Planning and Zoning Department
616 Germantown Pike, Lafayette Hill, PA 19444-1821
484-594-2625
www.whitemarshtwp.org

Subdivision and Land Development Cover Page for SLD # 03-23
Project Name: MileOne Fort Washington LLC – Final Plans
Address: 500-512 Pennsylvania Ave
Date: September 26, 2023
Status: Under Review

Updates:

Zoning Ordinance Compliance Review Letter- 10.31.23
Township Engineer Review Letter- 11.3.23
Fire Marshal Review Letter- 11.6.23
Revised FEMA Forms & Supplemental Flood Study- 11.21.23

This Checklist and the following items MUST be submitted to the Township, completed in their entirety, at the time of submission for the Township to accept a subdivision/land development application.

This checklist page must be filled out after printing the completed form starting on page 2 where applicable.

Applicant Initials	Required Items of Submission	Township Receipt
MSL	Whitemarsh Township Checklist	
MSL	Whitemarsh Township Application (Signature MUST Be Original)	
MSL	Whitemarsh Township Request for Modification (Signature MUST Be Original)	
MSL	Whitemarsh Time Waiver Form (Signature MUST Be Original)	
MSL	Whitemarsh Township Escrow (Payable to Whitemarsh Township; credit card payment accepted in person)	
MSL	Montgomery County Planning Commission Municipal Request for Review (County will request fee directly from applicant)	
MSL	Transportation Impact Study [§105-21.B.(9)(c)] (if applicable) Sent under separate cover	
MSL	Stormwater Management Plan & Supporting Calculations (if applicable)	
MSL	Supplemental Documents Applicable to a Specific Application	
MSL	List of Encumbrances (Book & Page Numbers) (if applicable)	
MSL	Three (3) Complete Sets of All Application Materials	
MSL	PDF or Link to Digital File of Each Component of the Application	

WHITEMARSH TOWNSHIP
SUBDIVISION and/or LAND DEVELOPMENT APPLICATION

The applicant, or applicant's authorized agent, for the Township to accept submission of the application, must complete each Application item and each Application Submission Checklist item.

Application Type: (check one)
☒ Minor Subdivision ☐ Minor Land Development
☐ Major Subdivision ☒ Major Land Development
☐ Land Development Waiver

Plan Type:
☐ Sketch ☐ Preliminary ☒ Final

INSERT "N/A" FOR NOT APPLICABLE WHERE APPROPRIATE

Name of Subdivision/Land Development: Proposed BMW Automotive Dealership Expansion

Location of Subdivision/Land Development: 500,506, 510, & 512 Pennsylvania Avenue
(~~Primary Access Roadway Name~~)

Between: Commerce Drive (Roadway Name) and Indiana Avenue (Roadway Name)

Number of Parcels: 4 **Block Number(s):** 51 **Unit Number(s):** 44, 2, 41, 46

512 Pennsylvania Ave, 510 Pennsylvania Ave, 500 Pennsylvania Ave, 506 Pennsylvania Ave
Parcel Number(s): 65-00-08776-006, 65-00-08773-00-9, 65-00-08770-00-3, 65-00-08767-00-6

Acreage: 5.132 AC Gross **Total Lots Proposed:** 1 **Zoning District:** CR-L (Commercial Retail -Low District)

Water Service Proposed: ☒ Public ☐ Private Sewer Service Proposed: ☒ Public ☐ Private

Applicant Name: MileOne Fort Washington, LLC **Contact Name:** Dennis Turnbaugh

Phone #: 301-679-4062 Fax #: Email: dturnbaugh@mileone.com

Address: 3301 Briggs Chaney Road, Silver Spring, MD 20904

Owner of Record Name (If Different): Auto Properties Fort Washington, LLC

Phone #: 443-872-0738 Fax #: Email: lolivieri@mileone.com

Address: 1 Olympic Place, Suite 1200, Towson, MD 21204

Engineer Name: Matthew Longenberger, P.E. **Firm Name:** Bohler Engineering PA, LLC

Phone #: 610-709-9971 Fax #: 610-709-9976 Email: mlongenberger@bohlereng.com

Address: 74 West Broad Street, Suite 500, Bethlehem, PA 18018

Fees and plans showing all public improvements are submitted with this application. Any additional plan information required by the Township Engineer will be submitted to the Director of Planning and Zoning for distribution. The undersigned applicant agrees to comply with all the provisions of Chapter 105 of the Code of the Township of Whitemarsh, as amended, and agrees to obtain all necessary permits in connection with the proposed subdivision and/or land development.

Whitemarsh Township employees, or township-authorized agents, are hereby granted permission to enter upon the land, if necessary, for site inspections.

Original preliminary and/or original final subdivision and/or land development applications submitted by 4:00pm on the last business day of the month will be reviewed by the Whitemarsh Township Planning Commission at a regular meeting two (2) months following the date of submission or other appropriate meeting date depending upon the results of Township reviews.

I hereby certify, as the undersigned applicant, that I am familiar with the provisions of: [1] Chapter 105, "Subdivision and Land Development", [2] Chapter 58, "Grading, Erosion Control, Stormwater Management and Best Management Practices", and [3] Chapter 55, "Tree Protection Standards" of the Code of the Township of Whitemarsh, as amended, and, to the best of my knowledge and belief, this application and the submitted plans conform to those provisions.

Date of Submission: 09/22/2023

Signature: _____

(Original Signature must be submitted)

Printed Name: Dennis L. Turnbaugh

I, (name) Dennis L. Turnbaugh **(title)** Division President of

(entity submitting application) MileOne Fort Washington, LLC do hereby affirm

that I am authorized by the applicant to affix my signature to this application.

Date: 9/19/2023 **Signature:** _____

(Original Signature must be submitted)

WHITEMARSH TOWNSHIP
REQUEST FOR MODIFICATION (WAIVER) OF
SUBDIVISION and/or LAND DEVELOPMENT ORDINANCE REQUIREMENTS

Pursuant to § 512.1.(b) of the Pennsylvania Municipalities Planning Code, all requests for a modification shall be in writing and shall accompany and be a part of the application for development. The request shall state in full the grounds and facts of unreasonableness or hardship on which the request is based, the provision or provisions of the ordinance involved and the minimum modification necessary.

Check the appropriate line:

☒ No modification (or waiver) of the Whitemarsh Township Subdivision and Land Development Ordinance is requested

☐ I/we hereby request the following modification[s] (or waiver[s]) of the Whitemarsh Township Subdivision and Land Development Ordinance. (The request must identify the applicable Section[s] of the Ordinance, modification[s] requested, and facts of unreasonableness or hardship upon which the request is made; attach additional sheets if necessary).

Name of Subdivision and/or Land Development: Proposed BMW Dealership Expansion

Date: 9/19/2023

Signature: Division President

(Original Signature must be submitted)

WHITEMARSH TOWNSHIP
SUBDIVISION and/or LAND DEVELOPMENT
TIME WAIVER FORM

Date: 09/22/2023

Granted to: Whitemarsh Township Board of Supervisors

Name of Subdivision and/or Land Development: Proposed BMW Automotive Dealership Expansion

On or about, 09/22/2023, I/we submitted for official filing the above-reference application.

Notwithstanding any contrary provision of the Pennsylvania Municipalities Planning Code or the Code of the Township of Whitemarsh, this letter will serve as notice to Whitemarsh Township that the requirement that action be taken on this application within ninety (90) days is hereby waived, without limitation as to time. This waiver is granted to permit us to make revisions to the application during the application review process.

Further, with the understanding that this waiver is voluntarily given and will be relied upon by Whitemarsh Township, I/we will give Whitemarsh Township written notice (by certified mail or recognized overnight carrier) should we determine that limiting the time of the review process becomes necessary. Whitemarsh Township shall then have ninety (90) days from receipt of such written notice in which to act upon the application.

This waver is not transferable or assignable by the Applicants and shall apply to any and all revised submissions made in relation to the above-referenced application.

I/we represent that I/we have been duly authorized to execute this waiver on behalf of the Applicant.

Date: 9/19/2023

Signature: Division President

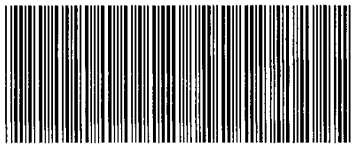
(Original Signature must be submitted)

Printed Name: Dennis L. Turbaugh

Firm Name: _____
(if applicable)

Title: _____
(if applicable)

DEED BK 6226 PG 02464 to 02470
INSTRUMENT # : 2021060714
RECORDED DATE: 05/26/2021 08:29:13 AM



5956243-0012U

RECORDER OF DEEDS
MONTGOMERY COUNTY
Jeanne Sorg

One Montgomery Plaza
Swede and Airy Streets ~ Suite 303
P.O. Box 311 ~ Norristown, PA 19404
Office: (610) 278-3289 ~ Fax: (610) 278-3869

MONTGOMERY COUNTY ROD

OFFICIAL RECORDING COVER PAGE

Document Type:	Deed	**Transaction #:**	6344284 - 2 Doc(s)
Document Date:	05/14/2021	**Document Page Count:**	6
Reference Info:		**Operator Id:**	ncostello

RETURN TO: (Mail)
FIDELITY NATIONAL
1700 Market St Ste 2100
Philadelphia, PA 19103-3919

PAID BY:
CHICAGO TITLE INSURANCE COMPANY PA

*** PROPERTY DATA:**

Parcel ID #:	65-00-08770-00-3	65-00-08767-00-6	65-00-08773-00-9
Address:	500 PENNSYLVANIA AVE FT WASHINGTON PA 19034	506 PENNSYLVANIA AVE PA	510 PENNSYLVANIA AVE PA
Municipality:	Whitemarsh Township (100%)	Whitemarsh Township (0%)	Whitemarsh Township (0%)
School District:	Colonial	Colonial	Colonial

*** ASSOCIATED DOCUMENT(S):**

CONSIDERATION/SECURED AMT:
$14,054,016.00

FEES / TAXES:

Recording Fee:Deed	$86.75
Additional Pages Fee	$4.00
Additional Parcels Fee	$60.00
Affordable Housing Pages	$4.00
Affordable Housing Parcels	$2.00
State RTT	$140,540.16
Whitemarsh Township RTT	$70,270.08
Colonial School District RTT	$70,270.08
Total:	$281,237.07

DEED BK 6226 PG 02464 to 02470
Recorded Date: 05/26/2021 08:29:13 AM
I hereby CERTIFY that this document is recorded in the Recorder of Deeds Office in Montgomery County, Pennsylvania.

Jeanne Sorg
Recorder of Deeds

Rev1a 2016-01-29

PLEASE DO NOT DETACH

THIS PAGE IS NOW PART OF THIS LEGAL DOCUMENT

NOTE: If document data differs from cover sheet, document data always supersedes.

Montgomery County

MAY 2 1 2021

Recorder of Deeds

PREPARED BY: McNEES WALLACE & NURICK LLC
RETURN TO: McNEES WALLACE & NURICK LLC
570 LAUSCH LANE, SUITE 200
LANCASTER, PA 17601

PARCEL ID NOs: 65-00-08770-00-3; 65-00-08767-00-6; 65-00-08773-00-9; & 65-00-08776-00-6

65-00-08767-10-5

THIS DEED

MADE this 14th day of May 2021 and effective as of the 17th day of May in the year Two Thousand Twenty One (2021).

BETWEEN CLEO-MAR, L.P., a Pennsylvania limited partnership (hereinafter called the "Grantor")

and

AUTO PROPERTIES FORT WASHINGTON, LLC, a Pennsylvania limited liability company (hereinafter called the "Grantee").

WITNESSETH, that in consideration of Fourteen Million Fifty-Four Thousand Sixteen and 00/100 Dollars ($14,054,016.00), in hand paid, the receipt whereof is hereby acknowledged, the Grantor hereby grants and conveys to the Grantee, its successors and assigns:

(Premises-A)

All those two certain pieces or parcels of ground, situate in Whitemarsh Township, Montgomery County, Pennsylvania, described according to a certain survey made for Delpost, Inc., Fort Washington Industrial Park, made by Frank A. Tebo, Registered Professional Engineer, dated September 12, 1966, as one parcel as follows to wit:

Beginning at a point formed by the intersection of the center line of Pennsylvania Avenue (60 feet wide) with the extended center line of Commerce Drive, thence extending said point of beginning, South 52 degrees 03 minutes 48 seconds East, along the center line of Pennsylvania Avenue, 43.00 feet to a point, a corner of lands now or late of Bankbill Corp., thence extending South 37 degrees 56 minutes 12 seconds West, along the aforesaid lands of Bankbill Corp., crossing the Southwesterly side of Pennsylvania Avenue, also crossing the bed of the Philadelphia Electric Co., Easement (30 feet wide), 507.62 feet to a point on the Northeasterly right of way line of the Reading Railroad, thence extending North 54 degrees 12 minutes 18 seconds West, along the Northeasterly right of way line of the Reading Railroad, 116.96 feet to a point, a corner of lands now or late of the Philadelphia Electric Co., thence extending North 38 degrees 56 minutes 12 seconds East along the aforesaid lands of the Philadelphia Electric Company, recrossing the aforesaid bed of the Philadelphia Electric Co., easement, also recrossing the Southeasterly side of Pennsylvania Avenue 512.07 feet to a point in the center line of Pennsylvania Avenue, thence extending South 52 degrees 03 minutes 48 seconds East, along the center line of

Pennsylvania Avenue, 65.00 feet to the first mentioned point of intersection and place of beginning.

(Premises-B)

All that certain irregular lot or parcel of ground, situate in the Township of Whitemarsh, County of Montgomery and Commonwealth of Pennsylvania, bounded and described in accordance with a survey and plan thereof made by C. Raymond Weir, Registered Professional Engineer, Ambler, Pennsylvania, dated March 31, 1958, as follows:

Beginning at a stone on the Southwesterly side of Pennsylvania Avenue (60 feet wide) a corner common to ground of Fort Washington Realty Corp., herein described, and ground now or late of Del-post, inc., thence extending from said point of beginning, along said ground now or late of Del-post Inc., South thirty-five degrees seventeen minutes West four hundred eighty-one feet and seventy-two one hundredths of a foot (481. 72 feet) to a stone set on the Northeasterly right of way line of the North Pennsylvania Railroad (Bethlehem Branch of the Reading Railroad) at a corner common ground herein described and ground now or late of Del-Post Inc., said point also being at the distance of thirty-three feet (33 feet) measured Northeastwardly from and at right angles to the center line on the aforementioned Railroad Company's right of way, thence on a line parallel with and thirty-three (33 feet) distant measured Northeastwardly from and at right angles to the center line of said right of way, North fifty-seven degrees forty-eight minutes West, one hundred fifty feet and twenty-two one-hundredths of a foot (150.22 feet) to a stone, thence through ground of Fort Washington Realty Corp., of which this is a part, the three (3) following courses and distances, (1) on a line parallel with the first course and distance above described North thirty-five degrees seventeen minutes East two hundred feet (200 feet), to a stone, (2) on a line parallel with the second course and distance above described, South fifty-seven degrees forty-eight minutes East, one hundred ten feet and sixteen one-hundredths of a foot (110.16 feet) to a stone, and (3) on a line parallel with the first course and distance above described, North thirty-five degrees seventeen minutes East, two hundred eighty-three feet and twenty-one one hundredths of a foot (283.21 feet) to a stone on the said southwesterly side of Pennsylvania Avenue, thence along the southwesterly side of Pennsylvania Avenue South fifty-five degrees forty minutes East forty feet (40 feet) to the first mentioned point and place of beginning.

(Premises-C)

ALL THAT CERTAIN lot or piece of ground with the buildings and improvements thereon erected, Situate in Whitemarsh Township, Montgomery County, Pennsylvania, bounded and described according to an As Built Survey Plot Plan made by Phillip C. Kretschman, P.E. made for Seltzer Development Corporation, dated July 1, 1986 as follows, to wit:

BEGINNING at a point on the title line in the bed of Pennsylvania Avenue (no width given), said point being South 52 degrees 03 minutes 48 seconds East the distance of 43.00 feet along the title line in the bed of Pennsylvania Avenue from its point of intersection with the center line of Commerce Drive (no width given); thence extending from said point of beginning along the title line in the bed of Pennsylvania Avenue the two following courses and distances: (1) South 52 degrees 03 minutes 48 seconds East 15.86 feet to a point, and

(2) South 52 degrees 09 minutes 18 seconds East and crossing a certain storm sewer easement 132.46 feet to a point; thence extending from said point South 37 degrees 56 minutes 12 seconds West and crossing the Southwesterly side of Pennsylvania Avenue and along a 5 foot wide parking easement and passing through a certain 20 foot storm drainage easement and passing through a certain Electric Company easement line and a certain Electric Company easement and another certain Electric Company easement line the distance of 502.65 feet to a point; thence extending from said point North 54 degrees 12 minutes 18 seconds West 148.42 feet to a point: thence extending from said point North 37 degrees 56 minutes 12 seconds East and recrossing the aforementioned Electric Company Easement line and the aforementioned Electric Company Easement line and recrossing the Southwesterly side of Pennsylvania Avenue the distance of 508.19 feet to a point on the title line in the bed of Pennsylvania Avenue, said point being the first mentioned point and place of beginning.

(Premises-D)

ALL THAT CERTAIN tract of land, situate in Whitemarsh Township, County of Montgomery and State of Pennsylvania, bounded and described as follows, to wit:

FROM a point on the intersection of the center lines of Commerce Drive and Pennsylvania Avenue and following the center line of Pennsylvania Avenue, South 52 degrees 3 minutes 48 seconds East, a distance of 58.86 feet to an angle point; thence continuing to follow the center line of Pennsylvania Avenue, South 52 degrees 9 minutes 18 seconds East, a distance of 132.46 feet to the point and place of beginning; from this point and following the center line of Pennsylvania Avenue, South 52 degrees 9 minutes 18 seconds East, a distance of 100 feet to a point; thence South 37 degrees 56 minutes 12 seconds West, a distance of 498.91 feet to a point on the right of way line of the Reading Railroad (Bethlehem Branch); thence following the right of way line of the Reading Railroad, North 54 degrees 12 minutes 18 seconds West, a distance of 100.07 feet to a point; thence North 37 degrees 56 minutes 12 seconds East, a distance of 502.65 feet to the point and place of beginning.

(As to Premises-A and B)

BEING THE SAME PREMISES which Rosalind T. Spodek by Deed dated November 17, 1999 and recorded December 9, 1999 in the Office of the Recorder of Deeds in and for Montgomery County, Pennsylvania, in Deed Book 5299, Page 1890, granted and conveyed unto CLEO-MAR, L.P., a Pennsylvania limited partnership, the Grantor herein.

(As to Premises-C)

BEING THE SAME PREMISES which PR Group III, LP, a Pennsylvania limited partnership, by Deed dated July 1, 2008 and recorded July 9, 2008 in the Office of the Recorder of Deeds in and for Montgomery County, Pennsylvania, in Deed Book 5699, Page 1401, granted and conveyed unto CLEO-MAR, L.P., a Pennsylvania limited partnership, the Grantor herein.

(As to Premises-D)

BEING THE SAME PREMISES which Geraldine Joan McCarron, Executrix of the Estate of Thomas F. McCarron, deceased, by Deed dated February 9, 2011 and recorded February 11, 2011 in the Office of the Recorder of Deeds in and for Montgomery County, Pennsylvania, in Deed Book 5793, Page 148, granted and conveyed unto CLEO-MAR, L.P., a Pennsylvania limited partnership, the Grantor herein.

UNDER AND SUBJECT to all exceptions, reservations, restrictions, limitations, conditions, covenants, agreements, rights-of-way and easements contained in, and/or conveyed and/or granted by, prior instruments of writing of record, insofar as they may still be in force and effect.

TOGETHER with all and singular the tenements, hereditaments, and appurtenances to the same belonging, or in anywise appertaining, and the reversion and reversions, remainder and remainders, rents, issues and profits thereof; **AND ALSO** all the estate, right, title, interest, property, claim and demand whatsoever, both in law and equity, of the said Grantor, of, in, to or out of the said premises and every part and parcel thereof.

TO HAVE AND TO HOLD the said hereditaments and premises, with all and singular the appurtenances unto the said Grantee, its successors and assigns, to and for the only proper use and behoof of said Grantee, its successors and assigns, forever.

AND the said Grantor, for itself and its successors and assigns, does by these presents, covenant, grant and agree to and with said Grantee, its successors and assigns, that it, the said Grantor, for itself and its successors and assigns, all and singular the hereditaments and premises hereinabove described and granted, or mentioned and intended so to be, with the appurtenances unto the said Grantee, its successors and assigns, against the said Grantor and its successors and assigns, and against all and every other person or persons, whomsoever, lawfully claiming or to claim the same or any part thereof, shall and will by these presents SPECIALLY WARRANT AND FOREVER DEFEND.

[Signatures on Following Page]

IN WITNESS WHEREOF, the Grantor has executed this deed on the date first above written.

CLEO-MAR, L.P., a Pennsylvania limited partnership

By and through its General Partner, BUNCHY, LLC, a Pennsylvania limited liability company

Witness: _____ By: _____
Name: MARIO P CESARINI
Title:

COMMONWEALTH OF PENNSYLVANIA :
: SS:
COUNTY OF MONTGOMERY :

On this, the 14 day of May, 2021, before me, a notary public, the undersigned officer, personally appeared Mario P. Cesarini, who acknowledged himself/herself to be the Sole Member of BUNCHY, LLC, a Pennsylvania limited liability company, the General Partner of **CLEO-MAR, L.P.**, a Pennsylvania limited partnership, and that he/she, as such officer, being authorized to do so, executed the foregoing instrument for the purposes therein contained by signing the name of the limited partnership by himself/herself as Sole Member of BUNCHY, LLC, its General Partner.

IN WITNESS WHEREOF, I have set my hand and official seal.

_____
Notary Public

My commission expires:

Commonwealth of Pennsylvania - Notary Seal
EVA M. GILETTE, Notary Public
Montgomery County
My Commission Expires April 14, 2022
Commission Number 1058588

CERTIFICATE OF ADDRESS

I hereby certify that the precise address of the Grantee herein is as follows:

1 Olympic Place, Suite 1000

Towson, Maryland 21204

On behalf of the Grantee

MONTGOMERY COUNTY COMMISSIONERS REGISTRY
65-00-08770-00-3 WHITEMARSH
500 PENNSYLVANIA AVE

CLEO-MAR LP $15.00
B 051 U 041 L 4238 DATE: 05/25/2021 JU

MONTGOMERY COUNTY COMMISSIONERS REGISTRY
65-00-08767-00-6 WHITEMARSH
506 PENNSYLVANIA AVE

CLEO-MAR LP $15.00
B 051 U 044 L 2900 DATE: 05/25/2021 JU

MONTGOMERY COUNTY COMMISSIONERS REGISTRY
65-00-08773-00-9 WHITEMARSH
510 PENNSYLVANIA AVE

CLEO-MAR LP $15.00
B 051 U 002 L 4237 DATE: 05/25/2021 JU

MONTGOMERY COUNTY COMMISSIONERS REGISTRY
65-00-08776-00-6 WHITEMARSH
512 PENNSYLVANIA AVE

CLEO-MAR LP $15.00
B 051 U 046 L 4000 DATE: 05/25/2021 JU

MONTGOMERY COUNTY COMMISSIONERS REGISTRY
65-00-08767-10-5 WHITEMARSH
506 PENNSYLVANIA AVE

CLEO-MAR LP $15.00
B 051 U 044 L 121 2205 DATE: 05/25/2021 JU

TRAFFIC PLANNING AND DESIGN, INC.
WWW.TRAFFICPD.COM

September 19, 2023

Mr. Paul Lutz
PennDOT 6-0
7000 Geerdes Blvd
King of Prussia, PA 19406

RE: PennDOT – Response to TIS Review
BMW Car Dealership Redevelopment
Whitemarsh Township, Montgomery County
TPD Job #MILE.00001
EPS Application #303682

Dear Mr. Lutz:

This letter pertains to the Proposed BMW Car Dealership Redevelopment in Whitemarsh Township, Montgomery County. Traffic Planning and Design, Inc. (TPD) has prepared this response letter to address the EPS Review Comments from PennDOT dated April 14, 2023 (attached for reference). For the discussion below, the review comments are shown in italic type, with the corresponding TPD response shown in bold and regular type:

REVIEW COMMENTS

General

1. *With respect to the formal permit application, please ensure that the following items are addressed:*
    a. *Please be advised that pursuant to and in accordance with Title 67, Chapter 441.8(h)(2)(iv) of the code, the Safe Stopping Sight Distance is the absolute minimum acceptable sight distance for driveways. It is the designer's responsibility to ensure that this minimum requirement is satisfied.*

        Response: So noted.

    b. *It should be understood that in accordance with PennDOT Strike-Off Letter 470-10-03 and pursuant to section 421 of the State Highway Law (36 P.S. § 670-421) the installation of any drainage facilities within the Legal Right-of-Way may necessitate additional permitting requirements, including, but not limited to, a separate Highway Occupancy Permit from the Municipality for the future maintenance of the new drainage facilities.*

        Response: So noted.

c. *ADA compliance within the limits of work (along the access frontage at a minimum) must be evaluated in the TIS (i.e. new/modified facilities, impact to SEPTA bus stops, etc.). If driveway modifications are proposed, the existing curb ramps must be upgraded to be ADA compliant. At a minimum, the ramp adjacent to the curb replacement would need to be reconstructed.*

Response: So noted.

2. **Upon resubmission, the applicant's engineer should put together a letter that describes how each comment has been addressed and where each can be found in the plan set. A copy of these comments and any previously submitted plans should also be provided. Further, if the applicants engineer has made any design changes independent of PennDOT reviewer comments, they must include a section in the response-to-comments letter that describes the additional design changes.*

** Additional comments may follow upon review of the resubmitted application. If you have any questions pertaining to the technical aspects of this review, please contact the Department's representative, Jason Cowen, PE at Jason.cowen@dawood.net or (855) 432-9663.*

** For guidance on Highway Occupancy Permit applications refer to PA Code Title 67, Chapter 441, Chapter 459 and PennDOT Publication 282. This will help expedite the review.*

Response: Will comply.

3. *Please be advised: The Department is now requiring a cost estimate be entered into EPS and that a Letter of Credit be submitted prior to HOP issuance.*

This cost estimate must include all work proposed within the Department's Right-of-Way including signal equipment, all roadway work, pavement markings and signage plus a 15% contingency to be entered into the "Fee Information & Estimate Construction Cost" section in the Application setup box. Further, this section requires the cost estimate to be broken down into site frontage costs and off site improvements costs. Please enter this information in the manner required. This cost estimate will be the basis for the value of the Letter of Credit the Department will require as security prior to the start of actual construction.

Response: Will comply. This is/will be included as part of the HOP submission.

4. *PLEASE SUBMIT A CHECK FOR $95.00 MADE PAYABLE TO PENNDOT-ATTN: MARY ELLEN CULHANE, PERMITS SUPERVISOR, 7000 GEERDES BLVD. KING OF PRUSSIA, PA. 19406. PLEASE INCLUDE THE APPLICATION NUMBER ON THE CHECK FOR OUR REFERENCE.*

Response: Will comply as part of the HOP submission.

5. *Applicant must apply for and obtain an ePermitting Business Partner ID (BP ID) prior to permit issuance. The BPID is to be used in the establishment of a billing account for the invoicing of inspection costs.*

For information on obtaining a BP ID, please visit:
https://www.epermitting.penndot.gov/EPS/home/manageBPRegistration.jsp
(Please make sure that you follow the instructions that are in the pink area).

After a BPID is obtained and activated by your system administrator (This is a 2-step process that must be completed for PennDOT to bill for permit inspection costs at a later date and if not activated, it could delay construction), please provide the following information in the Applicant Contact Info. area within the Applicant Team link of your EPS application.

1)BP ID No.
2)Contact information (Name/Title/Phone/E-mail) for a GENERAL contact person (Person that typically deals with the highway occupancy permit application process).
3)Contact information (Name/Title/Phone/E-mail) for a BILLIING contact person (Person that typically deals with the highway occupancy permit invoicing process).

Response: Will comply as part of the HOP submission.

Application

1. *Provide documentation of scope concurrence from Whitemarsh Township.*

   Response: Will comply. The correspondence from Whitemarsh Township is included in Appendix A.

Transportation Impact Study/Transportation Impact Assessment

1. *Match the intersection names used on the report to the synchro outputs.*

   Response: Revised accordingly.

2. *The ADT between Table 1 (roadway characteristics within study area) and TIRE are inconsistent for SR 2037. Revise the SR 2037 ADT to match the TIRE information for the east and west bound ADT.*

   Response: Revised accordingly.

3. *The Saturday Midday Peak Hour Equation/Rate in Table 5 is inconsistent with the scoping application trip generation. Revise to match the scoping application trip generation.*

   Response: Revised accordingly in order to provide for a conservative analysis. However, it should be noted that the trip generation calculations utilized for the Saturday Midday Peak are unrealistic. Based on the counts conducted at the existing dealership, the number of trips entering/exiting during the Saturday Midday Peak hour is 47 trips. The ITE equations calculate that the proposed dealership (a redevelopment/consolidation of the existing dealership) will generate 548 new trips during the Saturday Midday peak hour. More than 11x the existing trips experienced. It is unrealistic to assume the proposed development would generate anywhere near 548 peak hour trips, let alone double what exists. However, TPD utilized the ITE equation for purposes of the analysis in order to provide for an extremely conservative analysis.

4. *The trip generation for the Saturday Midday Peak Hour in Table 6 is inconsistent with the scoping application. Revise to match the scoping application.*

   Response: Revised accordingly.

5. *The storage length is inconsistent between Table 13 (95th percentile queue) and the synchro data, review and revise.*

   Response: Revised accordingly.

Access Configuration/Profile- Driveways/Local Roads

1. *Replace all existing depressed curb accesses along the property frontage with full height curb.*

   Response: Will comply. This has been provided for on the HOP plan set.

2. *Provide 14-foot curb lanes on the full movement access and a 28-foot throat at the right-in/right-out access.*

   Response: Will comply, however, based on the alignment of Commerce Drive and the need to accommodate delivery trucks, the driveway has been designed to provide for a width greater than the 28' minimum.

3. *The segment and offset for the low volume driveway are inconsistent with the straight line diagram. The low volume driveway appears to be 236 feet from the main access across from Commerce Drive. Review and revise accordingly.*

   Response: Will comply.

4. *Verify that the full movement access lane configuration will align with the lane configuration of Commerce Drive.*

   Response: Will comply.

Signal Section (Publication 46, 148 And 149)

1. *Upgrade the Traffic Signal and pedestrian facilities at the intersection of the main access and along the property frontage as required.*

   Response: Will comply. This has been provided for on the HOP plan set.

2. *Provide documentation of concurrence and coordination with traffic signal modification to the Commerce Drive and Pennsylvania Ave. intersection with Upper Dublin Township.*

   Response: Will comply.

We hope that these responses are helpful. If you require any additional information, please feel free to contact us.

Sincerely,
TRAFFIC PLANNING AND DESIGN, INC.

Matthew I. Hammond, P.E.
Executive Vice President
mhammond@trafficpd.com

Attachment: 4/14/2023 PennDOT EPS TIS Review

cc: Whitemarsh Township
Project Team (via Email)
TPD File

pennsylvania
DEPARTMENT OF TRANSPORTATION

Date: 04/14/2023

Subject: Highway Occupancy Permit Application No. 303682, Cycle No.1 - Returned For Revisions

To: MileOne Autogroup
510 Pennsylvania Avenue
Fort Washington, PA 19034

From: PennDOT Engineering District 6-0
7000 Geerdes Boulevard
King of Prussia, PA 19406

Dear Applicant,

PennDOT has reviewed your application for completeness, consistency and compliance with applicable Department Regulations. This review has identified issues that must be addressed in order for our review to continue.

The Department's review comments are attached.

Once the comments have been addressed, please resubmit the application and associated material for further review.

Upon resubmission, the applicant's engineer should put together a letter that describes how each comment has been addressed and where each can be found. This will help expedite the review. For guidance on HOP applications refer to 67 PA Code, Chapter 441, Chapter 459 and PennDOT Publication 282, "Highway Occupancy Permit Guidelines". Additional comments may follow upon review of the resubmitted application.

If you have any questions regarding this matter, you may contact Jason Cowen, at (855) 432-9663.

pennsylvania
DEPARTMENT OF TRANSPORTATION

Response Comments
Date: 04/14/2023
Application Number: 303682, Cycle No.1

General

(1) With respect to the formal permit application, please ensure that the following items are addressed:
a.Please be advised that pursuant to and in accordance with Title 67, Chapter 441.8(h)(2)(iv) of the code, the Safe Stopping Sight Distance is the absolute minimum acceptable sight distance for driveways. It is the designers responsibility to ensure that this minimum requirement is satisfied.
b.It should be understood that in accordance with PennDOT Strike-Off Letter 470-10-03 and pursuant to section 421 of the State Highway Law (36 P.S. § 670-421) the installation of any drainage facilities within the Legal Right-of-Way may necessitate additional permitting requirements, including, but not limited to, a separate Highway Occupancy Permit from the Municipality for the future maintenance of the new drainage facilities.
c.ADA compliance within the limits of work (along the access frontage at a minimum) must be evaluated in the TIS (i.e. new/modified facilities, impact to SEPTA bus stops, etc.). If driveway modifications are proposed, the existing curb ramps must be upgraded to be ADA compliant. At a minimum, the ramp adjacent to the curb replacement would need to be reconstructed.

(2) * Upon resubmission, the applicant's engineer should put together a letter that describes how each comment has been addressed and where each can be found in the plan set. A copy of these comments and any previously submitted plans should also be provided. Further, if the applicants engineer has made any design changes independent of PennDOT reviewer comments, they must include a section in the response-to-comments letter that describes the additional design changes.

* Additional comments may follow upon review of the resubmitted application. If you have any questions pertaining to the technical aspects of this review, please contact the Department's representative, Jason Cowen, PE at Jason.cowen@dawood.net or (855) 432-9663.

* For guidance on Highway Occupancy Permit applications refer to PA Code Title 67, Chapter 441, Chapter 459 and PennDOT Publication 282. This will help expedite the review.

(3) Please be advised: The Department is now requiring a cost estimate be entered into EPS and that a Letter of Credit be submitted prior to HOP issuance.
This cost estimate must include all work proposed within the Department's Right-of-Way including signal equipment, all roadway work, pavement markings and signage plus a 15% contingency to be

entered into the "Fee Information & Estimate Construction Cost" section in the Application setup box. Further, this section requires the cost estimate to be broken down into site frontage costs and off site improvements costs. Please enter this information in the manner required. This cost estimate will be the basis for the value of the Letter of Credit the Department will require as security prior to the start of actual construction.

(4) PLEASE SUBMIT A CHECK FOR $95.00 MADE PAYABLE TO PENNDOT-ATTN: MARY ELLEN CULHANE, PERMITS SUPERVISOR, 7000 GEERDES BLVD. KING OF PRUSSIA, PA. 19406. PLEASE INCLUDE THE APPLICATION NUMBER ON THE CHECK FOR OUR REFERENCE.

(5) Applicant must apply for and obtain an ePermitting Business Partner ID (BP ID) prior to permit issuance. The BP ID is to be used in the establishment of a billing account for the invoicing of inspection costs.

For information on obtaining a BP ID, please visit:
https://www.epermitting.penndot.gov/EPS/home/manageBPRegistration.jsp
(Please make sure that you follow the instructions that are in the pink area).

After a BP ID is obtained and activated by your system administrator (This is a 2-step process that must be completed for PennDOT to bill for permit inspection costs at a later date and if not activated, it could delay construction), please provide the following information in the Applicant Contact Info. area within the Applicant Team link of your EPS application.

1)BP ID No.

2)Contact information (Name/Title/Phone/E-mail) for a GENERAL contact person (Person that typically deals with the highway occupancy permit application process).

3)Contact information (Name/Title/Phone/E-mail) for a BILLIING contact person (Person that typically deals with the highway occupancy permit invoicing process).

Application

(1) Provide documentation of scope concurrence from Whitemarsh Township.

Transportation Impact Study/Transportation Impact Assessment

(1) 1.Match the intersection names used on the report to the synchro outputs.

2.The ADT between Table 1 (roadway characteristics within study area) and TIRE are inconsistent

for SR 2037. Revise the SR 2037 ADT to match the TIRE information for the east and west bound ADT.

3.The Saturday Midday Peak Hour Equation/Rate in Table 5 is inconsistent with the scoping application trip generation. Revise to matcha the scoping application trip generation.

4.The trip generation for the Saturday Midday Peak Hour in Table 6 is inconsistent with the scoping application. Revise to match the scoping application.

5.The storage length is inconsistent between Table 13 (95th percentile queue) and the synchro data, review and revise.

Access Configuration/Profile- Driveways/Local Roads

(1) Replace all existing depressed curb accesses along the property frontage with full height curb.
(2) Provide 14-foot curb lanes on the full movement access and a 28-foot throat at the right-in/right-out access.
(3) The segment and offset for the low volume driveway are inconsistent with the straight line diagram. The low volume driveway appears to be 236 feet from the main access across from Commerce Drive. Review and revise accordingly.
(4) Verify that the full movement access lane configuration will align with the lane configuration of Commerce Drive.

Signal Section (Publication 46, 148 And 149)

(1) Upgrade the Traffic Signal and pedestrian facilities at the intersection of the main access and along the property frontage as required.
(2) Provide documentation of concurrence and coordination with traffic signal modification to the Commerce Drive and Pennsylvania Ave. intersection with Upper Dublin Township.

Last Revised: September 20, 2023
TPD# MILE.00001

Est. 1989

TRAFFIC PLANNING AND DESIGN, INC.

BMW CAR DEALERSHIP REDEVELOPMENT

Transportation Impact Assessment
Whitemarsh Township, Montgomery County

For Submission To:
PennDOT District 6-0 & Whitemarsh Township

2500 East High Street, Suite 650, Pottstown, PA 19464 | 610.326.3100 | TPD@TrafficPD.com

BMW CAR DEALERSHIP REDEVELOPMENT
TRANSPORTATION IMPACT ASSESSMENT

FOR SUBMISSION TO:

Whitemarsh Township, Montgomery County, PA
& PennDOT District 6-0

Prepared For:
MileOne Autogroup
Mr. Dennis Turnbaugh
510 Pennsylvania Avenue
Fort Washington, PA 19034

September 20, 2023
TPD # MILE.00001

Prepared By:
Traffic Planning and Design, Inc.
Sanatoga Commons
2500 East High Street, Suite 650
Pottstown, Pennsylvania 19464

Phone: (610) 326-3100
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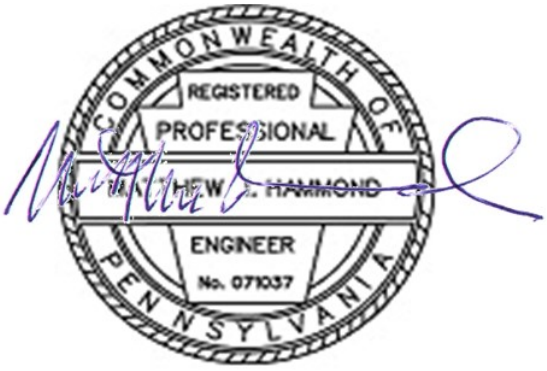
E-mail: TPD@TrafficPD.com
Web Site: www.trafficpd.com



Matthew I. Hammond, P.E.
Executive Vice President
Pennsylvania License Number 071037

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EXECUTIVE SUMMARY

The purpose of this study is to examine the potential traffic impact associated with the Proposed BMW Car Dealership Redevelopment in Whitemarsh Township, Montgomery County, Pennsylvania. Based on this evaluation, the following conclusions were reached:

- The Project Site is located on the southern side of Pennsylvania Avenue (SR 2037), in the vicinity of, opposite, Commerce Drive.
- The Proposed Redevelopment will consist of a consolidation/reorganization of the Existing Facility into a 69,182 s.f. New Car Sales and Service facility.
- Access to the Existing Facility is provided by five (5) access points to Pennsylvania Avenue (SR 2037).
- Access to the Proposed Redevelopment will be consolidated into two (2) access points as follows: one (1) re-aligned full-movement driveway opposite Commerce Drive (signalized) and one (1) right-in/right-out driveway further east.
- With development, all proposed driveway locations will exceed PennDOT sight distance criteria.
- The Proposed Redevelopment will generate 140 new trips during the weekday A.M. Peak Hour, 182 new trips during the weekday P.M. Peak Hour and 548 new trips during the Saturday Peak Hour.
- Based on the counts conducted at the existing driveways, the Existing Facility generated 67 new trips during the weekday A.M. Peak Hour, 65 new trips during the weekday P.M. Peak Hour and 47 new trips during the Saturday Peak Hour.
- It should be noted that these trip generation estimates are **extremely conservative** based on the data collected at the existing facility during the peak hours. The trips generated as part of this study, and utilized in all subsequent analysis, propose an increase of between 2x-11x the amount of traffic currently generated by the site. The redevelopment project is a consolidation of the existing buildings/uses on site and it is not expected that a significant increase in trip generation is likely.
- Under all projected (build) conditions with the development of the proposed site and with site-related recommendations outlined in **Table II**, all the study area intersections will satisfy PennDOT ILOS Standards
- Levels of Service (LOS) for the study area intersections have been summarized in matrix form. **Table I** details the overall intersection LOS for each study area intersection:

TABLE I
INTERSECTION LEVEL OF SERVICE DELAY (SECONDS) SUMMARY

Intersection	Peak Hour	2022 Exist	2025		2030		ILOS STANDARD
			Base	Proj.[1]	Base	Proj.[1]	
Pennsylvania Avenue (SR 2037) & Commerce Drive/ Site Driveway	Weekday AM	B (15.3)	B (15.4)	B (15.4)	B (15.4)	B (15.5)	Yes
	Weekday PM	C (25.7)	C (25.8)	C (27.8)	C (25.8)	C (27.9)	
	Saturday	B (13.9)	B (14.0)	C (20.7)	B (14.0)	C (20.7)	
Pennsylvania Avenue (SR 2037) & Western Exit-Only Driveway	Weekday AM	A (0.0)	A (0.0)	--	A (0.0)	--	Yes
	Weekday PM	A (0.0)	A (0.0)	--	A (0.0)	--	
	Saturday	A (0.0)	A (0.0)	--	A (0.0)	--	
Pennsylvania Avenue (SR 2037) & Central Exit-only Driveway	Weekday AM	A (0.0)	A (0.0)	--	A (0.0)	--	Yes
	Weekday PM	A (0.0)	A (0.0)	--	A (0.0)	--	
	Saturday	A (0.0)	A (0.0)	--	A (0.0)	--	
Pennsylvania Avenue (SR 2037) & Existing Access/ Proposed RI-RO Driveway	Weekday AM	A (0.0)	A (0.0)	A (0.0)	A (0.0)	A (0.0)	Yes
	Weekday PM	A (0.0)	A (0.0)	A (0.1)	A (0.0)	A (0.1)	
	Saturday	A (0.0)	A (0.0)	A (0.3)	A (0.0)	A (0.3)	
Pennsylvania Avenue (SR 2037) & Existing Eastern Full-Movement Driveway	Weekday AM	A (0.0)	A (0.0)	--	A (0.0)	--	Yes
	Weekday PM	A (0.0)	A (0.0)	--	A (0.0)	--	
	Saturday	A (0.0)	A (0.0)	--	A (0.0)	--	

Base = No-Build scenario, Proj. = Build scenario, 1 = With Site-Related Recommendations

» Site-related recommendations are summarized in **Table II**:

TABLE II
RECOMMENDATIONS

Intersection	Recommendations
Pennsylvania Avenue (SR 2037) & Commerce Drive/Site Driveway	Align the main site driveway directly opposite Commerce Drive
	Design the resultant NB driveway approach to provide a separate left-turn lane and a separate thru/right-turn lane
	Design the resultant SB Commerce Drive approach to provide dual left-turn lanes and a separate thru/right-turn lane
	With lane changes and realignment, remove split phasing and optimize signal timings
	Provide adequate turning radii to facilitate ingress/egress
	Provide required sight distances
	Work with PennDOT and Whitemarsh Township to provide ADA/Pedestrian Facilities to the extent feasible, including providing the "missing link" on the site side as part of the Cross County Trail project.
Pennsylvania Avenue (SR 2037) & Proposed RI-RO Driveway	Provide adequate turning radii to facilitate ingress/egress
	Provide a "STOP" sign on the NB egress approach
	Provide required sight distances
	Work with PennDOT and Whitemarsh Township to provide ADA/Pedestrian Facilities to the extent feasible

INTRODUCTION

Traffic Planning and Design, Inc. (TPD) has completed a Transportation Impact Study (TIS) for the Proposed BMW Car Dealership Redevelopment in Whitemarsh Township, Montgomery County, Pennsylvania. The Project Site is located on the southern side of Pennsylvania Avenue (SR 2037), in the vicinity of Commerce Drive, as shown in **Figure 1**. As shown in **Figure 2**, the Proposed Redevelopment will consist of a consolidation/reorganization of the Existing Facility into a 69,182 s.f. New Car Sales and Service facility. Access to the Existing Facility is provided by five (5) access points to Pennsylvania Avenue (SR 2037). Access to the Proposed Redevelopment will be consolidated into two (2) access points as follows: one (1) re-aligned full-movement driveway opposite Commerce Drive (signalized) and one (1) right-in/right-out driveway further east. TPD assumed an opening year of 2025 and a design year of 2030.

This report has been prepared in accordance with PennDOT's *Policies and Procedures for Transportation Impact Studies*, found in PennDOT's Publication 282, Appendix A, dated July 2017. A PennDOT Scoping Application, dated November 3, 2022, was sent to PennDOT 6-0 and Whitemarsh Township for review. The PennDOT Scoping Review was received in an email dated December 2, 2022, and Whitemarsh Township did not have any scoping comments as outlined in an email dated December 13, 2022. Project Correspondence is included in **Appendix A**.

EXISTING ROADWAY NETWORK

A field review of the existing roadway system in the study area was conducted. The existing roadway characteristics within the study area are summarized in **Table 1**. Photographs of the study area intersections are included in **Appendix B**.

TABLE 1
ROADWAY CHARACTERISTICS WITHIN STUDY AREA

Roadway	Route Ownership	Functional Classification/ Roadway Type	Predominant Directional Orientation	Average Daily Traffic[1]	Posted Speed Limit
Pennsylvania Avenue	State (SR 2037)	Minor Arterial	East-West	23,652	35 mph
Commerce Drive	(G217)	Urban Collector	North-South	5,596	35 mph

1 = PennDOT TIRe Website (September, 2023)

Bicycle and Pedestrian Facilities

Based on field observations, the intersections do not have bicycle specific accommodations. The pedestrian accommodations of the study area intersections are described below.

- Pennsylvania Avenue (SR 2037) and Commerce Drive/Site Driveway – There is sidewalk on the northern and southern sides of Pennsylvania Avenue (SR 2037) and the eastern side of Commerce Drive. There are pedestrian curb ramps, pedestrian push buttons, and crosswalks on the western and northern legs of the intersection. There are pedestrian curb ramps and a crosswalk on the site driveway.
- Pennsylvania Avenue (SR 2037) and Western Right-out Driveway – There is sidewalk on the northern and southern sides of Pennsylvania Avenue (SR 2037) with a driveway apron/sidewalk across the driveway.

- Pennsylvania Avenue (SR 2037) and Central Exit-only Driveway – There is sidewalk on the northern and southern sides of Pennsylvania Avenue (SR 2037) with pedestrian curb ramps and a crosswalk across the site access.
- Pennsylvania Avenue (SR 2037) and Site Driveway/Proposed RI-RO Driveway - There is sidewalk on the northern and southern sides of Pennsylvania Avenue (SR 2037) with pedestrian curb ramps at the site access.
- Pennsylvania Avenue (SR 2037) and Eastern Site Driveway - There is sidewalk on the northern and southern sides of Pennsylvania Avenue (SR 2037) with pedestrian curb ramps on the western side of the site access.

Crash Data Investigation

Crash data were obtained from PennDOT for the study area intersections. PennDOT defines a reportable crash as follows, "A reportable (crash) is one in which an injury or fatality occurs or if at least one of the vehicles involved requires towing from the scene." Reportable crashes were tabulated for the six-year time period beginning 01/01/2016 and ending 12/31/2021. For a given intersection, PennDOT considers a crash occurrence of 5 reportable, correctable crashes over a continuous twelve-month period during the past six years to be a threshold value, above which the intersection design should be reviewed to examine if corrective measures can be taken to enhance safety. The number of reportable crashes at the study area intersections is shown in **Table 2.**

TABLE 2
PENNDOT REPORTABLE CRASH DATA

Study Area Intersection	Total Number of Reportable Crashes					
	2016	2017	2018	2019	2020	2021
Pennsylvania Avenue & Commerce Drive/ Site Driveway	1	3	2	4	1	5
Pennsylvania Avenue & Western Exit-Only Driveway	1	0	0	0	0	0
Pennsylvania Avenue & Central Exit-only Driveway	0	0	0	1	0	0
Pennsylvania Avenue & Existing Access/Proposed RI-RO Driveway	0	0	0	0	0	0
Pennsylvania Avenue & Existing Eastern Full-Movement Driveway	0	0	0	0	0	0

Based on a review of the crash data in **Table 3**, there were no twelve-month periods during the past six years where 5 or more crashes occurred that were deemed correctable, except for the following:

- Pennsylvania Avenue (SR 2037) & Commerce Drive/Site Driveway – In 2021, there were 5 crashes in which the primary type of crash was angle crashes. The primary causation of the crashes was driver errors such as improper/careless turn, driver inexperienced, and distracted driving. However, based on the proposed re-alignment of the existing main access driveway serving the BMW dealership, and subsequent removal of the existing split phasing, it is TPD's opinion this intersection will be improved from a safety perspective.

EXISTING TRAFFIC CONDITIONS

Manual traffic counts were conducted on 15-minute intervals during the weekday morning (7:00 to 9:00 A.M.), weekday evening (4:00 to 6:00 P.M.) and Saturday midday (11:00 A.M. to 1:00 P.M.) peak periods. Data pertaining to heavy vehicles, pedestrians and transit vehicles were observed during the manual counts. Peak hours and count dates for the study area intersections are identified in **Table 3**.

TABLE 3
MANUAL TRAFFIC COUNT INFORMATION

Intersection	Date of Traffic Counts	Time Period	Intersection Peak Hour[1]
Pennsylvania Avenue (SR 2037) & Commerce Drive/ Site Driveway	Thursday, October 27, 2022	Weekday A.M.	8:00 to 9:00 A.M.
		Weekday P.M.	5:00 to 6:00 P.M.
	Saturday, October 29, 2022	Saturday Midday	11:30 A.M. to 12:30 P.M.
Pennsylvania Avenue (SR 2037) & Western Exit-Only Driveway	Thursday, October 27, 2022	Weekday A.M.	7:45 to 8:45 A.M.
		Weekday P.M.	5:00 to 6:00 P.M.
	Saturday, October 29, 2022	Saturday Midday	11:30 A.M. to 12:30 P.M.
Pennsylvania Avenue (SR 2037) & Central Exit-only Driveway	Thursday, October 27, 2022	Weekday A.M.	8:00 to 9:00 A.M.
		Weekday P.M.	5:00 to 6:00 P.M.
	Saturday, October 29, 2022	Saturday Midday	11:45 A.M. to 12:45 P.M.
Pennsylvania Avenue (SR 2037) & Existing Access/Proposed RI-RO Driveway	Thursday, October 27, 2022	Weekday A.M.	8:00 to 9:00 A.M.
		Weekday P.M.	5:00 to 6:00 P.M.
	Saturday, October 29, 2022	Saturday Midday	11:30 A.M. to 12:30 P.M.
Pennsylvania Avenue (SR 2037) & Existing Eastern Full-Movement Driveway	Thursday, October 27, 2022	Weekday A.M.	8:00 to 9:00 A.M.
		Weekday P.M.	5:00 to 6:00 P.M.
	Saturday, October 29, 2022	Saturday Midday	11:30 A.M. to 12:30 P.M.

1 =Peak Hour consists of the four consecutive 15-minute intervals where the highest traffic volumes occur

2022 Existing Condition traffic volumes for the weekday A.M., weekday P.M., and Saturday midday peak hours are illustrated in **Figures 3-5**. All traffic count data sheets are provided in **Appendix C**.

BASE (NO-BUILD) CONDITIONS

Annual Background Growth

A background growth factor for the roadways in the study area was developed based on growth factors for August 2022 to July 2023 obtained from the PennDOT Bureau of Planning and Research (BPR). The PennDOT BPR suggests using a background growth trend factor of 0.27% per year in Montgomery County for urban non-interstate roadways. As such, the background growth factor was applied annually to yield overall growth percentages of 0.81% (0.27% per year compounded for 3 years) for the 2025 opening year and 2.18% (0.27% per year compounded for 8 years) for the 2030 design year.

Nearby Proposed Developments

Base (no-build) traffic conditions were calculated to include traffic volumes from proposed developments, which, though not operating under existing conditions, may be operating by the future year (2030) of the proposed development. Based on the scoping application, there were no nearby developments specifically included in the study.

The additional traffic volumes due to the background growth, were added to the 2022 Existing Conditions to produce the 2025 and 2030 Base Condition (no-build) traffic volumes as shown in **Figures 6-11**.

SCHEDULED ROADWAY IMPROVEMENTS

Based on a review of the DVRPC TIP and PennDOT 12-Year Plan, there are no planned roadway improvements in the Study Area.

PROPOSED SITE ACCESS

The site is currently served by five (5) accesses to Pennsylvania Avenue (SR 2037). With redevelopment, the access points will be reduced to two (2) as follows; one (1) realigned full-movement driveway, opposite Commerce Drive (signalized) and one (1) Right-in/Right-out Driveway, east of the signal.

Sight Distance Analysis

A sight distance analysis was prepared for the proposed site driveway locations. In general, recommended safe sight distances depend upon the posted speed limit and roadway grades. The existing sight distances at the proposed driveways were measured in accordance with PennDOT Publication 282 Highway Occupancy Permit Guidelines and compared to PennDOT's desirable sight distance standard, which is identified in 67 PA Code Chapter 441.8(h), "Access to and Occupancy of Highways by Driveways and Local Roads." In addition, measured sight distances at the proposed driveways were compared to PennDOT's safe stopping sight distance standard, which is calculated by the following equation:

$$\mathbf{SSSD = 1.47VT + V^2/[30(f \pm g)]}$$

SSSD = safe stopping sight distance (acceptable sight distance)
V = Vehicle Speed
T = Perception Reaction Time of Driver (2.5 seconds)
f = Coefficient of Friction for Wet Pavements
g = Percent of Roadway Grade Divided by 100

Table 4 shows the measured, intersection, desirable, and acceptable (SSSD) sight distances at the site driveways for vehicles entering and exiting the site.

TABLE 4
SIGHT DISTANCE ANALYSIS - PROPOSED SITE DRIVEWAYS

	Direction	Posted Speed (mph)	Sight Distances (feet)			
			Grade[1] (%)	DES[2]	SSSD[3]	EXIST
Pennsylvania Avenue – Proposed Site Driveway, Opposite Commerce Drive						
Exiting Movements	*To the left*	35	0%	440′	314′	**700′+**
	To the right	35	-1%	350′	319′	**700′+**
Entering Left Turns	*Approaching same direction*	35	-1%	N/A	319′	**700′+**
	Approaching opposite direction	35	0%	320′	314′	**700′+**
Pennsylvania Avenue – Proposed RI-RO Site Driveway						
Exiting Movements	*To the left*	35	0%	440′	314′	**600′+**

DES = PennDOT Desirable Sight Distance
SSSD = PennDOT Acceptable Sight Distance
EXIST = Existing (measured) Sight Distance
1 = Roadway Grade Approaching Driveway
2 = Based on the posted speed
3 = Based on the posted speed plus 5 mph

As shown in **Table 4** above, the measured sight distances at the site driveways will satisfy all PennDOT Sight Distance Criteria.

TRIP GENERATION

The trip generation rates for the proposed site were obtained from the manual *Trip Generation*, eleventh Edition, 2021, an Institute of Transportation Engineers (ITE) Informational Report. **Table 5** shows the rates and directional percentages utilized for the analyzed time periods.

TABLE 5
TRIP GENERATION DATA – PROPOSED REDEVELOPMENT

Land Use (ITE #)	Time Period	Size (X)	Equation/Rate	Enter %
New Car Sales (ITE #840)	Average Weekday	69.182 ksf	T = 28.65*(X) – 29.45	50%
	Weekday AM Peak Hour		T = 1.86*(X)	73%
	Weekday PM Peak Hour		T = 2.42*(X)	40%
	Saturday Midday Peak Hour		T = 8.56*(X)-95.19	50%

T = Total Trips; X = Independent variable (ksf = 1000sf)

The results of the trip generation calculations are summarized in **Table 6**.

TABLE 6
TRIP GENERATION – PROPOSED REDEVELOPMENT

Time Period	Size	New Trips		
		Total	Enter	Exit
Average Weekday	69.182 ksf	2122	1061	1061
Weekday A.M. Peak Hour		140	102	38
Weekday P.M. Peak Hour		182	73	109
Saturday Midday Peak Hour		548	274	274

Based on the information contained in Table 6, the Proposed Redevelopment will generate 140 new trips during the weekday A.M. Peak Hour, 182 new trips during the weekday P.M. Peak Hour and 548 new trips during the Saturday Peak Hour.

Based on the counts conducted at the existing driveways (Figures 2-4), the Existing Facility generated 67 new trips during the weekday A.M. Peak Hour, 65 new trips during the weekday P.M. Peak Hour and 47 new trips during the Saturday Peak Hour. A base redistribution was developed to account for the occupancy of the Existing Facility. These redistributions are shown in Figures 12-14.

However, it should be noted that these trip generation estimates are extremely conservative based on the data collected at the existing facility during the peak hours. The trips generated as part of this study, and utilized in all subsequent analysis, propose an increase of between 2x-11x the amount of traffic currently generated by the site. The redevelopment project is a consolidation of the existing buildings/uses on site and it is not expected that a significant increase in trip generation is likely.

TRIP DISTRIBUTION

The distribution and assignment of new trips generated by the Proposed Redevelopment was based upon existing traffic patterns in the Study Area. Based on this evaluation, the new trips for the proposed development were distributed to the local roadway network based on the percentages shown in **Table 7.**

TABLE 7
TRIP DISTRIBUTION PERCENTAGES – NEW TRIPS

Direction – To/From	Assignment – To/From	Distribution Percentage AM/PM/SAT
East	via Pennsylvania Avenue (SR 2037)	51%
West	via Pennsylvania Avenue (SR 2037)	30%
North	via Commerce Drive	19%

The distribution of site-generated trips for the Proposed Redevelopment during the weekday A.M., weekday P.M., and Saturday midday peak hours are shown in **Figures 15-17.** The trip assignment percentage information is included in **Appendix D**.

PROJECTED (BUILD) CONDITION TRAFFIC VOLUMES

The site-generated trips for the Proposed Redevelopment were added to the 2025 and 2030 Base (no-build) Conditions to develop the 2025 and 2030 Projected (build) Condition traffic volumes, as shown in **Figures 18-23**. Volume development spreadsheets are also contained in **Appendix D.**

LEVELS OF SERVICE FOR AN INTERSECTION

For analysis of intersections, level of service is defined in terms of delay, which is a measure of driver discomfort and frustration, fuel consumption, and lost travel time. LOS criteria is stated in terms of control delay per vehicle for a one-hour analysis period. Control delay includes initial deceleration delay, queue move-up time, stopped delay, and final acceleration delay. The criteria are shown in **Table 8**. Delay, as it relates to level of service, is a complex measure and is dependent upon a number of variables. For signalized intersections, these variables include the quality of vehicle progression, the cycle length, the green time ratio, and the volume/capacity ratio for the lane group in question. For unsignalized intersections, delay is related to the availability of gaps in the flow of traffic on the major street and the driver's discretion in selecting an appropriate gap for a particular movement from the minor street (straight across, left or right turn).

TABLE 8
LEVEL OF SERVICE CRITERIA
UNSIGNALIZED AND SIGNALIZED INTERSECTIONS[1]

Level of Service	Control Delay Per Vehicle (Seconds)	
	Signalized	Unsignalized
A	< 10	< 10
B	> 10 and < 20	> 10 and < 15
C	> 20 and < 35	> 15 and < 25
D	> 35 and < 55	> 25 and < 35
E	> 55 and < 80	> 35 and < 50
F	> 80 or v/c > 1.0	> 50 or v/c > 1.0

[1]Obtained from Exhibits 19-8 and 20-2 of the Transportation Research Board's Highway Capacity Manual 6th Edition

CAPACITY ANALYSIS METHODOLOGY

Capacity analyses were conducted for the weekday A.M., weekday P.M., and Saturday midday peak hours at the study area intersections. These analyses were conducted according to the methodologies contained in the *6th Edition Highway Capacity Manual* (HCM) using *Synchro 11* software, a Trafficware product.

The following conditions were analyzed, as applicable:

- 2022 Existing conditions;
- 2025 Base Conditions (Build-out year without development);
- 2030 Base Conditions (Build-out year without development);
- 2025 Projected conditions (Build-out year with development);
- 2030 Projected conditions (Build-out year with development).

It should be noted that based on methodologies contained in Chapter 10 of PennDOT's Publication 46, TPD adjusted the following HCM default values in the *Synchro 11* capacity analysis. These adjustments were made at the signalized intersections within the study area for all time periods based on the study area location being classified as Suburban:

- Base saturation flow rates for signalized intersections. The saturation flow rate was changed from the default value of 1900 to 1800 based on Exhibit 10-9.
- Critical and Follow-Up Gap times were adjusted relative to the difference between default and PA Default values contained in Exhibits 10-11 and 10-12. As requested by PennDOT, worksheets/tables showing how these values were calculated are included in **Appendix E**.
- Per PennDOT standards, the signal timings at the study area intersections were optimized under the base and projected (build) conditions.

In addition, capacity analyses were conducted at the proposed site driveway under the projected conditions. The capacity analysis worksheets are included in **Appendix F**. The existing signal timing plans are included in **Appendix G.**

PennDOT's *Policies and Procedures for Transportation Impact Studies*, found in PennDOT's Publication 282, Appendix A, dated July 2017, contain the following criteria regarding levels of service:

- Page 29 of the Guidelines state that if evaluation of the With Development Horizon Year Scenario to the Without Development Horizon Year Scenario indicates that the overall intersection level of service has dropped, the applicant will be required to mitigate the level of service if the increase in overall intersection delay is greater than 10-seconds. If the overall intersection delay increase is less than or equal to 10-seconds, mitigation of the intersection will not be required.
- Page 29 of the Guidelines state that for mitigation scenarios, applicants are expected to mitigate the overall intersection LOS to the original Without Development LOS; the 10-second delay variance is not applied to mitigation scenarios. Applicants may be required to address available storage and queue lengths at critical movements or approaches even if the overall LOS requirements are met.
- Page 31 of the Guidelines state that if signalization is the preferred alternative for mitigation, overall intersection LOS C in rural areas and LOS D in urban areas is acceptable.
- Page 31 of the Guidelines states new signalized or unsignalized intersection established to serve as access to the development shall be designed to operate at minimum LOS C for rural areas, and minimum LOS D for urban areas.

LEVELS OF SERVICE IN THE STUDY AREA

Level of service (LOS) matrices for the study area intersections are shown in **Tables 9-11**.

TABLE 9
LEVEL OF SERVICE DELAY (SECONDS) SUMMARY

Intersection	Movement	Weekday AM Peak Hour				
		2022 Exist	2025 Opening Year		2030 Design Year	
			Base	Proj.[1]	Base	Proj.[1]
Pennsylvania Avenue (SR 2037) & Commerce Drive/Site Driveway	EBL	A	A	A	A	A
	EBT	A	A	A	A	A
	EBTR	A	A	A	A	A
	WBL	A	A	A	A	A
	WBT	A	A	B	A	B
	NBL	E (60.2)	E (60.2)	D	E (60.2)	D
	NBTR			D		D
	SBL (SBLL)	D	D	D	D	D
	SBLT (SBTR)	A	A	D	A	D
	SBR	D	D	--	D	--
	ILOS	**B (15.3)**	**B (15.4)**	**B (15.4)**	**B (15.4)**	**B (15.5)**
Pennsylvania Avenue (SR 2037) & Western Exit-Only Driveway	NBR	B	B	--	B	--
	ILOS	**A (0.0)**	**A (0.0)**	**--**	**A (0.0)**	**--**
Pennsylvania Avenue (SR 2037) & Central Exit-only Driveway	WBLT	A	A	--	A	--
	NBLR	C	C	--	C	--
	ILOS	**A (0.0)**	**A (0.0)**	**--**	**A (0.0)**	**--**
Pennsylvania Avenue (SR 2037) & Existing Access/ Proposed RI-RO Driveway	WBLT	A	A	--	A	--
	NBLR	A	A	A	A	A
	ILOS	**A (0.0)**	**A (0.0)**	**A (0.0)**	**A (0.0)**	**A (0.0)**
Pennsylvania Avenue (SR 2037) & Existing Eastern Full-Movement Driveway	WBLT	A	A	--	A	--
	NBLR	A	A	--	A	--
	ILOS	**A (0.0)**	**A (0.0)**	**--**	**A (0.0)**	**--**

Exist. = Existing Condition, Base = No-Build scenario, Proj. = Build scenario
1 = With Proposed Recommendations

TABLE 10
LEVEL OF SERVICE DELAY (SECONDS) SUMMARY

Intersection	Movement	Weekday PM Peak Hour				
		2022 Exist	2025 Opening Year		2030 Design Year	
			Base	Proj.[1]	Base	Proj.[1]
Pennsylvania Avenue (SR 2037) & Commerce Drive/Site Driveway	EBL	B	B	B	B	B
	EBT	B	B	B	B	B
	EBTR	B	B	B	B	B
	WBL	B	B	B	B	B
	WBT	B	B	B	B	B
	NBL	E (63.0)	E (63.0)	E (57.6)	E (63.0)	E (57.6)
	NBTR			E (60.5)		E (60.5)
	SBL (SBLL)	D	D	D	D	D
	SBLT (SBTR)	A	A	C	A	C
	SBR	D	D	--	D	--
	ILOS	**C (25.7)**	**C (25.8)**	**C (27.8)**	**C (25.8)**	**C (27.9)**
Pennsylvania Avenue (SR 2037) & Western Exit-Only Driveway	NBR	B	B	--	B	--
	ILOS	**A (0.0)**	**A (0.0)**	**--**	**A (0.0)**	**--**
Pennsylvania Avenue (SR 2037) & Central Exit-only Driveway	WBLT	A	A	--	A	--
	NBLR	B	B	--	B	--
	ILOS	**A (0.0)**	**A (0.0)**	**--**	**A (0.0)**	**--**
Pennsylvania Avenue (SR 2037) & Existing Access/ Proposed RI-RO Driveway	WBLT	A	A	--	A	--
	NBLR	A	A	B	A	B
	ILOS	**A (0.0)**	**A (0.0)**	**A (0.1)**	**A (0.0)**	**A (0.1)**
Pennsylvania Avenue (SR 2037) & Existing Eastern Full-Movement Driveway	WBLT	A	A	--	A	--
	NBLR	A	A	--	A	--
	ILOS	**A (0.0)**	**A (0.0)**	**--**	**A (0.0)**	**--**

Exist. = Existing Condition, Base = No-Build scenario, Proj. = Build scenario
1 = With Proposed Recommendations

TABLE 11
LEVEL OF SERVICE DELAY (SECONDS) SUMMARY

Intersection	Movement	Saturday Midday Peak Hour				
		2022 Exist	2025 Opening Year		2030 Design Year	
			Base	Proj.[1]	Base	Proj.[1]
Pennsylvania Avenue (SR 2037) & Commerce Drive/Site Driveway	EBL	A	A	A	A	A
	EBT	A	A	A	A	A
	EBTR	A	A	A	A	A
	WBL	A	A	B	A	B
	WBT	A	A	B	A	B
	NBL	D	D	D	D	D
	NBTR			D		D
	SBL (SBLL)	D	D	D	D	D
	SBLT (SBTR)	A	A	C	A	C
	SBR	D	D	--	D	--
	ILOS	**B (13.9)**	**B (14.0)**	**C (20.7)**	**B (14.0)**	**C (20.7)**
Pennsylvania Avenue (SR 2037) & Western Exit-Only Driveway	NBR	A	A	--	A	--
	ILOS	**A (0.0)**	**A (0.0)**	**--**	**A (0.0)**	**--**
Pennsylvania Avenue (SR 2037) & Central Exit-only Driveway	WBLT	A	A	--	A	--
	NBLR	B	B	--	B	--
	ILOS	**A (0.0)**	**A (0.0)**	**--**	**A (0.0)**	**--**
Pennsylvania Avenue (SR 2037) & Existing Access/ Proposed RI-RO Driveway	WBLT	A	A	--	A	--
	NBLR	A	A	A	A	A
	ILOS	**A (0.0)**	**A (0.0)**	**A (0.3)**	**A (0.0)**	**A (0.3)**
Pennsylvania Avenue (SR 2037) & Existing Eastern Full-Movement Driveway	WBLT	A	A	--	A	--
	NBLR	A	A	--	A	--
	ILOS	**A (0.0)**	**A (0.0)**	**--**	**A (0.0)**	**--**

Exist. = Existing Condition, Base = No-Build scenario, Proj. = Build scenario
1 = With Proposed Recommendations

As shown in **Tables 9-11**, under all projected (build) conditions with the development of the proposed site and with site-related recommendations outlined in **Table 16**, all of the study area intersections will satisfy PennDOT ILOS Standards.

95TH PERCENTILE QUEUE ANALYSIS

Queue analyses were conducted at the study area intersections using *Synchro 11* software. For this analysis, the 95th percentile queue is defined as the queue length that is exceeded in 5% of the signal cycles. As an example, for a signal with a 90-second cycle, this means that the 95th percentile queue length will be exceeded during 2 of the 40 signal cycles that occur during the peak hour. The queue analysis results are summarized in **Tables 12-14.**

TABLE 12
95TH PERCENTILE QUEUE

Intersection	Movement	Available Storage	Weekday AM Peak Hour				
			2022 Exist	2025 Opening Year		2030 Design Year	
				Base	Proj.[1]	Base	Proj.[1]
Pennsylvania Avenue (SR 2037) & Commerce Drive/ Site Driveway	EBL	180′	70′	70′	73′	73′	75′
	EBT	[1000′+]	60′	63′	68′	63′	68′
	EBTR	[1000′+]	65′	65′	70′	65′	70′
	WBL	230′	10′	10′	25′	10′	25′
	WBT	[380′]	115′	118′	118′	120′	120′
	NBL	--	20′	20′	15′	20′	15′
	NBTR	--			20′		20′
	SBL (SBLL)	150′	93′	93′	95′	95′	95′
	SBLT (SBTR)	[1000′+]	0′	0′	143′	0′	145′
	SBR	[1000′+]	135′	135′	--	140′	--
Pennsylvania Avenue (SR 2037) & Western Exit-Only Driveway	NBR	--	0′	0′	--	0′	--
Pennsylvania Avenue (SR 2037) & Central Exit-only Driveway	WBLT	30′[2]	0′	0′	--	0′	--
	NBLR	--	0′	0′	--	0′	--
Pennsylvania Avenue (SR 2037) & Existing Access/ Proposed RI-RO Driveway	WBLT	30′[2]	0′	0′	--	0′	--
	NBLR	--	0′	0′	0′	0′	0′
Pennsylvania Avenue (SR 2037) & Existing Eastern Full-Movement Driveway	WBLT	--	0′	0′	--	0′	--
	NBLR	--	0′	0′	--	0′	--

[Distance to next Public intersection]
1 = With Proposed Recommendations
2 = Distance to next site Driveway

TABLE 13
95TH PERCENTILE QUEUE

Intersection	Movement	Available Storage	Weekday PM Peak Hour				
			2022 Exist	2025 Opening Year		2030 Design Year	
				Base	Proj.[1]	Base	Proj.[1]
Pennsylvania Avenue (SR 2037) & Commerce Drive/ Site Driveway	EBL	180′	115′	118′	125′	120′	128′
	EBT	[1000′+]	168′	170′	190′	175′	193′
	EBTR	[1000′+]	175′	178′	195′	183′	198′
	WBL	230′	10′	10′	30′	10′	30′
	WBT	[380′]	138′	140′	148′	143′	153′
	NBL	--	33′	33′	50′	33′	50′
	NBTR	--			78′		78′
	SBL (SBLL)	150′	340′	343′	353′	345′	355′
	SBLT (SBTR)	[1000′+]	0′	0′	168′	0′	173′
	SBR	[1000′+]	180′	183′	--	185′	--
Pennsylvania Avenue (SR 2037) & Western Exit-Only Driveway	NBR	--	0′	0′	--	0′	--
Pennsylvania Avenue (SR 2037) & Central Exit-only Driveway	WBLT	30′[2]	0′	0′	--	0′	--
	NBLR	--	0′	0′	--	0′	--
Pennsylvania Avenue (SR 2037) & Existing Access/ Proposed RI-RO Driveway	WBLT	30′[2]	0′	0′	--	0′	--
	NBLR	--	0′	0′	3′	0′	3′
Pennsylvania Avenue (SR 2037) & Existing Eastern Full-Movement Driveway	WBLT	--	0′	0′	--	0′	--
	NBLR	--	0′	0′	--	0′	--

[Distance to next Study Area intersection]
1 = With Proposed Recommendations
2 = Distance to next site Driveway

TABLE 14
95TH PERCENTILE QUEUE

Intersection	Movement	Available Storage	Saturday Peak Hour				
			2022 Exist	2025 Opening Year		2030 Design Year	
				Base	Proj.[1]	Base	Proj.[1]
Pennsylvania Avenue (SR 2037) & Commerce Drive/ Site Driveway	EBL	180′	30′	30′	45′	33′	48′
	EBT	[1000′+]	45′	45′	88′	48′	88′
	EBTR	[1000′+]	48′	48′	90′	50′	90′
	WBL	230′	5′	5′	90′	5′	90′
	WBT	[380′]	88′	88′	115′	90′	115′
	NBL	--	15′	15′	83′	15′	83′
	NBTR	--			185′		185′
	SBL (SBLL)	150′	83′	83′	85′	85′	85′
	SBLT (SBTR)	[1000′+]	0′	0′	85′	0′	85′
	SBR	[1000′+]	63′	63′	--	65′	--
Pennsylvania Avenue (SR 2037) & Western Exit-Only Driveway	NBR	--	0′	0′	--	0′	--
Pennsylvania Avenue (SR 2037) & Central Exit-only Driveway	WBLT	30′[2]	0′	0′	--	0′	--
	NBLR	--	0′	0′	--	0′	--
Pennsylvania Avenue (SR 2037) & Existing Access/ Proposed RI-RO Driveway	WBLT	30′[2]	0′	0′	--	0′	--
	NBLR	--	0′	0′	5′	0′	5′
Pennsylvania Avenue (SR 2037) & Existing Eastern Full-Movement Driveway	WBLT	--	0′	0′	--	0′	--
	NBLR	--	0′	0′	--	0′	--

[Distance to next Study Area intersection]
1 = With Proposed Recommendations
2 = Distance to next site Driveway

Queue analysis worksheets are included with the capacity analysis worksheets provided in the **Appendix F**.

AUXILIARY TURN LANE ANALYSIS

Methodology

TPD evaluated auxiliary turn lane warrants at the Proposed Driveway. The warrant analysis methodology contained within Chapter 11 of PennDOT's *Publication 46*, Section 11.17 and Strike-Off Letter 470-08-07 was utilized for this evaluation.

Findings

Table 15 summarizes the results of the auxiliary turn lane analysis at the site access intersections.

TABLE 15
AUXILIARY TURN LANE ANALYSIS SUMMARY

Intersection	Auxiliary Lane	Warrant Satisfied?	Required Storage	Available Storage
Pennsylvania Avenue (SR 2037) & Commerce Drive/Site Driveway	WB Left-Turn Lane	Yes	175′	230′
	EB Right-Turn Lane	No	--	--
Pennsylvania Avenue (SR 2037) & Proposed RI-RO Driveway	EB Right-Turn Lane	No	--	--

The calculations for the auxiliary turn lane warrants are included in **Appendix H**.

RECOMMENDATIONS

TPD has made the following recommendations in relation to the Proposed Redevelopment, as outlined in **Table 16**:

TABLE 16
RECOMMENDATIONS

Intersection	Recommendations
Pennsylvania Avenue (SR 2037) & Commerce Drive/Site Driveway	Align the main site driveway directly opposite Commerce Drive
	Design the resultant NB driveway approach to provide a separate left-turn lane and a separate thru/right-turn lane
	Design the resultant SB Commerce Drive approach to provide dual left-turn lanes and a separate thru/right-turn lane
	With lane changes and realignment, remove split phasing and optimize signal timings
	Provide adequate turning radii to facilitate ingress/egress
	Provide required sight distances
	Work with PennDOT and Whitemarsh Township to provide ADA/Pedestrian Facilities to the extent feasible, including providing the "missing link" on the site side as part of the Cross County Trail project.
Pennsylvania Avenue (SR 2037) & Proposed RI-RO Driveway	Provide adequate turning radii to facilitate ingress/egress
	Provide a "STOP" sign on the NB egress approach
	Provide required sight distances
	Work with PennDOT and Whitemarsh Township to provide ADA/Pedestrian Facilities to the extent feasible

CONCLUSIONS

Based on the results of the Transportation Impact Study, TPD offers the following conclusions:

- The Project Site is located on the southern side of Pennsylvania Avenue (SR 2037), in the vicinity of, opposite, Commerce Drive.
- The Proposed Redevelopment will consist of a consolidation/reorganization of the Existing Facility into a 69,182 s.f. New Car Sales and Service facility.
- Access to the Existing Facility is provided by five (5) access points to Pennsylvania Avenue (SR 2037).
- Access to the Proposed Redevelopment will be consolidated into two (2) access points as follows: one (1) re-aligned full-movement driveway opposite Commerce Drive (signalized) and one (1) right-in/right-out driveway further east.
- With development, all proposed driveway locations will exceed PennDOT sight distance criteria.
- The Proposed Redevelopment will generate 140 new trips during the weekday A.M. Peak Hour, 182 new trips during the weekday P.M. Peak Hour and 548 new trips during the Saturday Peak Hour.

- Based on the counts conducted at the existing driveways, the Existing Facility generated 67 new trips during the weekday A.M. Peak Hour, 65 new trips during the weekday P.M. Peak Hour and 47 new trips during the Saturday Peak Hour.
- It should be noted that these trip generation estimates are **extremely conservative** based on the data collected at the existing facility during the peak hours. The trips generated as part of this study, and utilized in all subsequent analysis, propose an increase of between 2x-11x the amount of traffic currently generated by the site. The redevelopment project is a consolidation of the existing buildings/uses on site and it is not expected that a significant increase in trip generation is likely.
- Under all projected (build) conditions with the development of the proposed site and with site-related recommendations outlined in **Table 16**, all the study area intersections will satisfy PennDOT ILOS Standards.

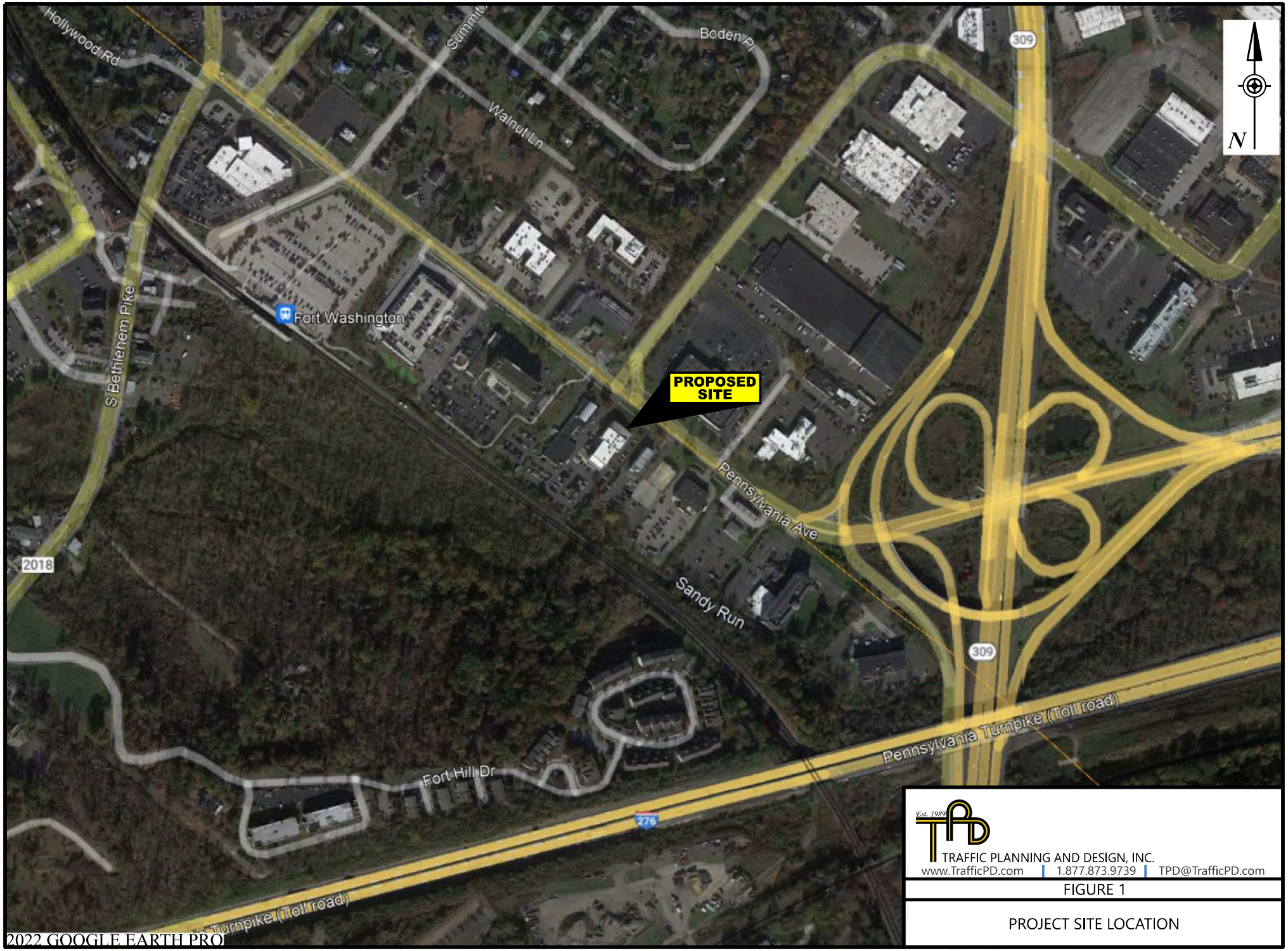

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FIGURE 1

PROJECT SITE LOCATION

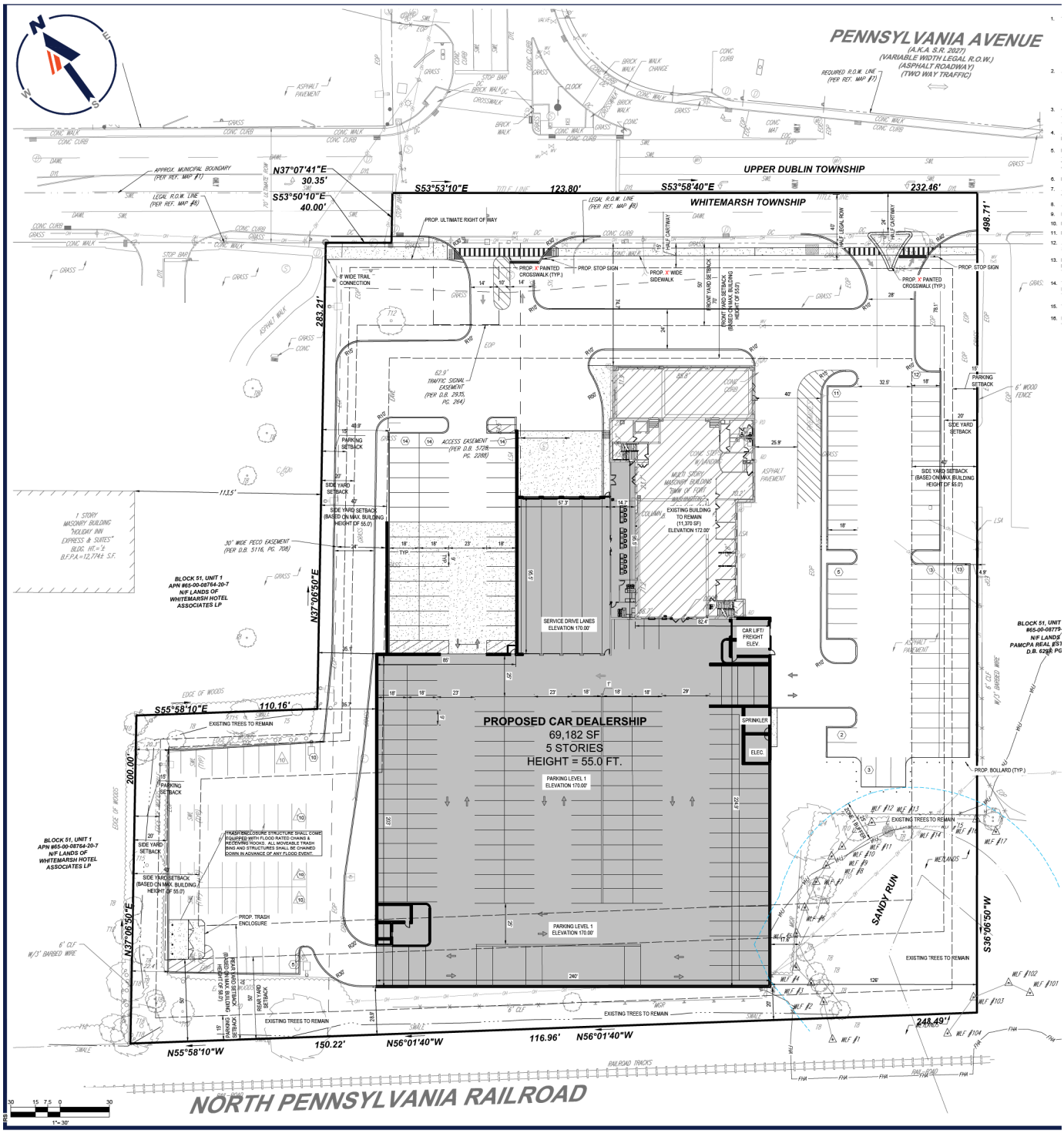

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FIGURE 2

PROPOSED SITE PLAN

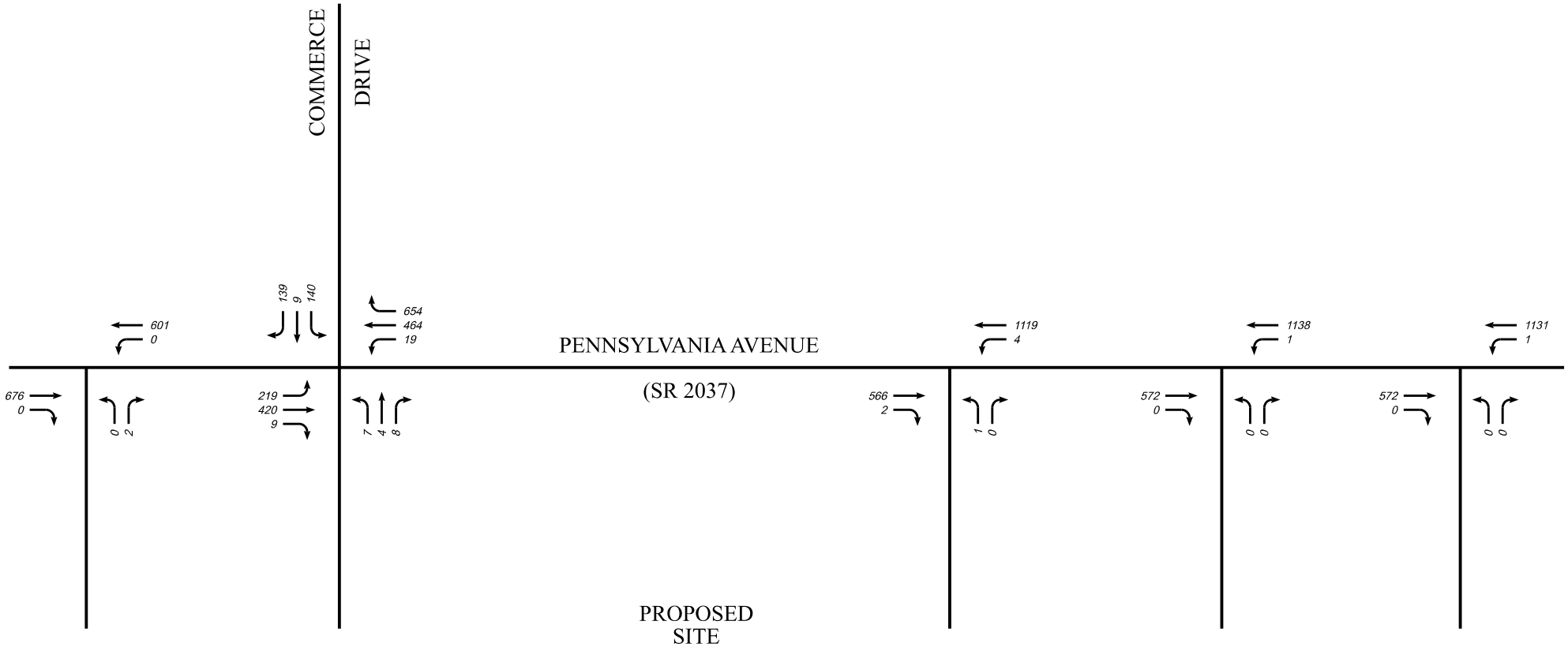

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FIGURE 3

2022 EXISTING CONDITIONS
WEEKDAY A.M. PEAK HOUR
TRAFFIC VOLUMES

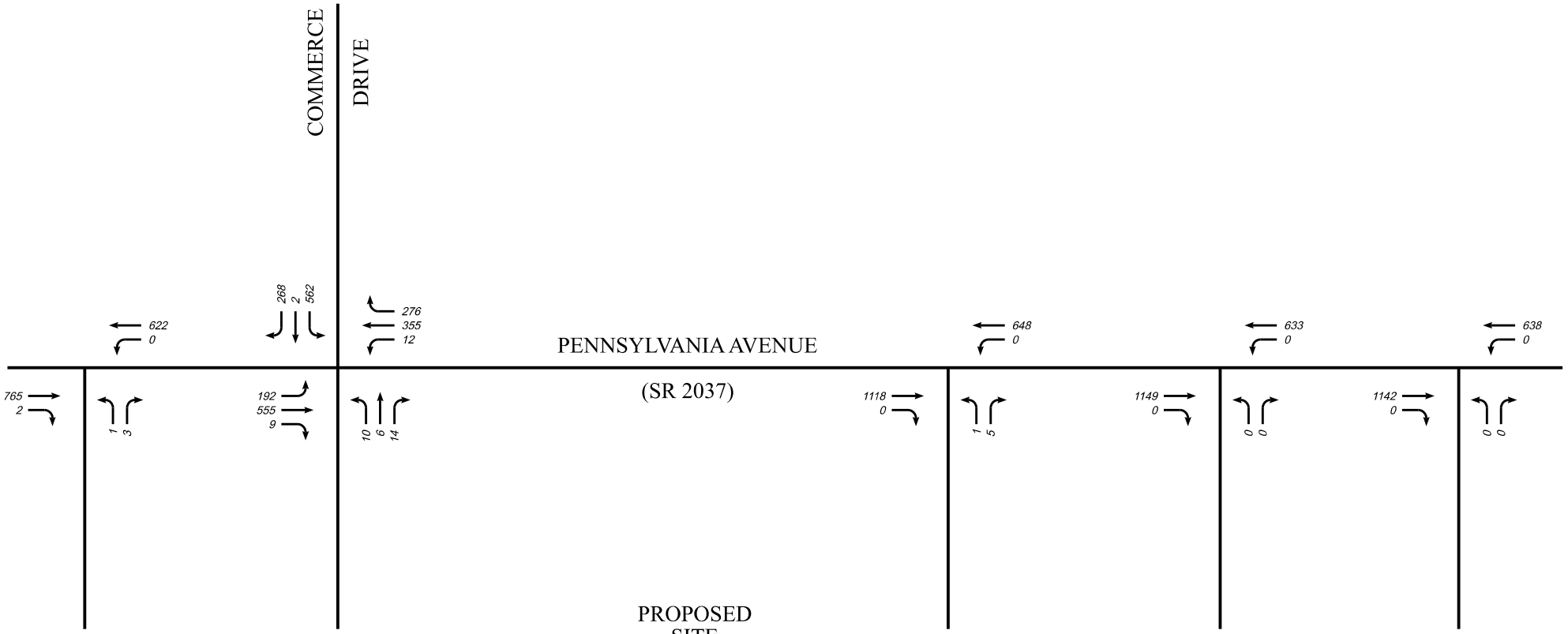

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FIGURE 4

2022 EXISTING CONDITIONS
WEEKDAY P.M. PEAK HOUR
TRAFFIC VOLUMES

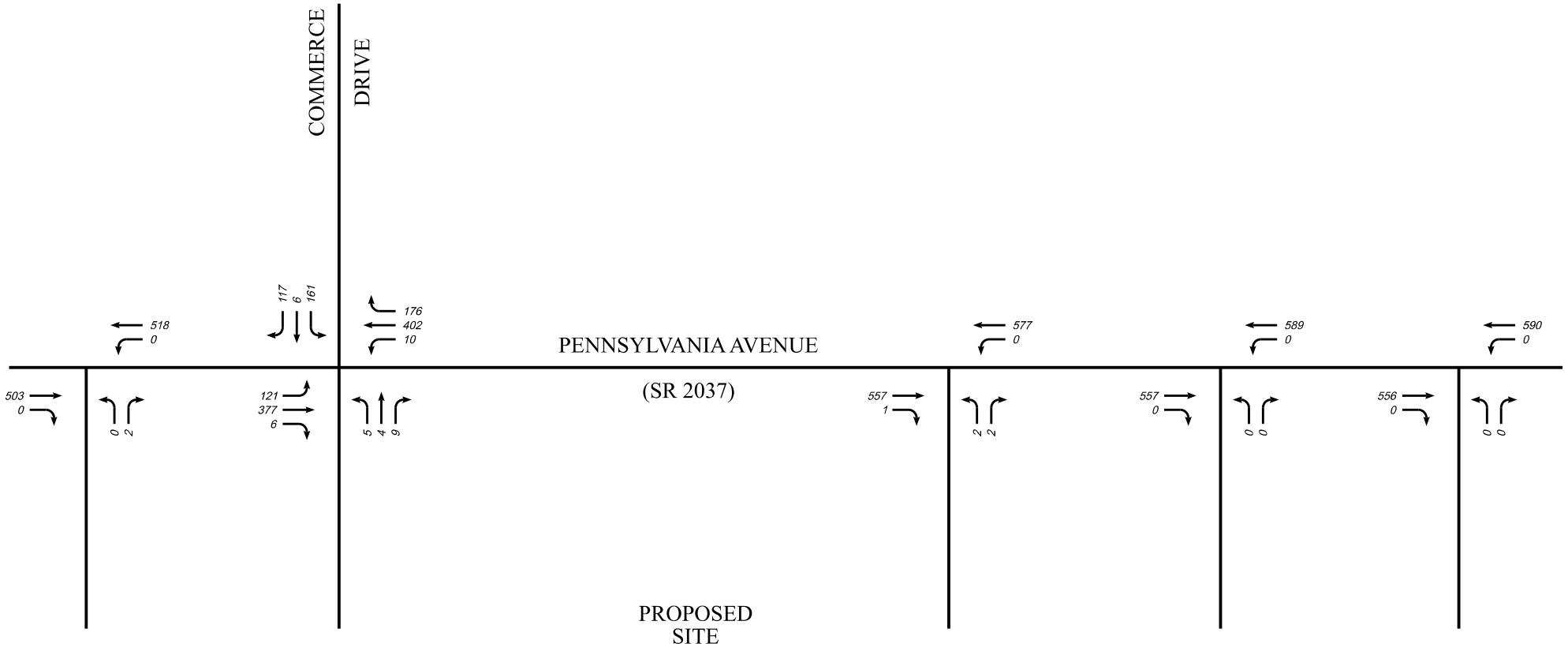

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FIGURE 5

2022 EXISTING CONDITIONS
SATURDAY MIDDAY PEAK HOUR
TRAFFIC VOLUMES

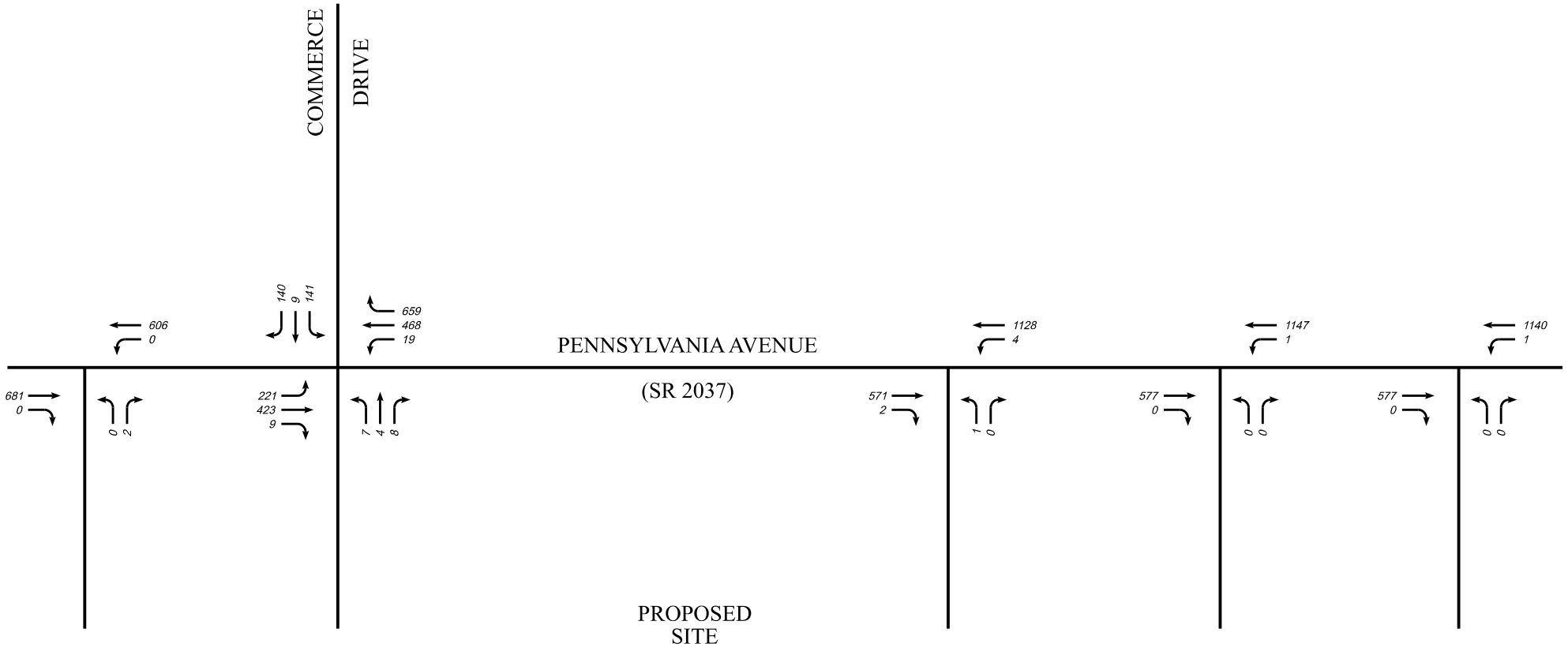

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FIGURE 6

2025 BASE CONDITIONS
WEEKDAY A.M. PEAK HOUR
TRAFFIC VOLUMES

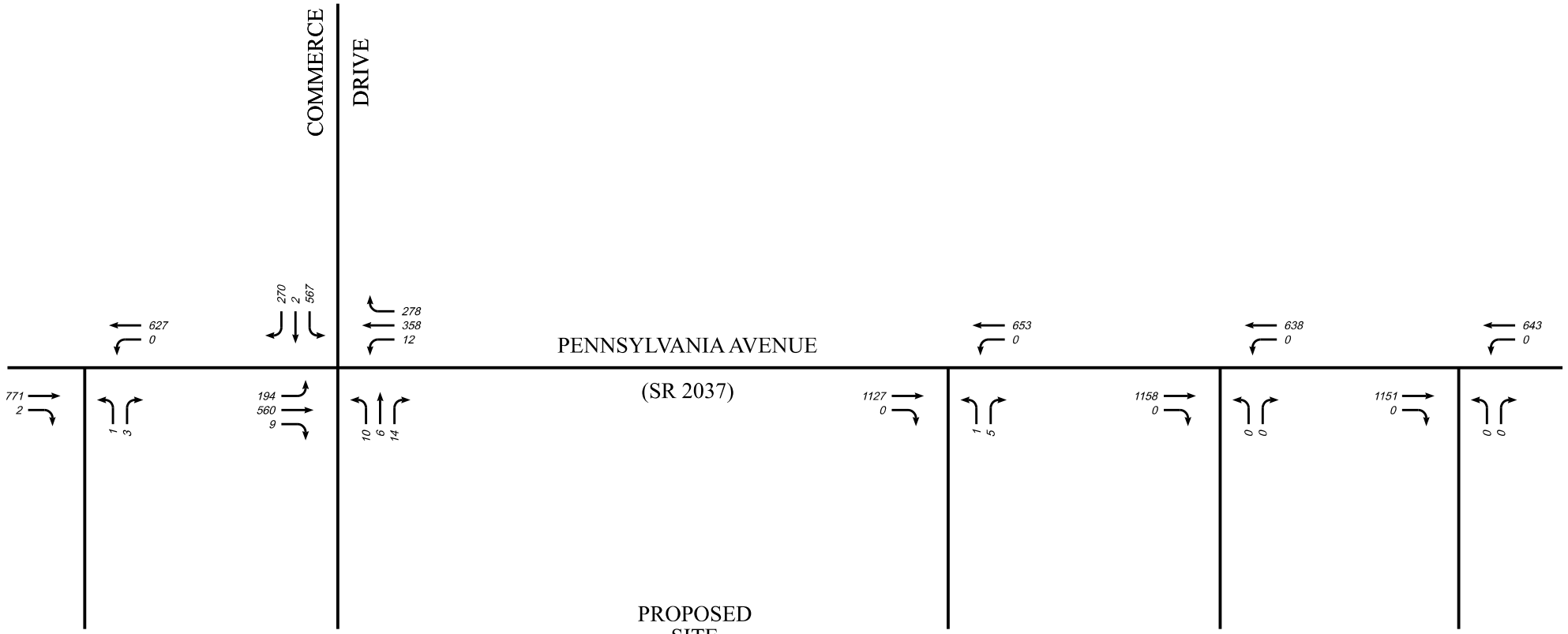

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FIGURE 7

2025 BASE CONDITIONS
WEEKDAY P.M. PEAK HOUR
TRAFFIC VOLUMES

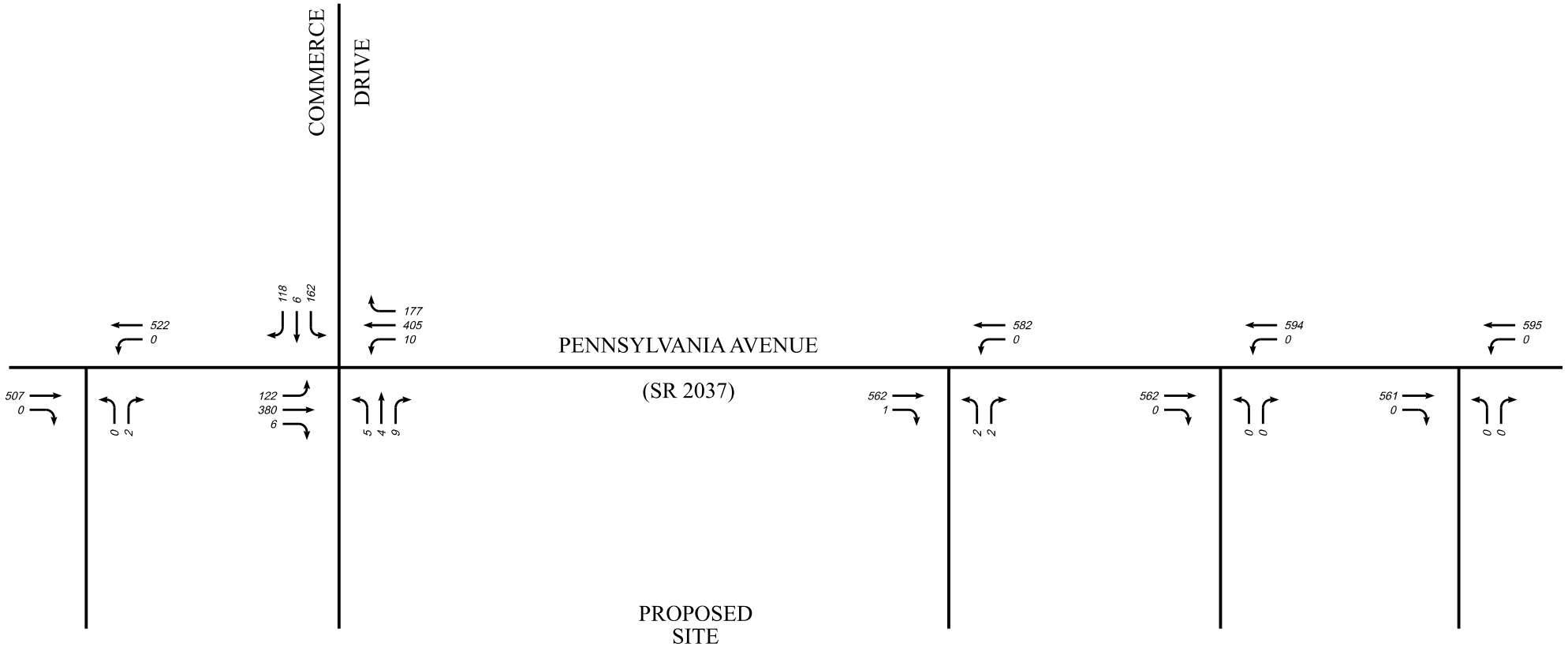

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FIGURE 8

2025 BASE CONDITIONS
SATURDAY MIDDAY PEAK HOUR
TRAFFIC VOLUMES

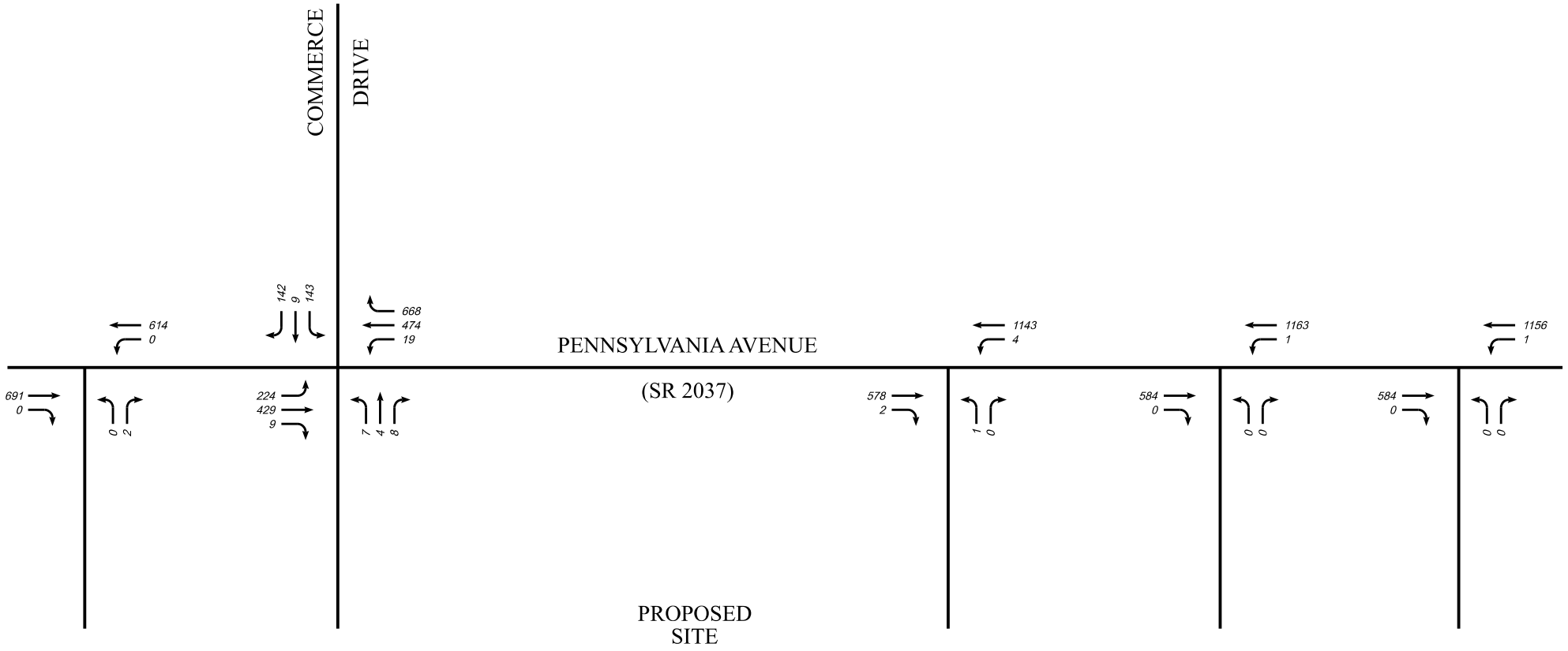

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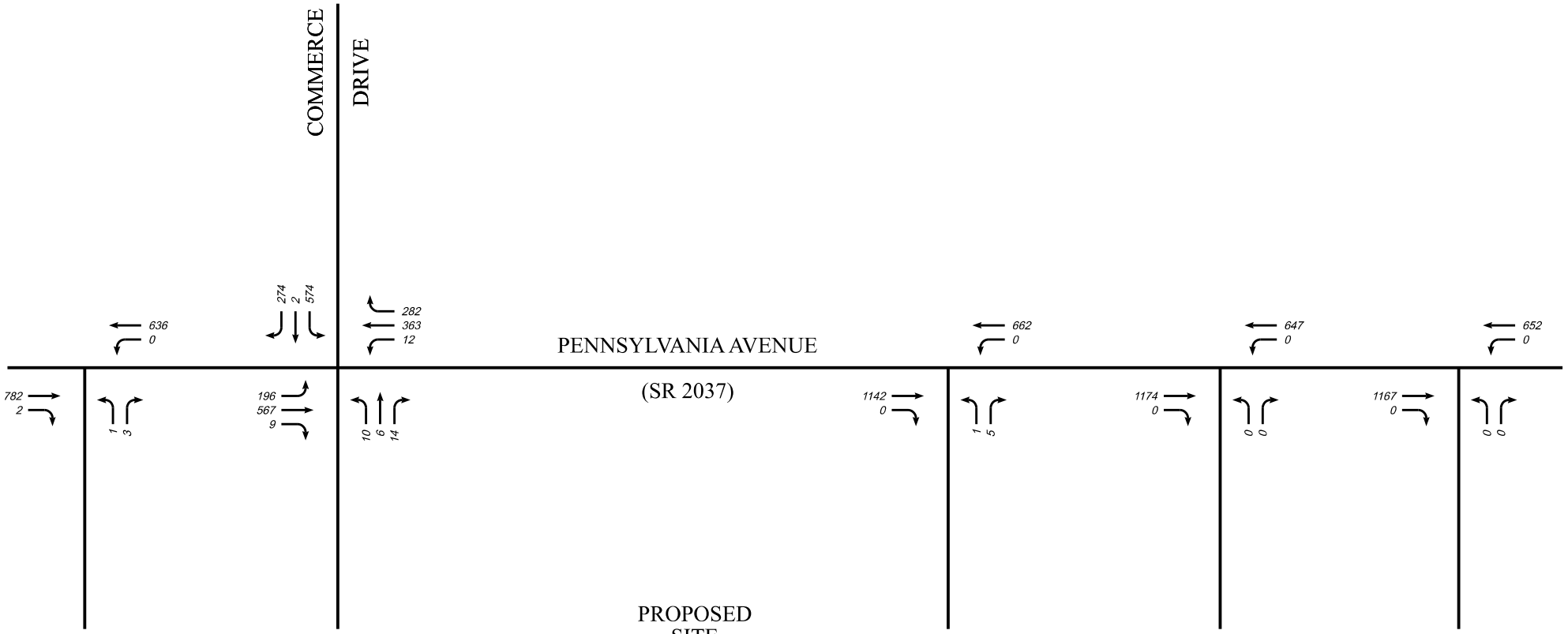
FIGURE 9

2030 BASE CONDITIONS
WEEKDAY A.M. PEAK HOUR
TRAFFIC VOLUMES



KEY:

SCHEMATIC DRAWING:NOT TO SCALE

N

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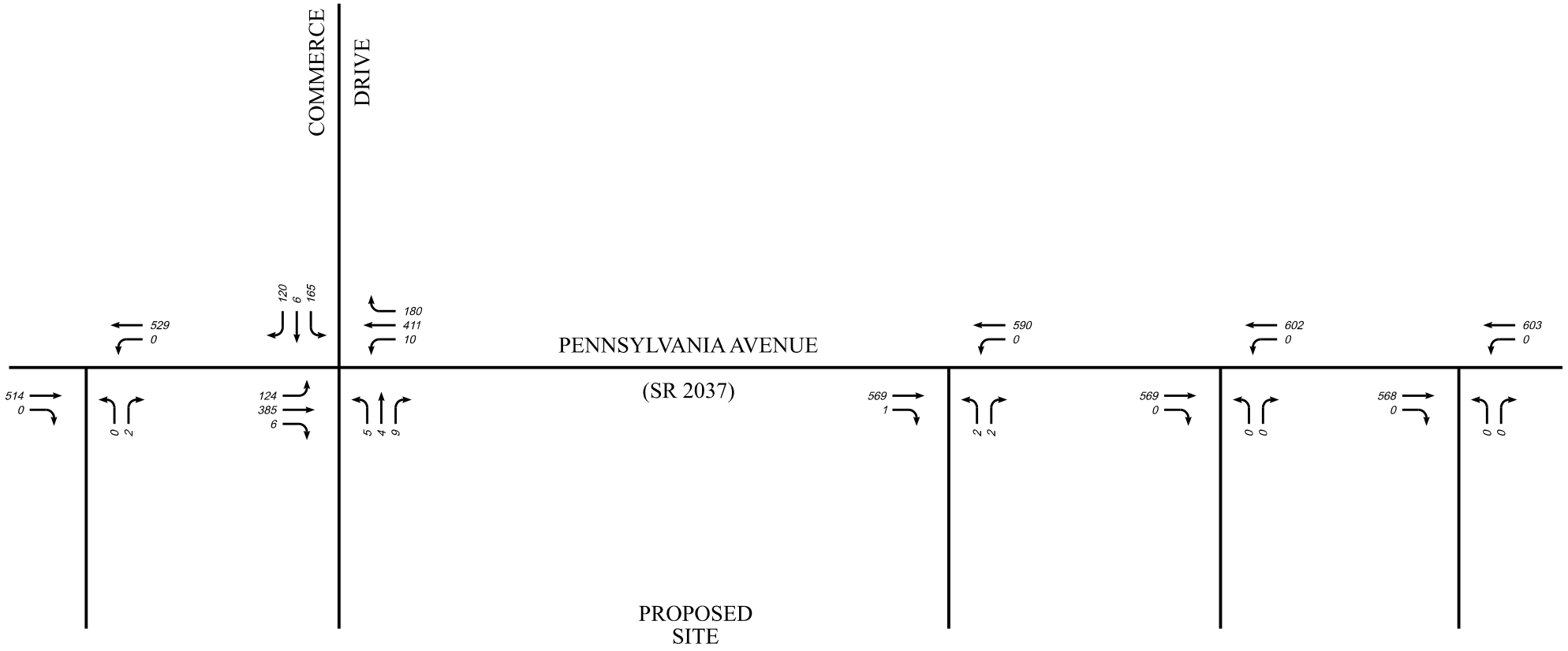
FIGURE 10

2030 BASE CONDITIONS
WEEKDAY P.M. PEAK HOUR
TRAFFIC VOLUMES



KEY:

SCHEMATIC DRAWING:NOT TO SCALE

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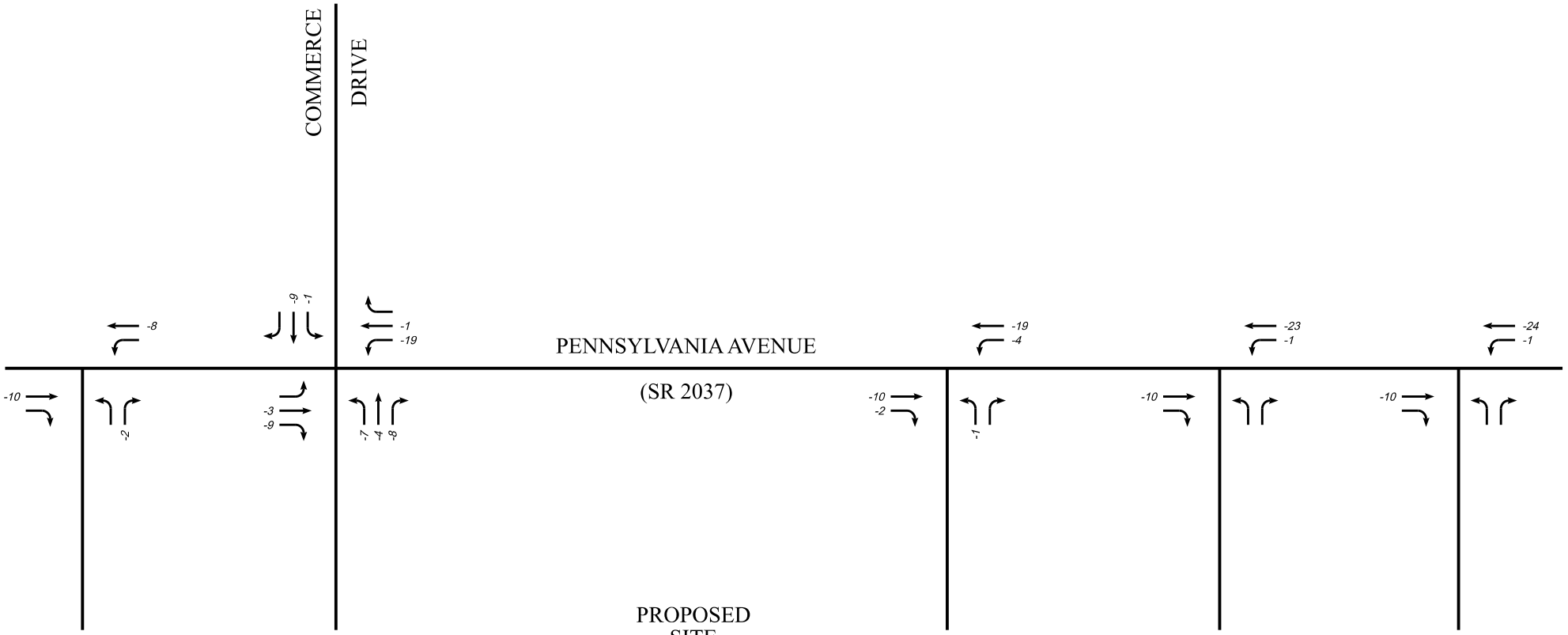
FIGURE 11

2030 BASE CONDITIONS
SATURDAY MIDDAY PEAK HOUR
TRAFFIC VOLUMES



KEY:

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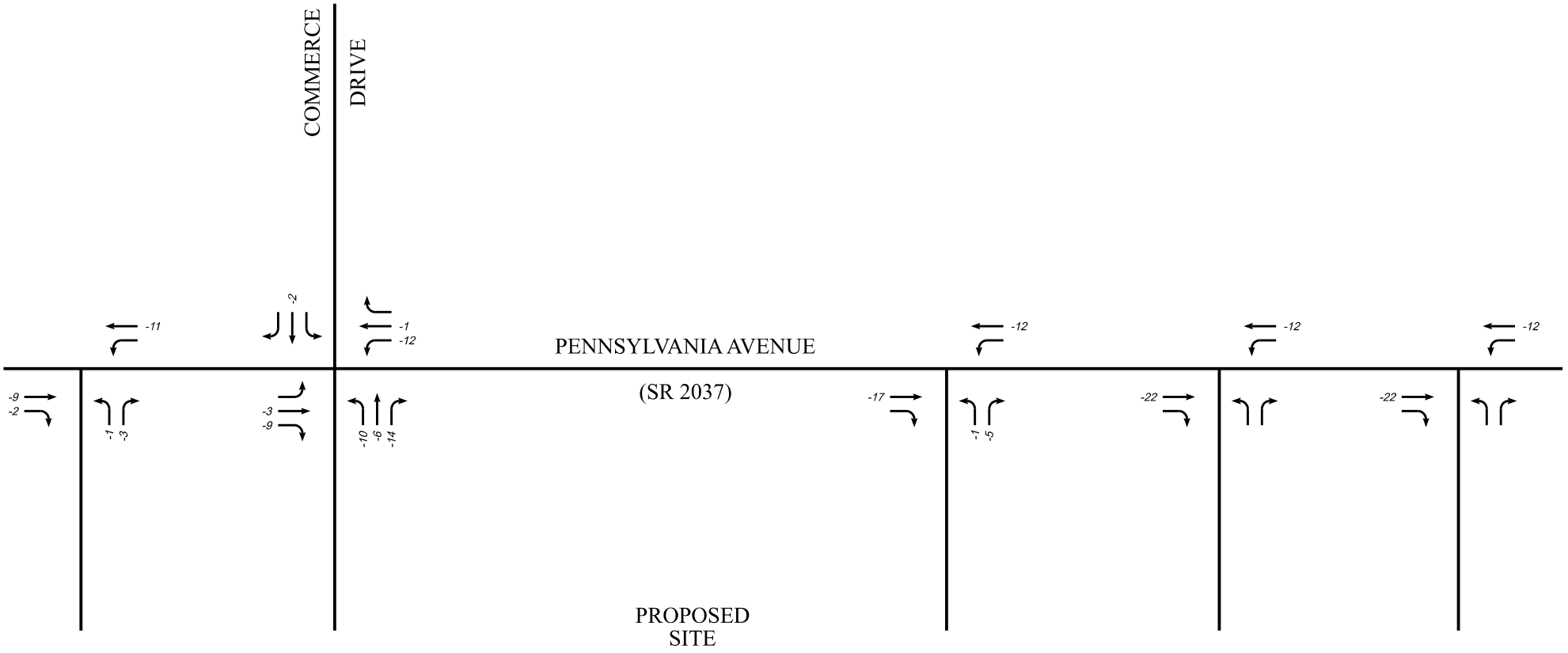
FIGURE 12

EXISTING TRIP REDISTRIBUTION
WEEKDAY A.M. PEAK HOUR
TRAFFIC VOLUMES



KEY:

SCHEMATIC DRAWING:NOT TO SCALE

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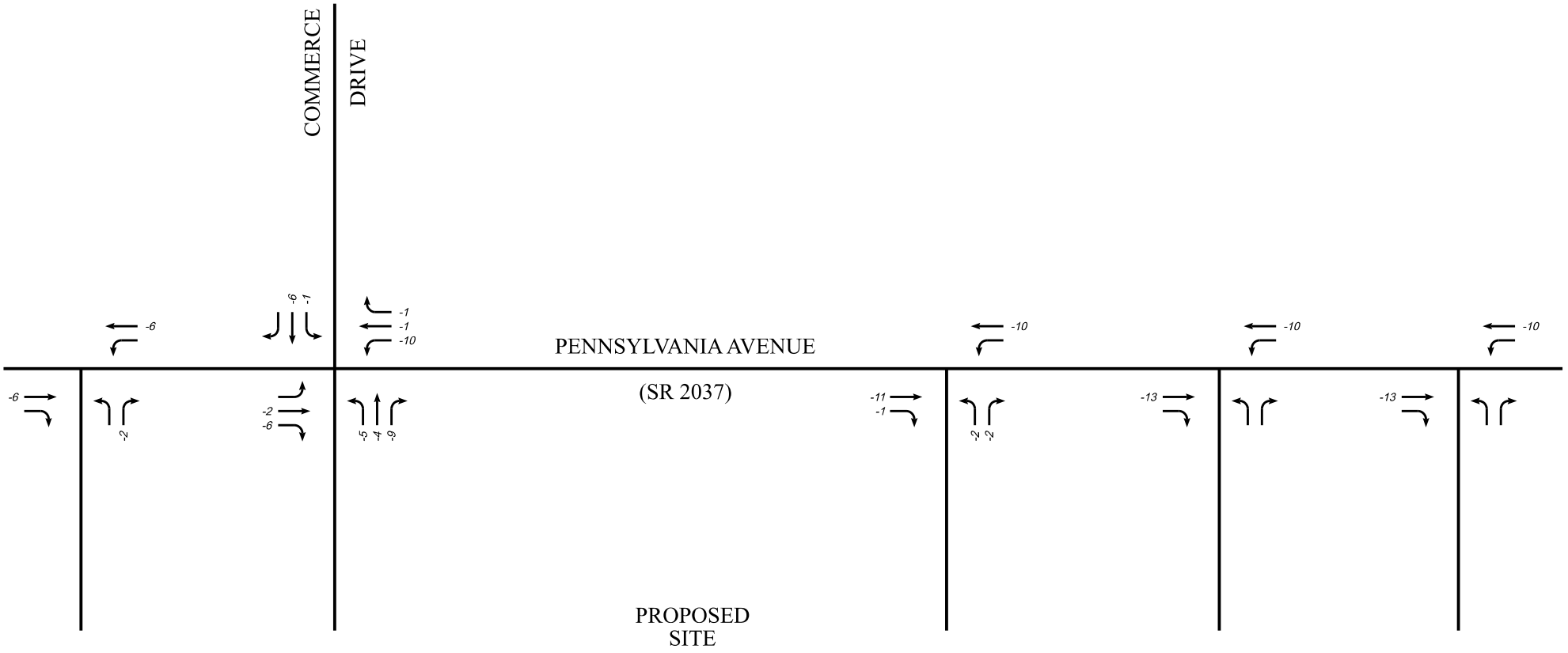
FIGURE 13

EXISTING TRIP REDISTRIBUTION
WEEKDAY P.M. PEAK HOUR
TRAFFIC VOLUMES



KEY:

SCHEMATIC DRAWING:NOT TO SCALE

N

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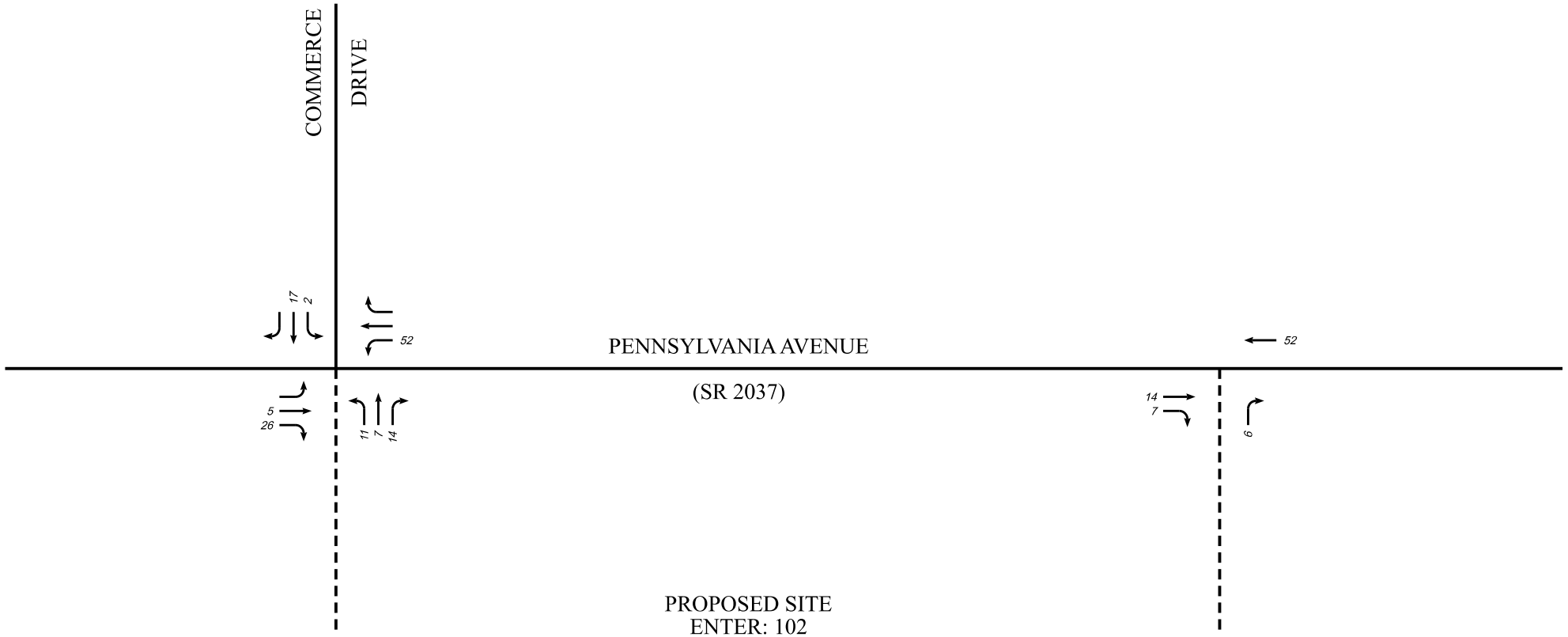
www.TrafficPD.com | 1.877.873.9739 | TPD@TrafficPD.com

FIGURE 14

EXISTING TRIP REDISTRIBUTION
SATURDAY MIDDAY PEAK HOUR
TRAFFIC VOLUMES



KEY:

- - - - - PROPOSED DRIVEWAY

SCHEMATIC DRAWING:NOT TO SCALE

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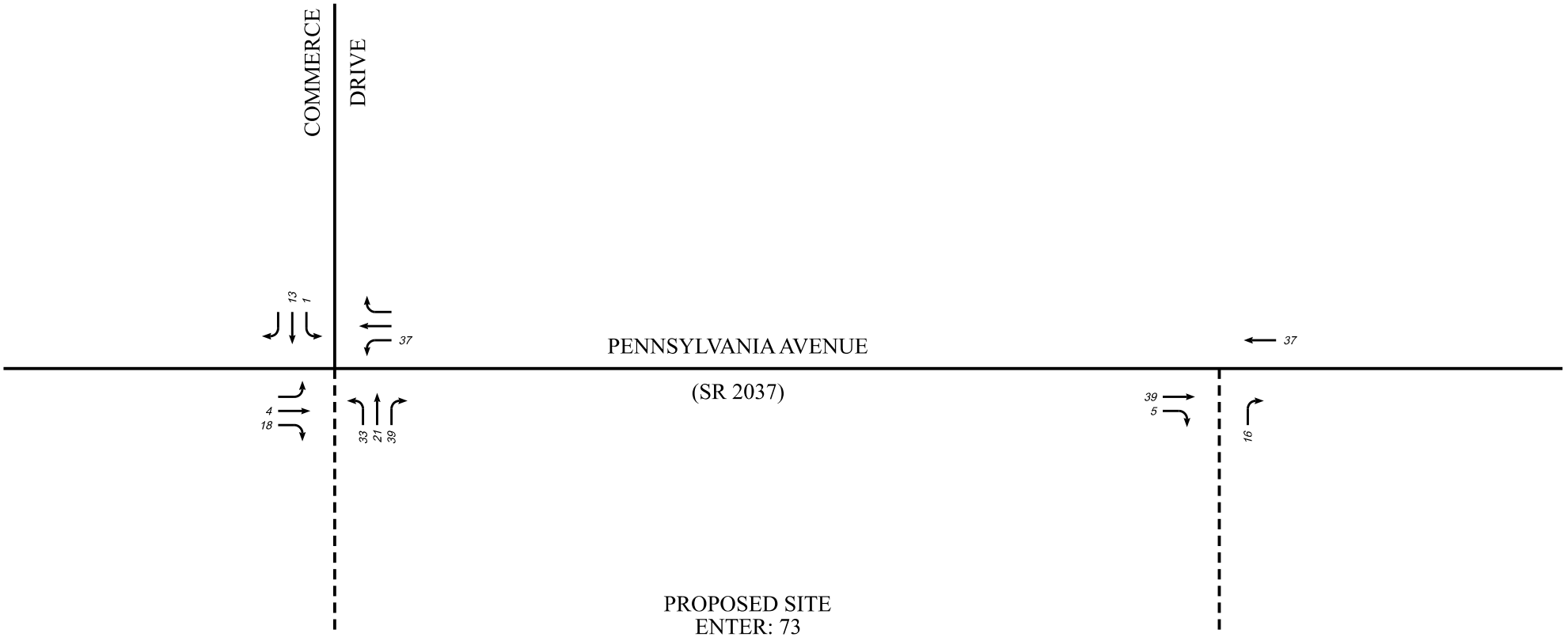
FIGURE 15

BMW CAR DEALERSHIP REDEVELOPMENT
WEEKDAY A.M. PEAK HOUR
TRIP DISTRIBUTION



KEY:

- - - - - PROPOSED DRIVEWAY

SCHEMATIC DRAWING:NOT TO SCALE

N

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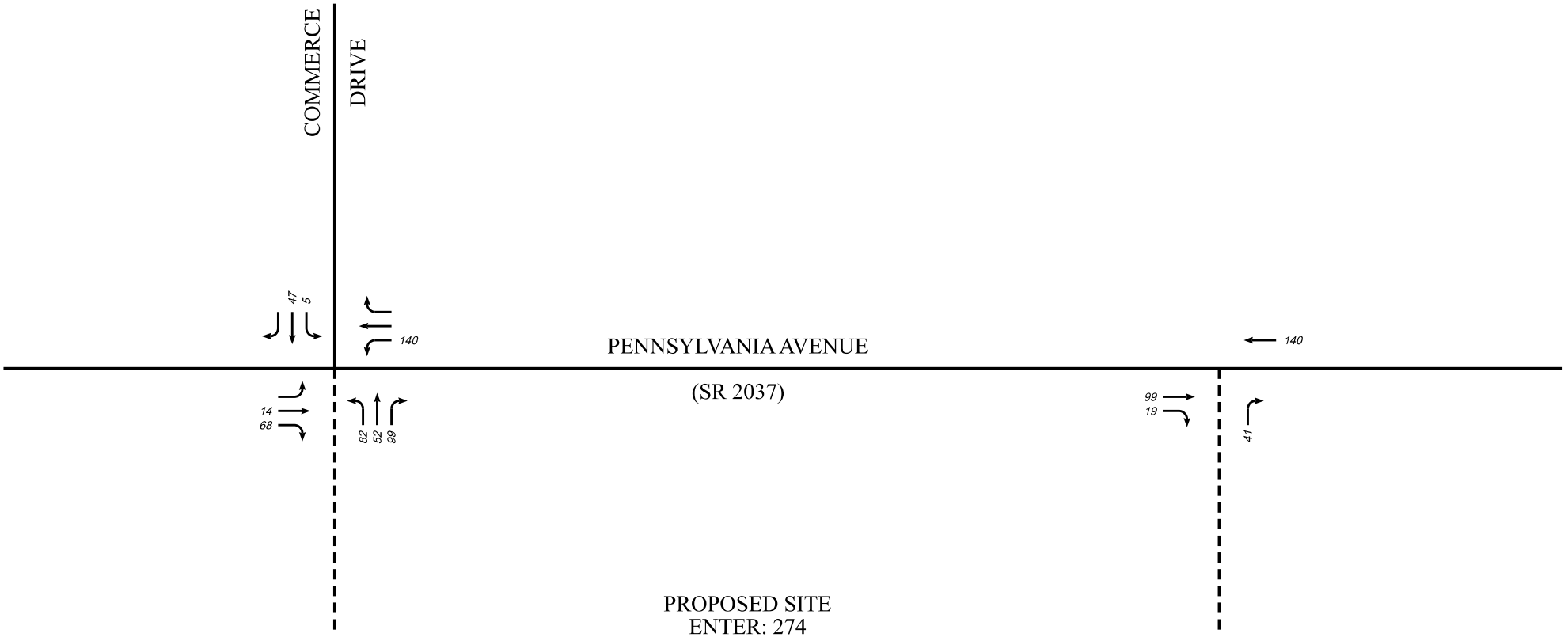
FIGURE 16

BMW CAR DEALERSHIP REDEVELOPMENT
WEEKDAY P.M. PEAK HOUR
TRIP DISTRIBUTION



KEY:

- - - - - PROPOSED DRIVEWAY

SCHEMATIC DRAWING:NOT TO SCALE

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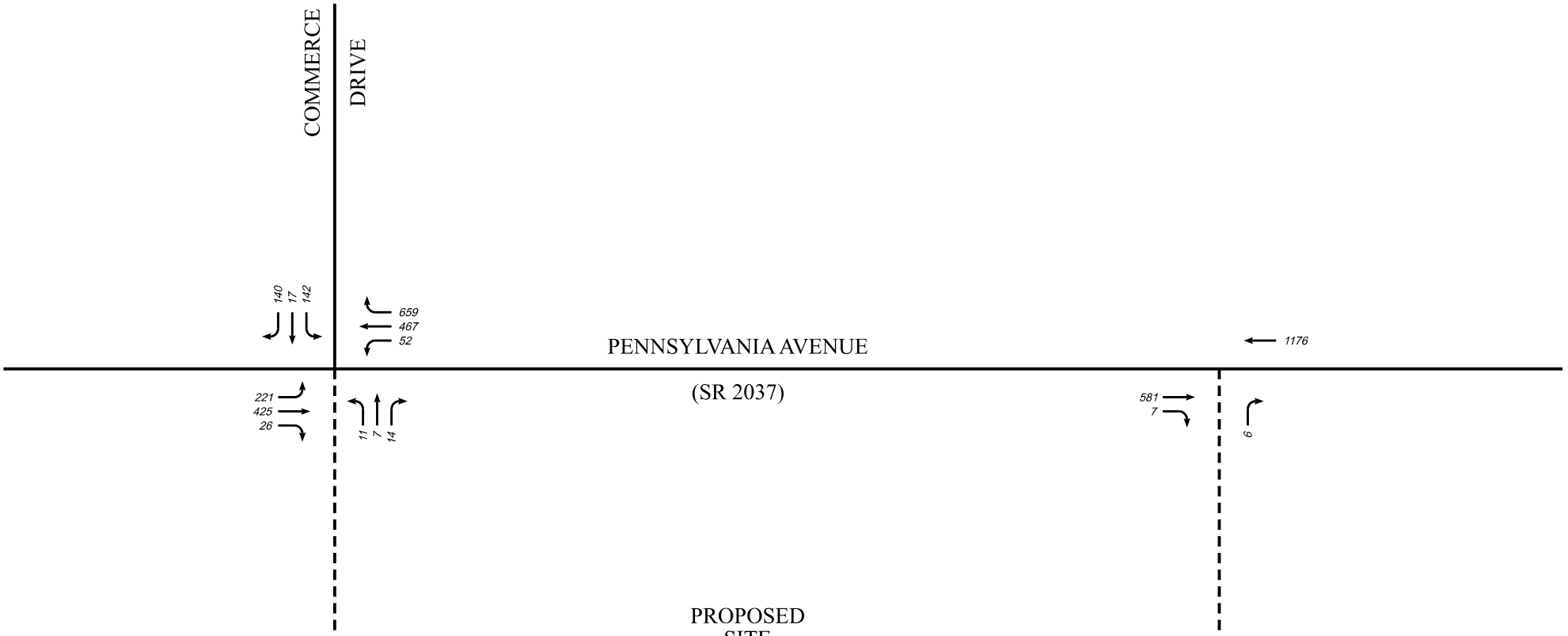
FIGURE 17

BMW CAR DEALERSHIP REDEVELOPMENT
SATURDAY MIDDAY PEAK HOUR
TRIP DISTRIBUTION



KEY:

- - - - - PROPOSED DRIVEWAY

SCHEMATIC DRAWING:NOT TO SCALE

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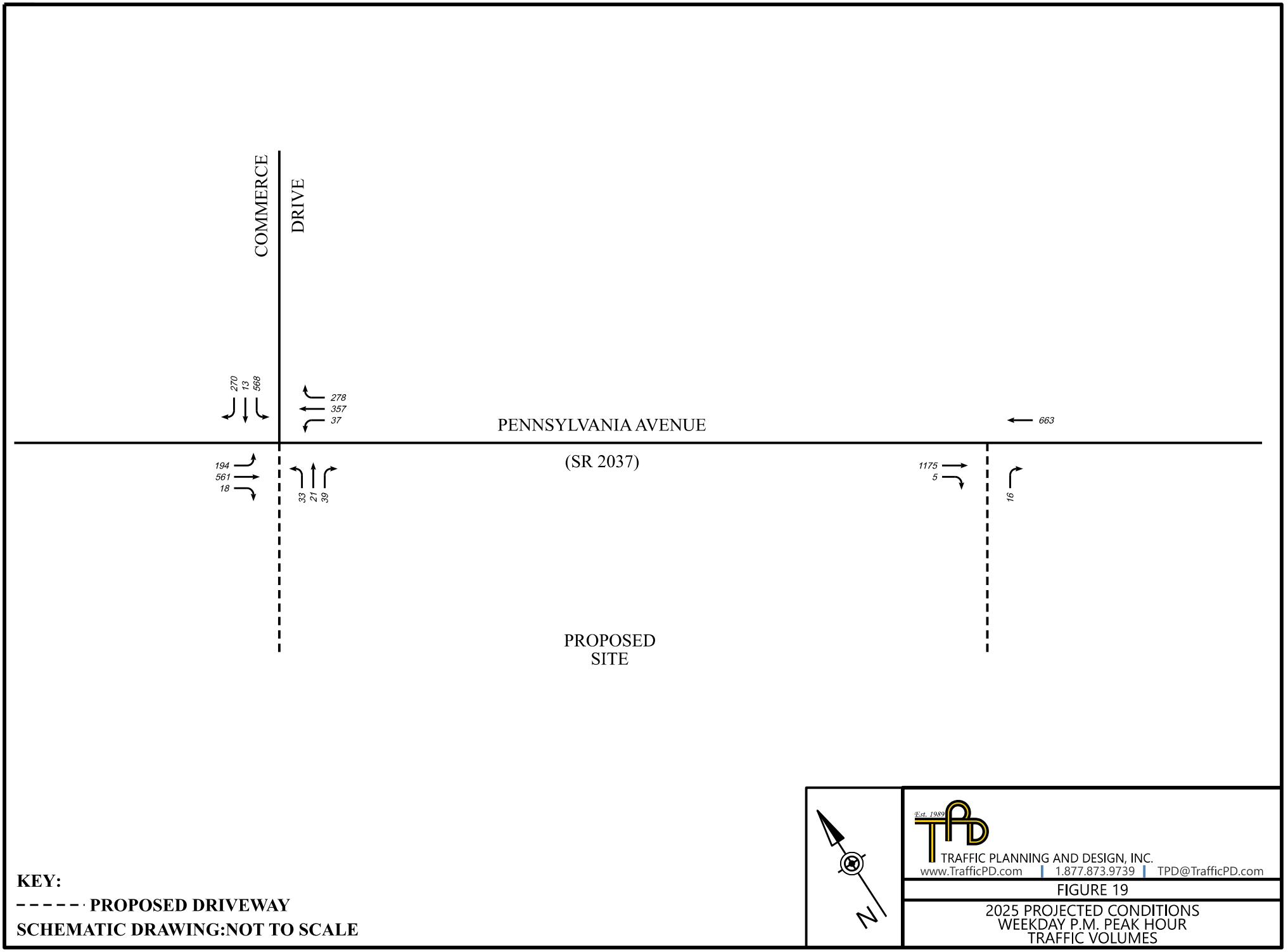
FIGURE 18

2025 PROJECTED CONDITIONS
WEEKDAY A.M. PEAK HOUR
TRAFFIC VOLUMES



KEY:

- - - - - PROPOSED DRIVEWAY

SCHEMATIC DRAWING:NOT TO SCALE

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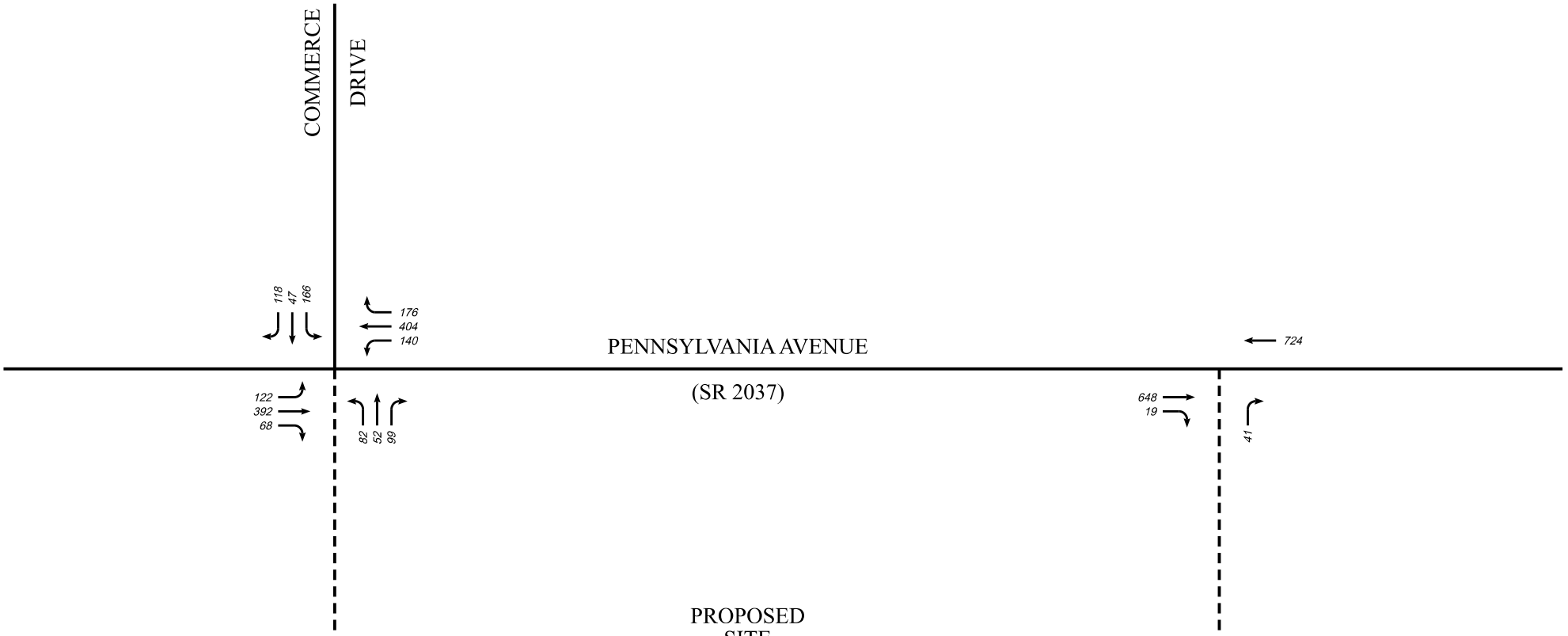
FIGURE 19

2025 PROJECTED CONDITIONS
WEEKDAY P.M. PEAK HOUR
TRAFFIC VOLUMES



KEY:

- - - - - PROPOSED DRIVEWAY

SCHEMATIC DRAWING:NOT TO SCALE

N

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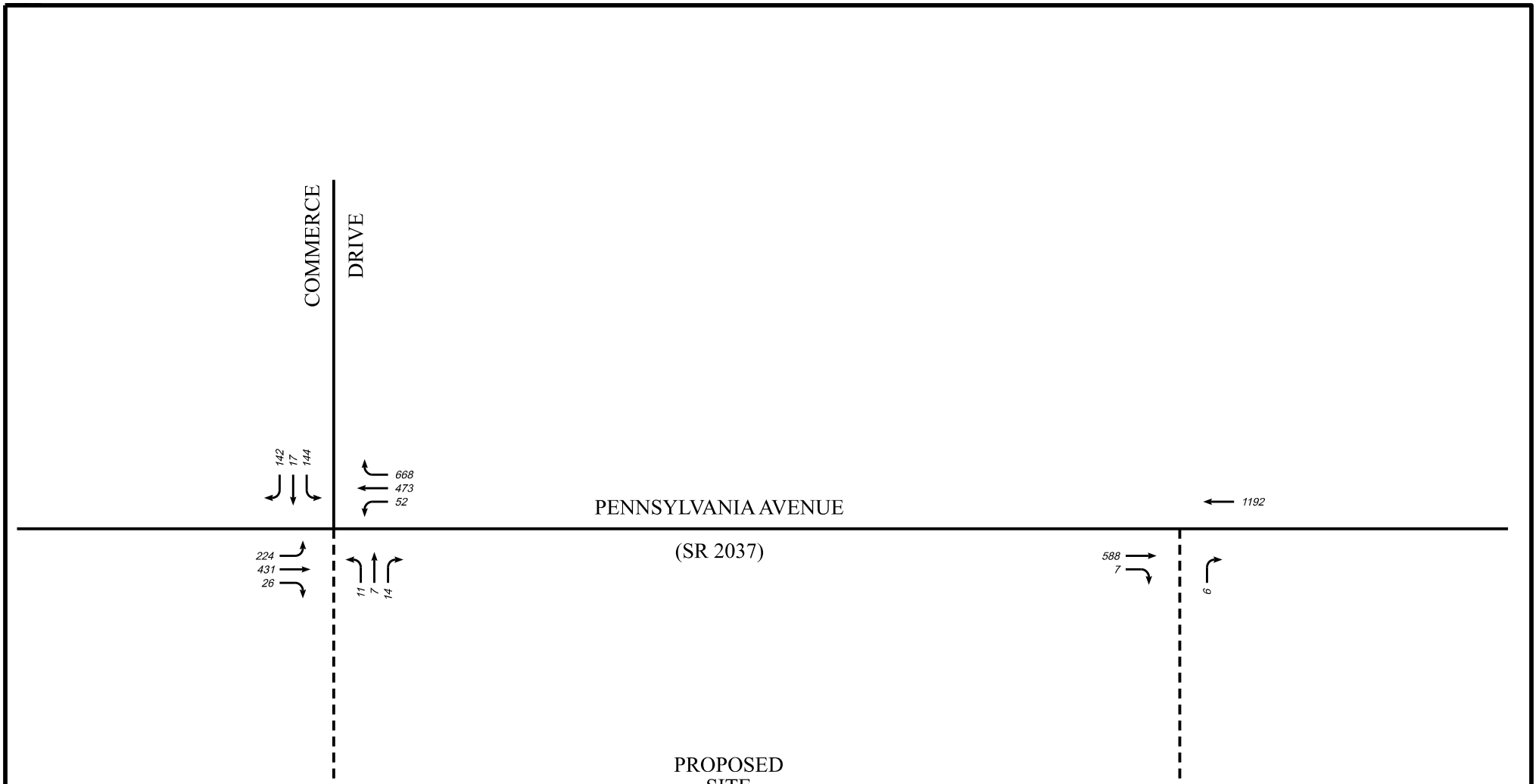
FIGURE 20

2025 PROJECTED CONDITIONS
SATURDAY MIDDAY PEAK HOUR
TRAFFIC VOLUMES



KEY:

- - - - - PROPOSED DRIVEWAY

SCHEMATIC DRAWING:NOT TO SCALE

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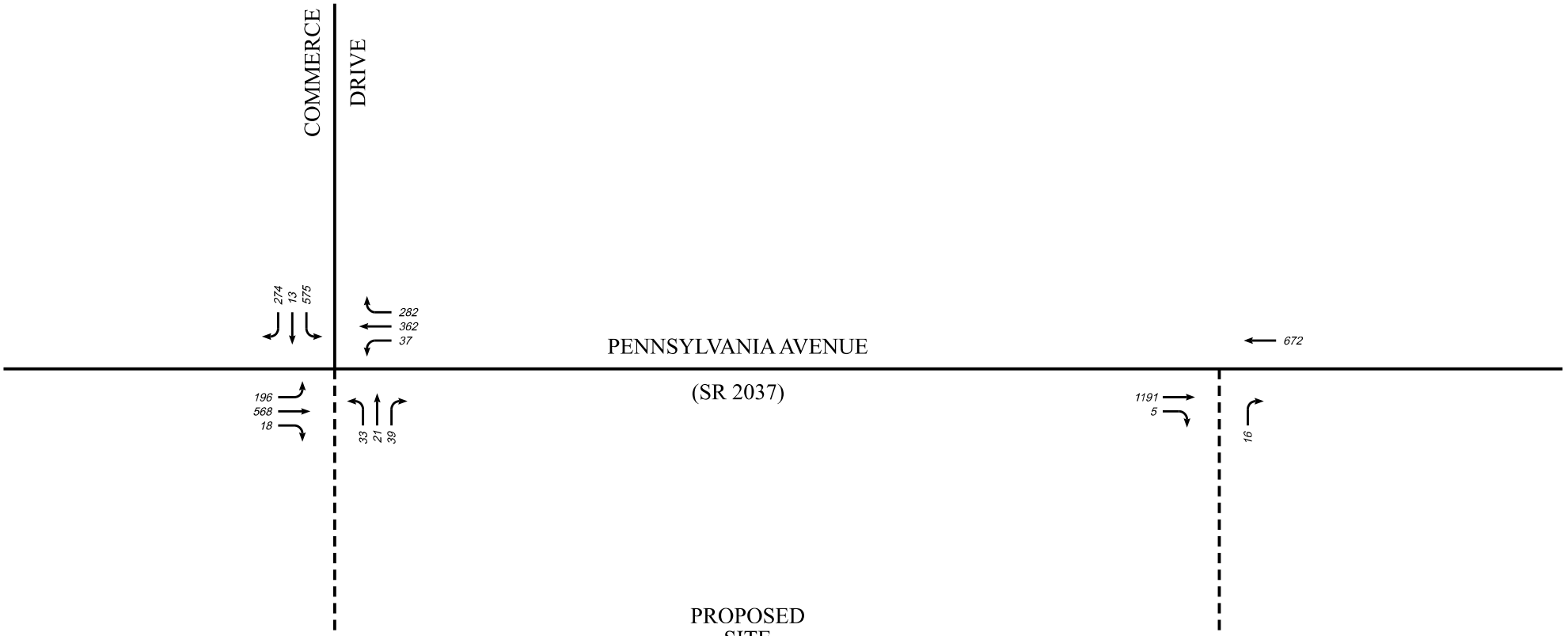
FIGURE 21

2030 PROJECTED CONDITIONS
WEEKDAY A.M. PEAK HOUR
TRAFFIC VOLUMES



KEY:

- - - - - PROPOSED DRIVEWAY

SCHEMATIC DRAWING:NOT TO SCALE

N

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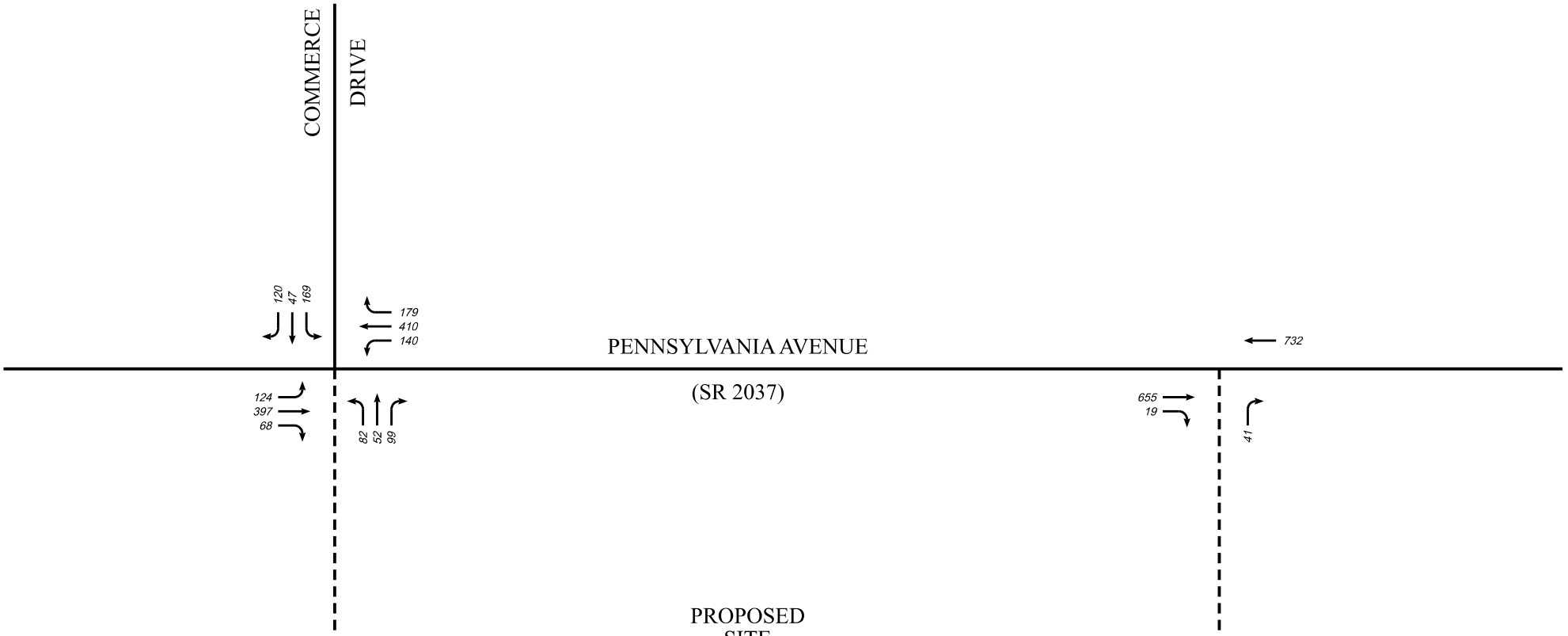
www.TrafficPD.com | 1.877.873.9739 | TPD@TrafficPD.com

FIGURE 22

2030 PROJECTED CONDITIONS
WEEKDAY P.M. PEAK HOUR
TRAFFIC VOLUMES



KEY:

- - - - - PROPOSED DRIVEWAY

SCHEMATIC DRAWING:NOT TO SCALE

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FIGURE 23

2030 PROJECTED CONDITIONS
SATURDAY MIDDAY PEAK HOUR
TRAFFIC VOLUMES

APPENDIX A

Project Correspondence

pennsylvania
DEPARTMENT OF TRANSPORTATION

Date: 04/14/2023

Subject: Highway Occupancy Permit Application No. 303682, Cycle No.1 - Returned For Revisions

To: MileOne Autogroup
510 Pennsylvania Avenue
Fort Washington, PA 19034

From: PennDOT Engineering District 6-0
7000 Geerdes Boulevard
King of Prussia, PA 19406

Dear Applicant,

PennDOT has reviewed your application for completeness, consistency and compliance with applicable Department Regulations. This review has identified issues that must be addressed in order for our review to continue.

The Department's review comments are attached.

Once the comments have been addressed, please resubmit the application and associated material for further review.

Upon resubmission, the applicant's engineer should put together a letter that describes how each comment has been addressed and where each can be found. This will help expedite the review. For guidance on HOP applications refer to 67 PA Code, Chapter 441, Chapter 459 and PennDOT Publication 282, "Highway Occupancy Permit Guidelines". Additional comments may follow upon review of the resubmitted application.

If you have any questions regarding this matter, you may contact Jason Cowen, at (855) 432-9663.

pennsylvania
DEPARTMENT OF TRANSPORTATION

Response Comments
Date: 04/14/2023
Application Number: 303682, Cycle No.1

General

(1) With respect to the formal permit application, please ensure that the following items are addressed:
a.Please be advised that pursuant to and in accordance with Title 67, Chapter 441.8(h)(2)(iv) of the code, the Safe Stopping Sight Distance is the absolute minimum acceptable sight distance for driveways. It is the designers responsibility to ensure that this minimum requirement is satisfied.
b.It should be understood that in accordance with PennDOT Strike-Off Letter 470-10-03 and pursuant to section 421 of the State Highway Law (36 P.S. § 670-421) the installation of any drainage facilities within the Legal Right-of-Way may necessitate additional permitting requirements, including, but not limited to, a separate Highway Occupancy Permit from the Municipality for the future maintenance of the new drainage facilities.
c.ADA compliance within the limits of work (along the access frontage at a minimum) must be evaluated in the TIS (i.e. new/modified facilities, impact to SEPTA bus stops, etc.). If driveway modifications are proposed, the existing curb ramps must be upgraded to be ADA compliant. At a minimum, the ramp adjacent to the curb replacement would need to be reconstructed.

(2) * Upon resubmission, the applicant's engineer should put together a letter that describes how each comment has been addressed and where each can be found in the plan set. A copy of these comments and any previously submitted plans should also be provided. Further, if the applicants engineer has made any design changes independent of PennDOT reviewer comments, they must include a section in the response-to-comments letter that describes the additional design changes.

* Additional comments may follow upon review of the resubmitted application. If you have any questions pertaining to the technical aspects of this review, please contact the Department's representative, Jason Cowen, PE at Jason.cowen@dawood.net or (855) 432-9663.

* For guidance on Highway Occupancy Permit applications refer to PA Code Title 67, Chapter 441, Chapter 459 and PennDOT Publication 282. This will help expedite the review.

(3) Please be advised: The Department is now requiring a cost estimate be entered into EPS and that a Letter of Credit be submitted prior to HOP issuance.
This cost estimate must include all work proposed within the Department's Right-of-Way including signal equipment, all roadway work, pavement markings and signage plus a 15% contingency to be

entered into the "Fee Information & Estimate Construction Cost" section in the Application setup box. Further, this section requires the cost estimate to be broken down into site frontage costs and off site improvements costs. Please enter this information in the manner required. This cost estimate will be the basis for the value of the Letter of Credit the Department will require as security prior to the start of actual construction.

(4) PLEASE SUBMIT A CHECK FOR $95.00 MADE PAYABLE TO PENNDOT-ATTN: MARY ELLEN CULHANE, PERMITS SUPERVISOR, 7000 GEERDES BLVD. KING OF PRUSSIA, PA. 19406. PLEASE INCLUDE THE APPLICATION NUMBER ON THE CHECK FOR OUR REFERENCE.

(5) Applicant must apply for and obtain an ePermitting Business Partner ID (BP ID) prior to permit issuance. The BP ID is to be used in the establishment of a billing account for the invoicing of inspection costs.

For information on obtaining a BP ID, please visit:
https://www.epermitting.penndot.gov/EPS/home/manageBPRegistration.jsp
(Please make sure that you follow the instructions that are in the pink area).

After a BP ID is obtained and activated by your system administrator (This is a 2-step process that must be completed for PennDOT to bill for permit inspection costs at a later date and if not activated, it could delay construction), please provide the following information in the Applicant Contact Info. area within the Applicant Team link of your EPS application.

1)BP ID No.

2)Contact information (Name/Title/Phone/E-mail) for a GENERAL contact person (Person that typically deals with the highway occupancy permit application process).

3)Contact information (Name/Title/Phone/E-mail) for a BILLIING contact person (Person that typically deals with the highway occupancy permit invoicing process).

Application

(1) Provide documentation of scope concurrence from Whitemarsh Township.

Transportation Impact Study/Transportation Impact Assessment

(1) 1.Match the intersection names used on the report to the synchro outputs.

2.The ADT between Table 1 (roadway characteristics within study area) and TIRE are inconsistent

for SR 2037. Revise the SR 2037 ADT to match the TIRE information for the east and west bound ADT.

3.The Saturday Midday Peak Hour Equation/Rate in Table 5 is inconsistent with the scoping application trip generation. Revise to matcha the scoping application trip generation.

4.The trip generation for the Saturday Midday Peak Hour in Table 6 is inconsistent with the scoping application. Revise to match the scoping application.

5.The storage length is inconsistent between Table 13 (95th percentile queue) and the synchro data, review and revise.

Access Configuration/Profile- Driveways/Local Roads

(1) Replace all existing depressed curb accesses along the property frontage with full height curb.
(2) Provide 14-foot curb lanes on the full movement access and a 28-foot throat at the right-in/right-out access.
(3) The segment and offset for the low volume driveway are inconsistent with the straight line diagram. The low volume driveway appears to be 236 feet from the main access across from Commerce Drive. Review and revise accordingly.
(4) Verify that the full movement access lane configuration will align with the lane configuration of Commerce Drive.

Signal Section (Publication 46, 148 And 149)

(1) Upgrade the Traffic Signal and pedestrian facilities at the intersection of the main access and along the property frontage as required.
(2) Provide documentation of concurrence and coordination with traffic signal modification to the Commerce Drive and Pennsylvania Ave. intersection with Upper Dublin Township.

From: Krista Heinrich <kheinrich@gilmore-assoc.com>
Sent: Tuesday, December 13, 2022 3:12 PM
To: Hammond, Matt; rmellor@whitemarshtwp.org
Cc: Bressler, Matt; Haesler, Brian
Subject: RE: BMW of Fort Washington - PennDOT Scoping Meeting Application

Matt-
We do not have any comments at this time; but would be interested in attending a scoping meeting, once scheduled.

Thanks,
Krista Heinrich, PE
Township Engineer
Gilmore & Associates

From: Hammond, Matt <mhammond@trafficpd.com>
Sent: Tuesday, December 13, 2022 3:08 PM
To: Krista Heinrich <kheinrich@gilmore-assoc.com>; rmellor@whitemarshtwp.org
Cc: Bressler, Matt <mbressler@trafficpd.com>; Haesler, Brian <bhaesler@trafficpd.com>
Subject: BMW of Fort Washington - PennDOT Scoping Meeting Application

Krista & Mr. Mellor,

Good afternoon. I hope all is well with you both.

I am following up on the below Scoping Application submission (attached) that was made to PennDOT and Whitemarsh Township on November 3rd in regards to the above referenced project. We have received the PennDOT comments and are looking to commence with the Traffic Study. Will you be providing comments or should we just address the PennDOT comments in the traffic study and in accordance with the Ordinance?

When you have a chance, could you let me know?

Thank you,
Matt

Matthew Hammond, P.E., *Executive Vice President*

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O: 610.326.3100 | www.TrafficPD.com |

From: ePermitting Help <penndotepermittinghelp@pa.gov>
Sent: Thursday, November 3, 2022 1:03 PM
To: dturnbaugh@mileone.com; Hammond, Matt <mhammond@trafficpd.com>; Bressler, Matt <mbressler@trafficpd.com>; Haesler, Brian <bhaesler@trafficpd.com>; fhanney@pa.gov; jotten@pa.gov;

slapenta@pa.gov; c-smccutch@pa.gov; scburton@pa.gov; ajparker@mccormicktaylor.com; planning@montcopa.org; kheinrich@gilmore-assoc.com; rmellor@whitemarshtwp.org
Cc: RA-PDEPSPROD@pa.gov
Subject: :: Scoping Meeting Application - Submitted - Application Number is : S0620220106 (Sent on: 11/03/2022 01:03:01 PM)

CAUTION: External email - do not click links or open attachments unless you recognize the sender and know the content is safe.

The TIS Determination and Scoping Meeting Application has been submitted to PennDOT successfully.

PennDOT will review the scoping meeting application (attached) and associated material (listed below) and respond via e-mail.

To access the application in EPS, please click on the below link.

The Following documents can be accessed in the ePermitting System:

1 : Figure 1.pdf
2 : C-301 Zoning.pdf

Click here to access the Scoping Application

PENNDOT EPERMIT - PLEASE DO NOT REPLY TO THIS EMAIL

From: ePermitting Help <penndotepermittinghelp@pa.gov>
Sent: Friday, December 02, 2022 10:14 AM
To: dturnbaugh@mileone.com; Hammond, Matt; Bressler, Matt; Haesler, Brian; fhanney@pa.gov; jotten@pa.gov; slapenta@pa.gov; c-smccutch@pa.gov; scburton@pa.gov; ajparker@mccormicktaylor.com; planning@montcopa.org; kheinrich@gilmore-assoc.com; rmellor@whitemarshtwp.org
Cc: RA-PDEPSPROD@pa.gov
Subject: :: Scoping Meeting Application - Returned - Application Number is : S0620220106 (Sent on: 12/02/2022 10:13:36 AM)

CAUTION: External email - do not click links or open attachments unless you recognize the sender and know the content is safe.

PennDOT has completed its review of the TIS Determination and Scoping Meeting Application.

Please address the following comments below, and resubmit the application to PennDOT for review.

PennDOT Review Comments :

1. The PennDOT project number for this scoping application review, S0620220106, must be referenced when the formal Highway Occupancy Permit (HOP) application is submitted.
2. The segment and offset for the low volume driveway are inconsistent with the straight line diagram. The low volume driveway appears to be 236 feet from the main access across from Commerce Drive. Review and revise accordingly.
3. Verify that the full movement access lane configuration will align with the lane configuration of Commerce Drive.
4. Replace all existing depressed curb accesses along the property frontage with full height curb.
5. Provide documentation of scope concurrence from Whitemarsh Township.
6. Upgrade the Traffic Signal and pedestrian facilities at the intersection of the main access and along the property frontage as required.
7. With respect to the formal permit application, please ensure that the following items are addressed:a. Please be advised that pursuant to and in accordance with Title 67, Chapter 441.8(h)(2)(iv) of the code, the Safe Stopping Sight Distance is the absolute minimum acceptable sight distance for driveways. It is the designer?s responsibility to ensure that this minimum requirement is satisfied. b. It should be understood that in accordance with PennDOT Strike-Off Letter 470-10-03 and pursuant to section 421 of the State Highway Law (36 P.S. ? 670-421) the installation of any drainage facilities within the Legal Right-of-Way may necessitate additional permitting requirements, including, but not limited to, a separate Highway Occupancy Permit from the Municipality for the future maintenance of the new drainage facilities.c. ADA compliance within the limits of work (along the access frontage at a minimum) must be evaluated in the TIS (i.e. new/modified facilities, impact to SEPTA bus stops, etc.). If driveway modifications are proposed, the existing curb ramps must be upgraded to be ADA compliant. At a minimum, the ramp adjacent to the curb replacement would need to be reconstructed. d. Consistent with current Department Policy, applicants for Highway Occupancy Permits must apply for an EPS Business Partner ID (BPID). The BPID is to be used in the establishment of a billing account for the invoicing of inspection costs. For information on obtaining a BPID, you may visit: https://www.dot14.state.pa.us/EPS/home/manageBPRegistration.jsp
8. Provide 14-foot curb lanes on the full movement access and a 28-foot throat at the right-in/right-out access.

Click here to access the Scoping Application

PENNDOT EPERMIT - PLEASE DO NOT REPLY TO THIS EMAIL

pennsylvania
DEPARTMENT OF TRANSPORTATION

TRANSPORTATION IMPACT STUDY (TIS) DETERMINATION & SCOPING MEETING APPLICATION

Scoping Meeting Application: Draft

Scoping Meeting Date: _____ Scoping Number: S0620220106

Tax Parcel Number: _____

Project/Development Name: BMW Fort Washington

Applicant Information:

Business Partner ID: _____

Applicant Name: MileOne Autogroup

Phone: 3016794062 Email 1: dturnbaugh@mileone.com

Primary Contact: Dennis Turnbaugh Email 2: _____

Additional Engineering Firm Information:

Business Partner ID: _____

Engineering Firm: Traffic Planning and Design Inc

Phone: 6103263100 Email 1: mhammond@trafficpd.com

Primary Contact: Matthew Hammond Email 2: mbressler@trafficpd.com

Creator Information:

Business Partner ID: 000094 Firm Name: Traffic Planning and Design, Inc.

Phone: 610-326-3100 Email 1: bhaesler@trafficpd.com

(1) LOCATION OF PROPOSED DEVELOPMENT:

PennDOT Engineering District: 06 Email: _____

County: Montgomery Email: planning@montcopa.org

Municipality: WHITEMARSH Email: rmellor@whitemarshtwp.org; kheinrich@gilmore-assoc.com

NO.	SR	Segment	Offset	Average Daily Trips	Driveway Classification	Local Road
1	2037	0013	1017	1415	Medium Volume	No
2	2037	0013	0897	707	Low Volume	No

Are there any vehicle weight or size restrictions along the SR in accordance with 75 PA C.S. ss 4902? : No

(2) DESCRIPTION OF PROPOSED DEVELOPMENT (Attach site plan if available):

Proposed site access:
Per preliminary discussion with PennDOT, with redevelopment of the site, the five existing access points to Pennsylvania Avenue (SR 2037) will be reduced to two access points to Pennsylvania Avenue (SR 2037); One full-movement opposite Commerce Drive and one right-in/right-out to the southeast of the signal.

Proposed land uses:
The redevelopment of the site will replace the 22,065 SF existing car dealership with a 75,085 SF New car sales and service facility. The resultant net increase in dealership area will be 53,020 SF.

Community linkages *(access to neighboring properties, cross easements, pedestrian and transit accommodations):*
None

(3) DEVELOPMENT SCHEDULE AND STAGING:

Anticipated Opening Date: 04-07-2025
Full Buildout Date: 04-07-2025

Describe Proposed Development Schedule/Staging:
None

(4) TRIP GENERATION:

Land Use & Size	Land Use Code	Were ITE results used?	Daily Trips	AM Peak Hour		PM Peak Hour		Saturday Peak Hour	
				Enter	Exit	Enter	Exit	Enter	Exit
New Car Sales / 75.09 KSF	840	Yes	2122	102	38	73	109	274	274
		TOTAL:	2122	102	38	73	109	274	274

(5) TRANSPORTATION IMPACT STUDY REQUIRED?

Transportation Impact Study Required? Yes

If Yes, based on:
During any one-hour time period, 100 or more additional vehicle trips entering or exiting an existing development. During any one-hour time period, 100 or more vehicle trips entering or exiting a development.

Other considerations as described below:
None

(6) TRANSPORTATION IMPACT ASSESSMENT REQUIRED?

Transportation Impact Assessment Required? No

(7) STUDY AREA:

Roadway and Study Intersections:
Pennsylvania Avenue (SR 2037) and Commerce Drive; Pennsylvania Avenue (SR 2037) and Existing Site Driveways

Land use context (Refer to PennDOT Design Manual, Part 1X, Appendix B):

Suburban Corridor

Known Congestion Areas:
To be determined

Known Safety Concerns:
To be determined

Known Environmental Constraints:
To be determined

Pedestrian/Bike Review (Community Centers, Parks, Schools, etc.):
To be addressed in TIS

Transit Review (Current routes/stops):
To be addressed in TIS

(8) STUDY AREA TYPE:

Study Area Type: Urban

(9) TIS ANALYSIS PERIODS AND TIMES:

Analysis period and times notes:
2022 Existing Conditions 2025 Base Conditions; 2025 Projected Conditions; Weekday A.M. Peak Hour (7-9 AM); Weekday P.M. Peak Hour (4-6 PM); Saturday Midday Peak Hour (11 AM - 1 PM)

(10) TRAFFIC ADJUSTMENT FACTORS:

(a) Seasonal Adjustment (Identify counts requiring adjustment and methodology):
None

(b) Annual Base Traffic Growth: 0.27 %/yr. **Source:** PennDOT BPR

(c) Pass-By Trips (Attach justification where required):

NO.	Land Use	%	Source

(d) Captured Trips for Multi-Use Sites:
None

(e) Modal Split Reductions:
None

(f) Other Reductions:
None

(11) OTHER PROJECTS WITHIN STUDY AREA TO BE ADDED TO BASE TRAFFIC:

Notes:
To be determined through scoping process

(12) TRIP DISTRIBUTION AND ASSIGNMENT:

Trip Distribution Notes:
To be based on existing traffic patterns in the study area.

(13) APPROVAL OF DATA COLLECTION ELEMENTS AND METHODOLOGIES:

NO.	Location	Period	Type

1	Pennsylvania Avenue and Existing Site Accesses	AM Peak, PM Peak, SAT Peak	Turning Movement Counts
2	Pennsylvania Avenue (SR 2037) and Commerce Drive	AM Peak, PM Peak, SAT Peak	Turning Movement Counts

(14) CAPACITY/LOS ANALYSIS:

NO.	Location	Period	Type
1	Pennsylvania Avenue (SR 2037) and Commerce Drive	AM Peak, PM Peak, SAT Peak	HCM 6th edition from Synchro 11
2	Pennsylvania Avenue (SR 2037) and Site Driveways	AM Peak, PM Peak, SAT Peak	HCM 6th edition from Synchro 11

(15) ROADWAY IMPROVEMENTS/MODIFICATIONS BY OTHERS TO BE INCLUDED:

Roadway Improvements:
To be determined

(16) OTHER NEEDED ANALYSES:

(a) Sight Distance Analysis:
Will be addressed in TIS

(b) Signal Warrant Analysis (Identify locations):
As needed

(c) Required Signal Phasing/Timing Modifications (Determine for all signalized intersections; specify methodology):
As needed

(d) Traffic Signal Corridor/Network Analysis (Identify locations/methodology):
As needed

(e) Analysis of the Need for Turning Lanes (Identify locations/methodology):
Will be addressed in TIS

(f) Turning Lane Lengths (Identify methodology to be used):
Will be addressed in TIS

(g) Left Turn Signal Phasing Analysis (Identify locations/methodology):
As needed

(h) Queuing Analysis (Identify locations/methodology):
As needed

(i) Gap Studies (Identify locations/methodology):
As needed

(j) Crash Analysis (Identify locations):
Will be addressed in TIS

(k) Weaving Analysis (Identify locations):
As needed

(l) Other Required Studies (Specify locations/methodology):
As needed

(17) ADDITIONAL COMMENTS OR RECOMMENDATIONS RELATIVE TO THE SCOPE OF THE TIS:

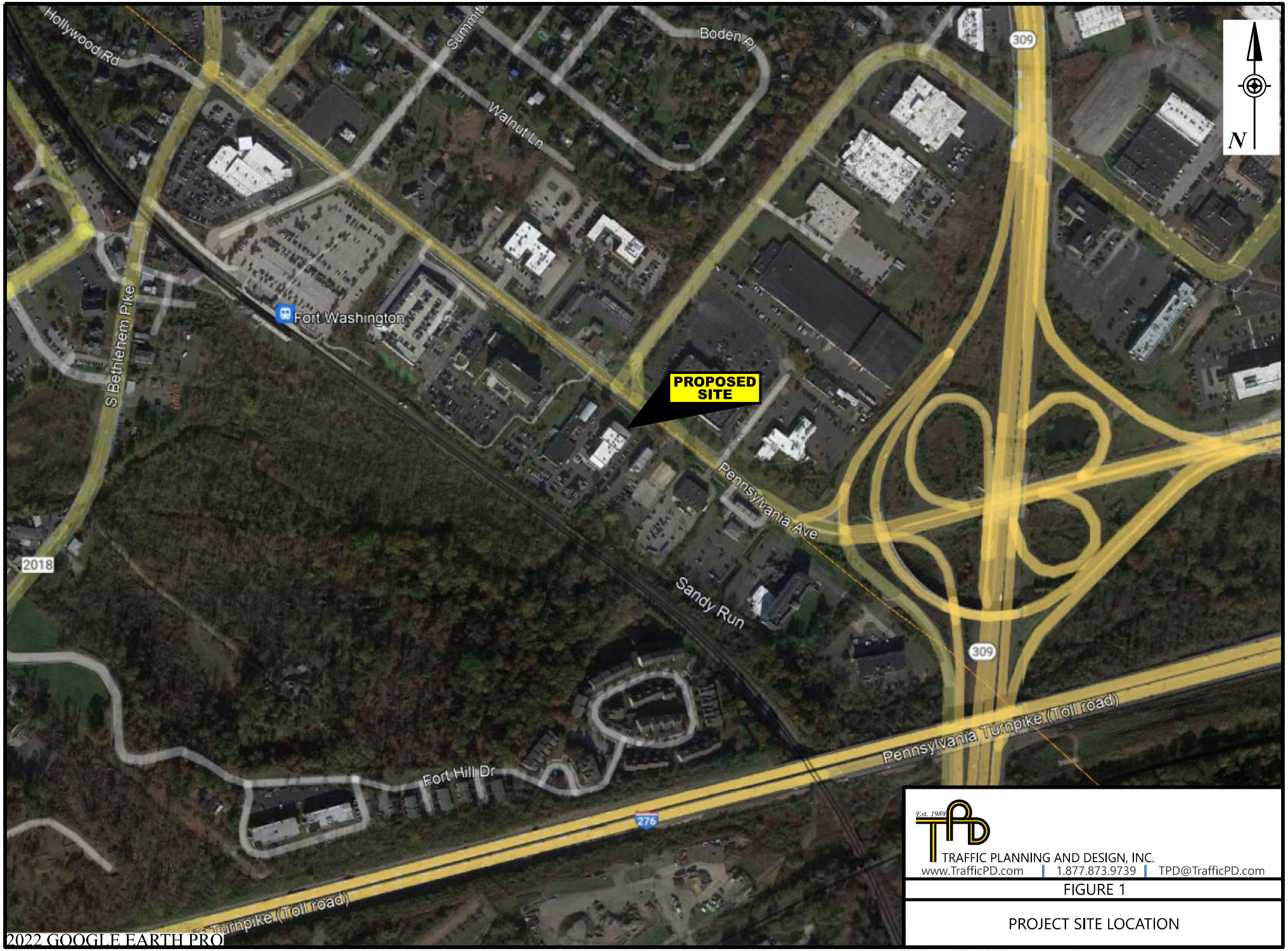
Additional Comments:

None

PennDOT Review Comments: (Current Cycle Comments)

After review of the scoping meeting application, the Department will contact the applicant regarding the need for a scoping meeting prior to applying for a highway occupancy permit.

This Electronic Copy Created on: 2022-11-03 12:21:49



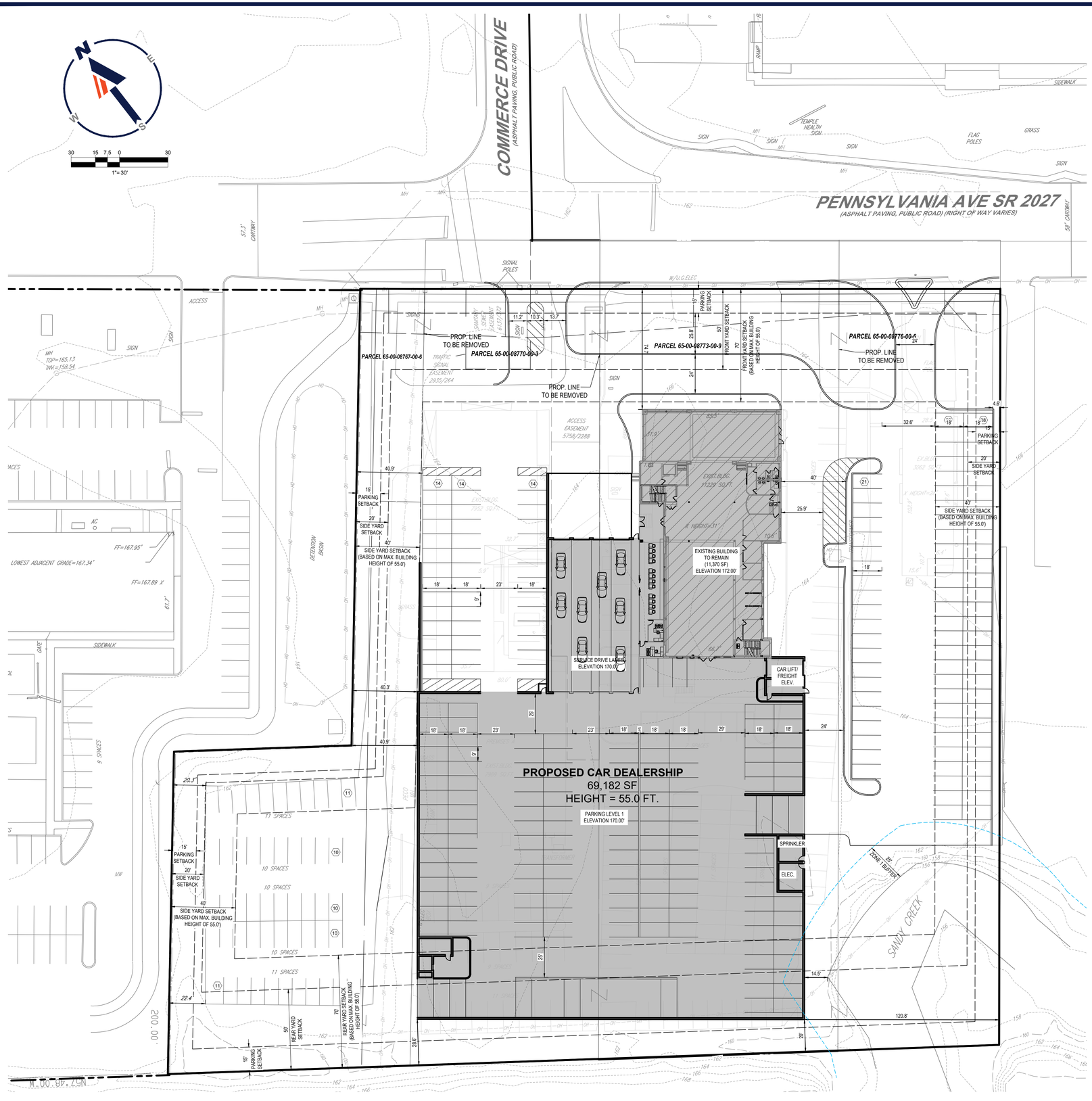
Est. 1989

TRAFFIC PLANNING AND DESIGN, INC.

www.TrafficPD.com | 1.877.873.9739 | TPD@TrafficPD.com

FIGURE 1

PROJECT SITE LOCATION



LEGEND

PROPOSED

SETBACK LINE	
BUILDING	
CONCRETE CURB	
EDGE OF ASPHALT	

LEGEND

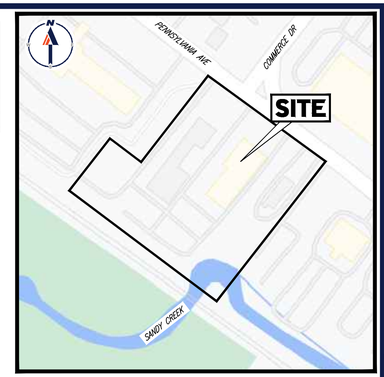
EXISTING

PROPERTY LINE	
EASEMENT LINE	
BUILDING	
CONCRETE CURB	
EDGE OF ASPHALT	
STORM/SANITARY MANHOLE	MH
OVERHEAD UTILITY WIRES	OH

LEGEND

TO BE REMOVED

PROPERTY LINE	
EASEMENT LINE	
BUILDING	
CONCRETE CURB	
EDGE OF ASPHALT	
STORM/SANITARY MANHOLE	MH
OVERHEAD UTILITY WIRES	OH



LOCATION MAP
1"=200'
100' 0 200'

GENERAL NOTES

1. THIS SITE IS LOCATED AT PENNSYLVANIA AVENUE, WHITEMARSH TOWNSHIP, MONTGOMERY COUNTY, COMMONWEALTH OF PENNSYLVANIA.
2. CONTRACTOR IS RESPONSIBLE TO OBTAIN ALL SPECIFIC RESOURCES, TECHNICAL REPORTS, AND DESIGN DOCUMENTS RELATED TO THIS PROJECT AND FAMILIARIZE HIMSELF WITH SAME FOR APPLICATION BOTH PRIOR TO AND DURING CONSTRUCTION.
3. ALL ELEVATIONS SHOWN ARE IN ACCORDANCE WITH THE REFERENCED SURVEYOR'S BENCHMARK AND MUST BE VERIFIED BY THE GENERAL CONTRACTOR PRIOR TO GROUNDBREAK.
4. APPLICANT/EQUITABLE OWNER:
   MILE-ONE AUTO-GROUP
   3301 BRIGGS CHANEY ROAD
   SILVER SPRING, MD 20904
5. PARCEL IDs:
   65-00-08776-00-6 (512 PENNSYLVANIA AVE)
   65-00-08773-00-9 (510 PENNSYLVANIA AVE)
   65-00-08770-00-3 (500 PENNSYLVANIA AVE)
   65-00-08767-00-6 & 65-00-08767-10-5 (506 PENNSYLVANIA AVE)
6. TOTAL SITE AREA: 4.886 AC.
7. **THE ENTIRE SITE IS IN A SPECIAL FLOOD HAZARD AREA, ZONE (AE), WITHIN THE 100-YEAR FLOODPLAIN, BASE FLOOD ELEVATION = 169.00. AS SUCH, THE ENTIRE SITE IS LOCATED WITHIN THE RIPARIAN CORRIDOR CONSERVATION OVERLAY DISTRICT PER WHITEMARSH TOWNSHIP.**
8. THE PROPOSED DEVELOPMENT AREA WILL BE SERVICED BY PUBLIC WATER AND SEWER.

ZONING REQUIREMENTS

REQUIREMENTS TAKEN FROM: WHITEMARSH TOWNSHIP, MONTGOMERY COUNTY, COMMONWEALTH OF PENNSYLVANIA.

ZONING: CR-L (COMMERCIAL RETAIL-LOW DISTRICT) WITH RIPARIAN CORRIDOR CONSERVATION OVERLAY
PROPOSED USE: AUTOMOTIVE RETAIL **(SPECIAL EXCEPTION PER SECTION 116-104.B(6))**

OVERALL BULK REQUIREMENTS	REQUIRED	EXISTING	PROPOSED CONSOLIDATED LOT
DISTRICT AREA [1]	5 AC. (MIN.)	212,828 SF (4.886 AC.)	NO CHANGE
MINIMUM LOT AREA	[2]	212,828 SF (4.886 AC.)	NO CHANGE
MINIMUM BUILDING SETBACKS:			
FRONT YARD SETBACK: [3]	MIN. = 50 FT. *REQ'D = 70 FT	N/A	74.7 FT.
SIDE YARD SETBACK: [3]	MIN. = 20 FT. *REQ'D = 40 FT	40.9 FT.	40.3 FT.
REAR YARD SETBACK: [3]	MIN. = 50 FT. *REQ'D = 70 FT	N/A	20 FT. **(V)**
MINIMUM PARKING SETBACKS:			
FRONT YARD SETBACK:	15 FT.	N/A	N/A
SIDE YARD SETBACK:	15 FT.	N/A	N/A
REAR YARD SETBACK:	15 FT.	N/A	N/A
MAXIMUM REQUIREMENTS:			
MAXIMUM BUILDING COVERAGE:	40%	15.3% (11,370 SF.)	32.5% (69,182 SF.)
MAXIMUM IMPERVIOUS COVERAGE:	65%	74.8% (159,131 SF.)	73.5% (156,430 SF.) **(V)**
MAXIMUM BUILDING HEIGHT: [3]	35 FT., 65 FT. MAX.	31 FT.	55.0 FT.
MINIMUM GREEN SPACE AREA:	35%		(26.5%) 56,388 SF. **(V)**
REAR YARD COVERAGE (ACCESSORY USES/STRUCTURES) [4]	30%	57.6% (41,665 SF.) **(ENC)**	40.2% (15,124 SF.) **(ENC-I)**

(ENC) - EXISTING NONCONFORMITY
(ENC - I) - EXISTING NONCONFORMITY, IMPROVED

[1] DISTRICT AREA. THE MINIMUM AREA WHICH MAY BE CLASSIFIED AS A CR COMMERCIAL RETAIL DISTRICT SHALL BE 5 ACRES.

[2] THE MINIMUM AREA FOR A SINGLE STRUCTURE OR DEVELOPMENT SHALL BE DETERMINED BY THE LAND USE, PARKING AND OTHER REQUIREMENTS.

[3] THE MAXIMUM HEIGHT OF ANY BUILDING ERECTED OR USED IN THIS DISTRICT SHALL BE 35 FEET, EXCEPT THAT THE HEIGHT OF ANY BUILDING MAY BE INCREASED TO A MAXIMUM OF 65 FEET, PROVIDED THAT FOR EVERY FOOT OF HEIGHT INCREASE IN EXCESS OF 35 FEET THERE SHALL BE ADDED TO EACH YARD REQUIREMENT ONE CORRESPONDING FOOT OF WIDTH OR DEPTH. STRUCTURES, EXCEPT CHIMNEYS AND FLAGPOLES, MAY BE ERECTED ABOVE THE ROOFLINE, SHALL BE ERECTED WITHIN A RECESSION OF ONE FOOT FOR EACH ONE FOOT OF ADDITIONAL HEIGHT, AND MUST BE DESIGNED TO BE COMPATIBLE WITH THE ARCHITECTURAL TREATMENT OF THE BUILDING.

*MINIMUM BUILDING SETBACKS ARE BASED ON A MAXIMUM STRUCTURE HEIGHT OF **55 FT**. 20' HAS BEEN ADDED TO EACH MINIMUM SETBACK REQUIREMENT AND ARE DEPICTED ABOVE.

[4] REAR YARD COVERAGE CALCULATION PER §116-24.D.3 IS BASED ON THE FOLLOWING AREAS:
EXISTING LOT: 72,288 SF. (1.66 AC.) TO REAR BUILDING LINE OF EXISTING STRUCTURE AT 500 PENNSYLVANIA AVENUE.
PROPOSED LOT: 37,601 SF. (0.86 AC.) TO REQUIRED REAR SETBACK LINE FOR 58' BUILDING

PROPOSED PARKING REQUIREMENTS (PER SECTION 116-184)

DESCRIPTION	UNIT	REQUIRED
RETAIL (11,370 SF SHOWROOM + 6,900 SF SERVICE RECEPTION)	1 SPACE/200 SF	92
OFFICE (5,915 SF - EXIST. BLDG 2ND FLR)	1 SPACE/200 SF	30
SERVICE BAYS (39)	1 SPACE PER BAY	39
OTHER COMMERCIAL (50,900 SF SRVC/PARTS/TECH)	1 SPACE/1000 SF	51
TOTAL SPACES REQUIRED:		212
TOTAL OFF-STREET PARKING SPACES PROPOSED (607 GARAGE + 171 OUTSIDE):		222
EV PARKING SPACES PROPOSED (8 REQUIRED PER §116-188.3):		10
TOTAL INVENTORY SPACES PROPOSED:		546
TOTAL SPACES PROPOSED:		**778**

THE FOLLOWING VARIANCES ARE REQUESTED FROM THE WHITEMARSH TOWNSHIP ZONING HEARING BOARD:

1. VARIANCES FROM SECTIONS 116-93.G AND 116-94 - TO PERMIT A REAR YARD SETBACK OF 20.0 FEET WHERE A SETBACK OF 70.0 FEET IS REQUIRED FOR A BUILDING HEIGHT OF 55.0 FEET IN HEIGHT.
2. VARIANCES FROM SECTION 116-259A - TO PERMIT AN ENCROACHMENT INTO THE RIPARIAN CORRIDOR CONSERVATION DISTRICT, AND A SETBACK OF 0.0 FEET FROM THE DISTRICT, AS THE ENTIRE SITE IS LOCATED WITHIN THE RIPARIAN CORRIDOR CONSERVATION DISTRICT DUE TO THE 100-YEAR FLOODPLAIN DELINEATION.
3. A VARIANCE FROM SECTION 116-184D - REQUIRING A MAXIMUM OF 30 INDIVIDUAL PARKING SPACES PLACED TOGETHER IN ANY PARKING AREA, DIMENSIONS OF THE PARKING AREA NOT EXCEEDING 150', AND PLANTING STRIPS OF NOT LESS THAN 10' IN WIDTH BETWEEN PARKING ROWS, TO PERMIT THE PROPOSED PARKING DECK BUILDING.
4. A VARIANCE FROM CHAPTER 101 OF THE CODE OF WHITEMARSH TOWNSHIP, ARTICLE V, SECTION 5.04(A)(2) - TO ALLOW THE PROPOSED USE TO HAVE A SUPPLY OF MORE THAN 550 GALLONS OF PETROLEUM PRODUCTS, MATERIALS, AND OTHER SUBSTANCES ASSOCIATED WITH AN AUTOMOTIVE USE WITHIN THE FLOODPLAIN, IN THAT THE APPLICANTS PROPOSE TO COMPLY WITH THE REQUIREMENTS OF SECTIONS 5.04(B),(C),(D) AND (E).
5. A VARIANCE FROM CHAPTER 116-24.D (3) TO PERMIT A REAR YARD COVERAGE OF 40.2%, WHERE THE REQUIREMENT IS 30% AND THE EXISTING COVERAGE IS 57.6%.

BOHLER
SITE CIVIL AND CONSULTING ENGINEERING
LAND SURVEYING
PROGRAM MANAGEMENT
LANDSCAPE ARCHITECTURE
INDUSTRIAL DESIGN
PERMITTING SERVICES
TRANSPORTATION SERVICES

THE INFORMATION, DESIGN AND CONTENT OF THIS PLAN IS PROPRIETARY AND SHALL NOT BE DISCLOSED OR USED FOR ANY PURPOSE, WHOLLY OR PARTIALLY, TO ANY PERSON OR ENTITY OTHER THAN THE OWNER OR ITS AUTHORIZED AGENTS WITHOUT THE PRIOR WRITTEN AUTHORIZATION FROM BOHLER. ONLY APPROVED, SEALED PLANS SHALL BE UTILIZED OR CONSTRUCTION PURPOSES.

REVISIONS

REV	DATE	COMMENT	DRAWN BY / CHECKED BY
1	10/26/2022	REV. DRIVEWAY LOCATIONS & HEIGHT	JAB / JAB

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FOR CONCEPT PURPOSES ONLY

THIS DRAWING IS INTENDED FOR MUNICIPAL AND/OR AGENCY REVIEW AND APPROVAL. IT IS NOT INTENDED AS A CONSTRUCTION DOCUMENT UNLESS INDICATED OTHERWISE.

PROJECT No.: PAB220113.00
DRAWN BY: BS
CHECKED BY: JAB
DATE: 10/10/2022
CAD I.D.: PAB220113.00-ZONE-1A

PROJECT:

ZONING PLAN

FOR

MILEONE AUTOGROUP, INC.

PROPOSED AUTOMOTIVE DEALERSHIP

500 - 512 PENNSYLVANIA AVE, WHITEMARSH TOWNSHIP MONTGOMERY COUNTY, PA

BOHLER
74 W BROAD STREET, SUITE 500
BETHLEHEM, PA 18018
Phone: (610) 709-9971
Fax: (610) 709-9976
www.BohlerEngineering.com

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PROFESSIONAL ENGINEER
PENNSYLVANIA LICENSE No. PE055573
NEW JERSEY LICENSE No. 24GE04493300
DELAWARE LICENSE No. 18315

SHEET TITLE:

ZONING PLAN

SHEET NUMBER:

C-301

REVISION 1 - 10/26/2022

\\BOHLERENG.NET\SHARES\PA-PROJECTS\2022\PAB220113.00\CAD\DRAWINGS\PLAN SETS\ZONING PLAN\PAB220113.00-ZONE-1A-----1A-LAYOUT C-301 ZONING

APPENDIX B

Study Area Photographs

Job #: *MILE.00001* *Date Taken:* *10/31/2022* *Intersection Of:* *Commerce Drive-Driveway & Pennsylvania Ave*

Direction / Road: **Eb. Pennsylvania Ave**
Approach / Departure: Approach
Distance: 50 feet

Direction / Road: **Eb. Pennsylvania Ave**
Approach / Departure: Approach
Distance: 200 Feet

Job #: *MILE.00001* *Date Taken:* *10/31/2022* *Intersection Of:* *Commerce Drive-Driveway & Pennsylvania Ave*

Direction / Road: **Wb. Pennsylvania Ave**
Approach / Departure: Approach
Distance: 50 feet

Direction / Road: **Wb. Pennsylvania Ave**
Approach / Departure: Approach
Distance: 200 Feet

Job #: *MILE.00001* *Date Taken:* *10/31/2022* *Intersection Of:* *Commerce Drive-Driveway & Pennsylvania Ave*

Direction / Road: **Nb. Existing Driveway**
Approach / Departure: Approach
Distance: 50 feet

Direction / Road: **Nb. Existing Driveway**
Approach / Departure: Approach
Distance: 200 Feet

Job #: *MILE.00001* *Date Taken:* *10/31/2022* *Intersection Of:* *Commerce Drive-Driveway & Pennsylvania Ave*

Direction / Road: **Sb. Commerce Drive**
Approach / Departure: Approach
Distance: 50 feet

Direction / Road: **Sb. Commerce Drive**
Approach / Departure: Approach
Distance: 200 Feet

Job #: *MILE.00001* *Date Taken:* *10/31/2022* *Intersection Of:* *Western-most Exit-only Driveway & Pennsylvania Ave*

Direction / Road: **Eb. Pennsylvania Avenue**
Approach / Departure: Approach
Distance: 50 feet

Direction / Road: **Eb. Pennsylvania Avenue**
Approach / Departure: Approach
Distance: 200 Feet

Job #: *MILE.00001* *Date Taken:* *10/31/2022* *Intersection Of:* *Western-most Exit-only Driveway & Pennsylvania Ave*

Direction / Road: **Wb. Pennsylvania Avenue**
Approach / Departure: Approach
Distance: 50 feet

Direction / Road: **Wb. Pennsylvania Avenue**
Approach / Departure: Approach
Distance: 200 Feet

Job #: *MILE.00001* *Date Taken:* *10/31/2022* *Intersection Of:* *Western-most Exit-only Driveway & Pennsylvania Ave*

Direction / Road: **Nb. Western-most Exit-only Driveway**
Approach / Departure: Approach
Distance: 50 feet

Direction / Road: **Nb. Western-most Exit-only Driveway**
Approach / Departure: Approach
Distance: 200 Feet

Job #: *MILE.00001* *Date Taken:* *10/31/2022* *Intersection Of:* *Exit-only Driveway & Pennsylvania Avenue*

Direction / Road: **Eb. Pennsylvania Avenue**
Approach / Departure: Approach
Distance: 50 feet

Direction / Road: **Eb. Pennsylvania Avenue**
Approach / Departure: Approach
Distance: 200 Feet

Job #: *MILE.00001* *Date Taken:* *10/31/2022* *Intersection Of:* *Exit-only Driveway & Pennsylvania Avenue*

Direction / Road: **Wb. Pennsylvania Avenue**
Approach / Departure: Approach
Distance: 50 feet

Direction / Road: **Wb. Pennsylvania Avenue**
Approach / Departure: Approach
Distance: 200 Feet

Job #: *MILE.00001* *Date Taken:* *10/31/2022* *Intersection Of:* *Exit-only Driveway & Pennsylvania Avenue*

Direction / Road: **Nb. Exit-only Driveway**
Approach / Departure: Approach
Distance: 50 feet

Direction / Road: **Nb. Exit-only Driveway**
Approach / Departure: Approach
Distance: 200 Feet

Job #: *MILE.00001* *Date Taken:* *10/31/2022* *Intersection Of:* *Existing Driveway & Pennsylvania Avenue*

Direction / Road: **Eb. Pennsylvania Avenue**
Approach / Departure: Approach
Distance: 50 feet

Direction / Road: **Eb. Pennsylvania Avenue**
Approach / Departure: Approach
Distance: 200 Feet

Job #: *MILE.00001* *Date Taken:* *10/31/2022* *Intersection Of:* *Existing Driveway & Pennsylvania Avenue*

Direction / Road: **Wb. Pennsylvania Avenue**
Approach / Departure: Approach
Distance: 50 feet

Direction / Road: **Wb. Pennsylvania Avenue**
Approach / Departure: Approach
Distance: 200 Feet

Job #: *MILE.00001* *Date Taken:* *10/31/2022* *Intersection Of:* *Existing Driveway & Pennsylvania Avenue*

Direction / Road: **Nb. Existing Driveway**
Approach / Departure: Approach
Distance: 50 feet

Direction / Road: **Nb. Existing Driveway**
Approach / Departure: Approach
Distance: 200 Feet

Job #: *MILE.00001* *Date Taken:* *10/31/2022* *Intersection Of:* *Existing Driveway & Pennsylvania Avenue*

Direction / Road: **Eb. Pennsylvania Avenue**
Approach / Departure: Approach
Distance: 50 feet

Direction / Road: **Eb. Pennsylvania Avenue**
Approach / Departure: Approach
Distance: 200 Feet

Job #: *MILE.00001* *Date Taken:* *10/31/2022* *Intersection Of:* *Existing Driveway & Pennsylvania Avenue*

Direction / Road:	**Wb. Pennsylvania Avenue**
Approach / Departure:	Approach
Distance:	50 feet

Direction / Road:	**Wb. Pennsylvania Avenue**
Approach / Departure:	Approach
Distance:	200 Feet

Job #: *MILE.00001* *Date Taken:* *10/31/2022* *Intersection Of:* *Existing Driveway & Pennsylvania Avenue*

Direction / Road: **Nb. Existing Driveway**
Approach / Departure: Approach
Distance: 50 feet

Direction / Road: **Nb. Existing Driveway**
Approach / Departure: Approach
Distance: 200 Feet

APPENDIX C

Manual Traffic Count Printouts

Counter: MIO:
Set up By JH::

Traffic Planning and Design, Inc
2500 East High Street
Suite 650
Pottstown, Pennsylvania, United States 19464
610.326.3100

Count Name: 2 Commerce Drive-Driveway (Star 2) & Pennsylvania Ave
Site Code:
Start Date: 10/27/2022

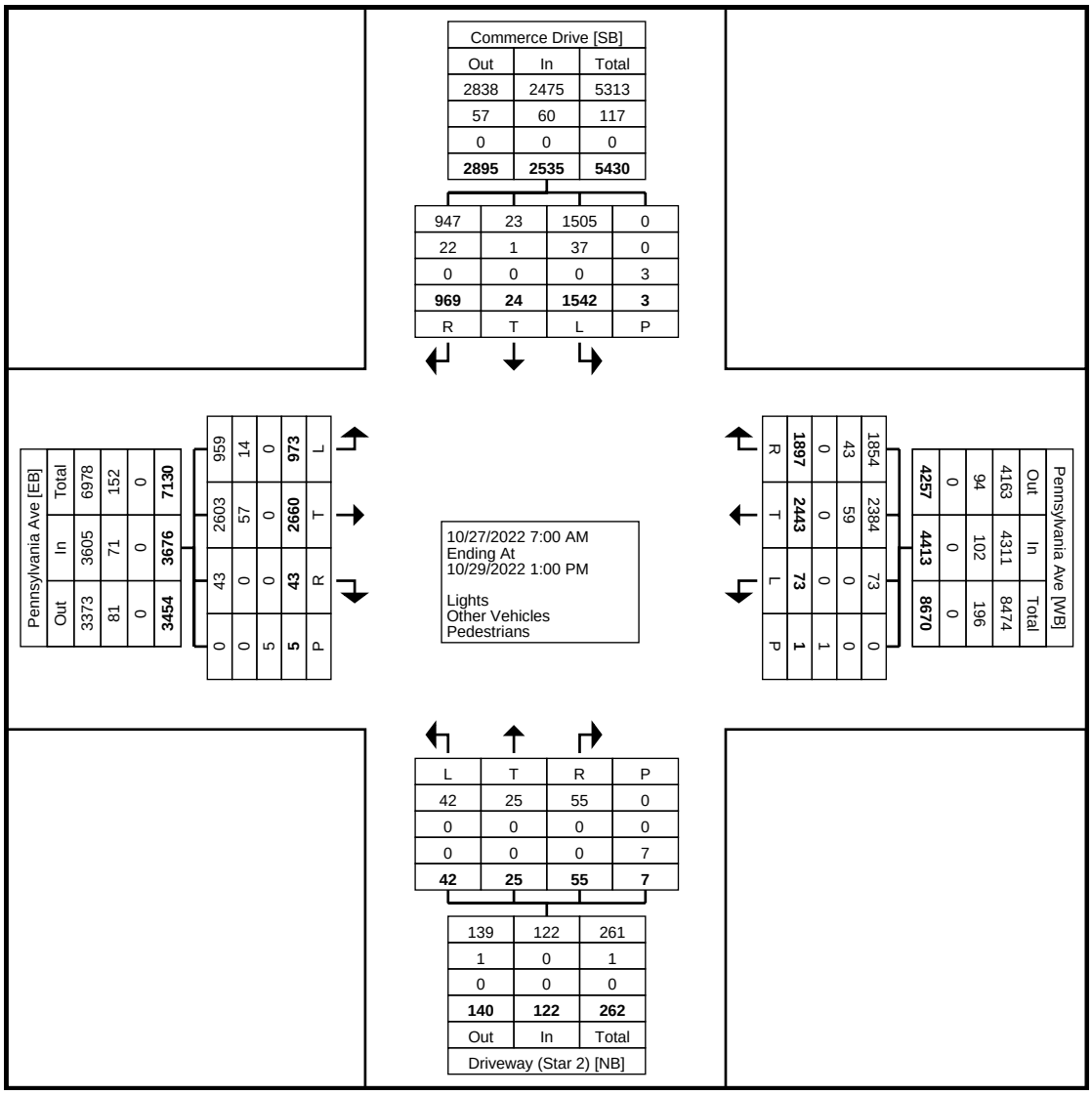
Turning Movement Data

Start Time	Pennsylvania Ave Eastbound						Pennsylvania Ave Westbound						Driveway (Star 2) Northbound						Commerce Drive Southbound						Int. Total
	Left	Thru	Right	Right on Red	Peds	App. Total	Left	Thru	Right	Right on Red	Peds	App. Total	Left	Thru	Right	Right on Red	Peds	App. Total	Left	Thru	Right	Right on Red	Peds	App. Total	
7:00 AM	23	94	0	0	0	117	0	128	41	18	0	187	0	0	0	0	2	0	24	0	16	23	0	63	367
7:15 AM	51	98	1	0	0	150	1	111	62	15	1	189	0	0	0	0	0	0	35	0	10	19	0	64	403
7:30 AM	43	101	1	0	0	145	4	134	75	28	0	241	3	1	2	0	0	6	37	0	14	13	0	64	456
7:45 AM	59	110	3	0	0	172	1	120	97	36	0	254	2	0	1	0	0	3	30	1	19	23	0	73	502
Hourly Total	176	403	5	0	0	584	6	493	275	97	1	871	5	1	3	0	2	9	126	1	59	78	0	264	1728
8:00 AM	52	119	1	0	0	172	6	104	126	31	0	267	1	2	0	3	0	6	37	2	30	6	0	75	520
8:15 AM	55	106	1	0	0	162	3	111	125	45	0	284	2	0	1	1	0	4	33	2	14	14	0	63	513
8:30 AM	63	101	4	0	4	168	6	132	136	26	0	300	1	0	1	1	4	3	28	4	23	12	2	67	538
8:45 AM	49	94	3	0	0	146	4	117	123	42	0	286	3	2	0	1	0	6	42	1	31	9	0	83	521
Hourly Total	219	420	9	0	4	648	19	464	510	144	0	1137	7	4	2	6	4	19	140	9	98	41	2	288	2092
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4:00 PM	38	163	3	0	0	204	3	106	50	18	0	177	3	1	2	1	0	7	88	1	21	17	0	127	515
4:15 PM	41	122	0	0	0	163	2	91	60	15	0	168	5	1	1	0	0	7	81	1	11	35	0	128	466
4:30 PM	39	131	2	0	0	172	2	85	44	12	0	143	3	2	1	3	0	9	116	1	17	28	0	162	486
4:45 PM	39	137	3	0	0	179	6	76	45	24	0	151	1	2	1	1	0	5	107	1	18	38	0	164	499
Hourly Total	157	553	8	0	0	718	13	358	199	69	0	639	12	6	5	5	0	28	392	4	67	118	0	581	1966
5:00 PM	41	140	0	0	0	181	4	75	44	32	0	155	1	2	2	1	0	6	199	0	37	46	0	282	624
5:15 PM	28	142	3	0	0	173	2	89	49	15	0	155	1	1	0	2	0	4	137	0	45	37	0	219	551
5:30 PM	64	145	2	0	1	211	3	94	48	16	0	161	3	0	1	2	0	6	123	1	30	23	1	177	555
5:45 PM	59	128	4	0	0	191	3	97	49	23	0	172	5	3	0	6	0	14	103	1	28	22	0	154	531
Hourly Total	192	555	9	0	1	756	12	355	190	86	0	643	10	6	3	11	0	30	562	2	140	128	1	832	2261
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11:00 AM	28	85	0	0	0	113	2	71	24	9	0	106	0	0	0	0	0	0	49	0	15	26	0	90	309
11:15 AM	27	84	2	0	0	113	4	89	29	9	0	131	0	1	0	2	1	3	35	1	22	13	0	71	318
11:30 AM	31	103	2	0	0	136	2	105	24	14	0	145	2	1	2	1	0	6	31	0	16	14	0	61	348
11:45 AM	35	85	2	0	0	122	1	107	40	15	0	163	1	0	2	0	0	3	45	1	12	21	0	79	367
Hourly Total	121	357	6	0	0	484	9	372	117	47	0	545	3	2	4	3	1	12	160	2	65	74	0	301	1342
12:00 PM	23	96	1	1	0	121	4	94	38	11	0	147	1	2	1	3	0	7	55	2	15	10	0	82	357
12:15 PM	32	93	0	0	0	125	3	96	30	4	0	133	1	1	0	0	0	2	30	3	17	12	0	62	322
12:30 PM	31	102	3	0	0	136	3	98	29	5	0	135	2	1	2	3	0	8	41	1	9	13	0	64	343
12:45 PM	22	81	1	0	0	104	4	113	43	3	0	163	1	2	2	2	0	7	36	0	12	13	0	61	335
Hourly Total	108	372	5	1	0	486	14	401	140	23	0	578	5	6	5	8	0	24	162	6	53	48	0	269	1357
Grand Total	973	2660	42	1	5	3676	73	2443	1431	466	1	4413	42	25	22	33	7	122	1542	24	482	487	3	2535	10746
Approach %	26.5	72.4	1.1	0.0	-	-	1.7	55.4	32.4	10.6	-	-	34.4	20.5	18.0	27.0	-	-	60.8	0.9	19.0	19.2	-	-	-
Total %	9.1	24.8	0.4	0.0	-	34.2	0.7	22.7	13.3	4.3	-	41.1	0.4	0.2	0.2	0.3	-	1.1	14.3	0.2	4.5	4.5	-	23.6	-
Lights	959	2603	42	1	-	3605	73	2384	1403	451	-	4311	42	25	22	33	-	122	1505	23	469	478	-	2475	10513
% Lights	98.6	97.9	100.0	100.0	-	98.1	100.0	97.6	98.0	96.8	-	97.7	100.0	100.0	100.0	100.0	-	100.0	97.6	95.8	97.3	98.2	-	97.6	97.8
Other Vehicles	14	57	0	0	-	71	0	59	28	15	-	102	0	0	0	0	-	0	37	1	13	9	-	60	233
% Other Vehicles	1.4	2.1	0.0	0.0	-	1.9	0.0	2.4	2.0	3.2	-	2.3	0.0	0.0	0.0	0.0	-	0.0	2.4	4.2	2.7	1.8	-	2.4	2.2
Pedestrians	-	-	-	-	5	-	-	-	-	-	1	-	-	-	-	-	7	-	-	-	-	-	3	-	-
% Pedestrians	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-

Traffic Planning and Design, Inc
2500 East High Street
Suite 650
Pottstown, Pennsylvania, United States 19464
610.326.3100

Counter: MIO:
Set up By JH::

Count Name: 2 Commerce Drive-Driveway (Star 2) & Pennsylvania Ave
Site Code:
Start Date: 10/27/2022



Turning Movement Data Plot

Traffic Planning and Design, Inc
2500 East High Street
Suite 650
Pottstown, Pennsylvania, United States 19464
610.326.3100

Counter: MIO:
Set up By JH::

Count Name: 2 Commerce Drive-Driveway (Star 2) & Pennsylvania Ave
Site Code:
Start Date: 10/27/2022

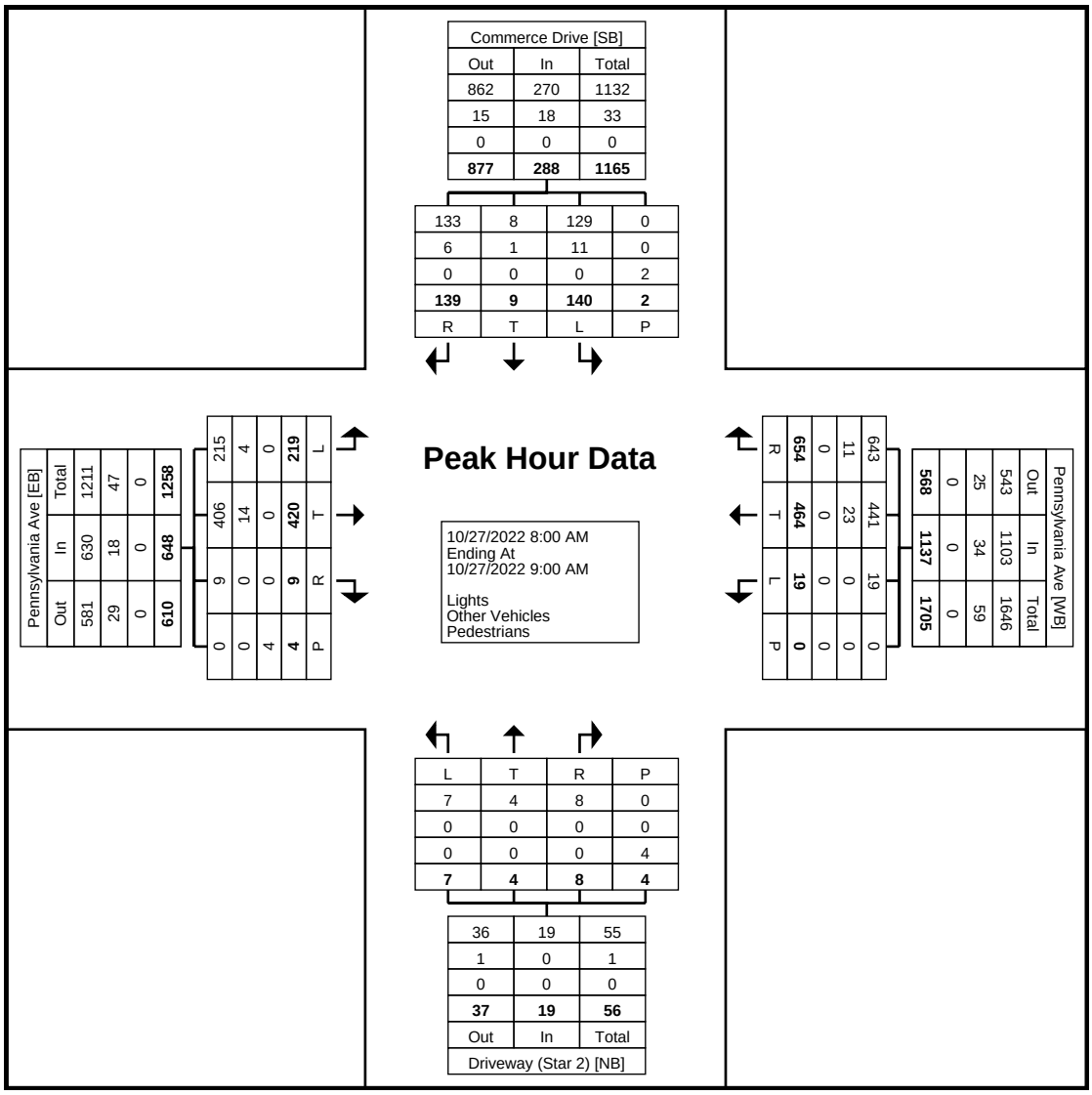
Turning Movement Peak Hour Data (8:00 AM)

Start Time	Pennsylvania Ave Eastbound						Pennsylvania Ave Westbound						Driveway (Star 2) Northbound						Commerce Drive Southbound						Int. Total
	Left	Thru	Right	Right on Red	Peds	App. Total	Left	Thru	Right	Right on Red	Peds	App. Total	Left	Thru	Right	Right on Red	Peds	App. Total	Left	Thru	Right	Right on Red	Peds	App. Total	
8:00 AM	52	119	1	0	0	172	6	104	126	31	0	267	1	2	0	3	0	6	37	2	30	6	0	75	520
8:15 AM	55	106	1	0	0	162	3	111	125	45	0	284	2	0	1	1	0	4	33	2	14	14	0	63	513
8:30 AM	63	101	4	0	4	168	6	132	136	26	0	300	1	0	1	1	4	3	28	4	23	12	2	67	538
8:45 AM	49	94	3	0	0	146	4	117	123	42	0	286	3	2	0	1	0	6	42	1	31	9	0	83	521
Total	219	420	9	0	4	648	19	464	510	144	0	1137	7	4	2	6	4	19	140	9	98	41	2	288	2092
Approach %	33.8	64.8	1.4	0.0	-	-	1.7	40.8	44.9	12.7	-	-	36.8	21.1	10.5	31.6	-	-	48.6	3.1	34.0	14.2	-	-	-
Total %	10.5	20.1	0.4	0.0	-	31.0	0.9	22.2	24.4	6.9	-	54.3	0.3	0.2	0.1	0.3	-	0.9	6.7	0.4	4.7	2.0	-	13.8	-
PHF	0.869	0.882	0.563	0.000	-	0.942	0.792	0.879	0.938	0.800	-	0.948	0.583	0.500	0.500	0.500	-	0.792	0.833	0.563	0.790	0.732	-	0.867	0.972
Lights	215	406	9	0	-	630	19	441	504	139	-	1103	7	4	2	6	-	19	129	8	92	41	-	270	2022
% Lights	98.2	96.7	100.0	-	-	97.2	100.0	95.0	98.8	96.5	-	97.0	100.0	100.0	100.0	100.0	-	100.0	92.1	88.9	93.9	100.0	-	93.8	96.7
Other Vehicles	4	14	0	0	-	18	0	23	6	5	-	34	0	0	0	0	-	0	11	1	6	0	-	18	70
% Other Vehicles	1.8	3.3	0.0	-	-	2.8	0.0	5.0	1.2	3.5	-	3.0	0.0	0.0	0.0	0.0	-	0.0	7.9	11.1	6.1	0.0	-	6.3	3.3
Pedestrians	-	-	-	-	4	-	-	-	-	-	0	-	-	-	-	-	4	-	-	-	-	-	2	-	-
% Pedestrians	-	-	-	-	100.0	-	-	-	-	-	-	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-

Traffic Planning and Design, Inc
2500 East High Street
Suite 650
Pottstown, Pennsylvania, United States 19464
610.326.3100

Counter: MIO:
Set up By JH::

Count Name: 2 Commerce Drive-Driveway (Star 2) & Pennsylvania Ave
Site Code:
Start Date: 10/27/2022



Turning Movement Peak Hour Data Plot (8:00 AM)

Traffic Planning and Design, Inc
2500 East High Street
Suite 650
Pottstown, Pennsylvania, United States 19464
610.326.3100

Counter: MIO:
Set up By JH::

Count Name: 2 Commerce Drive-Driveway (Star 2) & Pennsylvania Ave
Site Code:
Start Date: 10/27/2022

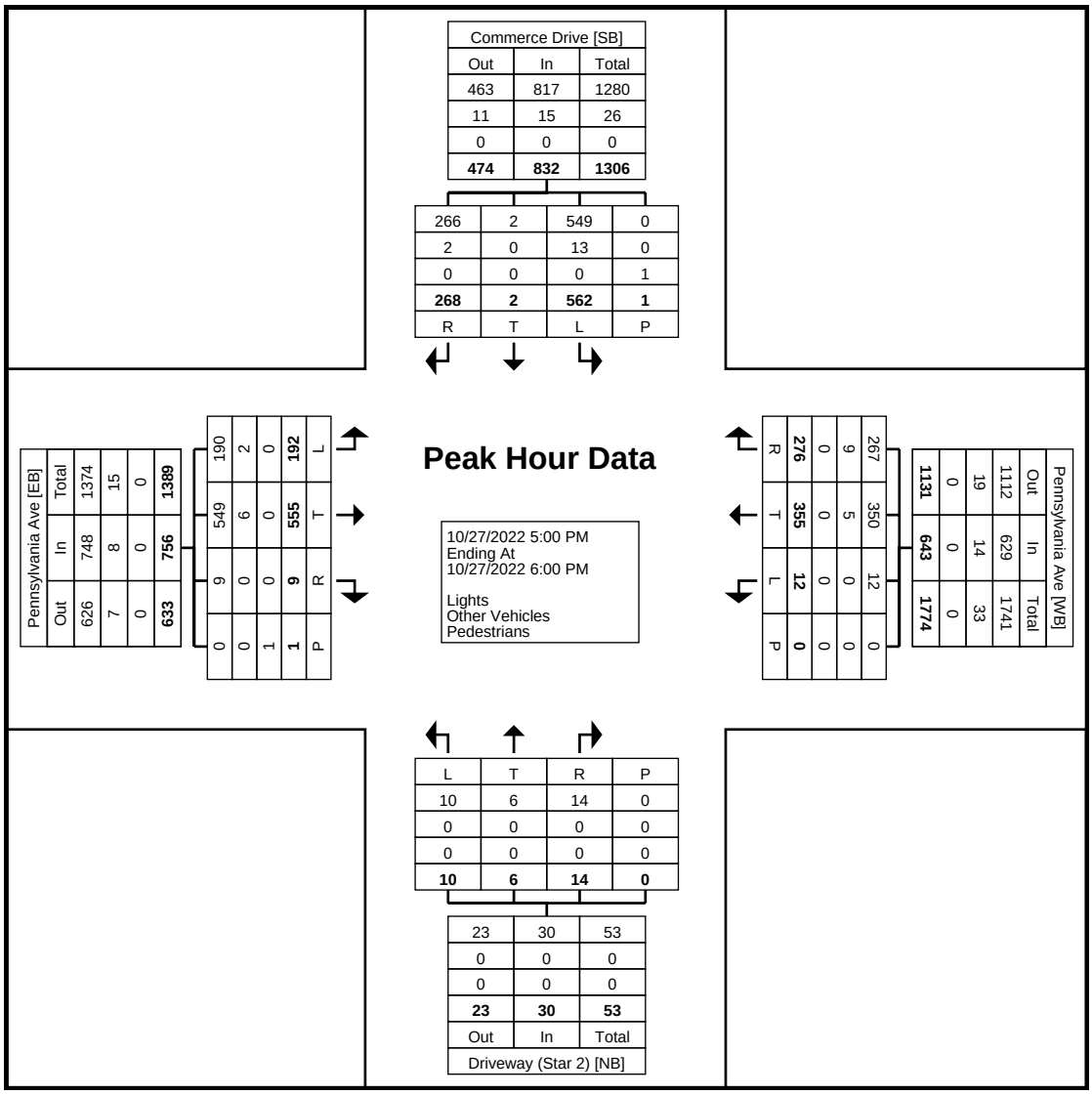
Turning Movement Peak Hour Data (5:00 PM)

Start Time	Pennsylvania Ave Eastbound						Pennsylvania Ave Westbound						Driveway (Star 2) Northbound						Commerce Drive Southbound						Int. Total
	Left	Thru	Right	Right on Red	Peds	App. Total	Left	Thru	Right	Right on Red	Peds	App. Total	Left	Thru	Right	Right on Red	Peds	App. Total	Left	Thru	Right	Right on Red	Peds	App. Total	
5:00 PM	41	140	0	0	0	181	4	75	44	32	0	155	1	2	2	1	0	6	199	0	37	46	0	282	624
5:15 PM	28	142	3	0	0	173	2	89	49	15	0	155	1	1	0	2	0	4	137	0	45	37	0	219	551
5:30 PM	64	145	2	0	1	211	3	94	48	16	0	161	3	0	1	2	0	6	123	1	30	23	1	177	555
5:45 PM	59	128	4	0	0	191	3	97	49	23	0	172	5	3	0	6	0	14	103	1	28	22	0	154	531
Total	192	555	9	0	1	756	12	355	190	86	0	643	10	6	3	11	0	30	562	2	140	128	1	832	2261
Approach %	25.4	73.4	1.2	0.0	-	-	1.9	55.2	29.5	13.4	-	-	33.3	20.0	10.0	36.7	-	-	67.5	0.2	16.8	15.4	-	-	-
Total %	8.5	24.5	0.4	0.0	-	33.4	0.5	15.7	8.4	3.8	-	28.4	0.4	0.3	0.1	0.5	-	1.3	24.9	0.1	6.2	5.7	-	36.8	-
PHF	0.750	0.957	0.563	0.000	-	0.896	0.750	0.915	0.969	0.672	-	0.935	0.500	0.500	0.375	0.458	-	0.536	0.706	0.500	0.778	0.696	-	0.738	0.906
Lights	190	549	9	0	-	748	12	350	183	84	-	629	10	6	3	11	-	30	549	2	139	127	-	817	2224
% Lights	99.0	98.9	100.0	-	-	98.9	100.0	98.6	96.3	97.7	-	97.8	100.0	100.0	100.0	100.0	-	100.0	97.7	100.0	99.3	99.2	-	98.2	98.4
Other Vehicles	2	6	0	0	-	8	0	5	7	2	-	14	0	0	0	0	-	0	13	0	1	1	-	15	37
% Other Vehicles	1.0	1.1	0.0	-	-	1.1	0.0	1.4	3.7	2.3	-	2.2	0.0	0.0	0.0	0.0	-	0.0	2.3	0.0	0.7	0.8	-	1.8	1.6
Pedestrians	-	-	-	-	1	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	1	-	-
% Pedestrians	-	-	-	-	100.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	100.0	-	-

Traffic Planning and Design, Inc
2500 East High Street
Suite 650
Pottstown, Pennsylvania, United States 19464
610.326.3100

Counter: MIO:
Set up By JH::

Count Name: 2 Commerce Drive-Driveway (Star 2) & Pennsylvania Ave
Site Code:
Start Date: 10/27/2022



Turning Movement Peak Hour Data Plot (5:00 PM)

Counter: MIO:
Set up By JH::

Traffic Planning and Design, Inc
2500 East High Street
Suite 650
Pottstown, Pennsylvania, United States 19464
610.326.3100

Count Name: 2 Commerce Drive-Driveway (Star 2) & Pennsylvania Ave
Site Code:
Start Date: 10/27/2022

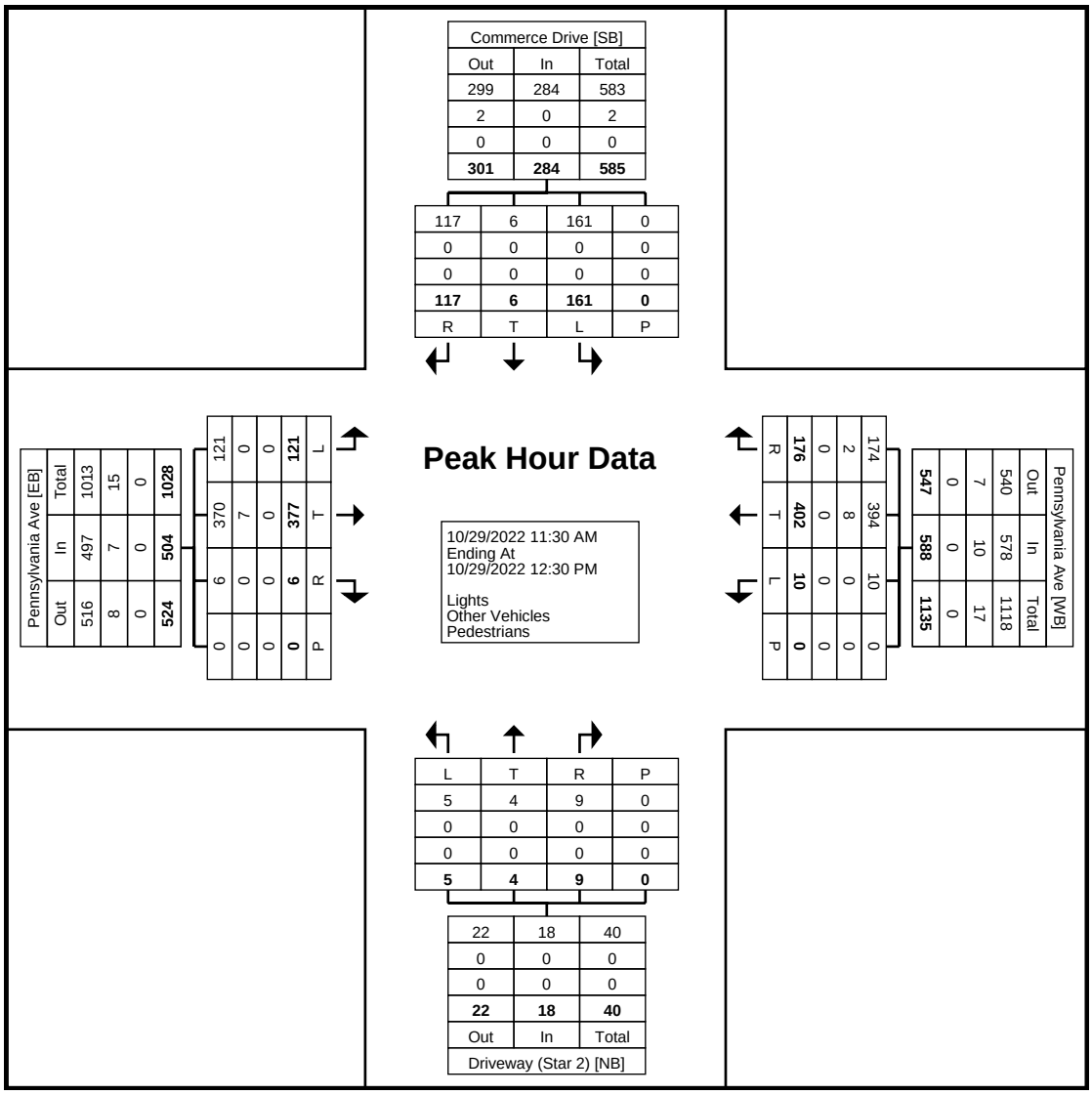
Turning Movement Peak Hour Data (11:30 AM)

Start Time	Pennsylvania Ave Eastbound						Pennsylvania Ave Westbound						Driveway (Star 2) Northbound						Commerce Drive Southbound						Int. Total
	Left	Thru	Right	Right on Red	Peds	App. Total	Left	Thru	Right	Right on Red	Peds	App. Total	Left	Thru	Right	Right on Red	Peds	App. Total	Left	Thru	Right	Right on Red	Peds	App. Total	
11:30 AM	31	103	2	0	0	136	2	105	24	14	0	145	2	1	2	1	0	6	31	0	16	14	0	61	348
11:45 AM	35	85	2	0	0	122	1	107	40	15	0	163	1	0	2	0	0	3	45	1	12	21	0	79	367
12:00 PM	23	96	1	1	0	121	4	94	38	11	0	147	1	2	1	3	0	7	55	2	15	10	0	82	357
12:15 PM	32	93	0	0	0	125	3	96	30	4	0	133	1	1	0	0	0	2	30	3	17	12	0	62	322
Total	121	377	5	1	0	504	10	402	132	44	0	588	5	4	5	4	0	18	161	6	60	57	0	284	1394
Approach %	24.0	74.8	1.0	0.2	-	-	1.7	68.4	22.4	7.5	-	-	27.8	22.2	27.8	22.2	-	-	56.7	2.1	21.1	20.1	-	-	-
Total %	8.7	27.0	0.4	0.1	-	36.2	0.7	28.8	9.5	3.2	-	42.2	0.4	0.3	0.4	0.3	-	1.3	11.5	0.4	4.3	4.1	-	20.4	-
PHF	0.864	0.915	0.625	0.250	-	0.926	0.625	0.939	0.825	0.733	-	0.902	0.625	0.500	0.625	0.333	-	0.643	0.732	0.500	0.882	0.679	-	0.866	0.950
Lights	121	370	5	1	-	497	10	394	131	43	-	578	5	4	5	4	-	18	161	6	60	57	-	284	1377
% Lights	100.0	98.1	100.0	100.0	-	98.6	100.0	98.0	99.2	97.7	-	98.3	100.0	100.0	100.0	100.0	-	100.0	100.0	100.0	100.0	100.0	-	100.0	98.8
Other Vehicles	0	7	0	0	-	7	0	8	1	1	-	10	0	0	0	0	-	0	0	0	0	0	-	0	17
% Other Vehicles	0.0	1.9	0.0	0.0	-	1.4	0.0	2.0	0.8	2.3	-	1.7	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	-	0.0	1.2
Pedestrians	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Traffic Planning and Design, Inc
2500 East High Street
Suite 650
Pottstown, Pennsylvania, United States 19464
610.326.3100

Counter: MIO:
Set up By JH::

Count Name: 2 Commerce Drive-Driveway (Star 2) & Pennsylvania Ave
Site Code:
Start Date: 10/27/2022



Turning Movement Peak Hour Data Plot (11:30 AM)

Counter: MIO:
Set up By JH::

Traffic Planning and Design, Inc
2500 East High Street
Suite 650
Pottstown, Pennsylvania, United States 19464
610.326.3100

Count Name: 1 Western-most exit only DW (Star 1) & Pennsylvania Ave
Site Code:
Start Date: 10/27/2022

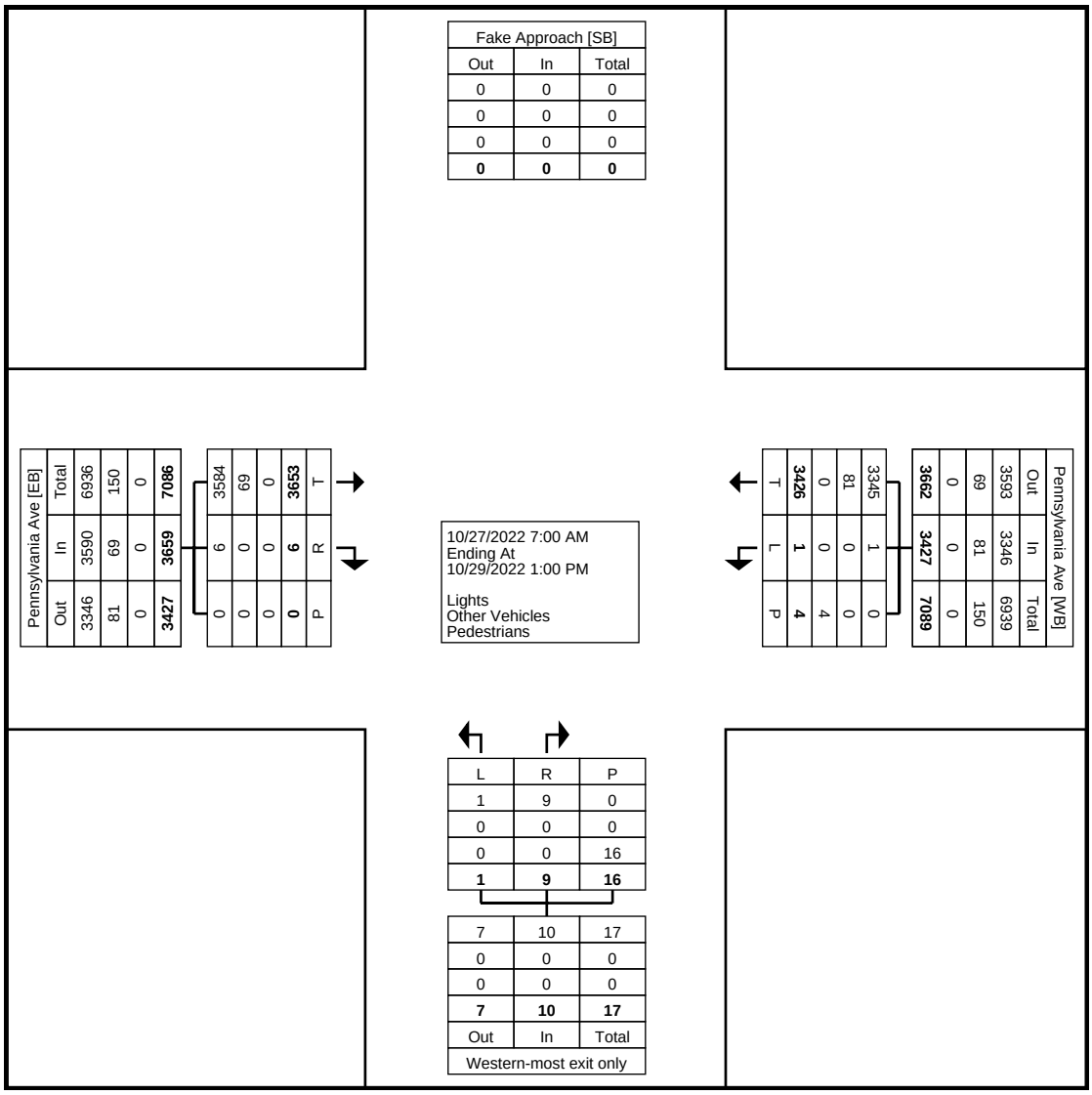
Turning Movement Data

Start Time	Pennsylvania Ave Eastbound				Pennsylvania Ave Westbound				Western-most exit only DW (Star 1) Northbound				Int. Total
	Thru	Right	Peds	App. Total	Left	Thru	Peds	App. Total	Left	Right	Peds	App. Total	
7:00 AM	118	1	0	119	0	167	0	167	0	1	1	1	287
7:15 AM	152	1	0	153	0	138	0	138	0	0	2	0	291
7:30 AM	138	0	0	138	0	163	0	163	0	0	0	0	301
7:45 AM	168	0	0	168	0	153	0	153	0	1	1	1	322
Hourly Total	576	2	0	578	0	621	0	621	0	2	4	2	1201
8:00 AM	174	0	0	174	0	146	0	146	0	1	0	1	321
8:15 AM	165	0	0	165	0	140	0	140	0	0	0	0	305
8:30 AM	169	0	0	169	0	162	4	162	0	0	8	0	331
8:45 AM	147	0	0	147	0	164	0	164	0	0	0	0	311
Hourly Total	655	0	0	655	0	612	4	612	0	1	8	1	1268
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-
4:00 PM	197	1	0	198	0	146	0	146	0	0	0	0	344
4:15 PM	170	1	0	171	0	143	0	143	0	0	0	0	314
4:30 PM	159	0	0	159	0	133	0	133	0	0	0	0	292
4:45 PM	173	0	0	173	0	133	0	133	0	0	0	0	306
Hourly Total	699	2	0	701	0	555	0	555	0	0	0	0	1256
5:00 PM	186	1	0	187	0	155	0	155	0	1	1	1	343
5:15 PM	172	1	0	173	0	170	0	170	1	1	0	2	345
5:30 PM	213	0	0	213	0	146	0	146	0	0	2	0	359
5:45 PM	194	0	0	194	0	151	0	151	0	1	0	1	346
Hourly Total	765	2	0	767	0	622	0	622	1	3	3	4	1393
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-
11:00 AM	111	0	0	111	0	111	0	111	0	0	0	0	222
11:15 AM	111	0	0	111	0	128	0	128	0	0	1	0	239
11:30 AM	135	0	0	135	0	131	0	131	0	0	0	0	266
11:45 AM	113	0	0	113	0	140	0	140	0	1	0	1	254
Hourly Total	470	0	0	470	0	510	0	510	0	1	1	1	981
12:00 PM	129	0	0	129	0	120	0	120	0	1	0	1	250
12:15 PM	126	0	0	126	0	127	0	127	0	0	0	0	253
12:30 PM	135	0	0	135	1	120	0	121	0	0	0	0	256
12:45 PM	98	0	0	98	0	139	0	139	0	1	0	1	238
Hourly Total	488	0	0	488	1	506	0	507	0	2	0	2	997
Grand Total	3653	6	0	3659	1	3426	4	3427	1	9	16	10	7096
Approach %	99.8	0.2	-	-	0.0	100.0	-	-	10.0	90.0	-	-	-
Total %	51.5	0.1	-	51.6	0.0	48.3	-	48.3	0.0	0.1	-	0.1	-
Lights	3584	6	-	3590	1	3345	-	3346	1	9	-	10	6946
% Lights	98.1	100.0	-	98.1	100.0	97.6	-	97.6	100.0	100.0	-	100.0	97.9
Other Vehicles	69	0	-	69	0	81	-	81	0	0	-	0	150
% Other Vehicles	1.9	0.0	-	1.9	0.0	2.4	-	2.4	0.0	0.0	-	0.0	2.1
Pedestrians	-	-	0	-	-	-	4	-	-	-	16	-	-
% Pedestrians	-	-	-	-	-	-	100.0	-	-	-	100.0	-	-

Counter: MIO:
Set up By JH::

Traffic Planning and Design, Inc
2500 East High Street
Suite 650
Pottstown, Pennsylvania, United States 19464
610.326.3100

Count Name: 1 Western-most exit only DW (Star 1) & Pennsylvania Ave
Site Code:
Start Date: 10/27/2022



Turning Movement Data Plot

Counter: MIO:
Set up By JH::

Traffic Planning and Design, Inc
2500 East High Street
Suite 650
Pottstown, Pennsylvania, United States 19464
610.326.3100

Count Name: 1 Western-most exit only DW (Star 1) & Pennsylvania Ave
Site Code:
Start Date: 10/27/2022

Turning Movement Peak Hour Data (7:45 AM)

Start Time	Pennsylvania Ave Eastbound				Pennsylvania Ave Westbound				Western-most exit only DW (Star 1) Northbound				
	Thru	Right	Peds	App. Total	Left	Thru	Peds	App. Total	Left	Right	Peds	App. Total	Int. Total
7:45 AM	168	0	0	168	0	153	0	153	0	1	1	1	322
8:00 AM	174	0	0	174	0	146	0	146	0	1	0	1	321
8:15 AM	165	0	0	165	0	140	0	140	0	0	0	0	305
8:30 AM	169	0	0	169	0	162	4	162	0	0	8	0	331
Total	676	0	0	676	0	601	4	601	0	2	9	2	1279
Approach %	100.0	0.0	-	-	0.0	100.0	-	-	0.0	100.0	-	-	-
Total %	52.9	0.0	-	52.9	0.0	47.0	-	47.0	0.0	0.2	-	0.2	-
PHF	0.971	0.000	-	0.971	0.000	0.927	-	0.927	0.000	0.500	-	0.500	0.966
Lights	659	0	-	659	0	576	-	576	0	2	-	2	1237
% Lights	97.5	-	-	97.5	-	95.8	-	95.8	-	100.0	-	100.0	96.7
Other Vehicles	17	0	-	17	0	25	-	25	0	0	-	0	42
% Other Vehicles	2.5	-	-	2.5	-	4.2	-	4.2	-	0.0	-	0.0	3.3
Pedestrians	-	-	0	-	-	-	4	-	-	-	9	-	-
% Pedestrians	-	-	-	-	-	-	100.0	-	-	-	100.0	-	-

Traffic Planning and Design, Inc
2500 East High Street
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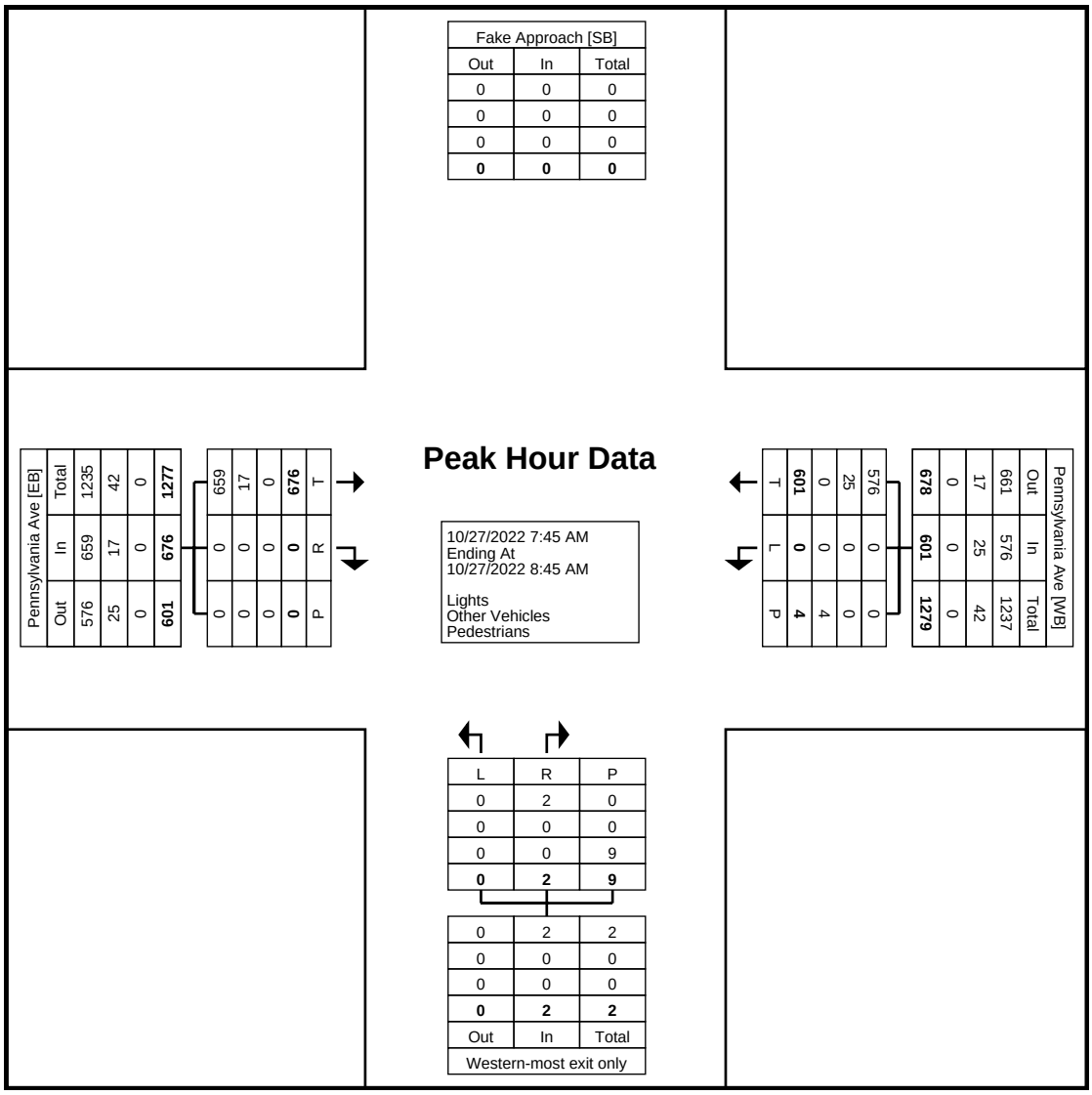
610.326.3100

Counter: MIO:
Set up By JH::

Count Name: 1 Western-most exit only DW (Star 1) & Pennsylvania Ave
Site Code:
Start Date: 10/27/2022



Turning Movement Peak Hour Data Plot (7:45 AM)

Counter: MIO:
Set up By JH::

Traffic Planning and Design, Inc
2500 East High Street
Suite 650
Pottstown, Pennsylvania, United States 19464
610.326.3100

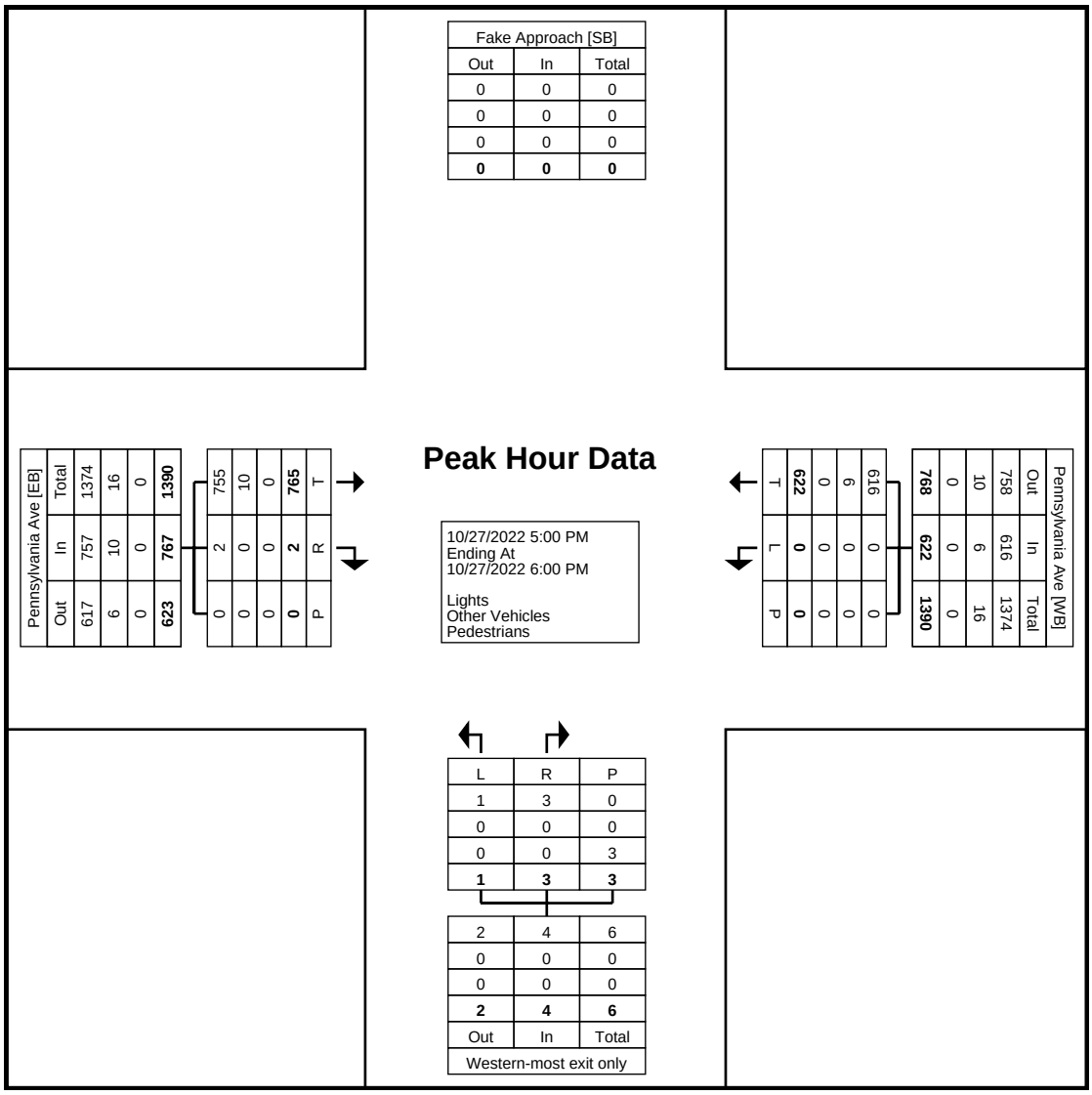
Turning Movement Peak Hour Data (5:00 PM)

Start Time	Pennsylvania Ave Eastbound				Pennsylvania Ave Westbound				Western-most exit only DW (Star 1) Northbound				
	Thru	Right	Peds	App. Total	Left	Thru	Peds	App. Total	Left	Right	Peds	App. Total	Int. Total
5:00 PM	186	1	0	187	0	155	0	155	0	1	1	1	343
5:15 PM	172	1	0	173	0	170	0	170	1	1	0	2	345
5:30 PM	213	0	0	213	0	146	0	146	0	0	2	0	359
5:45 PM	194	0	0	194	0	151	0	151	0	1	0	1	346
Total	765	2	0	767	0	622	0	622	1	3	3	4	1393
Approach %	99.7	0.3	-	-	0.0	100.0	-	-	25.0	75.0	-	-	-
Total %	54.9	0.1	-	55.1	0.0	44.7	-	44.7	0.1	0.2	-	0.3	-
PHF	0.898	0.500	-	0.900	0.000	0.915	-	0.915	0.250	0.750	-	0.500	0.970
Lights	755	2	-	757	0	616	-	616	1	3	-	4	1377
% Lights	98.7	100.0	-	98.7	-	99.0	-	99.0	100.0	100.0	-	100.0	98.9
Other Vehicles	10	0	-	10	0	6	-	6	0	0	-	0	16
% Other Vehicles	1.3	0.0	-	1.3	-	1.0	-	1.0	0.0	0.0	-	0.0	1.1
Pedestrians	-	-	0	-	-	-	0	-	-	-	3	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	100.0	-	-

Traffic Planning and Design, Inc
2500 East High Street
Suite 650
Pottstown, Pennsylvania, United States 19464
610.326.3100

Counter: MIO:
Set up By JH::

Count Name: 1 Western-most exit only DW (Star 1) & Pennsylvania Ave
Site Code:
Start Date: 10/27/2022



Turning Movement Peak Hour Data Plot (5:00 PM)

Traffic Planning and Design, Inc
2500 East High Street
Suite 650
Pottstown, Pennsylvania, United States 19464
610.326.3100

Counter: MIO:
Set up By JH::

Count Name: 1 Western-most exit only DW (Star 1) & Pennsylvania Ave
Site Code:
Start Date: 10/27/2022

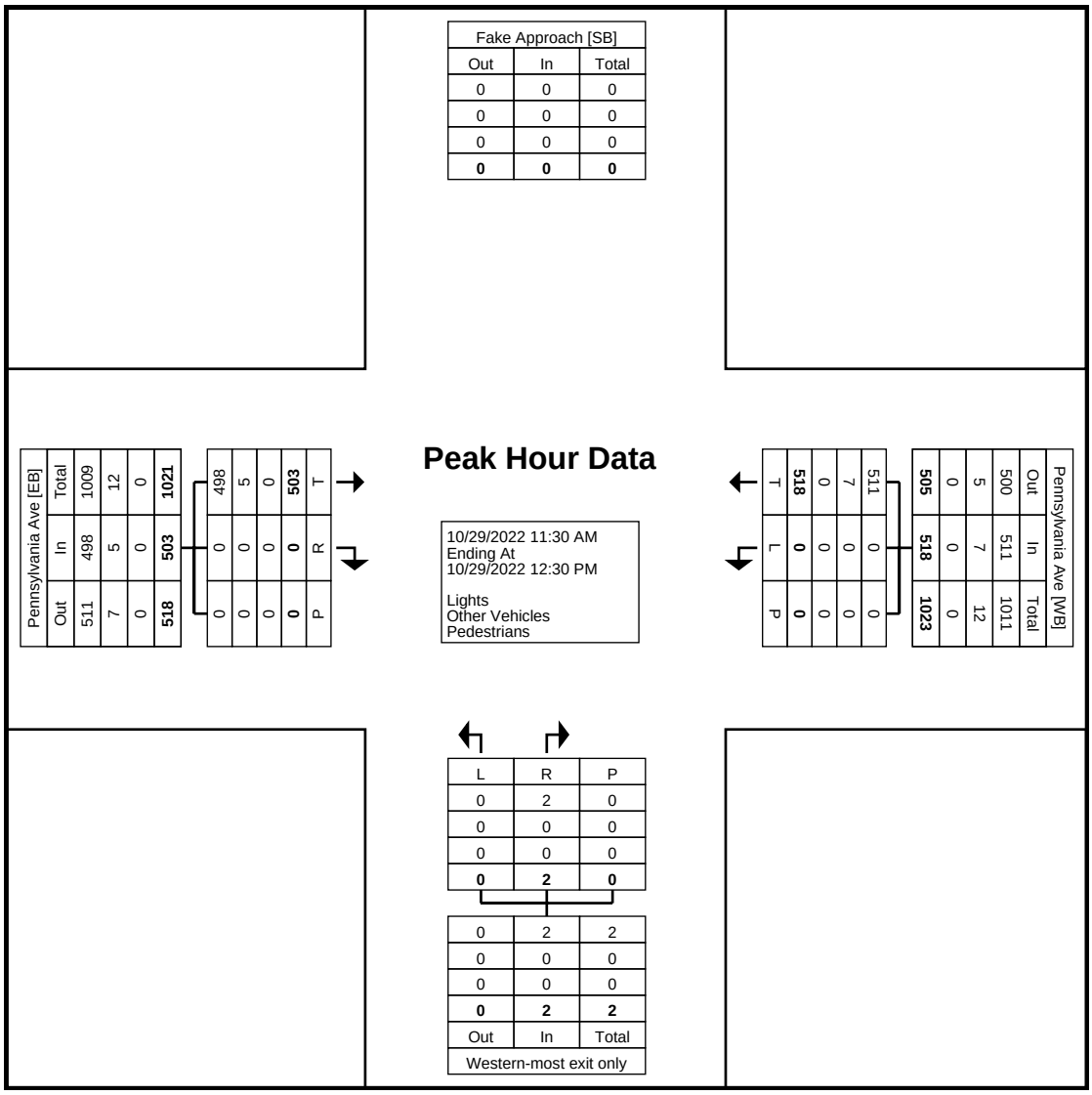
Turning Movement Peak Hour Data (11:30 AM)

Start Time	Pennsylvania Ave Eastbound				Pennsylvania Ave Westbound				Western-most exit only DW (Star 1) Northbound				
	Thru	Right	Peds	App. Total	Left	Thru	Peds	App. Total	Left	Right	Peds	App. Total	Int. Total
11:30 AM	135	0	0	135	0	131	0	131	0	0	0	0	266
11:45 AM	113	0	0	113	0	140	0	140	0	1	0	1	254
12:00 PM	129	0	0	129	0	120	0	120	0	1	0	1	250
12:15 PM	126	0	0	126	0	127	0	127	0	0	0	0	253
Total	503	0	0	503	0	518	0	518	0	2	0	2	1023
Approach %	100.0	0.0	-	-	0.0	100.0	-	-	0.0	100.0	-	-	-
Total %	49.2	0.0	-	49.2	0.0	50.6	-	50.6	0.0	0.2	-	0.2	-
PHF	0.931	0.000	-	0.931	0.000	0.925	-	0.925	0.000	0.500	-	0.500	0.961
Lights	498	0	-	498	0	511	-	511	0	2	-	2	1011
% Lights	99.0	-	-	99.0	-	98.6	-	98.6	-	100.0	-	100.0	98.8
Other Vehicles	5	0	-	5	0	7	-	7	0	0	-	0	12
% Other Vehicles	1.0	-	-	1.0	-	1.4	-	1.4	-	0.0	-	0.0	1.2
Pedestrians	-	-	0	-	-	-	0	-	-	-	0	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-

Traffic Planning and Design, Inc
2500 East High Street
Suite 650
Pottstown, Pennsylvania, United States 19464
610.326.3100

Counter: MIO:
Set up By JH::

Count Name: 1 Western-most exit only DW (Star 1) & Pennsylvania Ave
Site Code:
Start Date: 10/27/2022



Turning Movement Peak Hour Data Plot (11:30 AM)

Counter: MIO:
Set up By JH::

Traffic Planning and Design, Inc
2500 East High Street
Suite 650
Pottstown, Pennsylvania, United States 19464
610.326.3100

Count Name: 3 Exit-only Driveway (Star 3) & Pennsylvania Ave
Site Code:
Start Date: 10/27/2022

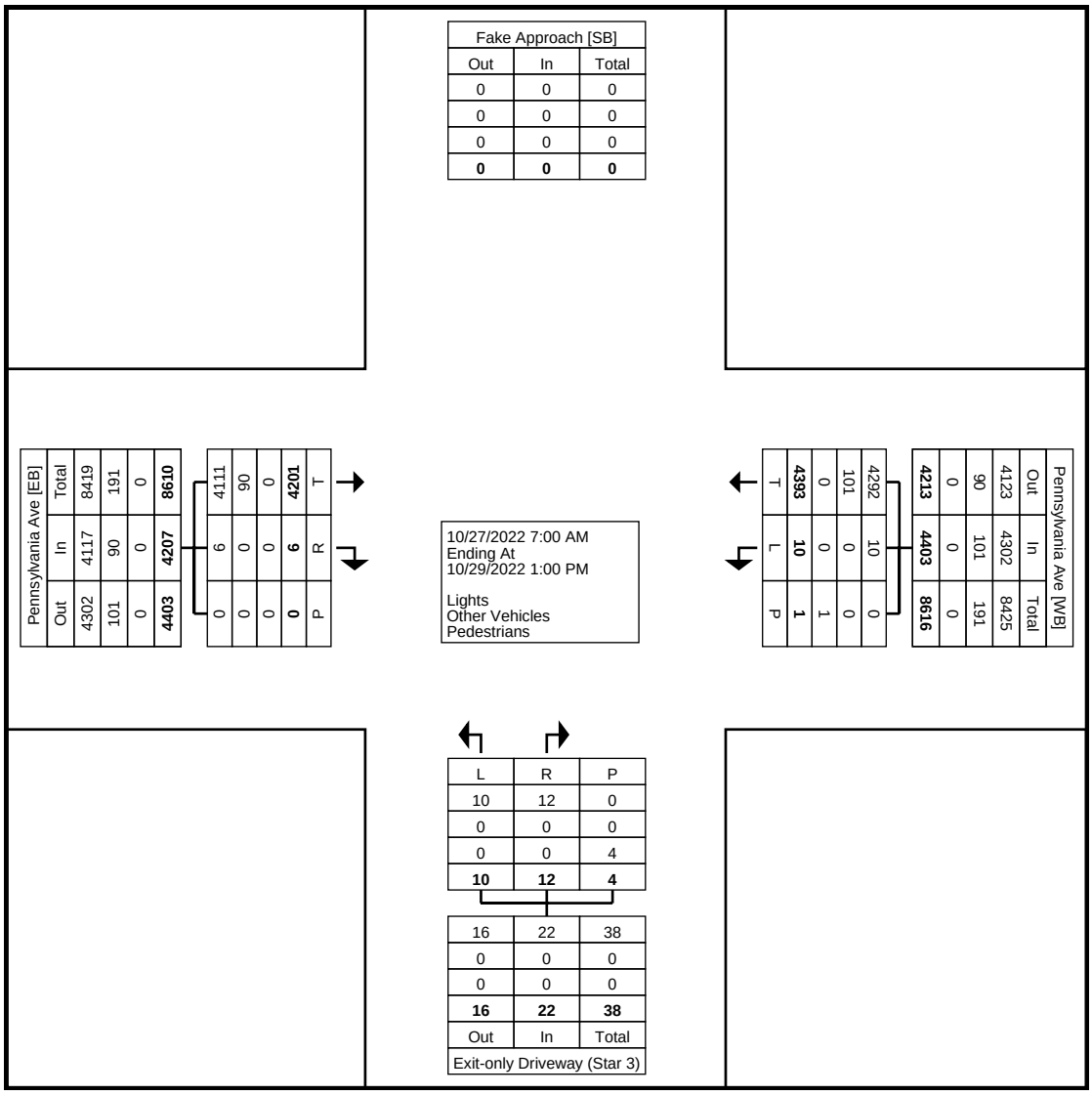
Turning Movement Data

Start Time	Pennsylvania Ave Eastbound				Pennsylvania Ave Westbound				Exit-only Driveway (Star 3) Northbound				
	Thru	Right	Peds	App. Total	Left	Thru	Peds	App. Total	Left	Right	Peds	App. Total	Int. Total
7:00 AM	117	0	0	117	0	185	0	185	0	0	1	0	302
7:15 AM	130	1	0	131	2	191	0	193	0	0	0	0	324
7:30 AM	139	0	0	139	1	245	0	246	0	0	0	0	385
7:45 AM	137	1	0	138	0	254	0	254	0	0	0	0	392
Hourly Total	523	2	0	525	3	875	0	878	0	0	1	0	1403
8:00 AM	157	0	0	157	1	269	1	270	0	0	0	0	427
8:15 AM	142	0	0	142	1	280	0	281	0	0	0	0	423
8:30 AM	130	1	0	131	0	283	0	283	1	0	2	1	415
8:45 AM	137	1	0	138	2	287	0	289	0	0	0	0	427
Hourly Total	566	2	0	568	4	1119	1	1123	1	0	2	1	1692
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-
4:00 PM	255	0	0	255	1	177	0	178	0	3	0	3	436
4:15 PM	200	0	0	200	0	174	0	174	1	0	0	1	375
4:30 PM	235	1	0	236	0	140	0	140	1	0	0	1	377
4:45 PM	243	0	0	243	0	144	0	144	0	1	0	1	388
Hourly Total	933	1	0	934	1	635	0	636	2	4	0	6	1576
5:00 PM	340	0	0	340	0	154	0	154	0	0	0	0	494
5:15 PM	275	0	0	275	0	158	0	158	1	4	0	5	438
5:30 PM	271	0	0	271	0	156	0	156	0	1	0	1	428
5:45 PM	232	0	0	232	0	180	0	180	0	0	0	0	412
Hourly Total	1118	0	0	1118	0	648	0	648	1	5	0	6	1772
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-
11:00 AM	130	0	0	130	1	107	0	108	2	0	0	2	240
11:15 AM	121	0	0	121	0	128	0	128	0	0	1	0	249
11:30 AM	135	0	0	135	1	141	0	142	1	1	0	2	279
11:45 AM	126	0	0	126	0	168	0	168	0	1	0	1	295
Hourly Total	512	0	0	512	2	544	0	546	3	2	1	5	1063
12:00 PM	155	0	0	155	0	137	0	137	1	0	0	1	293
12:15 PM	125	0	0	125	0	133	0	133	0	0	0	0	258
12:30 PM	151	1	0	152	0	139	0	139	1	1	0	2	293
12:45 PM	118	0	0	118	0	163	0	163	1	0	0	1	282
Hourly Total	549	1	0	550	0	572	0	572	3	1	0	4	1126
Grand Total	4201	6	0	4207	10	4393	1	4403	10	12	4	22	8632
Approach %	99.9	0.1	-	-	0.2	99.8	-	-	45.5	54.5	-	-	-
Total %	48.7	0.1	-	48.7	0.1	50.9	-	51.0	0.1	0.1	-	0.3	-
Lights	4111	6	-	4117	10	4292	-	4302	10	12	-	22	8441
% Lights	97.9	100.0	-	97.9	100.0	97.7	-	97.7	100.0	100.0	-	100.0	97.8
Other Vehicles	90	0	-	90	0	101	-	101	0	0	-	0	191
% Other Vehicles	2.1	0.0	-	2.1	0.0	2.3	-	2.3	0.0	0.0	-	0.0	2.2
Pedestrians	-	-	0	-	-	-	1	-	-	-	4	-	-
% Pedestrians	-	-	-	-	-	-	100.0	-	-	-	100.0	-	-

Traffic Planning and Design, Inc
2500 East High Street
Suite 650
Pottstown, Pennsylvania, United States 19464
610.326.3100

Counter: MIO:
Set up By JH::

Count Name: 3 Exit-only Driveway (Star 3) & Pennsylvania Ave
Site Code:
Start Date: 10/27/2022



Turning Movement Data Plot

Counter: MIO:
Set up By JH::

Traffic Planning and Design, Inc
2500 East High Street
Suite 650
Pottstown, Pennsylvania, United States 19464
610.326.3100

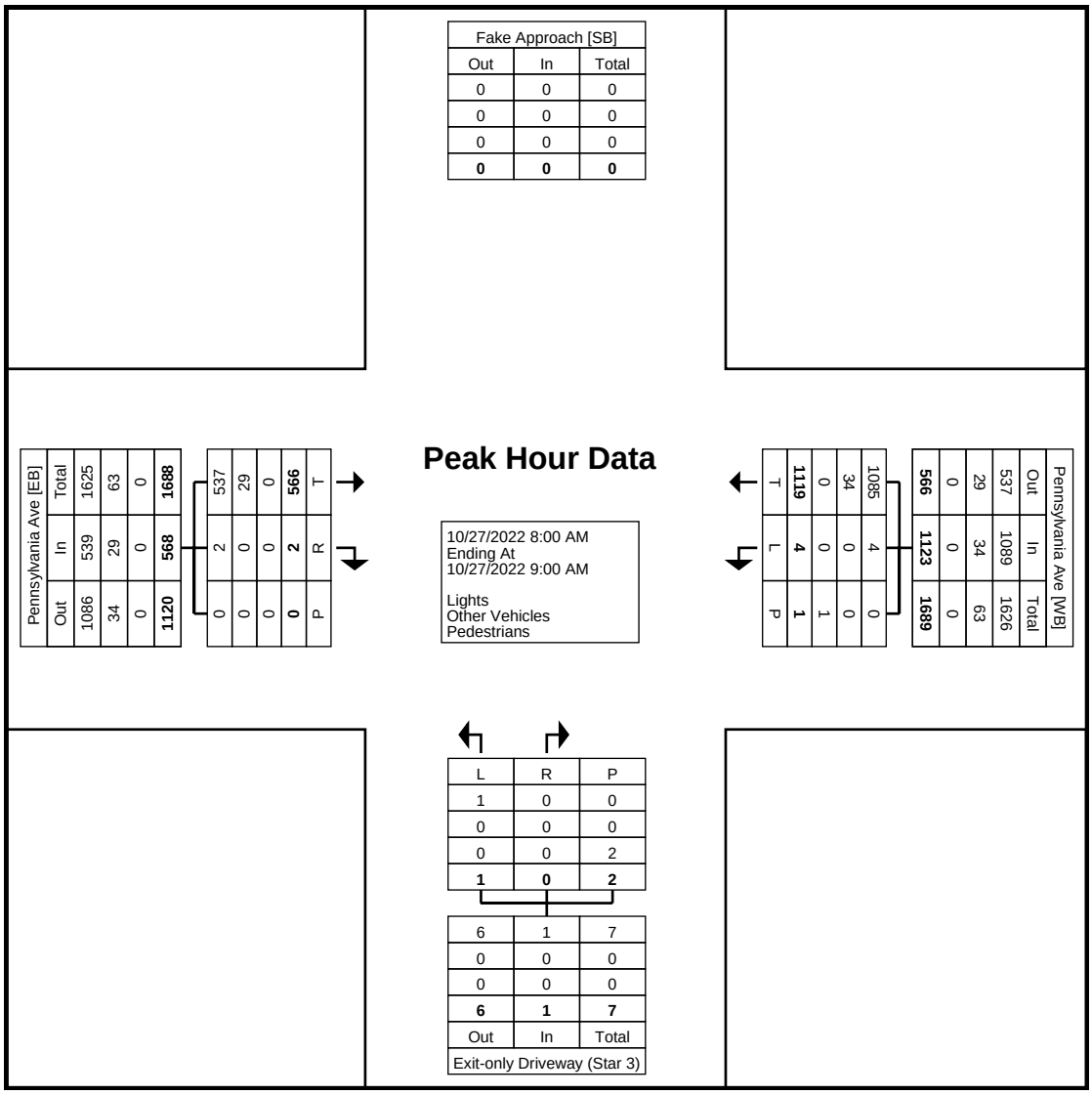
Turning Movement Peak Hour Data (8:00 AM)

Start Time	Pennsylvania Ave Eastbound				Pennsylvania Ave Westbound				Exit-only Driveway (Star 3) Northbound				
	Thru	Right	Peds	App. Total	Left	Thru	Peds	App. Total	Left	Right	Peds	App. Total	Int. Total
8:00 AM	157	0	0	157	1	269	1	270	0	0	0	0	427
8:15 AM	142	0	0	142	1	280	0	281	0	0	0	0	423
8:30 AM	130	1	0	131	0	283	0	283	1	0	2	1	415
8:45 AM	137	1	0	138	2	287	0	289	0	0	0	0	427
Total	566	2	0	568	4	1119	1	1123	1	0	2	1	1692
Approach %	99.6	0.4	-	-	0.4	99.6	-	-	100.0	0.0	-	-	-
Total %	33.5	0.1	-	33.6	0.2	66.1	-	66.4	0.1	0.0	-	0.1	-
PHF	0.901	0.500	-	0.904	0.500	0.975	-	0.971	0.250	0.000	-	0.250	0.991
Lights	537	2	-	539	4	1085	-	1089	1	0	-	1	1629
% Lights	94.9	100.0	-	94.9	100.0	97.0	-	97.0	100.0	-	-	100.0	96.3
Other Vehicles	29	0	-	29	0	34	-	34	0	0	-	0	63
% Other Vehicles	5.1	0.0	-	5.1	0.0	3.0	-	3.0	0.0	-	-	0.0	3.7
Pedestrians	-	-	0	-	-	-	1	-	-	-	2	-	-
% Pedestrians	-	-	-	-	-	-	100.0	-	-	-	100.0	-	-

Traffic Planning and Design, Inc
2500 East High Street
Suite 650
Pottstown, Pennsylvania, United States 19464
610.326.3100

Counter: MIO:
Set up By JH::

Count Name: 3 Exit-only Driveway (Star 3) & Pennsylvania Ave
Site Code:
Start Date: 10/27/2022



Turning Movement Peak Hour Data Plot (8:00 AM)

Counter: MIO:
Set up By JH::

Traffic Planning and Design, Inc
2500 East High Street
Suite 650
Pottstown, Pennsylvania, United States 19464
610.326.3100

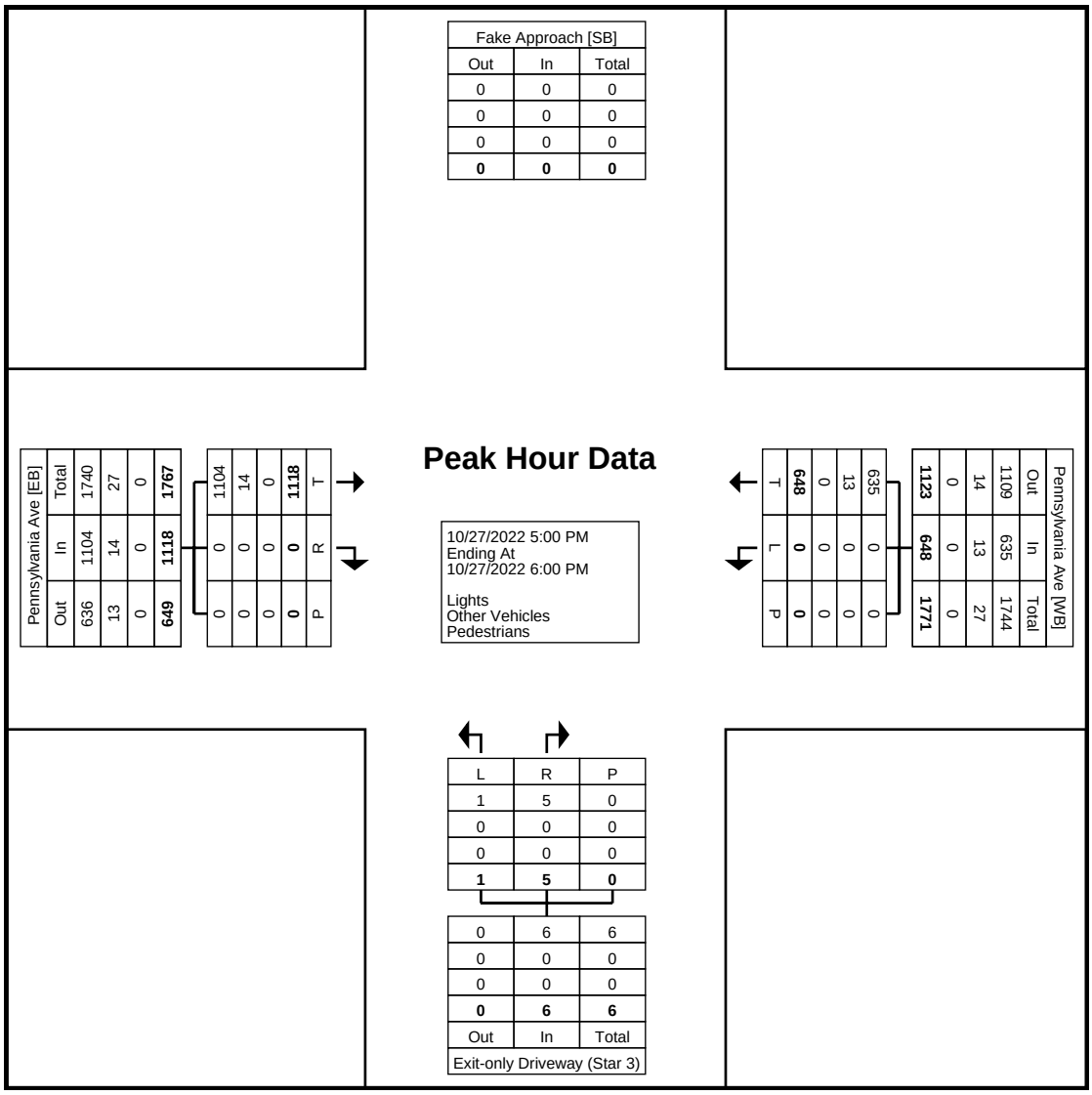
Turning Movement Peak Hour Data (5:00 PM)

Start Time	Pennsylvania Ave Eastbound				Pennsylvania Ave Westbound				Exit-only Driveway (Star 3) Northbound				
	Thru	Right	Peds	App. Total	Left	Thru	Peds	App. Total	Left	Right	Peds	App. Total	Int. Total
5:00 PM	340	0	0	340	0	154	0	154	0	0	0	0	494
5:15 PM	275	0	0	275	0	158	0	158	1	4	0	5	438
5:30 PM	271	0	0	271	0	156	0	156	0	1	0	1	428
5:45 PM	232	0	0	232	0	180	0	180	0	0	0	0	412
Total	1118	0	0	1118	0	648	0	648	1	5	0	6	1772
Approach %	100.0	0.0	-	-	0.0	100.0	-	-	16.7	83.3	-	-	-
Total %	63.1	0.0	-	63.1	0.0	36.6	-	36.6	0.1	0.3	-	0.3	-
PHF	0.822	0.000	-	0.822	0.000	0.900	-	0.900	0.250	0.313	-	0.300	0.897
Lights	1104	0	-	1104	0	635	-	635	1	5	-	6	1745
% Lights	98.7	-	-	98.7	-	98.0	-	98.0	100.0	100.0	-	100.0	98.5
Other Vehicles	14	0	-	14	0	13	-	13	0	0	-	0	27
% Other Vehicles	1.3	-	-	1.3	-	2.0	-	2.0	0.0	0.0	-	0.0	1.5
Pedestrians	-	-	0	-	-	-	0	-	-	-	0	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-

Traffic Planning and Design, Inc
2500 East High Street
Suite 650
Pottstown, Pennsylvania, United States 19464
610.326.3100

Counter: MIO:
Set up By JH::

Count Name: 3 Exit-only Driveway (Star 3) & Pennsylvania Ave
Site Code:
Start Date: 10/27/2022



Turning Movement Peak Hour Data Plot (5:00 PM)

Traffic Planning and Design, Inc
2500 East High Street
Suite 650
Pottstown, Pennsylvania, United States 19464
610.326.3100

Counter: MIO:
Set up By JH::

Count Name: 3 Exit-only Driveway (Star 3) & Pennsylvania Ave
Site Code:
Start Date: 10/27/2022

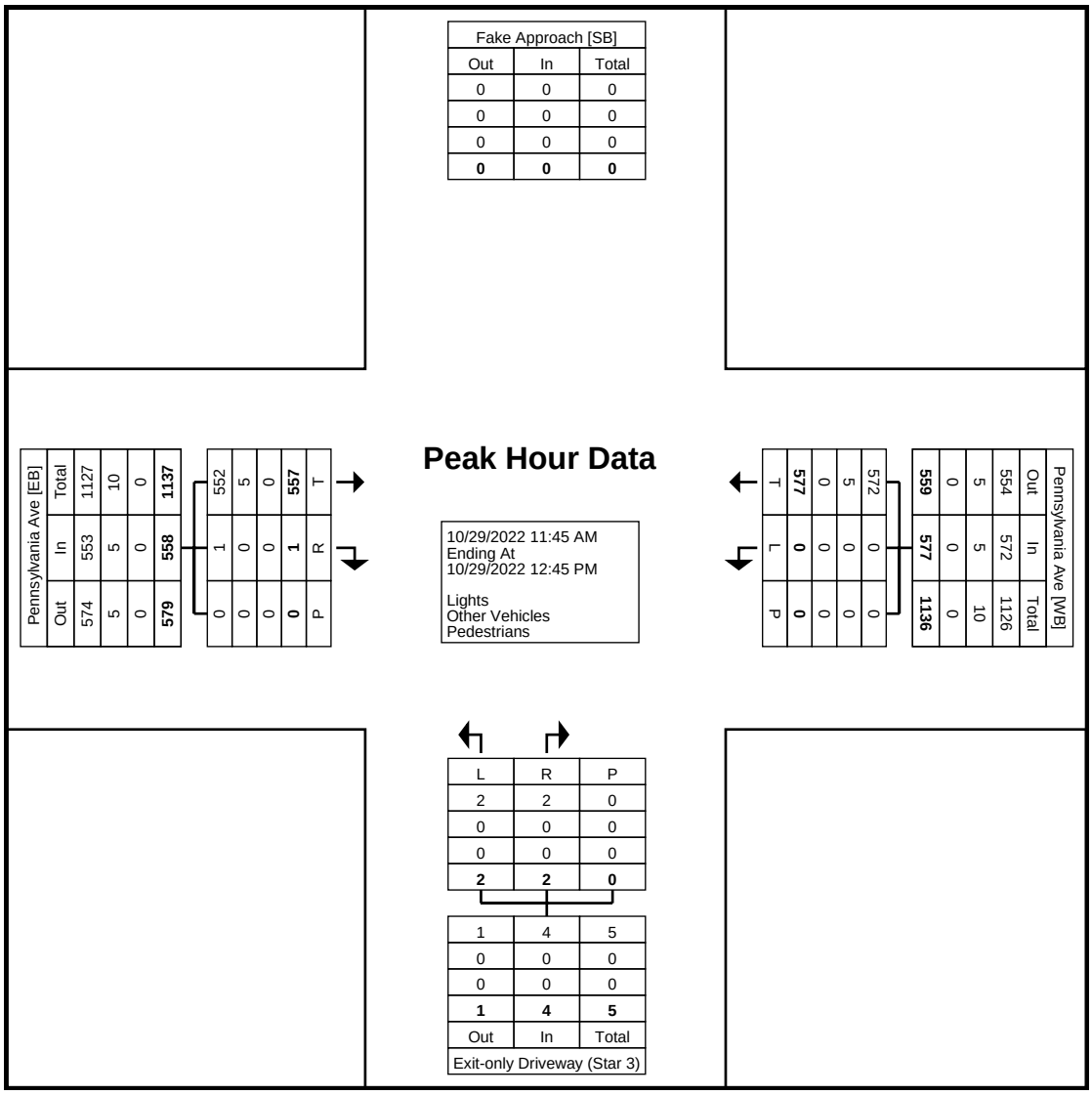
Turning Movement Peak Hour Data (11:45 AM)

Start Time	Pennsylvania Ave Eastbound				Pennsylvania Ave Westbound				Exit-only Driveway (Star 3) Northbound				
	Thru	Right	Peds	App. Total	Left	Thru	Peds	App. Total	Left	Right	Peds	App. Total	Int. Total
11:45 AM	126	0	0	126	0	168	0	168	0	1	0	1	295
12:00 PM	155	0	0	155	0	137	0	137	1	0	0	1	293
12:15 PM	125	0	0	125	0	133	0	133	0	0	0	0	258
12:30 PM	151	1	0	152	0	139	0	139	1	1	0	2	293
Total	557	1	0	558	0	577	0	577	2	2	0	4	1139
Approach %	99.8	0.2	-	-	0.0	100.0	-	-	50.0	50.0	-	-	-
Total %	48.9	0.1	-	49.0	0.0	50.7	-	50.7	0.2	0.2	-	0.4	-
PHF	0.898	0.250	-	0.900	0.000	0.859	-	0.859	0.500	0.500	-	0.500	0.965
Lights	552	1	-	553	0	572	-	572	2	2	-	4	1129
% Lights	99.1	100.0	-	99.1	-	99.1	-	99.1	100.0	100.0	-	100.0	99.1
Other Vehicles	5	0	-	5	0	5	-	5	0	0	-	0	10
% Other Vehicles	0.9	0.0	-	0.9	-	0.9	-	0.9	0.0	0.0	-	0.0	0.9
Pedestrians	-	-	0	-	-	-	0	-	-	-	0	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-

Traffic Planning and Design, Inc
2500 East High Street
Suite 650
Pottstown, Pennsylvania, United States 19464
610.326.3100

Counter: MIO:
Set up By JH::

Count Name: 3 Exit-only Driveway (Star 3) & Pennsylvania Ave
Site Code:
Start Date: 10/27/2022



Turning Movement Peak Hour Data Plot (11:45 AM)

Traffic Planning and Design, Inc
2500 East High Street
Suite 650
Pottstown, Pennsylvania, United States 19464
610.326.3100

Counter: MIO:
Set up By JH::

Count Name: 4 Existing Driveway (Star 4) & Pennsylvania Ave
Site Code:
Start Date: 10/27/2022

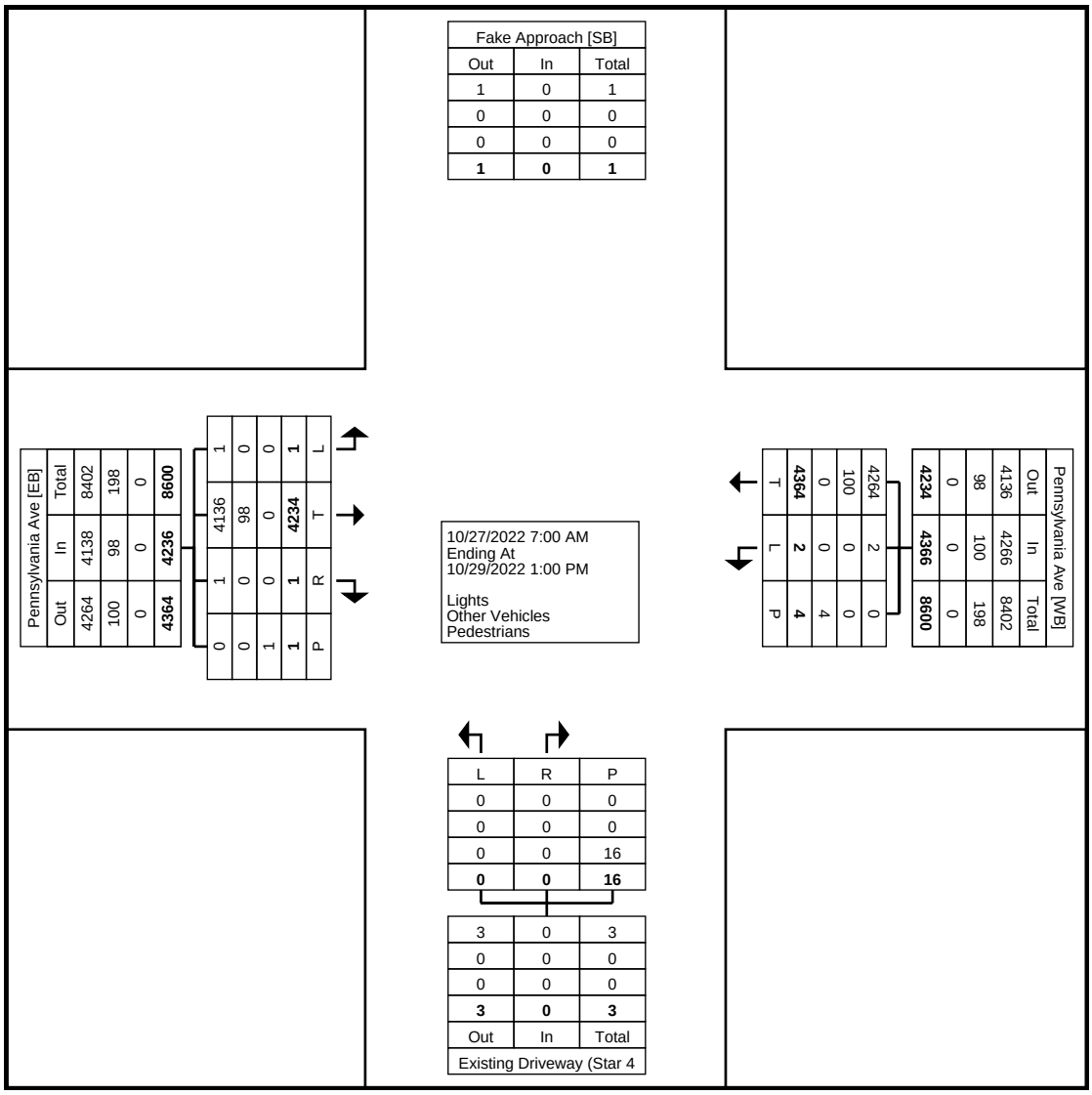
Turning Movement Data

Start Time	Pennsylvania Ave Eastbound					Pennsylvania Ave Westbound				Existing Driveway (Star 4 Northbound				
	Left	Thru	Right	Peds	App. Total	Left	Thru	Peds	App. Total	Left	Right	Peds	App. Total	Int. Total
7:00 AM	0	117	1	0	118	0	184	0	184	0	0	1	0	302
7:15 AM	0	130	0	0	130	0	183	1	183	0	0	0	0	313
7:30 AM	0	137	0	0	137	0	239	0	239	0	0	1	0	376
7:45 AM	0	132	0	0	132	0	236	0	236	0	0	1	0	368
Hourly Total	0	516	1	0	517	0	842	1	842	0	0	3	0	1359
8:00 AM	0	161	0	1	161	0	268	3	268	0	0	4	0	429
8:15 AM	0	142	0	0	142	0	280	0	280	0	0	0	0	422
8:30 AM	0	138	0	0	138	0	298	0	298	0	0	2	0	436
8:45 AM	0	131	0	0	131	1	292	0	293	0	0	0	0	424
Hourly Total	0	572	0	1	572	1	1138	3	1139	0	0	6	0	1711
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4:00 PM	0	256	0	0	256	0	176	0	176	0	0	0	0	432
4:15 PM	0	204	0	0	204	0	169	0	169	0	0	0	0	373
4:30 PM	0	240	0	0	240	0	146	0	146	0	0	3	0	386
4:45 PM	0	236	0	0	236	0	141	0	141	0	0	1	0	377
Hourly Total	0	936	0	0	936	0	632	0	632	0	0	4	0	1568
5:00 PM	0	343	0	0	343	0	150	0	150	0	0	0	0	493
5:15 PM	0	288	0	0	288	0	149	0	149	0	0	1	0	437
5:30 PM	0	279	0	0	279	0	158	0	158	0	0	1	0	437
5:45 PM	0	239	0	0	239	0	176	0	176	0	0	0	0	415
Hourly Total	0	1149	0	0	1149	0	633	0	633	0	0	2	0	1782
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11:00 AM	0	126	0	0	126	1	105	0	106	0	0	0	0	232
11:15 AM	0	119	0	0	119	0	132	0	132	0	0	1	0	251
11:30 AM	1	141	0	0	142	0	143	0	143	0	0	0	0	285
11:45 AM	0	120	0	0	120	0	167	0	167	0	0	0	0	287
Hourly Total	1	506	0	0	507	1	547	0	548	0	0	1	0	1055
12:00 PM	0	167	0	0	167	0	144	0	144	0	0	0	0	311
12:15 PM	0	128	0	0	128	0	135	0	135	0	0	0	0	263
12:30 PM	0	146	0	0	146	0	132	0	132	0	0	0	0	278
12:45 PM	0	114	0	0	114	0	161	0	161	0	0	0	0	275
Hourly Total	0	555	0	0	555	0	572	0	572	0	0	0	0	1127
Grand Total	1	4234	1	1	4236	2	4364	4	4366	0	0	16	0	8602
Approach %	0.0	100.0	0.0	-	-	0.0	100.0	-	-	0.0	0.0	-	-	-
Total %	0.0	49.2	0.0	-	49.2	0.0	50.7	-	50.8	0.0	0.0	-	0.0	-
Lights	1	4136	1	-	4138	2	4264	-	4266	0	0	-	0	8404
% Lights	100.0	97.7	100.0	-	97.7	100.0	97.7	-	97.7	-	-	-	-	97.7
Other Vehicles	0	98	0	-	98	0	100	-	100	0	0	-	0	198
% Other Vehicles	0.0	2.3	0.0	-	2.3	0.0	2.3	-	2.3	-	-	-	-	2.3
Pedestrians	-	-	-	1	-	-	-	4	-	-	-	16	-	-
% Pedestrians	-	-	-	100.0	-	-	-	100.0	-	-	-	100.0	-	-

Traffic Planning and Design, Inc
2500 East High Street
Suite 650
Pottstown, Pennsylvania, United States 19464
610.326.3100

Counter: MIO:
Set up By JH::

Count Name: 4 Existing Driveway (Star 4) & Pennsylvania Ave
Site Code:
Start Date: 10/27/2022



Turning Movement Data Plot

Traffic Planning and Design, Inc
2500 East High Street
Suite 650
Pottstown, Pennsylvania, United States 19464
610.326.3100

Counter: MIO:
Set up By JH::

Count Name: 4 Existing Driveway (Star 4) & Pennsylvania Ave
Site Code:
Start Date: 10/27/2022

Turning Movement Peak Hour Data (8:00 AM)

Start Time	Pennsylvania Ave Eastbound					Pennsylvania Ave Westbound				Existing Driveway (Star 4 Northbound				
	Left	Thru	Right	Peds	App. Total	Left	Thru	Peds	App. Total	Left	Right	Peds	App. Total	Int. Total
8:00 AM	0	161	0	1	161	0	268	3	268	0	0	4	0	429
8:15 AM	0	142	0	0	142	0	280	0	280	0	0	0	0	422
8:30 AM	0	138	0	0	138	0	298	0	298	0	0	2	0	436
8:45 AM	0	131	0	0	131	1	292	0	293	0	0	0	0	424
Total	0	572	0	1	572	1	1138	3	1139	0	0	6	0	1711
Approach %	0.0	100.0	0.0	-	-	0.1	99.9	-	-	0.0	0.0	-	-	-
Total %	0.0	33.4	0.0	-	33.4	0.1	66.5	-	66.6	0.0	0.0	-	0.0	-
PHF	0.000	0.888	0.000	-	0.888	0.250	0.955	-	0.956	0.000	0.000	-	0.000	0.981
Lights	0	548	0	-	548	1	1106	-	1107	0	0	-	0	1655
% Lights	-	95.8	-	-	95.8	100.0	97.2	-	97.2	-	-	-	-	96.7
Other Vehicles	0	24	0	-	24	0	32	-	32	0	0	-	0	56
% Other Vehicles	-	4.2	-	-	4.2	0.0	2.8	-	2.8	-	-	-	-	3.3
Pedestrians	-	-	-	1	-	-	-	3	-	-	-	6	-	-
% Pedestrians	-	-	-	100.0	-	-	-	100.0	-	-	-	100.0	-	-

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Site Code:
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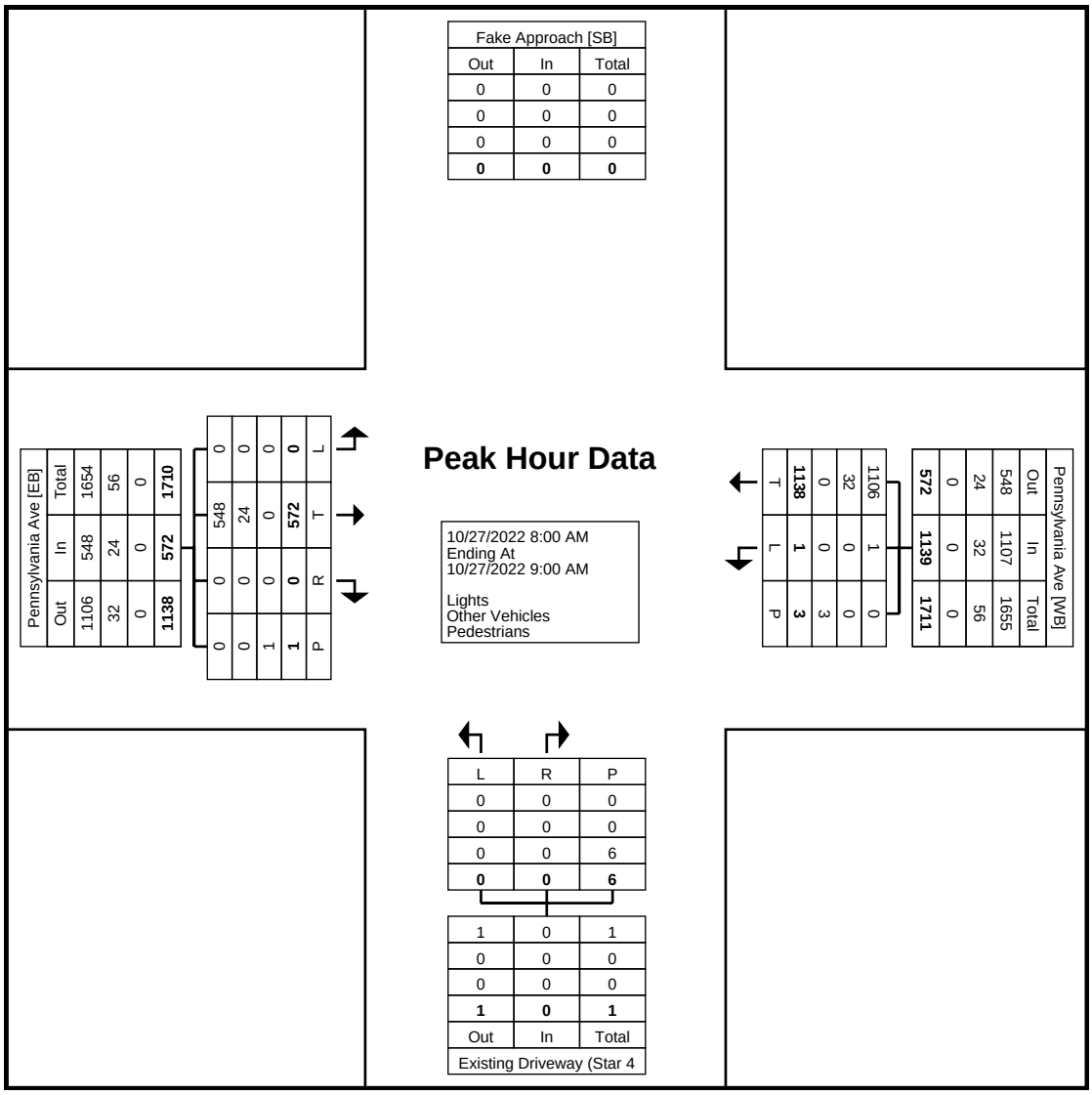

Turning Movement Peak Hour Data Plot (8:00 AM)

Traffic Planning and Design, Inc
2500 East High Street
Suite 650
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610.326.3100

Counter: MIO:
Set up By JH::

Count Name: 4 Existing Driveway (Star 4) & Pennsylvania Ave
Site Code:
Start Date: 10/27/2022

Turning Movement Peak Hour Data (5:00 PM)

Start Time	Pennsylvania Ave Eastbound					Pennsylvania Ave Westbound				Existing Driveway (Star 4 Northbound				
	Left	Thru	Right	Peds	App. Total	Left	Thru	Peds	App. Total	Left	Right	Peds	App. Total	Int. Total
5:00 PM	0	343	0	0	343	0	150	0	150	0	0	0	0	493
5:15 PM	0	288	0	0	288	0	149	0	149	0	0	1	0	437
5:30 PM	0	279	0	0	279	0	158	0	158	0	0	1	0	437
5:45 PM	0	239	0	0	239	0	176	0	176	0	0	0	0	415
Total	0	1149	0	0	1149	0	633	0	633	0	0	2	0	1782
Approach %	0.0	100.0	0.0	-	-	0.0	100.0	-	-	0.0	0.0	-	-	-
Total %	0.0	64.5	0.0	-	64.5	0.0	35.5	-	35.5	0.0	0.0	-	0.0	-
PHF	0.000	0.837	0.000	-	0.837	0.000	0.899	-	0.899	0.000	0.000	-	0.000	0.904
Lights	0	1132	0	-	1132	0	619	-	619	0	0	-	0	1751
% Lights	-	98.5	-	-	98.5	-	97.8	-	97.8	-	-	-	-	98.3
Other Vehicles	0	17	0	-	17	0	14	-	14	0	0	-	0	31
% Other Vehicles	-	1.5	-	-	1.5	-	2.2	-	2.2	-	-	-	-	1.7
Pedestrians	-	-	-	0	-	-	-	0	-	-	-	2	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	100.0	-	-

Traffic Planning and Design, Inc
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610.326.3100

Counter: MIO:
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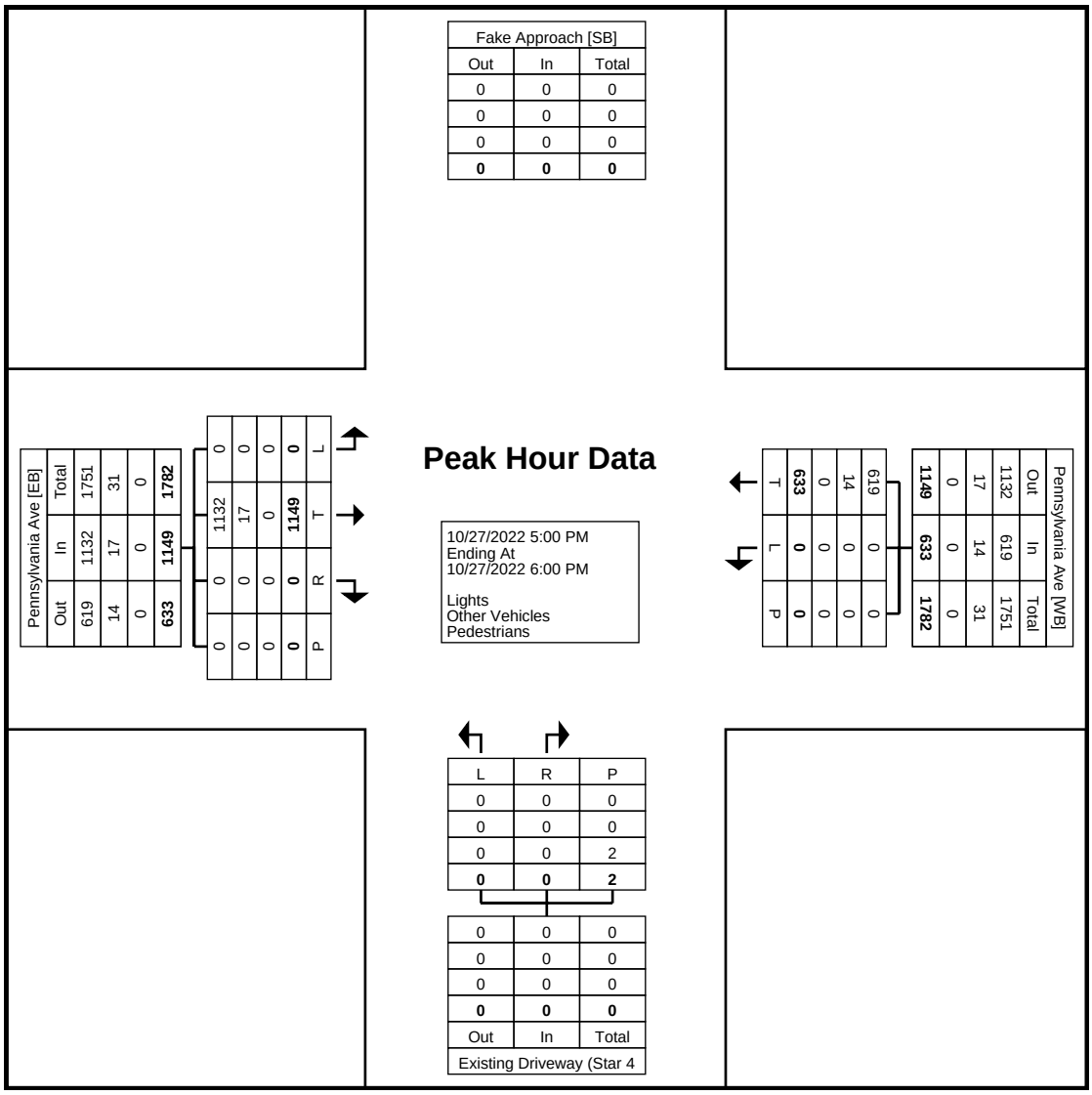
Count Name: 4 Existing Driveway (Star 4) & Pennsylvania Ave
Site Code:
Start Date: 10/27/2022



Turning Movement Peak Hour Data Plot (5:00 PM)

Counter: MIO:
Set up By JH::

Traffic Planning and Design, Inc
2500 East High Street
Suite 650
Pottstown, Pennsylvania, United States 19464
610.326.3100

Turning Movement Peak Hour Data (11:30 AM)

Start Time	Pennsylvania Ave Eastbound					Pennsylvania Ave Westbound				Existing Driveway (Star 4 Northbound				
	Left	Thru	Right	Peds	App. Total	Left	Thru	Peds	App. Total	Left	Right	Peds	App. Total	Int. Total
11:30 AM	1	141	0	0	142	0	143	0	143	0	0	0	0	285
11:45 AM	0	120	0	0	120	0	167	0	167	0	0	0	0	287
12:00 PM	0	167	0	0	167	0	144	0	144	0	0	0	0	311
12:15 PM	0	128	0	0	128	0	135	0	135	0	0	0	0	263
Total	1	556	0	0	557	0	589	0	589	0	0	0	0	1146
Approach %	0.2	99.8	0.0	-	-	0.0	100.0	-	-	0.0	0.0	-	-	-
Total %	0.1	48.5	0.0	-	48.6	0.0	51.4	-	51.4	0.0	0.0	-	0.0	-
PHF	0.250	0.832	0.000	-	0.834	0.000	0.882	-	0.882	0.000	0.000	-	0.000	0.921
Lights	1	549	0	-	550	0	579	-	579	0	0	-	0	1129
% Lights	100.0	98.7	-	-	98.7	-	98.3	-	98.3	-	-	-	-	98.5
Other Vehicles	0	7	0	-	7	0	10	-	10	0	0	-	0	17
% Other Vehicles	0.0	1.3	-	-	1.3	-	1.7	-	1.7	-	-	-	-	1.5
Pedestrians	-	-	-	0	-	-	-	0	-	-	-	0	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Traffic Planning and Design, Inc
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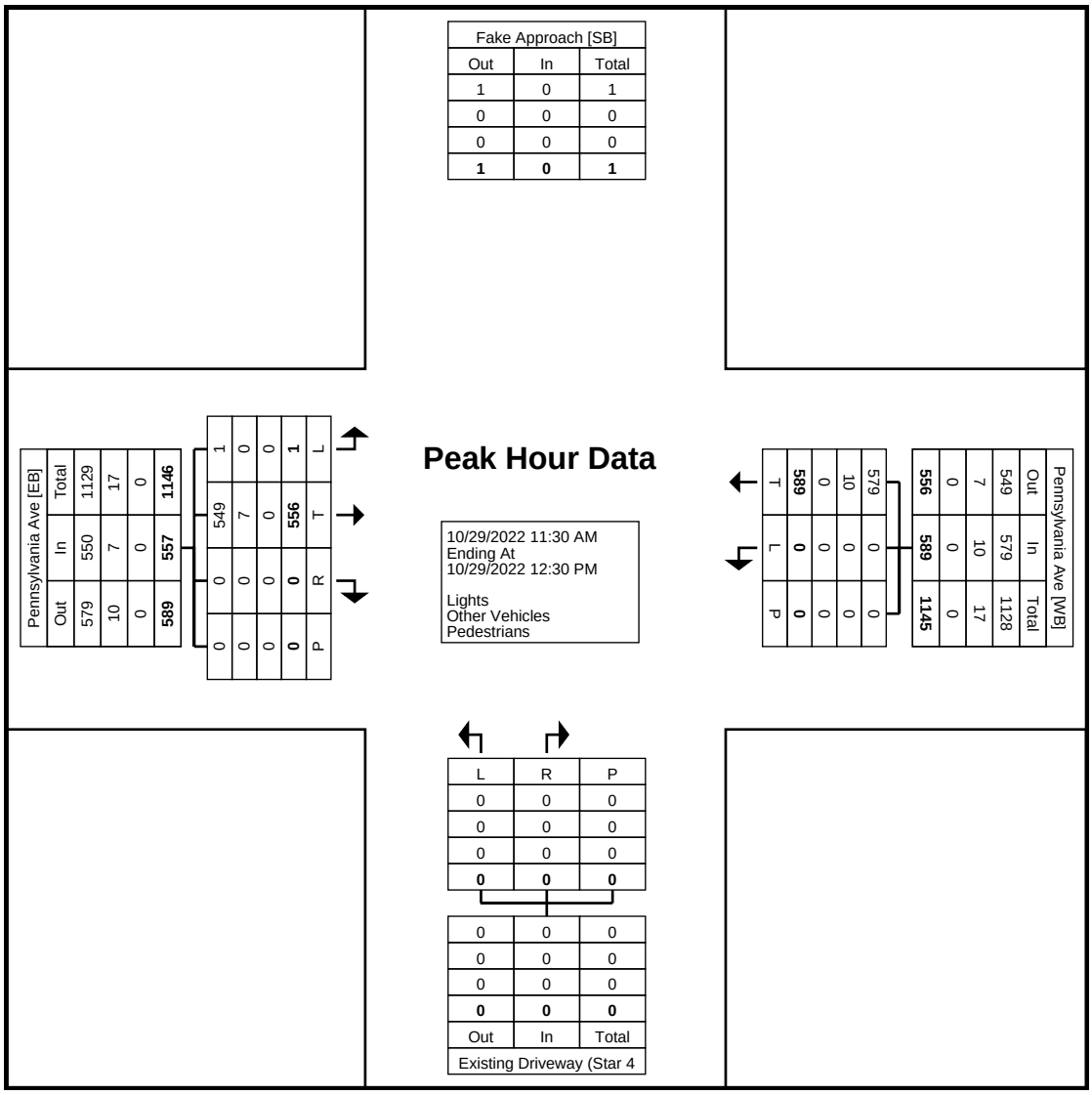
610.326.3100

Counter: MIO:
Set up By JH::

Count Name: 4 Existing Driveway (Star 4) & Pennsylvania Ave
Site Code:
Start Date: 10/27/2022



Turning Movement Peak Hour Data Plot (11:30 AM)

Traffic Planning and Design, Inc
2500 East High Street
Suite 650
Pottstown, Pennsylvania, United States 19464
610.326.3100

Counter: MIO:
Set up By JH::

Count Name: 5 Existing Driveway (Star 5) & Pennsylvania Ave
Site Code:
Start Date: 10/27/2022

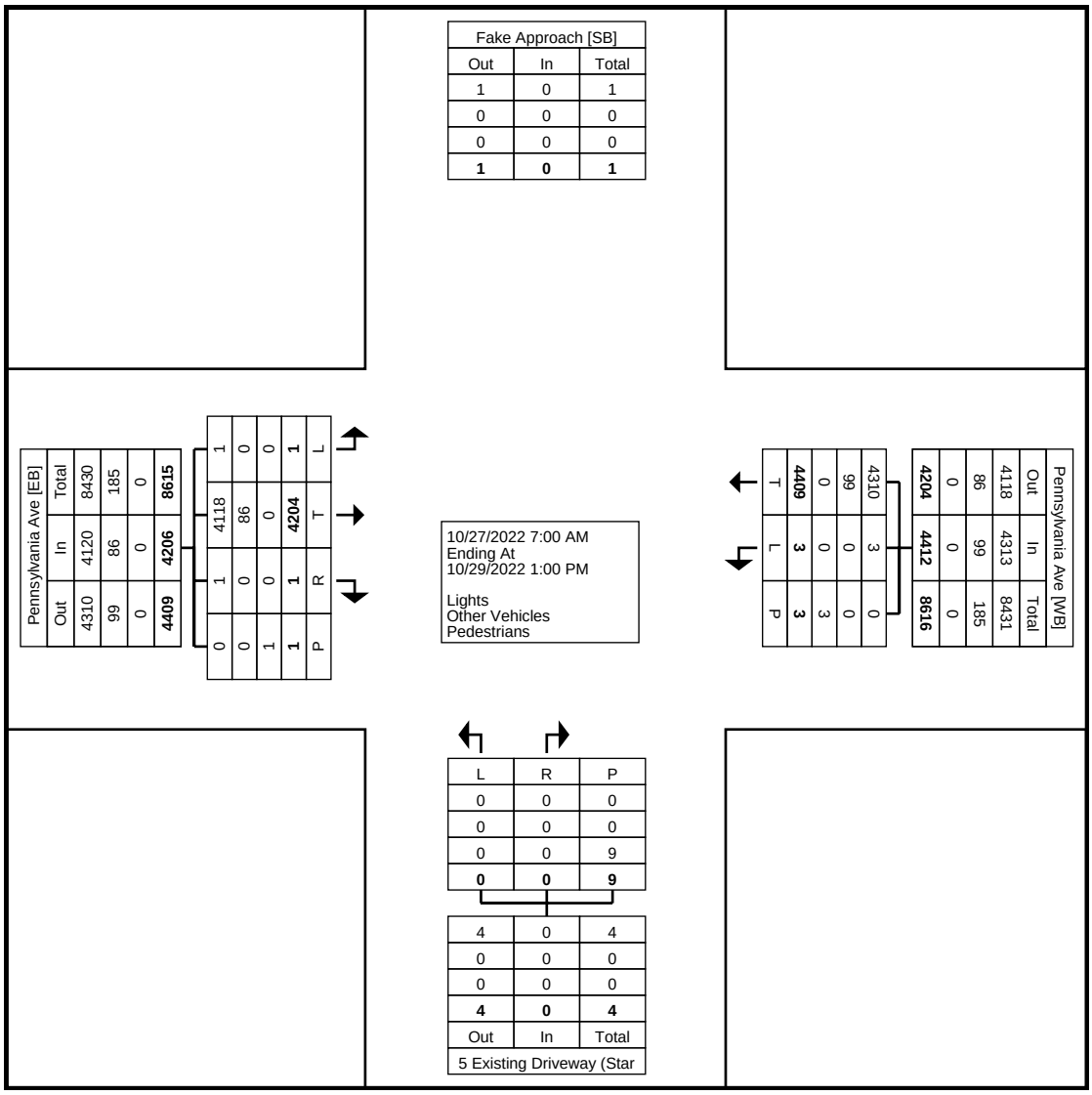
Turning Movement Data

Start Time	Pennsylvania Ave Eastbound					Pennsylvania Ave Westbound				5 Existing Driveway (Star 5) Northbound				
	Left	Thru	Right	Peds	App. Total	Left	Thru	Peds	App. Total	Left	Right	Peds	App. Total	Int. Total
7:00 AM	0	118	1	0	119	0	186	0	186	0	0	1	0	305
7:15 AM	0	130	0	0	130	0	189	0	189	0	0	0	0	319
7:30 AM	0	138	0	0	138	1	244	0	245	0	0	0	0	383
7:45 AM	0	132	0	0	132	0	256	0	256	0	0	0	0	388
Hourly Total	0	518	1	0	519	1	875	0	876	0	0	1	0	1395
8:00 AM	0	161	0	1	161	0	265	3	265	0	0	3	0	426
8:15 AM	0	143	0	0	143	0	282	0	282	0	0	0	0	425
8:30 AM	0	137	0	0	137	0	290	0	290	0	0	4	0	427
8:45 AM	0	131	0	0	131	1	294	0	295	0	0	0	0	426
Hourly Total	0	572	0	1	572	1	1131	3	1132	0	0	7	0	1704
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4:00 PM	0	237	0	0	237	0	179	0	179	0	0	0	0	416
4:15 PM	0	199	0	0	199	0	172	0	172	0	0	0	0	371
4:30 PM	0	232	0	0	232	0	144	0	144	0	0	0	0	376
4:45 PM	0	239	0	0	239	0	149	0	149	0	0	0	0	388
Hourly Total	0	907	0	0	907	0	644	0	644	0	0	0	0	1551
5:00 PM	0	344	0	0	344	0	153	0	153	0	0	0	0	497
5:15 PM	0	286	0	0	286	0	153	0	153	0	0	0	0	439
5:30 PM	0	275	0	0	275	0	157	0	157	0	0	1	0	432
5:45 PM	0	237	0	0	237	0	175	0	175	0	0	0	0	412
Hourly Total	0	1142	0	0	1142	0	638	0	638	0	0	1	0	1780
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11:00 AM	0	128	0	0	128	1	103	0	104	0	0	0	0	232
11:15 AM	0	123	0	0	123	0	132	0	132	0	0	0	0	255
11:30 AM	1	144	0	0	145	0	141	0	141	0	0	0	0	286
11:45 AM	0	119	0	0	119	0	169	0	169	0	0	0	0	288
Hourly Total	1	514	0	0	515	1	545	0	546	0	0	0	0	1061
12:00 PM	0	166	0	0	166	0	144	0	144	0	0	0	0	310
12:15 PM	0	126	0	0	126	0	136	0	136	0	0	0	0	262
12:30 PM	0	146	0	0	146	0	134	0	134	0	0	0	0	280
12:45 PM	0	113	0	0	113	0	162	0	162	0	0	0	0	275
Hourly Total	0	551	0	0	551	0	576	0	576	0	0	0	0	1127
Grand Total	1	4204	1	1	4206	3	4409	3	4412	0	0	9	0	8618
Approach %	0.0	100.0	0.0	-	-	0.1	99.9	-	-	0.0	0.0	-	-	-
Total %	0.0	48.8	0.0	-	48.8	0.0	51.2	-	51.2	0.0	0.0	-	0.0	-
Lights	1	4118	1	-	4120	3	4310	-	4313	0	0	-	0	8433
% Lights	100.0	98.0	100.0	-	98.0	100.0	97.8	-	97.8	-	-	-	-	97.9
Other Vehicles	0	86	0	-	86	0	99	-	99	0	0	-	0	185
% Other Vehicles	0.0	2.0	0.0	-	2.0	0.0	2.2	-	2.2	-	-	-	-	2.1
Pedestrians	-	-	-	1	-	-	-	3	-	-	-	9	-	-
% Pedestrians	-	-	-	100.0	-	-	-	100.0	-	-	-	100.0	-	-

Counter: MIO:
Set up By JH::

Traffic Planning and Design, Inc
2500 East High Street
Suite 650
Pottstown, Pennsylvania, United States 19464
610.326.3100

Count Name: 5 Existing Driveway (Star 5) & Pennsylvania Ave
Site Code:
Start Date: 10/27/2022



Turning Movement Data Plot

Counter: MIO:
Set up By JH::

Traffic Planning and Design, Inc
2500 East High Street
Suite 650
Pottstown, Pennsylvania, United States 19464
610.326.3100

Turning Movement Peak Hour Data (8:00 AM)

Start Time	Pennsylvania Ave Eastbound					Pennsylvania Ave Westbound				5 Existing Driveway (Star 5) Northbound				
	Left	Thru	Right	Peds	App. Total	Left	Thru	Peds	App. Total	Left	Right	Peds	App. Total	Int. Total
8:00 AM	0	161	0	1	161	0	265	3	265	0	0	3	0	426
8:15 AM	0	143	0	0	143	0	282	0	282	0	0	0	0	425
8:30 AM	0	137	0	0	137	0	290	0	290	0	0	4	0	427
8:45 AM	0	131	0	0	131	1	294	0	295	0	0	0	0	426
Total	0	572	0	1	572	1	1131	3	1132	0	0	7	0	1704
Approach %	0.0	100.0	0.0	-	-	0.1	99.9	-	-	0.0	0.0	-	-	-
Total %	0.0	33.6	0.0	-	33.6	0.1	66.4	-	66.4	0.0	0.0	-	0.0	-
PHF	0.000	0.888	0.000	-	0.888	0.250	0.962	-	0.959	0.000	0.000	-	0.000	0.998
Lights	0	548	0	-	548	1	1097	-	1098	0	0	-	0	1646
% Lights	-	95.8	-	-	95.8	100.0	97.0	-	97.0	-	-	-	-	96.6
Other Vehicles	0	24	0	-	24	0	34	-	34	0	0	-	0	58
% Other Vehicles	-	4.2	-	-	4.2	0.0	3.0	-	3.0	-	-	-	-	3.4
Pedestrians	-	-	-	1	-	-	-	3	-	-	-	7	-	-
% Pedestrians	-	-	-	100.0	-	-	-	100.0	-	-	-	100.0	-	-

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610.326.3100

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Site Code:
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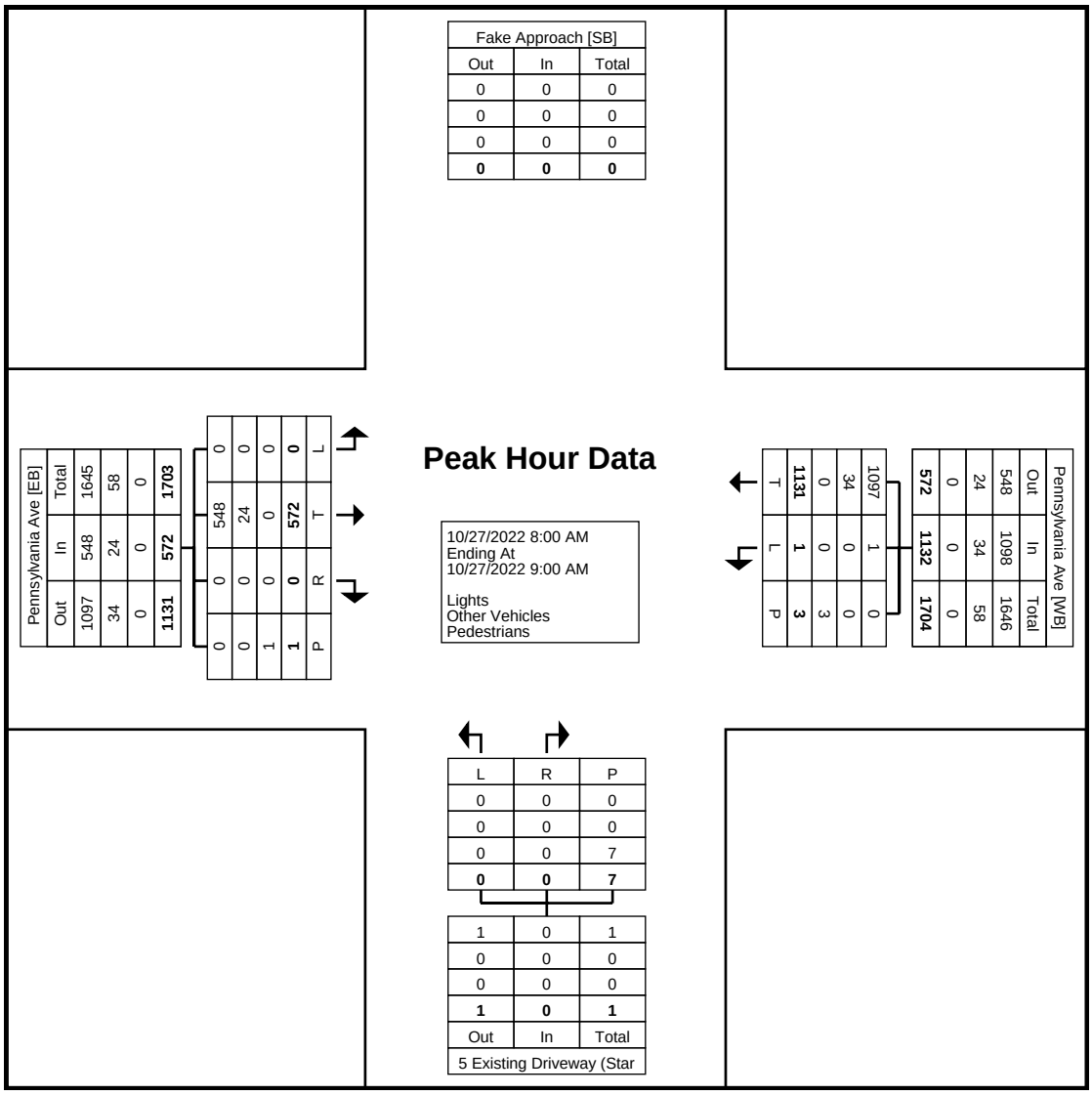

Turning Movement Peak Hour Data Plot (8:00 AM)

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2500 East High Street
Suite 650
Pottstown, Pennsylvania, United States 19464
610.326.3100

Turning Movement Peak Hour Data (5:00 PM)

Start Time	Pennsylvania Ave Eastbound					Pennsylvania Ave Westbound				5 Existing Driveway (Star 5) Northbound				
	Left	Thru	Right	Peds	App. Total	Left	Thru	Peds	App. Total	Left	Right	Peds	App. Total	Int. Total
5:00 PM	0	344	0	0	344	0	153	0	153	0	0	0	0	497
5:15 PM	0	286	0	0	286	0	153	0	153	0	0	0	0	439
5:30 PM	0	275	0	0	275	0	157	0	157	0	0	1	0	432
5:45 PM	0	237	0	0	237	0	175	0	175	0	0	0	0	412
Total	0	1142	0	0	1142	0	638	0	638	0	0	1	0	1780
Approach %	0.0	100.0	0.0	-	-	0.0	100.0	-	-	0.0	0.0	-	-	-
Total %	0.0	64.2	0.0	-	64.2	0.0	35.8	-	35.8	0.0	0.0	-	0.0	-
PHF	0.000	0.830	0.000	-	0.830	0.000	0.911	-	0.911	0.000	0.000	-	0.000	0.895
Lights	0	1128	0	-	1128	0	624	-	624	0	0	-	0	1752
% Lights	-	98.8	-	-	98.8	-	97.8	-	97.8	-	-	-	-	98.4
Other Vehicles	0	14	0	-	14	0	14	-	14	0	0	-	0	28
% Other Vehicles	-	1.2	-	-	1.2	-	2.2	-	2.2	-	-	-	-	1.6
Pedestrians	-	-	-	0	-	-	-	0	-	-	-	1	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	100.0	-	-

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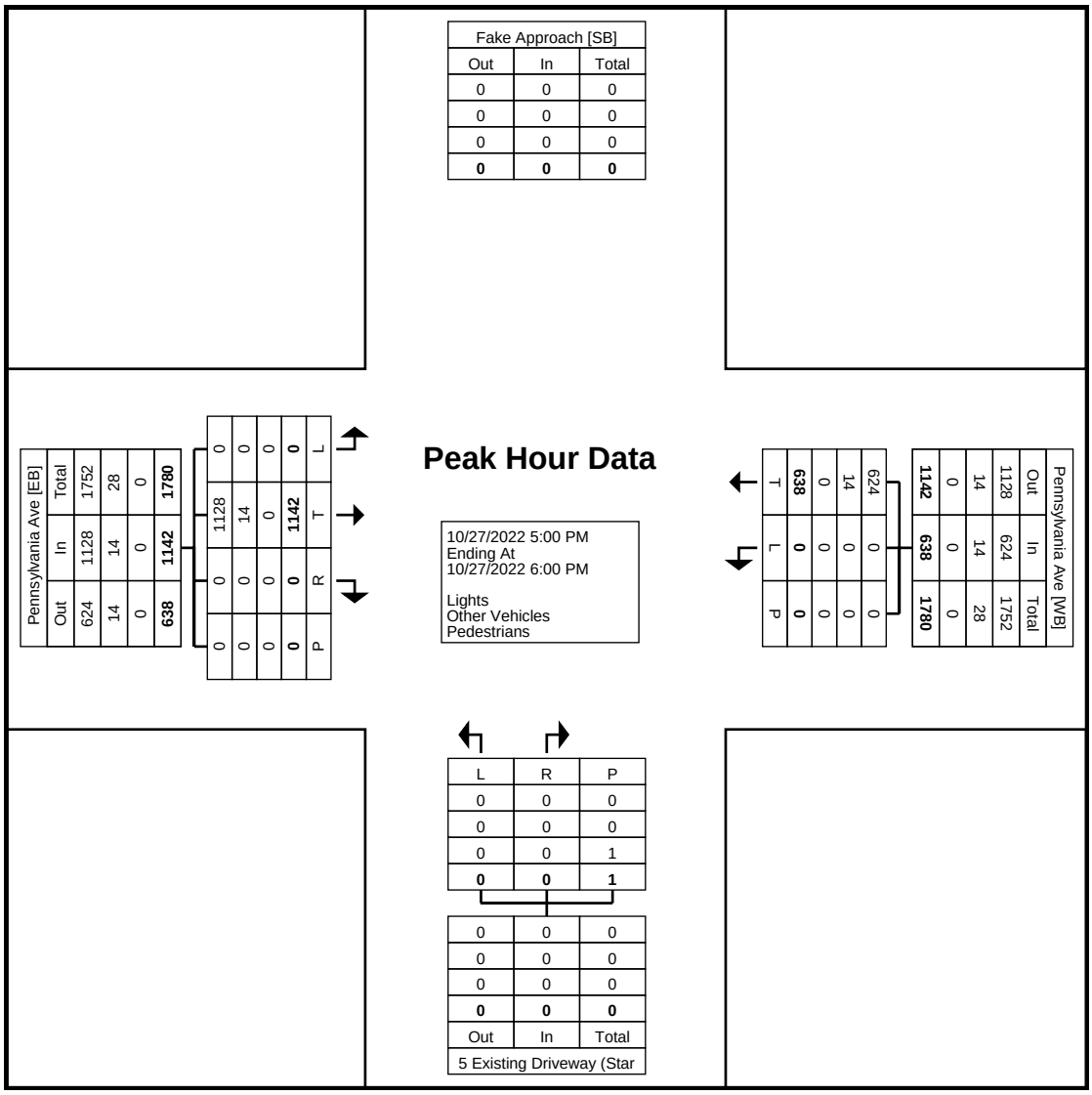

Turning Movement Peak Hour Data Plot (5:00 PM)

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Count Name: 5 Existing Driveway (Star 5) & Pennsylvania Ave
Site Code:
Start Date: 10/27/2022

Turning Movement Peak Hour Data (11:30 AM)

Start Time	Pennsylvania Ave Eastbound					Pennsylvania Ave Westbound				5 Existing Driveway (Star 5) Northbound				
	Left	Thru	Right	Peds	App. Total	Left	Thru	Peds	App. Total	Left	Right	Peds	App. Total	Int. Total
11:30 AM	1	144	0	0	145	0	141	0	141	0	0	0	0	286
11:45 AM	0	119	0	0	119	0	169	0	169	0	0	0	0	288
12:00 PM	0	166	0	0	166	0	144	0	144	0	0	0	0	310
12:15 PM	0	126	0	0	126	0	136	0	136	0	0	0	0	262
Total	1	555	0	0	556	0	590	0	590	0	0	0	0	1146
Approach %	0.2	99.8	0.0	-	-	0.0	100.0	-	-	0.0	0.0	-	-	-
Total %	0.1	48.4	0.0	-	48.5	0.0	51.5	-	51.5	0.0	0.0	-	0.0	-
PHF	0.250	0.836	0.000	-	0.837	0.000	0.873	-	0.873	0.000	0.000	-	0.000	0.924
Lights	1	549	0	-	550	0	579	-	579	0	0	-	0	1129
% Lights	100.0	98.9	-	-	98.9	-	98.1	-	98.1	-	-	-	-	98.5
Other Vehicles	0	6	0	-	6	0	11	-	11	0	0	-	0	17
% Other Vehicles	0.0	1.1	-	-	1.1	-	1.9	-	1.9	-	-	-	-	1.5
Pedestrians	-	-	-	0	-	-	-	0	-	-	-	0	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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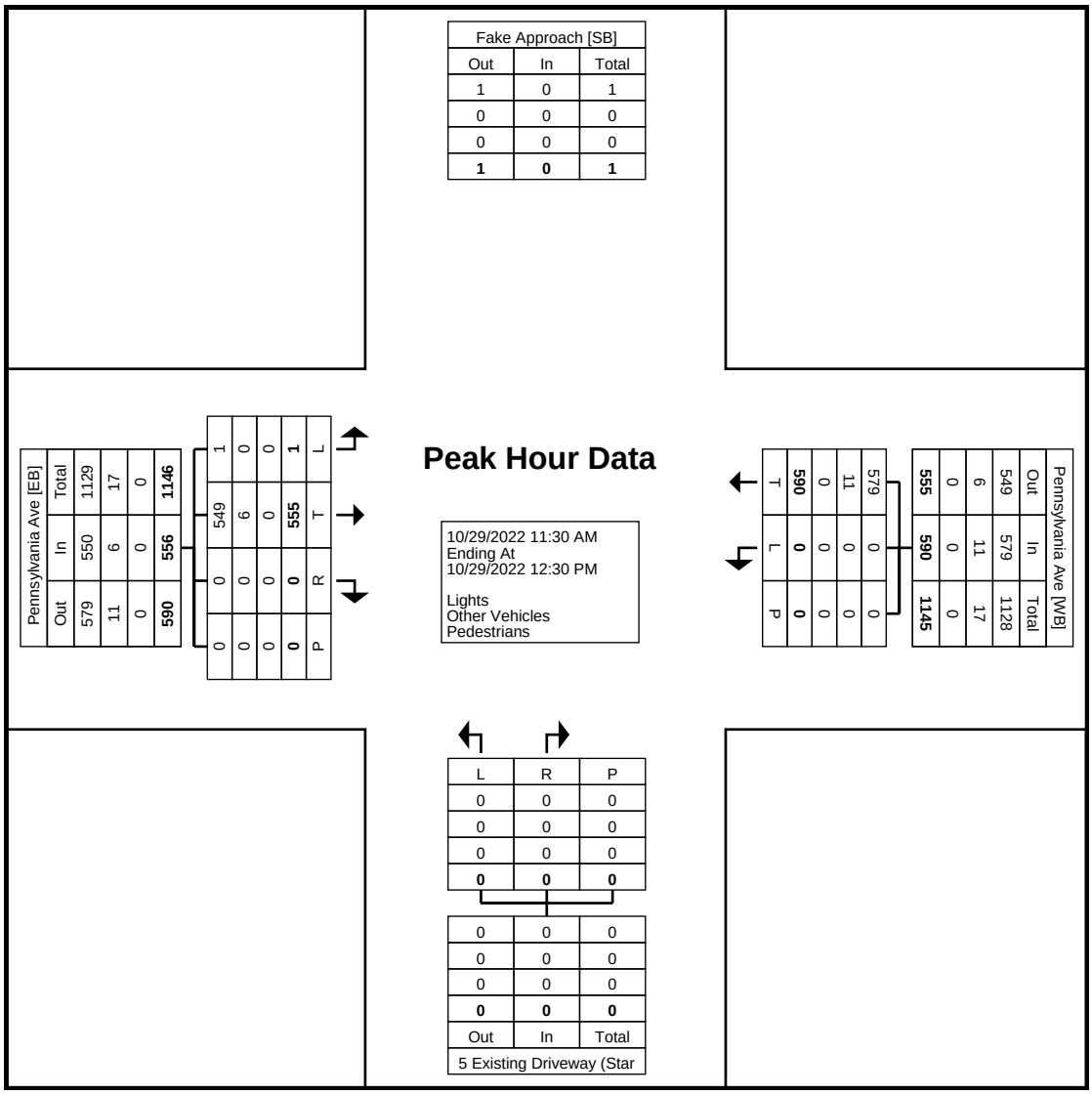


Turning Movement Peak Hour Data Plot (11:30 AM)

APPENDIX D

Volume Development Spreadsheets & Trip Assignment Data

TPD# MILE.00001
8/17/2023
Traffic Volumes Worksheet
Intersection: **Pennsylvania Avenue (SR 2037) & Commerce Drive/Site Driveway**
Synchro Node: **1** **Adjacent intersections:** **West** **0** **East** **0** **North** **0** **South** **0**

Time Period: Weekday A.M. Peak Hour

	Eastbound			Westbound			Northbound			Southbound			Intersection
	left	thru	right	left	thru	right	left	thru	right	left	thru	right	Volume
2022 Existing Counts	**219**	**420**	**9**	**19**	**464**	**654**	**7**	**4**	**8**	**140**	**9**	**139**	**2092**
Balancing													0
2022 Existing Volumes (Balanced)	**219**	**420**	**9**	**19**	**464**	**654**	**7**	**4**	**8**	**140**	**9**	**139**	**2092**
Base growth (0.27% compounded for 3 yrs)	2	3			4	5				1		1	16
Base growth (0.27% compounded for 8 yrs)	5	9			10	14				3		3	44
													0
													0
2025 Base Volumes	**221**	**423**	**9**	**19**	**468**	**659**	**7**	**4**	**8**	**141**	**9**	**140**	**2108**
2030 Base Volumes	**224**	**429**	**9**	**19**	**474**	**668**	**7**	**4**	**8**	**143**	**9**	**142**	**2136**

ENTER = **102**
EXIT = **38**

Trip Assignment % - New Enter		5.0%	25.0%	51.0%						2.0%	17.0%		
Trip Assignment % - New Exit							30.0%	19.0%	36.0%				
New Trips		5	26	52			11	7	14	2	17		**134**
Base Redistribution		-3	-9	-19	-1		-7	-4	-8	-1	-9		**-61**
2025 Projected Volumes	**221**	**425**	**26**	**52**	**467**	**659**	**11**	**7**	**14**	**142**	**17**	**140**	**2181**
2030 Projected Volumes	**224**	**431**	**26**	**52**	**473**	**668**	**11**	**7**	**14**	**144**	**17**	**142**	**2209**

Time Period: Weekday P.M. Peak Hour

	Eastbound			Westbound			Northbound			Southbound			Intersection
	left	thru	right	left	thru	right	left	thru	right	left	thru	right	Volume
2022 Existing Counts	**192**	**555**	**9**	**12**	**355**	**276**	**10**	**6**	**14**	**562**	**2**	**268**	**2261**
Balancing													0
2022 Existing Volumes (Balanced)	**192**	**555**	**9**	**12**	**355**	**276**	**10**	**6**	**14**	**562**	**2**	**268**	**2261**
Base growth (0.27% compounded for 3 yrs)	2	5			3	2				5		2	19
Base growth (0.27% compounded for 8 yrs)	4	12			8	6				12		6	48
													0
													0
2025 Base Volumes	**194**	**560**	**9**	**12**	**358**	**278**	**10**	**6**	**14**	**567**	**2**	**270**	**2280**
2030 Base Volumes	**196**	**567**	**9**	**12**	**363**	**282**	**10**	**6**	**14**	**574**	**2**	**274**	**2309**

ENTER = **73**
EXIT = **109**

Trip Assignment % - New Enter		5.0%	25.0%	51.0%						2.0%	17.0%		
Trip Assignment % - New Exit							30.0%	19.0%	36.0%				
New Trips		4	18	37			33	21	39	1	13		**166**
Base Redistribution		-3	-9	-12	-1		-10	-6	-14		-2		**-57**
2025 Projected Volumes	**194**	**561**	**18**	**37**	**357**	**278**	**33**	**21**	**39**	**568**	**13**	**270**	**2389**
2030 Projected Volumes	**196**	**568**	**18**	**37**	**362**	**282**	**33**	**21**	**39**	**575**	**13**	**274**	**2418**

Time Period: Saturday Peak Hour

	Eastbound			Westbound			Northbound			Southbound			Intersection
	left	thru	right	left	thru	right	left	thru	right	left	thru	right	Volume
2022 Existing Counts	**121**	**377**	**6**	**10**	**402**	**176**	**5**	**4**	**9**	**161**	**6**	**117**	**1394**
Balancing													0
2022 Existing Volumes (Balanced)	**121**	**377**	**6**	**10**	**402**	**176**	**5**	**4**	**9**	**161**	**6**	**117**	**1394**
Base growth (0.27% compounded for 3 yrs)	1	3			3	1				1		1	10
Base growth (0.27% compounded for 8 yrs)	3	8			9	4				4		3	31
													0
													0
2025 Base Volumes	**122**	**380**	**6**	**10**	**405**	**177**	**5**	**4**	**9**	**162**	**6**	**118**	**1404**
2030 Base Volumes	**124**	**385**	**6**	**10**	**411**	**180**	**5**	**4**	**9**	**165**	**6**	**120**	**1425**

ENTER = **274**
EXIT = **274**

Trip Assignment % - New Enter		5.0%	25.0%	51.0%						2.0%	17.0%		
Trip Assignment % - New Exit							30.0%	19.0%	36.0%				
New Trips		14	68	140			82	52	99	5	47		**507**
Base Redistribution		-2	-6	-10	-1	-1	-5	-4	-9	-1	-6		**-45**
2025 Projected Volumes	**122**	**392**	**68**	**140**	**404**	**176**	**82**	**52**	**99**	**166**	**47**	**118**	**1866**
2030 Projected Volumes	**124**	**397**	**68**	**140**	**410**	**179**	**82**	**52**	**99**	**169**	**47**	**120**	**1887**

TPD# MILE.00001
8/17/2023
Traffic Volumes Worksheet

Intersection:	**Pennsylvania Avenue (SR 2037) & Western Exit-only Site Driveway**
Synchro Node:	**2** Adjacent intersections: West 0 East 0 North 0 South 0

Time Period: Weekday A.M. Peak Hour

	Eastbound			Westbound			Northbound			Southbound			Intersection
	left	thru	right	left	thru	right	left	thru	right	left	thru	right	Volume
2022 Existing Counts		**676**	**0**	**0**	**601**		**0**		**2**				**1279**
Balancing													0
2022 Existing Volumes (Balanced)		**676**	**0**	**0**	**601**		**0**		**2**				**1279**
Base growth (0.27% compounded for 3 yrs)		5			5								10
Base growth (0.27% compounded for 8 yrs)		15			13								28
													0
													0
2025 Base Volumes		**681**	**0**	**0**	**606**		**0**		**2**				**1289**
2030 Base Volumes		**691**	**0**	**0**	**614**		**0**		**2**				**1307**

ENTER =	**102**	
EXIT =	**38**	

Trip Assignment % - New Enter		30.0%											
Trip Assignment % - New Exit					30.0%								
New Trips		31			11								**42**
Base Redistribution		-10			-8				-2				**-20**
2025 Projected Volumes		**702**			**609**								**1311**
2030 Projected Volumes		**712**			**617**								**1329**

Time Period: Weekday P.M. Peak Hour

	Eastbound			Westbound			Northbound			Southbound			Intersection
	left	thru	right	left	thru	right	left	thru	right	left	thru	right	Volume
2022 Existing Counts		**765**	**2**	**0**	**622**		**1**		**3**				**1393**
Balancing													0
2022 Existing Volumes (Balanced)		**765**	**2**	**0**	**622**		**1**		**3**				**1393**
Base growth (0.27% compounded for 3 yrs)		6			5								11
Base growth (0.27% compounded for 8 yrs)		17			14								31
													0
													0
2025 Base Volumes		**771**	**2**	**0**	**627**		**1**		**3**				**1404**
2030 Base Volumes		**782**	**2**	**0**	**636**		**1**		**3**				**1424**

ENTER =	**73**	
EXIT =	**109**	

Trip Assignment % - New Enter		30.0%											
Trip Assignment % - New Exit					30.0%								
New Trips		22			33								**55**
Base Redistribution		-9	-2		-11		-1		-3				**-26**
2025 Projected Volumes		**784**			**649**								**1433**
2030 Projected Volumes		**795**			**658**								**1453**

Time Period: Saturday Peak Hour

	Eastbound			Westbound			Northbound			Southbound			Intersection
	left	thru	right	left	thru	right	left	thru	right	left	thru	right	Volume
2022 Existing Counts		**503**	**0**	**0**	**518**		**0**		**2**				**1023**
Balancing													0
2022 Existing Volumes (Balanced)		**503**	**0**	**0**	**518**		**0**		**2**				**1023**
Base growth (0.27% compounded for 3 yrs)		4			4								8
Base growth (0.27% compounded for 8 yrs)		11			11								22
													0
													0
2025 Base Volumes		**507**	**0**	**0**	**522**		**0**		**2**				**1031**
2030 Base Volumes		**514**	**0**	**0**	**529**		**0**		**2**				**1045**

ENTER =	**274**	
EXIT =	**274**	

Trip Assignment % - New Enter		30.0%											
Trip Assignment % - New Exit					30.0%								
New Trips		82			82								**164**
Base Redistribution		-6			-6				-2				**-14**
2025 Projected Volumes		**583**			**598**								**1181**
2030 Projected Volumes		**590**			**605**								**1195**

TPD# MILE.00001
8/17/2023
Traffic Volumes Worksheet

Intersection:	**Pennsylvania Avenue (SR 2037) & Central Exit-only Driveway**
Synchro Node:	**3** Adjacent intersections: West **0** East **0** North **0** South **0**

Time Period: Weekday A.M. Peak Hour

	Eastbound			Westbound			Northbound			Southbound			Intersection
	left	thru	right	left	thru	right	left	thru	right	left	thru	right	Volume
2022 Existing Counts		**566**	**2**	**4**	**1119**		**1**		**0**				**1692**
Balancing													0
2022 Existing Volumes (Balanced)		**566**	**2**	**4**	**1119**		**1**		**0**				**1692**
Base growth (0.27% compounded for 3 yrs)		5			9								14
Base growth (0.27% compounded for 8 yrs)		12			24								36
													0
													0
2025 Base Volumes		**571**	**2**	**4**	**1128**		**1**		**0**				**1706**
2030 Base Volumes		**578**	**2**	**4**	**1143**		**1**		**0**				**1728**

ENTER =	**102**	
EXIT =	**38**	

Trip Assignment % - New Enter		7.0%			51.0%								
Trip Assignment % - New Exit		36.0%											
New Trips		21			52								**73**
Base Redistribution		-10	-2	-4	-19		-1						**-36**
2025 Projected Volumes		**582**			**1161**								**1743**
2030 Projected Volumes		**589**			**1176**								**1765**

Time Period: Weekday P.M. Peak Hour

	Eastbound			Westbound			Northbound			Southbound			Intersection
	left	thru	right	left	thru	right	left	thru	right	left	thru	right	Volume
2022 Existing Counts		**1118**	**0**	**0**	**648**		**1**		**5**				**1772**
Balancing													0
2022 Existing Volumes (Balanced)		**1118**	**0**	**0**	**648**		**1**		**5**				**1772**
Base growth (0.27% compounded for 3 yrs)		9			5								14
Base growth (0.27% compounded for 8 yrs)		24			14								38
													0
													0
2025 Base Volumes		**1127**	**0**	**0**	**653**		**1**		**5**				**1786**
2030 Base Volumes		**1142**	**0**	**0**	**662**		**1**		**5**				**1810**

ENTER =	**73**	
EXIT =	**109**	

Trip Assignment % - New Enter		7.0%			51.0%								
Trip Assignment % - New Exit		36.0%											
New Trips		44			37								**81**
Base Redistribution		-17			-12		-1		-5				**-35**
2025 Projected Volumes		**1154**			**678**								**1832**
2030 Projected Volumes		**1169**			**687**								**1856**

Time Period: Saturday Peak Hour

	Eastbound			Westbound			Northbound			Southbound			Intersection
	left	thru	right	left	thru	right	left	thru	right	left	thru	right	Volume
2022 Existing Counts		**557**	**1**	**0**	**577**		**2**		**2**				**1139**
Balancing													0
2022 Existing Volumes (Balanced)		**557**	**1**	**0**	**577**		**2**		**2**				**1139**
Base growth (0.27% compounded for 3 yrs)		5			5								10
Base growth (0.27% compounded for 8 yrs)		12			13								25
													0
													0
2025 Base Volumes		**562**	**1**	**0**	**582**		**2**		**2**				**1149**
2030 Base Volumes		**569**	**1**	**0**	**590**		**2**		**2**				**1164**

ENTER =	**274**	
EXIT =	**274**	

Trip Assignment % - New Enter		7.0%			51.0%								
Trip Assignment % - New Exit		36.0%											
New Trips		118			140								**258**
Base Redistribution		-11	-1		-10		-2		-2				**-26**
2025 Projected Volumes		**669**			**712**								**1381**
2030 Projected Volumes		**676**			**720**								**1396**

TPD# MILE.00001
8/17/2023
Traffic Volumes Worksheet
Intersection: **Pennsylvania Avenue (SR 2037) & Existing Access/Proposed RIRO Access**
Synchro Node: **4** **Adjacent intersections:** **West** **0** **East** **0** **North** **0** **South** **0**

Time Period: Weekday A.M. Peak Hour

	Eastbound			Westbound			Northbound			Southbound			Intersection
	left	thru	right	left	thru	right	left	thru	right	left	thru	right	Volume
2022 Existing Counts		**572**	**0**	**1**	**1138**		**0**		**0**				**1711**
Balancing													0
2022 Existing Volumes (Balanced)		**572**	**0**	**1**	**1138**		**0**		**0**				**1711**
Base growth (0.27% compounded for 3 yrs)		5			9								14
Base growth (0.27% compounded for 8 yrs)		12			25								37
													0
													0
2025 Base Volumes		**577**	**0**	**1**	**1147**		**0**		**0**				**1725**
2030 Base Volumes		**584**	**0**	**1**	**1163**		**0**		**0**				**1748**

ENTER = **102**
EXIT = **38**

Trip Assignment % - New Enter			7.0%		51.0%								
Trip Assignment % - New Exit		36.0%							15.0%				
New Trips		14	7		52				6				**79**
Base Redistribution		-10		-1	-23								**-34**
2025 Projected Volumes		**581**	**7**		**1176**				**6**				**1770**
2030 Projected Volumes		**588**	**7**		**1192**				**6**				**1793**

Time Period: Weekday P.M. Peak Hour

	Eastbound			Westbound			Northbound			Southbound			Intersection
	left	thru	right	left	thru	right	left	thru	right	left	thru	right	Volume
2022 Existing Counts		**1149**	**0**	**0**	**633**		**0**		**0**				**1782**
Balancing													0
2022 Existing Volumes (Balanced)		**1149**	**0**	**0**	**633**		**0**		**0**				**1782**
Base growth (0.27% compounded for 3 yrs)		9			5								14
Base growth (0.27% compounded for 8 yrs)		25			14								39
													0
													0
2025 Base Volumes		**1158**	**0**	**0**	**638**		**0**		**0**				**1796**
2030 Base Volumes		**1174**	**0**	**0**	**647**		**0**		**0**				**1821**

ENTER = **73**
EXIT = **109**

Trip Assignment % - New Enter			7.0%		51.0%								
Trip Assignment % - New Exit		36.0%							15.0%				
New Trips		39	5		37				16				**97**
Base Redistribution		-22			-12								**-34**
2025 Projected Volumes		**1175**	**5**		**663**				**16**				**1859**
2030 Projected Volumes		**1191**	**5**		**672**				**16**				**1884**

Time Period: Saturday Peak Hour

	Eastbound			Westbound			Northbound			Southbound			Intersection
	left	thru	right	left	thru	right	left	thru	right	left	thru	right	Volume
2022 Existing Counts		**557**	**0**	**0**	**589**		**0**		**0**				**1146**
Balancing													0
2022 Existing Volumes (Balanced)		**557**	**0**	**0**	**589**		**0**		**0**				**1146**
Base growth (0.27% compounded for 3 yrs)		5			5								10
Base growth (0.27% compounded for 8 yrs)		12			13								25
													0
													0
2025 Base Volumes		**562**	**0**	**0**	**594**		**0**		**0**				**1156**
2030 Base Volumes		**569**	**0**	**0**	**602**		**0**		**0**				**1171**

ENTER = **274**
EXIT = **274**

Trip Assignment % - New Enter			7.0%		51.0%								
Trip Assignment % - New Exit		36.0%							15.0%				
New Trips		99	19		140				41				**299**
Base Redistribution		-13			-10								**-23**
2025 Projected Volumes		**648**	**19**		**724**				**41**				**1432**
2030 Projected Volumes		**655**	**19**		**732**				**41**				**1447**

TPD# MILE.00001
8/17/2023
Traffic Volumes Worksheet
Intersection: **Pennsylvania Avenue (SR 2037) & Existing Eastern Driveway**
Synchro Node: **5** **Adjacent intersections:** **West** **0** **East** **0** **North** **0** **South** **0**

Time Period: Weekday A.M. Peak Hour

	Eastbound			Westbound			Northbound			Southbound			Intersection
	left	thru	right	left	thru	right	left	thru	right	left	thru	right	Volume
2022 Existing Counts		**572**	**0**	**1**	**1131**		**0**		**0**				**1704**
Balancing													0
2022 Existing Volumes (Balanced)		**572**	**0**	**1**	**1131**		**0**		**0**				**1704**
Base growth (0.27% compounded for 3 yrs)		5			9								14
Base growth (0.27% compounded for 8 yrs)		12			25								37
													0
													0
2025 Base Volumes		**577**	**0**	**1**	**1140**		**0**		**0**				**1718**
2030 Base Volumes		**584**	**0**	**1**	**1156**		**0**		**0**				**1741**

ENTER = **102**
EXIT = **38**

Trip Assignment % - New Enter					51.0%								
Trip Assignment % - New Exit		51.0%											
New Trips		19			52								**71**
Base Redistribution		-10		-1	-24								**-35**
2025 Projected Volumes		**586**			**1168**								**1754**
2030 Projected Volumes		**593**			**1184**								**1777**

Time Period: Weekday P.M. Peak Hour

	Eastbound			Westbound			Northbound			Southbound			Intersection
	left	thru	right	left	thru	right	left	thru	right	left	thru	right	Volume
2022 Existing Counts		**1142**	**0**	**0**	**638**		**0**		**0**				**1780**
Balancing													0
2022 Existing Volumes (Balanced)		**1142**	**0**	**0**	**638**		**0**		**0**				**1780**
Base growth (0.27% compounded for 3 yrs)		9			5								14
Base growth (0.27% compounded for 8 yrs)		25			14								39
													0
													0
2025 Base Volumes		**1151**	**0**	**0**	**643**		**0**		**0**				**1794**
2030 Base Volumes		**1167**	**0**	**0**	**652**		**0**		**0**				**1819**

ENTER = **73**
EXIT = **109**

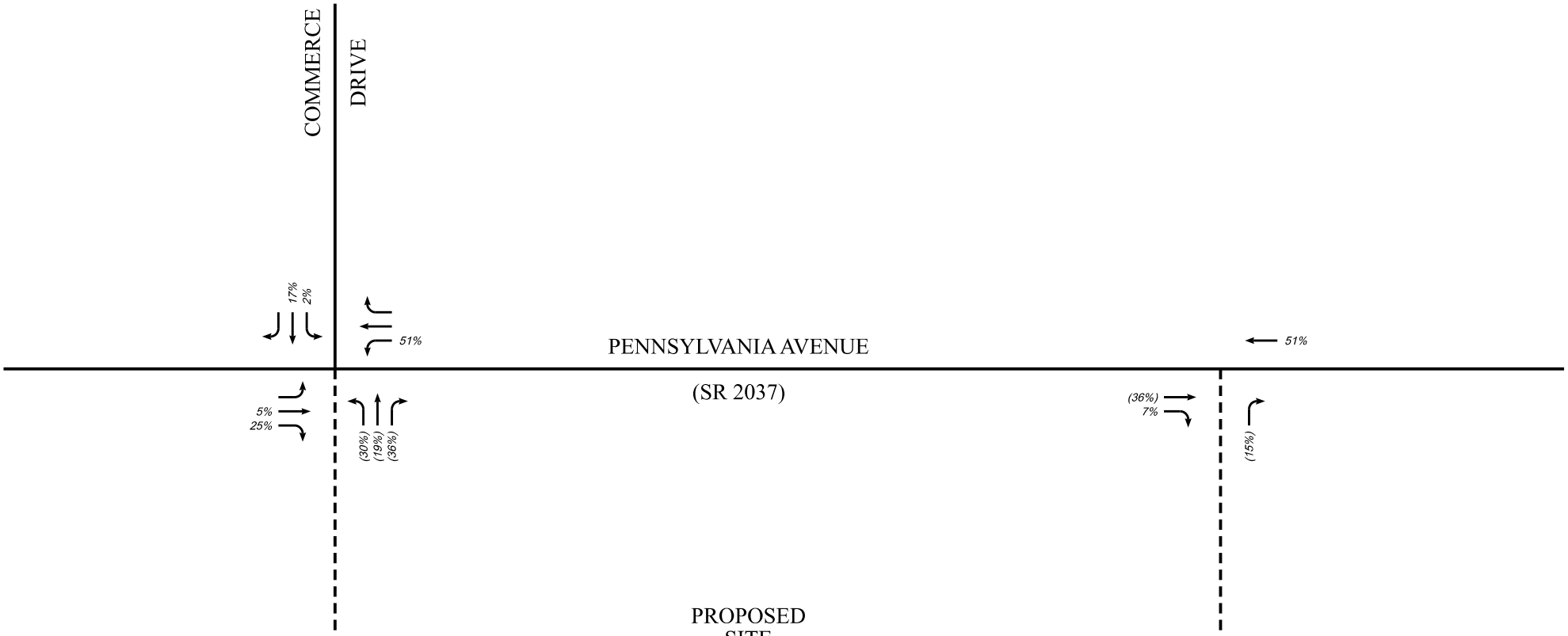
Trip Assignment % - New Enter					51.0%								
Trip Assignment % - New Exit		51.0%											
New Trips		56			37								**93**
Base Redistribution		-22			-12								**-34**
2025 Projected Volumes		**1185**			**668**								**1853**
2030 Projected Volumes		**1201**			**677**								**1878**

Time Period: Saturday Peak Hour

	Eastbound			Westbound			Northbound			Southbound			Intersection
	left	thru	right	left	thru	right	left	thru	right	left	thru	right	Volume
2022 Existing Counts		**556**	**0**	**0**	**590**		**0**		**0**				**1146**
Balancing													0
2022 Existing Volumes (Balanced)		**556**	**0**	**0**	**590**	**0**	**0**		**0**				**1146**
Base growth (0.27% compounded for 3 yrs)		5			5								10
Base growth (0.27% compounded for 8 yrs)		12			13								25
													0
													0
2025 Base Volumes		**561**	**0**	**0**	**595**		**0**		**0**				**1156**
2030 Base Volumes		**568**	**0**	**0**	**603**		**0**		**0**				**1171**

ENTER = **274**
EXIT = **274**

Trip Assignment % - New Enter					51.0%								
Trip Assignment % - New Exit		51.0%											
New Trips		140			140								**280**
Base Redistribution		-13			-10								**-23**
2025 Projected Volumes		**688**			**725**								**1413**
2030 Projected Volumes		**695**			**733**								**1428**



KEY:

- - - - - PROPOSED DRIVEWAY

SCHEMATIC DRAWING:NOT TO SCALE

N

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FIGURE D-1

BMW CAR DEALERSHIP REDEVELOPMENT
WEEKDAY AND WEEKEND PEAK HOUR
NEW TRIP ASSIGNMENT

APPENDIX E

Critical/Follow-Up Gap Data

CRITICAL HEADWAY CALCULATIONS FOR TWSC INTERSECTION WITHIN SUBURBAN LAND USE CONTEXT
BASED ON PENNSYLVANIA DEFAULT VALUES FROM CHAPTER 10 OF PENNDOT PUBLICATION 46

$t_{c,x} = t_{c,\,base} + t_{c,HV} * P_{HV} + t_{c,G} * G - t_{3,LT}$

where:

$t_{c,x}$ = critical headway for movement x (s)
$t_{c,base}$ = base crtitcal headway from Chapter 10 of PennDOT Publication 46
$t_{c,HV}$ = adjustment factor for heavy vehciles (1.0 for major streets with one lane in each direction; 2.0 for major streets with two or three lanes in each direction) (s)
P_{HV} = proportion of heavy vehciles for movement (expressed as a decimal; e.g., P_{HV}=0.02 for 2% heavy vehciles)
$t_{c,G}$ = adjustment factor for grade (0.1 for Movement 9 and 12; 0.2 for Movements 7,8,10, and 11) (s)
G = percent grade (expressed as an integer; e.g., G= -2 for a 2% downhill grade)
$t_{c,base}$ = adjustment factor for intersction geometry (0.7 for minor street left-turn movement at three-leg intersections; 0.0 otherwise) (s)

LEFT TURN FROM MAJOR ROADWAY - TWO LANES ($t_{c,\,base}$ = 4.3)

GRADE	0	-1	1	-2	2	-3	3	-4	4	-5	5	-6	6	-7	7	-8	8	-9	9	-10	10
HV %																					
0	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3
1	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3
2	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3
3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3
4	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3
5	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4
6	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4
7	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4
8	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4
9	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4
10	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4

LEFT TURN FROM MINOR ROADWAY - TWO LANES - 4-LEG INTERSECTION ($t_{c,\,base}$ = 7.1)

GRADE	0	-1	1	-2	2	-3	3	-4	4	-5	5	-6	6	-7	7	-8	8	-9	9	-10	10
HV %																					
0	7.1	6.9	7.3	6.7	7.5	6.5	7.7	6.3	7.9	6.1	8.1	5.9	8.3	5.7	8.5	5.5	8.7	5.3	8.9	5.1	9.1
1	7.1	6.9	7.3	6.7	7.5	6.5	7.7	6.3	7.9	6.1	8.1	5.9	8.3	5.7	8.5	5.5	8.7	5.3	8.9	5.1	9.1
2	7.1	6.9	7.3	6.7	7.5	6.5	7.7	6.3	7.9	6.1	8.1	5.9	8.3	5.7	8.5	5.5	8.7	5.3	8.9	5.1	9.1
3	7.1	6.9	7.3	6.7	7.5	6.5	7.7	6.3	7.9	6.1	8.1	5.9	8.3	5.7	8.5	5.5	8.7	5.3	8.9	5.1	9.1
4	7.1	6.9	7.3	6.7	7.5	6.5	7.7	6.3	7.9	6.1	8.1	5.9	8.3	5.7	8.5	5.5	8.7	5.3	8.9	5.1	9.1
5	7.2	7.0	7.4	6.8	7.6	6.6	7.8	6.4	8.0	6.2	8.2	6.0	8.4	5.8	8.6	5.6	8.8	5.4	9.0	5.2	9.2
6	7.2	7.0	7.4	6.8	7.6	6.6	7.8	6.4	8.0	6.2	8.2	6.0	8.4	5.8	8.6	5.6	8.8	5.4	9.0	5.2	9.2
7	7.2	7.0	7.4	6.8	7.6	6.6	7.8	6.4	8.0	6.2	8.2	6.0	8.4	5.8	8.6	5.6	8.8	5.4	9.0	5.2	9.2
8	7.2	7.0	7.4	6.8	7.6	6.6	7.8	6.4	8.0	6.2	8.2	6.0	8.4	5.8	8.6	5.6	8.8	5.4	9.0	5.2	9.2
9	7.2	7.0	7.4	6.8	7.6	6.6	7.8	6.4	8.0	6.2	8.2	6.0	8.4	5.8	8.6	5.6	8.8	5.4	9.0	5.2	9.2
10	7.2	7.0	7.4	6.8	7.6	6.6	7.8	6.4	8.0	6.2	8.2	6.0	8.4	5.8	8.6	5.6	8.8	5.4	9.0	5.2	9.2

THROUGH TRAFFIC ON MINOR ROADWAY - TWO LANES ($t_{c,\,base}$ = 6.5)

GRADE	0	-1	1	-2	2	-3	3	-4	4	-5	5	-6	6	-7	7	-8	8	-9	9	-10	10
HV %																					
0	6.5	6.3	6.7	6.1	6.9	5.9	7.1	5.7	7.3	5.5	7.5	5.3	7.7	5.1	7.9	4.9	8.1	4.7	8.3	4.5	8.5
1	6.5	6.3	6.7	6.1	6.9	5.9	7.1	5.7	7.3	5.5	7.5	5.3	7.7	5.1	7.9	4.9	8.1	4.7	8.3	4.5	8.5
2	6.5	6.3	6.7	6.1	6.9	5.9	7.1	5.7	7.3	5.5	7.5	5.3	7.7	5.1	7.9	4.9	8.1	4.7	8.3	4.5	8.5
3	6.5	6.3	6.7	6.1	6.9	5.9	7.1	5.7	7.3	5.5	7.5	5.3	7.7	5.1	7.9	4.9	8.1	4.7	8.3	4.5	8.5
4	6.5	6.3	6.7	6.1	6.9	5.9	7.1	5.7	7.3	5.5	7.5	5.3	7.7	5.1	7.9	4.9	8.1	4.7	8.3	4.5	8.5
5	6.6	6.4	6.8	6.2	7.0	6.0	7.2	5.8	7.4	5.6	7.6	5.4	7.8	5.2	8.0	5.0	8.2	4.8	8.4	4.6	8.6
6	6.6	6.4	6.8	6.2	7.0	6.0	7.2	5.8	7.4	5.6	7.6	5.4	7.8	5.2	8.0	5.0	8.2	4.8	8.4	4.6	8.6
7	6.6	6.4	6.8	6.2	7.0	6.0	7.2	5.8	7.4	5.6	7.6	5.4	7.8	5.2	8.0	5.0	8.2	4.8	8.4	4.6	8.6
8	6.6	6.4	6.8	6.2	7.0	6.0	7.2	5.8	7.4	5.6	7.6	5.4	7.8	5.2	8.0	5.0	8.2	4.8	8.4	4.6	8.6
9	6.6	6.4	6.8	6.2	7.0	6.0	7.2	5.8	7.4	5.6	7.6	5.4	7.8	5.2	8.0	5.0	8.2	4.8	8.4	4.6	8.6
10	6.6	6.4	6.8	6.2	7.0	6.0	7.2	5.8	7.4	5.6	7.6	5.4	7.8	5.2	8.0	5.0	8.2	4.8	8.4	4.6	8.6

RIGHT TURN FROM MINOR ROADWAY - TWO LANES ($t_{c,\,base}$ = 6.2)

GRADE	0	-1	1	-2	2	-3	3	-4	4	-5	5	-6	6	-7	7	-8	8	-9	9	-10	10
HV %																					
0	6.2	6.1	6.3	6.0	6.4	5.9	6.5	5.8	6.6	5.7	6.7	5.6	6.8	5.5	6.9	5.4	7.0	5.3	7.1	5.2	7.2
1	6.2	6.1	6.3	6.0	6.4	5.9	6.5	5.8	6.6	5.7	6.7	5.6	6.8	5.5	6.9	5.4	7.0	5.3	7.1	5.2	7.2
2	6.2	6.1	6.3	6.0	6.4	5.9	6.5	5.8	6.6	5.7	6.7	5.6	6.8	5.5	6.9	5.4	7.0	5.3	7.1	5.2	7.2
3	6.2	6.1	6.3	6.0	6.4	5.9	6.5	5.8	6.6	5.7	6.7	5.6	6.8	5.5	6.9	5.4	7.0	5.3	7.1	5.2	7.2
4	6.2	6.1	6.3	6.0	6.4	5.9	6.5	5.8	6.6	5.7	6.7	5.6	6.8	5.5	6.9	5.4	7.0	5.3	7.1	5.2	7.2
5	6.3	6.2	6.4	6.1	6.5	6.0	6.6	5.9	6.7	5.8	6.8	5.7	6.9	5.6	7.0	5.5	7.1	5.4	7.2	5.3	7.3
6	6.3	6.2	6.4	6.1	6.5	6.0	6.6	5.9	6.7	5.8	6.8	5.7	6.9	5.6	7.0	5.5	7.1	5.4	7.2	5.3	7.3
7	6.3	6.2	6.4	6.1	6.5	6.0	6.6	5.9	6.7	5.8	6.8	5.7	6.9	5.6	7.0	5.5	7.1	5.4	7.2	5.3	7.3
8	6.3	6.2	6.4	6.1	6.5	6.0	6.6	5.9	6.7	5.8	6.8	5.7	6.9	5.6	7.0	5.5	7.1	5.4	7.2	5.3	7.3
9	6.3	6.2	6.4	6.1	6.5	6.0	6.6	5.9	6.7	5.8	6.8	5.7	6.9	5.6	7.0	5.5	7.1	5.4	7.2	5.3	7.3
10	6.3	6.2	6.4	6.1	6.5	6.0	6.6	5.9	6.7	5.8	6.8	5.7	6.9	5.6	7.0	5.5	7.1	5.4	7.2	5.3	7.3

CRITICAL HEADWAY CALCULATIONS FOR TWSC INTERSECTION WITHIN SUBURBAN LAND USE CONTEXT
BASED ON PENNSYLVANIA DEFAULT VALUES FROM CHAPTER 10 OF PENNDOT PUBLICATION 46

$t_{c,x} = t_{c,\,base} + t_{c,HV} * P_{HV} + t_{c,G} * G - t_{3,LT}$

where:

$t_{c,x}$ = critical headway for movement x (s)
$t_{c,base}$ = base crtitcal headway from Chapter 10 of PennDOT Publication 46
$t_{c,HV}$ = adjustment factor for heavy vehciles (1.0 for major streets with one lane in each direction; 2.0 for major streets with two or three lanes in each direction) (s)
P_{HV} = proportion of heavy vehciles for movement (expressed as a decimal; e.g., P_{HV}=0.02 for 2% heavy vehciles)
$t_{c,G}$ = adjustment factor for grade (0.1 for Movement 9 and 12; 0.2 for Movements 7,8,10, and 11) (s)
G = percent grade (expressed as an integer; e.g., G= -2 for a 2% downhill grade)
$t_{c,base}$ = adjustment factor for intersction geometry (0.7 for minor street left-turn movement at three-leg intersections; 0.0 otherwise) (s)

LEFT TURN FROM MAJOR ROADWAY - TWO LANES ($t_{c,\,base}$ = 4.3)

GRADE	0	-1	1	-2	2	-3	3	-4	4	-5	5	-6	6	-7	7	-8	8	-9	9	-10	10
HV %																					
0	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3
1	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3
2	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3
3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3
4	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3
5	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4
6	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4
7	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4
8	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4
9	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4
10	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4

LEFT TURN FROM MINOR ROADWAY - TWO LANES - 3-LEG INTERSECTION ($t_{c,\,base}$ = 7.1)

GRADE	0	-1	1	-2	2	-3	3	-4	4	-5	5	-6	6	-7	7	-8	8	-9	9	-10	10
HV %																					
0	6.4	6.2	6.6	6.0	6.8	5.8	7.0	5.6	7.2	5.4	7.4	5.2	7.6	5.0	7.8	4.8	8.0	4.6	8.2	4.4	8.4
1	6.4	6.2	6.6	6.0	6.8	5.8	7.0	5.6	7.2	5.4	7.4	5.2	7.6	5.0	7.8	4.8	8.0	4.6	8.2	4.4	8.4
2	6.4	6.2	6.6	6.0	6.8	5.8	7.0	5.6	7.2	5.4	7.4	5.2	7.6	5.0	7.8	4.8	8.0	4.6	8.2	4.4	8.4
3	6.4	6.2	6.6	6.0	6.8	5.8	7.0	5.6	7.2	5.4	7.4	5.2	7.6	5.0	7.8	4.8	8.0	4.6	8.2	4.4	8.4
4	6.4	6.2	6.6	6.0	6.8	5.8	7.0	5.6	7.2	5.4	7.4	5.2	7.6	5.0	7.8	4.8	8.0	4.6	8.2	4.4	8.4
5	6.5	6.3	6.7	6.1	6.9	5.9	7.1	5.7	7.3	5.5	7.5	5.3	7.7	5.1	7.9	4.9	8.1	4.7	8.3	4.5	8.5
6	6.5	6.3	6.7	6.1	6.9	5.9	7.1	5.7	7.3	5.5	7.5	5.3	7.7	5.1	7.9	4.9	8.1	4.7	8.3	4.5	8.5
7	6.5	6.3	6.7	6.1	6.9	5.9	7.1	5.7	7.3	5.5	7.5	5.3	7.7	5.1	7.9	4.9	8.1	4.7	8.3	4.5	8.5
8	6.5	6.3	6.7	6.1	6.9	5.9	7.1	5.7	7.3	5.5	7.5	5.3	7.7	5.1	7.9	4.9	8.1	4.7	8.3	4.5	8.5
9	6.5	6.3	6.7	6.1	6.9	5.9	7.1	5.7	7.3	5.5	7.5	5.3	7.7	5.1	7.9	4.9	8.1	4.7	8.3	4.5	8.5
10	6.5	6.3	6.7	6.1	6.9	5.9	7.1	5.7	7.3	5.5	7.5	5.3	7.7	5.1	7.9	4.9	8.1	4.7	8.3	4.5	8.5

RIGHT TURN FROM MINOR ROADWAY - TWO LANES ($t_{c,\,base}$ = 6.2)

GRADE	0	-1	1	-2	2	-3	3	-4	4	-5	5	-6	6	-7	7	-8	8	-9	9	-10	10
HV %																					
0	6.2	6.1	6.3	6.0	6.4	5.9	6.5	5.8	6.6	5.7	6.7	5.6	6.8	5.5	6.9	5.4	7.0	5.3	7.1	5.2	7.2
1	6.2	6.1	6.3	6.0	6.4	5.9	6.5	5.8	6.6	5.7	6.7	5.6	6.8	5.5	6.9	5.4	7.0	5.3	7.1	5.2	7.2
2	6.2	6.1	6.3	6.0	6.4	5.9	6.5	5.8	6.6	5.7	6.7	5.6	6.8	5.5	6.9	5.4	7.0	5.3	7.1	5.2	7.2
3	6.2	6.1	6.3	6.0	6.4	5.9	6.5	5.8	6.6	5.7	6.7	5.6	6.8	5.5	6.9	5.4	7.0	5.3	7.1	5.2	7.2
4	6.2	6.1	6.3	6.0	6.4	5.9	6.5	5.8	6.6	5.7	6.7	5.6	6.8	5.5	6.9	5.4	7.0	5.3	7.1	5.2	7.2
5	6.3	6.2	6.4	6.1	6.5	6.0	6.6	5.9	6.7	5.8	6.8	5.7	6.9	5.6	7.0	5.5	7.1	5.4	7.2	5.3	7.3
6	6.3	6.2	6.4	6.1	6.5	6.0	6.6	5.9	6.7	5.8	6.8	5.7	6.9	5.6	7.0	5.5	7.1	5.4	7.2	5.3	7.3
7	6.3	6.2	6.4	6.1	6.5	6.0	6.6	5.9	6.7	5.8	6.8	5.7	6.9	5.6	7.0	5.5	7.1	5.4	7.2	5.3	7.3
8	6.3	6.2	6.4	6.1	6.5	6.0	6.6	5.9	6.7	5.8	6.8	5.7	6.9	5.6	7.0	5.5	7.1	5.4	7.2	5.3	7.3
9	6.3	6.2	6.4	6.1	6.5	6.0	6.6	5.9	6.7	5.8	6.8	5.7	6.9	5.6	7.0	5.5	7.1	5.4	7.2	5.3	7.3
10	6.3	6.2	6.4	6.1	6.5	6.0	6.6	5.9	6.7	5.8	6.8	5.7	6.9	5.6	7.0	5.5	7.1	5.4	7.2	5.3	7.3

FOLLOW-UP HEADWAY CALCULATIONS FOR TWSC INTERSECTION WITHIN SUBURBAN LAND USE CONTEXT
BASED ON PENNSYLVANIA DEFAULT VALUES FROM CHAPTER 10 OF PENNDOT PUBLICATION 46

$t_{f,x} = t_{f,\,base} + t_{f,HV} * P_{HV}$

where:

$t_{f,x}$ = follow-up headway for movement x (s)
$t_{f,base}$ = base follow-up headway from Chapter 10 of PennDOT Publication 46
$t_{f,HV}$ = adjustment factor for heavy vehciles (0.9 for major streets with one lane in each direction; 1.0 for major streets with two or three lanes in each direction) (s)
P_{HV} = proportion of heavy vehciles for movement (expressed as a decimal; e.g., P_{HV}=0.02 for 2% heavy vehciles)

LEFT TURN FROM MAJOR ROADWAY - TWO LANES ($t_{f,\,base}$ = 3.0)

GRADE	0	-1	1	-2	2	-3	3	-4	4	-5	5	-6	6	-7	7	-8	8	-9	9	-10	10
HV %																					
0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
1	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
2	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
3	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
4	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
5	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
6	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1
7	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1
8	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1
9	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1
10	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1

LEFT TURN FROM MINOR ROADWAY - TWO LANES ($t_{f,\,base}$ = 3.0)

GRADE	0	-1	1	-2	2	-3	3	-4	4	-5	5	-6	6	-7	7	-8	8	-9	9	-10	10
HV %																					
0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
1	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
2	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
3	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
4	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
5	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
6	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1
7	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1
8	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1
9	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1
10	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1

THROUGH TRAFFIC ON MINOR ROADWAY - TWO LANES ($t_{f,\,base}$ = 4.0)

GRADE	0	-1	1	-2	2	-3	3	-4	4	-5	5	-6	6	-7	7	-8	8	-9	9	-10	10
HV %																					
0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
1	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
2	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
3	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
4	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
5	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
6	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1
7	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1
8	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1
9	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1
10	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1

RIGHT TURN FROM MINOR ROADWAY - TWO LANES ($t_{f,\,base}$ = 3.1)

GRADE	0	-1	1	-2	2	-3	3	-4	4	-5	5	-6	6	-7	7	-8	8	-9	9	-10	10
HV %																					
0	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1
1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1
2	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1
3	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1
4	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1
5	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1
6	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2
7	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2
8	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2
9	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2
10	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2

APPENDIX F

Capacity Analyses

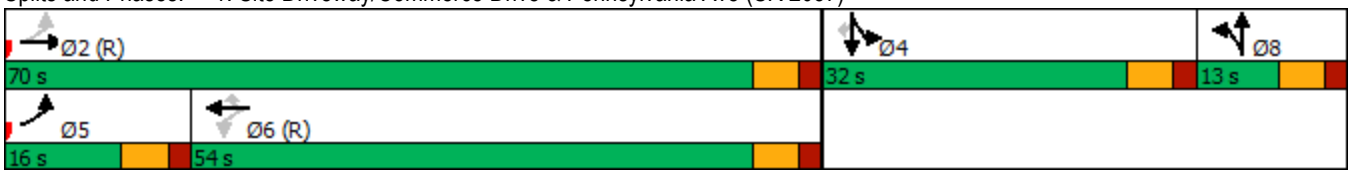
2022 Existing Conditions

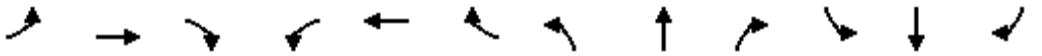
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	219	420	9	19	464	654	7	4	8	140	9	139
Future Volume (vph)	219	420	9	19	464	654	7	4	8	140	9	139
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	10	14	14	10	11	12	12	12	12	10	11	11
Grade (%)		-1%			1%			0%			0%	
Storage Length (ft)	180		0	230		100	0		0	150		0
Storage Lanes	1		0	1		1	0		0	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	1.00	1.00	1.00	0.95	0.95	1.00
Ped Bike Factor	1.00	1.00						0.98		1.00	1.00	0.99
Frt		0.997				0.850		0.943				0.850
Flt Protected	0.950			0.950				0.982		0.950	0.958	
Satd. Flow (prot)	1573	3549	0	1588	3133	1492	0	1647	0	1404	1462	1422
Flt Permitted	0.426			0.496				0.982		0.950	0.958	
Satd. Flow (perm)	704	3549	0	829	3133	1492	0	1637	0	1400	1458	1401
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		3				674		8				143
Link Speed (mph)		35			35			30			35	
Link Distance (ft)		92			155			162			498	
Travel Time (s)		1.8			3.0			3.7			9.7	
Confl. Peds. (#/hr)	4		4				4		4	2		2
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	2%	3%	0%	0%	5%	2%	0%	0%	0%	8%	11%	4%
Adj. Flow (vph)	226	433	9	20	478	674	7	4	8	144	9	143
Shared Lane Traffic (%)										47%		
Lane Group Flow (vph)	226	442	0	20	478	674	0	19	0	76	77	143
Turn Type	pm+pt	NA		Perm	NA	Perm	Split	NA		Split	NA	Perm
Protected Phases	5	2			6		8	8		4	4	
Permitted Phases	2			6		6						4
Detector Phase	5	2		6	6	6	8	8		4	4	4
Switch Phase												
Minimum Initial (s)	7.0	20.0		20.0	20.0	20.0	5.0	5.0		5.0	5.0	5.0
Minimum Split (s)	13.0	26.0		26.0	26.0	26.0	11.0	11.0		11.0	11.0	11.0
Total Split (s)	16.0	70.0		54.0	54.0	54.0	13.0	13.0		32.0	32.0	32.0
Total Split (%)	13.9%	60.9%		47.0%	47.0%	47.0%	11.3%	11.3%		27.8%	27.8%	27.8%
Yellow Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
All-Red Time (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0		2.0	2.0	2.0
Lost Time Adjust (s)	-1.0	-1.0		-1.0	-1.0	-1.0		-1.0		-1.0	-1.0	-1.0
Total Lost Time (s)	5.0	5.0		5.0	5.0	5.0		5.0		5.0	5.0	5.0
Lead/Lag	Lead			Lag	Lag	Lag						
Lead-Lag Optimize?	Yes			Yes	Yes	Yes						
Recall Mode	None	C-Max		C-Max	C-Max	C-Max	None	None		None	None	None

Intersection Summary	
Area Type:	Other
Cycle Length: 115	
Actuated Cycle Length: 115	
Offset: 12 (10%), Referenced to phase 2:EBTL and 6:WBTL, Start of 1st Green	

Natural Cycle: 65
Control Type: Actuated-Coordinated

Splits and Phases: 1: Site Driveway/Commerce Drive & Pennsylvania Ave (SR 2037)





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	219	420	9	19	464	654	7	4	8	140	9	139
Future Volume (veh/h)	219	420	9	19	464	654	7	4	8	140	9	139
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.97	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1809	1866	1911	1794	1724	1766	1800	1800	1800	1688	1646	1744
Adj Flow Rate, veh/h	226	433	9	20	478	0	7	4	2	150	0	101
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	3	0	0	5	2	0	0	0	8	11	4
Cap, veh/h	687	2636	55	629	2045		21	12	6	334	0	153
Arrive On Green	0.07	0.74	0.73	0.62	0.62	0.00	0.01	0.02	0.01	0.10	0.00	0.10
Sat Flow, veh/h	1723	3552	74	907	3276	1497	915	523	261	3215	0	1469
Grp Volume(v), veh/h	226	216	226	20	478	0	13	0	0	150	0	101
Grp Sat Flow(s),veh/h/ln	1723	1773	1853	907	1638	1497	1698	0	0	1607	0	1469
Q Serve(g_s), s	4.9	4.1	4.1	1.0	7.4	0.0	0.9	0.0	0.0	5.0	0.0	7.6
Cycle Q Clear(g_c), s	4.9	4.1	4.1	1.0	7.4	0.0	0.9	0.0	0.0	5.0	0.0	7.6
Prop In Lane	1.00		0.04	1.00		1.00	0.54		0.15	1.00		1.00
Lane Grp Cap(c), veh/h	687	1316	1375	629	2045		40	0	0	334	0	153
V/C Ratio(X)	0.33	0.16	0.16	0.03	0.23		0.33	0.00	0.00	0.45	0.00	0.66
Avail Cap(c_a), veh/h	724	1316	1375	629	2045		118	0	0	755	0	345
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	5.7	4.4	4.4	8.3	9.5	0.0	55.6	0.0	0.0	48.4	0.0	49.6
Incr Delay (d2), s/veh	0.3	0.3	0.3	0.1	0.3	0.0	4.6	0.0	0.0	0.9	0.0	4.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	2.8	2.4	2.6	0.4	4.6	0.0	0.8	0.0	0.0	3.7	0.0	5.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	6.0	4.6	4.6	8.4	9.8	0.0	60.2	0.0	0.0	49.4	0.0	54.4
LnGrp LOS	A	A	A	A	A		E	A	A	D	A	D
Approach Vol, veh/h		668			498			13			251	
Approach Delay, s/veh		5.1			9.7			60.2			51.4	
Approach LOS		A			A			E			D	

Timer - Assigned Phs		2		4	5	6		8				
Phs Duration (G+Y+Rc), s		90.3		17.0	13.5	76.8		7.7				
Change Period (Y+Rc), s		6.0		6.0	6.0	6.0		6.0				
Max Green Setting (Gmax), s		64.0		26.0	10.0	48.0		7.0				
Max Q Clear Time (g_c+I1), s		6.6		10.1	7.4	9.9		2.9				
Green Ext Time (p_c), s		1.6		0.9	0.2	2.2		0.0				

Intersection Summary		
HCM 6th Ctrl Delay	15.3	
HCM 6th LOS	B	

Notes

User approved volume balancing among the lanes for turning movement.

Unsignalized Delay for [WBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	676	0	0	601	0	2
Future Volume (vph)	676	0	0	601	0	2
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	14	11	12	12	15
Grade (%)	0%			0%	-1%	
Lane Util. Factor	0.95	1.00	1.00	0.95	1.00	1.00
Ped Bike Factor						
Frt						0.865
Flt Protected						
Satd. Flow (prot)	3320	0	0	3288	0	1721
Flt Permitted						
Satd. Flow (perm)	3320	0	0	3288	0	1721
Link Speed (mph)	35			35	30	
Link Distance (ft)	1190			92	164	
Travel Time (s)	23.2			1.8	3.7	
Confl. Peds. (#/hr)			4		9	9
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	3%	0%	0%	4%	0%	0%
Adj. Flow (vph)	697	0	0	620	0	2
Shared Lane Traffic (%)						
Lane Group Flow (vph)	697	0	0	620	0	2
Sign Control	Free			Free	Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	0

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑			↑↑		↱
Traffic Vol, veh/h	676	0	0	601	0	2
Future Vol, veh/h	676	0	0	601	0	2
Conflicting Peds, #/hr	0	0	4	0	9	9
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	-1	-
Peak Hour Factor	97	97	97	97	97	97
Heavy Vehicles, %	3	0	0	4	0	0
Mvmt Flow	697	0	0	620	0	2

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	-	-	-	-	358
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.8
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.1
Pot Cap-1 Maneuver	-	0	0	-	0	686
Stage 1	-	0	0	-	0	-
Stage 2	-	0	0	-	0	-
Platoon blocked, %	-			-		
Mov Cap-1 Maneuver	-	-	-	-	-	680
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	10.3
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	WBT
Capacity (veh/h)	680	-	-
HCM Lane V/C Ratio	0.003	-	-
HCM Control Delay (s)	10.3	-	-
HCM Lane LOS	B	-	-
HCM 95th %tile Q(veh)	0	-	-

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	566	2	4	1119	1	0
Future Volume (vph)	566	2	4	1119	1	0
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	15	12	10	16	12
Grade (%)	0%			0%	-2%	
Lane Util. Factor	0.95	0.95	0.95	0.95	1.00	1.00
Ped Bike Factor						
Frt	0.999					
Flt Protected					0.950	
Satd. Flow (prot)	3254	0	0	3099	1957	0
Flt Permitted					0.950	
Satd. Flow (perm)	3254	0	0	3099	1957	0
Link Speed (mph)	35			35	30	
Link Distance (ft)	155			113	194	
Travel Time (s)	3.0			2.2	4.4	
Confl. Peds. (#/hr)			1		2	2
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99
Heavy Vehicles (%)	5%	0%	0%	3%	0%	0%
Adj. Flow (vph)	572	2	4	1130	1	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	574	0	0	1134	1	0
Sign Control	Free			Free	Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	0

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	566	2	4	1119	1	0
Future Vol, veh/h	566	2	4	1119	1	0
Conflicting Peds, #/hr	0	0	1	0	2	2
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	-2	-
Peak Hour Factor	99	99	99	99	99	99
Heavy Vehicles, %	5	0	0	3	0	0
Mvmt Flow	572	2	4	1130	1	0

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	575	0	1149	290
Stage 1	-	-	-	-	574	-
Stage 2	-	-	-	-	575	-
Critical Hdwy	-	-	4.3	-	6.4	6.7
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	3	-	3	3.1
Pot Cap-1 Maneuver	-	-	*967	-	*366	*936
Stage 1	-	-	-	-	*967	-
Stage 2	-	-	-	-	*638	-
Platoon blocked, %	-	-	1	-	1	1
Mov Cap-1 Maneuver	-	-	*966	-	*360	*933
Mov Cap-2 Maneuver	-	-	-	-	*360	-
Stage 1	-	-	-	-	*966	-
Stage 2	-	-	-	-	*630	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	15
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	360	-	-	* 966	-
HCM Lane V/C Ratio	0.003	-	-	0.004	-
HCM Control Delay (s)	15	-	-	8.7	-
HCM Lane LOS	C	-	-	A	-
HCM 95th %tile Q(veh)	0	-	-	0	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	572	0	1	1138	0	0
Future Volume (vph)	572	0	1	1138	0	0
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	13	10	14	10	12
Grade (%)	0%			0%	-2%	
Lane Util. Factor	0.95	0.95	0.95	0.95	1.00	1.00
Ped Bike Factor						
Frt						
Flt Protected						
Satd. Flow (prot)	3288	0	0	3542	1697	0
Flt Permitted						
Satd. Flow (perm)	3288	0	0	3542	1697	0
Link Speed (mph)	35			35	30	
Link Distance (ft)	113			65	161	
Travel Time (s)	2.2			1.3	3.7	
Confl. Peds. (#/hr)		1	3		6	6
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles (%)	4%	0%	0%	3%	0%	0%
Adj. Flow (vph)	584	0	1	1161	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	584	0	0	1162	0	0
Sign Control	Free			Free	Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	0

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	572	0	1	1138	0	0
Future Vol, veh/h	572	0	1	1138	0	0
Conflicting Peds, #/hr	0	1	3	0	6	6
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	-2	-
Peak Hour Factor	98	98	98	98	98	98
Heavy Vehicles, %	4	0	0	3	0	0
Mvmt Flow	584	0	1	1161	0	0

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	587	0	1176	301
Stage 1	-	-	-	-	587	-
Stage 2	-	-	-	-	589	-
Critical Hdwy	-	-	4.3	-	6.4	6.7
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	3	-	3	3.1
Pot Cap-1 Maneuver	-	-	*955	-	*359	*924
Stage 1	-	-	-	-	*955	-
Stage 2	-	-	-	-	*628	-
Platoon blocked, %	-	-	1	-	1	1
Mov Cap-1 Maneuver	-	-	*952	-	*355	*915
Mov Cap-2 Maneuver	-	-	-	-	*355	-
Stage 1	-	-	-	-	*953	-
Stage 2	-	-	-	-	*622	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	0
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	-	-	-	* 952	-
HCM Lane V/C Ratio	-	-	-	0.001	-
HCM Control Delay (s)	0	-	-	8.8	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	-	-	-	0	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	572	0	1	1131	0	0
Future Volume (vph)	572	0	1	1131	0	0
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	13	11	11	12	12
Grade (%)	0%			-1%	-1%	
Lane Util. Factor	0.95	0.95	0.95	0.95	1.00	1.00
Ped Bike Factor						
Frt						
Flt Protected						
Satd. Flow (prot)	3288	0	0	3226	1809	0
Flt Permitted						
Satd. Flow (perm)	3288	0	0	3226	1809	0
Link Speed (mph)	35			35	30	
Link Distance (ft)	65			652	111	
Travel Time (s)	1.3			12.7	2.5	
Confl. Peds. (#/hr)		1	3		7	7
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99
Heavy Vehicles (%)	4%	0%	0%	3%	0%	0%
Adj. Flow (vph)	578	0	1	1142	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	578	0	0	1143	0	0
Sign Control	Free			Free	Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	0

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	572	0	1	1131	0	0
Future Vol, veh/h	572	0	1	1131	0	0
Conflicting Peds, #/hr	0	1	3	0	7	7
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	-1	-1	-
Peak Hour Factor	99	99	99	99	99	99
Heavy Vehicles, %	4	0	0	3	0	0
Mvmt Flow	578	0	1	1142	0	0

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	581	0	1161	299
Stage 1	-	-	-	-	581	-
Stage 2	-	-	-	-	580	-
Critical Hdwy	-	-	4.3	-	6.6	6.8
Critical Hdwy Stg 1	-	-	-	-	5.6	-
Critical Hdwy Stg 2	-	-	-	-	5.6	-
Follow-up Hdwy	-	-	3	-	3	3.1
Pot Cap-1 Maneuver	-	-	*955	-	*354	*924
Stage 1	-	-	-	-	*955	-
Stage 2	-	-	-	-	*614	-
Platoon blocked, %	-	-	1	-	1	1
Mov Cap-1 Maneuver	-	-	*952	-	*350	*915
Mov Cap-2 Maneuver	-	-	-	-	*350	-
Stage 1	-	-	-	-	*952	-
Stage 2	-	-	-	-	*608	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	0
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	-	-	-	* 952	-
HCM Lane V/C Ratio	-	-	-	0.001	-
HCM Control Delay (s)	0	-	-	8.8	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	-	-	-	0	-

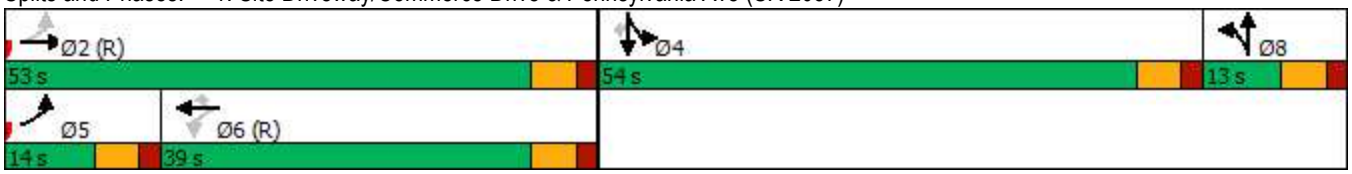
Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	192	555	9	12	355	276	10	6	14	562	2	268
Future Volume (vph)	192	555	9	12	355	276	10	6	14	562	2	268
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	10	14	14	10	11	12	12	12	12	10	11	11
Grade (%)		-1%			1%			0%			0%	
Storage Length (ft)	180		0	230		100	0		0	150		0
Storage Lanes	1		0	1		1	0		0	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	1.00	1.00	1.00	0.95	0.95	1.00
Ped Bike Factor	1.00	1.00								1.00	1.00	0.99
Frt		0.998				0.850		0.939				0.850
Flt Protected	0.950			0.950				0.984		0.950	0.953	
Satd. Flow (prot)	1588	3622	0	1588	3257	1478	0	1663	0	1486	1545	1464
Flt Permitted	0.431			0.417				0.984		0.950	0.953	
Satd. Flow (perm)	720	3622	0	697	3257	1478	0	1663	0	1485	1544	1446
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		2				303		15				295
Link Speed (mph)		35			35			30			35	
Link Distance (ft)		92			155			162			498	
Travel Time (s)		1.8			3.0			3.7			9.7	
Confl. Peds. (#/hr)	1		1							1		1
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles (%)	1%	1%	0%	0%	1%	3%	0%	0%	0%	2%	0%	1%
Adj. Flow (vph)	211	610	10	13	390	303	11	7	15	618	2	295
Shared Lane Traffic (%)										50%		
Lane Group Flow (vph)	211	620	0	13	390	303	0	33	0	309	311	295
Turn Type	pm+pt	NA		Perm	NA	Perm	Split	NA		Split	NA	Perm
Protected Phases	5	2			6		8	8		4	4	
Permitted Phases	2			6		6						4
Detector Phase	5	2		6	6	6	8	8		4	4	4
Switch Phase												
Minimum Initial (s)	7.0	20.0		20.0	20.0	20.0	5.0	5.0		5.0	5.0	5.0
Minimum Split (s)	13.0	26.0		26.0	26.0	26.0	11.0	11.0		11.0	11.0	11.0
Total Split (s)	14.0	53.0		39.0	39.0	39.0	13.0	13.0		54.0	54.0	54.0
Total Split (%)	11.7%	44.2%		32.5%	32.5%	32.5%	10.8%	10.8%		45.0%	45.0%	45.0%
Yellow Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
All-Red Time (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0		2.0	2.0	2.0
Lost Time Adjust (s)	-1.0	-1.0		-1.0	-1.0	-1.0		-1.0		-1.0	-1.0	-1.0
Total Lost Time (s)	5.0	5.0		5.0	5.0	5.0		5.0		5.0	5.0	5.0
Lead/Lag	Lead			Lag	Lag	Lag						
Lead-Lag Optimize?	Yes			Yes	Yes	Yes						
Recall Mode	None	C-Max		C-Max	C-Max	C-Max	None	None		None	None	None

Intersection Summary	
Area Type:	Other
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 108 (90%), Referenced to phase 2:EBTL and 6:WBTL, Start of 1st Green	

Natural Cycle: 70
Control Type: Actuated-Coordinated

Splits and Phases: 1: Site Driveway/Commerce Drive & Pennsylvania Ave (SR 2037)



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	192	555	9	12	355	276	10	6	14	562	2	268
Future Volume (veh/h)	192	555	9	12	355	276	10	6	14	562	2	268
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1823	1896	1911	1794	1780	1752	1800	1800	1800	1772	1800	1786
Adj Flow Rate, veh/h	211	610	10	13	390	0	11	7	3	619	0	154
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	1	1	0	0	1	3	0	0	0	2	0	1
Cap, veh/h	609	2230	37	444	1685		26	17	7	779	0	349
Arrive On Green	0.08	0.61	0.61	0.50	0.50	0.00	0.02	0.03	0.02	0.23	0.00	0.23
Sat Flow, veh/h	1736	3627	59	771	3383	1485	896	570	244	3375	0	1512
Grp Volume(v), veh/h	211	303	317	13	390	0	21	0	0	619	0	154
Grp Sat Flow(s),veh/h/ln	1736	1801	1885	771	1691	1485	1711	0	0	1688	0	1512
Q Serve(g_s), s	6.7	9.3	9.4	1.0	7.8	0.0	1.5	0.0	0.0	20.7	0.0	10.5
Cycle Q Clear(g_c), s	6.7	9.3	9.4	1.0	7.8	0.0	1.5	0.0	0.0	20.7	0.0	10.5
Prop In Lane	1.00		0.03	1.00		1.00	0.52		0.14	1.00		1.00
Lane Grp Cap(c), veh/h	609	1107	1159	444	1685		50	0	0	779	0	349
V/C Ratio(X)	0.35	0.27	0.27	0.03	0.23		0.42	0.00	0.00	0.79	0.00	0.44
Avail Cap(c_a), veh/h	609	1107	1159	444	1685		114	0	0	1378	0	617
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	11.8	10.7	10.7	15.4	17.1	0.0	57.6	0.0	0.0	43.5	0.0	39.5
Incr Delay (d2), s/veh	0.3	0.6	0.6	0.1	0.3	0.0	5.5	0.0	0.0	1.9	0.0	0.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	4.6	6.7	7.0	0.4	5.5	0.0	1.3	0.0	0.0	13.6	0.0	7.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	12.2	11.3	11.3	15.5	17.4	0.0	63.0	0.0	0.0	45.3	0.0	40.4
LnGrp LOS	B	B	B	B	B		E	A	A	D	A	D
Approach Vol, veh/h		831			403			21			773	
Approach Delay, s/veh		11.5			17.3			63.0			44.4	
Approach LOS		B			B			E			D	

Timer - Assigned Phs		2		4	5	6		8				
Phs Duration (G+Y+Rc), s		78.8		32.7	14.0	64.8		8.5				
Change Period (Y+Rc), s		6.0		6.0	6.0	6.0		6.0				
Max Green Setting (Gmax), s		47.0		48.0	8.0	33.0		7.0				
Max Q Clear Time (g_c+I1), s		11.8		23.2	9.2	10.3		3.5				
Green Ext Time (p_c), s		2.3		3.5	0.0	1.6		0.0				

Intersection Summary												
HCM 6th Ctrl Delay			25.7									
HCM 6th LOS			C									

Notes

User approved volume balancing among the lanes for turning movement.

Unsignalized Delay for [WBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	765	2	0	622	1	3
Future Volume (vph)	765	2	0	622	1	3
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	14	11	12	12	15
Grade (%)	0%			0%	-1%	
Lane Util. Factor	0.95	0.95	1.00	0.95	1.00	1.00
Ped Bike Factor						
Frt						0.865
Flt Protected					0.950	
Satd. Flow (prot)	3386	0	0	3386	0	1721
Flt Permitted					0.950	
Satd. Flow (perm)	3386	0	0	3386	0	1721
Link Speed (mph)	35			35	30	
Link Distance (ft)	1190			92	164	
Travel Time (s)	23.2			1.8	3.7	
Confl. Peds. (#/hr)					3	3
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	1%	0%	0%	1%	0%	0%
Adj. Flow (vph)	789	2	0	641	1	3
Shared Lane Traffic (%)						
Lane Group Flow (vph)	791	0	0	641	1	3
Sign Control	Free			Free	Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	0

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑			↑↑		↱
Traffic Vol, veh/h	765	2	0	622	1	3
Future Vol, veh/h	765	2	0	622	1	3
Conflicting Peds, #/hr	0	0	0	0	3	3
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	-1	-
Peak Hour Factor	97	97	97	97	97	97
Heavy Vehicles, %	1	0	0	1	0	0
Mvmt Flow	789	2	0	641	1	3

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	-	-	1114	399
Stage 1	-	-	-	-	790	-
Stage 2	-	-	-	-	324	-
Critical Hdwy	-	-	-	-	6.6	6.8
Critical Hdwy Stg 1	-	-	-	-	5.6	-
Critical Hdwy Stg 2	-	-	-	-	5.6	-
Follow-up Hdwy	-	-	-	-	3	3.1
Pot Cap-1 Maneuver	-	-	0	-	*239	646
Stage 1	-	-	0	-	*479	-
Stage 2	-	-	0	-	*998	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	-	-	*238	644
Mov Cap-2 Maneuver	-	-	-	-	*238	-
Stage 1	-	-	-	-	*479	-
Stage 2	-	-	-	-	*995	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	10.6
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT
Capacity (veh/h)	644	-	-	-
HCM Lane V/C Ratio	0.005	-	-	-
HCM Control Delay (s)	10.6	-	-	-
HCM Lane LOS	B	-	-	-
HCM 95th %tile Q(veh)	0	-	-	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	1118	0	0	648	1	5
Future Volume (vph)	1118	0	0	648	1	5
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	15	12	10	16	12
Grade (%)	0%			0%	-2%	
Lane Util. Factor	0.95	1.00	1.00	0.95	1.00	1.00
Frt					0.884	
Flt Protected					0.993	
Satd. Flow (prot)	3386	0	0	3129	1809	0
Flt Permitted					0.993	
Satd. Flow (perm)	3386	0	0	3129	1809	0
Link Speed (mph)	35			35	30	
Link Distance (ft)	155			113	194	
Travel Time (s)	3.0			2.2	4.4	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	1%	0%	0%	2%	0%	0%
Adj. Flow (vph)	1242	0	0	720	1	6
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1242	0	0	720	7	0
Sign Control	Free			Free	Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	0

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	1118	0	0	648	1	5
Future Vol, veh/h	1118	0	0	648	1	5
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	-2	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	1	0	0	2	0	0
Mvmt Flow	1242	0	0	720	1	6

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	-	-	-	1602	621
Stage 1	-	-	-	-	1242	-
Stage 2	-	-	-	-	360	-
Critical Hdwy	-	-	-	-	6.4	6.7
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	-	-	3	3.1
Pot Cap-1 Maneuver	-	0	0	-	295	*686
Stage 1	-	0	0	-	690	-
Stage 2	-	0	0	-	809	-
Platoon blocked, %	-			-	1	1
Mov Cap-1 Maneuver	-	-	-	-	295	*686
Mov Cap-2 Maneuver	-	-	-	-	295	-
Stage 1	-	-	-	-	690	-
Stage 2	-	-	-	-	809	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	11.5
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	WBT
Capacity (veh/h)	562	-	-
HCM Lane V/C Ratio	0.012	-	-
HCM Control Delay (s)	11.5	-	-
HCM Lane LOS	B	-	-
HCM 95th %tile Q(veh)	0	-	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	1149	0	0	633	0	0
Future Volume (vph)	1149	0	0	633	0	0
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	13	10	14	10	12
Grade (%)	0%			0%	-2%	
Lane Util. Factor	0.95	0.95	0.95	0.95	1.00	1.00
Ped Bike Factor						
Frt						
Flt Protected						
Satd. Flow (prot)	3353	0	0	3576	1697	0
Flt Permitted						
Satd. Flow (perm)	3353	0	0	3576	1697	0
Link Speed (mph)	35			35	30	
Link Distance (ft)	113			65	161	
Travel Time (s)	2.2			1.3	3.7	
Confl. Peds. (#/hr)					2	2
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	2%	0%	0%	2%	0%	0%
Adj. Flow (vph)	1277	0	0	703	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1277	0	0	703	0	0
Sign Control	Free			Free	Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	0

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	1149	0	0	633	0	0
Future Vol, veh/h	1149	0	0	633	0	0
Conflicting Peds, #/hr	0	0	0	0	2	2
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	-2	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	0	0	2	0	0
Mvmt Flow	1277	0	0	703	0	0

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	1277	0	1631	641
Stage 1	-	-	-	-	1277	-
Stage 2	-	-	-	-	354	-
Critical Hdwy	-	-	4.3	-	6.4	6.7
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	3	-	3	3.1
Pot Cap-1 Maneuver	-	-	*681	-	*303	*659
Stage 1	-	-	-	-	*681	-
Stage 2	-	-	-	-	*815	-
Platoon blocked, %	-	-	1	-	1	1
Mov Cap-1 Maneuver	-	-	*681	-	*302	*657
Mov Cap-2 Maneuver	-	-	-	-	*302	-
Stage 1	-	-	-	-	*681	-
Stage 2	-	-	-	-	*813	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	0
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	-	-	-	* 681	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	0	-	-	0	-
HCM Lane LOS	A	-	-	A	-
HCM 95th %tile Q(veh)	-	-	-	0	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	1142	0	0	638	0	0
Future Volume (vph)	1142	0	0	638	0	0
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	13	11	11	12	12
Grade (%)	0%			-1%	-1%	
Lane Util. Factor	0.95	0.95	0.95	0.95	1.00	1.00
Ped Bike Factor						
Frt						
Flt Protected						
Satd. Flow (prot)	3386	0	0	3257	1809	0
Flt Permitted						
Satd. Flow (perm)	3386	0	0	3257	1809	0
Link Speed (mph)	35			35	30	
Link Distance (ft)	65			652	111	
Travel Time (s)	1.3			12.7	2.5	
Confl. Peds. (#/hr)					1	1
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	1%	0%	0%	2%	0%	0%
Adj. Flow (vph)	1269	0	0	709	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1269	0	0	709	0	0
Sign Control	Free			Free	Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	0

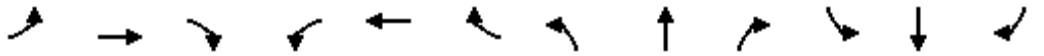
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	1142	0	0	638	0	0
Future Vol, veh/h	1142	0	0	638	0	0
Conflicting Peds, #/hr	0	0	0	0	1	1
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	-1	-1	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	1	0	0	2	0	0
Mvmt Flow	1269	0	0	709	0	0

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	1269	0	1625	636
Stage 1	-	-	-	-	1269	-
Stage 2	-	-	-	-	356	-
Critical Hdwy	-	-	4.3	-	6.6	6.8
Critical Hdwy Stg 1	-	-	-	-	5.6	-
Critical Hdwy Stg 2	-	-	-	-	5.6	-
Follow-up Hdwy	-	-	3	-	3	3.1
Pot Cap-1 Maneuver	-	-	*681	-	*297	*659
Stage 1	-	-	-	-	*681	-
Stage 2	-	-	-	-	*797	-
Platoon blocked, %	-	-	1	-	1	1
Mov Cap-1 Maneuver	-	-	*681	-	*297	*658
Mov Cap-2 Maneuver	-	-	-	-	*297	-
Stage 1	-	-	-	-	*681	-
Stage 2	-	-	-	-	*796	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	0
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	-	-	-	* 681	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	0	-	-	0	-
HCM Lane LOS	A	-	-	A	-
HCM 95th %tile Q(veh)	-	-	-	0	-

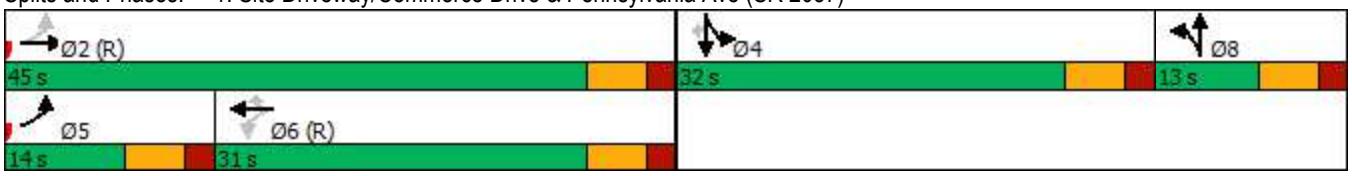
Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	121	377	6	10	402	176	5	4	9	161	6	117
Future Volume (vph)	121	377	6	10	402	176	5	4	9	161	6	117
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	10	14	14	10	11	12	12	12	12	10	11	11
Grade (%)		-1%			1%			0%			0%	
Storage Length (ft)	180		0	230		100	0		0	150		0
Storage Lanes	1		0	1		1	0		0	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	1.00	1.00	1.00	0.95	0.95	1.00
Frt		0.998				0.850		0.932				0.850
Flt Protected	0.950			0.950				0.986		0.950	0.956	
Satd. Flow (prot)	1604	3588	0	1588	3225	1507	0	1654	0	1516	1580	1479
Flt Permitted	0.441			0.515				0.986		0.950	0.956	
Satd. Flow (perm)	745	3588	0	861	3225	1507	0	1654	0	1516	1580	1479
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		2				185		9				182
Link Speed (mph)		35			35			30			35	
Link Distance (ft)		92			155			162			498	
Travel Time (s)		1.8			3.0			3.7			9.7	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	0%	2%	0%	0%	2%	1%	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	127	397	6	11	423	185	5	4	9	169	6	123
Shared Lane Traffic (%)										48%		
Lane Group Flow (vph)	127	403	0	11	423	185	0	18	0	88	87	123
Turn Type	pm+pt	NA		Perm	NA	Perm	Split	NA		Split	NA	Perm
Protected Phases	5	2			6		8	8		4	4	
Permitted Phases	2			6		6						4
Detector Phase	5	2		6	6	6	8	8		4	4	4
Switch Phase												
Minimum Initial (s)	7.0	20.0		20.0	20.0	20.0	5.0	5.0		5.0	5.0	5.0
Minimum Split (s)	13.0	26.0		26.0	26.0	26.0	11.0	11.0		11.0	11.0	11.0
Total Split (s)	14.0	45.0		31.0	31.0	31.0	13.0	13.0		32.0	32.0	32.0
Total Split (%)	15.6%	50.0%		34.4%	34.4%	34.4%	14.4%	14.4%		35.6%	35.6%	35.6%
Yellow Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
All-Red Time (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0		2.0	2.0	2.0
Lost Time Adjust (s)	-1.0	-1.0		-1.0	-1.0	-1.0		-1.0		-1.0	-1.0	-1.0
Total Lost Time (s)	5.0	5.0		5.0	5.0	5.0		5.0		5.0	5.0	5.0
Lead/Lag	Lead			Lag	Lag	Lag						
Lead-Lag Optimize?	Yes			Yes	Yes	Yes						
Recall Mode	None	C-Max		C-Max	C-Max	C-Max	None	None		None	None	None

Intersection Summary	
Area Type:	Other
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 34 (38%), Referenced to phase 2:EBTL and 6:WBTL, Start of 1st Green	
Natural Cycle: 65	
Control Type: Actuated-Coordinated	

Splits and Phases: 1: Site Driveway/Commerce Drive & Pennsylvania Ave (SR 2037)



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	121	377	6	10	402	176	5	4	9	161	6	117
Future Volume (veh/h)	121	377	6	10	402	176	5	4	9	161	6	117
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1837	1881	1911	1794	1766	1780	1800	1800	1800	1800	1800	1800
Adj Flow Rate, veh/h	127	397	5	11	423	0	5	4	5	173	0	63
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	2	0	0	2	1	0	0	0	0	0	0
Cap, veh/h	709	2566	32	616	1908		16	13	16	329	0	147
Arrive On Green	0.09	0.71	0.70	0.57	0.57	0.00	0.02	0.03	0.02	0.10	0.00	0.10
Sat Flow, veh/h	1750	3615	45	943	3356	1509	594	475	594	3429	0	1525
Grp Volume(v), veh/h	127	196	206	11	423	0	14	0	0	173	0	63
Grp Sat Flow(s),veh/h/ln	1750	1787	1873	943	1678	1509	1663	0	0	1714	0	1525
Q Serve(g_s), s	2.2	3.2	3.2	0.5	5.6	0.0	0.7	0.0	0.0	4.3	0.0	3.5
Cycle Q Clear(g_c), s	2.2	3.2	3.2	0.5	5.6	0.0	0.7	0.0	0.0	4.3	0.0	3.5
Prop In Lane	1.00		0.02	1.00		1.00	0.36		0.36	1.00		1.00
Lane Grp Cap(c), veh/h	709	1268	1329	616	1908		46	0	0	329	0	147
V/C Ratio(X)	0.18	0.15	0.15	0.02	0.22		0.31	0.00	0.00	0.53	0.00	0.43
Avail Cap(c_a), veh/h	735	1268	1329	616	1908		148	0	0	1029	0	458
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	5.3	4.3	4.3	8.5	9.6	0.0	43.3	0.0	0.0	38.7	0.0	38.4
Incr Delay (d2), s/veh	0.1	0.3	0.2	0.1	0.3	0.0	3.7	0.0	0.0	1.3	0.0	2.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	1.2	1.8	1.9	0.2	3.5	0.0	0.6	0.0	0.0	3.3	0.0	2.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	5.4	4.5	4.5	8.5	9.9	0.0	47.0	0.0	0.0	40.0	0.0	40.3
LnGrp LOS	A	A	A	A	A		D	A	A	D	A	D
Approach Vol, veh/h		529			434			14			236	
Approach Delay, s/veh		4.7			9.8			47.0			40.1	
Approach LOS		A			A			D			D	
Timer - Assigned Phs		2		4	5	6		8				
Phs Duration (G+Y+Rc), s		68.9		13.6	12.7	56.2		7.5				
Change Period (Y+Rc), s		6.0		6.0	6.0	6.0		6.0				
Max Green Setting (Gmax), s		39.0		26.0	8.0	25.0		7.0				
Max Q Clear Time (g_c+I1), s		5.7		6.8	4.7	8.1		2.7				
Green Ext Time (p_c), s		1.4		0.8	0.1	1.6		0.0				

Intersection Summary	
HCM 6th Ctrl Delay	13.9
HCM 6th LOS	B

Notes

User approved volume balancing among the lanes for turning movement.

Unsignalized Delay for [WBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	503	0	0	518	0	2
Future Volume (vph)	503	0	0	518	0	2
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	14	11	12	12	15
Grade (%)	0%			0%	-1%	
Lane Util. Factor	0.95	1.00	1.00	0.95	1.00	1.00
Frt						0.865
Flt Protected						
Satd. Flow (prot)	3386	0	0	3386	0	1721
Flt Permitted						
Satd. Flow (perm)	3386	0	0	3386	0	1721
Link Speed (mph)	35			35	30	
Link Distance (ft)	1190			92	164	
Travel Time (s)	23.2			1.8	3.7	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	1%	0%	0%	1%	0%	0%
Adj. Flow (vph)	524	0	0	540	0	2
Shared Lane Traffic (%)						
Lane Group Flow (vph)	524	0	0	540	0	2
Sign Control	Free			Free	Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	0

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑			↑↑		↱
Traffic Vol, veh/h	503	0	0	518	0	2
Future Vol, veh/h	503	0	0	518	0	2
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	-1	-
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	1	0	0	1	0	0
Mvmt Flow	524	0	0	540	0	2

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	-	-	-	-	262
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.8
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.1
Pot Cap-1 Maneuver	-	0	0	-	0	791
Stage 1	-	0	0	-	0	-
Stage 2	-	0	0	-	0	-
Platoon blocked, %	-			-		
Mov Cap-1 Maneuver	-	-	-	-	-	791
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	9.6
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	WBT
Capacity (veh/h)	791	-	-
HCM Lane V/C Ratio	0.003	-	-
HCM Control Delay (s)	9.6	-	-
HCM Lane LOS	A	-	-
HCM 95th %tile Q(veh)	0	-	-

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	557	1	0	577	2	2
Future Volume (vph)	557	1	0	577	2	2
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	15	12	10	16	12
Grade (%)	0%			0%	-2%	
Lane Util. Factor	0.95	0.95	1.00	0.95	1.00	1.00
Frt					0.932	
Flt Protected					0.976	
Satd. Flow (prot)	3386	0	0	3160	1874	0
Flt Permitted					0.976	
Satd. Flow (perm)	3386	0	0	3160	1874	0
Link Speed (mph)	35			35	30	
Link Distance (ft)	155			113	194	
Travel Time (s)	3.0			2.2	4.4	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	1%	0%	0%	1%	0%	0%
Adj. Flow (vph)	574	1	0	595	2	2
Shared Lane Traffic (%)						
Lane Group Flow (vph)	575	0	0	595	4	0
Sign Control	Free			Free	Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	0

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑			↑↑	↱	
Traffic Vol, veh/h	557	1	0	577	2	2
Future Vol, veh/h	557	1	0	577	2	2
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	-2	-
Peak Hour Factor	97	97	97	97	97	97
Heavy Vehicles, %	1	0	0	1	0	0
Mvmt Flow	574	1	0	595	2	2

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	-	-	873	288
Stage 1	-	-	-	-	575	-
Stage 2	-	-	-	-	298	-
Critical Hdwy	-	-	-	-	6.4	6.7
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	-	-	3	3.1
Pot Cap-1 Maneuver	-	-	0	-	576	*943
Stage 1	-	-	0	-	958	-
Stage 2	-	-	0	-	867	-
Platoon blocked, %	-	-		-	1	1
Mov Cap-1 Maneuver	-	-	-	-	576	*943
Mov Cap-2 Maneuver	-	-	-	-	576	-
Stage 1	-	-	-	-	958	-
Stage 2	-	-	-	-	867	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	10.1
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT
Capacity (veh/h)	715	-	-	-
HCM Lane V/C Ratio	0.006	-	-	-
HCM Control Delay (s)	10.1	-	-	-
HCM Lane LOS	B	-	-	-
HCM 95th %tile Q(veh)	0	-	-	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	557	0	0	589	0	0
Future Volume (vph)	557	0	0	589	0	0
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	13	10	14	10	12
Grade (%)	0%			0%	-2%	
Lane Util. Factor	0.95	0.95	0.95	0.95	1.00	1.00
Frt						
Flt Protected						
Satd. Flow (prot)	3386	0	0	3576	1697	0
Flt Permitted						
Satd. Flow (perm)	3386	0	0	3576	1697	0
Link Speed (mph)	35			35	30	
Link Distance (ft)	113			65	161	
Travel Time (s)	2.2			1.3	3.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	1%	0%	0%	2%	0%	0%
Adj. Flow (vph)	605	0	0	640	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	605	0	0	640	0	0
Sign Control	Free			Free	Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	0

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	557	0	0	589	0	0
Future Vol, veh/h	557	0	0	589	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	-2	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	1	0	0	2	0	0
Mvmt Flow	605	0	0	640	0	0

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	605	0	925	303
Stage 1	-	-	-	-	605	-
Stage 2	-	-	-	-	320	-
Critical Hdwy	-	-	4.3	-	6.4	6.7
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	3	-	3	3.1
Pot Cap-1 Maneuver	-	-	951	-	545	*931
Stage 1	-	-	-	-	946	-
Stage 2	-	-	-	-	846	-
Platoon blocked, %	-	-	1	-	1	1
Mov Cap-1 Maneuver	-	-	951	-	545	*931
Mov Cap-2 Maneuver	-	-	-	-	545	-
Stage 1	-	-	-	-	946	-
Stage 2	-	-	-	-	846	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	0
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	-	-	-	951	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	0	-	-	0	-
HCM Lane LOS	A	-	-	A	-
HCM 95th %tile Q(veh)	-	-	-	0	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	556	0	0	590	0	0
Future Volume (vph)	556	0	0	590	0	0
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	13	11	11	12	12
Grade (%)	0%			-1%	-1%	
Lane Util. Factor	0.95	0.95	0.95	0.95	1.00	1.00
Frt						
Flt Protected						
Satd. Flow (prot)	3386	0	0	3257	1809	0
Flt Permitted						
Satd. Flow (perm)	3386	0	0	3257	1809	0
Link Speed (mph)	35			35	30	
Link Distance (ft)	65			652	111	
Travel Time (s)	1.3			12.7	2.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	1%	0%	0%	2%	0%	0%
Adj. Flow (vph)	604	0	0	641	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	604	0	0	641	0	0
Sign Control	Free			Free	Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	0

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	556	0	0	590	0	0
Future Vol, veh/h	556	0	0	590	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	-1	-1	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	1	0	0	2	0	0
Mvmt Flow	604	0	0	641	0	0

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	604	0	925	302
Stage 1	-	-	-	-	604	-
Stage 2	-	-	-	-	321	-
Critical Hdwy	-	-	4.3	-	6.6	6.8
Critical Hdwy Stg 1	-	-	-	-	5.6	-
Critical Hdwy Stg 2	-	-	-	-	5.6	-
Follow-up Hdwy	-	-	3	-	3	3.1
Pot Cap-1 Maneuver	-	-	952	-	532	*931
Stage 1	-	-	-	-	947	-
Stage 2	-	-	-	-	830	-
Platoon blocked, %	-	-	1	-	1	1
Mov Cap-1 Maneuver	-	-	952	-	532	*931
Mov Cap-2 Maneuver	-	-	-	-	532	-
Stage 1	-	-	-	-	947	-
Stage 2	-	-	-	-	830	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	0
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	-	-	-	952	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	0	-	-	0	-
HCM Lane LOS	A	-	-	A	-
HCM 95th %tile Q(veh)	-	-	-	0	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

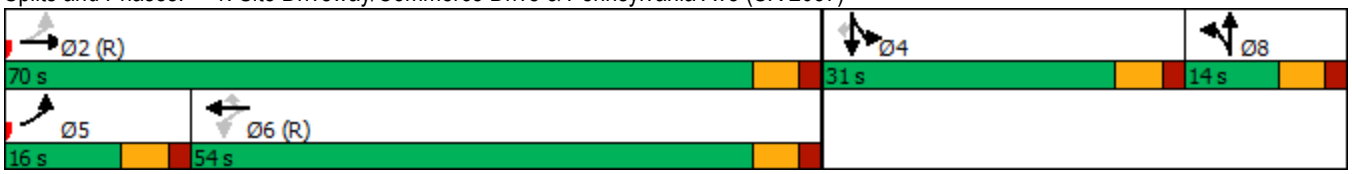
2025 Base Conditions

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	221	423	9	19	468	659	7	4	8	141	9	140
Future Volume (vph)	221	423	9	19	468	659	7	4	8	141	9	140
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	10	14	14	10	11	12	12	12	12	10	11	11
Grade (%)		-1%			1%			0%			0%	
Storage Length (ft)	180		0	230		100	0		0	150		0
Storage Lanes	1		0	1		1	0		0	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	1.00	1.00	1.00	0.95	0.95	1.00
Ped Bike Factor	1.00	1.00						0.98		1.00	1.00	0.99
Frt		0.997				0.850		0.943				0.850
Flt Protected	0.950			0.950				0.982		0.950	0.958	
Satd. Flow (prot)	1573	3549	0	1588	3133	1492	0	1648	0	1404	1462	1422
Flt Permitted	0.423			0.494				0.982		0.950	0.958	
Satd. Flow (perm)	699	3549	0	826	3133	1492	0	1640	0	1400	1458	1401
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		3				679		8				144
Link Speed (mph)		35			35			30			35	
Link Distance (ft)		92			155			162			498	
Travel Time (s)		1.8			3.0			3.7			9.7	
Confl. Peds. (#/hr)	4		4				4		4	2		2
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	2%	3%	0%	0%	5%	2%	0%	0%	0%	8%	11%	4%
Adj. Flow (vph)	228	436	9	20	482	679	7	4	8	145	9	144
Shared Lane Traffic (%)										47%		
Lane Group Flow (vph)	228	445	0	20	482	679	0	19	0	77	77	144
Turn Type	pm+pt	NA		Perm	NA	Perm	Split	NA		Split	NA	Perm
Protected Phases	5	2			6		8	8		4	4	
Permitted Phases	2			6		6						4
Detector Phase	5	2		6	6	6	8	8		4	4	4
Switch Phase												
Minimum Initial (s)	7.0	20.0		20.0	20.0	20.0	5.0	5.0		5.0	5.0	5.0
Minimum Split (s)	13.0	26.0		26.0	26.0	26.0	11.0	11.0		11.0	11.0	11.0
Total Split (s)	16.0	70.0		54.0	54.0	54.0	14.0	14.0		31.0	31.0	31.0
Total Split (%)	13.9%	60.9%		47.0%	47.0%	47.0%	12.2%	12.2%		27.0%	27.0%	27.0%
Yellow Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
All-Red Time (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0		2.0	2.0	2.0
Lost Time Adjust (s)	-1.0	-1.0		-1.0	-1.0	-1.0		-1.0		-1.0	-1.0	-1.0
Total Lost Time (s)	5.0	5.0		5.0	5.0	5.0		5.0		5.0	5.0	5.0
Lead/Lag	Lead			Lag	Lag	Lag						
Lead-Lag Optimize?	Yes			Yes	Yes	Yes						
Recall Mode	None	C-Max		C-Max	C-Max	C-Max	None	None		None	None	None

Intersection Summary	
Area Type:	Other
Cycle Length: 115	
Actuated Cycle Length: 115	
Offset: 12 (10%), Referenced to phase 2:EBTL and 6:WBTL, Start of 1st Green	

Natural Cycle: 65
Control Type: Actuated-Coordinated

Splits and Phases: 1: Site Driveway/Commerce Drive & Pennsylvania Ave (SR 2037)



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	221	423	9	19	468	659	7	4	8	141	9	140
Future Volume (veh/h)	221	423	9	19	468	659	7	4	8	141	9	140
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.97	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1809	1866	1911	1794	1724	1766	1800	1800	1800	1688	1646	1744
Adj Flow Rate, veh/h	228	436	9	20	482	0	7	4	2	151	0	102
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	3	0	0	5	2	0	0	0	8	11	4
Cap, veh/h	685	2635	54	627	2042		21	12	6	336	0	153
Arrive On Green	0.07	0.74	0.73	0.62	0.62	0.00	0.01	0.02	0.01	0.10	0.00	0.10
Sat Flow, veh/h	1723	3553	73	905	3276	1497	915	523	261	3215	0	1469
Grp Volume(v), veh/h	228	217	228	20	482	0	13	0	0	151	0	102
Grp Sat Flow(s),veh/h/ln	1723	1773	1853	905	1638	1497	1698	0	0	1607	0	1469
Q Serve(g_s), s	4.9	4.2	4.2	1.0	7.5	0.0	0.9	0.0	0.0	5.1	0.0	7.7
Cycle Q Clear(g_c), s	4.9	4.2	4.2	1.0	7.5	0.0	0.9	0.0	0.0	5.1	0.0	7.7
Prop In Lane	1.00		0.04	1.00		1.00	0.54		0.15	1.00		1.00
Lane Grp Cap(c), veh/h	685	1315	1374	627	2042		40	0	0	336	0	153
V/C Ratio(X)	0.33	0.17	0.17	0.03	0.24		0.33	0.00	0.00	0.45	0.00	0.66
Avail Cap(c_a), veh/h	720	1315	1374	627	2042		133	0	0	727	0	332
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	5.8	4.4	4.4	8.3	9.6	0.0	55.6	0.0	0.0	48.4	0.0	49.6
Incr Delay (d2), s/veh	0.3	0.3	0.3	0.1	0.3	0.0	4.6	0.0	0.0	0.9	0.0	4.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	2.8	2.5	2.6	0.4	4.7	0.0	0.8	0.0	0.0	3.7	0.0	5.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	6.1	4.6	4.6	8.4	9.8	0.0	60.2	0.0	0.0	49.3	0.0	54.4
LnGrp LOS	A	A	A	A	A		E	A	A	D	A	D
Approach Vol, veh/h		673			502			13			253	
Approach Delay, s/veh		5.1			9.8			60.2			51.4	
Approach LOS		A			A			E			D	

Timer - Assigned Phs		2		4	5	6		8				
Phs Duration (G+Y+Rc), s		90.3		17.0	13.6	76.7		7.7				
Change Period (Y+Rc), s		6.0		6.0	6.0	6.0		6.0				
Max Green Setting (Gmax), s		64.0		25.0	10.0	48.0		8.0				
Max Q Clear Time (g_c+I1), s		6.7		10.2	7.4	10.0		2.9				
Green Ext Time (p_c), s		1.6		0.8	0.2	2.2		0.0				

Intersection Summary		
HCM 6th Ctrl Delay	15.4	
HCM 6th LOS	B	

Notes

User approved volume balancing among the lanes for turning movement.

Unsignalized Delay for [WBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	681	0	0	606	0	2
Future Volume (vph)	681	0	0	606	0	2
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	14	11	12	12	15
Grade (%)	0%			0%	-1%	
Lane Util. Factor	0.95	1.00	1.00	0.95	1.00	1.00
Ped Bike Factor						
Frt						0.865
Flt Protected						
Satd. Flow (prot)	3320	0	0	3288	0	1721
Flt Permitted						
Satd. Flow (perm)	3320	0	0	3288	0	1721
Link Speed (mph)	35			35	30	
Link Distance (ft)	1190			92	164	
Travel Time (s)	23.2			1.8	3.7	
Confl. Peds. (#/hr)			4		9	9
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	3%	0%	0%	4%	0%	0%
Adj. Flow (vph)	702	0	0	625	0	2
Shared Lane Traffic (%)						
Lane Group Flow (vph)	702	0	0	625	0	2
Sign Control	Free			Free	Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	0

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑			↑↑		↱
Traffic Vol, veh/h	681	0	0	606	0	2
Future Vol, veh/h	681	0	0	606	0	2
Conflicting Peds, #/hr	0	0	4	0	9	9
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	-1	-
Peak Hour Factor	97	97	97	97	97	97
Heavy Vehicles, %	3	0	0	4	0	0
Mvmt Flow	702	0	0	625	0	2

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	-	-	-	-	360
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.8
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.1
Pot Cap-1 Maneuver	-	0	0	-	0	684
Stage 1	-	0	0	-	0	-
Stage 2	-	0	0	-	0	-
Platoon blocked, %	-			-		
Mov Cap-1 Maneuver	-	-	-	-	-	678
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	10.3
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	WBT
Capacity (veh/h)	678	-	-
HCM Lane V/C Ratio	0.003	-	-
HCM Control Delay (s)	10.3	-	-
HCM Lane LOS	B	-	-
HCM 95th %tile Q(veh)	0	-	-

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	571	2	4	1128	1	0
Future Volume (vph)	571	2	4	1128	1	0
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	15	12	10	16	12
Grade (%)	0%			0%	-2%	
Lane Util. Factor	0.95	0.95	0.95	0.95	1.00	1.00
Ped Bike Factor						
Frt	0.999					
Flt Protected					0.950	
Satd. Flow (prot)	3254	0	0	3099	1957	0
Flt Permitted					0.950	
Satd. Flow (perm)	3254	0	0	3099	1957	0
Link Speed (mph)	35			35	30	
Link Distance (ft)	155			113	194	
Travel Time (s)	3.0			2.2	4.4	
Confl. Peds. (#/hr)			1		2	2
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99
Heavy Vehicles (%)	5%	0%	0%	3%	0%	0%
Adj. Flow (vph)	577	2	4	1139	1	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	579	0	0	1143	1	0
Sign Control	Free			Free	Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	0

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	571	2	4	1128	1	0
Future Vol, veh/h	571	2	4	1128	1	0
Conflicting Peds, #/hr	0	0	1	0	2	2
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	-2	-
Peak Hour Factor	99	99	99	99	99	99
Heavy Vehicles, %	5	0	0	3	0	0
Mvmt Flow	577	2	4	1139	1	0

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	580	0	1159	293
Stage 1	-	-	-	-	579	-
Stage 2	-	-	-	-	580	-
Critical Hdwy	-	-	4.3	-	6.4	6.7
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	3	-	3	3.1
Pot Cap-1 Maneuver	-	-	967	-	*359	*936
Stage 1	-	-	-	-	*967	-
Stage 2	-	-	-	-	*634	-
Platoon blocked, %	-	-	1	-	1	1
Mov Cap-1 Maneuver	-	-	966	-	*354	*933
Mov Cap-2 Maneuver	-	-	-	-	*354	-
Stage 1	-	-	-	-	*966	-
Stage 2	-	-	-	-	*626	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	15.2
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	354	-	-	966	-
HCM Lane V/C Ratio	0.003	-	-	0.004	-
HCM Control Delay (s)	15.2	-	-	8.7	-
HCM Lane LOS	C	-	-	A	-
HCM 95th %tile Q(veh)	0	-	-	0	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	577	0	1	1147	0	0
Future Volume (vph)	577	0	1	1147	0	0
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	13	10	14	10	12
Grade (%)	0%			0%	-2%	
Lane Util. Factor	0.95	0.95	0.95	0.95	1.00	1.00
Ped Bike Factor						
Frt						
Flt Protected						
Satd. Flow (prot)	3288	0	0	3542	1697	0
Flt Permitted						
Satd. Flow (perm)	3288	0	0	3542	1697	0
Link Speed (mph)	35			35	30	
Link Distance (ft)	113			65	161	
Travel Time (s)	2.2			1.3	3.7	
Confl. Peds. (#/hr)		1	3		6	6
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles (%)	4%	0%	0%	3%	0%	0%
Adj. Flow (vph)	589	0	1	1170	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	589	0	0	1171	0	0
Sign Control	Free			Free	Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	0

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	577	0	1	1147	0	0
Future Vol, veh/h	577	0	1	1147	0	0
Conflicting Peds, #/hr	0	1	3	0	6	6
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	-2	-
Peak Hour Factor	98	98	98	98	98	98
Heavy Vehicles, %	4	0	0	3	0	0
Mvmt Flow	589	0	1	1170	0	0

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	592	0	1185	304
Stage 1	-	-	-	-	592	-
Stage 2	-	-	-	-	593	-
Critical Hdwy	-	-	4.3	-	6.4	6.7
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	3	-	3	3.1
Pot Cap-1 Maneuver	-	-	*955	-	*353	*924
Stage 1	-	-	-	-	*955	-
Stage 2	-	-	-	-	*625	-
Platoon blocked, %	-	-	1	-	1	1
Mov Cap-1 Maneuver	-	-	*952	-	*350	*915
Mov Cap-2 Maneuver	-	-	-	-	*350	-
Stage 1	-	-	-	-	*953	-
Stage 2	-	-	-	-	*619	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	0
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	-	-	-	* 952	-
HCM Lane V/C Ratio	-	-	-	0.001	-
HCM Control Delay (s)	0	-	-	8.8	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	-	-	-	0	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	577	0	1	1140	0	0
Future Volume (vph)	577	0	1	1140	0	0
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	13	11	11	12	12
Grade (%)	0%			-1%	-1%	
Lane Util. Factor	0.95	0.95	0.95	0.95	1.00	1.00
Ped Bike Factor						
Frt						
Flt Protected						
Satd. Flow (prot)	3288	0	0	3226	1809	0
Flt Permitted						
Satd. Flow (perm)	3288	0	0	3226	1809	0
Link Speed (mph)	35			35	30	
Link Distance (ft)	65			652	111	
Travel Time (s)	1.3			12.7	2.5	
Confl. Peds. (#/hr)		1	3		7	7
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99
Heavy Vehicles (%)	4%	0%	0%	3%	0%	0%
Adj. Flow (vph)	583	0	1	1152	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	583	0	0	1153	0	0
Sign Control	Free			Free	Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	0

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	577	0	1	1140	0	0
Future Vol, veh/h	577	0	1	1140	0	0
Conflicting Peds, #/hr	0	1	3	0	7	7
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	-1	-1	-
Peak Hour Factor	99	99	99	99	99	99
Heavy Vehicles, %	4	0	0	3	0	0
Mvmt Flow	583	0	1	1152	0	0

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	586	0	1171	302
Stage 1	-	-	-	-	586	-
Stage 2	-	-	-	-	585	-
Critical Hdwy	-	-	4.3	-	6.6	6.8
Critical Hdwy Stg 1	-	-	-	-	5.6	-
Critical Hdwy Stg 2	-	-	-	-	5.6	-
Follow-up Hdwy	-	-	3	-	3	3.1
Pot Cap-1 Maneuver	-	-	*955	-	*348	*924
Stage 1	-	-	-	-	*955	-
Stage 2	-	-	-	-	*610	-
Platoon blocked, %	-	-	1	-	1	1
Mov Cap-1 Maneuver	-	-	*952	-	*343	*915
Mov Cap-2 Maneuver	-	-	-	-	*343	-
Stage 1	-	-	-	-	*952	-
Stage 2	-	-	-	-	*604	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	0
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	-	-	-	* 952	-
HCM Lane V/C Ratio	-	-	-	0.001	-
HCM Control Delay (s)	0	-	-	8.8	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	-	-	-	0	-

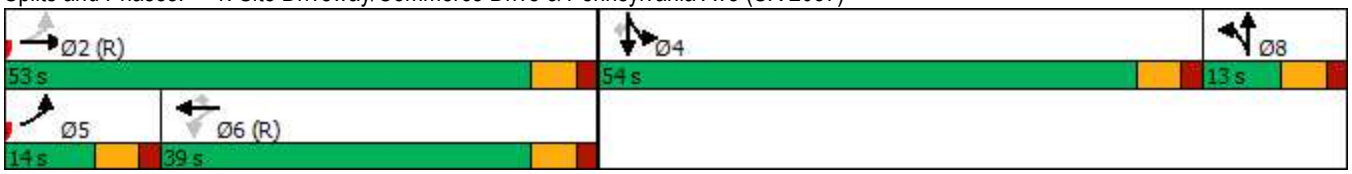
Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	194	560	9	12	358	278	10	6	14	567	2	270
Future Volume (vph)	194	560	9	12	358	278	10	6	14	567	2	270
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	10	14	14	10	11	12	12	12	12	10	11	11
Grade (%)		-1%			1%			0%			0%	
Storage Length (ft)	180		0	230		100	0		0	150		0
Storage Lanes	1		0	1		1	0		0	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	1.00	1.00	1.00	0.95	0.95	1.00
Ped Bike Factor	1.00	1.00								1.00	1.00	0.99
Frt		0.998				0.850		0.939				0.850
Flt Protected	0.950			0.950				0.984		0.950	0.953	
Satd. Flow (prot)	1588	3622	0	1588	3257	1478	0	1663	0	1486	1545	1464
Flt Permitted	0.428			0.415				0.984		0.950	0.953	
Satd. Flow (perm)	715	3622	0	694	3257	1478	0	1663	0	1485	1544	1446
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		2				305		15				297
Link Speed (mph)		35			35			30			35	
Link Distance (ft)		92			155			162			498	
Travel Time (s)		1.8			3.0			3.7			9.7	
Confl. Peds. (#/hr)	1		1							1		1
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles (%)	1%	1%	0%	0%	1%	3%	0%	0%	0%	2%	0%	1%
Adj. Flow (vph)	213	615	10	13	393	305	11	7	15	623	2	297
Shared Lane Traffic (%)										50%		
Lane Group Flow (vph)	213	625	0	13	393	305	0	33	0	311	314	297
Turn Type	pm+pt	NA		Perm	NA	Perm	Split	NA		Split	NA	Perm
Protected Phases	5	2			6		8	8		4	4	
Permitted Phases	2			6		6						4
Detector Phase	5	2		6	6	6	8	8		4	4	4
Switch Phase												
Minimum Initial (s)	7.0	20.0		20.0	20.0	20.0	5.0	5.0		5.0	5.0	5.0
Minimum Split (s)	13.0	26.0		26.0	26.0	26.0	11.0	11.0		11.0	11.0	11.0
Total Split (s)	14.0	53.0		39.0	39.0	39.0	13.0	13.0		54.0	54.0	54.0
Total Split (%)	11.7%	44.2%		32.5%	32.5%	32.5%	10.8%	10.8%		45.0%	45.0%	45.0%
Yellow Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
All-Red Time (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0		2.0	2.0	2.0
Lost Time Adjust (s)	-1.0	-1.0		-1.0	-1.0	-1.0		-1.0		-1.0	-1.0	-1.0
Total Lost Time (s)	5.0	5.0		5.0	5.0	5.0		5.0		5.0	5.0	5.0
Lead/Lag	Lead			Lag	Lag	Lag						
Lead-Lag Optimize?	Yes			Yes	Yes	Yes						
Recall Mode	None	C-Max		C-Max	C-Max	C-Max	None	None		None	None	None

Intersection Summary	
Area Type:	Other
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 108 (90%), Referenced to phase 2:EBTL and 6:WBTL, Start of 1st Green	

Natural Cycle: 70
Control Type: Actuated-Coordinated

Splits and Phases: 1: Site Driveway/Commerce Drive & Pennsylvania Ave (SR 2037)



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	194	560	9	12	358	278	10	6	14	567	2	270
Future Volume (veh/h)	194	560	9	12	358	278	10	6	14	567	2	270
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1823	1896	1911	1794	1780	1752	1800	1800	1800	1772	1800	1786
Adj Flow Rate, veh/h	213	615	10	13	393	0	11	7	3	624	0	156
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	1	1	0	0	1	3	0	0	0	2	0	1
Cap, veh/h	606	2224	36	441	1680		26	17	7	785	0	351
Arrive On Green	0.08	0.61	0.60	0.50	0.50	0.00	0.02	0.03	0.02	0.23	0.00	0.23
Sat Flow, veh/h	1736	3627	59	767	3383	1485	896	570	244	3375	0	1512
Grp Volume(v), veh/h	213	305	320	13	393	0	21	0	0	624	0	156
Grp Sat Flow(s),veh/h/ln	1736	1801	1885	767	1691	1485	1711	0	0	1688	0	1512
Q Serve(g_s), s	6.8	9.5	9.5	1.0	7.9	0.0	1.5	0.0	0.0	20.9	0.0	10.6
Cycle Q Clear(g_c), s	6.8	9.5	9.5	1.0	7.9	0.0	1.5	0.0	0.0	20.9	0.0	10.6
Prop In Lane	1.00		0.03	1.00		1.00	0.52		0.14	1.00		1.00
Lane Grp Cap(c), veh/h	606	1104	1156	441	1680		50	0	0	785	0	351
V/C Ratio(X)	0.35	0.28	0.28	0.03	0.23		0.42	0.00	0.00	0.80	0.00	0.44
Avail Cap(c_a), veh/h	606	1104	1156	441	1680		114	0	0	1378	0	617
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	11.9	10.8	10.8	15.5	17.2	0.0	57.6	0.0	0.0	43.4	0.0	39.4
Incr Delay (d2), s/veh	0.3	0.6	0.6	0.1	0.3	0.0	5.5	0.0	0.0	1.9	0.0	0.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	4.7	6.8	7.1	0.4	5.6	0.0	1.3	0.0	0.0	13.7	0.0	7.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	12.3	11.4	11.4	15.6	17.5	0.0	63.0	0.0	0.0	45.2	0.0	40.3
LnGrp LOS	B	B	B	B	B		E	A	A	D	A	D
Approach Vol, veh/h		838			406			21			780	
Approach Delay, s/veh		11.6			17.5			63.0			44.3	
Approach LOS		B			B			E			D	

Timer - Assigned Phs		2		4	5	6		8				
Phs Duration (G+Y+Rc), s		78.6		32.9	14.0	64.6		8.5				
Change Period (Y+Rc), s		6.0		6.0	6.0	6.0		6.0				
Max Green Setting (Gmax), s		47.0		48.0	8.0	33.0		7.0				
Max Q Clear Time (g_c+I1), s		12.0		23.4	9.3	10.4		3.5				
Green Ext Time (p_c), s		2.3		3.5	0.0	1.6		0.0				

Intersection Summary												
HCM 6th Ctrl Delay			25.8									
HCM 6th LOS			C									

Notes

User approved volume balancing among the lanes for turning movement.

Unsignalized Delay for [WBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	771	2	0	627	1	3
Future Volume (vph)	771	2	0	627	1	3
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	14	11	12	12	15
Grade (%)	0%			0%	-1%	
Lane Util. Factor	0.95	0.95	1.00	0.95	1.00	1.00
Ped Bike Factor						
Frt						0.865
Flt Protected					0.950	
Satd. Flow (prot)	3386	0	0	3386	0	1721
Flt Permitted					0.950	
Satd. Flow (perm)	3386	0	0	3386	0	1721
Link Speed (mph)	35			35	30	
Link Distance (ft)	1190			92	164	
Travel Time (s)	23.2			1.8	3.7	
Confl. Peds. (#/hr)					3	3
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	1%	0%	0%	1%	0%	0%
Adj. Flow (vph)	795	2	0	646	1	3
Shared Lane Traffic (%)						
Lane Group Flow (vph)	797	0	0	646	1	3
Sign Control	Free			Free	Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	0

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑			↑↑		↱
Traffic Vol, veh/h	771	2	0	627	1	3
Future Vol, veh/h	771	2	0	627	1	3
Conflicting Peds, #/hr	0	0	0	0	3	3
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	-1	-
Peak Hour Factor	97	97	97	97	97	97
Heavy Vehicles, %	1	0	0	1	0	0
Mvmt Flow	795	2	0	646	1	3

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	-	-	1122	402
Stage 1	-	-	-	-	796	-
Stage 2	-	-	-	-	326	-
Critical Hdwy	-	-	-	-	6.6	6.8
Critical Hdwy Stg 1	-	-	-	-	5.6	-
Critical Hdwy Stg 2	-	-	-	-	5.6	-
Follow-up Hdwy	-	-	-	-	3	3.1
Pot Cap-1 Maneuver	-	-	0	-	*236	643
Stage 1	-	-	0	-	*476	-
Stage 2	-	-	0	-	*998	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	-	-	*235	641
Mov Cap-2 Maneuver	-	-	-	-	*235	-
Stage 1	-	-	-	-	*476	-
Stage 2	-	-	-	-	*995	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	10.6
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT
Capacity (veh/h)	641	-	-	-
HCM Lane V/C Ratio	0.005	-	-	-
HCM Control Delay (s)	10.6	-	-	-
HCM Lane LOS	B	-	-	-
HCM 95th %tile Q(veh)	0	-	-	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	1127	0	0	653	1	5
Future Volume (vph)	1127	0	0	653	1	5
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	15	12	10	16	12
Grade (%)	0%			0%	-2%	
Lane Util. Factor	0.95	1.00	1.00	0.95	1.00	1.00
Frt					0.884	
Flt Protected					0.993	
Satd. Flow (prot)	3386	0	0	3129	1809	0
Flt Permitted					0.993	
Satd. Flow (perm)	3386	0	0	3129	1809	0
Link Speed (mph)	35			35	30	
Link Distance (ft)	155			113	194	
Travel Time (s)	3.0			2.2	4.4	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	1%	0%	0%	2%	0%	0%
Adj. Flow (vph)	1252	0	0	726	1	6
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1252	0	0	726	7	0
Sign Control	Free			Free	Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	0

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑			↑↑	↱	
Traffic Vol, veh/h	1127	0	0	653	1	5
Future Vol, veh/h	1127	0	0	653	1	5
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	-2	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	1	0	0	2	0	0
Mvmt Flow	1252	0	0	726	1	6

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	-	-	-	1615	626
Stage 1	-	-	-	-	1252	-
Stage 2	-	-	-	-	363	-
Critical Hdwy	-	-	-	-	6.4	6.7
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	-	-	3	3.1
Pot Cap-1 Maneuver	-	0	0	-	287	*686
Stage 1	-	0	0	-	677	-
Stage 2	-	0	0	-	807	-
Platoon blocked, %	-			-	1	1
Mov Cap-1 Maneuver	-	-	-	-	287	*686
Mov Cap-2 Maneuver	-	-	-	-	287	-
Stage 1	-	-	-	-	677	-
Stage 2	-	-	-	-	807	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	11.5
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	WBT
Capacity (veh/h)	557	-	-
HCM Lane V/C Ratio	0.012	-	-
HCM Control Delay (s)	11.5	-	-
HCM Lane LOS	B	-	-
HCM 95th %tile Q(veh)	0	-	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	1158	0	0	638	0	0
Future Volume (vph)	1158	0	0	638	0	0
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	13	10	14	10	12
Grade (%)	0%			0%	-2%	
Lane Util. Factor	0.95	0.95	0.95	0.95	1.00	1.00
Ped Bike Factor						
Frt						
Flt Protected						
Satd. Flow (prot)	3353	0	0	3576	1697	0
Flt Permitted						
Satd. Flow (perm)	3353	0	0	3576	1697	0
Link Speed (mph)	35			35	30	
Link Distance (ft)	113			65	161	
Travel Time (s)	2.2			1.3	3.7	
Confl. Peds. (#/hr)					2	2
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	2%	0%	0%	2%	0%	0%
Adj. Flow (vph)	1287	0	0	709	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1287	0	0	709	0	0
Sign Control	Free			Free	Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	0

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	1158	0	0	638	0	0
Future Vol, veh/h	1158	0	0	638	0	0
Conflicting Peds, #/hr	0	0	0	0	2	2
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	-2	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	0	0	2	0	0
Mvmt Flow	1287	0	0	709	0	0

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	1287	0	1644	646
Stage 1	-	-	-	-	1287	-
Stage 2	-	-	-	-	357	-
Critical Hdwy	-	-	4.3	-	6.4	6.7
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	3	-	3	3.1
Pot Cap-1 Maneuver	-	-	*681	-	*293	*659
Stage 1	-	-	-	-	*681	-
Stage 2	-	-	-	-	*812	-
Platoon blocked, %	-	-	1	-	1	1
Mov Cap-1 Maneuver	-	-	*681	-	*292	*657
Mov Cap-2 Maneuver	-	-	-	-	*292	-
Stage 1	-	-	-	-	*681	-
Stage 2	-	-	-	-	*810	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	0
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	-	-	-	* 681	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	0	-	-	0	-
HCM Lane LOS	A	-	-	A	-
HCM 95th %tile Q(veh)	-	-	-	0	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	1151	0	0	643	0	0
Future Volume (vph)	1151	0	0	643	0	0
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	13	11	11	12	12
Grade (%)	0%			-1%	-1%	
Lane Util. Factor	0.95	0.95	0.95	0.95	1.00	1.00
Ped Bike Factor						
Frt						
Flt Protected						
Satd. Flow (prot)	3386	0	0	3257	1809	0
Flt Permitted						
Satd. Flow (perm)	3386	0	0	3257	1809	0
Link Speed (mph)	35			35	30	
Link Distance (ft)	65			652	111	
Travel Time (s)	1.3			12.7	2.5	
Confl. Peds. (#/hr)					1	1
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	1%	0%	0%	2%	0%	0%
Adj. Flow (vph)	1279	0	0	714	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1279	0	0	714	0	0
Sign Control	Free			Free	Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	0

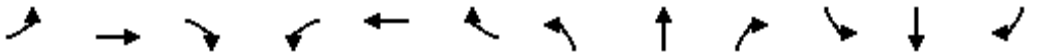
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	1151	0	0	643	0	0
Future Vol, veh/h	1151	0	0	643	0	0
Conflicting Peds, #/hr	0	0	0	0	1	1
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	-1	-1	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	1	0	0	2	0	0
Mvmt Flow	1279	0	0	714	0	0

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	1279	0	1637	641
Stage 1	-	-	-	-	1279	-
Stage 2	-	-	-	-	358	-
Critical Hdwy	-	-	4.3	-	6.6	6.8
Critical Hdwy Stg 1	-	-	-	-	5.6	-
Critical Hdwy Stg 2	-	-	-	-	5.6	-
Follow-up Hdwy	-	-	3	-	3	3.1
Pot Cap-1 Maneuver	-	-	*681	-	*288	*659
Stage 1	-	-	-	-	*681	-
Stage 2	-	-	-	-	*795	-
Platoon blocked, %	-	-	1	-	1	1
Mov Cap-1 Maneuver	-	-	*681	-	*288	*658
Mov Cap-2 Maneuver	-	-	-	-	*288	-
Stage 1	-	-	-	-	*681	-
Stage 2	-	-	-	-	*794	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	0
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	-	-	-	* 681	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	0	-	-	0	-
HCM Lane LOS	A	-	-	A	-
HCM 95th %tile Q(veh)	-	-	-	0	-

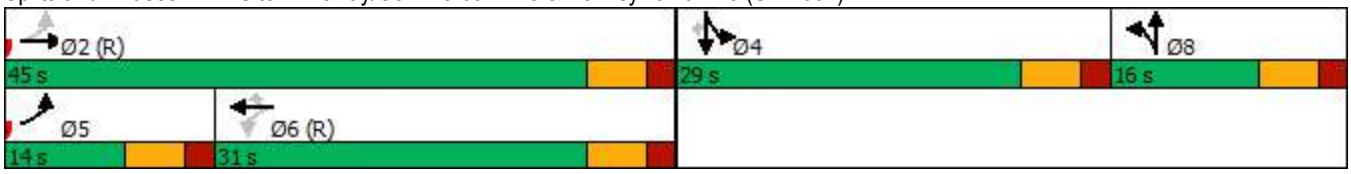
Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	122	380	6	10	405	177	5	4	9	162	6	118
Future Volume (vph)	122	380	6	10	405	177	5	4	9	162	6	118
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	10	14	14	10	11	12	12	12	12	10	11	11
Grade (%)		-1%			1%			0%			0%	
Storage Length (ft)	180		0	230		100	0		0	150		0
Storage Lanes	1		0	1		1	0		0	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	1.00	1.00	1.00	0.95	0.95	1.00
Frt		0.998				0.850		0.932				0.850
Flt Protected	0.950			0.950				0.986		0.950	0.955	
Satd. Flow (prot)	1604	3588	0	1588	3225	1507	0	1654	0	1516	1579	1479
Flt Permitted	0.439			0.513				0.986		0.950	0.955	
Satd. Flow (perm)	741	3588	0	858	3225	1507	0	1654	0	1516	1579	1479
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		2				186		9				182
Link Speed (mph)		35			35			30			35	
Link Distance (ft)		92			155			162			498	
Travel Time (s)		1.8			3.0			3.7			9.7	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	0%	2%	0%	0%	2%	1%	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	128	400	6	11	426	186	5	4	9	171	6	124
Shared Lane Traffic (%)										48%		
Lane Group Flow (vph)	128	406	0	11	426	186	0	18	0	89	88	124
Turn Type	pm+pt	NA		Perm	NA	Perm	Split	NA		Split	NA	Perm
Protected Phases	5	2			6		8	8		4	4	
Permitted Phases	2			6		6						4
Detector Phase	5	2		6	6	6	8	8		4	4	4
Switch Phase												
Minimum Initial (s)	7.0	20.0		20.0	20.0	20.0	5.0	5.0		5.0	5.0	5.0
Minimum Split (s)	13.0	26.0		26.0	26.0	26.0	11.0	11.0		11.0	11.0	11.0
Total Split (s)	14.0	45.0		31.0	31.0	31.0	16.0	16.0		29.0	29.0	29.0
Total Split (%)	15.6%	50.0%		34.4%	34.4%	34.4%	17.8%	17.8%		32.2%	32.2%	32.2%
Yellow Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
All-Red Time (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0		2.0	2.0	2.0
Lost Time Adjust (s)	-1.0	-1.0		-1.0	-1.0	-1.0		-1.0		-1.0	-1.0	-1.0
Total Lost Time (s)	5.0	5.0		5.0	5.0	5.0		5.0		5.0	5.0	5.0
Lead/Lag	Lead			Lag	Lag	Lag						
Lead-Lag Optimize?	Yes			Yes	Yes	Yes						
Recall Mode	None	C-Max		C-Max	C-Max	C-Max	None	None		None	None	None

Intersection Summary	
Area Type:	Other
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 34 (38%), Referenced to phase 2:EBTL and 6:WBTL, Start of 1st Green	
Natural Cycle: 65	
Control Type: Actuated-Coordinated	

Splits and Phases: 1: Site Driveway/Commerce Drive & Pennsylvania Ave (SR 2037)



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	122	380	6	10	405	177	5	4	9	162	6	118
Future Volume (veh/h)	122	380	6	10	405	177	5	4	9	162	6	118
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1837	1881	1911	1794	1766	1780	1800	1800	1800	1800	1800	1800
Adj Flow Rate, veh/h	128	400	5	11	426	0	5	4	5	175	0	64
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	2	0	0	2	1	0	0	0	0	0	0
Cap, veh/h	707	2565	32	614	1907		16	13	16	330	0	147
Arrive On Green	0.09	0.71	0.70	0.57	0.57	0.00	0.02	0.03	0.02	0.10	0.00	0.10
Sat Flow, veh/h	1750	3615	45	940	3356	1509	594	475	594	3429	0	1525
Grp Volume(v), veh/h	128	198	207	11	426	0	14	0	0	175	0	64
Grp Sat Flow(s),veh/h/ln	1750	1787	1873	940	1678	1509	1663	0	0	1714	0	1525
Q Serve(g_s), s	2.3	3.2	3.3	0.5	5.6	0.0	0.7	0.0	0.0	4.4	0.0	3.6
Cycle Q Clear(g_c), s	2.3	3.2	3.3	0.5	5.6	0.0	0.7	0.0	0.0	4.4	0.0	3.6
Prop In Lane	1.00		0.02	1.00		1.00	0.36		0.36	1.00		1.00
Lane Grp Cap(c), veh/h	707	1268	1329	614	1907		46	0	0	330	0	147
V/C Ratio(X)	0.18	0.16	0.16	0.02	0.22		0.31	0.00	0.00	0.53	0.00	0.44
Avail Cap(c_a), veh/h	732	1268	1329	614	1907		203	0	0	914	0	407
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	5.3	4.3	4.3	8.5	9.6	0.0	43.3	0.0	0.0	38.7	0.0	38.4
Incr Delay (d2), s/veh	0.1	0.3	0.3	0.1	0.3	0.0	3.7	0.0	0.0	1.3	0.0	2.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	1.2	1.8	1.9	0.2	3.5	0.0	0.6	0.0	0.0	3.3	0.0	2.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	5.5	4.5	4.5	8.5	9.9	0.0	47.0	0.0	0.0	40.1	0.0	40.4
LnGrp LOS	A	A	A	A	A		D	A	A	D	A	D
Approach Vol, veh/h		533			437			14			239	
Approach Delay, s/veh		4.7			9.8			47.0			40.2	
Approach LOS		A			A			D			D	

Timer - Assigned Phs		2		4	5	6		8				
Phs Duration (G+Y+Rc), s		68.9		13.7	12.7	56.2		7.5				
Change Period (Y+Rc), s		6.0		6.0	6.0	6.0		6.0				
Max Green Setting (Gmax), s		39.0		23.0	8.0	25.0		10.0				
Max Q Clear Time (g_c+I1), s		5.7		6.9	4.8	8.1		2.7				
Green Ext Time (p_c), s		1.4		0.8	0.1	1.6		0.0				

Intersection Summary		
HCM 6th Ctrl Delay	14.0	
HCM 6th LOS	B	

Notes

User approved volume balancing among the lanes for turning movement.

Unsignalized Delay for [WBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	507	0	0	522	0	2
Future Volume (vph)	507	0	0	522	0	2
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	14	11	12	12	15
Grade (%)	0%			0%	-1%	
Lane Util. Factor	0.95	1.00	1.00	0.95	1.00	1.00
Frt						0.865
Flt Protected						
Satd. Flow (prot)	3386	0	0	3386	0	1721
Flt Permitted						
Satd. Flow (perm)	3386	0	0	3386	0	1721
Link Speed (mph)	35			35	30	
Link Distance (ft)	1190			92	164	
Travel Time (s)	23.2			1.8	3.7	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	1%	0%	0%	1%	0%	0%
Adj. Flow (vph)	528	0	0	544	0	2
Shared Lane Traffic (%)						
Lane Group Flow (vph)	528	0	0	544	0	2
Sign Control	Free			Free	Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	0

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑			↑↑		↱
Traffic Vol, veh/h	507	0	0	522	0	2
Future Vol, veh/h	507	0	0	522	0	2
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	-1	-
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	1	0	0	1	0	0
Mvmt Flow	528	0	0	544	0	2

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	-	-	-	-	264
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.8
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.1
Pot Cap-1 Maneuver	-	0	0	-	0	789
Stage 1	-	0	0	-	0	-
Stage 2	-	0	0	-	0	-
Platoon blocked, %	-			-		
Mov Cap-1 Maneuver	-	-	-	-	-	789
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	9.6
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	WBT
Capacity (veh/h)	789	-	-
HCM Lane V/C Ratio	0.003	-	-
HCM Control Delay (s)	9.6	-	-
HCM Lane LOS	A	-	-
HCM 95th %tile Q(veh)	0	-	-

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	562	1	0	582	2	2
Future Volume (vph)	562	1	0	582	2	2
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	15	12	10	16	12
Grade (%)	0%			0%	-2%	
Lane Util. Factor	0.95	0.95	1.00	0.95	1.00	1.00
Frt					0.932	
Flt Protected					0.976	
Satd. Flow (prot)	3386	0	0	3160	1874	0
Flt Permitted					0.976	
Satd. Flow (perm)	3386	0	0	3160	1874	0
Link Speed (mph)	35			35	30	
Link Distance (ft)	155			113	194	
Travel Time (s)	3.0			2.2	4.4	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	1%	0%	0%	1%	0%	0%
Adj. Flow (vph)	579	1	0	600	2	2
Shared Lane Traffic (%)						
Lane Group Flow (vph)	580	0	0	600	4	0
Sign Control	Free			Free	Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	0

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	562	1	0	582	2	2
Future Vol, veh/h	562	1	0	582	2	2
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	-2	-
Peak Hour Factor	97	97	97	97	97	97
Heavy Vehicles, %	1	0	0	1	0	0
Mvmt Flow	579	1	0	600	2	2

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	-	-	880	290
Stage 1	-	-	-	-	580	-
Stage 2	-	-	-	-	300	-
Critical Hdwy	-	-	-	-	6.4	6.7
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	-	-	3	3.1
Pot Cap-1 Maneuver	-	-	0	-	570	*943
Stage 1	-	-	0	-	951	-
Stage 2	-	-	0	-	865	-
Platoon blocked, %	-	-		-	1	1
Mov Cap-1 Maneuver	-	-	-	-	570	*943
Mov Cap-2 Maneuver	-	-	-	-	570	-
Stage 1	-	-	-	-	951	-
Stage 2	-	-	-	-	865	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	10.1
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT
Capacity (veh/h)	711	-	-	-
HCM Lane V/C Ratio	0.006	-	-	-
HCM Control Delay (s)	10.1	-	-	-
HCM Lane LOS	B	-	-	-
HCM 95th %tile Q(veh)	0	-	-	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	562	0	0	594	0	0
Future Volume (vph)	562	0	0	594	0	0
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	13	10	14	10	12
Grade (%)	0%			0%	-2%	
Lane Util. Factor	0.95	0.95	0.95	0.95	1.00	1.00
Frt						
Flt Protected						
Satd. Flow (prot)	3386	0	0	3576	1697	0
Flt Permitted						
Satd. Flow (perm)	3386	0	0	3576	1697	0
Link Speed (mph)	35			35	30	
Link Distance (ft)	113			65	161	
Travel Time (s)	2.2			1.3	3.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	1%	0%	0%	2%	0%	0%
Adj. Flow (vph)	611	0	0	646	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	611	0	0	646	0	0
Sign Control	Free			Free	Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	0

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	562	0	0	594	0	0
Future Vol, veh/h	562	0	0	594	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	-2	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	1	0	0	2	0	0
Mvmt Flow	611	0	0	646	0	0

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	611	0	934	306
Stage 1	-	-	-	-	611	-
Stage 2	-	-	-	-	323	-
Critical Hdwy	-	-	4.3	-	6.4	6.7
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	3	-	3	3.1
Pot Cap-1 Maneuver	-	-	946	-	536	*931
Stage 1	-	-	-	-	939	-
Stage 2	-	-	-	-	843	-
Platoon blocked, %	-	-	1	-	1	1
Mov Cap-1 Maneuver	-	-	946	-	536	*931
Mov Cap-2 Maneuver	-	-	-	-	536	-
Stage 1	-	-	-	-	939	-
Stage 2	-	-	-	-	843	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	0
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	-	-	-	946	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	0	-	-	0	-
HCM Lane LOS	A	-	-	A	-
HCM 95th %tile Q(veh)	-	-	-	0	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	561	0	0	595	0	0
Future Volume (vph)	561	0	0	595	0	0
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	13	11	11	12	12
Grade (%)	0%			-1%	-1%	
Lane Util. Factor	0.95	0.95	0.95	0.95	1.00	1.00
Frt						
Flt Protected						
Satd. Flow (prot)	3386	0	0	3257	1809	0
Flt Permitted						
Satd. Flow (perm)	3386	0	0	3257	1809	0
Link Speed (mph)	35			35	30	
Link Distance (ft)	65			652	111	
Travel Time (s)	1.3			12.7	2.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	1%	0%	0%	2%	0%	0%
Adj. Flow (vph)	610	0	0	647	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	610	0	0	647	0	0
Sign Control	Free			Free	Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	0

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	561	0	0	595	0	0
Future Vol, veh/h	561	0	0	595	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	-1	-1	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	1	0	0	2	0	0
Mvmt Flow	610	0	0	647	0	0

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	610	0	934	305
Stage 1	-	-	-	-	610	-
Stage 2	-	-	-	-	324	-
Critical Hdwy	-	-	4.3	-	6.6	6.8
Critical Hdwy Stg 1	-	-	-	-	5.6	-
Critical Hdwy Stg 2	-	-	-	-	5.6	-
Follow-up Hdwy	-	-	3	-	3	3.1
Pot Cap-1 Maneuver	-	-	946	-	524	*931
Stage 1	-	-	-	-	939	-
Stage 2	-	-	-	-	827	-
Platoon blocked, %	-	-	1	-	1	1
Mov Cap-1 Maneuver	-	-	946	-	524	*931
Mov Cap-2 Maneuver	-	-	-	-	524	-
Stage 1	-	-	-	-	939	-
Stage 2	-	-	-	-	827	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	0
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	-	-	-	946	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	0	-	-	0	-
HCM Lane LOS	A	-	-	A	-
HCM 95th %tile Q(veh)	-	-	-	0	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

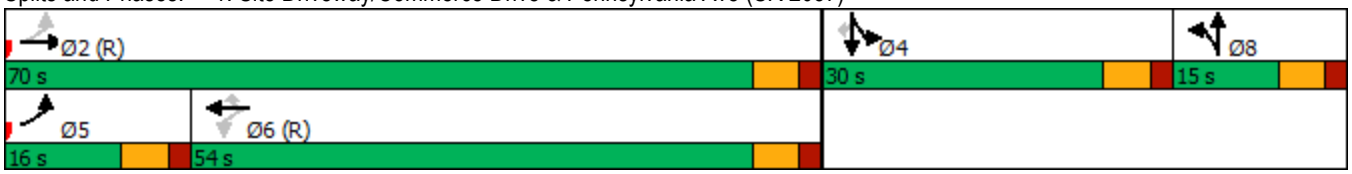
2030 Base Conditions

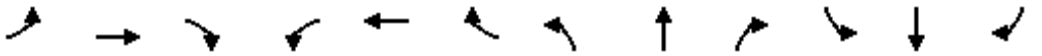
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	224	429	9	19	474	668	7	4	8	143	9	142
Future Volume (vph)	224	429	9	19	474	668	7	4	8	143	9	142
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	10	14	14	10	11	12	12	12	12	10	11	11
Grade (%)		-1%			1%			0%			0%	
Storage Length (ft)	180		0	230		100	0		0	150		0
Storage Lanes	1		0	1		1	0		0	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	1.00	1.00	1.00	0.95	0.95	1.00
Ped Bike Factor	1.00	1.00						0.98		1.00	1.00	0.99
Frt		0.997				0.850		0.943				0.850
Flt Protected	0.950			0.950				0.982		0.950	0.958	
Satd. Flow (prot)	1573	3549	0	1588	3133	1492	0	1649	0	1404	1462	1422
Flt Permitted	0.420			0.491				0.982		0.950	0.958	
Satd. Flow (perm)	694	3549	0	821	3133	1492	0	1641	0	1400	1458	1401
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		3				689		8				146
Link Speed (mph)		35			35			30			35	
Link Distance (ft)		92			155			162			498	
Travel Time (s)		1.8			3.0			3.7			9.7	
Confl. Peds. (#/hr)	4		4				4		4	2		2
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	2%	3%	0%	0%	5%	2%	0%	0%	0%	8%	11%	4%
Adj. Flow (vph)	231	442	9	20	489	689	7	4	8	147	9	146
Shared Lane Traffic (%)										47%		
Lane Group Flow (vph)	231	451	0	20	489	689	0	19	0	78	78	146
Turn Type	pm+pt	NA		Perm	NA	Perm	Split	NA		Split	NA	Perm
Protected Phases	5	2			6		8	8		4	4	
Permitted Phases	2			6		6						4
Detector Phase	5	2		6	6	6	8	8		4	4	4
Switch Phase												
Minimum Initial (s)	7.0	20.0		20.0	20.0	20.0	5.0	5.0		5.0	5.0	5.0
Minimum Split (s)	13.0	26.0		26.0	26.0	26.0	11.0	11.0		11.0	11.0	11.0
Total Split (s)	16.0	70.0		54.0	54.0	54.0	15.0	15.0		30.0	30.0	30.0
Total Split (%)	13.9%	60.9%		47.0%	47.0%	47.0%	13.0%	13.0%		26.1%	26.1%	26.1%
Yellow Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
All-Red Time (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0		2.0	2.0	2.0
Lost Time Adjust (s)	-1.0	-1.0		-1.0	-1.0	-1.0		-1.0		-1.0	-1.0	-1.0
Total Lost Time (s)	5.0	5.0		5.0	5.0	5.0		5.0		5.0	5.0	5.0
Lead/Lag	Lead			Lag	Lag	Lag						
Lead-Lag Optimize?	Yes			Yes	Yes	Yes						
Recall Mode	None	C-Max		C-Max	C-Max	C-Max	None	None		None	None	None

Intersection Summary	
Area Type:	Other
Cycle Length: 115	
Actuated Cycle Length: 115	
Offset: 12 (10%), Referenced to phase 2:EBTL and 6:WBTL, Start of 1st Green	

Natural Cycle: 65
Control Type: Actuated-Coordinated

Splits and Phases: 1: Site Driveway/Commerce Drive & Pennsylvania Ave (SR 2037)





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	224	429	9	19	474	668	7	4	8	143	9	142
Future Volume (veh/h)	224	429	9	19	474	668	7	4	8	143	9	142
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.97	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1809	1866	1911	1794	1724	1766	1800	1800	1800	1688	1646	1744
Adj Flow Rate, veh/h	231	442	9	20	489	0	7	4	2	153	0	104
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	3	0	0	5	2	0	0	0	8	11	4
Cap, veh/h	680	2631	54	622	2036		21	12	6	340	0	155
Arrive On Green	0.08	0.74	0.73	0.62	0.62	0.00	0.01	0.02	0.01	0.11	0.00	0.11
Sat Flow, veh/h	1723	3554	72	900	3276	1497	915	523	261	3215	0	1469
Grp Volume(v), veh/h	231	220	231	20	489	0	13	0	0	153	0	104
Grp Sat Flow(s),veh/h/ln	1723	1773	1853	900	1638	1497	1698	0	0	1607	0	1469
Q Serve(g_s), s	5.0	4.2	4.2	1.0	7.6	0.0	0.9	0.0	0.0	5.1	0.0	7.8
Cycle Q Clear(g_c), s	5.0	4.2	4.2	1.0	7.6	0.0	0.9	0.0	0.0	5.1	0.0	7.8
Prop In Lane	1.00		0.04	1.00		1.00	0.54		0.15	1.00		1.00
Lane Grp Cap(c), veh/h	680	1313	1372	622	2036		40	0	0	340	0	155
V/C Ratio(X)	0.34	0.17	0.17	0.03	0.24		0.33	0.00	0.00	0.45	0.00	0.67
Avail Cap(c_a), veh/h	714	1313	1372	622	2036		148	0	0	699	0	319
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	5.9	4.4	4.4	8.4	9.7	0.0	55.6	0.0	0.0	48.3	0.0	49.5
Incr Delay (d2), s/veh	0.3	0.3	0.3	0.1	0.3	0.0	4.6	0.0	0.0	0.9	0.0	4.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	2.9	2.5	2.6	0.4	4.8	0.0	0.8	0.0	0.0	3.8	0.0	5.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	6.2	4.7	4.7	8.5	10.0	0.0	60.2	0.0	0.0	49.2	0.0	54.4
LnGrp LOS	A	A	A	A	A		E	A	A	D	A	D
Approach Vol, veh/h		682			509			13			257	
Approach Delay, s/veh		5.2			9.9			60.2			51.3	
Approach LOS		A			A			E			D	

Timer - Assigned Phs		2		4	5	6		8				
Phs Duration (G+Y+Rc), s		90.2		17.1	13.7	76.5		7.7				
Change Period (Y+Rc), s		6.0		6.0	6.0	6.0		6.0				
Max Green Setting (Gmax), s		64.0		24.0	10.0	48.0		9.0				
Max Q Clear Time (g_c+I1), s		6.7		10.3	7.5	10.1		2.9				
Green Ext Time (p_c), s		1.6		0.8	0.2	2.3		0.0				

Intersection Summary		
HCM 6th Ctrl Delay	15.4	
HCM 6th LOS	B	

Notes

User approved volume balancing among the lanes for turning movement.

Unsignalized Delay for [WBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	691	0	0	614	0	2
Future Volume (vph)	691	0	0	614	0	2
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	14	11	12	12	15
Grade (%)	0%			0%	-1%	
Lane Util. Factor	0.95	1.00	1.00	0.95	1.00	1.00
Ped Bike Factor						
Frt						0.865
Flt Protected						
Satd. Flow (prot)	3320	0	0	3288	0	1721
Flt Permitted						
Satd. Flow (perm)	3320	0	0	3288	0	1721
Link Speed (mph)	35			35	30	
Link Distance (ft)	1190			92	164	
Travel Time (s)	23.2			1.8	3.7	
Confl. Peds. (#/hr)			4		9	9
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	3%	0%	0%	4%	0%	0%
Adj. Flow (vph)	712	0	0	633	0	2
Shared Lane Traffic (%)						
Lane Group Flow (vph)	712	0	0	633	0	2
Sign Control	Free			Free	Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	0

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑			↑↑		↱
Traffic Vol, veh/h	691	0	0	614	0	2
Future Vol, veh/h	691	0	0	614	0	2
Conflicting Peds, #/hr	0	0	4	0	9	9
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	-1	-
Peak Hour Factor	97	97	97	97	97	97
Heavy Vehicles, %	3	0	0	4	0	0
Mvmt Flow	712	0	0	633	0	2

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	-	-	-	-	365
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.8
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.1
Pot Cap-1 Maneuver	-	0	0	-	0	679
Stage 1	-	0	0	-	0	-
Stage 2	-	0	0	-	0	-
Platoon blocked, %	-			-		
Mov Cap-1 Maneuver	-	-	-	-	-	673
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	10.4
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	WBT
Capacity (veh/h)	673	-	-
HCM Lane V/C Ratio	0.003	-	-
HCM Control Delay (s)	10.4	-	-
HCM Lane LOS	B	-	-
HCM 95th %tile Q(veh)	0	-	-

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	578	2	4	1143	1	0
Future Volume (vph)	578	2	4	1143	1	0
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	15	12	10	16	12
Grade (%)	0%			0%	-2%	
Lane Util. Factor	0.95	0.95	0.95	0.95	1.00	1.00
Ped Bike Factor						
Frt	0.999					
Flt Protected					0.950	
Satd. Flow (prot)	3254	0	0	3099	1957	0
Flt Permitted					0.950	
Satd. Flow (perm)	3254	0	0	3099	1957	0
Link Speed (mph)	35			35	30	
Link Distance (ft)	155			113	194	
Travel Time (s)	3.0			2.2	4.4	
Confl. Peds. (#/hr)			1		2	2
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99
Heavy Vehicles (%)	5%	0%	0%	3%	0%	0%
Adj. Flow (vph)	584	2	4	1155	1	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	586	0	0	1159	1	0
Sign Control	Free			Free	Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	0

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑			↑↑	↱	
Traffic Vol, veh/h	578	2	4	1143	1	0
Future Vol, veh/h	578	2	4	1143	1	0
Conflicting Peds, #/hr	0	0	1	0	2	2
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	-2	-
Peak Hour Factor	99	99	99	99	99	99
Heavy Vehicles, %	5	0	0	3	0	0
Mvmt Flow	584	2	4	1155	1	0

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	587	0	1174	296
Stage 1	-	-	-	-	586	-
Stage 2	-	-	-	-	588	-
Critical Hdwy	-	-	4.3	-	6.4	6.7
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	3	-	3	3.1
Pot Cap-1 Maneuver	-	-	961	-	349	*936
Stage 1	-	-	-	-	960	-
Stage 2	-	-	-	-	628	-
Platoon blocked, %	-	-	1	-	1	1
Mov Cap-1 Maneuver	-	-	960	-	344	*933
Mov Cap-2 Maneuver	-	-	-	-	344	-
Stage 1	-	-	-	-	959	-
Stage 2	-	-	-	-	619	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	15.5
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	344	-	-	960	-
HCM Lane V/C Ratio	0.003	-	-	0.004	-
HCM Control Delay (s)	15.5	-	-	8.8	-
HCM Lane LOS	C	-	-	A	-
HCM 95th %tile Q(veh)	0	-	-	0	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	584	0	1	1163	0	0
Future Volume (vph)	584	0	1	1163	0	0
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	13	10	14	10	12
Grade (%)	0%			0%	-2%	
Lane Util. Factor	0.95	0.95	0.95	0.95	1.00	1.00
Ped Bike Factor						
Frt						
Flt Protected						
Satd. Flow (prot)	3288	0	0	3542	1697	0
Flt Permitted						
Satd. Flow (perm)	3288	0	0	3542	1697	0
Link Speed (mph)	35			35	30	
Link Distance (ft)	113			65	161	
Travel Time (s)	2.2			1.3	3.7	
Confl. Peds. (#/hr)		1	3		6	6
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles (%)	4%	0%	0%	3%	0%	0%
Adj. Flow (vph)	596	0	1	1187	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	596	0	0	1188	0	0
Sign Control	Free			Free	Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	0

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	584	0	1	1163	0	0
Future Vol, veh/h	584	0	1	1163	0	0
Conflicting Peds, #/hr	0	1	3	0	6	6
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	-2	-
Peak Hour Factor	98	98	98	98	98	98
Heavy Vehicles, %	4	0	0	3	0	0
Mvmt Flow	596	0	1	1187	0	0

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	599	0	1201	307
Stage 1	-	-	-	-	599	-
Stage 2	-	-	-	-	602	-
Critical Hdwy	-	-	4.3	-	6.4	6.7
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	3	-	3	3.1
Pot Cap-1 Maneuver	-	-	*955	-	*343	*924
Stage 1	-	-	-	-	*955	-
Stage 2	-	-	-	-	*619	-
Platoon blocked, %	-	-	1	-	1	1
Mov Cap-1 Maneuver	-	-	*952	-	*339	*915
Mov Cap-2 Maneuver	-	-	-	-	*339	-
Stage 1	-	-	-	-	*953	-
Stage 2	-	-	-	-	*613	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	0
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	-	-	-	* 952	-
HCM Lane V/C Ratio	-	-	-	0.001	-
HCM Control Delay (s)	0	-	-	8.8	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	-	-	-	0	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	584	0	1	1156	0	0
Future Volume (vph)	584	0	1	1156	0	0
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	13	11	11	12	12
Grade (%)	0%			-1%	-1%	
Lane Util. Factor	0.95	0.95	0.95	0.95	1.00	1.00
Ped Bike Factor						
Frt						
Flt Protected						
Satd. Flow (prot)	3288	0	0	3226	1809	0
Flt Permitted						
Satd. Flow (perm)	3288	0	0	3226	1809	0
Link Speed (mph)	35			35	30	
Link Distance (ft)	65			652	111	
Travel Time (s)	1.3			12.7	2.5	
Confl. Peds. (#/hr)		1	3		7	7
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99
Heavy Vehicles (%)	4%	0%	0%	3%	0%	0%
Adj. Flow (vph)	590	0	1	1168	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	590	0	0	1169	0	0
Sign Control	Free			Free	Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	0

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	584	0	1	1156	0	0
Future Vol, veh/h	584	0	1	1156	0	0
Conflicting Peds, #/hr	0	1	3	0	7	7
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	-1	-1	-
Peak Hour Factor	99	99	99	99	99	99
Heavy Vehicles, %	4	0	0	3	0	0
Mvmt Flow	590	0	1	1168	0	0

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	593	0	1186	305
Stage 1	-	-	-	-	593	-
Stage 2	-	-	-	-	593	-
Critical Hdwy	-	-	4.3	-	6.6	6.8
Critical Hdwy Stg 1	-	-	-	-	5.6	-
Critical Hdwy Stg 2	-	-	-	-	5.6	-
Follow-up Hdwy	-	-	3	-	3	3.1
Pot Cap-1 Maneuver	-	-	*955	-	*338	*924
Stage 1	-	-	-	-	*955	-
Stage 2	-	-	-	-	*605	-
Platoon blocked, %	-	-	1	-	1	1
Mov Cap-1 Maneuver	-	-	*952	-	*334	*915
Mov Cap-2 Maneuver	-	-	-	-	*334	-
Stage 1	-	-	-	-	*952	-
Stage 2	-	-	-	-	*599	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	0
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	-	-	-	* 952	-
HCM Lane V/C Ratio	-	-	-	0.001	-
HCM Control Delay (s)	0	-	-	8.8	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	-	-	-	0	-

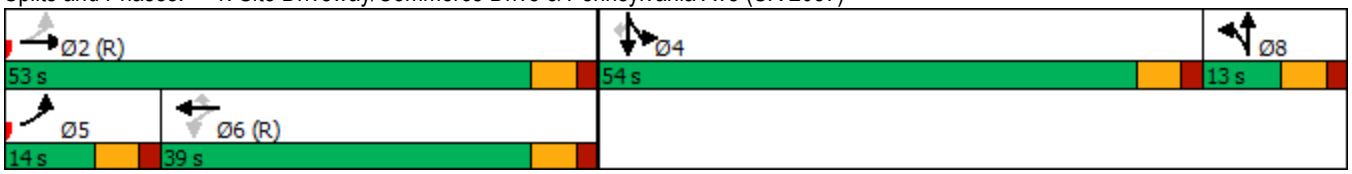
Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	196	567	9	12	363	282	10	6	14	574	2	274
Future Volume (vph)	196	567	9	12	363	282	10	6	14	574	2	274
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	10	14	14	10	11	12	12	12	12	10	11	11
Grade (%)		-1%			1%			0%			0%	
Storage Length (ft)	180		0	230		100	0		0	150		0
Storage Lanes	1		0	1		1	0		0	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	1.00	1.00	1.00	0.95	0.95	1.00
Ped Bike Factor	1.00	1.00								1.00	1.00	0.99
Frt		0.998				0.850		0.939				0.850
Flt Protected	0.950			0.950				0.984		0.950	0.953	
Satd. Flow (prot)	1588	3622	0	1588	3257	1478	0	1663	0	1486	1545	1464
Flt Permitted	0.423			0.412				0.984		0.950	0.953	
Satd. Flow (perm)	707	3622	0	689	3257	1478	0	1663	0	1485	1544	1446
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		2				309		15				301
Link Speed (mph)		35			35			30			35	
Link Distance (ft)		92			155			162			498	
Travel Time (s)		1.8			3.0			3.7			9.7	
Confl. Peds. (#/hr)	1		1							1		1
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles (%)	1%	1%	0%	0%	1%	3%	0%	0%	0%	2%	0%	1%
Adj. Flow (vph)	215	623	10	13	399	310	11	7	15	631	2	301
Shared Lane Traffic (%)										50%		
Lane Group Flow (vph)	215	633	0	13	399	310	0	33	0	315	318	301
Turn Type	pm+pt	NA		Perm	NA	Perm	Split	NA		Split	NA	Perm
Protected Phases	5	2			6		8	8		4	4	
Permitted Phases	2			6		6						4
Detector Phase	5	2		6	6	6	8	8		4	4	4
Switch Phase												
Minimum Initial (s)	7.0	20.0		20.0	20.0	20.0	5.0	5.0		5.0	5.0	5.0
Minimum Split (s)	13.0	26.0		26.0	26.0	26.0	11.0	11.0		11.0	11.0	11.0
Total Split (s)	14.0	53.0		39.0	39.0	39.0	13.0	13.0		54.0	54.0	54.0
Total Split (%)	11.7%	44.2%		32.5%	32.5%	32.5%	10.8%	10.8%		45.0%	45.0%	45.0%
Yellow Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
All-Red Time (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0		2.0	2.0	2.0
Lost Time Adjust (s)	-1.0	-1.0		-1.0	-1.0	-1.0		-1.0		-1.0	-1.0	-1.0
Total Lost Time (s)	5.0	5.0		5.0	5.0	5.0		5.0		5.0	5.0	5.0
Lead/Lag	Lead			Lag	Lag	Lag						
Lead-Lag Optimize?	Yes			Yes	Yes	Yes						
Recall Mode	None	C-Max		C-Max	C-Max	C-Max	None	None		None	None	None

Intersection Summary	
Area Type:	Other
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 108 (90%), Referenced to phase 2:EBTL and 6:WBTL, Start of 1st Green	

Natural Cycle: 70
Control Type: Actuated-Coordinated

Splits and Phases: 1: Site Driveway/Commerce Drive & Pennsylvania Ave (SR 2037)



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	196	567	9	12	363	282	10	6	14	574	2	274
Future Volume (veh/h)	196	567	9	12	363	282	10	6	14	574	2	274
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1823	1896	1911	1794	1780	1752	1800	1800	1800	1772	1800	1786
Adj Flow Rate, veh/h	215	623	10	13	399	0	11	7	3	632	0	160
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	1	1	0	0	1	3	0	0	0	2	0	1
Cap, veh/h	600	2215	36	436	1671		26	17	7	794	0	355
Arrive On Green	0.08	0.61	0.60	0.49	0.49	0.00	0.02	0.03	0.02	0.24	0.00	0.24
Sat Flow, veh/h	1736	3628	58	762	3383	1485	896	570	244	3375	0	1512
Grp Volume(v), veh/h	215	309	324	13	399	0	21	0	0	632	0	160
Grp Sat Flow(s),veh/h/ln	1736	1801	1885	762	1691	1485	1711	0	0	1688	0	1512
Q Serve(g_s), s	7.0	9.7	9.7	1.1	8.1	0.0	1.5	0.0	0.0	21.1	0.0	10.9
Cycle Q Clear(g_c), s	7.0	9.7	9.7	1.1	8.1	0.0	1.5	0.0	0.0	21.1	0.0	10.9
Prop In Lane	1.00		0.03	1.00		1.00	0.52		0.14	1.00		1.00
Lane Grp Cap(c), veh/h	600	1100	1151	436	1671		50	0	0	794	0	355
V/C Ratio(X)	0.36	0.28	0.28	0.03	0.24		0.42	0.00	0.00	0.80	0.00	0.45
Avail Cap(c_a), veh/h	600	1100	1151	436	1671		114	0	0	1378	0	617
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	12.1	11.0	11.0	15.6	17.4	0.0	57.6	0.0	0.0	43.2	0.0	39.3
Incr Delay (d2), s/veh	0.4	0.6	0.6	0.1	0.3	0.0	5.5	0.0	0.0	1.9	0.0	0.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	4.8	7.0	7.3	0.4	5.7	0.0	1.3	0.0	0.0	13.8	0.0	7.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	12.5	11.6	11.6	15.8	17.8	0.0	63.0	0.0	0.0	45.1	0.0	40.1
LnGrp LOS	B	B	B	B	B		E	A	A	D	A	D
Approach Vol, veh/h		848			412			21			792	
Approach Delay, s/veh		11.8			17.7			63.0			44.1	
Approach LOS		B			B			E			D	

Timer - Assigned Phs		2		4	5	6		8				
Phs Duration (G+Y+Rc), s		78.3		33.2	14.0	64.3		8.5				
Change Period (Y+Rc), s		6.0		6.0	6.0	6.0		6.0				
Max Green Setting (Gmax), s		47.0		48.0	8.0	33.0		7.0				
Max Q Clear Time (g_c+I1), s		12.2		23.6	9.5	10.6		3.5				
Green Ext Time (p_c), s		2.3		3.6	0.0	1.7		0.0				

Intersection Summary												
HCM 6th Ctrl Delay			25.8									
HCM 6th LOS			C									

Notes

User approved volume balancing among the lanes for turning movement.

Unsignalized Delay for [WBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	782	2	0	636	1	3
Future Volume (vph)	782	2	0	636	1	3
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	14	11	12	12	15
Grade (%)	0%			0%	-1%	
Lane Util. Factor	0.95	0.95	1.00	0.95	1.00	1.00
Ped Bike Factor						
Frt						0.865
Flt Protected					0.950	
Satd. Flow (prot)	3386	0	0	3386	0	1721
Flt Permitted					0.950	
Satd. Flow (perm)	3386	0	0	3386	0	1721
Link Speed (mph)	35			35	30	
Link Distance (ft)	1190			92	164	
Travel Time (s)	23.2			1.8	3.7	
Confl. Peds. (#/hr)					3	3
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	1%	0%	0%	1%	0%	0%
Adj. Flow (vph)	806	2	0	656	1	3
Shared Lane Traffic (%)						
Lane Group Flow (vph)	808	0	0	656	1	3
Sign Control	Free			Free	Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	0

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑			↑↑		↱
Traffic Vol, veh/h	782	2	0	636	1	3
Future Vol, veh/h	782	2	0	636	1	3
Conflicting Peds, #/hr	0	0	0	0	3	3
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	-1	-
Peak Hour Factor	97	97	97	97	97	97
Heavy Vehicles, %	1	0	0	1	0	0
Mvmt Flow	806	2	0	656	1	3

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	-	-	1138	407
Stage 1	-	-	-	-	807	-
Stage 2	-	-	-	-	331	-
Critical Hdwy	-	-	-	-	6.6	6.8
Critical Hdwy Stg 1	-	-	-	-	5.6	-
Critical Hdwy Stg 2	-	-	-	-	5.6	-
Follow-up Hdwy	-	-	-	-	3	3.1
Pot Cap-1 Maneuver	-	-	0	-	*231	638
Stage 1	-	-	0	-	*470	-
Stage 2	-	-	0	-	*977	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	-	-	*230	636
Mov Cap-2 Maneuver	-	-	-	-	*230	-
Stage 1	-	-	-	-	*470	-
Stage 2	-	-	-	-	*974	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	10.7
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT
Capacity (veh/h)	636	-	-	-
HCM Lane V/C Ratio	0.005	-	-	-
HCM Control Delay (s)	10.7	-	-	-
HCM Lane LOS	B	-	-	-
HCM 95th %tile Q(veh)	0	-	-	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	1142	0	0	662	1	5
Future Volume (vph)	1142	0	0	662	1	5
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	15	12	10	16	12
Grade (%)	0%			0%	-2%	
Lane Util. Factor	0.95	1.00	1.00	0.95	1.00	1.00
Frt					0.884	
Flt Protected					0.993	
Satd. Flow (prot)	3386	0	0	3129	1809	0
Flt Permitted					0.993	
Satd. Flow (perm)	3386	0	0	3129	1809	0
Link Speed (mph)	35			35	30	
Link Distance (ft)	155			113	194	
Travel Time (s)	3.0			2.2	4.4	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	1%	0%	0%	2%	0%	0%
Adj. Flow (vph)	1269	0	0	736	1	6
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1269	0	0	736	7	0
Sign Control	Free			Free	Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	0

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑			↑↑	↱	
Traffic Vol, veh/h	1142	0	0	662	1	5
Future Vol, veh/h	1142	0	0	662	1	5
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	-2	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	1	0	0	2	0	0
Mvmt Flow	1269	0	0	736	1	6

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	-	-	-	1637	635
Stage 1	-	-	-	-	1269	-
Stage 2	-	-	-	-	368	-
Critical Hdwy	-	-	-	-	6.4	6.7
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	-	-	3	3.1
Pot Cap-1 Maneuver	-	0	0	-	272	*686
Stage 1	-	0	0	-	657	-
Stage 2	-	0	0	-	802	-
Platoon blocked, %	-			-	1	1
Mov Cap-1 Maneuver	-	-	-	-	272	*686
Mov Cap-2 Maneuver	-	-	-	-	272	-
Stage 1	-	-	-	-	657	-
Stage 2	-	-	-	-	802	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	11.7
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	WBT
Capacity (veh/h)	547	-	-
HCM Lane V/C Ratio	0.012	-	-
HCM Control Delay (s)	11.7	-	-
HCM Lane LOS	B	-	-
HCM 95th %tile Q(veh)	0	-	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	1174	0	0	647	0	0
Future Volume (vph)	1174	0	0	647	0	0
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	13	10	14	10	12
Grade (%)	0%			0%	-2%	
Lane Util. Factor	0.95	0.95	0.95	0.95	1.00	1.00
Ped Bike Factor						
Frt						
Flt Protected						
Satd. Flow (prot)	3353	0	0	3576	1697	0
Flt Permitted						
Satd. Flow (perm)	3353	0	0	3576	1697	0
Link Speed (mph)	35			35	30	
Link Distance (ft)	113			65	161	
Travel Time (s)	2.2			1.3	3.7	
Confl. Peds. (#/hr)					2	2
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	2%	0%	0%	2%	0%	0%
Adj. Flow (vph)	1304	0	0	719	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1304	0	0	719	0	0
Sign Control	Free			Free	Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	0

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	1174	0	0	647	0	0
Future Vol, veh/h	1174	0	0	647	0	0
Conflicting Peds, #/hr	0	0	0	0	2	2
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	-2	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	0	0	2	0	0
Mvmt Flow	1304	0	0	719	0	0

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	1304	0	1666	654
Stage 1	-	-	-	-	1304	-
Stage 2	-	-	-	-	362	-
Critical Hdwy	-	-	4.3	-	6.4	6.7
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	3	-	3	3.1
Pot Cap-1 Maneuver	-	-	*653	-	*307	*631
Stage 1	-	-	-	-	*653	-
Stage 2	-	-	-	-	*808	-
Platoon blocked, %	-	-	1	-	1	1
Mov Cap-1 Maneuver	-	-	*653	-	*306	*630
Mov Cap-2 Maneuver	-	-	-	-	*306	-
Stage 1	-	-	-	-	*653	-
Stage 2	-	-	-	-	*806	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	0
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	-	-	-	* 653	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	0	-	-	0	-
HCM Lane LOS	A	-	-	A	-
HCM 95th %tile Q(veh)	-	-	-	0	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	1167	0	0	652	0	0
Future Volume (vph)	1167	0	0	652	0	0
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	13	11	11	12	12
Grade (%)	0%			-1%	-1%	
Lane Util. Factor	0.95	0.95	0.95	0.95	1.00	1.00
Ped Bike Factor						
Frt						
Flt Protected						
Satd. Flow (prot)	3386	0	0	3257	1809	0
Flt Permitted						
Satd. Flow (perm)	3386	0	0	3257	1809	0
Link Speed (mph)	35			35	30	
Link Distance (ft)	65			652	111	
Travel Time (s)	1.3			12.7	2.5	
Confl. Peds. (#/hr)					1	1
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	1%	0%	0%	2%	0%	0%
Adj. Flow (vph)	1297	0	0	724	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1297	0	0	724	0	0
Sign Control	Free			Free	Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	0

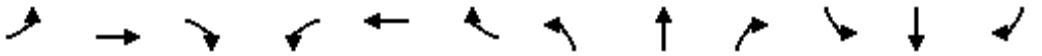
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	1167	0	0	652	0	0
Future Vol, veh/h	1167	0	0	652	0	0
Conflicting Peds, #/hr	0	0	0	0	1	1
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	-1	-1	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	1	0	0	2	0	0
Mvmt Flow	1297	0	0	724	0	0

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	1297	0	1660	650
Stage 1	-	-	-	-	1297	-
Stage 2	-	-	-	-	363	-
Critical Hdwy	-	-	4.3	-	6.6	6.8
Critical Hdwy Stg 1	-	-	-	-	5.6	-
Critical Hdwy Stg 2	-	-	-	-	5.6	-
Follow-up Hdwy	-	-	3	-	3	3.1
Pot Cap-1 Maneuver	-	-	681	-	272	*659
Stage 1	-	-	-	-	680	-
Stage 2	-	-	-	-	791	-
Platoon blocked, %	-	-	1	-	1	1
Mov Cap-1 Maneuver	-	-	681	-	272	*658
Mov Cap-2 Maneuver	-	-	-	-	272	-
Stage 1	-	-	-	-	680	-
Stage 2	-	-	-	-	790	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	0
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	-	-	-	681	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	0	-	-	0	-
HCM Lane LOS	A	-	-	A	-
HCM 95th %tile Q(veh)	-	-	-	0	-

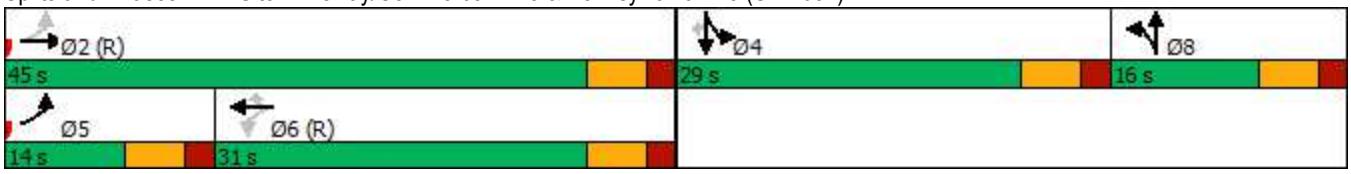
Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	124	385	6	10	411	180	5	4	9	165	6	120
Future Volume (vph)	124	385	6	10	411	180	5	4	9	165	6	120
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	10	14	14	10	11	12	12	12	12	10	11	11
Grade (%)		-1%			1%			0%			0%	
Storage Length (ft)	180		0	230		100	0		0	150		0
Storage Lanes	1		0	1		1	0		0	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	1.00	1.00	1.00	0.95	0.95	1.00
Frt		0.998				0.850		0.932				0.850
Flt Protected	0.950			0.950				0.986		0.950	0.955	
Satd. Flow (prot)	1604	3588	0	1588	3225	1507	0	1654	0	1516	1579	1479
Flt Permitted	0.434			0.511				0.986		0.950	0.955	
Satd. Flow (perm)	733	3588	0	854	3225	1507	0	1654	0	1516	1579	1479
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		2				189		9				182
Link Speed (mph)		35			35			30			35	
Link Distance (ft)		92			155			162			498	
Travel Time (s)		1.8			3.0			3.7			9.7	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	0%	2%	0%	0%	2%	1%	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	131	405	6	11	433	189	5	4	9	174	6	126
Shared Lane Traffic (%)										48%		
Lane Group Flow (vph)	131	411	0	11	433	189	0	18	0	90	90	126
Turn Type	pm+pt	NA		Perm	NA	Perm	Split	NA		Split	NA	Perm
Protected Phases	5	2			6		8	8		4	4	
Permitted Phases	2			6		6						4
Detector Phase	5	2		6	6	6	8	8		4	4	4
Switch Phase												
Minimum Initial (s)	7.0	20.0		20.0	20.0	20.0	5.0	5.0		5.0	5.0	5.0
Minimum Split (s)	13.0	26.0		26.0	26.0	26.0	11.0	11.0		11.0	11.0	11.0
Total Split (s)	14.0	45.0		31.0	31.0	31.0	16.0	16.0		29.0	29.0	29.0
Total Split (%)	15.6%	50.0%		34.4%	34.4%	34.4%	17.8%	17.8%		32.2%	32.2%	32.2%
Yellow Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
All-Red Time (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0		2.0	2.0	2.0
Lost Time Adjust (s)	-1.0	-1.0		-1.0	-1.0	-1.0		-1.0		-1.0	-1.0	-1.0
Total Lost Time (s)	5.0	5.0		5.0	5.0	5.0		5.0		5.0	5.0	5.0
Lead/Lag	Lead			Lag	Lag	Lag						
Lead-Lag Optimize?	Yes			Yes	Yes	Yes						
Recall Mode	None	C-Max		C-Max	C-Max	C-Max	None	None		None	None	None

Intersection Summary	
Area Type:	Other
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 34 (38%), Referenced to phase 2:EBTL and 6:WBTL, Start of 1st Green	
Natural Cycle: 65	
Control Type: Actuated-Coordinated	

Splits and Phases: 1: Site Driveway/Commerce Drive & Pennsylvania Ave (SR 2037)



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	124	385	6	10	411	180	5	4	9	165	6	120
Future Volume (veh/h)	124	385	6	10	411	180	5	4	9	165	6	120
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1837	1881	1911	1794	1766	1780	1800	1800	1800	1800	1800	1800
Adj Flow Rate, veh/h	131	405	5	11	433	0	5	4	5	178	0	66
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	2	0	0	2	1	0	0	0	0	0	0
Cap, veh/h	702	2562	32	611	1903		16	13	16	333	0	148
Arrive On Green	0.09	0.71	0.70	0.57	0.57	0.00	0.02	0.03	0.02	0.10	0.00	0.10
Sat Flow, veh/h	1750	3616	45	936	3356	1509	594	475	594	3429	0	1525
Grp Volume(v), veh/h	131	200	210	11	433	0	14	0	0	178	0	66
Grp Sat Flow(s),veh/h/ln	1750	1787	1873	936	1678	1509	1663	0	0	1714	0	1525
Q Serve(g_s), s	2.3	3.3	3.3	0.5	5.8	0.0	0.7	0.0	0.0	4.4	0.0	3.7
Cycle Q Clear(g_c), s	2.3	3.3	3.3	0.5	5.8	0.0	0.7	0.0	0.0	4.4	0.0	3.7
Prop In Lane	1.00		0.02	1.00		1.00	0.36		0.36	1.00		1.00
Lane Grp Cap(c), veh/h	702	1266	1327	611	1903		46	0	0	333	0	148
V/C Ratio(X)	0.19	0.16	0.16	0.02	0.23		0.31	0.00	0.00	0.53	0.00	0.44
Avail Cap(c_a), veh/h	727	1266	1327	611	1903		203	0	0	914	0	407
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	5.4	4.3	4.3	8.5	9.7	0.0	43.3	0.0	0.0	38.7	0.0	38.3
Incr Delay (d2), s/veh	0.1	0.3	0.3	0.1	0.3	0.0	3.7	0.0	0.0	1.3	0.0	2.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	1.3	1.9	2.0	0.2	3.6	0.0	0.6	0.0	0.0	3.4	0.0	2.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	5.5	4.6	4.6	8.6	10.0	0.0	47.0	0.0	0.0	40.0	0.0	40.4
LnGrp LOS	A	A	A	A	A		D	A	A	D	A	D
Approach Vol, veh/h		541			444			14			244	
Approach Delay, s/veh		4.8			9.9			47.0			40.1	
Approach LOS		A			A			D			D	

Timer - Assigned Phs		2		4	5	6		8				
Phs Duration (G+Y+Rc), s		68.8		13.8	12.7	56.0		7.5				
Change Period (Y+Rc), s		6.0		6.0	6.0	6.0		6.0				
Max Green Setting (Gmax), s		39.0		23.0	8.0	25.0		10.0				
Max Q Clear Time (g_c+I1), s		5.8		6.9	4.8	8.3		2.7				
Green Ext Time (p_c), s		1.4		0.8	0.1	1.7		0.0				

Intersection Summary		
HCM 6th Ctrl Delay	14.0	
HCM 6th LOS	B	

Notes

User approved volume balancing among the lanes for turning movement.

Unsignalized Delay for [WBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	514	0	0	529	0	2
Future Volume (vph)	514	0	0	529	0	2
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	14	11	12	12	15
Grade (%)	0%			0%	-1%	
Lane Util. Factor	0.95	1.00	1.00	0.95	1.00	1.00
Frt						0.865
Flt Protected						
Satd. Flow (prot)	3386	0	0	3386	0	1721
Flt Permitted						
Satd. Flow (perm)	3386	0	0	3386	0	1721
Link Speed (mph)	35			35	30	
Link Distance (ft)	1190			92	164	
Travel Time (s)	23.2			1.8	3.7	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	1%	0%	0%	1%	0%	0%
Adj. Flow (vph)	535	0	0	551	0	2
Shared Lane Traffic (%)						
Lane Group Flow (vph)	535	0	0	551	0	2
Sign Control	Free			Free	Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	0

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑			↑↑		↱
Traffic Vol, veh/h	514	0	0	529	0	2
Future Vol, veh/h	514	0	0	529	0	2
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	-1	-
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	1	0	0	1	0	0
Mvmt Flow	535	0	0	551	0	2

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	-	-	-	-	268
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.8
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.1
Pot Cap-1 Maneuver	-	0	0	-	0	784
Stage 1	-	0	0	-	0	-
Stage 2	-	0	0	-	0	-
Platoon blocked, %	-			-		
Mov Cap-1 Maneuver	-	-	-	-	-	784
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	9.6
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	WBT
Capacity (veh/h)	784	-	-
HCM Lane V/C Ratio	0.003	-	-
HCM Control Delay (s)	9.6	-	-
HCM Lane LOS	A	-	-
HCM 95th %tile Q(veh)	0	-	-

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	569	1	0	590	2	2
Future Volume (vph)	569	1	0	590	2	2
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	15	12	10	16	12
Grade (%)	0%			0%	-2%	
Lane Util. Factor	0.95	0.95	1.00	0.95	1.00	1.00
Frt					0.932	
Flt Protected					0.976	
Satd. Flow (prot)	3386	0	0	3160	1874	0
Flt Permitted					0.976	
Satd. Flow (perm)	3386	0	0	3160	1874	0
Link Speed (mph)	35			35	30	
Link Distance (ft)	155			113	194	
Travel Time (s)	3.0			2.2	4.4	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	1%	0%	0%	1%	0%	0%
Adj. Flow (vph)	587	1	0	608	2	2
Shared Lane Traffic (%)						
Lane Group Flow (vph)	588	0	0	608	4	0
Sign Control	Free			Free	Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	0

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	569	1	0	590	2	2
Future Vol, veh/h	569	1	0	590	2	2
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	-2	-
Peak Hour Factor	97	97	97	97	97	97
Heavy Vehicles, %	1	0	0	1	0	0
Mvmt Flow	587	1	0	608	2	2

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	-	-	892	294
Stage 1	-	-	-	-	588	-
Stage 2	-	-	-	-	304	-
Critical Hdwy	-	-	-	-	6.4	6.7
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	-	-	3	3.1
Pot Cap-1 Maneuver	-	-	0	-	558	*943
Stage 1	-	-	0	-	941	-
Stage 2	-	-	0	-	861	-
Platoon blocked, %	-	-		-	1	1
Mov Cap-1 Maneuver	-	-	-	-	558	*943
Mov Cap-2 Maneuver	-	-	-	-	558	-
Stage 1	-	-	-	-	941	-
Stage 2	-	-	-	-	861	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	10.2
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT
Capacity (veh/h)	701	-	-	-
HCM Lane V/C Ratio	0.006	-	-	-
HCM Control Delay (s)	10.2	-	-	-
HCM Lane LOS	B	-	-	-
HCM 95th %tile Q(veh)	0	-	-	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	569	0	0	602	0	0
Future Volume (vph)	569	0	0	602	0	0
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	13	10	14	10	12
Grade (%)	0%			0%	-2%	
Lane Util. Factor	0.95	0.95	0.95	0.95	1.00	1.00
Frt						
Flt Protected						
Satd. Flow (prot)	3386	0	0	3576	1697	0
Flt Permitted						
Satd. Flow (perm)	3386	0	0	3576	1697	0
Link Speed (mph)	35			35	30	
Link Distance (ft)	113			65	161	
Travel Time (s)	2.2			1.3	3.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	1%	0%	0%	2%	0%	0%
Adj. Flow (vph)	618	0	0	654	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	618	0	0	654	0	0
Sign Control	Free			Free	Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	0

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	569	0	0	602	0	0
Future Vol, veh/h	569	0	0	602	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	-2	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	1	0	0	2	0	0
Mvmt Flow	618	0	0	654	0	0

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	618	0	945	309
Stage 1	-	-	-	-	618	-
Stage 2	-	-	-	-	327	-
Critical Hdwy	-	-	4.3	-	6.4	6.7
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	3	-	3	3.1
Pot Cap-1 Maneuver	-	-	939	-	527	*931
Stage 1	-	-	-	-	930	-
Stage 2	-	-	-	-	839	-
Platoon blocked, %	-	-	1	-	1	1
Mov Cap-1 Maneuver	-	-	939	-	527	*931
Mov Cap-2 Maneuver	-	-	-	-	527	-
Stage 1	-	-	-	-	930	-
Stage 2	-	-	-	-	839	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	0
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	-	-	-	939	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	0	-	-	0	-
HCM Lane LOS	A	-	-	A	-
HCM 95th %tile Q(veh)	-	-	-	0	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	568	0	0	603	0	0
Future Volume (vph)	568	0	0	603	0	0
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	13	11	11	12	12
Grade (%)	0%			-1%	-1%	
Lane Util. Factor	0.95	0.95	0.95	0.95	1.00	1.00
Frt						
Flt Protected						
Satd. Flow (prot)	3386	0	0	3257	1809	0
Flt Permitted						
Satd. Flow (perm)	3386	0	0	3257	1809	0
Link Speed (mph)	35			35	30	
Link Distance (ft)	65			652	111	
Travel Time (s)	1.3			12.7	2.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	1%	0%	0%	2%	0%	0%
Adj. Flow (vph)	617	0	0	655	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	617	0	0	655	0	0
Sign Control	Free			Free	Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	0

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	568	0	0	603	0	0
Future Vol, veh/h	568	0	0	603	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	-1	-1	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	1	0	0	2	0	0
Mvmt Flow	617	0	0	655	0	0

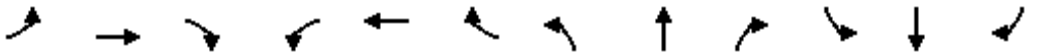
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	617	0	945	309
Stage 1	-	-	-	-	617	-
Stage 2	-	-	-	-	328	-
Critical Hdwy	-	-	4.3	-	6.6	6.8
Critical Hdwy Stg 1	-	-	-	-	5.6	-
Critical Hdwy Stg 2	-	-	-	-	5.6	-
Follow-up Hdwy	-	-	3	-	3	3.1
Pot Cap-1 Maneuver	-	-	940	-	514	*931
Stage 1	-	-	-	-	929	-
Stage 2	-	-	-	-	823	-
Platoon blocked, %	-	-	1	-	1	1
Mov Cap-1 Maneuver	-	-	940	-	514	*931
Mov Cap-2 Maneuver	-	-	-	-	514	-
Stage 1	-	-	-	-	929	-
Stage 2	-	-	-	-	823	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	0
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	-	-	-	940	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	0	-	-	0	-
HCM Lane LOS	A	-	-	A	-
HCM 95th %tile Q(veh)	-	-	-	0	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

2025 Projected Conditions With Improvements

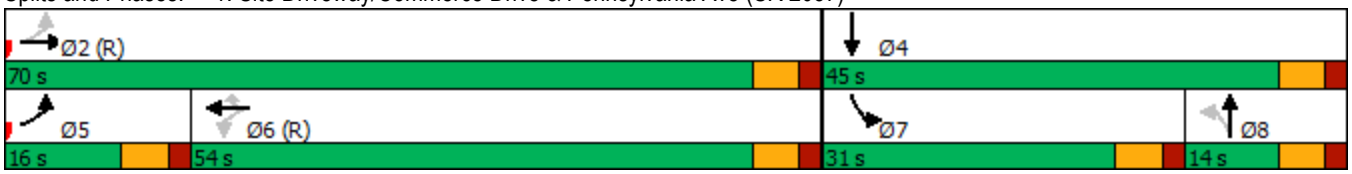


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	221	425	26	52	467	659	11	7	14	142	17	140
Future Volume (vph)	221	425	26	52	467	659	11	7	14	142	17	140
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	10	14	14	10	11	12	10	14	12	10	11	11
Grade (%)		-1%			1%			0%			0%	
Storage Length (ft)	180		0	230		100	0		0	150		0
Storage Lanes	1		0	1		1	1		0	2		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	1.00	1.00	1.00	0.97	1.00	1.00
Ped Bike Factor	1.00	1.00					0.99	0.98		1.00	0.99	
Frt		0.991				0.850		0.900			0.867	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1573	3529	0	1588	3133	1492	1596	1697	0	2867	1422	0
Flt Permitted	0.421			0.485			0.851			0.950		
Satd. Flow (perm)	696	3529	0	811	3133	1492	1410	1697	0	2855	1422	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		9				679		14			144	
Link Speed (mph)		35			35			30			35	
Link Distance (ft)		1280			268			162			498	
Travel Time (s)		24.9			5.2			3.7			9.7	
Confl. Peds. (#/hr)	4		4				4		4	2		2
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	2%	3%	0%	0%	5%	2%	0%	0%	0%	8%	11%	4%
Adj. Flow (vph)	228	438	27	54	481	679	11	7	14	146	18	144
Shared Lane Traffic (%)												
Lane Group Flow (vph)	228	465	0	54	481	679	11	21	0	146	162	0
Turn Type	pm+pt	NA		Perm	NA	Perm	Perm	NA		Prot	NA	
Protected Phases	5	2			6			8		7	4	
Permitted Phases	2			6		6	8					
Detector Phase	5	2		6	6	6	8	8		7	4	
Switch Phase												
Minimum Initial (s)	7.0	20.0		20.0	20.0	20.0	5.0	5.0		5.0	5.0	
Minimum Split (s)	13.0	26.0		26.0	26.0	26.0	11.0	11.0		11.0	11.0	
Total Split (s)	16.0	70.0		54.0	54.0	54.0	14.0	14.0		31.0	45.0	
Total Split (%)	13.9%	60.9%		47.0%	47.0%	47.0%	12.2%	12.2%		27.0%	39.1%	
Yellow Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	-1.0	-1.0		-1.0	-1.0	-1.0	0.0	-1.0		-1.0	-1.0	
Total Lost Time (s)	5.0	5.0		5.0	5.0	5.0	6.0	5.0		5.0	5.0	
Lead/Lag	Lead			Lag	Lag	Lag	Lag	Lag		Lead		
Lead-Lag Optimize?	Yes			Yes	Yes	Yes	Yes	Yes		Yes		
Recall Mode	None	C-Max		C-Max	C-Max	C-Max	None	None		None	None	

Intersection Summary	
Area Type:	Other
Cycle Length: 115	
Actuated Cycle Length: 115	
Offset: 12 (10%), Referenced to phase 2:EBTL and 6:WBTL, Start of 1st Green	

Natural Cycle: 65
Control Type: Actuated-Coordinated

Splits and Phases: 1: Site Driveway/Commerce Drive & Pennsylvania Ave (SR 2037)



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	221	425	26	52	467	659	11	7	14	142	17	140
Future Volume (veh/h)	221	425	26	52	467	659	11	7	14	142	17	140
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	0.99		0.97	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1809	1866	1911	1794	1724	1766	1800	1872	1800	1688	1646	1744
Adj Flow Rate, veh/h	228	438	27	54	481	0	11	7	8	146	18	102
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	3	0	0	5	2	0	0	0	8	11	4
Cap, veh/h	682	2504	154	613	2029		115	41	46	248	37	212
Arrive On Green	0.08	0.74	0.73	0.62	0.62	0.00	0.04	0.05	0.04	0.08	0.17	0.17
Sat Flow, veh/h	1723	3393	209	888	3276	1497	1209	784	896	3118	213	1209
Grp Volume(v), veh/h	228	228	237	54	481	0	11	0	15	146	0	120
Grp Sat Flow(s),veh/h/ln	1723	1773	1828	888	1638	1497	1209	0	1681	1559	0	1423
Q Serve(g_s), s	5.0	4.5	4.5	2.8	7.5	0.0	1.0	0.0	1.0	5.2	0.0	8.7
Cycle Q Clear(g_c), s	5.0	4.5	4.5	2.8	7.5	0.0	1.0	0.0	1.0	5.2	0.0	8.7
Prop In Lane	1.00		0.11	1.00		1.00	1.00		0.53	1.00		0.85
Lane Grp Cap(c), veh/h	682	1309	1349	613	2029		115	0	87	248	0	249
V/C Ratio(X)	0.33	0.17	0.18	0.09	0.24		0.10	0.00	0.17	0.59	0.00	0.48
Avail Cap(c_a), veh/h	717	1309	1349	613	2029		147	0	132	705	0	495
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	5.9	4.5	4.5	8.9	9.8	0.0	53.1	0.0	52.4	51.1	0.0	42.7
Incr Delay (d2), s/veh	0.3	0.3	0.3	0.3	0.3	0.0	0.4	0.0	0.9	2.2	0.0	1.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	2.9	2.7	2.8	1.0	4.7	0.0	0.6	0.0	0.8	3.8	0.0	5.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	6.2	4.8	4.8	9.2	10.0	0.0	53.5	0.0	53.4	53.3	0.0	44.2
LnGrp LOS	A	A	A	A	B		D	A	D	D	A	D
Approach Vol, veh/h		693			535			26			266	
Approach Delay, s/veh		5.3			10.0			53.4			49.2	
Approach LOS		A			A			D			D	

Timer - Assigned Phs		2		4	5	6	7	8				
Phs Duration (G+Y+Rc), s		89.9		25.1	13.7	76.2	14.2	11.0				
Change Period (Y+Rc), s		6.0		6.0	6.0	6.0	6.0	6.0				
Max Green Setting (Gmax), s		64.0		39.0	10.0	48.0	25.0	8.0				
Max Q Clear Time (g_c+I1), s		7.0		11.2	7.5	10.0	7.7	3.0				
Green Ext Time (p_c), s		1.7		0.4	0.2	2.5	0.5	0.0				

Intersection Summary		
HCM 6th Ctrl Delay	15.4	
HCM 6th LOS	B	

Notes

User approved volume balancing among the lanes for turning movement.

Unsignalized Delay for [WBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	581	7	0	1176	0	6
Future Volume (vph)	581	7	0	1176	0	6
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	13	10	14	10	12
Grade (%)	0%			0%	-2%	
Lane Util. Factor	0.95	0.95	1.00	0.95	1.00	1.00
Ped Bike Factor						
Frt	0.998					0.865
Flt Protected						
Satd. Flow (prot)	3283	0	0	3542	0	1573
Flt Permitted						
Satd. Flow (perm)	3283	0	0	3542	0	1573
Link Speed (mph)	35			35	30	
Link Distance (ft)	268			716	161	
Travel Time (s)	5.2			13.9	3.7	
Confl. Peds. (#/hr)		1	3		6	6
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles (%)	4%	0%	0%	3%	0%	0%
Adj. Flow (vph)	593	7	0	1200	0	6
Shared Lane Traffic (%)						
Lane Group Flow (vph)	600	0	0	1200	0	6
Sign Control	Free			Free	Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	0

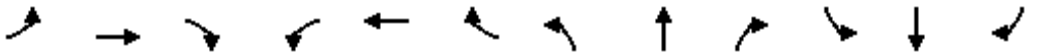
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	581	7	0	1176	0	6
Future Vol, veh/h	581	7	0	1176	0	6
Conflicting Peds, #/hr	0	1	3	0	6	6
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	-2	-
Peak Hour Factor	98	98	98	98	98	98
Heavy Vehicles, %	4	0	0	3	0	0
Mvmt Flow	593	7	0	1200	0	6

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	-	-	-	307
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.7
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.1
Pot Cap-1 Maneuver	-	-	0	-	0	*924
Stage 1	-	-	0	-	0	-
Stage 2	-	-	0	-	0	-
Platoon blocked, %	-	-		-		1
Mov Cap-1 Maneuver	-	-	-	-	-	*917
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	9
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT
Capacity (veh/h)	917	-	-	-
HCM Lane V/C Ratio	0.007	-	-	-
HCM Control Delay (s)	9	-	-	-
HCM Lane LOS	A	-	-	-
HCM 95th %tile Q(veh)	0	-	-	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

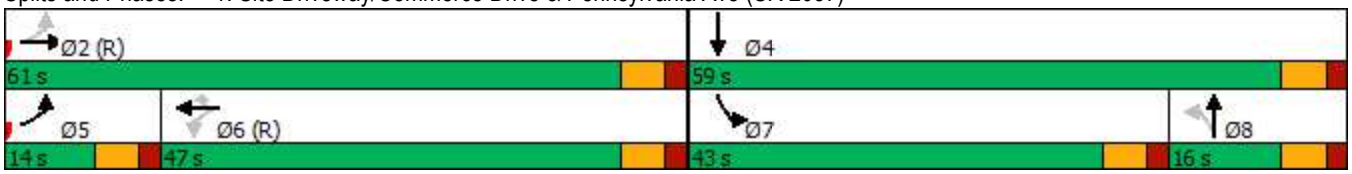


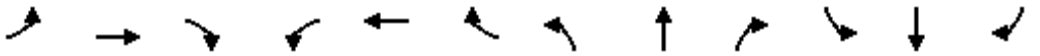
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	194	561	18	37	357	278	33	21	39	568	13	270
Future Volume (vph)	194	561	18	37	357	278	33	21	39	568	13	270
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	10	14	14	10	11	12	10	14	12	10	11	11
Grade (%)		-1%			1%			0%			0%	
Storage Length (ft)	180		0	230		100	0		0	150		0
Storage Lanes	1		0	1		1	1		0	2		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	1.00	1.00	1.00	0.97	1.00	1.00
Ped Bike Factor	1.00	1.00								1.00	0.99	
Frt		0.995				0.850		0.902			0.857	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1588	3611	0	1588	3257	1478	1596	1732	0	3036	1459	0
Flt Permitted	0.431			0.410			0.571			0.950		
Satd. Flow (perm)	720	3611	0	685	3257	1478	959	1732	0	3031	1459	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		4				305		43			297	
Link Speed (mph)		35			35			30			35	
Link Distance (ft)		1280			268			162			498	
Travel Time (s)		24.9			5.2			3.7			9.7	
Confl. Peds. (#/hr)	1		1							1		1
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles (%)	1%	1%	0%	0%	1%	3%	0%	0%	0%	2%	0%	1%
Adj. Flow (vph)	213	616	20	41	392	305	36	23	43	624	14	297
Shared Lane Traffic (%)												
Lane Group Flow (vph)	213	636	0	41	392	305	36	66	0	624	311	0
Turn Type	pm+pt	NA		Perm	NA	Perm	Perm	NA		Prot	NA	
Protected Phases	5	2			6			8		7	4	
Permitted Phases	2			6		6	8					
Detector Phase	5	2		6	6	6	8	8		7	4	
Switch Phase												
Minimum Initial (s)	7.0	20.0		20.0	20.0	20.0	5.0	5.0		5.0	5.0	
Minimum Split (s)	13.0	26.0		26.0	26.0	26.0	11.0	11.0		11.0	11.0	
Total Split (s)	14.0	61.0		47.0	47.0	47.0	16.0	16.0		43.0	59.0	
Total Split (%)	11.7%	50.8%		39.2%	39.2%	39.2%	13.3%	13.3%		35.8%	49.2%	
Yellow Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	-1.0	-1.0		-1.0	-1.0	-1.0	0.0	-1.0		-1.0	-1.0	
Total Lost Time (s)	5.0	5.0		5.0	5.0	5.0	6.0	5.0		5.0	5.0	
Lead/Lag	Lead			Lag	Lag	Lag	Lag	Lag		Lead		
Lead-Lag Optimize?	Yes			Yes	Yes	Yes	Yes	Yes		Yes		
Recall Mode	None	C-Max		C-Max	C-Max	C-Max	None	None		None	None	

Intersection Summary	
Area Type:	Other
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 108 (90%), Referenced to phase 2:EBTL and 6:WBTL, Start of 1st Green	

Natural Cycle: 70
Control Type: Actuated-Coordinated

Splits and Phases: 1: Site Driveway/Commerce Drive & Pennsylvania Ave (SR 2037)





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	194	561	18	37	357	278	33	21	39	568	13	270
Future Volume (veh/h)	194	561	18	37	357	278	33	21	39	568	13	270
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1823	1896	1911	1794	1780	1752	1800	1872	1800	1772	1800	1786
Adj Flow Rate, veh/h	213	616	20	41	392	0	36	23	31	624	14	156
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	1	1	0	0	1	3	0	0	0	2	0	1
Cap, veh/h	579	2095	68	418	1596		116	41	55	752	42	465
Arrive On Green	0.08	0.59	0.58	0.47	0.47	0.00	0.05	0.06	0.05	0.23	0.33	0.33
Sat Flow, veh/h	1736	3561	116	759	3383	1485	1164	723	974	3274	127	1416
Grp Volume(v), veh/h	213	311	325	41	392	0	36	0	54	624	0	170
Grp Sat Flow(s),veh/h/ln	1736	1801	1875	759	1691	1485	1164	0	1697	1637	0	1544
Q Serve(g_s), s	7.3	10.3	10.4	3.6	8.3	0.0	3.6	0.0	3.7	21.8	0.0	10.0
Cycle Q Clear(g_c), s	7.3	10.3	10.4	3.6	8.3	0.0	3.6	0.0	3.7	21.8	0.0	10.0
Prop In Lane	1.00		0.06	1.00		1.00	1.00		0.57	1.00		0.92
Lane Grp Cap(c), veh/h	579	1060	1103	418	1596		116	0	96	752	0	507
V/C Ratio(X)	0.37	0.29	0.29	0.10	0.25		0.31	0.00	0.56	0.83	0.00	0.34
Avail Cap(c_a), veh/h	579	1060	1103	418	1596		157	0	156	1037	0	695
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	13.4	12.3	12.3	17.7	18.9	0.0	56.1	0.0	55.4	44.0	0.0	30.4
Incr Delay (d2), s/veh	0.4	0.7	0.7	0.5	0.4	0.0	1.5	0.0	5.0	4.1	0.0	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	5.0	7.6	7.8	1.2	5.9	0.0	2.0	0.0	3.1	14.1	0.0	6.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	13.8	13.0	13.0	18.2	19.3	0.0	57.6	0.0	60.5	48.1	0.0	30.8
LnGrp LOS	B	B	B	B	B		E	A	E	D	A	C
Approach Vol, veh/h		849			433			90			794	
Approach Delay, s/veh		13.2			19.2			59.3			44.4	
Approach LOS		B			B			E			D	

Timer - Assigned Phs		2		4	5	6	7	8				
Phs Duration (G+Y+Rc), s		75.6		44.4	14.0	61.6	32.6	11.8				
Change Period (Y+Rc), s		6.0		6.0	6.0	6.0	6.0	6.0				
Max Green Setting (Gmax), s		55.0		53.0	8.0	41.0	37.0	10.0				
Max Q Clear Time (g_c+I1), s		12.8		12.5	9.8	10.8	24.3	5.7				
Green Ext Time (p_c), s		2.4		0.7	0.0	2.0	2.3	0.1				

Intersection Summary												
HCM 6th Ctrl Delay			27.8									
HCM 6th LOS			C									

Notes

User approved volume balancing among the lanes for turning movement.

Unsignalized Delay for [WBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	1175	5	0	663	0	16
Future Volume (vph)	1175	5	0	663	0	16
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	13	10	14	10	12
Grade (%)	0%			0%	-2%	
Lane Util. Factor	0.95	0.95	1.00	0.95	1.00	1.00
Ped Bike Factor						
Frt	0.999					0.865
Flt Protected						
Satd. Flow (prot)	3350	0	0	3576	0	1573
Flt Permitted						
Satd. Flow (perm)	3350	0	0	3576	0	1573
Link Speed (mph)	35			35	30	
Link Distance (ft)	268			716	161	
Travel Time (s)	5.2			13.9	3.7	
Confl. Peds. (#/hr)					2	2
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	2%	0%	0%	2%	0%	0%
Adj. Flow (vph)	1306	6	0	737	0	18
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1312	0	0	737	0	18
Sign Control	Free			Free	Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	0.1

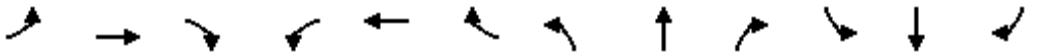
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	1175	5	0	663	0	16
Future Vol, veh/h	1175	5	0	663	0	16
Conflicting Peds, #/hr	0	0	0	0	2	2
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	-2	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	0	0	2	0	0
Mvmt Flow	1306	6	0	737	0	18

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	-	-	-	658
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.7
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.1
Pot Cap-1 Maneuver	-	-	0	-	0	*631
Stage 1	-	-	0	-	0	-
Stage 2	-	-	0	-	0	-
Platoon blocked, %	-	-		-		1
Mov Cap-1 Maneuver	-	-	-	-	-	*630
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	10.9
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT
Capacity (veh/h)	630	-	-	-
HCM Lane V/C Ratio	0.028	-	-	-
HCM Control Delay (s)	10.9	-	-	-
HCM Lane LOS	B	-	-	-
HCM 95th %tile Q(veh)	0.1	-	-	-

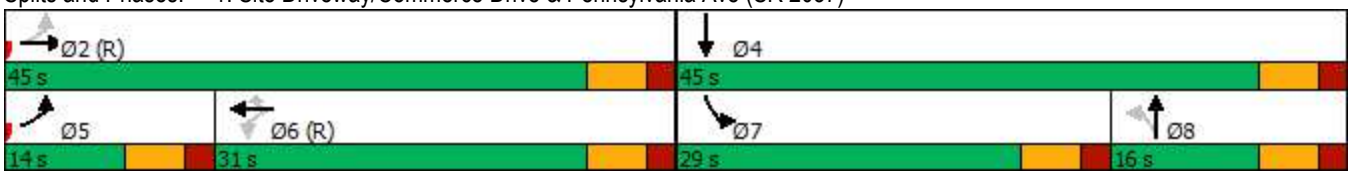
Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

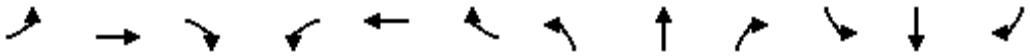


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	122	392	68	140	404	176	82	52	99	166	47	118
Future Volume (vph)	122	392	68	140	404	176	82	52	99	166	47	118
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	10	14	14	10	11	12	10	14	12	10	11	11
Grade (%)		-1%			1%			0%			0%	
Storage Length (ft)	180		0	230		100	0		0	150		0
Storage Lanes	1		0	1		1	1		0	2		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	1.00	1.00	1.00	0.97	1.00	1.00
Frt		0.978				0.850		0.902			0.892	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1604	3526	0	1588	3225	1507	1596	1732	0	3096	1552	0
Flt Permitted	0.405			0.476			0.648			0.950		
Satd. Flow (perm)	684	3526	0	796	3225	1507	1089	1732	0	3096	1552	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		28				185		86			124	
Link Speed (mph)		35			35			30			35	
Link Distance (ft)		1280			268			162			498	
Travel Time (s)		24.9			5.2			3.7			9.7	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	0%	2%	0%	0%	2%	1%	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	128	413	72	147	425	185	86	55	104	175	49	124
Shared Lane Traffic (%)												
Lane Group Flow (vph)	128	485	0	147	425	185	86	159	0	175	173	0
Turn Type	pm+pt	NA		Perm	NA	Perm	Perm	NA		Prot	NA	
Protected Phases	5	2			6			8		7	4	
Permitted Phases	2			6		6	8					
Detector Phase	5	2		6	6	6	8	8		7	4	
Switch Phase												
Minimum Initial (s)	7.0	20.0		20.0	20.0	20.0	5.0	5.0		5.0	5.0	
Minimum Split (s)	13.0	26.0		26.0	26.0	26.0	11.0	11.0		11.0	11.0	
Total Split (s)	14.0	45.0		31.0	31.0	31.0	16.0	16.0		29.0	45.0	
Total Split (%)	15.6%	50.0%		34.4%	34.4%	34.4%	17.8%	17.8%		32.2%	50.0%	
Yellow Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	-1.0	-1.0		-1.0	-1.0	-1.0	0.0	-1.0		-1.0	-1.0	
Total Lost Time (s)	5.0	5.0		5.0	5.0	5.0	6.0	5.0		5.0	5.0	
Lead/Lag	Lead			Lag	Lag	Lag	Lag	Lag		Lead		
Lead-Lag Optimize?	Yes			Yes	Yes	Yes	Yes	Yes		Yes		
Recall Mode	None	C-Max		C-Max	C-Max	C-Max	None	None		None	None	

Intersection Summary	
Area Type:	Other
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 34 (38%), Referenced to phase 2:EBTL and 6:WBTL, Start of 1st Green	
Natural Cycle: 65	
Control Type: Actuated-Coordinated	

Splits and Phases: 1: Site Driveway/Commerce Drive & Pennsylvania Ave (SR 2037)





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	122	392	68	140	404	176	82	52	99	166	47	118
Future Volume (veh/h)	122	392	68	140	404	176	82	52	99	166	47	118
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1837	1881	1911	1794	1766	1780	1800	1872	1800	1800	1800	1800
Adj Flow Rate, veh/h	128	413	71	147	425	0	86	55	100	175	49	64
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	2	0	0	2	1	0	0	0	0	0	0
Cap, veh/h	607	1880	321	495	1593		217	73	132	317	193	253
Arrive On Green	0.09	0.62	0.60	0.47	0.47	0.00	0.11	0.12	0.11	0.10	0.27	0.27
Sat Flow, veh/h	1750	3053	521	874	3356	1509	1232	595	1082	3326	708	925
Grp Volume(v), veh/h	128	240	244	147	425	0	86	0	155	175	0	113
Grp Sat Flow(s),veh/h/ln	1750	1787	1787	874	1678	1509	1232	0	1677	1663	0	1633
Q Serve(g_s), s	2.9	5.4	5.5	9.6	6.9	0.0	6.0	0.0	8.1	4.5	0.0	4.9
Cycle Q Clear(g_c), s	2.9	5.4	5.5	9.6	6.9	0.0	6.0	0.0	8.1	4.5	0.0	4.9
Prop In Lane	1.00		0.29	1.00		1.00	1.00		0.65	1.00		0.57
Lane Grp Cap(c), veh/h	607	1101	1101	495	1593		217	0	205	317	0	446
V/C Ratio(X)	0.21	0.22	0.22	0.30	0.27		0.40	0.00	0.76	0.55	0.00	0.25
Avail Cap(c_a), veh/h	632	1101	1101	495	1593		217	0	205	887	0	726
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	8.8	7.7	7.8	14.9	14.2	0.0	38.2	0.0	38.5	38.9	0.0	25.5
Incr Delay (d2), s/veh	0.2	0.5	0.5	1.5	0.4	0.0	1.2	0.0	14.8	1.5	0.0	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	1.8	3.5	3.6	3.6	4.6	0.0	3.3	0.0	7.4	3.4	0.0	3.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	9.0	8.1	8.2	16.5	14.6	0.0	39.4	0.0	53.3	40.4	0.0	25.8
LnGrp LOS	A	A	A	B	B		D	A	D	D	A	C
Approach Vol, veh/h		612			572			241			288	
Approach Delay, s/veh		8.3			15.1			48.4			34.7	
Approach LOS		A			B			D			C	

Timer - Assigned Phs		2		4	5	6	7	8				
Phs Duration (G+Y+Rc), s		60.4		29.6	12.7	47.7	13.6	16.0				
Change Period (Y+Rc), s		6.0		6.0	6.0	6.0	6.0	6.0				
Max Green Setting (Gmax), s		39.0		39.0	8.0	25.0	23.0	10.0				
Max Q Clear Time (g_c+I1), s		7.9		7.4	5.4	12.1	7.0	10.1				
Green Ext Time (p_c), s		1.7		0.4	0.1	2.3	0.6	0.0				

Intersection Summary		
HCM 6th Ctrl Delay		20.7
HCM 6th LOS		C

Notes

Unsignalized Delay for [WBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	648	19	0	724	0	41
Future Volume (vph)	648	19	0	724	0	41
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	13	10	14	10	12
Grade (%)	0%			0%	-2%	
Lane Util. Factor	0.95	0.95	1.00	0.95	1.00	1.00
Frt	0.996					0.865
Flt Protected						
Satd. Flow (prot)	3374	0	0	3576	0	1573
Flt Permitted						
Satd. Flow (perm)	3374	0	0	3576	0	1573
Link Speed (mph)	35			35	30	
Link Distance (ft)	268			716	161	
Travel Time (s)	5.2			13.9	3.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	1%	0%	0%	2%	0%	0%
Adj. Flow (vph)	704	21	0	787	0	45
Shared Lane Traffic (%)						
Lane Group Flow (vph)	725	0	0	787	0	45
Sign Control	Free			Free	Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	0.3

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	648	19	0	724	0	41
Future Vol, veh/h	648	19	0	724	0	41
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	-2	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	1	0	0	2	0	0
Mvmt Flow	704	21	0	787	0	45

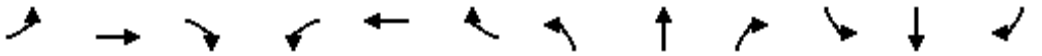
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	-	-	-	363
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.7
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.1
Pot Cap-1 Maneuver	-	-	0	-	0	*894
Stage 1	-	-	0	-	0	-
Stage 2	-	-	0	-	0	-
Platoon blocked, %	-	-		-		1
Mov Cap-1 Maneuver	-	-	-	-	-	*894
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	9.2
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT
Capacity (veh/h)	894	-	-	-
HCM Lane V/C Ratio	0.05	-	-	-
HCM Control Delay (s)	9.2	-	-	-
HCM Lane LOS	A	-	-	-
HCM 95th %tile Q(veh)	0.2	-	-	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

2030 Projected Conditions With Improvements

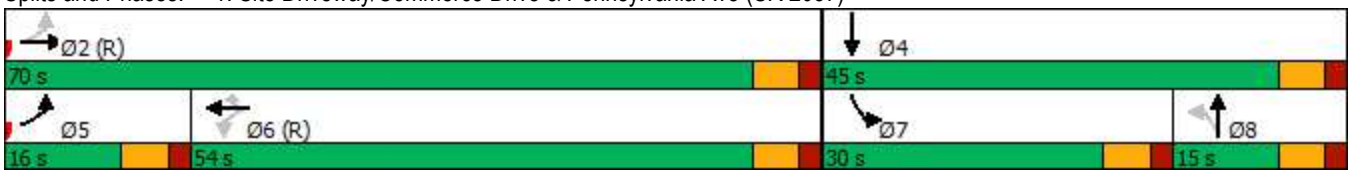


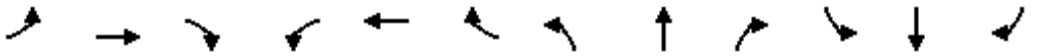
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	224	431	26	52	473	668	11	7	14	144	17	142
Future Volume (vph)	224	431	26	52	473	668	11	7	14	144	17	142
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	10	14	14	10	11	12	10	14	12	10	11	11
Grade (%)		-1%			1%			0%			0%	
Storage Length (ft)	180		0	230		100	0		0	150		0
Storage Lanes	1		0	1		1	1		0	2		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	1.00	1.00	1.00	0.97	1.00	1.00
Ped Bike Factor	1.00	1.00					0.99	0.98		1.00	0.99	
Frt		0.991				0.850		0.900			0.866	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1573	3529	0	1588	3133	1492	1596	1699	0	2867	1421	0
Flt Permitted	0.417			0.482			0.851			0.950		
Satd. Flow (perm)	689	3529	0	806	3133	1492	1412	1699	0	2854	1421	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		9				689		14			146	
Link Speed (mph)		35			35			30			35	
Link Distance (ft)		1280			268			162			498	
Travel Time (s)		24.9			5.2			3.7			9.7	
Confl. Peds. (#/hr)	4		4				4		4	2		2
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	2%	3%	0%	0%	5%	2%	0%	0%	0%	8%	11%	4%
Adj. Flow (vph)	231	444	27	54	488	689	11	7	14	148	18	146
Shared Lane Traffic (%)												
Lane Group Flow (vph)	231	471	0	54	488	689	11	21	0	148	164	0
Turn Type	pm+pt	NA		Perm	NA	Perm	Perm	NA		Prot	NA	
Protected Phases	5	2			6			8		7	4	
Permitted Phases	2			6		6	8					
Detector Phase	5	2		6	6	6	8	8		7	4	
Switch Phase												
Minimum Initial (s)	7.0	20.0		20.0	20.0	20.0	5.0	5.0		5.0	5.0	
Minimum Split (s)	13.0	26.0		26.0	26.0	26.0	11.0	11.0		11.0	11.0	
Total Split (s)	16.0	70.0		54.0	54.0	54.0	15.0	15.0		30.0	45.0	
Total Split (%)	13.9%	60.9%		47.0%	47.0%	47.0%	13.0%	13.0%		26.1%	39.1%	
Yellow Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	-1.0	-1.0		-1.0	-1.0	-1.0	0.0	-1.0		-1.0	-1.0	
Total Lost Time (s)	5.0	5.0		5.0	5.0	5.0	6.0	5.0		5.0	5.0	
Lead/Lag	Lead			Lag	Lag	Lag	Lag	Lag		Lead		
Lead-Lag Optimize?	Yes			Yes	Yes	Yes	Yes	Yes		Yes		
Recall Mode	None	C-Max		C-Max	C-Max	C-Max	None	None		None	None	

Intersection Summary	
Area Type:	Other
Cycle Length: 115	
Actuated Cycle Length: 115	
Offset: 12 (10%), Referenced to phase 2:EBTL and 6:WBTL, Start of 1st Green	

Natural Cycle: 65
Control Type: Actuated-Coordinated

Splits and Phases: 1: Site Driveway/Commerce Drive & Pennsylvania Ave (SR 2037)





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	224	431	26	52	473	668	11	7	14	144	17	142
Future Volume (veh/h)	224	431	26	52	473	668	11	7	14	144	17	142
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	0.99		0.97	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1809	1866	1911	1794	1724	1766	1800	1872	1800	1688	1646	1744
Adj Flow Rate, veh/h	231	444	27	54	488	0	11	7	8	148	18	104
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	3	0	0	5	2	0	0	0	8	11	4
Cap, veh/h	678	2504	152	609	2025		115	41	46	250	37	213
Arrive On Green	0.08	0.74	0.73	0.62	0.62	0.00	0.04	0.05	0.04	0.08	0.18	0.18
Sat Flow, veh/h	1723	3396	206	883	3276	1497	1207	784	896	3118	210	1213
Grp Volume(v), veh/h	231	231	240	54	488	0	11	0	15	148	0	122
Grp Sat Flow(s),veh/h/ln	1723	1773	1829	883	1638	1497	1207	0	1681	1559	0	1422
Q Serve(g_s), s	5.1	4.5	4.6	2.9	7.7	0.0	1.0	0.0	1.0	5.3	0.0	8.9
Cycle Q Clear(g_c), s	5.1	4.5	4.6	2.9	7.7	0.0	1.0	0.0	1.0	5.3	0.0	8.9
Prop In Lane	1.00		0.11	1.00		1.00	1.00		0.53	1.00		0.85
Lane Grp Cap(c), veh/h	678	1308	1349	609	2025		115	0	87	250	0	250
V/C Ratio(X)	0.34	0.18	0.18	0.09	0.24		0.10	0.00	0.17	0.59	0.00	0.49
Avail Cap(c_a), veh/h	711	1308	1349	609	2025		157	0	146	678	0	495
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	6.0	4.6	4.6	8.9	9.9	0.0	53.1	0.0	52.4	51.1	0.0	42.8
Incr Delay (d2), s/veh	0.3	0.3	0.3	0.3	0.3	0.0	0.4	0.0	0.9	2.2	0.0	1.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	3.0	2.7	2.8	1.0	4.8	0.0	0.6	0.0	0.8	3.8	0.0	5.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	6.3	4.9	4.9	9.2	10.1	0.0	53.5	0.0	53.3	53.3	0.0	44.2
LnGrp LOS	A	A	A	A	B		D	A	D	D	A	D
Approach Vol, veh/h		702			542			26			270	
Approach Delay, s/veh		5.3			10.0			53.4			49.2	
Approach LOS		A			B			D			D	

Timer - Assigned Phs		2		4	5	6	7	8				
Phs Duration (G+Y+Rc), s		89.8		25.2	13.7	76.1	14.2	11.0				
Change Period (Y+Rc), s		6.0		6.0	6.0	6.0	6.0	6.0				
Max Green Setting (Gmax), s		64.0		39.0	10.0	48.0	24.0	9.0				
Max Q Clear Time (g_c+I1), s		7.0		11.4	7.6	10.2	7.8	3.0				
Green Ext Time (p_c), s		1.7		0.4	0.2	2.5	0.5	0.0				

Intersection Summary												
HCM 6th Ctrl Delay			15.5									
HCM 6th LOS			B									

Notes

Unsignalized Delay for [WBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	588	7	0	1192	0	6
Future Volume (vph)	588	7	0	1192	0	6
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	13	10	14	10	12
Grade (%)	0%			0%	-2%	
Lane Util. Factor	0.95	0.95	1.00	0.95	1.00	1.00
Ped Bike Factor						
Frt	0.998					0.865
Flt Protected						
Satd. Flow (prot)	3283	0	0	3542	0	1573
Flt Permitted						
Satd. Flow (perm)	3283	0	0	3542	0	1573
Link Speed (mph)	35			35	30	
Link Distance (ft)	268			716	161	
Travel Time (s)	5.2			13.9	3.7	
Confl. Peds. (#/hr)		1	3		6	6
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles (%)	4%	0%	0%	3%	0%	0%
Adj. Flow (vph)	600	7	0	1216	0	6
Shared Lane Traffic (%)						
Lane Group Flow (vph)	607	0	0	1216	0	6
Sign Control	Free			Free	Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	0

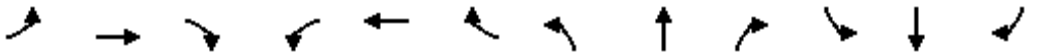
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	588	7	0	1192	0	6
Future Vol, veh/h	588	7	0	1192	0	6
Conflicting Peds, #/hr	0	1	3	0	6	6
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	-2	-
Peak Hour Factor	98	98	98	98	98	98
Heavy Vehicles, %	4	0	0	3	0	0
Mvmt Flow	600	7	0	1216	0	6

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	-	-	-	311
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.7
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.1
Pot Cap-1 Maneuver	-	-	0	-	0	*924
Stage 1	-	-	0	-	0	-
Stage 2	-	-	0	-	0	-
Platoon blocked, %	-	-		-		1
Mov Cap-1 Maneuver	-	-	-	-	-	*917
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	9
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT
Capacity (veh/h)	917	-	-	-
HCM Lane V/C Ratio	0.007	-	-	-
HCM Control Delay (s)	9	-	-	-
HCM Lane LOS	A	-	-	-
HCM 95th %tile Q(veh)	0	-	-	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

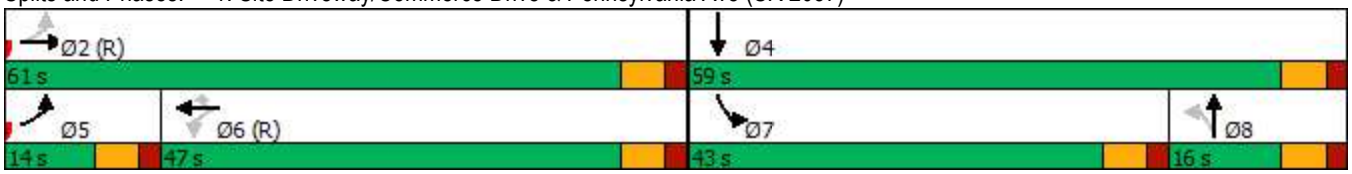


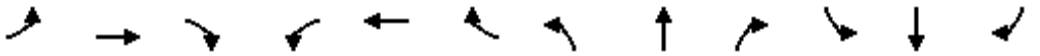
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	196	568	18	37	362	282	33	21	39	575	13	274
Future Volume (vph)	196	568	18	37	362	282	33	21	39	575	13	274
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	10	14	14	10	11	12	10	14	12	10	11	11
Grade (%)		-1%			1%			0%			0%	
Storage Length (ft)	180		0	230		100	0		0	150		0
Storage Lanes	1		0	1		1	1		0	2		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	1.00	1.00	1.00	0.97	1.00	1.00
Ped Bike Factor	1.00	1.00								1.00	0.99	
Frt		0.995				0.850		0.902			0.857	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1588	3611	0	1588	3257	1478	1596	1732	0	3036	1459	0
Flt Permitted	0.426			0.407			0.569			0.950		
Satd. Flow (perm)	712	3611	0	680	3257	1478	956	1732	0	3031	1459	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		4				310		43			301	
Link Speed (mph)		35			35			30			35	
Link Distance (ft)		1280			268			162			498	
Travel Time (s)		24.9			5.2			3.7			9.7	
Confl. Peds. (#/hr)	1		1							1		1
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles (%)	1%	1%	0%	0%	1%	3%	0%	0%	0%	2%	0%	1%
Adj. Flow (vph)	215	624	20	41	398	310	36	23	43	632	14	301
Shared Lane Traffic (%)												
Lane Group Flow (vph)	215	644	0	41	398	310	36	66	0	632	315	0
Turn Type	pm+pt	NA		Perm	NA	Perm	Perm	NA		Prot	NA	
Protected Phases	5	2			6			8		7	4	
Permitted Phases	2			6		6	8					
Detector Phase	5	2		6	6	6	8	8		7	4	
Switch Phase												
Minimum Initial (s)	7.0	20.0		20.0	20.0	20.0	5.0	5.0		5.0	5.0	
Minimum Split (s)	13.0	26.0		26.0	26.0	26.0	11.0	11.0		11.0	11.0	
Total Split (s)	14.0	61.0		47.0	47.0	47.0	16.0	16.0		43.0	59.0	
Total Split (%)	11.7%	50.8%		39.2%	39.2%	39.2%	13.3%	13.3%		35.8%	49.2%	
Yellow Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	-1.0	-1.0		-1.0	-1.0	-1.0	0.0	-1.0		-1.0	-1.0	
Total Lost Time (s)	5.0	5.0		5.0	5.0	5.0	6.0	5.0		5.0	5.0	
Lead/Lag	Lead			Lag	Lag	Lag	Lag	Lag		Lead		
Lead-Lag Optimize?	Yes			Yes	Yes	Yes	Yes	Yes		Yes		
Recall Mode	None	C-Max		C-Max	C-Max	C-Max	None	None		None	None	

Intersection Summary	
Area Type:	Other
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 108 (90%), Referenced to phase 2:EBTL and 6:WBTL, Start of 1st Green	

Natural Cycle: 70
Control Type: Actuated-Coordinated

Splits and Phases: 1: Site Driveway/Commerce Drive & Pennsylvania Ave (SR 2037)





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	196	568	18	37	362	282	33	21	39	575	13	274
Future Volume (veh/h)	196	568	18	37	362	282	33	21	39	575	13	274
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1823	1896	1911	1794	1780	1752	1800	1872	1800	1772	1800	1786
Adj Flow Rate, veh/h	215	624	20	41	398	0	36	23	31	632	14	160
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	1	1	0	0	1	3	0	0	0	2	0	1
Cap, veh/h	574	2088	67	414	1588		116	41	55	760	41	469
Arrive On Green	0.08	0.59	0.58	0.47	0.47	0.00	0.05	0.06	0.05	0.23	0.33	0.33
Sat Flow, veh/h	1736	3562	114	754	3383	1485	1160	723	974	3274	124	1419
Grp Volume(v), veh/h	215	315	329	41	398	0	36	0	54	632	0	174
Grp Sat Flow(s),veh/h/ln	1736	1801	1875	754	1691	1485	1160	0	1697	1637	0	1543
Q Serve(g_s), s	7.4	10.5	10.6	3.7	8.5	0.0	3.7	0.0	3.7	22.0	0.0	10.2
Cycle Q Clear(g_c), s	7.4	10.5	10.6	3.7	8.5	0.0	3.7	0.0	3.7	22.0	0.0	10.2
Prop In Lane	1.00		0.06	1.00		1.00	1.00		0.57	1.00		0.92
Lane Grp Cap(c), veh/h	574	1056	1099	414	1588		116	0	96	760	0	510
V/C Ratio(X)	0.37	0.30	0.30	0.10	0.25		0.31	0.00	0.56	0.83	0.00	0.34
Avail Cap(c_a), veh/h	574	1056	1099	414	1588		157	0	156	1037	0	694
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	13.6	12.5	12.5	17.9	19.1	0.0	56.1	0.0	55.4	43.8	0.0	30.3
Incr Delay (d2), s/veh	0.4	0.7	0.7	0.5	0.4	0.0	1.5	0.0	5.0	4.3	0.0	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	5.1	7.7	7.9	1.2	6.1	0.0	2.0	0.0	3.1	14.2	0.0	6.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	14.0	13.2	13.2	18.3	19.5	0.0	57.6	0.0	60.5	48.1	0.0	30.7
LnGrp LOS	B	B	B	B	B		E	A	E	D	A	C
Approach Vol, veh/h		859			439			90			806	
Approach Delay, s/veh		13.4			19.4			59.3			44.4	
Approach LOS		B			B			E			D	

Timer - Assigned Phs		2		4	5	6	7	8				
Phs Duration (G+Y+Rc), s		75.3		44.7	14.0	61.3	32.9	11.8				
Change Period (Y+Rc), s		6.0		6.0	6.0	6.0	6.0	6.0				
Max Green Setting (Gmax), s		55.0		53.0	8.0	41.0	37.0	10.0				
Max Q Clear Time (g_c+I1), s		13.0		12.7	9.9	11.0	24.5	5.7				
Green Ext Time (p_c), s		2.4		0.7	0.0	2.0	2.3	0.1				

Intersection Summary												
HCM 6th Ctrl Delay			27.9									
HCM 6th LOS			C									

Notes

User approved volume balancing among the lanes for turning movement.

Unsignalized Delay for [WBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	1191	5	0	672	0	16
Future Volume (vph)	1191	5	0	672	0	16
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	13	10	14	10	12
Grade (%)	0%			0%	-2%	
Lane Util. Factor	0.95	0.95	1.00	0.95	1.00	1.00
Ped Bike Factor						
Frt	0.999					0.865
Flt Protected						
Satd. Flow (prot)	3350	0	0	3576	0	1573
Flt Permitted						
Satd. Flow (perm)	3350	0	0	3576	0	1573
Link Speed (mph)	35			35	30	
Link Distance (ft)	268			716	161	
Travel Time (s)	5.2			13.9	3.7	
Confl. Peds. (#/hr)					2	2
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	2%	0%	0%	2%	0%	0%
Adj. Flow (vph)	1323	6	0	747	0	18
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1329	0	0	747	0	18
Sign Control	Free			Free	Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	0.1

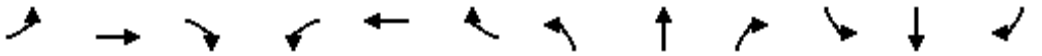
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	1191	5	0	672	0	16
Future Vol, veh/h	1191	5	0	672	0	16
Conflicting Peds, #/hr	0	0	0	0	2	2
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	-2	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	0	0	2	0	0
Mvmt Flow	1323	6	0	747	0	18

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	-	-	-	667
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.7
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.1
Pot Cap-1 Maneuver	-	-	0	-	0	*631
Stage 1	-	-	0	-	0	-
Stage 2	-	-	0	-	0	-
Platoon blocked, %	-	-		-		1
Mov Cap-1 Maneuver	-	-	-	-	-	*630
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	10.9
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT
Capacity (veh/h)	630	-	-	-
HCM Lane V/C Ratio	0.028	-	-	-
HCM Control Delay (s)	10.9	-	-	-
HCM Lane LOS	B	-	-	-
HCM 95th %tile Q(veh)	0.1	-	-	-

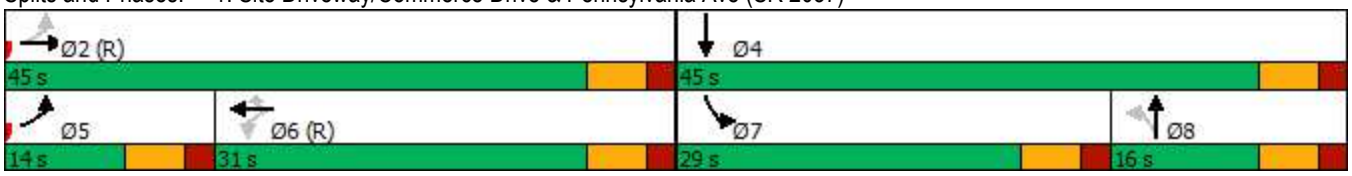
Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

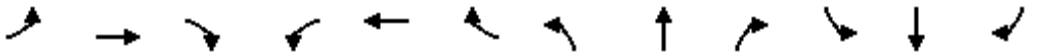


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	124	397	68	140	410	179	82	52	99	169	47	120
Future Volume (vph)	124	397	68	140	410	179	82	52	99	169	47	120
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	10	14	14	10	11	12	10	14	12	10	11	11
Grade (%)		-1%			1%			0%			0%	
Storage Length (ft)	180		0	230		100	0		0	150		0
Storage Lanes	1		0	1		1	1		0	2		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	1.00	1.00	1.00	0.97	1.00	1.00
Frt		0.978				0.850		0.902			0.892	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1604	3525	0	1588	3225	1507	1596	1732	0	3096	1552	0
Flt Permitted	0.399			0.473			0.647			0.950		
Satd. Flow (perm)	674	3525	0	791	3225	1507	1087	1732	0	3096	1552	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		28				188		86			126	
Link Speed (mph)		35			35			30			35	
Link Distance (ft)		1280			268			162			498	
Travel Time (s)		24.9			5.2			3.7			9.7	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	0%	2%	0%	0%	2%	1%	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	131	418	72	147	432	188	86	55	104	178	49	126
Shared Lane Traffic (%)												
Lane Group Flow (vph)	131	490	0	147	432	188	86	159	0	178	175	0
Turn Type	pm+pt	NA		Perm	NA	Perm	Perm	NA		Prot	NA	
Protected Phases	5	2			6			8		7	4	
Permitted Phases	2			6		6	8					
Detector Phase	5	2		6	6	6	8	8		7	4	
Switch Phase												
Minimum Initial (s)	7.0	20.0		20.0	20.0	20.0	5.0	5.0		5.0	5.0	
Minimum Split (s)	13.0	26.0		26.0	26.0	26.0	11.0	11.0		11.0	11.0	
Total Split (s)	14.0	45.0		31.0	31.0	31.0	16.0	16.0		29.0	45.0	
Total Split (%)	15.6%	50.0%		34.4%	34.4%	34.4%	17.8%	17.8%		32.2%	50.0%	
Yellow Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	-1.0	-1.0		-1.0	-1.0	-1.0	0.0	-1.0		-1.0	-1.0	
Total Lost Time (s)	5.0	5.0		5.0	5.0	5.0	6.0	5.0		5.0	5.0	
Lead/Lag	Lead			Lag	Lag	Lag	Lag	Lag		Lead		
Lead-Lag Optimize?	Yes			Yes	Yes	Yes	Yes	Yes		Yes		
Recall Mode	None	C-Max		C-Max	C-Max	C-Max	None	None		None	None	

Intersection Summary	
Area Type:	Other
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 34 (38%), Referenced to phase 2:EBTL and 6:WBTL, Start of 1st Green	
Natural Cycle: 65	
Control Type: Actuated-Coordinated	

Splits and Phases: 1: Site Driveway/Commerce Drive & Pennsylvania Ave (SR 2037)





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	124	397	68	140	410	179	82	52	99	169	47	120
Future Volume (veh/h)	124	397	68	140	410	179	82	52	99	169	47	120
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1837	1881	1911	1794	1766	1780	1800	1872	1800	1800	1800	1800
Adj Flow Rate, veh/h	131	418	71	147	432	0	86	55	100	178	49	66
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	2	0	0	2	1	0	0	0	0	0	0
Cap, veh/h	602	1881	317	492	1589		217	73	132	320	190	257
Arrive On Green	0.09	0.61	0.60	0.47	0.47	0.00	0.11	0.12	0.11	0.10	0.27	0.27
Sat Flow, veh/h	1750	3059	516	870	3356	1509	1229	595	1082	3326	695	936
Grp Volume(v), veh/h	131	243	246	147	432	0	86	0	155	178	0	115
Grp Sat Flow(s),veh/h/ln	1750	1787	1788	870	1678	1509	1229	0	1677	1663	0	1631
Q Serve(g_s), s	3.0	5.5	5.6	9.6	7.0	0.0	6.0	0.0	8.1	4.6	0.0	5.0
Cycle Q Clear(g_c), s	3.0	5.5	5.6	9.6	7.0	0.0	6.0	0.0	8.1	4.6	0.0	5.0
Prop In Lane	1.00		0.29	1.00		1.00	1.00		0.65	1.00		0.57
Lane Grp Cap(c), veh/h	602	1099	1100	492	1589		217	0	205	320	0	447
V/C Ratio(X)	0.22	0.22	0.22	0.30	0.27		0.40	0.00	0.76	0.56	0.00	0.26
Avail Cap(c_a), veh/h	627	1099	1100	492	1589		217	0	205	887	0	725
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	8.9	7.7	7.8	15.0	14.3	0.0	38.2	0.0	38.5	38.8	0.0	25.5
Incr Delay (d2), s/veh	0.2	0.5	0.5	1.6	0.4	0.0	1.2	0.0	14.8	1.5	0.0	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	1.9	3.5	3.6	3.6	4.6	0.0	3.3	0.0	7.4	3.4	0.0	3.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	9.1	8.2	8.3	16.6	14.7	0.0	39.4	0.0	53.3	40.3	0.0	25.8
LnGrp LOS	A	A	A	B	B		D	A	D	D	A	C
Approach Vol, veh/h		620			579			241			293	
Approach Delay, s/veh		8.4			15.2			48.4			34.6	
Approach LOS		A			B			D			C	

Timer - Assigned Phs		2		4	5	6	7	8				
Phs Duration (G+Y+Rc), s		60.3		29.7	12.7	47.6	13.7	16.0				
Change Period (Y+Rc), s		6.0		6.0	6.0	6.0	6.0	6.0				
Max Green Setting (Gmax), s		39.0		39.0	8.0	25.0	23.0	10.0				
Max Q Clear Time (g_c+I1), s		8.0		7.5	5.5	12.1	7.1	10.1				
Green Ext Time (p_c), s		1.8		0.4	0.1	2.3	0.6	0.0				

Intersection Summary												
HCM 6th Ctrl Delay			20.7									
HCM 6th LOS			C									

Notes

User approved volume balancing among the lanes for turning movement.

Unsignalized Delay for [WBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	655	19	0	732	0	41
Future Volume (vph)	655	19	0	732	0	41
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	13	10	14	10	12
Grade (%)	0%			0%	-2%	
Lane Util. Factor	0.95	0.95	1.00	0.95	1.00	1.00
Frt	0.996					0.865
Flt Protected						
Satd. Flow (prot)	3374	0	0	3576	0	1573
Flt Permitted						
Satd. Flow (perm)	3374	0	0	3576	0	1573
Link Speed (mph)	35			35	30	
Link Distance (ft)	268			716	161	
Travel Time (s)	5.2			13.9	3.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	1%	0%	0%	2%	0%	0%
Adj. Flow (vph)	712	21	0	796	0	45
Shared Lane Traffic (%)						
Lane Group Flow (vph)	733	0	0	796	0	45
Sign Control	Free			Free	Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	0.3

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	655	19	0	732	0	41
Future Vol, veh/h	655	19	0	732	0	41
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	-2	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	1	0	0	2	0	0
Mvmt Flow	712	21	0	796	0	45

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	-	-	-	367
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.7
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.1
Pot Cap-1 Maneuver	-	-	0	-	0	*894
Stage 1	-	-	0	-	0	-
Stage 2	-	-	0	-	0	-
Platoon blocked, %	-	-		-		1
Mov Cap-1 Maneuver	-	-	-	-	-	*894
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	9.2
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT
Capacity (veh/h)	894	-	-	-
HCM Lane V/C Ratio	0.05	-	-	-
HCM Control Delay (s)	9.2	-	-	-
HCM Lane LOS	A	-	-	-
HCM 95th %tile Q(veh)	0.2	-	-	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

APPENDIX G

PennDOT Signal Diagrams

SIGN DETAILS

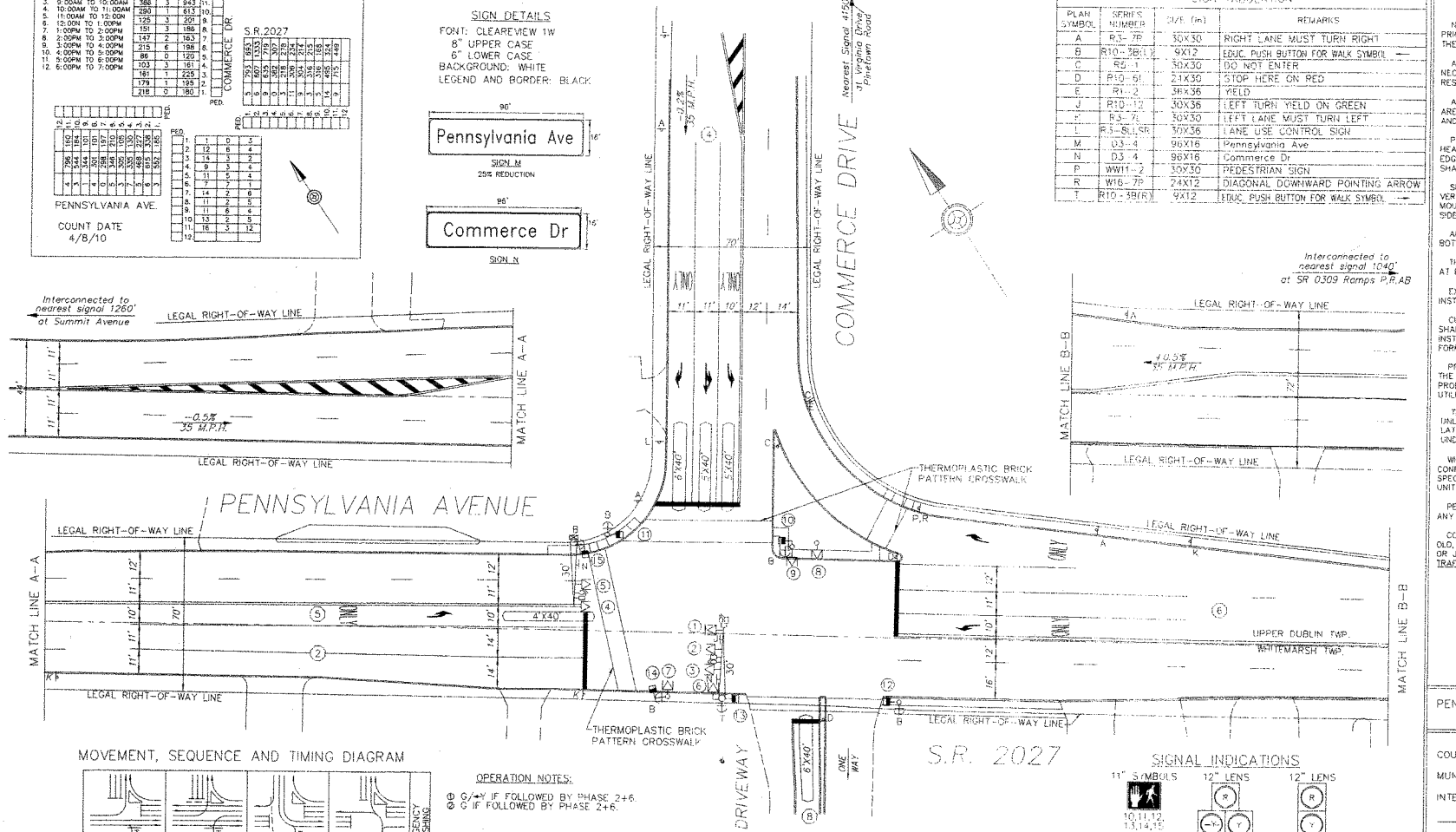
FONT: CLEAREVIEW 1W
8" UPPER CASE
6" LOWER CASE
BACKGROUND: WHITE
LEGEND AND BORDER: BLACK

SIGN M
25% REDUCTION

SIGN N

SIGN TABULATION

PLAN SYMBOL	SERIES NUMBER	SIZE (in)	REMARKS
A	R3-7P	30X30	RIGHT LANE MUST TURN RIGHT
B	R10-3B(L)	9X12	EDUC. PUSH BUTTON FOR WALK SYMBOL
C	R5-1	30X30	DO NOT ENTER
D	R10-6I	21X30	STOP HERE ON RED
E	R1-2	36X36	YIELD
J	R10-12	30X36	LEFT TURN YIELD ON GREEN
H	R3-7L	30X30	LEFT LANE MUST TURN LEFT
L	R3-8L,R	30X36	LANE USE CONTROL SIGN
M	D3-4	96X16	Pennsylvania Ave
N	D3-4	96X16	Commerce Dr
P	WW11-2	30X30	PEDESTRIAN SIGN
R	W16-7P	24X12	DIAGONAL DOWNWARD POINTING ARROW
T	R10-3B(R)	9X12	EDUC. PUSH BUTTON FOR WALK SYMBOL



MOVEMENT, SEQUENCE AND TIMING DIAGRAM

PHASE	2+5			2+6				4				8				EMERGENCY FLASHING
SIGNALS \ INTERVAL	1	2	3	4	5	6	7	8	9	10	11	12	13	14		
1	G/Y	Y	R	G	G	Y	R	R	R	R	R	R	R	R		Y
2,3	G	Y	R	G	G	Y	R	R	R	R	R	R	R	R		Y
4,5	R	R	R	G	G	Y	R	R	R	R	R	R	R	R		Y
6,7	R	R	R	R	R	R	R	G	G	Y	R	R	R	R		R
8,9	R	R	R	R	R	R	R	R	R	R	R	G	Y	R		R
10,11	H	H	H	M	FH	H	H	H	H	H	H	R	R	R		OFF
12,13	H	H	H	M	FH	H	H	H	H	H	H	G	Y	R		OFF
14,15	H	H	H	H	H	H	H	M	FH	H	H	R	R	R		OFF

FIXED		4	2			4	2		4	2		4	2		
MINIMUM	7			20			5			5					
PASSAGE	3						3			3					
MAX I	15			25			25			15					
PEDESTRIAN*				7	18		7	19							
MEMORY	NL			MX			L			NL					

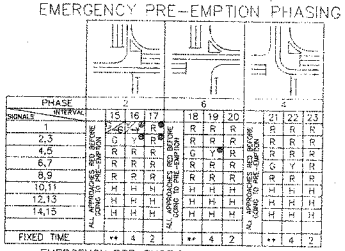
*UPON PEDESTRIAN ACTUATION ONLY, OTHERWISE "H" AT ALL TIMES.

SYSTEM NOTE:
REFER TO SYSTEM PERMIT #1-0038 FOR PROGRAM TIMES AND WEEKLY PROGRAM CHART

OPERATION NOTES:

① G/Y IF FOLLOWED BY PHASE 2+6.
② G IF FOLLOWED BY PHASE 2+6.

EMERGENCY PRE-EMPTION PHASING



PHASE	2			6			4				8			
SIGNALS \ INTERVAL	15	16	17	18	19	20	21	22	23		21	22	23	
1	G/Y	Y	R	R	R	R	R	R	R		R	R	R	
2,3	G	Y	R	R	R	R	R	R	R		R	R	R	
4,5	R	R	R	G	Y	R	R	R	R		R	R	R	
6,7	R	R	R	R	R	R	G	Y	R		R	R	R	
8,9	R	R	R	R	R	R	R	R	R		G	Y	R	
10,11	H	H	H	H	H	H	H	H	H		H	H	H	
12,13	H	H	H	H	H	H	H	H	H		H	H	H	
14,15	H	H	H	H	H	H	H	H	H		H	H	H	
FIXED TIME		**	4	2		**	4	2				**	4	2

ALL APPROACHES RED BEFORE GOING TO PRE-EMPTION
ALL APPROACHES RED BEFORE RETURNING TO NORMAL
ALL APPROACHES RED BEFORE GOING TO PRE-EMPTION
ALL APPROACHES RED BEFORE RETURNING TO NORMAL

EMERGENCY PRE-EMPTION OPERATION NOTES

Ⓐ SIGNALS TO INDICATE G/Y WHEN RETURNING TO NORMAL OPERATION.
Ⓑ SIGNALS TO INDICATE G WHEN RETURNING TO NORMAL OPERATION

EMERGENCY PRE-EMPTION NOTES

CONTROLLER TO BE EQUIPPED WITH EMERGENCY PRE-EMPTION FOR THE EASTBOUND AND WESTBOUND APPROACHES OF PENNSYLVANIA AVENUE, AND THE SOUTHBOUND APPROACH OF COMMERCE DRIVE, WITH A FAIL SAFE DEVICE FOR EACH DIRECTION OF OPERATION.

THIS FAIL SAFE DEVICE SHALL CONSIST OF A FLASHING WHITE FLOOD LIGHT, AND SHALL FLASH WHEN THE EMERGENCY VEHICLE HAS CONTROL OF THE INTERSECTION FOR THE APPROPRIATE APPROACH. LOCATION OF THE EMERGENCY VEHICLE DETECTORS ARE TO BE FIELD ADJUSTED TO ACHIEVE MAXIMUM OPERATION.

THE SIGNALS, WHEN ACTIVATED BY EMERGENCY VEHICLES, SHALL TERMINATE ALL GREEN INDICATIONS, AND TIME OUT THE YELLOW CLEARANCES. ALL APPROACHES SHALL THEN DISPLAY A RED INDICATION BEFORE THE PRE-EMPTION PHASE BEGINS. THE GREEN INDICATIONS FOR THE PRE-EMPTED PHASE SHALL REMAIN GREEN FOR THE DURATION OF THE SIGNAL PRE-EMPTION, WITH RED INDICATIONS DISPLAYED FOR ALL OTHER PHASES.

THE SIGNALS, WHEN ACTIVATED BY EMERGENCY VEHICLES, SHALL TIME OUT ALL YELLOW AND RED INDICATIONS, FOLLOWED BY THE GREEN INTERVAL OF THE PRE-EMPTION PHASE COVERED BY THE ACTUATION OF THE APPROACHING PHASE COVERING THE EMERGENCY VEHICLE.

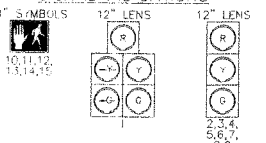
IF THE SIGNALS, WHEN ACTIVATED BY AN EMERGENCY VEHICLE ARE FLASHING, ALL SIGNALS SHALL REMAIN FLASHING.

UPON COMPLETION OF PRE-EMPTION PHASE 2, 4, OR 6, IN RETURNING TO NORMAL OPERATION, PHASE 2+6, INTERVAL 4 SHALL FOLLOW.

IN EMERGENCY PRE-EMPTION, NO PRIORITY SHALL BE ESTABLISHED. PRE-EMPTION SHALL BE A "FIRST COME, FIRST SERVE" OPERATION.

NOTE: IF PRE-EMPTION EQUIPMENT HAS ENCODING CAPABILITY FOR VEHICLE IDENTIFICATION, IT IS RECOMMENDED TO HAVE THE ZERO "00" FEATURE ON, TO GIVE UNCODED EMITTERS THE ABILITY TO ACTIVATE EMERGENCY PRE-EMPTION.

SIGNAL INDICATIONS



SIGNALS TO BE EQUIPPED WITH TUNNEL VISORS 1,2,3,4,5,6,7,8,9

SCALE
25 0 25

LEGEND

25'	MAST ARM/ IDENTIFYING LENGTH	12"Ø	LOOP SENSOR/SIZE
②	VEHICULAR SIGNAL HEAD/ BACKPLATE/VISORS/ DIRECTIONAL ARROW/ IDENTIFYING NUMBER		EMERGENCY PRE-EMPTION FLASHING BEACON
			EMERGENCY PRE-EMPTION DEVICE
②	PEDESTRIAN SIGNAL HEAD/ IDENTIFYING NUMBER	②	PHASE NUMBER
I	PEDESTRIAN PUSHBUTTON/ SIGN	A	SIGN/IDENTIFYING LETTER

GENERAL NOTES

NO MODIFICATIONS OF THIS INSTALLATION ARE PERMITTED UNLESS PRIOR APPROVAL IS GRANTED IN WRITING BY A REPRESENTATIVE OF THE DEPARTMENT OF TRANSPORTATION.

ALL MAINTENANCE WORK INCLUDING TRIMMING OF TREES, NECESSARY FOR PROPER VISIBILITY OF THE SIGNALS IS THE RESPONSIBILITY OF THE PERMITTEE.

ALL SIGNS AND PAVEMENT MARKINGS INDICATED ON THIS DRAWING ARE CONSIDERED PART OF THE PERMIT AND SHALL BE INSTALLED AND MAINTAINED IN ACCORDANCE WITH PUBLICATION NO. 212.

POST MOUNTED SIGNALS SHALL BE INSTALLED WITH THE SIGNAL HEADS A MINIMUM OF 2 FEET BEHIND THE FACE OF CURB OR THE EDGE OF THE SHOULDER. SUPPORT POLES FOR OVERHEAD SIGNALS SHALL ALSO HAVE A MINIMUM CLEARANCE HORIZONTALLY OF 2 FEET.

SIGNALS ERECTED OVER THE ROADWAY SHALL HAVE A MINIMUM VERTICAL CLEARANCE OF 16 FT. ABOVE THE ROADWAY. POST MOUNTED SIGNALS SHALL BE A MINIMUM OF 8 FT. ABOVE THE SIDEWALK OR PAVEMENT.

ALL OVERHEAD SIGNALS MUST BE RIGIDLY MOUNTED, TOP AND BOTTOM, AND EQUIPPED WITH BACKPLATES.

THE MINIMUM HORIZONTAL DISTANCE BETWEEN SIGNALS MEASURED AT RIGHT ANGLES TO THE APPROACH SHALL BE 8 FEET.

EXACT LOCATION OF DETECTORS SHALL BE DETERMINED PRIOR TO INSTALLATION BY A REPRESENTATIVE OF PENNDOT.

CURBING TO BE INSTALLED BY MUNICIPALITY AND WHERE NOTED, SHALL BE PLAIN CEMENT CONCRETE CURB OR GRANITE CURB, INSTALLED IN ACCORDANCE WITH DEPARTMENT SPECIFICATIONS FORM 408.

PRIOR TO INSTALLATION THE CONTRACTOR SHALL CONSULT WITH THE LOCAL OFFICIALS AND UTILITY COMPANIES TO RESOLVE ANY PROBLEMS WHICH MAY BE CREATED DUE TO THE LOCATION OF UTILITIES.

THIS DRAWING CANNOT BE USED AS A CONSTRUCTION DRAWING UNLESS THE PERMITTEE COMPLIES WITH THE PROVISIONS OF THE LATEST AMENDMENT TO ACT 287, PREVENTION OF DAMAGE TO UNDERGROUND UTILITIES, DATED DECEMBER 20, 1974.

WHEN LIQUID FUELS MONEY IS USED, SIGNAL INSTALLATION MUST CONFORM TO FORM 408 AND A COPY OF THE PROPOSED SPECIFICATIONS MUST BE SUBMITTED TO THE DISTRICT TRAFFIC UNIT, FOR REVIEW, PRIOR TO BIDDING.

PERMITTEE SHALL OBTAIN A HIGHWAY OCCUPANCY PERMIT FOR ANY CHANGES IN INTERSECTION GEOMETRY REGARDING EXCAVATION.

CONDUIT INSTALLED IN BITUMINOUS ROADWAY LESS THAN 5 YEARS OLD, OR CONCRETE ROADWAY REGARDLESS OF AGE, MUST BE BORED OR JACKED UNDER THE ROADWAY. INSTALL IN ACCORDANCE WITH TRAFFIC SIGNAL STANDARDS TC-8800 SERIES.

SYSTEM PERMIT # 1-0038

PENNSYLVANIA DEPARTMENT OF TRANSPORTATION
ENGINEERING DISTRICT 6-0

COUNTY: MONTGOMERY
MUNICIPALITY: UPPER DUBLIN TOWNSHIP
INTERSECTION: PENNSYLVANIA AVENUE (S.R. 2027) AND COMMERCE DRIVE

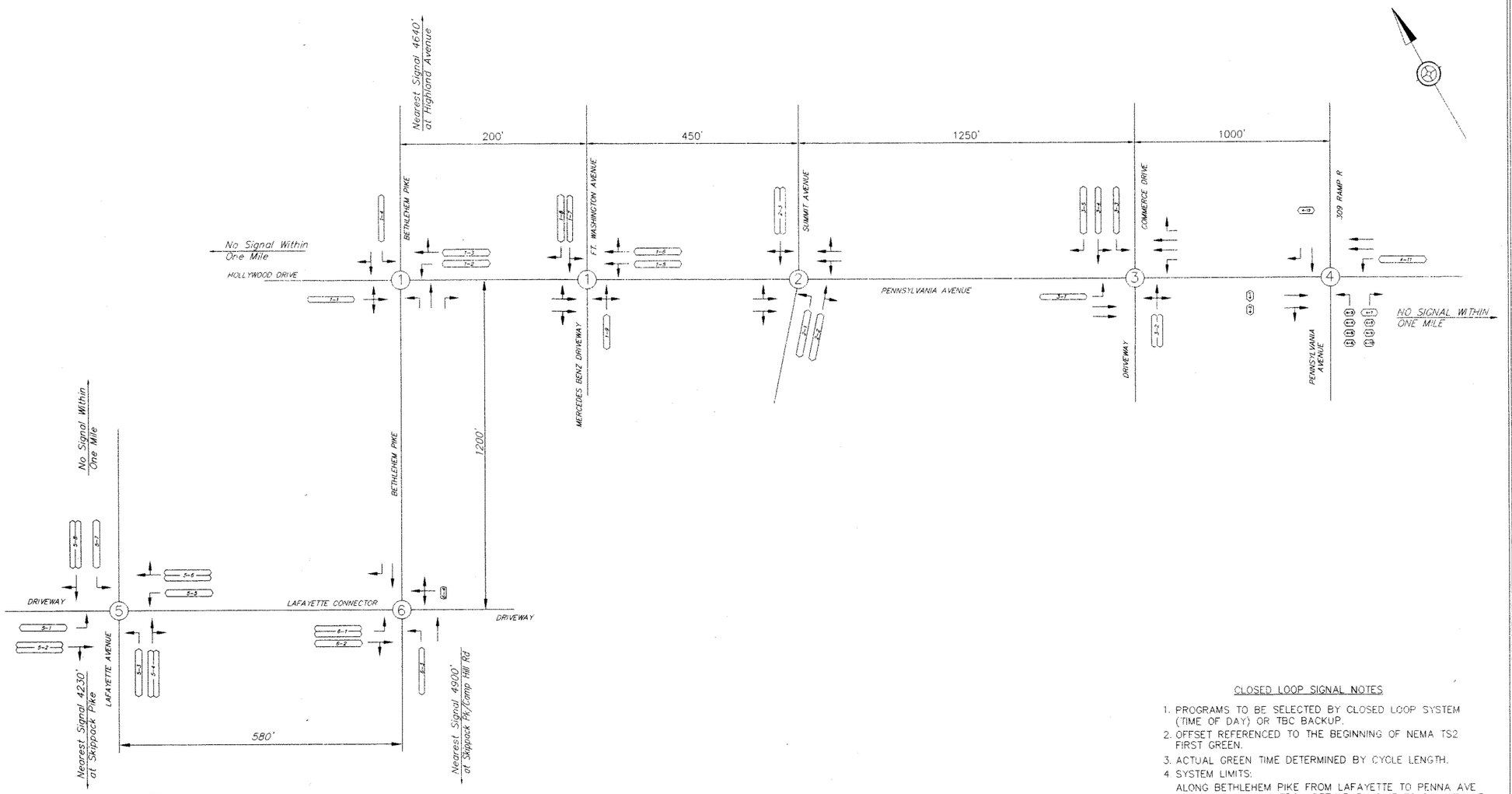
REVIEWED:
DATE
MUNICIPAL OFFICIAL DATE

RECOMMENDED:
ASHWIN PATEL 5/6/04
LOUIS R. BELMONTE 5/11/04
DISTRICT TRAFFIC ENGINEER DATE

NO.	REVISION	DES./ REVW.	DATE	REVW.	DATE	RECOM.	DATE
1	AS-BUILT, ADD SIGNS P & R, RELOCATE SIGN K, PED CLEARANCES, X-WALK STRIPING	WOF	8/10/10	DLA	8/12/10	ARP	8/13/10
2							
3							
4							
5							
6							
7							
8							

SHEET 2 OF 2 | PERMIT # 64-0401 | FILE # 0401

I-0038



TIME OF DAY SYSTEM
CYCLE/SPLIT/OFFSET

Program 1	File #	Phase										Cycle	Offset # 1	Offset # 2
Intersections		1	2	3	4	5	6	7	8	9	10			
1 BETHLEHEM PIKE/PENNSYLVANIA AVENUE	0681	–	–	–	–	–	–	–	–	–	–	MAX 1	FREE	
2 PENNSYLVANIA AVENUE/SUMMIT AVE	1649	–	76	–	39	–	76	–	39	–	–	115	10	
3 PENNSYLVANIA AVENUE/COMMERCE DRIVE	0401	–	70	–	32(SPLIT)	18(LEAD)	54	–	13(SPLIT)	–	–	115	12	
4 PENNSYLVANIA AVENUE/309 RAMP R	3479	23(LEAD)	54	–	38(SPLIT)	–	77	–	38	–	–	115	0	
5 BETHLEHEM PIKE/LAFAYETTE AVENUE	3275	–	59	–	12(SPLIT)	13(LEAD)	46	–	39(SPLIT)	–	–	110	FREE	
6 LAFAYETTE AVE/LAFAYETTE CONN.	3276	29(LEAD)	38	–	43(SPLIT)	–	67	–	43(SPLIT)	–	–	110	FREE	
Program 2	File #				Phase							Cycle	Offset # 1	Offset # 2
Intersections		1	2	3	4	5	6	7	8	9	10			
1 BETHLEHEM PIKE/PENNSYLVANIA AVENUE	0681	–	–	–	–	–	–	–	–	–	–	MAX 1	FREE	
2 PENNSYLVANIA AVENUE/SUMMIT AVE	1649	–	55	–	35	–	55	–	35	–	–	90	45	
3 PENNSYLVANIA AVENUE/COMMERCE DRIVE	0401	–	45	–	32(SPLIT)	14(LEAD)	31	–	13(SPLIT)	–	–	90	34	
4 PENNSYLVANIA AVENUE/309 RAMP R	3479	21(LEAD)	42	–	27	–	63	–	27	–	–	90	23	
5 BETHLEHEM PIKE/LAFAYETTE AVENUE	3275	–	69	–	12(SPLIT)	13(LEAD)	56	–	29(SPLIT)	–	–	110	FREE	
6 LAFAYETTE AVE/LAFAYETTE CONN.	3276	29(LEAD)	38	–	43(SPLIT)	–	67	–	43(SPLIT)	–	–	110	FREE	
Program 3	File #				Phase							Cycle	Offset # 1	Offset # 2
Intersections		1	2	3	4	5	6	7	8	9	10			
1 BETHLEHEM PIKE/PENNSYLVANIA AVENUE	0681	–	–	–	–	–	–	–	–	–	–	MAX 1	FREE	
2 PENNSYLVANIA AVENUE/SUMMIT AVE	1649	–	85	–	35	–	85	–	35	–	–	120	1	
3 PENNSYLVANIA AVENUE/COMMERCE DRIVE	0401	–	48	–	54(SPLIT)	14(LEAD)	35	–	13(SPLIT)	–	–	120	108	
4 PENNSYLVANIA AVENUE/309 RAMP R	3479	29(LEAD)	63	–	28	–	92	–	28	–	–	120	116	
5 BETHLEHEM PIKE/LAFAYETTE AVENUE	3275	–	51	–	12(SPLIT)	19(LEAD)	32	–	37(SPLIT)	–	–	100	FREE	
6 LAFAYETTE AVE/LAFAYETTE CONN.	3276	23(LEAD)	30	–	47(SPLIT)	–	53	–	47(SPLIT)	–	–	100	FREE	

NOTES: – ALL SPLIT TIMES INCLUDE YELLOW AND RED TIMES FOR A GIVEN PHASE.
– REFER TO THE SIGNAL PERMIT PLAN FOR MAX I, MAX II, CLEARANCE AND PED TIMES.

CLOSED LOOP SIGNAL NOTES

1. PROGRAMS TO BE SELECTED BY CLOSED LOOP SYSTEM (TIME OF DAY) OR TBC BACKUP.
2. OFFSET REFERENCED TO THE BEGINNING OF NEMA TS2 FIRST GREEN.
3. ACTUAL GREEN TIME DETERMINED BY CYCLE LENGTH.
4. SYSTEM LIMITS:
   ALONG BETHLEHEM PIKE FROM LAFAYETTE TO PENNA AVE
   ALONG PENNA AVE FROM BETHLEHEM PIKE TO SUMMIT AVE
   MASTER CONTROLLER: BETHLEHEM PIKE AND PENNA AVE
5. PRIMARY COORDINATION: FIBER OPTIC CABLE
   SECONDARY COORDINATION: TBC (DEFAULT TO BACKUP TBC)
6. SYSTEM IS DESIGNED FOR THE SYSTEM SOFTWARE: N/A

WEEKLY PROGRAM CHART				
EVENT	DAY	TIME	PROGRAM	REMARKS
1	1–7	00:00	MAX 1	FREE
2	1–5	06:00	1	–
3	1–5	09:00	2	–
4	1–5	15:00	3	–
5	1–5	19:00	MAX 1	FREE
6	6–7	10:00	2	–
7	6–7	07:00	MAX 1	FREE

* DAY 1 = MONDAY

LEGEND

(X–Y) SYSTEM DETECTOR, INTERSECTION X – LOOP NO. Y

(X–Y) DETECTOR, INTERSECTION X – LOOP NO. Y

ø PHASE

SCALE: NOT TO SCALE

GENERAL NOTES

NO MODIFICATIONS OF THIS INSTALLATION ARE PERMITTED UNLESS PRIOR APPROVAL IS GRANTED IN WRITING BY A REPRESENTATIVE OF THE DEPARTMENT OF TRANSPORTATION.

REFER TO TRAFFIC SIGNAL PERMIT DRAWING FOR INDIVIDUAL INTERSECTION OPERATION, GEOMETRY, PHASING AND CRITICAL TIMES.

FOR CONSTRUCTION AND INSPECTION THE SYSTEM PERMIT SHOULD ALWAYS BE ACCOMPANIED WITH TRAFFIC SIGNAL PERMIT DRAWING.

TEST THE SYSTEM AT LOCAL INTERSECTION LEVEL, SUBSYSTEM LEVEL MASTER CONTROLLER LEVEL AND PERSONAL COMPUTER REMOTE DIAL UP LEVEL.

GATHER THE SYSTEM FAILURE CRITICAL ALARMS REPORT AND ARCHIVE THEM WHERE APPLICABLE.

SET UP PENNDOT DISTRICT 6-0 COMPUTER WITH THE SYSTEM DATABASE AND GRAPHICS. MODIFY THE DATABASE AND GRAPHICS FOR SYSTEMS REVISIONS.

ASSIGN LOOP DETECTORS AND PROGRAM THE CONTROLLERS TO GATHER TRAFFIC VOLUMES IN 15 MINUTE INTERVAL, WHERE APPLICABLE.

EXACT LOCATION OF DETECTORS SHALL BE DETERMINED PRIOR TO INSTALLATION BY A REPRESENTATIVE OF PENNDOT.

OBTAIN POLE ATTACHMENT PERMIT FOR AERIAL FIBER OPTIC INSTALLATION.

MAINTAIN MASTER CONTROLLER COMMUNICATION SUCH AS PHONE DROPS.

PRIOR TO INSTALLATION THE CONTRACTOR SHALL CONSULT WITH THE LOCAL OFFICIALS AND UTILITY COMPANIES TO RESOLVE ANY PROBLEMS WHICH MAY BE CREATED DUE TO THE LOCATION OF UTILITIES.

THIS DRAWING CANNOT BE USED AS A CONSTRUCTION DRAWING UNLESS THE PERMITTEE COMPLIES WITH THE PROVISIONS OF THE LATEST AMENDMENT TO ACT 287, PREVENTION OF DAMAGE TO UNDERGROUND UTILITIES, DATED DECEMBER 10, 1974.

WHEN LIQUID FUELS MONEY IS USED, SIGNAL INSTALLATION MUST CONFORM TO FORM 408 AND A COPY OF THE PROPOSED SPECIFICATIONS MUST BE SUBMITTED TO THE DISTRICT TRAFFIC UNIT FOR REVIEW PRIOR TO BIDDING.

PERMITTEE SHALL OBTAIN A HIGHWAY OCCUPANCY PERMIT FOR ANY CHANGES IN INTERSECTION GEOMETRY REGARDING EXCAVATION.

CONDUIT INSTALLED IN BITUMINOUS ROADWAY LESS THAN 5 YEARS OLD, OR CONCRETE ROADWAY REGARDLESS OF AGE, MUST BE BORED OR JACKED UNDER THE ROADWAY. INSTALL IN ACCORDANCE WITH TRAFFIC SIGNAL STANDARDS TC-8800 SERIES.

PENNSYLVANIA DEPARTMENT OF TRANSPORTATION
ENGINEERING DISTRICT 6-0

COUNTY: MONTGOMERY
MUNICIPALITY: UPPER DUBLIN TWP./WHITEMARSH TWP.
INTERSECTION: BETHLEHEM PIKE
PENNSYLVANIA AVENUE

REVIEWED:

MUNICIPAL OFFICIAL — DATE 6/2/11

RECOMMENDED:

KEVIN M. CONAHAN 4/18/05

LOUIS R. BELMONTE 4/18/05
DISTRICT TRAFFIC ENGINEER — DATE

NO.	REVISION	DES./REVW.	DATE	REVW.	DATE	RECOM.	DATE
1	ADDED DRIVEWAY TO INTERSECTION 4			KMC	2/2/7	LRB	2/7/07
2	REVISED SPLITS, ADDED INTERSECTIONS 3 & 4	JLH	2/24/10	DLA	3/12/10	AP	3/12/10
3	REVISED TIMINGS ON PENNSYLVANIA AVE	MEM		DLA	12/27/10	LRB	1/3/11
4	ADDED DRIVEWAY TO INTERSECTION 1, CHANGED EVENT 6 TO PROGRAM 2	HB&K	4/11/11	DLA	5/19/11	AP	5/12/11
5							
6							
7							
8							

SHEET 2 OF 2 | PERMIT # I-0038 | FILE #

APPENDIX H

Auxiliary Turn Lane Warrant Analysis

Pennsylvania Avenue (SR 2037)
& Commerce Drive/ Site Driveway

Turn Lane Warrant and Length Analysis Workbook

STUDY LOCATION AND ANALYSIS INFORMATION

Municipality:	Whitemarsh Township	**Analysis Date:**	11/7/2022
County:	Chester County	**Conducted By:**	BH
PennDOT Engineering District:	6	**Checked By:**	MB
		Agency/Company Name:	Traffic Planning and Design, Inc.

Intersection & Approach Description: Pennsylvania Avenue (SR 2037) and Commerce Drive/Site Driveway

Analysis Period:	2030 Build	**Number of Approach Lanes:**	2
Design Hour:	AM Peak Hour	**Undivided or Divided Highway:**	Undivided
Intersection Control:	Signalized		
Posted Speed Limit (MPH):	35		**Type of Analysis**
Type of Terrain:	Level	**Left or Right-Turn Lane Analysis?:**	Left Turn Lane

VOLUME CALCULATIONS

Left Turn Lane Volume Calculations

Movement		Include?	Volume	% Trucks	PCEV
Advancing	Left	Yes	52	2.0%	53
	Through	-	473	5.0%	485
	Right	Yes	668	2.0%	675
Opposing	Left	Yes	224	2.0%	227
	Through	-	431	3.0%	438
	Right	Yes	26	2.0%	27

Advancing Volume:	1213
Opposing Volume:	692
Left Turn Volume:	53
% Left Turns in Advancing Volume:	4.37%

Right Turn Lane Volume Calculations

Movement		Include?	Volume	% Trucks	PCEV
Advancing	Left	Yes	224	2.0%	N/A
	Through	-	431	3.0%	N/A
	Right	-	26	2.0%	N/A

Advancing Volume:	N/A
Right Turn Volume:	N/A

TURN LANE WARRANT FINDINGS

Left Turn Lane Warrant Findings

Applicable Warrant Figure: Figure 7

Warrant Met?: Yes

Right Turn Lane Warrant Findings

Applicable Warrant Figure: N/A

Warrant Met?: N/A

TURN LANE LENGTH CALCULATIONS

Intersection Control:	Signalized
Design Hour Volume of Turning Lane:	53
Cycles Per Hour (Assumed):	Known
Cycles Per Hour (If Known):	31

Average # of Vehicles/Cycle: 2.0

PennDOT Publication 46, Exhibit 11-6

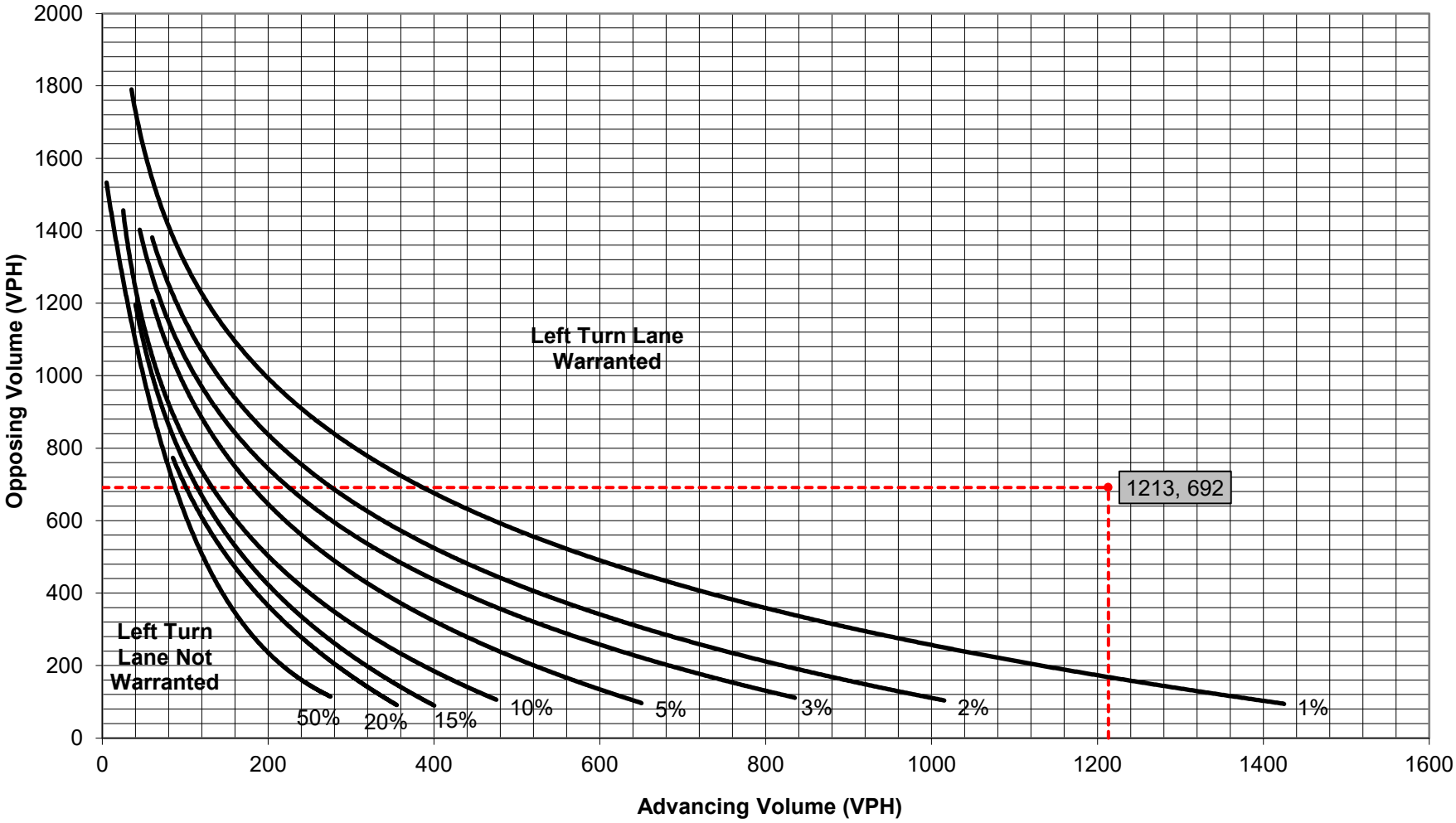
Type of Traffic Control	Speed (MPH)					
	25-35		40-45		50-60	
	Turn Demand Volume					
	High	Low	High	Low	High	Low
Signalized	A	A	B or C	B or C	B or C	B or C
Unsignalized	A	A	C	B	B or C	B

Left Turn Lane Storage Length, Condition A:	100	Feet
Condition B:	N/A	Feet
Condition C:	N/A	Feet
Required Left Turn Lane Storage Length:	100	Feet

Additional Findings: N/A

Additional Comments / Justifications:

Figure 7. Warrant for left turn lanes on four-lane, undivided highways (unsignalized and signalized intersections)
(L = % Left Turns in Advancing Volume)



Turn Lane Warrant and Length Analysis Workbook

STUDY LOCATION AND ANALYSIS INFORMATION

Municipality:	Whitemarsh Township	**Analysis Date:**	11/7/2022
County:	Chester County	**Conducted By:**	BH
PennDOT Engineering District:	6	**Checked By:**	MB
		Agency/Company Name:	Traffic Planning and Design, Inc.

Intersection & Approach Description: Pennsylvania Avenue (SR 2037) and Commerce Drive/Site Driveway

Analysis Period:	2030 Build	**Number of Approach Lanes:**	2
Design Hour:	AM Peak Hour	**Undivided or Divided Highway:**	Undivided
Intersection Control:	Signalized		
Posted Speed Limit (MPH):	35		**Type of Analysis**
Type of Terrain:	Level	**Left or Right-Turn Lane Analysis?:**	Right Turn Lane

VOLUME CALCULATIONS

Left Turn Lane Volume Calculations

Movement		Include?	Volume	% Trucks	PCEV
Advancing	Left	Yes	52	2.0%	N/A
	Through	-	473	5.0%	N/A
	Right	Yes	668	2.0%	N/A
Opposing	Left	Yes	224	2.0%	N/A
	Through	-	431	3.0%	N/A
	Right	Yes	26	2.0%	N/A

Advancing Volume:	N/A
Opposing Volume:	N/A
Left Turn Volume:	N/A
% Left Turns in Advancing Volume:	N/A

Right Turn Lane Volume Calculations

Movement		Include?	Volume	% Trucks	PCEV
Advancing	Left	Yes	224	2.0%	227
	Through	-	431	3.0%	438
	Right	-	26	2.0%	27

Advancing Volume:	692
Right Turn Volume:	27

TURN LANE WARRANT FINDINGS

Left Turn Lane Warrant Findings

Applicable Warrant Figure: N/A

Warrant Met?: N/A

Right Turn Lane Warrant Findings

Applicable Warrant Figure: Figure 11

Warrant Met?: No

TURN LANE LENGTH CALCULATIONS

Intersection Control:	Signalized
Design Hour Volume of Turning Lane:	27
Cycles Per Hour (Assumed):	Known
Cycles Per Hour (If Known):	31

Average # of Vehicles/Cycle: N/A

PennDOT Publication 46, Exhibit 11-6

Type of Traffic Control	Speed (MPH)					
	25-35		40-45		50-60	
	Turn Demand Volume					
	High	Low	High	Low	High	Low
Signalized	A	A	B or C	B or C	B or C	B or C
Unsignalized	A	A	C	B	B or C	B

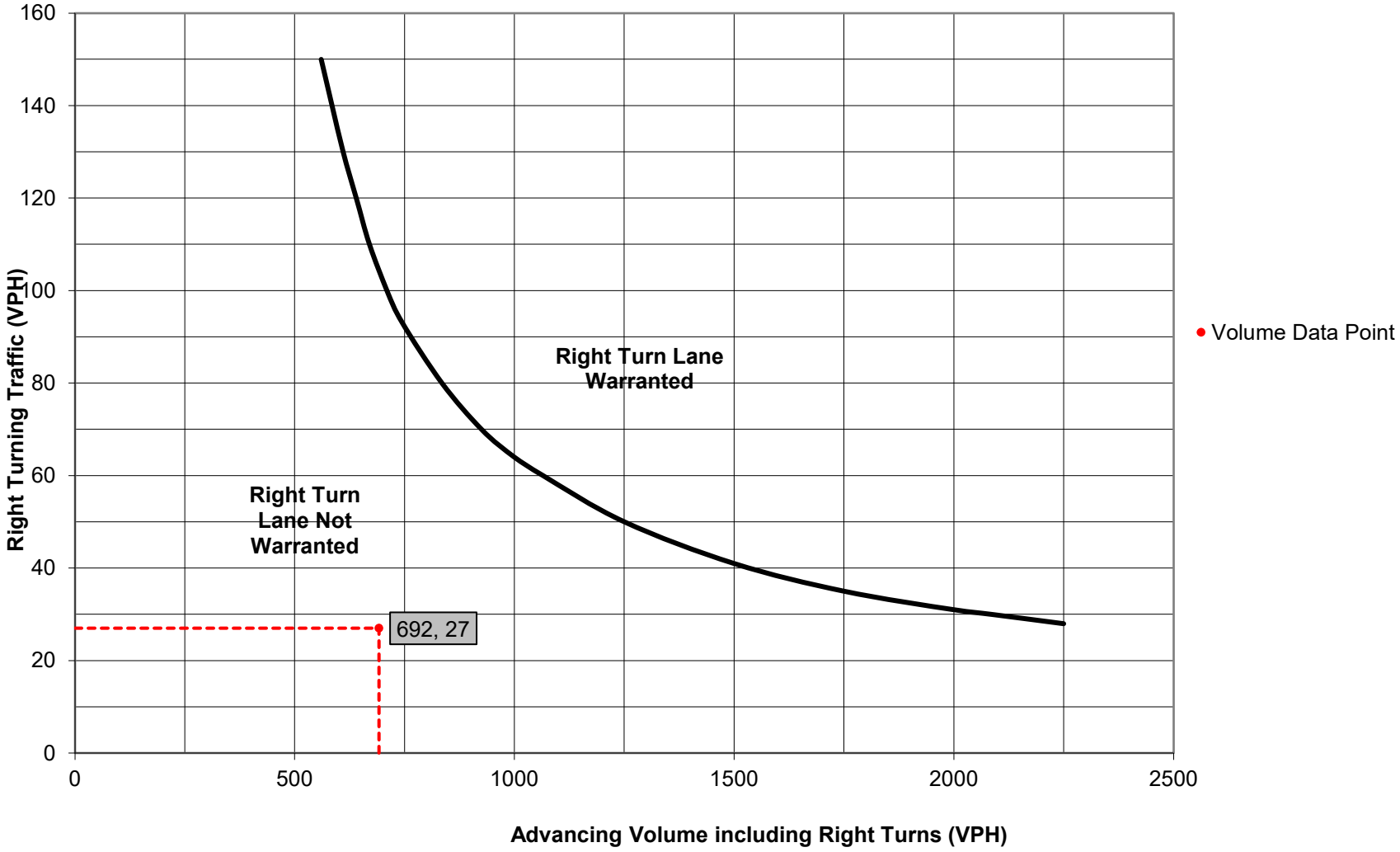
Right Turn Lane Storage Length, Condition A:	N/A	Feet
Condition B:	N/A	Feet
Condition C:	N/A	Feet
Required Right Turn Lane Storage Length:	N/A	Feet

Additional Findings:

N/A

Additional Comments / Justifications:

Figure 11. Warrant for right turn lanes on four-lane roadways
(40 mph or lower speeds, unsignalized and signalized intersections)



Turn Lane Warrant and Length Analysis Workbook

STUDY LOCATION AND ANALYSIS INFORMATION

Municipality:	Whitemarsh Township	**Analysis Date:**	11/7/2022
County:	Chester County	**Conducted By:**	BH
PennDOT Engineering District:	6	**Checked By:**	MB
		Agency/Company Name:	Traffic Planning and Design, Inc.

Intersection & Approach Description: Pennsylvania Avenue (SR 2037) and Commerce Drive/Site Driveway

Analysis Period:	2030 Build	**Number of Approach Lanes:**	2
Design Hour:	PM Peak Hour	**Undivided or Divided Highway:**	Undivided
Intersection Control:	Signalized		
Posted Speed Limit (MPH):	35		**Type of Analysis**
Type of Terrain:	Level	**Left or Right-Turn Lane Analysis?:**	Left Turn Lane

VOLUME CALCULATIONS

Left Turn Lane Volume Calculations

Movement		Include?	Volume	% Trucks	PCEV
Advancing	Left	Yes	37	2.0%	38
	Through	-	362	1.0%	364
	Right	Yes	282	3.0%	287
Opposing	Left	Yes	196	1.0%	197
	Through	-	568	1.0%	571
	Right	Yes	18	2.0%	19

Advancing Volume:	689
Opposing Volume:	787
Left Turn Volume:	38
% Left Turns in Advancing Volume:	5.52%

Right Turn Lane Volume Calculations

Movement		Include?	Volume	% Trucks	PCEV
Advancing	Left	Yes	196	1.0%	N/A
	Through	-	568	1.0%	N/A
	Right	-	18	2.0%	N/A

Advancing Volume:	N/A
Right Turn Volume:	N/A

TURN LANE WARRANT FINDINGS

Left Turn Lane Warrant Findings

Applicable Warrant Figure: Figure 7

Warrant Met?: Yes

Right Turn Lane Warrant Findings

Applicable Warrant Figure: N/A

Warrant Met?: N/A

TURN LANE LENGTH CALCULATIONS

Intersection Control:	Signalized
Design Hour Volume of Turning Lane:	38
Cycles Per Hour (Assumed):	Known
Cycles Per Hour (If Known):	31

Average # of Vehicles/Cycle: 1.0

PennDOT Publication 46, Exhibit 11-6

Type of Traffic Control	Speed (MPH)					
	25-35		40-45		50-60	
	Turn Demand Volume					
	High	Low	High	Low	High	Low
Signalized	A	A	B or C	B or C	B or C	B or C
Unsignalized	A	A	C	B	B or C	B

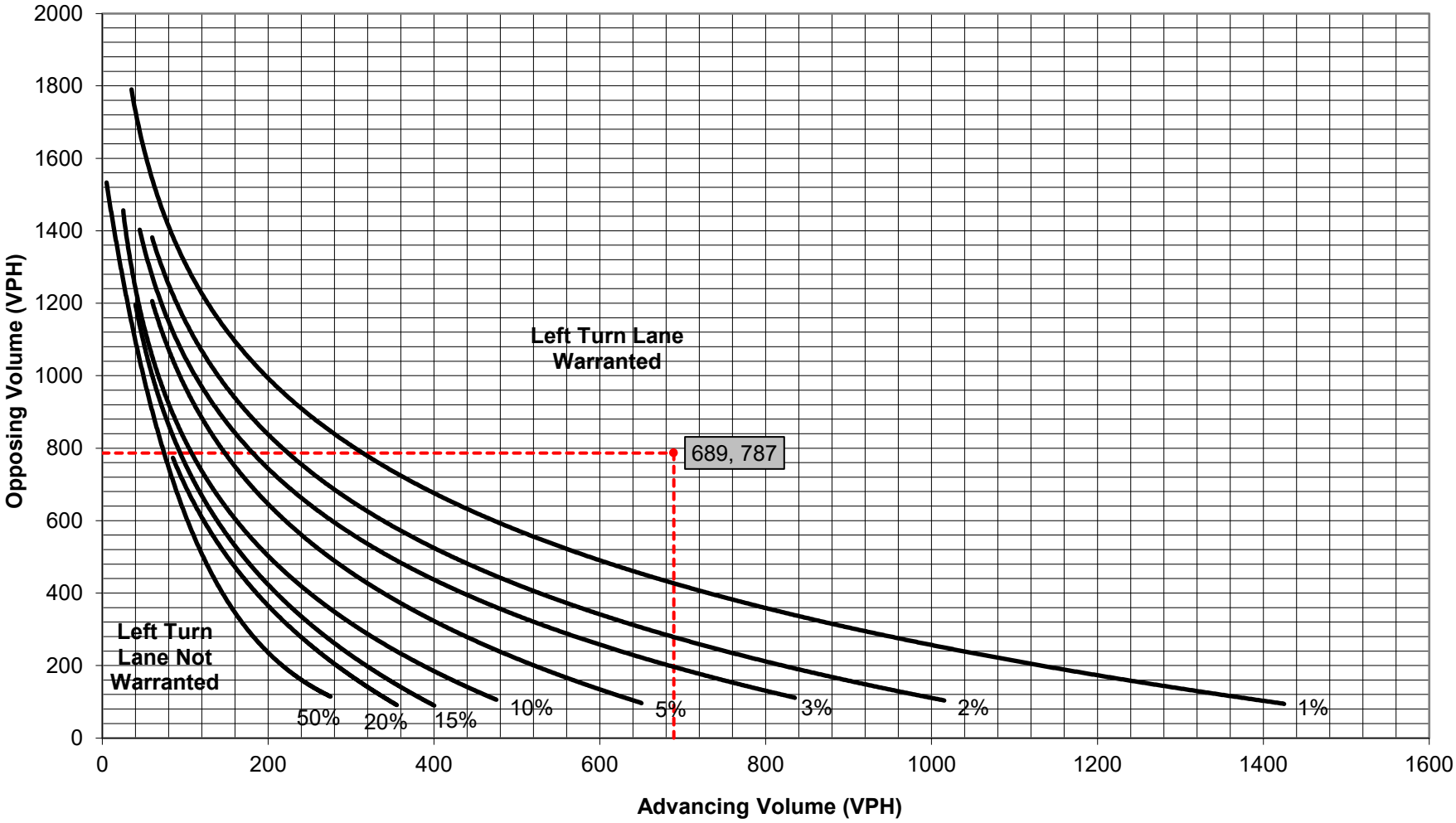
Left Turn Lane Storage Length, Condition A:	75	Feet
Condition B:	N/A	Feet
Condition C:	N/A	Feet
Required Left Turn Lane Storage Length:	75	Feet

Additional Findings:

N/A

Additional Comments / Justifications:

Figure 7. Warrant for left turn lanes on four-lane, undivided highways (unsignalized and signalized intersections)
(L = % Left Turns in Advancing Volume)



Turn Lane Warrant and Length Analysis Workbook

STUDY LOCATION AND ANALYSIS INFORMATION

Municipality:	Whitemarsh Township	**Analysis Date:**	11/7/2022
County:	Chester County	**Conducted By:**	BH
PennDOT Engineering District:	6	**Checked By:**	MB
		Agency/Company Name:	Traffic Planning and Design, Inc.

Intersection & Approach Description: Pennsylvania Avenue (SR 2037) and Commerce Drive/Site Driveway

Analysis Period:	2030 Build	**Number of Approach Lanes:**	2
Design Hour:	PM Peak Hour	**Undivided or Divided Highway:**	Undivided
Intersection Control:	Signalized		
Posted Speed Limit (MPH):	35		**Type of Analysis**
Type of Terrain:	Level	**Left or Right-Turn Lane Analysis?:**	Right Turn Lane

VOLUME CALCULATIONS

Left Turn Lane Volume Calculations

Movement		Include?	Volume	% Trucks	PCEV
Advancing	Left	Yes	37	2.0%	N/A
	Through	-	362	1.0%	N/A
	Right	Yes	282	3.0%	N/A
Opposing	Left	Yes	196	1.0%	N/A
	Through	-	568	1.0%	N/A
	Right	Yes	18	2.0%	N/A

Advancing Volume:	N/A
Opposing Volume:	N/A
Left Turn Volume:	N/A
% Left Turns in Advancing Volume:	N/A

Right Turn Lane Volume Calculations

Movement		Include?	Volume	% Trucks	PCEV
Advancing	Left	Yes	196	1.0%	197
	Through	-	568	1.0%	571
	Right	-	18	2.0%	19

Advancing Volume:	787
Right Turn Volume:	19

TURN LANE WARRANT FINDINGS

Left Turn Lane Warrant Findings

Applicable Warrant Figure: N/A

Warrant Met?: N/A

Right Turn Lane Warrant Findings

Applicable Warrant Figure: Figure 11

Warrant Met?: No

TURN LANE LENGTH CALCULATIONS

Intersection Control:	Signalized
Design Hour Volume of Turning Lane:	19
Cycles Per Hour (Assumed):	Known
Cycles Per Hour (If Known):	31

Average # of Vehicles/Cycle: N/A

PennDOT Publication 46, Exhibit 11-6

Type of Traffic Control	Speed (MPH)					
	25-35		40-45		50-60	
	Turn Demand Volume					
	High	Low	High	Low	High	Low
Signalized	A	A	B or C	B or C	B or C	B or C
Unsignalized	A	A	C	B	B or C	B

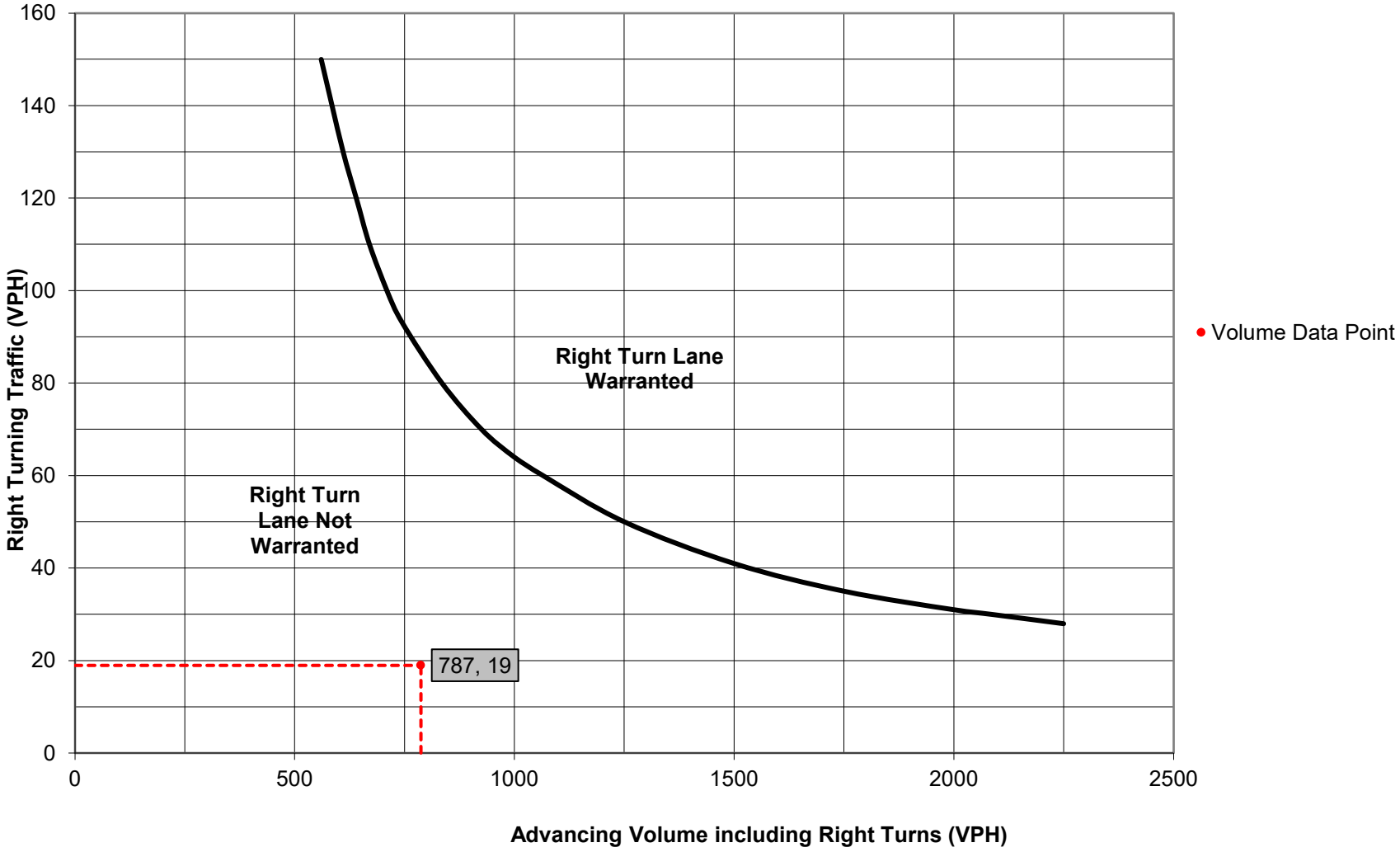
Right Turn Lane Storage Length, Condition A:	N/A	Feet
Condition B:	N/A	Feet
Condition C:	N/A	Feet
Required Right Turn Lane Storage Length:	N/A	Feet

Additional Findings:

N/A

Additional Comments / Justifications:

Figure 11. Warrant for right turn lanes on four-lane roadways
(40 mph or lower speeds, unsignalized and signalized intersections)



Turn Lane Warrant and Length Analysis Workbook

STUDY LOCATION AND ANALYSIS INFORMATION

Municipality:	Whitemarsh Township	**Analysis Date:**	8/17/2023
County:	Chester County	**Conducted By:**	BH
PennDOT Engineering District:	6	**Checked By:**	MB
		Agency/Company Name:	Traffic Planning and Design, Inc.

Intersection & Approach Description: Pennsylvania Avenue (SR 2037) and Commerce Drive/Site Driveway

Analysis Period:	2030 Build	**Number of Approach Lanes:**	2
Design Hour:	SAT Peak Hour	**Undivided or Divided Highway:**	Undivided
Intersection Control:	Signalized		
Posted Speed Limit (MPH):	35		**Type of Analysis**
Type of Terrain:	Level	**Left or Right-Turn Lane Analysis?:**	Left Turn Lane

VOLUME CALCULATIONS

Left Turn Lane Volume Calculations

Movement		Include?	Volume	% Trucks	PCEV
Advancing	Left	Yes	140	2.0%	142
	Through	-	410	2.0%	415
	Right	Yes	179	1.0%	180
Opposing	Left	Yes	124	2.0%	126
	Through	-	397	2.0%	401
	Right	Yes	68	2.0%	69

Advancing Volume:	737
Opposing Volume:	596
Left Turn Volume:	142
% Left Turns in Advancing Volume:	19.27%

Right Turn Lane Volume Calculations

Movement		Include?	Volume	% Trucks	PCEV
Advancing	Left	Yes	124	2.0%	N/A
	Through	-	397	2.0%	N/A
	Right	-	68	2.0%	N/A

Advancing Volume:	N/A
Right Turn Volume:	N/A

TURN LANE WARRANT FINDINGS

Left Turn Lane Warrant Findings

Applicable Warrant Figure: Figure 7

Warrant Met?: Yes

Right Turn Lane Warrant Findings

Applicable Warrant Figure: N/A

Warrant Met?: N/A

TURN LANE LENGTH CALCULATIONS

Intersection Control:	Signalized
Design Hour Volume of Turning Lane:	142
Cycles Per Hour (Assumed):	Known
Cycles Per Hour (If Known):	40

Average # of Vehicles/Cycle: 4.0

PennDOT Publication 46, Exhibit 11-6

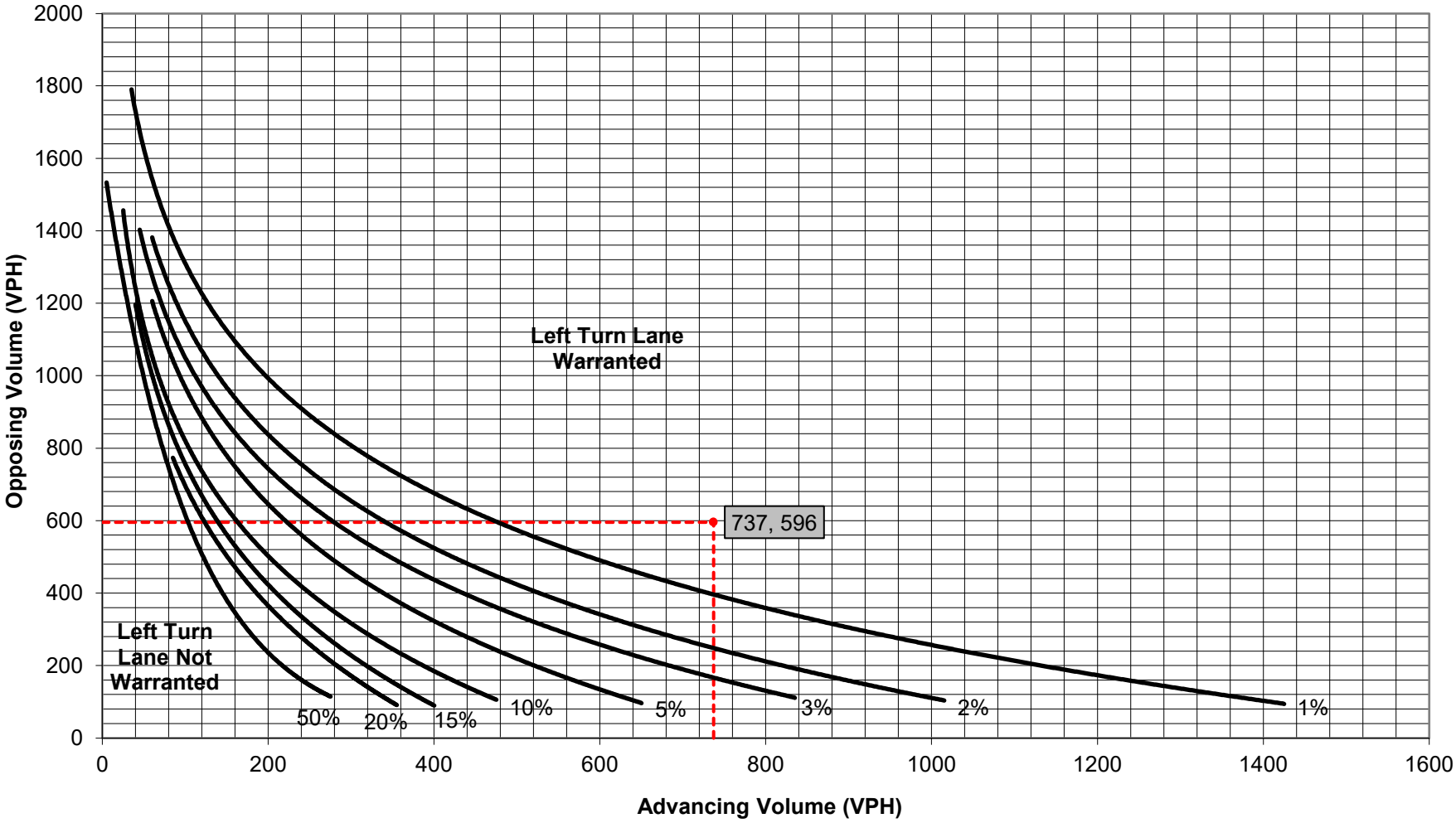
Type of Traffic Control	Speed (MPH)					
	25-35		40-45		50-60	
	Turn Demand Volume					
	High	Low	High	Low	High	Low
Signalized	A	A	B or C	B or C	B or C	B or C
Unsignalized	A	A	C	B	B or C	B

Left Turn Lane Storage Length, Condition A:	175	Feet
Condition B:	N/A	Feet
Condition C:	N/A	Feet
Required Left Turn Lane Storage Length:	175	Feet

Additional Findings: N/A

Additional Comments / Justifications:

Figure 7. Warrant for left turn lanes on four-lane, undivided highways (unsignalized and signalized intersections)
(L = % Left Turns in Advancing Volume)



Turn Lane Warrant and Length Analysis Workbook

STUDY LOCATION AND ANALYSIS INFORMATION

Municipality:	Whitemarsh Township	**Analysis Date:**	8/17/2023
County:	Chester County	**Conducted By:**	BH
PennDOT Engineering District:	6	**Checked By:**	MB
		Agency/Company Name:	Traffic Planning and Design, Inc.

Intersection & Approach Description: Pennsylvania Avenue (SR 2037) and Commerce Drive/Site Driveway

Analysis Period:	2030 Build	**Number of Approach Lanes:**	2
Design Hour:	SAT Peak Hour	**Undivided or Divided Highway:**	Undivided
Intersection Control:	Signalized		
Posted Speed Limit (MPH):	35		**Type of Analysis**
Type of Terrain:	Level	**Left or Right-Turn Lane Analysis?:**	Right Turn Lane

VOLUME CALCULATIONS

Left Turn Lane Volume Calculations

Movement		Include?	Volume	% Trucks	PCEV
Advancing	Left	Yes	140	2.0%	N/A
	Through	-	410	2.0%	N/A
	Right	Yes	179	1.0%	N/A
Opposing	Left	Yes	124	2.0%	N/A
	Through	-	397	2.0%	N/A
	Right	Yes	68	2.0%	N/A

Advancing Volume:	N/A
Opposing Volume:	N/A
Left Turn Volume:	N/A
% Left Turns in Advancing Volume:	N/A

Right Turn Lane Volume Calculations

Movement		Include?	Volume	% Trucks	PCEV
Advancing	Left	Yes	124	2.0%	126
	Through	-	397	2.0%	401
	Right	-	68	2.0%	69

Advancing Volume:	596
Right Turn Volume:	69

TURN LANE WARRANT FINDINGS

Left Turn Lane Warrant Findings

Applicable Warrant Figure: N/A

Warrant Met?: N/A

Right Turn Lane Warrant Findings

Applicable Warrant Figure: Figure 11

Warrant Met?: No

TURN LANE LENGTH CALCULATIONS

Intersection Control:	Signalized
Design Hour Volume of Turning Lane:	69
Cycles Per Hour (Assumed):	Known
Cycles Per Hour (If Known):	40

Average # of Vehicles/Cycle: N/A

PennDOT Publication 46, Exhibit 11-6

Type of Traffic Control	Speed (MPH)					
	25-35		40-45		50-60	
	Turn Demand Volume					
	High	Low	High	Low	High	Low
Signalized	A	A	B or C	B or C	B or C	B or C
Unsignalized	A	A	C	B	B or C	B

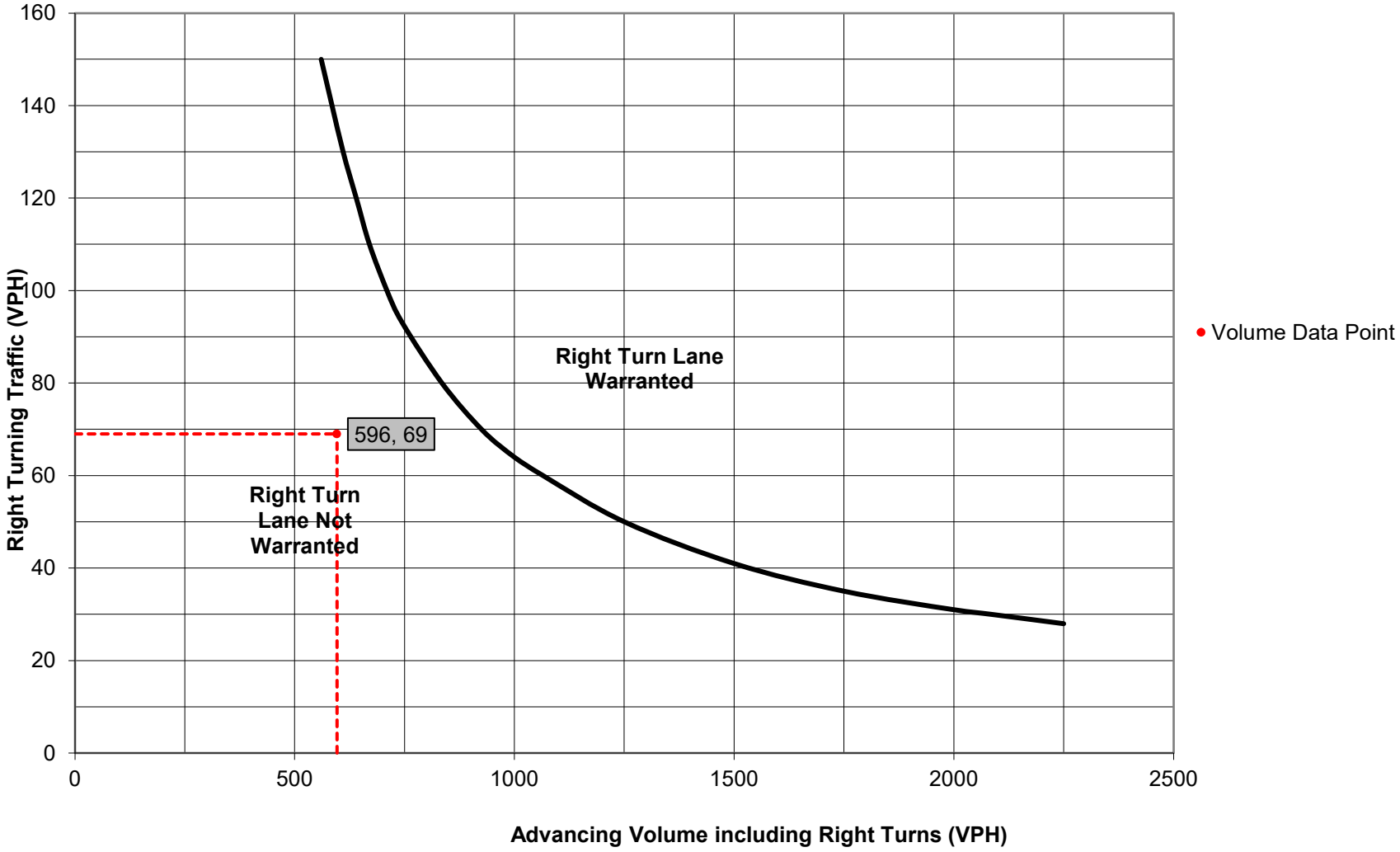
Right Turn Lane Storage Length, Condition A:	N/A	Feet
Condition B:	N/A	Feet
Condition C:	N/A	Feet
Required Right Turn Lane Storage Length:	N/A	Feet

Additional Findings:

N/A

Additional Comments / Justifications:

Figure 11. Warrant for right turn lanes on four-lane roadways
(40 mph or lower speeds, unsignalized and signalized intersections)



Pennsylvania Avenue (SR 2037) & Proposed RI-RO Driveway

Turn Lane Warrant and Length Analysis Workbook

STUDY LOCATION AND ANALYSIS INFORMATION

Municipality:	Whitemarsh Township	**Analysis Date:**	11/7/2022
County:	Chester County	**Conducted By:**	BH
PennDOT Engineering District:	6	**Checked By:**	MB
		Agency/Company Name:	Traffic Planning and Design, Inc.

Intersection & Approach Description: Pennsylvania Avenue (SR 2037) and Right-in/Right-out Site Driveway

Analysis Period:	2030 Build	**Number of Approach Lanes:**	2
Design Hour:	AM Peak Hour	**Undivided or Divided Highway:**	Undivided
Intersection Control:	Unsignalized		
Posted Speed Limit (MPH):	35		**Type of Analysis**
Type of Terrain:	Level	**Left or Right-Turn Lane Analysis?:**	Right Turn Lane

VOLUME CALCULATIONS

Left Turn Lane Volume Calculations

Movement		Include?	Volume	% Trucks	PCEV
Advancing	Left	Yes	0	2.0%	N/A
	Through	-	1192	3.0%	N/A
	Right	Yes	0	0.0%	N/A
Opposing	Left	Yes	0	0.0%	N/A
	Through	-	588	4.0%	N/A
	Right	Yes	7	2.0%	N/A

Advancing Volume:	N/A
Opposing Volume:	N/A
Left Turn Volume:	N/A
% Left Turns in Advancing Volume:	N/A

Right Turn Lane Volume Calculations

Movement		Include?	Volume	% Trucks	PCEV
Advancing	Left	Yes	0	0.0%	0
	Through	-	588	4.0%	600
	Right	-	7	2.0%	8

Advancing Volume:	608
Right Turn Volume:	8

TURN LANE WARRANT FINDINGS

Left Turn Lane Warrant Findings

Applicable Warrant Figure: N/A

Warrant Met?: N/A

Right Turn Lane Warrant Findings

Applicable Warrant Figure: Figure 11

Warrant Met?: No

TURN LANE LENGTH CALCULATIONS

Intersection Control:	Unsignalized
Design Hour Volume of Turning Lane:	8
Cycles Per Hour (Assumed):	60
Cycles Per Hour (If Known):	

Average # of Vehicles/Cycle: N/A

PennDOT Publication 46, Exhibit 11-6

Type of Traffic Control	Speed (MPH)					
	25-35		40-45		50-60	
	Turn Demand Volume					
	High	Low	High	Low	High	Low
Signalized	A	A	B or C	B or C	B or C	B or C
Unsignalized	A	A	C	B	B or C	B

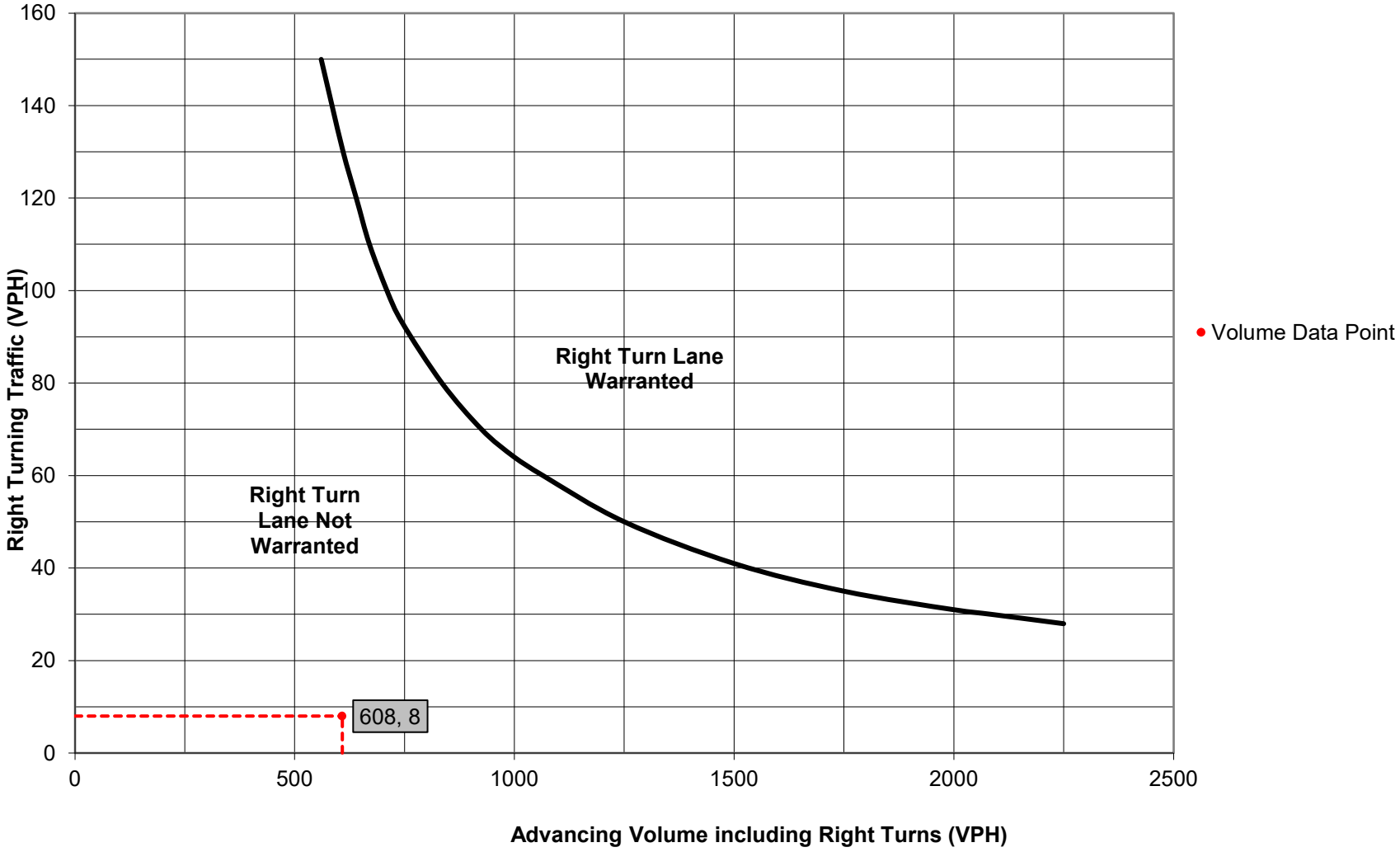
Right Turn Lane Storage Length, Condition A:	N/A	Feet
Condition B:	N/A	Feet
Condition C:	N/A	Feet
Required Right Turn Lane Storage Length:	N/A	Feet

Additional Findings:

N/A

Additional Comments / Justifications:

Figure 11. Warrant for right turn lanes on four-lane roadways
(40 mph or lower speeds, unsignalized and signalized intersections)



Turn Lane Warrant and Length Analysis Workbook

STUDY LOCATION AND ANALYSIS INFORMATION

Municipality:	Whitemarsh Township	**Analysis Date:**	11/7/2022
County:	Chester County	**Conducted By:**	BH
PennDOT Engineering District:	6	**Checked By:**	MB
		Agency/Company Name:	Traffic Planning and Design, Inc.

Intersection & Approach Description: Pennsylvania Avenue (SR 2037) and Right-in/Right-out Site Driveway

Analysis Period:	2030 Build	**Number of Approach Lanes:**	2
Design Hour:	PM Peak Hour	**Undivided or Divided Highway:**	Undivided
Intersection Control:	Unsignalized		
Posted Speed Limit (MPH):	35		**Type of Analysis**
Type of Terrain:	Level	**Left or Right-Turn Lane Analysis?:**	Right Turn Lane

VOLUME CALCULATIONS

Left Turn Lane Volume Calculations

Movement		Include?	Volume	% Trucks	PCEV
Advancing	Left	Yes	0	2.0%	N/A
	Through	-	672	2.0%	N/A
	Right	Yes	0	0.0%	N/A
Opposing	Left	Yes	0	0.0%	N/A
	Through	-	1191	2.0%	N/A
	Right	Yes	5	2.0%	N/A

Advancing Volume:	N/A
Opposing Volume:	N/A
Left Turn Volume:	N/A
% Left Turns in Advancing Volume:	N/A

Right Turn Lane Volume Calculations

Movement		Include?	Volume	% Trucks	PCEV
Advancing	Left	Yes	0	0.0%	0
	Through	-	1191	2.0%	1203
	Right	-	5	2.0%	6

Advancing Volume:	1209
Right Turn Volume:	6

TURN LANE WARRANT FINDINGS

Left Turn Lane Warrant Findings

Applicable Warrant Figure: N/A

Warrant Met?: N/A

Right Turn Lane Warrant Findings

Applicable Warrant Figure: Figure 11

Warrant Met?: No

TURN LANE LENGTH CALCULATIONS

Intersection Control:	Unsignalized
Design Hour Volume of Turning Lane:	6
Cycles Per Hour (Assumed):	60
Cycles Per Hour (If Known):	

Average # of Vehicles/Cycle: N/A

PennDOT Publication 46, Exhibit 11-6

Type of Traffic Control	Speed (MPH)					
	25-35		40-45		50-60	
	Turn Demand Volume					
	High	Low	High	Low	High	Low
Signalized	A	A	B or C	B or C	B or C	B or C
Unsignalized	A	A	C	B	B or C	B

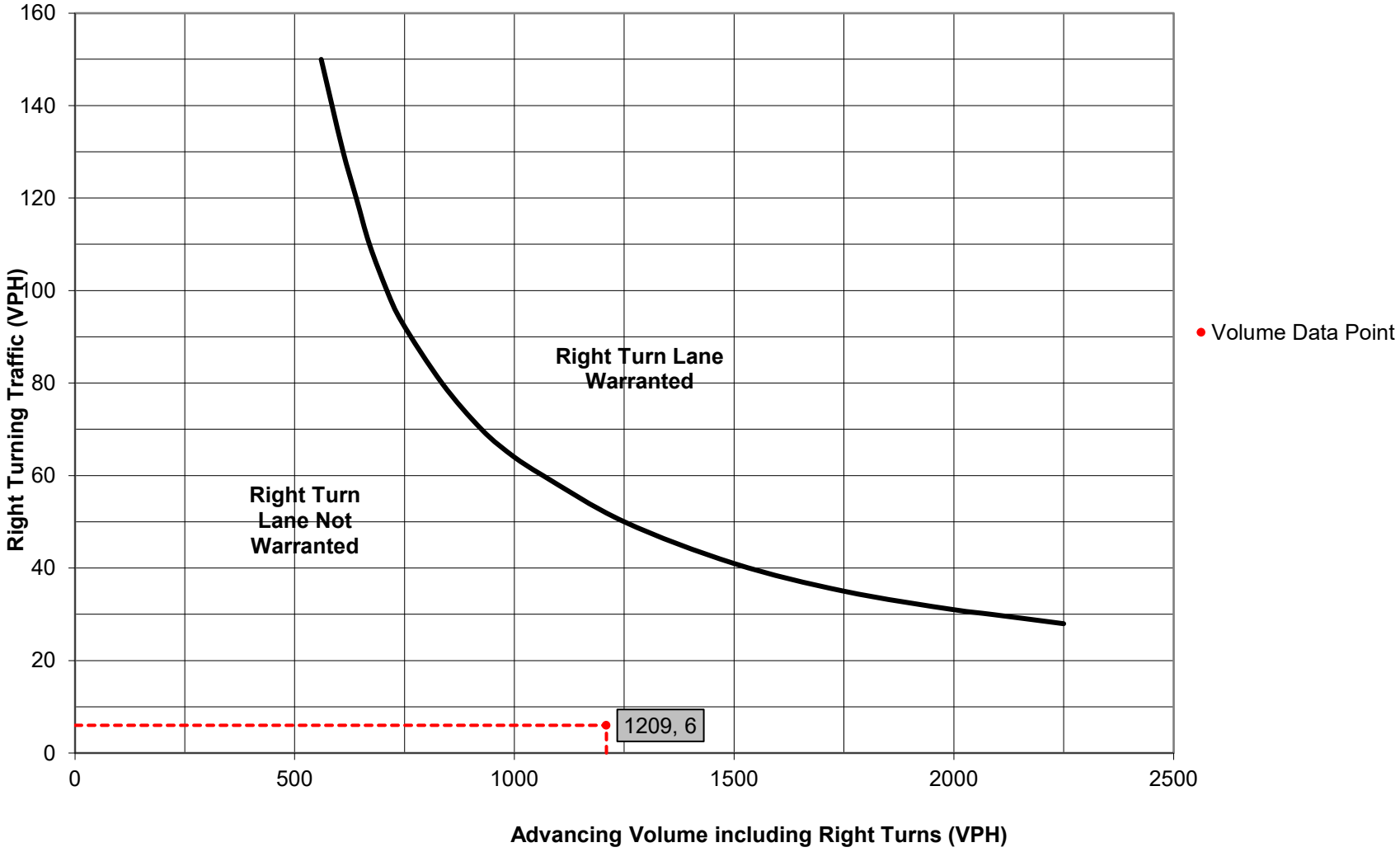
Right Turn Lane Storage Length, Condition A:	N/A	Feet
Condition B:	N/A	Feet
Condition C:	N/A	Feet
Required Right Turn Lane Storage Length:	N/A	Feet

Additional Findings:

N/A

Additional Comments / Justifications:

Figure 11. Warrant for right turn lanes on four-lane roadways
(40 mph or lower speeds, unsignalized and signalized intersections)



Turn Lane Warrant and Length Analysis Workbook

STUDY LOCATION AND ANALYSIS INFORMATION

Municipality:	Whitemarsh Township	**Analysis Date:**	8/17/2023
County:	Chester County	**Conducted By:**	BH
PennDOT Engineering District:	6	**Checked By:**	MB
		Agency/Company Name:	Traffic Planning and Design, Inc.

Intersection & Approach Description: Pennsylvania Avenue (SR 2037) and Right-in/Right-out Site Driveway

Analysis Period:	2030 Build	**Number of Approach Lanes:**	2
Design Hour:	SAT Peak Hour	**Undivided or Divided Highway:**	Undivided
Intersection Control:	Unsignalized		
Posted Speed Limit (MPH):	35		**Type of Analysis**
Type of Terrain:	Level	**Left or Right-Turn Lane Analysis?:**	Right Turn Lane

VOLUME CALCULATIONS

Left Turn Lane Volume Calculations

Movement		Include?	Volume	% Trucks	PCEV
Advancing	Left	Yes	0	2.0%	N/A
	Through	-	732	2.0%	N/A
	Right	Yes	0	0.0%	N/A
Opposing	Left	Yes	0	0.0%	N/A
	Through	-	655	1.0%	N/A
	Right	Yes	19	2.0%	N/A

Advancing Volume:	N/A
Opposing Volume:	N/A
Left Turn Volume:	N/A
% Left Turns in Advancing Volume:	N/A

Right Turn Lane Volume Calculations

Movement		Include?	Volume	% Trucks	PCEV
Advancing	Left	Yes	0	0.0%	0
	Through	-	655	1.0%	659
	Right	-	19	2.0%	20

Advancing Volume:	679
Right Turn Volume:	20

TURN LANE WARRANT FINDINGS

Left Turn Lane Warrant Findings

Applicable Warrant Figure: N/A

Warrant Met?: N/A

Right Turn Lane Warrant Findings

Applicable Warrant Figure: Figure 11

Warrant Met?: No

TURN LANE LENGTH CALCULATIONS

Intersection Control:	Unsignalized
Design Hour Volume of Turning Lane:	20
Cycles Per Hour (Assumed):	60
Cycles Per Hour (If Known):	

Average # of Vehicles/Cycle: N/A

PennDOT Publication 46, Exhibit 11-6

Type of Traffic Control	Speed (MPH)					
	25-35		40-45		50-60	
	Turn Demand Volume					
	High	Low	High	Low	High	Low
Signalized	A	A	B or C	B or C	B or C	B or C
Unsignalized	A	A	C	B	B or C	B

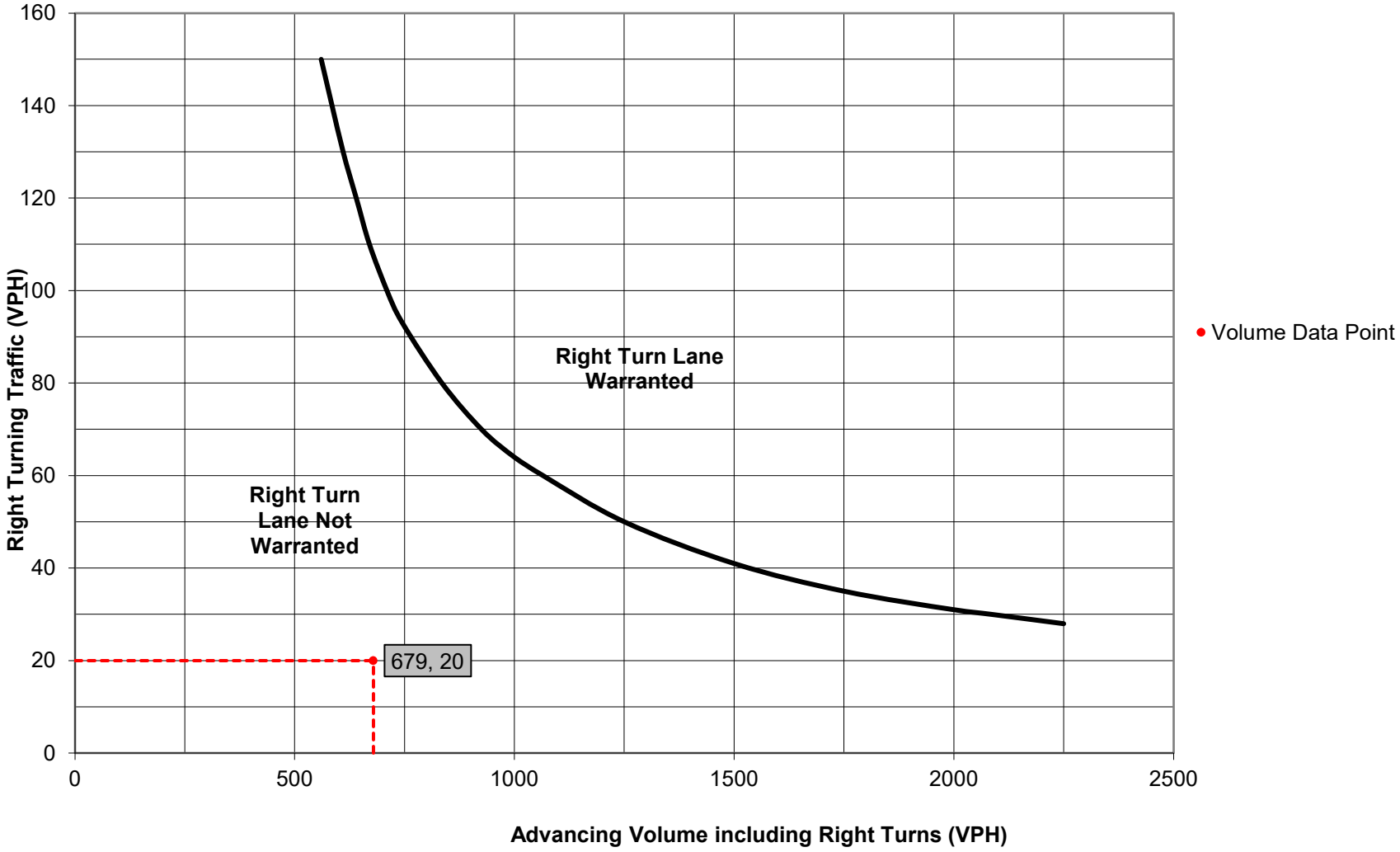
Right Turn Lane Storage Length, Condition A:	N/A	Feet
Condition B:	N/A	Feet
Condition C:	N/A	Feet
Required Right Turn Lane Storage Length:	N/A	Feet

Additional Findings:

N/A

Additional Comments / Justifications:

Figure 11. Warrant for right turn lanes on four-lane roadways
(40 mph or lower speeds, unsignalized and signalized intersections)



Post Construction
Stormwater Management Calculations

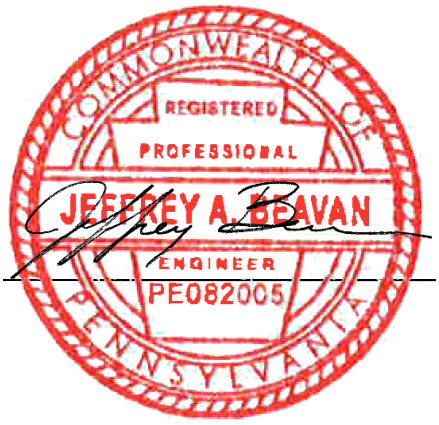
Project: BMW Automotive Dealership Expansion
500 Pennsylvania Avenue
Whitemarsh Township
Montgomery County, PA

Project Number: PAB220113.00

Client: MileOne Fort Washington, LLC
3301 Briggs Chaney Road
Silver Spring, MD 20904

Date: 03/15/2023
Rev 1: 05/4/2023
Rev 2: 09/20/2023

Design Professional: Jeff A. Beavan
PA License #PE082005



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General Project Description/Stormwater Management

GENERAL PROJECT DESCRIPTION

BMW of Fort Washington proposes to consolidate and subdivide four existing lots totaling 5.133 acres along Pennsylvania Avenue into one proposed lot. The proposed lot will contain a proposed automobile dealership. Pertinent data characterizing the existing and future site conditions are shown on the accompanying Final Land Development & Major Subdivision Plans.

The site drains to two points of interest, both of which ultimately drain to Sandy Run, which is tributary to the Wissahickon Creek, with a Chapter 93 designation of TSF, MF, or trout-stocking fishes, migratory fishes.

Waters of the US are present on the project site and have been delineated by survey. Detailed report and scope of the floodplain impacts and encroachments are contained in the DEP joint 105 permit package and is outside the scope of this report.

STORMWATER MANAGEMENT

The pre-development condition of the site consists two Points of Interest (POI #001 and POI #002) which is indicated on the attached Pre-Development Drainage Area Plan. POI #002 ultimately drains to POI#001. POI #001, taking the south and western portions of the site in the pre-development condition, drains through two distinct areas of cover to an open channel running along the south of the property; one area being predominately wooded area and the other area being predominately parking area. The flow through the wooded area takes place via sheet flow and channeled flow to an existing open channel located along the southwestern portion of the site. Flow then discharges out of the existing open channel and runs via channel flow (off-site) to the point of interest located at Sandy Run, which is tributary to Wissahickon Creek. The flow through the parking area drains via sheet flow and shallow concentrated flow to an existing inlet and 18-inch pipe located in the southeast corner of the site. Flow then discharges out of the existing 18-inch pipe and runs via channel flow in an existing open channel to the point of interest. POI #002 takes flow from the north and eastern portions of the site and drains to an existing 72-inch culvert containing mapped waters. Flow then discharges out of the existing 72-inch culvert directly to POI #001.

The on and off-site area tributary to these points of interest have been delineated and hydrographs have been generated for the 1-, 2-, 5-, 10-, 25-, 50-, and 100-year storms. The pre-development conditions were analyzed based on existing conditions for all areas tributary to the points of interest.

The post-development condition of the site maintains the same Points of Interest and relative drainage patterns as the existing condition. Overall, there is a decrease in impervious surface on the site. The drainage areas to POI#001 have been analyzed, and stormwater BMPs are proposed to control rate and runoff to required levels. The areas tributary to each basin have been delineated and hydrographs have been generated for the 1-, 2-, 5-, 10-, 25-, 50-, and 100-year storms. For POI #001, three underground basins (UG1, UG2, and UG3) have been designed to manage the runoff to required discharge rates. Basins UG1 and UG2 outfall pipes connect in a manhole to discharge directly to the creek. The UG3 outfall pipe discharges directly to the Sandy Run Creek. Volume reduction will be managed on the site through managed release, and landscape restoration. The drainage area and impervious cover to POI #002 has been significantly reduced in the post development condition, decreasing rate and volume runoff to this drainage area for each storm event analyzed.

In accordance with the Whitemarsh Township Stormwater Management Chapter 58, stormwater peak flow rates have been designed to reduce the post development peak rate for each sub drainage area individually and the ultimate POI as a whole to the required predevelopment peak rates. In addition, the stormwater peak flow rates have been further designed to comply with the Wissahickon Creek Watershed Act 167 Plan, District B requirements.

Calculation Methodology

The SCS Method was utilized for calculating the peak runoff rates and generating hydrographs for the pre- and post-development conditions as defined in the computer watershed software Hydraflow Hydrographs. The hydrographs were generated based on the precipitation amounts dictated by the NOAA Precipitation Frequency Data Server for Upper Dublin Twp, PA. Runoff curve numbers were obtained from the USDA NRCS TR-55 manual, and are contained at the end of this report. The Whitemarsh Township Stormwater Management Chapter 58 was adopted on February 26, 2004. The Wissahickon Creek Watershed Act 167 Plan was last revised and approved November 2014.

Times of concentration (TOC) were calculated using the methodology indicated in the Whitemarsh Township Stormwater Management Ordinance, with a minimum TOC of 5 minutes. Detailed TOC calculations are included within this report. All drainage areas that do not have detailed TOC calculations included in the report are assumed to have a minimum TOC of 5 minutes.

Wissahickon Creek Watershed Act 167 Plan, District B requires the reduction of the stormwater post development peak rates to the predevelopment peak rates as follows:

POST		PRE
2-yr	reduced to	1-yr
5-yr	reduced to	2-yr
10-yr	reduced to	5-yr
25-yr	reduced to	10-yr
50-yr	reduced to	25-yr
100-yr	reduced to	50-yr

Allowable release rate calculations are contained later in this report for the point of interest.

Volume Control

The volume increase resulting from development will be controlled through the combination of underground dry detention basins, managed release basins and landscape restoration. The 2-yr volume increase for POI#1 is 8,101 CF due to an increase in impervious drainage area.

Structural BMP's include 3 underground Detention facilities (UG1, UG2 and UG3) which have been designed to capture and treat the entire tributary flow from the 2-year storm. Overflow for the 5, 10, 25, 50, and 100-year storm events will flow through the outlet control structure. The facilities have been designed to achieve release rates of 0.01 cfs per one acre of impervious area tributary to the facility and reduce the 2-yr post-development peak flow to the 1-yr pre-development peak flow in accordance with the Managed Release Concept (MRC) requirements. The maximum ponding from the 2yr/24hr storm event will drawdown in less than 7 days after the duration of the design storm in accordance with the MRC requirements. MRC calculations are included within this report.

The total managed volume credit for UG1 is 6,773 CF via volume control via managed release control.

The total managed volume credit for UG2 is 2,093 CF via volume control via managed release control.

The proposed site landscaping was designed to revegetate the site with native species. A volume credit of 10 CF is provided for evergreen trees and 6 CF for deciduous trees. The site landscaping will provide an additional volume reduction of 562 CF.

Total volume reduction is 9,428 CF of the 8,101 CF requirement, which complies with the volume reduction requirements per CG-1 and the Whitemarsh Township Stormwater Management Ordinance.

Water Quality

Multiple BMPs are proposed for their water quality benefits in order to treat the stormwater runoff prior to it leaving the site. These BMPs are as follows:

Underground detention basins UG1, UG2, and UG3 will take runoff from impervious areas of the site for treatment prior to discharge. UG1 and UG2 will be designed for managed release to meet volume and rate requirements. Native landscaping is proposed across the site to decrease runoff and increase water quality. Existing mature trees within 100' of impervious area are being preserved which will decrease runoff and increase surface water uptake. Lastly, total disturbed area has been minimized to preserve a portion of wooded area on the southeast and southwest sides of the site.

Storm Sewer Conveyance Calculations

The storm drainage system has been designed to intercept runoff at topographic low points and areas of significant runoff quantities and convey stormwater to the stormwater management basins. Hydraflow Storm Sewers 2020 has been utilized for designing the storm conveyance system. Conveyance design flows are based on the Rational Method for the 100-year, utilizing runoff coefficients and the IDF information from NOAA Precipitation Frequency Data Server for Upper Dublin Twp, PA. Additional calculations are provided for the 25-year storm with flood tailwater conditions (50-year flood elevation from HEC-RAS), as well as the 100-year storm with flood tailwater conditions (100-year flood elevation from HEC-RAS), which shows that the flood water will not cause backups in other portions of the system.

Conclusion

The proposed stormwater management program described above has been designed to comply with the Whitemarsh Township Stormwater Management Requirements of the Whitemarsh Township Chapter 58, the Wissahickon Creek Watershed Act 167 Plan, District B and NPDES Phase II (where applicable) and the Stormwater Management Act of 1978.

PCSM PLANNING & DESIGN NOTES

The following measures were taken to preserve the integrity of stream channels and maintain and protect the physical, biological, and chemical qualities of the receiving stream:

- Direct runoff from impervious surfaces including roadways to BMPs.
- The use of native species requires less fertilization and chemical application than nonnative species.
- The use of sump and snout pre-treatment for water quality to PCSM BMP's.

The following measures were taken to prevent an increase in the rate of storm water runoff:

- Direct runoff to an underground storm water basin to control runoff rates.
- Minimize impervious areas where practical.

The following measures were taken to minimize any increase in storm water runoff volume:

- Provide underground Managed Release Concept basins to reduce runoff volume.

- Provide revegetate-reforest with native spaces throughout the site to help reduce runoff volume.
- Minimize impervious areas where practical.

The following measures were taken to minimize impervious areas:

- Vertical parking area reduces required surface parking and impervious footprint.
- Configure as efficiently as possible through vertical design to reduce surface parking and consolidate impervious coverage.

The following measures are taken to maximize protection of existing drainage features and vegetation:

- Access the site thru designated construction entrance.
- Protect woodlands with tree protection fencing.

The following measures were taken to minimize land clearing and grading:

- Protect woodlands with tree protection fencing.
- Adjust road slope and site grading to reduce extent of cuts or fills to existing grades.

The following measures are taken to minimize soil compaction:

- Access the site thru designated construction entrance.
- Use of treaded machinery where practical during earthmoving operations.
- Grade site to minimize extent of cuts/fills.

The following measures were taken to utilize other structural or nonstructural BMPs that prevent or minimize changes in storm water runoff:

- Provide underground detention/Managed Release Concept basins to help reduce runoff volume and rates.

POST-CONSTRUCTION STORMWATER MANAGEMENT BMPs

The storm drainage system has been designed to intercept runoff at topographic low points and areas of significant runoff quantities and convey stormwater to the stormwater management facilities. The proposed stormwater management program described above has been designed to comply with the Whitemarsh Township Stormwater Management Requirements of the Whitemarsh Township Chapter 58, the Wissahickon Creek Watershed Act 167 Plan, District B, NPDES Phase II and the Stormwater Management Act of 1978.

The PCSWM and BMP approach of this development is meant to prevent adverse stormwater impacts and provide the necessary treatment of runoff close to the origin of the impact. The primary goal of this development's stormwater management program was to mimic, as best as possible, the pre-development site hydrology by using both structural and non-structural bmp's to prevent or minimize changes in stormwater runoff.

Generally, the proposed BMPs were selected to:

- Preserve the integrity of Sandy Run and the Wissahickon Creek and maintain and protect the physical, biological and chemical qualities of the waters through mitigating any increases in stormwater runoff volume due to the proposed development and treating runoff for water quality purposes prior to being discharged from the site.
- Prevent an increase in rate of stormwater runoff. The proposed stormwater management design has reduced the post-development peak rate from the pre-development conditions, as required by Whitemarsh Township Stormwater Management Ordinance due to the reduction in stormwater runoff volume.
- To the greatest extent feasible, minimize any increase in stormwater runoff volume by incorporating two (2) underground Managed Release Concept basins and one (1) underground

detention basin. Resultantly, stormwater runoff volume has been reduced below pre-development levels.

- Minimize impervious surfaces and break up or disconnect the flow of runoff over impervious surfaces. Runoff from impervious areas is directed to water quality and infiltration BMP's in order to pre-treat runoff prior to being discharged from the site. the site conveys runoff through a series of water quality and infiltration BMP's in order to maximize pre-treatment of runoff and further mitigate any impact to peak rate and volume in the post development conditions.
- Maximize the protection of existing drainage features and existing vegetation. The proposed development has been designed to maintain the general drainage patterns of the site.
- Minimize land clearing and grading. The current 5.12 Ac. tract has been designed to only impact approximately 4.65 Ac. of Earth Disturbance within the tract boundary (4.65 total Ac. Of earth disturbance for the project).
- Minimize soil compaction. The sequence of construction has been designed to limit the extent and duration of disturbance activities and to limit the extent of heavy traffic over sensitive areas necessary for the PCSM design.
- Utilizes other measures or controls that prevent or minimize generation of increased stormwater runoff.

5.6.3 - Re-vegetate and Re-forest Disturbed Areas, Using Native Species - sites that require landscaping and re-vegetation should select and use vegetation (i.e., native species) that does not require significant chemical maintenance by fertilizers, herbicides, and pesticides. The introduction of these chemicals results in a negative impact on the water quality. The existing site consists of a grassed, vacant field for a future development. The proposal includes the implementation of meadow mix seed mixture along the rear of the property. Additionally, native species plantings (trees and shrubs) are being proposed throughout the development.

6.6.3 - Subsurface Detention Basin - subsurface detention facilities provide temporary storage of stormwater runoff by placing storage media of varying types beneath the proposed surface grade. Stormwater runoff from nearby impervious areas are conveyed to the subsurface storage media where it then reduces the post development runoff rate at or below the pre-development condition. This is a subsurface stormwater structure that provides for the temporary storage of stormwater runoff to prevent downstream flooding impacts. Water quality benefits are achieved with extended detention (dewatering between 24 hrs and 72 hrs) of the runoff volume from the water quality design storm.

6.6.4 - Water Quality Filters & Hydrodynamic Devices - These structural BMPs vary in size and function, but utilize some form of settling and filtration to remove particulate pollutants from stormwater runoff. Commercially available water quality filters, catch basin inserts, and hydrodynamic devices are generally configured to remove particulate contaminants, including coarse sediment, oil and grease, and debris. Water quality inlets are commonly used as pretreatment BMPs and can provide "hotspot" control by reducing sediment loads to infiltration devices. Hydrodynamic devices are not truly inserts, but separate flow through devices designed to serve in concert with inlets and storm sewer. Ideally, the flow through the device should remove liter, oil, sediment, heavy metals, dissolved, solids, and nutrients. Clays and fine silts do not easily settle out unless they are coagulated with some kind of chemical addition or polymer.

GENERAL SEQUENCING NOTES FOR PCSM BMPs

1. A site inspection by the county conservation district is required prior to removal of sediment traps and basins.
2. Bohler Engineering, LLC shall be notified of pre-construction meeting date and BMP construction schedule.

3. The contractor shall take all necessary precautions to limit the compaction in the proposed BMP bottoms.
4. Refer to the BMP construction details for construction guidelines of all proposed stormwater management BMPs.
5. A Notice of Termination (NOT) will be required to be submitted following acceptance of the proposed BMPs by the licensed professional responsible for BMP installation oversight. Prior to accepting the NOT, the Department and/or Conservation District Staff will perform a final inspection to ensure site stabilization and verify installation and function of stormwater BMPs.
6. The PCSM BMP's shall be constructed in the following order:
    - Install Tree Protection Fence
    - Install Underground Detention #1
    - Install Underground Detention #2 and #3
    - Install Proposed Trees (Revegetate/Reforest Native Plantings BMP)

Note: Refer to PCSM Plan and Details for individual construction sequencing and specifications.

PCSM BMP INSPECTIONS AND MAINTENANCE

Until the site is stabilized and during construction activities, all BMPs must be maintained properly by the contractor. All permanent maintenance procedures shall be performed by the owner. Maintenance must include inspections of all BMPs after each runoff event and on a weekly basis. All preventative and remedial maintenance work, including clean-out, repair, replacement, regrading, reseeding, remulching and renetting must be performed immediately and in accordance with these procedures, plans, and details. Any areas disturbed during maintenance must be stabilized immediately in accordance with the general conservation notes and specifications. All site inspections must be documented in an inspection log kept for this purpose indicating the compliance actions and the date, time and name of the person conducting the inspection. The inspection log must be kept on site at all times and made available to the district upon request.

Storm Drainage Systems – The stormwater management facilities including the inlets, stormwater piping, and detention basins on this site shall be maintained in proper working order in accordance with these plans and per the recommendation of the structure(s) manufacturer(s). Maintenance of these stormwater management facilities, as noted below, shall be the responsibility of the property owner(s) upon whose property the facilities are located.

All onsite inlets, manholes, and stormwater piping shall be cleared of debris every three (3) months or when accumulation hinders operation of the facility. Systems shall be flushed every five (5) years.

All sediment/debris/oil removed from the stormwater management system shall be disposed per local, state, and federal standards.

Should onsite erosion occur from the landscaped areas, source of erosion shall be immediately stabilized and the inlets, manholes, and stormwater piping shall be checked for accumulation and cleared if accumulation of sediment exists.

5.6.3 Re-Vegetate and Re-Forest Disturbed Areas, Using Native Species - Woodland areas planted with a proper cover crop can be expected to require annual mowing in order to control invasive species. Application of a carefully selected herbicide around the protective tree shelters/tubes may be necessary, reinforced by selective cutting/manual removal, if necessary. This initial maintenance routine is necessary for the first 2 to 3 years of growth and may be necessary for up to 5 years until tree growth and tree canopy begins to form, naturally inhibiting weed growth. A seasonal moving may be required,

although care must be taken to make sure that any management is coordinated with essential reseeding and other important aspects of meadow re-establishment.

6.6.3 Underground Extended Detention Basins – basins shall be inspected for litter and sediment accumulation on an annual basis or as directed by the township engineer. Needed maintenance should be initiated immediately after the inspection. The litter and sediment must be removed to restore design capacities. The litter and sediment shall be disposed of in an approved manner and in accordance with applicable state regulations. Any areas disturbed during maintenance must be stabilized immediately in accordance with the general conservation notes and specifications.

6.6.4 - Water Quality Filters & Hydrodynamic Devices - Maintenance is crucial to the effectiveness of this BMP and should be conducted in accordance with manufacturer recommendations. More frequent cleaning is desired and some sites benefit from keeping a log of removed sediment amount to determine a cleaning schedule. Disposal of removed material will depend on the nature of the drainage area and the intent and function of the water quality insert.

MRC# Narrative – Multiple Facilities

This Narrative applies to the following facilities:

- **Underground Basin UG1**
- **Underground Basin UG2**
- **Underground Basin UG3**

This appendix contains the following items:

- Summary of the 13 MRC design standards as utilized for the above-referenced basins
- MRC BMP Alternative Analysis
- MRC Design Summary Sheet
- MRC 1 inch Storm Summary and Hydrographs

Construction details of the facility and outlet control structure are located on the corresponding PCSM detail sheet. The pre and post construction drainage area maps are contained within appendix D of this report. CN calculations, Time of Concentration, Hydrographs and Summary Sheets for the 1, 2, 10, 50 & 100-yr Storm Events can be found within the main body of this report.

MRC BMP DESIGN STANDARDS

The above-referenced facilities incorporate the Managed Release Concept (MRC) to treat the entire tributary flow from the 2-year storm. The underground facility will be constructed from manufactured chambers outfitted with inspection ports for ease of maintenance. Maintenance will be performed per the chamber manufacture's guidelines. The underground facility is also proposed to be lined will an impermeable liner to prevent the infiltration of runoff into native soils.

1. **Runoff Capture** – The basins are designed to capture and treat the first one inch of runoff from all new impervious surfaces tributary to it. One inch storm event has been modeled and routed through the facility as well as the 2-yr, 10-yr, 50-yr and 100-yr storm events. The areas tributary to the facility has been delineated and hydrographs have been generated using the SCS Method and HydroCAD software. The corresponding hydrographs are located within this appendix.

2. **Release Rate** - The outlet control structure will achieve a release rate of 0.01 cfs per acre of impervious area tributary to the facility. The release rate summary and corresponding hydrographs are located within this appendix.

3. **Internal Water Storage (IWS)** -There is no IWS as these facilities are designed as Non-vegetated MRC basins for the purpose of vegetation credit. No infiltration is proposed due to poor infiltration rates.

4. **Peak Flow Attenuation** - The outlet control structure will reduce the 2-yr post development peak flow to the 1-yr pre-development peak flow, and will also control peak flows from the 10, 50 & 100-yr storm events via a secondary orifice and weir in the OCS. Quarterly inspections and inspections following 10, 50 1nd 100-yr storm events of basin and OCS are specified in this PCSM Report and on the PCSM plans. The release rate summary and corresponding hydrographs are located within this appendix.

5. **Stormwater BMP Manual** – All facilities use the MRC BMP - Non-vegetated MRC: Underground Storage Chambers standards due to poor infiltration rates and high groundwater.

6. **MRC BMP Selection** – Due to high groundwater and poor infiltration rates, all facilities use a standard MRC BMP - Non-vegetated MRC: Underground Storage Chambers standards, even the

above-ground facility (which is not able to achieve required soil media depth for Vegetated WQ benefit). Vegetated MRC and/or Non-vegetated MRC: porous pavement were not used as they contain an infiltration component that is not feasible for this site. The proposed design utilizes pre-treatment via water quality insert filters and sump & snout to treat surface runoff prior to it entering the MRC facility and ultimate discharge to the surface water. PCSM Spreadsheets for Rate and Water Quality demonstrating 85% removal of TSS for the contributing tributary are included within this appendix.

7. **Pre-Development Site Characterization and Assessment of Soil and Geology** – Infiltration testing was performed and resulted in poor rates making infiltration infeasible on the project site. Geotechnical testing (See report appendix) revealed several limiting factors including water, mottling, weathered rock, and bedrock.

8. **Separation Distance** – Due to poor infiltration rates, the proposed non-infiltrating MRC detention facilities will be lined (impermeable) and will not utilize soil media. Soil media and limiting zones are not applicable to the proposed impermeable detention facilities.

9. **Ponding Depth and Drawdown Time** - The maximum ponding for the 2-yr/24 hr storm will drawdown in less than three days for above-ground systems and less than seven days as required for subsurface MRC systems. Supporting drawdown calculations are contained within this appendix.

10. **Soil Media** - is not utilized as part of the facility due to poor infiltration rates.

11. **Underdrain Design** - is not utilized as there is no infiltration component or IWS in the facility due to poor infiltration rates.

12. **Discharge Flow Path** – A winged endwall with rip rap apron is utilized at each discharge outfall for outlet protection to the receiving water. Level Spreaders are not utilized to minimize disturbance to the stream bank and reduce the potential for re-channelization on the stream banks. Project outfalls are directly into the receiving waters.

13. **Antidegradation Requirements** – are not required as the Neshaminy Creek is not a HQ or EV water.

MRC BMP ALTERNATIVE ANALYSIS

Due to the restrictions of the aforementioned limiting zones and infiltration rates, BMPs utilizing infiltration to meet the regulatory requirements under § 102.8(g)(2) are technically infeasible. BMPs utilizing methods other than infiltration have been incorporated into the PCSM design, where appropriate, and used on site to the maximum extent feasible to treat the water quality volume (WQv) resulting from the post-development condition. To meet the shortfall associated with the volume that would normally be treated with an infiltration BMP, the Managed Release Concept (MRC) is proposed utilizing the standard "**Non-vegetated MRC: Underground Storage Chambers**" design criteria. To justify the use of an alternative PCSM BMP, the following is a summary of BMPs used on site for volume reduction and those determined to be not practical, demonstrating the applicant's intent to utilize traditional BMPs to the maximum extent feasible prior to considering an alternate PCSM design (i.e. MRC).

BMP 5.4.1 Protect Sensitive and Special Value Features – Protect sensitive/natural features has been proposed by way of a LOD reduction standpoint, including certain trees and the streambank to the extent feasible. Protection of all sensitive/natural features is not feasible due to the operational needs of the proposed facilities.

BMP 5.4.2 Protect/Conserve/Enhance Riparian Areas – Proposed to maximum extent possible by limiting and minimizing disturbance along the stream banks and wooded areas.

BMP 5.4.3 Protect/Utilize Natural Flow Pathways in Overall Stormwater Planning and Design - Proposed to maximum extent possible by limiting and minimizing disturbance along the stream banks and wooded areas and maintaining the same relative drainage patters.

BMP 5.5.1 Cluster Uses at Each Site; Build on the Smallest Area Possible - This BMP is not feasible due to floodplain constraints, as the entire site is within the 100 year floodplain.

BMP 5.5.2 Concentrate Uses Areawide through Smart Growth Practices - This BMP is not feasible due to floodplain constraints, as the entire site is within the 100 year floodplain.

BMP 5.6.1 Minimize Total Disturbed Area – Proposed by minimizing disturbance and grading along the stream banks, slopes and wooded areas with Tree protection fencing and demarcation of LOD.

BMP 5.6.2 Minimize Soil Compaction in Disturbed Areas - Proposed to the maximum extent possible by minimizing disturbance and grading along the stream banks, slopes and wooded areas with Tree protection fencing and demarcation of LOD.

BMP 5.6.3 Re-Vegetate and Re-Forest Disturbed Areas, Using Native Species – The majority of existing on-site trees and plant material are proposed to be protected during construction with tree protection fence. Moreover, planting of native species is proposed as part of the Landscape Plan.

BMP 5.7.1 Reduce Street Imperviousness – no streets are proposed with this project

BMP 5.7.2 Reduce Parking Imperviousness - A reduction in parking spaces is not proposed due to ordinance requirements.

BMP 5.8.1 Rooftop Disconnection – is not proposed. In POI#001, Managed Release Concept (MRC) is utilized to treat the entire tributary flow from the 2-year storm.

BMP 5.8.2 Disconnection from Storm Sewers - is not proposed. In POI#001, Managed Release Concept (MRC) is utilized to treat the entire tributary flow from the 2-year storm.

BMP 5.9.1 Streetsweeping - is not utilized due to the access limitations to the site and type of use.

BMP 6.4.1 Pervious Pavement with Infiltration Bed - is not proposed, as it has been determined to be infeasible due to both maintenance costs and the operational needs of the proposed facilities.

BMP 6.4.2 Infiltration Basin – is not proposed due to poor infiltration rates. In POI#001, Managed Release Concept (MRC) will be utilized to treat the entire tributary flow from the 2-year storm.

BMP 6.4.3 Subsurface Infiltration Bed - is not proposed due to poor infiltration rates. In POI#001, Managed Release Concept (MRC) will be utilized to treat the entire tributary flow from the 2-year storm.

BMP 6.4.4 Infiltration Trench - is not proposed due to poor infiltration rates. In POI#001, Managed Release Concept (MRC) will be utilized to treat the entire tributary flow from the 2-year storm.

BMP 6.4.5 Rain Garden/Bioretention - is not proposed for water quality as water quality is provided through a series of other BMPs.

BMP 6.4.6 Dry Well / Seepage Pit - are not proposed for recharge due to several limiting factors (See Appendix D). In POI#001, Managed Release Concept (MRC) will be utilized to treat the entire tributary flow from the 2-year storm.

BMP 6.4.7 Constructed Filter - is not proposed for water quality as water quality is provided through a series of other BMPs.

BMP 6.4.8 Vegetated Swale - are not proposed due to limited opportunity based on the site layout, as all proposed discharges are point source directly into surface waters.

BMP 6.4.9 Vegetated Filter Strip - is not utilized as all proposed discharges are point source directly into surface waters.

BMP 6.4.10 Infiltration Berm & Retentive Grading – is not proposed due to limited opportunity based on the site layout and on poor infiltration rates. Several existing wetland areas on the site naturally provide retentive grading.

BMP 6.5.1 Vegetated Roof - is not proposed for volume reduction, as it has been determined to be infeasible due to the design and maintenance costs; additionally, this entire 2-year volume will flow through a water quality inlet.

BMP 6.5.2 Runoff Capture & Reuse – Not feasible due to the lack of ability to spray during the winter. Additional water quality will be achieved through pretreatment of Managed Release Concept (MRC) basins UG1, and UG2; and through the planting of native vegetation as part of this project, which will decrease runoff and promote soil infiltration.

BMP 6.6.1 Constructed Wetland - Is not proposed, as disturbance and grading along the stream banks, slopes and wooded areas will be minimized with Tree protection fencing and demarcation of LOD.

BMP 6.6.2 Wet Pond/Retention Basin - is not proposed for peak rate control as this is provided through capture and reuse/spray irrigation and MRC.

BMP 6.6.3 Dry Extended Detention Basin - is utilized in UG1, UG2, and UG3 to control peak rate and volume of runoff through MRC method.

BMP 6.6.4 Water Quality Filters & Hydrodynamic Devices - are utilized as water quality pre-treatment of rooftop and parking surface runoff prior to entering the underground detention facilities and ultimate discharge to surface waters.

BMP 6.7.1 Riparian Buffer Restoration - is not utilized, disturbance to the existing riparian area is minimized.

BMP 6.7.2 Landscape Restoration - is utilized to the maximum extent possible by protection of existing trees and planting of proposed native species.

BMP 6.7.3 Soil Amendment & Restoration – Soil amendments are not proposed as there is limited topsoil areas on the site to amend due to extensive on-site impervious, as well as the fact that most soil areas are outside the LOD (see protect sensitive/natural features), and therefore provision of extensive soil amendments would result in extensive additional disturbance to provide limited volume benefit.

BMP 6.7.4 Floodplain Restoration – Is not proposed, as this BMP is only considered where there is minimal interaction between groundwater, stream base flow, and root systems; furthermore, the

disturbance associated with the improvements that affects the floodplain is covered under a separate permit.

BMP 6.8.1 Level Spreader – are not utilized to minimize disturbance and the potential for re-channelization on the stream banks. Project outfalls are directly into the receiving waters.

BMP 6.8.2 Special Detention Areas - Parking Lot, Rooftop – are not utilized as there is no need or requirement for them on the project.

USGS MAP

SCALE: 1" = 2,000'
AMBLER QUAD

Stormwater Management Calculation Summary

ALLOWABLE RELEASE RATE WORKSHEET

PROJECT: ***BMW Fort Washington***
500, 506, 510 & 512 Pennsylvania Avenue
Whitemarsh Township
Montgomery County, PA

DATE: ***9/18/2023***
BY: ***RS***
CHECKED BY: ***MSL***
SHEET NO.: ***Summary***
REVISION: ***2***

Release Rate Summary

Stormwater Peak Rate & Volume Summary - POI#1

	Storm Event (years)													
Hydrograph	**1**		**2**		**5**		**10**		**25**		**50**		**100**	
	Rate (cfs)	Volume (cf)	Rate (cfs)	Volume (cf)	Rate (cfs)	Volume (cf)	Rate (cfs)	Volume (cf)	Rate (cfs)	Volume (cf)	Rate (cfs)	Volume (cf)	Rate (cfs)	Volume (cf)
Pre-Development (cfs)	5.960	18,729	8.000	25,070	11.230	35,342	13.940	44,087	17.940	57,257	21.330	68,573	24.940	80,802
Post Development Total (cfs)	2.270	26,294	4.270	32,985	6.840	43,700	8.540	52,789	10.770	66,498	12.540	78,319	14.450	91,149
Required Release Rate Percentage														
Required Release Rate (cfs)	N/A	N/A	5.960	18,729	8.000	25,070	11.230	35,342	13.940	44,087	17.940	57,257	21.330	68,573
Pre to Post Change (cfs)	-3.690	7,565	-3.730	7,915	-4.390	8,358	-5.400	8,702	-7.170	9,241	-8.790	9,746	-10.490	10,347

Stormwater Peak Rate & Volume Summary - POI#2

	Storm Event (years)													
Hydrograph	**1**		**2**		**5**		**10**		**25**		**50**		**100**	
	Rate (cfs)	Volume (cf)	Rate (cfs)	Volume (cf)	Rate (cfs)	Volume (cf)	Rate (cfs)	Volume (cf)	Rate (cfs)	Volume (cf)	Rate (cfs)	Volume (cf)	Rate (cfs)	Volume (cf)
Pre-Development (cfs)	1.740	3,491	2.540	5,034	3.870	7,662	5.030	9,985	6.790	13,584	8.300	16,743	9.940	20,209
Post Development Total (cfs)	0.790	1,675	1.250	2,543	2.050	4,072	2.760	5,458	3.860	7,647	4.820	9,598	5.870	11,760
Required Release Rate Percentage														
Required Release Rate (cfs)	N/A	N/A	1.740	3,491	2.540	5,034	3.870	7,662	5.030	9,985	6.790	13,584	8.300	16,743
Pre to Post Change (cfs)	-0.950	-1,816	-1.290	-2,491	-1.820	-3,590	-2.270	-4,527	-2.930	-5,937	-3.480	-7,145	-4.070	-8,449

Stormwater Peak Rate & Volume Summary - TOTAL POI#1

	Storm Event (years)													
Hydrograph	**1**		**2**		**5**		**10**		**25**		**50**		**100**	
	Rate (cfs)	Volume (cf)	Rate (cfs)	Volume (cf)	Rate (cfs)	Volume (cf)	Rate (cfs)	Volume (cf)	Rate (cfs)	Volume (cf)	Rate (cfs)	Volume (cf)	Rate (cfs)	Volume (cf)
Pre-Development (cfs)	8.590	33,584	10.390	40,991	13.180	52,655	15.470	62,472	18.970	77,261	22.010	90,945	25.350	103,964
Post Development Total (cfs)	2.500	27,969	4.830	35,528	8.090	47,772	10.260	58,247	13.160	74,144	15.480	87,917	17.950	102,929
Required Release Rate Percentage														
Required Release Rate (cfs)	N/A	N/A	8.590	33,584	10.390	40,991	13.180	52,655	15.470	62,472	18.970	77,261	22.010	90,945
Pre to Post Change (cfs)	-6.090	-5,615	-5.560	-5,463	-5.090	-4,883	-5.210	-4,225	-5.810	-3,117	-6.530	-3,028	-7.400	-1,035

Pre-Development to Post-Development Analysis

COMPUTATION SHEET : COMPOSITE CURVE NUMBER (CN)

PROJECT: ***BMW Fort Washington***
500 Pennsylvania Ave
Whitemarsh Township, Montgomery County

DATE: ***5/4/2023***
BY: ***RMS***
CHECKED BY: ***MSL***
REVISION: ***2***

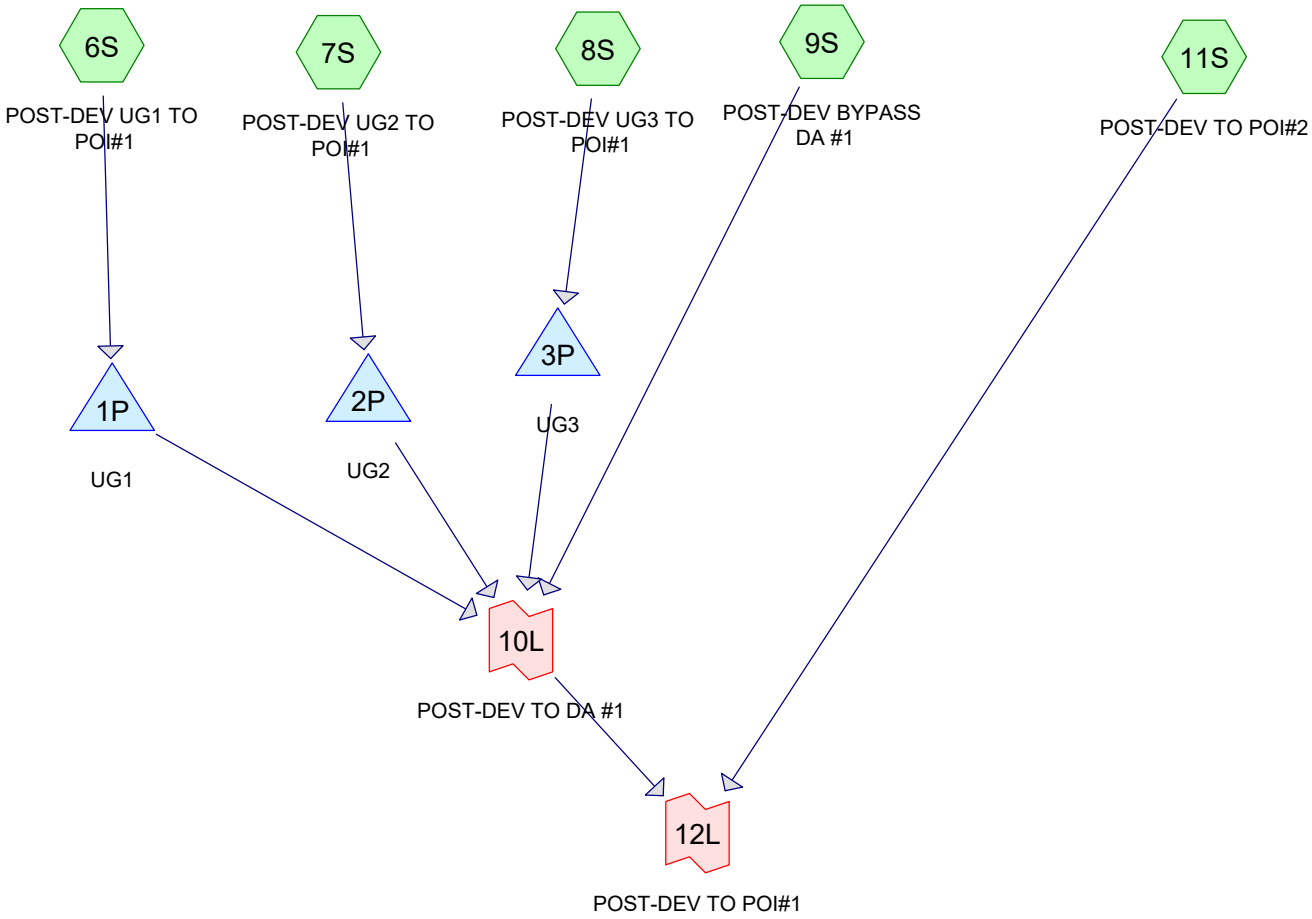
Cover Type Description	Soil HSG	CN	Pre-Development DA#1 (Acres)	Pre-Development DA#2 (Acres)	Pre-Development POI#1 (Acres)	BYPASS DA#1 TO POI#1
Meadow	A	39	0.476	3.900	4.376	
Wooded	A	30	0.366	0.000	0.366	
Meadow	B	61	0.024	0.051	0.075	
Wooded	B	55	0.000	0.000	0.000	
Meadow	C	74	0.000	0.000	0.000	
Wooded	C	70	0.000	0.000	0.000	
Meadow	D	80	0.000	0.000	0.000	
Wooded	D	77	0.000	0.000	0.000	
Impervious	ALL	98	3.010	0.705	3.715	
		Total Area	3.876	4.656	8.532	
		Composite CN	**84.1**	**48.2**	**64.5**	
		Time of Concentration (Tc)	18.50	9.10	9.10	

COMPUTATION SHEET : COMPOSITE CURVE NUMBER (CN)

PROJECT: ***BMW Fort Washington***
500 Pennsylvania Ave
Whitemarsh Township, Montgomery County

DATE: ***5/4/2023***
BY: ***RMS***
CHECKED BY: ***MSL***
REVISION: ***2***

Cover Type Description	Soil HSG	CN	UG1 TO POI#001 (Acres)	UG2 TO POI#001 (Acres)	UG3 TO POI#001 (Acres)	BYPASS DA#001 TO POI#001 (Acres)	DP#001 TOTAL (Acres)	BYPASS DP#002 TO POI#001 (Acres)	Post-Development POI#001 (Acres)
Open Space	A	39	0.009	0.032	0.068	0.433	0.542	0.264	0.806
Wooded	A	30	0.000	0.000	0.000	0.282	0.282	0.000	0.282
Open Space	B	61	0.000	0.002	0.000	0.000	0.002	0.130	0.132
Wooded	B	55	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Open Space	C	74	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Wooded	C	70	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Open Space	D	80	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Wooded	D	77	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Impervious	ALL	98	1.927	0.745	0.382	0.293	3.347	0.362	3.709
		Total Area	1.936	0.779	0.450	1.008	4.173	0.756	4.929
		Composite CN	**97.7**	**95.5**	**89.1**	**53.6**	**85.7**	**71.0**	**83.5**
		Time of Concentration (Tc)	5.00	5.00	5.00	18.50	5.00	5.00	5.00



Subcat Reach Pond Link

Routing Diagram for BMW
Prepared by Bohler Engineers, Printed 9/18/2023
HydroCAD® 10.20-2g s/n 03478 © 2022 HydroCAD Software Solutions LLC

Summary for Subcatchment 6S: POST-DEV UG1 TO POI#1

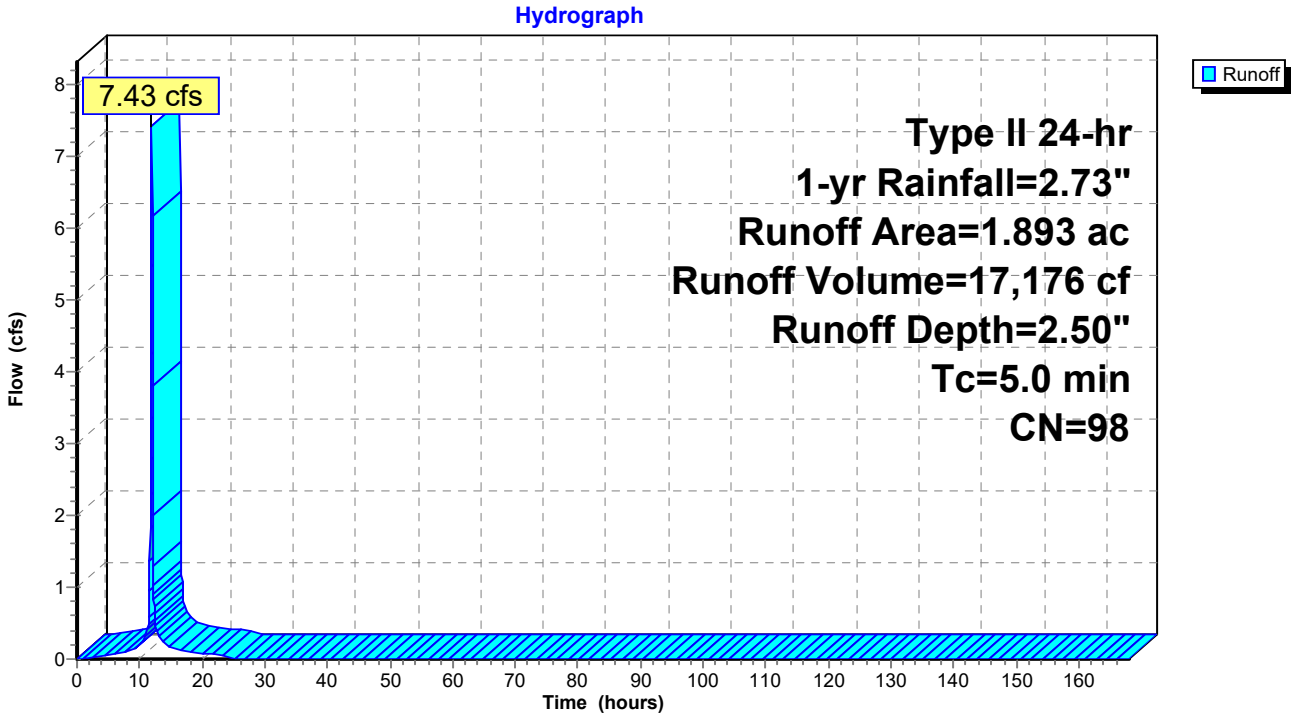
Runoff = 7.43 cfs @ 11.95 hrs, Volume= 17,176 cf, Depth= 2.50"
Routed to Pond 1P : UG1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-168.00 hrs, dt= 0.04 hrs
Type II 24-hr 1-yr Rainfall=2.73"

	Area (ac)	CN	Description
*	0.009	39	Lawn A
*	1.884	98	Impervious
	1.893	98	Weighted Average
	0.009		0.48% Pervious Area
	1.884		99.52% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment 6S: POST-DEV UG1 TO POI#1



Summary for Subcatchment 7S: POST-DEV UG2 TO POI#1

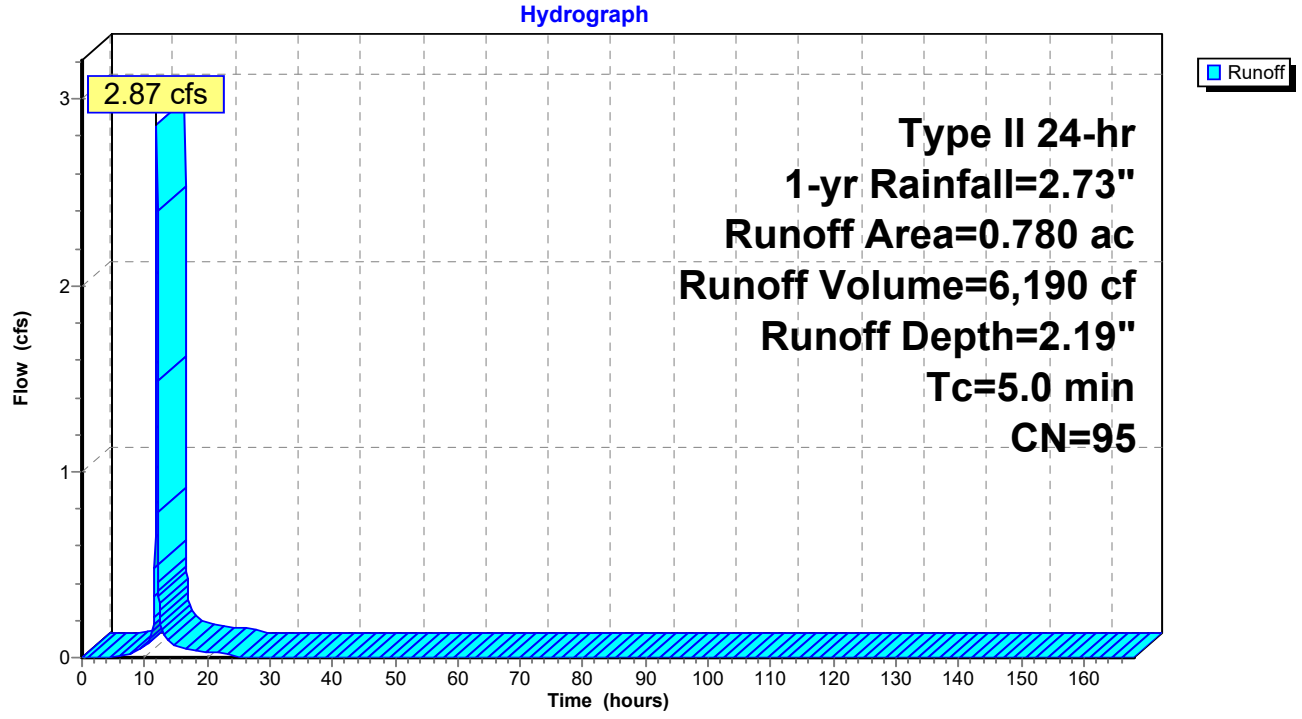
Runoff = 2.87 cfs @ 11.96 hrs, Volume= 6,190 cf, Depth= 2.19"
Routed to Pond 2P : UG2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-168.00 hrs, dt= 0.04 hrs
Type II 24-hr 1-yr Rainfall=2.73"

	Area (ac)	CN	Description
*	0.032	39	Lawn A
*	0.002	61	Lawn B
*	0.746	98	Impervious
	0.780	95	Weighted Average
	0.034		4.36% Pervious Area
	0.746		95.64% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment 7S: POST-DEV UG2 TO POI#1



Summary for Subcatchment 8S: POST-DEV UG3 TO POI#1

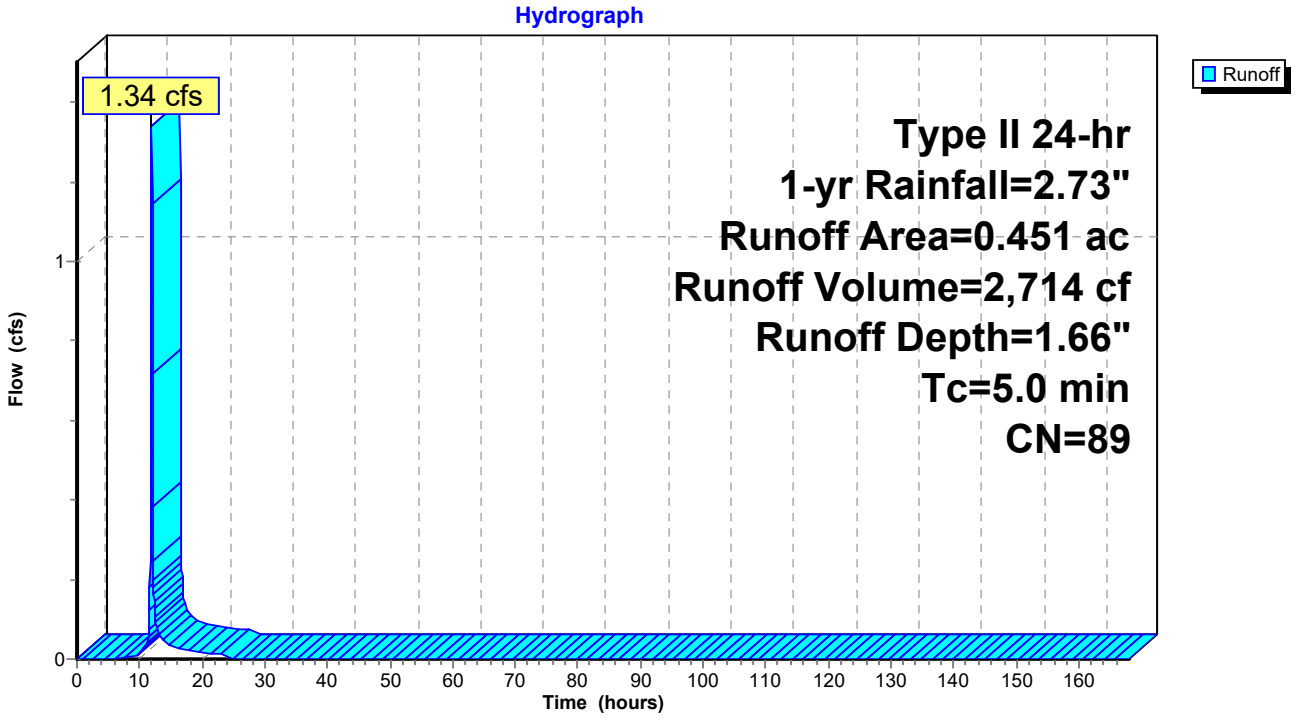
Runoff = 1.34 cfs @ 11.96 hrs, Volume= 2,714 cf, Depth= 1.66"
Routed to Pond 3P : UG3

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-168.00 hrs, dt= 0.04 hrs
Type II 24-hr 1-yr Rainfall=2.73"

	Area (ac)	CN	Description
*	0.067	39	Lawn A
*	0.384	98	Impervious
	0.451	89	Weighted Average
	0.067		14.86% Pervious Area
	0.384		85.14% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment 8S: POST-DEV UG3 TO POI#1



Summary for Subcatchment 9S: POST-DEV BYPASS DA #1

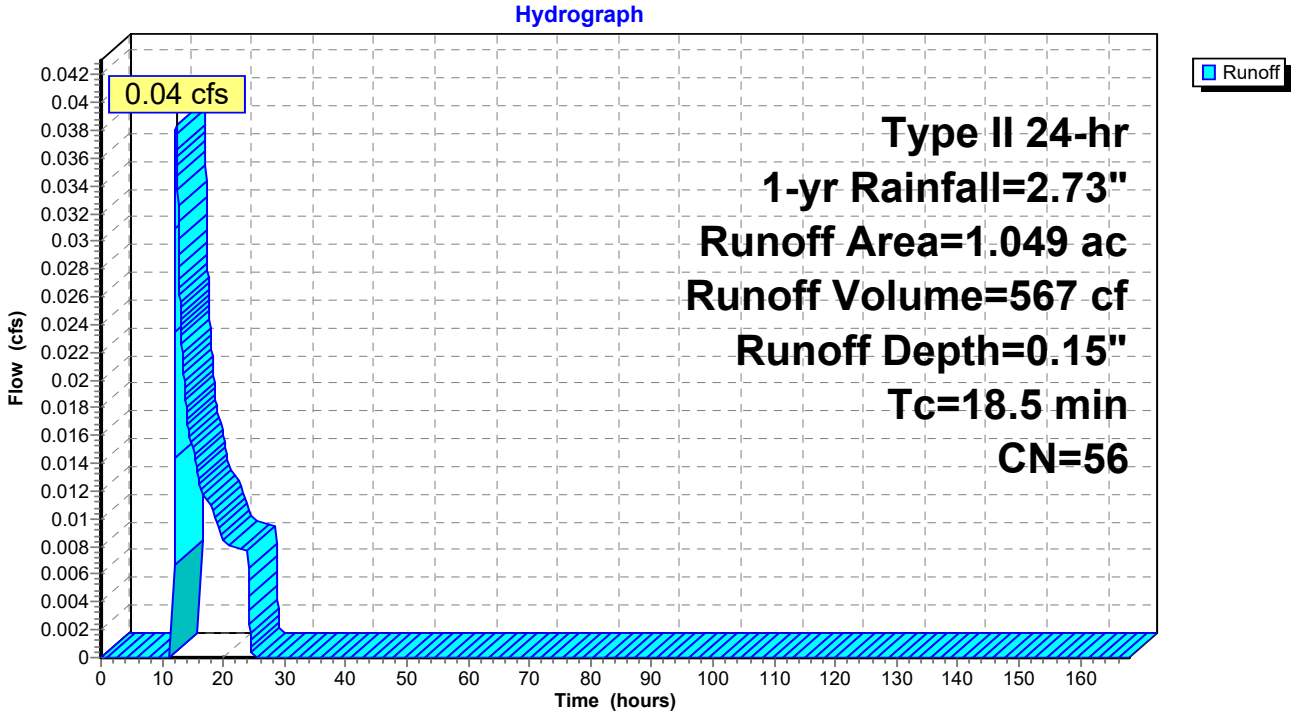
Runoff = 0.04 cfs @ 12.27 hrs, Volume= 567 cf, Depth= 0.15"
Routed to Link 10L : POST-DEV TO DA #1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-168.00 hrs, dt= 0.04 hrs
Type II 24-hr 1-yr Rainfall=2.73"

	Area (ac)	CN	Description
*	0.425	39	Lawn A
*	0.282	30	Wooded A
*	0.342	98	Impervious
	1.049	56	Weighted Average
	0.707		67.40% Pervious Area
	0.342		32.60% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
18.5					**Direct Entry,**

Subcatchment 9S: POST-DEV BYPASS DA #1



Summary for Subcatchment 11S: POST-DEV TO POI#2

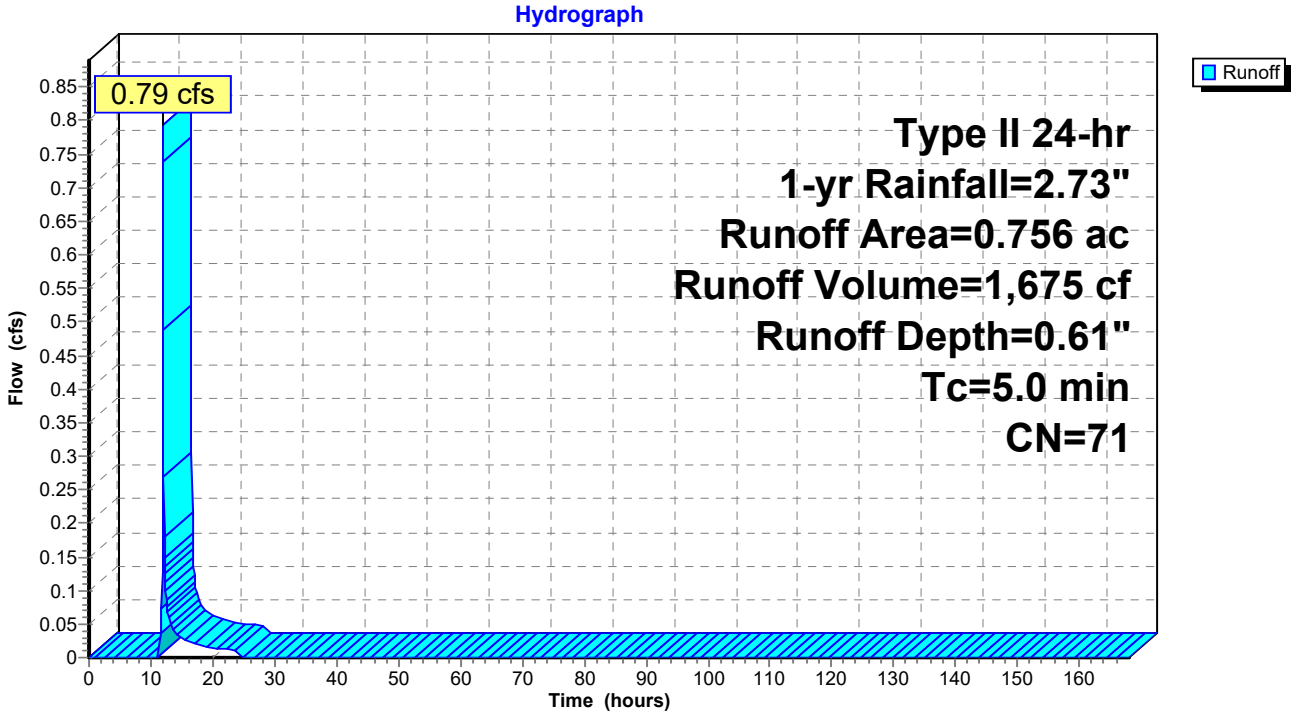
Runoff = 0.79 cfs @ 11.97 hrs, Volume= 1,675 cf, Depth= 0.61"
Routed to Link 12L : POST-DEV TO POI#1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-168.00 hrs, dt= 0.04 hrs
Type II 24-hr 1-yr Rainfall=2.73"

	Area (ac)	CN	Description
*	0.264	39	Lawn A
*	0.130	61	Lawn B
*	0.362	98	Impervious
	0.756	71	Weighted Average
	0.394		52.12% Pervious Area
	0.362		47.88% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment 11S: POST-DEV TO POI#2



Summary for Subcatchment 6S: POST-DEV UG1 TO POI#1

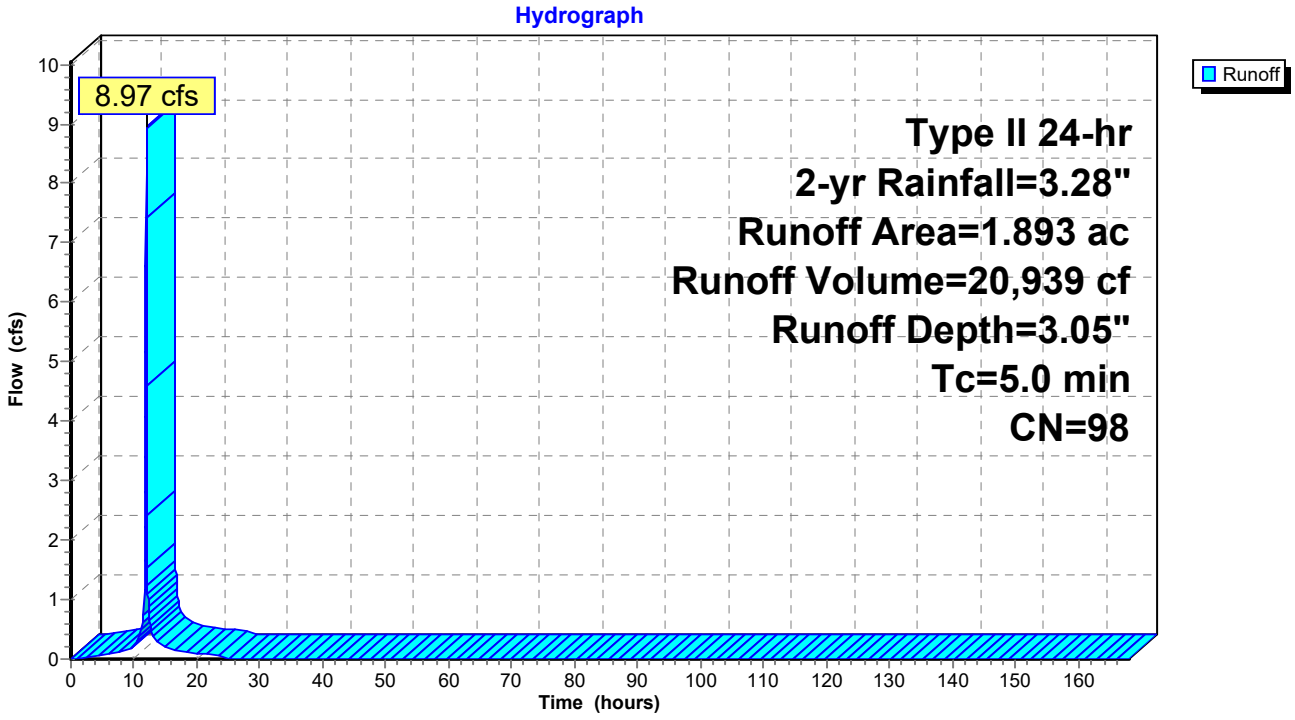
Runoff = 8.97 cfs @ 11.95 hrs, Volume= 20,939 cf, Depth= 3.05"
Routed to Pond 1P : UG1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-168.00 hrs, dt= 0.04 hrs
Type II 24-hr 2-yr Rainfall=3.28"

	Area (ac)	CN	Description
*	0.009	39	Lawn A
*	1.884	98	Impervious
	1.893	98	Weighted Average
	0.009		0.48% Pervious Area
	1.884		99.52% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment 6S: POST-DEV UG1 TO POI#1



Summary for Subcatchment 7S: POST-DEV UG2 TO POI#1

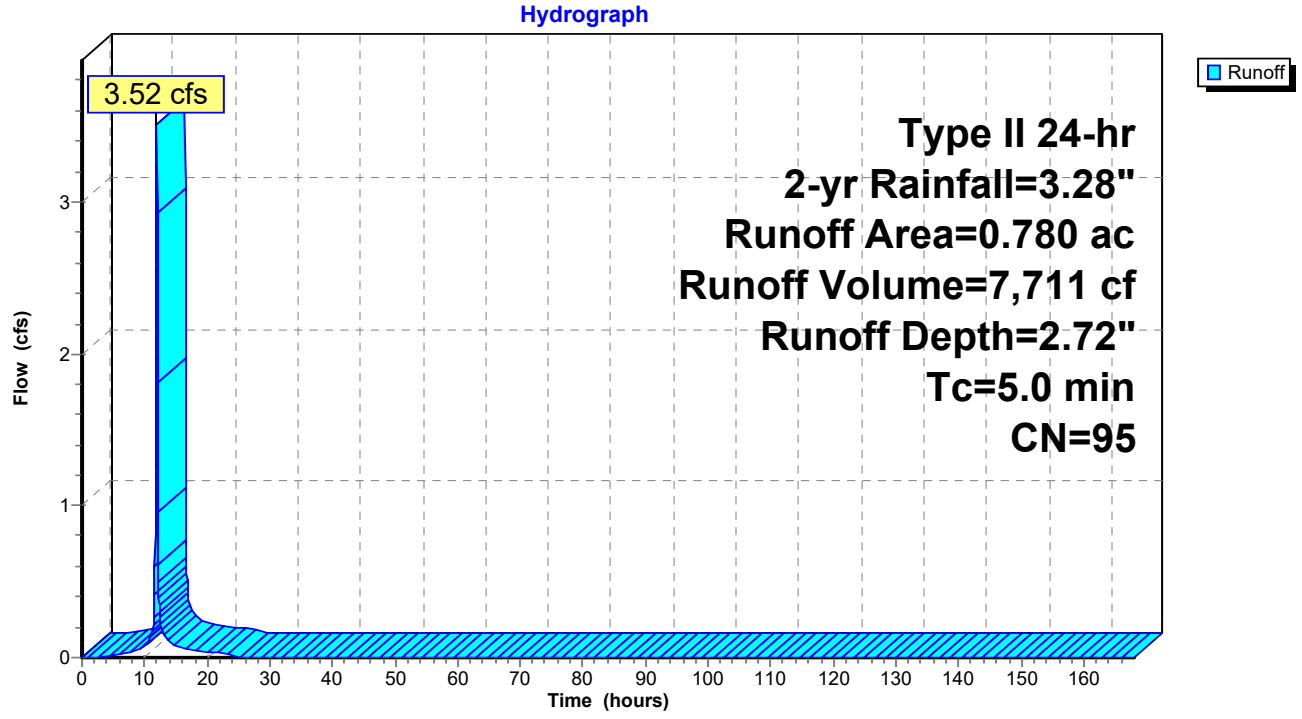
Runoff = 3.52 cfs @ 11.95 hrs, Volume= 7,711 cf, Depth= 2.72"
Routed to Pond 2P : UG2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-168.00 hrs, dt= 0.04 hrs
Type II 24-hr 2-yr Rainfall=3.28"

	Area (ac)	CN	Description
*	0.032	39	Lawn A
*	0.002	61	Lawn B
*	0.746	98	Impervious
	0.780	95	Weighted Average
	0.034		4.36% Pervious Area
	0.746		95.64% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment 7S: POST-DEV UG2 TO POI#1



Summary for Subcatchment 8S: POST-DEV UG3 TO POI#1

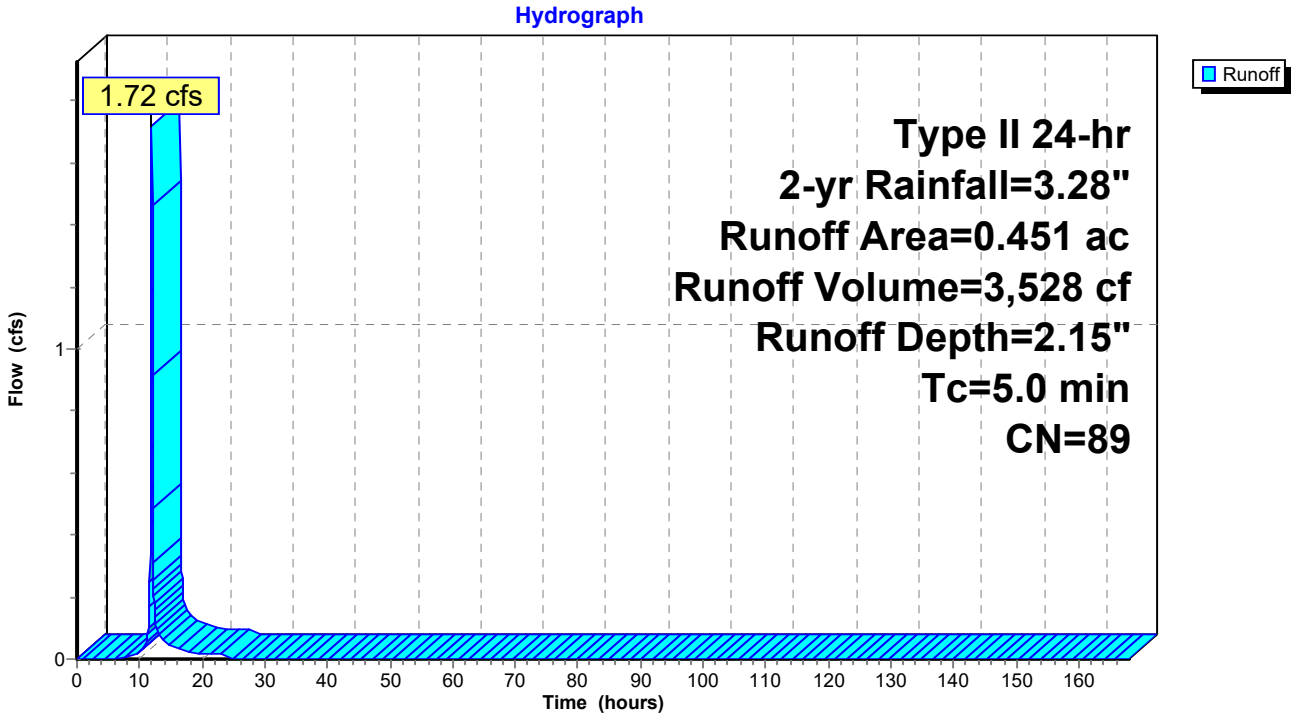
Runoff = 1.72 cfs @ 11.96 hrs, Volume= 3,528 cf, Depth= 2.15"
Routed to Pond 3P : UG3

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-168.00 hrs, dt= 0.04 hrs
Type II 24-hr 2-yr Rainfall=3.28"

	Area (ac)	CN	Description
*	0.067	39	Lawn A
*	0.384	98	Impervious
	0.451	89	Weighted Average
	0.067		14.86% Pervious Area
	0.384		85.14% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment 8S: POST-DEV UG3 TO POI#1



Summary for Subcatchment 9S: POST-DEV BYPASS DA #1

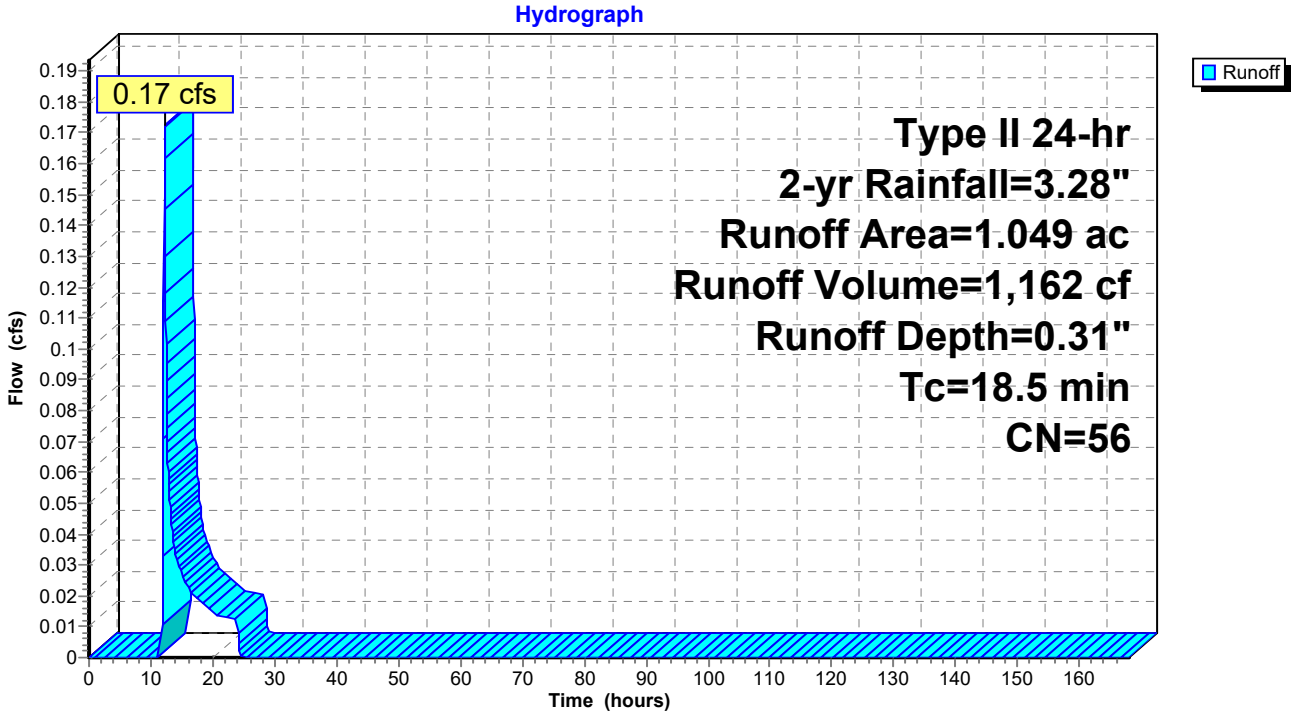
Runoff = 0.17 cfs @ 12.19 hrs, Volume= 1,162 cf, Depth= 0.31"
Routed to Link 10L : POST-DEV TO DA #1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-168.00 hrs, dt= 0.04 hrs
Type II 24-hr 2-yr Rainfall=3.28"

	Area (ac)	CN	Description
*	0.425	39	Lawn A
*	0.282	30	Wooded A
*	0.342	98	Impervious
	1.049	56	Weighted Average
	0.707		67.40% Pervious Area
	0.342		32.60% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
18.5					**Direct Entry,**

Subcatchment 9S: POST-DEV BYPASS DA #1



Summary for Subcatchment 11S: POST-DEV TO POI#2

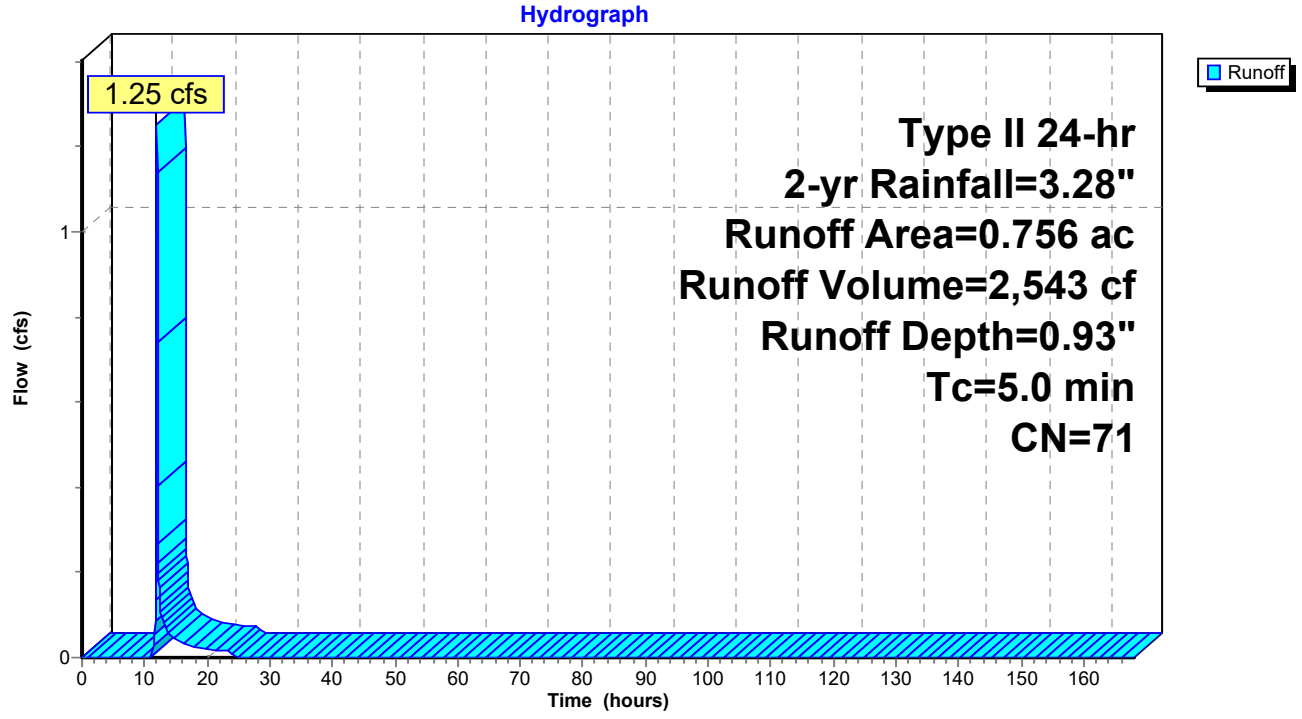
Runoff = 1.25 cfs @ 11.97 hrs, Volume= 2,543 cf, Depth= 0.93"
Routed to Link 12L : POST-DEV TO POI#1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-168.00 hrs, dt= 0.04 hrs
Type II 24-hr 2-yr Rainfall=3.28"

	Area (ac)	CN	Description
*	0.264	39	Lawn A
*	0.130	61	Lawn B
*	0.362	98	Impervious
	0.756	71	Weighted Average
	0.394		52.12% Pervious Area
	0.362		47.88% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment 11S: POST-DEV TO POI#2



Summary for Subcatchment 6S: POST-DEV UG1 TO POI#1

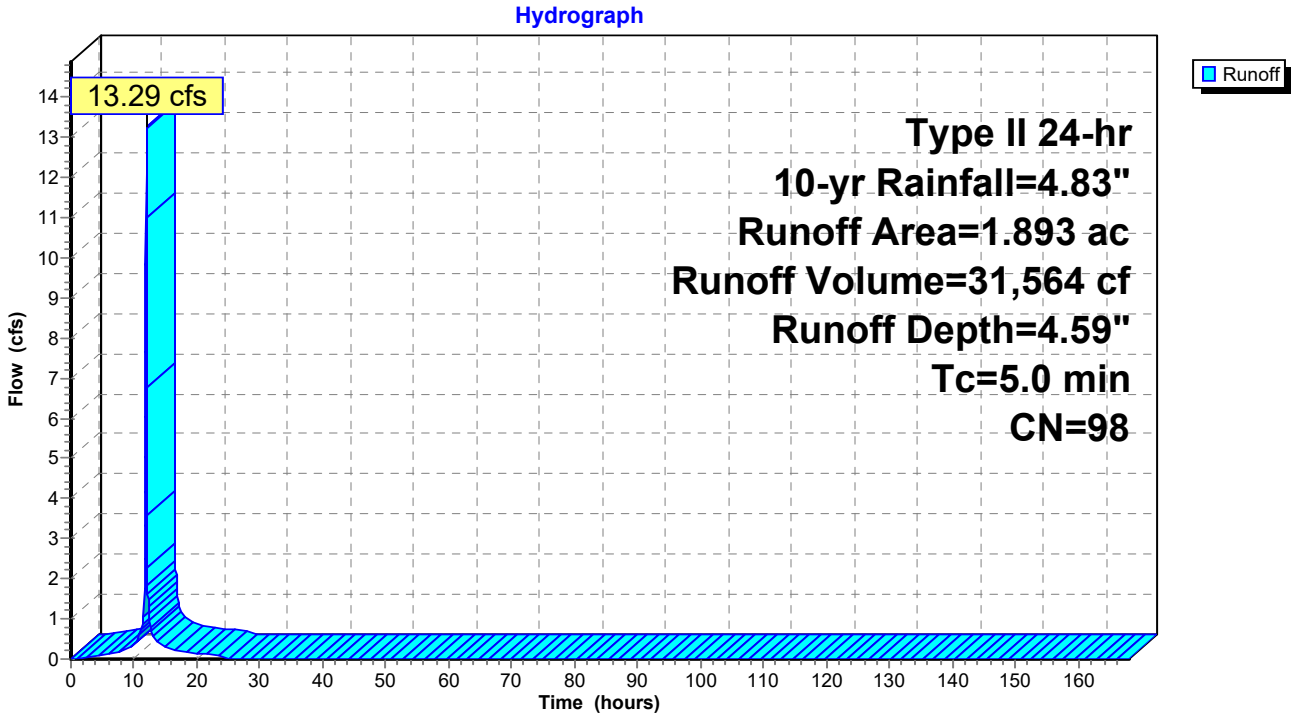
Runoff = 13.29 cfs @ 11.95 hrs, Volume= 31,564 cf, Depth= 4.59"
Routed to Pond 1P : UG1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-168.00 hrs, dt= 0.04 hrs
Type II 24-hr 10-yr Rainfall=4.83"

	Area (ac)	CN	Description
*	0.009	39	Lawn A
*	1.884	98	Impervious
	1.893	98	Weighted Average
	0.009		0.48% Pervious Area
	1.884		99.52% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment 6S: POST-DEV UG1 TO POI#1



Summary for Subcatchment 7S: POST-DEV UG2 TO POI#1

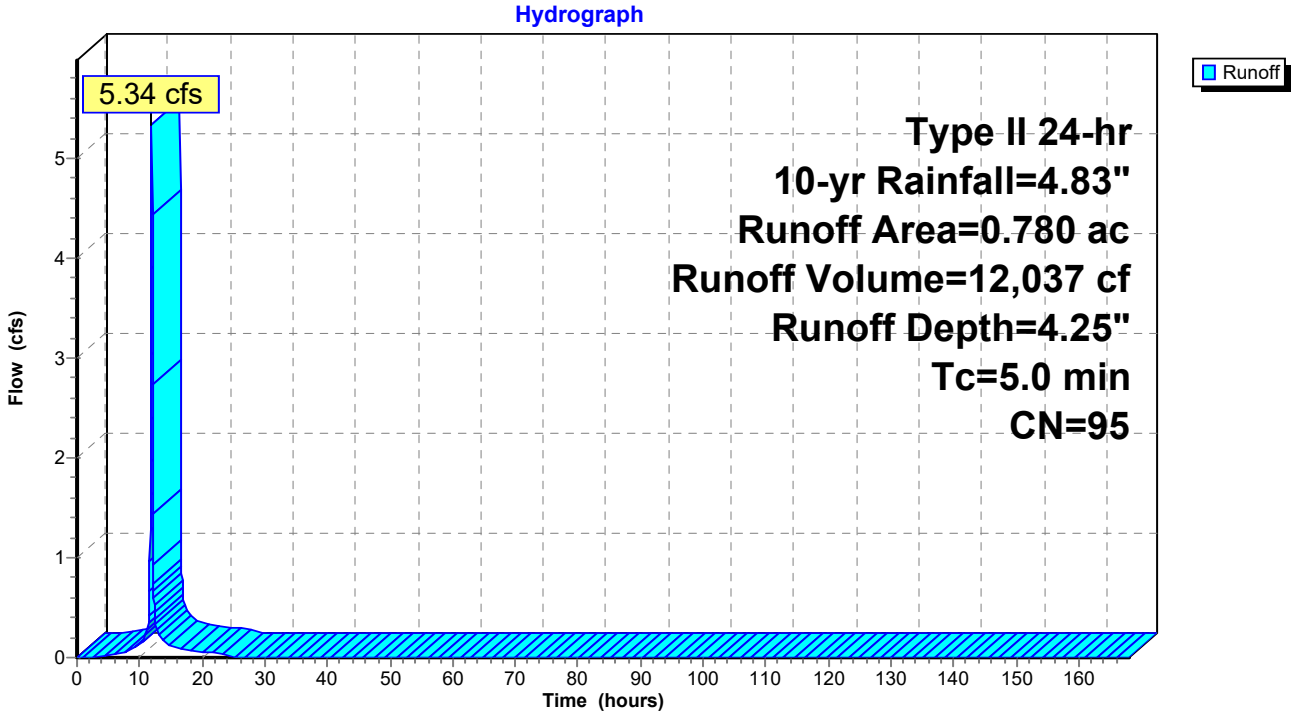
Runoff = 5.34 cfs @ 11.95 hrs, Volume= 12,037 cf, Depth= 4.25"
Routed to Pond 2P : UG2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-168.00 hrs, dt= 0.04 hrs
Type II 24-hr 10-yr Rainfall=4.83"

	Area (ac)	CN	Description
*	0.032	39	Lawn A
*	0.002	61	Lawn B
*	0.746	98	Impervious
	0.780	95	Weighted Average
	0.034		4.36% Pervious Area
	0.746		95.64% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment 7S: POST-DEV UG2 TO POI#1



Summary for Subcatchment 8S: POST-DEV UG3 TO POI#1

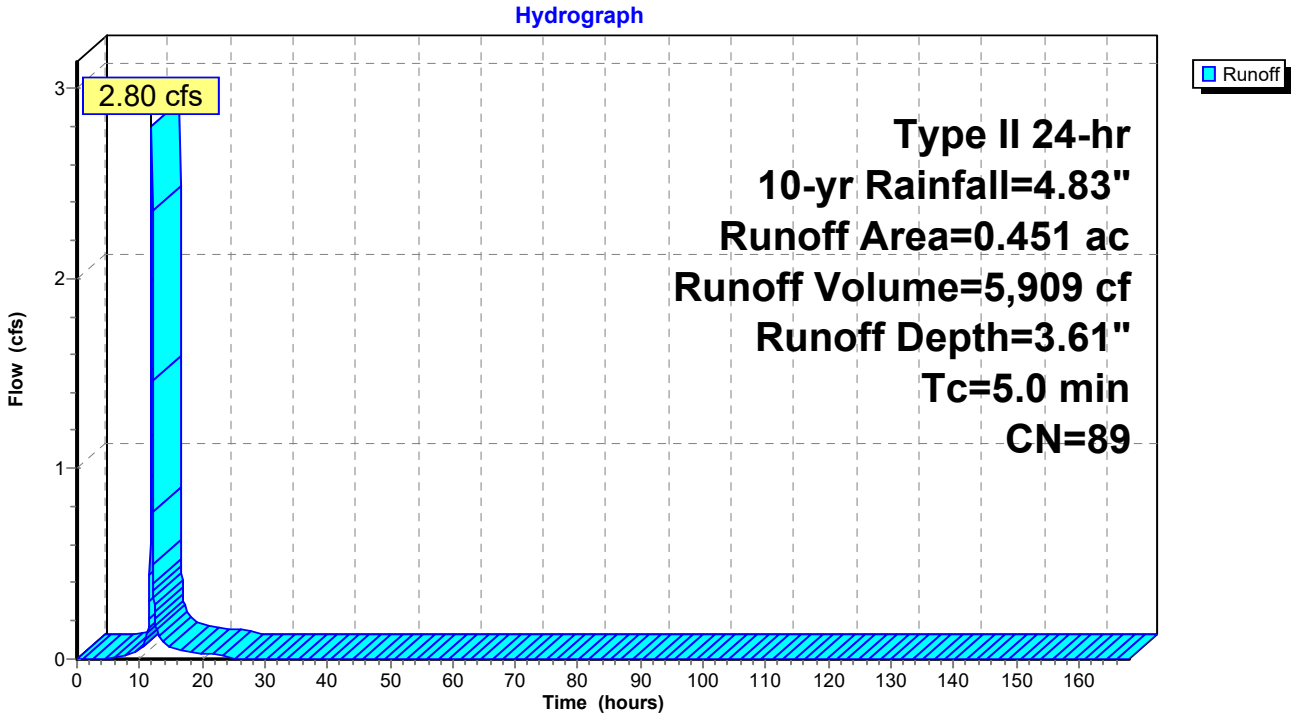
Runoff = 2.80 cfs @ 11.96 hrs, Volume= 5,909 cf, Depth= 3.61"
Routed to Pond 3P : UG3

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-168.00 hrs, dt= 0.04 hrs
Type II 24-hr 10-yr Rainfall=4.83"

	Area (ac)	CN	Description
*	0.067	39	Lawn A
*	0.384	98	Impervious
	0.451	89	Weighted Average
	0.067		14.86% Pervious Area
	0.384		85.14% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment 8S: POST-DEV UG3 TO POI#1



Summary for Subcatchment 9S: POST-DEV BYPASS DA #1

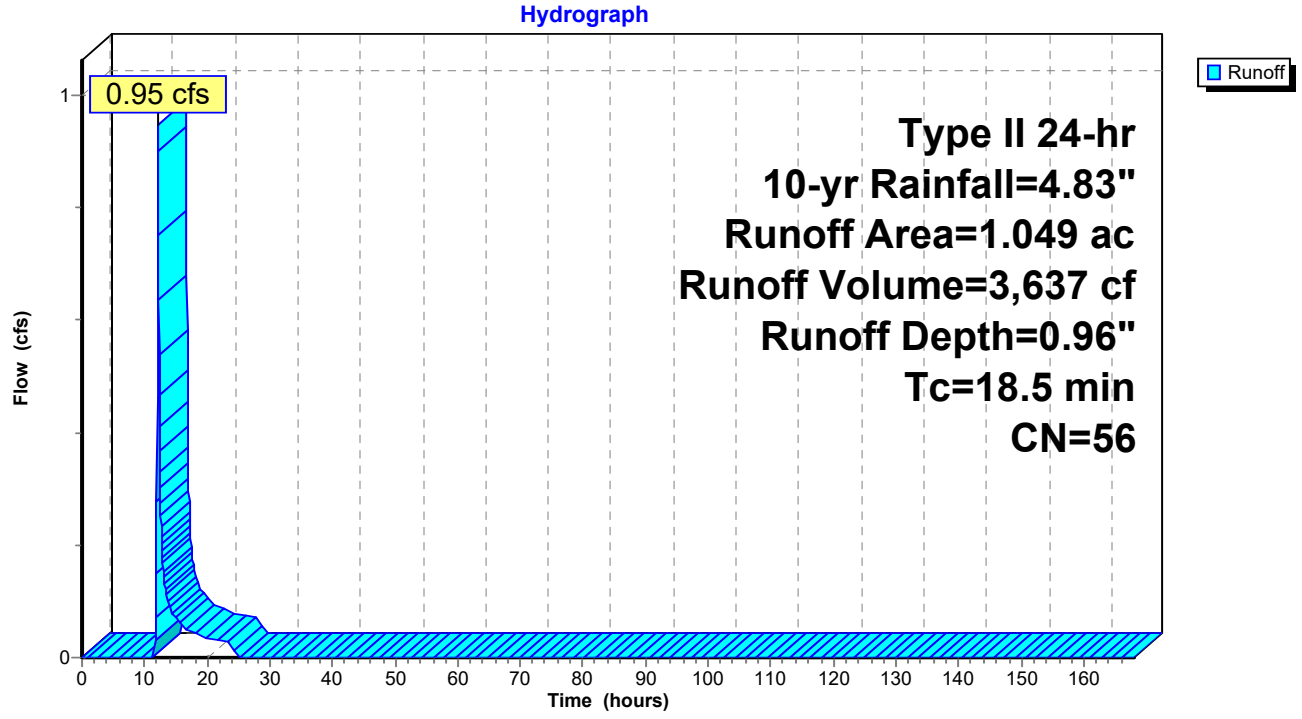
Runoff = 0.95 cfs @ 12.14 hrs, Volume= 3,637 cf, Depth= 0.96"
Routed to Link 10L : POST-DEV TO DA #1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-168.00 hrs, dt= 0.04 hrs
Type II 24-hr 10-yr Rainfall=4.83"

	Area (ac)	CN	Description
*	0.425	39	Lawn A
*	0.282	30	Wooded A
*	0.342	98	Impervious
	1.049	56	Weighted Average
	0.707		67.40% Pervious Area
	0.342		32.60% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
18.5					**Direct Entry,**

Subcatchment 9S: POST-DEV BYPASS DA #1



Summary for Subcatchment 11S: POST-DEV TO POI#2

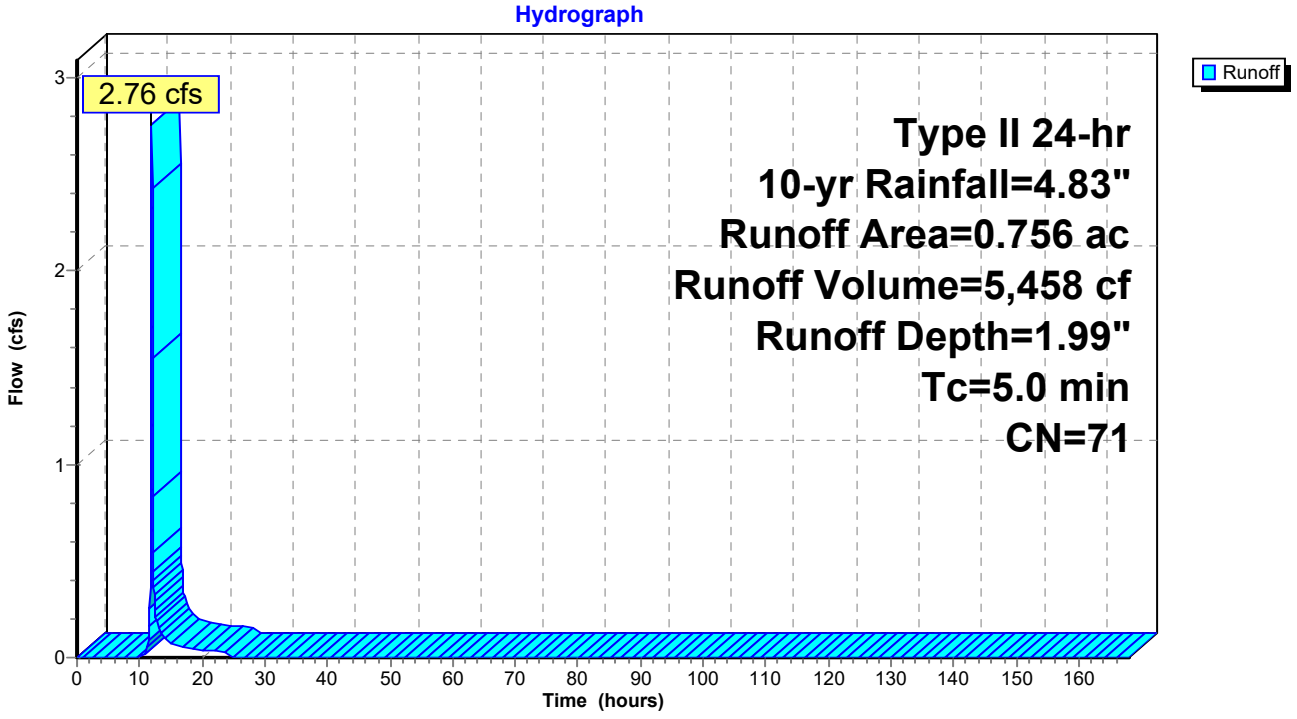
Runoff = 2.76 cfs @ 11.96 hrs, Volume= 5,458 cf, Depth= 1.99"
Routed to Link 12L : POST-DEV TO POI#1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-168.00 hrs, dt= 0.04 hrs
Type II 24-hr 10-yr Rainfall=4.83"

	Area (ac)	CN	Description
*	0.264	39	Lawn A
*	0.130	61	Lawn B
*	0.362	98	Impervious
	0.756	71	Weighted Average
	0.394		52.12% Pervious Area
	0.362		47.88% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment 11S: POST-DEV TO POI#2



Summary for Subcatchment 6S: POST-DEV UG1 TO POI#1

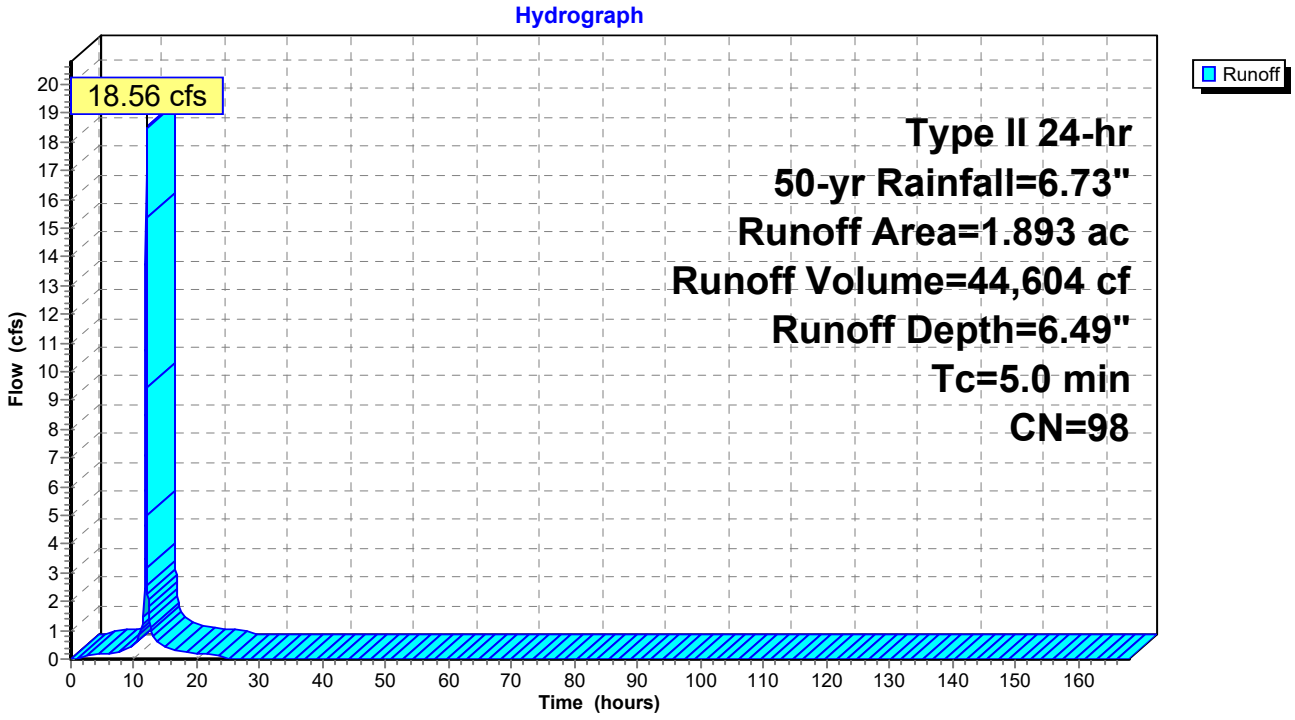
Runoff = 18.56 cfs @ 11.95 hrs, Volume= 44,604 cf, Depth= 6.49"
Routed to Pond 1P : UG1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-168.00 hrs, dt= 0.04 hrs
Type II 24-hr 50-yr Rainfall=6.73"

	Area (ac)	CN	Description
*	0.009	39	Lawn A
*	1.884	98	Impervious
	1.893	98	Weighted Average
	0.009		0.48% Pervious Area
	1.884		99.52% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment 6S: POST-DEV UG1 TO POI#1



Summary for Subcatchment 7S: POST-DEV UG2 TO POI#1

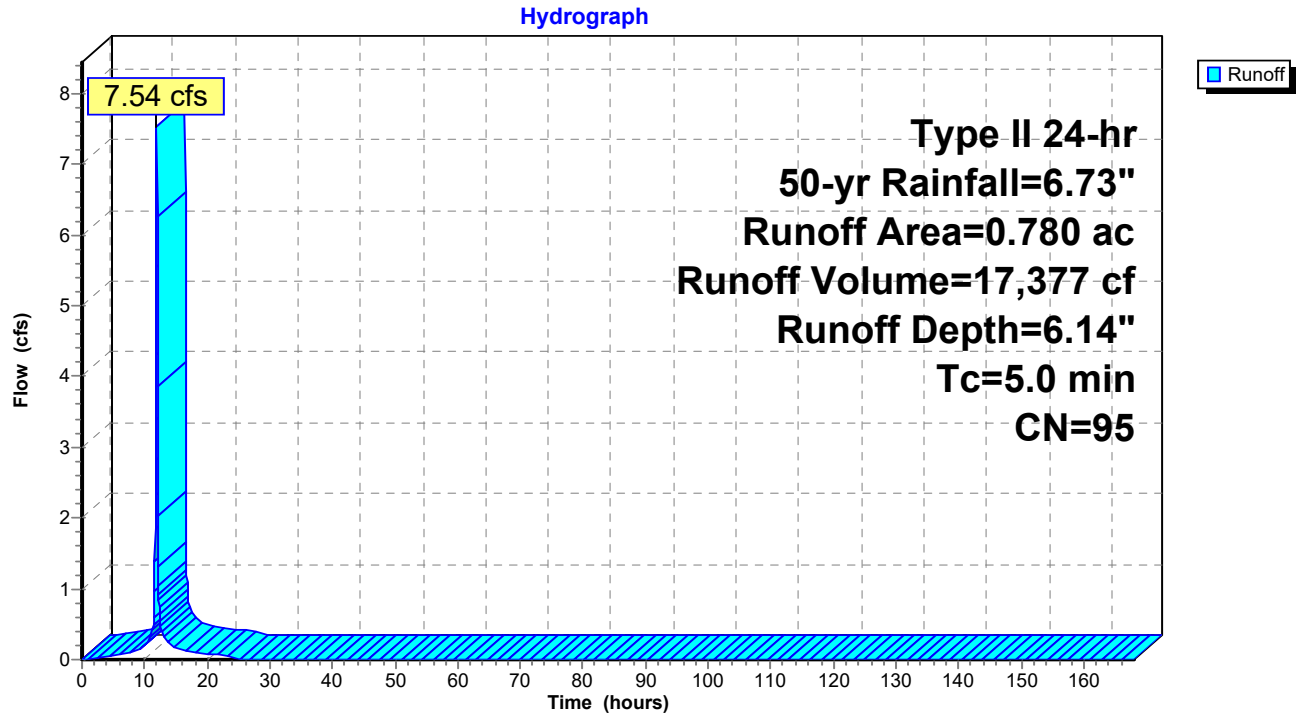
Runoff = 7.54 cfs @ 11.95 hrs, Volume= 17,377 cf, Depth= 6.14"
Routed to Pond 2P : UG2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-168.00 hrs, dt= 0.04 hrs
Type II 24-hr 50-yr Rainfall=6.73"

	Area (ac)	CN	Description
*	0.032	39	Lawn A
*	0.002	61	Lawn B
*	0.746	98	Impervious
	0.780	95	Weighted Average
	0.034		4.36% Pervious Area
	0.746		95.64% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment 7S: POST-DEV UG2 TO POI#1



Summary for Subcatchment 8S: POST-DEV UG3 TO POI#1

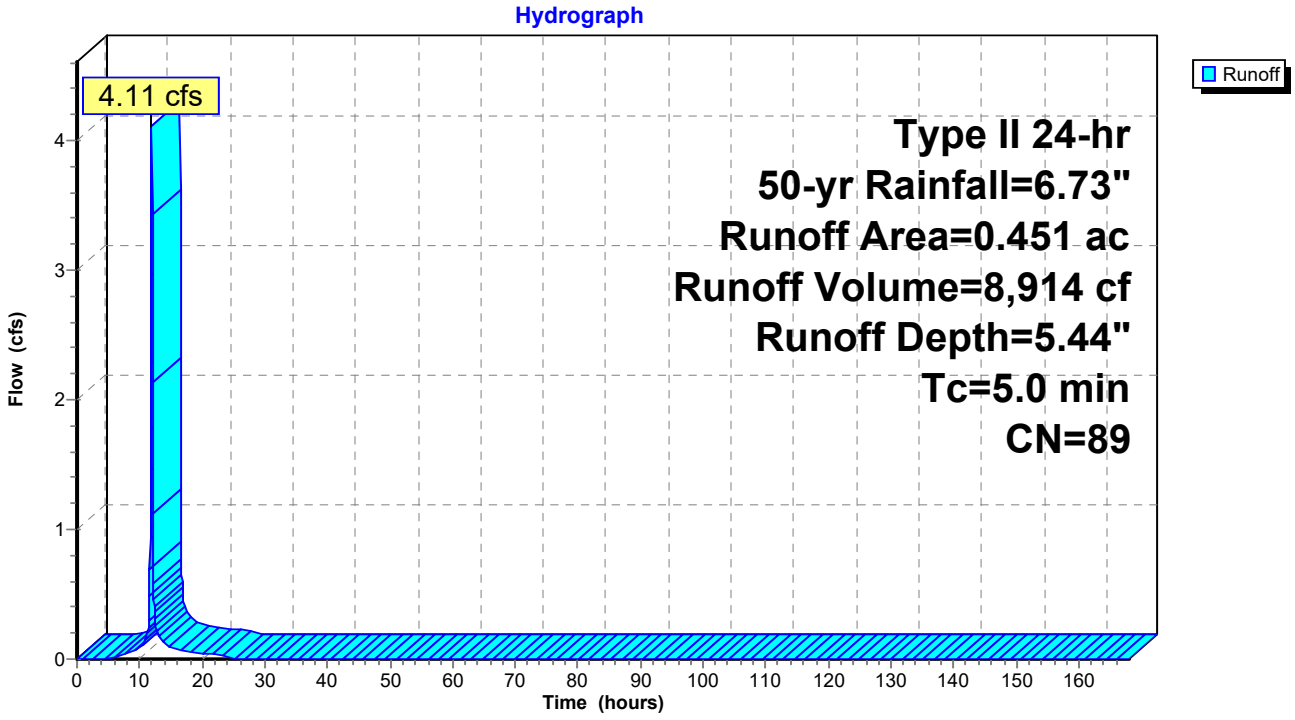
Runoff = 4.11 cfs @ 11.95 hrs, Volume= 8,914 cf, Depth= 5.44"
Routed to Pond 3P : UG3

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-168.00 hrs, dt= 0.04 hrs
Type II 24-hr 50-yr Rainfall=6.73"

	Area (ac)	CN	Description
*	0.067	39	Lawn A
*	0.384	98	Impervious
	0.451	89	Weighted Average
	0.067		14.86% Pervious Area
	0.384		85.14% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment 8S: POST-DEV UG3 TO POI#1



Summary for Subcatchment 9S: POST-DEV BYPASS DA #1

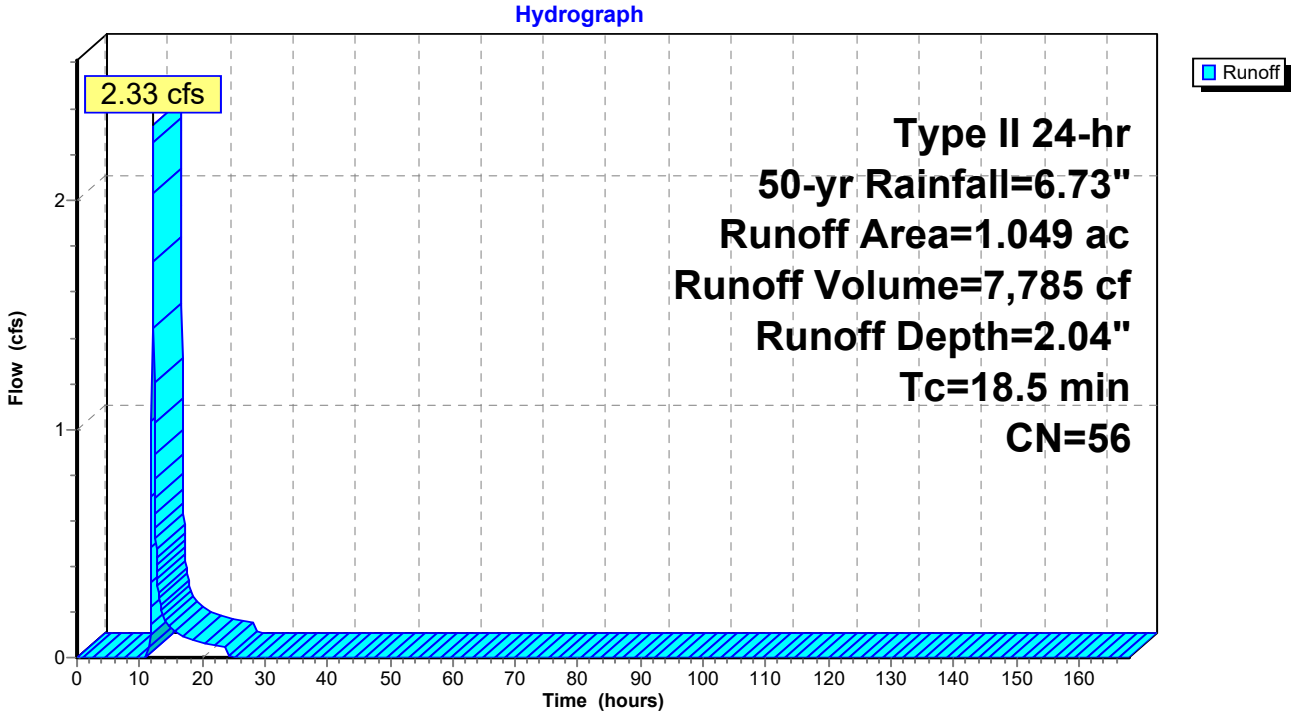
Runoff = 2.33 cfs @ 12.13 hrs, Volume= 7,785 cf, Depth= 2.04"
Routed to Link 10L : POST-DEV TO DA #1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-168.00 hrs, dt= 0.04 hrs
Type II 24-hr 50-yr Rainfall=6.73"

	Area (ac)	CN	Description
*	0.425	39	Lawn A
*	0.282	30	Wooded A
*	0.342	98	Impervious
	1.049	56	Weighted Average
	0.707		67.40% Pervious Area
	0.342		32.60% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
18.5					**Direct Entry,**

Subcatchment 9S: POST-DEV BYPASS DA #1



Summary for Subcatchment 11S: POST-DEV TO POI#2

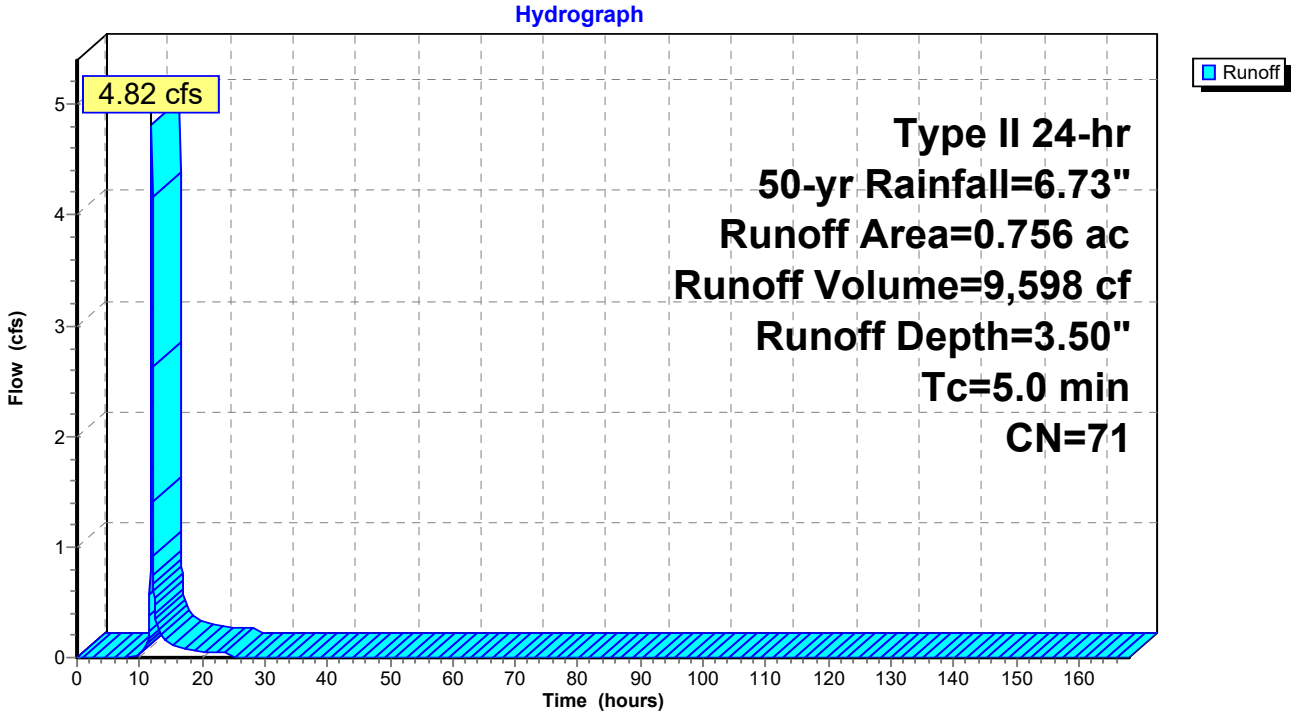
Runoff = 4.82 cfs @ 11.96 hrs, Volume= 9,598 cf, Depth= 3.50"
Routed to Link 12L : POST-DEV TO POI#1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-168.00 hrs, dt= 0.04 hrs
Type II 24-hr 50-yr Rainfall=6.73"

	Area (ac)	CN	Description
*	0.264	39	Lawn A
*	0.130	61	Lawn B
*	0.362	98	Impervious
	0.756	71	Weighted Average
	0.394		52.12% Pervious Area
	0.362		47.88% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment 11S: POST-DEV TO POI#2



Summary for Subcatchment 6S: POST-DEV UG1 TO POI#1

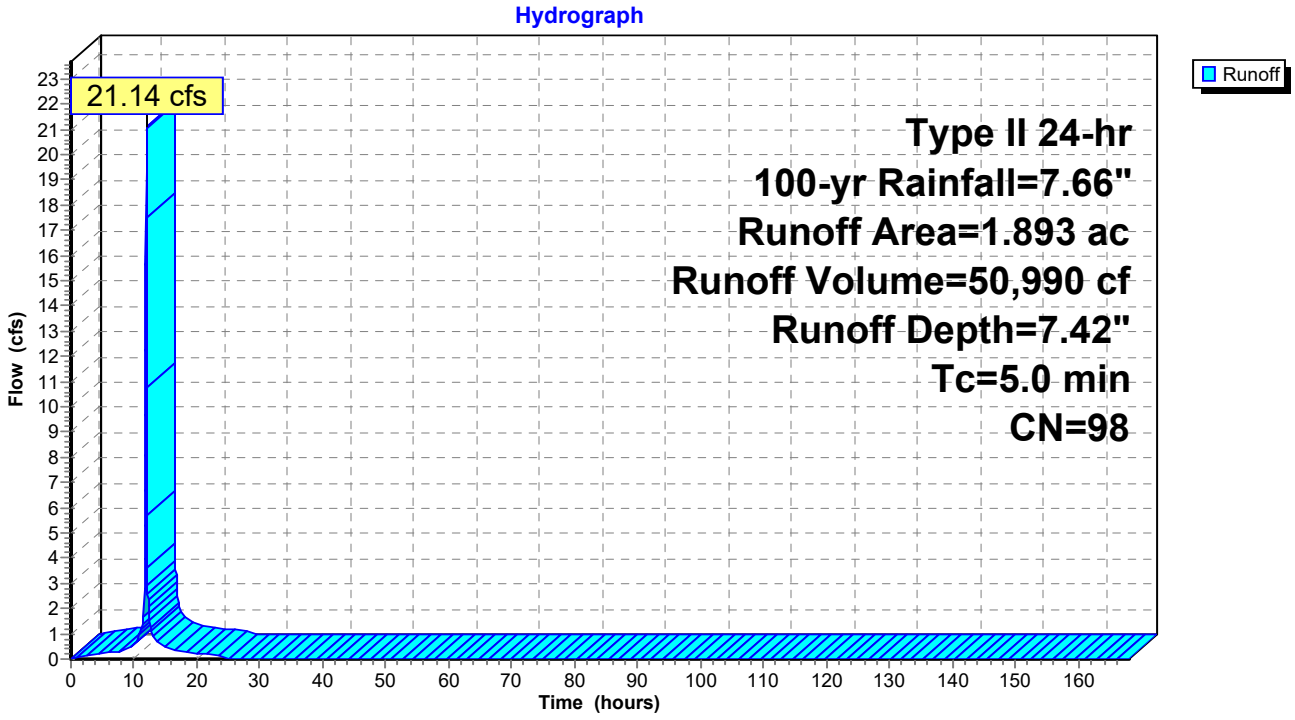
Runoff = 21.14 cfs @ 11.95 hrs, Volume= 50,990 cf, Depth= 7.42"
Routed to Pond 1P : UG1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-168.00 hrs, dt= 0.04 hrs
Type II 24-hr 100-yr Rainfall=7.66"

	Area (ac)	CN	Description
*	0.009	39	Lawn A
*	1.884	98	Impervious
	1.893	98	Weighted Average
	0.009		0.48% Pervious Area
	1.884		99.52% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment 6S: POST-DEV UG1 TO POI#1



Summary for Subcatchment 7S: POST-DEV UG2 TO POI#1

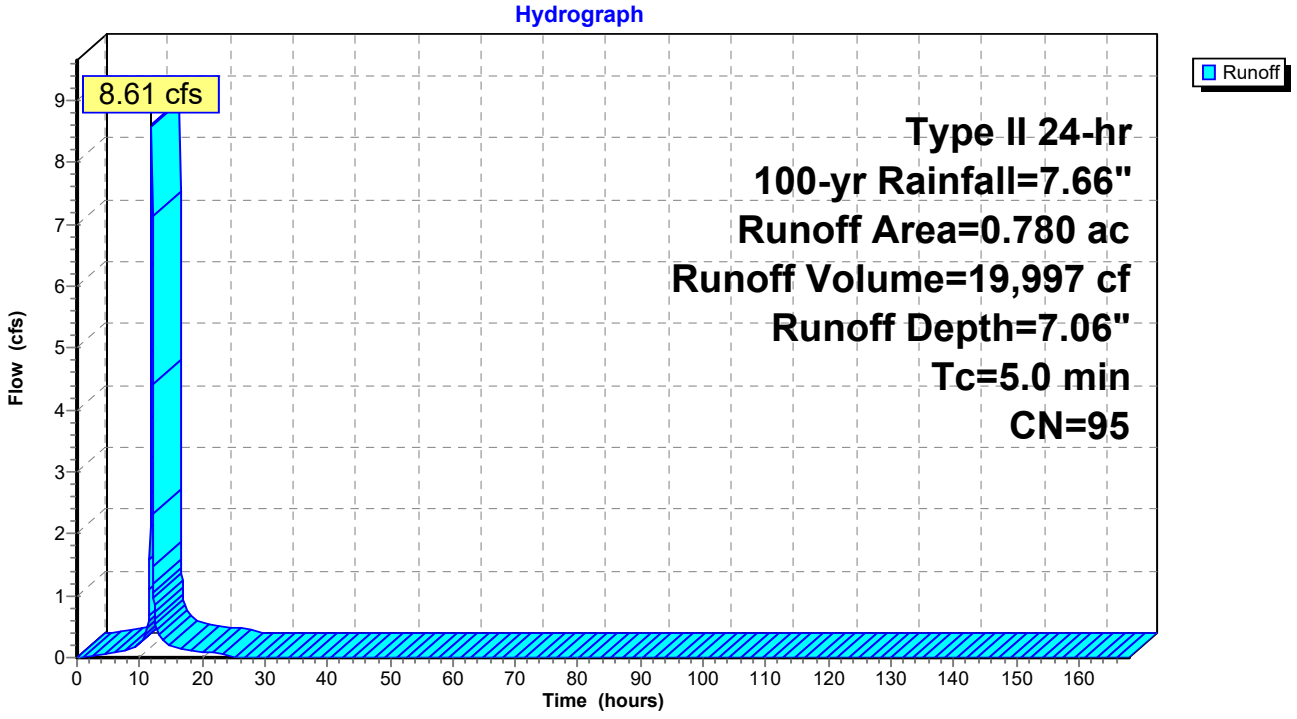
Runoff = 8.61 cfs @ 11.95 hrs, Volume= 19,997 cf, Depth= 7.06"
Routed to Pond 2P : UG2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-168.00 hrs, dt= 0.04 hrs
Type II 24-hr 100-yr Rainfall=7.66"

	Area (ac)	CN	Description
*	0.032	39	Lawn A
*	0.002	61	Lawn B
*	0.746	98	Impervious
	0.780	95	Weighted Average
	0.034		4.36% Pervious Area
	0.746		95.64% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment 7S: POST-DEV UG2 TO POI#1



Summary for Subcatchment 8S: POST-DEV UG3 TO POI#1

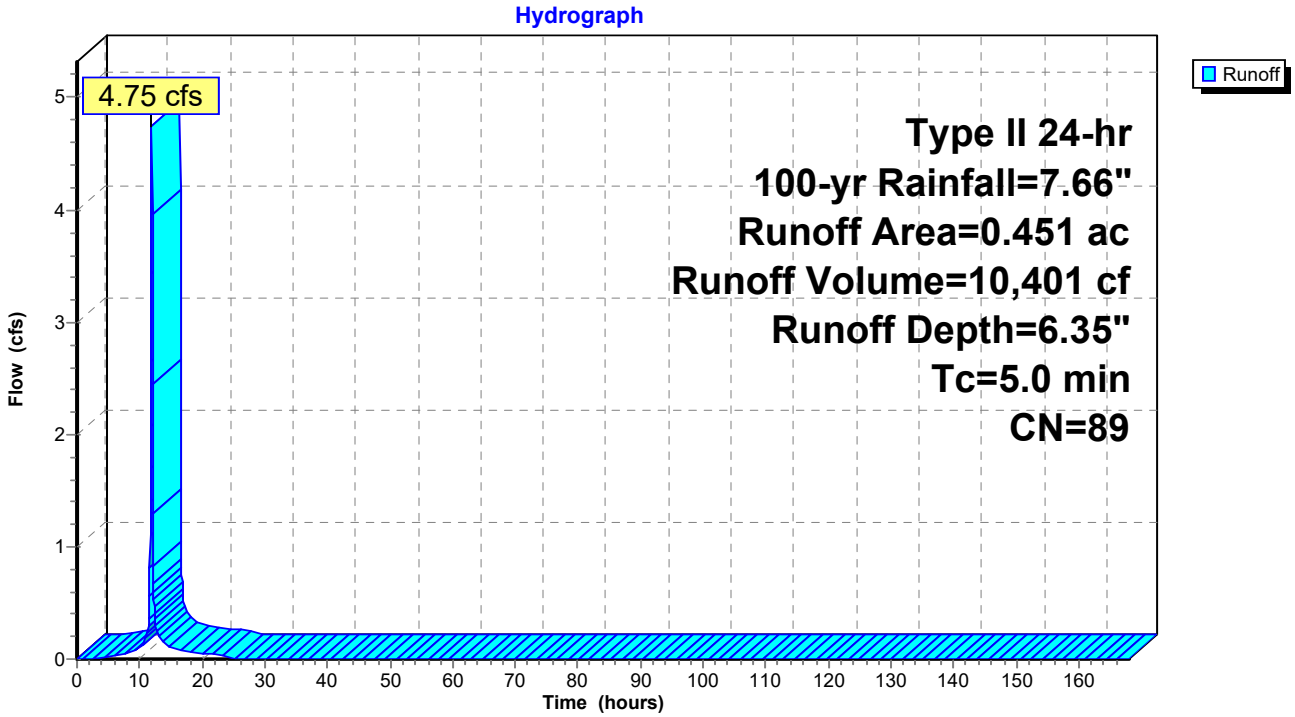
Runoff = 4.75 cfs @ 11.95 hrs, Volume= 10,401 cf, Depth= 6.35"
Routed to Pond 3P : UG3

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-168.00 hrs, dt= 0.04 hrs
Type II 24-hr 100-yr Rainfall=7.66"

	Area (ac)	CN	Description
*	0.067	39	Lawn A
*	0.384	98	Impervious
	0.451	89	Weighted Average
	0.067		14.86% Pervious Area
	0.384		85.14% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment 8S: POST-DEV UG3 TO POI#1



Summary for Subcatchment 9S: POST-DEV BYPASS DA #1

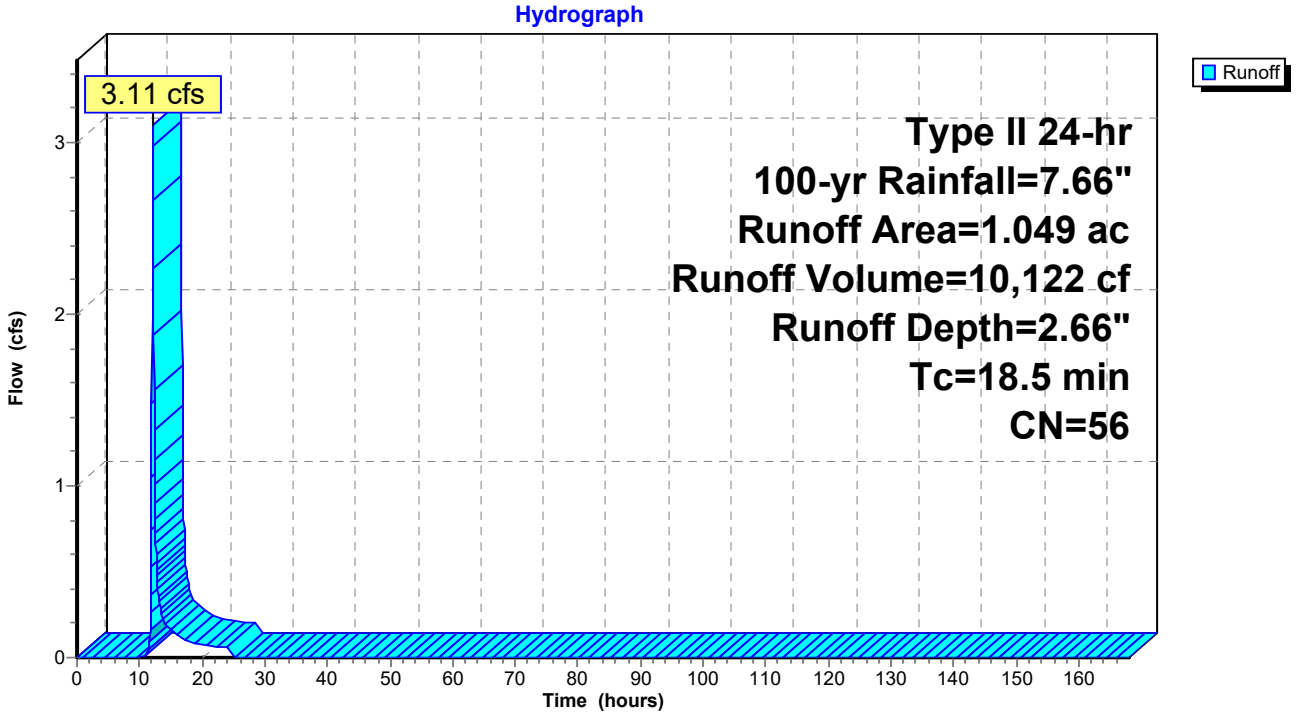
Runoff = 3.11 cfs @ 12.12 hrs, Volume= 10,122 cf, Depth= 2.66"
Routed to Link 10L : POST-DEV TO DA #1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-168.00 hrs, dt= 0.04 hrs
Type II 24-hr 100-yr Rainfall=7.66"

	Area (ac)	CN	Description
*	0.425	39	Lawn A
*	0.282	30	Wooded A
*	0.342	98	Impervious
	1.049	56	Weighted Average
	0.707		67.40% Pervious Area
	0.342		32.60% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
18.5					**Direct Entry,**

Subcatchment 9S: POST-DEV BYPASS DA #1



Summary for Subcatchment 11S: POST-DEV TO POI#2

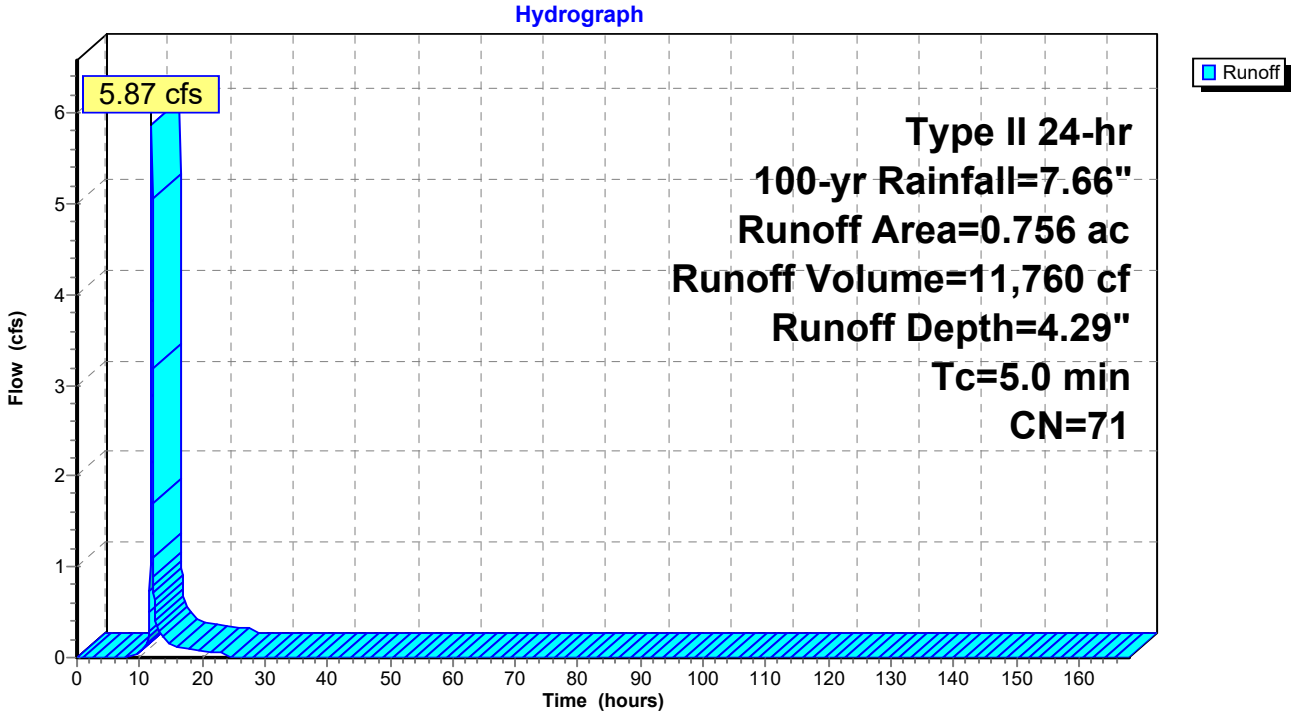
Runoff = 5.87 cfs @ 11.96 hrs, Volume= 11,760 cf, Depth= 4.29"
Routed to Link 12L : POST-DEV TO POI#1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-168.00 hrs, dt= 0.04 hrs
Type II 24-hr 100-yr Rainfall=7.66"

	Area (ac)	CN	Description
*	0.264	39	Lawn A
*	0.130	61	Lawn B
*	0.362	98	Impervious
	0.756	71	Weighted Average
	0.394		52.12% Pervious Area
	0.362		47.88% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment 11S: POST-DEV TO POI#2



Summary for Subcatchment 6S: POST-DEV UG1 TO POI#1

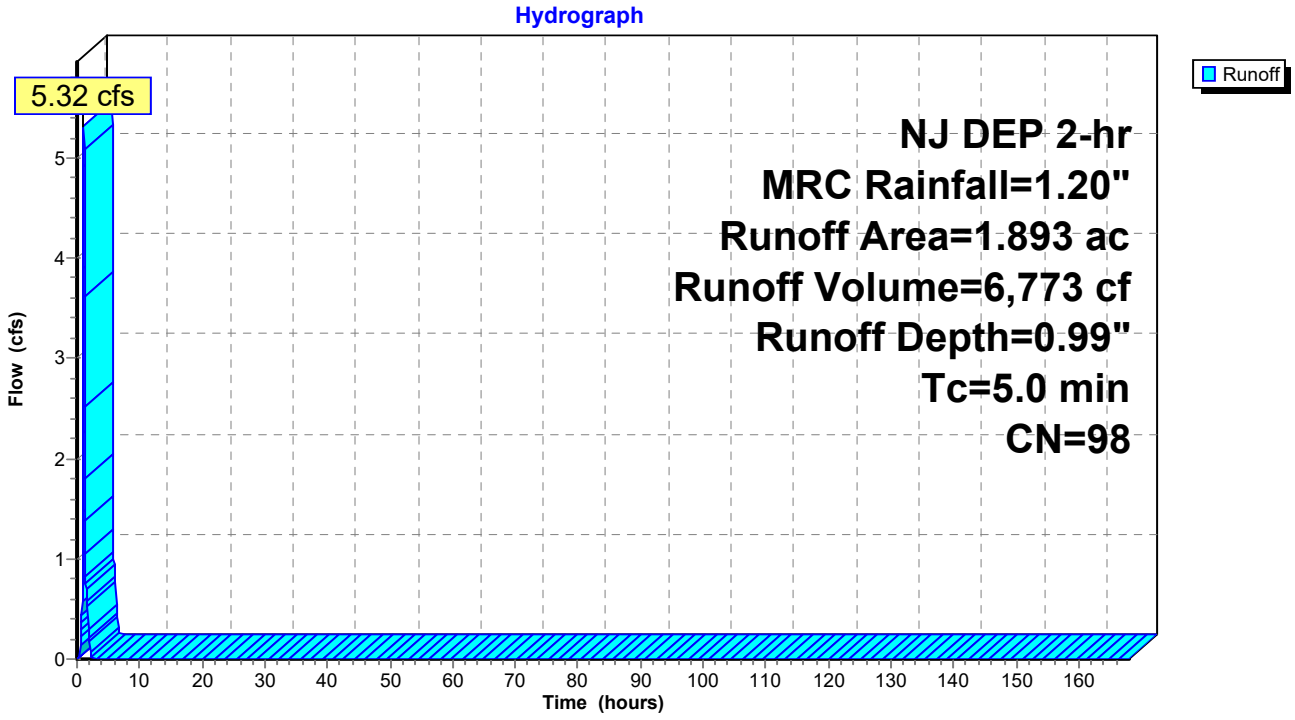
Runoff = 5.32 cfs @ 1.09 hrs, Volume= 6,773 cf, Depth= 0.99"
Routed to Pond 1P : UG1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-168.00 hrs, dt= 0.04 hrs
NJ DEP 2-hr MRC Rainfall=1.20"

	Area (ac)	CN	Description
*	0.009	39	Lawn A
*	1.884	98	Impervious
	1.893	98	Weighted Average
	0.009		0.48% Pervious Area
	1.884		99.52% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment 6S: POST-DEV UG1 TO POI#1



Summary for Subcatchment 7S: POST-DEV UG2 TO POI#1

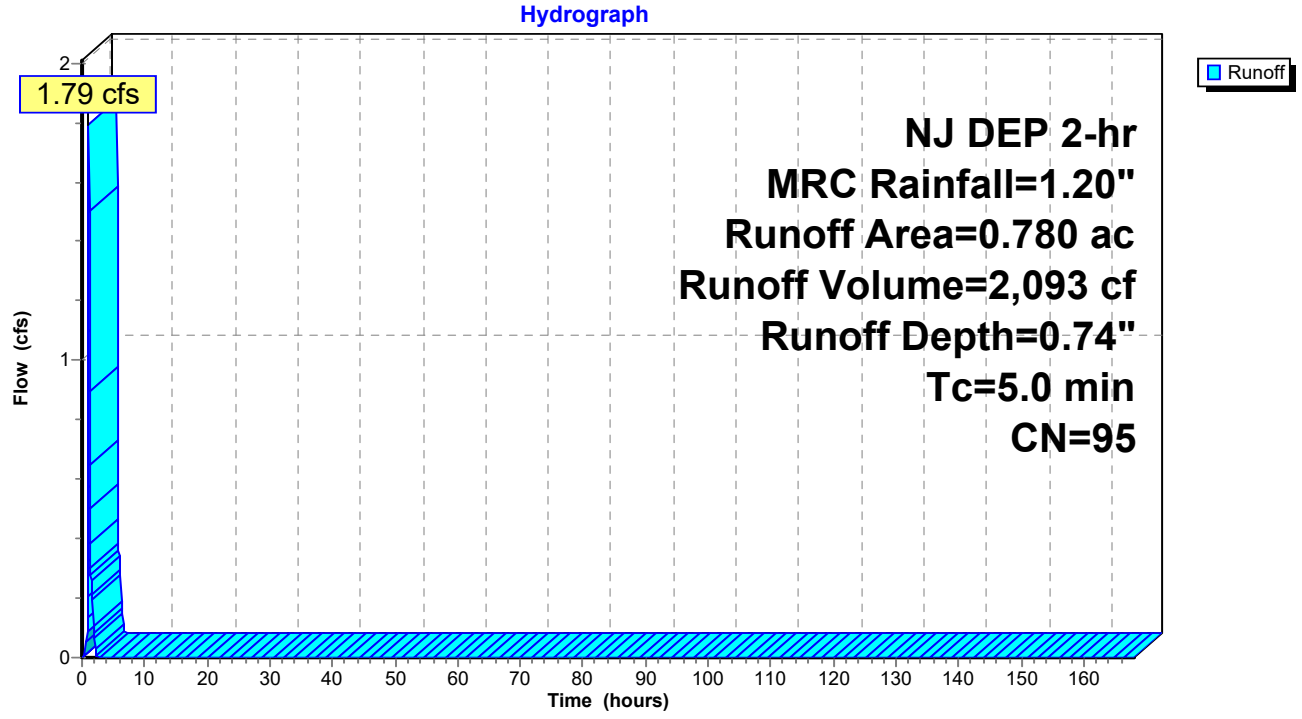
Runoff = 1.79 cfs @ 1.10 hrs, Volume= 2,093 cf, Depth= 0.74"
Routed to Pond 2P : UG2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-168.00 hrs, dt= 0.04 hrs
NJ DEP 2-hr MRC Rainfall=1.20"

	Area (ac)	CN	Description
*	0.032	39	Lawn A
*	0.002	61	Lawn B
*	0.746	98	Impervious
	0.780	95	Weighted Average
	0.034		4.36% Pervious Area
	0.746		95.64% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment 7S: POST-DEV UG2 TO POI#1



Summary for Subcatchment 8S: POST-DEV UG3 TO POI#1

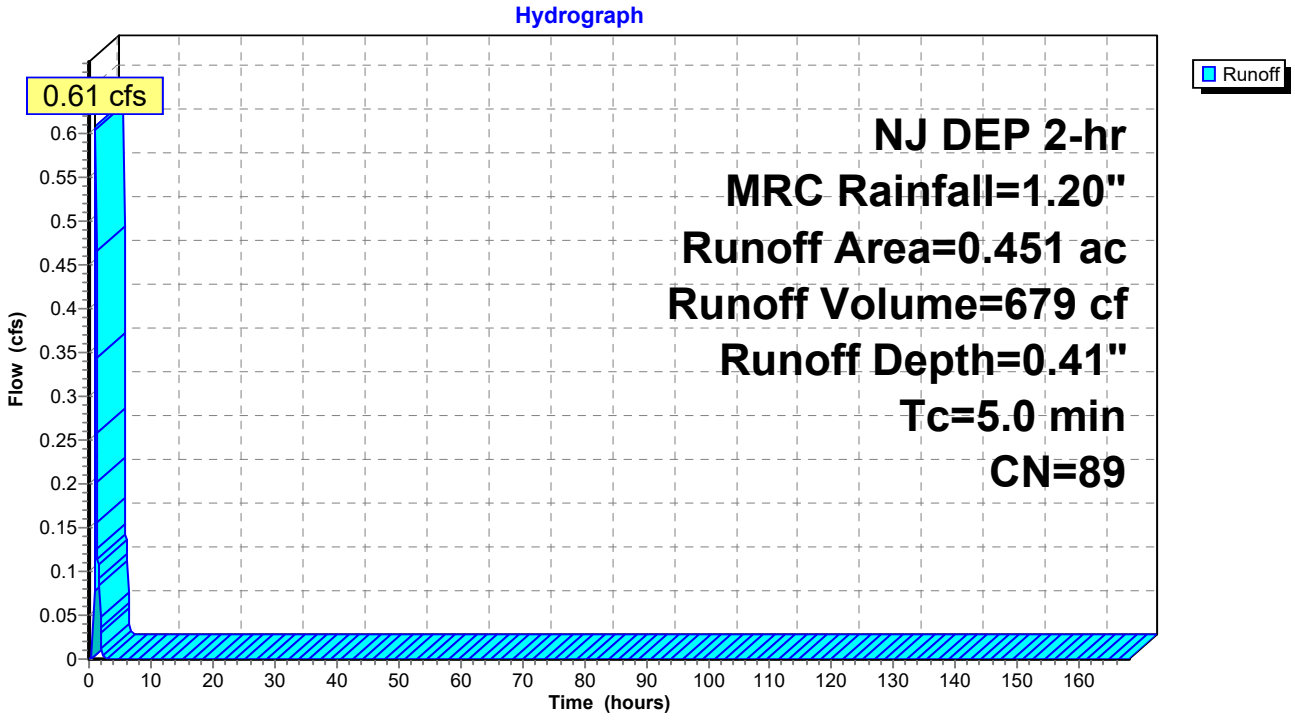
Runoff = 0.61 cfs @ 1.11 hrs, Volume= 679 cf, Depth= 0.41"
Routed to Pond 3P : UG3

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-168.00 hrs, dt= 0.04 hrs
NJ DEP 2-hr MRC Rainfall=1.20"

	Area (ac)	CN	Description
*	0.067	39	Lawn A
*	0.384	98	Impervious
	0.451	89	Weighted Average
	0.067		14.86% Pervious Area
	0.384		85.14% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment 8S: POST-DEV UG3 TO POI#1



Summary for Subcatchment 9S: POST-DEV BYPASS DA #1

[45] Hint: Runoff=Zero

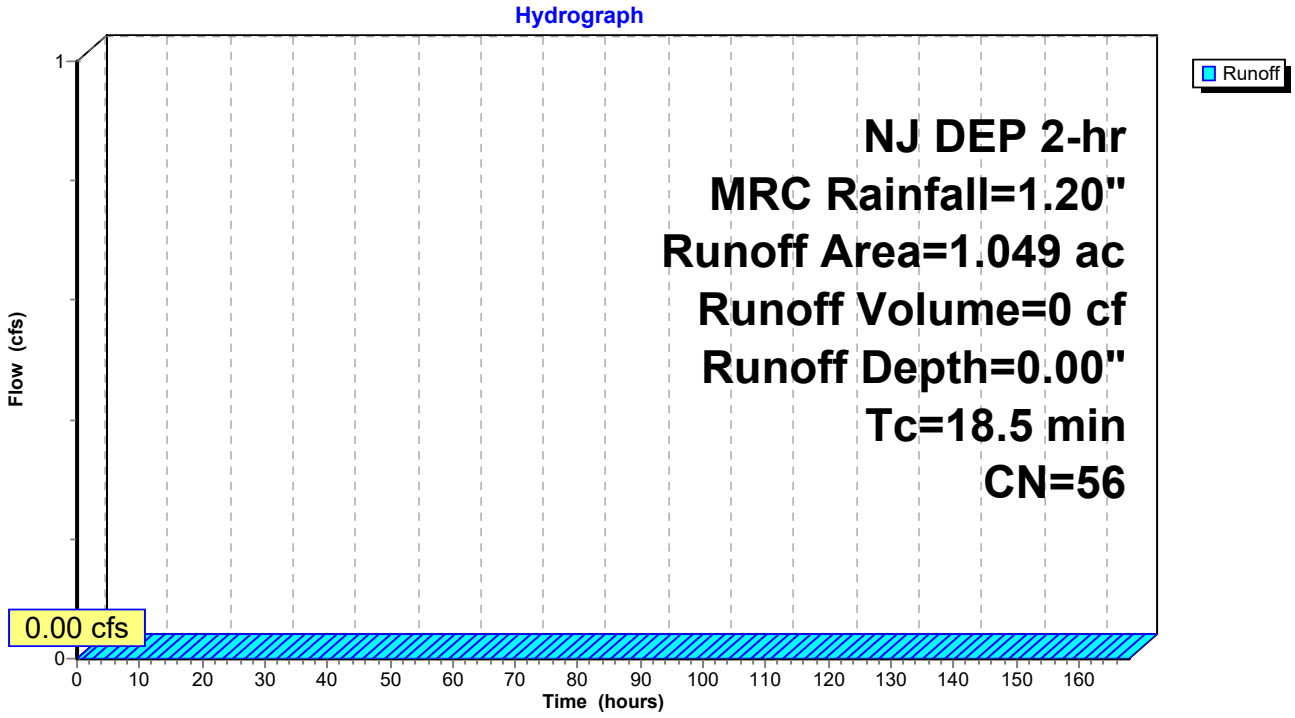
Runoff = 0.00 cfs @ 0.00 hrs, Volume= 0 cf, Depth= 0.00"
Routed to Link 10L : POST-DEV TO DA #1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-168.00 hrs, dt= 0.04 hrs
NJ DEP 2-hr MRC Rainfall=1.20"

	Area (ac)	CN	Description
*	0.425	39	Lawn A
*	0.282	30	Wooded A
*	0.342	98	Impervious
	1.049	56	Weighted Average
	0.707		67.40% Pervious Area
	0.342		32.60% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
18.5					**Direct Entry,**

Subcatchment 9S: POST-DEV BYPASS DA #1



Summary for Subcatchment 11S: POST-DEV TO POI#2

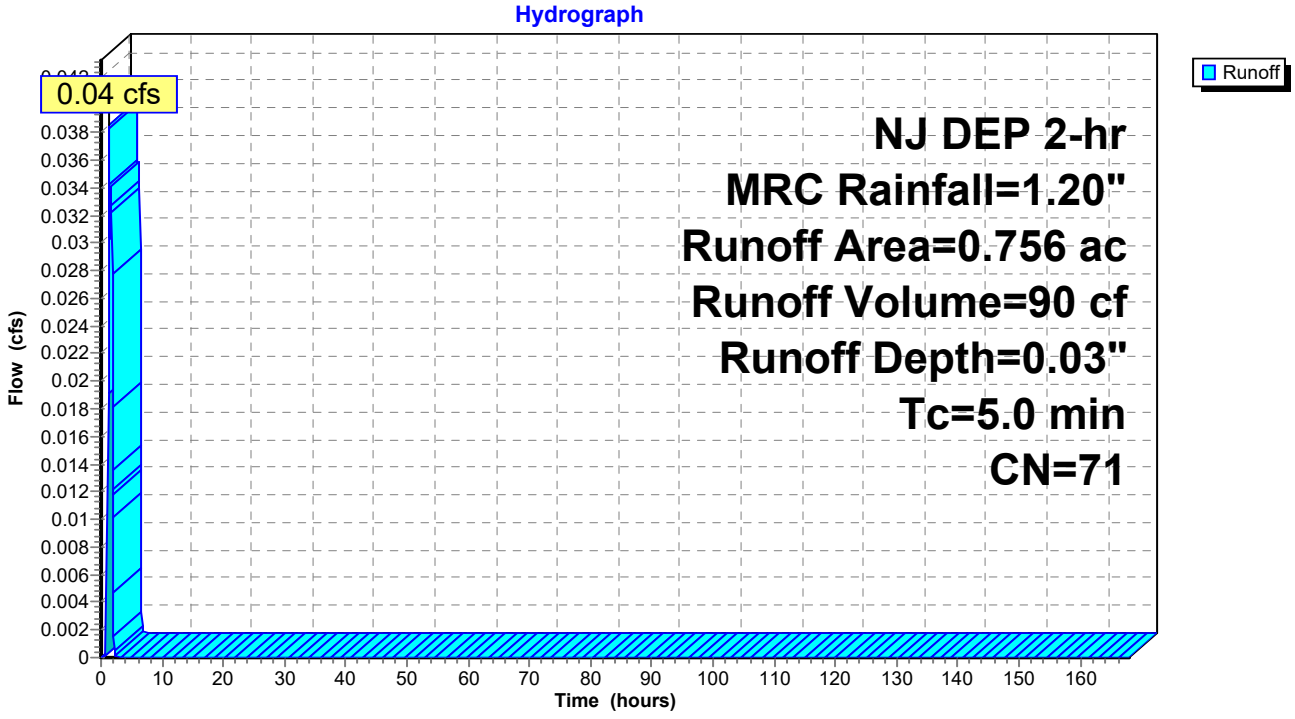
Runoff = 0.04 cfs @ 1.26 hrs, Volume= 90 cf, Depth= 0.03"
Routed to Link 12L : POST-DEV TO POI#1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-168.00 hrs, dt= 0.04 hrs
NJ DEP 2-hr MRC Rainfall=1.20"

	Area (ac)	CN	Description
*	0.264	39	Lawn A
*	0.130	61	Lawn B
*	0.362	98	Impervious
	0.756	71	Weighted Average
	0.394		52.12% Pervious Area
	0.362		47.88% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment 11S: POST-DEV TO POI#2



Summary for Pond 1P: UG1

Inflow Area = 82,459 sf, 99.52% Impervious, Inflow Depth = 2.50" for 1-yr event
Inflow = 7.43 cfs @ 11.95 hrs, Volume= 17,176 cf
Outflow = 1.56 cfs @ 12.11 hrs, Volume= 17,032 cf, Atten= 79%, Lag= 9.2 min
Primary = 1.56 cfs @ 12.11 hrs, Volume= 17,032 cf
Routed to Link 10L : POST-DEV TO DA #1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-168.00 hrs, dt= 0.04 hrs / 2
Peak Elev= 158.66' @ 12.11 hrs Surf.Area= 13,041 sf Storage= 9,934 cf

Plug-Flow detention time= 1,521.7 min calculated for 17,028 cf (99% of inflow)
Center-of-Mass det. time= 1,517.8 min (2,272.9 - 755.1)

Volume	Invert	Avail.Storage	Storage Description
#1A	157.53'	9,785 cf	**120.75'W x 108.00'L x 3.21'H Field A** 41,840 cf Overall - 17,377 cf Embedded = 24,463 cf x 40.0% Voids
#2A	158.03'	17,377 cf	**Cultec R-280HD** x 405 Inside #1 Effective Size= 46.9"W x 26.0"H => 6.07 sf x 7.00'L = 42.5 cf Overall Size= 47.0"W x 26.5"H x 8.00'L with 1.00' Overlap Row Length Adjustment= +1.00' x 6.07 sf x 27 rows
		27,162 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Device 4	157.53'	**1.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#2	Device 4	158.39'	**40.0" W x 4.0" H Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#3	Device 4	160.24'	**4.0' long Broad-Crested Rectangular Weir** Head (feet) 4.00 Coef. (English) 3.33
#4	Primary	157.53'	**18.0" Round Culvert** L= 66.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 157.53' / 157.20' S= 0.0050 '/' Cc= 0.900 n= 0.012, Flow Area= 1.77 sf

Primary OutFlow Max=1.56 cfs @ 12.11 hrs HW=158.66' TW=0.00' (Dynamic Tailwater)
└**4=Culvert** (Passes 1.56 cfs of 4.17 cfs potential flow)
  ├**1=Orifice/Grate** (Orifice Controls 0.03 cfs @ 5.03 fps)
  ├**2=Orifice/Grate** (Orifice Controls 1.53 cfs @ 1.68 fps)
  └**3=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond 1P: UG1 - Chamber Wizard Field A

Chamber Model = Cultec R-280HD (Cultec Recharger® 280HD)
Effective Size= 46.9"W x 26.0"H => 6.07 sf x 7.00'L = 42.5 cf
Overall Size= 47.0"W x 26.5"H x 8.00'L with 1.00' Overlap
Row Length Adjustment= +1.00' x 6.07 sf x 27 rows

47.0" Wide + 6.0" Spacing = 53.0" C-C Row Spacing

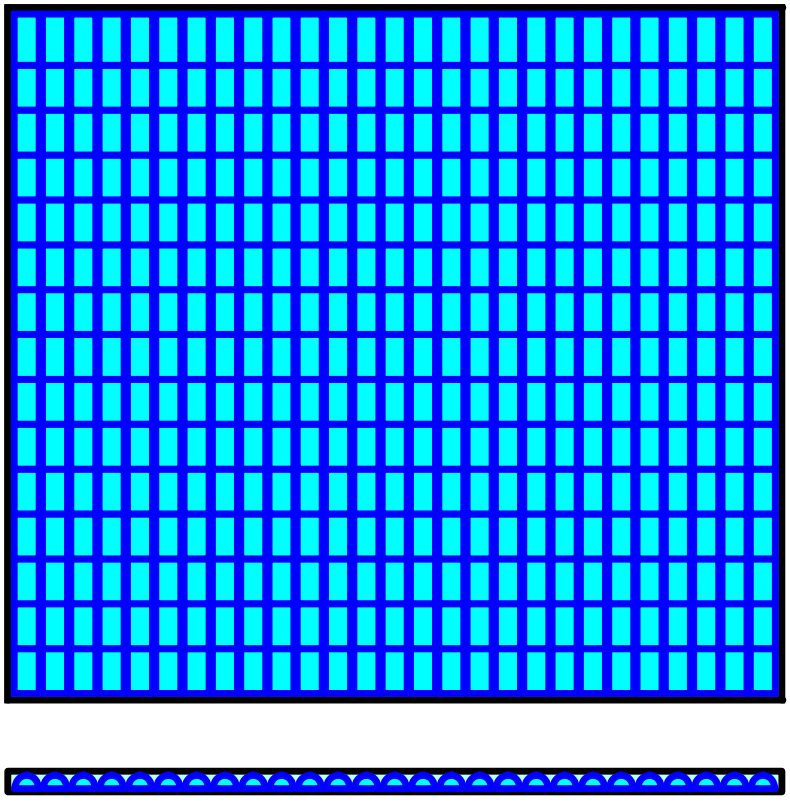
15 Chambers/Row x 7.00' Long +1.00' Row Adjustment = 106.00' Row Length +12.0" End Stone x 2 = 108.00' Base Length
27 Rows x 47.0" Wide + 6.0" Spacing x 26 + 12.0" Side Stone x 2 = 120.75' Base Width
6.0" Stone Base + 26.5" Chamber Height + 6.0" Stone Cover = 3.21' Field Height

405 Chambers x 42.5 cf +1.00' Row Adjustment x 6.07 sf x 27 Rows = 17,377.3 cf Chamber Storage

41,839.9 cf Field - 17,377.3 cf Chambers = 24,462.5 cf Stone x 40.0% Voids = 9,785.0 cf Stone Storage

Chamber Storage + Stone Storage = 27,162.4 cf = 0.624 af
Overall Storage Efficiency = 64.9%
Overall System Size = 108.00' x 120.75' x 3.21'

405 Chambers
1,549.6 cy Field
906.0 cy Stone



Hydrograph for Pond 1P: UG1

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
0.00	0.00	0	157.53	0.00
0.40	0.00	0	157.53	0.00
0.80	0.00	0	157.53	0.00
1.20	0.00	0	157.53	0.00
1.60	0.00	1	157.53	0.00
2.00	0.01	9	157.53	0.00
2.40	0.02	26	157.54	0.00
2.80	0.02	53	157.54	0.00
3.20	0.03	87	157.55	0.00
3.60	0.03	129	157.55	0.00
4.00	0.04	177	157.56	0.00
4.40	0.04	232	157.57	0.00
4.80	0.05	294	157.59	0.00
5.20	0.05	362	157.60	0.00
5.60	0.06	437	157.61	0.01
6.00	0.07	520	157.63	0.01
6.40	0.07	609	157.65	0.01
6.80	0.08	705	157.67	0.01
7.20	0.08	808	157.68	0.01
7.60	0.09	918	157.71	0.01
8.00	0.09	1,035	157.73	0.01
8.40	0.11	1,165	157.75	0.01
8.80	0.13	1,322	157.78	0.01
9.20	0.15	1,505	157.82	0.01
9.60	0.15	1,698	157.86	0.01
10.00	0.18	1,916	157.90	0.01
10.40	0.23	2,186	157.95	0.02
10.80	0.29	2,532	158.02	0.02
11.20	0.41	2,997	158.06	0.02
11.60	**0.95**	3,738	158.13	0.02
12.00	**6.16**	**9,170**	**158.60**	**1.03**
12.40	0.66	**9,407**	**158.62**	**1.19**
12.80	0.39	8,726	158.56	0.76
13.20	0.30	8,305	158.52	0.53
13.60	0.24	8,034	158.50	0.40
14.00	0.20	7,844	158.48	0.31
14.40	0.18	7,707	158.47	0.26
14.80	0.17	7,612	158.46	0.22
15.20	0.15	7,541	158.45	0.20
15.60	0.14	7,482	158.45	0.17
16.00	0.12	7,428	158.44	0.16
16.40	0.11	7,382	158.44	0.14
16.80	0.11	7,347	158.44	0.13
17.20	0.10	7,318	158.43	0.12
17.60	0.10	7,293	158.43	0.12
18.00	0.09	7,270	158.43	0.11
18.40	0.09	7,249	158.43	0.10
18.80	0.08	7,228	158.43	0.10
19.20	0.08	7,208	158.42	0.09
19.60	0.07	7,188	158.42	0.09
20.00	0.07	7,167	158.42	0.08
20.40	0.07	7,149	158.42	0.08
20.80	0.07	7,134	158.42	0.07

Hydrograph for Pond 1P: UG1 (continued)

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
21.20	0.06	7,123	158.42	0.07
21.60	0.06	7,113	158.42	0.07
22.00	0.06	7,105	158.42	0.07
22.40	0.06	7,097	158.41	0.07
22.80	0.06	7,091	158.41	0.06
23.20	0.06	7,085	158.41	0.06
23.60	0.06	7,079	158.41	0.06
24.00	0.06	7,074	158.41	0.06
24.40	0.00	7,010	158.41	0.05
24.80	0.00	6,948	158.40	0.04
25.20	0.00	6,899	158.40	0.03
25.60	0.00	6,858	158.39	0.03
26.00	0.00	6,821	158.39	0.02
26.40	0.00	6,787	158.39	0.02
26.80	0.00	6,753	158.39	0.02
27.20	0.00	6,719	158.38	0.02
27.60	0.00	6,685	158.38	0.02
28.00	0.00	6,651	158.38	0.02
28.40	0.00	6,617	158.37	0.02
28.80	0.00	6,583	158.37	0.02
29.20	0.00	6,550	158.37	0.02
29.60	0.00	6,516	158.36	0.02
30.00	0.00	6,482	158.36	0.02
30.40	0.00	6,449	158.36	0.02
30.80	0.00	6,415	158.36	0.02
31.20	0.00	6,382	158.35	0.02
31.60	0.00	6,348	158.35	0.02
32.00	0.00	6,315	158.35	0.02
32.40	0.00	6,282	158.34	0.02
32.80	0.00	6,248	158.34	0.02
33.20	0.00	6,215	158.34	0.02
33.60	0.00	6,182	158.34	0.02
34.00	0.00	6,149	158.33	0.02
34.40	0.00	6,116	158.33	0.02
34.80	0.00	6,083	158.33	0.02
35.20	0.00	6,050	158.32	0.02
35.60	0.00	6,018	158.32	0.02
36.00	0.00	5,985	158.32	0.02
36.40	0.00	5,952	158.32	0.02
36.80	0.00	5,920	158.31	0.02
37.20	0.00	5,887	158.31	0.02
37.60	0.00	5,855	158.31	0.02
38.00	0.00	5,822	158.30	0.02
38.40	0.00	5,790	158.30	0.02
38.80	0.00	5,758	158.30	0.02
39.20	0.00	5,726	158.30	0.02
39.60	0.00	5,693	158.29	0.02
40.00	0.00	5,661	158.29	0.02
40.40	0.00	5,629	158.29	0.02
40.80	0.00	5,597	158.29	0.02
41.20	0.00	5,565	158.28	0.02
41.60	0.00	5,534	158.28	0.02
42.00	0.00	5,502	158.28	0.02

Hydrograph for Pond 1P: UG1 (continued)

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
42.40	0.00	5,470	158.27	0.02
42.80	0.00	5,438	158.27	0.02
43.20	0.00	5,407	158.27	0.02
43.60	0.00	5,375	158.27	0.02
44.00	0.00	5,344	158.26	0.02
44.40	0.00	5,312	158.26	0.02
44.80	0.00	5,281	158.26	0.02
45.20	0.00	5,250	158.26	0.02
45.60	0.00	5,218	158.25	0.02
46.00	0.00	5,187	158.25	0.02
46.40	0.00	5,156	158.25	0.02
46.80	0.00	5,125	158.24	0.02
47.20	0.00	5,094	158.24	0.02
47.60	0.00	5,063	158.24	0.02
48.00	0.00	5,032	158.24	0.02
48.40	0.00	5,002	158.23	0.02
48.80	0.00	4,971	158.23	0.02
49.20	0.00	4,940	158.23	0.02
49.60	0.00	4,910	158.23	0.02
50.00	0.00	4,879	158.22	0.02
50.40	0.00	4,848	158.22	0.02
50.80	0.00	4,818	158.22	0.02
51.20	0.00	4,788	158.22	0.02
51.60	0.00	4,757	158.21	0.02
52.00	0.00	4,727	158.21	0.02
52.40	0.00	4,697	158.21	0.02
52.80	0.00	4,667	158.20	0.02
53.20	0.00	4,637	158.20	0.02
53.60	0.00	4,607	158.20	0.02
54.00	0.00	4,577	158.20	0.02
54.40	0.00	4,547	158.19	0.02
54.80	0.00	4,517	158.19	0.02
55.20	0.00	4,487	158.19	0.02
55.60	0.00	4,458	158.19	0.02
56.00	0.00	4,428	158.18	0.02
56.40	0.00	4,399	158.18	0.02
56.80	0.00	4,369	158.18	0.02
57.20	0.00	4,340	158.18	0.02
57.60	0.00	4,310	158.17	0.02
58.00	0.00	4,281	158.17	0.02
58.40	0.00	4,252	158.17	0.02
58.80	0.00	4,222	158.17	0.02
59.20	0.00	4,193	158.16	0.02
59.60	0.00	4,164	158.16	0.02
60.00	0.00	4,135	158.16	0.02
60.40	0.00	4,106	158.16	0.02
60.80	0.00	4,077	158.15	0.02
61.20	0.00	4,048	158.15	0.02
61.60	0.00	4,020	158.15	0.02
62.00	0.00	3,991	158.15	0.02
62.40	0.00	3,962	158.14	0.02
62.80	0.00	3,934	158.14	0.02
63.20	0.00	3,905	158.14	0.02

Hydrograph for Pond 1P: UG1 (continued)

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
63.60	0.00	3,877	158.14	0.02
64.00	0.00	3,848	158.13	0.02
64.40	0.00	3,820	158.13	0.02
64.80	0.00	3,792	158.13	0.02
65.20	0.00	3,763	158.13	0.02
65.60	0.00	3,735	158.13	0.02
66.00	0.00	3,707	158.12	0.02
66.40	0.00	3,679	158.12	0.02
66.80	0.00	3,651	158.12	0.02
67.20	0.00	3,623	158.12	0.02
67.60	0.00	3,595	158.11	0.02
68.00	0.00	3,568	158.11	0.02
68.40	0.00	3,540	158.11	0.02
68.80	0.00	3,512	158.11	0.02
69.20	0.00	3,485	158.10	0.02
69.60	0.00	3,457	158.10	0.02
70.00	0.00	3,430	158.10	0.02
70.40	0.00	3,402	158.10	0.02
70.80	0.00	3,375	158.09	0.02
71.20	0.00	3,347	158.09	0.02
71.60	0.00	3,320	158.09	0.02
72.00	0.00	3,293	158.09	0.02
72.40	0.00	3,266	158.09	0.02
72.80	0.00	3,239	158.08	0.02
73.20	0.00	3,212	158.08	0.02
73.60	0.00	3,185	158.08	0.02
74.00	0.00	3,158	158.08	0.02
74.40	0.00	3,131	158.07	0.02
74.80	0.00	3,104	158.07	0.02
75.20	0.00	3,078	158.07	0.02
75.60	0.00	3,051	158.07	0.02
76.00	0.00	3,024	158.06	0.02
76.40	0.00	2,998	158.06	0.02
76.80	0.00	2,971	158.06	0.02
77.20	0.00	2,945	158.06	0.02
77.60	0.00	2,919	158.06	0.02
78.00	0.00	2,892	158.05	0.02
78.40	0.00	2,866	158.05	0.02
78.80	0.00	2,840	158.05	0.02
79.20	0.00	2,814	158.05	0.02
79.60	0.00	2,788	158.05	0.02
80.00	0.00	2,762	158.04	0.02
80.40	0.00	2,736	158.04	0.02
80.80	0.00	2,710	158.04	0.02
81.20	0.00	2,684	158.04	0.02
81.60	0.00	2,658	158.03	0.02
82.00	0.00	2,633	158.03	0.02
82.40	0.00	2,607	158.03	0.02
82.80	0.00	2,582	158.02	0.02
83.20	0.00	2,556	158.02	0.02
83.60	0.00	2,531	158.02	0.02
84.00	0.00	2,506	158.01	0.02
84.40	0.00	2,481	158.01	0.02

Hydrograph for Pond 1P: UG1 (continued)

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
84.80	0.00	2,456	158.00	0.02
85.20	0.00	2,431	158.00	0.02
85.60	0.00	2,407	157.99	0.02
86.00	0.00	2,382	157.99	0.02
86.40	0.00	2,358	157.98	0.02
86.80	0.00	2,334	157.98	0.02
87.20	0.00	2,310	157.97	0.02
87.60	0.00	2,286	157.97	0.02
88.00	0.00	2,262	157.96	0.02
88.40	0.00	2,239	157.96	0.02
88.80	0.00	2,215	157.95	0.02
89.20	0.00	2,192	157.95	0.02
89.60	0.00	2,169	157.95	0.02
90.00	0.00	2,146	157.94	0.02
90.40	0.00	2,123	157.94	0.02
90.80	0.00	2,100	157.93	0.02
91.20	0.00	2,077	157.93	0.02
91.60	0.00	2,055	157.92	0.02
92.00	0.00	2,032	157.92	0.02
92.40	0.00	2,010	157.92	0.02
92.80	0.00	1,988	157.91	0.02
93.20	0.00	1,966	157.91	0.02
93.60	0.00	1,944	157.90	0.02
94.00	0.00	1,923	157.90	0.02
94.40	0.00	1,901	157.89	0.01
94.80	0.00	1,880	157.89	0.01
95.20	0.00	1,858	157.89	0.01
95.60	0.00	1,837	157.88	0.01
96.00	0.00	1,816	157.88	0.01
96.40	0.00	1,795	157.87	0.01
96.80	0.00	1,775	157.87	0.01
97.20	0.00	1,754	157.87	0.01
97.60	0.00	1,734	157.86	0.01
98.00	0.00	1,713	157.86	0.01
98.40	0.00	1,693	157.85	0.01
98.80	0.00	1,673	157.85	0.01
99.20	0.00	1,653	157.85	0.01
99.60	0.00	1,633	157.84	0.01
100.00	0.00	1,614	157.84	0.01
100.40	0.00	1,594	157.84	0.01
100.80	0.00	1,575	157.83	0.01
101.20	0.00	1,556	157.83	0.01
101.60	0.00	1,536	157.82	0.01
102.00	0.00	1,518	157.82	0.01
102.40	0.00	1,499	157.82	0.01
102.80	0.00	1,480	157.81	0.01
103.20	0.00	1,462	157.81	0.01
103.60	0.00	1,443	157.81	0.01
104.00	0.00	1,425	157.80	0.01
104.40	0.00	1,407	157.80	0.01
104.80	0.00	1,389	157.80	0.01
105.20	0.00	1,371	157.79	0.01
105.60	0.00	1,353	157.79	0.01

Hydrograph for Pond 1P: UG1 (continued)

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
106.00	0.00	1,336	157.79	0.01
106.40	0.00	1,318	157.78	0.01
106.80	0.00	1,301	157.78	0.01
107.20	0.00	1,284	157.78	0.01
107.60	0.00	1,267	157.77	0.01
108.00	0.00	1,250	157.77	0.01
108.40	0.00	1,233	157.77	0.01
108.80	0.00	1,216	157.76	0.01
109.20	0.00	1,200	157.76	0.01
109.60	0.00	1,184	157.76	0.01
110.00	0.00	1,167	157.75	0.01
110.40	0.00	1,151	157.75	0.01
110.80	0.00	1,135	157.75	0.01
111.20	0.00	1,120	157.74	0.01
111.60	0.00	1,104	157.74	0.01
112.00	0.00	1,088	157.74	0.01
112.40	0.00	1,073	157.74	0.01
112.80	0.00	1,058	157.73	0.01
113.20	0.00	1,043	157.73	0.01
113.60	0.00	1,028	157.73	0.01
114.00	0.00	1,013	157.72	0.01
114.40	0.00	998	157.72	0.01
114.80	0.00	984	157.72	0.01
115.20	0.00	969	157.72	0.01
115.60	0.00	955	157.71	0.01
116.00	0.00	941	157.71	0.01
116.40	0.00	927	157.71	0.01
116.80	0.00	913	157.70	0.01
117.20	0.00	899	157.70	0.01
117.60	0.00	885	157.70	0.01
118.00	0.00	872	157.70	0.01
118.40	0.00	859	157.69	0.01
118.80	0.00	846	157.69	0.01
119.20	0.00	832	157.69	0.01
119.60	0.00	820	157.69	0.01
120.00	0.00	807	157.68	0.01
120.40	0.00	794	157.68	0.01
120.80	0.00	782	157.68	0.01
121.20	0.00	769	157.68	0.01
121.60	0.00	757	157.68	0.01
122.00	0.00	745	157.67	0.01
122.40	0.00	733	157.67	0.01
122.80	0.00	721	157.67	0.01
123.20	0.00	709	157.67	0.01
123.60	0.00	698	157.66	0.01
124.00	0.00	686	157.66	0.01
124.40	0.00	675	157.66	0.01
124.80	0.00	664	157.66	0.01
125.20	0.00	653	157.66	0.01
125.60	0.00	642	157.65	0.01
126.00	0.00	632	157.65	0.01
126.40	0.00	621	157.65	0.01
126.80	0.00	610	157.65	0.01

Hydrograph for Pond 1P: UG1 (continued)

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
127.20	0.00	600	157.65	0.01
127.60	0.00	590	157.64	0.01
128.00	0.00	580	157.64	0.01
128.40	0.00	570	157.64	0.01
128.80	0.00	560	157.64	0.01
129.20	0.00	551	157.64	0.01
129.60	0.00	541	157.63	0.01
130.00	0.00	532	157.63	0.01
130.40	0.00	523	157.63	0.01
130.80	0.00	514	157.63	0.01
131.20	0.00	505	157.63	0.01
131.60	0.00	496	157.63	0.01
132.00	0.00	487	157.62	0.01
132.40	0.00	479	157.62	0.01
132.80	0.00	470	157.62	0.01
133.20	0.00	462	157.62	0.01
133.60	0.00	454	157.62	0.01
134.00	0.00	446	157.62	0.01
134.40	0.00	438	157.61	0.01
134.80	0.00	430	157.61	0.01
135.20	0.00	423	157.61	0.01
135.60	0.00	415	157.61	0.01
136.00	0.00	408	157.61	0.01
136.40	0.00	401	157.61	0.00
136.80	0.00	394	157.61	0.00
137.20	0.00	387	157.60	0.00
137.60	0.00	380	157.60	0.00
138.00	0.00	373	157.60	0.00
138.40	0.00	367	157.60	0.00
138.80	0.00	360	157.60	0.00
139.20	0.00	354	157.60	0.00
139.60	0.00	348	157.60	0.00
140.00	0.00	342	157.60	0.00
140.40	0.00	337	157.59	0.00
140.80	0.00	331	157.59	0.00
141.20	0.00	326	157.59	0.00
141.60	0.00	320	157.59	0.00
142.00	0.00	315	157.59	0.00
142.40	0.00	310	157.59	0.00
142.80	0.00	305	157.59	0.00
143.20	0.00	300	157.59	0.00
143.60	0.00	296	157.59	0.00
144.00	0.00	291	157.59	0.00
144.40	0.00	287	157.58	0.00
144.80	0.00	282	157.58	0.00
145.20	0.00	278	157.58	0.00
145.60	0.00	274	157.58	0.00
146.00	0.00	270	157.58	0.00
146.40	0.00	266	157.58	0.00
146.80	0.00	262	157.58	0.00
147.20	0.00	259	157.58	0.00
147.60	0.00	255	157.58	0.00
148.00	0.00	251	157.58	0.00

Hydrograph for Pond 1P: UG1 (continued)

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
148.40	0.00	248	157.58	0.00
148.80	0.00	245	157.58	0.00
149.20	0.00	241	157.58	0.00
149.60	0.00	238	157.58	0.00
150.00	0.00	235	157.58	0.00
150.40	0.00	232	157.57	0.00
150.80	0.00	229	157.57	0.00
151.20	0.00	226	157.57	0.00
151.60	0.00	223	157.57	0.00
152.00	0.00	220	157.57	0.00
152.40	0.00	217	157.57	0.00
152.80	0.00	215	157.57	0.00
153.20	0.00	212	157.57	0.00
153.60	0.00	209	157.57	0.00
154.00	0.00	207	157.57	0.00
154.40	0.00	204	157.57	0.00
154.80	0.00	202	157.57	0.00
155.20	0.00	200	157.57	0.00
155.60	0.00	197	157.57	0.00
156.00	0.00	195	157.57	0.00
156.40	0.00	193	157.57	0.00
156.80	0.00	191	157.57	0.00
157.20	0.00	188	157.57	0.00
157.60	0.00	186	157.57	0.00
158.00	0.00	184	157.57	0.00
158.40	0.00	182	157.56	0.00
158.80	0.00	180	157.56	0.00
159.20	0.00	178	157.56	0.00
159.60	0.00	177	157.56	0.00
160.00	0.00	175	157.56	0.00
160.40	0.00	173	157.56	0.00
160.80	0.00	171	157.56	0.00
161.20	0.00	169	157.56	0.00
161.60	0.00	168	157.56	0.00
162.00	0.00	166	157.56	0.00
162.40	0.00	164	157.56	0.00
162.80	0.00	163	157.56	0.00
163.20	0.00	161	157.56	0.00
163.60	0.00	159	157.56	0.00
164.00	0.00	158	157.56	0.00
164.40	0.00	156	157.56	0.00
164.80	0.00	155	157.56	0.00
165.20	0.00	153	157.56	0.00
165.60	0.00	152	157.56	0.00
166.00	0.00	151	157.56	0.00
166.40	0.00	149	157.56	0.00
166.80	0.00	148	157.56	0.00
167.20	0.00	147	157.56	0.00
167.60	0.00	145	157.56	0.00
168.00	0.00	144	157.56	0.00

Summary for Pond 2P: UG2

Inflow Area = 33,977 sf, 95.64% Impervious, Inflow Depth = 2.19" for 1-yr event
Inflow = 2.87 cfs @ 11.96 hrs, Volume= 6,190 cf
Outflow = 0.50 cfs @ 12.13 hrs, Volume= 5,983 cf, Atten= 83%, Lag= 10.6 min
Primary = 0.50 cfs @ 12.13 hrs, Volume= 5,983 cf
Routed to Link 10L : POST-DEV TO DA #1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-168.00 hrs, dt= 0.04 hrs / 2
Peak Elev= 161.14' @ 12.13 hrs Surf.Area= 3,834 sf Storage= 3,485 cf

Plug-Flow detention time= 1,961.3 min calculated for 5,983 cf (97% of inflow)
Center-of-Mass det. time= 1,940.9 min (2,722.7 - 781.8)

Volume	Invert	Avail.Storage	Storage Description
#1A	159.80'	3,209 cf	**35.33'W x 108.50'L x 3.54'H Field A** 13,578 cf Overall - 5,555 cf Embedded = 8,023 cf x 40.0% Voids
#2A	160.30'	5,555 cf	**Cultec R-330XLHD** x 105 Inside #1 Effective Size= 47.8"W x 30.0"H => 7.45 sf x 7.00'L = 52.2 cf Overall Size= 52.0"W x 30.5"H x 8.50'L with 1.50' Overlap Row Length Adjustment= +1.50' x 7.45 sf x 7 rows
		8,764 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Device 4	159.80'	**0.5" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#2	Device 4	160.90'	**16.0" W x 7.0" H Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#3	Device 4	162.55'	**4.0' long Broad-Crested Rectangular Weir** Head (feet) 4.00 Coef. (English) 3.33
#4	Primary	159.80'	**18.0" Round Culvert** L= 141.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 159.80' / 159.09' S= 0.0050 '/' Cc= 0.900 n= 0.012, Flow Area= 1.77 sf

Primary OutFlow Max=0.50 cfs @ 12.13 hrs HW=161.14' TW=0.00' (Dynamic Tailwater)
└**4=Culvert** (Passes 0.50 cfs of 5.67 cfs potential flow)
  ├**1=Orifice/Grate** (Orifice Controls 0.01 cfs @ 5.52 fps)
  ├**2=Orifice/Grate** (Orifice Controls 0.49 cfs @ 1.56 fps)
  └**3=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond 2P: UG2 - Chamber Wizard Field A

Chamber Model = Cultec R-330XLHD (Cultec Recharger® 330XLHD)
Effective Size= 47.8"W x 30.0"H => 7.45 sf x 7.00'L = 52.2 cf
Overall Size= 52.0"W x 30.5"H x 8.50'L with 1.50' Overlap
Row Length Adjustment= +1.50' x 7.45 sf x 7 rows

52.0" Wide + 6.0" Spacing = 58.0" C-C Row Spacing

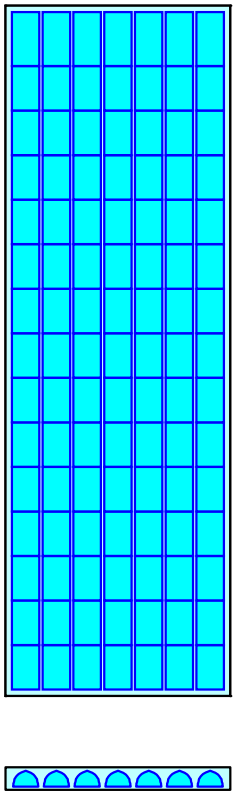
15 Chambers/Row x 7.00' Long +1.50' Row Adjustment = 106.50' Row Length +12.0" End Stone x 2 = 108.50' Base Length
7 Rows x 52.0" Wide + 6.0" Spacing x 6 + 12.0" Side Stone x 2 = 35.33' Base Width
6.0" Stone Base + 30.5" Chamber Height + 6.0" Stone Cover = 3.54' Field Height

105 Chambers x 52.2 cf +1.50' Row Adjustment x 7.45 sf x 7 Rows = 5,554.7 cf Chamber Storage

13,577.6 cf Field - 5,554.7 cf Chambers = 8,022.8 cf Stone x 40.0% Voids = 3,209.1 cf Stone Storage

Chamber Storage + Stone Storage = 8,763.9 cf = 0.201 af
Overall Storage Efficiency = 64.5%
Overall System Size = 108.50' x 35.33' x 3.54'

105 Chambers
502.9 cy Field
297.1 cy Stone



Hydrograph for Pond 2P: UG2

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
0.00	0.00	0	159.80	0.00
0.40	0.00	0	159.80	0.00
0.80	0.00	0	159.80	0.00
1.20	0.00	0	159.80	0.00
1.60	0.00	0	159.80	0.00
2.00	0.00	0	159.80	0.00
2.40	0.00	0	159.80	0.00
2.80	0.00	0	159.80	0.00
3.20	0.00	0	159.80	0.00
3.60	0.00	0	159.80	0.00
4.00	0.00	3	159.80	0.00
4.40	0.00	7	159.80	0.00
4.80	0.01	15	159.81	0.00
5.20	0.01	24	159.82	0.00
5.60	0.01	37	159.82	0.00
6.00	0.01	52	159.83	0.00
6.40	0.01	69	159.85	0.00
6.80	0.02	90	159.86	0.00
7.20	0.02	113	159.87	0.00
7.60	0.02	140	159.89	0.00
8.00	0.02	169	159.91	0.00
8.40	0.03	203	159.93	0.00
8.80	0.04	246	159.96	0.00
9.20	0.04	298	159.99	0.00
9.60	0.04	355	160.03	0.00
10.00	0.06	422	160.08	0.00
10.40	0.07	507	160.13	0.00
10.80	0.10	620	160.20	0.00
11.20	0.14	776	160.30	0.00
11.60	**0.33**	1,033	160.38	0.00
12.00	**2.40**	**3,122**	**161.02**	**0.19**
12.40	0.26	**3,371**	**161.10**	**0.39**
12.80	0.15	3,196	161.05	0.24
13.20	0.12	3,096	161.01	0.17
13.60	0.10	3,034	160.99	0.13
14.00	0.08	2,991	160.98	0.11
14.40	0.07	2,960	160.97	0.09
14.80	0.07	2,940	160.96	0.08
15.20	0.06	2,925	160.96	0.07
15.60	0.05	2,911	160.96	0.06
16.00	0.05	2,898	160.95	0.06
16.40	0.05	2,887	160.95	0.05
16.80	0.04	2,879	160.95	0.05
17.20	0.04	2,872	160.94	0.05
17.60	0.04	2,866	160.94	0.04
18.00	0.04	2,861	160.94	0.04
18.40	0.04	2,856	160.94	0.04
18.80	0.03	2,850	160.94	0.04
19.20	0.03	2,845	160.94	0.04
19.60	0.03	2,840	160.93	0.03
20.00	0.03	2,834	160.93	0.03
20.40	0.03	2,829	160.93	0.03
20.80	0.03	2,826	160.93	0.03

Hydrograph for Pond 2P: UG2 (continued)

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
21.20	0.03	2,823	160.93	0.03
21.60	0.03	2,821	160.93	0.03
22.00	0.03	2,819	160.93	0.03
22.40	0.02	2,818	160.93	0.03
22.80	0.02	2,816	160.93	0.03
23.20	0.02	2,815	160.93	0.02
23.60	0.02	2,814	160.93	0.02
24.00	0.02	2,812	160.93	0.02
24.40	0.00	2,789	160.92	0.02
24.80	0.00	2,768	160.91	0.01
25.20	0.00	2,753	160.91	0.01
25.60	0.00	2,741	160.90	0.01
26.00	0.00	2,731	160.90	0.01
26.40	0.00	2,721	160.90	0.01
26.80	0.00	2,711	160.89	0.01
27.20	0.00	2,701	160.89	0.01
27.60	0.00	2,692	160.89	0.01
28.00	0.00	2,682	160.88	0.01
28.40	0.00	2,672	160.88	0.01
28.80	0.00	2,662	160.88	0.01
29.20	0.00	2,653	160.88	0.01
29.60	0.00	2,643	160.87	0.01
30.00	0.00	2,633	160.87	0.01
30.40	0.00	2,624	160.87	0.01
30.80	0.00	2,614	160.86	0.01
31.20	0.00	2,604	160.86	0.01
31.60	0.00	2,595	160.86	0.01
32.00	0.00	2,585	160.85	0.01
32.40	0.00	2,575	160.85	0.01
32.80	0.00	2,566	160.85	0.01
33.20	0.00	2,556	160.85	0.01
33.60	0.00	2,547	160.84	0.01
34.00	0.00	2,537	160.84	0.01
34.40	0.00	2,528	160.84	0.01
34.80	0.00	2,518	160.83	0.01
35.20	0.00	2,509	160.83	0.01
35.60	0.00	2,499	160.83	0.01
36.00	0.00	2,490	160.83	0.01
36.40	0.00	2,480	160.82	0.01
36.80	0.00	2,471	160.82	0.01
37.20	0.00	2,461	160.82	0.01
37.60	0.00	2,452	160.81	0.01
38.00	0.00	2,442	160.81	0.01
38.40	0.00	2,433	160.81	0.01
38.80	0.00	2,424	160.81	0.01
39.20	0.00	2,414	160.80	0.01
39.60	0.00	2,405	160.80	0.01
40.00	0.00	2,396	160.80	0.01
40.40	0.00	2,386	160.79	0.01
40.80	0.00	2,377	160.79	0.01
41.20	0.00	2,368	160.79	0.01
41.60	0.00	2,358	160.79	0.01
42.00	0.00	2,349	160.78	0.01

Hydrograph for Pond 2P: UG2 (continued)

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
42.40	0.00	2,340	160.78	0.01
42.80	0.00	2,331	160.78	0.01
43.20	0.00	2,321	160.77	0.01
43.60	0.00	2,312	160.77	0.01
44.00	0.00	2,303	160.77	0.01
44.40	0.00	2,294	160.77	0.01
44.80	0.00	2,284	160.76	0.01
45.20	0.00	2,275	160.76	0.01
45.60	0.00	2,266	160.76	0.01
46.00	0.00	2,257	160.75	0.01
46.40	0.00	2,248	160.75	0.01
46.80	0.00	2,239	160.75	0.01
47.20	0.00	2,230	160.75	0.01
47.60	0.00	2,221	160.74	0.01
48.00	0.00	2,212	160.74	0.01
48.40	0.00	2,202	160.74	0.01
48.80	0.00	2,193	160.73	0.01
49.20	0.00	2,184	160.73	0.01
49.60	0.00	2,175	160.73	0.01
50.00	0.00	2,166	160.73	0.01
50.40	0.00	2,157	160.72	0.01
50.80	0.00	2,148	160.72	0.01
51.20	0.00	2,139	160.72	0.01
51.60	0.00	2,131	160.72	0.01
52.00	0.00	2,122	160.71	0.01
52.40	0.00	2,113	160.71	0.01
52.80	0.00	2,104	160.71	0.01
53.20	0.00	2,095	160.70	0.01
53.60	0.00	2,086	160.70	0.01
54.00	0.00	2,077	160.70	0.01
54.40	0.00	2,068	160.70	0.01
54.80	0.00	2,059	160.69	0.01
55.20	0.00	2,051	160.69	0.01
55.60	0.00	2,042	160.69	0.01
56.00	0.00	2,033	160.69	0.01
56.40	0.00	2,024	160.68	0.01
56.80	0.00	2,015	160.68	0.01
57.20	0.00	2,007	160.68	0.01
57.60	0.00	1,998	160.67	0.01
58.00	0.00	1,989	160.67	0.01
58.40	0.00	1,980	160.67	0.01
58.80	0.00	1,972	160.67	0.01
59.20	0.00	1,963	160.66	0.01
59.60	0.00	1,954	160.66	0.01
60.00	0.00	1,946	160.66	0.01
60.40	0.00	1,937	160.66	0.01
60.80	0.00	1,928	160.65	0.01
61.20	0.00	1,920	160.65	0.01
61.60	0.00	1,911	160.65	0.01
62.00	0.00	1,903	160.65	0.01
62.40	0.00	1,894	160.64	0.01
62.80	0.00	1,886	160.64	0.01
63.20	0.00	1,877	160.64	0.01

Hydrograph for Pond 2P: UG2 (continued)

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
63.60	0.00	1,868	160.64	0.01
64.00	0.00	1,860	160.63	0.01
64.40	0.00	1,851	160.63	0.01
64.80	0.00	1,843	160.63	0.01
65.20	0.00	1,834	160.62	0.01
65.60	0.00	1,826	160.62	0.01
66.00	0.00	1,817	160.62	0.01
66.40	0.00	1,809	160.62	0.01
66.80	0.00	1,801	160.61	0.01
67.20	0.00	1,792	160.61	0.01
67.60	0.00	1,784	160.61	0.01
68.00	0.00	1,775	160.61	0.01
68.40	0.00	1,767	160.60	0.01
68.80	0.00	1,759	160.60	0.01
69.20	0.00	1,750	160.60	0.01
69.60	0.00	1,742	160.60	0.01
70.00	0.00	1,734	160.59	0.01
70.40	0.00	1,725	160.59	0.01
70.80	0.00	1,717	160.59	0.01
71.20	0.00	1,709	160.59	0.01
71.60	0.00	1,701	160.58	0.01
72.00	0.00	1,692	160.58	0.01
72.40	0.00	1,684	160.58	0.01
72.80	0.00	1,676	160.58	0.01
73.20	0.00	1,668	160.57	0.01
73.60	0.00	1,659	160.57	0.01
74.00	0.00	1,651	160.57	0.01
74.40	0.00	1,643	160.57	0.01
74.80	0.00	1,635	160.56	0.01
75.20	0.00	1,627	160.56	0.01
75.60	0.00	1,619	160.56	0.01
76.00	0.00	1,611	160.56	0.01
76.40	0.00	1,602	160.55	0.01
76.80	0.00	1,594	160.55	0.01
77.20	0.00	1,586	160.55	0.01
77.60	0.00	1,578	160.55	0.01
78.00	0.00	1,570	160.54	0.01
78.40	0.00	1,562	160.54	0.01
78.80	0.00	1,554	160.54	0.01
79.20	0.00	1,546	160.54	0.01
79.60	0.00	1,538	160.53	0.01
80.00	0.00	1,530	160.53	0.01
80.40	0.00	1,522	160.53	0.01
80.80	0.00	1,514	160.53	0.01
81.20	0.00	1,506	160.52	0.01
81.60	0.00	1,498	160.52	0.01
82.00	0.00	1,490	160.52	0.01
82.40	0.00	1,483	160.52	0.01
82.80	0.00	1,475	160.51	0.01
83.20	0.00	1,467	160.51	0.01
83.60	0.00	1,459	160.51	0.01
84.00	0.00	1,451	160.51	0.01
84.40	0.00	1,443	160.51	0.01

Hydrograph for Pond 2P: UG2 (continued)

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
84.80	0.00	1,435	160.50	0.01
85.20	0.00	1,428	160.50	0.01
85.60	0.00	1,420	160.50	0.01
86.00	0.00	1,412	160.50	0.01
86.40	0.00	1,404	160.49	0.01
86.80	0.00	1,397	160.49	0.01
87.20	0.00	1,389	160.49	0.01
87.60	0.00	1,381	160.49	0.01
88.00	0.00	1,373	160.48	0.01
88.40	0.00	1,366	160.48	0.01
88.80	0.00	1,358	160.48	0.01
89.20	0.00	1,350	160.48	0.01
89.60	0.00	1,343	160.47	0.01
90.00	0.00	1,335	160.47	0.01
90.40	0.00	1,328	160.47	0.01
90.80	0.00	1,320	160.47	0.01
91.20	0.00	1,312	160.47	0.01
91.60	0.00	1,305	160.46	0.01
92.00	0.00	1,297	160.46	0.01
92.40	0.00	1,290	160.46	0.01
92.80	0.00	1,282	160.46	0.01
93.20	0.00	1,275	160.45	0.01
93.60	0.00	1,267	160.45	0.01
94.00	0.00	1,260	160.45	0.01
94.40	0.00	1,252	160.45	0.01
94.80	0.00	1,245	160.44	0.01
95.20	0.00	1,237	160.44	0.01
95.60	0.00	1,230	160.44	0.01
96.00	0.00	1,222	160.44	0.01
96.40	0.00	1,215	160.44	0.01
96.80	0.00	1,207	160.43	0.01
97.20	0.00	1,200	160.43	0.01
97.60	0.00	1,193	160.43	0.01
98.00	0.00	1,185	160.43	0.01
98.40	0.00	1,178	160.42	0.01
98.80	0.00	1,171	160.42	0.01
99.20	0.00	1,163	160.42	0.01
99.60	0.00	1,156	160.42	0.01
100.00	0.00	1,149	160.42	0.01
100.40	0.00	1,141	160.41	0.01
100.80	0.00	1,134	160.41	0.01
101.20	0.00	1,127	160.41	0.01
101.60	0.00	1,120	160.41	0.01
102.00	0.00	1,112	160.40	0.01
102.40	0.00	1,105	160.40	0.01
102.80	0.00	1,098	160.40	0.00
103.20	0.00	1,091	160.40	0.00
103.60	0.00	1,084	160.40	0.00
104.00	0.00	1,076	160.39	0.00
104.40	0.00	1,069	160.39	0.00
104.80	0.00	1,062	160.39	0.00
105.20	0.00	1,055	160.39	0.00
105.60	0.00	1,048	160.38	0.00

Hydrograph for Pond 2P: UG2 (continued)

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
106.00	0.00	1,041	160.38	0.00
106.40	0.00	1,034	160.38	0.00
106.80	0.00	1,027	160.38	0.00
107.20	0.00	1,020	160.38	0.00
107.60	0.00	1,013	160.37	0.00
108.00	0.00	1,006	160.37	0.00
108.40	0.00	999	160.37	0.00
108.80	0.00	992	160.37	0.00
109.20	0.00	985	160.37	0.00
109.60	0.00	978	160.36	0.00
110.00	0.00	971	160.36	0.00
110.40	0.00	964	160.36	0.00
110.80	0.00	957	160.36	0.00
111.20	0.00	950	160.36	0.00
111.60	0.00	943	160.35	0.00
112.00	0.00	936	160.35	0.00
112.40	0.00	929	160.35	0.00
112.80	0.00	922	160.35	0.00
113.20	0.00	915	160.34	0.00
113.60	0.00	909	160.34	0.00
114.00	0.00	902	160.34	0.00
114.40	0.00	895	160.34	0.00
114.80	0.00	888	160.34	0.00
115.20	0.00	881	160.33	0.00
115.60	0.00	875	160.33	0.00
116.00	0.00	868	160.33	0.00
116.40	0.00	861	160.33	0.00
116.80	0.00	854	160.33	0.00
117.20	0.00	848	160.32	0.00
117.60	0.00	841	160.32	0.00
118.00	0.00	834	160.32	0.00
118.40	0.00	828	160.32	0.00
118.80	0.00	821	160.32	0.00
119.20	0.00	814	160.31	0.00
119.60	0.00	808	160.31	0.00
120.00	0.00	801	160.31	0.00
120.40	0.00	794	160.31	0.00
120.80	0.00	788	160.31	0.00
121.20	0.00	781	160.30	0.00
121.60	0.00	775	160.30	0.00
122.00	0.00	768	160.30	0.00
122.40	0.00	762	160.30	0.00
122.80	0.00	755	160.29	0.00
123.20	0.00	749	160.29	0.00
123.60	0.00	742	160.28	0.00
124.00	0.00	736	160.28	0.00
124.40	0.00	729	160.28	0.00
124.80	0.00	723	160.27	0.00
125.20	0.00	717	160.27	0.00
125.60	0.00	710	160.26	0.00
126.00	0.00	704	160.26	0.00
126.40	0.00	698	160.26	0.00
126.80	0.00	692	160.25	0.00

Hydrograph for Pond 2P: UG2 (continued)

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
127.20	0.00	685	160.25	0.00
127.60	0.00	679	160.24	0.00
128.00	0.00	673	160.24	0.00
128.40	0.00	667	160.23	0.00
128.80	0.00	661	160.23	0.00
129.20	0.00	655	160.23	0.00
129.60	0.00	649	160.22	0.00
130.00	0.00	643	160.22	0.00
130.40	0.00	637	160.22	0.00
130.80	0.00	631	160.21	0.00
131.20	0.00	625	160.21	0.00
131.60	0.00	619	160.20	0.00
132.00	0.00	613	160.20	0.00
132.40	0.00	608	160.20	0.00
132.80	0.00	602	160.19	0.00
133.20	0.00	596	160.19	0.00
133.60	0.00	590	160.19	0.00
134.00	0.00	585	160.18	0.00
134.40	0.00	579	160.18	0.00
134.80	0.00	573	160.17	0.00
135.20	0.00	568	160.17	0.00
135.60	0.00	562	160.17	0.00
136.00	0.00	557	160.16	0.00
136.40	0.00	551	160.16	0.00
136.80	0.00	546	160.16	0.00
137.20	0.00	540	160.15	0.00
137.60	0.00	535	160.15	0.00
138.00	0.00	529	160.15	0.00
138.40	0.00	524	160.14	0.00
138.80	0.00	519	160.14	0.00
139.20	0.00	513	160.13	0.00
139.60	0.00	508	160.13	0.00
140.00	0.00	503	160.13	0.00
140.40	0.00	498	160.12	0.00
140.80	0.00	492	160.12	0.00
141.20	0.00	487	160.12	0.00
141.60	0.00	482	160.11	0.00
142.00	0.00	477	160.11	0.00
142.40	0.00	472	160.11	0.00
142.80	0.00	467	160.10	0.00
143.20	0.00	462	160.10	0.00
143.60	0.00	457	160.10	0.00
144.00	0.00	452	160.09	0.00
144.40	0.00	447	160.09	0.00
144.80	0.00	442	160.09	0.00
145.20	0.00	437	160.09	0.00
145.60	0.00	432	160.08	0.00
146.00	0.00	428	160.08	0.00
146.40	0.00	423	160.08	0.00
146.80	0.00	418	160.07	0.00
147.20	0.00	413	160.07	0.00
147.60	0.00	409	160.07	0.00
148.00	0.00	404	160.06	0.00

Hydrograph for Pond 2P: UG2 (continued)

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
148.40	0.00	399	160.06	0.00
148.80	0.00	395	160.06	0.00
149.20	0.00	390	160.05	0.00
149.60	0.00	386	160.05	0.00
150.00	0.00	381	160.05	0.00
150.40	0.00	377	160.05	0.00
150.80	0.00	372	160.04	0.00
151.20	0.00	368	160.04	0.00
151.60	0.00	363	160.04	0.00
152.00	0.00	359	160.03	0.00
152.40	0.00	354	160.03	0.00
152.80	0.00	350	160.03	0.00
153.20	0.00	346	160.03	0.00
153.60	0.00	342	160.02	0.00
154.00	0.00	337	160.02	0.00
154.40	0.00	333	160.02	0.00
154.80	0.00	329	160.01	0.00
155.20	0.00	325	160.01	0.00
155.60	0.00	321	160.01	0.00
156.00	0.00	317	160.01	0.00
156.40	0.00	313	160.00	0.00
156.80	0.00	309	160.00	0.00
157.20	0.00	305	160.00	0.00
157.60	0.00	301	160.00	0.00
158.00	0.00	297	159.99	0.00
158.40	0.00	293	159.99	0.00
158.80	0.00	289	159.99	0.00
159.20	0.00	285	159.99	0.00
159.60	0.00	281	159.98	0.00
160.00	0.00	277	159.98	0.00
160.40	0.00	274	159.98	0.00
160.80	0.00	270	159.98	0.00
161.20	0.00	266	159.97	0.00
161.60	0.00	262	159.97	0.00
162.00	0.00	259	159.97	0.00
162.40	0.00	255	159.97	0.00
162.80	0.00	252	159.96	0.00
163.20	0.00	248	159.96	0.00
163.60	0.00	245	159.96	0.00
164.00	0.00	241	159.96	0.00
164.40	0.00	238	159.95	0.00
164.80	0.00	234	159.95	0.00
165.20	0.00	231	159.95	0.00
165.60	0.00	227	159.95	0.00
166.00	0.00	224	159.95	0.00
166.40	0.00	221	159.94	0.00
166.80	0.00	217	159.94	0.00
167.20	0.00	214	159.94	0.00
167.60	0.00	211	159.94	0.00
168.00	0.00	208	159.94	0.00

Summary for Pond 3P: UG3

Inflow Area = 19,646 sf, 85.14% Impervious, Inflow Depth = 1.66" for 1-yr event
Inflow = 1.34 cfs @ 11.96 hrs, Volume= 2,714 cf
Outflow = 0.19 cfs @ 12.18 hrs, Volume= 2,713 cf, Atten= 86%, Lag= 13.2 min
Primary = 0.19 cfs @ 12.18 hrs, Volume= 2,713 cf
Routed to Link 10L : POST-DEV TO DA #1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-168.00 hrs, dt= 0.04 hrs / 2
Peak Elev= 161.00' @ 12.18 hrs Surf.Area= 2,917 sf Storage= 1,138 cf

Plug-Flow detention time= 95.2 min calculated for 2,713 cf (100% of inflow)
Center-of-Mass det. time= 94.8 min (908.3 - 813.6)

Volume	Invert	Avail.Storage	Storage Description
#1A	160.28'	2,010 cf	**44.00'W x 66.30'L x 2.71'H Field A** 7,901 cf Overall - 2,875 cf Embedded = 5,026 cf x 40.0% Voids
#2A	160.78'	2,875 cf	**Cultec R-180** x 130 Inside #1 Effective Size= 33.6"W x 20.0"H => 3.44 sf x 6.33'L = 21.8 cf Overall Size= 36.0"W x 20.5"H x 7.33'L with 1.00' Overlap Row Length Adjustment= +1.00' x 3.44 sf x 13 rows
		4,885 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Device 4	160.28'	**3.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#2	Device 4	160.97'	**6.0" W x 3.0" H Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#3	Device 4	162.50'	**4.0' long Broad-Crested Rectangular Weir** Head (feet) 4.00 Coef. (English) 3.33
#4	Primary	160.28'	**18.0" Round Culvert** L= 36.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 160.28' / 160.10' S= 0.0050 '/' Cc= 0.900 n= 0.012, Flow Area= 1.77 sf

Primary OutFlow Max=0.19 cfs @ 12.18 hrs HW=161.00' TW=0.00' (Dynamic Tailwater)
↑└**4=Culvert** (Passes 0.19 cfs of 1.83 cfs potential flow)
↑ ├**1=Orifice/Grate** (Orifice Controls 0.18 cfs @ 3.71 fps)
 ├**2=Orifice/Grate** (Orifice Controls 0.01 cfs @ 0.55 fps)
 └**3=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond 3P: UG3 - Chamber Wizard Field A

Chamber Model = Cultec R-180 (Cultec Recharger® 180HD)
Effective Size= 33.6"W x 20.0"H => 3.44 sf x 6.33'L = 21.8 cf
Overall Size= 36.0"W x 20.5"H x 7.33'L with 1.00' Overlap
Row Length Adjustment= +1.00' x 3.44 sf x 13 rows

36.0" Wide + 3.0" Spacing = 39.0" C-C Row Spacing

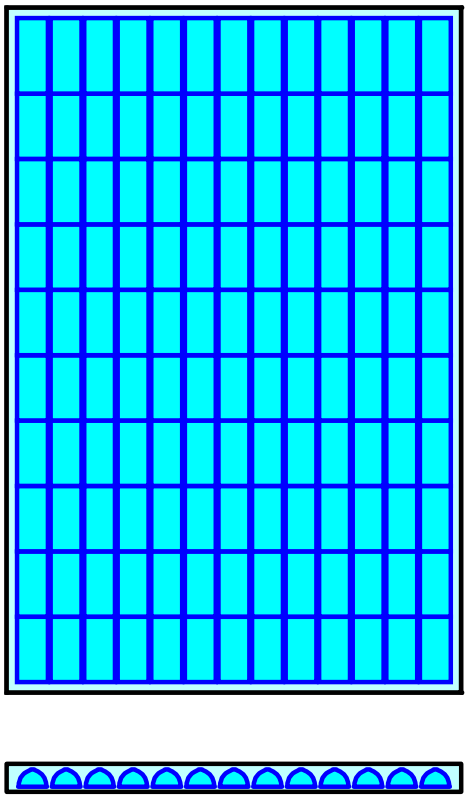
10 Chambers/Row x 6.33' Long +1.00' Row Adjustment = 64.30' Row Length +12.0" End Stone x 2 = 66.30' Base Length
13 Rows x 36.0" Wide + 3.0" Spacing x 12 + 12.0" Side Stone x 2 = 44.00' Base Width
6.0" Stone Base + 20.5" Chamber Height + 6.0" Stone Cover = 2.71' Field Height

130 Chambers x 21.8 cf +1.00' Row Adjustment x 3.44 sf x 13 Rows = 2,875.1 cf Chamber Storage

7,900.7 cf Field - 2,875.1 cf Chambers = 5,025.7 cf Stone x 40.0% Voids = 2,010.3 cf Stone Storage

Chamber Storage + Stone Storage = 4,885.3 cf = 0.112 af
Overall Storage Efficiency = 61.8%
Overall System Size = 66.30' x 44.00' x 2.71'

130 Chambers
292.6 cy Field
186.1 cy Stone



Hydrograph for Pond 3P: UG3

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
0.00	0.00	0	160.28	0.00
0.40	0.00	0	160.28	0.00
0.80	0.00	0	160.28	0.00
1.20	0.00	0	160.28	0.00
1.60	0.00	0	160.28	0.00
2.00	0.00	0	160.28	0.00
2.40	0.00	0	160.28	0.00
2.80	0.00	0	160.28	0.00
3.20	0.00	0	160.28	0.00
3.60	0.00	0	160.28	0.00
4.00	0.00	0	160.28	0.00
4.40	0.00	0	160.28	0.00
4.80	0.00	0	160.28	0.00
5.20	0.00	0	160.28	0.00
5.60	0.00	0	160.28	0.00
6.00	0.00	0	160.28	0.00
6.40	0.00	0	160.28	0.00
6.80	0.00	0	160.28	0.00
7.20	0.00	1	160.28	0.00
7.60	0.00	3	160.28	0.00
8.00	0.00	7	160.29	0.00
8.40	0.00	12	160.29	0.00
8.80	0.01	20	160.30	0.00
9.20	0.01	29	160.31	0.00
9.60	0.01	40	160.31	0.00
10.00	0.01	53	160.33	0.00
10.40	0.02	69	160.34	0.01
10.80	0.03	90	160.36	0.01
11.20	0.05	119	160.38	0.02
11.60	**0.12**	172	160.43	0.04
12.00	**1.15**	**951**	**160.92**	**0.17**
12.40	0.13	**1,112**	**160.99**	**0.18**
12.80	0.08	994	160.94	0.17
13.20	0.06	849	160.88	0.16
13.60	0.05	700	160.83	0.15
14.00	0.04	552	160.75	0.14
14.40	0.04	424	160.64	0.12
14.80	0.03	325	160.56	0.09
15.20	0.03	254	160.50	0.07
15.60	0.03	207	160.46	0.05
16.00	0.03	178	160.43	0.04
16.40	0.02	159	160.42	0.03
16.80	0.02	147	160.41	0.03
17.20	0.02	138	160.40	0.03
17.60	0.02	132	160.39	0.02
18.00	0.02	127	160.39	0.02
18.40	0.02	122	160.38	0.02
18.80	0.02	119	160.38	0.02
19.20	0.02	115	160.38	0.02
19.60	0.02	111	160.38	0.02
20.00	0.01	107	160.37	0.02
20.40	0.01	104	160.37	0.02
20.80	0.01	102	160.37	0.02

Hydrograph for Pond 3P: UG3 (continued)

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
21.20	0.01	100	160.37	0.01
21.60	0.01	98	160.36	0.01
22.00	0.01	97	160.36	0.01
22.40	0.01	96	160.36	0.01
22.80	0.01	95	160.36	0.01
23.20	0.01	94	160.36	0.01
23.60	0.01	93	160.36	0.01
24.00	0.01	92	160.36	0.01
24.40	0.00	79	160.35	0.01
24.80	0.00	68	160.34	0.01
25.20	0.00	59	160.33	0.01
25.60	0.00	52	160.32	0.00
26.00	0.00	46	160.32	0.00
26.40	0.00	42	160.32	0.00
26.80	0.00	38	160.31	0.00
27.20	0.00	35	160.31	0.00
27.60	0.00	32	160.31	0.00
28.00	0.00	30	160.31	0.00
28.40	0.00	28	160.30	0.00
28.80	0.00	26	160.30	0.00
29.20	0.00	25	160.30	0.00
29.60	0.00	24	160.30	0.00
30.00	0.00	22	160.30	0.00
30.40	0.00	21	160.30	0.00
30.80	0.00	20	160.30	0.00
31.20	0.00	19	160.30	0.00
31.60	0.00	18	160.30	0.00
32.00	0.00	18	160.30	0.00
32.40	0.00	17	160.29	0.00
32.80	0.00	16	160.29	0.00
33.20	0.00	16	160.29	0.00
33.60	0.00	15	160.29	0.00
34.00	0.00	15	160.29	0.00
34.40	0.00	14	160.29	0.00
34.80	0.00	14	160.29	0.00
35.20	0.00	13	160.29	0.00
35.60	0.00	13	160.29	0.00
36.00	0.00	12	160.29	0.00
36.40	0.00	12	160.29	0.00
36.80	0.00	12	160.29	0.00
37.20	0.00	11	160.29	0.00
37.60	0.00	11	160.29	0.00
38.00	0.00	11	160.29	0.00
38.40	0.00	11	160.29	0.00
38.80	0.00	10	160.29	0.00
39.20	0.00	10	160.29	0.00
39.60	0.00	10	160.29	0.00
40.00	0.00	10	160.29	0.00
40.40	0.00	9	160.29	0.00
40.80	0.00	9	160.29	0.00
41.20	0.00	9	160.29	0.00
41.60	0.00	9	160.29	0.00
42.00	0.00	9	160.29	0.00

Hydrograph for Pond 3P: UG3 (continued)

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
42.40	0.00	8	160.29	0.00
42.80	0.00	8	160.29	0.00
43.20	0.00	8	160.29	0.00
43.60	0.00	8	160.29	0.00
44.00	0.00	8	160.29	0.00
44.40	0.00	8	160.29	0.00
44.80	0.00	8	160.29	0.00
45.20	0.00	7	160.29	0.00
45.60	0.00	7	160.29	0.00
46.00	0.00	7	160.29	0.00
46.40	0.00	7	160.29	0.00
46.80	0.00	7	160.29	0.00
47.20	0.00	7	160.29	0.00
47.60	0.00	7	160.29	0.00
48.00	0.00	7	160.29	0.00
48.40	0.00	6	160.29	0.00
48.80	0.00	6	160.29	0.00
49.20	0.00	6	160.29	0.00
49.60	0.00	6	160.29	0.00
50.00	0.00	6	160.29	0.00
50.40	0.00	6	160.29	0.00
50.80	0.00	6	160.29	0.00
51.20	0.00	6	160.29	0.00
51.60	0.00	6	160.28	0.00
52.00	0.00	6	160.28	0.00
52.40	0.00	6	160.28	0.00
52.80	0.00	6	160.28	0.00
53.20	0.00	5	160.28	0.00
53.60	0.00	5	160.28	0.00
54.00	0.00	5	160.28	0.00
54.40	0.00	5	160.28	0.00
54.80	0.00	5	160.28	0.00
55.20	0.00	5	160.28	0.00
55.60	0.00	5	160.28	0.00
56.00	0.00	5	160.28	0.00
56.40	0.00	5	160.28	0.00
56.80	0.00	5	160.28	0.00
57.20	0.00	5	160.28	0.00
57.60	0.00	5	160.28	0.00
58.00	0.00	5	160.28	0.00
58.40	0.00	5	160.28	0.00
58.80	0.00	5	160.28	0.00
59.20	0.00	5	160.28	0.00
59.60	0.00	5	160.28	0.00
60.00	0.00	4	160.28	0.00
60.40	0.00	4	160.28	0.00
60.80	0.00	4	160.28	0.00
61.20	0.00	4	160.28	0.00
61.60	0.00	4	160.28	0.00
62.00	0.00	4	160.28	0.00
62.40	0.00	4	160.28	0.00
62.80	0.00	4	160.28	0.00
63.20	0.00	4	160.28	0.00

Hydrograph for Pond 3P: UG3 (continued)

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
63.60	0.00	4	160.28	0.00
64.00	0.00	4	160.28	0.00
64.40	0.00	4	160.28	0.00
64.80	0.00	4	160.28	0.00
65.20	0.00	4	160.28	0.00
65.60	0.00	4	160.28	0.00
66.00	0.00	4	160.28	0.00
66.40	0.00	4	160.28	0.00
66.80	0.00	4	160.28	0.00
67.20	0.00	4	160.28	0.00
67.60	0.00	4	160.28	0.00
68.00	0.00	4	160.28	0.00
68.40	0.00	4	160.28	0.00
68.80	0.00	4	160.28	0.00
69.20	0.00	4	160.28	0.00
69.60	0.00	4	160.28	0.00
70.00	0.00	4	160.28	0.00
70.40	0.00	4	160.28	0.00
70.80	0.00	3	160.28	0.00
71.20	0.00	3	160.28	0.00
71.60	0.00	3	160.28	0.00
72.00	0.00	3	160.28	0.00
72.40	0.00	3	160.28	0.00
72.80	0.00	3	160.28	0.00
73.20	0.00	3	160.28	0.00
73.60	0.00	3	160.28	0.00
74.00	0.00	3	160.28	0.00
74.40	0.00	3	160.28	0.00
74.80	0.00	3	160.28	0.00
75.20	0.00	3	160.28	0.00
75.60	0.00	3	160.28	0.00
76.00	0.00	3	160.28	0.00
76.40	0.00	3	160.28	0.00
76.80	0.00	3	160.28	0.00
77.20	0.00	3	160.28	0.00
77.60	0.00	3	160.28	0.00
78.00	0.00	3	160.28	0.00
78.40	0.00	3	160.28	0.00
78.80	0.00	3	160.28	0.00
79.20	0.00	3	160.28	0.00
79.60	0.00	3	160.28	0.00
80.00	0.00	3	160.28	0.00
80.40	0.00	3	160.28	0.00
80.80	0.00	3	160.28	0.00
81.20	0.00	3	160.28	0.00
81.60	0.00	3	160.28	0.00
82.00	0.00	3	160.28	0.00
82.40	0.00	3	160.28	0.00
82.80	0.00	3	160.28	0.00
83.20	0.00	3	160.28	0.00
83.60	0.00	3	160.28	0.00
84.00	0.00	3	160.28	0.00
84.40	0.00	3	160.28	0.00

Hydrograph for Pond 3P: UG3 (continued)

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
84.80	0.00	3	160.28	0.00
85.20	0.00	3	160.28	0.00
85.60	0.00	3	160.28	0.00
86.00	0.00	3	160.28	0.00
86.40	0.00	3	160.28	0.00
86.80	0.00	3	160.28	0.00
87.20	0.00	3	160.28	0.00
87.60	0.00	3	160.28	0.00
88.00	0.00	3	160.28	0.00
88.40	0.00	3	160.28	0.00
88.80	0.00	3	160.28	0.00
89.20	0.00	3	160.28	0.00
89.60	0.00	3	160.28	0.00
90.00	0.00	3	160.28	0.00
90.40	0.00	3	160.28	0.00
90.80	0.00	2	160.28	0.00
91.20	0.00	2	160.28	0.00
91.60	0.00	2	160.28	0.00
92.00	0.00	2	160.28	0.00
92.40	0.00	2	160.28	0.00
92.80	0.00	2	160.28	0.00
93.20	0.00	2	160.28	0.00
93.60	0.00	2	160.28	0.00
94.00	0.00	2	160.28	0.00
94.40	0.00	2	160.28	0.00
94.80	0.00	2	160.28	0.00
95.20	0.00	2	160.28	0.00
95.60	0.00	2	160.28	0.00
96.00	0.00	2	160.28	0.00
96.40	0.00	2	160.28	0.00
96.80	0.00	2	160.28	0.00
97.20	0.00	2	160.28	0.00
97.60	0.00	2	160.28	0.00
98.00	0.00	2	160.28	0.00
98.40	0.00	2	160.28	0.00
98.80	0.00	2	160.28	0.00
99.20	0.00	2	160.28	0.00
99.60	0.00	2	160.28	0.00
100.00	0.00	2	160.28	0.00
100.40	0.00	2	160.28	0.00
100.80	0.00	2	160.28	0.00
101.20	0.00	2	160.28	0.00
101.60	0.00	2	160.28	0.00
102.00	0.00	2	160.28	0.00
102.40	0.00	2	160.28	0.00
102.80	0.00	2	160.28	0.00
103.20	0.00	2	160.28	0.00
103.60	0.00	2	160.28	0.00
104.00	0.00	2	160.28	0.00
104.40	0.00	2	160.28	0.00
104.80	0.00	2	160.28	0.00
105.20	0.00	2	160.28	0.00
105.60	0.00	2	160.28	0.00

Hydrograph for Pond 3P: UG3 (continued)

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
106.00	0.00	2	160.28	0.00
106.40	0.00	2	160.28	0.00
106.80	0.00	2	160.28	0.00
107.20	0.00	2	160.28	0.00
107.60	0.00	2	160.28	0.00
108.00	0.00	2	160.28	0.00
108.40	0.00	2	160.28	0.00
108.80	0.00	2	160.28	0.00
109.20	0.00	2	160.28	0.00
109.60	0.00	2	160.28	0.00
110.00	0.00	2	160.28	0.00
110.40	0.00	2	160.28	0.00
110.80	0.00	2	160.28	0.00
111.20	0.00	2	160.28	0.00
111.60	0.00	2	160.28	0.00
112.00	0.00	2	160.28	0.00
112.40	0.00	2	160.28	0.00
112.80	0.00	2	160.28	0.00
113.20	0.00	2	160.28	0.00
113.60	0.00	2	160.28	0.00
114.00	0.00	2	160.28	0.00
114.40	0.00	2	160.28	0.00
114.80	0.00	2	160.28	0.00
115.20	0.00	2	160.28	0.00
115.60	0.00	2	160.28	0.00
116.00	0.00	2	160.28	0.00
116.40	0.00	2	160.28	0.00
116.80	0.00	2	160.28	0.00
117.20	0.00	2	160.28	0.00
117.60	0.00	2	160.28	0.00
118.00	0.00	2	160.28	0.00
118.40	0.00	2	160.28	0.00
118.80	0.00	2	160.28	0.00
119.20	0.00	2	160.28	0.00
119.60	0.00	2	160.28	0.00
120.00	0.00	2	160.28	0.00
120.40	0.00	2	160.28	0.00
120.80	0.00	2	160.28	0.00
121.20	0.00	2	160.28	0.00
121.60	0.00	2	160.28	0.00
122.00	0.00	2	160.28	0.00
122.40	0.00	2	160.28	0.00
122.80	0.00	2	160.28	0.00
123.20	0.00	2	160.28	0.00
123.60	0.00	2	160.28	0.00
124.00	0.00	2	160.28	0.00
124.40	0.00	2	160.28	0.00
124.80	0.00	2	160.28	0.00
125.20	0.00	2	160.28	0.00
125.60	0.00	2	160.28	0.00
126.00	0.00	2	160.28	0.00
126.40	0.00	2	160.28	0.00
126.80	0.00	2	160.28	0.00

Hydrograph for Pond 3P: UG3 (continued)

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
127.20	0.00	2	160.28	0.00
127.60	0.00	2	160.28	0.00
128.00	0.00	2	160.28	0.00
128.40	0.00	2	160.28	0.00
128.80	0.00	2	160.28	0.00
129.20	0.00	2	160.28	0.00
129.60	0.00	2	160.28	0.00
130.00	0.00	2	160.28	0.00
130.40	0.00	2	160.28	0.00
130.80	0.00	2	160.28	0.00
131.20	0.00	2	160.28	0.00
131.60	0.00	2	160.28	0.00
132.00	0.00	2	160.28	0.00
132.40	0.00	2	160.28	0.00
132.80	0.00	2	160.28	0.00
133.20	0.00	2	160.28	0.00
133.60	0.00	2	160.28	0.00
134.00	0.00	2	160.28	0.00
134.40	0.00	2	160.28	0.00
134.80	0.00	2	160.28	0.00
135.20	0.00	2	160.28	0.00
135.60	0.00	2	160.28	0.00
136.00	0.00	2	160.28	0.00
136.40	0.00	2	160.28	0.00
136.80	0.00	2	160.28	0.00
137.20	0.00	2	160.28	0.00
137.60	0.00	2	160.28	0.00
138.00	0.00	2	160.28	0.00
138.40	0.00	2	160.28	0.00
138.80	0.00	2	160.28	0.00
139.20	0.00	2	160.28	0.00
139.60	0.00	2	160.28	0.00
140.00	0.00	2	160.28	0.00
140.40	0.00	2	160.28	0.00
140.80	0.00	2	160.28	0.00
141.20	0.00	1	160.28	0.00
141.60	0.00	1	160.28	0.00
142.00	0.00	1	160.28	0.00
142.40	0.00	1	160.28	0.00
142.80	0.00	1	160.28	0.00
143.20	0.00	1	160.28	0.00
143.60	0.00	1	160.28	0.00
144.00	0.00	1	160.28	0.00
144.40	0.00	1	160.28	0.00
144.80	0.00	1	160.28	0.00
145.20	0.00	1	160.28	0.00
145.60	0.00	1	160.28	0.00
146.00	0.00	1	160.28	0.00
146.40	0.00	1	160.28	0.00
146.80	0.00	1	160.28	0.00
147.20	0.00	1	160.28	0.00
147.60	0.00	1	160.28	0.00
148.00	0.00	1	160.28	0.00

Hydrograph for Pond 3P: UG3 (continued)

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
148.40	0.00	1	160.28	0.00
148.80	0.00	1	160.28	0.00
149.20	0.00	1	160.28	0.00
149.60	0.00	1	160.28	0.00
150.00	0.00	1	160.28	0.00
150.40	0.00	1	160.28	0.00
150.80	0.00	1	160.28	0.00
151.20	0.00	1	160.28	0.00
151.60	0.00	1	160.28	0.00
152.00	0.00	1	160.28	0.00
152.40	0.00	1	160.28	0.00
152.80	0.00	1	160.28	0.00
153.20	0.00	1	160.28	0.00
153.60	0.00	1	160.28	0.00
154.00	0.00	1	160.28	0.00
154.40	0.00	1	160.28	0.00
154.80	0.00	1	160.28	0.00
155.20	0.00	1	160.28	0.00
155.60	0.00	1	160.28	0.00
156.00	0.00	1	160.28	0.00
156.40	0.00	1	160.28	0.00
156.80	0.00	1	160.28	0.00
157.20	0.00	1	160.28	0.00
157.60	0.00	1	160.28	0.00
158.00	0.00	1	160.28	0.00
158.40	0.00	1	160.28	0.00
158.80	0.00	1	160.28	0.00
159.20	0.00	1	160.28	0.00
159.60	0.00	1	160.28	0.00
160.00	0.00	1	160.28	0.00
160.40	0.00	1	160.28	0.00
160.80	0.00	1	160.28	0.00
161.20	0.00	1	160.28	0.00
161.60	0.00	1	160.28	0.00
162.00	0.00	1	160.28	0.00
162.40	0.00	1	160.28	0.00
162.80	0.00	1	160.28	0.00
163.20	0.00	1	160.28	0.00
163.60	0.00	1	160.28	0.00
164.00	0.00	1	160.28	0.00
164.40	0.00	1	160.28	0.00
164.80	0.00	1	160.28	0.00
165.20	0.00	1	160.28	0.00
165.60	0.00	1	160.28	0.00
166.00	0.00	1	160.28	0.00
166.40	0.00	1	160.28	0.00
166.80	0.00	1	160.28	0.00
167.20	0.00	1	160.28	0.00
167.60	0.00	1	160.28	0.00
168.00	0.00	1	160.28	0.00

Summary for Pond 1P: UG1

Inflow Area = 82,459 sf, 99.52% Impervious, Inflow Depth = 3.05" for 2-yr event
Inflow = 8.97 cfs @ 11.95 hrs, Volume= 20,939 cf
Outflow = 2.67 cfs @ 12.08 hrs, Volume= 20,795 cf, Atten= 70%, Lag= 7.7 min
Primary = 2.67 cfs @ 12.08 hrs, Volume= 20,795 cf
Routed to Link 10L : POST-DEV TO DA #1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-168.00 hrs, dt= 0.04 hrs / 2
Peak Elev= 158.81' @ 12.08 hrs Surf.Area= 13,041 sf Storage= 11,551 cf

Plug-Flow detention time= 1,265.5 min calculated for 20,790 cf (99% of inflow)
Center-of-Mass det. time= 1,262.6 min (2,013.6 - 751.0)

Volume	Invert	Avail.Storage	Storage Description
#1A	157.53'	9,785 cf	**120.75'W x 108.00'L x 3.21'H Field A** 41,840 cf Overall - 17,377 cf Embedded = 24,463 cf x 40.0% Voids
#2A	158.03'	17,377 cf	**Cultec R-280HD** x 405 Inside #1 Effective Size= 46.9"W x 26.0"H => 6.07 sf x 7.00'L = 42.5 cf Overall Size= 47.0"W x 26.5"H x 8.00'L with 1.00' Overlap Row Length Adjustment= +1.00' x 6.07 sf x 27 rows
		27,162 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Device 4	157.53'	**1.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#2	Device 4	158.39'	**40.0" W x 4.0" H Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#3	Device 4	160.24'	**4.0' long Broad-Crested Rectangular Weir** Head (feet) 4.00 Coef. (English) 3.33
#4	Primary	157.53'	**18.0" Round Culvert** L= 66.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 157.53' / 157.20' S= 0.0050 '/' Cc= 0.900 n= 0.012, Flow Area= 1.77 sf

Primary OutFlow Max=2.66 cfs @ 12.08 hrs HW=158.81' TW=0.00' (Dynamic Tailwater)
└**4=Culvert** (Passes 2.66 cfs of 5.03 cfs potential flow)
  ├**1=Orifice/Grate** (Orifice Controls 0.03 cfs @ 5.36 fps)
  ├**2=Orifice/Grate** (Orifice Controls 2.63 cfs @ 2.37 fps)
  └**3=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond 1P: UG1 - Chamber Wizard Field A

Chamber Model = Cultec R-280HD (Cultec Recharger® 280HD)
Effective Size= 46.9"W x 26.0"H => 6.07 sf x 7.00'L = 42.5 cf
Overall Size= 47.0"W x 26.5"H x 8.00'L with 1.00' Overlap
Row Length Adjustment= +1.00' x 6.07 sf x 27 rows

47.0" Wide + 6.0" Spacing = 53.0" C-C Row Spacing

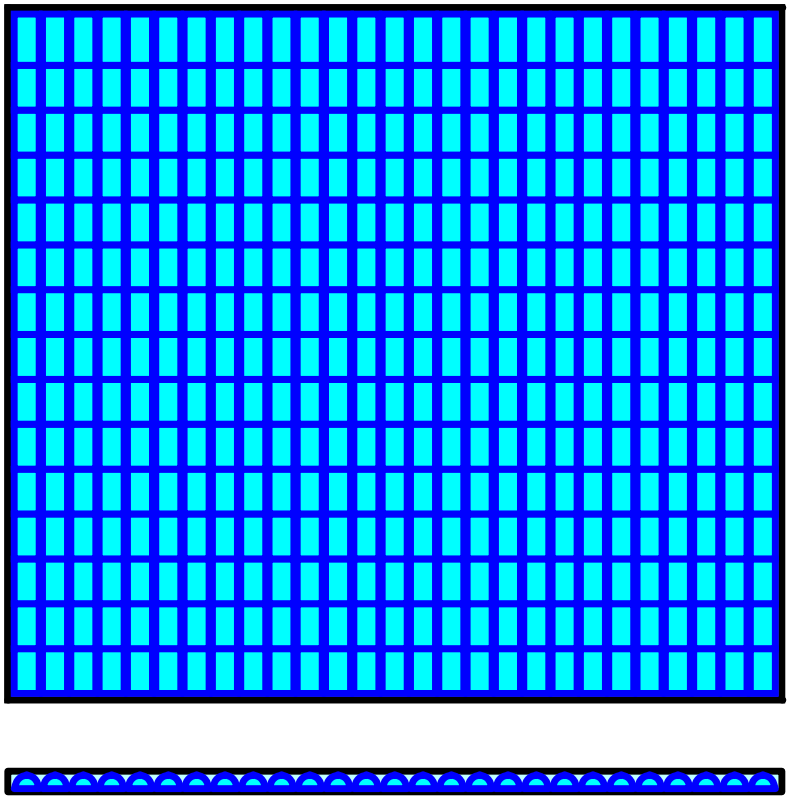
15 Chambers/Row x 7.00' Long +1.00' Row Adjustment = 106.00' Row Length +12.0" End Stone x 2 = 108.00' Base Length
27 Rows x 47.0" Wide + 6.0" Spacing x 26 + 12.0" Side Stone x 2 = 120.75' Base Width
6.0" Stone Base + 26.5" Chamber Height + 6.0" Stone Cover = 3.21' Field Height

405 Chambers x 42.5 cf +1.00' Row Adjustment x 6.07 sf x 27 Rows = 17,377.3 cf Chamber Storage

41,839.9 cf Field - 17,377.3 cf Chambers = 24,462.5 cf Stone x 40.0% Voids = 9,785.0 cf Stone Storage

Chamber Storage + Stone Storage = 27,162.4 cf = 0.624 af
Overall Storage Efficiency = 64.9%
Overall System Size = 108.00' x 120.75' x 3.21'

405 Chambers
1,549.6 cy Field
906.0 cy Stone



Hydrograph for Pond 1P: UG1

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
0.00	0.00	0	157.53	0.00
0.40	0.00	0	157.53	0.00
0.80	0.00	0	157.53	0.00
1.20	0.00	0	157.53	0.00
1.60	0.01	5	157.53	0.00
2.00	0.02	24	157.53	0.00
2.40	0.03	54	157.54	0.00
2.80	0.03	95	157.55	0.00
3.20	0.04	146	157.56	0.00
3.60	0.05	204	157.57	0.00
4.00	0.05	271	157.58	0.00
4.40	0.06	344	157.60	0.00
4.80	0.06	426	157.61	0.01
5.20	0.07	516	157.63	0.01
5.60	0.08	614	157.65	0.01
6.00	0.09	721	157.67	0.01
6.40	0.09	837	157.69	0.01
6.80	0.10	961	157.71	0.01
7.20	0.11	1,093	157.74	0.01
7.60	0.11	1,233	157.77	0.01
8.00	0.12	1,381	157.79	0.01
8.40	0.14	1,546	157.83	0.01
8.80	0.16	1,743	157.86	0.01
9.20	0.18	1,973	157.91	0.02
9.60	0.19	2,213	157.95	0.02
10.00	0.22	2,484	158.01	0.02
10.40	0.28	2,819	158.05	0.02
10.80	0.36	3,247	158.08	0.02
11.20	0.50	3,820	158.13	0.02
11.60	**1.15**	4,726	158.21	0.02
12.00	**7.44**	**10,914**	**158.75**	**2.31**
12.40	0.79	**10,247**	**158.69**	**1.81**
12.80	0.47	9,135	158.59	1.01
13.20	0.36	8,552	158.54	0.66
13.60	0.29	8,210	158.51	0.48
14.00	0.24	7,983	158.49	0.37
14.40	0.22	7,824	158.48	0.30
14.80	0.20	7,718	158.47	0.26
15.20	0.18	7,638	158.46	0.23
15.60	0.16	7,573	158.46	0.21
16.00	0.15	7,514	158.45	0.19
16.40	0.14	7,463	158.45	0.17
16.80	0.13	7,424	158.44	0.16
17.20	0.13	7,393	158.44	0.15
17.60	0.12	7,366	158.44	0.14
18.00	0.11	7,341	158.44	0.13
18.40	0.11	7,318	158.43	0.12
18.80	0.10	7,295	158.43	0.12
19.20	0.09	7,273	158.43	0.11
19.60	0.09	7,250	158.43	0.10
20.00	0.08	7,228	158.43	0.10
20.40	0.08	7,207	158.42	0.09
20.80	0.08	7,191	158.42	0.09

Hydrograph for Pond 1P: UG1 (continued)

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
21.20	0.08	7,179	158.42	0.09
21.60	0.08	7,169	158.42	0.08
22.00	0.08	7,160	158.42	0.08
22.40	0.07	7,153	158.42	0.08
22.80	0.07	7,146	158.42	0.08
23.20	0.07	7,139	158.42	0.08
23.60	0.07	7,133	158.42	0.07
24.00	0.07	7,127	158.42	0.07
24.40	0.00	7,052	158.41	0.06
24.80	0.00	6,981	158.40	0.04
25.20	0.00	6,925	158.40	0.03
25.60	0.00	6,880	158.40	0.03
26.00	0.00	6,841	158.39	0.03
26.40	0.00	6,806	158.39	0.02
26.80	0.00	6,772	158.39	0.02
27.20	0.00	6,738	158.38	0.02
27.60	0.00	6,704	158.38	0.02
28.00	0.00	6,670	158.38	0.02
28.40	0.00	6,636	158.37	0.02
28.80	0.00	6,602	158.37	0.02
29.20	0.00	6,568	158.37	0.02
29.60	0.00	6,535	158.37	0.02
30.00	0.00	6,501	158.36	0.02
30.40	0.00	6,467	158.36	0.02
30.80	0.00	6,434	158.36	0.02
31.20	0.00	6,400	158.35	0.02
31.60	0.00	6,367	158.35	0.02
32.00	0.00	6,334	158.35	0.02
32.40	0.00	6,300	158.35	0.02
32.80	0.00	6,267	158.34	0.02
33.20	0.00	6,234	158.34	0.02
33.60	0.00	6,201	158.34	0.02
34.00	0.00	6,168	158.33	0.02
34.40	0.00	6,135	158.33	0.02
34.80	0.00	6,102	158.33	0.02
35.20	0.00	6,069	158.33	0.02
35.60	0.00	6,036	158.32	0.02
36.00	0.00	6,003	158.32	0.02
36.40	0.00	5,971	158.32	0.02
36.80	0.00	5,938	158.31	0.02
37.20	0.00	5,905	158.31	0.02
37.60	0.00	5,873	158.31	0.02
38.00	0.00	5,841	158.31	0.02
38.40	0.00	5,808	158.30	0.02
38.80	0.00	5,776	158.30	0.02
39.20	0.00	5,744	158.30	0.02
39.60	0.00	5,711	158.29	0.02
40.00	0.00	5,679	158.29	0.02
40.40	0.00	5,647	158.29	0.02
40.80	0.00	5,615	158.29	0.02
41.20	0.00	5,583	158.28	0.02
41.60	0.00	5,551	158.28	0.02
42.00	0.00	5,520	158.28	0.02

Hydrograph for Pond 1P: UG1 (continued)

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
42.40	0.00	5,488	158.28	0.02
42.80	0.00	5,456	158.27	0.02
43.20	0.00	5,424	158.27	0.02
43.60	0.00	5,393	158.27	0.02
44.00	0.00	5,361	158.26	0.02
44.40	0.00	5,330	158.26	0.02
44.80	0.00	5,299	158.26	0.02
45.20	0.00	5,267	158.26	0.02
45.60	0.00	5,236	158.25	0.02
46.00	0.00	5,205	158.25	0.02
46.40	0.00	5,174	158.25	0.02
46.80	0.00	5,143	158.25	0.02
47.20	0.00	5,111	158.24	0.02
47.60	0.00	5,081	158.24	0.02
48.00	0.00	5,050	158.24	0.02
48.40	0.00	5,019	158.24	0.02
48.80	0.00	4,988	158.23	0.02
49.20	0.00	4,957	158.23	0.02
49.60	0.00	4,927	158.23	0.02
50.00	0.00	4,896	158.22	0.02
50.40	0.00	4,866	158.22	0.02
50.80	0.00	4,835	158.22	0.02
51.20	0.00	4,805	158.22	0.02
51.60	0.00	4,774	158.21	0.02
52.00	0.00	4,744	158.21	0.02
52.40	0.00	4,714	158.21	0.02
52.80	0.00	4,684	158.21	0.02
53.20	0.00	4,654	158.20	0.02
53.60	0.00	4,624	158.20	0.02
54.00	0.00	4,594	158.20	0.02
54.40	0.00	4,564	158.20	0.02
54.80	0.00	4,534	158.19	0.02
55.20	0.00	4,504	158.19	0.02
55.60	0.00	4,474	158.19	0.02
56.00	0.00	4,445	158.19	0.02
56.40	0.00	4,415	158.18	0.02
56.80	0.00	4,386	158.18	0.02
57.20	0.00	4,356	158.18	0.02
57.60	0.00	4,327	158.18	0.02
58.00	0.00	4,297	158.17	0.02
58.40	0.00	4,268	158.17	0.02
58.80	0.00	4,239	158.17	0.02
59.20	0.00	4,210	158.17	0.02
59.60	0.00	4,180	158.16	0.02
60.00	0.00	4,151	158.16	0.02
60.40	0.00	4,122	158.16	0.02
60.80	0.00	4,093	158.16	0.02
61.20	0.00	4,065	158.15	0.02
61.60	0.00	4,036	158.15	0.02
62.00	0.00	4,007	158.15	0.02
62.40	0.00	3,978	158.15	0.02
62.80	0.00	3,950	158.14	0.02
63.20	0.00	3,921	158.14	0.02

Hydrograph for Pond 1P: UG1 (continued)

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
63.60	0.00	3,893	158.14	0.02
64.00	0.00	3,864	158.14	0.02
64.40	0.00	3,836	158.13	0.02
64.80	0.00	3,808	158.13	0.02
65.20	0.00	3,779	158.13	0.02
65.60	0.00	3,751	158.13	0.02
66.00	0.00	3,723	158.12	0.02
66.40	0.00	3,695	158.12	0.02
66.80	0.00	3,667	158.12	0.02
67.20	0.00	3,639	158.12	0.02
67.60	0.00	3,611	158.11	0.02
68.00	0.00	3,583	158.11	0.02
68.40	0.00	3,555	158.11	0.02
68.80	0.00	3,528	158.11	0.02
69.20	0.00	3,500	158.11	0.02
69.60	0.00	3,472	158.10	0.02
70.00	0.00	3,445	158.10	0.02
70.40	0.00	3,417	158.10	0.02
70.80	0.00	3,390	158.10	0.02
71.20	0.00	3,363	158.09	0.02
71.60	0.00	3,335	158.09	0.02
72.00	0.00	3,308	158.09	0.02
72.40	0.00	3,281	158.09	0.02
72.80	0.00	3,254	158.08	0.02
73.20	0.00	3,227	158.08	0.02
73.60	0.00	3,200	158.08	0.02
74.00	0.00	3,173	158.08	0.02
74.40	0.00	3,146	158.08	0.02
74.80	0.00	3,119	158.07	0.02
75.20	0.00	3,093	158.07	0.02
75.60	0.00	3,066	158.07	0.02
76.00	0.00	3,039	158.07	0.02
76.40	0.00	3,013	158.06	0.02
76.80	0.00	2,986	158.06	0.02
77.20	0.00	2,960	158.06	0.02
77.60	0.00	2,933	158.06	0.02
78.00	0.00	2,907	158.06	0.02
78.40	0.00	2,881	158.05	0.02
78.80	0.00	2,855	158.05	0.02
79.20	0.00	2,828	158.05	0.02
79.60	0.00	2,802	158.05	0.02
80.00	0.00	2,776	158.04	0.02
80.40	0.00	2,750	158.04	0.02
80.80	0.00	2,724	158.04	0.02
81.20	0.00	2,699	158.04	0.02
81.60	0.00	2,673	158.04	0.02
82.00	0.00	2,647	158.03	0.02
82.40	0.00	2,621	158.03	0.02
82.80	0.00	2,596	158.03	0.02
83.20	0.00	2,570	158.02	0.02
83.60	0.00	2,545	158.02	0.02
84.00	0.00	2,520	158.01	0.02
84.40	0.00	2,495	158.01	0.02

Hydrograph for Pond 1P: UG1 (continued)

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
84.80	0.00	2,470	158.00	0.02
85.20	0.00	2,445	158.00	0.02
85.60	0.00	2,420	157.99	0.02
86.00	0.00	2,396	157.99	0.02
86.40	0.00	2,372	157.98	0.02
86.80	0.00	2,347	157.98	0.02
87.20	0.00	2,323	157.98	0.02
87.60	0.00	2,299	157.97	0.02
88.00	0.00	2,275	157.97	0.02
88.40	0.00	2,252	157.96	0.02
88.80	0.00	2,228	157.96	0.02
89.20	0.00	2,205	157.95	0.02
89.60	0.00	2,182	157.95	0.02
90.00	0.00	2,158	157.94	0.02
90.40	0.00	2,135	157.94	0.02
90.80	0.00	2,113	157.93	0.02
91.20	0.00	2,090	157.93	0.02
91.60	0.00	2,067	157.93	0.02
92.00	0.00	2,045	157.92	0.02
92.40	0.00	2,023	157.92	0.02
92.80	0.00	2,000	157.91	0.02
93.20	0.00	1,978	157.91	0.02
93.60	0.00	1,956	157.91	0.02
94.00	0.00	1,935	157.90	0.02
94.40	0.00	1,913	157.90	0.01
94.80	0.00	1,892	157.89	0.01
95.20	0.00	1,870	157.89	0.01
95.60	0.00	1,849	157.88	0.01
96.00	0.00	1,828	157.88	0.01
96.40	0.00	1,807	157.88	0.01
96.80	0.00	1,786	157.87	0.01
97.20	0.00	1,765	157.87	0.01
97.60	0.00	1,745	157.86	0.01
98.00	0.00	1,725	157.86	0.01
98.40	0.00	1,704	157.86	0.01
98.80	0.00	1,684	157.85	0.01
99.20	0.00	1,664	157.85	0.01
99.60	0.00	1,644	157.85	0.01
100.00	0.00	1,625	157.84	0.01
100.40	0.00	1,605	157.84	0.01
100.80	0.00	1,586	157.83	0.01
101.20	0.00	1,566	157.83	0.01
101.60	0.00	1,547	157.83	0.01
102.00	0.00	1,528	157.82	0.01
102.40	0.00	1,509	157.82	0.01
102.80	0.00	1,491	157.82	0.01
103.20	0.00	1,472	157.81	0.01
103.60	0.00	1,453	157.81	0.01
104.00	0.00	1,435	157.81	0.01
104.40	0.00	1,417	157.80	0.01
104.80	0.00	1,399	157.80	0.01
105.20	0.00	1,381	157.79	0.01
105.60	0.00	1,363	157.79	0.01

Hydrograph for Pond 1P: UG1 (continued)

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
106.00	0.00	1,345	157.79	0.01
106.40	0.00	1,328	157.78	0.01
106.80	0.00	1,311	157.78	0.01
107.20	0.00	1,293	157.78	0.01
107.60	0.00	1,276	157.77	0.01
108.00	0.00	1,259	157.77	0.01
108.40	0.00	1,242	157.77	0.01
108.80	0.00	1,226	157.76	0.01
109.20	0.00	1,209	157.76	0.01
109.60	0.00	1,193	157.76	0.01
110.00	0.00	1,176	157.76	0.01
110.40	0.00	1,160	157.75	0.01
110.80	0.00	1,144	157.75	0.01
111.20	0.00	1,128	157.75	0.01
111.60	0.00	1,113	157.74	0.01
112.00	0.00	1,097	157.74	0.01
112.40	0.00	1,082	157.74	0.01
112.80	0.00	1,066	157.73	0.01
113.20	0.00	1,051	157.73	0.01
113.60	0.00	1,036	157.73	0.01
114.00	0.00	1,021	157.73	0.01
114.40	0.00	1,006	157.72	0.01
114.80	0.00	992	157.72	0.01
115.20	0.00	977	157.72	0.01
115.60	0.00	963	157.71	0.01
116.00	0.00	949	157.71	0.01
116.40	0.00	935	157.71	0.01
116.80	0.00	921	157.71	0.01
117.20	0.00	907	157.70	0.01
117.60	0.00	893	157.70	0.01
118.00	0.00	880	157.70	0.01
118.40	0.00	866	157.70	0.01
118.80	0.00	853	157.69	0.01
119.20	0.00	840	157.69	0.01
119.60	0.00	827	157.69	0.01
120.00	0.00	814	157.69	0.01
120.40	0.00	801	157.68	0.01
120.80	0.00	789	157.68	0.01
121.20	0.00	776	157.68	0.01
121.60	0.00	764	157.68	0.01
122.00	0.00	752	157.67	0.01
122.40	0.00	740	157.67	0.01
122.80	0.00	728	157.67	0.01
123.20	0.00	716	157.67	0.01
123.60	0.00	704	157.67	0.01
124.00	0.00	693	157.66	0.01
124.40	0.00	682	157.66	0.01
124.80	0.00	670	157.66	0.01
125.20	0.00	659	157.66	0.01
125.60	0.00	648	157.65	0.01
126.00	0.00	637	157.65	0.01
126.40	0.00	627	157.65	0.01
126.80	0.00	616	157.65	0.01

Hydrograph for Pond 1P: UG1 (continued)

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
127.20	0.00	606	157.65	0.01
127.60	0.00	596	157.64	0.01
128.00	0.00	586	157.64	0.01
128.40	0.00	576	157.64	0.01
128.80	0.00	566	157.64	0.01
129.20	0.00	556	157.64	0.01
129.60	0.00	546	157.63	0.01
130.00	0.00	537	157.63	0.01
130.40	0.00	528	157.63	0.01
130.80	0.00	519	157.63	0.01
131.20	0.00	510	157.63	0.01
131.60	0.00	501	157.63	0.01
132.00	0.00	492	157.62	0.01
132.40	0.00	483	157.62	0.01
132.80	0.00	475	157.62	0.01
133.20	0.00	467	157.62	0.01
133.60	0.00	458	157.62	0.01
134.00	0.00	450	157.62	0.01
134.40	0.00	442	157.61	0.01
134.80	0.00	435	157.61	0.01
135.20	0.00	427	157.61	0.01
135.60	0.00	419	157.61	0.01
136.00	0.00	412	157.61	0.01
136.40	0.00	405	157.61	0.01
136.80	0.00	397	157.61	0.00
137.20	0.00	390	157.60	0.00
137.60	0.00	384	157.60	0.00
138.00	0.00	377	157.60	0.00
138.40	0.00	370	157.60	0.00
138.80	0.00	364	157.60	0.00
139.20	0.00	358	157.60	0.00
139.60	0.00	352	157.60	0.00
140.00	0.00	346	157.60	0.00
140.40	0.00	340	157.60	0.00
140.80	0.00	334	157.59	0.00
141.20	0.00	329	157.59	0.00
141.60	0.00	323	157.59	0.00
142.00	0.00	318	157.59	0.00
142.40	0.00	313	157.59	0.00
142.80	0.00	308	157.59	0.00
143.20	0.00	303	157.59	0.00
143.60	0.00	298	157.59	0.00
144.00	0.00	294	157.59	0.00
144.40	0.00	289	157.59	0.00
144.80	0.00	285	157.58	0.00
145.20	0.00	281	157.58	0.00
145.60	0.00	276	157.58	0.00
146.00	0.00	272	157.58	0.00
146.40	0.00	268	157.58	0.00
146.80	0.00	264	157.58	0.00
147.20	0.00	261	157.58	0.00
147.60	0.00	257	157.58	0.00
148.00	0.00	253	157.58	0.00

Hydrograph for Pond 1P: UG1 (continued)

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
148.40	0.00	250	157.58	0.00
148.80	0.00	246	157.58	0.00
149.20	0.00	243	157.58	0.00
149.60	0.00	240	157.58	0.00
150.00	0.00	237	157.58	0.00
150.40	0.00	233	157.57	0.00
150.80	0.00	230	157.57	0.00
151.20	0.00	227	157.57	0.00
151.60	0.00	224	157.57	0.00
152.00	0.00	222	157.57	0.00
152.40	0.00	219	157.57	0.00
152.80	0.00	216	157.57	0.00
153.20	0.00	213	157.57	0.00
153.60	0.00	211	157.57	0.00
154.00	0.00	208	157.57	0.00
154.40	0.00	206	157.57	0.00
154.80	0.00	203	157.57	0.00
155.20	0.00	201	157.57	0.00
155.60	0.00	199	157.57	0.00
156.00	0.00	196	157.57	0.00
156.40	0.00	194	157.57	0.00
156.80	0.00	192	157.57	0.00
157.20	0.00	190	157.57	0.00
157.60	0.00	188	157.57	0.00
158.00	0.00	185	157.57	0.00
158.40	0.00	183	157.57	0.00
158.80	0.00	181	157.56	0.00
159.20	0.00	179	157.56	0.00
159.60	0.00	178	157.56	0.00
160.00	0.00	176	157.56	0.00
160.40	0.00	174	157.56	0.00
160.80	0.00	172	157.56	0.00
161.20	0.00	170	157.56	0.00
161.60	0.00	169	157.56	0.00
162.00	0.00	167	157.56	0.00
162.40	0.00	165	157.56	0.00
162.80	0.00	164	157.56	0.00
163.20	0.00	162	157.56	0.00
163.60	0.00	160	157.56	0.00
164.00	0.00	159	157.56	0.00
164.40	0.00	157	157.56	0.00
164.80	0.00	156	157.56	0.00
165.20	0.00	154	157.56	0.00
165.60	0.00	153	157.56	0.00
166.00	0.00	151	157.56	0.00
166.40	0.00	150	157.56	0.00
166.80	0.00	149	157.56	0.00
167.20	0.00	147	157.56	0.00
167.60	0.00	146	157.56	0.00
168.00	0.00	145	157.56	0.00

Summary for Pond 2P: UG2

Inflow Area = 33,977 sf, 95.64% Impervious, Inflow Depth = 2.72" for 2-yr event
Inflow = 3.52 cfs @ 11.95 hrs, Volume= 7,711 cf
Outflow = 1.18 cfs @ 12.08 hrs, Volume= 7,502 cf, Atten= 66%, Lag= 7.2 min
Primary = 1.18 cfs @ 12.08 hrs, Volume= 7,502 cf
Routed to Link 10L : POST-DEV TO DA #1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-168.00 hrs, dt= 0.04 hrs / 2
Peak Elev= 161.32' @ 12.08 hrs Surf.Area= 3,834 sf Storage= 4,071 cf

Plug-Flow detention time= 1,577.1 min calculated for 7,500 cf (97% of inflow)
Center-of-Mass det. time= 1,561.9 min (2,337.8 - 775.9)

Volume	Invert	Avail.Storage	Storage Description
#1A	159.80'	3,209 cf	**35.33'W x 108.50'L x 3.54'H Field A** 13,578 cf Overall - 5,555 cf Embedded = 8,023 cf x 40.0% Voids
#2A	160.30'	5,555 cf	**Cultec R-330XLHD** x 105 Inside #1 Effective Size= 47.8"W x 30.0"H => 7.45 sf x 7.00'L = 52.2 cf Overall Size= 52.0"W x 30.5"H x 8.50'L with 1.50' Overlap Row Length Adjustment= +1.50' x 7.45 sf x 7 rows
		8,764 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Device 4	159.80'	**0.5" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#2	Device 4	160.90'	**16.0" W x 7.0" H Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#3	Device 4	162.55'	**4.0' long Broad-Crested Rectangular Weir** Head (feet) 4.00 Coef. (English) 3.33
#4	Primary	159.80'	**18.0" Round Culvert** L= 141.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 159.80' / 159.09' S= 0.0050 '/' Cc= 0.900 n= 0.012, Flow Area= 1.77 sf

Primary OutFlow Max=1.18 cfs @ 12.08 hrs HW=161.32' TW=0.00' (Dynamic Tailwater)
↑└**4=Culvert** (Passes 1.18 cfs of 6.75 cfs potential flow)
↑ ├**1=Orifice/Grate** (Orifice Controls 0.01 cfs @ 5.90 fps)
 ├**2=Orifice/Grate** (Orifice Controls 1.17 cfs @ 2.08 fps)
 └**3=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond 2P: UG2 - Chamber Wizard Field A

Chamber Model = Cultec R-330XLHD (Cultec Recharger® 330XLHD)
Effective Size= 47.8"W x 30.0"H => 7.45 sf x 7.00'L = 52.2 cf
Overall Size= 52.0"W x 30.5"H x 8.50'L with 1.50' Overlap
Row Length Adjustment= +1.50' x 7.45 sf x 7 rows

52.0" Wide + 6.0" Spacing = 58.0" C-C Row Spacing

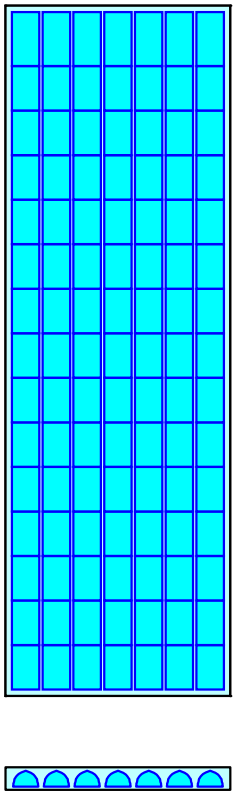
15 Chambers/Row x 7.00' Long +1.50' Row Adjustment = 106.50' Row Length +12.0" End Stone x 2 = 108.50' Base Length
7 Rows x 52.0" Wide + 6.0" Spacing x 6 + 12.0" Side Stone x 2 = 35.33' Base Width
6.0" Stone Base + 30.5" Chamber Height + 6.0" Stone Cover = 3.54' Field Height

105 Chambers x 52.2 cf +1.50' Row Adjustment x 7.45 sf x 7 Rows = 5,554.7 cf Chamber Storage

13,577.6 cf Field - 5,554.7 cf Chambers = 8,022.8 cf Stone x 40.0% Voids = 3,209.1 cf Stone Storage

Chamber Storage + Stone Storage = 8,763.9 cf = 0.201 af
Overall Storage Efficiency = 64.5%
Overall System Size = 108.50' x 35.33' x 3.54'

105 Chambers
502.9 cy Field
297.1 cy Stone



Hydrograph for Pond 2P: UG2

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
0.00	0.00	0	159.80	0.00
0.40	0.00	0	159.80	0.00
0.80	0.00	0	159.80	0.00
1.20	0.00	0	159.80	0.00
1.60	0.00	0	159.80	0.00
2.00	0.00	0	159.80	0.00
2.40	0.00	0	159.80	0.00
2.80	0.00	0	159.80	0.00
3.20	0.00	1	159.80	0.00
3.60	0.00	5	159.80	0.00
4.00	0.01	12	159.81	0.00
4.40	0.01	21	159.81	0.00
4.80	0.01	34	159.82	0.00
5.20	0.01	51	159.83	0.00
5.60	0.02	70	159.85	0.00
6.00	0.02	93	159.86	0.00
6.40	0.02	119	159.88	0.00
6.80	0.02	149	159.90	0.00
7.20	0.03	183	159.92	0.00
7.60	0.03	220	159.94	0.00
8.00	0.03	262	159.97	0.00
8.40	0.04	309	160.00	0.00
8.80	0.05	368	160.04	0.00
9.20	0.06	439	160.09	0.00
9.60	0.06	515	160.14	0.00
10.00	0.07	604	160.19	0.00
10.40	0.09	716	160.27	0.00
10.80	0.12	862	160.33	0.00
11.20	0.18	1,064	160.39	0.00
11.60	**0.42**	1,391	160.49	0.01
12.00	**2.94**	**3,842**	**161.25**	**0.89**
12.40	0.32	**3,597**	**161.17**	**0.61**
12.80	0.19	3,291	161.08	0.32
13.20	0.14	3,153	161.03	0.21
13.60	0.12	3,077	161.01	0.16
14.00	0.10	3,026	160.99	0.13
14.40	0.09	2,991	160.98	0.11
14.80	0.08	2,969	160.97	0.09
15.20	0.07	2,952	160.97	0.08
15.60	0.07	2,937	160.96	0.08
16.00	0.06	2,922	160.96	0.07
16.40	0.06	2,910	160.96	0.06
16.80	0.05	2,901	160.95	0.06
17.20	0.05	2,894	160.95	0.06
17.60	0.05	2,887	160.95	0.05
18.00	0.05	2,881	160.95	0.05
18.40	0.04	2,875	160.94	0.05
18.80	0.04	2,869	160.94	0.04
19.20	0.04	2,863	160.94	0.04
19.60	0.04	2,857	160.94	0.04
20.00	0.03	2,851	160.94	0.04
20.40	0.03	2,846	160.94	0.04
20.80	0.03	2,842	160.93	0.03

Hydrograph for Pond 2P: UG2 (continued)

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
21.20	0.03	2,839	160.93	0.03
21.60	0.03	2,837	160.93	0.03
22.00	0.03	2,835	160.93	0.03
22.40	0.03	2,833	160.93	0.03
22.80	0.03	2,832	160.93	0.03
23.20	0.03	2,830	160.93	0.03
23.60	0.03	2,829	160.93	0.03
24.00	0.03	2,827	160.93	0.03
24.40	0.00	2,799	160.92	0.02
24.80	0.00	2,775	160.91	0.01
25.20	0.00	2,758	160.91	0.01
25.60	0.00	2,745	160.90	0.01
26.00	0.00	2,735	160.90	0.01
26.40	0.00	2,725	160.90	0.01
26.80	0.00	2,715	160.89	0.01
27.20	0.00	2,705	160.89	0.01
27.60	0.00	2,696	160.89	0.01
28.00	0.00	2,686	160.89	0.01
28.40	0.00	2,676	160.88	0.01
28.80	0.00	2,666	160.88	0.01
29.20	0.00	2,657	160.88	0.01
29.60	0.00	2,647	160.87	0.01
30.00	0.00	2,637	160.87	0.01
30.40	0.00	2,627	160.87	0.01
30.80	0.00	2,618	160.86	0.01
31.20	0.00	2,608	160.86	0.01
31.60	0.00	2,599	160.86	0.01
32.00	0.00	2,589	160.86	0.01
32.40	0.00	2,579	160.85	0.01
32.80	0.00	2,570	160.85	0.01
33.20	0.00	2,560	160.85	0.01
33.60	0.00	2,551	160.84	0.01
34.00	0.00	2,541	160.84	0.01
34.40	0.00	2,531	160.84	0.01
34.80	0.00	2,522	160.84	0.01
35.20	0.00	2,512	160.83	0.01
35.60	0.00	2,503	160.83	0.01
36.00	0.00	2,493	160.83	0.01
36.40	0.00	2,484	160.82	0.01
36.80	0.00	2,474	160.82	0.01
37.20	0.00	2,465	160.82	0.01
37.60	0.00	2,456	160.81	0.01
38.00	0.00	2,446	160.81	0.01
38.40	0.00	2,437	160.81	0.01
38.80	0.00	2,427	160.81	0.01
39.20	0.00	2,418	160.80	0.01
39.60	0.00	2,409	160.80	0.01
40.00	0.00	2,399	160.80	0.01
40.40	0.00	2,390	160.79	0.01
40.80	0.00	2,381	160.79	0.01
41.20	0.00	2,371	160.79	0.01
41.60	0.00	2,362	160.79	0.01
42.00	0.00	2,353	160.78	0.01

Hydrograph for Pond 2P: UG2 (continued)

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
42.40	0.00	2,343	160.78	0.01
42.80	0.00	2,334	160.78	0.01
43.20	0.00	2,325	160.77	0.01
43.60	0.00	2,316	160.77	0.01
44.00	0.00	2,307	160.77	0.01
44.40	0.00	2,297	160.77	0.01
44.80	0.00	2,288	160.76	0.01
45.20	0.00	2,279	160.76	0.01
45.60	0.00	2,270	160.76	0.01
46.00	0.00	2,261	160.76	0.01
46.40	0.00	2,252	160.75	0.01
46.80	0.00	2,242	160.75	0.01
47.20	0.00	2,233	160.75	0.01
47.60	0.00	2,224	160.74	0.01
48.00	0.00	2,215	160.74	0.01
48.40	0.00	2,206	160.74	0.01
48.80	0.00	2,197	160.74	0.01
49.20	0.00	2,188	160.73	0.01
49.60	0.00	2,179	160.73	0.01
50.00	0.00	2,170	160.73	0.01
50.40	0.00	2,161	160.72	0.01
50.80	0.00	2,152	160.72	0.01
51.20	0.00	2,143	160.72	0.01
51.60	0.00	2,134	160.72	0.01
52.00	0.00	2,125	160.71	0.01
52.40	0.00	2,116	160.71	0.01
52.80	0.00	2,107	160.71	0.01
53.20	0.00	2,098	160.71	0.01
53.60	0.00	2,089	160.70	0.01
54.00	0.00	2,081	160.70	0.01
54.40	0.00	2,072	160.70	0.01
54.80	0.00	2,063	160.69	0.01
55.20	0.00	2,054	160.69	0.01
55.60	0.00	2,045	160.69	0.01
56.00	0.00	2,036	160.69	0.01
56.40	0.00	2,028	160.68	0.01
56.80	0.00	2,019	160.68	0.01
57.20	0.00	2,010	160.68	0.01
57.60	0.00	2,001	160.68	0.01
58.00	0.00	1,993	160.67	0.01
58.40	0.00	1,984	160.67	0.01
58.80	0.00	1,975	160.67	0.01
59.20	0.00	1,967	160.67	0.01
59.60	0.00	1,958	160.66	0.01
60.00	0.00	1,949	160.66	0.01
60.40	0.00	1,941	160.66	0.01
60.80	0.00	1,932	160.65	0.01
61.20	0.00	1,923	160.65	0.01
61.60	0.00	1,915	160.65	0.01
62.00	0.00	1,906	160.65	0.01
62.40	0.00	1,897	160.64	0.01
62.80	0.00	1,889	160.64	0.01
63.20	0.00	1,880	160.64	0.01

Hydrograph for Pond 2P: UG2 (continued)

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
63.60	0.00	1,872	160.64	0.01
64.00	0.00	1,863	160.63	0.01
64.40	0.00	1,855	160.63	0.01
64.80	0.00	1,846	160.63	0.01
65.20	0.00	1,838	160.63	0.01
65.60	0.00	1,829	160.62	0.01
66.00	0.00	1,821	160.62	0.01
66.40	0.00	1,812	160.62	0.01
66.80	0.00	1,804	160.62	0.01
67.20	0.00	1,796	160.61	0.01
67.60	0.00	1,787	160.61	0.01
68.00	0.00	1,779	160.61	0.01
68.40	0.00	1,770	160.61	0.01
68.80	0.00	1,762	160.60	0.01
69.20	0.00	1,754	160.60	0.01
69.60	0.00	1,745	160.60	0.01
70.00	0.00	1,737	160.59	0.01
70.40	0.00	1,729	160.59	0.01
70.80	0.00	1,720	160.59	0.01
71.20	0.00	1,712	160.59	0.01
71.60	0.00	1,704	160.58	0.01
72.00	0.00	1,696	160.58	0.01
72.40	0.00	1,687	160.58	0.01
72.80	0.00	1,679	160.58	0.01
73.20	0.00	1,671	160.57	0.01
73.60	0.00	1,663	160.57	0.01
74.00	0.00	1,654	160.57	0.01
74.40	0.00	1,646	160.57	0.01
74.80	0.00	1,638	160.56	0.01
75.20	0.00	1,630	160.56	0.01
75.60	0.00	1,622	160.56	0.01
76.00	0.00	1,614	160.56	0.01
76.40	0.00	1,606	160.55	0.01
76.80	0.00	1,598	160.55	0.01
77.20	0.00	1,589	160.55	0.01
77.60	0.00	1,581	160.55	0.01
78.00	0.00	1,573	160.54	0.01
78.40	0.00	1,565	160.54	0.01
78.80	0.00	1,557	160.54	0.01
79.20	0.00	1,549	160.54	0.01
79.60	0.00	1,541	160.54	0.01
80.00	0.00	1,533	160.53	0.01
80.40	0.00	1,525	160.53	0.01
80.80	0.00	1,517	160.53	0.01
81.20	0.00	1,509	160.53	0.01
81.60	0.00	1,502	160.52	0.01
82.00	0.00	1,494	160.52	0.01
82.40	0.00	1,486	160.52	0.01
82.80	0.00	1,478	160.52	0.01
83.20	0.00	1,470	160.51	0.01
83.60	0.00	1,462	160.51	0.01
84.00	0.00	1,454	160.51	0.01
84.40	0.00	1,446	160.51	0.01

Hydrograph for Pond 2P: UG2 (continued)

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
84.80	0.00	1,439	160.50	0.01
85.20	0.00	1,431	160.50	0.01
85.60	0.00	1,423	160.50	0.01
86.00	0.00	1,415	160.50	0.01
86.40	0.00	1,407	160.49	0.01
86.80	0.00	1,400	160.49	0.01
87.20	0.00	1,392	160.49	0.01
87.60	0.00	1,384	160.49	0.01
88.00	0.00	1,377	160.48	0.01
88.40	0.00	1,369	160.48	0.01
88.80	0.00	1,361	160.48	0.01
89.20	0.00	1,353	160.48	0.01
89.60	0.00	1,346	160.48	0.01
90.00	0.00	1,338	160.47	0.01
90.40	0.00	1,331	160.47	0.01
90.80	0.00	1,323	160.47	0.01
91.20	0.00	1,315	160.47	0.01
91.60	0.00	1,308	160.46	0.01
92.00	0.00	1,300	160.46	0.01
92.40	0.00	1,293	160.46	0.01
92.80	0.00	1,285	160.46	0.01
93.20	0.00	1,278	160.45	0.01
93.60	0.00	1,270	160.45	0.01
94.00	0.00	1,262	160.45	0.01
94.40	0.00	1,255	160.45	0.01
94.80	0.00	1,248	160.45	0.01
95.20	0.00	1,240	160.44	0.01
95.60	0.00	1,233	160.44	0.01
96.00	0.00	1,225	160.44	0.01
96.40	0.00	1,218	160.44	0.01
96.80	0.00	1,210	160.43	0.01
97.20	0.00	1,203	160.43	0.01
97.60	0.00	1,196	160.43	0.01
98.00	0.00	1,188	160.43	0.01
98.40	0.00	1,181	160.43	0.01
98.80	0.00	1,173	160.42	0.01
99.20	0.00	1,166	160.42	0.01
99.60	0.00	1,159	160.42	0.01
100.00	0.00	1,152	160.42	0.01
100.40	0.00	1,144	160.41	0.01
100.80	0.00	1,137	160.41	0.01
101.20	0.00	1,130	160.41	0.01
101.60	0.00	1,122	160.41	0.01
102.00	0.00	1,115	160.41	0.01
102.40	0.00	1,108	160.40	0.01
102.80	0.00	1,101	160.40	0.01
103.20	0.00	1,094	160.40	0.00
103.60	0.00	1,086	160.40	0.00
104.00	0.00	1,079	160.39	0.00
104.40	0.00	1,072	160.39	0.00
104.80	0.00	1,065	160.39	0.00
105.20	0.00	1,058	160.39	0.00
105.60	0.00	1,051	160.39	0.00

Hydrograph for Pond 2P: UG2 (continued)

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
106.00	0.00	1,044	160.38	0.00
106.40	0.00	1,037	160.38	0.00
106.80	0.00	1,029	160.38	0.00
107.20	0.00	1,022	160.38	0.00
107.60	0.00	1,015	160.38	0.00
108.00	0.00	1,008	160.37	0.00
108.40	0.00	1,001	160.37	0.00
108.80	0.00	994	160.37	0.00
109.20	0.00	987	160.37	0.00
109.60	0.00	980	160.36	0.00
110.00	0.00	973	160.36	0.00
110.40	0.00	966	160.36	0.00
110.80	0.00	959	160.36	0.00
111.20	0.00	953	160.36	0.00
111.60	0.00	946	160.35	0.00
112.00	0.00	939	160.35	0.00
112.40	0.00	932	160.35	0.00
112.80	0.00	925	160.35	0.00
113.20	0.00	918	160.35	0.00
113.60	0.00	911	160.34	0.00
114.00	0.00	904	160.34	0.00
114.40	0.00	898	160.34	0.00
114.80	0.00	891	160.34	0.00
115.20	0.00	884	160.34	0.00
115.60	0.00	877	160.33	0.00
116.00	0.00	870	160.33	0.00
116.40	0.00	864	160.33	0.00
116.80	0.00	857	160.33	0.00
117.20	0.00	850	160.33	0.00
117.60	0.00	844	160.32	0.00
118.00	0.00	837	160.32	0.00
118.40	0.00	830	160.32	0.00
118.80	0.00	824	160.32	0.00
119.20	0.00	817	160.32	0.00
119.60	0.00	810	160.31	0.00
120.00	0.00	804	160.31	0.00
120.40	0.00	797	160.31	0.00
120.80	0.00	790	160.31	0.00
121.20	0.00	784	160.31	0.00
121.60	0.00	777	160.30	0.00
122.00	0.00	771	160.30	0.00
122.40	0.00	764	160.30	0.00
122.80	0.00	758	160.29	0.00
123.20	0.00	751	160.29	0.00
123.60	0.00	745	160.29	0.00
124.00	0.00	738	160.28	0.00
124.40	0.00	732	160.28	0.00
124.80	0.00	725	160.27	0.00
125.20	0.00	719	160.27	0.00
125.60	0.00	713	160.26	0.00
126.00	0.00	707	160.26	0.00
126.40	0.00	700	160.26	0.00
126.80	0.00	694	160.25	0.00

Hydrograph for Pond 2P: UG2 (continued)

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
127.20	0.00	688	160.25	0.00
127.60	0.00	682	160.24	0.00
128.00	0.00	676	160.24	0.00
128.40	0.00	669	160.24	0.00
128.80	0.00	663	160.23	0.00
129.20	0.00	657	160.23	0.00
129.60	0.00	651	160.22	0.00
130.00	0.00	645	160.22	0.00
130.40	0.00	639	160.22	0.00
130.80	0.00	633	160.21	0.00
131.20	0.00	627	160.21	0.00
131.60	0.00	622	160.21	0.00
132.00	0.00	616	160.20	0.00
132.40	0.00	610	160.20	0.00
132.80	0.00	604	160.19	0.00
133.20	0.00	598	160.19	0.00
133.60	0.00	593	160.19	0.00
134.00	0.00	587	160.18	0.00
134.40	0.00	581	160.18	0.00
134.80	0.00	576	160.18	0.00
135.20	0.00	570	160.17	0.00
135.60	0.00	564	160.17	0.00
136.00	0.00	559	160.16	0.00
136.40	0.00	553	160.16	0.00
136.80	0.00	548	160.16	0.00
137.20	0.00	542	160.15	0.00
137.60	0.00	537	160.15	0.00
138.00	0.00	532	160.15	0.00
138.40	0.00	526	160.14	0.00
138.80	0.00	521	160.14	0.00
139.20	0.00	516	160.14	0.00
139.60	0.00	510	160.13	0.00
140.00	0.00	505	160.13	0.00
140.40	0.00	500	160.13	0.00
140.80	0.00	495	160.12	0.00
141.20	0.00	489	160.12	0.00
141.60	0.00	484	160.12	0.00
142.00	0.00	479	160.11	0.00
142.40	0.00	474	160.11	0.00
142.80	0.00	469	160.11	0.00
143.20	0.00	464	160.10	0.00
143.60	0.00	459	160.10	0.00
144.00	0.00	454	160.10	0.00
144.40	0.00	449	160.09	0.00
144.80	0.00	444	160.09	0.00
145.20	0.00	439	160.09	0.00
145.60	0.00	434	160.08	0.00
146.00	0.00	429	160.08	0.00
146.40	0.00	425	160.08	0.00
146.80	0.00	420	160.07	0.00
147.20	0.00	415	160.07	0.00
147.60	0.00	410	160.07	0.00
148.00	0.00	406	160.06	0.00

Hydrograph for Pond 2P: UG2 (continued)

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
148.40	0.00	401	160.06	0.00
148.80	0.00	397	160.06	0.00
149.20	0.00	392	160.06	0.00
149.60	0.00	387	160.05	0.00
150.00	0.00	383	160.05	0.00
150.40	0.00	378	160.05	0.00
150.80	0.00	374	160.04	0.00
151.20	0.00	369	160.04	0.00
151.60	0.00	365	160.04	0.00
152.00	0.00	361	160.04	0.00
152.40	0.00	356	160.03	0.00
152.80	0.00	352	160.03	0.00
153.20	0.00	348	160.03	0.00
153.60	0.00	343	160.02	0.00
154.00	0.00	339	160.02	0.00
154.40	0.00	335	160.02	0.00
154.80	0.00	331	160.02	0.00
155.20	0.00	326	160.01	0.00
155.60	0.00	322	160.01	0.00
156.00	0.00	318	160.01	0.00
156.40	0.00	314	160.00	0.00
156.80	0.00	310	160.00	0.00
157.20	0.00	306	160.00	0.00
157.60	0.00	302	160.00	0.00
158.00	0.00	298	159.99	0.00
158.40	0.00	294	159.99	0.00
158.80	0.00	290	159.99	0.00
159.20	0.00	287	159.99	0.00
159.60	0.00	283	159.98	0.00
160.00	0.00	279	159.98	0.00
160.40	0.00	275	159.98	0.00
160.80	0.00	271	159.98	0.00
161.20	0.00	268	159.97	0.00
161.60	0.00	264	159.97	0.00
162.00	0.00	260	159.97	0.00
162.40	0.00	257	159.97	0.00
162.80	0.00	253	159.96	0.00
163.20	0.00	249	159.96	0.00
163.60	0.00	246	159.96	0.00
164.00	0.00	242	159.96	0.00
164.40	0.00	239	159.96	0.00
164.80	0.00	235	159.95	0.00
165.20	0.00	232	159.95	0.00
165.60	0.00	229	159.95	0.00
166.00	0.00	225	159.95	0.00
166.40	0.00	222	159.94	0.00
166.80	0.00	219	159.94	0.00
167.20	0.00	215	159.94	0.00
167.60	0.00	212	159.94	0.00
168.00	0.00	209	159.94	0.00

Summary for Pond 3P: UG3

Inflow Area = 19,646 sf, 85.14% Impervious, Inflow Depth = 2.15" for 2-yr event
Inflow = 1.72 cfs @ 11.96 hrs, Volume= 3,528 cf
Outflow = 0.30 cfs @ 12.13 hrs, Volume= 3,526 cf, Atten= 82%, Lag= 10.5 min
Primary = 0.30 cfs @ 12.13 hrs, Volume= 3,526 cf
Routed to Link 10L : POST-DEV TO DA #1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-168.00 hrs, dt= 0.04 hrs / 2
Peak Elev= 161.13' @ 12.13 hrs Surf.Area= 2,917 sf Storage= 1,466 cf

Plug-Flow detention time= 89.9 min calculated for 3,525 cf (100% of inflow)
Center-of-Mass det. time= 91.1 min (897.2 - 806.1)

Volume	Invert	Avail.Storage	Storage Description
#1A	160.28'	2,010 cf	**44.00'W x 66.30'L x 2.71'H Field A** 7,901 cf Overall - 2,875 cf Embedded = 5,026 cf x 40.0% Voids
#2A	160.78'	2,875 cf	**Cultec R-180** x 130 Inside #1 Effective Size= 33.6"W x 20.0"H => 3.44 sf x 6.33'L = 21.8 cf Overall Size= 36.0"W x 20.5"H x 7.33'L with 1.00' Overlap Row Length Adjustment= +1.00' x 3.44 sf x 13 rows
		4,885 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Device 4	160.28'	**3.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#2	Device 4	160.97'	**6.0" W x 3.0" H Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#3	Device 4	162.50'	**4.0' long Broad-Crested Rectangular Weir** Head (feet) 4.00 Coef. (English) 3.33
#4	Primary	160.28'	**18.0" Round Culvert** L= 36.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 160.28' / 160.10' S= 0.0050 '/' Cc= 0.900 n= 0.012, Flow Area= 1.77 sf

Primary OutFlow Max=0.30 cfs @ 12.13 hrs HW=161.13' TW=0.00' (Dynamic Tailwater)
└**4=Culvert** (Passes 0.30 cfs of 2.45 cfs potential flow)
  ├**1=Orifice/Grate** (Orifice Controls 0.20 cfs @ 4.10 fps)
  ├**2=Orifice/Grate** (Orifice Controls 0.10 cfs @ 1.28 fps)
  └**3=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond 3P: UG3 - Chamber Wizard Field A

Chamber Model = Cultec R-180 (Cultec Recharger® 180HD)
Effective Size= 33.6"W x 20.0"H => 3.44 sf x 6.33'L = 21.8 cf
Overall Size= 36.0"W x 20.5"H x 7.33'L with 1.00' Overlap
Row Length Adjustment= +1.00' x 3.44 sf x 13 rows

36.0" Wide + 3.0" Spacing = 39.0" C-C Row Spacing

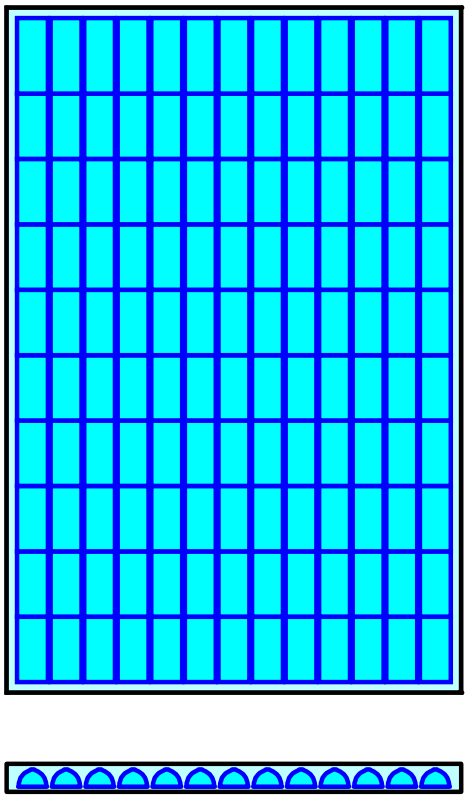
10 Chambers/Row x 6.33' Long +1.00' Row Adjustment = 64.30' Row Length +12.0" End Stone x 2 = 66.30' Base Length
13 Rows x 36.0" Wide + 3.0" Spacing x 12 + 12.0" Side Stone x 2 = 44.00' Base Width
6.0" Stone Base + 20.5" Chamber Height + 6.0" Stone Cover = 2.71' Field Height

130 Chambers x 21.8 cf +1.00' Row Adjustment x 3.44 sf x 13 Rows = 2,875.1 cf Chamber Storage

7,900.7 cf Field - 2,875.1 cf Chambers = 5,025.7 cf Stone x 40.0% Voids = 2,010.3 cf Stone Storage

Chamber Storage + Stone Storage = 4,885.3 cf = 0.112 af
Overall Storage Efficiency = 61.8%
Overall System Size = 66.30' x 44.00' x 2.71'

130 Chambers
292.6 cy Field
186.1 cy Stone



Hydrograph for Pond 3P: UG3

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
0.00	0.00	0	160.28	0.00
0.40	0.00	0	160.28	0.00
0.80	0.00	0	160.28	0.00
1.20	0.00	0	160.28	0.00
1.60	0.00	0	160.28	0.00
2.00	0.00	0	160.28	0.00
2.40	0.00	0	160.28	0.00
2.80	0.00	0	160.28	0.00
3.20	0.00	0	160.28	0.00
3.60	0.00	0	160.28	0.00
4.00	0.00	0	160.28	0.00
4.40	0.00	0	160.28	0.00
4.80	0.00	0	160.28	0.00
5.20	0.00	0	160.28	0.00
5.60	0.00	0	160.28	0.00
6.00	0.00	0	160.28	0.00
6.40	0.00	2	160.28	0.00
6.80	0.00	4	160.28	0.00
7.20	0.00	9	160.29	0.00
7.60	0.01	15	160.29	0.00
8.00	0.01	22	160.30	0.00
8.40	0.01	31	160.31	0.00
8.80	0.01	43	160.32	0.00
9.20	0.01	56	160.33	0.00
9.60	0.02	70	160.34	0.01
10.00	0.02	84	160.35	0.01
10.40	0.03	103	160.37	0.02
10.80	0.04	127	160.39	0.02
11.20	0.07	161	160.42	0.04
11.60	**0.17**	225	160.47	0.06
12.00	**1.46**	**1,256**	**161.05**	**0.22**
12.40	0.16	**1,387**	**161.10**	**0.27**
12.80	0.10	1,215	161.03	0.21
13.20	0.08	1,063	160.97	0.18
13.60	0.06	912	160.91	0.17
14.00	0.05	759	160.85	0.16
14.40	0.05	609	160.79	0.15
14.80	0.04	476	160.69	0.13
15.20	0.04	369	160.60	0.10
15.60	0.04	289	160.53	0.08
16.00	0.03	231	160.48	0.06
16.40	0.03	196	160.45	0.05
16.80	0.03	174	160.43	0.04
17.20	0.03	160	160.42	0.03
17.60	0.03	151	160.41	0.03
18.00	0.02	144	160.40	0.03
18.40	0.02	138	160.40	0.03
18.80	0.02	133	160.39	0.03
19.20	0.02	129	160.39	0.02
19.60	0.02	124	160.39	0.02
20.00	0.02	120	160.38	0.02
20.40	0.02	116	160.38	0.02
20.80	0.02	114	160.38	0.02

Hydrograph for Pond 3P: UG3 (continued)

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
21.20	0.02	112	160.38	0.02
21.60	0.02	110	160.37	0.02
22.00	0.02	109	160.37	0.02
22.40	0.02	107	160.37	0.02
22.80	0.02	106	160.37	0.02
23.20	0.02	105	160.37	0.02
23.60	0.02	104	160.37	0.02
24.00	0.02	103	160.37	0.02
24.40	0.00	87	160.35	0.01
24.80	0.00	73	160.34	0.01
25.20	0.00	63	160.33	0.01
25.60	0.00	55	160.33	0.00
26.00	0.00	49	160.32	0.00
26.40	0.00	44	160.32	0.00
26.80	0.00	40	160.31	0.00
27.20	0.00	37	160.31	0.00
27.60	0.00	34	160.31	0.00
28.00	0.00	31	160.31	0.00
28.40	0.00	29	160.31	0.00
28.80	0.00	27	160.30	0.00
29.20	0.00	26	160.30	0.00
29.60	0.00	24	160.30	0.00
30.00	0.00	23	160.30	0.00
30.40	0.00	22	160.30	0.00
30.80	0.00	21	160.30	0.00
31.20	0.00	20	160.30	0.00
31.60	0.00	19	160.30	0.00
32.00	0.00	18	160.30	0.00
32.40	0.00	17	160.29	0.00
32.80	0.00	17	160.29	0.00
33.20	0.00	16	160.29	0.00
33.60	0.00	15	160.29	0.00
34.00	0.00	15	160.29	0.00
34.40	0.00	14	160.29	0.00
34.80	0.00	14	160.29	0.00
35.20	0.00	13	160.29	0.00
35.60	0.00	13	160.29	0.00
36.00	0.00	13	160.29	0.00
36.40	0.00	12	160.29	0.00
36.80	0.00	12	160.29	0.00
37.20	0.00	12	160.29	0.00
37.60	0.00	11	160.29	0.00
38.00	0.00	11	160.29	0.00
38.40	0.00	11	160.29	0.00
38.80	0.00	10	160.29	0.00
39.20	0.00	10	160.29	0.00
39.60	0.00	10	160.29	0.00
40.00	0.00	10	160.29	0.00
40.40	0.00	10	160.29	0.00
40.80	0.00	9	160.29	0.00
41.20	0.00	9	160.29	0.00
41.60	0.00	9	160.29	0.00
42.00	0.00	9	160.29	0.00

Hydrograph for Pond 3P: UG3 (continued)

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
42.40	0.00	9	160.29	0.00
42.80	0.00	8	160.29	0.00
43.20	0.00	8	160.29	0.00
43.60	0.00	8	160.29	0.00
44.00	0.00	8	160.29	0.00
44.40	0.00	8	160.29	0.00
44.80	0.00	8	160.29	0.00
45.20	0.00	7	160.29	0.00
45.60	0.00	7	160.29	0.00
46.00	0.00	7	160.29	0.00
46.40	0.00	7	160.29	0.00
46.80	0.00	7	160.29	0.00
47.20	0.00	7	160.29	0.00
47.60	0.00	7	160.29	0.00
48.00	0.00	7	160.29	0.00
48.40	0.00	7	160.29	0.00
48.80	0.00	6	160.29	0.00
49.20	0.00	6	160.29	0.00
49.60	0.00	6	160.29	0.00
50.00	0.00	6	160.29	0.00
50.40	0.00	6	160.29	0.00
50.80	0.00	6	160.29	0.00
51.20	0.00	6	160.29	0.00
51.60	0.00	6	160.28	0.00
52.00	0.00	6	160.28	0.00
52.40	0.00	6	160.28	0.00
52.80	0.00	6	160.28	0.00
53.20	0.00	6	160.28	0.00
53.60	0.00	5	160.28	0.00
54.00	0.00	5	160.28	0.00
54.40	0.00	5	160.28	0.00
54.80	0.00	5	160.28	0.00
55.20	0.00	5	160.28	0.00
55.60	0.00	5	160.28	0.00
56.00	0.00	5	160.28	0.00
56.40	0.00	5	160.28	0.00
56.80	0.00	5	160.28	0.00
57.20	0.00	5	160.28	0.00
57.60	0.00	5	160.28	0.00
58.00	0.00	5	160.28	0.00
58.40	0.00	5	160.28	0.00
58.80	0.00	5	160.28	0.00
59.20	0.00	5	160.28	0.00
59.60	0.00	5	160.28	0.00
60.00	0.00	5	160.28	0.00
60.40	0.00	4	160.28	0.00
60.80	0.00	4	160.28	0.00
61.20	0.00	4	160.28	0.00
61.60	0.00	4	160.28	0.00
62.00	0.00	4	160.28	0.00
62.40	0.00	4	160.28	0.00
62.80	0.00	4	160.28	0.00
63.20	0.00	4	160.28	0.00

Hydrograph for Pond 3P: UG3 (continued)

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
63.60	0.00	4	160.28	0.00
64.00	0.00	4	160.28	0.00
64.40	0.00	4	160.28	0.00
64.80	0.00	4	160.28	0.00
65.20	0.00	4	160.28	0.00
65.60	0.00	4	160.28	0.00
66.00	0.00	4	160.28	0.00
66.40	0.00	4	160.28	0.00
66.80	0.00	4	160.28	0.00
67.20	0.00	4	160.28	0.00
67.60	0.00	4	160.28	0.00
68.00	0.00	4	160.28	0.00
68.40	0.00	4	160.28	0.00
68.80	0.00	4	160.28	0.00
69.20	0.00	4	160.28	0.00
69.60	0.00	4	160.28	0.00
70.00	0.00	4	160.28	0.00
70.40	0.00	4	160.28	0.00
70.80	0.00	3	160.28	0.00
71.20	0.00	3	160.28	0.00
71.60	0.00	3	160.28	0.00
72.00	0.00	3	160.28	0.00
72.40	0.00	3	160.28	0.00
72.80	0.00	3	160.28	0.00
73.20	0.00	3	160.28	0.00
73.60	0.00	3	160.28	0.00
74.00	0.00	3	160.28	0.00
74.40	0.00	3	160.28	0.00
74.80	0.00	3	160.28	0.00
75.20	0.00	3	160.28	0.00
75.60	0.00	3	160.28	0.00
76.00	0.00	3	160.28	0.00
76.40	0.00	3	160.28	0.00
76.80	0.00	3	160.28	0.00
77.20	0.00	3	160.28	0.00
77.60	0.00	3	160.28	0.00
78.00	0.00	3	160.28	0.00
78.40	0.00	3	160.28	0.00
78.80	0.00	3	160.28	0.00
79.20	0.00	3	160.28	0.00
79.60	0.00	3	160.28	0.00
80.00	0.00	3	160.28	0.00
80.40	0.00	3	160.28	0.00
80.80	0.00	3	160.28	0.00
81.20	0.00	3	160.28	0.00
81.60	0.00	3	160.28	0.00
82.00	0.00	3	160.28	0.00
82.40	0.00	3	160.28	0.00
82.80	0.00	3	160.28	0.00
83.20	0.00	3	160.28	0.00
83.60	0.00	3	160.28	0.00
84.00	0.00	3	160.28	0.00
84.40	0.00	3	160.28	0.00

Hydrograph for Pond 3P: UG3 (continued)

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
84.80	0.00	3	160.28	0.00
85.20	0.00	3	160.28	0.00
85.60	0.00	3	160.28	0.00
86.00	0.00	3	160.28	0.00
86.40	0.00	3	160.28	0.00
86.80	0.00	3	160.28	0.00
87.20	0.00	3	160.28	0.00
87.60	0.00	3	160.28	0.00
88.00	0.00	3	160.28	0.00
88.40	0.00	3	160.28	0.00
88.80	0.00	3	160.28	0.00
89.20	0.00	3	160.28	0.00
89.60	0.00	3	160.28	0.00
90.00	0.00	3	160.28	0.00
90.40	0.00	3	160.28	0.00
90.80	0.00	2	160.28	0.00
91.20	0.00	2	160.28	0.00
91.60	0.00	2	160.28	0.00
92.00	0.00	2	160.28	0.00
92.40	0.00	2	160.28	0.00
92.80	0.00	2	160.28	0.00
93.20	0.00	2	160.28	0.00
93.60	0.00	2	160.28	0.00
94.00	0.00	2	160.28	0.00
94.40	0.00	2	160.28	0.00
94.80	0.00	2	160.28	0.00
95.20	0.00	2	160.28	0.00
95.60	0.00	2	160.28	0.00
96.00	0.00	2	160.28	0.00
96.40	0.00	2	160.28	0.00
96.80	0.00	2	160.28	0.00
97.20	0.00	2	160.28	0.00
97.60	0.00	2	160.28	0.00
98.00	0.00	2	160.28	0.00
98.40	0.00	2	160.28	0.00
98.80	0.00	2	160.28	0.00
99.20	0.00	2	160.28	0.00
99.60	0.00	2	160.28	0.00
100.00	0.00	2	160.28	0.00
100.40	0.00	2	160.28	0.00
100.80	0.00	2	160.28	0.00
101.20	0.00	2	160.28	0.00
101.60	0.00	2	160.28	0.00
102.00	0.00	2	160.28	0.00
102.40	0.00	2	160.28	0.00
102.80	0.00	2	160.28	0.00
103.20	0.00	2	160.28	0.00
103.60	0.00	2	160.28	0.00
104.00	0.00	2	160.28	0.00
104.40	0.00	2	160.28	0.00
104.80	0.00	2	160.28	0.00
105.20	0.00	2	160.28	0.00
105.60	0.00	2	160.28	0.00

Hydrograph for Pond 3P: UG3 (continued)

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
106.00	0.00	2	160.28	0.00
106.40	0.00	2	160.28	0.00
106.80	0.00	2	160.28	0.00
107.20	0.00	2	160.28	0.00
107.60	0.00	2	160.28	0.00
108.00	0.00	2	160.28	0.00
108.40	0.00	2	160.28	0.00
108.80	0.00	2	160.28	0.00
109.20	0.00	2	160.28	0.00
109.60	0.00	2	160.28	0.00
110.00	0.00	2	160.28	0.00
110.40	0.00	2	160.28	0.00
110.80	0.00	2	160.28	0.00
111.20	0.00	2	160.28	0.00
111.60	0.00	2	160.28	0.00
112.00	0.00	2	160.28	0.00
112.40	0.00	2	160.28	0.00
112.80	0.00	2	160.28	0.00
113.20	0.00	2	160.28	0.00
113.60	0.00	2	160.28	0.00
114.00	0.00	2	160.28	0.00
114.40	0.00	2	160.28	0.00
114.80	0.00	2	160.28	0.00
115.20	0.00	2	160.28	0.00
115.60	0.00	2	160.28	0.00
116.00	0.00	2	160.28	0.00
116.40	0.00	2	160.28	0.00
116.80	0.00	2	160.28	0.00
117.20	0.00	2	160.28	0.00
117.60	0.00	2	160.28	0.00
118.00	0.00	2	160.28	0.00
118.40	0.00	2	160.28	0.00
118.80	0.00	2	160.28	0.00
119.20	0.00	2	160.28	0.00
119.60	0.00	2	160.28	0.00
120.00	0.00	2	160.28	0.00
120.40	0.00	2	160.28	0.00
120.80	0.00	2	160.28	0.00
121.20	0.00	2	160.28	0.00
121.60	0.00	2	160.28	0.00
122.00	0.00	2	160.28	0.00
122.40	0.00	2	160.28	0.00
122.80	0.00	2	160.28	0.00
123.20	0.00	2	160.28	0.00
123.60	0.00	2	160.28	0.00
124.00	0.00	2	160.28	0.00
124.40	0.00	2	160.28	0.00
124.80	0.00	2	160.28	0.00
125.20	0.00	2	160.28	0.00
125.60	0.00	2	160.28	0.00
126.00	0.00	2	160.28	0.00
126.40	0.00	2	160.28	0.00
126.80	0.00	2	160.28	0.00

Hydrograph for Pond 3P: UG3 (continued)

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
127.20	0.00	2	160.28	0.00
127.60	0.00	2	160.28	0.00
128.00	0.00	2	160.28	0.00
128.40	0.00	2	160.28	0.00
128.80	0.00	2	160.28	0.00
129.20	0.00	2	160.28	0.00
129.60	0.00	2	160.28	0.00
130.00	0.00	2	160.28	0.00
130.40	0.00	2	160.28	0.00
130.80	0.00	2	160.28	0.00
131.20	0.00	2	160.28	0.00
131.60	0.00	2	160.28	0.00
132.00	0.00	2	160.28	0.00
132.40	0.00	2	160.28	0.00
132.80	0.00	2	160.28	0.00
133.20	0.00	2	160.28	0.00
133.60	0.00	2	160.28	0.00
134.00	0.00	2	160.28	0.00
134.40	0.00	2	160.28	0.00
134.80	0.00	2	160.28	0.00
135.20	0.00	2	160.28	0.00
135.60	0.00	2	160.28	0.00
136.00	0.00	2	160.28	0.00
136.40	0.00	2	160.28	0.00
136.80	0.00	2	160.28	0.00
137.20	0.00	2	160.28	0.00
137.60	0.00	2	160.28	0.00
138.00	0.00	2	160.28	0.00
138.40	0.00	2	160.28	0.00
138.80	0.00	2	160.28	0.00
139.20	0.00	2	160.28	0.00
139.60	0.00	2	160.28	0.00
140.00	0.00	2	160.28	0.00
140.40	0.00	2	160.28	0.00
140.80	0.00	2	160.28	0.00
141.20	0.00	1	160.28	0.00
141.60	0.00	1	160.28	0.00
142.00	0.00	1	160.28	0.00
142.40	0.00	1	160.28	0.00
142.80	0.00	1	160.28	0.00
143.20	0.00	1	160.28	0.00
143.60	0.00	1	160.28	0.00
144.00	0.00	1	160.28	0.00
144.40	0.00	1	160.28	0.00
144.80	0.00	1	160.28	0.00
145.20	0.00	1	160.28	0.00
145.60	0.00	1	160.28	0.00
146.00	0.00	1	160.28	0.00
146.40	0.00	1	160.28	0.00
146.80	0.00	1	160.28	0.00
147.20	0.00	1	160.28	0.00
147.60	0.00	1	160.28	0.00
148.00	0.00	1	160.28	0.00

Hydrograph for Pond 3P: UG3 (continued)

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
148.40	0.00	1	160.28	0.00
148.80	0.00	1	160.28	0.00
149.20	0.00	1	160.28	0.00
149.60	0.00	1	160.28	0.00
150.00	0.00	1	160.28	0.00
150.40	0.00	1	160.28	0.00
150.80	0.00	1	160.28	0.00
151.20	0.00	1	160.28	0.00
151.60	0.00	1	160.28	0.00
152.00	0.00	1	160.28	0.00
152.40	0.00	1	160.28	0.00
152.80	0.00	1	160.28	0.00
153.20	0.00	1	160.28	0.00
153.60	0.00	1	160.28	0.00
154.00	0.00	1	160.28	0.00
154.40	0.00	1	160.28	0.00
154.80	0.00	1	160.28	0.00
155.20	0.00	1	160.28	0.00
155.60	0.00	1	160.28	0.00
156.00	0.00	1	160.28	0.00
156.40	0.00	1	160.28	0.00
156.80	0.00	1	160.28	0.00
157.20	0.00	1	160.28	0.00
157.60	0.00	1	160.28	0.00
158.00	0.00	1	160.28	0.00
158.40	0.00	1	160.28	0.00
158.80	0.00	1	160.28	0.00
159.20	0.00	1	160.28	0.00
159.60	0.00	1	160.28	0.00
160.00	0.00	1	160.28	0.00
160.40	0.00	1	160.28	0.00
160.80	0.00	1	160.28	0.00
161.20	0.00	1	160.28	0.00
161.60	0.00	1	160.28	0.00
162.00	0.00	1	160.28	0.00
162.40	0.00	1	160.28	0.00
162.80	0.00	1	160.28	0.00
163.20	0.00	1	160.28	0.00
163.60	0.00	1	160.28	0.00
164.00	0.00	1	160.28	0.00
164.40	0.00	1	160.28	0.00
164.80	0.00	1	160.28	0.00
165.20	0.00	1	160.28	0.00
165.60	0.00	1	160.28	0.00
166.00	0.00	1	160.28	0.00
166.40	0.00	1	160.28	0.00
166.80	0.00	1	160.28	0.00
167.20	0.00	1	160.28	0.00
167.60	0.00	1	160.28	0.00
168.00	0.00	1	160.28	0.00

Summary for Pond 1P: UG1

Inflow Area = 82,459 sf, 99.52% Impervious, Inflow Depth = 4.59" for 10-yr event
Inflow = 13.29 cfs @ 11.95 hrs, Volume= 31,564 cf
Outflow = 4.36 cfs @ 12.07 hrs, Volume= 31,418 cf, Atten= 67%, Lag= 7.3 min
Primary = 4.36 cfs @ 12.07 hrs, Volume= 31,418 cf
Routed to Link 10L : POST-DEV TO DA #1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-168.00 hrs, dt= 0.04 hrs / 2
Peak Elev= 159.22' @ 12.07 hrs Surf.Area= 13,041 sf Storage= 15,918 cf

Plug-Flow detention time= 873.6 min calculated for 31,418 cf (100% of inflow)
Center-of-Mass det. time= 870.4 min (1,614.0 - 743.6)

Volume	Invert	Avail.Storage	Storage Description
#1A	157.53'	9,785 cf	**120.75'W x 108.00'L x 3.21'H Field A** 41,840 cf Overall - 17,377 cf Embedded = 24,463 cf x 40.0% Voids
#2A	158.03'	17,377 cf	**Cultec R-280HD** x 405 Inside #1 Effective Size= 46.9"W x 26.0"H => 6.07 sf x 7.00'L = 42.5 cf Overall Size= 47.0"W x 26.5"H x 8.00'L with 1.00' Overlap Row Length Adjustment= +1.00' x 6.07 sf x 27 rows
		27,162 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Device 4	157.53'	**1.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#2	Device 4	158.39'	**40.0" W x 4.0" H Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#3	Device 4	160.24'	**4.0' long Broad-Crested Rectangular Weir** Head (feet) 4.00 Coef. (English) 3.33
#4	Primary	157.53'	**18.0" Round Culvert** L= 66.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 157.53' / 157.20' S= 0.0050 '/' Cc= 0.900 n= 0.012, Flow Area= 1.77 sf

Primary OutFlow Max=4.36 cfs @ 12.07 hrs HW=159.21' TW=0.00' (Dynamic Tailwater)
└**4=Culvert** (Passes 4.36 cfs of 7.29 cfs potential flow)
  ├**1=Orifice/Grate** (Orifice Controls 0.03 cfs @ 6.17 fps)
  ├**2=Orifice/Grate** (Orifice Controls 4.33 cfs @ 3.89 fps)
  └**3=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond 1P: UG1 - Chamber Wizard Field A

Chamber Model = Cultec R-280HD (Cultec Recharger® 280HD)
Effective Size= 46.9"W x 26.0"H => 6.07 sf x 7.00'L = 42.5 cf
Overall Size= 47.0"W x 26.5"H x 8.00'L with 1.00' Overlap
Row Length Adjustment= +1.00' x 6.07 sf x 27 rows

47.0" Wide + 6.0" Spacing = 53.0" C-C Row Spacing

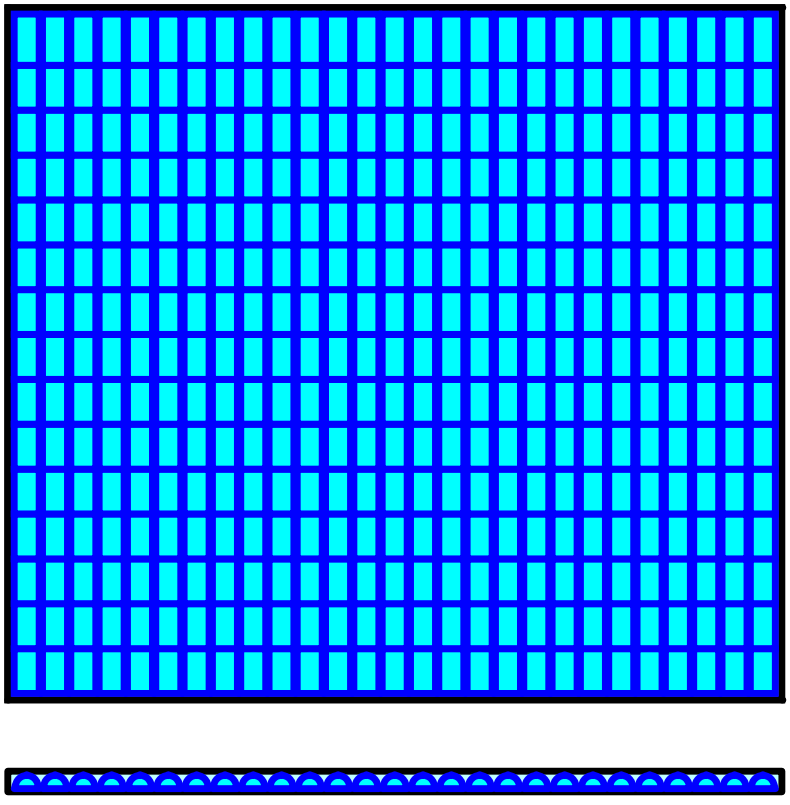
15 Chambers/Row x 7.00' Long +1.00' Row Adjustment = 106.00' Row Length +12.0" End Stone x 2 = 108.00' Base Length
27 Rows x 47.0" Wide + 6.0" Spacing x 26 + 12.0" Side Stone x 2 = 120.75' Base Width
6.0" Stone Base + 26.5" Chamber Height + 6.0" Stone Cover = 3.21' Field Height

405 Chambers x 42.5 cf +1.00' Row Adjustment x 6.07 sf x 27 Rows = 17,377.3 cf Chamber Storage

41,839.9 cf Field - 17,377.3 cf Chambers = 24,462.5 cf Stone x 40.0% Voids = 9,785.0 cf Stone Storage

Chamber Storage + Stone Storage = 27,162.4 cf = 0.624 af
Overall Storage Efficiency = 64.9%
Overall System Size = 108.00' x 120.75' x 3.21'

405 Chambers
1,549.6 cy Field
906.0 cy Stone



Hydrograph for Pond 1P: UG1

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
0.00	0.00	0	157.53	0.00
0.40	0.00	0	157.53	0.00
0.80	0.00	0	157.53	0.00
1.20	0.01	9	157.53	0.00
1.60	0.03	42	157.54	0.00
2.00	0.04	96	157.55	0.00
2.40	0.06	168	157.56	0.00
2.80	0.07	255	157.58	0.00
3.20	0.08	354	157.60	0.00
3.60	0.09	464	157.62	0.01
4.00	0.09	583	157.64	0.01
4.40	0.10	713	157.67	0.01
4.80	0.11	856	157.69	0.01
5.20	0.12	1,011	157.72	0.01
5.60	0.13	1,179	157.76	0.01
6.00	0.14	1,359	157.79	0.01
6.40	0.15	1,550	157.83	0.01
6.80	0.16	1,754	157.87	0.01
7.20	0.17	1,969	157.91	0.02
7.60	0.18	2,195	157.95	0.02
8.00	0.19	2,432	158.00	0.02
8.40	0.22	2,694	158.04	0.02
8.80	0.25	3,006	158.06	0.02
9.20	0.28	3,368	158.09	0.02
9.60	0.29	3,745	158.13	0.02
10.00	0.34	4,168	158.16	0.02
10.40	0.43	4,689	158.21	0.02
10.80	0.55	5,347	158.26	0.02
11.20	0.75	6,221	158.34	0.02
11.60	**1.73**	7,546	158.45	0.20
12.00	**11.00**	**15,122**	**159.14**	**4.11**
12.40	1.17	**13,330**	**158.97**	**3.46**
12.80	0.69	10,564	158.72	2.06
13.20	0.53	9,277	158.61	1.10
13.60	0.43	8,681	158.55	0.73
14.00	0.35	8,338	158.52	0.54
14.40	0.32	8,120	158.50	0.44
14.80	0.29	7,982	158.49	0.37
15.20	0.27	7,882	158.48	0.33
15.60	0.24	7,801	158.48	0.30
16.00	0.22	7,728	158.47	0.27
16.40	0.20	7,666	158.46	0.24
16.80	0.19	7,619	158.46	0.22
17.20	0.19	7,581	158.46	0.21
17.60	0.18	7,549	158.45	0.20
18.00	0.17	7,519	158.45	0.19
18.40	0.16	7,490	158.45	0.18
18.80	0.15	7,462	158.45	0.17
19.20	0.14	7,434	158.44	0.16
19.60	0.13	7,406	158.44	0.15
20.00	0.12	7,378	158.44	0.14
20.40	0.12	7,352	158.44	0.13
20.80	0.12	7,333	158.44	0.13

Hydrograph for Pond 1P: UG1 (continued)

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
21.20	0.11	7,319	158.43	0.12
21.60	0.11	7,307	158.43	0.12
22.00	0.11	7,297	158.43	0.12
22.40	0.11	7,288	158.43	0.11
22.80	0.11	7,280	158.43	0.11
23.20	0.11	7,273	158.43	0.11
23.60	0.10	7,266	158.43	0.11
24.00	0.10	7,259	158.43	0.11
24.40	0.00	7,152	158.42	0.08
24.80	0.00	7,055	158.41	0.06
25.20	0.00	6,983	158.40	0.04
25.60	0.00	6,927	158.40	0.03
26.00	0.00	6,882	158.40	0.03
26.40	0.00	6,843	158.39	0.03
26.80	0.00	6,808	158.39	0.02
27.20	0.00	6,774	158.39	0.02
27.60	0.00	6,739	158.38	0.02
28.00	0.00	6,705	158.38	0.02
28.40	0.00	6,671	158.38	0.02
28.80	0.00	6,637	158.37	0.02
29.20	0.00	6,604	158.37	0.02
29.60	0.00	6,570	158.37	0.02
30.00	0.00	6,536	158.37	0.02
30.40	0.00	6,502	158.36	0.02
30.80	0.00	6,469	158.36	0.02
31.20	0.00	6,435	158.36	0.02
31.60	0.00	6,402	158.35	0.02
32.00	0.00	6,368	158.35	0.02
32.40	0.00	6,335	158.35	0.02
32.80	0.00	6,302	158.35	0.02
33.20	0.00	6,268	158.34	0.02
33.60	0.00	6,235	158.34	0.02
34.00	0.00	6,202	158.34	0.02
34.40	0.00	6,169	158.33	0.02
34.80	0.00	6,136	158.33	0.02
35.20	0.00	6,103	158.33	0.02
35.60	0.00	6,070	158.33	0.02
36.00	0.00	6,037	158.32	0.02
36.40	0.00	6,005	158.32	0.02
36.80	0.00	5,972	158.32	0.02
37.20	0.00	5,939	158.31	0.02
37.60	0.00	5,907	158.31	0.02
38.00	0.00	5,874	158.31	0.02
38.40	0.00	5,842	158.31	0.02
38.80	0.00	5,809	158.30	0.02
39.20	0.00	5,777	158.30	0.02
39.60	0.00	5,745	158.30	0.02
40.00	0.00	5,713	158.29	0.02
40.40	0.00	5,681	158.29	0.02
40.80	0.00	5,648	158.29	0.02
41.20	0.00	5,616	158.29	0.02
41.60	0.00	5,584	158.28	0.02
42.00	0.00	5,553	158.28	0.02

Hydrograph for Pond 1P: UG1 (continued)

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
42.40	0.00	5,521	158.28	0.02
42.80	0.00	5,489	158.28	0.02
43.20	0.00	5,457	158.27	0.02
43.60	0.00	5,426	158.27	0.02
44.00	0.00	5,394	158.27	0.02
44.40	0.00	5,363	158.26	0.02
44.80	0.00	5,331	158.26	0.02
45.20	0.00	5,300	158.26	0.02
45.60	0.00	5,268	158.26	0.02
46.00	0.00	5,237	158.25	0.02
46.40	0.00	5,206	158.25	0.02
46.80	0.00	5,175	158.25	0.02
47.20	0.00	5,144	158.25	0.02
47.60	0.00	5,113	158.24	0.02
48.00	0.00	5,082	158.24	0.02
48.40	0.00	5,051	158.24	0.02
48.80	0.00	5,020	158.24	0.02
49.20	0.00	4,989	158.23	0.02
49.60	0.00	4,959	158.23	0.02
50.00	0.00	4,928	158.23	0.02
50.40	0.00	4,897	158.22	0.02
50.80	0.00	4,867	158.22	0.02
51.20	0.00	4,836	158.22	0.02
51.60	0.00	4,806	158.22	0.02
52.00	0.00	4,776	158.21	0.02
52.40	0.00	4,745	158.21	0.02
52.80	0.00	4,715	158.21	0.02
53.20	0.00	4,685	158.21	0.02
53.60	0.00	4,655	158.20	0.02
54.00	0.00	4,625	158.20	0.02
54.40	0.00	4,595	158.20	0.02
54.80	0.00	4,565	158.20	0.02
55.20	0.00	4,535	158.19	0.02
55.60	0.00	4,505	158.19	0.02
56.00	0.00	4,476	158.19	0.02
56.40	0.00	4,446	158.19	0.02
56.80	0.00	4,416	158.18	0.02
57.20	0.00	4,387	158.18	0.02
57.60	0.00	4,357	158.18	0.02
58.00	0.00	4,328	158.18	0.02
58.40	0.00	4,298	158.17	0.02
58.80	0.00	4,269	158.17	0.02
59.20	0.00	4,240	158.17	0.02
59.60	0.00	4,211	158.17	0.02
60.00	0.00	4,182	158.16	0.02
60.40	0.00	4,153	158.16	0.02
60.80	0.00	4,124	158.16	0.02
61.20	0.00	4,095	158.16	0.02
61.60	0.00	4,066	158.15	0.02
62.00	0.00	4,037	158.15	0.02
62.40	0.00	4,008	158.15	0.02
62.80	0.00	3,980	158.15	0.02
63.20	0.00	3,951	158.14	0.02

Hydrograph for Pond 1P: UG1 (continued)

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
63.60	0.00	3,922	158.14	0.02
64.00	0.00	3,894	158.14	0.02
64.40	0.00	3,865	158.14	0.02
64.80	0.00	3,837	158.13	0.02
65.20	0.00	3,809	158.13	0.02
65.60	0.00	3,780	158.13	0.02
66.00	0.00	3,752	158.13	0.02
66.40	0.00	3,724	158.12	0.02
66.80	0.00	3,696	158.12	0.02
67.20	0.00	3,668	158.12	0.02
67.60	0.00	3,640	158.12	0.02
68.00	0.00	3,612	158.11	0.02
68.40	0.00	3,584	158.11	0.02
68.80	0.00	3,557	158.11	0.02
69.20	0.00	3,529	158.11	0.02
69.60	0.00	3,501	158.11	0.02
70.00	0.00	3,474	158.10	0.02
70.40	0.00	3,446	158.10	0.02
70.80	0.00	3,419	158.10	0.02
71.20	0.00	3,391	158.10	0.02
71.60	0.00	3,364	158.09	0.02
72.00	0.00	3,336	158.09	0.02
72.40	0.00	3,309	158.09	0.02
72.80	0.00	3,282	158.09	0.02
73.20	0.00	3,255	158.08	0.02
73.60	0.00	3,228	158.08	0.02
74.00	0.00	3,201	158.08	0.02
74.40	0.00	3,174	158.08	0.02
74.80	0.00	3,147	158.08	0.02
75.20	0.00	3,120	158.07	0.02
75.60	0.00	3,094	158.07	0.02
76.00	0.00	3,067	158.07	0.02
76.40	0.00	3,040	158.07	0.02
76.80	0.00	3,014	158.06	0.02
77.20	0.00	2,987	158.06	0.02
77.60	0.00	2,961	158.06	0.02
78.00	0.00	2,934	158.06	0.02
78.40	0.00	2,908	158.06	0.02
78.80	0.00	2,882	158.05	0.02
79.20	0.00	2,856	158.05	0.02
79.60	0.00	2,829	158.05	0.02
80.00	0.00	2,803	158.05	0.02
80.40	0.00	2,777	158.04	0.02
80.80	0.00	2,751	158.04	0.02
81.20	0.00	2,725	158.04	0.02
81.60	0.00	2,700	158.04	0.02
82.00	0.00	2,674	158.04	0.02
82.40	0.00	2,648	158.03	0.02
82.80	0.00	2,622	158.03	0.02
83.20	0.00	2,597	158.03	0.02
83.60	0.00	2,571	158.02	0.02
84.00	0.00	2,546	158.02	0.02
84.40	0.00	2,521	158.01	0.02

Hydrograph for Pond 1P: UG1 (continued)

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
84.80	0.00	2,496	158.01	0.02
85.20	0.00	2,471	158.00	0.02
85.60	0.00	2,446	158.00	0.02
86.00	0.00	2,421	157.99	0.02
86.40	0.00	2,397	157.99	0.02
86.80	0.00	2,373	157.98	0.02
87.20	0.00	2,348	157.98	0.02
87.60	0.00	2,324	157.98	0.02
88.00	0.00	2,300	157.97	0.02
88.40	0.00	2,276	157.97	0.02
88.80	0.00	2,253	157.96	0.02
89.20	0.00	2,229	157.96	0.02
89.60	0.00	2,206	157.95	0.02
90.00	0.00	2,182	157.95	0.02
90.40	0.00	2,159	157.94	0.02
90.80	0.00	2,136	157.94	0.02
91.20	0.00	2,113	157.94	0.02
91.60	0.00	2,091	157.93	0.02
92.00	0.00	2,068	157.93	0.02
92.40	0.00	2,046	157.92	0.02
92.80	0.00	2,023	157.92	0.02
93.20	0.00	2,001	157.91	0.02
93.60	0.00	1,979	157.91	0.02
94.00	0.00	1,957	157.91	0.02
94.40	0.00	1,935	157.90	0.02
94.80	0.00	1,914	157.90	0.01
95.20	0.00	1,892	157.89	0.01
95.60	0.00	1,871	157.89	0.01
96.00	0.00	1,850	157.88	0.01
96.40	0.00	1,829	157.88	0.01
96.80	0.00	1,808	157.88	0.01
97.20	0.00	1,787	157.87	0.01
97.60	0.00	1,766	157.87	0.01
98.00	0.00	1,746	157.86	0.01
98.40	0.00	1,725	157.86	0.01
98.80	0.00	1,705	157.86	0.01
99.20	0.00	1,685	157.85	0.01
99.60	0.00	1,665	157.85	0.01
100.00	0.00	1,645	157.85	0.01
100.40	0.00	1,625	157.84	0.01
100.80	0.00	1,606	157.84	0.01
101.20	0.00	1,586	157.83	0.01
101.60	0.00	1,567	157.83	0.01
102.00	0.00	1,548	157.83	0.01
102.40	0.00	1,529	157.82	0.01
102.80	0.00	1,510	157.82	0.01
103.20	0.00	1,491	157.82	0.01
103.60	0.00	1,473	157.81	0.01
104.00	0.00	1,454	157.81	0.01
104.40	0.00	1,436	157.81	0.01
104.80	0.00	1,418	157.80	0.01
105.20	0.00	1,400	157.80	0.01
105.60	0.00	1,382	157.79	0.01

Hydrograph for Pond 1P: UG1 (continued)

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
106.00	0.00	1,364	157.79	0.01
106.40	0.00	1,346	157.79	0.01
106.80	0.00	1,329	157.78	0.01
107.20	0.00	1,311	157.78	0.01
107.60	0.00	1,294	157.78	0.01
108.00	0.00	1,277	157.77	0.01
108.40	0.00	1,260	157.77	0.01
108.80	0.00	1,243	157.77	0.01
109.20	0.00	1,226	157.77	0.01
109.60	0.00	1,210	157.76	0.01
110.00	0.00	1,193	157.76	0.01
110.40	0.00	1,177	157.76	0.01
110.80	0.00	1,161	157.75	0.01
111.20	0.00	1,145	157.75	0.01
111.60	0.00	1,129	157.75	0.01
112.00	0.00	1,113	157.74	0.01
112.40	0.00	1,098	157.74	0.01
112.80	0.00	1,082	157.74	0.01
113.20	0.00	1,067	157.73	0.01
113.60	0.00	1,052	157.73	0.01
114.00	0.00	1,037	157.73	0.01
114.40	0.00	1,022	157.73	0.01
114.80	0.00	1,007	157.72	0.01
115.20	0.00	992	157.72	0.01
115.60	0.00	978	157.72	0.01
116.00	0.00	963	157.71	0.01
116.40	0.00	949	157.71	0.01
116.80	0.00	935	157.71	0.01
117.20	0.00	921	157.71	0.01
117.60	0.00	907	157.70	0.01
118.00	0.00	894	157.70	0.01
118.40	0.00	880	157.70	0.01
118.80	0.00	867	157.70	0.01
119.20	0.00	853	157.69	0.01
119.60	0.00	840	157.69	0.01
120.00	0.00	827	157.69	0.01
120.40	0.00	814	157.69	0.01
120.80	0.00	802	157.68	0.01
121.20	0.00	789	157.68	0.01
121.60	0.00	777	157.68	0.01
122.00	0.00	764	157.68	0.01
122.40	0.00	752	157.67	0.01
122.80	0.00	740	157.67	0.01
123.20	0.00	728	157.67	0.01
123.60	0.00	716	157.67	0.01
124.00	0.00	705	157.67	0.01
124.40	0.00	693	157.66	0.01
124.80	0.00	682	157.66	0.01
125.20	0.00	671	157.66	0.01
125.60	0.00	660	157.66	0.01
126.00	0.00	649	157.65	0.01
126.40	0.00	638	157.65	0.01
126.80	0.00	627	157.65	0.01

Hydrograph for Pond 1P: UG1 (continued)

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
127.20	0.00	617	157.65	0.01
127.60	0.00	606	157.65	0.01
128.00	0.00	596	157.64	0.01
128.40	0.00	586	157.64	0.01
128.80	0.00	576	157.64	0.01
129.20	0.00	566	157.64	0.01
129.60	0.00	556	157.64	0.01
130.00	0.00	547	157.63	0.01
130.40	0.00	537	157.63	0.01
130.80	0.00	528	157.63	0.01
131.20	0.00	519	157.63	0.01
131.60	0.00	510	157.63	0.01
132.00	0.00	501	157.63	0.01
132.40	0.00	492	157.62	0.01
132.80	0.00	484	157.62	0.01
133.20	0.00	475	157.62	0.01
133.60	0.00	467	157.62	0.01
134.00	0.00	459	157.62	0.01
134.40	0.00	451	157.62	0.01
134.80	0.00	443	157.61	0.01
135.20	0.00	435	157.61	0.01
135.60	0.00	427	157.61	0.01
136.00	0.00	420	157.61	0.01
136.40	0.00	412	157.61	0.01
136.80	0.00	405	157.61	0.01
137.20	0.00	398	157.61	0.00
137.60	0.00	391	157.60	0.00
138.00	0.00	384	157.60	0.00
138.40	0.00	377	157.60	0.00
138.80	0.00	371	157.60	0.00
139.20	0.00	364	157.60	0.00
139.60	0.00	358	157.60	0.00
140.00	0.00	352	157.60	0.00
140.40	0.00	346	157.60	0.00
140.80	0.00	340	157.60	0.00
141.20	0.00	334	157.59	0.00
141.60	0.00	329	157.59	0.00
142.00	0.00	324	157.59	0.00
142.40	0.00	318	157.59	0.00
142.80	0.00	313	157.59	0.00
143.20	0.00	308	157.59	0.00
143.60	0.00	303	157.59	0.00
144.00	0.00	299	157.59	0.00
144.40	0.00	294	157.59	0.00
144.80	0.00	289	157.59	0.00
145.20	0.00	285	157.58	0.00
145.60	0.00	281	157.58	0.00
146.00	0.00	277	157.58	0.00
146.40	0.00	272	157.58	0.00
146.80	0.00	269	157.58	0.00
147.20	0.00	265	157.58	0.00
147.60	0.00	261	157.58	0.00
148.00	0.00	257	157.58	0.00

Hydrograph for Pond 1P: UG1 (continued)

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
148.40	0.00	254	157.58	0.00
148.80	0.00	250	157.58	0.00
149.20	0.00	247	157.58	0.00
149.60	0.00	243	157.58	0.00
150.00	0.00	240	157.58	0.00
150.40	0.00	237	157.58	0.00
150.80	0.00	234	157.57	0.00
151.20	0.00	230	157.57	0.00
151.60	0.00	228	157.57	0.00
152.00	0.00	225	157.57	0.00
152.40	0.00	222	157.57	0.00
152.80	0.00	219	157.57	0.00
153.20	0.00	216	157.57	0.00
153.60	0.00	214	157.57	0.00
154.00	0.00	211	157.57	0.00
154.40	0.00	208	157.57	0.00
154.80	0.00	206	157.57	0.00
155.20	0.00	203	157.57	0.00
155.60	0.00	201	157.57	0.00
156.00	0.00	199	157.57	0.00
156.40	0.00	196	157.57	0.00
156.80	0.00	194	157.57	0.00
157.20	0.00	192	157.57	0.00
157.60	0.00	190	157.57	0.00
158.00	0.00	188	157.57	0.00
158.40	0.00	186	157.57	0.00
158.80	0.00	184	157.57	0.00
159.20	0.00	182	157.56	0.00
159.60	0.00	180	157.56	0.00
160.00	0.00	178	157.56	0.00
160.40	0.00	176	157.56	0.00
160.80	0.00	174	157.56	0.00
161.20	0.00	172	157.56	0.00
161.60	0.00	170	157.56	0.00
162.00	0.00	169	157.56	0.00
162.40	0.00	167	157.56	0.00
162.80	0.00	165	157.56	0.00
163.20	0.00	164	157.56	0.00
163.60	0.00	162	157.56	0.00
164.00	0.00	160	157.56	0.00
164.40	0.00	159	157.56	0.00
164.80	0.00	157	157.56	0.00
165.20	0.00	156	157.56	0.00
165.60	0.00	154	157.56	0.00
166.00	0.00	153	157.56	0.00
166.40	0.00	151	157.56	0.00
166.80	0.00	150	157.56	0.00
167.20	0.00	149	157.56	0.00
167.60	0.00	147	157.56	0.00
168.00	0.00	146	157.56	0.00

Summary for Pond 2P: UG2

Inflow Area = 33,977 sf, 95.64% Impervious, Inflow Depth = 4.25" for 10-yr event
Inflow = 5.34 cfs @ 11.95 hrs, Volume= 12,037 cf
Outflow = 2.79 cfs @ 12.04 hrs, Volume= 11,826 cf, Atten= 48%, Lag= 5.3 min
Primary = 2.79 cfs @ 12.04 hrs, Volume= 11,826 cf
Routed to Link 10L : POST-DEV TO DA #1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-168.00 hrs, dt= 0.04 hrs / 2
Peak Elev= 161.76' @ 12.04 hrs Surf.Area= 3,834 sf Storage= 5,407 cf

Plug-Flow detention time= 1,026.7 min calculated for 11,826 cf (98% of inflow)
Center-of-Mass det. time= 1,015.3 min (1,779.9 - 764.6)

Volume	Invert	Avail.Storage	Storage Description
#1A	159.80'	3,209 cf	**35.33'W x 108.50'L x 3.54'H Field A** 13,578 cf Overall - 5,555 cf Embedded = 8,023 cf x 40.0% Voids
#2A	160.30'	5,555 cf	**Cultec R-330XLHD** x 105 Inside #1 Effective Size= 47.8"W x 30.0"H => 7.45 sf x 7.00'L = 52.2 cf Overall Size= 52.0"W x 30.5"H x 8.50'L with 1.50' Overlap Row Length Adjustment= +1.50' x 7.45 sf x 7 rows
		8,764 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Device 4	159.80'	**0.5" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#2	Device 4	160.90'	**16.0" W x 7.0" H Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#3	Device 4	162.55'	**4.0' long Broad-Crested Rectangular Weir** Head (feet) 4.00 Coef. (English) 3.33
#4	Primary	159.80'	**18.0" Round Culvert** L= 141.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 159.80' / 159.09' S= 0.0050 '/' Cc= 0.900 n= 0.012, Flow Area= 1.77 sf

Primary OutFlow Max=2.79 cfs @ 12.04 hrs HW=161.76' TW=0.00' (Dynamic Tailwater)
└**4=Culvert** (Passes 2.79 cfs of 8.33 cfs potential flow)
  ├**1=Orifice/Grate** (Orifice Controls 0.01 cfs @ 6.70 fps)
  ├**2=Orifice/Grate** (Orifice Controls 2.78 cfs @ 3.57 fps)
  └**3=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond 2P: UG2 - Chamber Wizard Field A

Chamber Model = Cultec R-330XLHD (Cultec Recharger® 330XLHD)
Effective Size= 47.8"W x 30.0"H => 7.45 sf x 7.00'L = 52.2 cf
Overall Size= 52.0"W x 30.5"H x 8.50'L with 1.50' Overlap
Row Length Adjustment= +1.50' x 7.45 sf x 7 rows

52.0" Wide + 6.0" Spacing = 58.0" C-C Row Spacing

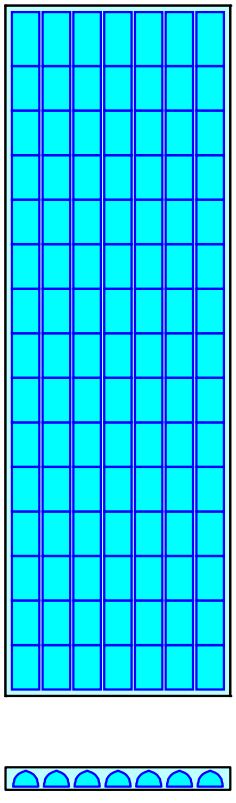
15 Chambers/Row x 7.00' Long +1.50' Row Adjustment = 106.50' Row Length +12.0" End Stone x 2 = 108.50' Base Length
7 Rows x 52.0" Wide + 6.0" Spacing x 6 + 12.0" Side Stone x 2 = 35.33' Base Width
6.0" Stone Base + 30.5" Chamber Height + 6.0" Stone Cover = 3.54' Field Height

105 Chambers x 52.2 cf +1.50' Row Adjustment x 7.45 sf x 7 Rows = 5,554.7 cf Chamber Storage

13,577.6 cf Field - 5,554.7 cf Chambers = 8,022.8 cf Stone x 40.0% Voids = 3,209.1 cf Stone Storage

Chamber Storage + Stone Storage = 8,763.9 cf = 0.201 af
Overall Storage Efficiency = 64.5%
Overall System Size = 108.50' x 35.33' x 3.54'

105 Chambers
502.9 cy Field
297.1 cy Stone



Hydrograph for Pond 2P: UG2

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
0.00	0.00	0	159.80	0.00
0.40	0.00	0	159.80	0.00
0.80	0.00	0	159.80	0.00
1.20	0.00	0	159.80	0.00
1.60	0.00	0	159.80	0.00
2.00	0.00	0	159.80	0.00
2.40	0.00	2	159.80	0.00
2.80	0.01	10	159.81	0.00
3.20	0.01	23	159.81	0.00
3.60	0.01	40	159.83	0.00
4.00	0.02	63	159.84	0.00
4.40	0.02	90	159.86	0.00
4.80	0.03	122	159.88	0.00
5.20	0.03	160	159.90	0.00
5.60	0.03	203	159.93	0.00
6.00	0.04	252	159.96	0.00
6.40	0.04	307	160.00	0.00
6.80	0.05	367	160.04	0.00
7.20	0.05	433	160.08	0.00
7.60	0.06	505	160.13	0.00
8.00	0.06	583	160.18	0.00
8.40	0.07	670	160.24	0.00
8.80	0.09	776	160.30	0.00
9.20	0.10	902	160.34	0.00
9.60	0.10	1,035	160.38	0.00
10.00	0.12	1,188	160.43	0.01
10.40	0.15	1,378	160.49	0.01
10.80	0.20	1,623	160.56	0.01
11.20	0.28	1,953	160.66	0.01
11.60	**0.66**	2,478	160.82	0.01
12.00	**4.43**	**5,284**	**161.72**	**2.69**
12.40	0.48	**3,998**	**161.30**	**1.09**
12.80	0.28	3,466	161.13	0.48
13.20	0.22	3,271	161.07	0.31
13.60	0.17	3,174	161.04	0.23
14.00	0.14	3,111	161.02	0.18
14.40	0.13	3,068	161.00	0.15
14.80	0.12	3,041	161.00	0.14
15.20	0.11	3,020	160.99	0.12
15.60	0.10	3,001	160.98	0.11
16.00	0.09	2,983	160.98	0.10
16.40	0.08	2,967	160.97	0.09
16.80	0.08	2,956	160.97	0.09
17.20	0.08	2,947	160.97	0.08
17.60	0.07	2,939	160.96	0.08
18.00	0.07	2,931	160.96	0.07
18.40	0.06	2,924	160.96	0.07
18.80	0.06	2,916	160.96	0.07
19.20	0.06	2,909	160.96	0.06
19.60	0.05	2,901	160.95	0.06
20.00	0.05	2,893	160.95	0.06
20.40	0.05	2,886	160.95	0.05
20.80	0.05	2,881	160.95	0.05

Hydrograph for Pond 2P: UG2 (continued)

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
21.20	0.05	2,878	160.95	0.05
21.60	0.05	2,876	160.94	0.05
22.00	0.05	2,873	160.94	0.05
22.40	0.04	2,871	160.94	0.05
22.80	0.04	2,870	160.94	0.05
23.20	0.04	2,868	160.94	0.04
23.60	0.04	2,866	160.94	0.04
24.00	0.04	2,864	160.94	0.04
24.40	0.00	2,824	160.93	0.03
24.80	0.00	2,792	160.92	0.02
25.20	0.00	2,770	160.91	0.01
25.60	0.00	2,755	160.91	0.01
26.00	0.00	2,742	160.90	0.01
26.40	0.00	2,732	160.90	0.01
26.80	0.00	2,722	160.90	0.01
27.20	0.00	2,712	160.89	0.01
27.60	0.00	2,703	160.89	0.01
28.00	0.00	2,693	160.89	0.01
28.40	0.00	2,683	160.89	0.01
28.80	0.00	2,673	160.88	0.01
29.20	0.00	2,664	160.88	0.01
29.60	0.00	2,654	160.88	0.01
30.00	0.00	2,644	160.87	0.01
30.40	0.00	2,635	160.87	0.01
30.80	0.00	2,625	160.87	0.01
31.20	0.00	2,615	160.86	0.01
31.60	0.00	2,606	160.86	0.01
32.00	0.00	2,596	160.86	0.01
32.40	0.00	2,586	160.86	0.01
32.80	0.00	2,577	160.85	0.01
33.20	0.00	2,567	160.85	0.01
33.60	0.00	2,557	160.85	0.01
34.00	0.00	2,548	160.84	0.01
34.40	0.00	2,538	160.84	0.01
34.80	0.00	2,529	160.84	0.01
35.20	0.00	2,519	160.83	0.01
35.60	0.00	2,510	160.83	0.01
36.00	0.00	2,500	160.83	0.01
36.40	0.00	2,491	160.83	0.01
36.80	0.00	2,481	160.82	0.01
37.20	0.00	2,472	160.82	0.01
37.60	0.00	2,462	160.82	0.01
38.00	0.00	2,453	160.81	0.01
38.40	0.00	2,444	160.81	0.01
38.80	0.00	2,434	160.81	0.01
39.20	0.00	2,425	160.81	0.01
39.60	0.00	2,415	160.80	0.01
40.00	0.00	2,406	160.80	0.01
40.40	0.00	2,397	160.80	0.01
40.80	0.00	2,387	160.79	0.01
41.20	0.00	2,378	160.79	0.01
41.60	0.00	2,369	160.79	0.01
42.00	0.00	2,359	160.79	0.01

Hydrograph for Pond 2P: UG2 (continued)

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
42.40	0.00	2,350	160.78	0.01
42.80	0.00	2,341	160.78	0.01
43.20	0.00	2,332	160.78	0.01
43.60	0.00	2,322	160.77	0.01
44.00	0.00	2,313	160.77	0.01
44.40	0.00	2,304	160.77	0.01
44.80	0.00	2,295	160.77	0.01
45.20	0.00	2,286	160.76	0.01
45.60	0.00	2,276	160.76	0.01
46.00	0.00	2,267	160.76	0.01
46.40	0.00	2,258	160.75	0.01
46.80	0.00	2,249	160.75	0.01
47.20	0.00	2,240	160.75	0.01
47.60	0.00	2,231	160.75	0.01
48.00	0.00	2,222	160.74	0.01
48.40	0.00	2,213	160.74	0.01
48.80	0.00	2,204	160.74	0.01
49.20	0.00	2,195	160.73	0.01
49.60	0.00	2,186	160.73	0.01
50.00	0.00	2,176	160.73	0.01
50.40	0.00	2,167	160.73	0.01
50.80	0.00	2,158	160.72	0.01
51.20	0.00	2,150	160.72	0.01
51.60	0.00	2,141	160.72	0.01
52.00	0.00	2,132	160.72	0.01
52.40	0.00	2,123	160.71	0.01
52.80	0.00	2,114	160.71	0.01
53.20	0.00	2,105	160.71	0.01
53.60	0.00	2,096	160.70	0.01
54.00	0.00	2,087	160.70	0.01
54.40	0.00	2,078	160.70	0.01
54.80	0.00	2,069	160.70	0.01
55.20	0.00	2,060	160.69	0.01
55.60	0.00	2,052	160.69	0.01
56.00	0.00	2,043	160.69	0.01
56.40	0.00	2,034	160.69	0.01
56.80	0.00	2,025	160.68	0.01
57.20	0.00	2,017	160.68	0.01
57.60	0.00	2,008	160.68	0.01
58.00	0.00	1,999	160.67	0.01
58.40	0.00	1,990	160.67	0.01
58.80	0.00	1,982	160.67	0.01
59.20	0.00	1,973	160.67	0.01
59.60	0.00	1,964	160.66	0.01
60.00	0.00	1,955	160.66	0.01
60.40	0.00	1,947	160.66	0.01
60.80	0.00	1,938	160.66	0.01
61.20	0.00	1,930	160.65	0.01
61.60	0.00	1,921	160.65	0.01
62.00	0.00	1,912	160.65	0.01
62.40	0.00	1,904	160.65	0.01
62.80	0.00	1,895	160.64	0.01
63.20	0.00	1,887	160.64	0.01

Hydrograph for Pond 2P: UG2 (continued)

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
63.60	0.00	1,878	160.64	0.01
64.00	0.00	1,869	160.64	0.01
64.40	0.00	1,861	160.63	0.01
64.80	0.00	1,852	160.63	0.01
65.20	0.00	1,844	160.63	0.01
65.60	0.00	1,835	160.62	0.01
66.00	0.00	1,827	160.62	0.01
66.40	0.00	1,819	160.62	0.01
66.80	0.00	1,810	160.62	0.01
67.20	0.00	1,802	160.61	0.01
67.60	0.00	1,793	160.61	0.01
68.00	0.00	1,785	160.61	0.01
68.40	0.00	1,776	160.61	0.01
68.80	0.00	1,768	160.60	0.01
69.20	0.00	1,760	160.60	0.01
69.60	0.00	1,751	160.60	0.01
70.00	0.00	1,743	160.60	0.01
70.40	0.00	1,735	160.59	0.01
70.80	0.00	1,726	160.59	0.01
71.20	0.00	1,718	160.59	0.01
71.60	0.00	1,710	160.59	0.01
72.00	0.00	1,702	160.58	0.01
72.40	0.00	1,693	160.58	0.01
72.80	0.00	1,685	160.58	0.01
73.20	0.00	1,677	160.58	0.01
73.60	0.00	1,669	160.57	0.01
74.00	0.00	1,660	160.57	0.01
74.40	0.00	1,652	160.57	0.01
74.80	0.00	1,644	160.57	0.01
75.20	0.00	1,636	160.56	0.01
75.60	0.00	1,628	160.56	0.01
76.00	0.00	1,620	160.56	0.01
76.40	0.00	1,612	160.56	0.01
76.80	0.00	1,603	160.55	0.01
77.20	0.00	1,595	160.55	0.01
77.60	0.00	1,587	160.55	0.01
78.00	0.00	1,579	160.55	0.01
78.40	0.00	1,571	160.54	0.01
78.80	0.00	1,563	160.54	0.01
79.20	0.00	1,555	160.54	0.01
79.60	0.00	1,547	160.54	0.01
80.00	0.00	1,539	160.53	0.01
80.40	0.00	1,531	160.53	0.01
80.80	0.00	1,523	160.53	0.01
81.20	0.00	1,515	160.53	0.01
81.60	0.00	1,507	160.52	0.01
82.00	0.00	1,499	160.52	0.01
82.40	0.00	1,491	160.52	0.01
82.80	0.00	1,484	160.52	0.01
83.20	0.00	1,476	160.52	0.01
83.60	0.00	1,468	160.51	0.01
84.00	0.00	1,460	160.51	0.01
84.40	0.00	1,452	160.51	0.01

Hydrograph for Pond 2P: UG2 (continued)

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
84.80	0.00	1,444	160.51	0.01
85.20	0.00	1,436	160.50	0.01
85.60	0.00	1,429	160.50	0.01
86.00	0.00	1,421	160.50	0.01
86.40	0.00	1,413	160.50	0.01
86.80	0.00	1,405	160.49	0.01
87.20	0.00	1,398	160.49	0.01
87.60	0.00	1,390	160.49	0.01
88.00	0.00	1,382	160.49	0.01
88.40	0.00	1,374	160.48	0.01
88.80	0.00	1,367	160.48	0.01
89.20	0.00	1,359	160.48	0.01
89.60	0.00	1,351	160.48	0.01
90.00	0.00	1,344	160.47	0.01
90.40	0.00	1,336	160.47	0.01
90.80	0.00	1,328	160.47	0.01
91.20	0.00	1,321	160.47	0.01
91.60	0.00	1,313	160.47	0.01
92.00	0.00	1,306	160.46	0.01
92.40	0.00	1,298	160.46	0.01
92.80	0.00	1,291	160.46	0.01
93.20	0.00	1,283	160.46	0.01
93.60	0.00	1,275	160.45	0.01
94.00	0.00	1,268	160.45	0.01
94.40	0.00	1,260	160.45	0.01
94.80	0.00	1,253	160.45	0.01
95.20	0.00	1,245	160.44	0.01
95.60	0.00	1,238	160.44	0.01
96.00	0.00	1,231	160.44	0.01
96.40	0.00	1,223	160.44	0.01
96.80	0.00	1,216	160.44	0.01
97.20	0.00	1,208	160.43	0.01
97.60	0.00	1,201	160.43	0.01
98.00	0.00	1,194	160.43	0.01
98.40	0.00	1,186	160.43	0.01
98.80	0.00	1,179	160.42	0.01
99.20	0.00	1,171	160.42	0.01
99.60	0.00	1,164	160.42	0.01
100.00	0.00	1,157	160.42	0.01
100.40	0.00	1,150	160.42	0.01
100.80	0.00	1,142	160.41	0.01
101.20	0.00	1,135	160.41	0.01
101.60	0.00	1,128	160.41	0.01
102.00	0.00	1,120	160.41	0.01
102.40	0.00	1,113	160.40	0.01
102.80	0.00	1,106	160.40	0.01
103.20	0.00	1,099	160.40	0.00
103.60	0.00	1,092	160.40	0.00
104.00	0.00	1,084	160.40	0.00
104.40	0.00	1,077	160.39	0.00
104.80	0.00	1,070	160.39	0.00
105.20	0.00	1,063	160.39	0.00
105.60	0.00	1,056	160.39	0.00

Hydrograph for Pond 2P: UG2 (continued)

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
106.00	0.00	1,049	160.39	0.00
106.40	0.00	1,042	160.38	0.00
106.80	0.00	1,035	160.38	0.00
107.20	0.00	1,027	160.38	0.00
107.60	0.00	1,020	160.38	0.00
108.00	0.00	1,013	160.37	0.00
108.40	0.00	1,006	160.37	0.00
108.80	0.00	999	160.37	0.00
109.20	0.00	992	160.37	0.00
109.60	0.00	985	160.37	0.00
110.00	0.00	978	160.36	0.00
110.40	0.00	971	160.36	0.00
110.80	0.00	964	160.36	0.00
111.20	0.00	958	160.36	0.00
111.60	0.00	951	160.36	0.00
112.00	0.00	944	160.35	0.00
112.40	0.00	937	160.35	0.00
112.80	0.00	930	160.35	0.00
113.20	0.00	923	160.35	0.00
113.60	0.00	916	160.35	0.00
114.00	0.00	909	160.34	0.00
114.40	0.00	903	160.34	0.00
114.80	0.00	896	160.34	0.00
115.20	0.00	889	160.34	0.00
115.60	0.00	882	160.33	0.00
116.00	0.00	875	160.33	0.00
116.40	0.00	869	160.33	0.00
116.80	0.00	862	160.33	0.00
117.20	0.00	855	160.33	0.00
117.60	0.00	848	160.32	0.00
118.00	0.00	842	160.32	0.00
118.40	0.00	835	160.32	0.00
118.80	0.00	828	160.32	0.00
119.20	0.00	822	160.32	0.00
119.60	0.00	815	160.31	0.00
120.00	0.00	808	160.31	0.00
120.40	0.00	802	160.31	0.00
120.80	0.00	795	160.31	0.00
121.20	0.00	789	160.31	0.00
121.60	0.00	782	160.30	0.00
122.00	0.00	775	160.30	0.00
122.40	0.00	769	160.30	0.00
122.80	0.00	762	160.30	0.00
123.20	0.00	756	160.29	0.00
123.60	0.00	749	160.29	0.00
124.00	0.00	743	160.28	0.00
124.40	0.00	736	160.28	0.00
124.80	0.00	730	160.28	0.00
125.20	0.00	724	160.27	0.00
125.60	0.00	717	160.27	0.00
126.00	0.00	711	160.26	0.00
126.40	0.00	705	160.26	0.00
126.80	0.00	699	160.26	0.00

Hydrograph for Pond 2P: UG2 (continued)

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
127.20	0.00	692	160.25	0.00
127.60	0.00	686	160.25	0.00
128.00	0.00	680	160.24	0.00
128.40	0.00	674	160.24	0.00
128.80	0.00	668	160.24	0.00
129.20	0.00	662	160.23	0.00
129.60	0.00	656	160.23	0.00
130.00	0.00	650	160.22	0.00
130.40	0.00	644	160.22	0.00
130.80	0.00	638	160.22	0.00
131.20	0.00	632	160.21	0.00
131.60	0.00	626	160.21	0.00
132.00	0.00	620	160.20	0.00
132.40	0.00	614	160.20	0.00
132.80	0.00	608	160.20	0.00
133.20	0.00	603	160.19	0.00
133.60	0.00	597	160.19	0.00
134.00	0.00	591	160.19	0.00
134.40	0.00	585	160.18	0.00
134.80	0.00	580	160.18	0.00
135.20	0.00	574	160.17	0.00
135.60	0.00	569	160.17	0.00
136.00	0.00	563	160.17	0.00
136.40	0.00	557	160.16	0.00
136.80	0.00	552	160.16	0.00
137.20	0.00	546	160.16	0.00
137.60	0.00	541	160.15	0.00
138.00	0.00	535	160.15	0.00
138.40	0.00	530	160.15	0.00
138.80	0.00	525	160.14	0.00
139.20	0.00	519	160.14	0.00
139.60	0.00	514	160.14	0.00
140.00	0.00	509	160.13	0.00
140.40	0.00	504	160.13	0.00
140.80	0.00	498	160.12	0.00
141.20	0.00	493	160.12	0.00
141.60	0.00	488	160.12	0.00
142.00	0.00	483	160.11	0.00
142.40	0.00	478	160.11	0.00
142.80	0.00	473	160.11	0.00
143.20	0.00	468	160.10	0.00
143.60	0.00	463	160.10	0.00
144.00	0.00	458	160.10	0.00
144.40	0.00	453	160.10	0.00
144.80	0.00	448	160.09	0.00
145.20	0.00	443	160.09	0.00
145.60	0.00	438	160.09	0.00
146.00	0.00	433	160.08	0.00
146.40	0.00	428	160.08	0.00
146.80	0.00	423	160.08	0.00
147.20	0.00	419	160.07	0.00
147.60	0.00	414	160.07	0.00
148.00	0.00	409	160.07	0.00

Hydrograph for Pond 2P: UG2 (continued)

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
148.40	0.00	405	160.06	0.00
148.80	0.00	400	160.06	0.00
149.20	0.00	395	160.06	0.00
149.60	0.00	391	160.05	0.00
150.00	0.00	386	160.05	0.00
150.40	0.00	382	160.05	0.00
150.80	0.00	377	160.05	0.00
151.20	0.00	373	160.04	0.00
151.60	0.00	368	160.04	0.00
152.00	0.00	364	160.04	0.00
152.40	0.00	359	160.03	0.00
152.80	0.00	355	160.03	0.00
153.20	0.00	351	160.03	0.00
153.60	0.00	346	160.03	0.00
154.00	0.00	342	160.02	0.00
154.40	0.00	338	160.02	0.00
154.80	0.00	334	160.02	0.00
155.20	0.00	329	160.01	0.00
155.60	0.00	325	160.01	0.00
156.00	0.00	321	160.01	0.00
156.40	0.00	317	160.01	0.00
156.80	0.00	313	160.00	0.00
157.20	0.00	309	160.00	0.00
157.60	0.00	305	160.00	0.00
158.00	0.00	301	160.00	0.00
158.40	0.00	297	159.99	0.00
158.80	0.00	293	159.99	0.00
159.20	0.00	289	159.99	0.00
159.60	0.00	285	159.99	0.00
160.00	0.00	282	159.98	0.00
160.40	0.00	278	159.98	0.00
160.80	0.00	274	159.98	0.00
161.20	0.00	270	159.98	0.00
161.60	0.00	267	159.97	0.00
162.00	0.00	263	159.97	0.00
162.40	0.00	259	159.97	0.00
162.80	0.00	256	159.97	0.00
163.20	0.00	252	159.96	0.00
163.60	0.00	248	159.96	0.00
164.00	0.00	245	159.96	0.00
164.40	0.00	241	159.96	0.00
164.80	0.00	238	159.96	0.00
165.20	0.00	234	159.95	0.00
165.60	0.00	231	159.95	0.00
166.00	0.00	228	159.95	0.00
166.40	0.00	224	159.95	0.00
166.80	0.00	221	159.94	0.00
167.20	0.00	218	159.94	0.00
167.60	0.00	214	159.94	0.00
168.00	0.00	211	159.94	0.00

Summary for Pond 3P: UG3

Inflow Area = 19,646 sf, 85.14% Impervious, Inflow Depth = 3.61" for 10-yr event
Inflow = 2.80 cfs @ 11.96 hrs, Volume= 5,909 cf
Outflow = 0.63 cfs @ 12.10 hrs, Volume= 5,908 cf, Atten= 78%, Lag= 8.8 min
Primary = 0.63 cfs @ 12.10 hrs, Volume= 5,908 cf
Routed to Link 10L : POST-DEV TO DA #1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-168.00 hrs, dt= 0.04 hrs / 2
Peak Elev= 161.50' @ 12.10 hrs Surf.Area= 2,917 sf Storage= 2,362 cf

Plug-Flow detention time= 78.3 min calculated for 5,906 cf (100% of inflow)
Center-of-Mass det. time= 79.4 min (870.9 - 791.5)

Volume	Invert	Avail.Storage	Storage Description
#1A	160.28'	2,010 cf	**44.00'W x 66.30'L x 2.71'H Field A** 7,901 cf Overall - 2,875 cf Embedded = 5,026 cf x 40.0% Voids
#2A	160.78'	2,875 cf	**Cultec R-180** x 130 Inside #1 Effective Size= 33.6"W x 20.0"H => 3.44 sf x 6.33'L = 21.8 cf Overall Size= 36.0"W x 20.5"H x 7.33'L with 1.00' Overlap Row Length Adjustment= +1.00' x 3.44 sf x 13 rows
		4,885 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Device 4	160.28'	**3.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#2	Device 4	160.97'	**6.0" W x 3.0" H Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#3	Device 4	162.50'	**4.0' long Broad-Crested Rectangular Weir** Head (feet) 4.00 Coef. (English) 3.33
#4	Primary	160.28'	**18.0" Round Culvert** L= 36.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 160.28' / 160.10' S= 0.0050 '/' Cc= 0.900 n= 0.012, Flow Area= 1.77 sf

Primary OutFlow Max=0.63 cfs @ 12.10 hrs HW=161.50' TW=0.00' (Dynamic Tailwater)
└**4=Culvert** (Passes 0.63 cfs of 4.47 cfs potential flow)
  ├**1=Orifice/Grate** (Orifice Controls 0.25 cfs @ 5.03 fps)
  ├**2=Orifice/Grate** (Orifice Controls 0.38 cfs @ 3.04 fps)
  └**3=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond 3P: UG3 - Chamber Wizard Field A

Chamber Model = Cultec R-180 (Cultec Recharger® 180HD)
Effective Size= 33.6"W x 20.0"H => 3.44 sf x 6.33'L = 21.8 cf
Overall Size= 36.0"W x 20.5"H x 7.33'L with 1.00' Overlap
Row Length Adjustment= +1.00' x 3.44 sf x 13 rows

36.0" Wide + 3.0" Spacing = 39.0" C-C Row Spacing

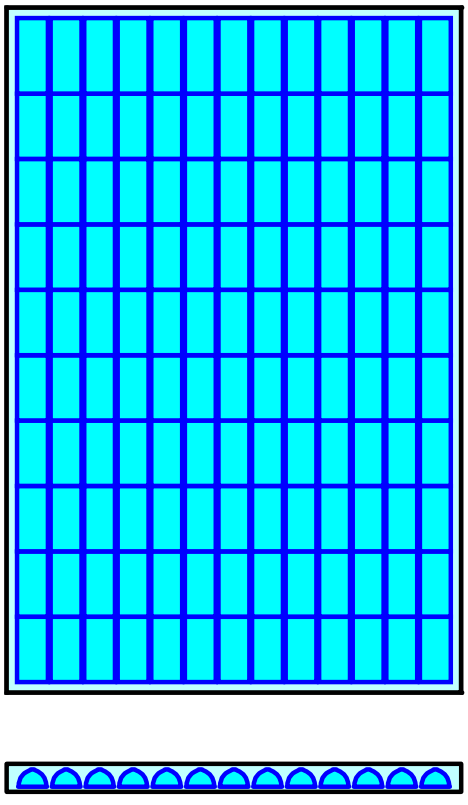
10 Chambers/Row x 6.33' Long +1.00' Row Adjustment = 64.30' Row Length +12.0" End Stone x 2 = 66.30' Base Length
13 Rows x 36.0" Wide + 3.0" Spacing x 12 + 12.0" Side Stone x 2 = 44.00' Base Width
6.0" Stone Base + 20.5" Chamber Height + 6.0" Stone Cover = 2.71' Field Height

130 Chambers x 21.8 cf +1.00' Row Adjustment x 3.44 sf x 13 Rows = 2,875.1 cf Chamber Storage

7,900.7 cf Field - 2,875.1 cf Chambers = 5,025.7 cf Stone x 40.0% Voids = 2,010.3 cf Stone Storage

Chamber Storage + Stone Storage = 4,885.3 cf = 0.112 af
Overall Storage Efficiency = 61.8%
Overall System Size = 66.30' x 44.00' x 2.71'

130 Chambers
292.6 cy Field
186.1 cy Stone



Hydrograph for Pond 3P: UG3

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
0.00	0.00	0	160.28	0.00
0.40	0.00	0	160.28	0.00
0.80	0.00	0	160.28	0.00
1.20	0.00	0	160.28	0.00
1.60	0.00	0	160.28	0.00
2.00	0.00	0	160.28	0.00
2.40	0.00	0	160.28	0.00
2.80	0.00	0	160.28	0.00
3.20	0.00	0	160.28	0.00
3.60	0.00	0	160.28	0.00
4.00	0.00	0	160.28	0.00
4.40	0.00	0	160.28	0.00
4.80	0.00	2	160.28	0.00
5.20	0.00	6	160.28	0.00
5.60	0.01	12	160.29	0.00
6.00	0.01	20	160.30	0.00
6.40	0.01	31	160.31	0.00
6.80	0.01	42	160.32	0.00
7.20	0.01	55	160.33	0.00
7.60	0.02	67	160.34	0.01
8.00	0.02	79	160.35	0.01
8.40	0.02	92	160.36	0.01
8.80	0.03	108	160.37	0.02
9.20	0.03	125	160.39	0.02
9.60	0.04	140	160.40	0.03
10.00	0.05	156	160.41	0.03
10.40	0.06	180	160.43	0.04
10.80	0.08	213	160.46	0.06
11.20	0.12	264	160.51	0.08
11.60	**0.31**	377	160.60	0.11
12.00	**2.36**	**2,095**	**161.39**	**0.56**
12.40	0.26	**2,097**	**161.39**	**0.56**
12.80	0.15	1,670	161.21	0.40
13.20	0.12	1,388	161.10	0.27
13.60	0.10	1,202	161.02	0.21
14.00	0.08	1,056	160.97	0.18
14.40	0.07	915	160.91	0.17
14.80	0.07	779	160.86	0.16
15.20	0.06	648	160.81	0.15
15.60	0.05	524	160.73	0.13
16.00	0.05	419	160.64	0.11
16.40	0.05	336	160.57	0.10
16.80	0.04	276	160.52	0.08
17.20	0.04	234	160.48	0.06
17.60	0.04	209	160.46	0.05
18.00	0.04	192	160.44	0.05
18.40	0.04	180	160.43	0.04
18.80	0.03	172	160.43	0.04
19.20	0.03	164	160.42	0.04
19.60	0.03	158	160.42	0.03
20.00	0.03	152	160.41	0.03
20.40	0.03	147	160.41	0.03
20.80	0.03	143	160.40	0.03

Hydrograph for Pond 3P: UG3 (continued)

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
21.20	0.03	140	160.40	0.03
21.60	0.03	138	160.40	0.03
22.00	0.03	137	160.40	0.03
22.40	0.02	135	160.40	0.03
22.80	0.02	134	160.39	0.03
23.20	0.02	132	160.39	0.02
23.60	0.02	131	160.39	0.02
24.00	0.02	130	160.39	0.02
24.40	0.00	107	160.37	0.02
24.80	0.00	87	160.35	0.01
25.20	0.00	73	160.34	0.01
25.60	0.00	63	160.33	0.01
26.00	0.00	55	160.33	0.00
26.40	0.00	49	160.32	0.00
26.80	0.00	44	160.32	0.00
27.20	0.00	40	160.31	0.00
27.60	0.00	37	160.31	0.00
28.00	0.00	34	160.31	0.00
28.40	0.00	31	160.31	0.00
28.80	0.00	29	160.30	0.00
29.20	0.00	27	160.30	0.00
29.60	0.00	26	160.30	0.00
30.00	0.00	24	160.30	0.00
30.40	0.00	23	160.30	0.00
30.80	0.00	22	160.30	0.00
31.20	0.00	21	160.30	0.00
31.60	0.00	20	160.30	0.00
32.00	0.00	19	160.30	0.00
32.40	0.00	18	160.30	0.00
32.80	0.00	17	160.29	0.00
33.20	0.00	17	160.29	0.00
33.60	0.00	16	160.29	0.00
34.00	0.00	15	160.29	0.00
34.40	0.00	15	160.29	0.00
34.80	0.00	14	160.29	0.00
35.20	0.00	14	160.29	0.00
35.60	0.00	13	160.29	0.00
36.00	0.00	13	160.29	0.00
36.40	0.00	13	160.29	0.00
36.80	0.00	12	160.29	0.00
37.20	0.00	12	160.29	0.00
37.60	0.00	12	160.29	0.00
38.00	0.00	11	160.29	0.00
38.40	0.00	11	160.29	0.00
38.80	0.00	11	160.29	0.00
39.20	0.00	10	160.29	0.00
39.60	0.00	10	160.29	0.00
40.00	0.00	10	160.29	0.00
40.40	0.00	10	160.29	0.00
40.80	0.00	10	160.29	0.00
41.20	0.00	9	160.29	0.00
41.60	0.00	9	160.29	0.00
42.00	0.00	9	160.29	0.00

Hydrograph for Pond 3P: UG3 (continued)

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
42.40	0.00	9	160.29	0.00
42.80	0.00	9	160.29	0.00
43.20	0.00	8	160.29	0.00
43.60	0.00	8	160.29	0.00
44.00	0.00	8	160.29	0.00
44.40	0.00	8	160.29	0.00
44.80	0.00	8	160.29	0.00
45.20	0.00	8	160.29	0.00
45.60	0.00	7	160.29	0.00
46.00	0.00	7	160.29	0.00
46.40	0.00	7	160.29	0.00
46.80	0.00	7	160.29	0.00
47.20	0.00	7	160.29	0.00
47.60	0.00	7	160.29	0.00
48.00	0.00	7	160.29	0.00
48.40	0.00	7	160.29	0.00
48.80	0.00	7	160.29	0.00
49.20	0.00	6	160.29	0.00
49.60	0.00	6	160.29	0.00
50.00	0.00	6	160.29	0.00
50.40	0.00	6	160.29	0.00
50.80	0.00	6	160.29	0.00
51.20	0.00	6	160.29	0.00
51.60	0.00	6	160.29	0.00
52.00	0.00	6	160.28	0.00
52.40	0.00	6	160.28	0.00
52.80	0.00	6	160.28	0.00
53.20	0.00	6	160.28	0.00
53.60	0.00	6	160.28	0.00
54.00	0.00	5	160.28	0.00
54.40	0.00	5	160.28	0.00
54.80	0.00	5	160.28	0.00
55.20	0.00	5	160.28	0.00
55.60	0.00	5	160.28	0.00
56.00	0.00	5	160.28	0.00
56.40	0.00	5	160.28	0.00
56.80	0.00	5	160.28	0.00
57.20	0.00	5	160.28	0.00
57.60	0.00	5	160.28	0.00
58.00	0.00	5	160.28	0.00
58.40	0.00	5	160.28	0.00
58.80	0.00	5	160.28	0.00
59.20	0.00	5	160.28	0.00
59.60	0.00	5	160.28	0.00
60.00	0.00	5	160.28	0.00
60.40	0.00	5	160.28	0.00
60.80	0.00	4	160.28	0.00
61.20	0.00	4	160.28	0.00
61.60	0.00	4	160.28	0.00
62.00	0.00	4	160.28	0.00
62.40	0.00	4	160.28	0.00
62.80	0.00	4	160.28	0.00
63.20	0.00	4	160.28	0.00

Hydrograph for Pond 3P: UG3 (continued)

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
63.60	0.00	4	160.28	0.00
64.00	0.00	4	160.28	0.00
64.40	0.00	4	160.28	0.00
64.80	0.00	4	160.28	0.00
65.20	0.00	4	160.28	0.00
65.60	0.00	4	160.28	0.00
66.00	0.00	4	160.28	0.00
66.40	0.00	4	160.28	0.00
66.80	0.00	4	160.28	0.00
67.20	0.00	4	160.28	0.00
67.60	0.00	4	160.28	0.00
68.00	0.00	4	160.28	0.00
68.40	0.00	4	160.28	0.00
68.80	0.00	4	160.28	0.00
69.20	0.00	4	160.28	0.00
69.60	0.00	4	160.28	0.00
70.00	0.00	4	160.28	0.00
70.40	0.00	4	160.28	0.00
70.80	0.00	4	160.28	0.00
71.20	0.00	3	160.28	0.00
71.60	0.00	3	160.28	0.00
72.00	0.00	3	160.28	0.00
72.40	0.00	3	160.28	0.00
72.80	0.00	3	160.28	0.00
73.20	0.00	3	160.28	0.00
73.60	0.00	3	160.28	0.00
74.00	0.00	3	160.28	0.00
74.40	0.00	3	160.28	0.00
74.80	0.00	3	160.28	0.00
75.20	0.00	3	160.28	0.00
75.60	0.00	3	160.28	0.00
76.00	0.00	3	160.28	0.00
76.40	0.00	3	160.28	0.00
76.80	0.00	3	160.28	0.00
77.20	0.00	3	160.28	0.00
77.60	0.00	3	160.28	0.00
78.00	0.00	3	160.28	0.00
78.40	0.00	3	160.28	0.00
78.80	0.00	3	160.28	0.00
79.20	0.00	3	160.28	0.00
79.60	0.00	3	160.28	0.00
80.00	0.00	3	160.28	0.00
80.40	0.00	3	160.28	0.00
80.80	0.00	3	160.28	0.00
81.20	0.00	3	160.28	0.00
81.60	0.00	3	160.28	0.00
82.00	0.00	3	160.28	0.00
82.40	0.00	3	160.28	0.00
82.80	0.00	3	160.28	0.00
83.20	0.00	3	160.28	0.00
83.60	0.00	3	160.28	0.00
84.00	0.00	3	160.28	0.00
84.40	0.00	3	160.28	0.00

Hydrograph for Pond 3P: UG3 (continued)

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
84.80	0.00	3	160.28	0.00
85.20	0.00	3	160.28	0.00
85.60	0.00	3	160.28	0.00
86.00	0.00	3	160.28	0.00
86.40	0.00	3	160.28	0.00
86.80	0.00	3	160.28	0.00
87.20	0.00	3	160.28	0.00
87.60	0.00	3	160.28	0.00
88.00	0.00	3	160.28	0.00
88.40	0.00	3	160.28	0.00
88.80	0.00	3	160.28	0.00
89.20	0.00	3	160.28	0.00
89.60	0.00	3	160.28	0.00
90.00	0.00	3	160.28	0.00
90.40	0.00	3	160.28	0.00
90.80	0.00	3	160.28	0.00
91.20	0.00	2	160.28	0.00
91.60	0.00	2	160.28	0.00
92.00	0.00	2	160.28	0.00
92.40	0.00	2	160.28	0.00
92.80	0.00	2	160.28	0.00
93.20	0.00	2	160.28	0.00
93.60	0.00	2	160.28	0.00
94.00	0.00	2	160.28	0.00
94.40	0.00	2	160.28	0.00
94.80	0.00	2	160.28	0.00
95.20	0.00	2	160.28	0.00
95.60	0.00	2	160.28	0.00
96.00	0.00	2	160.28	0.00
96.40	0.00	2	160.28	0.00
96.80	0.00	2	160.28	0.00
97.20	0.00	2	160.28	0.00
97.60	0.00	2	160.28	0.00
98.00	0.00	2	160.28	0.00
98.40	0.00	2	160.28	0.00
98.80	0.00	2	160.28	0.00
99.20	0.00	2	160.28	0.00
99.60	0.00	2	160.28	0.00
100.00	0.00	2	160.28	0.00
100.40	0.00	2	160.28	0.00
100.80	0.00	2	160.28	0.00
101.20	0.00	2	160.28	0.00
101.60	0.00	2	160.28	0.00
102.00	0.00	2	160.28	0.00
102.40	0.00	2	160.28	0.00
102.80	0.00	2	160.28	0.00
103.20	0.00	2	160.28	0.00
103.60	0.00	2	160.28	0.00
104.00	0.00	2	160.28	0.00
104.40	0.00	2	160.28	0.00
104.80	0.00	2	160.28	0.00
105.20	0.00	2	160.28	0.00
105.60	0.00	2	160.28	0.00

Hydrograph for Pond 3P: UG3 (continued)

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
106.00	0.00	2	160.28	0.00
106.40	0.00	2	160.28	0.00
106.80	0.00	2	160.28	0.00
107.20	0.00	2	160.28	0.00
107.60	0.00	2	160.28	0.00
108.00	0.00	2	160.28	0.00
108.40	0.00	2	160.28	0.00
108.80	0.00	2	160.28	0.00
109.20	0.00	2	160.28	0.00
109.60	0.00	2	160.28	0.00
110.00	0.00	2	160.28	0.00
110.40	0.00	2	160.28	0.00
110.80	0.00	2	160.28	0.00
111.20	0.00	2	160.28	0.00
111.60	0.00	2	160.28	0.00
112.00	0.00	2	160.28	0.00
112.40	0.00	2	160.28	0.00
112.80	0.00	2	160.28	0.00
113.20	0.00	2	160.28	0.00
113.60	0.00	2	160.28	0.00
114.00	0.00	2	160.28	0.00
114.40	0.00	2	160.28	0.00
114.80	0.00	2	160.28	0.00
115.20	0.00	2	160.28	0.00
115.60	0.00	2	160.28	0.00
116.00	0.00	2	160.28	0.00
116.40	0.00	2	160.28	0.00
116.80	0.00	2	160.28	0.00
117.20	0.00	2	160.28	0.00
117.60	0.00	2	160.28	0.00
118.00	0.00	2	160.28	0.00
118.40	0.00	2	160.28	0.00
118.80	0.00	2	160.28	0.00
119.20	0.00	2	160.28	0.00
119.60	0.00	2	160.28	0.00
120.00	0.00	2	160.28	0.00
120.40	0.00	2	160.28	0.00
120.80	0.00	2	160.28	0.00
121.20	0.00	2	160.28	0.00
121.60	0.00	2	160.28	0.00
122.00	0.00	2	160.28	0.00
122.40	0.00	2	160.28	0.00
122.80	0.00	2	160.28	0.00
123.20	0.00	2	160.28	0.00
123.60	0.00	2	160.28	0.00
124.00	0.00	2	160.28	0.00
124.40	0.00	2	160.28	0.00
124.80	0.00	2	160.28	0.00
125.20	0.00	2	160.28	0.00
125.60	0.00	2	160.28	0.00
126.00	0.00	2	160.28	0.00
126.40	0.00	2	160.28	0.00
126.80	0.00	2	160.28	0.00

Hydrograph for Pond 3P: UG3 (continued)

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
127.20	0.00	2	160.28	0.00
127.60	0.00	2	160.28	0.00
128.00	0.00	2	160.28	0.00
128.40	0.00	2	160.28	0.00
128.80	0.00	2	160.28	0.00
129.20	0.00	2	160.28	0.00
129.60	0.00	2	160.28	0.00
130.00	0.00	2	160.28	0.00
130.40	0.00	2	160.28	0.00
130.80	0.00	2	160.28	0.00
131.20	0.00	2	160.28	0.00
131.60	0.00	2	160.28	0.00
132.00	0.00	2	160.28	0.00
132.40	0.00	2	160.28	0.00
132.80	0.00	2	160.28	0.00
133.20	0.00	2	160.28	0.00
133.60	0.00	2	160.28	0.00
134.00	0.00	2	160.28	0.00
134.40	0.00	2	160.28	0.00
134.80	0.00	2	160.28	0.00
135.20	0.00	2	160.28	0.00
135.60	0.00	2	160.28	0.00
136.00	0.00	2	160.28	0.00
136.40	0.00	2	160.28	0.00
136.80	0.00	2	160.28	0.00
137.20	0.00	2	160.28	0.00
137.60	0.00	2	160.28	0.00
138.00	0.00	2	160.28	0.00
138.40	0.00	2	160.28	0.00
138.80	0.00	2	160.28	0.00
139.20	0.00	2	160.28	0.00
139.60	0.00	2	160.28	0.00
140.00	0.00	2	160.28	0.00
140.40	0.00	2	160.28	0.00
140.80	0.00	2	160.28	0.00
141.20	0.00	2	160.28	0.00
141.60	0.00	1	160.28	0.00
142.00	0.00	1	160.28	0.00
142.40	0.00	1	160.28	0.00
142.80	0.00	1	160.28	0.00
143.20	0.00	1	160.28	0.00
143.60	0.00	1	160.28	0.00
144.00	0.00	1	160.28	0.00
144.40	0.00	1	160.28	0.00
144.80	0.00	1	160.28	0.00
145.20	0.00	1	160.28	0.00
145.60	0.00	1	160.28	0.00
146.00	0.00	1	160.28	0.00
146.40	0.00	1	160.28	0.00
146.80	0.00	1	160.28	0.00
147.20	0.00	1	160.28	0.00
147.60	0.00	1	160.28	0.00
148.00	0.00	1	160.28	0.00

Hydrograph for Pond 3P: UG3 (continued)

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
148.40	0.00	1	160.28	0.00
148.80	0.00	1	160.28	0.00
149.20	0.00	1	160.28	0.00
149.60	0.00	1	160.28	0.00
150.00	0.00	1	160.28	0.00
150.40	0.00	1	160.28	0.00
150.80	0.00	1	160.28	0.00
151.20	0.00	1	160.28	0.00
151.60	0.00	1	160.28	0.00
152.00	0.00	1	160.28	0.00
152.40	0.00	1	160.28	0.00
152.80	0.00	1	160.28	0.00
153.20	0.00	1	160.28	0.00
153.60	0.00	1	160.28	0.00
154.00	0.00	1	160.28	0.00
154.40	0.00	1	160.28	0.00
154.80	0.00	1	160.28	0.00
155.20	0.00	1	160.28	0.00
155.60	0.00	1	160.28	0.00
156.00	0.00	1	160.28	0.00
156.40	0.00	1	160.28	0.00
156.80	0.00	1	160.28	0.00
157.20	0.00	1	160.28	0.00
157.60	0.00	1	160.28	0.00
158.00	0.00	1	160.28	0.00
158.40	0.00	1	160.28	0.00
158.80	0.00	1	160.28	0.00
159.20	0.00	1	160.28	0.00
159.60	0.00	1	160.28	0.00
160.00	0.00	1	160.28	0.00
160.40	0.00	1	160.28	0.00
160.80	0.00	1	160.28	0.00
161.20	0.00	1	160.28	0.00
161.60	0.00	1	160.28	0.00
162.00	0.00	1	160.28	0.00
162.40	0.00	1	160.28	0.00
162.80	0.00	1	160.28	0.00
163.20	0.00	1	160.28	0.00
163.60	0.00	1	160.28	0.00
164.00	0.00	1	160.28	0.00
164.40	0.00	1	160.28	0.00
164.80	0.00	1	160.28	0.00
165.20	0.00	1	160.28	0.00
165.60	0.00	1	160.28	0.00
166.00	0.00	1	160.28	0.00
166.40	0.00	1	160.28	0.00
166.80	0.00	1	160.28	0.00
167.20	0.00	1	160.28	0.00
167.60	0.00	1	160.28	0.00
168.00	0.00	1	160.28	0.00

Summary for Pond 1P: UG1

Inflow Area = 82,459 sf, 99.52% Impervious, Inflow Depth = 6.49" for 50-yr event
Inflow = 18.56 cfs @ 11.95 hrs, Volume= 44,604 cf
Outflow = 5.69 cfs @ 12.08 hrs, Volume= 44,458 cf, Atten= 69%, Lag= 7.6 min
Primary = 5.69 cfs @ 12.08 hrs, Volume= 44,458 cf
Routed to Link 10L : POST-DEV TO DA #1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-168.00 hrs, dt= 0.04 hrs / 2
Peak Elev= 159.67' @ 12.08 hrs Surf.Area= 13,041 sf Storage= 20,430 cf

Plug-Flow detention time= 642.9 min calculated for 44,447 cf (100% of inflow)
Center-of-Mass det. time= 642.5 min (1,380.9 - 738.4)

Volume	Invert	Avail.Storage	Storage Description
#1A	157.53'	9,785 cf	**120.75'W x 108.00'L x 3.21'H Field A** 41,840 cf Overall - 17,377 cf Embedded = 24,463 cf x 40.0% Voids
#2A	158.03'	17,377 cf	**Cultec R-280HD** x 405 Inside #1 Effective Size= 46.9"W x 26.0"H => 6.07 sf x 7.00'L = 42.5 cf Overall Size= 47.0"W x 26.5"H x 8.00'L with 1.00' Overlap Row Length Adjustment= +1.00' x 6.07 sf x 27 rows
		27,162 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Device 4	157.53'	**1.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#2	Device 4	158.39'	**40.0" W x 4.0" H Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#3	Device 4	160.24'	**4.0' long Broad-Crested Rectangular Weir** Head (feet) 4.00 Coef. (English) 3.33
#4	Primary	157.53'	**18.0" Round Culvert** L= 66.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 157.53' / 157.20' S= 0.0050 '/' Cc= 0.900 n= 0.012, Flow Area= 1.77 sf

Primary OutFlow Max=5.69 cfs @ 12.08 hrs HW=159.67' TW=0.00' (Dynamic Tailwater)
└**4=Culvert** (Passes 5.69 cfs of 8.80 cfs potential flow)
  ├**1=Orifice/Grate** (Orifice Controls 0.04 cfs @ 6.98 fps)
  ├**2=Orifice/Grate** (Orifice Controls 5.65 cfs @ 5.08 fps)
  └**3=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond 1P: UG1 - Chamber Wizard Field A

Chamber Model = Cultec R-280HD (Cultec Recharger® 280HD)
Effective Size= 46.9"W x 26.0"H => 6.07 sf x 7.00'L = 42.5 cf
Overall Size= 47.0"W x 26.5"H x 8.00'L with 1.00' Overlap
Row Length Adjustment= +1.00' x 6.07 sf x 27 rows

47.0" Wide + 6.0" Spacing = 53.0" C-C Row Spacing

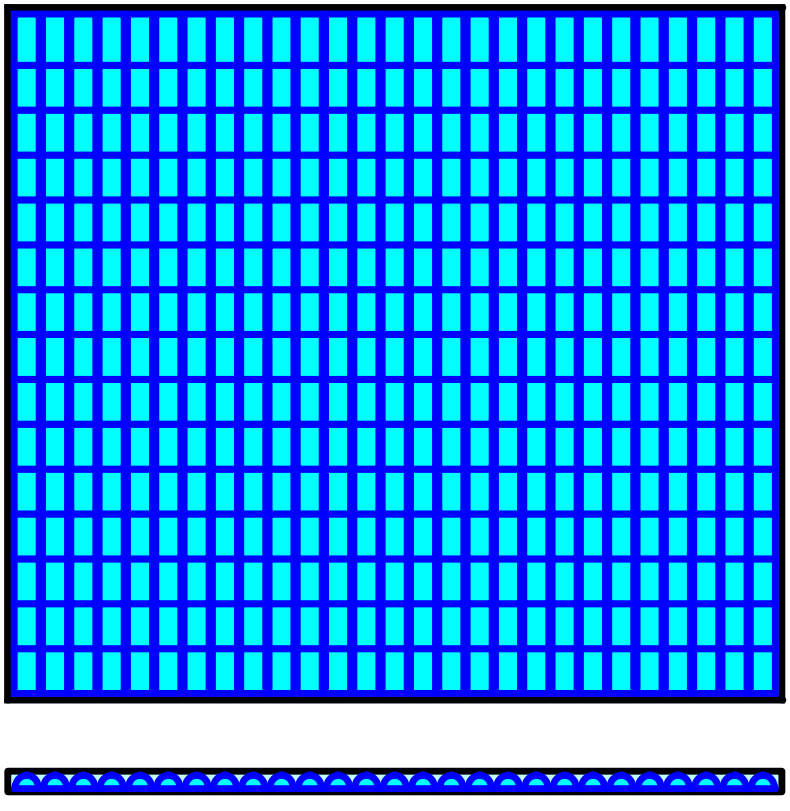
15 Chambers/Row x 7.00' Long +1.00' Row Adjustment = 106.00' Row Length +12.0" End Stone x 2 = 108.00' Base Length
27 Rows x 47.0" Wide + 6.0" Spacing x 26 + 12.0" Side Stone x 2 = 120.75' Base Width
6.0" Stone Base + 26.5" Chamber Height + 6.0" Stone Cover = 3.21' Field Height

405 Chambers x 42.5 cf +1.00' Row Adjustment x 6.07 sf x 27 Rows = 17,377.3 cf Chamber Storage

41,839.9 cf Field - 17,377.3 cf Chambers = 24,462.5 cf Stone x 40.0% Voids = 9,785.0 cf Stone Storage

Chamber Storage + Stone Storage = 27,162.4 cf = 0.624 af
Overall Storage Efficiency = 64.9%
Overall System Size = 108.00' x 120.75' x 3.21'

405 Chambers
1,549.6 cy Field
906.0 cy Stone



Hydrograph for Pond 1P: UG1

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
0.00	0.00	0	157.53	0.00
0.40	0.00	0	157.53	0.00
0.80	0.01	3	157.53	0.00
1.20	0.04	43	157.54	0.00
1.60	0.07	121	157.55	0.00
2.00	0.08	228	157.57	0.00
2.40	0.10	357	157.60	0.00
2.80	0.11	504	157.63	0.01
3.20	0.13	667	157.66	0.01
3.60	0.14	844	157.69	0.01
4.00	0.15	1,034	157.73	0.01
4.40	0.16	1,238	157.77	0.01
4.80	0.17	1,458	157.81	0.01
5.20	0.18	1,696	157.86	0.01
5.60	0.20	1,949	157.90	0.02
6.00	0.21	2,219	157.96	0.02
6.40	0.22	2,505	158.01	0.02
6.80	0.23	2,807	158.05	0.02
7.20	0.24	3,125	158.07	0.02
7.60	0.26	3,459	158.10	0.02
8.00	0.27	3,808	158.13	0.02
8.40	0.31	4,193	158.16	0.02
8.80	0.36	4,648	158.20	0.02
9.20	0.40	5,173	158.25	0.02
9.60	0.41	5,717	158.30	0.02
10.00	0.49	6,326	158.35	0.02
10.40	0.60	7,065	158.41	0.06
10.80	0.77	7,798	158.48	0.29
11.20	1.06	8,441	158.53	0.60
11.60	**2.43**	9,255	158.60	1.09
12.00	**15.37**	**19,205**	**159.54**	**5.34**
12.40	1.63	**17,119**	**159.33**	**4.74**
12.80	0.97	13,022	158.94	3.34
13.20	0.74	10,419	158.71	1.94
13.60	0.60	9,288	158.61	1.11
14.00	0.49	8,751	158.56	0.77
14.40	0.45	8,446	158.53	0.60
14.80	0.41	8,268	158.52	0.51
15.20	0.37	8,145	158.51	0.45
15.60	0.34	8,046	158.50	0.40
16.00	0.30	7,957	158.49	0.36
16.40	0.28	7,882	158.48	0.33
16.80	0.27	7,826	158.48	0.31
17.20	0.26	7,782	158.47	0.29
17.60	0.25	7,744	158.47	0.27
18.00	0.23	7,708	158.47	0.26
18.40	0.22	7,674	158.46	0.24
18.80	0.21	7,640	158.46	0.23
19.20	0.19	7,606	158.46	0.22
19.60	0.18	7,571	158.46	0.21
20.00	0.17	7,536	158.45	0.19
20.40	0.16	7,505	158.45	0.18
20.80	0.16	7,483	158.45	0.18

Hydrograph for Pond 1P: UG1 (continued)

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
21.20	0.16	7,466	158.45	0.17
21.60	0.16	7,453	158.45	0.17
22.00	0.15	7,442	158.44	0.16
22.40	0.15	7,432	158.44	0.16
22.80	0.15	7,423	158.44	0.16
23.20	0.15	7,414	158.44	0.15
23.60	0.14	7,406	158.44	0.15
24.00	0.14	7,397	158.44	0.15
24.40	0.00	7,252	158.43	0.10
24.80	0.00	7,127	158.42	0.07
25.20	0.00	7,037	158.41	0.05
25.60	0.00	6,969	158.40	0.04
26.00	0.00	6,916	158.40	0.03
26.40	0.00	6,872	158.40	0.03
26.80	0.00	6,834	158.39	0.02
27.20	0.00	6,800	158.39	0.02
27.60	0.00	6,766	158.39	0.02
28.00	0.00	6,731	158.38	0.02
28.40	0.00	6,697	158.38	0.02
28.80	0.00	6,663	158.38	0.02
29.20	0.00	6,630	158.37	0.02
29.60	0.00	6,596	158.37	0.02
30.00	0.00	6,562	158.37	0.02
30.40	0.00	6,528	158.37	0.02
30.80	0.00	6,495	158.36	0.02
31.20	0.00	6,461	158.36	0.02
31.60	0.00	6,427	158.36	0.02
32.00	0.00	6,394	158.35	0.02
32.40	0.00	6,361	158.35	0.02
32.80	0.00	6,327	158.35	0.02
33.20	0.00	6,294	158.35	0.02
33.60	0.00	6,261	158.34	0.02
34.00	0.00	6,227	158.34	0.02
34.40	0.00	6,194	158.34	0.02
34.80	0.00	6,161	158.33	0.02
35.20	0.00	6,128	158.33	0.02
35.60	0.00	6,095	158.33	0.02
36.00	0.00	6,063	158.33	0.02
36.40	0.00	6,030	158.32	0.02
36.80	0.00	5,997	158.32	0.02
37.20	0.00	5,964	158.32	0.02
37.60	0.00	5,932	158.31	0.02
38.00	0.00	5,899	158.31	0.02
38.40	0.00	5,867	158.31	0.02
38.80	0.00	5,834	158.31	0.02
39.20	0.00	5,802	158.30	0.02
39.60	0.00	5,770	158.30	0.02
40.00	0.00	5,737	158.30	0.02
40.40	0.00	5,705	158.29	0.02
40.80	0.00	5,673	158.29	0.02
41.20	0.00	5,641	158.29	0.02
41.60	0.00	5,609	158.29	0.02
42.00	0.00	5,577	158.28	0.02

Hydrograph for Pond 1P: UG1 (continued)

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
42.40	0.00	5,545	158.28	0.02
42.80	0.00	5,513	158.28	0.02
43.20	0.00	5,482	158.28	0.02
43.60	0.00	5,450	158.27	0.02
44.00	0.00	5,418	158.27	0.02
44.40	0.00	5,387	158.27	0.02
44.80	0.00	5,355	158.26	0.02
45.20	0.00	5,324	158.26	0.02
45.60	0.00	5,292	158.26	0.02
46.00	0.00	5,261	158.26	0.02
46.40	0.00	5,230	158.25	0.02
46.80	0.00	5,199	158.25	0.02
47.20	0.00	5,168	158.25	0.02
47.60	0.00	5,137	158.25	0.02
48.00	0.00	5,106	158.24	0.02
48.40	0.00	5,075	158.24	0.02
48.80	0.00	5,044	158.24	0.02
49.20	0.00	5,013	158.23	0.02
49.60	0.00	4,982	158.23	0.02
50.00	0.00	4,951	158.23	0.02
50.40	0.00	4,921	158.23	0.02
50.80	0.00	4,890	158.22	0.02
51.20	0.00	4,860	158.22	0.02
51.60	0.00	4,829	158.22	0.02
52.00	0.00	4,799	158.22	0.02
52.40	0.00	4,769	158.21	0.02
52.80	0.00	4,738	158.21	0.02
53.20	0.00	4,708	158.21	0.02
53.60	0.00	4,678	158.21	0.02
54.00	0.00	4,648	158.20	0.02
54.40	0.00	4,618	158.20	0.02
54.80	0.00	4,588	158.20	0.02
55.20	0.00	4,558	158.20	0.02
55.60	0.00	4,528	158.19	0.02
56.00	0.00	4,498	158.19	0.02
56.40	0.00	4,469	158.19	0.02
56.80	0.00	4,439	158.19	0.02
57.20	0.00	4,409	158.18	0.02
57.60	0.00	4,380	158.18	0.02
58.00	0.00	4,350	158.18	0.02
58.40	0.00	4,321	158.18	0.02
58.80	0.00	4,292	158.17	0.02
59.20	0.00	4,262	158.17	0.02
59.60	0.00	4,233	158.17	0.02
60.00	0.00	4,204	158.17	0.02
60.40	0.00	4,175	158.16	0.02
60.80	0.00	4,146	158.16	0.02
61.20	0.00	4,117	158.16	0.02
61.60	0.00	4,088	158.16	0.02
62.00	0.00	4,059	158.15	0.02
62.40	0.00	4,030	158.15	0.02
62.80	0.00	4,002	158.15	0.02
63.20	0.00	3,973	158.15	0.02

Hydrograph for Pond 1P: UG1 (continued)

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
63.60	0.00	3,944	158.14	0.02
64.00	0.00	3,916	158.14	0.02
64.40	0.00	3,887	158.14	0.02
64.80	0.00	3,859	158.14	0.02
65.20	0.00	3,830	158.13	0.02
65.60	0.00	3,802	158.13	0.02
66.00	0.00	3,774	158.13	0.02
66.40	0.00	3,746	158.13	0.02
66.80	0.00	3,718	158.12	0.02
67.20	0.00	3,689	158.12	0.02
67.60	0.00	3,661	158.12	0.02
68.00	0.00	3,634	158.12	0.02
68.40	0.00	3,606	158.11	0.02
68.80	0.00	3,578	158.11	0.02
69.20	0.00	3,550	158.11	0.02
69.60	0.00	3,522	158.11	0.02
70.00	0.00	3,495	158.10	0.02
70.40	0.00	3,467	158.10	0.02
70.80	0.00	3,440	158.10	0.02
71.20	0.00	3,412	158.10	0.02
71.60	0.00	3,385	158.10	0.02
72.00	0.00	3,357	158.09	0.02
72.40	0.00	3,330	158.09	0.02
72.80	0.00	3,303	158.09	0.02
73.20	0.00	3,276	158.09	0.02
73.60	0.00	3,249	158.08	0.02
74.00	0.00	3,222	158.08	0.02
74.40	0.00	3,195	158.08	0.02
74.80	0.00	3,168	158.08	0.02
75.20	0.00	3,141	158.07	0.02
75.60	0.00	3,114	158.07	0.02
76.00	0.00	3,087	158.07	0.02
76.40	0.00	3,061	158.07	0.02
76.80	0.00	3,034	158.07	0.02
77.20	0.00	3,008	158.06	0.02
77.60	0.00	2,981	158.06	0.02
78.00	0.00	2,955	158.06	0.02
78.40	0.00	2,928	158.06	0.02
78.80	0.00	2,902	158.05	0.02
79.20	0.00	2,876	158.05	0.02
79.60	0.00	2,850	158.05	0.02
80.00	0.00	2,823	158.05	0.02
80.40	0.00	2,797	158.05	0.02
80.80	0.00	2,771	158.04	0.02
81.20	0.00	2,745	158.04	0.02
81.60	0.00	2,719	158.04	0.02
82.00	0.00	2,694	158.04	0.02
82.40	0.00	2,668	158.04	0.02
82.80	0.00	2,642	158.03	0.02
83.20	0.00	2,616	158.03	0.02
83.60	0.00	2,591	158.03	0.02
84.00	0.00	2,565	158.02	0.02
84.40	0.00	2,540	158.02	0.02

Hydrograph for Pond 1P: UG1 (continued)

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
84.80	0.00	2,515	158.01	0.02
85.20	0.00	2,490	158.01	0.02
85.60	0.00	2,465	158.00	0.02
86.00	0.00	2,440	158.00	0.02
86.40	0.00	2,416	157.99	0.02
86.80	0.00	2,391	157.99	0.02
87.20	0.00	2,367	157.98	0.02
87.60	0.00	2,343	157.98	0.02
88.00	0.00	2,319	157.97	0.02
88.40	0.00	2,295	157.97	0.02
88.80	0.00	2,271	157.97	0.02
89.20	0.00	2,247	157.96	0.02
89.60	0.00	2,224	157.96	0.02
90.00	0.00	2,200	157.95	0.02
90.40	0.00	2,177	157.95	0.02
90.80	0.00	2,154	157.94	0.02
91.20	0.00	2,131	157.94	0.02
91.60	0.00	2,108	157.93	0.02
92.00	0.00	2,086	157.93	0.02
92.40	0.00	2,063	157.93	0.02
92.80	0.00	2,041	157.92	0.02
93.20	0.00	2,018	157.92	0.02
93.60	0.00	1,996	157.91	0.02
94.00	0.00	1,974	157.91	0.02
94.40	0.00	1,952	157.90	0.02
94.80	0.00	1,930	157.90	0.02
95.20	0.00	1,909	157.90	0.01
95.60	0.00	1,887	157.89	0.01
96.00	0.00	1,866	157.89	0.01
96.40	0.00	1,845	157.88	0.01
96.80	0.00	1,824	157.88	0.01
97.20	0.00	1,803	157.88	0.01
97.60	0.00	1,782	157.87	0.01
98.00	0.00	1,762	157.87	0.01
98.40	0.00	1,741	157.86	0.01
98.80	0.00	1,721	157.86	0.01
99.20	0.00	1,700	157.86	0.01
99.60	0.00	1,680	157.85	0.01
100.00	0.00	1,660	157.85	0.01
100.40	0.00	1,641	157.84	0.01
100.80	0.00	1,621	157.84	0.01
101.20	0.00	1,601	157.84	0.01
101.60	0.00	1,582	157.83	0.01
102.00	0.00	1,563	157.83	0.01
102.40	0.00	1,544	157.83	0.01
102.80	0.00	1,525	157.82	0.01
103.20	0.00	1,506	157.82	0.01
103.60	0.00	1,487	157.82	0.01
104.00	0.00	1,468	157.81	0.01
104.40	0.00	1,450	157.81	0.01
104.80	0.00	1,432	157.80	0.01
105.20	0.00	1,413	157.80	0.01
105.60	0.00	1,395	157.80	0.01

Hydrograph for Pond 1P: UG1 (continued)

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
106.00	0.00	1,377	157.79	0.01
106.40	0.00	1,360	157.79	0.01
106.80	0.00	1,342	157.79	0.01
107.20	0.00	1,325	157.78	0.01
107.60	0.00	1,307	157.78	0.01
108.00	0.00	1,290	157.78	0.01
108.40	0.00	1,273	157.77	0.01
108.80	0.00	1,256	157.77	0.01
109.20	0.00	1,239	157.77	0.01
109.60	0.00	1,223	157.76	0.01
110.00	0.00	1,206	157.76	0.01
110.40	0.00	1,190	157.76	0.01
110.80	0.00	1,173	157.75	0.01
111.20	0.00	1,157	157.75	0.01
111.60	0.00	1,141	157.75	0.01
112.00	0.00	1,125	157.75	0.01
112.40	0.00	1,110	157.74	0.01
112.80	0.00	1,094	157.74	0.01
113.20	0.00	1,079	157.74	0.01
113.60	0.00	1,063	157.73	0.01
114.00	0.00	1,048	157.73	0.01
114.40	0.00	1,033	157.73	0.01
114.80	0.00	1,018	157.73	0.01
115.20	0.00	1,004	157.72	0.01
115.60	0.00	989	157.72	0.01
116.00	0.00	974	157.72	0.01
116.40	0.00	960	157.71	0.01
116.80	0.00	946	157.71	0.01
117.20	0.00	932	157.71	0.01
117.60	0.00	918	157.71	0.01
118.00	0.00	904	157.70	0.01
118.40	0.00	890	157.70	0.01
118.80	0.00	877	157.70	0.01
119.20	0.00	864	157.70	0.01
119.60	0.00	850	157.69	0.01
120.00	0.00	837	157.69	0.01
120.40	0.00	824	157.69	0.01
120.80	0.00	811	157.69	0.01
121.20	0.00	799	157.68	0.01
121.60	0.00	786	157.68	0.01
122.00	0.00	774	157.68	0.01
122.40	0.00	761	157.68	0.01
122.80	0.00	749	157.67	0.01
123.20	0.00	737	157.67	0.01
123.60	0.00	725	157.67	0.01
124.00	0.00	714	157.67	0.01
124.40	0.00	702	157.66	0.01
124.80	0.00	691	157.66	0.01
125.20	0.00	679	157.66	0.01
125.60	0.00	668	157.66	0.01
126.00	0.00	657	157.66	0.01
126.40	0.00	646	157.65	0.01
126.80	0.00	635	157.65	0.01

Hydrograph for Pond 1P: UG1 (continued)

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
127.20	0.00	625	157.65	0.01
127.60	0.00	614	157.65	0.01
128.00	0.00	604	157.65	0.01
128.40	0.00	594	157.64	0.01
128.80	0.00	584	157.64	0.01
129.20	0.00	574	157.64	0.01
129.60	0.00	564	157.64	0.01
130.00	0.00	554	157.64	0.01
130.40	0.00	545	157.63	0.01
130.80	0.00	535	157.63	0.01
131.20	0.00	526	157.63	0.01
131.60	0.00	517	157.63	0.01
132.00	0.00	508	157.63	0.01
132.40	0.00	499	157.63	0.01
132.80	0.00	490	157.62	0.01
133.20	0.00	482	157.62	0.01
133.60	0.00	473	157.62	0.01
134.00	0.00	465	157.62	0.01
134.40	0.00	457	157.62	0.01
134.80	0.00	449	157.62	0.01
135.20	0.00	441	157.61	0.01
135.60	0.00	433	157.61	0.01
136.00	0.00	425	157.61	0.01
136.40	0.00	418	157.61	0.01
136.80	0.00	410	157.61	0.01
137.20	0.00	403	157.61	0.00
137.60	0.00	396	157.61	0.00
138.00	0.00	389	157.60	0.00
138.40	0.00	382	157.60	0.00
138.80	0.00	376	157.60	0.00
139.20	0.00	369	157.60	0.00
139.60	0.00	363	157.60	0.00
140.00	0.00	357	157.60	0.00
140.40	0.00	350	157.60	0.00
140.80	0.00	345	157.60	0.00
141.20	0.00	339	157.59	0.00
141.60	0.00	333	157.59	0.00
142.00	0.00	328	157.59	0.00
142.40	0.00	322	157.59	0.00
142.80	0.00	317	157.59	0.00
143.20	0.00	312	157.59	0.00
143.60	0.00	307	157.59	0.00
144.00	0.00	302	157.59	0.00
144.40	0.00	298	157.59	0.00
144.80	0.00	293	157.59	0.00
145.20	0.00	288	157.59	0.00
145.60	0.00	284	157.58	0.00
146.00	0.00	280	157.58	0.00
146.40	0.00	276	157.58	0.00
146.80	0.00	272	157.58	0.00
147.20	0.00	268	157.58	0.00
147.60	0.00	264	157.58	0.00
148.00	0.00	260	157.58	0.00

Hydrograph for Pond 1P: UG1 (continued)

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
148.40	0.00	256	157.58	0.00
148.80	0.00	253	157.58	0.00
149.20	0.00	249	157.58	0.00
149.60	0.00	246	157.58	0.00
150.00	0.00	242	157.58	0.00
150.40	0.00	239	157.58	0.00
150.80	0.00	236	157.58	0.00
151.20	0.00	233	157.57	0.00
151.60	0.00	230	157.57	0.00
152.00	0.00	227	157.57	0.00
152.40	0.00	224	157.57	0.00
152.80	0.00	221	157.57	0.00
153.20	0.00	218	157.57	0.00
153.60	0.00	216	157.57	0.00
154.00	0.00	213	157.57	0.00
154.40	0.00	210	157.57	0.00
154.80	0.00	208	157.57	0.00
155.20	0.00	205	157.57	0.00
155.60	0.00	203	157.57	0.00
156.00	0.00	200	157.57	0.00
156.40	0.00	198	157.57	0.00
156.80	0.00	196	157.57	0.00
157.20	0.00	194	157.57	0.00
157.60	0.00	191	157.57	0.00
158.00	0.00	189	157.57	0.00
158.40	0.00	187	157.57	0.00
158.80	0.00	185	157.57	0.00
159.20	0.00	183	157.57	0.00
159.60	0.00	181	157.56	0.00
160.00	0.00	179	157.56	0.00
160.40	0.00	177	157.56	0.00
160.80	0.00	175	157.56	0.00
161.20	0.00	173	157.56	0.00
161.60	0.00	172	157.56	0.00
162.00	0.00	170	157.56	0.00
162.40	0.00	168	157.56	0.00
162.80	0.00	167	157.56	0.00
163.20	0.00	165	157.56	0.00
163.60	0.00	163	157.56	0.00
164.00	0.00	162	157.56	0.00
164.40	0.00	160	157.56	0.00
164.80	0.00	158	157.56	0.00
165.20	0.00	157	157.56	0.00
165.60	0.00	155	157.56	0.00
166.00	0.00	154	157.56	0.00
166.40	0.00	153	157.56	0.00
166.80	0.00	151	157.56	0.00
167.20	0.00	150	157.56	0.00
167.60	0.00	148	157.56	0.00
168.00	0.00	147	157.56	0.00

Summary for Pond 2P: UG2

Inflow Area = 33,977 sf, 95.64% Impervious, Inflow Depth = 6.14" for 50-yr event
Inflow = 7.54 cfs @ 11.95 hrs, Volume= 17,377 cf
Outflow = 3.85 cfs @ 12.04 hrs, Volume= 17,164 cf, Atten= 49%, Lag= 5.4 min
Primary = 3.85 cfs @ 12.04 hrs, Volume= 17,164 cf
Routed to Link 10L : POST-DEV TO DA #1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-168.00 hrs, dt= 0.04 hrs / 2
Peak Elev= 162.25' @ 12.04 hrs Surf.Area= 3,834 sf Storage= 6,775 cf

Plug-Flow detention time= 728.1 min calculated for 17,164 cf (99% of inflow)
Center-of-Mass det. time= 719.9 min (1,476.1 - 756.2)

Volume	Invert	Avail.Storage	Storage Description
#1A	159.80'	3,209 cf	**35.33'W x 108.50'L x 3.54'H Field A** 13,578 cf Overall - 5,555 cf Embedded = 8,023 cf x 40.0% Voids
#2A	160.30'	5,555 cf	**Cultec R-330XLHD** x 105 Inside #1 Effective Size= 47.8"W x 30.0"H => 7.45 sf x 7.00'L = 52.2 cf Overall Size= 52.0"W x 30.5"H x 8.50'L with 1.50' Overlap Row Length Adjustment= +1.50' x 7.45 sf x 7 rows
		8,764 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Device 4	159.80'	**0.5" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#2	Device 4	160.90'	**16.0" W x 7.0" H Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#3	Device 4	162.55'	**4.0' long Broad-Crested Rectangular Weir** Head (feet) 4.00 Coef. (English) 3.33
#4	Primary	159.80'	**18.0" Round Culvert** L= 141.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 159.80' / 159.09' S= 0.0050 '/' Cc= 0.900 n= 0.012, Flow Area= 1.77 sf

Primary OutFlow Max=3.84 cfs @ 12.04 hrs HW=162.25' TW=0.00' (Dynamic Tailwater)
└**4=Culvert** (Passes 3.84 cfs of 9.49 cfs potential flow)
  ├**1=Orifice/Grate** (Orifice Controls 0.01 cfs @ 7.50 fps)
  ├**2=Orifice/Grate** (Orifice Controls 3.83 cfs @ 4.93 fps)
  └**3=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond 2P: UG2 - Chamber Wizard Field A

Chamber Model = Cultec R-330XLHD (Cultec Recharger® 330XLHD)
Effective Size= 47.8"W x 30.0"H => 7.45 sf x 7.00'L = 52.2 cf
Overall Size= 52.0"W x 30.5"H x 8.50'L with 1.50' Overlap
Row Length Adjustment= +1.50' x 7.45 sf x 7 rows

52.0" Wide + 6.0" Spacing = 58.0" C-C Row Spacing

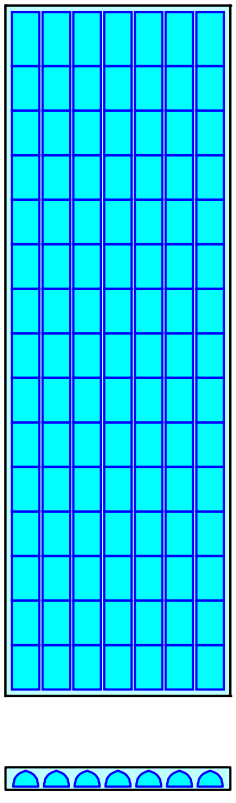
15 Chambers/Row x 7.00' Long +1.50' Row Adjustment = 106.50' Row Length +12.0" End Stone x 2 = 108.50' Base Length
7 Rows x 52.0" Wide + 6.0" Spacing x 6 + 12.0" Side Stone x 2 = 35.33' Base Width
6.0" Stone Base + 30.5" Chamber Height + 6.0" Stone Cover = 3.54' Field Height

105 Chambers x 52.2 cf +1.50' Row Adjustment x 7.45 sf x 7 Rows = 5,554.7 cf Chamber Storage

13,577.6 cf Field - 5,554.7 cf Chambers = 8,022.8 cf Stone x 40.0% Voids = 3,209.1 cf Stone Storage

Chamber Storage + Stone Storage = 8,763.9 cf = 0.201 af
Overall Storage Efficiency = 64.5%
Overall System Size = 108.50' x 35.33' x 3.54'

105 Chambers
502.9 cy Field
297.1 cy Stone



Hydrograph for Pond 2P: UG2

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
0.00	0.00	0	159.80	0.00
0.40	0.00	0	159.80	0.00
0.80	0.00	0	159.80	0.00
1.20	0.00	0	159.80	0.00
1.60	0.00	0	159.80	0.00
2.00	0.01	7	159.80	0.00
2.40	0.01	23	159.81	0.00
2.80	0.02	47	159.83	0.00
3.20	0.03	79	159.85	0.00
3.60	0.03	118	159.88	0.00
4.00	0.04	164	159.91	0.00
4.40	0.04	217	159.94	0.00
4.80	0.05	278	159.98	0.00
5.20	0.05	347	160.03	0.00
5.60	0.06	424	160.08	0.00
6.00	0.07	509	160.13	0.00
6.40	0.07	602	160.19	0.00
6.80	0.08	703	160.26	0.00
7.20	0.08	811	160.31	0.00
7.60	0.09	928	160.35	0.00
8.00	0.09	1,052	160.39	0.00
8.40	0.11	1,191	160.43	0.01
8.80	0.13	1,358	160.48	0.01
9.20	0.15	1,553	160.54	0.01
9.60	0.15	1,758	160.60	0.01
10.00	0.18	1,990	160.67	0.01
10.40	0.23	2,277	160.76	0.01
10.80	0.30	2,641	160.87	0.01
11.20	0.41	3,060	161.00	0.15
11.60	**0.96**	3,430	161.12	0.45
12.00	**6.25**	**6,591**	**162.18**	**3.72**
12.40	0.67	**4,524**	**161.47**	**1.84**
12.80	0.40	3,653	161.19	0.68
13.20	0.30	3,396	161.11	0.41
13.60	0.24	3,276	161.07	0.31
14.00	0.20	3,200	161.05	0.25
14.40	0.18	3,149	161.03	0.21
14.80	0.17	3,117	161.02	0.19
15.20	0.15	3,093	161.01	0.17
15.60	0.14	3,070	161.01	0.15
16.00	0.12	3,047	161.00	0.14
16.40	0.12	3,028	160.99	0.13
16.80	0.11	3,015	160.99	0.12
17.20	0.11	3,004	160.98	0.11
17.60	0.10	2,994	160.98	0.11
18.00	0.10	2,985	160.98	0.10
18.40	0.09	2,976	160.98	0.10
18.80	0.09	2,966	160.97	0.09
19.20	0.08	2,957	160.97	0.09
19.60	0.07	2,947	160.97	0.08
20.00	0.07	2,937	160.96	0.08
20.40	0.07	2,929	160.96	0.07
20.80	0.07	2,923	160.96	0.07

Hydrograph for Pond 2P: UG2 (continued)

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
21.20	0.07	2,920	160.96	0.07
21.60	0.06	2,917	160.96	0.07
22.00	0.06	2,914	160.96	0.07
22.40	0.06	2,912	160.96	0.06
22.80	0.06	2,909	160.96	0.06
23.20	0.06	2,907	160.95	0.06
23.60	0.06	2,905	160.95	0.06
24.00	0.06	2,903	160.95	0.06
24.40	0.00	2,848	160.94	0.04
24.80	0.00	2,807	160.92	0.02
25.20	0.00	2,781	160.92	0.01
25.60	0.00	2,762	160.91	0.01
26.00	0.00	2,749	160.91	0.01
26.40	0.00	2,737	160.90	0.01
26.80	0.00	2,727	160.90	0.01
27.20	0.00	2,718	160.90	0.01
27.60	0.00	2,708	160.89	0.01
28.00	0.00	2,698	160.89	0.01
28.40	0.00	2,688	160.89	0.01
28.80	0.00	2,679	160.88	0.01
29.20	0.00	2,669	160.88	0.01
29.60	0.00	2,659	160.88	0.01
30.00	0.00	2,649	160.87	0.01
30.40	0.00	2,640	160.87	0.01
30.80	0.00	2,630	160.87	0.01
31.20	0.00	2,620	160.87	0.01
31.60	0.00	2,611	160.86	0.01
32.00	0.00	2,601	160.86	0.01
32.40	0.00	2,591	160.86	0.01
32.80	0.00	2,582	160.85	0.01
33.20	0.00	2,572	160.85	0.01
33.60	0.00	2,563	160.85	0.01
34.00	0.00	2,553	160.84	0.01
34.40	0.00	2,543	160.84	0.01
34.80	0.00	2,534	160.84	0.01
35.20	0.00	2,524	160.84	0.01
35.60	0.00	2,515	160.83	0.01
36.00	0.00	2,505	160.83	0.01
36.40	0.00	2,496	160.83	0.01
36.80	0.00	2,486	160.82	0.01
37.20	0.00	2,477	160.82	0.01
37.60	0.00	2,467	160.82	0.01
38.00	0.00	2,458	160.82	0.01
38.40	0.00	2,449	160.81	0.01
38.80	0.00	2,439	160.81	0.01
39.20	0.00	2,430	160.81	0.01
39.60	0.00	2,420	160.80	0.01
40.00	0.00	2,411	160.80	0.01
40.40	0.00	2,402	160.80	0.01
40.80	0.00	2,392	160.80	0.01
41.20	0.00	2,383	160.79	0.01
41.60	0.00	2,374	160.79	0.01
42.00	0.00	2,364	160.79	0.01

Hydrograph for Pond 2P: UG2 (continued)

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
42.40	0.00	2,355	160.78	0.01
42.80	0.00	2,346	160.78	0.01
43.20	0.00	2,337	160.78	0.01
43.60	0.00	2,327	160.78	0.01
44.00	0.00	2,318	160.77	0.01
44.40	0.00	2,309	160.77	0.01
44.80	0.00	2,300	160.77	0.01
45.20	0.00	2,291	160.76	0.01
45.60	0.00	2,281	160.76	0.01
46.00	0.00	2,272	160.76	0.01
46.40	0.00	2,263	160.76	0.01
46.80	0.00	2,254	160.75	0.01
47.20	0.00	2,245	160.75	0.01
47.60	0.00	2,236	160.75	0.01
48.00	0.00	2,227	160.74	0.01
48.40	0.00	2,217	160.74	0.01
48.80	0.00	2,208	160.74	0.01
49.20	0.00	2,199	160.74	0.01
49.60	0.00	2,190	160.73	0.01
50.00	0.00	2,181	160.73	0.01
50.40	0.00	2,172	160.73	0.01
50.80	0.00	2,163	160.73	0.01
51.20	0.00	2,154	160.72	0.01
51.60	0.00	2,145	160.72	0.01
52.00	0.00	2,136	160.72	0.01
52.40	0.00	2,127	160.71	0.01
52.80	0.00	2,118	160.71	0.01
53.20	0.00	2,110	160.71	0.01
53.60	0.00	2,101	160.71	0.01
54.00	0.00	2,092	160.70	0.01
54.40	0.00	2,083	160.70	0.01
54.80	0.00	2,074	160.70	0.01
55.20	0.00	2,065	160.70	0.01
55.60	0.00	2,056	160.69	0.01
56.00	0.00	2,048	160.69	0.01
56.40	0.00	2,039	160.69	0.01
56.80	0.00	2,030	160.68	0.01
57.20	0.00	2,021	160.68	0.01
57.60	0.00	2,012	160.68	0.01
58.00	0.00	2,004	160.68	0.01
58.40	0.00	1,995	160.67	0.01
58.80	0.00	1,986	160.67	0.01
59.20	0.00	1,977	160.67	0.01
59.60	0.00	1,969	160.67	0.01
60.00	0.00	1,960	160.66	0.01
60.40	0.00	1,951	160.66	0.01
60.80	0.00	1,943	160.66	0.01
61.20	0.00	1,934	160.66	0.01
61.60	0.00	1,926	160.65	0.01
62.00	0.00	1,917	160.65	0.01
62.40	0.00	1,908	160.65	0.01
62.80	0.00	1,900	160.64	0.01
63.20	0.00	1,891	160.64	0.01

Hydrograph for Pond 2P: UG2 (continued)

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
63.60	0.00	1,883	160.64	0.01
64.00	0.00	1,874	160.64	0.01
64.40	0.00	1,865	160.63	0.01
64.80	0.00	1,857	160.63	0.01
65.20	0.00	1,848	160.63	0.01
65.60	0.00	1,840	160.63	0.01
66.00	0.00	1,831	160.62	0.01
66.40	0.00	1,823	160.62	0.01
66.80	0.00	1,815	160.62	0.01
67.20	0.00	1,806	160.62	0.01
67.60	0.00	1,798	160.61	0.01
68.00	0.00	1,789	160.61	0.01
68.40	0.00	1,781	160.61	0.01
68.80	0.00	1,773	160.61	0.01
69.20	0.00	1,764	160.60	0.01
69.60	0.00	1,756	160.60	0.01
70.00	0.00	1,747	160.60	0.01
70.40	0.00	1,739	160.60	0.01
70.80	0.00	1,731	160.59	0.01
71.20	0.00	1,723	160.59	0.01
71.60	0.00	1,714	160.59	0.01
72.00	0.00	1,706	160.59	0.01
72.40	0.00	1,698	160.58	0.01
72.80	0.00	1,689	160.58	0.01
73.20	0.00	1,681	160.58	0.01
73.60	0.00	1,673	160.58	0.01
74.00	0.00	1,665	160.57	0.01
74.40	0.00	1,657	160.57	0.01
74.80	0.00	1,648	160.57	0.01
75.20	0.00	1,640	160.57	0.01
75.60	0.00	1,632	160.56	0.01
76.00	0.00	1,624	160.56	0.01
76.40	0.00	1,616	160.56	0.01
76.80	0.00	1,608	160.56	0.01
77.20	0.00	1,600	160.55	0.01
77.60	0.00	1,592	160.55	0.01
78.00	0.00	1,583	160.55	0.01
78.40	0.00	1,575	160.55	0.01
78.80	0.00	1,567	160.54	0.01
79.20	0.00	1,559	160.54	0.01
79.60	0.00	1,551	160.54	0.01
80.00	0.00	1,543	160.54	0.01
80.40	0.00	1,535	160.53	0.01
80.80	0.00	1,527	160.53	0.01
81.20	0.00	1,519	160.53	0.01
81.60	0.00	1,511	160.53	0.01
82.00	0.00	1,504	160.52	0.01
82.40	0.00	1,496	160.52	0.01
82.80	0.00	1,488	160.52	0.01
83.20	0.00	1,480	160.52	0.01
83.60	0.00	1,472	160.51	0.01
84.00	0.00	1,464	160.51	0.01
84.40	0.00	1,456	160.51	0.01

Hydrograph for Pond 2P: UG2 (continued)

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
84.80	0.00	1,448	160.51	0.01
85.20	0.00	1,441	160.50	0.01
85.60	0.00	1,433	160.50	0.01
86.00	0.00	1,425	160.50	0.01
86.40	0.00	1,417	160.50	0.01
86.80	0.00	1,409	160.49	0.01
87.20	0.00	1,402	160.49	0.01
87.60	0.00	1,394	160.49	0.01
88.00	0.00	1,386	160.49	0.01
88.40	0.00	1,378	160.49	0.01
88.80	0.00	1,371	160.48	0.01
89.20	0.00	1,363	160.48	0.01
89.60	0.00	1,355	160.48	0.01
90.00	0.00	1,348	160.48	0.01
90.40	0.00	1,340	160.47	0.01
90.80	0.00	1,332	160.47	0.01
91.20	0.00	1,325	160.47	0.01
91.60	0.00	1,317	160.47	0.01
92.00	0.00	1,310	160.46	0.01
92.40	0.00	1,302	160.46	0.01
92.80	0.00	1,295	160.46	0.01
93.20	0.00	1,287	160.46	0.01
93.60	0.00	1,279	160.46	0.01
94.00	0.00	1,272	160.45	0.01
94.40	0.00	1,264	160.45	0.01
94.80	0.00	1,257	160.45	0.01
95.20	0.00	1,249	160.45	0.01
95.60	0.00	1,242	160.44	0.01
96.00	0.00	1,235	160.44	0.01
96.40	0.00	1,227	160.44	0.01
96.80	0.00	1,220	160.44	0.01
97.20	0.00	1,212	160.43	0.01
97.60	0.00	1,205	160.43	0.01
98.00	0.00	1,197	160.43	0.01
98.40	0.00	1,190	160.43	0.01
98.80	0.00	1,183	160.43	0.01
99.20	0.00	1,175	160.42	0.01
99.60	0.00	1,168	160.42	0.01
100.00	0.00	1,161	160.42	0.01
100.40	0.00	1,153	160.42	0.01
100.80	0.00	1,146	160.41	0.01
101.20	0.00	1,139	160.41	0.01
101.60	0.00	1,132	160.41	0.01
102.00	0.00	1,124	160.41	0.01
102.40	0.00	1,117	160.41	0.01
102.80	0.00	1,110	160.40	0.01
103.20	0.00	1,103	160.40	0.01
103.60	0.00	1,095	160.40	0.00
104.00	0.00	1,088	160.40	0.00
104.40	0.00	1,081	160.40	0.00
104.80	0.00	1,074	160.39	0.00
105.20	0.00	1,067	160.39	0.00
105.60	0.00	1,060	160.39	0.00

Hydrograph for Pond 2P: UG2 (continued)

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
106.00	0.00	1,053	160.39	0.00
106.40	0.00	1,045	160.38	0.00
106.80	0.00	1,038	160.38	0.00
107.20	0.00	1,031	160.38	0.00
107.60	0.00	1,024	160.38	0.00
108.00	0.00	1,017	160.38	0.00
108.40	0.00	1,010	160.37	0.00
108.80	0.00	1,003	160.37	0.00
109.20	0.00	996	160.37	0.00
109.60	0.00	989	160.37	0.00
110.00	0.00	982	160.37	0.00
110.40	0.00	975	160.36	0.00
110.80	0.00	968	160.36	0.00
111.20	0.00	961	160.36	0.00
111.60	0.00	954	160.36	0.00
112.00	0.00	947	160.35	0.00
112.40	0.00	941	160.35	0.00
112.80	0.00	934	160.35	0.00
113.20	0.00	927	160.35	0.00
113.60	0.00	920	160.35	0.00
114.00	0.00	913	160.34	0.00
114.40	0.00	906	160.34	0.00
114.80	0.00	899	160.34	0.00
115.20	0.00	893	160.34	0.00
115.60	0.00	886	160.34	0.00
116.00	0.00	879	160.33	0.00
116.40	0.00	872	160.33	0.00
116.80	0.00	865	160.33	0.00
117.20	0.00	859	160.33	0.00
117.60	0.00	852	160.33	0.00
118.00	0.00	845	160.32	0.00
118.40	0.00	839	160.32	0.00
118.80	0.00	832	160.32	0.00
119.20	0.00	825	160.32	0.00
119.60	0.00	819	160.32	0.00
120.00	0.00	812	160.31	0.00
120.40	0.00	805	160.31	0.00
120.80	0.00	799	160.31	0.00
121.20	0.00	792	160.31	0.00
121.60	0.00	786	160.31	0.00
122.00	0.00	779	160.30	0.00
122.40	0.00	772	160.30	0.00
122.80	0.00	766	160.30	0.00
123.20	0.00	759	160.30	0.00
123.60	0.00	753	160.29	0.00
124.00	0.00	746	160.29	0.00
124.40	0.00	740	160.28	0.00
124.80	0.00	734	160.28	0.00
125.20	0.00	727	160.27	0.00
125.60	0.00	721	160.27	0.00
126.00	0.00	714	160.27	0.00
126.40	0.00	708	160.26	0.00
126.80	0.00	702	160.26	0.00

Hydrograph for Pond 2P: UG2 (continued)

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
127.20	0.00	696	160.25	0.00
127.60	0.00	689	160.25	0.00
128.00	0.00	683	160.25	0.00
128.40	0.00	677	160.24	0.00
128.80	0.00	671	160.24	0.00
129.20	0.00	665	160.23	0.00
129.60	0.00	659	160.23	0.00
130.00	0.00	653	160.23	0.00
130.40	0.00	647	160.22	0.00
130.80	0.00	641	160.22	0.00
131.20	0.00	635	160.21	0.00
131.60	0.00	629	160.21	0.00
132.00	0.00	623	160.21	0.00
132.40	0.00	617	160.20	0.00
132.80	0.00	611	160.20	0.00
133.20	0.00	606	160.19	0.00
133.60	0.00	600	160.19	0.00
134.00	0.00	594	160.19	0.00
134.40	0.00	588	160.18	0.00
134.80	0.00	583	160.18	0.00
135.20	0.00	577	160.18	0.00
135.60	0.00	571	160.17	0.00
136.00	0.00	566	160.17	0.00
136.40	0.00	560	160.17	0.00
136.80	0.00	555	160.16	0.00
137.20	0.00	549	160.16	0.00
137.60	0.00	544	160.15	0.00
138.00	0.00	538	160.15	0.00
138.40	0.00	533	160.15	0.00
138.80	0.00	528	160.14	0.00
139.20	0.00	522	160.14	0.00
139.60	0.00	517	160.14	0.00
140.00	0.00	512	160.13	0.00
140.40	0.00	506	160.13	0.00
140.80	0.00	501	160.13	0.00
141.20	0.00	496	160.12	0.00
141.60	0.00	491	160.12	0.00
142.00	0.00	486	160.12	0.00
142.40	0.00	480	160.11	0.00
142.80	0.00	475	160.11	0.00
143.20	0.00	470	160.11	0.00
143.60	0.00	465	160.10	0.00
144.00	0.00	460	160.10	0.00
144.40	0.00	455	160.10	0.00
144.80	0.00	450	160.09	0.00
145.20	0.00	445	160.09	0.00
145.60	0.00	440	160.09	0.00
146.00	0.00	436	160.08	0.00
146.40	0.00	431	160.08	0.00
146.80	0.00	426	160.08	0.00
147.20	0.00	421	160.07	0.00
147.60	0.00	416	160.07	0.00
148.00	0.00	412	160.07	0.00

Hydrograph for Pond 2P: UG2 (continued)

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
148.40	0.00	407	160.07	0.00
148.80	0.00	402	160.06	0.00
149.20	0.00	398	160.06	0.00
149.60	0.00	393	160.06	0.00
150.00	0.00	389	160.05	0.00
150.40	0.00	384	160.05	0.00
150.80	0.00	379	160.05	0.00
151.20	0.00	375	160.04	0.00
151.60	0.00	371	160.04	0.00
152.00	0.00	366	160.04	0.00
152.40	0.00	362	160.04	0.00
152.80	0.00	357	160.03	0.00
153.20	0.00	353	160.03	0.00
153.60	0.00	349	160.03	0.00
154.00	0.00	344	160.02	0.00
154.40	0.00	340	160.02	0.00
154.80	0.00	336	160.02	0.00
155.20	0.00	332	160.02	0.00
155.60	0.00	328	160.01	0.00
156.00	0.00	323	160.01	0.00
156.40	0.00	319	160.01	0.00
156.80	0.00	315	160.01	0.00
157.20	0.00	311	160.00	0.00
157.60	0.00	307	160.00	0.00
158.00	0.00	303	160.00	0.00
158.40	0.00	299	160.00	0.00
158.80	0.00	295	159.99	0.00
159.20	0.00	291	159.99	0.00
159.60	0.00	288	159.99	0.00
160.00	0.00	284	159.98	0.00
160.40	0.00	280	159.98	0.00
160.80	0.00	276	159.98	0.00
161.20	0.00	272	159.98	0.00
161.60	0.00	269	159.98	0.00
162.00	0.00	265	159.97	0.00
162.40	0.00	261	159.97	0.00
162.80	0.00	258	159.97	0.00
163.20	0.00	254	159.97	0.00
163.60	0.00	250	159.96	0.00
164.00	0.00	247	159.96	0.00
164.40	0.00	243	159.96	0.00
164.80	0.00	240	159.96	0.00
165.20	0.00	236	159.95	0.00
165.60	0.00	233	159.95	0.00
166.00	0.00	229	159.95	0.00
166.40	0.00	226	159.95	0.00
166.80	0.00	223	159.95	0.00
167.20	0.00	219	159.94	0.00
167.60	0.00	216	159.94	0.00
168.00	0.00	213	159.94	0.00

Summary for Pond 3P: UG3

Inflow Area = 19,646 sf, 85.14% Impervious, Inflow Depth = 5.44" for 50-yr event
Inflow = 4.11 cfs @ 11.95 hrs, Volume= 8,914 cf
Outflow = 0.88 cfs @ 12.11 hrs, Volume= 8,913 cf, Atten= 79%, Lag= 9.1 min
Primary = 0.88 cfs @ 12.11 hrs, Volume= 8,913 cf
Routed to Link 10L : POST-DEV TO DA #1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-168.00 hrs, dt= 0.04 hrs / 2
Peak Elev= 162.03' @ 12.11 hrs Surf.Area= 2,917 sf Storage= 3,540 cf

Plug-Flow detention time= 74.8 min calculated for 8,913 cf (100% of inflow)
Center-of-Mass det. time= 74.5 min (854.7 - 780.2)

Volume	Invert	Avail.Storage	Storage Description
#1A	160.28'	2,010 cf	**44.00'W x 66.30'L x 2.71'H Field A** 7,901 cf Overall - 2,875 cf Embedded = 5,026 cf x 40.0% Voids
#2A	160.78'	2,875 cf	**Cultec R-180** x 130 Inside #1 Effective Size= 33.6"W x 20.0"H => 3.44 sf x 6.33'L = 21.8 cf Overall Size= 36.0"W x 20.5"H x 7.33'L with 1.00' Overlap Row Length Adjustment= +1.00' x 3.44 sf x 13 rows
		4,885 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Device 4	160.28'	**3.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#2	Device 4	160.97'	**6.0" W x 3.0" H Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#3	Device 4	162.50'	**4.0' long Broad-Crested Rectangular Weir** Head (feet) 4.00 Coef. (English) 3.33
#4	Primary	160.28'	**18.0" Round Culvert** L= 36.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 160.28' / 160.10' S= 0.0050 '/' Cc= 0.900 n= 0.012, Flow Area= 1.77 sf

Primary OutFlow Max=0.88 cfs @ 12.11 hrs HW=162.02' TW=0.00' (Dynamic Tailwater)
└**4=Culvert** (Passes 0.88 cfs of 7.40 cfs potential flow)
  ├**1=Orifice/Grate** (Orifice Controls 0.30 cfs @ 6.13 fps)
  ├**2=Orifice/Grate** (Orifice Controls 0.58 cfs @ 4.64 fps)
  └**3=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond 3P: UG3 - Chamber Wizard Field A

Chamber Model = Cultec R-180 (Cultec Recharger® 180HD)
Effective Size= 33.6"W x 20.0"H => 3.44 sf x 6.33'L = 21.8 cf
Overall Size= 36.0"W x 20.5"H x 7.33'L with 1.00' Overlap
Row Length Adjustment= +1.00' x 3.44 sf x 13 rows

36.0" Wide + 3.0" Spacing = 39.0" C-C Row Spacing

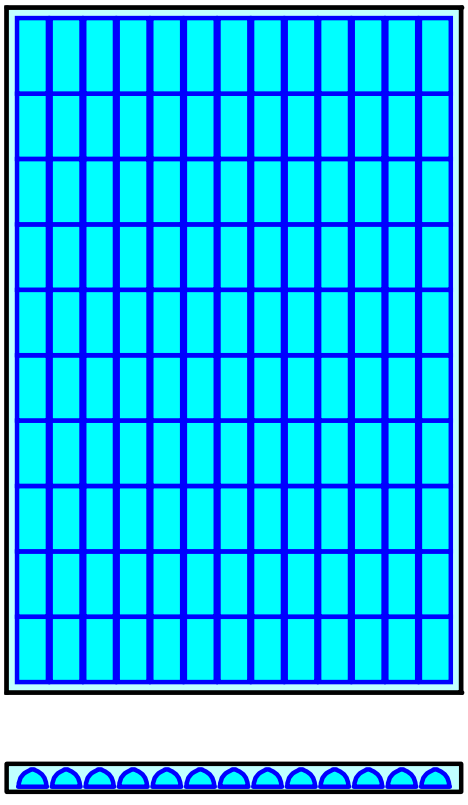
10 Chambers/Row x 6.33' Long +1.00' Row Adjustment = 64.30' Row Length +12.0" End Stone x 2 = 66.30' Base Length
13 Rows x 36.0" Wide + 3.0" Spacing x 12 + 12.0" Side Stone x 2 = 44.00' Base Width
6.0" Stone Base + 20.5" Chamber Height + 6.0" Stone Cover = 2.71' Field Height

130 Chambers x 21.8 cf +1.00' Row Adjustment x 3.44 sf x 13 Rows = 2,875.1 cf Chamber Storage

7,900.7 cf Field - 2,875.1 cf Chambers = 5,025.7 cf Stone x 40.0% Voids = 2,010.3 cf Stone Storage

Chamber Storage + Stone Storage = 4,885.3 cf = 0.112 af
Overall Storage Efficiency = 61.8%
Overall System Size = 66.30' x 44.00' x 2.71'

130 Chambers
292.6 cy Field
186.1 cy Stone



Hydrograph for Pond 3P: UG3

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
0.00	0.00	0	160.28	0.00
0.40	0.00	0	160.28	0.00
0.80	0.00	0	160.28	0.00
1.20	0.00	0	160.28	0.00
1.60	0.00	0	160.28	0.00
2.00	0.00	0	160.28	0.00
2.40	0.00	0	160.28	0.00
2.80	0.00	0	160.28	0.00
3.20	0.00	0	160.28	0.00
3.60	0.00	1	160.28	0.00
4.00	0.00	6	160.29	0.00
4.40	0.01	14	160.29	0.00
4.80	0.01	25	160.30	0.00
5.20	0.01	38	160.31	0.00
5.60	0.02	53	160.33	0.00
6.00	0.02	69	160.34	0.01
6.40	0.02	85	160.35	0.01
6.80	0.02	100	160.37	0.01
7.20	0.03	114	160.38	0.02
7.60	0.03	126	160.39	0.02
8.00	0.03	138	160.40	0.03
8.40	0.04	152	160.41	0.03
8.80	0.05	170	160.43	0.04
9.20	0.06	191	160.44	0.05
9.60	0.06	208	160.46	0.05
10.00	0.08	229	160.48	0.06
10.40	0.10	263	160.51	0.08
10.80	0.14	316	160.55	0.09
11.20	0.20	407	160.63	0.11
11.60	**0.48**	605	160.79	0.15
12.00	**3.44**	**3,141**	**161.84**	**0.80**
12.40	0.37	**3,172**	**161.85**	**0.81**
12.80	0.22	2,504	161.56	0.66
13.20	0.17	1,937	161.32	0.51
13.60	0.14	1,545	161.16	0.34
14.00	0.11	1,313	161.07	0.24
14.40	0.10	1,156	161.01	0.19
14.80	0.09	1,035	160.96	0.18
15.20	0.09	917	160.91	0.17
15.60	0.08	799	160.86	0.16
16.00	0.07	681	160.82	0.15
16.40	0.07	565	160.76	0.14
16.80	0.06	467	160.68	0.12
17.20	0.06	389	160.61	0.11
17.60	0.06	328	160.56	0.09
18.00	0.05	283	160.52	0.08
18.40	0.05	249	160.49	0.07
18.80	0.05	226	160.47	0.06
19.20	0.05	210	160.46	0.05
19.60	0.04	198	160.45	0.05
20.00	0.04	188	160.44	0.05
20.40	0.04	180	160.43	0.04
20.80	0.04	175	160.43	0.04

Hydrograph for Pond 3P: UG3 (continued)

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
21.20	0.04	171	160.43	0.04
21.60	0.04	169	160.42	0.04
22.00	0.04	167	160.42	0.04
22.40	0.04	165	160.42	0.04
22.80	0.03	163	160.42	0.04
23.20	0.03	161	160.42	0.04
23.60	0.03	160	160.42	0.03
24.00	0.03	158	160.42	0.03
24.40	0.00	126	160.39	0.02
24.80	0.00	99	160.37	0.01
25.20	0.00	82	160.35	0.01
25.60	0.00	69	160.34	0.01
26.00	0.00	60	160.33	0.01
26.40	0.00	53	160.33	0.00
26.80	0.00	47	160.32	0.00
27.20	0.00	43	160.32	0.00
27.60	0.00	39	160.31	0.00
28.00	0.00	36	160.31	0.00
28.40	0.00	33	160.31	0.00
28.80	0.00	31	160.31	0.00
29.20	0.00	29	160.30	0.00
29.60	0.00	27	160.30	0.00
30.00	0.00	25	160.30	0.00
30.40	0.00	24	160.30	0.00
30.80	0.00	23	160.30	0.00
31.20	0.00	21	160.30	0.00
31.60	0.00	20	160.30	0.00
32.00	0.00	19	160.30	0.00
32.40	0.00	19	160.30	0.00
32.80	0.00	18	160.30	0.00
33.20	0.00	17	160.29	0.00
33.60	0.00	16	160.29	0.00
34.00	0.00	16	160.29	0.00
34.40	0.00	15	160.29	0.00
34.80	0.00	15	160.29	0.00
35.20	0.00	14	160.29	0.00
35.60	0.00	14	160.29	0.00
36.00	0.00	13	160.29	0.00
36.40	0.00	13	160.29	0.00
36.80	0.00	13	160.29	0.00
37.20	0.00	12	160.29	0.00
37.60	0.00	12	160.29	0.00
38.00	0.00	12	160.29	0.00
38.40	0.00	11	160.29	0.00
38.80	0.00	11	160.29	0.00
39.20	0.00	11	160.29	0.00
39.60	0.00	10	160.29	0.00
40.00	0.00	10	160.29	0.00
40.40	0.00	10	160.29	0.00
40.80	0.00	10	160.29	0.00
41.20	0.00	9	160.29	0.00
41.60	0.00	9	160.29	0.00
42.00	0.00	9	160.29	0.00

Hydrograph for Pond 3P: UG3 (continued)

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
42.40	0.00	9	160.29	0.00
42.80	0.00	9	160.29	0.00
43.20	0.00	8	160.29	0.00
43.60	0.00	8	160.29	0.00
44.00	0.00	8	160.29	0.00
44.40	0.00	8	160.29	0.00
44.80	0.00	8	160.29	0.00
45.20	0.00	8	160.29	0.00
45.60	0.00	8	160.29	0.00
46.00	0.00	7	160.29	0.00
46.40	0.00	7	160.29	0.00
46.80	0.00	7	160.29	0.00
47.20	0.00	7	160.29	0.00
47.60	0.00	7	160.29	0.00
48.00	0.00	7	160.29	0.00
48.40	0.00	7	160.29	0.00
48.80	0.00	7	160.29	0.00
49.20	0.00	7	160.29	0.00
49.60	0.00	6	160.29	0.00
50.00	0.00	6	160.29	0.00
50.40	0.00	6	160.29	0.00
50.80	0.00	6	160.29	0.00
51.20	0.00	6	160.29	0.00
51.60	0.00	6	160.29	0.00
52.00	0.00	6	160.29	0.00
52.40	0.00	6	160.28	0.00
52.80	0.00	6	160.28	0.00
53.20	0.00	6	160.28	0.00
53.60	0.00	6	160.28	0.00
54.00	0.00	5	160.28	0.00
54.40	0.00	5	160.28	0.00
54.80	0.00	5	160.28	0.00
55.20	0.00	5	160.28	0.00
55.60	0.00	5	160.28	0.00
56.00	0.00	5	160.28	0.00
56.40	0.00	5	160.28	0.00
56.80	0.00	5	160.28	0.00
57.20	0.00	5	160.28	0.00
57.60	0.00	5	160.28	0.00
58.00	0.00	5	160.28	0.00
58.40	0.00	5	160.28	0.00
58.80	0.00	5	160.28	0.00
59.20	0.00	5	160.28	0.00
59.60	0.00	5	160.28	0.00
60.00	0.00	5	160.28	0.00
60.40	0.00	5	160.28	0.00
60.80	0.00	4	160.28	0.00
61.20	0.00	4	160.28	0.00
61.60	0.00	4	160.28	0.00
62.00	0.00	4	160.28	0.00
62.40	0.00	4	160.28	0.00
62.80	0.00	4	160.28	0.00
63.20	0.00	4	160.28	0.00

Hydrograph for Pond 3P: UG3 (continued)

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
63.60	0.00	4	160.28	0.00
64.00	0.00	4	160.28	0.00
64.40	0.00	4	160.28	0.00
64.80	0.00	4	160.28	0.00
65.20	0.00	4	160.28	0.00
65.60	0.00	4	160.28	0.00
66.00	0.00	4	160.28	0.00
66.40	0.00	4	160.28	0.00
66.80	0.00	4	160.28	0.00
67.20	0.00	4	160.28	0.00
67.60	0.00	4	160.28	0.00
68.00	0.00	4	160.28	0.00
68.40	0.00	4	160.28	0.00
68.80	0.00	4	160.28	0.00
69.20	0.00	4	160.28	0.00
69.60	0.00	4	160.28	0.00
70.00	0.00	4	160.28	0.00
70.40	0.00	4	160.28	0.00
70.80	0.00	4	160.28	0.00
71.20	0.00	4	160.28	0.00
71.60	0.00	3	160.28	0.00
72.00	0.00	3	160.28	0.00
72.40	0.00	3	160.28	0.00
72.80	0.00	3	160.28	0.00
73.20	0.00	3	160.28	0.00
73.60	0.00	3	160.28	0.00
74.00	0.00	3	160.28	0.00
74.40	0.00	3	160.28	0.00
74.80	0.00	3	160.28	0.00
75.20	0.00	3	160.28	0.00
75.60	0.00	3	160.28	0.00
76.00	0.00	3	160.28	0.00
76.40	0.00	3	160.28	0.00
76.80	0.00	3	160.28	0.00
77.20	0.00	3	160.28	0.00
77.60	0.00	3	160.28	0.00
78.00	0.00	3	160.28	0.00
78.40	0.00	3	160.28	0.00
78.80	0.00	3	160.28	0.00
79.20	0.00	3	160.28	0.00
79.60	0.00	3	160.28	0.00
80.00	0.00	3	160.28	0.00
80.40	0.00	3	160.28	0.00
80.80	0.00	3	160.28	0.00
81.20	0.00	3	160.28	0.00
81.60	0.00	3	160.28	0.00
82.00	0.00	3	160.28	0.00
82.40	0.00	3	160.28	0.00
82.80	0.00	3	160.28	0.00
83.20	0.00	3	160.28	0.00
83.60	0.00	3	160.28	0.00
84.00	0.00	3	160.28	0.00
84.40	0.00	3	160.28	0.00

Hydrograph for Pond 3P: UG3 (continued)

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
84.80	0.00	3	160.28	0.00
85.20	0.00	3	160.28	0.00
85.60	0.00	3	160.28	0.00
86.00	0.00	3	160.28	0.00
86.40	0.00	3	160.28	0.00
86.80	0.00	3	160.28	0.00
87.20	0.00	3	160.28	0.00
87.60	0.00	3	160.28	0.00
88.00	0.00	3	160.28	0.00
88.40	0.00	3	160.28	0.00
88.80	0.00	3	160.28	0.00
89.20	0.00	3	160.28	0.00
89.60	0.00	3	160.28	0.00
90.00	0.00	3	160.28	0.00
90.40	0.00	3	160.28	0.00
90.80	0.00	3	160.28	0.00
91.20	0.00	3	160.28	0.00
91.60	0.00	2	160.28	0.00
92.00	0.00	2	160.28	0.00
92.40	0.00	2	160.28	0.00
92.80	0.00	2	160.28	0.00
93.20	0.00	2	160.28	0.00
93.60	0.00	2	160.28	0.00
94.00	0.00	2	160.28	0.00
94.40	0.00	2	160.28	0.00
94.80	0.00	2	160.28	0.00
95.20	0.00	2	160.28	0.00
95.60	0.00	2	160.28	0.00
96.00	0.00	2	160.28	0.00
96.40	0.00	2	160.28	0.00
96.80	0.00	2	160.28	0.00
97.20	0.00	2	160.28	0.00
97.60	0.00	2	160.28	0.00
98.00	0.00	2	160.28	0.00
98.40	0.00	2	160.28	0.00
98.80	0.00	2	160.28	0.00
99.20	0.00	2	160.28	0.00
99.60	0.00	2	160.28	0.00
100.00	0.00	2	160.28	0.00
100.40	0.00	2	160.28	0.00
100.80	0.00	2	160.28	0.00
101.20	0.00	2	160.28	0.00
101.60	0.00	2	160.28	0.00
102.00	0.00	2	160.28	0.00
102.40	0.00	2	160.28	0.00
102.80	0.00	2	160.28	0.00
103.20	0.00	2	160.28	0.00
103.60	0.00	2	160.28	0.00
104.00	0.00	2	160.28	0.00
104.40	0.00	2	160.28	0.00
104.80	0.00	2	160.28	0.00
105.20	0.00	2	160.28	0.00
105.60	0.00	2	160.28	0.00

Hydrograph for Pond 3P: UG3 (continued)

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
106.00	0.00	2	160.28	0.00
106.40	0.00	2	160.28	0.00
106.80	0.00	2	160.28	0.00
107.20	0.00	2	160.28	0.00
107.60	0.00	2	160.28	0.00
108.00	0.00	2	160.28	0.00
108.40	0.00	2	160.28	0.00
108.80	0.00	2	160.28	0.00
109.20	0.00	2	160.28	0.00
109.60	0.00	2	160.28	0.00
110.00	0.00	2	160.28	0.00
110.40	0.00	2	160.28	0.00
110.80	0.00	2	160.28	0.00
111.20	0.00	2	160.28	0.00
111.60	0.00	2	160.28	0.00
112.00	0.00	2	160.28	0.00
112.40	0.00	2	160.28	0.00
112.80	0.00	2	160.28	0.00
113.20	0.00	2	160.28	0.00
113.60	0.00	2	160.28	0.00
114.00	0.00	2	160.28	0.00
114.40	0.00	2	160.28	0.00
114.80	0.00	2	160.28	0.00
115.20	0.00	2	160.28	0.00
115.60	0.00	2	160.28	0.00
116.00	0.00	2	160.28	0.00
116.40	0.00	2	160.28	0.00
116.80	0.00	2	160.28	0.00
117.20	0.00	2	160.28	0.00
117.60	0.00	2	160.28	0.00
118.00	0.00	2	160.28	0.00
118.40	0.00	2	160.28	0.00
118.80	0.00	2	160.28	0.00
119.20	0.00	2	160.28	0.00
119.60	0.00	2	160.28	0.00
120.00	0.00	2	160.28	0.00
120.40	0.00	2	160.28	0.00
120.80	0.00	2	160.28	0.00
121.20	0.00	2	160.28	0.00
121.60	0.00	2	160.28	0.00
122.00	0.00	2	160.28	0.00
122.40	0.00	2	160.28	0.00
122.80	0.00	2	160.28	0.00
123.20	0.00	2	160.28	0.00
123.60	0.00	2	160.28	0.00
124.00	0.00	2	160.28	0.00
124.40	0.00	2	160.28	0.00
124.80	0.00	2	160.28	0.00
125.20	0.00	2	160.28	0.00
125.60	0.00	2	160.28	0.00
126.00	0.00	2	160.28	0.00
126.40	0.00	2	160.28	0.00
126.80	0.00	2	160.28	0.00

Hydrograph for Pond 3P: UG3 (continued)

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
127.20	0.00	2	160.28	0.00
127.60	0.00	2	160.28	0.00
128.00	0.00	2	160.28	0.00
128.40	0.00	2	160.28	0.00
128.80	0.00	2	160.28	0.00
129.20	0.00	2	160.28	0.00
129.60	0.00	2	160.28	0.00
130.00	0.00	2	160.28	0.00
130.40	0.00	2	160.28	0.00
130.80	0.00	2	160.28	0.00
131.20	0.00	2	160.28	0.00
131.60	0.00	2	160.28	0.00
132.00	0.00	2	160.28	0.00
132.40	0.00	2	160.28	0.00
132.80	0.00	2	160.28	0.00
133.20	0.00	2	160.28	0.00
133.60	0.00	2	160.28	0.00
134.00	0.00	2	160.28	0.00
134.40	0.00	2	160.28	0.00
134.80	0.00	2	160.28	0.00
135.20	0.00	2	160.28	0.00
135.60	0.00	2	160.28	0.00
136.00	0.00	2	160.28	0.00
136.40	0.00	2	160.28	0.00
136.80	0.00	2	160.28	0.00
137.20	0.00	2	160.28	0.00
137.60	0.00	2	160.28	0.00
138.00	0.00	2	160.28	0.00
138.40	0.00	2	160.28	0.00
138.80	0.00	2	160.28	0.00
139.20	0.00	2	160.28	0.00
139.60	0.00	2	160.28	0.00
140.00	0.00	2	160.28	0.00
140.40	0.00	2	160.28	0.00
140.80	0.00	2	160.28	0.00
141.20	0.00	2	160.28	0.00
141.60	0.00	2	160.28	0.00
142.00	0.00	1	160.28	0.00
142.40	0.00	1	160.28	0.00
142.80	0.00	1	160.28	0.00
143.20	0.00	1	160.28	0.00
143.60	0.00	1	160.28	0.00
144.00	0.00	1	160.28	0.00
144.40	0.00	1	160.28	0.00
144.80	0.00	1	160.28	0.00
145.20	0.00	1	160.28	0.00
145.60	0.00	1	160.28	0.00
146.00	0.00	1	160.28	0.00
146.40	0.00	1	160.28	0.00
146.80	0.00	1	160.28	0.00
147.20	0.00	1	160.28	0.00
147.60	0.00	1	160.28	0.00
148.00	0.00	1	160.28	0.00

Hydrograph for Pond 3P: UG3 (continued)

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
148.40	0.00	1	160.28	0.00
148.80	0.00	1	160.28	0.00
149.20	0.00	1	160.28	0.00
149.60	0.00	1	160.28	0.00
150.00	0.00	1	160.28	0.00
150.40	0.00	1	160.28	0.00
150.80	0.00	1	160.28	0.00
151.20	0.00	1	160.28	0.00
151.60	0.00	1	160.28	0.00
152.00	0.00	1	160.28	0.00
152.40	0.00	1	160.28	0.00
152.80	0.00	1	160.28	0.00
153.20	0.00	1	160.28	0.00
153.60	0.00	1	160.28	0.00
154.00	0.00	1	160.28	0.00
154.40	0.00	1	160.28	0.00
154.80	0.00	1	160.28	0.00
155.20	0.00	1	160.28	0.00
155.60	0.00	1	160.28	0.00
156.00	0.00	1	160.28	0.00
156.40	0.00	1	160.28	0.00
156.80	0.00	1	160.28	0.00
157.20	0.00	1	160.28	0.00
157.60	0.00	1	160.28	0.00
158.00	0.00	1	160.28	0.00
158.40	0.00	1	160.28	0.00
158.80	0.00	1	160.28	0.00
159.20	0.00	1	160.28	0.00
159.60	0.00	1	160.28	0.00
160.00	0.00	1	160.28	0.00
160.40	0.00	1	160.28	0.00
160.80	0.00	1	160.28	0.00
161.20	0.00	1	160.28	0.00
161.60	0.00	1	160.28	0.00
162.00	0.00	1	160.28	0.00
162.40	0.00	1	160.28	0.00
162.80	0.00	1	160.28	0.00
163.20	0.00	1	160.28	0.00
163.60	0.00	1	160.28	0.00
164.00	0.00	1	160.28	0.00
164.40	0.00	1	160.28	0.00
164.80	0.00	1	160.28	0.00
165.20	0.00	1	160.28	0.00
165.60	0.00	1	160.28	0.00
166.00	0.00	1	160.28	0.00
166.40	0.00	1	160.28	0.00
166.80	0.00	1	160.28	0.00
167.20	0.00	1	160.28	0.00
167.60	0.00	1	160.28	0.00
168.00	0.00	1	160.28	0.00

Summary for Pond 1P: UG1

Inflow Area = 82,459 sf, 99.52% Impervious, Inflow Depth = 7.42" for 100-yr event
Inflow = 21.14 cfs @ 11.95 hrs, Volume= 50,990 cf
Outflow = 6.27 cfs @ 12.08 hrs, Volume= 50,843 cf, Atten= 70%, Lag= 7.7 min
Primary = 6.27 cfs @ 12.08 hrs, Volume= 50,843 cf
Routed to Link 10L : POST-DEV TO DA #1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-168.00 hrs, dt= 0.04 hrs / 2
Peak Elev= 159.91' @ 12.08 hrs Surf.Area= 13,041 sf Storage= 22,489 cf

Plug-Flow detention time= 574.4 min calculated for 50,843 cf (100% of inflow)
Center-of-Mass det. time= 572.4 min (1,309.0 - 736.6)

Volume	Invert	Avail.Storage	Storage Description
#1A	157.53'	9,785 cf	**120.75'W x 108.00'L x 3.21'H Field A** 41,840 cf Overall - 17,377 cf Embedded = 24,463 cf x 40.0% Voids
#2A	158.03'	17,377 cf	**Cultec R-280HD** x 405 Inside #1 Effective Size= 46.9"W x 26.0"H => 6.07 sf x 7.00'L = 42.5 cf Overall Size= 47.0"W x 26.5"H x 8.00'L with 1.00' Overlap Row Length Adjustment= +1.00' x 6.07 sf x 27 rows
		27,162 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Device 4	157.53'	**1.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#2	Device 4	158.39'	**40.0" W x 4.0" H Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#3	Device 4	160.24'	**4.0' long Broad-Crested Rectangular Weir** Head (feet) 4.00 Coef. (English) 3.33
#4	Primary	157.53'	**18.0" Round Culvert** L= 66.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 157.53' / 157.20' S= 0.0050 '/' Cc= 0.900 n= 0.012, Flow Area= 1.77 sf

Primary OutFlow Max=6.26 cfs @ 12.08 hrs HW=159.91' TW=0.00' (Dynamic Tailwater)
└**4=Culvert** (Passes 6.26 cfs of 9.82 cfs potential flow)
  ├**1=Orifice/Grate** (Orifice Controls 0.04 cfs @ 7.37 fps)
  ├**2=Orifice/Grate** (Orifice Controls 6.22 cfs @ 5.60 fps)
  └**3=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond 1P: UG1 - Chamber Wizard Field A

Chamber Model = Cultec R-280HD (Cultec Recharger® 280HD)
Effective Size= 46.9"W x 26.0"H => 6.07 sf x 7.00'L = 42.5 cf
Overall Size= 47.0"W x 26.5"H x 8.00'L with 1.00' Overlap
Row Length Adjustment= +1.00' x 6.07 sf x 27 rows

47.0" Wide + 6.0" Spacing = 53.0" C-C Row Spacing

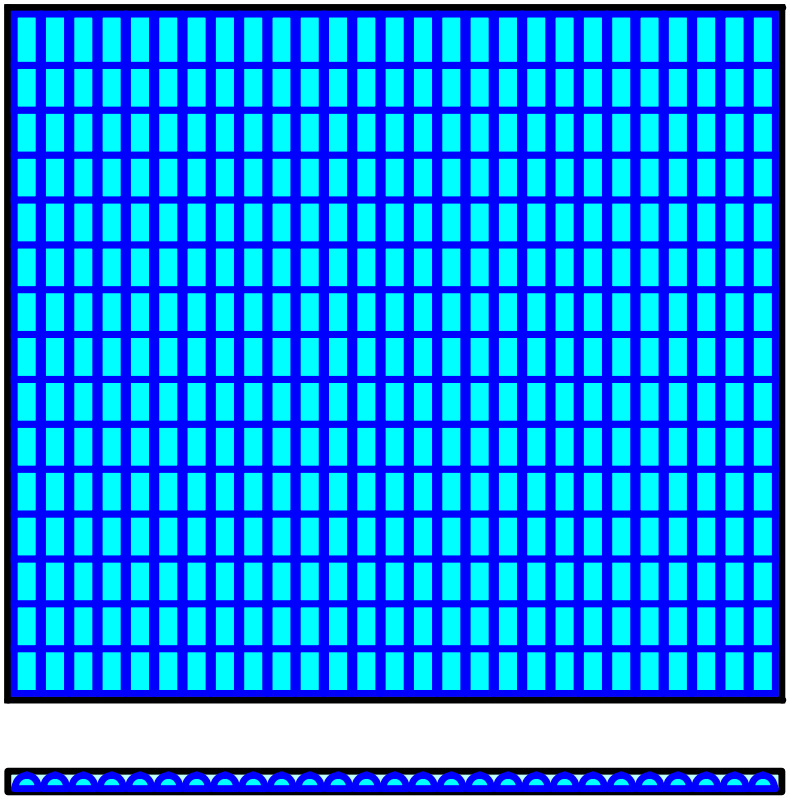
15 Chambers/Row x 7.00' Long +1.00' Row Adjustment = 106.00' Row Length +12.0" End Stone x 2 = 108.00' Base Length
27 Rows x 47.0" Wide + 6.0" Spacing x 26 + 12.0" Side Stone x 2 = 120.75' Base Width
6.0" Stone Base + 26.5" Chamber Height + 6.0" Stone Cover = 3.21' Field Height

405 Chambers x 42.5 cf +1.00' Row Adjustment x 6.07 sf x 27 Rows = 17,377.3 cf Chamber Storage

41,839.9 cf Field - 17,377.3 cf Chambers = 24,462.5 cf Stone x 40.0% Voids = 9,785.0 cf Stone Storage

Chamber Storage + Stone Storage = 27,162.4 cf = 0.624 af
Overall Storage Efficiency = 64.9%
Overall System Size = 108.00' x 120.75' x 3.21'

405 Chambers
1,549.6 cy Field
906.0 cy Stone



Hydrograph for Pond 1P: UG1

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
0.00	0.00	0	157.53	0.00
0.40	0.00	0	157.53	0.00
0.80	0.02	9	157.53	0.00
1.20	0.06	68	157.54	0.00
1.60	0.08	170	157.56	0.00
2.00	0.11	304	157.59	0.00
2.40	0.12	462	157.62	0.01
2.80	0.14	640	157.65	0.01
3.20	0.15	836	157.69	0.01
3.60	0.16	1,047	157.73	0.01
4.00	0.17	1,272	157.77	0.01
4.40	0.19	1,512	157.82	0.01
4.80	0.20	1,771	157.87	0.01
5.20	0.21	2,049	157.92	0.02
5.60	0.23	2,345	157.98	0.02
6.00	0.24	2,659	158.03	0.02
6.40	0.26	2,992	158.06	0.02
6.80	0.27	3,343	158.09	0.02
7.20	0.28	3,712	158.12	0.02
7.60	0.30	4,099	158.16	0.02
8.00	0.31	4,504	158.19	0.02
8.40	0.36	4,947	158.23	0.02
8.80	0.42	5,472	158.27	0.02
9.20	0.46	6,076	158.33	0.02
9.60	0.47	6,702	158.38	0.02
10.00	0.56	7,349	158.44	0.13
10.40	0.69	7,905	158.49	0.34
10.80	0.88	8,371	158.53	0.56
11.20	1.21	8,841	158.57	0.82
11.60	**2.77**	9,609	158.64	1.33
12.00	**17.50**	**21,031**	**159.74**	**5.85**
12.40	1.86	**18,922**	**159.51**	**5.26**
12.80	1.10	14,332	159.07	3.83
13.20	0.84	11,181	158.78	2.47
13.60	0.68	9,630	158.64	1.34
14.00	0.56	8,958	158.58	0.90
14.40	0.51	8,600	158.55	0.69
14.80	0.47	8,400	158.53	0.58
15.20	0.43	8,265	158.52	0.51
15.60	0.38	8,157	158.51	0.45
16.00	0.34	8,061	158.50	0.41
16.40	0.32	7,979	158.49	0.37
16.80	0.31	7,920	158.49	0.35
17.20	0.30	7,873	158.48	0.33
17.60	0.28	7,832	158.48	0.31
18.00	0.27	7,793	158.48	0.29
18.40	0.25	7,756	158.47	0.28
18.80	0.24	7,719	158.47	0.26
19.20	0.22	7,683	158.47	0.25
19.60	0.21	7,645	158.46	0.23
20.00	0.19	7,607	158.46	0.22
20.40	0.19	7,573	158.46	0.21
20.80	0.18	7,550	158.45	0.20

Hydrograph for Pond 1P: UG1 (continued)

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
21.20	0.18	7,532	158.45	0.19
21.60	0.18	7,518	158.45	0.19
22.00	0.18	7,507	158.45	0.18
22.40	0.17	7,496	158.45	0.18
22.80	0.17	7,487	158.45	0.18
23.20	0.17	7,477	158.45	0.17
23.60	0.16	7,468	158.45	0.17
24.00	0.16	7,459	158.45	0.17
24.40	0.00	7,296	158.43	0.12
24.80	0.00	7,157	158.42	0.08
25.20	0.00	7,059	158.41	0.06
25.60	0.00	6,986	158.41	0.04
26.00	0.00	6,929	158.40	0.04
26.40	0.00	6,883	158.40	0.03
26.80	0.00	6,844	158.39	0.03
27.20	0.00	6,809	158.39	0.02
27.60	0.00	6,775	158.39	0.02
28.00	0.00	6,741	158.38	0.02
28.40	0.00	6,707	158.38	0.02
28.80	0.00	6,673	158.38	0.02
29.20	0.00	6,639	158.38	0.02
29.60	0.00	6,605	158.37	0.02
30.00	0.00	6,571	158.37	0.02
30.40	0.00	6,537	158.37	0.02
30.80	0.00	6,504	158.36	0.02
31.20	0.00	6,470	158.36	0.02
31.60	0.00	6,437	158.36	0.02
32.00	0.00	6,403	158.35	0.02
32.40	0.00	6,370	158.35	0.02
32.80	0.00	6,336	158.35	0.02
33.20	0.00	6,303	158.35	0.02
33.60	0.00	6,270	158.34	0.02
34.00	0.00	6,237	158.34	0.02
34.40	0.00	6,203	158.34	0.02
34.80	0.00	6,170	158.33	0.02
35.20	0.00	6,137	158.33	0.02
35.60	0.00	6,104	158.33	0.02
36.00	0.00	6,072	158.33	0.02
36.40	0.00	6,039	158.32	0.02
36.80	0.00	6,006	158.32	0.02
37.20	0.00	5,973	158.32	0.02
37.60	0.00	5,941	158.31	0.02
38.00	0.00	5,908	158.31	0.02
38.40	0.00	5,876	158.31	0.02
38.80	0.00	5,843	158.31	0.02
39.20	0.00	5,811	158.30	0.02
39.60	0.00	5,778	158.30	0.02
40.00	0.00	5,746	158.30	0.02
40.40	0.00	5,714	158.30	0.02
40.80	0.00	5,682	158.29	0.02
41.20	0.00	5,650	158.29	0.02
41.60	0.00	5,618	158.29	0.02
42.00	0.00	5,586	158.28	0.02

Hydrograph for Pond 1P: UG1 (continued)

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
42.40	0.00	5,554	158.28	0.02
42.80	0.00	5,522	158.28	0.02
43.20	0.00	5,490	158.28	0.02
43.60	0.00	5,459	158.27	0.02
44.00	0.00	5,427	158.27	0.02
44.40	0.00	5,395	158.27	0.02
44.80	0.00	5,364	158.26	0.02
45.20	0.00	5,332	158.26	0.02
45.60	0.00	5,301	158.26	0.02
46.00	0.00	5,270	158.26	0.02
46.40	0.00	5,238	158.25	0.02
46.80	0.00	5,207	158.25	0.02
47.20	0.00	5,176	158.25	0.02
47.60	0.00	5,145	158.25	0.02
48.00	0.00	5,114	158.24	0.02
48.40	0.00	5,083	158.24	0.02
48.80	0.00	5,052	158.24	0.02
49.20	0.00	5,021	158.24	0.02
49.60	0.00	4,991	158.23	0.02
50.00	0.00	4,960	158.23	0.02
50.40	0.00	4,929	158.23	0.02
50.80	0.00	4,899	158.22	0.02
51.20	0.00	4,868	158.22	0.02
51.60	0.00	4,838	158.22	0.02
52.00	0.00	4,807	158.22	0.02
52.40	0.00	4,777	158.21	0.02
52.80	0.00	4,747	158.21	0.02
53.20	0.00	4,716	158.21	0.02
53.60	0.00	4,686	158.21	0.02
54.00	0.00	4,656	158.20	0.02
54.40	0.00	4,626	158.20	0.02
54.80	0.00	4,596	158.20	0.02
55.20	0.00	4,566	158.20	0.02
55.60	0.00	4,536	158.19	0.02
56.00	0.00	4,506	158.19	0.02
56.40	0.00	4,477	158.19	0.02
56.80	0.00	4,447	158.19	0.02
57.20	0.00	4,417	158.18	0.02
57.60	0.00	4,388	158.18	0.02
58.00	0.00	4,358	158.18	0.02
58.40	0.00	4,329	158.18	0.02
58.80	0.00	4,300	158.17	0.02
59.20	0.00	4,270	158.17	0.02
59.60	0.00	4,241	158.17	0.02
60.00	0.00	4,212	158.17	0.02
60.40	0.00	4,183	158.16	0.02
60.80	0.00	4,154	158.16	0.02
61.20	0.00	4,125	158.16	0.02
61.60	0.00	4,096	158.16	0.02
62.00	0.00	4,067	158.15	0.02
62.40	0.00	4,038	158.15	0.02
62.80	0.00	4,009	158.15	0.02
63.20	0.00	3,981	158.15	0.02

Hydrograph for Pond 1P: UG1 (continued)

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
63.60	0.00	3,952	158.14	0.02
64.00	0.00	3,924	158.14	0.02
64.40	0.00	3,895	158.14	0.02
64.80	0.00	3,867	158.14	0.02
65.20	0.00	3,838	158.13	0.02
65.60	0.00	3,810	158.13	0.02
66.00	0.00	3,782	158.13	0.02
66.40	0.00	3,753	158.13	0.02
66.80	0.00	3,725	158.12	0.02
67.20	0.00	3,697	158.12	0.02
67.60	0.00	3,669	158.12	0.02
68.00	0.00	3,641	158.12	0.02
68.40	0.00	3,613	158.11	0.02
68.80	0.00	3,585	158.11	0.02
69.20	0.00	3,558	158.11	0.02
69.60	0.00	3,530	158.11	0.02
70.00	0.00	3,502	158.11	0.02
70.40	0.00	3,475	158.10	0.02
70.80	0.00	3,447	158.10	0.02
71.20	0.00	3,420	158.10	0.02
71.60	0.00	3,392	158.10	0.02
72.00	0.00	3,365	158.09	0.02
72.40	0.00	3,338	158.09	0.02
72.80	0.00	3,310	158.09	0.02
73.20	0.00	3,283	158.09	0.02
73.60	0.00	3,256	158.08	0.02
74.00	0.00	3,229	158.08	0.02
74.40	0.00	3,202	158.08	0.02
74.80	0.00	3,175	158.08	0.02
75.20	0.00	3,148	158.08	0.02
75.60	0.00	3,121	158.07	0.02
76.00	0.00	3,095	158.07	0.02
76.40	0.00	3,068	158.07	0.02
76.80	0.00	3,041	158.07	0.02
77.20	0.00	3,015	158.06	0.02
77.60	0.00	2,988	158.06	0.02
78.00	0.00	2,962	158.06	0.02
78.40	0.00	2,935	158.06	0.02
78.80	0.00	2,909	158.06	0.02
79.20	0.00	2,883	158.05	0.02
79.60	0.00	2,857	158.05	0.02
80.00	0.00	2,831	158.05	0.02
80.40	0.00	2,804	158.05	0.02
80.80	0.00	2,778	158.04	0.02
81.20	0.00	2,752	158.04	0.02
81.60	0.00	2,727	158.04	0.02
82.00	0.00	2,701	158.04	0.02
82.40	0.00	2,675	158.04	0.02
82.80	0.00	2,649	158.03	0.02
83.20	0.00	2,624	158.03	0.02
83.60	0.00	2,598	158.03	0.02
84.00	0.00	2,572	158.02	0.02
84.40	0.00	2,547	158.02	0.02

Hydrograph for Pond 1P: UG1 (continued)

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
84.80	0.00	2,522	158.01	0.02
85.20	0.00	2,497	158.01	0.02
85.60	0.00	2,472	158.00	0.02
86.00	0.00	2,447	158.00	0.02
86.40	0.00	2,422	157.99	0.02
86.80	0.00	2,398	157.99	0.02
87.20	0.00	2,374	157.99	0.02
87.60	0.00	2,349	157.98	0.02
88.00	0.00	2,325	157.98	0.02
88.40	0.00	2,301	157.97	0.02
88.80	0.00	2,277	157.97	0.02
89.20	0.00	2,254	157.96	0.02
89.60	0.00	2,230	157.96	0.02
90.00	0.00	2,207	157.95	0.02
90.40	0.00	2,183	157.95	0.02
90.80	0.00	2,160	157.94	0.02
91.20	0.00	2,137	157.94	0.02
91.60	0.00	2,114	157.94	0.02
92.00	0.00	2,092	157.93	0.02
92.40	0.00	2,069	157.93	0.02
92.80	0.00	2,047	157.92	0.02
93.20	0.00	2,024	157.92	0.02
93.60	0.00	2,002	157.91	0.02
94.00	0.00	1,980	157.91	0.02
94.40	0.00	1,958	157.91	0.02
94.80	0.00	1,936	157.90	0.02
95.20	0.00	1,915	157.90	0.01
95.60	0.00	1,893	157.89	0.01
96.00	0.00	1,872	157.89	0.01
96.40	0.00	1,851	157.88	0.01
96.80	0.00	1,830	157.88	0.01
97.20	0.00	1,809	157.88	0.01
97.60	0.00	1,788	157.87	0.01
98.00	0.00	1,767	157.87	0.01
98.40	0.00	1,747	157.86	0.01
98.80	0.00	1,726	157.86	0.01
99.20	0.00	1,706	157.86	0.01
99.60	0.00	1,686	157.85	0.01
100.00	0.00	1,666	157.85	0.01
100.40	0.00	1,646	157.85	0.01
100.80	0.00	1,626	157.84	0.01
101.20	0.00	1,607	157.84	0.01
101.60	0.00	1,587	157.83	0.01
102.00	0.00	1,568	157.83	0.01
102.40	0.00	1,549	157.83	0.01
102.80	0.00	1,530	157.82	0.01
103.20	0.00	1,511	157.82	0.01
103.60	0.00	1,492	157.82	0.01
104.00	0.00	1,473	157.81	0.01
104.40	0.00	1,455	157.81	0.01
104.80	0.00	1,437	157.81	0.01
105.20	0.00	1,418	157.80	0.01
105.60	0.00	1,400	157.80	0.01

Hydrograph for Pond 1P: UG1 (continued)

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
106.00	0.00	1,382	157.79	0.01
106.40	0.00	1,365	157.79	0.01
106.80	0.00	1,347	157.79	0.01
107.20	0.00	1,329	157.78	0.01
107.60	0.00	1,312	157.78	0.01
108.00	0.00	1,295	157.78	0.01
108.40	0.00	1,278	157.77	0.01
108.80	0.00	1,261	157.77	0.01
109.20	0.00	1,244	157.77	0.01
109.60	0.00	1,227	157.77	0.01
110.00	0.00	1,210	157.76	0.01
110.40	0.00	1,194	157.76	0.01
110.80	0.00	1,178	157.76	0.01
111.20	0.00	1,162	157.75	0.01
111.60	0.00	1,146	157.75	0.01
112.00	0.00	1,130	157.75	0.01
112.40	0.00	1,114	157.74	0.01
112.80	0.00	1,098	157.74	0.01
113.20	0.00	1,083	157.74	0.01
113.60	0.00	1,068	157.73	0.01
114.00	0.00	1,052	157.73	0.01
114.40	0.00	1,037	157.73	0.01
114.80	0.00	1,022	157.73	0.01
115.20	0.00	1,008	157.72	0.01
115.60	0.00	993	157.72	0.01
116.00	0.00	978	157.72	0.01
116.40	0.00	964	157.71	0.01
116.80	0.00	950	157.71	0.01
117.20	0.00	936	157.71	0.01
117.60	0.00	922	157.71	0.01
118.00	0.00	908	157.70	0.01
118.40	0.00	894	157.70	0.01
118.80	0.00	881	157.70	0.01
119.20	0.00	867	157.70	0.01
119.60	0.00	854	157.69	0.01
120.00	0.00	841	157.69	0.01
120.40	0.00	828	157.69	0.01
120.80	0.00	815	157.69	0.01
121.20	0.00	802	157.68	0.01
121.60	0.00	790	157.68	0.01
122.00	0.00	777	157.68	0.01
122.40	0.00	765	157.68	0.01
122.80	0.00	753	157.67	0.01
123.20	0.00	741	157.67	0.01
123.60	0.00	729	157.67	0.01
124.00	0.00	717	157.67	0.01
124.40	0.00	705	157.67	0.01
124.80	0.00	694	157.66	0.01
125.20	0.00	682	157.66	0.01
125.60	0.00	671	157.66	0.01
126.00	0.00	660	157.66	0.01
126.40	0.00	649	157.65	0.01
126.80	0.00	638	157.65	0.01

Hydrograph for Pond 1P: UG1 (continued)

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
127.20	0.00	628	157.65	0.01
127.60	0.00	617	157.65	0.01
128.00	0.00	607	157.65	0.01
128.40	0.00	596	157.64	0.01
128.80	0.00	586	157.64	0.01
129.20	0.00	576	157.64	0.01
129.60	0.00	567	157.64	0.01
130.00	0.00	557	157.64	0.01
130.40	0.00	547	157.63	0.01
130.80	0.00	538	157.63	0.01
131.20	0.00	528	157.63	0.01
131.60	0.00	519	157.63	0.01
132.00	0.00	510	157.63	0.01
132.40	0.00	501	157.63	0.01
132.80	0.00	493	157.62	0.01
133.20	0.00	484	157.62	0.01
133.60	0.00	476	157.62	0.01
134.00	0.00	467	157.62	0.01
134.40	0.00	459	157.62	0.01
134.80	0.00	451	157.62	0.01
135.20	0.00	443	157.61	0.01
135.60	0.00	435	157.61	0.01
136.00	0.00	428	157.61	0.01
136.40	0.00	420	157.61	0.01
136.80	0.00	412	157.61	0.01
137.20	0.00	405	157.61	0.01
137.60	0.00	398	157.61	0.00
138.00	0.00	391	157.60	0.00
138.40	0.00	384	157.60	0.00
138.80	0.00	377	157.60	0.00
139.20	0.00	371	157.60	0.00
139.60	0.00	364	157.60	0.00
140.00	0.00	358	157.60	0.00
140.40	0.00	352	157.60	0.00
140.80	0.00	346	157.60	0.00
141.20	0.00	340	157.60	0.00
141.60	0.00	335	157.59	0.00
142.00	0.00	329	157.59	0.00
142.40	0.00	324	157.59	0.00
142.80	0.00	319	157.59	0.00
143.20	0.00	313	157.59	0.00
143.60	0.00	308	157.59	0.00
144.00	0.00	304	157.59	0.00
144.40	0.00	299	157.59	0.00
144.80	0.00	294	157.59	0.00
145.20	0.00	290	157.59	0.00
145.60	0.00	285	157.58	0.00
146.00	0.00	281	157.58	0.00
146.40	0.00	277	157.58	0.00
146.80	0.00	273	157.58	0.00
147.20	0.00	269	157.58	0.00
147.60	0.00	265	157.58	0.00
148.00	0.00	261	157.58	0.00

Hydrograph for Pond 1P: UG1 (continued)

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
148.40	0.00	257	157.58	0.00
148.80	0.00	254	157.58	0.00
149.20	0.00	250	157.58	0.00
149.60	0.00	247	157.58	0.00
150.00	0.00	243	157.58	0.00
150.40	0.00	240	157.58	0.00
150.80	0.00	237	157.58	0.00
151.20	0.00	234	157.57	0.00
151.60	0.00	231	157.57	0.00
152.00	0.00	228	157.57	0.00
152.40	0.00	225	157.57	0.00
152.80	0.00	222	157.57	0.00
153.20	0.00	219	157.57	0.00
153.60	0.00	216	157.57	0.00
154.00	0.00	214	157.57	0.00
154.40	0.00	211	157.57	0.00
154.80	0.00	208	157.57	0.00
155.20	0.00	206	157.57	0.00
155.60	0.00	203	157.57	0.00
156.00	0.00	201	157.57	0.00
156.40	0.00	199	157.57	0.00
156.80	0.00	196	157.57	0.00
157.20	0.00	194	157.57	0.00
157.60	0.00	192	157.57	0.00
158.00	0.00	190	157.57	0.00
158.40	0.00	188	157.57	0.00
158.80	0.00	186	157.57	0.00
159.20	0.00	184	157.57	0.00
159.60	0.00	182	157.56	0.00
160.00	0.00	180	157.56	0.00
160.40	0.00	178	157.56	0.00
160.80	0.00	176	157.56	0.00
161.20	0.00	174	157.56	0.00
161.60	0.00	172	157.56	0.00
162.00	0.00	170	157.56	0.00
162.40	0.00	169	157.56	0.00
162.80	0.00	167	157.56	0.00
163.20	0.00	165	157.56	0.00
163.60	0.00	164	157.56	0.00
164.00	0.00	162	157.56	0.00
164.40	0.00	160	157.56	0.00
164.80	0.00	159	157.56	0.00
165.20	0.00	157	157.56	0.00
165.60	0.00	156	157.56	0.00
166.00	0.00	154	157.56	0.00
166.40	0.00	153	157.56	0.00
166.80	0.00	151	157.56	0.00
167.20	0.00	150	157.56	0.00
167.60	0.00	149	157.56	0.00
168.00	0.00	147	157.56	0.00

Summary for Pond 2P: UG2

Inflow Area = 33,977 sf, 95.64% Impervious, Inflow Depth = 7.06" for 100-yr event
Inflow = 8.61 cfs @ 11.95 hrs, Volume= 19,997 cf
Outflow = 4.30 cfs @ 12.05 hrs, Volume= 19,784 cf, Atten= 50%, Lag= 5.5 min
Primary = 4.30 cfs @ 12.05 hrs, Volume= 19,784 cf
Routed to Link 10L : POST-DEV TO DA #1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-168.00 hrs, dt= 0.04 hrs / 2
Peak Elev= 162.51' @ 12.05 hrs Surf.Area= 3,834 sf Storage= 7,394 cf

Plug-Flow detention time= 637.8 min calculated for 19,779 cf (99% of inflow)
Center-of-Mass det. time= 632.6 min (1,385.8 - 753.2)

Volume	Invert	Avail.Storage	Storage Description
#1A	159.80'	3,209 cf	**35.33'W x 108.50'L x 3.54'H Field A** 13,578 cf Overall - 5,555 cf Embedded = 8,023 cf x 40.0% Voids
#2A	160.30'	5,555 cf	**Cultec R-330XLHD** x 105 Inside #1 Effective Size= 47.8"W x 30.0"H => 7.45 sf x 7.00'L = 52.2 cf Overall Size= 52.0"W x 30.5"H x 8.50'L with 1.50' Overlap Row Length Adjustment= +1.50' x 7.45 sf x 7 rows
		8,764 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Device 4	159.80'	**0.5" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#2	Device 4	160.90'	**16.0" W x 7.0" H Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#3	Device 4	162.55'	**4.0' long Broad-Crested Rectangular Weir** Head (feet) 4.00 Coef. (English) 3.33
#4	Primary	159.80'	**18.0" Round Culvert** L= 141.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 159.80' / 159.09' S= 0.0050 '/' Cc= 0.900 n= 0.012, Flow Area= 1.77 sf

Primary OutFlow Max=4.29 cfs @ 12.05 hrs HW=162.50' TW=0.00' (Dynamic Tailwater)
└**4=Culvert** (Passes 4.29 cfs of 10.19 cfs potential flow)
  ├**1=Orifice/Grate** (Orifice Controls 0.01 cfs @ 7.88 fps)
  ├**2=Orifice/Grate** (Orifice Controls 4.28 cfs @ 5.50 fps)
  └**3=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond 2P: UG2 - Chamber Wizard Field A

Chamber Model = Cultec R-330XLHD (Cultec Recharger® 330XLHD)
Effective Size= 47.8"W x 30.0"H => 7.45 sf x 7.00'L = 52.2 cf
Overall Size= 52.0"W x 30.5"H x 8.50'L with 1.50' Overlap
Row Length Adjustment= +1.50' x 7.45 sf x 7 rows

52.0" Wide + 6.0" Spacing = 58.0" C-C Row Spacing

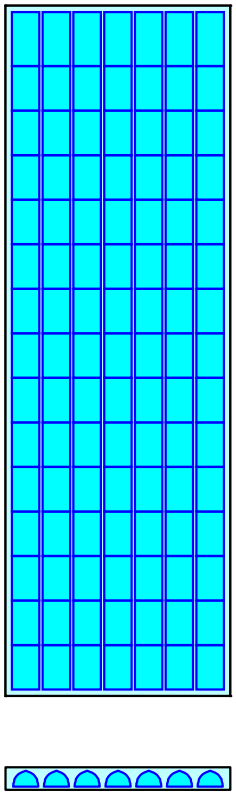
15 Chambers/Row x 7.00' Long +1.50' Row Adjustment = 106.50' Row Length +12.0" End Stone x 2 = 108.50' Base Length
7 Rows x 52.0" Wide + 6.0" Spacing x 6 + 12.0" Side Stone x 2 = 35.33' Base Width
6.0" Stone Base + 30.5" Chamber Height + 6.0" Stone Cover = 3.54' Field Height

105 Chambers x 52.2 cf +1.50' Row Adjustment x 7.45 sf x 7 Rows = 5,554.7 cf Chamber Storage

13,577.6 cf Field - 5,554.7 cf Chambers = 8,022.8 cf Stone x 40.0% Voids = 3,209.1 cf Stone Storage

Chamber Storage + Stone Storage = 8,763.9 cf = 0.201 af
Overall Storage Efficiency = 64.5%
Overall System Size = 108.50' x 35.33' x 3.54'

105 Chambers
502.9 cy Field
297.1 cy Stone



Hydrograph for Pond 2P: UG2

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
0.00	0.00	0	159.80	0.00
0.40	0.00	0	159.80	0.00
0.80	0.00	0	159.80	0.00
1.20	0.00	0	159.80	0.00
1.60	0.01	2	159.80	0.00
2.00	0.01	15	159.81	0.00
2.40	0.02	39	159.83	0.00
2.80	0.03	73	159.85	0.00
3.20	0.03	116	159.88	0.00
3.60	0.04	167	159.91	0.00
4.00	0.05	225	159.95	0.00
4.40	0.05	292	159.99	0.00
4.80	0.06	368	160.04	0.00
5.20	0.07	453	160.10	0.00
5.60	0.07	548	160.16	0.00
6.00	0.08	651	160.22	0.00
6.40	0.09	763	160.30	0.00
6.80	0.09	884	160.34	0.00
7.20	0.10	1,015	160.37	0.00
7.60	0.10	1,154	160.42	0.01
8.00	0.11	1,302	160.46	0.01
8.40	0.13	1,466	160.51	0.01
8.80	0.15	1,663	160.57	0.01
9.20	0.17	1,891	160.64	0.01
9.60	0.18	2,131	160.72	0.01
10.00	0.21	2,402	160.80	0.01
10.40	0.27	2,736	160.90	0.01
10.80	0.34	3,067	161.00	0.15
11.20	0.48	3,296	161.08	0.33
11.60	**1.10**	3,566	161.16	0.58
12.00	**7.14**	**7,167**	**162.41**	**4.13**
12.40	0.76	**4,836**	**161.57**	**2.24**
12.80	0.45	3,744	161.22	0.78
13.20	0.34	3,452	161.13	0.47
13.60	0.28	3,322	161.09	0.35
14.00	0.23	3,240	161.06	0.28
14.40	0.21	3,185	161.04	0.24
14.80	0.19	3,152	161.03	0.21
15.20	0.17	3,125	161.02	0.19
15.60	0.16	3,101	161.02	0.17
16.00	0.14	3,076	161.01	0.16
16.40	0.13	3,055	161.00	0.14
16.80	0.13	3,041	161.00	0.14
17.20	0.12	3,029	160.99	0.13
17.60	0.12	3,019	160.99	0.12
18.00	0.11	3,009	160.99	0.12
18.40	0.10	2,999	160.98	0.11
18.80	0.10	2,989	160.98	0.10
19.20	0.09	2,978	160.98	0.10
19.60	0.09	2,968	160.97	0.09
20.00	0.08	2,957	160.97	0.09
20.40	0.08	2,948	160.97	0.08
20.80	0.08	2,942	160.97	0.08

Hydrograph for Pond 2P: UG2 (continued)

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
21.20	0.07	2,938	160.96	0.08
21.60	0.07	2,935	160.96	0.08
22.00	0.07	2,932	160.96	0.07
22.40	0.07	2,930	160.96	0.07
22.80	0.07	2,927	160.96	0.07
23.20	0.07	2,925	160.96	0.07
23.60	0.07	2,922	160.96	0.07
24.00	0.07	2,920	160.96	0.07
24.40	0.00	2,859	160.94	0.04
24.80	0.00	2,813	160.93	0.02
25.20	0.00	2,785	160.92	0.02
25.60	0.00	2,765	160.91	0.01
26.00	0.00	2,751	160.91	0.01
26.40	0.00	2,739	160.90	0.01
26.80	0.00	2,729	160.90	0.01
27.20	0.00	2,719	160.90	0.01
27.60	0.00	2,710	160.89	0.01
28.00	0.00	2,700	160.89	0.01
28.40	0.00	2,690	160.89	0.01
28.80	0.00	2,680	160.88	0.01
29.20	0.00	2,671	160.88	0.01
29.60	0.00	2,661	160.88	0.01
30.00	0.00	2,651	160.88	0.01
30.40	0.00	2,641	160.87	0.01
30.80	0.00	2,632	160.87	0.01
31.20	0.00	2,622	160.87	0.01
31.60	0.00	2,612	160.86	0.01
32.00	0.00	2,603	160.86	0.01
32.40	0.00	2,593	160.86	0.01
32.80	0.00	2,584	160.85	0.01
33.20	0.00	2,574	160.85	0.01
33.60	0.00	2,564	160.85	0.01
34.00	0.00	2,555	160.85	0.01
34.40	0.00	2,545	160.84	0.01
34.80	0.00	2,536	160.84	0.01
35.20	0.00	2,526	160.84	0.01
35.60	0.00	2,517	160.83	0.01
36.00	0.00	2,507	160.83	0.01
36.40	0.00	2,498	160.83	0.01
36.80	0.00	2,488	160.82	0.01
37.20	0.00	2,479	160.82	0.01
37.60	0.00	2,469	160.82	0.01
38.00	0.00	2,460	160.82	0.01
38.40	0.00	2,450	160.81	0.01
38.80	0.00	2,441	160.81	0.01
39.20	0.00	2,432	160.81	0.01
39.60	0.00	2,422	160.80	0.01
40.00	0.00	2,413	160.80	0.01
40.40	0.00	2,403	160.80	0.01
40.80	0.00	2,394	160.80	0.01
41.20	0.00	2,385	160.79	0.01
41.60	0.00	2,375	160.79	0.01
42.00	0.00	2,366	160.79	0.01

Hydrograph for Pond 2P: UG2 (continued)

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
42.40	0.00	2,357	160.78	0.01
42.80	0.00	2,348	160.78	0.01
43.20	0.00	2,338	160.78	0.01
43.60	0.00	2,329	160.78	0.01
44.00	0.00	2,320	160.77	0.01
44.40	0.00	2,311	160.77	0.01
44.80	0.00	2,301	160.77	0.01
45.20	0.00	2,292	160.76	0.01
45.60	0.00	2,283	160.76	0.01
46.00	0.00	2,274	160.76	0.01
46.40	0.00	2,265	160.76	0.01
46.80	0.00	2,256	160.75	0.01
47.20	0.00	2,246	160.75	0.01
47.60	0.00	2,237	160.75	0.01
48.00	0.00	2,228	160.75	0.01
48.40	0.00	2,219	160.74	0.01
48.80	0.00	2,210	160.74	0.01
49.20	0.00	2,201	160.74	0.01
49.60	0.00	2,192	160.73	0.01
50.00	0.00	2,183	160.73	0.01
50.40	0.00	2,174	160.73	0.01
50.80	0.00	2,165	160.73	0.01
51.20	0.00	2,156	160.72	0.01
51.60	0.00	2,147	160.72	0.01
52.00	0.00	2,138	160.72	0.01
52.40	0.00	2,129	160.71	0.01
52.80	0.00	2,120	160.71	0.01
53.20	0.00	2,111	160.71	0.01
53.60	0.00	2,102	160.71	0.01
54.00	0.00	2,093	160.70	0.01
54.40	0.00	2,085	160.70	0.01
54.80	0.00	2,076	160.70	0.01
55.20	0.00	2,067	160.70	0.01
55.60	0.00	2,058	160.69	0.01
56.00	0.00	2,049	160.69	0.01
56.40	0.00	2,040	160.69	0.01
56.80	0.00	2,032	160.68	0.01
57.20	0.00	2,023	160.68	0.01
57.60	0.00	2,014	160.68	0.01
58.00	0.00	2,005	160.68	0.01
58.40	0.00	1,997	160.67	0.01
58.80	0.00	1,988	160.67	0.01
59.20	0.00	1,979	160.67	0.01
59.60	0.00	1,970	160.67	0.01
60.00	0.00	1,962	160.66	0.01
60.40	0.00	1,953	160.66	0.01
60.80	0.00	1,944	160.66	0.01
61.20	0.00	1,936	160.66	0.01
61.60	0.00	1,927	160.65	0.01
62.00	0.00	1,919	160.65	0.01
62.40	0.00	1,910	160.65	0.01
62.80	0.00	1,901	160.65	0.01
63.20	0.00	1,893	160.64	0.01

Hydrograph for Pond 2P: UG2 (continued)

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
63.60	0.00	1,884	160.64	0.01
64.00	0.00	1,876	160.64	0.01
64.40	0.00	1,867	160.63	0.01
64.80	0.00	1,859	160.63	0.01
65.20	0.00	1,850	160.63	0.01
65.60	0.00	1,842	160.63	0.01
66.00	0.00	1,833	160.62	0.01
66.40	0.00	1,825	160.62	0.01
66.80	0.00	1,816	160.62	0.01
67.20	0.00	1,808	160.62	0.01
67.60	0.00	1,799	160.61	0.01
68.00	0.00	1,791	160.61	0.01
68.40	0.00	1,782	160.61	0.01
68.80	0.00	1,774	160.61	0.01
69.20	0.00	1,766	160.60	0.01
69.60	0.00	1,757	160.60	0.01
70.00	0.00	1,749	160.60	0.01
70.40	0.00	1,741	160.60	0.01
70.80	0.00	1,732	160.59	0.01
71.20	0.00	1,724	160.59	0.01
71.60	0.00	1,716	160.59	0.01
72.00	0.00	1,708	160.59	0.01
72.40	0.00	1,699	160.58	0.01
72.80	0.00	1,691	160.58	0.01
73.20	0.00	1,683	160.58	0.01
73.60	0.00	1,675	160.58	0.01
74.00	0.00	1,666	160.57	0.01
74.40	0.00	1,658	160.57	0.01
74.80	0.00	1,650	160.57	0.01
75.20	0.00	1,642	160.57	0.01
75.60	0.00	1,634	160.56	0.01
76.00	0.00	1,626	160.56	0.01
76.40	0.00	1,617	160.56	0.01
76.80	0.00	1,609	160.56	0.01
77.20	0.00	1,601	160.55	0.01
77.60	0.00	1,593	160.55	0.01
78.00	0.00	1,585	160.55	0.01
78.40	0.00	1,577	160.55	0.01
78.80	0.00	1,569	160.54	0.01
79.20	0.00	1,561	160.54	0.01
79.60	0.00	1,553	160.54	0.01
80.00	0.00	1,545	160.54	0.01
80.40	0.00	1,537	160.53	0.01
80.80	0.00	1,529	160.53	0.01
81.20	0.00	1,521	160.53	0.01
81.60	0.00	1,513	160.53	0.01
82.00	0.00	1,505	160.52	0.01
82.40	0.00	1,497	160.52	0.01
82.80	0.00	1,489	160.52	0.01
83.20	0.00	1,481	160.52	0.01
83.60	0.00	1,473	160.51	0.01
84.00	0.00	1,466	160.51	0.01
84.40	0.00	1,458	160.51	0.01

Hydrograph for Pond 2P: UG2 (continued)

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
84.80	0.00	1,450	160.51	0.01
85.20	0.00	1,442	160.50	0.01
85.60	0.00	1,434	160.50	0.01
86.00	0.00	1,426	160.50	0.01
86.40	0.00	1,419	160.50	0.01
86.80	0.00	1,411	160.50	0.01
87.20	0.00	1,403	160.49	0.01
87.60	0.00	1,395	160.49	0.01
88.00	0.00	1,388	160.49	0.01
88.40	0.00	1,380	160.49	0.01
88.80	0.00	1,372	160.48	0.01
89.20	0.00	1,365	160.48	0.01
89.60	0.00	1,357	160.48	0.01
90.00	0.00	1,349	160.48	0.01
90.40	0.00	1,342	160.47	0.01
90.80	0.00	1,334	160.47	0.01
91.20	0.00	1,326	160.47	0.01
91.60	0.00	1,319	160.47	0.01
92.00	0.00	1,311	160.46	0.01
92.40	0.00	1,304	160.46	0.01
92.80	0.00	1,296	160.46	0.01
93.20	0.00	1,288	160.46	0.01
93.60	0.00	1,281	160.46	0.01
94.00	0.00	1,273	160.45	0.01
94.40	0.00	1,266	160.45	0.01
94.80	0.00	1,258	160.45	0.01
95.20	0.00	1,251	160.45	0.01
95.60	0.00	1,243	160.44	0.01
96.00	0.00	1,236	160.44	0.01
96.40	0.00	1,228	160.44	0.01
96.80	0.00	1,221	160.44	0.01
97.20	0.00	1,214	160.44	0.01
97.60	0.00	1,206	160.43	0.01
98.00	0.00	1,199	160.43	0.01
98.40	0.00	1,191	160.43	0.01
98.80	0.00	1,184	160.43	0.01
99.20	0.00	1,177	160.42	0.01
99.60	0.00	1,169	160.42	0.01
100.00	0.00	1,162	160.42	0.01
100.40	0.00	1,155	160.42	0.01
100.80	0.00	1,147	160.42	0.01
101.20	0.00	1,140	160.41	0.01
101.60	0.00	1,133	160.41	0.01
102.00	0.00	1,126	160.41	0.01
102.40	0.00	1,118	160.41	0.01
102.80	0.00	1,111	160.40	0.01
103.20	0.00	1,104	160.40	0.01
103.60	0.00	1,097	160.40	0.00
104.00	0.00	1,090	160.40	0.00
104.40	0.00	1,082	160.40	0.00
104.80	0.00	1,075	160.39	0.00
105.20	0.00	1,068	160.39	0.00
105.60	0.00	1,061	160.39	0.00

Hydrograph for Pond 2P: UG2 (continued)

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
106.00	0.00	1,054	160.39	0.00
106.40	0.00	1,047	160.38	0.00
106.80	0.00	1,040	160.38	0.00
107.20	0.00	1,033	160.38	0.00
107.60	0.00	1,026	160.38	0.00
108.00	0.00	1,018	160.38	0.00
108.40	0.00	1,011	160.37	0.00
108.80	0.00	1,004	160.37	0.00
109.20	0.00	997	160.37	0.00
109.60	0.00	990	160.37	0.00
110.00	0.00	983	160.37	0.00
110.40	0.00	976	160.36	0.00
110.80	0.00	970	160.36	0.00
111.20	0.00	963	160.36	0.00
111.60	0.00	956	160.36	0.00
112.00	0.00	949	160.35	0.00
112.40	0.00	942	160.35	0.00
112.80	0.00	935	160.35	0.00
113.20	0.00	928	160.35	0.00
113.60	0.00	921	160.35	0.00
114.00	0.00	914	160.34	0.00
114.40	0.00	908	160.34	0.00
114.80	0.00	901	160.34	0.00
115.20	0.00	894	160.34	0.00
115.60	0.00	887	160.34	0.00
116.00	0.00	880	160.33	0.00
116.40	0.00	874	160.33	0.00
116.80	0.00	867	160.33	0.00
117.20	0.00	860	160.33	0.00
117.60	0.00	853	160.33	0.00
118.00	0.00	847	160.32	0.00
118.40	0.00	840	160.32	0.00
118.80	0.00	833	160.32	0.00
119.20	0.00	827	160.32	0.00
119.60	0.00	820	160.32	0.00
120.00	0.00	813	160.31	0.00
120.40	0.00	807	160.31	0.00
120.80	0.00	800	160.31	0.00
121.20	0.00	793	160.31	0.00
121.60	0.00	787	160.31	0.00
122.00	0.00	780	160.30	0.00
122.40	0.00	774	160.30	0.00
122.80	0.00	767	160.30	0.00
123.20	0.00	761	160.30	0.00
123.60	0.00	754	160.29	0.00
124.00	0.00	748	160.29	0.00
124.40	0.00	741	160.28	0.00
124.80	0.00	735	160.28	0.00
125.20	0.00	728	160.27	0.00
125.60	0.00	722	160.27	0.00
126.00	0.00	716	160.27	0.00
126.40	0.00	709	160.26	0.00
126.80	0.00	703	160.26	0.00

Hydrograph for Pond 2P: UG2 (continued)

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
127.20	0.00	697	160.25	0.00
127.60	0.00	691	160.25	0.00
128.00	0.00	684	160.25	0.00
128.40	0.00	678	160.24	0.00
128.80	0.00	672	160.24	0.00
129.20	0.00	666	160.23	0.00
129.60	0.00	660	160.23	0.00
130.00	0.00	654	160.23	0.00
130.40	0.00	648	160.22	0.00
130.80	0.00	642	160.22	0.00
131.20	0.00	636	160.21	0.00
131.60	0.00	630	160.21	0.00
132.00	0.00	624	160.21	0.00
132.40	0.00	618	160.20	0.00
132.80	0.00	613	160.20	0.00
133.20	0.00	607	160.20	0.00
133.60	0.00	601	160.19	0.00
134.00	0.00	595	160.19	0.00
134.40	0.00	590	160.18	0.00
134.80	0.00	584	160.18	0.00
135.20	0.00	578	160.18	0.00
135.60	0.00	573	160.17	0.00
136.00	0.00	567	160.17	0.00
136.40	0.00	561	160.17	0.00
136.80	0.00	556	160.16	0.00
137.20	0.00	550	160.16	0.00
137.60	0.00	545	160.16	0.00
138.00	0.00	539	160.15	0.00
138.40	0.00	534	160.15	0.00
138.80	0.00	529	160.14	0.00
139.20	0.00	523	160.14	0.00
139.60	0.00	518	160.14	0.00
140.00	0.00	513	160.13	0.00
140.40	0.00	507	160.13	0.00
140.80	0.00	502	160.13	0.00
141.20	0.00	497	160.12	0.00
141.60	0.00	492	160.12	0.00
142.00	0.00	486	160.12	0.00
142.40	0.00	481	160.11	0.00
142.80	0.00	476	160.11	0.00
143.20	0.00	471	160.11	0.00
143.60	0.00	466	160.10	0.00
144.00	0.00	461	160.10	0.00
144.40	0.00	456	160.10	0.00
144.80	0.00	451	160.09	0.00
145.20	0.00	446	160.09	0.00
145.60	0.00	441	160.09	0.00
146.00	0.00	436	160.08	0.00
146.40	0.00	432	160.08	0.00
146.80	0.00	427	160.08	0.00
147.20	0.00	422	160.08	0.00
147.60	0.00	417	160.07	0.00
148.00	0.00	413	160.07	0.00

Hydrograph for Pond 2P: UG2 (continued)

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
148.40	0.00	408	160.07	0.00
148.80	0.00	403	160.06	0.00
149.20	0.00	399	160.06	0.00
149.60	0.00	394	160.06	0.00
150.00	0.00	389	160.05	0.00
150.40	0.00	385	160.05	0.00
150.80	0.00	380	160.05	0.00
151.20	0.00	376	160.05	0.00
151.60	0.00	371	160.04	0.00
152.00	0.00	367	160.04	0.00
152.40	0.00	363	160.04	0.00
152.80	0.00	358	160.03	0.00
153.20	0.00	354	160.03	0.00
153.60	0.00	349	160.03	0.00
154.00	0.00	345	160.03	0.00
154.40	0.00	341	160.02	0.00
154.80	0.00	337	160.02	0.00
155.20	0.00	333	160.02	0.00
155.60	0.00	328	160.01	0.00
156.00	0.00	324	160.01	0.00
156.40	0.00	320	160.01	0.00
156.80	0.00	316	160.01	0.00
157.20	0.00	312	160.00	0.00
157.60	0.00	308	160.00	0.00
158.00	0.00	304	160.00	0.00
158.40	0.00	300	160.00	0.00
158.80	0.00	296	159.99	0.00
159.20	0.00	292	159.99	0.00
159.60	0.00	288	159.99	0.00
160.00	0.00	284	159.99	0.00
160.40	0.00	281	159.98	0.00
160.80	0.00	277	159.98	0.00
161.20	0.00	273	159.98	0.00
161.60	0.00	269	159.98	0.00
162.00	0.00	266	159.97	0.00
162.40	0.00	262	159.97	0.00
162.80	0.00	258	159.97	0.00
163.20	0.00	255	159.97	0.00
163.60	0.00	251	159.96	0.00
164.00	0.00	247	159.96	0.00
164.40	0.00	244	159.96	0.00
164.80	0.00	240	159.96	0.00
165.20	0.00	237	159.95	0.00
165.60	0.00	234	159.95	0.00
166.00	0.00	230	159.95	0.00
166.40	0.00	227	159.95	0.00
166.80	0.00	223	159.95	0.00
167.20	0.00	220	159.94	0.00
167.60	0.00	217	159.94	0.00
168.00	0.00	213	159.94	0.00

Summary for Pond 3P: UG3

Inflow Area = 19,646 sf, 85.14% Impervious, Inflow Depth = 6.35" for 100-yr event
Inflow = 4.75 cfs @ 11.95 hrs, Volume= 10,401 cf
Outflow = 1.01 cfs @ 12.11 hrs, Volume= 10,400 cf, Atten= 79%, Lag= 9.2 min
Primary = 1.01 cfs @ 12.11 hrs, Volume= 10,400 cf
Routed to Link 10L : POST-DEV TO DA #1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-168.00 hrs, dt= 0.04 hrs / 2
Peak Elev= 162.36' @ 12.11 hrs Surf.Area= 2,917 sf Storage= 4,129 cf

Plug-Flow detention time= 73.9 min calculated for 10,400 cf (100% of inflow)
Center-of-Mass det. time= 73.5 min (849.6 - 776.1)

Volume	Invert	Avail.Storage	Storage Description
#1A	160.28'	2,010 cf	**44.00'W x 66.30'L x 2.71'H Field A** 7,901 cf Overall - 2,875 cf Embedded = 5,026 cf x 40.0% Voids
#2A	160.78'	2,875 cf	**Cultec R-180** x 130 Inside #1 Effective Size= 33.6"W x 20.0"H => 3.44 sf x 6.33'L = 21.8 cf Overall Size= 36.0"W x 20.5"H x 7.33'L with 1.00' Overlap Row Length Adjustment= +1.00' x 3.44 sf x 13 rows
		4,885 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Device 4	160.28'	**3.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#2	Device 4	160.97'	**6.0" W x 3.0" H Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#3	Device 4	162.50'	**4.0' long Broad-Crested Rectangular Weir** Head (feet) 4.00 Coef. (English) 3.33
#4	Primary	160.28'	**18.0" Round Culvert** L= 36.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 160.28' / 160.10' S= 0.0050 '/' Cc= 0.900 n= 0.012, Flow Area= 1.77 sf

Primary OutFlow Max=1.01 cfs @ 12.11 hrs HW=162.35' TW=0.00' (Dynamic Tailwater)
└**4=Culvert** (Passes 1.01 cfs of 8.58 cfs potential flow)
  ├**1=Orifice/Grate** (Orifice Controls 0.33 cfs @ 6.72 fps)
  ├**2=Orifice/Grate** (Orifice Controls 0.68 cfs @ 5.40 fps)
  └**3=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond 3P: UG3 - Chamber Wizard Field A

Chamber Model = Cultec R-180 (Cultec Recharger® 180HD)
Effective Size= 33.6"W x 20.0"H => 3.44 sf x 6.33'L = 21.8 cf
Overall Size= 36.0"W x 20.5"H x 7.33'L with 1.00' Overlap
Row Length Adjustment= +1.00' x 3.44 sf x 13 rows

36.0" Wide + 3.0" Spacing = 39.0" C-C Row Spacing

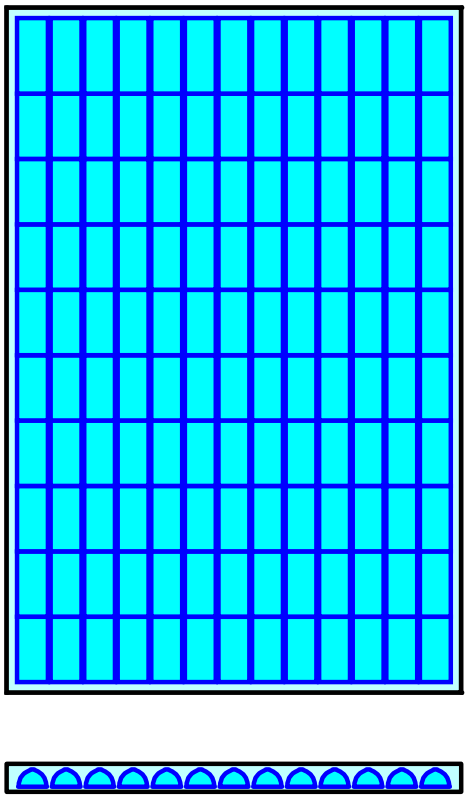
10 Chambers/Row x 6.33' Long +1.00' Row Adjustment = 64.30' Row Length +12.0" End Stone x 2 = 66.30' Base Length
13 Rows x 36.0" Wide + 3.0" Spacing x 12 + 12.0" Side Stone x 2 = 44.00' Base Width
6.0" Stone Base + 20.5" Chamber Height + 6.0" Stone Cover = 2.71' Field Height

130 Chambers x 21.8 cf +1.00' Row Adjustment x 3.44 sf x 13 Rows = 2,875.1 cf Chamber Storage

7,900.7 cf Field - 2,875.1 cf Chambers = 5,025.7 cf Stone x 40.0% Voids = 2,010.3 cf Stone Storage

Chamber Storage + Stone Storage = 4,885.3 cf = 0.112 af
Overall Storage Efficiency = 61.8%
Overall System Size = 66.30' x 44.00' x 2.71'

130 Chambers
292.6 cy Field
186.1 cy Stone



Hydrograph for Pond 3P: UG3

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
0.00	0.00	0	160.28	0.00
0.40	0.00	0	160.28	0.00
0.80	0.00	0	160.28	0.00
1.20	0.00	0	160.28	0.00
1.60	0.00	0	160.28	0.00
2.00	0.00	0	160.28	0.00
2.40	0.00	0	160.28	0.00
2.80	0.00	0	160.28	0.00
3.20	0.00	1	160.28	0.00
3.60	0.00	6	160.29	0.00
4.00	0.01	15	160.29	0.00
4.40	0.01	27	160.30	0.00
4.80	0.01	42	160.32	0.00
5.20	0.02	59	160.33	0.01
5.60	0.02	77	160.35	0.01
6.00	0.02	94	160.36	0.01
6.40	0.03	110	160.37	0.02
6.80	0.03	125	160.39	0.02
7.20	0.04	138	160.40	0.03
7.60	0.04	151	160.41	0.03
8.00	0.04	163	160.42	0.04
8.40	0.05	177	160.43	0.04
8.80	0.06	197	160.45	0.05
9.20	0.07	220	160.47	0.06
9.60	0.08	239	160.49	0.07
10.00	0.10	264	160.51	0.08
10.40	0.13	306	160.54	0.09
10.80	0.17	375	160.60	0.10
11.20	0.24	489	160.70	0.13
11.60	**0.57**	735	160.84	0.16
12.00	**3.96**	**3,665**	**162.09**	**0.91**
12.40	0.43	**3,717**	**162.12**	**0.92**
12.80	0.25	2,957	161.75	0.76
13.20	0.19	2,287	161.47	0.61
13.60	0.16	1,775	161.26	0.45
14.00	0.13	1,452	161.13	0.30
14.40	0.12	1,259	161.05	0.22
14.80	0.11	1,128	161.00	0.19
15.20	0.10	1,018	160.95	0.17
15.60	0.09	907	160.91	0.17
16.00	0.08	793	160.86	0.16
16.40	0.08	680	160.82	0.15
16.80	0.07	573	160.77	0.14
17.20	0.07	480	160.69	0.13
17.60	0.07	406	160.63	0.11
18.00	0.06	346	160.58	0.10
18.40	0.06	301	160.54	0.09
18.80	0.06	266	160.51	0.08
19.20	0.05	240	160.49	0.07
19.60	0.05	221	160.47	0.06
20.00	0.04	207	160.46	0.05
20.40	0.04	197	160.45	0.05
20.80	0.04	191	160.44	0.05

Hydrograph for Pond 3P: UG3 (continued)

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
21.20	0.04	186	160.44	0.04
21.60	0.04	183	160.44	0.04
22.00	0.04	180	160.43	0.04
22.40	0.04	178	160.43	0.04
22.80	0.04	176	160.43	0.04
23.20	0.04	174	160.43	0.04
23.60	0.04	173	160.43	0.04
24.00	0.04	171	160.43	0.04
24.40	0.00	134	160.39	0.03
24.80	0.00	105	160.37	0.02
25.20	0.00	85	160.35	0.01
25.60	0.00	72	160.34	0.01
26.00	0.00	62	160.33	0.01
26.40	0.00	54	160.33	0.00
26.80	0.00	48	160.32	0.00
27.20	0.00	44	160.32	0.00
27.60	0.00	40	160.31	0.00
28.00	0.00	36	160.31	0.00
28.40	0.00	34	160.31	0.00
28.80	0.00	31	160.31	0.00
29.20	0.00	29	160.30	0.00
29.60	0.00	27	160.30	0.00
30.00	0.00	26	160.30	0.00
30.40	0.00	24	160.30	0.00
30.80	0.00	23	160.30	0.00
31.20	0.00	22	160.30	0.00
31.60	0.00	21	160.30	0.00
32.00	0.00	20	160.30	0.00
32.40	0.00	19	160.30	0.00
32.80	0.00	18	160.30	0.00
33.20	0.00	17	160.29	0.00
33.60	0.00	17	160.29	0.00
34.00	0.00	16	160.29	0.00
34.40	0.00	15	160.29	0.00
34.80	0.00	15	160.29	0.00
35.20	0.00	14	160.29	0.00
35.60	0.00	14	160.29	0.00
36.00	0.00	13	160.29	0.00
36.40	0.00	13	160.29	0.00
36.80	0.00	13	160.29	0.00
37.20	0.00	12	160.29	0.00
37.60	0.00	12	160.29	0.00
38.00	0.00	12	160.29	0.00
38.40	0.00	11	160.29	0.00
38.80	0.00	11	160.29	0.00
39.20	0.00	11	160.29	0.00
39.60	0.00	10	160.29	0.00
40.00	0.00	10	160.29	0.00
40.40	0.00	10	160.29	0.00
40.80	0.00	10	160.29	0.00
41.20	0.00	9	160.29	0.00
41.60	0.00	9	160.29	0.00
42.00	0.00	9	160.29	0.00

Hydrograph for Pond 3P: UG3 (continued)

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
42.40	0.00	9	160.29	0.00
42.80	0.00	9	160.29	0.00
43.20	0.00	9	160.29	0.00
43.60	0.00	8	160.29	0.00
44.00	0.00	8	160.29	0.00
44.40	0.00	8	160.29	0.00
44.80	0.00	8	160.29	0.00
45.20	0.00	8	160.29	0.00
45.60	0.00	8	160.29	0.00
46.00	0.00	7	160.29	0.00
46.40	0.00	7	160.29	0.00
46.80	0.00	7	160.29	0.00
47.20	0.00	7	160.29	0.00
47.60	0.00	7	160.29	0.00
48.00	0.00	7	160.29	0.00
48.40	0.00	7	160.29	0.00
48.80	0.00	7	160.29	0.00
49.20	0.00	7	160.29	0.00
49.60	0.00	6	160.29	0.00
50.00	0.00	6	160.29	0.00
50.40	0.00	6	160.29	0.00
50.80	0.00	6	160.29	0.00
51.20	0.00	6	160.29	0.00
51.60	0.00	6	160.29	0.00
52.00	0.00	6	160.29	0.00
52.40	0.00	6	160.28	0.00
52.80	0.00	6	160.28	0.00
53.20	0.00	6	160.28	0.00
53.60	0.00	6	160.28	0.00
54.00	0.00	6	160.28	0.00
54.40	0.00	5	160.28	0.00
54.80	0.00	5	160.28	0.00
55.20	0.00	5	160.28	0.00
55.60	0.00	5	160.28	0.00
56.00	0.00	5	160.28	0.00
56.40	0.00	5	160.28	0.00
56.80	0.00	5	160.28	0.00
57.20	0.00	5	160.28	0.00
57.60	0.00	5	160.28	0.00
58.00	0.00	5	160.28	0.00
58.40	0.00	5	160.28	0.00
58.80	0.00	5	160.28	0.00
59.20	0.00	5	160.28	0.00
59.60	0.00	5	160.28	0.00
60.00	0.00	5	160.28	0.00
60.40	0.00	5	160.28	0.00
60.80	0.00	5	160.28	0.00
61.20	0.00	4	160.28	0.00
61.60	0.00	4	160.28	0.00
62.00	0.00	4	160.28	0.00
62.40	0.00	4	160.28	0.00
62.80	0.00	4	160.28	0.00
63.20	0.00	4	160.28	0.00

Hydrograph for Pond 3P: UG3 (continued)

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
63.60	0.00	4	160.28	0.00
64.00	0.00	4	160.28	0.00
64.40	0.00	4	160.28	0.00
64.80	0.00	4	160.28	0.00
65.20	0.00	4	160.28	0.00
65.60	0.00	4	160.28	0.00
66.00	0.00	4	160.28	0.00
66.40	0.00	4	160.28	0.00
66.80	0.00	4	160.28	0.00
67.20	0.00	4	160.28	0.00
67.60	0.00	4	160.28	0.00
68.00	0.00	4	160.28	0.00
68.40	0.00	4	160.28	0.00
68.80	0.00	4	160.28	0.00
69.20	0.00	4	160.28	0.00
69.60	0.00	4	160.28	0.00
70.00	0.00	4	160.28	0.00
70.40	0.00	4	160.28	0.00
70.80	0.00	4	160.28	0.00
71.20	0.00	4	160.28	0.00
71.60	0.00	3	160.28	0.00
72.00	0.00	3	160.28	0.00
72.40	0.00	3	160.28	0.00
72.80	0.00	3	160.28	0.00
73.20	0.00	3	160.28	0.00
73.60	0.00	3	160.28	0.00
74.00	0.00	3	160.28	0.00
74.40	0.00	3	160.28	0.00
74.80	0.00	3	160.28	0.00
75.20	0.00	3	160.28	0.00
75.60	0.00	3	160.28	0.00
76.00	0.00	3	160.28	0.00
76.40	0.00	3	160.28	0.00
76.80	0.00	3	160.28	0.00
77.20	0.00	3	160.28	0.00
77.60	0.00	3	160.28	0.00
78.00	0.00	3	160.28	0.00
78.40	0.00	3	160.28	0.00
78.80	0.00	3	160.28	0.00
79.20	0.00	3	160.28	0.00
79.60	0.00	3	160.28	0.00
80.00	0.00	3	160.28	0.00
80.40	0.00	3	160.28	0.00
80.80	0.00	3	160.28	0.00
81.20	0.00	3	160.28	0.00
81.60	0.00	3	160.28	0.00
82.00	0.00	3	160.28	0.00
82.40	0.00	3	160.28	0.00
82.80	0.00	3	160.28	0.00
83.20	0.00	3	160.28	0.00
83.60	0.00	3	160.28	0.00
84.00	0.00	3	160.28	0.00
84.40	0.00	3	160.28	0.00

Hydrograph for Pond 3P: UG3 (continued)

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
84.80	0.00	3	160.28	0.00
85.20	0.00	3	160.28	0.00
85.60	0.00	3	160.28	0.00
86.00	0.00	3	160.28	0.00
86.40	0.00	3	160.28	0.00
86.80	0.00	3	160.28	0.00
87.20	0.00	3	160.28	0.00
87.60	0.00	3	160.28	0.00
88.00	0.00	3	160.28	0.00
88.40	0.00	3	160.28	0.00
88.80	0.00	3	160.28	0.00
89.20	0.00	3	160.28	0.00
89.60	0.00	3	160.28	0.00
90.00	0.00	3	160.28	0.00
90.40	0.00	3	160.28	0.00
90.80	0.00	3	160.28	0.00
91.20	0.00	3	160.28	0.00
91.60	0.00	2	160.28	0.00
92.00	0.00	2	160.28	0.00
92.40	0.00	2	160.28	0.00
92.80	0.00	2	160.28	0.00
93.20	0.00	2	160.28	0.00
93.60	0.00	2	160.28	0.00
94.00	0.00	2	160.28	0.00
94.40	0.00	2	160.28	0.00
94.80	0.00	2	160.28	0.00
95.20	0.00	2	160.28	0.00
95.60	0.00	2	160.28	0.00
96.00	0.00	2	160.28	0.00
96.40	0.00	2	160.28	0.00
96.80	0.00	2	160.28	0.00
97.20	0.00	2	160.28	0.00
97.60	0.00	2	160.28	0.00
98.00	0.00	2	160.28	0.00
98.40	0.00	2	160.28	0.00
98.80	0.00	2	160.28	0.00
99.20	0.00	2	160.28	0.00
99.60	0.00	2	160.28	0.00
100.00	0.00	2	160.28	0.00
100.40	0.00	2	160.28	0.00
100.80	0.00	2	160.28	0.00
101.20	0.00	2	160.28	0.00
101.60	0.00	2	160.28	0.00
102.00	0.00	2	160.28	0.00
102.40	0.00	2	160.28	0.00
102.80	0.00	2	160.28	0.00
103.20	0.00	2	160.28	0.00
103.60	0.00	2	160.28	0.00
104.00	0.00	2	160.28	0.00
104.40	0.00	2	160.28	0.00
104.80	0.00	2	160.28	0.00
105.20	0.00	2	160.28	0.00
105.60	0.00	2	160.28	0.00

Hydrograph for Pond 3P: UG3 (continued)

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
106.00	0.00	2	160.28	0.00
106.40	0.00	2	160.28	0.00
106.80	0.00	2	160.28	0.00
107.20	0.00	2	160.28	0.00
107.60	0.00	2	160.28	0.00
108.00	0.00	2	160.28	0.00
108.40	0.00	2	160.28	0.00
108.80	0.00	2	160.28	0.00
109.20	0.00	2	160.28	0.00
109.60	0.00	2	160.28	0.00
110.00	0.00	2	160.28	0.00
110.40	0.00	2	160.28	0.00
110.80	0.00	2	160.28	0.00
111.20	0.00	2	160.28	0.00
111.60	0.00	2	160.28	0.00
112.00	0.00	2	160.28	0.00
112.40	0.00	2	160.28	0.00
112.80	0.00	2	160.28	0.00
113.20	0.00	2	160.28	0.00
113.60	0.00	2	160.28	0.00
114.00	0.00	2	160.28	0.00
114.40	0.00	2	160.28	0.00
114.80	0.00	2	160.28	0.00
115.20	0.00	2	160.28	0.00
115.60	0.00	2	160.28	0.00
116.00	0.00	2	160.28	0.00
116.40	0.00	2	160.28	0.00
116.80	0.00	2	160.28	0.00
117.20	0.00	2	160.28	0.00
117.60	0.00	2	160.28	0.00
118.00	0.00	2	160.28	0.00
118.40	0.00	2	160.28	0.00
118.80	0.00	2	160.28	0.00
119.20	0.00	2	160.28	0.00
119.60	0.00	2	160.28	0.00
120.00	0.00	2	160.28	0.00
120.40	0.00	2	160.28	0.00
120.80	0.00	2	160.28	0.00
121.20	0.00	2	160.28	0.00
121.60	0.00	2	160.28	0.00
122.00	0.00	2	160.28	0.00
122.40	0.00	2	160.28	0.00
122.80	0.00	2	160.28	0.00
123.20	0.00	2	160.28	0.00
123.60	0.00	2	160.28	0.00
124.00	0.00	2	160.28	0.00
124.40	0.00	2	160.28	0.00
124.80	0.00	2	160.28	0.00
125.20	0.00	2	160.28	0.00
125.60	0.00	2	160.28	0.00
126.00	0.00	2	160.28	0.00
126.40	0.00	2	160.28	0.00
126.80	0.00	2	160.28	0.00

Hydrograph for Pond 3P: UG3 (continued)

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
127.20	0.00	2	160.28	0.00
127.60	0.00	2	160.28	0.00
128.00	0.00	2	160.28	0.00
128.40	0.00	2	160.28	0.00
128.80	0.00	2	160.28	0.00
129.20	0.00	2	160.28	0.00
129.60	0.00	2	160.28	0.00
130.00	0.00	2	160.28	0.00
130.40	0.00	2	160.28	0.00
130.80	0.00	2	160.28	0.00
131.20	0.00	2	160.28	0.00
131.60	0.00	2	160.28	0.00
132.00	0.00	2	160.28	0.00
132.40	0.00	2	160.28	0.00
132.80	0.00	2	160.28	0.00
133.20	0.00	2	160.28	0.00
133.60	0.00	2	160.28	0.00
134.00	0.00	2	160.28	0.00
134.40	0.00	2	160.28	0.00
134.80	0.00	2	160.28	0.00
135.20	0.00	2	160.28	0.00
135.60	0.00	2	160.28	0.00
136.00	0.00	2	160.28	0.00
136.40	0.00	2	160.28	0.00
136.80	0.00	2	160.28	0.00
137.20	0.00	2	160.28	0.00
137.60	0.00	2	160.28	0.00
138.00	0.00	2	160.28	0.00
138.40	0.00	2	160.28	0.00
138.80	0.00	2	160.28	0.00
139.20	0.00	2	160.28	0.00
139.60	0.00	2	160.28	0.00
140.00	0.00	2	160.28	0.00
140.40	0.00	2	160.28	0.00
140.80	0.00	2	160.28	0.00
141.20	0.00	2	160.28	0.00
141.60	0.00	2	160.28	0.00
142.00	0.00	1	160.28	0.00
142.40	0.00	1	160.28	0.00
142.80	0.00	1	160.28	0.00
143.20	0.00	1	160.28	0.00
143.60	0.00	1	160.28	0.00
144.00	0.00	1	160.28	0.00
144.40	0.00	1	160.28	0.00
144.80	0.00	1	160.28	0.00
145.20	0.00	1	160.28	0.00
145.60	0.00	1	160.28	0.00
146.00	0.00	1	160.28	0.00
146.40	0.00	1	160.28	0.00
146.80	0.00	1	160.28	0.00
147.20	0.00	1	160.28	0.00
147.60	0.00	1	160.28	0.00
148.00	0.00	1	160.28	0.00

Hydrograph for Pond 3P: UG3 (continued)

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
148.40	0.00	1	160.28	0.00
148.80	0.00	1	160.28	0.00
149.20	0.00	1	160.28	0.00
149.60	0.00	1	160.28	0.00
150.00	0.00	1	160.28	0.00
150.40	0.00	1	160.28	0.00
150.80	0.00	1	160.28	0.00
151.20	0.00	1	160.28	0.00
151.60	0.00	1	160.28	0.00
152.00	0.00	1	160.28	0.00
152.40	0.00	1	160.28	0.00
152.80	0.00	1	160.28	0.00
153.20	0.00	1	160.28	0.00
153.60	0.00	1	160.28	0.00
154.00	0.00	1	160.28	0.00
154.40	0.00	1	160.28	0.00
154.80	0.00	1	160.28	0.00
155.20	0.00	1	160.28	0.00
155.60	0.00	1	160.28	0.00
156.00	0.00	1	160.28	0.00
156.40	0.00	1	160.28	0.00
156.80	0.00	1	160.28	0.00
157.20	0.00	1	160.28	0.00
157.60	0.00	1	160.28	0.00
158.00	0.00	1	160.28	0.00
158.40	0.00	1	160.28	0.00
158.80	0.00	1	160.28	0.00
159.20	0.00	1	160.28	0.00
159.60	0.00	1	160.28	0.00
160.00	0.00	1	160.28	0.00
160.40	0.00	1	160.28	0.00
160.80	0.00	1	160.28	0.00
161.20	0.00	1	160.28	0.00
161.60	0.00	1	160.28	0.00
162.00	0.00	1	160.28	0.00
162.40	0.00	1	160.28	0.00
162.80	0.00	1	160.28	0.00
163.20	0.00	1	160.28	0.00
163.60	0.00	1	160.28	0.00
164.00	0.00	1	160.28	0.00
164.40	0.00	1	160.28	0.00
164.80	0.00	1	160.28	0.00
165.20	0.00	1	160.28	0.00
165.60	0.00	1	160.28	0.00
166.00	0.00	1	160.28	0.00
166.40	0.00	1	160.28	0.00
166.80	0.00	1	160.28	0.00
167.20	0.00	1	160.28	0.00
167.60	0.00	1	160.28	0.00
168.00	0.00	1	160.28	0.00

Summary for Pond 1P: UG1

Inflow Area = 82,459 sf, 99.52% Impervious, Inflow Depth = 0.99" for MRC event
Inflow = 5.32 cfs @ 1.09 hrs, Volume= 6,773 cf
Outflow = 0.02 cfs @ 2.13 hrs, Volume= 6,682 cf, Atten= 100%, Lag= 62.6 min
Primary = 0.02 cfs @ 2.13 hrs, Volume= 6,682 cf
Routed to Link 10L : POST-DEV TO DA #1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-168.00 hrs, dt= 0.04 hrs / 2
Peak Elev= 158.38' @ 2.13 hrs Surf.Area= 13,041 sf Storage= 6,674 cf

Plug-Flow detention time= 2,875.3 min calculated for 6,681 cf (99% of inflow)
Center-of-Mass det. time= 2,876.3 min (2,945.7 - 69.5)

Volume	Invert	Avail.Storage	Storage Description
#1A	157.53'	9,785 cf	**120.75'W x 108.00'L x 3.21'H Field A** 41,840 cf Overall - 17,377 cf Embedded = 24,463 cf x 40.0% Voids
#2A	158.03'	17,377 cf	**Cultec R-280HD** x 405 Inside #1 Effective Size= 46.9"W x 26.0"H => 6.07 sf x 7.00'L = 42.5 cf Overall Size= 47.0"W x 26.5"H x 8.00'L with 1.00' Overlap Row Length Adjustment= +1.00' x 6.07 sf x 27 rows
		27,162 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Device 4	157.53'	**1.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#2	Device 4	158.39'	**40.0" W x 4.0" H Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#3	Device 4	160.24'	**4.0' long Broad-Crested Rectangular Weir** Head (feet) 4.00 Coef. (English) 3.33
#4	Primary	157.53'	**18.0" Round Culvert** L= 66.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 157.53' / 157.20' S= 0.0050 '/' Cc= 0.900 n= 0.012, Flow Area= 1.77 sf

Primary OutFlow Max=0.02 cfs @ 2.13 hrs HW=158.38' TW=0.00' (Dynamic Tailwater)
└**4=Culvert** (Passes 0.02 cfs of 2.57 cfs potential flow)
  ├**1=Orifice/Grate** (Orifice Controls 0.02 cfs @ 4.32 fps)
  ├**2=Orifice/Grate** (Controls 0.00 cfs)
  └**3=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond 1P: UG1 - Chamber Wizard Field A

Chamber Model = Cultec R-280HD (Cultec Recharger® 280HD)
Effective Size= 46.9"W x 26.0"H => 6.07 sf x 7.00'L = 42.5 cf
Overall Size= 47.0"W x 26.5"H x 8.00'L with 1.00' Overlap
Row Length Adjustment= +1.00' x 6.07 sf x 27 rows

47.0" Wide + 6.0" Spacing = 53.0" C-C Row Spacing

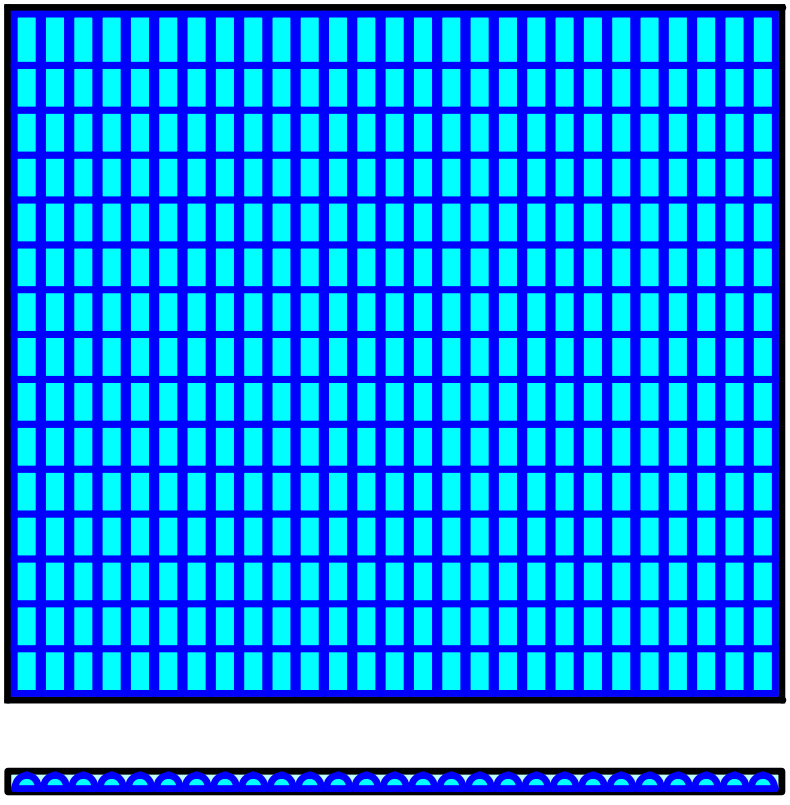
15 Chambers/Row x 7.00' Long +1.00' Row Adjustment = 106.00' Row Length +12.0" End Stone x 2 = 108.00' Base Length
27 Rows x 47.0" Wide + 6.0" Spacing x 26 + 12.0" Side Stone x 2 = 120.75' Base Width
6.0" Stone Base + 26.5" Chamber Height + 6.0" Stone Cover = 3.21' Field Height

405 Chambers x 42.5 cf +1.00' Row Adjustment x 6.07 sf x 27 Rows = 17,377.3 cf Chamber Storage

41,839.9 cf Field - 17,377.3 cf Chambers = 24,462.5 cf Stone x 40.0% Voids = 9,785.0 cf Stone Storage

Chamber Storage + Stone Storage = 27,162.4 cf = 0.624 af
Overall Storage Efficiency = 64.9%
Overall System Size = 108.00' x 120.75' x 3.21'

405 Chambers
1,549.6 cy Field
906.0 cy Stone



Hydrograph for Pond 1P: UG1

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
0.00	0.00	0	157.53	0.00
0.40	0.03	3	157.53	0.00
0.80	**0.57**	401	157.61	0.00
1.20	**2.52**	4,691	158.21	0.02
1.60	0.57	6,115	158.33	0.02
2.00	0.18	**6,637**	**158.37**	**0.02**
2.40	0.00	**6,653**	**158.38**	**0.02**
2.80	0.00	6,619	158.37	0.02
3.20	0.00	6,585	158.37	0.02
3.60	0.00	6,551	158.37	0.02
4.00	0.00	6,518	158.36	0.02
4.40	0.00	6,484	158.36	0.02
4.80	0.00	6,450	158.36	0.02
5.20	0.00	6,417	158.36	0.02
5.60	0.00	6,383	158.35	0.02
6.00	0.00	6,350	158.35	0.02
6.40	0.00	6,317	158.35	0.02
6.80	0.00	6,283	158.34	0.02
7.20	0.00	6,250	158.34	0.02
7.60	0.00	6,217	158.34	0.02
8.00	0.00	6,184	158.34	0.02
8.40	0.00	6,151	158.33	0.02
8.80	0.00	6,118	158.33	0.02
9.20	0.00	6,085	158.33	0.02
9.60	0.00	6,052	158.32	0.02
10.00	0.00	6,019	158.32	0.02
10.40	0.00	5,987	158.32	0.02
10.80	0.00	5,954	158.32	0.02
11.20	0.00	5,921	158.31	0.02
11.60	0.00	5,889	158.31	0.02
12.00	0.00	5,856	158.31	0.02
12.40	0.00	5,824	158.30	0.02
12.80	0.00	5,792	158.30	0.02
13.20	0.00	5,759	158.30	0.02
13.60	0.00	5,727	158.30	0.02
14.00	0.00	5,695	158.29	0.02
14.40	0.00	5,663	158.29	0.02
14.80	0.00	5,631	158.29	0.02
15.20	0.00	5,599	158.29	0.02
15.60	0.00	5,567	158.28	0.02
16.00	0.00	5,535	158.28	0.02
16.40	0.00	5,503	158.28	0.02
16.80	0.00	5,472	158.27	0.02
17.20	0.00	5,440	158.27	0.02
17.60	0.00	5,408	158.27	0.02
18.00	0.00	5,377	158.27	0.02
18.40	0.00	5,345	158.26	0.02
18.80	0.00	5,314	158.26	0.02
19.20	0.00	5,283	158.26	0.02
19.60	0.00	5,251	158.26	0.02
20.00	0.00	5,220	158.25	0.02
20.40	0.00	5,189	158.25	0.02
20.80	0.00	5,158	158.25	0.02

Hydrograph for Pond 1P: UG1 (continued)

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
21.20	0.00	5,127	158.24	0.02
21.60	0.00	5,096	158.24	0.02
22.00	0.00	5,065	158.24	0.02
22.40	0.00	5,034	158.24	0.02
22.80	0.00	5,003	158.23	0.02
23.20	0.00	4,972	158.23	0.02
23.60	0.00	4,942	158.23	0.02
24.00	0.00	4,911	158.23	0.02
24.40	0.00	4,881	158.22	0.02
24.80	0.00	4,850	158.22	0.02
25.20	0.00	4,820	158.22	0.02
25.60	0.00	4,789	158.22	0.02
26.00	0.00	4,759	158.21	0.02
26.40	0.00	4,729	158.21	0.02
26.80	0.00	4,698	158.21	0.02
27.20	0.00	4,668	158.20	0.02
27.60	0.00	4,638	158.20	0.02
28.00	0.00	4,608	158.20	0.02
28.40	0.00	4,578	158.20	0.02
28.80	0.00	4,548	158.19	0.02
29.20	0.00	4,519	158.19	0.02
29.60	0.00	4,489	158.19	0.02
30.00	0.00	4,459	158.19	0.02
30.40	0.00	4,430	158.18	0.02
30.80	0.00	4,400	158.18	0.02
31.20	0.00	4,370	158.18	0.02
31.60	0.00	4,341	158.18	0.02
32.00	0.00	4,312	158.17	0.02
32.40	0.00	4,282	158.17	0.02
32.80	0.00	4,253	158.17	0.02
33.20	0.00	4,224	158.17	0.02
33.60	0.00	4,195	158.16	0.02
34.00	0.00	4,166	158.16	0.02
34.40	0.00	4,137	158.16	0.02
34.80	0.00	4,108	158.16	0.02
35.20	0.00	4,079	158.15	0.02
35.60	0.00	4,050	158.15	0.02
36.00	0.00	4,021	158.15	0.02
36.40	0.00	3,992	158.15	0.02
36.80	0.00	3,964	158.14	0.02
37.20	0.00	3,935	158.14	0.02
37.60	0.00	3,907	158.14	0.02
38.00	0.00	3,878	158.14	0.02
38.40	0.00	3,850	158.13	0.02
38.80	0.00	3,821	158.13	0.02
39.20	0.00	3,793	158.13	0.02
39.60	0.00	3,765	158.13	0.02
40.00	0.00	3,737	158.13	0.02
40.40	0.00	3,709	158.12	0.02
40.80	0.00	3,681	158.12	0.02
41.20	0.00	3,653	158.12	0.02
41.60	0.00	3,625	158.12	0.02
42.00	0.00	3,597	158.11	0.02

Hydrograph for Pond 1P: UG1 (continued)

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
42.40	0.00	3,569	158.11	0.02
42.80	0.00	3,541	158.11	0.02
43.20	0.00	3,514	158.11	0.02
43.60	0.00	3,486	158.10	0.02
44.00	0.00	3,458	158.10	0.02
44.40	0.00	3,431	158.10	0.02
44.80	0.00	3,403	158.10	0.02
45.20	0.00	3,376	158.09	0.02
45.60	0.00	3,349	158.09	0.02
46.00	0.00	3,322	158.09	0.02
46.40	0.00	3,294	158.09	0.02
46.80	0.00	3,267	158.09	0.02
47.20	0.00	3,240	158.08	0.02
47.60	0.00	3,213	158.08	0.02
48.00	0.00	3,186	158.08	0.02
48.40	0.00	3,159	158.08	0.02
48.80	0.00	3,132	158.07	0.02
49.20	0.00	3,106	158.07	0.02
49.60	0.00	3,079	158.07	0.02
50.00	0.00	3,052	158.07	0.02
50.40	0.00	3,026	158.07	0.02
50.80	0.00	2,999	158.06	0.02
51.20	0.00	2,973	158.06	0.02
51.60	0.00	2,946	158.06	0.02
52.00	0.00	2,920	158.06	0.02
52.40	0.00	2,894	158.05	0.02
52.80	0.00	2,867	158.05	0.02
53.20	0.00	2,841	158.05	0.02
53.60	0.00	2,815	158.05	0.02
54.00	0.00	2,789	158.05	0.02
54.40	0.00	2,763	158.04	0.02
54.80	0.00	2,737	158.04	0.02
55.20	0.00	2,711	158.04	0.02
55.60	0.00	2,685	158.04	0.02
56.00	0.00	2,660	158.03	0.02
56.40	0.00	2,634	158.03	0.02
56.80	0.00	2,608	158.03	0.02
57.20	0.00	2,583	158.03	0.02
57.60	0.00	2,557	158.02	0.02
58.00	0.00	2,532	158.02	0.02
58.40	0.00	2,507	158.01	0.02
58.80	0.00	2,482	158.01	0.02
59.20	0.00	2,457	158.00	0.02
59.60	0.00	2,433	158.00	0.02
60.00	0.00	2,408	157.99	0.02
60.40	0.00	2,384	157.99	0.02
60.80	0.00	2,359	157.98	0.02
61.20	0.00	2,335	157.98	0.02
61.60	0.00	2,311	157.97	0.02
62.00	0.00	2,287	157.97	0.02
62.40	0.00	2,263	157.96	0.02
62.80	0.00	2,240	157.96	0.02
63.20	0.00	2,216	157.95	0.02

Hydrograph for Pond 1P: UG1 (continued)

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
63.60	0.00	2,193	157.95	0.02
64.00	0.00	2,170	157.95	0.02
64.40	0.00	2,147	157.94	0.02
64.80	0.00	2,124	157.94	0.02
65.20	0.00	2,101	157.93	0.02
65.60	0.00	2,078	157.93	0.02
66.00	0.00	2,056	157.92	0.02
66.40	0.00	2,033	157.92	0.02
66.80	0.00	2,011	157.92	0.02
67.20	0.00	1,989	157.91	0.02
67.60	0.00	1,967	157.91	0.02
68.00	0.00	1,945	157.90	0.02
68.40	0.00	1,924	157.90	0.02
68.80	0.00	1,902	157.89	0.01
69.20	0.00	1,881	157.89	0.01
69.60	0.00	1,859	157.89	0.01
70.00	0.00	1,838	157.88	0.01
70.40	0.00	1,817	157.88	0.01
70.80	0.00	1,796	157.87	0.01
71.20	0.00	1,776	157.87	0.01
71.60	0.00	1,755	157.87	0.01
72.00	0.00	1,735	157.86	0.01
72.40	0.00	1,714	157.86	0.01
72.80	0.00	1,694	157.85	0.01
73.20	0.00	1,674	157.85	0.01
73.60	0.00	1,654	157.85	0.01
74.00	0.00	1,634	157.84	0.01
74.40	0.00	1,615	157.84	0.01
74.80	0.00	1,595	157.84	0.01
75.20	0.00	1,576	157.83	0.01
75.60	0.00	1,557	157.83	0.01
76.00	0.00	1,537	157.82	0.01
76.40	0.00	1,519	157.82	0.01
76.80	0.00	1,500	157.82	0.01
77.20	0.00	1,481	157.81	0.01
77.60	0.00	1,462	157.81	0.01
78.00	0.00	1,444	157.81	0.01
78.40	0.00	1,426	157.80	0.01
78.80	0.00	1,408	157.80	0.01
79.20	0.00	1,390	157.80	0.01
79.60	0.00	1,372	157.79	0.01
80.00	0.00	1,354	157.79	0.01
80.40	0.00	1,336	157.79	0.01
80.80	0.00	1,319	157.78	0.01
81.20	0.00	1,302	157.78	0.01
81.60	0.00	1,285	157.78	0.01
82.00	0.00	1,268	157.77	0.01
82.40	0.00	1,251	157.77	0.01
82.80	0.00	1,234	157.77	0.01
83.20	0.00	1,217	157.76	0.01
83.60	0.00	1,201	157.76	0.01
84.00	0.00	1,184	157.76	0.01
84.40	0.00	1,168	157.75	0.01

Hydrograph for Pond 1P: UG1 (continued)

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
84.80	0.00	1,152	157.75	0.01
85.20	0.00	1,136	157.75	0.01
85.60	0.00	1,120	157.74	0.01
86.00	0.00	1,105	157.74	0.01
86.40	0.00	1,089	157.74	0.01
86.80	0.00	1,074	157.74	0.01
87.20	0.00	1,059	157.73	0.01
87.60	0.00	1,043	157.73	0.01
88.00	0.00	1,028	157.73	0.01
88.40	0.00	1,014	157.72	0.01
88.80	0.00	999	157.72	0.01
89.20	0.00	984	157.72	0.01
89.60	0.00	970	157.72	0.01
90.00	0.00	956	157.71	0.01
90.40	0.00	941	157.71	0.01
90.80	0.00	927	157.71	0.01
91.20	0.00	914	157.71	0.01
91.60	0.00	900	157.70	0.01
92.00	0.00	886	157.70	0.01
92.40	0.00	873	157.70	0.01
92.80	0.00	859	157.69	0.01
93.20	0.00	846	157.69	0.01
93.60	0.00	833	157.69	0.01
94.00	0.00	820	157.69	0.01
94.40	0.00	807	157.68	0.01
94.80	0.00	795	157.68	0.01
95.20	0.00	782	157.68	0.01
95.60	0.00	770	157.68	0.01
96.00	0.00	758	157.68	0.01
96.40	0.00	746	157.67	0.01
96.80	0.00	734	157.67	0.01
97.20	0.00	722	157.67	0.01
97.60	0.00	710	157.67	0.01
98.00	0.00	698	157.66	0.01
98.40	0.00	687	157.66	0.01
98.80	0.00	676	157.66	0.01
99.20	0.00	665	157.66	0.01
99.60	0.00	654	157.66	0.01
100.00	0.00	643	157.65	0.01
100.40	0.00	632	157.65	0.01
100.80	0.00	621	157.65	0.01
101.20	0.00	611	157.65	0.01
101.60	0.00	601	157.65	0.01
102.00	0.00	590	157.64	0.01
102.40	0.00	580	157.64	0.01
102.80	0.00	571	157.64	0.01
103.20	0.00	561	157.64	0.01
103.60	0.00	551	157.64	0.01
104.00	0.00	542	157.63	0.01
104.40	0.00	532	157.63	0.01
104.80	0.00	523	157.63	0.01
105.20	0.00	514	157.63	0.01
105.60	0.00	505	157.63	0.01

Hydrograph for Pond 1P: UG1 (continued)

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
106.00	0.00	496	157.63	0.01
106.40	0.00	488	157.62	0.01
106.80	0.00	479	157.62	0.01
107.20	0.00	471	157.62	0.01
107.60	0.00	462	157.62	0.01
108.00	0.00	454	157.62	0.01
108.40	0.00	446	157.62	0.01
108.80	0.00	438	157.61	0.01
109.20	0.00	431	157.61	0.01
109.60	0.00	423	157.61	0.01
110.00	0.00	416	157.61	0.01
110.40	0.00	408	157.61	0.01
110.80	0.00	401	157.61	0.00
111.20	0.00	394	157.61	0.00
111.60	0.00	387	157.60	0.00
112.00	0.00	380	157.60	0.00
112.40	0.00	374	157.60	0.00
112.80	0.00	367	157.60	0.00
113.20	0.00	361	157.60	0.00
113.60	0.00	355	157.60	0.00
114.00	0.00	349	157.60	0.00
114.40	0.00	343	157.60	0.00
114.80	0.00	337	157.59	0.00
115.20	0.00	331	157.59	0.00
115.60	0.00	326	157.59	0.00
116.00	0.00	321	157.59	0.00
116.40	0.00	315	157.59	0.00
116.80	0.00	310	157.59	0.00
117.20	0.00	306	157.59	0.00
117.60	0.00	301	157.59	0.00
118.00	0.00	296	157.59	0.00
118.40	0.00	291	157.59	0.00
118.80	0.00	287	157.59	0.00
119.20	0.00	283	157.58	0.00
119.60	0.00	278	157.58	0.00
120.00	0.00	274	157.58	0.00
120.40	0.00	270	157.58	0.00
120.80	0.00	266	157.58	0.00
121.20	0.00	263	157.58	0.00
121.60	0.00	259	157.58	0.00
122.00	0.00	255	157.58	0.00
122.40	0.00	252	157.58	0.00
122.80	0.00	248	157.58	0.00
123.20	0.00	245	157.58	0.00
123.60	0.00	241	157.58	0.00
124.00	0.00	238	157.58	0.00
124.40	0.00	235	157.58	0.00
124.80	0.00	232	157.57	0.00
125.20	0.00	229	157.57	0.00
125.60	0.00	226	157.57	0.00
126.00	0.00	223	157.57	0.00
126.40	0.00	220	157.57	0.00
126.80	0.00	217	157.57	0.00

Hydrograph for Pond 1P: UG1 (continued)

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
127.20	0.00	215	157.57	0.00
127.60	0.00	212	157.57	0.00
128.00	0.00	209	157.57	0.00
128.40	0.00	207	157.57	0.00
128.80	0.00	204	157.57	0.00
129.20	0.00	202	157.57	0.00
129.60	0.00	200	157.57	0.00
130.00	0.00	197	157.57	0.00
130.40	0.00	195	157.57	0.00
130.80	0.00	193	157.57	0.00
131.20	0.00	191	157.57	0.00
131.60	0.00	189	157.57	0.00
132.00	0.00	186	157.57	0.00
132.40	0.00	184	157.57	0.00
132.80	0.00	182	157.56	0.00
133.20	0.00	180	157.56	0.00
133.60	0.00	178	157.56	0.00
134.00	0.00	177	157.56	0.00
134.40	0.00	175	157.56	0.00
134.80	0.00	173	157.56	0.00
135.20	0.00	171	157.56	0.00
135.60	0.00	169	157.56	0.00
136.00	0.00	168	157.56	0.00
136.40	0.00	166	157.56	0.00
136.80	0.00	164	157.56	0.00
137.20	0.00	163	157.56	0.00
137.60	0.00	161	157.56	0.00
138.00	0.00	160	157.56	0.00
138.40	0.00	158	157.56	0.00
138.80	0.00	156	157.56	0.00
139.20	0.00	155	157.56	0.00
139.60	0.00	154	157.56	0.00
140.00	0.00	152	157.56	0.00
140.40	0.00	151	157.56	0.00
140.80	0.00	149	157.56	0.00
141.20	0.00	148	157.56	0.00
141.60	0.00	147	157.56	0.00
142.00	0.00	145	157.56	0.00
142.40	0.00	144	157.56	0.00
142.80	0.00	143	157.56	0.00
143.20	0.00	141	157.56	0.00
143.60	0.00	140	157.56	0.00
144.00	0.00	139	157.56	0.00
144.40	0.00	138	157.56	0.00
144.80	0.00	137	157.56	0.00
145.20	0.00	135	157.56	0.00
145.60	0.00	134	157.56	0.00
146.00	0.00	133	157.56	0.00
146.40	0.00	132	157.56	0.00
146.80	0.00	131	157.56	0.00
147.20	0.00	130	157.55	0.00
147.60	0.00	129	157.55	0.00
148.00	0.00	128	157.55	0.00

Hydrograph for Pond 1P: UG1 (continued)

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
148.40	0.00	127	157.55	0.00
148.80	0.00	126	157.55	0.00
149.20	0.00	125	157.55	0.00
149.60	0.00	124	157.55	0.00
150.00	0.00	123	157.55	0.00
150.40	0.00	122	157.55	0.00
150.80	0.00	121	157.55	0.00
151.20	0.00	120	157.55	0.00
151.60	0.00	119	157.55	0.00
152.00	0.00	118	157.55	0.00
152.40	0.00	117	157.55	0.00
152.80	0.00	117	157.55	0.00
153.20	0.00	116	157.55	0.00
153.60	0.00	115	157.55	0.00
154.00	0.00	114	157.55	0.00
154.40	0.00	113	157.55	0.00
154.80	0.00	112	157.55	0.00
155.20	0.00	112	157.55	0.00
155.60	0.00	111	157.55	0.00
156.00	0.00	110	157.55	0.00
156.40	0.00	109	157.55	0.00
156.80	0.00	109	157.55	0.00
157.20	0.00	108	157.55	0.00
157.60	0.00	107	157.55	0.00
158.00	0.00	106	157.55	0.00
158.40	0.00	106	157.55	0.00
158.80	0.00	105	157.55	0.00
159.20	0.00	104	157.55	0.00
159.60	0.00	103	157.55	0.00
160.00	0.00	103	157.55	0.00
160.40	0.00	102	157.55	0.00
160.80	0.00	101	157.55	0.00
161.20	0.00	101	157.55	0.00
161.60	0.00	100	157.55	0.00
162.00	0.00	100	157.55	0.00
162.40	0.00	99	157.55	0.00
162.80	0.00	98	157.55	0.00
163.20	0.00	98	157.55	0.00
163.60	0.00	97	157.55	0.00
164.00	0.00	96	157.55	0.00
164.40	0.00	96	157.55	0.00
164.80	0.00	95	157.55	0.00
165.20	0.00	95	157.55	0.00
165.60	0.00	94	157.55	0.00
166.00	0.00	94	157.55	0.00
166.40	0.00	93	157.55	0.00
166.80	0.00	92	157.55	0.00
167.20	0.00	92	157.55	0.00
167.60	0.00	91	157.55	0.00
168.00	0.00	91	157.55	0.00

Summary for Pond 2P: UG2

Inflow Area = 33,977 sf, 95.64% Impervious, Inflow Depth = 0.74" for MRC event
Inflow = 1.79 cfs @ 1.10 hrs, Volume= 2,093 cf
Outflow = 0.01 cfs @ 2.14 hrs, Volume= 2,072 cf, Atten= 100%, Lag= 62.2 min
Primary = 0.01 cfs @ 2.14 hrs, Volume= 2,072 cf
Routed to Link 10L : POST-DEV TO DA #1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-168.00 hrs, dt= 0.04 hrs / 2
Peak Elev= 160.70' @ 2.14 hrs Surf.Area= 3,834 sf Storage= 2,069 cf

Plug-Flow detention time= 3,393.9 min calculated for 2,071 cf (99% of inflow)
Center-of-Mass det. time= 3,395.0 min (3,467.6 - 72.7)

Volume	Invert	Avail.Storage	Storage Description
#1A	159.80'	3,209 cf	**35.33'W x 108.50'L x 3.54'H Field A** 13,578 cf Overall - 5,555 cf Embedded = 8,023 cf x 40.0% Voids
#2A	160.30'	5,555 cf	**Cultec R-330XLHD** x 105 Inside #1 Effective Size= 47.8"W x 30.0"H => 7.45 sf x 7.00'L = 52.2 cf Overall Size= 52.0"W x 30.5"H x 8.50'L with 1.50' Overlap Row Length Adjustment= +1.50' x 7.45 sf x 7 rows
		8,764 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Device 4	159.80'	**0.5" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#2	Device 4	160.90'	**16.0" W x 7.0" H Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#3	Device 4	162.55'	**4.0' long Broad-Crested Rectangular Weir** Head (feet) 4.00 Coef. (English) 3.33
#4	Primary	159.80'	**18.0" Round Culvert** L= 141.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 159.80' / 159.09' S= 0.0050 '/' Cc= 0.900 n= 0.012, Flow Area= 1.77 sf

Primary OutFlow Max=0.01 cfs @ 2.14 hrs HW=160.70' TW=0.00' (Dynamic Tailwater)
└**4=Culvert** (Passes 0.01 cfs of 3.00 cfs potential flow)
  ├**1=Orifice/Grate** (Orifice Controls 0.01 cfs @ 4.51 fps)
  ├**2=Orifice/Grate** (Controls 0.00 cfs)
  └**3=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond 2P: UG2 - Chamber Wizard Field A

Chamber Model = Cultec R-330XLHD (Cultec Recharger® 330XLHD)
Effective Size= 47.8"W x 30.0"H => 7.45 sf x 7.00'L = 52.2 cf
Overall Size= 52.0"W x 30.5"H x 8.50'L with 1.50' Overlap
Row Length Adjustment= +1.50' x 7.45 sf x 7 rows

52.0" Wide + 6.0" Spacing = 58.0" C-C Row Spacing

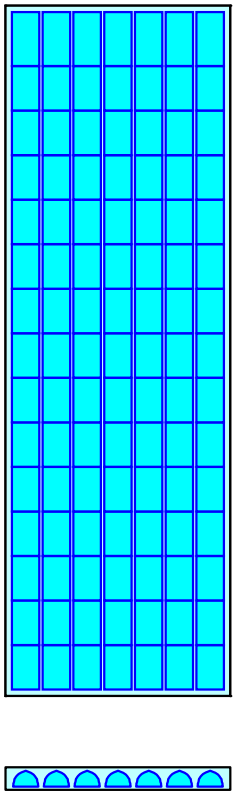
15 Chambers/Row x 7.00' Long +1.50' Row Adjustment = 106.50' Row Length +12.0" End Stone x 2 = 108.50' Base Length
7 Rows x 52.0" Wide + 6.0" Spacing x 6 + 12.0" Side Stone x 2 = 35.33' Base Width
6.0" Stone Base + 30.5" Chamber Height + 6.0" Stone Cover = 3.54' Field Height

105 Chambers x 52.2 cf +1.50' Row Adjustment x 7.45 sf x 7 Rows = 5,554.7 cf Chamber Storage

13,577.6 cf Field - 5,554.7 cf Chambers = 8,022.8 cf Stone x 40.0% Voids = 3,209.1 cf Stone Storage

Chamber Storage + Stone Storage = 8,763.9 cf = 0.201 af
Overall Storage Efficiency = 64.5%
Overall System Size = 108.50' x 35.33' x 3.54'

105 Chambers
502.9 cy Field
297.1 cy Stone



Hydrograph for Pond 2P: UG2

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
0.00	0.00	0	159.80	0.00
0.40	0.00	0	159.80	0.00
0.80	**0.09**	29	159.82	0.00
1.20	**0.90**	1,330	160.47	0.01
1.60	0.21	1,854	160.63	0.01
2.00	0.07	**2,054**	**160.69**	**0.01**
2.40	0.00	**2,063**	**160.69**	**0.01**
2.80	0.00	2,055	160.69	0.01
3.20	0.00	2,046	160.69	0.01
3.60	0.00	2,037	160.69	0.01
4.00	0.00	2,028	160.68	0.01
4.40	0.00	2,019	160.68	0.01
4.80	0.00	2,011	160.68	0.01
5.20	0.00	2,002	160.68	0.01
5.60	0.00	1,993	160.67	0.01
6.00	0.00	1,984	160.67	0.01
6.40	0.00	1,976	160.67	0.01
6.80	0.00	1,967	160.67	0.01
7.20	0.00	1,958	160.66	0.01
7.60	0.00	1,950	160.66	0.01
8.00	0.00	1,941	160.66	0.01
8.40	0.00	1,932	160.65	0.01
8.80	0.00	1,924	160.65	0.01
9.20	0.00	1,915	160.65	0.01
9.60	0.00	1,907	160.65	0.01
10.00	0.00	1,898	160.64	0.01
10.40	0.00	1,889	160.64	0.01
10.80	0.00	1,881	160.64	0.01
11.20	0.00	1,872	160.64	0.01
11.60	0.00	1,864	160.63	0.01
12.00	0.00	1,855	160.63	0.01
12.40	0.00	1,847	160.63	0.01
12.80	0.00	1,838	160.63	0.01
13.20	0.00	1,830	160.62	0.01
13.60	0.00	1,821	160.62	0.01
14.00	0.00	1,813	160.62	0.01
14.40	0.00	1,804	160.62	0.01
14.80	0.00	1,796	160.61	0.01
15.20	0.00	1,788	160.61	0.01
15.60	0.00	1,779	160.61	0.01
16.00	0.00	1,771	160.61	0.01
16.40	0.00	1,762	160.60	0.01
16.80	0.00	1,754	160.60	0.01
17.20	0.00	1,746	160.60	0.01
17.60	0.00	1,737	160.59	0.01
18.00	0.00	1,729	160.59	0.01
18.40	0.00	1,721	160.59	0.01
18.80	0.00	1,713	160.59	0.01
19.20	0.00	1,704	160.58	0.01
19.60	0.00	1,696	160.58	0.01
20.00	0.00	1,688	160.58	0.01
20.40	0.00	1,680	160.58	0.01
20.80	0.00	1,671	160.57	0.01

Hydrograph for Pond 2P: UG2 (continued)

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
21.20	0.00	1,663	160.57	0.01
21.60	0.00	1,655	160.57	0.01
22.00	0.00	1,647	160.57	0.01
22.40	0.00	1,639	160.56	0.01
22.80	0.00	1,630	160.56	0.01
23.20	0.00	1,622	160.56	0.01
23.60	0.00	1,614	160.56	0.01
24.00	0.00	1,606	160.55	0.01
24.40	0.00	1,598	160.55	0.01
24.80	0.00	1,590	160.55	0.01
25.20	0.00	1,582	160.55	0.01
25.60	0.00	1,574	160.55	0.01
26.00	0.00	1,566	160.54	0.01
26.40	0.00	1,558	160.54	0.01
26.80	0.00	1,550	160.54	0.01
27.20	0.00	1,542	160.54	0.01
27.60	0.00	1,534	160.53	0.01
28.00	0.00	1,526	160.53	0.01
28.40	0.00	1,518	160.53	0.01
28.80	0.00	1,510	160.53	0.01
29.20	0.00	1,502	160.52	0.01
29.60	0.00	1,494	160.52	0.01
30.00	0.00	1,486	160.52	0.01
30.40	0.00	1,478	160.52	0.01
30.80	0.00	1,470	160.51	0.01
31.20	0.00	1,463	160.51	0.01
31.60	0.00	1,455	160.51	0.01
32.00	0.00	1,447	160.51	0.01
32.40	0.00	1,439	160.50	0.01
32.80	0.00	1,431	160.50	0.01
33.20	0.00	1,423	160.50	0.01
33.60	0.00	1,416	160.50	0.01
34.00	0.00	1,408	160.49	0.01
34.40	0.00	1,400	160.49	0.01
34.80	0.00	1,392	160.49	0.01
35.20	0.00	1,385	160.49	0.01
35.60	0.00	1,377	160.48	0.01
36.00	0.00	1,369	160.48	0.01
36.40	0.00	1,362	160.48	0.01
36.80	0.00	1,354	160.48	0.01
37.20	0.00	1,346	160.48	0.01
37.60	0.00	1,339	160.47	0.01
38.00	0.00	1,331	160.47	0.01
38.40	0.00	1,323	160.47	0.01
38.80	0.00	1,316	160.47	0.01
39.20	0.00	1,308	160.46	0.01
39.60	0.00	1,301	160.46	0.01
40.00	0.00	1,293	160.46	0.01
40.40	0.00	1,285	160.46	0.01
40.80	0.00	1,278	160.45	0.01
41.20	0.00	1,270	160.45	0.01
41.60	0.00	1,263	160.45	0.01
42.00	0.00	1,255	160.45	0.01

Hydrograph for Pond 2P: UG2 (continued)

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
42.40	0.00	1,248	160.45	0.01
42.80	0.00	1,240	160.44	0.01
43.20	0.00	1,233	160.44	0.01
43.60	0.00	1,226	160.44	0.01
44.00	0.00	1,218	160.44	0.01
44.40	0.00	1,211	160.43	0.01
44.80	0.00	1,203	160.43	0.01
45.20	0.00	1,196	160.43	0.01
45.60	0.00	1,189	160.43	0.01
46.00	0.00	1,181	160.43	0.01
46.40	0.00	1,174	160.42	0.01
46.80	0.00	1,167	160.42	0.01
47.20	0.00	1,159	160.42	0.01
47.60	0.00	1,152	160.42	0.01
48.00	0.00	1,145	160.41	0.01
48.40	0.00	1,137	160.41	0.01
48.80	0.00	1,130	160.41	0.01
49.20	0.00	1,123	160.41	0.01
49.60	0.00	1,116	160.41	0.01
50.00	0.00	1,108	160.40	0.01
50.40	0.00	1,101	160.40	0.01
50.80	0.00	1,094	160.40	0.00
51.20	0.00	1,087	160.40	0.00
51.60	0.00	1,080	160.39	0.00
52.00	0.00	1,072	160.39	0.00
52.40	0.00	1,065	160.39	0.00
52.80	0.00	1,058	160.39	0.00
53.20	0.00	1,051	160.39	0.00
53.60	0.00	1,044	160.38	0.00
54.00	0.00	1,037	160.38	0.00
54.40	0.00	1,030	160.38	0.00
54.80	0.00	1,023	160.38	0.00
55.20	0.00	1,016	160.38	0.00
55.60	0.00	1,009	160.37	0.00
56.00	0.00	1,002	160.37	0.00
56.40	0.00	995	160.37	0.00
56.80	0.00	988	160.37	0.00
57.20	0.00	981	160.36	0.00
57.60	0.00	974	160.36	0.00
58.00	0.00	967	160.36	0.00
58.40	0.00	960	160.36	0.00
58.80	0.00	953	160.36	0.00
59.20	0.00	946	160.35	0.00
59.60	0.00	939	160.35	0.00
60.00	0.00	932	160.35	0.00
60.40	0.00	925	160.35	0.00
60.80	0.00	918	160.35	0.00
61.20	0.00	912	160.34	0.00
61.60	0.00	905	160.34	0.00
62.00	0.00	898	160.34	0.00
62.40	0.00	891	160.34	0.00
62.80	0.00	884	160.34	0.00
63.20	0.00	878	160.33	0.00

Hydrograph for Pond 2P: UG2 (continued)

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
63.60	0.00	871	160.33	0.00
64.00	0.00	864	160.33	0.00
64.40	0.00	857	160.33	0.00
64.80	0.00	851	160.33	0.00
65.20	0.00	844	160.32	0.00
65.60	0.00	837	160.32	0.00
66.00	0.00	831	160.32	0.00
66.40	0.00	824	160.32	0.00
66.80	0.00	817	160.32	0.00
67.20	0.00	811	160.31	0.00
67.60	0.00	804	160.31	0.00
68.00	0.00	797	160.31	0.00
68.40	0.00	791	160.31	0.00
68.80	0.00	784	160.31	0.00
69.20	0.00	778	160.30	0.00
69.60	0.00	771	160.30	0.00
70.00	0.00	765	160.30	0.00
70.40	0.00	758	160.29	0.00
70.80	0.00	751	160.29	0.00
71.20	0.00	745	160.29	0.00
71.60	0.00	739	160.28	0.00
72.00	0.00	732	160.28	0.00
72.40	0.00	726	160.27	0.00
72.80	0.00	719	160.27	0.00
73.20	0.00	713	160.27	0.00
73.60	0.00	707	160.26	0.00
74.00	0.00	701	160.26	0.00
74.40	0.00	694	160.25	0.00
74.80	0.00	688	160.25	0.00
75.20	0.00	682	160.24	0.00
75.60	0.00	676	160.24	0.00
76.00	0.00	670	160.24	0.00
76.40	0.00	664	160.23	0.00
76.80	0.00	658	160.23	0.00
77.20	0.00	652	160.22	0.00
77.60	0.00	646	160.22	0.00
78.00	0.00	640	160.22	0.00
78.40	0.00	634	160.21	0.00
78.80	0.00	628	160.21	0.00
79.20	0.00	622	160.21	0.00
79.60	0.00	616	160.20	0.00
80.00	0.00	610	160.20	0.00
80.40	0.00	604	160.19	0.00
80.80	0.00	599	160.19	0.00
81.20	0.00	593	160.19	0.00
81.60	0.00	587	160.18	0.00
82.00	0.00	582	160.18	0.00
82.40	0.00	576	160.18	0.00
82.80	0.00	570	160.17	0.00
83.20	0.00	565	160.17	0.00
83.60	0.00	559	160.16	0.00
84.00	0.00	554	160.16	0.00
84.40	0.00	548	160.16	0.00

Hydrograph for Pond 2P: UG2 (continued)

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
84.80	0.00	543	160.15	0.00
85.20	0.00	537	160.15	0.00
85.60	0.00	532	160.15	0.00
86.00	0.00	526	160.14	0.00
86.40	0.00	521	160.14	0.00
86.80	0.00	516	160.14	0.00
87.20	0.00	511	160.13	0.00
87.60	0.00	505	160.13	0.00
88.00	0.00	500	160.13	0.00
88.40	0.00	495	160.12	0.00
88.80	0.00	490	160.12	0.00
89.20	0.00	484	160.12	0.00
89.60	0.00	479	160.11	0.00
90.00	0.00	474	160.11	0.00
90.40	0.00	469	160.11	0.00
90.80	0.00	464	160.10	0.00
91.20	0.00	459	160.10	0.00
91.60	0.00	454	160.10	0.00
92.00	0.00	449	160.09	0.00
92.40	0.00	444	160.09	0.00
92.80	0.00	439	160.09	0.00
93.20	0.00	435	160.08	0.00
93.60	0.00	430	160.08	0.00
94.00	0.00	425	160.08	0.00
94.40	0.00	420	160.07	0.00
94.80	0.00	415	160.07	0.00
95.20	0.00	411	160.07	0.00
95.60	0.00	406	160.06	0.00
96.00	0.00	401	160.06	0.00
96.40	0.00	397	160.06	0.00
96.80	0.00	392	160.06	0.00
97.20	0.00	388	160.05	0.00
97.60	0.00	383	160.05	0.00
98.00	0.00	379	160.05	0.00
98.40	0.00	374	160.04	0.00
98.80	0.00	370	160.04	0.00
99.20	0.00	365	160.04	0.00
99.60	0.00	361	160.04	0.00
100.00	0.00	356	160.03	0.00
100.40	0.00	352	160.03	0.00
100.80	0.00	348	160.03	0.00
101.20	0.00	344	160.02	0.00
101.60	0.00	339	160.02	0.00
102.00	0.00	335	160.02	0.00
102.40	0.00	331	160.02	0.00
102.80	0.00	327	160.01	0.00
103.20	0.00	323	160.01	0.00
103.60	0.00	318	160.01	0.00
104.00	0.00	314	160.01	0.00
104.40	0.00	310	160.00	0.00
104.80	0.00	306	160.00	0.00
105.20	0.00	302	160.00	0.00
105.60	0.00	298	159.99	0.00

Hydrograph for Pond 2P: UG2 (continued)

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
106.00	0.00	294	159.99	0.00
106.40	0.00	291	159.99	0.00
106.80	0.00	287	159.99	0.00
107.20	0.00	283	159.98	0.00
107.60	0.00	279	159.98	0.00
108.00	0.00	275	159.98	0.00
108.40	0.00	272	159.98	0.00
108.80	0.00	268	159.97	0.00
109.20	0.00	264	159.97	0.00
109.60	0.00	260	159.97	0.00
110.00	0.00	257	159.97	0.00
110.40	0.00	253	159.97	0.00
110.80	0.00	250	159.96	0.00
111.20	0.00	246	159.96	0.00
111.60	0.00	243	159.96	0.00
112.00	0.00	239	159.96	0.00
112.40	0.00	236	159.95	0.00
112.80	0.00	232	159.95	0.00
113.20	0.00	229	159.95	0.00
113.60	0.00	225	159.95	0.00
114.00	0.00	222	159.94	0.00
114.40	0.00	219	159.94	0.00
114.80	0.00	215	159.94	0.00
115.20	0.00	212	159.94	0.00
115.60	0.00	209	159.94	0.00
116.00	0.00	206	159.93	0.00
116.40	0.00	203	159.93	0.00
116.80	0.00	199	159.93	0.00
117.20	0.00	196	159.93	0.00
117.60	0.00	193	159.93	0.00
118.00	0.00	190	159.92	0.00
118.40	0.00	187	159.92	0.00
118.80	0.00	184	159.92	0.00
119.20	0.00	181	159.92	0.00
119.60	0.00	178	159.92	0.00
120.00	0.00	175	159.91	0.00
120.40	0.00	173	159.91	0.00
120.80	0.00	170	159.91	0.00
121.20	0.00	167	159.91	0.00
121.60	0.00	164	159.91	0.00
122.00	0.00	161	159.91	0.00
122.40	0.00	159	159.90	0.00
122.80	0.00	156	159.90	0.00
123.20	0.00	153	159.90	0.00
123.60	0.00	151	159.90	0.00
124.00	0.00	148	159.90	0.00
124.40	0.00	145	159.89	0.00
124.80	0.00	143	159.89	0.00
125.20	0.00	140	159.89	0.00
125.60	0.00	138	159.89	0.00
126.00	0.00	135	159.89	0.00
126.40	0.00	133	159.89	0.00
126.80	0.00	130	159.89	0.00

Hydrograph for Pond 2P: UG2 (continued)

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
127.20	0.00	128	159.88	0.00
127.60	0.00	126	159.88	0.00
128.00	0.00	123	159.88	0.00
128.40	0.00	121	159.88	0.00
128.80	0.00	119	159.88	0.00
129.20	0.00	117	159.88	0.00
129.60	0.00	114	159.87	0.00
130.00	0.00	112	159.87	0.00
130.40	0.00	110	159.87	0.00
130.80	0.00	108	159.87	0.00
131.20	0.00	106	159.87	0.00
131.60	0.00	104	159.87	0.00
132.00	0.00	102	159.87	0.00
132.40	0.00	100	159.87	0.00
132.80	0.00	98	159.86	0.00
133.20	0.00	96	159.86	0.00
133.60	0.00	94	159.86	0.00
134.00	0.00	92	159.86	0.00
134.40	0.00	90	159.86	0.00
134.80	0.00	88	159.86	0.00
135.20	0.00	87	159.86	0.00
135.60	0.00	85	159.86	0.00
136.00	0.00	83	159.85	0.00
136.40	0.00	81	159.85	0.00
136.80	0.00	80	159.85	0.00
137.20	0.00	78	159.85	0.00
137.60	0.00	76	159.85	0.00
138.00	0.00	75	159.85	0.00
138.40	0.00	73	159.85	0.00
138.80	0.00	72	159.85	0.00
139.20	0.00	70	159.85	0.00
139.60	0.00	69	159.84	0.00
140.00	0.00	67	159.84	0.00
140.40	0.00	66	159.84	0.00
140.80	0.00	64	159.84	0.00
141.20	0.00	63	159.84	0.00
141.60	0.00	62	159.84	0.00
142.00	0.00	60	159.84	0.00
142.40	0.00	59	159.84	0.00
142.80	0.00	58	159.84	0.00
143.20	0.00	57	159.84	0.00
143.60	0.00	55	159.84	0.00
144.00	0.00	54	159.84	0.00
144.40	0.00	53	159.83	0.00
144.80	0.00	52	159.83	0.00
145.20	0.00	51	159.83	0.00
145.60	0.00	50	159.83	0.00
146.00	0.00	49	159.83	0.00
146.40	0.00	48	159.83	0.00
146.80	0.00	47	159.83	0.00
147.20	0.00	46	159.83	0.00
147.60	0.00	45	159.83	0.00
148.00	0.00	44	159.83	0.00

Hydrograph for Pond 2P: UG2 (continued)

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
148.40	0.00	44	159.83	0.00
148.80	0.00	43	159.83	0.00
149.20	0.00	42	159.83	0.00
149.60	0.00	41	159.83	0.00
150.00	0.00	41	159.83	0.00
150.40	0.00	40	159.83	0.00
150.80	0.00	39	159.83	0.00
151.20	0.00	38	159.83	0.00
151.60	0.00	38	159.82	0.00
152.00	0.00	37	159.82	0.00
152.40	0.00	37	159.82	0.00
152.80	0.00	36	159.82	0.00
153.20	0.00	35	159.82	0.00
153.60	0.00	35	159.82	0.00
154.00	0.00	34	159.82	0.00
154.40	0.00	34	159.82	0.00
154.80	0.00	33	159.82	0.00
155.20	0.00	33	159.82	0.00
155.60	0.00	32	159.82	0.00
156.00	0.00	32	159.82	0.00
156.40	0.00	31	159.82	0.00
156.80	0.00	31	159.82	0.00
157.20	0.00	30	159.82	0.00
157.60	0.00	30	159.82	0.00
158.00	0.00	29	159.82	0.00
158.40	0.00	29	159.82	0.00
158.80	0.00	29	159.82	0.00
159.20	0.00	28	159.82	0.00
159.60	0.00	28	159.82	0.00
160.00	0.00	27	159.82	0.00
160.40	0.00	27	159.82	0.00
160.80	0.00	27	159.82	0.00
161.20	0.00	26	159.82	0.00
161.60	0.00	26	159.82	0.00
162.00	0.00	26	159.82	0.00
162.40	0.00	25	159.82	0.00
162.80	0.00	25	159.82	0.00
163.20	0.00	25	159.82	0.00
163.60	0.00	25	159.82	0.00
164.00	0.00	24	159.82	0.00
164.40	0.00	24	159.82	0.00
164.80	0.00	24	159.82	0.00
165.20	0.00	23	159.82	0.00
165.60	0.00	23	159.82	0.00
166.00	0.00	23	159.81	0.00
166.40	0.00	23	159.81	0.00
166.80	0.00	22	159.81	0.00
167.20	0.00	22	159.81	0.00
167.60	0.00	22	159.81	0.00
168.00	0.00	22	159.81	0.00

Summary for Pond 3P: UG3

Inflow Area = 19,646 sf, 85.14% Impervious, Inflow Depth = 0.41" for MRC event
Inflow = 0.61 cfs @ 1.11 hrs, Volume= 679 cf
Outflow = 0.11 cfs @ 1.51 hrs, Volume= 678 cf, Atten= 82%, Lag= 24.1 min
Primary = 0.11 cfs @ 1.51 hrs, Volume= 678 cf
Routed to Link 10L : POST-DEV TO DA #1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-168.00 hrs, dt= 0.04 hrs / 2
Peak Elev= 160.62' @ 1.51 hrs Surf.Area= 2,917 sf Storage= 396 cf

Plug-Flow detention time= 106.7 min calculated for 678 cf (100% of inflow)
Center-of-Mass det. time= 108.8 min (185.4 - 76.6)

Volume	Invert	Avail.Storage	Storage Description
#1A	160.28'	2,010 cf	**44.00'W x 66.30'L x 2.71'H Field A** 7,901 cf Overall - 2,875 cf Embedded = 5,026 cf x 40.0% Voids
#2A	160.78'	2,875 cf	**Cultec R-180** x 130 Inside #1 Effective Size= 33.6"W x 20.0"H => 3.44 sf x 6.33'L = 21.8 cf Overall Size= 36.0"W x 20.5"H x 7.33'L with 1.00' Overlap Row Length Adjustment= +1.00' x 3.44 sf x 13 rows
		4,885 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Device 4	160.28'	**3.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#2	Device 4	160.97'	**6.0" W x 3.0" H Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#3	Device 4	162.50'	**4.0' long Broad-Crested Rectangular Weir** Head (feet) 4.00 Coef. (English) 3.33
#4	Primary	160.28'	**18.0" Round Culvert** L= 36.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 160.28' / 160.10' S= 0.0050 '/' Cc= 0.900 n= 0.012, Flow Area= 1.77 sf

Primary OutFlow Max=0.11 cfs @ 1.51 hrs HW=160.62' TW=0.00' (Dynamic Tailwater)
└**4=Culvert** (Passes 0.11 cfs of 0.45 cfs potential flow)
  ├**1=Orifice/Grate** (Orifice Controls 0.11 cfs @ 2.23 fps)
  ├**2=Orifice/Grate** (Controls 0.00 cfs)
  └**3=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond 3P: UG3 - Chamber Wizard Field A

Chamber Model = Cultec R-180 (Cultec Recharger® 180HD)
Effective Size= 33.6"W x 20.0"H => 3.44 sf x 6.33'L = 21.8 cf
Overall Size= 36.0"W x 20.5"H x 7.33'L with 1.00' Overlap
Row Length Adjustment= +1.00' x 3.44 sf x 13 rows

36.0" Wide + 3.0" Spacing = 39.0" C-C Row Spacing

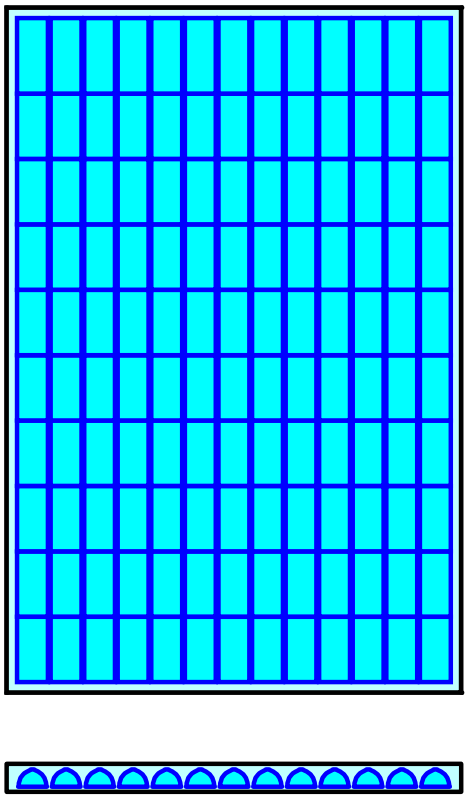
10 Chambers/Row x 6.33' Long +1.00' Row Adjustment = 64.30' Row Length +12.0" End Stone x 2 = 66.30' Base Length
13 Rows x 36.0" Wide + 3.0" Spacing x 12 + 12.0" Side Stone x 2 = 44.00' Base Width
6.0" Stone Base + 20.5" Chamber Height + 6.0" Stone Cover = 2.71' Field Height

130 Chambers x 21.8 cf +1.00' Row Adjustment x 3.44 sf x 13 Rows = 2,875.1 cf Chamber Storage

7,900.7 cf Field - 2,875.1 cf Chambers = 5,025.7 cf Stone x 40.0% Voids = 2,010.3 cf Stone Storage

Chamber Storage + Stone Storage = 4,885.3 cf = 0.112 af
Overall Storage Efficiency = 61.8%
Overall System Size = 66.30' x 44.00' x 2.71'

130 Chambers
292.6 cy Field
186.1 cy Stone



Hydrograph for Pond 3P: UG3

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
0.00	0.00	0	160.28	0.00
0.40	0.00	0	160.28	0.00
0.80	**0.00**	0	160.28	0.00
1.20	**0.34**	**331**	**160.56**	**0.09**
1.60	0.09	**394**	**160.62**	**0.11**
2.00	0.03	334	160.57	0.09
2.40	0.00	228	160.48	0.06
2.80	0.00	160	160.42	0.03
3.20	0.00	121	160.38	0.02
3.60	0.00	96	160.36	0.01
4.00	0.00	80	160.35	0.01
4.40	0.00	68	160.34	0.01
4.80	0.00	59	160.33	0.01
5.20	0.00	52	160.32	0.00
5.60	0.00	46	160.32	0.00
6.00	0.00	42	160.32	0.00
6.40	0.00	38	160.31	0.00
6.80	0.00	35	160.31	0.00
7.20	0.00	33	160.31	0.00
7.60	0.00	30	160.31	0.00
8.00	0.00	28	160.30	0.00
8.40	0.00	27	160.30	0.00
8.80	0.00	25	160.30	0.00
9.20	0.00	24	160.30	0.00
9.60	0.00	22	160.30	0.00
10.00	0.00	21	160.30	0.00
10.40	0.00	20	160.30	0.00
10.80	0.00	19	160.30	0.00
11.20	0.00	18	160.30	0.00
11.60	0.00	18	160.30	0.00
12.00	0.00	17	160.29	0.00
12.40	0.00	16	160.29	0.00
12.80	0.00	16	160.29	0.00
13.20	0.00	15	160.29	0.00
13.60	0.00	15	160.29	0.00
14.00	0.00	14	160.29	0.00
14.40	0.00	14	160.29	0.00
14.80	0.00	13	160.29	0.00
15.20	0.00	13	160.29	0.00
15.60	0.00	12	160.29	0.00
16.00	0.00	12	160.29	0.00
16.40	0.00	12	160.29	0.00
16.80	0.00	11	160.29	0.00
17.20	0.00	11	160.29	0.00
17.60	0.00	11	160.29	0.00
18.00	0.00	11	160.29	0.00
18.40	0.00	10	160.29	0.00
18.80	0.00	10	160.29	0.00
19.20	0.00	10	160.29	0.00
19.60	0.00	10	160.29	0.00
20.00	0.00	9	160.29	0.00
20.40	0.00	9	160.29	0.00
20.80	0.00	9	160.29	0.00

Hydrograph for Pond 3P: UG3 (continued)

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
21.20	0.00	9	160.29	0.00
21.60	0.00	9	160.29	0.00
22.00	0.00	8	160.29	0.00
22.40	0.00	8	160.29	0.00
22.80	0.00	8	160.29	0.00
23.20	0.00	8	160.29	0.00
23.60	0.00	8	160.29	0.00
24.00	0.00	8	160.29	0.00
24.40	0.00	8	160.29	0.00
24.80	0.00	7	160.29	0.00
25.20	0.00	7	160.29	0.00
25.60	0.00	7	160.29	0.00
26.00	0.00	7	160.29	0.00
26.40	0.00	7	160.29	0.00
26.80	0.00	7	160.29	0.00
27.20	0.00	7	160.29	0.00
27.60	0.00	7	160.29	0.00
28.00	0.00	6	160.29	0.00
28.40	0.00	6	160.29	0.00
28.80	0.00	6	160.29	0.00
29.20	0.00	6	160.29	0.00
29.60	0.00	6	160.29	0.00
30.00	0.00	6	160.29	0.00
30.40	0.00	6	160.29	0.00
30.80	0.00	6	160.29	0.00
31.20	0.00	6	160.28	0.00
31.60	0.00	6	160.28	0.00
32.00	0.00	6	160.28	0.00
32.40	0.00	6	160.28	0.00
32.80	0.00	5	160.28	0.00
33.20	0.00	5	160.28	0.00
33.60	0.00	5	160.28	0.00
34.00	0.00	5	160.28	0.00
34.40	0.00	5	160.28	0.00
34.80	0.00	5	160.28	0.00
35.20	0.00	5	160.28	0.00
35.60	0.00	5	160.28	0.00
36.00	0.00	5	160.28	0.00
36.40	0.00	5	160.28	0.00
36.80	0.00	5	160.28	0.00
37.20	0.00	5	160.28	0.00
37.60	0.00	5	160.28	0.00
38.00	0.00	5	160.28	0.00
38.40	0.00	5	160.28	0.00
38.80	0.00	5	160.28	0.00
39.20	0.00	5	160.28	0.00
39.60	0.00	4	160.28	0.00
40.00	0.00	4	160.28	0.00
40.40	0.00	4	160.28	0.00
40.80	0.00	4	160.28	0.00
41.20	0.00	4	160.28	0.00
41.60	0.00	4	160.28	0.00
42.00	0.00	4	160.28	0.00

Hydrograph for Pond 3P: UG3 (continued)

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
42.40	0.00	4	160.28	0.00
42.80	0.00	4	160.28	0.00
43.20	0.00	4	160.28	0.00
43.60	0.00	4	160.28	0.00
44.00	0.00	4	160.28	0.00
44.40	0.00	4	160.28	0.00
44.80	0.00	4	160.28	0.00
45.20	0.00	4	160.28	0.00
45.60	0.00	4	160.28	0.00
46.00	0.00	4	160.28	0.00
46.40	0.00	4	160.28	0.00
46.80	0.00	4	160.28	0.00
47.20	0.00	4	160.28	0.00
47.60	0.00	4	160.28	0.00
48.00	0.00	4	160.28	0.00
48.40	0.00	4	160.28	0.00
48.80	0.00	4	160.28	0.00
49.20	0.00	4	160.28	0.00
49.60	0.00	4	160.28	0.00
50.00	0.00	4	160.28	0.00
50.40	0.00	3	160.28	0.00
50.80	0.00	3	160.28	0.00
51.20	0.00	3	160.28	0.00
51.60	0.00	3	160.28	0.00
52.00	0.00	3	160.28	0.00
52.40	0.00	3	160.28	0.00
52.80	0.00	3	160.28	0.00
53.20	0.00	3	160.28	0.00
53.60	0.00	3	160.28	0.00
54.00	0.00	3	160.28	0.00
54.40	0.00	3	160.28	0.00
54.80	0.00	3	160.28	0.00
55.20	0.00	3	160.28	0.00
55.60	0.00	3	160.28	0.00
56.00	0.00	3	160.28	0.00
56.40	0.00	3	160.28	0.00
56.80	0.00	3	160.28	0.00
57.20	0.00	3	160.28	0.00
57.60	0.00	3	160.28	0.00
58.00	0.00	3	160.28	0.00
58.40	0.00	3	160.28	0.00
58.80	0.00	3	160.28	0.00
59.20	0.00	3	160.28	0.00
59.60	0.00	3	160.28	0.00
60.00	0.00	3	160.28	0.00
60.40	0.00	3	160.28	0.00
60.80	0.00	3	160.28	0.00
61.20	0.00	3	160.28	0.00
61.60	0.00	3	160.28	0.00
62.00	0.00	3	160.28	0.00
62.40	0.00	3	160.28	0.00
62.80	0.00	3	160.28	0.00
63.20	0.00	3	160.28	0.00

Hydrograph for Pond 3P: UG3 (continued)

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
63.60	0.00	3	160.28	0.00
64.00	0.00	3	160.28	0.00
64.40	0.00	3	160.28	0.00
64.80	0.00	3	160.28	0.00
65.20	0.00	3	160.28	0.00
65.60	0.00	3	160.28	0.00
66.00	0.00	3	160.28	0.00
66.40	0.00	3	160.28	0.00
66.80	0.00	3	160.28	0.00
67.20	0.00	3	160.28	0.00
67.60	0.00	3	160.28	0.00
68.00	0.00	3	160.28	0.00
68.40	0.00	3	160.28	0.00
68.80	0.00	3	160.28	0.00
69.20	0.00	3	160.28	0.00
69.60	0.00	3	160.28	0.00
70.00	0.00	3	160.28	0.00
70.40	0.00	2	160.28	0.00
70.80	0.00	2	160.28	0.00
71.20	0.00	2	160.28	0.00
71.60	0.00	2	160.28	0.00
72.00	0.00	2	160.28	0.00
72.40	0.00	2	160.28	0.00
72.80	0.00	2	160.28	0.00
73.20	0.00	2	160.28	0.00
73.60	0.00	2	160.28	0.00
74.00	0.00	2	160.28	0.00
74.40	0.00	2	160.28	0.00
74.80	0.00	2	160.28	0.00
75.20	0.00	2	160.28	0.00
75.60	0.00	2	160.28	0.00
76.00	0.00	2	160.28	0.00
76.40	0.00	2	160.28	0.00
76.80	0.00	2	160.28	0.00
77.20	0.00	2	160.28	0.00
77.60	0.00	2	160.28	0.00
78.00	0.00	2	160.28	0.00
78.40	0.00	2	160.28	0.00
78.80	0.00	2	160.28	0.00
79.20	0.00	2	160.28	0.00
79.60	0.00	2	160.28	0.00
80.00	0.00	2	160.28	0.00
80.40	0.00	2	160.28	0.00
80.80	0.00	2	160.28	0.00
81.20	0.00	2	160.28	0.00
81.60	0.00	2	160.28	0.00
82.00	0.00	2	160.28	0.00
82.40	0.00	2	160.28	0.00
82.80	0.00	2	160.28	0.00
83.20	0.00	2	160.28	0.00
83.60	0.00	2	160.28	0.00
84.00	0.00	2	160.28	0.00
84.40	0.00	2	160.28	0.00

Hydrograph for Pond 3P: UG3 (continued)

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
84.80	0.00	2	160.28	0.00
85.20	0.00	2	160.28	0.00
85.60	0.00	2	160.28	0.00
86.00	0.00	2	160.28	0.00
86.40	0.00	2	160.28	0.00
86.80	0.00	2	160.28	0.00
87.20	0.00	2	160.28	0.00
87.60	0.00	2	160.28	0.00
88.00	0.00	2	160.28	0.00
88.40	0.00	2	160.28	0.00
88.80	0.00	2	160.28	0.00
89.20	0.00	2	160.28	0.00
89.60	0.00	2	160.28	0.00
90.00	0.00	2	160.28	0.00
90.40	0.00	2	160.28	0.00
90.80	0.00	2	160.28	0.00
91.20	0.00	2	160.28	0.00
91.60	0.00	2	160.28	0.00
92.00	0.00	2	160.28	0.00
92.40	0.00	2	160.28	0.00
92.80	0.00	2	160.28	0.00
93.20	0.00	2	160.28	0.00
93.60	0.00	2	160.28	0.00
94.00	0.00	2	160.28	0.00
94.40	0.00	2	160.28	0.00
94.80	0.00	2	160.28	0.00
95.20	0.00	2	160.28	0.00
95.60	0.00	2	160.28	0.00
96.00	0.00	2	160.28	0.00
96.40	0.00	2	160.28	0.00
96.80	0.00	2	160.28	0.00
97.20	0.00	2	160.28	0.00
97.60	0.00	2	160.28	0.00
98.00	0.00	2	160.28	0.00
98.40	0.00	2	160.28	0.00
98.80	0.00	2	160.28	0.00
99.20	0.00	2	160.28	0.00
99.60	0.00	2	160.28	0.00
100.00	0.00	2	160.28	0.00
100.40	0.00	2	160.28	0.00
100.80	0.00	2	160.28	0.00
101.20	0.00	2	160.28	0.00
101.60	0.00	2	160.28	0.00
102.00	0.00	2	160.28	0.00
102.40	0.00	2	160.28	0.00
102.80	0.00	2	160.28	0.00
103.20	0.00	2	160.28	0.00
103.60	0.00	2	160.28	0.00
104.00	0.00	2	160.28	0.00
104.40	0.00	2	160.28	0.00
104.80	0.00	2	160.28	0.00
105.20	0.00	2	160.28	0.00
105.60	0.00	2	160.28	0.00

Hydrograph for Pond 3P: UG3 (continued)

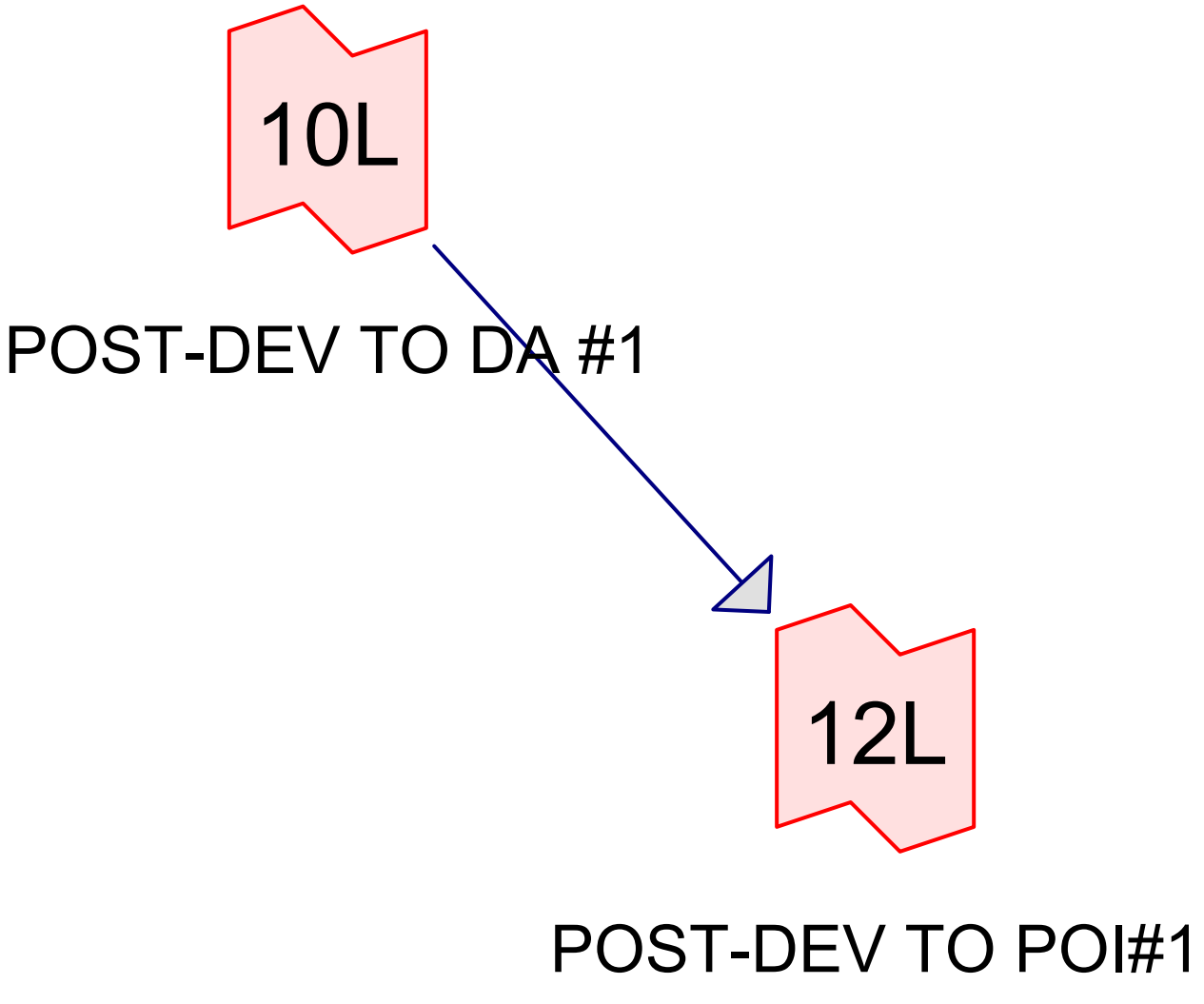
Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
106.00	0.00	2	160.28	0.00
106.40	0.00	2	160.28	0.00
106.80	0.00	2	160.28	0.00
107.20	0.00	2	160.28	0.00
107.60	0.00	2	160.28	0.00
108.00	0.00	2	160.28	0.00
108.40	0.00	2	160.28	0.00
108.80	0.00	2	160.28	0.00
109.20	0.00	2	160.28	0.00
109.60	0.00	2	160.28	0.00
110.00	0.00	2	160.28	0.00
110.40	0.00	2	160.28	0.00
110.80	0.00	2	160.28	0.00
111.20	0.00	2	160.28	0.00
111.60	0.00	2	160.28	0.00
112.00	0.00	2	160.28	0.00
112.40	0.00	2	160.28	0.00
112.80	0.00	2	160.28	0.00
113.20	0.00	2	160.28	0.00
113.60	0.00	2	160.28	0.00
114.00	0.00	2	160.28	0.00
114.40	0.00	2	160.28	0.00
114.80	0.00	2	160.28	0.00
115.20	0.00	2	160.28	0.00
115.60	0.00	2	160.28	0.00
116.00	0.00	2	160.28	0.00
116.40	0.00	2	160.28	0.00
116.80	0.00	2	160.28	0.00
117.20	0.00	2	160.28	0.00
117.60	0.00	2	160.28	0.00
118.00	0.00	2	160.28	0.00
118.40	0.00	2	160.28	0.00
118.80	0.00	2	160.28	0.00
119.20	0.00	2	160.28	0.00
119.60	0.00	2	160.28	0.00
120.00	0.00	2	160.28	0.00
120.40	0.00	2	160.28	0.00
120.80	0.00	1	160.28	0.00
121.20	0.00	1	160.28	0.00
121.60	0.00	1	160.28	0.00
122.00	0.00	1	160.28	0.00
122.40	0.00	1	160.28	0.00
122.80	0.00	1	160.28	0.00
123.20	0.00	1	160.28	0.00
123.60	0.00	1	160.28	0.00
124.00	0.00	1	160.28	0.00
124.40	0.00	1	160.28	0.00
124.80	0.00	1	160.28	0.00
125.20	0.00	1	160.28	0.00
125.60	0.00	1	160.28	0.00
126.00	0.00	1	160.28	0.00
126.40	0.00	1	160.28	0.00
126.80	0.00	1	160.28	0.00

Hydrograph for Pond 3P: UG3 (continued)

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
127.20	0.00	1	160.28	0.00
127.60	0.00	1	160.28	0.00
128.00	0.00	1	160.28	0.00
128.40	0.00	1	160.28	0.00
128.80	0.00	1	160.28	0.00
129.20	0.00	1	160.28	0.00
129.60	0.00	1	160.28	0.00
130.00	0.00	1	160.28	0.00
130.40	0.00	1	160.28	0.00
130.80	0.00	1	160.28	0.00
131.20	0.00	1	160.28	0.00
131.60	0.00	1	160.28	0.00
132.00	0.00	1	160.28	0.00
132.40	0.00	1	160.28	0.00
132.80	0.00	1	160.28	0.00
133.20	0.00	1	160.28	0.00
133.60	0.00	1	160.28	0.00
134.00	0.00	1	160.28	0.00
134.40	0.00	1	160.28	0.00
134.80	0.00	1	160.28	0.00
135.20	0.00	1	160.28	0.00
135.60	0.00	1	160.28	0.00
136.00	0.00	1	160.28	0.00
136.40	0.00	1	160.28	0.00
136.80	0.00	1	160.28	0.00
137.20	0.00	1	160.28	0.00
137.60	0.00	1	160.28	0.00
138.00	0.00	1	160.28	0.00
138.40	0.00	1	160.28	0.00
138.80	0.00	1	160.28	0.00
139.20	0.00	1	160.28	0.00
139.60	0.00	1	160.28	0.00
140.00	0.00	1	160.28	0.00
140.40	0.00	1	160.28	0.00
140.80	0.00	1	160.28	0.00
141.20	0.00	1	160.28	0.00
141.60	0.00	1	160.28	0.00
142.00	0.00	1	160.28	0.00
142.40	0.00	1	160.28	0.00
142.80	0.00	1	160.28	0.00
143.20	0.00	1	160.28	0.00
143.60	0.00	1	160.28	0.00
144.00	0.00	1	160.28	0.00
144.40	0.00	1	160.28	0.00
144.80	0.00	1	160.28	0.00
145.20	0.00	1	160.28	0.00
145.60	0.00	1	160.28	0.00
146.00	0.00	1	160.28	0.00
146.40	0.00	1	160.28	0.00
146.80	0.00	1	160.28	0.00
147.20	0.00	1	160.28	0.00
147.60	0.00	1	160.28	0.00
148.00	0.00	1	160.28	0.00

Hydrograph for Pond 3P: UG3 (continued)

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
148.40	0.00	1	160.28	0.00
148.80	0.00	1	160.28	0.00
149.20	0.00	1	160.28	0.00
149.60	0.00	1	160.28	0.00
150.00	0.00	1	160.28	0.00
150.40	0.00	1	160.28	0.00
150.80	0.00	1	160.28	0.00
151.20	0.00	1	160.28	0.00
151.60	0.00	1	160.28	0.00
152.00	0.00	1	160.28	0.00
152.40	0.00	1	160.28	0.00
152.80	0.00	1	160.28	0.00
153.20	0.00	1	160.28	0.00
153.60	0.00	1	160.28	0.00
154.00	0.00	1	160.28	0.00
154.40	0.00	1	160.28	0.00
154.80	0.00	1	160.28	0.00
155.20	0.00	1	160.28	0.00
155.60	0.00	1	160.28	0.00
156.00	0.00	1	160.28	0.00
156.40	0.00	1	160.28	0.00
156.80	0.00	1	160.28	0.00
157.20	0.00	1	160.28	0.00
157.60	0.00	1	160.28	0.00
158.00	0.00	1	160.28	0.00
158.40	0.00	1	160.28	0.00
158.80	0.00	1	160.28	0.00
159.20	0.00	1	160.28	0.00
159.60	0.00	1	160.28	0.00
160.00	0.00	1	160.28	0.00
160.40	0.00	1	160.28	0.00
160.80	0.00	1	160.28	0.00
161.20	0.00	1	160.28	0.00
161.60	0.00	1	160.28	0.00
162.00	0.00	1	160.28	0.00
162.40	0.00	1	160.28	0.00
162.80	0.00	1	160.28	0.00
163.20	0.00	1	160.28	0.00
163.60	0.00	1	160.28	0.00
164.00	0.00	1	160.28	0.00
164.40	0.00	1	160.28	0.00
164.80	0.00	1	160.28	0.00
165.20	0.00	1	160.28	0.00
165.60	0.00	1	160.28	0.00
166.00	0.00	1	160.28	0.00
166.40	0.00	1	160.28	0.00
166.80	0.00	1	160.28	0.00
167.20	0.00	1	160.28	0.00
167.60	0.00	1	160.28	0.00
168.00	0.00	1	160.28	0.00



Subcat Reach Pond Link

Routing Diagram for BMW
Prepared by Bohler Engineers, Printed 9/20/2023
HydroCAD® 10.20-2g s/n 03478 © 2022 HydroCAD Software Solutions LLC

Rainfall Events Listing (selected events)

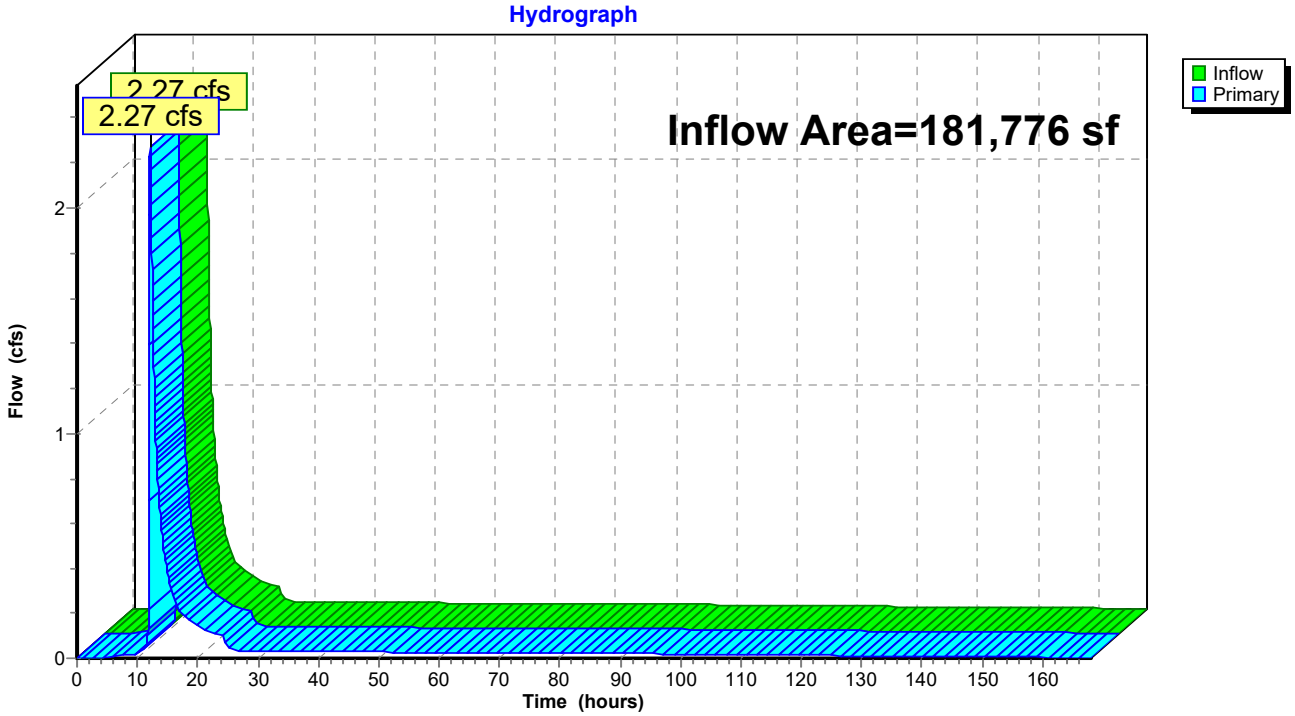
Event#	Event Name	Storm Type	Curve	Mode	Duration (hours)	B/B	Depth (inches)	AMC
1	1-yr	Type II 24-hr		Default	24.00	1	2.73	2
2	2-yr	Type II 24-hr		Default	24.00	1	3.28	2
3	10-yr	Type II 24-hr		Default	24.00	1	4.83	2
4	50-yr	Type II 24-hr		Default	24.00	1	6.73	2
5	100-yr	Type II 24-hr		Default	24.00	1	7.66	2
6	MRC	NJ DEP 2-hr		Default	2.00	1	1.20	2

Summary for Link 10L: POST-DEV TO DA #1

Inflow Area = 181,776 sf, 80.42% Impervious, Inflow Depth > 1.74" for 1-yr event
Inflow = 2.27 cfs @ 12.12 hrs, Volume= 26,294 cf
Primary = 2.27 cfs @ 12.12 hrs, Volume= 26,294 cf, Atten= 0%, Lag= 0.0 min
Routed to Link 12L : POST-DEV TO POI#1

Primary outflow = Inflow, Time Span= 0.00-168.00 hrs, dt= 0.04 hrs

Link 10L: POST-DEV TO DA #1

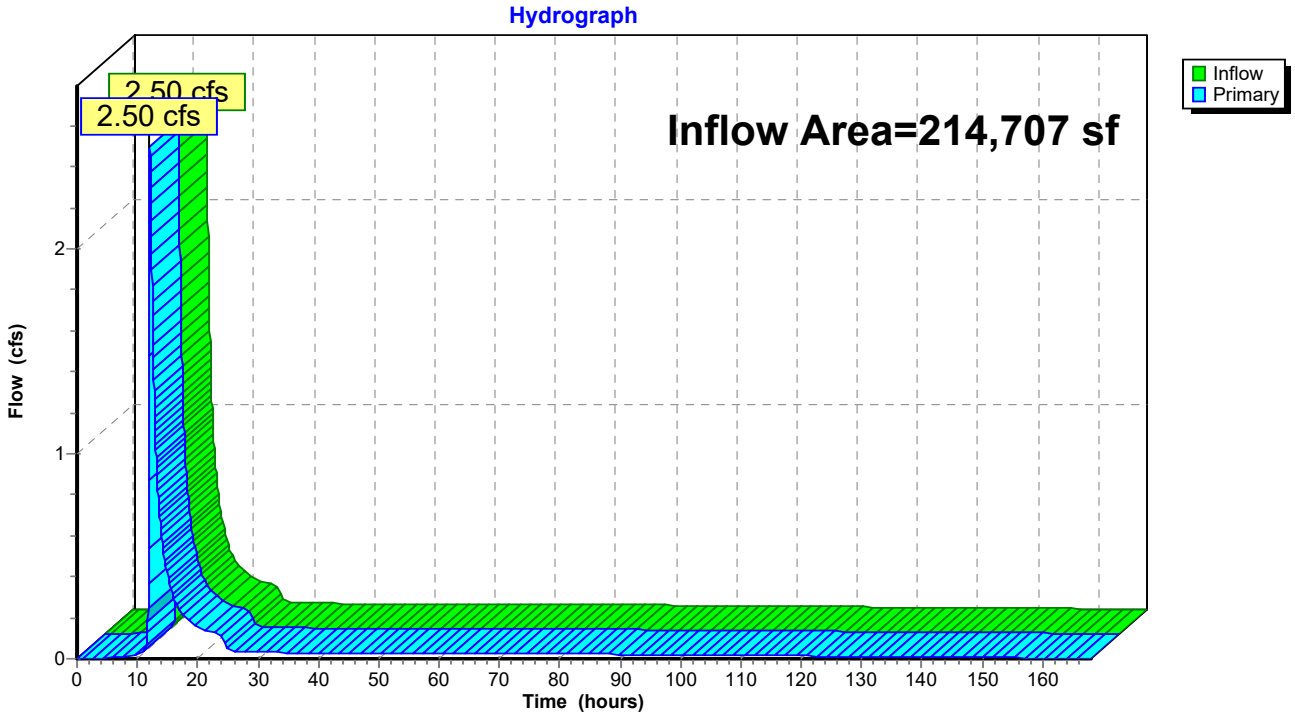


Summary for Link 12L: POST-DEV TO POI#1

Inflow Area = 214,707 sf, 75.43% Impervious, Inflow Depth > 1.56" for 1-yr event
Inflow = 2.50 cfs @ 12.08 hrs, Volume= 27,969 cf
Primary = 2.50 cfs @ 12.08 hrs, Volume= 27,969 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-168.00 hrs, dt= 0.04 hrs

Link 12L: POST-DEV TO POI#1

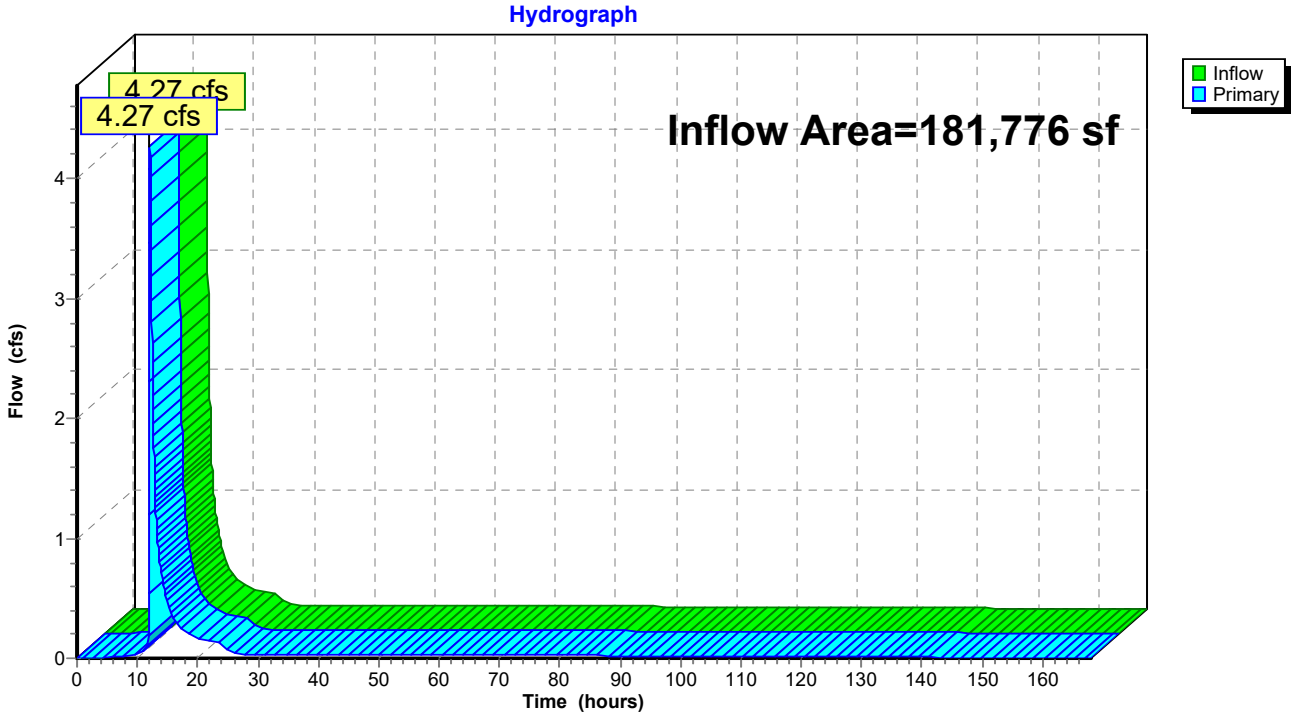


Summary for Link 10L: POST-DEV TO DA #1

Inflow Area = 181,776 sf, 80.42% Impervious, Inflow Depth > 2.18" for 2-yr event
Inflow = 4.27 cfs @ 12.09 hrs, Volume= 32,985 cf
Primary = 4.27 cfs @ 12.09 hrs, Volume= 32,985 cf, Atten= 0%, Lag= 0.0 min
Routed to Link 12L : POST-DEV TO POI#1

Primary outflow = Inflow, Time Span= 0.00-168.00 hrs, dt= 0.04 hrs

Link 10L: POST-DEV TO DA #1

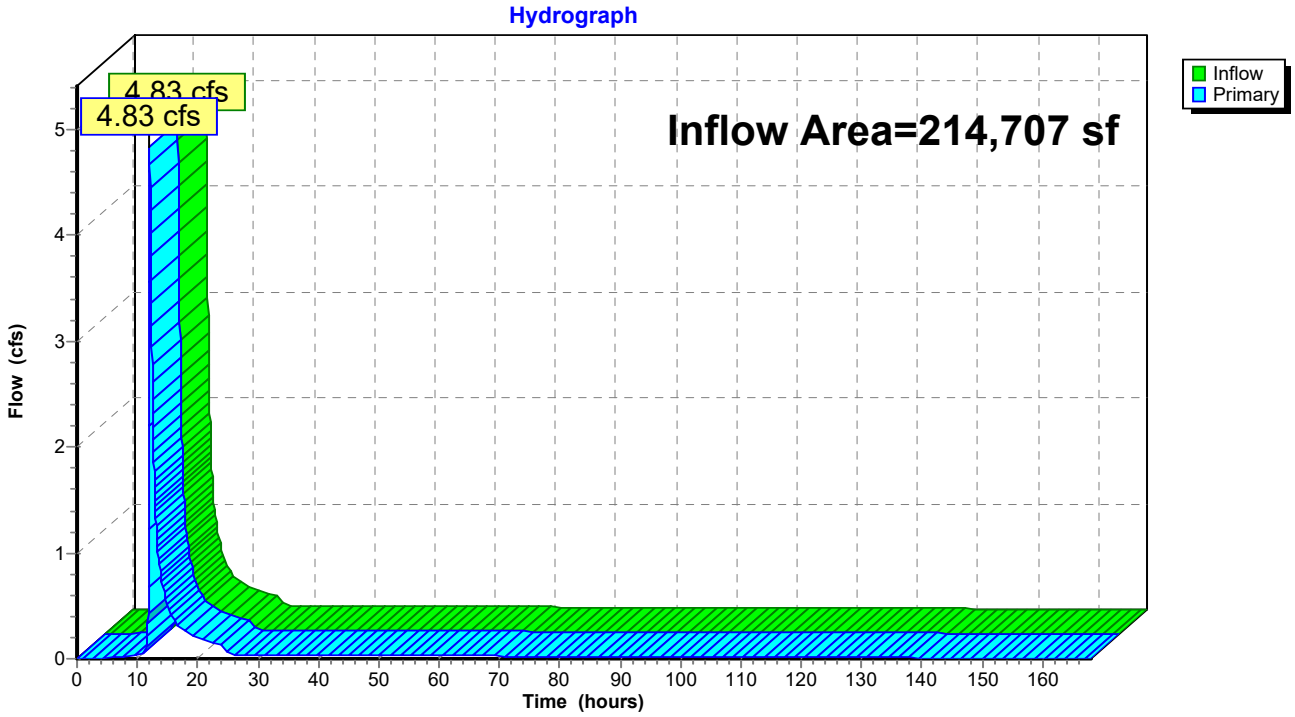


Summary for Link 12L: POST-DEV TO POI#1

Inflow Area = 214,707 sf, 75.43% Impervious, Inflow Depth > 1.99" for 2-yr event
Inflow = 4.83 cfs @ 12.04 hrs, Volume= 35,528 cf
Primary = 4.83 cfs @ 12.04 hrs, Volume= 35,528 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-168.00 hrs, dt= 0.04 hrs

Link 12L: POST-DEV TO POI#1

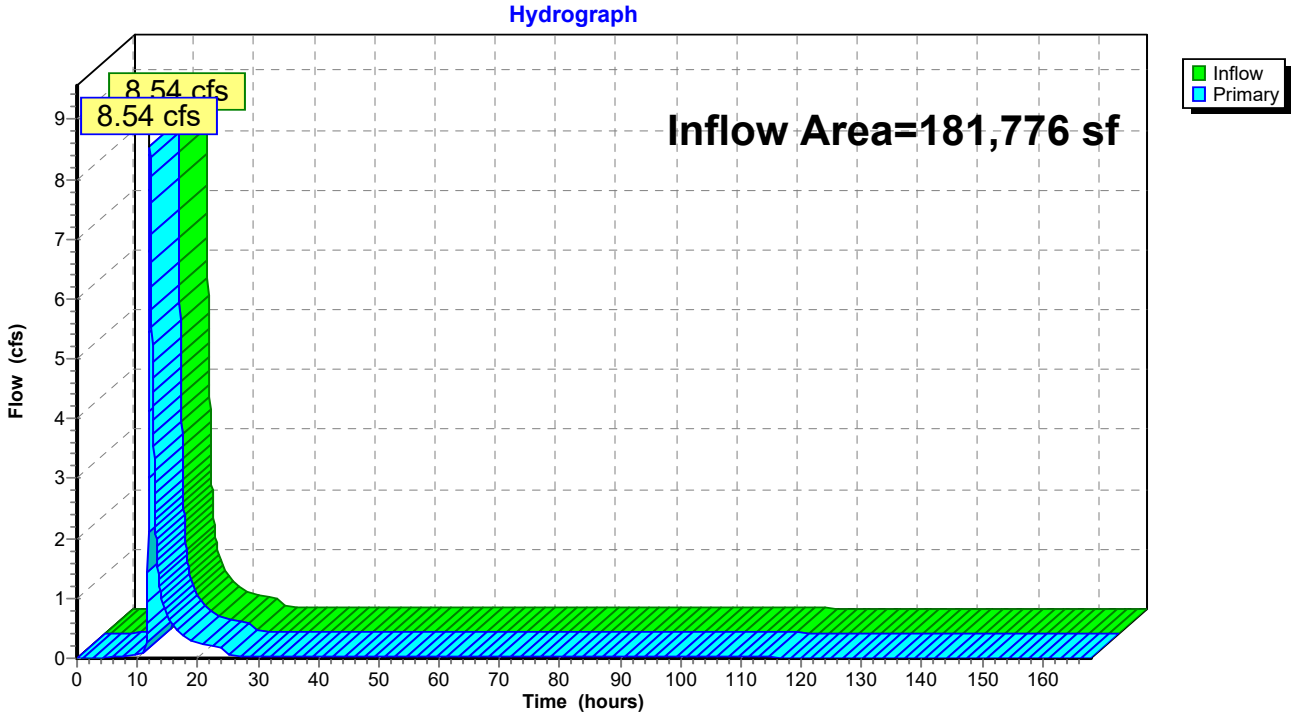


Summary for Link 10L: POST-DEV TO DA #1

Inflow Area = 181,776 sf, 80.42% Impervious, Inflow Depth > 3.48" for 10-yr event
Inflow = 8.54 cfs @ 12.08 hrs, Volume= 52,789 cf
Primary = 8.54 cfs @ 12.08 hrs, Volume= 52,789 cf, Atten= 0%, Lag= 0.0 min
Routed to Link 12L : POST-DEV TO POI#1

Primary outflow = Inflow, Time Span= 0.00-168.00 hrs, dt= 0.04 hrs

Link 10L: POST-DEV TO DA #1

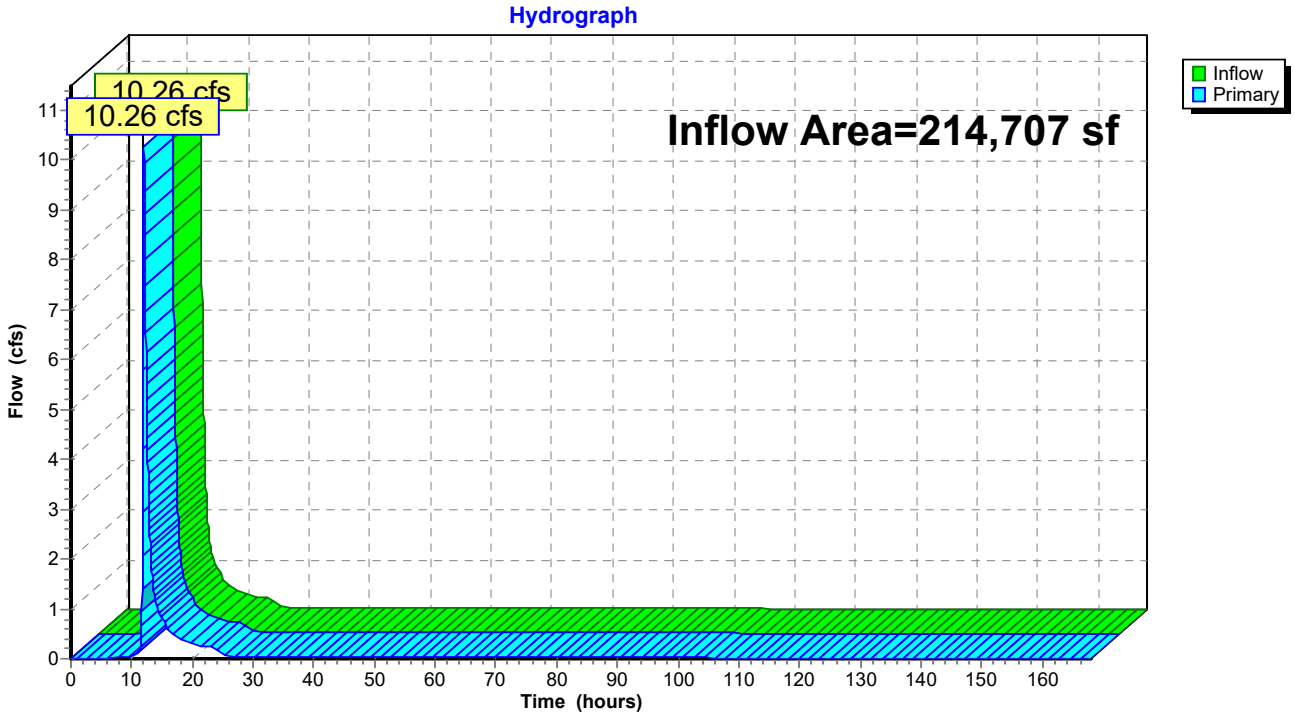


Summary for Link 12L: POST-DEV TO POI#1

Inflow Area = 214,707 sf, 75.43% Impervious, Inflow Depth > 3.26" for 10-yr event
Inflow = 10.26 cfs @ 12.01 hrs, Volume= 58,247 cf
Primary = 10.26 cfs @ 12.01 hrs, Volume= 58,247 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-168.00 hrs, dt= 0.04 hrs

Link 12L: POST-DEV TO POI#1

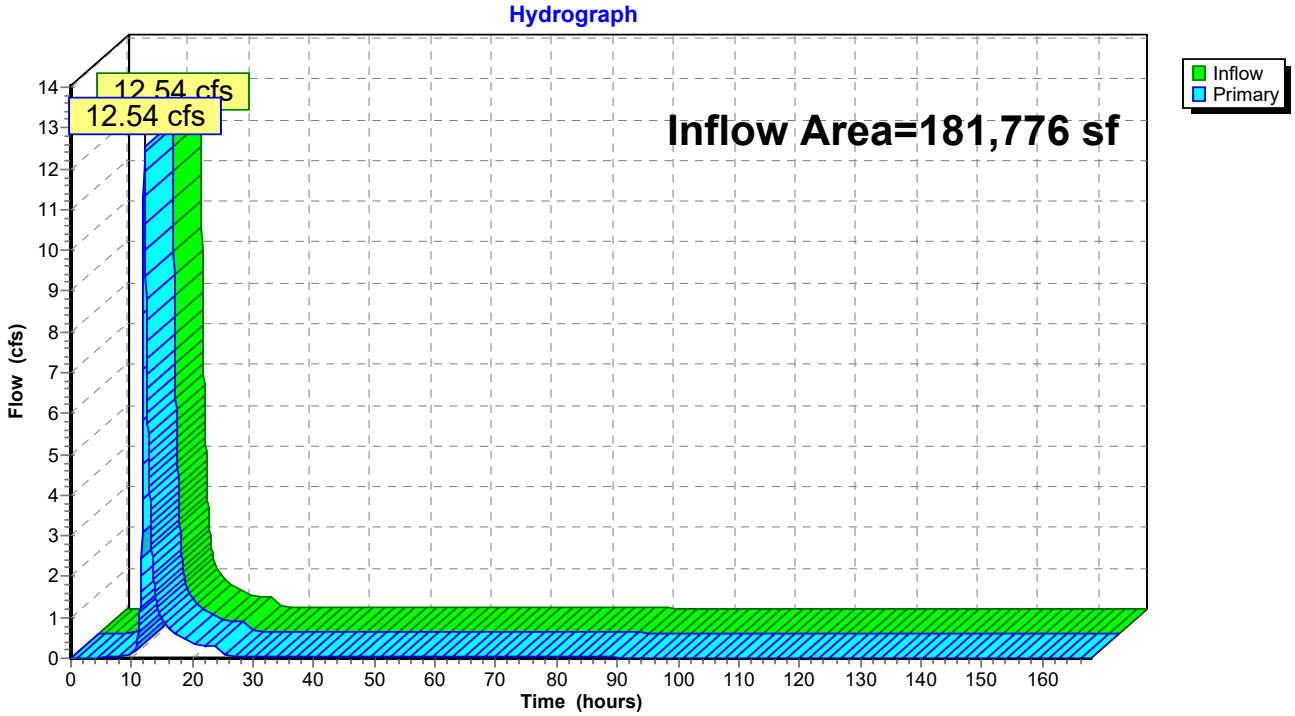


Summary for Link 10L: POST-DEV TO DA #1

Inflow Area = 181,776 sf, 80.42% Impervious, Inflow Depth > 5.17" for 50-yr event
Inflow = 12.54 cfs @ 12.09 hrs, Volume= 78,319 cf
Primary = 12.54 cfs @ 12.09 hrs, Volume= 78,319 cf, Atten= 0%, Lag= 0.0 min
Routed to Link 12L : POST-DEV TO POI#1

Primary outflow = Inflow, Time Span= 0.00-168.00 hrs, dt= 0.04 hrs

Link 10L: POST-DEV TO DA #1

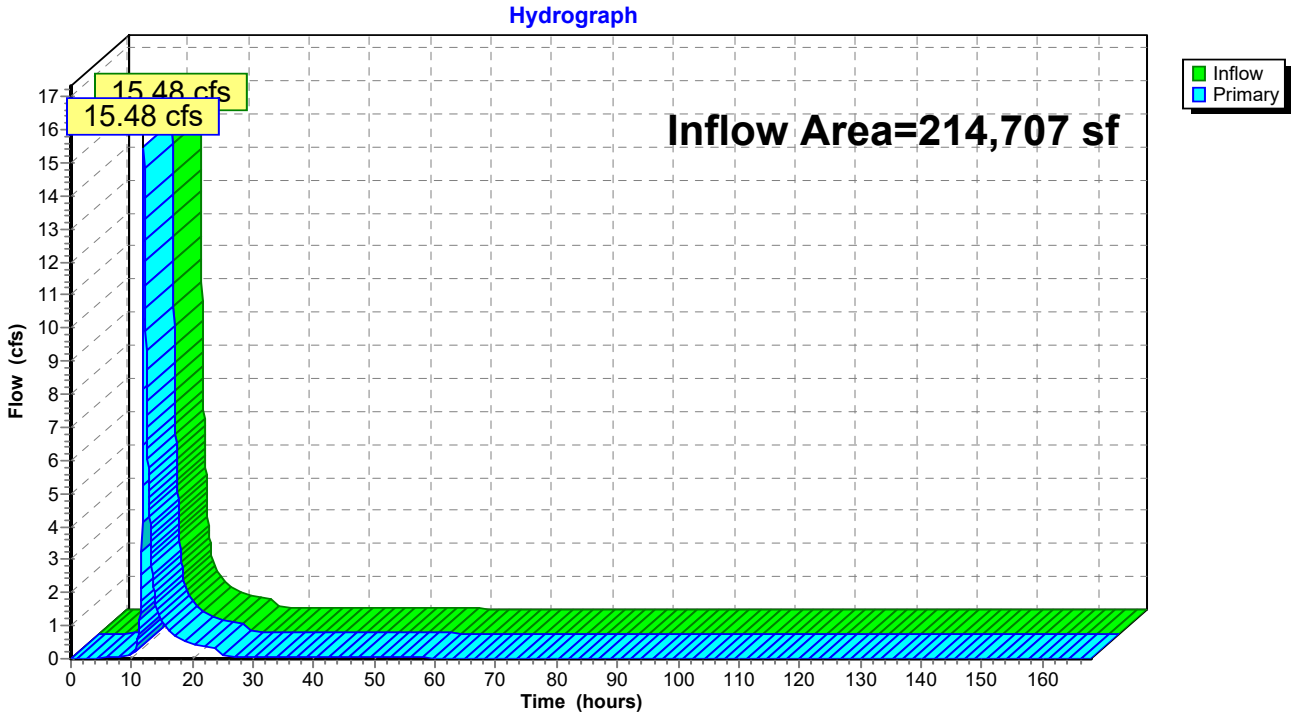


Summary for Link 12L: POST-DEV TO POI#1

Inflow Area = 214,707 sf, 75.43% Impervious, Inflow Depth > 4.91" for 50-yr event
Inflow = 15.48 cfs @ 12.00 hrs, Volume= 87,917 cf
Primary = 15.48 cfs @ 12.00 hrs, Volume= 87,917 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-168.00 hrs, dt= 0.04 hrs

Link 12L: POST-DEV TO POI#1

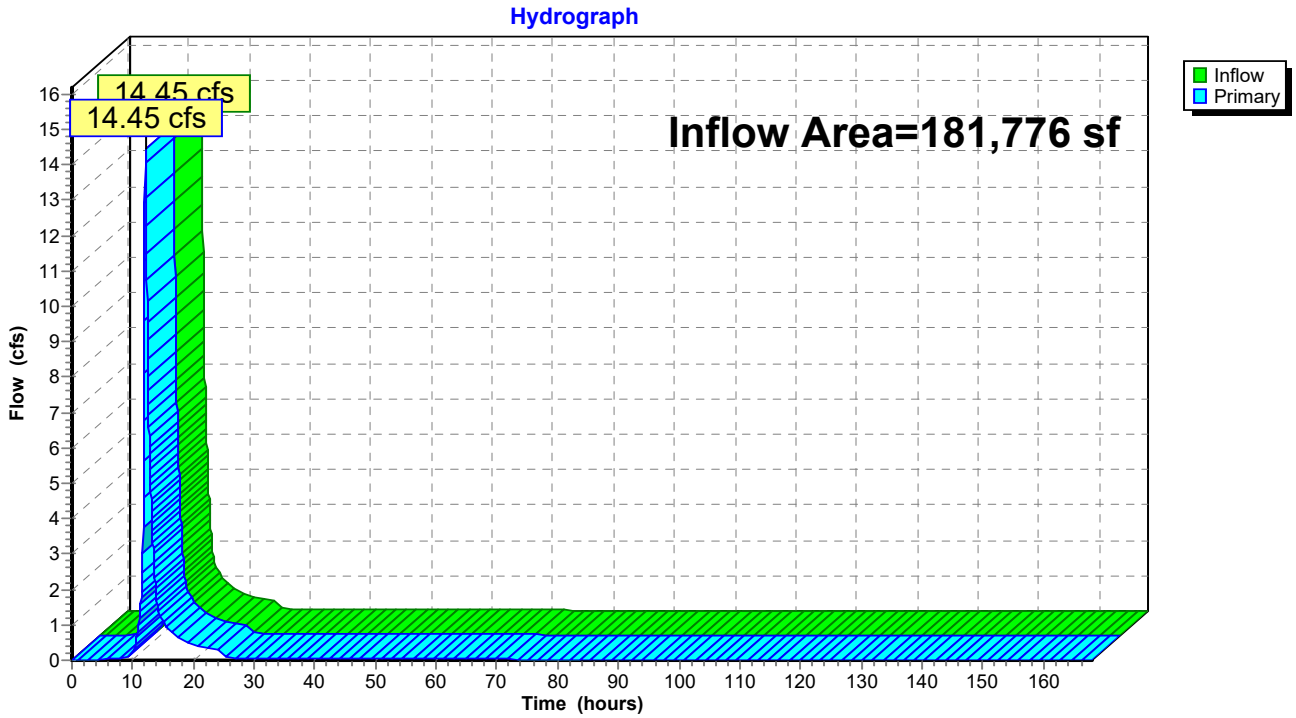


Summary for Link 10L: POST-DEV TO DA #1

Inflow Area = 181,776 sf, 80.42% Impervious, Inflow Depth > 6.02" for 100-yr event
Inflow = 14.45 cfs @ 12.09 hrs, Volume= 91,149 cf
Primary = 14.45 cfs @ 12.09 hrs, Volume= 91,149 cf, Atten= 0%, Lag= 0.0 min
Routed to Link 12L : POST-DEV TO POI#1

Primary outflow = Inflow, Time Span= 0.00-168.00 hrs, dt= 0.04 hrs

Link 10L: POST-DEV TO DA #1

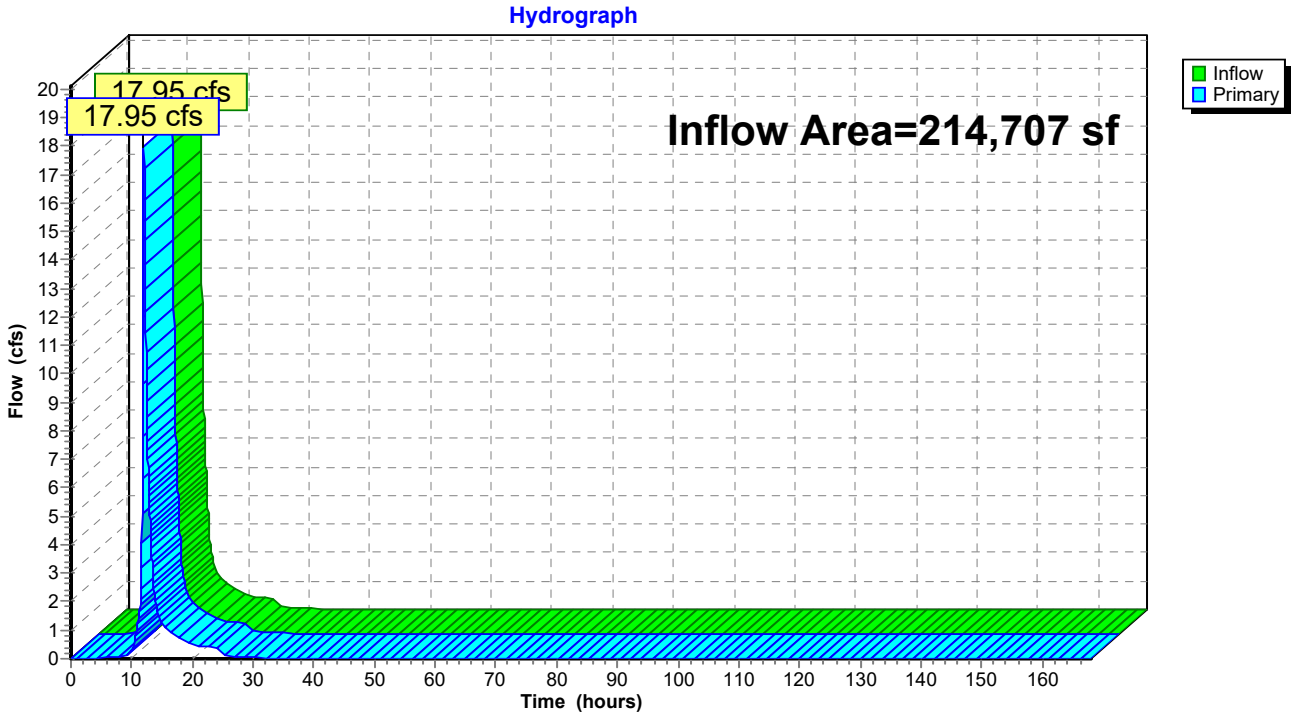


Summary for Link 12L: POST-DEV TO POI#1

Inflow Area = 214,707 sf, 75.43% Impervious, Inflow Depth > 5.75" for 100-yr event
Inflow = 17.95 cfs @ 12.00 hrs, Volume= 102,909 cf
Primary = 17.95 cfs @ 12.00 hrs, Volume= 102,909 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-168.00 hrs, dt= 0.04 hrs

Link 12L: POST-DEV TO POI#1

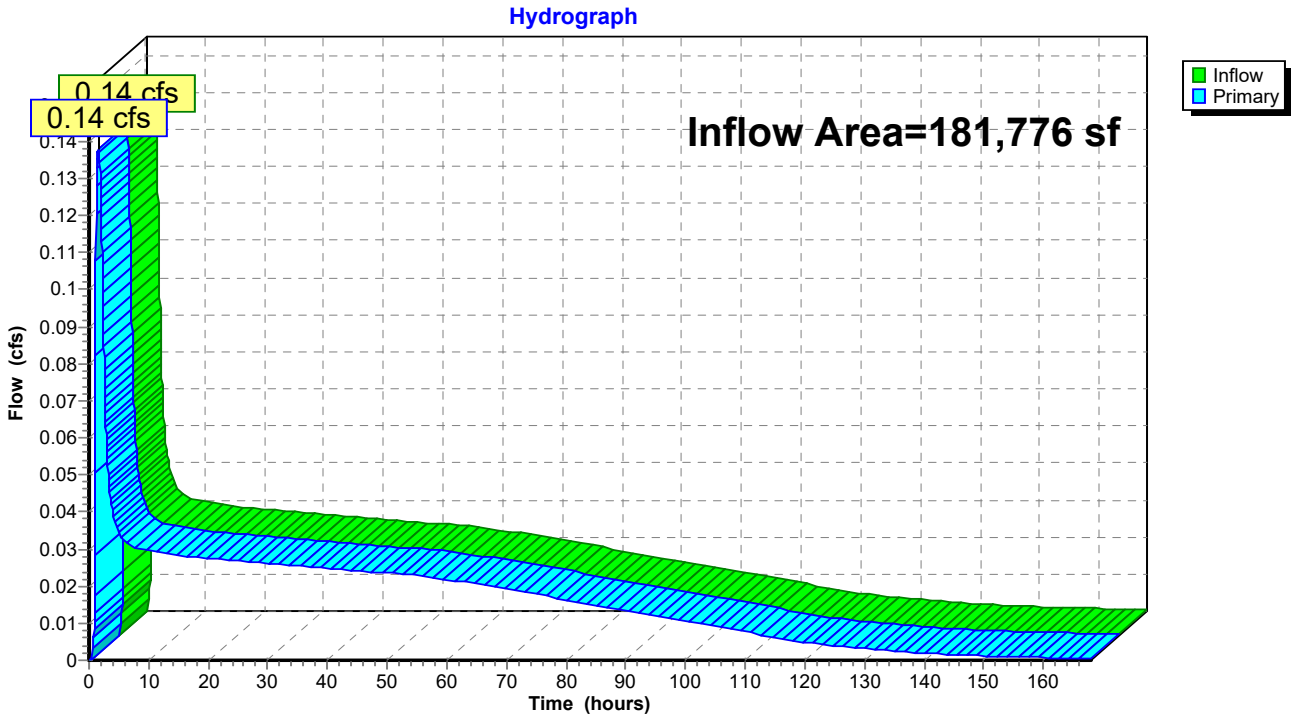


Summary for Link 10L: POST-DEV TO DA #1

Inflow Area = 181,776 sf, 80.42% Impervious, Inflow Depth > 0.62" for MRC event
Inflow = 0.14 cfs @ 1.55 hrs, Volume= 9,432 cf
Primary = 0.14 cfs @ 1.55 hrs, Volume= 9,432 cf, Atten= 0%, Lag= 0.0 min
Routed to Link 12L : POST-DEV TO POI#1

Primary outflow = Inflow, Time Span= 0.00-168.00 hrs, dt= 0.04 hrs

Link 10L: POST-DEV TO DA #1

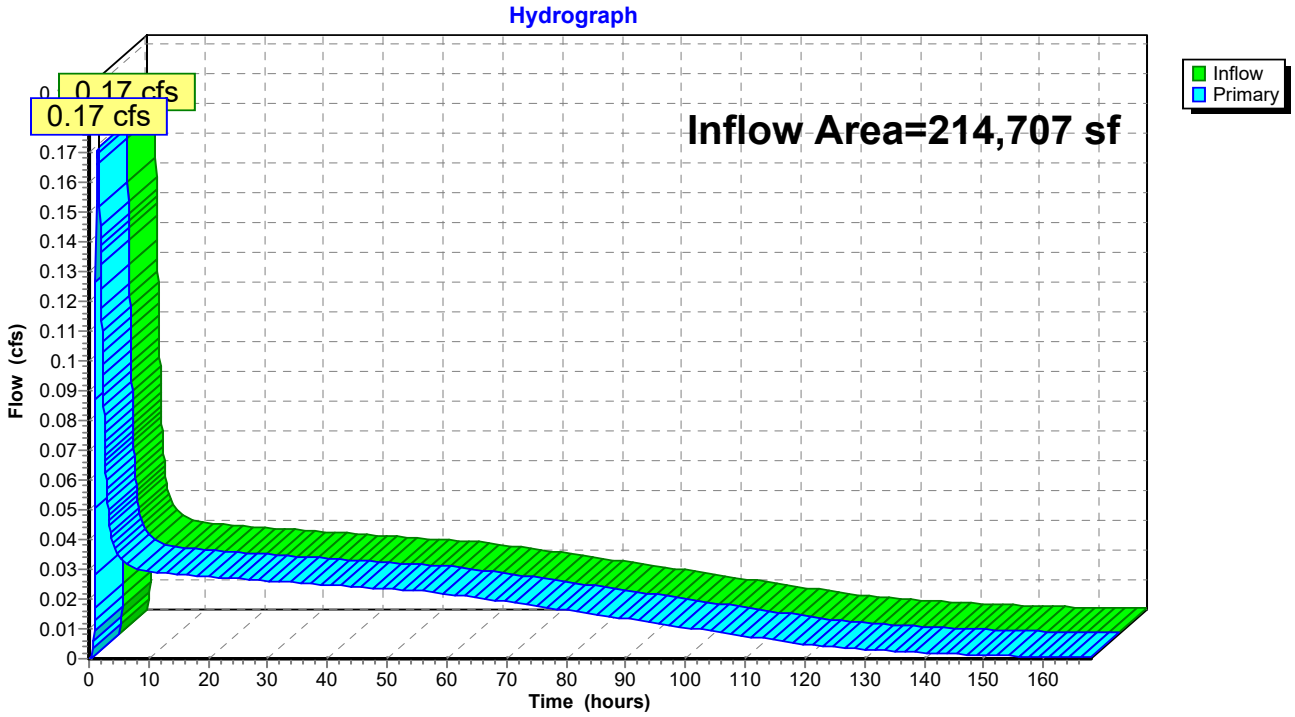


Summary for Link 12L: POST-DEV TO POI#1

Inflow Area = 214,707 sf, 75.43% Impervious, Inflow Depth > 0.53" for MRC event
Inflow = 0.17 cfs @ 1.52 hrs, Volume= 9,522 cf
Primary = 0.17 cfs @ 1.52 hrs, Volume= 9,522 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-168.00 hrs, dt= 0.04 hrs

Link 12L: POST-DEV TO POI#1



Volume Calculations

Stage-Area-Storage for Pond 1P: UG1

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
157.53	0	158.06	2,965	158.59	9,098
157.54	52	158.07	3,084	158.60	9,211
157.55	104	158.08	3,203	158.61	9,324
157.56	156	158.09	3,321	158.62	9,436
157.57	209	158.10	3,439	158.63	9,549
157.58	261	158.11	3,557	158.64	9,661
157.59	313	158.12	3,675	158.65	9,773
157.60	365	158.13	3,793	158.66	9,885
157.61	417	158.14	3,910	158.67	9,997
157.62	469	158.15	4,028	158.68	10,109
157.63	522	158.16	4,145	158.69	10,221
157.64	574	158.17	4,262	158.70	10,333
157.65	626	158.18	4,378	158.71	10,445
157.66	678	158.19	4,495	158.72	10,556
157.67	730	158.20	4,611	158.73	10,668
157.68	782	158.21	4,727	158.74	10,779
157.69	835	158.22	4,843	158.75	10,890
157.70	887	158.23	4,960	158.76	11,001
157.71	939	158.24	5,076	158.77	11,112
157.72	991	158.25	5,192	158.78	11,222
157.73	1,043	158.26	5,308	158.79	11,333
157.74	1,095	158.27	5,423	158.80	11,443
157.75	1,148	158.28	5,539	158.81	11,553
157.76	1,200	158.29	5,655	158.82	11,663
157.77	1,252	158.30	5,771	158.83	11,773
157.78	1,304	158.31	5,887	158.84	11,882
157.79	1,356	158.32	6,002	158.85	11,992
157.80	1,408	158.33	6,118	158.86	12,101
157.81	1,461	158.34	6,233	158.87	12,211
157.82	1,513	158.35	6,349	158.88	12,320
157.83	1,565	158.36	6,464	158.89	12,429
157.84	1,617	158.37	6,580	158.90	12,538
157.85	1,669	158.38	6,695	158.91	12,646
157.86	1,721	158.39	6,811	158.92	12,755
157.87	1,774	158.40	6,926	158.93	12,864
157.88	1,826	158.41	7,041	158.94	12,972
157.89	1,878	158.42	7,156	158.95	13,081
157.90	1,930	158.43	7,272	158.96	13,189
157.91	1,982	158.44	7,387	158.97	13,297
157.92	2,034	158.45	7,502	158.98	13,405
157.93	2,087	158.46	7,617	158.99	13,514
157.94	2,139	158.47	7,732	159.00	13,621
157.95	2,191	158.48	7,846	159.01	13,729
157.96	2,243	158.49	7,961	159.02	13,837
157.97	2,295	158.50	8,075	159.03	13,945
157.98	2,347	158.51	8,190	159.04	14,052
157.99	2,400	158.52	8,304	159.05	14,160
158.00	2,452	158.53	8,418	159.06	14,267
158.01	2,504	158.54	8,531	159.07	14,374
158.02	2,556	158.55	8,645	159.08	14,481
158.03	2,608	158.56	8,759	159.09	14,588
158.04	2,727	158.57	8,872	159.10	14,695
158.05	2,847	158.58	8,985	159.11	14,802

Stage-Area-Storage for Pond 1P: UG1 (continued)

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
159.12	14,909	159.65	20,213	160.18	24,248
159.13	15,016	159.66	20,305	160.19	24,301
159.14	15,122	159.67	20,397	160.20	24,354
159.15	15,228	159.68	20,489	160.21	24,406
159.16	15,334	159.69	20,580	160.22	24,459
159.17	15,439	159.70	20,671	160.23	24,511
159.18	15,545	159.71	20,761	160.24	24,563
159.19	15,650	159.72	20,851	160.25	24,615
159.20	15,755	159.73	20,940	160.26	24,667
159.21	15,860	159.74	21,029	160.27	24,719
159.22	15,964	159.75	21,118	160.28	24,772
159.23	16,068	159.76	21,206	160.29	24,824
159.24	16,172	159.77	21,293	160.30	24,876
159.25	16,276	159.78	21,381	160.31	24,928
159.26	16,379	159.79	21,467	160.32	24,980
159.27	16,482	159.80	21,554	160.33	25,032
159.28	16,585	159.81	21,639	160.34	25,084
159.29	16,687	159.82	21,724	160.35	25,137
159.30	16,790	159.83	21,809	160.36	25,189
159.31	16,892	159.84	21,893	160.37	25,241
159.32	16,994	159.85	21,976	160.38	25,293
159.33	17,095	159.86	22,059	160.39	25,345
159.34	17,197	159.87	22,141	160.40	25,397
159.35	17,298	159.88	22,223	160.41	25,450
159.36	17,399	159.89	22,303	160.42	25,502
159.37	17,500	159.90	22,383	160.43	25,554
159.38	17,601	159.91	22,463	160.44	25,606
159.39	17,701	159.92	22,541	160.45	25,658
159.40	17,801	159.93	22,619	160.46	25,710
159.41	17,901	159.94	22,696	160.47	25,763
159.42	18,001	159.95	22,773	160.48	25,815
159.43	18,100	159.96	22,848	160.49	25,867
159.44	18,199	159.97	22,922	160.50	25,919
159.45	18,298	159.98	22,995	160.51	25,971
159.46	18,397	159.99	23,068	160.52	26,023
159.47	18,495	160.00	23,139	160.53	26,076
159.48	18,593	160.01	23,209	160.54	26,128
159.49	18,691	160.02	23,278	160.55	26,180
159.50	18,788	160.03	23,345	160.56	26,232
159.51	18,885	160.04	23,412	160.57	26,284
159.52	18,982	160.05	23,478	160.58	26,336
159.53	19,079	160.06	23,543	160.59	26,389
159.54	19,175	160.07	23,607	160.60	26,441
159.55	19,271	160.08	23,669	160.61	26,493
159.56	19,367	160.09	23,731	160.62	26,545
159.57	19,462	160.10	23,792	160.63	26,597
159.58	19,557	160.11	23,852	160.64	26,649
159.59	19,652	160.12	23,910	160.65	26,702
159.60	19,746	160.13	23,968	160.66	26,754
159.61	19,840	160.14	24,026	160.67	26,806
159.62	19,934	160.15	24,082	160.68	26,858
159.63	20,027	160.16	24,138	160.69	26,910
159.64	20,120	160.17	24,193	160.70	26,962

Stage-Area-Storage for Pond 1P: UG1 (continued)

Elevation (feet)	Storage (cubic-feet)
160.71	27,015
160.72	27,067
160.73	27,119
160.74	**27,162**

Stage-Area-Storage for Pond 2P: UG2

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
159.80	0	160.33	866	160.86	2,602
159.81	15	160.34	899	160.87	2,634
159.82	31	160.35	932	160.88	2,667
159.83	46	160.36	965	160.89	2,699
159.84	61	160.37	998	160.90	2,731
159.85	77	160.38	1,031	160.91	2,764
159.86	92	160.39	1,064	160.92	2,796
159.87	107	160.40	1,097	160.93	2,828
159.88	123	160.41	1,130	160.94	2,860
159.89	138	160.42	1,163	160.95	2,892
159.90	153	160.43	1,196	160.96	2,924
159.91	169	160.44	1,229	160.97	2,956
159.92	184	160.45	1,262	160.98	2,988
159.93	199	160.46	1,295	160.99	3,020
159.94	215	160.47	1,328	161.00	3,052
159.95	230	160.48	1,361	161.01	3,084
159.96	245	160.49	1,393	161.02	3,115
159.97	261	160.50	1,426	161.03	3,147
159.98	276	160.51	1,459	161.04	3,179
159.99	291	160.52	1,492	161.05	3,211
160.00	307	160.53	1,525	161.06	3,242
160.01	322	160.54	1,557	161.07	3,274
160.02	337	160.55	1,590	161.08	3,306
160.03	353	160.56	1,623	161.09	3,337
160.04	368	160.57	1,656	161.10	3,369
160.05	383	160.58	1,688	161.11	3,401
160.06	399	160.59	1,721	161.12	3,432
160.07	414	160.60	1,754	161.13	3,464
160.08	429	160.61	1,787	161.14	3,496
160.09	445	160.62	1,819	161.15	3,527
160.10	460	160.63	1,852	161.16	3,559
160.11	475	160.64	1,885	161.17	3,590
160.12	491	160.65	1,917	161.18	3,622
160.13	506	160.66	1,950	161.19	3,654
160.14	521	160.67	1,983	161.20	3,685
160.15	537	160.68	2,015	161.21	3,717
160.16	552	160.69	2,048	161.22	3,748
160.17	567	160.70	2,081	161.23	3,780
160.18	583	160.71	2,113	161.24	3,811
160.19	598	160.72	2,146	161.25	3,843
160.20	613	160.73	2,179	161.26	3,874
160.21	629	160.74	2,211	161.27	3,906
160.22	644	160.75	2,244	161.28	3,937
160.23	659	160.76	2,277	161.29	3,969
160.24	675	160.77	2,309	161.30	4,000
160.25	690	160.78	2,342	161.31	4,032
160.26	705	160.79	2,374	161.32	4,063
160.27	721	160.80	2,407	161.33	4,094
160.28	736	160.81	2,440	161.34	4,126
160.29	751	160.82	2,472	161.35	4,157
160.30	767	160.83	2,505	161.36	4,188
160.31	800	160.84	2,537	161.37	4,220
160.32	833	160.85	2,570	161.38	4,251

Stage-Area-Storage for Pond 2P: UG2 (continued)

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
161.39	4,282	161.92	5,876	162.45	7,260
161.40	4,314	161.93	5,904	162.46	7,283
161.41	4,345	161.94	5,932	162.47	7,306
161.42	4,376	161.95	5,961	162.48	7,328
161.43	4,407	161.96	5,989	162.49	7,351
161.44	4,439	161.97	6,017	162.50	7,373
161.45	4,470	161.98	6,045	162.51	7,395
161.46	4,501	161.99	6,073	162.52	7,416
161.47	4,532	162.00	6,101	162.53	7,438
161.48	4,563	162.01	6,129	162.54	7,459
161.49	4,594	162.02	6,157	162.55	7,480
161.50	4,626	162.03	6,184	162.56	7,501
161.51	4,657	162.04	6,212	162.57	7,521
161.52	4,688	162.05	6,240	162.58	7,542
161.53	4,718	162.06	6,267	162.59	7,562
161.54	4,749	162.07	6,295	162.60	7,582
161.55	4,780	162.08	6,322	162.61	7,601
161.56	4,811	162.09	6,349	162.62	7,621
161.57	4,842	162.10	6,376	162.63	7,640
161.58	4,872	162.11	6,403	162.64	7,659
161.59	4,903	162.12	6,430	162.65	7,678
161.60	4,933	162.13	6,457	162.66	7,696
161.61	4,964	162.14	6,484	162.67	7,714
161.62	4,994	162.15	6,511	162.68	7,732
161.63	5,024	162.16	6,537	162.69	7,750
161.64	5,055	162.17	6,564	162.70	7,768
161.65	5,085	162.18	6,590	162.71	7,785
161.66	5,115	162.19	6,617	162.72	7,803
161.67	5,145	162.20	6,643	162.73	7,820
161.68	5,175	162.21	6,669	162.74	7,837
161.69	5,205	162.22	6,695	162.75	7,853
161.70	5,234	162.23	6,721	162.76	7,870
161.71	5,264	162.24	6,747	162.77	7,886
161.72	5,294	162.25	6,772	162.78	7,902
161.73	5,324	162.26	6,798	162.79	7,918
161.74	5,353	162.27	6,823	162.80	7,933
161.75	5,383	162.28	6,849	162.81	7,949
161.76	5,412	162.29	6,874	162.82	7,964
161.77	5,442	162.30	6,899	162.83	7,979
161.78	5,471	162.31	6,924	162.84	7,995
161.79	5,500	162.32	6,949	162.85	8,010
161.80	5,530	162.33	6,974	162.86	8,025
161.81	5,559	162.34	6,999	162.87	8,041
161.82	5,588	162.35	7,023	162.88	8,056
161.83	5,617	162.36	7,047	162.89	8,071
161.84	5,646	162.37	7,072	162.90	8,087
161.85	5,675	162.38	7,096	162.91	8,102
161.86	5,704	162.39	7,120	162.92	8,117
161.87	5,733	162.40	7,144	162.93	8,133
161.88	5,761	162.41	7,167	162.94	8,148
161.89	5,790	162.42	7,191	162.95	8,163
161.90	5,819	162.43	7,214	162.96	8,179
161.91	5,847	162.44	7,237	162.97	8,194

Stage-Area-Storage for Pond 2P: UG2 (continued)

Elevation (feet)	Storage (cubic-feet)
162.98	8,209
162.99	8,225
163.00	8,240
163.01	8,255
163.02	8,271
163.03	8,286
163.04	8,301
163.05	8,317
163.06	8,332
163.07	8,347
163.08	8,363
163.09	8,378
163.10	8,393
163.11	8,409
163.12	8,424
163.13	8,439
163.14	8,455
163.15	8,470
163.16	8,485
163.17	8,501
163.18	8,516
163.19	8,531
163.20	8,547
163.21	8,562
163.22	8,577
163.23	8,593
163.24	8,608
163.25	8,623
163.26	8,639
163.27	8,654
163.28	8,669
163.29	8,685
163.30	8,700
163.31	8,715
163.32	8,731
163.33	8,746
163.34	**8,761**

Stage-Area-Storage for Pond 3P: UG3

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
160.28	0	160.81	660	161.34	1,981
160.29	12	160.82	686	161.35	2,005
160.30	23	160.83	711	161.36	2,030
160.31	35	160.84	737	161.37	2,054
160.32	47	160.85	762	161.38	2,078
160.33	58	160.86	788	161.39	2,102
160.34	70	160.87	813	161.40	2,126
160.35	82	160.88	838	161.41	2,150
160.36	93	160.89	864	161.42	2,174
160.37	105	160.90	889	161.43	2,198
160.38	117	160.91	914	161.44	2,222
160.39	128	160.92	939	161.45	2,246
160.40	140	160.93	964	161.46	2,270
160.41	152	160.94	989	161.47	2,294
160.42	163	160.95	1,014	161.48	2,318
160.43	175	160.96	1,039	161.49	2,342
160.44	187	160.97	1,065	161.50	2,365
160.45	198	160.98	1,090	161.51	2,389
160.46	210	160.99	1,115	161.52	2,413
160.47	222	161.00	1,140	161.53	2,437
160.48	233	161.01	1,165	161.54	2,460
160.49	245	161.02	1,190	161.55	2,484
160.50	257	161.03	1,215	161.56	2,508
160.51	268	161.04	1,240	161.57	2,531
160.52	280	161.05	1,265	161.58	2,555
160.53	292	161.06	1,290	161.59	2,578
160.54	303	161.07	1,315	161.60	2,602
160.55	315	161.08	1,339	161.61	2,625
160.56	327	161.09	1,364	161.62	2,649
160.57	338	161.10	1,389	161.63	2,672
160.58	350	161.11	1,414	161.64	2,695
160.59	362	161.12	1,439	161.65	2,719
160.60	373	161.13	1,464	161.66	2,742
160.61	385	161.14	1,489	161.67	2,765
160.62	397	161.15	1,514	161.68	2,788
160.63	408	161.16	1,539	161.69	2,811
160.64	420	161.17	1,564	161.70	2,834
160.65	432	161.18	1,589	161.71	2,857
160.66	443	161.19	1,613	161.72	2,879
160.67	455	161.20	1,638	161.73	2,902
160.68	467	161.21	1,663	161.74	2,925
160.69	478	161.22	1,688	161.75	2,947
160.70	490	161.23	1,712	161.76	2,970
160.71	502	161.24	1,737	161.77	2,992
160.72	513	161.25	1,762	161.78	3,014
160.73	525	161.26	1,786	161.79	3,037
160.74	537	161.27	1,811	161.80	3,059
160.75	548	161.28	1,835	161.81	3,081
160.76	560	161.29	1,859	161.82	3,103
160.77	572	161.30	1,884	161.83	3,125
160.78	583	161.31	1,908	161.84	3,147
160.79	609	161.32	1,933	161.85	3,169
160.80	635	161.33	1,957	161.86	3,190

Stage-Area-Storage for Pond 3P: UG3 (continued)

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
161.87	3,212	162.40	4,190	162.93	4,817
161.88	3,233	162.41	4,203	162.94	4,829
161.89	3,255	162.42	4,217	162.95	4,841
161.90	3,276	162.43	4,231	162.96	4,852
161.91	3,298	162.44	4,244	162.97	4,864
161.92	3,319	162.45	4,257	162.98	4,876
161.93	3,340	162.46	4,269	162.99	**4,885**
161.94	3,361	162.47	4,281		
161.95	3,382	162.48	4,292		
161.96	3,403	162.49	4,304		
161.97	3,424	162.50	4,316		
161.98	3,445	162.51	4,327		
161.99	3,466	162.52	4,339		
162.00	3,486	162.53	4,351		
162.01	3,507	162.54	4,362		
162.02	3,527	162.55	4,374		
162.03	3,547	162.56	4,386		
162.04	3,567	162.57	4,397		
162.05	3,588	162.58	4,409		
162.06	3,607	162.59	4,421		
162.07	3,627	162.60	4,432		
162.08	3,647	162.61	4,444		
162.09	3,667	162.62	4,456		
162.10	3,686	162.63	4,467		
162.11	3,705	162.64	4,479		
162.12	3,725	162.65	4,491		
162.13	3,744	162.66	4,502		
162.14	3,763	162.67	4,514		
162.15	3,781	162.68	4,526		
162.16	3,800	162.69	4,537		
162.17	3,818	162.70	4,549		
162.18	3,837	162.71	4,561		
162.19	3,855	162.72	4,572		
162.20	3,873	162.73	4,584		
162.21	3,890	162.74	4,596		
162.22	3,908	162.75	4,607		
162.23	3,925	162.76	4,619		
162.24	3,942	162.77	4,631		
162.25	3,959	162.78	4,642		
162.26	3,976	162.79	4,654		
162.27	3,992	162.80	4,666		
162.28	4,009	162.81	4,677		
162.29	4,025	162.82	4,689		
162.30	4,041	162.83	4,701		
162.31	4,056	162.84	4,712		
162.32	4,072	162.85	4,724		
162.33	4,087	162.86	4,736		
162.34	4,102	162.87	4,747		
162.35	4,117	162.88	4,759		
162.36	4,132	162.89	4,771		
162.37	4,147	162.90	4,782		
162.38	4,161	162.91	4,794		
162.39	4,175	162.92	4,806		

Stage-Area-Storage for Pond 1P: UG1

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
157.53	0	158.06	2,965	158.59	9,098
157.54	52	158.07	3,084	158.60	9,211
157.55	104	158.08	3,203	158.61	9,324
157.56	156	158.09	3,321	158.62	9,436
157.57	209	158.10	3,439	158.63	9,549
157.58	261	158.11	3,557	158.64	9,661
157.59	313	158.12	3,675	158.65	9,773
157.60	365	158.13	3,793	158.66	9,885
157.61	417	158.14	3,910	158.67	9,997
157.62	469	158.15	4,028	158.68	10,109
157.63	522	158.16	4,145	158.69	10,221
157.64	574	158.17	4,262	158.70	10,333
157.65	626	158.18	4,378	158.71	10,445
157.66	678	158.19	4,495	158.72	10,556
157.67	730	158.20	4,611	158.73	10,668
157.68	782	158.21	4,727	158.74	10,779
157.69	835	158.22	4,843	158.75	10,890
157.70	887	158.23	4,960	158.76	11,001
157.71	939	158.24	5,076	158.77	11,112
157.72	991	158.25	5,192	158.78	11,222
157.73	1,043	158.26	5,308	158.79	11,333
157.74	1,095	158.27	5,423	158.80	11,443
157.75	1,148	158.28	5,539	158.81	11,553
157.76	1,200	158.29	5,655	158.82	11,663
157.77	1,252	158.30	5,771	158.83	11,773
157.78	1,304	158.31	5,887	158.84	11,882
157.79	1,356	158.32	6,002	158.85	11,992
157.80	1,408	158.33	6,118	158.86	12,101
157.81	1,461	158.34	6,233	158.87	12,211
157.82	1,513	158.35	6,349	158.88	12,320
157.83	1,565	158.36	6,464	158.89	12,429
157.84	1,617	158.37	6,580	158.90	12,538
157.85	1,669	158.38	6,695	158.91	12,646
157.86	1,721	158.39	6,811	158.92	12,755
157.87	1,774	158.40	6,926	158.93	12,864
157.88	1,826	158.41	7,041	158.94	12,972
157.89	1,878	158.42	7,156	158.95	13,081
157.90	1,930	158.43	7,272	158.96	13,189
157.91	1,982	158.44	7,387	158.97	13,297
157.92	2,034	158.45	7,502	158.98	13,405
157.93	2,087	158.46	7,617	158.99	13,514
157.94	2,139	158.47	7,732	159.00	13,621
157.95	2,191	158.48	7,846	159.01	13,729
157.96	2,243	158.49	7,961	159.02	13,837
157.97	2,295	158.50	8,075	159.03	13,945
157.98	2,347	158.51	8,190	159.04	14,052
157.99	2,400	158.52	8,304	159.05	14,160
158.00	2,452	158.53	8,418	159.06	14,267
158.01	2,504	158.54	8,531	159.07	14,374
158.02	2,556	158.55	8,645	159.08	14,481
158.03	2,608	158.56	8,759	159.09	14,588
158.04	2,727	158.57	8,872	159.10	14,695
158.05	2,847	158.58	8,985	159.11	14,802

Stage-Area-Storage for Pond 1P: UG1 (continued)

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
159.12	14,909	159.65	20,213	160.18	24,248
159.13	15,016	159.66	20,305	160.19	24,301
159.14	15,122	159.67	20,397	160.20	24,354
159.15	15,228	159.68	20,489	160.21	24,406
159.16	15,334	159.69	20,580	160.22	24,459
159.17	15,439	159.70	20,671	160.23	24,511
159.18	15,545	159.71	20,761	160.24	24,563
159.19	15,650	159.72	20,851	160.25	24,615
159.20	15,755	159.73	20,940	160.26	24,667
159.21	15,860	159.74	21,029	160.27	24,719
159.22	15,964	159.75	21,118	160.28	24,772
159.23	16,068	159.76	21,206	160.29	24,824
159.24	16,172	159.77	21,293	160.30	24,876
159.25	16,276	159.78	21,381	160.31	24,928
159.26	16,379	159.79	21,467	160.32	24,980
159.27	16,482	159.80	21,554	160.33	25,032
159.28	16,585	159.81	21,639	160.34	25,084
159.29	16,687	159.82	21,724	160.35	25,137
159.30	16,790	159.83	21,809	160.36	25,189
159.31	16,892	159.84	21,893	160.37	25,241
159.32	16,994	159.85	21,976	160.38	25,293
159.33	17,095	159.86	22,059	160.39	25,345
159.34	17,197	159.87	22,141	160.40	25,397
159.35	17,298	159.88	22,223	160.41	25,450
159.36	17,399	159.89	22,303	160.42	25,502
159.37	17,500	159.90	22,383	160.43	25,554
159.38	17,601	159.91	22,463	160.44	25,606
159.39	17,701	159.92	22,541	160.45	25,658
159.40	17,801	159.93	22,619	160.46	25,710
159.41	17,901	159.94	22,696	160.47	25,763
159.42	18,001	159.95	22,773	160.48	25,815
159.43	18,100	159.96	22,848	160.49	25,867
159.44	18,199	159.97	22,922	160.50	25,919
159.45	18,298	159.98	22,995	160.51	25,971
159.46	18,397	159.99	23,068	160.52	26,023
159.47	18,495	160.00	23,139	160.53	26,076
159.48	18,593	160.01	23,209	160.54	26,128
159.49	18,691	160.02	23,278	160.55	26,180
159.50	18,788	160.03	23,345	160.56	26,232
159.51	18,885	160.04	23,412	160.57	26,284
159.52	18,982	160.05	23,478	160.58	26,336
159.53	19,079	160.06	23,543	160.59	26,389
159.54	19,175	160.07	23,607	160.60	26,441
159.55	19,271	160.08	23,669	160.61	26,493
159.56	19,367	160.09	23,731	160.62	26,545
159.57	19,462	160.10	23,792	160.63	26,597
159.58	19,557	160.11	23,852	160.64	26,649
159.59	19,652	160.12	23,910	160.65	26,702
159.60	19,746	160.13	23,968	160.66	26,754
159.61	19,840	160.14	24,026	160.67	26,806
159.62	19,934	160.15	24,082	160.68	26,858
159.63	20,027	160.16	24,138	160.69	26,910
159.64	20,120	160.17	24,193	160.70	26,962

Stage-Area-Storage for Pond 1P: UG1 (continued)

Elevation (feet)	Storage (cubic-feet)
160.71	27,015
160.72	27,067
160.73	27,119
160.74	**27,162**

Stage-Area-Storage for Pond 2P: UG2

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
159.80	0	160.33	866	160.86	2,602
159.81	15	160.34	899	160.87	2,634
159.82	31	160.35	932	160.88	2,667
159.83	46	160.36	965	160.89	2,699
159.84	61	160.37	998	160.90	2,731
159.85	77	160.38	1,031	160.91	2,764
159.86	92	160.39	1,064	160.92	2,796
159.87	107	160.40	1,097	160.93	2,828
159.88	123	160.41	1,130	160.94	2,860
159.89	138	160.42	1,163	160.95	2,892
159.90	153	160.43	1,196	160.96	2,924
159.91	169	160.44	1,229	160.97	2,956
159.92	184	160.45	1,262	160.98	2,988
159.93	199	160.46	1,295	160.99	3,020
159.94	215	160.47	1,328	161.00	3,052
159.95	230	160.48	1,361	161.01	3,084
159.96	245	160.49	1,393	161.02	3,115
159.97	261	160.50	1,426	161.03	3,147
159.98	276	160.51	1,459	161.04	3,179
159.99	291	160.52	1,492	161.05	3,211
160.00	307	160.53	1,525	161.06	3,242
160.01	322	160.54	1,557	161.07	3,274
160.02	337	160.55	1,590	161.08	3,306
160.03	353	160.56	1,623	161.09	3,337
160.04	368	160.57	1,656	161.10	3,369
160.05	383	160.58	1,688	161.11	3,401
160.06	399	160.59	1,721	161.12	3,432
160.07	414	160.60	1,754	161.13	3,464
160.08	429	160.61	1,787	161.14	3,496
160.09	445	160.62	1,819	161.15	3,527
160.10	460	160.63	1,852	161.16	3,559
160.11	475	160.64	1,885	161.17	3,590
160.12	491	160.65	1,917	161.18	3,622
160.13	506	160.66	1,950	161.19	3,654
160.14	521	160.67	1,983	161.20	3,685
160.15	537	160.68	2,015	161.21	3,717
160.16	552	160.69	2,048	161.22	3,748
160.17	567	160.70	2,081	161.23	3,780
160.18	583	160.71	2,113	161.24	3,811
160.19	598	160.72	2,146	161.25	3,843
160.20	613	160.73	2,179	161.26	3,874
160.21	629	160.74	2,211	161.27	3,906
160.22	644	160.75	2,244	161.28	3,937
160.23	659	160.76	2,277	161.29	3,969
160.24	675	160.77	2,309	161.30	4,000
160.25	690	160.78	2,342	161.31	4,032
160.26	705	160.79	2,374	161.32	4,063
160.27	721	160.80	2,407	161.33	4,094
160.28	736	160.81	2,440	161.34	4,126
160.29	751	160.82	2,472	161.35	4,157
160.30	767	160.83	2,505	161.36	4,188
160.31	800	160.84	2,537	161.37	4,220
160.32	833	160.85	2,570	161.38	4,251

Stage-Area-Storage for Pond 2P: UG2 (continued)

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
161.39	4,282	161.92	5,876	162.45	7,260
161.40	4,314	161.93	5,904	162.46	7,283
161.41	4,345	161.94	5,932	162.47	7,306
161.42	4,376	161.95	5,961	162.48	7,328
161.43	4,407	161.96	5,989	162.49	7,351
161.44	4,439	161.97	6,017	162.50	7,373
161.45	4,470	161.98	6,045	162.51	7,395
161.46	4,501	161.99	6,073	162.52	7,416
161.47	4,532	162.00	6,101	162.53	7,438
161.48	4,563	162.01	6,129	162.54	7,459
161.49	4,594	162.02	6,157	162.55	7,480
161.50	4,626	162.03	6,184	162.56	7,501
161.51	4,657	162.04	6,212	162.57	7,521
161.52	4,688	162.05	6,240	162.58	7,542
161.53	4,718	162.06	6,267	162.59	7,562
161.54	4,749	162.07	6,295	162.60	7,582
161.55	4,780	162.08	6,322	162.61	7,601
161.56	4,811	162.09	6,349	162.62	7,621
161.57	4,842	162.10	6,376	162.63	7,640
161.58	4,872	162.11	6,403	162.64	7,659
161.59	4,903	162.12	6,430	162.65	7,678
161.60	4,933	162.13	6,457	162.66	7,696
161.61	4,964	162.14	6,484	162.67	7,714
161.62	4,994	162.15	6,511	162.68	7,732
161.63	5,024	162.16	6,537	162.69	7,750
161.64	5,055	162.17	6,564	162.70	7,768
161.65	5,085	162.18	6,590	162.71	7,785
161.66	5,115	162.19	6,617	162.72	7,803
161.67	5,145	162.20	6,643	162.73	7,820
161.68	5,175	162.21	6,669	162.74	7,837
161.69	5,205	162.22	6,695	162.75	7,853
161.70	5,234	162.23	6,721	162.76	7,870
161.71	5,264	162.24	6,747	162.77	7,886
161.72	5,294	162.25	6,772	162.78	7,902
161.73	5,324	162.26	6,798	162.79	7,918
161.74	5,353	162.27	6,823	162.80	7,933
161.75	5,383	162.28	6,849	162.81	7,949
161.76	5,412	162.29	6,874	162.82	7,964
161.77	5,442	162.30	6,899	162.83	7,979
161.78	5,471	162.31	6,924	162.84	7,995
161.79	5,500	162.32	6,949	162.85	8,010
161.80	5,530	162.33	6,974	162.86	8,025
161.81	5,559	162.34	6,999	162.87	8,041
161.82	5,588	162.35	7,023	162.88	8,056
161.83	5,617	162.36	7,047	162.89	8,071
161.84	5,646	162.37	7,072	162.90	8,087
161.85	5,675	162.38	7,096	162.91	8,102
161.86	5,704	162.39	7,120	162.92	8,117
161.87	5,733	162.40	7,144	162.93	8,133
161.88	5,761	162.41	7,167	162.94	8,148
161.89	5,790	162.42	7,191	162.95	8,163
161.90	5,819	162.43	7,214	162.96	8,179
161.91	5,847	162.44	7,237	162.97	8,194

Stage-Area-Storage for Pond 2P: UG2 (continued)

Elevation (feet)	Storage (cubic-feet)
162.98	8,209
162.99	8,225
163.00	8,240
163.01	8,255
163.02	8,271
163.03	8,286
163.04	8,301
163.05	8,317
163.06	8,332
163.07	8,347
163.08	8,363
163.09	8,378
163.10	8,393
163.11	8,409
163.12	8,424
163.13	8,439
163.14	8,455
163.15	8,470
163.16	8,485
163.17	8,501
163.18	8,516
163.19	8,531
163.20	8,547
163.21	8,562
163.22	8,577
163.23	8,593
163.24	8,608
163.25	8,623
163.26	8,639
163.27	8,654
163.28	8,669
163.29	8,685
163.30	8,700
163.31	8,715
163.32	8,731
163.33	8,746
163.34	**8,761**

Stage-Area-Storage for Pond 3P: UG3

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
160.28	0	160.81	660	161.34	1,981
160.29	12	160.82	686	161.35	2,005
160.30	23	160.83	711	161.36	2,030
160.31	35	160.84	737	161.37	2,054
160.32	47	160.85	762	161.38	2,078
160.33	58	160.86	788	161.39	2,102
160.34	70	160.87	813	161.40	2,126
160.35	82	160.88	838	161.41	2,150
160.36	93	160.89	864	161.42	2,174
160.37	105	160.90	889	161.43	2,198
160.38	117	160.91	914	161.44	2,222
160.39	128	160.92	939	161.45	2,246
160.40	140	160.93	964	161.46	2,270
160.41	152	160.94	989	161.47	2,294
160.42	163	160.95	1,014	161.48	2,318
160.43	175	160.96	1,039	161.49	2,342
160.44	187	160.97	1,065	161.50	2,365
160.45	198	160.98	1,090	161.51	2,389
160.46	210	160.99	1,115	161.52	2,413
160.47	222	161.00	1,140	161.53	2,437
160.48	233	161.01	1,165	161.54	2,460
160.49	245	161.02	1,190	161.55	2,484
160.50	257	161.03	1,215	161.56	2,508
160.51	268	161.04	1,240	161.57	2,531
160.52	280	161.05	1,265	161.58	2,555
160.53	292	161.06	1,290	161.59	2,578
160.54	303	161.07	1,315	161.60	2,602
160.55	315	161.08	1,339	161.61	2,625
160.56	327	161.09	1,364	161.62	2,649
160.57	338	161.10	1,389	161.63	2,672
160.58	350	161.11	1,414	161.64	2,695
160.59	362	161.12	1,439	161.65	2,719
160.60	373	161.13	1,464	161.66	2,742
160.61	385	161.14	1,489	161.67	2,765
160.62	397	161.15	1,514	161.68	2,788
160.63	408	161.16	1,539	161.69	2,811
160.64	420	161.17	1,564	161.70	2,834
160.65	432	161.18	1,589	161.71	2,857
160.66	443	161.19	1,613	161.72	2,879
160.67	455	161.20	1,638	161.73	2,902
160.68	467	161.21	1,663	161.74	2,925
160.69	478	161.22	1,688	161.75	2,947
160.70	490	161.23	1,712	161.76	2,970
160.71	502	161.24	1,737	161.77	2,992
160.72	513	161.25	1,762	161.78	3,014
160.73	525	161.26	1,786	161.79	3,037
160.74	537	161.27	1,811	161.80	3,059
160.75	548	161.28	1,835	161.81	3,081
160.76	560	161.29	1,859	161.82	3,103
160.77	572	161.30	1,884	161.83	3,125
160.78	583	161.31	1,908	161.84	3,147
160.79	609	161.32	1,933	161.85	3,169
160.80	635	161.33	1,957	161.86	3,190

Stage-Area-Storage for Pond 3P: UG3 (continued)

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
161.87	3,212	162.40	4,190	162.93	4,817
161.88	3,233	162.41	4,203	162.94	4,829
161.89	3,255	162.42	4,217	162.95	4,841
161.90	3,276	162.43	4,231	162.96	4,852
161.91	3,298	162.44	4,244	162.97	4,864
161.92	3,319	162.45	4,257	162.98	4,876
161.93	3,340	162.46	4,269	162.99	**4,885**
161.94	3,361	162.47	4,281		
161.95	3,382	162.48	4,292		
161.96	3,403	162.49	4,304		
161.97	3,424	162.50	4,316		
161.98	3,445	162.51	4,327		
161.99	3,466	162.52	4,339		
162.00	3,486	162.53	4,351		
162.01	3,507	162.54	4,362		
162.02	3,527	162.55	4,374		
162.03	3,547	162.56	4,386		
162.04	3,567	162.57	4,397		
162.05	3,588	162.58	4,409		
162.06	3,607	162.59	4,421		
162.07	3,627	162.60	4,432		
162.08	3,647	162.61	4,444		
162.09	3,667	162.62	4,456		
162.10	3,686	162.63	4,467		
162.11	3,705	162.64	4,479		
162.12	3,725	162.65	4,491		
162.13	3,744	162.66	4,502		
162.14	3,763	162.67	4,514		
162.15	3,781	162.68	4,526		
162.16	3,800	162.69	4,537		
162.17	3,818	162.70	4,549		
162.18	3,837	162.71	4,561		
162.19	3,855	162.72	4,572		
162.20	3,873	162.73	4,584		
162.21	3,890	162.74	4,596		
162.22	3,908	162.75	4,607		
162.23	3,925	162.76	4,619		
162.24	3,942	162.77	4,631		
162.25	3,959	162.78	4,642		
162.26	3,976	162.79	4,654		
162.27	3,992	162.80	4,666		
162.28	4,009	162.81	4,677		
162.29	4,025	162.82	4,689		
162.30	4,041	162.83	4,701		
162.31	4,056	162.84	4,712		
162.32	4,072	162.85	4,724		
162.33	4,087	162.86	4,736		
162.34	4,102	162.87	4,747		
162.35	4,117	162.88	4,759		
162.36	4,132	162.89	4,771		
162.37	4,147	162.90	4,782		
162.38	4,161	162.91	4,794		
162.39	4,175	162.92	4,806		

Stage-Area-Storage for Pond 1P: UG1

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
157.53	0	158.06	2,965	158.59	9,098
157.54	52	158.07	3,084	158.60	9,211
157.55	104	158.08	3,203	158.61	9,324
157.56	156	158.09	3,321	158.62	9,436
157.57	209	158.10	3,439	158.63	9,549
157.58	261	158.11	3,557	158.64	9,661
157.59	313	158.12	3,675	158.65	9,773
157.60	365	158.13	3,793	158.66	9,885
157.61	417	158.14	3,910	158.67	9,997
157.62	469	158.15	4,028	158.68	10,109
157.63	522	158.16	4,145	158.69	10,221
157.64	574	158.17	4,262	158.70	10,333
157.65	626	158.18	4,378	158.71	10,445
157.66	678	158.19	4,495	158.72	10,556
157.67	730	158.20	4,611	158.73	10,668
157.68	782	158.21	4,727	158.74	10,779
157.69	835	158.22	4,843	158.75	10,890
157.70	887	158.23	4,960	158.76	11,001
157.71	939	158.24	5,076	158.77	11,112
157.72	991	158.25	5,192	158.78	11,222
157.73	1,043	158.26	5,308	158.79	11,333
157.74	1,095	158.27	5,423	158.80	11,443
157.75	1,148	158.28	5,539	158.81	11,553
157.76	1,200	158.29	5,655	158.82	11,663
157.77	1,252	158.30	5,771	158.83	11,773
157.78	1,304	158.31	5,887	158.84	11,882
157.79	1,356	158.32	6,002	158.85	11,992
157.80	1,408	158.33	6,118	158.86	12,101
157.81	1,461	158.34	6,233	158.87	12,211
157.82	1,513	158.35	6,349	158.88	12,320
157.83	1,565	158.36	6,464	158.89	12,429
157.84	1,617	158.37	6,580	158.90	12,538
157.85	1,669	158.38	6,695	158.91	12,646
157.86	1,721	158.39	6,811	158.92	12,755
157.87	1,774	158.40	6,926	158.93	12,864
157.88	1,826	158.41	7,041	158.94	12,972
157.89	1,878	158.42	7,156	158.95	13,081
157.90	1,930	158.43	7,272	158.96	13,189
157.91	1,982	158.44	7,387	158.97	13,297
157.92	2,034	158.45	7,502	158.98	13,405
157.93	2,087	158.46	7,617	158.99	13,514
157.94	2,139	158.47	7,732	159.00	13,621
157.95	2,191	158.48	7,846	159.01	13,729
157.96	2,243	158.49	7,961	159.02	13,837
157.97	2,295	158.50	8,075	159.03	13,945
157.98	2,347	158.51	8,190	159.04	14,052
157.99	2,400	158.52	8,304	159.05	14,160
158.00	2,452	158.53	8,418	159.06	14,267
158.01	2,504	158.54	8,531	159.07	14,374
158.02	2,556	158.55	8,645	159.08	14,481
158.03	2,608	158.56	8,759	159.09	14,588
158.04	2,727	158.57	8,872	159.10	14,695
158.05	2,847	158.58	8,985	159.11	14,802

Stage-Area-Storage for Pond 1P: UG1 (continued)

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
159.12	14,909	159.65	20,213	160.18	24,248
159.13	15,016	159.66	20,305	160.19	24,301
159.14	15,122	159.67	20,397	160.20	24,354
159.15	15,228	159.68	20,489	160.21	24,406
159.16	15,334	159.69	20,580	160.22	24,459
159.17	15,439	159.70	20,671	160.23	24,511
159.18	15,545	159.71	20,761	160.24	24,563
159.19	15,650	159.72	20,851	160.25	24,615
159.20	15,755	159.73	20,940	160.26	24,667
159.21	15,860	159.74	21,029	160.27	24,719
159.22	15,964	159.75	21,118	160.28	24,772
159.23	16,068	159.76	21,206	160.29	24,824
159.24	16,172	159.77	21,293	160.30	24,876
159.25	16,276	159.78	21,381	160.31	24,928
159.26	16,379	159.79	21,467	160.32	24,980
159.27	16,482	159.80	21,554	160.33	25,032
159.28	16,585	159.81	21,639	160.34	25,084
159.29	16,687	159.82	21,724	160.35	25,137
159.30	16,790	159.83	21,809	160.36	25,189
159.31	16,892	159.84	21,893	160.37	25,241
159.32	16,994	159.85	21,976	160.38	25,293
159.33	17,095	159.86	22,059	160.39	25,345
159.34	17,197	159.87	22,141	160.40	25,397
159.35	17,298	159.88	22,223	160.41	25,450
159.36	17,399	159.89	22,303	160.42	25,502
159.37	17,500	159.90	22,383	160.43	25,554
159.38	17,601	159.91	22,463	160.44	25,606
159.39	17,701	159.92	22,541	160.45	25,658
159.40	17,801	159.93	22,619	160.46	25,710
159.41	17,901	159.94	22,696	160.47	25,763
159.42	18,001	159.95	22,773	160.48	25,815
159.43	18,100	159.96	22,848	160.49	25,867
159.44	18,199	159.97	22,922	160.50	25,919
159.45	18,298	159.98	22,995	160.51	25,971
159.46	18,397	159.99	23,068	160.52	26,023
159.47	18,495	160.00	23,139	160.53	26,076
159.48	18,593	160.01	23,209	160.54	26,128
159.49	18,691	160.02	23,278	160.55	26,180
159.50	18,788	160.03	23,345	160.56	26,232
159.51	18,885	160.04	23,412	160.57	26,284
159.52	18,982	160.05	23,478	160.58	26,336
159.53	19,079	160.06	23,543	160.59	26,389
159.54	19,175	160.07	23,607	160.60	26,441
159.55	19,271	160.08	23,669	160.61	26,493
159.56	19,367	160.09	23,731	160.62	26,545
159.57	19,462	160.10	23,792	160.63	26,597
159.58	19,557	160.11	23,852	160.64	26,649
159.59	19,652	160.12	23,910	160.65	26,702
159.60	19,746	160.13	23,968	160.66	26,754
159.61	19,840	160.14	24,026	160.67	26,806
159.62	19,934	160.15	24,082	160.68	26,858
159.63	20,027	160.16	24,138	160.69	26,910
159.64	20,120	160.17	24,193	160.70	26,962

Stage-Area-Storage for Pond 1P: UG1 (continued)

Elevation (feet)	Storage (cubic-feet)
160.71	27,015
160.72	27,067
160.73	27,119
160.74	**27,162**

Stage-Area-Storage for Pond 2P: UG2

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
159.80	0	160.33	866	160.86	2,602
159.81	15	160.34	899	160.87	2,634
159.82	31	160.35	932	160.88	2,667
159.83	46	160.36	965	160.89	2,699
159.84	61	160.37	998	160.90	2,731
159.85	77	160.38	1,031	160.91	2,764
159.86	92	160.39	1,064	160.92	2,796
159.87	107	160.40	1,097	160.93	2,828
159.88	123	160.41	1,130	160.94	2,860
159.89	138	160.42	1,163	160.95	2,892
159.90	153	160.43	1,196	160.96	2,924
159.91	169	160.44	1,229	160.97	2,956
159.92	184	160.45	1,262	160.98	2,988
159.93	199	160.46	1,295	160.99	3,020
159.94	215	160.47	1,328	161.00	3,052
159.95	230	160.48	1,361	161.01	3,084
159.96	245	160.49	1,393	161.02	3,115
159.97	261	160.50	1,426	161.03	3,147
159.98	276	160.51	1,459	161.04	3,179
159.99	291	160.52	1,492	161.05	3,211
160.00	307	160.53	1,525	161.06	3,242
160.01	322	160.54	1,557	161.07	3,274
160.02	337	160.55	1,590	161.08	3,306
160.03	353	160.56	1,623	161.09	3,337
160.04	368	160.57	1,656	161.10	3,369
160.05	383	160.58	1,688	161.11	3,401
160.06	399	160.59	1,721	161.12	3,432
160.07	414	160.60	1,754	161.13	3,464
160.08	429	160.61	1,787	161.14	3,496
160.09	445	160.62	1,819	161.15	3,527
160.10	460	160.63	1,852	161.16	3,559
160.11	475	160.64	1,885	161.17	3,590
160.12	491	160.65	1,917	161.18	3,622
160.13	506	160.66	1,950	161.19	3,654
160.14	521	160.67	1,983	161.20	3,685
160.15	537	160.68	2,015	161.21	3,717
160.16	552	160.69	2,048	161.22	3,748
160.17	567	160.70	2,081	161.23	3,780
160.18	583	160.71	2,113	161.24	3,811
160.19	598	160.72	2,146	161.25	3,843
160.20	613	160.73	2,179	161.26	3,874
160.21	629	160.74	2,211	161.27	3,906
160.22	644	160.75	2,244	161.28	3,937
160.23	659	160.76	2,277	161.29	3,969
160.24	675	160.77	2,309	161.30	4,000
160.25	690	160.78	2,342	161.31	4,032
160.26	705	160.79	2,374	161.32	4,063
160.27	721	160.80	2,407	161.33	4,094
160.28	736	160.81	2,440	161.34	4,126
160.29	751	160.82	2,472	161.35	4,157
160.30	767	160.83	2,505	161.36	4,188
160.31	800	160.84	2,537	161.37	4,220
160.32	833	160.85	2,570	161.38	4,251

Stage-Area-Storage for Pond 2P: UG2 (continued)

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
161.39	4,282	161.92	5,876	162.45	7,260
161.40	4,314	161.93	5,904	162.46	7,283
161.41	4,345	161.94	5,932	162.47	7,306
161.42	4,376	161.95	5,961	162.48	7,328
161.43	4,407	161.96	5,989	162.49	7,351
161.44	4,439	161.97	6,017	162.50	7,373
161.45	4,470	161.98	6,045	162.51	7,395
161.46	4,501	161.99	6,073	162.52	7,416
161.47	4,532	162.00	6,101	162.53	7,438
161.48	4,563	162.01	6,129	162.54	7,459
161.49	4,594	162.02	6,157	162.55	7,480
161.50	4,626	162.03	6,184	162.56	7,501
161.51	4,657	162.04	6,212	162.57	7,521
161.52	4,688	162.05	6,240	162.58	7,542
161.53	4,718	162.06	6,267	162.59	7,562
161.54	4,749	162.07	6,295	162.60	7,582
161.55	4,780	162.08	6,322	162.61	7,601
161.56	4,811	162.09	6,349	162.62	7,621
161.57	4,842	162.10	6,376	162.63	7,640
161.58	4,872	162.11	6,403	162.64	7,659
161.59	4,903	162.12	6,430	162.65	7,678
161.60	4,933	162.13	6,457	162.66	7,696
161.61	4,964	162.14	6,484	162.67	7,714
161.62	4,994	162.15	6,511	162.68	7,732
161.63	5,024	162.16	6,537	162.69	7,750
161.64	5,055	162.17	6,564	162.70	7,768
161.65	5,085	162.18	6,590	162.71	7,785
161.66	5,115	162.19	6,617	162.72	7,803
161.67	5,145	162.20	6,643	162.73	7,820
161.68	5,175	162.21	6,669	162.74	7,837
161.69	5,205	162.22	6,695	162.75	7,853
161.70	5,234	162.23	6,721	162.76	7,870
161.71	5,264	162.24	6,747	162.77	7,886
161.72	5,294	162.25	6,772	162.78	7,902
161.73	5,324	162.26	6,798	162.79	7,918
161.74	5,353	162.27	6,823	162.80	7,933
161.75	5,383	162.28	6,849	162.81	7,949
161.76	5,412	162.29	6,874	162.82	7,964
161.77	5,442	162.30	6,899	162.83	7,979
161.78	5,471	162.31	6,924	162.84	7,995
161.79	5,500	162.32	6,949	162.85	8,010
161.80	5,530	162.33	6,974	162.86	8,025
161.81	5,559	162.34	6,999	162.87	8,041
161.82	5,588	162.35	7,023	162.88	8,056
161.83	5,617	162.36	7,047	162.89	8,071
161.84	5,646	162.37	7,072	162.90	8,087
161.85	5,675	162.38	7,096	162.91	8,102
161.86	5,704	162.39	7,120	162.92	8,117
161.87	5,733	162.40	7,144	162.93	8,133
161.88	5,761	162.41	7,167	162.94	8,148
161.89	5,790	162.42	7,191	162.95	8,163
161.90	5,819	162.43	7,214	162.96	8,179
161.91	5,847	162.44	7,237	162.97	8,194

Stage-Area-Storage for Pond 2P: UG2 (continued)

Elevation (feet)	Storage (cubic-feet)
162.98	8,209
162.99	8,225
163.00	8,240
163.01	8,255
163.02	8,271
163.03	8,286
163.04	8,301
163.05	8,317
163.06	8,332
163.07	8,347
163.08	8,363
163.09	8,378
163.10	8,393
163.11	8,409
163.12	8,424
163.13	8,439
163.14	8,455
163.15	8,470
163.16	8,485
163.17	8,501
163.18	8,516
163.19	8,531
163.20	8,547
163.21	8,562
163.22	8,577
163.23	8,593
163.24	8,608
163.25	8,623
163.26	8,639
163.27	8,654
163.28	8,669
163.29	8,685
163.30	8,700
163.31	8,715
163.32	8,731
163.33	8,746
163.34	**8,761**

Stage-Area-Storage for Pond 3P: UG3

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
160.28	0	160.81	660	161.34	1,981
160.29	12	160.82	686	161.35	2,005
160.30	23	160.83	711	161.36	2,030
160.31	35	160.84	737	161.37	2,054
160.32	47	160.85	762	161.38	2,078
160.33	58	160.86	788	161.39	2,102
160.34	70	160.87	813	161.40	2,126
160.35	82	160.88	838	161.41	2,150
160.36	93	160.89	864	161.42	2,174
160.37	105	160.90	889	161.43	2,198
160.38	117	160.91	914	161.44	2,222
160.39	128	160.92	939	161.45	2,246
160.40	140	160.93	964	161.46	2,270
160.41	152	160.94	989	161.47	2,294
160.42	163	160.95	1,014	161.48	2,318
160.43	175	160.96	1,039	161.49	2,342
160.44	187	160.97	1,065	161.50	2,365
160.45	198	160.98	1,090	161.51	2,389
160.46	210	160.99	1,115	161.52	2,413
160.47	222	161.00	1,140	161.53	2,437
160.48	233	161.01	1,165	161.54	2,460
160.49	245	161.02	1,190	161.55	2,484
160.50	257	161.03	1,215	161.56	2,508
160.51	268	161.04	1,240	161.57	2,531
160.52	280	161.05	1,265	161.58	2,555
160.53	292	161.06	1,290	161.59	2,578
160.54	303	161.07	1,315	161.60	2,602
160.55	315	161.08	1,339	161.61	2,625
160.56	327	161.09	1,364	161.62	2,649
160.57	338	161.10	1,389	161.63	2,672
160.58	350	161.11	1,414	161.64	2,695
160.59	362	161.12	1,439	161.65	2,719
160.60	373	161.13	1,464	161.66	2,742
160.61	385	161.14	1,489	161.67	2,765
160.62	397	161.15	1,514	161.68	2,788
160.63	408	161.16	1,539	161.69	2,811
160.64	420	161.17	1,564	161.70	2,834
160.65	432	161.18	1,589	161.71	2,857
160.66	443	161.19	1,613	161.72	2,879
160.67	455	161.20	1,638	161.73	2,902
160.68	467	161.21	1,663	161.74	2,925
160.69	478	161.22	1,688	161.75	2,947
160.70	490	161.23	1,712	161.76	2,970
160.71	502	161.24	1,737	161.77	2,992
160.72	513	161.25	1,762	161.78	3,014
160.73	525	161.26	1,786	161.79	3,037
160.74	537	161.27	1,811	161.80	3,059
160.75	548	161.28	1,835	161.81	3,081
160.76	560	161.29	1,859	161.82	3,103
160.77	572	161.30	1,884	161.83	3,125
160.78	583	161.31	1,908	161.84	3,147
160.79	609	161.32	1,933	161.85	3,169
160.80	635	161.33	1,957	161.86	3,190

Stage-Area-Storage for Pond 3P: UG3 (continued)

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
161.87	3,212	162.40	4,190	162.93	4,817
161.88	3,233	162.41	4,203	162.94	4,829
161.89	3,255	162.42	4,217	162.95	4,841
161.90	3,276	162.43	4,231	162.96	4,852
161.91	3,298	162.44	4,244	162.97	4,864
161.92	3,319	162.45	4,257	162.98	4,876
161.93	3,340	162.46	4,269	162.99	**4,885**
161.94	3,361	162.47	4,281		
161.95	3,382	162.48	4,292		
161.96	3,403	162.49	4,304		
161.97	3,424	162.50	4,316		
161.98	3,445	162.51	4,327		
161.99	3,466	162.52	4,339		
162.00	3,486	162.53	4,351		
162.01	3,507	162.54	4,362		
162.02	3,527	162.55	4,374		
162.03	3,547	162.56	4,386		
162.04	3,567	162.57	4,397		
162.05	3,588	162.58	4,409		
162.06	3,607	162.59	4,421		
162.07	3,627	162.60	4,432		
162.08	3,647	162.61	4,444		
162.09	3,667	162.62	4,456		
162.10	3,686	162.63	4,467		
162.11	3,705	162.64	4,479		
162.12	3,725	162.65	4,491		
162.13	3,744	162.66	4,502		
162.14	3,763	162.67	4,514		
162.15	3,781	162.68	4,526		
162.16	3,800	162.69	4,537		
162.17	3,818	162.70	4,549		
162.18	3,837	162.71	4,561		
162.19	3,855	162.72	4,572		
162.20	3,873	162.73	4,584		
162.21	3,890	162.74	4,596		
162.22	3,908	162.75	4,607		
162.23	3,925	162.76	4,619		
162.24	3,942	162.77	4,631		
162.25	3,959	162.78	4,642		
162.26	3,976	162.79	4,654		
162.27	3,992	162.80	4,666		
162.28	4,009	162.81	4,677		
162.29	4,025	162.82	4,689		
162.30	4,041	162.83	4,701		
162.31	4,056	162.84	4,712		
162.32	4,072	162.85	4,724		
162.33	4,087	162.86	4,736		
162.34	4,102	162.87	4,747		
162.35	4,117	162.88	4,759		
162.36	4,132	162.89	4,771		
162.37	4,147	162.90	4,782		
162.38	4,161	162.91	4,794		
162.39	4,175	162.92	4,806		

Stage-Area-Storage for Pond 1P: UG1

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
157.53	0	158.06	2,965	158.59	9,098
157.54	52	158.07	3,084	158.60	9,211
157.55	104	158.08	3,203	158.61	9,324
157.56	156	158.09	3,321	158.62	9,436
157.57	209	158.10	3,439	158.63	9,549
157.58	261	158.11	3,557	158.64	9,661
157.59	313	158.12	3,675	158.65	9,773
157.60	365	158.13	3,793	158.66	9,885
157.61	417	158.14	3,910	158.67	9,997
157.62	469	158.15	4,028	158.68	10,109
157.63	522	158.16	4,145	158.69	10,221
157.64	574	158.17	4,262	158.70	10,333
157.65	626	158.18	4,378	158.71	10,445
157.66	678	158.19	4,495	158.72	10,556
157.67	730	158.20	4,611	158.73	10,668
157.68	782	158.21	4,727	158.74	10,779
157.69	835	158.22	4,843	158.75	10,890
157.70	887	158.23	4,960	158.76	11,001
157.71	939	158.24	5,076	158.77	11,112
157.72	991	158.25	5,192	158.78	11,222
157.73	1,043	158.26	5,308	158.79	11,333
157.74	1,095	158.27	5,423	158.80	11,443
157.75	1,148	158.28	5,539	158.81	11,553
157.76	1,200	158.29	5,655	158.82	11,663
157.77	1,252	158.30	5,771	158.83	11,773
157.78	1,304	158.31	5,887	158.84	11,882
157.79	1,356	158.32	6,002	158.85	11,992
157.80	1,408	158.33	6,118	158.86	12,101
157.81	1,461	158.34	6,233	158.87	12,211
157.82	1,513	158.35	6,349	158.88	12,320
157.83	1,565	158.36	6,464	158.89	12,429
157.84	1,617	158.37	6,580	158.90	12,538
157.85	1,669	158.38	6,695	158.91	12,646
157.86	1,721	158.39	6,811	158.92	12,755
157.87	1,774	158.40	6,926	158.93	12,864
157.88	1,826	158.41	7,041	158.94	12,972
157.89	1,878	158.42	7,156	158.95	13,081
157.90	1,930	158.43	7,272	158.96	13,189
157.91	1,982	158.44	7,387	158.97	13,297
157.92	2,034	158.45	7,502	158.98	13,405
157.93	2,087	158.46	7,617	158.99	13,514
157.94	2,139	158.47	7,732	159.00	13,621
157.95	2,191	158.48	7,846	159.01	13,729
157.96	2,243	158.49	7,961	159.02	13,837
157.97	2,295	158.50	8,075	159.03	13,945
157.98	2,347	158.51	8,190	159.04	14,052
157.99	2,400	158.52	8,304	159.05	14,160
158.00	2,452	158.53	8,418	159.06	14,267
158.01	2,504	158.54	8,531	159.07	14,374
158.02	2,556	158.55	8,645	159.08	14,481
158.03	2,608	158.56	8,759	159.09	14,588
158.04	2,727	158.57	8,872	159.10	14,695
158.05	2,847	158.58	8,985	159.11	14,802

Stage-Area-Storage for Pond 1P: UG1 (continued)

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
159.12	14,909	159.65	20,213	160.18	24,248
159.13	15,016	159.66	20,305	160.19	24,301
159.14	15,122	159.67	20,397	160.20	24,354
159.15	15,228	159.68	20,489	160.21	24,406
159.16	15,334	159.69	20,580	160.22	24,459
159.17	15,439	159.70	20,671	160.23	24,511
159.18	15,545	159.71	20,761	160.24	24,563
159.19	15,650	159.72	20,851	160.25	24,615
159.20	15,755	159.73	20,940	160.26	24,667
159.21	15,860	159.74	21,029	160.27	24,719
159.22	15,964	159.75	21,118	160.28	24,772
159.23	16,068	159.76	21,206	160.29	24,824
159.24	16,172	159.77	21,293	160.30	24,876
159.25	16,276	159.78	21,381	160.31	24,928
159.26	16,379	159.79	21,467	160.32	24,980
159.27	16,482	159.80	21,554	160.33	25,032
159.28	16,585	159.81	21,639	160.34	25,084
159.29	16,687	159.82	21,724	160.35	25,137
159.30	16,790	159.83	21,809	160.36	25,189
159.31	16,892	159.84	21,893	160.37	25,241
159.32	16,994	159.85	21,976	160.38	25,293
159.33	17,095	159.86	22,059	160.39	25,345
159.34	17,197	159.87	22,141	160.40	25,397
159.35	17,298	159.88	22,223	160.41	25,450
159.36	17,399	159.89	22,303	160.42	25,502
159.37	17,500	159.90	22,383	160.43	25,554
159.38	17,601	159.91	22,463	160.44	25,606
159.39	17,701	159.92	22,541	160.45	25,658
159.40	17,801	159.93	22,619	160.46	25,710
159.41	17,901	159.94	22,696	160.47	25,763
159.42	18,001	159.95	22,773	160.48	25,815
159.43	18,100	159.96	22,848	160.49	25,867
159.44	18,199	159.97	22,922	160.50	25,919
159.45	18,298	159.98	22,995	160.51	25,971
159.46	18,397	159.99	23,068	160.52	26,023
159.47	18,495	160.00	23,139	160.53	26,076
159.48	18,593	160.01	23,209	160.54	26,128
159.49	18,691	160.02	23,278	160.55	26,180
159.50	18,788	160.03	23,345	160.56	26,232
159.51	18,885	160.04	23,412	160.57	26,284
159.52	18,982	160.05	23,478	160.58	26,336
159.53	19,079	160.06	23,543	160.59	26,389
159.54	19,175	160.07	23,607	160.60	26,441
159.55	19,271	160.08	23,669	160.61	26,493
159.56	19,367	160.09	23,731	160.62	26,545
159.57	19,462	160.10	23,792	160.63	26,597
159.58	19,557	160.11	23,852	160.64	26,649
159.59	19,652	160.12	23,910	160.65	26,702
159.60	19,746	160.13	23,968	160.66	26,754
159.61	19,840	160.14	24,026	160.67	26,806
159.62	19,934	160.15	24,082	160.68	26,858
159.63	20,027	160.16	24,138	160.69	26,910
159.64	20,120	160.17	24,193	160.70	26,962

Stage-Area-Storage for Pond 1P: UG1 (continued)

Elevation (feet)	Storage (cubic-feet)
160.71	27,015
160.72	27,067
160.73	27,119
160.74	**27,162**

Stage-Area-Storage for Pond 2P: UG2

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
159.80	0	160.33	866	160.86	2,602
159.81	15	160.34	899	160.87	2,634
159.82	31	160.35	932	160.88	2,667
159.83	46	160.36	965	160.89	2,699
159.84	61	160.37	998	160.90	2,731
159.85	77	160.38	1,031	160.91	2,764
159.86	92	160.39	1,064	160.92	2,796
159.87	107	160.40	1,097	160.93	2,828
159.88	123	160.41	1,130	160.94	2,860
159.89	138	160.42	1,163	160.95	2,892
159.90	153	160.43	1,196	160.96	2,924
159.91	169	160.44	1,229	160.97	2,956
159.92	184	160.45	1,262	160.98	2,988
159.93	199	160.46	1,295	160.99	3,020
159.94	215	160.47	1,328	161.00	3,052
159.95	230	160.48	1,361	161.01	3,084
159.96	245	160.49	1,393	161.02	3,115
159.97	261	160.50	1,426	161.03	3,147
159.98	276	160.51	1,459	161.04	3,179
159.99	291	160.52	1,492	161.05	3,211
160.00	307	160.53	1,525	161.06	3,242
160.01	322	160.54	1,557	161.07	3,274
160.02	337	160.55	1,590	161.08	3,306
160.03	353	160.56	1,623	161.09	3,337
160.04	368	160.57	1,656	161.10	3,369
160.05	383	160.58	1,688	161.11	3,401
160.06	399	160.59	1,721	161.12	3,432
160.07	414	160.60	1,754	161.13	3,464
160.08	429	160.61	1,787	161.14	3,496
160.09	445	160.62	1,819	161.15	3,527
160.10	460	160.63	1,852	161.16	3,559
160.11	475	160.64	1,885	161.17	3,590
160.12	491	160.65	1,917	161.18	3,622
160.13	506	160.66	1,950	161.19	3,654
160.14	521	160.67	1,983	161.20	3,685
160.15	537	160.68	2,015	161.21	3,717
160.16	552	160.69	2,048	161.22	3,748
160.17	567	160.70	2,081	161.23	3,780
160.18	583	160.71	2,113	161.24	3,811
160.19	598	160.72	2,146	161.25	3,843
160.20	613	160.73	2,179	161.26	3,874
160.21	629	160.74	2,211	161.27	3,906
160.22	644	160.75	2,244	161.28	3,937
160.23	659	160.76	2,277	161.29	3,969
160.24	675	160.77	2,309	161.30	4,000
160.25	690	160.78	2,342	161.31	4,032
160.26	705	160.79	2,374	161.32	4,063
160.27	721	160.80	2,407	161.33	4,094
160.28	736	160.81	2,440	161.34	4,126
160.29	751	160.82	2,472	161.35	4,157
160.30	767	160.83	2,505	161.36	4,188
160.31	800	160.84	2,537	161.37	4,220
160.32	833	160.85	2,570	161.38	4,251

Stage-Area-Storage for Pond 2P: UG2 (continued)

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
161.39	4,282	161.92	5,876	162.45	7,260
161.40	4,314	161.93	5,904	162.46	7,283
161.41	4,345	161.94	5,932	162.47	7,306
161.42	4,376	161.95	5,961	162.48	7,328
161.43	4,407	161.96	5,989	162.49	7,351
161.44	4,439	161.97	6,017	162.50	7,373
161.45	4,470	161.98	6,045	162.51	7,395
161.46	4,501	161.99	6,073	162.52	7,416
161.47	4,532	162.00	6,101	162.53	7,438
161.48	4,563	162.01	6,129	162.54	7,459
161.49	4,594	162.02	6,157	162.55	7,480
161.50	4,626	162.03	6,184	162.56	7,501
161.51	4,657	162.04	6,212	162.57	7,521
161.52	4,688	162.05	6,240	162.58	7,542
161.53	4,718	162.06	6,267	162.59	7,562
161.54	4,749	162.07	6,295	162.60	7,582
161.55	4,780	162.08	6,322	162.61	7,601
161.56	4,811	162.09	6,349	162.62	7,621
161.57	4,842	162.10	6,376	162.63	7,640
161.58	4,872	162.11	6,403	162.64	7,659
161.59	4,903	162.12	6,430	162.65	7,678
161.60	4,933	162.13	6,457	162.66	7,696
161.61	4,964	162.14	6,484	162.67	7,714
161.62	4,994	162.15	6,511	162.68	7,732
161.63	5,024	162.16	6,537	162.69	7,750
161.64	5,055	162.17	6,564	162.70	7,768
161.65	5,085	162.18	6,590	162.71	7,785
161.66	5,115	162.19	6,617	162.72	7,803
161.67	5,145	162.20	6,643	162.73	7,820
161.68	5,175	162.21	6,669	162.74	7,837
161.69	5,205	162.22	6,695	162.75	7,853
161.70	5,234	162.23	6,721	162.76	7,870
161.71	5,264	162.24	6,747	162.77	7,886
161.72	5,294	162.25	6,772	162.78	7,902
161.73	5,324	162.26	6,798	162.79	7,918
161.74	5,353	162.27	6,823	162.80	7,933
161.75	5,383	162.28	6,849	162.81	7,949
161.76	5,412	162.29	6,874	162.82	7,964
161.77	5,442	162.30	6,899	162.83	7,979
161.78	5,471	162.31	6,924	162.84	7,995
161.79	5,500	162.32	6,949	162.85	8,010
161.80	5,530	162.33	6,974	162.86	8,025
161.81	5,559	162.34	6,999	162.87	8,041
161.82	5,588	162.35	7,023	162.88	8,056
161.83	5,617	162.36	7,047	162.89	8,071
161.84	5,646	162.37	7,072	162.90	8,087
161.85	5,675	162.38	7,096	162.91	8,102
161.86	5,704	162.39	7,120	162.92	8,117
161.87	5,733	162.40	7,144	162.93	8,133
161.88	5,761	162.41	7,167	162.94	8,148
161.89	5,790	162.42	7,191	162.95	8,163
161.90	5,819	162.43	7,214	162.96	8,179
161.91	5,847	162.44	7,237	162.97	8,194

Stage-Area-Storage for Pond 2P: UG2 (continued)

Elevation (feet)	Storage (cubic-feet)
162.98	8,209
162.99	8,225
163.00	8,240
163.01	8,255
163.02	8,271
163.03	8,286
163.04	8,301
163.05	8,317
163.06	8,332
163.07	8,347
163.08	8,363
163.09	8,378
163.10	8,393
163.11	8,409
163.12	8,424
163.13	8,439
163.14	8,455
163.15	8,470
163.16	8,485
163.17	8,501
163.18	8,516
163.19	8,531
163.20	8,547
163.21	8,562
163.22	8,577
163.23	8,593
163.24	8,608
163.25	8,623
163.26	8,639
163.27	8,654
163.28	8,669
163.29	8,685
163.30	8,700
163.31	8,715
163.32	8,731
163.33	8,746
163.34	**8,761**

Stage-Area-Storage for Pond 3P: UG3

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
160.28	0	160.81	660	161.34	1,981
160.29	12	160.82	686	161.35	2,005
160.30	23	160.83	711	161.36	2,030
160.31	35	160.84	737	161.37	2,054
160.32	47	160.85	762	161.38	2,078
160.33	58	160.86	788	161.39	2,102
160.34	70	160.87	813	161.40	2,126
160.35	82	160.88	838	161.41	2,150
160.36	93	160.89	864	161.42	2,174
160.37	105	160.90	889	161.43	2,198
160.38	117	160.91	914	161.44	2,222
160.39	128	160.92	939	161.45	2,246
160.40	140	160.93	964	161.46	2,270
160.41	152	160.94	989	161.47	2,294
160.42	163	160.95	1,014	161.48	2,318
160.43	175	160.96	1,039	161.49	2,342
160.44	187	160.97	1,065	161.50	2,365
160.45	198	160.98	1,090	161.51	2,389
160.46	210	160.99	1,115	161.52	2,413
160.47	222	161.00	1,140	161.53	2,437
160.48	233	161.01	1,165	161.54	2,460
160.49	245	161.02	1,190	161.55	2,484
160.50	257	161.03	1,215	161.56	2,508
160.51	268	161.04	1,240	161.57	2,531
160.52	280	161.05	1,265	161.58	2,555
160.53	292	161.06	1,290	161.59	2,578
160.54	303	161.07	1,315	161.60	2,602
160.55	315	161.08	1,339	161.61	2,625
160.56	327	161.09	1,364	161.62	2,649
160.57	338	161.10	1,389	161.63	2,672
160.58	350	161.11	1,414	161.64	2,695
160.59	362	161.12	1,439	161.65	2,719
160.60	373	161.13	1,464	161.66	2,742
160.61	385	161.14	1,489	161.67	2,765
160.62	397	161.15	1,514	161.68	2,788
160.63	408	161.16	1,539	161.69	2,811
160.64	420	161.17	1,564	161.70	2,834
160.65	432	161.18	1,589	161.71	2,857
160.66	443	161.19	1,613	161.72	2,879
160.67	455	161.20	1,638	161.73	2,902
160.68	467	161.21	1,663	161.74	2,925
160.69	478	161.22	1,688	161.75	2,947
160.70	490	161.23	1,712	161.76	2,970
160.71	502	161.24	1,737	161.77	2,992
160.72	513	161.25	1,762	161.78	3,014
160.73	525	161.26	1,786	161.79	3,037
160.74	537	161.27	1,811	161.80	3,059
160.75	548	161.28	1,835	161.81	3,081
160.76	560	161.29	1,859	161.82	3,103
160.77	572	161.30	1,884	161.83	3,125
160.78	583	161.31	1,908	161.84	3,147
160.79	609	161.32	1,933	161.85	3,169
160.80	635	161.33	1,957	161.86	3,190

Stage-Area-Storage for Pond 3P: UG3 (continued)

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
161.87	3,212	162.40	4,190	162.93	4,817
161.88	3,233	162.41	4,203	162.94	4,829
161.89	3,255	162.42	4,217	162.95	4,841
161.90	3,276	162.43	4,231	162.96	4,852
161.91	3,298	162.44	4,244	162.97	4,864
161.92	3,319	162.45	4,257	162.98	4,876
161.93	3,340	162.46	4,269	162.99	**4,885**
161.94	3,361	162.47	4,281		
161.95	3,382	162.48	4,292		
161.96	3,403	162.49	4,304		
161.97	3,424	162.50	4,316		
161.98	3,445	162.51	4,327		
161.99	3,466	162.52	4,339		
162.00	3,486	162.53	4,351		
162.01	3,507	162.54	4,362		
162.02	3,527	162.55	4,374		
162.03	3,547	162.56	4,386		
162.04	3,567	162.57	4,397		
162.05	3,588	162.58	4,409		
162.06	3,607	162.59	4,421		
162.07	3,627	162.60	4,432		
162.08	3,647	162.61	4,444		
162.09	3,667	162.62	4,456		
162.10	3,686	162.63	4,467		
162.11	3,705	162.64	4,479		
162.12	3,725	162.65	4,491		
162.13	3,744	162.66	4,502		
162.14	3,763	162.67	4,514		
162.15	3,781	162.68	4,526		
162.16	3,800	162.69	4,537		
162.17	3,818	162.70	4,549		
162.18	3,837	162.71	4,561		
162.19	3,855	162.72	4,572		
162.20	3,873	162.73	4,584		
162.21	3,890	162.74	4,596		
162.22	3,908	162.75	4,607		
162.23	3,925	162.76	4,619		
162.24	3,942	162.77	4,631		
162.25	3,959	162.78	4,642		
162.26	3,976	162.79	4,654		
162.27	3,992	162.80	4,666		
162.28	4,009	162.81	4,677		
162.29	4,025	162.82	4,689		
162.30	4,041	162.83	4,701		
162.31	4,056	162.84	4,712		
162.32	4,072	162.85	4,724		
162.33	4,087	162.86	4,736		
162.34	4,102	162.87	4,747		
162.35	4,117	162.88	4,759		
162.36	4,132	162.89	4,771		
162.37	4,147	162.90	4,782		
162.38	4,161	162.91	4,794		
162.39	4,175	162.92	4,806		

Stage-Area-Storage for Pond 1P: UG1

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
157.53	0	158.06	2,965	158.59	9,098
157.54	52	158.07	3,084	158.60	9,211
157.55	104	158.08	3,203	158.61	9,324
157.56	156	158.09	3,321	158.62	9,436
157.57	209	158.10	3,439	158.63	9,549
157.58	261	158.11	3,557	158.64	9,661
157.59	313	158.12	3,675	158.65	9,773
157.60	365	158.13	3,793	158.66	9,885
157.61	417	158.14	3,910	158.67	9,997
157.62	469	158.15	4,028	158.68	10,109
157.63	522	158.16	4,145	158.69	10,221
157.64	574	158.17	4,262	158.70	10,333
157.65	626	158.18	4,378	158.71	10,445
157.66	678	158.19	4,495	158.72	10,556
157.67	730	158.20	4,611	158.73	10,668
157.68	782	158.21	4,727	158.74	10,779
157.69	835	158.22	4,843	158.75	10,890
157.70	887	158.23	4,960	158.76	11,001
157.71	939	158.24	5,076	158.77	11,112
157.72	991	158.25	5,192	158.78	11,222
157.73	1,043	158.26	5,308	158.79	11,333
157.74	1,095	158.27	5,423	158.80	11,443
157.75	1,148	158.28	5,539	158.81	11,553
157.76	1,200	158.29	5,655	158.82	11,663
157.77	1,252	158.30	5,771	158.83	11,773
157.78	1,304	158.31	5,887	158.84	11,882
157.79	1,356	158.32	6,002	158.85	11,992
157.80	1,408	158.33	6,118	158.86	12,101
157.81	1,461	158.34	6,233	158.87	12,211
157.82	1,513	158.35	6,349	158.88	12,320
157.83	1,565	158.36	6,464	158.89	12,429
157.84	1,617	158.37	6,580	158.90	12,538
157.85	1,669	158.38	6,695	158.91	12,646
157.86	1,721	158.39	6,811	158.92	12,755
157.87	1,774	158.40	6,926	158.93	12,864
157.88	1,826	158.41	7,041	158.94	12,972
157.89	1,878	158.42	7,156	158.95	13,081
157.90	1,930	158.43	7,272	158.96	13,189
157.91	1,982	158.44	7,387	158.97	13,297
157.92	2,034	158.45	7,502	158.98	13,405
157.93	2,087	158.46	7,617	158.99	13,514
157.94	2,139	158.47	7,732	159.00	13,621
157.95	2,191	158.48	7,846	159.01	13,729
157.96	2,243	158.49	7,961	159.02	13,837
157.97	2,295	158.50	8,075	159.03	13,945
157.98	2,347	158.51	8,190	159.04	14,052
157.99	2,400	158.52	8,304	159.05	14,160
158.00	2,452	158.53	8,418	159.06	14,267
158.01	2,504	158.54	8,531	159.07	14,374
158.02	2,556	158.55	8,645	159.08	14,481
158.03	2,608	158.56	8,759	159.09	14,588
158.04	2,727	158.57	8,872	159.10	14,695
158.05	2,847	158.58	8,985	159.11	14,802

Stage-Area-Storage for Pond 1P: UG1 (continued)

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
159.12	14,909	159.65	20,213	160.18	24,248
159.13	15,016	159.66	20,305	160.19	24,301
159.14	15,122	159.67	20,397	160.20	24,354
159.15	15,228	159.68	20,489	160.21	24,406
159.16	15,334	159.69	20,580	160.22	24,459
159.17	15,439	159.70	20,671	160.23	24,511
159.18	15,545	159.71	20,761	160.24	24,563
159.19	15,650	159.72	20,851	160.25	24,615
159.20	15,755	159.73	20,940	160.26	24,667
159.21	15,860	159.74	21,029	160.27	24,719
159.22	15,964	159.75	21,118	160.28	24,772
159.23	16,068	159.76	21,206	160.29	24,824
159.24	16,172	159.77	21,293	160.30	24,876
159.25	16,276	159.78	21,381	160.31	24,928
159.26	16,379	159.79	21,467	160.32	24,980
159.27	16,482	159.80	21,554	160.33	25,032
159.28	16,585	159.81	21,639	160.34	25,084
159.29	16,687	159.82	21,724	160.35	25,137
159.30	16,790	159.83	21,809	160.36	25,189
159.31	16,892	159.84	21,893	160.37	25,241
159.32	16,994	159.85	21,976	160.38	25,293
159.33	17,095	159.86	22,059	160.39	25,345
159.34	17,197	159.87	22,141	160.40	25,397
159.35	17,298	159.88	22,223	160.41	25,450
159.36	17,399	159.89	22,303	160.42	25,502
159.37	17,500	159.90	22,383	160.43	25,554
159.38	17,601	159.91	22,463	160.44	25,606
159.39	17,701	159.92	22,541	160.45	25,658
159.40	17,801	159.93	22,619	160.46	25,710
159.41	17,901	159.94	22,696	160.47	25,763
159.42	18,001	159.95	22,773	160.48	25,815
159.43	18,100	159.96	22,848	160.49	25,867
159.44	18,199	159.97	22,922	160.50	25,919
159.45	18,298	159.98	22,995	160.51	25,971
159.46	18,397	159.99	23,068	160.52	26,023
159.47	18,495	160.00	23,139	160.53	26,076
159.48	18,593	160.01	23,209	160.54	26,128
159.49	18,691	160.02	23,278	160.55	26,180
159.50	18,788	160.03	23,345	160.56	26,232
159.51	18,885	160.04	23,412	160.57	26,284
159.52	18,982	160.05	23,478	160.58	26,336
159.53	19,079	160.06	23,543	160.59	26,389
159.54	19,175	160.07	23,607	160.60	26,441
159.55	19,271	160.08	23,669	160.61	26,493
159.56	19,367	160.09	23,731	160.62	26,545
159.57	19,462	160.10	23,792	160.63	26,597
159.58	19,557	160.11	23,852	160.64	26,649
159.59	19,652	160.12	23,910	160.65	26,702
159.60	19,746	160.13	23,968	160.66	26,754
159.61	19,840	160.14	24,026	160.67	26,806
159.62	19,934	160.15	24,082	160.68	26,858
159.63	20,027	160.16	24,138	160.69	26,910
159.64	20,120	160.17	24,193	160.70	26,962

Stage-Area-Storage for Pond 1P: UG1 (continued)

Elevation (feet)	Storage (cubic-feet)
160.71	27,015
160.72	27,067
160.73	27,119
160.74	**27,162**

Stage-Area-Storage for Pond 2P: UG2

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
159.80	0	160.33	866	160.86	2,602
159.81	15	160.34	899	160.87	2,634
159.82	31	160.35	932	160.88	2,667
159.83	46	160.36	965	160.89	2,699
159.84	61	160.37	998	160.90	2,731
159.85	77	160.38	1,031	160.91	2,764
159.86	92	160.39	1,064	160.92	2,796
159.87	107	160.40	1,097	160.93	2,828
159.88	123	160.41	1,130	160.94	2,860
159.89	138	160.42	1,163	160.95	2,892
159.90	153	160.43	1,196	160.96	2,924
159.91	169	160.44	1,229	160.97	2,956
159.92	184	160.45	1,262	160.98	2,988
159.93	199	160.46	1,295	160.99	3,020
159.94	215	160.47	1,328	161.00	3,052
159.95	230	160.48	1,361	161.01	3,084
159.96	245	160.49	1,393	161.02	3,115
159.97	261	160.50	1,426	161.03	3,147
159.98	276	160.51	1,459	161.04	3,179
159.99	291	160.52	1,492	161.05	3,211
160.00	307	160.53	1,525	161.06	3,242
160.01	322	160.54	1,557	161.07	3,274
160.02	337	160.55	1,590	161.08	3,306
160.03	353	160.56	1,623	161.09	3,337
160.04	368	160.57	1,656	161.10	3,369
160.05	383	160.58	1,688	161.11	3,401
160.06	399	160.59	1,721	161.12	3,432
160.07	414	160.60	1,754	161.13	3,464
160.08	429	160.61	1,787	161.14	3,496
160.09	445	160.62	1,819	161.15	3,527
160.10	460	160.63	1,852	161.16	3,559
160.11	475	160.64	1,885	161.17	3,590
160.12	491	160.65	1,917	161.18	3,622
160.13	506	160.66	1,950	161.19	3,654
160.14	521	160.67	1,983	161.20	3,685
160.15	537	160.68	2,015	161.21	3,717
160.16	552	160.69	2,048	161.22	3,748
160.17	567	160.70	2,081	161.23	3,780
160.18	583	160.71	2,113	161.24	3,811
160.19	598	160.72	2,146	161.25	3,843
160.20	613	160.73	2,179	161.26	3,874
160.21	629	160.74	2,211	161.27	3,906
160.22	644	160.75	2,244	161.28	3,937
160.23	659	160.76	2,277	161.29	3,969
160.24	675	160.77	2,309	161.30	4,000
160.25	690	160.78	2,342	161.31	4,032
160.26	705	160.79	2,374	161.32	4,063
160.27	721	160.80	2,407	161.33	4,094
160.28	736	160.81	2,440	161.34	4,126
160.29	751	160.82	2,472	161.35	4,157
160.30	767	160.83	2,505	161.36	4,188
160.31	800	160.84	2,537	161.37	4,220
160.32	833	160.85	2,570	161.38	4,251

Stage-Area-Storage for Pond 2P: UG2 (continued)

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
161.39	4,282	161.92	5,876	162.45	7,260
161.40	4,314	161.93	5,904	162.46	7,283
161.41	4,345	161.94	5,932	162.47	7,306
161.42	4,376	161.95	5,961	162.48	7,328
161.43	4,407	161.96	5,989	162.49	7,351
161.44	4,439	161.97	6,017	162.50	7,373
161.45	4,470	161.98	6,045	162.51	7,395
161.46	4,501	161.99	6,073	162.52	7,416
161.47	4,532	162.00	6,101	162.53	7,438
161.48	4,563	162.01	6,129	162.54	7,459
161.49	4,594	162.02	6,157	162.55	7,480
161.50	4,626	162.03	6,184	162.56	7,501
161.51	4,657	162.04	6,212	162.57	7,521
161.52	4,688	162.05	6,240	162.58	7,542
161.53	4,718	162.06	6,267	162.59	7,562
161.54	4,749	162.07	6,295	162.60	7,582
161.55	4,780	162.08	6,322	162.61	7,601
161.56	4,811	162.09	6,349	162.62	7,621
161.57	4,842	162.10	6,376	162.63	7,640
161.58	4,872	162.11	6,403	162.64	7,659
161.59	4,903	162.12	6,430	162.65	7,678
161.60	4,933	162.13	6,457	162.66	7,696
161.61	4,964	162.14	6,484	162.67	7,714
161.62	4,994	162.15	6,511	162.68	7,732
161.63	5,024	162.16	6,537	162.69	7,750
161.64	5,055	162.17	6,564	162.70	7,768
161.65	5,085	162.18	6,590	162.71	7,785
161.66	5,115	162.19	6,617	162.72	7,803
161.67	5,145	162.20	6,643	162.73	7,820
161.68	5,175	162.21	6,669	162.74	7,837
161.69	5,205	162.22	6,695	162.75	7,853
161.70	5,234	162.23	6,721	162.76	7,870
161.71	5,264	162.24	6,747	162.77	7,886
161.72	5,294	162.25	6,772	162.78	7,902
161.73	5,324	162.26	6,798	162.79	7,918
161.74	5,353	162.27	6,823	162.80	7,933
161.75	5,383	162.28	6,849	162.81	7,949
161.76	5,412	162.29	6,874	162.82	7,964
161.77	5,442	162.30	6,899	162.83	7,979
161.78	5,471	162.31	6,924	162.84	7,995
161.79	5,500	162.32	6,949	162.85	8,010
161.80	5,530	162.33	6,974	162.86	8,025
161.81	5,559	162.34	6,999	162.87	8,041
161.82	5,588	162.35	7,023	162.88	8,056
161.83	5,617	162.36	7,047	162.89	8,071
161.84	5,646	162.37	7,072	162.90	8,087
161.85	5,675	162.38	7,096	162.91	8,102
161.86	5,704	162.39	7,120	162.92	8,117
161.87	5,733	162.40	7,144	162.93	8,133
161.88	5,761	162.41	7,167	162.94	8,148
161.89	5,790	162.42	7,191	162.95	8,163
161.90	5,819	162.43	7,214	162.96	8,179
161.91	5,847	162.44	7,237	162.97	8,194

Stage-Area-Storage for Pond 2P: UG2 (continued)

Elevation (feet)	Storage (cubic-feet)
162.98	8,209
162.99	8,225
163.00	8,240
163.01	8,255
163.02	8,271
163.03	8,286
163.04	8,301
163.05	8,317
163.06	8,332
163.07	8,347
163.08	8,363
163.09	8,378
163.10	8,393
163.11	8,409
163.12	8,424
163.13	8,439
163.14	8,455
163.15	8,470
163.16	8,485
163.17	8,501
163.18	8,516
163.19	8,531
163.20	8,547
163.21	8,562
163.22	8,577
163.23	8,593
163.24	8,608
163.25	8,623
163.26	8,639
163.27	8,654
163.28	8,669
163.29	8,685
163.30	8,700
163.31	8,715
163.32	8,731
163.33	8,746
163.34	**8,761**

Stage-Area-Storage for Pond 3P: UG3

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
160.28	0	160.81	660	161.34	1,981
160.29	12	160.82	686	161.35	2,005
160.30	23	160.83	711	161.36	2,030
160.31	35	160.84	737	161.37	2,054
160.32	47	160.85	762	161.38	2,078
160.33	58	160.86	788	161.39	2,102
160.34	70	160.87	813	161.40	2,126
160.35	82	160.88	838	161.41	2,150
160.36	93	160.89	864	161.42	2,174
160.37	105	160.90	889	161.43	2,198
160.38	117	160.91	914	161.44	2,222
160.39	128	160.92	939	161.45	2,246
160.40	140	160.93	964	161.46	2,270
160.41	152	160.94	989	161.47	2,294
160.42	163	160.95	1,014	161.48	2,318
160.43	175	160.96	1,039	161.49	2,342
160.44	187	160.97	1,065	161.50	2,365
160.45	198	160.98	1,090	161.51	2,389
160.46	210	160.99	1,115	161.52	2,413
160.47	222	161.00	1,140	161.53	2,437
160.48	233	161.01	1,165	161.54	2,460
160.49	245	161.02	1,190	161.55	2,484
160.50	257	161.03	1,215	161.56	2,508
160.51	268	161.04	1,240	161.57	2,531
160.52	280	161.05	1,265	161.58	2,555
160.53	292	161.06	1,290	161.59	2,578
160.54	303	161.07	1,315	161.60	2,602
160.55	315	161.08	1,339	161.61	2,625
160.56	327	161.09	1,364	161.62	2,649
160.57	338	161.10	1,389	161.63	2,672
160.58	350	161.11	1,414	161.64	2,695
160.59	362	161.12	1,439	161.65	2,719
160.60	373	161.13	1,464	161.66	2,742
160.61	385	161.14	1,489	161.67	2,765
160.62	397	161.15	1,514	161.68	2,788
160.63	408	161.16	1,539	161.69	2,811
160.64	420	161.17	1,564	161.70	2,834
160.65	432	161.18	1,589	161.71	2,857
160.66	443	161.19	1,613	161.72	2,879
160.67	455	161.20	1,638	161.73	2,902
160.68	467	161.21	1,663	161.74	2,925
160.69	478	161.22	1,688	161.75	2,947
160.70	490	161.23	1,712	161.76	2,970
160.71	502	161.24	1,737	161.77	2,992
160.72	513	161.25	1,762	161.78	3,014
160.73	525	161.26	1,786	161.79	3,037
160.74	537	161.27	1,811	161.80	3,059
160.75	548	161.28	1,835	161.81	3,081
160.76	560	161.29	1,859	161.82	3,103
160.77	572	161.30	1,884	161.83	3,125
160.78	583	161.31	1,908	161.84	3,147
160.79	609	161.32	1,933	161.85	3,169
160.80	635	161.33	1,957	161.86	3,190

Stage-Area-Storage for Pond 3P: UG3 (continued)

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
161.87	3,212	162.40	4,190	162.93	4,817
161.88	3,233	162.41	4,203	162.94	4,829
161.89	3,255	162.42	4,217	162.95	4,841
161.90	3,276	162.43	4,231	162.96	4,852
161.91	3,298	162.44	4,244	162.97	4,864
161.92	3,319	162.45	4,257	162.98	4,876
161.93	3,340	162.46	4,269	162.99	**4,885**
161.94	3,361	162.47	4,281		
161.95	3,382	162.48	4,292		
161.96	3,403	162.49	4,304		
161.97	3,424	162.50	4,316		
161.98	3,445	162.51	4,327		
161.99	3,466	162.52	4,339		
162.00	3,486	162.53	4,351		
162.01	3,507	162.54	4,362		
162.02	3,527	162.55	4,374		
162.03	3,547	162.56	4,386		
162.04	3,567	162.57	4,397		
162.05	3,588	162.58	4,409		
162.06	3,607	162.59	4,421		
162.07	3,627	162.60	4,432		
162.08	3,647	162.61	4,444		
162.09	3,667	162.62	4,456		
162.10	3,686	162.63	4,467		
162.11	3,705	162.64	4,479		
162.12	3,725	162.65	4,491		
162.13	3,744	162.66	4,502		
162.14	3,763	162.67	4,514		
162.15	3,781	162.68	4,526		
162.16	3,800	162.69	4,537		
162.17	3,818	162.70	4,549		
162.18	3,837	162.71	4,561		
162.19	3,855	162.72	4,572		
162.20	3,873	162.73	4,584		
162.21	3,890	162.74	4,596		
162.22	3,908	162.75	4,607		
162.23	3,925	162.76	4,619		
162.24	3,942	162.77	4,631		
162.25	3,959	162.78	4,642		
162.26	3,976	162.79	4,654		
162.27	3,992	162.80	4,666		
162.28	4,009	162.81	4,677		
162.29	4,025	162.82	4,689		
162.30	4,041	162.83	4,701		
162.31	4,056	162.84	4,712		
162.32	4,072	162.85	4,724		
162.33	4,087	162.86	4,736		
162.34	4,102	162.87	4,747		
162.35	4,117	162.88	4,759		
162.36	4,132	162.89	4,771		
162.37	4,147	162.90	4,782		
162.38	4,161	162.91	4,794		
162.39	4,175	162.92	4,806		

Stage-Area-Storage for Pond 1P: UG1

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
157.53	0	158.06	2,965	158.59	9,098
157.54	52	158.07	3,084	158.60	9,211
157.55	104	158.08	3,203	158.61	9,324
157.56	156	158.09	3,321	158.62	9,436
157.57	209	158.10	3,439	158.63	9,549
157.58	261	158.11	3,557	158.64	9,661
157.59	313	158.12	3,675	158.65	9,773
157.60	365	158.13	3,793	158.66	9,885
157.61	417	158.14	3,910	158.67	9,997
157.62	469	158.15	4,028	158.68	10,109
157.63	522	158.16	4,145	158.69	10,221
157.64	574	158.17	4,262	158.70	10,333
157.65	626	158.18	4,378	158.71	10,445
157.66	678	158.19	4,495	158.72	10,556
157.67	730	158.20	4,611	158.73	10,668
157.68	782	158.21	4,727	158.74	10,779
157.69	835	158.22	4,843	158.75	10,890
157.70	887	158.23	4,960	158.76	11,001
157.71	939	158.24	5,076	158.77	11,112
157.72	991	158.25	5,192	158.78	11,222
157.73	1,043	158.26	5,308	158.79	11,333
157.74	1,095	158.27	5,423	158.80	11,443
157.75	1,148	158.28	5,539	158.81	11,553
157.76	1,200	158.29	5,655	158.82	11,663
157.77	1,252	158.30	5,771	158.83	11,773
157.78	1,304	158.31	5,887	158.84	11,882
157.79	1,356	158.32	6,002	158.85	11,992
157.80	1,408	158.33	6,118	158.86	12,101
157.81	1,461	158.34	6,233	158.87	12,211
157.82	1,513	158.35	6,349	158.88	12,320
157.83	1,565	158.36	6,464	158.89	12,429
157.84	1,617	158.37	6,580	158.90	12,538
157.85	1,669	158.38	6,695	158.91	12,646
157.86	1,721	158.39	6,811	158.92	12,755
157.87	1,774	158.40	6,926	158.93	12,864
157.88	1,826	158.41	7,041	158.94	12,972
157.89	1,878	158.42	7,156	158.95	13,081
157.90	1,930	158.43	7,272	158.96	13,189
157.91	1,982	158.44	7,387	158.97	13,297
157.92	2,034	158.45	7,502	158.98	13,405
157.93	2,087	158.46	7,617	158.99	13,514
157.94	2,139	158.47	7,732	159.00	13,621
157.95	2,191	158.48	7,846	159.01	13,729
157.96	2,243	158.49	7,961	159.02	13,837
157.97	2,295	158.50	8,075	159.03	13,945
157.98	2,347	158.51	8,190	159.04	14,052
157.99	2,400	158.52	8,304	159.05	14,160
158.00	2,452	158.53	8,418	159.06	14,267
158.01	2,504	158.54	8,531	159.07	14,374
158.02	2,556	158.55	8,645	159.08	14,481
158.03	2,608	158.56	8,759	159.09	14,588
158.04	2,727	158.57	8,872	159.10	14,695
158.05	2,847	158.58	8,985	159.11	14,802

Stage-Area-Storage for Pond 1P: UG1 (continued)

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
159.12	14,909	159.65	20,213	160.18	24,248
159.13	15,016	159.66	20,305	160.19	24,301
159.14	15,122	159.67	20,397	160.20	24,354
159.15	15,228	159.68	20,489	160.21	24,406
159.16	15,334	159.69	20,580	160.22	24,459
159.17	15,439	159.70	20,671	160.23	24,511
159.18	15,545	159.71	20,761	160.24	24,563
159.19	15,650	159.72	20,851	160.25	24,615
159.20	15,755	159.73	20,940	160.26	24,667
159.21	15,860	159.74	21,029	160.27	24,719
159.22	15,964	159.75	21,118	160.28	24,772
159.23	16,068	159.76	21,206	160.29	24,824
159.24	16,172	159.77	21,293	160.30	24,876
159.25	16,276	159.78	21,381	160.31	24,928
159.26	16,379	159.79	21,467	160.32	24,980
159.27	16,482	159.80	21,554	160.33	25,032
159.28	16,585	159.81	21,639	160.34	25,084
159.29	16,687	159.82	21,724	160.35	25,137
159.30	16,790	159.83	21,809	160.36	25,189
159.31	16,892	159.84	21,893	160.37	25,241
159.32	16,994	159.85	21,976	160.38	25,293
159.33	17,095	159.86	22,059	160.39	25,345
159.34	17,197	159.87	22,141	160.40	25,397
159.35	17,298	159.88	22,223	160.41	25,450
159.36	17,399	159.89	22,303	160.42	25,502
159.37	17,500	159.90	22,383	160.43	25,554
159.38	17,601	159.91	22,463	160.44	25,606
159.39	17,701	159.92	22,541	160.45	25,658
159.40	17,801	159.93	22,619	160.46	25,710
159.41	17,901	159.94	22,696	160.47	25,763
159.42	18,001	159.95	22,773	160.48	25,815
159.43	18,100	159.96	22,848	160.49	25,867
159.44	18,199	159.97	22,922	160.50	25,919
159.45	18,298	159.98	22,995	160.51	25,971
159.46	18,397	159.99	23,068	160.52	26,023
159.47	18,495	160.00	23,139	160.53	26,076
159.48	18,593	160.01	23,209	160.54	26,128
159.49	18,691	160.02	23,278	160.55	26,180
159.50	18,788	160.03	23,345	160.56	26,232
159.51	18,885	160.04	23,412	160.57	26,284
159.52	18,982	160.05	23,478	160.58	26,336
159.53	19,079	160.06	23,543	160.59	26,389
159.54	19,175	160.07	23,607	160.60	26,441
159.55	19,271	160.08	23,669	160.61	26,493
159.56	19,367	160.09	23,731	160.62	26,545
159.57	19,462	160.10	23,792	160.63	26,597
159.58	19,557	160.11	23,852	160.64	26,649
159.59	19,652	160.12	23,910	160.65	26,702
159.60	19,746	160.13	23,968	160.66	26,754
159.61	19,840	160.14	24,026	160.67	26,806
159.62	19,934	160.15	24,082	160.68	26,858
159.63	20,027	160.16	24,138	160.69	26,910
159.64	20,120	160.17	24,193	160.70	26,962

Stage-Area-Storage for Pond 1P: UG1 (continued)

Elevation (feet)	Storage (cubic-feet)
160.71	27,015
160.72	27,067
160.73	27,119
160.74	**27,162**

Stage-Area-Storage for Pond 2P: UG2

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
159.80	0	160.33	866	160.86	2,602
159.81	15	160.34	899	160.87	2,634
159.82	31	160.35	932	160.88	2,667
159.83	46	160.36	965	160.89	2,699
159.84	61	160.37	998	160.90	2,731
159.85	77	160.38	1,031	160.91	2,764
159.86	92	160.39	1,064	160.92	2,796
159.87	107	160.40	1,097	160.93	2,828
159.88	123	160.41	1,130	160.94	2,860
159.89	138	160.42	1,163	160.95	2,892
159.90	153	160.43	1,196	160.96	2,924
159.91	169	160.44	1,229	160.97	2,956
159.92	184	160.45	1,262	160.98	2,988
159.93	199	160.46	1,295	160.99	3,020
159.94	215	160.47	1,328	161.00	3,052
159.95	230	160.48	1,361	161.01	3,084
159.96	245	160.49	1,393	161.02	3,115
159.97	261	160.50	1,426	161.03	3,147
159.98	276	160.51	1,459	161.04	3,179
159.99	291	160.52	1,492	161.05	3,211
160.00	307	160.53	1,525	161.06	3,242
160.01	322	160.54	1,557	161.07	3,274
160.02	337	160.55	1,590	161.08	3,306
160.03	353	160.56	1,623	161.09	3,337
160.04	368	160.57	1,656	161.10	3,369
160.05	383	160.58	1,688	161.11	3,401
160.06	399	160.59	1,721	161.12	3,432
160.07	414	160.60	1,754	161.13	3,464
160.08	429	160.61	1,787	161.14	3,496
160.09	445	160.62	1,819	161.15	3,527
160.10	460	160.63	1,852	161.16	3,559
160.11	475	160.64	1,885	161.17	3,590
160.12	491	160.65	1,917	161.18	3,622
160.13	506	160.66	1,950	161.19	3,654
160.14	521	160.67	1,983	161.20	3,685
160.15	537	160.68	2,015	161.21	3,717
160.16	552	160.69	2,048	161.22	3,748
160.17	567	160.70	2,081	161.23	3,780
160.18	583	160.71	2,113	161.24	3,811
160.19	598	160.72	2,146	161.25	3,843
160.20	613	160.73	2,179	161.26	3,874
160.21	629	160.74	2,211	161.27	3,906
160.22	644	160.75	2,244	161.28	3,937
160.23	659	160.76	2,277	161.29	3,969
160.24	675	160.77	2,309	161.30	4,000
160.25	690	160.78	2,342	161.31	4,032
160.26	705	160.79	2,374	161.32	4,063
160.27	721	160.80	2,407	161.33	4,094
160.28	736	160.81	2,440	161.34	4,126
160.29	751	160.82	2,472	161.35	4,157
160.30	767	160.83	2,505	161.36	4,188
160.31	800	160.84	2,537	161.37	4,220
160.32	833	160.85	2,570	161.38	4,251

Stage-Area-Storage for Pond 2P: UG2 (continued)

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
161.39	4,282	161.92	5,876	162.45	7,260
161.40	4,314	161.93	5,904	162.46	7,283
161.41	4,345	161.94	5,932	162.47	7,306
161.42	4,376	161.95	5,961	162.48	7,328
161.43	4,407	161.96	5,989	162.49	7,351
161.44	4,439	161.97	6,017	162.50	7,373
161.45	4,470	161.98	6,045	162.51	7,395
161.46	4,501	161.99	6,073	162.52	7,416
161.47	4,532	162.00	6,101	162.53	7,438
161.48	4,563	162.01	6,129	162.54	7,459
161.49	4,594	162.02	6,157	162.55	7,480
161.50	4,626	162.03	6,184	162.56	7,501
161.51	4,657	162.04	6,212	162.57	7,521
161.52	4,688	162.05	6,240	162.58	7,542
161.53	4,718	162.06	6,267	162.59	7,562
161.54	4,749	162.07	6,295	162.60	7,582
161.55	4,780	162.08	6,322	162.61	7,601
161.56	4,811	162.09	6,349	162.62	7,621
161.57	4,842	162.10	6,376	162.63	7,640
161.58	4,872	162.11	6,403	162.64	7,659
161.59	4,903	162.12	6,430	162.65	7,678
161.60	4,933	162.13	6,457	162.66	7,696
161.61	4,964	162.14	6,484	162.67	7,714
161.62	4,994	162.15	6,511	162.68	7,732
161.63	5,024	162.16	6,537	162.69	7,750
161.64	5,055	162.17	6,564	162.70	7,768
161.65	5,085	162.18	6,590	162.71	7,785
161.66	5,115	162.19	6,617	162.72	7,803
161.67	5,145	162.20	6,643	162.73	7,820
161.68	5,175	162.21	6,669	162.74	7,837
161.69	5,205	162.22	6,695	162.75	7,853
161.70	5,234	162.23	6,721	162.76	7,870
161.71	5,264	162.24	6,747	162.77	7,886
161.72	5,294	162.25	6,772	162.78	7,902
161.73	5,324	162.26	6,798	162.79	7,918
161.74	5,353	162.27	6,823	162.80	7,933
161.75	5,383	162.28	6,849	162.81	7,949
161.76	5,412	162.29	6,874	162.82	7,964
161.77	5,442	162.30	6,899	162.83	7,979
161.78	5,471	162.31	6,924	162.84	7,995
161.79	5,500	162.32	6,949	162.85	8,010
161.80	5,530	162.33	6,974	162.86	8,025
161.81	5,559	162.34	6,999	162.87	8,041
161.82	5,588	162.35	7,023	162.88	8,056
161.83	5,617	162.36	7,047	162.89	8,071
161.84	5,646	162.37	7,072	162.90	8,087
161.85	5,675	162.38	7,096	162.91	8,102
161.86	5,704	162.39	7,120	162.92	8,117
161.87	5,733	162.40	7,144	162.93	8,133
161.88	5,761	162.41	7,167	162.94	8,148
161.89	5,790	162.42	7,191	162.95	8,163
161.90	5,819	162.43	7,214	162.96	8,179
161.91	5,847	162.44	7,237	162.97	8,194

Stage-Area-Storage for Pond 2P: UG2 (continued)

Elevation (feet)	Storage (cubic-feet)
162.98	8,209
162.99	8,225
163.00	8,240
163.01	8,255
163.02	8,271
163.03	8,286
163.04	8,301
163.05	8,317
163.06	8,332
163.07	8,347
163.08	8,363
163.09	8,378
163.10	8,393
163.11	8,409
163.12	8,424
163.13	8,439
163.14	8,455
163.15	8,470
163.16	8,485
163.17	8,501
163.18	8,516
163.19	8,531
163.20	8,547
163.21	8,562
163.22	8,577
163.23	8,593
163.24	8,608
163.25	8,623
163.26	8,639
163.27	8,654
163.28	8,669
163.29	8,685
163.30	8,700
163.31	8,715
163.32	8,731
163.33	8,746
163.34	**8,761**

Stage-Area-Storage for Pond 3P: UG3

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
160.28	0	160.81	660	161.34	1,981
160.29	12	160.82	686	161.35	2,005
160.30	23	160.83	711	161.36	2,030
160.31	35	160.84	737	161.37	2,054
160.32	47	160.85	762	161.38	2,078
160.33	58	160.86	788	161.39	2,102
160.34	70	160.87	813	161.40	2,126
160.35	82	160.88	838	161.41	2,150
160.36	93	160.89	864	161.42	2,174
160.37	105	160.90	889	161.43	2,198
160.38	117	160.91	914	161.44	2,222
160.39	128	160.92	939	161.45	2,246
160.40	140	160.93	964	161.46	2,270
160.41	152	160.94	989	161.47	2,294
160.42	163	160.95	1,014	161.48	2,318
160.43	175	160.96	1,039	161.49	2,342
160.44	187	160.97	1,065	161.50	2,365
160.45	198	160.98	1,090	161.51	2,389
160.46	210	160.99	1,115	161.52	2,413
160.47	222	161.00	1,140	161.53	2,437
160.48	233	161.01	1,165	161.54	2,460
160.49	245	161.02	1,190	161.55	2,484
160.50	257	161.03	1,215	161.56	2,508
160.51	268	161.04	1,240	161.57	2,531
160.52	280	161.05	1,265	161.58	2,555
160.53	292	161.06	1,290	161.59	2,578
160.54	303	161.07	1,315	161.60	2,602
160.55	315	161.08	1,339	161.61	2,625
160.56	327	161.09	1,364	161.62	2,649
160.57	338	161.10	1,389	161.63	2,672
160.58	350	161.11	1,414	161.64	2,695
160.59	362	161.12	1,439	161.65	2,719
160.60	373	161.13	1,464	161.66	2,742
160.61	385	161.14	1,489	161.67	2,765
160.62	397	161.15	1,514	161.68	2,788
160.63	408	161.16	1,539	161.69	2,811
160.64	420	161.17	1,564	161.70	2,834
160.65	432	161.18	1,589	161.71	2,857
160.66	443	161.19	1,613	161.72	2,879
160.67	455	161.20	1,638	161.73	2,902
160.68	467	161.21	1,663	161.74	2,925
160.69	478	161.22	1,688	161.75	2,947
160.70	490	161.23	1,712	161.76	2,970
160.71	502	161.24	1,737	161.77	2,992
160.72	513	161.25	1,762	161.78	3,014
160.73	525	161.26	1,786	161.79	3,037
160.74	537	161.27	1,811	161.80	3,059
160.75	548	161.28	1,835	161.81	3,081
160.76	560	161.29	1,859	161.82	3,103
160.77	572	161.30	1,884	161.83	3,125
160.78	583	161.31	1,908	161.84	3,147
160.79	609	161.32	1,933	161.85	3,169
160.80	635	161.33	1,957	161.86	3,190

Stage-Area-Storage for Pond 3P: UG3 (continued)

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
161.87	3,212	162.40	4,190	162.93	4,817
161.88	3,233	162.41	4,203	162.94	4,829
161.89	3,255	162.42	4,217	162.95	4,841
161.90	3,276	162.43	4,231	162.96	4,852
161.91	3,298	162.44	4,244	162.97	4,864
161.92	3,319	162.45	4,257	162.98	4,876
161.93	3,340	162.46	4,269	162.99	**4,885**
161.94	3,361	162.47	4,281		
161.95	3,382	162.48	4,292		
161.96	3,403	162.49	4,304		
161.97	3,424	162.50	4,316		
161.98	3,445	162.51	4,327		
161.99	3,466	162.52	4,339		
162.00	3,486	162.53	4,351		
162.01	3,507	162.54	4,362		
162.02	3,527	162.55	4,374		
162.03	3,547	162.56	4,386		
162.04	3,567	162.57	4,397		
162.05	3,588	162.58	4,409		
162.06	3,607	162.59	4,421		
162.07	3,627	162.60	4,432		
162.08	3,647	162.61	4,444		
162.09	3,667	162.62	4,456		
162.10	3,686	162.63	4,467		
162.11	3,705	162.64	4,479		
162.12	3,725	162.65	4,491		
162.13	3,744	162.66	4,502		
162.14	3,763	162.67	4,514		
162.15	3,781	162.68	4,526		
162.16	3,800	162.69	4,537		
162.17	3,818	162.70	4,549		
162.18	3,837	162.71	4,561		
162.19	3,855	162.72	4,572		
162.20	3,873	162.73	4,584		
162.21	3,890	162.74	4,596		
162.22	3,908	162.75	4,607		
162.23	3,925	162.76	4,619		
162.24	3,942	162.77	4,631		
162.25	3,959	162.78	4,642		
162.26	3,976	162.79	4,654		
162.27	3,992	162.80	4,666		
162.28	4,009	162.81	4,677		
162.29	4,025	162.82	4,689		
162.30	4,041	162.83	4,701		
162.31	4,056	162.84	4,712		
162.32	4,072	162.85	4,724		
162.33	4,087	162.86	4,736		
162.34	4,102	162.87	4,747		
162.35	4,117	162.88	4,759		
162.36	4,132	162.89	4,771		
162.37	4,147	162.90	4,782		
162.38	4,161	162.91	4,794		
162.39	4,175	162.92	4,806		

Events for Pond 1P: UG1

Event	Inflow (cfs)	Primary (cfs)	Elevation (feet)	Storage (cubic-feet)
1-yr	7.43	1.56	158.66	9,934
2-yr	8.97	2.67	158.81	11,551
10-yr	13.29	4.36	159.22	15,918
50-yr	18.56	5.69	159.67	20,430
100-yr	**21.14**	**6.27**	**159.91**	**22,489**
MRC	5.32	0.02	158.38	6,674

Events for Pond 2P: UG2

Event	Inflow (cfs)	Primary (cfs)	Elevation (feet)	Storage (cubic-feet)
1-yr	2.87	0.50	161.14	3,485
2-yr	3.52	1.18	161.32	4,071
10-yr	5.34	2.79	161.76	5,407
50-yr	7.54	3.85	162.25	6,775
100-yr	**8.61**	**4.30**	**162.51**	**7,394**
MRC	1.79	0.01	160.70	2,069

Events for Pond 3P: UG3

Event	Inflow (cfs)	Primary (cfs)	Elevation (feet)	Storage (cubic-feet)
1-yr	1.34	0.19	161.00	1,138
2-yr	1.72	0.30	161.13	1,466
10-yr	2.80	0.63	161.50	2,362
50-yr	4.11	0.88	162.03	3,540
100-yr	**4.75**	**1.01**	**162.36**	**4,129**
MRC	0.61	0.11	160.62	396

General Information

Instructions | *General* | Volume | Rate | Quality

Project Name: **Proposed Automotive Dealership Expansion**

Application Type: **PAG-02 NOI**

County: **Montgomery**

Municipality: **Whitemarsh Township**

Project Type: **Commercial Building**

(●) New Project ( ) Minor / Major Amendment

Total Project Site Area: **5.45** acres *(In Watershed)*

Total Earth Disturbance: **4.93** acres *(In Watershed)*

No. of Post-Construction Discharge Points: **1**

Start DP Numbering at: **001**

Discharge Point (DP) No.	Drainage Area (DA) (acres)	Earth Disturbance in DA (acres)	Existing Impervious in DA (acres)	Proposed Impervious in DA (acres)	Receiving Waters	Ch. 93 Class	Structural BMP(s)
001		3.17		3.01	Wissahickon Creek	TSF, MF	Yes
Undetained Areas	4.93	1.76	3.71	0.70	Wissahickon Creek	TSF, MF	
Totals:	**4.93**	**4.93**	**3.711**	**3.708**			

Volume Management

Project: Proposed Automotive Dealership Expansion

Instructions | General | *Volume* | Rate | Quality

2-Year / 24-Hour Storm Event (NOAA Atlas 14): **3.28** inches

Alternative 2-Year / 24-Hour Storm Event _____ inches

Alternative Source: _____

Pre-Construction Conditions: *No. Rows:* **6** ☐ *Exempt from Meadow in Good Condition* ☑ *Automatically Calculate CN, Ia, Runoff and Volume*

Land Cover	Area (acres)	Soil Group	CN	Ia (in)	Q Runoff (in)	Runoff Volume (cf)
Pervious as Meadow	0.86	A	30	4.667	0.00	0
Forested (Good Condition)	0.28	A	30	4.667	0.00	0
Pervious as Meadow	0.08	B	58	1.448	0.37	101
Impervious as Meadow	0.72	A	30	4.667	0.00	0
Impervious as Meadow	0.03	B	58	1.448	0.37	34
Impervious Areas: Commercial	2.97	N/A	98	0.041	3.05	32,885
TOTAL (ACRES):	**4.93**				**TOTAL (CF):**	**33,020**

Post-Construction Conditions: *No. Rows:* **4**

Land Cover	Area (acres)	Soil Group	CN	Ia (in)	Q Runoff (in)	Runoff Volume (cf)
Open Space (Lawns, Parks, Golf Courses, Cemeteries, Etc.) - Good Condition (Grass Cover > 75%)	0.78	A	39	3.128	0.00	4

Woods (Good Condition)	0.28	A	30	4.667	0.00	0
Open Space (Lawns, Parks, Golf Courses, Cemeteries, Etc.) - Good Condition (Grass Cover > 75%)	0.16	B	61	1.279	0.48	272
Impervious Areas: Commercial	3.71	N/A	98	0.041	3.05	41,026
TOTAL (ACRES):	**4.93**				**TOTAL (CF):**	**41,303**

NET CHANGE IN VOLUME TO MANAGE (CF): **8,283**

Non-Structural BMP Volume Credits:

☑ Tree Planting Credit

Number of new deciduous trees that will be planted within disturbed area: 67 — **CREDIT (CF):** **402**

Number of new evergreen trees that will be planted within disturbed area: 16 — **CREDIT (CF):** **160**

☐ Other (attach calculations):

Structural BMP Volume Credits: *No. Structural BMPs:* **3** *Start BMP Numbering at:* **1**

DP No.	BMP No.	BMP Name	MRC?	Discharge	Incremental BMP DA (acres)	Volume Routed to BMP (CF)	Infiltration / Vegetated Area (SF)	Infiltration Rate (in/hr)	Infiltration Period (hrs)	Vegeta-ted?	Media Depth (ft)	Storage Volume (CF)	Infiltration Credit (CF)	ET Credit (CF)
001	1	Dry Extended Detention Basin	Y	Off-Site	2.01	20,927	0	0.00	12	No	4.2	17,377	**0**	
001	2	Dry Extended Detention Basin	Y	Off-Site	0.70	7,681	0	0.00	12	No	4.6	5,555	**0**	
001	3	Dry Extended Detention Basin	-	Off-Site	0.45	3,482	0	0.00	12	No	2.7	2,875	**0**	
												Totals:		

INFILTRATION & ET CREDITS (CF):

MANAGED RELEASE CREDIT (CF): **28,608**

NET CHANGE IN VOLUME TO MANAGE (CF): **8,283**

TOTAL CREDITS (CF): **30,095**

VOLUME REQUIREMENT SATISFIED

Rate Control

Project: Proposed Automotive Dealership Expansion

Precipitation Amounts:

NOAA 2-Year 24-Hour Storm Event (in):	**3.28**	Alternative 2-Year 24-Hour Storm Event (in):	
NOAA 10-Year 24-Hour Storm Event (in):	**4.83**	Alternative 10-Year 24-Hour Storm Event (in):	
NOAA 50-Year 24-Hour Storm Event (in):	**6.73**	Alternative 50-Year 24-Hour Storm Event (in):	
NOAA 100-Year 24-Hour Storm Event (in):	**7.66**	Alternative 100-Year 24-Hour Storm Event (in):	

☑ **Report Summary of Peak Rates Only**

Attach model input and output data or other calculations to support the rates reported below.

	Peak Discharge Rates (cfs)			
	Pre-Construction	**Post-Construction**	**Net Change**	
2-Year Storm:	**10.54**	**5.57**	**-4.97**	***Rate Control Satisfied***
10-Year Storm:	**18.97**	**11.49**	**-7.48**	***Rate Control Satisfied***
50-Year Storm:	**29.63**	**17.57**	**-12.06**	***Rate Control Satisfied***
100-Year Storm:	**34.86**	**20.56**	**-14.30**	***Rate Control Satisfied***

Water Quality

Project: Proposed Automotive Dealership Expansion

PRINT

Instructions | General | Volume | Rate | *Quality*

Pre-Construction Pollutant Loads:

Land Cover (from Volume Worksheet)	Land Cover for Water Quality	Area (acres)	Soil Group	Runoff Volume (cf)	Pollutant Conc. (mg/L)			Pollutant Loads (lbs)		
					TSS	TP	TN	TSS	TP	TN
Pervious as Meadow	Grassland/Herbaceous	0.86	A	0	48.8	0.22	2.30	0.00	0.00	0.00
Forested (Good Condition)	Deciduous Forest/Evergreen Forest/Mixed Forest	0.28	A	0	45.0	0.13	1.05	0.00	0.00	0.00
Pervious as Meadow	Grassland/Herbaceous	0.08	B	101	48.8	0.22	2.30	0.31	0.00	0.01
Impervious as Meadow	Grassland/Herbaceous	0.72	A	0	48.8	0.22	2.30	0.00	0.00	0.00
Impervious as Meadow	Grassland/Herbaceous	0.03	B	34	48.8	0.22	2.30	0.10	0.00	0.00
Impervious Areas: Commercial	Commercial	2.97	N/A	32,885	61.7	0.22	2.02	126.74	0.45	4.15
	TOTAL (ACRES):	**4.93**					**TOTALS:**	**127.15**	**0.45**	**4.17**

Post-Construction Pollutant Loads (without BMPs):

Land Cover (from Volume Worksheet)	Land Cover for Water	Area	Soil	Runoff Volume	Pollutant Conc. (mg/L)	Pollutant Loads (lbs)

Land Cover (from Volume Worksheet)	Quality	(acres)	Group	Volume (cf)	TSS	TP	TN	TSS	TP	TN
Open Space (Lawns, Parks, Golf Courses, Cemeteries, Etc.) - Good Condition (Grass Cover > 75%)	Open Space	0.78	A	4	78.0	0.25	1.25	0.02	0.00	0.00
Woods (Good Condition)	Deciduous Forest/Evergreen Forest/Mixed Forest	0.28	A	0	45.0	0.13	1.05	0.00	0.00	0.00
Open Space (Lawns, Parks, Golf Courses, Cemeteries, Etc.) - Good Condition (Grass Cover > 75%)	Open Space	0.16	B	272	78.0	0.25	1.25	1.32	0.00	0.02
Impervious Areas: Commercial	Commercial	3.71	N/A	41,026	61.7	0.22	2.02	158.11	0.56	5.17
	TOTAL (ACRES):	**4.93**					**TOTALS:**	**159.46**	**0.57**	**5.20**

POLLUTANT LOAD REDUCTION REQUIREMENTS (LBS):	**32.31**	**0.11**	**1.03**

☑ **Characterize Undetained Areas (for Untreated Stormwater)** *No. Rows:* **4**

Land Cover	Area (acres)	Soil Group	CN	Ia (in)	Q Runoff (in)	Runoff Volume (cf)
Open Space (Lawns, Parks, Golf Courses, Cemeteries, Etc.) - Good Condition (Grass Cover > 75%)	**0.655**	**A**	**39**	**3.128**	**0.00**	**3**
Woods (Good Condition)	**0.282**	**A**	**30**	**4.667**	**0.00**	**0**
Open Space (Lawns, Parks, Golf Courses, Cemeteries, Etc.) - Good Condition (Grass Cover > 75%)	**0.13**	**B**	**61**	**1.279**	**0.48**	**225**
Impervious Areas: Commercial	**0.697**	**N/A**	**98**	**0.041**	**3.05**	**7,710**

Non-Structural BMP Water Quality Credits:

☑ Pervious Undetained Area Credit

TSS	TP	TN
0.17	**0.00**	**0.00**

☐ Other (attach calculations)

Structural BMP Water Quality Credits:

☑ *Use default BMP Outflows and Median BMP Outflow Concentrations*

DP No.	BMP No.	BMP Name	MRC?	BMP DA (acres)	Vol. Routed to BMP (CF)	Inf. & ET Credits (CF)	Capture & Buffer Credits (CF)	Outflow (CF)	Outflow Conc. (mg/L)			Pollutant Loads (lbs)		
									TSS	TP	TN	TSS	TP	TN
001	1	Dry Extended Detention Basin	Y	2.01	20,927	0		20,927	-	-	-	-	-	-
001	2	Dry Extended Detention Basin	Y	0.70	7,681	0		7,681	-	-	-	-	-	-
001	3	Dry Extended Detention Basin	-	0.45	3,482	0		3,482	22.00	0.19	1.22	4.78	0.04	0.27

	TSS	TP	TN
POLLUTANT LOADS FROM STRUCTURAL BMP (TREATED) OUTFLOWS (LBS):	**4.78**	**0.04**	**0.27**
POLLUTANT LOADS FROM UNTREATED STORMWATER (LBS):	**30.83**	**0.11**	**0.99**
NON-STRUCTURAL BMP WATER QUALITY CREDITS (LBS):	**0.17**	**0.00**	**0.00**
NET POLLUTANT LOADS FROM SITE, POST-CONSTRUCTION (LBS):	**35.44**	**0.15**	**1.25**
POLLUTANT LOADS FROM SITE, PRE-CONSTRUCTION (LBS):	**127.15**	**0.45**	**4.17**

WATER QUALITY REQUIREMENT SATISFIED

CERTIFICATION

I certify under penalty of law and subject to the penalties of 18 Pa.C.S. § 4904 (relating to unsworn falsification to authorities) that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I further certify that the structure, function, and calculations contained in this spreadsheet have not been modified in comparison to the spreadsheet DEP has posted to its website or, if modifications were made, an explanation of the modifications made is attached to this spreadsheet.

Jeffrey Beavan, P.E.	9/12/2023
Spreadsheet User Name	Date

NON-STRUCTURAL BMP CREDITS

REVEGTATE AND REFOREST VOLUME CREDITS (BMP 5.6.3)

For Deciduous Trees:
Volume Reduction (ft^3) = $6ft^3$

Deciduous Trees	67	# of trees	x	6	ft^3	=	402.00	cuft

For Evergreen Trees:
Volume Reduction (ft^3) = $10ft^3$

Evergreen Trees	16	# of trees	x	10	ft^3	=	160.00	cuft

For Evergreen Shrubs:
Volume Reduction (ft^3) = $3ft^3$

Evergreen Surubs	0	# of shrubs	x	2	ft^3	=	0.00	cuft

Total Volume Credit = **562.00 cuft**

PROTECT SENSITIVE/SPECIAL FEATURES CREDITS (BMP 5.4.1)

For trees within 100 feet of impervious area:

Tree Canopy		s.f.	x	1/2"	x	1/12	=	**0.00**	**cuft**

AMENDED SOILS CREDITS (BMP 6.7.3)

Volume = Amended area (ft2) x 0.5 in x 1/12

Area of Amended Soils		S.F.
Volume	**0**	cuft

TOTAL NON-STRUCTURAL BMP CREDIT: **562.00 cuft**

POI1:	Bypass	UG1	UG2	UG3	Total		UG1	= 20,939 - 12 =20927
Deciduous Trees:	38	2	5	1	46		UG2	=7,711 - 30 =7681
Evergreen Trees:	1	0	0	3	4		UG3	=3,528 - 46 =3482

POI2:	
Deciduous Trees:	17
Evergreen Trees:	12

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MANAGED RELEASE CONCEPT (MRC) DESIGN SUMMARY

Complete One Design Summary Sheet for Each BMP Designed for MRC

GENERAL INFORMATION

Applicant Name:	**MileOne Fort Washington, LLC**	Project Name:	**BMW Automotive Dealership Expansion**
Applicant Address:	**3301 Briggs Chaney Road**	Municipality:	**Whitemarsh Township**
City, State, Zip:	Silver Spring, MD 20904	County:	**Montgomery County**

Permit Type: ☒ NPDES PAG-02 ☐ NPDES IP ☐ ESCGP ☐ ESP

	Pre-Development	Post-Development	Change
Impervious Area (acres):	3.715	3.701	0.014

MRC BMP INFORMATION

MRC BMP Type: **Dry Extended Detention Basin UG1** Stormwater BMP Manual Section: **6.6.3**

Will the BMP Include Vegetation? ☐ Yes ☒ No

If Yes, Identify Proposed Vegetation:

For Non-Vegetated BMPs Will There Be Pre- or Post-Treatment? ☒ Yes (Pre-) ☐ Yes (Post-) ☐ No

If Yes, Identify Proposed Pre- or Post-Treatment: **Water Quality Filters / Hydrodynamic Devices**

Name of Surface Water to Receive MRC BMP Discharges: **Sandy Run**

Designated Use of Surface Water: **TSF, MF** Existing Use of Surface Water (if different):

Is the Surface Water Impaired? ☒ Yes ☐ No

If Yes, Identify Cause(s): **Municipal Point Source Discharges – Nutrients, Biochemical Oxygen Demand (BOD) ; Urban Runoff/Storm Sewers - Nutrients**

Will the BMP have an impermeable liner? ☒ Yes ☐ No

If Yes, explain why a liner is proposed: **Proximity to Seasonal High Water Table**

BMP Media Description: **Coarse Aggregate with 40% Voids**

Are Any Deviations from MRC Design Standards Proposed? ☐ Yes ☒ No

If Yes, Identify Deviations:

MRC BMP DESIGN VALUES AND STANDARDS

Parameter	Design Value	Design Standard
Actual Contributing Impervious Area to BMP (acres)	**1.88**	
Equivalent Contributing Impervious Area to BMP (acres)	**1.86**	
Total Drainage Area to BMP (acres)	**1.96**	
MRC BMP Release Rate (cfs)	**0.02**	*No greater than 0.01 cfs / acre of equivalent contributing impervious*
Underdrain Outflow Rate During 1.2-Inch/2-Hour Storm (cfs)	**0.02**	*<= MRC BMP Release Rate (cfs)*
Maximum Storm Event Routed to MRC BMP	**100-Yr**	

MRC BMP Design Summary
Revised, August 25, 2020

Parameter	Design Value	Design Standard
BMP Footprint Area (ft^2)	**13,041**	
Bottom BMP Elevation (Native Soils) (ft)	**156.53**	
2-Yr/24-Hr Storm Ponding Depth (ft)	**2.28**	*1 ft (recommended) (2 ft max)*
Maximum Ponding Depth (ft)	**3.39**	*4 ft (max)*
Overflow Bypass Elevation (ft)	**160.24**	
Media Depth (ft)	**4.21**	*2 ft (min) – 4 ft (max)*
Media Void Space (%)	**40**	
Internal Water Storage (IWS) Depth (ft)	**1**	*1 ft recommended*
Top of IWS Elevation (ft)	**157.53**	
Underdrain Pipe Diameter (in)	**4**	
Underdrain Orifice Diameter (in)	**1.0**	
Underdrain Outlet Elevation (ft)	**157.53**	
IWS Available for Routing (%)	**0**	*50% max*
Separation Distance (Groundwater) (ft)	**-2.47**	*1 ft (min) (2 ft recommended)*
Infiltration Rate (in/hr)	**0**	
Volume of Overflow During 1.2-Inch/2-Hour Storm (cf)	**0**	*0 (No overflow allowed)*
1-Yr/24-Hr **Pre**-Development Peak Rate (cfs)	**10.54**	
2-Yr/24-Hr **Post**-Development Peak Rate (cfs)	**5.57**	*1-Yr/24-Hr Pre-Development Peak Rate (or per approved Act 167 Plan)*
10-Yr/24-Hr **Post**-Development Peak Rate (cfs)	**11.59**	*10-Yr/24-Hr Pre-Development Peak Rate*
50-Yr/24-Hr **Post**-Development Peak Rate (cfs)	**17.57**	*50-Yr/24-Hr Pre-Development Peak Rate*
100-Yr/24-Hr **Post**-Development Peak Rate (cfs)	**20.56**	*100-Yr/24-Hr Pre-Development Peak Rate*
Total 2-Yr/24-Hr Runoff Volume Managed by BMP (cf)	**20,927**	
Ponding Time @ 2-Yr/24-Hr Storm (hrs)	**113**	*72 hrs (surface), 7 days (underground)*
Ponding Time @ 10-Yr/24-Hr Storm (hrs)	**113**	*72 hrs (surface), 7 days (underground)*
Ponding Time @ 50-Yr/24-Hr Storm (hrs)	**113**	*72 hrs (surface), 7 days (underground)*
Ponding Time @ 100-Yr/24-Hr Storm (hrs)	**113**	*72 hrs (surface), 7 days (underground)*

Jeffrey A. Beavan
Licensed P.E. Name

Licensed P.E. Signature

PE082055
License No.

08/04/2023
Date

Licensed Professional's Seal

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MANAGED RELEASE CONCEPT (MRC) DESIGN SUMMARY

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Applicant Name:	**MileOne Fort Washington, LLC**	Project Name:	**BMW Automotive Dealership Expansion**
Applicant Address:	**3301 Briggs Chaney Road**	Municipality:	**Whitemarsh Township**
City, State, Zip:	Silver Spring, MD 20904	County:	**Montgomery County**

Permit Type: ☒ NPDES PAG-02 ☐ NPDES IP ☐ ESCGP ☐ ESP

	Pre-Development	Post-Development	Change
Impervious Area (acres):	3.715	3.701	0.014

MRC BMP INFORMATION

MRC BMP Type: **Dry Extended Detention Basin UG2** Stormwater BMP Manual Section: **6.6.3**

Will the BMP Include Vegetation? ☐ Yes ☒ No

If Yes, Identify Proposed Vegetation:

For Non-Vegetated BMPs Will There Be Pre- or Post-Treatment? ☒ Yes (Pre-) ☐ Yes (Post-) ☐ No

If Yes, Identify Proposed Pre- or Post-Treatment: **Water Quality Filters / Hydrodynamic Devices**

Name of Surface Water to Receive MRC BMP Discharges: **Sandy Run**

Designated Use of Surface Water: **TSF, MF** Existing Use of Surface Water (if different):

Is the Surface Water Impaired? ☒ Yes ☐ No

If Yes, Identify Cause(s): **Municipal Point Source Discharges – Nutrients, Biochemical Oxygen Demand (BOD) ; Urban Runoff/Storm Sewers - Nutrients**

Will the BMP have an impermeable liner? ☒ Yes ☐ No

If Yes, explain why a liner is proposed: **Proximity to Seasonal High Water Table**

BMP Media Description: **Coarse Aggregate with 40% Voids**

Are Any Deviations from MRC Design Standards Proposed? ☐ Yes ☒ No

If Yes, Identify Deviations:

MRC BMP DESIGN VALUES AND STANDARDS

Parameter	Design Value	Design Standard
Actual Contributing Impervious Area to BMP (acres)	**0.75**	
Equivalent Contributing Impervious Area to BMP (acres)	**0.73**	
Total Drainage Area to BMP (acres)	**0.78**	
MRC BMP Release Rate (cfs)	**0.01**	*No greater than 0.01 cfs / acre of equivalent contributing impervious*
Underdrain Outflow Rate During 1.2-Inch/2-Hour Storm (cfs)	**0.01**	*<= MRC BMP Release Rate (cfs)*
Maximum Storm Event Routed to MRC BMP	**100-Yr**	

MRC BMP Design Summary
Revised, August 25, 2020

Parameter	Design Value	Design Standard
BMP Footprint Area (ft^2)	**3,833**	
Bottom BMP Elevation (Native Soils) (ft)	**158.80**	
2-Yr/24-Hr Storm Ponding Depth (ft)	**2.60**	*1 ft (recommended) (2 ft max)*
Maximum Ponding Depth (ft)	**4.64**	*4 ft (max)*
Overflow Bypass Elevation (ft)	**162.55**	
Media Depth (ft)	**3.54**	*2 ft (min) – 4 ft (max)*
Media Void Space (%)	**40**	
Internal Water Storage (IWS) Depth (ft)	**1**	*1 ft recommended*
Top of IWS Elevation (ft)	**159.80**	
Underdrain Pipe Diameter (in)	**4**	
Underdrain Orifice Diameter (in)	**0.5**	
Underdrain Outlet Elevation (ft)	**159.80**	
IWS Available for Routing (%)	**0**	*50% max*
Separation Distance (Groundwater) (ft)	**-0.20**	*1 ft (min) (2 ft recommended)*
Infiltration Rate (in/hr)	**0**	
Volume of Overflow During 1.2-Inch/2-Hour Storm (cf)	**0**	*0 (No overflow allowed)*
1-Yr/24-Hr **Pre**-Development Peak Rate (cfs)	**10.54**	
2-Yr/24-Hr **Post**-Development Peak Rate (cfs)	**5.57**	*1-Yr/24-Hr Pre-Development Peak Rate (or per approved Act 167 Plan)*
10-Yr/24-Hr **Post**-Development Peak Rate (cfs)	**11.59**	*10-Yr/24-Hr Pre-Development Peak Rate*
50-Yr/24-Hr **Post**-Development Peak Rate (cfs)	**17.57**	*50-Yr/24-Hr Pre-Development Peak Rate*
100-Yr/24-Hr **Post**-Development Peak Rate (cfs)	**20.56**	*100-Yr/24-Hr Pre-Development Peak Rate*
Total 2-Yr/24-Hr Runoff Volume Managed by BMP (cf)	**7,681**	
Ponding Time @ 2-Yr/24-Hr Storm (hrs)	**80**	*72 hrs (surface), 7 days (underground)*
Ponding Time @ 10-Yr/24-Hr Storm (hrs)	**80**	*72 hrs (surface), 7 days (underground)*
Ponding Time @ 50-Yr/24-Hr Storm (hrs)	**80**	*72 hrs (surface), 7 days (underground)*
Ponding Time @ 100-Yr/24-Hr Storm (hrs)	**80**	*72 hrs (surface), 7 days (underground)*

Jeffrey A. Beavan
Licensed P.E. Name

Licensed P.E. Signature

PE082005
License No.

08/04/2023
Date

Licensed Professional's Seal

General Information

Instructions | *General* | Volume | Rate | Quality

Project Name: **Proposed Automotive Dealership Expansion**

Application Type: **PAG-02 NOI**

County: **Montgomery**

Municipality: **Whitemarsh Township**

Project Type: **Commercial Building**

(●) New Project ( ) Minor / Major Amendment

Total Project Site Area: **5.45** acres *(In Watershed)*

Total Earth Disturbance: **4.93** acres *(In Watershed)*

No. of Post-Construction Discharge Points: **1**

Start DP Numbering at: **001**

Discharge Point (DP) No.	Drainage Area (DA) (acres)	Earth Disturbance in DA (acres)	Existing Impervious in DA (acres)	Proposed Impervious in DA (acres)	Receiving Waters	Ch. 93 Class	Structural BMP(s)
001		3.17		3.01	Wissahickon Creek	TSF, MF	Yes
Undetained Areas	4.93	1.76	3.71	0.70	Wissahickon Creek	TSF, MF	
Totals:	**4.93**	**4.93**	**3.711**	**3.708**			

Volume Management

Project: Proposed Automotive Dealership Expansion

Instructions | General | *Volume* | Rate | Quality

2-Year / 24-Hour Storm Event (NOAA Atlas 14): **3.28** inches

Alternative 2-Year / 24-Hour Storm Event _____ inches

Alternative Source: _____

Pre-Construction Conditions: *No. Rows:* **6** ☐ *Exempt from Meadow in Good Condition* ☑ *Automatically Calculate CN, Ia, Runoff and Volume*

Land Cover	Area (acres)	Soil Group	CN	Ia (in)	Q Runoff (in)	Runoff Volume (cf)
Pervious as Meadow	0.47	A	30	4.667	0.00	0
Forested (Good Condition)	0.28	A	30	4.667	0.00	0
Pervious as Meadow	0.02	B	58	1.448	0.37	32
Impervious as Meadow	0.59	A	30	4.667	0.00	0
Impervious as Meadow	0.01	B	58	1.448	0.37	11
Impervious Areas: Commercial	2.41	N/A	98	0.041	3.05	26,636
TOTAL (ACRES):	**3.78**				**TOTAL (CF):**	**26,679**

Post-Construction Conditions: *No. Rows:* **4**

Land Cover	Area (acres)	Soil Group	CN	Ia (in)	Q Runoff (in)	Runoff Volume (cf)
Open Space (Lawns, Parks, Golf Courses, Cemeteries, Etc.) - Good Condition (Grass Cover > 75%)	0.52	A	39	3.128	0.00	3

Woods (Good Condition)	0.28	A	30	4.667	0.00	0
Open Space (Lawns, Parks, Golf Courses, Cemeteries, Etc.) - Good Condition (Grass Cover > 75%)	0.03	B	61	1.279	0.48	47
Impervious Areas: Commercial	3.35	N/A	98	0.041	3.05	37,022
TOTAL (ACRES):	**4.17**				**TOTAL (CF):**	**37,072**

NET CHANGE IN VOLUME TO MANAGE (CF): **10,393**

Non-Structural BMP Volume Credits:

☐ Tree Planting Credit

☐ Other (attach calculations):

Structural BMP Volume Credits: *No. Structural BMPs:* **3** *Start BMP Numbering at:* **1**

DP No.	BMP No.	BMP Name	MRC?	Discharge	Incremental BMP DA (acres)	Volume Routed to BMP (CF)	Infiltration / Vegetated Area (SF)	Infiltration Rate (in/hr)	Infiltration Period (hrs)	Vegeta-ted?	Media Depth (ft)	Storage Volume (CF)	Infiltration Credit (CF)	ET Credit (CF)
001	1	Dry Extended Detention Basin	Y	Off-Site	2.01	20,927	0	0.00	12	No	4.2	17,377	**0**	
001	2	Dry Extended Detention Basin	Y	Off-Site	0.70	7,681	0	0.00	12	No	4.6	5,555	**0**	
001	3	Dry Extended Detention Basin	-	Off-Site	0.45	3,482	0	0.00	12	No	2.7	2,875	**0**	
												Totals:		

INFILTRATION & ET CREDITS (CF):

MANAGED RELEASE CREDIT (CF): **28,608**

NET CHANGE IN VOLUME TO MANAGE (CF): **10,393**

TOTAL CREDITS (CF): **29,533**

VOLUME REQUIREMENT SATISFIED

Rate Control

Project: Proposed Automotive Dealership Expansion

Precipitation Amounts:

NOAA 2-Year 24-Hour Storm Event (in):	**3.28**	Alternative 2-Year 24-Hour Storm Event (in):	
NOAA 10-Year 24-Hour Storm Event (in):	**4.83**	Alternative 10-Year 24-Hour Storm Event (in):	
NOAA 50-Year 24-Hour Storm Event (in):	**6.73**	Alternative 50-Year 24-Hour Storm Event (in):	
NOAA 100-Year 24-Hour Storm Event (in):	**7.66**	Alternative 100-Year 24-Hour Storm Event (in):	

☑ **Report Summary of Peak Rates Only**

Attach model input and output data or other calculations to support the rates reported below.

	Peak Discharge Rates (cfs)			
	Pre-Construction	**Post-Construction**	**Net Change**	
2-Year Storm:	**8.00**	**4.32**	**-3.68**	***Rate Control Satisfied***
10-Year Storm:	**13.94**	**8.73**	**-5.21**	***Rate Control Satisfied***
50-Year Storm:	**21.33**	**12.75**	**-8.58**	***Rate Control Satisfied***
100-Year Storm:	**24.94**	**14.69**	**-10.25**	***Rate Control Satisfied***

Water Quality

Project: Proposed Automotive Dealership Expansion

PRINT

Instructions | General | Volume | Rate | *Quality*

Pre-Construction Pollutant Loads:

Land Cover (from Volume Worksheet)	Land Cover for Water Quality	Area (acres)	Soil Group	Runoff Volume (cf)	Pollutant Conc. (mg/L)			Pollutant Loads (lbs)		
					TSS	TP	TN	TSS	TP	TN
Pervious as Meadow	Grassland/Herbaceous	0.47	A	0	48.8	0.22	2.30	0.00	0.00	0.00
Forested (Good Condition)	Deciduous Forest/Evergreen Forest/Mixed Forest	0.28	A	0	45.0	0.13	1.05	0.00	0.00	0.00
Pervious as Meadow	Grassland/Herbaceous	0.02	B	32	48.8	0.22	2.30	0.10	0.00	0.00
Impervious as Meadow	Grassland/Herbaceous	0.59	A	0	48.8	0.22	2.30	0.00	0.00	0.00
Impervious as Meadow	Grassland/Herbaceous	0.01	B	11	48.8	0.22	2.30	0.03	0.00	0.00
Impervious Areas: Commercial	Commercial	2.41	N/A	26,636	61.7	0.22	2.02	102.65	0.37	3.36
	TOTAL (ACRES):	**3.78**					**TOTALS:**	**102.78**	**0.37**	**3.37**

Post-Construction Pollutant Loads (without BMPs):

Land Cover (from Volume Worksheet)	Land Cover for Water	Area	Soil	Runoff Volume	Pollutant Conc. (mg/L)	Pollutant Loads (lbs)

Land Cover (from Volume Worksheet)	Quality	(acres)	Group	Volume (cf)	TSS	TP	TN	TSS	TP	TN
Open Space (Lawns, Parks, Golf Courses, Cemeteries, Etc.) - Good Condition (Grass Cover > 75%)	Open Space	0.52	A	3	78.0	0.25	1.25	0.01	0.00	0.00
Woods (Good Condition)	Deciduous Forest/Evergreen Forest/Mixed Forest	0.28	A	0	45.0	0.13	1.05	0.00	0.00	0.00
Open Space (Lawns, Parks, Golf Courses, Cemeteries, Etc.) - Good Condition (Grass Cover > 75%)	Open Space	0.03	B	47	78.0	0.25	1.25	0.23	0.00	0.00
Impervious Areas: Commercial	Commercial	3.35	N/A	37,022	61.7	0.22	2.02	142.68	0.51	4.67
	TOTAL (ACRES):	**4.17**					**TOTALS:**	**142.92**	**0.51**	**4.67**

POLLUTANT LOAD REDUCTION REQUIREMENTS (LBS):	**40.14**	**0.14**	**1.31**

☑ **Characterize Undetained Areas (for Untreated Stormwater)** *No. Rows:* **4**

Land Cover	Area (acres)	Soil Group	CN	Ia (in)	Q Runoff (in)	Runoff Volume (cf)
Open Space (Lawns, Parks, Golf Courses, Cemeteries, Etc.) - Good Condition (Grass Cover > 75%)	**0.391**	**A**	**39**	**3.128**	**0.00**	**2**
Woods (Good Condition)	**0.282**	**A**	**30**	**4.667**	**0.00**	**0**
Open Space (Lawns, Parks, Golf Courses, Cemeteries, Etc.) - Good Condition (Grass Cover > 75%)	**0.027**	**B**	**61**	**1.279**	**0.48**	**47**
Impervious Areas: Commercial	**0.335**	**N/A**	**98**	**0.041**	**3.05**	**3,706**

Non-Structural BMP Water Quality Credits:

☑ Pervious Undetained Area Credit

TSS	TP	TN
0.04	**0.00**	**0.00**

☐ Other (attach calculations)

Structural BMP Water Quality Credits:

☑ *Use default BMP Outflows and Median BMP Outflow Concentrations*

DP No.	BMP No.	BMP Name	MRC?	BMP DA (acres)	Vol. Routed to BMP (CF)	Inf. & ET Credits (CF)	Capture & Buffer Credits (CF)	Outflow (CF)	Outflow Conc. (mg/L)			Pollutant Loads (lbs)		
									TSS	TP	TN	TSS	TP	TN
001	1	Dry Extended Detention Basin	Y	2.01	20,927	0		20,927	-	-	-	-	-	-
001	2	Dry Extended Detention Basin	Y	0.70	7,681	0		7,681	-	-	-	-	-	-
001	3	Dry Extended Detention Basin	-	0.45	3,482	0		3,482	22.00	0.19	1.22	4.78	0.04	0.27

	TSS	TP	TN
POLLUTANT LOADS FROM STRUCTURAL BMP (TREATED) OUTFLOWS (LBS):	**4.78**	**0.04**	**0.27**
POLLUTANT LOADS FROM UNTREATED STORMWATER (LBS):	**14.52**	**0.05**	**0.47**
NON-STRUCTURAL BMP WATER QUALITY CREDITS (LBS):	**0.04**	**0.00**	**0.00**
NET POLLUTANT LOADS FROM SITE, POST-CONSTRUCTION (LBS):	**19.27**	**0.09**	**0.74**
POLLUTANT LOADS FROM SITE, PRE-CONSTRUCTION (LBS):	**102.78**	**0.37**	**3.37**

WATER QUALITY REQUIREMENT SATISFIED

CERTIFICATION

I certify under penalty of law and subject to the penalties of 18 Pa.C.S. § 4904 (relating to unsworn falsification to authorities) that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I further certify that the structure, function, and calculations contained in this spreadsheet have not been modified in comparison to the spreadsheet DEP has posted to its website or, if modifications were made, an explanation of the modifications made is attached to this spreadsheet.

Jeffrey Beavan, P.E.	9/12/2023
Spreadsheet User Name	Date

Instructions

Instructions | General | Volume | Rate | Quality

If prompted by Excel after opening the DEP Post-Construction Stormwater Management (PCSM) Spreadsheet, enable editing and macros. This spreadsheet consists of five hyperlink tabs: Instructions, General, Volume, Rate and Quality. Each tab has a corresponding worksheet. To begin, click on the General tab. **NOTE - The spreadsheet is intended for the evaluation of volume, rate, and water quality for discharges to a single receiving water.** If for example there are 3 post-construction discharge points to Mud Run and 3 post-construction discharge points to Clear Creek, two spreadsheets should be completed (one each for Mud Run and Clear Creek).

Only those cells that are highlighted are available for data entry by the user:

Click on the button below to open detailed instructions on the use of the DEP PCSM Spreadsheet:

OPEN INSTRUCTIONS

If you have questions concerning use of this spreadsheet, contact the Bureau of Clean Water at: RA-EPChapter102@pa.gov.

General Information

Instructions | *General* | Volume | Rate | Quality

Project Name: **Proposed Automotive Dealership Expansion**

Application Type: **PAG-02 NOI**

County: **Montgomery**

Municipality: **Whitemarsh Township**

Project Type: **Commercial Building**

(●) New Project ( ) Minor / Major Amendment

Total Project Site Area: **5.45** acres
(In Watershed)

Total Earth Disturbance: **4.93** acres
(In Watershed)

No. of Post-Construction Discharge Points: **2**

Start DP Numbering at: **001**

Discharge Point (DP) No.	Drainage Area (DA) (acres)	Earth Disturbance in DA (acres)	Existing Impervious in DA (acres)	Proposed Impervious in DA (acres)	Receiving Waters	Ch. 93 Class	Structural BMP(s)
001							
002							
Undetained Areas	4.93						
Totals:	**4.93**						

PROJECT SITE MEETS SMALL SITE EXCEPTION - RATE WORKSHEET NOT REQUIRED

Volume Management

Project: Proposed Automotive Dealership Expansion

Instructions | General | *Volume* | Rate | Quality

2-Year / 24-Hour Storm Event (NOAA Atlas 14): **3.28** inches

Alternative 2-Year / 24-Hour Storm Event _____ inches

Alternative Source: _____

Pre-Construction Conditions: *No. Rows:* **5** ☐ *Exempt from Meadow in Good Condition* ☑ *Automatically Calculate CN, Ia, Runoff and Volume*

Land Cover	Area (acres)	Soil Group	CN	Ia (in)	Q Runoff (in)	Runoff Volume (cf)
Pervious as Meadow	0.39	A	30	4.667	0.00	0
Pervious as Meadow	0.05	B	58	1.448	0.37	68
Impervious as Meadow	0.13	A	30	4.667	0.00	0
Impervious as Meadow	0.02	B	58	1.448	0.37	23
Impervious Areas: Commercial	0.57	N/A	98	0.041	3.05	6,250
TOTAL (ACRES):	**1.15**				**TOTAL (CF):**	**6,341**

Post-Construction Conditions: *No. Rows:* **3**

Land Cover	Area (acres)	Soil Group	CN	Ia (in)	Q Runoff (in)	Runoff Volume (cf)
Open Space (Lawns, Parks, Golf Courses, Cemeteries, Etc.) - Good Condition (Grass Cover > 75%)	0.26	A	39	3.128	0.00	1
Open Space (Lawns, Parks, Golf Courses, Cemeteries, Etc.) - Good Condition (Grass Cover > 75%)	0.13	B	61	1.279	0.48	225

Impervious Areas: Commercial	0.36	N/A	98	0.041	3.05	4,004

TOTAL (ACRES): **0.76** **TOTAL (CF):** **4,231**

NET CHANGE IN VOLUME TO MANAGE (CF): **-2,110**

Non-Structural BMP Volume Credits:

☑ Tree Planting Credit

Number of new deciduous trees that will be planted within disturbed area: 17 **CREDIT (CF):** **102**

Number of new evergreen trees that will be planted within disturbed area: 12 **CREDIT (CF):** **120**

☐ Other (attach calculations):

Structural BMP Volume Credits: *No. Structural BMPs:* *Start BMP Numbering at:*

DP No.	BMP No.	BMP Name	MRC?	Discharge	Incremental BMP DA (acres)	Volume Routed to BMP (CF)	Infiltration / Vegetated Area (SF)	Infiltration Rate (in/hr)	Infiltration Period (hrs)	Vegeta-ted?	Media Depth (ft)	Storage Volume (CF)	Infiltration Credit (CF)	ET Credit (CF)

Totals:

INFILTRATION & ET CREDITS (CF):

NET CHANGE IN VOLUME TO MANAGE (CF): **-2,110**

TOTAL CREDITS (CF): **222**

VOLUME REQUIREMENT SATISFIED

Rate Control

Project: Proposed Automotive Dealership Expansion

SMALL SITE EXCEPTION SATISFIED: RATE CONTROL NOT REQUIRED

Precipitation Amounts:

NOAA 2-Year 24-Hour Storm Event (in):	**3.28**	Alternative 2-Year 24-Hour Storm Event (in):	
NOAA 10-Year 24-Hour Storm Event (in):	**4.83**	Alternative 10-Year 24-Hour Storm Event (in):	
NOAA 50-Year 24-Hour Storm Event (in):	**6.73**	Alternative 50-Year 24-Hour Storm Event (in):	
NOAA 100-Year 24-Hour Storm Event (in):	**7.66**	Alternative 100-Year 24-Hour Storm Event (in):	

☑ **Report Summary of Peak Rates Only**

Attach model input and output data or other calculations to support the rates reported below.

	Peak Discharge Rates (cfs)			
	Pre-Construction	**Post-Construction**	**Net Change**	
2-Year Storm:	**2.54**	**1.25**	**-1.29**	***Rate Control Satisfied***
10-Year Storm:	**5.03**	**2.76**	**-2.27**	***Rate Control Satisfied***
50-Year Storm:	**8.30**	**4.82**	**-3.48**	***Rate Control Satisfied***
100-Year Storm:	**9.94**	**5.87**	**-4.07**	***Rate Control Satisfied***

Water Quality

Project: Proposed Automotive Dealership Expansion

PRINT

Instructions | General | Volume | Rate | *Quality*

Pre-Construction Pollutant Loads:

Land Cover (from Volume Worksheet)	Land Cover for Water Quality	Area (acres)	Soil Group	Runoff Volume (cf)	Pollutant Conc. (mg/L)			Pollutant Loads (lbs)		
					TSS	TP	TN	TSS	TP	TN
Pervious as Meadow	Grassland/Herbaceous	0.39	A	0	48.8	0.22	2.30	0.00	0.00	0.00
Pervious as Meadow	Grassland/Herbaceous	0.05	B	68	48.8	0.22	2.30	0.21	0.00	0.01
Impervious as Meadow	Grassland/Herbaceous	0.13	A	0	48.8	0.22	2.30	0.00	0.00	0.00
Impervious as Meadow	Grassland/Herbaceous	0.02	B	23	48.8	0.22	2.30	0.07	0.00	0.00
Impervious Areas: Commercial	Commercial	0.57	N/A	6,250	61.7	0.22	2.02	24.09	0.09	0.79
	TOTAL (ACRES):	**1.15**					**TOTALS:**	**24.36**	**0.09**	**0.80**

Post-Construction Pollutant Loads (without BMPs):

Land Cover (from Volume Worksheet)	Land Cover for Water Quality	Area (acres)	Soil Group	Runoff Volume (cf)	Pollutant Conc. (mg/L)			Pollutant Loads (lbs)		
					TSS	TP	TN	TSS	TP	TN

Open Space (Lawns, Parks, Golf Courses, Cemeteries, Etc.) - Good Condition (Grass Cover > 75%)	Open Space	0.26	A	1	78.0	0.25	1.25	0.01	0.00	0.00
Open Space (Lawns, Parks, Golf Courses, Cemeteries, Etc.) - Good Condition (Grass Cover > 75%)	Open Space	0.13	B	225	78.0	0.25	1.25	1.10	0.00	0.02
Impervious Areas: Commercial	Commercial	0.36	N/A	4,004	61.7	0.22	2.02	15.43	0.06	0.51
	TOTAL (ACRES):	**0.76**					**TOTALS:**	**16.54**	**0.06**	**0.52**

POLLUTANT LOAD REDUCTION REQUIREMENTS (LBS):	**0.00**	**0.00**	**0.00**

☑ **Characterize Undetained Areas (for Untreated Stormwater)** *No. Rows:* **3**

Land Cover	Area (acres)	Soil Group	CN	Ia (in)	Q Runoff (in)	Runoff Volume (cf)
Open Space (Lawns, Parks, Golf Courses, Cemeteries, Etc.) - Good Condition (Grass Cover > 75%)	**0.264**	**A**	**39**	**3.128**	**0.00**	**1**
Open Space (Lawns, Parks, Golf Courses, Cemeteries, Etc.) - Good Condition (Grass Cover > 75%)	**0.13**	**B**	**61**	**1.279**	**0.48**	**225**
Impervious Areas: Commercial	**0.362**	**N/A**	**98**	**0.041**	**3.05**	**4,004**

Non-Structural BMP Water Quality Credits:

☑ Pervious Undetained Area Credit

TSS	TP	TN
0.17	**0.00**	**0.00**

☐ Other (attach calculations)

Structural BMP Water Quality Credits:

☑ *Use default BMP Outflows and Median BMP Outflow Concentrations*

DP No.	BMP	BMP Name	RC?	BMP DA	Vol. Routed	Inf. & ET	Capture & Buffer	Outflow	Outflow Conc. (mg/L)		Pollutant Loads (lbs)	

DP No.	No.	BMP Name	MP	DA (acres)	to BMP (CF)	Credits (CF)	Credits (CF)	(CF)	TSS	TP	TN	TSS	TP	TN

	TSS	TP	TN
POLLUTANT LOADS FROM STRUCTURAL BMP (TREATED) OUTFLOWS (LBS):	0.00	0.00	0.00
POLLUTANT LOADS FROM UNTREATED STORMWATER (LBS):	16.54	0.06	0.52
NON-STRUCTURAL BMP WATER QUALITY CREDITS (LBS):	0.17	0.00	0.00
NET POLLUTANT LOADS FROM SITE, POST-CONSTRUCTION (LBS):	16.36	0.06	0.52
POLLUTANT LOADS FROM SITE, PRE-CONSTRUCTION (LBS):	24.36	0.09	0.80

WATER QUALITY REQUIREMENT SATISFIED

CERTIFICATION

I certify under penalty of law and subject to the penalties of 18 Pa.C.S. § 4904 (relating to unsworn falsification to authorities) that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I further certify that the structure, function, and calculations contained in this spreadsheet have not been modified in comparison to the spreadsheet DEP has posted to its website or, if modifications were made, an explanation of the modifications made is attached to this spreadsheet.

Jeffrey Beavan, P.E.	9/18/2023
Spreadsheet User Name	Date

NON-STRUCTURAL BMP CREDITS

REVEGTATE AND REFOREST VOLUME CREDITS (BMP 5.6.3)

For Deciduous Trees:
Volume Reduction (ft^3) = $6ft^3$

Deciduous Trees	67	# of trees	x	6	ft^3	=	402.00	cuft

For Evergreen Trees:
Volume Reduction (ft^3) = $10ft^3$

Evergreen Trees	16	# of trees	x	10	ft^3	=	160.00	cuft

For Evergreen Shrubs:
Volume Reduction (ft^3) = $3ft^3$

Evergreen Surubs	0	# of shrubs	x	2	ft^3	=	0.00	cuft

Total Volume Credit = **562.00 cuft**

PROTECT SENSITIVE/SPECIAL FEATURES CREDITS (BMP 5.4.1)

For trees within 100 feet of impervious area:

Tree Canopy		s.f.	x	1/2"	x	1/12	=	**0.00**	**cuft**

AMENDED SOILS CREDITS (BMP 6.7.3)

Volume = Amended area (ft2) x 0.5 in x 1/12

Area of Amended Soils		S.F.
Volume	**0**	cuft

TOTAL NON-STRUCTURAL BMP CREDIT: **562.00 cuft**

POI1:	Bypass	UG1	UG2	UG3	Total		UG1	= 20,939 - 12 =20927
Deciduous Trees:	41	2	5	1	49		UG2	=7,711 - 30 =7681
Evergreen Trees:	1	0	0	3	4		UG3	=3,528 - 46 =3482

POI2:	
Deciduous Trees:	18
Evergreen Trees:	12

Storm Drainage Calculations

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER

MANAGED RELEASE CONCEPT (MRC) DESIGN SUMMARY

Complete One Design Summary Sheet for Each BMP Designed for MRC

GENERAL INFORMATION

Applicant Name:	**MileOne Fort Washington, LLC**	Project Name:	**BMW Automotive Dealership Expansion**
Applicant Address:	**3301 Briggs Chaney Road**	Municipality:	**Whitemarsh Township**
City, State, Zip:	Silver Spring, MD 20904	County:	**Montgomery County**

Permit Type: ☒ NPDES PAG-02 ☐ NPDES IP ☐ ESCGP ☐ ESP

	Pre-Development	Post-Development	Change
Impervious Area (acres):	3.715	3.701	0.014

MRC BMP INFORMATION

MRC BMP Type: **Dry Extended Detention Basin UG1** Stormwater BMP Manual Section: **6.6.3**

Will the BMP Include Vegetation? ☐ Yes ☒ No

If Yes, Identify Proposed Vegetation:

For Non-Vegetated BMPs Will There Be Pre- or Post-Treatment? ☒ Yes (Pre-) ☐ Yes (Post-) ☐ No

If Yes, Identify Proposed Pre- or Post-Treatment: **Water Quality Filters / Hydrodynamic Devices**

Name of Surface Water to Receive MRC BMP Discharges: **Sandy Run**

Designated Use of Surface Water: **TSF, MF** Existing Use of Surface Water (if different):

Is the Surface Water Impaired? ☒ Yes ☐ No

If Yes, Identify Cause(s): **Municipal Point Source Discharges – Nutrients, Biochemical Oxygen Demand (BOD) ; Urban Runoff/Storm Sewers - Nutrients**

Will the BMP have an impermeable liner? ☒ Yes ☐ No

If Yes, explain why a liner is proposed: **Proximity to Seasonal High Water Table**

BMP Media Description: **Coarse Aggregate with 40% Voids**

Are Any Deviations from MRC Design Standards Proposed? ☐ Yes ☒ No

If Yes, Identify Deviations:

MRC BMP DESIGN VALUES AND STANDARDS

Parameter	Design Value	Design Standard
Actual Contributing Impervious Area to BMP (acres)	**1.88**	
Equivalent Contributing Impervious Area to BMP (acres)	**1.86**	
Total Drainage Area to BMP (acres)	**1.96**	
MRC BMP Release Rate (cfs)	**0.02**	*No greater than 0.01 cfs / acre of equivalent contributing impervious*
Underdrain Outflow Rate During 1.2-Inch/2-Hour Storm (cfs)	**0.02**	*<= MRC BMP Release Rate (cfs)*
Maximum Storm Event Routed to MRC BMP	**100-Yr**	

MRC BMP Design Summary
Revised, August 25, 2020

Parameter	Design Value	Design Standard
BMP Footprint Area (ft^2)	**13,041**	
Bottom BMP Elevation (Native Soils) (ft)	**156.53**	
2-Yr/24-Hr Storm Ponding Depth (ft)	**2.28**	*1 ft (recommended) (2 ft max)*
Maximum Ponding Depth (ft)	**3.39**	*4 ft (max)*
Overflow Bypass Elevation (ft)	**160.24**	
Media Depth (ft)	**4.21**	*2 ft (min) – 4 ft (max)*
Media Void Space (%)	**40**	
Internal Water Storage (IWS) Depth (ft)	**1**	*1 ft recommended*
Top of IWS Elevation (ft)	**157.53**	
Underdrain Pipe Diameter (in)	**4**	
Underdrain Orifice Diameter (in)	**1.0**	
Underdrain Outlet Elevation (ft)	**157.53**	
IWS Available for Routing (%)	**0**	*50% max*
Separation Distance (Groundwater) (ft)	**-2.47**	*1 ft (min) (2 ft recommended)*
Infiltration Rate (in/hr)	**0**	
Volume of Overflow During 1.2-Inch/2-Hour Storm (cf)	**0**	*0 (No overflow allowed)*
1-Yr/24-Hr **Pre**-Development Peak Rate (cfs)	**10.54**	
2-Yr/24-Hr **Post**-Development Peak Rate (cfs)	**5.57**	*1-Yr/24-Hr Pre-Development Peak Rate (or per approved Act 167 Plan)*
10-Yr/24-Hr **Post**-Development Peak Rate (cfs)	**11.59**	*10-Yr/24-Hr Pre-Development Peak Rate*
50-Yr/24-Hr **Post**-Development Peak Rate (cfs)	**17.57**	*50-Yr/24-Hr Pre-Development Peak Rate*
100-Yr/24-Hr **Post**-Development Peak Rate (cfs)	**20.56**	*100-Yr/24-Hr Pre-Development Peak Rate*
Total 2-Yr/24-Hr Runoff Volume Managed by BMP (cf)	**20,927**	
Ponding Time @ 2-Yr/24-Hr Storm (hrs)	**113**	*72 hrs (surface), 7 days (underground)*
Ponding Time @ 10-Yr/24-Hr Storm (hrs)	**113**	*72 hrs (surface), 7 days (underground)*
Ponding Time @ 50-Yr/24-Hr Storm (hrs)	**113**	*72 hrs (surface), 7 days (underground)*
Ponding Time @ 100-Yr/24-Hr Storm (hrs)	**113**	*72 hrs (surface), 7 days (underground)*

Jeffrey A. Beavan
Licensed P.E. Name

Licensed P.E. Signature

PE082055
License No.

08/04/2023
Date

Licensed Professional's Seal

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER

MANAGED RELEASE CONCEPT (MRC) DESIGN SUMMARY

Complete One Design Summary Sheet for Each BMP Designed for MRC

GENERAL INFORMATION

Applicant Name:	**MileOne Fort Washington, LLC**	Project Name:	**BMW Automotive Dealership Expansion**
Applicant Address:	**3301 Briggs Chaney Road**	Municipality:	**Whitemarsh Township**
City, State, Zip:	Silver Spring, MD 20904	County:	**Montgomery County**

Permit Type: ☒ NPDES PAG-02 ☐ NPDES IP ☐ ESCGP ☐ ESP

	Pre-Development	Post-Development	Change
Impervious Area (acres):	3.715	3.701	0.014

MRC BMP INFORMATION

MRC BMP Type: **Dry Extended Detention Basin UG2** Stormwater BMP Manual Section: **6.6.3**

Will the BMP Include Vegetation? ☐ Yes ☒ No

If Yes, Identify Proposed Vegetation:

For Non-Vegetated BMPs Will There Be Pre- or Post-Treatment? ☒ Yes (Pre-) ☐ Yes (Post-) ☐ No

If Yes, Identify Proposed Pre- or Post-Treatment: **Water Quality Filters / Hydrodynamic Devices**

Name of Surface Water to Receive MRC BMP Discharges: **Sandy Run**

Designated Use of Surface Water: **TSF, MF** Existing Use of Surface Water (if different):

Is the Surface Water Impaired? ☒ Yes ☐ No

If Yes, Identify Cause(s): **Municipal Point Source Discharges – Nutrients, Biochemical Oxygen Demand (BOD) ; Urban Runoff/Storm Sewers - Nutrients**

Will the BMP have an impermeable liner? ☒ Yes ☐ No

If Yes, explain why a liner is proposed: **Proximity to Seasonal High Water Table**

BMP Media Description: **Coarse Aggregate with 40% Voids**

Are Any Deviations from MRC Design Standards Proposed? ☐ Yes ☒ No

If Yes, Identify Deviations:

MRC BMP DESIGN VALUES AND STANDARDS

Parameter	Design Value	Design Standard
Actual Contributing Impervious Area to BMP (acres)	**0.75**	
Equivalent Contributing Impervious Area to BMP (acres)	**0.73**	
Total Drainage Area to BMP (acres)	**0.78**	
MRC BMP Release Rate (cfs)	**0.01**	*No greater than 0.01 cfs / acre of equivalent contributing impervious*
Underdrain Outflow Rate During 1.2-Inch/2-Hour Storm (cfs)	**0.01**	*<= MRC BMP Release Rate (cfs)*
Maximum Storm Event Routed to MRC BMP	**100-Yr**	

MRC BMP Design Summary
Revised, August 25, 2020

Parameter	Design Value	Design Standard
BMP Footprint Area (ft^2)	**3,833**	
Bottom BMP Elevation (Native Soils) (ft)	**158.80**	
2-Yr/24-Hr Storm Ponding Depth (ft)	**2.60**	*1 ft (recommended) (2 ft max)*
Maximum Ponding Depth (ft)	**4.64**	*4 ft (max)*
Overflow Bypass Elevation (ft)	**162.55**	
Media Depth (ft)	**3.54**	*2 ft (min) – 4 ft (max)*
Media Void Space (%)	**40**	
Internal Water Storage (IWS) Depth (ft)	**1**	*1 ft recommended*
Top of IWS Elevation (ft)	**159.80**	
Underdrain Pipe Diameter (in)	**4**	
Underdrain Orifice Diameter (in)	**0.5**	
Underdrain Outlet Elevation (ft)	**159.80**	
IWS Available for Routing (%)	**0**	*50% max*
Separation Distance (Groundwater) (ft)	**-0.20**	*1 ft (min) (2 ft recommended)*
Infiltration Rate (in/hr)	**0**	
Volume of Overflow During 1.2-Inch/2-Hour Storm (cf)	**0**	*0 (No overflow allowed)*
1-Yr/24-Hr **Pre**-Development Peak Rate (cfs)	**10.54**	
2-Yr/24-Hr **Post**-Development Peak Rate (cfs)	**5.57**	*1-Yr/24-Hr Pre-Development Peak Rate (or per approved Act 167 Plan)*
10-Yr/24-Hr **Post**-Development Peak Rate (cfs)	**11.59**	*10-Yr/24-Hr Pre-Development Peak Rate*
50-Yr/24-Hr **Post**-Development Peak Rate (cfs)	**17.57**	*50-Yr/24-Hr Pre-Development Peak Rate*
100-Yr/24-Hr **Post**-Development Peak Rate (cfs)	**20.56**	*100-Yr/24-Hr Pre-Development Peak Rate*
Total 2-Yr/24-Hr Runoff Volume Managed by BMP (cf)	**7,681**	
Ponding Time @ 2-Yr/24-Hr Storm (hrs)	**80**	*72 hrs (surface), 7 days (underground)*
Ponding Time @ 10-Yr/24-Hr Storm (hrs)	**80**	*72 hrs (surface), 7 days (underground)*
Ponding Time @ 50-Yr/24-Hr Storm (hrs)	**80**	*72 hrs (surface), 7 days (underground)*
Ponding Time @ 100-Yr/24-Hr Storm (hrs)	**80**	*72 hrs (surface), 7 days (underground)*

Jeffrey A. Beavan
Licensed P.E. Name

Licensed P.E. Signature

PE082005
License No.

08/04/2023
Date

Licensed Professional's Seal

Runoff Calculations C Worksheet

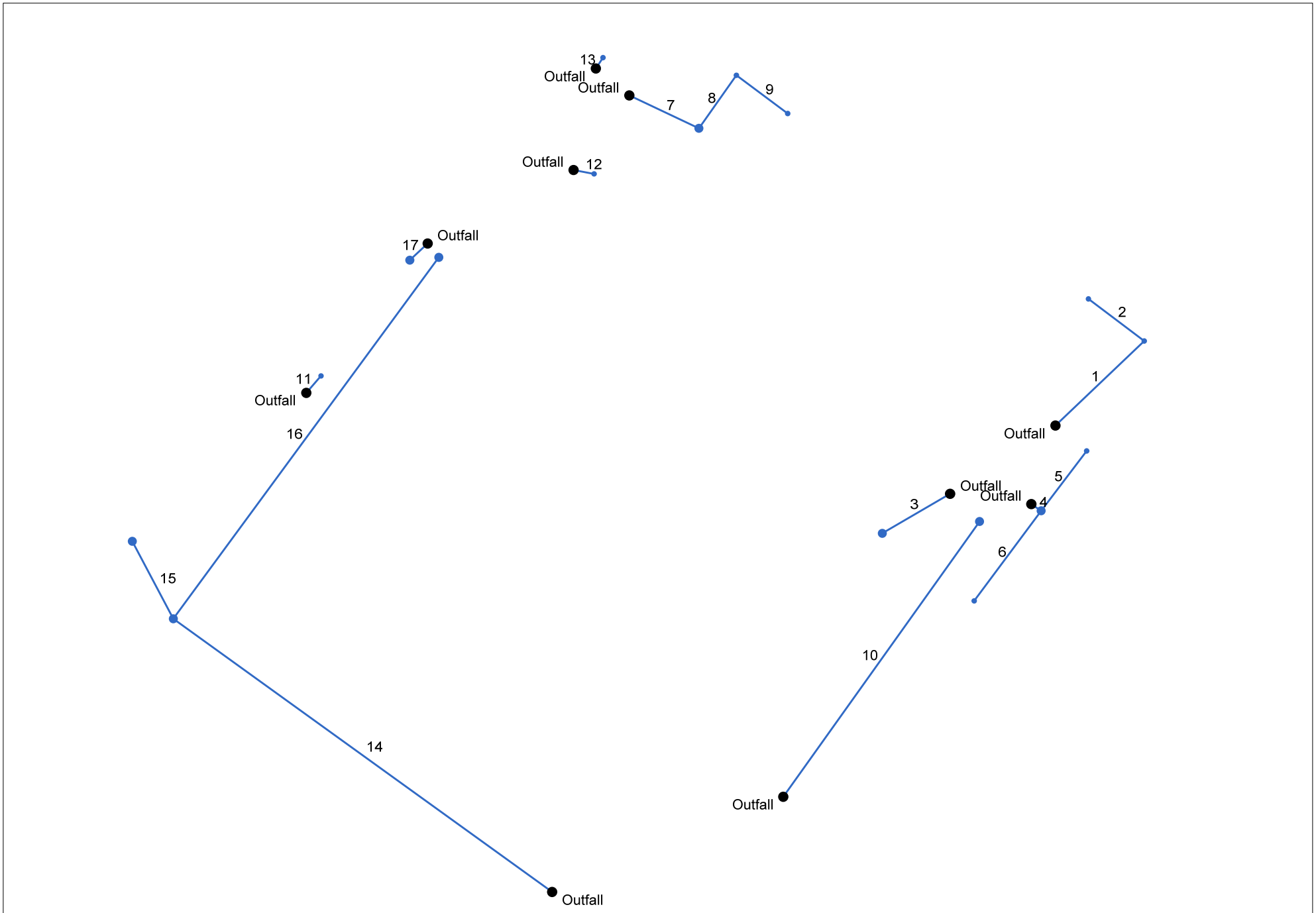
Project: **BMW Fort Washington**

Description: **510 Pennsylvania Ave, Whitemarsh Township, Montgomery County**

Drainage Area	Land Use Description	C	Area (Acres)	Total Area (Acres)	Weighted C
INL-110	Impervious	0.95	0.323	**0.32**	**0.95**
INL-120	Impervious	0.95	0.085	**0.10**	**0.89**
	Pervious	0.35	0.010		
INL-210	Impervious	0.95	0.083	**0.09**	**0.92**
	Pervious	0.35	0.005		
INL-221	Impervious	0.95	0.091	**0.09**	**0.95**
INL-222	Impervious	0.95	0.339	**0.35**	**0.93**
	Pervious	0.35	0.014		
INL-230	Impervious	0.95	0.176	**0.18**	**0.92**
	Pervious	0.35	0.008		
INL-240	Impervious	0.95	0.070	**0.08**	**0.90**
	Pervious	0.35	0.007		
INL-310.1	Impervious	0.95	0.060	**0.10**	**0.73**
	Pervious	0.35	0.036		

INL-311	Impervious	0.95	0.017	**0.02**	**0.95**
INL-312	Impervious	0.95	0.071	**0.08**	**0.92**
	Pervious	0.35	0.004		
INL-313	Impervious	0.95	0.107	**0.11**	**0.91**
	Pervious	0.35	0.007		
INL-320	Impervious	0.95	0.132	**0.14**	**0.93**
	Pervious	0.35	0.004		

Hydraflow Storm Sewers Extension for Autodesk® Civil 3D® Plan



Project File: PAB220113.00-Storm(25-yr-Tailwater)_Rev2.stm	Number of lines: 17	Date: 9/13/2023

Structure Report

Struct No.	Structure ID	Junction Type	Rim Elev (ft)	Structure			Line Out			Line In		
				Shape	Length (ft)	Width (ft)	Size (in)	Shape	Invert (ft)	Size (in)	Shape	Invert (ft)
1	INL-312	Combination	163.83	Cir	2.00	2.00	15	Cir	160.87	15	Cir	160.87
2	INL-313	Combination	163.61	Cir	2.00	2.00	15	Cir	161.07			
3	INL-320	Combination	164.97	Cir	4.00	4.00	15	Cir	160.53			
4	MH-310	Manhole	165.01	Cir	4.00	4.00	15	Cir	160.31	15 15	Cir Cir	160.31 160.31
5	INL-311	Combination	164.93	Cir	2.00	2.00	15	Cir	160.52			
6	INL-310.1	Combination	164.28	Cir	2.00	2.00	15	Cir	160.63			
7	MH220	Manhole	165.20	Cir	4.00	4.00	18	Cir	159.80	18	Cir	159.90
8	INL-221	Combination	163.75	Cir	2.00	2.00	18	Cir	160.08	15	Cir	160.08
9	INL-222	Combination	0.00	Cir	2.00	2.00	15	Cir	160.30			
10	OCS-301	Manhole	163.70	Cir	4.00	4.00	18	Cir	160.28			
11	INL-120	Combination	164.04	Cir	2.00	2.00	15	Cir	159.18			
12	INL-210	Combination	162.38	Cir	2.00	2.00	15	Cir	158.60			
13	INL-230	Combination	165.07	Cir	2.00	2.00	15	Cir	158.58			
14	MH-102	Manhole	161.24	Cir	4.00	4.00	18	Cir	157.27	18 18	Cir Cir	157.27 157.27
15	OCS-103	Manhole	160.95	Cir	4.00	4.00	18	Cir	157.53			
16	OCS-201	Manhole	163.22	Cir	4.00	4.00	18	Cir	158.54			
17	INL-240	Combination	0.00	Cir	4.00	4.00	12	Cir	158.65			

Storm Sewer Summary Report

Line No.	Line ID	Flow rate (cfs)	Line Size (in)	Line shape	Line length (ft)	Invert EL Dn (ft)	Invert EL Up (ft)	Line Slope (%)	HGL Down (ft)	HGL Up (ft)	Minor loss (ft)	HGL Junct (ft)	Dns Line No.	Junction Type
1	UG3 - INL-312	1.18	15	Cir	68.843	160.52	160.87	0.508	160.95	161.30	n/a	161.30 j	End	Combination
2	INL-312 - INL-313	0.72	15	Cir	39.117	160.87	161.07	0.511	161.30	161.40	0.12	161.40	1	Combination
3	UG3 - INL-320	0.93	15	Cir	44.198	160.31	160.53	0.498	160.69	160.91	n/a	160.91	End	Combination
4	UG3 - MH-310	0.51	15	Cir	6.564	160.28	160.31	0.457	160.56	160.59	n/a	160.59	End	Manhole
5	MH-310 - INL-311	0.14	15	Cir	42.283	160.31	160.52	0.497	160.59	160.66	0.05	160.71	4	Combination
6	MH-310 - INL-310.1	0.52	15	Cir	62.971	160.31	160.63	0.508	160.59	160.91	0.10	160.91	4	Combination
7	MH220 - UG2	2.85	18	Cir	43.230	158.54	159.80	2.915	159.18	160.44	n/a	160.44	End	Manhole
8	INL 221 - MH-220	2.90	18	Cir	36.465	159.90	160.08	0.494	160.52	160.73	n/a	160.73	7	Combination
9	INL-222 - INL-221	2.33	15	Cir	35.880	160.08	160.30	0.613	160.73	160.91	0.24	160.91	8	Combination
10	EW-300 - OCS-301	0.77	18	Cir	190.000	159.30	160.28	0.516	168.24*	168.25*	0.00	168.25	End	Manhole
11	UG1 - INL-120	0.64	15	Cir	12.702	158.79	159.18	3.070	159.10	159.49	0.11	159.49	End	Combination
12	UG2 - INL-210	0.59	15	Cir	11.724	158.54	158.60	0.512	158.84	158.90	n/a	158.90	End	Combination
13	UG2 - INL-230	1.18	15	Cir	7.409	158.54	158.58	0.540	158.97	159.01	n/a	159.01	End	Combination
14	EW100 - MH101	9.27	18	Cir	262.064	155.75	157.27	0.580	168.24*	169.98*	0.43	170.41	End	Manhole
15	MH-101 - OCS-102	5.13	18	Cir	49.249	157.27	157.53	0.528	170.41*	170.51*	0.13	170.64	14	Manhole
16	MH-101 - OCS-201	3.37	18	Cir	251.945	157.27	158.54	0.504	170.41*	170.67*	0.06	170.72	14	Manhole
17	INL-240 - UG2	0.51	12	Cir	13.674	158.54	158.65	0.804	158.84	158.95	n/a	158.95 j	End	Combination

Project File: PAB220113.00-Storm(25-yr-Tailwater)_Rev2.stm | Number of lines: 17 | Run Date: 9/13/2023

NOTES: Return period = 25 Yrs. ; *Surcharged (HGL above crown). ; j - Line contains hyd. jump.

Inlet Report

Line No	Inlet ID	Q = CIA (cfs)	Q carry (cfs)	Q capt (cfs)	Q Byp (cfs)	Junc Type	Curb Inlet		Grate Inlet			Gutter							Inlet			Byp Line No
							Ht (in)	L (ft)	Area (sqft)	L (ft)	W (ft)	So (ft/ft)	W (ft)	Sw (ft/ft)	Sx (ft/ft)	n	Depth (ft)	Spread (ft)	Depth (ft)	Spread (ft)	Depr (in)	
1	INL-312	0.53	0.00	0.52	0.01	Comb	4.0	4.00	0.00	4.00	2.00	0.030	2.00	0.050	0.020	0.013	0.12	2.99	0.02	0.49	0.0	Off
2	INL-313	0.72	0.00	0.68	0.03	Comb	4.0	4.00	0.00	4.00	2.00	0.030	2.00	0.050	0.020	0.013	0.13	3.66	0.04	0.85	0.0	Off
3	INL-320	0.93	0.00	0.93	0.00	Comb	4.0	8.00	15.08	8.00	2.00	Sag	2.00	0.050	0.020	0.013	0.14	3.88	0.14	3.88	0.0	Off
4	MH-310	0.00	0.00	0.00	0.00	MH	0.0	0.00	0.00	0.00	0.00	Sag	0.00	0.000	0.000	0.013	0.00	0.00	0.00	0.00	0.0	Off
5	INL-311	0.14	0.00	0.14	0.00	Comb	4.0	4.00	0.00	4.00	2.00	0.005	2.00	0.050	0.020	0.013	0.10	2.07	0.00	0.00	0.0	Off
6	INL-310.1	0.52	0.00	0.52	0.00	Comb	4.0	4.00	7.54	4.00	2.00	Sag	2.00	0.050	0.020	0.013	0.13	3.40	0.13	3.40	0.0	Off
7	MH220	0.00	0.00	0.00	0.00	MH	0.0	2.00	0.00	2.00	0.00	0.000	0.00	0.000	0.000	0.000	0.00	0.00	0.00	0.00	0.0	Off
8	INL-221	0.61	0.00	0.59	0.02	Comb	4.0	4.00	0.00	4.00	2.00	0.030	2.00	0.050	0.020	0.013	0.13	3.31	0.03	0.67	0.0	Off
9	INL-222	2.33	0.00	1.75	0.58	Comb	4.0	4.00	0.00	4.00	2.00	0.030	2.00	0.050	0.020	0.013	0.20	6.75	0.12	3.19	0.0	Off
10	OCS-301	0.77*	0.00	0.00	0.77	MH	0.0	0.00	0.00	0.00	0.00	Sag	0.00	0.000	0.000	0.013	0.00	0.00	0.00	0.00	0.0	Off
11	INL-120	0.64	0.00	0.59	0.05	Comb	4.0	4.00	0.00	4.00	2.00	0.010	2.00	0.050	0.020	0.013	0.15	4.69	0.06	1.23	0.0	Off
12	INL-210	0.59	0.00	0.59	0.00	Comb	4.0	4.00	7.54	4.00	2.00	Sag	2.00	0.050	0.020	0.013	0.13	3.74	0.13	3.74	0.0	Off
13	INL-230	1.18	0.00	1.18	0.00	Comb	4.0	4.00	7.54	4.00	2.00	Sag	2.00	0.050	0.020	0.013	0.18	6.23	0.18	6.23	0.0	Off
14	MH-102	0.77*	0.00	0.00	0.77	MH	0.0	0.00	0.00	0.00	0.00	Sag	0.00	0.000	0.000	0.013	0.00	0.00	0.00	0.00	0.0	Off
15	OCS-103	5.13*	0.00	0.00	5.13	MH	0.0	0.00	0.00	0.00	0.00	Sag	0.00	0.000	0.000	0.013	0.00	0.00	0.00	0.00	0.0	Off
16	OCS-201	3.37*	0.00	0.00	3.37	MH	0.0	0.00	0.00	0.00	0.00	Sag	0.00	0.000	0.000	0.013	0.00	0.00	0.00	0.00	0.0	Off
17	INL-240	0.51	0.00	0.51	0.00	Comb	4.0	4.00	7.54	4.00	2.00	Sag	2.00	0.050	0.020	0.013	0.13	3.37	0.13	3.37	0.0	Off

Project File: PAB220113.00-Storm(25-yr-Tailwater)_Rev2.stm | Number of lines: 17 | Run Date: 9/13/2023

NOTES: Inlet N-Values = 0.016; Intensity = 55.41 / (Inlet time + 11.00) ^ 0.74; Return period = 25 Yrs. ; * Indicates Known Q added. All curb inlets are throat.

FL-DOT Report

Line No	To Line	Type of struc	n - Value	Len	Drainage Area			Time of conc	Time of Flow in sect	Inten (I)	Total CA	Add Q	Inlet elev	Elev of HGL			Rise	HGL	ADD		Date: 9/13/2023
					C1 = 0.2 C2 = 0.5 C3 = 0.9							Total Flow		Elev of Crown			Span	Pipe	Full Flow		Frequency: 25 yrs
														Elev of Invert							Proj: PAB220113.00-Storm(
					Increment (ac)	Sub-Total (ac)	Sum CA					Q		Up	Down	Fall	Size	Slope	Vel	Cap	
				(ft)				(min)	(min)	(in/hr)		(cfs)	(ft)	(ft)	(ft)	(ft)	(in)	(%)	(ft/s)	(cfs)	Line description
1	End	Comb	0.012	68.843	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	6.12	1.14	6.80	0.17	0.00 1.18	163.83	161.30 162.12 160.87	160.95 161.77 160.52	0.35 0.35	15 15 Cir	0.51 0.51	3.17 4.06	1.18 4.99	UG3 - INL-312
2	1	Comb	0.012	39.117	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	5.00	1.12	7.15	0.10	0.00 0.72	163.61	161.40 162.32 161.07	161.30 162.12 160.87	0.10 0.20	15 15 Cir	0.26 0.51	2.34 4.08	0.72 5.00	INL-312 - INL-313
3	End	Comb	0.012	44.198	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	5.00	0.97	7.15	0.13	0.00 0.93	164.97	160.91 161.78 160.53	160.69 161.56 160.31	0.22 0.22	15 15 Cir	0.49 0.50	2.96 4.02	0.93 4.94	UG3 - INL-320
4	End	MH	0.012	6.564	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	11.36	0.21	5.59	0.09	0.00 0.51	165.01	160.59 161.56 160.31	160.56 161.53 160.28	0.03 0.03	15 15 Cir	0.44 0.46	2.51 3.85	0.51 4.73	UG3 - MH-310
5	4	Comb	0.012	42.283	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	5.00	6.36	7.15	0.02	0.00 0.14	164.93	160.66 161.77 160.52	160.59 161.56 160.31	0.07 0.21	15 15 Cir	0.18 0.50	1.20 4.02	0.14 4.93	MH-310 - INL-311
6	4	Comb	0.012	62.971	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	5.00	2.47	7.15	0.07	0.00 0.52	164.28	160.91 161.88 160.63	160.59 161.56 160.31	0.32 0.32	15 15 Cir	0.51 0.51	2.54 4.06	0.52 4.99	MH-310 - INL-310.1
7	End	MH	0.012	43.230	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	5.68	0.44	6.93	0.41	0.00 2.85	165.20	160.44 161.30 159.80	159.18 160.04 158.54	1.26 1.26	18 18 Cir	2.92 2.91	3.96 10.99	2.85 19.42	MH220 - UG2
8	7	Comb	0.012	36.465	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	5.32	0.37	7.05	0.41	0.00 2.90	163.75	160.73 161.58 160.08	160.52 161.40 159.90	0.20 0.18	18 18 Cir	0.55 0.49	4.07 4.52	2.90 7.99	INL 221 - MH-220
9	8	Comb	0.012	35.880	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	5.00	0.32	7.15	0.33	0.00 2.33	0.00	160.91 161.55 160.30	160.73 161.33 160.08	0.18 0.22	15 15 Cir	0.51 0.61	3.78 4.46	2.33 5.48	INL-222 - INL-221
10	End	MH	0.012	190.000	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	5.00	7.27	0.00	0.00	0.77 0.77	163.70	168.25 161.78 160.28	168.24 160.80 159.30	0.01 0.98	18 18 Cir	0.00 0.52	0.44 4.62	0.77 8.17	EW-300 - OCS-301

NOTES: Intensity = 55.41 / (Inlet time + 11.00) ^ 0.74 (in/hr) ; Time of flow in section is based on full flow.

Project File: PAB220113.00-Storm(25-yr-Tailwater)_Rev2.stm

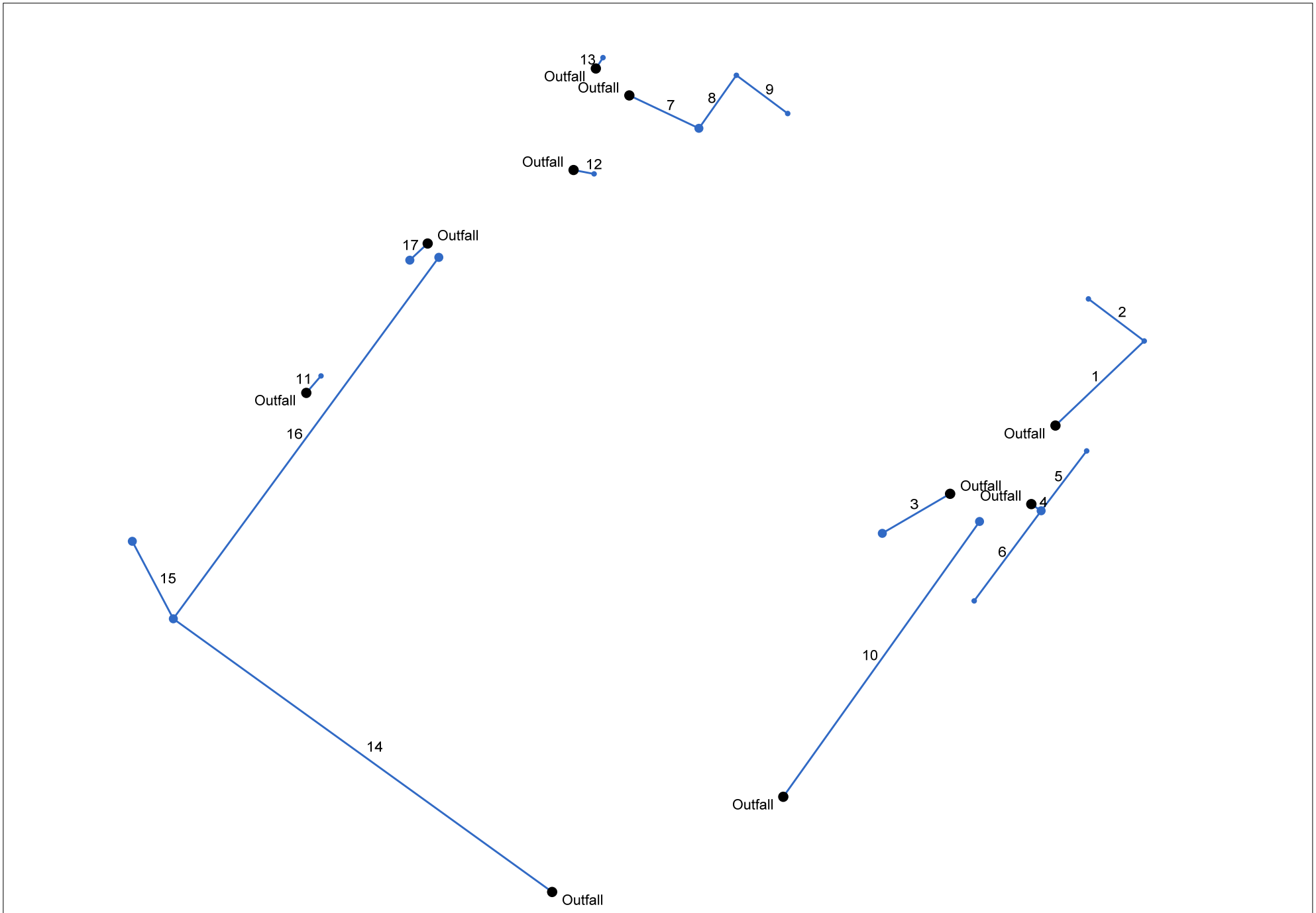
FL-DOT Report

Line No	To Line	Type of struc	n - Value	Len	Drainage Area			Time of conc	Time of Flow in sect	Inten (I)	Total CA	Add Q	Inlet elev	Elev of HGL			Rise	HGL	ADD		Date: 9/13/2023
					C1 = 0.2 C2 = 0.5 C3 = 0.9							Total Flow		Elev of Crown			Span	Pipe	Full Flow		Frequency: 25 yrs
														Elev of Invert							Proj: PAB220113.00-Storm(
					Increment (ac)	Sub-Total (ac)	Sum CA					Q		Up	Down	Fall	Size	Slope	Vel	Cap	
				(ft)				(min)	(min)	(in/hr)		(cfs)	(ft)	(ft)	(ft)	(ft)	(in)	(%)	(ft/s)	(cfs)	Line description
11	End	Comb	0.012	12.702	0.00	0.00	0.00	5.00	0.41	7.15	0.09	0.00	164.04	159.49	159.10	0.39	15	3.08	2.68	0.64	UG1 - INL-120
					0.00	0.00	0.00					0.64		160.43	160.04		15	3.07	9.99	12.26	
					0.00	0.00	0.00							159.18	158.79	0.39	Cir				
12	End	Comb	0.012	11.724	0.00	0.00	0.00	5.00	0.40	7.15	0.08	0.00	162.38	158.90	158.84	0.06	15	0.51	2.61	0.59	UG2 - INL-210
					0.00	0.00	0.00					0.59		159.85	159.79		15	0.51	4.08	5.00	
					0.00	0.00	0.00							158.60	158.54	0.06	Cir				
13	End	Comb	0.012	7.409	0.00	0.00	0.00	5.00	0.13	7.15	0.17	0.00	165.07	159.01	158.97	0.04	15	0.52	3.18	1.18	UG2 - INL-230
					0.00	0.00	0.00					1.18		159.83	159.79		15	0.54	4.19	5.14	
					0.00	0.00	0.00							158.58	158.54	0.04	Cir				
14	End	MH	0.012	262.064	0.00	0.00	0.00	7.20	0.83	0.00	0.00	0.77	161.24	169.98	168.24	1.74	18	0.66	5.25	9.27	EW100 - MH101
					0.00	0.00	0.00					9.27		158.77	157.25		18	0.58	4.90	8.66	
					0.00	0.00	0.00							157.27	155.75	1.52	Cir				
15	14	MH	0.012	49.249	0.00	0.00	0.00	5.00	0.28	0.00	0.00	5.13	160.95	170.51	170.41	0.10	18	0.20	2.90	5.13	MH-101 - OCS-102
					0.00	0.00	0.00					5.13		159.03	158.77		18	0.53	4.68	8.27	
					0.00	0.00	0.00							157.53	157.27	0.26	Cir				
16	14	MH	0.013	251.945	0.00	0.00	0.00	5.00	2.20	0.00	0.00	3.37	163.22	170.67	170.41	0.26	18	0.10	1.91	3.37	MH-101 - OCS-201
					0.00	0.00	0.00					3.37		160.04	158.77		18	0.50	4.22	7.46	
					0.00	0.00	0.00							158.54	157.27	1.27	Cir				
17	End	Comb	0.012	13.674	0.00	0.00	0.00	5.00	0.35	7.15	0.07	0.00	0.00	158.95	158.84	0.11	12	0.79	2.61	0.51	INL-240 - UG2
					0.00	0.00	0.00					0.51		159.65	159.54		12	0.80	4.41	3.46	
					0.00	0.00	0.00							158.65	158.54	0.11	Cir				

NOTES: Intensity = 55.41 / (Inlet time + 11.00) ^ 0.74 (in/hr) ; Time of flow in section is based on full flow.

Project File: PAB220113.00-Storm(25-yr-Tailwater)_Rev2.stm

Hydraflow Storm Sewers Extension for Autodesk® Civil 3D® Plan



Project File: PAB220113.00-Storm(100-yr-Tailwater)_Rev2.stm	Number of lines: 17	Date: 9/13/2023

Structure Report

Struct No.	Structure ID	Junction Type	Rim Elev (ft)	Structure			Line Out			Line In		
				Shape	Length (ft)	Width (ft)	Size (in)	Shape	Invert (ft)	Size (in)	Shape	Invert (ft)
1	INL-312	Combination	163.83	Cir	2.00	2.00	15	Cir	160.87	15	Cir	160.87
2	INL-313	Combination	163.61	Cir	2.00	2.00	15	Cir	161.07			
3	INL-320	Combination	164.97	Cir	4.00	4.00	15	Cir	160.53			
4	MH-310	Manhole	165.01	Cir	4.00	4.00	15	Cir	160.31	15 15	Cir Cir	160.31 160.31
5	INL-311	Combination	164.93	Cir	2.00	2.00	15	Cir	160.52			
6	INL-310.1	Combination	164.28	Cir	2.00	2.00	15	Cir	160.63			
7	MH220	Manhole	165.20	Cir	4.00	4.00	18	Cir	159.80	18	Cir	159.90
8	INL-221	Combination	163.75	Cir	2.00	2.00	18	Cir	160.08	15	Cir	160.08
9	INL-222	Combination	0.00	Cir	2.00	2.00	15	Cir	160.30			
10	OCS-301	Manhole	163.70	Cir	4.00	4.00	18	Cir	160.28			
11	INL-120	Combination	164.04	Cir	2.00	2.00	15	Cir	159.18			
12	INL-210	Combination	162.38	Cir	2.00	2.00	15	Cir	158.60			
13	INL-230	Combination	165.07	Cir	2.00	2.00	15	Cir	158.58			
14	MH-102	Manhole	161.24	Cir	4.00	4.00	18	Cir	157.27	18 18	Cir Cir	157.27 157.27
15	OCS-103	Manhole	160.95	Cir	4.00	4.00	18	Cir	157.53			
16	OCS-201	Manhole	163.22	Cir	4.00	4.00	18	Cir	158.54			
17	INL-240	Combination	0.00	Cir	4.00	4.00	12	Cir	158.65			

Storm Sewer Summary Report

Line No.	Line ID	Flow rate (cfs)	Line Size (in)	Line shape	Line length (ft)	Invert EL Dn (ft)	Invert EL Up (ft)	Line Slope (%)	HGL Down (ft)	HGL Up (ft)	Minor loss (ft)	HGL Junct (ft)	Dns Line No.	Junction Type
1	UG3 - INL-312	1.36	15	Cir	68.843	160.52	160.87	0.508	160.98	161.33	0.26	161.33	End	Combination
2	INL-312 - INL-313	0.82	15	Cir	39.117	160.87	161.07	0.511	161.33	161.42	n/a	161.42	1	Combination
3	UG3 - INL-320	1.07	15	Cir	44.198	160.31	160.53	0.498	160.77	160.94	n/a	160.94	End	Combination
4	UG3 - MH-310	0.61	15	Cir	6.564	160.28	160.31	0.457	160.58	160.61	n/a	160.61	End	Manhole
5	MH-310 - INL-311	0.16	15	Cir	42.283	160.31	160.52	0.497	160.61	160.68	n/a	160.72 j	4	Combination
6	MH-310 - INL-310.1	0.60	15	Cir	62.971	160.31	160.63	0.508	160.61	160.93	n/a	160.93 j	4	Combination
7	MH220 - UG2	3.28	18	Cir	43.230	158.54	159.80	2.915	159.22	160.49	0.26	160.49	End	Manhole
8	INL 221 - MH-220	3.32	18	Cir	36.465	159.90	160.08	0.494	160.57	160.77	0.40	160.77	7	Combination
9	INL-222 - INL-221	2.67	15	Cir	35.880	160.08	160.30	0.613	160.77	160.95	n/a	160.95 j	8	Combination
10	EW-300 - OCS-301	0.77	18	Cir	190.000	159.30	160.28	0.516	169.00*	169.01*	0.00	169.01	End	Manhole
11	UG1 - INL-120	0.73	15	Cir	12.702	158.79	159.18	3.070	159.14	159.51	n/a	159.51 j	End	Combination
12	UG2 - INL-210	0.68	15	Cir	11.724	158.54	158.60	0.512	158.95	158.92	n/a	158.92	End	Combination
13	UG2 - INL-230	1.36	15	Cir	7.409	158.54	158.58	0.540	159.03	159.04	n/a	159.04	End	Combination
14	EW100 - MH101	9.27	18	Cir	262.064	155.75	157.27	0.580	169.00*	170.74*	0.43	171.17	End	Manhole
15	MH-101 - OCS-102	5.13	18	Cir	49.249	157.27	157.53	0.528	171.17*	171.27*	0.13	171.40	14	Manhole
16	MH-101 - OCS-201	3.37	18	Cir	251.945	157.27	158.54	0.504	171.17*	171.43*	0.06	171.48	14	Manhole
17	INL-240 - UG2	0.59	12	Cir	13.674	158.54	158.65	0.804	158.86	158.97	0.12	158.97	End	Combination

Project File: PAB220113.00-Storm(100-yr-Tailwater)_Rev2.stm | Number of lines: 17 | Run Date: 9/13/2023

NOTES: Return period = 100 Yrs. ; *Surcharged (HGL above crown). ; j - Line contains hyd. jump.

Inlet Report

Line No	Inlet ID	Q = CIA (cfs)	Q carry (cfs)	Q capt (cfs)	Q Byp (cfs)	Junc Type	Curb Inlet		Grate Inlet			Gutter							Inlet			Byp Line No
							Ht (in)	L (ft)	Area (sqft)	L (ft)	W (ft)	So (ft/ft)	W (ft)	Sw (ft/ft)	Sx (ft/ft)	n	Depth (ft)	Spread (ft)	Depth (ft)	Spread (ft)	Depr (in)	
1	INL-312	0.60	0.00	0.59	0.02	Comb	4.0	4.00	0.00	4.00	2.00	0.030	2.00	0.050	0.020	0.013	0.13	3.28	0.03	0.65	0.0	Off
2	INL-313	0.82	0.00	0.77	0.05	Comb	4.0	4.00	0.00	4.00	2.00	0.030	2.00	0.050	0.020	0.013	0.14	3.98	0.05	1.00	0.0	Off
3	INL-320	1.07	0.00	1.07	0.00	Comb	4.0	8.00	15.08	8.00	2.00	Sag	2.00	0.050	0.020	0.013	0.15	4.29	0.15	4.29	0.0	Off
4	MH-310	0.00	0.00	0.00	0.00	MH	0.0	0.00	0.00	0.00	0.00	Sag	0.00	0.000	0.000	0.013	0.00	0.00	0.00	0.00	0.0	Off
5	INL-311	0.16	0.00	0.16	0.00	Comb	4.0	4.00	0.00	4.00	2.00	0.005	2.00	0.050	0.020	0.013	0.11	2.33	0.00	0.08	0.0	Off
6	INL-310.1	0.60	0.00	0.60	0.00	Comb	4.0	4.00	7.54	4.00	2.00	Sag	2.00	0.050	0.020	0.013	0.14	3.77	0.14	3.77	0.0	Off
7	MH220	0.00	0.00	0.00	0.00	MH	0.0	2.00	0.00	2.00	0.00	0.000	0.00	0.000	0.000	0.000	0.00	0.00	0.00	0.00	0.0	Off
8	INL-221	0.70	0.00	0.67	0.03	Comb	4.0	4.00	0.00	4.00	2.00	0.030	2.00	0.050	0.020	0.013	0.13	3.62	0.04	0.81	0.0	Off
9	INL-222	2.67	0.00	1.94	0.73	Comb	4.0	4.00	0.00	4.00	2.00	0.030	2.00	0.050	0.020	0.013	0.20	7.18	0.13	3.71	0.0	Off
10	OCS-301	0.77*	0.00	0.00	0.77	MH	0.0	0.00	0.00	0.00	0.00	Sag	0.00	0.000	0.000	0.013	0.00	0.00	0.00	0.00	0.0	Off
11	INL-120	0.73	0.00	0.66	0.07	Comb	4.0	4.00	0.00	4.00	2.00	0.010	2.00	0.050	0.020	0.013	0.16	5.03	0.07	1.40	0.0	Off
12	INL-210	0.68	0.00	0.68	0.00	Comb	4.0	4.00	7.54	4.00	2.00	Sag	2.00	0.050	0.020	0.013	0.14	4.14	0.14	4.14	0.0	Off
13	INL-230	1.36	0.00	1.36	0.00	Comb	4.0	4.00	7.54	4.00	2.00	Sag	2.00	0.050	0.020	0.013	0.20	6.87	0.20	6.87	0.0	Off
14	MH-102	0.77*	0.00	0.00	0.77	MH	0.0	0.00	0.00	0.00	0.00	Sag	0.00	0.000	0.000	0.013	0.00	0.00	0.00	0.00	0.0	Off
15	OCS-103	5.13*	0.00	0.00	5.13	MH	0.0	0.00	0.00	0.00	0.00	Sag	0.00	0.000	0.000	0.013	0.00	0.00	0.00	0.00	0.0	Off
16	OCS-201	3.37*	0.00	0.00	3.37	MH	0.0	0.00	0.00	0.00	0.00	Sag	0.00	0.000	0.000	0.013	0.00	0.00	0.00	0.00	0.0	Off
17	INL-240	0.59	0.00	0.59	0.00	Comb	4.0	4.00	7.54	4.00	2.00	Sag	2.00	0.050	0.020	0.013	0.13	3.73	0.13	3.73	0.0	Off

Project File: PAB220113.00-Storm(100-yr-Tailwater)_Rev2.stm | Number of lines: 17 | Run Date: 9/13/2023

NOTES: Inlet N-Values = 0.016; Intensity = 46.91 / (Inlet time + 9.20) ^ 0.66; Return period = 100 Yrs. ; * Indicates Known Q added. All curb inlets are throat.

FL-DOT Report

Line No	To Line	Type of struc	n - Value	Len	Drainage Area			Time of conc	Time of Flow in sect	Inten (I)	Total CA	Add Q	Inlet elev	Elev of HGL			Rise	HGL	ADD		Date: 9/13/2023
					C1 = 0.2 C2 = 0.5 C3 = 0.9							Total Flow		Elev of Crown			Span	Pipe	Full Flow		Frequency: 100 yrs
					Increment (ac)	Sub-Total (ac)	Sum CA					Q		Elev of Invert Up	Down	Fall	Size	Slope	Vel	Cap	Proj: PAB220113.00-Storm
				(ft)				(min)	(min)	(in/hr)		(cfs)	(ft)	(ft)	(ft)	(ft)	(in)	(%)	(ft/s)	(cfs)	Line description
1	End	Comb	0.012	68.843	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	5.98	1.00	7.84	0.17	0.00 1.36	163.83	161.33 162.12 160.87	160.98 161.77 160.52	0.35 0.35	15 15 Cir	0.51 0.51	3.32 4.06	1.36 4.99	UG3 - INL-312
2	1	Comb	0.012	39.117	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	5.00	0.98	8.19	0.10	0.00 0.82	163.61	161.42 162.32 161.07	161.33 162.12 160.87	0.09 0.20	15 15 Cir	0.24 0.51	2.43 4.08	0.82 5.00	INL-312 - INL-313
3	End	Comb	0.012	44.198	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	5.00	0.85	8.19	0.13	0.00 1.07	164.97	160.94 161.78 160.53	160.77 161.56 160.31	0.17 0.22	15 15 Cir	0.38 0.50	2.84 4.02	1.07 4.94	UG3 - INL-320
4	End	MH	0.012	6.564	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	10.56	0.18	6.59	0.09	0.00 0.61	165.01	160.61 161.56 160.31	160.58 161.53 160.28	0.03 0.03	15 15 Cir	0.47 0.46	2.64 3.85	0.61 4.73	UG3 - MH-310
5	4	Comb	0.012	42.283	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	5.00	5.56	8.19	0.02	0.00 0.16	164.93	160.68 161.77 160.52	160.61 161.56 160.31	0.06 0.21	15 15 Cir	0.15 0.50	1.22 4.02	0.16 4.93	MH-310 - INL-311
6	4	Comb	0.012	62.971	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	5.00	2.15	8.19	0.07	0.00 0.60	164.28	160.93 161.88 160.63	160.61 161.56 160.31	0.32 0.32	15 15 Cir	0.50 0.51	2.61 4.06	0.60 4.99	MH-310 - INL-310.1
7	End	MH	0.012	43.230	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	5.60	0.39	7.97	0.41	0.00 3.28	165.20	160.49 161.30 159.80	159.22 160.04 158.54	1.27 1.26	18 18 Cir	2.94 2.91	4.17 10.99	3.28 19.42	MH220 - UG2
8	7	Comb	0.012	36.465	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	5.28	0.32	8.09	0.41	0.00 3.32	163.75	160.77 161.58 160.08	160.57 161.40 159.90	0.20 0.18	18 18 Cir	0.55 0.49	4.23 4.52	3.32 7.99	INL 221 - MH-220
9	8	Comb	0.012	35.880	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	5.00	0.28	8.19	0.33	0.00 2.67	0.00	160.95 161.55 160.30	160.77 161.33 160.08	0.18 0.22	15 15 Cir	0.50 0.61	3.95 4.46	2.67 5.48	INL-222 - INL-221
10	End	MH	0.012	190.000	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	5.00	7.27	0.00	0.00	0.77 0.77	163.70	169.01 161.78 160.28	169.00 160.80 159.30	0.01 0.98	18 18 Cir	0.00 0.52	0.44 4.62	0.77 8.17	EW-300 - OCS-301

NOTES: Intensity = 46.91 / (Inlet time + 9.20) ^ 0.66 (in/hr) ; Time of flow in section is based on full flow.

Project File: PAB220113.00-Storm(100-yr-Tailwater)_Rev2.stm

FL-DOT Report

Line No	To Line	Type of struc	n - Value	Len	Drainage Area			Time of conc	Time of Flow in sect	Inten (I)	Total CA	Add Q	Inlet elev	Elev of HGL			Rise	HGL	ADD		Date: 9/13/2023
					C1 = 0.2 C2 = 0.5 C3 = 0.9							Total Flow		Elev of Crown			Span	Pipe	Full Flow		Frequency: 100 yrs
														Elev of Invert							Proj: PAB220113.00-Storm(
					Increment (ac)	Sub-Total (ac)	Sum CA					Q		Up	Down	Fall	Size	Slope	Vel	Cap	
				(ft)				(min)	(min)	(in/hr)		(cfs)	(ft)	(ft)	(ft)	(ft)	(in)	(%)	(ft/s)	(cfs)	Line description
11	End	Comb	0.012	12.702	0.00	0.00	0.00	5.00	0.36	8.19	0.09	0.00	164.04	159.51	159.14	0.37	15	2.94	2.68	0.73	UG1 - INL-120
					0.00	0.00	0.00					0.73		160.43	160.04		15	3.07	9.99	12.26	
					0.00	0.00	0.00							159.18	158.79	0.39	Cir				
12	End	Comb	0.012	11.724	0.00	0.00	0.00	5.00	0.35	8.19	0.08	0.00	162.38	158.92	158.95	-0.03	15	-0.24	2.33	0.68	UG2 - INL-210
					0.00	0.00	0.00					0.68		159.85	159.79		15	0.51	4.08	5.00	
					0.00	0.00	0.00							158.60	158.54	0.06	Cir				
13	End	Comb	0.012	7.409	0.00	0.00	0.00	5.00	0.11	8.19	0.17	0.00	165.07	159.04	159.03	0.01	15	0.13	3.18	1.36	UG2 - INL-230
					0.00	0.00	0.00					1.36		159.83	159.79		15	0.54	4.19	5.14	
					0.00	0.00	0.00							158.58	158.54	0.04	Cir				
14	End	MH	0.012	262.064	0.00	0.00	0.00	7.20	0.83	0.00	0.00	0.77	161.24	170.74	169.00	1.74	18	0.66	5.25	9.27	EW100 - MH101
					0.00	0.00	0.00					9.27		158.77	157.25		18	0.58	4.90	8.66	
					0.00	0.00	0.00							157.27	155.75	1.52	Cir				
15	14	MH	0.012	49.249	0.00	0.00	0.00	5.00	0.28	0.00	0.00	5.13	160.95	171.27	171.17	0.10	18	0.20	2.90	5.13	MH-101 - OCS-102
					0.00	0.00	0.00					5.13		159.03	158.77		18	0.53	4.68	8.27	
					0.00	0.00	0.00							157.53	157.27	0.26	Cir				
16	14	MH	0.013	251.945	0.00	0.00	0.00	5.00	2.20	0.00	0.00	3.37	163.22	171.43	171.17	0.26	18	0.10	1.91	3.37	MH-101 - OCS-201
					0.00	0.00	0.00					3.37		160.04	158.77		18	0.50	4.22	7.46	
					0.00	0.00	0.00							158.54	157.27	1.27	Cir				
17	End	Comb	0.012	13.674	0.00	0.00	0.00	5.00	0.30	8.19	0.07	0.00	0.00	158.97	158.86	0.11	12	0.80	2.73	0.59	INL-240 - UG2
					0.00	0.00	0.00					0.59		159.65	159.54		12	0.80	4.41	3.46	
					0.00	0.00	0.00							158.65	158.54	0.11	Cir				

NOTES: Intensity = 46.91 / (Inlet time + 9.20) ^ 0.66 (in/hr) ; Time of flow in section is based on full flow.

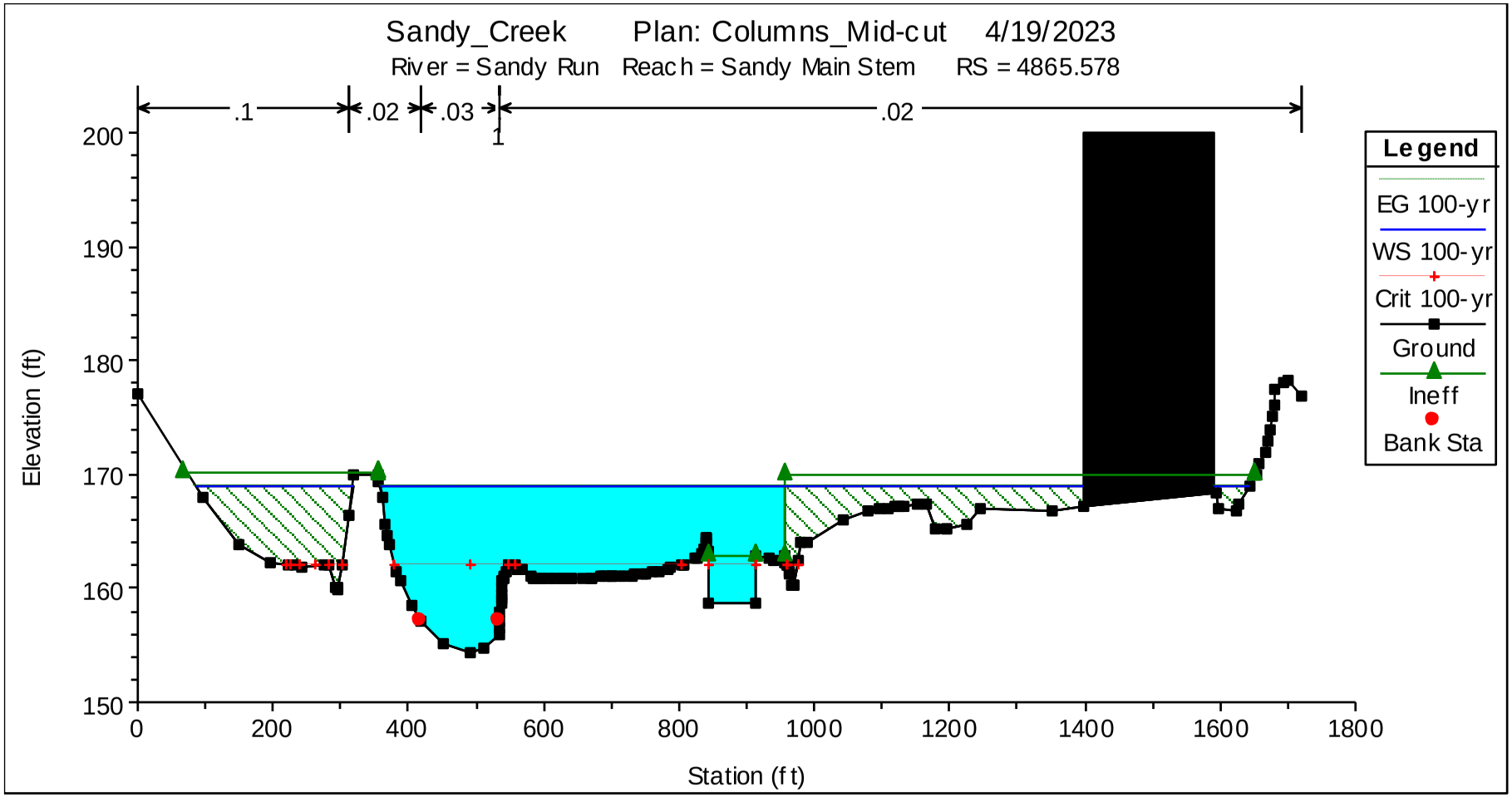
Project File: PAB220113.00-Storm(100-yr-Tailwater)_Rev2.stm

Plan: Mid-Columns Sandy Run Sandy Main Stem RS: 4865.578 Profile: 50-yr

E.G. Elev (ft)	168.52	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.27	Wt. n-Val.	0.02	0.03	
W.S. Elev (ft)	168.24	Reach Len. (ft)	54.72	88.7	126.71
Crit W.S. (ft)	160.38	Flow Area (sq ft)	326.26	1520.34	
E.G. Slope (ft/ft)	0.000254	Area (sq ft)	326.26	1520.34	
Q Total (cfs)	7709	Flow (cfs)	1489.52	6219.48	
Top Width (ft)	153	Top Width (ft)	36.06	116.94	
Vel Total (ft/s)	4.17	Avg. Vel. (ft/s)	4.57	4.09	
Max Chl Dpth (ft)	13.99	Hydr. Depth (ft)	9.05	13	
Conv. Total (cfs)	484034.4	Conv. (cfs)	93524.5	390510	
Length Wtd. (ft)	85.21	Wetted Per. (ft)	43.05	128.74	
Min Ch El (ft)	154.25	Shear (lb/sq ft)	0.12	0.19	
Alpha	1.01	Stream Power (lb/ft s)	0.55	0.77	
Frctn Loss (ft)	0.04	Cum Volume (acre-ft)	74.05	44.17	157.23
C & E Loss (ft)	0.07	Cum SA (acres)	14.42	4.26	24.85

Plan: Mid-Columns Sandy Run Sandy Main Stem RS: 4865.578 Profile: 100-yr

E.G. Elev (ft)	169.05	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.05	Wt. n-Val.	0.02	0.03	0.02
W.S. Elev (ft)	169	Reach Len. (ft)	54.72	88.7	126.71
Crit W.S. (ft)	162	Flow Area (sq ft)	458.45	1612.22	3346.02
E.G. Slope (ft/ft)	0.000039	Area (sq ft)	1720.99	1612.22	4704.15
Q Total (cfs)	9741	Flow (cfs)	809.71	2857.97	6073.32
Top Width (ft)	1329.19	Top Width (ft)	292.88	117.19	919.12
Vel Total (ft/s)	1.8	Avg. Vel. (ft/s)	1.77	1.77	1.82
Max Chl Dpth (ft)	14.75	Hydr. Depth (ft)	7.61	13.76	7.95
Conv. Total (cfs)	1558056	Conv. (cfs)	129512.5	457126.8	971416.9
Length Wtd. (ft)	102.25	Wetted Per. (ft)	61.83	117.71	432.11
Min Ch El (ft)	154.25	Shear (lb/sq ft)	0.02	0.03	0.02
Alpha	1	Stream Power (lb/ft s)	0.03	0.06	0.03
Frctn Loss (ft)	0.01	Cum Volume (acre-ft)	111.2	44.75	232.74
C & E Loss (ft)	0.06	Cum SA (acres)	27.96	4.26	44.97

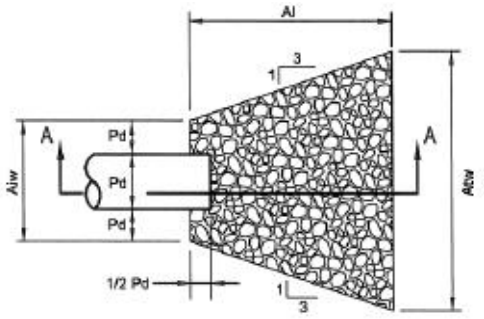

Sandy_Creek Plan: Columns_Mid-cut 4/19/2023
River = Sandy Run Reach = Sandy Main Stem RS = 4865.578
.1
.02
.03
.02
1
Legend
EG 100-yr
WS 100-yr
Crit 100-yr
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)
200
190
180
170
160
150
0
200
400
600
800
1000
1200
1400
1600
1800

Supporting Documentation

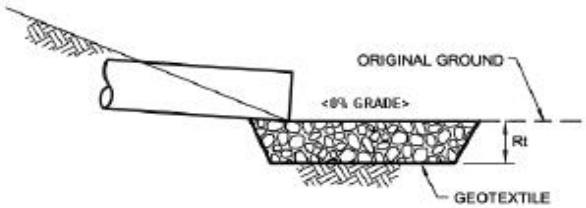
Rip-rap Apron Summary Sheet

Project: **BMW Fort Washington**

Description: **510 Pennsylvania Ave, Whitemarsh Township, Montgomery County**



PLAN VIEW



SECTION A - A

Outlet Name	Pipe						Apron					
	Dia. In.	Tail Water Condition Min or Max	Manning's "n" For Pipe	Slope	Q cfs	V^1 fps	d_{50} R-	in.	Rt in.	Al ft.	Aiw ft.	Atw ft
EW-100	18	MIN	0.013	0.0050	5.13	2.90	3	6	9.0	12.00	4.5	16.5

CULTEC Stormwater Design Calculator

Date:	March 14, 2023

Project Information:

BMW Fort Washington
500 Pennsylvania Ave
Fort Washington
Pennsylvania
United States

Project Number:	PAB220113.00

Calculations Performed By:

Kaitlyn Peterson
Bohler Engineering
74 W Broad Street, Suite 500
Bethlehem Pennsylvania
18018
United States
(610) 709-9976
kpeterson@hanovereng.com

RECHARGER 280HD

Recharger 280HD Chamber Specifications

Height	**26.5**	inches
Width	**47.0**	inches
Length	**8.00**	feet
Installed Length	**7.00**	feet
Bare Chamber Volume	**42.55**	cu. feet
Installed Chamber Volume	**65.96**	cu. feet

Breakdown of Storage Provided by Recharger 280HD Stormwater System

Within Chambers	**10,808.46**	cu. feet
Within Feed Connectors	**6.92**	cu. feet
Within Stone	**6,338.02**	cu. feet
Total Storage Provided	**17,153.4**	**cu. feet**
Total Storage Required	16243.00	cu. feet

Materials List

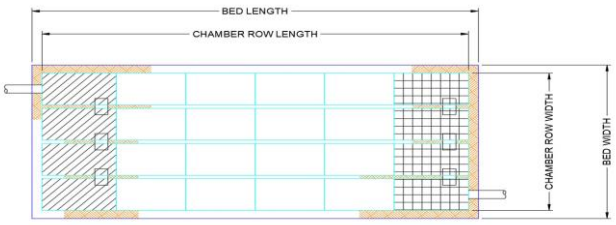
Recharger 280HD

Total Number of Chambers Required	**252**	**pieces**
Separator Row Chambers	**18**	pieces
Starter Chambers	**14**	pieces
Intermediate Chambers	**224**	pieces
End Chambers	**14**	pieces
HVLV FC-24 Feed Connectors	**13**	pieces
CULTEC No. 410 Non-Woven Geotextile	**2481**	sq. yards
CULTEC No. 4800 Woven Geotextile	**198**	feet
Stone	**587**	cu. yards

Separator Row Qty Included in Total

Based on 1 Internal Manifold

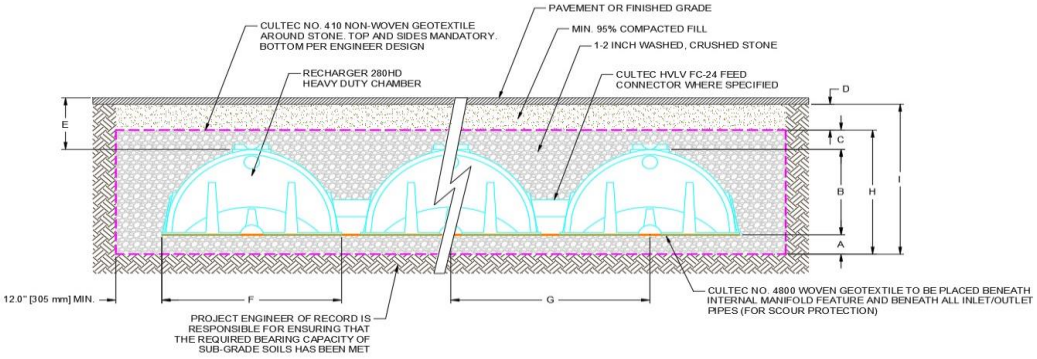
Bed Detail



Bed Layout Information

Number of Rows Wide	**14**	pieces
Number of Chambers Long	**18**	pieces
Chamber Row Width	**62.42**	feet
Chamber Row Length	**127.00**	feet
Bed Width	**64.42**	feet
Bed Length	**129.00**	feet
Bed Area Required	**8309.75**	sq. feet
Length of Separator Row	**127.00**	feet

Bed detail for reference only. Not project specific. Not to scale.



Conceptual graphic only. Not job specific.

Cross Section Table Reference

A	Depth of Stone Base	**6.0**	inches
B	Chamber Height	**26.5**	inches
C	Depth of Stone Above Units	**6.0**	inches
D	Depth of 95% Compacted Fill	**10.0**	inches
E	Max. Depth Allowed Above the Chamber	**12.00**	feet
F	Chamber Width	**47.0**	inches
G	Center to Center Spacing	**4.50**	feet
H	Effective Depth	**3.21**	feet
I	Bed Depth	**4.04**	feet

CULTEC Stormwater Design Calculator

Date:	March 14, 2023

Project Information:

BMW Fort Washington
500 Pennsylvania Ave
Fort Washington
Pennsylvania
United States

Project Number:	PAB220113.00

Calculations Performed By:

Kaitlyn Peterson
Bohler Engineering
74 W Broad Street, Suite 500
Bethlehem Pennsylvania
18018
United States
(610) 709-9976
kpeterson@hanovereng.com

RECHARGER 330XLHD

Recharger 330XLHD Chamber Specifications

Height	**30.5**	inches
Width	**52.0**	inches
Length	**8.50**	feet
Installed Length	**7.00**	feet
Bare Chamber Volume	**52.21**	cu. feet
Installed Chamber Volume	**89.18**	cu. feet

Breakdown of Storage Provided by Recharger 330XLHD Stormwater System

Within Chambers	**5,079.58**	cu. feet
Within Feed Connectors	**-**	cu. feet
Within Stone	**3,776.86**	cu. feet
Total Storage Provided	**8,856.4**	**cu. feet**
Total Storage Required	8392.00	cu. feet

Materials List

Recharger 330XLHD

Total Number of Chambers Required	**96**	**pieces**
Separator Row Chambers	**16**	pieces
Starter Chambers	**6**	pieces
Intermediate Chambers	**84**	pieces
End Chambers	**6**	pieces
HVLV FC-24 Feed Connectors	**10**	pieces
CULTEC No. 410 Non-Woven Geotextile	**1288**	sq. yards
CULTEC No. 4800 Woven Geotextile	**191**	feet
Stone	**350**	cu. yards

Separator Row Qty Included in Total

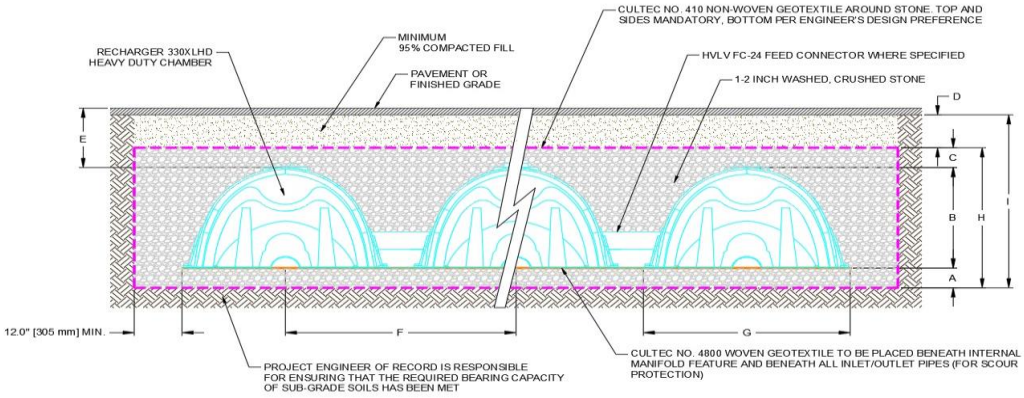
Based on 2 Internal Manifolds

Bed Detail

Bed Layout Information

Number of Rows Wide	**6**	pieces
Number of Chambers Long	**16**	pieces
Chamber Row Width	**33.50**	feet
Chamber Row Length	**113.50**	feet
Bed Width	**35.50**	feet
Bed Length	**115.50**	feet
Bed Area Required	**4100.25**	sq. feet
Length of Separator Row	**113.50**	feet

Bed detail for reference only. Not project specific. Not to scale.



Conceptual graphic only. Not job specific.

Cross Section Table Reference

A	Depth of Stone Base	**6.0**	inches
B	Chamber Height	**30.5**	inches
C	Depth of Stone Above Units	**6.0**	inches
D	Depth of 95% Compacted Fill	**10.0**	inches
E	Max. Depth Allowed Above the Chamber	**12.00**	feet
F	Chamber Width	**52.0**	inches
G	Center to Center Spacing	**5.83**	feet
H	Effective Depth	**3.54**	feet
I	Bed Depth	**4.38**	feet

CULTEC Stormwater Design Calculator

Date:	March 14, 2023

Project Information:

BMW Fort Washington
500 Pennsylvania Ave
Fort Washington
Pennsylvania
United States

Project Number:	PAB220113.00

Calculations Performed By:

Kaitlyn Peterson
Bohler Engineering
74 W Broad Street, Suite 500
Bethlehem Pennsylvania
18018
United States
(610) 709-9976
kpeterson@hanovereng.com

RECHARGER 180HD

Recharger 180HD Chamber Specifications

Height	**20.5**	inches
Width	**36.0**	inches
Length	**7.33**	feet
Installed Length	**6.33**	feet
Bare Chamber Volume	**21.84**	cu. feet
Installed Chamber Volume	**61.11**	cu. feet

Breakdown of Storage Provided by Recharger 180HD Stormwater System

Within Chambers	**1,855.13**	cu. feet
Within Feed Connectors	**36.40**	cu. feet
Within Stone	**3,213.59**	cu. feet
Total Storage Provided	**5,105.1**	**cu. feet**
Total Storage Required	5021.00	cu. feet

Materials List

Recharger 180HD

Total Number of Chambers Required	**84**	**pieces**
Separator Row Chambers	**14**	pieces
Starter Chambers	**6**	pieces
Intermediate Chambers	**72**	pieces
End Chambers	**6**	pieces
HVLV FC-24 Feed Connectors	**10**	pieces
CULTEC No. 410 Non-Woven Geotextile	**1117**	sq. yards
CULTEC No. 4800 Woven Geotextile	**175**	feet
Stone	**298**	cu. yards

Separator Row Qty Included in Total

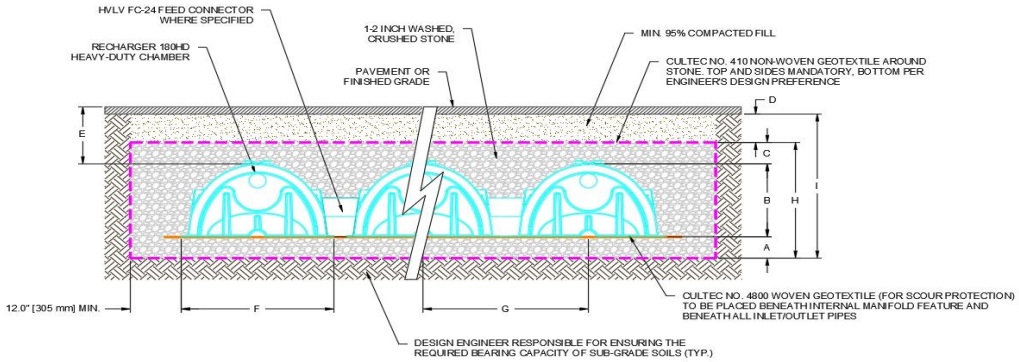
Based on 2 Internal Manifolds

Bed Detail

Bed detail for reference only. Not project specific. Not to scale.

Bed Layout Information

Number of Rows Wide	**6**	pieces
Number of Chambers Long	**14**	pieces
Chamber Row Width	**38.00**	feet
Chamber Row Length	**89.62**	feet
Bed Width	**40.00**	feet
Bed Length	**91.62**	feet
Bed Area Required	**3664.80**	sq. feet
Length of Separator Row	**89.62**	feet

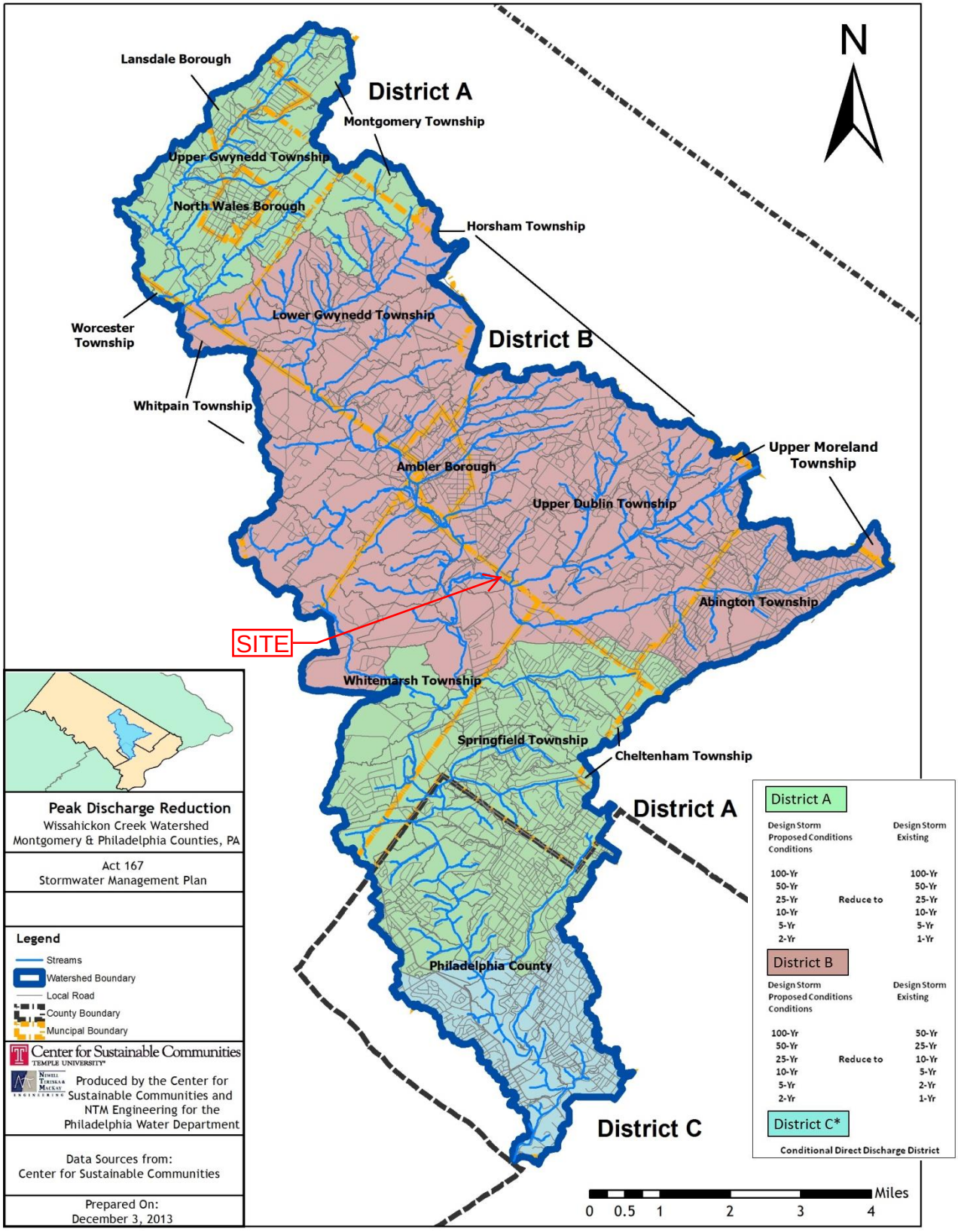


Conceptual graphic only. Not job specific.

Cross Section Table Reference

A	Depth of Stone Base	**6.0**	inches
B	Chamber Height	**20.5**	inches
C	Depth of Stone Above Units	**6.0**	inches
D	Depth of 95% Compacted Fill	**8.0**	inches
E	Max. Depth Allowed Above the Chamber	**12.00**	feet
F	Chamber Width	**36.0**	inches
G	Center to Center Spacing	**7.00**	feet
H	Effective Depth	**2.71**	feet
I	Bed Depth	**3.38**	feet

Figure 4.4.E Peak Rate Management District Map for the Wissahickon Watershed



NOAA Atlas 14, Volume 2, Version 3
Location name: Fort Washington, Pennsylvania, USA*
Latitude: 40.134°, Longitude: -75.207°
Elevation: m/ft**
* source: ESRI Maps
** source: USGS

POINT PRECIPITATION FREQUENCY ESTIMATES

G.M. Bonnin, D. Martin, B. Lin, T. Parzybok, M.Yekta, and D. Riley

NOAA, National Weather Service, Silver Spring, Maryland

PF_tabular | PF_graphical | Maps_&_aerials

PF tabular

PDS-based point precipitation frequency estimates with 90% confidence intervals (in inches/hour)[1]

Duration	Average recurrence interval (years)									
	1	2	5	10	25	50	100	200	500	1000
5-min	**4.13** (3.78-4.52)	**4.92** (4.50-5.39)	**5.80** (5.28-6.32)	**6.41** (5.84-7.01)	**7.16** (6.49-7.82)	**7.68** (6.92-8.40)	**8.20** (7.36-8.98)	**8.65** (7.72-9.50)	**9.19** (8.12-10.1)	**9.59** (8.42-10.6)
10-min	**3.29** (3.02-3.61)	**3.94** (3.60-4.30)	**4.64** (4.23-5.07)	**5.13** (4.67-5.60)	**5.71** (5.17-6.23)	**6.12** (5.51-6.69)	**6.51** (5.84-7.13)	**6.85** (6.12-7.53)	**7.27** (6.43-8.02)	**7.55** (6.63-8.37)
15-min	**2.75** (2.52-3.01)	**3.30** (3.02-3.61)	**3.91** (3.57-4.27)	**4.32** (3.94-4.73)	**4.82** (4.37-5.27)	**5.16** (4.66-5.65)	**5.48** (4.92-6.01)	**5.76** (5.15-6.34)	**6.10** (5.40-6.73)	**6.32** (5.55-7.00)
30-min	**1.88** (1.72-2.06)	**2.28** (2.08-2.49)	**2.78** (2.54-3.04)	**3.13** (2.86-3.43)	**3.57** (3.24-3.90)	**3.89** (3.51-4.25)	**4.20** (3.77-4.60)	**4.49** (4.01-4.93)	**4.85** (4.29-5.36)	**5.12** (4.49-5.67)
60-min	**1.17** (1.08-1.29)	**1.43** (1.31-1.56)	**1.78** (1.63-1.95)	**2.04** (1.86-2.23)	**2.38** (2.15-2.60)	**2.64** (2.38-2.88)	**2.89** (2.60-3.17)	**3.15** (2.81-3.46)	**3.48** (3.08-3.84)	**3.73** (3.28-4.14)
2-hr	**0.703** (0.640-0.772)	**0.854** (0.779-0.938)	**1.07** (0.972-1.17)	**1.23** (1.12-1.35)	**1.46** (1.31-1.59)	**1.63** (1.46-1.79)	**1.81** (1.61-1.98)	**1.98** (1.75-2.18)	**2.23** (1.94-2.46)	**2.41** (2.09-2.67)
3-hr	**0.512** (0.466-0.565)	**0.622** (0.566-0.685)	**0.781** (0.709-0.860)	**0.903** (0.818-0.994)	**1.07** (0.962-1.18)	**1.20** (1.07-1.32)	**1.34** (1.19-1.47)	**1.47** (1.30-1.62)	**1.66** (1.44-1.84)	**1.81** (1.55-2.01)
6-hr	**0.322** (0.294-0.355)	**0.390** (0.356-0.431)	**0.487** (0.444-0.537)	**0.567** (0.514-0.623)	**0.678** (0.610-0.745)	**0.769** (0.687-0.845)	**0.866** (0.766-0.952)	**0.968** (0.847-1.07)	**1.11** (0.955-1.23)	**1.23** (1.04-1.37)
12-hr	**0.195** (0.178-0.216)	**0.235** (0.215-0.261)	**0.296** (0.270-0.327)	**0.347** (0.315-0.383)	**0.422** (0.379-0.464)	**0.485** (0.432-0.533)	**0.554** (0.487-0.610)	**0.629** (0.544-0.695)	**0.738** (0.626-0.821)	**0.831** (0.692-0.927)
24-hr	**0.114** (0.105-0.124)	**0.137** (0.126-0.149)	**0.172** (0.158-0.187)	**0.201** (0.185-0.219)	**0.244** (0.223-0.265)	**0.280** (0.254-0.304)	**0.319** (0.288-0.346)	**0.362** (0.324-0.392)	**0.424** (0.374-0.459)	**0.475** (0.415-0.515)
2-day	**0.065** (0.060-0.072)	**0.079** (0.072-0.086)	**0.100** (0.091-0.109)	**0.116** (0.106-0.127)	**0.140** (0.128-0.153)	**0.160** (0.145-0.174)	**0.181** (0.163-0.197)	**0.204** (0.182-0.222)	**0.236** (0.209-0.258)	**0.263** (0.231-0.287)
3-day	**0.046** (0.042-0.050)	**0.056** (0.051-0.061)	**0.070** (0.064-0.076)	**0.081** (0.075-0.088)	**0.098** (0.089-0.106)	**0.111** (0.101-0.121)	**0.126** (0.114-0.136)	**0.141** (0.127-0.153)	**0.163** (0.145-0.177)	**0.181** (0.160-0.197)
4-day	**0.036** (0.034-0.040)	**0.044** (0.041-0.048)	**0.055** (0.051-0.060)	**0.064** (0.059-0.069)	**0.076** (0.070-0.083)	**0.087** (0.079-0.094)	**0.098** (0.089-0.106)	**0.109** (0.099-0.119)	**0.126** (0.113-0.137)	**0.140** (0.124-0.152)
7-day	**0.024** (0.023-0.026)	**0.029** (0.027-0.032)	**0.036** (0.033-0.039)	**0.042** (0.039-0.045)	**0.050** (0.046-0.054)	**0.056** (0.052-0.061)	**0.064** (0.058-0.069)	**0.071** (0.065-0.077)	**0.082** (0.074-0.088)	**0.091** (0.081-0.098)
10-day	**0.019** (0.018-0.021)	**0.023** (0.022-0.025)	**0.028** (0.026-0.030)	**0.032** (0.030-0.035)	**0.038** (0.035-0.041)	**0.043** (0.039-0.046)	**0.047** (0.044-0.051)	**0.052** (0.048-0.056)	**0.059** (0.054-0.064)	**0.065** (0.058-0.070)
20-day	**0.013** (0.012-0.014)	**0.016** (0.015-0.017)	**0.019** (0.017-0.020)	**0.021** (0.020-0.022)	**0.024** (0.023-0.026)	**0.027** (0.025-0.028)	**0.029** (0.027-0.031)	**0.032** (0.029-0.034)	**0.035** (0.032-0.037)	**0.038** (0.034-0.040)
30-day	**0.011** (0.010-0.011)	**0.013** (0.012-0.014)	**0.015** (0.014-0.016)	**0.017** (0.016-0.017)	**0.019** (0.018-0.020)	**0.020** (0.019-0.022)	**0.022** (0.021-0.023)	**0.024** (0.022-0.025)	**0.026** (0.024-0.027)	**0.027** (0.025-0.029)
45-day	**0.009** (0.009-0.010)	**0.011** (0.010-0.011)	**0.012** (0.012-0.013)	**0.014** (0.013-0.014)	**0.015** (0.014-0.016)	**0.016** (0.016-0.017)	**0.017** (0.016-0.018)	**0.018** (0.017-0.019)	**0.020** (0.019-0.021)	**0.021** (0.019-0.022)
60-day	**0.008** (0.008-0.009)	**0.010** (0.009-0.010)	**0.011** (0.011-0.012)	**0.012** (0.012-0.013)	**0.013** (0.013-0.014)	**0.014** (0.014-0.015)	**0.015** (0.014-0.016)	**0.016** (0.015-0.017)	**0.017** (0.016-0.018)	**0.018** (0.017-0.019)

[1] Precipitation frequency (PF) estimates in this table are based on frequency analysis of partial duration series (PDS).

Numbers in parenthesis are PF estimates at lower and upper bounds of the 90% confidence interval. The probability that precipitation frequency estimates (for a given duration and average recurrence interval) will be greater than the upper bound (or less than the lower bound) is 5%. Estimates at upper bounds are not checked against probable maximum precipitation (PMP) estimates and may be higher than currently valid PMP values.

Please refer to NOAA Atlas 14 document for more information.

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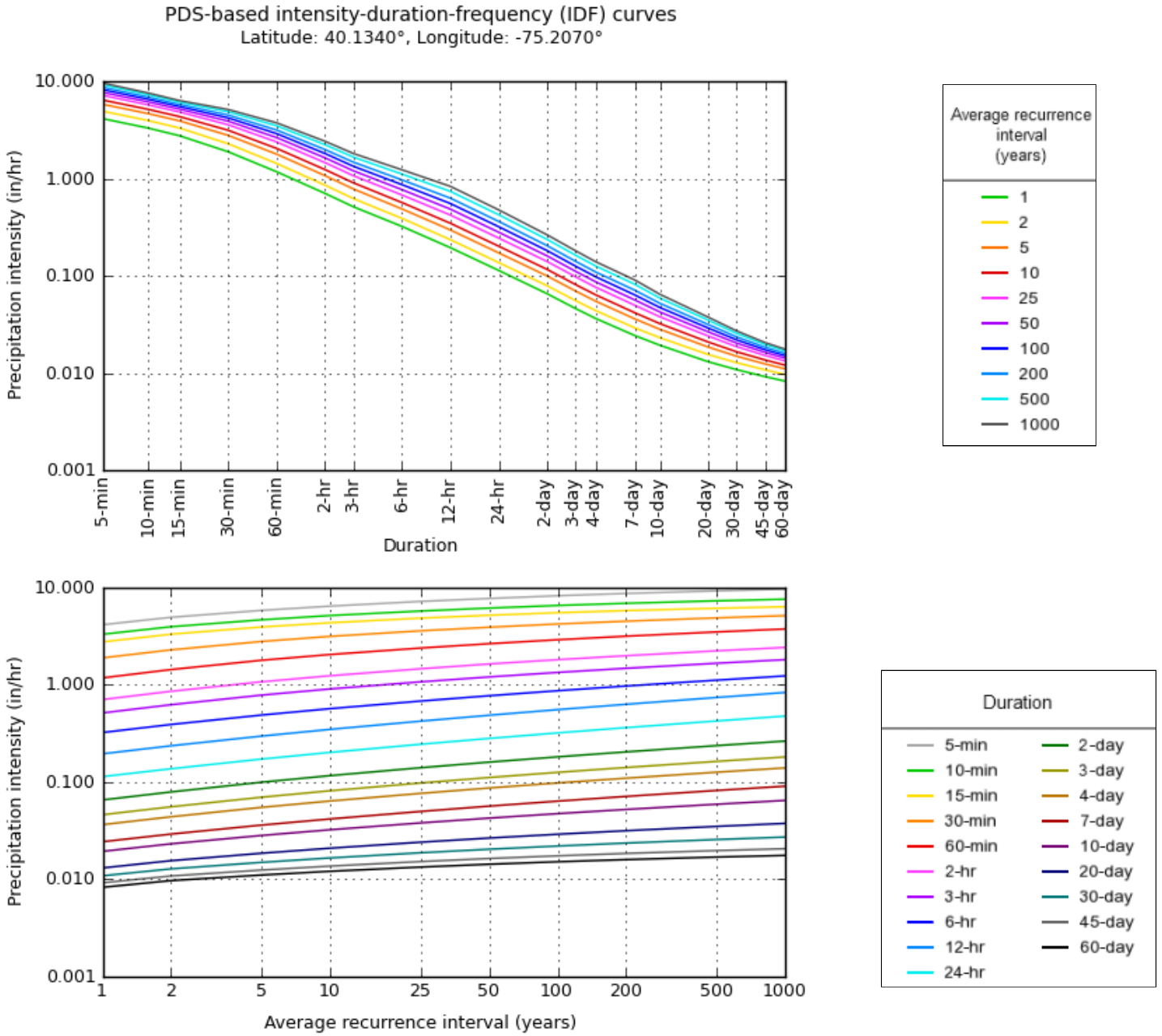
PF graphical



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Maps & aerials

Small scale terrain

NOAA Atlas 14, Volume 2, Version 3
Location name: Fort Washington, Pennsylvania, USA*
Latitude: 40.134°, Longitude: -75.207°
Elevation: m/ft**
* source: ESRI Maps
** source: USGS

POINT PRECIPITATION FREQUENCY ESTIMATES

G.M. Bonnin, D. Martin, B. Lin, T. Parzybok, M.Yekta, and D. Riley

NOAA, National Weather Service, Silver Spring, Maryland

PF_tabular | PF_graphical | Maps_&_aerials

PF tabular

PDS-based point precipitation frequency estimates with 90% confidence intervals (in inches)[1]

Duration	Average recurrence interval (years)									
	1	2	5	10	25	50	100	200	500	1000
5-min	**0.344** (0.315-0.377)	**0.410** (0.375-0.449)	**0.483** (0.440-0.527)	**0.534** (0.487-0.584)	**0.597** (0.541-0.652)	**0.640** (0.577-0.700)	**0.683** (0.613-0.748)	**0.721** (0.643-0.792)	**0.766** (0.677-0.845)	**0.799** (0.702-0.886)
10-min	**0.549** (0.503-0.601)	**0.656** (0.600-0.717)	**0.773** (0.705-0.845)	**0.855** (0.779-0.934)	**0.951** (0.862-1.04)	**1.02** (0.919-1.12)	**1.09** (0.974-1.19)	**1.14** (1.02-1.25)	**1.21** (1.07-1.34)	**1.26** (1.11-1.40)
15-min	**0.687** (0.629-0.752)	**0.825** (0.754-0.902)	**0.978** (0.892-1.07)	**1.08** (0.985-1.18)	**1.21** (1.09-1.32)	**1.29** (1.16-1.41)	**1.37** (1.23-1.50)	**1.44** (1.29-1.58)	**1.52** (1.35-1.68)	**1.58** (1.39-1.75)
30-min	**0.942** (0.862-1.03)	**1.14** (1.04-1.25)	**1.39** (1.27-1.52)	**1.57** (1.43-1.71)	**1.79** (1.62-1.95)	**1.95** (1.75-2.13)	**2.10** (1.89-2.30)	**2.24** (2.00-2.47)	**2.43** (2.15-2.68)	**2.56** (2.25-2.84)
60-min	**1.17** (1.08-1.29)	**1.43** (1.31-1.56)	**1.78** (1.63-1.95)	**2.04** (1.86-2.23)	**2.38** (2.15-2.60)	**2.64** (2.38-2.88)	**2.89** (2.60-3.17)	**3.15** (2.81-3.46)	**3.48** (3.08-3.84)	**3.73** (3.28-4.14)
2-hr	**1.41** (1.28-1.54)	**1.71** (1.56-1.88)	**2.14** (1.95-2.35)	**2.47** (2.24-2.70)	**2.91** (2.62-3.19)	**3.26** (2.92-3.57)	**3.61** (3.22-3.96)	**3.97** (3.51-4.36)	**4.45** (3.89-4.91)	**4.82** (4.17-5.34)
3-hr	**1.54** (1.40-1.70)	**1.87** (1.70-2.06)	**2.35** (2.13-2.58)	**2.71** (2.46-2.98)	**3.21** (2.89-3.53)	**3.60** (3.23-3.96)	**4.01** (3.56-4.42)	**4.42** (3.89-4.88)	**4.98** (4.33-5.53)	**5.43** (4.66-6.04)
6-hr	**1.93** (1.76-2.13)	**2.33** (2.13-2.58)	**2.92** (2.66-3.22)	**3.39** (3.08-3.73)	**4.06** (3.65-4.46)	**4.61** (4.11-5.06)	**5.19** (4.58-5.70)	**5.80** (5.07-6.38)	**6.66** (5.72-7.38)	**7.36** (6.23-8.19)
12-hr	**2.35** (2.15-2.60)	**2.84** (2.60-3.14)	**3.57** (3.26-3.94)	**4.18** (3.80-4.62)	**5.08** (4.57-5.59)	**5.84** (5.20-6.43)	**6.67** (5.86-7.35)	**7.57** (6.56-8.37)	**8.90** (7.54-9.89)	**10.0** (8.33-11.2)
24-hr	**2.73** (2.51-2.97)	**3.28** (3.03-3.58)	**4.13** (3.80-4.49)	**4.83** (4.43-5.26)	**5.86** (5.35-6.36)	**6.73** (6.10-7.29)	**7.66** (6.91-8.30)	**8.68** (7.76-9.40)	**10.2** (8.98-11.0)	**11.4** (9.97-12.4)
2-day	**3.14** (2.88-3.43)	**3.79** (3.48-4.14)	**4.78** (4.38-5.22)	**5.58** (5.10-6.09)	**6.73** (6.12-7.32)	**7.68** (6.96-8.36)	**8.70** (7.83-9.46)	**9.79** (8.74-10.7)	**11.4** (10.0-12.4)	**12.6** (11.1-13.8)
3-day	**3.32** (3.06-3.62)	**4.00** (3.69-4.37)	**5.02** (4.62-5.47)	**5.85** (5.37-6.37)	**7.03** (6.42-7.64)	**8.01** (7.29-8.70)	**9.04** (8.18-9.82)	**10.1** (9.12-11.0)	**11.7** (10.4-12.8)	**13.0** (11.5-14.2)
4-day	**3.50** (3.24-3.81)	**4.22** (3.90-4.59)	**5.27** (4.86-5.73)	**6.12** (5.64-6.65)	**7.33** (6.72-7.96)	**8.33** (7.61-9.04)	**9.39** (8.54-10.2)	**10.5** (9.50-11.4)	**12.1** (10.8-13.2)	**13.4** (11.9-14.6)
7-day	**4.09** (3.80-4.43)	**4.90** (4.56-5.32)	**6.06** (5.63-6.57)	**7.01** (6.49-7.60)	**8.37** (7.72-9.06)	**9.49** (8.72-10.3)	**10.7** (9.76-11.5)	**11.9** (10.9-12.9)	**13.7** (12.4-14.9)	**15.2** (13.6-16.5)
10-day	**4.65** (4.34-5.01)	**5.56** (5.19-5.98)	**6.78** (6.31-7.29)	**7.75** (7.21-8.34)	**9.12** (8.45-9.80)	**10.2** (9.44-11.0)	**11.4** (10.4-12.2)	**12.5** (11.5-13.5)	**14.2** (12.9-15.3)	**15.5** (14.0-16.7)
20-day	**6.29** (5.91-6.70)	**7.46** (7.01-7.95)	**8.90** (8.36-9.49)	**10.0** (9.40-10.7)	**11.6** (10.8-12.3)	**12.7** (11.9-13.6)	**13.9** (13.0-14.9)	**15.2** (14.1-16.2)	**16.8** (15.5-17.9)	**18.0** (16.5-19.3)
30-day	**7.83** (7.41-8.27)	**9.23** (8.74-9.74)	**10.8** (10.2-11.4)	**11.9** (11.3-12.6)	**13.5** (12.7-14.2)	**14.7** (13.8-15.5)	**15.8** (14.9-16.7)	**17.0** (15.9-18.0)	**18.5** (17.2-19.6)	**19.6** (18.2-20.8)
45-day	**9.96** (9.47-10.5)	**11.7** (11.1-12.3)	**13.4** (12.8-14.1)	**14.8** (14.0-15.5)	**16.4** (15.6-17.3)	**17.7** (16.7-18.6)	**18.8** (17.8-19.8)	**19.9** (18.8-21.0)	**21.3** (20.1-22.4)	**22.3** (20.9-23.5)
60-day	**11.9** (11.4-12.5)	**14.0** (13.3-14.7)	**15.9** (15.2-16.7)	**17.4** (16.6-18.3)	**19.2** (18.3-20.2)	**20.6** (19.6-21.6)	**21.8** (20.7-22.9)	**23.0** (21.8-24.1)	**24.4** (23.1-25.7)	**25.4** (24.0-26.7)

[1] Precipitation frequency (PF) estimates in this table are based on frequency analysis of partial duration series (PDS).

Numbers in parenthesis are PF estimates at lower and upper bounds of the 90% confidence interval. The probability that precipitation frequency estimates (for a given duration and average recurrence interval) will be greater than the upper bound (or less than the lower bound) is 5%. Estimates at upper bounds are not checked against probable maximum precipitation (PMP) estimates and may be higher than currently valid PMP values.

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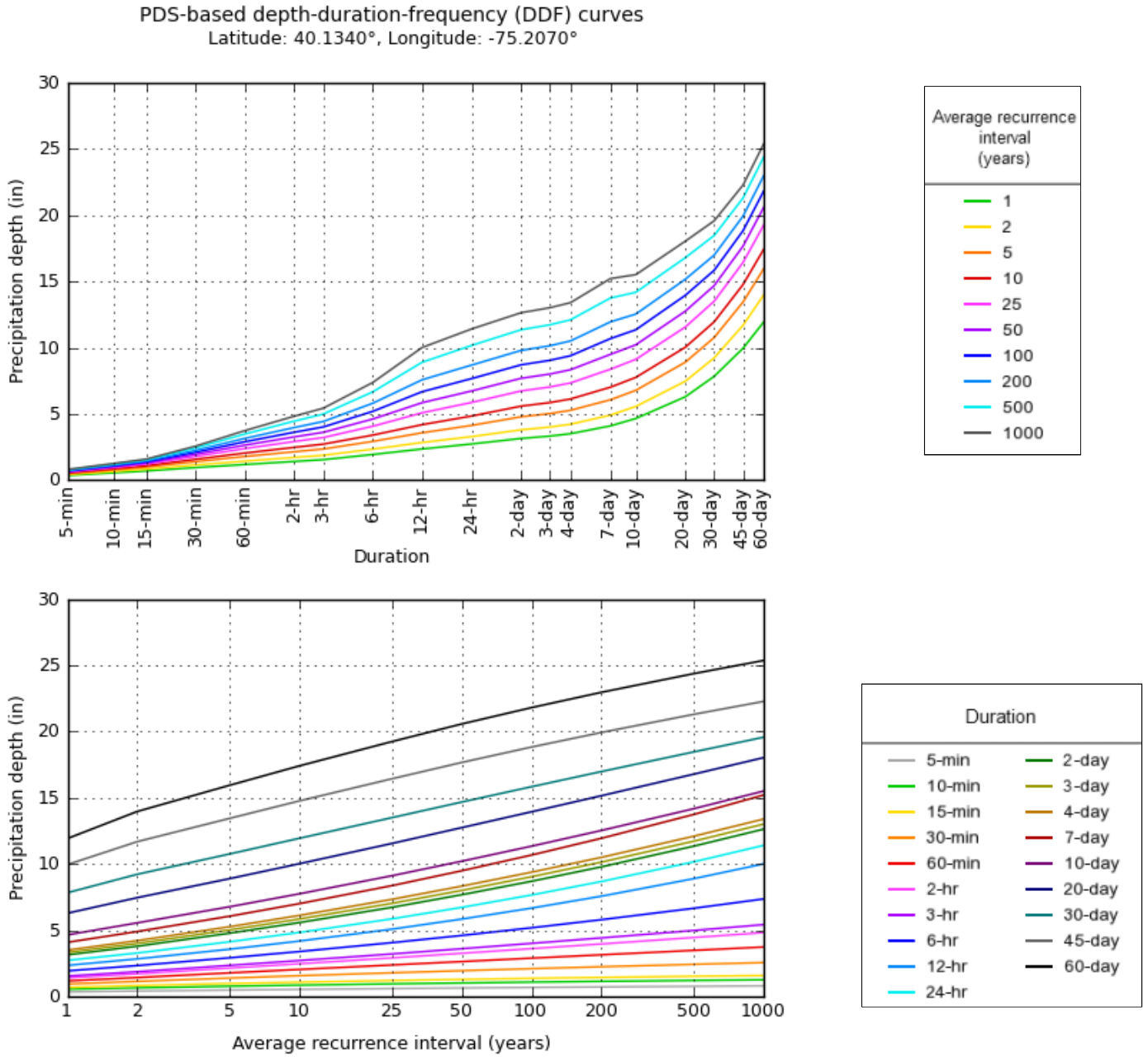
PF graphical



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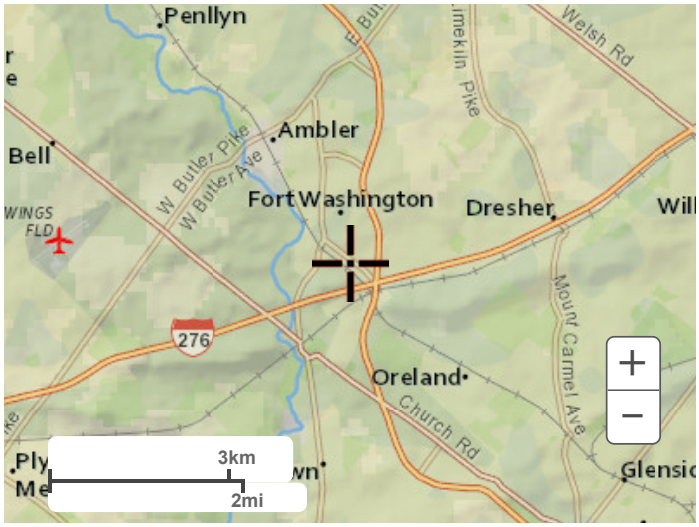
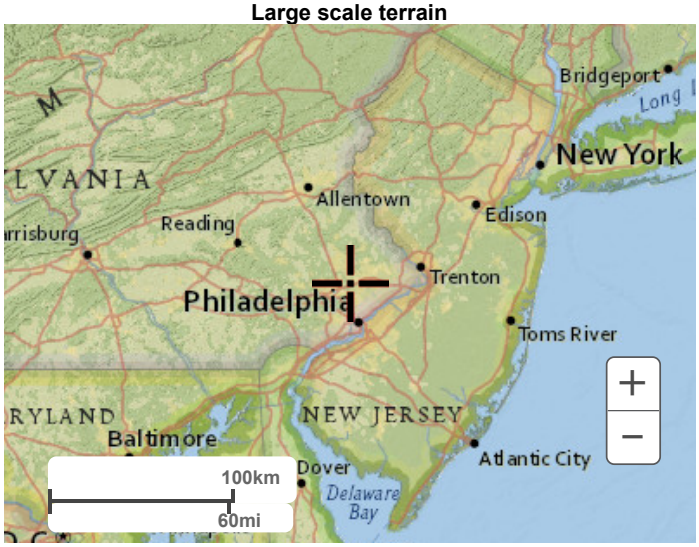
Maps & aerials

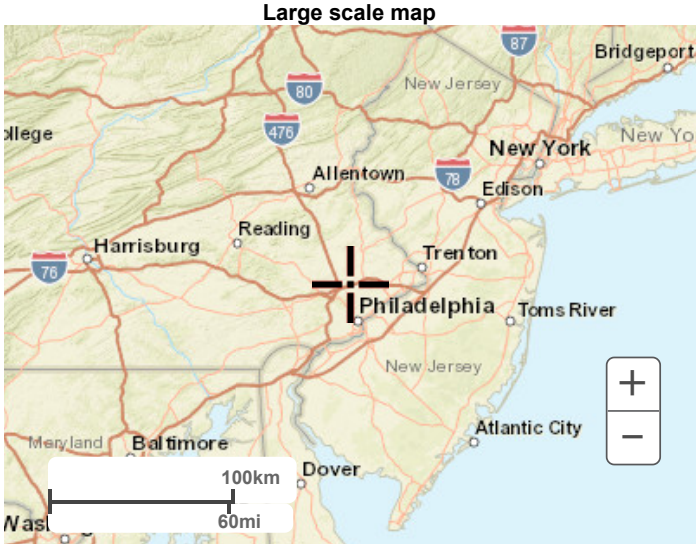
Small scale terrain



Large scale terrain



Large scale map



Large scale aerial

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US Department of Commerce
National Oceanic and Atmospheric Administration
National Weather Service
National Water Center
1325 East West Highway
Silver Spring, MD 20910
Questions?: HDSC.Questions@noaa.gov

Disclaimer

Permanent Channel Design Data

Project: **BMW Automotive Dealership Expansion**
Description: **500 Pennsylvania Avenue**
Whitemarsh Township, Montgomery County

Slope Condition (Minimum, Maximum, Entire)	Minimum	Maximum	Minimum	Maximum
Channel or Channel Section	**Existing Swale-1**	**Existing Swale-1**	**Permanent Swale**	**Permanent Swale**
Channel Condition (Temporary or Permanent)	**Permanent**	**Temporary**	**Permanent**	**Permanent**
Design Storm (2-Year or 10-Year)	2-Year	2-Year	10-Year	10-Year
Acres (Ac)	3.78	3.78	0.50	0.50
Multiplier (1.6 for temporary or 2.75 for permanent)	2.75	2.75	2.75	2.75
Q_r (Required Capacity, cfs)	10.40	10.40	1.38	1.38
Q (At Flow Depth d, cfs)	10.40	10.40	1.38	1.38
Protective Lining **	Grass (6")	Grass (6")	Grass (6")	Grass (6")
n (Manning's Coefficient) **	0.095	0.095	0.093	0.093
V_a (Allowable Velocity, fps)	4.00	4.00	4.00	4.00
V (At Flow Depth d, fps)	0.83	0.83	0.96	0.96
τ_a (Max. Allowable Shear Stress, lb/ft2)	1.00	1.00	1.00	1.00
τ_d (Shear Stress at Flow Depth d, lb/ft2)	0.25	0.25	0.44	0.44
Channel Bottom Width (ft)	6.00	6.00	3.00	3.00
Z1 Channel Side Slope (H:V)	2.00	2.00	3.00	3.00
Z2 Channel Side Slope (H:V)	3.00	3.00	3.00	3.00
D (Design Depth in ft)	1.00	1.00	1.00	1.00
Channel Top Width (ft) @D	11.00	11.00	9.00	9.00
d (Flow Depth in ft)	1.34	1.34	0.35	0.35
Channel Top Width (ft) @d	12.71	12.71	5.12	5.12
Bottom Width: Depth Ratio (12:1 max)	4.47	4.47	8.47	8.47
d_{50} Stone Size (in)	N/A	N/A	N/A	N/A
A (Area in s.f. at flow depth, d)	12.55	12.55	1.44	1.44
P (Wetted Perimeter in ft)	13.24	13.24	5.24	5.24
R (Hydraulic Radius (A/P))	0.95	0.95	0.27	0.27
S (Bed Slope, ft/ft) *	0.003	0.003	0.020	0.020
S_c (Critical Slope)	0.139	0.139	0.198	0.198
$0.7S_c$	0.097	0.097	0.138	0.138
$1.3S_c$	0.180	0.180	0.257	0.257
Stable Flow? (Y/N)	Y	Y	Y	Y
Freeboard Based on Unstable Flow, ft	N/A	N/A	N/A	N/A
Freeboard Based On Stable Flow, ft	0.34	0.34	0.09	0.09
Minimum Required Freeboard, ft ***	0.50	0.50	0.50	0.50
Minimum Required Depth, ft	1.84	1.84	0.85	0.85
Design Method for Protective Lining**** Permissible Velocity (V) or Shear Stress (S)	S	S	S	S
Vegetative Lining Retardance	C	C	C	C
Include Bend Analysis (Approx. Horizontal Radius, ft)				
Additional Depth Adjustment for Horizontal Bend	0.00	0.00	0.00	0.00

** Slopes may not be averaged.*

*** For vegetated channels, provide data for temporary linings and vegetated conditions in separate columns.*

****Minimum Freeboard, F, is 0.50 ft.*

*****Permissible velocity lining design method is not acceptable for channels with a bed slope of 10% or greater.*

*****Shear stress lining design method is recommended for channels with a bed slope of 10% or greater.*

*****Shear stress lining design method may be used for any channel bed slope.*

Swale Calculations

Project: **BMW Automotive Dealership Expansion**

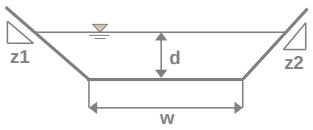
Description: **500 Pennsylvania Avenue**
Whitemarsh Township, Montgomery County

Swale Name: **Existing Swale-1**

Input Channel Parameters

Channel Dimensions

z1	2.00	ft. (horiz to 1' vert.)
z2	3.00	ft. (horiz to 1' vert.)
w	6.00	ft. (bottom width)
d	1.00	ft. (design depth)



Slope Condition

Minimum	0.0030	ft/ft (capacity)
Maximum	0.0030	ft/ft (stability)
Entire	0.0030	ft/ft

Evaluate Temporary & Permanent Conditions

Design Method: **Shear Stress**

☐ **Temporary**

Calculate Design Flow (Q)

2-yr storm cfs

OR

Area acres

x cfs/acre

cfs (design Q)

Select Lining Material

	Lining	Retardance (A, B, C, D)	d_{50} Stone Size (in.)	Initial n-value	Allowable Velocity	Allowable τ_d (lb/ft^2)
z1						
z2						
w						

Results

	n-value	d	v (fps)	τ_d (lb/ft^2)
Min. slope				
Max. slope				
Entire slope				

☑ **Permanent**

Calculate Design Flow (Q)

10-yr storm cfs

OR

Area 3.78 acres

x 2.75 cfs/acre

10.40 cfs (design Q)

Select Lining Material

	Lining	Retardance (A, B, C, D)	d_{50} Stone Size (in.)	Initial n-value	Allowable Velocity	Allowable τ_d (lb/ft^2)
z1	**Grass (6")**	**C**	N/A	0.034	4.000	**1.000**
z2	**Grass (6")**	**C**	N/A	0.034	4.000	**1.000**
w	**Grass (6")**	**C**	N/A	0.034	4.000	**1.000**

Results

	n-value	d	v (fps)	τ_d (lb/ft^2)
Min. slope	0.095	1.34	0.83	**0.25**
Max. slope	0.095	1.34	0.83	**0.25**
Entire slope	0.095	1.34	0.83	**0.25**

Swale Calculations

Project: **BMW Automotive Dealership Expansion**

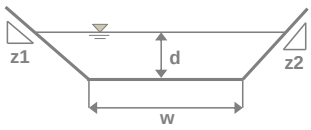
Description: **500 Pennsylvania Avenue**
Whitemarsh Township, Montgomery County

Swale Name: **Permanent Swale**

Input Channel Parameters

Channel Dimensions

z1	3.00	ft. (horiz to 1' vert.)
z2	3.00	ft. (horiz to 1' vert.)
w	3.00	ft. (bottom width)
d	1.00	ft. (design depth)



Slope Condition

Minimum	0.0200	ft/ft (capacity)
Maximum	0.0200	ft/ft (stability)
Entire	0.0200	ft/ft

Evaluate Temporary & Permanent Conditions

Design Method: **Shear Stress**

☐ **Temporary**

Calculate Design Flow (Q)

2-yr storm cfs

OR

Area acres

x cfs/acre

cfs (design Q)

Select Lining Material

	Lining	Retardance (A, B, C, D)	d_{50} Stone Size (in.)	Initial n-value	Allowable Velocity	Allowable τ_d (lb/ft^2)
z1						
z2						
w						

Results

	n-value	d	v (fps)	τ_d (lb/ft^2)
Min. slope				
Max. slope				
Entire slope				

☑ **Permanent**

Calculate Design Flow (Q)

10-yr storm cfs

OR

Area 0.50 acres

x 2.75 cfs/acre

1.38 cfs (design Q)

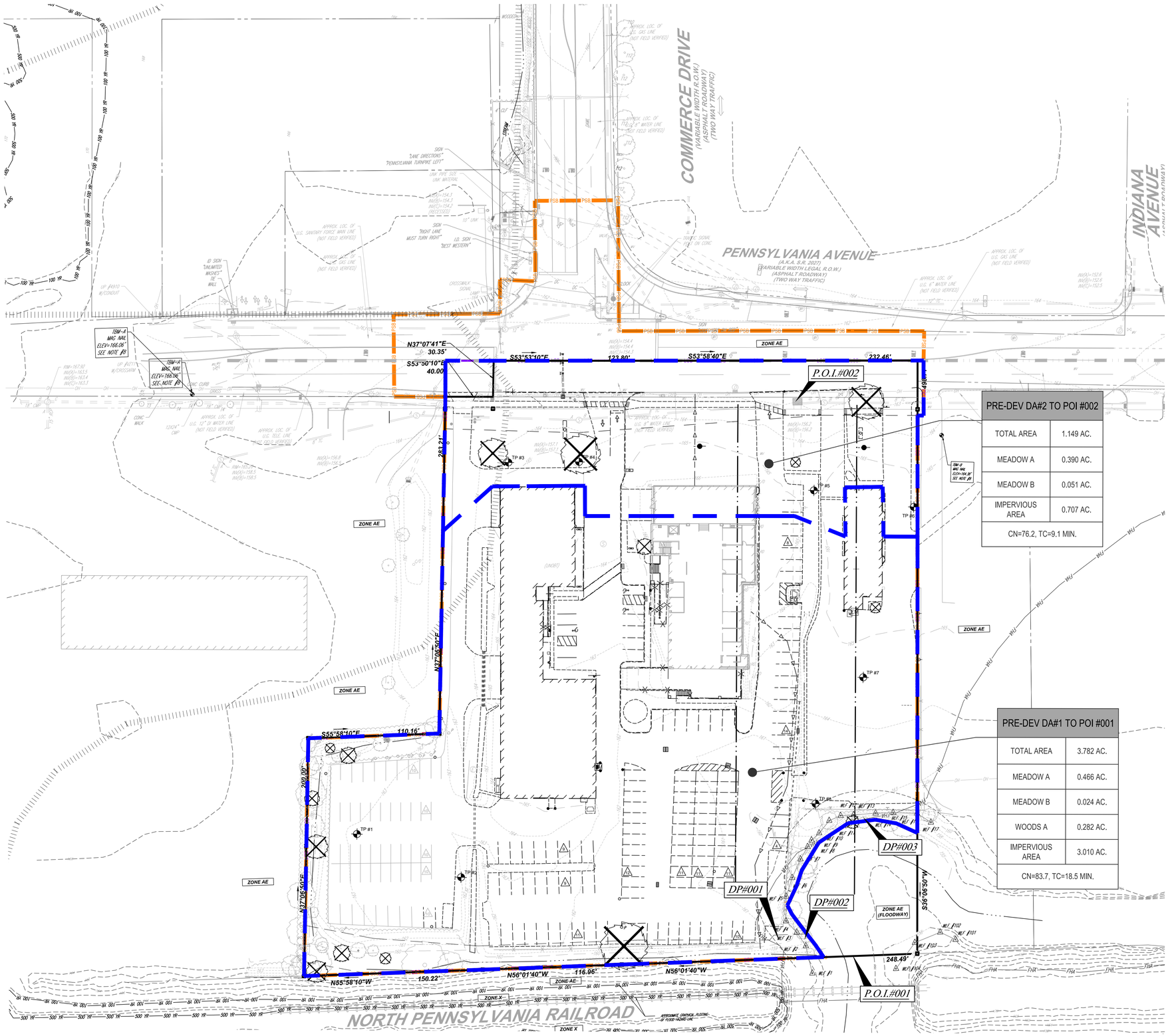
Select Lining Material

	Lining	Retardance (A, B, C, D)	d_{50} Stone Size (in.)	Initial n-value	Allowable Velocity	Allowable τ_d (lb/ft^2)
z1	**Grass (6")**	**C**	N/A	0.034	4.000	**1.000**
z2	**Grass (6")**	**C**	N/A	0.034	4.000	**1.000**
w	**Grass (6")**	**C**	N/A	0.034	4.000	**1.000**

Results

	n-value	d	v (fps)	τ_d (lb/ft^2)
Min. slope	0.093	0.35	0.96	**0.44**
Max. slope	0.093	0.35	0.96	**0.44**
Entire slope	0.093	0.35	0.96	**0.44**

Appendix A – Drainage Area Plans



PRE-DEV DA#2 TO POI #002	
TOTAL AREA	1.149 AC.
MEADOW A	0.390 AC.
MEADOW B	0.051 AC.
IMPERVIOUS AREA	0.707 AC.
CN=76.2, TC=9.1 MIN.	

PRE-DEV DA#1 TO POI #001	
TOTAL AREA	3.782 AC.
MEADOW A	0.466 AC.
MEADOW B	0.024 AC.
WOODS A	0.282 AC.
IMPERVIOUS AREA	3.010 AC.
CN=83.7, TC=18.5 MIN.	

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SITE CIVIL AND CONSULTING ENGINEERING
LAND SURVEYING
PROGRAM MANAGEMENT
LANDSCAPE ARCHITECTURE
SUSTAINABLE DESIGN
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REVISIONS

REV	DATE	COMMENT	DRAWN BY / CHECKED BY
1	5/4/2023	NPDES SUBMISSION NPDES REV-0	KMP MSL
2	7/11/2023	SHADE TREE COMMISSION	HMP MSL
3	8/4/2023	NPDES SUBMISSION NPDES REV-1	HMP MSL
4	9/20/2023	TOWNSHIP RESUBMISSION	RMS MSL

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PROJECT No.: PAB220113.00
DRAWN BY: RMS
CHECKED BY: MSL
DATE: 03/15/2023
CAD I.D.: PAB220113.00-DRIN-4A

PROJECT:

FINAL LAND DEVELOPMENT PLANS

FOR

MILEONE FORT WASHINGTON, LLC

BMW AUTOMOTIVE DEALERSHIP EXPANSION

**500 PENNSYLVANIA AVENUE
WHITEMARSH TOWNSHIP
MONTGOMERY COUNTY, PA**

BOHLER
74 W BROAD STREET, SUITE 500
BETHLEHEM, PA 18018
Phone: (610) 709-9971
Fax: (610) 709-9976
www.BohlerEngineering.com

J.A. BEAVAN
PROFESSIONAL ENGINEER
PENNSYLVANIA LICENSE No. PE082006
NEW YORK LICENSE No. 16 093204
NEW JERSEY LICENSE No. 24GE05039500

SHEET TITLE:

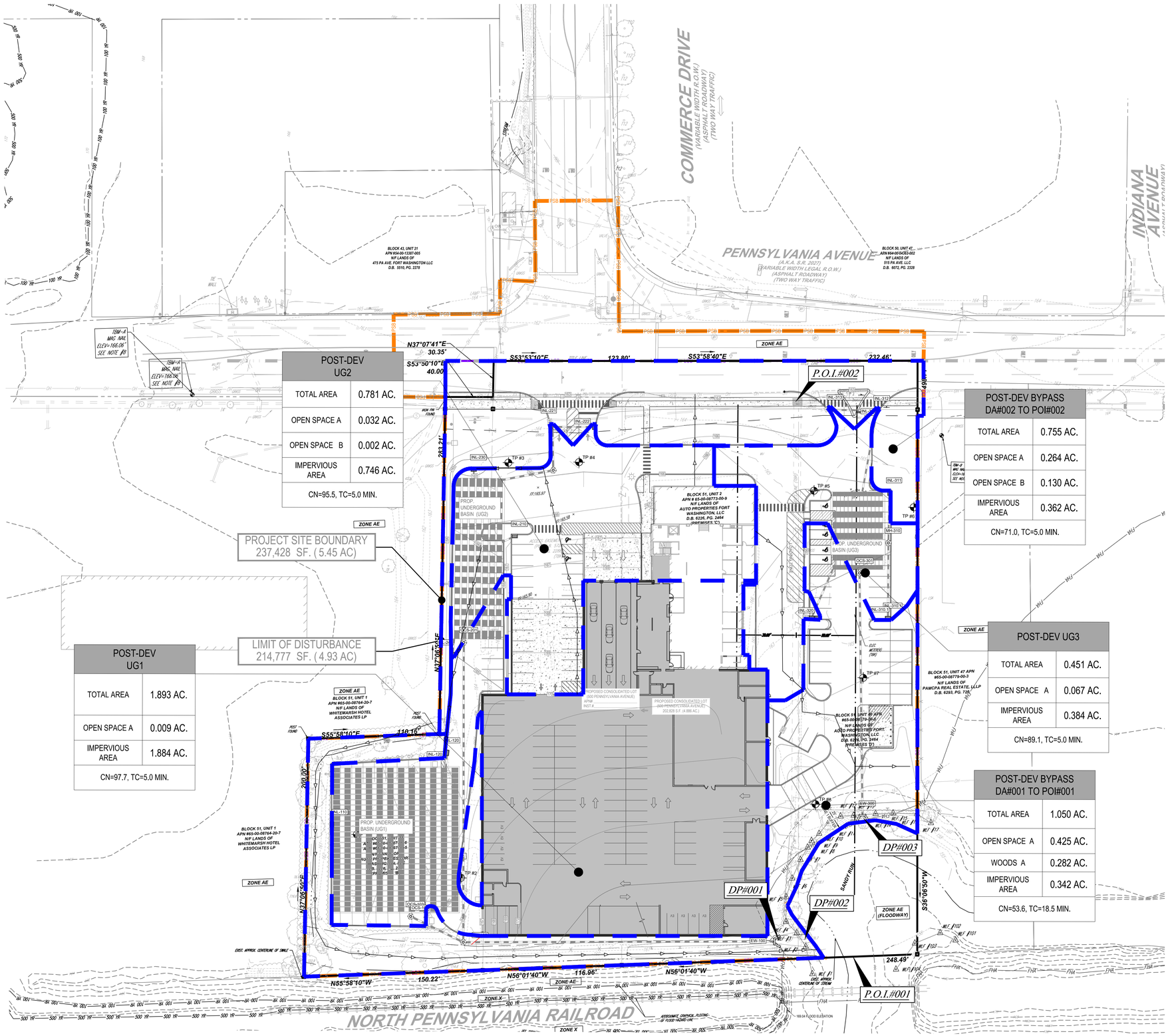
PRE DEVELOPMENT DRAINAGE AREA PLAN

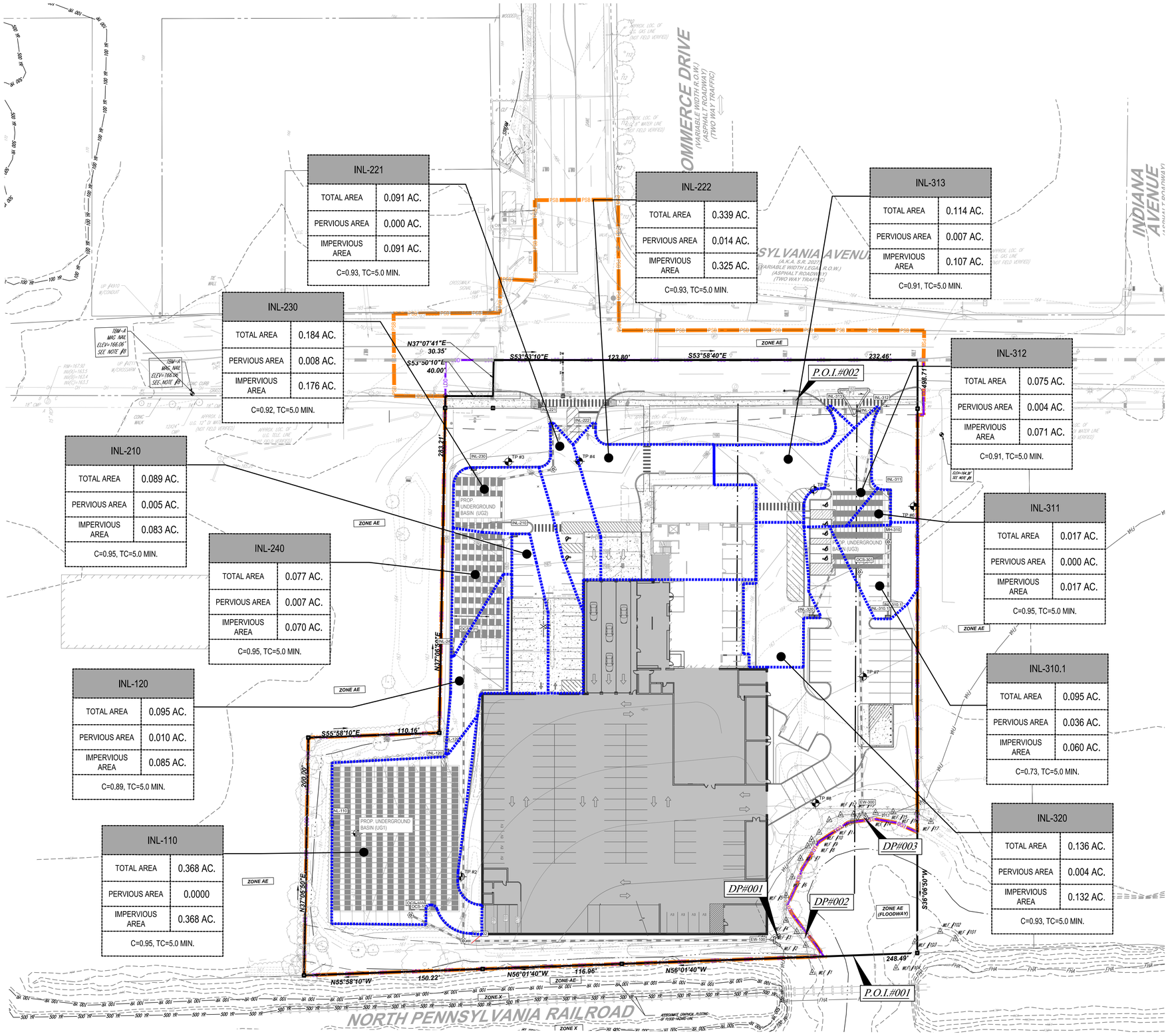
SHEET NUMBER:

C-1001

REVISION 4 - 9/20/2023

R:\2022\PAB220113.00\CAD\DRAWINGS\PLAN SETS\CIVIL SITE PLANS\PAB220113.00-DRIN-4A-----LAYOUT: C-1001 PRE
RSS


COMMERCE DRIVE
(VARIABLE WIDTH R.O.W.)
(ASPHALT ROADWAY)
(TWO WAY TRAFFIC)
PENNSYLVANIA AVENUE
(A.K.A. S.R. 2027)
(VARIABLE WIDTH LEGAL R.O.W.)
(ASPHALT ROADWAY)
(TWO WAY TRAFFIC)
INDIANA AVENUE
BLOCK 43, UNIT 21
APN 65-00-12307-005
N/F LANDS OF
475 PA AVE. FORT WASHINGTON LLC
D.B. 5510, PG. 2278
BLOCK 50, UNIT 47...
APN 65-00-09635-002
N/F LANDS OF
515 PA AVE. LLC
D.B. 6072, PG. 2328
TBM-A
MAG. NAIL
ELEV.= 166.06'
SEE NOTE #8
TBM-A
MAG. NAIL
ELEV.= 166.56'
SEE NOTE #8
N37°07'41"E
30.35'
S53°50'10"E
40.00'
S53°53'10"E
123.80'
S53°58'40"E
232.46'
ZONE AE
P.O.I.#002
INL-313
INL-312
INL-221
INL-222
INL-230
TP #3
TP #4
TP #5
TP #6
INL-311
INL-310
PROP. UNDERGROUND BASIN (UG2)
PROP. UNDERGROUND BASIN (UG3)
OCS-210
OCS-301
OCS-201
INL-320
INL-310.1
INL-310.2
ZONE AE
PROJECT SITE BOUNDARY
237,428 SF. (5.45 AC)
LIMIT OF DISTURBANCE
214,777 SF. (4.93 AC)
BLOCK 51, UNIT 2
APN # 65-00-08773-00-9
N/F LANDS OF
AUTO PROPERTIES FORT WASHINGTON, LLC
D.B. 6228, PG. 2464
(REF.MISC'S. 'C')
PROPOSED CONSOLIDATED LOT
(500 PENNSYLVANIA AVENUE)
APN#
INST.#
PROPOSED CONSOLIDATED LOT
(500 PENNSYLVANIA AVENUE)
202,828 S.F. (4.886 AC.)
BLOCK 51, UNIT 47 APN
#65-00-08779-00-3
N/F LANDS OF
PAMCPA REAL ESTATE, LLLP
D.B. 6293, PG. 725
BLOCK 51, UNIT 46 APN
#65-00-08779-00-6
N/F LANDS OF
AUTO PROPERTIES FORT WASHINGTON, LLC
D.B. 6228, PG. 2464
(REF.MISC'S. 'D')
BLOCK 51, UNIT 1
APN #65-00-08764-20-7
N/F LANDS OF
WHITEMARSH HOTEL ASSOCIATES LP
ZONE AE
INL-110
INL-120
OCS-101
OCS-102
TP #1
TP #2
TP #7
TP #8
EW-300
EW-100
DP#001
DP#002
DP#003
SANDY RUN
ZONE AE (FLOODWAY)
P.O.I.#001
S55°58'10"E
118.16'
200.00'
N37°07'50"E
283.21'
N37°05'50"W
496.95'
248.49'
N55°58'10"W
150.22'
N56°01'40"W
116.96'
N56°01'40"W
ZONE AE
ZONE X
NORTH PENNSYLVANIA RAILROAD
APPROXIMATE GRAPHICAL PLOTTING OF FLOOD HAZARD LINE
100-YEAR FLOOD ELEVATION
DIST. APPROX. CENTERLINE OF STREAM
DIST. APPROX. CENTERLINE OF SWALE
PROP. UNDERGROUND BASIN (UG1)
TOP 167.00
INV. IN 163.50
INV. OUT 163.40
TOP 167.00
INV. IN 163.50
INV. OUT 163.40
TOP 167.00
INV. IN 163.50
INV. OUT 163.40



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1	5/4/2023	NPDES SUBMISSION NPDES REV-0	KMP MSL
2	7/11/2023	SHADE TREE COMMISSION	HMP MSL
3	8/4/2023	NPDES SUBMISSION NPDES REV-1	HMP MSL
4	9/20/2023	TOWNSHIP RESUBMISSION	RMS MSL

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PROJECT No.:	PAB220113.00
DRAWN BY:	RMS
CHECKED BY:	MSL
DATE:	03/15/2023
CAD I.D.:	PAB220113.00-DRIN-4A

PROJECT:

FINAL LAND DEVELOPMENT PLANS

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74 W BROAD STREET, SUITE 500
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J.A. BEAVAN
PROFESSIONAL ENGINEER
PENNSYLVANIA LICENSE No. PE082006
NEW YORK LICENSE No. 16 093204
NEW JERSEY LICENSE No. 24GE05539500

SHEET TITLE:

INLET DRAINAGE AREA PLAN

SHEET NUMBER:

C-1003

REVISION 4 - 9/20/2023

R:\2022\PAB220113.00\CAD\DRAWINGS\PLAN SETS\CIVIL SITE PLANS\PAB220113.00-DRIN-4A_-_LAYOUT: C-1003 INL DA'S
RS

PRELIMINARY LAND DEVELOPMENT PLANS

FOR

MILEONE FORT WASHINGTON, LLC

PROPOSED

BMW AUTOMOTIVE DEALERSHIP EXPANSION

LOCATION OF SITE

500 PENNSYLVANIA AVENUE,
WHITEMARSH TOWNSHIP
MONTGOMERY COUNTY
COMMONWEALTH OF PENNSYLVANIA

DRAWING SHEET INDEX

SHEET TITLE	SHEET NUMBER
COVER SHEET	C-101 *
NOTES SHEET	C-102 *
EXISTING CONDITIONS/DEMOLITION PLAN	C-201
RECORD PLAN	C-301 *
EASEMENT PLAN	C-302 *
SITE PLAN	C-303 *
TRUCK TURNING PLAN	C-304, C-305
GRADING PLAN	C-401
UTILITY PLAN	C-501
SOIL EROSION AND SEDIMENT POLLUTION CONTROL PLAN	C-601, C-602
SOIL EROSION AND SEDIMENT POLLUTION CONTROL NOTES & DETAILS	C-603, C-604, C-605, C-606
POST CONSTRUCTION STORMWATER MANAGEMENT PLAN	C-607 *
POST CONSTRUCTION STORMWATER MANAGEMENT NOTES & DETAILS	C-608 *, C-609 *, C-610 *
LANDSCAPE PLAN	C-701
LANDSCAPE NOTES AND DETAILS	C-702
LIGHTING PLAN	C-703
PROFILES	C-801, C-802
DETAILS SHEET	C-901, C-902, C-903
DRAINAGE AREA PLANS	C-1001, C-1002, C-1003
LOT CONSOLIDATION PLAN	LC-01 *

* DENOTES PLAN SHEETS TO BE RECORDED

THE FOLLOWING VARIANCES ARE GRANTED FROM THE WHITEMARSH TOWNSHIP ZONING HEARING BOARD (RESOLUTION 2023-11):

1. A VARIANCE FROM §116-93.C - SO AS TO PERMIT AN IMPERVIOUS COVERAGE OF 70.9%, RATHER THAN THE 65.0% PERMITTED, AND TO PERMIT 29.1% GREEN SPACE, RATHER THAN THE 35% REQUIRED, AN IMPROVEMENT OF AN EXISTING NON-CONFORMITY ON THE OVERALL CONSOLIDATED SUBJECT PROPERTY.
2. A VARIANCE FROM §116-93.G - SO AS TO PERMIT A REAR YARD SETBACK OF 20 FEET, RATHER THAN THE 50 FEET WITH AN EXPANSION TO 80 FEET BASED ON THE HEIGHT OF THE BUILDING AS REQUIRED.
3. A VARIANCE FROM §116-94 - SO AS TO PERMIT A SIDE YARD SETBACK OF 35 FEET, RATHER THAN THE 50 FEET REQUIRED FOR A BUILDING HEIGHT OF 65 FEET, AND A FRONT YARD SETBACK OF 64.4 FEET, RATHER THAN THE 80 FEET REQUIRED FOR A BUILDING HEIGHT OF 65 FEET.
4. A SPECIAL EXCEPTION UNDER §116-96.A - SO AS TO PERMIT THE OUTSIDE DISPLAY AND/OR SALE OF VEHICLES ASSOCIATED WITH THE AUTOMOTIVE DEALERSHIP.
5. A SPECIAL EXCEPTION UNDER §116-104.B.(6) - SO AS TO PERMIT RETAIL SALES, WHOLESALE SALES, AND/OR CUSTOMER SERVICE IN THE CR-L DISTRICT.
6. A VARIANCE FROM §116-164.C - SO AS TO PERMIT DEVELOPMENT IN THE FLOODPLAIN WHERE THE EFFECT IS NOT FULLY OFFSET BY IMPROVEMENTS, UNDER CIRCUMSTANCES WHEREBY THE FLOOD HEIGHT WOULD BE INCREASED BY UP TO 4" WITHIN A LIMITED SECTION OF THE SITE, WITH NO ADVERSE EFFECTS TO THE CAPACITY OF THE CHANNEL OR THE FLOODWAY, OR UPSTREAM OR DOWNSTREAM CAPACITY OF THE FLOODPLAIN.
7. A VARIANCE FROM §116-164.D - SO AS TO PERMIT THE PROPOSED USE TO HAVE A SUPPLY OF MORE THAN 550 GALLONS OF PETROLEUM PRODUCTS, MATERIALS, AND OTHER SUBSTANCES ASSOCIATED WITH AN AUTOMOTIVE USE WITHIN THE FLOODPLAIN.
8. A VARIANCE FROM §116-1 65 - SO AS TO PERMIT THE EXPANSION OF AN EXISTING AUTOMOBILE DEALERSHIP WITHIN THE FLOODPLAIN CONSERVATION OVERLAY DISTRICT.
9. A VARIANCE FROM §116-169.B.(2) - SO AS TO PERMIT 40% DISTURBANCE TO MAN-MADE STEEP SLOPES (25+%) ON THE SITE, RATHER THAN THE 15% IS PERMITTED.
10. A VARIANCE FROM §116-184.B - SO AS TO PERMIT THE MINIMUM PARKING COUNT TO BE EXCEEDED BY MORE THAN 110% TO ACCOMMODATE INVENTORY STORAGE.
11. VARIANCE FROM §116-184.D - SO AS TO PERMIT MORE THAN 30 INDIVIDUAL PARKING SPACES TO BE PLACED TOGETHER IN ANY PARKING AREA, WITH DIMENSIONS OF THE PARKING AREA EXCEEDING 150 FEET, AND NOT INSTALLING PLANTING STRIPS OF NOT LESS THAN 10 FEET IN WIDTH BETWEEN PARKING ROWS, AS SHOWN ON THE PLANS, AS APPLICABLE TO THE PROPOSED PARKING DECKS AND CERTAIN EXISTING PARKING AREAS TO REMAIN.
12. A VARIANCE FROM §116-188.3 - SO AS TO PERMIT EV CHARGING SPACES PROVIDED ONLY BASED ON THE REQUIRED OFF-STREET PARKING SPACES, AND TO EXCLUDE INVENTORY STORAGE SPACES FROM THE REQUIREMENTS.
13. A VARIANCE FROM §116-259.B - SO AS TO PERMIT AN ENCROACHMENT INTO THE RIPARIAN CORRIDOR CONSERVATION DISTRICT ZONE ONE, INCLUDING A +135 FOOT PORTION OF THE BUILDING, IN AN AREA DEVELOPED WITH SURFACE PARKING IN THE EXISTING CONDITION.
14. VARIANCES FROM §116-259.C AND §116-260 - SO AS TO PERMIT AN ENCROACHMENT INTO THE RIPARIAN CORRIDOR CONSERVATION DISTRICT ZONE TWO, INCLUDING FOR THE BUILDING AND ASSOCIATED IMPROVEMENTS, TRASH ENCLOSURE, SITE ROADS, DRIVEWAYS, AND STRUCTURES, AS THE ENTIRE SITE IS LOCATED WITHIN THE RIPARIAN CORRIDOR CONSERVATION DISTRICT DUE TO THE 100-YEAR FLOODPLAIN DELINEATION.
15. VARIANCES FROM §101-21.D. AND §101-24.B - SO AS TO PERMIT CONSTRUCTION WITHIN AN IDENTIFIED FLOODPLAIN AREA CLOSER THAN 50 FEET TO THE TOP-OF-BANK OF A WATERCOURSE, IN ACCORDANCE WITH PADEP AND FEMA REQUIREMENTS.
16. A VARIANCE FROM §101-24.A.(12) - SO AS TO PERMIT THE PROPOSED USE TO HAVE A SUPPLY OF MORE THAN 550 GALLONS OF PETROLEUM PRODUCTS, MATERIALS, AND OTHER SUBSTANCES ASSOCIATED WITH AN AUTOMOTIVE USE WITHIN THE FLOODPLAIN.

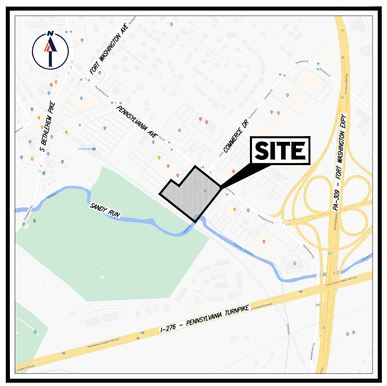
THE FOLLOWING WAIVERS WERE GRANTED FROM THE WHITEMARSH TOWNSHIP BOARD OF SUPERVISORS (RESOLUTION 2023-19):

1. FROM SALDO §105-21.(B).(1)(n) - FROM THE REQUIREMENT TO SHOW EXISTING FEATURES WITHIN 500 FEET OF THE SITE TO ALLOW AN AERIAL PLAN SHOWING FEATURES WITHIN 500 FEET OF THE PROJECT TO BE INCLUDED WITH THE PLAN SET.
2. FROM SALDO §105-21.(B).(13) - FROM THE REQUIREMENT THAT AN EXISTING RESOURCES AND SITE ANALYSIS (ERSA) PLAN BE SUBMITTED TO ALLOW THE SITE SURVEY TO SERVE AS SAME.
3. FROM SALDO §105-21.(B).(15) - FROM THE REQUIREMENT TO PROVIDE A PRELIMINARY RESOURCE IMPACT AND CONSERVATION PLAN TO ALLOW THE POST-CONSTRUCTION STORMWATER MANAGEMENT (PCSM) PLANS, DETAILS, AND NOTES TO SERVE AS SAME.
4. FROM SALDO §105-20.A AND 105-48.E - FROM THE REQUIREMENT THAT STREET TREES BE PLANTED WITHIN A TREE PLANTING ZONE OF LAWN AREA OR OTHER MATERIAL APPROVED BY THE SHADE TREE COMMISSION, SITUATED BETWEEN THE SIDEWALK AND CURB AND MEASURING A MINIMUM OF FIVE FEET IN WIDTH FROM THE PLANTING EDGE OF THE CURB TO THE PLANTING EDGE OF THE SIDEWALK, TO ALLOW STREET TREES TO BE PLANTED OUTSIDE OF THE TREE ZONE DUE TO UTILITY CONFLICTS AND AN EXISTING SANITARY SEWER EASEMENT ALONG THE SITE FRONTAGE. THE REQUIRED NUMBER OF STREET TREES SHALL BE PROVIDED ALONG THE SITE FRONTAGE
5. FROM SALDO §105-38.A - FROM THE REQUIREMENT TO PROVIDE 2-WAY AISLES OF A SIZE NOT LESS THAN 24 FEET FOR GO-DEFREE PARKING, HAVING A STALL DIMENSION OF NOT LESS THAN 9' X 18" IN ORDER TO PRESERVE AN EXISTING PARKING AREA IN THE SOUTHWESTERN CORNER OF THE PROPERTY TO BE UTILIZED FOR DEALERSHIP OPERATIONS AND ARE NOT INTENDED FOR CUSTOMER PARKING.
6. FROM SALDO §105-38.B - FROM THE REQUIREMENT THAT THE MAXIMUM WIDTH OF ENTRANCE AND EXIT DRIVES BE 35 FEET AT THE STREET LINE IN ORDER TO PROVIDE ALIGNMENT WITH OPPOSITE TRAVEL AND AUXILIARY LANES AND TO SATISFY PENNDOT DESIGN CRITERIA ALONG A STATE ROUTE.
7. FROM SALDO §105-38.C - FROM THE REQUIREMENT THAT CURVES/TURNS IN ENTRANCE AND EXIT DRIVES AND ALL INTERNAL PARKING LOT AISLES NECESSARY FOR PROVIDING ACCESS FOR FIRE PROTECTION EQUIPMENT SHALL HAVE A MINIMUM INSIDE TURNING RADIUS OF 25 FEET AND A MINIMUM OUTSIDE TURNING RADIUS OF 50 FEET, TO PERMIT CURB RADII OF LESS THAN 25 FEET, CONDITIONED ON THE APPLICANT PROVIDING THE TOWNSHIP WITH TRUCK TURNING TEMPLATES TO THE SATISFACTION OF THE TOWNSHIP FIRE MARSHAL AND THE TOWNSHIP ENGINEER SHOWING CIRCULATION THROUGHOUT THE PROPERTY.
8. FROM SALDO §105-38.D - FROM THE REQUIREMENT THAT PARKING AREAS BE DESIGNED TO PERMIT EACH MOTOR VEHICLE TO PROCEED TO AND FROM THE PARKING SPACE PROVIDED FOR IT WITHOUT REQUIRING THE MOVING OF ANY OTHER MOTOR VEHICLES, TO ALLOW DOUBLE-STACKED INVENTORY AND SERVICE/REPAIR PARKING SPACES WITHOUT A DIRECT ACCESS AISLE, AS THESE ARE INTENDED TO BE UTILIZED FOR DEALERSHIP OPERATIONS AND NOT TO MEET REQUIRED OFF-STREET PARKING REQUIREMENTS.
9. FROM SALDO §105-38.H - FROM THE REQUIREMENT THAT EXCEPT AT ENTRANCE AND EXIT DRIVES, ALL PARKING AREAS SHALL BE SET BACK FROM THE RIGHT-OF-WAY LINE AND ALL PROPERTY LINES AT LEAST 15 FEET, TO ALLOW A 4.9-FOOT SETBACK ALONG THE SOUTHEASTERN PROPERTY LINE FOR UP TO 13 INVENTORY STORAGE AND/OR SERVICE STORAGE SPACES.
10. FROM SALDO §105-38.I - FROM THE REQUIREMENT THAT NO MORE THAN 15 PARKING SPACES BE PERMITTED IN A CONTINUOUS ROW WITHOUT BEING INTERRUPTED BY A LANDSCAPING AREA OF NOT LESS THAN THE WIDTH OF A PARKING SPACE CONSTRUCTED IN ACCORDANCE WITH THE PLAN, TO PERMIT PARKING ROWS OF GREATER THAN 15 SPACES WITHOUT INTERRUPTION FOR PARKING SPACES LOCATED WITHIN THE PARKING STRUCTURE.
11. FROM SALDO §105-38.J - FROM THE REQUIREMENT THAT NO ONE AREA FOR OFF-STREET PARKING OF MOTOR VEHICLES SHALL EXCEED 30 CARS IN CAPACITY AND THAT SEPARATE AREAS ON A PARCEL SHALL BE PHYSICALLY SEPARATED FROM ONE ANOTHER BY TEN-FOOT-WIDE PLANTING STRIPS, TO PERMIT THE PROPOSED PARKING DECK BUILDING, TO ALLOW CERTAIN EXISTING PARKING AREAS (INCLUDING THE SOUTHWESTERN CORNER OF THE PROPERTY) TO REMAIN IN THEIR EXISTING PAVED STATE, AND FOR LIMITED DOUBLE-STACKED INVENTORY/SERVICE STORAGE SPACES ON THE PROPERTY.
12. FROM SALDO §105-38.O - FROM THE REQUIREMENT THAT PARKING AREAS BE LOCATED AT LEAST 10 FEET FROM ANY BUILDING OR STRUCTURE, TO ALLOW THE 14 PARKING SPACES LOCATED NEAR THE SERVICE DRIVE LANE TO REMAIN.
13. FROM SALDO §105-52.B.(2) - FROM THE REQUIREMENT THAT A MINIMUM 50-FOOT BUFFER YARD BE PROVIDED BETWEEN LAND DEVELOPMENTS, TO ALLOW AN ALTERNATIVE PLANTING OPTION FOR THE BUFFERS ALONG PENNSYLVANIA AVENUE AND THE SOUTHEASTERN PROPERTY LINE DUE TO LIMITED SITE AREA, CONDITIONED ON THE APPLICANT PROVIDING THE REQUIRED QUANTITY OF BUFFER PLANTINGS TO MEET THE SCREENING REQUIREMENTS
14. FROM SALDO §105-53.D - A PARTIAL WAIVER FROM THE REQUIREMENT OF DEDICATION OF LAND SUITABLE FOR PARK AND RECREATIONAL USE TO THE TOWNSHIP OR PAYMENT OF FEES IN LIEU THEREOF TO ALLOW THE APPLICANT TO COORDINATE WITH THE BOARD OF SUPERVISORS IN CONSIDERATION OF THE STREAM BEING PRESERVED AND ANTICIPATED EASEMENT TO THE COUNTY FOR USE IN EXTENDING THE CROSS-COUNTY TRAIL ALONG THE REAR OF THE PROPERTY
15. FROM SALDO §105-21.1.E - FROM THE REQUIREMENT THAT A TRAFFIC IMPACT FEE BE PAID TO ALLOW FOR THE PAYMENT OF A VOLUNTARY CONTRIBUTION IN ACCORDANCE WITH PARAGRAPH 8, ABOVE
16. FROM SALDO §58-30.A (9) - FROM THE REQUIREMENT THAT ALL STORMWATER DETENTION/RETENTION FACILITIES SHALL BE IN PLACE AND FUNCTIONING PRIOR TO THE CREATION OF ANY IMPERVIOUS SURFACE, TO PERMIT CONSTRUCTION OF IMPERVIOUS SURFACES PRIOR TO COMPLETION OF ALL ON-SITE STORMWATER FACILITIES, PROVIDED THAT ADEQUATE EROSION AND SEDIMENT POLLUTION CONTROLS ARE PROVIDED TO PREVENT SEDIMENT- LADEN WATER FROM LEAVING THE PROPERTY AND THAT EROSION AND SEDIMENT ADEQUACY AND AN NPDES PERMIT ARE OBTAINED FROM PADEP AND THE MONTGOMERY COUNTY CONSERVATION DISTRICT PRIOR TO COMMENCING CONSTRUCTION.
17.
18. FROM SALDO §58-34.B.(7)(d) - FROM THE REQUIREMENT THAT THE MINIMUM DIAMETER OF ALL STORM DRAINAGE PIPES SHALL BE 18 INCHES OR EQUIVALENT THERETO AND THAT ALL STORM PIPE SHALL BE REINFORCED CONCRETE PIPE WHICH CONFORMS TO THE PENNSYLVANIA DEPARTMENT OF TRANSPORTATION SPECIFICATIONS, OR WHITEMARSH TOWNSHIP SPECIFICATIONS, WHICHEVER ARE MORE STRINGENT, TO PERMIT STORMWATER PIPE SIZES UNDER 18 INCHES AND TO PERMIT HDPE PIPE IN LIEU OF THE REQUIRED REINFORCED CONCRETE PIPE
19. FROM SALDO §58-34.B.(7)(h) - FROM THE REQUIREMENT THAT STORM PIPES SHALL HAVE A MINIMUM 18-INCH DEPTH OF COVER OVER THE TOP OF PIPE, TO PERMIT ROOF LEADER PIPING TO HAVE A MINIMUM OF 12 INCHES OF COVER OVER THE TOP OF THE PIPE
20. FROM SALDO §55-4.C (3) AND 55-4.D (6) - FROM THE REQUIREMENT THAT REPLACEMENT TREES BE PROVIDED IN ACCORDANCE WITH THE ORDINANCE, TO PERMIT FEWER THAN THE REQUIRED NUMBER OF REPLACEMENT TREES DUE TO INSUFFICIENT PLANTING AREA

USGS MAP

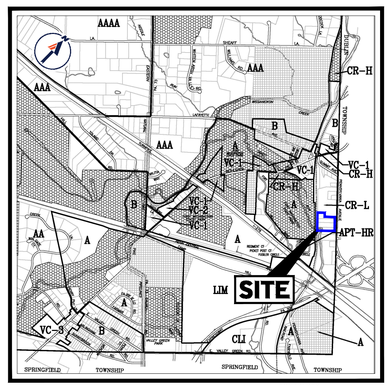
AMBLER QUAD

SCALE: 1"=2,000'



LOCATION MAP

SCALE: 1"=800'



ZONING MAP

SCALE: 1"=2,000'

ZONING KEY

CR-L - COMMERCIAL RETAIL

A - RESIDENTIAL (15,000 SF)

VC-1 - VILLAGE COMMERCIAL 1

▨ - RECREATION OVERLAY

PREPARED BY

BOHLER

(Rev. 1/2020)

SITE SPECIFIC NOTES

1. PROPERTY OWNER:
   AUTO PROPERTIES FORT WASHINGTON
   1 OLYMPIC PL, SUITE 1000, TOWSON, MD 21204
2. EXISTING PROPERTY INFORMATION:
   65-00-08773-00-3 , 65-00-087670-00-6 , 65-00-08773-00-9 , 65-00-08776-00-6
   500-512 PENNSYLVANIA AVE, FORT WASHINGTON, PA 19034
   ZONED GC-2 AND R-4
3. APPLICANT/EQUITABLE OWNER:
   MILEONE FORT WASHINGTON, LLC
   C/O DENNIS TURNBAUGH
   3301 BRIGGS CHANEY ROAD, SILVER SPRING, MD 20904
   (301) 679-4062
4. SITE AREA:
   GROSS AREA = 223,558 S.F. OR 5.132 AC.

   PARCEL DATA (PIN AND ADDRESS): PROPERTY KNOWN AS BLOCK 51, UNIT 41, APN #65-00-08770-00-3; BLOCK 51, UNIT 46, APN #65-00-08767-00-6; BLOCK 51, UNIT 2, APN #65-00-08773-00-9 & BLOCK 51, UNIT 44, APN #65-00-08776-00-6 AS IDENTIFIED ON THE OFFICIAL TAX MAP OF WHITEMARSH TOWNSHIP, COMMONWEALTH OF PENNSYLVANIA.
5. EXISTING NUMBER OF LOTS: FIVE (5)
   5.a. EXISTING LOT 1: APN 65000877003
   5.b. EXISTING LOT 2: APN 65000876706
   5.c. EXISTING LOT 3: APN 65000877309
   5.d. EXISTING LOT 4: APN 65000877606
   5.e. EXISTING LOT 5: APN 65000876705
6. PROPOSED NUMBER OF LOTS: ONE (1)
7. SOURCE OF TITLE: TITLE REPORT PREPARED BY CHICAGO TITLE INSURANCE COMPANY. TITLE NUMBER PHI210770. EFFECTIVE DATE 05/17/2021.
8. HORIZONTAL DATUM <IS BASED ON PENNSYLVANIA STATE PLANE SOUTH COORDINATES, NAD 83. VERTICAL DATUM IS NAVD 1988. BENCHMARK: 166.06'>.
9. BY GRAPHIC PLOTTING ONLY, THE PROPERTY IS LOCATED IN FLOOD HAZARD ZONE AE (BASE FLOOD ELEVATIONS DETERMINED) AS SHOWN ON THE FLOOD INSURANCE RATE MAP (FIRM), MONTGOMERY COUNTY, PENNSYLVANIA, (ALL JURISDICTIONS), PANEL 289 OF 451MAP NUMBER 42091C0289G, EFFECTIVE DATE: 03-02-2016.
10. THE AREA BETWEEN THE ULTIMATE AND LEGAL RIGHT-OF-WAY <OF THE ROAD SHALL BE OFFERED TO THE AGENCY HAVING JURISDICTION>.
11. ALL CURB AND PAVEMENT RADII ARE 5', UNLESS OTHERWISE NOTED.
12. ALL PROPOSED PINS AND MONUMENTS SHALL BE PLACED AND CERTIFIED BY A LICENSED PENNSYLVANIA PROFESSIONAL SURVEYOR.

STORMWATER MANAGEMENT OWNER CERTIFICATION

I, _____, ACKNOWLEDGE THAT THE STORMWATER BMPS ARE FIXTURES THAT CAN BE ALTERED OR REMOVED ONLY AFTER APPROVAL BY THE TOWNSHIP.

NAME

TITLE

DATE

STORMWATER BLANKET EASEMENT

A BLANKET STORMWATER EASEMENT IN FAVOR OF WHITEMARSH TOWNSHIP IS PROVIDED FOR ACCESS AND MAINTENANCE PURPOSES ON AND OVER THE PROPERTY, EXCEPT FOR THE PORTIONS OF THE PROPERTY ON WHICH BUILDINGS OR OTHER VERTICAL STRUCTURES HAVE BEEN ERECTED. THE TOWNSHIP OF WHITEMARSH SHALL HAVE THE RIGHT TO INSPECT ALL STORMWATER MANAGEMENT FEATURE AND FACILITIES AND TO REQUIRE REPAIRS, BUT NOT THE OBLIGATION TO MAKE SUCH REPAIRS.

STORMWATER FACILITIES SHALL BE OWNED AND MAINTAINED BY THE PROPERTY OWNER IN PERPETUITY. THE PROPERTY OWNER SHALL PROVIDE A BLANKET STORMWATER ACCESS EASEMENT TO THE TOWNSHIP FOR THE PURPOSE OF ACCESS TO THE STORMWATER FACILITIES. IF, IN THE JUDGEMENT OF THE TOWNSHIP ENGINEER, THE OWNER HAS FAILED TO MAINTAIN THE STORMWATER FACILITIES IN SUCH A MANNER AS TO ENSURE THEIR PROPER FUNCTIONING, THE TOWNSHIP AFTER PROVIDING A WRITTEN NOTICE, SHALL HAVE THE RIGHT TO ENTER UPON THE LANDS OF THE OWNER AND TO MAKE ANY REPAIRS AS MAY BE NECESSARY TO THE STORMWATER FACILITIES TO ENSURE THAT SUCH FACILITIES FUNCTION AND PERFORM IN ACCORDANCE WITH THE DESIGN SPECIFICATIONS. ANY AND ALL COSTS INCURRED BY THE TOWNSHIP FOR SUCH REPAIRS AND/OR MAINTENANCE SHALL BE PAID IN FULL BY THE OWNER. A LIEN OR LIENS MAY BE PLACED AGAINST THE PROPERTY IF THE OWNER FAILS TO REMIT PAYMENT WITHIN SIXTY (60) DAYS.

MCPC No.: (14-0121-003)

PROCESSED and REVIEWED. Report prepared by
Montgomery County Planning Commission
in accordance with the Municipalities Planning Code.

Certified this date _____

Montgomery County Planning Commission

RECORDER OF DEEDS

RECORDED IN THE OFFICE FOR THE RECORDING OF DEEDS IN AND FOR THE COUNTY OF MONTGOMERY, AT NORRISTOWN, PA. IN PLAN BOOK NO. _____ PAGE NO. _____ ON _____, 2017.

RECORDER

OWNER CERTIFICATION AND ACKNOWLEDGEMENT OF PLAN

I, DENNIS TURNBAUGH, HEREBY CERTIFY THAT AUTO PROPERTIES FOR WASHINGTON, LLC, IS THE REGISTERED OWNER OF THE LAND HEREIN PROPOSED TO BE DEVELOPED, AND THAT SAID OWNER ADOPTS THIS PLAN AND DESIRES THE SAME TO BE RECORDED. WITNESS MY HAND AND SEAL THIS ___ DAY OF _____, 20___.

AUTO PROPERTIES FORT WASHINGTON, LLC
BY: MILEONE FORT WASHINGTON, LLC
MEMBER

DENNIS TURNBAUGH, DIVISION PRESIDENT

ATTEST

COMMONWEALTH OF PENNSYLVANIA,
COUNTY OF MONTGOMERY:

ON THIS, THE _____ DAY OF _____, 20____, BEFORE ME, A NOTARY PUBLIC, THE UNDERSIGNED OFFICER, PERSONALLY APPEARED DENNIS TURNBAUGH, WHO ACKNOWLEDGED HIMSELF TO BE THE DIVISION PRESIDENT OF MILEONE FORT WASHINGTON, LLC, AND THAT HE AS SUCH, BEING AUTHORIZED TO DO SO, EXECUTED THE FOREGOING INSTRUMENT FOR THE PURPOSES THEREIN CONTAINED.

IN WITNESS WHEREOF, I HAVE HEREUNTO SET MY HAND AND OFFICIAL SEAL.

NOTARY PUBLIC

MY COMMISSION EXPIRES:_____

SURVEYOR'S CERTIFICATION

I, JAMES C. WEED, P.L.S., A REGISTERED PROFESSIONAL LAND SURVEYOR OF THE COMMONWEALTH OF PENNSYLVANIA, DO HEREBY CERTIFY THAT THIS PLAN CORRECTLY REPRESENTS THE METES AND BOUNDS AS SURVEYED BY ME ON _____, 20____, AND THAT THE LOCATION, SIZE AND MATERIAL OF EXISTING MARKERS ARE ACCURATELY SHOWN HEREON.

JAMES C. WEED

REGISTERED No.: #SU075250

DATE

MONUMENTATION CERTIFICATION:

I, JAMES C. WEED, P.L.S., A REGISTERED PROFESSIONAL LAND SURVEYOR OF THE COMMONWEALTH OF PENNSYLVANIA, DO HEREBY CERTIFY THAT ALL CONCRETE MONUMENTS HAVE BEEN SET OR FOUND BY ME ON _____, 20____, AS INDICATED AND SHOWN HEREON.

JAMES C. WEED

REGISTERED No.: #SU075250

DATE

ENGINEER'S CERTIFICATION

I, JEFFREY A. BEAVAN, P.E., A REGISTERED PROFESSIONAL ENGINEER OF THE COMMONWEALTH OF PENNSYLVANIA, DO HEREBY CERTIFY THAT THIS PLAN CORRECT IN ALL DETAILS AS PREPARED BY ME ON _____, 20____.

JEFFREY A. BEAVAN

REGISTERED No.: #PE082005

DATE

STORMWATER MANAGEMENT DESIGN ENGINEER CERTIFICATION

JEFFREY A. BEAVAN, P.E., ON THIS DATE _____ HAS REVIEWED AND HEREBY CERTIFIES THAT THE STORMWATER MANAGEMENT SITE PLAN MEETS ALL DESIGN STANDARDS AND CRITERIA OF CHAPTER 58, "GRADING, EROSION CONTROL, STORMWATER MANAGEMENT AND BEST MANAGEMENT PRACTICE.

JEFFREY A. BEAVAN

REGISTERED No.: #PE082005

REVIEW OF THE TOWNSHIP ENGINEER, WHITEMARSH TOWNSHIP:

THIS SUBDIVISION AND/OR LAND DEVELOPMENT PLAN WAS REVIEWED BY THE APPOINTED TOWNSHIP ENGINEER FOR WHITEMARSH TOWNSHIP ON THIS _____ DAY OF _____, 20____.

KRISTA HEINRICH, P.E.
TOWNSHIP ENGINEER

APPROVAL OF THE WHITEMARSH TOWNSHIP BOARD OF SUPERVISORS:

THIS SUBDIVISION AND/OR LAND DEVELOPMENT PLAN WAS APPROVED BY RESOLUTION OF THE BOARD OF SUPERVISORS OF WHITEMARSH TOWNSHIP ON THIS _____ DAY OF _____, 20____.

CHAIRMAN

SECRETARY

RECORD PLAN 1 OF 10

BOHLER
SITE CIVIL AND CONSULTING ENGINEERING
LAND SURVEYING
PROGRAM MANAGEMENT
LANDSCAPE ARCHITECTURE
SUSTAINABLE SOLUTIONS
PERMITTING SERVICES
TRANSPORTATION SERVICES

THE INFORMATION, DESIGN AND CONTENT OF THIS PLAN ARE COPYRIGHTED AND SHALL NOT BE COPIED OR USED FOR ANY PURPOSE WITHOUT THE EXPRESS AUTHORIZATION FROM BOHLER. ONLY APPROVED, SIGNED AND SEALED PLANS SHALL BE UTILIZED FOR CONSTRUCTION PURPOSES

REVISIONS

REV	DATE	COMMENT	DRAWN BY / CHECKED BY
1	5/4/2023	NPDES SUBMISSION NPDES REV-0	KMP MSL
2	7/11/2023	SHADE TREE COMMISSION	HMP MSL
3	8/4/2023	NPDES SUBMISSION NPDES REV-1	HMP MSL
4	9/20/2023	TOWNSHIP RESUBMISSION	RMS MSL

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www.pa1call.org

NOT APPROVED FOR CONSTRUCTION

THIS DRAWING IS INTENDED FOR MUNICIPAL AND/OR AGENCY REVIEW AND APPROVAL. IT IS NOT INTENDED AS A CONSTRUCTION DOCUMENT UNLESS INDICATED OTHERWISE.

PROJECT No.:	PAB220113.00
DRAWN BY:	RMS
CHECKED BY:	MSL
DATE:	03/15/2023
CAD I.D.:	PAB220113.00-CNDS-4A

PROJECT:

FINAL LAND DEVELOPMENT PLANS

FOR

MILEONE FORT WASHINGTON, LLC

BMW AUTOMOTIVE DEALERSHIP EXPANSION

500 PENNSYLVANIA AVENUE
WHITEMARSH TOWNSHIP
MONTGOMERY COUNTY, PA

BOHLER
74 W BROAD STREET, SUITE 500
BETHLEHEM, PA 18018
Phone: (610) 709-9971
Fax: (610) 709-9976
www.BohlerEngineering.com

JEFFREY A. BEAVAN
COMMONWEALTH OF PENNSYLVANIA
NOTARIAL SEAL
JEFFREY A. BEAVAN
Notary Public
PLYMOUTH TWP., MONTGOMERY COUNTY
MY COMMISSION EXPIRES JUNE 26, 2025
PROFESSIONAL ENGINEER
PE082005
COMMONWEALTH OF PENNSYLVANIA
NOT VALID FOR CONSTRUCTION UNLESS SIGNED AND SEALED
NEW JERSEY LICENSE No. 24GE04106500

SHEET TITLE:

COVER SHEET

SHEET NUMBER:

C-101

REVISION 4 - 9/20/2023

P:\2022\PAB220113.00\CAD\WHINDS\PLAN SET\CIVIL SITE PLANS\PAB220113.00-CNDS-4A—LAYOUT C-101 COVER

GENERAL NOTES

(Rev. 2/2021)

1. THESE PLANS ARE SOLELY BASED ON INFORMATION THE OWNER AND OTHERS PROVIDED TO BOHLER ENGINEERING, PENNSYLVANIA, LLC (HEREIN "BOHLER") PRIOR TO THE DATE ON WHICH THE ENGINEER OF RECORD AND BOHLER PREPARED THESE PLANS. THE CONTRACTOR MUST FIELD VERIFY ALL EXISTING CONDITIONS AND IMMEDIATELY NOTIFY BOHLER, IN WRITING, IF ANY ACTUAL SITE CONDITIONS DIFFER FROM THOSE SHOWN ON THESE PLANS, OR IF THE PROPOSED WORK CONFLICTS WITH ANY OTHER SITE FEATURES.

2. THE CONTRACTOR MUST STRICTLY COMPLY WITH THESE NOTES AND ALL SPECIFICATIONS/REPORTS CONTAINED HEREIN. THE CONTRACTOR MUST ENSURE THAT ALL SUBCONTRACTORS FULLY AND COMPLETELY CONFORM TO AND COMPLY WITH THESE REQUIREMENTS. THESE NOTES, AND THE REQUIREMENTS ARTICULATED IN THE NOTES CONTAINED IN ALL THE OTHER DRAWINGS THAT COMPRISE THE PLAN SET OF DRAWINGS. ADDITIONAL NOTES AND SPECIFIC PLAN NOTES MAY BE FOUND ON THE INDIVIDUAL PLANS. THESE GENERAL NOTES APPLY TO THIS ENTIRE DOCUMENT PACKAGE. IT IS THE CONTRACTOR'S RESPONSIBILITY TO REVIEW ALL CONSTRUCTION CONTRACT DOCUMENTS INCLUDING, BUT NOT LIMITED TO, ALL OF THESE DRAWINGS AND SPECIFICATIONS ASSOCIATED WITH THE PROJECT WORK SCOPE, PRIOR TO THE INITIATION AND COMMENCEMENT OF CONSTRUCTION.

3. PRIOR TO THE COMMENCEMENT OF CONSTRUCTION, THE CONTRACTOR MUST CONFIRM WITH THE ENGINEER OF RECORD AND BOHLER THAT THE LATEST EDITION OF THE DOCUMENTS AND/OR REPORTS REFERENCED WITHIN THE PLAN REFERENCES ARE BEING USED FOR CONSTRUCTION. THIS IS THE CONTRACTOR'S SOLE AND COMPLETE RESPONSIBILITY.

4. PRIOR TO THE COMMENCEMENT OF CONSTRUCTION, THE CONTRACTOR MUST ENSURE THAT ALL REQUIRED PERMITS AND APPROVALS HAVE BEEN OBTAINED. NO CONSTRUCTION OR FABRICATION IS TO BEGIN UNTIL THE CONTRACTOR HAS RECEIVED AND THOROUGHLY REVIEWED THE CONDITIONS OF APPROVAL TO ALL APPROVED PLANS AND PERMITS ISSUED BY THE PERMITTING AUTHORITIES AND HAS ALSO CONFIRMED THAT ALL NECESSARY AND REQUIRED PERMITS HAVE BEEN OBTAINED. THE CONTRACTOR MUST HAVE COPIES OF ALL PERMITS AND APPROVALS ON SITE AT ALL TIMES.

5. THE CONTRACTOR MUST ENSURE THAT ALL WORK IS PERFORMED IN ACCORDANCE WITH THESE PLANS, SPECIFICATIONS/REPORTS AND CONDITIONS OF APPROVAL AND ALL APPLICABLE REQUIREMENTS, RULES, REGULATIONS, STATUTES, REQUIREMENTS, CODES, LAWS AND STANDARDS OF ALL GOVERNMENTAL ENTITIES WITH JURISDICTION OVER THIS PROJECT, AND ALL PROVISIONS IN AND CONDITIONS OF THE CONSTRUCTION CONTRACT WITH THE OWNER/DEVELOPER INCLUDING ALL EXHIBITS, ATTACHMENTS AND ADDENDA TO SAME.

6. PRIOR TO THE COMMENCEMENT OF CONSTRUCTION, THE CONTRACTOR MUST COORDINATE THE BUILDING LAYOUT BY CAREFULLY REVIEWING THE MOST CURRENT ARCHITECTURAL, STRUCTURAL, MECHANICAL, ELECTRICAL, PLUMBING AND FIRE SUPPRESSION PLANS (WHERE APPLICABLE). THE CONTRACTOR MUST IMMEDIATELY NOTIFY OWNER, ARCHITECT AND ENGINEER OF RECORD AND BOHLER, IN WRITING, OF ANY CONFLICTS, DISCREPANCIES OR AMBIGUITIES WHICH EXIST BETWEEN THESE PLANS AND ANY OTHER PLANS THAT COMPRISE THE CONSTRUCTION DOCUMENTS.

7. CONTRACTOR MUST REFER TO AND ENSURE COMPLIANCE WITH THE APPROVED ARCHITECTURAL/BUILDING PLANS OF RECORD FOR EXACT LOCATIONS AND DIMENSIONS OF ENTRY/EXIT POINTS, ELEVATIONS, PRECISE BUILDING DIMENSIONS, AND EXACT BUILDING UTILITY LOCATIONS.

8. THE CONTRACTOR MUST FIELD VERIFY ALL DIMENSIONS AND MEASUREMENTS SHOWN ON THESE PLANS, PRIOR TO THE COMMENCEMENT OF CONSTRUCTION. THE CONTRACTOR MUST IMMEDIATELY NOTIFY ENGINEER OF RECORD AND BOHLER, IN WRITING, IF ANY CONFLICTS, DISCREPANCIES, OR AMBIGUITIES EXIST PRIOR TO PROCEEDING WITH CONSTRUCTION. NO EXTRA COMPENSATION WILL BE ALLOWED TO THE CONTRACTOR FOR WORK WHICH HAS TO BE RE-DONE OR REPAIRED DUE TO DIMENSIONS, MEASUREMENTS OR GRADES SHOWN INCORRECTLY ON THESE PLANS PRIOR TO BOTH (A) THE CONTRACTOR GIVING ENGINEER OF RECORD AND BOHLER WRITTEN NOTIFICATION OF SAME AND (B) ENGINEER OF RECORD AND BOHLER, THEREAFTER, PROVIDING THE CONTRACTOR WITH WRITTEN AUTHORIZATION TO PROCEED WITH SUCH ADDITIONAL WORK.

9. THE CONTRACTOR MUST VERIFY ALL DIMENSIONS AND MEASUREMENTS INCLUDED ON DESIGN DOCUMENTS HEREIN AND MUST NOT SCALE OFF THE DRAWINGS SET. IN ADDITION, ALL DIMENSIONS AND MEASUREMENTS ARE TO BE CHECKED AND CONFIRMED BY THE CONTRACTOR AND THE GENERAL CONTRACTOR PRIOR TO PREPARATION OF SHOP DRAWINGS, FABRICATION/ORDERING OF PARTS AND MATERIALS AND COMMENCEMENT OF SITE WORK. SITE PLAN DRAWINGS ARE NOT INTENDED AS SURVEY DOCUMENTS. DIMENSIONS SUPERSEDE GRAPHICAL REPRESENTATIONS. THE CONTRACTOR MUST MAKE CONTRACTORS OWN MEASUREMENTS FOR IMPLEMENTATION OF IMPROVEMENTS.

10. THE OWNER AND CONTRACTOR MUST BE FAMILIAR WITH AND RESPONSIBLE FOR THE PROCUREMENT OF ANY AND ALL CERTIFICATIONS REQUIRED FOR THE ISSUANCE OF A CERTIFICATE OF OCCUPANCY.

11. WHEN INCLUDED AS ONE OF THE REFERENCED DOCUMENTS, THE GEOTECHNICAL REPORT, SPECIFICATIONS AND RECOMMENDATIONS SET FORTH THEREIN ARE A PART OF THE REQUIRED CONSTRUCTION DOCUMENTS AND, IN CASE OF CONFLICT, DISCREPANCY OR AMBIGUITY, THE MORE RESTRICTIVE OR HIGHER STANDARD SHALL GOVERN. THE CONTRACTOR MUST REVIEW AND BE FAMILIAR WITH THE GEOTECHNICAL REPORT AND RECOMMENDATIONS, MUST TAKE PRECEDENCE UNLESS SPECIFICALLY NOTED OTHERWISE ON THE PLANS. THE CONTRACTOR MUST NOTIFY THE ENGINEER OF RECORD AND BOHLER, IN WRITING, OF ANY SUCH CONFLICT, DISCREPANCY OR AMBIGUITY BETWEEN THE GEOTECHNICAL REPORT AND PLANS AND SPECIFICATIONS, PRIOR TO PROCEEDING WITH WORK. IF A GEOTECHNICAL REPORT WAS NOT CREATED, THEN THE CONTRACTOR MUST FOLLOW AND COMPLY WITH ALL OF THE REQUIREMENTS OF ANY AND ALL MUNICIPAL, COUNTY, STATE, AND FEDERAL LAWS AND APPLICABLE SPECIFICATIONS WHICH HAVE JURISDICTION OVER THIS PROJECT.

12. ENGINEER OF RECORD AND BOHLER ARE NEITHER LIABLE NOR RESPONSIBLE FOR ANY SUBSURFACE CONDITIONS AND FURTHER, HAS NO LIABILITY FOR ANY HAZARDOUS MATERIALS, HAZARDOUS WASTE OR CONTAMINATION, ABOVE OR UNDER THE PROPERTY.

13. THE CONTRACTOR IS RESPONSIBLE FOR IDENTIFYING WHEN AND WHERE SHORING IS REQUIRED AND FOR INSTALLING ALL SHORING REQUIRED DURING EXCAVATION (TO BE PERFORMED IN ACCORDANCE WITH CURRENT OSHA STANDARDS) AND ANY ADDITIONAL PRECAUTIONS TO BE TAKEN TO ASSURE THE STABILITY OF ADJACENT, NEARBY AND CONTIGUOUS STRUCTURES AND PROPERTIES. ALL OF THIS WORK IS TO BE PERFORMED AT CONTRACTORS COST AND EXPENSE.

14. THE CONTRACTOR MUST EXERCISE EXTREME CAUTION WHEN PERFORMING ANY WORK ACTIVITIES ADJACENT TO PAVEMENT, STRUCTURES, ETC. WHICH ARE TO REMAIN EITHER FOR AN INITIAL PHASE OF THE PROJECT OR AS PART OF THE FINAL CONDITION. THE CONTRACTOR IS RESPONSIBLE FOR TAKING ALL APPROPRIATE MEASURES REQUIRED TO ENSURE THE STRUCTURAL STABILITY OF SIDEWALKS AND PAVEMENT, UTILITIES, BUILDINGS, AND INFRASTRUCTURE WHICH ARE TO REMAIN, AND TO PROVIDE A SAFE WORK AREA FOR THIRD PARTIES, PEDESTRIANS AND ANYONE INVOLVED WITH THE PROJECT.

15. DEBRIS MUST NOT BE BURIED ON THE SUBJECT SITE. ALL DEMOLITION AND CONSTRUCTION WASTES, UNSUITABLE EXCAVATED MATERIAL, EXCESS SOIL AND DEBRIS (SOLID WASTE) MUST BE DISPOSED OF IN ACCORDANCE WITH THE REQUIREMENTS OF ANY AND ALL MUNICIPAL, COUNTY, STATE, AND FEDERAL LAWS AND APPLICABLE CODES WHICH HAVE JURISDICTION OVER THIS PROJECT OR OVER THE CONTRACTOR.

16. IT IS THE CONTRACTOR'S SOLE RESPONSIBILITY TO MAINTAIN RECORDS TO DEMONSTRATE PROPER AND FULLY COMPLIANT DISPOSAL ACTIVITIES, TO BE PROMPTLY PROVIDED TO THE OWNER UPON REQUEST.

17. THE CONTRACTOR MUST REPAIR, AT CONTRACTOR'S SOLE COST, ALL DAMAGE DONE TO ANY NEW OR EXISTING CONSTRUCTION OR PROPERTY DURING THE COURSE OF CONSTRUCTION, INCLUDING BUT NOT LIMITED TO DRAINAGE, UTILITIES, PAVEMENT, STRIPING, CURB, ETC. AND MUST BEAR ALL COSTS ASSOCIATED WITH SAME TO INCLUDE, BUT NOT BE LIMITED TO, REDESIGN, RE-SURVEY, RE-PERMITTING AND CONSTRUCTION. THE CONTRACTOR IS RESPONSIBLE FOR AND MUST REPLACE ALL SIGNAL INTERCONNECTION CABLE, WIRING CONDUITS, AND ANY UNDERGROUND ACCESSORY EQUIPMENT DAMAGED DURING CONSTRUCTION AND MUST BEAR ALL COSTS ASSOCIATED WITH SAME. THE REPAIR OF ANY SUCH NEW OR EXISTING CONSTRUCTION OR PROPERTY MUST RESTORE SUCH CONSTRUCTION OR PROPERTY TO A CONDITION EQUIVALENT TO OR BETTER THAN THE CONDITIONS PRIOR TO COMMENCEMENT OF THE CONSTRUCTION, AND IN CONFORMANCE WITH APPLICABLE CODES, LAWS, RULES, REGULATIONS, STATUTORY REQUIREMENTS AND STATUTES. THE CONTRACTOR MUST BEAR ALL COSTS ASSOCIATED WITH SAME. THE CONTRACTOR MUST, PROMPTLY, DOCUMENT ALL EXISTING DAMAGE AND NOTIFY, IN WRITING, THE OWNER AND THE CONSTRUCTION MANAGER PRIOR TO THE START OF CONSTRUCTION.

18. THE ENGINEER OF RECORD AND BOHLER ARE NOT RESPONSIBLE FOR AND HAVE NO CONTRACTUAL, LEGAL OR OTHER RESPONSIBILITIES FOR JOB SITE SAFETY JOB SITE SUPERVISION, OR ANYTHING RELATED TO SAME. THE ENGINEER OF RECORD AND BOHLER HAVE NOT BEEN RETAINED TO PERFORM OR TO BE RESPONSIBLE FOR JOB SITE SAFETY, SAME BEING WHOLLY OUTSIDE OF ENGINEER OF RECORD'S AND BOHLER SERVICES AS RELATED TO THIS PROJECT. THE ENGINEER OF RECORD AND BOHLER ARE NOT RESPONSIBLE TO IDENTIFY OR REPORT ANY JOB SITE SAFETY ISSUES OR ANY JOB SITE CONDITIONS, AT ANY TIME.

19. THE CONTRACTOR MUST IMMEDIATELY IDENTIFY IN WRITING, TO THE ENGINEER OF RECORD AND BOHLER , ANY DISCREPANCIES THAT MAY OR COULD AFFECT THE PUBLIC SAFETY, HEALTH OR GENERAL WELFARE OR PROJECT COST. IF THE CONTRACTOR PROCEEDS WITH CONSTRUCTION WITHOUT PROVIDING PROPER WRITTEN NOTIFICATION AS DESCRIBED ABOVE, IT WILL BE AT THE CONTRACTOR'S OWN RISK AND, FURTHER, THE CONTRACTOR MUST INDEMNIFY, DEFEND AND HOLD HARMLESS THE ENGINEER OF RECORD AND BOHLER FOR ANY AND ALL DAMAGES, COSTS, INJURIES, ATTORNEY'S FEES AND THE LIKE WHICH RESULT FROM OR ARE IN ANY WAY RELATED TO SAME INCLUDING, BUT NOT LIMITED TO, ANY THIRD PARTY AND FIRST PARTY CLAIMS.

20. THE ENGINEER OF RECORD AND BOHLER ARE NOT RESPONSIBLE FOR ANY INJURY OR DAMAGES RESULTING FROM THE CONTRACTOR'S FAILURE TO BUILD OR CONSTRUCT IN STRICT ACCORDANCE WITH THE APPROVED PLANS, AND CURRENT CODES, RULES, STATUTES AND THE LIKE. IF THE CONTRACTOR AND/OR OWNER ELECT TO BUILD OR CONSTRUCT ANY IMPROVEMENTS IN A MANNER THAT FAILS TO COMPLY WITH CODES AND STATE LIKE, THE CONTRACTOR AND/OR OWNER AGREE TO AND MUST JOINTLY, INDEPENDENTLY, SEPARATELY, AND SEVERALLY INDEMNIFY AND HOLD THE ENGINEER OF RECORD AND BOHLER HARMLESS FOR AND FROM ALL INJURIES, CLAIMS AND DAMAGES THAT ENGINEER AND BOHLER SUFFER AND ANY AND ALL COSTS THAT ENGINEER AND BOHLER INCUR AS A RESULT THEREOF.

21. ALL CONTRACTORS MUST CARRY AT LEAST THE MINIMUM AMOUNT OF THE SPECIFIED AND COMMERCIALLY REASONABLE STATUTORY WORKER'S COMPENSATION INSURANCE, EMPLOYER'S LIABILITY INSURANCE AND COMMERCIAL GENERAL LIABILITY INSURANCE (CGL) INCLUDING ALSO ALL UMBRELLA COVERAGES. ALL CONTRACTORS MUST HAVE THEIR CGL POLICIES ENDORSED TO NAME BOHLER , AND ITS PAST, PRESENT AND FUTURE OWNERS, OFFICERS, DIRECTORS, PARTNERS, SHAREHOLDERS, MEMBERS, PRINCIPALS, COMMISSIONERS, AGENTS, SERVANTS, EMPLOYEES, AFFILIATES, SUBSIDIARIES, AND RELATED ENTITIES, AND ITS SUBCONTRACTORS AND SUBCONSULTANTS AS ADDITIONAL NAMED INSUREDS AND TO PROVIDE CONTRACTUAL LIABILITY COVERAGE SUFFICIENT TO INSURE (DEFEND, IF APPLICABLE) AND HOLD HARMLESS AND INDEMNITY OBLIGATIONS ASSUMED AND AGREED TO BY THE CONTRACTOR HEREIN. ALL CONTRACTORS MUST FURNISH BOHLER WITH CERTIFICATIONS OF INSURANCE OR CERTIFICATES OF INSURANCE AS EVIDENCE OF THE REQUIRED INSURANCE COVERAGES PRIOR TO COMMENCING ANY WORK AND UPON RENEWAL OF EACH POLICY DURING THE ENTIRE PERIOD OF CONSTRUCTION AND FOR TWO YEARS AFTER THE COMPLETION OF CONSTRUCTION AND AFTER ALL PERMITS ARE ISSUED, WHICHEVER DATE IS LATER. IN ADDITION, ALL CONTRACTORS AGREE THAT THEY WILL, TO THE FULLEST EXTENT PERMITTED UNDER THE LAW, INDEMNIFY, DEFEND AND HOLD HARMLESS BOHLER , AND ITS PAST, PRESENT AND FUTURE OWNERS, OFFICERS, DIRECTORS, PARTNERS, SHAREHOLDERS, MEMBERS, PRINCIPALS, COMMISSIONERS, AGENTS, SERVANTS, EMPLOYEES, AFFILIATES, SUBSIDIARIES, AND RELATED ENTITIES, AND ITS SUBCONTRACTORS AND SUBCONSULTANTS AGAINST ANY DAMAGES, INJURIES, CLAIMS, ACTIONS, PENALTIES, EXPENSES, PUNITIVE DAMAGES, STATUTORY CLAIMS, STATUTORY CAUSES OF ACTION, LOSSES, CAUSES OF ACTION, LIABILITIES OR COSTS, INCLUDING, BUT NOT LIMITED TO, REASONABLE ATTORNEYS' FEES AND DEFENSE COSTS, ARISING OUT OF OR IN ANY WAY CONNECTED WITH OR TO THE PROJECT, INCLUDING ALL CLAIMS BY EMPLOYEES OF THE CONTRACTOR(S), ALL CLAIMS BY THIRD PARTIES AND ALL CLAIMS RELATED TO THE PROJECT. THE CONTRACTOR MUST NOTIFY ENGINEER, IN WRITING, AT LEAST THIRTY (30) DAYS PRIOR TO ANY TERMINATION, SUSPENSION OR CHANGE OF ITS INSURANCE HEREUNDER.

22. THE ENGINEER OF RECORD AND BOHLER ARE NOT RESPONSIBLE FOR CONSTRUCTION METHODS, MEANS, TECHNIQUES OR PROCEDURES, GENERALLY OR FOR THE CONSTRUCTION MEANS, METHODS, TECHNIQUES OR PROCEDURES FOR COMPLETION OF THE WORK DEPICTED BOTH ON THESE PLANS, AND FOR ANY CONFLICTS IN SCOPE AND REVISIONS THAT RESULT FROM SAME. THE CONTRACTOR IS FULLY AND SOLELY RESPONSIBLE FOR DETERMINING THE MEANS AND METHODS FOR COMPLETION OF THE WORK, PRIOR TO THE COMMENCEMENT OF CONSTRUCTION.

23. NEITHER THE PROFESSIONAL ACTIVITIES OF BOHLER, NOR THE PRESENCE OF BOHLER AND/OR ITS PAST, PRESENT AND FUTURE OWNERS, OFFICERS, DIRECTORS, PARTNERS, SHAREHOLDERS, MEMBERS, PRINCIPALS, COMMISSIONERS, AGENTS, SERVANTS, EMPLOYEES, AFFILIATES, SUBSIDIARIES, AND RELATED ENTITIES, AND ITS SUBCONTRACTORS AND SUBCONSULTANTS AT A CONSTRUCTION/PROJECT SITE (HEREIN "BOHLER PARTIES"), RELIEVES OR WILL RELIEVE THE CONTRACTOR OF AND FROM CONSTRUCTION MEANS, METHODS, SEQUENCE, TECHNIQUES OR PROCEDURES NECESSARY FOR PERFORMING, OVERSEEING, SUPERINTENDING AND COORDINATING THE WORK IN ACCORDANCE WITH THE CONTRACT DOCUMENTS AND COMPLIANCE WITH ALL HEALTH AND SAFETY PRECAUTIONS REQUIRED BY ANY REGULATORY AGENCIES WITH JURISDICTION OVER THE PROJECT AND/OR PROPERTY. BOHLER PARTIES HAVE NO AUTHORITY TO EXERCISE ANY CONTROL OVER ANY CONSTRUCTION (OR ANY RESPONSIBILITY FOR) ANY CONSTRUCTION, THE CONTRACTOR OR ITS EMPLOYEES RELATING TO THEIR WORK AND ANY AND ALL HEALTH AND SAFETY PROGRAMS OR PROCEDURES. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR JOB SITE SAFETY. THE CONTRACTOR MUST INDEMNIFY, DEFEND, PROTECT AND HOLD HARMLESS BOHLER PARTIES FOR AND FROM ANY LIABILITY TO BOHLER PARTIES RESULTING FROM THE CONTRACTOR'S WORK, SERVICES AND/OR VIOLATIONS OF THIS NOTE, THESE NOTES OR ANY NOTES IN THE PLAN SET AND, FURTHER, THE CONTRACTOR MUST NAME BOHLER AS AN ADDITIONAL INSURED UNDER THE GENERAL CONTRACTOR'S POLICIES OF GENERAL LIABILITY INSURANCE AS DESCRIBED ABOVE.

24. WHEN IT IS CLEARLY AND SPECIFICALLY WITHIN BOHLER'S SCOPE OF SERVICES CONTRACT WITH THE OWNER/DEVELOPER, BOHLER WILL REVIEW OR TAKE OTHER APPROPRIATE ACTION ON THE CONTRACTOR SUBMITTALS, SUCH AS SHOP DRAWINGS, PRODUCT DATA, SAMPLES, AND OTHER DATA, WHICH THE CONTRACTOR IS REQUIRED TO SUBMIT, BUT ONLY FOR THE LIMITED PURPOSE OF EVALUATING CONFORMANCE WITH THE DESIGN INTENT AND THE INFORMATION SHOWN IN THE CONSTRUCTION CONTRACT DOCUMENTS. CONSTRUCTION MEANS AND METHODS AND/OR TECHNIQUES OR PROCEDURES, COORDINATION OF THE WORK WITH OTHER TRADES, AND CONSTRUCTION SAFETY PRECAUTIONS ARE THE SOLE RESPONSIBILITY OF THE CONTRACTOR AND BOHLER HAS NO RESPONSIBILITY OR LIABILITY FOR SAME. BOHLER WILL PERFORM ITS SHOP DRAWING REVIEW WITH REASONABLE PROMPTNESS, AS CONDITIONS PERMIT. ANY DOCUMENT, DOCUMENTING BOHLER'S REVIEW OF A SPECIFIC ITEM OR LIMITED SCOPE, MUST NOT INDICATE THAT BOHLER HAS REVIEWED THE ENTIRE ASSEMBLY OF WHICH THE ITEM IS A COMPONENT. BOHLER IS NOT RESPONSIBLE FOR ANY DEVIATIONS FROM THE CONSTRUCTION DOCUMENTS. THE CONTRACTOR MUST, IN WRITING, PROMPTLY AND IMMEDIATELY BRING ANY DEVIATIONS FROM THE CONSTRUCTION DOCUMENTS TO BOHLER'S ATTENTION. BOHLER IS NOT REQUIRED TO REVIEW PARTIAL SUBMISSIONS OR THOSE FOR WHICH SUBMISSIONS OF CORRELATED ITEMS HAVE NOT BEEN RECEIVED.

25. IF THE CONTRACTOR DEVIATES FROM THESE PLANS AND/OR SPECIFICATIONS, INCLUDING THE NOTES CONTAINED HEREIN, WITHOUT FIRST OBTAINING THE PRIOR WRITTEN AUTHORIZATION OF THE ENGINEER OF RECORD AND BOHLER FOR ALL DEVIATIONS WITHIN ENGINEER'S SCOPE, THE CONTRACTOR IS SOLELY RESPONSIBLE FOR THE PAYMENT OF ALL COSTS INCURRED IN CORRECTING ANY WORK PERFORMED WHICH DEVIATES FROM THE PLANS. ALL FINES AND/OR PENALTIES ASSESSED WITH RESPECT THERETO AND ALL COMPENSATORY OR PUNITIVE DAMAGES RESULTING THEREFROM AND, FURTHER, MUST DEFEND, INDEMNIFY, PROTECT, AND HOLD HARMLESS THE ENGINEER OF RECORD AND BOHLER PARTIES TO THE FULLEST EXTENT PERMITTED UNDER THE LAW, FOR AND FROM ALL FEES, ATTORNEYS' FEES, DAMAGES, COSTS, JUDGMENTS, CLAIMS, INJURIES, PENALTIES AND THE LIKE RELATED TO SAME.

26. THE CONTRACTOR IS RESPONSIBLE FOR A MAINTAINING AND PROTECTING THE TRAFFIC CONTROL PLAN AND ELEMENTS IN ACCORDANCE WITH FEDERAL, STATE, AND LOCAL REQUIREMENTS, FOR ALL WORK THAT AFFECTS PUBLIC TRAVEL EITHER IN THE RIGHT OF WAY OR ON SITE. THE COST FOR THIS ITEM MUST BE INCLUDED IN THE CONTRACTOR'S PRICE AND IS THE CONTRACTOR'S SOLE RESPONSIBILITY.

27. OWNER MUST MAINTAIN AND PRESERVE ALL PHYSICAL SITE FEATURES AND DESIGN FEATURES DEPICTED ON THE PLANS AND RELATED DOCUMENTS IN STRICT ACCORDANCE WITH THE APPROVED PLAN(S) AND DESIGN; AND, FURTHER, THE ENGINEER OF RECORD AND BOHLER ARE NOT RESPONSIBLE FOR ANY FAILURE TO SO MAINTAIN OR PRESERVE SITE AND/OR DESIGN FEATURES. IF OWNER FAILS TO MAINTAIN AND/OR PRESERVE ALL PHYSICAL SITE FEATURES AND/OR DESIGN FEATURES DEPICTED ON THE PLANS AND RELATED DOCUMENTS, OWNER AGREES TO INDEMNIFY AND HOLD THE ENGINEER OF RECORD AND BOHLER PARTIES, HARMLESS FOR ALL INJURIES, DAMAGES AND COSTS THAT ENGINEER OF RECORD AND BOHLER INCUR AS A RESULT OF SAID FAILURE OR FAILURE TO PRESERVE.

28. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR ENSURING THAT ALL CONSTRUCTION ACTIVITIES AND MATERIALS COMPLY WITH AND CONFORM TO APPLICABLE FEDERAL, STATE AND LOCAL RULES AND REGULATIONS, LAWS, ORDINANCES, AND CODES, AND ALL APPLICABLE REQUIREMENTS OF THE OCCUPATIONAL SAFETY AND HEALTH ACT OF 1970, (29 U.S.C. 651 ET SEQ.) AS AMENDED, AND ANY MODIFICATIONS, AMENDMENTS OR REVISIONS TO SAME.

29. THE CONTRACTOR MUST STRICTLY COMPLY WITH THE LATEST AND CURRENT OSHA STANDARDS AND REGULATIONS, AND/OR ANY OTHER AGENCY WITH JURISDICTION OVER EXCAVATION AND TRENCHING PROCEDURES. ENGINEER OF RECORD AND BOHLER HAS NO RESPONSIBILITY FOR OR AS RELATED TO EXCAVATION AND TRENCHING PROCEDURES AND WORK.

30. THE CONTRACTOR AND THE OWNER MUST INSTALL ALL ELEMENTS AND COMPONENTS IN STRICT COMPLIANCE WITH AND IN ACCORDANCE WITH MANUFACTURER'S STANDARDS AND RECOMMENDED INSTALLATION CRITERIA AND SPECIFICATIONS. IF THE CONTRACTOR AND/OR OWNER FAIL TO DO SO, THEY AGREE TO JOINTLY, INDEPENDENTLY, SEPARATELY, COLLECTIVELY, AND SEVERALLY INDEMNIFY, DEFEND, PROTECT AND HOLD ENGINEER OF RECORD AND BOHLER PARTIES HARMLESS FOR ALL INJURIES AND DAMAGES THAT ENGINEER SUFFERS AND COSTS THAT ENGINEER INCURS AS A RESULT OF SAID FAILURE.

31. THE CONTRACTOR IS RESPONSIBLE TO MAINTAIN AN ON-SITE STORMWATER POLLUTION PREVENTION PLAN (SWPPP) IN COMPLIANCE WITH THE ENVIRONMENTAL PROTECTION AGENCY (EPA) REQUIREMENTS OR LOCAL GOVERNING AGENCY FOR SITES WHERE ONE (1) ACRE OR MORE IS DISTURBED BY CONSTRUCTION ACTIVITIES, OR LESS THAN ONE ACRE IF LOCAL JURISDICTION REQUIRES A DIFFERENT THRESHOLD. THE CONTRACTOR MUST ENSURE THAT ALL ACTIVITIES, INCLUDING THOSE OF ALL SUBCONTRACTORS, ARE IN COMPLIANCE WITH THE SWPPP, INCLUDING BUT NOT LIMITED TO LOGGING ACTIVITIES (MINIMUM ONCE PER WEEK AND AFTER RAINFALL EVENTS) AND CORRECTIVE MEASURES, AS APPROPRIATE AND FURTHER, THE CONTRACTOR IS SOLELY AND COMPLETELY RESPONSIBLE FOR FAILING TO DO SO.

32. AS CONTAINED IN THESE DRAWINGS AND ASSOCIATED DOCUMENTS PREPARED BY THE ENGINEER OF RECORD AND BOHLER, THE USE OF THE WORDS 'CERTIFY' OR 'CERTIFICATION' CONSTITUTE(S) AN EXPRESSION ONLY OF PROFESSIONAL OPINION REGARDING THE INFORMATION WHICH IS THE SUBJECT OF THE STATEMENT OF RECORD'S AND BOHLER KNOWLEDGE OR BELIEF AND IN ACCORDANCE WITH COMMON AND ACCEPTED PROCEDURE CONSISTENT WITH THE APPLICABLE STANDARDS OF PRACTICE, AND DOES NOT CONSTITUTE A WARRANTY OR GUARANTEE OF ANY NATURE OR TYPE, EITHER EXPRESSED OR IMPLIED, UNDER ANY CIRCUMSTANCES.

33. IT IS THE CONTRACTOR'S RESPONSIBILITY TO HAVE SUBMITTALS PREPARED FOR ANY CONSTRUCTION DETAILED ITEMS AND TO COORDINATE THE SUBMITTALS WITH THE RESPECTIVE GOVERNING AGENCIES OR SERVICE PROVIDERS, WHO SHALL HAVE THE FINAL AUTHORITY IN APPROVING THE SUBMITTALS.

DEMOLITION NOTES

(Rev. 2/2021)

1. THE GENERAL NOTES MUST BE INCLUDED AS PART OF THIS ENTIRE DOCUMENT PACKAGE AND ARE PART OF THE CONTRACT DOCUMENTS. THE GENERAL NOTES ARE REFERENCED HEREIN, AND THE CONTRACTOR MUST REFER TO THEM AND FULLY COMPLY WITH THESE NOTES, IN THEIR ENTIRETY. THE CONTRACTOR MUST BE FAMILIAR WITH AND ACKNOWLEDGE FAMILIARITY WITH ALL OF THE GENERAL NOTES AND ALL OF THE PLANS' SPECIFIC NOTES.

2. THE CONTRACTOR MUST CONDUCT DEMOLITION/REMOVALS ACTIVITIES IN SUCH A MANNER AS TO ENSURE MINIMUM INTERFERENCE WITH ROADS, STREETS, SIDEWALKS, WALKWAYS, AND ALL OTHER ADJACENT FACILITIES. THE CONTRACTOR MUST OBTAIN ALL APPLICABLE PERMITS FROM THE APPROPRIATE GOVERNMENTAL AUTHORITY(IES) PRIOR TO THE COMMENCEMENT OF ANY DEMOLITION ACTIVITIES IN OR ADJACENT TO THE RIGHT-OF-WAY.

3. WHEN DEMOLITION-RELATED ACTIVITIES IMPACT ROADWAYS AND/OR ROADWAY RIGHT-OF-WAY, THE CONTRACTOR MUST PROVIDE TRAFFIC CONTROL AND GENERALLY ACCEPTED PRACTICES IN ACCORDANCE WITH THE LATEST EDITION OF THE FEDERAL HIGHWAY ADMINISTRATION "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" (MUTCD), AND THE FEDERAL, STATE, AND LOCAL REGULATIONS.

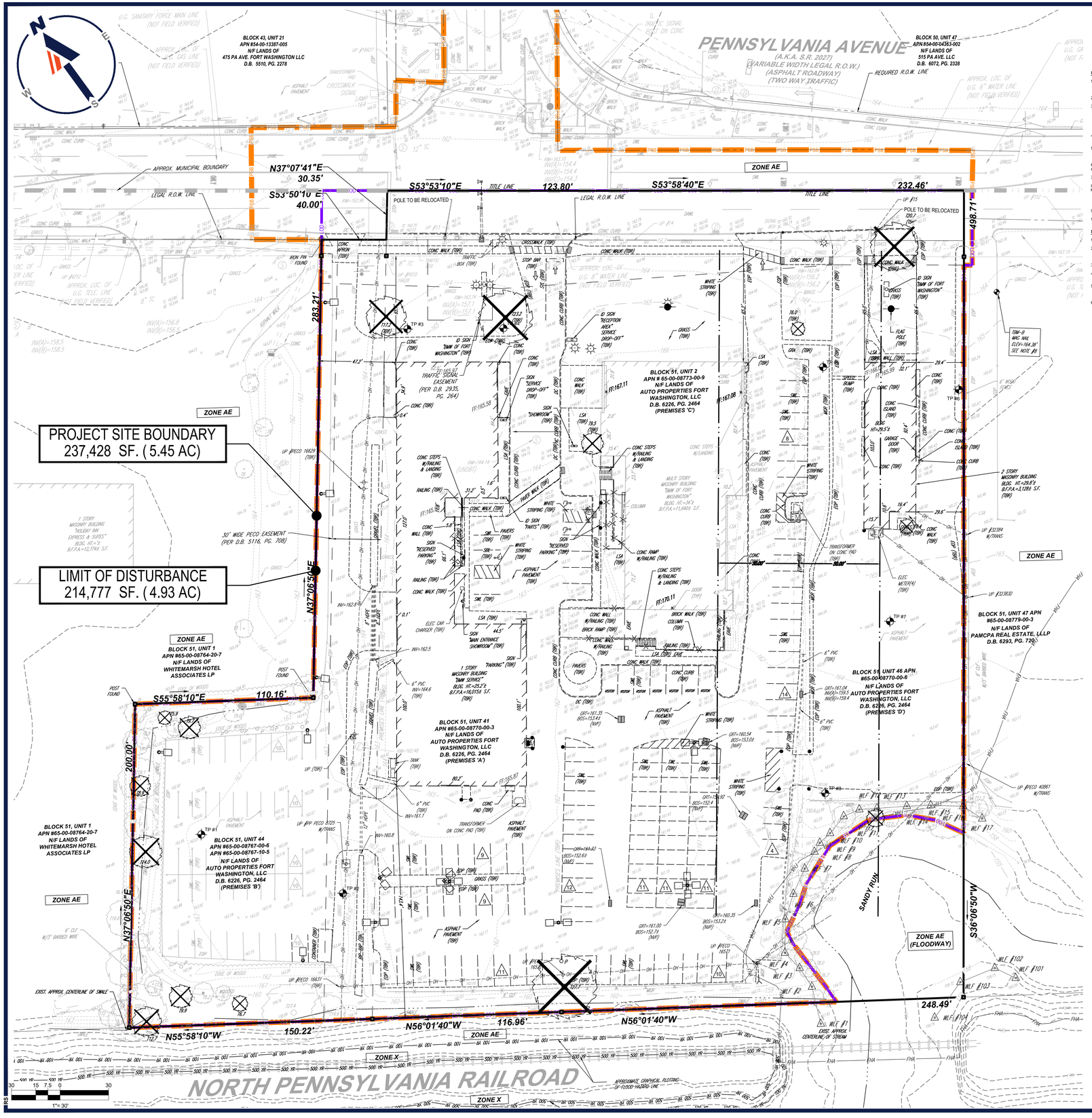
4. THE DEMOLITION (AND/OR REMOVALS) PLAN IS INTENDED TO PROVIDE GENERAL INFORMATION AND TO IDENTIFY ONLY CONDITIONS REGARDING ITEMS TO BE DEMOLISHED, REMOVED, AND/OR TO REMAIN.
   A. THE CONTRACTOR MUST ALSO REVIEW ALL CONSTRUCTION DOCUMENTS AND INCLUDE WITHIN THE DEMOLITION ACTIVITIES ALL INCIDENTAL WORK NECESSARY FOR THE CONSTRUCTION OF THE NEW SITE IMPROVEMENTS.
   B. THIS PLAN IS NOT INTENDED TO AND DOES NOT ADDRESS SEQUENCING THE MEANS, METHODS, SEQUENCING, TECHNIQUES AND PROCEDURES TO BE EMPLOYED TO ACCOMPLISH THE WORK. ALL MEANS, METHODS, SEQUENCING, TECHNIQUES AND PROCEDURES TO BE USED MUST BE IN STRICT ACCORDANCE AND CONFORMANCE WITH ALL STATE, FEDERAL, LOCAL, AND JURISDICTIONAL REQUIREMENTS. THE CONTRACTOR MUST COMPLY WITH ALL OSHA AND OTHER SAFETY PRECAUTIONS NECESSARY TO PROVIDE A SAFE WORK SITE FOR THE CONTRACTOR AND THE PUBLIC.

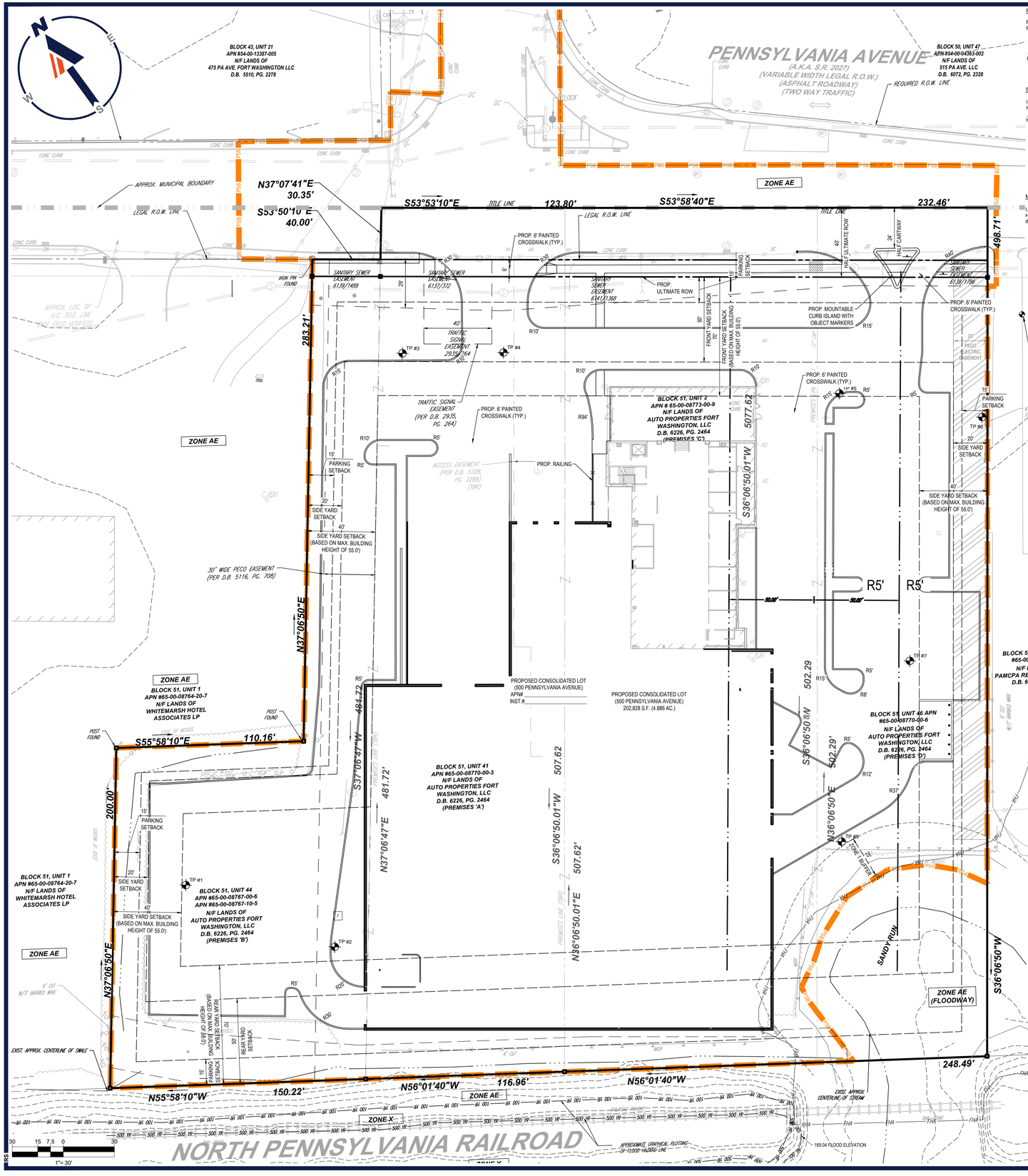
5. THE CONTRACTOR MUST PROVIDE ALL "METHODS AND MEANS" NECESSARY TO PREVENT MOVEMENT, SETTLEMENT, OR COLLAPSE OF EXISTING STRUCTURES AND IMPROVEMENTS THAT ARE REMAINING ON OR OFF SITE. THE CONTRACTOR, AT THE CONTRACTOR'S SOLE COST, MUST REPAIR ALL DAMAGE TO ALL ITEMS AND FEATURES THAT ARE TO REMAIN. CONTRACTOR MUST USE NEW MATERIAL FOR ALL REPAIRS. CONTRACTOR'S REPAIRS MUST INCLUDE THE RESTORATION OF ALL ITEMS AND FEATURES REPAIRED TO THEIR PRE-DEMOLITION CONDITION, OR BETTER. CONTRACTOR MUST PERFORM ALL REPAIRS AT THE CONTRACTOR'S SOLE EXPENSE.

6. ENGINEER OF RECORD AND BOHLER ARE NOT RESPONSIBLE FOR JOB SITE SAFETY OR SUPERVISION. THE CONTRACTOR MUST PROCEED WITH THE DEMOLITION IN A SYSTEMATIC AND SAFE MANNER, COMPLYING WITH ALL OSHA REQUIREMENTS, TO ENSURE PUBLIC AND CONTRACTOR SAFETY AND SAFETY TO ALL PROPERTY ON THE SITE OR ADJACENT OR NEAR TO THE SAME.

7. THE CONTRACTOR IS RESPONSIBLE FOR JOB SITE SAFETY, WHICH MUST INCLUDE, BUT IS NOT LIMITED TO, THE INSTALLATION AND MAINTENANCE OF BARRIERS, FENCING, OTHER APPROPRIATE AND/OR NECESSARY SAFETY FEATURES AND ITEMS NECESSARY TO PROTECT THE PUBLIC FROM AREAS OF CONSTRUCTION AND CONSTRUCTION ACTIVITIES. THE CONTRACTOR MUST SATISFY ALL REQUIREMENTS NECESSARY TO PROTECT THE DEMOLITION IN SUCH A MANNER AS TO PREVENT THE ENTRY OF ALL UNAUTHORIZED PERSONS AT ANY TIME, TO OR NEAR THE DEMOLITION AREA.

8. PRIOR TO THE COMMENCEMENT OF ANY SITE ACTIVITY AND ANY DEMOLITION ACTIVITY, THE CONTRACTOR MUST, IN WRITING, RAISE ANY QUESTIONS CONCERNING THE ACCURACY OR INTENT OF THESE PLANS AND/OR SPECIFICATIONS, ALL CONCERNS OR QUESTIONS REGARDING THE APPLICABLE SAFETY STANDARDS, AND/OR THE SAFETY OF THE CONTRACTOR AND/OR THIRD PARTIES IN


PENNSYLVANIA AVENUE
(A.K.A. S.R. 2027)
(VARIABLE WIDTH LEGAL R.O.W.)
(ASPHALT ROADWAY)
(TWO WAY TRAFFIC)
REQUIRED R.O.W. LINE
BLOCK 43, UNIT 21
APN #54-00-13387-005
N/F LANDS OF
475 PA AVE. FORT WASHINGTON LLC
D.B. 5510, PG. 2278
BLOCK 50, UNIT 47
APN #54-00-04363-002
N/F LANDS OF
515 PA AVE. LLC
D.B. 6072, PG. 2328
APPROX. MUNICIPAL BOUNDARY
LEGAL R.O.W. LINE
N37°07'41"E
30.35'
S53°50'10"E
40.00'
S53°53'10"E
123.80'
S53°58'40"E
232.46'
TITLE LINE
POLE TO BE RELOCATED
POLE TO BE RELOCATED
498.71'
283.21'
ZONE AE
PROJECT SITE BOUNDARY
237,428 SF. (5.45 AC)
LIMIT OF DISTURBANCE
214,777 SF. (4.93 AC)
30' WIDE PECO EASEMENT
(PER D.B. 5116, PG. 708)
N37°06'50"E
200.00'
S55°58'10"E
110.16'
N55°58'10"W
150.22'
N56°01'40"W
116.96'
N56°01'40"W
248.49'
S36°06'50"W
EXIST. APPROX. CENTERLINE OF SWALE
EXIST. APPROX. CENTERLINE OF STREAM
BLOCK 51, UNIT 2
APN # 65-00-08773-00-9
N/F LANDS OF
AUTO PROPERTIES FORT
WASHINGTON, LLC
D.B. 6226, PG. 2464
(PREMISES 'C')
BLOCK 51, UNIT 1
APN #65-00-08764-20-7
N/F LANDS OF
WHITEMARSH HOTEL
ASSOCIATES LP
BLOCK 51, UNIT 41
APN #65-00-08770-00-3
N/F LANDS OF
AUTO PROPERTIES FORT
WASHINGTON, LLC
D.B. 6226, PG. 2464
(PREMISES 'A')
BLOCK 51, UNIT 44
APN #65-00-08767-00-6
APN #65-00-08767-10-5
N/F LANDS OF
AUTO PROPERTIES FORT
WASHINGTON, LLC
D.B. 6226, PG. 2464
(PREMISES 'B')
BLOCK 51, UNIT 46 APN
#65-00-08770-00-6
N/F LANDS OF
AUTO PROPERTIES FORT
WASHINGTON, LLC
D.B. 6226, PG. 2464
(PREMISES 'D')
BLOCK 51, UNIT 47 APN
#65-00-08779-00-3
N/F LANDS OF
PAMCPA REAL ESTATE, LLLP
D.B. 6293, PG. 729
ZONE AE
ZONE X
ZONE AE (FLOODWAY)
NORTH PENNSYLVANIA RAILROAD
APPROXIMATE GRAPHICAL PLOTTING OF FLOOD HAZARD LINE
TBM-A: MAG NAIL SET IN, ELEVATION = 166.06'
TBM-B: MAG NAIL SET IN, ELEVATION = 164.38'
TBM-B MAG NAIL ELEV= 164.38' SEE NOTE #8
1 STORY MASONRY BUILDING "HOLIDAY INN EXPRESS & SUITES" BLDG. HT.= 3 B.F.F.A.= 12,774± S.F.
MULTI STORY MASONRY BUILDING "TOWN OF FORT WASHINGTON" BLDG. HT.=34'± B.F.F.A.=11,640± S.F.
2 STORY MASONRY BUILDING BLDG. HT.=29.8'± B.F.F.A.=3,128± S.F. (TBR)
1 STORY MASONRY BUILDING "SUN SERVICE" BLDG. HT.=25.2'± B.F.F.A.=16,015± S.F. (TBR)
1 STORY MASONRY BUILDING "MAN ENTRANCE SHOWROOM" (TBR)
1 STORY MASONRY BUILDING "PARKING" (TBR)
TRANSFORMER ON CONC PAD (TBR)
TRANSFORMER ON CONC PAD
ELEC METER(4) (TBR)
ELEC CAR CHARGER (TBR)
TP #1
TP #2
TP #3
TP #5
TP #6
TP #7
TP #8
TP #9
TP #10
SANDY RUN
WLF #1
WLF #2
WLF #3
WLF #4
WLF #5
WLF #6
WLF #7
WLF #8
WLF #9
WLF #10
WLF #11
WLF #12
WLF #13
WLF #14
WLF #15
WLF #16
WLF #17
WLF #101
WLF #102
WLF #103
WLF #104
FHA
SIGN "RESERVED PARKING" (TBR)
SIGN "PARKING" (TBR)
SIGN "SHOWROOM" (TBR)
SIGN "SERVICE DROP-OFF" (TBR)
ID SIGN "RECEPTION AREA SERVICE DROP-OFF" (TBR)
ID SIGN "TOWN OF FORT WASHINGTON" (TBR)
ID SIGN "PARTS" (TBR)
FLAG POLE (TBR)
GRASS PAVERS (TBR)
ASPHALT PAVEMENT (TBR)
CONC WALK (TBR)
CONC CURB (TBR)
CONC STEPS W/RAILING & LANDING (TBR)
CONC RAMP W/RAILING (TBR)
BRICK WALK (TBR)
WHITE STRIPING (TBR)
HANDI MAN (TBR)
RAILING (TBR)
CONC WALL W/RAILING (TBR)
CONC PAD (TBR)
CONC ISLAND (TBR)
GARAGE DOOR (TBR)
DOOR (TYP)
COLUMN (TBR)
SPEED BUMP (TBR)
LSA (TBR)
SWK (TBR)
DRIVE (TBR)
CROSSWALK (TBR)
STOP BAR (TBR)
TRAFFIC BOX (TBR)
TRAFFIC SIGNAL EASEMENT (PER D.B. 2935, PG. 264)
TRAFFIC SIGNAL EQUIP ON CONC PAD (TBR)
UP #F15
UP #F14
UP #F13
UP #F12
UP #F11
UP #F10
UP #F9
UP #F8
UP #F7
UP #F6
UP #F5
UP #F4
UP #F3
UP #F2
UP #F1
UP #32,934 W/TRANS
UP #32,933 W/TRANS
UP #PECO 40861 W/TRANS
UP #PECO 3725 W/TRANS
UP #PECO 16629 (TBR)
UP #PECO 16631 (TBR)
UP #PECO 16570
UP #PECO 16571
UP #PECO 16572
UP #PECO 16573
UP #PECO 16574
UP #PECO 16575
UP #PECO 16576
UP #PECO 16577
UP #PECO 16578
UP #PECO 16579
UP #PECO 16580
UP #PECO 16581
UP #PECO 16582
UP #PECO



RECORDER OF DEEDS

RECORDED IN THE OFFICE FOR THE RECORDING OF DEEDS IN AND FOR THE COUNTY OF MONTGOMERY, AT NORRISTOWN, PA, IN PLAN BOOK NO. _____ PAGE NO. _____ ON _____, 2017.

_____
RECORDER

SURVEYOR'S CERTIFICATION

I, JAMES C. WEED, P.L.S., A REGISTERED PROFESSIONAL LAND SURVEYOR OF THE COMMONWEALTH OF PENNSYLVANIA, DO HEREBY CERTIFY THAT THIS PLAN CORRECTLY REPRESENTS THE METES AND BOUNDS AS SURVEYED BY ME ON _____, AND THAT THE LOCATION, SIZE AND MATERIAL OF EXISTING MARKERS ARE ACCURATELY SHOWN HEREON.

_____
JAMES C. WEED

_____
REGISTERED No.: #SU075250

_____
DATE

MONUMENTATION CERTIFICATION:

I, JAMES C. WEED, P.L.S., A REGISTERED PROFESSIONAL LAND SURVEYOR OF THE COMMONWEALTH OF PENNSYLVANIA, DO HEREBY CERTIFY THAT ALL CONCRETE MONUMENTS HAVE BEEN SET OR FOUND BY ME ON _____, AS INDICATED AND SHOWN HEREON.

_____
JAMES C. WEED

_____
REGISTERED No.: #SU075250

_____
DATE

ENGINEER'S CERTIFICATION

I, JEFFREY A. BEAVAN, P.E., A REGISTERED PROFESSIONAL ENGINEER OF THE COMMONWEALTH OF PENNSYLVANIA, DO HEREBY CERTIFY THAT THIS PLAN CORRECT IN ALL DETAILS AS PREPARED BY ME ON _____, 2017.

_____
JEFFREY A. BEAVAN

_____
REGISTERED No.: #PE082005

_____
DATE

REVIEW OF THE TOWNSHIP ENGINEER, WHITEMARSH TOWNSHIP:

THIS SUBDIVISION AND/OR LAND DEVELOPMENT PLAN WAS REVIEWED BY THE APPOINTED TOWNSHIP ENGINEER FOR WHITEMARSH TOWNSHIP ON THIS _____ DAY OF _____, 20___.

_____
KRISTA HEINRICH, P.E.
TOWNSHIP ENGINEER

APPROVAL OF THE WHITEMARSH TOWNSHIP BOARD OF SUPERVISORS:

THIS SUBDIVISION AND/OR LAND DEVELOPMENT PLAN WAS APPROVED BY RESOLUTION OF THE BOARD OF SUPERVISORS OF WHITEMARSH TOWNSHIP ON THIS _____ DAY OF _____, 20___.

_____ _____
CHAIRMAN SECRETARY

ZONING REQUIREMENTS:

REQUIREMENTS TAKEN FROM: WHITEMARSH TOWNSHIP, MONTGOMERY COUNTY, COMMONWEALTH OF PENNSYLVANIA. (6/22/2016)

ZONING: CR-L (COMMERCIAL RETAIL-LOW DISTRICT) WITH RIPARIAN CORRIDOR CONSERVATION, FLOODPLAIN CONSERVATION, AND STEEP SLOPES OVERLAY DISTRICTS
EXISTING USE: AUTOMOTIVE RETAIL, **PROPOSED USE:** AUTOMOTIVE RETAIL **(SPECIAL EXCEPTION GRANTED)**

OVERALL BULK REQUIREMENTS	REQUIRED	EXISTING (CONSOLIDATED LOTS)	PROPOSED CONSOLIDATED LOT
MINIMUM LOT AREA (TO ULT. ROW) [1]	5 AC. (MIN.)	208,647 SF (4.790 AC.)	NO CHANGE
MINIMUM LOT AREA (TO ULT. ROW)	[2]	208,647 SF (4.790 AC.)	NO CHANGE
MINIMUM BUILDING SETBACKS:			
FRONT YARD SETBACK: (PENNSYLVANIA AVE)	MIN. = 50 FT. *REQD = 70 FT	65.2 FT.	64.4 FT.
SIDE YARD SETBACK: [3]	MIN. = 20 FT. *REQD = 40 FT	47.2 FT.	35.1 FT.
REAR YARD SETBACK: [3]	MIN. = 50 FT. *REQD = 70 FT.	143.4 FT.	28.9 FT. **(V-A)**
MINIMUM PARKING SETBACKS:			
FRONT YARD SETBACK:	15 FT.	117.6 FT.	115.8 FT.
SIDE YARD SETBACK:	15 FT.	19.7 FT.	22.4 FT.
REAR YARD SETBACK:	15 FT.	17.4 FT.	41.4 FT.
MAXIMUM REQUIREMENTS:			
MAXIMUM BUILDING COVERAGE:	40%	15.3% (30,513 SF.)	32.5% (69,182 SF.)
MAXIMUM IMPERVIOUS COVERAGE:	65%	74.8% (159,131 SF)	70.8% (147,896 SF.)**(V-A)**
MAXIMUM BUILDING HEIGHT: [3]	35 FT., 65 FT. MAX.	31 FT	65.0 FT
MINIMUM GREEN SPACE AREA:	35%		(29.2%) 60,751 **(V-A)**
REAR YARD COVERAGE (ACCESSORY USES/STRUCTURES) [4]	30%	28.4% (19,834 SF.)	8.2% (5,728 SF.)

(ENC) = EXISTING NON-CONFORMITY
(V) = VARIANCE REQUESTED
(V-A) = VARIANCE APPROVED

[1] DISTRICT AREA. THE MINIMUM AREA WHICH MAY BE CLASSIFIED AS A CR COMMERCIAL RETAIL DISTRICT SHALL BE 5 ACRES.

[2] THE MINIMUM AREA FOR A SINGLE STRUCTURE OR DEVELOPMENT SHALL BE DETERMINED BY THE LAND USE, PARKING AND OTHER REQUIREMENTS.

[3] THE MAXIMUM HEIGHT OF ANY BUILDING ERECTED OR USED IN THIS DISTRICT SHALL BE 35 FEET, EXCEPT THAT THE HEIGHT OF ANY BUILDING MAY BE INCREASED TO A MAXIMUM OF 65 FEET, PROVIDED THAT FOR EVERY FOOT OF HEIGHT INCREASE IN EXCESS OF 35 FEET THERE SHALL BE ADDED TO EACH YARD REQUIREMENT ONE CORRESPONDING FOOT OF WIDTH OR DEPTH. STRUCTURES, EXCEPT CHIMNEYS AND FLAGPOLES, MAY BE ERECTED ABOVE THE ROOFLINE, SHALL BE ERECTED WITHIN A RECESSION OF ONE FOOT FOR EACH ONE FOOT OF ADDITIONAL HEIGHT, AND MUST BE DESIGNED TO BE COMPATIBLE WITH THE ARCHITECTURAL TREATMENT OF THE BUILDING.
*MINIMUM BUILDING SETBACKS ARE BASED ON A MAXIMUM STRUCTURE HEIGHT OF 70'. 35'HAS BEEN ADDED TO EACH MINIMUM SETBACK REQUIREMENT AND ARE DEPICTED ABOVE.
**MINIMUM BUILDING SETBACKS ARE BASED ON A MAXIMUM STRUCTURE HEIGHT OF 46.83'. 11.83' HAS BEEN ADDED TO EACH MINIMUM SETBACK REQUIREMENT AND ARE DEPICTED ABOVE.

[4] REAR YARD COVERAGE CALCULATION PER §155-24 D 3 IS BASED ON THE FOLLOWING AREAS:
EXISTING LOT: 72,268 SF. (1.66 AC.) TO REAR BUILDING LINE OF EXISTING STRUCTURE AT 500 PENNSYLVANIA AVE.
PROPOSED LOT: 37,601 SF. (0.86 AC.) TO REQUIRED SETBACK LINE FOR 56' BUILDING.

MCPC No.: (14-0121-003)

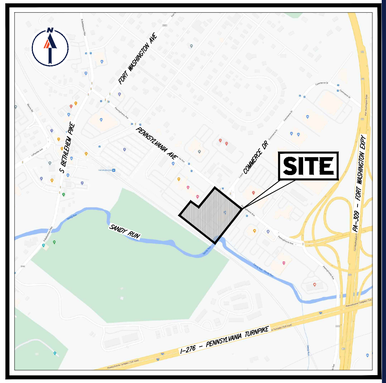
PROCESSED and REVIEWED. Report prepared by Montgomery County Planning Commission in accordance with the Municipalities Planning Code.

Certified this date _____

_____
Montgomery County Planning Commission

LOCATION MAP

SCALE: 1" = 800'



LEGEND

PROPOSED

PROPERTY LINE
EASEMENT LINE
SETBACK LINE
BUILDING
RETAINING WALL
CONCRETE CURB
FLUSH CURB
FENCE
GUIDE RAIL
TREELINE
SIDEWALK
RAMP
SIGN
BOLLARD
PARKING COUNT
AREA LIGHT
DRAINAGE INLET
MANHOLE
ENDWALL
TRANSFORMER

LEGEND

EXISTING

PROPERTY LINE
R.O.W. LINE
BUILDING
CONCRETE CURB
FENCE
TREELINE
CONCRETE MONUMENT/ IRON PIN
SIGN
TREE
DRAINAGE INLET
STORM/SANITARY MANHOLE
WATER/GAS VALVES
FIRE HYDRANT
UTILITY POLE
OVERHEAD UTILITY WIRES
100 YEAR FLOOD PLAIN
500 YEAR FLOOD PLAIN
SWALE
CENTERLINE OF STREAM
FLOOD WAY
ASSUMED FLOOD WAY
TOP OF BANK / OHWM

BOHLER
SITE CIVIL AND CONSULTING ENGINEERING
LAND SURVEYING
PROGRAM MANAGEMENT
LANDSCAPE ARCHITECTURE
INDUSTRIAL DESIGN
PERMITTING SERVICES
TRANSPORTATION SERVICES

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3	8/4/2023	NPDES SUBMISSION NPDES REV-1	HMP MSL
4	9/20/2023	TOWNSHIP RESUBMISSION	RMS MSL

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PROJECT No.: PAB220113.00
DRAWN BY: RMS
CHECKED BY: MSL
DATE: 03/15/2023
CAD I.D.: PAB220113.00-LDVP-4A

PROJECT:

FINAL LAND DEVELOPMENT PLANS

FOR

MILEONE FORT WASHINGTON, LLC

BMW AUTOMOTIVE DEALERSHIP EXPANSION

500 PENNSYLVANIA AVENUE WHITEMARSH TOWNSHIP MONTGOMERY COUNTY, PA

BOHLER
74 W BROAD STREET, SUITE 500
BETHLEHEM, PA 18018
Phone: (610) 709-9971
Fax: (610) 709-9976
www.BohlerEngineering.com

COMMONWEALTH OF PENNSYLVANIA
JEFFREY A. BEAVAN
082005
JEFFREY A. BEAVAN
PROFESSIONAL ENGINEER
PENNSYLVANIA LICENSE NO. PE082005
NEW JERSEY LICENSE NO. GE49500

SHEET TITLE:

RECORD PLAN

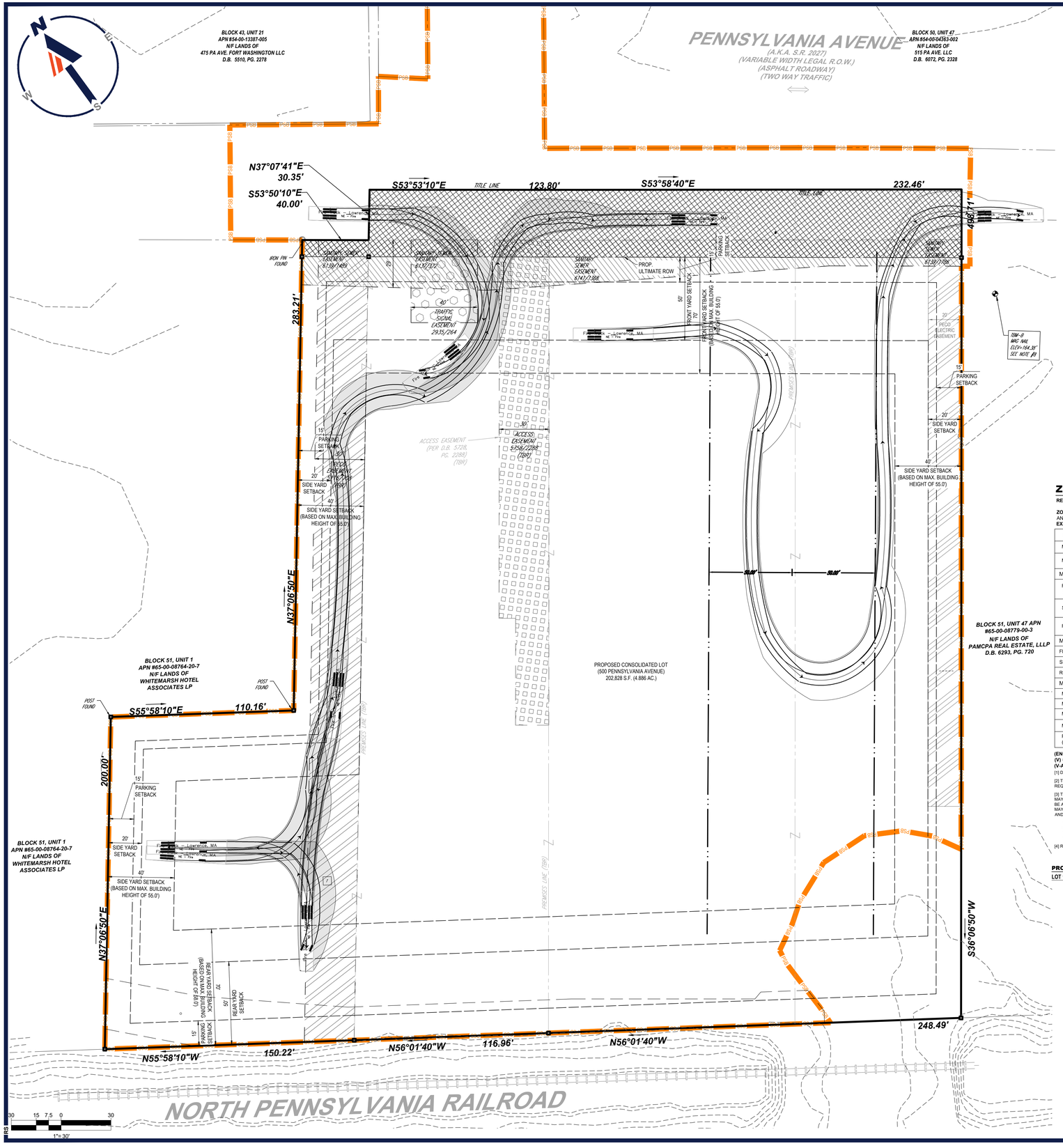
SHEET NUMBER:

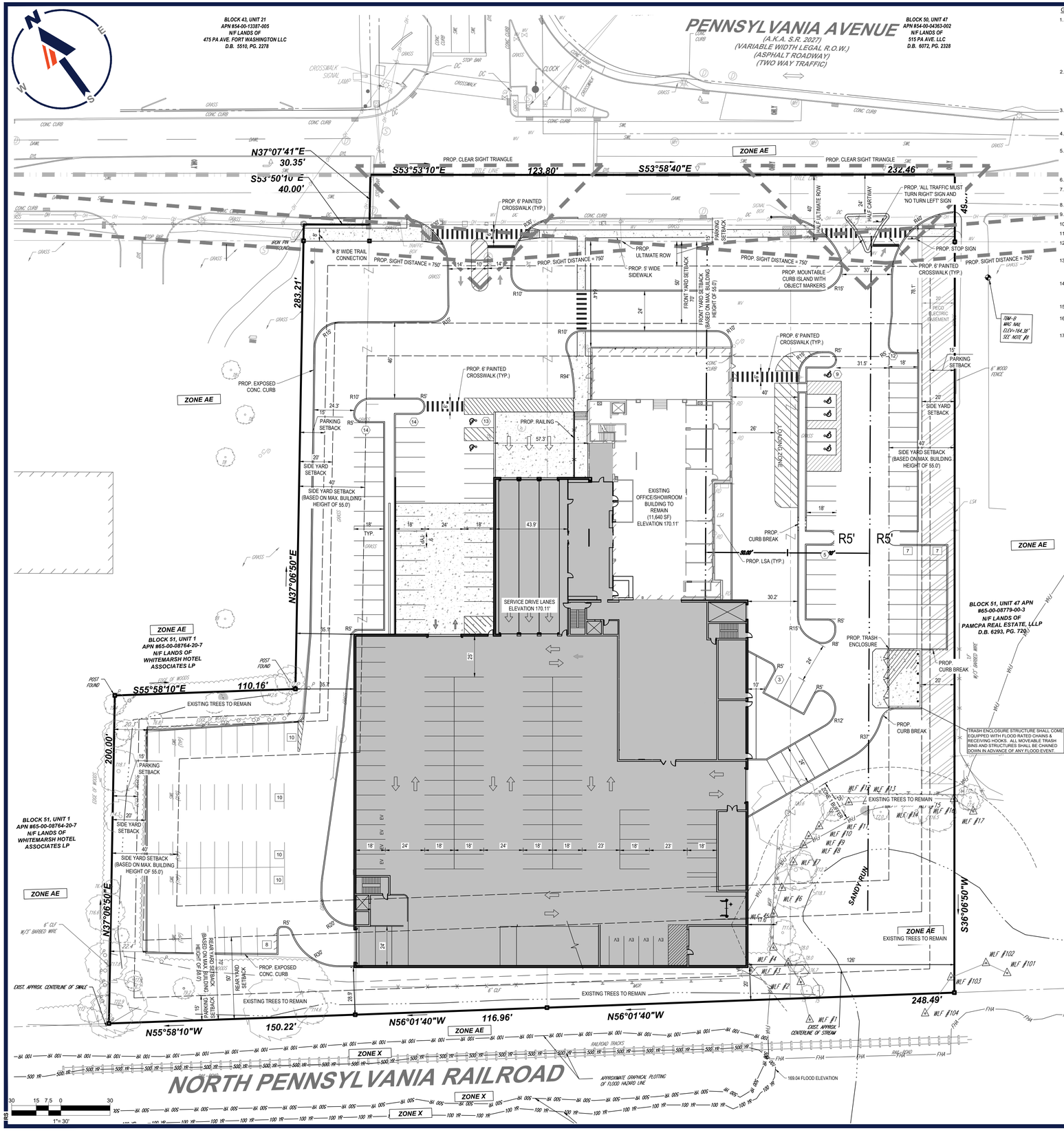
C-301

REVISION 4 - 9/20/2023

RECORD PLAN 3 OF 10

R:\2022\PAB220113.00\CAD\DRAWINGS\PLAN SETS\CIVIL SITE PLANS\PAB220113.00-LDVP-4A---LAYOUT C-301 RECORD


PENNSYLVANIA AVENUE
(A.K.A. S.R. 2027)
(VARIABLE WIDTH LEGAL R.O.W.)
(ASPHALT ROADWAY)
(TWO WAY TRAFFIC)
BLOCK 43, UNIT 21
APN #54-00-13387-005
N/F LANDS OF
475 PA AVE. FORT WASHINGTON LLC
D.B. 5510, PG. 2278
BLOCK 50, UNIT 47
APN #54-00-04363-002
N/F LANDS OF
515 PA AVE. LLC
D.B. 6072, PG. 2328
N37°07'41"E
30.35'
S53°50'10"E
40.00'
S53°53'10"E
123.80'
TITLE LINE
S53°58'40"E
232.46'
493.11'
283.21'
N37°06'50"E
200.00'
S55°58'10"E
110.16'
S36°06'50"W
248.49'
N55°58'10"W
150.22'
N56°01'40"W
116.96'
N56°01'40"W
IRON PIN FOUND
POST FOUND
SANITARY SEWER EASEMENT 6139/1485
DRAINAGE SEWER EASEMENT 4130/312
SANITARY SEWER EASEMENT 6141/1388
PROP. ULTIMATE ROW
TRAFFIC SIGNAL EASEMENT 2935/264
ACCESS EASEMENT (PER D.B. 5728, PG. 2288) (TBR)
ACCESS EASEMENT 5728/2288 (TBR)
PECO ELECTRIC EASEMENT 6116/1709 (TBR)
PECO ELECTRIC EASEMENT
PREMISES LINE (TBR)
FRONT YARD SETBACK
FRONT YARD SETBACK (BASED ON MAX. BUILDING HEIGHT OF 55.0')
15' PARKING SETBACK
20' SIDE YARD SETBACK
40' SIDE YARD SETBACK (BASED ON MAX. BUILDING HEIGHT OF 55.0')
REAR YARD SETBACK
50'
70'
5'
IRON PIPE FOUND
IRON PIPE FOUND
IRON PIPE FOUND



GENERAL NOTES

1. THIS PLAN REFERENCES DOCUMENTS AND INFORMATION BY:
   CONTROL POINT ASSOCIATE, LLC.
   1600 MANOR DRIVE, SUITE 210
   CHALFONT, PA 18914
   ENTITLED: "BOUNDARY & TOPOGRAPHIC SURVEY"
   PREPARED FOR: BMW OF FORT WASHINGTON
   FILE NO.: 02-220505-00
   DATED: 02/06/2023
2. APPLICANT/ EQUITABLE OWNER:
   BMW OF FORT WASHINGTON
   3301 BRIGGS CHANEY ROAD
   SILVER SPRING, MD 20904
   ATTENTION: DENNIS TURNBAUGH
   301-679-4062
3. CONTRACTOR IS RESPONSIBLE TO OBTAIN ALL SPECIFIC RESOURCES, TECHNICAL REPORTS, AND DESIGN DOCUMENTS RELATED TO THIS PROJECT AND FAMILIARIZE HIMSELF WITH SAME FOR APPLICATION BOTH PRIOR TO AND DURING CONSTRUCTION.
4. ALL ELEVATIONS SHOWN ARE IN ACCORDANCE WITH THE REFERENCED SURVEYOR'S BENCHMARK AND MUST BE VERIFIED BY THE GENERAL CONTRACTOR PRIOR TO GROUNDBREAK.
5. PARCEL DATA: PROPERTY KNOWN AS BLOCK 51, UNIT 41, APN #65-00-08775-003; BLOCK 51 UNIT 46, APN #65-00-08767-00-6; BLOCK 51, UNIT 2, APN #65-00-08773-00-9 & BLOCK 51, UNIT 44, APN #65-00-08776-00-6 AS IDENTIFIED ON THE TAX MAP OF WHITEMARSH TOWNSHIP, COMMONWEALTH OF PENNSYLVANIA.
6. PARCEL AREA: TOTAL SITE AREA: 5.132 AC.
7. ALL A.D.A. ACCESSIBLE PARKING SPACES, RAMPS, AND ACCESSIBLE ROUTES SHALL BE CONSTRUCTED TO MEET CURRENT A.D.A. REQUIREMENTS, AS AMENDED.
8. ALL FEATURES ARE EXISTING TO REMAIN UNLESS OTHERWISE NOTED.
9. FEATURES TO BE REMOVED ARE NOTED (TBR).
10. MEASUREMENTS ARE TAKEN FROM FACE OF CURB, WHERE APPLICABLE.
11. NO DEBRIS SHALL BE BURIED ON-SITE.
12. ALL PUBLIC UTILITIES, INCLUDING WATER AND SEWER ARE CURRENTLY AVAILABLE. SITE IS TO BE SERVICED BY PUBLIC WATER AND SEWER UTILITIES.
13. LOCATION OF UNDERGROUND UTILITIES ARE APPROXIMATE. BEFORE ANY EXCAVATION IS TO BEGIN, ALL UNDERGROUND UTILITIES SHOULD BE VERIFIED AS TO THEIR LOCATION, SIZE AND TYPE BY THE PROPER UTILITY COMPANIES.
14. THE ENTIRE SITE IS IN A SPECIAL FLOOD HAZARD AREA, ZONE (AE), WITHIN THE 100-YEAR FLOODPLAIN. BASE FLOOD ELEVATION = 169.04. AS SUCH THE ENTIRE SITE IS LOCATED WITHIN THE RIPARIAN CORRIDOR CONSERVATION OVERLAY DISTRICT PER WHITEMARSH TOWNSHIP
15. THE EXISTENCE OF UNDERGROUND STORAGE TANKS, IF ANY, IS UNKNOWN.
16. ELEVATIONS REFER TO THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88, BASED ON GPS OBSERVATIONS UTILIZING THE KEYSTONE VRS NETWORK (KEYNET GPS).
17. STRUCTURES, INCLUDING BUT NOT LIMITED TO MAILBOXES, FENCES AND POLES, SHALL NOT BE ERECTED WITHIN STREET RIGHTS-OF-WAY

ZONING REQUIREMENTS:

REQUIREMENTS TAKEN FROM: WHITEMARSH TOWNSHIP, MONTGOMERY COUNTY, COMMONWEALTH OF PENNSYLVANIA. (6/22/2016)

ZONING: CR-L (COMMERCIAL RETAIL-LOW DISTRICT) WITH RIPARIAN CORRIDOR CONSERVATION, FLOODPLAIN CONSERVATION, AND STEEP SLOPES OVERLAY DISTRICTS
EXISTING USE: AUTOMOTIVE RETAIL, **PROPOSED USE:** AUTOMOTIVE RETAIL **(SPECIAL EXCEPTION GRANTED)**

OVERALL BULK REQUIREMENTS	REQUIRED	EXISTING (CONSOLIDATED LOTS)	PROPOSED CONSOLIDATED LOT
MINIMUM LOT AREA (TO ULT. ROW) [1]	5 AC. (MIN.)	208,647 SF (4.790 AC.)	NO CHANGE
MINIMUM LOT AREA (TO ULT. ROW)	[2]	208,647 SF (4.790 AC.)	NO CHANGE
MINIMUM BUILDING SETBACKS:			
FRONT YARD SETBACK: (PENNSYLVANIA AVE)	MIN. = 50 FT. *REQD = 70 FT	65.2 FT.	64.4 FT.
SIDE YARD SETBACK: [3]	MIN. = 20 FT. *REQD = 40 FT	47.2 FT.	35.1 FT.
REAR YARD SETBACK: [3]	MIN. = 50 FT. *REQD = 70 FT.	143.4 FT.	28.9 FT. **(V-A)**
MINIMUM PARKING SETBACKS:			
FRONT YARD SETBACK:	15 FT.	117.6 FT.	115.8 FT.
SIDE YARD SETBACK:	15 FT.	19.7 FT.	22.4 FT.
REAR YARD SETBACK:	15 FT.	17.4 FT.	41.4 FT.
MAXIMUM REQUIREMENTS:			
MAXIMUM BUILDING COVERAGE:	40%	15.3% (30,513 SF.)	32.5% (69,182 SF.)
MAXIMUM IMPERVIOUS COVERAGE:	65%	74.8% (159,131 SF)	70.8% (147,896 SF.)**(V-A)**
MAXIMUM BUILDING HEIGHT: [3]	35 FT., 65 FT. MAX.	31 FT	65.0 FT
MINIMUM GREEN SPACE AREA:	35%		(29.2%) 60,751 **(V-A)**
REAR YARD COVERAGE (ACCESSORY USES/STRUCTURES) [4]	30%	28.4% (19,834 SF.)	8.2% (5,728 SF.)

(ENC) = EXISTING NON-CONFORMITY
(V) = VARIANCE REQUESTED
(V-A) = VARIANCE APPROVED

[1] DISTRICT AREA. THE MINIMUM AREA WHICH MAY BE CLASSIFIED AS A CR COMMERCIAL RETAIL DISTRICT SHALL BE 5 ACRES.

[2] THE MINIMUM AREA FOR A SINGLE STRUCTURE OR DEVELOPMENT SHALL BE DETERMINED BY THE LAND USE, PARKING AND OTHER REQUIREMENTS.

[3] THE MAXIMUM HEIGHT OF ANY BUILDING ERECTED OR USED IN THIS DISTRICT SHALL BE 35 FEET, EXCEPT THAT THE HEIGHT OF ANY BUILDING MAY BE INCREASED TO A MAXIMUM OF 65 FEET, PROVIDED THAT FOR EVERY FOOT OF HEIGHT INCREASE IN EXCESS OF 35 FEET THERE SHALL BE ADDED TO EACH YARD REQUIREMENT ONE CORRESPONDING FOOT OF WIDTH OR DEPTH. STRUCTURES, EXCEPT CHIMNEYS AND FLAGPOLES, MAY BE ERECTED ABOVE THE ROOFLINE, SHALL BE ERECTED WITHIN A RECESSION OF ONE FOOT FOR EACH ONE FOOT OF ADDITIONAL HEIGHT, AND MUST BE DESIGNED TO BE COMPATIBLE WITH THE ARCHITECTURAL TREATMENT OF THE BUILDING.
*MINIMUM BUILDING SETBACKS ARE BASED ON A MAXIMUM STRUCTURE HEIGHT OF 70'. 35' HAS BEEN ADDED TO EACH MINIMUM SETBACK REQUIREMENT AND ARE DEPICTED ABOVE.
**MINIMUM BUILDING SETBACKS ARE BASED ON A MAXIMUM STRUCTURE HEIGHT OF 46.83'. 11.83' HAS BEEN ADDED TO EACH MINIMUM SETBACK REQUIREMENT AND ARE DEPICTED ABOVE.

[4] REAR YARD COVERAGE CALCULATION PER §116-24.D.3 IS BASED ON THE FOLLOWING AREAS:
EXISTING LOT: 72,268 SF. (1.66 AC.) TO REAR BUILDING LINE OF EXISTING STRUCTURE AT 500 PENNSYLVANIA AVE.
PROPOSED LOT: 37,601 SF. (0.86 AC.) TO REQUIRED SETBACK LINE FOR 58' BUILDING.

PROPOSED PARKING REQUIREMENTS (PER SECTION 116-184)

DESCRIPTION	UNIT	REQUIRED
RETAIL (11,370 SF SHOWROOM + 6,900 SF SERVICE RECEPTION)	1 SPACE/200 SF	92
OFFICE (5,915 SF - EXIST. BLDG 2ND FLR)	1 SPACE/200 SF	30
SERVICE BAYS (39)	1 SPACE PER BAY	39
OTHER COMMERCIAL (50,900 SF SRVC/PARTS/TECH)	1 SPACE/1000 SF	51
TOTAL SPACES REQUIRED:		212
TOTAL ADA SPACES REQUIRED		7 CAR AND VAN (2 VAN)
TOTAL OFF-STREET PARKING SPACES PROPOSED (142 GARAGE + 70 OUTSIDE):		212
EV PARKING SPACES PROPOSED (8 REQUIRED PER §116-188.3):		16 (GARAGE)
TOTAL ADA SPACES PROPOSED		7 CAR AND VAN (2 VAN)
TOTAL INVENTORY SPACES PROPOSED (317 GARAGE + 82 OUTSIDE):		470
TOTAL SPACES PROPOSED:		**682**

ELEVATION CERTIFICATE NOTE:

ELEVATION CERTIFICATE(S) MUST BE SUBMITTED UPON COMPLETION OF THE PROPOSED IMPROVEMENTS.

FLOODPLAIN PERMIT NOTE:

IT SHALL BE UNLAWFUL FOR ANY PERSON, PARTNERSHIP, BUSINESS OR CORPORATION TO UNDERTAKE, OR CAUSE TO BE UNDERTAKEN, ANY CONSTRUCTION OR DEVELOPMENT ANYWHERE WITHIN THE FLOODPLAIN IN TOWNSHIP OF WHITEMARSH UNLESS A PERMIT HAS BEEN OBTAINED FROM THE FLOODPLAIN ADMINISTRATOR.

GENERAL BLANKET COMMON ACCESS AND UTILITY EASEMENT NOTE:

A BLANKET EASEMENT IS TO BE ESTABLISHED FOR COMMON ACCESS AND UTILITIES WITHIN THE AREA DEFINED AND ILLUSTRATED ON SHEET C-601 UNLESS OTHERWISE SPECIFIED ON THIS PLAN.

NOTE:

1. THE PROPERTY OWNER SHALL HAVE THE RESPONSIBILITY FOR THE PERPETUAL MAINTENANCE OF THE PERMANENT WATER DETENTION BASIN, BASIN OUTLET STRUCTURES AND PIPES WHICH ARE LOCATED ON HIS PROPERTY. NO CHANGES SHALL BE MADE TO THE STRUCTURES, PIPES OR FINISH GRADING WITHOUT PRIOR WRITTEN APPROVAL FROM THE TOWNSHIP. THE TOWNSHIP HAS THE RIGHT TO ENTER THE LOT TO PERFORM ANY REQUIRED MAINTENANCE WHICH HAS NOT BEEN PROPERLY PERFORMED OR CARRIED OUT IN A TIMELY MANNER THE PROPERTY OWNER SHALL BE RESPONSIBLE FOR THE COST OF ANY MAINTENANCE WHICH IS PERFORMED BY THE TOWNSHIP. THE TOWNSHIP SHALL LIEN THE PROPERTY FOR SAID COSTS UNTIL THE TOWNSHIP HAS BEEN REIMBURSED IN FULL.
2. THE DEVELOPER OR PROPERTY OWNER SHALL PAY TO THE TOWNSHIP AND TO THE AUTHORITY WHICH TREATS THE SEWAGE THE CURRENT FEES FOR THE TREATMENT AND COLLECTION OF SEWAGE WHEN SUCH FACILITIES ARE MADE AVAILABLE TO THE APPLICANT'S SITE.

MCPC No.: (14-0121-003)

PROCESSED and REVIEWED. Report prepared by Montgomery County Planning Commission in accordance with the Municipalities Planning Code.

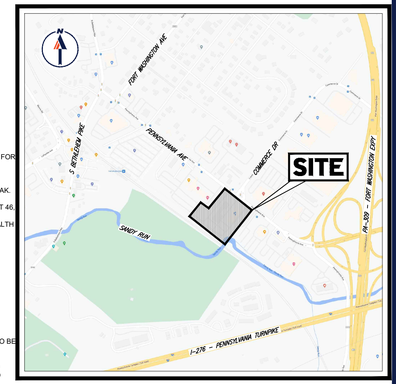
Certified this date _____

Montgomery County Planning Commission

STORMWATER BLANKET EASEMENT

A BLANKET STORMWATER EASEMENT IN FAVOR OF WHITEMARSH TOWNSHIP IS PROVIDED FOR ACCESS AND MAINTENANCE PURPOSES ON AND OVER THE PROPERTY, EXCEPT FOR THE PORTIONS OF THE PROPERTY ON WHICH BUILDINGS OR OTHER VERTICAL STRUCTURES HAVE BEEN ERECTED. THE TOWNSHIP OF WHITEMARSH SHALL HAVE THE RIGHT TO INSPECT ALL STORMWATER MANAGEMENT FEATURE AND FACILITIES AND TO REQUIRE REPAIRS, BUT NOT THE OBLIGATION TO MAKE SUCH REPAIRS.

STORMWATER FACILITIES SHALL BE OWNED AND MAINTAINED BY THE PROPERTY OWNER IN PERPETUITY. THE PROPERTY OWNER SHALL PROVIDE A BLANKET STORMWATER ACCESS EASEMENT TO THE TOWNSHIP FOR THE PURPOSE OF ACCESS TO THE STORMWATER FACILITIES IF, IN THE JUDGEMENT OF THE TOWNSHIP ENGINEER, THE OWNER HAS FAILED TO MAINTAIN THE STORMWATER FACILITIES IN SUCH A MANNER AS TO ENSURE THEIR PROPER FUNCTIONING, THE TOWNSHIP AFTER PROVIDING A WRITTEN NOTICE, SHALL HAVE THE RIGHT TO ENTER UPON THE LANDS OF THE OWNER AND TO MAKE ANY REPAIRS AS MAY BE NECESSARY TO THE STORMWATER FACILITIES TO ENSURE THAT SUCH FACILITIES FUNCTION AND PERFORM IN ACCORDANCE WITH THE DESIGN SPECIFICATIONS. ANY AND ALL COSTS INCURRED BY THE TOWNSHIP FOR SUCH REPAIRS AND/OR MAINTENANCE SHALL BE PAID IN FULL BY THE OWNER. A LIEN OR LIENS MAY BE PLACED AGAINST THE PROPERTY IF THE OWNER FAILS TO REMIT PAYMENT WITHIN SIXTY (60) DAYS.



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800 400 200 0 800
1"=800'

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COMMONWEALTH OF PENNSYLVANIA
JEFFREY A. BEAVAN
PROFESSIONAL ENGINEER
I HEREBY CERTIFY THAT THIS DOCUMENT WAS PREPARED BY ME OR UNDER MY SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE COMMONWEALTH OF PENNSYLVANIA.
PENNSYLVANIA LICENSE NO. PE084564
NEW JERSEY LICENSE NO. GE49534
NEW JERSEY CERTIFICATE OF AUTHORIZATION NO. 24GA28006500

SHEET TITLE:

SITE PLAN

SHEET NUMBER:

C-303

RECORD PLAN 5 OF 10

REVISION 4 - 9/20/2023

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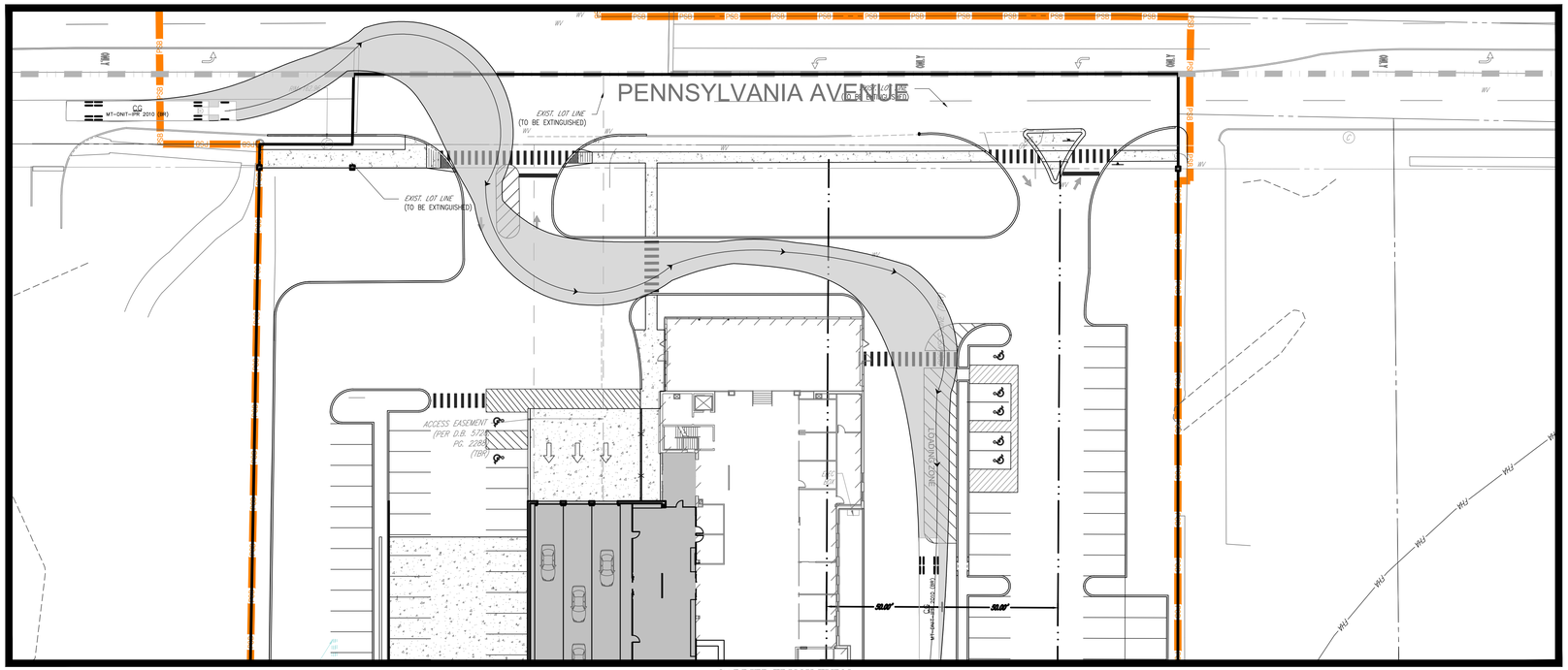
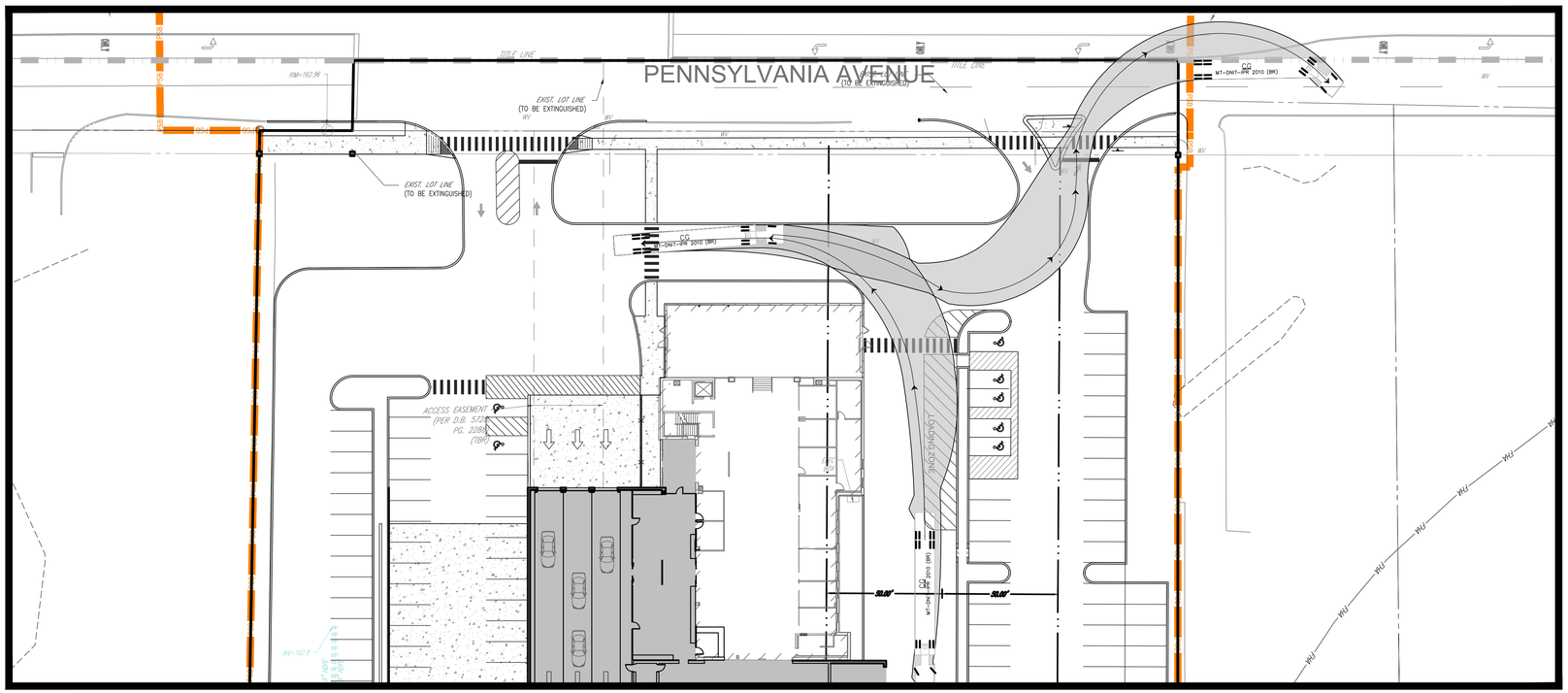
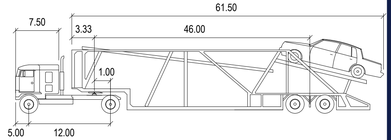
R:\2022\PAB220113.00\CAD\DRAWINGS\PLAN SETS\CIVIL SITE PLANS\PAB220113.00-LDVP-4A_-_LAYOUT C-303 SITE



CARRIER TRUCK TURN



CARRIER TRUCK TURN



Auget Carrier	feet		
Tractor Width	: 8.00	Lock to Lock Time	: 6.0
Trailer Width	: 8.53	Steering Angle	: 16.5
Tractor Track	: 8.00	Articulating Angle	: 70.0
Trailer Track	: 8.50		

30 15 7.5 0 30

1"= 30'

R:\2022\PAB220113.00\CAD\DRAWINGS\PLAN SETS\CIVIL SITE PLANS\PAB220113.00-LDVP-4A---LAYOUT C-304 TRUCK TURNING

BOHLER

SITE CIVIL AND CONSULTING ENGINEERING
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PENNSYLVANIA LICENSE NO. PE090595
NEW JERSEY LICENSE NO. GE49090500

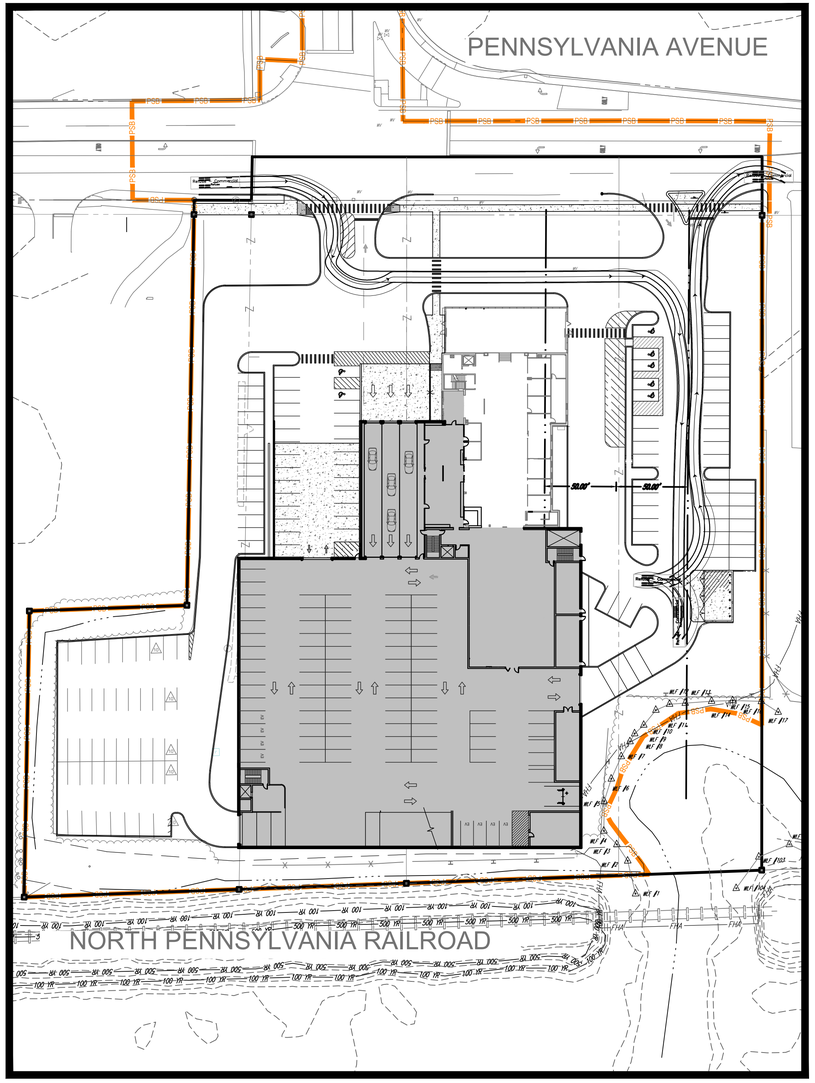
SHEET TITLE:

TRUCK TURNING PLAN - AUTO CARRIER

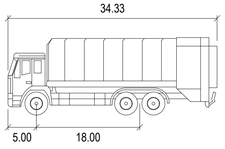
SHEET NUMBER:

C-304

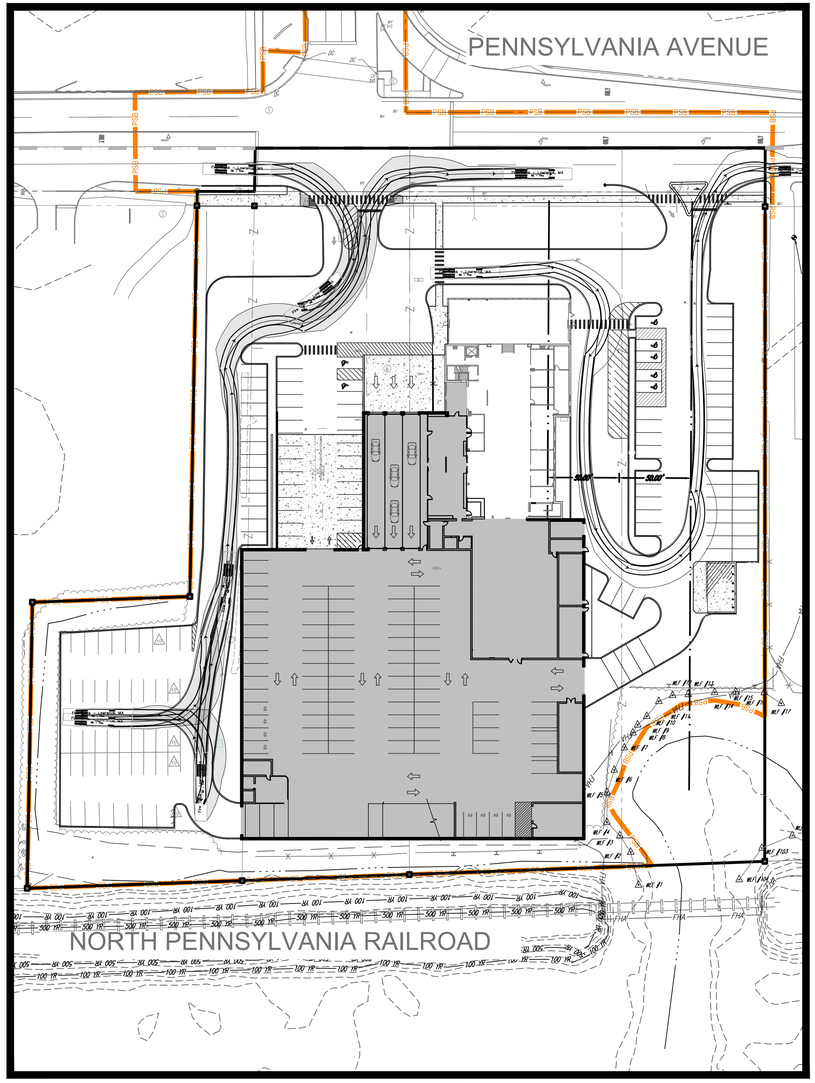
REVISION 4 - 9/20/2023



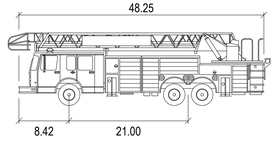
REFUSE TRUCK TURN



Garbage Truck	feet
Width	: 8.00
Track	: 8.00
Lock to Lock Time	: 6.0
Steering Angle	: 31.0



FIRE TRUCK TURN



Township Fire Truck	feet
Width	: 8.83
Track	: 8.00
Lock to Lock Time	: 6.0
Steering Angle	: 48.0

50 25 12.5 0 50
1"= 50'

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REV	DATE	COMMENT	DRAWN BY / CHECKED BY
1	5/4/2023	NPDES SUBMISSION NPDES REV-0	KMP MSL
2	7/11/2023	SHADE TREE COMMISSION	HMP MSL
3	8/4/2023	NPDES SUBMISSION NPDES REV-1	HMP MSL
4	9/20/2023	TOWNSHIP RESUBMISSION	RMS MSL

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PROJECT No.:	PAB220113.00
DRAWN BY:	RMS
CHECKED BY:	MSL
DATE:	03/15/2023
CAD I.D.:	PAB220113.00-LDVP-4A

PROJECT:

FINAL LAND DEVELOPMENT PLANS

FOR

MILEONE FORT WASHINGTON, LLC

BMW AUTOMOTIVE DEALERSHIP EXPANSION

**500 PENNSYLVANIA AVENUE
WHITEMARSH TOWNSHIP
MONTGOMERY COUNTY, PA**

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74 W BROAD STREET, SUITE 500
BETHLEHEM, PA 18018
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COMMONWEALTH OF PENNSYLVANIA
JEFFREY A. BEAVAN
PROFESSIONAL ENGINEER
JEFFREY A. BEAVAN
PROFESSIONAL ENGINEER
PENNSYLVANIA LICENSE # PE090705
NEW JERSEY LICENSE # GE49209500

SHEET TITLE:

TRUCK TURNING PLAN - FIRE & REFUSE

SHEET NUMBER:

C-305

REVISION 4 - 9/20/2023

R:\2022\PAB220113.00\CAD\DRAWINGS\PLAN SETS\CIVIL SITE PLANS\PAB220113.00-LDVP-4A.----LAYOUT: C-305 FIRE - REFUSE
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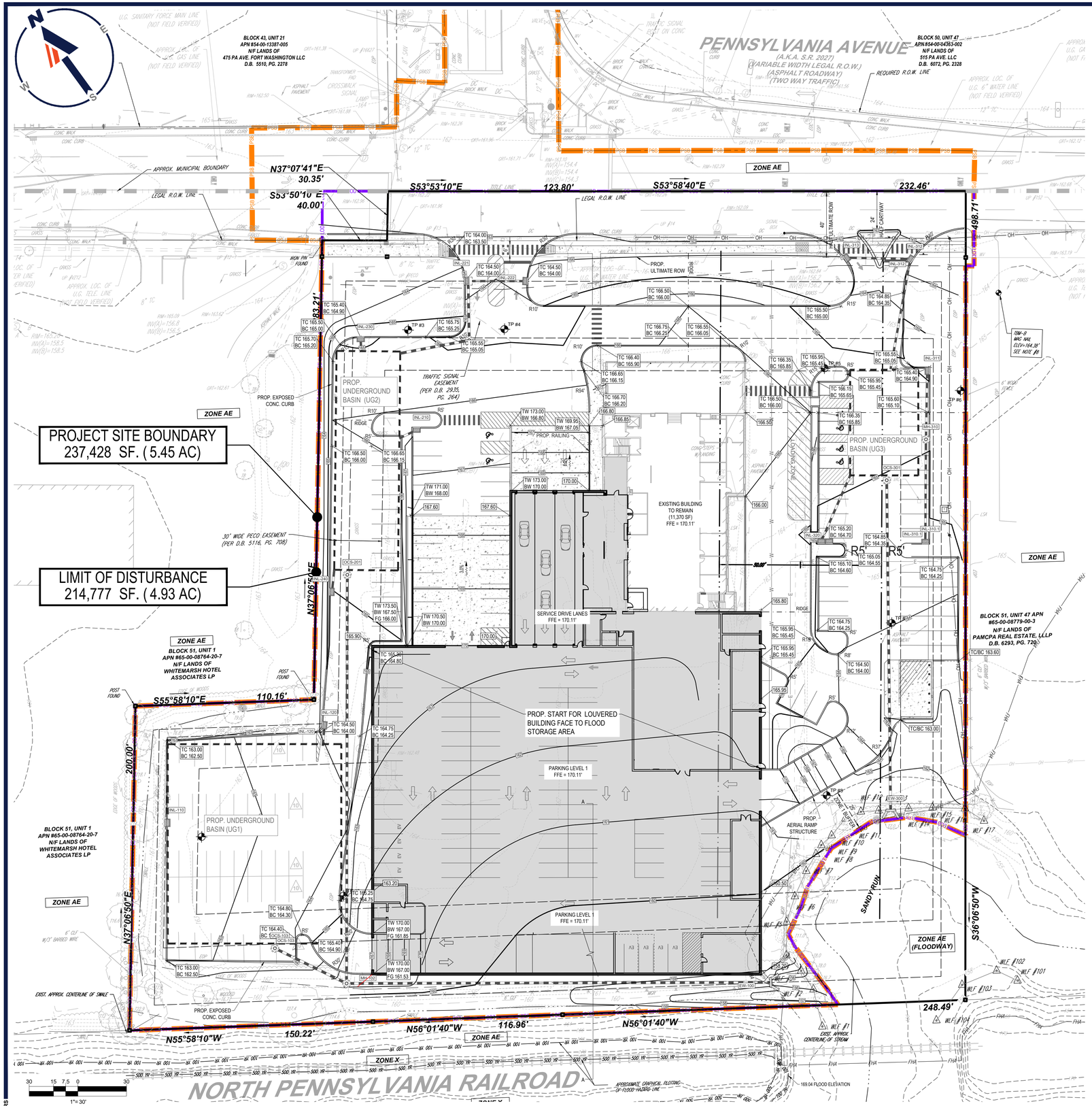
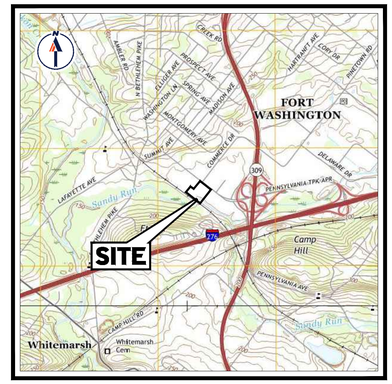




USGS MAP

AMBLER QUAD

SCALE: 1"=2,000'

1000' 0 2000'

LEGEND

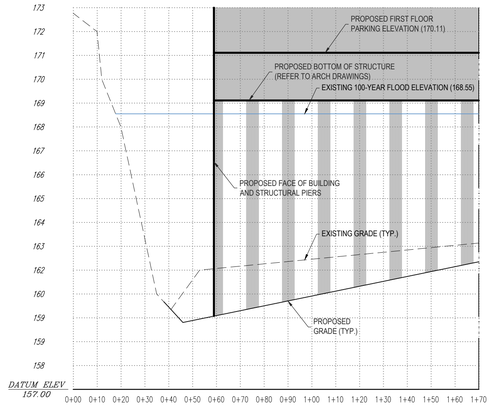
EXISTING

PROPERTY LINE	
R.O.W. LINE	
BUILDING	
CONCRETE CURB	
FENCE	
TREELINE	
CONCRETE MONUMENT/ IRON PIN	
SIGN	
TREE	
DRAINAGE INLET	
STORM/SANITARY MANHOLE	
WATER/GAS VALVES	
UTILITY POLE	
OVERHEAD UTILITY WIRES	
GAS LINE	
WATER LINE	
STORM PIPE	
CONTOUR ELEVATION	
CENTERLINE OF WATER FEATURE	
100 YEAR FLOOD PLAIN	100 YR 100 YR
500 YEAR FLOOD PLAIN	500 YR 500 YR
FLOOD WAY	ITEM ITEM
EDGE OF STREAM DELINEATION FLAGS	WF #5 WF #5

LEGEND

PROPOSED

SPOT ELEVATION	123.00 TC 123.50 BC 123.00
CONTOUR ELEVATION	100
RIDGE	
BUILDING	
RETAINING WALL	
CONCRETE CURB	
FLUSH CURB	
RAMP	
AREA LIGHT	
DRAINAGE INLET	
MANHOLE	
ENDWALL	
TRANSFORMER	
STORM PIPE	
ELECTRIC	UGET&C
SANITARY SEWER PIPE	S
WATER PIPE	W
LIMIT OF DISTURBANCE	LOD LOD
PROJECT SITE BOUNDARY	PSB PSB



EXISTING DRAINAGE SWALE
CROSS SECTION A-A
SCALE: 1"=30' HORZ.
1"=3' VERT.

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PROJECT:

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LICENSE
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PROFESSIONAL ENGINEER
PENNSYLVANIA LICENSE NO. PE 062365
NEW JERSEY LICENSE NO. GE 49500

SHEET TITLE:

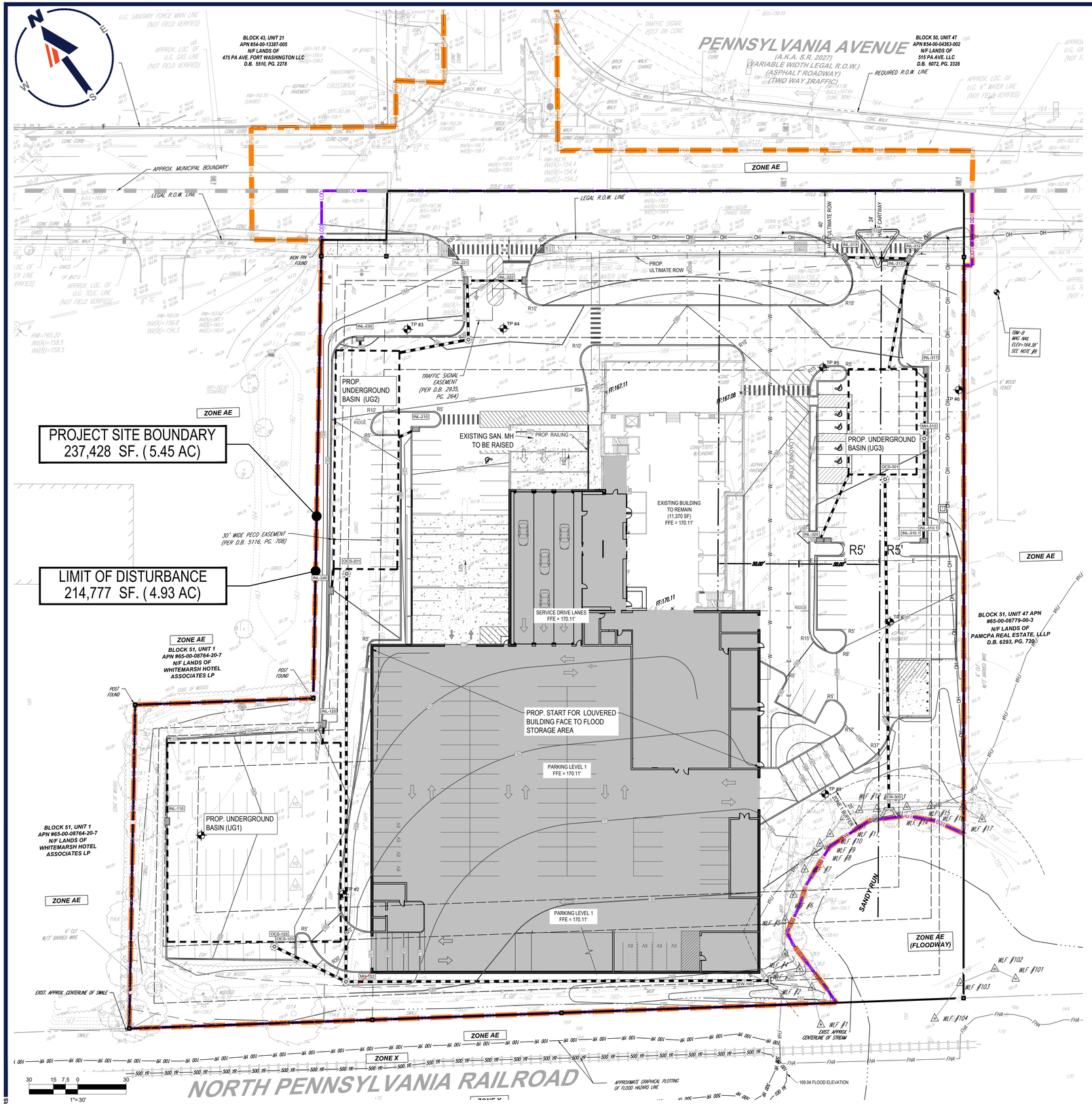
GRADING PLAN

SHEET NUMBER:

C-401

REVISION 4 - 9/20/2023

R:\2022\PAB220113.00\CAD\DRAWINGS\PLAN SETS\CIVIL SITE PLANS\PAB220113.00-GDUL-4A-----LAYOUT C-401 GRADING
RS



USGS MAP

AMBLER QUAD

SCALE: 1"=2,000'

1000' 0 2000'

STORM SEWER PIPE SCHEDULE

FROM	TO	SIZE (IN.)	TYPE	LENGTH (FT.)	SLOPE(%)
INL-120		15"	HDPE	13	3.10%
INL-210		15"	HDPE	12	0.50%
INL-221	MH220	18"	HDPE	36	0.51%
INL-221	INL-222	15"	HDPE	35	0.63%
INL-230		15"	HDPE	7	0.54%
INL-240		15"	HDPE	14	0.80%
INL-310.1	MH-310	15"	HDPE	63	0.50%
INL-311	MH-310	15"	HDPE	42	0.50%
INL-312	INL-313	15"	HDPE	39	0.50%
INL-312		15"	HDPE	69	0.51%
INL-320		15"	HDPE	44	0.50%
MH-102	EW-100	18"	HDPE	262	0.58%
MH-310		15"	HDPE	7	0.50%
MH220		18"	HDPE	43	2.91%
OCS-103	MH-102	18"	HDPE	49	0.53%
OCS-201	MH-102	18"	HDPE	252	0.50%
OCS-301	EW-300	18"	HDPE	204	1.13%

STORM STRUCTURE SCHEDULE

NAME	TYPE	GRT/RIM ELEV. (FT.)	INVERTS
EW-100	ENDWALL	157.92'	INV IN = 155.75' (18" HDPE)
EW-300	ENDWALL	160.07'	INV IN = 157.90' (18" HDPE)
INL-110	TYPE C INLET	162.50'	
INL-120	TYPE C INLET	164.04'	INV OUT = 159.18' (15" HDPE)
INL-210	TYPE C INLET	162.38'	INV OUT = 158.60' (15" HDPE)
INL-221	TYPE C INLET	163.75'	INV IN = 160.08' (15" HDPE) INV OUT = 160.08' (18" HDPE)
INL-222	TYPE C INLET	164.04'	INV OUT = 160.30' (15" HDPE)
INL-230	TYPE C INLET	165.07'	INV OUT = 158.58' (15" HDPE)
INL-240	TYPE C INLET	164.99'	INV OUT = 158.65' (15" HDPE)
INL-310.1	TYPE C INLET	164.28'	INV OUT = 160.62' (15" HDPE)
INL-311	TYPE C INLET	164.93'	INV OUT = 160.52' (15" HDPE)
INL-312	TYPE C INLET	163.83'	INV IN = 160.87' (15" HDPE) INV OUT = 160.87' (15" HDPE)
INL-313	TYPE C INLET	163.61'	INV OUT = 161.07' (15" HDPE)
INL-320	TYPE C INLET	164.97'	INV OUT = 160.53' (15" HDPE)
MH-102	MANHOLE	161.31'	INV IN = 157.27' (18" HDPE) INV IN = 157.27' (18" HDPE) INV OUT = 157.27' (18" HDPE)
MH-310	MANHOLE	165.01'	INV IN = 160.31' (15" HDPE) INV IN = 160.31' (15" HDPE) INV OUT = 160.31' (15" HDPE)
MH220	MANHOLE	165.20'	INV IN = 159.90' (18" HDPE) INV OUT = 159.80' (18" HDPE)
OCS-103	MANHOLE	160.95'	INV OUT = 157.53' (18" HDPE)

LEGEND

PROPOSED

- RIDGE
- STORM PIPE
- ELECTRIC — UGET&C —
- SANITARY SEWER PIPE — S —
- WATER PIPE — W —
- AREA LIGHT
- DRAINAGE INLET
- MANHOLE
- ENDWALL
- TRANSFORMER
- CONTOUR ELEVATION — 100 —
- BUILDING
- RETAINING WALL
- CONCRETE CURB
- FLUSH CURB
- LIMIT OF DISTURBANCE — LOD — LOD —
- PROJECT SITE BOUNDARY — PSB — PSB —

LEGEND

EXISTING

- PROPERTY LINE
- R.O.W. LINE
- BUILDING
- CONCRETE CURB
- FENCE — X —
- TREELINE
- CONCRETE MONUMENT/ IRON PIN
- SIGN
- TREE
- DRAINAGE INLET
- STORM/SANITARY MANHOLE
- WATER/GAS VALVES
- UTILITY POLE
- OVERHEAD UTILITY WIRES — OH —
- WATER LINE — W —
- STORM PIPE
- CONTOUR ELEVATION — 100 —
- CENTERLINE OF WATER FEATURE
- 100 YEAR FLOOD PLAIN — 100 YR —
- 500 YEAR FLOOD PLAIN — 500 YR —
- EDGE OF STREAM DELINEATION FLAGS WLF #5 WLF #6
- FLOOD WAY — FDW —

UTILITY COMPANY	PHONE NUMBER
AMBLER BOROUGH	215-646-1000
AQUA PENNSYLVANIA, INC.	610-525-1400
AT & T	215-233-3474
BUCKS COUNTY WATER & SEWER	215-750-0585
COMCAST CABLE COMMUNICATIONS, INC.	215-918-3137
COMCAST CABLEVISION	215-961-3800
NORTH WALES WATER	215-699-4836
PECO	610-292-8057
SEPTA	215-580-7852
UPPER DUBLIN TWP.	215-643-1600
VERIZON	215-657-9260
WHITEMARSH TOWNSHIP	610-825-3535

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FOR

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PROFESSIONAL ENGINEER
JEFFREY A. BEAVAN
PROFESSIONAL ENGINEER
PENNSYLVANIA LICENSE No. PE090135
NETWORK LICENSE No. 24GA28079600
NEW JERSEY LIC. No. GE49500

SHEET TITLE:

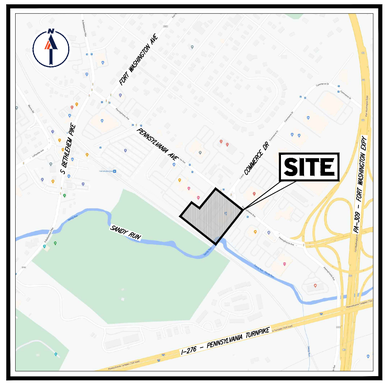
UTILITY PLAN

SHEET NUMBER:

C-501

REVISION 4 - 9/20/2023

R:\2022\PAB220113.00\CAD\DRAWINGS\PLAN SETS\CIVIL SITE PLANS\PAB220113.00-GDUL-4A-----LAYOUT C-501 UTILITY
RS

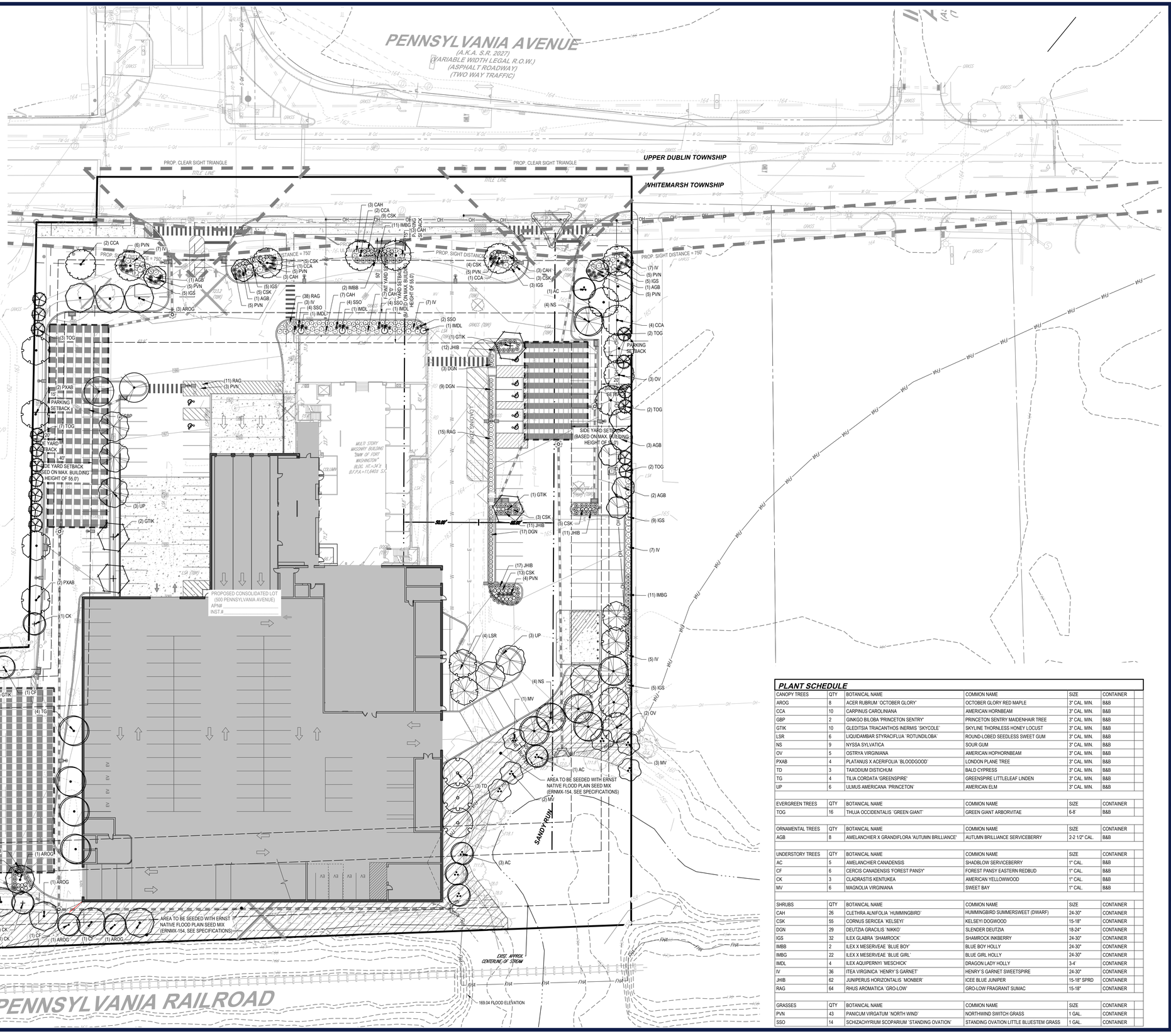


LOCATION MAP

SCALE: 1" = 800'

GENERAL NOTES:

1. THIS PLAN IS TO BE UTILIZED FOR LANDSCAPE PURPOSES ONLY.
2. ALL DISTURBED UNPAVED AREAS, EXCLUDING PLANTING BEDS, ARE TO BE INSTALLED AS LAWN IN ACCORDANCE WITH LANDSCAPE SPECIFICATION #2.C., UNLESS OTHERWISE STATED ON THIS PLAN.
3. SHRUBS PLANTED ALONG HEAD-IN PARKING STALLS SHALL BE INSTALLED TO ALLOW A CLEARANCE OF TWO FEET FROM FACE OF CURB TO ALLOW FOR BUMPER OVERHANG.
4. IF IRRIGATION IS REQUIRED BY THE OWNER OR APPROVING MUNICIPALITY, THE CONTRACTOR SHALL PROVIDE AN IRRIGATION SYSTEM MEETING THE SPECIFICATIONS OF THE CHOSEN PRODUCT'S MANUFACTURER. THE IRRIGATION DESIGN SHALL ACCOMMODATE LAWN AND BED AREAS EACH UNDER SEPARATE ZONES TO MAXIMIZE WATER EFFICIENCY. THE CONTRACTOR SHALL BE RESPONSIBLE FOR SECURING ANY PERMITS REQUIRED FOR THE INSTALLATION OF AN IRRIGATION SYSTEM.
5. PLANT MATERIAL SUBSTITUTIONS MUST BE FORMALLY SUBMITTED TO BOHLER AND THE MUNICIPAL ENGINEER AND LANDSCAPE CONSULTANTS FOR REVIEW AND APPROVAL PRIOR TO INSTALLATION. ANY PLANT MATERIAL THAT ARE TO BE INSTALLED WITHIN STORMWATER BMP FEATURES MUST BE NATIVE SPECIES.
6. WITHOUT EXCEPTION, WEED BARRIER FABRIC SHALL NOT BE INSTALLED WITHIN ANY BMP FACILITY. BMP FACILITIES INCLUDE RAINGARDENS, INFILTRATION TRENCHES, VEGETATIVE SWALES AND STORMWATER BASINS.
7. TREES PLANTED IN CLOSE PROXIMITY TO OTHER EXISTING TREES SHALL BE FIELD LOCATED TO MINIMIZE IMPACT ON EXISTING TREES.
8. OWNER/OPERATOR IS RESPONSIBLE FOR MAINTAINING EXISTING TREES ON SITE, INCLUDING THE EDGE CONDITIONS AROUND THE SITE. VOLUNTEER VINES ARE TO BE PERPETUALLY MAINTAINED BY CUTTING AT THE BASE AND PROVIDING SEPARATION FROM THE GROUND. WHERE FEASIBLE, VINES CAN BE REMOVED FROM THE TREES WHERE IT WILL NOT ADVERSELY IMPACT THOSE TREES. ALL DEBRIS IS TO BE DISPOSED OFF OFF SITE. INSPECTION AND REMOVAL OF VINES SHALL BE CONDUCTED TWICE PER YEAR AS PART OF REGULAR LANDSCAPE MAINTENANCE OPERATIONS.



PLANT SCHEDULE

CANOPY TREES	QTY	BOTANICAL NAME	COMMON NAME	SIZE	CONTAINER
AROG	8	ACER RUBRUM `OCTOBER GLORY`	OCTOBER GLORY RED MAPLE	3" CAL. MIN.	B&B
CCA	10	CARPINUS CAROLINIANA	AMERICAN HORNBEAM	3" CAL. MIN.	B&B
GBP	2	GINKGO BILOBA `PRINCETON SENTRY`	PRINCETON SENTRY MAIDENHAIR TREE	3" CAL. MIN.	B&B
GTIK	10	GLEDITSIA TRIACANTHOS INERMIS `SKYCOLE`	SKYLINE THORNLESS HONEY LOCUST	3" CAL. MIN.	B&B
LSR	6	LIQUIDAMBAR STYRACIFLUA `ROTUNDILOBA`	ROUND-LOBED SEEDLESS SWEET GUM	3" CAL. MIN.	B&B
NS	9	NYSSA SYLVATICA	SOUR GUM	3" CAL. MIN.	B&B
OV	5	OSTRYA VIRGINIANA	AMERICAN HOPHORNBEAM	3" CAL. MIN.	B&B
PXAB	4	PLATANUS X ACERIFOLIA `BLOODGOOD`	LONDON PLANE TREE	3" CAL. MIN.	B&B
TD	3	TAXODIUM DISTICHUM	BALD CYPRESS	3" CAL. MIN.	B&B
TG	4	TILIA CORDATA `GREENSPIRE`	GREENSPIRE LITTLELEAF LINDEN	3" CAL. MIN.	B&B
UP	6	ULMUS AMERICANA `PRINCETON`	AMERICAN ELM	3" CAL. MIN.	B&B
EVERGREEN TREES	QTY	BOTANICAL NAME	COMMON NAME	SIZE	CONTAINER
TOG	16	THUJA OCCIDENTALIS `GREEN GIANT`	GREEN GIANT ARBORVITAE	6-8'	B&B
ORNAMENTAL TREES	QTY	BOTANICAL NAME	COMMON NAME	SIZE	CONTAINER
AGB	8	AMELANCHIER X GRANDIFLORA `AUTUMN BRILLIANCE`	AUTUMN BRILLIANCE SERVICEBERRY	2-2 1/2" CAL.	B&B
UNDERSTORY TREES	QTY	BOTANICAL NAME	COMMON NAME	SIZE	CONTAINER
AC	5	AMELANCHIER CANADENSIS	SHADBLOW SERVICEBERRY	1" CAL.	B&B
CF	6	CERCIS CANADENSIS `FOREST PANSY`	FOREST PANSY EASTERN REDBUD	1" CAL.	B&B
CK	3	CLADRASTIS KENTUKEA	AMERICAN YELLOWWOOD	1" CAL.	B&B
MV	6	MAGNOLIA VIRGINIANA	SWEET BAY	1" CAL.	B&B
SHRUBS	QTY	BOTANICAL NAME	COMMON NAME	SIZE	CONTAINER
CAH	26	CLETHRA ALNIFOLIA `HUMMINGBIRD`	HUMMINGBIRD SUMMERSWEET (DWARF)	24-30"	CONTAINER
CSK	55	CORNUS SERICEA `KELSEYI`	KELSEYI DOGWOOD	15-18"	CONTAINER
DGN	29	DEUTZIA GRACILIS `NIKKO`	SLENDER DEUTZIA	18-24"	CONTAINER
IGS	32	ILEX GLABRA `SHAMROCK`	SHAMROCK INKBERRY	24-30"	CONTAINER
IMBB	2	ILEX X MESERVEAE `BLUE BOY`	BLUE BOY HOLLY	24-30"	CONTAINER
IMBG	22	ILEX X MESERVEAE `BLUE GIRL`	BLUE GIRL HOLLY	24-30"	CONTAINER
IMDL	4	ILEX AQUIPERNYI `MESCHICK`	DRAGON LADY HOLLY	3-4`	CONTAINER
IV	36	ITEA VIRGINICA `HENRY'S GARNET`	HENRY`S GARNET SWEETSPIRE	24-30"	CONTAINER
JHIB	62	JUNIPERUS HORIZONTALIS `MONBER`	ICEE BLUE JUNIPER	15-18" SPRD	CONTAINER
RAG	64	RHUS AROMATICA `GRO-LOW`	GRO-LOW FRAGRANT SUMAC	15-18"	CONTAINER
GRASSES	QTY	BOTANICAL NAME	COMMON NAME	SIZE	CONTAINER
PVN	43	PANICUM VIRGATUM `NORTH WIND`	NORTHWIND SWITCH GRASS	1 GAL.	CONTAINER
SSO	14	SCHIZACHYRIUM SCOPARIUM `STANDING OVATION`	STANDING OVATION LITTLE BLUESTEM GRASS	1 GAL.	CONTAINER

30 15 7.5 0 30
1"= 30'

R:\2022\PAB220113.00\CAD\DRAWINGS\PLAN SETS\CIVIL SITE PLANS\PAB220113.00-LLGT-4A---LAYOUT: C-701 LSCP

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PROGRAM MANAGEMENT
LANDSCAPE ARCHITECTURE
LAND DEVELOPMENT DESIGN
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REV	DATE	COMMENT	DRAWN BY / CHECKED BY
1	5/4/2023	NPDES SUBMISSION NPDES REV-0	KMP MSL
2	7/11/2023	SHADE TREE COMMISSION	HMP MSL
3	8/4/2023	NPDES SUBMISSION NPDES REV-1	HMP MSL
4	9/20/2023	TOWNSHIP RESUBMISSION	RMS MSL

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PROJECT No.:	PAB220113.00
DRAWN BY:	RMS
CHECKED BY:	MSL
DATE:	03/15/2023
CAD I.D.:	PAB220113.00-LLGT-4A

PROJECT:

FINAL LAND DEVELOPMENT PLANS

FOR

MILEONE FORT WASHINGTON, LLC

BMW AUTOMOTIVE DEALERSHIP EXPANSION

500 PENNSYLVANIA AVENUE
WHITEMARSH TOWNSHIP
MONTGOMERY COUNTY, PA

BOHLER
74 W BROAD STREET, SUITE 500
BETHLEHEM, PA 18018
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Fax: (610) 709-9976
www.BohlerEngineering.com

PENNSYLVANIA D.T. NORTH LICENSED LANDSCAPE ARCHITECT
REGISTERED LANDSCAPE ARCHITECT
PENNSYLVANIA LICENSE No. LA002729

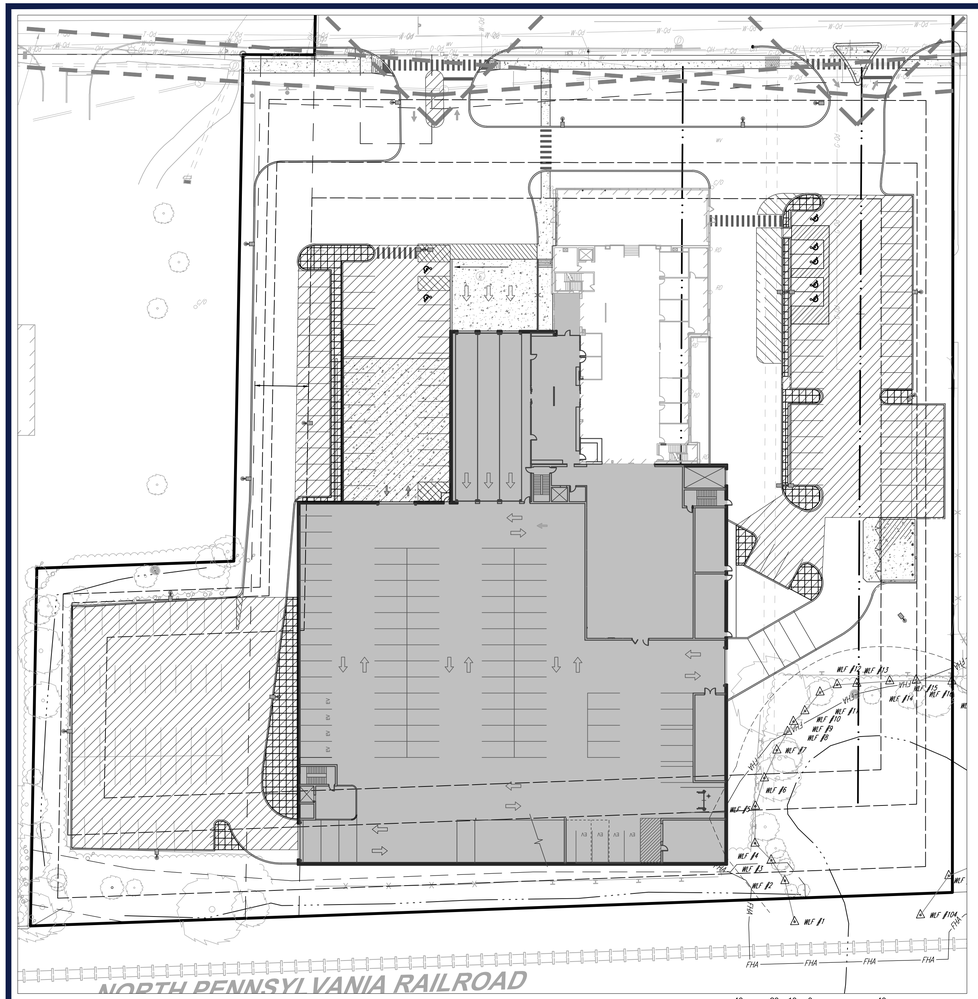
SHEET TITLE:

LANDSCAPE PLAN

SHEET NUMBER:

C-701

REVISION 4 - 9/20/2023


NORTH PENNSYLVANIA RAILROAD
WLF #1
WLF #2
WLF #3
WLF #4
WLF #5
WLF #6
WLF #7
WLF #8
WLF #9
WLF #10
WLF #11
WLF #12
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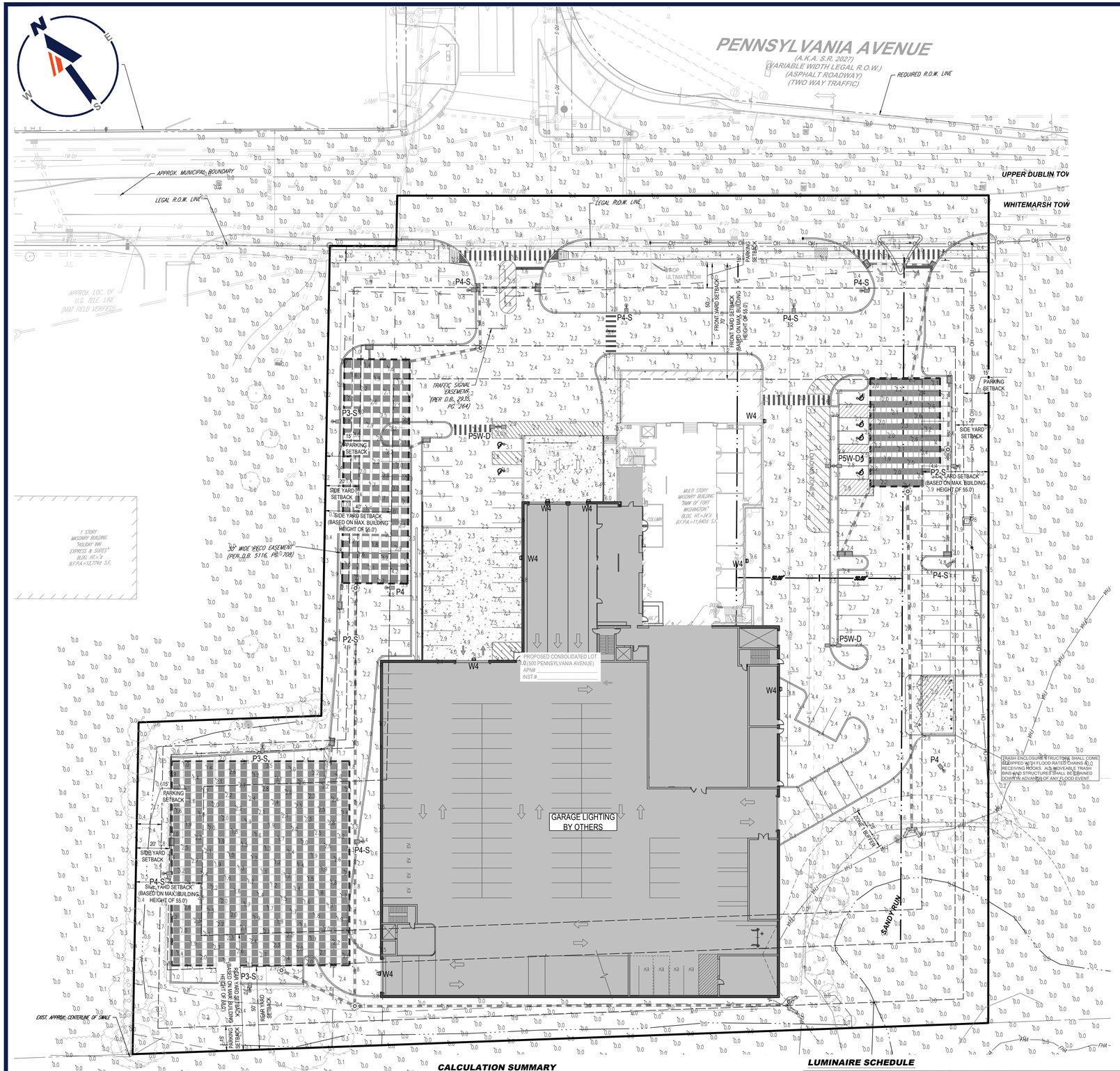
WLF #18
WLF #19
WLF #20
WLF



CALCULATION SUMMARY

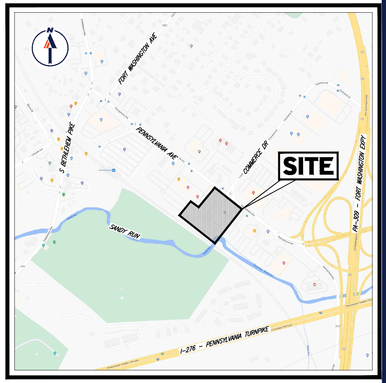
LABEL	CALCTYPE	UNITS	AVG	MAX	MIN	AVG/MIN	MAX/MIN
ALL POINTS	ILLUMINANCE	Fc	0.87	10.5	0.0	N.A.	N.A.
DRIVE AISLES	ILLUMINANCE	Fc	2.62	9.6	1.0	2.62	9.60
PARKING - NORTH	ILLUMINANCE	Fc	2.65	8.3	1.3	2.04	6.38
PARKING - SOUTHEAST	ILLUMINANCE	Fc	2.57	5.3	1.0	2.57	5.30
PARKING - WEST	ILLUMINANCE	Fc	2.21	8.7	1.0	2.21	8.70
SERVICE LANES	ILLUMINANCE	Fc	3.55	10.5	1.3	2.73	8.08

LUMINAIRE SCHEDULE

LABEL	QTY	MOUNTING HEIGHT	ARRANGEMENT	LUM. LUMENS	LLF	DESCRIPTION	POLE
P2-S	2	24'-6" AFG	SINGLE	11225	0.900	GARDCO BY SIGNIFY, PUREFORM MEDIUM LED AREA LIGHT, TYPE 2 WITH INTERNAL HOUSING SIDE SHIELD, ZERO UP-LIGHT (P26-48L-700-NW-G2-AR-2-x-HS)	GARDCO BY SIGNIFY, STRAIGHT ROUND STEEL POLE, 22' LENGTH (SRS-CB-4-11-22-D1-DT5)
P3-S	3	24'-6" AFG	SINGLE	11224	0.900	GARDCO BY SIGNIFY, PUREFORM MEDIUM LED AREA LIGHT, TYPE 3 WITH INTERNAL HOUSING SIDE SHIELD, ZERO UP-LIGHT (P26-48L-700-NW-G2-AR-3-x-HS)	GARDCO BY SIGNIFY, STRAIGHT ROUND STEEL POLE, 22' LENGTH (SRS-CB-4-11-22-D1-DT5)
P4	2	24'-6" AFG	SINGLE	14351	0.900	GARDCO BY SIGNIFY, PUREFORM MEDIUM LED AREA LIGHT, TYPE 4, ZERO UP-LIGHT (P26-48L-700-NW-G2-AR-4-x)	GARDCO BY SIGNIFY, STRAIGHT ROUND STEEL POLE, 22' LENGTH (SRS-CB-4-11-22-D1-DT5)
P4-S	7	24'-6" AFG	SINGLE	11707	0.900	GARDCO BY SIGNIFY, PUREFORM MEDIUM LED AREA LIGHT, TYPE 4 WITH INTERNAL HOUSING SIDE SHIELD, ZERO UP-LIGHT (P26-48L-700-NW-G2-AR-4-x-HS)	GARDCO BY SIGNIFY, STRAIGHT ROUND STEEL POLE, 22' LENGTH (SRS-CB-4-11-22-D1-DT5)
P5W-D	3	24'-6" AFG	BACK-BACK	14819	0.900	GARDCO BY SIGNIFY, PUREFORM MEDIUM LED AREA LIGHT, TYPE 5W, ZERO UP-LIGHT (P26-48L-700-NW-G2-AR-5W-x)	GARDCO BY SIGNIFY, STRAIGHT ROUND STEEL POLE, 22' LENGTH (SRS-CB-4-11-22-D2-DT5)
W4	8	12'-0" AFF	SINGLE	7938	0.900	GARDCO BY SIGNIFY, PUREFORM LED WALL SCONCE, TYPE 4, ZERO UP-LIGHT (PWS-48L-400-NW-G2-4-x)	----------

GENERAL LIGHTING NOTES

1. THE GENERAL NOTES MUST BE INCLUDED AS PART OF THIS ENTIRE DOCUMENT PACKAGE AND ARE PART OF THE CONTRACT DOCUMENTS. THE GENERAL NOTES ARE REFERENCED HEREIN, AND THE ELECTRICAL CONTRACTOR MUST REFER TO THEM AND FULLY COMPLY WITH THESE NOTES, IN THEIR ENTIRETY. THE ELECTRICAL CONTRACTOR MUST BE FAMILIAR WITH AND ACKNOWLEDGE FAMILIARITY WITH ALL OF THE GENERAL NOTES AND ALL OF THE PLANS' SPECIFIC NOTES.
2. THE ELECTRICAL CONTRACTOR MUST COMPLY WITH ALL APPLICABLE CONTRACTOR REQUIREMENTS INDICATED IN THE PLANS, INCLUDING BUT NOT LIMITED TO GENERAL NOTES, GRADING AND UTILITY NOTES, SITE SAFETY, AND ALL AGENCY AND GOVERNMENTAL REGULATIONS.
3. THE LIGHTING PLAN DEPICTS PROPOSED, SUSTAINED ILLUMINATION LEVELS CALCULATED USING DATA PROVIDED BY THE NOTED MANUFACTURER. ACTUAL SUSTAINED SITE ILLUMINATION LEVELS AND PERFORMANCE OF LUMINAIRES MAY VARY DUE TO VARIATIONS IN WEATHER, ELECTRICAL VOLTAGE, TOLERANCE IN LAMPS, THE SERVICE LIFE OF EQUIPMENT AND LUMINAIRES AND OTHER RELATED VARIABLE FIELD CONDITIONS.
4. THE LIGHTING VALUES AND CALCULATION POINTS DEPICTED ON THIS PLAN ARE ANALYZED ON A HORIZONTAL GEOMETRIC PLANE AT GROUND LEVEL UNLESS OTHERWISE NOTED. ILLUMINATION LEVELS ARE SHOWN IN FOOT-CANDLES (FC).
5. THE LUMINAIRES, LAMPS AND LENSES MUST BE REGULARLY INSPECTED/MAINTAINED TO ENSURE THAT THEY FUNCTION PROPERLY. THIS WORK SHOULD INCLUDE, BUT IS NOT LIMITED TO, VISUAL OBSERVATION, CLEANING OF LENSES, AND RE-LAMPING ACCORDING TO MANUFACTURER RECOMMENDATIONS. FAILURE TO FOLLOW THE ABOVE STEPS COULD RESULT IN IMPROPER LIGHT DISTRIBUTION AND FAILURE TO COMPLY WITH THE APPROVED DESIGN. UPON COMPLETION AND OWNER'S ACCEPTANCE OF THE WORK, THE ABOVE RESPONSIBILITIES BECOMES SOLELY THE OWNER'S.
6. THE LIGHTING PLAN IS INTENDED TO SHOW THE LOCATIONS AND TYPE OF LUMINAIRES. POWER SYSTEM, CONDUITS, WIRING AND OTHER ELECTRICAL COMPONENTS ARE SOLELY THE ARCHITECT'S, MECHANICAL ENGINEER'S AND/OR ELECTRICAL CONTRACTOR'S RESPONSIBILITY, AS INDICATED IN THE CONSTRUCTION CONTRACT DOCUMENTS. THE CONTRACTOR MUST COORDINATE WITH THE PROJECT ARCHITECT AND/OR ELECTRICAL ENGINEER REGARDING ANY AND ALL POWER SOURCES AND TIMING DEVICES NECESSARY TO MEET THE DESIGN INTENT. THESE ITEMS MUST BE INSTALLED AS REQUIRED BY STATE AND LOCAL REGULATIONS. CONTRACTOR IS RESPONSIBLE FOR THE INSTALLATION OF LIGHTING FIXTURES AND APPURTENANCES IN ACCORDANCE WITH ALL APPLICABLE BUILDING AND ELECTRICAL CODES.
7. THE ELECTRICAL CONTRACTOR MUST BRING IMMEDIATELY, IN WRITING, ANY LIGHT LOCATIONS THAT CONFLICT WITH DRAINAGE, UTILITIES, OR OTHER STRUCTURE(S) TO THE PROFESSIONAL OF RECORD'S ATTENTION, PRIOR TO THE START OF CONSTRUCTION.
8. THE ELECTRICAL CONTRACTOR IS RESPONSIBLE TO ENSURE THAT SHIELDING AND OR ROTATED OPTICS ARE INSTALLED AS INDICATED ON THE PLAN IN ORDER TO ACHIEVE THE LIGHTING LEVELS THE REVIEWING AGENCY APPROVED.
9. UPON OWNERS ACCEPTANCE OF THE COMPLETED PROJECT, THE OWNER SHALL BE RESPONSIBLE FOR ALL MAINTENANCE, SERVICING, REPAIR AND INSPECTION OF THE LIGHTING SYSTEM AND ALL OF ITS COMPONENTS AND RELATED SYSTEMS, TO ENSURE ADEQUATE LIGHTING LEVELS ARE PRESENT AND FUNCTIONING AT ALL TIMES.
10. THE LIGHT LOSS FACTORS (LLF) DEPICTED IN THE LUMINAIRE SCHEDULE ON THIS PLAN ARE BASED ON DATA PROVIDED BY THE MANUFACTURER FOLLOWING IES LM-80-08 TESTING. THE LIGHT LEVELS DEPICTED ON THIS PLAN WERE CALCULATED BASED ON THE LLF LISTED IN THE LUMINAIRE SCHEDULE.
11. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL PROVIDE SUBMITTALS TO BOHLER FOR REVIEW AND APPROVAL. SUBSTITUTION REQUESTS MUST BE ACCOMPANIED BY A HORIZONTAL PHOTOMETRIC STUDY DEMONSTRATING THAT THE LUMINAIRE(S) IN QUESTION WILL MEET THE DESIGN INTENT OF THIS PLAN. SUBSTITUTION REQUESTS WITHOUT A PHOTOMETRIC STUDY WILL BE REJECTED.



LOCATION MAP

SCALE: 1" = 800'

800 400 200 0 800

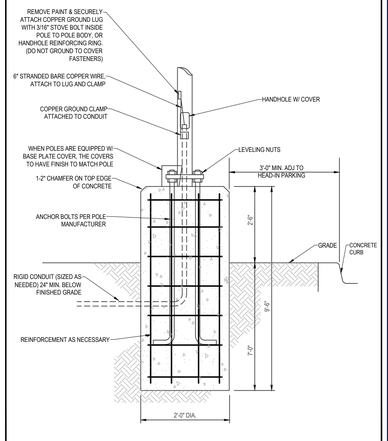
1"=800'

LIGHTING COMPLIANCE

ZONING:
116-98 LIGHTING. LIGHTING SHALL BE ARRANGED IN A MANNER WHICH WILL PROTECT THE HIGHWAY AND NEIGHBORING PROPERTIES FROM DIRECT GLARE OR HAZARDOUS INTERFERENCE OF ANY KIND. [COMPLIES]

SALDO:
105-38.U ALL COMMON PARKING AREAS SHALL BE ADEQUATELY LIGHTED DURING AFTER-DARK OPERATING HOURS. ALL LIGHT STANDARDS SHALL BE LOCATED ON RAISED PARKING ISLANDS AND NOT ON THE PARKING SURFACE. [COMPLIES]

105-38.V. ALL ARTIFICIAL LIGHTING USED TO ILLUMINATE ANY PARKING SPACE OR SPACES SHALL BE SO ARRANGED THAT NO DIRECT RAYS FROM SUCH LIGHTING SHALL FALL UPON ANY NEIGHBORING PROPERTY OR STREETS, NOR SHALL ANY HIGH BRIGHTNESS SURFACE OF THE LUMINARIES BE VISIBLE FROM NEIGHBORING RESIDENTIAL PROPERTIES OR FROM A PUBLIC STREET. [COMPLIES]



NOTES:
1. THIS DETAIL IS FOR BID AND BUDGETARY PURPOSES ONLY. CONTRACTOR SHALL ENSURE DESIGN IS PREPARED BY A QUALIFIED STRUCTURAL ENGINEER CONSIDERING LIGHTING MANUFACTURER REQUIREMENTS, LOCAL WIND LOADS, SITE SPECIFIC SOIL PARAMETERS.
2. ALL REBAR SHALL HAVE A YIELD STRENGTH OF 60ksi, AND MAINTAIN A 3" MIN. CLEARANCE FROM SURFACES.

I-3 | **LIGHT POLE FOUNDATION DETAIL**

NOT TO SCALE

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PROJECT No.:	PAB220113.00
DRAWN BY:	RMS
CHECKED BY:	MSL
DATE:	03/15/2023
CAD I.D.:	PAB220113.00-LLGT-4A

PROJECT:

FINAL LAND DEVELOPMENT PLANS

FOR

MILEONE FORT WASHINGTON, LLC

BMW AUTOMOTIVE DEALERSHIP EXPANSION

**500 PENNSYLVANIA AVENUE
WHITEMARSH TOWNSHIP
MONTGOMERY COUNTY, PA**

BOHLER

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PENNSYLVANIA
D.T. NORTH
REGISTERED LANDSCAPE ARCHITECT
PENNSYLVANIA LICENSE No. LA002729

SHEET TITLE:

LIGHTING PLAN

SHEET NUMBER:

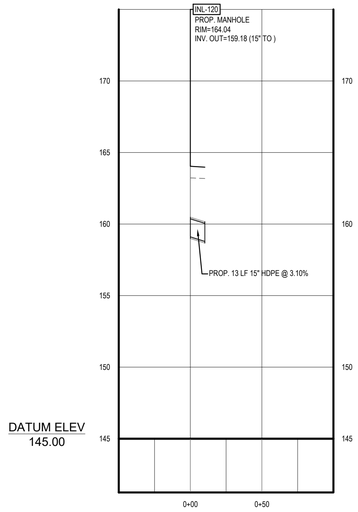
C-703

REVISION 4 - 9/20/2023

30 15 7.5 0 30

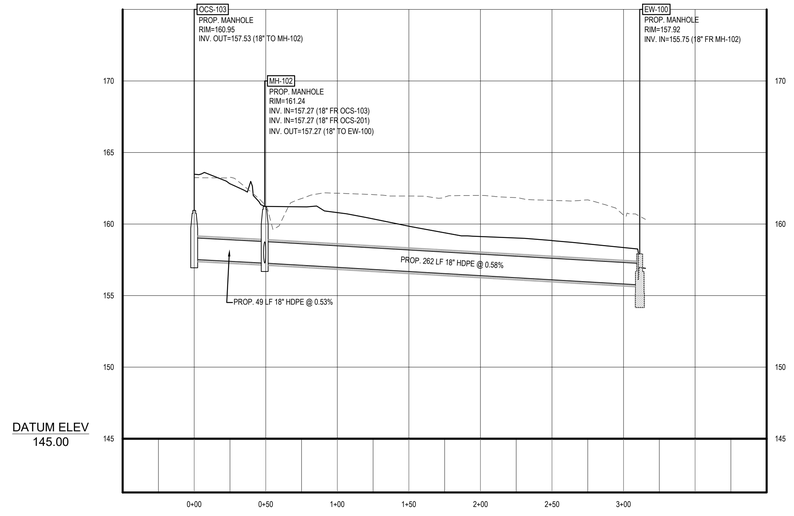
1" = 30'

R:\2022\PAB220113.00\CAD\DRAWINGS\PLAN SETS\CIVIL SITE PLANS\PAB220113.00-LLGT-4A_-_LAYOUT C-703 LGHT



INL-120 TO UG1

SCALE: 1"= 50 ' HORIZONTAL
1"= 5 ' VERTICAL



OCS-102 TO EW-100

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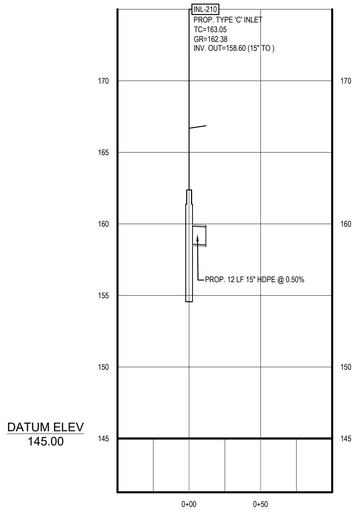
1"= 5 ' VERTICAL



INL-210 TO UG2

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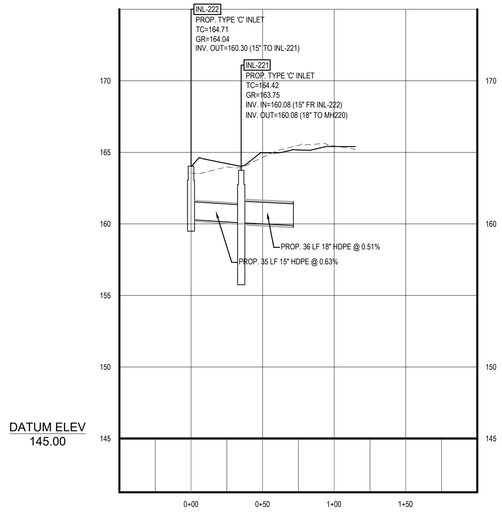

INL-221 TO UG2

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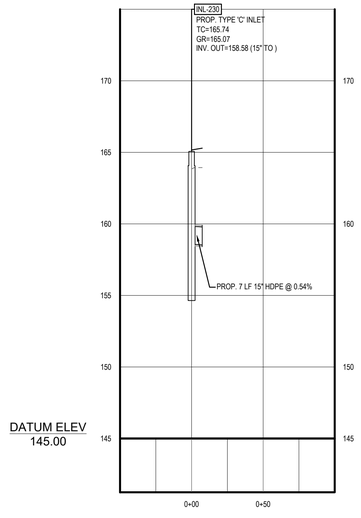

INL-230 TO UG2

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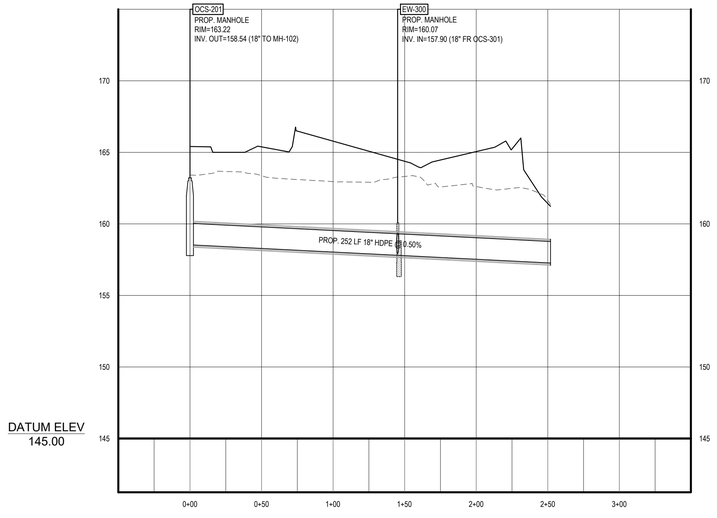

OCS-201 TO MH-200

SCALE: 1"= 50 ' HORIZONTAL
1"= 5 ' VERTICAL

R:\2022\PAB220113.00\CAD\DRAWINGS\PLAN SETS\CIVIL SITE PLANS\PAB220113.00-PROF-4A-----LAYOUT C-801 STM PROFILES
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4	9/28/2023	TOWNSHIP RESUBMISSION	RMS MSL

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JEFFREY A. BEAVAN
PROFESSIONAL ENGINEER
PENNSYLVANIA LICENSE NO. 078403
NEW JERSEY LICENSE No. GE045606600
SEAL
SIGNATURE
DATE: 9/28/2023

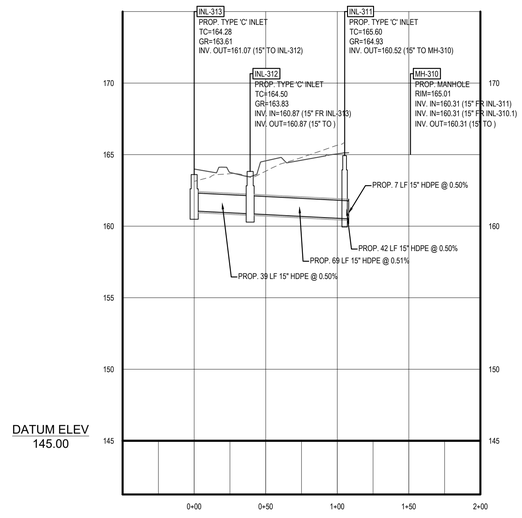
SHEET TITLE:

STORM SEWER PROFILES

SHEET NUMBER:

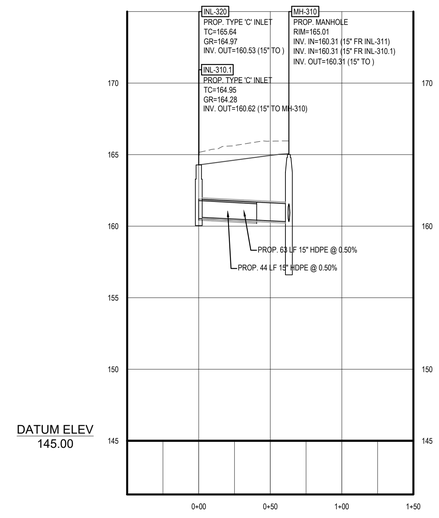
C-801

REVISION 4 - 9/28/2023



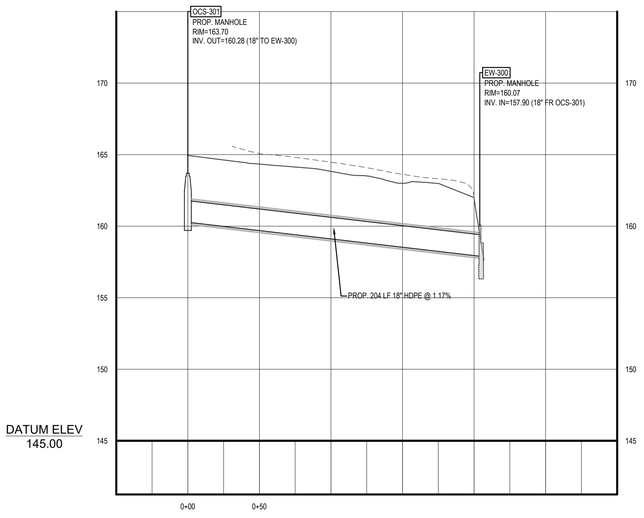
INL-313 TO UG3

SCALE: 1"= 50 ' HORIZONTAL
1"= 5 ' VERTICAL



INL-320 TO MH-310

SCALE: 1"= 50 ' HORIZONTAL
1"= 5 ' VERTICAL



OCS-301 TO MH-200

SCALE: 1"= 50 ' HORIZONTAL
1"= 5 ' VERTICAL

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PROFESSIONAL ENGINEER
JEFFREY A. BEAVAN
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PENNSYLVANIA LICENSE No. PE084525
NEW JERSEY LICENSE No. GE049306600

SHEET TITLE:

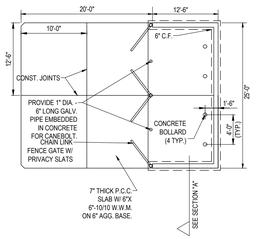
STORM SEWER PROFILES

SHEET NUMBER:

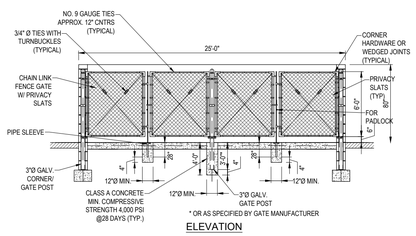
C-802

REVISION 4 - 9/28/2023

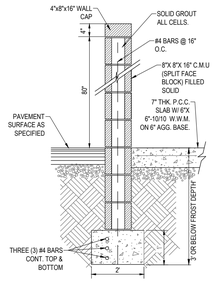
I:\2022\PAB220113.00\CAD\DRAWINGS\PLAN SETS\CIVIL SITE PLANS\PAB220113.00-PROF-4A.....LAYOUT C-802 STM PROFILES
RS



PLAN VIEW



ELEVATION

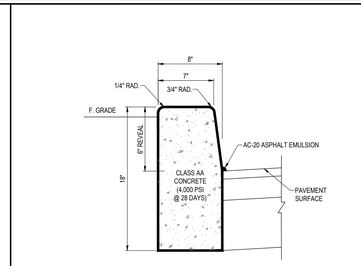


SECTION "A"

NOTE: TRASH ENCLOSURE FINISH TO BE COORDINATED WITH OWNER.

A-10 ***12'-6" x 25'-0" CMU TRASH ENCLOSURE DETAIL***

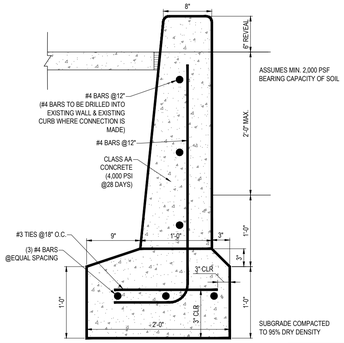
NOT TO SCALE



TRANSVERSE JOINTS 3/4" WIDE SHALL BE INSTALLED IN THE CURB 20' APART AND SHALL BE FILLED WITH CELLULAR COMPRESSION MATERIAL AS SPECIFIED RECESSED 1/4" IN FROM FRONT FACE AND TOP OF CURB.

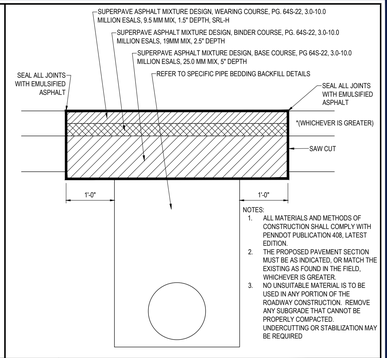
P-1 ***TYPICAL CONCRETE CURB DETAIL***

NOT TO SCALE



P-4 ***TYPICAL EXTENDED CONCRETE CURB DETAIL***

NOT TO SCALE



P-14 ***FLEXIBLE PAVEMENT RESTORATION***

NOT TO SCALE

NOTE:
ALL MATERIALS AND METHODS OF CONSTRUCTION SHALL COMPLY WITH THE LATEST EDITIONS OF PENNDOT PUBLICATION 408 AND 242 (PAVEMENT POLICY MANUAL).

P-17 ***STANDARD ASPHALT PAVEMENT DETAIL***

NOT TO SCALE

EXPANSION JOINTS 1/2" WIDE PREMOULDED BIT. MATERIAL SHALL BE INSTALLED AT 30' INTERVALS. CONTRACTION JOINTS TO BE SPACED AT EQUAL INTERVALS, 5' MAXIMUM LENGTH.

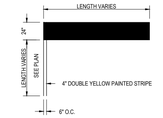
ALL SIDEWALKS SHALL BE LATERALL PITCHED AT A SLOPE OF NO LESS THAN [INCH PER FOOT.

P-21 ***CONCRETE SIDEWALK DETAIL***

NOT TO SCALE

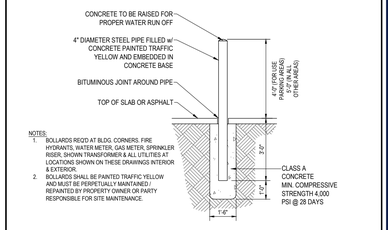
P-22 ***SIDEWALK TIE-IN DETAIL***

NOT TO SCALE



T-6 ***WHITE PAINTED STOP BAR DETAIL***

NOT TO SCALE



T-20 ***BOLLARD DETAIL***

NOT TO SCALE

T-11 ***STANDARD POLE MOUNTED SIGN INSTALLATION DETAIL***

NOT TO SCALE

NOTES:
1. POST MOUNTED SIGNS SHALL BE TYPE B CHANNEL BAR POSTS AND SHALL CONFORM TO PADOT "TRAFFIC CONTROL SIGNING STANDARDS" TC-8702B. APPROPRIATE POSTS SHALL BE SELECTED BASED ON THE SIZE OF THE SIGN USING THE SELECTION TABLES CONTAINED THEREIN.
2. SIGN INSTALLATION SHALL BE IN ACCORDANCE WITH PADOT "TRAFFIC CONTROL SIGNING STANDARDS" TC-8702B, AS AMENDED.
3. SEE CIVIL PLANS FOR EXACT LOCATION, TYPE AND SIZE OF SIGNS. ALL REGULATORY (R SERIES), SIGNS SHALL CONFORM TO THE PADOT "HANDBOOK OF APPROVED SIGNS", PUBLICATION 236M, AS AMENDED, UNLESS OTHERWISE SPECIFIED.
4. SIGNS SHALL BE SETBACK 2.0' FROM CURB LINES OR OTHER OBSTRUCTIONS AS MEASURED FROM THE FACE/EDGE OF THE SIGN.
5. RESERVED PARKING SPACE SIGNS SHALL CONFORM TO DEPARTMENT OF JUSTICE "ADA STANDARDS FOR ACCESSIBLE DESIGN" AS AMENDED.
6. ALL SIGNS SHALL BE INSTALLED WITH ACORN NUT FASTENERS.

T-14 ***RESERVED PARKING SPACE WITH PENALTIES & VAN ACCESSIBLE SIGNS***

NOT TO SCALE

NOTES:
1. DETECTABLE WARNINGS SHALL BE A PRE-MANUFACTURED ARMOUR-TILE TACTILE SYSTEM OR APPROVED EQUIVALENT.
2. CONTRACTOR TO COORDINATE SPECIFIC SYSTEM AND MATERIALS TO BE UTILIZED WITH THE ENGINEER TO ENSURE LOCAL, STATE AND A.D.A. COMPLIANCE PRIOR TO CONSTRUCTION.

T-16 ***TRUNCATED DOME PATTERN FOR ADA DETECTABLE WARNING SURFACES (FOR USE IN DOT ROADWAYS)***

NOT TO SCALE

NOTES:
1. REFER TO PLAN SET FOR LOCATIONS OF PROPOSED BOLLARDS
2. BOLLARDS SHALL BE PAINTED TRAFFIC YELLOW AND MUST BE PERPETUALLY MAINTAINED / REPAINTED BY PROPERTY OWNER OR PARTY RESPONSIBLE FOR SITE MAINTENANCE.

T-18 ***RESERVED PARKING SIGN WITHIN BOLLARD DETAIL***

NOT TO SCALE

T-15 ***RESERVED PARKING SPACE & PENALTIES SIGNS***

NOT TO SCALE

NOTES:
1. THIS TYPE OF MARKING SHOULD BE USED AT LOCATIONS WHERE SUBSTANTIAL NUMBERS OF PEDESTRIANS CROSS WITHOUT ANY OTHER TRAFFIC CONTROL DEVICE, AT LOCATIONS WHERE PHYSICAL CONDITIONS ARE SUCH THAT ADDED VISIBILITY OF THE CROSSWALK IS NECESSARY, OR AT PLACES WHERE PEDESTRIANS MIGHT NOT BE EXPECTED.
2. ALL CROSSWALKS SHALL COMPLY WITH THE FEDERAL HIGHWAY ADMINISTRATION'S "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" (MUTCD), AS AMENDED.
3. LONGITUDINAL LINES SHALL BE PERPENDICULAR TO TRAVELLED WAY THE EXTEND ACROSS THE FULL WIDTH OF PAVEMENT OR TO THE EDGE OF THE INTERSECTING CROSSWALK TO DISCOURAGE DIAGONAL WALKING BETWEEN CROSSWALKS.
4. ALL CROSSWALK LONGITUDINAL LINES SHALL BE WHITE THERMOPLAST. ALL LINES AND NEUTRAL AREAS SHALL BE OF EQUAL WIDTHS.
5. WARNING SIGNS SHALL BE INSTALLED IN ACCORDANCE WITH MUTCD, AS AMENDED.
6. THE SPACING OF THE LINES SHALL BE SELECTED TO AVOID THE WHEEL PATH.

T-22 ***HIGH VISIBILITY CROSSWALK (PERPENDICULAR TO INTERSECTION)***

NOT TO SCALE

BOHLER

SITE CIVIL AND CONSULTING ENGINEERING
LAND SURVEYING
PROGRAM MANAGEMENT
LANDSCAPE ARCHITECTURE
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REVISIONS

REV	DATE	COMMENT	DRAWN BY / CHECKED BY
1	5/4/2023	NPDES SUBMISSION NPDES REV-0	KMP MSL
2	7/11/2023	SHADE TREE COMMISSION	HMP MSL
3	8/4/2023	NPDES SUBMISSION NPDES REV-1	HMP MSL
4	9/20/2023	TOWNSHIP RESUBMISSION	RMS MSL

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PROJECT No.: PAB220113.00
DRAWN BY: RMS
CHECKED BY: MSL
DATE: 03/15/2023
CAD I.D.: PAB220113.00-CNDS-4A

PROJECT:

FINAL LAND DEVELOPMENT PLANS

FOR

MILEONE FORT WASHINGTON, LLC

BMW AUTOMOTIVE DEALERSHIP EXPANSION

500 PENNSYLVANIA AVENUE WHITEMARSH TOWNSHIP MONTGOMERY COUNTY, PA

BOHLER

74 W BROAD STREET, SUITE 500
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PROFESSIONAL ENGINEER
PENNSYLVANIA LICENSE NO. PE087035
NEW JERSEY LICENSE NO. GE49500

SHEET TITLE:

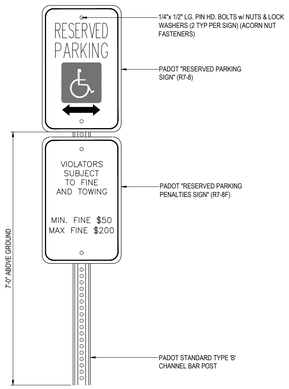
DETAIL SHEET

SHEET NUMBER:

C-901

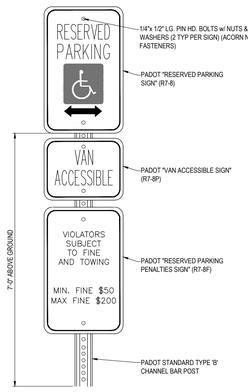
REVISION 4 - 9/20/2023

R:\2022\PAB220113.00\CAD\DRAWINGS\PLAN SETS\CIVIL SITE PLANS\PAB220113.00-CNDS-4A-----LAYOUT: C-901 DETAILS



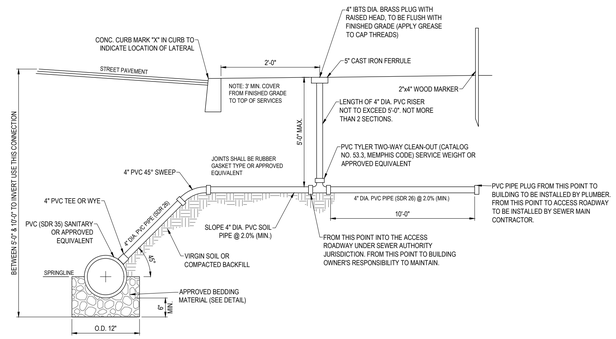
T-15 ***RESERVED PARKING SPACE & PENALTIES SIGNS***

NOT TO SCALE



T-14 ***RESERVED PARKING SPACE WITH PENALTIES & VAN ACCESSIBLE SIGNS***

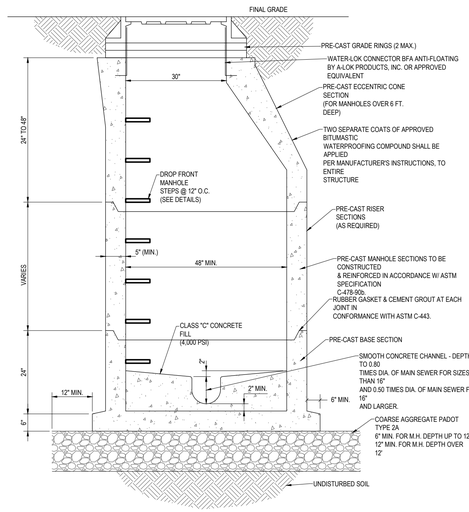
NOT TO SCALE



S-1 ***TYPICAL SANITARY SEWER LATERAL DETAIL***

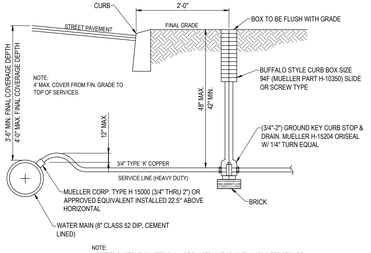
NOT TO SCALE

SANITARY LATERAL PIPE AND MH STRUCTURE WITHIN FLOODPLAIN SHALL BE WATERTIGHT / WATERPROOF AND BE CONSTRUCTED WITH WATERTIGHT / WATERPROOF FITTINGS AND COMPONENTS. MH SHALL HAVE A BOLT DOWN WATERTIGHT / WATERPROOF LID.



S-3 ***PRECAST SANITARY MANHOLE DETAILS***

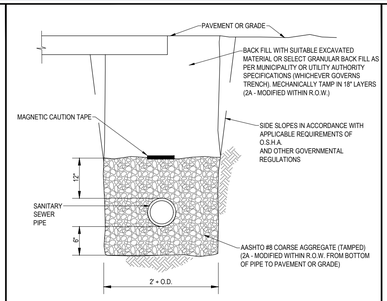
NOT TO SCALE



NOTE:
MODIFIED 2A STONE (8" LIFTS) SHALL BE PLACED WHEN BACKFILLING WATER SERVICE CONNECTION FROM MAIN TO BEHIND CURB.

W-2 ***WATER SERVICES CONNECTION DETAIL***

NOT TO SCALE

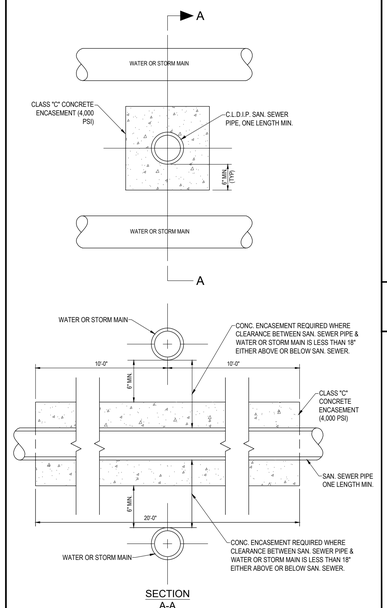


EXCAVATIONS IN EXISTING PAVED ROADWAYS SHALL BE COORDINATED WITH THE LOCAL PERMITTING AGENCY, AND ALL EXCAVATION SHALL BE PAVED WITH TEMPORARY BITUMINOUS PAVEMENT FROM THE DATE OF ORIGINAL EXCAVATION UNTIL PERMANENT PAVEMENT IS INSTALLED. (MINIMUM = 90 DAYS, MAXIMUM = 120 DAYS)

THIS DETAIL IS NOT FOR USE WITHIN A STATE RIGHT-OF-WAY. REFER TO THE LATEST APPROVED DOT SPECIFICATIONS FOR TRENCH BEDDING WITHIN A STATE RIGHT-OF-WAY.

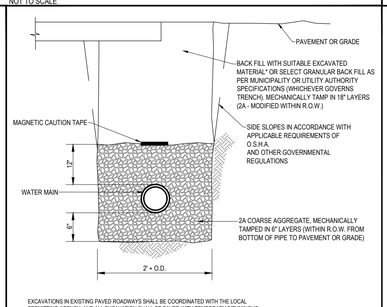
S-8 ***TRENCH BEDDING CLASSIFICATION (SANITARY MAIN)***

NOT TO SCALE



S-11 ***CONCRETE ENCASEMENT DETAIL***

NOT TO SCALE



EXCAVATIONS IN EXISTING PAVED ROADWAYS SHALL BE COORDINATED WITH THE LOCAL PERMITTING AGENCY, AND ALL EXCAVATION SHALL BE PAVED WITH TEMPORARY BITUMINOUS PAVEMENT FROM THE DATE OF ORIGINAL EXCAVATION UNTIL PERMANENT PAVEMENT IS INSTALLED. (MINIMUM = 90 DAYS, MAXIMUM = 120 DAYS)

THIS DETAIL IS NOT FOR USE WITHIN A STATE RIGHT-OF-WAY. REFER TO THE LATEST APPROVED DOT SPECIFICATIONS FOR TRENCH BEDDING WITHIN A STATE RIGHT-OF-WAY.

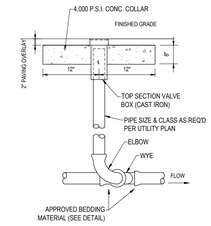
W-4 ***TRENCH BEDDING CLASSIFICATION (WATER MAIN)***

NOT TO SCALE

LIST OF APPLICABLE PADOT DETAILS

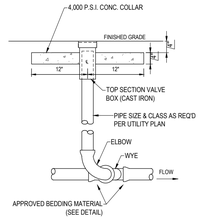
SIGNAGE: PA.D.O.T. PUBLICATION 236
ADDITIONAL DETAILS ASSOCIATED WITH PADOT ROAD IMPROVEMENTS ARE ON THE FOLLOWING STANDARD DETAILS FROM PennDOT PUBLICATION 72M:
(THE PERMITTEE IS REQUIRED TO PROVIDE THE CONTRACTOR WITH COPIES OF THE MOST CURRENT APPLICABLE RC DRAWINGS FROM THE PennDOT PUBLICATION 72M)

STANDARD DRAWING NUMBER	DRAWING DATE
RC – 28M	JUNE 10, 2013
RC – 39M	JUNE 10, 2013
RC – 45M	JUNE 10, 2013
RC – 46M	JUNE 10, 2013
RC – 64M	JUNE 10, 2013
RC – 67M	JUNE 10, 2013



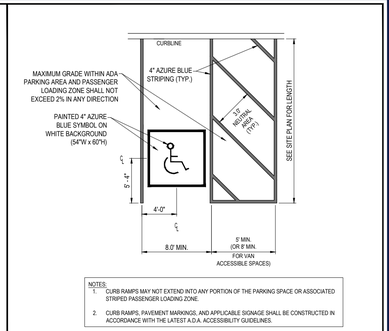
S-12 ***TYPICAL CLEANOUT DETAIL (PAVED AREAS)***

NOT TO SCALE



S-13 ***TYPICAL CLEANOUT DETAIL (LANDSCAPE AREAS)***

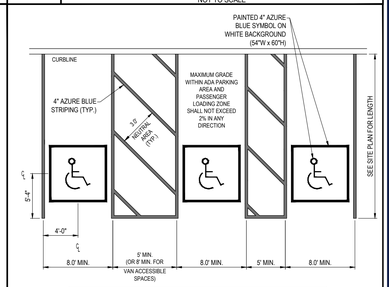
NOT TO SCALE



NOTES:
1. CURB RAMPS MAY NOT EXTEND INTO ANY PORTION OF THE PARKING SPACE OR ASSOCIATED STRIPED PASSENGER LOADING ZONE.
2. CURB RAMPS, PAVEMENT MARKINGS, AND APPLICABLE SIGNAGE SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE LATEST A.D.A. ACCESSIBILITY GUIDELINES.

T-13 ***ADA ACCESSIBLE PARKING SPACE STRIPING (1 SPACE)***

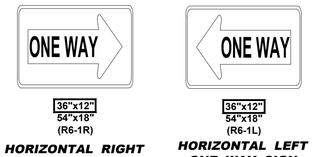
NOT TO SCALE



NOTES:
1.) CURB RAMPS MAY NOT EXTEND INTO ANY PORTION OF THE PARKING SPACE OR ASSOCIATED STRIPED PASSENGER LOADING ZONE.
2.) CURB RAMPS, PAVEMENT MARKINGS, AND APPLICABLE SIGNAGE SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE LATEST A.D.A. ACCESSIBILITY GUIDELINES.

T-12 ***ADA ACCESSIBLE PARKING SPACE STRIPING (3 SPACES)***

NOT TO SCALE



HORIZONTAL RIGHT ONE WAY SIGN ***HORIZONTAL LEFT ONE WAY SIGN***

STOP SIGN ***YIELD SIGN*** ***KEEP RIGHT SIGN***

ALL TRAFFIC MUST TURN RIGHT SIGN ***NO LEFT TURN SIGN***

ALL PAVEMENT MARKINGS SHOULD BE IN ACCORDANCE WITH PennDOT PUBLICATION 111, TC-8600 & TC-8700 STANDARDS, LATEST EDITION.

SIGNAGE: PA.D.O.T. PUBLICATION 236
"STOP" SIGN - R1-1 (24" x 24")
"NO LEFT TURN" SIGN - R3-2 (24" x 24")
"CENTER LANE - LEFT TURN - ONLY" SIGN - R3-9B (24" x 36")
"BEGIN" SIGN - R3-9CP (24" x 12")
"KEEP RIGHT" SIGN - R4-7 (12" x 18")
"DO NOT ENTER" SIGN - R5-1 (30" x 30")
VERTICAL "ONE WAY" LEFT SIGN - R6-2L (18" x 24")
VERTICAL "ONE WAY" RIGHT SIGN - R6-2R (18" x 24")
NO PARKING SYMBOL SIGN - R8-3 (24" x 24")
PEDESTRIAN SIGN - W11-2 (30" x 30" W/ FLUORESCENT YELLOW-GREEN BACKGROUND)
DOWNWARD POINTING ARROW SIGN - W16-7P (24" x 12" W/ FLUORESCENT YELLOW-GREEN BACKGROUND)
OBJECT MARKER - OM1-3 (18" x 18")

ADDITIONAL DETAILS ASSOCIATED WITH PADOT ROAD IMPROVEMENTS ARE ON THE FOLLOWING STANDARD DETAILS FROM THE LATEST EDITION OF PennDOT PUBLICATION 72M:
(THE PERMITTEE IS REQUIRED TO PROVIDE THE CONTRACTOR WITH COPIES OF THE MOST CURRENT APPLICABLE RC DRAWINGS)

LIST OF APPLICABLE PADOT DETAILS & STANDARDS

STANDARD DRAWING NUMBER	DRAWING NAME
RC - 26M	CONCRETE PAVEMENT REHABILITATION
RC - 28M	OVERLAY TRANSITIONS AND PAVING NOTCHES
RC - 30M	SUBSURFACE DRAINS
RC - 33M	END SECTIONS FOR PIPE CULVERTS
RC - 38M	SANITARY SEWER MANHOLES
RC - 39M	STORMWATER MANHOLES
RC - 45M	INLET TOPS, GRATES AND FRAMES
RC - 46M	INLET BOXES
RC - 64M	CURBS AND GUTTERS
RC - 65M	CONCRETE MOUNTABLE CURBS
RC - 67M	CURB RAMPS AND SIDEWALKS

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REVISIONS

REV	DATE	COMMENT	DRAWN BY / CHECKED BY
1	5/4/2023	NPDES SUBMISSION NPDES REV-0	KMP MSL
2	7/11/2023	SHADE TREE COMMISSION	HMP MSL
3	8/4/2023	NPDES SUBMISSION NPDES REV-1	HMP MSL
4	9/20/2023	TOWNSHIP RESUBMISSION	RMS MSL

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PROJECT No.: PAB220113.00
DRAWN BY: RMS
CHECKED BY: MSL
DATE: 03/15/2023
CAD I.D.: PAB220113.00-CNDS-4A

PROJECT:

FINAL LAND DEVELOPMENT PLANS

FOR

MILEONE FORT WASHINGTON, LLC

BMW AUTOMOTIVE DEALERSHIP EXPANSION

500 PENNSYLVANIA AVENUE WHITEMARSH TOWNSHIP MONTGOMERY COUNTY, PA

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NEW JERSEY LICENSE NO. GE49209500

SHEET TITLE:

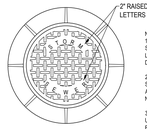
DETAIL SHEET

SHEET NUMBER:

C-902

REVISION 4 - 9/20/2023

R:\2022\PAB220113.00\CAD\DRAWINGS\PLAN SETS\CIVIL SITE PLANS\PAB220113.00-CNDS-4A-----3A-LAYOUT C-902 DETAILS
RMS



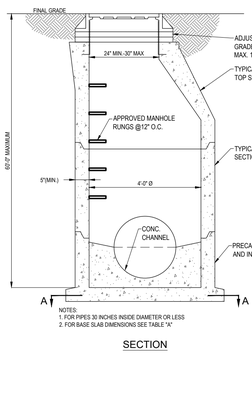
MANHOLE COVER SECTION

NOTES:
1.) STANDARD MANHOLE FRAMES & COVERS SHALL BE USED ON ALL MANHOLES NOT LOCATED WITHIN EASEMENTS UNLESS DIRECTED OTHERWISE BY THE ENGINEER.

2.) STANDARD MANHOLE FRAME & COVER SHALL BE BRODIESTATE PATTERN #1012B, OR APPROVED EQUIVALENT, WITH NON-PENETRATING PICK HOLES.

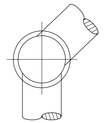
3.) "FLOW-SEAL" MANHOLE COVERS SHALL BE USED ON MANHOLES LOCATED WITHIN EASEMENTS, IN UNPAVED AREAS, AND OUTSIDE OF THE CENTERLINE OF PAVED ROADS.

4.) ALL MANHOLE FRAME AND COVERS SHALL BE MADE IN THE USA.



NOTES:
1. FOR PIPES 30 INCHES INSIDE DIAMETER OR LESS
2. FOR BASE SLAB DIMENSIONS SEE TABLE "A"

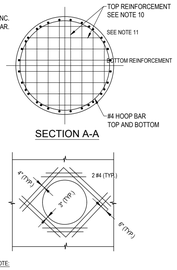
SECTION



PLAN VIEW

TABLE A
BASE SLAB DIMENSIONS

MAX. DEPTH FROM TOP OF MANHOLE TO TOP OF FOOTING	AS DESIGNED (SEE NOTE 12)	
	FOOTING DIAMETER	FOOTING THICKNESS
10'-0"	6'-9"	1'-0"
20'-0"	6'-9"	1'-0"
30'-0"	6'-9"	1'-3"
40'-0"	7'-3"	1'-3"
50'-0"	8'-0"	1'-3"
60'-0"	8'-6"	1'-3"



SECTION A-A

NOTE:

FOR WALL THICKNESS 10" THICK OR GREATER PLACE ADDITIONAL REINFORCEMENT AS SHOWN ABOVE AT EACH FACE OF THE WALL INSIDE MAIN REINFORCEMENT.
FOR WALLS 5" THICK KEEP MAIN REINFORCEMENT CENTERED IN WALL, PROVIDE ADDITIONAL REINFORCEMENT AS SHOWN ABOVE, MAINTAINING REQUIRED COVER.

REINFORCEMENT DETAIL AT OPENINGS

NOTES:
1. PRECAST MANHOLES, MEETING THE REQUIREMENTS OF PUBLICATION 408 SPECIFICATIONS, SECTION 714, MAY BE SUBSTITUTED FOR THE STANDARD CAST-IN-PLACE MANHOLE.

2. CONSTRUCTION NOTES:
A. CONSTRUCT IN ACCORDANCE WITH: PENNDOT PUBLICATION 408 SPECIFICATIONS; SECTIONS 605, 606, 714 AND ASTM C-478-90, STANDARD SPECIFICATIONS FOR PRECAST REINFORCED CONCRETE MANHOLE SECTIONS, AS MODIFIED HERE IN:
B. MINIMUM CONCRETE CLASS AA.
C. PROVIDE EPOXY COATED STEEL REINFORCEMENT (IN ACCORDANCE WITH ASTM A1060), STEEL WELDED WIRE FABRIC (IN ACCORDANCE WITH ASTM A820 & A675), PLAIN BILLET STEEL BARS (IN ACCORDANCE WITH ASTM A615) OR DEFORMED BILLET STEEL BARS. PROVIDE MINIMUM YIELD STRENGTH OF 60,000 PSI.
D. CLEAR COVER FOR STEEL: WALLS: 2" FOOTINGS: 2" (TOP BARS), 1 1/2" (BOTTOM BARS) 1 1/2" (SIDE COVER)

3. PROVIDE 12" MINIMUM HORIZONTAL CLEARANCE BETWEEN OPENINGS LOCATED AT THE SAME DEPTH. PIPES NOT LOCATED AT THE SAME DEPTH MUST BE LOCATED VERTICALLY AT LEAST ONE TIMES MAXIMUM OPENING DIAMETER APART.

4. FOR RISERS OR BASE SECTIONS WITH OPENINGS, PROVIDE A MINIMUM HEIGHT OF SECTION EQUAL TO TWO TIMES THE LARGEST OPENING, CENTER OF OPENING TO BE LOCATED AT LEAST ONE TIMES THE OPENING FROM THE CLOSEST JOINT BETWEEN RISERS.

5. FOR PRECAST RISER OR BASE SECTIONS WITH ONE OPENING LOCATED AT DEPTHS TO 60' OR FOR SECTIONS WITH TWO OR MORE OPENINGS, LOCATED AT A DEPTH OF 15 FEET AND LESS, PROVIDE CIRCUMFERENTIAL REINFORCEMENT IN ACCORDANCE WITH REINFORCEMENT DETAIL AT OPENINGS.

FOR RISERS OR BASE SECTIONS WITH 2 OR MORE OPENINGS, LOCATED AT A DEPTH GREATER THAN 15 FEET, BUT LESS THAN OR EQUAL TO 30 FEET, PROVIDE CIRCUMFERENTIAL REINFORCEMENT EQUAL TO 0.44 SQ/IN VERTICAL FOOT FOR THE DEPTH OF THE RISER OR BASE SECTION

FOR RISERS OR BASE SECTIONS WITH 2 OR MORE OPENINGS, LOCATED AT DEPTHS GREATER THAN 30 FEET, USE A 10 INCH THICK WALL RISER OR BASE SECTION WITH CIRCUMFERENTIAL REINFORCEMENT EQUAL TO 0.15 SQ/IN VERTICAL FOOT EACH FACE

RISERS OR BASE SECTIONS WITH HOLES TO BE CLEARLY MARKED WITH MAXIMUM ALLOWABLE DEPTH.

6. PROVIDE ADDITIONAL REINFORCEMENT BARS AROUND OPENINGS AS SHOWN ON REINFORCEMENT DETAILS AT OPENINGS

7. PROVIDE MANHOLE STEPS MEETING THE REQUIREMENTS OF PUBLICATION 408 SPECIFICATIONS, SECTION 605.2(C), ALTERNATE CONFIGURATIONS AND DIMENSIONS, AS APPROVED BY THE ENGINEER, MAY BE USED.

8. PROVIDE MINIMUM 1" SECTION DIMENSION FOR METAL STEPS. PROVIDE MAXIMUM 3/4" SECTION DIMENSION FOR NON-DETERIORATING MATERIAL STEPS.

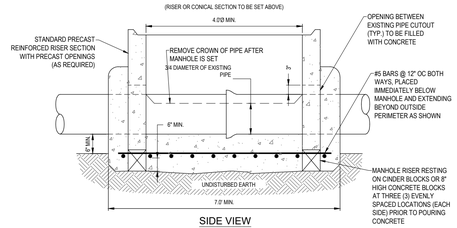
9. MECHANICAL ANCHOR REQUIRED FOR INSTALLATION OF STEPS WITHOUT HOOKS.

10. FOR FOOTING TOP REINFORCEMENT, BOTH DIRECTIONS, USE NO. 19 (6) BARS AT 12" FOR DEPTHS TO 60' OR 0.30 IN/FT WWF FOR DEPTHS TO 30' AND 0.32 IN/FT WWF FOR DEPTHS GREATER THAN 30'. 6" MAXIMUM SPACING FOR WWF.

11. FOR FOOTING BOTTOM REINFORCEMENT, BOTH DIRECTIONS, USE NO. 13 (4) BARS AT 18" FOR DEPTHS TO 60' OR 0.15 IN/FT WWF FOR DEPTHS TO 30' AND 0.16 IN/FT WWF FOR DEPTHS GREATER THAN 30'. 6" MAXIMUM SPACING FOR WWF.

12. A SAFE BEARING CAPACITY OF (1.5 TONS PER SF) UNDER THE ENTIRE SLAB IS ASSUMED TO DETERMINE THE BASE SIZE. WHEN THE SUBSOIL IS EXTREMELY POOR, PROCEED WITH CONSTRUCTION ONLY AFTER THE ENGINEER SPECIFIES ADEQUATE BASE DESIGN.

R-4	PRECAST STORM MANHOLE DETAILS
	NOT TO SCALE



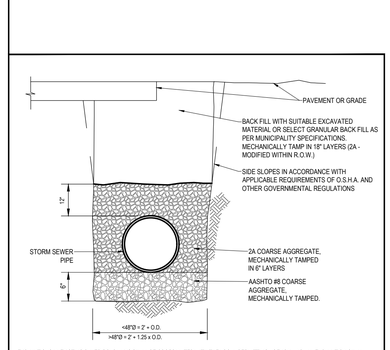
SIDE VIEW

FRONT VIEW

NOTES:
1.) EXISTING PIPE TO REMAIN UNTIL EXFILTRATION OR VACUUM TEST ON MANHOLE IS ACCEPTABLE TO AUTHORITY.

2.) REMOVE CROWN OF EXISTING PIPE FLUSH WITH CONCRETE SHELF.

R-5	DOGHOUSE MANHOLE DETAIL
	NOT TO SCALE



EXCAVATIONS IN EXISTING PAVED ROADWAYS SHALL BE COORDINATED WITH THE LOCAL PERMITTING AGENCY, AND ALL EXCAVATION SHALL BE PAVED WITH TEMPORARY BITUMINOUS PAVEMENT FROM THE DATE OF ORIGINAL EXCAVATION UNTIL PERMANENT PAVEMENT IS INSTALLED. (MINIMUM = 90 DAYS, MAXIMUM = 120 DAYS)

THIS DETAIL IS NOT FOR USE WITHIN A STATE RIGHT-OF-WAY. REFER TO THE LATEST APPROVED DOT SPECIFICATIONS FOR TRENCH BEDDING WITHIN A STATE RIGHT-OF-WAY.

R-11	TRENCH BEDDING CLASSIFICATION (STORM)
	NOT TO SCALE

BOHLER
SITE CIVIL AND CONSULTING ENGINEERING
LAND SURVEYING
PROGRAM MANAGEMENT
LANDSCAPE ARCHITECTURE
SUSTAINABILITY DESIGN
PERMITTING SERVICES
TRANSPORTATION SERVICES

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REVISIONS

REV	DATE	COMMENT	DRAWN BY / CHECKED BY
1	5/4/2023	NPDES SUBMISSION NPDES REV-0	KMP MSL
2	7/11/2023	SHADE TREE COMMISSION	HMP MSL
3	8/4/2023	NPDES SUBMISSION NPDES REV-1	HMP MSL
4	9/20/2023	TOWNSHIP RESUBMISSION	RMS MSL

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PROJECT NO.:	PAB220113.00
DRAWN BY:	RMS
CHECKED BY:	MSL
DATE:	03/15/2023
CAD I.D.:	PAB220113.00-CNDS-4A

PROJECT:

FINAL LAND DEVELOPMENT PLANS

FOR

MILEONE FORT WASHINGTON, LLC

BMW AUTOMOTIVE DEALERSHIP EXPANSION

500 PENNSYLVANIA AVENUE WHITEMARSH TOWNSHIP MONTGOMERY COUNTY, PA

BOHLER
74 W BROAD STREET, SUITE 500
BETHLEHEM, PA 18018
Phone: (610) 709-9971
Fax: (610) 709-9976
www.BohlerEngineering.com

COMMONWEALTH OF PENNSYLVANIA
JEFFREY A. BEAVAN
PROFESSIONAL ENGINEER
JEFFREY A. BEAVAN
PE 042364
Professional Engineer License No. PE042364
NEW JERSEY PROFESSIONAL ENGINEER LICENSE NO. 24GE05036600

SHEET TITLE:

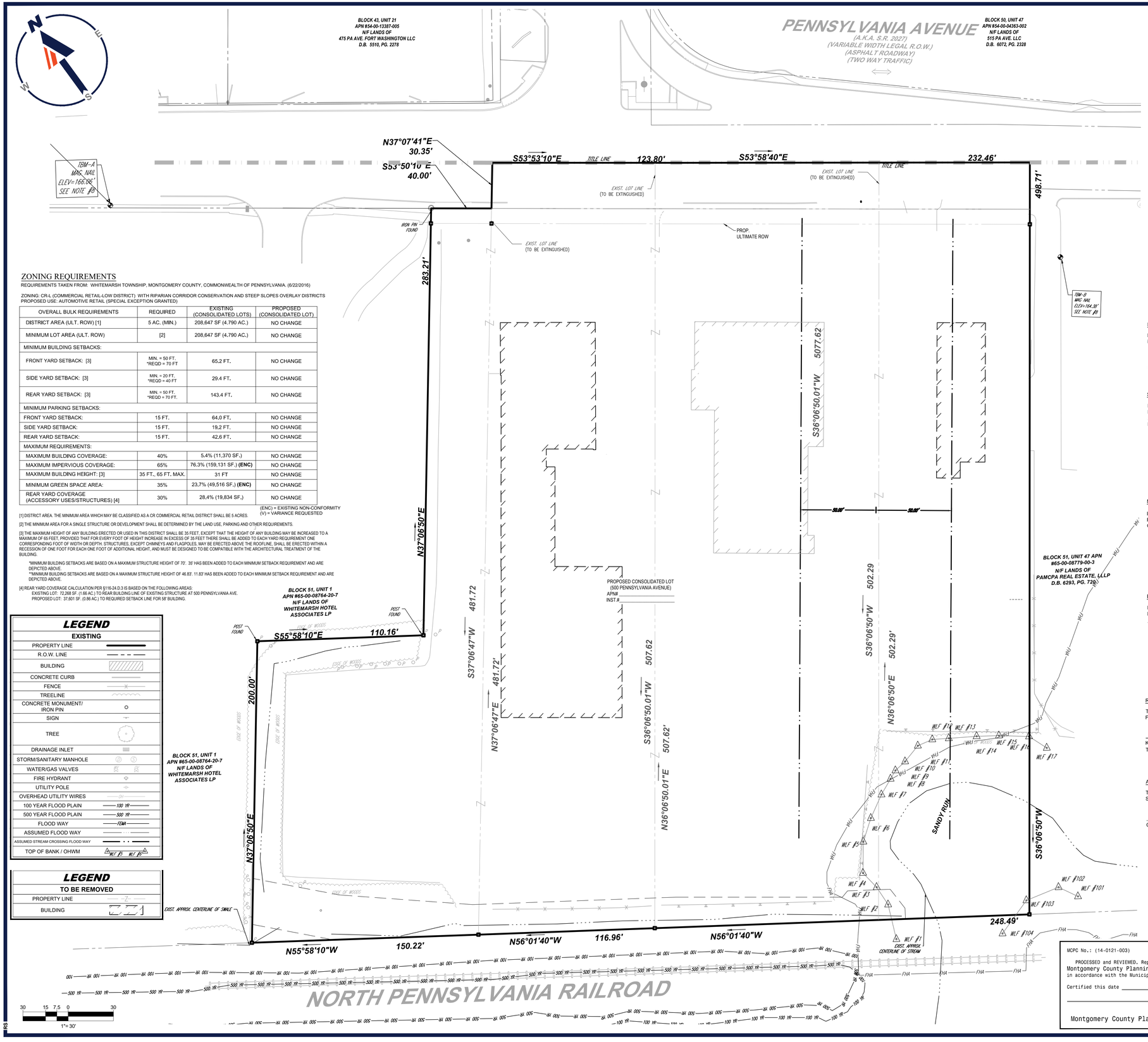
DETAIL SHEET

SHEET NUMBER:

C-903

REVISION 4 - 9/20/2023

R:\2022\PAB220113.00\CAD\DRAWINGS\PLAN SETS\CIVIL SITE PLANS\PAB220113.00-CNDS-4A-----LAYOUT: C-903 DETAILS
RS



ZONING REQUIREMENTS

REQUIREMENTS TAKEN FROM: WHITEMARSH TOWNSHIP, MONTGOMERY COUNTY, COMMONWEALTH OF PENNSYLVANIA. (6/22/2016)

ZONING: CR-L (COMMERCIAL RETAIL-LOW DISTRICT) WITH RIPARIAN CORRIDOR CONSERVATION AND STEEP SLOPES OVERLAY DISTRICTS
PROPOSED USE: AUTOMOTIVE RETAIL (SPECIAL EXCEPTION GRANTED)

OVERALL BULK REQUIREMENTS	REQUIRED	EXISTING (CONSOLIDATED LOTS)	PROPOSED (CONSOLIDATED LOT)
DISTRICT AREA (ULT. ROW) [1]	5 AC. (MIN.)	208,647 SF (4.790 AC.)	NO CHANGE
MINIMUM LOT AREA (ULT. ROW)	[2]	208,647 SF (4.790 AC.)	NO CHANGE
MINIMUM BUILDING SETBACKS:			
FRONT YARD SETBACK: [3]	MIN. = 50 FT. *REQD = 70 FT	65.2 FT.	NO CHANGE
SIDE YARD SETBACK: [3]	MIN. = 20 FT. *REQD = 40 FT	29.4 FT.	NO CHANGE
REAR YARD SETBACK: [3]	MIN. = 50 FT. *REQD = 70 FT.	143.4 FT.	NO CHANGE
MINIMUM PARKING SETBACKS:			
FRONT YARD SETBACK:	15 FT.	64.0 FT.	NO CHANGE
SIDE YARD SETBACK:	15 FT.	19.2 FT.	NO CHANGE
REAR YARD SETBACK:	15 FT.	42.6 FT.	NO CHANGE
MAXIMUM REQUIREMENTS:			
MAXIMUM BUILDING COVERAGE:	40%	5.4% (11,370 SF.)	NO CHANGE
MAXIMUM IMPERVIOUS COVERAGE:	65%	76.3% (159,131 SF.) **(ENC)**	NO CHANGE
MAXIMUM BUILDING HEIGHT: [3]	35 FT., 65 FT. MAX.	31 FT	NO CHANGE
MINIMUM GREEN SPACE AREA:	35%	23,7% (49,516 SF.) **(ENC)**	NO CHANGE
REAR YARD COVERAGE (ACCESSORY USES/STRUCTURES) [4]	30%	28,4% (19,834 SF.)	NO CHANGE

(ENC) = EXISTING NON-CONFORMITY
(V) = VARIANCE REQUESTED

[1] DISTRICT AREA. THE MINIMUM AREA WHICH MAY BE CLASSIFIED AS A CR COMMERCIAL RETAIL DISTRICT SHALL BE 5 ACRES.

[2] THE MINIMUM AREA FOR A SINGLE STRUCTURE OR DEVELOPMENT SHALL BE DETERMINED BY THE LAND USE, PARKING AND OTHER REQUIREMENTS.

[3] THE MAXIMUM HEIGHT OF ANY BUILDING ERECTED OR USED IN THIS DISTRICT SHALL BE 35 FEET, EXCEPT THAT THE HEIGHT OF ANY BUILDING MAY BE INCREASED TO A MAXIMUM OF 65 FEET, PROVIDED THAT FOR EVERY FOOT OF HEIGHT INCREASE IN EXCESS OF 35 FEET THERE SHALL BE ADDED TO EACH YARD REQUIREMENT ONE CORRESPONDING FOOT OF WIDTH OR DEPTH. STRUCTURES, EXCEPT CHIMNEYS AND FLAGPOLES, MAY BE ERECTED ABOVE THE ROOFLINE, SHALL BE ERECTED WITHIN A RECESSION OF ONE FOOT FOR EACH ONE FOOT OF ADDITIONAL HEIGHT, AND MUST BE DESIGNED TO BE COMPATIBLE WITH THE ARCHITECTURAL TREATMENT OF THE BUILDING.

*MINIMUM BUILDING SETBACKS ARE BASED ON A MAXIMUM STRUCTURE HEIGHT OF 70'. 35' HAS BEEN ADDED TO EACH MINIMUM SETBACK REQUIREMENT AND ARE DEPICTED ABOVE.
**MINIMUM BUILDING SETBACKS ARE BASED ON A MAXIMUM STRUCTURE HEIGHT OF 46.83'. 11.83' HAS BEEN ADDED TO EACH MINIMUM SETBACK REQUIREMENT AND ARE DEPICTED ABOVE.

[4] REAR YARD COVERAGE CALCULATION PER §116-24.D.3 IS BASED ON THE FOLLOWING AREAS:
EXISTING LOT: 72,268 SF. (1.66 AC.) TO REAR BUILDING LINE OF EXISTING STRUCTURE AT 500 PENNSYLVANIA AVE.
PROPOSED LOT: 37,601 SF. (0.86 AC.) TO REQUIRED SETBACK LINE FOR 58' BUILDING.

LEGEND

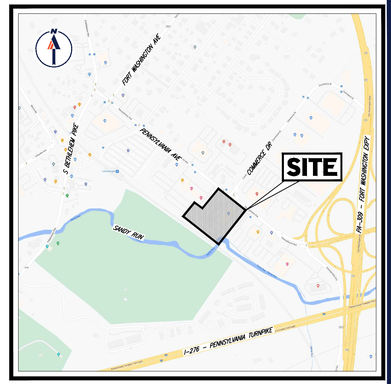
EXISTING

- PROPERTY LINE
- R.O.W. LINE
- BUILDING
- CONCRETE CURB
- FENCE
- TREELINE
- CONCRETE MONUMENT/ IRON PIN
- SIGN
- TREE
- DRAINAGE INLET
- STORM/SANITARY MANHOLE
- WATER/GAS VALVES
- FIRE HYDRANT
- UTILITY POLE
- OVERHEAD UTILITY WIRES
- 100 YEAR FLOOD PLAIN — 100 YR —
- 500 YEAR FLOOD PLAIN — 500 YR —
- FLOOD WAY — FDWA —
- ASSUMED FLOOD WAY
- ASSUMED STREAM CROSSING FLOOD WAY
- TOP OF BANK / OHWM — WLF #5 WLF #6

LEGEND

TO BE REMOVED

- PROPERTY LINE
- BUILDING



LOCATION MAP

SCALE: 1" = 800'

RECORDER OF DEEDS

RECORDED IN THE OFFICE FOR THE RECORDING OF DEEDS IN AND FOR THE COUNTY OF MONTGOMERY, AT NORRISTOWN, PA, IN PLAN BOOK NO. _____ PAGE NO. _____ ON _____ 2017.

_____
RECORDER

SURVEYOR'S CERTIFICATION

I, JAMES C. WEED, P.L.S., A REGISTERED PROFESSIONAL LAND SURVEYOR OF THE COMMONWEALTH OF PENNSYLVANIA, DO HEREBY CERTIFY THAT THIS PLAN CORRECTLY REPRESENTS THE METES AND BOUNDS AS SURVEYED BY ME ON _____ AND THAT THE LOCATION, SIZE AND MATERIAL OF EXISTING MARKERS ARE ACCURATELY SHOWN HEREON.

_____
JAMES C. WEED

_____
REGISTERED No.: #SU075250

_____
DATE

MONUMENTATION CERTIFICATION:

I, JAMES C. WEED, P.L.S., A REGISTERED PROFESSIONAL LAND SURVEYOR OF THE COMMONWEALTH OF PENNSYLVANIA, DO HEREBY CERTIFY THAT ALL CONCRETE MONUMENTS HAVE BEEN SET OR FOUND BY ME ON _____, AS INDICATED AND SHOWN HEREON.

_____
JAMES C. WEED

_____
REGISTERED No.: #SU075250

_____
DATE

ENGINEER'S CERTIFICATION

I, JEFFREY A. BEAVAN, P.E., A REGISTERED PROFESSIONAL ENGINEER OF THE COMMONWEALTH OF PENNSYLVANIA, DO HEREBY CERTIFY THAT THIS PLAN CORRECT IN ALL DETAILS AS PREPARED BY ME ON _____, 2017.

_____
JEFFREY A. BEAVAN

_____
REGISTERED No.: #PE082005

_____
DATE

REVIEW OF THE TOWNSHIP ENGINEER, WHITEMARSH TOWNSHIP:

THIS SUBDIVISION AND/OR LAND DEVELOPMENT PLAN WAS REVIEWED BY THE APPOINTED TOWNSHIP ENGINEER FOR WHITEMARSH TOWNSHIP ON THIS _____ DAY OF _____, 20____.

_____
KRISTA HEINRICH, P.E.
TOWNSHIP ENGINEER

APPROVAL OF THE WHITEMARSH TOWNSHIP BOARD OF SUPERVISORS:

THIS SUBDIVISION AND/OR LAND DEVELOPMENT PLAN WAS APPROVED BY RESOLUTION OF THE BOARD OF SUPERVISORS OF WHITEMARSH TOWNSHIP ON THIS _____ DAY OF _____, 20____.

_____ _____
CHAIRMAN SECRETARY

MCPC No.: (14-0121-003)

PROCESSED and REVIEWED. Report prepared by
Montgomery County Planning Commission
in accordance with the Municipalities Planning Code.

Certified this date _____

_____
Montgomery County Planning Commission

RECORD PLAN 10 OF 10

BOHLER
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REV	DATE	COMMENT	DRAWN BY / CHECKED BY
1	9/20/2023	TOWNSHIP RESUBMISSION	RMS / MSL

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PROJECT No.:	PAB220113.00
DRAWN BY:	RMS
CHECKED BY:	MSL
DATE:	03/15/2023
CAD I.D.:	PAB220113.00-LDVP-4A

PROJECT:

PRELIMINARY LOT CONSOLIDATION PLANS

FOR

MILEONE FORT WASHINGTON, LLC

BMW AUTOMOTIVE DEALERSHIP EXPANSION

**500 PENNSYLVANIA AVENUE
WHITEMARSH TOWNSHIP
MONTGOMERY COUNTY, PA**

BOHLER
74 W BROAD STREET, SUITE 500
BETHLEHEM, PA 18018
Phone: (610) 709-9971
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www.BohlerEngineering.com

COMMONWEALTH OF PENNSYLVANIA
J.A. BEAVAN
PROFESSIONAL
JEFFREY A. BEAVAN
PROFESSIONAL ENGINEER
PE082005
PENNSYLVANIA LICENSE No. PE082005
NEW YORK LICENSE No. 110102-1
NEW JERSEY LICENSE No. GE49536600

SHEET TITLE:

LOT CONSOLIDATION PLAN

SHEET NUMBER:

LC-01

REVISION 1 - 9/20/2023

R:\2022\PAB220113.00\CAD\DRAWINGS\PLAN SETS\CIVIL SITE PLANS\PAB220113.00-LDVP-4A_---LAYOUT LC-01 LOT CONSOLIDATION.DWG 3/15/2023 3:13:43 PM EDT RS

Whitemarsh TOWNSHIP
616 GERMANTOWN PIKE - LAFAYETTE HILL, PA 19444-1821
TEL: 610-825-3535 FAX: 610-825-9416
www.whitemarshtwp.org

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Richard L. Mellor, Jr.
Township Manager

October 31, 2023

Mile One Fort Washington, LLC
c/o Dennis Turnbaugh
3301 Briggs Chaney Road
Silver Springs, MD 20904

RE: SLD#03-23/ 500-512 Pennsylvania Ave. Fort Washington
Final Minor Subdivision/ Major Land Development – Automobile Dealership Expansion
Zoning Ordinance Compliance Review Letter

Dear Mr. Turnbaugh:

Please accept this review of the Zoning Ordinance Compliance issues for your Final Minor Subdivision/Major Land Development Plan. We reviewed the most recent land development plan set prepared by Bohler Engineering, dated March 15, 2023, updated through September 20, 2023. No architectural plans were included in the current submission. The plan depicts the combination of four lots, the removal of two existing structures, and the construction of a new multi-level service, storage, and parking structure for the BMW dealership on the rear of the existing showroom; a small front portion of the showroom is also to be razed due to floodplain issues. The parcels are located in the Commercial Retail District (CR-L), the Floodplain Conservation District, the Riparian Corridor Conservation District, and a portion of the lot has steep slopes.

The following items are issues that must be addressed in order to comply with Chapter 116, Zoning, of the Whitemarsh Township Code.

1.	§ 116-164.D.	It is acknowledged that a variance from this section was granted to permit a supply of more than 550 gallons of petroleum products, materials, and other substances associated with automotive use within the floodplain. However, the location(s) for where these products will be stored, must be depicted on the site plan.
2.	§ 116-166.C.	This section describes floodproofing standards. Any development in the floodplain must be shown to comply with this section. Applicable standards will be verified at the time of building permit submission. We also note that the Township Engineer's June 8, 2023 review of the Preliminary Plan cited the requirements of Chapter 101, Floodplain Management, that must be met.
3.	§ 116-169.B.	All slopes 15% and greater should be shown on a plan. There are restrictions of the allowable percentage of disturbance of slopes 15-25% and over 25% in this section . Documentation of disturbance must therefore also be shown.
4.	§ 116-188.3.	This section requires electric vehicle parking spaces to be included in addition to the minimum number of parking spaces required. The parking table on Sheet C-303 appears to include the 16 proposed EV spaces in the total minimum number of parking spaces required (212). The 8 required EV spaces should be added to the total (212), resulting in 220 spaces. Further, the site plan only depicts 8 of the 16 proposed EV spaces and should be adjusted to

show all 16. Additionally, there are discrepancies between the parking table on Sheet C-302 and Sheet C-303. These should be corrected.

5. § 116-204.B. This section states that renovations valued at over 50% of the market value of the property in the floodplain must comply with relevant floodplain construction requirements including applicable provisions of Chapter 101, Floodplain Management. We also note that the Township Engineer's June 8, 2023 review of the Preliminary Plan cited the specific requirements of Chapter 101, Floodplain Management, that must be met. The applicable standards will be verified at the time of building permit submission.

6. § 116-206 Proposed sign locations and details should be included. Alternatively, we understand that the Applicant will submit a separate sign application. Should there be any zoning relief needed for signage, a new Zoning Hearing Board application will be required.

7. We note that the following variances have been granted in ZHB Case #2023-11 on June 7, 2023:

a) A Variance from **§116-93.C**, so as to permit an impervious coverage of 70.9%, rather than the 65.0% permitted, and to permit 29.1% green space, rather than the 35% required, an improvement of an existing non-conformity on the overall consolidated Subject Property.

b) A Variance from **§116-93.G**, so as to permit a rear yard setback of 20 feet, rather than the 50 feet with an expansion to 80 feet based on the height of the building as required.

c) A Variance from **§116-94**, so as to permit a side yard setback of 35 feet, rather than the 50 feet required for a building height of 65 feet, and a front yard setback of 64.4 feet, rather than the 80 feet required for a building height of 65 feet.

d) A Special Exception under **§116-96.A**, so as to permit the outside display and/or sale of vehicles associated with the automotive dealership.

e) A Special Exception under **§116-104.B.(6)**, so as to permit retail sales, wholesale sales, and/or customer service in the CR-L District.

f) A Variance from **§116-164.C**, so as to permit development in the floodplain where the effect is not fully offset by improvements, under circumstances whereby the flood height would be increased by up to 4" within a limited section of the site, with no adverse effects to the capacity of the channel or the floodway, or upstream or downstream capacity of the floodplain.

g) A Variance from **§116-164.D**, so as to permit the proposed use to have a supply of more than 550 gallons of petroleum products, materials, and other substances associated with an automotive use within the floodplain.

h) A Variance from **§116-165**, so as to permit the expansion of an existing automobile dealership within the Floodplain Conservation Overlay District.

i) A Variance from **§116-169.B.(2)**, so as to permit 40% disturbance to man-made steep slopes (25+%) on the site, rather than the 15% is permitted.

j) A Variance from **§116-184.B**, so as to permit the minimum parking count to be exceeded by more than 110% to accommodate inventory storage.

k) A Variance from **§116-184.D**, so as to permit more than 30 individual parking spaces to be placed together in any parking area, with dimensions of the parking area exceeding 150 feet, and not installing planting strips of not less than 10 feet in width between parking rows, as shown on the plans, as applicable to the proposed parking decks and certain existing parking areas to remain.

l) A Variance from **§116-188.3**, so as to permit EV charging spaces provided only based on the required off-street parking spaces, and to exclude inventory storage spaces from the requirements.

m) A Variance from **§116-259.B**, so as to permit an encroachment into the Riparian Corridor Conservation District Zone One, including a± 15 foot portion of the building, in an area developed with surface parking in the existing condition.

n) Variances from **§116-259.C** and **§116-260**, so as to permit an encroachment into the Riparian Corridor Conservation District Zone Two, including for the building and associated improvements, trash enclosure, site roads, driveways, and structures, as the entire site is located within the Riparian Corridor Conservation District due to the 100-year Floodplain delineation.

o) Variances from **§101-21.D.** and **§101-24.B**, so as to permit construction within an identified floodplain area closer than 50 feet to the top-of-bank of a watercourse, m accordance with PADEP and FEMA requirements.

p) A Variance from **§101-24.A.(12)**, so as to permit the proposed use to have a supply of more than 550 gallons of petroleum products, materials, and other substances associated with an automotive use within the floodplain.

Additional Comment:

8. The Cover Sheet C-101 states the variances granted by the Zoning Hearing Board as Resolution 2023-11. This should be changed to ZHB Case 2023-11.

Should you have any questions, please do not hesitate to contact me.

Very truly yours,

Charles L. Guttenplan, AICP
Director of Planning and Zoning/Zoning Officer

cc: Richard L. Mellor, Jr., Township Manager
Craig McAnally, Township Assistant Manager
Robert A. Sztubinski, B.C.O., Director of Building and Codes
Andrew Thomas, Whitemarsh Township Fire Marshal
Sean P. Kilkenny, Esq., Township Solicitor
Krista Heinrich, P.E., Township Engineer
Matthew Longenberger, P.E. & Jeff Beavan, P.E., Bohler Engineering, Applicant's Engineers
John Iannozzi, Esq. Hamburg Rubin, Applicant's Attorney

GILMORE & ASSOCIATES, INC.
ENGINEERING & CONSULTING SERVICES

November 3, 2023

Mr. Richard L. Mellor, Jr. - Township Manager
Whitemarsh Township Municipal Building
616 Germantown Pike
Lafayette Hill, PA 19444

RE: Final Plan Review
500-512 Pennsylvania Ave
Whitemarsh Township, Montgomery County, PA
S/LD # 03-23
Our Project Number 2023-03063

Dear Mr. Mellor:

As requested, we have reviewed plans for the above referenced Final Plan Submission consisting of:

- Plan Set prepared by Bohler Engineering dated March 15, 2023, last revised September 20, 2023, consisting of the following Sheets: C-101, C-102, C-201, C-301, C-302, C-303, C-304, C-305, C-401, C-501, C-701, C-702, C-703, C-801, C-802, C-901, C-902, C-903, LC-01
- Post Construction Stormwater Management (PCSM) plan narrative prepared by Bohler Engineering dated March 15, 2023, last revised September 20, 2023
- Flood Analysis Report dated April 3, 2023, last revised July 24, 2023
- Various supporting documents, forms and correspondence enclosed with the application.

The following comments are offered for your consideration:

The following Waivers were granted by Resolution # 2023-19, adopted August 10, 2023.

	Section	Description
1.	105-21(B)(1)(n)	The applicant was granted a waiver from the requirements of this section of the ordinance, to allow an aerial plan showing features within 500 feet of the project to be included in the plan set. The plans must be revised to show existing features along Pennsylvania Avenue for approximately 200 feet to the East of the property to verify proper alignment and an aerial photo showing features within 500 feet must be included in the plan set.
2.	105-21(B)(13)	The applicant was granted a waiver from the requirements of this section of the ordinance, which requires an Existing Resources and Site Analysis Plan (ERSAP) to be prepared which provides a comprehensive analysis of existing conditions, both on the proposed development tract and within 500 feet of the tract boundaries.

	Section	Description
3.	105-21(B)(15)	The applicant was granted a waiver from the requirements of this section of the ordinance which requires a Preliminary Resource Impact and Conservation Plan to be prepared to allow the Post-Construction Stormwater Management (PCSM) plans and details to show the required features.
4.	105-21.1(E)	The applicant was granted a waiver from the requirement for payment of a traffic impact fee to allow for the payment of a voluntary contribution in accordance with Paragraph 8 of Resolution 2023-19.
5.	105-30 (A)	The applicant was granted a waiver from the requirements of this section of the ordinance to allow street trees to be planted outside of the tree planting zone, situated between the sidewalk and curb.
6.	105-38(A)	The applicant was granted a waiver from the requirements of this section of the ordinance which requires that two-way aisles for parking spaces having a 90-degree angle of parking must be 24 feet wide, with a minimum parking stall width of 9 ft x 18 ft. The waiver was granted to allow the continuation of an existing parking area in the southwestern corner of the site which will be used for Dealership operations and are not intended for customer parking.
7.	105-38(B)	The applicant was granted a waiver from the requirements of this section of the ordinance to allow a width greater than thirty-five feet (35.0') at the street line in order to provide alignment with the opposite travel and auxiliary lanes and to satisfy PennDOT design criteria along a State Route.
8.	105-38(C)	The applicant was granted a waiver from this section of the ordinance which requires that curves/turns in entrance and exit drives and all internal parking lot aisles necessary for providing access for fire protection equipment shall have a minimum inside turning radius of 25 feet and a minimum outside turning radius of 50 feet, conditioned on the Applicant providing the Township with truck turning templates to the satisfaction of the Township Fire Marshal and the Township Engineer. The truck turning template diagram submitted shows the fire truck utilizing curbing for maneuvering and must be revised to remove this condition and to utilize the Tower 29 Township Fire truck with an overall length of 49'-4" and a wheelbase of 23.0'. Additionally, the fire truck templates must be removed from the Dedication and Easement Plan and the applicant must obtain approval from the Township Fire Mashal.
9.	105-38(D)	The applicant was granted a waiver from the requirements of this section of the ordinance which requires parking areas to be designed to permit each motor vehicle to proceed to and from the parking space provided for it without requiring the moving of any other motor vehicles, to allow double-stacked inventory and service/repair parking spaces without a direct access aisle, as these are intended to be utilized for dealership operations and not to meet required off-street parking requirements. The plans must be revised to graphically distinguish between off-street parking stalls and stalls for inventory and service repair operations. It does not appear that 212 required compliant parking stalls are proposed.

	Section	Description
10.	105-38 (H)	The applicant was granted a waiver from the requirements of this section of the ordinance which requires that except at entrance and exit drives, all parking areas shall be set back from the right-of-way line and all property lines at least 15 feet, to allow a 4.9-foot setback along the southeastern property line for up to 13 inventory storage and/or service storage spaces.
11.	105-38(I)	The applicant was granted a waiver from the requirements of this section of the ordinance which requires no more than 15 parking spaces to be permitted in a continuous row without being interrupted by a landscaping area, to permit parking rows of greater than 15 spaces without interruption within the parking structure.
12.	105-38(J)	The applicant was granted a waiver from the requirements of this section of the ordinance which requires no one area for off-street parking of motor vehicles to exceed 30 cars in capacity and that separate areas on a parcel shall be physically separated from one another by ten-foot-wide planting strips, to permit the proposed parking deck building, to allow certain existing parking areas (including double stacked inventory/service storage spaces on the Property) to remain in their existing paved state, and for limited double-stacked inventory/service storage spaces on the Property.
13.	105-38(O)	The applicant was granted a waiver from the requirements of this section of the ordinance to allow less than ten feet (10.0') to be provided between the proposed building and service drive lanes.
14.	105-39(A)	The applicant was granted a waiver from the requirements of this section of the ordinance, which requires all parking areas to have at least one, three inch-caliper tree for every two parking spaces provided.
15.	105-48(E)	The applicant was granted a waiver from the requirements of this section of the ordinance to allow street trees to be planted outside of the tree planting zone, situated between the sidewalk and curb.
16.	105-52(B)(2)	The applicant was granted a waiver from the requirements of this section of the ordinance which requires all buffers to have a minimum width of 50 feet, to allow an alternative planting option for the buffers along Pennsylvania Avenue and the southeastern property line, conditioned on the applicant providing the required quantity of buffer plantings to meet the screening requirements.
17.	105-53(D)	The applicant was granted a partial waiver from the requirements of this section of the ordinance which requires the dedication of land in the amount of 10% of the total Site Area for Park and/or Recreational use. Granting of the waiver was conditioned that the applicant coordinate with the Board of Supervisors in consideration of the stream being preserved and potential easement dedication to the County for use in extending the cross-county trail along the rear of the property. This easement to the County for use in extending the cross-county trail must be shown on the Record Plan.
18.	58-30(A)(9)	The applicant was granted relief from the requirements of this section of the ordinance which requires detention/retention facilities to be in place and functioning prior to the creation of any impervious area.

	Section	Description
19.	58-34(B)(7)(d)	The applicant was granted relief from the requirements of this section of the ordinance, which requires the minimum diameter of all storm drainage pipes to be eighteen inches and reinforced concrete pipe, to permit stormwater pipe sizes under 18-inches and to permit HDPE pipe.
20.	58-34(B)(7)(h)	The applicant was granted relief from the requirements of this section of the ordinance, which requires storm pipes to have a minimum eighteen-inch depth of cover the top of the pipe to permit roof leader piping to have a minimum of 12-inches of cover over the top of the pipe. The applicant's engineer must demonstrate the pipe material is able to withstand the bearing capacity.
21.	55-4(C)(3)	The applicant was granted a waiver from the requirements of this section of the ordinance which requires that every tree determined to be living and healthy, with a DBH of 6 inches or greater and which is designated to be removed or which is destroyed, shall be replaced with one or more new Canopy trees of a type and species approved by the Township with a trunk diameter of not less than 3 inches in caliper.
22.	55-4(D)(6)	The applicant was granted a waiver from the requirements of this section of the ordinance, which requires every living and healthy tree with a DBH of six inches or greater and which is designated to be removed or which is destroyed, shall be replaced with one or more new canopy trees, of a type and species approved by the Shade Tree Commission with a trunk diameter of not less than three inches in caliper.

SUBDIVISION AND LAND DEVELOPMENT ORDINANCE

	Section	Description
23.	105-21(A)(5)	The following plans and legend must be revised and/or updated accordingly: Sheet C-201, C-301 and C-501: • Utilize different linetypes between centerline of Sandy Run Creek and the existing onsite swale. • Identify linetype that runs parallel between TMP #065-00-08779-00-3 and within the existing building.
24.	105-21(B)(1)(j)	The applicant must submit legal descriptions for the proposed lot consolidation for review by the Township Engineer.
25.	105-21(B)(1)(m)	The labels for Pennsylvania Avenue must be revised to reference the State Route Number as SR 2037.

	Section	Description
26.	105-21(B)(1) (o)(3)	The plans must be revised to include the following information for the proposed building and parking areas: • Dimensions of all drive aisles and buildings, • All parking spaces within the garage must be annotated. It appears the number of parking spaces annotated are not consistent with the parking table, • Existing uses of the building to remain which specifies the retail, office and service bays areas with square footage noted must be identified, • There appears to be additional office/showroom space proposed between the existing building to remain and the parking structure. Label the proposed use(s) for this space and ensure it is included in the parking calculations. • A detailed plan must be submitted showing the layout of each level including any pavement markings and signage.
27.	105-21(B) (2)(a)	The plans must be revised to include a delineation of the soil types within the site, specifically identifying the location of hydrologic soil groups A and B which were utilized in the Stormwater Management Report. Additionally, a table must be included on the Erosion and Sediment Control Plan which indicates each soil's limitations.
28.	105-21(B)(7)	The Grading Plan must be revised to eliminate the inconsistent grading beneath the proposed parking garage and throughout the site. The Township Engineer's Office can provide a mark-up of the areas for clarification purposes, upon request.
29.	105-21(B)(9) (d)[2][b]	The Transportation Impact Assessment Report must be revised to provide a description of the public transportation (i.e., SEPTA) available in the area. Additionally, the plans must be revised to show the relocation of the existing bus stop which is currently in the center of the right in/right out driveway. This should be addressed within the traffic study with recommendations on a proposed location that will better serve loading/unloading passengers. The location should be coordinated with SEPTA. Include the Township in all correspondence.
30.	105-21(B)(9) (d)[3][b]	The Transportation Impact Assessment Report must be revised to identify roadways and/or intersections experiencing levels of service E or F.
31.	105-21(B)(9) (d)[5][a]	The Transportation Impact Assessment Report must be revised to provide clarification of the following: • The critical headway values used in the analysis are not consistent with the calculated values in Appendix E • The timings used for the existing PM peak analysis do not appear to be consistent with signal plans • The applicant may consider revising the trip generation table to clearly demonstrate the amount of site traffic that is being added to the roadway network versus the existing building conditions
32.	105-21(B)(9) (d)[6][a]	All streets and/or intersections showing a level of service below C shall be considered deficient, and specific recommendations for the elimination of these problems shall be listed. This listing of recommended improvements shall include but are not limited to the following elements: internal circulation design, site access location and design, external street and intersection design and improvements, traffic signal installation and operation, including signal timing and transit design improvements. The report must be revised to provide recommendations to eliminate the various deficiencies noted.

	Section	Description
33.	105-21(B)(9)(d)[6][a]	Signal Design Plans for the revised Pennsylvania Avenue/Commerce Drive intersection showing new alignment and updated timings must be submitted for review.
34.	105-21(B)(9)(d)[6][f]	Any submittal to the Pennsylvania Department of Transportation shall be accompanied by comments from the Planning Commission and the Montgomery County Planning Commission. Please include the Township in any submission to PennDOT.
35.	105-21(B)(10)(a), 105-78	The applicant shall submit a letter from the appropriate municipal authority indicating the availability of public sanitary sewer facilities.
36.	105-21(B)(10)(b)	The applicant shall submit a letter from the appropriate municipal authority indicating the availability of central water supply.
37.	105-21(B)(12)	A map showing the location of the proposed subdivision within its neighborhood context shall be submitted.
38.	105-28(I)	This section of the ordinance requires the applicant to obtain a Highway Occupancy Permit from the Pennsylvania Department of Transportation (PennDOT) for the proposed work within the right of way of Pennsylvania Avenue (SR-2037). The Highway Occupancy Permit Application Plans must be submitted to the Township for review prior to submission to PennDOT. The Township Engineer should be notified of all meetings with PennDOT and must be copied on all correspondence. Additionally, the plans must be revised to indicate to source or plan reference uses to determine the Right-of-way width for Pennsylvania Avenue.
39.	105-38(Q)	The plans must be revised to label the radii on the channelized island for the eastern driveway.
40.	105-38(V)	All artificial lighting used to illuminate any parking space or spaces shall be so arranged that no direct rays from such lighting shall fall upon any neighboring property or streets, nor shall any high brightness surface of the luminaries be visible from neighboring residential property or from a public street. The required Lighting Plan must be revised to demonstrate compliance with the requirements of this section of the ordinance.
41.	105-45(C)	The proposed parking facility along the Eastern property line is within the proposed PECO utility; the applicant must provide evidence in sufficient detail that the location of the parking is acceptable to PECO. Include the Township in all correspondence.
42.	105-72(A)	Monuments must be provided at all property line corners. Monuments shall be placed at each change in direction of a boundary along the street line.
43.	105-76(B)	The applicant must obtain a letter of approval from the Township Fire Marshal in order to ensure that adequate fire protection is provided.
44.	105-79	All preliminary plan submissions shall include documentation of sewerage facilities planning as required by the PADEP.

	Section	Description
45.	105-89	The developer shall enter into a written agreement with the Township in the manner and form approved by they Solicitor wherein the developer shall agree, to construct or cause to be constructed at his own expense all proposed improvements shown on the approved land development plan, all in strict accordance with the standards and specifications of the Township and within the time specified in said agreement and to deposit with the Township financial security in an amount sufficient to cover the cost of all subdivision or land development improvements, including both public and private improvements.

GRADING, EROSION CONTROL, STORMWATER MANAGEMENT AND BEST MANAGEMENT PRACTICES ORDINANCE:

	Section	Description
46.	58-14(A)(2)(b)	The stormwater management design must be revised to analyze 20% of the existing impervious area of the site as meadow in good condition. Based upon the soils classification on the site it does not appear that A and B soil groups are present and must be confirmed. If present and utilized in the design, the meadow curve numbers for soil groups A and B must be revised to be consistent with the TR-55 manual. The pre-development areas reported in the curve number calculations must be revised to reflect actual conditions and pre-development hydrograph peak rate calculations must be submitted.
47.	58-15(A)(1)	The stormwater management report must be revised to include calculations for the pre-development peak discharge rates.
48.	58-17(A)(2)(o)	The top of grate/rim elevations labelled on the “Storm Sewer Profiles Plan” and the “Utility Plan” do not appear consistent with the finished grades shown on the “Grading Plan”, specifically Inlet 320, manhole 310, inlet 230, inlet 221, inlet 210, and manhole 220
49.	58-17(A)(2)(p)	The following inconsistencies between the stormwater plans/details and the stormwater management report must be addressed: • The top of box for all outlet devices is not considered a weir structure; therefore the pond report must be revised, • UG Basin 1: Outlet pipe and orifice length noted in pond report is not consistent with design, • UG Basin 2: Chamber barrel length noted in pond report not consistent with PCSM plan, 3” orifice missing from pond report, outlet pipe length and weir elevation not consistent with design, • UG Basin 3: Chamber barrel length, number of chambers and outlet pipe noted in pond report is not consistent with design • The Cultec underground basin detail located on the PCSM sheet (C-606) must be revised to show all pertinent data (i.e. layers appear turned off)
50.	58-17(A)(7)	A cross section of the existing swale located adjacent to existing parking lot utilized for the bypass area must be shown on the plan set and include the hundred-year hydraulic grade line.

	Section	Description
51.	58-18(A)(2)	Since the limit of disturbance is greater than one acre, the applicant must obtain a National Pollutant Discharge Elimination System (NPDES) permit from the Pennsylvania Department of Environmental Protection. Once obtained, a copy must be submitted to the Township.
52.	58-23(A)	An as-built survey of all stormwater BMPs must be submitted to the Township in paper and digital (dwg) formats. A note must be added to the plans stating an as-built survey will be completed and submitted in both formats to the Township.
53.	58-24(K)(2)(g)	All easements must be documented in the form of an easement agreement, approved by the Township Solicitor and recorded at the Recorder of Deeds for Montgomery County.
54.	58-25	The property owner shall sign an operations and maintenance agreement with the Township addressing stormwater BMPs that are to be privately owned.
55.	58-29(A)(2)	No excavation shall be made with a cut face steeper than 3:1 unless a concrete, masonry, or other approved retaining wall designed by a Registered Professional Engineer experienced in structural engineering, and constructed in accordance with approved standards, is provided to support the face of the excavation. Design calculations/details pertaining to the retaining walls must be submitted for review by the Township Engineer. Additional bottom/top of wall elevations must be included on the grading plan and elevation views of the retaining walls must be provided.
56.	58-31(A)(1)	The pre-development areas within the curve number calculations do not appear consistent with the plans and must be revised.
57.	58-31(A)(6)	The plans must be revised to identify all roof leaders and their terminus points to confirm drainage boundaries.
58.	58-31(A)(8)	The stormwater management calculations must be revised to address tailwater from the Sandy Run. A flap gate, or similar, should be considered at all outlet structures.
59.	58-31(A)(17)	The stormwater management report must be revised to provide profiles of all pipe conveyances with hydraulic grade lines shown.
60.	58-32(E)(4)	The following note must be attached to all drainage plans and signed and sealed by the applicant's registered professional engineer experienced in geotechnical and soil engineering: "I certify that the proposed facility is/is not underlain by limestone."
61.	58-34(B)(4)	The storm sewer facilities must be revised to provide a minimum drop of two inches between the lowest pipe invert elevation and the outlet pipe invert elevation.
62.	58-35(C)(3)(e)	A detailed soils evaluation of the project site shall be performed to determine the suitability of infiltration BMPs. The evaluation shall be performed by a registered professional engineer experienced in geotechnical engineering or a certified professional soil scientist, and at a minimum, address soil permeability, depth to bedrock, susceptibility to sinkhole formation, and subgrade stability.

CHAPTER 101 – FLOODPLAIN MANAGEMENT ORDINANCE:

	Section	Description
63.	101-9(C)(4)(g)	The applicant must provide an indication of the amount, location and purpose of any materials or substances referred to in §§ 101-23(F) and 101-24 which are intended to be used, produced, stored or otherwise maintained on site
64.	101-9(C)(4)(h)	The applicant must provide a description of the safeguards incorporated into the design of the proposed structure to prevent leaks or spills of the substances listed in § 101-24 during a base flood.
65.	101-17(A)(1)	Within any floodway area, no encroachments, including fill, new construction, substantial improvements, or other development shall be permitted unless it has been demonstrated through hydrologic and hydraulic analysis performed in accordance with standard engineering practice that the proposed encroachment would not result in any increase in flood levels within the community during the occurrence of the base flood discharge. The submitted Floodway Analysis Report indicates 0.28 feet increase in the base flood elevation at River Station 4865.578 and must be revised to show no increase.
66.	101-17(A)(2)	Within any floodway area, no new construction or development shall be allowed, unless the appropriate approvals are obtained from the Army Corps of Engineers, Federal Emergency Management Agency, Pennsylvania Department of Environmental Protection and approved by the Township.
67.	101-17(A)(1)	In the Floodplain Conservation District, no development shall be permitted except where the effect of such development on flood heights is fully offset by accompanying improvements which have been approved by all appropriate local, state, and federal authorities as required. The applicant must provide evidence in sufficient detail to demonstrate compliance with the requirements of this section of the ordinance, such as the inclusion of a cut/fill analysis plan demonstrating there will be no net fill. The Flood Analysis for Sandy Run Report concludes there will be a net fill condition which appears inconsistent with the remaining narrative and must be revised. Additionally, the stormwater facilities must be removed from the net cut conditions since it is not an accurate hydrologic representation, and these facilities will be designed for stormwater management purposes.
68.	101-17(A)(2)	The applicant must obtain a permit from the Pennsylvania Department of Environmental Protection for the proposed work within the floodway.
69.	101-22(C)(3)(c)	An elevation view of the proposed parking garage must be submitted that is consistent with the cross sections included in the HEC-RAS Flood Analysis for Sandy Run. Additionally, the cross sections within the HEC-RAS report do not appear consistent with the pier locations on the plans and must be revised.
70.	101-23(F)	This section of the ordinance requires all materials that are buoyant, flammable, explosive, or in times of flooding, could be injurious to human, animal, or plant life, and not listed in §101-24, Development which may endanger human life, shall be stored at or above the regulatory flood elevation or floodproofed to maximum extent possible. The applicant's engineer must demonstrate that stored materials are protected.

	Section	Description
71.	101-23(H)	The plans must be revised to demonstrate that any structures, including fencing and trash enclosures, shall be adequately anchored to prevent flotation, collapse, or lateral movement.
72.	101-24(A)	The plans must be revised to demonstrate that the storage of any materials listed in section 116-164(D) or 101-24(A) of the Township Code (including petroleum products) shall be elevated and located in flood proofed areas of the proposed building. All gas and petroleum fuel systems and parts thereof shall be located two feet above the one-hundred-year-flood level, in accordance with Section 42-7(H)(4) of the Township Code.

ADDITIONAL COMMENTS

73. The plans must be revised to include ADA ramp details for the crossings of both access driveways. The details should include spot elevations, slopes, and lengths to verify ADA compliance and constructability.

74. Provide ADA ramp details for all internal crossings. For ease of reference, each ramp should be labelled/numbered with corresponding unique labels for the details. The ramp details should include spot elevations, slopes, and lengths to verify ADA compliance and constructability.

75. To the west of the proposed right-in/right-out driveway, show proposed curb tying into the existing curb along Pennsylvania Avenue to replace the depressed curb for the existing driveways to be removed.

76. Provide a crossing of Pennsylvania Avenue at the traffic signal. ADA ramps and pedestrian signal head with countdown timers and pushbuttons must be proposed.

77. On the Auto Carrier Truck Turning Plans, the carrier is shown running over curbing on the right-in/right-out driveway. In addition, the turning movements show the truck partially in the opposing traffic lanes. Radii may need to be increased at the site driveways for the largest anticipated vehicle, the auto carrier. Revise the design to avoid the carrier running over curbs and from going into the opposing traffic along Pennsylvania Avenue.

78. The Traffic Impact Assessment Report indicated a separate left turn lane exiting the driveway at the intersection of Pennsylvania Avenue (SR 2037) and Commerce Drive/Site Driveway. The plans must be revised to show the separate left turn lane leaving the site driveway.

79. Include all turning movements on the auto carrier truck turning plans to show the auto carrier entering and leaving the site to the west.

80. Revise the trash/fire truck turning templates to remove encroachments on proposed parking spaces. Additionally, show all entering and exiting movements for the fire truck detail including left-in and left-out.

81. Ensure existing utilities shown on Sheet 4 are not conflicting with proposed curbing and turning island for the right-in/right-out driveway. We note that the proposed curb for the right-in/right-out driveway appears to conflict with an existing gas valve and sewer/manhole cover.

82. The size of the proposed building is noted as 69,182 square feet. This is a reduction from the most recent impact fee coordination correspondence which indicated 95,576 square feet, but the building footprint appears very similar. Verify the size of the facility and provide commentary on the change in size. The total size of the facility should be noted on the site plan.

83. Update Figure 2 in the Traffic Impact Report to include the latest site plan for consistency.

84. Include signage for the garage entrances to indicate height restrictions within the parking garage.

85. The western driveway design should be discussed with PennDOT. Typically, with a signalized intersection, 150' length is preferred to first internal intersection. We note the proposed length (45') between the signal and first existing internal intersection is less than existing conditions (60').

86. Include the proposed object marker sign detail and size on the detail sheet.

87. Provide a copy of submitted HOP documents and ensure all future submissions are provided electronically to the Township for concurrent review.

88. The parking requirements table on the plans indicates 39 service bays for the site. The plans should show the location of the service area and how access will be provided.

89. The TIA recommends revising the southbound Commerce Drive approach to provide dual left turn lanes and a separate through/right turn lane. With this reconfiguration, the alignment through the intersection is skewed. This should be coordinated with PennDOT to determine the optimal driveway/intersection design and the plans updated accordingly.

90. The following sheets referenced on the Cover Sheet do not appear to have been included within the plan set, and must be provided: Sheets C-601, C-602, C-603, C- C-604, C-605, C-606, C-607, C-608, C-609, C-610.

Any future submission of the design plans for this project must be accompanied by a letter, prepared by the applicant's engineer, which addresses each of the comments contained in this report. Should you have any questions regarding this matter, please do not hesitate to contact me at this office.

Sincerely,

Krista Heinrich, PE
Township Engineer

c: Craig T. McAnally – Acting Assistant Township Manager
Charles L. Guttenplan, AICP – Director of Planning and Zoning
Robert A. Sztubinski, B.C.O. – Director of Building & Codes
Andrew Thomas – Fire Marshal
Sean Kilkenny, Esq.; The Law Offices of Sean Kilkenny, LLC – Township Solicitor *(via email)*
Dennis Turnbaugh – Mile One Fort Washington LLC
Jeffrey A. Beavan, PE – Applicant's Engineer
John Iannozzi, Esq. – Applicant's Attorney

WHITEMARSH TOWNSHIP

To: Charlie L. Guttenplan, Director of Planning & Zoning/Zoning Officer.

From: **Andrew G. Thomas, Fire Marshal** 11/6/23

Subject: SLD#03-23 MILEONE FORT WASHINGTON LLC
FINAL MINOR SUBDIVISION & MAJOR LAND DEVELOPMENT
500-512 PENNSYLVANIA AVENUE
FORT WASHINGTON, PA 19034

Date: 11/6/2023

The original plan review letter was conducted by Keystone Municipal Services, Inc. Review Letter, dated March 27, 2023

1. The plan shall be in accordance with Appendix C section C101 of the 2018 International Fire Code "Fire Hydrant Locations and Distribution". The submitted plan does not indicate any on-site fire hydrants.

Bohler Response: No onsite fire hydrants are proposed. Fire protection will be provided upon coordination with the fire department.
Fire Marshal Response: Whitemarsh Township reviews all fire plans, please provide the distances from the new proposed building to the nearest fire hydrant for review. This must be completed before any final plans are recorded.

2. The plan shall be in accordance with Appendix D section D101 of the 2018 International Fire Code "Fire Apparatus Access Roads". The submitted plan indicates 24' access roads. Section D105 requires 26' access roads.

Bohler Response: No access roads are proposed for the site development. Onsite parking lots are shown at 24-foot widths consistent with Township SALDO requirements.
Fire Marshal Response: all driving areas indicated on the truck turning plan are part of the access roads needed for the fire department to safely position in the event of an emergency, the 24 foot widths of those roads must remain clear at all times and be marked accordingly.

3. The plan shall be in accordance with section 503.4 "Obstruction of fire apparatus access roads" of the 2018 International Fire Code. The submitted truck turning plan indicates using parking spaces as the fire apparatus access road.

Bohler Response: The Plans have been updated to remove parking space conflicts for the proposed fire truck turning maneuvers.

Andrew G. Thomas
Fire Marshal, Emergency Management Coordinator
616 Germantown Pike
Lafayette Hill, PA 19444
Phone: 610-825-3535 ext. 2614
Email: athomas@whitemarshtwp.org

Fire Marshal Response: please provide dimensions of the truck turn area in the lower parking lot on the left side of the property to indicate the needed 24 foot width for safe operations of fire apparatus.

4. The plan shall be in accordance with section 503.1.1 "Buildings and Facilities" of the 2018 International Fire Code. The submitted plan indicates more than 150' of the exterior of the building not being able to be accessible by a fire apparatus road.

Bohler Response: Internal fire protection plans will be provided under separate cover. Site fire protection coordination will be provided in coordination with the fire department.
***Fire Marshal Response: Please provide information so we can see if the plans meet the criteria of* 503.1.1 "Buildings and Facilities" of the 2018 International Fire Code.**

5. The plan shall be in accordance with Appendix D section 103.6 "Signs". The submitted plan does not indicate on the detail sheet "NO PARKING - FIRE LANE" signs.

Bohler Response: Will comply,
Fire Marshal Response: There is no striping or signage for fire lanes indicated in the plan received. This must be completed before any final plans are recorded.

DEPARTMENT OF HOMELAND SECURITY
Federal Emergency Management Agency

OVERVIEW & CONCURRENCE FORM

OMB Control Number: 1660-0016
Expiration: 1/31/2024

PAPERWORK BURDEN DISCLOSURE NOTICE

Public reporting burden for this form is estimated to average 1 hours per response. The burden estimate includes the time for reviewing instructions, searching existing data sources, gathering and maintaining the needed data, and completing, reviewing, and submitting the form. You are not required to respond to this collection of information unless it displays a valid OMB control number. Send comments regarding the accuracy of the burden estimate and any suggestions for reducing this burden to: Information Collections Management, Department of Homeland Security, Federal Emergency Management Agency, 500 C Street, SW, Washington, DC 20472 , Paperwork Reduction Project (1660-0016). Submission of the form is required to obtain or retain benefits under the National Flood Insurance Program. **Please do not send your completed survey to the above address.**

PRIVACY ACT STATEMENT

AUTHORITY: The National Flood Insurance Act of 1968, Public Law 90-448, as amended by the Flood Disaster Protection Act of 1973, Public Law 93-234.
PRINCIPAL PURPOSE(S): This information is being collected for the purpose of determining an applicant's eligibility to request changes to National Flood Insurance Program (NFIP) Flood Insurance Rate Maps (FIRM).
ROUTINE USE(S): The information on this form may be disclosed as generally permitted under 5 U.S.C § 552a(b) of the Privacy Act of 1974, as amended. This includes using this information as necessary and authorized by the routine uses published in DHS/FEMA/NFIP/LOMA-1 National Flood Insurance Program (NFIP); Letter of Map Amendment (LOMA) February 15, 2006, 71 FR 7990.
DISCLOSURE: The disclosure of information on this form is voluntary; however, failure to provide the information requested may delay or prevent FEMA from processing a determination regarding a requested change to a (NFIP) Flood Insurance Rate Maps (FIRM).

A. REQUESTED RESPONSE FROM DHS-FEMA

This request is for a (check one):

☐ CLOMR: A letter from DHS-FEMA commenting on whether a proposed project, if built as proposed, would justify a map revision or proposed hydrology changes (See 44 CFR Ch. 1, Parts 60, 65 & 72). All CLOMRs require documentation of compliance with the Endangered Species Act. Refer to the Instructions for details.

☒ LOMR: A letter from DHS-FEMA officially revising the current NFIP map to show the changes to floodplains, regulatory floodway or flood elevations. (See 44 CFR Ch. 1, Parts 60, 65 & 72).

B. OVERVIEW

1. The NFIP map panel(s) affected for all impacted communities is (are):

Community No.	Community Name	State	Map No.	Panel No.	Effective Date
Example: 480301; 480287	City of Katy; Harris County	TX; TX	48473C; 48201C	0005D; 0220G	02/08/83; 09/28/90
420712	Township of Whitemarsh	PA	42091C	0289	03/02/2016 05/24/2021

2. a. Flooding Source: Sandy Run

b. Types of Flooding: ☒ Riverine ☐ Coastal ☐ Shallow Flooding (e.g., Zones AO and AH)
☐ Alluvial Fan ☐ Lakes ☐ Other (Attach Description)

3. Project Name/Identifier: BMW of Fort Washington

4. FEMA zone designations (choices: A, AH, AO, A1-A30, A99, AE, AR, V, V1-V30, VE, B, C, D, X)

a. Effective: AE

b. Revised: AE

5. Basis for Request and Type of Revision:

a. The basis for this revision request is (check all that apply)

☒ Physical Change	☐ Improved Methodology/Data	☐ Regulatory Floodway Revision	☐ Base Map Changes
☐ Coastal Analysis	☒ Hydraulic Analysis	☐ Hydrologic Analysis	☒ Corrections
☐ Weir-Dam Changes	☐ Levee Certification	☐ Alluvial Fan Analysis	☐ Natural Changes
☒ New Topographic Data	☐ Other (Attach Description)		

Note: A photograph and narrative description of the area of concern is not required, but is very helpful during review.

b. The area of revision encompasses the following structures (check all that apply)

Structures:	☐ Channelization	☐ Levee/Floodwall	☐ Bridge/Culvert
	☐ Dam	☒ Fill	☐ Other (Attach Description)

6. ☒ Documentation of ESA compliance is submitted (required to initiate CLOMR review). Please refer to the instructions for more information.

C. REVIEW FEE

Has the review fee for the appropriate request category been included? ☒ Yes Fee amount: $ 6,500

☐ No, Attach Explanation

- **Please see the DHS-FEMA Web site at http://www.fema.gov/forms-documents-and-software/flood-map-related-fees for Fee Amounts and Exemptions.**

D. SIGNATURES

1. REQUESTOR'S SIGNATURE

All documents submitted in support of this request are correct to the best of my knowledge. I understand that any false statement may be punishable by fine or imprisonment under Title 18 of the United States Code, Section 1001.

Name: Dennis Turnbaugh	Company: MileOne Fort Washington, LLC	
Mailing Address: 3301 Briggs Chaney Road Silver Spring, MD 20904	Daytime Telephone: 301-679-4062	Fax No.:
	E-mail Address: dturnbaugh@mileone.com	
	Date:	

Signature of Requestor (required):

2. COMMUNITY CONCURRENCE

As the community official responsible for floodplain management, I hereby acknowledge that we have received and reviewed this Letter of Map Revision (LOMR) or conditional LOMR request. Based upon the community's review, we find the completed or proposed project meets or is designed to meet all of the community floodplain management requirements, including the requirements for when fill is placed in the regulatory floodway, and that all necessary Federal, State, and local permits have been, or in the case of a conditional LOMR, will be obtained. For Conditional LOMR requests, the applicant has documented Endangered Species Act (ESA) compliance to FEMA prior to FEMA's review of the Conditional LOMR application. For LOMR requests, I acknowledge that compliance with Sections 9 and 10 of the ESA has been achieved independently of FEMA's process. For actions authorized, funded, or being carried out by Federal or State agencies, documentation from the agency showing its compliance with Section 7(a)(2) of the ESA will be submitted. In addition, we have determined that the land and any existing or proposed structures to be removed from the SFHA are or will be reasonably safe from flooding as defined in 44CFR 65.2(c), and that we have available upon request by FEMA, all analyses and documentation used to make this determination.

Community Official's Name and Title: Krista Heinrich, Floodplain Administrator

Mailing Address:	Community Name: Whitemarsh Township	
	Daytime Telephone: 215-486-5770	Fax No.: 215-486-5791
	E-mail Address: kheinrich@gilmore-assoc.com	

Community Official's Signature (required): Date:

3. CERTIFICATION BY REGISTERED PROFESSIONAL ENGINEER AND/OR LAND SURVEYOR

This certification is to be signed and sealed by a licensed land surveyor, registered professional engineer, or architect authorized by law to certify elevation information data, hydrologic and hydraulic analysis, and any other supporting information as per NFIP regulations paragraph 65.2(b) and as described in the MT-2 Forms Instructions. All documents submitted in support of this request are correct to the best of my knowledge. I understand that any false statement may be punishable by fine or imprisonment under Title 18 of the United States Code, Section 1001.

Certifier's Name: Jeffrey A. Beavan		License No.: PE082005	Expiration Date: 9/30/2023
Company Name: BohlerEngineering		Mailing Address: 74 West Broad Street Suite 500 Bethlehem, PA 18018	
Telephone No.: 610-709-9971	Fax No.: 610-709-9976		
E-mail Address: jbeavan@bohlereng.com			
Signature:			Date:

Ensure the forms that are appropriate to your revision request are included in your submittal.

Form Name and (Number)	Required if ...
☒ Riverine Hydrology and Hydraulics Form (Form 2)	New or revised discharges or water-surface elevations
☐ Riverine Structures Form (Form 3)	Channel is modified, addition/revision of bridge/culverts, addition/revision of levee/floodwall, addition/revision of dam
☐ Coastal Analysis Form (Form 4)	New or revised coastal elevations
☐ Coastal Structures Form (Form 5)	Addition/revision of coastal structure
☐ Alluvial Fan Flooding Form (Form 6)	Flood control measures on alluvial fans

Seal (Optional)

DEPARTMENT OF HOMELAND SECURITY

Federal Emergency Management Agency

RIVERINE HYDROLOGY & HYDRAULICS FORM (FORM 2)

OMB Control Number: 1660-0016
Expiration: 1/31/2024

PAPERWORK BURDEN DISCLOSURE NOTICE

Public reporting burden for this form is estimated to average 3.5 hours per response. The burden estimate includes the time for reviewing instructions, searching existing data sources, gathering and maintaining the needed data, and completing, reviewing, and submitting the form. You are not required to respond to this collection of information unless it displays a valid OMB control number. Send comments regarding the accuracy of the burden estimate and any suggestions for reducing this burden to: Information Collections Management, Department of Homeland Security, Federal Emergency Management Agency, 500 C Street, SW, Washington, DC 20472 , Paperwork Reduction Project (1660-0016). Submission of the form is required to obtain or retain benefits under the National Flood Insurance Program. **Please do not send your completed survey to the above address.**

PRIVACY ACT STATEMENT

AUTHORITY: The National Flood Insurance Act of 1968, Public Law 90-448, as amended by the Flood Disaster Protection Act of 1973, Public Law 93-234.
PRINCIPAL PURPOSE(S): This information is being collected for the purpose of determining an applicant's eligibility to request changes to National Flood Insurance Program (NFIP) Flood Insurance Rate Maps (FIRM).
ROUTINE USE(S): The information on this form may be disclosed as generally permitted under 5 U.S.C § 552a(b) of the Privacy Act of 1974, as amended. This includes using this information as necessary and authorized by the routine uses published in DHS/FEMA/NFIP/LOMA-1 National Flood Insurance Program (NFIP); Letter of Map Amendment (LOMA) February 15, 2006, 71 FR 7990.
DISCLOSURE: The disclosure of information on this form is voluntary; however, failure to provide the information requested may delay or prevent FEMA from processing a determination regarding a requested change to a (NFIP) Flood Insurance Rate Maps (FIRM).

Flooding Source: Sandy Run

Note: Fill out one form for each flooding source studied

A. HYDROLOGY

1. Reason for New Hydrologic Analysis (check all that apply):

☒ Not revised (skip to section B) ☐ No existing analysis ☐ Improved data

☐ Alternative methodology ☐ Proposed Conditions (CLOMR) ☐ Changed physical condition of watershed

2. Comparison of Representative 1%-Annual-Chance Discharges

Location	Drainage Area (Sq. Mi.)	Effective/FIS (cfs)	Revised (cfs)

3. Methodology for New Hydrologic Analysis (check all that apply)

☐ Precipitation/Runoff Model → Specify Model: _____ Duration: _____ Rainfall Amount: _____

☐ Statistical Analysis of Gage Records

☐ Regional Regression Equations ☐ Other (please attach description)

Please enclose all relevant models in digital format, maps, computations (including computation of parameters), and documentation to support the new analysis.

4. Review/Approval of Analysis

If your community requires a regional, state, or federal agency to review the hydrologic analysis, please attach evidence of approval/review. 4. HEC-RAS File Description**:

5. Impacts of Sediment Transport on Hydrology

Is the hydrology for the revised flooding source(s) affected by sediment transport? ☐ Yes ☐ No

If yes, then fill out Section F (Sediment Transport) of Form 3. If No, then attach your explanation.

B. HYDRAULICS

1. Reach to be Revised

	Description	Cross Section	Water-Surface Elevation (ft.)	
			Effective	Proposed/Revised
Downstream Limit*	South of Site	4777.088	163.53	163.53
Upstream Limit*	East of Site	5508.105	169.37	169.20

*Proposed/Revised elevations must tie-into the Effective elevations within 0.5 foot at the downstream and upstream limits of revision.

2. Hydraulic Method/Model Used: HEC-RAS

☒ Steady State ☐ Unsteady State ☐ One-Dimensional ☐ Two-Dimentional

3. Pre-Submittal Review of Hydraulic Models*

DHS-FEMA has developed two review programs, CHECK-2 and CHECK-RAS, to aid in the review of HEC-2 and HEC-RAS hydraulic models, respectively. We recommend that you review your HEC-2 and HEC-RAS models with CHECK-2 and CHECK-RAS.

4. HEC-RAS File Description**:

Models Submitted	Natural Run		Floodway Run		Datum
Duplicate Effective Model*	File Name:	Plan Name:	File Name:	Plan Name:	
	Sandy_Run	Effective	Sandy_Run		NAVD88
Corrected Effective Model*	File Name:	Plan Name:	File Name:	Plan Name:	
	Sandy_Run	Corrected-Effective	Sandy_Run		NAVD88
Existing or Pre-Project Conditions Model	File Name:	Plan Name:	File Name:	Plan Name:	
	Sandy_Run	Corrected-Effective	Sandy_Run		NAVD88
Revised or Post-Project Conditions Model	File Name:	Plan Name:	File Name:	Plan Name:	
	Sandy_Run	Columns_Mid-Cut	Sandy_Run	:olumns_mid-cut_FW	NAVD88
Other - (attach description)	File Name:	Plan Name:	File Name:	Plan Name:	

* For details, refer to the corresponding section of the instructions.
**See instructions for information about modeling other then HEC-RAS. ☒ Digital Models Submitted? (Required)

C. MAPPING REQUIREMENTS

A **certified topographic work map** must be submitted showing the following information (where applicable): the boundaries of the effective, existing, and proposed conditions 1%-annual-chance floodplain (for approximate Zone A revisions) or the boundaries of the 1%- and 0.2%-annual-chance floodplains and regulatory floodway (for detailed Zone AE, AO, and AH revisions); location and alignment of all cross sections with stationing control indicated; stream, road, and other alignments (e.g., dams, levees, etc.); current community easements and boundaries; boundaries of the requester's property; certification of a registered professional engineer registered in the subject State; location and description of reference marks; and the referenced vertical datum (NGVD, NAVD, etc.).

Topographic Information: ☒ Digital Mapping (GIS/CADD) Data Submitted (preferred)

Source: Control Point Associates, Inc. Date: 02/24/2023

Vertical Datum: NAVD88 Spatial Projection:

Accuracy: 0.07 FT

Note that the boundaries of the existing or proposed conditions floodplains and regulatory floodway to be shown on the revised FIRM and/or FBFM must tie-in with the effective floodplain and regulatory floodway boundaries. Please attach **a copy of the effective FIRM and/or FBFM**, at the same scale as the original, annotated to show the boundaries of the revised 1%-and 0.2%-annual-chance floodplains and regulatory floodway that tie-in with the boundaries of the effective 1%-and 0.2%-annual-chance floodplain and regulatory floodway at the upstream and downstream limits of the area on revision.

☒ Annotated FIRM and/or FBFM (Required)

D. COMMON REGULATORY REQUIREMENTS*

1. For LOMR/CLOMR requests, do Base Flood Elevations (BFEs) or Special Flood Hazard Areas (SFHAs) increase compared to the effective BFEs? ☐ Yes ☒ No

   If Yes, please attach **proof of property owner notification**. Examples of property owner notifications can be found in the MT-2 Form 2 Instructions.

2. For CLOMR requests, if either of the following is true, please submit **evidence of compliance with Section 65.12 of the NFIP regulations**:

   - The proposed project encroaches upon a regulatory floodway and would result in increases above 0.00 foot compared to pre-project conditions.
   - The proposed project encroaches upon a SFHA with or without BFEs established and would result in increases above 1.00 foot compared to pre-project conditions.

3. Does the request involve the placement or proposed placement of fill? ☐ Yes ☒ No

   If Yes, the community must be able to certify that the area to be removed from the special flood hazard area, to include any structures or proposed structures, meets all of the standards of the local floodplain ordinances, and is reasonably safe from flooding in accordance with the NFIP regulations set forth at 44 CFR 60.3(A)(3), 65.5(a)(4), and 65.6(a)(14). Please see the MT-2 instructions for more information.

4. Does the request involve the placement or proposed placement of fill? ☐ Yes ☒ No

   If Yes, attach **evidence of regulatory floodway revision notification**. As per Paragraph 65.7(b)(1) of the NFIP Regulations, notification is required for requests involving revisions to the regulatory floodway Elements and examples of regulatory floodway revision notification can be found in the MT-2 Form 2 Instructions.

5. For CLOMR requests, please submit documentation to FEMA and the community to show that you have complied with Sections 9 and 10 of the Endangered Species Act (ESA). For actions authorized, funded, or being carried out by Federal or State agencies, please submit documentation from the agency showing its compliance with Section 7(a)(2) of the ESA. Please see the MT-2 instructions for more detail.

1. PROJECT INFORMATION

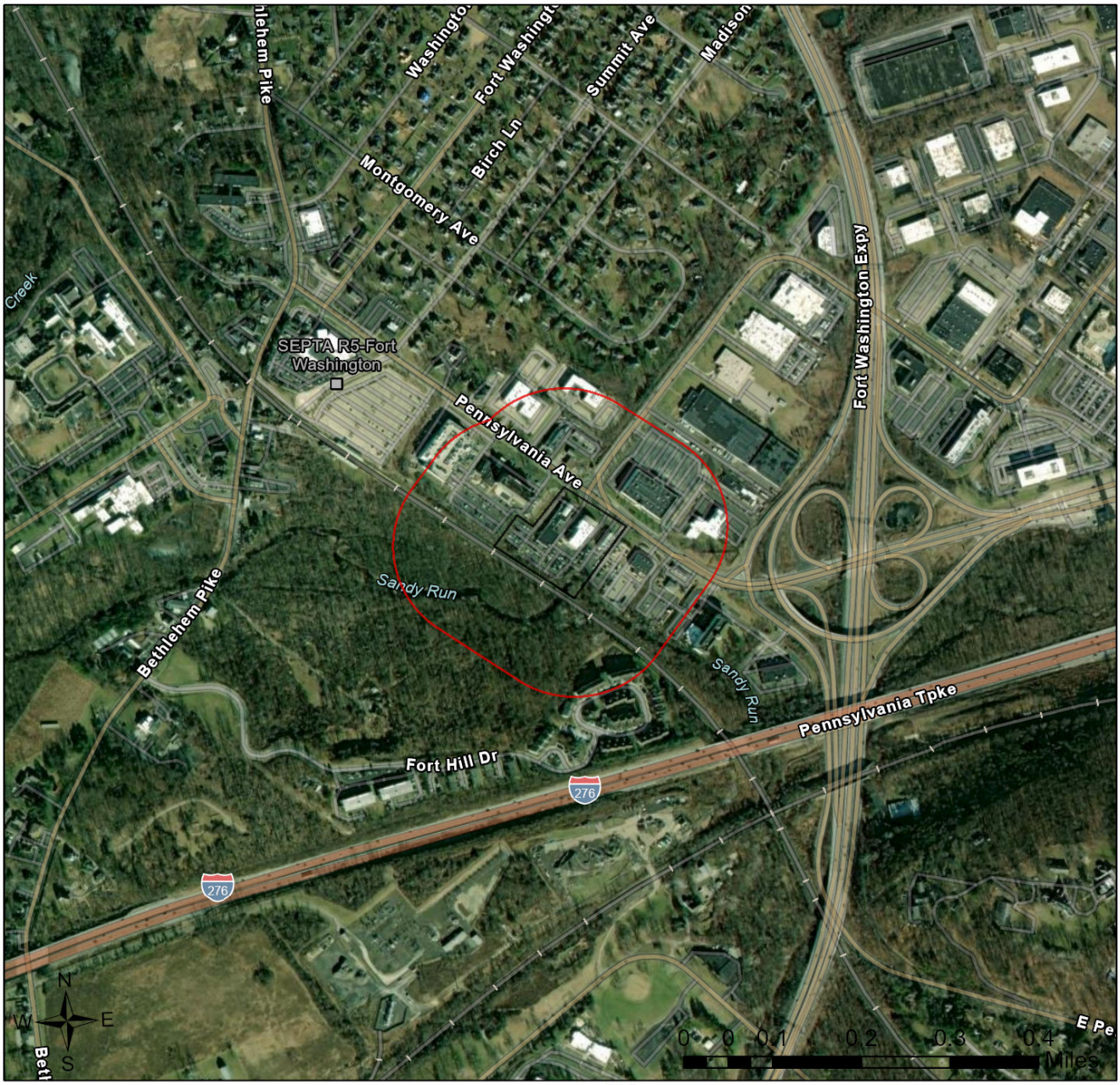
Project Name: **MileOne BMW- proposed Automotive Dealership- Whitemarsh Township**
Date of Review: **4/27/2023 03:54:06 PM**
Project Category: **Development, New commercial/industrial development (store, gas station, factory)**
Project Area: **4.97 acres**
County(s): **Montgomery**
Township/Municipality(s): **WHITEMARSH TOWNSHIP**
ZIP Code:
Quadrangle Name(s): **AMBLER**
Watersheds HUC 8: **Schuylkill**
Watersheds HUC 12: **Lower Wissahickon Creek**
Decimal Degrees: **40.133850, -75.207344**
Degrees Minutes Seconds: **40° 8' 1.8593" N, 75° 12' 26.4375" W**

2. SEARCH RESULTS

Agency	Results	Response
PA Game Commission	No Known Impact	No Further Review Required
PA Department of Conservation and Natural Resources	No Known Impact	No Further Review Required
PA Fish and Boat Commission	No Known Impact	No Further Review Required
U.S. Fish and Wildlife Service	No Known Impact	No Further Review Required

As summarized above, Pennsylvania Natural Diversity Inventory (PNDI) records indicate no known impacts to threatened and endangered species and/or special concern species and resources within the project area. Therefore, based on the information you provided, no further coordination is required with the jurisdictional agencies. This response does not reflect potential agency concerns regarding impacts to other ecological resources, such as wetlands.

MileOne BMW- proposed Automotive Dealership- Whitemarsh Township

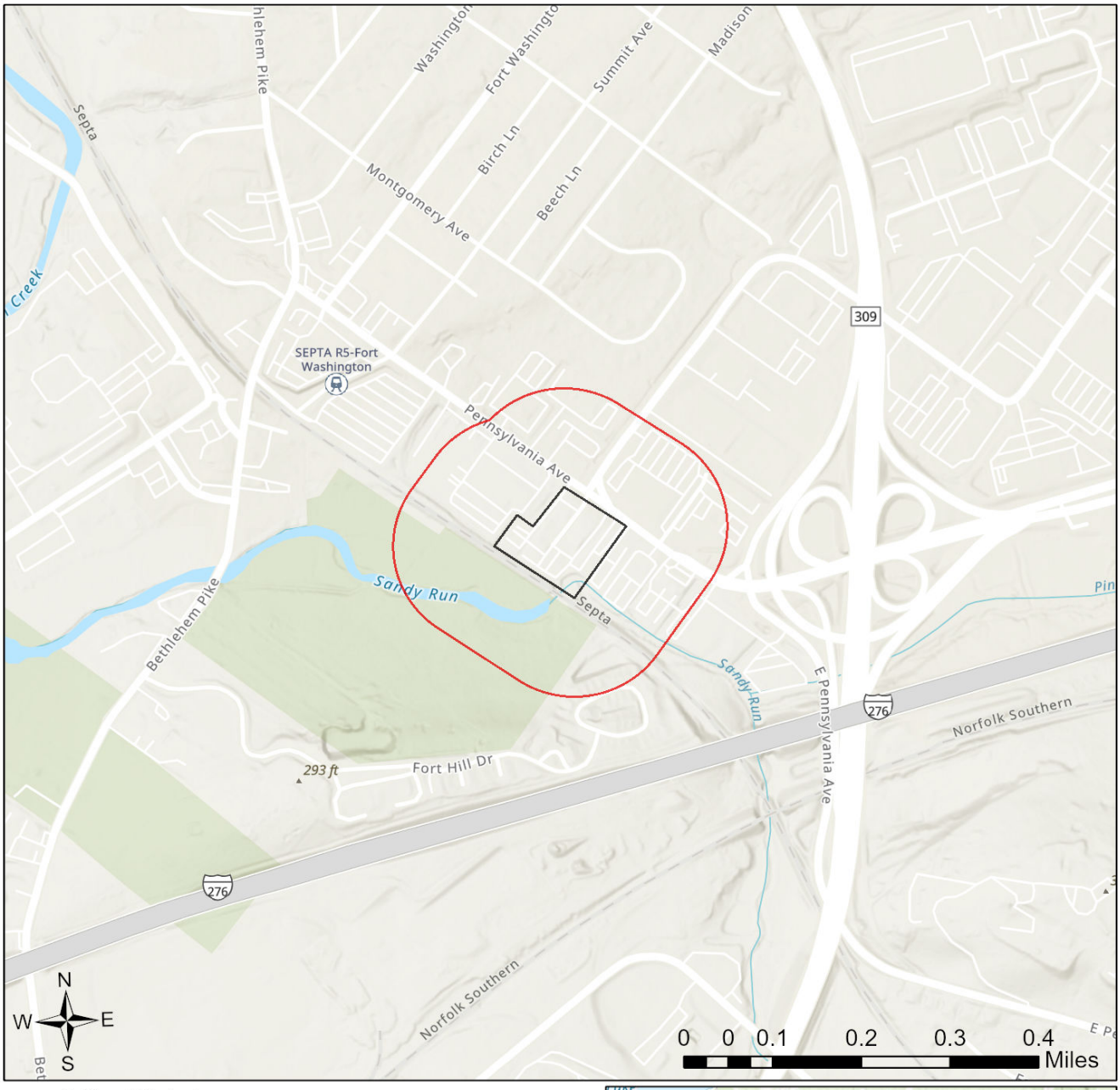


Buffered Project Boundary

Project Boundary

Sources: Esri, Airbus DS, USGS, NGA, NASA, CGIAR, N Robinson, NCEAS, NLS, OS, NMA, Geodatastyrelsen, Rijkswaterstaat, GSA, Geoland, FEMA, Intermap and the GIS user community

MileOne BMW- proposed Automotive Dealership- Whitemarsh Township



Sources: Esri, Airbus DS, USGS, NGA, NASA, CGIAR, N Robinson, NCEAS, NLS, OS, NMA, Geodatastyrelsen, Rijkswaterstaat, GSA, Geoland, FEMA, Intermap and the GIS user community

RESPONSE TO QUESTION(S) ASKED

Q1: The proposed project is in the range of the Indiana bat. Describe how the project will affect bat habitat (forests, woodlots and trees) and indicate what measures will be taken in consideration of this. Round acreages up to the nearest acre (e.g., 0.2 acres = 1 acre).
Your answer is: The project will affect 1 to 39 acres of forests, woodlots and trees.

Q2: Is tree removal, tree cutting or forest clearing of 40 acres or more necessary to implement all aspects of this project?
Your answer is: No

3. AGENCY COMMENTS

Regardless of whether a DEP permit is necessary for this proposed project, any potential impacts to threatened and endangered species and/or special concern species and resources must be resolved with the appropriate jurisdictional agency. In some cases, a permit or authorization from the jurisdictional agency may be needed if adverse impacts to these species and habitats cannot be avoided.

These agency determinations and responses are **valid for two years** (from the date of the review), and are based on the project information that was provided, including the exact project location; the project type, description, and features; and any responses to questions that were generated during this search. If any of the following change: 1) project location, 2) project size or configuration, 3) project type, or 4) responses to the questions that were asked during the online review, the results of this review are not valid, and the review must be searched again via the PNDI Environmental Review Tool and resubmitted to the jurisdictional agencies. The PNDI tool is a primary screening tool, and a desktop review may reveal more or fewer impacts than what is listed on this PNDI receipt. The jursidictional agencies **strongly advise against** conducting surveys for the species listed on the receipt prior to consultation with the agencies.

PA Game Commission
RESPONSE:
No Impact is anticipated to threatened and endangered species and/or special concern species and resources.

PA Department of Conservation and Natural Resources
RESPONSE:
No Impact is anticipated to threatened and endangered species and/or special concern species and resources.

PA Fish and Boat Commission
RESPONSE:
No Impact is anticipated to threatened and endangered species and/or special concern species and resources.

U.S. Fish and Wildlife Service
RESPONSE:
No impacts to **federally** listed or proposed species are anticipated. Therefore, no further consultation/coordination under the Endangered Species Act (87 Stat. 884, as amended; 16 U.S.C. 1531 et seq. is required. Because no take of federally listed species is anticipated, none is authorized. This response does not reflect potential Fish and Wildlife Service concerns under the Fish and Wildlife Coordination Act or other authorities.

4. DEP INFORMATION

The Pa Department of Environmental Protection (DEP) requires that a signed copy of this receipt, along with any required documentation from jurisdictional agencies concerning resolution of potential impacts, be submitted with applications for permits requiring PNDI review. Two review options are available to permit applicants for handling PNDI coordination in conjunction with DEP's permit review process involving either T&E Species or species of special concern. Under sequential review, the permit applicant performs a PNDI screening and completes all coordination with the appropriate jurisdictional agencies prior to submitting the permit application. The applicant will include with its application, both a PNDI receipt and/or a clearance letter from the jurisdictional agency if the PNDI Receipt shows a Potential Impact to a species or the applicant chooses to obtain letters directly from the jurisdictional agencies. Under concurrent review, DEP, where feasible, will allow technical review of the permit to occur concurrently with the T&E species consultation with the jurisdictional agency. The applicant must still supply a copy of the PNDI Receipt with its permit application. The PNDI Receipt should also be submitted to the appropriate agency according to directions on the PNDI Receipt. The applicant and the jurisdictional agency will work together to resolve the potential impact(s). See the DEP PNDI policy at https://conservationexplorer.dcnr.pa.gov/content/resources.

5. ADDITIONAL INFORMATION

The PNDI environmental review website is a preliminary screening tool. There are often delays in updating species status classifications. Because the proposed status represents the best available information regarding the conservation status of the species, state jurisdictional agency staff give the proposed statuses at least the same consideration as the current legal status. If surveys or further information reveal that a threatened and endangered and/or special concern species and resources exist in your project area, contact the appropriate jurisdictional agency/agencies immediately to identify and resolve any impacts.

For a list of species known to occur in the county where your project is located, please see the species lists by county found on the PA Natural Heritage Program (PNHP) home page (www.naturalheritage.state.pa.us). Also note that the PNDI Environmental Review Tool only contains information about species occurrences that have actually been reported to the PNHP.

6. AGENCY CONTACT INFORMATION

PA Department of Conservation and Natural Resources
Bureau of Forestry, Ecological Services Section
400 Market Street, PO Box 8552
Harrisburg, PA 17105-8552
Email: RA-HeritageReview@pa.gov

U.S. Fish and Wildlife Service
Pennsylvania Field Office
Endangered Species Section
110 Radnor Rd; Suite 101
State College, PA 16801
Email: IR1_ESPenn@fws.gov
NO Faxes Please

PA Fish and Boat Commission
Division of Environmental Services
595 E. Rolling Ridge Dr., Bellefonte, PA 16823
Email: RA-FBPACENOTIFY@pa.gov

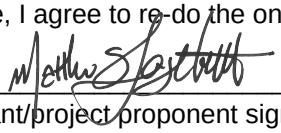
PA Game Commission
Bureau of Wildlife Management
Division of Environmental Review
2001 Elmerton Avenue, Harrisburg, PA 17110-9797
Email: RA-PGC_PNDI@pa.gov
NO Faxes Please

7. PROJECT CONTACT INFORMATION

Name: Matthew Longenberger, RLA
Company/Business Name: Bohler Engineering PA, LLC
Address: 74 West Broad Street, Suite 500
City, State, Zip: Bethlehem, PA 18018
Phone: (610) 709-9971 Fax: (610) 709-9979
Email: mlongenberger@bohlereng.com

8. CERTIFICATION

I certify that ALL of the project information contained in this receipt (including project location, project size/configuration, project type, answers to questions) is true, accurate and complete. In addition, if the project type, location, size or configuration changes, or if the answers to any questions that were asked during this online review change, I agree to re-do the online environmental review.



applicant/project proponent signature

04/27/2023
date

74 W. Broad Street, Suite 500
Bethlehem, PA 18018
610.709.9971

HEC-RAS Flood Analysis for Sandy Run

Project: BMW Automotive Dealership Expansion
500 Pennsylvania Avenue
Whitemarsh Township
Montgomery County, PA

Project Number: PAB220113.00

Client: MileOne Fort Washington, LLC
3301 Briggs Chaney Road
Silver Spring, MD 20904

Date: 11/17/2023

Professional Engineer: Jeff A. Beavan, P.E.
PA License #PE082005

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Appendix A – Cross Section Plan ..... A

Appendix B - Cut/Fill Exhibit ..... B

Appendix C - Topographic Work Map Exhibit C

Appendix D – Annotated FIRM Map Exhibit ..... D

Flood Analysis Narrative

GENERAL PROJECT DESCRIPTION

BMW of Fort Washington proposes to consolidate and subdivide four existing lots totaling 5.133 acres along Pennsylvania Avenue into one proposed lot. The proposed lot will contain a proposed automobile dealership. Pertinent data characterizing the existing and future site conditions are shown on the accompanying Preliminary Land Development Plans.

The site drains to two points of interest, both of which ultimately drain to Sandy Run, which is tributary to the Wissahickon Creek, with a Chapter 93 designation of TSF, MF, or trout-stocking fishes, migratory fishes.

Waters of the US exist and are present on the project site and have been delineated by survey. No wetland areas exist on site. The entire site is located within the existing 100 and 500 year floodplain as delineated on the effective FEMA Flood Insurance Rate Map panel covering the site area (panel number 42091C0289G, revised May 24, 2021).

FLOODPLAIN ANALYSIS

A hydraulic analysis was performed based on a HEC-RAS geometric model of the confluence of the Sandy Run, including the main stem and a number of upstream tributaries. The intent of the analysis is to indicate that the proposed development will not impact flood elevations beyond 1 foot elevation as a result of the placement of the building and grading operations (net cut) within the floodplain. The HEC-RAS river analysis system software, as developed by the U.S. Army Corps of Engineers, was used for the analysis. The data for the Schuylkill River model was based on a HEC-RAS model provided by FEMA, dated January 2010, revised November 2012. Elevations were compared to the cross-sections contained in the May 24, 2021 Flood Insurance Study for Montgomery County. The cross-sections within the site area include from station 4790.088 to station 5084.678 of the Sandy Run Main Stem.

The Effective condition of the Site is based on the Approved LOMR of the as-built conditions for the Audi of Fort Washington dealership, located at 432 Pennsylvania Avenue, Whitemarsh Township, Montgomery County, PA.

The Corrected Effective condition of the site supplements the Audi of Fort Washington conditions with surveyed conditions of the BMW of Fort Washington property located at 500, 506, 510, and 512 Pennsylvania Avenue, Whitemarsh Township, Montgomery County, PA. In order to provide a direct comparison between development conditions, the Corrected Effective conditions adjust the cross section geometry to align with the proposed building footprints in the Post-Development conditions.

The Post-Development conditions for the BMW of Fort Washington property are modeled to provide flood storage under the building expansion. The proposed building expansion proposes a finished floor elevation of 171.00 on columns in order to provide flood storage and a net cut condition for the site. The building expansion was modeled to rest upon columns with a width of 2 feet, spaced 20 feet on center.

In comparison to the corrected effective FEMA Flood Insurance Rate Map panels covering the site area (panel number 42091C0289G, revised May 24, 2021), the HEC-RAS analysis indicates that the 100-year storm event (1-percent-annual-chance storm) for the Sandy Run maintains an elevation below the floodproofing elevation 170.00 where floodproofing is applicable within the project site. Upstream of the project site, including the cross sections within Upper Dublin Township, both the 100-year and 500-year elevations decrease in comparison to the effective flood study for a length of 1200 feet within the study area. As flood storage is being provided under the building, columns under the building were modeled as obstructions to the top of the building, with ineffective flow shown for the space between the columns. The portions of the building that are not resting upon columns and which are to be floodproofed were modeled as obstructions in the applicable cross-sections, as flood storage cannot be provided within these areas. The underground basins within the site are located within the existing floodplain and were modeled as cut, providing flood storage in this area as intended to offset building fill and floodproofing elsewhere.

In addition to the HEC-RAS analysis, a cut/fill comparison was made based on the proposed site grading, showing that the proposed project will result in a net cut of 274 cubic yards within the floodplain area.

Based on this analysis, the proposed project will result in a 0.17 foot decrease in the base flood elevation for the Sandy Run upstream of the project site.

Endangered Species Act Compliance

In accordance with the Endangered Species Act (ESA) of 1973, the project uses consist of an existing automotive dealership, a car wash, and a service and maintenance building; therefore, no potential for "Take" exists (meaning that the project has no potential to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct) to threatened and endangered species.

Conclusion

The HEC-RAS outputs for the 1-percent-annual-chance storm event floodplain analysis for the Sandy Run is included herein, and shows a 0.01 foot decrease in the base flood elevation upstream as a result of development. In addition, cut/fill calculations are provided showing that the proposed development will result in a net cut condition, thereby increasing the storage within the floodplain. Based on this analysis, the project has been designed to comply with the Whitemarsh Township Floodplain Ordinance, Chapter 101, as well as applicable State and Federal floodplain regulations.

USGS MAP

SCALE: 1" = 2,000'
AMBLER QUAD

HEC-RAS Summary of Analysis Results

Sandy Main Stem (NAVD 88)
100-Year Profile Analysis

River Sta	Profile	Duplicate Effective W.S. Elev	Corrected W.S. Elev	Proposed W.S. Elev	Proposed Comparison	
					Duplicate	Corrected
6572.639	100-yr	172.84	172.88	172.84	0.00	-0.04
6414.98	100-yr	172.45	172.49	172.45	0.00	-0.04
6189.177	100-yr	168.91	169.05	168.88	-0.03	-0.17
5508.105	100-yr	169.23	169.37	169.2	-0.03	-0.17
5084.678	100-yr	169.16	169.07	169.05	-0.11	-0.02
5065.378	100-yr	169.17	169.12	168.96	-0.21	-0.16
5039.878	100-yr	168.67	169.11	168.79	0.12	-0.32
4865.578	100-yr	168.68	169	168.69	0.01	-0.31
4790.088	100-yr	168.63	168.44	168.1	-0.53	-0.34
4777.088	100-yr	168.53	168.28	168.19	-0.34	-0.09
4685.592	100-yr	163.53	163.53	163.53	0	0.00
4327.181	100-yr	164.33	164.33	164.33	0	0.00

= River stations within project limits

= Decrease in proposed water surface elevations vs given comparison model

= Increase in proposed water surface elevations vs given comparison model

= Duplicate Effective Model

Sandy Main Stem (NAVD 88)
500-Year Profile Analysis

River Sta	Profile	Duplicate Effective W.S. Elev	Corrected W.S. Elev	Proposed W.S. Elev	Proposed Comparison Duplicate	Proposed Comparison Corrected	
6572.639	500-yr	176.93	175.73	175.73	-1.2	0.00	
6414.98	500-yr	176.38	174.98	174.98	-1.4	0.00	
6189.177	500-yr	170.76	170.81	170.85	0.09	+0.04	
5508.105	500-yr	171.41	171.45	171.48	0.07	+0.03	
5084.678	500-yr	171.35	171.43	171.47	0.12	0.04	
5065.378	500-yr	171.35	171.4	171.4	0.05	0	
5039.878	500-yr	171.37	171.42	171.43	0.06	0.01	
4865.578	500-yr	171.36	171.39	171.4	0.04	0.01	
4790.088	500-yr	171.34	171.37	171.36	0.02	-0.01	
4777.088	500-yr	171.35	171.38	171.38	0.03	0	
4685.592	500-yr	167.22	167.22	167.22	0	0.00	
4327.181	500-yr	166.74	166.74	166.74	0	0.00	
3964.325	500-yr	163.61	165.93	165.93	2.32	0.00	-165.93

= River stations within project limits

= Decrease in proposed water surface elevations vs given comparison model

= Increase in proposed water surface elevations vs given comparison model

= Duplicate Effective Model

Sandy Main Stem (NAVD 88)
Encroached Floodway Analysis

River Sta	W.S. Elev	W.S. Delta	E.G. Elev	Top Wdth Act	Top Width Delta	Enc Sta L	Enc Sta L Delta	Enc Sta R	Enc Sta R Delta
6189.177	170.12		171.08	92		558		650	
6189.177	169.78	-0.34	170.79	92	0.00	558	0.00	650	0.00
5508.105	170.12		170.47	263.21		294		810	
5508.105	169.75	-0.37	170.13	263.21	0.00	294	0.00	810	0.00
5084.678	170.01		170.33	255		525		780	
5084.678	169.62	-0.39	169.97	255	0.00	525	0.00	780	0.00
5065.378	169.88		170.31	207		353		560	
5065.378	169.53	-0.35	169.96	223.3	+16.30	336.7	-16.30	560	0.00
5039.878	169.78		170.27	180.84		359.16		540	
5039.878	169.05	-0.73	169.87	194.47	+13.63	345.53	-13.63	540	0.00
4865.578	169.64		169.99	153		382		535	
4865.578	169.05	-0.59	169.4	175.32	+22.32	359.68	-22.32	535	0.00
4790.088	169.34		169.9	136.8		513.2		650	
4790.088	168.02	-1.32	169.26	136.52	-0.28	493.39	-19.81	630	-20.00
4777.088	168.57	0.29	169.71	104.47		388.53		493	0
4777.088	168.15	-0.42	169.1	120.82	+16.35	378.18	-10.35	499	+6.00
4740 BR U	166.25		169.71	0		388.53		493	
4740 BR U	166.25	0.00	169.1	0	0.00	378.18	-10.35	499	+6.00
4740 BR D	164.54		168.51	95.9		400		580	
4740 BR D	164.54	0.00	168.51	95.9	0.00	400	0.00	580	0.00
4685.592	164.54		167.01	180		400		580	
4685.592	164.54	0.00	167.01	180	0.00	400	0.00	580	0.00
4327.181	165.21		165.41	520		315		835	
4327.181	165.21	0.00	165.41	520	0.00	315	0.00	835	0.00

= River stations within project limits

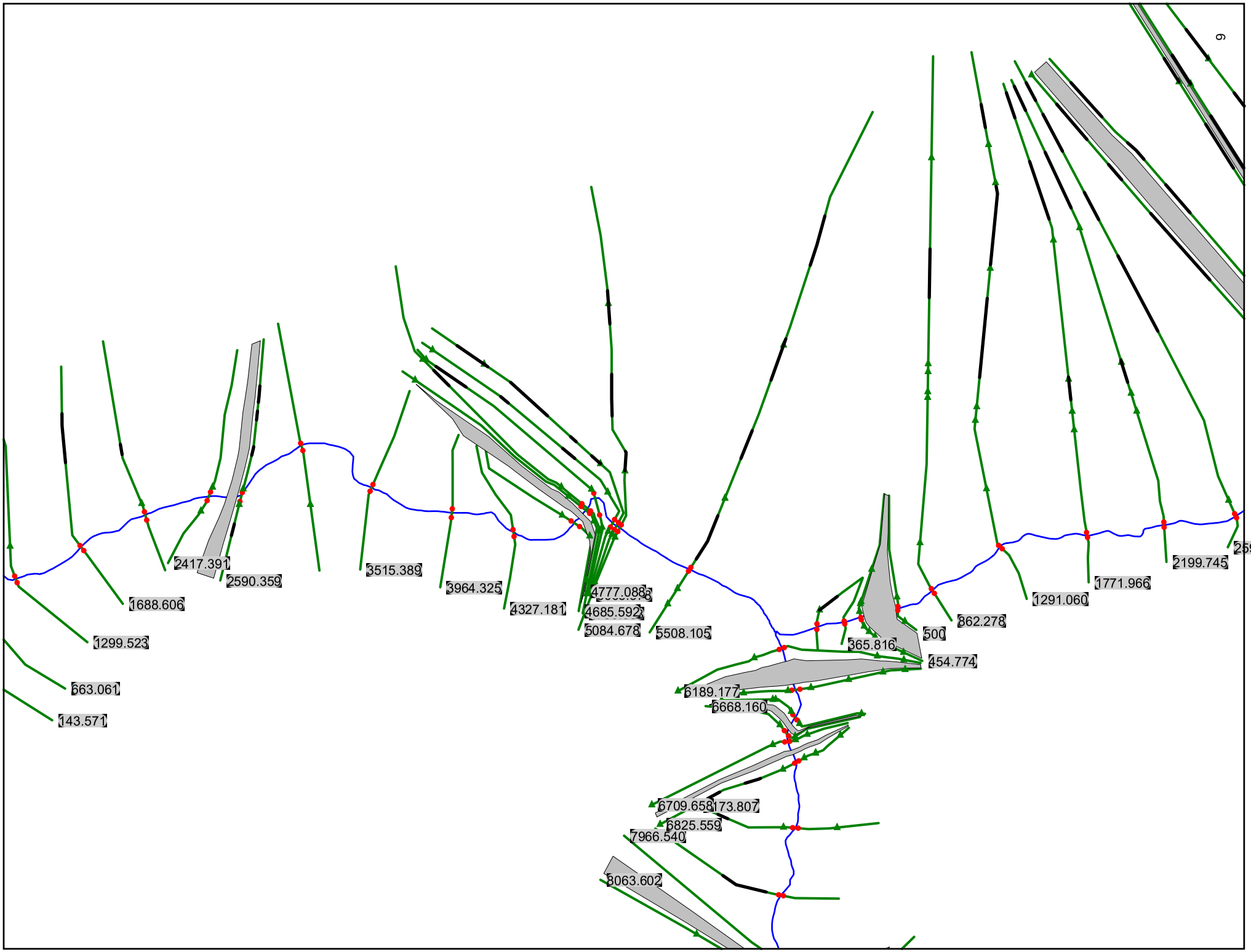
= Non-existent river stations in duplicate effective model

= Decrease in proposed water surface elevations vs duplicate effective model

= Increase in proposed water surface elevations vs duplicate effective model

= Duplicate Effective Model

HEC-RAS Detailed Analysis Results – Duplicate Effective Model


2417.391
2590.359
1688.606
1299.523
663.061
143.571
3515.389
3964.325
4327.181
4777.088
4685.592
5084.678
5508.105
362.278
500
365.816
454.774
6189.177
6668.160
6709.658
173.807
6825.559
7966.540
3063.602
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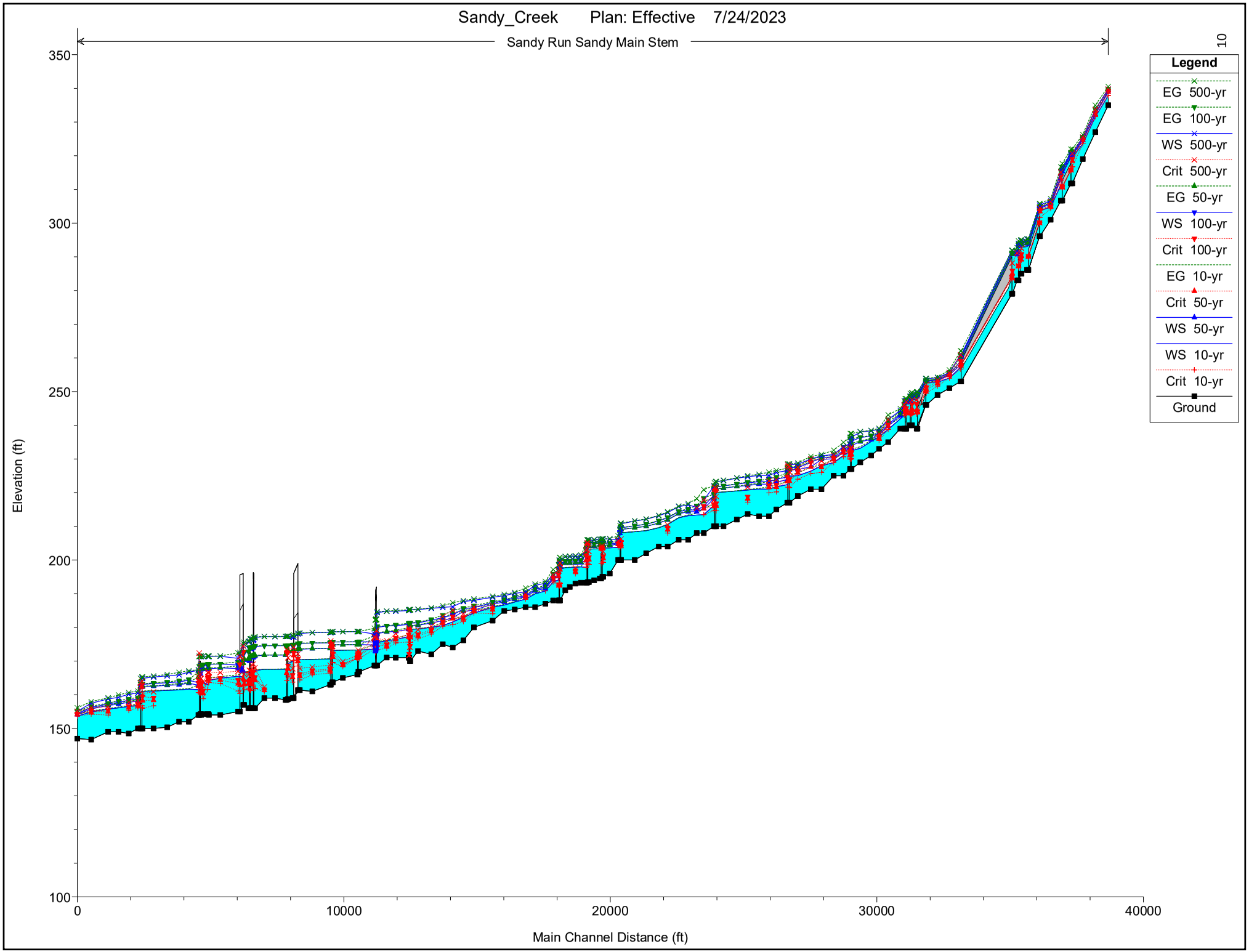
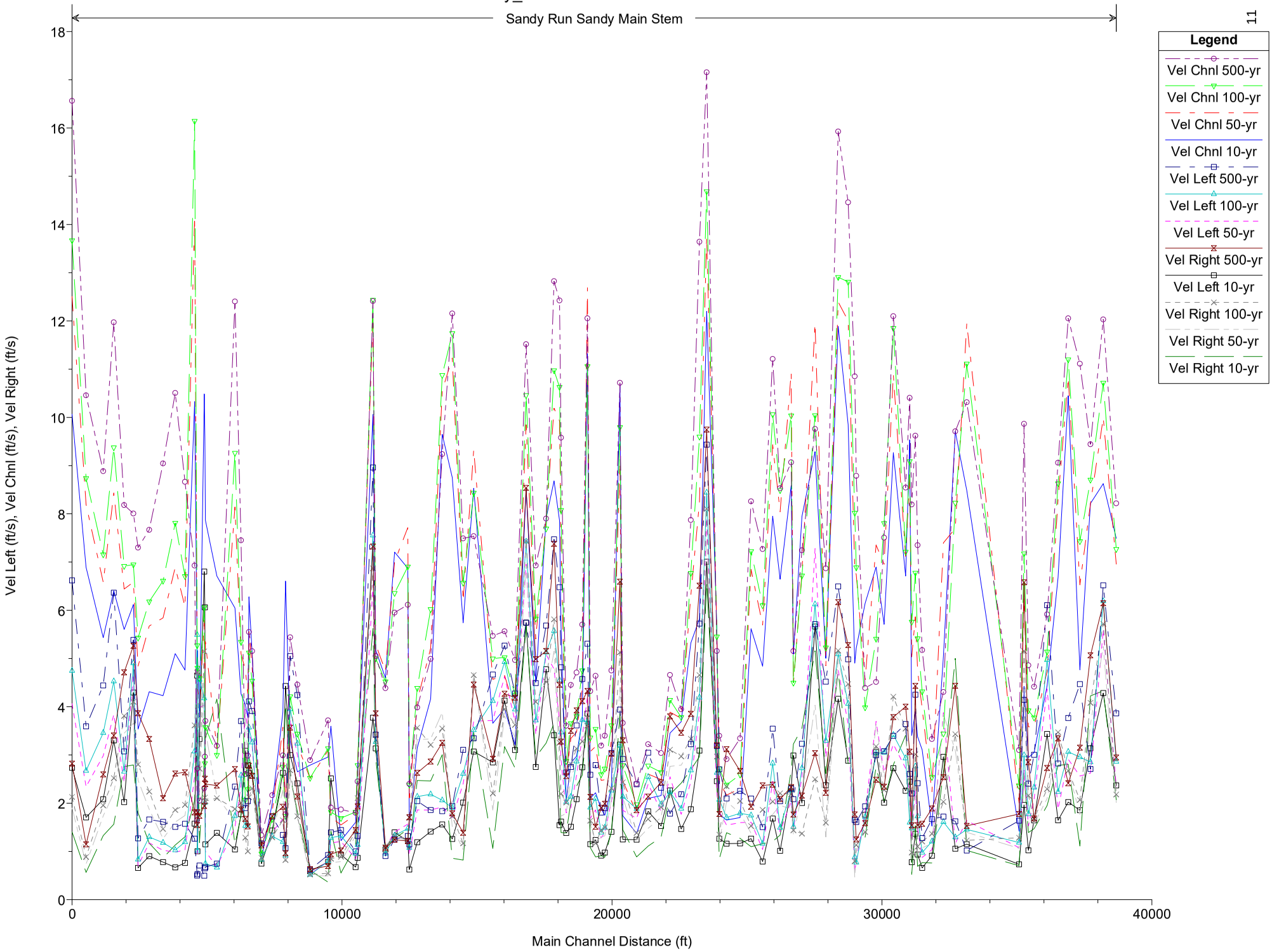
2199.745
2592.7


Sandy_Creek Plan: Effective 7/24/2023
Sandy Run Sandy Main Stem
10
Legend
EG 500-yr
EG 100-yr
WS 500-yr
Crit 500-yr
EG 50-yr
WS 100-yr
Crit 100-yr
EG 10-yr
Crit 50-yr
WS 50-yr
WS 10-yr
Crit 10-yr
Ground
Elevation (ft)
350
300
250
200
150
100
0
10000
20000
30000
40000
Main Channel Distance (ft)

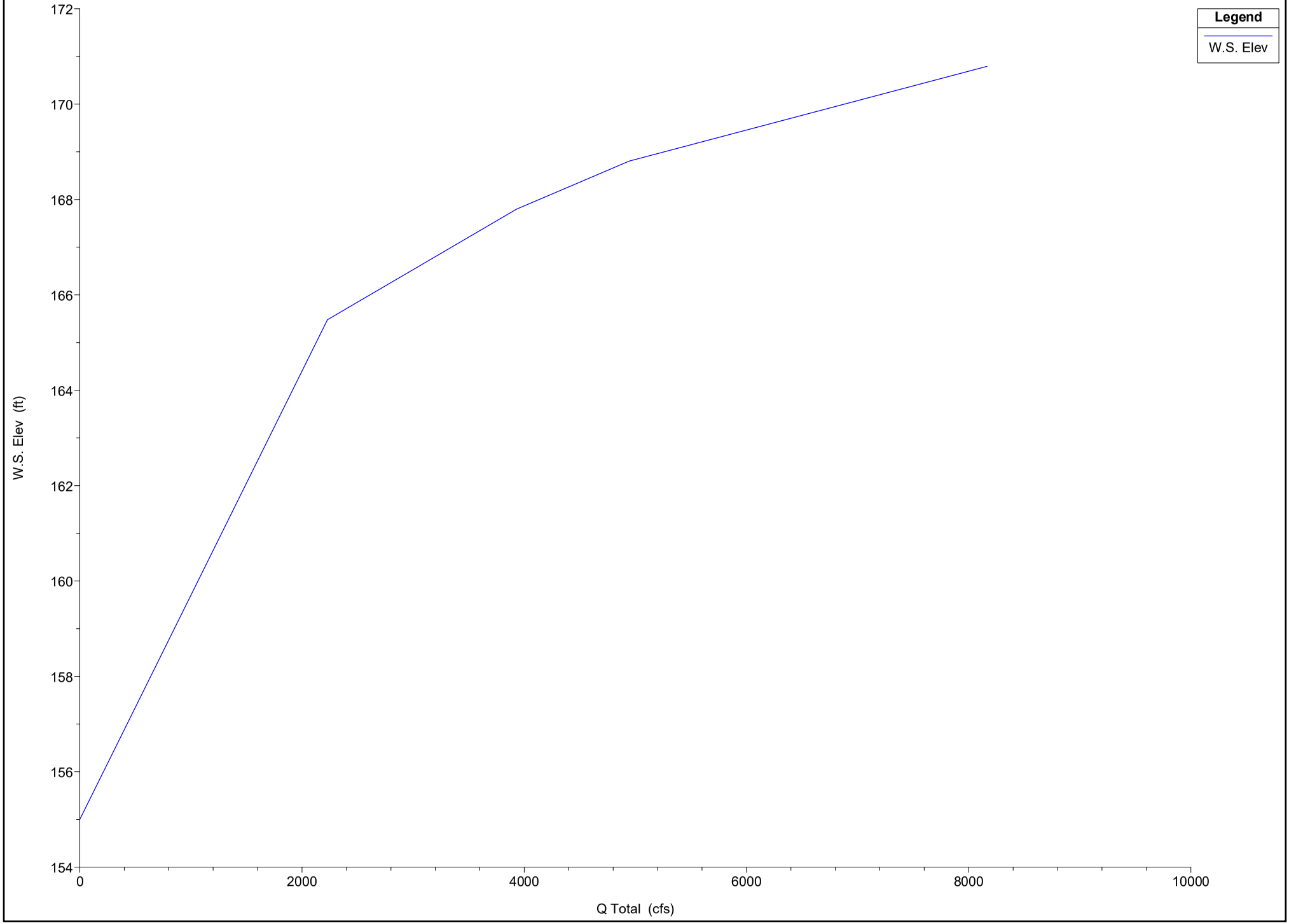
Sandy_Creek Plan: Effective 7/24/2023

Sandy Run Sandy Main Stem



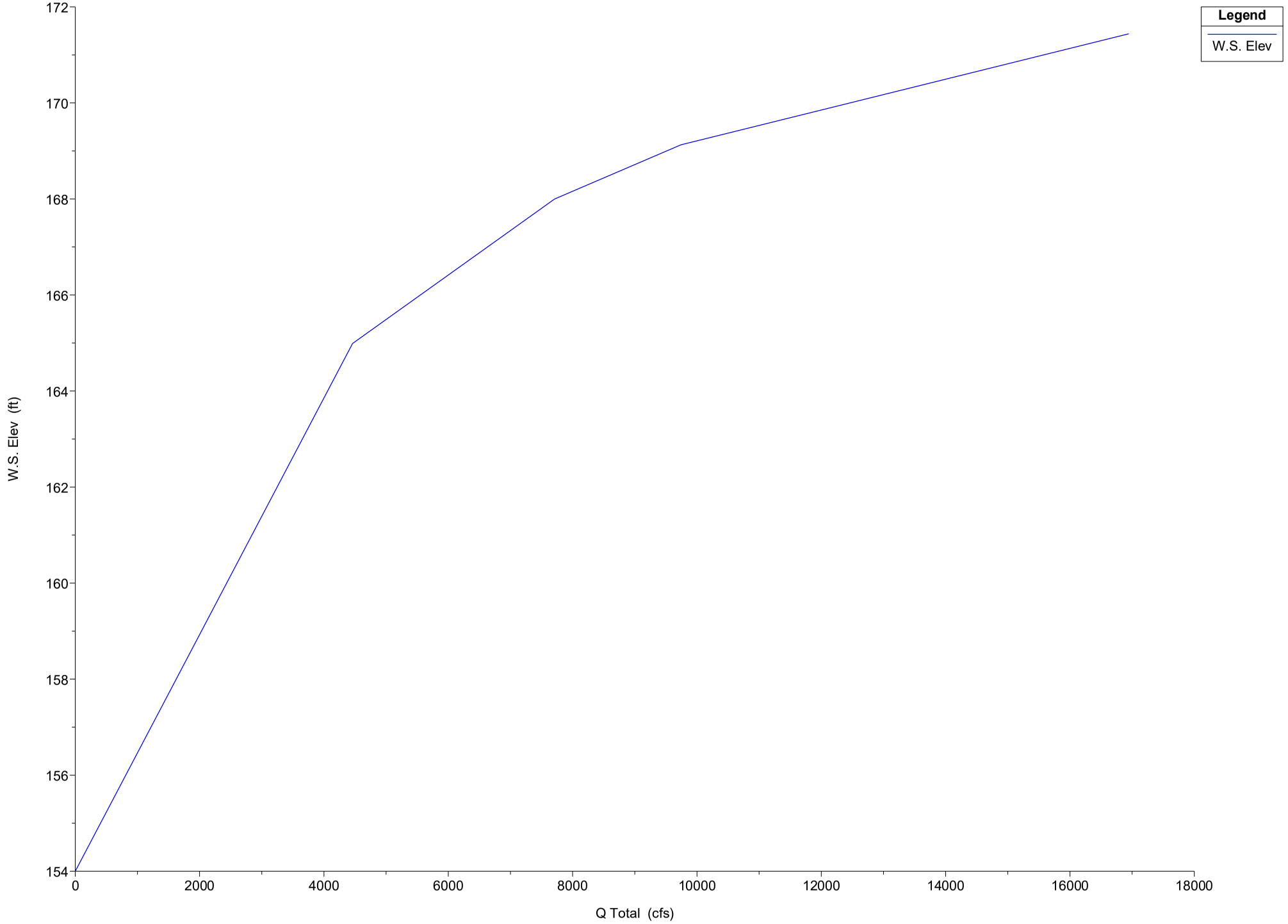
Sandy_Creek Plan: Effective 7/24/2023

River = Sandy Run Reach = Sandy Main Stem RS = 6189.177



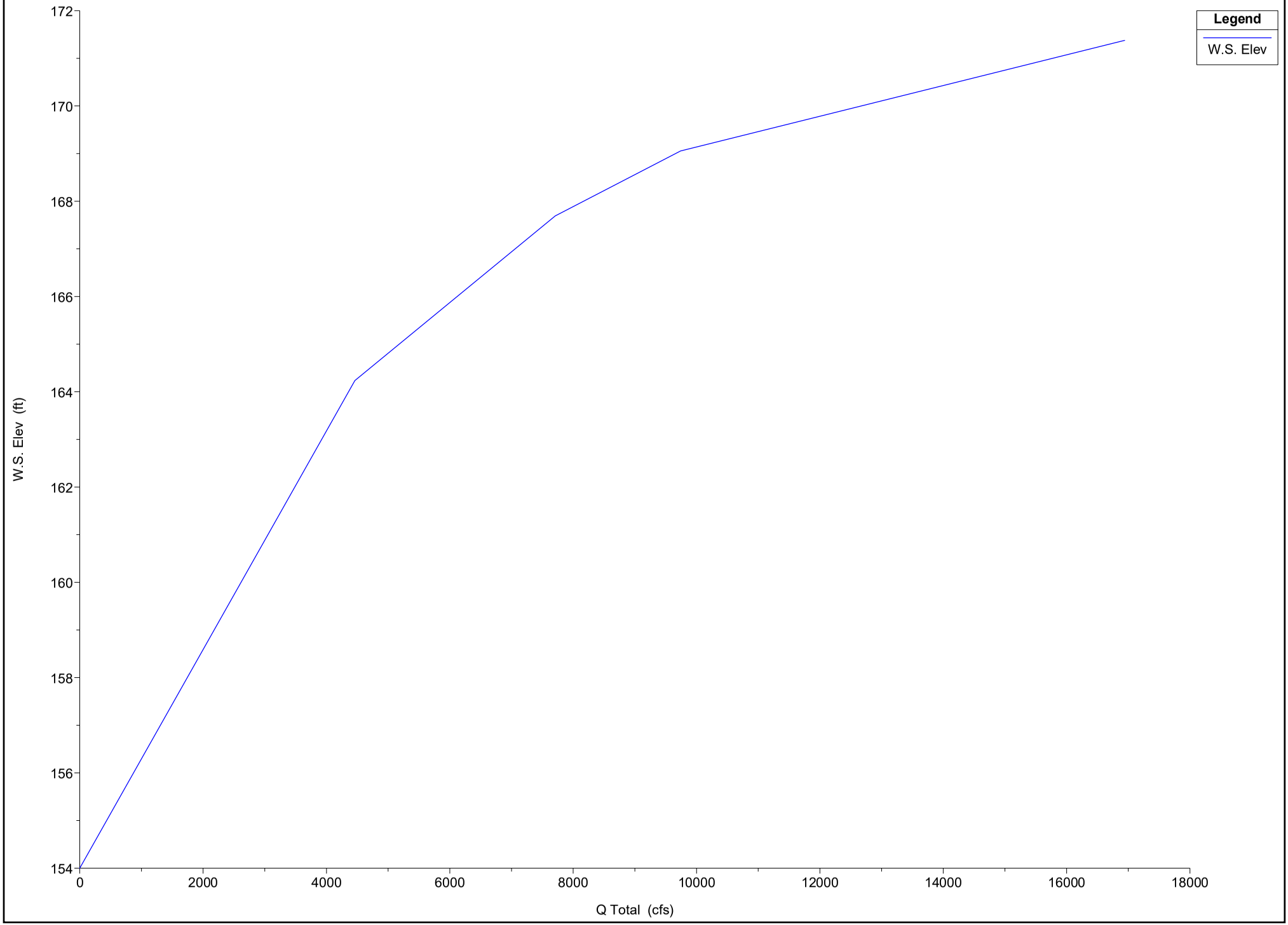
Sandy_Creek Plan: Effective 7/24/2023

River = Sandy Run Reach = Sandy Main Stem RS = 5508.105



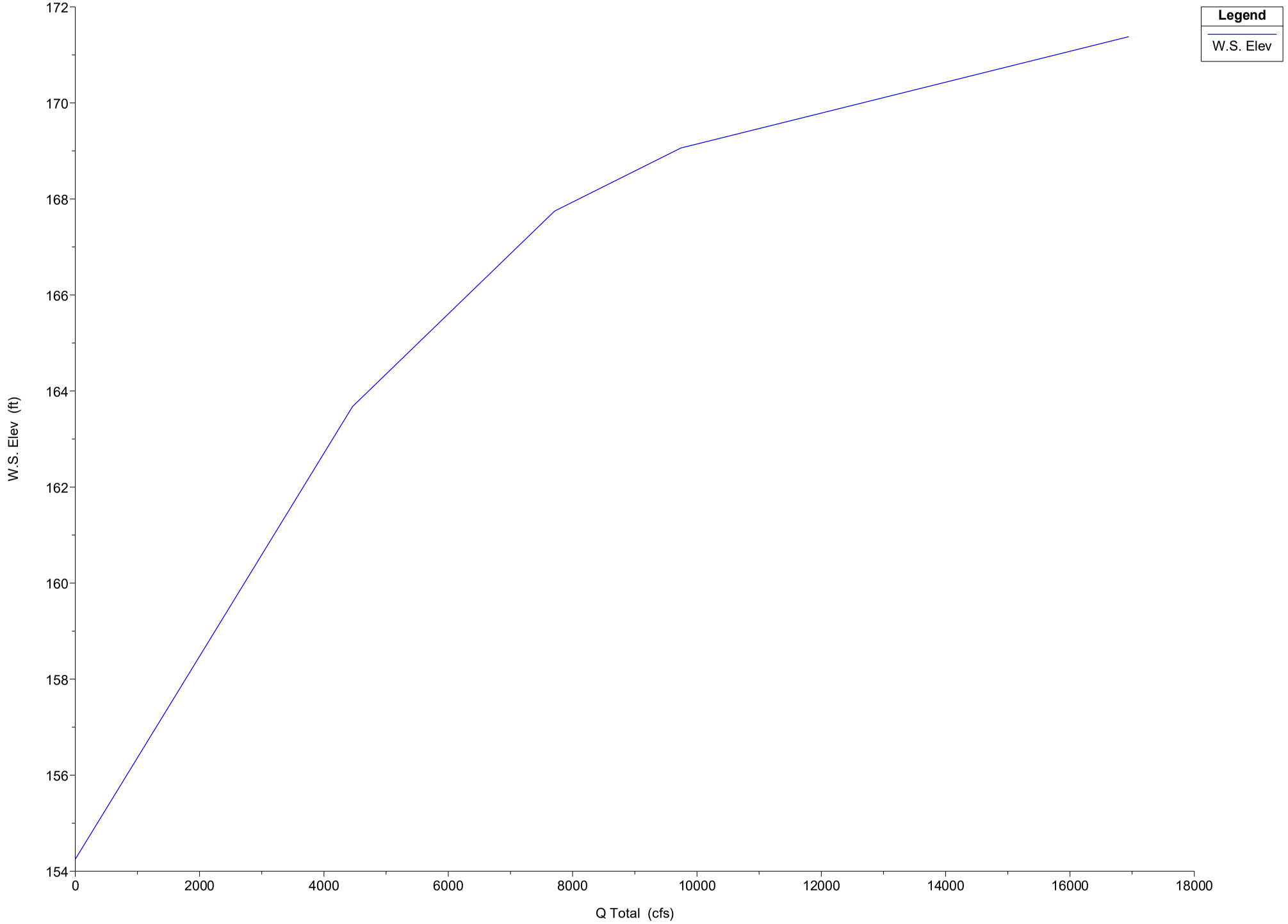
Sandy_Creek Plan: Effective 7/24/2023

River = Sandy Run Reach = Sandy Main Stem RS = 5084.678



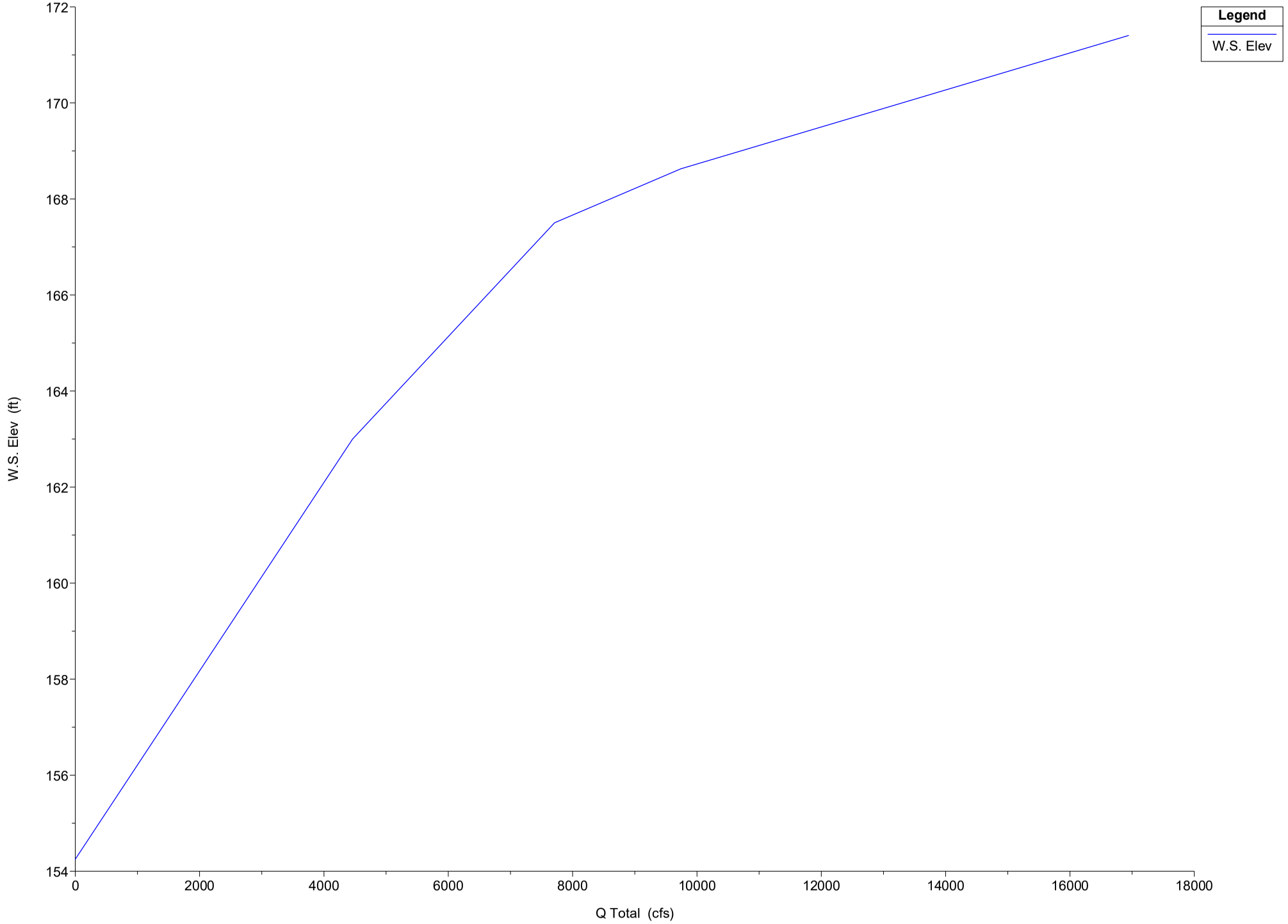
Sandy_Creek Plan: Effective 7/24/2023

River = Sandy Run Reach = Sandy Main Stem RS = 5065.378



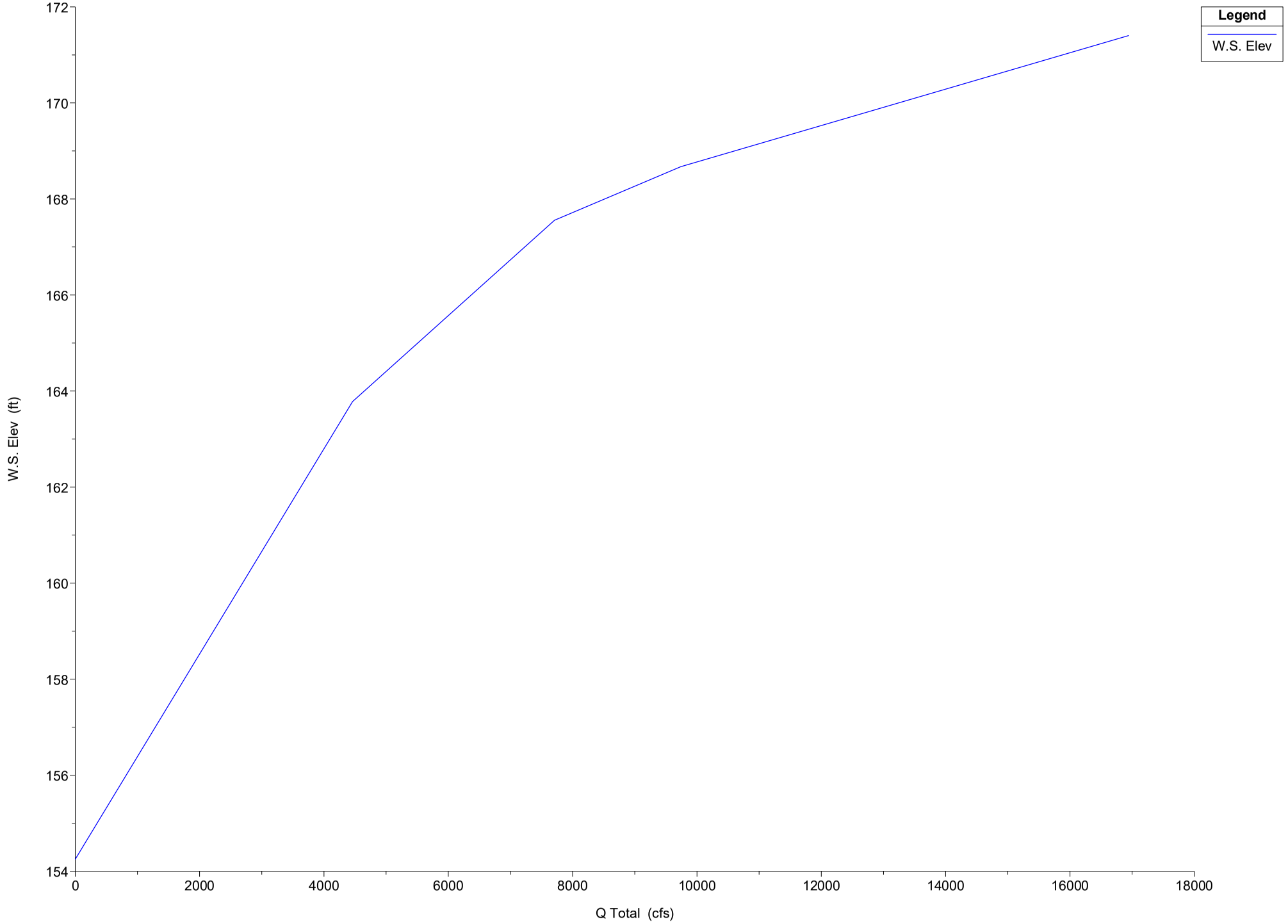
Sandy_Creek Plan: Effective 7/24/2023

River = Sandy Run Reach = Sandy Main Stem RS = 5039.878



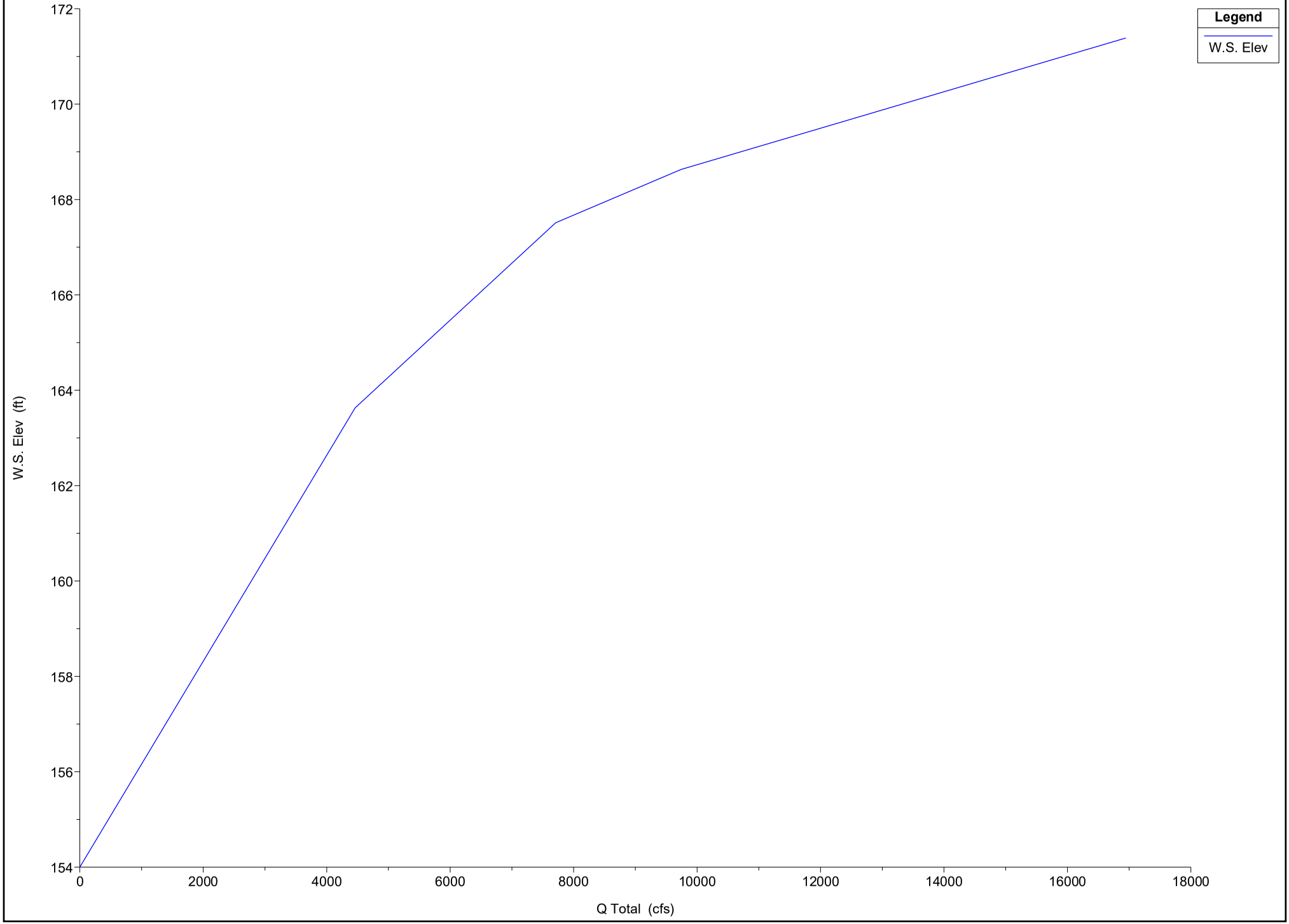
Sandy_Creek Plan: Effective 7/24/2023

River = Sandy Run Reach = Sandy Main Stem RS = 4865.578



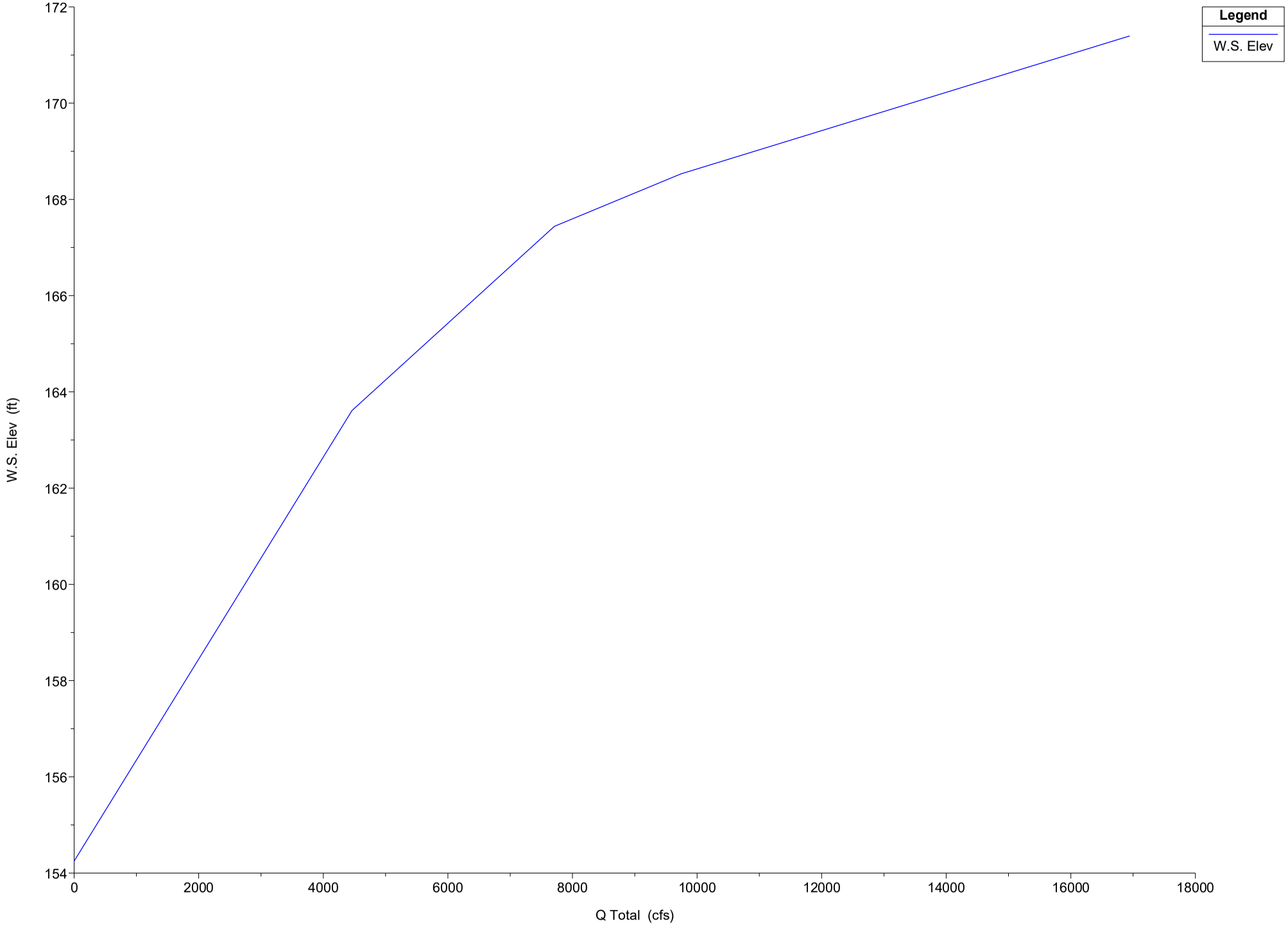
Sandy_Creek Plan: Effective 7/24/2023

River = Sandy Run Reach = Sandy Main Stem RS = 4790.088



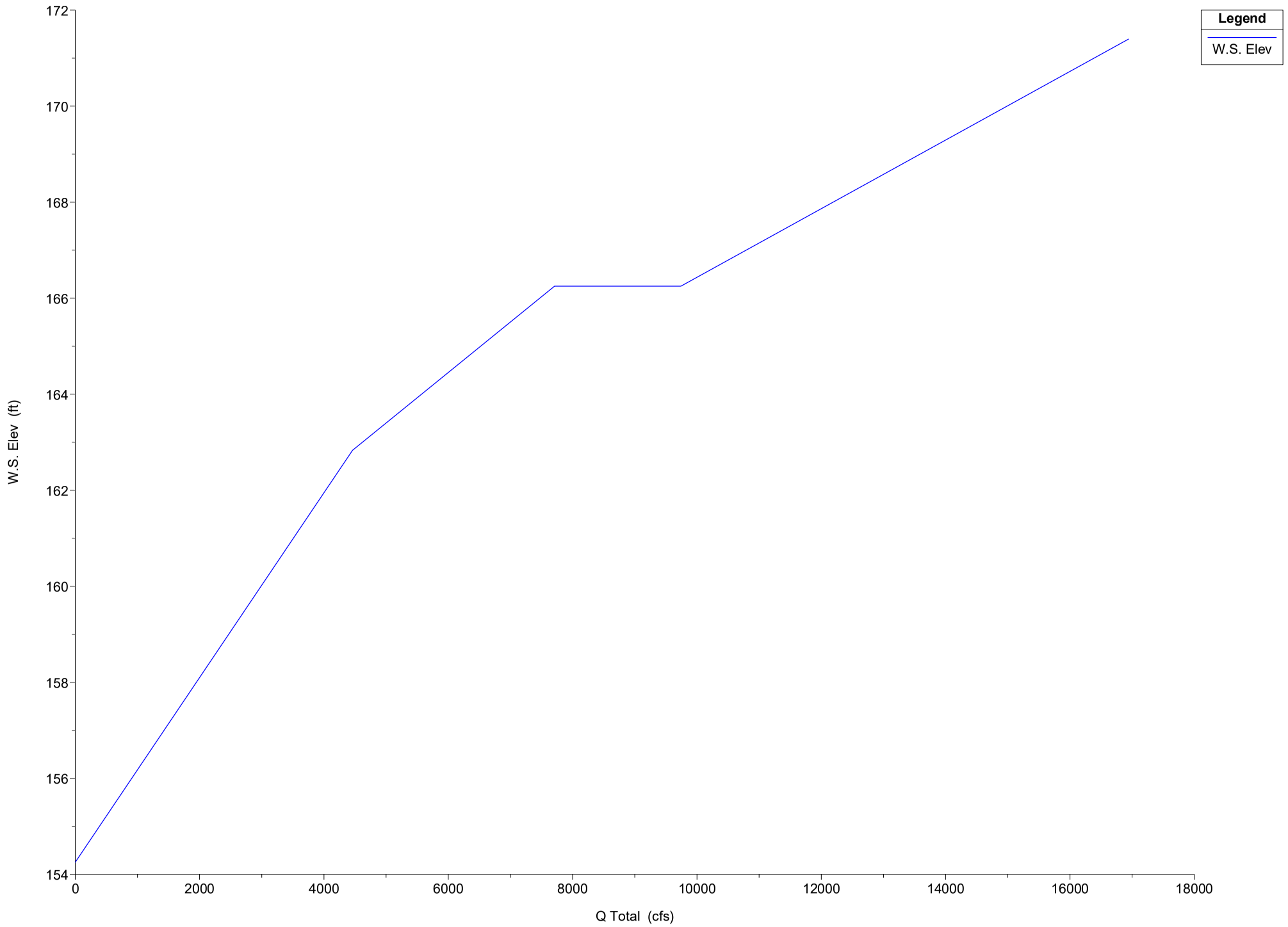
Sandy_Creek Plan: Effective 7/24/2023

River = Sandy Run Reach = Sandy Main Stem RS = 4777.088



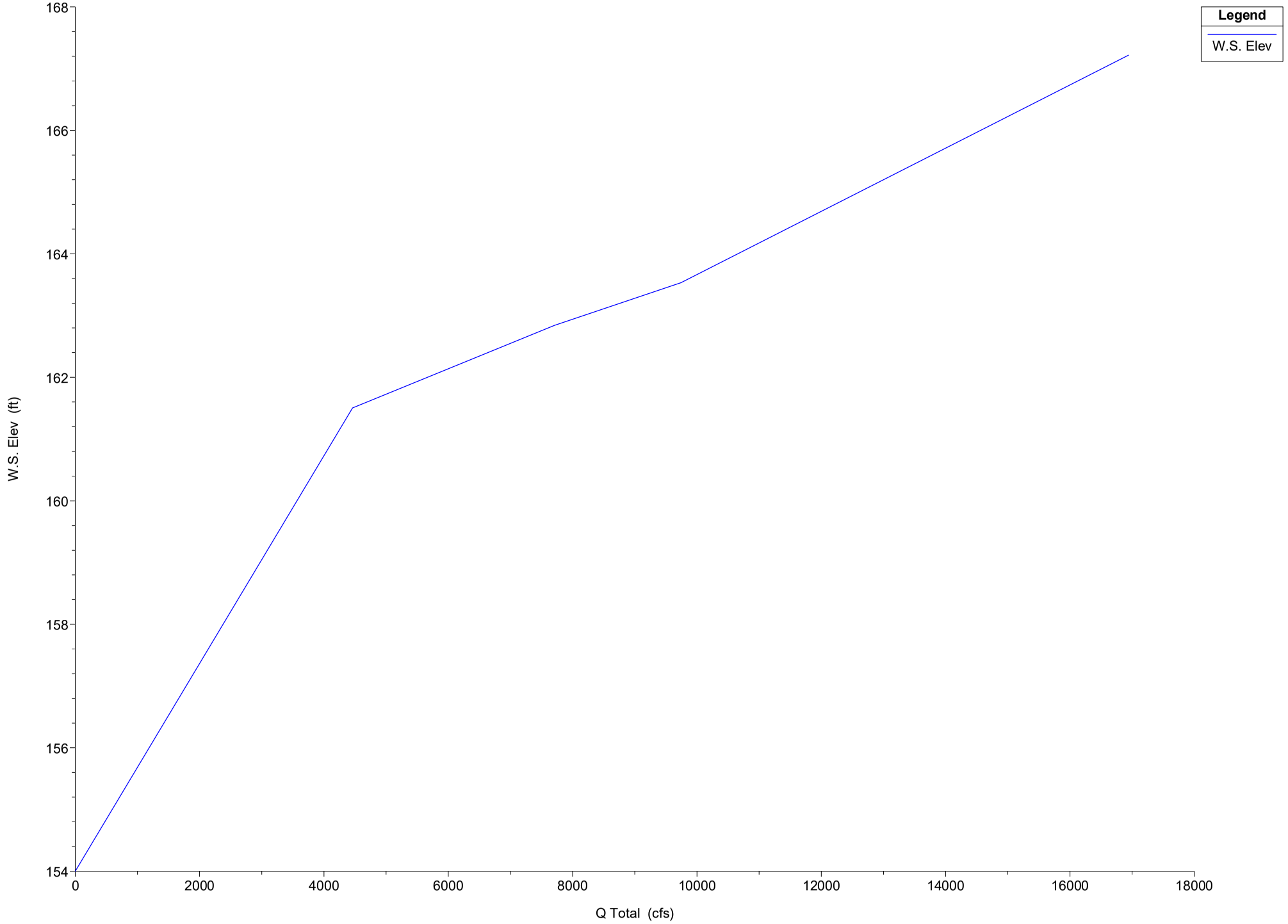
Sandy_Creek Plan: Effective 7/24/2023

River = Sandy Run Reach = Sandy Main Stem RS = 4740 BR



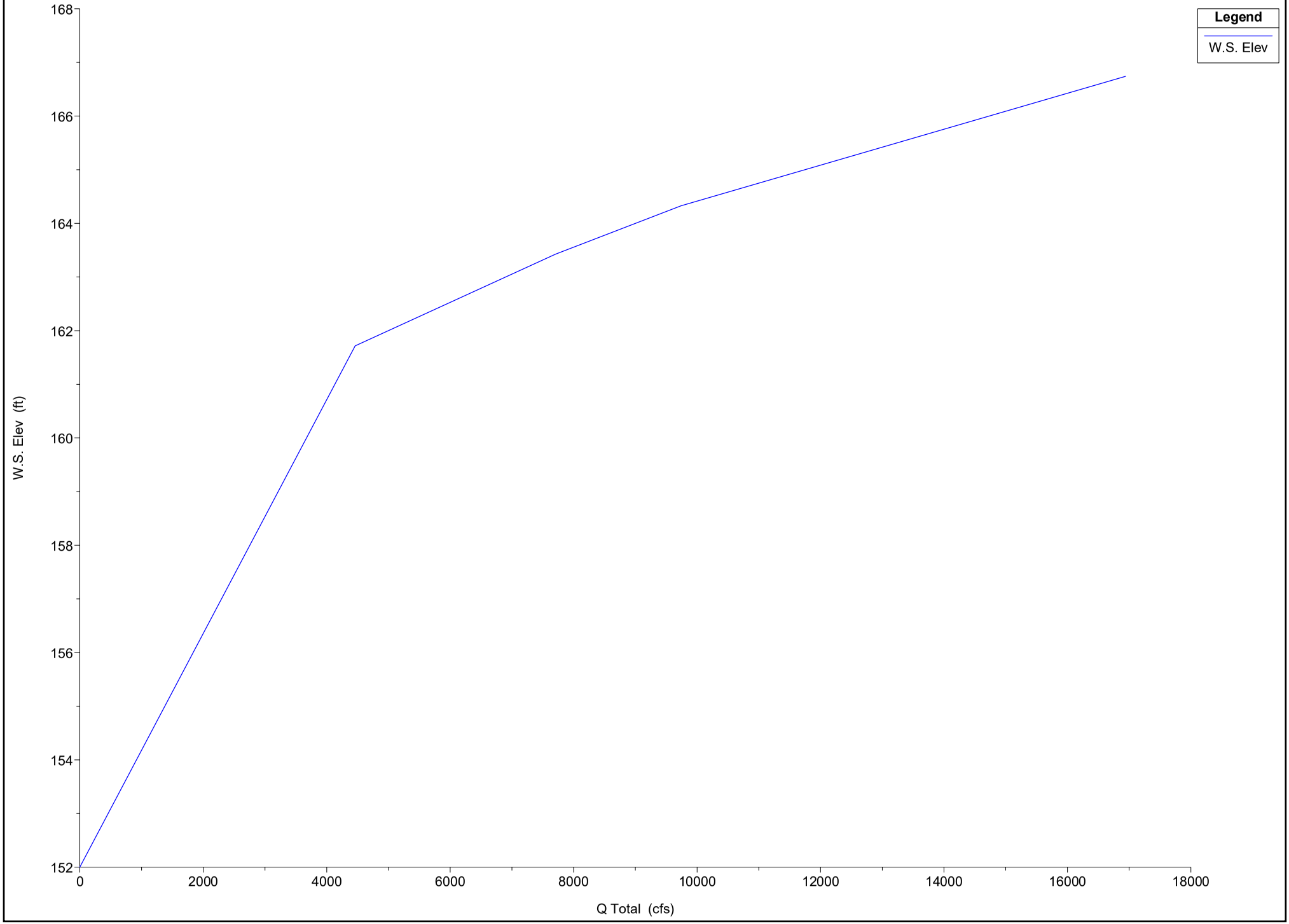
Sandy_Creek Plan: Effective 7/24/2023

River = Sandy Run Reach = Sandy Main Stem RS = 4685.592



Sandy_Creek Plan: Effective 7/24/2023

River = Sandy Run Reach = Sandy Main Stem RS = 4327.181



Sandy_Creek Plan: Effective 7/24/2023

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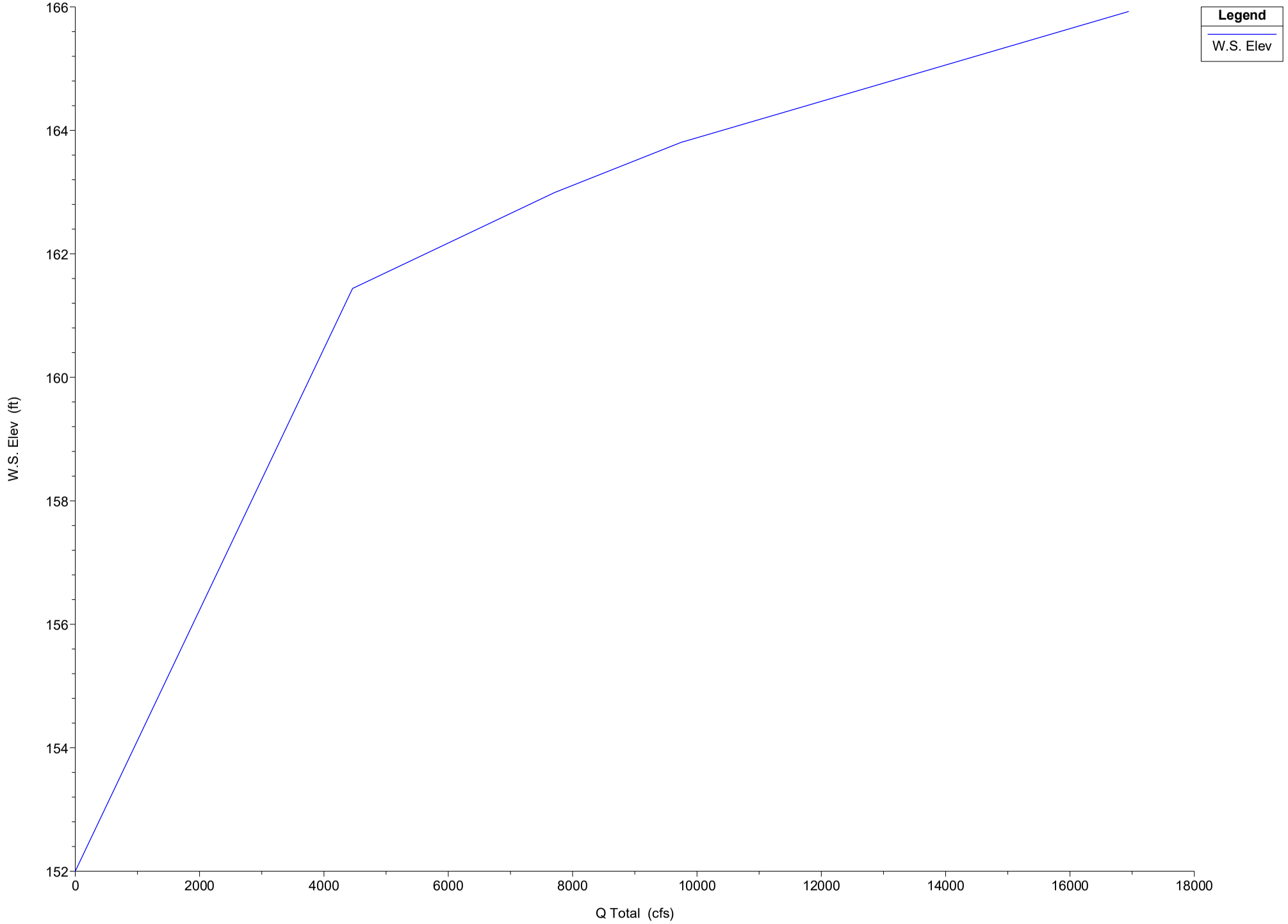
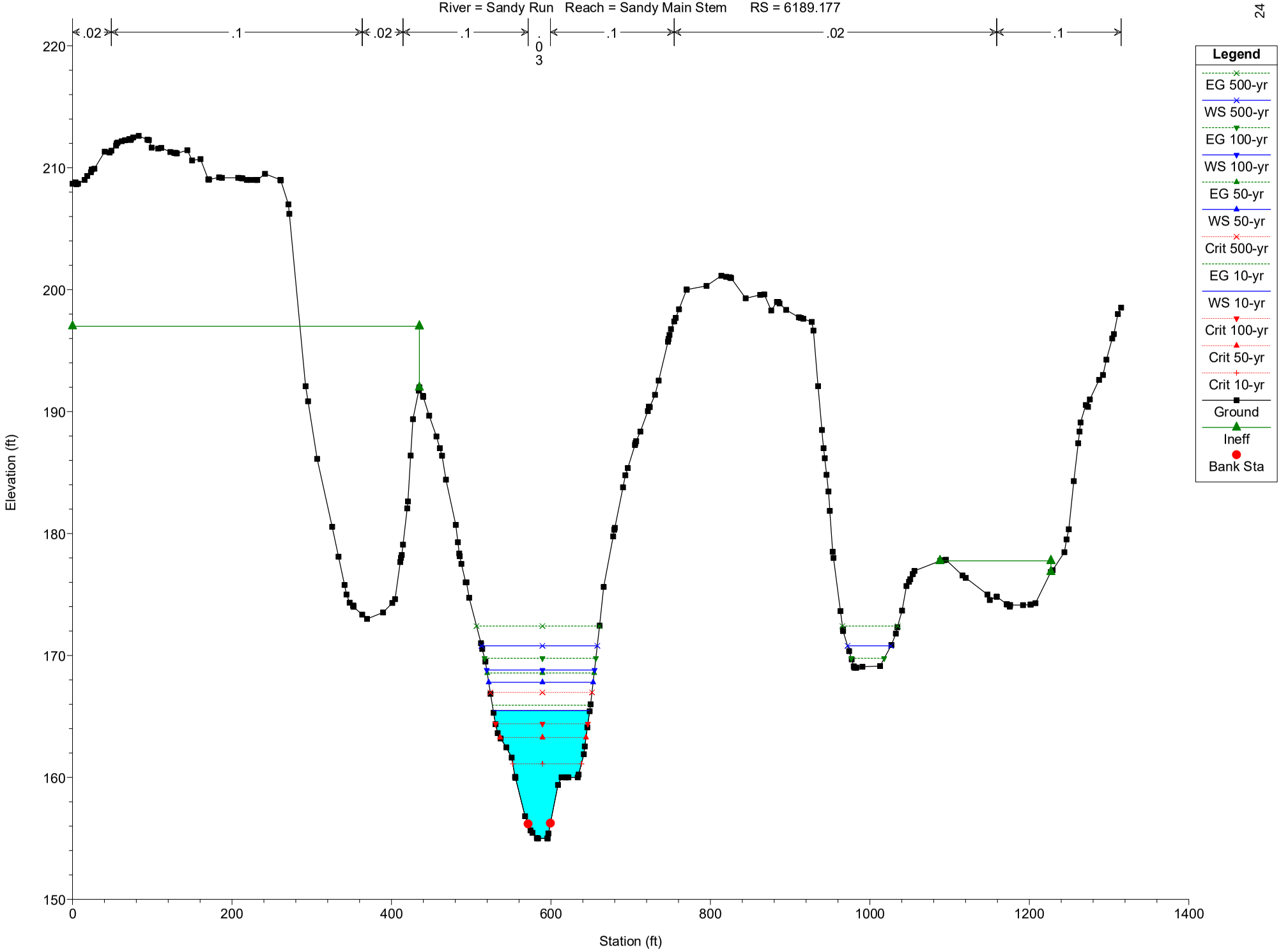
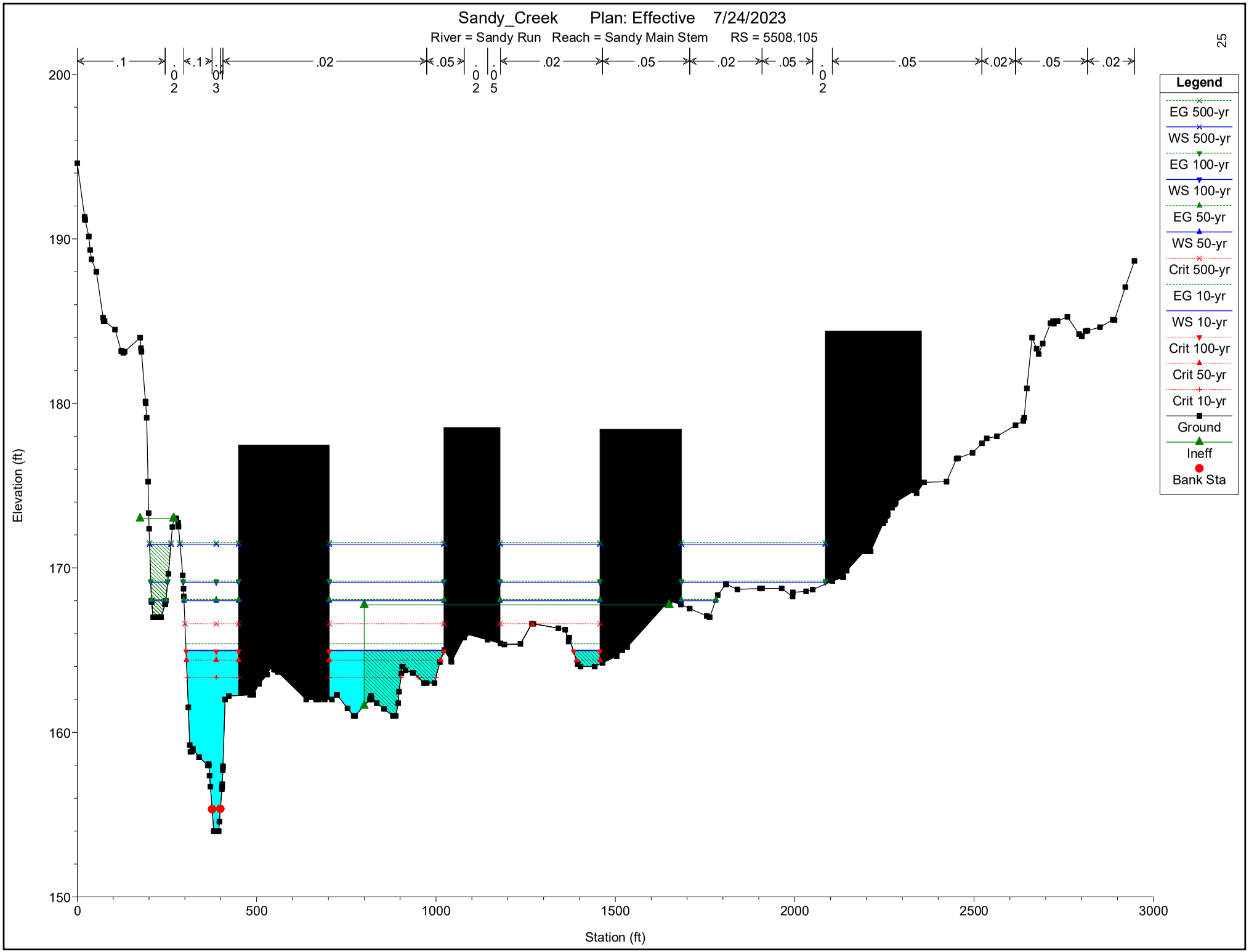


Sandy_Creek Plan: Effective 7/24/2023

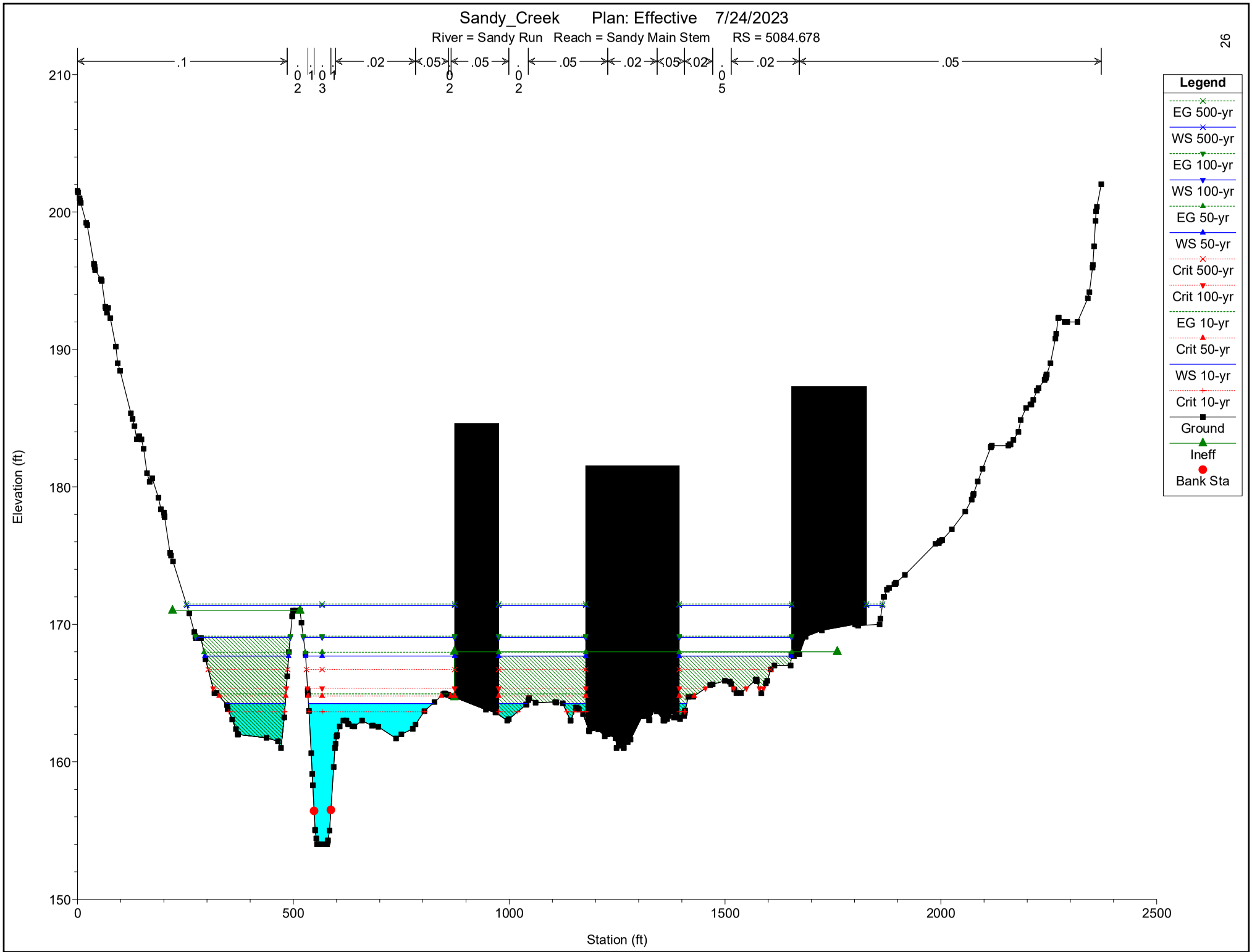
River = Sandy Run Reach = Sandy Main Stem RS = 6189.177




Sandy_Creek Plan: Effective 7/24/2023
River = Sandy Run Reach = Sandy Main Stem RS = 5508.105
.1
.02
.1
.03
.02
.05
.02
.05
.02
.05
.02
.05
.02
.05
.02
.02
.05
.02
Legend
EG 500-yr
WS 500-yr
EG 100-yr
WS 100-yr
EG 50-yr
WS 50-yr
Crit 500-yr
EG 10-yr
WS 10-yr
Crit 100-yr
Crit 50-yr
Crit 10-yr
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)
200
190
180
170
160
150
0
500
1000
1500
2000
2500
3000

Sandy_Creek Plan: Effective 7/24/2023

River = Sandy Run Reach = Sandy Main Stem RS = 5084.678



Sandy_Creek Plan: Effective 7/24/2023

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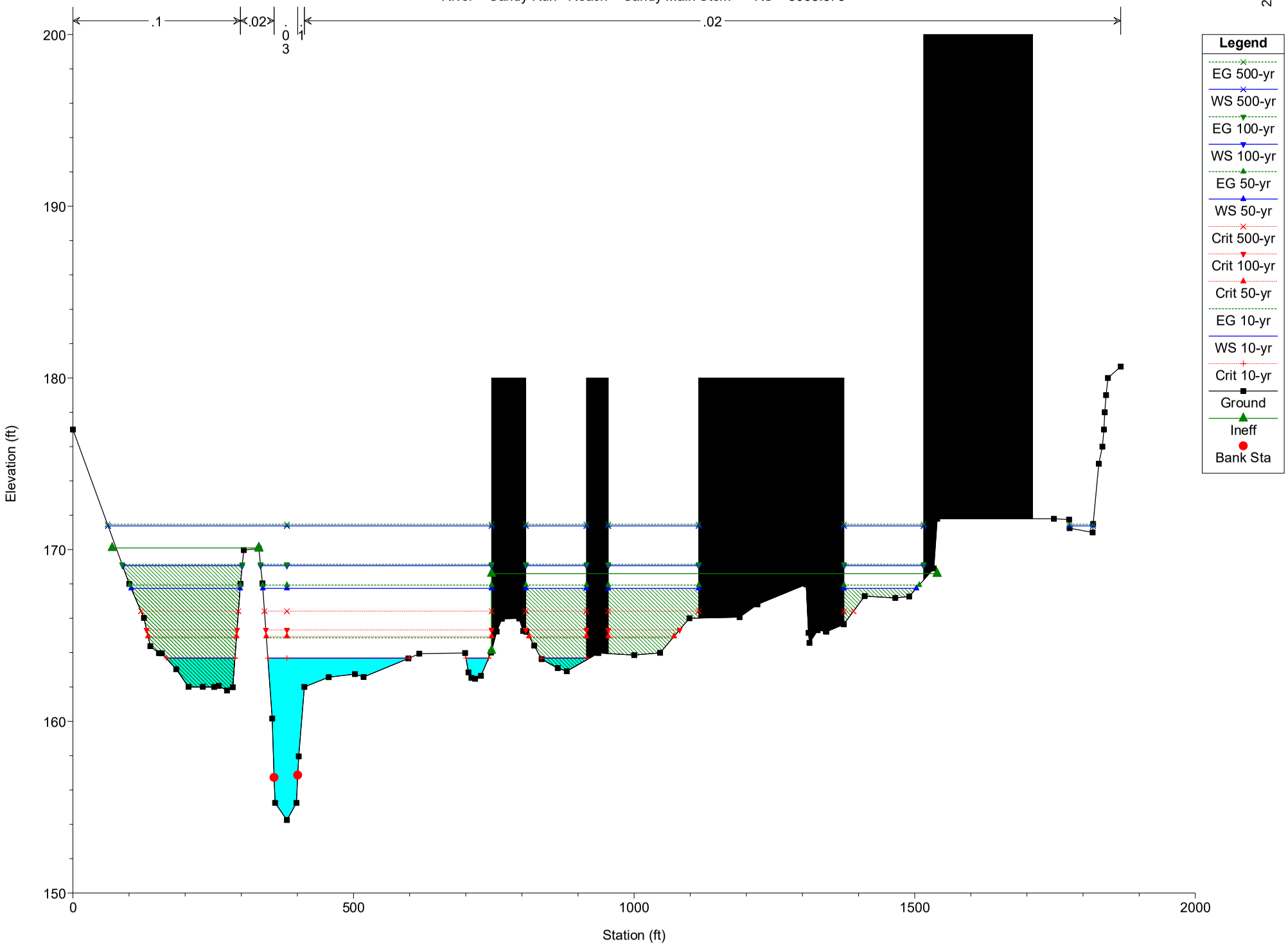

Sandy_Creek Plan: Effective 7/24/2023

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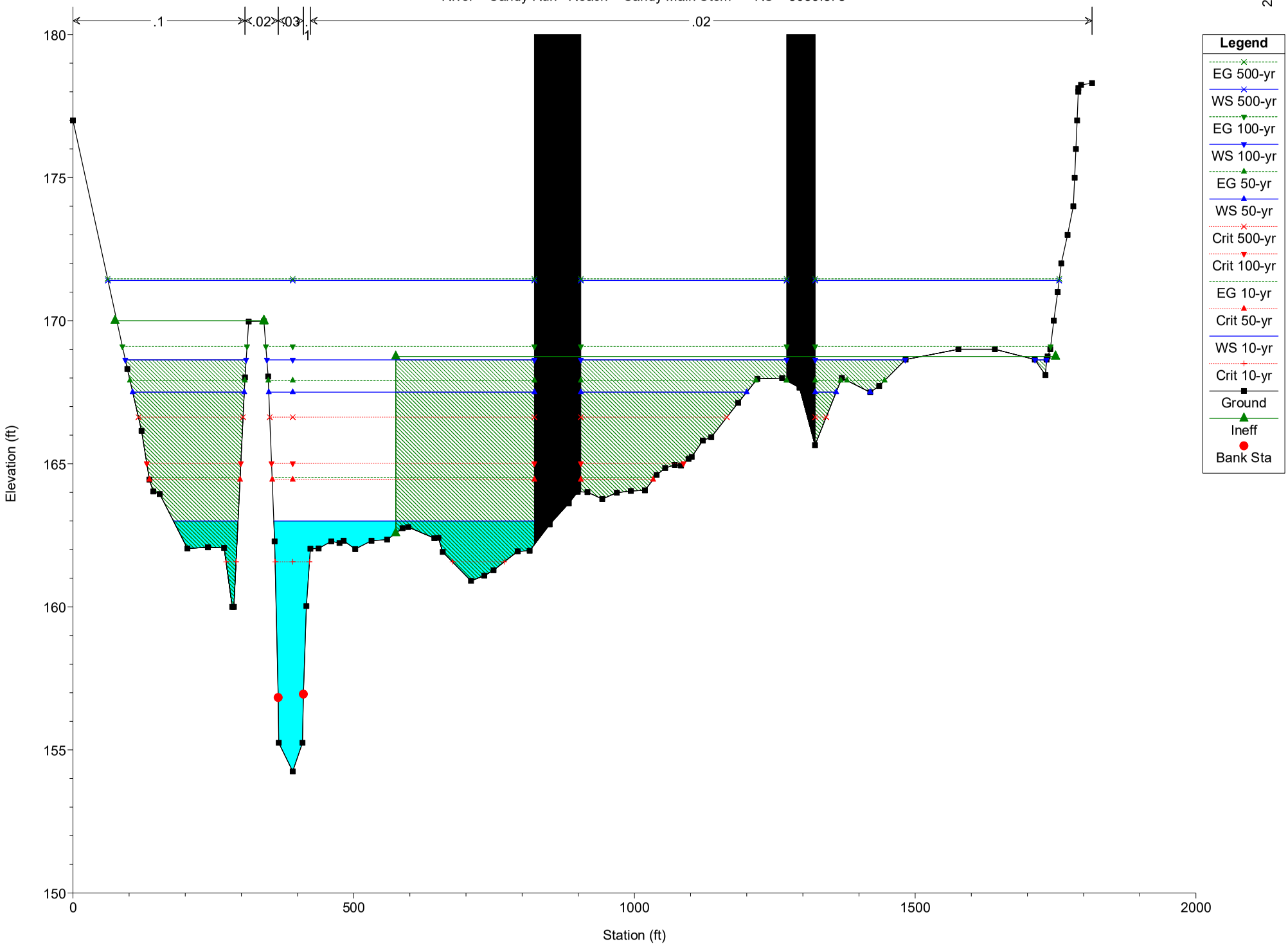
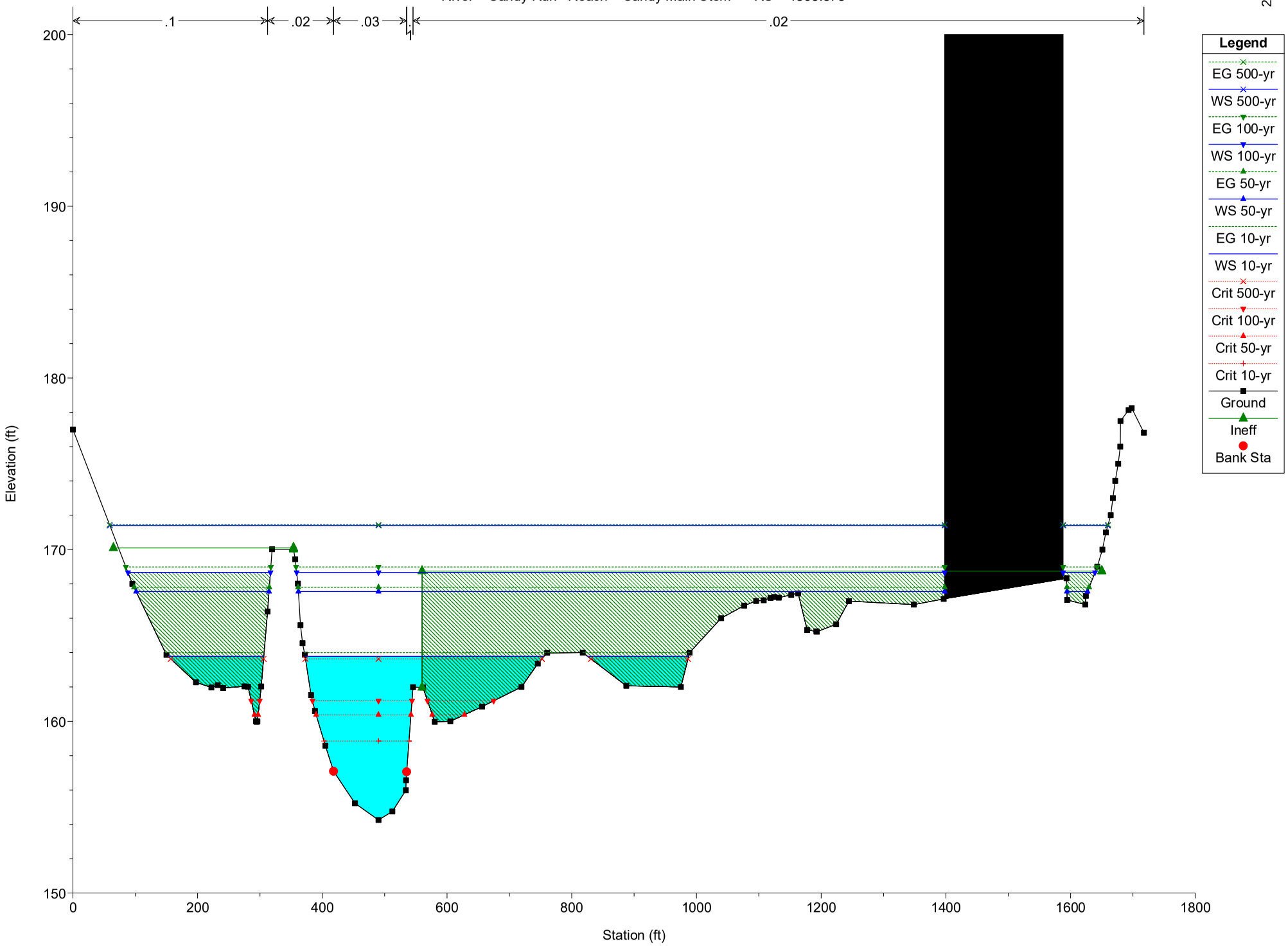
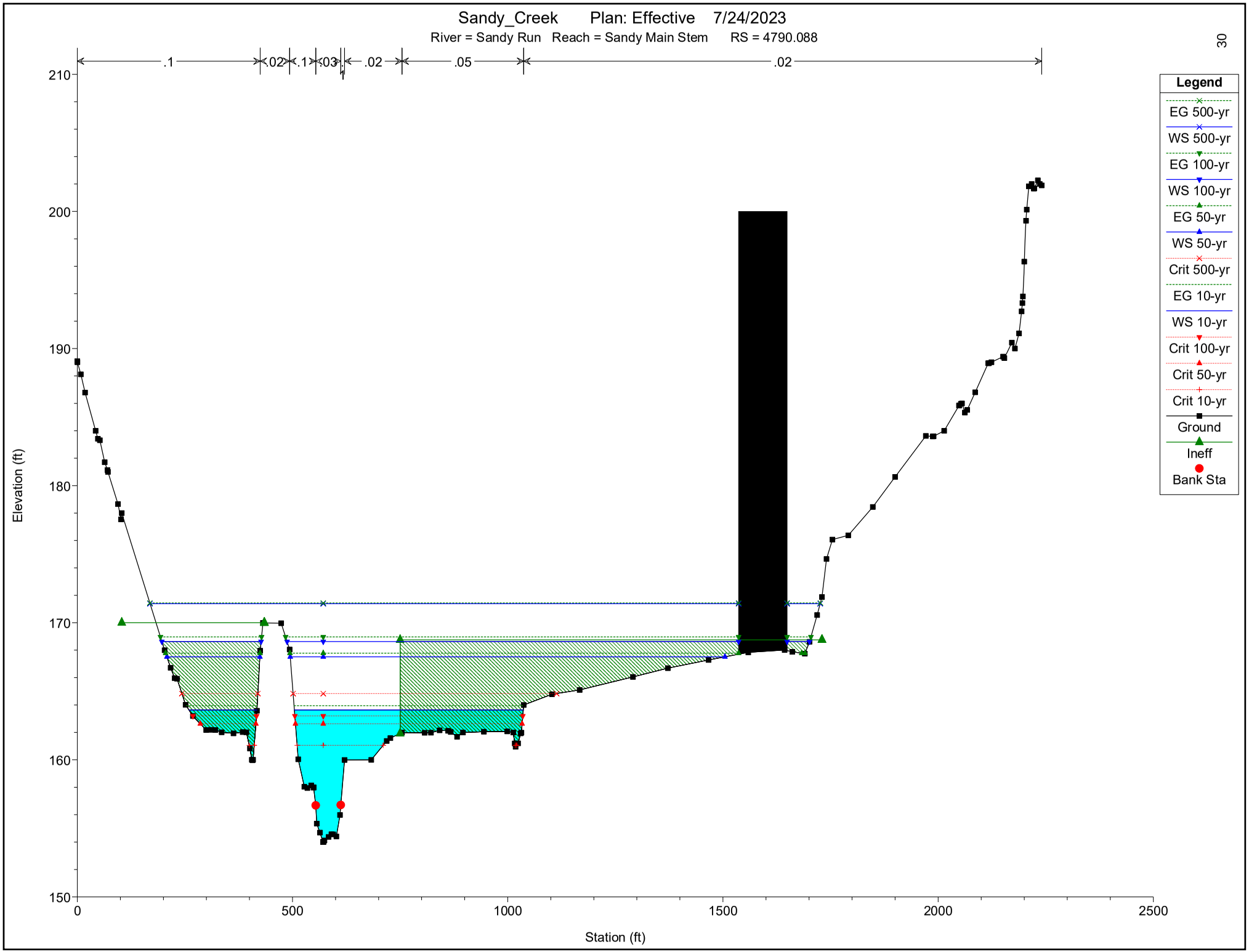


Sandy_Creek Plan: Effective 7/24/2023

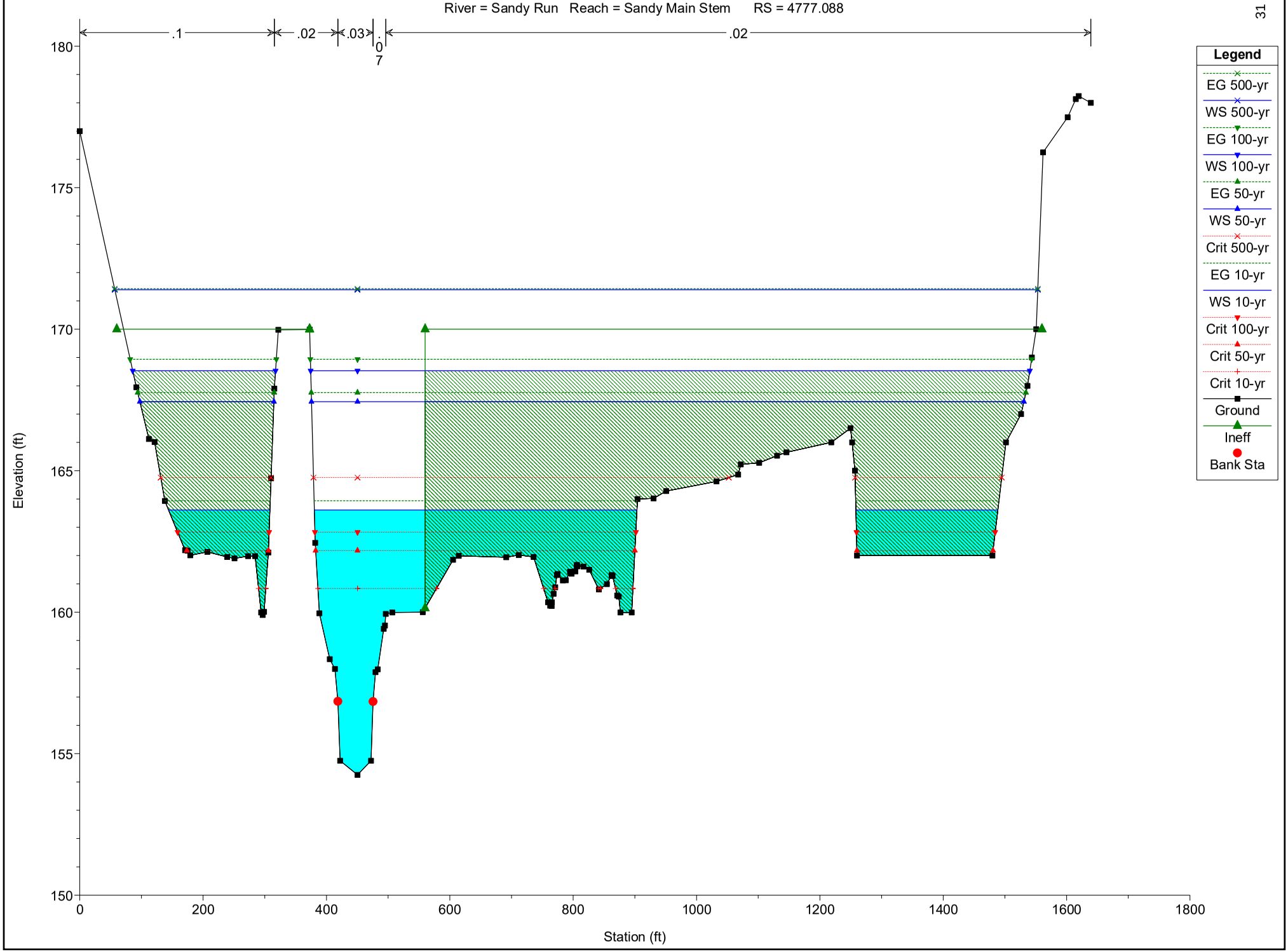
River = Sandy Run Reach = Sandy Main Stem RS = 4865.578




Sandy_Creek Plan: Effective 7/24/2023
River = Sandy Run Reach = Sandy Main Stem RS = 4790.088
.1
.02
.1
.03
.02
.05
.02
30
Legend
EG 500-yr
WS 500-yr
EG 100-yr
WS 100-yr
EG 50-yr
WS 50-yr
Crit 500-yr
EG 10-yr
WS 10-yr
Crit 100-yr
Crit 50-yr
Crit 10-yr
Ground
Ineff
Bank Sta
Elevation (ft)
210
200
190
180
170
160
150
0
500
1000
1500
2000
2500
Station (ft)

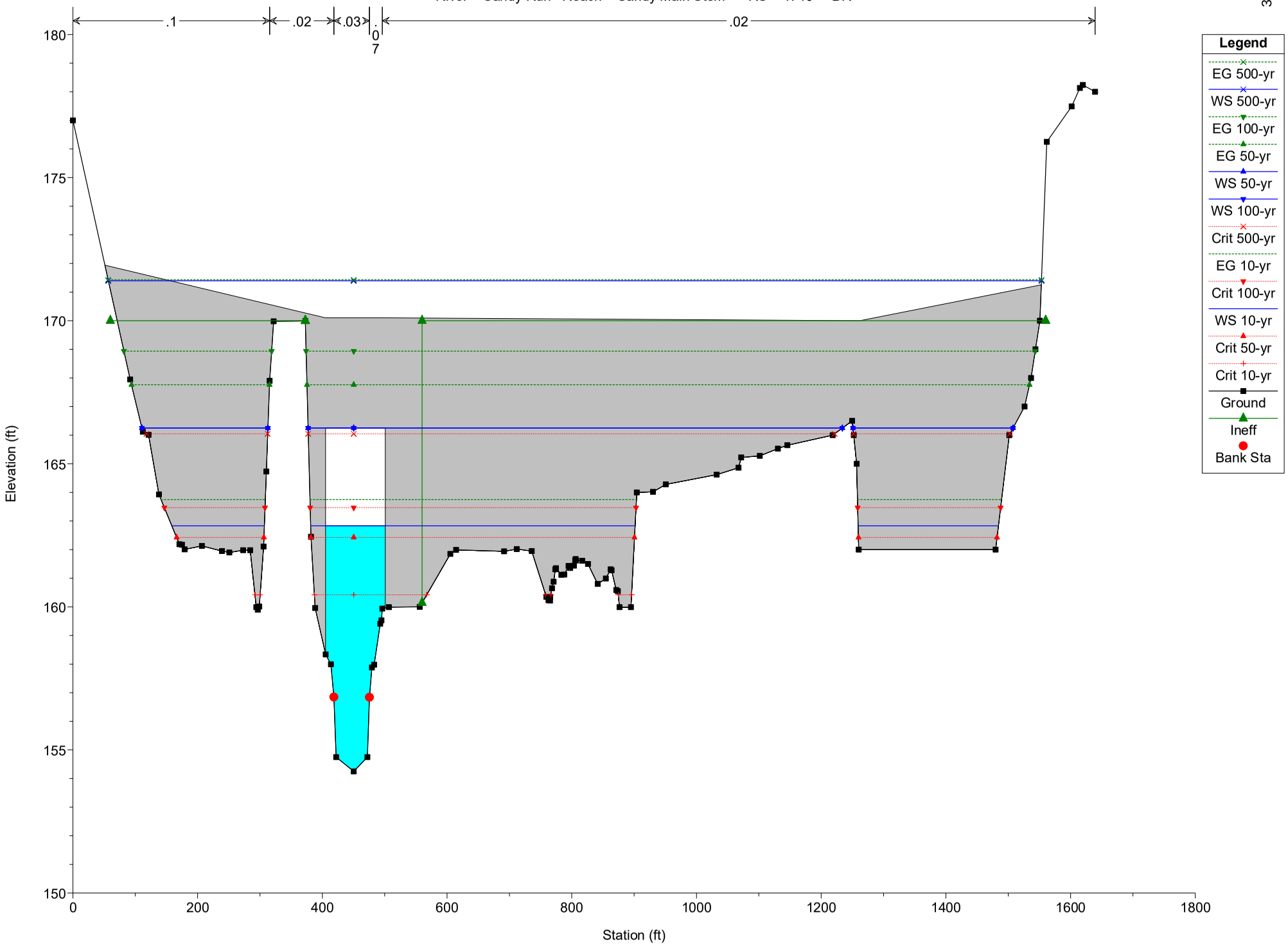
Sandy_Creek Plan: Effective 7/24/2023

River = Sandy Run Reach = Sandy Main Stem RS = 4777.088



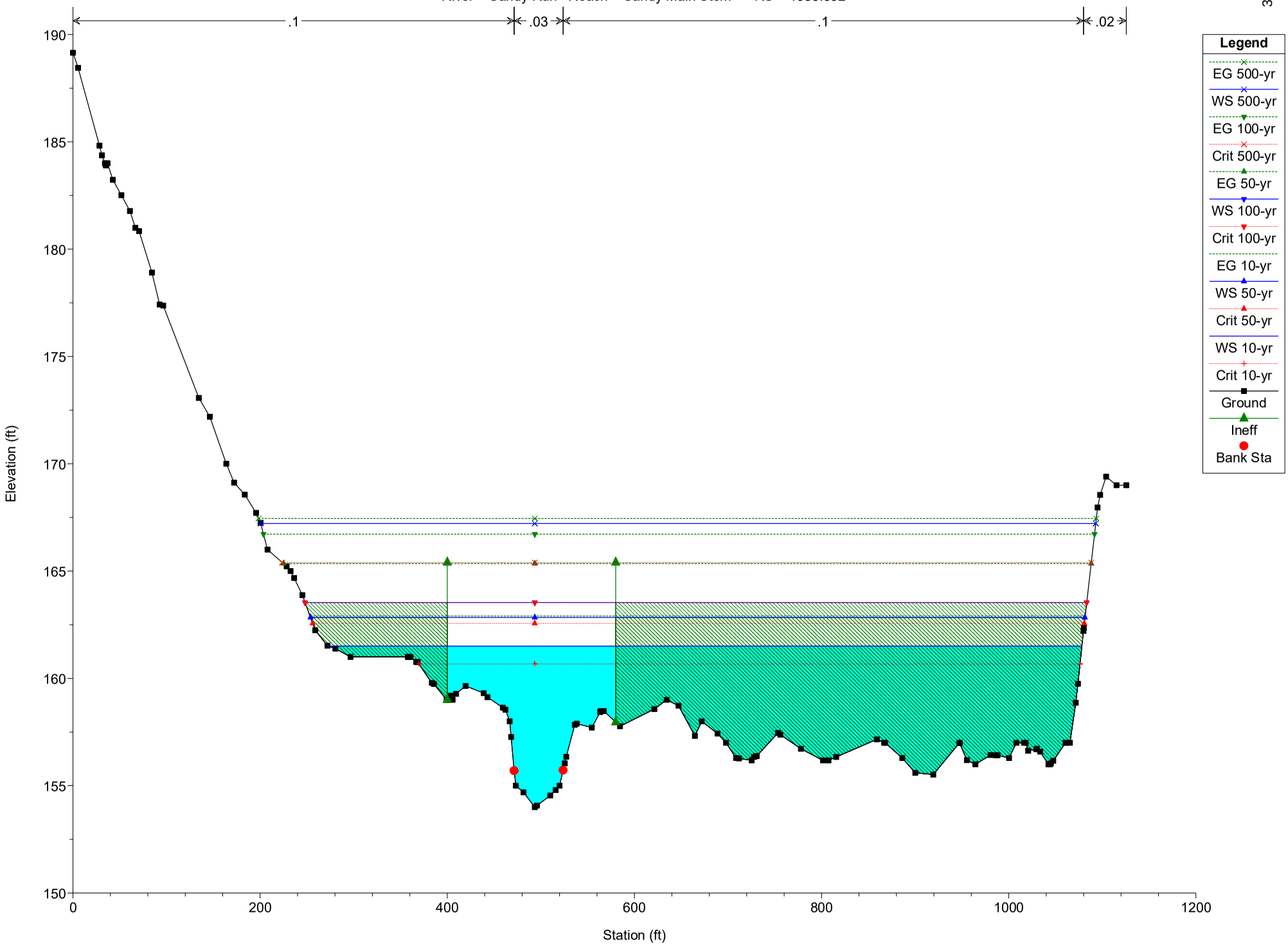
Sandy_Creek Plan: Effective 7/24/2023

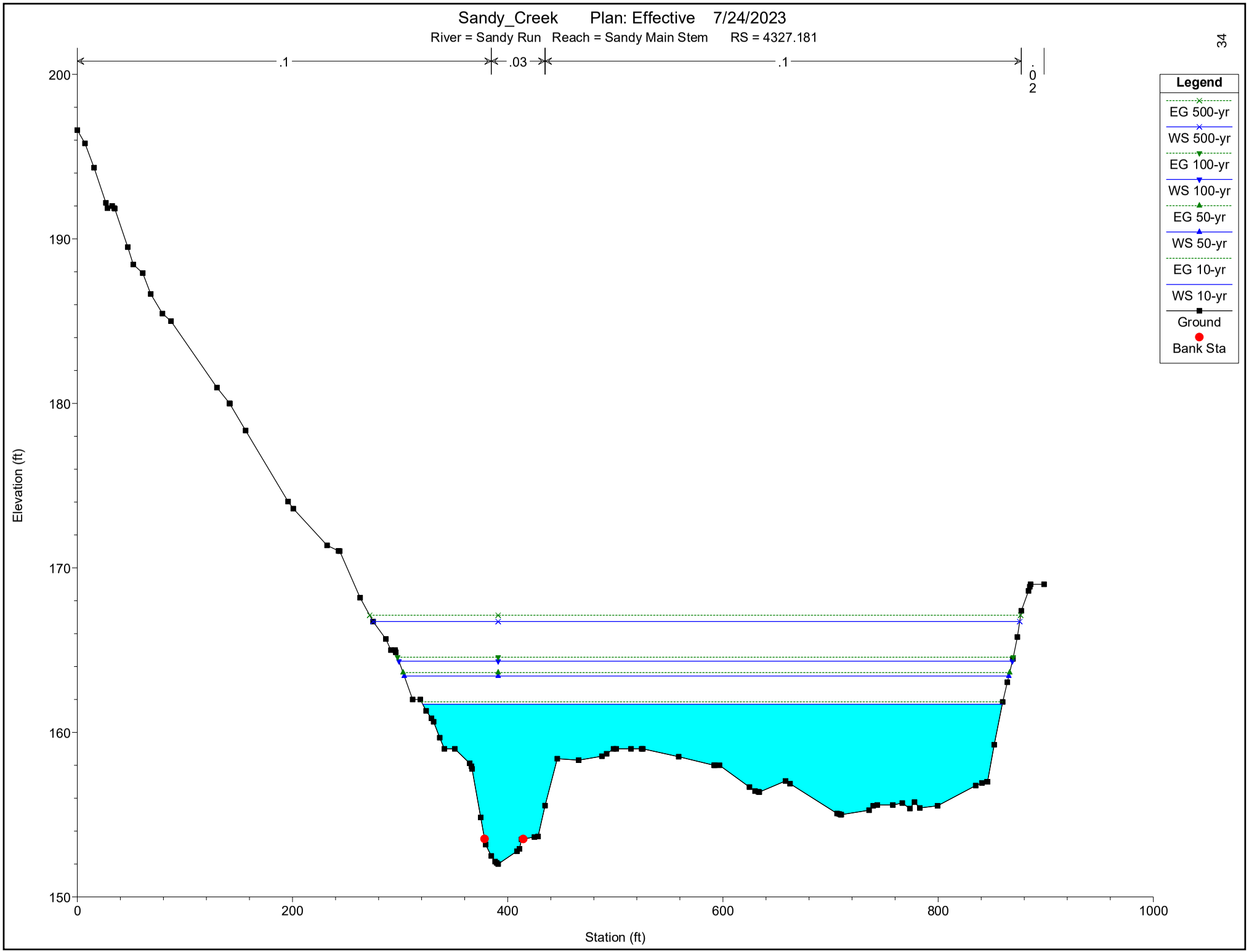
River = Sandy Run Reach = Sandy Main Stem RS = 4740 BR

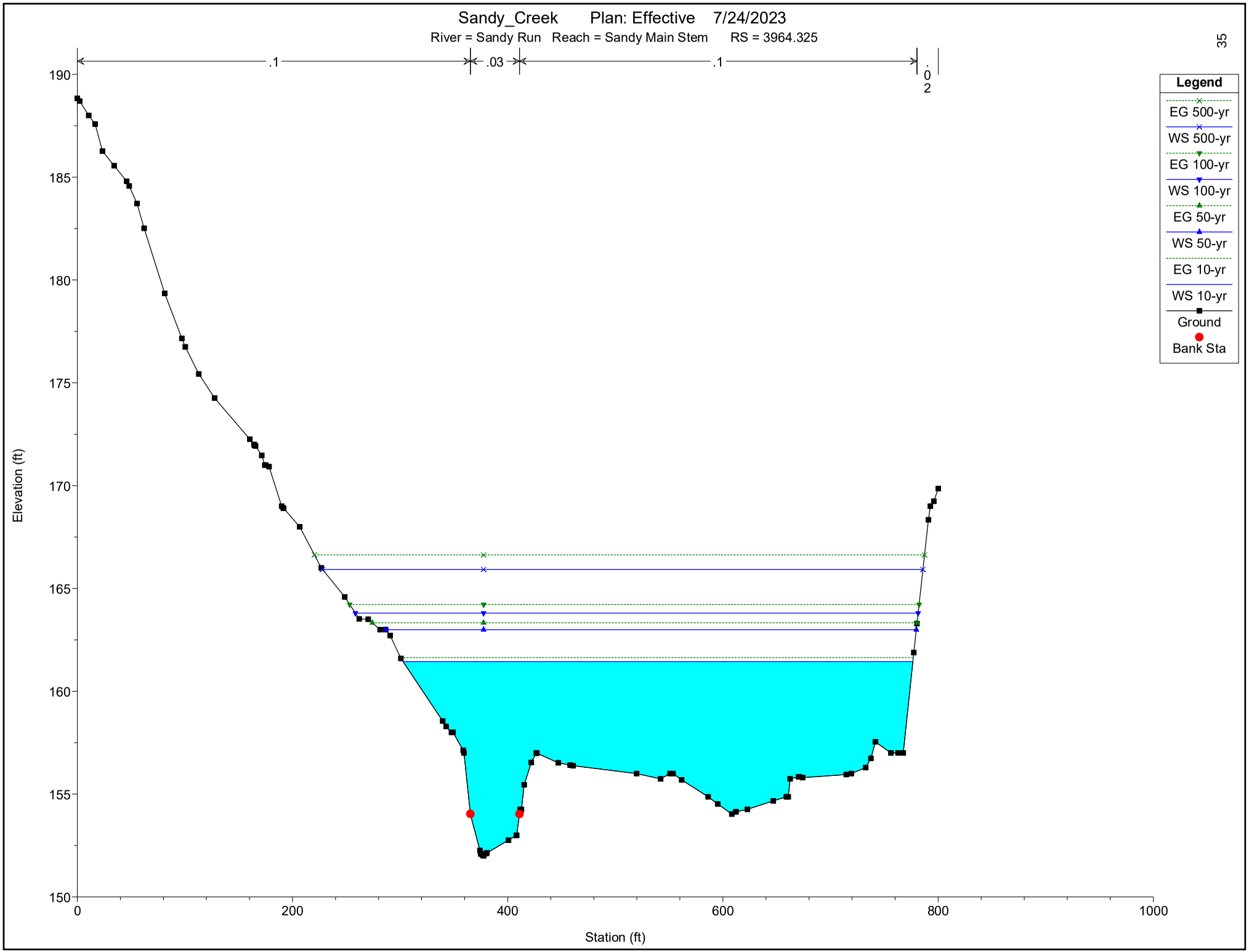


Sandy_Creek Plan: Effective 7/24/2023

River = Sandy Run Reach = Sandy Main Stem RS = 4685.592




Sandy_Creek Plan: Effective 7/24/2023
River = Sandy Run Reach = Sandy Main Stem RS = 4327.181
34
.1
.03
.1
.02
Legend
EG 500-yr
WS 500-yr
EG 100-yr
WS 100-yr
EG 50-yr
WS 50-yr
EG 10-yr
WS 10-yr
Ground
Bank Sta
Elevation (ft)
200
190
180
170
160
150
0
200
400
600
800
1000
Station (ft)


Sandy_Creek Plan: Effective 7/24/2023
River = Sandy Run Reach = Sandy Main Stem RS = 3964.325
.1
.03
.1
.02
35
Legend
EG 500-yr
WS 500-yr
EG 100-yr
WS 100-yr
EG 50-yr
WS 50-yr
EG 10-yr
WS 10-yr
Ground
Bank Sta
Elevation (ft)
190
185
180
175
170
165
160
155
150
0
200
400
600
800
1000
Station (ft)

Plan: Effective Sandy Run Sandy Main Stem RS: 6189.177 Profile: 100-yr

E.G. Elev (ft)	169.77	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.96	Wt. n-Val.	0.100	0.030	0.100
W.S. Elev (ft)	168.81	Reach Len. (ft)	633.10	668.48	716.54
Crit W.S. (ft)	164.39	Flow Area (sq ft)	356.14	379.31	431.45
E.G. Slope (ft/ft)	0.001100	Area (sq ft)	356.14	379.31	431.45
Q Total (cfs)	4945.00	Flow (cfs)	619.32	3513.14	812.55
Top Width (ft)	135.24	Top Width (ft)	51.90	28.04	55.30
Vel Total (ft/s)	4.24	Avg. Vel. (ft/s)	1.74	9.26	1.88
Max Chl Dpth (ft)	13.81	Hydr. Depth (ft)	6.86	13.53	7.80
Conv. Total (cfs)	149101.1	Conv. (cfs)	18673.6	105927.7	24499.8
Length Wtd. (ft)	695.25	Wetted Per. (ft)	53.73	28.33	57.75
Min Ch El (ft)	155.00	Shear (lb/sq ft)	0.46	0.92	0.51
Alpha	3.45	Stream Power (lb/ft s)	0.79	8.51	0.97
Frctn Loss (ft)	0.12	Cum Volume (acre-ft)	134.10	59.36	328.04
C & E Loss (ft)	0.44	Cum SA (acres)	31.77	5.29	68.27

Plan: Effective Sandy Run Sandy Main Stem RS: 5508.105 Profile: 100-yr

E.G. Elev (ft)	169.20	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.07	Wt. n-Val.	0.100	0.030	0.022
W.S. Elev (ft)	169.13	Reach Len. (ft)	418.82	423.43	428.32
Crit W.S. (ft)	164.93	Flow Area (sq ft)	767.50	341.67	3894.57
E.G. Slope (ft/ft)	0.000103	Area (sq ft)	848.35	341.67	3894.57
Q Total (cfs)	9741.00	Flow (cfs)	513.62	1024.28	8203.10
Top Width (ft)	1201.65	Top Width (ft)	127.70	22.99	1050.96
Vel Total (ft/s)	1.95	Avg. Vel. (ft/s)	0.67	3.00	2.11
Max Chl Dpth (ft)	15.13	Hydr. Depth (ft)	9.51	14.86	3.71
Conv. Total (cfs)	962113.9	Conv. (cfs)	50729.8	101167.6	810216.4
Length Wtd. (ft)	427.25	Wetted Per. (ft)	83.72	23.38	1081.76
Min Ch El (ft)	154.00	Shear (lb/sq ft)	0.06	0.09	0.02
Alpha	1.24	Stream Power (lb/ft s)	0.04	0.28	0.05
Frctn Loss (ft)	0.05	Cum Volume (acre-ft)	125.35	53.82	292.46
C & E Loss (ft)	0.00	Cum SA (acres)	30.46	4.90	59.18

Plan: Effective Sandy Run Sandy Main Stem RS: 5084.678 Profile: 100-yr

E.G. Elev (ft)	169.15	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.09	Wt. n-Val.	0.082	0.030	0.027
W.S. Elev (ft)	169.05	Reach Len. (ft)	19.30	19.30	19.30
Crit W.S. (ft)	165.35	Flow Area (sq ft)	136.90	569.49	3722.38
E.G. Slope (ft/ft)	0.000149	Area (sq ft)	1306.16	569.49	3722.38
Q Total (cfs)	9741.00	Flow (cfs)	102.24	2035.21	7603.55
Top Width (ft)	1031.22	Top Width (ft)	244.16	38.79	748.27
Vel Total (ft/s)	2.20	Avg. Vel. (ft/s)	0.75	3.57	2.04
Max Chl Dpth (ft)	15.05	Hydr. Depth (ft)	5.47	14.68	4.97
Conv. Total (cfs)	796736.8	Conv. (cfs)	8362.5	166463.8	621910.5
Length Wtd. (ft)	19.30	Wetted Per. (ft)	28.23	39.72	773.41
Min Ch El (ft)	154.00	Shear (lb/sq ft)	0.05	0.13	0.04
Alpha	1.23	Stream Power (lb/ft s)	0.03	0.48	0.09
Frctn Loss (ft)	0.00	Cum Volume (acre-ft)	114.99	49.40	255.01
C & E Loss (ft)	0.00	Cum SA (acres)	28.68	4.60	50.33

Plan: Effective Sandy Run Sandy Main Stem RS: 5065.378 Profile: 100-yr

E.G. Elev (ft)	169.14	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.08	Wt. n-Val.	0.020	0.030	0.021
W.S. Elev (ft)	169.06	Reach Len. (ft)	25.50	25.50	25.50
Crit W.S. (ft)	165.33	Flow Area (sq ft)	123.60	596.10	3689.76
E.G. Slope (ft/ft)	0.000098	Area (sq ft)	1230.37	596.10	3689.76
Q Total (cfs)	9741.00	Flow (cfs)	248.77	1684.08	7808.15
Top Width (ft)	1035.60	Top Width (ft)	237.10	42.00	756.50
Vel Total (ft/s)	2.21	Avg. Vel. (ft/s)	2.01	2.83	2.12
Max Chl Dpth (ft)	14.81	Hydr. Depth (ft)	5.14	14.19	4.88
Conv. Total (cfs)	983412.1	Conv. (cfs)	25114.9	170017.5	788279.8
Length Wtd. (ft)	25.50	Wetted Per. (ft)	27.33	43.14	784.58

Plan: Effective Sandy Run Sandy Main Stem RS: 5065.378 Profile: 100-yr (Continued)

Min Ch El (ft)	154.25	Shear (lb/sq ft)	0.03	0.08	0.03
Alpha	1.04	Stream Power (lb/ft s)	0.06	0.24	0.06
Frctn Loss (ft)	0.00	Cum Volume (acre-ft)	114.43	49.14	253.37
C & E Loss (ft)	0.04	Cum SA (acres)	28.57	4.58	50.00

Plan: Effective Sandy Run Sandy Main Stem RS: 5039.878 Profile: 100-yr

E.G. Elev (ft)	169.10	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.47	Wt. n-Val.	0.020	0.030	0.022
W.S. Elev (ft)	168.63	Reach Len. (ft)	93.53	174.30	218.10
Crit W.S. (ft)	165.01	Flow Area (sq ft)	97.85	621.13	1081.50
E.G. Slope (ft/ft)	0.000474	Area (sq ft)	1198.38	621.13	4053.35
Q Total (cfs)	9741.00	Flow (cfs)	408.84	3761.53	5570.63
Top Width (ft)	1239.02	Top Width (ft)	235.27	45.00	958.75
Vel Total (ft/s)	5.41	Avg. Vel. (ft/s)	4.18	6.06	5.15
Max Chl Dpth (ft)	14.38	Hydr. Depth (ft)	4.87	13.80	6.57
Conv. Total (cfs)	447514.5	Conv. (cfs)	18782.8	172809.5	255922.2
Length Wtd. (ft)	177.99	Wetted Per. (ft)	23.56	46.66	165.61
Min Ch El (ft)	154.25	Shear (lb/sq ft)	0.12	0.39	0.19
Alpha	1.03	Stream Power (lb/ft s)	0.51	2.38	0.99
Frctn Loss (ft)	0.06	Cum Volume (acre-ft)	113.72	48.78	251.10
C & E Loss (ft)	0.05	Cum SA (acres)	28.43	4.56	49.49

Plan: Effective Sandy Run Sandy Main Stem RS: 4865.578 Profile: 100-yr

E.G. Elev (ft)	168.99	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.32	Wt. n-Val.	0.020	0.030	0.034
W.S. Elev (ft)	168.67	Reach Len. (ft)	41.51	75.49	113.50
Crit W.S. (ft)	161.19	Flow Area (sq ft)	438.69	1573.46	190.47
E.G. Slope (ft/ft)	0.000271	Area (sq ft)	1624.98	1573.46	3963.92
Q Total (cfs)	9741.00	Flow (cfs)	2002.50	7221.10	517.40
Top Width (ft)	1318.82	Top Width (ft)	287.72	117.19	913.91
Vel Total (ft/s)	4.42	Avg. Vel. (ft/s)	4.56	4.59	2.72
Max Chl Dpth (ft)	14.42	Hydr. Depth (ft)	7.40	13.43	7.70
Conv. Total (cfs)	592137.5	Conv. (cfs)	121728.3	438957.3	31452.0
Length Wtd. (ft)	82.48	Wetted Per. (ft)	60.78	117.71	25.89
Min Ch El (ft)	154.25	Shear (lb/sq ft)	0.12	0.23	0.12
Alpha	1.04	Stream Power (lb/ft s)	0.56	1.04	0.34
Frctn Loss (ft)	0.02	Cum Volume (acre-ft)	110.68	44.39	231.03
C & E Loss (ft)	0.00	Cum SA (acres)	27.87	4.23	44.81

Plan: Effective Sandy Run Sandy Main Stem RS: 4790.088 Profile: 100-yr

E.G. Elev (ft)	168.96	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.33	Wt. n-Val.	0.100	0.030	0.022
W.S. Elev (ft)	168.63	Reach Len. (ft)	13.00	13.00	13.00
Crit W.S. (ft)	163.20	Flow Area (sq ft)	513.98	810.66	1126.94
E.G. Slope (ft/ft)	0.000285	Area (sq ft)	1731.94	810.66	4383.76
Q Total (cfs)	9741.00	Flow (cfs)	523.78	3894.25	5322.97
Top Width (ft)	1331.95	Top Width (ft)	297.20	58.20	976.55
Vel Total (ft/s)	3.97	Avg. Vel. (ft/s)	1.02	4.80	4.72
Max Chl Dpth (ft)	14.63	Hydr. Depth (ft)	7.72	13.93	8.18
Conv. Total (cfs)	576788.5	Conv. (cfs)	31014.6	230587.8	315186.2
Length Wtd. (ft)	13.00	Wetted Per. (ft)	68.47	58.90	138.43
Min Ch El (ft)	154.00	Shear (lb/sq ft)	0.13	0.25	0.14
Alpha	1.36	Stream Power (lb/ft s)	0.14	1.18	0.68
Frctn Loss (ft)	0.00	Cum Volume (acre-ft)	109.08	42.32	220.16
C & E Loss (ft)	0.02	Cum SA (acres)	27.59	4.08	42.34

Plan: Effective Sandy Run Sandy Main Stem RS: 4777.088 Profile: 100-yr

E.G. Elev (ft)	168.94	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.41	Wt. n-Val.	0.020	0.030	0.025
W.S. Elev (ft)	168.53	Reach Len. (ft)	15.00	15.00	15.00
Crit W.S. (ft)	162.83	Flow Area (sq ft)	369.83	790.84	753.20
E.G. Slope (ft/ft)	0.000349	Area (sq ft)	1604.50	790.84	6031.65

Plan: Effective Sandy Run Sandy Main Stem RS: 4777.088 Profile: 100-yr (Continued)

Q Total (cfs)	9741.00	Flow (cfs)	2031.79	4167.68	3541.54
Top Width (ft)	1397.55	Top Width (ft)	275.68	57.00	1064.87
Vel Total (ft/s)	5.09	Avg. Vel. (ft/s)	5.49	5.27	4.70
Max Chl Dpth (ft)	14.28	Hydr. Depth (ft)	8.38	13.87	8.91
Conv. Total (cfs)	521382.6	Conv. (cfs)	108750.5	223073.0	189559.0
Length Wtd. (ft)	15.00	Wetted Per. (ft)	46.97	58.19	84.81
Min Ch El (ft)	154.25	Shear (lb/sq ft)	0.17	0.30	0.19
Alpha	1.01	Stream Power (lb/ft s)	0.94	1.56	0.91
Frctn Loss (ft)		Cum Volume (acre-ft)	108.59	42.09	218.60
C & E Loss (ft)		Cum SA (acres)	27.51	4.06	42.04

Plan: Effective Sandy Run Sandy Main Stem RS: 4740 BR U Profile: 100-yr

E.G. Elev (ft)	168.94	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.90	Wt. n-Val.	0.020	0.030	0.055
W.S. Elev (ft)	166.25	Reach Len. (ft)	40.00	40.00	40.00
Crit W.S. (ft)	163.47	Flow Area (sq ft)	111.79	660.85	191.64
E.G. Slope (ft/ft)	0.005214	Area (sq ft)	111.79	660.85	191.64
Q Total (cfs)	9741.00	Flow (cfs)	1304.97	7574.43	861.60
Top Width (ft)		Top Width (ft)			
Vel Total (ft/s)	10.10	Avg. Vel. (ft/s)	11.67	11.46	4.50
Max Chl Dpth (ft)	12.00	Hydr. Depth (ft)	111000.50		
Conv. Total (cfs)	134901.6	Conv. (cfs)	18072.3	104897.2	11932.2
Length Wtd. (ft)	40.00	Wetted Per. (ft)	34.83	115.19	57.60
Min Ch El (ft)	154.25	Shear (lb/sq ft)	1.04	1.87	1.08
Alpha	1.20	Stream Power (lb/ft s)	12.20	21.40	4.87
Frctn Loss (ft)		Cum Volume (acre-ft)	108.29	41.84	217.53
C & E Loss (ft)		Cum SA (acres)	27.46	4.05	41.86

Plan: Effective Sandy Run Sandy Main Stem RS: 4740 BR D Profile: 100-yr

E.G. Elev (ft)	168.51	Element	Left OB	Channel	Right OB
Vel Head (ft)	4.30	Wt. n-Val.	0.100	0.030	0.100
W.S. Elev (ft)	164.21	Reach Len. (ft)	36.50	36.50	36.50
Crit W.S. (ft)	164.21	Flow Area (sq ft)	153.86	504.36	121.66
E.G. Slope (ft/ft)	0.006114	Area (sq ft)	153.86	504.36	121.66
Q Total (cfs)	9741.00	Flow (cfs)	509.90	8807.04	424.06
Top Width (ft)	95.90	Top Width (ft)	26.33	52.44	17.13
Vel Total (ft/s)	12.49	Avg. Vel. (ft/s)	3.31	17.46	3.49
Max Chl Dpth (ft)	10.21	Hydr. Depth (ft)	5.84	9.62	7.10
Conv. Total (cfs)	124580.5	Conv. (cfs)	6521.3	112635.8	5423.4
Length Wtd. (ft)	36.50	Wetted Per. (ft)	31.94	52.68	23.41
Min Ch El (ft)	154.00	Shear (lb/sq ft)	1.84	3.65	1.98
Alpha	1.77	Stream Power (lb/ft s)	6.09	63.81	6.91
Frctn Loss (ft)		Cum Volume (acre-ft)	108.17	41.30	217.39
C & E Loss (ft)		Cum SA (acres)	27.45	4.03	41.85

Plan: Effective Sandy Run Sandy Main Stem RS: 4685.592 Profile: 100-yr

E.G. Elev (ft)	166.72	Element	Left OB	Channel	Right OB
Vel Head (ft)	3.19	Wt. n-Val.	0.100	0.030	0.100
W.S. Elev (ft)	163.53	Reach Len. (ft)	393.59	358.41	320.67
Crit W.S. (ft)	163.53	Flow Area (sq ft)	324.57	469.04	323.60
E.G. Slope (ft/ft)	0.005758	Area (sq ft)	708.82	469.04	3610.15
Q Total (cfs)	9741.00	Flow (cfs)	998.19	7572.79	1170.02
Top Width (ft)	835.28	Top Width (ft)	223.41	52.44	559.43
Vel Total (ft/s)	8.72	Avg. Vel. (ft/s)	3.08	16.15	3.62
Max Chl Dpth (ft)	9.53	Hydr. Depth (ft)	4.54	8.94	5.77
Conv. Total (cfs)	128372.6	Conv. (cfs)	13154.7	99798.6	15419.2
Length Wtd. (ft)	346.18	Wetted Per. (ft)	72.05	52.68	56.35
Min Ch El (ft)	154.00	Shear (lb/sq ft)	1.62	3.20	2.06
Alpha	2.70	Stream Power (lb/ft s)	4.98	51.67	7.46
Frctn Loss (ft)	0.63	Cum Volume (acre-ft)	107.81	40.89	215.82
C & E Loss (ft)	1.47	Cum SA (acres)	27.34	3.99	41.61

Plan: Effective Sandy Run Sandy Main Stem RS: 4327.181 Profile: 100-yr

E.G. Elev (ft)	164.57	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.24	Wt. n-Val.	0.100	0.034	0.084
W.S. Elev (ft)	164.33	Reach Len. (ft)	379.56	362.86	348.11
Crit W.S. (ft)		Flow Area (sq ft)	360.79	422.56	3294.49
E.G. Slope (ft/ft)	0.000880	Area (sq ft)	360.79	422.56	3294.49
Q Total (cfs)	9741.00	Flow (cfs)	431.37	2833.56	6476.07
Top Width (ft)	570.03	Top Width (ft)	79.56	35.94	454.53
Vel Total (ft/s)	2.39	Avg. Vel. (ft/s)	1.20	6.71	1.97
Max Chl Dpth (ft)	12.33	Hydr. Depth (ft)	4.53	11.76	7.25
Conv. Total (cfs)	328280.8	Conv. (cfs)	14537.5	95493.7	218249.6
Length Wtd. (ft)	354.53	Wetted Per. (ft)	80.80	36.17	456.48
Min Ch El (ft)	152.00	Shear (lb/sq ft)	0.25	0.64	0.40
Alpha	2.75	Stream Power (lb/ft s)	0.29	4.31	0.78
Frctn Loss (ft)	0.33	Cum Volume (acre-ft)	102.98	37.22	190.41
C & E Loss (ft)	0.02	Cum SA (acres)	25.97	3.62	37.87

Plan: Effective Sandy Run Sandy Main Stem RS: 3964.325 Profile: 100-yr

E.G. Elev (ft)	164.22	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.42	Wt. n-Val.	0.100	0.030	0.100
W.S. Elev (ft)	163.80	Reach Len. (ft)	460.88	448.94	432.66
Crit W.S. (ft)		Flow Area (sq ft)	345.62	508.58	2906.66
E.G. Slope (ft/ft)	0.001012	Area (sq ft)	345.62	508.58	2906.66
Q Total (cfs)	9741.00	Flow (cfs)	354.97	3973.20	5412.83
Top Width (ft)	523.01	Top Width (ft)	106.92	45.65	370.43
Vel Total (ft/s)	2.59	Avg. Vel. (ft/s)	1.03	7.81	1.86
Max Chl Dpth (ft)	11.80	Hydr. Depth (ft)	3.23	11.14	7.85
Conv. Total (cfs)	306231.1	Conv. (cfs)	11159.2	124906.9	170165.0
Length Wtd. (ft)	441.11	Wetted Per. (ft)	107.90	46.06	372.81
Min Ch El (ft)	152.00	Shear (lb/sq ft)	0.20	0.70	0.49
Alpha	4.00	Stream Power (lb/ft s)	0.21	5.45	0.92
Frctn Loss (ft)	0.34	Cum Volume (acre-ft)	99.90	33.35	165.63
C & E Loss (ft)	0.05	Cum SA (acres)	25.16	3.28	34.58

Plan: Effective Sandy Run Sandy Main Stem RS: 6189.177 Profile: 500-yr

E.G. Elev (ft)	172.41	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.61	Wt. n-Val.	0.100	0.030	0.087
W.S. Elev (ft)	170.79	Reach Len. (ft)	633.10	668.48	716.54
Crit W.S. (ft)	166.97	Flow Area (sq ft)	465.31	435.06	619.39
E.G. Slope (ft/ft)	0.001643	Area (sq ft)	465.31	435.06	619.39
Q Total (cfs)	8165.00	Flow (cfs)	1091.81	5396.26	1676.92
Top Width (ft)	199.66	Top Width (ft)	58.38	28.04	113.24
Vel Total (ft/s)	5.37	Avg. Vel. (ft/s)	2.35	12.40	2.71
Max Chl Dpth (ft)	15.79	Hydr. Depth (ft)	7.97	15.52	5.47
Conv. Total (cfs)	201429.5	Conv. (cfs)	26934.9	133125.1	41369.5
Length Wtd. (ft)	697.78	Wetted Per. (ft)	60.52	28.33	116.52
Min Ch El (ft)	155.00	Shear (lb/sq ft)	0.79	1.58	0.55
Alpha	3.60	Stream Power (lb/ft s)	1.85	19.54	1.48
Frctn Loss (ft)	0.12	Cum Volume (acre-ft)	191.91	70.04	474.23
C & E Loss (ft)	0.76	Cum SA (acres)	36.86	5.33	74.39

Plan: Effective Sandy Run Sandy Main Stem RS: 5508.105 Profile: 500-yr

E.G. Elev (ft)	171.53	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.09	Wt. n-Val.	0.099	0.030	0.022
W.S. Elev (ft)	171.44	Reach Len. (ft)	418.82	423.43	428.32
Crit W.S. (ft)	166.60	Flow Area (sq ft)	963.39	394.79	6322.67
E.G. Slope (ft/ft)	0.000096	Area (sq ft)	1167.30	394.79	6322.67
Q Total (cfs)	16941.00	Flow (cfs)	720.38	1259.55	14961.07
Top Width (ft)	1222.68	Top Width (ft)	148.73	22.99	1050.96
Vel Total (ft/s)	2.21	Avg. Vel. (ft/s)	0.75	3.19	2.37
Max Chl Dpth (ft)	17.44	Hydr. Depth (ft)	10.78	17.17	6.02
Conv. Total (cfs)	1731232.0	Conv. (cfs)	73616.7	128715.7	1528900.0
Length Wtd. (ft)	427.22	Wetted Per. (ft)	92.67	23.38	1097.94
Min Ch El (ft)	154.00	Shear (lb/sq ft)	0.06	0.10	0.03
Alpha	1.18	Stream Power (lb/ft s)	0.05	0.32	0.08
Frctn Loss (ft)	0.05	Cum Volume (acre-ft)	180.05	63.67	417.14
C & E Loss (ft)	0.00	Cum SA (acres)	35.35	4.94	64.82

Plan: Effective Sandy Run Sandy Main Stem RS: 5084.678 Profile: 500-yr

E.G. Elev (ft)	171.48	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.10	Wt. n-Val.	0.092	0.030	0.026
W.S. Elev (ft)	171.38	Reach Len. (ft)	19.30	19.30	19.30
Crit W.S. (ft)	166.72	Flow Area (sq ft)	1921.47	659.59	5507.55
E.G. Slope (ft/ft)	0.000132	Area (sq ft)	1921.47	659.59	5507.55
Q Total (cfs)	16941.00	Flow (cfs)	1297.35	2443.64	13200.01
Top Width (ft)	1118.99	Top Width (ft)	295.16	38.79	785.03
Vel Total (ft/s)	2.09	Avg. Vel. (ft/s)	0.68	3.70	2.40
Max Chl Dpth (ft)	17.38	Hydr. Depth (ft)	6.51	17.00	7.02
Conv. Total (cfs)	1474147.0	Conv. (cfs)	112890.9	212636.7	1148619.0
Length Wtd. (ft)	19.30	Wetted Per. (ft)	300.92	39.72	823.36
Min Ch El (ft)	154.00	Shear (lb/sq ft)	0.05	0.14	0.06
Alpha	1.48	Stream Power (lb/ft s)	0.04	0.51	0.13
Frctn Loss (ft)	0.00	Cum Volume (acre-ft)	165.20	58.54	358.97
C & E Loss (ft)	0.00	Cum SA (acres)	33.22	4.64	55.79

Plan: Effective Sandy Run Sandy Main Stem RS: 5065.378 Profile: 500-yr

E.G. Elev (ft)	171.47	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.10	Wt. n-Val.	0.074	0.030	0.021
W.S. Elev (ft)	171.38	Reach Len. (ft)	25.50	25.50	25.50
Crit W.S. (ft)	166.42	Flow Area (sq ft)	1857.32	693.43	5453.35
E.G. Slope (ft/ft)	0.000088	Area (sq ft)	1857.32	693.43	5453.35
Q Total (cfs)	16941.00	Flow (cfs)	1209.41	2057.22	13674.37
Top Width (ft)	1136.29	Top Width (ft)	295.78	42.00	798.52
Vel Total (ft/s)	2.12	Avg. Vel. (ft/s)	0.65	2.97	2.51
Max Chl Dpth (ft)	17.13	Hydr. Depth (ft)	6.28	16.51	6.83
Conv. Total (cfs)	1801440.0	Conv. (cfs)	128603.9	218756.6	1454079.0
Length Wtd. (ft)	25.50	Wetted Per. (ft)	301.21	43.14	842.94

Plan: Effective Sandy Run Sandy Main Stem RS: 5065.378 Profile: 500-yr (Continued)

Min Ch El (ft)	154.25	Shear (lb/sq ft)	0.03	0.09	0.04
Alpha	1.38	Stream Power (lb/ft s)	0.02	0.26	0.09
Frctn Loss (ft)	0.00	Cum Volume (acre-ft)	164.36	58.24	356.54
C & E Loss (ft)	0.01	Cum SA (acres)	33.09	4.62	55.44

Plan: Effective Sandy Run Sandy Main Stem RS: 5039.878 Profile: 500-yr

E.G. Elev (ft)	171.46	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.06	Wt. n-Val.	0.077	0.030	0.020
W.S. Elev (ft)	171.40	Reach Len. (ft)	93.53	174.30	218.10
Crit W.S. (ft)	166.63	Flow Area (sq ft)	1953.37	745.96	7333.89
E.G. Slope (ft/ft)	0.000054	Area (sq ft)	1953.37	745.96	7333.89
Q Total (cfs)	16941.00	Flow (cfs)	971.05	1723.32	14246.62
Top Width (ft)	1560.25	Top Width (ft)	303.16	45.00	1212.09
Vel Total (ft/s)	1.69	Avg. Vel. (ft/s)	0.50	2.31	1.94
Max Chl Dpth (ft)	17.15	Hydr. Depth (ft)	6.44	16.58	6.05
Conv. Total (cfs)	2305119.0	Conv. (cfs)	132128.7	234488.4	1938502.0
Length Wtd. (ft)	200.75	Wetted Per. (ft)	309.18	46.66	1239.48
Min Ch El (ft)	154.25	Shear (lb/sq ft)	0.02	0.05	0.02
Alpha	1.31	Stream Power (lb/ft s)	0.01	0.12	0.04
Frctn Loss (ft)	0.01	Cum Volume (acre-ft)	163.25	57.82	352.80
C & E Loss (ft)	0.00	Cum SA (acres)	32.91	4.59	54.85

Plan: Effective Sandy Run Sandy Main Stem RS: 4865.578 Profile: 500-yr

E.G. Elev (ft)	171.45	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.05	Wt. n-Val.	0.050	0.030	0.020
W.S. Elev (ft)	171.40	Reach Len. (ft)	41.51	75.49	113.50
Crit W.S. (ft)	163.64	Flow Area (sq ft)	2512.26	1893.17	6487.63
E.G. Slope (ft/ft)	0.000042	Area (sq ft)	2512.26	1893.17	6487.63
Q Total (cfs)	16941.00	Flow (cfs)	1776.99	3880.90	11283.11
Top Width (ft)	1410.36	Top Width (ft)	358.69	117.19	934.48
Vel Total (ft/s)	1.56	Avg. Vel. (ft/s)	0.71	2.05	1.74
Max Chl Dpth (ft)	17.15	Hydr. Depth (ft)	7.00	16.15	6.94
Conv. Total (cfs)	2608055.0	Conv. (cfs)	273565.5	597462.3	1737027.0
Length Wtd. (ft)	99.39	Wetted Per. (ft)	362.99	117.71	944.56
Min Ch El (ft)	154.25	Shear (lb/sq ft)	0.02	0.04	0.02
Alpha	1.25	Stream Power (lb/ft s)	0.01	0.09	0.03
Frctn Loss (ft)	0.01	Cum Volume (acre-ft)	158.45	52.54	318.20
C & E Loss (ft)	0.00	Cum SA (acres)	32.20	4.27	49.48

Plan: Effective Sandy Run Sandy Main Stem RS: 4790.088 Profile: 500-yr

E.G. Elev (ft)	171.44	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.06	Wt. n-Val.	0.094	0.030	0.027
W.S. Elev (ft)	171.39	Reach Len. (ft)	13.00	13.00	13.00
Crit W.S. (ft)	164.83	Flow Area (sq ft)	2685.59	971.00	7108.33
E.G. Slope (ft/ft)	0.000072	Area (sq ft)	2685.59	971.00	7108.33
Q Total (cfs)	16941.00	Flow (cfs)	1423.95	2638.66	12878.39
Top Width (ft)	1444.20	Top Width (ft)	384.95	58.20	1001.05
Vel Total (ft/s)	1.57	Avg. Vel. (ft/s)	0.53	2.72	1.81
Max Chl Dpth (ft)	17.39	Hydr. Depth (ft)	6.98	16.68	7.10
Conv. Total (cfs)	1999981.0	Conv. (cfs)	168105.3	311508.4	1520367.0
Length Wtd. (ft)	13.00	Wetted Per. (ft)	389.64	58.90	1009.52
Min Ch El (ft)	154.00	Shear (lb/sq ft)	0.03	0.07	0.03
Alpha	1.48	Stream Power (lb/ft s)	0.02	0.20	0.06
Frctn Loss (ft)	0.00	Cum Volume (acre-ft)	155.98	50.06	300.49
C & E Loss (ft)	0.01	Cum SA (acres)	31.85	4.12	46.95

Plan: Effective Sandy Run Sandy Main Stem RS: 4777.088 Profile: 500-yr

E.G. Elev (ft)	171.43	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.04	Wt. n-Val.	0.056	0.030	0.021
W.S. Elev (ft)	171.40	Reach Len. (ft)	15.00	15.00	15.00
Crit W.S. (ft)	164.76	Flow Area (sq ft)	2520.84	954.15	9106.69
E.G. Slope (ft/ft)	0.000027	Area (sq ft)	2520.84	954.15	9106.69

Plan: Effective Sandy Run Sandy Main Stem RS: 4777.088 Profile: 500-yr (Continued)

Q Total (cfs)	16941.00	Flow (cfs)	1265.81	1574.97	14100.21
Top Width (ft)	1496.42	Top Width (ft)	361.65	57.00	1077.77
Vel Total (ft/s)	1.35	Avg. Vel. (ft/s)	0.50	1.65	1.55
Max Chl Dpth (ft)	17.15	Hydr. Depth (ft)	6.97	16.74	8.45
Conv. Total (cfs)	3280940.0	Conv. (cfs)	245148.2	305023.1	2730768.0
Length Wtd. (ft)	15.00	Wetted Per. (ft)	367.90	58.19	1081.46
Min Ch El (ft)	154.25	Shear (lb/sq ft)	0.01	0.03	0.01
Alpha	1.25	Stream Power (lb/ft s)	0.01	0.05	0.02
Frctn Loss (ft)		Cum Volume (acre-ft)	155.20	49.77	298.07
C & E Loss (ft)		Cum SA (acres)	31.74	4.10	46.64

Plan: Effective Sandy Run Sandy Main Stem RS: 4740 BR U Profile: 500-yr

E.G. Elev (ft)	171.43	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.85	Wt. n-Val.			
W.S. Elev (ft)	171.40	Reach Len. (ft)	40.00	40.00	40.00
Crit W.S. (ft)	166.05	Flow Area (sq ft)	290.53	734.70	1472.42
E.G. Slope (ft/ft)		Area (sq ft)	290.53	734.70	1472.42
Q Total (cfs)	16941.00	Flow (cfs)	2153.76	10258.83	4514.57
Top Width (ft)	1397.18	Top Width (ft)	262.41	57.00	1077.77
Vel Total (ft/s)	6.78	Avg. Vel. (ft/s)	7.41	13.96	3.07
Max Chl Dpth (ft)	17.15	Hydr. Depth (ft)	1.11	12.89	1.37
Conv. Total (cfs)		Conv. (cfs)			
Length Wtd. (ft)	40.00	Wetted Per. (ft)	297.24	172.19	1135.41
Min Ch El (ft)	154.25	Shear (lb/sq ft)			
Alpha	1.18	Stream Power (lb/ft s)			
Frctn Loss (ft)		Cum Volume (acre-ft)	154.72	49.48	296.25
C & E Loss (ft)		Cum SA (acres)	31.63	4.08	46.27

Plan: Effective Sandy Run Sandy Main Stem RS: 4740 BR D Profile: 500-yr

E.G. Elev (ft)	171.43	Element	Left OB	Channel	Right OB
Vel Head (ft)	2.94	Wt. n-Val.			
W.S. Elev (ft)	171.40	Reach Len. (ft)	36.50	36.50	36.50
Crit W.S. (ft)	172.38	Flow Area (sq ft)	438.24	679.46	1154.77
E.G. Slope (ft/ft)		Area (sq ft)	438.24	679.46	1154.77
Q Total (cfs)	16941.00	Flow (cfs)	1259.82	11641.11	4026.23
Top Width (ft)	972.93	Top Width (ft)	318.79	52.44	601.70
Vel Total (ft/s)	7.45	Avg. Vel. (ft/s)	2.87	17.13	3.49
Max Chl Dpth (ft)	17.40	Hydr. Depth (ft)	1.37	12.96	1.92
Conv. Total (cfs)		Conv. (cfs)			
Length Wtd. (ft)	36.50	Wetted Per. (ft)	379.22	157.56	646.93
Min Ch El (ft)	154.00	Shear (lb/sq ft)			
Alpha	3.40	Stream Power (lb/ft s)			
Frctn Loss (ft)		Cum Volume (acre-ft)	154.38	48.83	295.04
C & E Loss (ft)		Cum SA (acres)	31.36	4.03	45.50

Plan: Effective Sandy Run Sandy Main Stem RS: 4685.592 Profile: 500-yr

E.G. Elev (ft)	167.45	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.24	Wt. n-Val.	0.100	0.030	0.099
W.S. Elev (ft)	167.22	Reach Len. (ft)	393.59	358.41	320.67
Crit W.S. (ft)	165.40	Flow Area (sq ft)	1623.34	662.31	5689.82
E.G. Slope (ft/ft)	0.000669	Area (sq ft)	1623.34	662.31	5689.82
Q Total (cfs)	16941.00	Flow (cfs)	2053.90	4587.42	10299.69
Top Width (ft)	892.37	Top Width (ft)	270.79	52.44	569.14
Vel Total (ft/s)	2.12	Avg. Vel. (ft/s)	1.27	6.93	1.81
Max Chl Dpth (ft)	13.22	Hydr. Depth (ft)	5.99	12.63	10.00
Conv. Total (cfs)	655009.7	Conv. (cfs)	79412.3	177368.6	398228.8
Length Wtd. (ft)	337.08	Wetted Per. (ft)	271.76	52.68	571.65
Min Ch El (ft)	154.00	Shear (lb/sq ft)	0.25	0.53	0.42
Alpha	3.36	Stream Power (lb/ft s)	0.32	3.64	0.75
Frctn Loss (ft)	0.29	Cum Volume (acre-ft)	153.52	48.27	292.17
C & E Loss (ft)	0.04	Cum SA (acres)	31.12	3.99	45.01

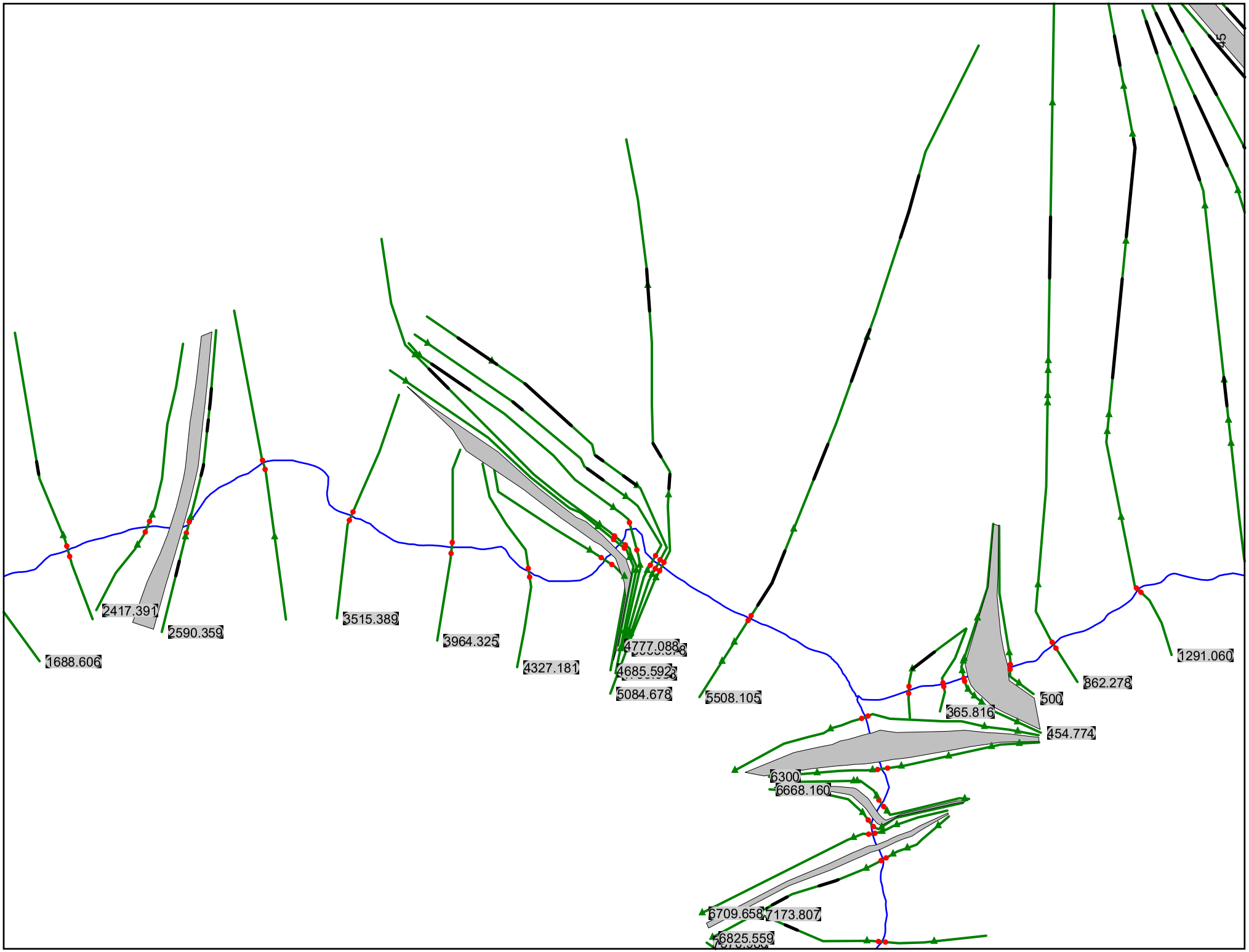
Plan: Effective Sandy Run Sandy Main Stem RS: 4327.181 Profile: 500-yr

E.G. Elev (ft)	167.12	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.38	Wt. n-Val.	0.100	0.034	0.086
W.S. Elev (ft)	166.74	Reach Len. (ft)	379.56	362.86	348.11
Crit W.S. (ft)		Flow Area (sq ft)	579.86	509.24	4399.65
E.G. Slope (ft/ft)	0.001149	Area (sq ft)	579.86	509.24	4399.65
Q Total (cfs)	16941.00	Flow (cfs)	912.15	4411.72	11617.13
Top Width (ft)	600.93	Top Width (ft)	103.64	35.94	461.35
Vel Total (ft/s)	3.09	Avg. Vel. (ft/s)	1.57	8.66	2.64
Max Chl Dpth (ft)	14.74	Hydr. Depth (ft)	5.60	14.17	9.54
Conv. Total (cfs)	499880.0	Conv. (cfs)	26914.9	130177.2	342787.9
Length Wtd. (ft)	354.49	Wetted Per. (ft)	105.03	36.17	463.72
Min Ch El (ft)	152.00	Shear (lb/sq ft)	0.40	1.01	0.68
Alpha	2.57	Stream Power (lb/ft s)	0.62	8.74	1.80
Frctn Loss (ft)	0.46	Cum Volume (acre-ft)	143.56	43.45	255.04
C & E Loss (ft)	0.03	Cum SA (acres)	29.42	3.62	41.22

Plan: Effective Sandy Run Sandy Main Stem RS: 3964.325 Profile: 500-yr

E.G. Elev (ft)	166.63	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.71	Wt. n-Val.	0.100	0.030	0.100
W.S. Elev (ft)	165.93	Reach Len. (ft)	460.88	448.94	432.66
Crit W.S. (ft)		Flow Area (sq ft)	603.33	605.43	3697.24
E.G. Slope (ft/ft)	0.001450	Area (sq ft)	603.33	605.43	3697.24
Q Total (cfs)	16941.00	Flow (cfs)	910.80	6360.55	9669.64
Top Width (ft)	557.93	Top Width (ft)	137.42	45.65	374.87
Vel Total (ft/s)	3.45	Avg. Vel. (ft/s)	1.51	10.51	2.62
Max Chl Dpth (ft)	13.93	Hydr. Depth (ft)	4.39	13.26	9.86
Conv. Total (cfs)	444838.3	Conv. (cfs)	23915.9	167016.0	253906.4
Length Wtd. (ft)	441.02	Wetted Per. (ft)	138.47	46.06	377.72
Min Ch El (ft)	152.00	Shear (lb/sq ft)	0.39	1.19	0.89
Alpha	3.81	Stream Power (lb/ft s)	0.60	12.50	2.32
Frctn Loss (ft)	0.51	Cum Volume (acre-ft)	138.41	38.81	222.68
C & E Loss (ft)	0.09	Cum SA (acres)	28.37	3.28	37.88

HEC-RAS Detailed Analysis Results – Corrected Effective Model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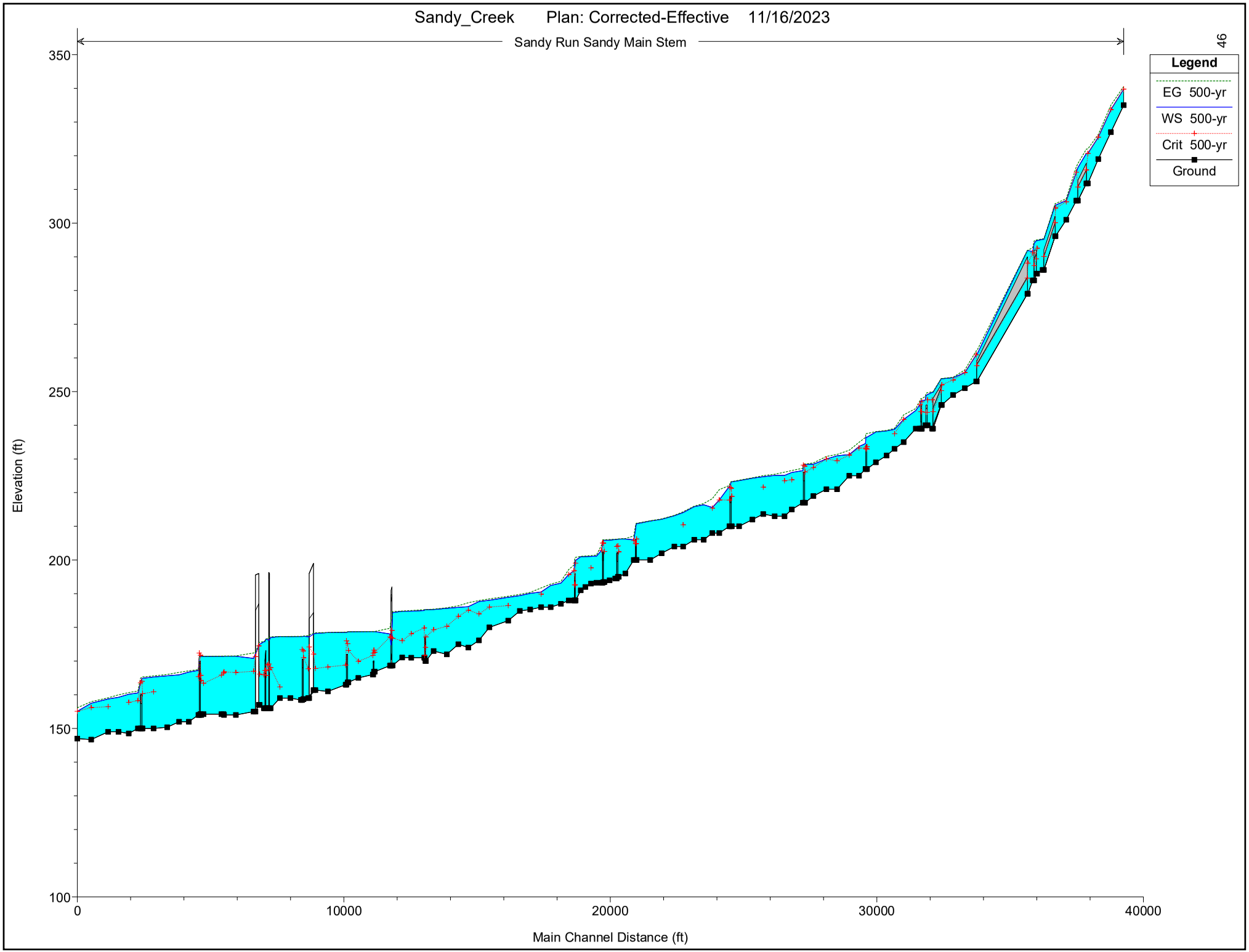
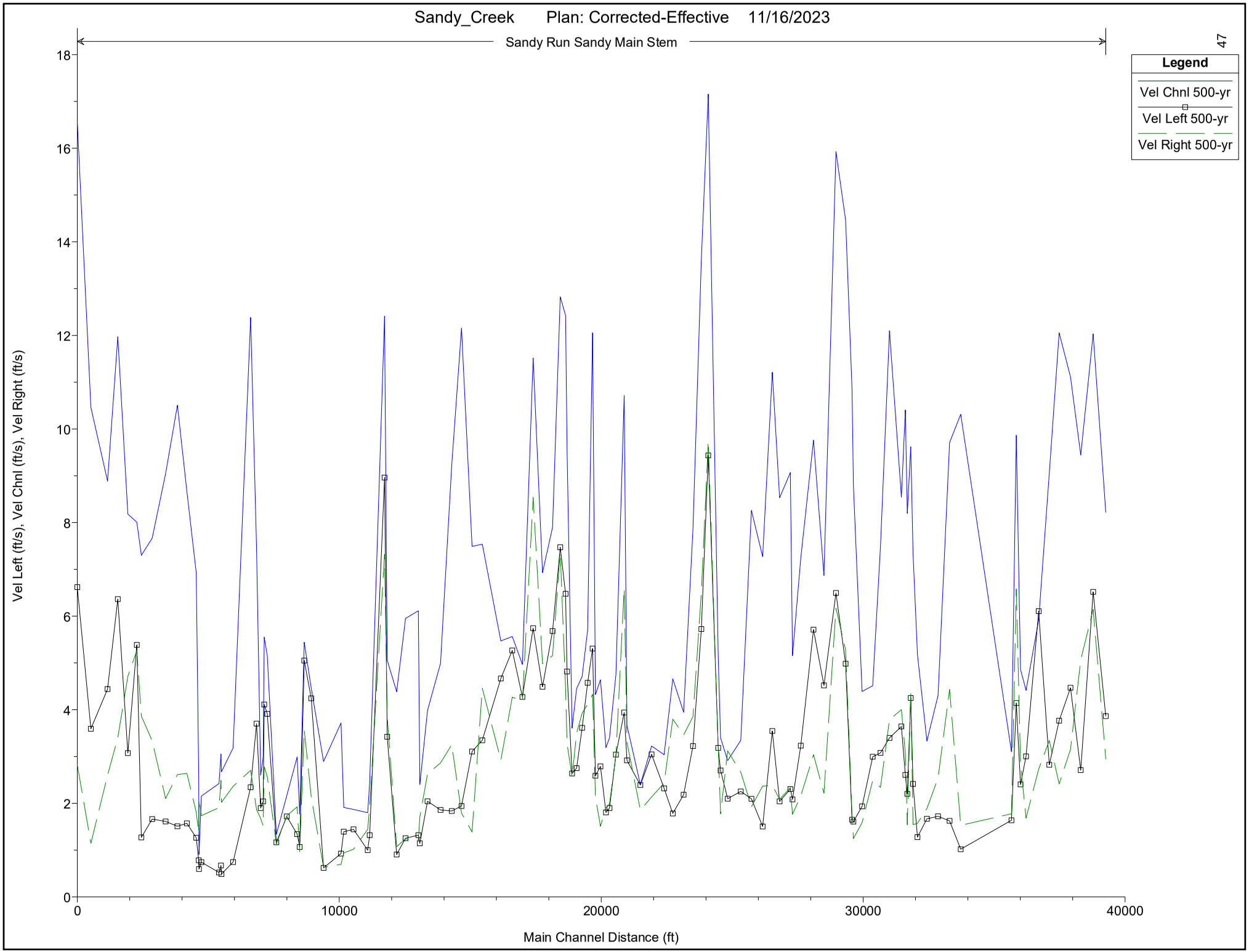
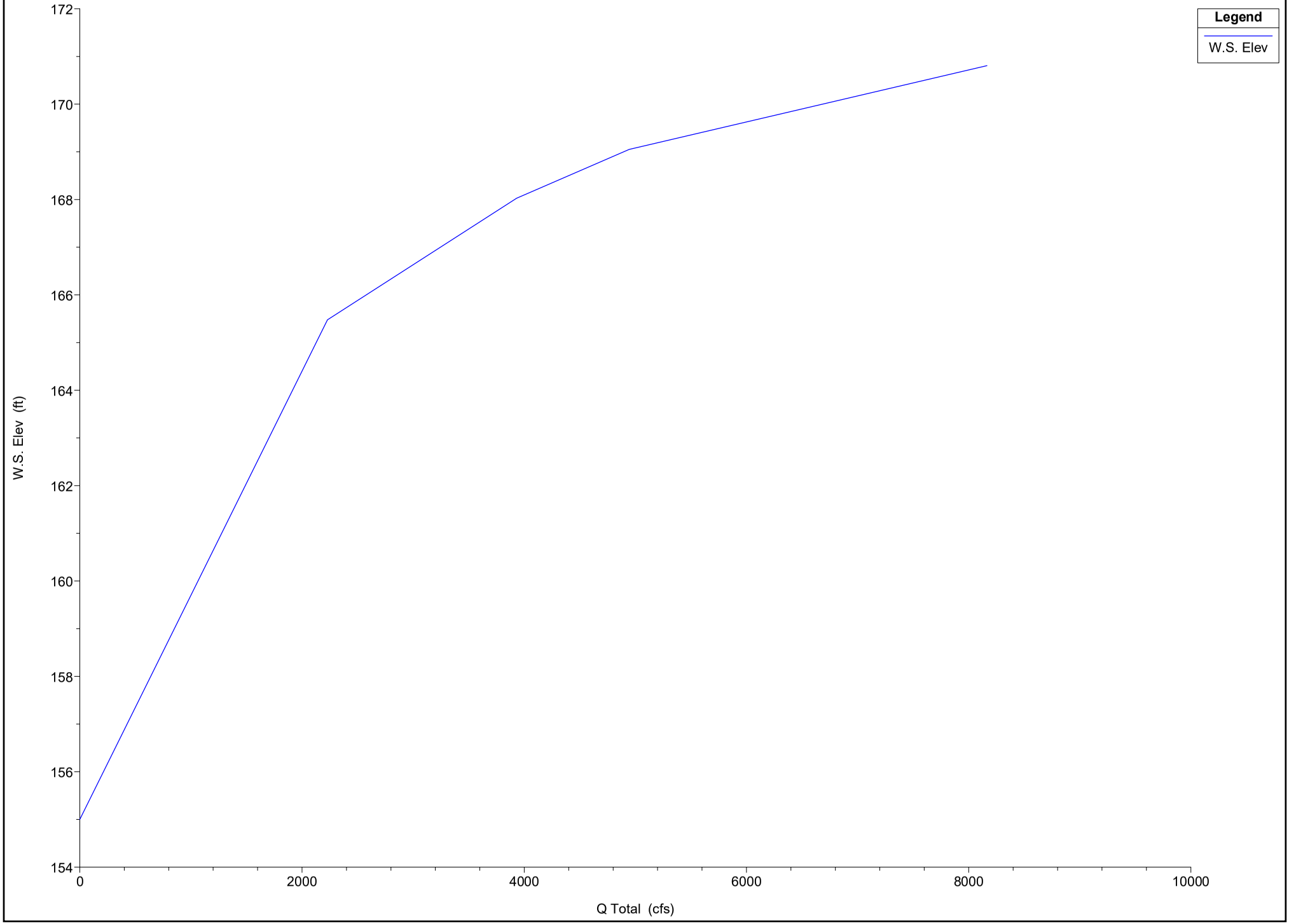

Sandy_Creek Plan: Corrected-Effective 11/16/2023
Sandy Run Sandy Main Stem
46
Legend
EG 500-yr
WS 500-yr
Crit 500-yr
Ground
Elevation (ft)
350
300
250
200
150
100
0
10000
20000
30000
40000
Main Channel Distance (ft)


Sandy_Creek Plan: Corrected-Effective 11/16/2023
Sandy Run Sandy Main Stem
47
Legend
Vel Chnl 500-yr
Vel Left 500-yr
Vel Right 500-yr
Vel Left (ft/s), Vel Chnl (ft/s), Vel Right (ft/s)
Main Channel Distance (ft)
0
2
4
6
8
10
12
14
16
18
0
10000
20000
30000
40000

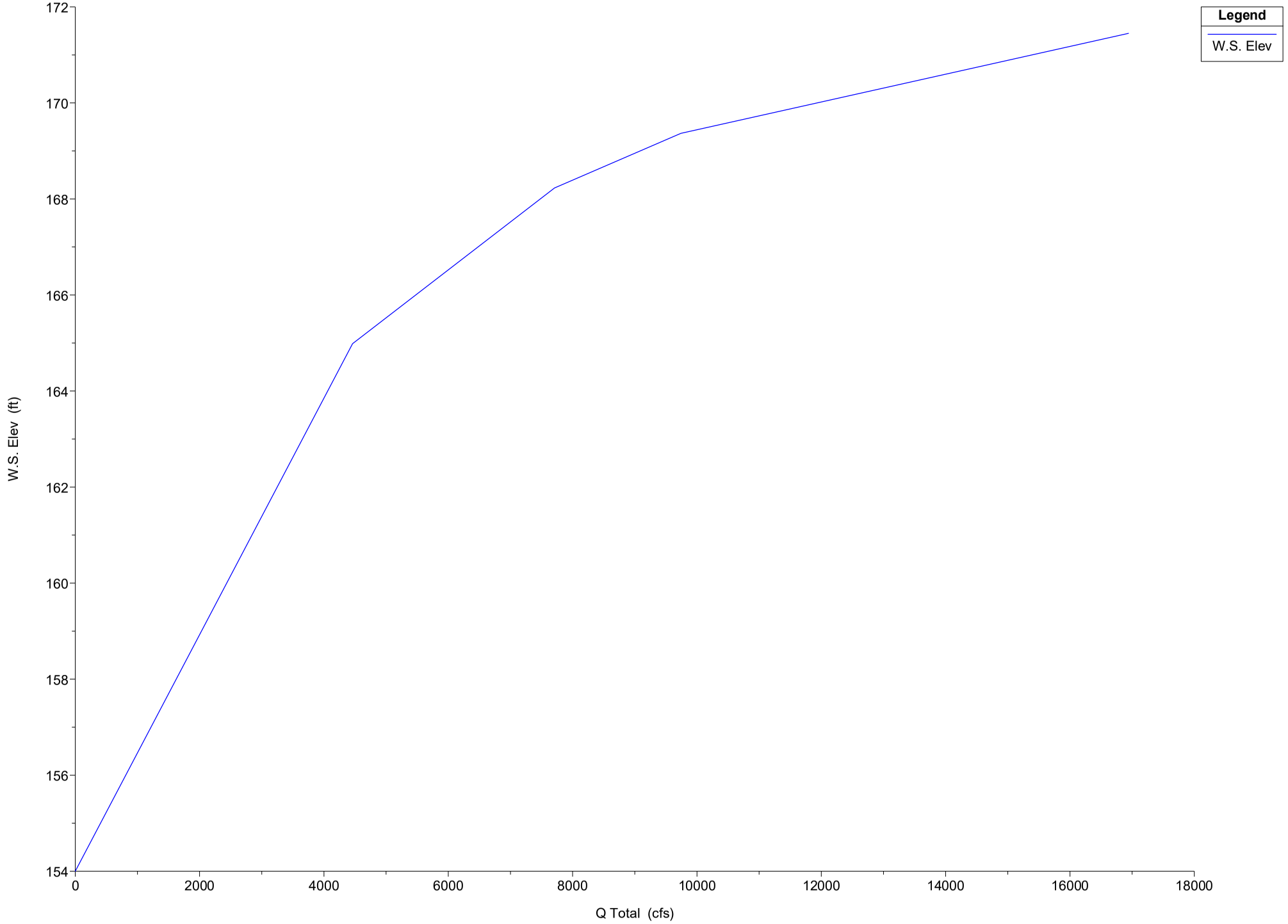
Sandy_Creek Plan: Corrected-Effective 11/16/2023

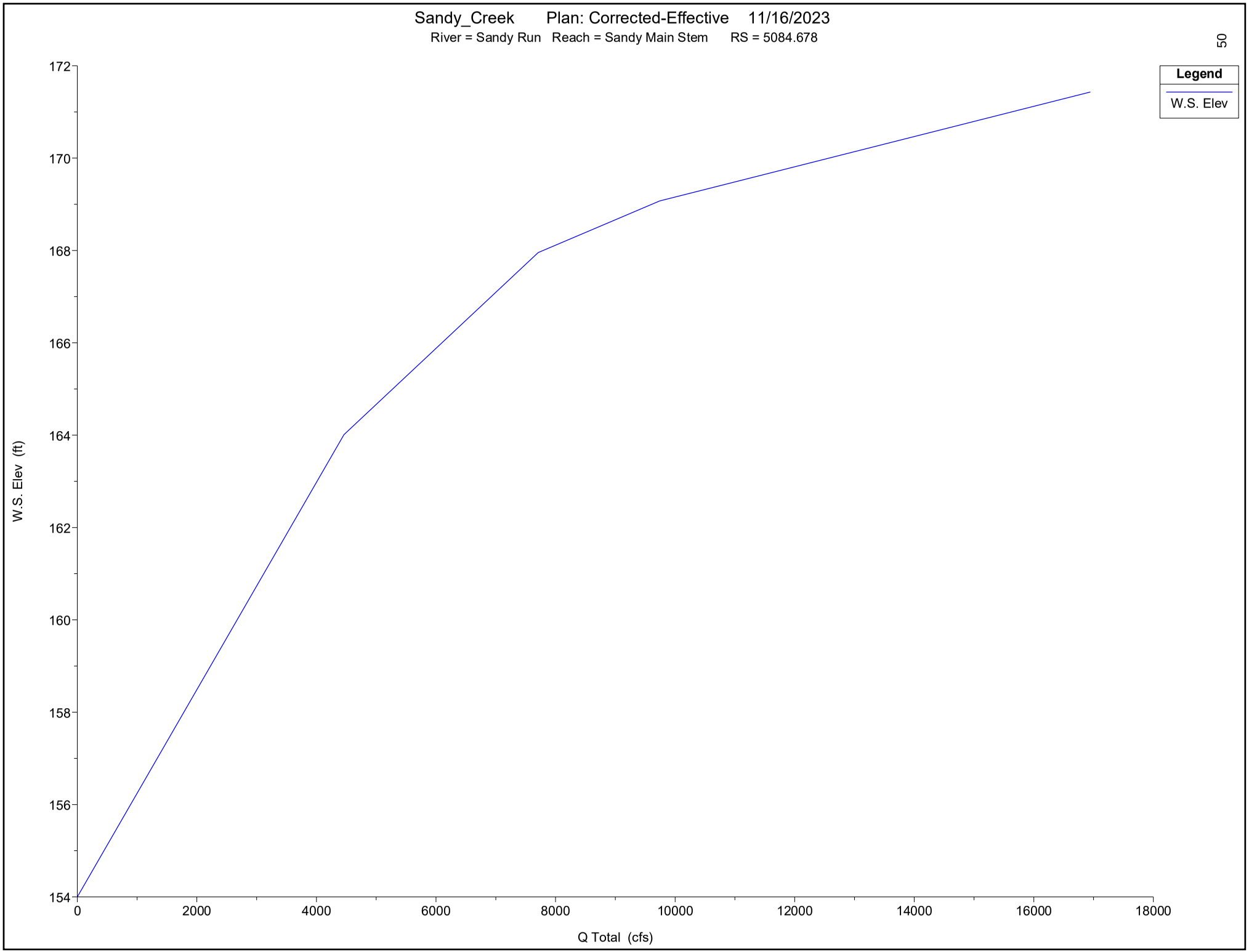
River = Sandy Run Reach = Sandy Main Stem RS = 6189.177



Sandy_Creek Plan: Corrected-Effective 11/16/2023

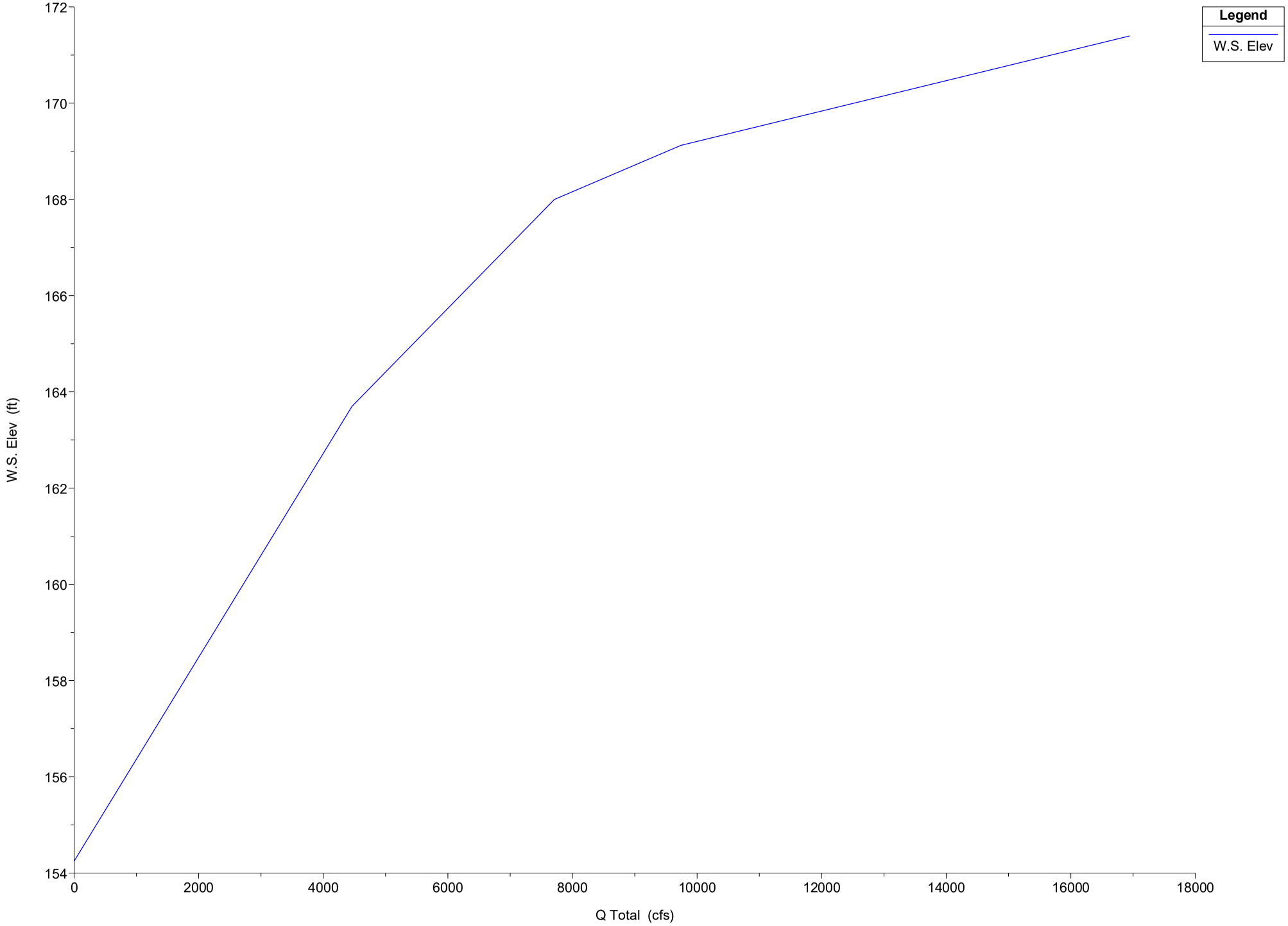
River = Sandy Run Reach = Sandy Main Stem RS = 5508.105




Sandy_Creek Plan: Corrected-Effective 11/16/2023
River = Sandy Run Reach = Sandy Main Stem RS = 5084.678
50
Legend
W.S. Elev
W.S. Elev (ft)
172
170
168
166
164
162
160
158
156
154
0
2000
4000
6000
8000
10000
12000
14000
16000
18000
Q Total (cfs)

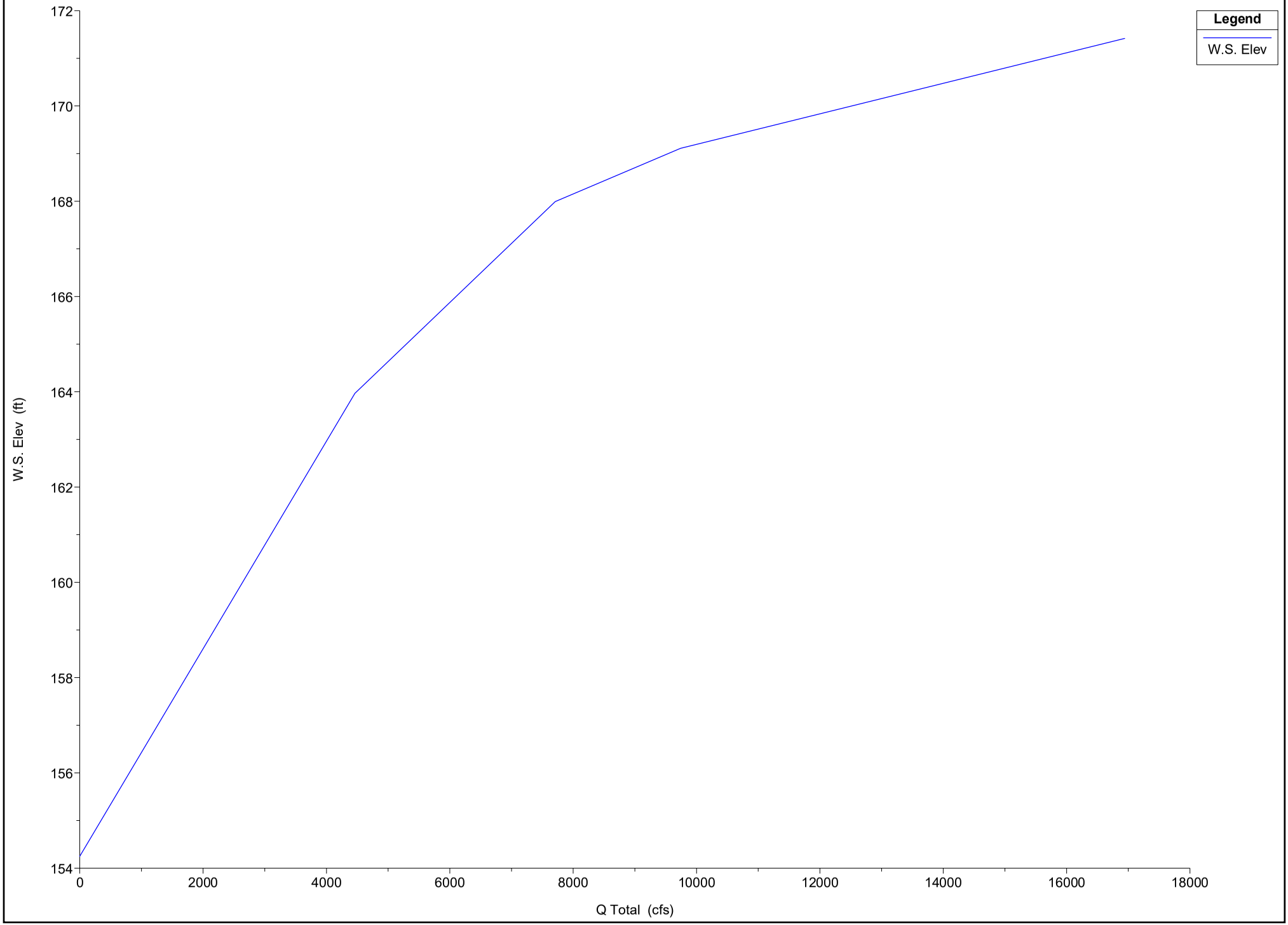
Sandy_Creek Plan: Corrected-Effective 11/16/2023

River = Sandy Run Reach = Sandy Main Stem RS = 5065.378



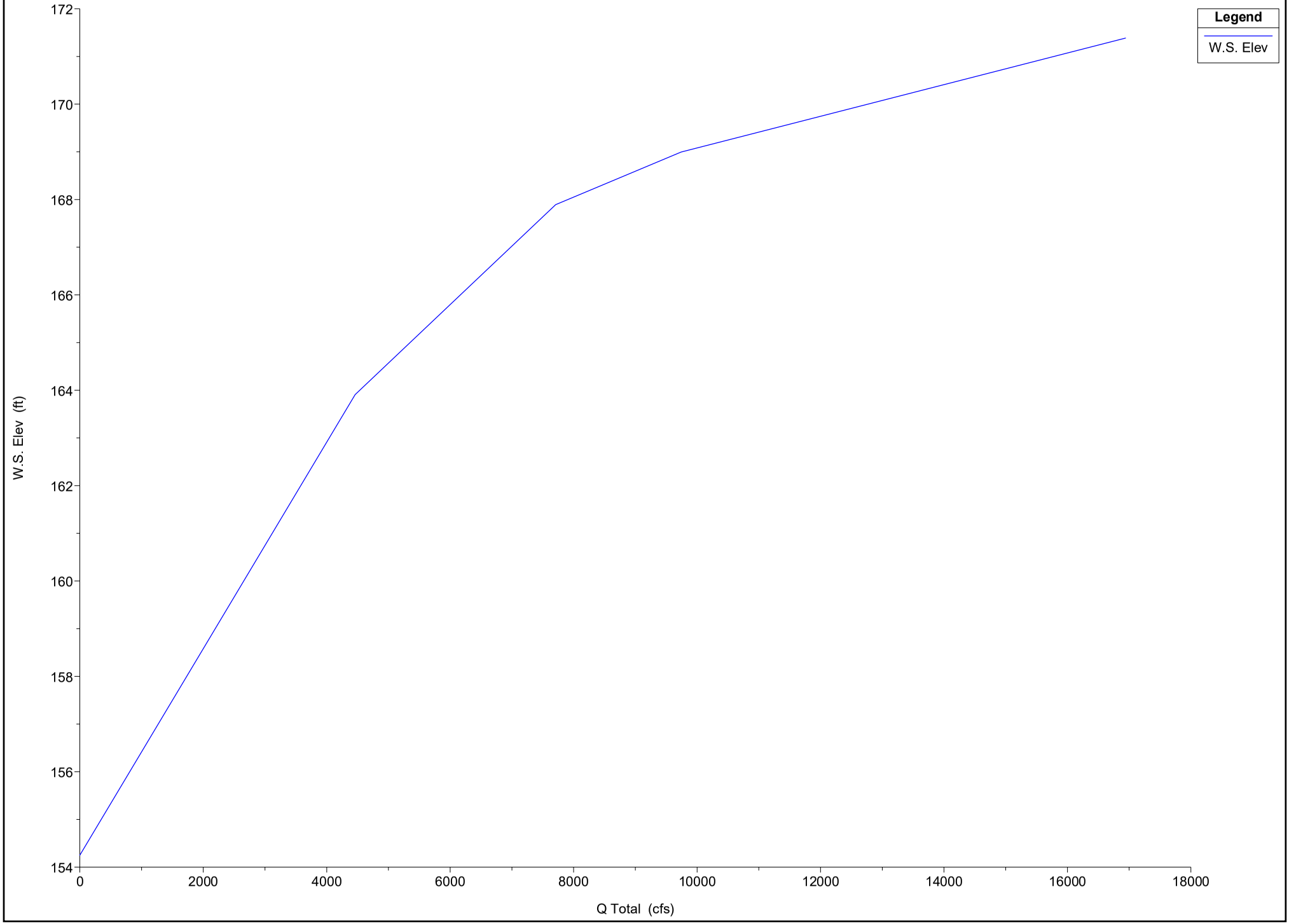
Sandy_Creek Plan: Corrected-Effective 11/16/2023

River = Sandy Run Reach = Sandy Main Stem RS = 5039.878



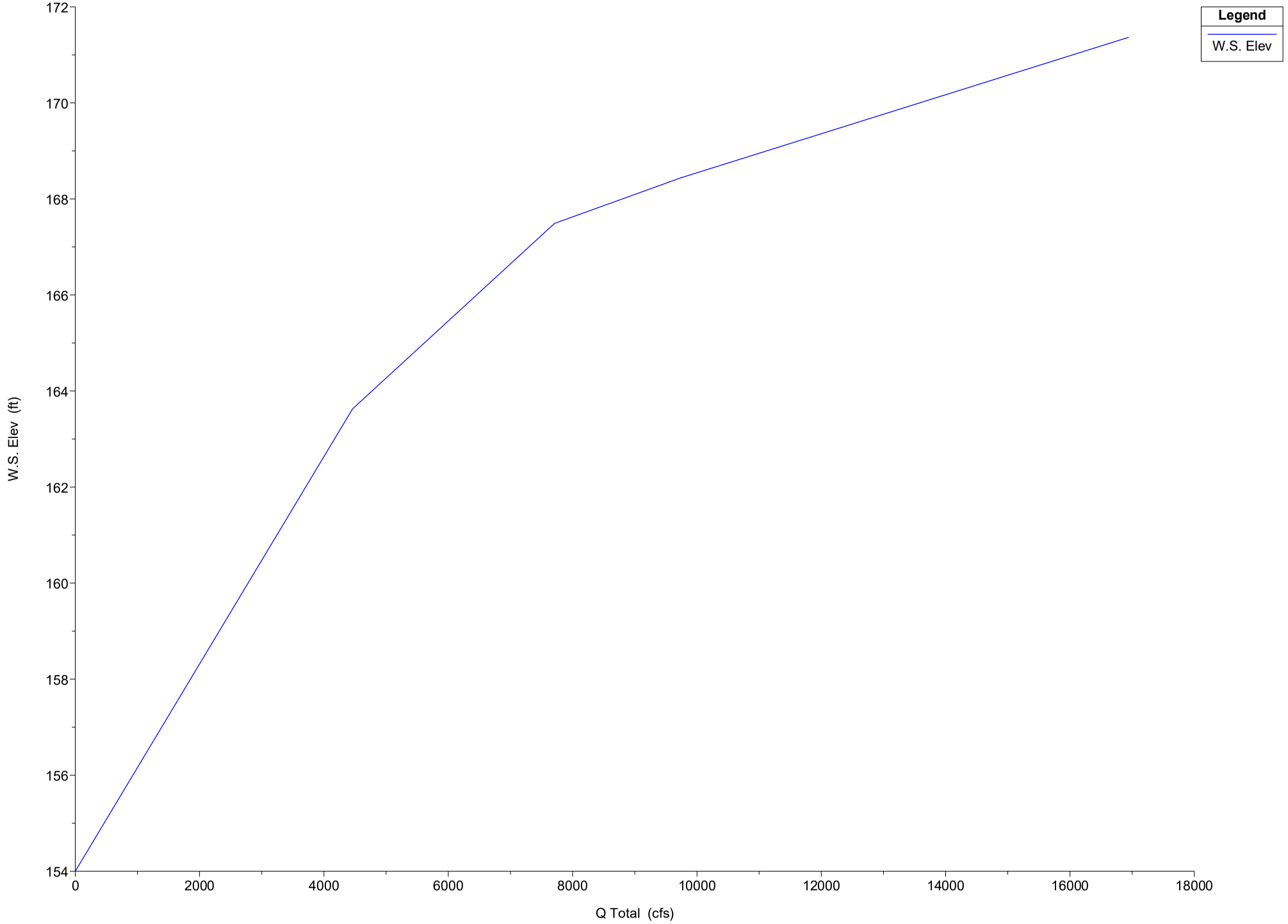
Sandy_Creek Plan: Corrected-Effective 11/16/2023

River = Sandy Run Reach = Sandy Main Stem RS = 4865.578



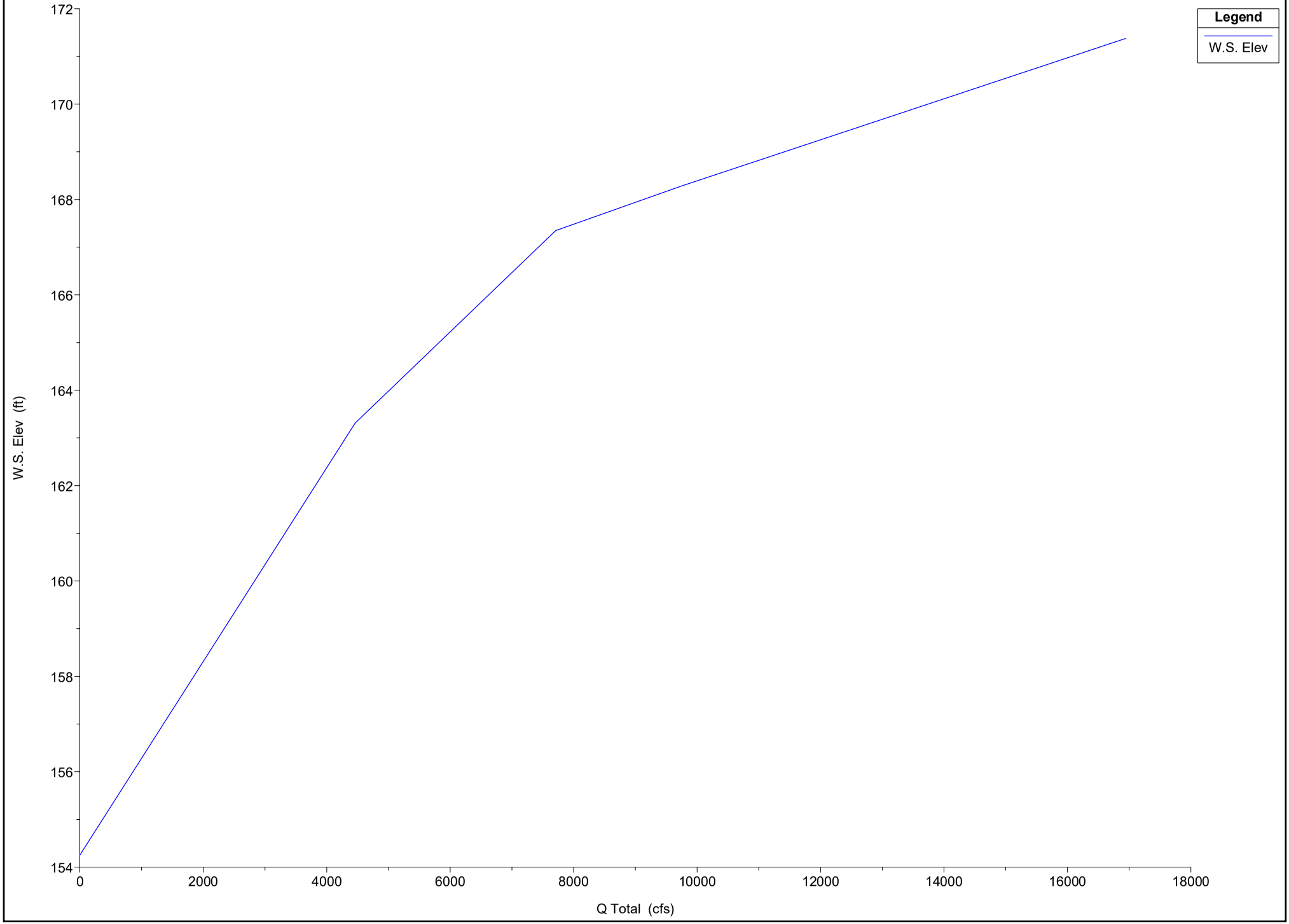
Sandy_Creek Plan: Corrected-Effective 11/16/2023

River = Sandy Run Reach = Sandy Main Stem RS = 4790.088



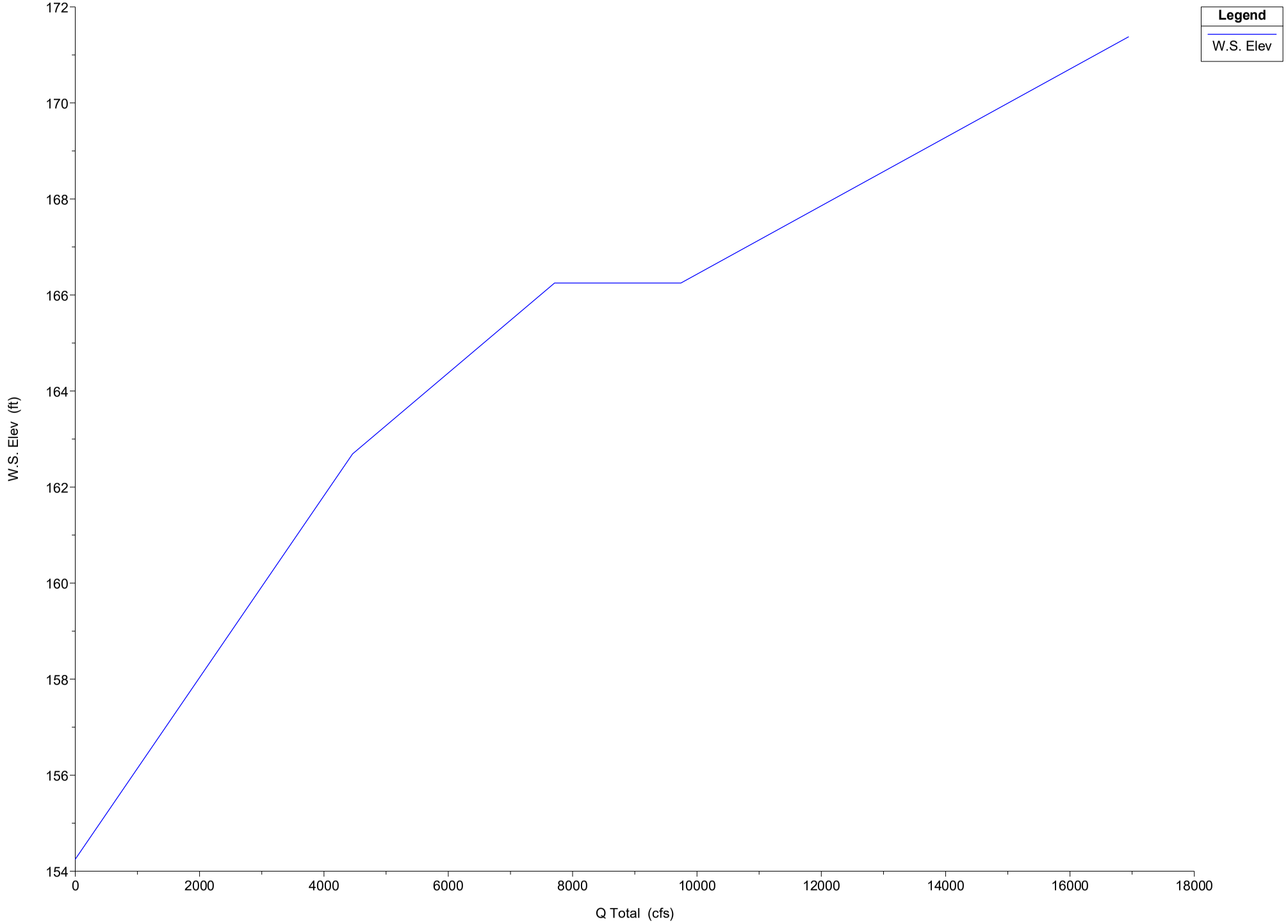
Sandy_Creek Plan: Corrected-Effective 11/16/2023

River = Sandy Run Reach = Sandy Main Stem RS = 4777.088



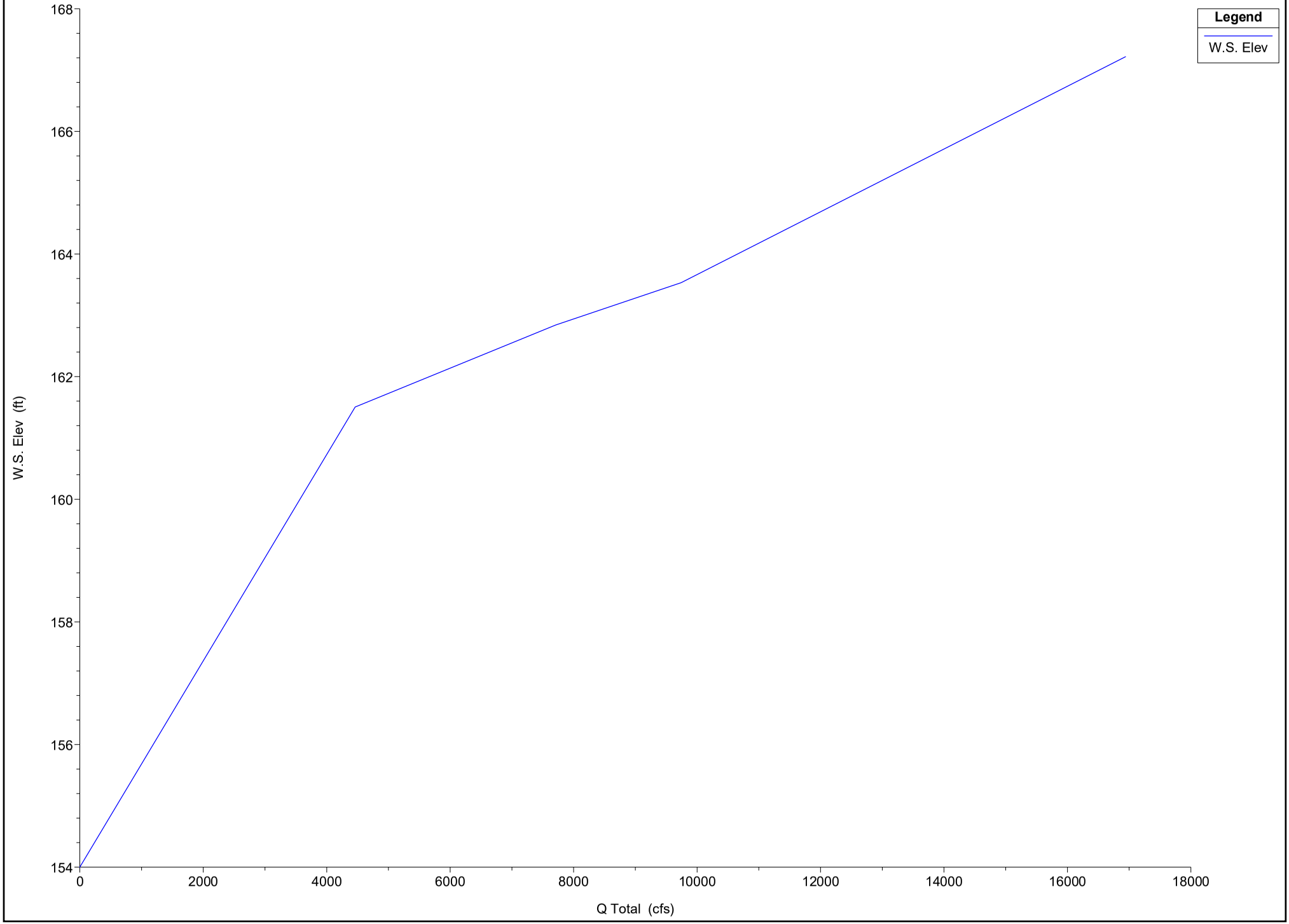
Sandy_Creek Plan: Corrected-Effective 11/16/2023

River = Sandy Run Reach = Sandy Main Stem RS = 4740 BR



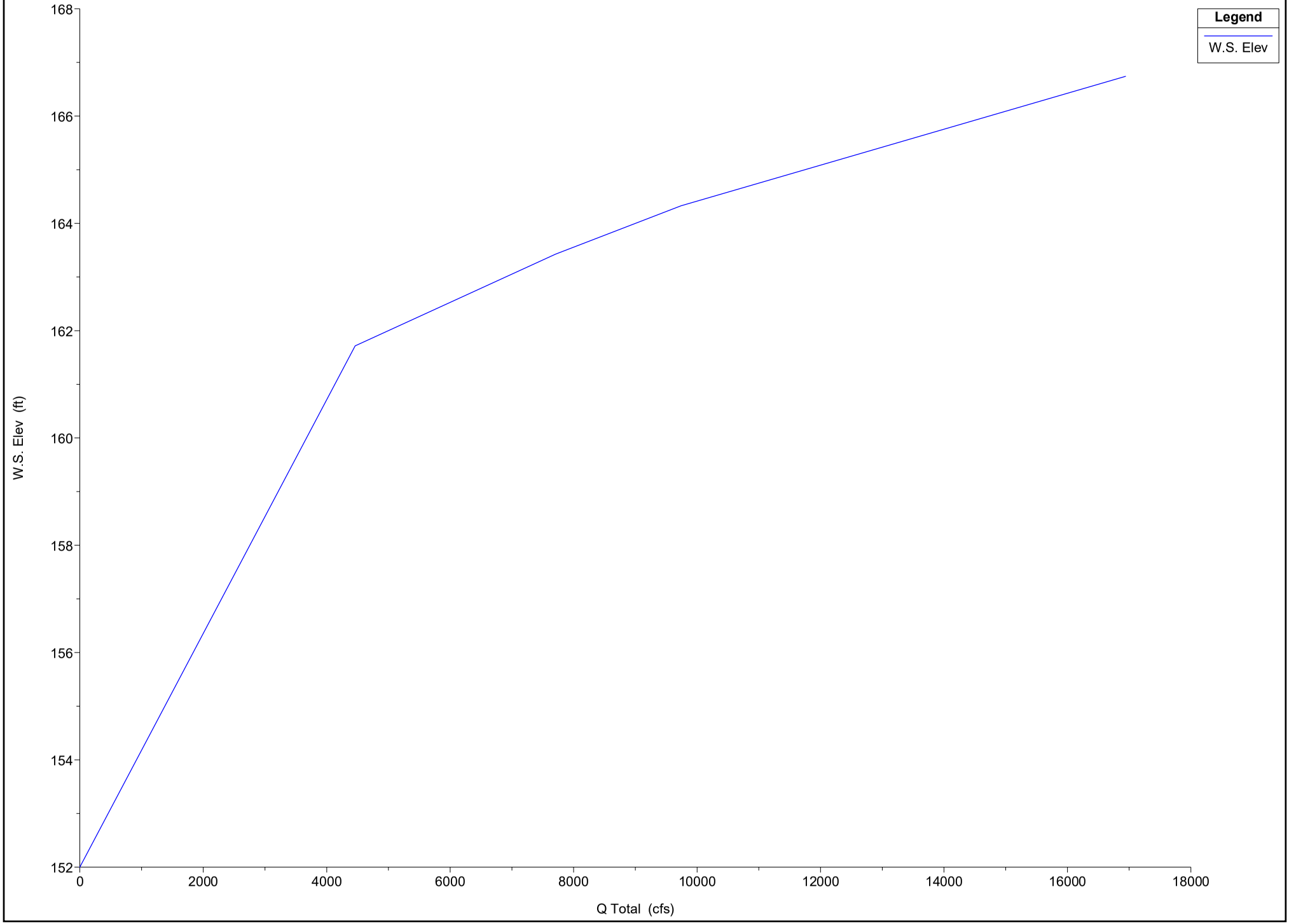
Sandy_Creek Plan: Corrected-Effective 11/16/2023

River = Sandy Run Reach = Sandy Main Stem RS = 4685.592



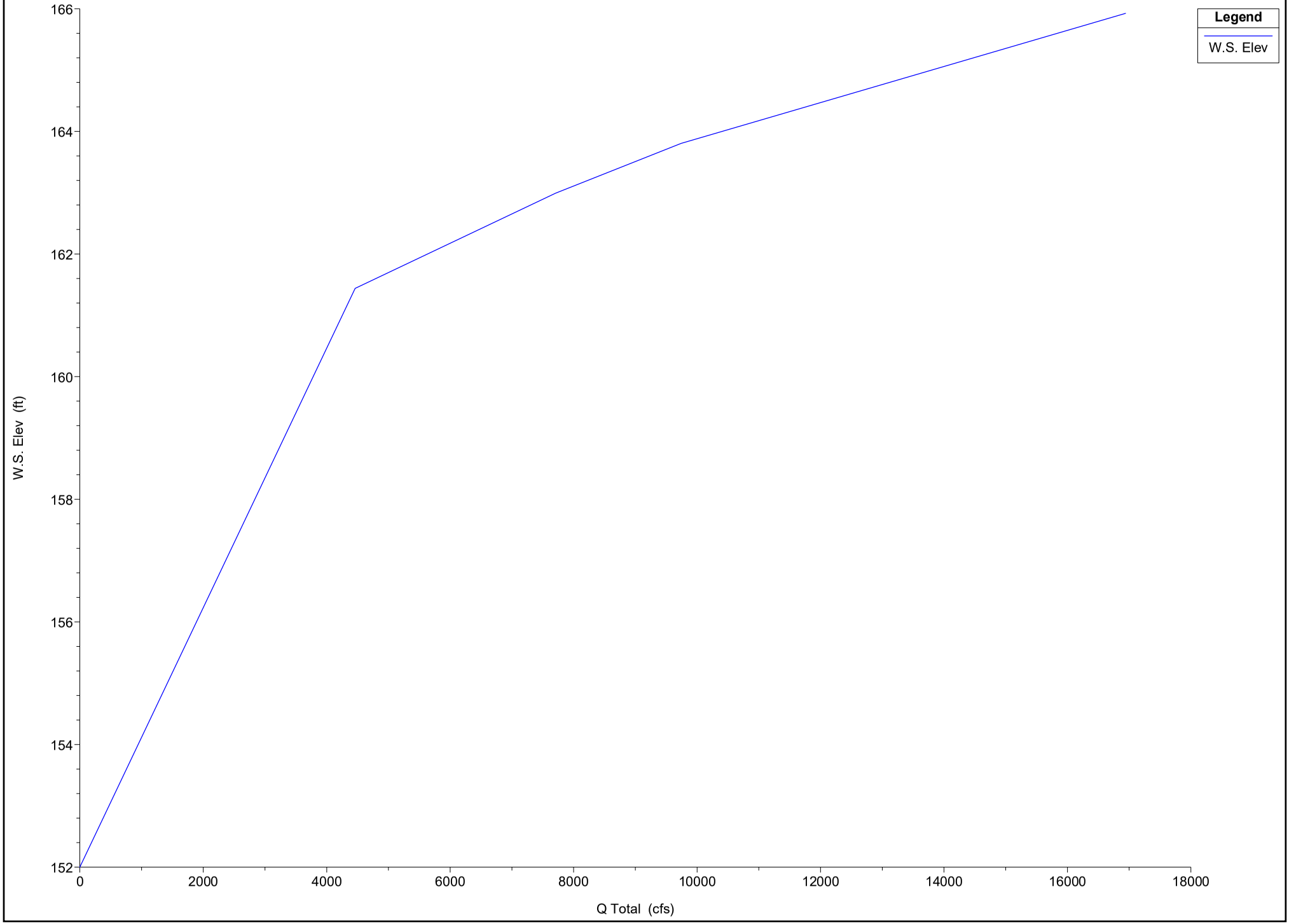
Sandy_Creek Plan: Corrected-Effective 11/16/2023

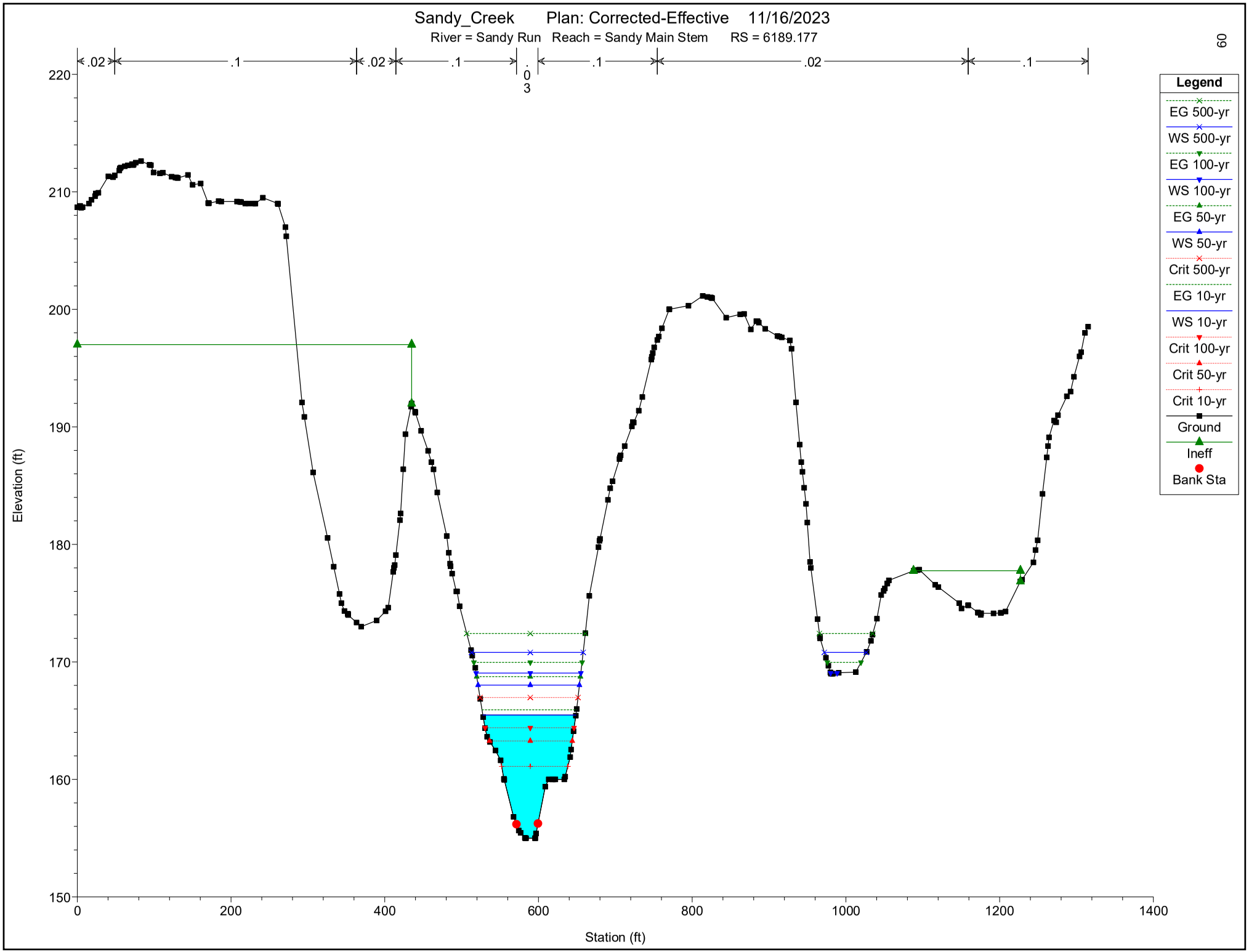
River = Sandy Run Reach = Sandy Main Stem RS = 4327.181



Sandy_Creek Plan: Corrected-Effective 11/16/2023

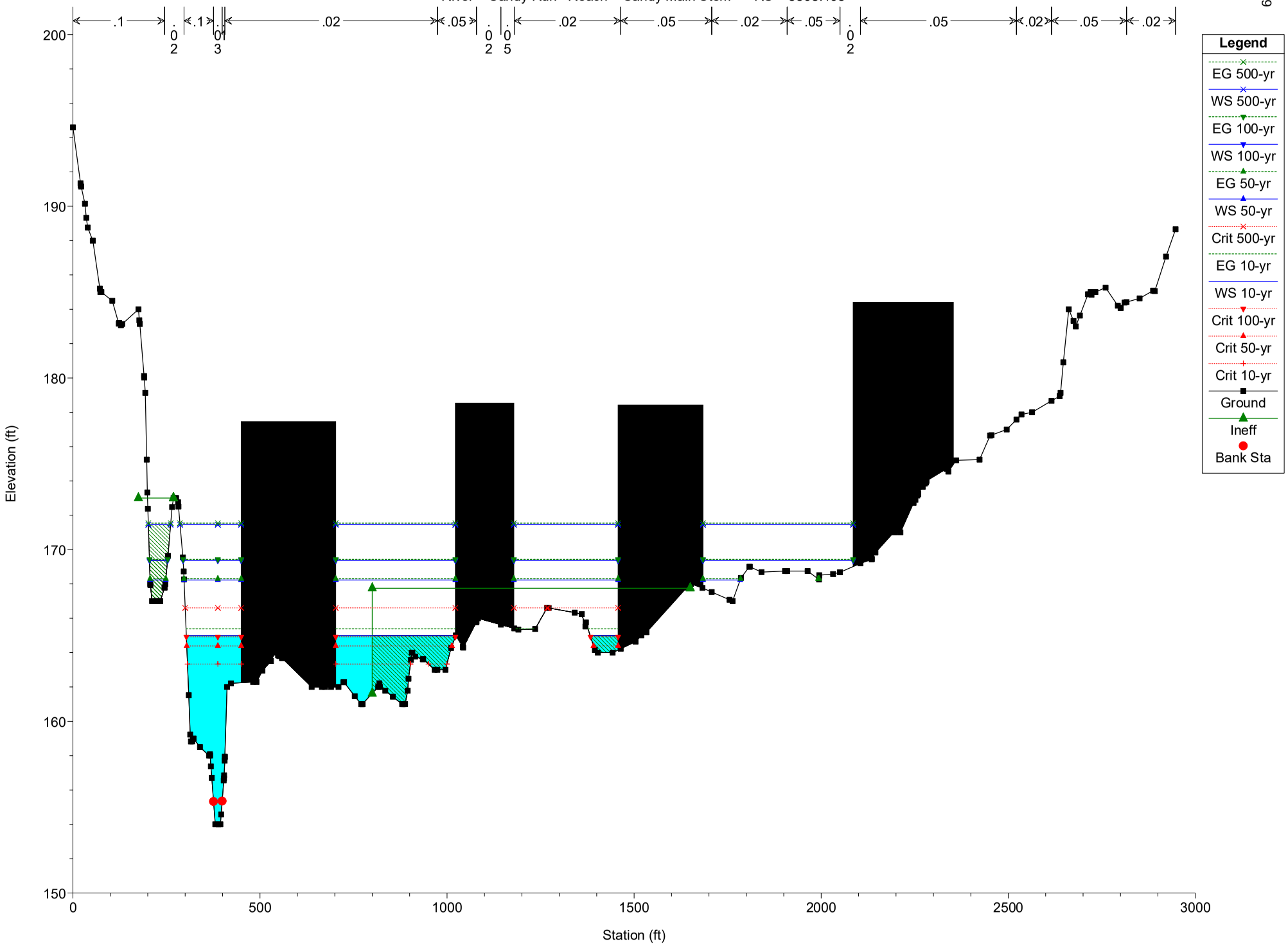
River = Sandy Run Reach = Sandy Main Stem RS = 3964.325

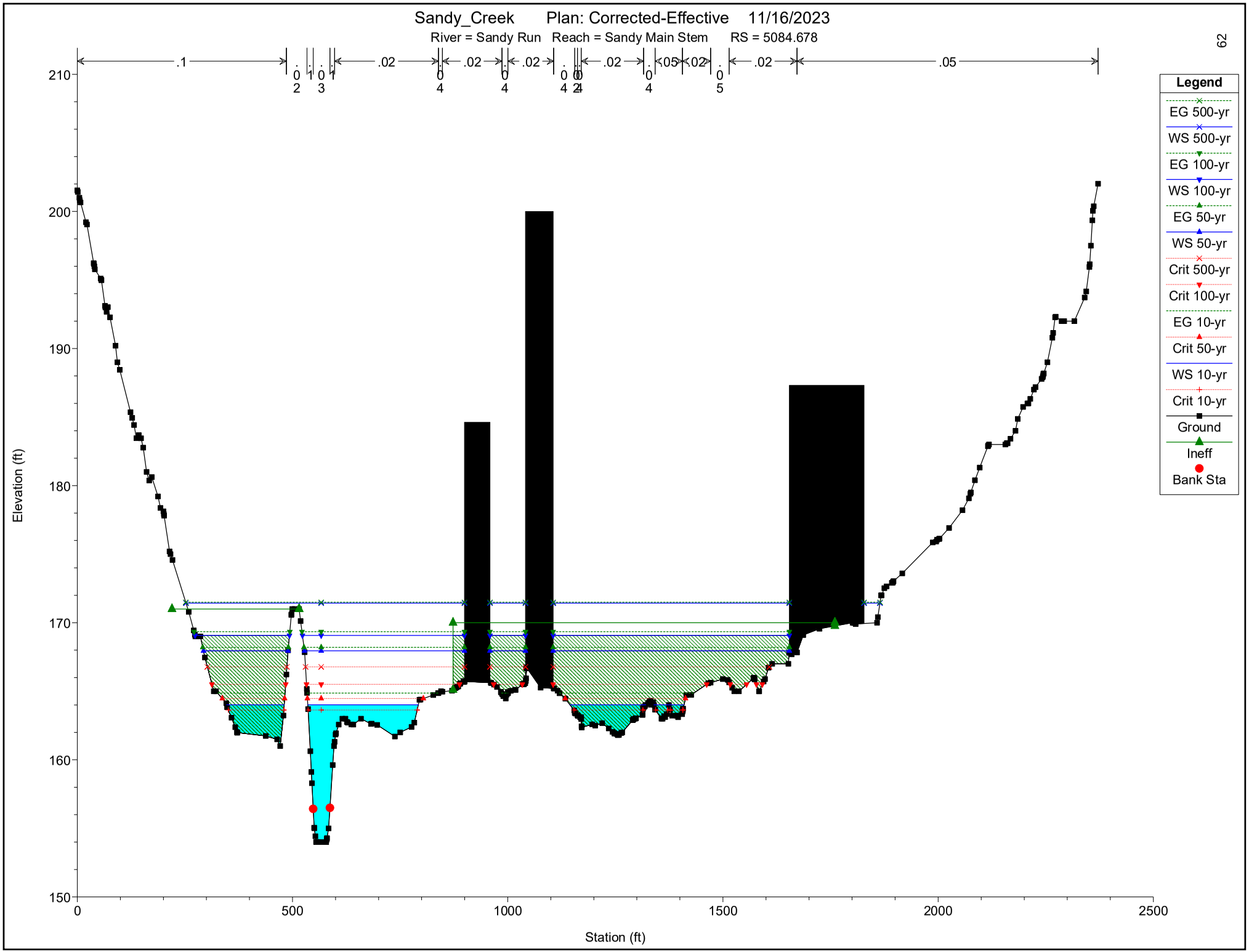


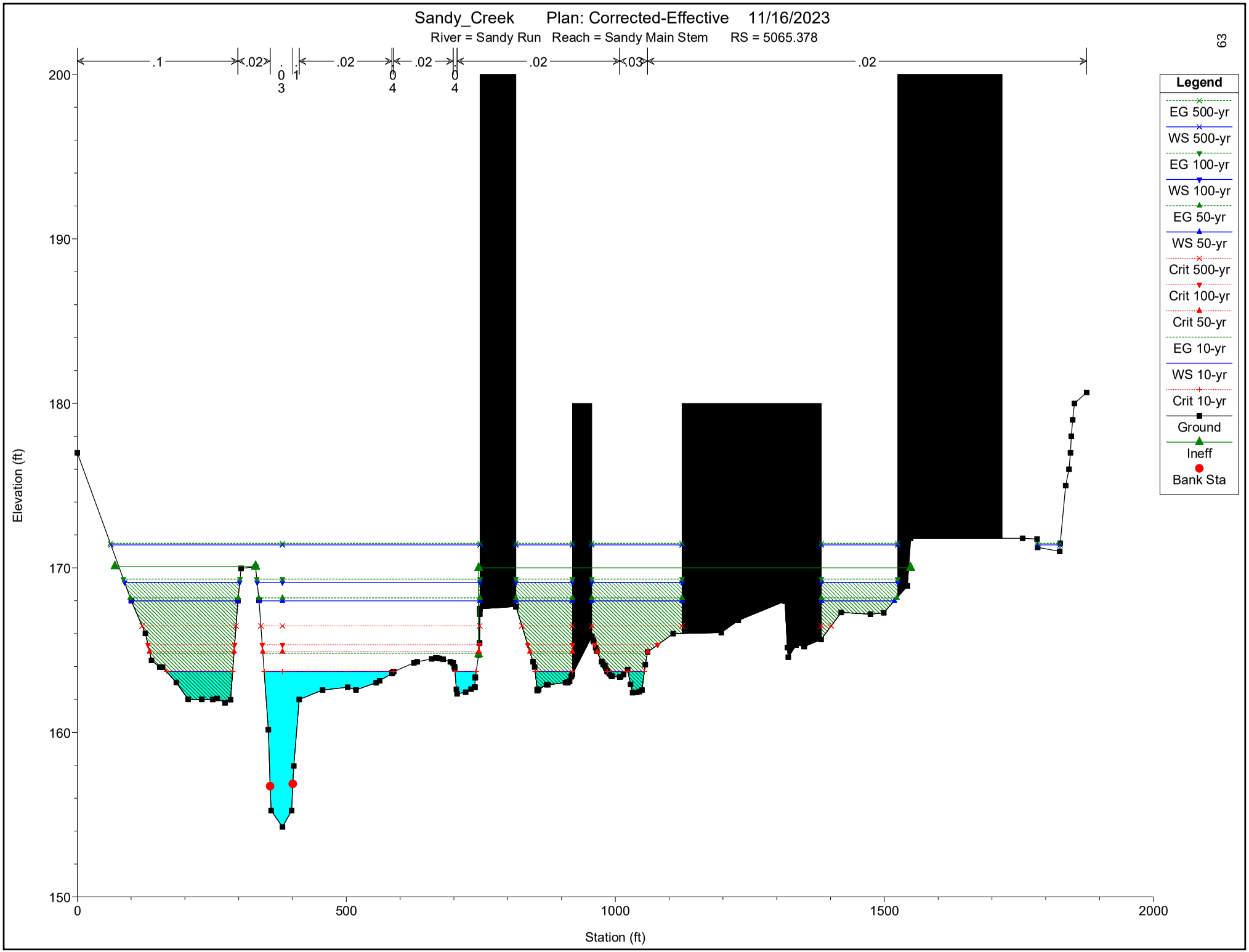

Sandy_Creek Plan: Corrected-Effective 11/16/2023
River = Sandy Run Reach = Sandy Main Stem RS = 6189.177
.02
.1
.02
.1
.03
.1
.02
.1
Legend
EG 500-yr
WS 500-yr
EG 100-yr
WS 100-yr
EG 50-yr
WS 50-yr
Crit 500-yr
EG 10-yr
WS 10-yr
Crit 100-yr
Crit 50-yr
Crit 10-yr
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)
220
210
200
190
180
170
160
150
0
200
400
600
800
1000
1200
1400

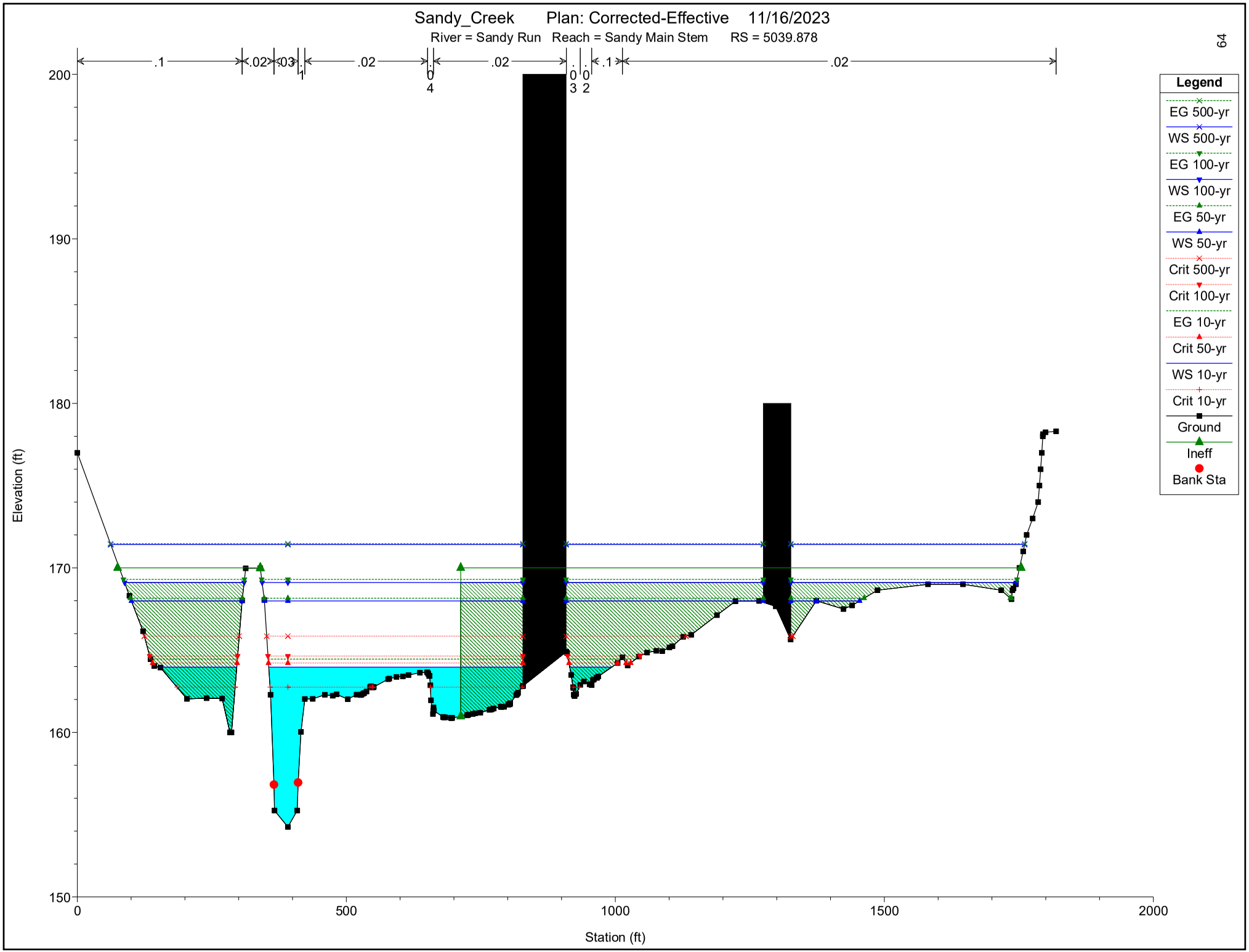
Sandy_Creek Plan: Corrected-Effective 11/16/2023

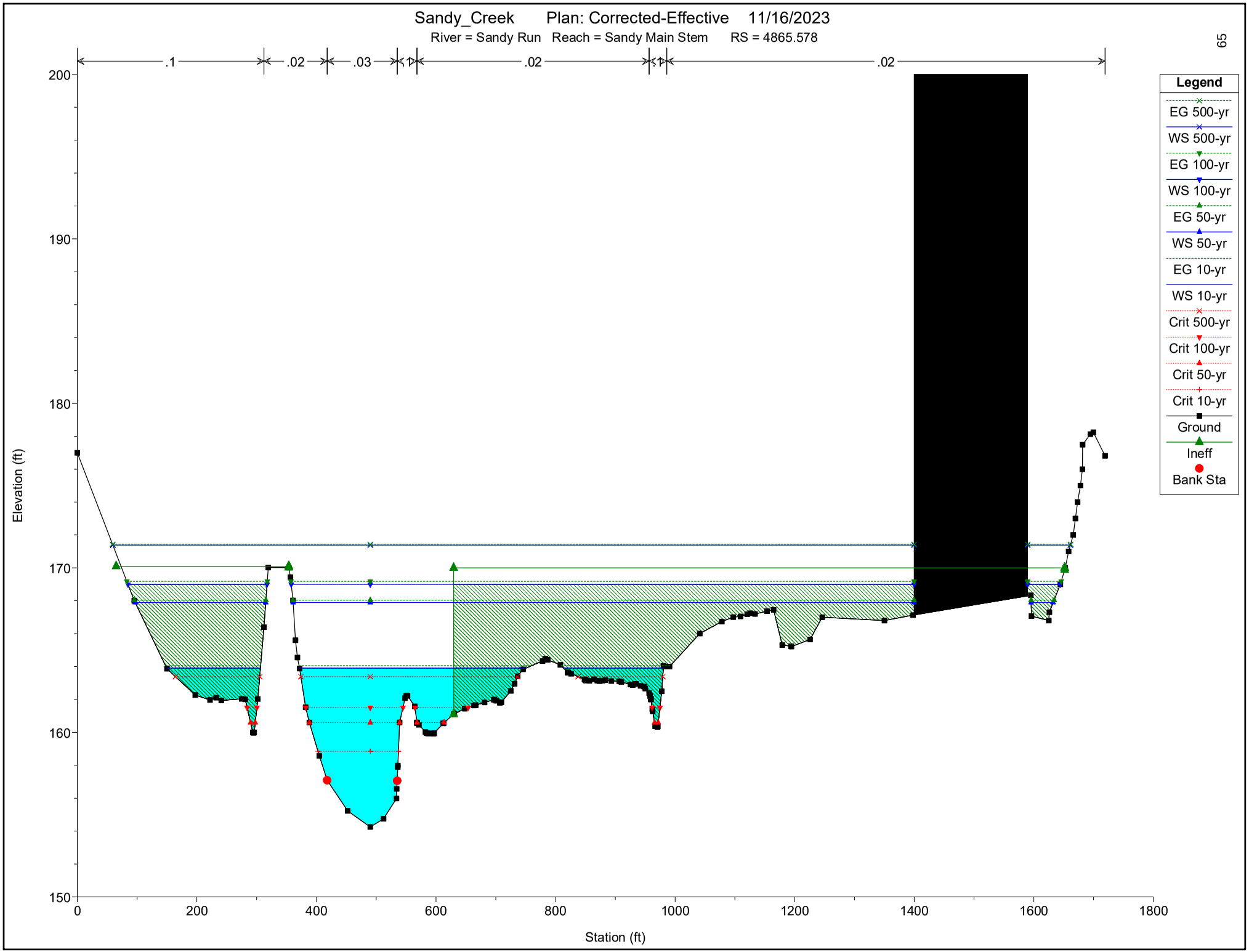
River = Sandy Run Reach = Sandy Main Stem RS = 5508.105

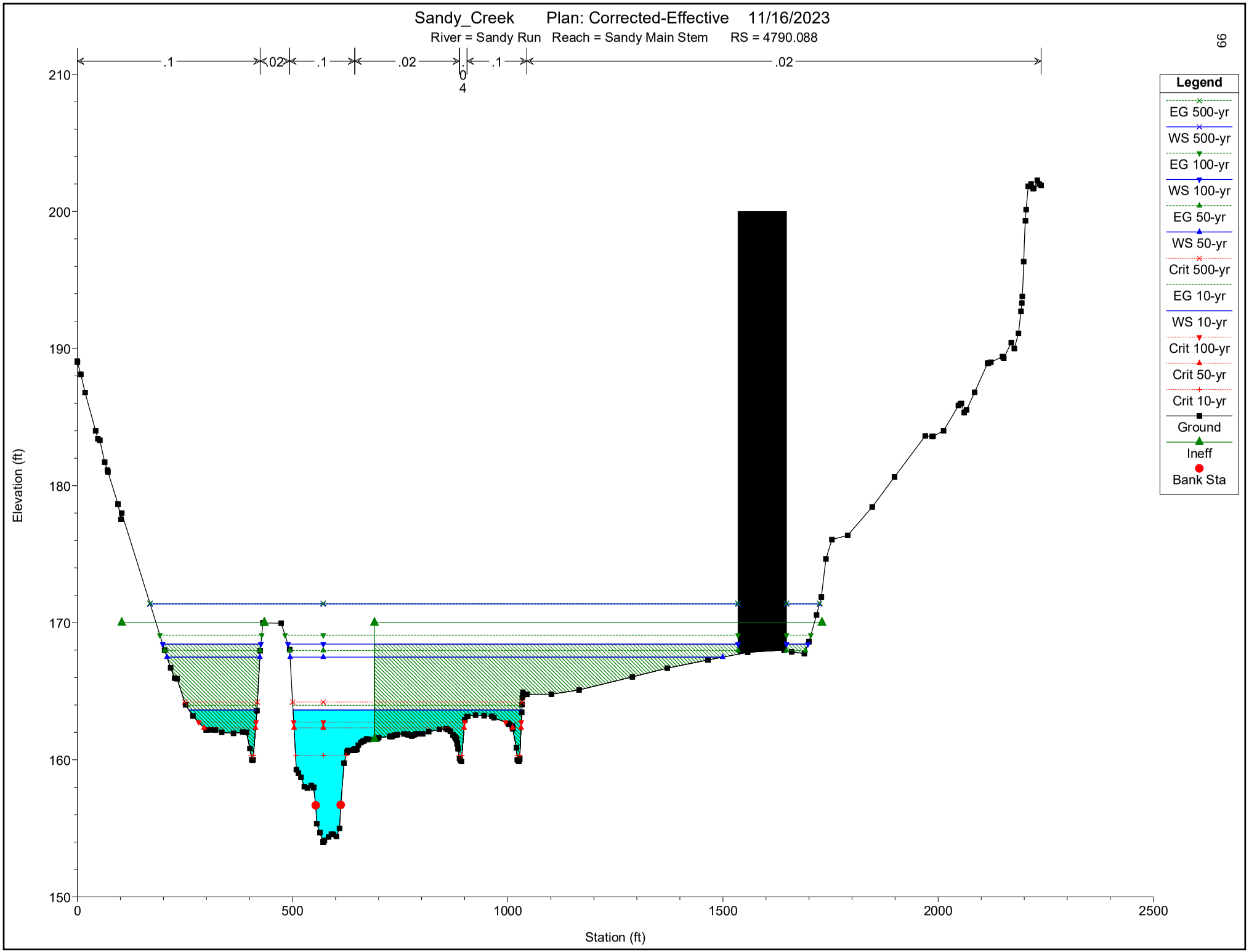



Sandy_Creek Plan: Corrected-Effective 11/16/2023
River = Sandy Run Reach = Sandy Main Stem RS = 5084.678
62
Legend
EG 500-yr
WS 500-yr
EG 100-yr
WS 100-yr
EG 50-yr
WS 50-yr
Crit 500-yr
Crit 100-yr
EG 10-yr
Crit 50-yr
WS 10-yr
Crit 10-yr
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)
210
200
190
180
170
160
150
0
500
1000
1500
2000
2500


Sandy_Creek Plan: Corrected-Effective 11/16/2023
River = Sandy Run Reach = Sandy Main Stem RS = 5065.378
63
.1
.02
.03
.02
.04
.02
.04
.02
.03
.02
Legend
EG 500-yr
WS 500-yr
EG 100-yr
WS 100-yr
EG 50-yr
WS 50-yr
Crit 500-yr
Crit 100-yr
Crit 50-yr
EG 10-yr
WS 10-yr
Crit 10-yr
Ground
Ineff
Bank Sta
Elevation (ft)
200
190
180
170
160
150
0
500
1000
1500
2000
Station (ft)

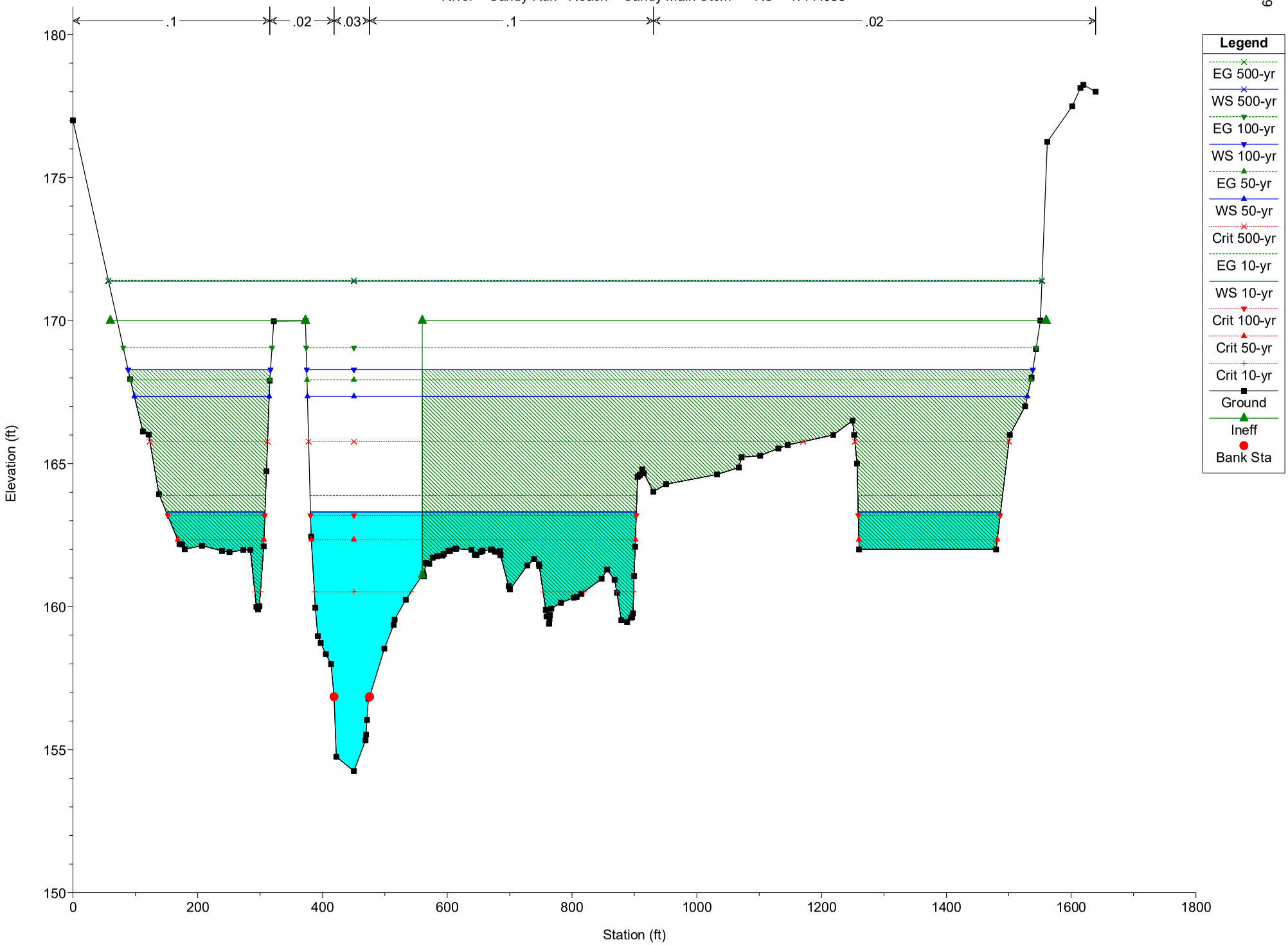

Sandy_Creek Plan: Corrected-Effective 11/16/2023
River = Sandy Run Reach = Sandy Main Stem RS = 5039.878
64
.1
.02
.03
.02
.02
.1
.02
Legend
EG 500-yr
WS 500-yr
EG 100-yr
WS 100-yr
EG 50-yr
WS 50-yr
Crit 500-yr
Crit 100-yr
EG 10-yr
Crit 50-yr
WS 10-yr
Crit 10-yr
Ground
Ineff
Bank Sta
Elevation (ft)
200
190
180
170
160
150
0
500
1000
1500
2000
Station (ft)


Sandy_Creek Plan: Corrected-Effective 11/16/2023
River = Sandy Run Reach = Sandy Main Stem RS = 4865.578
65
.1
.02
.03
.02
.02
Legend
EG 500-yr
WS 500-yr
EG 100-yr
WS 100-yr
EG 50-yr
WS 50-yr
EG 10-yr
WS 10-yr
Crit 500-yr
Crit 100-yr
Crit 50-yr
Crit 10-yr
Ground
Ineff
Bank Sta
Elevation (ft)
200
190
180
170
160
150
0
200
400
600
800
1000
1200
1400
1600
1800
Station (ft)


Sandy_Creek Plan: Corrected-Effective 11/16/2023
River = Sandy Run Reach = Sandy Main Stem RS = 4790.088
.1
.02
.1
.02
.1
.02
Legend
EG 500-yr
WS 500-yr
EG 100-yr
WS 100-yr
EG 50-yr
WS 50-yr
Crit 500-yr
EG 10-yr
WS 10-yr
Crit 100-yr
Crit 50-yr
Crit 10-yr
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)
210
200
190
180
170
160
150
0
500
1000
1500
2000
2500

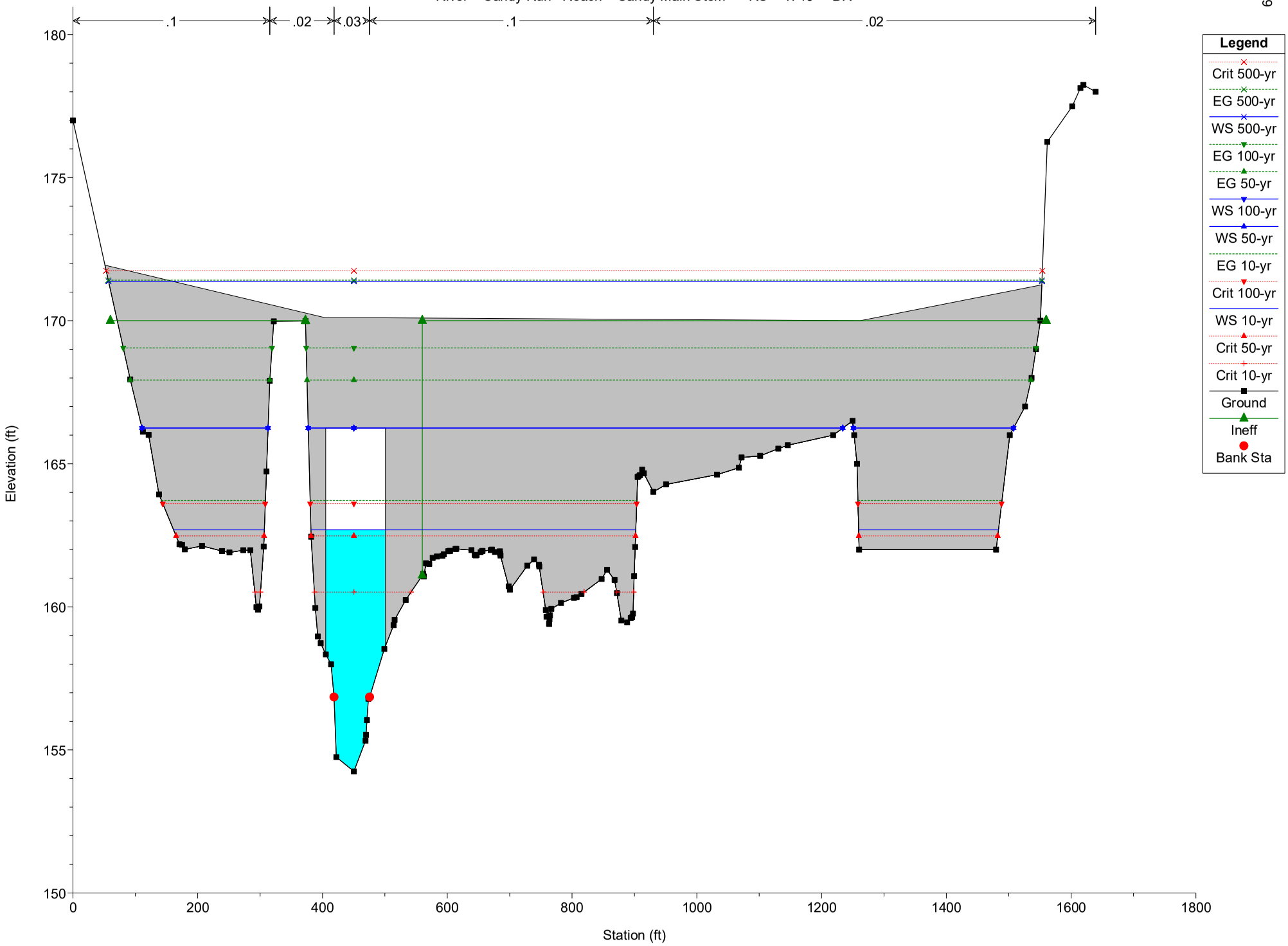
Sandy_Creek Plan: Corrected-Effective 11/16/2023

River = Sandy Run Reach = Sandy Main Stem RS = 4777.088



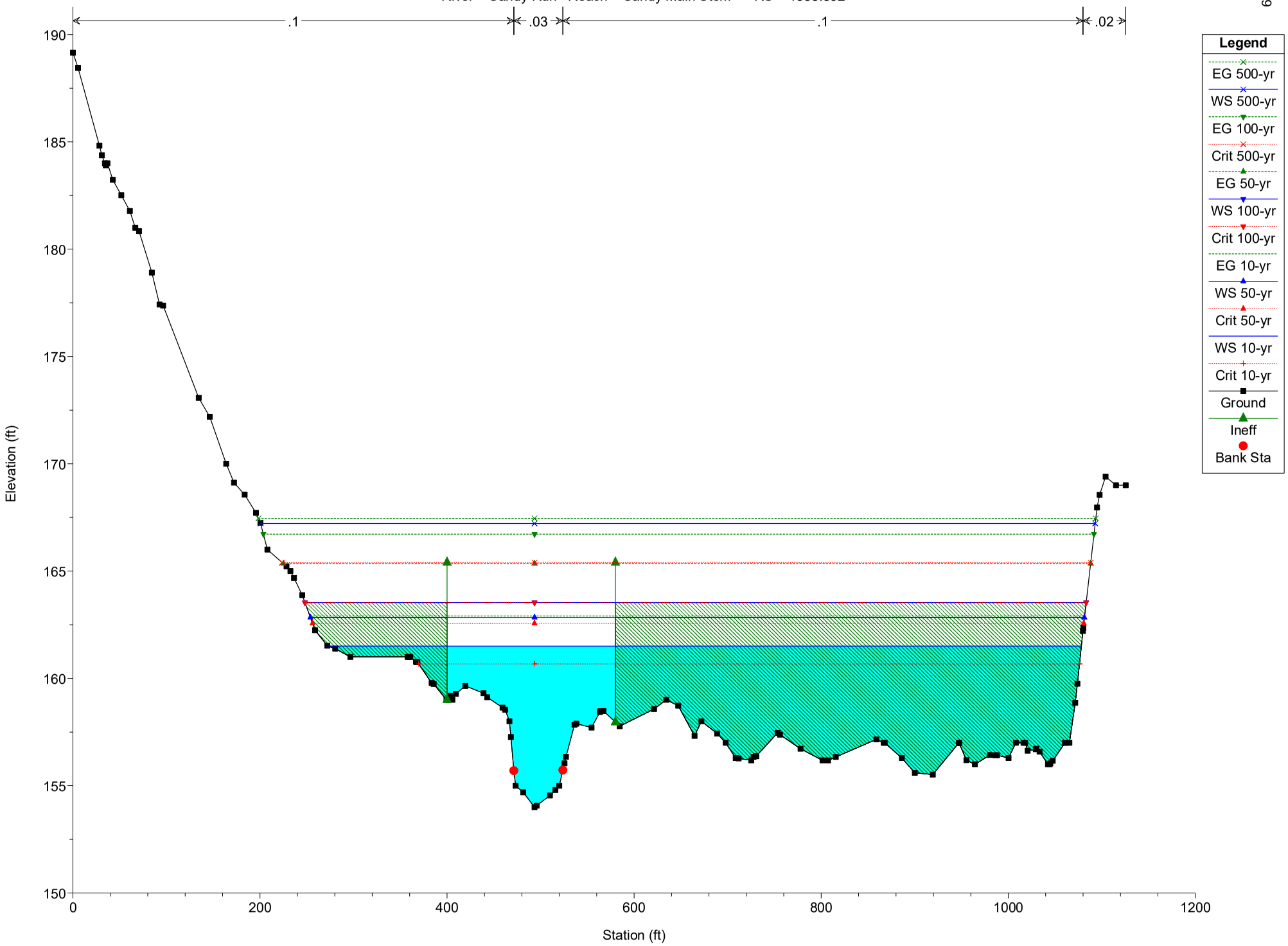
Sandy_Creek Plan: Corrected-Effective 11/16/2023

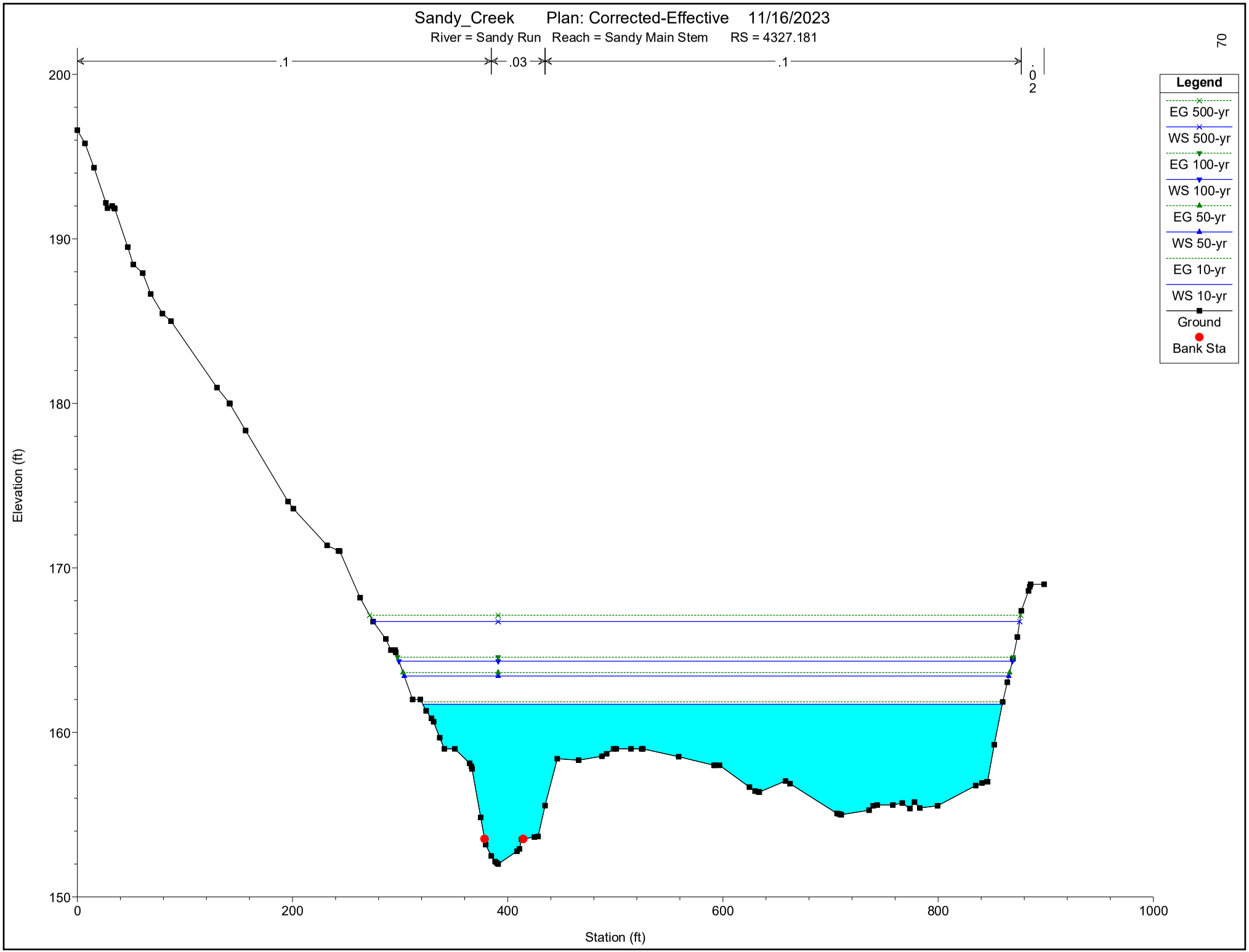
River = Sandy Run Reach = Sandy Main Stem RS = 4740 BR

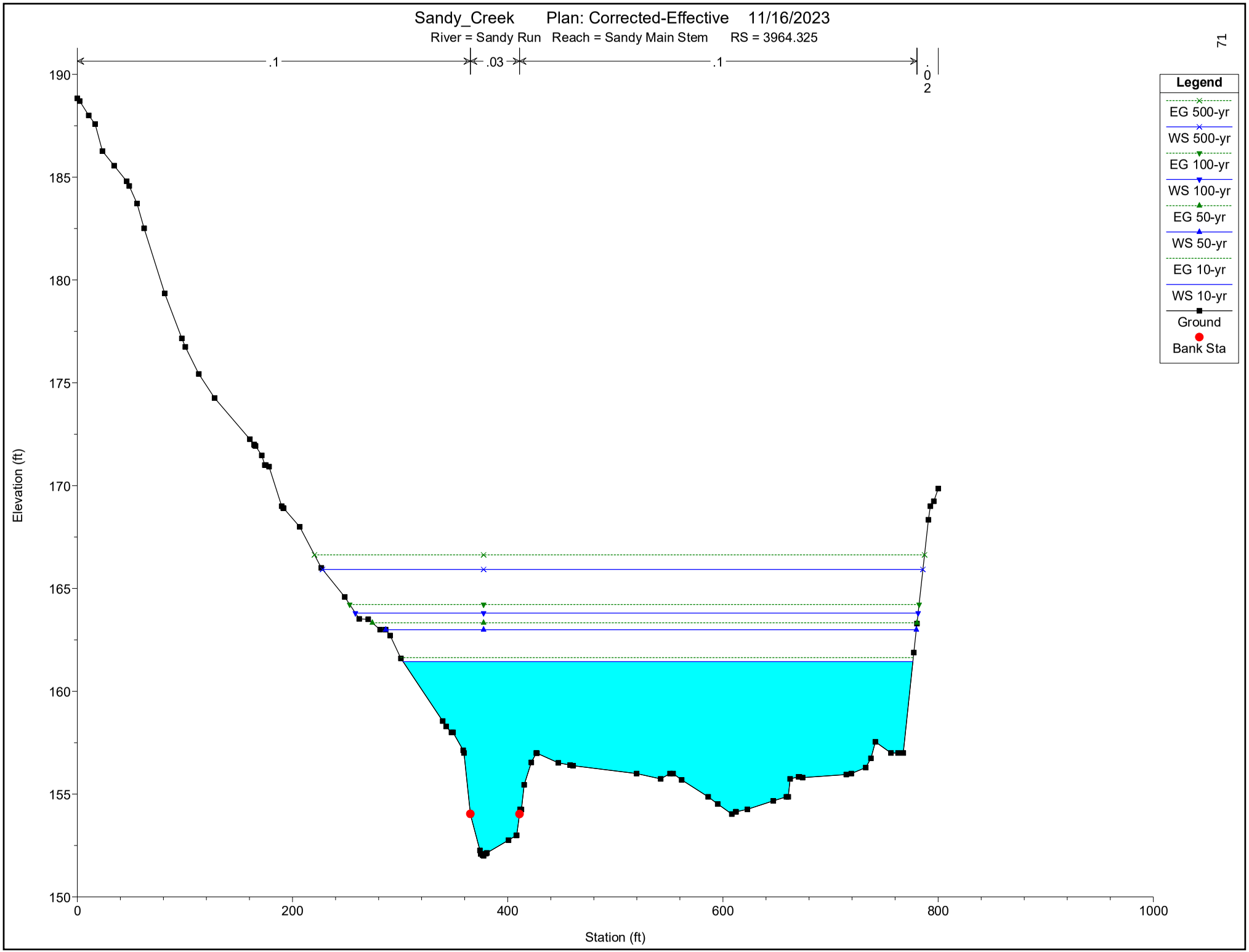


Sandy_Creek Plan: Corrected-Effective 11/16/2023

River = Sandy Run Reach = Sandy Main Stem RS = 4685.592




Sandy_Creek Plan: Corrected-Effective 11/16/2023
River = Sandy Run Reach = Sandy Main Stem RS = 4327.181
.1
.03
.1
.02
Legend
EG 500-yr
WS 500-yr
EG 100-yr
WS 100-yr
EG 50-yr
WS 50-yr
EG 10-yr
WS 10-yr
Ground
Bank Sta
Elevation (ft)
Station (ft)
200
190
180
170
160
150
0
200
400
600
800
1000


Sandy_Creek Plan: Corrected-Effective 11/16/2023
River = Sandy Run Reach = Sandy Main Stem RS = 3964.325
.1
.03
.1
.02
71
Legend
EG 500-yr
WS 500-yr
EG 100-yr
WS 100-yr
EG 50-yr
WS 50-yr
EG 10-yr
WS 10-yr
Ground
Bank Sta
Elevation (ft)
190
185
180
175
170
165
160
155
150
0
200
400
600
800
1000
Station (ft)

Plan: Corr-Eff Sandy Run Sandy Main Stem RS: 6189.177 Profile: 100-yr

E.G. Elev (ft)	169.96	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.91	Wt. n-Val.	0.100	0.030	0.100
W.S. Elev (ft)	169.05	Reach Len. (ft)	633.10	668.48	716.54
Crit W.S. (ft)	164.39	Flow Area (sq ft)	368.97	386.21	445.38
E.G. Slope (ft/ft)	0.001025	Area (sq ft)	368.97	386.21	445.38
Q Total (cfs)	4945.00	Flow (cfs)	629.05	3494.46	821.49
Top Width (ft)	144.74	Top Width (ft)	52.51	28.04	64.20
Vel Total (ft/s)	4.12	Avg. Vel. (ft/s)	1.70	9.05	1.84
Max Chl Dpth (ft)	14.05	Hydr. Depth (ft)	7.03	13.77	6.94
Conv. Total (cfs)	154464.6	Conv. (cfs)	19649.5	109154.8	25660.4
Length Wtd. (ft)	695.47	Wetted Per. (ft)	54.38	28.33	66.72
Min Ch El (ft)	155.00	Shear (lb/sq ft)	0.43	0.87	0.43
Alpha	3.47	Stream Power (lb/ft s)	0.74	7.89	0.79
Frctn Loss (ft)	0.11	Cum Volume (acre-ft)	154.75	73.83	396.33
C & E Loss (ft)	0.42	Cum SA (acres)	35.35	6.31	84.10

Plan: Corr-Eff Sandy Run Sandy Main Stem RS: 5508.105 Profile: 100-yr

E.G. Elev (ft)	169.43	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.07	Wt. n-Val.	0.100	0.030	0.022
W.S. Elev (ft)	169.37	Reach Len. (ft)	438.29	442.90	447.79
Crit W.S. (ft)	164.93	Flow Area (sq ft)	786.94	347.19	4146.72
E.G. Slope (ft/ft)	0.000089	Area (sq ft)	879.23	347.19	4146.72
Q Total (cfs)	9741.00	Flow (cfs)	499.97	982.74	8258.29
Top Width (ft)	1203.63	Top Width (ft)	129.68	22.99	1050.96
Vel Total (ft/s)	1.84	Avg. Vel. (ft/s)	0.64	2.83	1.99
Max Chl Dpth (ft)	15.37	Hydr. Depth (ft)	9.68	15.10	3.95
Conv. Total (cfs)	1029905.0	Conv. (cfs)	52861.4	103904.3	873139.1
Length Wtd. (ft)	446.53	Wetted Per. (ft)	84.35	23.38	1083.44
Min Ch El (ft)	154.00	Shear (lb/sq ft)	0.05	0.08	0.02
Alpha	1.23	Stream Power (lb/ft s)	0.03	0.23	0.04
Frctn Loss (ft)	0.07	Cum Volume (acre-ft)	145.68	68.21	358.56
C & E Loss (ft)	0.02	Cum SA (acres)	34.02	5.92	74.93

Plan: Corr-Eff Sandy Run Sandy Main Stem RS: 5084.678 Profile: 100-yr

E.G. Elev (ft)	169.35	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.27	Wt. n-Val.	0.082	0.030	0.022
W.S. Elev (ft)	169.07	Reach Len. (ft)	19.30	19.30	19.30
Crit W.S. (ft)	165.51	Flow Area (sq ft)	137.35	570.17	1739.07
E.G. Slope (ft/ft)	0.000284	Area (sq ft)	1310.48	570.17	4765.42
Q Total (cfs)	9741.00	Flow (cfs)	141.65	2809.53	6789.82
Top Width (ft)	1227.01	Top Width (ft)	244.48	38.79	943.74
Vel Total (ft/s)	3.98	Avg. Vel. (ft/s)	1.03	4.93	3.90
Max Chl Dpth (ft)	15.07	Hydr. Depth (ft)	5.47	14.70	6.08
Conv. Total (cfs)	578310.7	Conv. (cfs)	8409.6	166798.2	403102.9
Length Wtd. (ft)	19.30	Wetted Per. (ft)	28.30	39.72	287.40
Min Ch El (ft)	154.00	Shear (lb/sq ft)	0.09	0.25	0.11
Alpha	1.11	Stream Power (lb/ft s)	0.09	1.25	0.42
Frctn Loss (ft)	0.00	Cum Volume (acre-ft)	134.66	63.54	312.75
C & E Loss (ft)	0.02	Cum SA (acres)	32.14	5.61	64.68

Plan: Corr-Eff Sandy Run Sandy Main Stem RS: 5065.378 Profile: 100-yr

E.G. Elev (ft)	169.32	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.19	Wt. n-Val.	0.020	0.030	0.021
W.S. Elev (ft)	169.12	Reach Len. (ft)	76.22	76.22	76.22
Crit W.S. (ft)	165.33	Flow Area (sq ft)	125.10	598.71	2074.04
E.G. Slope (ft/ft)	0.000208	Area (sq ft)	1245.12	598.71	3709.41
Q Total (cfs)	9741.00	Flow (cfs)	368.05	2472.34	6900.62
Top Width (ft)	1043.15	Top Width (ft)	238.17	42.00	762.98
Vel Total (ft/s)	3.48	Avg. Vel. (ft/s)	2.94	4.13	3.33
Max Chl Dpth (ft)	14.87	Hydr. Depth (ft)	5.16	14.25	6.00
Conv. Total (cfs)	674758.4	Conv. (cfs)	25494.6	171258.5	478005.3
Length Wtd. (ft)	76.22	Wetted Per. (ft)	27.54	43.14	347.31

Plan: Corr-Eff Sandy Run Sandy Main Stem RS: 5065.378 Profile: 100-yr (Continued)

Min Ch El (ft)	154.25	Shear (lb/sq ft)	0.06	0.18	0.08
Alpha	1.03	Stream Power (lb/ft s)	0.17	0.75	0.26
Frctn Loss (ft)	0.01	Cum Volume (acre-ft)	134.09	63.28	310.88
C & E Loss (ft)	0.00	Cum SA (acres)	32.03	5.59	64.30

Plan: Corr-Eff Sandy Run Sandy Main Stem RS: 5039.878 Profile: 100-yr

E.G. Elev (ft)	169.30	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.19	Wt. n-Val.	0.020	0.030	0.021
W.S. Elev (ft)	169.11	Reach Len. (ft)	593.05	673.82	717.62
Crit W.S. (ft)	164.64	Flow Area (sq ft)	107.98	642.80	2052.78
E.G. Slope (ft/ft)	0.000185	Area (sq ft)	1313.80	642.80	4601.72
Q Total (cfs)	9741.00	Flow (cfs)	285.85	2492.03	6963.13
Top Width (ft)	1492.99	Top Width (ft)	244.17	45.00	1203.82
Vel Total (ft/s)	3.47	Avg. Vel. (ft/s)	2.65	3.88	3.39
Max Chl Dpth (ft)	14.86	Hydr. Depth (ft)	4.91	14.28	6.80
Conv. Total (cfs)	715215.8	Conv. (cfs)	20987.7	182972.8	511255.3
Length Wtd. (ft)	686.62	Wetted Per. (ft)	25.52	46.66	304.14
Min Ch El (ft)	154.25	Shear (lb/sq ft)	0.05	0.16	0.08
Alpha	1.02	Stream Power (lb/ft s)	0.13	0.62	0.27
Frctn Loss (ft)	0.12	Cum Volume (acre-ft)	131.86	62.20	303.60
C & E Loss (ft)	0.00	Cum SA (acres)	31.61	5.51	62.58

Plan: Corr-Eff Sandy Run Sandy Main Stem RS: 4865.578 Profile: 100-yr

E.G. Elev (ft)	169.18	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.19	Wt. n-Val.	0.020	0.030	0.026
W.S. Elev (ft)	169.00	Reach Len. (ft)	54.72	88.70	126.71
Crit W.S. (ft)	161.51	Flow Area (sq ft)	457.96	1611.27	782.71
E.G. Slope (ft/ft)	0.000162	Area (sq ft)	1718.61	1611.27	4111.07
Q Total (cfs)	9741.00	Flow (cfs)	1644.40	5807.06	2289.54
Top Width (ft)	1328.99	Top Width (ft)	292.75	117.19	919.04
Vel Total (ft/s)	3.42	Avg. Vel. (ft/s)	3.59	3.60	2.93
Max Chl Dpth (ft)	14.75	Hydr. Depth (ft)	7.60	13.75	8.30
Conv. Total (cfs)	766045.9	Conv. (cfs)	129317.6	456675.7	180052.5
Length Wtd. (ft)	97.36	Wetted Per. (ft)	61.81	117.71	96.01
Min Ch El (ft)	154.25	Shear (lb/sq ft)	0.07	0.14	0.08
Alpha	1.02	Stream Power (lb/ft s)	0.27	0.50	0.24
Frctn Loss (ft)	0.04	Cum Volume (acre-ft)	111.21	44.76	231.84
C & E Loss (ft)	0.05	Cum SA (acres)	27.96	4.26	45.09

Plan: Corr-Eff Sandy Run Sandy Main Stem RS: 4790.088 Profile: 100-yr

E.G. Elev (ft)	169.10	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.65	Wt. n-Val.	0.100	0.100	0.033
W.S. Elev (ft)	168.44	Reach Len. (ft)	13.00	13.00	13.00
Crit W.S. (ft)	162.75	Flow Area (sq ft)	534.24	803.39	600.15
E.G. Slope (ft/ft)	0.002207	Area (sq ft)	1708.70	803.39	3983.43
Q Total (cfs)	9741.00	Flow (cfs)	1546.51	3194.85	4999.64
Top Width (ft)	1323.90	Top Width (ft)	292.78	58.20	972.92
Vel Total (ft/s)	5.03	Avg. Vel. (ft/s)	2.89	3.98	8.33
Max Chl Dpth (ft)	14.44	Hydr. Depth (ft)	8.27	13.80	7.68
Conv. Total (cfs)	207329.7	Conv. (cfs)	32916.2	67999.9	106413.6
Length Wtd. (ft)	13.00	Wetted Per. (ft)	67.16	59.09	78.86
Min Ch El (ft)	154.00	Shear (lb/sq ft)	1.10	1.87	1.05
Alpha	1.67	Stream Power (lb/ft s)	3.17	7.45	8.74
Frctn Loss (ft)	0.02	Cum Volume (acre-ft)	109.06	42.31	220.06
C & E Loss (ft)	0.03	Cum SA (acres)	27.59	4.08	42.34

Plan: Corr-Eff Sandy Run Sandy Main Stem RS: 4777.088 Profile: 100-yr

E.G. Elev (ft)	169.05	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.77	Wt. n-Val.	0.020	0.030	0.100
W.S. Elev (ft)	168.28	Reach Len. (ft)	15.00	15.00	15.00
Crit W.S. (ft)	163.19	Flow Area (sq ft)	364.13	763.88	755.04
E.G. Slope (ft/ft)	0.000708	Area (sq ft)	1541.54	763.88	5881.60

Plan: Corr-Eff Sandy Run Sandy Main Stem RS: 4777.088 Profile: 100-yr (Continued)

Q Total (cfs)	9741.00	Flow (cfs)	2832.46	5624.53	1284.01
Top Width (ft)	1392.17	Top Width (ft)	272.08	57.00	1063.09
Vel Total (ft/s)	5.17	Avg. Vel. (ft/s)	7.78	7.36	1.70
Max Chl Dpth (ft)	14.03	Hydr. Depth (ft)	8.31	13.40	8.94
Conv. Total (cfs)	366150.2	Conv. (cfs)	106467.9	211418.0	48264.2
Length Wtd. (ft)	15.00	Wetted Per. (ft)	46.64	57.83	84.62
Min Ch El (ft)	154.25	Shear (lb/sq ft)	0.34	0.58	0.39
Alpha	1.84	Stream Power (lb/ft s)	2.68	4.30	0.67
Frctn Loss (ft)		Cum Volume (acre-ft)	108.58	42.07	218.59
C & E Loss (ft)		Cum SA (acres)	27.50	4.06	42.04

Plan: Corr-Eff Sandy Run Sandy Main Stem RS: 4740 BR U Profile: 100-yr

E.G. Elev (ft)	169.05	Element	Left OB	Channel	Right OB
Vel Head (ft)	2.13	Wt. n-Val.	0.020	0.030	0.100
W.S. Elev (ft)	166.25	Reach Len. (ft)	40.00	40.00	40.00
Crit W.S. (ft)	163.61	Flow Area (sq ft)	111.79	648.09	216.63
E.G. Slope (ft/ft)	0.005836	Area (sq ft)	111.79	648.09	216.63
Q Total (cfs)	9741.00	Flow (cfs)	1380.27	7773.36	587.37
Top Width (ft)		Top Width (ft)			
Vel Total (ft/s)	9.98	Avg. Vel. (ft/s)	12.35	11.99	2.71
Max Chl Dpth (ft)	12.00	Hydr. Depth (ft)	111002.70		
Conv. Total (cfs)	127512.1	Conv. (cfs)	18068.1	101755.1	7688.8
Length Wtd. (ft)	40.00	Wetted Per. (ft)	34.84	114.83	58.68
Min Ch El (ft)	154.25	Shear (lb/sq ft)	1.17	2.06	1.35
Alpha	1.38	Stream Power (lb/ft s)	14.43	24.66	3.65
Frctn Loss (ft)		Cum Volume (acre-ft)	108.29	41.83	217.54
C & E Loss (ft)		Cum SA (acres)	27.46	4.05	41.86

Plan: Corr-Eff Sandy Run Sandy Main Stem RS: 4740 BR D Profile: 100-yr

E.G. Elev (ft)	168.51	Element	Left OB	Channel	Right OB
Vel Head (ft)	4.30	Wt. n-Val.	0.100	0.030	0.100
W.S. Elev (ft)	164.21	Reach Len. (ft)	36.50	36.50	36.50
Crit W.S. (ft)	164.21	Flow Area (sq ft)	153.86	504.36	121.66
E.G. Slope (ft/ft)	0.006114	Area (sq ft)	153.86	504.36	121.66
Q Total (cfs)	9741.00	Flow (cfs)	509.90	8807.04	424.06
Top Width (ft)	95.90	Top Width (ft)	26.33	52.44	17.13
Vel Total (ft/s)	12.49	Avg. Vel. (ft/s)	3.31	17.46	3.49
Max Chl Dpth (ft)	10.21	Hydr. Depth (ft)	5.84	9.62	7.10
Conv. Total (cfs)	124580.5	Conv. (cfs)	6521.3	112635.8	5423.4
Length Wtd. (ft)	36.50	Wetted Per. (ft)	31.94	52.68	23.41
Min Ch El (ft)	154.00	Shear (lb/sq ft)	1.84	3.65	1.98
Alpha	1.77	Stream Power (lb/ft s)	6.09	63.81	6.91
Frctn Loss (ft)		Cum Volume (acre-ft)	108.17	41.30	217.39
C & E Loss (ft)		Cum SA (acres)	27.45	4.03	41.85

Plan: Corr-Eff Sandy Run Sandy Main Stem RS: 4685.592 Profile: 100-yr

E.G. Elev (ft)	166.72	Element	Left OB	Channel	Right OB
Vel Head (ft)	3.19	Wt. n-Val.	0.100	0.030	0.100
W.S. Elev (ft)	163.53	Reach Len. (ft)	393.59	358.41	320.67
Crit W.S. (ft)	163.53	Flow Area (sq ft)	324.57	469.04	323.60
E.G. Slope (ft/ft)	0.005758	Area (sq ft)	708.82	469.04	3610.15
Q Total (cfs)	9741.00	Flow (cfs)	998.19	7572.79	1170.02
Top Width (ft)	835.28	Top Width (ft)	223.41	52.44	559.43
Vel Total (ft/s)	8.72	Avg. Vel. (ft/s)	3.08	16.15	3.62
Max Chl Dpth (ft)	9.53	Hydr. Depth (ft)	4.54	8.94	5.77
Conv. Total (cfs)	128372.6	Conv. (cfs)	13154.7	99798.6	15419.2
Length Wtd. (ft)	346.18	Wetted Per. (ft)	72.05	52.68	56.35
Min Ch El (ft)	154.00	Shear (lb/sq ft)	1.62	3.20	2.06
Alpha	2.70	Stream Power (lb/ft s)	4.98	51.67	7.46
Frctn Loss (ft)	0.63	Cum Volume (acre-ft)	107.81	40.89	215.82
C & E Loss (ft)	1.47	Cum SA (acres)	27.34	3.99	41.61

Plan: Corr-Eff Sandy Run Sandy Main Stem RS: 4327.181 Profile: 100-yr

E.G. Elev (ft)	164.57	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.24	Wt. n-Val.	0.100	0.034	0.084
W.S. Elev (ft)	164.33	Reach Len. (ft)	379.56	362.86	348.11
Crit W.S. (ft)		Flow Area (sq ft)	360.79	422.56	3294.49
E.G. Slope (ft/ft)	0.000880	Area (sq ft)	360.79	422.56	3294.49
Q Total (cfs)	9741.00	Flow (cfs)	431.37	2833.56	6476.07
Top Width (ft)	570.03	Top Width (ft)	79.56	35.94	454.53
Vel Total (ft/s)	2.39	Avg. Vel. (ft/s)	1.20	6.71	1.97
Max Chl Dpth (ft)	12.33	Hydr. Depth (ft)	4.53	11.76	7.25
Conv. Total (cfs)	328280.8	Conv. (cfs)	14537.5	95493.7	218249.6
Length Wtd. (ft)	354.53	Wetted Per. (ft)	80.80	36.17	456.48
Min Ch El (ft)	152.00	Shear (lb/sq ft)	0.25	0.64	0.40
Alpha	2.75	Stream Power (lb/ft s)	0.29	4.31	0.78
Frctn Loss (ft)	0.33	Cum Volume (acre-ft)	102.98	37.22	190.41
C & E Loss (ft)	0.02	Cum SA (acres)	25.97	3.62	37.87

Plan: Corr-Eff Sandy Run Sandy Main Stem RS: 3964.325 Profile: 100-yr

E.G. Elev (ft)	164.22	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.42	Wt. n-Val.	0.100	0.030	0.100
W.S. Elev (ft)	163.80	Reach Len. (ft)	460.88	448.94	432.66
Crit W.S. (ft)		Flow Area (sq ft)	345.62	508.58	2906.66
E.G. Slope (ft/ft)	0.001012	Area (sq ft)	345.62	508.58	2906.66
Q Total (cfs)	9741.00	Flow (cfs)	354.97	3973.20	5412.83
Top Width (ft)	523.01	Top Width (ft)	106.92	45.65	370.43
Vel Total (ft/s)	2.59	Avg. Vel. (ft/s)	1.03	7.81	1.86
Max Chl Dpth (ft)	11.80	Hydr. Depth (ft)	3.23	11.14	7.85
Conv. Total (cfs)	306231.1	Conv. (cfs)	11159.2	124906.9	170165.0
Length Wtd. (ft)	441.11	Wetted Per. (ft)	107.90	46.06	372.81
Min Ch El (ft)	152.00	Shear (lb/sq ft)	0.20	0.70	0.49
Alpha	4.00	Stream Power (lb/ft s)	0.21	5.45	0.92
Frctn Loss (ft)	0.34	Cum Volume (acre-ft)	99.90	33.35	165.63
C & E Loss (ft)	0.05	Cum SA (acres)	25.16	3.28	34.58

Plan: Corr-Eff Sandy Run Sandy Main Stem RS: 6189.177 Profile: 500-yr

E.G. Elev (ft)	172.42	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.61	Wt. n-Val.	0.100	0.030	0.087
W.S. Elev (ft)	170.81	Reach Len. (ft)	633.10	668.48	716.54
Crit W.S. (ft)	166.97	Flow Area (sq ft)	466.14	435.46	620.99
E.G. Slope (ft/ft)	0.001636	Area (sq ft)	466.14	435.46	620.99
Q Total (cfs)	8165.00	Flow (cfs)	1092.06	5392.48	1680.46
Top Width (ft)	199.91	Top Width (ft)	58.43	28.04	113.44
Vel Total (ft/s)	5.36	Avg. Vel. (ft/s)	2.34	12.38	2.71
Max Chl Dpth (ft)	15.81	Hydr. Depth (ft)	7.98	15.53	5.47
Conv. Total (cfs)	201877.0	Conv. (cfs)	27000.9	133327.3	41548.9
Length Wtd. (ft)	697.79	Wetted Per. (ft)	60.56	28.33	116.73
Min Ch El (ft)	155.00	Shear (lb/sq ft)	0.79	1.57	0.54
Alpha	3.60	Stream Power (lb/ft s)	1.84	19.44	1.47
Frctn Loss (ft)	0.12	Cum Volume (acre-ft)	221.33	86.67	572.68
C & E Loss (ft)	0.76	Cum SA (acres)	41.22	6.35	89.71

Plan: Corr-Eff Sandy Run Sandy Main Stem RS: 5508.105 Profile: 500-yr

E.G. Elev (ft)	171.54	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.09	Wt. n-Val.	0.099	0.030	0.022
W.S. Elev (ft)	171.45	Reach Len. (ft)	438.29	442.90	447.79
Crit W.S. (ft)	166.60	Flow Area (sq ft)	964.44	395.06	6335.06
E.G. Slope (ft/ft)	0.000095	Area (sq ft)	1169.06	395.06	6335.06
Q Total (cfs)	16941.00	Flow (cfs)	719.79	1257.69	14963.52
Top Width (ft)	1222.79	Top Width (ft)	148.84	22.99	1050.96
Vel Total (ft/s)	2.20	Avg. Vel. (ft/s)	0.75	3.18	2.36
Max Chl Dpth (ft)	17.45	Hydr. Depth (ft)	10.78	17.18	6.03
Conv. Total (cfs)	1735773.0	Conv. (cfs)	73749.6	128863.1	1533160.0
Length Wtd. (ft)	446.89	Wetted Per. (ft)	92.72	23.38	1098.02
Min Ch El (ft)	154.00	Shear (lb/sq ft)	0.06	0.10	0.03
Alpha	1.18	Stream Power (lb/ft s)	0.05	0.32	0.08
Frctn Loss (ft)	0.04	Cum Volume (acre-ft)	209.45	80.30	515.47
C & E Loss (ft)	0.01	Cum SA (acres)	39.71	5.96	80.13

Plan: Corr-Eff Sandy Run Sandy Main Stem RS: 5084.678 Profile: 500-yr

E.G. Elev (ft)	171.50	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.07	Wt. n-Val.	0.092	0.030	0.023
W.S. Elev (ft)	171.43	Reach Len. (ft)	19.30	19.30	19.30
Crit W.S. (ft)	166.78	Flow Area (sq ft)	1937.16	661.65	7040.03
E.G. Slope (ft/ft)	0.000068	Area (sq ft)	1937.16	661.65	7040.03
Q Total (cfs)	16941.00	Flow (cfs)	947.11	1768.68	14225.22
Top Width (ft)	1315.24	Top Width (ft)	295.69	38.79	980.75
Vel Total (ft/s)	1.76	Avg. Vel. (ft/s)	0.49	2.67	2.02
Max Chl Dpth (ft)	17.43	Hydr. Depth (ft)	6.55	17.06	7.18
Conv. Total (cfs)	2047320.0	Conv. (cfs)	114457.7	213744.5	1719118.0
Length Wtd. (ft)	19.30	Wetted Per. (ft)	301.45	39.72	1012.10
Min Ch El (ft)	154.00	Shear (lb/sq ft)	0.03	0.07	0.03
Alpha	1.36	Stream Power (lb/ft s)	0.01	0.19	0.06
Frctn Loss (ft)	0.00	Cum Volume (acre-ft)	193.82	74.93	446.72
C & E Loss (ft)	0.00	Cum SA (acres)	37.47	5.64	69.69

Plan: Corr-Eff Sandy Run Sandy Main Stem RS: 5065.378 Profile: 500-yr

E.G. Elev (ft)	171.49	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.10	Wt. n-Val.	0.074	0.030	0.021
W.S. Elev (ft)	171.40	Reach Len. (ft)	76.22	76.22	76.22
Crit W.S. (ft)	166.48	Flow Area (sq ft)	1862.20	694.12	5453.94
E.G. Slope (ft/ft)	0.000093	Area (sq ft)	1862.20	694.12	5453.94
Q Total (cfs)	16941.00	Flow (cfs)	1249.11	2118.48	13573.40
Top Width (ft)	1143.02	Top Width (ft)	295.96	42.00	805.06
Vel Total (ft/s)	2.11	Avg. Vel. (ft/s)	0.67	3.05	2.49
Max Chl Dpth (ft)	17.15	Hydr. Depth (ft)	6.29	16.53	6.77
Conv. Total (cfs)	1752260.0	Conv. (cfs)	129199.7	219121.3	1403939.0
Length Wtd. (ft)	76.22	Wetted Per. (ft)	301.40	43.14	845.00

Plan: Corr-Eff Sandy Run Sandy Main Stem RS: 5065.378 Profile: 500-yr (Continued)

Min Ch El (ft)	154.25	Shear (lb/sq ft)	0.04	0.09	0.04
Alpha	1.38	Stream Power (lb/ft s)	0.02	0.29	0.09
Frctn Loss (ft)	0.01	Cum Volume (acre-ft)	192.98	74.63	443.95
C & E Loss (ft)	0.01	Cum SA (acres)	37.34	5.63	69.29

Plan: Corr-Eff Sandy Run Sandy Main Stem RS: 5039.878 Profile: 500-yr

E.G. Elev (ft)	171.47	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.06	Wt. n-Val.	0.077	0.030	0.022
W.S. Elev (ft)	171.42	Reach Len. (ft)	593.05	673.82	717.62
Crit W.S. (ft)	165.85	Flow Area (sq ft)	1957.34	746.55	7394.60
E.G. Slope (ft/ft)	0.000059	Area (sq ft)	1957.34	746.55	7394.60
Q Total (cfs)	16941.00	Flow (cfs)	1021.43	1808.63	14110.94
Top Width (ft)	1567.32	Top Width (ft)	303.31	45.00	1219.02
Vel Total (ft/s)	1.68	Avg. Vel. (ft/s)	0.52	2.42	1.91
Max Chl Dpth (ft)	17.17	Hydr. Depth (ft)	6.45	16.59	6.07
Conv. Total (cfs)	2199288.0	Conv. (cfs)	132602.5	234797.1	1831888.0
Length Wtd. (ft)	699.40	Wetted Per. (ft)	309.32	46.66	1246.25
Min Ch El (ft)	154.25	Shear (lb/sq ft)	0.02	0.06	0.02
Alpha	1.31	Stream Power (lb/ft s)	0.01	0.14	0.04
Frctn Loss (ft)	0.04	Cum Volume (acre-ft)	189.64	73.37	432.71
C & E Loss (ft)	0.00	Cum SA (acres)	36.82	5.55	67.52

Plan: Corr-Eff Sandy Run Sandy Main Stem RS: 4865.578 Profile: 500-yr

E.G. Elev (ft)	171.43	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.05	Wt. n-Val.	0.050	0.030	0.022
W.S. Elev (ft)	171.39	Reach Len. (ft)	54.72	88.70	126.71
Crit W.S. (ft)	163.39	Flow Area (sq ft)	2506.60	1891.32	6328.58
E.G. Slope (ft/ft)	0.000047	Area (sq ft)	2506.60	1891.32	6328.58
Q Total (cfs)	16941.00	Flow (cfs)	1863.68	4078.93	10998.39
Top Width (ft)	1411.72	Top Width (ft)	358.52	117.19	936.01
Vel Total (ft/s)	1.58	Avg. Vel. (ft/s)	0.74	2.16	1.74
Max Chl Dpth (ft)	17.14	Hydr. Depth (ft)	6.99	16.14	6.76
Conv. Total (cfs)	2477396.0	Conv. (cfs)	272538.2	596489.1	1608368.0
Length Wtd. (ft)	113.75	Wetted Per. (ft)	362.83	117.71	947.34
Min Ch El (ft)	154.25	Shear (lb/sq ft)	0.02	0.05	0.02
Alpha	1.26	Stream Power (lb/ft s)	0.01	0.10	0.03
Frctn Loss (ft)	0.01	Cum Volume (acre-ft)	159.25	52.96	319.67
C & E Loss (ft)	0.00	Cum SA (acres)	32.31	4.30	49.77

Plan: Corr-Eff Sandy Run Sandy Main Stem RS: 4790.088 Profile: 500-yr

E.G. Elev (ft)	171.43	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.06	Wt. n-Val.	0.094	0.100	0.026
W.S. Elev (ft)	171.37	Reach Len. (ft)	13.00	13.00	13.00
Crit W.S. (ft)	164.22	Flow Area (sq ft)	2711.12	973.68	6870.45
E.G. Slope (ft/ft)	0.000089	Area (sq ft)	2711.12	973.68	6870.45
Q Total (cfs)	16941.00	Flow (cfs)	1616.85	885.73	14438.43
Top Width (ft)	1442.54	Top Width (ft)	384.76	58.20	999.58
Vel Total (ft/s)	1.60	Avg. Vel. (ft/s)	0.60	0.91	2.10
Max Chl Dpth (ft)	17.37	Hydr. Depth (ft)	7.05	16.73	6.87
Conv. Total (cfs)	1791832.0	Conv. (cfs)	171012.0	93682.4	1527137.0
Length Wtd. (ft)	13.00	Wetted Per. (ft)	390.10	59.09	1010.19
Min Ch El (ft)	154.00	Shear (lb/sq ft)	0.04	0.09	0.04
Alpha	1.49	Stream Power (lb/ft s)	0.02	0.08	0.08
Frctn Loss (ft)	0.00	Cum Volume (acre-ft)	155.97	50.05	300.48
C & E Loss (ft)	0.01	Cum SA (acres)	31.85	4.12	46.95

Plan: Corr-Eff Sandy Run Sandy Main Stem RS: 4777.088 Profile: 500-yr

E.G. Elev (ft)	171.41	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.04	Wt. n-Val.	0.055	0.030	0.037
W.S. Elev (ft)	171.38	Reach Len. (ft)	15.00	15.00	15.00
Crit W.S. (ft)	165.77	Flow Area (sq ft)	2519.35	940.33	9201.53
E.G. Slope (ft/ft)	0.000065	Area (sq ft)	2519.35	940.33	9201.53

Plan: Corr-Eff Sandy Run Sandy Main Stem RS: 4777.088 Profile: 500-yr (Continued)

Q Total (cfs)	16941.00	Flow (cfs)	1975.90	2401.19	12563.91
Top Width (ft)	1496.19	Top Width (ft)	361.46	57.00	1077.74
Vel Total (ft/s)	1.34	Avg. Vel. (ft/s)	0.78	2.55	1.37
Max Chl Dpth (ft)	17.13	Hydr. Depth (ft)	6.97	16.50	8.54
Conv. Total (cfs)	2109014.0	Conv. (cfs)	245983.5	298928.1	1564102.0
Length Wtd. (ft)	15.00	Wetted Per. (ft)	367.77	57.83	1081.99
Min Ch El (ft)	154.25	Shear (lb/sq ft)	0.03	0.07	0.03
Alpha	1.33	Stream Power (lb/ft s)	0.02	0.17	0.05
Frctn Loss (ft)		Cum Volume (acre-ft)	155.19	49.76	298.08
C & E Loss (ft)		Cum SA (acres)	31.73	4.10	46.64

Plan: Corr-Eff Sandy Run Sandy Main Stem RS: 4740 BR U Profile: 500-yr

E.G. Elev (ft)	171.41	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.27	Wt. n-Val.			
W.S. Elev (ft)	171.38	Reach Len. (ft)	40.00	40.00	40.00
Crit W.S. (ft)	171.75	Flow Area (sq ft)	285.68	720.88	1477.35
E.G. Slope (ft/ft)		Area (sq ft)	285.68	720.88	1477.35
Q Total (cfs)	16941.00	Flow (cfs)	2251.91	10601.32	4113.77
Top Width (ft)	1393.57	Top Width (ft)	258.83	57.00	1077.74
Vel Total (ft/s)	6.82	Avg. Vel. (ft/s)	7.88	14.71	2.78
Max Chl Dpth (ft)	17.13	Hydr. Depth (ft)	1.10	12.65	1.37
Conv. Total (cfs)		Conv. (cfs)			
Length Wtd. (ft)	40.00	Wetted Per. (ft)	293.67	171.83	1136.45
Min Ch El (ft)	154.25	Shear (lb/sq ft)			
Alpha	1.76	Stream Power (lb/ft s)			
Frctn Loss (ft)		Cum Volume (acre-ft)	154.71	49.48	296.24
C & E Loss (ft)		Cum SA (acres)	31.63	4.08	46.27

Plan: Corr-Eff Sandy Run Sandy Main Stem RS: 4740 BR D Profile: 500-yr

E.G. Elev (ft)	171.41	Element	Left OB	Channel	Right OB
Vel Head (ft)	2.98	Wt. n-Val.			
W.S. Elev (ft)	171.38	Reach Len. (ft)	36.50	36.50	36.50
Crit W.S. (ft)	172.38	Flow Area (sq ft)	432.30	678.48	1143.57
E.G. Slope (ft/ft)		Area (sq ft)	432.30	678.48	1143.57
Q Total (cfs)	16941.00	Flow (cfs)	1250.94	11734.25	3981.82
Top Width (ft)	972.78	Top Width (ft)	318.64	52.44	601.70
Vel Total (ft/s)	7.51	Avg. Vel. (ft/s)	2.89	17.29	3.48
Max Chl Dpth (ft)	17.38	Hydr. Depth (ft)	1.36	12.94	1.90
Conv. Total (cfs)		Conv. (cfs)			
Length Wtd. (ft)	36.50	Wetted Per. (ft)	379.07	157.56	646.92
Min Ch El (ft)	154.00	Shear (lb/sq ft)			
Alpha	3.40	Stream Power (lb/ft s)			
Frctn Loss (ft)		Cum Volume (acre-ft)	154.38	48.83	295.04
C & E Loss (ft)		Cum SA (acres)	31.36	4.03	45.50

Plan: Corr-Eff Sandy Run Sandy Main Stem RS: 4685.592 Profile: 500-yr

E.G. Elev (ft)	167.45	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.24	Wt. n-Val.	0.100	0.030	0.099
W.S. Elev (ft)	167.22	Reach Len. (ft)	393.59	358.41	320.67
Crit W.S. (ft)	165.40	Flow Area (sq ft)	1623.34	662.31	5689.82
E.G. Slope (ft/ft)	0.000669	Area (sq ft)	1623.34	662.31	5689.82
Q Total (cfs)	16941.00	Flow (cfs)	2053.90	4587.42	10299.69
Top Width (ft)	892.37	Top Width (ft)	270.79	52.44	569.14
Vel Total (ft/s)	2.12	Avg. Vel. (ft/s)	1.27	6.93	1.81
Max Chl Dpth (ft)	13.22	Hydr. Depth (ft)	5.99	12.63	10.00
Conv. Total (cfs)	655009.7	Conv. (cfs)	79412.3	177368.6	398228.8
Length Wtd. (ft)	337.08	Wetted Per. (ft)	271.76	52.68	571.65
Min Ch El (ft)	154.00	Shear (lb/sq ft)	0.25	0.53	0.42
Alpha	3.36	Stream Power (lb/ft s)	0.32	3.64	0.75
Frctn Loss (ft)	0.29	Cum Volume (acre-ft)	153.52	48.27	292.17
C & E Loss (ft)	0.04	Cum SA (acres)	31.12	3.99	45.01

Plan: Corr-Eff Sandy Run Sandy Main Stem RS: 4327.181 Profile: 500-yr

E.G. Elev (ft)	167.12	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.38	Wt. n-Val.	0.100	0.034	0.086
W.S. Elev (ft)	166.74	Reach Len. (ft)	379.56	362.86	348.11
Crit W.S. (ft)		Flow Area (sq ft)	579.86	509.24	4399.65
E.G. Slope (ft/ft)	0.001149	Area (sq ft)	579.86	509.24	4399.65
Q Total (cfs)	16941.00	Flow (cfs)	912.15	4411.72	11617.13
Top Width (ft)	600.93	Top Width (ft)	103.64	35.94	461.35
Vel Total (ft/s)	3.09	Avg. Vel. (ft/s)	1.57	8.66	2.64
Max Chl Dpth (ft)	14.74	Hydr. Depth (ft)	5.60	14.17	9.54
Conv. Total (cfs)	499880.0	Conv. (cfs)	26914.9	130177.2	342787.9
Length Wtd. (ft)	354.49	Wetted Per. (ft)	105.03	36.17	463.72
Min Ch El (ft)	152.00	Shear (lb/sq ft)	0.40	1.01	0.68
Alpha	2.57	Stream Power (lb/ft s)	0.62	8.74	1.80
Frctn Loss (ft)	0.46	Cum Volume (acre-ft)	143.56	43.45	255.04
C & E Loss (ft)	0.03	Cum SA (acres)	29.42	3.62	41.22

Plan: Corr-Eff Sandy Run Sandy Main Stem RS: 3964.325 Profile: 500-yr

E.G. Elev (ft)	166.63	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.71	Wt. n-Val.	0.100	0.030	0.100
W.S. Elev (ft)	165.93	Reach Len. (ft)	460.88	448.94	432.66
Crit W.S. (ft)		Flow Area (sq ft)	603.33	605.43	3697.24
E.G. Slope (ft/ft)	0.001450	Area (sq ft)	603.33	605.43	3697.24
Q Total (cfs)	16941.00	Flow (cfs)	910.80	6360.55	9669.64
Top Width (ft)	557.93	Top Width (ft)	137.42	45.65	374.87
Vel Total (ft/s)	3.45	Avg. Vel. (ft/s)	1.51	10.51	2.62
Max Chl Dpth (ft)	13.93	Hydr. Depth (ft)	4.39	13.26	9.86
Conv. Total (cfs)	444838.3	Conv. (cfs)	23915.9	167016.0	253906.4
Length Wtd. (ft)	441.02	Wetted Per. (ft)	138.47	46.06	377.72
Min Ch El (ft)	152.00	Shear (lb/sq ft)	0.39	1.19	0.89
Alpha	3.81	Stream Power (lb/ft s)	0.60	12.50	2.32
Frctn Loss (ft)	0.51	Cum Volume (acre-ft)	138.41	38.81	222.68
C & E Loss (ft)	0.09	Cum SA (acres)	28.37	3.28	37.88

HEC-RAS Detailed Analysis Results – Proposed Model

143.571
663.061
1299.523
1688.606
2417.391
2590.359
3515.389
3964.325
4327.181
4685.592
4777.088
5084.678
5508.105
5668.160
6709.658
6825.559
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500
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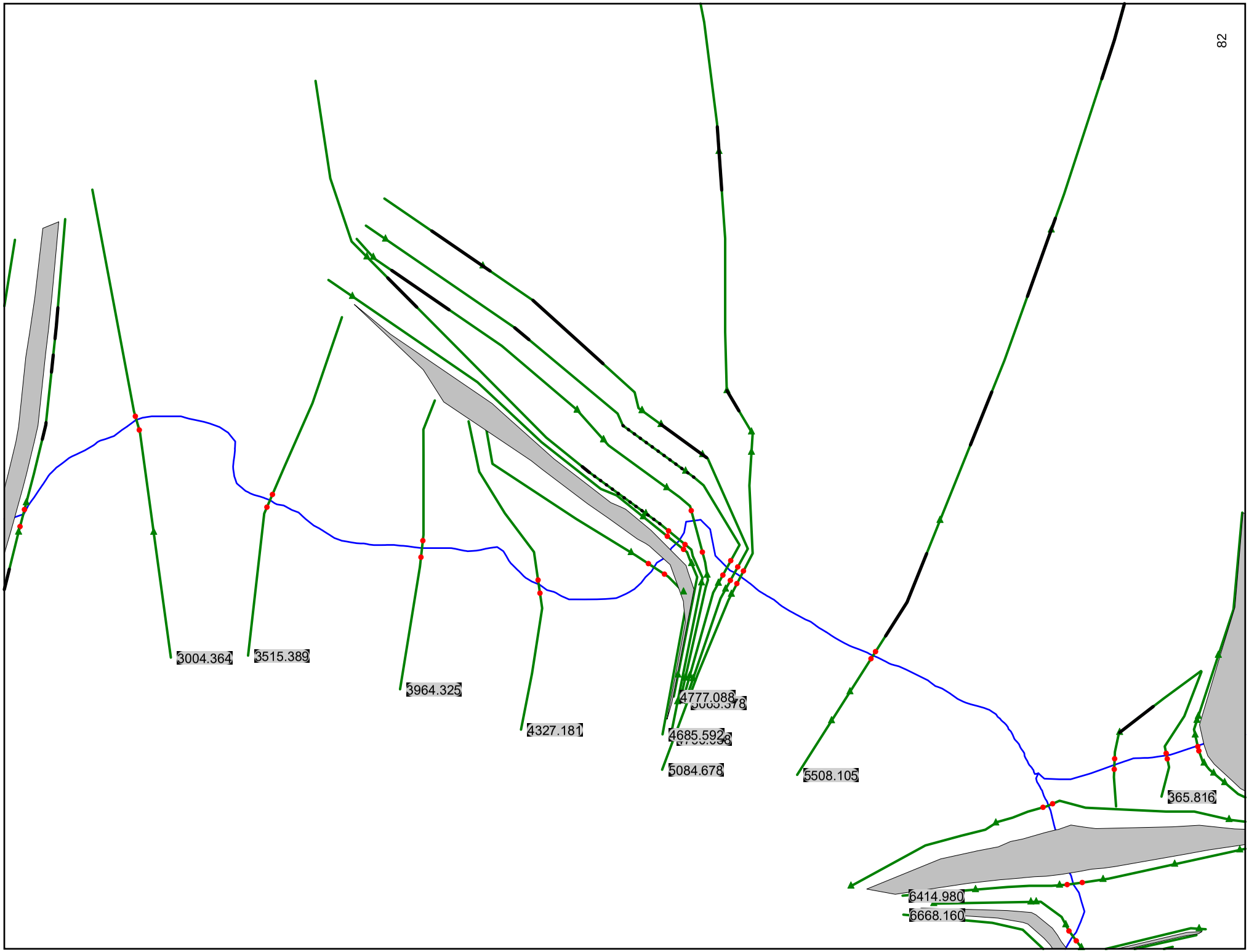
2592.777
3336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3004.364
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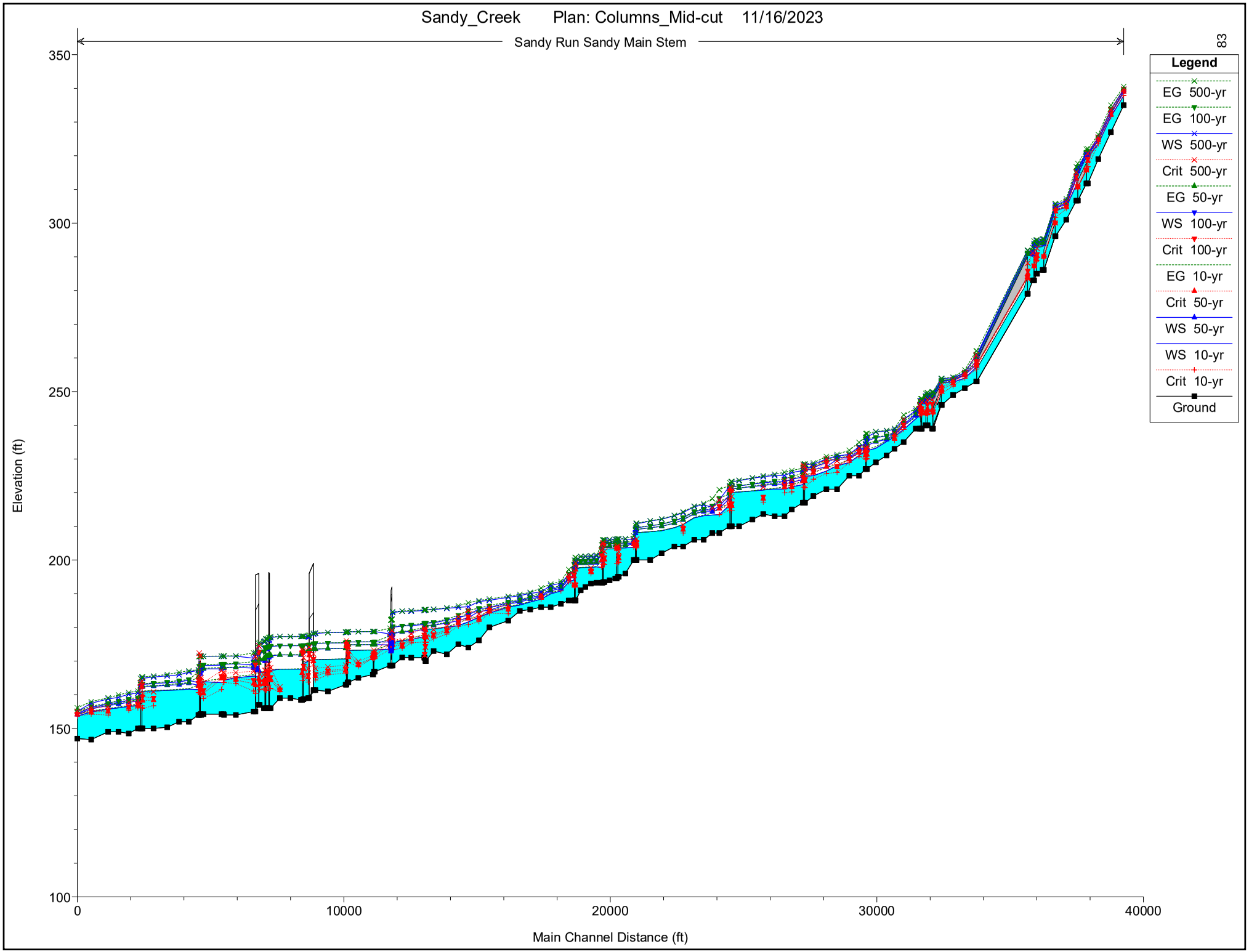
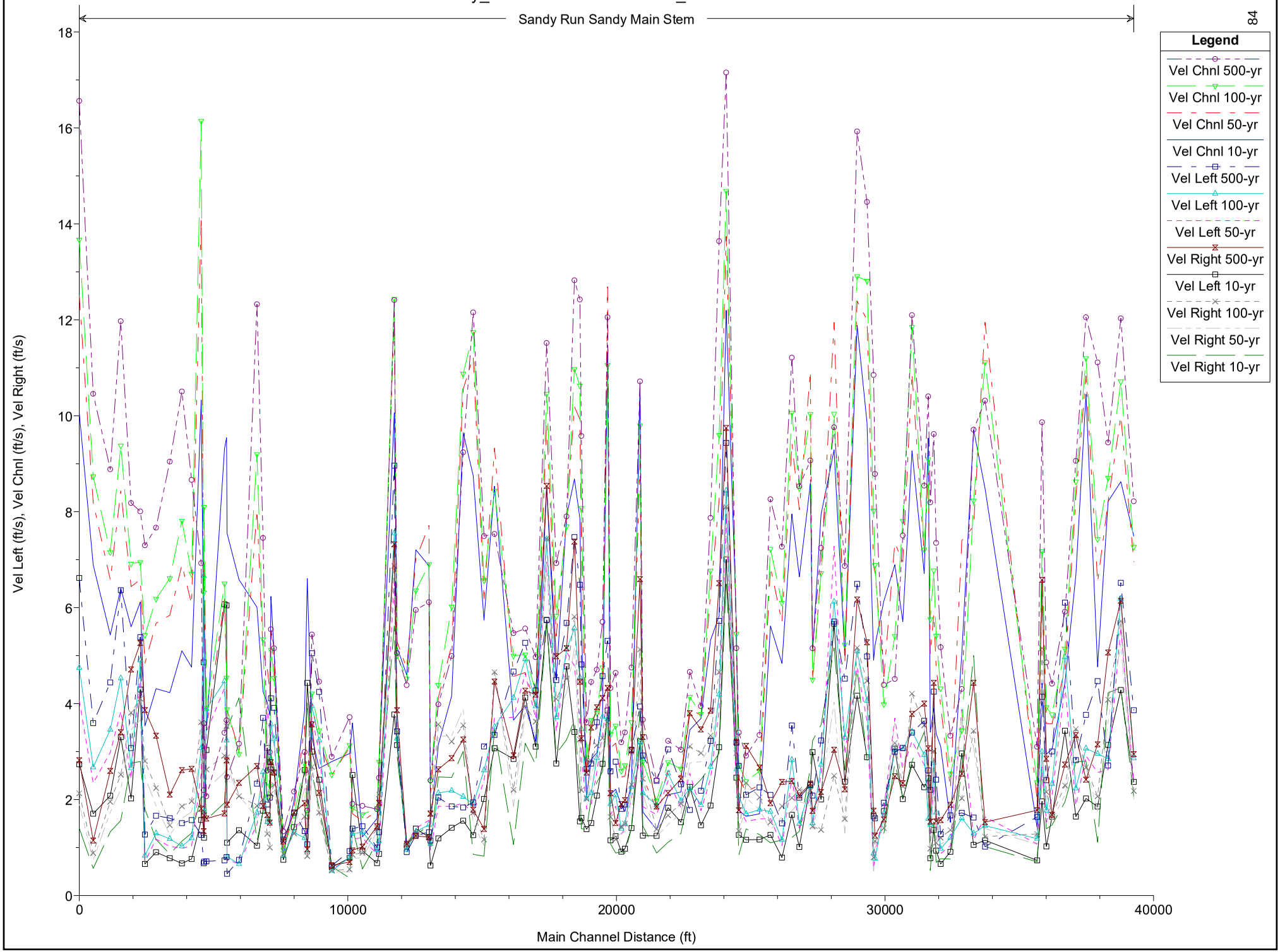
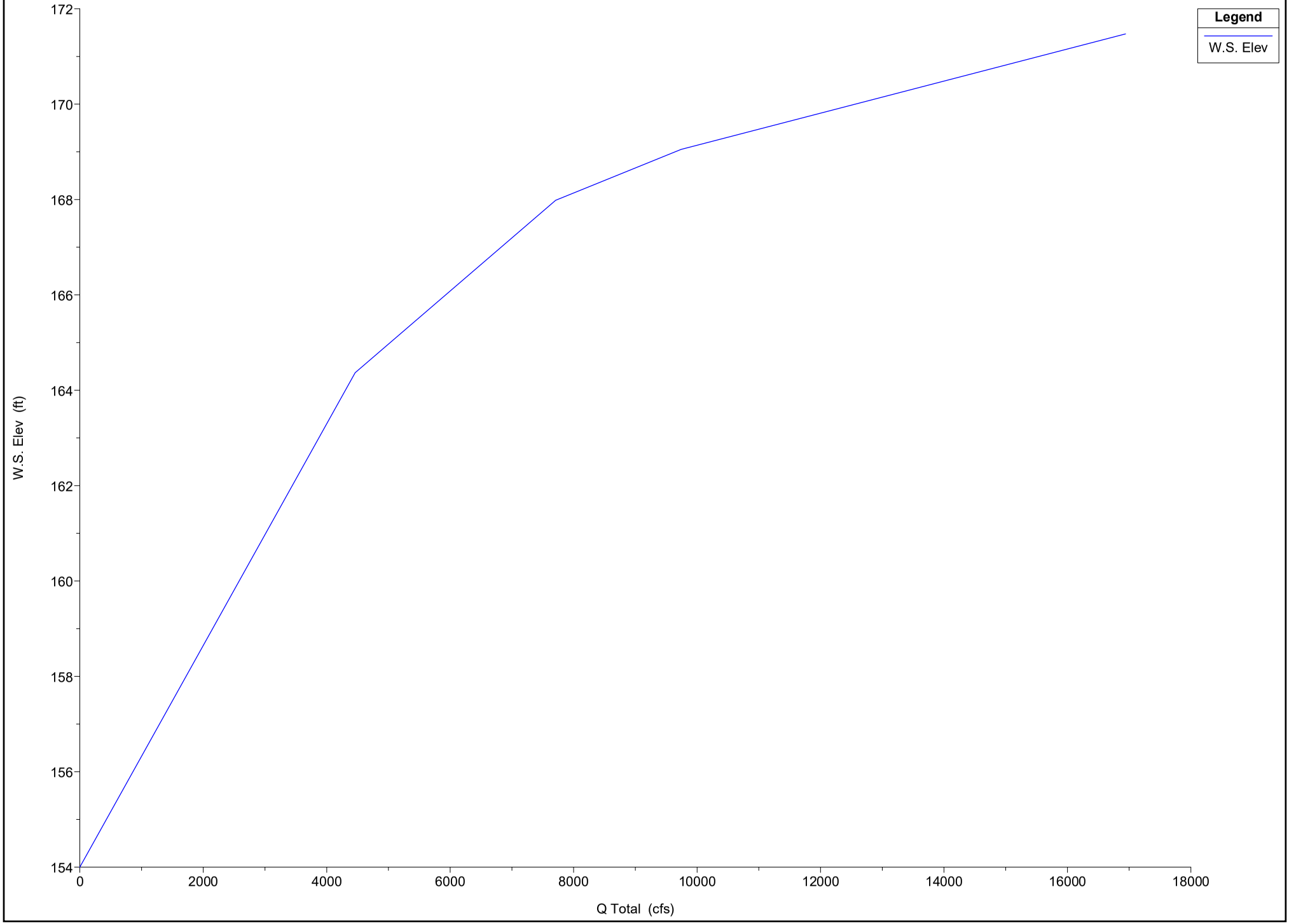

Sandy_Creek Plan: Columns_Mid-cut 11/16/2023
Sandy Run Sandy Main Stem
83
Legend
EG 500-yr
EG 100-yr
WS 500-yr
Crit 500-yr
EG 50-yr
WS 100-yr
Crit 100-yr
EG 10-yr
Crit 50-yr
WS 50-yr
WS 10-yr
Crit 10-yr
Ground
Elevation (ft)
350
300
250
200
150
100
0
10000
20000
30000
40000
Main Channel Distance (ft)

Sandy_Creek Plan: Columns_Mid-cut 11/16/2023



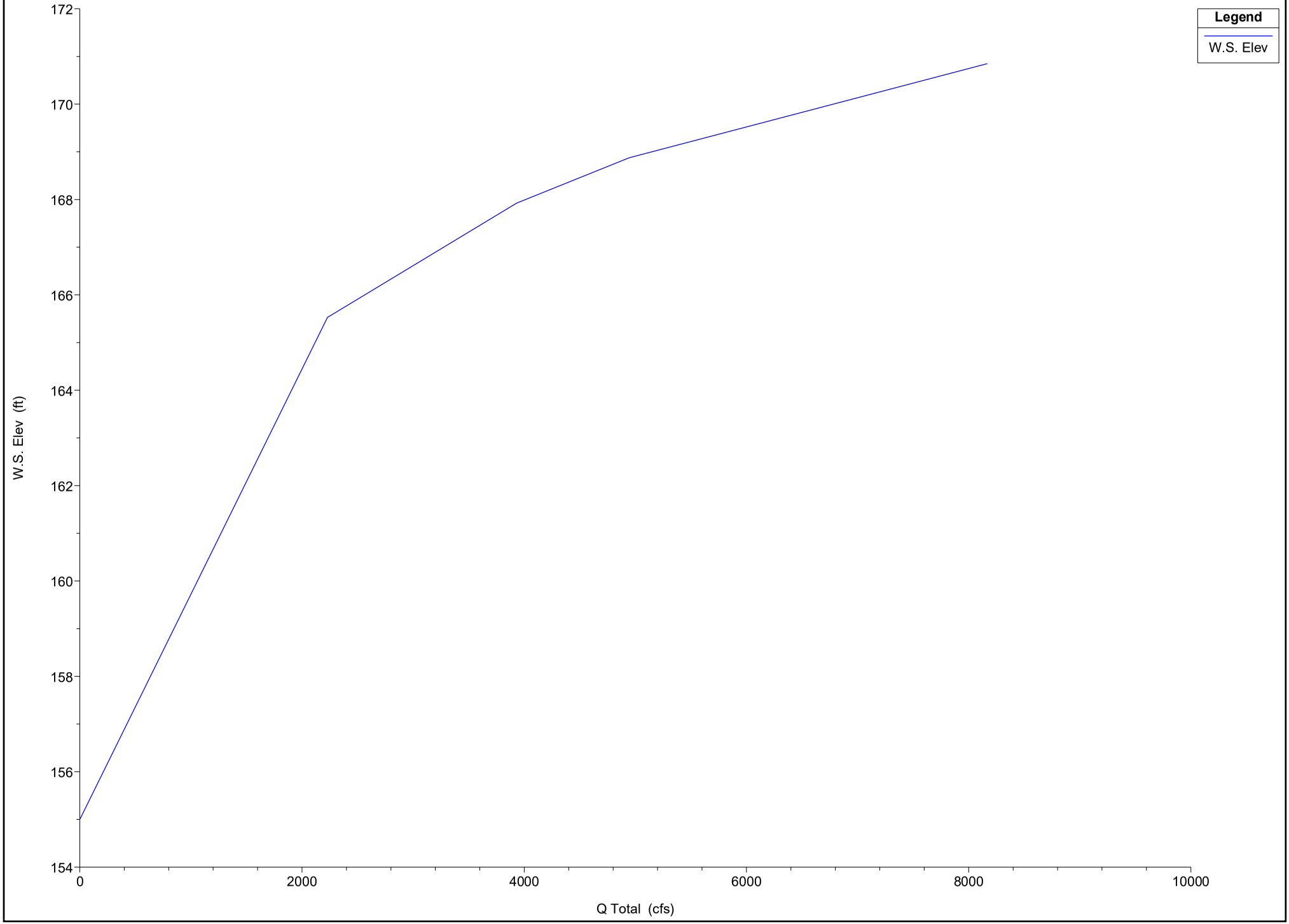
Sandy_Creek Plan: Columns_Mid-cut 11/16/2023

River = Sandy Run Reach = Sandy Main Stem RS = 5084.678



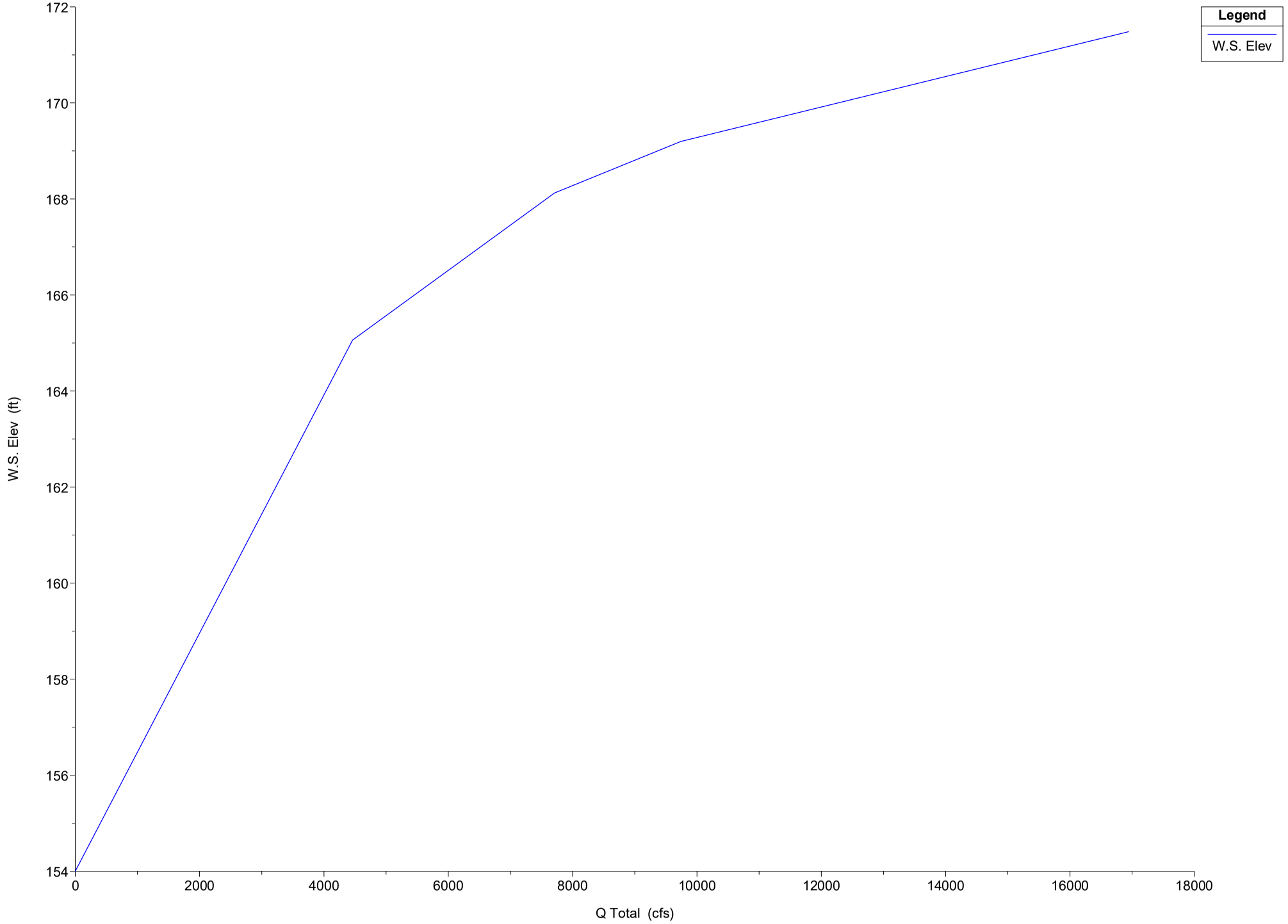
Sandy_Creek Plan: Columns_Mid-cut 11/16/2023

River = Sandy Run Reach = Sandy Main Stem RS = 6189.177



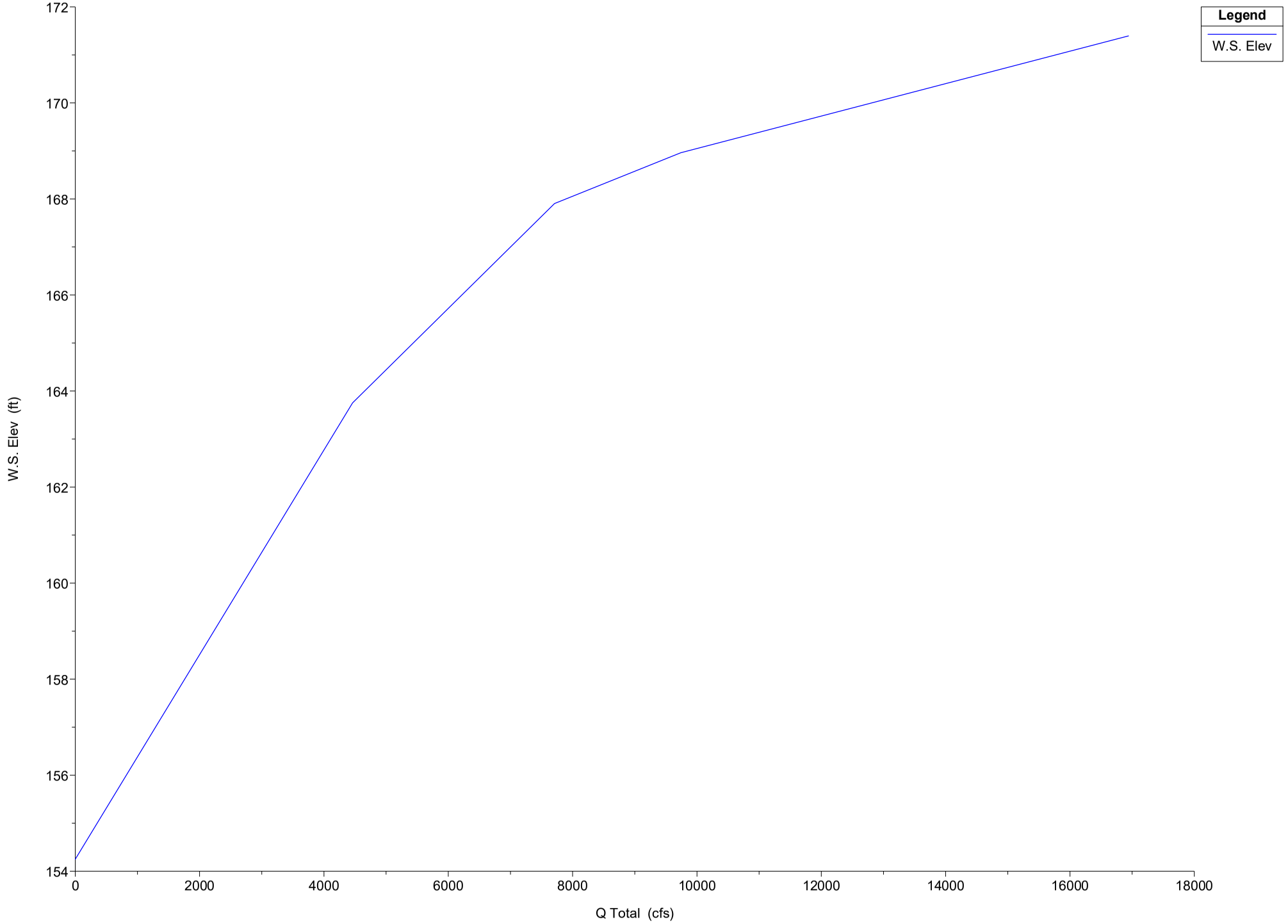
Sandy_Creek Plan: Columns_Mid-cut 11/16/2023

River = Sandy Run Reach = Sandy Main Stem RS = 5508.105



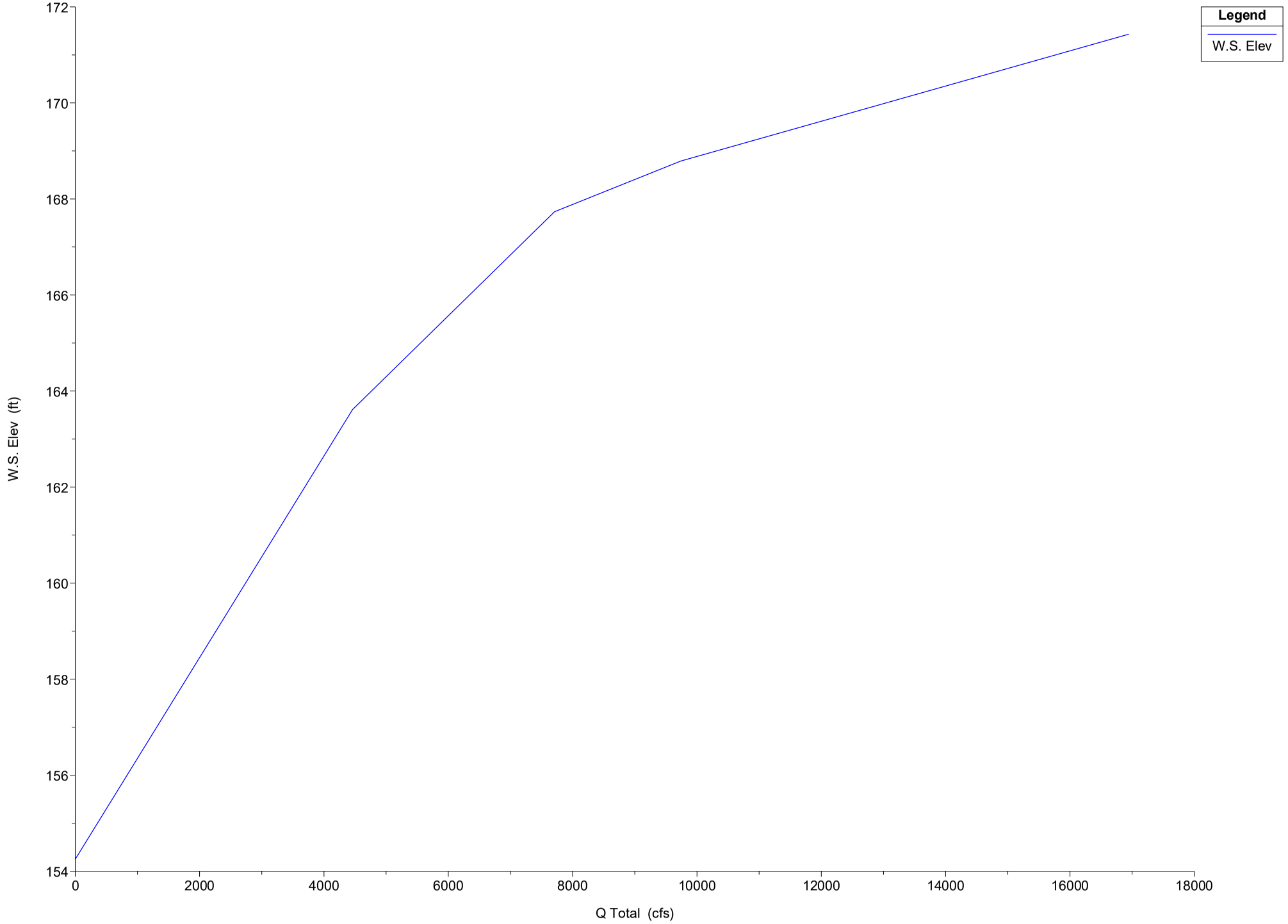
Sandy_Creek Plan: Columns_Mid-cut 11/16/2023

River = Sandy Run Reach = Sandy Main Stem RS = 5065.378



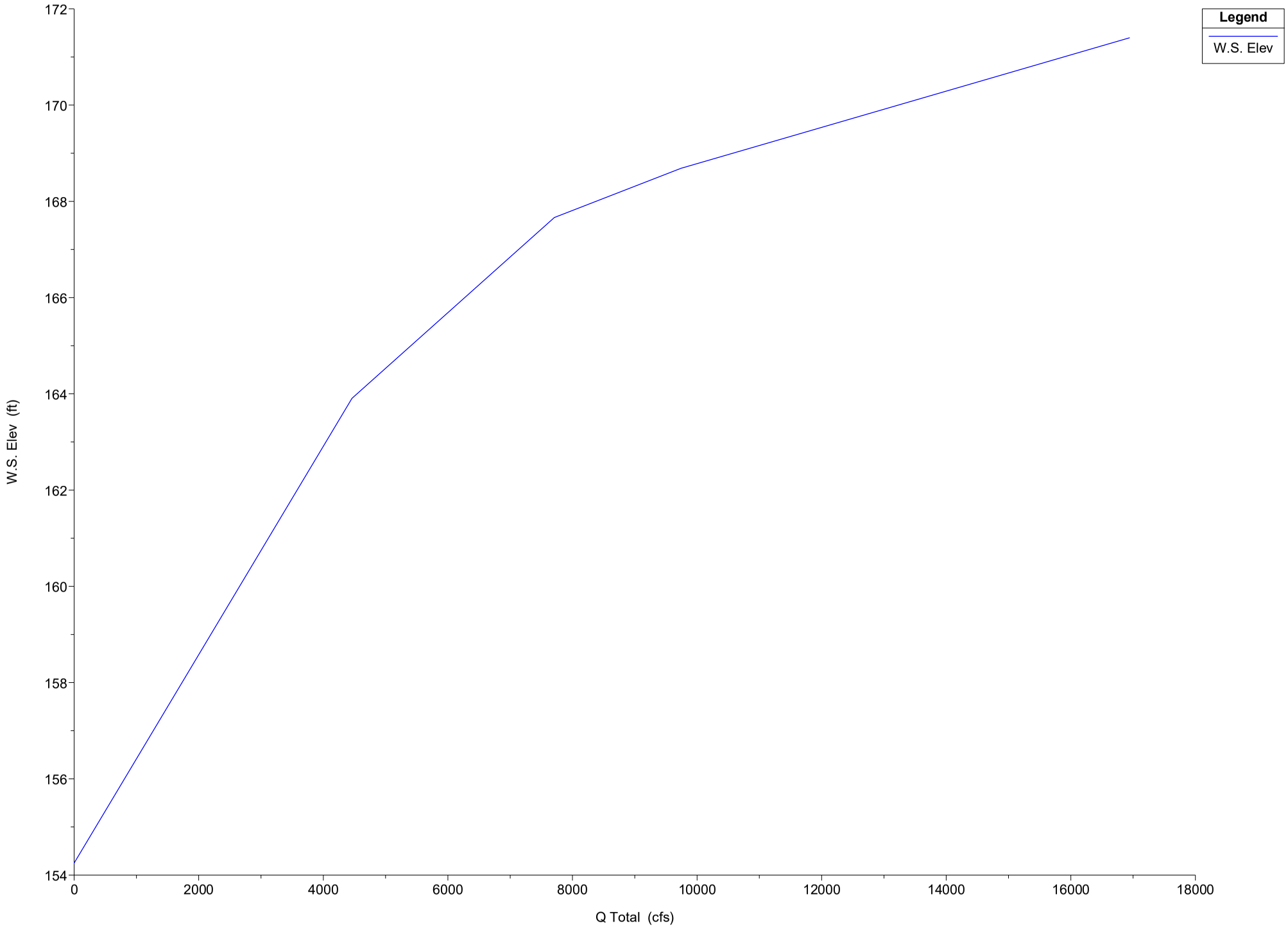
Sandy_Creek Plan: Columns_Mid-cut 11/16/2023

River = Sandy Run Reach = Sandy Main Stem RS = 5039.878



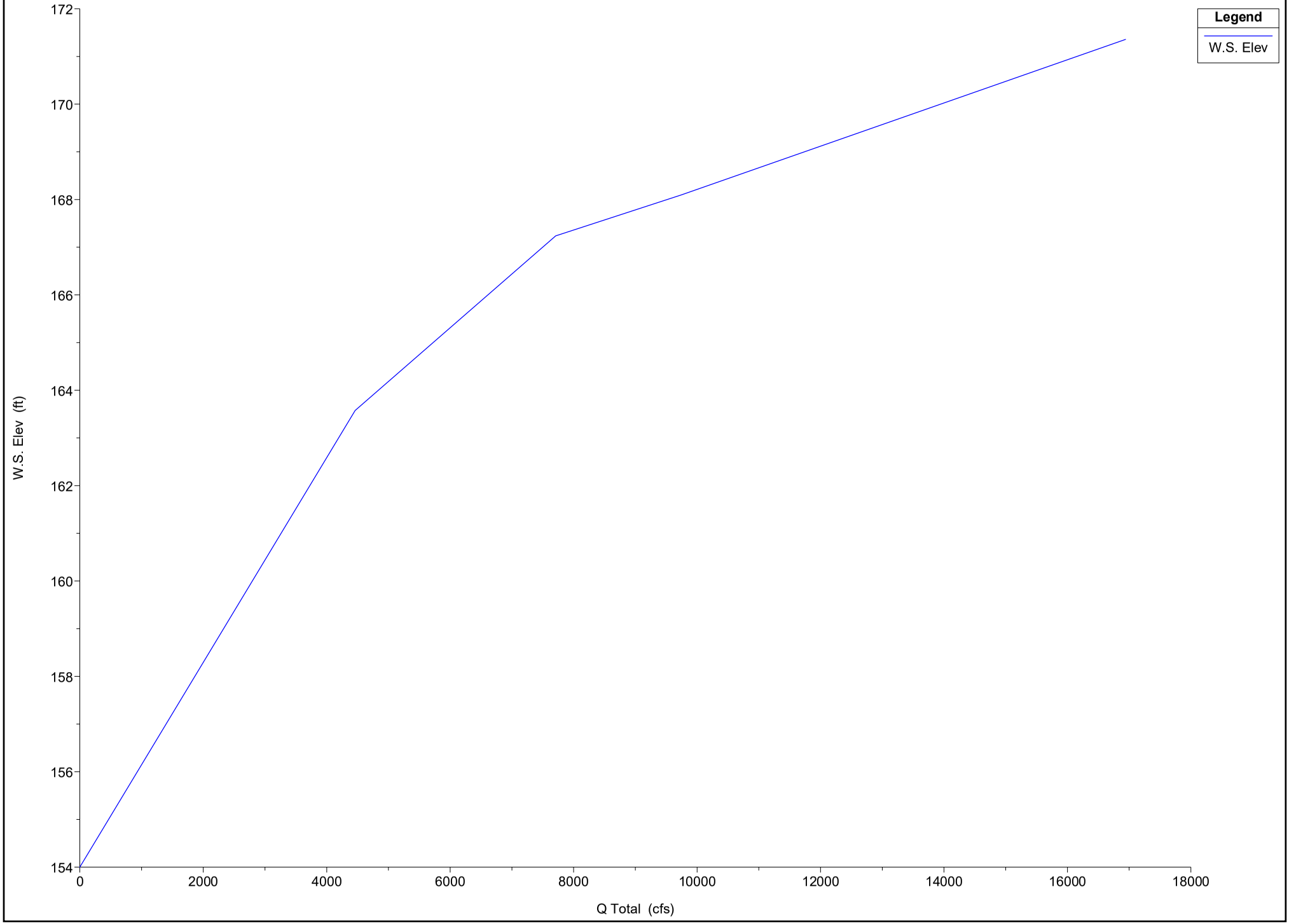
Sandy_Creek Plan: Columns_Mid-cut 11/16/2023

River = Sandy Run Reach = Sandy Main Stem RS = 4865.578



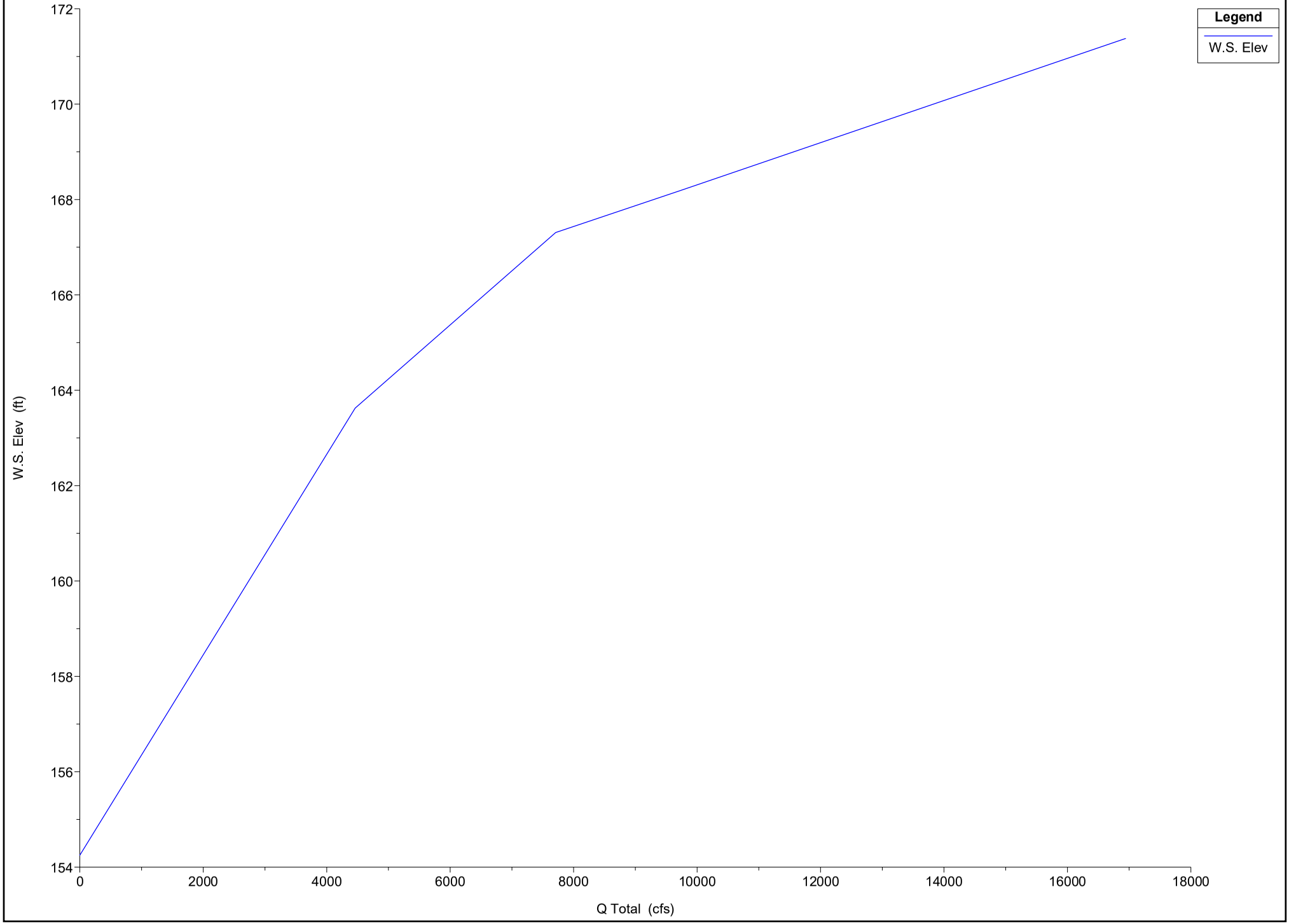
Sandy_Creek Plan: Columns_Mid-cut 11/16/2023

River = Sandy Run Reach = Sandy Main Stem RS = 4790.088



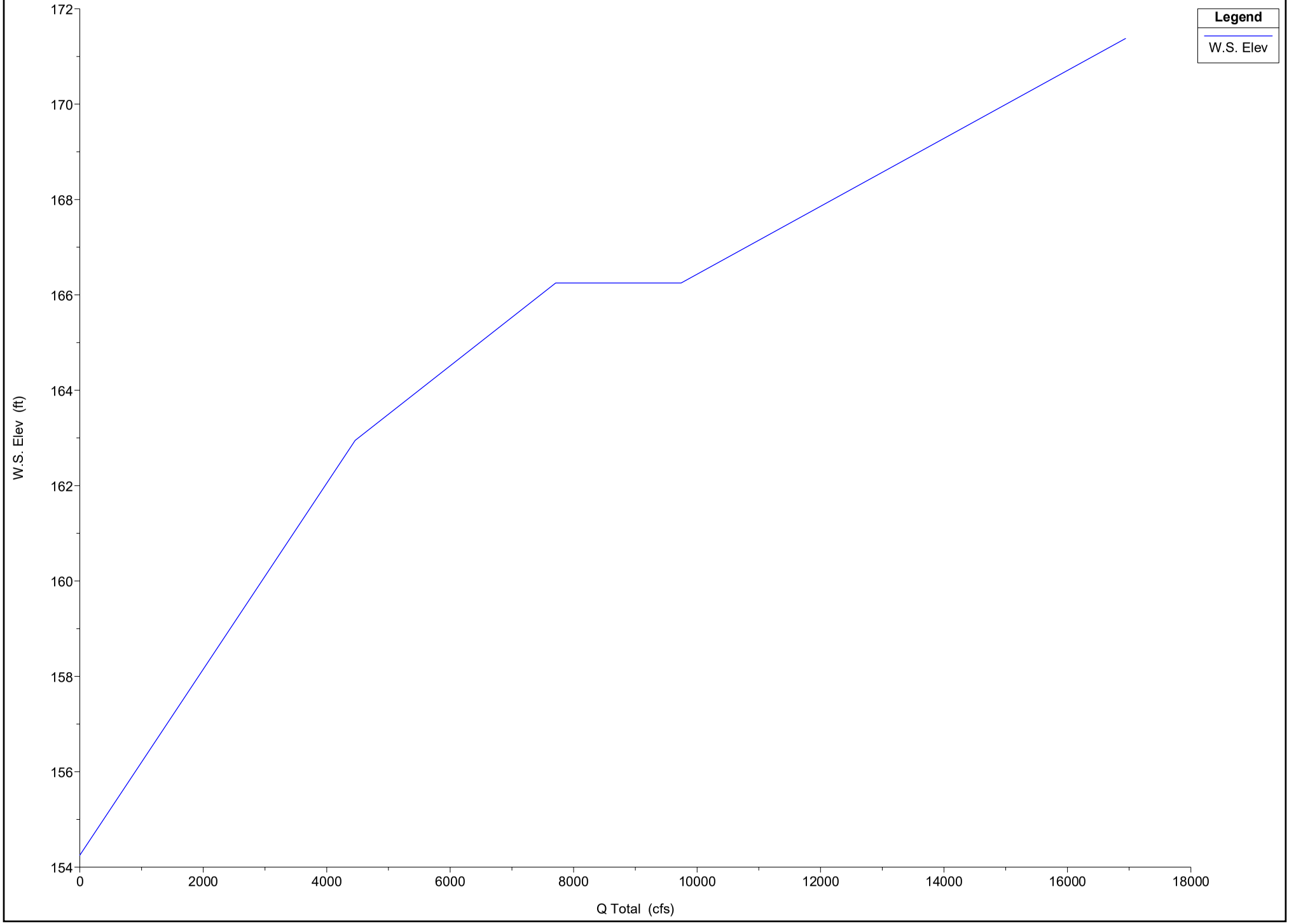
Sandy_Creek Plan: Columns_Mid-cut 11/16/2023

River = Sandy Run Reach = Sandy Main Stem RS = 4777.088



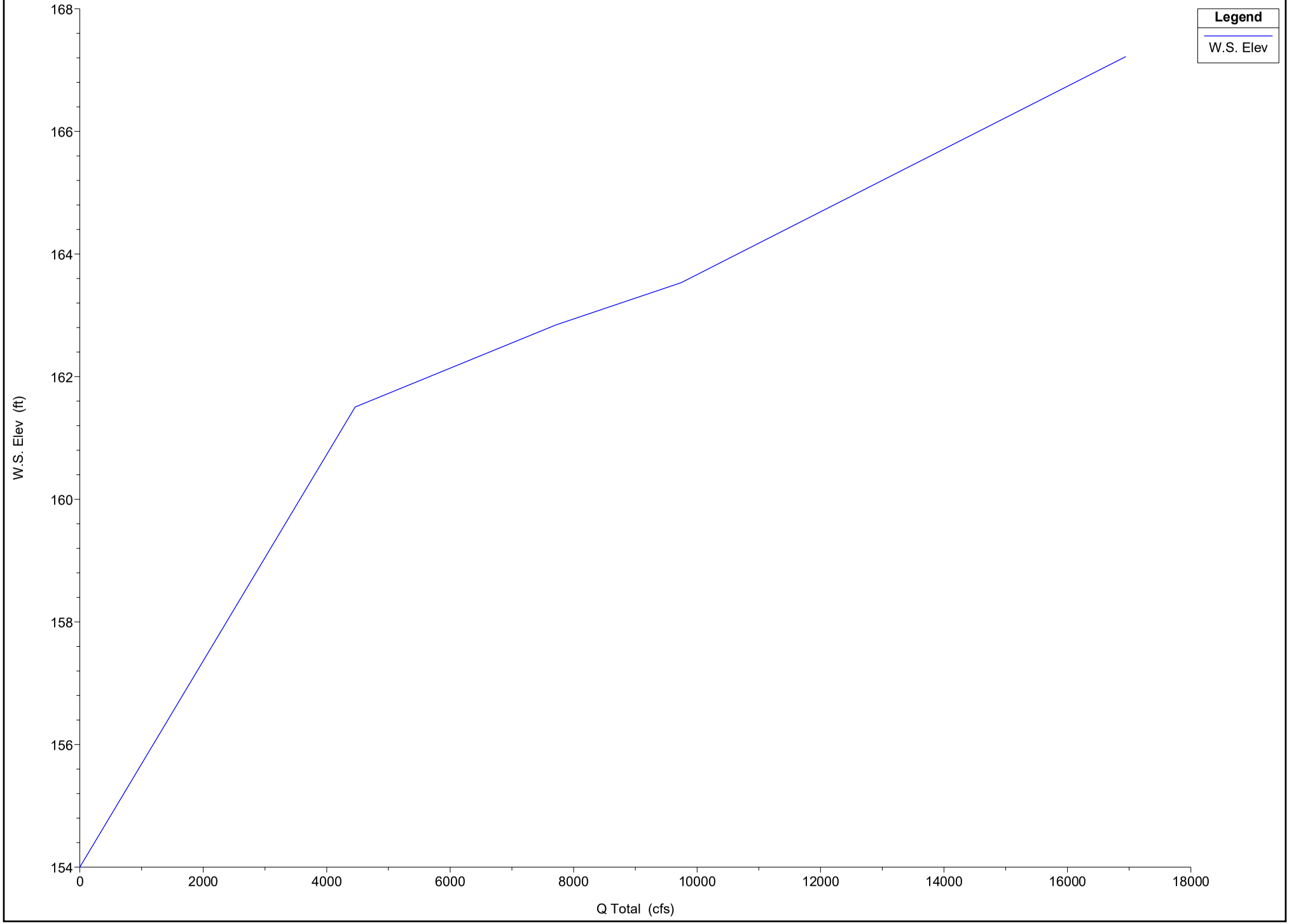
Sandy_Creek Plan: Columns_Mid-cut 11/16/2023

River = Sandy Run Reach = Sandy Main Stem RS = 4740 BR



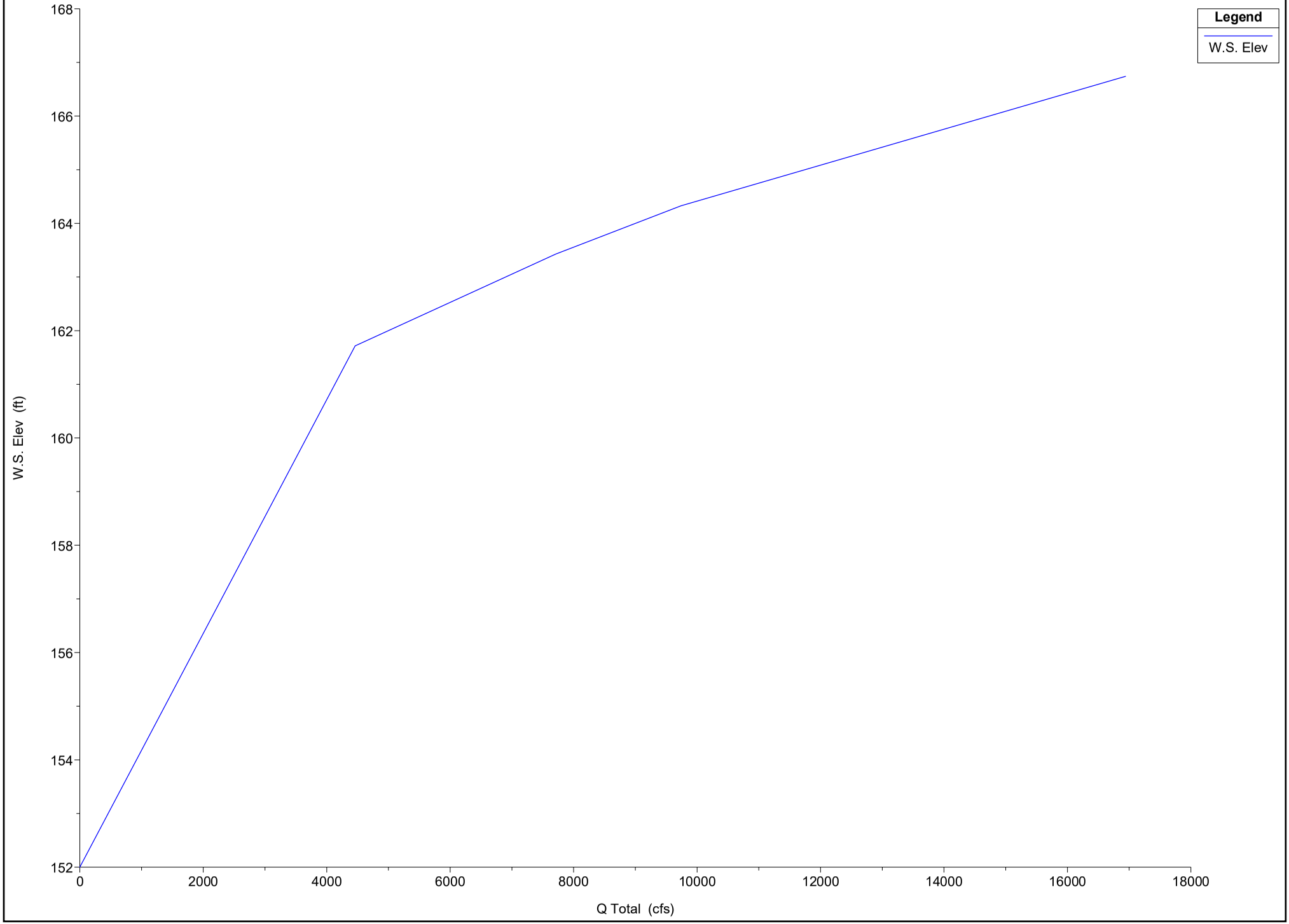
Sandy_Creek Plan: Columns_Mid-cut 11/16/2023

River = Sandy Run Reach = Sandy Main Stem RS = 4685.592



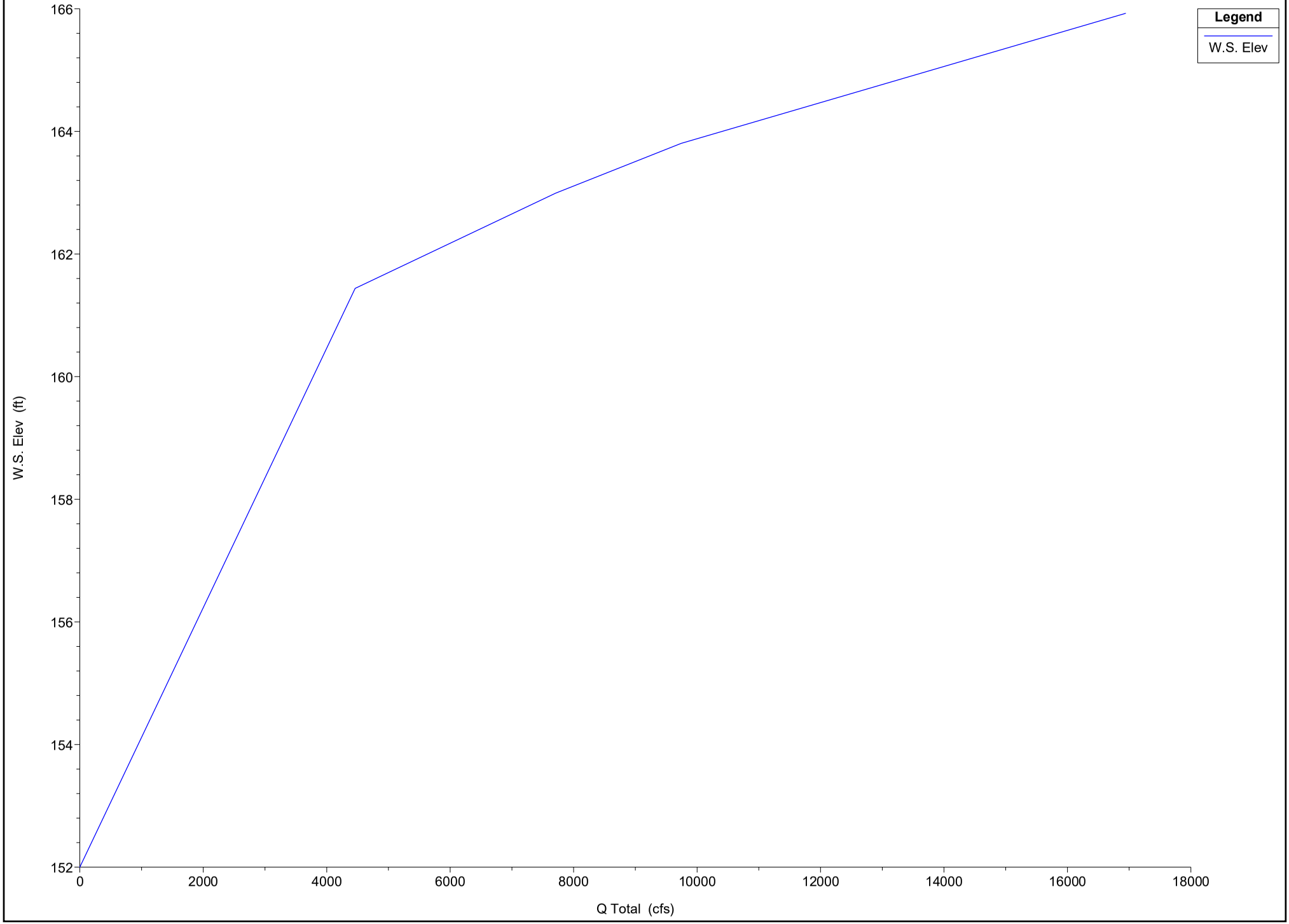
Sandy_Creek Plan: Columns_Mid-cut 11/16/2023

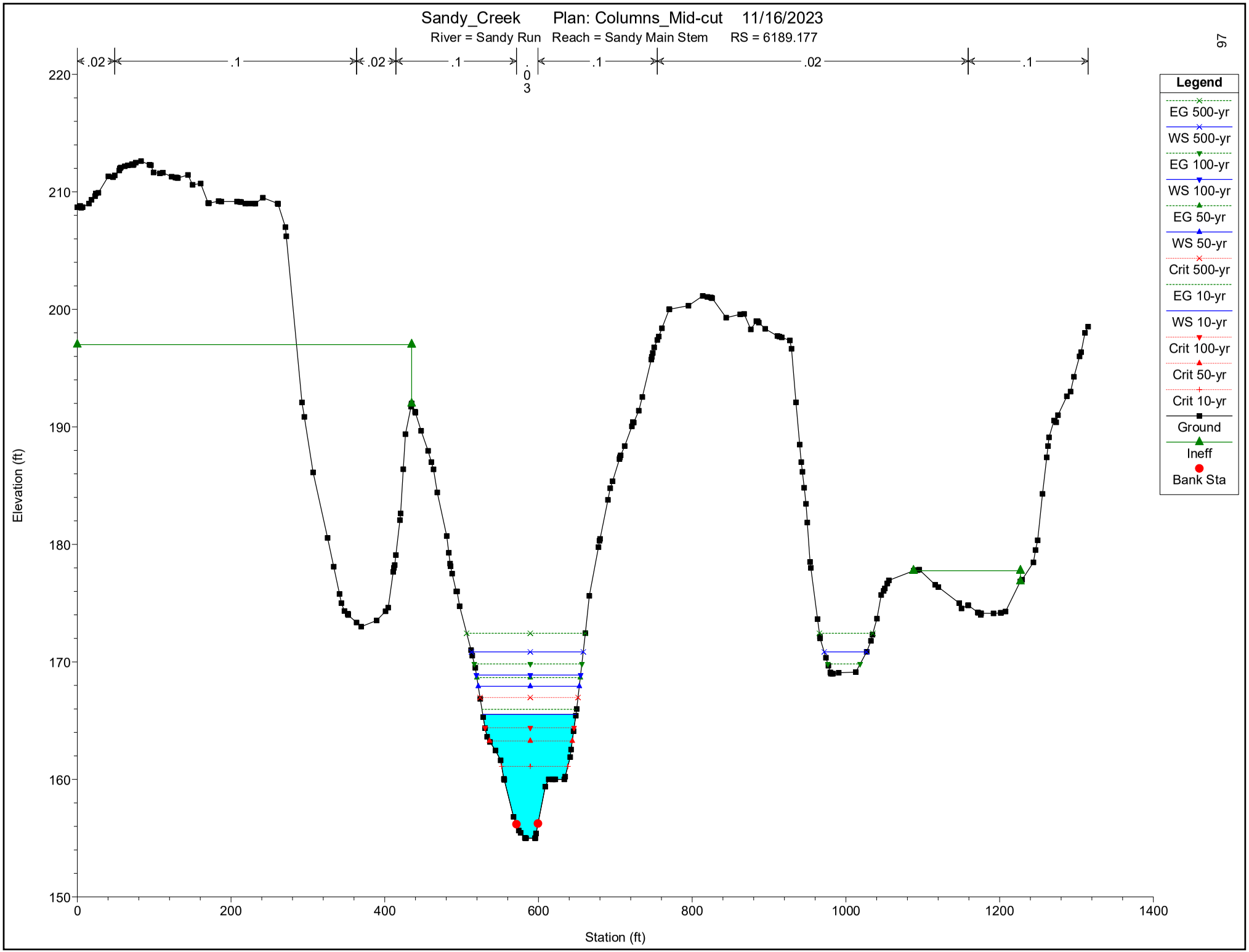
River = Sandy Run Reach = Sandy Main Stem RS = 4327.181



Sandy_Creek Plan: Columns_Mid-cut 11/16/2023

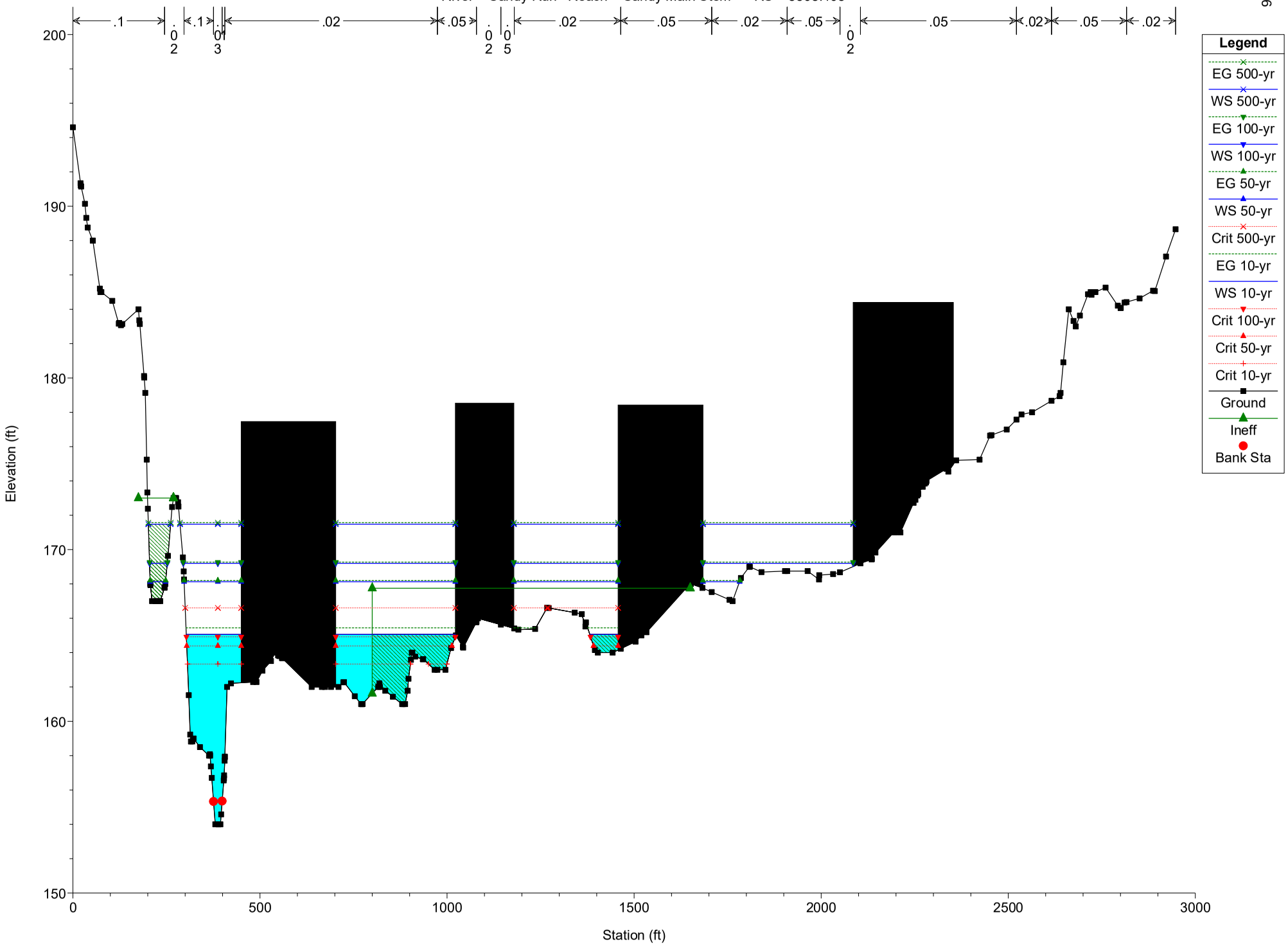
River = Sandy Run Reach = Sandy Main Stem RS = 3964.325




Sandy_Creek Plan: Columns_Mid-cut 11/16/2023
River = Sandy Run Reach = Sandy Main Stem RS = 6189.177
97
.02
.1
.02
.1
.03
.1
.02
.1
Legend
EG 500-yr
WS 500-yr
EG 100-yr
WS 100-yr
EG 50-yr
WS 50-yr
Crit 500-yr
EG 10-yr
WS 10-yr
Crit 100-yr
Crit 50-yr
Crit 10-yr
Ground
Ineff
Bank Sta
Elevation (ft)
220
210
200
190
180
170
160
150
0
200
400
600
800
1000
1200
1400
Station (ft)

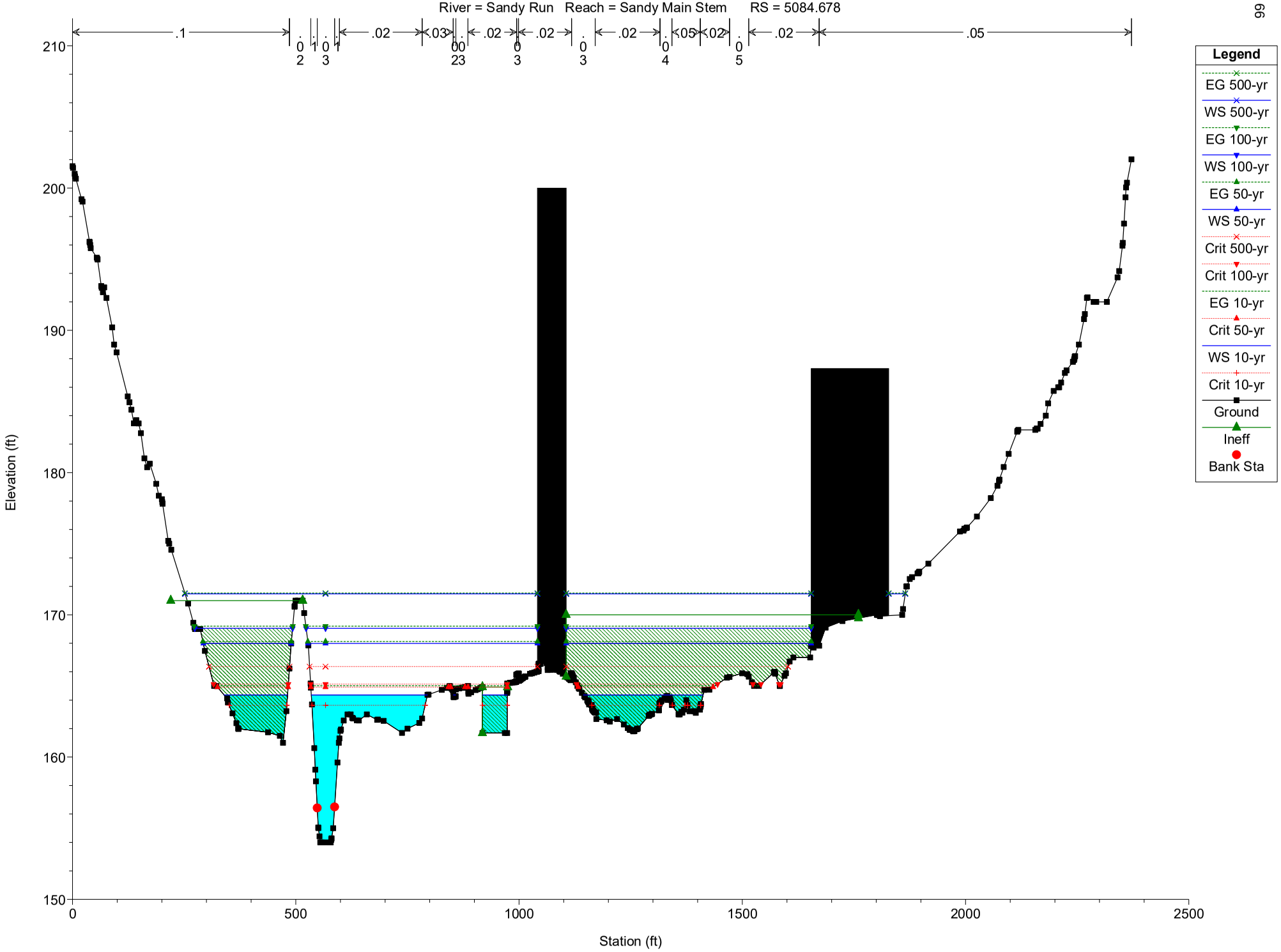
Sandy_Creek Plan: Columns_Mid-cut 11/16/2023

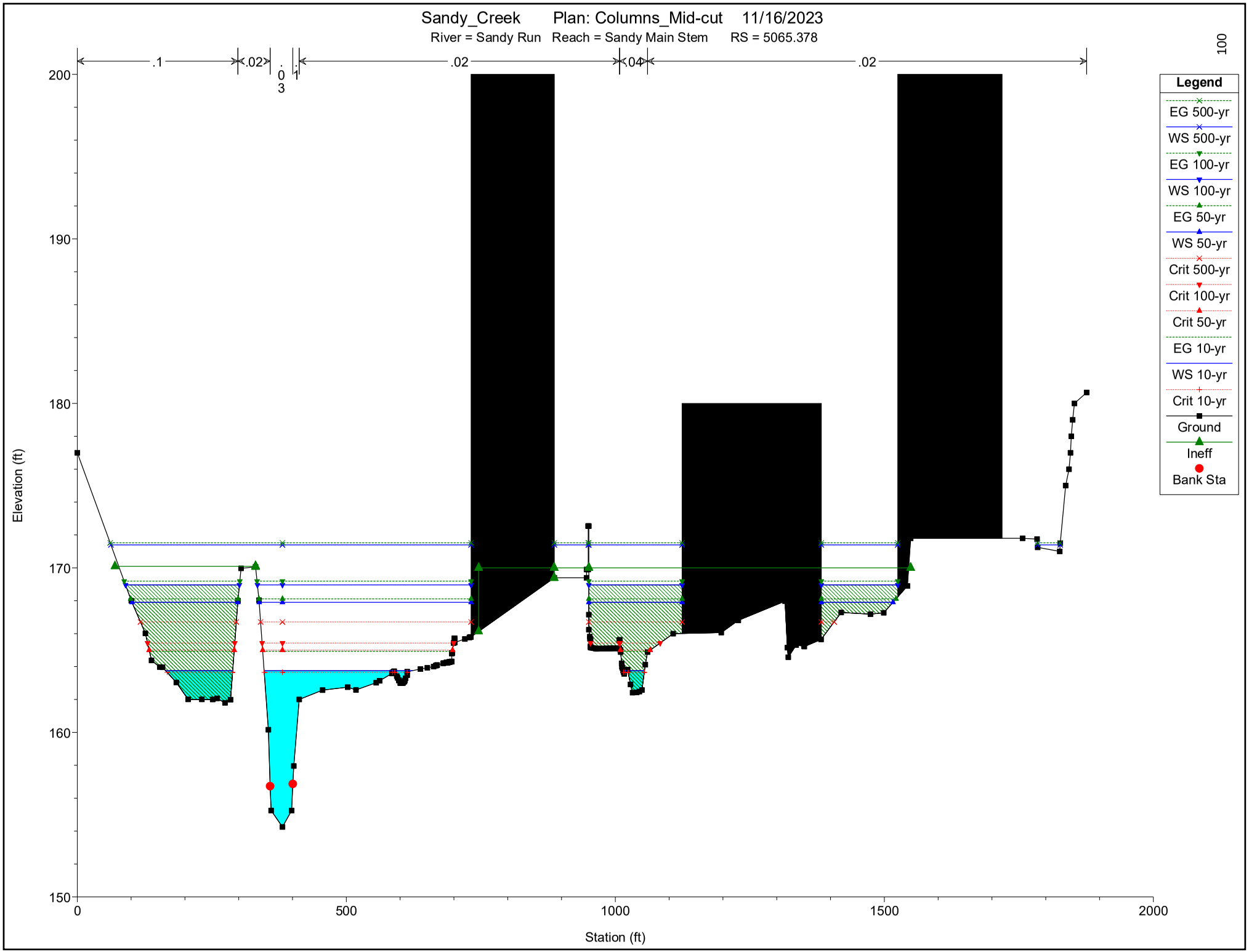
River = Sandy Run Reach = Sandy Main Stem RS = 5508.105

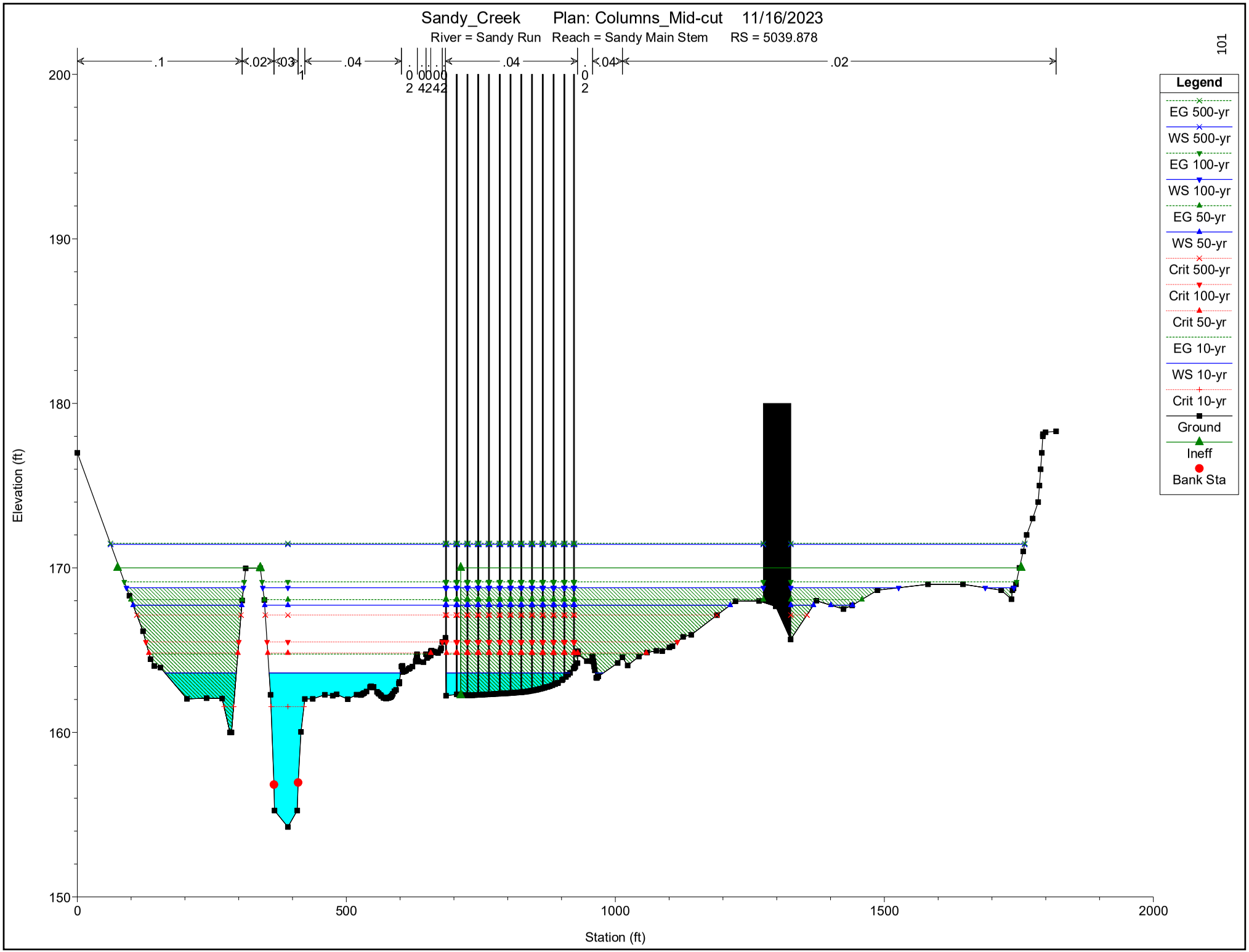


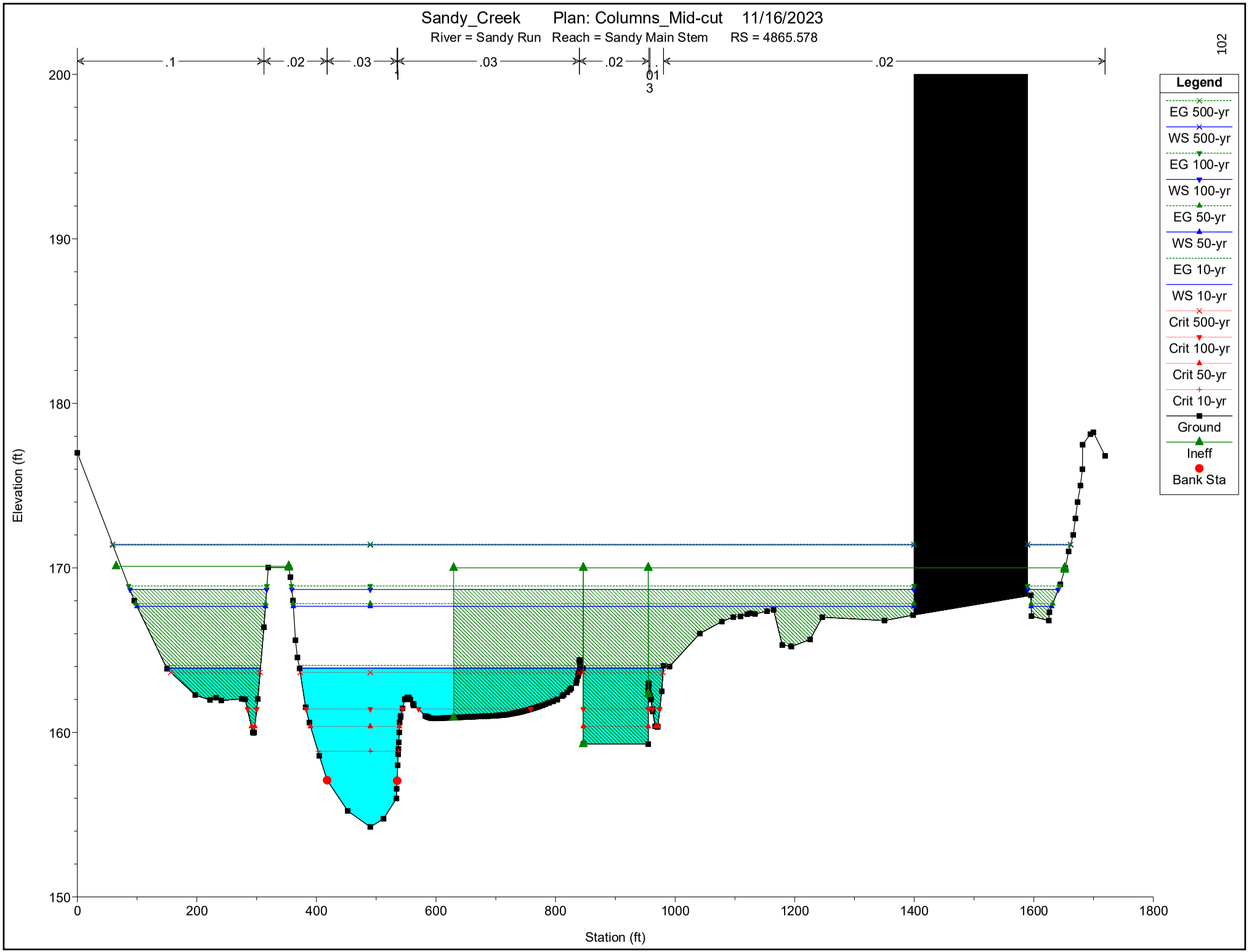
Sandy_Creek Plan: Columns_Mid-cut 11/16/2023

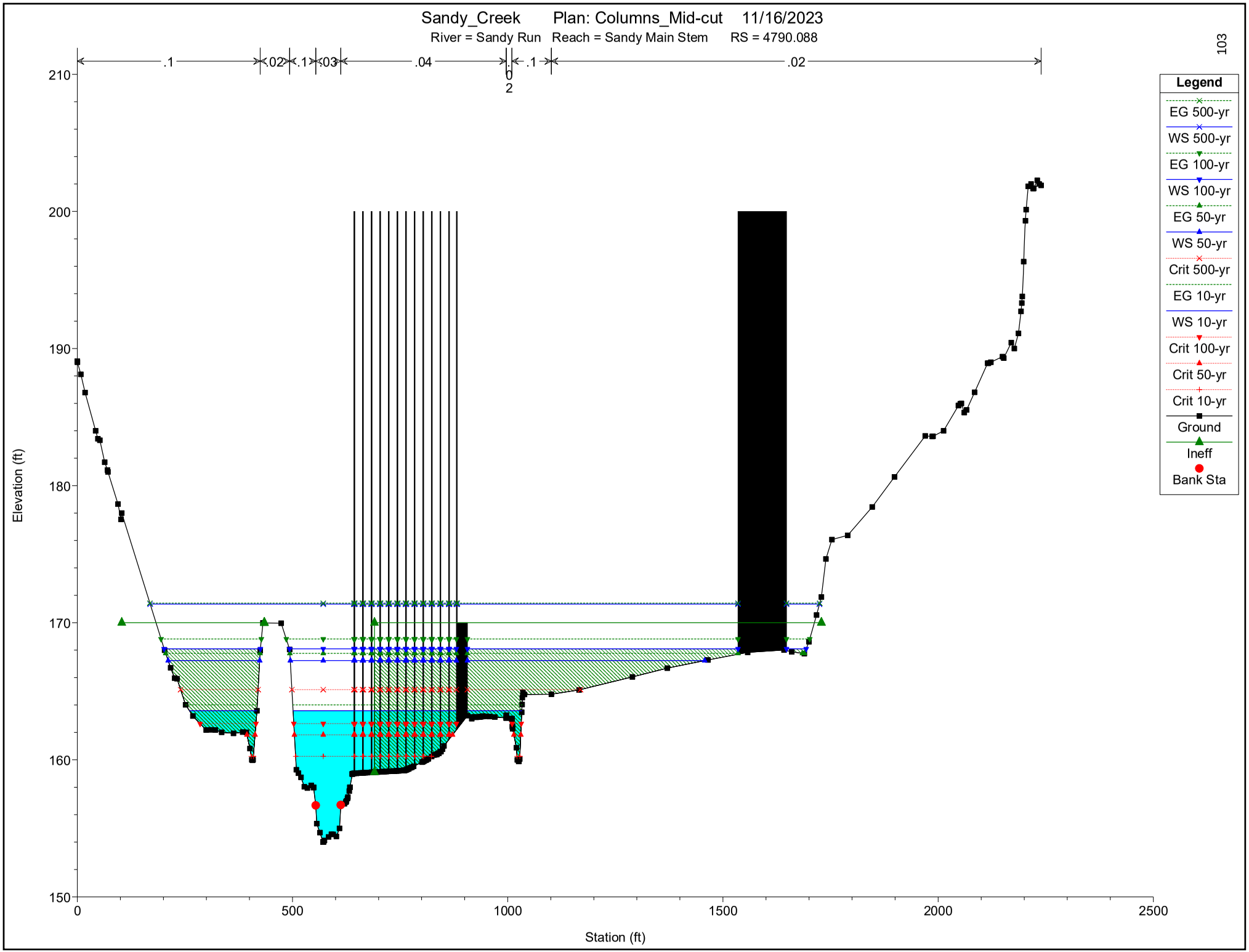
River = Sandy Run Reach = Sandy Main Stem RS = 5084.678




Sandy_Creek Plan: Columns_Mid-cut 11/16/2023
River = Sandy Run Reach = Sandy Main Stem RS = 5065.378
.1
.02
.03
.02
.04
.02
100
Legend
EG 500-yr
WS 500-yr
EG 100-yr
WS 100-yr
EG 50-yr
WS 50-yr
Crit 500-yr
Crit 100-yr
Crit 50-yr
EG 10-yr
WS 10-yr
Crit 10-yr
Ground
Ineff
Bank Sta
Elevation (ft)
200
190
180
170
160
150
0
500
1000
1500
2000
Station (ft)

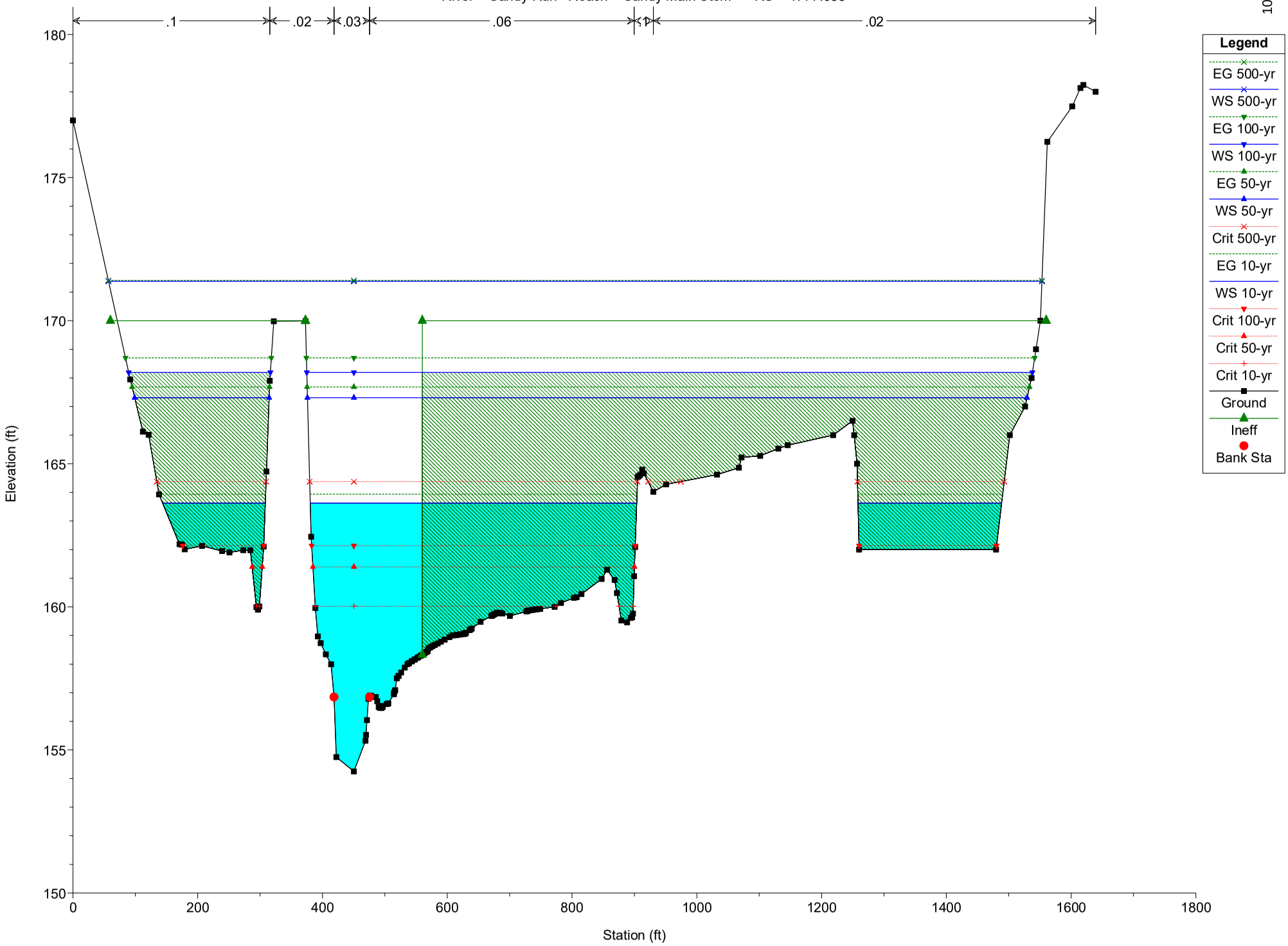

Sandy_Creek Plan: Columns_Mid-cut 11/16/2023
River = Sandy Run Reach = Sandy Main Stem RS = 5039.878
101
.1
.02
.03
.04
.04
.04
.02
Legend
EG 500-yr
WS 500-yr
EG 100-yr
WS 100-yr
EG 50-yr
WS 50-yr
Crit 500-yr
Crit 100-yr
Crit 50-yr
EG 10-yr
WS 10-yr
Crit 10-yr
Ground
Ineff
Bank Sta
Elevation (ft)
200
190
180
170
160
150
0
500
1000
1500
2000
Station (ft)

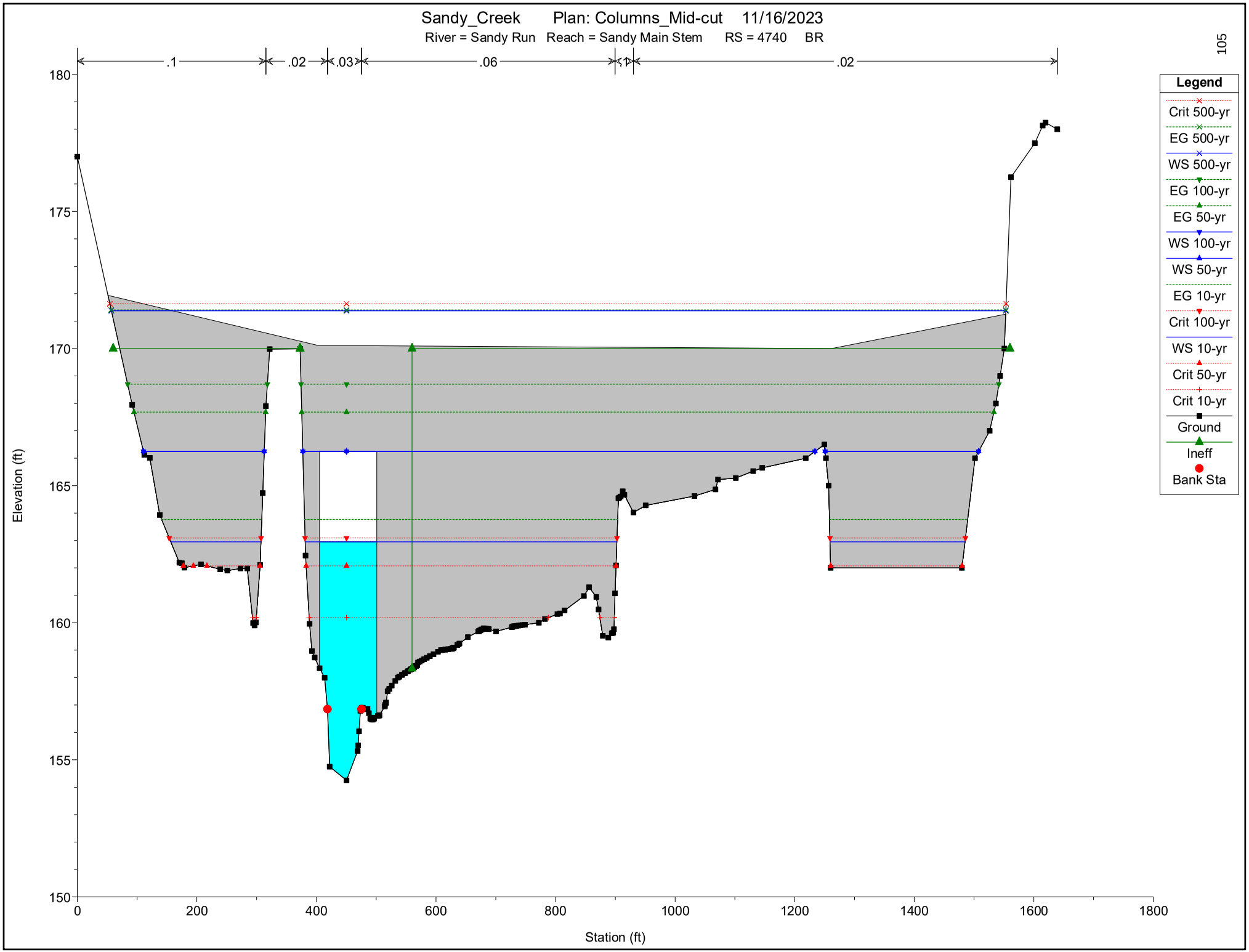

Sandy_Creek Plan: Columns_Mid-cut 11/16/2023
River = Sandy Run Reach = Sandy Main Stem RS = 4865.578
.1
.02
.03
.03
.02
.02
102
Legend
EG 500-yr
WS 500-yr
EG 100-yr
WS 100-yr
EG 50-yr
WS 50-yr
EG 10-yr
WS 10-yr
Crit 500-yr
Crit 100-yr
Crit 50-yr
Crit 10-yr
Ground
Ineff
Bank Sta
Elevation (ft)
200
190
180
170
160
150
0
200
400
600
800
1000
1200
1400
1600
1800
Station (ft)


Sandy_Creek Plan: Columns_Mid-cut 11/16/2023
River = Sandy Run Reach = Sandy Main Stem RS = 4790.088
103
.1
.02
.1
.03
.04
.1
.02
Legend
EG 500-yr
WS 500-yr
EG 100-yr
WS 100-yr
EG 50-yr
WS 50-yr
Crit 500-yr
EG 10-yr
WS 10-yr
Crit 100-yr
Crit 50-yr
Crit 10-yr
Ground
Ineff
Bank Sta
Elevation (ft)
210
200
190
180
170
160
150
0
500
1000
1500
2000
2500
Station (ft)

Sandy_Creek Plan: Columns_Mid-cut 11/16/2023

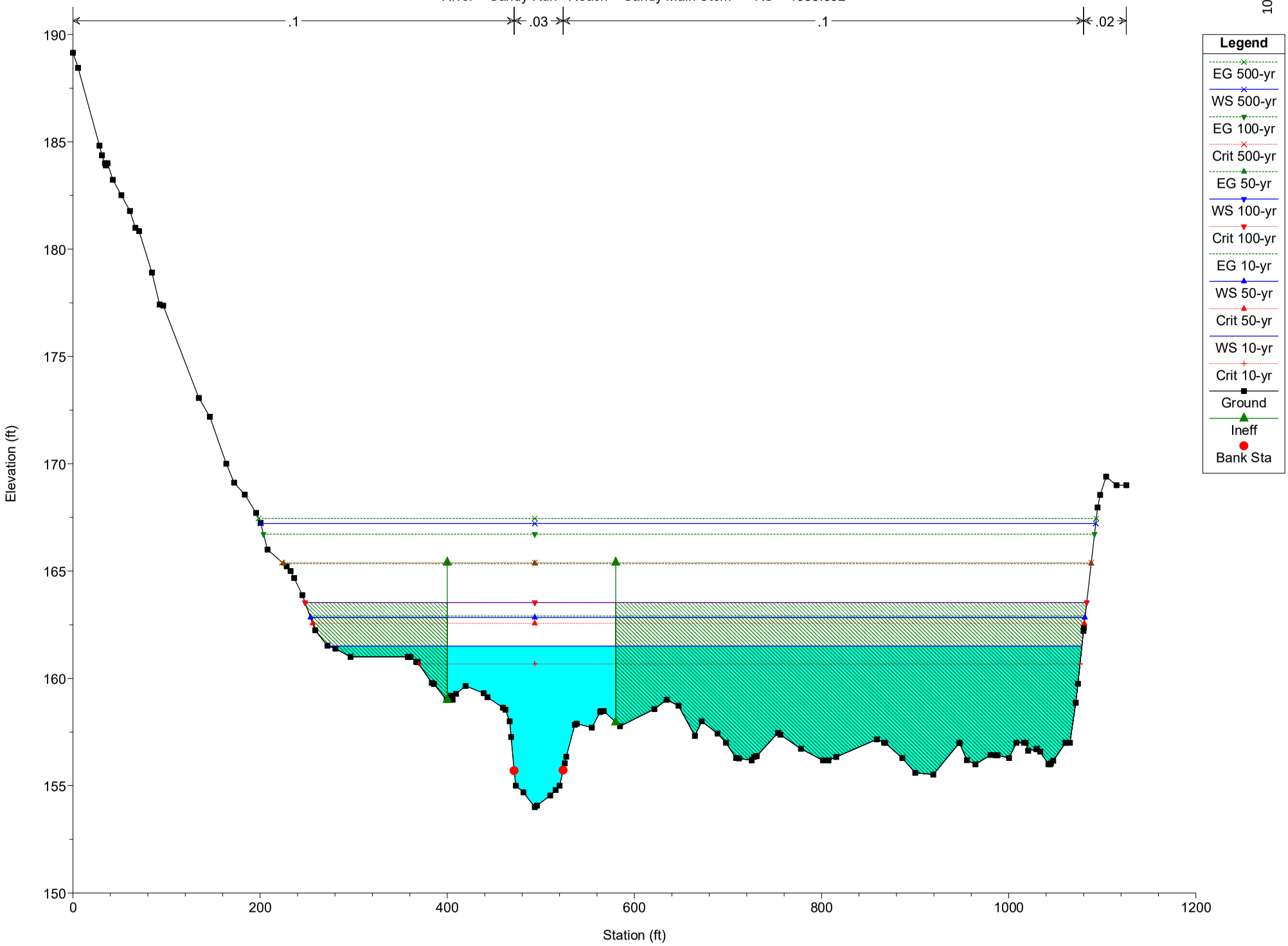
River = Sandy Run Reach = Sandy Main Stem RS = 4777.088

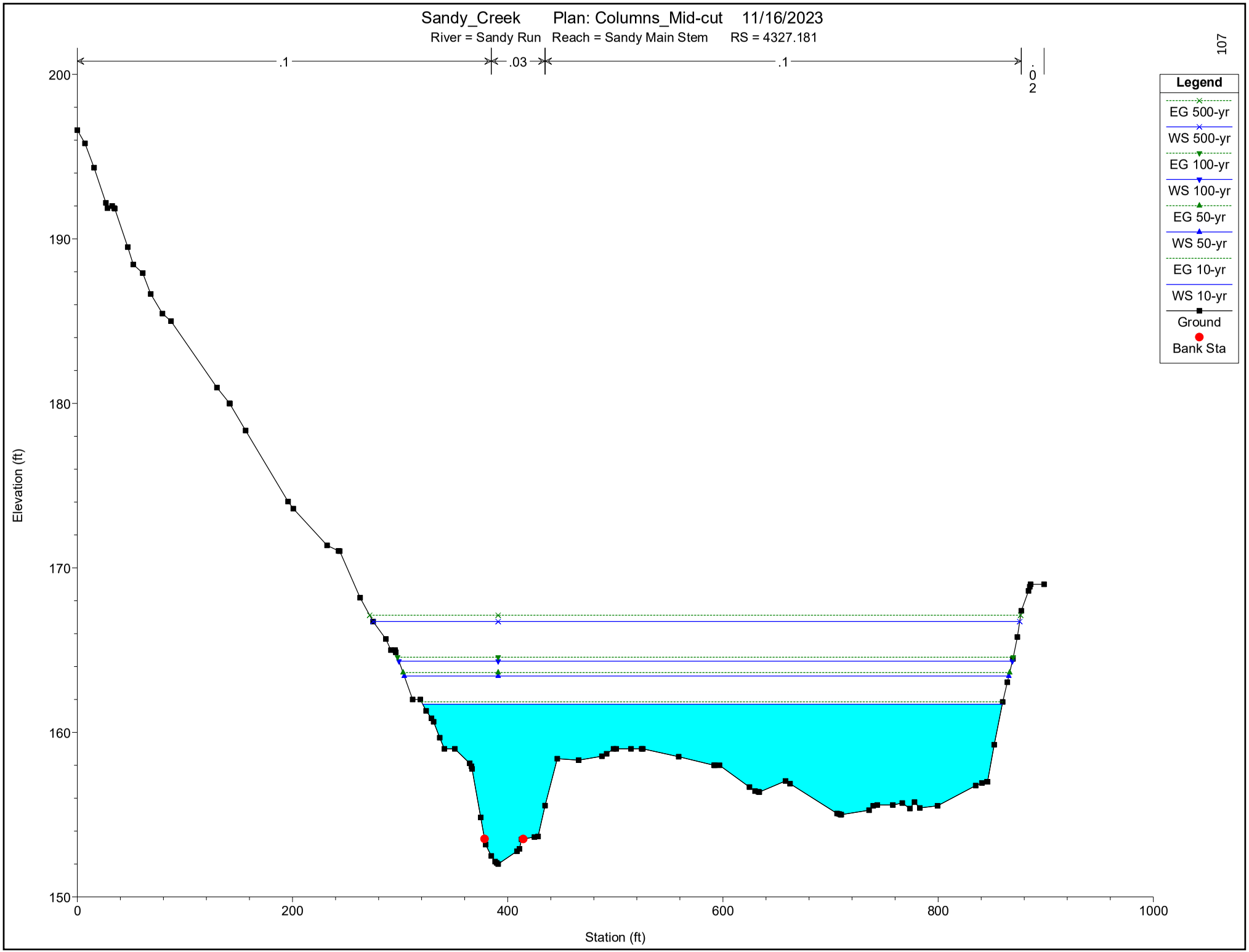


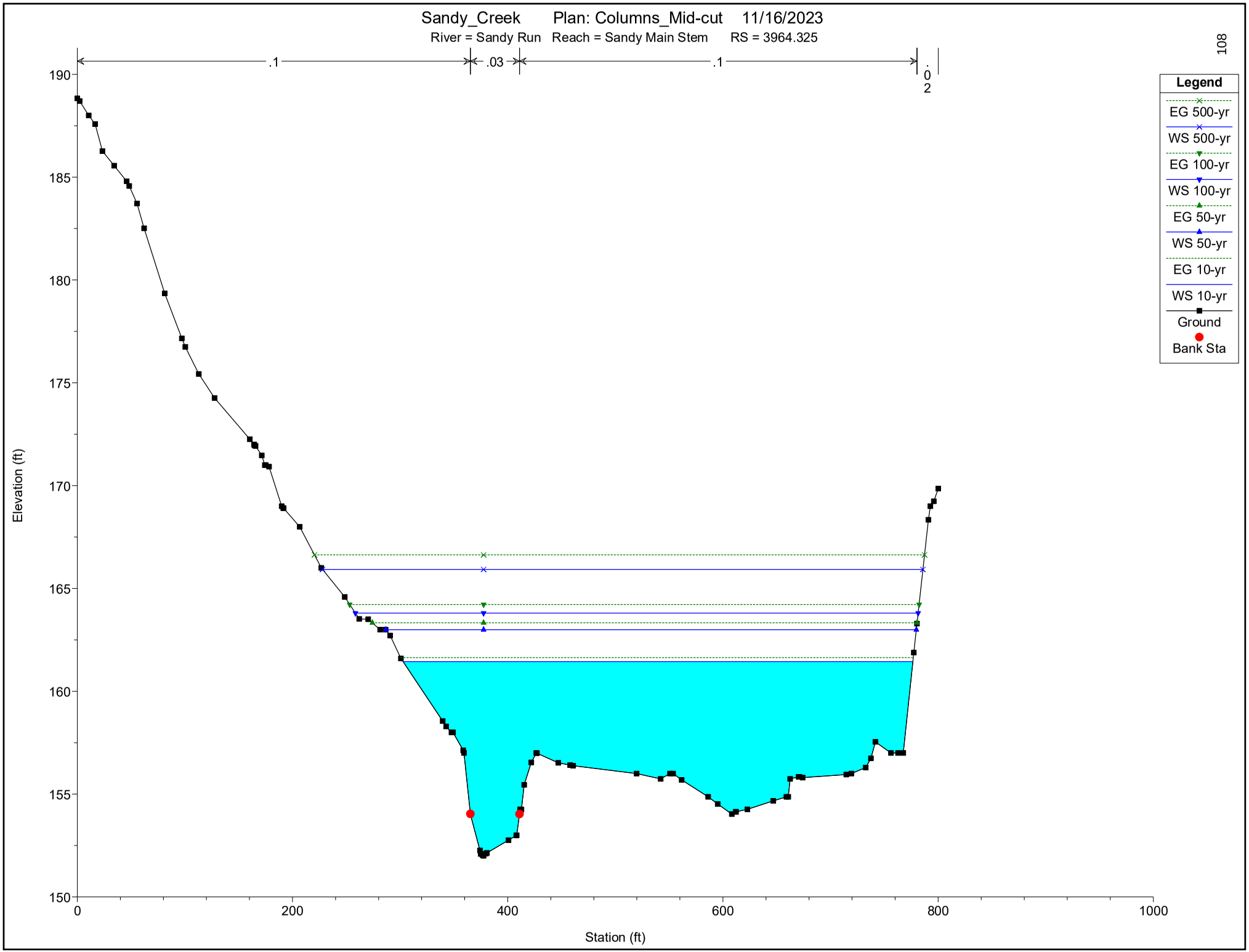

Sandy_Creek Plan: Columns_Mid-cut 11/16/2023
River = Sandy Run Reach = Sandy Main Stem RS = 4740 BR
105
.1
.02
.03
.06
.1
.02
Legend
Crit 500-yr
EG 500-yr
WS 500-yr
EG 100-yr
EG 50-yr
WS 100-yr
WS 50-yr
EG 10-yr
Crit 100-yr
WS 10-yr
Crit 50-yr
Crit 10-yr
Ground
Ineff
Bank Sta
Elevation (ft)
180
175
170
165
160
155
150
0
200
400
600
800
1000
1200
1400
1600
1800
Station (ft)

Sandy_Creek Plan: Columns_Mid-cut 11/16/2023

River = Sandy Run Reach = Sandy Main Stem RS = 4685.592




Sandy_Creek Plan: Columns_Mid-cut 11/16/2023
River = Sandy Run Reach = Sandy Main Stem RS = 4327.181
.1
.03
.1
.02
107
Legend
EG 500-yr
WS 500-yr
EG 100-yr
WS 100-yr
EG 50-yr
WS 50-yr
EG 10-yr
WS 10-yr
Ground
Bank Sta
Elevation (ft)
200
190
180
170
160
150
0
200
400
600
800
1000
Station (ft)


Sandy_Creek Plan: Columns_Mid-cut 11/16/2023
River = Sandy Run Reach = Sandy Main Stem RS = 3964.325
.1
.03
.1
.02
108
Legend
EG 500-yr
WS 500-yr
EG 100-yr
WS 100-yr
EG 50-yr
WS 50-yr
EG 10-yr
WS 10-yr
Ground
Bank Sta
Elevation (ft)
190
185
180
175
170
165
160
155
150
0
200
400
600
800
1000
Station (ft)

Plan: Mid-Columns Sandy Run Sandy Main Stem RS: 6189.177 Profile: 100-yr

E.G. Elev (ft)	169.82	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.95	Wt. n-Val.	0.100	0.030	0.100
W.S. Elev (ft)	168.88	Reach Len. (ft)	633.10	668.48	716.54
Crit W.S. (ft)	164.39	Flow Area (sq ft)	359.89	381.34	435.45
E.G. Slope (ft/ft)	0.001077	Area (sq ft)	359.89	381.34	435.45
Q Total (cfs)	4945.00	Flow (cfs)	622.20	3507.61	815.18
Top Width (ft)	135.54	Top Width (ft)	52.08	28.04	55.42
Vel Total (ft/s)	4.20	Avg. Vel. (ft/s)	1.73	9.20	1.87
Max Chl Dpth (ft)	13.88	Hydr. Depth (ft)	6.91	13.60	7.86
Conv. Total (cfs)	150665.3	Conv. (cfs)	18957.4	106870.7	24837.2
Length Wtd. (ft)	695.32	Wetted Per. (ft)	53.92	28.33	57.90
Min Ch El (ft)	155.00	Shear (lb/sq ft)	0.45	0.91	0.51
Alpha	3.45	Stream Power (lb/ft s)	0.78	8.33	0.95
Frctn Loss (ft)	0.12	Cum Volume (acre-ft)	153.00	73.27	395.52
C & E Loss (ft)	0.44	Cum SA (acres)	35.23	6.31	83.09

Plan: Mid-Columns Sandy Run Sandy Main Stem RS: 5508.105 Profile: 100-yr

E.G. Elev (ft)	169.27	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.07	Wt. n-Val.	0.100	0.030	0.022
W.S. Elev (ft)	169.20	Reach Len. (ft)	438.29	442.90	447.79
Crit W.S. (ft)	164.93	Flow Area (sq ft)	773.20	343.29	3968.73
E.G. Slope (ft/ft)	0.000098	Area (sq ft)	857.38	343.29	3968.73
Q Total (cfs)	9741.00	Flow (cfs)	509.53	1011.78	8219.69
Top Width (ft)	1202.24	Top Width (ft)	128.29	22.99	1050.96
Vel Total (ft/s)	1.92	Avg. Vel. (ft/s)	0.66	2.95	2.07
Max Chl Dpth (ft)	15.20	Hydr. Depth (ft)	9.56	14.93	3.78
Conv. Total (cfs)	981725.7	Conv. (cfs)	51352.0	101969.5	828404.2
Length Wtd. (ft)	446.68	Wetted Per. (ft)	83.90	23.38	1082.26
Min Ch El (ft)	154.00	Shear (lb/sq ft)	0.06	0.09	0.02
Alpha	1.24	Stream Power (lb/ft s)	0.04	0.27	0.05
Frctn Loss (ft)	0.06	Cum Volume (acre-ft)	144.15	67.71	359.30
C & E Loss (ft)	0.01	Cum SA (acres)	33.92	5.92	73.99

Plan: Mid-Columns Sandy Run Sandy Main Stem RS: 5084.678 Profile: 100-yr

E.G. Elev (ft)	169.20	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.15	Wt. n-Val.	0.082	0.030	0.022
W.S. Elev (ft)	169.05	Reach Len. (ft)	19.30	19.30	19.30
Crit W.S. (ft)	165.13	Flow Area (sq ft)	136.84	569.39	2576.79
E.G. Slope (ft/ft)	0.000176	Area (sq ft)	1305.53	569.39	5140.86
Q Total (cfs)	9741.00	Flow (cfs)	110.88	2208.42	7421.70
Top Width (ft)	1285.96	Top Width (ft)	244.12	38.79	1003.05
Vel Total (ft/s)	2.97	Avg. Vel. (ft/s)	0.81	3.88	2.88
Max Chl Dpth (ft)	15.05	Hydr. Depth (ft)	5.47	14.68	5.67
Conv. Total (cfs)	734033.1	Conv. (cfs)	8355.6	166415.1	559262.4
Length Wtd. (ft)	19.30	Wetted Per. (ft)	28.22	39.72	466.74
Min Ch El (ft)	154.00	Shear (lb/sq ft)	0.05	0.16	0.06
Alpha	1.11	Stream Power (lb/ft s)	0.04	0.61	0.17
Frctn Loss (ft)	0.00	Cum Volume (acre-ft)	133.27	63.07	312.47
C & E Loss (ft)	0.01	Cum SA (acres)	32.05	5.61	63.43

Plan: Mid-Columns Sandy Run Sandy Main Stem RS: 5065.378 Profile: 100-yr

E.G. Elev (ft)	169.19	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.23	Wt. n-Val.	0.020	0.030	0.021
W.S. Elev (ft)	168.96	Reach Len. (ft)	76.22	76.22	76.22
Crit W.S. (ft)	165.43	Flow Area (sq ft)	121.27	592.01	1885.09
E.G. Slope (ft/ft)	0.000256	Area (sq ft)	1207.34	592.01	2873.70
Q Total (cfs)	9741.00	Flow (cfs)	392.24	2687.80	6660.95
Top Width (ft)	923.93	Top Width (ft)	235.41	42.00	646.52
Vel Total (ft/s)	3.75	Avg. Vel. (ft/s)	3.23	4.54	3.53
Max Chl Dpth (ft)	14.71	Hydr. Depth (ft)	5.11	14.10	5.69
Conv. Total (cfs)	609131.9	Conv. (cfs)	24528.1	168075.8	416527.9
Length Wtd. (ft)	76.22	Wetted Per. (ft)	27.00	43.14	336.63

Plan: Mid-Columns Sandy Run Sandy Main Stem RS: 5065.378 Profile: 100-yr (Continued)

Min Ch El (ft)	154.25	Shear (lb/sq ft)	0.07	0.22	0.09
Alpha	1.04	Stream Power (lb/ft s)	0.23	0.99	0.32
Frctn Loss (ft)	0.03	Cum Volume (acre-ft)	132.72	62.81	310.70
C & E Loss (ft)	0.01	Cum SA (acres)	31.94	5.59	63.07

Plan: Mid-Columns Sandy Run Sandy Main Stem RS: 5039.878 Profile: 100-yr

E.G. Elev (ft)	169.15	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.36	Wt. n-Val.	0.020	0.030	0.038
W.S. Elev (ft)	168.79	Reach Len. (ft)	593.05	673.82	717.62
Crit W.S. (ft)	165.50	Flow Area (sq ft)	101.13	628.38	1784.46
E.G. Slope (ft/ft)	0.000538	Area (sq ft)	1236.49	628.38	4265.19
Q Total (cfs)	9741.00	Flow (cfs)	451.91	4085.79	5203.30
Top Width (ft)	1375.72	Top Width (ft)	238.25	45.00	1092.47
Vel Total (ft/s)	3.87	Avg. Vel. (ft/s)	4.47	6.50	2.92
Max Chl Dpth (ft)	14.54	Hydr. Depth (ft)	4.88	13.96	5.99
Conv. Total (cfs)	420037.3	Conv. (cfs)	19486.4	176181.6	224369.2
Length Wtd. (ft)	680.77	Wetted Per. (ft)	24.22	46.66	323.08
Min Ch El (ft)	154.25	Shear (lb/sq ft)	0.14	0.45	0.19
Alpha	1.55	Stream Power (lb/ft s)	0.63	2.94	0.54
Frctn Loss (ft)	0.21	Cum Volume (acre-ft)	130.58	61.74	304.45
C & E Loss (ft)	0.04	Cum SA (acres)	31.53	5.51	61.54

Plan: Mid-Columns Sandy Run Sandy Main Stem RS: 4865.578 Profile: 100-yr

E.G. Elev (ft)	168.90	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.21	Wt. n-Val.	0.020	0.030	0.030
W.S. Elev (ft)	168.69	Reach Len. (ft)	54.72	88.70	126.71
Crit W.S. (ft)	161.42	Flow Area (sq ft)	439.49	1575.05	713.68
E.G. Slope (ft/ft)	0.000196	Area (sq ft)	1628.87	1575.05	4492.34
Q Total (cfs)	9741.00	Flow (cfs)	1709.00	6157.25	1874.75
Top Width (ft)	1320.83	Top Width (ft)	287.93	117.19	915.71
Vel Total (ft/s)	3.57	Avg. Vel. (ft/s)	3.89	3.91	2.63
Max Chl Dpth (ft)	14.44	Hydr. Depth (ft)	7.41	13.44	7.57
Conv. Total (cfs)	695611.4	Conv. (cfs)	122041.1	439693.4	133876.9
Length Wtd. (ft)	92.68	Wetted Per. (ft)	60.82	117.71	95.88
Min Ch El (ft)	154.25	Shear (lb/sq ft)	0.09	0.16	0.09
Alpha	1.07	Stream Power (lb/ft s)	0.34	0.64	0.24
Frctn Loss (ft)	0.03	Cum Volume (acre-ft)	111.07	44.70	232.32
C & E Loss (ft)	0.05	Cum SA (acres)	27.95	4.26	45.00

Plan: Mid-Columns Sandy Run Sandy Main Stem RS: 4790.088 Profile: 100-yr

E.G. Elev (ft)	168.82	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.72	Wt. n-Val.	0.100	0.030	0.040
W.S. Elev (ft)	168.10	Reach Len. (ft)	13.00	13.00	13.00
Crit W.S. (ft)	162.64	Flow Area (sq ft)	512.57	783.32	698.60
E.G. Slope (ft/ft)	0.000852	Area (sq ft)	1609.11	783.32	3822.98
Q Total (cfs)	9741.00	Flow (cfs)	898.49	6343.83	2498.69
Top Width (ft)	1261.77	Top Width (ft)	284.75	58.20	918.82
Vel Total (ft/s)	4.88	Avg. Vel. (ft/s)	1.75	8.10	3.58
Max Chl Dpth (ft)	14.10	Hydr. Depth (ft)	8.39	13.46	9.68
Conv. Total (cfs)	333677.1	Conv. (cfs)	30777.6	217307.1	85592.4
Length Wtd. (ft)	13.00	Wetted Per. (ft)	63.60	59.09	126.60
Min Ch El (ft)	154.00	Shear (lb/sq ft)	0.43	0.71	0.29
Alpha	1.94	Stream Power (lb/ft s)	0.75	5.71	1.05
Frctn Loss (ft)	0.01	Cum Volume (acre-ft)	109.04	42.30	220.22
C & E Loss (ft)	0.11	Cum SA (acres)	27.59	4.08	42.33

Plan: Mid-Columns Sandy Run Sandy Main Stem RS: 4777.088 Profile: 100-yr

E.G. Elev (ft)	168.70	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.51	Wt. n-Val.	0.020	0.030	0.060
W.S. Elev (ft)	168.19	Reach Len. (ft)	15.00	15.00	15.00
Crit W.S. (ft)	162.14	Flow Area (sq ft)	360.28	758.87	916.19
E.G. Slope (ft/ft)	0.000525	Area (sq ft)	1517.68	758.87	6393.62

Plan: Mid-Columns Sandy Run Sandy Main Stem RS: 4777.088 Profile: 100-yr (Continued)

Q Total (cfs)	9741.00	Flow (cfs)	2402.18	4792.90	2545.92
Top Width (ft)	1390.28	Top Width (ft)	270.81	57.00	1062.46
Vel Total (ft/s)	4.79	Avg. Vel. (ft/s)	6.67	6.32	2.78
Max Chl Dpth (ft)	13.94	Hydr. Depth (ft)	8.24	13.31	10.84
Conv. Total (cfs)	424995.6	Conv. (cfs)	104806.2	209112.2	111077.3
Length Wtd. (ft)	15.00	Wetted Per. (ft)	46.50	57.83	84.58
Min Ch El (ft)	154.25	Shear (lb/sq ft)	0.25	0.43	0.36
Alpha	1.42	Stream Power (lb/ft s)	1.69	2.72	0.99
Frctn Loss (ft)		Cum Volume (acre-ft)	108.57	42.07	218.70
C & E Loss (ft)		Cum SA (acres)	27.50	4.06	42.04

Plan: Mid-Columns Sandy Run Sandy Main Stem RS: 4740 BR U Profile: 100-yr

E.G. Elev (ft)	168.70	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.82	Wt. n-Val.	0.020	0.030	0.060
W.S. Elev (ft)	166.25	Reach Len. (ft)	40.00	40.00	40.00
Crit W.S. (ft)	163.09	Flow Area (sq ft)	111.79	648.09	243.99
E.G. Slope (ft/ft)	0.005199	Area (sq ft)	111.79	648.09	243.99
Q Total (cfs)	9741.00	Flow (cfs)	1302.74	7336.73	1101.53
Top Width (ft)		Top Width (ft)			
Vel Total (ft/s)	9.70	Avg. Vel. (ft/s)	11.65	11.32	4.51
Max Chl Dpth (ft)	12.00	Hydr. Depth (ft)	111002.70		
Conv. Total (cfs)	135100.6	Conv. (cfs)	18068.1	101755.1	15277.4
Length Wtd. (ft)	40.00	Wetted Per. (ft)	34.84	114.83	60.69
Min Ch El (ft)	154.25	Shear (lb/sq ft)	1.04	1.83	1.30
Alpha	1.24	Stream Power (lb/ft s)	12.14	20.74	5.89
Frctn Loss (ft)		Cum Volume (acre-ft)	108.29	41.83	217.55
C & E Loss (ft)		Cum SA (acres)	27.46	4.05	41.86

Plan: Mid-Columns Sandy Run Sandy Main Stem RS: 4740 BR D Profile: 100-yr

E.G. Elev (ft)	168.51	Element	Left OB	Channel	Right OB
Vel Head (ft)	4.30	Wt. n-Val.	0.100	0.030	0.100
W.S. Elev (ft)	164.21	Reach Len. (ft)	36.50	36.50	36.50
Crit W.S. (ft)	164.21	Flow Area (sq ft)	153.86	504.36	121.66
E.G. Slope (ft/ft)	0.006114	Area (sq ft)	153.86	504.36	121.66
Q Total (cfs)	9741.00	Flow (cfs)	509.90	8807.04	424.06
Top Width (ft)	95.90	Top Width (ft)	26.33	52.44	17.13
Vel Total (ft/s)	12.49	Avg. Vel. (ft/s)	3.31	17.46	3.49
Max Chl Dpth (ft)	10.21	Hydr. Depth (ft)	5.84	9.62	7.10
Conv. Total (cfs)	124580.5	Conv. (cfs)	6521.3	112635.8	5423.4
Length Wtd. (ft)	36.50	Wetted Per. (ft)	31.94	52.68	23.41
Min Ch El (ft)	154.00	Shear (lb/sq ft)	1.84	3.65	1.98
Alpha	1.77	Stream Power (lb/ft s)	6.09	63.81	6.91
Frctn Loss (ft)		Cum Volume (acre-ft)	108.17	41.30	217.39
C & E Loss (ft)		Cum SA (acres)	27.45	4.03	41.85

Plan: Mid-Columns Sandy Run Sandy Main Stem RS: 4685.592 Profile: 100-yr

E.G. Elev (ft)	166.72	Element	Left OB	Channel	Right OB
Vel Head (ft)	3.19	Wt. n-Val.	0.100	0.030	0.100
W.S. Elev (ft)	163.53	Reach Len. (ft)	393.59	358.41	320.67
Crit W.S. (ft)	163.53	Flow Area (sq ft)	324.57	469.04	323.60
E.G. Slope (ft/ft)	0.005758	Area (sq ft)	708.82	469.04	3610.15
Q Total (cfs)	9741.00	Flow (cfs)	998.19	7572.79	1170.02
Top Width (ft)	835.28	Top Width (ft)	223.41	52.44	559.43
Vel Total (ft/s)	8.72	Avg. Vel. (ft/s)	3.08	16.15	3.62
Max Chl Dpth (ft)	9.53	Hydr. Depth (ft)	4.54	8.94	5.77
Conv. Total (cfs)	128372.6	Conv. (cfs)	13154.7	99798.6	15419.2
Length Wtd. (ft)	346.18	Wetted Per. (ft)	72.05	52.68	56.35
Min Ch El (ft)	154.00	Shear (lb/sq ft)	1.62	3.20	2.06
Alpha	2.70	Stream Power (lb/ft s)	4.98	51.67	7.46
Frctn Loss (ft)	0.63	Cum Volume (acre-ft)	107.81	40.89	215.82
C & E Loss (ft)	1.47	Cum SA (acres)	27.34	3.99	41.61

Plan: Mid-Columns Sandy Run Sandy Main Stem RS: 4327.181 Profile: 100-yr

E.G. Elev (ft)	164.57	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.24	Wt. n-Val.	0.100	0.034	0.084
W.S. Elev (ft)	164.33	Reach Len. (ft)	379.56	362.86	348.11
Crit W.S. (ft)		Flow Area (sq ft)	360.79	422.56	3294.49
E.G. Slope (ft/ft)	0.000880	Area (sq ft)	360.79	422.56	3294.49
Q Total (cfs)	9741.00	Flow (cfs)	431.37	2833.56	6476.07
Top Width (ft)	570.03	Top Width (ft)	79.56	35.94	454.53
Vel Total (ft/s)	2.39	Avg. Vel. (ft/s)	1.20	6.71	1.97
Max Chl Dpth (ft)	12.33	Hydr. Depth (ft)	4.53	11.76	7.25
Conv. Total (cfs)	328280.8	Conv. (cfs)	14537.5	95493.7	218249.6
Length Wtd. (ft)	354.53	Wetted Per. (ft)	80.80	36.17	456.48
Min Ch El (ft)	152.00	Shear (lb/sq ft)	0.25	0.64	0.40
Alpha	2.75	Stream Power (lb/ft s)	0.29	4.31	0.78
Frctn Loss (ft)	0.33	Cum Volume (acre-ft)	102.98	37.22	190.41
C & E Loss (ft)	0.02	Cum SA (acres)	25.97	3.62	37.87

Plan: Mid-Columns Sandy Run Sandy Main Stem RS: 3964.325 Profile: 100-yr

E.G. Elev (ft)	164.22	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.42	Wt. n-Val.	0.100	0.030	0.100
W.S. Elev (ft)	163.80	Reach Len. (ft)	460.88	448.94	432.66
Crit W.S. (ft)		Flow Area (sq ft)	345.62	508.58	2906.66
E.G. Slope (ft/ft)	0.001012	Area (sq ft)	345.62	508.58	2906.66
Q Total (cfs)	9741.00	Flow (cfs)	354.97	3973.20	5412.83
Top Width (ft)	523.01	Top Width (ft)	106.92	45.65	370.43
Vel Total (ft/s)	2.59	Avg. Vel. (ft/s)	1.03	7.81	1.86
Max Chl Dpth (ft)	11.80	Hydr. Depth (ft)	3.23	11.14	7.85
Conv. Total (cfs)	306231.1	Conv. (cfs)	11159.2	124906.9	170165.0
Length Wtd. (ft)	441.11	Wetted Per. (ft)	107.90	46.06	372.81
Min Ch El (ft)	152.00	Shear (lb/sq ft)	0.20	0.70	0.49
Alpha	4.00	Stream Power (lb/ft s)	0.21	5.45	0.92
Frctn Loss (ft)	0.34	Cum Volume (acre-ft)	99.90	33.35	165.63
C & E Loss (ft)	0.05	Cum SA (acres)	25.16	3.28	34.58

Plan: Mid-Columns Sandy Run Sandy Main Stem RS: 6189.177 Profile: 500-yr

E.G. Elev (ft)	172.44	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.59	Wt. n-Val.	0.100	0.030	0.086
W.S. Elev (ft)	170.85	Reach Len. (ft)	633.10	668.48	716.54
Crit W.S. (ft)	166.97	Flow Area (sq ft)	468.53	436.60	625.64
E.G. Slope (ft/ft)	0.001615	Area (sq ft)	468.53	436.60	625.64
Q Total (cfs)	8165.00	Flow (cfs)	1092.77	5381.49	1690.74
Top Width (ft)	200.64	Top Width (ft)	58.55	28.04	114.04
Vel Total (ft/s)	5.33	Avg. Vel. (ft/s)	2.33	12.33	2.70
Max Chl Dpth (ft)	15.85	Hydr. Depth (ft)	8.00	15.57	5.49
Conv. Total (cfs)	203177.2	Conv. (cfs)	27192.4	133912.5	42072.3
Length Wtd. (ft)	697.82	Wetted Per. (ft)	60.70	28.33	117.35
Min Ch El (ft)	155.00	Shear (lb/sq ft)	0.78	1.55	0.54
Alpha	3.60	Stream Power (lb/ft s)	1.82	19.15	1.45
Frctn Loss (ft)	0.12	Cum Volume (acre-ft)	221.54	86.72	583.86
C & E Loss (ft)	0.75	Cum SA (acres)	41.22	6.35	90.43

Plan: Mid-Columns Sandy Run Sandy Main Stem RS: 5508.105 Profile: 500-yr

E.G. Elev (ft)	171.57	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.09	Wt. n-Val.	0.099	0.030	0.022
W.S. Elev (ft)	171.48	Reach Len. (ft)	438.29	442.90	447.79
Crit W.S. (ft)	166.60	Flow Area (sq ft)	967.50	395.84	6370.97
E.G. Slope (ft/ft)	0.000094	Area (sq ft)	1174.15	395.84	6370.97
Q Total (cfs)	16941.00	Flow (cfs)	718.10	1252.35	14970.55
Top Width (ft)	1223.11	Top Width (ft)	149.16	22.99	1050.96
Vel Total (ft/s)	2.19	Avg. Vel. (ft/s)	0.74	3.16	2.35
Max Chl Dpth (ft)	17.48	Hydr. Depth (ft)	10.80	17.22	6.06
Conv. Total (cfs)	1748958.0	Conv. (cfs)	74135.3	129290.4	1545532.0
Length Wtd. (ft)	446.92	Wetted Per. (ft)	92.86	23.38	1098.26
Min Ch El (ft)	154.00	Shear (lb/sq ft)	0.06	0.10	0.03
Alpha	1.18	Stream Power (lb/ft s)	0.05	0.31	0.08
Frctn Loss (ft)	0.03	Cum Volume (acre-ft)	209.60	80.33	526.31
C & E Loss (ft)	0.01	Cum SA (acres)	39.72	5.96	80.84

Plan: Mid-Columns Sandy Run Sandy Main Stem RS: 5084.678 Profile: 500-yr

E.G. Elev (ft)	171.53	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.06	Wt. n-Val.	0.092	0.030	0.023
W.S. Elev (ft)	171.47	Reach Len. (ft)	19.30	19.30	19.30
Crit W.S. (ft)	166.36	Flow Area (sq ft)	1949.75	663.30	7619.95
E.G. Slope (ft/ft)	0.000058	Area (sq ft)	1949.75	663.30	7619.95
Q Total (cfs)	16941.00	Flow (cfs)	883.34	1638.33	14419.33
Top Width (ft)	1375.17	Top Width (ft)	296.12	38.79	1040.26
Vel Total (ft/s)	1.66	Avg. Vel. (ft/s)	0.45	2.47	1.89
Max Chl Dpth (ft)	17.47	Hydr. Depth (ft)	6.58	17.10	7.33
Conv. Total (cfs)	2219401.0	Conv. (cfs)	115724.0	214634.4	1889043.0
Length Wtd. (ft)	19.30	Wetted Per. (ft)	301.87	39.72	1067.86
Min Ch El (ft)	154.00	Shear (lb/sq ft)	0.02	0.06	0.03
Alpha	1.33	Stream Power (lb/ft s)	0.01	0.15	0.05
Frctn Loss (ft)	0.00	Cum Volume (acre-ft)	193.88	74.94	454.40
C & E Loss (ft)	0.01	Cum SA (acres)	37.48	5.64	70.09

Plan: Mid-Columns Sandy Run Sandy Main Stem RS: 5065.378 Profile: 500-yr

E.G. Elev (ft)	171.52	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.13	Wt. n-Val.	0.074	0.030	0.022
W.S. Elev (ft)	171.40	Reach Len. (ft)	76.22	76.22	76.22
Crit W.S. (ft)	166.72	Flow Area (sq ft)	1862.20	694.12	4581.18
E.G. Slope (ft/ft)	0.000134	Area (sq ft)	1862.20	694.12	4581.18
Q Total (cfs)	16941.00	Flow (cfs)	1495.21	2535.86	12909.94
Top Width (ft)	1089.66	Top Width (ft)	295.96	42.00	751.69
Vel Total (ft/s)	2.37	Avg. Vel. (ft/s)	0.80	3.65	2.82
Max Chl Dpth (ft)	17.15	Hydr. Depth (ft)	6.29	16.53	6.09
Conv. Total (cfs)	1463859.0	Conv. (cfs)	129199.7	219121.3	1115538.0
Length Wtd. (ft)	76.22	Wetted Per. (ft)	301.40	43.14	784.80

Plan: Mid-Columns Sandy Run Sandy Main Stem RS: 5065.378 Profile: 500-yr (Continued)

Min Ch El (ft)	154.25	Shear (lb/sq ft)	0.05	0.13	0.05
Alpha	1.44	Stream Power (lb/ft s)	0.04	0.49	0.14
Frctn Loss (ft)	0.01	Cum Volume (acre-ft)	193.04	74.64	451.70
C & E Loss (ft)	0.02	Cum SA (acres)	37.34	5.63	69.70

Plan: Mid-Columns Sandy Run Sandy Main Stem RS: 5039.878 Profile: 500-yr

E.G. Elev (ft)	171.49	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.06	Wt. n-Val.	0.077	0.030	0.030
W.S. Elev (ft)	171.43	Reach Len. (ft)	593.05	673.82	717.62
Crit W.S. (ft)	167.13	Flow Area (sq ft)	1961.51	747.17	7579.41
E.G. Slope (ft/ft)	0.000116	Area (sq ft)	1961.51	747.17	7579.41
Q Total (cfs)	16941.00	Flow (cfs)	1435.71	2536.16	12969.14
Top Width (ft)	1621.72	Top Width (ft)	303.46	45.00	1273.26
Vel Total (ft/s)	1.65	Avg. Vel. (ft/s)	0.73	3.39	1.71
Max Chl Dpth (ft)	17.18	Hydr. Depth (ft)	6.46	16.60	5.95
Conv. Total (cfs)	1570563.0	Conv. (cfs)	133101.0	235121.5	1202341.0
Length Wtd. (ft)	697.41	Wetted Per. (ft)	309.48	46.66	1512.49
Min Ch El (ft)	154.25	Shear (lb/sq ft)	0.05	0.12	0.04
Alpha	1.48	Stream Power (lb/ft s)	0.03	0.39	0.06
Frctn Loss (ft)	0.05	Cum Volume (acre-ft)	189.69	73.38	441.06
C & E Loss (ft)	0.01	Cum SA (acres)	36.82	5.55	67.93

Plan: Mid-Columns Sandy Run Sandy Main Stem RS: 4865.578 Profile: 500-yr

E.G. Elev (ft)	171.44	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.04	Wt. n-Val.	0.050	0.030	0.025
W.S. Elev (ft)	171.40	Reach Len. (ft)	54.72	88.70	126.71
Crit W.S. (ft)	163.65	Flow Area (sq ft)	2510.89	1892.72	7004.61
E.G. Slope (ft/ft)	0.000043	Area (sq ft)	2510.89	1892.72	7004.61
Q Total (cfs)	16941.00	Flow (cfs)	1791.92	3915.55	11233.52
Top Width (ft)	1411.94	Top Width (ft)	358.65	117.19	936.10
Vel Total (ft/s)	1.48	Avg. Vel. (ft/s)	0.71	2.07	1.60
Max Chl Dpth (ft)	17.15	Hydr. Depth (ft)	7.00	16.15	7.48
Conv. Total (cfs)	2583955.0	Conv. (cfs)	273316.3	597226.2	1713412.0
Length Wtd. (ft)	110.53	Wetted Per. (ft)	362.95	117.71	956.44
Min Ch El (ft)	154.25	Shear (lb/sq ft)	0.02	0.04	0.02
Alpha	1.25	Stream Power (lb/ft s)	0.01	0.09	0.03
Frctn Loss (ft)	0.01	Cum Volume (acre-ft)	159.25	52.96	320.93
C & E Loss (ft)	0.00	Cum SA (acres)	32.31	4.30	49.73

Plan: Mid-Columns Sandy Run Sandy Main Stem RS: 4790.088 Profile: 500-yr

E.G. Elev (ft)	171.43	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.07	Wt. n-Val.	0.094	0.030	0.032
W.S. Elev (ft)	171.36	Reach Len. (ft)	13.00	13.00	13.00
Crit W.S. (ft)	165.12	Flow Area (sq ft)	2707.89	973.19	6906.22
E.G. Slope (ft/ft)	0.000125	Area (sq ft)	2707.89	973.19	6906.22
Q Total (cfs)	16941.00	Flow (cfs)	1911.50	3494.57	11534.93
Top Width (ft)	1416.34	Top Width (ft)	384.68	58.20	973.46
Vel Total (ft/s)	1.60	Avg. Vel. (ft/s)	0.71	3.59	1.67
Max Chl Dpth (ft)	17.36	Hydr. Depth (ft)	7.04	16.72	7.09
Conv. Total (cfs)	1512581.0	Conv. (cfs)	170668.8	312013.6	1029898.0
Length Wtd. (ft)	13.00	Wetted Per. (ft)	390.02	59.09	1281.75
Min Ch El (ft)	154.00	Shear (lb/sq ft)	0.05	0.13	0.04
Alpha	1.80	Stream Power (lb/ft s)	0.04	0.46	0.07
Frctn Loss (ft)	0.00	Cum Volume (acre-ft)	155.97	50.05	300.69
C & E Loss (ft)	0.02	Cum SA (acres)	31.85	4.12	46.95

Plan: Mid-Columns Sandy Run Sandy Main Stem RS: 4777.088 Profile: 500-yr

E.G. Elev (ft)	171.41	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.03	Wt. n-Val.	0.055	0.030	0.034
W.S. Elev (ft)	171.38	Reach Len. (ft)	15.00	15.00	15.00
Crit W.S. (ft)	164.38	Flow Area (sq ft)	2519.45	940.35	9807.25
E.G. Slope (ft/ft)	0.000048	Area (sq ft)	2519.45	940.35	9807.26

Plan: Mid-Columns Sandy Run Sandy Main Stem RS: 4777.088 Profile: 500-yr (Continued)

Q Total (cfs)	16941.00	Flow (cfs)	1698.64	2064.17	13178.20
Top Width (ft)	1496.20	Top Width (ft)	361.46	57.00	1077.74
Vel Total (ft/s)	1.28	Avg. Vel. (ft/s)	0.67	2.20	1.34
Max Chl Dpth (ft)	17.13	Hydr. Depth (ft)	6.97	16.50	9.10
Conv. Total (cfs)	2453429.0	Conv. (cfs)	246000.3	298936.4	1908492.0
Length Wtd. (ft)	15.00	Wetted Per. (ft)	367.77	57.83	1081.64
Min Ch El (ft)	154.25	Shear (lb/sq ft)	0.02	0.05	0.03
Alpha	1.25	Stream Power (lb/ft s)	0.01	0.11	0.04
Frctn Loss (ft)		Cum Volume (acre-ft)	155.19	49.76	298.20
C & E Loss (ft)		Cum SA (acres)	31.73	4.10	46.64

Plan: Mid-Columns Sandy Run Sandy Main Stem RS: 4740 BR U Profile: 500-yr

E.G. Elev (ft)	171.41	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.09	Wt. n-Val.			
W.S. Elev (ft)	171.38	Reach Len. (ft)	40.00	40.00	40.00
Crit W.S. (ft)	171.64	Flow Area (sq ft)	285.76	720.90	1505.01
E.G. Slope (ft/ft)		Area (sq ft)	285.76	720.90	1505.01
Q Total (cfs)	16941.00	Flow (cfs)	2145.92	10029.05	4775.89
Top Width (ft)	1393.62	Top Width (ft)	258.88	57.00	1077.74
Vel Total (ft/s)	6.74	Avg. Vel. (ft/s)	7.51	13.91	3.17
Max Chl Dpth (ft)	17.13	Hydr. Depth (ft)	1.10	12.65	1.40
Conv. Total (cfs)		Conv. (cfs)			
Length Wtd. (ft)	40.00	Wetted Per. (ft)	293.73	171.83	1138.47
Min Ch El (ft)	154.25	Shear (lb/sq ft)			
Alpha	1.54	Stream Power (lb/ft s)			
Frctn Loss (ft)		Cum Volume (acre-ft)	154.71	49.48	296.25
C & E Loss (ft)		Cum SA (acres)	31.63	4.08	46.27

Plan: Mid-Columns Sandy Run Sandy Main Stem RS: 4740 BR D Profile: 500-yr

E.G. Elev (ft)	171.41	Element	Left OB	Channel	Right OB
Vel Head (ft)	2.98	Wt. n-Val.			
W.S. Elev (ft)	171.38	Reach Len. (ft)	36.50	36.50	36.50
Crit W.S. (ft)	172.38	Flow Area (sq ft)	432.39	678.50	1143.74
E.G. Slope (ft/ft)		Area (sq ft)	432.39	678.50	1143.74
Q Total (cfs)	16941.00	Flow (cfs)	1246.54	11737.11	3967.21
Top Width (ft)	972.78	Top Width (ft)	318.64	52.44	601.70
Vel Total (ft/s)	7.51	Avg. Vel. (ft/s)	2.88	17.30	3.47
Max Chl Dpth (ft)	17.38	Hydr. Depth (ft)	1.36	12.94	1.90
Conv. Total (cfs)		Conv. (cfs)			
Length Wtd. (ft)	36.50	Wetted Per. (ft)	379.07	157.56	646.92
Min Ch El (ft)	154.00	Shear (lb/sq ft)			
Alpha	3.40	Stream Power (lb/ft s)			
Frctn Loss (ft)		Cum Volume (acre-ft)	154.38	48.83	295.04
C & E Loss (ft)		Cum SA (acres)	31.36	4.03	45.50

Plan: Mid-Columns Sandy Run Sandy Main Stem RS: 4685.592 Profile: 500-yr

E.G. Elev (ft)	167.45	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.24	Wt. n-Val.	0.100	0.030	0.099
W.S. Elev (ft)	167.22	Reach Len. (ft)	393.59	358.41	320.67
Crit W.S. (ft)	165.40	Flow Area (sq ft)	1623.34	662.31	5689.82
E.G. Slope (ft/ft)	0.000669	Area (sq ft)	1623.34	662.31	5689.82
Q Total (cfs)	16941.00	Flow (cfs)	2053.90	4587.42	10299.69
Top Width (ft)	892.37	Top Width (ft)	270.79	52.44	569.14
Vel Total (ft/s)	2.12	Avg. Vel. (ft/s)	1.27	6.93	1.81
Max Chl Dpth (ft)	13.22	Hydr. Depth (ft)	5.99	12.63	10.00
Conv. Total (cfs)	655009.7	Conv. (cfs)	79412.3	177368.6	398228.8
Length Wtd. (ft)	337.08	Wetted Per. (ft)	271.76	52.68	571.65
Min Ch El (ft)	154.00	Shear (lb/sq ft)	0.25	0.53	0.42
Alpha	3.36	Stream Power (lb/ft s)	0.32	3.64	0.75
Frctn Loss (ft)	0.29	Cum Volume (acre-ft)	153.52	48.27	292.17
C & E Loss (ft)	0.04	Cum SA (acres)	31.12	3.99	45.01

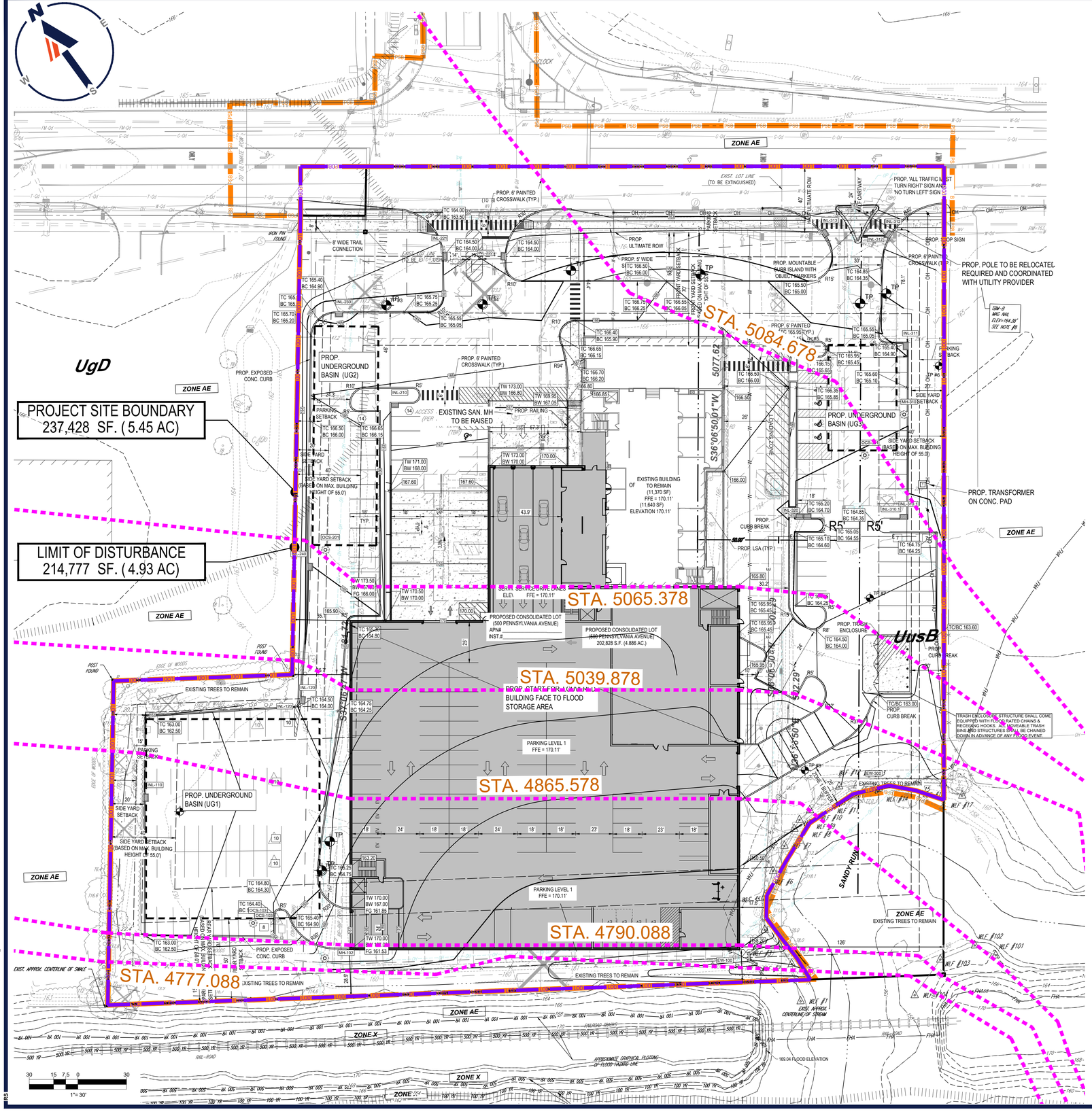
Plan: Mid-Columns Sandy Run Sandy Main Stem RS: 4327.181 Profile: 500-yr

E.G. Elev (ft)	167.12	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.38	Wt. n-Val.	0.100	0.034	0.086
W.S. Elev (ft)	166.74	Reach Len. (ft)	379.56	362.86	348.11
Crit W.S. (ft)		Flow Area (sq ft)	579.86	509.24	4399.65
E.G. Slope (ft/ft)	0.001149	Area (sq ft)	579.86	509.24	4399.65
Q Total (cfs)	16941.00	Flow (cfs)	912.15	4411.72	11617.13
Top Width (ft)	600.93	Top Width (ft)	103.64	35.94	461.35
Vel Total (ft/s)	3.09	Avg. Vel. (ft/s)	1.57	8.66	2.64
Max Chl Dpth (ft)	14.74	Hydr. Depth (ft)	5.60	14.17	9.54
Conv. Total (cfs)	499880.0	Conv. (cfs)	26914.9	130177.2	342787.9
Length Wtd. (ft)	354.49	Wetted Per. (ft)	105.03	36.17	463.72
Min Ch El (ft)	152.00	Shear (lb/sq ft)	0.40	1.01	0.68
Alpha	2.57	Stream Power (lb/ft s)	0.62	8.74	1.80
Frctn Loss (ft)	0.46	Cum Volume (acre-ft)	143.56	43.45	255.04
C & E Loss (ft)	0.03	Cum SA (acres)	29.42	3.62	41.22

Plan: Mid-Columns Sandy Run Sandy Main Stem RS: 3964.325 Profile: 500-yr

E.G. Elev (ft)	166.63	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.71	Wt. n-Val.	0.100	0.030	0.100
W.S. Elev (ft)	165.93	Reach Len. (ft)	460.88	448.94	432.66
Crit W.S. (ft)		Flow Area (sq ft)	603.33	605.43	3697.24
E.G. Slope (ft/ft)	0.001450	Area (sq ft)	603.33	605.43	3697.24
Q Total (cfs)	16941.00	Flow (cfs)	910.80	6360.55	9669.64
Top Width (ft)	557.93	Top Width (ft)	137.42	45.65	374.87
Vel Total (ft/s)	3.45	Avg. Vel. (ft/s)	1.51	10.51	2.62
Max Chl Dpth (ft)	13.93	Hydr. Depth (ft)	4.39	13.26	9.86
Conv. Total (cfs)	444838.3	Conv. (cfs)	23915.9	167016.0	253906.4
Length Wtd. (ft)	441.02	Wetted Per. (ft)	138.47	46.06	377.72
Min Ch El (ft)	152.00	Shear (lb/sq ft)	0.39	1.19	0.89
Alpha	3.81	Stream Power (lb/ft s)	0.60	12.50	2.32
Frctn Loss (ft)	0.51	Cum Volume (acre-ft)	138.41	38.81	222.68
C & E Loss (ft)	0.09	Cum SA (acres)	28.37	3.28	37.88

Appendix A – Cross-Section Plan



USGS MAP

AMBLER QUAD

SCALE: 1"=2,000'

1000' 0 2000'

BOHLER

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PROJECT No.:	PAB220113.00
DRAWN BY:	RMS
CHECKED BY:	MSL
DATE:	03/21/2023
CAD I.D.:	PAB220113_CUTFILL-0A

PROJECT:

FLOODPLAIN ANALYSIS PLANS

FOR

MILEONE FORT WASHINGTON, LLC

BMW AUTOMOTIVE DEALERSHIP EXPANSION

500 PENNSYLVANIA AVENUE
WHITEMARSH TOWNSHIP
MONTGOMERY COUNTY, PA

BOHLER
74 W BROAD STREET, SUITE 500
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J.A. BEAVAN
PROFESSIONAL ENGINEER
PENNSYLVANIA LICENSE No. PE082005
NEW YORK LICENSE No. 16 093204
NEW JERSEY LICENSE No. 24GE05339500

SHEET TITLE:

FLOODPLAIN CROSS-SECTION EXHIBIT

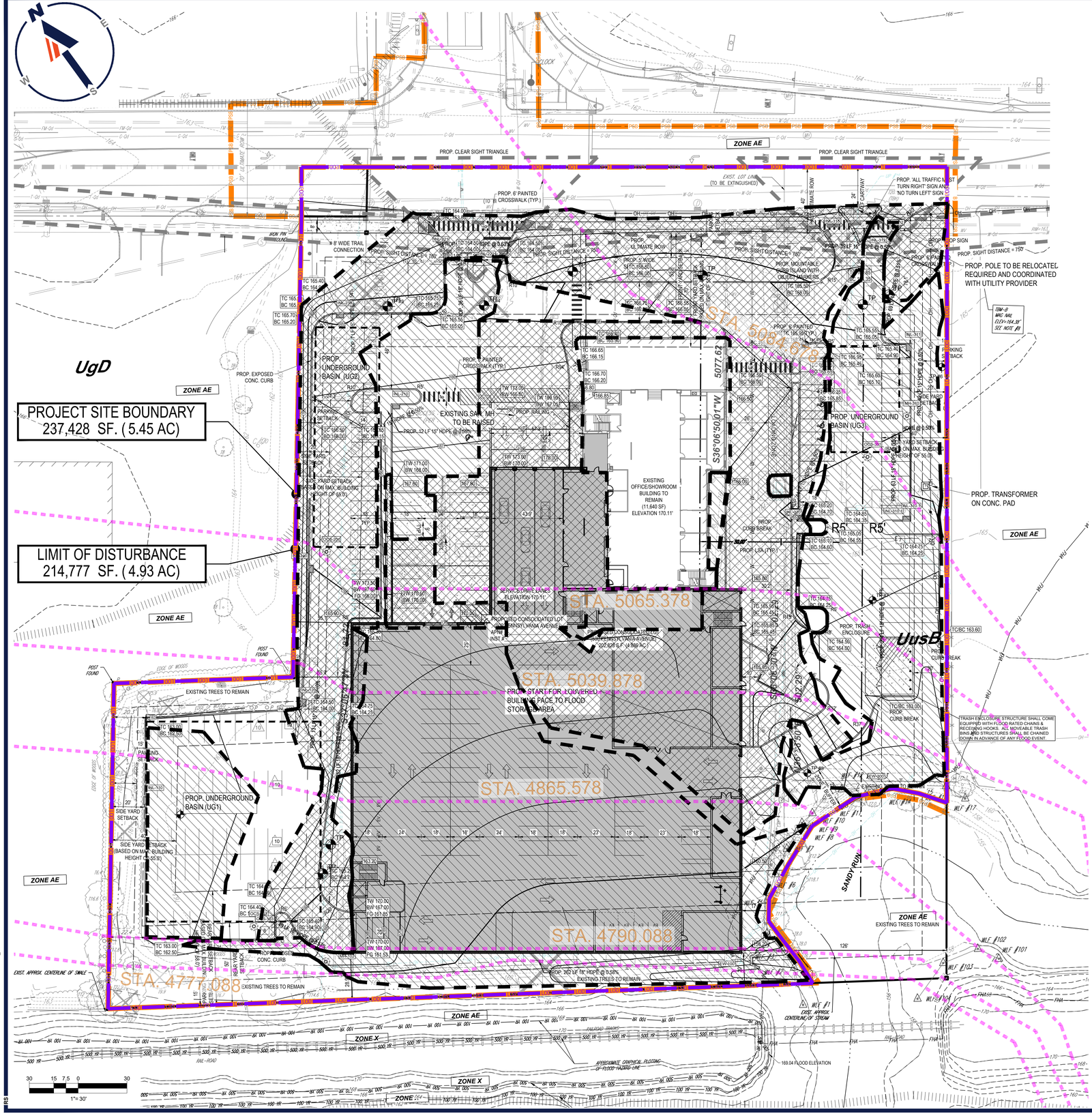
SHEET NUMBER:

C-301

ORG. DATE - 03/21/2023

R:\2022\PAB220113.00\C-ADP\DWG\EXHIBITS\FEMA\PAB220113_CUTFILL-0A.dwg — LAYOUT: C-301 FEMA CROSS-SECTIONS — RMS

Appendix B – Cut/Fill Exhibit



USGS MAP

AMBLER QUAD

SCALE: 1"=2,000'

1000' 0 2000'

CUT FILL LEGEND

FLOODPLAIN FILL AREA

FLOODPLAIN CUT AREA

AS-BUILT FLOODPLAIN CUT/FILL CALCULATION

CUT WITHIN FLOODPLAIN: 5,159 CY
FILL WITHIN FLOODPLAIN: 4,885 CY

NET CUT WITHIN FLOODPLAIN: 274 CY
NET FILL WITHIN FLOODPLAIN = 0 CY

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PROJECT No.:	PAB220113.00
DRAWN BY:	RMS
CHECKED BY:	MSL
DATE:	03/21/2023
CAD I.D.:	PAB220113_CUTFILL-0A

PROJECT:

FLOODPLAIN ANALYSIS PLANS

FOR

MILEONE FORT WASHINGTON, LLC

BMW AUTOMOTIVE DEALERSHIP EXPANSION

500 PENNSYLVANIA AVENUE
WHITEMARSH TOWNSHIP
MONTGOMERY COUNTY, PA

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NEW YORK LICENSE No. 16 093204
NEW JERSEY LICENSE No. 24GE05339500

SHEET TITLE:

FLOODPLAIN CUT-FILL EXHIBIT

SHEET NUMBER:

C-302

ORG. DATE - 03/21/2023

R:\2022\PAB220113.00\CAD\BWI\WINGS\EXHIBITS\FEMA\PAB220113_CUTFILL-0A---LAYOUT: C-302 CUT-FILL

Appendix C – Topographic Work Map Exhibit

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PROJECT No.:	PAB220113.00
DRAWN BY:	RMS
CHECKED BY:	JAB
DATE:	07/17/2023
CAD I.D.:	WORK MAP

PROJECT:

MONTGOMERY COUNTY
COMMONWEALTH OF PA
WHITEMARSH TOWNSHIP
SANDY RUN WATERSHED

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NEW JERSEY LICENSE No. 24GE05035600

SHEET TITLE:

APPLICATION FOR CLOMR
TOPOGRAPHIC WORK MAP
NAVD88

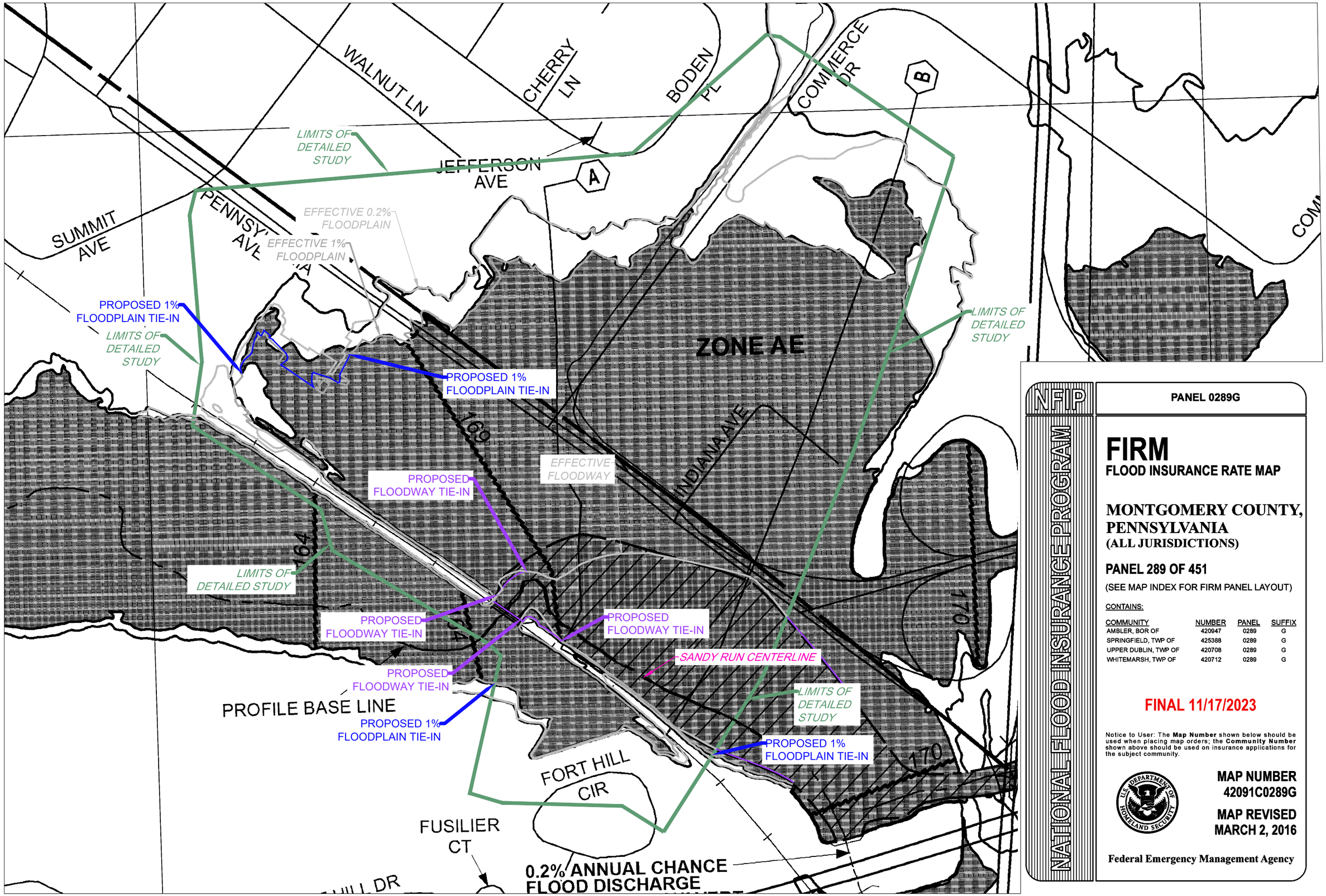
SHEET NUMBER:

1

ORG. DATE - 07/17/2023

R:\2022\PAB220113.00\TECHNICAL\STORMWATER & HEC\FEMA\WORK MAP---LAYOUT - TOPO WORK MAP
RMS

Appendix D – Annotated FIRM Map Exhibit



NFIP

PANEL 0289G

NATIONAL FLOOD INSURANCE PROGRAM

FIRM

FLOOD INSURANCE RATE MAP

MONTGOMERY COUNTY, PENNSYLVANIA

(ALL JURISDICTIONS)

PANEL 289 OF 451

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
AMBLER, BOR OF	420947	0289	G
SPRINGFIELD, TWP OF	425388	0289	G
UPPER DUBLIN, TWP OF	420708	0289	G
WHITEMARSH, TWP OF	420712	0289	G

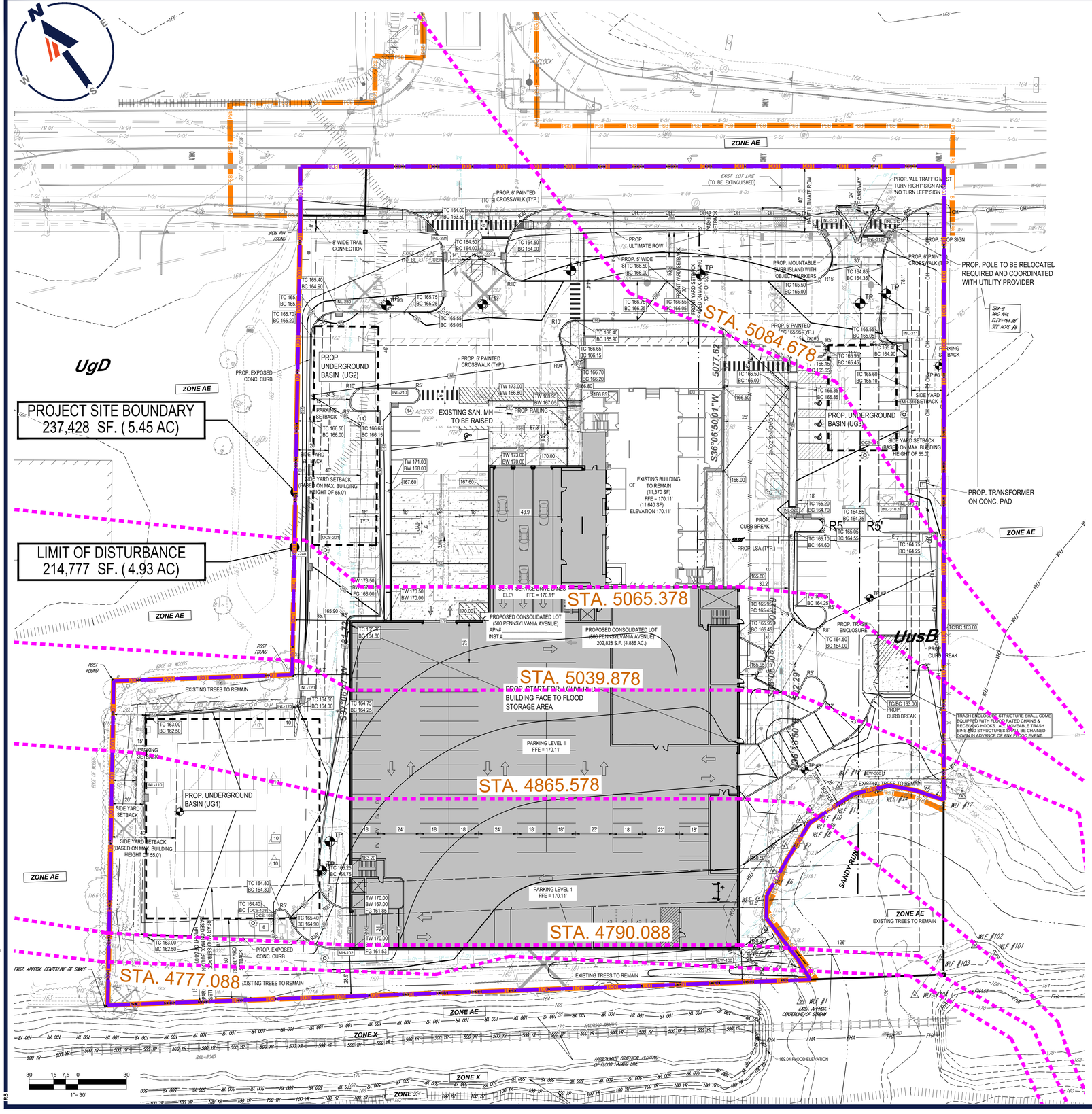
FINAL 11/17/2023

Notice to User: The **Map Number** shown below should be used when placing map orders; the **Community Number** shown above should be used on insurance applications for the subject community.

MAP NUMBER
42091C0289G

MAP REVISED
MARCH 2, 2016

Federal Emergency Management Agency



USGS MAP

AMBLER QUAD

SCALE: 1"=2,000'

1000' 0 2000'

BOHLER

SITE CIVIL AND CONSULTING ENGINEERING
LAND SURVEYING
PROGRAM MANAGEMENT
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REVISIONS

REV	DATE	COMMENT	DRAWN BY / CHECKED BY

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PROJECT No.:	PAB220113.00
DRAWN BY:	RMS
CHECKED BY:	MSL
DATE:	11/17/2023
CAD I.D.:	PAB220113_CUTFILL-0A

PROJECT:

FLOODPLAIN ANALYSIS PLANS

FOR

MILEONE FORT WASHINGTON, LLC

BMW AUTOMOTIVE DEALERSHIP EXPANSION

500 PENNSYLVANIA AVENUE
WHITEMARSH TOWNSHIP
MONTGOMERY COUNTY, PA

BOHLER
74 W BROAD STREET, SUITE 500
BETHLEHEM, PA 18018
Phone: (610) 709-9971
Fax: (610) 709-9976
www.BohlerEngineering.com

J.A. BEAVAN
PROFESSIONAL ENGINEER
PENNSYLVANIA LICENSE No. PE082006
NEW YORK LICENSE No. 16 093204
NEW JERSEY LICENSE No. 24GE05339500

SHEET TITLE:

FLOODPLAIN CROSS-SECTION EXHIBIT

SHEET NUMBER:

C-301

ORG. DATE - 11/17/2023

R:\2022\PAB220113.00\C-ADD\BZA\WINGS\EXHIBITS\FEMA\PAB220113_CUTFILL-0A-----LAYOUT: C-301 FEMA CROSS-SECTIONS
IRS

PROJECT SITE BOUNDARY
237,428 SF. (5.45 AC)

LIMIT OF DISTURBANCE
214,777 SF. (4.93 AC)

UgD

ZONE AE

PROP. CLEAR SIGHT TRIANGLE

PROP. 6' PAINTED (10' S CROSSWALK (TYP.)

EXIST. LOT LINE (TO BE EXTINGUISHED)

PROP. 'ALL TRAFFIC MUST TURN RIGHT' SIGN AND 'NO TURN LEFT' SIGN

PROP. ULTIMATE ROW

PROP. 8' WIDE TRAIL CONNECTION

PROP. SIGHT DISTANCE = 780'

PROP. SIGHT DISTANCE = 750'

PROP. SIGHT DISTANCE = 150'

PROP. 5' WIDE SIDEWALK

PROP. 5' PAINTED CROSSWALK

PROP. STOP SIGN

PROP. POLE TO BE RELOCATED REQUIRED AND COORDINATED WITH UTILITY PROVIDER

PROP. MOUNTABLE CURB ISLAND WITH OBJECT MARKERS

PROP. 6' PAINTED (10' S CROSSWALK (TYP.)

PROP. UNDERGROUND BASIN (UG2)

PROP. PAINTED CROSSWALK (TYP.)

PROP. EXPOSED CONC. CURB

EXISTING SAN. MH TO BE RAISED

PROP. 12 LF 15" HDPE @ 0.50%

PROP. RAILING

PROP. UNDERGROUND BASIN (UG3)

PROP. 15" HDPE @ 0.50%

PARKING SETBACK

30' SIDE YARD SETBACK (BASED ON MAX. BUILDING HEIGHT OF 55.0')

EXISTING OFFICE/SHOWROOM BUILDING TO REMAIN (11,640 SF) ELEVATION 170.11'

PROP. TRANSFORMER ON CONC. PAD

PROP. CURB BREAK

PROP. LOD (TYP.)

SERVICE DRIVE LANES ELEVATION 170.11'

PROPOSED CONSOLIDATED LOT
PENNSYLVANIA AVENUE
APN# 54-00-03604-00-6
INST. #

PROPOSED CONSOLIDATED LOT
PENNSYLVANIA AVENUE
APN# 54-00-03604-00-6
INST. #
202,626 S.F. (4.569 AC.)

PROP. TRASH ENCLOSURE

TRASH ENCLOSURE STRUCTURE SHALL COME EQUIPPED WITH FLOOD RATED CHAINS & RECEIVING HOOKS. ALL MOVEABLE TRASH BINS AND STRUCTURES SHALL BE CHAINED DOWN IN ADVANCE OF ANY FLOOD EVENT.

EXISTING TREES TO REMAIN

PROP. UNDERGROUND BASIN (UG1)

PROP. START OF LOUVERED BUILDING FACE TO FLOOD STORAGE AREA

PROP. 262 LF 18" HDPE @ 0.50%

EXISTING TREES TO REMAIN

EXISTING TREES TO REMAIN

STA. 5064.678

STA. 5065.378

STA. 5039.878

STA. 4865.578

STA. 4790.088

STA. 4777.088

5077.62' S36°06'50.01"W

S36°06'50.01"W 202.29'

S53°50'01"E 350.50'

SANDY RUN

EXIST. APPROX. CENTERLINE OF STREAM

EXIST. APPROX. CENTERLINE OF SWALE

APPROXIMATE GRAPHICAL PLOTTING OF FLOOD HAZARD LINE

169.04 FLOOD ELEVATION

ZONE X

ZONE AE

30 15 7.5 0 30
1"= 30'

USGS MAP

AMBLER QUAD
SCALE: 1"=2,000'
1000' 0 2000'

FORT WASHINGTON
SITE
Camp Hill
Whitemarsh
Sandy Run
PENNSYLVANIA TPK/I-276
PENNSYLVANIA AVE
DELAWARE DR
CREEK RD
LIGHTHART DR
CAMP RD
DAVISTOWN RD
MORRISON RD
SUMMIT AVE
COMMERCE DR
LAFAYETTE AVE
FLEETWOOD DR
MILL HILL RD
BETHLEHEM PIKE
FLOURTOWN RD
PROSPECT AVE
MORELAND AVE
ARDSLEY DR
ASHBOURNE RD
WILLOW GROVE AVE
Whitemarsh Cem.

CUT FILL LEGEND

FLOODPLAIN FILL AREA

FLOODPLAIN CUT AREA

AS-BUILT FLOODPLAIN CUT/FILL CALCULATION

CUT WITHIN FLOODPLAIN: 5,159 CY
FILL WITHIN FLOODPLAIN: 4,885 CY

NET CUT WITHIN FLOODPLAIN: 274 CY
NET FILL WITHIN FLOODPLAIN = 0 CY

R:\2022\PAB220113.00\CAD\BWI\WINGS\EXHIBITS\FEMA\PAB220113_CUTFILL-0A---LAYOUT: C-302 CUT-FILL

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SUSTAINABLE DESIGN
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REVISIONS

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PROJECT No.:	PAB220113.00
DRAWN BY:	RMS
CHECKED BY:	MSL
DATE:	11/17/2023
CAD I.D.:	PAB220113_CUTFILL-0A

PROJECT:

FLOODPLAIN ANALYSIS PLANS

FOR

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PROFESSIONAL ENGINEER
PENNSYLVANIA LICENSE No. PE082006
NEW YORK LICENSE No. 16 093204
NEW JERSEY LICENSE No. 24GE05339500

SHEET TITLE:

FLOODPLAIN CUT-FILL EXHIBIT

SHEET NUMBER:

C-302

ORG. DATE - 11/17/2023

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SITE CIVIL AND CONSULTING ENGINEERING
LAND SURVEYING
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PROJECT No.:	PAB220113.00
DRAWN BY:	RMS
CHECKED BY:	JAB
DATE:	11/17/2023
CAD I.D.:	WORK MAP

PROJECT:

MONTGOMERY COUNTY
COMMONWEALTH OF PA
WHITEMARSH TOWNSHIP
SANDY RUN WATERSHED

BOHLER
74 W BROAD STREET, SUITE 500
BETHLEHEM, PA 18018
Phone: (610) 709-9571
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J.A. BEAVAN
PROFESSIONAL ENGINEER
PENNSYLVANIA LICENSE No. PE082006
NEW YORK LICENSE No. 16 093204
NEW JERSEY LICENSE No. 24GE05035600

SHEET TITLE:

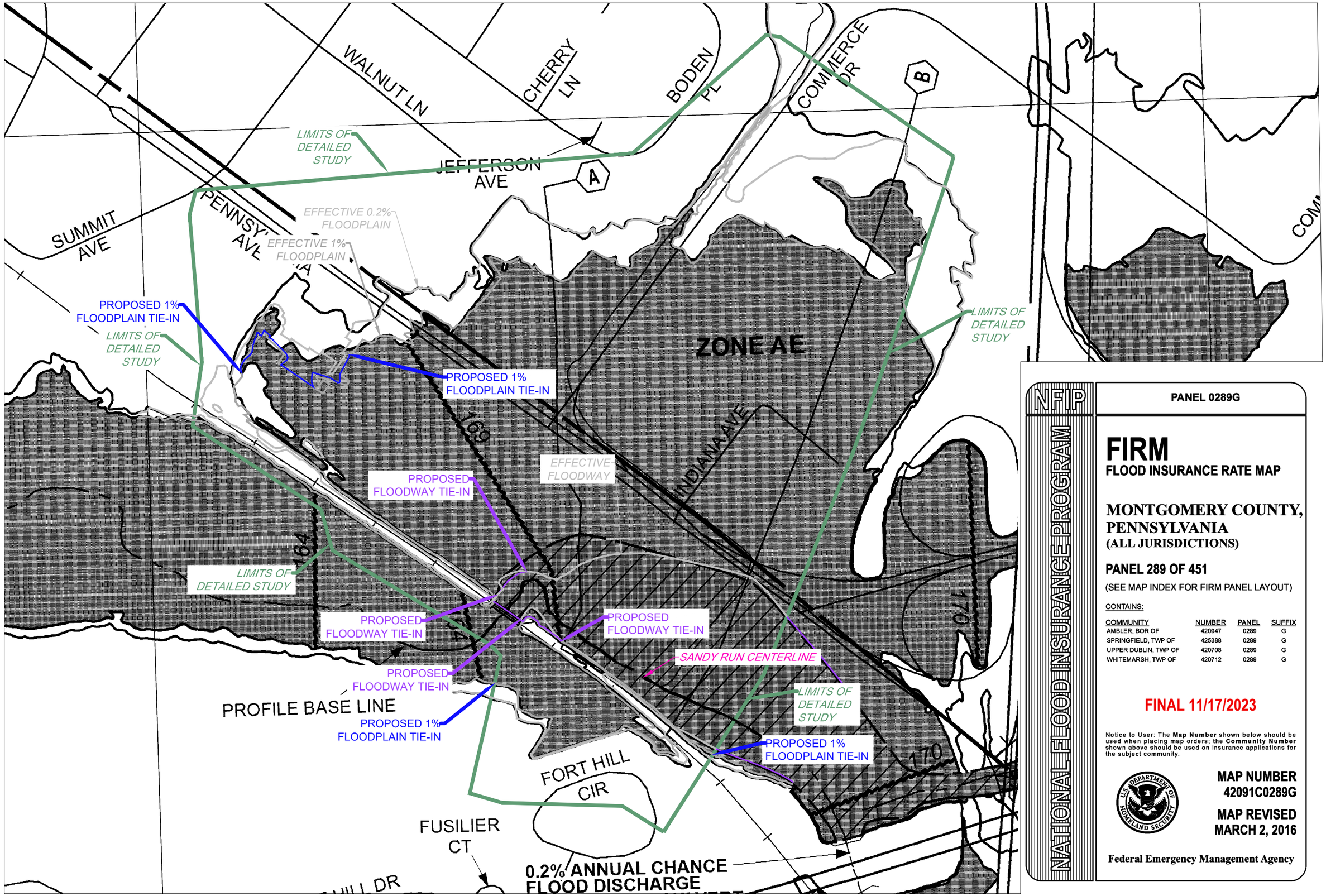
APPLICATION FOR CLOMR
TOPOGRAPHIC WORK MAP
NAVD88

SHEET NUMBER:

1

ORG. DATE - 11/17/2023

R:\2022\PAB220113.00\TECHNICAL\STORMWATER & ESE\FEMA\WORK MAP---LAYOUT: TOPO WORK MAP
RMS



NFIP

PANEL 0289G

NATIONAL FLOOD INSURANCE PROGRAM

FIRM

FLOOD INSURANCE RATE MAP

MONTGOMERY COUNTY, PENNSYLVANIA

(ALL JURISDICTIONS)

PANEL 289 OF 451

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
AMBLER, BOR OF	420947	0289	G
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FINAL 11/17/2023

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MAP NUMBER
42091C0289G

MAP REVISED
MARCH 2, 2016

Federal Emergency Management Agency

Sandy Main Stem (NAVD 88)
100-Year Profile Analysis

River Sta	Profile	Duplicate Effective W.S. Elev	Corrected W.S. Elev	Proposed W.S. Elev	Proposed Comparison Duplicate	Proposed Comparison Corrected
6572.639	100-yr	172.84	172.88	172.84	0.00	-0.04
6414.98	100-yr	172.45	172.49	172.45	0.00	-0.04
6189.177	100-yr	168.91	169.05	168.88	-0.03	-0.17
5508.105	100-yr	169.23	169.37	169.2	-0.03	-0.17
5084.678	100-yr	169.16	169.07	169.05	-0.11	-0.02
5065.378	100-yr	169.17	169.12	168.96	-0.21	-0.16
5039.878	100-yr	168.67	169.11	168.79	0.12	-0.32
4865.578	100-yr	168.68	169	168.69	0.01	-0.31
4790.088	100-yr	168.63	168.44	168.1	-0.53	-0.34
4777.088	100-yr	168.53	168.28	168.19	-0.34	-0.09
4685.592	100-yr	163.53	163.53	163.53	0	0.00
4327.181	100-yr	164.33	164.33	164.33	0	0.00

= River stations within project limits

= Decrease in proposed water surface elevations vs given comparison model

= Increase in proposed water surface elevations vs given comparison model

= Duplicate Effective Model

Sandy Main Stem (NAVD 88)
100-Year Profile Analysis

River Sta	Profile	Duplicate Effective W.S. Elev	Corrected W.S. Elev	Proposed W.S. Elev	Proposed Comparison	
					Duplicate	Corrected
38835.32	100-yr	339.2	339.2	339.2	0.00	0.00
38353.13	100-yr	332.65	332.64	332.64	-0.01	0.00
37880.8	100-yr	324.82	324.83	324.83	0.01	0.00
37489.56	100-yr	320.49	320.49	320.49	0.00	0.00
37056.92	100-yr	313.8	313.8	313.8	0.00	0.00
36678.73	100-yr	305.92	305.92	305.92	0.00	0.00
36275.49	100-yr	304.67	304.65	304.65	-0.02	0.00
35791.32	100-yr	294.29	294.29	294.29	0.00	0.00
35582.96	100-yr	294	294	294	0.00	0.00
35420.3	100-yr	291.02	291.04	291.04	0.02	0.00
35237.49	100-yr	291.19	291.19	291.19	0.00	0.00
33297.82	100-yr	259.06	259.06	259.06	0.00	0.00
32874.91	100-yr	255.13	255.13	255.13	0.00	0.00
32432.32	100-yr	253.51	253.53	253.53	0.02	0.00
32009.44	100-yr	253.28	253.3	253.3	0.02	0.00
31647.46	100-yr	248.83	248.85	248.85	0.02	0.00
31476.58	100-yr	248.5	248.52	248.52	0.02	0.00
31392.94	100-yr	247.14	247.14	247.14	0.00	0.00
31259.8	100-yr	247.02	247.02	247.02	0.00	0.00
31182.62	100-yr	245.22	245.23	245.23	0.01	0.00
31033.98	100-yr	243.39	243.39	243.39	0.00	0.00
30579.27	100-yr	240.21	240.2	240.2	-0.01	0.00
30235.35	100-yr	237.64	237.64	237.64	0.00	0.00
29939.91	100-yr	236.74	236.74	236.74	0.00	0.00
29533.61	100-yr	236.36	236.36	236.36	0.00	0.00
29203.58	100-yr	235.29	235.29	235.29	0.00	0.00
29148	100-yr	233.57	233.57	233.57	0.00	0.00
28902.69	100-yr	232.43	232.43	232.43	0.00	0.00
28536.39	100-yr	230.51	230.51	230.51	0.00	0.00
28078.23	100-yr	230.3	230.3	230.3	0.00	0.00

27678.42	100-yr	228.98	228.98	228.98	0.00	0.00
27191.04	100-yr	227.32	227.44	227.44	0.12	0.00
26877.54	100-yr	227.24	227.37	227.37	0.13	0.00
26794.7	100-yr	224.68	224.68	224.68	0.00	0.00
26382.38	100-yr	223.87	223.93	223.93	0.06	0.00
26107.58	100-yr	223.08	223.22	223.22	0.14	0.00
25737.96	100-yr	223.11	223.26	223.26	0.15	0.00
25309.8	100-yr	222.68	222.88	222.88	0.20	0.00
24900.93	100-yr	222.31	222.54	222.54	0.23	0.00
24402.5	100-yr	221.67	221.98	221.98	0.31	0.00
24129.68	100-yr	221.33	221.69	221.69	0.36	0.00
24042.15	100-yr	219.28	219.29	219.29	0.01	0.00
23662.23	100-yr	216.04	216.01	216.01	-0.03	0.00
23396.78	100-yr	214.79	214.79	214.79	0.00	0.00
23076.73	100-yr	214.93	214.93	214.93	0.00	0.00
22719.89	100-yr	214.34	214.34	214.34	0.00	0.00
22305.19	100-yr	212.52	212.52	212.52	0.00	0.00
21973.79	100-yr	211.59	211.59	211.59	0.00	0.00
21498.81	100-yr	210.59	210.6	210.6	0.01	0.00
21070	100-yr	210.14	210.15	210.15	0.01	0.00
20558.49	100-yr	209.53	209.56	209.56	0.03	0.00
20450.5	100-yr	204.97	204.96	204.96	-0.01	0.00
20135.83	100-yr	204.96	204.99	204.99	0.03	0.00
19889.56	100-yr	204.94	204.96	204.96	0.02	0.00
19756.97	100-yr	204.85	204.87	204.87	0.02	0.00
19546.85	100-yr	204.73	204.75	204.75	0.02	0.00
19352.67	100-yr	204.7	204.73	204.73	0.03	0.00
19245.94	100-yr	201.39	201.39	201.39	0.00	0.00
19054.38	100-yr	199.78	199.78	199.78	0.00	0.00
18845.69	100-yr	199.69	199.69	199.69	0.00	0.00
18634.5	100-yr	199.62	199.62	199.62	0.00	0.00
18463	100-yr	199.61	199.61	199.61	0.00	0.00
18269.19	100-yr	198.7	198.7	198.7	0.00	0.00
18211.69	100-yr	195.64	195.64	195.64	0.00	0.00
18010.15	100-yr	194.72	194.72	194.72	0.00	0.00

17718.32	100-yr	192.01	192.01	192.01	0.00	0.00
17333.24	100-yr	191.3	191.3	191.3	0.00	0.00
16976.28	100-yr	189.42	189.42	189.42	0.00	0.00
16566.37	100-yr	188.8	188.8	188.8	0.00	0.00
16177.16	100-yr	187.98	187.98	187.98	0.00	0.00
15741.39	100-yr	187.35	187.35	187.35	0.00	0.00
15036.05	100-yr	185.9	185.9	185.9	0.00	0.00
14643.01	100-yr	185.51	185.51	185.51	0.00	0.00
14242.08	100-yr	183.67	183.67	183.67	0.00	0.00
13869.62	100-yr	182.87	182.87	182.87	0.00	0.00
13438.13	100-yr	182.13	182.13	182.13	0.00	0.00
12942.35	100-yr	181.36	181.36	181.36	0.00	0.00
12648.67	100-yr	181.27	181.27	181.27	0.00	0.00
12591.62	100-yr	180.92	180.89	180.89	-0.03	0.00
12103.89	100-yr	180.54	180.51	180.51	-0.03	0.00
11764.28	100-yr	180.45	180.42	180.42	-0.03	0.00
11405.26	100-yr	180.04	180	180	-0.04	0.00
11303	100-yr	175.66	175.65	175.65	-0.01	0.00
10733.77	100-yr	175.72	175.74	175.73	0.01	-0.01
10661.15	100-yr	175.71	175.73	175.72	0.01	-0.01
10118.31	100-yr	175.68	175.7	175.69	0.01	-0.01
9744.554	100-yr	175.66	175.68	175.67	0.01	-0.01
9639.641	100-yr	175.41	175.44	175.43	0.02	-0.01
8975.758	100-yr	175.36	175.39	175.37	0.01	-0.02
8504.5	100-yr	175.19	175.22	175.2	0.01	-0.02
8235.939	100-yr	174.57	174.61	174.59	0.02	-0.02
8063.602	100-yr	174.65	174.69	174.67	0.02	-0.02
7966.54	100-yr	174.57	174.59	174.57	0.00	-0.02
7570.986	100-yr	174.57	174.59	174.57	0.00	-0.02
7173.807	100-yr	174.57	174.59	174.57	0.00	-0.02
6825.559	100-yr	174.29	174.32	174.29	0.00	-0.03
6709.658	100-yr	173.95	173.98	173.95	0.00	-0.03
6668.16	100-yr	174.07	174.09	174.06	-0.01	-0.03
6572.639	100-yr	172.84	172.88	172.84	0.00	-0.04
6414.98	100-yr	172.45	172.49	172.45	0.00	-0.04

6189.177	100-yr	168.91	169.05	168.88		-0.03	-0.17	
5508.105	100-yr	169.23	169.37	169.2		-0.03	-0.17	
5084.678	100-yr	169.16	169.07	169.05		-0.11	-0.02	
5065.378	100-yr	169.17	169.12	168.96		-0.21	-0.16	
5039.878	100-yr	168.67	169.11	168.79		0.12	-0.32	
4865.578	100-yr	168.68	169	168.69		0.01	-0.31	
4790.088	100-yr	168.63	168.44	168.1		-0.53	-0.34	
4777.088	100-yr	168.53	168.28	168.19		-0.34	-0.09	
4685.592	100-yr	163.53	163.53	163.53		0	0.00	
4327.181	100-yr	164.33	164.33	164.33		0	0.00	
3964.325	100-yr	0	163.8	163.8	0	163.8	0.00	-163.80
3515.389	100-yr	0	163.59	163.59	0	163.59	0.00	
3004.364	100-yr	163.53	163.31	163.31	0	-0.22	0.00	
2590.359	100-yr	164.33	163.09	163.09	0	-1.24	0.00	
2417.391	100-yr	0	158.77	158.77	0	158.77	0.00	
2072.963	100-yr	0	158.41	158.41	0	158.41	0.00	
1688.606	100-yr	0	157.76	157.76	0	157.76	0.00	
1299.523	100-yr	0	157.31	157.31	0	157.31	0.00	
663.061	100-yr	158.77	156.25	156.25	0	-2.52	0.00	
143.571	100-yr	158.41	154.39	154.39	0	-4.02	0.00	

= River stations within project limits

= Decrease in proposed water surface elevations vs given comparison model

= Increase in proposed water surface elevations vs given comparison model

= Duplicate Effective Model

Sandy Main Stem (NAVD 88)
500-Year Profile Analysis

River Sta	Profile	Duplicate Effective W.S. Elev	Corrected W.S. Elev	Proposed W.S. Elev	Proposed Comparison Duplicate	Proposed Comparison Corrected
6572.639	500-yr	176.93	175.73	175.73	-1.2	0.00
6414.98	500-yr	176.38	174.98	174.98	-1.4	0.00
6189.177	500-yr	170.76	170.81	170.85	0.09	+0.04
5508.105	500-yr	171.41	171.45	171.48	0.07	+0.03
5084.678	500-yr	171.35	171.43	171.47	0.12	0.04
5065.378	500-yr	171.35	171.4	171.4	0.05	0
5039.878	500-yr	171.37	171.42	171.43	0.06	0.01
4865.578	500-yr	171.36	171.39	171.4	0.04	0.01
4790.088	500-yr	171.34	171.37	171.36	0.02	-0.01
4777.088	500-yr	171.35	171.38	171.38	0.03	0
4685.592	500-yr	167.22	167.22	167.22	0	0.00
4327.181	500-yr	166.74	166.74	166.74	0	0.00
3964.325	500-yr	163.61	165.93	165.93	2.32	0.00

= River stations within project limits

= Decrease in proposed water surface elevations vs given comparison model

= Increase in proposed water surface elevations vs given comparison model

= Duplicate Effective Model

Sandy Main Stem (NAVD 88)
500-Year Profile Analysis

River Sta	Profile	Duplicate Effective W.S. Elev	Corrected W.S. Elev	Proposed W.S. Elev	Proposed Comparison	
					Duplicate	Corrected
38835.32	500-yr	339.75	339.75	339.75	0	0.00
38353.13	500-yr	333.67	333.69	333.69	0.02	0.00
37880.8	500-yr	325.5	325.5	325.5	0	0.00
37489.56	500-yr	320.7	320.68	320.68	-0.02	0.00
37056.92	500-yr	315.13	315.13	315.13	0	0.00
36678.73	500-yr	306.72	306.72	306.72	0	0.00
36275.49	500-yr	305.29	305.3	305.3	0.01	0.00
35791.32	500-yr	295.17	295.17	295.17	0	0.00
35582.96	500-yr	294.79	294.79	294.79	0	0.00
35420.3	500-yr	291.55	291.55	291.55	0	0.00
35237.49	500-yr	291.85	291.85	291.85	0	0.00
33297.82	500-yr	260.9	260.91	260.91	0.01	0.00
32874.91	500-yr	255.61	255.62	255.62	0.01	0.00
32432.32	500-yr	254.16	254.13	254.13	-0.03	0.00
32009.44	500-yr	253.84	253.79	253.79	-0.05	0.00
31647.46	500-yr	249.74	249.74	249.74	0	0.00
31476.58	500-yr	249.11	249.12	249.12	0.01	0.00
31392.94	500-yr	247.47	247.48	247.48	0.01	0.00
31259.8	500-yr	247.23	247.26	247.26	0.03	0.00
31182.62	500-yr	246.09	246.1	246.1	0.01	0.00
31033.98	500-yr	244.37	244.37	244.37	0	0.00
30579.27	500-yr	241.72	241.72	241.72	0	0.00
30235.35	500-yr	238.8	238.8	238.8	0	0.00
29939.91	500-yr	238.31	238.31	238.31	0	0.00
29533.61	500-yr	237.98	237.98	237.98	0	0.00
29203.58	500-yr	236.45	236.44	236.44	-0.01	0.00
29148	500-yr	234.57	234.57	234.57	0	0.00
28902.69	500-yr	233.67	233.67	233.67	0	0.00
28536.39	500-yr	231.3	231.3	231.3	0	0.00
28078.23	500-yr	230.91	230.91	230.91	0	0.00

27678.42	500-yr	230	230	230	0	0.00
27191.04	500-yr	228.32	228.42	228.42	0.1	0.00
26877.54	500-yr	228.2	228.32	228.32	0.12	0.00
26794.7	500-yr	226.45	226.53	226.53	0.08	0.00
26382.38	500-yr	225.84	225.97	225.97	0.13	0.00
26107.58	500-yr	224.85	225.11	225.11	0.26	0.00
25737.96	500-yr	224.85	225.1	225.1	0.25	0.00
25309.8	500-yr	224.4	224.71	224.71	0.31	0.00
24900.93	500-yr	223.91	224.29	224.29	0.38	0.00
24402.5	500-yr	223.03	223.55	223.55	0.52	0.00
24129.68	500-yr	222.55	223.19	223.19	0.64	0.00
24042.15	500-yr	221.87	221.87	221.87	0	0.00
23662.23	500-yr	217.83	217.83	217.83	0	0.00
23396.78	500-yr	215.59	215.58	215.58	-0.01	0.00
23076.73	500-yr	216.4	216.4	216.4	0	0.00
22719.89	500-yr	215.83	215.84	215.84	0.01	0.00
22305.19	500-yr	214.08	214.08	214.08	0	0.00
21973.79	500-yr	213.14	213.15	213.15	0.01	0.00
21498.81	500-yr	212.07	212.09	212.09	0.02	0.00
21070	500-yr	211.54	211.56	211.56	0.02	0.00
20558.49	500-yr	210.7	210.74	210.74	0.04	0.00
20450.5	500-yr	205.9	206	206	0.1	0.00
20135.83	500-yr	206.13	206.2	206.2	0.07	0.00
19889.56	500-yr	206.1	206.18	206.18	0.08	0.00
19756.97	500-yr	206.02	206.1	206.1	0.08	0.00
19546.85	500-yr	205.82	205.9	205.9	0.08	0.00
19352.67	500-yr	205.78	205.87	205.87	0.09	0.00
19245.94	500-yr	202.91	202.9	202.9	-0.01	0.00
19054.38	500-yr	201.16	201.15	201.15	-0.01	0.00
18845.69	500-yr	201.07	201.07	201.07	0	0.00
18634.5	500-yr	201	201	201	0	0.00
18463	500-yr	200.99	200.98	200.98	-0.01	0.00
18269.19	500-yr	199.9	199.89	199.89	-0.01	0.00
18211.69	500-yr	196.83	196.83	196.83	0	0.00
18010.15	500-yr	195.67	195.67	195.67	0	0.00

17718.32	500-yr	193.14	193.14	193.14	0	0.00
17333.24	500-yr	192.43	192.43	192.43	0	0.00
16976.28	500-yr	190.51	190.51	190.51	0	0.00
16566.37	500-yr	190.1	190.1	190.1	0	0.00
16177.16	500-yr	189.42	189.41	189.41	-0.01	0.00
15741.39	500-yr	188.92	188.92	188.92	0	0.00
15036.05	500-yr	188.06	188.05	188.05	-0.01	0.00
14643.01	500-yr	187.69	187.68	187.68	-0.01	0.00
14242.08	500-yr	186.19	186.15	186.15	-0.04	0.00
13869.62	500-yr	185.99	185.95	185.95	-0.04	0.00
13438.13	500-yr	185.7	185.65	185.65	-0.05	0.00
12942.35	500-yr	185.35	185.29	185.29	-0.06	0.00
12648.67	500-yr	185.3	185.24	185.24	-0.06	0.00
12591.62	500-yr	185.01	185.01	185.01	0	0.00
12103.89	500-yr	184.81	184.81	184.81	0	0.00
11764.28	500-yr	184.77	184.78	184.78	0.01	0.00
11405.26	500-yr	184.38	184.39	184.39	0.01	0.00
11303	500-yr	178.63	178.05	178.05	-0.58	0.00
10733.77	500-yr	179.18	178.74	178.74	-0.44	0.00
10661.15	500-yr	179.18	178.74	178.74	-0.44	0.00
10118.31	500-yr	179.16	178.72	178.72	-0.44	0.00
9744.554	500-yr	179.15	178.7	178.7	-0.45	0.00
9639.641	500-yr	179	178.52	178.52	-0.48	0.00
8975.758	500-yr	178.96	178.47	178.47	-0.49	0.00
8504.5	500-yr	178.72	178.21	178.21	-0.51	0.00
8235.939	500-yr	177.86	177.24	177.24	-0.62	0.00
8063.602	500-yr	177.99	177.38	177.38	-0.61	0.00
7966.54	500-yr	177.91	177.29	177.29	-0.62	0.00
7570.986	500-yr	177.9	177.27	177.27	-0.63	0.00
7173.807	500-yr	177.91	177.28	177.28	-0.63	0.00
6825.559	500-yr	177.62	176.96	176.96	-0.66	0.00
6709.658	500-yr	177.15	176.4	176.4	-0.75	0.00
6668.16	500-yr	177.24	176.5	176.5	-0.74	0.00
6572.639	500-yr	176.93	175.73	175.73	-1.2	0.00
6414.98	500-yr	176.38	174.98	174.98	-1.4	0.00

6189.177	500-yr	170.76	170.81	170.85	0.09	+0.04	
5508.105	500-yr	171.41	171.45	171.48	0.07	+0.03	
5084.678	500-yr	171.35	171.43	171.47	0.12	0.04	
5065.378	500-yr	171.35	171.4	171.4	0.05	0	
5039.878	500-yr	171.37	171.42	171.43	0.06	0.01	
4865.578	500-yr	171.36	171.39	171.4	0.04	0.01	
4790.088	500-yr	171.34	171.37	171.36	0.02	-0.01	
4777.088	500-yr	171.35	171.38	171.38	0.03	0	
4685.592	500-yr	167.22	167.22	167.22	0	0.00	
4327.181	500-yr	166.74	166.74	166.74	0	0.00	
3964.325	500-yr	163.61	165.93	165.93	2.32	0.00	-165.93
3515.389	500-yr	0	165.62	165.62	165.62	0.00	
3004.364	500-yr	167.22	165.28	165.28	-1.94	0.00	
2590.359	500-yr	166.74	164.89	164.89	-1.85	0.00	
2417.391	500-yr	161.31	160.54	160.54	-0.77	0.00	
2072.963	500-yr	161.13	160.16	160.16	-0.97	0.00	
1688.606	500-yr	161.02	159.26	159.26	-1.76	0.00	
1299.523	500-yr	0	158.74	158.74	158.74	0.00	
663.061	500-yr	160.54	157.48	157.48	-3.06	0.00	
143.571	500-yr	160.16	155.1	155.1	-5.06	0.00	

= River stations within project limits

= Decrease in proposed water surface elevations vs given comparison model

= Increase in proposed water surface elevations vs given comparison model

= Duplicate Effective Model

Sandy Main Stem (NAVD 88)
100-Year Profile Analysis

River Sta	Profile	Duplicate Top Width	Corrected Top Width	Proposed Top Width	Proposed Comparison	
					Duplicate	Corrected
6189.177	100-yr	135.69	144.74	135.54	+9.05	-9.20
5508.105	100-yr	1102.54	1203.63	1202.24	+101.09	-1.39
5084.678	100-yr	1033.05	1227.01	1285.96	+193.96	+58.95
5065.378	100-yr	1037.43	1043.15	923.93	+5.72	-119.22
5039.878	100-yr	1459.78	1492.99	1375.72	+33.21	-117.27
4865.578	100-yr	1319.67	1328.99	1320.83	+9.32	-8.16
4790.088	100-yr	1331.94	1323.9	1261.77	-8.04	-62.13
4777.088	100-yr	1397.55	1392.17	1390.28	-5.38	-1.89
4685.592	100-yr	835.28	835.28	835.28	0.00	0.00
4327.181	100-yr	570.04	570.03	570.03	-0.01	0.00
4327.181	500-yr	600.96	600.93	600.93	-600.96	-600.93
0	0	0	0	0	0	0.00
3964.325	10-yr	473.79	473.75	473.75	-473.79	-473.75
3964.325	50-yr	493.06	493.06	493.06	-493.06	-493.06
3964.325	100-yr	523.02	523.01	523.01	-523.02	-523.01
3964.325	500-yr	558.01	557.93	557.93	-558.01	-557.93
0	0	0	0	0	0	0.00
3515.389	10-yr	621.32	621.26	621.26	-621.32	-621.26
3515.389	50-yr	663.55	663.54	663.54	-663.55	-663.54
3515.389	100-yr	673.98	673.96	673.96	-673.98	-673.96
3515.389	500-yr	715.97	715.88	715.88	-715.97	-715.88
0	0	0	0	0	0	0.00
3004.364	10-yr	641.29	640.98	640.98	-641.29	-640.98
3004.364	50-yr	718.74	718.72	718.72	-718.74	-718.72
3004.364	100-yr	740.35	740.33	740.33	-740.35	-740.33
3004.364	500-yr	817.13	816.8	816.8	-817.13	-816.80
0	0	0	0	0	0	0.00
2590.359	10-yr	467.81	467.74	467.74	-467.81	-467.74
2590.359	50-yr	529.77	529.74	529.74	-529.77	-529.74

2590.359	100-yr	537.83	537.82	537.82	-537.83	-537.82
2590.359	500-yr	549.94	549.94	549.94	-549.94	-549.94
0	0	0	0	0	0	0.00
2500	0	0	0	0	0	0.00
0	0	0	0	0	0	0.00
2417.391	10-yr	454.78	454.78	454.78	-454.78	-454.78
2417.391	50-yr	466.23	466.23	466.23	-466.23	-466.23
2417.391	100-yr	472.7	472.71	472.71	-472.7	-472.71
2417.391	500-yr	569.06	569.09	569.09	-569.06	-569.09
0	0	0	0	0	0	0.00
2072.963	10-yr	451.37	451.38	451.38	-451.37	-451.38
2072.963	50-yr	545.43	545.43	545.43	-545.43	-545.43
2072.963	100-yr	566.62	566.67	566.67	-566.62	-566.67
2072.963	500-yr	658.93	658.94	658.94	-658.93	-658.94
0	0	0	0	0	0	0.00
1688.606	10-yr	529.6	529.6	529.6	-529.6	-529.60
1688.606	50-yr	572.16	572.16	572.16	-572.16	-572.16
1688.606	100-yr	578.5	578.51	578.51	-578.5	-578.51
1688.606	500-yr	598.88	598.89	598.89	-598.88	-598.89
0	0	0	0	0	0	0.00
1299.523	10-yr	817.1	817.13	817.13	-817.1	-817.13
1299.523	50-yr	859.85	859.86	859.86	-859.85	-859.86
1299.523	100-yr	869.05	869.08	869.08	-869.05	-869.08
1299.523	500-yr	948.77	948.79	948.79	-948.77	-948.79
0	0	0	0	0	0	0.00
663.061	10-yr	846.05	846.23	846.23	-846.05	-846.23
663.061	50-yr	943.05	943.05	943.05	-943.05	-943.05
663.061	100-yr	958.19	958.44	958.44	-958.19	-958.44
663.061	500-yr	1063.89	1064.14	1064.14	-1063.89	-1064.14
0	0	0	0	0	0	0.00
143.571	10-yr	1050.73	1050.67	1050.67	-1050.73	-1050.67
143.571	50-yr	1075.19	1075.19	1075.19	-1075.19	-1075.19
143.571	100-yr	1099.81	1099.1	1099.1	-1099.81	-1099.10
143.571	500-yr	1260.3	1259.04	1259.04	-1260.3	-1259.04

= River stations within project limits

= Decrease in proposed water surface elevations vs given comparison model

= Increase in proposed water surface elevations vs given comparison model

= Duplicate Effective Model

Sandy Main Stem (NAVD 88)

100-Year Water surface Station Comparison

River Sta	Profile	Duplicate Effective Sta W.S. Lft	Duplicate Effective Sta W.S. Rgt	Proposed Sta W.S. Lft	Proposed Sta W.S. Rgt	Proposed Comparison Sta W.S. Lft	Proposed Comparison Sta W.S. Rgt
5508.105	100-yr	204.97	2085.5	205.04	2085.5	+0.07	0.00
5084.678	100-yr	272.97	1654.28	273.76	1654.28	+0.79	0.00
5065.378	100-yr	89.56	1524.91	88.58	1516	-0.98	-8.91
5039.878	100-yr	88.34	1745.21	93.24	1733.96	+4.90	-11.25
4865.578	100-yr	87.85	1641.28	88.3	1639.17	+0.45	-2.11
4790.088	100-yr	196.48	1699.97	196.45	1701.35	-0.03	+1.38
4777.088	100-yr	85.77	1540.47	85.92	1540.37	+0.15	-0.10
4685.592	100-yr	248.02	1083.3	248.02	1083.3	0.00	0.00
4327.181	100-yr	298.94	868.97	298.94	868.97	0.00	0.00

= River stations within project limits

= Contraction in proposed water surface stationing vs duplicate model

#NAME?

= Duplicate Effective Model

Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Crit W.S. (ft)	E.G. Elev (ft)
Sandy Mai	38835.32	10-yr	0	0	0	0	0
Sandy Mai	38835.32	50-yr	0	0	0	0	0
Sandy Mai	38835.32	100-yr	0	0	0	0	0
Sandy Mai	38835.32	500-yr	0	0	0	0	0
			0	0	0	0	0
Sandy Mai	38353.13	10-yr	0	0	0	0	0
Sandy Mai	38353.13	50-yr	0	0	0	0	0
Sandy Mai	38353.13	100-yr	0	0	0	0	0
Sandy Mai	38353.13	500-yr	0	0	0	0	0
			0	0	0	0	0
Sandy Mai	37880.8	10-yr	0	0	0	0	0
Sandy Mai	37880.8	50-yr	0	0	0	0	0
Sandy Mai	37880.8	100-yr	0	0	0	0	0
Sandy Mai	37880.8	500-yr	0	0	0	0	0
			0	0	0	0	0
Sandy Mai	37489.56	10-yr	0	0	0	0	0
Sandy Mai	37489.56	50-yr	0	0	0	0	0
Sandy Mai	37489.56	100-yr	0	0	0	0	0
Sandy Mai	37489.56	500-yr	0	0	0	0	0
			0	0	0	0	0
Sandy Mai	37270		#VALUE!	0	0	0	0
			0	0	0	0	0
Sandy Mai	37056.92	10-yr	0	0	0	0	0
Sandy Mai	37056.92	50-yr	0	0	0	0	0
Sandy Mai	37056.92	100-yr	0	0	0	0	0
Sandy Mai	37056.92	500-yr	0	0	0	0	0
			0	0	0	0	0
Sandy Mai	36678.73	10-yr	0	0	0	0	0
Sandy Mai	36678.73	50-yr	0	0	0	0	0
Sandy Mai	36678.73	100-yr	0	0	0	0	0
Sandy Mai	36678.73	500-yr	0	0	0	0	0
			0	0	0	0	0
Sandy Mai	36275.49	10-yr	0	0	0	0	0
Sandy Mai	36275.49	50-yr	0	0	0	0	0
Sandy Mai	36275.49	100-yr	0	0	0	0	0
Sandy Mai	36275.49	500-yr	0	0	0	0	0
			0	0	0	0	0
Sandy Mai	36000		#VALUE!	0	0	0	0
			0	0	0	0	0
Sandy Mai	35791.32	10-yr	0	0	0	0	0
Sandy Mai	35791.32	50-yr	0	0	0	0	0
Sandy Mai	35791.32	100-yr	0	0	0	0	0
Sandy Mai	35791.32	500-yr	0	0	0	0	0
			0	0	0	0	0
Sandy Mai	35582.96	10-yr	0	0	0	0	0

Sandy Mai	35582.96	50-yr	0	0	0	0	0
Sandy Mai	35582.96	100-yr	0	0	0	0	0
Sandy Mai	35582.96	500-yr	0	0	0	0	0
			0	0	0	0	0
Sandy Mai	35513		#VALUE!	0	0	0	0
			0	0	0	0	0
Sandy Mai	35420.3	10-yr	0	0	0	0	0
Sandy Mai	35420.3	50-yr	0	0	0	0	0
Sandy Mai	35420.3	100-yr	0	0	0	0	0
Sandy Mai	35420.3	500-yr	0	0	0	0	0
			0	0	0	0	0
Sandy Mai	35237.49	10-yr	0	0	0	0	0
Sandy Mai	35237.49	50-yr	0	0	0	0	0
Sandy Mai	35237.49	100-yr	0	0	0	0	0
Sandy Mai	35237.49	500-yr	0	0	0	0	0
			0	0	0	0	0
Sandy Mai	34267		#VALUE!	0	0	0	0
			0	0	0	0	0
Sandy Mai	33297.82	10-yr	0	0	0	0	0
Sandy Mai	33297.82	50-yr	0	0	0	0	0
Sandy Mai	33297.82	100-yr	0	0	0	0	0
Sandy Mai	33297.82	500-yr	0	0	0	0	0
			0	0	0	0	0
Sandy Mai	32874.91	10-yr	0	0	0	0	0
Sandy Mai	32874.91	50-yr	0	0	0	0	0
Sandy Mai	32874.91	100-yr	0	0	0	0	0
Sandy Mai	32874.91	500-yr	0	0	0	0	0
			0	0	0	0	0
Sandy Mai	32432.32	10-yr	0	0	0	0	0
Sandy Mai	32432.32	50-yr	0	0	0	0	0
Sandy Mai	32432.32	100-yr	0	0	0	0	0
Sandy Mai	32432.32	500-yr	0	0	0	0	0
			0	0	0	0	0
Sandy Mai	32009.44	10-yr	0	0	0	0	0
Sandy Mai	32009.44	50-yr	0	0	0	0	0
Sandy Mai	32009.44	100-yr	0	0	0	0	0
Sandy Mai	32009.44	500-yr	0	0	0	0	0
			0	0	0	0	0
Sandy Mai	31828		#VALUE!	0	0	0	0
			0	0	0	0	0
Sandy Mai	31647.46	10-yr	0	0	0	0	0
Sandy Mai	31647.46	50-yr	0	0	0	0	0
Sandy Mai	31647.46	100-yr	0	0	0	0	0
Sandy Mai	31647.46	500-yr	0	0	0	0	0
			0	0	0	0	0
Sandy Mai	31476.58	10-yr	0	0	0	0	0
Sandy Mai	31476.58	50-yr	0	0	0	0	0

Sandy Mai	31476.58	100-yr	0	0	0	0	0
Sandy Mai	31476.58	500-yr	0	0	0	0	0
			0	0	0	0	0
Sandy Mai	31435		#VALUE!	0	0	0	0
			0	0	0	0	0
Sandy Mai	31392.94	10-yr	0	0	0	0	0
Sandy Mai	31392.94	50-yr	0	0	0	0	0
Sandy Mai	31392.94	100-yr	0	0	0	0	0
Sandy Mai	31392.94	500-yr	0	0	0	0	0
			0	0	0	0	0
Sandy Mai	31259.8	10-yr	0	0	0	0	0
Sandy Mai	31259.8	50-yr	0	0	0	0	0
Sandy Mai	31259.8	100-yr	0	0	0	0	0
Sandy Mai	31259.8	500-yr	0	0	0	0	0
			0	0	0	0	0
Sandy Mai	31220		#VALUE!	0	0	0	0
			0	0	0	0	0
Sandy Mai	31182.62	10-yr	0	0	0	0	0
Sandy Mai	31182.62	50-yr	0	0	0	0	0
Sandy Mai	31182.62	100-yr	0	0	0	0	0
Sandy Mai	31182.62	500-yr	0	0	0	0	0
			0	0	0	0	0
Sandy Mai	31033.98	10-yr	0	0	0	0	0
Sandy Mai	31033.98	50-yr	0	0	0	0	0
Sandy Mai	31033.98	100-yr	0	0	0	0	0
Sandy Mai	31033.98	500-yr	0	0	0	0	0
			0	0	0	0	0
Sandy Mai	30579.27	10-yr	0	0	0	0	0
Sandy Mai	30579.27	50-yr	0	0	0	0	0
Sandy Mai	30579.27	100-yr	0	0	0	0	0
Sandy Mai	30579.27	500-yr	0	0	0	0	0
			0	0	0	0	0
Sandy Mai	30235.35	10-yr	0	0	0	0	0
Sandy Mai	30235.35	50-yr	0	0	0	0	0
Sandy Mai	30235.35	100-yr	0	0	0	0	0
Sandy Mai	30235.35	500-yr	0	0	0	0	0
			0	0	0	0	0
Sandy Mai	29939.91	10-yr	0	0	0	0	0
Sandy Mai	29939.91	50-yr	0	0	0	0	0
Sandy Mai	29939.91	100-yr	0	0	0	0	0
Sandy Mai	29939.91	500-yr	0	0	0	0	0
			0	0	0	0	0
Sandy Mai	29533.61	10-yr	0	0	0	0	0
Sandy Mai	29533.61	50-yr	0	0	0	0	0
Sandy Mai	29533.61	100-yr	0	0	0	0	0
Sandy Mai	29533.61	500-yr	0	0	0	0	0
			0	0	0	0	0

Sandy Mai	29203.58	10-yr	0	0	0	0	0
Sandy Mai	29203.58	50-yr	0	0	0	0	0
Sandy Mai	29203.58	100-yr	0	0	0	0	0
Sandy Mai	29203.58	500-yr	0	0	0	0	0
			0	0	0	0	0
Sandy Mai	29175		#VALUE!	0	0	0	0
			0	0	0	0	0
Sandy Mai	29148	10-yr	0	0	0	0	0
Sandy Mai	29148	50-yr	0	0	0	0	0
Sandy Mai	29148	100-yr	0	0	0	0	0
Sandy Mai	29148	500-yr	0	0	0	0	0
			0	0	0	0	0
Sandy Mai	28902.69	10-yr	0	0	0	0	0
Sandy Mai	28902.69	50-yr	0	0	0	0	0
Sandy Mai	28902.69	100-yr	0	0	0	0	0
Sandy Mai	28902.69	500-yr	0	0	0	0	0
			0	0	0	0	0
Sandy Mai	28536.39	10-yr	0	0	0	0	0
Sandy Mai	28536.39	50-yr	0	0	0	0	0
Sandy Mai	28536.39	100-yr	0	0	0	0	0
Sandy Mai	28536.39	500-yr	0	0	0	0	0
			0	0	0	0	0
Sandy Mai	28078.23	10-yr	0	0	0	0	0
Sandy Mai	28078.23	50-yr	0	0	0	0	0
Sandy Mai	28078.23	100-yr	0	0	0	0	0
Sandy Mai	28078.23	500-yr	0	0	0	0	0
			0	0	0	0	0
Sandy Mai	27678.42	10-yr	0	0	0	0	0
Sandy Mai	27678.42	50-yr	0	0	0	0	0
Sandy Mai	27678.42	100-yr	0	0	0	0	0
Sandy Mai	27678.42	500-yr	0	0	0	0	0
			0	0	0	0	0
Sandy Mai	27191.04	10-yr	0	0	0	0	0
Sandy Mai	27191.04	50-yr	0	0	0	0	0
Sandy Mai	27191.04	100-yr	0	0	0	0	0
Sandy Mai	27191.04	500-yr	0	0	0	0	0
			0	0	0	0	0
Sandy Mai	26877.54	10-yr	0	0	0	0	0
Sandy Mai	26877.54	50-yr	0	0	0	0	0
Sandy Mai	26877.54	100-yr	0	0	0	0	0
Sandy Mai	26877.54	500-yr	0	0	0	0	0
			0	0	0	0	0
Sandy Mai	26835		#VALUE!	0	0	0	0
			0	0	0	0	0
Sandy Mai	26794.7	10-yr	0	0	0	0	0
Sandy Mai	26794.7	50-yr	0	0	0	0	0
Sandy Mai	26794.7	100-yr	0	0	0	0	0

Sandy Mai	26794.7	500-yr	0	0	0	0	0
			0	0	0	0	0
Sandy Mai	26382.38	10-yr	0	0	0	0	0
Sandy Mai	26382.38	50-yr	0	0	0	0	0
Sandy Mai	26382.38	100-yr	0	0	0	0	0
Sandy Mai	26382.38	500-yr	0	0	0	0	0
			0	0	0	0	0
Sandy Mai	26107.58	10-yr	0	0	0	0	0
Sandy Mai	26107.58	50-yr	0	0	0	0	0
Sandy Mai	26107.58	100-yr	0	0	0	0	0
Sandy Mai	26107.58	500-yr	0	0	0	0	0
			0	0	0	0	0
Sandy Mai	25737.96	10-yr	0	0	0	0	0
Sandy Mai	25737.96	50-yr	0	0	0	0	0
Sandy Mai	25737.96	100-yr	0	0	0	0	0
Sandy Mai	25737.96	500-yr	0	0	0	0	0
			0	0	0	0	0
Sandy Mai	25309.8	10-yr	0	0	0	0	0
Sandy Mai	25309.8	50-yr	0	0	0	0	0
Sandy Mai	25309.8	100-yr	0	0	0	0	0
Sandy Mai	25309.8	500-yr	0	0	0	0	0
			0	0	0	0	0
Sandy Mai	24900.93	10-yr	0	0	0	0	0
Sandy Mai	24900.93	50-yr	0	0	0	0	0
Sandy Mai	24900.93	100-yr	0	0	0	0	0
Sandy Mai	24900.93	500-yr	0	0	0	0	0
			0	0	0	0	0
Sandy Mai	24402.5	10-yr	0	0	0	0	0
Sandy Mai	24402.5	50-yr	0	0	0	0	0
Sandy Mai	24402.5	100-yr	0	0	0	0	0
Sandy Mai	24402.5	500-yr	0	0	0	0	0
			0	0	0	0	0
Sandy Mai	24129.68	10-yr	0	0	0	0	0
Sandy Mai	24129.68	50-yr	0	0	0	0	0
Sandy Mai	24129.68	100-yr	0	0	0	0	0
Sandy Mai	24129.68	500-yr	0	0	0	0	0
			0	0	0	0	0
Sandy Mai	24085		#VALUE!	0	0	0	0
			0	0	0	0	0
Sandy Mai	24042.15	10-yr	0	0	0	0	0
Sandy Mai	24042.15	50-yr	0	0	0	0	0
Sandy Mai	24042.15	100-yr	0	0	0	0	0
Sandy Mai	24042.15	500-yr	0	0	0	0	0
			0	0	0	0	0
Sandy Mai	23662.23	10-yr	0	0	0	0	0
Sandy Mai	23662.23	50-yr	0	0	0	0	0
Sandy Mai	23662.23	100-yr	0	0	0	0	0

Sandy Mai	23662.23	500-yr	0	0	0	0	0
			0	0	0	0	0
Sandy Mai	23396.78	10-yr	0	0	0	0	0
Sandy Mai	23396.78	50-yr	0	0	0	0	0
Sandy Mai	23396.78	100-yr	0	0	0	0	0
Sandy Mai	23396.78	500-yr	0	0	0	0	0
			0	0	0	0	0
Sandy Mai	23076.73	10-yr	0	0	0	0	0
Sandy Mai	23076.73	50-yr	0	0	0	0	0
Sandy Mai	23076.73	100-yr	0	0	0	0	0
Sandy Mai	23076.73	500-yr	0	0	0	0	0
			0	0	0	0	0
Sandy Mai	22719.89	10-yr	0	0	0	0	0
Sandy Mai	22719.89	50-yr	0	0	0	0	0
Sandy Mai	22719.89	100-yr	0	0	0	0	0
Sandy Mai	22719.89	500-yr	0	0	0	0	0
			0	0	0	0	0
Sandy Mai	22305.19	10-yr	0	0	0	0	0
Sandy Mai	22305.19	50-yr	0	0	0	0	0
Sandy Mai	22305.19	100-yr	0	0	0	0	0
Sandy Mai	22305.19	500-yr	0	0	0	0	0
			0	0	0	0	0
Sandy Mai	21973.79	10-yr	0	0	0	0	0
Sandy Mai	21973.79	50-yr	0	0	0	0	0
Sandy Mai	21973.79	100-yr	0	0	0	0	0
Sandy Mai	21973.79	500-yr	0	0	0	0	0
			0	0	0	0	0
Sandy Mai	21498.81	10-yr	0	0	0	0	0
Sandy Mai	21498.81	50-yr	0	0	0	0	0
Sandy Mai	21498.81	100-yr	0	0	0	0	0
Sandy Mai	21498.81	500-yr	0	0	0	0	0
			0	0	0	0	0
Sandy Mai	21070	10-yr	0	0	0	0	0
Sandy Mai	21070	50-yr	0	0	0	0	0
Sandy Mai	21070	100-yr	0	0	0	0	0
Sandy Mai	21070	500-yr	0	0	0	0	0
			0	0	0	0	0
Sandy Mai	20558.49	10-yr	0	0	0	0	0
Sandy Mai	20558.49	50-yr	0	0	0	0	0
Sandy Mai	20558.49	100-yr	0	0	0	0	0
Sandy Mai	20558.49	500-yr	0	0	0	0	0
			0	0	0	0	0
Sandy Mai	20488		#VALUE!	0	0	0	0
			0	0	0	0	0
Sandy Mai	20450.5	10-yr	0	0	0	0	0
Sandy Mai	20450.5	50-yr	0	0	0	0	0
Sandy Mai	20450.5	100-yr	0	0	0	0	0

Sandy Mai	20450.5	500-yr	0	0	0	0	0
			0	0	0	0	0
Sandy Mai	20135.83	10-yr	0	0	0	0	0
Sandy Mai	20135.83	50-yr	0	0	0	0	0
Sandy Mai	20135.83	100-yr	0	0	0	0	0
Sandy Mai	20135.83	500-yr	0	0	0	0	0
			0	0	0	0	0
Sandy Mai	19889.56	10-yr	0	0	0	0	0
Sandy Mai	19889.56	50-yr	0	0	0	0	0
Sandy Mai	19889.56	100-yr	0	0	0	0	0
Sandy Mai	19889.56	500-yr	0	0	0	0	0
			0	0	0	0	0
Sandy Mai	19820		#VALUE!	0	0	0	0
			0	0	0	0	0
Sandy Mai	19756.97	10-yr	0	0	0	0	0
Sandy Mai	19756.97	50-yr	0	0	0	0	0
Sandy Mai	19756.97	100-yr	0	0	0	0	0
Sandy Mai	19756.97	500-yr	0	0	0	0	0
			0	0	0	0	0
Sandy Mai	19546.85	10-yr	0	0	0	0	0
Sandy Mai	19546.85	50-yr	0	0	0	0	0
Sandy Mai	19546.85	100-yr	0	0	0	0	0
Sandy Mai	19546.85	500-yr	0	0	0	0	0
			0	0	0	0	0
Sandy Mai	19352.67	10-yr	0	0	0	0	0
Sandy Mai	19352.67	50-yr	0	0	0	0	0
Sandy Mai	19352.67	100-yr	0	0	0	0	0
Sandy Mai	19352.67	500-yr	0	0	0	0	0
			0	0	0	0	0
Sandy Mai	19300		#VALUE!	0	0	0	0
			0	0	0	0	0
Sandy Mai	19245.94	10-yr	0	0	0	0	0
Sandy Mai	19245.94	50-yr	0	0	0	0	0
Sandy Mai	19245.94	100-yr	0	0	0	0	0
Sandy Mai	19245.94	500-yr	0	0	0	0	0
			0	0	0	0	0
Sandy Mai	19054.38	10-yr	0	0	0	0	0
Sandy Mai	19054.38	50-yr	0	0	0	0	0
Sandy Mai	19054.38	100-yr	0	0	0	0	0
Sandy Mai	19054.38	500-yr	0	0	0	0	0
			0	0	0	0	0
Sandy Mai	18845.69	10-yr	0	0	0	0	0
Sandy Mai	18845.69	50-yr	0	0	0	0	0
Sandy Mai	18845.69	100-yr	0	0	0	0	0
Sandy Mai	18845.69	500-yr	0	0	0	0	0
			0	0	0	0	0
Sandy Mai	18634.5	10-yr	0	0	0	0	0

Sandy Mai	18634.5	50-yr	0	0	0	0	0
Sandy Mai	18634.5	100-yr	0	0	0	0	0
Sandy Mai	18634.5	500-yr	0	0	0	0	0
			0	0	0	0	0
Sandy Mai	18463	10-yr	0	0	0	0	0
Sandy Mai	18463	50-yr	0	0	0	0	0
Sandy Mai	18463	100-yr	0	0	0	0	0
Sandy Mai	18463	500-yr	0	0	0	0	0
			0	0	0	0	0
Sandy Mai	18269.19	10-yr	0	0	0	0	0
Sandy Mai	18269.19	50-yr	0	0	0	0	0
Sandy Mai	18269.19	100-yr	0	0	0	0	0
Sandy Mai	18269.19	500-yr	0	0	0	0	0
			0	0	0	0	0
Sandy Mai	18240		#VALUE!	0	0	0	0
			0	0	0	0	0
Sandy Mai	18211.69	10-yr	0	0	0	0	0
Sandy Mai	18211.69	50-yr	0	0	0	0	0
Sandy Mai	18211.69	100-yr	0	0	0	0	0
Sandy Mai	18211.69	500-yr	0	0	0	0	0
			0	0	0	0	0
Sandy Mai	18010.15	10-yr	0	0	0	0	0
Sandy Mai	18010.15	50-yr	0	0	0	0	0
Sandy Mai	18010.15	100-yr	0	0	0	0	0
Sandy Mai	18010.15	500-yr	0	0	0	0	0
			0	0	0	0	0
Sandy Mai	17718.32	10-yr	0	0	0	0	0
Sandy Mai	17718.32	50-yr	0	0	0	0	0
Sandy Mai	17718.32	100-yr	0	0	0	0	0
Sandy Mai	17718.32	500-yr	0	0	0	0	0
			0	0	0	0	0
Sandy Mai	17333.24	10-yr	0	0	0	0	0
Sandy Mai	17333.24	50-yr	0	0	0	0	0
Sandy Mai	17333.24	100-yr	0	0	0	0	0
Sandy Mai	17333.24	500-yr	0	0	0	0	0
			0	0	0	0	0
Sandy Mai	16976.28	10-yr	0	0	0	0	0
Sandy Mai	16976.28	50-yr	0	0	0	0	0
Sandy Mai	16976.28	100-yr	0	0	0	0	0
Sandy Mai	16976.28	500-yr	0	0	0	0	0
			0	0	0	0	0
Sandy Mai	16566.37	10-yr	0	0	0	0	0
Sandy Mai	16566.37	50-yr	0	0	0	0	0
Sandy Mai	16566.37	100-yr	0	0	0	0	0
Sandy Mai	16566.37	500-yr	0	0	0	0	0
			0	0	0	0	0
Sandy Mai	16177.16	10-yr	0	0	0	0	0

Sandy Mai	16177.16	50-yr	0	0	0	0	0
Sandy Mai	16177.16	100-yr	0	0	0	0	0
Sandy Mai	16177.16	500-yr	0	0	0	0	0
			0	0	0	0	0
Sandy Mai	15741.39	10-yr	0	0	0	0	0
Sandy Mai	15741.39	50-yr	0	0	0	0	0
Sandy Mai	15741.39	100-yr	0	0	0	0	0
Sandy Mai	15741.39	500-yr	0	0	0	0	0
			0	0	0	0	0
Sandy Mai	15036.05	10-yr	0	0	0	0	0
Sandy Mai	15036.05	50-yr	0	0	0	0	0
Sandy Mai	15036.05	100-yr	0	0	0	0	0
Sandy Mai	15036.05	500-yr	0	0	0	0	0
			0	0	0	0	0
Sandy Mai	14643.01	10-yr	0	0	0	0	0
Sandy Mai	14643.01	50-yr	0	0	0	0	0
Sandy Mai	14643.01	100-yr	0	0	0	0	0
Sandy Mai	14643.01	500-yr	0	0	0	0	0
			0	0	0	0	0
Sandy Mai	14242.08	10-yr	0	0	0	0	0
Sandy Mai	14242.08	50-yr	0	0	0	0	0
Sandy Mai	14242.08	100-yr	0	0	0	0	0
Sandy Mai	14242.08	500-yr	0	0	0	0	0
			0	0	0	0	0
Sandy Mai	13869.62	10-yr	0	0	0	0	0
Sandy Mai	13869.62	50-yr	0	0	0	0	0
Sandy Mai	13869.62	100-yr	0	0	0	0	0
Sandy Mai	13869.62	500-yr	0	0	0	0	0
			0	0	0	0	0
Sandy Mai	13438.13	10-yr	0	0	0	0	0
Sandy Mai	13438.13	50-yr	0	0	0	0	0
Sandy Mai	13438.13	100-yr	0	0	0	0	0
Sandy Mai	13438.13	500-yr	0	0	0	0	0
			0	0	0	0	0
Sandy Mai	12942.35	10-yr	0	0	0	0	0
Sandy Mai	12942.35	50-yr	0	0	0	0	0
Sandy Mai	12942.35	100-yr	0	0	0	0	0
Sandy Mai	12942.35	500-yr	0	0	0	0	0
			0	0	0	0	0
Sandy Mai	12648.67	10-yr	0	0	0	0	0
Sandy Mai	12648.67	50-yr	0	0	0	0	0
Sandy Mai	12648.67	100-yr	0	0	0	0	0
Sandy Mai	12648.67	500-yr	0	0	0	0	0
			0	0	0	0	0
Sandy Mai	12600		#VALUE!	0	0	0	0
			0	0	0	0	0
Sandy Mai	12591.62	10-yr	0	0	0	0	0

Sandy Mai	12591.62	50-yr	0	0	0	0	0
Sandy Mai	12591.62	100-yr	0	0	0	0	0
Sandy Mai	12591.62	500-yr	0	0	0	0	0
			0	0	0	0	0
Sandy Mai	12103.89	10-yr	0	0	0	0	0
Sandy Mai	12103.89	50-yr	0	0	0	0	0
Sandy Mai	12103.89	100-yr	0	0	0	0	0
Sandy Mai	12103.89	500-yr	0	0	0	0	0
			0	0	0	0	0
Sandy Mai	11764.28	10-yr	0	0	0	0	0
Sandy Mai	11764.28	50-yr	0	0	0	0	0
Sandy Mai	11764.28	100-yr	0	0	0	0	0
Sandy Mai	11764.28	500-yr	0	0	0	0	0
			0	0	0	0	0
Sandy Mai	11405.26	10-yr	0	0	0	0	0
Sandy Mai	11405.26	50-yr	0	0	0	0	0
Sandy Mai	11405.26	100-yr	0	0	0	0	0
Sandy Mai	11405.26	500-yr	0	0	0	0	0
			0	0	0	0	0
Sandy Mai	11350		#VALUE!	0	0	0	0
			0	0	0	0	0
Sandy Mai	11303	10-yr	0	0	0	0	0
Sandy Mai	11303	50-yr	0	0	0	0	0
Sandy Mai	11303	100-yr	0	0	0	0	0
Sandy Mai	11303	500-yr	0	0	0	0	0
			0	0	0	0	0
Sandy Mai	10733.77	10-yr	0	0	0	0	0
Sandy Mai	10733.77	50-yr	0	0	0	0	0
Sandy Mai	10733.77	100-yr	0	0	-0.01	0	-0.01
Sandy Mai	10733.77	500-yr	0	0	0	0	0
			0	0	0	0	0
Sandy Mai	10700		#VALUE!	0	0	0	0
			0	0	0	0	0
Sandy Mai	10661.15	10-yr	0	0	0	0	0
Sandy Mai	10661.15	50-yr	0	0	0	0	0
Sandy Mai	10661.15	100-yr	0	0	-0.01	0	-0.01
Sandy Mai	10661.15	500-yr	0	0	0	0	0
			0	0	0	0	0
Sandy Mai	10118.31	10-yr	0	0	0	0	0
Sandy Mai	10118.31	50-yr	0	0	0	0	0
Sandy Mai	10118.31	100-yr	0	0	-0.01	0	-0.01
Sandy Mai	10118.31	500-yr	0	0	0	0	0
			0	0	0	0	0
Sandy Mai	9744.554	10-yr	0	0	0	0	0
Sandy Mai	9744.554	50-yr	0	0	0	0	0
Sandy Mai	9744.554	100-yr	0	0	-0.01	0	-0.01
Sandy Mai	9744.554	500-yr	0	0	0	0	0

			0	0	0	0	0
Sandy Mai	9685		#VALUE!	0	0	0	0
			0	0	0	0	0
Sandy Mai	9639.641	10-yr	0	0	-0.01	0	0
Sandy Mai	9639.641	50-yr	0	0	-0.01	0	-0.01
Sandy Mai	9639.641	100-yr	0	0	-0.01	0	-0.02
Sandy Mai	9639.641	500-yr	0	0	0	0	0
			0	0	0	0	0
Sandy Mai	8975.758	10-yr	0	0	-0.01	0	0
Sandy Mai	8975.758	50-yr	0	0	-0.01	0	-0.01
Sandy Mai	8975.758	100-yr	0	0	-0.02	0	-0.01
Sandy Mai	8975.758	500-yr	0	0	0	0	0
			0	0	0	0	0
Sandy Mai	8504.5	10-yr	0	0	0	0	0
Sandy Mai	8504.5	50-yr	0	0	-0.01	0	-0.01
Sandy Mai	8504.5	100-yr	0	0	-0.02	0	-0.02
Sandy Mai	8504.5	500-yr	0	0	0	0	0
			0	0	0	0	0
Sandy Mai	8350		#VALUE!	0	0	0	0
			0	0	0	0	0
Sandy Mai	8235.939	10-yr	0	0	-0.01	0	-0.01
Sandy Mai	8235.939	50-yr	0	0	-0.01	0	-0.01
Sandy Mai	8235.939	100-yr	0	0	-0.02	0	-0.02
Sandy Mai	8235.939	500-yr	0	0	0	0	0
			0	0	0	0	0
Sandy Mai	8063.602	10-yr	0	0	-0.01	0	0
Sandy Mai	8063.602	50-yr	0	0	-0.01	0	-0.02
Sandy Mai	8063.602	100-yr	0	0	-0.02	0	-0.02
Sandy Mai	8063.602	500-yr	0	0	0	0	0
			0	0	0	0	0
Sandy Mai	8000		#VALUE!	0	0	0	0
			0	0	0	0	0
Sandy Mai	7966.54	10-yr	0	0	0.03	0	0.02
Sandy Mai	7966.54	50-yr	0	0	-0.05	0	-0.04
Sandy Mai	7966.54	100-yr	0	0	-0.02	0	-0.02
Sandy Mai	7966.54	500-yr	0	0	0	0	0
			0	0	0	0	0
Sandy Mai	7570.986	10-yr	0	0	0.03	0	0.02
Sandy Mai	7570.986	50-yr	0	0	-0.05	0	-0.04
Sandy Mai	7570.986	100-yr	0	0	-0.02	0	-0.03
Sandy Mai	7570.986	500-yr	0	0	0	0	0
			0	0	0	0	0
Sandy Mai	7173.807	10-yr	0	0	0.02	0	0.03
Sandy Mai	7173.807	50-yr	0	0	-0.04	0	-0.05
Sandy Mai	7173.807	100-yr	0	0	-0.02	0	-0.02
Sandy Mai	7173.807	500-yr	0	0	0	0	0
			0	0	0	0	0

Sandy Mai	6825.559	10-yr	0	0	0.03	0	0.03
Sandy Mai	6825.559	50-yr	0	0	-0.05	0	-0.05
Sandy Mai	6825.559	100-yr	0	0	-0.03	0	-0.02
Sandy Mai	6825.559	500-yr	0	0	0	0	0
			0	0	0	0	0
Sandy Mai	6765		#VALUE!	0	0	0	0
			0	0	0	0	0
Sandy Mai	6709.658	10-yr	0	0	0.04	0	0.03
Sandy Mai	6709.658	50-yr	0	0	-0.06	0	-0.05
Sandy Mai	6709.658	100-yr	0	0	-0.03	0	-0.02
Sandy Mai	6709.658	500-yr	0	0	0	0	0
			0	0	0	0	0
Sandy Mai	6668.16	10-yr	0	0	0.04	0	0.03
Sandy Mai	6668.16	50-yr	0	0	-0.05	0	-0.05
Sandy Mai	6668.16	100-yr	0	0	-0.03	0	-0.03
Sandy Mai	6668.16	500-yr	0	0	0	0	0
			0	0	0	0	0
Sandy Mai	6600		#VALUE!	0	0	0	0
			0	0	0	0	0
Sandy Mai	6572.639	10-yr	0	0	0.03	0	0.03
Sandy Mai	6572.639	50-yr	0	0	-0.05	0	-0.05
Sandy Mai	6572.639	100-yr	0	0	-0.04	0	-0.03
Sandy Mai	6572.639	500-yr	0	0	0	0	0
			0	0	0	0	0
Sandy Mai	6414.98	10-yr	0	0	0.03	0	0.03
Sandy Mai	6414.98	50-yr	0	0	-0.05	0	-0.04
Sandy Mai	6414.98	100-yr	0	0	-0.04	0	-0.03
Sandy Mai	6414.98	500-yr	0	0	0	0	-0.01
			0	0	0	0	0
Sandy Mai	6300		#VALUE!	0	0	0	0
			0	0	0	0	0
Sandy Mai	6189.177	10-yr	0	0	0.05	0	0.05
Sandy Mai	6189.177	50-yr	0	0	-0.11	0	-0.09
Sandy Mai	6189.177	100-yr	0	0	-0.17	0	-0.14
Sandy Mai	6189.177	500-yr	0	0	0.04	0	0.02
			0	0	0	0	0
Sandy Mai	5508.105	10-yr	0	0	0.07	0	0.06
Sandy Mai	5508.105	50-yr	0	0	-0.1	0	-0.1
Sandy Mai	5508.105	100-yr	0	0	-0.17	0	-0.16
Sandy Mai	5508.105	500-yr	0	0	0.03	0	0.03
			0	0	0	0	0
Sandy Mai	5084.678	10-yr	0	0	0.36	0.01	0.14
Sandy Mai	5084.678	50-yr	0	0	0.03	0.45	-0.07
Sandy Mai	5084.678	100-yr	0	0	-0.02	-0.38	-0.15
Sandy Mai	5084.678	500-yr	0	0	0.04	-0.42	0.03
			0	0	0	0	0
Sandy Mai	5065.378	10-yr	0	0	0.05	-0.05	0.12

Sandy Mai	5065.378	50-yr	0	0	-0.09	0.1	-0.06
Sandy Mai	5065.378	100-yr	0	0	-0.16	0.1	-0.13
Sandy Mai	5065.378	500-yr	0	0	0	0.24	0.03
			0	0	0	0	0
Sandy Mai	5039.878	10-yr	0	0	-0.36	-1.18	0.3
Sandy Mai	5039.878	50-yr	0	0	-0.26	0.61	-0.09
Sandy Mai	5039.878	100-yr	0	0	-0.32	0.86	-0.15
Sandy Mai	5039.878	500-yr	0	0	0.01	1.28	0.02
			0	0	0	0	0
Sandy Mai	4865.578	10-yr	0	0	0	0	0.01
Sandy Mai	4865.578	50-yr	0	0	-0.22	-0.22	-0.21
Sandy Mai	4865.578	100-yr	0	0	-0.31	-0.09	-0.28
Sandy Mai	4865.578	500-yr	0	0	0.01	0.26	0.01
			0	0	0	0	0
Sandy Mai	4790.088	10-yr	0	0	-0.05	-0.04	0.02
Sandy Mai	4790.088	50-yr	0	0	-0.25	-0.5	-0.2
Sandy Mai	4790.088	100-yr	0	0	-0.34	-0.11	-0.28
Sandy Mai	4790.088	500-yr	0	0	-0.01	0.9	0
			0	0	0	0	0
Sandy Mai	4777.088	10-yr	0	0	0.31	-0.5	0.06
Sandy Mai	4777.088	50-yr	0	0	-0.04	-0.94	-0.25
Sandy Mai	4777.088	100-yr	0	0	-0.09	-1.05	-0.35
Sandy Mai	4777.088	500-yr	0	0	0	-1.39	0
			0	0	0	0	0
Sandy Mai	4740		#VALUE!	0	0	0	0
			0	0	0	0	0
Sandy Mai	4685.592	10-yr	0	0	0	0	0
Sandy Mai	4685.592	50-yr	0	0	0	0	0
Sandy Mai	4685.592	100-yr	0	0	0	0	0
Sandy Mai	4685.592	500-yr	0	0	0	0	0
			0	0	0	0	0
Sandy Mai	4327.181	10-yr	0	0	0	0	0
Sandy Mai	4327.181	50-yr	0	0	0	0	0
Sandy Mai	4327.181	100-yr	0	0	0	0	0
Sandy Mai	4327.181	500-yr	0	0	0	0	0
			0	0	0	0	0
Sandy Mai	3964.325	10-yr	0	0	0	0	0
Sandy Mai	3964.325	50-yr	0	0	0	0	0
Sandy Mai	3964.325	100-yr	0	0	0	0	0
Sandy Mai	3964.325	500-yr	0	0	0	0	0
			0	0	0	0	0
Sandy Mai	3515.389	10-yr	0	0	0	0	0
Sandy Mai	3515.389	50-yr	0	0	0	0	0
Sandy Mai	3515.389	100-yr	0	0	0	0	0
Sandy Mai	3515.389	500-yr	0	0	0	0	0
			0	0	0	0	0
Sandy Mai	3004.364	10-yr	0	0	0	0	0

Sandy Mai	3004.364	50-yr	0	0	0	0	0
Sandy Mai	3004.364	100-yr	0	0	0	0	0
Sandy Mai	3004.364	500-yr	0	0	0	0	0
			0	0	0	0	0
Sandy Mai	2590.359	10-yr	0	0	0	0	0
Sandy Mai	2590.359	50-yr	0	0	0	0	0
Sandy Mai	2590.359	100-yr	0	0	0	0	0
Sandy Mai	2590.359	500-yr	0	0	0	0	0
			0	0	0	0	0
Sandy Mai	2500		#VALUE!	0	0	0	0
			0	0	0	0	0
Sandy Mai	2417.391	10-yr	0	0	0	0	0
Sandy Mai	2417.391	50-yr	0	0	0	0	0
Sandy Mai	2417.391	100-yr	0	0	0	0	0
Sandy Mai	2417.391	500-yr	0	0	0	0	0
			0	0	0	0	0
Sandy Mai	2072.963	10-yr	0	0	0	0	0
Sandy Mai	2072.963	50-yr	0	0	0	0	0
Sandy Mai	2072.963	100-yr	0	0	0	0	0
Sandy Mai	2072.963	500-yr	0	0	0	0	0
			0	0	0	0	0
Sandy Mai	1688.606	10-yr	0	0	0	0	0
Sandy Mai	1688.606	50-yr	0	0	0	0	0
Sandy Mai	1688.606	100-yr	0	0	0	0	0
Sandy Mai	1688.606	500-yr	0	0	0	0	0
			0	0	0	0	0
Sandy Mai	1299.523	10-yr	0	0	0	0	0
Sandy Mai	1299.523	50-yr	0	0	0	0	0
Sandy Mai	1299.523	100-yr	0	0	0	0	0
Sandy Mai	1299.523	500-yr	0	0	0	0	0
			0	0	0	0	0
Sandy Mai	663.061	10-yr	0	0	0	0	0
Sandy Mai	663.061	50-yr	0	0	0	0	0
Sandy Mai	663.061	100-yr	0	0	0	0	0
Sandy Mai	663.061	500-yr	0	0	0	0	0
			0	0	0	0	0
Sandy Mai	143.571	10-yr	0	0	0	0	0
Sandy Mai	143.571	50-yr	0	0	0	0	0
Sandy Mai	143.571	100-yr	0	0	0	0	0
Sandy Mai	143.571	500-yr	0	0	0	0	0

E.G. Slope (ft/ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)	Froude # Chl
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0

0	0	0	0	0
0	0	0	0	0
0	0	0	0	0

0	0	0	0	0
0	0	0	0	0
0	0	0	0	0

0	0	0	0	0
0	0	0	0	0
0	0	0	0	0

0	0	0	0	0
0	0	0	0	0
0	0	0	0	0

0	0	0	0	0
0	0	0	0	0
0	0	0	0	0

0	0	0	0	0
0	0	0	0	0
0	0	0	0	0

0	0	0	0	0
0	0	0	0	0
0	0	0	0	0

0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
-1E-06	0	0.02	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0.02	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0.03	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0.03	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0.03	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0

0	0	0	0	0
0	0	0	0	0
0	0	0.01	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0.01	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0.01	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	-0.02	0	0
0	0	0	0	0
0	0	0.18	0.08	0
1E-06	0	-0.97	-0.05	0
1E-06	0.01	-7.2	-0.16	0
0	0	-0.07	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0.25	0.01	0
1E-06	0	-1.13	-0.02	0
1E-06	0	-8.11	-0.71	0
0	0	-0.08	-0.03	0
0	0	0	0	0
0	0	0.24	0.01	0
0	0	-1	-0.04	0
0	0	-7.2	-0.26	0
0	0	-0.07	0	0
0	0	0	0	0
0	0	0.15	0.02	0
0	0	-1.14	-0.03	0
0	0.01	-8.12	-0.74	0
0	0	-0.07	-0.01	0

0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
1E-06	0	-1.06	-0.17	0
1E-06	0	-6	-0.26	0
1E-06	0	-11.32	-0.39	0
0	0	-0.11	-0.01	0
0	0	0	0	0
0	0	-1.26	-0.08	0
1E-06	0	-8.78	-0.22	0
0	0	-16.45	-0.48	0
0	0	-0.15	0	0
0	0	0	0	0
1E-06	0	-0.56	-0.11	0
0	0	-2.25	-0.31	0
1E-06	0.01	-3.92	-0.37	0
0	0	-0.04	-0.01	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0.01	-0.29	-0.09	0
1E-06	0.01	-1.74	-0.55	0
1E-06	0.01	-3.1	-0.41	0
0	0	-0.03	-0.01	0
0	0	0	0	0
1E-06	0	-0.18	-0.17	0
0	0	-8.68	-0.35	0
0.000001	0.01	-16.55	-0.22	0
0.000001	0	-0.16	-0.01	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
-4E-06	-0.02	3.41	0.18	0
4E-06	0.02	-22.18	-0.86	0
1E-06	0.01	-13.72	-0.17	0
0	0	-0.13	-0.01	0
0	0	0	0	0
-1E-06	-0.02	7.41	0.26	0
0	0.01	-14.52	-0.12	0
0	0	-7.22	-0.04	0
1E-06	0	-0.07	0	0
0	0	0	0	0
-0.000001	0	10.14	0.13	0
0	0	-18.49	-0.28	0
0.000001	0	-9.37	-0.16	0
0	0	-0.1	-0.01	0
0	0	0	0	0

-7E-06	-0.02	3.3	0.36	0
4E-06	0.03	-5.56	-0.56	0.01
1E-06	0.01	-2.82	-0.62	0
0	0	-0.04	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
-0.000015	-0.05	3.7	1.05	0
7E-06	0.04	-5.77	-0.94	0.01
1E-06	0.02	-3.05	-0.82	0
0	0	-0.05	0	0
0	0	0	0	0
-3E-06	-0.02	2.89	0.56	0
2E-06	0.01	-4.76	-1.1	0
0.000001	0.01	-7.35	-0.34	0
0	0	-0.09	-0.01	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
-5E-06	-0.02	2.72	0.6	0
4E-06	0.03	-3.81	-0.77	0
0.000001	0	-11.96	-0.54	0
0	0	-0.39	-0.01	0
0	0	0	0	0
-5E-06	-0.02	3.57	0.2	0
4E-06	0.03	-5.73	-2.08	0.01
0.000003	0.02	-5.03	-4.73	0
0	0	-0.3	-0.03	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
-0.000013	-0.04	6.1	0.23	0
0.000028	0.09	-13.54	-0.43	0.01
0.000052	0.15	-23.89	-9.2	0.01
-2.1E-05	-0.05	8.19	0.73	0
0	0	0	0	0
-3.8E-05	-0.13	17.91	1.24	-0.01
7E-06	0.08	-87.82	-2.51	0
0.000009	0.12	-195.62	-1.39	0
-1E-06	-0.02	39.75	0.32	-0.01
0	0	0	0	0
-0.000371	-0.96	92.64	93.87	-0.06
-0.000114	-1	674.61	59.72	-0.05
-0.000108	-1.05	836.43	58.95	-0.05
-0.00001	-0.2	594.16	59.93	0
0	0	0	0	0
6.4E-05	0.19	-17.96	-100.12	0

0.000048	0.39	-156.95	-120.64	0.02
0.000048	0.41	-199.48	-119.22	0.02
0.000041	0.6	-872.76	-53.36	0.03
0	0	0	0	0
0.001048	2.63	-203.91	-96.39	0.16
0.000347	2.43	-261.39	-56.16	0.12
0.000353	2.62	-289.6	-117.27	0.13
0.000057	0.97	189.6	54.4	0.05
0	0	0	0	0
0.000028	0.18	-40.63	57	0.01
0.000028	0.25	-100.96	-6.52	0.01
0.000034	0.31	-123.72	-8.16	0.02
-0.000004	-0.09	681.72	0.22	0
0	0	0	0	0
-0.004322	1.49	142.42	-51.13	0.09
-0.001324	3.3	81.24	-95.2	0.16
-0.001355	4.12	56.71	-62.13	0.2
0.000036	2.68	32.05	-26.2	0.11
0	0	0	0	0
-0.000406	-1.35	224.96	9.44	-0.09
-0.00016	-0.95	161.16	-0.98	-0.05
-0.000183	-1.04	152.29	-1.89	-0.04
-0.000017	-0.35	605.84	0.01	-0.01
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0

0	0	0	0	0
0	0	0	0	0
0	0	0	0	0

Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Crit W.S. (ft)	E.G. Elev (ft)
Sandy Mai	38835.32	100-yr	0	0	0	0	0
Sandy Mai	38835.32	500-yr	0	0	0	0	0
			0	0	0	0	0
Sandy Mai	38353.13	100-yr	0	0	0	0	0
Sandy Mai	38353.13	500-yr	0	0	0	0	0
			0	0	0	0	0
Sandy Mai	37880.8	100-yr	0	0	0	0	0
Sandy Mai	37880.8	500-yr	0	0	0	0	0
			0	0	0	0	0
Sandy Mai	37489.56	100-yr	0	0	0	0	0
Sandy Mai	37489.56	500-yr	0	0	0	0	0
			0	0	0	0	0
Sandy Mai	37056.92	100-yr	0	0	0	0	0
Sandy Mai	37056.92	500-yr	0	0	0	0	0
			0	0	0	0	0
Sandy Mai	36678.73	100-yr	0	0	0	0	0
Sandy Mai	36678.73	500-yr	0	0	0	0	0
			0	0	0	0	0
Sandy Mai	36275.49	100-yr	0	0	0	0	0
Sandy Mai	36275.49	500-yr	0	0	0	0	0
			0	0	0	0	0
Sandy Mai	35791.32	100-yr	0	0	0	0	0
Sandy Mai	35791.32	500-yr	0	0	0	0	0
			0	0	0	0	0
Sandy Mai	35582.96	100-yr	0	0	0	0	0
Sandy Mai	35582.96	500-yr	0	0	0	0	0
			0	0	0	0	0
Sandy Mai	35420.3	100-yr	0	0	0	0	0
Sandy Mai	35420.3	500-yr	0	0	0	0	0
			0	0	0	0	0
Sandy Mai	35237.49	100-yr	0	0	0	0	0
Sandy Mai	35237.49	500-yr	0	0	0	0	0
			0	0	0	0	0
Sandy Mai	33297.82	100-yr	0	0	0	0	0
Sandy Mai	33297.82	500-yr	0	0	0	0	0
			0	0	0	0	0
Sandy Mai	32874.91	100-yr	0	0	0	0	0
Sandy Mai	32874.91	500-yr	0	0	0	0	0
			0	0	0	0	0
Sandy Mai	32432.32	100-yr	0	0	0	0	0
Sandy Mai	32432.32	500-yr	0	0	0	0	0
			0	0	0	0	0
Sandy Mai	32009.44	100-yr	0	0	0	0	0
Sandy Mai	32009.44	500-yr	0	0	0	0	0
			0	0	0	0	0

Sandy Mai	31647.46	100-yr	0	0	0	0	0
Sandy Mai	31647.46	500-yr	0	0	0	0	0
			0	0	0	0	0
Sandy Mai	31476.58	100-yr	0	0	0	0	0
Sandy Mai	31476.58	500-yr	0	0	0	0	0
			0	0	0	0	0
Sandy Mai	31392.94	100-yr	0	0	0	0	0
Sandy Mai	31392.94	500-yr	0	0	0	0	0
			0	0	0	0	0
Sandy Mai	31259.8	100-yr	0	0	0	0	0
Sandy Mai	31259.8	500-yr	0	0	0	0	0
			0	0	0	0	0
Sandy Mai	31182.62	100-yr	0	0	0	0	0
Sandy Mai	31182.62	500-yr	0	0	0	0	0
			0	0	0	0	0
Sandy Mai	31033.98	100-yr	0	0	0	0	0
Sandy Mai	31033.98	500-yr	0	0	0	0	0
			0	0	0	0	0
Sandy Mai	30579.27	100-yr	0	0	0	0	0
Sandy Mai	30579.27	500-yr	0	0	0	0	0
			0	0	0	0	0
Sandy Mai	30235.35	100-yr	0	0	0	0	0
Sandy Mai	30235.35	500-yr	0	0	0	0	0
			0	0	0	0	0
Sandy Mai	29939.91	100-yr	0	0	0	0	0
Sandy Mai	29939.91	500-yr	0	0	0	0	0
			0	0	0	0	0
Sandy Mai	29533.61	100-yr	0	0	0	0	0
Sandy Mai	29533.61	500-yr	0	0	0	0	0
			0	0	0	0	0
Sandy Mai	29203.58	100-yr	0	0	0	0	0
Sandy Mai	29203.58	500-yr	0	0	0	0	0
			0	0	0	0	0
Sandy Mai	29148	100-yr	0	0	0	0	0
Sandy Mai	29148	500-yr	0	0	0	0	0
			0	0	0	0	0
Sandy Mai	28902.69	100-yr	0	0	0	0	0
Sandy Mai	28902.69	500-yr	0	0	0	0	0
			0	0	0	0	0
Sandy Mai	28536.39	100-yr	0	0	0	0	0
Sandy Mai	28536.39	500-yr	0	0	0	0	0
			0	0	0	0	0
Sandy Mai	28078.23	100-yr	0	0	0	0	0
Sandy Mai	28078.23	500-yr	0	0	0	0	0
			0	0	0	0	0
Sandy Mai	27678.42	100-yr	0	0	0	0	0
Sandy Mai	27678.42	500-yr	0	0	0	0	0

			0	0	0	0	0
Sandy Mai	27191.04	100-yr	0	0	0	0	0
Sandy Mai	27191.04	500-yr	0	0	0	0	0
			0	0	0	0	0
Sandy Mai	26877.54	100-yr	0	0	0	0	0
Sandy Mai	26877.54	500-yr	0	0	0	0	0
			0	0	0	0	0
Sandy Mai	26794.7	100-yr	0	0	0	0	0
Sandy Mai	26794.7	500-yr	0	0	0	0	0
			0	0	0	0	0
Sandy Mai	26382.38	100-yr	0	0	0	0	0
Sandy Mai	26382.38	500-yr	0	0	0	0	0
			0	0	0	0	0
Sandy Mai	26107.58	100-yr	0	0	0	0	0
Sandy Mai	26107.58	500-yr	0	0	0	0	0
			0	0	0	0	0
Sandy Mai	25737.96	100-yr	0	0	0	0	0
Sandy Mai	25737.96	500-yr	0	0	0	0	0
			0	0	0	0	0
Sandy Mai	25309.8	100-yr	0	0	0	0	0
Sandy Mai	25309.8	500-yr	0	0	0	0	0
			0	0	0	0	0
Sandy Mai	24900.93	100-yr	0	0	0	0	0
Sandy Mai	24900.93	500-yr	0	0	0	0	0
			0	0	0	0	0
Sandy Mai	24402.5	100-yr	0	0	0	0	0
Sandy Mai	24402.5	500-yr	0	0	0	0	0
			0	0	0	0	0
Sandy Mai	24129.68	100-yr	0	0	0	0	0
Sandy Mai	24129.68	500-yr	0	0	0	0	0
			0	0	0	0	0
Sandy Mai	24042.15	100-yr	0	0	0	0	0
Sandy Mai	24042.15	500-yr	0	0	0	0	0
			0	0	0	0	0
Sandy Mai	23662.23	100-yr	0	0	0	0	0
Sandy Mai	23662.23	500-yr	0	0	0	0	0
			0	0	0	0	0
Sandy Mai	23396.78	100-yr	0	0	0	0	0
Sandy Mai	23396.78	500-yr	0	0	0	0	0
			0	0	0	0	0
Sandy Mai	23076.73	100-yr	0	0	0	0	0
Sandy Mai	23076.73	500-yr	0	0	0	0	0
			0	0	0	0	0
Sandy Mai	22719.89	100-yr	0	0	0	0	0
Sandy Mai	22719.89	500-yr	0	0	0	0	0
			0	0	0	0	0
Sandy Mai	22305.19	100-yr	0	0	0	0	0

Sandy Mai	22305.19	500-yr	0	0	0	0	0
			0	0	0	0	0
Sandy Mai	21973.79	100-yr	0	0	0	0	0
Sandy Mai	21973.79	500-yr	0	0	0	0	0
			0	0	0	0	0
Sandy Mai	21498.81	100-yr	0	0	0	0	0
Sandy Mai	21498.81	500-yr	0	0	0	0	0
			0	0	0	0	0
Sandy Mai	21070	100-yr	0	0	0	0	0
Sandy Mai	21070	500-yr	0	0	0	0	0
			0	0	0	0	0
Sandy Mai	20558.49	100-yr	0	0	0	0	0
Sandy Mai	20558.49	500-yr	0	0	0	0	0
			0	0	0	0	0
Sandy Mai	20450.5	100-yr	0	0	0	0	0
Sandy Mai	20450.5	500-yr	0	0	0	0	0
			0	0	0	0	0
Sandy Mai	20135.83	100-yr	0	0	0	0	0
Sandy Mai	20135.83	500-yr	0	0	0	0	0
			0	0	0	0	0
Sandy Mai	19889.56	100-yr	0	0	0	0	0
Sandy Mai	19889.56	500-yr	0	0	0	0	0
			0	0	0	0	0
Sandy Mai	19756.97	100-yr	0	0	0	0	0
Sandy Mai	19756.97	500-yr	0	0	0	0	0
			0	0	0	0	0
Sandy Mai	19546.85	100-yr	0	0	0	0	0
Sandy Mai	19546.85	500-yr	0	0	0	0	0
			0	0	0	0	0
Sandy Mai	19352.67	100-yr	0	0	0	0	0
Sandy Mai	19352.67	500-yr	0	0	0	0	0
			0	0	0	0	0
Sandy Mai	19245.94	100-yr	0	0	0	0	0
Sandy Mai	19245.94	500-yr	0	0	0	0	0
			0	0	0	0	0
Sandy Mai	19054.38	100-yr	0	0	0	0	0
Sandy Mai	19054.38	500-yr	0	0	0	0	0
			0	0	0	0	0
Sandy Mai	18845.69	100-yr	0	0	0	0	0
Sandy Mai	18845.69	500-yr	0	0	0	0	0
			0	0	0	0	0
Sandy Mai	18634.5	100-yr	0	0	0	0	0
Sandy Mai	18634.5	500-yr	0	0	0	0	0
			0	0	0	0	0
Sandy Mai	18463	100-yr	0	0	0	0	0
Sandy Mai	18463	500-yr	0	0	0	0	0
			0	0	0	0	0

Sandy Mai	18269.19	100-yr	0	0	0	0	0
Sandy Mai	18269.19	500-yr	0	0	0	0	0
			0	0	0	0	0
Sandy Mai	18211.69	100-yr	0	0	0	0	0
Sandy Mai	18211.69	500-yr	0	0	0	0	0
			0	0	0	0	0
Sandy Mai	18010.15	100-yr	0	0	0	0	0
Sandy Mai	18010.15	500-yr	0	0	0	0	0
			0	0	0	0	0
Sandy Mai	17718.32	100-yr	0	0	0	0	0
Sandy Mai	17718.32	500-yr	0	0	0	0	0
			0	0	0	0	0
Sandy Mai	17333.24	100-yr	0	0	0	0	0
Sandy Mai	17333.24	500-yr	0	0	0	0	0
			0	0	0	0	0
Sandy Mai	16976.28	100-yr	0	0	0	0	0
Sandy Mai	16976.28	500-yr	0	0	0	0	0
			0	0	0	0	0
Sandy Mai	16566.37	100-yr	0	0	0	0	0
Sandy Mai	16566.37	500-yr	0	0	0	0	0
			0	0	0	0	0
Sandy Mai	16177.16	100-yr	0	0	0	0	0
Sandy Mai	16177.16	500-yr	0	0	0	0	0
			0	0	0	0	0
Sandy Mai	15741.39	100-yr	0	0	0	0	0
Sandy Mai	15741.39	500-yr	0	0	0	0	0
			0	0	0	0	0
Sandy Mai	15036.05	100-yr	0	0	0	0	0
Sandy Mai	15036.05	500-yr	0	0	0	0	0
			0	0	0	0	0
Sandy Mai	14643.01	100-yr	0	0	0	0	0
Sandy Mai	14643.01	500-yr	0	0	0	0	0
			0	0	0	0	0
Sandy Mai	14242.08	100-yr	0	0	0	0	0
Sandy Mai	14242.08	500-yr	0	0	0	0	0
			0	0	0	0	0
Sandy Mai	13869.62	100-yr	0	0	0	0	0
Sandy Mai	13869.62	500-yr	0	0	0	0	0
			0	0	0	0	0
Sandy Mai	13438.13	100-yr	0	0	0	0	0
Sandy Mai	13438.13	500-yr	0	0	0	0	0
			0	0	0	0	0
Sandy Mai	12942.35	100-yr	0	0	0	0	0
Sandy Mai	12942.35	500-yr	0	0	0	0	0
			0	0	0	0	0
Sandy Mai	12648.67	100-yr	0	0	0	0	0
Sandy Mai	12648.67	500-yr	0	0	0	0	0

			0	0	0	0	0
Sandy Mai	12591.62	100-yr	0	0	0	0	0
Sandy Mai	12591.62	500-yr	0	0	0	0	0
			0	0	0	0	0
Sandy Mai	12103.89	100-yr	0	0	0	0	0
Sandy Mai	12103.89	500-yr	0	0	0	0	0
			0	0	0	0	0
Sandy Mai	11764.28	100-yr	0	0	0	0	0
Sandy Mai	11764.28	500-yr	0	0	0	0	0
			0	0	0	0	0
Sandy Mai	11405.26	100-yr	0	0	0	0	0
Sandy Mai	11405.26	500-yr	0	0	0	0	0
			0	0	0	0	0
Sandy Mai	11303	100-yr	0	0	0	0	0
Sandy Mai	11303	500-yr	0	0	0	0	0
			0	0	0	0	0
Sandy Mai	10733.77	100-yr	0	0	-0.01	0	-0.01
Sandy Mai	10733.77	500-yr	0	0	0	0	0
			0	0	0	0	0
Sandy Mai	10661.15	100-yr	0	0	-0.01	0	-0.01
Sandy Mai	10661.15	500-yr	0	0	0	0	0
			0	0	0	0	0
Sandy Mai	10118.31	100-yr	0	0	-0.01	0	-0.01
Sandy Mai	10118.31	500-yr	0	0	0	0	0
			0	0	0	0	0
Sandy Mai	9744.554	100-yr	0	0	-0.01	0	-0.01
Sandy Mai	9744.554	500-yr	0	0	0	0	0
			0	0	0	0	0
Sandy Mai	9639.641	100-yr	0	0	-0.01	0	-0.02
Sandy Mai	9639.641	500-yr	0	0	0	0	0
			0	0	0	0	0
Sandy Mai	8975.758	100-yr	0	0	-0.02	0	-0.01
Sandy Mai	8975.758	500-yr	0	0	0	0	0
			0	0	0	0	0
Sandy Mai	8504.5	100-yr	0	0	-0.02	0	-0.02
Sandy Mai	8504.5	500-yr	0	0	0	0	0
			0	0	0	0	0
Sandy Mai	8235.939	100-yr	0	0	-0.02	0	-0.02
Sandy Mai	8235.939	500-yr	0	0	0	0	0
			0	0	0	0	0
Sandy Mai	8063.602	100-yr	0	0	-0.02	0	-0.02
Sandy Mai	8063.602	500-yr	0	0	0	0	0
			0	0	0	0	0
Sandy Mai	7966.54	100-yr	0	0	-0.02	0	-0.02
Sandy Mai	7966.54	500-yr	0	0	0	0	0
			0	0	0	0	0
Sandy Mai	7570.986	100-yr	0	0	-0.02	0	-0.03

Sandy Mai	7570.986	500-yr	0	0	0	0	0
			0	0	0	0	0
Sandy Mai	7173.807	100-yr	0	0	-0.02	0	-0.02
Sandy Mai	7173.807	500-yr	0	0	0	0	0
			0	0	0	0	0
Sandy Mai	6825.559	100-yr	0	0	-0.03	0	-0.02
Sandy Mai	6825.559	500-yr	0	0	0	0	0
			0	0	0	0	0
Sandy Mai	6709.658	100-yr	0	0	-0.03	0	-0.02
Sandy Mai	6709.658	500-yr	0	0	0	0	0
			0	0	0	0	0
Sandy Mai	6668.16	100-yr	0	0	-0.03	0	-0.03
Sandy Mai	6668.16	500-yr	0	0	0	0	0
			0	0	0	0	0
Sandy Mai	6572.639	100-yr	0	0	-0.04	0	-0.03
Sandy Mai	6572.639	500-yr	0	0	0	0	0
			0	0	0	0	0
Sandy Mai	6414.98	100-yr	0	0	-0.04	0	-0.03
Sandy Mai	6414.98	500-yr	0	0	0	0	-0.01
			0	0	0	0	0
Sandy Mai	6189.177	100-yr	0	0	-0.17	0	-0.14
Sandy Mai	6189.177	500-yr	0	0	0.04	0	0.02
			0	0	0	0	0
Sandy Mai	5508.105	100-yr	0	0	-0.17	0	-0.16
Sandy Mai	5508.105	500-yr	0	0	0.03	0	0.03
			0	0	0	0	0
Sandy Mai	5084.678	100-yr	0	0	-0.02	-0.38	-0.15
Sandy Mai	5084.678	500-yr	0	0	0.04	-0.42	0.03
			0	0	0	0	0
Sandy Mai	5065.378	100-yr	0	0	-0.16	0.1	-0.13
Sandy Mai	5065.378	500-yr	0	0	0	0.24	0.03
			0	0	0	0	0
Sandy Mai	5039.878	100-yr	0	0	-0.32	0.86	-0.15
Sandy Mai	5039.878	500-yr	0	0	0.01	1.28	0.02
			0	0	0	0	0
Sandy Mai	4865.578	100-yr	0	0	-0.31	-0.09	-0.28
Sandy Mai	4865.578	500-yr	0	0	0.01	0.26	0.01
			0	0	0	0	0
Sandy Mai	4790.088	100-yr	0	0	-0.34	-0.11	-0.28
Sandy Mai	4790.088	500-yr	0	0	-0.01	0.9	0
			0	0	0	0	0
Sandy Mai	4777.088	100-yr	0	0	-0.09	-1.05	-0.35
Sandy Mai	4777.088	500-yr	0	0	0	-1.39	0
			0	0	0	0	0
Sandy Mai	4685.592	100-yr	0	0	0	0	0
Sandy Mai	4685.592	500-yr	0	0	0	0	0
			0	0	0	0	0

Sandy Mai	4327.181	100-yr	0	0	0	0	0
Sandy Mai	4327.181	500-yr	0	0	0	0	0
			0	0	0	0	0
Sandy Mai	3964.325	100-yr	0	0	0	0	0
Sandy Mai	3964.325	500-yr	0	0	0	0	0
			0	0	0	0	0
Sandy Mai	3515.389	100-yr	0	0	0	0	0
Sandy Mai	3515.389	500-yr	0	0	0	0	0
			0	0	0	0	0
Sandy Mai	3004.364	100-yr	0	0	0	0	0
Sandy Mai	3004.364	500-yr	0	0	0	0	0
			0	0	0	0	0
Sandy Mai	2590.359	100-yr	0	0	0	0	0
Sandy Mai	2590.359	500-yr	0	0	0	0	0
			0	0	0	0	0
Sandy Mai	2417.391	100-yr	0	0	0	0	0
Sandy Mai	2417.391	500-yr	0	0	0	0	0
			0	0	0	0	0
Sandy Mai	2072.963	100-yr	0	0	0	0	0
Sandy Mai	2072.963	500-yr	0	0	0	0	0
			0	0	0	0	0
Sandy Mai	1688.606	100-yr	0	0	0	0	0
Sandy Mai	1688.606	500-yr	0	0	0	0	0
			0	0	0	0	0
Sandy Mai	1299.523	100-yr	0	0	0	0	0
Sandy Mai	1299.523	500-yr	0	0	0	0	0
			0	0	0	0	0
Sandy Mai	663.061	100-yr	0	0	0	0	0
Sandy Mai	663.061	500-yr	0	0	0	0	0
			0	0	0	0	0
Sandy Mai	143.571	100-yr	0	0	0	0	0
Sandy Mai	143.571	500-yr	0	0	0	0	0

E.G. Slope (ft/ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)	Froude # Chl
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0

0	0	0	0	0
0	0	0	0	0
0	0	0	0	0

0	0	0	0	0
0	0	0	0	0
0	0	0	0	0

0	0	0	0	0
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0	0	0	0	0
0	0	0	0	0
0	0	-0.02	0	0
0	0	0	0	0
1E-06	0.01	-7.2	-0.16	0
0	0	-0.07	0	0
0	0	0	0	0
1E-06	0	-8.11	-0.71	0
0	0	-0.08	-0.03	0
0	0	0	0	0
0	0	-7.2	-0.26	0
0	0	-0.07	0	0
0	0	0	0	0
0	0.01	-8.12	-0.74	0
0	0	-0.07	-0.01	0
0	0	0	0	0
1E-06	0	-11.32	-0.39	0
0	0	-0.11	-0.01	0
0	0	0	0	0
0	0	-16.45	-0.48	0
0	0	-0.15	0	0
0	0	0	0	0
1E-06	0.01	-3.92	-0.37	0
0	0	-0.04	-0.01	0
0	0	0	0	0
1E-06	0.01	-3.1	-0.41	0
0	0	-0.03	-0.01	0
0	0	0	0	0
0.000001	0.01	-16.55	-0.22	0
0.000001	0	-0.16	-0.01	0
0	0	0	0	0
1E-06	0.01	-13.72	-0.17	0
0	0	-0.13	-0.01	0
0	0	0	0	0
0	0	-7.22	-0.04	0

1E-06	0	-0.07	0	0
0	0	0	0	0
0.000001	0	-9.37	-0.16	0
0	0	-0.1	-0.01	0
0	0	0	0	0
1E-06	0.01	-2.82	-0.62	0
0	0	-0.04	0	0
0	0	0	0	0
1E-06	0.02	-3.05	-0.82	0
0	0	-0.05	0	0
0	0	0	0	0
0.000001	0.01	-7.35	-0.34	0
0	0	-0.09	-0.01	0
0	0	0	0	0
0.000001	0	-11.96	-0.54	0
0	0	-0.39	-0.01	0
0	0	0	0	0
0.000003	0.02	-5.03	-4.73	0
0	0	-0.3	-0.03	0
0	0	0	0	0
0.000052	0.15	-23.89	-9.2	0.01
-2.1E-05	-0.05	8.19	0.73	0
0	0	0	0	0
0.000009	0.12	-195.62	-1.39	0
-1E-06	-0.02	39.75	0.32	-0.01
0	0	0	0	0
-0.000108	-1.05	836.43	58.95	-0.05
-0.00001	-0.2	594.16	59.93	0
0	0	0	0	0
0.000048	0.41	-199.48	-119.22	0.02
0.000041	0.6	-872.76	-53.36	0.03
0	0	0	0	0
0.000353	2.62	-289.6	-117.27	0.13
0.000057	0.97	189.6	54.4	0.05
0	0	0	0	0
0.000034	0.31	-123.72	-8.16	0.02
-0.000004	-0.09	681.72	0.22	0
0	0	0	0	0
-0.001355	4.12	56.71	-62.13	0.2
0.000036	2.68	32.05	-26.2	0.11
0	0	0	0	0
-0.000183	-1.04	152.29	-1.89	-0.04
-0.000017	-0.35	605.84	0.01	-0.01
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Sandy Main Stem (NAVD 88)
Encroached Floodway Analysis

River Sta	W.S. Elev	W.S. Delta	E.G. Elev	Top Wdth Act	Top Width Delta	Enc Sta L	Enc Sta L Delta	Enc Sta R	Enc Sta R Delta
6189.177	169.99		170.97	92		558		650	
6189.177	169.84	-0.15	170.85	92	0.00	558	0.00	650	0.00
5508.105	169.98		170.34	263.21		294		810	
5508.105	169.82	-0.16	170.19	263.21	0.00	294	0.00	810	0.00
5084.678	169.86		170.19	255		525		780	
5084.678	169.69	-0.17	170.04	255	0.00	525	0.00	780	0.00
5065.378	169.73		170.17	207		353		560	
5065.378	169.6	-0.13	170.02	223.3	+16.30	336.7	-16.30	560	0.00
5039.878	169.62		170.13	180.84		359.16		540	
5039.878	169.48	-0.14	169.98	194.47	+13.63	345.53	-13.63	540	0.00
4865.578	169.48		169.84	153		382		535	
4865.578	169.37	-0.11	169.69	175.32	+22.32	359.68	-22.32	535	0.00
4790.088	168.84		169.74	136.8		513.2		650	
4790.088	168.08	-0.76	169.53	136.61	-0.19	493.39	-19.81	630	-20.00
4777.088	168.78	0.23	169.72	104.47		388.53		493	0
4777.088	168.39	-0.39	169.2	120.82	+16.35	378.18	-10.35	499	+6.00
4740 BR U	169.62		170.13	180.84		359.16		540	
4740 BR U	166.25	-3.37	169.2	0	-180.84	378.18	+19.02	499	-41.00
4740 BR D	169.48		169.84	153		382		535	
4740 BR D	164.54	-4.94	168.51	95.9	-57.10	400	+18.00	580	+45.00
4685.592	168.84		169.74	136.8		513.2		650	
4685.592	164.54	-4.30	167.01	180	+43.20	400	-113.20	580	-70.00
4327.181	168.78		169.72	104.47		388.53		493	
4327.181	165.21	-3.57	165.41	520	+415.53	315	-73.53	835	+342.00

= River stations within project limits

= Non-existent river stations in duplicate effective model

= Decrease in proposed water surface elevations vs duplicate effective model

= Increase in proposed water surface elevations vs duplicate effective model

= Duplicate Effective Model

Reach	River Sta	Profile	W.S. Elev (ft)	Prof Delta WS (ft)	E.G. Elev (ft)	Top Wdth Act (ft)	Q Left (cfs)	Q Channel (cfs)
Sandy Main Stem	38835.32	100 yr	339.2		339.87	213.05	255.85	1134.6
Sandy Main Stem	38835.32	100 yr encroache	339.12	-0.08	340.01	115	183.05	1225.5
Sandy Main Stem	38353.13	100 yr	332.64		333.79	78.47	649.02	682.44
Sandy Main Stem	38353.13	100 yr encroache	333.06	0.42	334.85	38.69	520.24	855.39
Sandy Main Stem	37880.8	100 yr	324.83		325.57	160.34	64.58	764.8
Sandy Main Stem	37880.8	100 yr encroache	324.76	-0.07	325.62	110	68.07	785.25
Sandy Main Stem	37489.56	100 yr	320.49		321.1	126.74	308.03	963.83
Sandy Main Stem	37489.56	100 yr encroache	320.96	0.47	321.43	86	403.41	906.39
Sandy Main Stem	37270		Culvert					
Sandy Main Stem	37056.92	100 yr	313.8		315.39	78.75	259.56	1158.8
Sandy Main Stem	37056.92	100 yr encroache	313.78	-0.02	315.44	65.39	258.76	1171.8
Sandy Main Stem	36678.73	100 yr	305.92		306.51	180.6	211.21	624.83
Sandy Main Stem	36678.73	100 yr encroache	306.25	0.33	306.87	94.41	83.16	660.83
Sandy Main Stem	36275.49	100 yr	304.65		304.99	170.35	644.24	533.76
Sandy Main Stem	36275.49	100 yr encroache	305.28	0.63	305.66	84.3	840.52	516.13
Sandy Main Stem	36000		Culvert					
Sandy Main Stem	35791.32	100 yr	294.29		294.41	191.04	978.51	373.45
Sandy Main Stem	35791.32	100 yr encroache	295.23	0.93	295.44	70	824.88	487.79
Sandy Main Stem	35582.96	100 yr	294		294.13	183.71	518.11	591.48
Sandy Main Stem	35582.96	100 yr encroache	294.88	0.88	295.12	64	431.18	773.06
Sandy Main Stem	35513		Culvert					

Sandy Main Stem	35420.3	100 yr	291.04		291.69	78.23	82.18	965.66
Sandy Main Stem	35420.3	100 yr encroache	291.58	0.54	292.47	31.16		1124.2
Sandy Main Stem	35237.49	100 yr	291.19		291.23	269.78	551.03	419.43
Sandy Main Stem	35237.49	100 yr encroache	291.83	0.64	291.89	121	755.51	459.88
Sandy Main Stem	34267		Culvert					
Sandy Main Stem	33297.82	100 yr	259.06		260.79	104.41	36.11	1301.7
Sandy Main Stem	33297.82	100 yr encroache	258.99	-0.06	260.9	72	16.3	1332.8
Sandy Main Stem	32874.91	100 yr	255.13		255.76	226.22	54.4	746.43
Sandy Main Stem	32874.91	100 yr encroache	255.83	0.7	257.81	49.6	128.77	1273.2
Sandy Main Stem	32432.32	100 yr	253.53		253.63	313.51	116.15	399.29
Sandy Main Stem	32432.32	100 yr encroache	254.37	0.84	255.12	53	348.12	1055.8
Sandy Main Stem	32009.44	100 yr	253.3		253.35	332.83	111.14	361.46
Sandy Main Stem	32009.44	100 yr encroache	254.27	0.96	254.34	134.95	200.58	451.68
Sandy Main Stem	31828		Culvert					
Sandy Main Stem	31647.46	100 yr	248.85		248.99	307.5	202.08	635.02
Sandy Main Stem	31647.46	100 yr encroache	249.55	0.71	249.72	115	190.49	704.21
Sandy Main Stem	31476.58	100 yr	248.52		248.83	173.15	393.12	961.42
Sandy Main Stem	31476.58	100 yr encroache	249.18	0.67	249.56	72.29	348.36	1076.7
Sandy Main Stem	31435		Culvert					
Sandy Main Stem	31392.94	100 yr	247.14		247.69	106.03	333.7	1042.2
Sandy Main Stem	31392.94	100 yr encroache	247.66	0.52	248.22	68.21	249.13	1104.5
Sandy Main Stem	31259.8	100 yr	247.02		247.34	341.2	374.16	874.39
Sandy Main Stem	31259.8	100 yr encroache	247.63	0.61	247.89	165	422.96	855.36

Sandy Main Stem	31220		Culvert					
Sandy Main Stem	31182.62	100 yr	245.23		246.23	145.5	48.26	1112.2
Sandy Main Stem	31182.62	100 yr encroache	245.06	-0.17	246.21	138.59	54.26	1141.1
Sandy Main Stem	31033.98	100 yr	243.39		243.82	122.97	616.54	618.72
Sandy Main Stem	31033.98	100 yr encroache	243.55	0.16	244.01	93	586.38	645.35
Sandy Main Stem	30579.27	100 yr	240.2		241.76	80.2	120.79	972.41
Sandy Main Stem	30579.27	100 yr encroache	240.19	-0.02	241.92	50	130.95	1003.9
Sandy Main Stem	30235.35	100 yr	237.64		237.99	233.39	480.74	415.64
Sandy Main Stem	30235.35	100 yr encroache	238.24	0.6	238.75	65	288.23	489.6
Sandy Main Stem	29939.91	100 yr	236.74		236.95	164.81	693.57	281.18
Sandy Main Stem	29939.91	100 yr encroache	237.02	0.28	237.53	71	774.7	403.89
Sandy Main Stem	29533.61	100 yr	236.36		236.49	181.75	393.25	637.55
Sandy Main Stem	29533.61	100 yr encroache	236.3	-0.06	236.63	80	330.98	883.75
Sandy Main Stem	29203.58	100 yr	235.29		236.02	41.1	3.25	1432.6
Sandy Main Stem	29203.58	100 yr encroache	235.35	0.06	236.08	29.72	3.16	1435.5
Sandy Main Stem	29175		Culvert					
Sandy Main Stem	29148	100 yr	233.57		234.56	33.46	0.65	1441.8
Sandy Main Stem	29148	100 yr encroache	234.38	0.81	235.15	29.72		1443
Sandy Main Stem	28902.69	100 yr	232.43		233.52	166.15	1039.7	1123.2
Sandy Main Stem	28902.69	100 yr encroache	233.04	0.62	234.21	90	990.51	1188.4
Sandy Main Stem	28536.39	100 yr	230.51		231.41	194.64	930.09	710.56
Sandy Main Stem	28536.39	100 yr encroache	231.4	0.9	232.48	85	828.76	813.57

Sandy Main Stem	28078.23	100 yr	230.3		230.55	308.52	1376.4	1272.5
Sandy Main Stem	28078.23	100 yr encroache	231.23	0.92	231.6	120	1080.8	1575.6
Sandy Main Stem	27678.42	100 yr	228.98		230.03	374.55	386.61	1918.1
Sandy Main Stem	27678.42	100 yr encroache	229.73	0.75	231.03	157	105.76	2225
Sandy Main Stem	27191.04	100 yr	227.44		227.83	440.06	1444	1494.9
Sandy Main Stem	27191.04	100 yr encroache	228.3	0.86	228.84	107.88	1471.8	1674.2
Sandy Main Stem	26877.54	100 yr	227.37		227.52	567.52	787.72	1303.3
Sandy Main Stem	26877.54	100 yr encroache	228.34	0.96	228.49	230	1112.7	1293.5
Sandy Main Stem	26835 BR U	100 yr	227.37		227.52	435.06	335.27	1936.9
Sandy Main Stem	26835 BR U	100 yr encroache	228.34	0.96	228.48	230	692.65	1972.4
Sandy Main Stem	26835 BR D	100 yr	227.37		227.52	400.85	292.75	1979
Sandy Main Stem	26835 BR D	100 yr encroache	228.06	0.69	228.48	165	650.33	2014.3
Sandy Main Stem	26794.7	100 yr	224.68		225.83	288.22	520.98	2281.5
Sandy Main Stem	26794.7	100 yr encroache	225.67	0.99	226.44	165	601.55	2156.2
Sandy Main Stem	26382.38	100 yr	223.93		224.66	206.96	245.23	1964.6
Sandy Main Stem	26382.38	100 yr encroache	224.88	0.95	225.74	101.32	132.35	2242.2
Sandy Main Stem	26107.58	100 yr	223.22		224.13	218.27	1294.8	2364.7
Sandy Main Stem	26107.58	100 yr encroache	223.8	0.58	225.16	103.47	1192.6	2811.3
Sandy Main Stem	25737.96	100 yr	223.26		223.54	328.48	275.24	1891
Sandy Main Stem	25737.96	100 yr encroache	224.02	0.77	224.34	181.2		2018.5
Sandy Main Stem	25309.8	100 yr	222.88		223.16	417.46	560.36	1392.2
Sandy Main Stem	25309.8	100 yr encroache	223.46	0.58	223.87	175.43	242.17	1630.8
Sandy Main Stem	24900.93	100 yr	222.54		222.6	283.49	581.04	685.11

Sandy Main Stem	24900.93	100 yr encroache	223.14	0.61	223.23	207.27	259.59	785.7
Sandy Main Stem	24402.5	100 yr	221.98		222.06	295.77	836.46	687.25
Sandy Main Stem	24402.5	100 yr encroache	222.51	0.53	222.61	195.31	551.95	799.45
Sandy Main Stem	24129.68	100 yr	221.69		221.76	424.04	1685.3	1130.5
Sandy Main Stem	24129.68	100 yr encroache	222.22	0.53	222.29	268.39	1584.6	1153.8
Sandy Main Stem	24085 BR U	100 yr	221.69		221.76	424.04	763.98	1751.5
Sandy Main Stem	24085 BR U	100 yr encroache	222.22	0.53	222.29	268.39	1003.3	1712.1
Sandy Main Stem	24085 BR D	100 yr	220.88		221.76	290.5	763.98	1751.5
Sandy Main Stem	24085 BR D	100 yr encroache	221.09	0.2	222.11	204	1003.3	1712.1
Sandy Main Stem	24042.15	100 yr	219.29		219.58	267.33	482.03	2088.8
Sandy Main Stem	24042.15	100 yr encroache	220.14	0.84	220.36	204	566.34	1930.8
Sandy Main Stem	23662.23	100 yr	216.01		218.39	85	484.63	2496.2
Sandy Main Stem	23662.23	100 yr encroache	216.19	0.17	219.13	55	81.51	2706.9
Sandy Main Stem	23396.78	100 yr	214.79		216.11	105.27	291.09	3889.1
Sandy Main Stem	23396.78	100 yr encroache	215.54	0.75	216.6	80	292.03	3859.5
Sandy Main Stem	23076.73	100 yr	214.93		215.23	319.22	1357.6	1161.2
Sandy Main Stem	23076.73	100 yr encroache	215.33	0.4	215.87	142.91	787.75	1425.8
Sandy Main Stem	22719.89	100 yr	214.34		214.47	456.14	1120.9	665.19
Sandy Main Stem	22719.89	100 yr encroache	214.77	0.43	214.94	240.56	822.27	722.42
Sandy Main Stem	22305.19	100 yr	212.52		212.68	351.6	436.59	754.86
Sandy Main Stem	22305.19	100 yr encroache	213.23	0.71	213.38	261.1	430.3	754.48
Sandy Main Stem	21973.79	100 yr	211.59		211.67	515.64	1910.2	1228.3

Sandy Main Stem	21973.79	100 yr encroache	212.48	0.89	212.56	345.59	1586.4	1347
Sandy Main Stem	21498.81	100 yr	210.6		210.68	525.56	2752.4	677.78
Sandy Main Stem	21498.81	100 yr encroache	211.59	0.99	211.69	280	2486.5	793.03
Sandy Main Stem	21070	100 yr	210.15		210.2	574.1	2903.9	445.33
Sandy Main Stem	21070	100 yr encroache	211.14	0.99	211.2	305	2719	529.38
Sandy Main Stem	20558.49	100 yr	209.56		209.65	374.35	1506	1814.4
Sandy Main Stem	20558.49	100 yr encroache	210.49	0.94	210.62	219	967.57	2189.2
Sandy Main Stem	20488		Culvert					
Sandy Main Stem	20450.5	100 yr	204.96		205.96	302.76	15.16	2687.8
Sandy Main Stem	20450.5	100 yr encroache	205.35	0.39	206.83	164.48		3268
Sandy Main Stem	20135.83	100 yr	204.99		205.08	424.17	546.68	670.61
Sandy Main Stem	20135.83	100 yr encroache	205.71	0.72	205.85	249.7	36.71	777.28
Sandy Main Stem	19889.56	100 yr	204.96		205.01	689.67	1909	1019.3
Sandy Main Stem	19889.56	100 yr encroache	205.71	0.75	205.77	408.07	2097.7	972.9
Sandy Main Stem	19820 BR U	100 yr	204.96		205.01	689.67	2083	559.31
Sandy Main Stem	19820 BR U	100 yr encroache	205.71	0.75	205.77	408.07	2287.4	834.89
Sandy Main Stem	19820 BR D	100 yr	204.87		204.92	726.19	2052	578.94
Sandy Main Stem	19820 BR D	100 yr encroache	205.55	0.67	205.61	408.07	2248.4	859.55
Sandy Main Stem	19756.97	100 yr	204.87		204.92	726.19	1832.1	1073.3
Sandy Main Stem	19756.97	100 yr encroache	205.55	0.67	205.61	408.07	1761.2	1172.6
Sandy Main Stem	19546.85	100 yr	204.75		204.87	484.39	2818.4	1863.8
Sandy Main Stem	19546.85	100 yr encroache	205.41	0.65	205.55	225.16	2996.3	1948.7

Sandy Main Stem	19352.67	100 yr	204.73		204.82	519.68	2861	1242.2
Sandy Main Stem	19352.67	100 yr encroache	205.4	0.67	205.49	302.99	2836.8	1164.6
Sandy Main Stem	19300 BR U	100 yr	204.73		204.81	519.68	1208.5	2630.6
Sandy Main Stem	19300 BR U	100 yr encroache	205.4	0.67	205.49	302.99	1313.8	2995.8
Sandy Main Stem	19300 BR D	100 yr	204.48		204.81	482.24	1208.5	2630.6
Sandy Main Stem	19300 BR D	100 yr encroache	204.52	0.03	205.49	200	1313.8	2995.8
Sandy Main Stem	19245.94	100 yr	201.39		202.96	230.74	572.57	3983.3
Sandy Main Stem	19245.94	100 yr encroache	201.36	-0.03	202.95	199.07	558.5	3985.2
Sandy Main Stem	19054.38	100 yr	199.78		200	326.31	2497	807.4
Sandy Main Stem	19054.38	100 yr encroache	200.04	0.27	200.37	200.04	2414.6	929.84
Sandy Main Stem	18845.69	100 yr	199.69		199.84	363.76	2339.8	707.39
Sandy Main Stem	18845.69	100 yr encroache	199.95	0.26	200.18	234.56	2361.2	841.79
Sandy Main Stem	18634.5	100 yr	199.62		199.74	432.95	1665.5	667.32
Sandy Main Stem	18634.5	100 yr encroache	199.88	0.26	200.05	256.86	1733.5	766.92
Sandy Main Stem	18463	100 yr	199.61		199.68	476.14	2747.7	592.37
Sandy Main Stem	18463	100 yr encroache	199.87	0.26	199.98	289.16	2852.4	675.58
Sandy Main Stem	18269.19	100 yr	198.7		199.41	319.24	1435.6	3143
Sandy Main Stem	18269.19	100 yr encroache	199.13	0.43	199.74	246.8	1406.3	3046.5
Sandy Main Stem	18240		Culvert					
Sandy Main Stem	18211.69	100 yr	195.64		197.01	225.96	1169.4	3610.3
Sandy Main Stem	18211.69	100 yr encroache	195.81	0.16	197.73	118.25	673.37	4139.8
Sandy Main Stem	18010.15	100 yr	194.72		195.88	253.71	1144.1	2362.1
Sandy Main Stem	18010.15	100 yr encroache	194.88	0.16	196.56	135	973.63	2701.5

Sandy Main Stem	17718.32	100 yr	192.01		192.47	418.7	1086.3	1061
Sandy Main Stem	17718.32	100 yr encroache	192.96	0.95	194.42	142.44	542.75	1959.4
Sandy Main Stem	17333.24	100 yr	191.3		191.6	369.25	1178.4	895.33
Sandy Main Stem	17333.24	100 yr encroache	191.94	0.63	192.77	133.58	1018.7	1425.4
Sandy Main Stem	16976.28	100 yr	189.42		190.46	284.19	1006.8	1063.9
Sandy Main Stem	16976.28	100 yr encroache	190.15	0.73	191.39	152.86	801.63	1218.7
Sandy Main Stem	16566.37	100 yr	188.8		189.03	446.17	2210.9	368.79
Sandy Main Stem	16566.37	100 yr encroache	189.61	0.8	190	235	1940.6	552.71
Sandy Main Stem	16177.16	100 yr	187.98		188.34	374.26	3616	466.94
Sandy Main Stem	16177.16	100 yr encroache	188.78	0.8	189.29	209.96	4009.1	657.54
Sandy Main Stem	15741.39	100 yr	187.35		187.63	358.38	3753.2	939.72
Sandy Main Stem	15741.39	100 yr encroache	188.3	0.95	188.63	212.51	3858.7	1086.3
Sandy Main Stem	15036.05	100 yr	185.9		186.46	330.62	845.96	1554.7
Sandy Main Stem	15036.05	100 yr encroache	186.83	0.93	187.59	169.87	243.35	1841.7
Sandy Main Stem	14643.01	100 yr	185.51		185.75	447.68	2281	1402.4
Sandy Main Stem	14643.01	100 yr encroache	186.44	0.94	186.85	220	2228.3	1796.3
Sandy Main Stem	14242.08	100 yr	183.67		185	349.99	1276.4	3016.7
Sandy Main Stem	14242.08	100 yr encroache	184.2	0.53	185.97	162.02	1039.2	3453.8
Sandy Main Stem	13869.62	100 yr	182.87		183.67	319.13	650.4	1863.6
Sandy Main Stem	13869.62	100 yr encroache	183.26	0.39	184.49	133.77	156.53	2191.1
Sandy Main Stem	13438.13	100 yr	182.13		182.4	346.75	1028.7	1595.9
Sandy Main Stem	13438.13	100 yr encroache	182.53	0.4	182.97	147.96	727.05	1830.8

Sandy Main Stem	12942.35	100 yr	181.36		181.55	311.02	966.35	1127.1
Sandy Main Stem	12942.35	100 yr encroache	181.67	0.32	181.95	199.27	882.86	1319.8
Sandy Main Stem	12648.67	100 yr	181.27		181.32	467.77	815.36	965.27
Sandy Main Stem	12648.67	100 yr encroache	181.6	0.33	181.66	326	714.65	1064.6
Sandy Main Stem	12600 BR U #1	100 yr	181.25		181.32			309.4
Sandy Main Stem	12600 BR U #1	100 yr encroache	181.59	0.34	181.66			407.3
Sandy Main Stem	12600 BR D #1	100 yr	180.82		181.32			309.4
Sandy Main Stem	12600 BR D #1	100 yr encroache	181.51	0.69	181.66			407.3
Sandy Main Stem	12591.62	100 yr	180.89		181.24	530.73	947.52	2223.1
Sandy Main Stem	12591.62	100 yr encroache	180.69	-0.2	181.42	315	530.84	2822.5
Sandy Main Stem	12103.89	100 yr	180.51		180.76	470.82	1486.1	1801.7
Sandy Main Stem	12103.89	100 yr encroache	180.19	-0.32	180.57	270	1312.4	2041
Sandy Main Stem	11764.28	100 yr	180.42		180.52	575.43	1046	1365.9
Sandy Main Stem	11764.28	100 yr encroache	179.98	-0.43	180.2	280	807.95	1709.4
Sandy Main Stem	11405.26	100 yr	180		180.31	158.87	386.12	2709.8
Sandy Main Stem	11405.26	100 yr encroache	179.6	-0.41	179.94	157.94	373.86	2766.1
Sandy Main Stem	11350		Mult Open					
Sandy Main Stem	11303	100 yr	175.65		177.45	129.64	571.41	3097.4
Sandy Main Stem	11303	100 yr encroache	176.66	1.01	177.76	141.5	611.58	2846.4
Sandy Main Stem	10733.77	100 yr	175.73		175.79	652.68	842.35	418.93
Sandy Main Stem	10733.77	100 yr encroache	176.91	1.18	177.01	363.21	1239.6	581.01

Sandy Main Stem	10700	BR U	100 yr	175.7		175.78	652.37	1006.2	189.32
Sandy Main Stem	10700	BR U	100 yr encroache	176.89	1.18	177	363.21	1389.1	255.94
Sandy Main Stem	10700	BR D	100 yr	175.72		175.76	723.64	927.29	171.44
Sandy Main Stem	10700	BR D	100 yr encroache	176.91	1.19	176.97	410	1367.5	230.63
Sandy Main Stem	10661.15		100 yr	175.72		175.75	728.99	984.08	347.64
Sandy Main Stem	10661.15		100 yr encroache	176.91	1.19	176.96	410	1303.2	494.93
Sandy Main Stem	10118.31		100 yr	175.69		175.72	638.97	3636.8	383.35
Sandy Main Stem	10118.31		100 yr encroache	176.88	1.19	176.92	350	3942	445.94
Sandy Main Stem	9744.554		100 yr	175.67		175.7	711.66	3102	721.4
Sandy Main Stem	9744.554		100 yr encroache	176.86	1.19	176.9	415.49	2517.4	890.97
Sandy Main Stem	9685	BR U	100 yr	175.67		175.7	523.26	883.7	573.84
Sandy Main Stem	9685	BR U	100 yr encroache	176.86	1.19	176.9	415.49	1893	734.73
Sandy Main Stem	9685	BR D	100 yr	175.42		175.7	496.58	873.68	578.15
Sandy Main Stem	9685	BR D	100 yr encroache	176.59	1.16	176.67	415.15	1882.5	739.25
Sandy Main Stem	9639.641		100 yr	175.42		175.48	700.37	2502.4	1574.6
Sandy Main Stem	9639.641		100 yr encroache	176.59	1.16	176.67	415.15	2049.4	1941.4
Sandy Main Stem	8975.758		100 yr	175.37		175.39	996.85	1258.8	1002.7
Sandy Main Stem	8975.758		100 yr encroache	176.52	1.15	176.57	500	627.72	1300.1
Sandy Main Stem	8504.5		100 yr	175.2		175.32	229	1316.6	1332.3
Sandy Main Stem	8504.5		100 yr encroache	176.39	1.19	176.49	189	1138	1448.6
Sandy Main Stem	8350	BR U #1	100 yr	175.16		175.25	79.9		
Sandy Main Stem	8350	BR U #1	100 yr encroache	176.31	1.16	176.43	64.9		

Sandy Main Stem	8350 BR D #1	100 yr	174.6		174.9	66.13		
Sandy Main Stem	8350 BR D #1	100 yr encroache	175.88	1.28	176.16	56.9		
Sandy Main Stem	8235.939	100 yr	174.59		174.8	155.4	1863	1417.7
Sandy Main Stem	8235.939	100 yr encroache	175.9	1.31	176.07	138.95	1603.5	1509.6
Sandy Main Stem	8063.602	100 yr	174.67		174.69	840.34	3969	644.26
Sandy Main Stem	8063.602	100 yr encroache	175.89	1.22	176.02	180	2734.5	1479
Sandy Main Stem	8000 BR U	100 yr	174.67		174.69	613.69	3643.8	446.71
Sandy Main Stem	8000 BR U	100 yr encroache	175.89	1.22	176.02	180	1851	1624.1
Sandy Main Stem	8000 BR D	100 yr	174.57		174.62	602.77	3719.8	429.07
Sandy Main Stem	8000 BR D	100 yr encroache	174.76	0.19	175.68	130	2098.8	1566.6
Sandy Main Stem	7966.54	100 yr	174.57		174.62	628.01	2654.3	1134.2
Sandy Main Stem	7966.54	100 yr encroache	174.76	0.19	174.9	130	2007	1510.8
Sandy Main Stem	7570.986	100 yr	174.56		174.59	331.13	1035.8	642.12
Sandy Main Stem	7570.986	100 yr encroache	174.75	0.19	174.84	150	938.15	1063.8
Sandy Main Stem	7173.807	100 yr	174.57		174.58	429.54	2257.1	430.71
Sandy Main Stem	7173.807	100 yr encroache	174.73	0.16	174.81	150	2021.3	1187
Sandy Main Stem	6825.559	100 yr	174.29		174.51	122.91	2457.5	1970.7
Sandy Main Stem	6825.559	100 yr encroache	174.51	0.22	174.73	113	2376.4	2024.5
Sandy Main Stem	6765 BR U	100 yr	174.07		174.45	87	1777.9	2515.6
Sandy Main Stem	6765 BR U	100 yr encroache	174.32	0.25	174.67	77.9	1754.3	2462.8
Sandy Main Stem	6765 BR D	100 yr	173.83		174.39	86.43	1404.4	3110.2
Sandy Main Stem	6765 BR D	100 yr encroache	174.1	0.27	174.62	74.9	1395.2	3042.9

Sandy Main Stem	6709.658	100 yr	173.95		174.23	122.43	2300.8	2320.1
Sandy Main Stem	6709.658	100 yr encroache	174.2	0.26	174.48	110	2202.1	2369
Sandy Main Stem	6668.16	100 yr	174.06		174.11	301.49	3344	1373.4
Sandy Main Stem	6668.16	100 yr encroache	174.29	0.23	174.38	160	2845.4	1775.6
Sandy Main Stem	6600 BR U	100 yr	174.06		174.11	301.49	438.13	3832.8
Sandy Main Stem	6600 BR U	100 yr encroache	174.29	0.23	174.38	160	485.17	3840.9
Sandy Main Stem	6600 BR D	100 yr	173.83		174.05	302.4	580.31	3723.4
Sandy Main Stem	6600 BR D	100 yr encroache	173.89	0.06	174.21	178	625.47	3732.9
Sandy Main Stem	6572.639	100 yr	172.83		172.87	335.5	2003.3	1127.3
Sandy Main Stem	6572.639	100 yr encroache	173.14	0.3	173.21	178	1967.7	1430.3
Sandy Main Stem	6414.98	100 yr	172.44		172.77	129.14	623.33	3414.4
Sandy Main Stem	6414.98	100 yr encroache	172.78	0.34	173.12	120	518.57	3480
Sandy Main Stem	6300 BR U #1	100 yr	172.71		172.73	3.07		
Sandy Main Stem	6300 BR U #1	100 yr encroache						
Sandy Main Stem	6300 BR D #1	100 yr	169.09		169.09	16.53		
Sandy Main Stem	6300 BR D #1	100 yr encroache						
Sandy Main Stem	6189.177	100 yr	168.84		169.8	135.4	620.83	3510.2
Sandy Main Stem	6189.177	100 yr encroache	169.84	1	170.85	92	270.58	3748.4
Sandy Main Stem	5508.105	100 yr	169.17		169.24	1154.8	511.47	1017.7
Sandy Main Stem	5508.105	100 yr encroache	169.82	0.65	170.19	263.21	1096	2098.1
Sandy Main Stem	5084.678	100 yr	168.99		169.16	517.85	132.02	2665.1
Sandy Main Stem	5084.678	100 yr encroache	169.69	0.71	170.04	255	180.65	3129.5
Sandy Main Stem	5065.378	100 yr	168.95		169.15	444.17	376.33	2584.4

Sandy Main Stem	5065.378		100 yr encroache	169.6	0.66	170.02	223.3	589.54	3584
Sandy Main Stem	5039.878		100 yr	169.04		169.1	1324.2	193.68	1702.9
Sandy Main Stem	5039.878		100 yr encroache	169.48	0.44	169.98	194.47	518.31	4119.1
Sandy Main Stem	4865.578		100 yr	169		169.05	598.23	809.71	2858
Sandy Main Stem	4865.578		100 yr encroache	169.37	0.36	169.69	175.32	2338.8	7402.2
Sandy Main Stem	4790.088		100 yr	168.31		168.98	339.92	920.86	6401.1
Sandy Main Stem	4790.088		100 yr encroache	168.08	-0.23	169.53	136.61	1161	8204.1
Sandy Main Stem	4777.088		100 yr	168.46		168.82	185.53	1976	3645.1
Sandy Main Stem	4777.088		100 yr encroache	168.39	-0.08	169.2	120.82	2938.3	5442.1
Sandy Main Stem	4740	BR U	100 yr	166.25		168.82		1235.2	6591.4
Sandy Main Stem	4740	BR U	100 yr encroache	166.25	0.00	169.2		1228.6	6555.8
Sandy Main Stem	4740	BR D	100 yr	164.21		168.51	95.9	509.9	8807
Sandy Main Stem	4740	BR D	100 yr encroache	164.54	0.33	168.51	95.9	523.47	8792.8
Sandy Main Stem	4685.592		100 yr	163.53		166.72	180	998.19	7572.8
Sandy Main Stem	4685.592		100 yr encroache	164.54	1.00	167.01	180	1095.1	7472.1
Sandy Main Stem	4327.181		100 yr	164.33		164.57	570.03	431.37	2833.6
Sandy Main Stem	4327.181		100 yr encroache	165.21	0.88	165.41	520	488.26	2774.7
Sandy Main Stem	3964.325		100 yr	163.8		164.22	523.01	354.97	3973.2
Sandy Main Stem	3964.325		100 yr encroache	164.63	0.83	165.11	355.74	76.87	4347.5
Sandy Main Stem	3515.389		100 yr	163.59		163.83	673.96	1350.5	3183
Sandy Main Stem	3515.389		100 yr encroache	164.45	0.86	164.72	448.04	935.24	3463.1
Sandy Main Stem	3004.364		100 yr	163.31		163.53	740.33	3869.5	3072.4
Sandy Main Stem	3004.364		100 yr encroache	164.17	0.86	164.43	443.91	3689.7	3442.8
Sandy Main Stem	2590.359		100 yr	163.09		163.31	537.82	316.83	3257.7
Sandy Main Stem	2590.359		100 yr encroache	163.85	0.76	164.19	240	423.32	3754.3
Sandy Main Stem	2500	BR U	100 yr	163.09		163.32	492.71	713.75	4930.8
Sandy Main Stem	2500	BR U	100 yr encroache	163.85	0.76	164.19	240	711.29	5342.2
Sandy Main Stem	2500	BR D	100 yr	162.55		163.32	547.23	1191.3	4870.9

Sandy Main Stem	2500 BR D	100 yr encroache	162.64	0.1	164.19	227	1199.3	5281
Sandy Main Stem	2417.391	100 yr	158.77		159.18	472.71	432.31	2849.7
Sandy Main Stem	2417.391	100 yr encroache	159.44	0.67	160.4	227	538.69	4237.1
Sandy Main Stem	2072.963	100 yr	158.41		158.78	566.67	793.84	2891
Sandy Main Stem	2072.963	100 yr encroache	159.17	0.76	159.68	300	29.41	3325.5
Sandy Main Stem	1688.606	100 yr	157.76		158.22	578.51	1178.2	2641.7
Sandy Main Stem	1688.606	100 yr encroache	158.5	0.74	159.11	375.23	586.12	3072.2
Sandy Main Stem	1299.523	100 yr	157.31		157.55	869.08	1960	2131.6
Sandy Main Stem	1299.523	100 yr encroache	158.09	0.78	158.41	535.19	1534.3	2482
Sandy Main Stem	663.061	100 yr	156.25		156.62	958.44	7114.2	2412.4
Sandy Main Stem	663.061	100 yr encroache	157.15	0.9	157.55	574.04	7008.5	2635.4
Sandy Main Stem	143.571	100 yr	154.39		155.16	1099.1	4828.8	1932.9
Sandy Main Stem	143.571	100 yr encroache	155.04	0.65	156.17	523.43	5593.2	2291.8

Q Right (cfs)	Enc Sta L (ft)	Ch Sta L (ft)	Ch Sta R (ft)	Enc Sta R (ft)
52.51		198.54	246.95	
34.41	140	198.54	246.95	255
111.54		173.08	186.92	
67.36	151.31	173.08	186.92	190
613.63		330.22	350.22	
589.67	315	330.22	350.22	425
171.15		296.76	314.12	
133.2	245	296.76	314.12	331
24.69		247.26	263.71	
12.45	155	247.26	263.71	265
606.96		237.63	254.11	
699.01	230	237.63	254.11	325
265		353.97	368.12	
86.35	200	353.97	368.12	376
91.04		245.1	258.78	
130.33	200	245.1	258.78	270
333.41		299.96	317.3	
238.76	268	299.96	317.3	332

395.16		312.08	330	
318.83	312.08	312.08	330	343.24
472.54		331.46	346.39	
227.61	245	331.46	346.39	366
105.19		415.84	436.5	
93.87	413	415.84	436.5	485
642.17		297.1	319.54	
41.02	272	297.1	319.54	321.6
927.55		210.86	236.63	
39.13	186	210.86	236.63	239
970.4		246.4	267.25	
790.75	223	246.4	267.25	410
605.89		268.63	284.21	
548.3	245	268.63	284.21	360
88.47		238.97	260.29	
17.98	160	238.97	260.29	290
67.14		277.88	300	
89.39	205	277.88	300	335
194.45		298.97	320.29	
164.68	210	298.97	320.29	375

282.58		225.81	248.59	
247.61	194	225.81	248.59	335
207.75		158.54	178.67	
211.27	100	158.54	178.67	193
349.81		161.62	177.52	
308.11	150	161.62	177.52	200
546.63		182.32	194.04	
665.17	165	182.32	194.04	230
468.25		210.63	220	
264.41	165	210.63	220	236
412.2		357.66	381.26	
228.27	325	357.66	381.26	405
7.17		413.89	440.56	
4.31	412.37	413.89	440.56	442.09
0.55		446.21	475.93	
	446.21	446.21	475.93	475.93
983.03		338.73	350.55	
967.09	300	338.73	350.55	390
1505.4		311	321	
1503.7	285	311	321	370

497.17		338.99	365.6	
489.68	295	338.99	365.6	415
841.33		321.09	345.96	
815.3	318	321.09	345.96	475
207.12		386.16	413.88	
	306	386.16	413.88	413.88
1055		546.64	575.28	
739.8	415	546.64	575.28	645
876.74		546.64	575.28	
474.81	415	546.64	575.28	645
877.19		528.66	559.89	
475.26	445	528.66	559.89	610
343.57		528.66	559.89	
388.23	445	528.66	559.89	610
936.17		242.55	269.97	
771.45	230	242.55	269.97	331.32
657.45		218.08	241.5	
313.09	157.94	218.08	241.5	261.41
2150.8		207.1	237.65	
2298.5	207.1	207.1	237.65	388.3
2364.4		255	275.99	
2444	240	255	275.99	415.43
3050.9		227.49	252.64	

3271.7	212.73	227.49	252.64	420
2793.3		178.4	202.54	
2965.6	150	178.4	202.54	345.31
1501.2		229.39	265.61	
1578.6	130	229.39	265.61	398.39
1802.4		229.39	265.61	
1599.6	130	229.39	265.61	398.39
1802.4		346.51	388.65	
1599.6	286	346.51	388.65	490
1746.2		346.51	388.65	
1819.8	286	346.51	388.65	490
1336.2		292.01	313.22	
1528.6	290	292.01	313.22	345
136.83		390.12	449.81	
165.43	380	390.12	449.81	460
1798.2		328.87	348.15	
2103.5	290	328.87	348.15	432.91
2530.9		549.67	570.75	
2772.3	500	549.67	570.75	740.56
3753.6		295.05	316.45	
3760.2	275	295.05	316.45	536.1
1806.5		307.15	368.38	

2011.7	212.12	307.15	368.38	557.71
1514.9		430.17	458.57	
1665.4	300	430.17	458.57	580
1595.8		496.26	518.5	
1696.6	345	496.26	518.5	650
1624.6		629.72	701.79	
1788.2	570	629.72	701.79	789
2242		785.8	842.27	
1677	785.8	785.8	842.27	950.28
3727.7		653.71	674.38	
4131	650.98	653.71	674.38	900.68
2016.7		542.45	580.61	
1874.4	367.57	542.45	580.61	775.64
2347.6		542.45	580.61	
1822.7	367.57	542.45	580.61	775.64
2359		583.56	623.52	
1837	409.58	583.56	623.52	817.65
2039.5		583.56	623.52	
2011.1	409.58	583.56	623.52	817.65
262.78		509.3	563.24	
	338.08	509.3	563.24	563.24

841.86		529.11	562.52	
943.54	337.16	529.11	562.52	640.15
1098.6		529.11	562.52	
632.5	337.16	529.11	562.52	640.15
1098.6		392.59	438.84	
632.5	285	392.59	438.84	485
389.18		392.59	438.84	
401.31	285	392.59	438.84	485
1640.6		322.74	350.36	
1600.6	218	322.74	350.36	418.04
1897.9		380.56	410.67	
1742	253.41	380.56	410.67	487.97
2612.2		366.56	390.51	
2444.6	259.59	366.56	390.51	516.45
1605		368.21	393.61	
1417	182.96	368.21	393.61	472.12
366.38		240.56	277.68	
492.2	115	240.56	277.68	361.8
165.25		235.31	280.67	
131.85	171.75	235.31	280.67	290
1438.8		229.85	262.16	
1269.9	185	229.85	262.16	320

2797.7		270.52	300.87	
2442.9	257.56	270.52	300.87	400
2871.2		416.9	445.88	
2500.9	386.42	416.9	445.88	520
2874.3		640.59	670.34	
2924.7	615	640.59	670.34	767.86
2365.4		465.25	490.43	
2451.7	380	465.25	490.43	615
862.06		486.06	516.06	
278.38	320.98	486.06	516.06	530.94
252.13		404.41	441.09	
	228.58	404.41	441.09	441.09
2544.4		306.23	338.73	
2859.9	291.91	306.23	338.73	461.78
1261.6		390.97	414.77	
920.44	290	390.97	414.77	510
651.93		571.91	601.09	
452	494.11	571.91	601.09	656.13
2431		424.75	446.63	
2597.4	415.81	424.75	446.63	549.58
2320.5		462.14	490.66	
2387.2	424.93	462.14	490.66	572.89

2851.5		684.15	715.62	
2742.3	610.85	684.15	715.62	810.12
3164.4		516.53	553.47	
3165.8	440	516.53	553.47	766
		516.53	553.47	
	440	516.53	553.47	766
		481.95	515.76	
	440	481.95	515.76	755
1774.4		481.95	515.76	
1591.6	440	481.95	515.76	755
1657.2		502.91	532.78	
1591.6	400	502.91	532.78	670
2533.1		573.29	605.89	
2427.6	510	573.29	605.89	790
1849.1		806.45	857.41	
1805	791	806.45	857.41	1080
1276.2		792.22	830.06	
1487	768	792.22	830.06	1040
3683.7		721.13	738.39	
3124.4	561.87	721.13	738.39	925.08

3749.5		721.13	738.39	
3300	561.87	721.13	738.39	925.08
3846.3		809.55	830.3	
3346.9	670	809.55	830.3	1080
3613.3		809.55	830.3	
3146.9	670	809.55	830.3	1080
924.84		819.67	841.1	
557.06	560	819.67	841.1	910
1121.7		825.11	861	
1536.7	640	825.11	861	1055.5
3499.3		825.11	861	
2316.7	640	825.11	861	1055.5
3505.1		851.17	894.27	
2322.7	670	851.17	894.27	1085.2
867.96		851.17	894.27	
954.18	670	851.17	894.27	1085.2
2683.5		1068.5	1096.9	
3017.2	1000	1068.5	1096.9	1500
2296.1		1424.2	1452.4	
2358.4	1392	1424.2	1452.4	1715
1271.7		1424.2	1452.4	
1335.5	1392	1424.2	1452.4	1715

1271.7		883.9	905.89	
1335.5	850	883.9	905.89	1050
1664.2		883.9	905.89	
1831.9	850	883.9	905.89	1050
331.74		1076.7	1100.7	
731.57	970	1076.7	1100.7	1150
876.61		1076.7	1100.7	
1467.3	970	1076.7	1100.7	1150
818.27		1060.6	1086.8	
1277	1000	1060.6	1086.8	1130
1156.5		1060.6	1086.8	
1427.2	1000	1060.6	1086.8	1130
3267.1		736.38	761.34	
2943.1	700	736.38	761.34	850
2257.2		516.38	545.37	
1736.8	450	516.38	545.37	600
516.81		768.75	792.84	
544.09	700	768.75	792.84	813
651.51		768.75	792.84	
727.88	700	768.75	792.84	813
430.41		765.84	792.33	
506.88	700	765.84	792.33	810

324.15		765.84	792.33	
373.86	700	765.84	792.33	810
227.69		448.8	483.17	
324.03	340	448.8	483.17	500
674.51		448.8	483.17	
619.67	340	448.8	483.17	500
641.72		406.17	439.7	
587.31	327	406.17	439.7	505
1814.4		406.17	439.7	
1547.1	327	406.17	439.7	505
907.28		450.95	492.71	
946.44	430	450.95	492.71	550
0.09		450.95	492.71	
0.09		571.37	599.41	
813.93		571.37	599.41	
926.07	558	571.37	599.41	650
8211.8		375.86	398.85	
6546.9	294	375.86	398.85	810
6943.9		548.14	586.93	
6430.9	525	548.14	586.93	780
6780.3		358.5	400.5	

5567.5	336.7	358.5	400.5	560
7844.4		365.5	410.5	
5103.6	345.53	365.5	410.5	540
6073.3		418.06	535.25	
	359.68	418.06	535.25	535
2419		554	612.2	
375.87	493.39	554	612.2	630
4119.9		418.5	475.5	
1360.6	378.18	418.5	475.5	499
1914.4		418.5	475.5	
1956.7	378.18	418.5	475.5	499
424.06		471.43	523.87	
424.77	400	471.43	523.87	580
1170		471.43	523.87	
1173.8	400	471.43	523.87	580
6476.1		378.5	414.44	
6478	315	378.5	414.44	835
5412.8		365.33	410.98	
5316.6	358	365.33	410.98	713.74
5207.5		409.52	447.2	
5342.7	344.09	409.52	447.2	792.13
2799.1		627.74	666.86	
2608.5	396.09	627.74	666.86	840
6166.5		421.6	469.78	
5563.4	380	421.6	469.78	620
4109.5		421.6	469.78	
3687.4	380	421.6	469.78	620
3691.8		383.22	430.46	

3260.6	373	383.22	430.46	600
6459		383.22	430.46	
4965.2	373	383.22	430.46	600
6056.1		276.68	321	
6386.1	275	276.68	321	575
5921.1		341.77	374.41	
6082.7	329.77	341.77	374.41	705
5649.4		479.94	516	
5724.7	409.81	479.94	516	945
214.41		1075.9	1106.7	
97.12	542.96	1075.9	1106.7	1117
2979.3		887.85	907.97	
1856	517.88	887.85	907.97	1041.3

Reach	River Sta	Profile	W.S. Elev (ft)	Prof Delta WS (ft)	E.G. Elev (ft)	Top Wdth Act (ft)	Q Left (cfs)	Q Channel (cfs)
Sandy Main Stem	38835.32	100 yr	339.2		339.87	213.05	255.85	1134.6
Sandy Main Stem	38835.32	100 yr encroache	339.12	-0.08	340.01	115	183.05	1225.5
Sandy Main Stem	38353.13	100 yr	332.64		333.79	78.47	649.02	682.44
Sandy Main Stem	38353.13	100 yr encroache	333.06	0.42	334.85	38.69	520.24	855.39
Sandy Main Stem	37880.8	100 yr	324.83		325.57	160.34	64.58	764.8
Sandy Main Stem	37880.8	100 yr encroache	324.76	-0.07	325.62	110	68.07	785.25
Sandy Main Stem	37489.56	100 yr	320.49		321.1	126.74	308.03	963.83
Sandy Main Stem	37489.56	100 yr encroache	320.96	0.47	321.43	86	403.41	906.39
Sandy Main Stem	37270		Culvert					
Sandy Main Stem	37056.92	100 yr	313.8		315.39	78.75	259.56	1158.8
Sandy Main Stem	37056.92	100 yr encroache	313.78	-0.02	315.44	65.39	258.76	1171.8
Sandy Main Stem	36678.73	100 yr	305.92		306.51	180.6	211.21	624.83
Sandy Main Stem	36678.73	100 yr encroache	306.25	0.33	306.87	94.41	83.16	660.83
Sandy Main Stem	36275.49	100 yr	304.65		304.99	170.35	644.24	533.76
Sandy Main Stem	36275.49	100 yr encroache	305.28	0.63	305.66	84.3	840.52	516.13
Sandy Main Stem	36000		Culvert					
Sandy Main Stem	35791.32	100 yr	294.29		294.41	191.04	978.51	373.45
Sandy Main Stem	35791.32	100 yr encroache	295.23	0.93	295.44	70	824.88	487.79
Sandy Main Stem	35582.96	100 yr	294		294.13	183.71	518.11	591.48
Sandy Main Stem	35582.96	100 yr encroache	294.88	0.88	295.12	64	431.18	773.06
Sandy Main Stem	35513		Culvert					

Sandy Main Stem	35420.3	100 yr	291.04		291.69	78.23	82.18	965.66
Sandy Main Stem	35420.3	100 yr encroache	291.58	0.54	292.47	31.16		1124.2
Sandy Main Stem	35237.49	100 yr	291.19		291.23	269.78	551.03	419.43
Sandy Main Stem	35237.49	100 yr encroache	291.83	0.64	291.89	121	755.51	459.88
Sandy Main Stem	34267		Culvert					
Sandy Main Stem	33297.82	100 yr	259.06		260.79	104.41	36.11	1301.7
Sandy Main Stem	33297.82	100 yr encroache	258.99	-0.06	260.9	72	16.3	1332.8
Sandy Main Stem	32874.91	100 yr	255.13		255.76	226.22	54.4	746.43
Sandy Main Stem	32874.91	100 yr encroache	255.83	0.7	257.81	49.6	128.77	1273.2
Sandy Main Stem	32432.32	100 yr	253.53		253.63	313.51	116.15	399.29
Sandy Main Stem	32432.32	100 yr encroache	254.37	0.84	255.12	53	348.12	1055.8
Sandy Main Stem	32009.44	100 yr	253.3		253.35	332.83	111.14	361.46
Sandy Main Stem	32009.44	100 yr encroache	254.27	0.96	254.34	134.95	200.58	451.68
Sandy Main Stem	31828		Culvert					
Sandy Main Stem	31647.46	100 yr	248.85		248.99	307.5	202.08	635.02
Sandy Main Stem	31647.46	100 yr encroache	249.55	0.71	249.72	115	190.49	704.21
Sandy Main Stem	31476.58	100 yr	248.52		248.83	173.15	393.12	961.42
Sandy Main Stem	31476.58	100 yr encroache	249.18	0.67	249.56	72.29	348.36	1076.7
Sandy Main Stem	31435		Culvert					
Sandy Main Stem	31392.94	100 yr	247.14		247.69	106.03	333.7	1042.2
Sandy Main Stem	31392.94	100 yr encroache	247.66	0.52	248.22	68.21	249.13	1104.5
Sandy Main Stem	31259.8	100 yr	247.02		247.34	341.2	374.16	874.39
Sandy Main Stem	31259.8	100 yr encroache	247.63	0.61	247.89	165	422.96	855.36

Sandy Main Stem	31220		Culvert					
Sandy Main Stem	31182.62	100 yr	245.23		246.23	145.5	48.26	1112.2
Sandy Main Stem	31182.62	100 yr encroache	245.06	-0.17	246.21	138.59	54.26	1141.1
Sandy Main Stem	31033.98	100 yr	243.39		243.82	122.97	616.54	618.72
Sandy Main Stem	31033.98	100 yr encroache	243.55	0.16	244.01	93	586.38	645.35
Sandy Main Stem	30579.27	100 yr	240.2		241.76	80.2	120.79	972.41
Sandy Main Stem	30579.27	100 yr encroache	240.19	-0.02	241.92	50	130.95	1003.9
Sandy Main Stem	30235.35	100 yr	237.64		237.99	233.39	480.74	415.64
Sandy Main Stem	30235.35	100 yr encroache	238.24	0.6	238.75	65	288.23	489.6
Sandy Main Stem	29939.91	100 yr	236.74		236.95	164.81	693.57	281.18
Sandy Main Stem	29939.91	100 yr encroache	237.02	0.28	237.53	71	774.7	403.89
Sandy Main Stem	29533.61	100 yr	236.36		236.49	181.75	393.25	637.55
Sandy Main Stem	29533.61	100 yr encroache	236.3	-0.06	236.63	80	330.98	883.75
Sandy Main Stem	29203.58	100 yr	235.29		236.02	41.1	3.25	1432.6
Sandy Main Stem	29203.58	100 yr encroache	235.35	0.06	236.08	29.72	3.16	1435.5
Sandy Main Stem	29175		Culvert					
Sandy Main Stem	29148	100 yr	233.57		234.56	33.46	0.65	1441.8
Sandy Main Stem	29148	100 yr encroache	234.38	0.81	235.15	29.72		1443
Sandy Main Stem	28902.69	100 yr	232.43		233.52	166.15	1039.7	1123.2
Sandy Main Stem	28902.69	100 yr encroache	233.04	0.62	234.21	90	990.51	1188.4
Sandy Main Stem	28536.39	100 yr	230.51		231.41	194.64	930.09	710.56
Sandy Main Stem	28536.39	100 yr encroache	231.4	0.9	232.48	85	828.76	813.57

Sandy Main Stem	28078.23	100 yr	230.3		230.55	308.52	1376.4	1272.5
Sandy Main Stem	28078.23	100 yr encroache	231.23	0.92	231.6	120	1080.8	1575.6
Sandy Main Stem	27678.42	100 yr	228.98		230.03	374.55	386.61	1918.1
Sandy Main Stem	27678.42	100 yr encroache	229.73	0.75	231.03	157	105.76	2225
Sandy Main Stem	27191.04	100 yr	227.44		227.83	440.06	1444	1494.9
Sandy Main Stem	27191.04	100 yr encroache	228.3	0.86	228.84	107.88	1471.8	1674.2
Sandy Main Stem	26877.54	100 yr	227.37		227.52	567.52	787.72	1303.3
Sandy Main Stem	26877.54	100 yr encroache	228.34	0.96	228.49	230	1112.7	1293.5
Sandy Main Stem	26835 BR U	100 yr	227.37		227.52	435.06	335.27	1936.9
Sandy Main Stem	26835 BR U	100 yr encroache	228.34	0.96	228.48	230	692.65	1972.4
Sandy Main Stem	26835 BR D	100 yr	227.37		227.52	400.85	292.75	1979
Sandy Main Stem	26835 BR D	100 yr encroache	228.06	0.69	228.48	165	650.33	2014.3
Sandy Main Stem	26794.7	100 yr	224.68		225.83	288.22	520.98	2281.5
Sandy Main Stem	26794.7	100 yr encroache	225.67	0.99	226.44	165	601.55	2156.2
Sandy Main Stem	26382.38	100 yr	223.93		224.66	206.96	245.23	1964.6
Sandy Main Stem	26382.38	100 yr encroache	224.88	0.95	225.74	101.32	132.35	2242.2
Sandy Main Stem	26107.58	100 yr	223.22		224.13	218.27	1294.8	2364.7
Sandy Main Stem	26107.58	100 yr encroache	223.8	0.58	225.16	103.47	1192.6	2811.3
Sandy Main Stem	25737.96	100 yr	223.26		223.54	328.48	275.24	1891
Sandy Main Stem	25737.96	100 yr encroache	224.02	0.77	224.34	181.2		2018.5
Sandy Main Stem	25309.8	100 yr	222.88		223.16	417.46	560.36	1392.2
Sandy Main Stem	25309.8	100 yr encroache	223.46	0.58	223.87	175.43	242.17	1630.8
Sandy Main Stem	24900.93	100 yr	222.54		222.6	283.49	581.04	685.11

Sandy Main Stem	24900.93	100 yr encroache	223.14	0.61	223.23	207.27	259.59	785.7
Sandy Main Stem	24402.5	100 yr	221.98		222.06	295.77	836.46	687.25
Sandy Main Stem	24402.5	100 yr encroache	222.51	0.53	222.61	195.31	551.95	799.45
Sandy Main Stem	24129.68	100 yr	221.69		221.76	424.04	1685.3	1130.5
Sandy Main Stem	24129.68	100 yr encroache	222.22	0.53	222.29	268.39	1584.6	1153.8
Sandy Main Stem	24085 BR U	100 yr	221.69		221.76	424.04	763.98	1751.5
Sandy Main Stem	24085 BR U	100 yr encroache	222.22	0.53	222.29	268.39	1003.3	1712.1
Sandy Main Stem	24085 BR D	100 yr	220.88		221.76	290.5	763.98	1751.5
Sandy Main Stem	24085 BR D	100 yr encroache	221.09	0.2	222.11	204	1003.3	1712.1
Sandy Main Stem	24042.15	100 yr	219.29		219.58	267.33	482.03	2088.8
Sandy Main Stem	24042.15	100 yr encroache	220.14	0.84	220.36	204	566.34	1930.8
Sandy Main Stem	23662.23	100 yr	216.01		218.39	85	484.63	2496.2
Sandy Main Stem	23662.23	100 yr encroache	216.19	0.17	219.13	55	81.51	2706.9
Sandy Main Stem	23396.78	100 yr	214.79		216.11	105.27	291.09	3889.1
Sandy Main Stem	23396.78	100 yr encroache	215.54	0.75	216.6	80	292.03	3859.5
Sandy Main Stem	23076.73	100 yr	214.93		215.23	319.22	1357.6	1161.2
Sandy Main Stem	23076.73	100 yr encroache	215.33	0.4	215.87	142.91	787.75	1425.8
Sandy Main Stem	22719.89	100 yr	214.34		214.47	456.14	1120.9	665.19
Sandy Main Stem	22719.89	100 yr encroache	214.77	0.43	214.94	240.56	822.27	722.42
Sandy Main Stem	22305.19	100 yr	212.52		212.68	351.6	436.59	754.86
Sandy Main Stem	22305.19	100 yr encroache	213.23	0.71	213.38	261.1	430.3	754.48
Sandy Main Stem	21973.79	100 yr	211.59		211.67	515.64	1910.2	1228.3

Sandy Main Stem	21973.79	100 yr encroache	212.48	0.89	212.56	345.59	1586.4	1347
Sandy Main Stem	21498.81	100 yr	210.6		210.68	525.56	2752.4	677.78
Sandy Main Stem	21498.81	100 yr encroache	211.59	0.99	211.69	280	2486.5	793.03
Sandy Main Stem	21070	100 yr	210.15		210.2	574.1	2903.9	445.33
Sandy Main Stem	21070	100 yr encroache	211.14	0.99	211.2	305	2719	529.38
Sandy Main Stem	20558.49	100 yr	209.56		209.65	374.35	1506	1814.4
Sandy Main Stem	20558.49	100 yr encroache	210.49	0.94	210.62	219	967.57	2189.2
Sandy Main Stem	20488		Culvert					
Sandy Main Stem	20450.5	100 yr	204.96		205.96	302.76	15.16	2687.8
Sandy Main Stem	20450.5	100 yr encroache	205.35	0.39	206.83	164.48		3268
Sandy Main Stem	20135.83	100 yr	204.99		205.08	424.17	546.68	670.61
Sandy Main Stem	20135.83	100 yr encroache	205.71	0.72	205.85	249.7	36.71	777.28
Sandy Main Stem	19889.56	100 yr	204.96		205.01	689.67	1909	1019.3
Sandy Main Stem	19889.56	100 yr encroache	205.71	0.75	205.77	408.07	2097.7	972.9
Sandy Main Stem	19820 BR U	100 yr	204.96		205.01	689.67	2083	559.31
Sandy Main Stem	19820 BR U	100 yr encroache	205.71	0.75	205.77	408.07	2287.4	834.89
Sandy Main Stem	19820 BR D	100 yr	204.87		204.92	726.19	2052	578.94
Sandy Main Stem	19820 BR D	100 yr encroache	205.55	0.67	205.61	408.07	2248.4	859.55
Sandy Main Stem	19756.97	100 yr	204.87		204.92	726.19	1832.1	1073.3
Sandy Main Stem	19756.97	100 yr encroache	205.55	0.67	205.61	408.07	1761.2	1172.6
Sandy Main Stem	19546.85	100 yr	204.75		204.87	484.39	2818.4	1863.8
Sandy Main Stem	19546.85	100 yr encroache	205.41	0.65	205.55	225.16	2996.3	1948.7

Sandy Main Stem	19352.67	100 yr	204.73		204.82	519.68	2861	1242.2
Sandy Main Stem	19352.67	100 yr encroache	205.4	0.67	205.49	302.99	2836.8	1164.6
Sandy Main Stem	19300 BR U	100 yr	204.73		204.81	519.68	1208.5	2630.6
Sandy Main Stem	19300 BR U	100 yr encroache	205.4	0.67	205.49	302.99	1313.8	2995.8
Sandy Main Stem	19300 BR D	100 yr	204.48		204.81	482.24	1208.5	2630.6
Sandy Main Stem	19300 BR D	100 yr encroache	204.52	0.03	205.49	200	1313.8	2995.8
Sandy Main Stem	19245.94	100 yr	201.39		202.96	230.74	572.57	3983.3
Sandy Main Stem	19245.94	100 yr encroache	201.36	-0.03	202.95	199.07	558.5	3985.2
Sandy Main Stem	19054.38	100 yr	199.78		200	326.31	2497	807.4
Sandy Main Stem	19054.38	100 yr encroache	200.04	0.27	200.37	200.04	2414.6	929.84
Sandy Main Stem	18845.69	100 yr	199.69		199.84	363.76	2339.8	707.39
Sandy Main Stem	18845.69	100 yr encroache	199.95	0.26	200.18	234.56	2361.2	841.79
Sandy Main Stem	18634.5	100 yr	199.62		199.74	432.95	1665.5	667.32
Sandy Main Stem	18634.5	100 yr encroache	199.88	0.26	200.05	256.86	1733.5	766.92
Sandy Main Stem	18463	100 yr	199.61		199.68	476.14	2747.7	592.37
Sandy Main Stem	18463	100 yr encroache	199.87	0.26	199.98	289.16	2852.4	675.58
Sandy Main Stem	18269.19	100 yr	198.7		199.41	319.24	1435.6	3143
Sandy Main Stem	18269.19	100 yr encroache	199.13	0.43	199.74	246.8	1406.3	3046.5
Sandy Main Stem	18240		Culvert					
Sandy Main Stem	18211.69	100 yr	195.64		197.01	225.96	1169.4	3610.3
Sandy Main Stem	18211.69	100 yr encroache	195.81	0.16	197.73	118.25	673.37	4139.8
Sandy Main Stem	18010.15	100 yr	194.72		195.88	253.71	1144.1	2362.1
Sandy Main Stem	18010.15	100 yr encroache	194.88	0.16	196.56	135	973.63	2701.5

Sandy Main Stem	17718.32	100 yr	192.01		192.47	418.7	1086.3	1061
Sandy Main Stem	17718.32	100 yr encroache	192.96	0.95	194.42	142.44	542.75	1959.4
Sandy Main Stem	17333.24	100 yr	191.3		191.6	369.25	1178.4	895.33
Sandy Main Stem	17333.24	100 yr encroache	191.94	0.63	192.77	133.58	1018.7	1425.4
Sandy Main Stem	16976.28	100 yr	189.42		190.46	284.19	1006.8	1063.9
Sandy Main Stem	16976.28	100 yr encroache	190.15	0.73	191.39	152.86	801.63	1218.7
Sandy Main Stem	16566.37	100 yr	188.8		189.03	446.17	2210.9	368.79
Sandy Main Stem	16566.37	100 yr encroache	189.61	0.8	190	235	1940.6	552.71
Sandy Main Stem	16177.16	100 yr	187.98		188.34	374.26	3616	466.94
Sandy Main Stem	16177.16	100 yr encroache	188.78	0.8	189.29	209.96	4009.1	657.54
Sandy Main Stem	15741.39	100 yr	187.35		187.63	358.38	3753.2	939.72
Sandy Main Stem	15741.39	100 yr encroache	188.3	0.95	188.63	212.51	3858.7	1086.3
Sandy Main Stem	15036.05	100 yr	185.9		186.46	330.62	845.96	1554.7
Sandy Main Stem	15036.05	100 yr encroache	186.83	0.93	187.59	169.87	243.35	1841.7
Sandy Main Stem	14643.01	100 yr	185.51		185.75	447.68	2281	1402.4
Sandy Main Stem	14643.01	100 yr encroache	186.44	0.94	186.85	220	2228.3	1796.3
Sandy Main Stem	14242.08	100 yr	183.67		185	349.99	1276.4	3016.7
Sandy Main Stem	14242.08	100 yr encroache	184.2	0.53	185.97	162.02	1039.2	3453.8
Sandy Main Stem	13869.62	100 yr	182.87		183.67	319.13	650.4	1863.6
Sandy Main Stem	13869.62	100 yr encroache	183.26	0.39	184.49	133.77	156.53	2191.1
Sandy Main Stem	13438.13	100 yr	182.13		182.4	346.75	1028.7	1595.9
Sandy Main Stem	13438.13	100 yr encroache	182.53	0.4	182.97	147.96	727.04	1830.8

Sandy Main Stem	12942.35	100 yr	181.36		181.55	311.02	966.35	1127.1
Sandy Main Stem	12942.35	100 yr encroache	181.67	0.31	181.95	199.27	882.8	1319.9
Sandy Main Stem	12648.67	100 yr	181.27		181.32	467.77	815.36	965.27
Sandy Main Stem	12648.67	100 yr encroache	181.6	0.33	181.66	326	714.63	1064.6
Sandy Main Stem	12600 BR U #1	100 yr	181.25		181.32			309.4
Sandy Main Stem	12600 BR U #1	100 yr encroache	181.59	0.34	181.66			407.29
Sandy Main Stem	12600 BR D #1	100 yr	180.82		181.32			309.4
Sandy Main Stem	12600 BR D #1	100 yr encroache	181.49	0.68	181.66			407.29
Sandy Main Stem	12591.62	100 yr	180.89		181.24	530.73	947.52	2223.1
Sandy Main Stem	12591.62	100 yr encroache	180.69	-0.2	181.42	315	530.84	2822.6
Sandy Main Stem	12103.89	100 yr	180.51		180.76	470.82	1486.1	1801.7
Sandy Main Stem	12103.89	100 yr encroache	180.19	-0.32	180.57	270	1312.4	2041.1
Sandy Main Stem	11764.28	100 yr	180.42		180.52	575.43	1046	1365.9
Sandy Main Stem	11764.28	100 yr encroache	179.98	-0.43	180.2	280	807.95	1709.4
Sandy Main Stem	11405.26	100 yr	180		180.31	158.87	386.12	2709.8
Sandy Main Stem	11405.26	100 yr encroache	179.6	-0.41	179.94	157.94	373.86	2766.2
Sandy Main Stem	11350		Mult Open					
Sandy Main Stem	11303	100 yr	175.65		177.45	129.64	571.41	3097.4
Sandy Main Stem	11303	100 yr encroache	176.67	1.02	177.77	141.52	612.06	2843.4
Sandy Main Stem	10733.77	100 yr	175.73		175.79	652.68	842.32	418.93
Sandy Main Stem	10733.77	100 yr encroache	176.92	1.19	177.02	363.21	1241.2	580.35

Sandy Main Stem	10700	BR U	100 yr	175.7		175.78	652.37	1006.1	189.33
Sandy Main Stem	10700	BR U	100 yr encroache	176.9	1.2	177.01	363.21	1390.6	255.67
Sandy Main Stem	10700	BR D	100 yr	175.72		175.76	723.64	927.28	171.44
Sandy Main Stem	10700	BR D	100 yr encroache	176.92	1.2	176.98	410	1368.1	230.48
Sandy Main Stem	10661.15		100 yr	175.72		175.75	728.98	984.07	347.65
Sandy Main Stem	10661.15		100 yr encroache	176.92	1.2	176.97	410	1303.7	494.54
Sandy Main Stem	10118.31		100 yr	175.69		175.72	638.97	3636.8	383.35
Sandy Main Stem	10118.31		100 yr encroache	176.89	1.2	176.93	350	3941.8	445.79
Sandy Main Stem	9744.554		100 yr	175.67		175.7	711.66	3102	721.41
Sandy Main Stem	9744.554		100 yr encroache	176.87	1.2	176.91	415.49	2517.1	890.36
Sandy Main Stem	9685	BR U	100 yr	175.67		175.7	523.25	883.61	573.84
Sandy Main Stem	9685	BR U	100 yr encroache	176.87	1.2	176.91	415.49	1887.8	731.87
Sandy Main Stem	9685	BR D	100 yr	175.42		175.7	496.57	873.59	578.15
Sandy Main Stem	9685	BR D	100 yr encroache	176.61	1.19	176.69	415.15	1877.4	736.35
Sandy Main Stem	9639.641		100 yr	175.42		175.48	700.37	2502.4	1574.6
Sandy Main Stem	9639.641		100 yr encroache	176.61	1.19	176.69	415.15	2048.7	1940.4
Sandy Main Stem	8975.758		100 yr	175.37		175.39	996.85	1258.8	1002.7
Sandy Main Stem	8975.758		100 yr encroache	176.55	1.18	176.59	500	627.46	1299.1
Sandy Main Stem	8504.5		100 yr	175.2		175.32	229	1316.6	1332.3
Sandy Main Stem	8504.5		100 yr encroache	176.41	1.21	176.52	189	1137.6	1448.3
Sandy Main Stem	8350	BR U #1	100 yr	175.16		175.25	79.9		
Sandy Main Stem	8350	BR U #1	100 yr encroache	176.34	1.18	176.45	64.9		

Sandy Main Stem	8350 BR D #1	100 yr	174.6		174.9	66.13		
Sandy Main Stem	8350 BR D #1	100 yr encroache	175.9	1.31	176.19	56.96		
Sandy Main Stem	8235.939	100 yr	174.59		174.8	155.4	1863	1417.8
Sandy Main Stem	8235.939	100 yr encroache	175.92	1.34	176.1	139.01	1602.2	1508.7
Sandy Main Stem	8063.602	100 yr	174.67		174.69	840.34	3969	644.27
Sandy Main Stem	8063.602	100 yr encroache	175.92	1.25	176.05	180	2735.3	1476.9
Sandy Main Stem	8000 BR U	100 yr	174.67		174.69	613.69	3618.8	450.47
Sandy Main Stem	8000 BR U	100 yr encroache	175.92	1.25	176.05	180	1858.5	1611
Sandy Main Stem	8000 BR D	100 yr	174.57		174.62	602.79	3695.4	432.69
Sandy Main Stem	8000 BR D	100 yr encroache	174.81	0.24	175.71	130	2103.2	1554.3
Sandy Main Stem	7966.54	100 yr	174.57		174.62	628.02	2654.5	1134.1
Sandy Main Stem	7966.54	100 yr encroache	174.81	0.24	174.95	130	2008	1509.6
Sandy Main Stem	7570.986	100 yr	174.56		174.59	331.13	1035.8	642.09
Sandy Main Stem	7570.986	100 yr encroache	174.8	0.24	174.89	150	938.33	1063.5
Sandy Main Stem	7173.807	100 yr	174.57		174.58	429.55	2257.1	430.7
Sandy Main Stem	7173.807	100 yr encroache	174.78	0.21	174.86	150	2021.6	1187
Sandy Main Stem	6825.559	100 yr	174.29		174.51	122.92	2457.6	1970.6
Sandy Main Stem	6825.559	100 yr encroache	174.56	0.27	174.78	113	2379	2021.4
Sandy Main Stem	6765 BR U	100 yr	174.07		174.45	87.01	1777.9	2515.5
Sandy Main Stem	6765 BR U	100 yr encroache	174.37	0.3	174.73	77.9	1755.3	2459.9
Sandy Main Stem	6765 BR D	100 yr	173.83		174.39	86.44	1404.4	3110.1
Sandy Main Stem	6765 BR D	100 yr encroache	174.16	0.33	174.67	74.9	1397.5	3038.1

Sandy Main Stem	6709.658	100 yr	173.95		174.24	122.44	2300.9	2319.9
Sandy Main Stem	6709.658	100 yr encroache	174.26	0.31	174.54	110	2205.6	2364.5
Sandy Main Stem	6668.16	100 yr	174.06		174.11	301.51	3344	1373.3
Sandy Main Stem	6668.16	100 yr encroache	174.35	0.28	174.44	160	2847.6	1773.3
Sandy Main Stem	6600 BR U	100 yr	174.06		174.11	301.51	438.93	3832
Sandy Main Stem	6600 BR U	100 yr encroache	174.35	0.28	174.44	160	507.67	3821
Sandy Main Stem	6600 BR D	100 yr	173.83		174.05	303.64	581.06	3722.6
Sandy Main Stem	6600 BR D	100 yr encroache	173.92	0.09	174.26	178	646.73	3714
Sandy Main Stem	6572.639	100 yr	172.84		172.88	335.51	2003.3	1127.2
Sandy Main Stem	6572.639	100 yr encroache	173.21	0.38	173.28	178	1968.7	1428.4
Sandy Main Stem	6414.98	100 yr	172.44		172.77	129.2	623.34	3414.3
Sandy Main Stem	6414.98	100 yr encroache	172.86	0.42	173.19	120	518.33	3475.2
Sandy Main Stem	6300 BR U #1	100 yr	172.71		172.73	3.07		
Sandy Main Stem	6300 BR U #1	100 yr encroache						
Sandy Main Stem	6300 BR D #1	100 yr	169.09		169.09	18.02		
Sandy Main Stem	6300 BR D #1	100 yr encroache						
Sandy Main Stem	6189.177	100 yr	168.85		169.81	135.44	621.22	3509.5
Sandy Main Stem	6189.177	100 yr encroache	169.99	1.14	170.97	92	269.99	3743.3
Sandy Main Stem	5508.105	100 yr	169.17		169.25	1154.8	510.92	1016
Sandy Main Stem	5508.105	100 yr encroache	169.98	0.81	170.34	263.21	1094.9	2077
Sandy Main Stem	5084.678	100 yr	169.13		169.19	1007.9	95.24	1866.8
Sandy Main Stem	5084.678	100 yr encroache	169.86	0.73	170.19	255	183.83	3088
Sandy Main Stem	5065.378	100 yr	168.97		169.18	411.25	366.44	2508

Sandy Main Stem	5065.378	100 yr encroache	169.73	0.76	170.17	207	203.4	3701.5
Sandy Main Stem	5039.878	100 yr	169.07		169.12	1270.4	167.78	1469.8
Sandy Main Stem	5039.878	100 yr encroache	169.62	0.55	170.13	180.84	261.26	4199.8
Sandy Main Stem	4865.578	100 yr	168.72		169.02	201.31	1953.7	7025.5
Sandy Main Stem	4865.578	100 yr encroache	169.48	0.76	169.84	153	1958.4	7782.6
Sandy Main Stem	4790.088	100 yr	168.63		168.99	262.54	619.61	4208.9
Sandy Main Stem	4790.088	100 yr encroache	168.84	0.22	169.74	136.8	790.25	6909.3
Sandy Main Stem	4777.088	100 yr	168.55		168.96	185.63	2238.5	4112.8
Sandy Main Stem	4777.088	100 yr encroache	168.78	0.23	169.72	104.47	2639.8	6068.2
Sandy Main Stem	4740 BR U	100 yr	166.25		168.96		1256.1	6703
Sandy Main Stem	4740 BR U	100 yr encroache	166.25	0.00	169.72		1305	6963.9
Sandy Main Stem	4740 BR D	100 yr	164.21		168.51	95.9	509.9	8807
Sandy Main Stem	4740 BR D	100 yr encroache	164.54	0.33	168.51	95.9	523.47	8792.8
Sandy Main Stem	4685.592	100 yr	163.53		166.72	180	998.19	7572.8
Sandy Main Stem	4685.592	100 yr encroache	164.54	1.00	167.01	180	1095.1	7472.1
Sandy Main Stem	4327.181	100 yr	164.33		164.57	570.03	431.37	2833.6
Sandy Main Stem	4327.181	100 yr encroache	165.21	0.88	165.41	520	488.26	2774.7
Sandy Main Stem	3964.325	100 yr	163.8		164.22	523.01	354.97	3973.2
Sandy Main Stem	3964.325	100 yr encroache	164.63	0.83	165.11	355.74	76.87	4347.5
Sandy Main Stem	3515.389	100 yr	163.59		163.83	673.96	1350.5	3183
Sandy Main Stem	3515.389	100 yr encroache	164.45	0.86	164.72	448.04	935.24	3463.1
Sandy Main Stem	3004.364	100 yr	163.31		163.53	740.33	3869.5	3072.4
Sandy Main Stem	3004.364	100 yr encroache	164.17	0.86	164.43	443.91	3689.7	3442.8
Sandy Main Stem	2590.359	100 yr	163.09		163.31	537.82	316.83	3257.7
Sandy Main Stem	2590.359	100 yr encroache	163.85	0.76	164.19	240	423.32	3754.3
Sandy Main Stem	2500 BR U	100 yr	163.09		163.32	492.71	713.75	4930.8
Sandy Main Stem	2500 BR U	100 yr encroache	163.85	0.76	164.19	240	711.29	5342.2

Sandy Main Stem	2500	BR D	100 yr	162.55		163.32	547.23	1191.3	4870.9
Sandy Main Stem	2500	BR D	100 yr encroache	162.64	0.1	164.19	227	1199.3	5281
Sandy Main Stem	2417.391		100 yr	158.77		159.18	472.71	432.31	2849.7
Sandy Main Stem	2417.391		100 yr encroache	159.44	0.67	160.4	227	538.69	4237.1
Sandy Main Stem	2072.963		100 yr	158.41		158.78	566.67	793.84	2891
Sandy Main Stem	2072.963		100 yr encroache	159.17	0.76	159.68	300	29.41	3325.5
Sandy Main Stem	1688.606		100 yr	157.76		158.22	578.51	1178.2	2641.7
Sandy Main Stem	1688.606		100 yr encroache	158.5	0.74	159.11	375.23	586.12	3072.2
Sandy Main Stem	1299.523		100 yr	157.31		157.55	869.08	1960	2131.6
Sandy Main Stem	1299.523		100 yr encroache	158.09	0.78	158.41	535.19	1534.3	2482
Sandy Main Stem	663.061		100 yr	156.25		156.62	958.44	7114.2	2412.4
Sandy Main Stem	663.061		100 yr encroache	157.15	0.9	157.55	574.04	7008.5	2635.4
Sandy Main Stem	143.571		100 yr	154.39		155.16	1099.1	4828.8	1932.9
Sandy Main Stem	143.571		100 yr encroache	155.04	0.65	156.17	523.43	5593.2	2291.8

Q Right (cfs)	Enc Sta L (ft)	Ch Sta L (ft)	Ch Sta R (ft)	Enc Sta R (ft)
52.51		198.54	246.95	
34.41	140	198.54	246.95	255
111.54		173.08	186.92	
67.36	151.31	173.08	186.92	190
613.63		330.22	350.22	
589.67	315	330.22	350.22	425
171.15		296.76	314.12	
133.2	245	296.76	314.12	331
24.69		247.26	263.71	
12.45	155	247.26	263.71	265
606.96		237.63	254.11	
699.01	230	237.63	254.11	325
265		353.97	368.12	
86.35	200	353.97	368.12	376
91.04		245.1	258.78	
130.33	200	245.1	258.78	270
333.41		299.96	317.3	
238.76	268	299.96	317.3	332

395.16		312.08	330	
318.83	312.08	312.08	330	343.24
472.54		331.46	346.39	
227.61	245	331.46	346.39	366
105.19		415.84	436.5	
93.87	413	415.84	436.5	485
642.17		297.1	319.54	
41.02	272	297.1	319.54	321.6
927.55		210.86	236.63	
39.13	186	210.86	236.63	239
970.4		246.4	267.25	
790.75	223	246.4	267.25	410
605.89		268.63	284.21	
548.3	245	268.63	284.21	360
88.47		238.97	260.29	
17.98	160	238.97	260.29	290
67.14		277.88	300	
89.39	205	277.88	300	335
194.45		298.97	320.29	
164.68	210	298.97	320.29	375

282.58		225.81	248.59	
247.61	194	225.81	248.59	335
207.75		158.54	178.67	
211.27	100	158.54	178.67	193
349.81		161.62	177.52	
308.11	150	161.62	177.52	200
546.63		182.32	194.04	
665.17	165	182.32	194.04	230
468.25		210.63	220	
264.41	165	210.63	220	236
412.2		357.66	381.26	
228.27	325	357.66	381.26	405
7.17		413.89	440.56	
4.31	412.37	413.89	440.56	442.09
0.55		446.21	475.93	
	446.21	446.21	475.93	475.93
983.03		338.73	350.55	
967.09	300	338.73	350.55	390
1505.4		311	321	
1503.7	285	311	321	370

497.17		338.99	365.6	
489.68	295	338.99	365.6	415
841.33		321.09	345.96	
815.3	318	321.09	345.96	475
207.12		386.16	413.88	
	306	386.16	413.88	413.88
1055		546.64	575.28	
739.8	415	546.64	575.28	645
876.74		546.64	575.28	
474.81	415	546.64	575.28	645
877.19		528.66	559.89	
475.26	445	528.66	559.89	610
343.57		528.66	559.89	
388.23	445	528.66	559.89	610
936.17		242.55	269.97	
771.45	230	242.55	269.97	331.32
657.45		218.08	241.5	
313.09	157.94	218.08	241.5	261.41
2150.8		207.1	237.65	
2298.5	207.1	207.1	237.65	388.3
2364.4		255	275.99	
2444	240	255	275.99	415.43
3050.9		227.49	252.64	

3271.7	212.73	227.49	252.64	420
2793.3		178.4	202.54	
2965.6	150	178.4	202.54	345.31
1501.2		229.39	265.61	
1578.6	130	229.39	265.61	398.39
1802.4		229.39	265.61	
1599.6	130	229.39	265.61	398.39
1802.4		346.51	388.65	
1599.6	286	346.51	388.65	490
1746.2		346.51	388.65	
1819.8	286	346.51	388.65	490
1336.2		292.01	313.22	
1528.6	290	292.01	313.22	345
136.83		390.12	449.81	
165.43	380	390.12	449.81	460
1798.2		328.87	348.15	
2103.5	290	328.87	348.15	432.91
2530.9		549.67	570.75	
2772.3	500	549.67	570.75	740.56
3753.6		295.05	316.45	
3760.2	275	295.05	316.45	536.1
1806.5		307.15	368.38	

2011.7	212.12	307.15	368.38	557.71
1514.9		430.17	458.57	
1665.4	300	430.17	458.57	580
1595.8		496.26	518.5	
1696.6	345	496.26	518.5	650
1624.6		629.72	701.79	
1788.2	570	629.72	701.79	789
2242		785.8	842.27	
1677	785.8	785.8	842.27	950.28
3727.7		653.71	674.38	
4131	650.98	653.71	674.38	900.68
2016.7		542.45	580.61	
1874.4	367.57	542.45	580.61	775.64
2347.6		542.45	580.61	
1822.7	367.57	542.45	580.61	775.64
2359		583.56	623.52	
1837	409.58	583.56	623.52	817.65
2039.5		583.56	623.52	
2011.1	409.58	583.56	623.52	817.65
262.78		509.3	563.24	
	338.08	509.3	563.24	563.24

841.86		529.11	562.52	
943.54	337.16	529.11	562.52	640.15
1098.6		529.11	562.52	
632.5	337.16	529.11	562.52	640.15
1098.6		392.59	438.84	
632.5	285	392.59	438.84	485
389.18		392.59	438.84	
401.31	285	392.59	438.84	485
1640.6		322.74	350.36	
1600.6	218	322.74	350.36	418.04
1897.9		380.56	410.67	
1742	253.41	380.56	410.67	487.97
2612.2		366.56	390.51	
2444.6	259.59	366.56	390.51	516.45
1605		368.21	393.61	
1417	182.96	368.21	393.61	472.12
366.38		240.56	277.68	
492.2	115	240.56	277.68	361.8
165.25		235.31	280.67	
131.85	171.75	235.31	280.67	290
1438.8		229.85	262.16	
1269.9	185	229.85	262.16	320

2797.7		270.52	300.87	
2442.9	257.56	270.52	300.87	400
2871.2		416.9	445.88	
2500.9	386.42	416.9	445.88	520
2874.3		640.59	670.34	
2924.7	615	640.59	670.34	767.86
2365.4		465.25	490.43	
2451.7	380	465.25	490.43	615
862.06		486.06	516.06	
278.38	320.98	486.06	516.06	530.94
252.13		404.41	441.09	
	228.58	404.41	441.09	441.09
2544.4		306.23	338.73	
2859.9	291.91	306.23	338.73	461.78
1261.6		390.97	414.77	
920.44	290	390.97	414.77	510
651.93		571.91	601.09	
451.99	494.11	571.91	601.09	656.13
2431		424.75	446.63	
2597.3	415.81	424.75	446.63	549.58
2320.5		462.14	490.66	
2387.2	424.93	462.14	490.66	572.89

2851.5		684.15	715.62	
2742.4	610.85	684.15	715.62	810.12
3164.4		516.53	553.47	
3165.7	440	516.53	553.47	766
		516.53	553.47	
	440	516.53	553.47	766
		481.95	515.76	
	440	481.95	515.76	755
1774.4		481.95	515.76	
1591.6	440	481.95	515.76	755
1657.2		502.91	532.78	
1591.5	400	502.91	532.78	670
2533.1		573.29	605.89	
2427.6	510	573.29	605.89	790
1849.1		806.45	857.41	
1804.9	791	806.45	857.41	1080
1276.2		792.22	830.06	
1489.6	768	792.22	830.06	1040
3683.8		721.13	738.39	
3123.4	561.87	721.13	738.39	925.08

3749.6		721.13	738.39	
3298.7	561.87	721.13	738.39	925.08
3846.3		809.55	830.3	
3346.5	670	809.55	830.3	1080
3613.3		809.55	830.3	
3146.7	670	809.55	830.3	1080
924.83		819.67	841.1	
557.42	560	819.67	841.1	910
1121.6		825.11	861	
1537.6	640	825.11	861	1055.5
3499.2		825.11	861	
2305.2	640	825.11	861	1055.5
3504.9		851.17	894.27	
2311.1	670	851.17	894.27	1085.2
867.95		851.17	894.27	
955.96	670	851.17	894.27	1085.2
2683.4		1068.5	1096.9	
3018.4	1000	1068.5	1096.9	1500
2296.1		1424.2	1452.4	
2359.1	1392	1424.2	1452.4	1715
1271.7		1424.2	1452.4	
1340.9	1392	1424.2	1452.4	1715

1271.7		883.9	905.89	
1340.9	850	883.9	905.89	1050
1664.2		883.9	905.89	
1834.1	850	883.9	905.89	1050
331.74		1076.7	1100.7	
732.85	970	1076.7	1100.7	1150
872.25		1076.7	1100.7	
1472.9	970	1076.7	1100.7	1150
813.41		1060.6	1086.8	
1285	1000	1060.6	1086.8	1130
1156.5		1060.6	1086.8	
1427.4	1000	1060.6	1086.8	1130
3267.1		736.38	761.34	
2943.1	700	736.38	761.34	850
2257.2		516.38	545.37	
1736.5	450	516.38	545.37	600
516.83		768.75	792.84	
544.54	700	768.75	792.84	813
651.54		768.75	792.84	
729.82	700	768.75	792.84	813
430.44		765.84	792.33	
509.32	700	765.84	792.33	810

324.17		765.84	792.33	
374.86	700	765.84	792.33	810
227.74		448.8	483.17	
324.05	340	448.8	483.17	500
674.48		448.8	483.17	
615.58	340	448.8	483.17	500
641.7		406.17	439.7	
583.51	327	406.17	439.7	505
1814.5		406.17	439.7	
1547.9	327	406.17	439.7	505
907.38		450.95	492.71	
951.51	430	450.95	492.71	550
0.1		450.95	492.71	
0.1		571.37	599.41	
814.28		571.37	599.41	
931.7	558	571.37	599.41	650
8214.1		375.86	398.85	
6569.1	294	375.86	398.85	810
7779		548.14	586.93	
6469.2	525	548.14	586.93	780
6866.6		358.5	400.5	

5836.1	353	358.5	400.5	560
8103.5		365.5	410.5	
5279.9	359.16	365.5	410.5	540
761.8		418.06	535.25	
	382	418.06	535.25	535
4912.5		554	612.2	
2041.4	513.2	554	612.2	650
3389.7		418.5	475.5	
1033	388.53	418.5	475.5	493
1781.8		418.5	475.5	
1472	388.53	418.5	475.5	493
424.06		471.43	523.87	
424.77	400	471.43	523.87	580
1170		471.43	523.87	
1173.8	400	471.43	523.87	580
6476.1		378.5	414.44	
6478	315	378.5	414.44	835
5412.8		365.33	410.98	
5316.6	358	365.33	410.98	713.74
5207.5		409.52	447.2	
5342.7	344.09	409.52	447.2	792.13
2799.1		627.74	666.86	
2608.5	396.09	627.74	666.86	840
6166.5		421.6	469.78	
5563.4	380	421.6	469.78	620
4109.5		421.6	469.78	
3687.4	380	421.6	469.78	620

3691.8		383.22	430.46	
3260.6	373	383.22	430.46	600
6459		383.22	430.46	
4965.2	373	383.22	430.46	600
6056.1		276.68	321	
6386.1	275	276.68	321	575
5921.1		341.77	374.41	
6082.7	329.77	341.77	374.41	705
5649.4		479.94	516	
5724.7	409.81	479.94	516	945
214.41		1075.9	1106.7	
97.12	542.96	1075.9	1106.7	1117
2979.3		887.85	907.97	
1856	517.88	887.85	907.97	1041.3

Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Crit W.S. (ft)	E.G. Elev (ft)	E.G. Slope (ft/ft)
Sandy Mai	38835.32	10-yr	689	335	337.86	337.86	338.72	0.00999
Sandy Mai	38835.32	50-yr	1169	335	338.94	338.94	339.6	0.004689
Sandy Mai	38835.32	100-yr	1443	335	339.2	339.2	339.87	0.004575
Sandy Mai	38835.32	500-yr	2290	335	339.75	339.75	340.51	0.004735
Sandy Mai	38353.13	10-yr	689	327	331.57	331.57	332.39	0.005969
Sandy Mai	38353.13	50-yr	1169	327	332.31	332.31	333.33	0.006209
Sandy Mai	38353.13	100-yr	1443	327	332.65	332.65	333.79	0.006364
Sandy Mai	38353.13	500-yr	2290	327	333.67	333.67	334.99	0.006273
Sandy Mai	37880.8	10-yr	689	319	323.52	323.52	324.37	0.006578
Sandy Mai	37880.8	50-yr	1169	319	324.58	324.58	325.27	0.004408
Sandy Mai	37880.8	100-yr	1443	319	324.82	324.82	325.57	0.00462
Sandy Mai	37880.8	500-yr	2290	319	325.5	325.5	326.29	0.004455
Sandy Mai	37489.56	10-yr	689	311.79	319.5	316.72	319.79	0.000922
Sandy Mai	37489.56	50-yr	1169	311.79	320.18	318.42	320.69	0.001539
Sandy Mai	37489.56	100-yr	1443	311.79	320.49	319	321.1	0.001829
Sandy Mai	37489.56	500-yr	2290	311.79	320.7	320.69	322.01	0.003902
Sandy Mai	37270		Culvert					
Sandy Mai	37056.92	10-yr	689	306.66	311.36	311.36	312.99	0.008132
Sandy Mai	37056.92	50-yr	1169	306.66	313.14	313.14	314.72	0.005257
Sandy Mai	37056.92	100-yr	1443	306.66	313.8	313.8	315.39	0.004858
Sandy Mai	37056.92	500-yr	2290	306.66	315.13	315.13	316.68	0.004358
Sandy Mai	36678.73	10-yr	689	301	304.8	304.3	305.22	0.003772
Sandy Mai	36678.73	50-yr	1169	301	305.6	305	306.17	0.004318
Sandy Mai	36678.73	100-yr	1443	301	305.92	304.94	306.51	0.004279
Sandy Mai	36678.73	500-yr	2290	301	306.72	306.32	307.25	0.003781
Sandy Mai	36275.49	10-yr	689	296.1	303.76	301.63	303.96	0.002222
Sandy Mai	36275.49	50-yr	1169	296.1	304.33	303.44	304.63	0.002863
Sandy Mai	36275.49	100-yr	1443	296.1	304.67	303.83	305	0.002793
Sandy Mai	36275.49	500-yr	2290	296.1	305.29	304.46	305.77	0.003403
Sandy Mai	36000		Culvert					
Sandy Mai	35791.32	10-yr	689	286.09	293.06		293.13	0.00126
Sandy Mai	35791.32	50-yr	1169	286.09	293.91		294.01	0.001489
Sandy Mai	35791.32	100-yr	1443	286.09	294.29		294.41	0.001526
Sandy Mai	35791.32	500-yr	2290	286.09	295.17		295.34	0.001785
Sandy Mai	35582.96	10-yr	689	285	292.85	288.96	292.93	0.000708

Sandy Mai	35582.96	50-yr	1169	285	293.64	290.2	293.76	0.00094
Sandy Mai	35582.96	100-yr	1443	285	294	290.81	294.13	0.001055
Sandy Mai	35582.96	500-yr	2290	285	294.79	292.54	294.99	0.001436
Sandy Mai	35513		Culvert					
Sandy Mai	35420.3	10-yr	689	283	290.29		290.54	0.001975
Sandy Mai	35420.3	50-yr	1169	283	290.79		291.3	0.003679
Sandy Mai	35420.3	100-yr	1443	283	291.02		291.68	0.004642
Sandy Mai	35420.3	500-yr	2290	283	291.55	291.17	292.72	0.007977
Sandy Mai	35237.49	10-yr	689	279.02	290.34	283.38	290.36	0.000132
Sandy Mai	35237.49	50-yr	1169	279.02	290.91	285.04	290.94	0.000251
Sandy Mai	35237.49	100-yr	1443	279.02	291.19	285.86	291.23	0.00032
Sandy Mai	35237.49	500-yr	2290	279.02	291.85	288.12	291.92	0.000542
Sandy Mai	34267		Culvert					
Sandy Mai	33297.82	10-yr	689	253	257.22	256.67	258.31	0.005093
Sandy Mai	33297.82	50-yr	1169	253	257.86	257.86	260.08	0.008519
Sandy Mai	33297.82	100-yr	1443	253	259.06	259.06	260.79	0.005163
Sandy Mai	33297.82	500-yr	2290	253	260.9	260.9	262.07	0.003089
Sandy Mai	32874.91	10-yr	689	251	254	254	255.37	0.009327
Sandy Mai	32874.91	50-yr	1169	251	254.92	254.92	255.5	0.004093
Sandy Mai	32874.91	100-yr	1443	251	255.13	255.13	255.76	0.004336
Sandy Mai	32874.91	500-yr	2290	251	255.61	255.61	256.41	0.005256
Sandy Mai	32432.32	10-yr	689	249	252.79	251.62	253.11	0.001787
Sandy Mai	32432.32	50-yr	1169	249	253.21	252.43	253.87	0.003314
Sandy Mai	32432.32	100-yr	1443	249	253.51	252.93	253.61	0.000667
Sandy Mai	32432.32	500-yr	2290	249	254.16	253.45	254.3	0.000832
Sandy Mai	32009.44	10-yr	689	246	252.73	249.47	252.75	0.000233
Sandy Mai	32009.44	50-yr	1169	246	253.12	250.64	253.15	0.000455
Sandy Mai	32009.44	100-yr	1443	246	253.28	251.24	253.32	0.000586
Sandy Mai	32009.44	500-yr	2290	246	253.84	252	253.92	0.000857
Sandy Mai	31828		Culvert					
Sandy Mai	31647.46	10-yr	689	239	247.64	243.29	247.73	0.000246
Sandy Mai	31647.46	50-yr	1169	239	248.46	244.52	248.58	0.000356
Sandy Mai	31647.46	100-yr	1443	239	248.83	246.31	248.97	0.000404
Sandy Mai	31647.46	500-yr	2290	239	249.74	247.57	249.91	0.000511
Sandy Mai	31476.58	10-yr	689	240	247.53	243.38	247.66	0.000421
Sandy Mai	31476.58	50-yr	1169	240	248.2	244.78	248.46	0.000749

Sandy Mai	31476.58	100-yr	1443	240	248.5	246.29	248.82	0.000932
Sandy Mai	31476.58	500-yr	2290	240	249.11	247.54	249.66	0.001554
Sandy Mai	31435		Culvert					
Sandy Mai	31392.94	10-yr	689	239.99	246.63		246.82	0.001705
Sandy Mai	31392.94	50-yr	1169	239.99	246.92		247.35	0.003812
Sandy Mai	31392.94	100-yr	1443	239.99	247.14		247.69	0.004812
Sandy Mai	31392.94	500-yr	2290	239.99	247.47		248.54	0.009202
Sandy Mai	31259.8	10-yr	689	239	246.58	243.1	246.7	0.000373
Sandy Mai	31259.8	50-yr	1169	239	246.81	244.43	247.08	0.000836
Sandy Mai	31259.8	100-yr	1443	239	247.02	245.08	247.34	0.001032
Sandy Mai	31259.8	500-yr	2290	239	247.23	246.95	247.86	0.002064
Sandy Mai	31220		Culvert					
Sandy Mai	31182.62	10-yr	689	239	242.91	242.91	244.28	0.008644
Sandy Mai	31182.62	50-yr	1169	239	244.74	244.74	245.76	0.003966
Sandy Mai	31182.62	100-yr	1443	239	245.22	245.22	246.23	0.003706
Sandy Mai	31182.62	500-yr	2290	239	246.09	246.09	247.23	0.003978
Sandy Mai	31033.98	10-yr	689	239	241.91		242.34	0.004703
Sandy Mai	31033.98	50-yr	1169	239	242.88		243.31	0.00355
Sandy Mai	31033.98	100-yr	1443	239	243.39		243.82	0.003086
Sandy Mai	31033.98	500-yr	2290	239	244.37		244.95	0.003268
Sandy Mai	30579.27	10-yr	689	235	238.76	238.76	239.84	0.006159
Sandy Mai	30579.27	50-yr	1169	235	239.79	239.79	241.15	0.006131
Sandy Mai	30579.27	100-yr	1443	235	240.21	240.21	241.75	0.006428
Sandy Mai	30579.27	500-yr	2290	235	241.72	241.72	243.09	0.0048
Sandy Mai	30235.35	10-yr	689	233	236.58	235.41	236.8	0.002515
Sandy Mai	30235.35	50-yr	1169	233	237.24	236.14	237.53	0.002963
Sandy Mai	30235.35	100-yr	1443	233	237.64	236.7	237.99	0.003303
Sandy Mai	30235.35	500-yr	2290	233	238.8	237.48	239.08	0.002254
Sandy Mai	29939.91	10-yr	689	231	235.17		235.53	0.008674
Sandy Mai	29939.91	50-yr	1169	231	235.78		236.16	0.008141
Sandy Mai	29939.91	100-yr	1443	231	236.74		236.95	0.003416
Sandy Mai	29939.91	500-yr	2290	231	238.31		238.46	0.00171
Sandy Mai	29533.61	10-yr	689	229	233.17		233.63	0.002883
Sandy Mai	29533.61	50-yr	1169	229	235.09		235.28	0.000898
Sandy Mai	29533.61	100-yr	1443	229	236.36		236.49	0.00052
Sandy Mai	29533.61	500-yr	2290	229	237.98		238.13	0.000474

Sandy Mai	29203.58	10-yr	689	227	232.44	230.02	232.86	0.001854
Sandy Mai	29203.58	50-yr	1169	227	233.98	231.27	234.69	0.002186
Sandy Mai	29203.58	100-yr	1443	227	235.29	231.91	236.02	0.001788
Sandy Mai	29203.58	500-yr	2290	227	236.45	233.65	237.54	0.002417
Sandy Mai	29175		Culvert					
Sandy Mai	29148	10-yr	689	227	232.24	229.86	232.61	0.00159
Sandy Mai	29148	50-yr	1169	227	233.24	231.04	233.97	0.002536
Sandy Mai	29148	100-yr	1443	227	233.57	231.62	234.56	0.003215
Sandy Mai	29148	500-yr	2290	227	234.57	233.22	236.39	0.004795
Sandy Mai	28902.69	10-yr	1479	225	231.04	230.69	231.82	0.003621
Sandy Mai	28902.69	50-yr	2537	225	231.98	231.83	232.99	0.004432
Sandy Mai	28902.69	100-yr	3146	225	232.43	232.21	233.52	0.004645
Sandy Mai	28902.69	500-yr	5020	225	233.67	233.23	234.91	0.004816
Sandy Mai	28536.39	10-yr	1479	225	228.89	228.89	229.8	0.009397
Sandy Mai	28536.39	50-yr	2537	225	230.04	229.8	230.9	0.007255
Sandy Mai	28536.39	100-yr	3146	225	230.51	230.18	231.41	0.006984
Sandy Mai	28536.39	500-yr	5020	225	231.3	231.17	232.58	0.008887
Sandy Mai	28078.23	10-yr	1479	221	227.99	226	228.27	0.000811
Sandy Mai	28078.23	50-yr	2537	221	229.86	227.5	230.09	0.000552
Sandy Mai	28078.23	100-yr	3146	221	230.3	227.9	230.55	0.0006
Sandy Mai	28078.23	500-yr	5020	221	230.91	229.44	231.33	0.000951
Sandy Mai	27678.42	10-yr	1479	221	226.4	225.66	227.56	0.004045
Sandy Mai	27678.42	50-yr	2537	221	227.65	227.65	229.43	0.004995
Sandy Mai	27678.42	100-yr	3146	221	228.98	228.98	230.03	0.00274
Sandy Mai	27678.42	500-yr	5020	221	230	230	230.74	0.002192
Sandy Mai	27191.04	10-yr	1479	219	225.03	223.98	225.87	0.002713
Sandy Mai	27191.04	50-yr	2537	219	226.87	225.92	227.3	0.001333
Sandy Mai	27191.04	100-yr	3146	219	227.32	226.34	227.76	0.00136
Sandy Mai	27191.04	500-yr	5020	219	228.32	227.44	228.74	0.001325
Sandy Mai	26877.54	10-yr	1479	217	224.89	221.51	225.23	0.000706
Sandy Mai	26877.54	50-yr	2537	217	226.8	223.4	226.96	0.000397
Sandy Mai	26877.54	100-yr	3146	217	227.24	224.02	227.41	0.000428
Sandy Mai	26877.54	500-yr	5020	217	228.2	226.13	228.39	0.000484
Sandy Mai	26835		Bridge					
Sandy Mai	26794.7	10-yr	1479	217	222.38		223.43	0.003595
Sandy Mai	26794.7	50-yr	2537	217	224.22	224.22	225.35	0.002877
Sandy Mai	26794.7	100-yr	3146	217	224.68	224.68	225.83	0.002947

Sandy Mai	26794.7	500-yr	5020	217	226.45		227.2	0.001892
Sandy Mai	26382.38	10-yr	1479	215	221.68	220.22	222.22	0.001632
Sandy Mai	26382.38	50-yr	2537	215	223.14	221.65	223.84	0.001796
Sandy Mai	26382.38	100-yr	3146	215	223.87	222.29	224.62	0.00179
Sandy Mai	26382.38	500-yr	5020	215	225.84	223.82	226.47	0.001416
Sandy Mai	26107.58	10-yr	2016	213	220.97	219.81	221.73	0.001774
Sandy Mai	26107.58	50-yr	3442	213	222.38	221.56	223.29	0.002021
Sandy Mai	26107.58	100-yr	4317	213	223.08	222.15	224.06	0.002113
Sandy Mai	26107.58	500-yr	7013	213	224.85	223.52	225.93	0.002187
Sandy Mai	25737.96	10-yr	2016	213	220.97		221.2	0.000647
Sandy Mai	25737.96	50-yr	3442	213	222.41		222.69	0.000716
Sandy Mai	25737.96	100-yr	4317	213	223.11		223.41	0.000755
Sandy Mai	25737.96	500-yr	7013	213	224.85		225.24	0.00088
Sandy Mai	25309.8	10-yr	2016	213.64	220.63	217.18	220.85	0.001007
Sandy Mai	25309.8	50-yr	3442	213.64	221.99	218.2	222.29	0.001224
Sandy Mai	25309.8	100-yr	4317	213.64	222.68	218.79	223	0.001241
Sandy Mai	25309.8	500-yr	7013	213.64	224.4	221.63	224.77	0.00131
Sandy Mai	24900.93	10-yr	2016	212	220.4		220.43	0.000813
Sandy Mai	24900.93	50-yr	3442	212	221.65		221.71	0.001241
Sandy Mai	24900.93	100-yr	4317	212	222.31		222.38	0.001458
Sandy Mai	24900.93	500-yr	7013	212	223.91		224.04	0.002046
Sandy Mai	24402.5	10-yr	2016	210	220.05		220.08	0.000613
Sandy Mai	24402.5	50-yr	3442	210	221.11		221.18	0.000956
Sandy Mai	24402.5	100-yr	4317	210	221.67		221.76	0.001107
Sandy Mai	24402.5	500-yr	7013	210	223.03		223.18	0.001512
Sandy Mai	24129.68	10-yr	2016	210	219.88	214.6	219.9	0.000706
Sandy Mai	24129.68	50-yr	3442	210	220.82	216.03	220.88	0.001303
Sandy Mai	24129.68	100-yr	4317	210	221.33	216.79	221.4	0.001569
Sandy Mai	24129.68	500-yr	7013	210	222.55	218.86	222.68	0.0023
Sandy Mai	24085		Bridge					
Sandy Mai	24042.15	10-yr	2016	210	216.23	214.73	216.62	0.001224
Sandy Mai	24042.15	50-yr	3442	210	218.26	215.93	218.59	0.000824
Sandy Mai	24042.15	100-yr	4317	210	219.28	216.48	219.57	0.000664
Sandy Mai	24042.15	500-yr	7013	210	221.87	217.79	222.12	0.000422
Sandy Mai	23662.23	10-yr	2016	208	213.45	213.45	215.28	0.006323
Sandy Mai	23662.23	50-yr	3442	208	215.23	215.23	217.38	0.005504
Sandy Mai	23662.23	100-yr	4317	208	216.04	216.04	218.39	0.005392

Sandy Mai	23662.23	500-yr	7013	208	217.83	217.83	220.88	0.005697
Sandy Mai	23396.78	10-yr	2016	208	213.34		213.84	0.00149
Sandy Mai	23396.78	50-yr	3442	208	214.35		215.33	0.002363
Sandy Mai	23396.78	100-yr	4317	208	214.79		216.11	0.002933
Sandy Mai	23396.78	500-yr	7013	208	215.59	215.38	218.19	0.005109
Sandy Mai	23076.73	10-yr	2016	206	213.15		213.36	0.001017
Sandy Mai	23076.73	50-yr	3442	206	214.34		214.61	0.001164
Sandy Mai	23076.73	100-yr	4317	206	214.93		215.23	0.001224
Sandy Mai	23076.73	500-yr	7013	206	216.4		216.77	0.001349
Sandy Mai	22719.89	10-yr	2016	206	212.54		212.65	0.005048
Sandy Mai	22719.89	50-yr	3442	206	213.74		213.86	0.004183
Sandy Mai	22719.89	100-yr	4317	206	214.34		214.47	0.003831
Sandy Mai	22719.89	500-yr	7013	206	215.83		216	0.00335
Sandy Mai	22305.19	10-yr	2229	204	210.52	208	210.62	0.004437
Sandy Mai	22305.19	50-yr	3931	204	211.88	209	212.02	0.004349
Sandy Mai	22305.19	100-yr	4945	204	212.52	209.51	212.68	0.004469
Sandy Mai	22305.19	500-yr	8165	204	214.08	210.46	214.3	0.004529
Sandy Mai	21973.79	10-yr	2229	204	209.57		209.62	0.002137
Sandy Mai	21973.79	50-yr	3931	204	210.96		211.03	0.002096
Sandy Mai	21973.79	100-yr	4945	204	211.59		211.66	0.002125
Sandy Mai	21973.79	500-yr	8165	204	213.14		213.24	0.002196
Sandy Mai	21498.81	10-yr	2229	202	208.7		208.75	0.001594
Sandy Mai	21498.81	50-yr	3931	202	210		210.07	0.001901
Sandy Mai	21498.81	100-yr	4945	202	210.59		210.67	0.002009
Sandy Mai	21498.81	500-yr	8165	202	212.07		212.2	0.002188
Sandy Mai	21070	10-yr	2229	200	208.39		208.41	0.000504
Sandy Mai	21070	50-yr	3931	200	209.6		209.63	0.000711
Sandy Mai	21070	100-yr	4945	200	210.14		210.19	0.000815
Sandy Mai	21070	500-yr	8165	200	211.54		211.62	0.001016
Sandy Mai	20558.49	10-yr	2229	200	208.07	203.62	208.1	0.000932
Sandy Mai	20558.49	50-yr	3931	200	209.09	204.77	209.16	0.001538
Sandy Mai	20558.49	100-yr	4945	200	209.53	205.35	209.63	0.001895
Sandy Mai	20558.49	500-yr	8165	200	210.7	206.23	210.88	0.002799
Sandy Mai	20488		Culvert					
Sandy Mai	20450.5	10-yr	2229	200	203.77	203.77	205.53	0.008509
Sandy Mai	20450.5	50-yr	3931	200	204.65	204.65	205.53	0.004579
Sandy Mai	20450.5	100-yr	4945	200	204.97	204.97	205.96	0.004863

Sandy Mai	20450.5	500-yr	8165	200	205.9	205.77	207.14	0.004947
Sandy Mai	20135.83	10-yr	2229	196	203.6		203.64	0.000149
Sandy Mai	20135.83	50-yr	3931	196	204.41		204.49	0.000259
Sandy Mai	20135.83	100-yr	4945	196	204.96		205.06	0.000288
Sandy Mai	20135.83	500-yr	8165	196	206.13		206.3	0.000428
Sandy Mai	19889.56	10-yr	2229	195	203.58	199.29	203.6	0.000073
Sandy Mai	19889.56	50-yr	3931	195	204.38	200.49	204.43	0.00013
Sandy Mai	19889.56	100-yr	4945	195	204.94	201.08	204.99	0.000145
Sandy Mai	19889.56	500-yr	8165	195	206.1	202.45	206.19	0.000201
Sandy Mai	19820		Bridge					
Sandy Mai	19756.97	10-yr	2229	194.5	203.32		203.35	0.000085
Sandy Mai	19756.97	50-yr	3931	194.5	204.24		204.28	0.000129
Sandy Mai	19756.97	100-yr	4945	194.5	204.85		204.9	0.000132
Sandy Mai	19756.97	500-yr	8165	194.5	206.02		206.1	0.000177
Sandy Mai	19546.85	10-yr	2229	194	203.27		203.32	0.000123
Sandy Mai	19546.85	50-yr	3931	194	204.14		204.24	0.00022
Sandy Mai	19546.85	100-yr	4945	194	204.73		204.85	0.000254
Sandy Mai	19546.85	500-yr	8165	194	205.82		206.01	0.000389
Sandy Mai	19352.67	10-yr	2229	193.47	203.26	198.7	203.29	0.000098
Sandy Mai	19352.67	50-yr	3931	193.47	204.12	200.11	204.19	0.000186
Sandy Mai	19352.67	100-yr	4945	193.47	204.7	200.82	204.79	0.000209
Sandy Mai	19352.67	500-yr	8165	193.47	205.78	202.54	205.92	0.000314
Sandy Mai	19300		Bridge					
Sandy Mai	19245.94	10-yr	2229	193.25	197.81	197.81	199.79	0.00812
Sandy Mai	19245.94	50-yr	3931	193.25	199.87	199.87	202.23	0.005991
Sandy Mai	19245.94	100-yr	4945	193.25	201.39	201.39	202.96	0.003408
Sandy Mai	19245.94	500-yr	8165	193.25	202.91	202.91	204.47	0.003185
Sandy Mai	19054.38	10-yr	2229	193.25	197.95		198.08	0.000824
Sandy Mai	19054.38	50-yr	3931	193.25	199.21		199.4	0.000795
Sandy Mai	19054.38	100-yr	4945	193.25	199.78		200	0.00082
Sandy Mai	19054.38	500-yr	8165	193.25	201.16		201.49	0.0009
Sandy Mai	18845.69	10-yr	2229	193	197.85	195.5	197.93	0.000514
Sandy Mai	18845.69	50-yr	3931	193	199.12	196.59	199.25	0.000502
Sandy Mai	18845.69	100-yr	4945	193	199.69	196.88	199.84	0.000524
Sandy Mai	18845.69	500-yr	8165	193	201.07	197.67	201.3	0.000612
Sandy Mai	18634.5	10-yr	2229	192	197.78		197.84	0.000318

Sandy Mai	18634.5	50-yr	3931	192	199.05		199.15	0.000341
Sandy Mai	18634.5	100-yr	4945	192	199.62		199.74	0.000363
Sandy Mai	18634.5	500-yr	8165	192	201		201.18	0.000431
Sandy Mai	18463	10-yr	2229	191	197.76		197.8	0.000149
Sandy Mai	18463	50-yr	3931	191	199.04		199.1	0.000185
Sandy Mai	18463	100-yr	4945	191	199.61		199.68	0.000208
Sandy Mai	18463	500-yr	8165	191	200.99		201.1	0.000265
Sandy Mai	18269.19	10-yr	2229	188	197.19	193.07	197.62	0.000833
Sandy Mai	18269.19	50-yr	3931	188	198.2	197.1	198.85	0.001247
Sandy Mai	18269.19	100-yr	4945	188	198.7	197.86	199.4	0.001372
Sandy Mai	18269.19	500-yr	8165	188	199.9	199.09	200.77	0.001654
Sandy Mai	18240		Culvert					
Sandy Mai	18211.69	10-yr	2229	188	194.11	192.39	195.03	0.002702
Sandy Mai	18211.69	50-yr	3931	188	195.14	195.14	196.41	0.003483
Sandy Mai	18211.69	100-yr	4945	188	195.64	195.64	197.01	0.003639
Sandy Mai	18211.69	500-yr	8165	188	196.83	196.83	198.51	0.004087
Sandy Mai	18010.15	10-yr	2229	188	193.47	193.47	194.33	0.004225
Sandy Mai	18010.15	50-yr	3931	188	194.35	194.35	195.38	0.004755
Sandy Mai	18010.15	100-yr	4945	188	194.72	194.72	195.88	0.00511
Sandy Mai	18010.15	500-yr	8165	188	195.67	195.67	197.18	0.005841
Sandy Mai	17718.32	10-yr	2229	187	190.83	190.83	191.34	0.005067
Sandy Mai	17718.32	50-yr	3931	187	191.57		192.05	0.003866
Sandy Mai	17718.32	100-yr	4945	187	192.01		192.47	0.003218
Sandy Mai	17718.32	500-yr	8165	187	193.14		193.67	0.002523
Sandy Mai	17333.24	10-yr	2229	186	189.95		190.13	0.001325
Sandy Mai	17333.24	50-yr	3931	186	190.86		191.11	0.001449
Sandy Mai	17333.24	100-yr	4945	186	191.3		191.6	0.001497
Sandy Mai	17333.24	500-yr	8165	186	192.43		192.86	0.001637
Sandy Mai	16976.28	10-yr	2229	186	188.41	188.4	189.08	0.009177
Sandy Mai	16976.28	50-yr	3931	186	189.08	189.04	190	0.008819
Sandy Mai	16976.28	100-yr	4945	186	189.42	189.38	190.46	0.008646
Sandy Mai	16976.28	500-yr	8165	186	190.51	189.86	191.7	0.007251
Sandy Mai	16566.37	10-yr	2229	185.31	187.53		187.67	0.001485
Sandy Mai	16566.37	50-yr	3931	185.31	188.37		188.56	0.00145
Sandy Mai	16566.37	100-yr	4945	185.31	188.8		189.03	0.001412
Sandy Mai	16566.37	500-yr	8165	185.31	190.1		190.39	0.00126
Sandy Mai	16177.16	10-yr	2229	184.88	186.62		186.87	0.003063

Sandy Mai	16177.16	50-yr	3931	184.88	187.53		187.85	0.002406
Sandy Mai	16177.16	100-yr	4945	184.88	187.98		188.34	0.002278
Sandy Mai	16177.16	500-yr	8165	184.88	189.42		189.82	0.00168
Sandy Mai	15741.39	10-yr	2229	182	186.03	184.06	186.17	0.000951
Sandy Mai	15741.39	50-yr	3931	182	186.92	185.24	187.15	0.001124
Sandy Mai	15741.39	100-yr	4945	182	187.35	185.56	187.63	0.001196
Sandy Mai	15741.39	500-yr	8165	182	188.92	186.47	189.26	0.001002
Sandy Mai	15036.05	10-yr	2229	180	184.25	184.25	184.91	0.004884
Sandy Mai	15036.05	50-yr	3931	180	185.11	184.89	185.81	0.004462
Sandy Mai	15036.05	100-yr	4945	180	185.9	185.19	186.46	0.002986
Sandy Mai	15036.05	500-yr	8165	180	188.06	186.03	188.48	0.001545
Sandy Mai	14643.01	10-yr	2229	176.16	183.04	181.71	183.27	0.001114
Sandy Mai	14643.01	50-yr	3931	176.16	184.74	182.55	184.97	0.000949
Sandy Mai	14643.01	100-yr	4945	176.16	185.51	182.95	185.75	0.000949
Sandy Mai	14643.01	500-yr	8165	176.16	187.69	184.01	187.98	0.000922
Sandy Mai	14242.08	10-yr	2229	174	181.62	180.8	182.55	0.002516
Sandy Mai	14242.08	50-yr	3931	174	182.88	182.63	184.2	0.003321
Sandy Mai	14242.08	100-yr	4945	174	183.67	183.22	185	0.003187
Sandy Mai	14242.08	500-yr	8165	174	186.19	185.09	187.32	0.002402
Sandy Mai	13869.62	10-yr	2229	175	180.51	180.36	181.35	0.004036
Sandy Mai	13869.62	50-yr	3931	175	181.93	181.31	182.78	0.003551
Sandy Mai	13869.62	100-yr	4945	175	182.87	181.77	183.67	0.003104
Sandy Mai	13869.62	500-yr	8165	175	185.99	183.3	186.45	0.001409
Sandy Mai	13438.13	10-yr	2229	172	179.99	178.02	180.14	0.001515
Sandy Mai	13438.13	50-yr	3931	172	181.26	178.86	181.5	0.001916
Sandy Mai	13438.13	100-yr	4945	172	182.13	179.27	182.41	0.002156
Sandy Mai	13438.13	500-yr	8165	172	185.7	180.33	185.87	0.000945
Sandy Mai	12942.35	10-yr	2229	173	179.4	176.6	179.51	0.001059
Sandy Mai	12942.35	50-yr	3931	173	180.47	177.47	180.66	0.001487
Sandy Mai	12942.35	100-yr	4945	173	181.36	177.95	181.55	0.001348
Sandy Mai	12942.35	500-yr	8165	173	185.35	179.31	185.47	0.000644
Sandy Mai	12648.67	10-yr	2229	170	179.35	175.51	179.37	0.000139
Sandy Mai	12648.67	50-yr	3931	170	180.39	177.16	180.43	0.000245
Sandy Mai	12648.67	100-yr	4945	170	181.27	177.16	181.32	0.000264
Sandy Mai	12648.67	500-yr	8165	170	185.3	177.17	185.35	0.000175
Sandy Mai	12600		Mult Open					
Sandy Mai	12591.62	10-yr	2229	171	177.36	175.65	177.82	0.001754

Sandy Mai	12591.62	50-yr	3931	171	179.58	177.14	180.03	0.001349
Sandy Mai	12591.62	100-yr	4945	171	180.92	177.86	181.26	0.000952
Sandy Mai	12591.62	500-yr	8165	171	185.01	179.83	185.23	0.00047
Sandy Mai	12103.89	10-yr	2229	171	176.45	175.43	176.86	0.002123
Sandy Mai	12103.89	50-yr	3931	171	179.06	176.4	179.36	0.001124
Sandy Mai	12103.89	100-yr	4945	171	180.54	176.87	180.79	0.000808
Sandy Mai	12103.89	500-yr	8165	171	184.81	178.14	184.99	0.000438
Sandy Mai	11764.28	10-yr	2229	171.05	176.19	173.8	176.31	0.000948
Sandy Mai	11764.28	50-yr	3931	171.05	178.94	174.52	179.05	0.000537
Sandy Mai	11764.28	100-yr	4945	171.05	180.45	174.92	180.55	0.000422
Sandy Mai	11764.28	500-yr	8165	171.05	184.77	176.04	184.85	0.000241
Sandy Mai	11405.26	10-yr	2229	168.7	175.6	173.33	175.91	0.00089
Sandy Mai	11405.26	50-yr	3931	168.7	178.5	174.73	178.8	0.000539
Sandy Mai	11405.26	100-yr	4945	168.7	180.04	175.3	180.34	0.000433
Sandy Mai	11405.26	500-yr	8165	168.7	184.38	176.79	184.7	0.000284
Sandy Mai	11350		Mult Open					
Sandy Mai	11303	10-yr	2229	168.66	173.54	173.54	174.85	0.005771
Sandy Mai	11303	50-yr	3931	168.66	174.81	174.81	176.57	0.005938
Sandy Mai	11303	100-yr	4945	168.66	175.66	175.66	177.45	0.005183
Sandy Mai	11303	500-yr	8165	168.66	178.63	177.17	179.99	0.002528
Sandy Mai	10733.77	10-yr	2229	166.86	173.25	170.71	173.31	0.00028
Sandy Mai	10733.77	50-yr	3931	166.86	174.85	171.6	174.91	0.000217
Sandy Mai	10733.77	100-yr	4945	166.86	175.72	171.86	175.78	0.00018
Sandy Mai	10733.77	500-yr	8165	166.86	179.18	172.62	179.23	0.000076
Sandy Mai	10700		Bridge					
Sandy Mai	10661.15	10-yr	2229	166.01	173.25	170.85	173.27	0.000085
Sandy Mai	10661.15	50-yr	3931	166.01	174.84	170.86	174.86	0.000078
Sandy Mai	10661.15	100-yr	4945	166.01	175.71	170.99	175.74	0.000071
Sandy Mai	10661.15	500-yr	8165	166.01	179.18	171.67	179.21	0.00004
Sandy Mai	10118.31	10-yr	2229	165	173.22	168.31	173.24	0.000038
Sandy Mai	10118.31	50-yr	3931	165	174.81	168.86	174.83	0.000049
Sandy Mai	10118.31	100-yr	4945	165	175.68	169.14	175.71	0.000051
Sandy Mai	10118.31	500-yr	8165	165	179.16	169.92	179.19	0.000038
Sandy Mai	9744.554	10-yr	2229	163.7	173.05	169.56	173.16	0.000321
Sandy Mai	9744.554	50-yr	3931	163.7	174.78	171.21	174.81	0.000057
Sandy Mai	9744.554	100-yr	4945	163.7	175.66	172.18	175.69	0.000056
Sandy Mai	9744.554	500-yr	8165	163.7	179.15	173.14	179.17	0.000039

Sandy Mai	9685		Bridge					
Sandy Mai	9639.641	10-yr	2229	163	170.57	166.43	170.63	0.000287
Sandy Mai	9639.641	50-yr	3931	163	173.53	167.24	173.59	0.000202
Sandy Mai	9639.641	100-yr	4945	163	175.41	167.68	175.47	0.000154
Sandy Mai	9639.641	500-yr	8165	163	179	168.81	179.07	0.000138
Sandy Mai	8975.758	10-yr	2229	161	170.43	165.94	170.48	0.000178
Sandy Mai	8975.758	50-yr	3931	161	173.45	166.8	173.48	0.000103
Sandy Mai	8975.758	100-yr	4945	161	175.36	167.2	175.38	0.00008
Sandy Mai	8975.758	500-yr	8165	161	178.96	168.25	178.99	0.000069
Sandy Mai	8504.5	10-yr	2229	161.39	170.31	164.4	170.39	0.000159
Sandy Mai	8504.5	50-yr	3931	161.39	173.28	165.54	173.39	0.000164
Sandy Mai	8504.5	100-yr	4945	161.39	175.19	166.14	175.3	0.000147
Sandy Mai	8504.5	500-yr	8165	161.39	178.72	167.82	178.89	0.000171
Sandy Mai	8350		Mult Open					
Sandy Mai	8235.939	10-yr	2229	159	169.83	163.73	169.97	0.000196
Sandy Mai	8235.939	50-yr	3931	159	172.65	165.15	172.86	0.000222
Sandy Mai	8235.939	100-yr	4945	159	174.57	165.83	174.78	0.000192
Sandy Mai	8235.939	500-yr	8165	159	177.86	167.73	178.15	0.000236
Sandy Mai	8063.602	10-yr	2229	158.71	169.19	165.29	169.78	0.000872
Sandy Mai	8063.602	50-yr	3931	158.71	172.72	167.71	172.75	0.000055
Sandy Mai	8063.602	100-yr	4945	158.71	174.65	168.67	174.67	0.000033
Sandy Mai	8063.602	500-yr	8165	158.71	177.99	171	178	0.000022
Sandy Mai	8000		Bridge					
Sandy Mai	7966.54	10-yr	2229	158.47	168.16		168.29	0.000266
Sandy Mai	7966.54	50-yr	3931	158.47	171.81		171.91	0.00017
Sandy Mai	7966.54	100-yr	4945	158.47	174.57		174.62	0.000079
Sandy Mai	7966.54	500-yr	8165	158.47	177.91		177.96	0.000061
Sandy Mai	7570.986	10-yr	2229	159	168.16		168.19	0.000069
Sandy Mai	7570.986	50-yr	3931	159	171.82		171.85	0.000046
Sandy Mai	7570.986	100-yr	4945	159	174.57		174.59	0.00003
Sandy Mai	7570.986	500-yr	8165	159	177.9		177.94	0.000035
Sandy Mai	7173.807	10-yr	2229	159	168.17	160.89	168.18	0.000013
Sandy Mai	7173.807	50-yr	3931	159	171.82	161.31	171.83	0.000012
Sandy Mai	7173.807	100-yr	4945	159	174.57	161.58	174.58	0.00001
Sandy Mai	7173.807	500-yr	8165	159	177.91	162.3	177.93	0.000013

Sandy Mai	6825.559	10-yr	2229	156	167.88	162.34	168.1	0.000328
Sandy Mai	6825.559	50-yr	3931	156	171.51	164.32	171.75	0.000254
Sandy Mai	6825.559	100-yr	4945	156	174.29	165.23	174.51	0.000182
Sandy Mai	6825.559	500-yr	8165	156	177.62	168.05	177.85	0.000165
Sandy Mai	6765		Bridge					
Sandy Mai	6709.658	10-yr	2229	156	167.58	162.9	167.93	0.00053
Sandy Mai	6709.658	50-yr	3931	156	171.14	166.25	171.48	0.000379
Sandy Mai	6709.658	100-yr	4945	156	173.95	167	174.24	0.000255
Sandy Mai	6709.658	500-yr	8165	156	177.15	168.81	177.41	0.000206
Sandy Mai	6668.16	10-yr	2229	156.01	167.67	161.38	167.81	0.0002
Sandy Mai	6668.16	50-yr	3931	156.01	171.18	163.14	171.41	0.00021
Sandy Mai	6668.16	100-yr	4945	156.01	174.07	163.85	174.11	0.000048
Sandy Mai	6668.16	500-yr	8165	156.01	177.24	165.78	177.31	0.000057
Sandy Mai	6600		Bridge					
Sandy Mai	6572.639	10-yr	2229	156	167.44	161.78	167.62	0.000233
Sandy Mai	6572.639	50-yr	3931	156	170.43	163.2	170.73	0.000281
Sandy Mai	6572.639	100-yr	4945	156	172.84	163.93	172.88	0.000043
Sandy Mai	6572.639	500-yr	8165	156	176.93	165.91	176.98	0.000041
Sandy Mai	6414.98	10-yr	2229	157	167.39	161.46	167.58	0.000277
Sandy Mai	6414.98	50-yr	3931	157	170.38	163.09	170.69	0.000338
Sandy Mai	6414.98	100-yr	4945	157	172.45	163.92	172.78	0.000307
Sandy Mai	6414.98	500-yr	8165	157	176.38	166.12	176.84	0.000339
Sandy Mai	6300		Mult Open					
Sandy Mai	6189.177	10-yr	2229	155	166.48	161.11	166.82	0.000471
Sandy Mai	6189.177	50-yr	3931	155	167.89	163.27	168.63	0.000916
Sandy Mai	6189.177	100-yr	4945	155	168.91	164.39	169.85	0.001066
Sandy Mai	6189.177	500-yr	8165	155	170.76	166.96	172.39	0.001658
Sandy Mai	5508.105	10-yr	4460	154	164.71	163.57	165.83	0.002086
Sandy Mai	5508.105	50-yr	7709	154	168.09	165.31	168.16	0.000119
Sandy Mai	5508.105	100-yr	9741	154	169.23	166.2	169.3	0.000098
Sandy Mai	5508.105	500-yr	16941	154	171.41	167.75	171.5	0.000102
Sandy Mai	5084.678	10-yr	4460	154	164.5	163.64	165.07	0.001
Sandy Mai	5084.678	50-yr	7709	154	167.79	164.79	168.06	0.000363
Sandy Mai	5084.678	100-yr	9741	154	169.16	165.34	169.25	0.000141
Sandy Mai	5084.678	500-yr	16941	154	171.35	166.71	171.45	0.000134
Sandy Mai	5065.378	10-yr	4460	154.25	163.68	163.68	164.86	0.002137

Sandy Mai	5065.378	50-yr	7709	154.25	167.83	164.94	168.02	0.000246
Sandy Mai	5065.378	100-yr	9741	154.25	169.17	165.33	169.24	0.000093
Sandy Mai	5065.378	500-yr	16941	154.25	171.35	166.42	171.45	0.00009
Sandy Mai	5039.878	10-yr	4460	154.25	163.52	161.56	164.53	0.001908
Sandy Mai	5039.878	50-yr	7709	154.25	167.54	164.45	167.94	0.000477
Sandy Mai	5039.878	100-yr	9741	154.25	168.67	165	169.13	0.000465
Sandy Mai	5039.878	500-yr	16941	154.25	171.37	166.63	171.42	0.000054
Sandy Mai	4865.578	10-yr	4460	154.25	163.8	158.85	164.01	0.000335
Sandy Mai	4865.578	50-yr	7709	154.25	167.56	160.37	167.81	0.000237
Sandy Mai	4865.578	100-yr	9741	154.25	168.68	161.18	168.99	0.00027
Sandy Mai	4865.578	500-yr	16941	154.25	171.36	163.64	171.41	0.000044
Sandy Mai	4790.088	10-yr	4460	154	163.63	161.06	163.95	0.000598
Sandy Mai	4790.088	50-yr	7709	154	167.51	162.63	167.78	0.000268
Sandy Mai	4790.088	100-yr	9741	154	168.63	163.19	168.96	0.000285
Sandy Mai	4790.088	500-yr	16941	154	171.34	164.84	171.4	0.000073
Sandy Mai	4777.088	10-yr	4460	154.25	163.61	160.84	163.94	0.000567
Sandy Mai	4777.088	50-yr	7709	154.25	167.44	162.18	167.76	0.000314
Sandy Mai	4777.088	100-yr	9741	154.25	168.53	162.82	168.94	0.000349
Sandy Mai	4777.088	500-yr	16941	154.25	171.35	164.75	171.39	0.000026
Sandy Mai	4740		Bridge					
Sandy Mai	4685.592	10-yr	4460	154	161.51	160.68	162.91	0.003314
Sandy Mai	4685.592	50-yr	7709	154	162.84	162.56	165.35	0.004931
Sandy Mai	4685.592	100-yr	9741	154	163.53	163.53	166.72	0.005757
Sandy Mai	4685.592	500-yr	16941	154	167.22	165.4	167.46	0.000668
Sandy Mai	4327.181	10-yr	4460	152	161.72		161.86	0.000617
Sandy Mai	4327.181	50-yr	7709	152	163.43		163.64	0.000802
Sandy Mai	4327.181	100-yr	9741	152	164.33		164.57	0.00088
Sandy Mai	4327.181	500-yr	16941	152	166.74		167.12	0.001147
Sandy Mai	3964.325	10-yr	4460	152	161.44		161.64	0.000592
Sandy Mai	3964.325	50-yr	7709	152	162.99		163.33	0.000871
Sandy Mai	3964.325	100-yr	9741	152	163.81		164.22	0.001011
Sandy Mai	3964.325	500-yr	16941	152	165.93		166.64	0.001448
Sandy Mai	3515.389	10-yr	4460	150.35	161.31		161.42	0.000322
Sandy Mai	3515.389	50-yr	7709	150.35	162.8		162.99	0.000516
Sandy Mai	3515.389	100-yr	9741	150.35	163.59		163.83	0.000607
Sandy Mai	3515.389	500-yr	16941	150.35	165.62		166.04	0.000932
Sandy Mai	3004.364	10-yr	4460	150	161.13	156.74	161.25	0.000332

Sandy Mai	3004.364	50-yr	7709	150	162.54	158.37	162.73	0.000487
Sandy Mai	3004.364	100-yr	9741	150	163.31	159.12	163.53	0.000532
Sandy Mai	3004.364	500-yr	16941	150	165.29	160.89	165.6	0.000673
Sandy Mai	2590.359	10-yr	4460	150	161.02	156.02	161.12	0.000321
Sandy Mai	2590.359	50-yr	7709	150	162.36	158.26	162.54	0.000513
Sandy Mai	2590.359	100-yr	9741	150	163.09	159.46	163.31	0.000594
Sandy Mai	2590.359	500-yr	16941	150	164.9	160.33	165.3	0.000895
Sandy Mai	2500		Bridge					
Sandy Mai	2417.391	10-yr	4460	150	156.86	156.08	157.19	0.001199
Sandy Mai	2417.391	50-yr	7709	150	158.15	156.83	158.51	0.001101
Sandy Mai	2417.391	100-yr	9741	150	158.77	157.19	159.18	0.001111
Sandy Mai	2417.391	500-yr	16941	150	160.54	158.25	161.1	0.001152
Sandy Mai	2072.963	10-yr	4460	148.51	156.52	155.32	156.79	0.000876
Sandy Mai	2072.963	50-yr	7709	148.51	157.8	156.14	158.13	0.000941
Sandy Mai	2072.963	100-yr	9741	148.51	158.41	156.55	158.78	0.000993
Sandy Mai	2072.963	500-yr	16941	148.51	160.16	157.75	160.66	0.001106
Sandy Mai	1688.606	10-yr	4460	149	156.13		156.38	0.001261
Sandy Mai	1688.606	50-yr	7709	149	157.23		157.62	0.0018
Sandy Mai	1688.606	100-yr	9741	149	157.75		158.22	0.002048
Sandy Mai	1688.606	500-yr	16941	149	159.26		159.99	0.002695
Sandy Mai	1299.523	10-yr	4460	149	155.78	153.98	155.93	0.000958
Sandy Mai	1299.523	50-yr	7709	149	156.81	155.02	157.02	0.001162
Sandy Mai	1299.523	100-yr	9741	149	157.3	155.41	157.55	0.001266
Sandy Mai	1299.523	500-yr	16941	149	158.74	156.47	159.1	0.001575
Sandy Mai	663.061	10-yr	4460	146.71	154.93	154.26	155.22	0.001293
Sandy Mai	663.061	50-yr	7709	146.71	155.81	154.95	156.16	0.001578
Sandy Mai	663.061	100-yr	9741	146.71	156.24	155.37	156.62	0.001688
Sandy Mai	663.061	500-yr	16941	146.71	157.48	156.21	157.96	0.002028
Sandy Mai	143.571	10-yr	4460	147	153.68	153.68	154.18	0.003564
Sandy Mai	143.571	50-yr	7709	147	154.14	154.14	154.82	0.005016
Sandy Mai	143.571	100-yr	9741	147	154.4	154.4	155.16	0.005616
Sandy Mai	143.571	500-yr	16941	147	155.1	155.1	156.16	0.007351

Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)	Froude # Chl
7.49	94.35	59.19	0.96
6.96	218.02	183.65	0.71
7.27	269.46	212.99	0.71
8.22	401.37	255.14	0.75
8.63	111.09	65.56	0.81
10	163.27	74.58	0.85
10.65	189.19	78.64	0.87
12.08	285.55	110.43	0.9
8.24	105.48	62.41	0.83
8.21	221.84	148.04	0.71
8.74	259.84	160.05	0.74
9.44	395.09	228.07	0.74
4.79	210.45	87.55	0.33
6.62	278.67	119.16	0.44
7.43	316.8	126.76	0.48
11.05	344.2	136.85	0.7
10.45	75.19	29.94	0.94
10.83	150.21	72.84	0.8
11.2	197.35	97.82	0.79
12.05	354.79	119.2	0.77
6.67	186.1	107.49	0.65
8.25	287.64	194.05	0.72
8.63	341.57	225.48	0.73
9.07	562.67	256.51	0.7
4.16	212.54	134.43	0.29
5	296.31	157.61	0.33
5.09	351.96	171.3	0.33
5.94	469.19	204.42	0.37
3.03	353.97	156.21	0.22
3.6	500.99	186.83	0.24
3.78	572.79	191.01	0.25
4.42	748.52	216.42	0.27
2.93	393.77	169.07	0.19

3.61	532.13	180.3	0.22
3.93	596.41	183.67	0.23
4.86	749.55	206.11	0.28
4.38	186.49	63.54	0.3
6.27	220.5	71.53	0.41
7.19	237.68	77.22	0.46
9.86	289.48	117.11	0.61
1.41	804.31	228.07	0.07
2.01	938.99	245.31	0.1
2.3	1009.23	269.52	0.12
3.1	1193.55	283.93	0.15
8.49	95.46	35.81	0.76
12.17	121.22	44.49	1.01
11.1	227.8	107.1	0.82
10.36	698.11	346.73	0.67
9.7	87.44	134.08	1
7.71	272.08	213.74	0.69
8.23	319.82	245.04	0.72
9.76	428.81	333.95	0.81
5.05	167.23	255.17	0.46
7.39	204.28	285.9	0.64
3.47	639.06	311.41	0.29
4.24	858.77	357.44	0.33
1.53	758.61	317.12	0.11
2.23	883.47	331.88	0.15
2.57	936.24	332.71	0.17
3.28	1124.1	335.28	0.21
3.09	525.13	244.8	0.19
3.96	740.44	285.16	0.23
4.34	851.28	306.62	0.25
5.19	1141.79	331.73	0.28
3.36	339.62	126.92	0.22
4.76	433.88	155.07	0.3

5.44	482.02	172.13	0.33
7.37	602.34	213.49	0.43
3.84	244.4	101.21	0.27
5.9	273.57	103.96	0.4
6.78	296.59	106.02	0.45
9.66	332.23	110.89	0.63
3.33	461.89	306.58	0.23
5.09	534.1	325.14	0.34
5.77	602.5	341.15	0.38
8.31	675.1	347.41	0.54
9.54	79.44	33.49	0.96
8.83	211.6	123.92	0.7
9.09	276.81	145.5	0.69
10.41	415.2	203.79	0.73
6.71	176.21	106.42	0.71
7.12	291.94	121.29	0.65
7.23	353.95	122.96	0.62
8.54	479.32	134.48	0.66
9.27	109.88	53.34	0.85
10.89	169.86	68.22	0.88
11.81	201.45	80.61	0.92
12.1	379.66	158.95	0.83
5.71	264.47	151.43	0.54
6.96	370.44	171.13	0.6
7.81	450.91	233.39	0.65
7.51	755.06	295.41	0.55
6.89	184.22	142.81	0.61
7.35	275.09	152.04	0.6
5.41	427.96	164.81	0.4
4.52	787.9	266.64	0.3
6.14	192.16	137.9	0.57
4.56	474.74	156.55	0.34
3.98	683.07	181.75	0.27
4.39	1020.91	214.09	0.27

5.22	132.01	26.47	0.41
6.74	175.59	31.42	0.47
6.89	218.58	199.8	0.43
8.78	387.23	388.12	0.52
4.9	140.52	29.07	0.39
6.87	170.69	56.23	0.51
8.02	181.21	92.07	0.57
10.85	217.85	217.09	0.72
9.85	343.44	145.63	0.71
12	489.4	162.86	0.8
12.81	563.36	166.15	0.83
14.46	793.72	222.25	0.87
11.88	264.79	124.76	1.06
12.39	440.06	184.3	0.97
12.91	529.14	194.64	0.97
15.92	701.98	234.36	1.12
5.01	418.04	163.88	0.34
4.85	838.77	429.91	0.29
5.23	971.84	458.52	0.3
6.87	1226.72	489.76	0.39
9.29	182.24	47.59	0.72
11.95	283.68	124.44	0.84
10.04	591.03	421.6	0.64
9.76	1102.58	509.34	0.58
7.95	264.89	148.53	0.59
6.73	666.05	345.84	0.43
7.07	849.69	424.3	0.44
7.55	1318.18	507.65	0.45
5.09	337.7	265.07	0.32
4.43	1230.75	498.84	0.25
4.74	1468.65	567.52	0.26
5.35	2022.71	588.68	0.29
8.61	211.57	63.96	0.68
9.5	487.08	265.9	0.64
10.04	613.51	288.11	0.66

9.31	1296.85	470.92	0.55
6.71	436.38	144.06	0.48
8.11	664.06	176.29	0.52
8.6	807.05	205.99	0.52
8.8	1469.54	433.24	0.48
8.1	541.92	193.75	0.51
9.67	836.09	212.95	0.56
10.37	984.83	223.55	0.58
11.78	1484.24	308.79	0.61
4.95	983.6	298.29	0.31
5.83	1427.93	317.6	0.34
6.28	1653.96	326.69	0.35
7.54	2243.69	360.47	0.39
5.72	1164.92	319.39	0.38
7.1	1692.43	408	0.43
7.54	1979.77	416.31	0.44
8.71	2705.32	433.37	0.47
1.75	1499.26	267.17	0.11
2.37	1836.99	270.78	0.13
2.68	2014.96	278.06	0.15
3.5	2493.9	320.28	0.18
1.71	1429.51	262.32	0.09
2.28	1717.81	280.43	0.12
2.53	1877.66	290.1	0.13
3.19	2291.26	322.98	0.16
1.78	1629.65	357.3	0.1
2.57	1982.26	447.99	0.14
2.91	2188.8	478.59	0.15
3.78	2714.83	534.64	0.19
5.66	478.38	165.18	0.41
5.63	888.84	259.19	0.35
5.47	1150.64	326.12	0.32
5.16	1890.31	522.73	0.27
12.2	205.86	59.81	0.92
13.74	328.78	77.58	0.9
14.6	394.82	85.31	0.91

17.16	563.72	103.34	0.96
5.83	371.05	83.37	0.44
8.24	459.92	95.63	0.58
9.6	503.98	105.28	0.65
13.64	594.19	122.35	0.87
5.32	707.24	252.37	0.35
6.31	1033.77	297.41	0.39
6.77	1216.14	319.21	0.4
7.87	1724.95	368.68	0.43
3.69	865.49	375.63	0.25
3.76	1350.63	434.49	0.24
3.78	1621.06	456.12	0.23
3.95	2332.63	497.61	0.22
3.46	934.84	300.32	0.24
3.88	1367.92	333.48	0.24
4.14	1583.5	370.59	0.25
4.67	2320.76	553.61	0.26
2.16	1387.31	442.23	0.16
2.48	2052.41	503.68	0.17
2.65	2371.68	515.59	0.17
3.05	3272.01	612.84	0.18
2.1	1380.74	386.06	0.14
2.58	1922.84	447.81	0.16
2.79	2225.59	525.17	0.17
3.23	3040.54	567.23	0.18
1.37	1987.26	492.71	0.08
1.78	2609.2	541.02	0.1
1.98	2908.88	572.73	0.11
2.41	3743.97	606.79	0.13
1.74	1500.3	535.44	0.11
2.44	1853.6	594.04	0.15
2.8	2015.46	619.19	0.16
3.69	2475.96	688.95	0.2
10.69	211.33	212.64	0.98
9.06	622.72	300.14	0.75
9.76	718.14	302.82	0.78

11.07	1004.84	310.28	0.81
2.33	1476.37	388.59	0.15
3.3	1798.85	409.12	0.2
3.63	2031.55	423.61	0.21
4.8	2544.01	469.85	0.27
1.75	2112.52	591.11	0.11
2.48	2606.84	645.62	0.14
2.73	2979.66	687.98	0.15
3.45	3826.82	761.88	0.18
1.88	2070.21	647.45	0.11
2.47	2692.19	701.47	0.14
2.61	3129	725.38	0.14
3.25	4006.47	774.81	0.17
2.22	1477.23	377.84	0.14
3.18	1820.64	420.13	0.18
3.55	2085.96	481.79	0.2
4.72	2678.15	601.05	0.25
2.1	1690.77	422.83	0.12
3.07	2074.04	483.09	0.17
3.38	2368.35	518.5	0.18
4.4	2954.46	569.27	0.22
11.33	200.85	53.15	0.97
12.69	350.83	99.7	0.89
11.06	623.46	230.68	0.7
12.04	1042.84	315.94	0.7
3.77	782.47	283.61	0.32
4.39	1158.24	312.94	0.33
4.75	1339.36	326.27	0.34
5.7	1805.04	345.26	0.37
2.98	963.59	334.01	0.25
3.49	1402.97	354.78	0.26
3.81	1606.95	363.74	0.27
4.71	2124.15	385.87	0.3
2.84	1142.49	374.14	0.21

3.37	1650.57	416.63	0.22
3.66	1891.6	432.9	0.23
4.45	2513.49	466.4	0.26
2.05	1531.95	421.63	0.14
2.59	2093	458.72	0.17
2.87	2358.01	476.09	0.18
3.6	3038.15	506.26	0.21
5.68	545.86	217.15	0.33
7.46	814.76	300.59	0.42
8.08	968.34	319.12	0.44
9.54	1380.2	362.74	0.49
7.86	334.59	176.43	0.57
9.93	537.31	212.4	0.66
10.63	647.35	225.94	0.68
12.43	935.96	260.33	0.74
8.69	375.12	205.75	0.66
10.19	576.09	244.12	0.72
10.98	667.89	253.69	0.75
12.83	920.88	277.89	0.82
7.91	484.48	404.33	0.76
7.88	786.16	414.27	0.69
7.69	968.48	418.69	0.64
7.9	1459.67	446.64	0.58
4.51	705.59	319.49	0.4
5.41	1010.09	353.14	0.43
5.83	1170.28	369.23	0.45
6.93	1610.41	411.35	0.48
8.52	355.69	245.54	0.97
9.85	529.27	270.75	0.99
10.45	623.87	284.21	1
11.51	993.11	399.6	0.96
3.21	760.43	402.77	0.38
3.93	1108.37	431.91	0.4
4.25	1299.24	446.17	0.4
4.97	1910.77	505.44	0.4
3.96	565.46	334.03	0.53

4.65	879.61	356.46	0.5
5.02	1044.55	374.26	0.5
5.56	1616.13	418.14	0.46
3.65	762.55	320.54	0.33
4.57	1059.29	346.26	0.37
5	1212.56	358.37	0.39
5.47	1806.1	398.2	0.37
8.57	464.11	282.53	0.75
9.33	718.69	307.37	0.74
8.44	971.11	330.61	0.62
7.52	1761.81	401.18	0.47
5.74	1074.1	398.2	0.4
6.19	1827.79	436.44	0.38
6.57	2165.63	447.66	0.39
7.49	3190.4	510.05	0.4
8.75	641.16	284.28	0.59
11.25	1031.48	352.89	0.7
11.74	1303.23	377.56	0.7
12.06	2566.23	571.79	0.63
9.77	538.21	222.94	0.74
10.68	865.74	271.72	0.72
10.87	1172.19	319.15	0.68
9.16	2348.86	427.95	0.49
4.23	855.13	252.62	0.28
5.31	1190.38	272.96	0.32
6.02	1458.87	346.8	0.35
4.95	2931.59	473.85	0.24
3.24	919.15	294.83	0.23
4.27	1238.32	302.48	0.28
4.39	1509.43	311.14	0.27
3.95	3220.91	503.2	0.2
1.52	2165.9	492.44	0.09
2.17	2624.68	532.1	0.12
2.38	3028.42	576.36	0.13
2.39	5042.23	718.76	0.11
6.83	829.67	269.64	0.49

7.39	1713.62	508.95	0.45
6.87	2412.37	531.06	0.39
6.12	4752.2	798.88	0.29
7.04	993.99	346.18	0.53
6.66	2012.52	442.63	0.41
6.32	2692.17	471.26	0.36
5.96	4987.58	596.79	0.28
4.48	1574.27	433.57	0.35
4.51	2891.15	523.13	0.28
4.5	3729.02	585.35	0.26
4.39	6571.37	703.59	0.21
4.98	541.2	170.2	0.35
5	963.76	330.91	0.29
4.98	1207.54	469.6	0.27
5.06	1897.63	842.04	0.23
10.1	269.74	102.38	0.84
12.1	406.85	116.96	0.89
12.4	511.75	136.67	0.85
11.1	938.38	352.91	0.63
2.79	1196.28	449.05	0.2
2.86	2076.68	616.26	0.18
2.79	2633.66	652.54	0.17
2.27	5084.96	774.77	0.11
1.62	2077.95	632.67	0.11
1.79	3153.24	711.85	0.11
1.82	3780.84	728.36	0.11
1.69	6646.73	952.67	0.08
1.23	2523.95	561.86	0.08
1.57	3458.6	619.13	0.09
1.69	4008.61	638.74	0.09
1.77	6449.19	762.11	0.08
3.63	1007.12	616.43	0.22
1.73	3508.73	692.99	0.1
1.82	4121.05	711.01	0.1
1.83	6790.23	829.89	0.08

3	2103.84	544.91	0.2
3.2	3957.69	647.77	0.18
3.14	5228	700.05	0.16
3.55	7933.02	804.57	0.16
2.83	2740.07	761.23	0.17
2.61	6134.9	923.12	0.13
2.53	7965.1	996.47	0.12
2.74	11795.27	1103.53	0.12
2.68	1010.51	939.16	0.16
3.3	1681.4	1118.98	0.17
3.44	2117.28	1190.56	0.16
4.33	2933.73	1290.76	0.18
3.33	742.47	313.81	0.18
4.15	1133.83	444.5	0.2
4.22	1426.22	549.32	0.19
5.32	1950.98	639.86	0.22
6.7	384.68	446.05	0.37
2.06	3570.02	743.54	0.1
1.74	5091.01	840.17	0.08
1.62	7943.19	872.17	0.07
3.56	828.24	162.93	0.21
3.56	1813.63	490.92	0.17
2.75	3326.81	628.05	0.12
2.76	5493.3	683.96	0.11
1.77	1665.29	291.21	0.1
1.81	2794.89	324.26	0.09
1.67	3696.59	331.14	0.07
2.06	4826.83	354.72	0.08
0.78	3134.54	394.03	0.05
0.94	4606.95	413.09	0.05
0.95	5764.74	429.58	0.04
1.28	7344.94	494.45	0.05

4.54	674.66	143.06	0.23
4.8	1081.59	221.05	0.22
4.54	1411.34	258.08	0.19
4.84	2313.51	323.72	0.18
5.4	554.91	183.12	0.29
5.53	929.5	268.51	0.26
5.12	1250.78	328.59	0.22
5.15	2176.11	377.43	0.2
3.45	750.9	314.03	0.18
4.26	1062.36	369.9	0.2
2.29	3005.55	441.32	0.1
2.8	4002.43	496.78	0.11
3.68	678.64	265.12	0.2
4.75	905.97	368.17	0.22
2.06	3264.7	401.96	0.09
2.34	4742.91	487.53	0.09
3.88	779.53	106.52	0.21
5.08	1089.42	285.61	0.25
5.34	1334.03	456.26	0.24
6.53	2183.41	704.43	0.26
5.34	863.6	125.44	0.28
8.07	1044.59	131.37	0.4
9.17	1181.66	135.69	0.44
12.44	1514.09	199.16	0.56
10.69	852.51	532.28	0.58
3.07	3944.24	855.98	0.15
2.95	5008.58	1102.54	0.13
3.28	7487	1222.38	0.14
7.22	926.08	656.36	0.4
5.24	2040	1001.28	0.25
3.49	4517.48	1033.05	0.16
3.72	8055.97	1118.56	0.16
9.59	651.58	495.34	0.57

4.21	2298.7	996.3	0.21
2.76	4487.23	1037.43	0.13
2.99	7955.29	1119.12	0.13
8.92	657.71	594.79	0.53
5.75	1552.79	1014.72	0.28
6.01	1849.2	1459.78	0.28
2.3	10306.93	1621.48	0.1
3.78	1249.45	700.72	0.23
4.06	1980.61	1249.34	0.2
4.59	2203.4	1319.67	0.22
2.08	10769.03	1409.63	0.09
5.17	1190.79	689.65	0.3
4.4	2163.35	1226.05	0.22
4.8	2451.56	1331.94	0.23
2.74	10704.86	1443.43	0.12
5.02	1015.35	914.01	0.3
4.74	1712.03	1372.39	0.23
5.27	1913.87	1397.55	0.25
1.61	12702.79	1495.93	0.07
10.32	752.7	805.41	0.69
14.16	993.14	827.68	0.87
16.14	1117.25	835.28	0.95
6.92	7977.79	892.39	0.34
4.76	2622.88	538.61	0.28
6.07	3567.67	561.85	0.32
6.71	4078.18	570.04	0.34
8.66	5490.66	600.96	0.41
5.1	2598.04	473.79	0.3
6.89	3346.8	493.06	0.38
7.81	3761.34	523.02	0.41
10.5	4908.58	558.01	0.51
4.23	3690.74	621.32	0.23
5.84	4645.71	663.55	0.3
6.61	5173.31	673.98	0.33
9.04	6584.95	715.97	0.41
4.31	3195.4	641.29	0.23

5.67	4161.04	718.74	0.29
6.18	4722.9	740.35	0.31
7.66	6242.67	817.13	0.35
3.53	2129.7	467.81	0.19
4.84	2791.22	529.77	0.25
5.43	3181.37	537.83	0.27
7.29	4172.47	549.94	0.34
6.12	1188.13	454.78	0.41
6.58	1781.29	466.23	0.41
6.95	2072.13	472.7	0.42
8.01	2957.21	569.06	0.44
5.6	1311.72	451.37	0.36
6.44	1967.65	545.43	0.38
6.92	2305.32	566.62	0.4
8.18	3396.62	658.93	0.43
6.41	1992.25	529.6	0.43
8.43	2589.92	572.16	0.52
9.38	2890.51	578.5	0.56
11.97	3773.17	598.88	0.66
5.43	2449.94	817.1	0.37
6.58	3322.89	859.85	0.42
7.16	3750.05	869.05	0.44
8.89	5042.31	948.77	0.5
6.9	1958.94	846.05	0.44
8.19	2758.92	943.05	0.49
8.76	3171	958.19	0.52
10.46	4403.17	1063.89	0.58
10.05	1790.14	1050.73	0.7
12.51	2288.19	1075.19	0.85
13.57	2570.56	1099.81	0.9
16.53	3350.29	1260.3	1.05

Reach	River Sta	Profile	Sta W.S. Lf (ft)	Sta W.S. Rgt (ft)
Sandy Mai	38835.32	10-yr	189.87	249.06
Sandy Mai	38835.32	50-yr	175.55	255
Sandy Mai	38835.32	100-yr	85.42	313.98
Sandy Mai	38835.32	500-yr	69.09	324.25
Sandy Mai	38353.13	10-yr	128.97	194.54
Sandy Mai	38353.13	50-yr	151.31	190
Sandy Mai	38353.13	100-yr	119.19	197.66
Sandy Mai	38353.13	500-yr	92.11	202.96
Sandy Mai	37880.8	10-yr	324.47	386.98
Sandy Mai	37880.8	50-yr	315	425
Sandy Mai	37880.8	100-yr	301.62	461.96
Sandy Mai	37880.8	500-yr	242.73	470.75
Sandy Mai	37489.56	10-yr	257.68	345.72
Sandy Mai	37489.56	50-yr	245	331
Sandy Mai	37489.56	100-yr	233.85	390.33
Sandy Mai	37489.56	500-yr	229.16	425.2
Sandy Mai	37270		Culvert	
Sandy Mai	37056.92	10-yr	235.86	265.8
Sandy Mai	37056.92	50-yr	155	265
Sandy Mai	37056.92	100-yr	142.44	404.46
Sandy Mai	37056.92	500-yr	140.64	409.77
Sandy Mai	36678.73	10-yr	199.05	306.41
Sandy Mai	36678.73	50-yr	230	324.41
Sandy Mai	36678.73	100-yr	161.52	458.25
Sandy Mai	36678.73	500-yr	156.53	473.81
Sandy Mai	36275.49	10-yr	203.32	560.72
Sandy Mai	36275.49	50-yr	200	376
Sandy Mai	36275.49	100-yr	179.03	677.77
Sandy Mai	36275.49	500-yr	159.77	694.35
Sandy Mai	36000		Culvert	
Sandy Mai	35791.32	10-yr	118.14	273.8
Sandy Mai	35791.32	50-yr	200	270
Sandy Mai	35791.32	100-yr	98.14	289.18
Sandy Mai	35791.32	500-yr	98.14	314.55
Sandy Mai	35582.96	10-yr	192.63	360.84

Sandy Mai	35582.96	50-yr	268	332
Sandy Mai	35582.96	100-yr	137.23	360.84
Sandy Mai	35582.96	500-yr	116.88	393.24
Sandy Mai	35513		Culvert	
Sandy Mai	35420.3	10-yr	302.72	365.83
Sandy Mai	35420.3	50-yr	312.08	343.24
Sandy Mai	35420.3	100-yr	298.06	376.29
Sandy Mai	35420.3	500-yr	295.07	412.08
Sandy Mai	35237.49	10-yr	216.2	630.57
Sandy Mai	35237.49	50-yr	245	366
Sandy Mai	35237.49	100-yr	187.01	643.89
Sandy Mai	35237.49	500-yr	177.46	648.49
Sandy Mai	34267		Culvert	
Sandy Mai	33297.82	10-yr	410.19	446.01
Sandy Mai	33297.82	50-yr	413	485
Sandy Mai	33297.82	100-yr	232.97	505.45
Sandy Mai	33297.82	500-yr	40.16	542.49
Sandy Mai	32874.91	10-yr	274.85	418.19
Sandy Mai	32874.91	50-yr	272	321.6
Sandy Mai	32874.91	100-yr	86.17	602.63
Sandy Mai	32874.91	500-yr	80.82	606.69
Sandy Mai	32432.32	10-yr	180.24	488.2
Sandy Mai	32432.32	50-yr	186	239
Sandy Mai	32432.32	100-yr	149.47	491.89
Sandy Mai	32432.32	500-yr	137.94	494.88
Sandy Mai	32009.44	10-yr	221.51	590.71
Sandy Mai	32009.44	50-yr	223	410
Sandy Mai	32009.44	100-yr	205.83	590.71
Sandy Mai	32009.44	500-yr	203.59	590.71
Sandy Mai	31828		Culvert	
Sandy Mai	31647.46	10-yr	204	490.92
Sandy Mai	31647.46	50-yr	245	360
Sandy Mai	31647.46	100-yr	171.69	521.82
Sandy Mai	31647.46	500-yr	154.65	582.87
Sandy Mai	31476.58	10-yr	134.02	366.08
Sandy Mai	31476.58	50-yr	160	290

Sandy Mai	31476.58	100-yr	58.21	393.92
Sandy Mai	31476.58	500-yr	45.13	450.47
Sandy Mai	31435		Culvert	
Sandy Mai	31392.94	10-yr	172.48	310.86
Sandy Mai	31392.94	50-yr	205	310.86
Sandy Mai	31392.94	100-yr	167.18	310.86
Sandy Mai	31392.94	500-yr	165.67	339.79
Sandy Mai	31259.8	10-yr	173.42	500.15
Sandy Mai	31259.8	50-yr	210	375
Sandy Mai	31259.8	100-yr	169	510.21
Sandy Mai	31259.8	500-yr	166.82	515.18
Sandy Mai	31220		Culvert	
Sandy Mai	31182.62	10-yr	221.32	254.82
Sandy Mai	31182.62	50-yr	212	335
Sandy Mai	31182.62	100-yr	190.38	335.88
Sandy Mai	31182.62	500-yr	190.38	434.01
Sandy Mai	31033.98	10-yr	86.98	193.31
Sandy Mai	31033.98	50-yr	100	193
Sandy Mai	31033.98	100-yr	70.34	193.31
Sandy Mai	31033.98	500-yr	63.78	257.12
Sandy Mai	30579.27	10-yr	151.11	204.46
Sandy Mai	30579.27	50-yr	150	200
Sandy Mai	30579.27	100-yr	141.59	297.38
Sandy Mai	30579.27	500-yr	124.8	359.4
Sandy Mai	30235.35	10-yr	123.77	275.21
Sandy Mai	30235.35	50-yr	165	230
Sandy Mai	30235.35	100-yr	116.57	349.95
Sandy Mai	30235.35	500-yr	108.62	404.05
Sandy Mai	29939.91	10-yr	134.14	276.95
Sandy Mai	29939.91	50-yr	165	236
Sandy Mai	29939.91	100-yr	112.14	276.95
Sandy Mai	29939.91	500-yr	112.14	420.92
Sandy Mai	29533.61	10-yr	305.33	443.24
Sandy Mai	29533.61	50-yr	325	405
Sandy Mai	29533.61	100-yr	256.91	508.18
Sandy Mai	29533.61	500-yr	249.48	508.18

Sandy Mai	29203.58	10-yr	414.01	440.48
Sandy Mai	29203.58	50-yr	412.61	442.09
Sandy Mai	29203.58	100-yr	220.57	660.99
Sandy Mai	29203.58	500-yr	152.44	691.26
Sandy Mai	29175		Culvert	
Sandy Mai	29148	10-yr	446.4	475.48
Sandy Mai	29148	50-yr	446.21	475.93
Sandy Mai	29148	100-yr	336.04	477.94
Sandy Mai	29148	500-yr	310.24	709.88
Sandy Mai	28902.69	10-yr	269.72	415.37
Sandy Mai	28902.69	50-yr	300	390
Sandy Mai	28902.69	100-yr	249.22	415.37
Sandy Mai	28902.69	500-yr	240.12	502.04
Sandy Mai	28536.39	10-yr	259.39	384.14
Sandy Mai	28536.39	50-yr	285	370
Sandy Mai	28536.39	100-yr	249.19	516.93
Sandy Mai	28536.39	500-yr	245.39	552.84
Sandy Mai	28078.23	10-yr	213.4	377.3
Sandy Mai	28078.23	50-yr	295	415
Sandy Mai	28078.23	100-yr	142.53	665.4
Sandy Mai	28078.23	500-yr	134.04	683.3
Sandy Mai	27678.42	10-yr	310.21	357.8
Sandy Mai	27678.42	50-yr	318	364.37
Sandy Mai	27678.42	100-yr	305.4	827.4
Sandy Mai	27678.42	500-yr	302.24	851.29
Sandy Mai	27191.04	10-yr	204.26	422.32
Sandy Mai	27191.04	50-yr	306	413.88
Sandy Mai	27191.04	100-yr	184.73	624.79
Sandy Mai	27191.04	500-yr	177.17	692.06
Sandy Mai	26877.54	10-yr	476.16	894.81
Sandy Mai	26877.54	50-yr	415	645
Sandy Mai	26877.54	100-yr	269.29	1016.34
Sandy Mai	26877.54	500-yr	220.12	1061.22
Sandy Mai	26835		Bridge	
Sandy Mai	26794.7	10-yr	510.05	574.32
Sandy Mai	26794.7	50-yr	445	610
Sandy Mai	26794.7	100-yr	392.11	823.58

Sandy Mai	26794.7	500-yr	294.68	979.44
Sandy Mai	26382.38	10-yr	215.16	359.83
Sandy Mai	26382.38	50-yr	230	331.32
Sandy Mai	26382.38	100-yr	155.87	362.83
Sandy Mai	26382.38	500-yr	149.69	631.78
Sandy Mai	26107.58	10-yr	116.87	314.95
Sandy Mai	26107.58	50-yr	157.94	261.41
Sandy Mai	26107.58	100-yr	99.21	470.49
Sandy Mai	26107.58	500-yr	88.11	564.13
Sandy Mai	25737.96	10-yr	167.47	467.38
Sandy Mai	25737.96	50-yr	207.1	388.3
Sandy Mai	25737.96	100-yr	147.31	475.79
Sandy Mai	25737.96	500-yr	131.09	498.5
Sandy Mai	25309.8	10-yr	203.34	584.86
Sandy Mai	25309.8	50-yr	240	415.43
Sandy Mai	25309.8	100-yr	189.39	606.85
Sandy Mai	25309.8	500-yr	177.93	616.73
Sandy Mai	24900.93	10-yr	181.57	449.07
Sandy Mai	24900.93	50-yr	212.73	420
Sandy Mai	24900.93	100-yr	175.12	549.81
Sandy Mai	24900.93	500-yr	166.65	590.19
Sandy Mai	24402.5	10-yr	116.77	381.55
Sandy Mai	24402.5	50-yr	150	345.31
Sandy Mai	24402.5	100-yr	111.8	407.58
Sandy Mai	24402.5	500-yr	107.47	444.24
Sandy Mai	24129.68	10-yr	90.97	482.28
Sandy Mai	24129.68	50-yr	130	398.39
Sandy Mai	24129.68	100-yr	44.58	544.34
Sandy Mai	24129.68	500-yr	31.01	586.05
Sandy Mai	24085		Bridge	
Sandy Mai	24042.15	10-yr	322.28	487.51
Sandy Mai	24042.15	50-yr	286	490
Sandy Mai	24042.15	100-yr	226.24	553.04
Sandy Mai	24042.15	500-yr	53.42	576.21
Sandy Mai	23662.23	10-yr	282.24	342.05
Sandy Mai	23662.23	50-yr	290	345
Sandy Mai	23662.23	100-yr	277.67	362.66

Sandy Mai	23662.23	500-yr	272.33	375.69
Sandy Mai	23396.78	10-yr	373.51	456.88
Sandy Mai	23396.78	50-yr	380	460
Sandy Mai	23396.78	100-yr	355.5	460.78
Sandy Mai	23396.78	500-yr	341.23	463.53
Sandy Mai	23076.73	10-yr	184.76	474.43
Sandy Mai	23076.73	50-yr	290	432.91
Sandy Mai	23076.73	100-yr	135.34	527.43
Sandy Mai	23076.73	500-yr	121.17	562.73
Sandy Mai	22719.89	10-yr	388.45	764.09
Sandy Mai	22719.89	50-yr	500	740.56
Sandy Mai	22719.89	100-yr	348.91	805.04
Sandy Mai	22719.89	500-yr	325.64	823.28
Sandy Mai	22305.19	10-yr	261.97	562.3
Sandy Mai	22305.19	50-yr	275	536.1
Sandy Mai	22305.19	100-yr	130.37	589.84
Sandy Mai	22305.19	500-yr	119.45	732.68
Sandy Mai	21973.79	10-yr	130.58	572.88
Sandy Mai	21973.79	50-yr	212.12	557.71
Sandy Mai	21973.79	100-yr	110.13	625.77
Sandy Mai	21973.79	500-yr	96.79	761.86
Sandy Mai	21498.81	10-yr	210.94	649.15
Sandy Mai	21498.81	50-yr	300	580
Sandy Mai	21498.81	100-yr	124.62	702.22
Sandy Mai	21498.81	500-yr	110.72	730.11
Sandy Mai	21070	10-yr	178.71	716.15
Sandy Mai	21070	50-yr	345	650
Sandy Mai	21070	100-yr	159.96	778.67
Sandy Mai	21070	500-yr	145.72	885.23
Sandy Mai	20558.49	10-yr	306.78	903.16
Sandy Mai	20558.49	50-yr	570	789
Sandy Mai	20558.49	100-yr	267.43	948.66
Sandy Mai	20558.49	500-yr	232.97	984.25
Sandy Mai	20488		Culvert	
Sandy Mai	20450.5	10-yr	784.2	1045.95
Sandy Mai	20450.5	50-yr	785.8	950.28
Sandy Mai	20450.5	100-yr	781.52	1084.28

Sandy Mai	20450.5	500-yr	778.84	1089.89
Sandy Mai	20135.83	10-yr	606.23	994.83
Sandy Mai	20135.83	50-yr	650.98	900.68
Sandy Mai	20135.83	100-yr	600.67	1024.85
Sandy Mai	20135.83	500-yr	595.79	1071.53
Sandy Mai	19889.56	10-yr	289.84	880.97
Sandy Mai	19889.56	50-yr	367.57	775.64
Sandy Mai	19889.56	100-yr	223.9	913.57
Sandy Mai	19889.56	500-yr	172.63	938.12
Sandy Mai	19820		Bridge	
Sandy Mai	19756.97	10-yr	293.4	940.86
Sandy Mai	19756.97	50-yr	409.58	817.65
Sandy Mai	19756.97	100-yr	245.53	971.72
Sandy Mai	19756.97	500-yr	210.76	988.36
Sandy Mai	19546.85	10-yr	238.28	616.13
Sandy Mai	19546.85	50-yr	338.08	563.24
Sandy Mai	19546.85	100-yr	201.14	685.54
Sandy Mai	19546.85	500-yr	164.44	772.6
Sandy Mai	19352.67	10-yr	242.66	665.5
Sandy Mai	19352.67	50-yr	337.16	640.15
Sandy Mai	19352.67	100-yr	189.84	709.51
Sandy Mai	19352.67	500-yr	167.85	740.94
Sandy Mai	19300		Bridge	
Sandy Mai	19245.94	10-yr	389.12	442.27
Sandy Mai	19245.94	50-yr	363.54	463.27
Sandy Mai	19245.94	100-yr	284.67	515.41
Sandy Mai	19245.94	500-yr	261.03	576.72
Sandy Mai	19054.38	10-yr	176.66	460.34
Sandy Mai	19054.38	50-yr	218	418.04
Sandy Mai	19054.38	100-yr	165.89	492.19
Sandy Mai	19054.38	500-yr	157.85	503.07
Sandy Mai	18845.69	10-yr	198.56	532.66
Sandy Mai	18845.69	50-yr	253.41	487.97
Sandy Mai	18845.69	100-yr	178.21	541.97
Sandy Mai	18845.69	500-yr	162.41	548.22
Sandy Mai	18634.5	10-yr	188.33	562.7

Sandy Mai	18634.5	50-yr	259.59	516.45
Sandy Mai	18634.5	100-yr	138.32	571.27
Sandy Mai	18634.5	500-yr	112.21	578.53
Sandy Mai	18463	10-yr	117.89	539.62
Sandy Mai	18463	50-yr	182.96	472.12
Sandy Mai	18463	100-yr	84.5	560.64
Sandy Mai	18463	500-yr	70.45	576.64
Sandy Mai	18269.19	10-yr	90.98	308.36
Sandy Mai	18269.19	50-yr	115	361.8
Sandy Mai	18269.19	100-yr	84.2	403.44
Sandy Mai	18269.19	500-yr	78.8	441.09
Sandy Mai	18240		Culvert	
Sandy Mai	18211.69	10-yr	110.04	290.63
Sandy Mai	18211.69	50-yr	171.75	290
Sandy Mai	18211.69	100-yr	99.06	325.02
Sandy Mai	18211.69	500-yr	91.2	351.56
Sandy Mai	18010.15	10-yr	150.93	356.71
Sandy Mai	18010.15	50-yr	185	320
Sandy Mai	18010.15	100-yr	125.93	379.64
Sandy Mai	18010.15	500-yr	119.17	397.08
Sandy Mai	17718.32	10-yr	196.43	600.76
Sandy Mai	17718.32	50-yr	257.56	400
Sandy Mai	17718.32	100-yr	184.82	603.51
Sandy Mai	17718.32	500-yr	180.59	627.24
Sandy Mai	17333.24	10-yr	324.04	643.55
Sandy Mai	17333.24	50-yr	386.42	520
Sandy Mai	17333.24	100-yr	299.84	669.09
Sandy Mai	17333.24	500-yr	279.8	691.2
Sandy Mai	16976.28	10-yr	584.97	830.5
Sandy Mai	16976.28	50-yr	615	767.86
Sandy Mai	16976.28	100-yr	574.45	858.64
Sandy Mai	16976.28	500-yr	481.15	880.7
Sandy Mai	16566.37	10-yr	301.12	703.89
Sandy Mai	16566.37	50-yr	380	615
Sandy Mai	16566.37	100-yr	284.16	730.33
Sandy Mai	16566.37	500-yr	252.09	757.45
Sandy Mai	16177.16	10-yr	261.77	595.77

Sandy Mai	16177.16	50-yr	320.98	530.94
Sandy Mai	16177.16	100-yr	242.6	616.87
Sandy Mai	16177.16	500-yr	223.69	641.75
Sandy Mai	15741.39	10-yr	170.72	491.17
Sandy Mai	15741.39	50-yr	228.58	441.09
Sandy Mai	15741.39	100-yr	160.97	519.35
Sandy Mai	15741.39	500-yr	151.69	549.79
Sandy Mai	15036.05	10-yr	238.6	521.31
Sandy Mai	15036.05	50-yr	291.91	461.78
Sandy Mai	15036.05	100-yr	231.09	561.7
Sandy Mai	15036.05	500-yr	221.33	622.29
Sandy Mai	14643.01	10-yr	241.84	661.63
Sandy Mai	14643.01	50-yr	290	510
Sandy Mai	14643.01	100-yr	229.85	677.52
Sandy Mai	14643.01	500-yr	217.54	726.11
Sandy Mai	14242.08	10-yr	432.37	752.13
Sandy Mai	14242.08	50-yr	494.11	656.13
Sandy Mai	14242.08	100-yr	377.28	759.12
Sandy Mai	14242.08	500-yr	270.52	841.05
Sandy Mai	13869.62	10-yr	358.29	581.57
Sandy Mai	13869.62	50-yr	415.81	549.58
Sandy Mai	13869.62	100-yr	344.87	664
Sandy Mai	13869.62	500-yr	324.15	750.87
Sandy Mai	13438.13	10-yr	365.58	619.17
Sandy Mai	13438.13	50-yr	424.93	572.89
Sandy Mai	13438.13	100-yr	346.82	693.58
Sandy Mai	13438.13	500-yr	312.38	784.5
Sandy Mai	12942.35	10-yr	547.51	843.06
Sandy Mai	12942.35	50-yr	610.85	810.12
Sandy Mai	12942.35	100-yr	541.03	868.22
Sandy Mai	12942.35	500-yr	453.16	954.74
Sandy Mai	12648.67	10-yr	230.12	814.08
Sandy Mai	12648.67	50-yr	440	766
Sandy Mai	12648.67	100-yr	193.7	835.78
Sandy Mai	12648.67	500-yr	159.7	895.02
Sandy Mai	12600		Mult Open	
Sandy Mai	12591.62	10-yr	383.84	803.49

Sandy Mai	12591.62	50-yr	440	755
Sandy Mai	12591.62	100-yr	370.1	900.83
Sandy Mai	12591.62	500-yr	144.23	988.79
Sandy Mai	12103.89	10-yr	361.83	706.28
Sandy Mai	12103.89	50-yr	400	670
Sandy Mai	12103.89	100-yr	301.33	772.15
Sandy Mai	12103.89	500-yr	248.17	845.12
Sandy Mai	11764.28	10-yr	444.77	875.56
Sandy Mai	11764.28	50-yr	510	790
Sandy Mai	11764.28	100-yr	375.49	983.07
Sandy Mai	11764.28	500-yr	297.35	1001.05
Sandy Mai	11405.26	10-yr	780.95	1069.35
Sandy Mai	11405.26	50-yr	791	1076.56
Sandy Mai	11405.26	100-yr	562.46	1217.51
Sandy Mai	11405.26	500-yr	494.16	1336.32
Sandy Mai	11350		Mult Open	
Sandy Mai	11303	10-yr	768.25	1021.59
Sandy Mai	11303	50-yr	768	1040
Sandy Mai	11303	100-yr	763.75	1042.67
Sandy Mai	11303	500-yr	760.33	1190.7
Sandy Mai	10733.77	10-yr	544.57	1036.87
Sandy Mai	10733.77	50-yr	561.87	925.08
Sandy Mai	10733.77	100-yr	393.44	1046.12
Sandy Mai	10733.77	500-yr	321.36	1070.68
Sandy Mai	10700		Bridge	
Sandy Mai	10661.15	10-yr	600.93	1234.29
Sandy Mai	10661.15	50-yr	670	1080
Sandy Mai	10661.15	100-yr	513.35	1242.34
Sandy Mai	10661.15	500-yr	370.7	1502.64
Sandy Mai	10118.31	10-yr	472.64	1034.97
Sandy Mai	10118.31	50-yr	560	910
Sandy Mai	10118.31	100-yr	441.7	1080.67
Sandy Mai	10118.31	500-yr	387.58	1142.62
Sandy Mai	9744.554	10-yr	493.64	1110.94
Sandy Mai	9744.554	50-yr	640	1055.49
Sandy Mai	9744.554	100-yr	452.8	1170.7
Sandy Mai	9744.554	500-yr	408.38	1216.51

Sandy Mai	9685		Bridge	
Sandy Mai	9639.641	10-yr	562.91	1137.71
Sandy Mai	9639.641	50-yr	670	1085.15
Sandy Mai	9639.641	100-yr	500.97	1201.34
Sandy Mai	9639.641	500-yr	466.08	1256.99
Sandy Mai	8975.758	10-yr	848.28	1642.09
Sandy Mai	8975.758	50-yr	1000	1500
Sandy Mai	8975.758	100-yr	755.14	1751.99
Sandy Mai	8975.758	500-yr	693.13	1791.76
Sandy Mai	8504.5	10-yr	984.92	1948.22
Sandy Mai	8504.5	50-yr	1392	1715
Sandy Mai	8504.5	100-yr	832.09	2022.95
Sandy Mai	8504.5	500-yr	802.03	2071.84
Sandy Mai	8350		Mult Open	
Sandy Mai	8235.939	10-yr	638.88	1016.17
Sandy Mai	8235.939	50-yr	850	1050
Sandy Mai	8235.939	100-yr	474.15	1068.29
Sandy Mai	8235.939	500-yr	414.02	1073.01
Sandy Mai	8063.602	10-yr	635.64	1120.37
Sandy Mai	8063.602	50-yr	970	1150
Sandy Mai	8063.602	100-yr	338.6	1178.94
Sandy Mai	8063.602	500-yr	317.56	1183.72
Sandy Mai	8000		Bridge	
Sandy Mai	7966.54	10-yr	1001.63	1134.98
Sandy Mai	7966.54	50-yr	1000	1130
Sandy Mai	7966.54	100-yr	553.21	1181.23
Sandy Mai	7966.54	500-yr	513.39	1185.37
Sandy Mai	7570.986	10-yr	671.35	956.91
Sandy Mai	7570.986	50-yr	700	850
Sandy Mai	7570.986	100-yr	670	1001.13
Sandy Mai	7570.986	500-yr	414.73	1006.27
Sandy Mai	7173.807	10-yr	330.68	721.85
Sandy Mai	7173.807	50-yr	450	600
Sandy Mai	7173.807	100-yr	305	734.55
Sandy Mai	7173.807	500-yr	297.81	789.79

Sandy Mai	6825.559	10-yr	693.01	877.88
Sandy Mai	6825.559	50-yr	700	813
Sandy Mai	6825.559	100-yr	620.13	891.8
Sandy Mai	6825.559	500-yr	604.04	900.41
Sandy Mai	6765		Bridge	
Sandy Mai	6709.658	10-yr	669.87	877.31
Sandy Mai	6709.658	50-yr	700	809.36
Sandy Mai	6709.658	100-yr	554.35	883.97
Sandy Mai	6709.658	500-yr	520.29	887.31
Sandy Mai	6668.16	10-yr	261.81	611.08
Sandy Mai	6668.16	50-yr	340	500
Sandy Mai	6668.16	100-yr	221.33	662.58
Sandy Mai	6668.16	500-yr	203.07	684.64
Sandy Mai	6600		Bridge	
Sandy Mai	6572.639	10-yr	297.02	551.15
Sandy Mai	6572.639	50-yr	327	505
Sandy Mai	6572.639	100-yr	182.61	617.13
Sandy Mai	6572.639	500-yr	168.9	638.09
Sandy Mai	6414.98	10-yr	425.16	526.63
Sandy Mai	6414.98	50-yr	430	544.6
Sandy Mai	6414.98	100-yr	286.14	1033.91
Sandy Mai	6414.98	500-yr	280.8	1038.65
Sandy Mai	6300		Mult Open	
Sandy Mai	6189.177	10-yr	527.67	648.73
Sandy Mai	6189.177	50-yr	558	650
Sandy Mai	6189.177	100-yr	519.35	654.79
Sandy Mai	6189.177	500-yr	512.6	1027.38
Sandy Mai	5508.105	10-yr	303.13	1457.25
Sandy Mai	5508.105	50-yr	296.41	810
Sandy Mai	5508.105	100-yr	204.97	2085.5
Sandy Mai	5508.105	500-yr	201.56	2085.5
Sandy Mai	5084.678	10-yr	346.75	1409.68
Sandy Mai	5084.678	50-yr	525.74	780
Sandy Mai	5084.678	100-yr	272.97	1654.28
Sandy Mai	5084.678	500-yr	251.64	1865.15
Sandy Mai	5065.378	10-yr	161.67	1054.55

Sandy Mai	5065.378	50-yr	353	560
Sandy Mai	5065.378	100-yr	89.56	1524.91
Sandy Mai	5065.378	500-yr	63.59	1826.53
Sandy Mai	5039.878	10-yr	159.09	984.44
Sandy Mai	5039.878	50-yr	359.16	540
Sandy Mai	5039.878	100-yr	88.34	1745.21
Sandy Mai	5039.878	500-yr	62	1760.79
Sandy Mai	4865.578	10-yr	150.7	980.28
Sandy Mai	4865.578	50-yr	382	535
Sandy Mai	4865.578	100-yr	87.85	1641.28
Sandy Mai	4865.578	500-yr	59.32	1661.42
Sandy Mai	4790.088	10-yr	260.8	1032.73
Sandy Mai	4790.088	50-yr	513.2	650
Sandy Mai	4790.088	100-yr	196.48	1699.97
Sandy Mai	4790.088	500-yr	169	1724.54
Sandy Mai	4777.088	10-yr	144.06	1488.5
Sandy Mai	4777.088	50-yr	388.53	493
Sandy Mai	4777.088	100-yr	85.77	1540.47
Sandy Mai	4777.088	500-yr	56.79	1553.28
Sandy Mai	4740		Bridge	
Sandy Mai	4685.592	10-yr	272.95	1078.16
Sandy Mai	4685.592	50-yr	400	580
Sandy Mai	4685.592	100-yr	248.02	1083.3
Sandy Mai	4685.592	500-yr	200.64	1093.01
Sandy Mai	4327.181	10-yr	320.99	859.59
Sandy Mai	4327.181	50-yr	315	835
Sandy Mai	4327.181	100-yr	298.94	868.97
Sandy Mai	4327.181	500-yr	274.86	875.79
Sandy Mai	3964.325	10-yr	302.77	776.52
Sandy Mai	3964.325	50-yr	358	713.74
Sandy Mai	3964.325	100-yr	258.41	781.41
Sandy Mai	3964.325	500-yr	227.91	785.85
Sandy Mai	3515.389	10-yr	261.52	882.78
Sandy Mai	3515.389	50-yr	344.09	792.13
Sandy Mai	3515.389	100-yr	213.7	887.66
Sandy Mai	3515.389	500-yr	175.06	890.94
Sandy Mai	3004.364	10-yr	261.93	917.31

Sandy Mai	3004.364	50-yr	396.09	840
Sandy Mai	3004.364	100-yr	226.47	966.8
Sandy Mai	3004.364	500-yr	202.05	1021.22
Sandy Mai	2590.359	10-yr	368.05	929.46
Sandy Mai	2590.359	50-yr	380	620
Sandy Mai	2590.359	100-yr	313.98	945.48
Sandy Mai	2590.359	500-yr	301.86	945.48
Sandy Mai	2500		Bridge	
Sandy Mai	2417.391	10-yr	367.84	822.62
Sandy Mai	2417.391	50-yr	373	600
Sandy Mai	2417.391	100-yr	358.4	831.11
Sandy Mai	2417.391	500-yr	257.8	865.41
Sandy Mai	2072.963	10-yr	205.49	710.65
Sandy Mai	2072.963	50-yr	275	575
Sandy Mai	2072.963	100-yr	188.84	809.29
Sandy Mai	2072.963	500-yr	157.69	870.41
Sandy Mai	1688.606	10-yr	289.24	818.84
Sandy Mai	1688.606	50-yr	329.77	705
Sandy Mai	1688.606	100-yr	240.33	818.84
Sandy Mai	1688.606	500-yr	219.95	818.84
Sandy Mai	1299.523	10-yr	306.74	1137.79
Sandy Mai	1299.523	50-yr	409.81	945
Sandy Mai	1299.523	100-yr	274.47	1143.55
Sandy Mai	1299.523	500-yr	219.01	1167.8
Sandy Mai	663.061	10-yr	313.06	1188.38
Sandy Mai	663.061	50-yr	542.96	1117
Sandy Mai	663.061	100-yr	284.15	1242.59
Sandy Mai	663.061	500-yr	231.29	1295.43
Sandy Mai	143.571	10-yr	371.65	1422.32
Sandy Mai	143.571	50-yr	517.88	1041.31
Sandy Mai	143.571	100-yr	343.36	1442.46
Sandy Mai	143.571	500-yr	312.59	1605.15

Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Crit W.S. (ft)	E.G. Elev (ft)	E.G. Slope (ft/ft)
Sandy Mai	38835.32	10-yr	689	335	337.86	337.86	338.72	0.009987
Sandy Mai	38835.32	50-yr	1169	335	338.94	338.94	339.6	0.004684
Sandy Mai	38835.32	100-yr	1443	335	339.2	339.2	339.87	0.004571
Sandy Mai	38835.32	500-yr	2290	335	339.75	339.75	340.52	0.004731
Sandy Mai	38353.13	10-yr	689	327	331.57	331.57	332.39	0.005963
Sandy Mai	38353.13	50-yr	1169	327	332.31	332.31	333.33	0.006199
Sandy Mai	38353.13	100-yr	1443	327	332.64	332.64	333.79	0.006468
Sandy Mai	38353.13	500-yr	2290	327	333.69	333.69	334.99	0.006198
Sandy Mai	37880.8	10-yr	689	319	323.52	323.52	324.37	0.006525
Sandy Mai	37880.8	50-yr	1169	319	324.58	324.58	325.27	0.004408
Sandy Mai	37880.8	100-yr	1443	319	324.83	324.83	325.57	0.004579
Sandy Mai	37880.8	500-yr	2290	319	325.5	325.5	326.29	0.004461
Sandy Mai	37489.56	10-yr	689	311.79	319.52	316.72	319.8	0.000908
Sandy Mai	37489.56	50-yr	1169	311.79	320.23	318.42	320.72	0.001483
Sandy Mai	37489.56	100-yr	1443	311.79	320.49	319	321.1	0.001831
Sandy Mai	37489.56	500-yr	2290	311.79	320.68	320.68	322.01	0.00396
Sandy Mai	37270		Culvert					
Sandy Mai	37056.92	10-yr	689	306.66	311.36	311.36	312.99	0.008131
Sandy Mai	37056.92	50-yr	1169	306.66	313.14	313.14	314.73	0.005263
Sandy Mai	37056.92	100-yr	1443	306.66	313.8	313.8	315.39	0.004856
Sandy Mai	37056.92	500-yr	2290	306.66	315.13	315.13	316.68	0.004359
Sandy Mai	36678.73	10-yr	689	301	304.8	304.3	305.21	0.003799
Sandy Mai	36678.73	50-yr	1169	301	305.59	305	306.17	0.004397
Sandy Mai	36678.73	100-yr	1443	301	305.92	304.94	306.51	0.004274
Sandy Mai	36678.73	500-yr	2290	301	306.72	306.32	307.25	0.003772
Sandy Mai	36275.49	10-yr	689	296.1	303.64	301.61	303.88	0.002586
Sandy Mai	36275.49	50-yr	1169	296.1	304.42	303.44	304.69	0.002525
Sandy Mai	36275.49	100-yr	1443	296.1	304.65	303.83	304.99	0.002853
Sandy Mai	36275.49	500-yr	2290	296.1	305.3	304.46	305.78	0.003373
Sandy Mai	36000		Culvert					
Sandy Mai	35791.32	10-yr	689	286.09	293.04		293.12	0.00128
Sandy Mai	35791.32	50-yr	1169	286.09	293.92		294.03	0.001469
Sandy Mai	35791.32	100-yr	1443	286.09	294.29		294.41	0.001521
Sandy Mai	35791.32	500-yr	2290	286.09	295.17		295.34	0.001786
Sandy Mai	35582.96	10-yr	689	285	292.83	288.97	292.92	0.00072

Sandy Mai	35582.96	50-yr	1169	285	293.66	290.19	293.77	0.000927
Sandy Mai	35582.96	100-yr	1443	285	294	290.8	294.13	0.001052
Sandy Mai	35582.96	500-yr	2290	285	294.79	292.54	294.99	0.001437
Sandy Mai	35513		Culvert					
Sandy Mai	35420.3	10-yr	689	283	290.25		290.51	0.002031
Sandy Mai	35420.3	50-yr	1169	283	290.79		291.3	0.003678
Sandy Mai	35420.3	100-yr	1443	283	291.04		291.69	0.004615
Sandy Mai	35420.3	500-yr	2290	283	291.55	291.18	292.72	0.007987
Sandy Mai	35237.49	10-yr	689	279.02	290.31	283.38	290.33	0.000135
Sandy Mai	35237.49	50-yr	1169	279.02	290.91	285.03	290.94	0.000251
Sandy Mai	35237.49	100-yr	1443	279.02	291.19	285.86	291.23	0.000337
Sandy Mai	35237.49	500-yr	2290	279.02	291.85	288.11	291.92	0.000542
Sandy Mai	34267		Culvert					
Sandy Mai	33297.82	10-yr	689	253	257.22	256.67	258.31	0.005089
Sandy Mai	33297.82	50-yr	1169	253	257.94	257.94	260.07	0.008019
Sandy Mai	33297.82	100-yr	1443	253	259.06	259.06	260.79	0.005174
Sandy Mai	33297.82	500-yr	2290	253	260.91	260.91	262.07	0.003058
Sandy Mai	32874.91	10-yr	689	251	254	254	255.38	0.009335
Sandy Mai	32874.91	50-yr	1169	251	254.92	254.91	255.5	0.004085
Sandy Mai	32874.91	100-yr	1443	251	255.13	255.13	255.76	0.004336
Sandy Mai	32874.91	500-yr	2290	251	255.62	255.62	256.41	0.005191
Sandy Mai	32432.32	10-yr	689	249	252.8	251.63	253.11	0.001774
Sandy Mai	32432.32	50-yr	1169	249	253.21	252.44	253.87	0.003324
Sandy Mai	32432.32	100-yr	1443	249	253.53	252.93	253.63	0.000652
Sandy Mai	32432.32	500-yr	2290	249	254.13	253.45	254.27	0.000865
Sandy Mai	32009.44	10-yr	689	246	252.74	249.48	252.75	0.000231
Sandy Mai	32009.44	50-yr	1169	246	253.11	250.64	253.15	0.000457
Sandy Mai	32009.44	100-yr	1443	246	253.3	251.24	253.35	0.00057
Sandy Mai	32009.44	500-yr	2290	246	253.79	252	253.87	0.000893
Sandy Mai	31828		Culvert					
Sandy Mai	31647.46	10-yr	689	239	247.63	243.29	247.72	0.000249
Sandy Mai	31647.46	50-yr	1169	239	248.46	244.52	248.59	0.000354
Sandy Mai	31647.46	100-yr	1443	239	248.85	246.31	248.99	0.0004
Sandy Mai	31647.46	500-yr	2290	239	249.74	247.57	249.92	0.000509
Sandy Mai	31476.58	10-yr	689	240	247.51	243.38	247.65	0.000425
Sandy Mai	31476.58	50-yr	1169	240	248.21	244.8	248.46	0.000745

Sandy Mai	31476.58	100-yr	1443	240	248.52	246.29	248.83	0.000921
Sandy Mai	31476.58	500-yr	2290	240	249.12	247.55	249.67	0.001544
Sandy Mai	31435		Culvert					
Sandy Mai	31392.94	10-yr	689	239.99	246.59		246.78	0.001781
Sandy Mai	31392.94	50-yr	1169	239.99	246.94		247.36	0.003749
Sandy Mai	31392.94	100-yr	1443	239.99	247.14		247.69	0.004807
Sandy Mai	31392.94	500-yr	2290	239.99	247.48		248.55	0.009096
Sandy Mai	31259.8	10-yr	689	239	246.53	243.1	246.66	0.000396
Sandy Mai	31259.8	50-yr	1169	239	246.84	244.44	247.09	0.000815
Sandy Mai	31259.8	100-yr	1443	239	247.02	245.08	247.34	0.00103
Sandy Mai	31259.8	500-yr	2290	239	247.26	246.95	247.87	0.001995
Sandy Mai	31220		Culvert					
Sandy Mai	31182.62	10-yr	689	239	242.91	242.91	244.28	0.008638
Sandy Mai	31182.62	50-yr	1169	239	244.74	244.74	245.76	0.003963
Sandy Mai	31182.62	100-yr	1443	239	245.23	245.23	246.23	0.003704
Sandy Mai	31182.62	500-yr	2290	239	246.1	246.1	247.23	0.003974
Sandy Mai	31033.98	10-yr	689	239	241.91		242.34	0.004705
Sandy Mai	31033.98	50-yr	1169	239	242.88		243.31	0.003551
Sandy Mai	31033.98	100-yr	1443	239	243.39		243.82	0.003069
Sandy Mai	31033.98	500-yr	2290	239	244.37		244.95	0.003269
Sandy Mai	30579.27	10-yr	689	235	238.76	238.76	239.85	0.006151
Sandy Mai	30579.27	50-yr	1169	235	239.79	239.79	241.15	0.006124
Sandy Mai	30579.27	100-yr	1443	235	240.2	240.2	241.76	0.00649
Sandy Mai	30579.27	500-yr	2290	235	241.72	241.72	243.09	0.004795
Sandy Mai	30235.35	10-yr	689	233	236.58	235.47	236.8	0.002513
Sandy Mai	30235.35	50-yr	1169	233	237.24	236.14	237.53	0.002963
Sandy Mai	30235.35	100-yr	1443	233	237.64	236.7	237.99	0.003303
Sandy Mai	30235.35	500-yr	2290	233	238.8	237.48	239.08	0.002254
Sandy Mai	29939.91	10-yr	689	231	235.17		235.53	0.008677
Sandy Mai	29939.91	50-yr	1169	231	235.78		236.16	0.008142
Sandy Mai	29939.91	100-yr	1443	231	236.74		236.95	0.003416
Sandy Mai	29939.91	500-yr	2290	231	238.31		238.46	0.001709
Sandy Mai	29533.61	10-yr	689	229	233.17		233.63	0.002882
Sandy Mai	29533.61	50-yr	1169	229	235.09		235.28	0.000898
Sandy Mai	29533.61	100-yr	1443	229	236.36		236.49	0.00052
Sandy Mai	29533.61	500-yr	2290	229	237.98		238.13	0.000474

Sandy Mai	29203.58	10-yr	689	227	232.44	230.01	232.86	0.001853
Sandy Mai	29203.58	50-yr	1169	227	233.98	231.27	234.69	0.002187
Sandy Mai	29203.58	100-yr	1443	227	235.29	231.92	236.02	0.001789
Sandy Mai	29203.58	500-yr	2290	227	236.44	233.64	237.54	0.002425
Sandy Mai	29175		Culvert					
Sandy Mai	29148	10-yr	689	227	232.24	229.86	232.61	0.00159
Sandy Mai	29148	50-yr	1169	227	233.24	231.04	233.98	0.002535
Sandy Mai	29148	100-yr	1443	227	233.57	231.63	234.56	0.003215
Sandy Mai	29148	500-yr	2290	227	234.57	233.23	236.39	0.004795
Sandy Mai	28902.69	10-yr	1479	225	231.04	230.68	231.83	0.003618
Sandy Mai	28902.69	50-yr	2537	225	231.98	231.83	232.99	0.004433
Sandy Mai	28902.69	100-yr	3146	225	232.43	232.22	233.52	0.004645
Sandy Mai	28902.69	500-yr	5020	225	233.67	233.24	234.92	0.004815
Sandy Mai	28536.39	10-yr	1479	225	228.89	228.89	229.8	0.009407
Sandy Mai	28536.39	50-yr	2537	225	230.04	229.8	230.91	0.007252
Sandy Mai	28536.39	100-yr	3146	225	230.51	230.19	231.41	0.006984
Sandy Mai	28536.39	500-yr	5020	225	231.3	231.16	232.58	0.008892
Sandy Mai	28078.23	10-yr	1479	221	227.99	226	228.27	0.00081
Sandy Mai	28078.23	50-yr	2537	221	229.86	227.51	230.09	0.000552
Sandy Mai	28078.23	100-yr	3146	221	230.3	227.9	230.55	0.0006
Sandy Mai	28078.23	500-yr	5020	221	230.91	229.43	231.33	0.000951
Sandy Mai	27678.42	10-yr	1479	221	226.4	225.67	227.56	0.004046
Sandy Mai	27678.42	50-yr	2537	221	227.65	227.65	229.44	0.004995
Sandy Mai	27678.42	100-yr	3146	221	228.98	228.98	230.03	0.00274
Sandy Mai	27678.42	500-yr	5020	221	230	230	230.74	0.002192
Sandy Mai	27191.04	10-yr	1479	219	225.03	223.98	225.87	0.002713
Sandy Mai	27191.04	50-yr	2537	219	226.85	225.92	227.29	0.001364
Sandy Mai	27191.04	100-yr	3146	219	227.44	226.33	227.83	0.001204
Sandy Mai	27191.04	500-yr	5020	219	228.42	227.44	228.81	0.001201
Sandy Mai	26877.54	10-yr	1479	217	224.9	221.51	225.23	0.000706
Sandy Mai	26877.54	50-yr	2537	217	226.78	223.4	226.94	0.000406
Sandy Mai	26877.54	100-yr	3146	217	227.37	224.02	227.52	0.000379
Sandy Mai	26877.54	500-yr	5020	217	228.32	226.13	228.5	0.000442
Sandy Mai	26835		Bridge					
Sandy Mai	26794.7	10-yr	1479	217	222.39		223.44	0.003559
Sandy Mai	26794.7	50-yr	2537	217	223.78	223.32	225.38	0.004161
Sandy Mai	26794.7	100-yr	3146	217	224.68	224.68	225.83	0.002942

Sandy Mai	26794.7	500-yr	5020	217	226.53		227.23	0.001774
Sandy Mai	26382.38	10-yr	1479	215	221.71	220.22	222.25	0.00159
Sandy Mai	26382.38	50-yr	2537	215	223.18	221.65	223.87	0.001758
Sandy Mai	26382.38	100-yr	3146	215	223.93	222.28	224.66	0.001727
Sandy Mai	26382.38	500-yr	5020	215	225.97	223.82	226.56	0.001308
Sandy Mai	26107.58	10-yr	2016	213	221.05	219.93	221.77	0.001686
Sandy Mai	26107.58	50-yr	3442	213	222.49	221.58	223.35	0.001896
Sandy Mai	26107.58	100-yr	4317	213	223.22	222.14	224.13	0.00195
Sandy Mai	26107.58	500-yr	7013	213	225.11	223.52	226.07	0.001923
Sandy Mai	25737.96	10-yr	2016	213	221.05		221.27	0.000609
Sandy Mai	25737.96	50-yr	3442	213	222.52		222.78	0.000673
Sandy Mai	25737.96	100-yr	4317	213	223.26		223.54	0.000699
Sandy Mai	25737.96	500-yr	7013	213	225.1		225.46	0.000794
Sandy Mai	25309.8	10-yr	2016	213.64	220.73	217.18	220.95	0.000954
Sandy Mai	25309.8	50-yr	3442	213.64	222.13	218.19	222.41	0.001114
Sandy Mai	25309.8	100-yr	4317	213.64	222.88	218.8	223.16	0.001107
Sandy Mai	25309.8	500-yr	7013	213.64	224.71	221.62	225.04	0.001135
Sandy Mai	24900.93	10-yr	2016	212	220.52		220.54	0.000761
Sandy Mai	24900.93	50-yr	3442	212	221.82		221.88	0.001147
Sandy Mai	24900.93	100-yr	4317	212	222.54		222.6	0.001324
Sandy Mai	24900.93	500-yr	7013	212	224.29		224.4	0.001796
Sandy Mai	24402.5	10-yr	2016	210	220.19		220.22	0.000563
Sandy Mai	24402.5	50-yr	3442	210	221.34		221.4	0.000844
Sandy Mai	24402.5	100-yr	4317	210	221.98		222.06	0.000944
Sandy Mai	24402.5	500-yr	7013	210	223.55		223.69	0.001199
Sandy Mai	24129.68	10-yr	2016	210	220.03	214.61	220.06	0.000686
Sandy Mai	24129.68	50-yr	3442	210	221.08	216.03	221.13	0.001134
Sandy Mai	24129.68	100-yr	4317	210	221.69	216.79	221.76	0.001307
Sandy Mai	24129.68	500-yr	7013	210	223.19	218.86	223.29	0.001737
Sandy Mai	24085		Bridge					
Sandy Mai	24042.15	10-yr	2016	210	216.24	214.73	216.62	0.001222
Sandy Mai	24042.15	50-yr	3442	210	218.26	215.93	218.59	0.000823
Sandy Mai	24042.15	100-yr	4317	210	219.29	216.49	219.58	0.000658
Sandy Mai	24042.15	500-yr	7013	210	221.87	217.78	222.12	0.000422
Sandy Mai	23662.23	10-yr	2016	208	213.45	213.45	215.28	0.006326
Sandy Mai	23662.23	50-yr	3442	208	215.23	215.23	217.38	0.005501
Sandy Mai	23662.23	100-yr	4317	208	216.01	216.01	218.39	0.005483

Sandy Mai	23662.23	500-yr	7013	208	217.83	217.83	220.88	0.005694
Sandy Mai	23396.78	10-yr	2016	208	213.34		213.84	0.00149
Sandy Mai	23396.78	50-yr	3442	208	214.35		215.33	0.002364
Sandy Mai	23396.78	100-yr	4317	208	214.79		216.11	0.002934
Sandy Mai	23396.78	500-yr	7013	208	215.58	215.38	218.2	0.005115
Sandy Mai	23076.73	10-yr	2016	206	213.15		213.36	0.001017
Sandy Mai	23076.73	50-yr	3442	206	214.33		214.61	0.001164
Sandy Mai	23076.73	100-yr	4317	206	214.93		215.23	0.001223
Sandy Mai	23076.73	500-yr	7013	206	216.4		216.77	0.001349
Sandy Mai	22719.89	10-yr	2016	206	212.54		212.65	0.005048
Sandy Mai	22719.89	50-yr	3442	206	213.74		213.86	0.004185
Sandy Mai	22719.89	100-yr	4317	206	214.34		214.47	0.00383
Sandy Mai	22719.89	500-yr	7013	206	215.84		216	0.003348
Sandy Mai	22305.19	10-yr	2229	204	210.53	208	210.62	0.004436
Sandy Mai	22305.19	50-yr	3931	204	211.88	209	212.02	0.004368
Sandy Mai	22305.19	100-yr	4945	204	212.52	209.51	212.68	0.004461
Sandy Mai	22305.19	500-yr	8165	204	214.08	210.46	214.3	0.004516
Sandy Mai	21973.79	10-yr	2229	204	209.57		209.62	0.002135
Sandy Mai	21973.79	50-yr	3931	204	210.95		211.01	0.002116
Sandy Mai	21973.79	100-yr	4945	204	211.59		211.67	0.002117
Sandy Mai	21973.79	500-yr	8165	204	213.15		213.25	0.002186
Sandy Mai	21498.81	10-yr	2229	202	208.7		208.75	0.001591
Sandy Mai	21498.81	50-yr	3931	202	209.97		210.05	0.001938
Sandy Mai	21498.81	100-yr	4945	202	210.6		210.68	0.001993
Sandy Mai	21498.81	500-yr	8165	202	212.09		212.21	0.002169
Sandy Mai	21070	10-yr	2229	200	208.4		208.42	0.000503
Sandy Mai	21070	50-yr	3931	200	209.56		209.6	0.000727
Sandy Mai	21070	100-yr	4945	200	210.15		210.2	0.000807
Sandy Mai	21070	500-yr	8165	200	211.56		211.64	0.001005
Sandy Mai	20558.49	10-yr	2229	200	208.07	203.62	208.11	0.000929
Sandy Mai	20558.49	50-yr	3931	200	209.04	204.76	209.12	0.001583
Sandy Mai	20558.49	100-yr	4945	200	209.56	205.35	209.65	0.001873
Sandy Mai	20558.49	500-yr	8165	200	210.74	206.23	210.91	0.002754
Sandy Mai	20488		Culvert					
Sandy Mai	20450.5	10-yr	2229	200	203.77	203.77	205.53	0.008487
Sandy Mai	20450.5	50-yr	3931	200	204.65	204.65	205.53	0.00458
Sandy Mai	20450.5	100-yr	4945	200	204.96	204.96	205.96	0.004904

Sandy Mai	20450.5	500-yr	8165	200	206	205.76	207.15	0.004536
Sandy Mai	20135.83	10-yr	2229	196	203.6		203.64	0.000149
Sandy Mai	20135.83	50-yr	3931	196	204.4		204.48	0.00026
Sandy Mai	20135.83	100-yr	4945	196	204.99		205.08	0.000284
Sandy Mai	20135.83	500-yr	8165	196	206.2		206.37	0.000416
Sandy Mai	19889.56	10-yr	2229	195	203.58	199.29	203.6	0.000073
Sandy Mai	19889.56	50-yr	3931	195	204.38	200.49	204.42	0.000131
Sandy Mai	19889.56	100-yr	4945	195	204.96	201.08	205.01	0.000143
Sandy Mai	19889.56	500-yr	8165	195	206.18	202.45	206.26	0.000193
Sandy Mai	19820		Bridge					
Sandy Mai	19756.97	10-yr	2229	194.5	203.32		203.35	0.000085
Sandy Mai	19756.97	50-yr	3931	194.5	204.24		204.28	0.000129
Sandy Mai	19756.97	100-yr	4945	194.5	204.87		204.92	0.00013
Sandy Mai	19756.97	500-yr	8165	194.5	206.1		206.17	0.00017
Sandy Mai	19546.85	10-yr	2229	194	203.27		203.32	0.000123
Sandy Mai	19546.85	50-yr	3931	194	204.14		204.24	0.00022
Sandy Mai	19546.85	100-yr	4945	194	204.75		204.87	0.000251
Sandy Mai	19546.85	500-yr	8165	194	205.9		206.09	0.000372
Sandy Mai	19352.67	10-yr	2229	193.47	203.26	198.71	203.29	0.000098
Sandy Mai	19352.67	50-yr	3931	193.47	204.12	200.12	204.19	0.000186
Sandy Mai	19352.67	100-yr	4945	193.47	204.73	200.83	204.82	0.000206
Sandy Mai	19352.67	500-yr	8165	193.47	205.87	202.54	206	0.0003
Sandy Mai	19300		Bridge					
Sandy Mai	19245.94	10-yr	2229	193.25	197.82	197.82	199.79	0.008109
Sandy Mai	19245.94	50-yr	3931	193.25	199.88	199.88	202.23	0.005988
Sandy Mai	19245.94	100-yr	4945	193.25	201.39	201.39	202.96	0.003406
Sandy Mai	19245.94	500-yr	8165	193.25	202.9	202.9	204.47	0.003197
Sandy Mai	19054.38	10-yr	2229	193.25	197.95		198.09	0.000821
Sandy Mai	19054.38	50-yr	3931	193.25	199.23		199.41	0.000783
Sandy Mai	19054.38	100-yr	4945	193.25	199.78		200	0.000819
Sandy Mai	19054.38	500-yr	8165	193.25	201.15		201.48	0.000902
Sandy Mai	18845.69	10-yr	2229	193	197.85	195.92	197.94	0.000512
Sandy Mai	18845.69	50-yr	3931	193	199.14	196.59	199.27	0.000493
Sandy Mai	18845.69	100-yr	4945	193	199.69	196.88	199.84	0.000523
Sandy Mai	18845.69	500-yr	8165	193	201.07	197.68	201.3	0.000613
Sandy Mai	18634.5	10-yr	2229	192	197.78		197.85	0.000317

Sandy Mai	18634.5	50-yr	3931	192	199.08		199.17	0.000336
Sandy Mai	18634.5	100-yr	4945	192	199.62		199.74	0.000363
Sandy Mai	18634.5	500-yr	8165	192	201		201.18	0.000432
Sandy Mai	18463	10-yr	2229	191	197.77		197.8	0.000149
Sandy Mai	18463	50-yr	3931	191	199.06		199.12	0.000183
Sandy Mai	18463	100-yr	4945	191	199.61		199.68	0.000208
Sandy Mai	18463	500-yr	8165	191	200.98		201.1	0.000266
Sandy Mai	18269.19	10-yr	2229	188	197.2	193.07	197.63	0.000829
Sandy Mai	18269.19	50-yr	3931	188	198.27	197.11	198.88	0.001189
Sandy Mai	18269.19	100-yr	4945	188	198.7	197.86	199.41	0.001369
Sandy Mai	18269.19	500-yr	8165	188	199.89	199.08	200.77	0.00167
Sandy Mai	18240		Culvert					
Sandy Mai	18211.69	10-yr	2229	188	194.11	192.39	195.03	0.002702
Sandy Mai	18211.69	50-yr	3931	188	195.14	195.14	196.41	0.003481
Sandy Mai	18211.69	100-yr	4945	188	195.64	195.64	197.01	0.003637
Sandy Mai	18211.69	500-yr	8165	188	196.83	196.83	198.51	0.004084
Sandy Mai	18010.15	10-yr	2229	188	193.47	193.47	194.33	0.004222
Sandy Mai	18010.15	50-yr	3931	188	194.35	194.35	195.39	0.004752
Sandy Mai	18010.15	100-yr	4945	188	194.72	194.72	195.88	0.005107
Sandy Mai	18010.15	500-yr	8165	188	195.67	195.67	197.19	0.005837
Sandy Mai	17718.32	10-yr	2229	187	190.83	190.83	191.34	0.005065
Sandy Mai	17718.32	50-yr	3931	187	191.57		192.05	0.003865
Sandy Mai	17718.32	100-yr	4945	187	192.01		192.47	0.003218
Sandy Mai	17718.32	500-yr	8165	187	193.14		193.67	0.002522
Sandy Mai	17333.24	10-yr	2229	186	189.95		190.13	0.001325
Sandy Mai	17333.24	50-yr	3931	186	190.86		191.11	0.001449
Sandy Mai	17333.24	100-yr	4945	186	191.3		191.6	0.001496
Sandy Mai	17333.24	500-yr	8165	186	192.43		192.86	0.001636
Sandy Mai	16976.28	10-yr	2229	186	188.41	188.38	189.08	0.009183
Sandy Mai	16976.28	50-yr	3931	186	189.08	189.04	190	0.008826
Sandy Mai	16976.28	100-yr	4945	186	189.42	189.38	190.46	0.008652
Sandy Mai	16976.28	500-yr	8165	186	190.51	189.87	191.7	0.007264
Sandy Mai	16566.37	10-yr	2229	185.31	187.53		187.67	0.001485
Sandy Mai	16566.37	50-yr	3931	185.31	188.37		188.56	0.00145
Sandy Mai	16566.37	100-yr	4945	185.31	188.8		189.03	0.001412
Sandy Mai	16566.37	500-yr	8165	185.31	190.1		190.39	0.001261
Sandy Mai	16177.16	10-yr	2229	184.88	186.62		186.87	0.003068

Sandy Mai	16177.16	50-yr	3931	184.88	187.53		187.85	0.002405
Sandy Mai	16177.16	100-yr	4945	184.88	187.98		188.34	0.002278
Sandy Mai	16177.16	500-yr	8165	184.88	189.41		189.82	0.001684
Sandy Mai	15741.39	10-yr	2229	182	186.03	184.06	186.17	0.000954
Sandy Mai	15741.39	50-yr	3931	182	186.92	185.24	187.15	0.001124
Sandy Mai	15741.39	100-yr	4945	182	187.35	185.56	187.63	0.001196
Sandy Mai	15741.39	500-yr	8165	182	188.92	186.46	189.26	0.001004
Sandy Mai	15036.05	10-yr	2229	180	184.26	184.26	184.91	0.004826
Sandy Mai	15036.05	50-yr	3931	180	185.11	184.88	185.81	0.004462
Sandy Mai	15036.05	100-yr	4945	180	185.9	185.19	186.46	0.002985
Sandy Mai	15036.05	500-yr	8165	180	188.05	186.04	188.47	0.001553
Sandy Mai	14643.01	10-yr	2229	176.16	183.04	181.7	183.27	0.001114
Sandy Mai	14643.01	50-yr	3931	176.16	184.74	182.55	184.97	0.000949
Sandy Mai	14643.01	100-yr	4945	176.16	185.51	182.94	185.75	0.000949
Sandy Mai	14643.01	500-yr	8165	176.16	187.68	184.01	187.97	0.000924
Sandy Mai	14242.08	10-yr	2229	174	181.62	180.79	182.55	0.002522
Sandy Mai	14242.08	50-yr	3931	174	182.88	182.63	184.21	0.003306
Sandy Mai	14242.08	100-yr	4945	174	183.67	183.22	185	0.003188
Sandy Mai	14242.08	500-yr	8165	174	186.15	185.1	187.31	0.002453
Sandy Mai	13869.62	10-yr	2229	175	180.55	180.37	181.36	0.003907
Sandy Mai	13869.62	50-yr	3931	175	181.98	181.3	182.8	0.00344
Sandy Mai	13869.62	100-yr	4945	175	182.87	181.77	183.67	0.003106
Sandy Mai	13869.62	500-yr	8165	175	185.95	183.3	186.41	0.001441
Sandy Mai	13438.13	10-yr	2229	172	180.04	178.02	180.2	0.001448
Sandy Mai	13438.13	50-yr	3931	172	181.34	178.84	181.57	0.001824
Sandy Mai	13438.13	100-yr	4945	172	182.13	179.27	182.4	0.002158
Sandy Mai	13438.13	500-yr	8165	172	185.65	180.35	185.82	0.000967
Sandy Mai	12942.35	10-yr	2229	173	179.5	176.6	179.6	0.000979
Sandy Mai	12942.35	50-yr	3931	173	180.61	177.47	180.78	0.001356
Sandy Mai	12942.35	100-yr	4945	173	181.36	177.94	181.55	0.00135
Sandy Mai	12942.35	500-yr	8165	173	185.29	179.32	185.41	0.000659
Sandy Mai	12648.67	10-yr	2229	170	179.45	175.51	179.47	0.000131
Sandy Mai	12648.67	50-yr	3931	170	180.53	177.16	180.57	0.000228
Sandy Mai	12648.67	100-yr	4945	170	181.27	177.16	181.32	0.000264
Sandy Mai	12648.67	500-yr	8165	170	185.24	177.17	185.29	0.000178
Sandy Mai	12600		Mult Open					
Sandy Mai	12591.62	10-yr	2229	171	177.33	175.65	177.8	0.001786

Sandy Mai	12591.62	50-yr	3931	171	179.41	177.15	179.91	0.001512
Sandy Mai	12591.62	100-yr	4945	171	180.89	177.85	181.24	0.000966
Sandy Mai	12591.62	500-yr	8165	171	185.01	179.83	185.23	0.000469
Sandy Mai	12103.89	10-yr	2229	171	176.38	175.43	176.81	0.002262
Sandy Mai	12103.89	50-yr	3931	171	178.82	176.41	179.15	0.001296
Sandy Mai	12103.89	100-yr	4945	171	180.51	176.87	180.76	0.000821
Sandy Mai	12103.89	500-yr	8165	171	184.81	178.14	185	0.000437
Sandy Mai	11764.28	10-yr	2229	171.05	176.1	173.8	176.22	0.001021
Sandy Mai	11764.28	50-yr	3931	171.05	178.67	174.52	178.79	0.000621
Sandy Mai	11764.28	100-yr	4945	171.05	180.42	174.92	180.52	0.000429
Sandy Mai	11764.28	500-yr	8165	171.05	184.78	176.04	184.86	0.000241
Sandy Mai	11405.26	10-yr	2229	168.7	175.45	173.34	175.79	0.000992
Sandy Mai	11405.26	50-yr	3931	168.7	178.16	174.73	178.5	0.000635
Sandy Mai	11405.26	100-yr	4945	168.7	180	175.31	180.31	0.00044
Sandy Mai	11405.26	500-yr	8165	168.7	184.39	176.8	184.7	0.000283
Sandy Mai	11350		Mult Open					
Sandy Mai	11303	10-yr	2229	168.66	173.55	173.55	174.85	0.005712
Sandy Mai	11303	50-yr	3931	168.66	174.81	174.81	176.57	0.005939
Sandy Mai	11303	100-yr	4945	168.66	175.65	175.65	177.45	0.00522
Sandy Mai	11303	500-yr	8165	168.66	178.05	177.16	179.75	0.003439
Sandy Mai	10733.77	10-yr	2229	166.86	173.28	170.71	173.34	0.000273
Sandy Mai	10733.77	50-yr	3931	166.86	174.9	171.59	174.96	0.000208
Sandy Mai	10733.77	100-yr	4945	166.86	175.74	171.86	175.8	0.000178
Sandy Mai	10733.77	500-yr	8165	166.86	178.74	172.62	178.79	0.000093
Sandy Mai	10700		Bridge					
Sandy Mai	10661.15	10-yr	2229	166.01	173.27	170.85	173.29	0.000083
Sandy Mai	10661.15	50-yr	3931	166.01	174.89	170.86	174.91	0.000075
Sandy Mai	10661.15	100-yr	4945	166.01	175.73	170.99	175.76	0.00007
Sandy Mai	10661.15	500-yr	8165	166.01	178.74	171.67	178.77	0.000047
Sandy Mai	10118.31	10-yr	2229	165	173.25	168.31	173.26	0.000038
Sandy Mai	10118.31	50-yr	3931	165	174.86	168.86	174.88	0.000048
Sandy Mai	10118.31	100-yr	4945	165	175.7	169.13	175.73	0.000051
Sandy Mai	10118.31	500-yr	8165	165	178.72	169.91	178.75	0.000044
Sandy Mai	9744.554	10-yr	2229	163.7	173.07	169.56	173.19	0.000314
Sandy Mai	9744.554	50-yr	3931	163.7	174.84	171.21	174.86	0.000055
Sandy Mai	9744.554	100-yr	4945	163.7	175.68	172.19	175.71	0.000056
Sandy Mai	9744.554	500-yr	8165	163.7	178.7	173.14	178.73	0.000045

Sandy Mai	9685		Bridge					
Sandy Mai	9639.641	10-yr	2229	163	170.64	166.43	170.69	0.000276
Sandy Mai	9639.641	50-yr	3931	163	173.78	167.24	173.83	0.000182
Sandy Mai	9639.641	100-yr	4945	163	175.44	167.68	175.5	0.000152
Sandy Mai	9639.641	500-yr	8165	163	178.52	168.81	178.59	0.000157
Sandy Mai	8975.758	10-yr	2229	161	170.51	165.94	170.55	0.000171
Sandy Mai	8975.758	50-yr	3931	161	173.71	166.8	173.74	0.000092
Sandy Mai	8975.758	100-yr	4945	161	175.39	167.2	175.41	0.000079
Sandy Mai	8975.758	500-yr	8165	161	178.47	168.25	178.5	0.00008
Sandy Mai	8504.5	10-yr	2229	161.39	170.38	164.4	170.46	0.000154
Sandy Mai	8504.5	50-yr	3931	161.39	173.55	165.54	173.66	0.000151
Sandy Mai	8504.5	100-yr	4945	161.39	175.22	166.14	175.34	0.000145
Sandy Mai	8504.5	500-yr	8165	161.39	178.21	167.82	178.4	0.000189
Sandy Mai	8350		Mult Open					
Sandy Mai	8235.939	10-yr	2229	159	169.92	163.74	170.06	0.00019
Sandy Mai	8235.939	50-yr	3931	159	172.98	165.16	173.17	0.000199
Sandy Mai	8235.939	100-yr	4945	159	174.61	165.83	174.82	0.00019
Sandy Mai	8235.939	500-yr	8165	159	177.24	167.73	177.57	0.000258
Sandy Mai	8063.602	10-yr	2229	158.71	169.3	165.28	169.86	0.000836
Sandy Mai	8063.602	50-yr	3931	158.71	173.04	167.71	173.07	0.000046
Sandy Mai	8063.602	100-yr	4945	158.71	174.69	168.67	174.71	0.000032
Sandy Mai	8063.602	500-yr	8165	158.71	177.38	171	177.4	0.000027
Sandy Mai	8000		Bridge					
Sandy Mai	7966.54	10-yr	2229	158.47	167.58		167.74	0.000344
Sandy Mai	7966.54	50-yr	3931	158.47	171.88		171.97	0.000165
Sandy Mai	7966.54	100-yr	4945	158.47	174.59		174.64	0.000078
Sandy Mai	7966.54	500-yr	8165	158.47	177.29		177.34	0.000075
Sandy Mai	7570.986	10-yr	2229	159	167.58		167.62	0.000095
Sandy Mai	7570.986	50-yr	3931	159	171.88		171.91	0.000045
Sandy Mai	7570.986	100-yr	4945	159	174.59		174.62	0.00003
Sandy Mai	7570.986	500-yr	8165	159	177.27		177.32	0.00004
Sandy Mai	7173.807	10-yr	2229	159	167.59	160.89	167.59	0.000017
Sandy Mai	7173.807	50-yr	3931	159	171.88	161.31	171.9	0.000012
Sandy Mai	7173.807	100-yr	4945	159	174.59	161.58	174.6	0.000009
Sandy Mai	7173.807	500-yr	8165	159	177.28	162.31	177.3	0.000015

Sandy Mai	6825.559	10-yr	2229	156	167.21	161.88	167.49	0.000452
Sandy Mai	6825.559	50-yr	3931	156	171.58	164.31	171.82	0.000249
Sandy Mai	6825.559	100-yr	4945	156	174.32	165.23	174.53	0.000181
Sandy Mai	6825.559	500-yr	8165	156	176.96	168.06	177.22	0.000196
Sandy Mai	6765		Bridge					
Sandy Mai	6709.658	10-yr	2229	156	166.81	162.89	167.3	0.00079
Sandy Mai	6709.658	50-yr	3931	156	171.22	166.25	171.55	0.00037
Sandy Mai	6709.658	100-yr	4945	156	173.98	167	174.26	0.000254
Sandy Mai	6709.658	500-yr	8165	156	176.4	168.83	176.7	0.000251
Sandy Mai	6668.16	10-yr	2229	156.01	166.94	161.39	167.12	0.000262
Sandy Mai	6668.16	50-yr	3931	156.01	171.25	163.14	171.48	0.000207
Sandy Mai	6668.16	100-yr	4945	156.01	174.09	163.85	174.14	0.000047
Sandy Mai	6668.16	500-yr	8165	156.01	176.5	165.78	176.58	0.000068
Sandy Mai	6600		Bridge					
Sandy Mai	6572.639	10-yr	2229	156	166.68	161.78	166.89	0.000311
Sandy Mai	6572.639	50-yr	3931	156	170.5	163.21	170.8	0.000276
Sandy Mai	6572.639	100-yr	4945	156	172.88	163.93	172.91	0.000042
Sandy Mai	6572.639	500-yr	8165	156	175.73	165.92	175.79	0.000055
Sandy Mai	6414.98	10-yr	2229	157	166.61	161.46	166.84	0.000373
Sandy Mai	6414.98	50-yr	3931	157	170.45	163.1	170.75	0.000332
Sandy Mai	6414.98	100-yr	4945	157	172.49	163.92	172.81	0.000304
Sandy Mai	6414.98	500-yr	8165	157	174.98	166.12	175.61	0.000488
Sandy Mai	6300		Mult Open					
Sandy Mai	6189.177	10-yr	2229	155	165.48	161.11	165.92	0.000683
Sandy Mai	6189.177	50-yr	3931	155	168.03	163.28	168.75	0.000878
Sandy Mai	6189.177	100-yr	4945	155	169.05	164.39	169.96	0.001025
Sandy Mai	6189.177	500-yr	8165	155	170.81	166.97	172.42	0.001636
Sandy Mai	5508.105	10-yr	4460	154	164.99	163.33	165.38	0.000795
Sandy Mai	5508.105	50-yr	7709	154	168.23	164.39	168.3	0.000108
Sandy Mai	5508.105	100-yr	9741	154	169.37	164.93	169.43	0.000089
Sandy Mai	5508.105	500-yr	16941	154	171.45	166.6	171.54	0.000095
Sandy Mai	5084.678	10-yr	4460	154	164.01	163.63	164.87	0.001485
Sandy Mai	5084.678	50-yr	7709	154	167.95	164.47	168.2	0.000308
Sandy Mai	5084.678	100-yr	9741	154	169.07	165.51	169.35	0.000284
Sandy Mai	5084.678	500-yr	16941	154	171.43	166.78	171.5	0.000068
Sandy Mai	5065.378	10-yr	4460	154.25	163.7	163.7	164.81	0.002028

Sandy Mai	5065.378	50-yr	7709	154.25	168	164.9	168.18	0.000232
Sandy Mai	5065.378	100-yr	9741	154.25	169.12	165.33	169.32	0.000208
Sandy Mai	5065.378	500-yr	16941	154.25	171.4	166.48	171.49	0.000093
Sandy Mai	5039.878	10-yr	4460	154.25	163.97	162.75	164.46	0.001002
Sandy Mai	5039.878	50-yr	7709	154.25	167.99	164.22	168.16	0.000193
Sandy Mai	5039.878	100-yr	9741	154.25	169.11	164.64	169.3	0.000185
Sandy Mai	5039.878	500-yr	16941	154.25	171.42	165.85	171.47	0.000059
Sandy Mai	4865.578	10-yr	4460	154.25	163.91	158.85	164.06	0.000245
Sandy Mai	4865.578	50-yr	7709	154.25	167.89	160.59	168.04	0.000143
Sandy Mai	4865.578	100-yr	9741	154.25	169	161.51	169.18	0.000162
Sandy Mai	4865.578	500-yr	16941	154.25	171.39	163.39	171.43	0.000047
Sandy Mai	4790.088	10-yr	4460	154	163.63	160.3	163.98	0.005144
Sandy Mai	4790.088	50-yr	7709	154	167.49	162.33	167.97	0.002001
Sandy Mai	4790.088	100-yr	9741	154	168.44	162.75	169.1	0.002207
Sandy Mai	4790.088	500-yr	16941	154	171.37	164.22	171.43	0.000089
Sandy Mai	4777.088	10-yr	4460	154.25	163.31	160.52	163.88	0.001
Sandy Mai	4777.088	50-yr	7709	154.25	167.35	162.34	167.93	0.000591
Sandy Mai	4777.088	100-yr	9741	154.25	168.28	163.19	169.05	0.000708
Sandy Mai	4777.088	500-yr	16941	154.25	171.38	165.77	171.41	0.000065
Sandy Mai	4740		Bridge					
Sandy Mai	4685.592	10-yr	4460	154	161.51	160.67	162.91	0.003319
Sandy Mai	4685.592	50-yr	7709	154	162.84	162.56	165.35	0.004934
Sandy Mai	4685.592	100-yr	9741	154	163.53	163.53	166.72	0.005758
Sandy Mai	4685.592	500-yr	16941	154	167.22	165.4	167.45	0.000669
Sandy Mai	4327.181	10-yr	4460	152	161.72		161.86	0.000618
Sandy Mai	4327.181	50-yr	7709	152	163.43		163.64	0.000802
Sandy Mai	4327.181	100-yr	9741	152	164.33		164.57	0.00088
Sandy Mai	4327.181	500-yr	16941	152	166.74		167.12	0.001149
Sandy Mai	3964.325	10-yr	4460	152	161.44		161.64	0.000593
Sandy Mai	3964.325	50-yr	7709	152	162.99		163.33	0.000871
Sandy Mai	3964.325	100-yr	9741	152	163.8		164.22	0.001012
Sandy Mai	3964.325	500-yr	16941	152	165.93		166.63	0.00145
Sandy Mai	3515.389	10-yr	4460	150.35	161.31		161.42	0.000323
Sandy Mai	3515.389	50-yr	7709	150.35	162.8		162.99	0.000516
Sandy Mai	3515.389	100-yr	9741	150.35	163.59		163.83	0.000607
Sandy Mai	3515.389	500-yr	16941	150.35	165.62		166.04	0.000933
Sandy Mai	3004.364	10-yr	4460	150	161.13	156.74	161.25	0.000333

Sandy Mai	3004.364	50-yr	7709	150	162.54	158.36	162.73	0.000487
Sandy Mai	3004.364	100-yr	9741	150	163.31	159.11	163.53	0.000532
Sandy Mai	3004.364	500-yr	16941	150	165.28	160.9	165.6	0.000675
Sandy Mai	2590.359	10-yr	4460	150	161.01	156.02	161.12	0.000321
Sandy Mai	2590.359	50-yr	7709	150	162.36	158.27	162.54	0.000513
Sandy Mai	2590.359	100-yr	9741	150	163.09	159.46	163.31	0.000595
Sandy Mai	2590.359	500-yr	16941	150	164.89	160.34	165.29	0.000897
Sandy Mai	2500		Bridge					
Sandy Mai	2417.391	10-yr	4460	150	156.86	156.09	157.19	0.001199
Sandy Mai	2417.391	50-yr	7709	150	158.15	156.83	158.51	0.001101
Sandy Mai	2417.391	100-yr	9741	150	158.77	157.19	159.18	0.001111
Sandy Mai	2417.391	500-yr	16941	150	160.54	158.25	161.11	0.001152
Sandy Mai	2072.963	10-yr	4460	148.51	156.52	155.33	156.79	0.000876
Sandy Mai	2072.963	50-yr	7709	148.51	157.8	156.15	158.13	0.000941
Sandy Mai	2072.963	100-yr	9741	148.51	158.41	156.55	158.78	0.000992
Sandy Mai	2072.963	500-yr	16941	148.51	160.16	157.76	160.66	0.001106
Sandy Mai	1688.606	10-yr	4460	149	156.13		156.38	0.001261
Sandy Mai	1688.606	50-yr	7709	149	157.23		157.62	0.0018
Sandy Mai	1688.606	100-yr	9741	149	157.76		158.22	0.002047
Sandy Mai	1688.606	500-yr	16941	149	159.26		159.99	0.002695
Sandy Mai	1299.523	10-yr	4460	149	155.78	153.98	155.94	0.000957
Sandy Mai	1299.523	50-yr	7709	149	156.81	155.02	157.02	0.001162
Sandy Mai	1299.523	100-yr	9741	149	157.31	155.39	157.55	0.001265
Sandy Mai	1299.523	500-yr	16941	149	158.74	156.48	159.1	0.001574
Sandy Mai	663.061	10-yr	4460	146.71	154.93	154.26	155.22	0.001291
Sandy Mai	663.061	50-yr	7709	146.71	155.81	154.95	156.16	0.001578
Sandy Mai	663.061	100-yr	9741	146.71	156.25	155.37	156.62	0.001678
Sandy Mai	663.061	500-yr	16941	146.71	157.48	156.22	157.97	0.002025
Sandy Mai	143.571	10-yr	4460	147	153.67	153.67	154.18	0.003578
Sandy Mai	143.571	50-yr	7709	147	154.14	154.14	154.82	0.005016
Sandy Mai	143.571	100-yr	9741	147	154.39	154.39	155.16	0.005715
Sandy Mai	143.571	500-yr	16941	147	155.1	155.1	156.16	0.007386

Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)	Froude # Chl
7.49	94.36	59.2	0.96
6.96	218.12	183.69	0.71
7.27	269.56	213.05	0.71
8.22	401.5	255.16	0.75
8.63	111.13	65.57	0.81
9.99	163.37	74.6	0.85
10.71	188.05	78.47	0.88
12.03	287.03	110.85	0.89
8.22	105.82	62.51	0.82
8.21	221.84	148.04	0.71
8.71	260.8	160.34	0.73
9.44	394.88	228.02	0.74
4.77	212.18	88.04	0.33
6.53	284.23	120.3	0.43
7.43	316.67	126.74	0.48
11.11	341.69	135.81	0.71
10.45	75.19	29.94	0.94
10.83	150.13	72.77	0.8
11.2	197.39	97.83	0.79
12.05	354.77	119.2	0.77
6.68	185.54	107.36	0.65
8.3	285.57	193.54	0.73
8.63	341.73	225.59	0.73
9.06	563.19	256.56	0.7
4.44	197.74	107.09	0.31
4.73	310.8	160.75	0.31
5.14	348.92	170.35	0.33
5.92	471.82	206.19	0.37
3.05	351.74	155.66	0.22
3.58	503.3	186.97	0.24
3.78	573.36	191.04	0.25
4.42	748.43	216.41	0.27
2.95	390.76	168.21	0.19

3.59	535.09	180.46	0.22
3.92	597.14	183.71	0.23
4.86	749.43	206.1	0.28
4.42	184.47	63.11	0.3
6.26	220.52	71.54	0.41
7.18	238.66	78.23	0.46
9.87	289.31	117.01	0.61
1.42	797.39	227.26	0.08
2.01	939.11	245.33	0.1
2.36	1010.37	269.78	0.12
3.1	1193.42	283.92	0.15
8.48	95.49	35.82	0.76
11.95	124.74	45.86	0.99
11.11	227.51	106.32	0.82
10.31	702.29	348.64	0.66
9.71	87.4	134.02	1
7.7	272.31	213.76	0.69
8.23	319.8	245.02	0.72
9.71	430.86	334.41	0.8
5.04	167.75	255.6	0.46
7.4	203.99	285.67	0.64
3.44	645.18	313.51	0.29
4.31	847.03	356.94	0.34
1.53	761.08	317.15	0.11
2.23	882.37	331.86	0.15
2.54	944.7	332.83	0.17
3.33	1108.58	335.07	0.22
3.11	522.14	244.3	0.19
3.95	742.21	285.47	0.23
4.32	855.67	307.5	0.25
5.18	1143.82	332.06	0.28
3.38	337.91	126.5	0.22
4.75	434.95	155.47	0.3

5.42	485.04	173.15	0.33
7.35	604.39	213.62	0.43
3.9	239.56	100.73	0.27
5.87	275.57	104.14	0.4
6.78	296.71	106.03	0.45
9.62	333.78	111.03	0.63
3.4	445.88	301.84	0.23
5.04	541.85	327.1	0.34
5.76	603.07	341.2	0.38
8.2	686.27	348.36	0.53
9.54	79.46	33.49	0.96
8.82	211.68	123.93	0.7
9.09	276.91	145.5	0.69
10.41	415.41	203.81	0.73
6.71	176.15	106.33	0.71
7.12	291.92	121.29	0.65
7.21	354.62	122.97	0.62
8.54	479.28	134.48	0.66
9.27	109.93	53.35	0.85
10.89	169.93	68.25	0.88
11.85	200.51	80.2	0.92
12.1	379.89	159.01	0.83
5.71	264.54	151.44	0.54
6.96	370.46	171.13	0.6
7.81	450.89	233.39	0.65
7.51	755.15	295.42	0.55
6.9	184.19	142.81	0.61
7.35	275.08	152.04	0.61
5.41	427.97	164.81	0.4
4.51	788.08	266.65	0.3
6.14	192.18	137.91	0.57
4.56	474.75	156.55	0.34
3.98	683.09	181.75	0.27
4.39	1021.08	214.09	0.27

5.22	132.02	26.48	0.41
6.74	175.57	31.35	0.47
6.89	218.55	199.72	0.43
8.79	386.12	387.92	0.52
4.9	140.52	29.07	0.39
6.87	170.7	56.28	0.51
8.02	181.22	92.09	0.57
10.85	217.84	217.06	0.72
9.85	343.57	145.65	0.71
12	489.37	162.86	0.8
12.81	563.35	166.15	0.83
14.46	793.83	222.26	0.87
11.89	264.68	124.75	1.06
12.39	440.13	184.31	0.97
12.91	529.12	194.64	0.97
15.93	701.83	234.34	1.12
5	418.13	163.89	0.34
4.85	839.14	429.98	0.29
5.23	972.04	458.55	0.3
6.87	1226.84	489.79	0.39
9.29	182.23	47.59	0.72
11.95	283.68	124.44	0.84
10.04	591.03	421.6	0.64
9.76	1102.58	509.34	0.58
7.95	264.91	148.55	0.59
6.79	659.47	330.44	0.44
6.72	902.7	440.06	0.42
7.25	1373.78	514.89	0.43
5.09	337.72	265.09	0.32
4.47	1217.36	495.34	0.26
4.5	1543.51	567.52	0.25
5.15	2092.63	592.08	0.27
8.59	212.47	64.27	0.68
10.93	380.66	219.78	0.76
10.04	614.1	288.22	0.66

9.07	1335.71	474.83	0.53
6.65	441.41	144.67	0.47
8.04	670.38	179.23	0.51
8.49	819.68	206.96	0.52
8.53	1525.79	434.51	0.46
7.95	557.22	198.08	0.5
9.43	858.34	213.46	0.55
10.06	1016.05	236.6	0.56
11.21	1569.22	355.08	0.57
4.84	1008.91	299.91	0.3
5.69	1460.93	319.09	0.33
6.1	1700.79	328.48	0.34
7.27	2334.8	367.41	0.37
5.62	1198.25	346.21	0.37
6.85	1751.1	409.56	0.42
7.22	2059.87	417.46	0.42
8.26	2840.64	438.8	0.44
1.7	1530.66	267.5	0.1
2.3	1883	271.27	0.13
2.59	2079.12	283.49	0.14
3.34	2615.56	332.34	0.17
1.65	1467.28	264.78	0.09
2.17	1781.07	284.24	0.11
2.38	1967.74	295.77	0.12
2.91	2465.38	336.77	0.14
1.77	1680.95	391.31	0.1
2.44	2087.2	463.61	0.13
2.72	2341.01	499.76	0.14
3.4	3007.49	555.03	0.17
5.66	478.63	165.22	0.41
5.63	889.21	259.29	0.35
5.45	1154.15	326.79	0.32
5.16	1890.94	522.79	0.27
12.2	205.83	59.81	0.92
13.74	328.84	77.58	0.9
14.69	392.24	85	0.91

17.15	563.85	103.35	0.96
5.83	371.03	83.37	0.44
8.24	459.85	95.61	0.58
9.6	503.92	105.27	0.65
13.64	593.95	122.31	0.87
5.32	707.23	252.37	0.35
6.31	1033.65	297.4	0.39
6.77	1216.22	319.22	0.4
7.87	1725.16	368.69	0.43
3.69	865.48	375.63	0.25
3.76	1350.39	434.47	0.24
3.78	1621.3	456.14	0.23
3.95	2333.1	497.64	0.22
3.46	934.93	300.33	0.24
3.89	1366	333.46	0.24
4.14	1584.43	370.79	0.25
4.66	2323.13	553.75	0.26
2.16	1387.77	442.29	0.16
2.49	2045.86	503.22	0.17
2.64	2374.58	515.64	0.17
3.04	3277.04	613.02	0.18
2.1	1381.65	386.17	0.14
2.6	1910.51	446.5	0.16
2.78	2231.78	525.56	0.17
3.22	3049.49	567.35	0.18
1.37	1988.76	492.83	0.08
1.8	2589.52	539.56	0.1
1.97	2917.95	574.1	0.11
2.4	3756.99	608.65	0.12
1.74	1501.53	535.66	0.11
2.46	1835.86	591.28	0.15
2.78	2023.71	620.51	0.16
3.66	2489.27	690.56	0.2
10.68	211.51	212.86	0.98
9.06	622.68	300.14	0.75
9.79	716.07	302.76	0.78

10.72	1034.22	311.05	0.78
2.33	1476.49	388.6	0.15
3.3	1797.3	409.02	0.2
3.61	2040.78	424.17	0.21
4.75	2577.65	475.74	0.26
1.75	2112.72	591.13	0.11
2.49	2604.36	645.35	0.14
2.71	2994.98	689.67	0.15
3.4	3882.33	765.49	0.18
1.88	2070.3	647.46	0.11
2.47	2692.14	701.46	0.14
2.6	3144.64	726.19	0.14
3.19	4064.29	777.61	0.17
2.22	1477.27	377.85	0.14
3.18	1820.59	420.11	0.19
3.54	2096.92	484.39	0.2
4.64	2728.01	608.15	0.25
2.1	1690.81	422.84	0.12
3.07	2073.98	483.08	0.17
3.36	2380.36	519.68	0.18
4.32	3002.54	573.09	0.22
11.32	200.94	53.15	0.97
12.69	350.92	99.73	0.89
11.06	623.69	230.74	0.7
12.05	1041.21	315.69	0.7
3.76	783.48	283.69	0.32
4.36	1164.58	313.42	0.33
4.75	1339.8	326.31	0.34
5.7	1803.94	345.22	0.37
2.97	964.96	334.1	0.25
3.47	1410.76	355.13	0.26
3.81	1607.5	363.76	0.27
4.71	2122.85	385.81	0.3
2.84	1144.15	374.37	0.21

3.34	1660.28	417.29	0.22
3.65	1892.31	432.95	0.23
4.45	2511.86	466.32	0.26
2.05	1533.85	421.73	0.14
2.57	2103.83	459.45	0.16
2.87	2358.81	476.14	0.18
3.61	3036.38	506.2	0.21
5.67	547.38	217.38	0.33
7.32	833.8	302.95	0.41
8.08	969.34	319.24	0.44
9.58	1374.98	362.29	0.49
7.86	334.6	176.44	0.57
9.93	537.5	212.42	0.66
10.63	647.53	225.96	0.68
12.42	936.21	260.35	0.74
8.68	375.24	205.78	0.66
10.19	576.23	244.14	0.72
10.97	668.06	253.71	0.75
12.83	921.11	277.91	0.82
7.91	484.57	404.33	0.76
7.88	786.19	414.27	0.69
7.69	968.54	418.7	0.64
7.9	1459.9	446.65	0.58
4.51	705.7	319.51	0.4
5.41	1010.29	353.16	0.43
5.83	1170.51	369.25	0.45
6.93	1610.9	411.4	0.48
8.52	355.62	245.53	0.97
9.85	529.13	270.74	0.99
10.46	623.7	284.19	1
11.52	992.48	399.55	0.96
3.21	760.43	402.77	0.38
3.93	1108.41	431.92	0.4
4.25	1299.29	446.17	0.4
4.97	1910.05	505.36	0.4
3.96	565.15	334	0.53

4.65	879.63	356.46	0.5
5.02	1044.56	374.26	0.5
5.56	1614.94	418.06	0.46
3.66	761.67	320.46	0.33
4.57	1059.37	346.27	0.37
5	1212.63	358.38	0.39
5.47	1804.43	398.1	0.37
8.53	466.16	282.71	0.75
9.33	718.72	307.37	0.74
8.43	971.26	330.62	0.62
7.54	1758.43	400.95	0.48
5.74	1074.19	398.2	0.4
6.19	1828.03	436.45	0.38
6.57	2166	447.68	0.39
7.49	3185.79	508.57	0.4
8.75	640.31	284.16	0.59
11.23	1033.72	353.11	0.7
11.74	1303.02	377.54	0.7
12.16	2543.2	570.53	0.64
9.65	545.11	223.28	0.72
10.56	875.83	273.84	0.71
10.87	1171.86	319.13	0.69
9.24	2329.86	426.72	0.49
4.16	869.73	253.59	0.27
5.22	1211.66	274.68	0.32
6.02	1458.37	346.75	0.35
4.99	2907.33	472.12	0.25
3.15	947.44	295.56	0.22
4.12	1280.04	303.45	0.27
4.39	1508.72	311.02	0.27
3.99	3190.87	501.57	0.2
1.48	2209.42	495.39	0.09
2.11	2689.33	537.01	0.12
2.38	3027.32	576.27	0.13
2.4	5008.62	714.46	0.11
6.87	822.84	268.43	0.5

7.71	1627.12	504.76	0.48
6.9	2397.8	530.73	0.39
6.11	4755.31	799.09	0.29
7.21	969.3	344.45	0.55
7.01	1904.62	434.92	0.44
6.36	2676.41	470.82	0.36
5.95	4990.65	596.95	0.28
4.6	1534	430.79	0.36
4.74	2751.99	518.37	0.3
4.52	3708.92	584.23	0.26
4.39	6575.09	703.69	0.21
5.17	520.5	167.74	0.37
5.29	911.97	307.35	0.31
5	1201.14	463.11	0.27
5.06	1898.5	842.16	0.23
10.06	270.8	102.48	0.84
12.1	406.8	116.95	0.89
12.44	510.5	136.57	0.85
12.41	849.04	327.22	0.73
2.76	1206.89	453.63	0.19
2.81	2107.92	617.97	0.18
2.78	2647.03	652.83	0.17
2.45	4752.01	749.33	0.13
1.6	2092.21	633.36	0.11
1.76	3189.8	712.45	0.11
1.82	3795.88	729.67	0.11
1.8	6251.06	930.68	0.09
1.23	2536.85	562.34	0.08
1.55	3490.96	620.29	0.09
1.69	4021.99	639.22	0.09
1.87	6114.22	755.03	0.09
3.6	1015.16	617.3	0.22
1.71	3545.38	693.75	0.09
1.81	4136.11	712.37	0.1
1.91	6428.07	808.14	0.09

2.96	2133.39	549.64	0.2
3.09	4121.2	654.75	0.17
3.13	5250.31	700.83	0.16
3.72	7546.78	790.92	0.17
2.79	2775.34	763.47	0.16
2.51	6375.07	929.17	0.13
2.52	7997.55	997.41	0.12
2.89	11254.79	1098.63	0.12
2.65	1026.09	942.13	0.16
3.21	1743.3	1127.87	0.16
3.43	2124.98	1191.29	0.16
4.46	2809.43	1269.82	0.19
3.29	750.63	316.48	0.18
3.99	1182.28	460.01	0.19
4.2	1432.25	550.11	0.19
5.44	1848.28	629.31	0.23
6.61	390	450.76	0.37
1.91	3809.42	753.08	0.09
1.72	5123.25	840.6	0.08
1.77	7418.41	866.17	0.07
3.89	746.02	133.35	0.23
3.52	1844.81	492.13	0.17
2.74	3340.06	628.22	0.12
2.99	5068.9	671.99	0.12
2	1496.5	285.56	0.12
1.8	2815.32	324.43	0.09
1.67	3703.57	331.18	0.07
2.17	4607.63	347.54	0.09
0.85	2905.3	391.17	0.05
0.94	4632.97	413.48	0.05
0.95	5773.8	429.73	0.04
1.34	7036.9	491.99	0.06

5.12	601.97	135.14	0.27
4.76	1089.38	221.84	0.21
4.53	1414.04	258.67	0.19
5.16	2187.29	296.37	0.2
6.28	476.26	156.95	0.35
5.48	937.56	269.82	0.25
5.1	1253.66	329.36	0.22
5.55	2034.81	367.02	0.22
3.78	688.44	302	0.21
4.24	1069.01	371.43	0.2
2.28	3012.52	441.64	0.1
2.99	3764.89	481.57	0.12
4.05	620.64	254.14	0.22
4.72	911.24	369.24	0.22
2.06	3275.89	402.47	0.09
2.6	4290.44	469.19	0.1
4.27	703.03	101.47	0.24
5.05	1097.35	289.4	0.24
5.32	1338.69	460.64	0.24
7.45	1853.59	662.13	0.31
6.05	740.2	121.05	0.33
7.95	1062.89	131.96	0.39
9.05	1200.56	144.74	0.43
12.38	1522.59	199.91	0.55
6.71	1220.71	540.95	0.36
2.95	4108.6	892.57	0.14
2.83	5280.85	1203.63	0.13
3.18	7694.56	1222.79	0.14
8.51	772.8	636.28	0.48
4.87	2057.68	1199.53	0.23
4.93	2446.59	1227.01	0.23
2.67	9638.84	1315.24	0.11
9.36	666.32	537.92	0.56

4.12	2336.7	1017.39	0.2
4.13	2797.85	1043.15	0.19
3.05	8010.27	1143.02	0.13
6.69	940.51	695.6	0.39
3.75	2392.91	1179.84	0.18
3.88	2803.57	1492.99	0.18
2.42	10098.49	1567.32	0.1
3.26	1500.04	702.59	0.2
3.21	2553.93	1293.96	0.16
3.6	2851.94	1328.99	0.17
2.16	10726.5	1411.72	0.09
4.56	1006.67	689.34	0.27
3.61	1750.1	1221.05	0.18
3.98	1937.78	1323.9	0.19
0.91	10555.25	1442.54	0.04
6.43	976.78	908.79	0.39
6.41	1710.52	1370.17	0.32
7.36	1883.05	1392.17	0.35
2.55	12661.21	1496.19	0.11
10.33	752.2	805.22	0.69
14.17	992.85	827.66	0.87
16.15	1117.2	835.28	0.95
6.93	7975.47	892.37	0.34
4.76	2621.76	538.59	0.28
6.07	3567.59	561.85	0.32
6.71	4077.84	570.03	0.34
8.66	5488.75	600.93	0.41
5.1	2596.87	473.75	0.3
6.89	3346.65	493.06	0.38
7.81	3760.85	523.01	0.41
10.51	4906	557.93	0.51
4.23	3689.13	621.26	0.23
5.84	4645.55	663.54	0.3
6.61	5172.71	673.96	0.33
9.05	6581.32	715.88	0.41
4.31	3193.54	640.98	0.23

5.67	4160.85	718.72	0.29
6.18	4722.14	740.33	0.31
7.67	6237.8	816.8	0.35
3.54	2128.25	467.74	0.19
4.84	2791.07	529.74	0.25
5.43	3180.76	537.82	0.27
7.3	4168.66	549.94	0.34
6.12	1188.15	454.78	0.41
6.58	1781.29	466.23	0.41
6.95	2072.37	472.71	0.42
8.01	2957.36	569.09	0.44
5.6	1311.77	451.38	0.36
6.44	1967.68	545.43	0.38
6.92	2305.71	566.67	0.4
8.18	3396.86	658.94	0.43
6.41	1992.36	529.6	0.43
8.43	2589.91	572.16	0.52
9.38	2891.07	578.51	0.56
11.97	3773.33	598.89	0.66
5.43	2450.25	817.13	0.37
6.58	3323.01	859.86	0.42
7.16	3751.53	869.08	0.44
8.89	5043.04	948.79	0.5
6.89	1960.1	846.23	0.44
8.19	2759.15	943.05	0.49
8.74	3177.81	958.44	0.51
10.46	4405.93	1064.14	0.58
10.07	1787.91	1050.67	0.71
12.51	2288.19	1075.19	0.85
13.67	2556.32	1099.1	0.91
16.56	3345.28	1259.04	1.05

Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Crit W.S. (ft)	E.G. Elev (ft)	E.G. Slope (ft/ft)
Sandy Mai	38835.32	10-yr	689	335	337.86	337.86	338.72	0.009987
Sandy Mai	38835.32	50-yr	1169	335	338.39	338.39	339.78	0.011749
Sandy Mai	38835.32	100-yr	1443	335	339.2	339.2	339.87	0.004571
Sandy Mai	38835.32	500-yr	2290	335	339.75	339.75	340.52	0.004731
Sandy Mai	38353.13	10-yr	689	327	331.57	331.57	332.39	0.005963
Sandy Mai	38353.13	50-yr	1169	327	332.6	332.6	334.15	0.007416
Sandy Mai	38353.13	100-yr	1443	327	332.64	332.64	333.79	0.006468
Sandy Mai	38353.13	500-yr	2290	327	333.69	333.69	334.99	0.006198
Sandy Mai	37880.8	10-yr	689	319	323.52	323.52	324.37	0.006525
Sandy Mai	37880.8	50-yr	1169	319	324.51	324.51	325.27	0.004762
Sandy Mai	37880.8	100-yr	1443	319	324.83	324.83	325.57	0.004579
Sandy Mai	37880.8	500-yr	2290	319	325.5	325.5	326.29	0.004461
Sandy Mai	37489.56	10-yr	689	311.79	319.52	316.72	319.8	0.000908
Sandy Mai	37489.56	50-yr	1169	311.79	320.61	318.43	321	0.001121
Sandy Mai	37489.56	100-yr	1443	311.79	320.49	319	321.1	0.001831
Sandy Mai	37489.56	500-yr	2290	311.79	320.68	320.68	322.01	0.00396
Sandy Mai	37270		Culvert					
Sandy Mai	37056.92	10-yr	689	306.66	311.36	311.36	312.99	0.008131
Sandy Mai	37056.92	50-yr	1169	306.66	313.19	313.19	314.77	0.005178
Sandy Mai	37056.92	100-yr	1443	306.66	313.8	313.8	315.39	0.004856
Sandy Mai	37056.92	500-yr	2290	306.66	315.13	315.13	316.68	0.004359
Sandy Mai	36678.73	10-yr	689	301	304.8	304.3	305.21	0.003799
Sandy Mai	36678.73	50-yr	1169	301	305.82	304.95	306.39	0.003792
Sandy Mai	36678.73	100-yr	1443	301	305.92	304.94	306.51	0.004274
Sandy Mai	36678.73	500-yr	2290	301	306.72	306.32	307.25	0.003772
Sandy Mai	36275.49	10-yr	689	296.1	303.64	301.61	303.88	0.002586
Sandy Mai	36275.49	50-yr	1169	296.1	304.84	303.51	305.16	0.002051
Sandy Mai	36275.49	100-yr	1443	296.1	304.65	303.83	304.99	0.002853
Sandy Mai	36275.49	500-yr	2290	296.1	305.3	304.46	305.78	0.003373
Sandy Mai	36000		Culvert					
Sandy Mai	35791.32	10-yr	689	286.09	293.04		293.12	0.00128
Sandy Mai	35791.32	50-yr	1169	286.09	294.59		294.78	0.00164
Sandy Mai	35791.32	100-yr	1443	286.09	294.29		294.41	0.001521
Sandy Mai	35791.32	500-yr	2290	286.09	295.17		295.34	0.001786
Sandy Mai	35582.96	10-yr	689	285	292.83	288.97	292.92	0.00072

Sandy Mai	35582.96	50-yr	1169	285	294.29	290.2	294.48	0.001142
Sandy Mai	35582.96	100-yr	1443	285	294	290.8	294.13	0.001052
Sandy Mai	35582.96	500-yr	2290	285	294.79	292.54	294.99	0.001437
Sandy Mai	35513		Culvert					
Sandy Mai	35420.3	10-yr	689	283	290.25		290.51	0.002031
Sandy Mai	35420.3	50-yr	1169	283	291.22		291.88	0.005455
Sandy Mai	35420.3	100-yr	1443	283	291.04		291.69	0.004615
Sandy Mai	35420.3	500-yr	2290	283	291.55	291.18	292.72	0.007987
Sandy Mai	35237.49	10-yr	689	279.02	290.31	283.38	290.33	0.000135
Sandy Mai	35237.49	50-yr	1169	279.02	291.39	285.03	291.44	0.000276
Sandy Mai	35237.49	100-yr	1443	279.02	291.19	285.86	291.23	0.000337
Sandy Mai	35237.49	500-yr	2290	279.02	291.85	288.11	291.92	0.000542
Sandy Mai	34267		Culvert					
Sandy Mai	33297.82	10-yr	689	253	257.22	256.67	258.31	0.005089
Sandy Mai	33297.82	50-yr	1169	253	258.19	257.86	260.14	0.006781
Sandy Mai	33297.82	100-yr	1443	253	259.06	259.06	260.79	0.005174
Sandy Mai	33297.82	500-yr	2290	253	260.91	260.91	262.07	0.003058
Sandy Mai	32874.91	10-yr	689	251	254	254	255.38	0.009335
Sandy Mai	32874.91	50-yr	1169	251	255.31	255.31	257.04	0.007389
Sandy Mai	32874.91	100-yr	1443	251	255.13	255.13	255.76	0.004336
Sandy Mai	32874.91	500-yr	2290	251	255.62	255.62	256.41	0.005191
Sandy Mai	32432.32	10-yr	689	249	252.8	251.63	253.11	0.001774
Sandy Mai	32432.32	50-yr	1169	249	254	252.57	254.58	0.002206
Sandy Mai	32432.32	100-yr	1443	249	253.53	252.93	253.63	0.000652
Sandy Mai	32432.32	500-yr	2290	249	254.13	253.45	254.27	0.000865
Sandy Mai	32009.44	10-yr	689	246	252.74	249.48	252.75	0.000231
Sandy Mai	32009.44	50-yr	1169	246	253.89	250.64	253.95	0.000474
Sandy Mai	32009.44	100-yr	1443	246	253.3	251.24	253.35	0.00057
Sandy Mai	32009.44	500-yr	2290	246	253.79	252	253.87	0.000893
Sandy Mai	31828		Culvert					
Sandy Mai	31647.46	10-yr	689	239	247.63	243.29	247.72	0.000249
Sandy Mai	31647.46	50-yr	1169	239	249.02	244.52	249.16	0.000337
Sandy Mai	31647.46	100-yr	1443	239	248.85	246.31	248.99	0.0004
Sandy Mai	31647.46	500-yr	2290	239	249.74	247.57	249.92	0.000509
Sandy Mai	31476.58	10-yr	689	240	247.51	243.38	247.65	0.000425
Sandy Mai	31476.58	50-yr	1169	240	248.73	244.8	249.03	0.000732

Sandy Mai	31476.58	100-yr	1443	240	248.52	246.29	248.83	0.000921
Sandy Mai	31476.58	500-yr	2290	240	249.12	247.55	249.67	0.001544
Sandy Mai	31435		Culvert					
Sandy Mai	31392.94	10-yr	689	239.99	246.59		246.78	0.001781
Sandy Mai	31392.94	50-yr	1169	239.99	247.35		247.79	0.003422
Sandy Mai	31392.94	100-yr	1443	239.99	247.14		247.69	0.004807
Sandy Mai	31392.94	500-yr	2290	239.99	247.48		248.55	0.009096
Sandy Mai	31259.8	10-yr	689	239	246.53	243.1	246.66	0.000396
Sandy Mai	31259.8	50-yr	1169	239	247.31	244.44	247.53	0.00063
Sandy Mai	31259.8	100-yr	1443	239	247.02	245.08	247.34	0.00103
Sandy Mai	31259.8	500-yr	2290	239	247.26	246.95	247.87	0.001995
Sandy Mai	31220		Culvert					
Sandy Mai	31182.62	10-yr	689	239	242.91	242.91	244.28	0.008638
Sandy Mai	31182.62	50-yr	1169	239	244.73	244.73	245.76	0.003983
Sandy Mai	31182.62	100-yr	1443	239	245.23	245.23	246.23	0.003704
Sandy Mai	31182.62	500-yr	2290	239	246.1	246.1	247.23	0.003974
Sandy Mai	31033.98	10-yr	689	239	241.91		242.34	0.004705
Sandy Mai	31033.98	50-yr	1169	239	242.98		243.43	0.003335
Sandy Mai	31033.98	100-yr	1443	239	243.39		243.82	0.003069
Sandy Mai	31033.98	500-yr	2290	239	244.37		244.95	0.003269
Sandy Mai	30579.27	10-yr	689	235	238.76	238.76	239.85	0.006151
Sandy Mai	30579.27	50-yr	1169	235	239.73	239.73	241.24	0.00672
Sandy Mai	30579.27	100-yr	1443	235	240.2	240.2	241.76	0.00649
Sandy Mai	30579.27	500-yr	2290	235	241.72	241.72	243.09	0.004795
Sandy Mai	30235.35	10-yr	689	233	236.58	235.47	236.8	0.002513
Sandy Mai	30235.35	50-yr	1169	233	237.72	236.18	238.15	0.002906
Sandy Mai	30235.35	100-yr	1443	233	237.64	236.7	237.99	0.003303
Sandy Mai	30235.35	500-yr	2290	233	238.8	237.48	239.08	0.002254
Sandy Mai	29939.91	10-yr	689	231	235.17		235.53	0.008677
Sandy Mai	29939.91	50-yr	1169	231	236.18		236.76	0.008665
Sandy Mai	29939.91	100-yr	1443	231	236.74		236.95	0.003416
Sandy Mai	29939.91	500-yr	2290	231	238.31		238.46	0.001709
Sandy Mai	29533.61	10-yr	689	229	233.17		233.63	0.002882
Sandy Mai	29533.61	50-yr	1169	229	235.06		235.45	0.001536
Sandy Mai	29533.61	100-yr	1443	229	236.36		236.49	0.00052
Sandy Mai	29533.61	500-yr	2290	229	237.98		238.13	0.000474

Sandy Mai	29203.58	10-yr	689	227	232.44	230.01	232.86	0.001853
Sandy Mai	29203.58	50-yr	1169	227	234.11	231.27	234.79	0.002045
Sandy Mai	29203.58	100-yr	1443	227	235.29	231.92	236.02	0.001789
Sandy Mai	29203.58	500-yr	2290	227	236.44	233.64	237.54	0.002425
Sandy Mai	29175		Culvert					
Sandy Mai	29148	10-yr	689	227	232.24	229.86	232.61	0.00159
Sandy Mai	29148	50-yr	1169	227	233.67	231.04	234.3	0.002125
Sandy Mai	29148	100-yr	1443	227	233.57	231.63	234.56	0.003215
Sandy Mai	29148	500-yr	2290	227	234.57	233.23	236.39	0.004795
Sandy Mai	28902.69	10-yr	1479	225	231.04	230.68	231.83	0.003618
Sandy Mai	28902.69	50-yr	2537	225	232.35	231.55	233.4	0.003913
Sandy Mai	28902.69	100-yr	3146	225	232.43	232.22	233.52	0.004645
Sandy Mai	28902.69	500-yr	5020	225	233.67	233.24	234.92	0.004815
Sandy Mai	28536.39	10-yr	1479	225	228.89	228.89	229.8	0.009407
Sandy Mai	28536.39	50-yr	2537	225	230.79	229.7	231.7	0.005308
Sandy Mai	28536.39	100-yr	3146	225	230.51	230.19	231.41	0.006984
Sandy Mai	28536.39	500-yr	5020	225	231.3	231.16	232.58	0.008892
Sandy Mai	28078.23	10-yr	1479	221	227.99	226	228.27	0.00081
Sandy Mai	28078.23	50-yr	2537	221	230.6	227.22	230.91	0.000596
Sandy Mai	28078.23	100-yr	3146	221	230.3	227.9	230.55	0.0006
Sandy Mai	28078.23	500-yr	5020	221	230.91	229.43	231.33	0.000951
Sandy Mai	27678.42	10-yr	1479	221	226.4	225.67	227.56	0.004046
Sandy Mai	27678.42	50-yr	2537	221	227.48	227.48	230.11	0.006971
Sandy Mai	27678.42	100-yr	3146	221	228.98	228.98	230.03	0.00274
Sandy Mai	27678.42	500-yr	5020	221	230	230	230.74	0.002192
Sandy Mai	27191.04	10-yr	1479	219	225.03	223.98	225.87	0.002713
Sandy Mai	27191.04	50-yr	2537	219	227.46	226.03	227.98	0.001553
Sandy Mai	27191.04	100-yr	3146	219	227.44	226.33	227.83	0.001204
Sandy Mai	27191.04	500-yr	5020	219	228.42	227.44	228.81	0.001201
Sandy Mai	26877.54	10-yr	1479	217	224.9	221.51	225.23	0.000706
Sandy Mai	26877.54	50-yr	2537	217	227.47	223.4	227.62	0.000305
Sandy Mai	26877.54	100-yr	3146	217	227.37	224.02	227.52	0.000379
Sandy Mai	26877.54	500-yr	5020	217	228.32	226.13	228.5	0.000442
Sandy Mai	26835		Bridge					
Sandy Mai	26794.7	10-yr	1479	217	222.39		223.44	0.003559
Sandy Mai	26794.7	50-yr	2537	217	224.52		225.54	0.002436
Sandy Mai	26794.7	100-yr	3146	217	224.68	224.68	225.83	0.002942

Sandy Mai	26794.7	500-yr	5020	217	226.53		227.23	0.001774
Sandy Mai	26382.38	10-yr	1479	215	221.71	220.22	222.25	0.00159
Sandy Mai	26382.38	50-yr	2537	215	223.85	221.51	224.61	0.001603
Sandy Mai	26382.38	100-yr	3146	215	223.93	222.28	224.66	0.001727
Sandy Mai	26382.38	500-yr	5020	215	225.97	223.82	226.56	0.001308
Sandy Mai	26107.58	10-yr	2016	213	221.05	219.93	221.77	0.001686
Sandy Mai	26107.58	50-yr	3442	213	222.91	221.26	224.06	0.002109
Sandy Mai	26107.58	100-yr	4317	213	223.22	222.14	224.13	0.00195
Sandy Mai	26107.58	500-yr	7013	213	225.11	223.52	226.07	0.001923
Sandy Mai	25737.96	10-yr	2016	213	221.05		221.27	0.000609
Sandy Mai	25737.96	50-yr	3442	213	223.03		223.32	0.000889
Sandy Mai	25737.96	100-yr	4317	213	223.26		223.54	0.000699
Sandy Mai	25737.96	500-yr	7013	213	225.1		225.46	0.000794
Sandy Mai	25309.8	10-yr	2016	213.64	220.73	217.18	220.95	0.000954
Sandy Mai	25309.8	50-yr	3442	213.64	222.55	218.27	222.88	0.001115
Sandy Mai	25309.8	100-yr	4317	213.64	222.88	218.8	223.16	0.001107
Sandy Mai	25309.8	500-yr	7013	213.64	224.71	221.62	225.04	0.001135
Sandy Mai	24900.93	10-yr	2016	212	220.52		220.54	0.000761
Sandy Mai	24900.93	50-yr	3442	212	222.25		222.32	0.001292
Sandy Mai	24900.93	100-yr	4317	212	222.54		222.6	0.001324
Sandy Mai	24900.93	500-yr	7013	212	224.29		224.4	0.001796
Sandy Mai	24402.5	10-yr	2016	210	220.19		220.22	0.000563
Sandy Mai	24402.5	50-yr	3442	210	221.69		221.77	0.000986
Sandy Mai	24402.5	100-yr	4317	210	221.98		222.06	0.000944
Sandy Mai	24402.5	500-yr	7013	210	223.55		223.69	0.001199
Sandy Mai	24129.68	10-yr	2016	210	220.03	214.61	220.06	0.000686
Sandy Mai	24129.68	50-yr	3442	210	221.43	216.03	221.49	0.001037
Sandy Mai	24129.68	100-yr	4317	210	221.69	216.79	221.76	0.001307
Sandy Mai	24129.68	500-yr	7013	210	223.19	218.86	223.29	0.001737
Sandy Mai	24085		Bridge					
Sandy Mai	24042.15	10-yr	2016	210	216.24	214.73	216.62	0.001222
Sandy Mai	24042.15	50-yr	3442	210	218.84	215.93	219.08	0.000546
Sandy Mai	24042.15	100-yr	4317	210	219.29	216.49	219.58	0.000658
Sandy Mai	24042.15	500-yr	7013	210	221.87	217.78	222.12	0.000422
Sandy Mai	23662.23	10-yr	2016	208	213.45	213.45	215.28	0.006326
Sandy Mai	23662.23	50-yr	3442	208	215.37	215.37	217.89	0.005904
Sandy Mai	23662.23	100-yr	4317	208	216.01	216.01	218.39	0.005483

Sandy Mai	23662.23	500-yr	7013	208	217.83	217.83	220.88	0.005694
Sandy Mai	23396.78	10-yr	2016	208	213.34		213.84	0.00149
Sandy Mai	23396.78	50-yr	3442	208	214.86		215.7	0.001803
Sandy Mai	23396.78	100-yr	4317	208	214.79		216.11	0.002934
Sandy Mai	23396.78	500-yr	7013	208	215.58	215.38	218.2	0.005115
Sandy Mai	23076.73	10-yr	2016	206	213.15		213.36	0.001017
Sandy Mai	23076.73	50-yr	3442	206	214.59		215.06	0.001521
Sandy Mai	23076.73	100-yr	4317	206	214.93		215.23	0.001223
Sandy Mai	23076.73	500-yr	7013	206	216.4		216.77	0.001349
Sandy Mai	22719.89	10-yr	2016	206	212.54		212.65	0.005048
Sandy Mai	22719.89	50-yr	3442	206	214		214.15	0.004061
Sandy Mai	22719.89	100-yr	4317	206	214.34		214.47	0.00383
Sandy Mai	22719.89	500-yr	7013	206	215.84		216	0.003348
Sandy Mai	22305.19	10-yr	2229	204	210.53	208	210.62	0.004436
Sandy Mai	22305.19	50-yr	3931	204	212.4	209	212.53	0.003471
Sandy Mai	22305.19	100-yr	4945	204	212.52	209.51	212.68	0.004461
Sandy Mai	22305.19	500-yr	8165	204	214.08	210.46	214.3	0.004516
Sandy Mai	21973.79	10-yr	2229	204	209.57		209.62	0.002135
Sandy Mai	21973.79	50-yr	3931	204	211.65		211.71	0.001744
Sandy Mai	21973.79	100-yr	4945	204	211.59		211.67	0.002117
Sandy Mai	21973.79	500-yr	8165	204	213.15		213.25	0.002186
Sandy Mai	21498.81	10-yr	2229	202	208.7		208.75	0.001591
Sandy Mai	21498.81	50-yr	3931	202	210.8		210.88	0.001746
Sandy Mai	21498.81	100-yr	4945	202	210.6		210.68	0.001993
Sandy Mai	21498.81	500-yr	8165	202	212.09		212.21	0.002169
Sandy Mai	21070	10-yr	2229	200	208.4		208.42	0.000503
Sandy Mai	21070	50-yr	3931	200	210.41		210.45	0.00071
Sandy Mai	21070	100-yr	4945	200	210.15		210.2	0.000807
Sandy Mai	21070	500-yr	8165	200	211.56		211.64	0.001005
Sandy Mai	20558.49	10-yr	2229	200	208.07	203.62	208.11	0.000929
Sandy Mai	20558.49	50-yr	3931	200	209.87	204.76	209.97	0.00162
Sandy Mai	20558.49	100-yr	4945	200	209.56	205.35	209.65	0.001873
Sandy Mai	20558.49	500-yr	8165	200	210.74	206.23	210.91	0.002754
Sandy Mai	20488		Culvert					
Sandy Mai	20450.5	10-yr	2229	200	203.77	203.77	205.53	0.008487
Sandy Mai	20450.5	50-yr	3931	200	204.92	204.92	206.2	0.005723
Sandy Mai	20450.5	100-yr	4945	200	204.96	204.96	205.96	0.004904

Sandy Mai	20450.5	500-yr	8165	200	206	205.76	207.15	0.004536
Sandy Mai	20135.83	10-yr	2229	196	203.6		203.64	0.000149
Sandy Mai	20135.83	50-yr	3931	196	204.94		205.06	0.000278
Sandy Mai	20135.83	100-yr	4945	196	204.99		205.08	0.000284
Sandy Mai	20135.83	500-yr	8165	196	206.2		206.37	0.000416
Sandy Mai	19889.56	10-yr	2229	195	203.58	199.29	203.6	0.000073
Sandy Mai	19889.56	50-yr	3931	195	204.94	200.49	204.99	0.000095
Sandy Mai	19889.56	100-yr	4945	195	204.96	201.08	205.01	0.000143
Sandy Mai	19889.56	500-yr	8165	195	206.18	202.45	206.26	0.000193
Sandy Mai	19820		Bridge					
Sandy Mai	19756.97	10-yr	2229	194.5	203.32		203.35	0.000085
Sandy Mai	19756.97	50-yr	3931	194.5	204.55		204.6	0.000137
Sandy Mai	19756.97	100-yr	4945	194.5	204.87		204.92	0.00013
Sandy Mai	19756.97	500-yr	8165	194.5	206.1		206.17	0.00017
Sandy Mai	19546.85	10-yr	2229	194	203.27		203.32	0.000123
Sandy Mai	19546.85	50-yr	3931	194	204.43		204.55	0.000265
Sandy Mai	19546.85	100-yr	4945	194	204.75		204.87	0.000251
Sandy Mai	19546.85	500-yr	8165	194	205.9		206.09	0.000372
Sandy Mai	19352.67	10-yr	2229	193.47	203.26	198.71	203.29	0.000098
Sandy Mai	19352.67	50-yr	3931	193.47	204.42	200.12	204.49	0.00015
Sandy Mai	19352.67	100-yr	4945	193.47	204.73	200.83	204.82	0.000206
Sandy Mai	19352.67	500-yr	8165	193.47	205.87	202.54	206	0.0003
Sandy Mai	19300		Bridge					
Sandy Mai	19245.94	10-yr	2229	193.25	197.82	197.82	199.79	0.008109
Sandy Mai	19245.94	50-yr	3931	193.25	199.88	199.88	202.23	0.005988
Sandy Mai	19245.94	100-yr	4945	193.25	201.39	201.39	202.96	0.003406
Sandy Mai	19245.94	500-yr	8165	193.25	202.9	202.9	204.47	0.003197
Sandy Mai	19054.38	10-yr	2229	193.25	197.95		198.09	0.000821
Sandy Mai	19054.38	50-yr	3931	193.25	199.41		199.68	0.000892
Sandy Mai	19054.38	100-yr	4945	193.25	199.78		200	0.000819
Sandy Mai	19054.38	500-yr	8165	193.25	201.15		201.48	0.000902
Sandy Mai	18845.69	10-yr	2229	193	197.85	195.92	197.94	0.000512
Sandy Mai	18845.69	50-yr	3931	193	199.32	196.6	199.5	0.000608
Sandy Mai	18845.69	100-yr	4945	193	199.69	196.88	199.84	0.000523
Sandy Mai	18845.69	500-yr	8165	193	201.07	197.68	201.3	0.000613
Sandy Mai	18634.5	10-yr	2229	192	197.78		197.85	0.000317

Sandy Mai	18634.5	50-yr	3931	192	199.25		199.39	0.000392
Sandy Mai	18634.5	100-yr	4945	192	199.62		199.74	0.000363
Sandy Mai	18634.5	500-yr	8165	192	201		201.18	0.000432
Sandy Mai	18463	10-yr	2229	191	197.77		197.8	0.000149
Sandy Mai	18463	50-yr	3931	191	199.24		199.32	0.000214
Sandy Mai	18463	100-yr	4945	191	199.61		199.68	0.000208
Sandy Mai	18463	500-yr	8165	191	200.98		201.1	0.000266
Sandy Mai	18269.19	10-yr	2229	188	197.2	193.07	197.63	0.000829
Sandy Mai	18269.19	50-yr	3931	188	198.55	197.04	199.1	0.001047
Sandy Mai	18269.19	100-yr	4945	188	198.7	197.86	199.41	0.001369
Sandy Mai	18269.19	500-yr	8165	188	199.89	199.08	200.77	0.00167
Sandy Mai	18240		Culvert					
Sandy Mai	18211.69	10-yr	2229	188	194.11	192.39	195.03	0.002702
Sandy Mai	18211.69	50-yr	3931	188	195.28	195.06	196.87	0.00394
Sandy Mai	18211.69	100-yr	4945	188	195.64	195.64	197.01	0.003637
Sandy Mai	18211.69	500-yr	8165	188	196.83	196.83	198.51	0.004084
Sandy Mai	18010.15	10-yr	2229	188	193.47	193.47	194.33	0.004222
Sandy Mai	18010.15	50-yr	3931	188	194.41	194.41	195.85	0.005764
Sandy Mai	18010.15	100-yr	4945	188	194.72	194.72	195.88	0.005107
Sandy Mai	18010.15	500-yr	8165	188	195.67	195.67	197.19	0.005837
Sandy Mai	17718.32	10-yr	2229	187	190.83	190.83	191.34	0.005065
Sandy Mai	17718.32	50-yr	3931	187	192.32	192.29	193.7	0.006551
Sandy Mai	17718.32	100-yr	4945	187	192.01		192.47	0.003218
Sandy Mai	17718.32	500-yr	8165	187	193.14		193.67	0.002522
Sandy Mai	17333.24	10-yr	2229	186	189.95		190.13	0.001325
Sandy Mai	17333.24	50-yr	3931	186	191.36		192.03	0.002425
Sandy Mai	17333.24	100-yr	4945	186	191.3		191.6	0.001496
Sandy Mai	17333.24	500-yr	8165	186	192.43		192.86	0.001636
Sandy Mai	16976.28	10-yr	2229	186	188.41	188.38	189.08	0.009183
Sandy Mai	16976.28	50-yr	3931	186	189.69		190.71	0.005845
Sandy Mai	16976.28	100-yr	4945	186	189.42	189.38	190.46	0.008652
Sandy Mai	16976.28	500-yr	8165	186	190.51	189.87	191.7	0.007264
Sandy Mai	16566.37	10-yr	2229	185.31	187.53		187.67	0.001485
Sandy Mai	16566.37	50-yr	3931	185.31	189		189.34	0.001654
Sandy Mai	16566.37	100-yr	4945	185.31	188.8		189.03	0.001412
Sandy Mai	16566.37	500-yr	8165	185.31	190.1		190.39	0.001261
Sandy Mai	16177.16	10-yr	2229	184.88	186.62		186.87	0.003068

Sandy Mai	16177.16	50-yr	3931	184.88	188.12		188.58	0.002353
Sandy Mai	16177.16	100-yr	4945	184.88	187.98		188.34	0.002278
Sandy Mai	16177.16	500-yr	8165	184.88	189.41		189.82	0.001684
Sandy Mai	15741.39	10-yr	2229	182	186.03	184.06	186.17	0.000954
Sandy Mai	15741.39	50-yr	3931	182	187.6	185.51	187.88	0.001076
Sandy Mai	15741.39	100-yr	4945	182	187.35	185.56	187.63	0.001196
Sandy Mai	15741.39	500-yr	8165	182	188.92	186.46	189.26	0.001004
Sandy Mai	15036.05	10-yr	2229	180	184.26	184.26	184.91	0.004826
Sandy Mai	15036.05	50-yr	3931	180	185.8	185.27	186.66	0.003642
Sandy Mai	15036.05	100-yr	4945	180	185.9	185.19	186.46	0.002985
Sandy Mai	15036.05	500-yr	8165	180	188.05	186.04	188.47	0.001553
Sandy Mai	14643.01	10-yr	2229	176.16	183.04	181.7	183.27	0.001114
Sandy Mai	14643.01	50-yr	3931	176.16	185.4	182.76	185.77	0.001144
Sandy Mai	14643.01	100-yr	4945	176.16	185.51	182.94	185.75	0.000949
Sandy Mai	14643.01	500-yr	8165	176.16	187.68	184.01	187.97	0.000924
Sandy Mai	14242.08	10-yr	2229	174	181.62	180.79	182.55	0.002522
Sandy Mai	14242.08	50-yr	3931	174	183.46	182.57	184.94	0.003089
Sandy Mai	14242.08	100-yr	4945	174	183.67	183.22	185	0.003188
Sandy Mai	14242.08	500-yr	8165	174	186.15	185.1	187.31	0.002452
Sandy Mai	13869.62	10-yr	2229	175	180.55	180.37	181.36	0.003907
Sandy Mai	13869.62	50-yr	3931	175	182.51	181.62	183.59	0.003531
Sandy Mai	13869.62	100-yr	4945	175	182.87	181.77	183.67	0.003106
Sandy Mai	13869.62	500-yr	8165	175	185.95	183.3	186.41	0.001441
Sandy Mai	13438.13	10-yr	2229	172	180.04	178.02	180.2	0.001448
Sandy Mai	13438.13	50-yr	3931	172	181.85	178.98	182.2	0.002166
Sandy Mai	13438.13	100-yr	4945	172	182.13	179.27	182.4	0.002158
Sandy Mai	13438.13	500-yr	8165	172	185.65	180.35	185.82	0.000967
Sandy Mai	12942.35	10-yr	2229	173	179.5	176.6	179.6	0.000979
Sandy Mai	12942.35	50-yr	3931	173	181.1	177.59	181.31	0.001397
Sandy Mai	12942.35	100-yr	4945	173	181.36	177.94	181.55	0.00135
Sandy Mai	12942.35	500-yr	8165	173	185.29	179.32	185.41	0.000659
Sandy Mai	12648.67	10-yr	2229	170	179.45	175.51	179.47	0.000131
Sandy Mai	12648.67	50-yr	3931	170	181.03	177.16	181.08	0.000234
Sandy Mai	12648.67	100-yr	4945	170	181.27	177.16	181.32	0.000264
Sandy Mai	12648.67	500-yr	8165	170	185.24	177.17	185.29	0.000178
Sandy Mai	12600		Mult Open					
Sandy Mai	12591.62	10-yr	2229	171	177.33	175.65	177.8	0.001786

Sandy Mai	12591.62	50-yr	3931	171	179.45	176.98	180.29	0.002097
Sandy Mai	12591.62	100-yr	4945	171	180.89	177.85	181.24	0.000966
Sandy Mai	12591.62	500-yr	8165	171	185.01	179.83	185.23	0.000469
Sandy Mai	12103.89	10-yr	2229	171	176.38	175.43	176.81	0.002262
Sandy Mai	12103.89	50-yr	3931	171	178.86	176.35	179.25	0.001402
Sandy Mai	12103.89	100-yr	4945	171	180.51	176.87	180.76	0.000821
Sandy Mai	12103.89	500-yr	8165	171	184.81	178.14	185	0.000437
Sandy Mai	11764.28	10-yr	2229	171.05	176.1	173.8	176.22	0.001021
Sandy Mai	11764.28	50-yr	3931	171.05	178.62	174.64	178.82	0.000896
Sandy Mai	11764.28	100-yr	4945	171.05	180.42	174.92	180.52	0.000429
Sandy Mai	11764.28	500-yr	8165	171.05	184.78	176.04	184.86	0.000241
Sandy Mai	11405.26	10-yr	2229	168.7	175.45	173.34	175.79	0.000992
Sandy Mai	11405.26	50-yr	3931	168.7	178.17	174.73	178.5	0.000636
Sandy Mai	11405.26	100-yr	4945	168.7	180	175.31	180.31	0.00044
Sandy Mai	11405.26	500-yr	8165	168.7	184.39	176.8	184.7	0.000283
Sandy Mai	11350		Mult Open					
Sandy Mai	11303	10-yr	2229	168.66	173.55	173.55	174.85	0.005712
Sandy Mai	11303	50-yr	3931	168.66	175.82	174.8	176.87	0.002978
Sandy Mai	11303	100-yr	4945	168.66	175.65	175.65	177.45	0.00522
Sandy Mai	11303	500-yr	8165	168.66	178.05	177.16	179.75	0.003439
Sandy Mai	10733.77	10-yr	2229	166.86	173.28	170.71	173.34	0.000273
Sandy Mai	10733.77	50-yr	3931	166.86	176.03	172.54	176.12	0.00024
Sandy Mai	10733.77	100-yr	4945	166.86	175.73	171.86	175.79	0.000179
Sandy Mai	10733.77	500-yr	8165	166.86	178.74	172.62	178.79	0.000093
Sandy Mai	10700		Bridge					
Sandy Mai	10661.15	10-yr	2229	166.01	173.27	170.85	173.29	0.000083
Sandy Mai	10661.15	50-yr	3931	166.01	176.03	171.67	176.07	0.000094
Sandy Mai	10661.15	100-yr	4945	166.01	175.72	170.99	175.75	0.000071
Sandy Mai	10661.15	500-yr	8165	166.01	178.74	171.67	178.77	0.000047
Sandy Mai	10118.31	10-yr	2229	165	173.25	168.31	173.26	0.000038
Sandy Mai	10118.31	50-yr	3931	165	176.01	168.85	176.03	0.000042
Sandy Mai	10118.31	100-yr	4945	165	175.69	169.13	175.72	0.000051
Sandy Mai	10118.31	500-yr	8165	165	178.72	169.91	178.75	0.000044
Sandy Mai	9744.554	10-yr	2229	163.7	173.07	169.56	173.19	0.000314
Sandy Mai	9744.554	50-yr	3931	163.7	175.98	171.2	176.01	0.000056
Sandy Mai	9744.554	100-yr	4945	163.7	175.67	172.19	175.7	0.000056
Sandy Mai	9744.554	500-yr	8165	163.7	178.7	173.14	178.73	0.000045

Sandy Mai	9685		Bridge					
Sandy Mai	9639.641	10-yr	2229	163	170.64	166.43	170.69	0.000276
Sandy Mai	9639.641	50-yr	3931	163	174.74	167.82	174.82	0.000198
Sandy Mai	9639.641	100-yr	4945	163	175.42	167.68	175.48	0.000153
Sandy Mai	9639.641	500-yr	8165	163	178.52	168.81	178.59	0.000157
Sandy Mai	8975.758	10-yr	2229	161	170.51	165.94	170.55	0.000171
Sandy Mai	8975.758	50-yr	3931	161	174.67	167.31	174.71	0.000114
Sandy Mai	8975.758	100-yr	4945	161	175.37	167.2	175.39	0.000079
Sandy Mai	8975.758	500-yr	8165	161	178.47	168.25	178.5	0.00008
Sandy Mai	8504.5	10-yr	2229	161.39	170.38	164.4	170.46	0.000154
Sandy Mai	8504.5	50-yr	3931	161.39	174.54	165.55	174.64	0.000133
Sandy Mai	8504.5	100-yr	4945	161.39	175.2	166.14	175.32	0.000146
Sandy Mai	8504.5	500-yr	8165	161.39	178.21	167.82	178.4	0.000189
Sandy Mai	8350		Mult Open					
Sandy Mai	8235.939	10-yr	2229	159	169.92	163.74	170.06	0.00019
Sandy Mai	8235.939	50-yr	3931	159	174.08	165.17	174.24	0.000169
Sandy Mai	8235.939	100-yr	4945	159	174.59	165.83	174.8	0.000191
Sandy Mai	8235.939	500-yr	8165	159	177.24	167.73	177.57	0.000258
Sandy Mai	8063.602	10-yr	2229	158.71	169.3	165.28	169.86	0.000836
Sandy Mai	8063.602	50-yr	3931	158.71	174.07	167.71	174.2	0.000153
Sandy Mai	8063.602	100-yr	4945	158.71	174.67	168.67	174.69	0.000033
Sandy Mai	8063.602	500-yr	8165	158.71	177.38	171	177.4	0.000027
Sandy Mai	8000		Bridge					
Sandy Mai	7966.54	10-yr	2229	158.47	167.58		167.74	0.000344
Sandy Mai	7966.54	50-yr	3931	158.47	172.2		172.34	0.000169
Sandy Mai	7966.54	100-yr	4945	158.47	174.57		174.62	0.000079
Sandy Mai	7966.54	500-yr	8165	158.47	177.29		177.34	0.000075
Sandy Mai	7570.986	10-yr	2229	159	167.58		167.62	0.000095
Sandy Mai	7570.986	50-yr	3931	159	172.18		172.27	0.000093
Sandy Mai	7570.986	100-yr	4945	159	174.56		174.59	0.00003
Sandy Mai	7570.986	500-yr	8165	159	177.27		177.32	0.00004
Sandy Mai	7173.807	10-yr	2229	159	167.59	160.89	167.59	0.000017
Sandy Mai	7173.807	50-yr	3931	159	172.16	162.79	172.23	0.000081
Sandy Mai	7173.807	100-yr	4945	159	174.57	161.58	174.58	0.00001
Sandy Mai	7173.807	500-yr	8165	159	177.28	162.31	177.3	0.000015

Sandy Mai	6825.559	10-yr	2229	156	167.21	161.88	167.49	0.000452
Sandy Mai	6825.559	50-yr	3931	156	171.91	164.31	172.14	0.000234
Sandy Mai	6825.559	100-yr	4945	156	174.29	165.23	174.51	0.000182
Sandy Mai	6825.559	500-yr	8165	156	176.96	168.06	177.22	0.000196
Sandy Mai	6765		Bridge					
Sandy Mai	6709.658	10-yr	2229	156	166.81	162.89	167.3	0.00079
Sandy Mai	6709.658	50-yr	3931	156	171.58	166.25	171.89	0.000343
Sandy Mai	6709.658	100-yr	4945	156	173.95	167	174.24	0.000256
Sandy Mai	6709.658	500-yr	8165	156	176.4	168.83	176.7	0.000251
Sandy Mai	6668.16	10-yr	2229	156.01	166.94	161.39	167.12	0.000262
Sandy Mai	6668.16	50-yr	3931	156.01	171.61	163.14	171.83	0.000187
Sandy Mai	6668.16	100-yr	4945	156.01	174.06	163.85	174.11	0.000048
Sandy Mai	6668.16	500-yr	8165	156.01	176.5	165.78	176.58	0.000068
Sandy Mai	6600		Bridge					
Sandy Mai	6572.639	10-yr	2229	156	166.68	161.78	166.89	0.000311
Sandy Mai	6572.639	50-yr	3931	156	170.85	163.21	171.13	0.000251
Sandy Mai	6572.639	100-yr	4945	156	172.84	163.93	172.88	0.000043
Sandy Mai	6572.639	500-yr	8165	156	175.73	165.92	175.79	0.000055
Sandy Mai	6414.98	10-yr	2229	157	166.61	161.46	166.84	0.000373
Sandy Mai	6414.98	50-yr	3931	157	170.78	163.1	171.08	0.000315
Sandy Mai	6414.98	100-yr	4945	157	172.44	163.92	172.77	0.000308
Sandy Mai	6414.98	500-yr	8165	157	174.98	166.12	175.61	0.000488
Sandy Mai	6300		Mult Open					
Sandy Mai	6189.177	10-yr	2229	155	165.48	161.11	165.92	0.000684
Sandy Mai	6189.177	50-yr	3931	155	168.65	163.17	169.43	0.000842
Sandy Mai	6189.177	100-yr	4945	155	168.85	164.39	169.81	0.001085
Sandy Mai	6189.177	500-yr	8165	155	170.92	166.97	172.48	0.001579
Sandy Mai	5508.105	10-yr	4460	154	164.99	163.33	165.38	0.000795
Sandy Mai	5508.105	50-yr	7709	154	168.56	164.39	168.88	0.000368
Sandy Mai	5508.105	100-yr	9741	154	169.17	164.93	169.25	0.0001
Sandy Mai	5508.105	500-yr	16941	154	171.54	166.6	171.63	0.000091
Sandy Mai	5084.678	10-yr	4460	154	164.03	163.63	164.87	0.001463
Sandy Mai	5084.678	50-yr	7709	154	168.42	164.76	168.72	0.000323
Sandy Mai	5084.678	100-yr	9741	154	169.13	165.37	169.19	0.000124
Sandy Mai	5084.678	500-yr	16941	154	171.51	166.78	171.58	0.000108
Sandy Mai	5065.378	10-yr	4460	154.25	163.84	163.65	164.83	0.001808

Sandy Mai	5065.378	50-yr	7709	154.25	168.3	164.88	168.7	0.000447
Sandy Mai	5065.378	100-yr	9741	154.25	168.97	165.42	169.18	0.000222
Sandy Mai	5065.378	500-yr	16941	154.25	171.3	166.51	171.56	0.000215
Sandy Mai	5039.878	10-yr	4460	154.25	163.77	161.57	164.68	0.001667
Sandy Mai	5039.878	50-yr	7709	154.25	168.21	164.52	168.66	0.000492
Sandy Mai	5039.878	100-yr	9741	154.25	169.07	165.12	169.12	0.000065
Sandy Mai	5039.878	500-yr	16941	154.25	171.43	166.74	171.49	0.000053
Sandy Mai	4865.578	10-yr	4460	154.25	163.85	158.85	164.05	0.00032
Sandy Mai	4865.578	50-yr	7709	154.25	168.09	160.38	168.37	0.000264
Sandy Mai	4865.578	100-yr	9741	154.25	168.72	161.2	169.02	0.000253
Sandy Mai	4865.578	500-yr	16941	154.25	171.41	163.63	171.46	0.000043
Sandy Mai	4790.088	10-yr	4460	154	163.57	160.41	163.99	0.000785
Sandy Mai	4790.088	50-yr	7709	154	167.58	162.72	168.29	0.000754
Sandy Mai	4790.088	100-yr	9741	154	168.63	163.67	168.99	0.00033
Sandy Mai	4790.088	500-yr	16941	154	171.39	165.33	171.45	0.000049
Sandy Mai	4777.088	10-yr	4460	154.25	163.6	160.52	163.93	0.00064
Sandy Mai	4777.088	50-yr	7709	154.25	167.56	162.08	168.28	0.000722
Sandy Mai	4777.088	100-yr	9741	154.25	168.55	162.73	168.96	0.000403
Sandy Mai	4777.088	500-yr	16941	154.25	171.4	164.75	171.44	0.000048
Sandy Mai	4740		Bridge					
Sandy Mai	4685.592	10-yr	4460	154	161.51	160.67	162.91	0.003319
Sandy Mai	4685.592	50-yr	7709	154	163.5	162.56	165.59	0.003736
Sandy Mai	4685.592	100-yr	9741	154	163.53	163.53	166.72	0.005758
Sandy Mai	4685.592	500-yr	16941	154	167.22	165.4	167.45	0.000669
Sandy Mai	4327.181	10-yr	4460	152	161.72		161.86	0.000618
Sandy Mai	4327.181	50-yr	7709	152	164		164.18	0.000657
Sandy Mai	4327.181	100-yr	9741	152	164.33		164.57	0.00088
Sandy Mai	4327.181	500-yr	16941	152	166.74		167.12	0.001149
Sandy Mai	3964.325	10-yr	4460	152	161.44		161.64	0.000593
Sandy Mai	3964.325	50-yr	7709	152	163.5		163.89	0.000883
Sandy Mai	3964.325	100-yr	9741	152	163.8		164.22	0.001012
Sandy Mai	3964.325	500-yr	16941	152	165.93		166.63	0.00145
Sandy Mai	3515.389	10-yr	4460	150.35	161.31		161.42	0.000323
Sandy Mai	3515.389	50-yr	7709	150.35	163.32		163.55	0.00052
Sandy Mai	3515.389	100-yr	9741	150.35	163.59		163.83	0.000607
Sandy Mai	3515.389	500-yr	16941	150.35	165.62		166.04	0.000933
Sandy Mai	3004.364	10-yr	4460	150	161.13	156.74	161.25	0.000333

Sandy Mai	3004.364	50-yr	7709	150	163.05	158.49	163.28	0.000506
Sandy Mai	3004.364	100-yr	9741	150	163.31	159.11	163.53	0.000532
Sandy Mai	3004.364	500-yr	16941	150	165.28	160.9	165.6	0.000675
Sandy Mai	2590.359	10-yr	4460	150	161.01	156.02	161.12	0.000321
Sandy Mai	2590.359	50-yr	7709	150	162.8	158.26	163.07	0.000566
Sandy Mai	2590.359	100-yr	9741	150	163.09	159.46	163.31	0.000595
Sandy Mai	2590.359	500-yr	16941	150	164.89	160.34	165.29	0.000897
Sandy Mai	2500		Bridge					
Sandy Mai	2417.391	10-yr	4460	150	156.86	156.09	157.19	0.001199
Sandy Mai	2417.391	50-yr	7709	150	158.67	157.37	159.5	0.00185
Sandy Mai	2417.391	100-yr	9741	150	158.77	157.19	159.18	0.001111
Sandy Mai	2417.391	500-yr	16941	150	160.54	158.25	161.11	0.001152
Sandy Mai	2072.963	10-yr	4460	148.51	156.52	155.33	156.79	0.000876
Sandy Mai	2072.963	50-yr	7709	148.51	158.39	156.42	158.83	0.000977
Sandy Mai	2072.963	100-yr	9741	148.51	158.41	156.55	158.78	0.000992
Sandy Mai	2072.963	500-yr	16941	148.51	160.16	157.76	160.66	0.001106
Sandy Mai	1688.606	10-yr	4460	149	156.13		156.38	0.001261
Sandy Mai	1688.606	50-yr	7709	149	157.81		158.31	0.001836
Sandy Mai	1688.606	100-yr	9741	149	157.76		158.22	0.002047
Sandy Mai	1688.606	500-yr	16941	149	159.26		159.99	0.002695
Sandy Mai	1299.523	10-yr	4460	149	155.78	153.98	155.94	0.000957
Sandy Mai	1299.523	50-yr	7709	149	157.43	154.96	157.69	0.001137
Sandy Mai	1299.523	100-yr	9741	149	157.31	155.39	157.55	0.001265
Sandy Mai	1299.523	500-yr	16941	149	158.74	156.48	159.1	0.001574
Sandy Mai	663.061	10-yr	4460	146.71	154.93	154.26	155.22	0.001291
Sandy Mai	663.061	50-yr	7709	146.71	156.57	155.04	156.92	0.00131
Sandy Mai	663.061	100-yr	9741	146.71	156.25	155.37	156.62	0.001678
Sandy Mai	663.061	500-yr	16941	146.71	157.48	156.22	157.97	0.002025
Sandy Mai	143.571	10-yr	4460	147	153.67	153.67	154.18	0.003578
Sandy Mai	143.571	50-yr	7709	147	154.71	154.71	155.68	0.005308
Sandy Mai	143.571	100-yr	9741	147	154.39	154.39	155.16	0.005715
Sandy Mai	143.571	500-yr	16941	147	155.1	155.1	156.16	0.007386

Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)	Froude # Chl
7.49	94.36	59.2	0.96
9.61	131.03	79.45	1.09
7.27	269.56	213.05	0.71
8.22	401.5	255.16	0.75
8.63	111.13	65.57	0.81
11.41	126.47	38.69	0.94
10.71	188.05	78.47	0.88
12.03	287.03	110.85	0.89
8.22	105.82	62.51	0.82
8.45	199.07	110	0.74
8.71	260.8	160.34	0.73
9.44	394.88	228.02	0.74
4.77	212.18	88.04	0.33
5.88	293.43	86	0.38
7.43	316.67	126.74	0.48
11.11	341.69	135.81	0.71
10.45	75.19	29.94	0.94
10.8	150.12	65.39	0.8
11.2	197.39	97.83	0.79
12.05	354.77	119.2	0.77
6.68	185.54	107.36	0.65
8.01	258.6	94.41	0.68
8.63	341.73	225.59	0.73
9.06	563.19	256.56	0.7
4.44	197.74	107.09	0.31
4.43	265.33	84.3	0.28
5.14	348.92	170.35	0.33
5.92	471.82	206.19	0.37
3.05	351.74	155.66	0.22
4.03	352.92	70	0.26
3.78	573.36	191.04	0.25
4.42	748.43	216.41	0.27
2.95	390.76	168.21	0.19

4.18	366.23	64	0.25
3.92	597.14	183.71	0.23
4.86	749.43	206.1	0.28
4.42	184.47	63.11	0.3
6.75	181.31	31.16	0.43
7.18	238.66	78.23	0.46
9.87	289.31	117.01	0.61
1.42	797.39	227.26	0.08
2.16	735.14	121	0.11
2.36	1010.37	269.78	0.12
3.1	1193.42	283.92	0.15
8.48	95.49	35.82	0.76
11.39	136.65	72	0.92
11.11	227.51	106.32	0.82
10.31	702.29	348.64	0.66
9.71	87.4	134.02	1
11.06	147.56	49.6	0.95
8.23	319.8	245.02	0.72
9.71	430.86	334.41	0.8
5.04	167.75	255.6	0.46
6.76	206.96	53	0.53
3.44	645.18	313.51	0.29
4.31	847.03	356.94	0.34
1.53	761.08	317.15	0.11
2.45	649.77	134.95	0.16
2.54	944.7	332.83	0.17
3.33	1108.58	335.07	0.22
3.11	522.14	244.3	0.19
4.01	569.09	115	0.23
4.32	855.67	307.5	0.25
5.18	1143.82	332.06	0.28
3.38	337.91	126.5	0.22
4.91	358.53	72.29	0.3

5.42	485.04	173.15	0.33
7.35	604.39	213.62	0.43
3.9	239.56	100.73	0.27
5.83	254.79	68.21	0.38
6.78	296.71	106.03	0.45
9.62	333.78	111.03	0.63
3.4	445.88	301.84	0.23
4.63	493.7	165	0.3
5.76	603.07	341.2	0.38
8.2	686.27	348.36	0.53
9.54	79.46	33.49	0.96
8.84	210.81	123	0.71
9.09	276.91	145.5	0.69
10.41	415.41	203.81	0.73
6.71	176.15	106.33	0.71
7.03	273.37	93	0.63
7.21	354.62	122.97	0.62
8.54	479.28	134.48	0.66
9.27	109.93	53.35	0.85
11.31	154.85	50	0.92
11.85	200.51	80.2	0.92
12.1	379.89	159.01	0.83
5.71	264.54	151.44	0.54
7.41	262.26	65	0.61
7.81	450.89	233.39	0.65
7.51	755.15	295.42	0.55
6.9	184.19	142.81	0.61
8.01	206.56	71	0.63
5.41	427.97	164.81	0.4
4.51	788.08	266.65	0.3
6.14	192.18	137.91	0.57
5.95	303.01	80	0.45
3.98	683.09	181.75	0.27
4.39	1021.08	214.09	0.27

5.22	132.02	26.48	0.41
6.6	179.26	29.48	0.45
6.89	218.55	199.72	0.43
8.79	386.12	387.92	0.52
4.9	140.52	29.07	0.39
6.4	182.79	29.72	0.45
8.02	181.22	92.09	0.57
10.85	217.84	217.06	0.72
9.85	343.57	145.65	0.71
11.68	417.58	90	0.76
12.81	563.35	166.15	0.83
14.46	793.83	222.26	0.87
11.89	264.68	124.75	1.06
11.64	393.31	85	0.85
12.91	529.12	194.64	0.97
15.93	701.83	234.34	1.12
5	418.13	163.89	0.34
5.32	638.83	120	0.31
5.23	972.04	458.55	0.3
6.87	1226.84	489.79	0.39
9.29	182.23	47.59	0.72
13.86	212.77	46.37	0.98
10.04	591.03	421.6	0.64
9.76	1102.58	509.34	0.58
7.95	264.91	148.55	0.59
6.72	477.38	107.88	0.42
6.72	902.7	440.06	0.42
7.25	1373.78	514.89	0.43
5.09	337.72	265.09	0.32
4.06	991.21	230	0.22
4.5	1543.51	567.52	0.25
5.15	2092.63	592.08	0.27
8.59	212.47	64.27	0.68
9.01	468.88	165	0.59
10.04	614.1	288.22	0.66

9.07	1335.71	474.83	0.53
6.65	441.41	144.67	0.47
8.12	606.56	101.32	0.5
8.49	819.68	206.96	0.52
8.53	1525.79	434.51	0.46
7.95	557.22	198.08	0.5
10.25	637.16	103.47	0.58
10.06	1016.05	236.6	0.56
11.21	1569.22	355.08	0.57
4.84	1008.91	299.91	0.3
5.7	1125.47	181.2	0.32
6.1	1700.79	328.48	0.34
7.27	2334.8	367.41	0.37
5.62	1198.25	346.21	0.37
7.08	1353.36	175.43	0.42
7.22	2059.87	417.46	0.42
8.26	2840.64	438.8	0.44
1.7	1530.66	267.5	0.1
2.51	1661.35	207.27	0.14
2.59	2079.12	283.49	0.14
3.34	2615.56	332.34	0.17
1.65	1467.28	264.78	0.09
2.39	1560.56	195.31	0.12
2.38	1967.74	295.77	0.12
2.91	2465.38	336.77	0.14
1.77	1680.95	391.31	0.1
2.38	1925.89	268.39	0.13
2.72	2341.01	499.76	0.14
3.4	3007.49	555.03	0.17
5.66	478.63	165.22	0.41
4.8	965.2	204	0.29
5.45	1154.15	326.79	0.32
5.16	1890.94	522.79	0.27
12.2	205.83	59.81	0.92
14.41	293.98	55	0.94
14.69	392.24	85	0.91

17.15	563.85	103.35	0.96
5.83	371.03	83.37	0.44
7.58	486.37	80	0.51
9.6	503.92	105.27	0.65
13.64	593.95	122.31	0.87
5.32	707.23	252.37	0.35
7.36	722.48	142.91	0.44
6.77	1216.22	319.22	0.4
7.87	1725.16	368.69	0.43
3.69	865.48	375.63	0.25
3.79	1123.74	240.56	0.24
3.78	1621.3	456.14	0.23
3.95	2333.1	497.64	0.22
3.46	934.93	300.33	0.24
3.62	1393.12	261.1	0.22
4.14	1584.43	370.79	0.25
4.66	2323.13	553.75	0.26
2.16	1387.77	442.29	0.16
2.41	1939.29	345.59	0.15
2.64	2374.58	515.64	0.17
3.04	3277.04	613.02	0.18
2.1	1381.65	386.17	0.14
2.64	1794.27	280	0.16
2.78	2231.78	525.56	0.17
3.22	3049.49	567.35	0.18
1.37	1988.76	492.83	0.08
1.88	2365.6	305	0.1
1.97	2917.95	574.1	0.11
2.4	3756.99	608.65	0.12
1.74	1501.53	535.66	0.11
2.65	1604.82	219	0.15
2.78	2023.71	620.51	0.16
3.66	2489.27	690.56	0.2
10.68	211.51	212.86	0.98
10.18	478.09	164.48	0.82
9.79	716.07	302.76	0.78

10.72	1034.22	311.05	0.78
2.33	1476.49	388.6	0.15
3.56	1474.02	249.7	0.21
3.61	2040.78	424.17	0.21
4.75	2577.65	475.74	0.26
1.75	2112.72	591.13	0.11
2.21	2437.11	408.07	0.12
2.71	2994.98	689.67	0.15
3.4	3882.33	765.49	0.18
1.88	2070.3	647.46	0.11
2.61	2173.7	408.07	0.15
2.6	3144.64	726.19	0.14
3.19	4064.29	777.61	0.17
2.22	1477.27	377.85	0.14
3.26	1436.95	225.16	0.19
3.54	2096.92	484.39	0.2
4.64	2728.01	608.15	0.25
2.1	1690.81	422.84	0.12
2.81	1894.89	302.99	0.15
3.36	2380.36	519.68	0.18
4.32	3002.54	573.09	0.22
11.32	200.94	53.15	0.97
12.69	350.92	99.73	0.89
11.06	623.69	230.74	0.7
12.05	1041.21	315.69	0.7
3.76	783.48	283.69	0.32
4.76	954.7	200.04	0.35
4.75	1339.8	326.31	0.34
5.7	1803.94	345.22	0.37
2.97	964.96	334.1	0.25
3.93	1141.22	234.56	0.29
3.81	1607.5	363.76	0.27
4.71	2122.85	385.81	0.3
2.84	1144.15	374.37	0.21

3.67	1344.15	256.86	0.24
3.65	1892.31	432.95	0.23
4.45	2511.86	466.32	0.26
2.05	1533.85	421.73	0.14
2.83	1693.96	289.16	0.18
2.87	2358.81	476.14	0.18
3.61	3036.38	506.2	0.21
5.67	547.38	217.38	0.33
6.99	842.14	246.8	0.38
8.08	969.34	319.24	0.44
9.58	1374.98	362.29	0.49
7.86	334.6	176.44	0.57
10.7	438.67	118.25	0.71
10.63	647.53	225.96	0.68
12.42	936.21	260.35	0.74
8.68	375.24	205.78	0.66
11.29	451.69	135	0.79
10.97	668.06	253.71	0.75
12.83	921.11	277.91	0.82
7.91	484.57	404.33	0.76
11.47	446.77	142.44	0.92
7.69	968.54	418.7	0.64
7.9	1459.9	446.65	0.58
4.51	705.7	319.51	0.4
7.47	604.02	133.58	0.57
5.83	1170.51	369.25	0.45
6.93	1610.9	411.4	0.48
8.52	355.62	245.53	0.97
9.04	487.4	152.86	0.83
10.46	623.7	284.19	1
11.52	992.48	399.55	0.96
3.21	760.43	402.77	0.38
4.78	846.66	235	0.44
4.25	1299.29	446.17	0.4
4.97	1910.05	505.36	0.4
3.96	565.15	334	0.53

5.26	728.59	209.96	0.52
5.02	1044.56	374.26	0.5
5.56	1614.94	418.06	0.46
3.66	761.67	320.46	0.33
4.6	929.73	212.51	0.35
5	1212.63	358.38	0.39
5.47	1804.43	398.1	0.37
8.53	466.16	282.71	0.75
9.21	583.58	169.87	0.69
8.43	971.26	330.62	0.62
7.54	1758.43	400.95	0.48
5.74	1074.19	398.2	0.4
7.16	1295.95	220	0.42
6.57	2166	447.68	0.39
7.49	3185.79	508.57	0.4
8.75	640.31	284.16	0.59
11.38	782.97	162.02	0.68
11.74	1303.02	377.54	0.7
12.16	2543.22	570.53	0.64
9.65	545.11	223.28	0.72
11.24	660.55	133.77	0.72
10.87	1171.86	319.13	0.69
9.24	2329.88	426.72	0.49
4.16	869.73	253.59	0.27
5.91	906.3	147.96	0.35
6.02	1458.37	346.75	0.35
4.99	2907.36	472.12	0.25
3.15	947.44	295.56	0.22
4.37	1108.85	199.27	0.27
4.39	1508.72	311.02	0.27
3.99	3190.9	501.57	0.2
1.48	2209.42	495.39	0.09
2.21	2359.41	326	0.12
2.38	3027.32	576.27	0.13
2.4	5008.65	714.46	0.11
6.87	822.84	268.43	0.5

9.12	1123.08	315	0.57
6.9	2397.8	530.73	0.39
6.11	4755.32	799.09	0.29
7.21	969.3	344.45	0.55
7.32	1548.71	270	0.46
6.36	2676.41	470.82	0.36
5.95	4990.66	596.95	0.28
4.6	1534	430.79	0.36
5.66	1906.56	280	0.37
4.52	3708.92	584.23	0.26
4.39	6575.1	703.69	0.21
5.17	520.5	167.74	0.37
5.3	912.37	186.76	0.32
5	1201.14	463.11	0.27
5.06	1898.5	842.16	0.23
10.06	270.8	102.48	0.84
9.55	532.9	132.1	0.65
12.44	510.5	136.57	0.85
12.41	849.02	327.22	0.73
2.76	1206.86	453.62	0.19
3.3	1743.89	363.21	0.19
2.79	2640.05	652.68	0.17
2.45	4751.95	749.33	0.13
1.6	2092.17	633.36	0.11
2.14	2479.26	410	0.12
1.82	3788.02	728.98	0.11
1.8	6250.99	930.65	0.09
1.23	2536.81	562.34	0.08
1.56	2978.57	350	0.08
1.69	4015.01	638.97	0.09
1.87	6114.16	755.03	0.09
3.6	1015.14	617.3	0.22
1.84	2941.1	415.49	0.1
1.82	4128.24	711.66	0.1
1.91	6428.01	808.13	0.09

2.96	2133.33	549.63	0.2
3.43	3288.35	415.15	0.18
3.13	5237.03	700.37	0.16
3.72	7546.7	790.91	0.17
2.79	2775.26	763.47	0.16
2.92	4621.81	500	0.14
2.52	7978.26	996.85	0.12
2.89	11254.67	1098.63	0.12
2.65	1026.06	942.12	0.16
3.17	1734.28	323	0.15
3.44	2120.39	1190.85	0.16
4.46	2809.4	1269.81	0.19
3.29	750.61	316.47	0.18
3.87	1298.43	153.63	0.18
4.21	1428.61	549.63	0.19
5.44	1848.26	629.31	0.23
6.61	389.99	450.75	0.37
3.66	1514.5	180	0.17
1.73	5103.83	840.34	0.08
1.77	7418.27	866.16	0.07
3.89	745.98	133.35	0.23
3.61	1341.79	130	0.17
2.75	3324.22	628.02	0.12
2.99	5068.8	671.98	0.12
2	1496.42	285.56	0.12
2.64	1732.27	150	0.13
1.67	3695.23	331.13	0.07
2.17	4607.58	347.54	0.09
0.85	2905.2	391.17	0.05
2.48	1835.04	150	0.12
0.95	5762.98	429.55	0.04
1.34	7036.83	491.99	0.06

5.12	601.94	135.14	0.27
4.68	1125.52	113	0.21
4.54	1410.78	257.95	0.19
5.16	2187.26	296.37	0.2
6.28	476.22	156.94	0.35
5.37	977.23	109.36	0.25
5.12	1250.14	328.42	0.22
5.55	2034.78	367.02	0.22
3.78	688.41	302	0.21
4.09	1101.42	160	0.19
2.29	3004.05	441.25	0.1
2.99	3764.83	481.56	0.12
4.05	620.61	254.14	0.22
4.58	937.66	178	0.21
2.07	3262.69	401.87	0.09
2.6	4290.14	469.18	0.1
4.27	702.99	101.47	0.24
5	1135.4	114.6	0.24
5.34	1333.16	455.43	0.24
7.45	1853.36	662.11	0.31
6.05	740.14	121.05	0.33
8.04	939.62	92	0.39
9.22	1173.32	135.44	0.44
12.22	1545.12	201.77	0.54
6.72	1220.51	540.94	0.36
5.53	2172.83	260.8	0.26
2.96	5057.32	1202.04	0.14
3.13	7803.64	1223.66	0.13
8.45	777.06	638.69	0.48
5.1	1858.52	254.26	0.24
3.26	5530.93	1228.01	0.15
3.37	9745.79	1316.42	0.14
8.93	707.4	560.57	0.53

5.81	1558.96	207	0.28
4.23	2736.08	1040.55	0.2
4.62	5358.47	1141.6	0.2
8.5	692.09	676.86	0.5
6.05	1462.88	180.84	0.29
2.29	5300.02	1491.96	0.11
2.29	10126.19	1567.63	0.1
3.71	1250	695.24	0.22
4.15	1823.23	153	0.2
4.45	2203	1321.6	0.21
2.08	10755.84	1412.1	0.09
5.91	1107.46	687.81	0.35
7.42	1420.62	136.8	0.36
5.17	2389.1	1330.54	0.24
2.26	10589.91	1442.98	0.1
4.99	1015.16	917.6	0.3
6.84	1158.36	104.47	0.34
5.38	1917.69	1397.86	0.26
2.12	12684.49	1496.49	0.09
10.33	752.2	805.22	0.69
12.98	1112.02	180	0.77
16.15	1117.2	835.28	0.95
6.93	7975.47	892.37	0.34
4.76	2621.76	538.59	0.28
5.68	3724.24	520	0.3
6.71	4077.84	570.03	0.34
8.66	5488.75	600.93	0.41
5.1	2596.87	473.75	0.3
7.17	2937.87	355.74	0.38
7.81	3760.85	523.01	0.41
10.51	4906	557.93	0.51
4.23	3689.13	621.26	0.23
6.04	3986.24	448.04	0.3
6.61	5172.71	673.96	0.33
9.05	6581.32	715.88	0.41
4.31	3193.54	640.98	0.23

5.95	3506.58	443.91	0.3
6.18	4722.14	740.33	0.31
7.67	6237.8	816.8	0.35
3.54	2128.25	467.74	0.19
5.22	2135.64	240	0.26
5.43	3180.76	537.82	0.27
7.3	4168.66	549.94	0.34
6.12	1188.15	454.78	0.41
8.9	1158	227	0.54
6.95	2072.37	472.71	0.42
8.01	2957.36	569.09	0.44
5.6	1311.77	451.38	0.36
6.85	1584.53	300	0.39
6.92	2305.71	566.67	0.4
8.18	3396.86	658.94	0.43
6.41	1992.36	529.6	0.43
8.92	2237.61	375.23	0.53
9.38	2891.07	578.51	0.56
11.97	3773.33	598.89	0.66
5.43	2450.25	817.13	0.37
6.85	2990.57	535.19	0.42
7.16	3751.53	869.08	0.44
8.89	5043.04	948.79	0.5
6.89	1960.1	846.23	0.44
7.91	2619.33	574.04	0.46
8.74	3177.81	958.44	0.51
10.46	4405.93	1064.14	0.58
10.07	1787.91	1050.67	0.71
13.57	1554.51	523.43	0.88
13.67	2556.32	1099.1	0.91
16.56	3345.28	1259.04	1.05

Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Crit W.S. (ft)	E.G. Elev (ft)	E.G. Slope (ft/ft)
Sandy Mai	38835.32	10-yr	689	335	337.86	337.86	338.72	0.009987
Sandy Mai	38835.32	50-yr	1169	335	338.94	338.94	339.6	0.004684
Sandy Mai	38835.32	100-yr	1443	335	339.2	339.2	339.87	0.004571
Sandy Mai	38835.32	500-yr	2290	335	339.75	339.75	340.52	0.004731
Sandy Mai	38353.13	10-yr	689	327	331.57	331.57	332.39	0.005963
Sandy Mai	38353.13	50-yr	1169	327	332.31	332.31	333.33	0.006199
Sandy Mai	38353.13	100-yr	1443	327	332.64	332.64	333.79	0.006468
Sandy Mai	38353.13	500-yr	2290	327	333.69	333.69	334.99	0.006198
Sandy Mai	37880.8	10-yr	689	319	323.52	323.52	324.37	0.006525
Sandy Mai	37880.8	50-yr	1169	319	324.58	324.58	325.27	0.004408
Sandy Mai	37880.8	100-yr	1443	319	324.83	324.83	325.57	0.004579
Sandy Mai	37880.8	500-yr	2290	319	325.5	325.5	326.29	0.004461
Sandy Mai	37489.56	10-yr	689	311.79	319.52	316.72	319.8	0.000908
Sandy Mai	37489.56	50-yr	1169	311.79	320.23	318.42	320.72	0.001483
Sandy Mai	37489.56	100-yr	1443	311.79	320.49	319	321.1	0.001831
Sandy Mai	37489.56	500-yr	2290	311.79	320.68	320.68	322.01	0.00396
Sandy Mai	37270		Culvert					
Sandy Mai	37056.92	10-yr	689	306.66	311.36	311.36	312.99	0.008131
Sandy Mai	37056.92	50-yr	1169	306.66	313.14	313.14	314.73	0.005263
Sandy Mai	37056.92	100-yr	1443	306.66	313.8	313.8	315.39	0.004856
Sandy Mai	37056.92	500-yr	2290	306.66	315.13	315.13	316.68	0.004359
Sandy Mai	36678.73	10-yr	689	301	304.8	304.3	305.21	0.003799
Sandy Mai	36678.73	50-yr	1169	301	305.59	305	306.17	0.004397
Sandy Mai	36678.73	100-yr	1443	301	305.92	304.94	306.51	0.004274
Sandy Mai	36678.73	500-yr	2290	301	306.72	306.32	307.25	0.003772
Sandy Mai	36275.49	10-yr	689	296.1	303.64	301.61	303.88	0.002586
Sandy Mai	36275.49	50-yr	1169	296.1	304.42	303.44	304.69	0.002525
Sandy Mai	36275.49	100-yr	1443	296.1	304.65	303.83	304.99	0.002853
Sandy Mai	36275.49	500-yr	2290	296.1	305.3	304.46	305.78	0.003373
Sandy Mai	36000		Culvert					
Sandy Mai	35791.32	10-yr	689	286.09	293.04		293.12	0.00128
Sandy Mai	35791.32	50-yr	1169	286.09	293.92		294.03	0.001469
Sandy Mai	35791.32	100-yr	1443	286.09	294.29		294.41	0.001521
Sandy Mai	35791.32	500-yr	2290	286.09	295.17		295.34	0.001786
Sandy Mai	35582.96	10-yr	689	285	292.83	288.97	292.92	0.00072

Sandy Mai	35582.96	50-yr	1169	285	293.66	290.19	293.77	0.000927
Sandy Mai	35582.96	100-yr	1443	285	294	290.8	294.13	0.001052
Sandy Mai	35582.96	500-yr	2290	285	294.79	292.54	294.99	0.001437
Sandy Mai	35513		Culvert					
Sandy Mai	35420.3	10-yr	689	283	290.25		290.51	0.002031
Sandy Mai	35420.3	50-yr	1169	283	290.79		291.3	0.003678
Sandy Mai	35420.3	100-yr	1443	283	291.04		291.69	0.004615
Sandy Mai	35420.3	500-yr	2290	283	291.55	291.18	292.72	0.007987
Sandy Mai	35237.49	10-yr	689	279.02	290.31	283.38	290.33	0.000135
Sandy Mai	35237.49	50-yr	1169	279.02	290.91	285.03	290.94	0.000251
Sandy Mai	35237.49	100-yr	1443	279.02	291.19	285.86	291.23	0.000337
Sandy Mai	35237.49	500-yr	2290	279.02	291.85	288.11	291.92	0.000542
Sandy Mai	34267		Culvert					
Sandy Mai	33297.82	10-yr	689	253	257.22	256.67	258.31	0.005089
Sandy Mai	33297.82	50-yr	1169	253	257.94	257.94	260.07	0.008019
Sandy Mai	33297.82	100-yr	1443	253	259.06	259.06	260.79	0.005174
Sandy Mai	33297.82	500-yr	2290	253	260.91	260.91	262.07	0.003058
Sandy Mai	32874.91	10-yr	689	251	254	254	255.38	0.009335
Sandy Mai	32874.91	50-yr	1169	251	254.92	254.91	255.5	0.004085
Sandy Mai	32874.91	100-yr	1443	251	255.13	255.13	255.76	0.004336
Sandy Mai	32874.91	500-yr	2290	251	255.62	255.62	256.41	0.005191
Sandy Mai	32432.32	10-yr	689	249	252.8	251.63	253.11	0.001774
Sandy Mai	32432.32	50-yr	1169	249	253.21	252.44	253.87	0.003324
Sandy Mai	32432.32	100-yr	1443	249	253.53	252.93	253.63	0.000652
Sandy Mai	32432.32	500-yr	2290	249	254.13	253.45	254.27	0.000865
Sandy Mai	32009.44	10-yr	689	246	252.74	249.48	252.75	0.000231
Sandy Mai	32009.44	50-yr	1169	246	253.11	250.64	253.15	0.000457
Sandy Mai	32009.44	100-yr	1443	246	253.3	251.24	253.35	0.00057
Sandy Mai	32009.44	500-yr	2290	246	253.79	252	253.87	0.000893
Sandy Mai	31828		Culvert					
Sandy Mai	31647.46	10-yr	689	239	247.63	243.29	247.72	0.000249
Sandy Mai	31647.46	50-yr	1169	239	248.46	244.52	248.59	0.000354
Sandy Mai	31647.46	100-yr	1443	239	248.85	246.31	248.99	0.0004
Sandy Mai	31647.46	500-yr	2290	239	249.74	247.57	249.92	0.000509
Sandy Mai	31476.58	10-yr	689	240	247.51	243.38	247.65	0.000425
Sandy Mai	31476.58	50-yr	1169	240	248.21	244.8	248.46	0.000745

Sandy Mai	31476.58	100-yr	1443	240	248.52	246.29	248.83	0.000921
Sandy Mai	31476.58	500-yr	2290	240	249.12	247.55	249.67	0.001544
Sandy Mai	31435		Culvert					
Sandy Mai	31392.94	10-yr	689	239.99	246.59		246.78	0.001781
Sandy Mai	31392.94	50-yr	1169	239.99	246.94		247.36	0.003749
Sandy Mai	31392.94	100-yr	1443	239.99	247.14		247.69	0.004807
Sandy Mai	31392.94	500-yr	2290	239.99	247.48		248.55	0.009096
Sandy Mai	31259.8	10-yr	689	239	246.53	243.1	246.66	0.000396
Sandy Mai	31259.8	50-yr	1169	239	246.84	244.44	247.09	0.000815
Sandy Mai	31259.8	100-yr	1443	239	247.02	245.08	247.34	0.00103
Sandy Mai	31259.8	500-yr	2290	239	247.26	246.95	247.87	0.001995
Sandy Mai	31220		Culvert					
Sandy Mai	31182.62	10-yr	689	239	242.91	242.91	244.28	0.008638
Sandy Mai	31182.62	50-yr	1169	239	244.74	244.74	245.76	0.003963
Sandy Mai	31182.62	100-yr	1443	239	245.23	245.23	246.23	0.003704
Sandy Mai	31182.62	500-yr	2290	239	246.1	246.1	247.23	0.003974
Sandy Mai	31033.98	10-yr	689	239	241.91		242.34	0.004705
Sandy Mai	31033.98	50-yr	1169	239	242.88		243.31	0.003551
Sandy Mai	31033.98	100-yr	1443	239	243.39		243.82	0.003069
Sandy Mai	31033.98	500-yr	2290	239	244.37		244.95	0.003269
Sandy Mai	30579.27	10-yr	689	235	238.76	238.76	239.85	0.006151
Sandy Mai	30579.27	50-yr	1169	235	239.79	239.79	241.15	0.006124
Sandy Mai	30579.27	100-yr	1443	235	240.2	240.2	241.76	0.00649
Sandy Mai	30579.27	500-yr	2290	235	241.72	241.72	243.09	0.004795
Sandy Mai	30235.35	10-yr	689	233	236.58	235.47	236.8	0.002513
Sandy Mai	30235.35	50-yr	1169	233	237.24	236.14	237.53	0.002963
Sandy Mai	30235.35	100-yr	1443	233	237.64	236.7	237.99	0.003303
Sandy Mai	30235.35	500-yr	2290	233	238.8	237.48	239.08	0.002254
Sandy Mai	29939.91	10-yr	689	231	235.17		235.53	0.008677
Sandy Mai	29939.91	50-yr	1169	231	235.78		236.16	0.008142
Sandy Mai	29939.91	100-yr	1443	231	236.74		236.95	0.003416
Sandy Mai	29939.91	500-yr	2290	231	238.31		238.46	0.001709
Sandy Mai	29533.61	10-yr	689	229	233.17		233.63	0.002882
Sandy Mai	29533.61	50-yr	1169	229	235.09		235.28	0.000898
Sandy Mai	29533.61	100-yr	1443	229	236.36		236.49	0.00052
Sandy Mai	29533.61	500-yr	2290	229	237.98		238.13	0.000474

Sandy Mai	29203.58	10-yr	689	227	232.44	230.01	232.86	0.001853
Sandy Mai	29203.58	50-yr	1169	227	233.98	231.27	234.69	0.002187
Sandy Mai	29203.58	100-yr	1443	227	235.29	231.92	236.02	0.001789
Sandy Mai	29203.58	500-yr	2290	227	236.44	233.64	237.54	0.002425
Sandy Mai	29175		Culvert					
Sandy Mai	29148	10-yr	689	227	232.24	229.86	232.61	0.00159
Sandy Mai	29148	50-yr	1169	227	233.24	231.04	233.98	0.002535
Sandy Mai	29148	100-yr	1443	227	233.57	231.63	234.56	0.003215
Sandy Mai	29148	500-yr	2290	227	234.57	233.23	236.39	0.004795
Sandy Mai	28902.69	10-yr	1479	225	231.04	230.68	231.83	0.003618
Sandy Mai	28902.69	50-yr	2537	225	231.98	231.83	232.99	0.004433
Sandy Mai	28902.69	100-yr	3146	225	232.43	232.22	233.52	0.004645
Sandy Mai	28902.69	500-yr	5020	225	233.67	233.24	234.92	0.004815
Sandy Mai	28536.39	10-yr	1479	225	228.89	228.89	229.8	0.009407
Sandy Mai	28536.39	50-yr	2537	225	230.04	229.8	230.91	0.007252
Sandy Mai	28536.39	100-yr	3146	225	230.51	230.19	231.41	0.006984
Sandy Mai	28536.39	500-yr	5020	225	231.3	231.16	232.58	0.008892
Sandy Mai	28078.23	10-yr	1479	221	227.99	226	228.27	0.00081
Sandy Mai	28078.23	50-yr	2537	221	229.86	227.51	230.09	0.000552
Sandy Mai	28078.23	100-yr	3146	221	230.3	227.9	230.55	0.0006
Sandy Mai	28078.23	500-yr	5020	221	230.91	229.43	231.33	0.000951
Sandy Mai	27678.42	10-yr	1479	221	226.4	225.67	227.56	0.004046
Sandy Mai	27678.42	50-yr	2537	221	227.65	227.65	229.44	0.004995
Sandy Mai	27678.42	100-yr	3146	221	228.98	228.98	230.03	0.00274
Sandy Mai	27678.42	500-yr	5020	221	230	230	230.74	0.002192
Sandy Mai	27191.04	10-yr	1479	219	225.03	223.98	225.87	0.002713
Sandy Mai	27191.04	50-yr	2537	219	226.85	225.92	227.29	0.001364
Sandy Mai	27191.04	100-yr	3146	219	227.44	226.33	227.83	0.001204
Sandy Mai	27191.04	500-yr	5020	219	228.42	227.44	228.81	0.001201
Sandy Mai	26877.54	10-yr	1479	217	224.9	221.51	225.23	0.000706
Sandy Mai	26877.54	50-yr	2537	217	226.78	223.4	226.94	0.000406
Sandy Mai	26877.54	100-yr	3146	217	227.37	224.02	227.52	0.000379
Sandy Mai	26877.54	500-yr	5020	217	228.32	226.13	228.5	0.000442
Sandy Mai	26835		Bridge					
Sandy Mai	26794.7	10-yr	1479	217	222.39		223.44	0.003559
Sandy Mai	26794.7	50-yr	2537	217	223.78	223.32	225.38	0.004161
Sandy Mai	26794.7	100-yr	3146	217	224.68	224.68	225.83	0.002942

Sandy Mai	26794.7	500-yr	5020	217	226.53		227.23	0.001774
Sandy Mai	26382.38	10-yr	1479	215	221.71	220.22	222.25	0.00159
Sandy Mai	26382.38	50-yr	2537	215	223.18	221.65	223.87	0.001758
Sandy Mai	26382.38	100-yr	3146	215	223.93	222.28	224.66	0.001727
Sandy Mai	26382.38	500-yr	5020	215	225.97	223.82	226.56	0.001308
Sandy Mai	26107.58	10-yr	2016	213	221.05	219.93	221.77	0.001686
Sandy Mai	26107.58	50-yr	3442	213	222.49	221.58	223.35	0.001896
Sandy Mai	26107.58	100-yr	4317	213	223.22	222.14	224.13	0.00195
Sandy Mai	26107.58	500-yr	7013	213	225.11	223.52	226.07	0.001923
Sandy Mai	25737.96	10-yr	2016	213	221.05		221.27	0.000609
Sandy Mai	25737.96	50-yr	3442	213	222.52		222.78	0.000673
Sandy Mai	25737.96	100-yr	4317	213	223.26		223.54	0.000699
Sandy Mai	25737.96	500-yr	7013	213	225.1		225.46	0.000794
Sandy Mai	25309.8	10-yr	2016	213.64	220.73	217.18	220.95	0.000954
Sandy Mai	25309.8	50-yr	3442	213.64	222.13	218.19	222.41	0.001114
Sandy Mai	25309.8	100-yr	4317	213.64	222.88	218.8	223.16	0.001107
Sandy Mai	25309.8	500-yr	7013	213.64	224.71	221.62	225.04	0.001135
Sandy Mai	24900.93	10-yr	2016	212	220.52		220.54	0.000761
Sandy Mai	24900.93	50-yr	3442	212	221.82		221.88	0.001147
Sandy Mai	24900.93	100-yr	4317	212	222.54		222.6	0.001324
Sandy Mai	24900.93	500-yr	7013	212	224.29		224.4	0.001796
Sandy Mai	24402.5	10-yr	2016	210	220.19		220.22	0.000563
Sandy Mai	24402.5	50-yr	3442	210	221.34		221.4	0.000844
Sandy Mai	24402.5	100-yr	4317	210	221.98		222.06	0.000944
Sandy Mai	24402.5	500-yr	7013	210	223.55		223.69	0.001199
Sandy Mai	24129.68	10-yr	2016	210	220.03	214.61	220.06	0.000686
Sandy Mai	24129.68	50-yr	3442	210	221.08	216.03	221.13	0.001134
Sandy Mai	24129.68	100-yr	4317	210	221.69	216.79	221.76	0.001307
Sandy Mai	24129.68	500-yr	7013	210	223.19	218.86	223.29	0.001737
Sandy Mai	24085		Bridge					
Sandy Mai	24042.15	10-yr	2016	210	216.24	214.73	216.62	0.001222
Sandy Mai	24042.15	50-yr	3442	210	218.26	215.93	218.59	0.000823
Sandy Mai	24042.15	100-yr	4317	210	219.29	216.49	219.58	0.000658
Sandy Mai	24042.15	500-yr	7013	210	221.87	217.78	222.12	0.000422
Sandy Mai	23662.23	10-yr	2016	208	213.45	213.45	215.28	0.006326
Sandy Mai	23662.23	50-yr	3442	208	215.23	215.23	217.38	0.005501
Sandy Mai	23662.23	100-yr	4317	208	216.01	216.01	218.39	0.005483

Sandy Mai	23662.23	500-yr	7013	208	217.83	217.83	220.88	0.005694
Sandy Mai	23396.78	10-yr	2016	208	213.34		213.84	0.00149
Sandy Mai	23396.78	50-yr	3442	208	214.35		215.33	0.002364
Sandy Mai	23396.78	100-yr	4317	208	214.79		216.11	0.002934
Sandy Mai	23396.78	500-yr	7013	208	215.58	215.38	218.2	0.005115
Sandy Mai	23076.73	10-yr	2016	206	213.15		213.36	0.001017
Sandy Mai	23076.73	50-yr	3442	206	214.33		214.61	0.001164
Sandy Mai	23076.73	100-yr	4317	206	214.93		215.23	0.001223
Sandy Mai	23076.73	500-yr	7013	206	216.4		216.77	0.001349
Sandy Mai	22719.89	10-yr	2016	206	212.54		212.65	0.005048
Sandy Mai	22719.89	50-yr	3442	206	213.74		213.86	0.004185
Sandy Mai	22719.89	100-yr	4317	206	214.34		214.47	0.00383
Sandy Mai	22719.89	500-yr	7013	206	215.84		216	0.003348
Sandy Mai	22305.19	10-yr	2229	204	210.53	208	210.62	0.004436
Sandy Mai	22305.19	50-yr	3931	204	211.88	209	212.02	0.004368
Sandy Mai	22305.19	100-yr	4945	204	212.52	209.51	212.68	0.004461
Sandy Mai	22305.19	500-yr	8165	204	214.08	210.46	214.3	0.004516
Sandy Mai	21973.79	10-yr	2229	204	209.57		209.62	0.002135
Sandy Mai	21973.79	50-yr	3931	204	210.95		211.01	0.002116
Sandy Mai	21973.79	100-yr	4945	204	211.59		211.67	0.002117
Sandy Mai	21973.79	500-yr	8165	204	213.15		213.25	0.002186
Sandy Mai	21498.81	10-yr	2229	202	208.7		208.75	0.001591
Sandy Mai	21498.81	50-yr	3931	202	209.97		210.05	0.001938
Sandy Mai	21498.81	100-yr	4945	202	210.6		210.68	0.001993
Sandy Mai	21498.81	500-yr	8165	202	212.09		212.21	0.002169
Sandy Mai	21070	10-yr	2229	200	208.4		208.42	0.000503
Sandy Mai	21070	50-yr	3931	200	209.56		209.6	0.000727
Sandy Mai	21070	100-yr	4945	200	210.15		210.2	0.000807
Sandy Mai	21070	500-yr	8165	200	211.56		211.64	0.001005
Sandy Mai	20558.49	10-yr	2229	200	208.07	203.62	208.11	0.000929
Sandy Mai	20558.49	50-yr	3931	200	209.04	204.76	209.12	0.001583
Sandy Mai	20558.49	100-yr	4945	200	209.56	205.35	209.65	0.001873
Sandy Mai	20558.49	500-yr	8165	200	210.74	206.23	210.91	0.002754
Sandy Mai	20488		Culvert					
Sandy Mai	20450.5	10-yr	2229	200	203.77	203.77	205.53	0.008487
Sandy Mai	20450.5	50-yr	3931	200	204.65	204.65	205.53	0.00458
Sandy Mai	20450.5	100-yr	4945	200	204.96	204.96	205.96	0.004904

Sandy Mai	20450.5	500-yr	8165	200	206	205.76	207.15	0.004536
Sandy Mai	20135.83	10-yr	2229	196	203.6		203.64	0.000149
Sandy Mai	20135.83	50-yr	3931	196	204.4		204.48	0.00026
Sandy Mai	20135.83	100-yr	4945	196	204.99		205.08	0.000284
Sandy Mai	20135.83	500-yr	8165	196	206.2		206.37	0.000416
Sandy Mai	19889.56	10-yr	2229	195	203.58	199.29	203.6	0.000073
Sandy Mai	19889.56	50-yr	3931	195	204.38	200.49	204.42	0.000131
Sandy Mai	19889.56	100-yr	4945	195	204.96	201.08	205.01	0.000143
Sandy Mai	19889.56	500-yr	8165	195	206.18	202.45	206.26	0.000193
Sandy Mai	19820		Bridge					
Sandy Mai	19756.97	10-yr	2229	194.5	203.32		203.35	0.000085
Sandy Mai	19756.97	50-yr	3931	194.5	204.24		204.28	0.000129
Sandy Mai	19756.97	100-yr	4945	194.5	204.87		204.92	0.00013
Sandy Mai	19756.97	500-yr	8165	194.5	206.1		206.17	0.00017
Sandy Mai	19546.85	10-yr	2229	194	203.27		203.32	0.000123
Sandy Mai	19546.85	50-yr	3931	194	204.14		204.24	0.00022
Sandy Mai	19546.85	100-yr	4945	194	204.75		204.87	0.000251
Sandy Mai	19546.85	500-yr	8165	194	205.9		206.09	0.000372
Sandy Mai	19352.67	10-yr	2229	193.47	203.26	198.71	203.29	0.000098
Sandy Mai	19352.67	50-yr	3931	193.47	204.12	200.12	204.19	0.000186
Sandy Mai	19352.67	100-yr	4945	193.47	204.73	200.83	204.82	0.000206
Sandy Mai	19352.67	500-yr	8165	193.47	205.87	202.54	206	0.0003
Sandy Mai	19300		Bridge					
Sandy Mai	19245.94	10-yr	2229	193.25	197.82	197.82	199.79	0.008109
Sandy Mai	19245.94	50-yr	3931	193.25	199.88	199.88	202.23	0.005988
Sandy Mai	19245.94	100-yr	4945	193.25	201.39	201.39	202.96	0.003406
Sandy Mai	19245.94	500-yr	8165	193.25	202.9	202.9	204.47	0.003197
Sandy Mai	19054.38	10-yr	2229	193.25	197.95		198.09	0.000821
Sandy Mai	19054.38	50-yr	3931	193.25	199.23		199.41	0.000783
Sandy Mai	19054.38	100-yr	4945	193.25	199.78		200	0.000819
Sandy Mai	19054.38	500-yr	8165	193.25	201.15		201.48	0.000902
Sandy Mai	18845.69	10-yr	2229	193	197.85	195.92	197.94	0.000512
Sandy Mai	18845.69	50-yr	3931	193	199.14	196.59	199.27	0.000493
Sandy Mai	18845.69	100-yr	4945	193	199.69	196.88	199.84	0.000523
Sandy Mai	18845.69	500-yr	8165	193	201.07	197.68	201.3	0.000613
Sandy Mai	18634.5	10-yr	2229	192	197.78		197.85	0.000317

Sandy Mai	18634.5	50-yr	3931	192	199.08		199.17	0.000336
Sandy Mai	18634.5	100-yr	4945	192	199.62		199.74	0.000363
Sandy Mai	18634.5	500-yr	8165	192	201		201.18	0.000432
Sandy Mai	18463	10-yr	2229	191	197.77		197.8	0.000149
Sandy Mai	18463	50-yr	3931	191	199.06		199.12	0.000183
Sandy Mai	18463	100-yr	4945	191	199.61		199.68	0.000208
Sandy Mai	18463	500-yr	8165	191	200.98		201.1	0.000266
Sandy Mai	18269.19	10-yr	2229	188	197.2	193.07	197.63	0.000829
Sandy Mai	18269.19	50-yr	3931	188	198.27	197.11	198.88	0.001189
Sandy Mai	18269.19	100-yr	4945	188	198.7	197.86	199.41	0.001369
Sandy Mai	18269.19	500-yr	8165	188	199.89	199.08	200.77	0.00167
Sandy Mai	18240		Culvert					
Sandy Mai	18211.69	10-yr	2229	188	194.11	192.39	195.03	0.002702
Sandy Mai	18211.69	50-yr	3931	188	195.14	195.14	196.41	0.003481
Sandy Mai	18211.69	100-yr	4945	188	195.64	195.64	197.01	0.003637
Sandy Mai	18211.69	500-yr	8165	188	196.83	196.83	198.51	0.004084
Sandy Mai	18010.15	10-yr	2229	188	193.47	193.47	194.33	0.004222
Sandy Mai	18010.15	50-yr	3931	188	194.35	194.35	195.39	0.004752
Sandy Mai	18010.15	100-yr	4945	188	194.72	194.72	195.88	0.005107
Sandy Mai	18010.15	500-yr	8165	188	195.67	195.67	197.19	0.005837
Sandy Mai	17718.32	10-yr	2229	187	190.83	190.83	191.34	0.005065
Sandy Mai	17718.32	50-yr	3931	187	191.57		192.05	0.003865
Sandy Mai	17718.32	100-yr	4945	187	192.01		192.47	0.003218
Sandy Mai	17718.32	500-yr	8165	187	193.14		193.67	0.002522
Sandy Mai	17333.24	10-yr	2229	186	189.95		190.13	0.001325
Sandy Mai	17333.24	50-yr	3931	186	190.86		191.11	0.001449
Sandy Mai	17333.24	100-yr	4945	186	191.3		191.6	0.001496
Sandy Mai	17333.24	500-yr	8165	186	192.43		192.86	0.001636
Sandy Mai	16976.28	10-yr	2229	186	188.41	188.38	189.08	0.009183
Sandy Mai	16976.28	50-yr	3931	186	189.08	189.04	190	0.008826
Sandy Mai	16976.28	100-yr	4945	186	189.42	189.38	190.46	0.008652
Sandy Mai	16976.28	500-yr	8165	186	190.51	189.87	191.7	0.007264
Sandy Mai	16566.37	10-yr	2229	185.31	187.53		187.67	0.001485
Sandy Mai	16566.37	50-yr	3931	185.31	188.37		188.56	0.00145
Sandy Mai	16566.37	100-yr	4945	185.31	188.8		189.03	0.001412
Sandy Mai	16566.37	500-yr	8165	185.31	190.1		190.39	0.001261
Sandy Mai	16177.16	10-yr	2229	184.88	186.62		186.87	0.003068

Sandy Mai	16177.16	50-yr	3931	184.88	187.53		187.85	0.002405
Sandy Mai	16177.16	100-yr	4945	184.88	187.98		188.34	0.002278
Sandy Mai	16177.16	500-yr	8165	184.88	189.41		189.82	0.001684
Sandy Mai	15741.39	10-yr	2229	182	186.03	184.06	186.17	0.000954
Sandy Mai	15741.39	50-yr	3931	182	186.92	185.24	187.15	0.001124
Sandy Mai	15741.39	100-yr	4945	182	187.35	185.56	187.63	0.001196
Sandy Mai	15741.39	500-yr	8165	182	188.92	186.46	189.26	0.001004
Sandy Mai	15036.05	10-yr	2229	180	184.26	184.26	184.91	0.004826
Sandy Mai	15036.05	50-yr	3931	180	185.11	184.88	185.81	0.004462
Sandy Mai	15036.05	100-yr	4945	180	185.9	185.19	186.46	0.002985
Sandy Mai	15036.05	500-yr	8165	180	188.05	186.04	188.47	0.001553
Sandy Mai	14643.01	10-yr	2229	176.16	183.04	181.7	183.27	0.001114
Sandy Mai	14643.01	50-yr	3931	176.16	184.74	182.55	184.97	0.000949
Sandy Mai	14643.01	100-yr	4945	176.16	185.51	182.94	185.75	0.000949
Sandy Mai	14643.01	500-yr	8165	176.16	187.68	184.01	187.97	0.000924
Sandy Mai	14242.08	10-yr	2229	174	181.62	180.79	182.55	0.002522
Sandy Mai	14242.08	50-yr	3931	174	182.88	182.63	184.21	0.003306
Sandy Mai	14242.08	100-yr	4945	174	183.67	183.22	185	0.003188
Sandy Mai	14242.08	500-yr	8165	174	186.15	185.1	187.31	0.002453
Sandy Mai	13869.62	10-yr	2229	175	180.55	180.37	181.36	0.003907
Sandy Mai	13869.62	50-yr	3931	175	181.98	181.3	182.8	0.00344
Sandy Mai	13869.62	100-yr	4945	175	182.87	181.77	183.67	0.003106
Sandy Mai	13869.62	500-yr	8165	175	185.95	183.3	186.41	0.001441
Sandy Mai	13438.13	10-yr	2229	172	180.04	178.02	180.2	0.001448
Sandy Mai	13438.13	50-yr	3931	172	181.34	178.84	181.57	0.001824
Sandy Mai	13438.13	100-yr	4945	172	182.13	179.27	182.4	0.002158
Sandy Mai	13438.13	500-yr	8165	172	185.65	180.35	185.82	0.000967
Sandy Mai	12942.35	10-yr	2229	173	179.5	176.6	179.6	0.000979
Sandy Mai	12942.35	50-yr	3931	173	180.61	177.47	180.78	0.001356
Sandy Mai	12942.35	100-yr	4945	173	181.36	177.94	181.55	0.00135
Sandy Mai	12942.35	500-yr	8165	173	185.29	179.32	185.41	0.000659
Sandy Mai	12648.67	10-yr	2229	170	179.45	175.51	179.47	0.000131
Sandy Mai	12648.67	50-yr	3931	170	180.53	177.16	180.57	0.000228
Sandy Mai	12648.67	100-yr	4945	170	181.27	177.16	181.32	0.000264
Sandy Mai	12648.67	500-yr	8165	170	185.24	177.17	185.29	0.000178
Sandy Mai	12600		Mult Open					
Sandy Mai	12591.62	10-yr	2229	171	177.33	175.65	177.8	0.001786

Sandy Mai	12591.62	50-yr	3931	171	179.41	177.15	179.91	0.001512
Sandy Mai	12591.62	100-yr	4945	171	180.89	177.85	181.24	0.000966
Sandy Mai	12591.62	500-yr	8165	171	185.01	179.83	185.23	0.000469
Sandy Mai	12103.89	10-yr	2229	171	176.38	175.43	176.81	0.002262
Sandy Mai	12103.89	50-yr	3931	171	178.82	176.41	179.15	0.001296
Sandy Mai	12103.89	100-yr	4945	171	180.51	176.87	180.76	0.000821
Sandy Mai	12103.89	500-yr	8165	171	184.81	178.14	185	0.000437
Sandy Mai	11764.28	10-yr	2229	171.05	176.1	173.8	176.22	0.001021
Sandy Mai	11764.28	50-yr	3931	171.05	178.67	174.52	178.79	0.000621
Sandy Mai	11764.28	100-yr	4945	171.05	180.42	174.92	180.52	0.000429
Sandy Mai	11764.28	500-yr	8165	171.05	184.78	176.04	184.86	0.000241
Sandy Mai	11405.26	10-yr	2229	168.7	175.45	173.34	175.79	0.000992
Sandy Mai	11405.26	50-yr	3931	168.7	178.16	174.73	178.5	0.000635
Sandy Mai	11405.26	100-yr	4945	168.7	180	175.31	180.31	0.00044
Sandy Mai	11405.26	500-yr	8165	168.7	184.39	176.8	184.7	0.000283
Sandy Mai	11350		Mult Open					
Sandy Mai	11303	10-yr	2229	168.66	173.55	173.55	174.85	0.005712
Sandy Mai	11303	50-yr	3931	168.66	174.81	174.81	176.57	0.005939
Sandy Mai	11303	100-yr	4945	168.66	175.65	175.65	177.45	0.00522
Sandy Mai	11303	500-yr	8165	168.66	178.05	177.16	179.75	0.003439
Sandy Mai	10733.77	10-yr	2229	166.86	173.28	170.71	173.34	0.000273
Sandy Mai	10733.77	50-yr	3931	166.86	174.9	171.59	174.96	0.000208
Sandy Mai	10733.77	100-yr	4945	166.86	175.74	171.86	175.8	0.000178
Sandy Mai	10733.77	500-yr	8165	166.86	178.74	172.62	178.79	0.000093
Sandy Mai	10700		Bridge					
Sandy Mai	10661.15	10-yr	2229	166.01	173.27	170.85	173.29	0.000083
Sandy Mai	10661.15	50-yr	3931	166.01	174.89	170.86	174.91	0.000075
Sandy Mai	10661.15	100-yr	4945	166.01	175.73	170.99	175.76	0.00007
Sandy Mai	10661.15	500-yr	8165	166.01	178.74	171.67	178.77	0.000047
Sandy Mai	10118.31	10-yr	2229	165	173.25	168.31	173.26	0.000038
Sandy Mai	10118.31	50-yr	3931	165	174.86	168.86	174.88	0.000048
Sandy Mai	10118.31	100-yr	4945	165	175.7	169.13	175.73	0.000051
Sandy Mai	10118.31	500-yr	8165	165	178.72	169.91	178.75	0.000044
Sandy Mai	9744.554	10-yr	2229	163.7	173.07	169.56	173.19	0.000314
Sandy Mai	9744.554	50-yr	3931	163.7	174.84	171.21	174.86	0.000055
Sandy Mai	9744.554	100-yr	4945	163.7	175.68	172.19	175.71	0.000056
Sandy Mai	9744.554	500-yr	8165	163.7	178.7	173.14	178.73	0.000045

Sandy Mai	9685		Bridge					
Sandy Mai	9639.641	10-yr	2229	163	170.64	166.43	170.69	0.000276
Sandy Mai	9639.641	50-yr	3931	163	173.78	167.24	173.83	0.000182
Sandy Mai	9639.641	100-yr	4945	163	175.44	167.68	175.5	0.000152
Sandy Mai	9639.641	500-yr	8165	163	178.52	168.81	178.59	0.000157
Sandy Mai	8975.758	10-yr	2229	161	170.51	165.94	170.55	0.000171
Sandy Mai	8975.758	50-yr	3931	161	173.71	166.8	173.74	0.000092
Sandy Mai	8975.758	100-yr	4945	161	175.39	167.2	175.41	0.000079
Sandy Mai	8975.758	500-yr	8165	161	178.47	168.25	178.5	0.00008
Sandy Mai	8504.5	10-yr	2229	161.39	170.38	164.4	170.46	0.000154
Sandy Mai	8504.5	50-yr	3931	161.39	173.55	165.54	173.66	0.000151
Sandy Mai	8504.5	100-yr	4945	161.39	175.22	166.14	175.34	0.000145
Sandy Mai	8504.5	500-yr	8165	161.39	178.21	167.82	178.4	0.000189
Sandy Mai	8350		Mult Open					
Sandy Mai	8235.939	10-yr	2229	159	169.92	163.74	170.06	0.00019
Sandy Mai	8235.939	50-yr	3931	159	172.98	165.16	173.17	0.000199
Sandy Mai	8235.939	100-yr	4945	159	174.61	165.83	174.82	0.00019
Sandy Mai	8235.939	500-yr	8165	159	177.24	167.73	177.57	0.000258
Sandy Mai	8063.602	10-yr	2229	158.71	169.3	165.28	169.86	0.000836
Sandy Mai	8063.602	50-yr	3931	158.71	173.04	167.71	173.07	0.000046
Sandy Mai	8063.602	100-yr	4945	158.71	174.69	168.67	174.71	0.000032
Sandy Mai	8063.602	500-yr	8165	158.71	177.38	171	177.4	0.000027
Sandy Mai	8000		Bridge					
Sandy Mai	7966.54	10-yr	2229	158.47	167.58		167.74	0.000344
Sandy Mai	7966.54	50-yr	3931	158.47	171.88		171.97	0.000165
Sandy Mai	7966.54	100-yr	4945	158.47	174.59		174.64	0.000078
Sandy Mai	7966.54	500-yr	8165	158.47	177.29		177.34	0.000075
Sandy Mai	7570.986	10-yr	2229	159	167.58		167.62	0.000095
Sandy Mai	7570.986	50-yr	3931	159	171.88		171.91	0.000045
Sandy Mai	7570.986	100-yr	4945	159	174.59		174.62	0.00003
Sandy Mai	7570.986	500-yr	8165	159	177.27		177.32	0.00004
Sandy Mai	7173.807	10-yr	2229	159	167.59	160.89	167.59	0.000017
Sandy Mai	7173.807	50-yr	3931	159	171.88	161.31	171.9	0.000012
Sandy Mai	7173.807	100-yr	4945	159	174.59	161.58	174.6	0.000009
Sandy Mai	7173.807	500-yr	8165	159	177.28	162.31	177.3	0.000015

Sandy Mai	6825.559	10-yr	2229	156	167.21	161.88	167.49	0.000452
Sandy Mai	6825.559	50-yr	3931	156	171.58	164.31	171.82	0.000249
Sandy Mai	6825.559	100-yr	4945	156	174.32	165.23	174.53	0.000181
Sandy Mai	6825.559	500-yr	8165	156	176.96	168.06	177.22	0.000196
Sandy Mai	6765		Bridge					
Sandy Mai	6709.658	10-yr	2229	156	166.81	162.89	167.3	0.00079
Sandy Mai	6709.658	50-yr	3931	156	171.22	166.25	171.55	0.00037
Sandy Mai	6709.658	100-yr	4945	156	173.98	167	174.26	0.000254
Sandy Mai	6709.658	500-yr	8165	156	176.4	168.83	176.7	0.000251
Sandy Mai	6668.16	10-yr	2229	156.01	166.94	161.39	167.12	0.000262
Sandy Mai	6668.16	50-yr	3931	156.01	171.25	163.14	171.48	0.000207
Sandy Mai	6668.16	100-yr	4945	156.01	174.09	163.85	174.14	0.000047
Sandy Mai	6668.16	500-yr	8165	156.01	176.5	165.78	176.58	0.000068
Sandy Mai	6600		Bridge					
Sandy Mai	6572.639	10-yr	2229	156	166.68	161.78	166.89	0.000311
Sandy Mai	6572.639	50-yr	3931	156	170.5	163.21	170.8	0.000276
Sandy Mai	6572.639	100-yr	4945	156	172.88	163.93	172.91	0.000042
Sandy Mai	6572.639	500-yr	8165	156	175.73	165.92	175.79	0.000055
Sandy Mai	6414.98	10-yr	2229	157	166.61	161.46	166.84	0.000373
Sandy Mai	6414.98	50-yr	3931	157	170.45	163.1	170.75	0.000332
Sandy Mai	6414.98	100-yr	4945	157	172.49	163.92	172.81	0.000304
Sandy Mai	6414.98	500-yr	8165	157	174.98	166.12	175.61	0.000488
Sandy Mai	6300		Mult Open					
Sandy Mai	6189.177	10-yr	2229	155	165.48	161.11	165.92	0.000683
Sandy Mai	6189.177	50-yr	3931	155	168.03	163.28	168.75	0.000878
Sandy Mai	6189.177	100-yr	4945	155	169.05	164.39	169.96	0.001025
Sandy Mai	6189.177	500-yr	8165	155	170.81	166.97	172.42	0.001636
Sandy Mai	5508.105	10-yr	4460	154	164.99	163.33	165.38	0.000795
Sandy Mai	5508.105	50-yr	7709	154	168.23	164.39	168.3	0.000108
Sandy Mai	5508.105	100-yr	9741	154	169.37	164.93	169.43	0.000089
Sandy Mai	5508.105	500-yr	16941	154	171.45	166.6	171.54	0.000095
Sandy Mai	5084.678	10-yr	4460	154	164.01	163.63	164.87	0.001485
Sandy Mai	5084.678	50-yr	7709	154	167.95	164.47	168.2	0.000308
Sandy Mai	5084.678	100-yr	9741	154	169.07	165.51	169.35	0.000284
Sandy Mai	5084.678	500-yr	16941	154	171.43	166.78	171.5	0.000068
Sandy Mai	5065.378	10-yr	4460	154.25	163.7	163.7	164.81	0.002028

Sandy Mai	5065.378	50-yr	7709	154.25	168	164.9	168.18	0.000232
Sandy Mai	5065.378	100-yr	9741	154.25	169.12	165.33	169.32	0.000208
Sandy Mai	5065.378	500-yr	16941	154.25	171.4	166.48	171.49	0.000093
Sandy Mai	5039.878	10-yr	4460	154.25	163.97	162.75	164.46	0.001002
Sandy Mai	5039.878	50-yr	7709	154.25	167.99	164.22	168.16	0.000193
Sandy Mai	5039.878	100-yr	9741	154.25	169.11	164.64	169.3	0.000185
Sandy Mai	5039.878	500-yr	16941	154.25	171.42	165.85	171.47	0.000059
Sandy Mai	4865.578	10-yr	4460	154.25	163.91	158.85	164.06	0.000245
Sandy Mai	4865.578	50-yr	7709	154.25	167.89	160.59	168.04	0.000143
Sandy Mai	4865.578	100-yr	9741	154.25	169	161.51	169.18	0.000162
Sandy Mai	4865.578	500-yr	16941	154.25	171.39	163.39	171.43	0.000047
Sandy Mai	4790.088	10-yr	4460	154	163.63	160.3	163.98	0.005144
Sandy Mai	4790.088	50-yr	7709	154	167.49	162.33	167.97	0.002001
Sandy Mai	4790.088	100-yr	9741	154	168.44	162.75	169.1	0.002207
Sandy Mai	4790.088	500-yr	16941	154	171.37	164.22	171.43	0.000089
Sandy Mai	4777.088	10-yr	4460	154.25	163.31	160.52	163.88	0.001
Sandy Mai	4777.088	50-yr	7709	154.25	167.35	162.34	167.93	0.000591
Sandy Mai	4777.088	100-yr	9741	154.25	168.28	163.19	169.05	0.000708
Sandy Mai	4777.088	500-yr	16941	154.25	171.38	165.77	171.41	0.000065
Sandy Mai	4740		Bridge					
Sandy Mai	4685.592	10-yr	4460	154	161.51	160.67	162.91	0.003319
Sandy Mai	4685.592	50-yr	7709	154	162.84	162.56	165.35	0.004934
Sandy Mai	4685.592	100-yr	9741	154	163.53	163.53	166.72	0.005758
Sandy Mai	4685.592	500-yr	16941	154	167.22	165.4	167.45	0.000669
Sandy Mai	4327.181	10-yr	4460	152	161.72		161.86	0.000618
Sandy Mai	4327.181	50-yr	7709	152	163.43		163.64	0.000802
Sandy Mai	4327.181	100-yr	9741	152	164.33		164.57	0.00088
Sandy Mai	4327.181	500-yr	16941	152	166.74		167.12	0.001149
Sandy Mai	3964.325	10-yr	4460	152	161.44		161.64	0.000593
Sandy Mai	3964.325	50-yr	7709	152	162.99		163.33	0.000871
Sandy Mai	3964.325	100-yr	9741	152	163.8		164.22	0.001012
Sandy Mai	3964.325	500-yr	16941	152	165.93		166.63	0.00145
Sandy Mai	3515.389	10-yr	4460	150.35	161.31		161.42	0.000323
Sandy Mai	3515.389	50-yr	7709	150.35	162.8		162.99	0.000516
Sandy Mai	3515.389	100-yr	9741	150.35	163.59		163.83	0.000607
Sandy Mai	3515.389	500-yr	16941	150.35	165.62		166.04	0.000933
Sandy Mai	3004.364	10-yr	4460	150	161.13	156.74	161.25	0.000333

Sandy Mai	3004.364	50-yr	7709	150	162.54	158.36	162.73	0.000487
Sandy Mai	3004.364	100-yr	9741	150	163.31	159.11	163.53	0.000532
Sandy Mai	3004.364	500-yr	16941	150	165.28	160.9	165.6	0.000675
Sandy Mai	2590.359	10-yr	4460	150	161.01	156.02	161.12	0.000321
Sandy Mai	2590.359	50-yr	7709	150	162.36	158.27	162.54	0.000513
Sandy Mai	2590.359	100-yr	9741	150	163.09	159.46	163.31	0.000595
Sandy Mai	2590.359	500-yr	16941	150	164.89	160.34	165.29	0.000897
Sandy Mai	2500		Bridge					
Sandy Mai	2417.391	10-yr	4460	150	156.86	156.09	157.19	0.001199
Sandy Mai	2417.391	50-yr	7709	150	158.15	156.83	158.51	0.001101
Sandy Mai	2417.391	100-yr	9741	150	158.77	157.19	159.18	0.001111
Sandy Mai	2417.391	500-yr	16941	150	160.54	158.25	161.11	0.001152
Sandy Mai	2072.963	10-yr	4460	148.51	156.52	155.33	156.79	0.000876
Sandy Mai	2072.963	50-yr	7709	148.51	157.8	156.15	158.13	0.000941
Sandy Mai	2072.963	100-yr	9741	148.51	158.41	156.55	158.78	0.000992
Sandy Mai	2072.963	500-yr	16941	148.51	160.16	157.76	160.66	0.001106
Sandy Mai	1688.606	10-yr	4460	149	156.13		156.38	0.001261
Sandy Mai	1688.606	50-yr	7709	149	157.23		157.62	0.0018
Sandy Mai	1688.606	100-yr	9741	149	157.76		158.22	0.002047
Sandy Mai	1688.606	500-yr	16941	149	159.26		159.99	0.002695
Sandy Mai	1299.523	10-yr	4460	149	155.78	153.98	155.94	0.000957
Sandy Mai	1299.523	50-yr	7709	149	156.81	155.02	157.02	0.001162
Sandy Mai	1299.523	100-yr	9741	149	157.31	155.39	157.55	0.001265
Sandy Mai	1299.523	500-yr	16941	149	158.74	156.48	159.1	0.001574
Sandy Mai	663.061	10-yr	4460	146.71	154.93	154.26	155.22	0.001291
Sandy Mai	663.061	50-yr	7709	146.71	155.81	154.95	156.16	0.001578
Sandy Mai	663.061	100-yr	9741	146.71	156.25	155.37	156.62	0.001678
Sandy Mai	663.061	500-yr	16941	146.71	157.48	156.22	157.97	0.002025
Sandy Mai	143.571	10-yr	4460	147	153.67	153.67	154.18	0.003578
Sandy Mai	143.571	50-yr	7709	147	154.14	154.14	154.82	0.005016
Sandy Mai	143.571	100-yr	9741	147	154.39	154.39	155.16	0.005715
Sandy Mai	143.571	500-yr	16941	147	155.1	155.1	156.16	0.007386

Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)	Froude # Chl
7.49	94.36	59.2	0.96
6.96	218.12	183.69	0.71
7.27	269.56	213.05	0.71
8.22	401.5	255.16	0.75
8.63	111.13	65.57	0.81
9.99	163.37	74.6	0.85
10.71	188.05	78.47	0.88
12.03	287.03	110.85	0.89
8.22	105.82	62.51	0.82
8.21	221.84	148.04	0.71
8.71	260.8	160.34	0.73
9.44	394.88	228.02	0.74
4.77	212.18	88.04	0.33
6.53	284.23	120.3	0.43
7.43	316.67	126.74	0.48
11.11	341.69	135.81	0.71
10.45	75.19	29.94	0.94
10.83	150.13	72.77	0.8
11.2	197.39	97.83	0.79
12.05	354.77	119.2	0.77
6.68	185.54	107.36	0.65
8.3	285.57	193.54	0.73
8.63	341.73	225.59	0.73
9.06	563.19	256.56	0.7
4.44	197.74	107.09	0.31
4.73	310.8	160.75	0.31
5.14	348.92	170.35	0.33
5.92	471.82	206.19	0.37
3.05	351.74	155.66	0.22
3.58	503.3	186.97	0.24
3.78	573.36	191.04	0.25
4.42	748.43	216.41	0.27
2.95	390.76	168.21	0.19

3.59	535.09	180.46	0.22
3.92	597.14	183.71	0.23
4.86	749.43	206.1	0.28
4.42	184.47	63.11	0.3
6.26	220.52	71.54	0.41
7.18	238.66	78.23	0.46
9.87	289.31	117.01	0.61
1.42	797.39	227.26	0.08
2.01	939.11	245.33	0.1
2.36	1010.37	269.78	0.12
3.1	1193.42	283.92	0.15
8.48	95.49	35.82	0.76
11.95	124.74	45.86	0.99
11.11	227.51	106.32	0.82
10.31	702.29	348.64	0.66
9.71	87.4	134.02	1
7.7	272.31	213.76	0.69
8.23	319.8	245.02	0.72
9.71	430.86	334.41	0.8
5.04	167.75	255.6	0.46
7.4	203.99	285.67	0.64
3.44	645.18	313.51	0.29
4.31	847.03	356.94	0.34
1.53	761.08	317.15	0.11
2.23	882.37	331.86	0.15
2.54	944.7	332.83	0.17
3.33	1108.58	335.07	0.22
3.11	522.14	244.3	0.19
3.95	742.21	285.47	0.23
4.32	855.67	307.5	0.25
5.18	1143.82	332.06	0.28
3.38	337.91	126.5	0.22
4.75	434.95	155.47	0.3

5.42	485.04	173.15	0.33
7.35	604.39	213.62	0.43
3.9	239.56	100.73	0.27
5.87	275.57	104.14	0.4
6.78	296.71	106.03	0.45
9.62	333.78	111.03	0.63
3.4	445.88	301.84	0.23
5.04	541.85	327.1	0.34
5.76	603.07	341.2	0.38
8.2	686.27	348.36	0.53
9.54	79.46	33.49	0.96
8.82	211.68	123.93	0.7
9.09	276.91	145.5	0.69
10.41	415.41	203.81	0.73
6.71	176.15	106.33	0.71
7.12	291.92	121.29	0.65
7.21	354.62	122.97	0.62
8.54	479.28	134.48	0.66
9.27	109.93	53.35	0.85
10.89	169.93	68.25	0.88
11.85	200.51	80.2	0.92
12.1	379.89	159.01	0.83
5.71	264.54	151.44	0.54
6.96	370.46	171.13	0.6
7.81	450.89	233.39	0.65
7.51	755.15	295.42	0.55
6.9	184.19	142.81	0.61
7.35	275.08	152.04	0.61
5.41	427.97	164.81	0.4
4.51	788.08	266.65	0.3
6.14	192.18	137.91	0.57
4.56	474.75	156.55	0.34
3.98	683.09	181.75	0.27
4.39	1021.08	214.09	0.27

5.22	132.02	26.48	0.41
6.74	175.57	31.35	0.47
6.89	218.55	199.72	0.43
8.79	386.12	387.92	0.52
4.9	140.52	29.07	0.39
6.87	170.7	56.28	0.51
8.02	181.22	92.09	0.57
10.85	217.84	217.06	0.72
9.85	343.57	145.65	0.71
12	489.37	162.86	0.8
12.81	563.35	166.15	0.83
14.46	793.83	222.26	0.87
11.89	264.68	124.75	1.06
12.39	440.13	184.31	0.97
12.91	529.12	194.64	0.97
15.93	701.83	234.34	1.12
5	418.13	163.89	0.34
4.85	839.14	429.98	0.29
5.23	972.04	458.55	0.3
6.87	1226.84	489.79	0.39
9.29	182.23	47.59	0.72
11.95	283.68	124.44	0.84
10.04	591.03	421.6	0.64
9.76	1102.58	509.34	0.58
7.95	264.91	148.55	0.59
6.79	659.47	330.44	0.44
6.72	902.7	440.06	0.42
7.25	1373.78	514.89	0.43
5.09	337.72	265.09	0.32
4.47	1217.36	495.34	0.26
4.5	1543.51	567.52	0.25
5.15	2092.63	592.08	0.27
8.59	212.47	64.27	0.68
10.93	380.66	219.78	0.76
10.04	614.1	288.22	0.66

9.07	1335.71	474.83	0.53
6.65	441.41	144.67	0.47
8.04	670.38	179.23	0.51
8.49	819.68	206.96	0.52
8.53	1525.79	434.51	0.46
7.95	557.22	198.08	0.5
9.43	858.34	213.46	0.55
10.06	1016.05	236.6	0.56
11.21	1569.22	355.08	0.57
4.84	1008.91	299.91	0.3
5.69	1460.93	319.09	0.33
6.1	1700.79	328.48	0.34
7.27	2334.8	367.41	0.37
5.62	1198.25	346.21	0.37
6.85	1751.1	409.56	0.42
7.22	2059.87	417.46	0.42
8.26	2840.64	438.8	0.44
1.7	1530.66	267.5	0.1
2.3	1883	271.27	0.13
2.59	2079.12	283.49	0.14
3.34	2615.56	332.34	0.17
1.65	1467.28	264.78	0.09
2.17	1781.07	284.24	0.11
2.38	1967.74	295.77	0.12
2.91	2465.38	336.77	0.14
1.77	1680.95	391.31	0.1
2.44	2087.2	463.61	0.13
2.72	2341.01	499.76	0.14
3.4	3007.49	555.03	0.17
5.66	478.63	165.22	0.41
5.63	889.21	259.29	0.35
5.45	1154.15	326.79	0.32
5.16	1890.94	522.79	0.27
12.2	205.83	59.81	0.92
13.74	328.84	77.58	0.9
14.69	392.24	85	0.91

17.15	563.85	103.35	0.96
5.83	371.03	83.37	0.44
8.24	459.85	95.61	0.58
9.6	503.92	105.27	0.65
13.64	593.95	122.31	0.87
5.32	707.23	252.37	0.35
6.31	1033.65	297.4	0.39
6.77	1216.22	319.22	0.4
7.87	1725.16	368.69	0.43
3.69	865.48	375.63	0.25
3.76	1350.39	434.47	0.24
3.78	1621.3	456.14	0.23
3.95	2333.1	497.64	0.22
3.46	934.93	300.33	0.24
3.89	1366	333.46	0.24
4.14	1584.43	370.79	0.25
4.66	2323.13	553.75	0.26
2.16	1387.77	442.29	0.16
2.49	2045.86	503.22	0.17
2.64	2374.58	515.64	0.17
3.04	3277.04	613.02	0.18
2.1	1381.65	386.17	0.14
2.6	1910.51	446.5	0.16
2.78	2231.78	525.56	0.17
3.22	3049.49	567.35	0.18
1.37	1988.76	492.83	0.08
1.8	2589.52	539.56	0.1
1.97	2917.95	574.1	0.11
2.4	3756.99	608.65	0.12
1.74	1501.53	535.66	0.11
2.46	1835.86	591.28	0.15
2.78	2023.71	620.51	0.16
3.66	2489.27	690.56	0.2
10.68	211.51	212.86	0.98
9.06	622.68	300.14	0.75
9.79	716.07	302.76	0.78

10.72	1034.22	311.05	0.78
2.33	1476.49	388.6	0.15
3.3	1797.3	409.02	0.2
3.61	2040.78	424.17	0.21
4.75	2577.65	475.74	0.26
1.75	2112.72	591.13	0.11
2.49	2604.36	645.35	0.14
2.71	2994.98	689.67	0.15
3.4	3882.33	765.49	0.18
1.88	2070.3	647.46	0.11
2.47	2692.14	701.46	0.14
2.6	3144.64	726.19	0.14
3.19	4064.29	777.61	0.17
2.22	1477.27	377.85	0.14
3.18	1820.59	420.11	0.19
3.54	2096.92	484.39	0.2
4.64	2728.01	608.15	0.25
2.1	1690.81	422.84	0.12
3.07	2073.98	483.08	0.17
3.36	2380.36	519.68	0.18
4.32	3002.54	573.09	0.22
11.32	200.94	53.15	0.97
12.69	350.92	99.73	0.89
11.06	623.69	230.74	0.7
12.05	1041.21	315.69	0.7
3.76	783.48	283.69	0.32
4.36	1164.58	313.42	0.33
4.75	1339.8	326.31	0.34
5.7	1803.94	345.22	0.37
2.97	964.96	334.1	0.25
3.47	1410.76	355.13	0.26
3.81	1607.5	363.76	0.27
4.71	2122.85	385.81	0.3
2.84	1144.15	374.37	0.21

3.34	1660.28	417.29	0.22
3.65	1892.31	432.95	0.23
4.45	2511.86	466.32	0.26
2.05	1533.85	421.73	0.14
2.57	2103.83	459.45	0.16
2.87	2358.81	476.14	0.18
3.61	3036.38	506.2	0.21
5.67	547.38	217.38	0.33
7.32	833.8	302.95	0.41
8.08	969.34	319.24	0.44
9.58	1374.98	362.29	0.49
7.86	334.6	176.44	0.57
9.93	537.5	212.42	0.66
10.63	647.53	225.96	0.68
12.42	936.21	260.35	0.74
8.68	375.24	205.78	0.66
10.19	576.23	244.14	0.72
10.97	668.06	253.71	0.75
12.83	921.11	277.91	0.82
7.91	484.57	404.33	0.76
7.88	786.19	414.27	0.69
7.69	968.54	418.7	0.64
7.9	1459.9	446.65	0.58
4.51	705.7	319.51	0.4
5.41	1010.29	353.16	0.43
5.83	1170.51	369.25	0.45
6.93	1610.9	411.4	0.48
8.52	355.62	245.53	0.97
9.85	529.13	270.74	0.99
10.46	623.7	284.19	1
11.52	992.48	399.55	0.96
3.21	760.43	402.77	0.38
3.93	1108.41	431.92	0.4
4.25	1299.29	446.17	0.4
4.97	1910.05	505.36	0.4
3.96	565.15	334	0.53

4.65	879.63	356.46	0.5
5.02	1044.56	374.26	0.5
5.56	1614.94	418.06	0.46
3.66	761.67	320.46	0.33
4.57	1059.37	346.27	0.37
5	1212.63	358.38	0.39
5.47	1804.43	398.1	0.37
8.53	466.16	282.71	0.75
9.33	718.72	307.37	0.74
8.43	971.26	330.62	0.62
7.54	1758.43	400.95	0.48
5.74	1074.19	398.2	0.4
6.19	1828.03	436.45	0.38
6.57	2166	447.68	0.39
7.49	3185.79	508.57	0.4
8.75	640.31	284.16	0.59
11.23	1033.72	353.11	0.7
11.74	1303.02	377.54	0.7
12.16	2543.2	570.53	0.64
9.65	545.11	223.28	0.72
10.56	875.83	273.84	0.71
10.87	1171.86	319.13	0.69
9.24	2329.86	426.72	0.49
4.16	869.73	253.59	0.27
5.22	1211.66	274.68	0.32
6.02	1458.37	346.75	0.35
4.99	2907.33	472.12	0.25
3.15	947.44	295.56	0.22
4.12	1280.04	303.45	0.27
4.39	1508.72	311.02	0.27
3.99	3190.87	501.57	0.2
1.48	2209.42	495.39	0.09
2.11	2689.33	537.01	0.12
2.38	3027.32	576.27	0.13
2.4	5008.62	714.46	0.11
6.87	822.84	268.43	0.5

7.71	1627.12	504.76	0.48
6.9	2397.8	530.73	0.39
6.11	4755.31	799.09	0.29
7.21	969.3	344.45	0.55
7.01	1904.62	434.92	0.44
6.36	2676.41	470.82	0.36
5.95	4990.65	596.95	0.28
4.6	1534	430.79	0.36
4.74	2751.99	518.37	0.3
4.52	3708.92	584.23	0.26
4.39	6575.09	703.69	0.21
5.17	520.5	167.74	0.37
5.29	911.97	307.35	0.31
5	1201.14	463.11	0.27
5.06	1898.5	842.16	0.23
10.06	270.8	102.48	0.84
12.1	406.8	116.95	0.89
12.44	510.5	136.57	0.85
12.41	849.04	327.22	0.73
2.76	1206.89	453.63	0.19
2.81	2107.92	617.97	0.18
2.78	2647.03	652.83	0.17
2.45	4752.01	749.33	0.13
1.6	2092.21	633.36	0.11
1.76	3189.8	712.45	0.11
1.82	3795.88	729.67	0.11
1.8	6251.06	930.68	0.09
1.23	2536.85	562.34	0.08
1.55	3490.96	620.29	0.09
1.69	4021.99	639.22	0.09
1.87	6114.22	755.03	0.09
3.6	1015.16	617.3	0.22
1.71	3545.38	693.75	0.09
1.81	4136.11	712.37	0.1
1.91	6428.07	808.14	0.09

2.96	2133.39	549.64	0.2
3.09	4121.2	654.75	0.17
3.13	5250.31	700.83	0.16
3.72	7546.78	790.92	0.17
2.79	2775.34	763.47	0.16
2.51	6375.07	929.17	0.13
2.52	7997.55	997.41	0.12
2.89	11254.79	1098.63	0.12
2.65	1026.09	942.13	0.16
3.21	1743.3	1127.87	0.16
3.43	2124.98	1191.29	0.16
4.46	2809.43	1269.82	0.19
3.29	750.63	316.48	0.18
3.99	1182.28	460.01	0.19
4.2	1432.25	550.11	0.19
5.44	1848.28	629.31	0.23
6.61	390	450.76	0.37
1.91	3809.42	753.08	0.09
1.72	5123.25	840.6	0.08
1.77	7418.41	866.17	0.07
3.89	746.02	133.35	0.23
3.52	1844.81	492.13	0.17
2.74	3340.06	628.22	0.12
2.99	5068.9	671.99	0.12
2	1496.5	285.56	0.12
1.8	2815.32	324.43	0.09
1.67	3703.57	331.18	0.07
2.17	4607.63	347.54	0.09
0.85	2905.3	391.17	0.05
0.94	4632.97	413.48	0.05
0.95	5773.8	429.73	0.04
1.34	7036.9	491.99	0.06

5.12	601.97	135.14	0.27
4.76	1089.38	221.84	0.21
4.53	1414.04	258.67	0.19
5.16	2187.29	296.37	0.2
6.28	476.26	156.95	0.35
5.48	937.56	269.82	0.25
5.1	1253.66	329.36	0.22
5.55	2034.81	367.02	0.22
3.78	688.44	302	0.21
4.24	1069.01	371.43	0.2
2.28	3012.52	441.64	0.1
2.99	3764.89	481.57	0.12
4.05	620.64	254.14	0.22
4.72	911.24	369.24	0.22
2.06	3275.89	402.47	0.09
2.6	4290.44	469.19	0.1
4.27	703.03	101.47	0.24
5.05	1097.35	289.4	0.24
5.32	1338.69	460.64	0.24
7.45	1853.59	662.13	0.31
6.05	740.2	121.05	0.33
7.95	1062.89	131.96	0.39
9.05	1200.56	144.74	0.43
12.38	1522.59	199.91	0.55
6.71	1220.71	540.95	0.36
2.95	4108.6	892.57	0.14
2.83	5280.85	1203.63	0.13
3.18	7694.56	1222.79	0.14
8.51	772.8	636.28	0.48
4.87	2057.68	1199.53	0.23
4.93	2446.59	1227.01	0.23
2.67	9638.84	1315.24	0.11
9.36	666.32	537.92	0.56

4.12	2336.7	1017.39	0.2
4.13	2797.85	1043.15	0.19
3.05	8010.27	1143.02	0.13
6.69	940.51	695.6	0.39
3.75	2392.91	1179.84	0.18
3.88	2803.57	1492.99	0.18
2.42	10098.49	1567.32	0.1
3.26	1500.04	702.59	0.2
3.21	2553.93	1293.96	0.16
3.6	2851.94	1328.99	0.17
2.16	10726.5	1411.72	0.09
4.56	1006.67	689.34	0.27
3.61	1750.1	1221.05	0.18
3.98	1937.78	1323.9	0.19
0.91	10555.25	1442.54	0.04
6.43	976.78	908.79	0.39
6.41	1710.52	1370.17	0.32
7.36	1883.05	1392.17	0.35
2.55	12661.21	1496.19	0.11
10.33	752.2	805.22	0.69
14.17	992.85	827.66	0.87
16.15	1117.2	835.28	0.95
6.93	7975.47	892.37	0.34
4.76	2621.76	538.59	0.28
6.07	3567.59	561.85	0.32
6.71	4077.84	570.03	0.34
8.66	5488.75	600.93	0.41
5.1	2596.87	473.75	0.3
6.89	3346.65	493.06	0.38
7.81	3760.85	523.01	0.41
10.51	4906	557.93	0.51
4.23	3689.13	621.26	0.23
5.84	4645.55	663.54	0.3
6.61	5172.71	673.96	0.33
9.05	6581.32	715.88	0.41
4.31	3193.54	640.98	0.23

5.67	4160.85	718.72	0.29
6.18	4722.14	740.33	0.31
7.67	6237.8	816.8	0.35
3.54	2128.25	467.74	0.19
4.84	2791.07	529.74	0.25
5.43	3180.76	537.82	0.27
7.3	4168.66	549.94	0.34
6.12	1188.15	454.78	0.41
6.58	1781.29	466.23	0.41
6.95	2072.37	472.71	0.42
8.01	2957.36	569.09	0.44
5.6	1311.77	451.38	0.36
6.44	1967.68	545.43	0.38
6.92	2305.71	566.67	0.4
8.18	3396.86	658.94	0.43
6.41	1992.36	529.6	0.43
8.43	2589.91	572.16	0.52
9.38	2891.07	578.51	0.56
11.97	3773.33	598.89	0.66
5.43	2450.25	817.13	0.37
6.58	3323.01	859.86	0.42
7.16	3751.53	869.08	0.44
8.89	5043.04	948.79	0.5
6.89	1960.1	846.23	0.44
8.19	2759.15	943.05	0.49
8.74	3177.81	958.44	0.51
10.46	4405.93	1064.14	0.58
10.07	1787.91	1050.67	0.71
12.51	2288.19	1075.19	0.85
13.67	2556.32	1099.1	0.91
16.56	3345.28	1259.04	1.05

Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Crit W.S. (ft)	E.G. Elev (ft)	E.G. Slope (ft/ft)
Sandy Mai	38835.32	10-yr	0	0	0	0	0	0
Sandy Mai	38835.32	50-yr	0	0	0.55	0.55	-0.18	-0.00707
Sandy Mai	38835.32	100-yr	0	0	0	0	0	0
Sandy Mai	38835.32	500-yr	0	0	0	0	0	0
			0	0	0	0	0	0
Sandy Mai	38353.13	10-yr	0	0	0	0	0	0
Sandy Mai	38353.13	50-yr	0	0	-0.29	-0.29	-0.82	-0.00122
Sandy Mai	38353.13	100-yr	0	0	0	0	0	0
Sandy Mai	38353.13	500-yr	0	0	0	0	0	0
			0	0	0	0	0	0
Sandy Mai	37880.8	10-yr	0	0	0	0	0	0
Sandy Mai	37880.8	50-yr	0	0	0.07	0.07	0	-0.00035
Sandy Mai	37880.8	100-yr	0	0	0	0	0	0
Sandy Mai	37880.8	500-yr	0	0	0	0	0	0
			0	0	0	0	0	0
Sandy Mai	37489.56	10-yr	0	0	0	0	0	0
Sandy Mai	37489.56	50-yr	0	0	-0.38	-0.01	-0.28	0.000362
Sandy Mai	37489.56	100-yr	0	0	0	0	0	0
Sandy Mai	37489.56	500-yr	0	0	0	0	0	0
			0	0	0	0	0	0
Sandy Mai	37270		#VALUE!	0	0	0	0	0
			0	0	0	0	0	0
Sandy Mai	37056.92	10-yr	0	0	0	0	0	0
Sandy Mai	37056.92	50-yr	0	0	-0.05	-0.05	-0.04	0.000085
Sandy Mai	37056.92	100-yr	0	0	0	0	0	0
Sandy Mai	37056.92	500-yr	0	0	0	0	0	0
			0	0	0	0	0	0
Sandy Mai	36678.73	10-yr	0	0	0	0	0	0
Sandy Mai	36678.73	50-yr	0	0	-0.23	0.05	-0.22	0.000605
Sandy Mai	36678.73	100-yr	0	0	0	0	0	0
Sandy Mai	36678.73	500-yr	0	0	0	0	0	0
			0	0	0	0	0	0
Sandy Mai	36275.49	10-yr	0	0	0	0	0	0
Sandy Mai	36275.49	50-yr	0	0	-0.42	-0.07	-0.47	0.000474
Sandy Mai	36275.49	100-yr	0	0	0	0	0	0
Sandy Mai	36275.49	500-yr	0	0	0	0	0	0
			0	0	0	0	0	0
Sandy Mai	36000		#VALUE!	0	0	0	0	0
			0	0	0	0	0	0
Sandy Mai	35791.32	10-yr	0	0	0	0	0	0
Sandy Mai	35791.32	50-yr	0	0	-0.67	0	-0.75	-0.00017
Sandy Mai	35791.32	100-yr	0	0	0	0	0	0
Sandy Mai	35791.32	500-yr	0	0	0	0	0	0
			0	0	0	0	0	0
Sandy Mai	35582.96	10-yr	0	0	0	0	0	0

Sandy Mai	35582.96	50-yr	0	0	-0.63	-0.01	-0.71	-0.00022
Sandy Mai	35582.96	100-yr	0	0	0	0	0	0
Sandy Mai	35582.96	500-yr	0	0	0	0	0	0
			0	0	0	0	0	0
Sandy Mai	35513		#VALUE!	0	0	0	0	0
			0	0	0	0	0	0
Sandy Mai	35420.3	10-yr	0	0	0	0	0	0
Sandy Mai	35420.3	50-yr	0	0	-0.43	0	-0.58	-0.00178
Sandy Mai	35420.3	100-yr	0	0	0	0	0	0
Sandy Mai	35420.3	500-yr	0	0	0	0	0	0
			0	0	0	0	0	0
Sandy Mai	35237.49	10-yr	0	0	0	0	0	0
Sandy Mai	35237.49	50-yr	0	0	-0.48	0	-0.5	-2.5E-05
Sandy Mai	35237.49	100-yr	0	0	0	0	0	0
Sandy Mai	35237.49	500-yr	0	0	0	0	0	0
			0	0	0	0	0	0
Sandy Mai	34267		#VALUE!	0	0	0	0	0
			0	0	0	0	0	0
Sandy Mai	33297.82	10-yr	0	0	0	0	0	0
Sandy Mai	33297.82	50-yr	0	0	-0.25	0.08	-0.07	0.001238
Sandy Mai	33297.82	100-yr	0	0	0	0	0	0
Sandy Mai	33297.82	500-yr	0	0	0	0	0	0
			0	0	0	0	0	0
Sandy Mai	32874.91	10-yr	0	0	0	0	0	0
Sandy Mai	32874.91	50-yr	0	0	-0.39	-0.4	-1.54	-0.0033
Sandy Mai	32874.91	100-yr	0	0	0	0	0	0
Sandy Mai	32874.91	500-yr	0	0	0	0	0	0
			0	0	0	0	0	0
Sandy Mai	32432.32	10-yr	0	0	0	0	0	0
Sandy Mai	32432.32	50-yr	0	0	-0.79	-0.13	-0.71	0.001118
Sandy Mai	32432.32	100-yr	0	0	0	0	0	0
Sandy Mai	32432.32	500-yr	0	0	0	0	0	0
			0	0	0	0	0	0
Sandy Mai	32009.44	10-yr	0	0	0	0	0	0
Sandy Mai	32009.44	50-yr	0	0	-0.78	0	-0.8	-1.7E-05
Sandy Mai	32009.44	100-yr	0	0	0	0	0	0
Sandy Mai	32009.44	500-yr	0	0	0	0	0	0
			0	0	0	0	0	0
Sandy Mai	31828		#VALUE!	0	0	0	0	0
			0	0	0	0	0	0
Sandy Mai	31647.46	10-yr	0	0	0	0	0	0
Sandy Mai	31647.46	50-yr	0	0	-0.56	0	-0.57	0.000017
Sandy Mai	31647.46	100-yr	0	0	0	0	0	0
Sandy Mai	31647.46	500-yr	0	0	0	0	0	0
			0	0	0	0	0	0
Sandy Mai	31476.58	10-yr	0	0	0	0	0	0
Sandy Mai	31476.58	50-yr	0	0	-0.52	0	-0.57	0.000013

Sandy Mai	31476.58	100-yr	0	0	0	0	0	0
Sandy Mai	31476.58	500-yr	0	0	0	0	0	0
			0	0	0	0	0	0
Sandy Mai	31435		#VALUE!	0	0	0	0	0
			0	0	0	0	0	0
Sandy Mai	31392.94	10-yr	0	0	0	0	0	0
Sandy Mai	31392.94	50-yr	0	0	-0.41	0	-0.43	0.000327
Sandy Mai	31392.94	100-yr	0	0	0	0	0	0
Sandy Mai	31392.94	500-yr	0	0	0	0	0	0
			0	0	0	0	0	0
Sandy Mai	31259.8	10-yr	0	0	0	0	0	0
Sandy Mai	31259.8	50-yr	0	0	-0.47	0	-0.44	0.000185
Sandy Mai	31259.8	100-yr	0	0	0	0	0	0
Sandy Mai	31259.8	500-yr	0	0	0	0	0	0
			0	0	0	0	0	0
Sandy Mai	31220		#VALUE!	0	0	0	0	0
			0	0	0	0	0	0
Sandy Mai	31182.62	10-yr	0	0	0	0	0	0
Sandy Mai	31182.62	50-yr	0	0	0.01	0.01	0	-2E-05
Sandy Mai	31182.62	100-yr	0	0	0	0	0	0
Sandy Mai	31182.62	500-yr	0	0	0	0	0	0
			0	0	0	0	0	0
Sandy Mai	31033.98	10-yr	0	0	0	0	0	0
Sandy Mai	31033.98	50-yr	0	0	-0.1	0	-0.12	0.000216
Sandy Mai	31033.98	100-yr	0	0	0	0	0	0
Sandy Mai	31033.98	500-yr	0	0	0	0	0	0
			0	0	0	0	0	0
Sandy Mai	30579.27	10-yr	0	0	0	0	0	0
Sandy Mai	30579.27	50-yr	0	0	0.06	0.06	-0.09	-0.0006
Sandy Mai	30579.27	100-yr	0	0	0	0	0	0
Sandy Mai	30579.27	500-yr	0	0	0	0	0	0
			0	0	0	0	0	0
Sandy Mai	30235.35	10-yr	0	0	0	0	0	0
Sandy Mai	30235.35	50-yr	0	0	-0.48	-0.04	-0.62	5.7E-05
Sandy Mai	30235.35	100-yr	0	0	0	0	0	0
Sandy Mai	30235.35	500-yr	0	0	0	0	0	0
			0	0	0	0	0	0
Sandy Mai	29939.91	10-yr	0	0	0	0	0	0
Sandy Mai	29939.91	50-yr	0	0	-0.4	0	-0.6	-0.00052
Sandy Mai	29939.91	100-yr	0	0	0	0	0	0
Sandy Mai	29939.91	500-yr	0	0	0	0	0	0
			0	0	0	0	0	0
Sandy Mai	29533.61	10-yr	0	0	0	0	0	0
Sandy Mai	29533.61	50-yr	0	0	0.03	0	-0.17	-0.00064
Sandy Mai	29533.61	100-yr	0	0	0	0	0	0
Sandy Mai	29533.61	500-yr	0	0	0	0	0	0
			0	0	0	0	0	0

Sandy Mai	29203.58	10-yr	0	0	0	0	0	0
Sandy Mai	29203.58	50-yr	0	0	-0.13	0	-0.1	0.000142
Sandy Mai	29203.58	100-yr	0	0	0	0	0	0
Sandy Mai	29203.58	500-yr	0	0	0	0	0	0
			0	0	0	0	0	0
Sandy Mai	29175		#VALUE!	0	0	0	0	0
			0	0	0	0	0	0
Sandy Mai	29148	10-yr	0	0	0	0	0	0
Sandy Mai	29148	50-yr	0	0	-0.43	0	-0.32	0.00041
Sandy Mai	29148	100-yr	0	0	0	0	0	0
Sandy Mai	29148	500-yr	0	0	0	0	0	0
			0	0	0	0	0	0
Sandy Mai	28902.69	10-yr	0	0	0	0	0	0
Sandy Mai	28902.69	50-yr	0	0	-0.37	0.28	-0.41	0.00052
Sandy Mai	28902.69	100-yr	0	0	0	0	0	0
Sandy Mai	28902.69	500-yr	0	0	0	0	0	0
			0	0	0	0	0	0
Sandy Mai	28536.39	10-yr	0	0	0	0	0	0
Sandy Mai	28536.39	50-yr	0	0	-0.75	0.1	-0.79	0.001944
Sandy Mai	28536.39	100-yr	0	0	0	0	0	0
Sandy Mai	28536.39	500-yr	0	0	0	0	0	0
			0	0	0	0	0	0
Sandy Mai	28078.23	10-yr	0	0	0	0	0	0
Sandy Mai	28078.23	50-yr	0	0	-0.74	0.29	-0.82	-4.4E-05
Sandy Mai	28078.23	100-yr	0	0	0	0	0	0
Sandy Mai	28078.23	500-yr	0	0	0	0	0	0
			0	0	0	0	0	0
Sandy Mai	27678.42	10-yr	0	0	0	0	0	0
Sandy Mai	27678.42	50-yr	0	0	0.17	0.17	-0.67	-0.00198
Sandy Mai	27678.42	100-yr	0	0	0	0	0	0
Sandy Mai	27678.42	500-yr	0	0	0	0	0	0
			0	0	0	0	0	0
Sandy Mai	27191.04	10-yr	0	0	0	0	0	0
Sandy Mai	27191.04	50-yr	0	0	-0.61	-0.11	-0.69	-0.00019
Sandy Mai	27191.04	100-yr	0	0	0	0	0	0
Sandy Mai	27191.04	500-yr	0	0	0	0	0	0
			0	0	0	0	0	0
Sandy Mai	26877.54	10-yr	0	0	0	0	0	0
Sandy Mai	26877.54	50-yr	0	0	-0.69	0	-0.68	0.000101
Sandy Mai	26877.54	100-yr	0	0	0	0	0	0
Sandy Mai	26877.54	500-yr	0	0	0	0	0	0
			0	0	0	0	0	0
Sandy Mai	26835		#VALUE!	0	0	0	0	0
			0	0	0	0	0	0
Sandy Mai	26794.7	10-yr	0	0	0	0	0	0
Sandy Mai	26794.7	50-yr	0	0	-0.74	223.32	-0.16	0.001725
Sandy Mai	26794.7	100-yr	0	0	0	0	0	0

Sandy Mai	26794.7	500-yr	0	0	0	0	0	0
			0	0	0	0	0	0
Sandy Mai	26382.38	10-yr	0	0	0	0	0	0
Sandy Mai	26382.38	50-yr	0	0	-0.67	0.14	-0.74	0.000155
Sandy Mai	26382.38	100-yr	0	0	0	0	0	0
Sandy Mai	26382.38	500-yr	0	0	0	0	0	0
			0	0	0	0	0	0
Sandy Mai	26107.58	10-yr	0	0	0	0	0	0
Sandy Mai	26107.58	50-yr	0	0	-0.42	0.32	-0.71	-0.00021
Sandy Mai	26107.58	100-yr	0	0	0	0	0	0
Sandy Mai	26107.58	500-yr	0	0	0	0	0	0
			0	0	0	0	0	0
Sandy Mai	25737.96	10-yr	0	0	0	0	0	0
Sandy Mai	25737.96	50-yr	0	0	-0.51	0	-0.54	-0.00022
Sandy Mai	25737.96	100-yr	0	0	0	0	0	0
Sandy Mai	25737.96	500-yr	0	0	0	0	0	0
			0	0	0	0	0	0
Sandy Mai	25309.8	10-yr	0	0	0	0	0	0
Sandy Mai	25309.8	50-yr	0	0	-0.42	-0.08	-0.47	-1E-06
Sandy Mai	25309.8	100-yr	0	0	0	0	0	0
Sandy Mai	25309.8	500-yr	0	0	0	0	0	0
			0	0	0	0	0	0
Sandy Mai	24900.93	10-yr	0	0	0	0	0	0
Sandy Mai	24900.93	50-yr	0	0	-0.43	0	-0.44	-0.00015
Sandy Mai	24900.93	100-yr	0	0	0	0	0	0
Sandy Mai	24900.93	500-yr	0	0	0	0	0	0
			0	0	0	0	0	0
Sandy Mai	24402.5	10-yr	0	0	0	0	0	0
Sandy Mai	24402.5	50-yr	0	0	-0.35	0	-0.37	-0.00014
Sandy Mai	24402.5	100-yr	0	0	0	0	0	0
Sandy Mai	24402.5	500-yr	0	0	0	0	0	0
			0	0	0	0	0	0
Sandy Mai	24129.68	10-yr	0	0	0	0	0	0
Sandy Mai	24129.68	50-yr	0	0	-0.35	0	-0.36	9.7E-05
Sandy Mai	24129.68	100-yr	0	0	0	0	0	0
Sandy Mai	24129.68	500-yr	0	0	0	0	0	0
			0	0	0	0	0	0
Sandy Mai	24085		#VALUE!	0	0	0	0	0
			0	0	0	0	0	0
Sandy Mai	24042.15	10-yr	0	0	0	0	0	0
Sandy Mai	24042.15	50-yr	0	0	-0.58	0	-0.49	0.000277
Sandy Mai	24042.15	100-yr	0	0	0	0	0	0
Sandy Mai	24042.15	500-yr	0	0	0	0	0	0
			0	0	0	0	0	0
Sandy Mai	23662.23	10-yr	0	0	0	0	0	0
Sandy Mai	23662.23	50-yr	0	0	-0.14	-0.14	-0.51	-0.0004
Sandy Mai	23662.23	100-yr	0	0	0	0	0	0

Sandy Mai	23662.23	500-yr	0	0	0	0	0	0
			0	0	0	0	0	0
Sandy Mai	23396.78	10-yr	0	0	0	0	0	0
Sandy Mai	23396.78	50-yr	0	0	-0.51	0	-0.37	0.000561
Sandy Mai	23396.78	100-yr	0	0	0	0	0	0
Sandy Mai	23396.78	500-yr	0	0	0	0	0	0
			0	0	0	0	0	0
Sandy Mai	23076.73	10-yr	0	0	0	0	0	0
Sandy Mai	23076.73	50-yr	0	0	-0.26	0	-0.45	-0.00036
Sandy Mai	23076.73	100-yr	0	0	0	0	0	0
Sandy Mai	23076.73	500-yr	0	0	0	0	0	0
			0	0	0	0	0	0
Sandy Mai	22719.89	10-yr	0	0	0	0	0	0
Sandy Mai	22719.89	50-yr	0	0	-0.26	0	-0.29	0.000124
Sandy Mai	22719.89	100-yr	0	0	0	0	0	0
Sandy Mai	22719.89	500-yr	0	0	0	0	0	0
			0	0	0	0	0	0
Sandy Mai	22305.19	10-yr	0	0	0	0	0	0
Sandy Mai	22305.19	50-yr	0	0	-0.52	0	-0.51	0.000897
Sandy Mai	22305.19	100-yr	0	0	0	0	0	0
Sandy Mai	22305.19	500-yr	0	0	0	0	0	0
			0	0	0	0	0	0
Sandy Mai	21973.79	10-yr	0	0	0	0	0	0
Sandy Mai	21973.79	50-yr	0	0	-0.7	0	-0.7	0.000372
Sandy Mai	21973.79	100-yr	0	0	0	0	0	0
Sandy Mai	21973.79	500-yr	0	0	0	0	0	0
			0	0	0	0	0	0
Sandy Mai	21498.81	10-yr	0	0	0	0	0	0
Sandy Mai	21498.81	50-yr	0	0	-0.83	0	-0.83	0.000192
Sandy Mai	21498.81	100-yr	0	0	0	0	0	0
Sandy Mai	21498.81	500-yr	0	0	0	0	0	0
			0	0	0	0	0	0
Sandy Mai	21070	10-yr	0	0	0	0	0	0
Sandy Mai	21070	50-yr	0	0	-0.85	0	-0.85	0.000017
Sandy Mai	21070	100-yr	0	0	0	0	0	0
Sandy Mai	21070	500-yr	0	0	0	0	0	0
			0	0	0	0	0	0
Sandy Mai	20558.49	10-yr	0	0	0	0	0	0
Sandy Mai	20558.49	50-yr	0	0	-0.83	0	-0.85	-3.7E-05
Sandy Mai	20558.49	100-yr	0	0	0	0	0	0
Sandy Mai	20558.49	500-yr	0	0	0	0	0	0
			0	0	0	0	0	0
Sandy Mai	20488		#VALUE!	0	0	0	0	0
			0	0	0	0	0	0
Sandy Mai	20450.5	10-yr	0	0	0	0	0	0
Sandy Mai	20450.5	50-yr	0	0	-0.27	-0.27	-0.67	-0.00114
Sandy Mai	20450.5	100-yr	0	0	0	0	0	0

Sandy Mai	20450.5	500-yr	0	0	0	0	0	0
			0	0	0	0	0	0
Sandy Mai	20135.83	10-yr	0	0	0	0	0	0
Sandy Mai	20135.83	50-yr	0	0	-0.54	0	-0.58	-1.8E-05
Sandy Mai	20135.83	100-yr	0	0	0	0	0	0
Sandy Mai	20135.83	500-yr	0	0	0	0	0	0
			0	0	0	0	0	0
Sandy Mai	19889.56	10-yr	0	0	0	0	0	0
Sandy Mai	19889.56	50-yr	0	0	-0.56	0	-0.57	0.000036
Sandy Mai	19889.56	100-yr	0	0	0	0	0	0
Sandy Mai	19889.56	500-yr	0	0	0	0	0	0
			0	0	0	0	0	0
Sandy Mai	19820		#VALUE!	0	0	0	0	0
			0	0	0	0	0	0
Sandy Mai	19756.97	10-yr	0	0	0	0	0	0
Sandy Mai	19756.97	50-yr	0	0	-0.31	0	-0.32	-8E-06
Sandy Mai	19756.97	100-yr	0	0	0	0	0	0
Sandy Mai	19756.97	500-yr	0	0	0	0	0	0
			0	0	0	0	0	0
Sandy Mai	19546.85	10-yr	0	0	0	0	0	0
Sandy Mai	19546.85	50-yr	0	0	-0.29	0	-0.31	-4.5E-05
Sandy Mai	19546.85	100-yr	0	0	0	0	0	0
Sandy Mai	19546.85	500-yr	0	0	0	0	0	0
			0	0	0	0	0	0
Sandy Mai	19352.67	10-yr	0	0	0	0	0	0
Sandy Mai	19352.67	50-yr	0	0	-0.3	0	-0.3	0.000036
Sandy Mai	19352.67	100-yr	0	0	0	0	0	0
Sandy Mai	19352.67	500-yr	0	0	0	0	0	0
			0	0	0	0	0	0
Sandy Mai	19300		#VALUE!	0	0	0	0	0
			0	0	0	0	0	0
Sandy Mai	19245.94	10-yr	0	0	0	0	0	0
Sandy Mai	19245.94	50-yr	0	0	0	0	0	0
Sandy Mai	19245.94	100-yr	0	0	0	0	0	0
Sandy Mai	19245.94	500-yr	0	0	0	0	0	0
			0	0	0	0	0	0
Sandy Mai	19054.38	10-yr	0	0	0	0	0	0
Sandy Mai	19054.38	50-yr	0	0	-0.18	0	-0.27	-0.00011
Sandy Mai	19054.38	100-yr	0	0	0	0	0	0
Sandy Mai	19054.38	500-yr	0	0	0	0	0	0
			0	0	0	0	0	0
Sandy Mai	18845.69	10-yr	0	0	0	0	0	0
Sandy Mai	18845.69	50-yr	0	0	-0.18	-0.01	-0.23	-0.00012
Sandy Mai	18845.69	100-yr	0	0	0	0	0	0
Sandy Mai	18845.69	500-yr	0	0	0	0	0	0
			0	0	0	0	0	0
Sandy Mai	18634.5	10-yr	0	0	0	0	0	0

Sandy Mai	18634.5	50-yr	0	0	-0.17	0	-0.22	-5.6E-05
Sandy Mai	18634.5	100-yr	0	0	0	0	0	0
Sandy Mai	18634.5	500-yr	0	0	0	0	0	0
			0	0	0	0	0	0
Sandy Mai	18463	10-yr	0	0	0	0	0	0
Sandy Mai	18463	50-yr	0	0	-0.18	0	-0.2	-3.1E-05
Sandy Mai	18463	100-yr	0	0	0	0	0	0
Sandy Mai	18463	500-yr	0	0	0	0	0	0
			0	0	0	0	0	0
Sandy Mai	18269.19	10-yr	0	0	0	0	0	0
Sandy Mai	18269.19	50-yr	0	0	-0.28	0.07	-0.22	0.000142
Sandy Mai	18269.19	100-yr	0	0	0	0	0	0
Sandy Mai	18269.19	500-yr	0	0	0	0	0	0
			0	0	0	0	0	0
Sandy Mai	18240		#VALUE!	0	0	0	0	0
			0	0	0	0	0	0
Sandy Mai	18211.69	10-yr	0	0	0	0	0	0
Sandy Mai	18211.69	50-yr	0	0	-0.14	0.08	-0.46	-0.00046
Sandy Mai	18211.69	100-yr	0	0	0	0	0	0
Sandy Mai	18211.69	500-yr	0	0	0	0	0	0
			0	0	0	0	0	0
Sandy Mai	18010.15	10-yr	0	0	0	0	0	0
Sandy Mai	18010.15	50-yr	0	0	-0.06	-0.06	-0.46	-0.00101
Sandy Mai	18010.15	100-yr	0	0	0	0	0	0
Sandy Mai	18010.15	500-yr	0	0	0	0	0	0
			0	0	0	0	0	0
Sandy Mai	17718.32	10-yr	0	0	0	0	0	0
Sandy Mai	17718.32	50-yr	0	0	-0.75	-192.29	-1.65	-0.00269
Sandy Mai	17718.32	100-yr	0	0	0	0	0	0
Sandy Mai	17718.32	500-yr	0	0	0	0	0	0
			0	0	0	0	0	0
Sandy Mai	17333.24	10-yr	0	0	0	0	0	0
Sandy Mai	17333.24	50-yr	0	0	-0.5	0	-0.92	-0.00098
Sandy Mai	17333.24	100-yr	0	0	0	0	0	0
Sandy Mai	17333.24	500-yr	0	0	0	0	0	0
			0	0	0	0	0	0
Sandy Mai	16976.28	10-yr	0	0	0	0	0	0
Sandy Mai	16976.28	50-yr	0	0	-0.61	189.04	-0.71	0.002981
Sandy Mai	16976.28	100-yr	0	0	0	0	0	0
Sandy Mai	16976.28	500-yr	0	0	0	0	0	0
			0	0	0	0	0	0
Sandy Mai	16566.37	10-yr	0	0	0	0	0	0
Sandy Mai	16566.37	50-yr	0	0	-0.63	0	-0.78	-0.0002
Sandy Mai	16566.37	100-yr	0	0	0	0	0	0
Sandy Mai	16566.37	500-yr	0	0	0	0	0	0
			0	0	0	0	0	0
Sandy Mai	16177.16	10-yr	0	0	0	0	0	0

Sandy Mai	16177.16	50-yr	0	0	-0.59	0	-0.73	0.000052
Sandy Mai	16177.16	100-yr	0	0	0	0	0	0
Sandy Mai	16177.16	500-yr	0	0	0	0	0	0
			0	0	0	0	0	0
Sandy Mai	15741.39	10-yr	0	0	0	0	0	0
Sandy Mai	15741.39	50-yr	0	0	-0.68	-0.27	-0.73	4.8E-05
Sandy Mai	15741.39	100-yr	0	0	0	0	0	0
Sandy Mai	15741.39	500-yr	0	0	0	0	0	0
			0	0	0	0	0	0
Sandy Mai	15036.05	10-yr	0	0	0	0	0	0
Sandy Mai	15036.05	50-yr	0	0	-0.69	-0.39	-0.85	0.00082
Sandy Mai	15036.05	100-yr	0	0	0	0	0	0
Sandy Mai	15036.05	500-yr	0	0	0	0	0	0
			0	0	0	0	0	0
Sandy Mai	14643.01	10-yr	0	0	0	0	0	0
Sandy Mai	14643.01	50-yr	0	0	-0.66	-0.21	-0.8	-0.0002
Sandy Mai	14643.01	100-yr	0	0	0	0	0	0
Sandy Mai	14643.01	500-yr	0	0	0	0	0	0
			0	0	0	0	0	0
Sandy Mai	14242.08	10-yr	0	0	0	0	0	0
Sandy Mai	14242.08	50-yr	0	0	-0.58	0.06	-0.73	0.000217
Sandy Mai	14242.08	100-yr	0	0	0	0	0	0
Sandy Mai	14242.08	500-yr	0	0	0	0	0	1E-06
			0	0	0	0	0	0
Sandy Mai	13869.62	10-yr	0	0	0	0	0	0
Sandy Mai	13869.62	50-yr	0	0	-0.53	-0.32	-0.79	-9.1E-05
Sandy Mai	13869.62	100-yr	0	0	0	0	0	0
Sandy Mai	13869.62	500-yr	0	0	0	0	0	0
			0	0	0	0	0	0
Sandy Mai	13438.13	10-yr	0	0	0	0	0	0
Sandy Mai	13438.13	50-yr	0	0	-0.51	-0.14	-0.63	-0.00034
Sandy Mai	13438.13	100-yr	0	0	0	0	0	0
Sandy Mai	13438.13	500-yr	0	0	0	0	0	0
			0	0	0	0	0	0
Sandy Mai	12942.35	10-yr	0	0	0	0	0	0
Sandy Mai	12942.35	50-yr	0	0	-0.49	-0.12	-0.53	-4.1E-05
Sandy Mai	12942.35	100-yr	0	0	0	0	0	0
Sandy Mai	12942.35	500-yr	0	0	0	0	0	0
			0	0	0	0	0	0
Sandy Mai	12648.67	10-yr	0	0	0	0	0	0
Sandy Mai	12648.67	50-yr	0	0	-0.5	0	-0.51	-6E-06
Sandy Mai	12648.67	100-yr	0	0	0	0	0	0
Sandy Mai	12648.67	500-yr	0	0	0	0	0	0
			0	0	0	0	0	0
Sandy Mai	12600		#VALUE!	0	0	0	0	0
			0	0	0	0	0	0
Sandy Mai	12591.62	10-yr	0	0	0	0	0	0

Sandy Mai	12591.62	50-yr	0	0	-0.04	0.17	-0.38	-0.00059
Sandy Mai	12591.62	100-yr	0	0	0	0	0	0
Sandy Mai	12591.62	500-yr	0	0	0	0	0	0
			0	0	0	0	0	0
Sandy Mai	12103.89	10-yr	0	0	0	0	0	0
Sandy Mai	12103.89	50-yr	0	0	-0.04	0.06	-0.1	-0.00011
Sandy Mai	12103.89	100-yr	0	0	0	0	0	0
Sandy Mai	12103.89	500-yr	0	0	0	0	0	0
			0	0	0	0	0	0
Sandy Mai	11764.28	10-yr	0	0	0	0	0	0
Sandy Mai	11764.28	50-yr	0	0	0.05	-0.12	-0.03	-0.00028
Sandy Mai	11764.28	100-yr	0	0	0	0	0	0
Sandy Mai	11764.28	500-yr	0	0	0	0	0	0
			0	0	0	0	0	0
Sandy Mai	11405.26	10-yr	0	0	0	0	0	0
Sandy Mai	11405.26	50-yr	0	0	-0.01	0	0	-1E-06
Sandy Mai	11405.26	100-yr	0	0	0	0	0	0
Sandy Mai	11405.26	500-yr	0	0	0	0	0	0
			0	0	0	0	0	0
Sandy Mai	11350		#VALUE!	0	0	0	0	0
			0	0	0	0	0	0
Sandy Mai	11303	10-yr	0	0	0	0	0	0
Sandy Mai	11303	50-yr	0	0	-1.01	0.01	-0.3	0.002961
Sandy Mai	11303	100-yr	0	0	0	0	0	0
Sandy Mai	11303	500-yr	0	0	0	0	0	0
			0	0	0	0	0	0
Sandy Mai	10733.77	10-yr	0	0	0	0	0	0
Sandy Mai	10733.77	50-yr	0	0	-1.13	-0.95	-1.16	-3.2E-05
Sandy Mai	10733.77	100-yr	0	0	0.01	0	0.01	-1E-06
Sandy Mai	10733.77	500-yr	0	0	0	0	0	0
			0	0	0	0	0	0
Sandy Mai	10700		#VALUE!	0	0	0	0	0
			0	0	0	0	0	0
Sandy Mai	10661.15	10-yr	0	0	0	0	0	0
Sandy Mai	10661.15	50-yr	0	0	-1.14	-0.81	-1.16	-1.9E-05
Sandy Mai	10661.15	100-yr	0	0	0.01	0	0.01	-1E-06
Sandy Mai	10661.15	500-yr	0	0	0	0	0	0
			0	0	0	0	0	0
Sandy Mai	10118.31	10-yr	0	0	0	0	0	0
Sandy Mai	10118.31	50-yr	0	0	-1.15	0.01	-1.15	0.000006
Sandy Mai	10118.31	100-yr	0	0	0.01	0	0.01	0
Sandy Mai	10118.31	500-yr	0	0	0	0	0	0
			0	0	0	0	0	0
Sandy Mai	9744.554	10-yr	0	0	0	0	0	0
Sandy Mai	9744.554	50-yr	0	0	-1.14	0.01	-1.15	-1E-06
Sandy Mai	9744.554	100-yr	0	0	0.01	0	0.01	0
Sandy Mai	9744.554	500-yr	0	0	0	0	0	0

			0	0	0	0	0	0
Sandy Mai	9685		#VALUE!	0	0	0	0	0
			0	0	0	0	0	0
Sandy Mai	9639.641	10-yr	0	0	0	0	0	0
Sandy Mai	9639.641	50-yr	0	0	-0.96	-0.58	-0.99	-1.6E-05
Sandy Mai	9639.641	100-yr	0	0	0.02	0	0.02	-1E-06
Sandy Mai	9639.641	500-yr	0	0	0	0	0	0
			0	0	0	0	0	0
Sandy Mai	8975.758	10-yr	0	0	0	0	0	0
Sandy Mai	8975.758	50-yr	0	0	-0.96	-0.51	-0.97	-2.2E-05
Sandy Mai	8975.758	100-yr	0	0	0.02	0	0.02	0
Sandy Mai	8975.758	500-yr	0	0	0	0	0	0
			0	0	0	0	0	0
Sandy Mai	8504.5	10-yr	0	0	0	0	0	0
Sandy Mai	8504.5	50-yr	0	0	-0.99	-0.01	-0.98	0.000018
Sandy Mai	8504.5	100-yr	0	0	0.02	0	0.02	-1E-06
Sandy Mai	8504.5	500-yr	0	0	0	0	0	0
			0	0	0	0	0	0
Sandy Mai	8350		#VALUE!	0	0	0	0	0
			0	0	0	0	0	0
Sandy Mai	8235.939	10-yr	0	0	0	0	0	0
Sandy Mai	8235.939	50-yr	0	0	-1.1	-0.01	-1.07	0.00003
Sandy Mai	8235.939	100-yr	0	0	0.02	0	0.02	-1E-06
Sandy Mai	8235.939	500-yr	0	0	0	0	0	0
			0	0	0	0	0	0
Sandy Mai	8063.602	10-yr	0	0	0	0	0	0
Sandy Mai	8063.602	50-yr	0	0	-1.03	0	-1.13	-0.00011
Sandy Mai	8063.602	100-yr	0	0	0.02	0	0.02	-1E-06
Sandy Mai	8063.602	500-yr	0	0	0	0	0	0
			0	0	0	0	0	0
Sandy Mai	8000		#VALUE!	0	0	0	0	0
			0	0	0	0	0	0
Sandy Mai	7966.54	10-yr	0	0	0	0	0	0
Sandy Mai	7966.54	50-yr	0	0	-0.32	0	-0.37	-4E-06
Sandy Mai	7966.54	100-yr	0	0	0.02	0	0.02	-1E-06
Sandy Mai	7966.54	500-yr	0	0	0	0	0	0
			0	0	0	0	0	0
Sandy Mai	7570.986	10-yr	0	0	0	0	0	0
Sandy Mai	7570.986	50-yr	0	0	-0.3	0	-0.36	-4.8E-05
Sandy Mai	7570.986	100-yr	0	0	0.03	0	0.03	0
Sandy Mai	7570.986	500-yr	0	0	0	0	0	0
			0	0	0	0	0	0
Sandy Mai	7173.807	10-yr	0	0	0	0	0	0
Sandy Mai	7173.807	50-yr	0	0	-0.28	-1.48	-0.33	-6.9E-05
Sandy Mai	7173.807	100-yr	0	0	0.02	0	0.02	-1E-06
Sandy Mai	7173.807	500-yr	0	0	0	0	0	0
			0	0	0	0	0	0

Sandy Mai	6825.559	10-yr	0	0	0	0	0	0
Sandy Mai	6825.559	50-yr	0	0	-0.33	0	-0.32	0.000015
Sandy Mai	6825.559	100-yr	0	0	0.03	0	0.02	-1E-06
Sandy Mai	6825.559	500-yr	0	0	0	0	0	0
			0	0	0	0	0	0
Sandy Mai	6765		#VALUE!	0	0	0	0	0
			0	0	0	0	0	0
Sandy Mai	6709.658	10-yr	0	0	0	0	0	0
Sandy Mai	6709.658	50-yr	0	0	-0.36	0	-0.34	0.000027
Sandy Mai	6709.658	100-yr	0	0	0.03	0	0.02	-2E-06
Sandy Mai	6709.658	500-yr	0	0	0	0	0	0
			0	0	0	0	0	0
Sandy Mai	6668.16	10-yr	0	0	0	0	0	0
Sandy Mai	6668.16	50-yr	0	0	-0.36	0	-0.35	0.00002
Sandy Mai	6668.16	100-yr	0	0	0.03	0	0.03	-1E-06
Sandy Mai	6668.16	500-yr	0	0	0	0	0	0
			0	0	0	0	0	0
Sandy Mai	6600		#VALUE!	0	0	0	0	0
			0	0	0	0	0	0
Sandy Mai	6572.639	10-yr	0	0	0	0	0	0
Sandy Mai	6572.639	50-yr	0	0	-0.35	0	-0.33	0.000025
Sandy Mai	6572.639	100-yr	0	0	0.04	0	0.03	-1E-06
Sandy Mai	6572.639	500-yr	0	0	0	0	0	0
			0	0	0	0	0	0
Sandy Mai	6414.98	10-yr	0	0	0	0	0	0
Sandy Mai	6414.98	50-yr	0	0	-0.33	0	-0.33	0.000017
Sandy Mai	6414.98	100-yr	0	0	0.05	0	0.04	-4E-06
Sandy Mai	6414.98	500-yr	0	0	0	0	0	0
			0	0	0	0	0	0
Sandy Mai	6300		#VALUE!	0	0	0	0	0
			0	0	0	0	0	0
Sandy Mai	6189.177	10-yr	0	0	0	0	0	-1E-06
Sandy Mai	6189.177	50-yr	0	0	-0.62	0.11	-0.68	0.000036
Sandy Mai	6189.177	100-yr	0	0	0.2	0	0.15	-6E-05
Sandy Mai	6189.177	500-yr	0	0	-0.11	0	-0.06	0.000057
			0	0	0	0	0	0
Sandy Mai	5508.105	10-yr	0	0	0	0	0	0
Sandy Mai	5508.105	50-yr	0	0	-0.33	0	-0.58	-0.00026
Sandy Mai	5508.105	100-yr	0	0	0.2	0	0.18	-1.1E-05
Sandy Mai	5508.105	500-yr	0	0	-0.09	0	-0.09	0.000004
			0	0	0	0	0	0
Sandy Mai	5084.678	10-yr	0	0	-0.02	0	0	2.2E-05
Sandy Mai	5084.678	50-yr	0	0	-0.47	-0.29	-0.52	-1.5E-05
Sandy Mai	5084.678	100-yr	0	0	-0.06	0.14	0.16	0.00016
Sandy Mai	5084.678	500-yr	0	0	-0.08	0	-0.08	-0.00004
			0	0	0	0	0	0
Sandy Mai	5065.378	10-yr	0	0	-0.14	0.05	-0.02	0.00022

Sandy Mai	5065.378	50-yr	0	0	-0.3	0.02	-0.52	-0.00022
Sandy Mai	5065.378	100-yr	0	0	0.15	-0.09	0.14	-1.4E-05
Sandy Mai	5065.378	500-yr	0	0	0.1	-0.03	-0.07	-0.00012
			0	0	0	0	0	0
Sandy Mai	5039.878	10-yr	0	0	0.2	1.18	-0.22	-0.00067
Sandy Mai	5039.878	50-yr	0	0	-0.22	-0.3	-0.5	-0.0003
Sandy Mai	5039.878	100-yr	0	0	0.04	-0.48	0.18	0.00012
Sandy Mai	5039.878	500-yr	0	0	-0.01	-0.89	-0.02	0.000006
			0	0	0	0	0	0
Sandy Mai	4865.578	10-yr	0	0	0.06	0	0.01	-7.5E-05
Sandy Mai	4865.578	50-yr	0	0	-0.2	0.21	-0.33	-0.00012
Sandy Mai	4865.578	100-yr	0	0	0.28	0.31	0.16	-9.1E-05
Sandy Mai	4865.578	500-yr	0	0	-0.02	-0.24	-0.03	0.000004
			0	0	0	0	0	0
Sandy Mai	4790.088	10-yr	0	0	0.06	-0.11	-0.01	0.004359
Sandy Mai	4790.088	50-yr	0	0	-0.09	-0.39	-0.32	0.001247
Sandy Mai	4790.088	100-yr	0	0	-0.19	-0.92	0.11	0.001877
Sandy Mai	4790.088	500-yr	0	0	-0.02	-1.11	-0.02	0.00004
			0	0	0	0	0	0
Sandy Mai	4777.088	10-yr	0	0	-0.29	0	-0.05	0.00036
Sandy Mai	4777.088	50-yr	0	0	-0.21	0.26	-0.35	-0.00013
Sandy Mai	4777.088	100-yr	0	0	-0.27	0.46	0.09	0.000305
Sandy Mai	4777.088	500-yr	0	0	-0.02	1.02	-0.03	0.000017
			0	0	0	0	0	0
Sandy Mai	4740		#VALUE!	0	0	0	0	0
			0	0	0	0	0	0
Sandy Mai	4685.592	10-yr	0	0	0	0	0	0
Sandy Mai	4685.592	50-yr	0	0	-0.66	0	-0.24	0.001198
Sandy Mai	4685.592	100-yr	0	0	0	0	0	0
Sandy Mai	4685.592	500-yr	0	0	0	0	0	0
			0	0	0	0	0	0
Sandy Mai	4327.181	10-yr	0	0	0	0	0	0
Sandy Mai	4327.181	50-yr	0	0	-0.57	0	-0.54	0.000145
Sandy Mai	4327.181	100-yr	0	0	0	0	0	0
Sandy Mai	4327.181	500-yr	0	0	0	0	0	0
			0	0	0	0	0	0
Sandy Mai	3964.325	10-yr	0	0	0	0	0	0
Sandy Mai	3964.325	50-yr	0	0	-0.51	0	-0.56	-1.2E-05
Sandy Mai	3964.325	100-yr	0	0	0	0	0	0
Sandy Mai	3964.325	500-yr	0	0	0	0	0	0
			0	0	0	0	0	0
Sandy Mai	3515.389	10-yr	0	0	0	0	0	0
Sandy Mai	3515.389	50-yr	0	0	-0.52	0	-0.56	-4E-06
Sandy Mai	3515.389	100-yr	0	0	0	0	0	0
Sandy Mai	3515.389	500-yr	0	0	0	0	0	0
			0	0	0	0	0	0
Sandy Mai	3004.364	10-yr	0	0	0	0	0	0

Sandy Mai	3004.364	50-yr	0	0	-0.51	-0.13	-0.55	-1.9E-05
Sandy Mai	3004.364	100-yr	0	0	0	0	0	0
Sandy Mai	3004.364	500-yr	0	0	0	0	0	0
			0	0	0	0	0	0
Sandy Mai	2590.359	10-yr	0	0	0	0	0	0
Sandy Mai	2590.359	50-yr	0	0	-0.44	0.01	-0.53	-5.3E-05
Sandy Mai	2590.359	100-yr	0	0	0	0	0	0
Sandy Mai	2590.359	500-yr	0	0	0	0	0	0
			0	0	0	0	0	0
Sandy Mai	2500		#VALUE!	0	0	0	0	0
			0	0	0	0	0	0
Sandy Mai	2417.391	10-yr	0	0	0	0	0	0
Sandy Mai	2417.391	50-yr	0	0	-0.52	-0.54	-0.99	-0.00075
Sandy Mai	2417.391	100-yr	0	0	0	0	0	0
Sandy Mai	2417.391	500-yr	0	0	0	0	0	0
			0	0	0	0	0	0
Sandy Mai	2072.963	10-yr	0	0	0	0	0	0
Sandy Mai	2072.963	50-yr	0	0	-0.59	-0.27	-0.7	-3.6E-05
Sandy Mai	2072.963	100-yr	0	0	0	0	0	0
Sandy Mai	2072.963	500-yr	0	0	0	0	0	0
			0	0	0	0	0	0
Sandy Mai	1688.606	10-yr	0	0	0	0	0	0
Sandy Mai	1688.606	50-yr	0	0	-0.58	0	-0.69	-3.6E-05
Sandy Mai	1688.606	100-yr	0	0	0	0	0	0
Sandy Mai	1688.606	500-yr	0	0	0	0	0	0
			0	0	0	0	0	0
Sandy Mai	1299.523	10-yr	0	0	0	0	0	0
Sandy Mai	1299.523	50-yr	0	0	-0.62	0.06	-0.67	2.5E-05
Sandy Mai	1299.523	100-yr	0	0	0	0	0	0
Sandy Mai	1299.523	500-yr	0	0	0	0	0	0
			0	0	0	0	0	0
Sandy Mai	663.061	10-yr	0	0	0	0	0	0
Sandy Mai	663.061	50-yr	0	0	-0.76	-0.09	-0.76	0.000268
Sandy Mai	663.061	100-yr	0	0	0	0	0	0
Sandy Mai	663.061	500-yr	0	0	0	0	0	0
			0	0	0	0	0	0
Sandy Mai	143.571	10-yr	0	0	0	0	0	0
Sandy Mai	143.571	50-yr	0	0	-0.57	-0.57	-0.86	-0.00029
Sandy Mai	143.571	100-yr	0	0	0	0	0	0
Sandy Mai	143.571	500-yr	0	0	0	0	0	0

Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)	Froude # Chl
0	0	0	0
-2.65	87.09	104.24	-0.38
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
-1.42	36.9	35.91	-0.09
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
-0.24	22.77	38.04	-0.03
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0.65	-9.2	34.3	0.05
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0.03	0.01	7.38	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0.29	26.97	99.13	0.05
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0.3	45.47	76.45	0.03
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
-0.45	150.38	116.97	-0.02
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0

-0.59	168.86	116.46	-0.03
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
-0.49	39.21	40.38	-0.02
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
-0.15	203.97	124.33	-0.01
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0.56	-11.91	-26.14	0.07
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
-3.36	124.75	164.16	-0.26
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0.64	-2.97	232.67	0.11
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
-0.22	232.6	196.91	-0.01
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
-0.06	173.12	170.47	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
-0.16	76.42	83.18	0

0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0.04	20.78	35.93	0.02
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0.41	48.15	162.1	0.04
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
-0.02	0.87	0.93	-0.01
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0.09	18.55	28.29	0.02
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
-0.42	15.08	18.25	-0.04
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
-0.45	108.2	106.13	-0.01
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
-0.66	68.52	81.04	-0.02
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
-1.39	171.74	76.55	-0.11
0	0	0	0
0	0	0	0
0	0	0	0

0	0	0	0
0.14	-3.69	1.87	0.02
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0.47	-12.09	26.56	0.06
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0.32	71.79	72.86	0.04
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0.75	46.82	99.31	0.12
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
-0.47	200.31	309.98	-0.02
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
-1.91	70.91	78.07	-0.14
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0.07	182.09	222.56	0.02
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0.41	226.15	265.34	0.04
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
1.92	-88.22	54.78	0.17
0	0	0	0

0	0	0	0
0	0	0	0
0	0	0	0
-0.08	63.82	77.91	0.01
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
-0.82	221.18	109.99	-0.03
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
-0.01	335.46	137.89	0.01
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
-0.23	397.74	234.13	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
-0.21	221.65	64	-0.01
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
-0.22	220.51	88.93	-0.01
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0.06	161.31	195.22	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0.83	-75.99	55.29	0.06
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
-0.67	34.86	22.58	-0.04
0	0	0	0

0	0	0	0
0	0	0	0
0	0	0	0
0.66	-26.52	15.61	0.07
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
-1.05	311.17	154.49	-0.05
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
-0.03	226.65	193.91	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0.27	-27.12	72.36	0.02
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0.08	106.57	157.63	0.02
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
-0.04	116.24	166.5	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
-0.08	223.92	234.56	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
-0.19	231.04	372.28	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
-1.12	144.59	135.66	-0.07
0	0	0	0

0	0	0	0
0	0	0	0
0	0	0	0
-0.26	323.28	159.32	-0.01
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0.28	167.25	237.28	0.02
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
-0.14	518.44	293.39	-0.01
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
-0.08	383.64	194.95	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0.26	179.09	180.09	0.02
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
-0.4	209.88	113.38	-0.02
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
-0.46	269.54	120.57	-0.03
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0

-0.33	316.13	160.43	-0.02
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
-0.26	409.87	170.29	-0.02
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0.33	-8.34	56.15	0.03
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
-0.77	98.83	94.17	-0.05
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
-1.1	124.54	109.14	-0.07
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
-3.59	339.42	271.83	-0.23
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
-2.06	406.27	219.58	-0.14
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0.81	41.73	117.88	0.16
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
-0.85	261.75	196.92	-0.04
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0

-0.61	151.04	146.5	-0.02
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
-0.03	129.64	133.76	0.02
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0.12	135.14	137.5	0.05
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
-0.97	532.08	216.45	-0.04
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
-0.15	250.75	191.09	0.02
0	0	0	0
0	-0.02	0	0
0	0	0	0
0	0	0	0
-0.68	215.28	140.07	-0.01
0	0	0	0
0	-0.02	0	0
0	0	0	0
0	0	0	0
-0.69	305.36	126.72	-0.03
0	0	0	0
0	-0.03	0	0
0	0	0	0
0	0	0	0
-0.25	171.19	104.18	0
0	0	0	0
0	-0.03	0	0
0	0	0	0
0	0	0	0
-0.1	329.92	211.01	0
0	0	0	0
0	-0.03	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0

-1.41	504.04	189.76	-0.09
0	0	0	0
0	-0.01	0	0
0	0	0	0
0	0	0	0
-0.31	355.91	164.92	-0.02
0	0	0	0
0	-0.01	0	0
0	0	0	0
0	0	0	0
-0.92	845.43	238.37	-0.07
0	0	0	0
0	-0.01	0	0
0	0	0	0
0	0	0	0
-0.01	-0.4	120.59	-0.01
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
2.55	-126.1	-15.15	0.24
0	0	0	0
0	0.02	0	0
0	0	0	0
0	0.03	0.01	0
-0.49	364.03	254.76	-0.01
-0.01	6.98	0.15	0
0	0.06	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0.04	0	0
-0.38	710.54	302.45	-0.01
0	7.86	0.69	0
0	0.07	0.03	0
0	0	0	0
0	0.04	0	0
-0.01	512.39	270.29	0.01
0	6.98	0.25	0
0	0.06	0	0
0	0	0	0
0	0.02	0	0
-0.13	604.28	278.26	-0.01
-0.01	7.87	0.71	0
0	0.06	0.01	0

0	0	0	0
0	0	0	0
0	0	0	0
0	0.06	0.01	0
-0.34	832.85	239.6	-0.01
0	13.28	0.46	0
0	0.08	0.01	0
0	0	0	0
0	0.08	0	0
-0.41	1753.26	429.17	-0.01
0	19.29	0.56	0
0	0.12	0	0
0	0	0	0
0	0.03	0.01	0
0.04	9.02	804.87	0.01
-0.01	4.59	0.44	0
0	0.03	0.01	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0.02	0.01	0
0.12	-116.15	306.38	0.01
-0.01	3.64	0.48	0
0	0.02	0	0
0	0	0	0
0	0.01	0.01	0
-1.75	2294.92	573.08	-0.08
-0.01	19.42	0.26	0
0	0.14	0.01	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0.04	0	0
-0.09	503.02	362.13	0
-0.01	15.84	0.2	0
0	0.1	0.01	0
0	0	0	0
0	0.08	0	0
-0.84	1083.05	174.43	-0.04
0	8.34	0.05	0
0	0.05	0	0
0	0	0	0
0	0.1	0	0
-1.54	2797.93	263.48	-0.07
0	10.82	0.18	0
0	0.07	0	0
0	0	0	0

0	0.03	0	0
0.08	-36.14	108.84	0
-0.01	3.26	0.72	0
0	0.03	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0.04	0.01	0
0.11	-39.67	160.46	0
-0.02	3.52	0.94	0
0	0.03	0	0
0	0	0	0
0	0.03	0	0
0.15	-32.41	211.43	0.01
-0.01	8.47	0.39	0
0	0.06	0.01	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0.03	0	0
0.14	-26.42	191.24	0.01
-0.01	13.2	0.6	0
0	0.3	0.01	0
0	0	0	0
0	0.04	0	0
0.05	-38.05	174.8	0
-0.02	5.53	5.21	0
0	0.23	0.02	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0.06	0	0
-0.09	123.27	39.96	0
-0.17	27.24	9.3	-0.01
0.16	-22.53	-1.86	0.01
0	0	0	0
-0.01	0.2	0.01	0
-2.58	1935.77	631.77	-0.12
-0.13	223.53	1.59	-0.01
0.05	-109.08	-0.87	0.01
0	0	0	0
0.06	-4.26	-2.41	0
-0.23	199.16	945.27	-0.01
1.67	-3084.34	-1	0.08
-0.7	-106.95	-1.18	-0.03
0	0	0	0
0.43	-41.08	-22.65	0.03

-1.69	777.74	810.39	-0.08
-0.1	61.77	2.6	-0.01
-1.57	2651.8	1.42	-0.07
0	0	0	0
-1.81	248.42	18.74	-0.11
-2.3	930.03	999	-0.11
1.59	-2496.45	1.03	0.07
0.13	-27.7	-0.31	0
0	0	0	0
-0.45	250.04	7.35	-0.02
-0.94	730.7	1140.96	-0.04
-0.85	648.94	7.39	-0.04
0.08	-29.34	-0.38	0
0	0	0	0
-1.35	-100.79	1.53	-0.08
-3.81	329.48	1084.25	-0.18
-1.19	-451.32	-6.64	-0.05
-1.35	-34.66	-0.44	-0.06
0	0	0	0
1.44	-38.38	-8.81	0.09
-0.43	552.16	1265.7	-0.02
1.98	-34.64	-5.69	0.09
0.43	-23.28	-0.3	0.02
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
1.19	-119.17	647.66	0.1
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0.39	-156.65	41.85	0.02
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
-0.28	408.78	137.32	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
-0.2	659.31	215.5	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0

-0.28	654.27	274.81	-0.01
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
-0.38	655.43	289.74	-0.01
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
-2.32	623.29	239.23	-0.13
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
-0.41	383.15	245.43	-0.01
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
-0.49	352.3	196.93	-0.01
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
-0.27	332.44	324.67	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0.28	139.82	369.01	0.03
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
-1.06	733.68	551.76	-0.03
0	0	0	0
0	0	0	0

Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Crit W.S. (ft)	E.G. Elev (ft)	E.G. Slope (ft/ft)
Sandy Mai	38835.32	10-yr	689	335	337.86	337.86	338.72	0.009987
Sandy Mai	38835.32	50-yr	1169	335	338.94	338.94	339.6	0.004684
Sandy Mai	38835.32	100-yr	1443	335	339.2	339.2	339.87	0.004571
Sandy Mai	38835.32	500-yr	2290	335	339.75	339.75	340.52	0.004731
Sandy Mai	38353.13	10-yr	689	327	331.57	331.57	332.39	0.005963
Sandy Mai	38353.13	50-yr	1169	327	332.31	332.31	333.33	0.006199
Sandy Mai	38353.13	100-yr	1443	327	332.64	332.64	333.79	0.006468
Sandy Mai	38353.13	500-yr	2290	327	333.69	333.69	334.99	0.006198
Sandy Mai	37880.8	10-yr	689	319	323.52	323.52	324.37	0.006525
Sandy Mai	37880.8	50-yr	1169	319	324.58	324.58	325.27	0.004408
Sandy Mai	37880.8	100-yr	1443	319	324.83	324.83	325.57	0.004579
Sandy Mai	37880.8	500-yr	2290	319	325.5	325.5	326.29	0.004461
Sandy Mai	37489.56	10-yr	689	311.79	319.52	316.72	319.8	0.000908
Sandy Mai	37489.56	50-yr	1169	311.79	320.23	318.42	320.72	0.001483
Sandy Mai	37489.56	100-yr	1443	311.79	320.49	319	321.1	0.001831
Sandy Mai	37489.56	500-yr	2290	311.79	320.68	320.68	322.01	0.00396
Sandy Mai	37270		Culvert					
Sandy Mai	37056.92	10-yr	689	306.66	311.36	311.36	312.99	0.008131
Sandy Mai	37056.92	50-yr	1169	306.66	313.14	313.14	314.73	0.005263
Sandy Mai	37056.92	100-yr	1443	306.66	313.8	313.8	315.39	0.004856
Sandy Mai	37056.92	500-yr	2290	306.66	315.13	315.13	316.68	0.004359
Sandy Mai	36678.73	10-yr	689	301	304.8	304.3	305.21	0.003799
Sandy Mai	36678.73	50-yr	1169	301	305.59	305	306.17	0.004397
Sandy Mai	36678.73	100-yr	1443	301	305.92	304.94	306.51	0.004274
Sandy Mai	36678.73	500-yr	2290	301	306.72	306.32	307.25	0.003772
Sandy Mai	36275.49	10-yr	689	296.1	303.64	301.61	303.88	0.002586
Sandy Mai	36275.49	50-yr	1169	296.1	304.42	303.44	304.69	0.002525
Sandy Mai	36275.49	100-yr	1443	296.1	304.65	303.83	304.99	0.002853
Sandy Mai	36275.49	500-yr	2290	296.1	305.3	304.46	305.78	0.003373
Sandy Mai	36000		Culvert					
Sandy Mai	35791.32	10-yr	689	286.09	293.04		293.12	0.00128
Sandy Mai	35791.32	50-yr	1169	286.09	293.92		294.03	0.001469
Sandy Mai	35791.32	100-yr	1443	286.09	294.29		294.41	0.001521
Sandy Mai	35791.32	500-yr	2290	286.09	295.17		295.34	0.001786
Sandy Mai	35582.96	10-yr	689	285	292.83	288.97	292.92	0.00072

Sandy Mai	35582.96	50-yr	1169	285	293.66	290.19	293.77	0.000927
Sandy Mai	35582.96	100-yr	1443	285	294	290.8	294.13	0.001052
Sandy Mai	35582.96	500-yr	2290	285	294.79	292.54	294.99	0.001437
Sandy Mai	35513		Culvert					
Sandy Mai	35420.3	10-yr	689	283	290.25		290.51	0.002031
Sandy Mai	35420.3	50-yr	1169	283	290.79		291.3	0.003678
Sandy Mai	35420.3	100-yr	1443	283	291.04		291.69	0.004615
Sandy Mai	35420.3	500-yr	2290	283	291.55	291.18	292.72	0.007987
Sandy Mai	35237.49	10-yr	689	279.02	290.31	283.38	290.33	0.000135
Sandy Mai	35237.49	50-yr	1169	279.02	290.91	285.03	290.94	0.000251
Sandy Mai	35237.49	100-yr	1443	279.02	291.19	285.86	291.23	0.000337
Sandy Mai	35237.49	500-yr	2290	279.02	291.85	288.11	291.92	0.000542
Sandy Mai	34267		Culvert					
Sandy Mai	33297.82	10-yr	689	253	257.22	256.67	258.31	0.005089
Sandy Mai	33297.82	50-yr	1169	253	257.94	257.94	260.07	0.008019
Sandy Mai	33297.82	100-yr	1443	253	259.06	259.06	260.79	0.005174
Sandy Mai	33297.82	500-yr	2290	253	260.91	260.91	262.07	0.003058
Sandy Mai	32874.91	10-yr	689	251	254	254	255.38	0.009335
Sandy Mai	32874.91	50-yr	1169	251	254.92	254.91	255.5	0.004085
Sandy Mai	32874.91	100-yr	1443	251	255.13	255.13	255.76	0.004336
Sandy Mai	32874.91	500-yr	2290	251	255.62	255.62	256.41	0.005191
Sandy Mai	32432.32	10-yr	689	249	252.8	251.63	253.11	0.001774
Sandy Mai	32432.32	50-yr	1169	249	253.21	252.44	253.87	0.003324
Sandy Mai	32432.32	100-yr	1443	249	253.53	252.93	253.63	0.000652
Sandy Mai	32432.32	500-yr	2290	249	254.13	253.45	254.27	0.000865
Sandy Mai	32009.44	10-yr	689	246	252.74	249.48	252.75	0.000231
Sandy Mai	32009.44	50-yr	1169	246	253.11	250.64	253.15	0.000457
Sandy Mai	32009.44	100-yr	1443	246	253.3	251.24	253.35	0.00057
Sandy Mai	32009.44	500-yr	2290	246	253.79	252	253.87	0.000893
Sandy Mai	31828		Culvert					
Sandy Mai	31647.46	10-yr	689	239	247.63	243.29	247.72	0.000249
Sandy Mai	31647.46	50-yr	1169	239	248.46	244.52	248.59	0.000354
Sandy Mai	31647.46	100-yr	1443	239	248.85	246.31	248.99	0.0004
Sandy Mai	31647.46	500-yr	2290	239	249.74	247.57	249.92	0.000509
Sandy Mai	31476.58	10-yr	689	240	247.51	243.38	247.65	0.000425
Sandy Mai	31476.58	50-yr	1169	240	248.21	244.8	248.46	0.000745

Sandy Mai	31476.58	100-yr	1443	240	248.52	246.29	248.83	0.000921
Sandy Mai	31476.58	500-yr	2290	240	249.12	247.55	249.67	0.001544
Sandy Mai	31435		Culvert					
Sandy Mai	31392.94	10-yr	689	239.99	246.59		246.78	0.001781
Sandy Mai	31392.94	50-yr	1169	239.99	246.94		247.36	0.003749
Sandy Mai	31392.94	100-yr	1443	239.99	247.14		247.69	0.004807
Sandy Mai	31392.94	500-yr	2290	239.99	247.48		248.55	0.009096
Sandy Mai	31259.8	10-yr	689	239	246.53	243.1	246.66	0.000396
Sandy Mai	31259.8	50-yr	1169	239	246.84	244.44	247.09	0.000815
Sandy Mai	31259.8	100-yr	1443	239	247.02	245.08	247.34	0.00103
Sandy Mai	31259.8	500-yr	2290	239	247.26	246.95	247.87	0.001995
Sandy Mai	31220		Culvert					
Sandy Mai	31182.62	10-yr	689	239	242.91	242.91	244.28	0.008638
Sandy Mai	31182.62	50-yr	1169	239	244.74	244.74	245.76	0.003963
Sandy Mai	31182.62	100-yr	1443	239	245.23	245.23	246.23	0.003704
Sandy Mai	31182.62	500-yr	2290	239	246.1	246.1	247.23	0.003974
Sandy Mai	31033.98	10-yr	689	239	241.91		242.34	0.004705
Sandy Mai	31033.98	50-yr	1169	239	242.88		243.31	0.003551
Sandy Mai	31033.98	100-yr	1443	239	243.39		243.82	0.003069
Sandy Mai	31033.98	500-yr	2290	239	244.37		244.95	0.003269
Sandy Mai	30579.27	10-yr	689	235	238.76	238.76	239.85	0.006151
Sandy Mai	30579.27	50-yr	1169	235	239.79	239.79	241.15	0.006124
Sandy Mai	30579.27	100-yr	1443	235	240.2	240.2	241.76	0.00649
Sandy Mai	30579.27	500-yr	2290	235	241.72	241.72	243.09	0.004795
Sandy Mai	30235.35	10-yr	689	233	236.58	235.47	236.8	0.002513
Sandy Mai	30235.35	50-yr	1169	233	237.24	236.14	237.53	0.002963
Sandy Mai	30235.35	100-yr	1443	233	237.64	236.7	237.99	0.003303
Sandy Mai	30235.35	500-yr	2290	233	238.8	237.48	239.08	0.002254
Sandy Mai	29939.91	10-yr	689	231	235.17		235.53	0.008677
Sandy Mai	29939.91	50-yr	1169	231	235.78		236.16	0.008142
Sandy Mai	29939.91	100-yr	1443	231	236.74		236.95	0.003416
Sandy Mai	29939.91	500-yr	2290	231	238.31		238.46	0.001709
Sandy Mai	29533.61	10-yr	689	229	233.17		233.63	0.002882
Sandy Mai	29533.61	50-yr	1169	229	235.09		235.28	0.000898
Sandy Mai	29533.61	100-yr	1443	229	236.36		236.49	0.00052
Sandy Mai	29533.61	500-yr	2290	229	237.98		238.13	0.000474

Sandy Mai	29203.58	10-yr	689	227	232.44	230.01	232.86	0.001853
Sandy Mai	29203.58	50-yr	1169	227	233.98	231.27	234.69	0.002187
Sandy Mai	29203.58	100-yr	1443	227	235.29	231.92	236.02	0.001789
Sandy Mai	29203.58	500-yr	2290	227	236.44	233.64	237.54	0.002425
Sandy Mai	29175		Culvert					
Sandy Mai	29148	10-yr	689	227	232.24	229.86	232.61	0.00159
Sandy Mai	29148	50-yr	1169	227	233.24	231.04	233.98	0.002535
Sandy Mai	29148	100-yr	1443	227	233.57	231.63	234.56	0.003215
Sandy Mai	29148	500-yr	2290	227	234.57	233.23	236.39	0.004795
Sandy Mai	28902.69	10-yr	1479	225	231.04	230.68	231.83	0.003618
Sandy Mai	28902.69	50-yr	2537	225	231.98	231.83	232.99	0.004433
Sandy Mai	28902.69	100-yr	3146	225	232.43	232.22	233.52	0.004645
Sandy Mai	28902.69	500-yr	5020	225	233.67	233.24	234.92	0.004815
Sandy Mai	28536.39	10-yr	1479	225	228.89	228.89	229.8	0.009407
Sandy Mai	28536.39	50-yr	2537	225	230.04	229.8	230.91	0.007252
Sandy Mai	28536.39	100-yr	3146	225	230.51	230.19	231.41	0.006984
Sandy Mai	28536.39	500-yr	5020	225	231.3	231.16	232.58	0.008892
Sandy Mai	28078.23	10-yr	1479	221	227.99	226	228.27	0.00081
Sandy Mai	28078.23	50-yr	2537	221	229.86	227.51	230.09	0.000552
Sandy Mai	28078.23	100-yr	3146	221	230.3	227.9	230.55	0.0006
Sandy Mai	28078.23	500-yr	5020	221	230.91	229.43	231.33	0.000951
Sandy Mai	27678.42	10-yr	1479	221	226.4	225.67	227.56	0.004046
Sandy Mai	27678.42	50-yr	2537	221	227.65	227.65	229.44	0.004995
Sandy Mai	27678.42	100-yr	3146	221	228.98	228.98	230.03	0.00274
Sandy Mai	27678.42	500-yr	5020	221	230	230	230.74	0.002192
Sandy Mai	27191.04	10-yr	1479	219	225.03	223.98	225.87	0.002713
Sandy Mai	27191.04	50-yr	2537	219	226.85	225.92	227.29	0.001364
Sandy Mai	27191.04	100-yr	3146	219	227.44	226.33	227.83	0.001204
Sandy Mai	27191.04	500-yr	5020	219	228.42	227.44	228.81	0.001201
Sandy Mai	26877.54	10-yr	1479	217	224.9	221.51	225.23	0.000706
Sandy Mai	26877.54	50-yr	2537	217	226.78	223.4	226.94	0.000406
Sandy Mai	26877.54	100-yr	3146	217	227.37	224.02	227.52	0.000379
Sandy Mai	26877.54	500-yr	5020	217	228.32	226.13	228.5	0.000442
Sandy Mai	26835		Bridge					
Sandy Mai	26794.7	10-yr	1479	217	222.39		223.44	0.003559
Sandy Mai	26794.7	50-yr	2537	217	223.78	223.32	225.38	0.004161
Sandy Mai	26794.7	100-yr	3146	217	224.68	224.68	225.83	0.002942

Sandy Mai	26794.7	500-yr	5020	217	226.53		227.23	0.001774
Sandy Mai	26382.38	10-yr	1479	215	221.71	220.22	222.25	0.00159
Sandy Mai	26382.38	50-yr	2537	215	223.18	221.65	223.87	0.001758
Sandy Mai	26382.38	100-yr	3146	215	223.93	222.28	224.66	0.001727
Sandy Mai	26382.38	500-yr	5020	215	225.97	223.82	226.56	0.001308
Sandy Mai	26107.58	10-yr	2016	213	221.05	219.93	221.77	0.001686
Sandy Mai	26107.58	50-yr	3442	213	222.49	221.58	223.35	0.001896
Sandy Mai	26107.58	100-yr	4317	213	223.22	222.14	224.13	0.00195
Sandy Mai	26107.58	500-yr	7013	213	225.11	223.52	226.07	0.001923
Sandy Mai	25737.96	10-yr	2016	213	221.05		221.27	0.000609
Sandy Mai	25737.96	50-yr	3442	213	222.52		222.78	0.000673
Sandy Mai	25737.96	100-yr	4317	213	223.26		223.54	0.000699
Sandy Mai	25737.96	500-yr	7013	213	225.1		225.46	0.000794
Sandy Mai	25309.8	10-yr	2016	213.64	220.73	217.18	220.95	0.000954
Sandy Mai	25309.8	50-yr	3442	213.64	222.13	218.19	222.41	0.001114
Sandy Mai	25309.8	100-yr	4317	213.64	222.88	218.8	223.16	0.001107
Sandy Mai	25309.8	500-yr	7013	213.64	224.71	221.62	225.04	0.001135
Sandy Mai	24900.93	10-yr	2016	212	220.52		220.54	0.000761
Sandy Mai	24900.93	50-yr	3442	212	221.82		221.88	0.001147
Sandy Mai	24900.93	100-yr	4317	212	222.54		222.6	0.001324
Sandy Mai	24900.93	500-yr	7013	212	224.29		224.4	0.001796
Sandy Mai	24402.5	10-yr	2016	210	220.19		220.22	0.000563
Sandy Mai	24402.5	50-yr	3442	210	221.34		221.4	0.000844
Sandy Mai	24402.5	100-yr	4317	210	221.98		222.06	0.000944
Sandy Mai	24402.5	500-yr	7013	210	223.55		223.69	0.001199
Sandy Mai	24129.68	10-yr	2016	210	220.03	214.61	220.06	0.000686
Sandy Mai	24129.68	50-yr	3442	210	221.08	216.03	221.13	0.001134
Sandy Mai	24129.68	100-yr	4317	210	221.69	216.79	221.76	0.001307
Sandy Mai	24129.68	500-yr	7013	210	223.19	218.86	223.29	0.001737
Sandy Mai	24085		Bridge					
Sandy Mai	24042.15	10-yr	2016	210	216.24	214.73	216.62	0.001222
Sandy Mai	24042.15	50-yr	3442	210	218.26	215.93	218.59	0.000823
Sandy Mai	24042.15	100-yr	4317	210	219.29	216.49	219.58	0.000658
Sandy Mai	24042.15	500-yr	7013	210	221.87	217.78	222.12	0.000422
Sandy Mai	23662.23	10-yr	2016	208	213.45	213.45	215.28	0.006326
Sandy Mai	23662.23	50-yr	3442	208	215.23	215.23	217.38	0.005501
Sandy Mai	23662.23	100-yr	4317	208	216.01	216.01	218.39	0.005483

Sandy Mai	23662.23	500-yr	7013	208	217.83	217.83	220.88	0.005694
Sandy Mai	23396.78	10-yr	2016	208	213.34		213.84	0.00149
Sandy Mai	23396.78	50-yr	3442	208	214.35		215.33	0.002364
Sandy Mai	23396.78	100-yr	4317	208	214.79		216.11	0.002934
Sandy Mai	23396.78	500-yr	7013	208	215.58	215.38	218.2	0.005115
Sandy Mai	23076.73	10-yr	2016	206	213.15		213.36	0.001017
Sandy Mai	23076.73	50-yr	3442	206	214.33		214.61	0.001164
Sandy Mai	23076.73	100-yr	4317	206	214.93		215.23	0.001223
Sandy Mai	23076.73	500-yr	7013	206	216.4		216.77	0.001349
Sandy Mai	22719.89	10-yr	2016	206	212.54		212.65	0.005048
Sandy Mai	22719.89	50-yr	3442	206	213.74		213.86	0.004185
Sandy Mai	22719.89	100-yr	4317	206	214.34		214.47	0.00383
Sandy Mai	22719.89	500-yr	7013	206	215.84		216	0.003348
Sandy Mai	22305.19	10-yr	2229	204	210.53	208	210.62	0.004436
Sandy Mai	22305.19	50-yr	3931	204	211.88	209	212.02	0.004368
Sandy Mai	22305.19	100-yr	4945	204	212.52	209.51	212.68	0.004461
Sandy Mai	22305.19	500-yr	8165	204	214.08	210.46	214.3	0.004516
Sandy Mai	21973.79	10-yr	2229	204	209.57		209.62	0.002135
Sandy Mai	21973.79	50-yr	3931	204	210.95		211.01	0.002116
Sandy Mai	21973.79	100-yr	4945	204	211.59		211.67	0.002117
Sandy Mai	21973.79	500-yr	8165	204	213.15		213.25	0.002186
Sandy Mai	21498.81	10-yr	2229	202	208.7		208.75	0.001591
Sandy Mai	21498.81	50-yr	3931	202	209.97		210.05	0.001938
Sandy Mai	21498.81	100-yr	4945	202	210.6		210.68	0.001993
Sandy Mai	21498.81	500-yr	8165	202	212.09		212.21	0.002169
Sandy Mai	21070	10-yr	2229	200	208.4		208.42	0.000503
Sandy Mai	21070	50-yr	3931	200	209.56		209.6	0.000727
Sandy Mai	21070	100-yr	4945	200	210.15		210.2	0.000807
Sandy Mai	21070	500-yr	8165	200	211.56		211.64	0.001005
Sandy Mai	20558.49	10-yr	2229	200	208.07	203.62	208.11	0.000929
Sandy Mai	20558.49	50-yr	3931	200	209.04	204.76	209.12	0.001583
Sandy Mai	20558.49	100-yr	4945	200	209.56	205.35	209.65	0.001873
Sandy Mai	20558.49	500-yr	8165	200	210.74	206.23	210.91	0.002754
Sandy Mai	20488		Culvert					
Sandy Mai	20450.5	10-yr	2229	200	203.77	203.77	205.53	0.008487
Sandy Mai	20450.5	50-yr	3931	200	204.65	204.65	205.53	0.00458
Sandy Mai	20450.5	100-yr	4945	200	204.96	204.96	205.96	0.004904

Sandy Mai	20450.5	500-yr	8165	200	206	205.76	207.15	0.004536
Sandy Mai	20135.83	10-yr	2229	196	203.6		203.64	0.000149
Sandy Mai	20135.83	50-yr	3931	196	204.4		204.48	0.00026
Sandy Mai	20135.83	100-yr	4945	196	204.99		205.08	0.000284
Sandy Mai	20135.83	500-yr	8165	196	206.2		206.37	0.000416
Sandy Mai	19889.56	10-yr	2229	195	203.58	199.29	203.6	0.000073
Sandy Mai	19889.56	50-yr	3931	195	204.38	200.49	204.42	0.000131
Sandy Mai	19889.56	100-yr	4945	195	204.96	201.08	205.01	0.000143
Sandy Mai	19889.56	500-yr	8165	195	206.18	202.45	206.26	0.000193
Sandy Mai	19820		Bridge					
Sandy Mai	19756.97	10-yr	2229	194.5	203.32		203.35	0.000085
Sandy Mai	19756.97	50-yr	3931	194.5	204.24		204.28	0.000129
Sandy Mai	19756.97	100-yr	4945	194.5	204.87		204.92	0.00013
Sandy Mai	19756.97	500-yr	8165	194.5	206.1		206.17	0.00017
Sandy Mai	19546.85	10-yr	2229	194	203.27		203.32	0.000123
Sandy Mai	19546.85	50-yr	3931	194	204.14		204.24	0.00022
Sandy Mai	19546.85	100-yr	4945	194	204.75		204.87	0.000251
Sandy Mai	19546.85	500-yr	8165	194	205.9		206.09	0.000372
Sandy Mai	19352.67	10-yr	2229	193.47	203.26	198.71	203.29	0.000098
Sandy Mai	19352.67	50-yr	3931	193.47	204.12	200.12	204.19	0.000186
Sandy Mai	19352.67	100-yr	4945	193.47	204.73	200.83	204.82	0.000206
Sandy Mai	19352.67	500-yr	8165	193.47	205.87	202.54	206	0.0003
Sandy Mai	19300		Bridge					
Sandy Mai	19245.94	10-yr	2229	193.25	197.82	197.82	199.79	0.008109
Sandy Mai	19245.94	50-yr	3931	193.25	199.88	199.88	202.23	0.005988
Sandy Mai	19245.94	100-yr	4945	193.25	201.39	201.39	202.96	0.003406
Sandy Mai	19245.94	500-yr	8165	193.25	202.9	202.9	204.47	0.003197
Sandy Mai	19054.38	10-yr	2229	193.25	197.95		198.09	0.000821
Sandy Mai	19054.38	50-yr	3931	193.25	199.23		199.41	0.000783
Sandy Mai	19054.38	100-yr	4945	193.25	199.78		200	0.000819
Sandy Mai	19054.38	500-yr	8165	193.25	201.15		201.48	0.000902
Sandy Mai	18845.69	10-yr	2229	193	197.85	195.92	197.94	0.000512
Sandy Mai	18845.69	50-yr	3931	193	199.14	196.59	199.27	0.000493
Sandy Mai	18845.69	100-yr	4945	193	199.69	196.88	199.84	0.000523
Sandy Mai	18845.69	500-yr	8165	193	201.07	197.68	201.3	0.000613
Sandy Mai	18634.5	10-yr	2229	192	197.78		197.85	0.000317

Sandy Mai	18634.5	50-yr	3931	192	199.08		199.17	0.000336
Sandy Mai	18634.5	100-yr	4945	192	199.62		199.74	0.000363
Sandy Mai	18634.5	500-yr	8165	192	201		201.18	0.000432
Sandy Mai	18463	10-yr	2229	191	197.77		197.8	0.000149
Sandy Mai	18463	50-yr	3931	191	199.06		199.12	0.000183
Sandy Mai	18463	100-yr	4945	191	199.61		199.68	0.000208
Sandy Mai	18463	500-yr	8165	191	200.98		201.1	0.000266
Sandy Mai	18269.19	10-yr	2229	188	197.2	193.07	197.63	0.000829
Sandy Mai	18269.19	50-yr	3931	188	198.27	197.11	198.88	0.001189
Sandy Mai	18269.19	100-yr	4945	188	198.7	197.86	199.41	0.001369
Sandy Mai	18269.19	500-yr	8165	188	199.89	199.08	200.77	0.00167
Sandy Mai	18240		Culvert					
Sandy Mai	18211.69	10-yr	2229	188	194.11	192.39	195.03	0.002702
Sandy Mai	18211.69	50-yr	3931	188	195.14	195.14	196.41	0.003481
Sandy Mai	18211.69	100-yr	4945	188	195.64	195.64	197.01	0.003637
Sandy Mai	18211.69	500-yr	8165	188	196.83	196.83	198.51	0.004084
Sandy Mai	18010.15	10-yr	2229	188	193.47	193.47	194.33	0.004222
Sandy Mai	18010.15	50-yr	3931	188	194.35	194.35	195.39	0.004752
Sandy Mai	18010.15	100-yr	4945	188	194.72	194.72	195.88	0.005107
Sandy Mai	18010.15	500-yr	8165	188	195.67	195.67	197.19	0.005837
Sandy Mai	17718.32	10-yr	2229	187	190.83	190.83	191.34	0.005065
Sandy Mai	17718.32	50-yr	3931	187	191.57		192.05	0.003865
Sandy Mai	17718.32	100-yr	4945	187	192.01		192.47	0.003218
Sandy Mai	17718.32	500-yr	8165	187	193.14		193.67	0.002522
Sandy Mai	17333.24	10-yr	2229	186	189.95		190.13	0.001325
Sandy Mai	17333.24	50-yr	3931	186	190.86		191.11	0.001449
Sandy Mai	17333.24	100-yr	4945	186	191.3		191.6	0.001496
Sandy Mai	17333.24	500-yr	8165	186	192.43		192.86	0.001636
Sandy Mai	16976.28	10-yr	2229	186	188.41	188.38	189.08	0.009183
Sandy Mai	16976.28	50-yr	3931	186	189.08	189.04	190	0.008826
Sandy Mai	16976.28	100-yr	4945	186	189.42	189.38	190.46	0.008652
Sandy Mai	16976.28	500-yr	8165	186	190.51	189.87	191.7	0.007264
Sandy Mai	16566.37	10-yr	2229	185.31	187.53		187.67	0.001485
Sandy Mai	16566.37	50-yr	3931	185.31	188.37		188.56	0.00145
Sandy Mai	16566.37	100-yr	4945	185.31	188.8		189.03	0.001412
Sandy Mai	16566.37	500-yr	8165	185.31	190.1		190.39	0.001261
Sandy Mai	16177.16	10-yr	2229	184.88	186.62		186.87	0.003068

Sandy Mai	16177.16	50-yr	3931	184.88	187.53		187.85	0.002405
Sandy Mai	16177.16	100-yr	4945	184.88	187.98		188.34	0.002278
Sandy Mai	16177.16	500-yr	8165	184.88	189.41		189.82	0.001684
Sandy Mai	15741.39	10-yr	2229	182	186.03	184.06	186.17	0.000954
Sandy Mai	15741.39	50-yr	3931	182	186.92	185.24	187.15	0.001124
Sandy Mai	15741.39	100-yr	4945	182	187.35	185.56	187.63	0.001196
Sandy Mai	15741.39	500-yr	8165	182	188.92	186.46	189.26	0.001004
Sandy Mai	15036.05	10-yr	2229	180	184.26	184.26	184.91	0.004826
Sandy Mai	15036.05	50-yr	3931	180	185.11	184.88	185.81	0.004462
Sandy Mai	15036.05	100-yr	4945	180	185.9	185.19	186.46	0.002985
Sandy Mai	15036.05	500-yr	8165	180	188.05	186.04	188.47	0.001553
Sandy Mai	14643.01	10-yr	2229	176.16	183.04	181.7	183.27	0.001114
Sandy Mai	14643.01	50-yr	3931	176.16	184.74	182.55	184.97	0.000949
Sandy Mai	14643.01	100-yr	4945	176.16	185.51	182.94	185.75	0.000949
Sandy Mai	14643.01	500-yr	8165	176.16	187.68	184.01	187.97	0.000924
Sandy Mai	14242.08	10-yr	2229	174	181.62	180.79	182.55	0.002522
Sandy Mai	14242.08	50-yr	3931	174	182.88	182.63	184.21	0.003306
Sandy Mai	14242.08	100-yr	4945	174	183.67	183.22	185	0.003188
Sandy Mai	14242.08	500-yr	8165	174	186.15	185.1	187.31	0.002452
Sandy Mai	13869.62	10-yr	2229	175	180.55	180.37	181.36	0.003907
Sandy Mai	13869.62	50-yr	3931	175	181.98	181.3	182.8	0.00344
Sandy Mai	13869.62	100-yr	4945	175	182.87	181.77	183.67	0.003106
Sandy Mai	13869.62	500-yr	8165	175	185.95	183.3	186.41	0.001441
Sandy Mai	13438.13	10-yr	2229	172	180.04	178.02	180.2	0.001448
Sandy Mai	13438.13	50-yr	3931	172	181.34	178.84	181.57	0.001824
Sandy Mai	13438.13	100-yr	4945	172	182.13	179.27	182.4	0.002158
Sandy Mai	13438.13	500-yr	8165	172	185.65	180.35	185.82	0.000967
Sandy Mai	12942.35	10-yr	2229	173	179.5	176.6	179.6	0.000979
Sandy Mai	12942.35	50-yr	3931	173	180.61	177.47	180.78	0.001356
Sandy Mai	12942.35	100-yr	4945	173	181.36	177.94	181.55	0.00135
Sandy Mai	12942.35	500-yr	8165	173	185.29	179.32	185.41	0.000659
Sandy Mai	12648.67	10-yr	2229	170	179.45	175.51	179.47	0.000131
Sandy Mai	12648.67	50-yr	3931	170	180.53	177.16	180.57	0.000228
Sandy Mai	12648.67	100-yr	4945	170	181.27	177.16	181.32	0.000264
Sandy Mai	12648.67	500-yr	8165	170	185.24	177.17	185.29	0.000178
Sandy Mai	12600		Mult Open					
Sandy Mai	12591.62	10-yr	2229	171	177.33	175.65	177.8	0.001786

Sandy Mai	12591.62	50-yr	3931	171	179.41	177.15	179.91	0.001512
Sandy Mai	12591.62	100-yr	4945	171	180.89	177.85	181.24	0.000966
Sandy Mai	12591.62	500-yr	8165	171	185.01	179.83	185.23	0.000469
Sandy Mai	12103.89	10-yr	2229	171	176.38	175.43	176.81	0.002262
Sandy Mai	12103.89	50-yr	3931	171	178.82	176.41	179.15	0.001296
Sandy Mai	12103.89	100-yr	4945	171	180.51	176.87	180.76	0.000821
Sandy Mai	12103.89	500-yr	8165	171	184.81	178.14	185	0.000437
Sandy Mai	11764.28	10-yr	2229	171.05	176.1	173.8	176.22	0.001021
Sandy Mai	11764.28	50-yr	3931	171.05	178.67	174.52	178.79	0.000621
Sandy Mai	11764.28	100-yr	4945	171.05	180.42	174.92	180.52	0.000429
Sandy Mai	11764.28	500-yr	8165	171.05	184.78	176.04	184.86	0.000241
Sandy Mai	11405.26	10-yr	2229	168.7	175.45	173.34	175.79	0.000992
Sandy Mai	11405.26	50-yr	3931	168.7	178.16	174.73	178.5	0.000635
Sandy Mai	11405.26	100-yr	4945	168.7	180	175.31	180.31	0.00044
Sandy Mai	11405.26	500-yr	8165	168.7	184.39	176.8	184.7	0.000283
Sandy Mai	11350		Mult Open					
Sandy Mai	11303	10-yr	2229	168.66	173.55	173.55	174.85	0.005712
Sandy Mai	11303	50-yr	3931	168.66	174.81	174.81	176.57	0.005939
Sandy Mai	11303	100-yr	4945	168.66	175.65	175.65	177.45	0.00522
Sandy Mai	11303	500-yr	8165	168.66	178.05	177.16	179.75	0.003439
Sandy Mai	10733.77	10-yr	2229	166.86	173.28	170.71	173.34	0.000273
Sandy Mai	10733.77	50-yr	3931	166.86	174.9	171.59	174.96	0.000209
Sandy Mai	10733.77	100-yr	4945	166.86	175.73	171.86	175.79	0.000179
Sandy Mai	10733.77	500-yr	8165	166.86	178.74	172.62	178.79	0.000093
Sandy Mai	10700		Bridge					
Sandy Mai	10661.15	10-yr	2229	166.01	173.27	170.85	173.29	0.000083
Sandy Mai	10661.15	50-yr	3931	166.01	174.89	170.86	174.91	0.000076
Sandy Mai	10661.15	100-yr	4945	166.01	175.72	170.99	175.75	0.000071
Sandy Mai	10661.15	500-yr	8165	166.01	178.74	171.67	178.77	0.000047
Sandy Mai	10118.31	10-yr	2229	165	173.25	168.31	173.26	0.000038
Sandy Mai	10118.31	50-yr	3931	165	174.86	168.86	174.88	0.000048
Sandy Mai	10118.31	100-yr	4945	165	175.69	169.13	175.72	0.000051
Sandy Mai	10118.31	500-yr	8165	165	178.72	169.91	178.75	0.000044
Sandy Mai	9744.554	10-yr	2229	163.7	173.07	169.56	173.19	0.000314
Sandy Mai	9744.554	50-yr	3931	163.7	174.84	171.21	174.86	0.000055
Sandy Mai	9744.554	100-yr	4945	163.7	175.67	172.19	175.7	0.000056
Sandy Mai	9744.554	500-yr	8165	163.7	178.7	173.14	178.73	0.000045

Sandy Mai	9685		Bridge					
Sandy Mai	9639.641	10-yr	2229	163	170.63	166.43	170.69	0.000277
Sandy Mai	9639.641	50-yr	3931	163	173.77	167.24	173.82	0.000183
Sandy Mai	9639.641	100-yr	4945	163	175.43	167.68	175.48	0.000153
Sandy Mai	9639.641	500-yr	8165	163	178.52	168.81	178.59	0.000157
Sandy Mai	8975.758	10-yr	2229	161	170.5	165.94	170.55	0.000171
Sandy Mai	8975.758	50-yr	3931	161	173.7	166.8	173.73	0.000093
Sandy Mai	8975.758	100-yr	4945	161	175.37	167.2	175.4	0.000079
Sandy Mai	8975.758	500-yr	8165	161	178.47	168.25	178.5	0.00008
Sandy Mai	8504.5	10-yr	2229	161.39	170.38	164.4	170.46	0.000155
Sandy Mai	8504.5	50-yr	3931	161.39	173.54	165.54	173.65	0.000151
Sandy Mai	8504.5	100-yr	4945	161.39	175.2	166.14	175.32	0.000146
Sandy Mai	8504.5	500-yr	8165	161.39	178.21	167.82	178.4	0.000189
Sandy Mai	8350		Mult Open					
Sandy Mai	8235.939	10-yr	2229	159	169.91	163.74	170.05	0.00019
Sandy Mai	8235.939	50-yr	3931	159	172.97	165.16	173.16	0.0002
Sandy Mai	8235.939	100-yr	4945	159	174.59	165.83	174.8	0.000191
Sandy Mai	8235.939	500-yr	8165	159	177.24	167.73	177.57	0.000258
Sandy Mai	8063.602	10-yr	2229	158.71	169.29	165.28	169.86	0.000837
Sandy Mai	8063.602	50-yr	3931	158.71	173.03	167.71	173.05	0.000046
Sandy Mai	8063.602	100-yr	4945	158.71	174.67	168.67	174.69	0.000033
Sandy Mai	8063.602	500-yr	8165	158.71	177.38	171	177.4	0.000028
Sandy Mai	8000		Bridge					
Sandy Mai	7966.54	10-yr	2229	158.47	167.61		167.76	0.00034
Sandy Mai	7966.54	50-yr	3931	158.47	171.83		171.93	0.000169
Sandy Mai	7966.54	100-yr	4945	158.47	174.57		174.62	0.000079
Sandy Mai	7966.54	500-yr	8165	158.47	177.29		177.34	0.000075
Sandy Mai	7570.986	10-yr	2229	159	167.61		167.64	0.000094
Sandy Mai	7570.986	50-yr	3931	159	171.83		171.87	0.000045
Sandy Mai	7570.986	100-yr	4945	159	174.57		174.59	0.00003
Sandy Mai	7570.986	500-yr	8165	159	177.27		177.32	0.000041
Sandy Mai	7173.807	10-yr	2229	159	167.61	160.89	167.62	0.000016
Sandy Mai	7173.807	50-yr	3931	159	171.84	161.31	171.85	0.000012
Sandy Mai	7173.807	100-yr	4945	159	174.57	161.58	174.58	0.00001
Sandy Mai	7173.807	500-yr	8165	159	177.28	162.31	177.3	0.000015

Sandy Mai	6825.559	10-yr	2229	156	167.24	161.88	167.52	0.000445
Sandy Mai	6825.559	50-yr	3931	156	171.53	164.31	171.77	0.000253
Sandy Mai	6825.559	100-yr	4945	156	174.29	165.23	174.51	0.000182
Sandy Mai	6825.559	500-yr	8165	156	176.96	168.06	177.22	0.000196
Sandy Mai	6765		Bridge					
Sandy Mai	6709.658	10-yr	2229	156	166.85	162.89	167.33	0.000775
Sandy Mai	6709.658	50-yr	3931	156	171.16	166.25	171.5	0.000377
Sandy Mai	6709.658	100-yr	4945	156	173.95	167	174.24	0.000255
Sandy Mai	6709.658	500-yr	8165	156	176.4	168.83	176.7	0.000251
Sandy Mai	6668.16	10-yr	2229	156.01	166.98	161.39	167.15	0.000259
Sandy Mai	6668.16	50-yr	3931	156.01	171.2	163.14	171.43	0.000209
Sandy Mai	6668.16	100-yr	4945	156.01	174.06	163.85	174.11	0.000048
Sandy Mai	6668.16	500-yr	8165	156.01	176.5	165.78	176.58	0.000068
Sandy Mai	6600		Bridge					
Sandy Mai	6572.639	10-yr	2229	156	166.71	161.78	166.92	0.000306
Sandy Mai	6572.639	50-yr	3931	156	170.45	163.21	170.75	0.00028
Sandy Mai	6572.639	100-yr	4945	156	172.84	163.93	172.88	0.000043
Sandy Mai	6572.639	500-yr	8165	156	175.73	165.92	175.79	0.000055
Sandy Mai	6414.98	10-yr	2229	157	166.64	161.46	166.87	0.000368
Sandy Mai	6414.98	50-yr	3931	157	170.4	163.1	170.71	0.000336
Sandy Mai	6414.98	100-yr	4945	157	172.45	163.92	172.78	0.000307
Sandy Mai	6414.98	500-yr	8165	157	174.98	166.12	175.6	0.000488
Sandy Mai	6300		Mult Open					
Sandy Mai	6189.177	10-yr	2229	155	165.53	161.11	165.97	0.00067
Sandy Mai	6189.177	50-yr	3931	155	167.92	163.28	168.66	0.000906
Sandy Mai	6189.177	100-yr	4945	155	168.88	164.39	169.82	0.001077
Sandy Mai	6189.177	500-yr	8165	155	170.85	166.97	172.44	0.001615
Sandy Mai	5508.105	10-yr	4460	154	165.06	163.33	165.44	0.000757
Sandy Mai	5508.105	50-yr	7709	154	168.13	164.39	168.2	0.000115
Sandy Mai	5508.105	100-yr	9741	154	169.2	164.93	169.27	0.000098
Sandy Mai	5508.105	500-yr	16941	154	171.48	166.6	171.57	0.000094
Sandy Mai	5084.678	10-yr	4460	154	164.37	163.64	165.01	0.001114
Sandy Mai	5084.678	50-yr	7709	154	167.98	164.92	168.13	0.000194
Sandy Mai	5084.678	100-yr	9741	154	169.05	165.13	169.2	0.000176
Sandy Mai	5084.678	500-yr	16941	154	171.47	166.36	171.53	0.000058
Sandy Mai	5065.378	10-yr	4460	154.25	163.75	163.65	164.93	0.002092

Sandy Mai	5065.378	50-yr	7709	154.25	167.91	165	168.12	0.00028
Sandy Mai	5065.378	100-yr	9741	154.25	168.96	165.43	169.19	0.000256
Sandy Mai	5065.378	500-yr	16941	154.25	171.4	166.72	171.52	0.000134
Sandy Mai	5039.878	10-yr	4460	154.25	163.61	161.57	164.76	0.00205
Sandy Mai	5039.878	50-yr	7709	154.25	167.73	164.83	168.07	0.00054
Sandy Mai	5039.878	100-yr	9741	154.25	168.79	165.5	169.15	0.000538
Sandy Mai	5039.878	500-yr	16941	154.25	171.43	167.13	171.49	0.000116
Sandy Mai	4865.578	10-yr	4460	154.25	163.91	158.85	164.07	0.000273
Sandy Mai	4865.578	50-yr	7709	154.25	167.67	160.37	167.83	0.000171
Sandy Mai	4865.578	100-yr	9741	154.25	168.69	161.42	168.9	0.000196
Sandy Mai	4865.578	500-yr	16941	154.25	171.4	163.65	171.44	0.000043
Sandy Mai	4790.088	10-yr	4460	154	163.58	160.26	164	0.000822
Sandy Mai	4790.088	50-yr	7709	154	167.24	161.83	167.77	0.000677
Sandy Mai	4790.088	100-yr	9741	154	168.1	162.64	168.82	0.000852
Sandy Mai	4790.088	500-yr	16941	154	171.36	165.12	171.43	0.000125
Sandy Mai	4777.088	10-yr	4460	154.25	163.62	160.02	163.94	0.000594
Sandy Mai	4777.088	50-yr	7709	154.25	167.31	161.4	167.68	0.000431
Sandy Mai	4777.088	100-yr	9741	154.25	168.19	162.14	168.7	0.000525
Sandy Mai	4777.088	500-yr	16941	154.25	171.38	164.38	171.41	0.000048
Sandy Mai	4740		Bridge					
Sandy Mai	4685.592	10-yr	4460	154	161.51	160.67	162.91	0.003319
Sandy Mai	4685.592	50-yr	7709	154	162.84	162.56	165.35	0.004934
Sandy Mai	4685.592	100-yr	9741	154	163.53	163.53	166.72	0.005758
Sandy Mai	4685.592	500-yr	16941	154	167.22	165.4	167.45	0.000669
Sandy Mai	4327.181	10-yr	4460	152	161.72		161.86	0.000618
Sandy Mai	4327.181	50-yr	7709	152	163.43		163.64	0.000802
Sandy Mai	4327.181	100-yr	9741	152	164.33		164.57	0.00088
Sandy Mai	4327.181	500-yr	16941	152	166.74		167.12	0.001149
Sandy Mai	3964.325	10-yr	4460	152	161.44		161.64	0.000593
Sandy Mai	3964.325	50-yr	7709	152	162.99		163.33	0.000871
Sandy Mai	3964.325	100-yr	9741	152	163.8		164.22	0.001012
Sandy Mai	3964.325	500-yr	16941	152	165.93		166.63	0.00145
Sandy Mai	3515.389	10-yr	4460	150.35	161.31		161.42	0.000323
Sandy Mai	3515.389	50-yr	7709	150.35	162.8		162.99	0.000516
Sandy Mai	3515.389	100-yr	9741	150.35	163.59		163.83	0.000607
Sandy Mai	3515.389	500-yr	16941	150.35	165.62		166.04	0.000933
Sandy Mai	3004.364	10-yr	4460	150	161.13	156.74	161.25	0.000333

Sandy Mai	3004.364	50-yr	7709	150	162.54	158.36	162.73	0.000487
Sandy Mai	3004.364	100-yr	9741	150	163.31	159.11	163.53	0.000532
Sandy Mai	3004.364	500-yr	16941	150	165.28	160.9	165.6	0.000675
Sandy Mai	2590.359	10-yr	4460	150	161.01	156.02	161.12	0.000321
Sandy Mai	2590.359	50-yr	7709	150	162.36	158.27	162.54	0.000513
Sandy Mai	2590.359	100-yr	9741	150	163.09	159.46	163.31	0.000595
Sandy Mai	2590.359	500-yr	16941	150	164.89	160.34	165.29	0.000897
Sandy Mai	2500		Bridge					
Sandy Mai	2417.391	10-yr	4460	150	156.86	156.09	157.19	0.001199
Sandy Mai	2417.391	50-yr	7709	150	158.15	156.83	158.51	0.001101
Sandy Mai	2417.391	100-yr	9741	150	158.77	157.19	159.18	0.001111
Sandy Mai	2417.391	500-yr	16941	150	160.54	158.25	161.11	0.001152
Sandy Mai	2072.963	10-yr	4460	148.51	156.52	155.33	156.79	0.000876
Sandy Mai	2072.963	50-yr	7709	148.51	157.8	156.15	158.13	0.000941
Sandy Mai	2072.963	100-yr	9741	148.51	158.41	156.55	158.78	0.000992
Sandy Mai	2072.963	500-yr	16941	148.51	160.16	157.76	160.66	0.001106
Sandy Mai	1688.606	10-yr	4460	149	156.13		156.38	0.001261
Sandy Mai	1688.606	50-yr	7709	149	157.23		157.62	0.0018
Sandy Mai	1688.606	100-yr	9741	149	157.76		158.22	0.002047
Sandy Mai	1688.606	500-yr	16941	149	159.26		159.99	0.002695
Sandy Mai	1299.523	10-yr	4460	149	155.78	153.98	155.94	0.000957
Sandy Mai	1299.523	50-yr	7709	149	156.81	155.02	157.02	0.001162
Sandy Mai	1299.523	100-yr	9741	149	157.31	155.39	157.55	0.001265
Sandy Mai	1299.523	500-yr	16941	149	158.74	156.48	159.1	0.001574
Sandy Mai	663.061	10-yr	4460	146.71	154.93	154.26	155.22	0.001291
Sandy Mai	663.061	50-yr	7709	146.71	155.81	154.95	156.16	0.001578
Sandy Mai	663.061	100-yr	9741	146.71	156.25	155.37	156.62	0.001678
Sandy Mai	663.061	500-yr	16941	146.71	157.48	156.22	157.97	0.002025
Sandy Mai	143.571	10-yr	4460	147	153.67	153.67	154.18	0.003578
Sandy Mai	143.571	50-yr	7709	147	154.14	154.14	154.82	0.005016
Sandy Mai	143.571	100-yr	9741	147	154.39	154.39	155.16	0.005715
Sandy Mai	143.571	500-yr	16941	147	155.1	155.1	156.16	0.007386

Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)	Froude # Chl
7.49	94.36	59.2	0.96
6.96	218.12	183.69	0.71
7.27	269.56	213.05	0.71
8.22	401.5	255.16	0.75
8.63	111.13	65.57	0.81
9.99	163.37	74.6	0.85
10.71	188.05	78.47	0.88
12.03	287.03	110.85	0.89
8.22	105.82	62.51	0.82
8.21	221.84	148.04	0.71
8.71	260.8	160.34	0.73
9.44	394.88	228.02	0.74
4.77	212.18	88.04	0.33
6.53	284.23	120.3	0.43
7.43	316.67	126.74	0.48
11.11	341.69	135.81	0.71
10.45	75.19	29.94	0.94
10.83	150.13	72.77	0.8
11.2	197.39	97.83	0.79
12.05	354.77	119.2	0.77
6.68	185.54	107.36	0.65
8.3	285.57	193.54	0.73
8.63	341.73	225.59	0.73
9.06	563.19	256.56	0.7
4.44	197.74	107.09	0.31
4.73	310.8	160.75	0.31
5.14	348.92	170.35	0.33
5.92	471.82	206.19	0.37
3.05	351.74	155.66	0.22
3.58	503.3	186.97	0.24
3.78	573.36	191.04	0.25
4.42	748.43	216.41	0.27
2.95	390.76	168.21	0.19

3.59	535.09	180.46	0.22
3.92	597.14	183.71	0.23
4.86	749.43	206.1	0.28
4.42	184.47	63.11	0.3
6.26	220.52	71.54	0.41
7.18	238.66	78.23	0.46
9.87	289.31	117.01	0.61
1.42	797.39	227.26	0.08
2.01	939.11	245.33	0.1
2.36	1010.37	269.78	0.12
3.1	1193.42	283.92	0.15
8.48	95.49	35.82	0.76
11.95	124.74	45.86	0.99
11.11	227.51	106.32	0.82
10.31	702.29	348.64	0.66
9.71	87.4	134.02	1
7.7	272.31	213.76	0.69
8.23	319.8	245.02	0.72
9.71	430.86	334.41	0.8
5.04	167.75	255.6	0.46
7.4	203.99	285.67	0.64
3.44	645.18	313.51	0.29
4.31	847.03	356.94	0.34
1.53	761.08	317.15	0.11
2.23	882.37	331.86	0.15
2.54	944.7	332.83	0.17
3.33	1108.58	335.07	0.22
3.11	522.14	244.3	0.19
3.95	742.21	285.47	0.23
4.32	855.67	307.5	0.25
5.18	1143.82	332.06	0.28
3.38	337.91	126.5	0.22
4.75	434.95	155.47	0.3

5.42	485.04	173.15	0.33
7.35	604.39	213.62	0.43
3.9	239.56	100.73	0.27
5.87	275.57	104.14	0.4
6.78	296.71	106.03	0.45
9.62	333.78	111.03	0.63
3.4	445.88	301.84	0.23
5.04	541.85	327.1	0.34
5.76	603.07	341.2	0.38
8.2	686.27	348.36	0.53
9.54	79.46	33.49	0.96
8.82	211.68	123.93	0.7
9.09	276.91	145.5	0.69
10.41	415.41	203.81	0.73
6.71	176.15	106.33	0.71
7.12	291.92	121.29	0.65
7.21	354.62	122.97	0.62
8.54	479.28	134.48	0.66
9.27	109.93	53.35	0.85
10.89	169.93	68.25	0.88
11.85	200.51	80.2	0.92
12.1	379.89	159.01	0.83
5.71	264.54	151.44	0.54
6.96	370.46	171.13	0.6
7.81	450.89	233.39	0.65
7.51	755.15	295.42	0.55
6.9	184.19	142.81	0.61
7.35	275.08	152.04	0.61
5.41	427.97	164.81	0.4
4.51	788.08	266.65	0.3
6.14	192.18	137.91	0.57
4.56	474.75	156.55	0.34
3.98	683.09	181.75	0.27
4.39	1021.08	214.09	0.27

5.22	132.02	26.48	0.41
6.74	175.57	31.35	0.47
6.89	218.55	199.72	0.43
8.79	386.12	387.92	0.52
4.9	140.52	29.07	0.39
6.87	170.7	56.28	0.51
8.02	181.22	92.09	0.57
10.85	217.84	217.06	0.72
9.85	343.57	145.65	0.71
12	489.37	162.86	0.8
12.81	563.35	166.15	0.83
14.46	793.83	222.26	0.87
11.89	264.68	124.75	1.06
12.39	440.13	184.31	0.97
12.91	529.12	194.64	0.97
15.93	701.83	234.34	1.12
5	418.13	163.89	0.34
4.85	839.14	429.98	0.29
5.23	972.04	458.55	0.3
6.87	1226.84	489.79	0.39
9.29	182.23	47.59	0.72
11.95	283.68	124.44	0.84
10.04	591.03	421.6	0.64
9.76	1102.58	509.34	0.58
7.95	264.91	148.55	0.59
6.79	659.47	330.44	0.44
6.72	902.7	440.06	0.42
7.25	1373.78	514.89	0.43
5.09	337.72	265.09	0.32
4.47	1217.36	495.34	0.26
4.5	1543.51	567.52	0.25
5.15	2092.63	592.08	0.27
8.59	212.47	64.27	0.68
10.93	380.66	219.78	0.76
10.04	614.1	288.22	0.66

9.07	1335.71	474.83	0.53
6.65	441.41	144.67	0.47
8.04	670.38	179.23	0.51
8.49	819.68	206.96	0.52
8.53	1525.79	434.51	0.46
7.95	557.22	198.08	0.5
9.43	858.34	213.46	0.55
10.06	1016.05	236.6	0.56
11.21	1569.22	355.08	0.57
4.84	1008.91	299.91	0.3
5.69	1460.93	319.09	0.33
6.1	1700.79	328.48	0.34
7.27	2334.8	367.41	0.37
5.62	1198.25	346.21	0.37
6.85	1751.1	409.56	0.42
7.22	2059.87	417.46	0.42
8.26	2840.64	438.8	0.44
1.7	1530.66	267.5	0.1
2.3	1883	271.27	0.13
2.59	2079.12	283.49	0.14
3.34	2615.56	332.34	0.17
1.65	1467.28	264.78	0.09
2.17	1781.07	284.24	0.11
2.38	1967.74	295.77	0.12
2.91	2465.38	336.77	0.14
1.77	1680.95	391.31	0.1
2.44	2087.2	463.61	0.13
2.72	2341.01	499.76	0.14
3.4	3007.49	555.03	0.17
5.66	478.63	165.22	0.41
5.63	889.21	259.29	0.35
5.45	1154.15	326.79	0.32
5.16	1890.94	522.79	0.27
12.2	205.83	59.81	0.92
13.74	328.84	77.58	0.9
14.69	392.24	85	0.91

17.15	563.85	103.35	0.96
5.83	371.03	83.37	0.44
8.24	459.85	95.61	0.58
9.6	503.92	105.27	0.65
13.64	593.95	122.31	0.87
5.32	707.23	252.37	0.35
6.31	1033.65	297.4	0.39
6.77	1216.22	319.22	0.4
7.87	1725.16	368.69	0.43
3.69	865.48	375.63	0.25
3.76	1350.39	434.47	0.24
3.78	1621.3	456.14	0.23
3.95	2333.1	497.64	0.22
3.46	934.93	300.33	0.24
3.89	1366	333.46	0.24
4.14	1584.43	370.79	0.25
4.66	2323.13	553.75	0.26
2.16	1387.77	442.29	0.16
2.49	2045.86	503.22	0.17
2.64	2374.58	515.64	0.17
3.04	3277.04	613.02	0.18
2.1	1381.65	386.17	0.14
2.6	1910.51	446.5	0.16
2.78	2231.78	525.56	0.17
3.22	3049.49	567.35	0.18
1.37	1988.76	492.83	0.08
1.8	2589.52	539.56	0.1
1.97	2917.95	574.1	0.11
2.4	3756.99	608.65	0.12
1.74	1501.53	535.66	0.11
2.46	1835.86	591.28	0.15
2.78	2023.71	620.51	0.16
3.66	2489.27	690.56	0.2
10.68	211.51	212.86	0.98
9.06	622.68	300.14	0.75
9.79	716.07	302.76	0.78

10.72	1034.22	311.05	0.78
2.33	1476.49	388.6	0.15
3.3	1797.3	409.02	0.2
3.61	2040.78	424.17	0.21
4.75	2577.65	475.74	0.26
1.75	2112.72	591.13	0.11
2.49	2604.36	645.35	0.14
2.71	2994.98	689.67	0.15
3.4	3882.33	765.49	0.18
1.88	2070.3	647.46	0.11
2.47	2692.14	701.46	0.14
2.6	3144.64	726.19	0.14
3.19	4064.29	777.61	0.17
2.22	1477.27	377.85	0.14
3.18	1820.59	420.11	0.19
3.54	2096.92	484.39	0.2
4.64	2728.01	608.15	0.25
2.1	1690.81	422.84	0.12
3.07	2073.98	483.08	0.17
3.36	2380.36	519.68	0.18
4.32	3002.54	573.09	0.22
11.32	200.94	53.15	0.97
12.69	350.92	99.73	0.89
11.06	623.69	230.74	0.7
12.05	1041.21	315.69	0.7
3.76	783.48	283.69	0.32
4.36	1164.58	313.42	0.33
4.75	1339.8	326.31	0.34
5.7	1803.94	345.22	0.37
2.97	964.96	334.1	0.25
3.47	1410.76	355.13	0.26
3.81	1607.5	363.76	0.27
4.71	2122.85	385.81	0.3
2.84	1144.15	374.37	0.21

3.34	1660.28	417.29	0.22
3.65	1892.31	432.95	0.23
4.45	2511.86	466.32	0.26
2.05	1533.85	421.73	0.14
2.57	2103.83	459.45	0.16
2.87	2358.81	476.14	0.18
3.61	3036.38	506.2	0.21
5.67	547.38	217.38	0.33
7.32	833.8	302.95	0.41
8.08	969.34	319.24	0.44
9.58	1374.98	362.29	0.49
7.86	334.6	176.44	0.57
9.93	537.5	212.42	0.66
10.63	647.53	225.96	0.68
12.42	936.21	260.35	0.74
8.68	375.24	205.78	0.66
10.19	576.23	244.14	0.72
10.97	668.06	253.71	0.75
12.83	921.11	277.91	0.82
7.91	484.57	404.33	0.76
7.88	786.19	414.27	0.69
7.69	968.54	418.7	0.64
7.9	1459.9	446.65	0.58
4.51	705.7	319.51	0.4
5.41	1010.29	353.16	0.43
5.83	1170.51	369.25	0.45
6.93	1610.9	411.4	0.48
8.52	355.62	245.53	0.97
9.85	529.13	270.74	0.99
10.46	623.7	284.19	1
11.52	992.48	399.55	0.96
3.21	760.43	402.77	0.38
3.93	1108.41	431.92	0.4
4.25	1299.29	446.17	0.4
4.97	1910.05	505.36	0.4
3.96	565.15	334	0.53

4.65	879.63	356.46	0.5
5.02	1044.56	374.26	0.5
5.56	1614.94	418.06	0.46
3.66	761.67	320.46	0.33
4.57	1059.37	346.27	0.37
5	1212.63	358.38	0.39
5.47	1804.43	398.1	0.37
8.53	466.16	282.71	0.75
9.33	718.72	307.37	0.74
8.43	971.26	330.62	0.62
7.54	1758.43	400.95	0.48
5.74	1074.19	398.2	0.4
6.19	1828.03	436.45	0.38
6.57	2166	447.68	0.39
7.49	3185.79	508.57	0.4
8.75	640.31	284.16	0.59
11.23	1033.72	353.11	0.7
11.74	1303.02	377.54	0.7
12.16	2543.22	570.53	0.64
9.65	545.11	223.28	0.72
10.56	875.83	273.84	0.71
10.87	1171.86	319.13	0.69
9.24	2329.88	426.72	0.49
4.16	869.73	253.59	0.27
5.22	1211.66	274.68	0.32
6.02	1458.37	346.75	0.35
4.99	2907.36	472.12	0.25
3.15	947.44	295.56	0.22
4.12	1280.04	303.45	0.27
4.39	1508.72	311.02	0.27
3.99	3190.9	501.57	0.2
1.48	2209.42	495.39	0.09
2.11	2689.33	537.01	0.12
2.38	3027.32	576.27	0.13
2.4	5008.65	714.46	0.11
6.87	822.84	268.43	0.5

7.71	1627.12	504.76	0.48
6.9	2397.8	530.73	0.39
6.11	4755.32	799.09	0.29
7.21	969.3	344.45	0.55
7.01	1904.62	434.92	0.44
6.36	2676.41	470.82	0.36
5.95	4990.66	596.95	0.28
4.6	1534	430.79	0.36
4.74	2751.99	518.37	0.3
4.52	3708.92	584.23	0.26
4.39	6575.1	703.69	0.21
5.17	520.5	167.74	0.37
5.29	911.97	307.35	0.31
5	1201.14	463.11	0.27
5.06	1898.5	842.16	0.23
10.06	270.8	102.48	0.84
12.1	406.8	116.95	0.89
12.44	510.5	136.57	0.85
12.41	849.02	327.22	0.73
2.76	1207.07	453.71	0.19
2.81	2106.95	617.92	0.18
2.79	2639.83	652.67	0.17
2.45	4751.94	749.33	0.13
1.6	2092.46	633.37	0.11
1.76	3188.67	712.43	0.11
1.82	3787.77	728.96	0.11
1.8	6250.98	930.65	0.09
1.23	2537.09	562.35	0.08
1.55	3489.96	620.25	0.09
1.69	4014.79	638.96	0.09
1.87	6114.15	755.03	0.09
3.6	1015.31	617.32	0.22
1.71	3544.24	693.72	0.09
1.82	4127.99	711.63	0.1
1.91	6428	808.13	0.09

2.96	2132.33	549.47	0.2
3.09	4115.2	654.49	0.17
3.13	5238.99	700.44	0.16
3.72	7546.67	790.91	0.17
2.79	2774.08	763.39	0.16
2.51	6366.29	928.95	0.13
2.52	7981.1	996.93	0.12
2.89	11254.64	1098.63	0.12
2.65	1025.53	942.02	0.16
3.21	1741.05	1127.56	0.16
3.44	2121.06	1190.92	0.16
4.46	2809.39	1269.81	0.19
3.3	750.34	316.39	0.18
4	1180.54	459.46	0.19
4.21	1429.15	549.7	0.19
5.44	1848.25	629.3	0.23
6.61	389.82	450.59	0.37
1.91	3800.74	752.73	0.09
1.73	5106.7	840.38	0.08
1.77	7418.25	866.16	0.07
3.87	749.43	133.53	0.23
3.54	1822.63	491.27	0.17
2.75	3326.34	628.05	0.12
2.99	5068.77	671.98	0.12
1.98	1503.91	285.82	0.12
1.81	2800.8	324.31	0.09
1.67	3696.35	331.14	0.07
2.17	4607.56	347.54	0.09
0.85	2915.44	391.3	0.05
0.94	4614.48	413.2	0.05
0.95	5764.43	429.57	0.04
1.34	7036.8	491.98	0.06

5.1	605.27	135.5	0.27
4.79	1083.82	221.28	0.22
4.54	1411.22	258.05	0.19
5.16	2187.25	296.37	0.2
6.23	479.96	158	0.35
5.52	931.79	268.88	0.26
5.12	1250.61	328.54	0.22
5.55	2034.76	367.02	0.22
3.76	691.33	302.56	0.21
4.25	1064.25	370.33	0.2
2.29	3005.17	441.3	0.1
2.99	3764.8	481.56	0.12
4.03	623.36	254.74	0.22
4.75	907.43	368.47	0.22
2.06	3263.93	401.93	0.09
2.6	4290.05	469.18	0.1
4.25	706.6	101.67	0.24
5.08	1091.62	287.32	0.25
5.34	1333.66	455.91	0.24
7.45	1853.29	662.1	0.31
6.01	746.3	121.28	0.33
8.04	1049.35	131.53	0.4
9.2	1176.67	135.54	0.44
12.33	1530.78	200.64	0.55
6.58	1238.62	542.19	0.35
3.03	4020.78	890.06	0.14
2.95	5085.23	1202.24	0.13
3.16	7734.31	1223.11	0.13
7.55	865.44	730.15	0.42
3.87	2732.29	1259.25	0.18
3.88	3283.02	1285.96	0.18
2.47	10233	1375.17	0.11
9.55	648.36	437.8	0.56

4.51	2179.75	896.75	0.22
4.54	2598.37	923.93	0.21
3.65	7137.51	1089.66	0.16
9.32	736.6	599.21	0.55
6.18	2131.52	1123.68	0.3
6.5	2513.97	1375.72	0.31
3.39	10288.09	1621.72	0.15
3.44	1459.41	759.59	0.21
3.46	2452.97	1287.44	0.17
3.91	2728.22	1320.83	0.19
2.07	11408.22	1411.94	0.09
6.05	1149.09	638.21	0.36
6.91	1831.34	1125.85	0.34
8.1	1994.49	1261.77	0.39
3.59	10587.3	1416.34	0.15
5.08	1201.74	918.23	0.3
5.46	1871.68	1369.19	0.27
6.32	2035.34	1390.28	0.31
2.2	13267.05	1496.2	0.1
10.33	752.2	805.22	0.69
14.17	992.85	827.66	0.87
16.15	1117.2	835.28	0.95
6.93	7975.47	892.37	0.34
4.76	2621.76	538.59	0.28
6.07	3567.59	561.85	0.32
6.71	4077.84	570.03	0.34
8.66	5488.75	600.93	0.41
5.1	2596.87	473.75	0.3
6.89	3346.65	493.06	0.38
7.81	3760.85	523.01	0.41
10.51	4906	557.93	0.51
4.23	3689.13	621.26	0.23
5.84	4645.55	663.54	0.3
6.61	5172.71	673.96	0.33
9.05	6581.32	715.88	0.41
4.31	3193.54	640.98	0.23

5.67	4160.85	718.72	0.29
6.18	4722.14	740.33	0.31
7.67	6237.8	816.8	0.35
3.54	2128.25	467.74	0.19
4.84	2791.07	529.74	0.25
5.43	3180.76	537.82	0.27
7.3	4168.66	549.94	0.34
6.12	1188.15	454.78	0.41
6.58	1781.29	466.23	0.41
6.95	2072.37	472.71	0.42
8.01	2957.36	569.09	0.44
5.6	1311.77	451.38	0.36
6.44	1967.68	545.43	0.38
6.92	2305.71	566.67	0.4
8.18	3396.86	658.94	0.43
6.41	1992.36	529.6	0.43
8.43	2589.91	572.16	0.52
9.38	2891.07	578.51	0.56
11.97	3773.33	598.89	0.66
5.43	2450.25	817.13	0.37
6.58	3323.01	859.86	0.42
7.16	3751.53	869.08	0.44
8.89	5043.04	948.79	0.5
6.89	1960.1	846.23	0.44
8.19	2759.15	943.05	0.49
8.74	3177.81	958.44	0.51
10.46	4405.93	1064.14	0.58
10.07	1787.91	1050.67	0.71
12.51	2288.19	1075.19	0.85
13.67	2556.32	1099.1	0.91
16.56	3345.28	1259.04	1.05

Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Crit W.S. (ft)	E.G. Elev (ft)	E.G. Slope (ft/ft)
Sandy Mai	38835.32	10-yr	689	335	337.86	337.86	338.72	0.009987
Sandy Mai	38835.32	50-yr	1169	335	338.39	338.39	339.78	0.011749
Sandy Mai	38835.32	100-yr	1443	335	339.2	339.2	339.87	0.004571
Sandy Mai	38835.32	500-yr	2290	335	339.75	339.75	340.52	0.004731
Sandy Mai	38353.13	10-yr	689	327	331.57	331.57	332.39	0.005963
Sandy Mai	38353.13	50-yr	1169	327	332.6	332.6	334.15	0.007416
Sandy Mai	38353.13	100-yr	1443	327	332.64	332.64	333.79	0.006468
Sandy Mai	38353.13	500-yr	2290	327	333.69	333.69	334.99	0.006198
Sandy Mai	37880.8	10-yr	689	319	323.52	323.52	324.37	0.006525
Sandy Mai	37880.8	50-yr	1169	319	324.51	324.51	325.27	0.004762
Sandy Mai	37880.8	100-yr	1443	319	324.83	324.83	325.57	0.004579
Sandy Mai	37880.8	500-yr	2290	319	325.5	325.5	326.29	0.004461
Sandy Mai	37489.56	10-yr	689	311.79	319.52	316.72	319.8	0.000908
Sandy Mai	37489.56	50-yr	1169	311.79	320.61	318.43	321	0.001121
Sandy Mai	37489.56	100-yr	1443	311.79	320.49	319	321.1	0.001831
Sandy Mai	37489.56	500-yr	2290	311.79	320.68	320.68	322.01	0.00396
Sandy Mai	37270		Culvert					
Sandy Mai	37056.92	10-yr	689	306.66	311.36	311.36	312.99	0.008131
Sandy Mai	37056.92	50-yr	1169	306.66	313.19	313.19	314.77	0.005178
Sandy Mai	37056.92	100-yr	1443	306.66	313.8	313.8	315.39	0.004856
Sandy Mai	37056.92	500-yr	2290	306.66	315.13	315.13	316.68	0.004359
Sandy Mai	36678.73	10-yr	689	301	304.8	304.3	305.21	0.003799
Sandy Mai	36678.73	50-yr	1169	301	305.82	304.95	306.39	0.003792
Sandy Mai	36678.73	100-yr	1443	301	305.92	304.94	306.51	0.004274
Sandy Mai	36678.73	500-yr	2290	301	306.72	306.32	307.25	0.003772
Sandy Mai	36275.49	10-yr	689	296.1	303.64	301.61	303.88	0.002586
Sandy Mai	36275.49	50-yr	1169	296.1	304.84	303.51	305.16	0.002051
Sandy Mai	36275.49	100-yr	1443	296.1	304.65	303.83	304.99	0.002853
Sandy Mai	36275.49	500-yr	2290	296.1	305.3	304.46	305.78	0.003373
Sandy Mai	36000		Culvert					
Sandy Mai	35791.32	10-yr	689	286.09	293.04		293.12	0.00128
Sandy Mai	35791.32	50-yr	1169	286.09	294.59		294.78	0.00164
Sandy Mai	35791.32	100-yr	1443	286.09	294.29		294.41	0.001521
Sandy Mai	35791.32	500-yr	2290	286.09	295.17		295.34	0.001786
Sandy Mai	35582.96	10-yr	689	285	292.83	288.97	292.92	0.00072

Sandy Mai	35582.96	50-yr	1169	285	294.29	290.2	294.48	0.001142
Sandy Mai	35582.96	100-yr	1443	285	294	290.8	294.13	0.001052
Sandy Mai	35582.96	500-yr	2290	285	294.79	292.54	294.99	0.001437
Sandy Mai	35513		Culvert					
Sandy Mai	35420.3	10-yr	689	283	290.25		290.51	0.002031
Sandy Mai	35420.3	50-yr	1169	283	291.22		291.88	0.005455
Sandy Mai	35420.3	100-yr	1443	283	291.04		291.69	0.004615
Sandy Mai	35420.3	500-yr	2290	283	291.55	291.18	292.72	0.007987
Sandy Mai	35237.49	10-yr	689	279.02	290.31	283.38	290.33	0.000135
Sandy Mai	35237.49	50-yr	1169	279.02	291.39	285.03	291.44	0.000276
Sandy Mai	35237.49	100-yr	1443	279.02	291.19	285.86	291.23	0.000337
Sandy Mai	35237.49	500-yr	2290	279.02	291.85	288.11	291.92	0.000542
Sandy Mai	34267		Culvert					
Sandy Mai	33297.82	10-yr	689	253	257.22	256.67	258.31	0.005089
Sandy Mai	33297.82	50-yr	1169	253	258.19	257.86	260.14	0.006781
Sandy Mai	33297.82	100-yr	1443	253	259.06	259.06	260.79	0.005174
Sandy Mai	33297.82	500-yr	2290	253	260.91	260.91	262.07	0.003058
Sandy Mai	32874.91	10-yr	689	251	254	254	255.38	0.009335
Sandy Mai	32874.91	50-yr	1169	251	255.31	255.31	257.04	0.007389
Sandy Mai	32874.91	100-yr	1443	251	255.13	255.13	255.76	0.004336
Sandy Mai	32874.91	500-yr	2290	251	255.62	255.62	256.41	0.005191
Sandy Mai	32432.32	10-yr	689	249	252.8	251.63	253.11	0.001774
Sandy Mai	32432.32	50-yr	1169	249	254	252.57	254.58	0.002206
Sandy Mai	32432.32	100-yr	1443	249	253.53	252.93	253.63	0.000652
Sandy Mai	32432.32	500-yr	2290	249	254.13	253.45	254.27	0.000865
Sandy Mai	32009.44	10-yr	689	246	252.74	249.48	252.75	0.000231
Sandy Mai	32009.44	50-yr	1169	246	253.89	250.64	253.95	0.000474
Sandy Mai	32009.44	100-yr	1443	246	253.3	251.24	253.35	0.00057
Sandy Mai	32009.44	500-yr	2290	246	253.79	252	253.87	0.000893
Sandy Mai	31828		Culvert					
Sandy Mai	31647.46	10-yr	689	239	247.63	243.29	247.72	0.000249
Sandy Mai	31647.46	50-yr	1169	239	249.02	244.52	249.16	0.000337
Sandy Mai	31647.46	100-yr	1443	239	248.85	246.31	248.99	0.0004
Sandy Mai	31647.46	500-yr	2290	239	249.74	247.57	249.92	0.000509
Sandy Mai	31476.58	10-yr	689	240	247.51	243.38	247.65	0.000425
Sandy Mai	31476.58	50-yr	1169	240	248.73	244.8	249.03	0.000732

Sandy Mai	31476.58	100-yr	1443	240	248.52	246.29	248.83	0.000921
Sandy Mai	31476.58	500-yr	2290	240	249.12	247.55	249.67	0.001544
Sandy Mai	31435		Culvert					
Sandy Mai	31392.94	10-yr	689	239.99	246.59		246.78	0.001781
Sandy Mai	31392.94	50-yr	1169	239.99	247.35		247.79	0.003422
Sandy Mai	31392.94	100-yr	1443	239.99	247.14		247.69	0.004807
Sandy Mai	31392.94	500-yr	2290	239.99	247.48		248.55	0.009096
Sandy Mai	31259.8	10-yr	689	239	246.53	243.1	246.66	0.000396
Sandy Mai	31259.8	50-yr	1169	239	247.31	244.44	247.53	0.00063
Sandy Mai	31259.8	100-yr	1443	239	247.02	245.08	247.34	0.00103
Sandy Mai	31259.8	500-yr	2290	239	247.26	246.95	247.87	0.001995
Sandy Mai	31220		Culvert					
Sandy Mai	31182.62	10-yr	689	239	242.91	242.91	244.28	0.008638
Sandy Mai	31182.62	50-yr	1169	239	244.73	244.73	245.76	0.003983
Sandy Mai	31182.62	100-yr	1443	239	245.23	245.23	246.23	0.003704
Sandy Mai	31182.62	500-yr	2290	239	246.1	246.1	247.23	0.003974
Sandy Mai	31033.98	10-yr	689	239	241.91		242.34	0.004705
Sandy Mai	31033.98	50-yr	1169	239	242.98		243.43	0.003335
Sandy Mai	31033.98	100-yr	1443	239	243.39		243.82	0.003069
Sandy Mai	31033.98	500-yr	2290	239	244.37		244.95	0.003269
Sandy Mai	30579.27	10-yr	689	235	238.76	238.76	239.85	0.006151
Sandy Mai	30579.27	50-yr	1169	235	239.73	239.73	241.24	0.00672
Sandy Mai	30579.27	100-yr	1443	235	240.2	240.2	241.76	0.00649
Sandy Mai	30579.27	500-yr	2290	235	241.72	241.72	243.09	0.004795
Sandy Mai	30235.35	10-yr	689	233	236.58	235.47	236.8	0.002513
Sandy Mai	30235.35	50-yr	1169	233	237.72	236.18	238.15	0.002906
Sandy Mai	30235.35	100-yr	1443	233	237.64	236.7	237.99	0.003303
Sandy Mai	30235.35	500-yr	2290	233	238.8	237.48	239.08	0.002254
Sandy Mai	29939.91	10-yr	689	231	235.17		235.53	0.008677
Sandy Mai	29939.91	50-yr	1169	231	236.18		236.76	0.008665
Sandy Mai	29939.91	100-yr	1443	231	236.74		236.95	0.003416
Sandy Mai	29939.91	500-yr	2290	231	238.31		238.46	0.001709
Sandy Mai	29533.61	10-yr	689	229	233.17		233.63	0.002882
Sandy Mai	29533.61	50-yr	1169	229	235.06		235.45	0.001536
Sandy Mai	29533.61	100-yr	1443	229	236.36		236.49	0.00052
Sandy Mai	29533.61	500-yr	2290	229	237.98		238.13	0.000474

Sandy Mai	29203.58	10-yr	689	227	232.44	230.01	232.86	0.001853
Sandy Mai	29203.58	50-yr	1169	227	234.11	231.27	234.79	0.002045
Sandy Mai	29203.58	100-yr	1443	227	235.29	231.92	236.02	0.001789
Sandy Mai	29203.58	500-yr	2290	227	236.44	233.64	237.54	0.002425
Sandy Mai	29175		Culvert					
Sandy Mai	29148	10-yr	689	227	232.24	229.86	232.61	0.00159
Sandy Mai	29148	50-yr	1169	227	233.67	231.04	234.3	0.002125
Sandy Mai	29148	100-yr	1443	227	233.57	231.63	234.56	0.003215
Sandy Mai	29148	500-yr	2290	227	234.57	233.23	236.39	0.004795
Sandy Mai	28902.69	10-yr	1479	225	231.04	230.68	231.83	0.003618
Sandy Mai	28902.69	50-yr	2537	225	232.35	231.55	233.4	0.003913
Sandy Mai	28902.69	100-yr	3146	225	232.43	232.22	233.52	0.004645
Sandy Mai	28902.69	500-yr	5020	225	233.67	233.24	234.92	0.004815
Sandy Mai	28536.39	10-yr	1479	225	228.89	228.89	229.8	0.009407
Sandy Mai	28536.39	50-yr	2537	225	230.79	229.7	231.7	0.005308
Sandy Mai	28536.39	100-yr	3146	225	230.51	230.19	231.41	0.006984
Sandy Mai	28536.39	500-yr	5020	225	231.3	231.16	232.58	0.008892
Sandy Mai	28078.23	10-yr	1479	221	227.99	226	228.27	0.00081
Sandy Mai	28078.23	50-yr	2537	221	230.6	227.22	230.91	0.000596
Sandy Mai	28078.23	100-yr	3146	221	230.3	227.9	230.55	0.0006
Sandy Mai	28078.23	500-yr	5020	221	230.91	229.43	231.33	0.000951
Sandy Mai	27678.42	10-yr	1479	221	226.4	225.67	227.56	0.004046
Sandy Mai	27678.42	50-yr	2537	221	227.48	227.48	230.11	0.006971
Sandy Mai	27678.42	100-yr	3146	221	228.98	228.98	230.03	0.00274
Sandy Mai	27678.42	500-yr	5020	221	230	230	230.74	0.002192
Sandy Mai	27191.04	10-yr	1479	219	225.03	223.98	225.87	0.002713
Sandy Mai	27191.04	50-yr	2537	219	227.46	226.03	227.98	0.001553
Sandy Mai	27191.04	100-yr	3146	219	227.44	226.33	227.83	0.001204
Sandy Mai	27191.04	500-yr	5020	219	228.42	227.44	228.81	0.001201
Sandy Mai	26877.54	10-yr	1479	217	224.9	221.51	225.23	0.000706
Sandy Mai	26877.54	50-yr	2537	217	227.47	223.4	227.62	0.000305
Sandy Mai	26877.54	100-yr	3146	217	227.37	224.02	227.52	0.000379
Sandy Mai	26877.54	500-yr	5020	217	228.32	226.13	228.5	0.000442
Sandy Mai	26835		Bridge					
Sandy Mai	26794.7	10-yr	1479	217	222.39		223.44	0.003559
Sandy Mai	26794.7	50-yr	2537	217	224.52		225.54	0.002436
Sandy Mai	26794.7	100-yr	3146	217	224.68	224.68	225.83	0.002942

Sandy Mai	26794.7	500-yr	5020	217	226.53		227.23	0.001774
Sandy Mai	26382.38	10-yr	1479	215	221.71	220.22	222.25	0.00159
Sandy Mai	26382.38	50-yr	2537	215	223.85	221.51	224.61	0.001603
Sandy Mai	26382.38	100-yr	3146	215	223.93	222.28	224.66	0.001727
Sandy Mai	26382.38	500-yr	5020	215	225.97	223.82	226.56	0.001308
Sandy Mai	26107.58	10-yr	2016	213	221.05	219.93	221.77	0.001686
Sandy Mai	26107.58	50-yr	3442	213	222.91	221.26	224.06	0.002109
Sandy Mai	26107.58	100-yr	4317	213	223.22	222.14	224.13	0.00195
Sandy Mai	26107.58	500-yr	7013	213	225.11	223.52	226.07	0.001923
Sandy Mai	25737.96	10-yr	2016	213	221.05		221.27	0.000609
Sandy Mai	25737.96	50-yr	3442	213	223.03		223.32	0.000889
Sandy Mai	25737.96	100-yr	4317	213	223.26		223.54	0.000699
Sandy Mai	25737.96	500-yr	7013	213	225.1		225.46	0.000794
Sandy Mai	25309.8	10-yr	2016	213.64	220.73	217.18	220.95	0.000954
Sandy Mai	25309.8	50-yr	3442	213.64	222.55	218.27	222.88	0.001115
Sandy Mai	25309.8	100-yr	4317	213.64	222.88	218.8	223.16	0.001107
Sandy Mai	25309.8	500-yr	7013	213.64	224.71	221.62	225.04	0.001135
Sandy Mai	24900.93	10-yr	2016	212	220.52		220.54	0.000761
Sandy Mai	24900.93	50-yr	3442	212	222.25		222.32	0.001292
Sandy Mai	24900.93	100-yr	4317	212	222.54		222.6	0.001324
Sandy Mai	24900.93	500-yr	7013	212	224.29		224.4	0.001796
Sandy Mai	24402.5	10-yr	2016	210	220.19		220.22	0.000563
Sandy Mai	24402.5	50-yr	3442	210	221.69		221.77	0.000986
Sandy Mai	24402.5	100-yr	4317	210	221.98		222.06	0.000944
Sandy Mai	24402.5	500-yr	7013	210	223.55		223.69	0.001199
Sandy Mai	24129.68	10-yr	2016	210	220.03	214.61	220.06	0.000686
Sandy Mai	24129.68	50-yr	3442	210	221.43	216.03	221.49	0.001037
Sandy Mai	24129.68	100-yr	4317	210	221.69	216.79	221.76	0.001307
Sandy Mai	24129.68	500-yr	7013	210	223.19	218.86	223.29	0.001737
Sandy Mai	24085		Bridge					
Sandy Mai	24042.15	10-yr	2016	210	216.24	214.73	216.62	0.001222
Sandy Mai	24042.15	50-yr	3442	210	218.84	215.93	219.08	0.000546
Sandy Mai	24042.15	100-yr	4317	210	219.29	216.49	219.58	0.000658
Sandy Mai	24042.15	500-yr	7013	210	221.87	217.78	222.12	0.000422
Sandy Mai	23662.23	10-yr	2016	208	213.45	213.45	215.28	0.006326
Sandy Mai	23662.23	50-yr	3442	208	215.37	215.37	217.89	0.005904
Sandy Mai	23662.23	100-yr	4317	208	216.01	216.01	218.39	0.005483

Sandy Mai	23662.23	500-yr	7013	208	217.83	217.83	220.88	0.005694
Sandy Mai	23396.78	10-yr	2016	208	213.34		213.84	0.00149
Sandy Mai	23396.78	50-yr	3442	208	214.86		215.7	0.001803
Sandy Mai	23396.78	100-yr	4317	208	214.79		216.11	0.002934
Sandy Mai	23396.78	500-yr	7013	208	215.58	215.38	218.2	0.005115
Sandy Mai	23076.73	10-yr	2016	206	213.15		213.36	0.001017
Sandy Mai	23076.73	50-yr	3442	206	214.59		215.06	0.001521
Sandy Mai	23076.73	100-yr	4317	206	214.93		215.23	0.001223
Sandy Mai	23076.73	500-yr	7013	206	216.4		216.77	0.001349
Sandy Mai	22719.89	10-yr	2016	206	212.54		212.65	0.005048
Sandy Mai	22719.89	50-yr	3442	206	214		214.15	0.004061
Sandy Mai	22719.89	100-yr	4317	206	214.34		214.47	0.00383
Sandy Mai	22719.89	500-yr	7013	206	215.84		216	0.003348
Sandy Mai	22305.19	10-yr	2229	204	210.53	208	210.62	0.004436
Sandy Mai	22305.19	50-yr	3931	204	212.4	209	212.53	0.003471
Sandy Mai	22305.19	100-yr	4945	204	212.52	209.51	212.68	0.004461
Sandy Mai	22305.19	500-yr	8165	204	214.08	210.46	214.3	0.004516
Sandy Mai	21973.79	10-yr	2229	204	209.57		209.62	0.002135
Sandy Mai	21973.79	50-yr	3931	204	211.65		211.71	0.001744
Sandy Mai	21973.79	100-yr	4945	204	211.59		211.67	0.002117
Sandy Mai	21973.79	500-yr	8165	204	213.15		213.25	0.002186
Sandy Mai	21498.81	10-yr	2229	202	208.7		208.75	0.001591
Sandy Mai	21498.81	50-yr	3931	202	210.8		210.88	0.001746
Sandy Mai	21498.81	100-yr	4945	202	210.6		210.68	0.001993
Sandy Mai	21498.81	500-yr	8165	202	212.09		212.21	0.002169
Sandy Mai	21070	10-yr	2229	200	208.4		208.42	0.000503
Sandy Mai	21070	50-yr	3931	200	210.41		210.45	0.00071
Sandy Mai	21070	100-yr	4945	200	210.15		210.2	0.000807
Sandy Mai	21070	500-yr	8165	200	211.56		211.64	0.001005
Sandy Mai	20558.49	10-yr	2229	200	208.07	203.62	208.11	0.000929
Sandy Mai	20558.49	50-yr	3931	200	209.87	204.76	209.97	0.00162
Sandy Mai	20558.49	100-yr	4945	200	209.56	205.35	209.65	0.001873
Sandy Mai	20558.49	500-yr	8165	200	210.74	206.23	210.91	0.002754
Sandy Mai	20488		Culvert					
Sandy Mai	20450.5	10-yr	2229	200	203.77	203.77	205.53	0.008487
Sandy Mai	20450.5	50-yr	3931	200	204.92	204.92	206.2	0.005723
Sandy Mai	20450.5	100-yr	4945	200	204.96	204.96	205.96	0.004904

Sandy Mai	20450.5	500-yr	8165	200	206	205.76	207.15	0.004536
Sandy Mai	20135.83	10-yr	2229	196	203.6		203.64	0.000149
Sandy Mai	20135.83	50-yr	3931	196	204.94		205.06	0.000278
Sandy Mai	20135.83	100-yr	4945	196	204.99		205.08	0.000284
Sandy Mai	20135.83	500-yr	8165	196	206.2		206.37	0.000416
Sandy Mai	19889.56	10-yr	2229	195	203.58	199.29	203.6	0.000073
Sandy Mai	19889.56	50-yr	3931	195	204.94	200.49	204.99	0.000095
Sandy Mai	19889.56	100-yr	4945	195	204.96	201.08	205.01	0.000143
Sandy Mai	19889.56	500-yr	8165	195	206.18	202.45	206.26	0.000193
Sandy Mai	19820		Bridge					
Sandy Mai	19756.97	10-yr	2229	194.5	203.32		203.35	0.000085
Sandy Mai	19756.97	50-yr	3931	194.5	204.55		204.6	0.000137
Sandy Mai	19756.97	100-yr	4945	194.5	204.87		204.92	0.00013
Sandy Mai	19756.97	500-yr	8165	194.5	206.1		206.17	0.00017
Sandy Mai	19546.85	10-yr	2229	194	203.27		203.32	0.000123
Sandy Mai	19546.85	50-yr	3931	194	204.43		204.55	0.000265
Sandy Mai	19546.85	100-yr	4945	194	204.75		204.87	0.000251
Sandy Mai	19546.85	500-yr	8165	194	205.9		206.09	0.000372
Sandy Mai	19352.67	10-yr	2229	193.47	203.26	198.71	203.29	0.000098
Sandy Mai	19352.67	50-yr	3931	193.47	204.42	200.12	204.49	0.00015
Sandy Mai	19352.67	100-yr	4945	193.47	204.73	200.83	204.82	0.000206
Sandy Mai	19352.67	500-yr	8165	193.47	205.87	202.54	206	0.0003
Sandy Mai	19300		Bridge					
Sandy Mai	19245.94	10-yr	2229	193.25	197.82	197.82	199.79	0.008109
Sandy Mai	19245.94	50-yr	3931	193.25	199.88	199.88	202.23	0.005988
Sandy Mai	19245.94	100-yr	4945	193.25	201.39	201.39	202.96	0.003406
Sandy Mai	19245.94	500-yr	8165	193.25	202.9	202.9	204.47	0.003197
Sandy Mai	19054.38	10-yr	2229	193.25	197.95		198.09	0.000821
Sandy Mai	19054.38	50-yr	3931	193.25	199.41		199.68	0.000892
Sandy Mai	19054.38	100-yr	4945	193.25	199.78		200	0.000819
Sandy Mai	19054.38	500-yr	8165	193.25	201.15		201.48	0.000902
Sandy Mai	18845.69	10-yr	2229	193	197.85	195.92	197.94	0.000512
Sandy Mai	18845.69	50-yr	3931	193	199.32	196.6	199.5	0.000608
Sandy Mai	18845.69	100-yr	4945	193	199.69	196.88	199.84	0.000523
Sandy Mai	18845.69	500-yr	8165	193	201.07	197.68	201.3	0.000613
Sandy Mai	18634.5	10-yr	2229	192	197.78		197.85	0.000317

Sandy Mai	18634.5	50-yr	3931	192	199.25		199.39	0.000392
Sandy Mai	18634.5	100-yr	4945	192	199.62		199.74	0.000363
Sandy Mai	18634.5	500-yr	8165	192	201		201.18	0.000432
Sandy Mai	18463	10-yr	2229	191	197.77		197.8	0.000149
Sandy Mai	18463	50-yr	3931	191	199.24		199.32	0.000214
Sandy Mai	18463	100-yr	4945	191	199.61		199.68	0.000208
Sandy Mai	18463	500-yr	8165	191	200.98		201.1	0.000266
Sandy Mai	18269.19	10-yr	2229	188	197.2	193.07	197.63	0.000829
Sandy Mai	18269.19	50-yr	3931	188	198.55	197.04	199.1	0.001047
Sandy Mai	18269.19	100-yr	4945	188	198.7	197.86	199.41	0.001369
Sandy Mai	18269.19	500-yr	8165	188	199.89	199.08	200.77	0.00167
Sandy Mai	18240		Culvert					
Sandy Mai	18211.69	10-yr	2229	188	194.11	192.39	195.03	0.002702
Sandy Mai	18211.69	50-yr	3931	188	195.28	195.06	196.87	0.00394
Sandy Mai	18211.69	100-yr	4945	188	195.64	195.64	197.01	0.003637
Sandy Mai	18211.69	500-yr	8165	188	196.83	196.83	198.51	0.004084
Sandy Mai	18010.15	10-yr	2229	188	193.47	193.47	194.33	0.004222
Sandy Mai	18010.15	50-yr	3931	188	194.41	194.41	195.85	0.005764
Sandy Mai	18010.15	100-yr	4945	188	194.72	194.72	195.88	0.005107
Sandy Mai	18010.15	500-yr	8165	188	195.67	195.67	197.19	0.005837
Sandy Mai	17718.32	10-yr	2229	187	190.83	190.83	191.34	0.005065
Sandy Mai	17718.32	50-yr	3931	187	192.32	192.29	193.7	0.006551
Sandy Mai	17718.32	100-yr	4945	187	192.01		192.47	0.003218
Sandy Mai	17718.32	500-yr	8165	187	193.14		193.67	0.002522
Sandy Mai	17333.24	10-yr	2229	186	189.95		190.13	0.001325
Sandy Mai	17333.24	50-yr	3931	186	191.36		192.03	0.002425
Sandy Mai	17333.24	100-yr	4945	186	191.3		191.6	0.001496
Sandy Mai	17333.24	500-yr	8165	186	192.43		192.86	0.001636
Sandy Mai	16976.28	10-yr	2229	186	188.41	188.38	189.08	0.009183
Sandy Mai	16976.28	50-yr	3931	186	189.69		190.71	0.005845
Sandy Mai	16976.28	100-yr	4945	186	189.42	189.38	190.46	0.008652
Sandy Mai	16976.28	500-yr	8165	186	190.51	189.87	191.7	0.007264
Sandy Mai	16566.37	10-yr	2229	185.31	187.53		187.67	0.001485
Sandy Mai	16566.37	50-yr	3931	185.31	189		189.34	0.001654
Sandy Mai	16566.37	100-yr	4945	185.31	188.8		189.03	0.001412
Sandy Mai	16566.37	500-yr	8165	185.31	190.1		190.39	0.001261
Sandy Mai	16177.16	10-yr	2229	184.88	186.62		186.87	0.003068

Sandy Mai	16177.16	50-yr	3931	184.88	188.12		188.58	0.002353
Sandy Mai	16177.16	100-yr	4945	184.88	187.98		188.34	0.002278
Sandy Mai	16177.16	500-yr	8165	184.88	189.41		189.82	0.001684
Sandy Mai	15741.39	10-yr	2229	182	186.03	184.06	186.17	0.000954
Sandy Mai	15741.39	50-yr	3931	182	187.6	185.51	187.88	0.001076
Sandy Mai	15741.39	100-yr	4945	182	187.35	185.56	187.63	0.001196
Sandy Mai	15741.39	500-yr	8165	182	188.92	186.46	189.26	0.001004
Sandy Mai	15036.05	10-yr	2229	180	184.26	184.26	184.91	0.004826
Sandy Mai	15036.05	50-yr	3931	180	185.8	185.27	186.66	0.003642
Sandy Mai	15036.05	100-yr	4945	180	185.9	185.19	186.46	0.002985
Sandy Mai	15036.05	500-yr	8165	180	188.05	186.04	188.47	0.001553
Sandy Mai	14643.01	10-yr	2229	176.16	183.04	181.7	183.27	0.001114
Sandy Mai	14643.01	50-yr	3931	176.16	185.4	182.76	185.77	0.001144
Sandy Mai	14643.01	100-yr	4945	176.16	185.51	182.94	185.75	0.000949
Sandy Mai	14643.01	500-yr	8165	176.16	187.68	184.01	187.97	0.000924
Sandy Mai	14242.08	10-yr	2229	174	181.62	180.79	182.55	0.002522
Sandy Mai	14242.08	50-yr	3931	174	183.46	182.57	184.94	0.003089
Sandy Mai	14242.08	100-yr	4945	174	183.67	183.22	185	0.003188
Sandy Mai	14242.08	500-yr	8165	174	186.15	185.1	187.31	0.002453
Sandy Mai	13869.62	10-yr	2229	175	180.55	180.37	181.36	0.003907
Sandy Mai	13869.62	50-yr	3931	175	182.51	181.62	183.59	0.003531
Sandy Mai	13869.62	100-yr	4945	175	182.87	181.77	183.67	0.003106
Sandy Mai	13869.62	500-yr	8165	175	185.95	183.3	186.41	0.001441
Sandy Mai	13438.13	10-yr	2229	172	180.04	178.02	180.2	0.001448
Sandy Mai	13438.13	50-yr	3931	172	181.85	178.98	182.2	0.002166
Sandy Mai	13438.13	100-yr	4945	172	182.13	179.27	182.4	0.002158
Sandy Mai	13438.13	500-yr	8165	172	185.65	180.35	185.82	0.000967
Sandy Mai	12942.35	10-yr	2229	173	179.5	176.6	179.6	0.000979
Sandy Mai	12942.35	50-yr	3931	173	181.1	177.59	181.31	0.001396
Sandy Mai	12942.35	100-yr	4945	173	181.36	177.94	181.55	0.00135
Sandy Mai	12942.35	500-yr	8165	173	185.29	179.32	185.41	0.000659
Sandy Mai	12648.67	10-yr	2229	170	179.45	175.51	179.47	0.000131
Sandy Mai	12648.67	50-yr	3931	170	181.03	177.16	181.08	0.000234
Sandy Mai	12648.67	100-yr	4945	170	181.27	177.16	181.32	0.000264
Sandy Mai	12648.67	500-yr	8165	170	185.24	177.17	185.29	0.000178
Sandy Mai	12600		Mult Open					
Sandy Mai	12591.62	10-yr	2229	171	177.33	175.65	177.8	0.001786

Sandy Mai	12591.62	50-yr	3931	171	179.46	176.98	180.29	0.002096
Sandy Mai	12591.62	100-yr	4945	171	180.89	177.85	181.24	0.000966
Sandy Mai	12591.62	500-yr	8165	171	185.01	179.83	185.23	0.000469
Sandy Mai	12103.89	10-yr	2229	171	176.38	175.43	176.81	0.002262
Sandy Mai	12103.89	50-yr	3931	171	178.86	176.35	179.25	0.001402
Sandy Mai	12103.89	100-yr	4945	171	180.51	176.87	180.76	0.000821
Sandy Mai	12103.89	500-yr	8165	171	184.81	178.14	185	0.000437
Sandy Mai	11764.28	10-yr	2229	171.05	176.1	173.8	176.22	0.001021
Sandy Mai	11764.28	50-yr	3931	171.05	178.62	174.64	178.82	0.000896
Sandy Mai	11764.28	100-yr	4945	171.05	180.42	174.92	180.52	0.000429
Sandy Mai	11764.28	500-yr	8165	171.05	184.78	176.04	184.86	0.000241
Sandy Mai	11405.26	10-yr	2229	168.7	175.45	173.34	175.79	0.000992
Sandy Mai	11405.26	50-yr	3931	168.7	178.17	174.73	178.5	0.000636
Sandy Mai	11405.26	100-yr	4945	168.7	180	175.31	180.31	0.00044
Sandy Mai	11405.26	500-yr	8165	168.7	184.39	176.8	184.7	0.000283
Sandy Mai	11350		Mult Open					
Sandy Mai	11303	10-yr	2229	168.66	173.55	173.55	174.85	0.005712
Sandy Mai	11303	50-yr	3931	168.66	175.83	174.8	176.88	0.002965
Sandy Mai	11303	100-yr	4945	168.66	175.65	175.65	177.45	0.00522
Sandy Mai	11303	500-yr	8165	168.66	178.05	177.16	179.75	0.00344
Sandy Mai	10733.77	10-yr	2229	166.86	173.28	170.71	173.34	0.000273
Sandy Mai	10733.77	50-yr	3931	166.86	176.04	172.54	176.13	0.000239
Sandy Mai	10733.77	100-yr	4945	166.86	175.73	171.86	175.79	0.000179
Sandy Mai	10733.77	500-yr	8165	166.86	178.74	172.62	178.79	0.000093
Sandy Mai	10700		Bridge					
Sandy Mai	10661.15	10-yr	2229	166.01	173.27	170.85	173.29	0.000083
Sandy Mai	10661.15	50-yr	3931	166.01	176.04	171.67	176.08	0.000094
Sandy Mai	10661.15	100-yr	4945	166.01	175.72	170.99	175.75	0.000071
Sandy Mai	10661.15	500-yr	8165	166.01	178.74	171.67	178.77	0.000047
Sandy Mai	10118.31	10-yr	2229	165	173.25	168.31	173.26	0.000038
Sandy Mai	10118.31	50-yr	3931	165	176.01	168.85	176.04	0.000042
Sandy Mai	10118.31	100-yr	4945	165	175.69	169.13	175.72	0.000051
Sandy Mai	10118.31	500-yr	8165	165	178.72	169.91	178.75	0.000044
Sandy Mai	9744.554	10-yr	2229	163.7	173.07	169.56	173.19	0.000314
Sandy Mai	9744.554	50-yr	3931	163.7	175.99	171.2	176.02	0.000055
Sandy Mai	9744.554	100-yr	4945	163.7	175.67	172.19	175.7	0.000056
Sandy Mai	9744.554	500-yr	8165	163.7	178.7	173.14	178.73	0.000045

Sandy Mai	9685		Bridge					
Sandy Mai	9639.641	10-yr	2229	163	170.63	166.43	170.69	0.000277
Sandy Mai	9639.641	50-yr	3931	163	174.77	167.82	174.85	0.000196
Sandy Mai	9639.641	100-yr	4945	163	175.42	167.68	175.48	0.000153
Sandy Mai	9639.641	500-yr	8165	163	178.52	168.81	178.59	0.000157
Sandy Mai	8975.758	10-yr	2229	161	170.5	165.94	170.55	0.000171
Sandy Mai	8975.758	50-yr	3931	161	174.7	167.31	174.74	0.000113
Sandy Mai	8975.758	100-yr	4945	161	175.37	167.2	175.39	0.000079
Sandy Mai	8975.758	500-yr	8165	161	178.47	168.25	178.5	0.00008
Sandy Mai	8504.5	10-yr	2229	161.39	170.38	164.4	170.46	0.000155
Sandy Mai	8504.5	50-yr	3931	161.39	174.57	165.55	174.67	0.000132
Sandy Mai	8504.5	100-yr	4945	161.39	175.2	166.14	175.32	0.000146
Sandy Mai	8504.5	500-yr	8165	161.39	178.21	167.82	178.4	0.000189
Sandy Mai	8350		Mult Open					
Sandy Mai	8235.939	10-yr	2229	159	169.91	163.74	170.05	0.00019
Sandy Mai	8235.939	50-yr	3931	159	174.12	165.17	174.27	0.000167
Sandy Mai	8235.939	100-yr	4945	159	174.59	165.83	174.8	0.000191
Sandy Mai	8235.939	500-yr	8165	159	177.24	167.73	177.57	0.000258
Sandy Mai	8063.602	10-yr	2229	158.71	169.29	165.28	169.86	0.000837
Sandy Mai	8063.602	50-yr	3931	158.71	174.1	167.71	174.23	0.000151
Sandy Mai	8063.602	100-yr	4945	158.71	174.67	168.67	174.69	0.000033
Sandy Mai	8063.602	500-yr	8165	158.71	177.38	171	177.4	0.000028
Sandy Mai	8000		Bridge					
Sandy Mai	7966.54	10-yr	2229	158.47	167.61		167.76	0.00034
Sandy Mai	7966.54	50-yr	3931	158.47	172.27		172.41	0.000166
Sandy Mai	7966.54	100-yr	4945	158.47	174.57		174.62	0.000079
Sandy Mai	7966.54	500-yr	8165	158.47	177.29		177.34	0.000075
Sandy Mai	7570.986	10-yr	2229	159	167.61		167.64	0.000094
Sandy Mai	7570.986	50-yr	3931	159	172.25		172.33	0.000092
Sandy Mai	7570.986	100-yr	4945	159	174.56		174.59	0.00003
Sandy Mai	7570.986	500-yr	8165	159	177.27		177.32	0.000041
Sandy Mai	7173.807	10-yr	2229	159	167.61	160.89	167.62	0.000016
Sandy Mai	7173.807	50-yr	3931	159	172.22	162.79	172.29	0.000079
Sandy Mai	7173.807	100-yr	4945	159	174.57	161.58	174.58	0.00001
Sandy Mai	7173.807	500-yr	8165	159	177.28	162.31	177.3	0.000015

Sandy Mai	6825.559	10-yr	2229	156	167.24	161.88	167.52	0.000445
Sandy Mai	6825.559	50-yr	3931	156	171.98	164.31	172.21	0.000229
Sandy Mai	6825.559	100-yr	4945	156	174.29	165.23	174.51	0.000182
Sandy Mai	6825.559	500-yr	8165	156	176.96	168.06	177.22	0.000196
Sandy Mai	6765		Bridge					
Sandy Mai	6709.658	10-yr	2229	156	166.85	162.89	167.33	0.000774
Sandy Mai	6709.658	50-yr	3931	156	171.66	166.25	171.96	0.000335
Sandy Mai	6709.658	100-yr	4945	156	173.95	167	174.23	0.000256
Sandy Mai	6709.658	500-yr	8165	156	176.4	168.83	176.7	0.000251
Sandy Mai	6668.16	10-yr	2229	156.01	166.98	161.39	167.16	0.000258
Sandy Mai	6668.16	50-yr	3931	156.01	171.69	163.14	171.9	0.000183
Sandy Mai	6668.16	100-yr	4945	156.01	174.06	163.85	174.11	0.000048
Sandy Mai	6668.16	500-yr	8165	156.01	176.5	165.78	176.58	0.000068
Sandy Mai	6600		Bridge					
Sandy Mai	6572.639	10-yr	2229	156	166.72	161.78	166.93	0.000306
Sandy Mai	6572.639	50-yr	3931	156	170.92	163.21	171.2	0.000246
Sandy Mai	6572.639	100-yr	4945	156	172.83	163.93	172.87	0.000043
Sandy Mai	6572.639	500-yr	8165	156	175.73	165.92	175.79	0.000055
Sandy Mai	6414.98	10-yr	2229	157	166.64	161.46	166.87	0.000367
Sandy Mai	6414.98	50-yr	3931	157	170.86	163.1	171.16	0.000309
Sandy Mai	6414.98	100-yr	4945	157	172.44	163.92	172.77	0.000308
Sandy Mai	6414.98	500-yr	8165	157	174.98	166.12	175.6	0.000488
Sandy Mai	6300		Mult Open					
Sandy Mai	6189.177	10-yr	2229	155	165.53	161.11	165.97	0.00067
Sandy Mai	6189.177	50-yr	3931	155	168.77	163.17	169.53	0.000816
Sandy Mai	6189.177	100-yr	4945	155	168.84	164.39	169.8	0.001088
Sandy Mai	6189.177	500-yr	8165	155	170.92	166.97	172.48	0.001579
Sandy Mai	5508.105	10-yr	4460	154	165.06	163.33	165.44	0.000756
Sandy Mai	5508.105	50-yr	7709	154	168.69	164.39	169	0.000349
Sandy Mai	5508.105	100-yr	9741	154	169.17	164.93	169.24	0.0001
Sandy Mai	5508.105	500-yr	16941	154	171.54	166.6	171.63	0.000091
Sandy Mai	5084.678	10-yr	4460	154	164.37	163.63	165.01	0.001115
Sandy Mai	5084.678	50-yr	7709	154	168.56	164.75	168.85	0.000304
Sandy Mai	5084.678	100-yr	9741	154	168.99	164.91	169.16	0.00026
Sandy Mai	5084.678	500-yr	16941	154	171.52	166.51	171.58	0.000099
Sandy Mai	5065.378	10-yr	4460	154.25	163.65	163.65	164.92	0.002256

Sandy Mai	5065.378	50-yr	7709	154.25	168.45	164.88	168.83	0.00042
Sandy Mai	5065.378	100-yr	9741	154.25	168.95	165.49	169.15	0.000237
Sandy Mai	5065.378	500-yr	16941	154.25	171.32	166.74	171.56	0.000217
Sandy Mai	5039.878	10-yr	4460	154.25	163.94	161.57	164.43	0.001034
Sandy Mai	5039.878	50-yr	7709	154.25	168.36	164.52	168.79	0.000464
Sandy Mai	5039.878	100-yr	9741	154.25	169.04	164.69	169.1	0.000088
Sandy Mai	5039.878	500-yr	16941	154.25	171.44	165.66	171.49	0.000066
Sandy Mai	4865.578	10-yr	4460	154.25	164.08	158.85	164.14	0.000098
Sandy Mai	4865.578	50-yr	7709	154.25	168.24	160.38	168.52	0.000254
Sandy Mai	4865.578	100-yr	9741	154.25	169	162	169.05	0.000039
Sandy Mai	4865.578	500-yr	16941	154.25	171.41	163.02	171.46	0.000036
Sandy Mai	4790.088	10-yr	4460	154	163.63	160.57	164.08	0.000856
Sandy Mai	4790.088	50-yr	7709	154	167.42	162.34	168.41	0.001048
Sandy Mai	4790.088	100-yr	9741	154	168.31	162.97	168.98	0.000823
Sandy Mai	4790.088	500-yr	16941	154	171.34	165.32	171.44	0.000198
Sandy Mai	4777.088	10-yr	4460	154.25	163.74	159.78	163.96	0.000396
Sandy Mai	4777.088	50-yr	7709	154.25	167.54	162.02	168.26	0.000721
Sandy Mai	4777.088	100-yr	9741	154.25	168.46	161.62	168.82	0.000323
Sandy Mai	4777.088	500-yr	16941	154.25	171.37	163.63	171.41	0.000041
Sandy Mai	4740		Bridge					
Sandy Mai	4685.592	10-yr	4460	154	161.51	160.67	162.91	0.003319
Sandy Mai	4685.592	50-yr	7709	154	163.5	162.56	165.59	0.003736
Sandy Mai	4685.592	100-yr	9741	154	163.53	163.53	166.72	0.005758
Sandy Mai	4685.592	500-yr	16941	154	167.22	165.4	167.45	0.000669
Sandy Mai	4327.181	10-yr	4460	152	161.72		161.86	0.000618
Sandy Mai	4327.181	50-yr	7709	152	164		164.18	0.000657
Sandy Mai	4327.181	100-yr	9741	152	164.33		164.57	0.00088
Sandy Mai	4327.181	500-yr	16941	152	166.74		167.12	0.001149
Sandy Mai	3964.325	10-yr	4460	152	161.44		161.64	0.000593
Sandy Mai	3964.325	50-yr	7709	152	163.5		163.89	0.000883
Sandy Mai	3964.325	100-yr	9741	152	163.8		164.22	0.001012
Sandy Mai	3964.325	500-yr	16941	152	165.93		166.63	0.00145
Sandy Mai	3515.389	10-yr	4460	150.35	161.31		161.42	0.000323
Sandy Mai	3515.389	50-yr	7709	150.35	163.32		163.55	0.00052
Sandy Mai	3515.389	100-yr	9741	150.35	163.59		163.83	0.000607
Sandy Mai	3515.389	500-yr	16941	150.35	165.62		166.04	0.000933
Sandy Mai	3004.364	10-yr	4460	150	161.13	156.74	161.25	0.000333

Sandy Mai	3004.364	50-yr	7709	150	163.05	158.49	163.28	0.000506
Sandy Mai	3004.364	100-yr	9741	150	163.31	159.11	163.53	0.000532
Sandy Mai	3004.364	500-yr	16941	150	165.28	160.9	165.6	0.000675
Sandy Mai	2590.359	10-yr	4460	150	161.01	156.02	161.12	0.000321
Sandy Mai	2590.359	50-yr	7709	150	162.8	158.26	163.07	0.000566
Sandy Mai	2590.359	100-yr	9741	150	163.09	159.46	163.31	0.000595
Sandy Mai	2590.359	500-yr	16941	150	164.89	160.34	165.29	0.000897
Sandy Mai	2500		Bridge					
Sandy Mai	2417.391	10-yr	4460	150	156.86	156.09	157.19	0.001199
Sandy Mai	2417.391	50-yr	7709	150	158.67	157.37	159.5	0.00185
Sandy Mai	2417.391	100-yr	9741	150	158.77	157.19	159.18	0.001111
Sandy Mai	2417.391	500-yr	16941	150	160.54	158.25	161.11	0.001152
Sandy Mai	2072.963	10-yr	4460	148.51	156.52	155.33	156.79	0.000876
Sandy Mai	2072.963	50-yr	7709	148.51	158.39	156.42	158.83	0.000977
Sandy Mai	2072.963	100-yr	9741	148.51	158.41	156.55	158.78	0.000992
Sandy Mai	2072.963	500-yr	16941	148.51	160.16	157.76	160.66	0.001106
Sandy Mai	1688.606	10-yr	4460	149	156.13		156.38	0.001261
Sandy Mai	1688.606	50-yr	7709	149	157.81		158.31	0.001836
Sandy Mai	1688.606	100-yr	9741	149	157.76		158.22	0.002047
Sandy Mai	1688.606	500-yr	16941	149	159.26		159.99	0.002695
Sandy Mai	1299.523	10-yr	4460	149	155.78	153.98	155.94	0.000957
Sandy Mai	1299.523	50-yr	7709	149	157.43	154.96	157.69	0.001137
Sandy Mai	1299.523	100-yr	9741	149	157.31	155.39	157.55	0.001265
Sandy Mai	1299.523	500-yr	16941	149	158.74	156.48	159.1	0.001574
Sandy Mai	663.061	10-yr	4460	146.71	154.93	154.26	155.22	0.001291
Sandy Mai	663.061	50-yr	7709	146.71	156.57	155.04	156.92	0.00131
Sandy Mai	663.061	100-yr	9741	146.71	156.25	155.37	156.62	0.001678
Sandy Mai	663.061	500-yr	16941	146.71	157.48	156.22	157.97	0.002025
Sandy Mai	143.571	10-yr	4460	147	153.67	153.67	154.18	0.003578
Sandy Mai	143.571	50-yr	7709	147	154.71	154.71	155.68	0.005308
Sandy Mai	143.571	100-yr	9741	147	154.39	154.39	155.16	0.005715
Sandy Mai	143.571	500-yr	16941	147	155.1	155.1	156.16	0.007386

Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)	Froude # Chl
7.49	94.36	59.2	0.96
9.61	131.03	79.45	1.09
7.27	269.56	213.05	0.71
8.22	401.5	255.16	0.75
8.63	111.13	65.57	0.81
11.41	126.47	38.69	0.94
10.71	188.05	78.47	0.88
12.03	287.03	110.85	0.89
8.22	105.82	62.51	0.82
8.45	199.07	110	0.74
8.71	260.8	160.34	0.73
9.44	394.88	228.02	0.74
4.77	212.18	88.04	0.33
5.88	293.43	86	0.38
7.43	316.67	126.74	0.48
11.11	341.69	135.81	0.71
10.45	75.19	29.94	0.94
10.8	150.12	65.39	0.8
11.2	197.39	97.83	0.79
12.05	354.77	119.2	0.77
6.68	185.54	107.36	0.65
8.01	258.6	94.41	0.68
8.63	341.73	225.59	0.73
9.06	563.19	256.56	0.7
4.44	197.74	107.09	0.31
4.43	265.33	84.3	0.28
5.14	348.92	170.35	0.33
5.92	471.82	206.19	0.37
3.05	351.74	155.66	0.22
4.03	352.92	70	0.26
3.78	573.36	191.04	0.25
4.42	748.43	216.41	0.27
2.95	390.76	168.21	0.19

4.18	366.23	64	0.25
3.92	597.14	183.71	0.23
4.86	749.43	206.1	0.28
4.42	184.47	63.11	0.3
6.75	181.31	31.16	0.43
7.18	238.66	78.23	0.46
9.87	289.31	117.01	0.61
1.42	797.39	227.26	0.08
2.16	735.14	121	0.11
2.36	1010.37	269.78	0.12
3.1	1193.42	283.92	0.15
8.48	95.49	35.82	0.76
11.39	136.65	72	0.92
11.11	227.51	106.32	0.82
10.31	702.29	348.64	0.66
9.71	87.4	134.02	1
11.06	147.56	49.6	0.95
8.23	319.8	245.02	0.72
9.71	430.86	334.41	0.8
5.04	167.75	255.6	0.46
6.76	206.96	53	0.53
3.44	645.18	313.51	0.29
4.31	847.03	356.94	0.34
1.53	761.08	317.15	0.11
2.45	649.77	134.95	0.16
2.54	944.7	332.83	0.17
3.33	1108.58	335.07	0.22
3.11	522.14	244.3	0.19
4.01	569.09	115	0.23
4.32	855.67	307.5	0.25
5.18	1143.82	332.06	0.28
3.38	337.91	126.5	0.22
4.91	358.53	72.29	0.3

5.42	485.04	173.15	0.33
7.35	604.39	213.62	0.43
3.9	239.56	100.73	0.27
5.83	254.79	68.21	0.38
6.78	296.71	106.03	0.45
9.62	333.78	111.03	0.63
3.4	445.88	301.84	0.23
4.63	493.7	165	0.3
5.76	603.07	341.2	0.38
8.2	686.27	348.36	0.53
9.54	79.46	33.49	0.96
8.84	210.81	123	0.71
9.09	276.91	145.5	0.69
10.41	415.41	203.81	0.73
6.71	176.15	106.33	0.71
7.03	273.37	93	0.63
7.21	354.62	122.97	0.62
8.54	479.28	134.48	0.66
9.27	109.93	53.35	0.85
11.31	154.85	50	0.92
11.85	200.51	80.2	0.92
12.1	379.89	159.01	0.83
5.71	264.54	151.44	0.54
7.41	262.26	65	0.61
7.81	450.89	233.39	0.65
7.51	755.15	295.42	0.55
6.9	184.19	142.81	0.61
8.01	206.56	71	0.63
5.41	427.97	164.81	0.4
4.51	788.08	266.65	0.3
6.14	192.18	137.91	0.57
5.95	303.01	80	0.45
3.98	683.09	181.75	0.27
4.39	1021.08	214.09	0.27

5.22	132.02	26.48	0.41
6.6	179.26	29.48	0.45
6.89	218.55	199.72	0.43
8.79	386.12	387.92	0.52
4.9	140.52	29.07	0.39
6.4	182.79	29.72	0.45
8.02	181.22	92.09	0.57
10.85	217.84	217.06	0.72
9.85	343.57	145.65	0.71
11.68	417.58	90	0.76
12.81	563.35	166.15	0.83
14.46	793.83	222.26	0.87
11.89	264.68	124.75	1.06
11.64	393.31	85	0.85
12.91	529.12	194.64	0.97
15.93	701.83	234.34	1.12
5	418.13	163.89	0.34
5.32	638.83	120	0.31
5.23	972.04	458.55	0.3
6.87	1226.84	489.79	0.39
9.29	182.23	47.59	0.72
13.86	212.77	46.37	0.98
10.04	591.03	421.6	0.64
9.76	1102.58	509.34	0.58
7.95	264.91	148.55	0.59
6.72	477.38	107.88	0.42
6.72	902.7	440.06	0.42
7.25	1373.78	514.89	0.43
5.09	337.72	265.09	0.32
4.06	991.21	230	0.22
4.5	1543.51	567.52	0.25
5.15	2092.63	592.08	0.27
8.59	212.47	64.27	0.68
9.01	468.88	165	0.59
10.04	614.1	288.22	0.66

9.07	1335.71	474.83	0.53
6.65	441.41	144.67	0.47
8.12	606.56	101.32	0.5
8.49	819.68	206.96	0.52
8.53	1525.79	434.51	0.46
7.95	557.22	198.08	0.5
10.25	637.16	103.47	0.58
10.06	1016.05	236.6	0.56
11.21	1569.22	355.08	0.57
4.84	1008.91	299.91	0.3
5.7	1125.47	181.2	0.32
6.1	1700.79	328.48	0.34
7.27	2334.8	367.41	0.37
5.62	1198.25	346.21	0.37
7.08	1353.36	175.43	0.42
7.22	2059.87	417.46	0.42
8.26	2840.64	438.8	0.44
1.7	1530.66	267.5	0.1
2.51	1661.35	207.27	0.14
2.59	2079.12	283.49	0.14
3.34	2615.56	332.34	0.17
1.65	1467.28	264.78	0.09
2.39	1560.56	195.31	0.12
2.38	1967.74	295.77	0.12
2.91	2465.38	336.77	0.14
1.77	1680.95	391.31	0.1
2.38	1925.89	268.39	0.13
2.72	2341.01	499.76	0.14
3.4	3007.49	555.03	0.17
5.66	478.63	165.22	0.41
4.8	965.2	204	0.29
5.45	1154.15	326.79	0.32
5.16	1890.94	522.79	0.27
12.2	205.83	59.81	0.92
14.41	293.98	55	0.94
14.69	392.24	85	0.91

17.15	563.85	103.35	0.96
5.83	371.03	83.37	0.44
7.58	486.37	80	0.51
9.6	503.92	105.27	0.65
13.64	593.95	122.31	0.87
5.32	707.23	252.37	0.35
7.36	722.48	142.91	0.44
6.77	1216.22	319.22	0.4
7.87	1725.16	368.69	0.43
3.69	865.48	375.63	0.25
3.79	1123.74	240.56	0.24
3.78	1621.3	456.14	0.23
3.95	2333.1	497.64	0.22
3.46	934.93	300.33	0.24
3.62	1393.12	261.1	0.22
4.14	1584.43	370.79	0.25
4.66	2323.13	553.75	0.26
2.16	1387.77	442.29	0.16
2.41	1939.29	345.59	0.15
2.64	2374.58	515.64	0.17
3.04	3277.04	613.02	0.18
2.1	1381.65	386.17	0.14
2.64	1794.27	280	0.16
2.78	2231.78	525.56	0.17
3.22	3049.49	567.35	0.18
1.37	1988.76	492.83	0.08
1.88	2365.6	305	0.1
1.97	2917.95	574.1	0.11
2.4	3756.99	608.65	0.12
1.74	1501.53	535.66	0.11
2.65	1604.82	219	0.15
2.78	2023.71	620.51	0.16
3.66	2489.27	690.56	0.2
10.68	211.51	212.86	0.98
10.18	478.09	164.48	0.82
9.79	716.07	302.76	0.78

10.72	1034.22	311.05	0.78
2.33	1476.49	388.6	0.15
3.56	1474.02	249.7	0.21
3.61	2040.78	424.17	0.21
4.75	2577.65	475.74	0.26
1.75	2112.72	591.13	0.11
2.21	2437.11	408.07	0.12
2.71	2994.98	689.67	0.15
3.4	3882.33	765.49	0.18
1.88	2070.3	647.46	0.11
2.61	2173.7	408.07	0.15
2.6	3144.64	726.19	0.14
3.19	4064.29	777.61	0.17
2.22	1477.27	377.85	0.14
3.26	1436.95	225.16	0.19
3.54	2096.92	484.39	0.2
4.64	2728.01	608.15	0.25
2.1	1690.81	422.84	0.12
2.81	1894.89	302.99	0.15
3.36	2380.36	519.68	0.18
4.32	3002.54	573.09	0.22
11.32	200.94	53.15	0.97
12.69	350.92	99.73	0.89
11.06	623.69	230.74	0.7
12.05	1041.21	315.69	0.7
3.76	783.48	283.69	0.32
4.76	954.7	200.04	0.35
4.75	1339.8	326.31	0.34
5.7	1803.94	345.22	0.37
2.97	964.96	334.1	0.25
3.93	1141.22	234.56	0.29
3.81	1607.5	363.76	0.27
4.71	2122.85	385.81	0.3
2.84	1144.15	374.37	0.21

3.67	1344.15	256.86	0.24
3.65	1892.31	432.95	0.23
4.45	2511.86	466.32	0.26
2.05	1533.85	421.73	0.14
2.83	1693.96	289.16	0.18
2.87	2358.81	476.14	0.18
3.61	3036.38	506.2	0.21
5.67	547.38	217.38	0.33
6.99	842.14	246.8	0.38
8.08	969.34	319.24	0.44
9.58	1374.98	362.29	0.49
7.86	334.6	176.44	0.57
10.7	438.67	118.25	0.71
10.63	647.53	225.96	0.68
12.42	936.21	260.35	0.74
8.68	375.24	205.78	0.66
11.29	451.69	135	0.79
10.97	668.06	253.71	0.75
12.83	921.11	277.91	0.82
7.91	484.57	404.33	0.76
11.47	446.77	142.44	0.92
7.69	968.54	418.7	0.64
7.9	1459.9	446.65	0.58
4.51	705.7	319.51	0.4
7.47	604.02	133.58	0.57
5.83	1170.51	369.25	0.45
6.93	1610.9	411.4	0.48
8.52	355.62	245.53	0.97
9.04	487.4	152.86	0.83
10.46	623.7	284.19	1
11.52	992.48	399.55	0.96
3.21	760.43	402.77	0.38
4.78	846.66	235	0.44
4.25	1299.29	446.17	0.4
4.97	1910.05	505.36	0.4
3.96	565.15	334	0.53

5.26	728.59	209.96	0.52
5.02	1044.56	374.26	0.5
5.56	1614.94	418.06	0.46
3.66	761.67	320.46	0.33
4.6	929.73	212.51	0.35
5	1212.63	358.38	0.39
5.47	1804.43	398.1	0.37
8.53	466.16	282.71	0.75
9.21	583.58	169.87	0.69
8.43	971.26	330.62	0.62
7.54	1758.43	400.95	0.48
5.74	1074.19	398.2	0.4
7.16	1295.96	220	0.42
6.57	2166	447.68	0.39
7.49	3185.79	508.57	0.4
8.75	640.31	284.16	0.59
11.38	782.98	162.02	0.68
11.74	1303.02	377.54	0.7
12.16	2543.2	570.53	0.64
9.65	545.11	223.28	0.72
11.24	660.57	133.77	0.72
10.87	1171.86	319.13	0.69
9.24	2329.86	426.72	0.49
4.16	869.73	253.59	0.27
5.91	906.35	147.96	0.35
6.02	1458.37	346.75	0.35
4.99	2907.33	472.12	0.25
3.15	947.44	295.56	0.22
4.37	1108.95	199.27	0.27
4.39	1508.72	311.02	0.27
3.99	3190.87	501.57	0.2
1.48	2209.42	495.39	0.09
2.21	2359.59	326	0.12
2.38	3027.32	576.27	0.13
2.4	5008.62	714.46	0.11
6.87	822.84	268.43	0.5

9.12	1123.23	315	0.57
6.9	2397.8	530.73	0.39
6.11	4755.31	799.09	0.29
7.21	969.3	344.45	0.55
7.31	1548.9	270	0.46
6.36	2676.41	470.82	0.36
5.95	4990.65	596.95	0.28
4.6	1534	430.79	0.36
5.66	1906.78	280	0.37
4.52	3708.92	584.23	0.26
4.39	6575.09	703.69	0.21
5.17	520.5	167.74	0.37
5.3	912.53	186.77	0.32
5	1201.14	463.11	0.27
5.06	1898.5	842.16	0.23
10.06	270.8	102.48	0.84
9.54	533.79	132.22	0.65
12.44	510.5	136.57	0.85
12.41	848.97	327.21	0.73
2.76	1207.27	453.8	0.19
3.3	1746.15	363.21	0.19
2.79	2640.11	652.68	0.17
2.45	4751.8	749.32	0.13
1.6	2092.71	633.38	0.11
2.14	2481.81	410	0.12
1.82	3788.1	728.99	0.11
1.8	6250.8	930.59	0.09
1.23	2537.31	562.36	0.08
1.56	2980.77	350	0.08
1.69	4015.08	638.97	0.09
1.87	6114.01	755.03	0.09
3.6	1015.45	617.34	0.22
1.84	2943.74	415.49	0.1
1.82	4128.32	711.66	0.1
1.91	6427.84	808.13	0.09

2.96	2132.64	549.52	0.2
3.41	3300.69	415.15	0.18
3.13	5237.11	700.37	0.16
3.72	7546.53	790.9	0.17
2.79	2774.45	763.41	0.16
2.91	4637.08	500	0.14
2.52	7978.36	996.85	0.12
2.89	11254.44	1098.63	0.12
2.65	1025.7	942.05	0.16
3.17	1740.22	323	0.15
3.44	2120.41	1190.86	0.16
4.46	2809.35	1269.81	0.19
3.29	750.42	316.41	0.18
3.86	1303.21	153.75	0.18
4.21	1428.63	549.63	0.19
5.44	1848.22	629.3	0.23
6.61	389.87	450.64	0.37
3.64	1520.88	180	0.17
1.73	5103.95	840.34	0.08
1.77	7418.09	866.16	0.07
3.87	749.58	133.53	0.23
3.59	1350.42	130	0.17
2.75	3323.49	628.01	0.12
2.99	5068.64	671.97	0.12
1.98	1504.24	285.83	0.12
2.63	1742.29	150	0.13
1.67	3694.85	331.13	0.08
2.17	4607.49	347.54	0.09
0.84	2915.89	391.31	0.05
2.47	1845.14	150	0.12
0.95	5762.49	429.54	0.04
1.34	7036.71	491.98	0.06

5.09	605.42	135.52	0.27
4.64	1133.62	113	0.21
4.54	1410.63	257.92	0.19
5.16	2187.21	296.37	0.2
6.23	480.13	158.05	0.35
5.32	985.76	109.5	0.24
5.12	1249.98	328.38	0.22
5.55	2034.72	367.02	0.22
3.76	691.46	302.58	0.21
4.07	1108.32	160	0.18
2.29	3003.66	441.23	0.1
2.99	3764.73	481.55	0.12
4.03	623.48	254.76	0.22
4.55	943.28	178	0.21
2.07	3262.27	401.86	0.09
2.6	4289.76	469.17	0.1
4.25	706.76	101.68	0.24
4.97	1144.09	115.05	0.24
5.34	1332.97	455.25	0.24
7.45	1853.08	662.08	0.31
6.01	746.57	121.29	0.33
7.96	950.62	92	0.38
9.23	1172.02	135.4	0.44
12.23	1545.11	201.77	0.54
6.58	1239.41	542.24	0.35
5.42	2207	261.05	0.25
2.97	5046.48	1201.96	0.14
3.13	7803.56	1223.66	0.13
7.55	866.05	727.14	0.42
4.98	1894.31	254.84	0.23
4.7	3311.86	1273.17	0.22
3.22	10353.39	1375.85	0.14
9.84	614.87	416.02	0.59

5.68	1589.12	207	0.27
4.37	2753.27	909.29	0.21
4.63	5477.13	1089.46	0.2
6.78	1040.29	677.72	0.4
5.92	1489.8	180.84	0.28
2.66	5242.55	1545.33	0.12
2.56	10245.94	1621.87	0.11
2.09	2501.09	780.53	0.12
4.09	1846.6	153	0.2
1.77	5416.69	1329.19	0.08
1.89	11352.32	1412.24	0.08
6.21	1732.57	613.74	0.36
8.68	1452.2	134.8	0.43
8.04	3292.41	1243.46	0.38
4.51	10300.5	1389.97	0.19
3.97	1202.42	921.65	0.24
6.83	1161.82	104.47	0.34
4.8	2065.77	1396.13	0.23
1.95	13261.87	1496.16	0.09
10.33	752.2	805.22	0.69
12.98	1112.02	180	0.77
16.15	1117.2	835.28	0.95
6.93	7975.47	892.37	0.34
4.76	2621.76	538.59	0.28
5.68	3724.24	520	0.3
6.71	4077.84	570.03	0.34
8.66	5488.75	600.93	0.41
5.1	2596.87	473.75	0.3
7.17	2937.87	355.74	0.38
7.81	3760.85	523.01	0.41
10.51	4906	557.93	0.51
4.23	3689.13	621.26	0.23
6.04	3986.24	448.04	0.3
6.61	5172.71	673.96	0.33
9.05	6581.32	715.88	0.41
4.31	3193.54	640.98	0.23

5.95	3506.58	443.91	0.3
6.18	4722.14	740.33	0.31
7.67	6237.8	816.8	0.35
3.54	2128.25	467.74	0.19
5.22	2135.64	240	0.26
5.43	3180.76	537.82	0.27
7.3	4168.66	549.94	0.34
6.12	1188.15	454.78	0.41
8.9	1158	227	0.54
6.95	2072.37	472.71	0.42
8.01	2957.36	569.09	0.44
5.6	1311.77	451.38	0.36
6.85	1584.53	300	0.39
6.92	2305.71	566.67	0.4
8.18	3396.86	658.94	0.43
6.41	1992.36	529.6	0.43
8.92	2237.61	375.23	0.53
9.38	2891.07	578.51	0.56
11.97	3773.33	598.89	0.66
5.43	2450.25	817.13	0.37
6.85	2990.57	535.19	0.42
7.16	3751.53	869.08	0.44
8.89	5043.04	948.79	0.5
6.89	1960.1	846.23	0.44
7.91	2619.33	574.04	0.46
8.74	3177.81	958.44	0.51
10.46	4405.93	1064.14	0.58
10.07	1787.91	1050.67	0.71
13.57	1554.51	523.43	0.88
13.67	2556.32	1099.1	0.91
16.56	3345.28	1259.04	1.05

Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Crit W.S. (ft)	E.G. Elev (ft)	E.G. Slope (ft/ft)
Sandy Mai	38835.32	10-yr	689	335	337.86	337.86	338.72	0.009987
Sandy Mai	38835.32	50-yr	1169	335	338.94	338.94	339.6	0.004684
Sandy Mai	38835.32	100-yr	1443	335	339.2	339.2	339.87	0.004571
Sandy Mai	38835.32	500-yr	2290	335	339.75	339.75	340.52	0.004731
Sandy Mai	38353.13	10-yr	689	327	331.57	331.57	332.39	0.005963
Sandy Mai	38353.13	50-yr	1169	327	332.31	332.31	333.33	0.006199
Sandy Mai	38353.13	100-yr	1443	327	332.64	332.64	333.79	0.006468
Sandy Mai	38353.13	500-yr	2290	327	333.69	333.69	334.99	0.006198
Sandy Mai	37880.8	10-yr	689	319	323.52	323.52	324.37	0.006525
Sandy Mai	37880.8	50-yr	1169	319	324.58	324.58	325.27	0.004408
Sandy Mai	37880.8	100-yr	1443	319	324.83	324.83	325.57	0.004579
Sandy Mai	37880.8	500-yr	2290	319	325.5	325.5	326.29	0.004461
Sandy Mai	37489.56	10-yr	689	311.79	319.52	316.72	319.8	0.000908
Sandy Mai	37489.56	50-yr	1169	311.79	320.23	318.42	320.72	0.001483
Sandy Mai	37489.56	100-yr	1443	311.79	320.49	319	321.1	0.001831
Sandy Mai	37489.56	500-yr	2290	311.79	320.68	320.68	322.01	0.00396
Sandy Mai	37270		Culvert					
Sandy Mai	37056.92	10-yr	689	306.66	311.36	311.36	312.99	0.008131
Sandy Mai	37056.92	50-yr	1169	306.66	313.14	313.14	314.73	0.005263
Sandy Mai	37056.92	100-yr	1443	306.66	313.8	313.8	315.39	0.004856
Sandy Mai	37056.92	500-yr	2290	306.66	315.13	315.13	316.68	0.004359
Sandy Mai	36678.73	10-yr	689	301	304.8	304.3	305.21	0.003799
Sandy Mai	36678.73	50-yr	1169	301	305.59	305	306.17	0.004397
Sandy Mai	36678.73	100-yr	1443	301	305.92	304.94	306.51	0.004274
Sandy Mai	36678.73	500-yr	2290	301	306.72	306.32	307.25	0.003772
Sandy Mai	36275.49	10-yr	689	296.1	303.64	301.61	303.88	0.002586
Sandy Mai	36275.49	50-yr	1169	296.1	304.42	303.44	304.69	0.002525
Sandy Mai	36275.49	100-yr	1443	296.1	304.65	303.83	304.99	0.002853
Sandy Mai	36275.49	500-yr	2290	296.1	305.3	304.46	305.78	0.003373
Sandy Mai	36000		Culvert					
Sandy Mai	35791.32	10-yr	689	286.09	293.04		293.12	0.00128
Sandy Mai	35791.32	50-yr	1169	286.09	293.92		294.03	0.001469
Sandy Mai	35791.32	100-yr	1443	286.09	294.29		294.41	0.001521
Sandy Mai	35791.32	500-yr	2290	286.09	295.17		295.34	0.001786
Sandy Mai	35582.96	10-yr	689	285	292.83	288.97	292.92	0.00072

Sandy Mai	35582.96	50-yr	1169	285	293.66	290.19	293.77	0.000927
Sandy Mai	35582.96	100-yr	1443	285	294	290.8	294.13	0.001052
Sandy Mai	35582.96	500-yr	2290	285	294.79	292.54	294.99	0.001437
Sandy Mai	35513		Culvert					
Sandy Mai	35420.3	10-yr	689	283	290.25		290.51	0.002031
Sandy Mai	35420.3	50-yr	1169	283	290.79		291.3	0.003678
Sandy Mai	35420.3	100-yr	1443	283	291.04		291.69	0.004615
Sandy Mai	35420.3	500-yr	2290	283	291.55	291.18	292.72	0.007987
Sandy Mai	35237.49	10-yr	689	279.02	290.31	283.38	290.33	0.000135
Sandy Mai	35237.49	50-yr	1169	279.02	290.91	285.03	290.94	0.000251
Sandy Mai	35237.49	100-yr	1443	279.02	291.19	285.86	291.23	0.000337
Sandy Mai	35237.49	500-yr	2290	279.02	291.85	288.11	291.92	0.000542
Sandy Mai	34267		Culvert					
Sandy Mai	33297.82	10-yr	689	253	257.22	256.67	258.31	0.005089
Sandy Mai	33297.82	50-yr	1169	253	257.94	257.94	260.07	0.008019
Sandy Mai	33297.82	100-yr	1443	253	259.06	259.06	260.79	0.005174
Sandy Mai	33297.82	500-yr	2290	253	260.91	260.91	262.07	0.003058
Sandy Mai	32874.91	10-yr	689	251	254	254	255.38	0.009335
Sandy Mai	32874.91	50-yr	1169	251	254.92	254.91	255.5	0.004085
Sandy Mai	32874.91	100-yr	1443	251	255.13	255.13	255.76	0.004336
Sandy Mai	32874.91	500-yr	2290	251	255.62	255.62	256.41	0.005191
Sandy Mai	32432.32	10-yr	689	249	252.8	251.63	253.11	0.001774
Sandy Mai	32432.32	50-yr	1169	249	253.21	252.44	253.87	0.003324
Sandy Mai	32432.32	100-yr	1443	249	253.53	252.93	253.63	0.000652
Sandy Mai	32432.32	500-yr	2290	249	254.13	253.45	254.27	0.000865
Sandy Mai	32009.44	10-yr	689	246	252.74	249.48	252.75	0.000231
Sandy Mai	32009.44	50-yr	1169	246	253.11	250.64	253.15	0.000457
Sandy Mai	32009.44	100-yr	1443	246	253.3	251.24	253.35	0.00057
Sandy Mai	32009.44	500-yr	2290	246	253.79	252	253.87	0.000893
Sandy Mai	31828		Culvert					
Sandy Mai	31647.46	10-yr	689	239	247.63	243.29	247.72	0.000249
Sandy Mai	31647.46	50-yr	1169	239	248.46	244.52	248.59	0.000354
Sandy Mai	31647.46	100-yr	1443	239	248.85	246.31	248.99	0.0004
Sandy Mai	31647.46	500-yr	2290	239	249.74	247.57	249.92	0.000509
Sandy Mai	31476.58	10-yr	689	240	247.51	243.38	247.65	0.000425
Sandy Mai	31476.58	50-yr	1169	240	248.21	244.8	248.46	0.000745

Sandy Mai	31476.58	100-yr	1443	240	248.52	246.29	248.83	0.000921
Sandy Mai	31476.58	500-yr	2290	240	249.12	247.55	249.67	0.001544
Sandy Mai	31435		Culvert					
Sandy Mai	31392.94	10-yr	689	239.99	246.59		246.78	0.001781
Sandy Mai	31392.94	50-yr	1169	239.99	246.94		247.36	0.003749
Sandy Mai	31392.94	100-yr	1443	239.99	247.14		247.69	0.004807
Sandy Mai	31392.94	500-yr	2290	239.99	247.48		248.55	0.009096
Sandy Mai	31259.8	10-yr	689	239	246.53	243.1	246.66	0.000396
Sandy Mai	31259.8	50-yr	1169	239	246.84	244.44	247.09	0.000815
Sandy Mai	31259.8	100-yr	1443	239	247.02	245.08	247.34	0.00103
Sandy Mai	31259.8	500-yr	2290	239	247.26	246.95	247.87	0.001995
Sandy Mai	31220		Culvert					
Sandy Mai	31182.62	10-yr	689	239	242.91	242.91	244.28	0.008638
Sandy Mai	31182.62	50-yr	1169	239	244.74	244.74	245.76	0.003963
Sandy Mai	31182.62	100-yr	1443	239	245.23	245.23	246.23	0.003704
Sandy Mai	31182.62	500-yr	2290	239	246.1	246.1	247.23	0.003974
Sandy Mai	31033.98	10-yr	689	239	241.91		242.34	0.004705
Sandy Mai	31033.98	50-yr	1169	239	242.88		243.31	0.003551
Sandy Mai	31033.98	100-yr	1443	239	243.39		243.82	0.003069
Sandy Mai	31033.98	500-yr	2290	239	244.37		244.95	0.003269
Sandy Mai	30579.27	10-yr	689	235	238.76	238.76	239.85	0.006151
Sandy Mai	30579.27	50-yr	1169	235	239.79	239.79	241.15	0.006124
Sandy Mai	30579.27	100-yr	1443	235	240.2	240.2	241.76	0.00649
Sandy Mai	30579.27	500-yr	2290	235	241.72	241.72	243.09	0.004795
Sandy Mai	30235.35	10-yr	689	233	236.58	235.47	236.8	0.002513
Sandy Mai	30235.35	50-yr	1169	233	237.24	236.14	237.53	0.002963
Sandy Mai	30235.35	100-yr	1443	233	237.64	236.7	237.99	0.003303
Sandy Mai	30235.35	500-yr	2290	233	238.8	237.48	239.08	0.002254
Sandy Mai	29939.91	10-yr	689	231	235.17		235.53	0.008677
Sandy Mai	29939.91	50-yr	1169	231	235.78		236.16	0.008142
Sandy Mai	29939.91	100-yr	1443	231	236.74		236.95	0.003416
Sandy Mai	29939.91	500-yr	2290	231	238.31		238.46	0.001709
Sandy Mai	29533.61	10-yr	689	229	233.17		233.63	0.002882
Sandy Mai	29533.61	50-yr	1169	229	235.09		235.28	0.000898
Sandy Mai	29533.61	100-yr	1443	229	236.36		236.49	0.00052
Sandy Mai	29533.61	500-yr	2290	229	237.98		238.13	0.000474

Sandy Mai	29203.58	10-yr	689	227	232.44	230.01	232.86	0.001853
Sandy Mai	29203.58	50-yr	1169	227	233.98	231.27	234.69	0.002187
Sandy Mai	29203.58	100-yr	1443	227	235.29	231.92	236.02	0.001789
Sandy Mai	29203.58	500-yr	2290	227	236.44	233.64	237.54	0.002425
Sandy Mai	29175		Culvert					
Sandy Mai	29148	10-yr	689	227	232.24	229.86	232.61	0.00159
Sandy Mai	29148	50-yr	1169	227	233.24	231.04	233.98	0.002535
Sandy Mai	29148	100-yr	1443	227	233.57	231.63	234.56	0.003215
Sandy Mai	29148	500-yr	2290	227	234.57	233.23	236.39	0.004795
Sandy Mai	28902.69	10-yr	1479	225	231.04	230.68	231.83	0.003618
Sandy Mai	28902.69	50-yr	2537	225	231.98	231.83	232.99	0.004433
Sandy Mai	28902.69	100-yr	3146	225	232.43	232.22	233.52	0.004645
Sandy Mai	28902.69	500-yr	5020	225	233.67	233.24	234.92	0.004815
Sandy Mai	28536.39	10-yr	1479	225	228.89	228.89	229.8	0.009407
Sandy Mai	28536.39	50-yr	2537	225	230.04	229.8	230.91	0.007252
Sandy Mai	28536.39	100-yr	3146	225	230.51	230.19	231.41	0.006984
Sandy Mai	28536.39	500-yr	5020	225	231.3	231.16	232.58	0.008892
Sandy Mai	28078.23	10-yr	1479	221	227.99	226	228.27	0.00081
Sandy Mai	28078.23	50-yr	2537	221	229.86	227.51	230.09	0.000552
Sandy Mai	28078.23	100-yr	3146	221	230.3	227.9	230.55	0.0006
Sandy Mai	28078.23	500-yr	5020	221	230.91	229.43	231.33	0.000951
Sandy Mai	27678.42	10-yr	1479	221	226.4	225.67	227.56	0.004046
Sandy Mai	27678.42	50-yr	2537	221	227.65	227.65	229.44	0.004995
Sandy Mai	27678.42	100-yr	3146	221	228.98	228.98	230.03	0.00274
Sandy Mai	27678.42	500-yr	5020	221	230	230	230.74	0.002192
Sandy Mai	27191.04	10-yr	1479	219	225.03	223.98	225.87	0.002713
Sandy Mai	27191.04	50-yr	2537	219	226.85	225.92	227.29	0.001364
Sandy Mai	27191.04	100-yr	3146	219	227.44	226.33	227.83	0.001204
Sandy Mai	27191.04	500-yr	5020	219	228.42	227.44	228.81	0.001201
Sandy Mai	26877.54	10-yr	1479	217	224.9	221.51	225.23	0.000706
Sandy Mai	26877.54	50-yr	2537	217	226.78	223.4	226.94	0.000406
Sandy Mai	26877.54	100-yr	3146	217	227.37	224.02	227.52	0.000379
Sandy Mai	26877.54	500-yr	5020	217	228.32	226.13	228.5	0.000442
Sandy Mai	26835		Bridge					
Sandy Mai	26794.7	10-yr	1479	217	222.39		223.44	0.003559
Sandy Mai	26794.7	50-yr	2537	217	223.78	223.32	225.38	0.004161
Sandy Mai	26794.7	100-yr	3146	217	224.68	224.68	225.83	0.002942

Sandy Mai	26794.7	500-yr	5020	217	226.53		227.23	0.001774
Sandy Mai	26382.38	10-yr	1479	215	221.71	220.22	222.25	0.00159
Sandy Mai	26382.38	50-yr	2537	215	223.18	221.65	223.87	0.001758
Sandy Mai	26382.38	100-yr	3146	215	223.93	222.28	224.66	0.001727
Sandy Mai	26382.38	500-yr	5020	215	225.97	223.82	226.56	0.001308
Sandy Mai	26107.58	10-yr	2016	213	221.05	219.93	221.77	0.001686
Sandy Mai	26107.58	50-yr	3442	213	222.49	221.58	223.35	0.001896
Sandy Mai	26107.58	100-yr	4317	213	223.22	222.14	224.13	0.00195
Sandy Mai	26107.58	500-yr	7013	213	225.11	223.52	226.07	0.001923
Sandy Mai	25737.96	10-yr	2016	213	221.05		221.27	0.000609
Sandy Mai	25737.96	50-yr	3442	213	222.52		222.78	0.000673
Sandy Mai	25737.96	100-yr	4317	213	223.26		223.54	0.000699
Sandy Mai	25737.96	500-yr	7013	213	225.1		225.46	0.000794
Sandy Mai	25309.8	10-yr	2016	213.64	220.73	217.18	220.95	0.000954
Sandy Mai	25309.8	50-yr	3442	213.64	222.13	218.19	222.41	0.001114
Sandy Mai	25309.8	100-yr	4317	213.64	222.88	218.8	223.16	0.001107
Sandy Mai	25309.8	500-yr	7013	213.64	224.71	221.62	225.04	0.001135
Sandy Mai	24900.93	10-yr	2016	212	220.52		220.54	0.000761
Sandy Mai	24900.93	50-yr	3442	212	221.82		221.88	0.001147
Sandy Mai	24900.93	100-yr	4317	212	222.54		222.6	0.001324
Sandy Mai	24900.93	500-yr	7013	212	224.29		224.4	0.001796
Sandy Mai	24402.5	10-yr	2016	210	220.19		220.22	0.000563
Sandy Mai	24402.5	50-yr	3442	210	221.34		221.4	0.000844
Sandy Mai	24402.5	100-yr	4317	210	221.98		222.06	0.000944
Sandy Mai	24402.5	500-yr	7013	210	223.55		223.69	0.001199
Sandy Mai	24129.68	10-yr	2016	210	220.03	214.61	220.06	0.000686
Sandy Mai	24129.68	50-yr	3442	210	221.08	216.03	221.13	0.001134
Sandy Mai	24129.68	100-yr	4317	210	221.69	216.79	221.76	0.001307
Sandy Mai	24129.68	500-yr	7013	210	223.19	218.86	223.29	0.001737
Sandy Mai	24085		Bridge					
Sandy Mai	24042.15	10-yr	2016	210	216.24	214.73	216.62	0.001222
Sandy Mai	24042.15	50-yr	3442	210	218.26	215.93	218.59	0.000823
Sandy Mai	24042.15	100-yr	4317	210	219.29	216.49	219.58	0.000658
Sandy Mai	24042.15	500-yr	7013	210	221.87	217.78	222.12	0.000422
Sandy Mai	23662.23	10-yr	2016	208	213.45	213.45	215.28	0.006326
Sandy Mai	23662.23	50-yr	3442	208	215.23	215.23	217.38	0.005501
Sandy Mai	23662.23	100-yr	4317	208	216.01	216.01	218.39	0.005483

Sandy Mai	23662.23	500-yr	7013	208	217.83	217.83	220.88	0.005694
Sandy Mai	23396.78	10-yr	2016	208	213.34		213.84	0.00149
Sandy Mai	23396.78	50-yr	3442	208	214.35		215.33	0.002364
Sandy Mai	23396.78	100-yr	4317	208	214.79		216.11	0.002934
Sandy Mai	23396.78	500-yr	7013	208	215.58	215.38	218.2	0.005115
Sandy Mai	23076.73	10-yr	2016	206	213.15		213.36	0.001017
Sandy Mai	23076.73	50-yr	3442	206	214.33		214.61	0.001164
Sandy Mai	23076.73	100-yr	4317	206	214.93		215.23	0.001223
Sandy Mai	23076.73	500-yr	7013	206	216.4		216.77	0.001349
Sandy Mai	22719.89	10-yr	2016	206	212.54		212.65	0.005048
Sandy Mai	22719.89	50-yr	3442	206	213.74		213.86	0.004185
Sandy Mai	22719.89	100-yr	4317	206	214.34		214.47	0.00383
Sandy Mai	22719.89	500-yr	7013	206	215.84		216	0.003348
Sandy Mai	22305.19	10-yr	2229	204	210.53	208	210.62	0.004436
Sandy Mai	22305.19	50-yr	3931	204	211.88	209	212.02	0.004368
Sandy Mai	22305.19	100-yr	4945	204	212.52	209.51	212.68	0.004461
Sandy Mai	22305.19	500-yr	8165	204	214.08	210.46	214.3	0.004516
Sandy Mai	21973.79	10-yr	2229	204	209.57		209.62	0.002135
Sandy Mai	21973.79	50-yr	3931	204	210.95		211.01	0.002116
Sandy Mai	21973.79	100-yr	4945	204	211.59		211.67	0.002117
Sandy Mai	21973.79	500-yr	8165	204	213.15		213.25	0.002186
Sandy Mai	21498.81	10-yr	2229	202	208.7		208.75	0.001591
Sandy Mai	21498.81	50-yr	3931	202	209.97		210.05	0.001938
Sandy Mai	21498.81	100-yr	4945	202	210.6		210.68	0.001993
Sandy Mai	21498.81	500-yr	8165	202	212.09		212.21	0.002169
Sandy Mai	21070	10-yr	2229	200	208.4		208.42	0.000503
Sandy Mai	21070	50-yr	3931	200	209.56		209.6	0.000727
Sandy Mai	21070	100-yr	4945	200	210.15		210.2	0.000807
Sandy Mai	21070	500-yr	8165	200	211.56		211.64	0.001005
Sandy Mai	20558.49	10-yr	2229	200	208.07	203.62	208.11	0.000929
Sandy Mai	20558.49	50-yr	3931	200	209.04	204.76	209.12	0.001583
Sandy Mai	20558.49	100-yr	4945	200	209.56	205.35	209.65	0.001873
Sandy Mai	20558.49	500-yr	8165	200	210.74	206.23	210.91	0.002754
Sandy Mai	20488		Culvert					
Sandy Mai	20450.5	10-yr	2229	200	203.77	203.77	205.53	0.008487
Sandy Mai	20450.5	50-yr	3931	200	204.65	204.65	205.53	0.00458
Sandy Mai	20450.5	100-yr	4945	200	204.96	204.96	205.96	0.004904

Sandy Mai	20450.5	500-yr	8165	200	206	205.76	207.15	0.004536
Sandy Mai	20135.83	10-yr	2229	196	203.6		203.64	0.000149
Sandy Mai	20135.83	50-yr	3931	196	204.4		204.48	0.00026
Sandy Mai	20135.83	100-yr	4945	196	204.99		205.08	0.000284
Sandy Mai	20135.83	500-yr	8165	196	206.2		206.37	0.000416
Sandy Mai	19889.56	10-yr	2229	195	203.58	199.29	203.6	0.000073
Sandy Mai	19889.56	50-yr	3931	195	204.38	200.49	204.42	0.000131
Sandy Mai	19889.56	100-yr	4945	195	204.96	201.08	205.01	0.000143
Sandy Mai	19889.56	500-yr	8165	195	206.18	202.45	206.26	0.000193
Sandy Mai	19820		Bridge					
Sandy Mai	19756.97	10-yr	2229	194.5	203.32		203.35	0.000085
Sandy Mai	19756.97	50-yr	3931	194.5	204.24		204.28	0.000129
Sandy Mai	19756.97	100-yr	4945	194.5	204.87		204.92	0.00013
Sandy Mai	19756.97	500-yr	8165	194.5	206.1		206.17	0.00017
Sandy Mai	19546.85	10-yr	2229	194	203.27		203.32	0.000123
Sandy Mai	19546.85	50-yr	3931	194	204.14		204.24	0.00022
Sandy Mai	19546.85	100-yr	4945	194	204.75		204.87	0.000251
Sandy Mai	19546.85	500-yr	8165	194	205.9		206.09	0.000372
Sandy Mai	19352.67	10-yr	2229	193.47	203.26	198.71	203.29	0.000098
Sandy Mai	19352.67	50-yr	3931	193.47	204.12	200.12	204.19	0.000186
Sandy Mai	19352.67	100-yr	4945	193.47	204.73	200.83	204.82	0.000206
Sandy Mai	19352.67	500-yr	8165	193.47	205.87	202.54	206	0.0003
Sandy Mai	19300		Bridge					
Sandy Mai	19245.94	10-yr	2229	193.25	197.82	197.82	199.79	0.008109
Sandy Mai	19245.94	50-yr	3931	193.25	199.88	199.88	202.23	0.005988
Sandy Mai	19245.94	100-yr	4945	193.25	201.39	201.39	202.96	0.003406
Sandy Mai	19245.94	500-yr	8165	193.25	202.9	202.9	204.47	0.003197
Sandy Mai	19054.38	10-yr	2229	193.25	197.95		198.09	0.000821
Sandy Mai	19054.38	50-yr	3931	193.25	199.23		199.41	0.000783
Sandy Mai	19054.38	100-yr	4945	193.25	199.78		200	0.000819
Sandy Mai	19054.38	500-yr	8165	193.25	201.15		201.48	0.000902
Sandy Mai	18845.69	10-yr	2229	193	197.85	195.92	197.94	0.000512
Sandy Mai	18845.69	50-yr	3931	193	199.14	196.59	199.27	0.000493
Sandy Mai	18845.69	100-yr	4945	193	199.69	196.88	199.84	0.000523
Sandy Mai	18845.69	500-yr	8165	193	201.07	197.68	201.3	0.000613
Sandy Mai	18634.5	10-yr	2229	192	197.78		197.85	0.000317

Sandy Mai	18634.5	50-yr	3931	192	199.08		199.17	0.000336
Sandy Mai	18634.5	100-yr	4945	192	199.62		199.74	0.000363
Sandy Mai	18634.5	500-yr	8165	192	201		201.18	0.000432
Sandy Mai	18463	10-yr	2229	191	197.77		197.8	0.000149
Sandy Mai	18463	50-yr	3931	191	199.06		199.12	0.000183
Sandy Mai	18463	100-yr	4945	191	199.61		199.68	0.000208
Sandy Mai	18463	500-yr	8165	191	200.98		201.1	0.000266
Sandy Mai	18269.19	10-yr	2229	188	197.2	193.07	197.63	0.000829
Sandy Mai	18269.19	50-yr	3931	188	198.27	197.11	198.88	0.001189
Sandy Mai	18269.19	100-yr	4945	188	198.7	197.86	199.41	0.001369
Sandy Mai	18269.19	500-yr	8165	188	199.89	199.08	200.77	0.00167
Sandy Mai	18240		Culvert					
Sandy Mai	18211.69	10-yr	2229	188	194.11	192.39	195.03	0.002702
Sandy Mai	18211.69	50-yr	3931	188	195.14	195.14	196.41	0.003481
Sandy Mai	18211.69	100-yr	4945	188	195.64	195.64	197.01	0.003637
Sandy Mai	18211.69	500-yr	8165	188	196.83	196.83	198.51	0.004084
Sandy Mai	18010.15	10-yr	2229	188	193.47	193.47	194.33	0.004222
Sandy Mai	18010.15	50-yr	3931	188	194.35	194.35	195.39	0.004752
Sandy Mai	18010.15	100-yr	4945	188	194.72	194.72	195.88	0.005107
Sandy Mai	18010.15	500-yr	8165	188	195.67	195.67	197.19	0.005837
Sandy Mai	17718.32	10-yr	2229	187	190.83	190.83	191.34	0.005065
Sandy Mai	17718.32	50-yr	3931	187	191.57		192.05	0.003865
Sandy Mai	17718.32	100-yr	4945	187	192.01		192.47	0.003218
Sandy Mai	17718.32	500-yr	8165	187	193.14		193.67	0.002522
Sandy Mai	17333.24	10-yr	2229	186	189.95		190.13	0.001325
Sandy Mai	17333.24	50-yr	3931	186	190.86		191.11	0.001449
Sandy Mai	17333.24	100-yr	4945	186	191.3		191.6	0.001496
Sandy Mai	17333.24	500-yr	8165	186	192.43		192.86	0.001636
Sandy Mai	16976.28	10-yr	2229	186	188.41	188.38	189.08	0.009183
Sandy Mai	16976.28	50-yr	3931	186	189.08	189.04	190	0.008826
Sandy Mai	16976.28	100-yr	4945	186	189.42	189.38	190.46	0.008652
Sandy Mai	16976.28	500-yr	8165	186	190.51	189.87	191.7	0.007264
Sandy Mai	16566.37	10-yr	2229	185.31	187.53		187.67	0.001485
Sandy Mai	16566.37	50-yr	3931	185.31	188.37		188.56	0.00145
Sandy Mai	16566.37	100-yr	4945	185.31	188.8		189.03	0.001412
Sandy Mai	16566.37	500-yr	8165	185.31	190.1		190.39	0.001261
Sandy Mai	16177.16	10-yr	2229	184.88	186.62		186.87	0.003068

Sandy Mai	16177.16	50-yr	3931	184.88	187.53		187.85	0.002405
Sandy Mai	16177.16	100-yr	4945	184.88	187.98		188.34	0.002278
Sandy Mai	16177.16	500-yr	8165	184.88	189.41		189.82	0.001684
Sandy Mai	15741.39	10-yr	2229	182	186.03	184.06	186.17	0.000954
Sandy Mai	15741.39	50-yr	3931	182	186.92	185.24	187.15	0.001124
Sandy Mai	15741.39	100-yr	4945	182	187.35	185.56	187.63	0.001196
Sandy Mai	15741.39	500-yr	8165	182	188.92	186.46	189.26	0.001004
Sandy Mai	15036.05	10-yr	2229	180	184.26	184.26	184.91	0.004826
Sandy Mai	15036.05	50-yr	3931	180	185.11	184.88	185.81	0.004462
Sandy Mai	15036.05	100-yr	4945	180	185.9	185.19	186.46	0.002985
Sandy Mai	15036.05	500-yr	8165	180	188.05	186.04	188.47	0.001553
Sandy Mai	14643.01	10-yr	2229	176.16	183.04	181.7	183.27	0.001114
Sandy Mai	14643.01	50-yr	3931	176.16	184.74	182.55	184.97	0.000949
Sandy Mai	14643.01	100-yr	4945	176.16	185.51	182.94	185.75	0.000949
Sandy Mai	14643.01	500-yr	8165	176.16	187.68	184.01	187.97	0.000924
Sandy Mai	14242.08	10-yr	2229	174	181.62	180.79	182.55	0.002522
Sandy Mai	14242.08	50-yr	3931	174	182.88	182.63	184.21	0.003306
Sandy Mai	14242.08	100-yr	4945	174	183.67	183.22	185	0.003188
Sandy Mai	14242.08	500-yr	8165	174	186.15	185.1	187.31	0.002452
Sandy Mai	13869.62	10-yr	2229	175	180.55	180.37	181.36	0.003907
Sandy Mai	13869.62	50-yr	3931	175	181.98	181.3	182.8	0.00344
Sandy Mai	13869.62	100-yr	4945	175	182.87	181.77	183.67	0.003106
Sandy Mai	13869.62	500-yr	8165	175	185.95	183.3	186.41	0.001441
Sandy Mai	13438.13	10-yr	2229	172	180.04	178.02	180.2	0.001448
Sandy Mai	13438.13	50-yr	3931	172	181.34	178.84	181.57	0.001824
Sandy Mai	13438.13	100-yr	4945	172	182.13	179.27	182.4	0.002158
Sandy Mai	13438.13	500-yr	8165	172	185.65	180.35	185.82	0.000967
Sandy Mai	12942.35	10-yr	2229	173	179.5	176.6	179.6	0.000979
Sandy Mai	12942.35	50-yr	3931	173	180.61	177.47	180.78	0.001356
Sandy Mai	12942.35	100-yr	4945	173	181.36	177.94	181.55	0.00135
Sandy Mai	12942.35	500-yr	8165	173	185.29	179.32	185.41	0.000659
Sandy Mai	12648.67	10-yr	2229	170	179.45	175.51	179.47	0.000131
Sandy Mai	12648.67	50-yr	3931	170	180.53	177.16	180.57	0.000228
Sandy Mai	12648.67	100-yr	4945	170	181.27	177.16	181.32	0.000264
Sandy Mai	12648.67	500-yr	8165	170	185.24	177.17	185.29	0.000178
Sandy Mai	12600		Mult Open					
Sandy Mai	12591.62	10-yr	2229	171	177.33	175.65	177.8	0.001786

Sandy Mai	12591.62	50-yr	3931	171	179.41	177.15	179.91	0.001512
Sandy Mai	12591.62	100-yr	4945	171	180.89	177.85	181.24	0.000966
Sandy Mai	12591.62	500-yr	8165	171	185.01	179.83	185.23	0.000469
Sandy Mai	12103.89	10-yr	2229	171	176.38	175.43	176.81	0.002262
Sandy Mai	12103.89	50-yr	3931	171	178.82	176.41	179.15	0.001296
Sandy Mai	12103.89	100-yr	4945	171	180.51	176.87	180.76	0.000821
Sandy Mai	12103.89	500-yr	8165	171	184.81	178.14	185	0.000437
Sandy Mai	11764.28	10-yr	2229	171.05	176.1	173.8	176.22	0.001021
Sandy Mai	11764.28	50-yr	3931	171.05	178.67	174.52	178.79	0.000621
Sandy Mai	11764.28	100-yr	4945	171.05	180.42	174.92	180.52	0.000429
Sandy Mai	11764.28	500-yr	8165	171.05	184.78	176.04	184.86	0.000241
Sandy Mai	11405.26	10-yr	2229	168.7	175.45	173.34	175.79	0.000992
Sandy Mai	11405.26	50-yr	3931	168.7	178.16	174.73	178.5	0.000635
Sandy Mai	11405.26	100-yr	4945	168.7	180	175.31	180.31	0.00044
Sandy Mai	11405.26	500-yr	8165	168.7	184.39	176.8	184.7	0.000283
Sandy Mai	11350		Mult Open					
Sandy Mai	11303	10-yr	2229	168.66	173.55	173.55	174.85	0.005712
Sandy Mai	11303	50-yr	3931	168.66	174.81	174.81	176.57	0.005939
Sandy Mai	11303	100-yr	4945	168.66	175.65	175.65	177.45	0.00522
Sandy Mai	11303	500-yr	8165	168.66	178.05	177.16	179.75	0.003439
Sandy Mai	10733.77	10-yr	2229	166.86	173.28	170.71	173.34	0.000273
Sandy Mai	10733.77	50-yr	3931	166.86	174.9	171.59	174.96	0.000209
Sandy Mai	10733.77	100-yr	4945	166.86	175.73	171.86	175.79	0.000179
Sandy Mai	10733.77	500-yr	8165	166.86	178.74	172.62	178.79	0.000093
Sandy Mai	10700		Bridge					
Sandy Mai	10661.15	10-yr	2229	166.01	173.27	170.85	173.29	0.000083
Sandy Mai	10661.15	50-yr	3931	166.01	174.89	170.86	174.91	0.000076
Sandy Mai	10661.15	100-yr	4945	166.01	175.72	170.99	175.75	0.000071
Sandy Mai	10661.15	500-yr	8165	166.01	178.74	171.67	178.77	0.000047
Sandy Mai	10118.31	10-yr	2229	165	173.25	168.31	173.26	0.000038
Sandy Mai	10118.31	50-yr	3931	165	174.86	168.86	174.88	0.000048
Sandy Mai	10118.31	100-yr	4945	165	175.69	169.13	175.72	0.000051
Sandy Mai	10118.31	500-yr	8165	165	178.72	169.91	178.75	0.000044
Sandy Mai	9744.554	10-yr	2229	163.7	173.07	169.56	173.19	0.000314
Sandy Mai	9744.554	50-yr	3931	163.7	174.84	171.21	174.86	0.000055
Sandy Mai	9744.554	100-yr	4945	163.7	175.67	172.19	175.7	0.000056
Sandy Mai	9744.554	500-yr	8165	163.7	178.7	173.14	178.73	0.000045

Sandy Mai	9685		Bridge					
Sandy Mai	9639.641	10-yr	2229	163	170.63	166.43	170.69	0.000277
Sandy Mai	9639.641	50-yr	3931	163	173.77	167.24	173.82	0.000183
Sandy Mai	9639.641	100-yr	4945	163	175.43	167.68	175.48	0.000153
Sandy Mai	9639.641	500-yr	8165	163	178.52	168.81	178.59	0.000157
Sandy Mai	8975.758	10-yr	2229	161	170.5	165.94	170.55	0.000171
Sandy Mai	8975.758	50-yr	3931	161	173.7	166.8	173.73	0.000093
Sandy Mai	8975.758	100-yr	4945	161	175.37	167.2	175.4	0.000079
Sandy Mai	8975.758	500-yr	8165	161	178.47	168.25	178.5	0.00008
Sandy Mai	8504.5	10-yr	2229	161.39	170.38	164.4	170.46	0.000155
Sandy Mai	8504.5	50-yr	3931	161.39	173.54	165.54	173.65	0.000151
Sandy Mai	8504.5	100-yr	4945	161.39	175.2	166.14	175.32	0.000146
Sandy Mai	8504.5	500-yr	8165	161.39	178.21	167.82	178.4	0.000189
Sandy Mai	8350		Mult Open					
Sandy Mai	8235.939	10-yr	2229	159	169.91	163.74	170.05	0.00019
Sandy Mai	8235.939	50-yr	3931	159	172.97	165.16	173.16	0.0002
Sandy Mai	8235.939	100-yr	4945	159	174.59	165.83	174.8	0.000191
Sandy Mai	8235.939	500-yr	8165	159	177.24	167.73	177.57	0.000258
Sandy Mai	8063.602	10-yr	2229	158.71	169.29	165.28	169.86	0.000837
Sandy Mai	8063.602	50-yr	3931	158.71	173.03	167.71	173.05	0.000046
Sandy Mai	8063.602	100-yr	4945	158.71	174.67	168.67	174.69	0.000033
Sandy Mai	8063.602	500-yr	8165	158.71	177.38	171	177.4	0.000028
Sandy Mai	8000		Bridge					
Sandy Mai	7966.54	10-yr	2229	158.47	167.61		167.76	0.00034
Sandy Mai	7966.54	50-yr	3931	158.47	171.83		171.93	0.000169
Sandy Mai	7966.54	100-yr	4945	158.47	174.57		174.62	0.000079
Sandy Mai	7966.54	500-yr	8165	158.47	177.29		177.34	0.000075
Sandy Mai	7570.986	10-yr	2229	159	167.61		167.64	0.000094
Sandy Mai	7570.986	50-yr	3931	159	171.83		171.87	0.000045
Sandy Mai	7570.986	100-yr	4945	159	174.57		174.59	0.00003
Sandy Mai	7570.986	500-yr	8165	159	177.27		177.32	0.000041
Sandy Mai	7173.807	10-yr	2229	159	167.61	160.89	167.62	0.000016
Sandy Mai	7173.807	50-yr	3931	159	171.84	161.31	171.85	0.000012
Sandy Mai	7173.807	100-yr	4945	159	174.57	161.58	174.58	0.00001
Sandy Mai	7173.807	500-yr	8165	159	177.28	162.31	177.3	0.000015

Sandy Mai	6825.559	10-yr	2229	156	167.24	161.88	167.52	0.000445
Sandy Mai	6825.559	50-yr	3931	156	171.53	164.31	171.77	0.000253
Sandy Mai	6825.559	100-yr	4945	156	174.29	165.23	174.51	0.000182
Sandy Mai	6825.559	500-yr	8165	156	176.96	168.06	177.22	0.000196
Sandy Mai	6765		Bridge					
Sandy Mai	6709.658	10-yr	2229	156	166.85	162.89	167.33	0.000775
Sandy Mai	6709.658	50-yr	3931	156	171.16	166.25	171.5	0.000377
Sandy Mai	6709.658	100-yr	4945	156	173.95	167	174.24	0.000255
Sandy Mai	6709.658	500-yr	8165	156	176.4	168.83	176.7	0.000251
Sandy Mai	6668.16	10-yr	2229	156.01	166.98	161.39	167.15	0.000259
Sandy Mai	6668.16	50-yr	3931	156.01	171.2	163.14	171.43	0.000209
Sandy Mai	6668.16	100-yr	4945	156.01	174.06	163.85	174.11	0.000048
Sandy Mai	6668.16	500-yr	8165	156.01	176.5	165.78	176.58	0.000068
Sandy Mai	6600		Bridge					
Sandy Mai	6572.639	10-yr	2229	156	166.71	161.78	166.92	0.000306
Sandy Mai	6572.639	50-yr	3931	156	170.45	163.21	170.75	0.00028
Sandy Mai	6572.639	100-yr	4945	156	172.84	163.93	172.88	0.000043
Sandy Mai	6572.639	500-yr	8165	156	175.73	165.92	175.79	0.000055
Sandy Mai	6414.98	10-yr	2229	157	166.64	161.46	166.87	0.000368
Sandy Mai	6414.98	50-yr	3931	157	170.4	163.1	170.71	0.000336
Sandy Mai	6414.98	100-yr	4945	157	172.45	163.92	172.78	0.000307
Sandy Mai	6414.98	500-yr	8165	157	174.98	166.12	175.6	0.000488
Sandy Mai	6300		Mult Open					
Sandy Mai	6189.177	10-yr	2229	155	165.53	161.11	165.97	0.00067
Sandy Mai	6189.177	50-yr	3931	155	167.92	163.28	168.66	0.000906
Sandy Mai	6189.177	100-yr	4945	155	168.88	164.39	169.82	0.001077
Sandy Mai	6189.177	500-yr	8165	155	170.85	166.97	172.44	0.001615
Sandy Mai	5508.105	10-yr	4460	154	165.06	163.33	165.44	0.000757
Sandy Mai	5508.105	50-yr	7709	154	168.13	164.39	168.2	0.000115
Sandy Mai	5508.105	100-yr	9741	154	169.2	164.93	169.27	0.000098
Sandy Mai	5508.105	500-yr	16941	154	171.48	166.6	171.57	0.000094
Sandy Mai	5084.678	10-yr	4460	154	164.37	163.64	165.01	0.001114
Sandy Mai	5084.678	50-yr	7709	154	167.98	164.92	168.13	0.000194
Sandy Mai	5084.678	100-yr	9741	154	169.05	165.13	169.2	0.000176
Sandy Mai	5084.678	500-yr	16941	154	171.47	166.36	171.53	0.000058
Sandy Mai	5065.378	10-yr	4460	154.25	163.75	163.65	164.93	0.002092

Sandy Mai	5065.378	50-yr	7709	154.25	167.91	165	168.12	0.00028
Sandy Mai	5065.378	100-yr	9741	154.25	168.96	165.43	169.19	0.000256
Sandy Mai	5065.378	500-yr	16941	154.25	171.4	166.72	171.52	0.000134
Sandy Mai	5039.878	10-yr	4460	154.25	163.61	161.57	164.76	0.00205
Sandy Mai	5039.878	50-yr	7709	154.25	167.73	164.83	168.07	0.00054
Sandy Mai	5039.878	100-yr	9741	154.25	168.79	165.5	169.15	0.000538
Sandy Mai	5039.878	500-yr	16941	154.25	171.43	167.13	171.49	0.000116
Sandy Mai	4865.578	10-yr	4460	154.25	163.91	158.85	164.07	0.000273
Sandy Mai	4865.578	50-yr	7709	154.25	167.67	160.37	167.83	0.000171
Sandy Mai	4865.578	100-yr	9741	154.25	168.69	161.42	168.9	0.000196
Sandy Mai	4865.578	500-yr	16941	154.25	171.4	163.65	171.44	0.000043
Sandy Mai	4790.088	10-yr	4460	154	163.58	160.26	164	0.000822
Sandy Mai	4790.088	50-yr	7709	154	167.24	161.83	167.77	0.000677
Sandy Mai	4790.088	100-yr	9741	154	168.1	162.64	168.82	0.000852
Sandy Mai	4790.088	500-yr	16941	154	171.36	165.12	171.43	0.000125
Sandy Mai	4777.088	10-yr	4460	154.25	163.62	160.02	163.94	0.000594
Sandy Mai	4777.088	50-yr	7709	154.25	167.31	161.4	167.68	0.000431
Sandy Mai	4777.088	100-yr	9741	154.25	168.19	162.14	168.7	0.000525
Sandy Mai	4777.088	500-yr	16941	154.25	171.38	164.38	171.41	0.000048
Sandy Mai	4740		Bridge					
Sandy Mai	4685.592	10-yr	4460	154	161.51	160.67	162.91	0.003319
Sandy Mai	4685.592	50-yr	7709	154	162.84	162.56	165.35	0.004934
Sandy Mai	4685.592	100-yr	9741	154	163.53	163.53	166.72	0.005758
Sandy Mai	4685.592	500-yr	16941	154	167.22	165.4	167.45	0.000669
Sandy Mai	4327.181	10-yr	4460	152	161.72		161.86	0.000618
Sandy Mai	4327.181	50-yr	7709	152	163.43		163.64	0.000802
Sandy Mai	4327.181	100-yr	9741	152	164.33		164.57	0.00088
Sandy Mai	4327.181	500-yr	16941	152	166.74		167.12	0.001149
Sandy Mai	3964.325	10-yr	4460	152	161.44		161.64	0.000593
Sandy Mai	3964.325	50-yr	7709	152	162.99		163.33	0.000871
Sandy Mai	3964.325	100-yr	9741	152	163.8		164.22	0.001012
Sandy Mai	3964.325	500-yr	16941	152	165.93		166.63	0.00145
Sandy Mai	3515.389	10-yr	4460	150.35	161.31		161.42	0.000323
Sandy Mai	3515.389	50-yr	7709	150.35	162.8		162.99	0.000516
Sandy Mai	3515.389	100-yr	9741	150.35	163.59		163.83	0.000607
Sandy Mai	3515.389	500-yr	16941	150.35	165.62		166.04	0.000933
Sandy Mai	3004.364	10-yr	4460	150	161.13	156.74	161.25	0.000333

Sandy Mai	3004.364	50-yr	7709	150	162.54	158.36	162.73	0.000487
Sandy Mai	3004.364	100-yr	9741	150	163.31	159.11	163.53	0.000532
Sandy Mai	3004.364	500-yr	16941	150	165.28	160.9	165.6	0.000675
Sandy Mai	2590.359	10-yr	4460	150	161.01	156.02	161.12	0.000321
Sandy Mai	2590.359	50-yr	7709	150	162.36	158.27	162.54	0.000513
Sandy Mai	2590.359	100-yr	9741	150	163.09	159.46	163.31	0.000595
Sandy Mai	2590.359	500-yr	16941	150	164.89	160.34	165.29	0.000897
Sandy Mai	2500		Bridge					
Sandy Mai	2417.391	10-yr	4460	150	156.86	156.09	157.19	0.001199
Sandy Mai	2417.391	50-yr	7709	150	158.15	156.83	158.51	0.001101
Sandy Mai	2417.391	100-yr	9741	150	158.77	157.19	159.18	0.001111
Sandy Mai	2417.391	500-yr	16941	150	160.54	158.25	161.11	0.001152
Sandy Mai	2072.963	10-yr	4460	148.51	156.52	155.33	156.79	0.000876
Sandy Mai	2072.963	50-yr	7709	148.51	157.8	156.15	158.13	0.000941
Sandy Mai	2072.963	100-yr	9741	148.51	158.41	156.55	158.78	0.000992
Sandy Mai	2072.963	500-yr	16941	148.51	160.16	157.76	160.66	0.001106
Sandy Mai	1688.606	10-yr	4460	149	156.13		156.38	0.001261
Sandy Mai	1688.606	50-yr	7709	149	157.23		157.62	0.0018
Sandy Mai	1688.606	100-yr	9741	149	157.76		158.22	0.002047
Sandy Mai	1688.606	500-yr	16941	149	159.26		159.99	0.002695
Sandy Mai	1299.523	10-yr	4460	149	155.78	153.98	155.94	0.000957
Sandy Mai	1299.523	50-yr	7709	149	156.81	155.02	157.02	0.001162
Sandy Mai	1299.523	100-yr	9741	149	157.31	155.39	157.55	0.001265
Sandy Mai	1299.523	500-yr	16941	149	158.74	156.48	159.1	0.001574
Sandy Mai	663.061	10-yr	4460	146.71	154.93	154.26	155.22	0.001291
Sandy Mai	663.061	50-yr	7709	146.71	155.81	154.95	156.16	0.001578
Sandy Mai	663.061	100-yr	9741	146.71	156.25	155.37	156.62	0.001678
Sandy Mai	663.061	500-yr	16941	146.71	157.48	156.22	157.97	0.002025
Sandy Mai	143.571	10-yr	4460	147	153.67	153.67	154.18	0.003578
Sandy Mai	143.571	50-yr	7709	147	154.14	154.14	154.82	0.005016
Sandy Mai	143.571	100-yr	9741	147	154.39	154.39	155.16	0.005715
Sandy Mai	143.571	500-yr	16941	147	155.1	155.1	156.16	0.007386

Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)	Froude # Chl
7.49	94.36	59.2	0.96
6.96	218.12	183.69	0.71
7.27	269.56	213.05	0.71
8.22	401.5	255.16	0.75
8.63	111.13	65.57	0.81
9.99	163.37	74.6	0.85
10.71	188.05	78.47	0.88
12.03	287.03	110.85	0.89
8.22	105.82	62.51	0.82
8.21	221.84	148.04	0.71
8.71	260.8	160.34	0.73
9.44	394.88	228.02	0.74
4.77	212.18	88.04	0.33
6.53	284.23	120.3	0.43
7.43	316.67	126.74	0.48
11.11	341.69	135.81	0.71
10.45	75.19	29.94	0.94
10.83	150.13	72.77	0.8
11.2	197.39	97.83	0.79
12.05	354.77	119.2	0.77
6.68	185.54	107.36	0.65
8.3	285.57	193.54	0.73
8.63	341.73	225.59	0.73
9.06	563.19	256.56	0.7
4.44	197.74	107.09	0.31
4.73	310.8	160.75	0.31
5.14	348.92	170.35	0.33
5.92	471.82	206.19	0.37
3.05	351.74	155.66	0.22
3.58	503.3	186.97	0.24
3.78	573.36	191.04	0.25
4.42	748.43	216.41	0.27
2.95	390.76	168.21	0.19

3.59	535.09	180.46	0.22
3.92	597.14	183.71	0.23
4.86	749.43	206.1	0.28
4.42	184.47	63.11	0.3
6.26	220.52	71.54	0.41
7.18	238.66	78.23	0.46
9.87	289.31	117.01	0.61
1.42	797.39	227.26	0.08
2.01	939.11	245.33	0.1
2.36	1010.37	269.78	0.12
3.1	1193.42	283.92	0.15
8.48	95.49	35.82	0.76
11.95	124.74	45.86	0.99
11.11	227.51	106.32	0.82
10.31	702.29	348.64	0.66
9.71	87.4	134.02	1
7.7	272.31	213.76	0.69
8.23	319.8	245.02	0.72
9.71	430.86	334.41	0.8
5.04	167.75	255.6	0.46
7.4	203.99	285.67	0.64
3.44	645.18	313.51	0.29
4.31	847.03	356.94	0.34
1.53	761.08	317.15	0.11
2.23	882.37	331.86	0.15
2.54	944.7	332.83	0.17
3.33	1108.58	335.07	0.22
3.11	522.14	244.3	0.19
3.95	742.21	285.47	0.23
4.32	855.67	307.5	0.25
5.18	1143.82	332.06	0.28
3.38	337.91	126.5	0.22
4.75	434.95	155.47	0.3

5.42	485.04	173.15	0.33
7.35	604.39	213.62	0.43
3.9	239.56	100.73	0.27
5.87	275.57	104.14	0.4
6.78	296.71	106.03	0.45
9.62	333.78	111.03	0.63
3.4	445.88	301.84	0.23
5.04	541.85	327.1	0.34
5.76	603.07	341.2	0.38
8.2	686.27	348.36	0.53
9.54	79.46	33.49	0.96
8.82	211.68	123.93	0.7
9.09	276.91	145.5	0.69
10.41	415.41	203.81	0.73
6.71	176.15	106.33	0.71
7.12	291.92	121.29	0.65
7.21	354.62	122.97	0.62
8.54	479.28	134.48	0.66
9.27	109.93	53.35	0.85
10.89	169.93	68.25	0.88
11.85	200.51	80.2	0.92
12.1	379.89	159.01	0.83
5.71	264.54	151.44	0.54
6.96	370.46	171.13	0.6
7.81	450.89	233.39	0.65
7.51	755.15	295.42	0.55
6.9	184.19	142.81	0.61
7.35	275.08	152.04	0.61
5.41	427.97	164.81	0.4
4.51	788.08	266.65	0.3
6.14	192.18	137.91	0.57
4.56	474.75	156.55	0.34
3.98	683.09	181.75	0.27
4.39	1021.08	214.09	0.27

5.22	132.02	26.48	0.41
6.74	175.57	31.35	0.47
6.89	218.55	199.72	0.43
8.79	386.12	387.92	0.52
4.9	140.52	29.07	0.39
6.87	170.7	56.28	0.51
8.02	181.22	92.09	0.57
10.85	217.84	217.06	0.72
9.85	343.57	145.65	0.71
12	489.37	162.86	0.8
12.81	563.35	166.15	0.83
14.46	793.83	222.26	0.87
11.89	264.68	124.75	1.06
12.39	440.13	184.31	0.97
12.91	529.12	194.64	0.97
15.93	701.83	234.34	1.12
5	418.13	163.89	0.34
4.85	839.14	429.98	0.29
5.23	972.04	458.55	0.3
6.87	1226.84	489.79	0.39
9.29	182.23	47.59	0.72
11.95	283.68	124.44	0.84
10.04	591.03	421.6	0.64
9.76	1102.58	509.34	0.58
7.95	264.91	148.55	0.59
6.79	659.47	330.44	0.44
6.72	902.7	440.06	0.42
7.25	1373.78	514.89	0.43
5.09	337.72	265.09	0.32
4.47	1217.36	495.34	0.26
4.5	1543.51	567.52	0.25
5.15	2092.63	592.08	0.27
8.59	212.47	64.27	0.68
10.93	380.66	219.78	0.76
10.04	614.1	288.22	0.66

9.07	1335.71	474.83	0.53
6.65	441.41	144.67	0.47
8.04	670.38	179.23	0.51
8.49	819.68	206.96	0.52
8.53	1525.79	434.51	0.46
7.95	557.22	198.08	0.5
9.43	858.34	213.46	0.55
10.06	1016.05	236.6	0.56
11.21	1569.22	355.08	0.57
4.84	1008.91	299.91	0.3
5.69	1460.93	319.09	0.33
6.1	1700.79	328.48	0.34
7.27	2334.8	367.41	0.37
5.62	1198.25	346.21	0.37
6.85	1751.1	409.56	0.42
7.22	2059.87	417.46	0.42
8.26	2840.64	438.8	0.44
1.7	1530.66	267.5	0.1
2.3	1883	271.27	0.13
2.59	2079.12	283.49	0.14
3.34	2615.56	332.34	0.17
1.65	1467.28	264.78	0.09
2.17	1781.07	284.24	0.11
2.38	1967.74	295.77	0.12
2.91	2465.38	336.77	0.14
1.77	1680.95	391.31	0.1
2.44	2087.2	463.61	0.13
2.72	2341.01	499.76	0.14
3.4	3007.49	555.03	0.17
5.66	478.63	165.22	0.41
5.63	889.21	259.29	0.35
5.45	1154.15	326.79	0.32
5.16	1890.94	522.79	0.27
12.2	205.83	59.81	0.92
13.74	328.84	77.58	0.9
14.69	392.24	85	0.91

17.15	563.85	103.35	0.96
5.83	371.03	83.37	0.44
8.24	459.85	95.61	0.58
9.6	503.92	105.27	0.65
13.64	593.95	122.31	0.87
5.32	707.23	252.37	0.35
6.31	1033.65	297.4	0.39
6.77	1216.22	319.22	0.4
7.87	1725.16	368.69	0.43
3.69	865.48	375.63	0.25
3.76	1350.39	434.47	0.24
3.78	1621.3	456.14	0.23
3.95	2333.1	497.64	0.22
3.46	934.93	300.33	0.24
3.89	1366	333.46	0.24
4.14	1584.43	370.79	0.25
4.66	2323.13	553.75	0.26
2.16	1387.77	442.29	0.16
2.49	2045.86	503.22	0.17
2.64	2374.58	515.64	0.17
3.04	3277.04	613.02	0.18
2.1	1381.65	386.17	0.14
2.6	1910.51	446.5	0.16
2.78	2231.78	525.56	0.17
3.22	3049.49	567.35	0.18
1.37	1988.76	492.83	0.08
1.8	2589.52	539.56	0.1
1.97	2917.95	574.1	0.11
2.4	3756.99	608.65	0.12
1.74	1501.53	535.66	0.11
2.46	1835.86	591.28	0.15
2.78	2023.71	620.51	0.16
3.66	2489.27	690.56	0.2
10.68	211.51	212.86	0.98
9.06	622.68	300.14	0.75
9.79	716.07	302.76	0.78

10.72	1034.22	311.05	0.78
2.33	1476.49	388.6	0.15
3.3	1797.3	409.02	0.2
3.61	2040.78	424.17	0.21
4.75	2577.65	475.74	0.26
1.75	2112.72	591.13	0.11
2.49	2604.36	645.35	0.14
2.71	2994.98	689.67	0.15
3.4	3882.33	765.49	0.18
1.88	2070.3	647.46	0.11
2.47	2692.14	701.46	0.14
2.6	3144.64	726.19	0.14
3.19	4064.29	777.61	0.17
2.22	1477.27	377.85	0.14
3.18	1820.59	420.11	0.19
3.54	2096.92	484.39	0.2
4.64	2728.01	608.15	0.25
2.1	1690.81	422.84	0.12
3.07	2073.98	483.08	0.17
3.36	2380.36	519.68	0.18
4.32	3002.54	573.09	0.22
11.32	200.94	53.15	0.97
12.69	350.92	99.73	0.89
11.06	623.69	230.74	0.7
12.05	1041.21	315.69	0.7
3.76	783.48	283.69	0.32
4.36	1164.58	313.42	0.33
4.75	1339.8	326.31	0.34
5.7	1803.94	345.22	0.37
2.97	964.96	334.1	0.25
3.47	1410.76	355.13	0.26
3.81	1607.5	363.76	0.27
4.71	2122.85	385.81	0.3
2.84	1144.15	374.37	0.21

3.34	1660.28	417.29	0.22
3.65	1892.31	432.95	0.23
4.45	2511.86	466.32	0.26
2.05	1533.85	421.73	0.14
2.57	2103.83	459.45	0.16
2.87	2358.81	476.14	0.18
3.61	3036.38	506.2	0.21
5.67	547.38	217.38	0.33
7.32	833.8	302.95	0.41
8.08	969.34	319.24	0.44
9.58	1374.98	362.29	0.49
7.86	334.6	176.44	0.57
9.93	537.5	212.42	0.66
10.63	647.53	225.96	0.68
12.42	936.21	260.35	0.74
8.68	375.24	205.78	0.66
10.19	576.23	244.14	0.72
10.97	668.06	253.71	0.75
12.83	921.11	277.91	0.82
7.91	484.57	404.33	0.76
7.88	786.19	414.27	0.69
7.69	968.54	418.7	0.64
7.9	1459.9	446.65	0.58
4.51	705.7	319.51	0.4
5.41	1010.29	353.16	0.43
5.83	1170.51	369.25	0.45
6.93	1610.9	411.4	0.48
8.52	355.62	245.53	0.97
9.85	529.13	270.74	0.99
10.46	623.7	284.19	1
11.52	992.48	399.55	0.96
3.21	760.43	402.77	0.38
3.93	1108.41	431.92	0.4
4.25	1299.29	446.17	0.4
4.97	1910.05	505.36	0.4
3.96	565.15	334	0.53

4.65	879.63	356.46	0.5
5.02	1044.56	374.26	0.5
5.56	1614.94	418.06	0.46
3.66	761.67	320.46	0.33
4.57	1059.37	346.27	0.37
5	1212.63	358.38	0.39
5.47	1804.43	398.1	0.37
8.53	466.16	282.71	0.75
9.33	718.72	307.37	0.74
8.43	971.26	330.62	0.62
7.54	1758.43	400.95	0.48
5.74	1074.19	398.2	0.4
6.19	1828.03	436.45	0.38
6.57	2166	447.68	0.39
7.49	3185.79	508.57	0.4
8.75	640.31	284.16	0.59
11.23	1033.72	353.11	0.7
11.74	1303.02	377.54	0.7
12.16	2543.22	570.53	0.64
9.65	545.11	223.28	0.72
10.56	875.83	273.84	0.71
10.87	1171.86	319.13	0.69
9.24	2329.88	426.72	0.49
4.16	869.73	253.59	0.27
5.22	1211.66	274.68	0.32
6.02	1458.37	346.75	0.35
4.99	2907.36	472.12	0.25
3.15	947.44	295.56	0.22
4.12	1280.04	303.45	0.27
4.39	1508.72	311.02	0.27
3.99	3190.9	501.57	0.2
1.48	2209.42	495.39	0.09
2.11	2689.33	537.01	0.12
2.38	3027.32	576.27	0.13
2.4	5008.65	714.46	0.11
6.87	822.84	268.43	0.5

7.71	1627.12	504.76	0.48
6.9	2397.8	530.73	0.39
6.11	4755.32	799.09	0.29
7.21	969.3	344.45	0.55
7.01	1904.62	434.92	0.44
6.36	2676.41	470.82	0.36
5.95	4990.66	596.95	0.28
4.6	1534	430.79	0.36
4.74	2751.99	518.37	0.3
4.52	3708.92	584.23	0.26
4.39	6575.1	703.69	0.21
5.17	520.5	167.74	0.37
5.29	911.97	307.35	0.31
5	1201.14	463.11	0.27
5.06	1898.5	842.16	0.23
10.06	270.8	102.48	0.84
12.1	406.8	116.95	0.89
12.44	510.5	136.57	0.85
12.41	849.02	327.22	0.73
2.76	1207.07	453.71	0.19
2.81	2106.95	617.92	0.18
2.79	2639.83	652.67	0.17
2.45	4751.94	749.33	0.13
1.6	2092.46	633.37	0.11
1.76	3188.67	712.43	0.11
1.82	3787.77	728.96	0.11
1.8	6250.98	930.65	0.09
1.23	2537.09	562.35	0.08
1.55	3489.96	620.25	0.09
1.69	4014.79	638.96	0.09
1.87	6114.15	755.03	0.09
3.6	1015.31	617.32	0.22
1.71	3544.24	693.72	0.09
1.82	4127.99	711.63	0.1
1.91	6428	808.13	0.09

2.96	2132.33	549.47	0.2
3.09	4115.2	654.49	0.17
3.13	5238.99	700.44	0.16
3.72	7546.67	790.91	0.17
2.79	2774.08	763.39	0.16
2.51	6366.29	928.95	0.13
2.52	7981.1	996.93	0.12
2.89	11254.64	1098.63	0.12
2.65	1025.53	942.02	0.16
3.21	1741.05	1127.56	0.16
3.44	2121.06	1190.92	0.16
4.46	2809.39	1269.81	0.19
3.3	750.34	316.39	0.18
4	1180.54	459.46	0.19
4.21	1429.15	549.7	0.19
5.44	1848.25	629.3	0.23
6.61	389.82	450.59	0.37
1.91	3800.74	752.73	0.09
1.73	5106.7	840.38	0.08
1.77	7418.25	866.16	0.07
3.87	749.43	133.53	0.23
3.54	1822.63	491.27	0.17
2.75	3326.34	628.05	0.12
2.99	5068.77	671.98	0.12
1.98	1503.91	285.82	0.12
1.81	2800.8	324.31	0.09
1.67	3696.35	331.14	0.07
2.17	4607.56	347.54	0.09
0.85	2915.44	391.3	0.05
0.94	4614.48	413.2	0.05
0.95	5764.43	429.57	0.04
1.34	7036.8	491.98	0.06

5.1	605.27	135.5	0.27
4.79	1083.82	221.28	0.22
4.54	1411.22	258.05	0.19
5.16	2187.25	296.37	0.2
6.23	479.96	158	0.35
5.52	931.79	268.88	0.26
5.12	1250.61	328.54	0.22
5.55	2034.76	367.02	0.22
3.76	691.33	302.56	0.21
4.25	1064.25	370.33	0.2
2.29	3005.17	441.3	0.1
2.99	3764.8	481.56	0.12
4.03	623.36	254.74	0.22
4.75	907.43	368.47	0.22
2.06	3263.93	401.93	0.09
2.6	4290.05	469.18	0.1
4.25	706.6	101.67	0.24
5.08	1091.62	287.32	0.25
5.34	1333.66	455.91	0.24
7.45	1853.29	662.1	0.31
6.01	746.3	121.28	0.33
8.04	1049.35	131.53	0.4
9.2	1176.67	135.54	0.44
12.33	1530.78	200.64	0.55
6.58	1238.62	542.19	0.35
3.03	4020.78	890.06	0.14
2.95	5085.23	1202.24	0.13
3.16	7734.31	1223.11	0.13
7.55	865.44	730.15	0.42
3.87	2732.29	1259.25	0.18
3.88	3283.02	1285.96	0.18
2.47	10233	1375.17	0.11
9.55	648.36	437.8	0.56

4.51	2179.75	896.75	0.22
4.54	2598.37	923.93	0.21
3.65	7137.51	1089.66	0.16
9.32	736.6	599.21	0.55
6.18	2131.52	1123.68	0.3
6.5	2513.97	1375.72	0.31
3.39	10288.09	1621.72	0.15
3.44	1459.41	759.59	0.21
3.46	2452.97	1287.44	0.17
3.91	2728.22	1320.83	0.19
2.07	11408.22	1411.94	0.09
6.05	1149.09	638.21	0.36
6.91	1831.34	1125.85	0.34
8.1	1994.49	1261.77	0.39
3.59	10587.3	1416.34	0.15
5.08	1201.74	918.23	0.3
5.46	1871.68	1369.19	0.27
6.32	2035.34	1390.28	0.31
2.2	13267.05	1496.2	0.1
10.33	752.2	805.22	0.69
14.17	992.85	827.66	0.87
16.15	1117.2	835.28	0.95
6.93	7975.47	892.37	0.34
4.76	2621.76	538.59	0.28
6.07	3567.59	561.85	0.32
6.71	4077.84	570.03	0.34
8.66	5488.75	600.93	0.41
5.1	2596.87	473.75	0.3
6.89	3346.65	493.06	0.38
7.81	3760.85	523.01	0.41
10.51	4906	557.93	0.51
4.23	3689.13	621.26	0.23
5.84	4645.55	663.54	0.3
6.61	5172.71	673.96	0.33
9.05	6581.32	715.88	0.41
4.31	3193.54	640.98	0.23

5.67	4160.85	718.72	0.29
6.18	4722.14	740.33	0.31
7.67	6237.8	816.8	0.35
3.54	2128.25	467.74	0.19
4.84	2791.07	529.74	0.25
5.43	3180.76	537.82	0.27
7.3	4168.66	549.94	0.34
6.12	1188.15	454.78	0.41
6.58	1781.29	466.23	0.41
6.95	2072.37	472.71	0.42
8.01	2957.36	569.09	0.44
5.6	1311.77	451.38	0.36
6.44	1967.68	545.43	0.38
6.92	2305.71	566.67	0.4
8.18	3396.86	658.94	0.43
6.41	1992.36	529.6	0.43
8.43	2589.91	572.16	0.52
9.38	2891.07	578.51	0.56
11.97	3773.33	598.89	0.66
5.43	2450.25	817.13	0.37
6.58	3323.01	859.86	0.42
7.16	3751.53	869.08	0.44
8.89	5043.04	948.79	0.5
6.89	1960.1	846.23	0.44
8.19	2759.15	943.05	0.49
8.74	3177.81	958.44	0.51
10.46	4405.93	1064.14	0.58
10.07	1787.91	1050.67	0.71
12.51	2288.19	1075.19	0.85
13.67	2556.32	1099.1	0.91
16.56	3345.28	1259.04	1.05

Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Crit W.S. (ft)	E.G. Elev (ft)	E.G. Slope (ft/ft)
Sandy Mai	38835.32	10-yr	0	0	0	0	0	0
Sandy Mai	38835.32	50-yr	0	0	0.55	0.55	-0.18	-0.00707
Sandy Mai	38835.32	100-yr	0	0	0	0	0	0
Sandy Mai	38835.32	500-yr	0	0	0	0	0	0
			0	0	0	0	0	0
Sandy Mai	38353.13	10-yr	0	0	0	0	0	0
Sandy Mai	38353.13	50-yr	0	0	-0.29	-0.29	-0.82	-0.00122
Sandy Mai	38353.13	100-yr	0	0	0	0	0	0
Sandy Mai	38353.13	500-yr	0	0	0	0	0	0
			0	0	0	0	0	0
Sandy Mai	37880.8	10-yr	0	0	0	0	0	0
Sandy Mai	37880.8	50-yr	0	0	0.07	0.07	0	-0.00035
Sandy Mai	37880.8	100-yr	0	0	0	0	0	0
Sandy Mai	37880.8	500-yr	0	0	0	0	0	0
			0	0	0	0	0	0
Sandy Mai	37489.56	10-yr	0	0	0	0	0	0
Sandy Mai	37489.56	50-yr	0	0	-0.38	-0.01	-0.28	0.000362
Sandy Mai	37489.56	100-yr	0	0	0	0	0	0
Sandy Mai	37489.56	500-yr	0	0	0	0	0	0
			0	0	0	0	0	0
Sandy Mai	37270		#VALUE!	0	0	0	0	0
			0	0	0	0	0	0
Sandy Mai	37056.92	10-yr	0	0	0	0	0	0
Sandy Mai	37056.92	50-yr	0	0	-0.05	-0.05	-0.04	0.000085
Sandy Mai	37056.92	100-yr	0	0	0	0	0	0
Sandy Mai	37056.92	500-yr	0	0	0	0	0	0
			0	0	0	0	0	0
Sandy Mai	36678.73	10-yr	0	0	0	0	0	0
Sandy Mai	36678.73	50-yr	0	0	-0.23	0.05	-0.22	0.000605
Sandy Mai	36678.73	100-yr	0	0	0	0	0	0
Sandy Mai	36678.73	500-yr	0	0	0	0	0	0
			0	0	0	0	0	0
Sandy Mai	36275.49	10-yr	0	0	0	0	0	0
Sandy Mai	36275.49	50-yr	0	0	-0.42	-0.07	-0.47	0.000474
Sandy Mai	36275.49	100-yr	0	0	0	0	0	0
Sandy Mai	36275.49	500-yr	0	0	0	0	0	0
			0	0	0	0	0	0
Sandy Mai	36000		#VALUE!	0	0	0	0	0
			0	0	0	0	0	0
Sandy Mai	35791.32	10-yr	0	0	0	0	0	0
Sandy Mai	35791.32	50-yr	0	0	-0.67	0	-0.75	-0.00017
Sandy Mai	35791.32	100-yr	0	0	0	0	0	0
Sandy Mai	35791.32	500-yr	0	0	0	0	0	0
			0	0	0	0	0	0
Sandy Mai	35582.96	10-yr	0	0	0	0	0	0

Sandy Mai	35582.96	50-yr	0	0	-0.63	-0.01	-0.71	-0.00022
Sandy Mai	35582.96	100-yr	0	0	0	0	0	0
Sandy Mai	35582.96	500-yr	0	0	0	0	0	0
			0	0	0	0	0	0
Sandy Mai	35513		#VALUE!	0	0	0	0	0
			0	0	0	0	0	0
Sandy Mai	35420.3	10-yr	0	0	0	0	0	0
Sandy Mai	35420.3	50-yr	0	0	-0.43	0	-0.58	-0.00178
Sandy Mai	35420.3	100-yr	0	0	0	0	0	0
Sandy Mai	35420.3	500-yr	0	0	0	0	0	0
			0	0	0	0	0	0
Sandy Mai	35237.49	10-yr	0	0	0	0	0	0
Sandy Mai	35237.49	50-yr	0	0	-0.48	0	-0.5	-2.5E-05
Sandy Mai	35237.49	100-yr	0	0	0	0	0	0
Sandy Mai	35237.49	500-yr	0	0	0	0	0	0
			0	0	0	0	0	0
Sandy Mai	34267		#VALUE!	0	0	0	0	0
			0	0	0	0	0	0
Sandy Mai	33297.82	10-yr	0	0	0	0	0	0
Sandy Mai	33297.82	50-yr	0	0	-0.25	0.08	-0.07	0.001238
Sandy Mai	33297.82	100-yr	0	0	0	0	0	0
Sandy Mai	33297.82	500-yr	0	0	0	0	0	0
			0	0	0	0	0	0
Sandy Mai	32874.91	10-yr	0	0	0	0	0	0
Sandy Mai	32874.91	50-yr	0	0	-0.39	-0.4	-1.54	-0.0033
Sandy Mai	32874.91	100-yr	0	0	0	0	0	0
Sandy Mai	32874.91	500-yr	0	0	0	0	0	0
			0	0	0	0	0	0
Sandy Mai	32432.32	10-yr	0	0	0	0	0	0
Sandy Mai	32432.32	50-yr	0	0	-0.79	-0.13	-0.71	0.001118
Sandy Mai	32432.32	100-yr	0	0	0	0	0	0
Sandy Mai	32432.32	500-yr	0	0	0	0	0	0
			0	0	0	0	0	0
Sandy Mai	32009.44	10-yr	0	0	0	0	0	0
Sandy Mai	32009.44	50-yr	0	0	-0.78	0	-0.8	-1.7E-05
Sandy Mai	32009.44	100-yr	0	0	0	0	0	0
Sandy Mai	32009.44	500-yr	0	0	0	0	0	0
			0	0	0	0	0	0
Sandy Mai	31828		#VALUE!	0	0	0	0	0
			0	0	0	0	0	0
Sandy Mai	31647.46	10-yr	0	0	0	0	0	0
Sandy Mai	31647.46	50-yr	0	0	-0.56	0	-0.57	0.000017
Sandy Mai	31647.46	100-yr	0	0	0	0	0	0
Sandy Mai	31647.46	500-yr	0	0	0	0	0	0
			0	0	0	0	0	0
Sandy Mai	31476.58	10-yr	0	0	0	0	0	0
Sandy Mai	31476.58	50-yr	0	0	-0.52	0	-0.57	0.000013

Sandy Mai	31476.58	100-yr	0	0	0	0	0	0
Sandy Mai	31476.58	500-yr	0	0	0	0	0	0
			0	0	0	0	0	0
Sandy Mai	31435		#VALUE!	0	0	0	0	0
			0	0	0	0	0	0
Sandy Mai	31392.94	10-yr	0	0	0	0	0	0
Sandy Mai	31392.94	50-yr	0	0	-0.41	0	-0.43	0.000327
Sandy Mai	31392.94	100-yr	0	0	0	0	0	0
Sandy Mai	31392.94	500-yr	0	0	0	0	0	0
			0	0	0	0	0	0
Sandy Mai	31259.8	10-yr	0	0	0	0	0	0
Sandy Mai	31259.8	50-yr	0	0	-0.47	0	-0.44	0.000185
Sandy Mai	31259.8	100-yr	0	0	0	0	0	0
Sandy Mai	31259.8	500-yr	0	0	0	0	0	0
			0	0	0	0	0	0
Sandy Mai	31220		#VALUE!	0	0	0	0	0
			0	0	0	0	0	0
Sandy Mai	31182.62	10-yr	0	0	0	0	0	0
Sandy Mai	31182.62	50-yr	0	0	0.01	0.01	0	-2E-05
Sandy Mai	31182.62	100-yr	0	0	0	0	0	0
Sandy Mai	31182.62	500-yr	0	0	0	0	0	0
			0	0	0	0	0	0
Sandy Mai	31033.98	10-yr	0	0	0	0	0	0
Sandy Mai	31033.98	50-yr	0	0	-0.1	0	-0.12	0.000216
Sandy Mai	31033.98	100-yr	0	0	0	0	0	0
Sandy Mai	31033.98	500-yr	0	0	0	0	0	0
			0	0	0	0	0	0
Sandy Mai	30579.27	10-yr	0	0	0	0	0	0
Sandy Mai	30579.27	50-yr	0	0	0.06	0.06	-0.09	-0.0006
Sandy Mai	30579.27	100-yr	0	0	0	0	0	0
Sandy Mai	30579.27	500-yr	0	0	0	0	0	0
			0	0	0	0	0	0
Sandy Mai	30235.35	10-yr	0	0	0	0	0	0
Sandy Mai	30235.35	50-yr	0	0	-0.48	-0.04	-0.62	5.7E-05
Sandy Mai	30235.35	100-yr	0	0	0	0	0	0
Sandy Mai	30235.35	500-yr	0	0	0	0	0	0
			0	0	0	0	0	0
Sandy Mai	29939.91	10-yr	0	0	0	0	0	0
Sandy Mai	29939.91	50-yr	0	0	-0.4	0	-0.6	-0.00052
Sandy Mai	29939.91	100-yr	0	0	0	0	0	0
Sandy Mai	29939.91	500-yr	0	0	0	0	0	0
			0	0	0	0	0	0
Sandy Mai	29533.61	10-yr	0	0	0	0	0	0
Sandy Mai	29533.61	50-yr	0	0	0.03	0	-0.17	-0.00064
Sandy Mai	29533.61	100-yr	0	0	0	0	0	0
Sandy Mai	29533.61	500-yr	0	0	0	0	0	0
			0	0	0	0	0	0

Sandy Mai	29203.58	10-yr	0	0	0	0	0	0
Sandy Mai	29203.58	50-yr	0	0	-0.13	0	-0.1	0.000142
Sandy Mai	29203.58	100-yr	0	0	0	0	0	0
Sandy Mai	29203.58	500-yr	0	0	0	0	0	0
			0	0	0	0	0	0
Sandy Mai	29175		#VALUE!	0	0	0	0	0
			0	0	0	0	0	0
Sandy Mai	29148	10-yr	0	0	0	0	0	0
Sandy Mai	29148	50-yr	0	0	-0.43	0	-0.32	0.00041
Sandy Mai	29148	100-yr	0	0	0	0	0	0
Sandy Mai	29148	500-yr	0	0	0	0	0	0
			0	0	0	0	0	0
Sandy Mai	28902.69	10-yr	0	0	0	0	0	0
Sandy Mai	28902.69	50-yr	0	0	-0.37	0.28	-0.41	0.00052
Sandy Mai	28902.69	100-yr	0	0	0	0	0	0
Sandy Mai	28902.69	500-yr	0	0	0	0	0	0
			0	0	0	0	0	0
Sandy Mai	28536.39	10-yr	0	0	0	0	0	0
Sandy Mai	28536.39	50-yr	0	0	-0.75	0.1	-0.79	0.001944
Sandy Mai	28536.39	100-yr	0	0	0	0	0	0
Sandy Mai	28536.39	500-yr	0	0	0	0	0	0
			0	0	0	0	0	0
Sandy Mai	28078.23	10-yr	0	0	0	0	0	0
Sandy Mai	28078.23	50-yr	0	0	-0.74	0.29	-0.82	-4.4E-05
Sandy Mai	28078.23	100-yr	0	0	0	0	0	0
Sandy Mai	28078.23	500-yr	0	0	0	0	0	0
			0	0	0	0	0	0
Sandy Mai	27678.42	10-yr	0	0	0	0	0	0
Sandy Mai	27678.42	50-yr	0	0	0.17	0.17	-0.67	-0.00198
Sandy Mai	27678.42	100-yr	0	0	0	0	0	0
Sandy Mai	27678.42	500-yr	0	0	0	0	0	0
			0	0	0	0	0	0
Sandy Mai	27191.04	10-yr	0	0	0	0	0	0
Sandy Mai	27191.04	50-yr	0	0	-0.61	-0.11	-0.69	-0.00019
Sandy Mai	27191.04	100-yr	0	0	0	0	0	0
Sandy Mai	27191.04	500-yr	0	0	0	0	0	0
			0	0	0	0	0	0
Sandy Mai	26877.54	10-yr	0	0	0	0	0	0
Sandy Mai	26877.54	50-yr	0	0	-0.69	0	-0.68	0.000101
Sandy Mai	26877.54	100-yr	0	0	0	0	0	0
Sandy Mai	26877.54	500-yr	0	0	0	0	0	0
			0	0	0	0	0	0
Sandy Mai	26835		#VALUE!	0	0	0	0	0
			0	0	0	0	0	0
Sandy Mai	26794.7	10-yr	0	0	0	0	0	0
Sandy Mai	26794.7	50-yr	0	0	-0.74	223.32	-0.16	0.001725
Sandy Mai	26794.7	100-yr	0	0	0	0	0	0

Sandy Mai	26794.7	500-yr	0	0	0	0	0	0
			0	0	0	0	0	0
Sandy Mai	26382.38	10-yr	0	0	0	0	0	0
Sandy Mai	26382.38	50-yr	0	0	-0.67	0.14	-0.74	0.000155
Sandy Mai	26382.38	100-yr	0	0	0	0	0	0
Sandy Mai	26382.38	500-yr	0	0	0	0	0	0
			0	0	0	0	0	0
Sandy Mai	26107.58	10-yr	0	0	0	0	0	0
Sandy Mai	26107.58	50-yr	0	0	-0.42	0.32	-0.71	-0.00021
Sandy Mai	26107.58	100-yr	0	0	0	0	0	0
Sandy Mai	26107.58	500-yr	0	0	0	0	0	0
			0	0	0	0	0	0
Sandy Mai	25737.96	10-yr	0	0	0	0	0	0
Sandy Mai	25737.96	50-yr	0	0	-0.51	0	-0.54	-0.00022
Sandy Mai	25737.96	100-yr	0	0	0	0	0	0
Sandy Mai	25737.96	500-yr	0	0	0	0	0	0
			0	0	0	0	0	0
Sandy Mai	25309.8	10-yr	0	0	0	0	0	0
Sandy Mai	25309.8	50-yr	0	0	-0.42	-0.08	-0.47	-1E-06
Sandy Mai	25309.8	100-yr	0	0	0	0	0	0
Sandy Mai	25309.8	500-yr	0	0	0	0	0	0
			0	0	0	0	0	0
Sandy Mai	24900.93	10-yr	0	0	0	0	0	0
Sandy Mai	24900.93	50-yr	0	0	-0.43	0	-0.44	-0.00015
Sandy Mai	24900.93	100-yr	0	0	0	0	0	0
Sandy Mai	24900.93	500-yr	0	0	0	0	0	0
			0	0	0	0	0	0
Sandy Mai	24402.5	10-yr	0	0	0	0	0	0
Sandy Mai	24402.5	50-yr	0	0	-0.35	0	-0.37	-0.00014
Sandy Mai	24402.5	100-yr	0	0	0	0	0	0
Sandy Mai	24402.5	500-yr	0	0	0	0	0	0
			0	0	0	0	0	0
Sandy Mai	24129.68	10-yr	0	0	0	0	0	0
Sandy Mai	24129.68	50-yr	0	0	-0.35	0	-0.36	9.7E-05
Sandy Mai	24129.68	100-yr	0	0	0	0	0	0
Sandy Mai	24129.68	500-yr	0	0	0	0	0	0
			0	0	0	0	0	0
Sandy Mai	24085		#VALUE!	0	0	0	0	0
			0	0	0	0	0	0
Sandy Mai	24042.15	10-yr	0	0	0	0	0	0
Sandy Mai	24042.15	50-yr	0	0	-0.58	0	-0.49	0.000277
Sandy Mai	24042.15	100-yr	0	0	0	0	0	0
Sandy Mai	24042.15	500-yr	0	0	0	0	0	0
			0	0	0	0	0	0
Sandy Mai	23662.23	10-yr	0	0	0	0	0	0
Sandy Mai	23662.23	50-yr	0	0	-0.14	-0.14	-0.51	-0.0004
Sandy Mai	23662.23	100-yr	0	0	0	0	0	0

Sandy Mai	23662.23	500-yr	0	0	0	0	0	0
			0	0	0	0	0	0
Sandy Mai	23396.78	10-yr	0	0	0	0	0	0
Sandy Mai	23396.78	50-yr	0	0	-0.51	0	-0.37	0.000561
Sandy Mai	23396.78	100-yr	0	0	0	0	0	0
Sandy Mai	23396.78	500-yr	0	0	0	0	0	0
			0	0	0	0	0	0
Sandy Mai	23076.73	10-yr	0	0	0	0	0	0
Sandy Mai	23076.73	50-yr	0	0	-0.26	0	-0.45	-0.00036
Sandy Mai	23076.73	100-yr	0	0	0	0	0	0
Sandy Mai	23076.73	500-yr	0	0	0	0	0	0
			0	0	0	0	0	0
Sandy Mai	22719.89	10-yr	0	0	0	0	0	0
Sandy Mai	22719.89	50-yr	0	0	-0.26	0	-0.29	0.000124
Sandy Mai	22719.89	100-yr	0	0	0	0	0	0
Sandy Mai	22719.89	500-yr	0	0	0	0	0	0
			0	0	0	0	0	0
Sandy Mai	22305.19	10-yr	0	0	0	0	0	0
Sandy Mai	22305.19	50-yr	0	0	-0.52	0	-0.51	0.000897
Sandy Mai	22305.19	100-yr	0	0	0	0	0	0
Sandy Mai	22305.19	500-yr	0	0	0	0	0	0
			0	0	0	0	0	0
Sandy Mai	21973.79	10-yr	0	0	0	0	0	0
Sandy Mai	21973.79	50-yr	0	0	-0.7	0	-0.7	0.000372
Sandy Mai	21973.79	100-yr	0	0	0	0	0	0
Sandy Mai	21973.79	500-yr	0	0	0	0	0	0
			0	0	0	0	0	0
Sandy Mai	21498.81	10-yr	0	0	0	0	0	0
Sandy Mai	21498.81	50-yr	0	0	-0.83	0	-0.83	0.000192
Sandy Mai	21498.81	100-yr	0	0	0	0	0	0
Sandy Mai	21498.81	500-yr	0	0	0	0	0	0
			0	0	0	0	0	0
Sandy Mai	21070	10-yr	0	0	0	0	0	0
Sandy Mai	21070	50-yr	0	0	-0.85	0	-0.85	0.000017
Sandy Mai	21070	100-yr	0	0	0	0	0	0
Sandy Mai	21070	500-yr	0	0	0	0	0	0
			0	0	0	0	0	0
Sandy Mai	20558.49	10-yr	0	0	0	0	0	0
Sandy Mai	20558.49	50-yr	0	0	-0.83	0	-0.85	-3.7E-05
Sandy Mai	20558.49	100-yr	0	0	0	0	0	0
Sandy Mai	20558.49	500-yr	0	0	0	0	0	0
			0	0	0	0	0	0
Sandy Mai	20488		#VALUE!	0	0	0	0	0
			0	0	0	0	0	0
Sandy Mai	20450.5	10-yr	0	0	0	0	0	0
Sandy Mai	20450.5	50-yr	0	0	-0.27	-0.27	-0.67	-0.00114
Sandy Mai	20450.5	100-yr	0	0	0	0	0	0

Sandy Mai	20450.5	500-yr	0	0	0	0	0	0
			0	0	0	0	0	0
Sandy Mai	20135.83	10-yr	0	0	0	0	0	0
Sandy Mai	20135.83	50-yr	0	0	-0.54	0	-0.58	-1.8E-05
Sandy Mai	20135.83	100-yr	0	0	0	0	0	0
Sandy Mai	20135.83	500-yr	0	0	0	0	0	0
			0	0	0	0	0	0
Sandy Mai	19889.56	10-yr	0	0	0	0	0	0
Sandy Mai	19889.56	50-yr	0	0	-0.56	0	-0.57	0.000036
Sandy Mai	19889.56	100-yr	0	0	0	0	0	0
Sandy Mai	19889.56	500-yr	0	0	0	0	0	0
			0	0	0	0	0	0
Sandy Mai	19820		#VALUE!	0	0	0	0	0
			0	0	0	0	0	0
Sandy Mai	19756.97	10-yr	0	0	0	0	0	0
Sandy Mai	19756.97	50-yr	0	0	-0.31	0	-0.32	-8E-06
Sandy Mai	19756.97	100-yr	0	0	0	0	0	0
Sandy Mai	19756.97	500-yr	0	0	0	0	0	0
			0	0	0	0	0	0
Sandy Mai	19546.85	10-yr	0	0	0	0	0	0
Sandy Mai	19546.85	50-yr	0	0	-0.29	0	-0.31	-4.5E-05
Sandy Mai	19546.85	100-yr	0	0	0	0	0	0
Sandy Mai	19546.85	500-yr	0	0	0	0	0	0
			0	0	0	0	0	0
Sandy Mai	19352.67	10-yr	0	0	0	0	0	0
Sandy Mai	19352.67	50-yr	0	0	-0.3	0	-0.3	0.000036
Sandy Mai	19352.67	100-yr	0	0	0	0	0	0
Sandy Mai	19352.67	500-yr	0	0	0	0	0	0
			0	0	0	0	0	0
Sandy Mai	19300		#VALUE!	0	0	0	0	0
			0	0	0	0	0	0
Sandy Mai	19245.94	10-yr	0	0	0	0	0	0
Sandy Mai	19245.94	50-yr	0	0	0	0	0	0
Sandy Mai	19245.94	100-yr	0	0	0	0	0	0
Sandy Mai	19245.94	500-yr	0	0	0	0	0	0
			0	0	0	0	0	0
Sandy Mai	19054.38	10-yr	0	0	0	0	0	0
Sandy Mai	19054.38	50-yr	0	0	-0.18	0	-0.27	-0.00011
Sandy Mai	19054.38	100-yr	0	0	0	0	0	0
Sandy Mai	19054.38	500-yr	0	0	0	0	0	0
			0	0	0	0	0	0
Sandy Mai	18845.69	10-yr	0	0	0	0	0	0
Sandy Mai	18845.69	50-yr	0	0	-0.18	-0.01	-0.23	-0.00012
Sandy Mai	18845.69	100-yr	0	0	0	0	0	0
Sandy Mai	18845.69	500-yr	0	0	0	0	0	0
			0	0	0	0	0	0
Sandy Mai	18634.5	10-yr	0	0	0	0	0	0

Sandy Mai	18634.5	50-yr	0	0	-0.17	0	-0.22	-5.6E-05
Sandy Mai	18634.5	100-yr	0	0	0	0	0	0
Sandy Mai	18634.5	500-yr	0	0	0	0	0	0
			0	0	0	0	0	0
Sandy Mai	18463	10-yr	0	0	0	0	0	0
Sandy Mai	18463	50-yr	0	0	-0.18	0	-0.2	-3.1E-05
Sandy Mai	18463	100-yr	0	0	0	0	0	0
Sandy Mai	18463	500-yr	0	0	0	0	0	0
			0	0	0	0	0	0
Sandy Mai	18269.19	10-yr	0	0	0	0	0	0
Sandy Mai	18269.19	50-yr	0	0	-0.28	0.07	-0.22	0.000142
Sandy Mai	18269.19	100-yr	0	0	0	0	0	0
Sandy Mai	18269.19	500-yr	0	0	0	0	0	0
			0	0	0	0	0	0
Sandy Mai	18240		#VALUE!	0	0	0	0	0
			0	0	0	0	0	0
Sandy Mai	18211.69	10-yr	0	0	0	0	0	0
Sandy Mai	18211.69	50-yr	0	0	-0.14	0.08	-0.46	-0.00046
Sandy Mai	18211.69	100-yr	0	0	0	0	0	0
Sandy Mai	18211.69	500-yr	0	0	0	0	0	0
			0	0	0	0	0	0
Sandy Mai	18010.15	10-yr	0	0	0	0	0	0
Sandy Mai	18010.15	50-yr	0	0	-0.06	-0.06	-0.46	-0.00101
Sandy Mai	18010.15	100-yr	0	0	0	0	0	0
Sandy Mai	18010.15	500-yr	0	0	0	0	0	0
			0	0	0	0	0	0
Sandy Mai	17718.32	10-yr	0	0	0	0	0	0
Sandy Mai	17718.32	50-yr	0	0	-0.75	-192.29	-1.65	-0.00269
Sandy Mai	17718.32	100-yr	0	0	0	0	0	0
Sandy Mai	17718.32	500-yr	0	0	0	0	0	0
			0	0	0	0	0	0
Sandy Mai	17333.24	10-yr	0	0	0	0	0	0
Sandy Mai	17333.24	50-yr	0	0	-0.5	0	-0.92	-0.00098
Sandy Mai	17333.24	100-yr	0	0	0	0	0	0
Sandy Mai	17333.24	500-yr	0	0	0	0	0	0
			0	0	0	0	0	0
Sandy Mai	16976.28	10-yr	0	0	0	0	0	0
Sandy Mai	16976.28	50-yr	0	0	-0.61	189.04	-0.71	0.002981
Sandy Mai	16976.28	100-yr	0	0	0	0	0	0
Sandy Mai	16976.28	500-yr	0	0	0	0	0	0
			0	0	0	0	0	0
Sandy Mai	16566.37	10-yr	0	0	0	0	0	0
Sandy Mai	16566.37	50-yr	0	0	-0.63	0	-0.78	-0.0002
Sandy Mai	16566.37	100-yr	0	0	0	0	0	0
Sandy Mai	16566.37	500-yr	0	0	0	0	0	0
			0	0	0	0	0	0
Sandy Mai	16177.16	10-yr	0	0	0	0	0	0

Sandy Mai	16177.16	50-yr	0	0	-0.59	0	-0.73	0.000052
Sandy Mai	16177.16	100-yr	0	0	0	0	0	0
Sandy Mai	16177.16	500-yr	0	0	0	0	0	0
			0	0	0	0	0	0
Sandy Mai	15741.39	10-yr	0	0	0	0	0	0
Sandy Mai	15741.39	50-yr	0	0	-0.68	-0.27	-0.73	4.8E-05
Sandy Mai	15741.39	100-yr	0	0	0	0	0	0
Sandy Mai	15741.39	500-yr	0	0	0	0	0	0
			0	0	0	0	0	0
Sandy Mai	15036.05	10-yr	0	0	0	0	0	0
Sandy Mai	15036.05	50-yr	0	0	-0.69	-0.39	-0.85	0.00082
Sandy Mai	15036.05	100-yr	0	0	0	0	0	0
Sandy Mai	15036.05	500-yr	0	0	0	0	0	0
			0	0	0	0	0	0
Sandy Mai	14643.01	10-yr	0	0	0	0	0	0
Sandy Mai	14643.01	50-yr	0	0	-0.66	-0.21	-0.8	-0.0002
Sandy Mai	14643.01	100-yr	0	0	0	0	0	0
Sandy Mai	14643.01	500-yr	0	0	0	0	0	0
			0	0	0	0	0	0
Sandy Mai	14242.08	10-yr	0	0	0	0	0	0
Sandy Mai	14242.08	50-yr	0	0	-0.58	0.06	-0.73	0.000217
Sandy Mai	14242.08	100-yr	0	0	0	0	0	0
Sandy Mai	14242.08	500-yr	0	0	0	0	0	-1E-06
			0	0	0	0	0	0
Sandy Mai	13869.62	10-yr	0	0	0	0	0	0
Sandy Mai	13869.62	50-yr	0	0	-0.53	-0.32	-0.79	-9.1E-05
Sandy Mai	13869.62	100-yr	0	0	0	0	0	0
Sandy Mai	13869.62	500-yr	0	0	0	0	0	0
			0	0	0	0	0	0
Sandy Mai	13438.13	10-yr	0	0	0	0	0	0
Sandy Mai	13438.13	50-yr	0	0	-0.51	-0.14	-0.63	-0.00034
Sandy Mai	13438.13	100-yr	0	0	0	0	0	0
Sandy Mai	13438.13	500-yr	0	0	0	0	0	0
			0	0	0	0	0	0
Sandy Mai	12942.35	10-yr	0	0	0	0	0	0
Sandy Mai	12942.35	50-yr	0	0	-0.49	-0.12	-0.53	-4E-05
Sandy Mai	12942.35	100-yr	0	0	0	0	0	0
Sandy Mai	12942.35	500-yr	0	0	0	0	0	0
			0	0	0	0	0	0
Sandy Mai	12648.67	10-yr	0	0	0	0	0	0
Sandy Mai	12648.67	50-yr	0	0	-0.5	0	-0.51	-6E-06
Sandy Mai	12648.67	100-yr	0	0	0	0	0	0
Sandy Mai	12648.67	500-yr	0	0	0	0	0	0
			0	0	0	0	0	0
Sandy Mai	12600		#VALUE!	0	0	0	0	0
			0	0	0	0	0	0
Sandy Mai	12591.62	10-yr	0	0	0	0	0	0

Sandy Mai	12591.62	50-yr	0	0	-0.05	0.17	-0.38	-0.00058
Sandy Mai	12591.62	100-yr	0	0	0	0	0	0
Sandy Mai	12591.62	500-yr	0	0	0	0	0	0
			0	0	0	0	0	0
Sandy Mai	12103.89	10-yr	0	0	0	0	0	0
Sandy Mai	12103.89	50-yr	0	0	-0.04	0.06	-0.1	-0.00011
Sandy Mai	12103.89	100-yr	0	0	0	0	0	0
Sandy Mai	12103.89	500-yr	0	0	0	0	0	0
			0	0	0	0	0	0
Sandy Mai	11764.28	10-yr	0	0	0	0	0	0
Sandy Mai	11764.28	50-yr	0	0	0.05	-0.12	-0.03	-0.00028
Sandy Mai	11764.28	100-yr	0	0	0	0	0	0
Sandy Mai	11764.28	500-yr	0	0	0	0	0	0
			0	0	0	0	0	0
Sandy Mai	11405.26	10-yr	0	0	0	0	0	0
Sandy Mai	11405.26	50-yr	0	0	-0.01	0	0	-1E-06
Sandy Mai	11405.26	100-yr	0	0	0	0	0	0
Sandy Mai	11405.26	500-yr	0	0	0	0	0	0
			0	0	0	0	0	0
Sandy Mai	11350		#VALUE!	0	0	0	0	0
			0	0	0	0	0	0
Sandy Mai	11303	10-yr	0	0	0	0	0	0
Sandy Mai	11303	50-yr	0	0	-1.02	0.01	-0.31	0.002974
Sandy Mai	11303	100-yr	0	0	0	0	0	0
Sandy Mai	11303	500-yr	0	0	0	0	0	-1E-06
			0	0	0	0	0	0
Sandy Mai	10733.77	10-yr	0	0	0	0	0	0
Sandy Mai	10733.77	50-yr	0	0	-1.14	-0.95	-1.17	-0.00003
Sandy Mai	10733.77	100-yr	0	0	0	0	0	0
Sandy Mai	10733.77	500-yr	0	0	0	0	0	0
			0	0	0	0	0	0
Sandy Mai	10700		#VALUE!	0	0	0	0	0
			0	0	0	0	0	0
Sandy Mai	10661.15	10-yr	0	0	0	0	0	0
Sandy Mai	10661.15	50-yr	0	0	-1.15	-0.81	-1.17	-1.8E-05
Sandy Mai	10661.15	100-yr	0	0	0	0	0	0
Sandy Mai	10661.15	500-yr	0	0	0	0	0	0
			0	0	0	0	0	0
Sandy Mai	10118.31	10-yr	0	0	0	0	0	0
Sandy Mai	10118.31	50-yr	0	0	-1.15	0.01	-1.16	0.000006
Sandy Mai	10118.31	100-yr	0	0	0	0	0	0
Sandy Mai	10118.31	500-yr	0	0	0	0	0	0
			0	0	0	0	0	0
Sandy Mai	9744.554	10-yr	0	0	0	0	0	0
Sandy Mai	9744.554	50-yr	0	0	-1.15	0.01	-1.16	0
Sandy Mai	9744.554	100-yr	0	0	0	0	0	0
Sandy Mai	9744.554	500-yr	0	0	0	0	0	0

			0	0	0	0	0	0
Sandy Mai	9685		#VALUE!	0	0	0	0	0
			0	0	0	0	0	0
Sandy Mai	9639.641	10-yr	0	0	0	0	0	0
Sandy Mai	9639.641	50-yr	0	0	-1	-0.58	-1.03	-1.3E-05
Sandy Mai	9639.641	100-yr	0	0	0.01	0	0	0
Sandy Mai	9639.641	500-yr	0	0	0	0	0	0
			0	0	0	0	0	0
Sandy Mai	8975.758	10-yr	0	0	0	0	0	0
Sandy Mai	8975.758	50-yr	0	0	-1	-0.51	-1.01	-0.00002
Sandy Mai	8975.758	100-yr	0	0	0	0	0.01	0
Sandy Mai	8975.758	500-yr	0	0	0	0	0	0
			0	0	0	0	0	0
Sandy Mai	8504.5	10-yr	0	0	0	0	0	0
Sandy Mai	8504.5	50-yr	0	0	-1.03	-0.01	-1.02	0.000019
Sandy Mai	8504.5	100-yr	0	0	0	0	0	0
Sandy Mai	8504.5	500-yr	0	0	0	0	0	0
			0	0	0	0	0	0
Sandy Mai	8350		#VALUE!	0	0	0	0	0
			0	0	0	0	0	0
Sandy Mai	8235.939	10-yr	0	0	0	0	0	0
Sandy Mai	8235.939	50-yr	0	0	-1.15	-0.01	-1.11	0.000033
Sandy Mai	8235.939	100-yr	0	0	0	0	0	0
Sandy Mai	8235.939	500-yr	0	0	0	0	0	0
			0	0	0	0	0	0
Sandy Mai	8063.602	10-yr	0	0	0	0	0	0
Sandy Mai	8063.602	50-yr	0	0	-1.07	0	-1.18	-0.00011
Sandy Mai	8063.602	100-yr	0	0	0	0	0	0
Sandy Mai	8063.602	500-yr	0	0	0	0	0	0
			0	0	0	0	0	0
Sandy Mai	8000		#VALUE!	0	0	0	0	0
			0	0	0	0	0	0
Sandy Mai	7966.54	10-yr	0	0	0	0	0	0
Sandy Mai	7966.54	50-yr	0	0	-0.44	0	-0.48	3E-06
Sandy Mai	7966.54	100-yr	0	0	0	0	0	0
Sandy Mai	7966.54	500-yr	0	0	0	0	0	0
			0	0	0	0	0	0
Sandy Mai	7570.986	10-yr	0	0	0	0	0	0
Sandy Mai	7570.986	50-yr	0	0	-0.42	0	-0.46	-4.7E-05
Sandy Mai	7570.986	100-yr	0	0	0.01	0	0	0
Sandy Mai	7570.986	500-yr	0	0	0	0	0	0
			0	0	0	0	0	0
Sandy Mai	7173.807	10-yr	0	0	0	0	0	0
Sandy Mai	7173.807	50-yr	0	0	-0.38	-1.48	-0.44	-6.7E-05
Sandy Mai	7173.807	100-yr	0	0	0	0	0	0
Sandy Mai	7173.807	500-yr	0	0	0	0	0	0
			0	0	0	0	0	0

Sandy Mai	6825.559	10-yr	0	0	0	0	0	0
Sandy Mai	6825.559	50-yr	0	0	-0.45	0	-0.44	0.000024
Sandy Mai	6825.559	100-yr	0	0	0	0	0	0
Sandy Mai	6825.559	500-yr	0	0	0	0	0	0
			0	0	0	0	0	0
Sandy Mai	6765		#VALUE!	0	0	0	0	0
			0	0	0	0	0	0
Sandy Mai	6709.658	10-yr	0	0	0	0	0	1E-06
Sandy Mai	6709.658	50-yr	0	0	-0.5	0	-0.46	0.000042
Sandy Mai	6709.658	100-yr	0	0	0	0	0.01	-1E-06
Sandy Mai	6709.658	500-yr	0	0	0	0	0	0
			0	0	0	0	0	0
Sandy Mai	6668.16	10-yr	0	0	0	0	-0.01	1E-06
Sandy Mai	6668.16	50-yr	0	0	-0.49	0	-0.47	0.000026
Sandy Mai	6668.16	100-yr	0	0	0	0	0	0
Sandy Mai	6668.16	500-yr	0	0	0	0	0	0
			0	0	0	0	0	0
Sandy Mai	6600		#VALUE!	0	0	0	0	0
			0	0	0	0	0	0
Sandy Mai	6572.639	10-yr	0	0	-0.01	0	-0.01	0
Sandy Mai	6572.639	50-yr	0	0	-0.47	0	-0.45	0.000034
Sandy Mai	6572.639	100-yr	0	0	0.01	0	0.01	0
Sandy Mai	6572.639	500-yr	0	0	0	0	0	0
			0	0	0	0	0	0
Sandy Mai	6414.98	10-yr	0	0	0	0	0	1E-06
Sandy Mai	6414.98	50-yr	0	0	-0.46	0	-0.45	0.000027
Sandy Mai	6414.98	100-yr	0	0	0.01	0	0.01	-1E-06
Sandy Mai	6414.98	500-yr	0	0	0	0	0	0
			0	0	0	0	0	0
Sandy Mai	6300		#VALUE!	0	0	0	0	0
			0	0	0	0	0	0
Sandy Mai	6189.177	10-yr	0	0	0	0	0	0
Sandy Mai	6189.177	50-yr	0	0	-0.85	0.11	-0.87	0.00009
Sandy Mai	6189.177	100-yr	0	0	0.04	0	0.02	-1.1E-05
Sandy Mai	6189.177	500-yr	0	0	-0.07	0	-0.04	3.6E-05
			0	0	0	0	0	0
Sandy Mai	5508.105	10-yr	0	0	0	0	0	1E-06
Sandy Mai	5508.105	50-yr	0	0	-0.56	0	-0.8	-0.00023
Sandy Mai	5508.105	100-yr	0	0	0.03	0	0.03	-2E-06
Sandy Mai	5508.105	500-yr	0	0	-0.06	0	-0.06	3E-06
			0	0	0	0	0	0
Sandy Mai	5084.678	10-yr	0	0	0	0.01	0	-1E-06
Sandy Mai	5084.678	50-yr	0	0	-0.58	0.17	-0.72	-0.00011
Sandy Mai	5084.678	100-yr	0	0	0.06	0.22	0.04	-8.4E-05
Sandy Mai	5084.678	500-yr	0	0	-0.05	-0.15	-0.05	-4.1E-05
			0	0	0	0	0	0
Sandy Mai	5065.378	10-yr	0	0	0.1	0	0.01	-0.00016

Sandy Mai	5065.378	50-yr	0	0	-0.54	0.12	-0.71	-0.00014
Sandy Mai	5065.378	100-yr	0	0	0.01	-0.06	0.04	0.000019
Sandy Mai	5065.378	500-yr	0	0	0.08	-0.02	-0.04	-8.3E-05
			0	0	0	0	0	0
Sandy Mai	5039.878	10-yr	0	0	-0.33	0	0.33	0.001016
Sandy Mai	5039.878	50-yr	0	0	-0.63	0.31	-0.72	0.000076
Sandy Mai	5039.878	100-yr	0	0	-0.25	0.81	0.05	0.00045
Sandy Mai	5039.878	500-yr	0	0	-0.01	1.47	0	0.00005
			0	0	0	0	0	0
Sandy Mai	4865.578	10-yr	0	0	-0.17	0	-0.07	0.000175
Sandy Mai	4865.578	50-yr	0	0	-0.57	-0.01	-0.69	-8.3E-05
Sandy Mai	4865.578	100-yr	0	0	-0.31	-0.58	-0.15	0.000157
Sandy Mai	4865.578	500-yr	0	0	-0.01	0.63	-0.02	0.000007
			0	0	0	0	0	0
Sandy Mai	4790.088	10-yr	0	0	-0.05	-0.31	-0.08	-3.4E-05
Sandy Mai	4790.088	50-yr	0	0	-0.18	-0.51	-0.64	-0.00037
Sandy Mai	4790.088	100-yr	0	0	-0.21	-0.33	-0.16	2.9E-05
Sandy Mai	4790.088	500-yr	0	0	0.02	-0.2	-0.01	-7.3E-05
			0	0	0	0	0	0
Sandy Mai	4777.088	10-yr	0	0	-0.12	0.24	-0.02	0.000198
Sandy Mai	4777.088	50-yr	0	0	-0.23	-0.62	-0.58	-0.00029
Sandy Mai	4777.088	100-yr	0	0	-0.27	0.52	-0.12	0.000202
Sandy Mai	4777.088	500-yr	0	0	0.01	0.75	0	0.000007
			0	0	0	0	0	0
Sandy Mai	4740		#VALUE!	0	0	0	0	0
			0	0	0	0	0	0
Sandy Mai	4685.592	10-yr	0	0	0	0	0	0
Sandy Mai	4685.592	50-yr	0	0	-0.66	0	-0.24	0.001198
Sandy Mai	4685.592	100-yr	0	0	0	0	0	0
Sandy Mai	4685.592	500-yr	0	0	0	0	0	0
			0	0	0	0	0	0
Sandy Mai	4327.181	10-yr	0	0	0	0	0	0
Sandy Mai	4327.181	50-yr	0	0	-0.57	0	-0.54	0.000145
Sandy Mai	4327.181	100-yr	0	0	0	0	0	0
Sandy Mai	4327.181	500-yr	0	0	0	0	0	0
			0	0	0	0	0	0
Sandy Mai	3964.325	10-yr	0	0	0	0	0	0
Sandy Mai	3964.325	50-yr	0	0	-0.51	0	-0.56	-1.2E-05
Sandy Mai	3964.325	100-yr	0	0	0	0	0	0
Sandy Mai	3964.325	500-yr	0	0	0	0	0	0
			0	0	0	0	0	0
Sandy Mai	3515.389	10-yr	0	0	0	0	0	0
Sandy Mai	3515.389	50-yr	0	0	-0.52	0	-0.56	-4E-06
Sandy Mai	3515.389	100-yr	0	0	0	0	0	0
Sandy Mai	3515.389	500-yr	0	0	0	0	0	0
			0	0	0	0	0	0
Sandy Mai	3004.364	10-yr	0	0	0	0	0	0

Sandy Mai	3004.364	50-yr	0	0	-0.51	-0.13	-0.55	-1.9E-05
Sandy Mai	3004.364	100-yr	0	0	0	0	0	0
Sandy Mai	3004.364	500-yr	0	0	0	0	0	0
			0	0	0	0	0	0
Sandy Mai	2590.359	10-yr	0	0	0	0	0	0
Sandy Mai	2590.359	50-yr	0	0	-0.44	0.01	-0.53	-5.3E-05
Sandy Mai	2590.359	100-yr	0	0	0	0	0	0
Sandy Mai	2590.359	500-yr	0	0	0	0	0	0
			0	0	0	0	0	0
Sandy Mai	2500		#VALUE!	0	0	0	0	0
			0	0	0	0	0	0
Sandy Mai	2417.391	10-yr	0	0	0	0	0	0
Sandy Mai	2417.391	50-yr	0	0	-0.52	-0.54	-0.99	-0.00075
Sandy Mai	2417.391	100-yr	0	0	0	0	0	0
Sandy Mai	2417.391	500-yr	0	0	0	0	0	0
			0	0	0	0	0	0
Sandy Mai	2072.963	10-yr	0	0	0	0	0	0
Sandy Mai	2072.963	50-yr	0	0	-0.59	-0.27	-0.7	-3.6E-05
Sandy Mai	2072.963	100-yr	0	0	0	0	0	0
Sandy Mai	2072.963	500-yr	0	0	0	0	0	0
			0	0	0	0	0	0
Sandy Mai	1688.606	10-yr	0	0	0	0	0	0
Sandy Mai	1688.606	50-yr	0	0	-0.58	0	-0.69	-3.6E-05
Sandy Mai	1688.606	100-yr	0	0	0	0	0	0
Sandy Mai	1688.606	500-yr	0	0	0	0	0	0
			0	0	0	0	0	0
Sandy Mai	1299.523	10-yr	0	0	0	0	0	0
Sandy Mai	1299.523	50-yr	0	0	-0.62	0.06	-0.67	2.5E-05
Sandy Mai	1299.523	100-yr	0	0	0	0	0	0
Sandy Mai	1299.523	500-yr	0	0	0	0	0	0
			0	0	0	0	0	0
Sandy Mai	663.061	10-yr	0	0	0	0	0	0
Sandy Mai	663.061	50-yr	0	0	-0.76	-0.09	-0.76	0.000268
Sandy Mai	663.061	100-yr	0	0	0	0	0	0
Sandy Mai	663.061	500-yr	0	0	0	0	0	0
			0	0	0	0	0	0
Sandy Mai	143.571	10-yr	0	0	0	0	0	0
Sandy Mai	143.571	50-yr	0	0	-0.57	-0.57	-0.86	-0.00029
Sandy Mai	143.571	100-yr	0	0	0	0	0	0
Sandy Mai	143.571	500-yr	0	0	0	0	0	0

Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)	Froude # Chl
0	0	0	0
-2.65	87.09	104.24	-0.38
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
-1.42	36.9	35.91	-0.09
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
-0.24	22.77	38.04	-0.03
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0.65	-9.2	34.3	0.05
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0.03	0.01	7.38	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0.29	26.97	99.13	0.05
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0.3	45.47	76.45	0.03
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
-0.45	150.38	116.97	-0.02
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0

-0.59	168.86	116.46	-0.03
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
-0.49	39.21	40.38	-0.02
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
-0.15	203.97	124.33	-0.01
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0.56	-11.91	-26.14	0.07
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
-3.36	124.75	164.16	-0.26
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0.64	-2.97	232.67	0.11
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
-0.22	232.6	196.91	-0.01
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
-0.06	173.12	170.47	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
-0.16	76.42	83.18	0

0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0.04	20.78	35.93	0.02
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0.41	48.15	162.1	0.04
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
-0.02	0.87	0.93	-0.01
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0.09	18.55	28.29	0.02
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
-0.42	15.08	18.25	-0.04
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
-0.45	108.2	106.13	-0.01
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
-0.66	68.52	81.04	-0.02
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
-1.39	171.74	76.55	-0.11
0	0	0	0
0	0	0	0
0	0	0	0

0	0	0	0
0.14	-3.69	1.87	0.02
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0.47	-12.09	26.56	0.06
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0.32	71.79	72.86	0.04
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0.75	46.82	99.31	0.12
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
-0.47	200.31	309.98	-0.02
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
-1.91	70.91	78.07	-0.14
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0.07	182.09	222.56	0.02
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0.41	226.15	265.34	0.04
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
1.92	-88.22	54.78	0.17
0	0	0	0

0	0	0	0
0	0	0	0
0	0	0	0
-0.08	63.82	77.91	0.01
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
-0.82	221.18	109.99	-0.03
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
-0.01	335.46	137.89	0.01
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
-0.23	397.74	234.13	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
-0.21	221.65	64	-0.01
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
-0.22	220.51	88.93	-0.01
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0.06	161.31	195.22	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0.83	-75.99	55.29	0.06
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
-0.67	34.86	22.58	-0.04
0	0	0	0

0	0	0	0
0	0	0	0
0	0	0	0
0.66	-26.52	15.61	0.07
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
-1.05	311.17	154.49	-0.05
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
-0.03	226.65	193.91	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0.27	-27.12	72.36	0.02
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0.08	106.57	157.63	0.02
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
-0.04	116.24	166.5	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
-0.08	223.92	234.56	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
-0.19	231.04	372.28	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
-1.12	144.59	135.66	-0.07
0	0	0	0

0	0	0	0
0	0	0	0
0	0	0	0
-0.26	323.28	159.32	-0.01
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0.28	167.25	237.28	0.02
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
-0.14	518.44	293.39	-0.01
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
-0.08	383.64	194.95	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0.26	179.09	180.09	0.02
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
-0.4	209.88	113.38	-0.02
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
-0.46	269.54	120.57	-0.03
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0

-0.33	316.13	160.43	-0.02
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
-0.26	409.87	170.29	-0.02
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0.33	-8.34	56.15	0.03
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
-0.77	98.83	94.17	-0.05
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
-1.1	124.54	109.14	-0.07
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
-3.59	339.42	271.83	-0.23
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
-2.06	406.27	219.58	-0.14
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0.81	41.73	117.88	0.16
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
-0.85	261.75	196.92	-0.04
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0

-0.61	151.04	146.5	-0.02
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
-0.03	129.64	133.76	0.02
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0.12	135.14	137.5	0.05
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
-0.97	532.07	216.45	-0.04
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
-0.15	250.74	191.09	0.02
0	0	0	0
0	0.02	0	0
0	0	0	0
0	0	0	0
-0.68	215.26	140.07	-0.01
0	0	0	0
0	0.02	0	0
0	0	0	0
0	0	0	0
-0.69	305.31	126.72	-0.03
0	0	0	0
0	0.03	0	0
0	0	0	0
0	0	0	0
-0.25	171.09	104.18	0
0	0	0	0
0	0.03	0	0
0	0	0	0
0	0	0	0
-0.1	329.74	211.01	0
0	0	0	0
0	0.03	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0

-1.41	503.89	189.76	-0.09
0	0	0	0
0	0.01	0	0
0	0	0	0
0	0	0	0
-0.3	355.72	164.92	-0.02
0	0	0	0
0	0.01	0	0
0	0	0	0
0	0	0	0
-0.92	845.21	238.37	-0.07
0	0	0	0
0	0.01	0	0
0	0	0	0
0	0	0	0
-0.01	-0.56	120.58	-0.01
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
2.56	-126.99	-15.27	0.24
0	0	0	0
0	0.05	0.01	0
0	0	0	0
0	-0.2	-0.09	0
-0.49	360.8	254.71	-0.01
0	-0.28	-0.01	0
0	0.14	0.01	0
0	0	0	0
0	0	0	0
0	0	0	0
0	-0.25	-0.01	0
-0.38	706.86	302.43	-0.01
0	-0.33	-0.03	0
0	0.18	0.06	0
0	0	0	0
0	-0.22	-0.01	0
-0.01	509.19	270.25	0.01
0	-0.29	-0.01	0
0	0.14	0	0
0	0	0	0
0	-0.14	-0.02	0
-0.13	600.5	278.23	-0.01
0	-0.33	-0.03	0
0	0.16	0	0

0	0	0	0
0	0	0	0
0	0	0	0
0	-0.31	-0.05	0
-0.32	814.51	239.34	-0.01
0	1.88	0.07	0
0	0.14	0.01	0
0	0	0	0
0	-0.37	-0.02	0
-0.4	1729.21	428.95	-0.01
0	2.74	0.08	0
0	0.2	0	0
0	0	0	0
0	-0.17	-0.03	0
0.04	0.83	804.56	0.01
0	0.65	0.06	0
0	0.04	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0.01	-0.08	-0.02	0
0.14	-122.67	305.71	0.01
0	0.52	0.07	0
0	0.03	0	0
0	0	0	0
0	-0.05	-0.05	0
-1.73	2279.86	572.73	-0.08
0	2.75	0.04	0
0	0.16	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	-0.15	0	0
-0.05	472.21	361.27	0
0	2.85	0.04	0
0	0.13	0.01	0
0	0	0	0
0	-0.33	-0.01	0
-0.82	1058.51	174.31	-0.04
0	1.5	0.01	-0.01
0	0.07	0	0
0	0	0	0
0.01	-0.45	-0.01	0
-1.53	2769.34	263.2	-0.07
0	1.94	0.03	0
0	0.09	0	0
0	0	0	0

0.01	-0.15	-0.02	0
0.15	-49.8	108.28	0.01
0	0.59	0.13	0
0	0.04	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	-0.17	-0.05	0
0.2	-53.97	159.38	0.02
0	0.63	0.16	0
0	0.04	0	0
0	0	0	0
0	-0.13	-0.02	0
0.18	-44.07	210.33	0.02
0	1.51	0.07	0
0	0.07	0.01	0
0	0	0	0
0	0	0	0
0	0	0	0
0	-0.12	-0.02	0
0.2	-35.85	190.47	0.01
-0.01	1.66	0.07	0
0	0.29	0.01	0
0	0	0	0
0	-0.16	-0.01	0
0.11	-52.47	172.27	0.01
0	0.69	0.66	0
0	0.21	0.02	0
0	0	0	0
0	0	0	0
0	0	0	0
0	-0.27	-0.01	0
0.08	98.73	39.53	0.02
-0.03	4.65	0.14	0
0.1	-14.33	-1.13	0.01
0	0	0	0
0	-0.79	-0.05	0
-2.39	1813.78	629.01	-0.11
-0.02	38.75	0.28	-0.01
0.03	-69.25	-0.55	0
0	0	0	0
0	-0.61	3.01	0
-1.11	837.98	1004.41	-0.05
-0.82	-28.84	12.79	-0.04
-0.75	-120.39	-0.68	-0.03
0	0	0	0
-0.29	33.49	21.78	-0.03

-1.17	590.63	689.75	-0.05
0.17	-154.9	14.64	0
-0.98	1660.38	0.2	-0.04
0	0	0	0
2.54	-303.69	-78.51	0.15
0.26	641.72	942.84	0.02
3.84	-2728.58	-169.61	0.19
0.83	42.15	-0.15	0.04
0	0	0	0
1.35	-1041.68	-20.94	0.09
-0.63	606.37	1134.44	-0.03
2.14	-2688.47	-8.36	0.11
0.18	55.9	-0.3	0.01
0	0	0	0
-0.16	-583.48	24.47	0
-1.77	379.14	991.05	-0.09
0.06	-1297.92	18.31	0.01
-0.92	286.8	26.37	-0.04
0	0	0	0
1.11	-0.68	-3.42	0.06
-1.37	709.86	1264.72	-0.07
1.52	-30.43	-5.85	0.08
0.25	5.18	0.04	0.01
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
1.19	-119.17	647.66	0.1
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0.39	-156.65	41.85	0.02
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
-0.28	408.78	137.32	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
-0.2	659.31	215.5	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0

-0.28	654.27	274.81	-0.01
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
-0.38	655.43	289.74	-0.01
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
-2.32	623.29	239.23	-0.13
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
-0.41	383.15	245.43	-0.01
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
-0.49	352.3	196.93	-0.01
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
-0.27	332.44	324.67	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0.28	139.82	369.01	0.03
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
-1.06	733.68	551.76	-0.03
0	0	0	0
0	0	0	0

Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Crit W.S. (ft)	E.G. Elev (ft)	E.G. Slope (ft/ft)
Sandy Mai	38835.32	10-yr						
Sandy Mai	38835.32	50-yr						
Sandy Mai	38835.32	100-yr						
Sandy Mai	38835.32	500-yr						
Sandy Mai	38353.13	10-yr						
Sandy Mai	38353.13	50-yr						
Sandy Mai	38353.13	100-yr						
Sandy Mai	38353.13	500-yr						
Sandy Mai	37880.8	10-yr						
Sandy Mai	37880.8	50-yr						
Sandy Mai	37880.8	100-yr						
Sandy Mai	37880.8	500-yr						
Sandy Mai	37489.56	10-yr						
Sandy Mai	37489.56	50-yr						
Sandy Mai	37489.56	100-yr						
Sandy Mai	37489.56	500-yr						
Sandy Mai	37270		Culvert					
Sandy Mai	37056.92	10-yr						
Sandy Mai	37056.92	50-yr						
Sandy Mai	37056.92	100-yr						
Sandy Mai	37056.92	500-yr						
Sandy Mai	36678.73	10-yr						
Sandy Mai	36678.73	50-yr						
Sandy Mai	36678.73	100-yr						
Sandy Mai	36678.73	500-yr						
Sandy Mai	36275.49	10-yr						
Sandy Mai	36275.49	50-yr						
Sandy Mai	36275.49	100-yr						
Sandy Mai	36275.49	500-yr						
Sandy Mai	36000		Culvert					
Sandy Mai	35791.32	10-yr						
Sandy Mai	35791.32	50-yr						
Sandy Mai	35791.32	100-yr						
Sandy Mai	35791.32	500-yr						
Sandy Mai	35582.96	10-yr						

Sandy Mai	35582.96	50-yr	
Sandy Mai	35582.96	100-yr	
Sandy Mai	35582.96	500-yr	
Sandy Mai	35513		Culvert
Sandy Mai	35420.3	10-yr	
Sandy Mai	35420.3	50-yr	
Sandy Mai	35420.3	100-yr	
Sandy Mai	35420.3	500-yr	
Sandy Mai	35237.49	10-yr	
Sandy Mai	35237.49	50-yr	
Sandy Mai	35237.49	100-yr	
Sandy Mai	35237.49	500-yr	
Sandy Mai	34267		Culvert
Sandy Mai	33297.82	10-yr	
Sandy Mai	33297.82	50-yr	
Sandy Mai	33297.82	100-yr	
Sandy Mai	33297.82	500-yr	
Sandy Mai	32874.91	10-yr	
Sandy Mai	32874.91	50-yr	
Sandy Mai	32874.91	100-yr	
Sandy Mai	32874.91	500-yr	
Sandy Mai	32432.32	10-yr	
Sandy Mai	32432.32	50-yr	
Sandy Mai	32432.32	100-yr	
Sandy Mai	32432.32	500-yr	
Sandy Mai	32009.44	10-yr	
Sandy Mai	32009.44	50-yr	
Sandy Mai	32009.44	100-yr	
Sandy Mai	32009.44	500-yr	
Sandy Mai	31828		Culvert
Sandy Mai	31647.46	10-yr	
Sandy Mai	31647.46	50-yr	
Sandy Mai	31647.46	100-yr	
Sandy Mai	31647.46	500-yr	
Sandy Mai	31476.58	10-yr	
Sandy Mai	31476.58	50-yr	

Sandy Mai	31476.58	100-yr	
Sandy Mai	31476.58	500-yr	
Sandy Mai	31435		Culvert
Sandy Mai	31392.94	10-yr	
Sandy Mai	31392.94	50-yr	
Sandy Mai	31392.94	100-yr	
Sandy Mai	31392.94	500-yr	
Sandy Mai	31259.8	10-yr	
Sandy Mai	31259.8	50-yr	
Sandy Mai	31259.8	100-yr	
Sandy Mai	31259.8	500-yr	
Sandy Mai	31220		Culvert
Sandy Mai	31182.62	10-yr	
Sandy Mai	31182.62	50-yr	
Sandy Mai	31182.62	100-yr	
Sandy Mai	31182.62	500-yr	
Sandy Mai	31033.98	10-yr	
Sandy Mai	31033.98	50-yr	
Sandy Mai	31033.98	100-yr	
Sandy Mai	31033.98	500-yr	
Sandy Mai	30579.27	10-yr	
Sandy Mai	30579.27	50-yr	
Sandy Mai	30579.27	100-yr	
Sandy Mai	30579.27	500-yr	
Sandy Mai	30235.35	10-yr	
Sandy Mai	30235.35	50-yr	
Sandy Mai	30235.35	100-yr	
Sandy Mai	30235.35	500-yr	
Sandy Mai	29939.91	10-yr	
Sandy Mai	29939.91	50-yr	
Sandy Mai	29939.91	100-yr	
Sandy Mai	29939.91	500-yr	
Sandy Mai	29533.61	10-yr	
Sandy Mai	29533.61	50-yr	
Sandy Mai	29533.61	100-yr	
Sandy Mai	29533.61	500-yr	

Sandy Mai	29203.58	10-yr	
Sandy Mai	29203.58	50-yr	
Sandy Mai	29203.58	100-yr	
Sandy Mai	29203.58	500-yr	
Sandy Mai	29175		Culvert
Sandy Mai	29148	10-yr	
Sandy Mai	29148	50-yr	
Sandy Mai	29148	100-yr	
Sandy Mai	29148	500-yr	
Sandy Mai	28902.69	10-yr	
Sandy Mai	28902.69	50-yr	
Sandy Mai	28902.69	100-yr	
Sandy Mai	28902.69	500-yr	
Sandy Mai	28536.39	10-yr	
Sandy Mai	28536.39	50-yr	
Sandy Mai	28536.39	100-yr	
Sandy Mai	28536.39	500-yr	
Sandy Mai	28078.23	10-yr	
Sandy Mai	28078.23	50-yr	
Sandy Mai	28078.23	100-yr	
Sandy Mai	28078.23	500-yr	
Sandy Mai	27678.42	10-yr	
Sandy Mai	27678.42	50-yr	
Sandy Mai	27678.42	100-yr	
Sandy Mai	27678.42	500-yr	
Sandy Mai	27191.04	10-yr	
Sandy Mai	27191.04	50-yr	
Sandy Mai	27191.04	100-yr	
Sandy Mai	27191.04	500-yr	
Sandy Mai	26877.54	10-yr	
Sandy Mai	26877.54	50-yr	
Sandy Mai	26877.54	100-yr	
Sandy Mai	26877.54	500-yr	
Sandy Mai	26835		Bridge
Sandy Mai	26794.7	10-yr	
Sandy Mai	26794.7	50-yr	
Sandy Mai	26794.7	100-yr	

Sandy Mai	26794.7	500-yr	
Sandy Mai	26382.38	10-yr	
Sandy Mai	26382.38	50-yr	
Sandy Mai	26382.38	100-yr	
Sandy Mai	26382.38	500-yr	
Sandy Mai	26107.58	10-yr	
Sandy Mai	26107.58	50-yr	
Sandy Mai	26107.58	100-yr	
Sandy Mai	26107.58	500-yr	
Sandy Mai	25737.96	10-yr	
Sandy Mai	25737.96	50-yr	
Sandy Mai	25737.96	100-yr	
Sandy Mai	25737.96	500-yr	
Sandy Mai	25309.8	10-yr	
Sandy Mai	25309.8	50-yr	
Sandy Mai	25309.8	100-yr	
Sandy Mai	25309.8	500-yr	
Sandy Mai	24900.93	10-yr	
Sandy Mai	24900.93	50-yr	
Sandy Mai	24900.93	100-yr	
Sandy Mai	24900.93	500-yr	
Sandy Mai	24402.5	10-yr	
Sandy Mai	24402.5	50-yr	
Sandy Mai	24402.5	100-yr	
Sandy Mai	24402.5	500-yr	
Sandy Mai	24129.68	10-yr	
Sandy Mai	24129.68	50-yr	
Sandy Mai	24129.68	100-yr	
Sandy Mai	24129.68	500-yr	
Sandy Mai	24085		Bridge
Sandy Mai	24042.15	10-yr	
Sandy Mai	24042.15	50-yr	
Sandy Mai	24042.15	100-yr	
Sandy Mai	24042.15	500-yr	
Sandy Mai	23662.23	10-yr	
Sandy Mai	23662.23	50-yr	
Sandy Mai	23662.23	100-yr	

Sandy Mai	23662.23	500-yr	
Sandy Mai	23396.78	10-yr	
Sandy Mai	23396.78	50-yr	
Sandy Mai	23396.78	100-yr	
Sandy Mai	23396.78	500-yr	
Sandy Mai	23076.73	10-yr	
Sandy Mai	23076.73	50-yr	
Sandy Mai	23076.73	100-yr	
Sandy Mai	23076.73	500-yr	
Sandy Mai	22719.89	10-yr	
Sandy Mai	22719.89	50-yr	
Sandy Mai	22719.89	100-yr	
Sandy Mai	22719.89	500-yr	
Sandy Mai	22305.19	10-yr	
Sandy Mai	22305.19	50-yr	
Sandy Mai	22305.19	100-yr	
Sandy Mai	22305.19	500-yr	
Sandy Mai	21973.79	10-yr	
Sandy Mai	21973.79	50-yr	
Sandy Mai	21973.79	100-yr	
Sandy Mai	21973.79	500-yr	
Sandy Mai	21498.81	10-yr	
Sandy Mai	21498.81	50-yr	
Sandy Mai	21498.81	100-yr	
Sandy Mai	21498.81	500-yr	
Sandy Mai	21070	10-yr	
Sandy Mai	21070	50-yr	
Sandy Mai	21070	100-yr	
Sandy Mai	21070	500-yr	
Sandy Mai	20558.49	10-yr	
Sandy Mai	20558.49	50-yr	
Sandy Mai	20558.49	100-yr	
Sandy Mai	20558.49	500-yr	
Sandy Mai	20488		Culvert
Sandy Mai	20450.5	10-yr	
Sandy Mai	20450.5	50-yr	
Sandy Mai	20450.5	100-yr	

Sandy Mai	20450.5	500-yr	
Sandy Mai	20135.83	10-yr	
Sandy Mai	20135.83	50-yr	
Sandy Mai	20135.83	100-yr	
Sandy Mai	20135.83	500-yr	
Sandy Mai	19889.56	10-yr	
Sandy Mai	19889.56	50-yr	
Sandy Mai	19889.56	100-yr	
Sandy Mai	19889.56	500-yr	
Sandy Mai	19820		Bridge
Sandy Mai	19756.97	10-yr	
Sandy Mai	19756.97	50-yr	
Sandy Mai	19756.97	100-yr	
Sandy Mai	19756.97	500-yr	
Sandy Mai	19546.85	10-yr	
Sandy Mai	19546.85	50-yr	
Sandy Mai	19546.85	100-yr	
Sandy Mai	19546.85	500-yr	
Sandy Mai	19352.67	10-yr	
Sandy Mai	19352.67	50-yr	
Sandy Mai	19352.67	100-yr	
Sandy Mai	19352.67	500-yr	
Sandy Mai	19300		Bridge
Sandy Mai	19245.94	10-yr	
Sandy Mai	19245.94	50-yr	
Sandy Mai	19245.94	100-yr	
Sandy Mai	19245.94	500-yr	
Sandy Mai	19054.38	10-yr	
Sandy Mai	19054.38	50-yr	
Sandy Mai	19054.38	100-yr	
Sandy Mai	19054.38	500-yr	
Sandy Mai	18845.69	10-yr	
Sandy Mai	18845.69	50-yr	
Sandy Mai	18845.69	100-yr	
Sandy Mai	18845.69	500-yr	
Sandy Mai	18634.5	10-yr	

Sandy Mai	18634.5	50-yr	
Sandy Mai	18634.5	100-yr	
Sandy Mai	18634.5	500-yr	
Sandy Mai	18463	10-yr	
Sandy Mai	18463	50-yr	
Sandy Mai	18463	100-yr	
Sandy Mai	18463	500-yr	
Sandy Mai	18269.19	10-yr	
Sandy Mai	18269.19	50-yr	
Sandy Mai	18269.19	100-yr	
Sandy Mai	18269.19	500-yr	
Sandy Mai	18240		Culvert
Sandy Mai	18211.69	10-yr	
Sandy Mai	18211.69	50-yr	
Sandy Mai	18211.69	100-yr	
Sandy Mai	18211.69	500-yr	
Sandy Mai	18010.15	10-yr	
Sandy Mai	18010.15	50-yr	
Sandy Mai	18010.15	100-yr	
Sandy Mai	18010.15	500-yr	
Sandy Mai	17718.32	10-yr	
Sandy Mai	17718.32	50-yr	
Sandy Mai	17718.32	100-yr	
Sandy Mai	17718.32	500-yr	
Sandy Mai	17333.24	10-yr	
Sandy Mai	17333.24	50-yr	
Sandy Mai	17333.24	100-yr	
Sandy Mai	17333.24	500-yr	
Sandy Mai	16976.28	10-yr	
Sandy Mai	16976.28	50-yr	
Sandy Mai	16976.28	100-yr	
Sandy Mai	16976.28	500-yr	
Sandy Mai	16566.37	10-yr	
Sandy Mai	16566.37	50-yr	
Sandy Mai	16566.37	100-yr	
Sandy Mai	16566.37	500-yr	
Sandy Mai	16177.16	10-yr	

Sandy Mai	16177.16	50-yr	
Sandy Mai	16177.16	100-yr	
Sandy Mai	16177.16	500-yr	
Sandy Mai	15741.39	10-yr	
Sandy Mai	15741.39	50-yr	
Sandy Mai	15741.39	100-yr	
Sandy Mai	15741.39	500-yr	
Sandy Mai	15036.05	10-yr	
Sandy Mai	15036.05	50-yr	
Sandy Mai	15036.05	100-yr	
Sandy Mai	15036.05	500-yr	
Sandy Mai	14643.01	10-yr	
Sandy Mai	14643.01	50-yr	
Sandy Mai	14643.01	100-yr	
Sandy Mai	14643.01	500-yr	
Sandy Mai	14242.08	10-yr	
Sandy Mai	14242.08	50-yr	
Sandy Mai	14242.08	100-yr	
Sandy Mai	14242.08	500-yr	
Sandy Mai	13869.62	10-yr	
Sandy Mai	13869.62	50-yr	
Sandy Mai	13869.62	100-yr	
Sandy Mai	13869.62	500-yr	
Sandy Mai	13438.13	10-yr	
Sandy Mai	13438.13	50-yr	
Sandy Mai	13438.13	100-yr	
Sandy Mai	13438.13	500-yr	
Sandy Mai	12942.35	10-yr	
Sandy Mai	12942.35	50-yr	
Sandy Mai	12942.35	100-yr	
Sandy Mai	12942.35	500-yr	
Sandy Mai	12648.67	10-yr	
Sandy Mai	12648.67	50-yr	
Sandy Mai	12648.67	100-yr	
Sandy Mai	12648.67	500-yr	
Sandy Mai	12600		Mult Open
Sandy Mai	12591.62	10-yr	

Sandy Mai	12591.62	50-yr	
Sandy Mai	12591.62	100-yr	
Sandy Mai	12591.62	500-yr	
Sandy Mai	12103.89	10-yr	
Sandy Mai	12103.89	50-yr	
Sandy Mai	12103.89	100-yr	
Sandy Mai	12103.89	500-yr	
Sandy Mai	11764.28	10-yr	
Sandy Mai	11764.28	50-yr	
Sandy Mai	11764.28	100-yr	
Sandy Mai	11764.28	500-yr	
Sandy Mai	11405.26	10-yr	
Sandy Mai	11405.26	50-yr	
Sandy Mai	11405.26	100-yr	
Sandy Mai	11405.26	500-yr	
Sandy Mai	11350		Mult Open
Sandy Mai	11303	10-yr	
Sandy Mai	11303	50-yr	
Sandy Mai	11303	100-yr	
Sandy Mai	11303	500-yr	
Sandy Mai	10733.77	10-yr	
Sandy Mai	10733.77	50-yr	
Sandy Mai	10733.77	100-yr	
Sandy Mai	10733.77	500-yr	
Sandy Mai	10700		Bridge
Sandy Mai	10661.15	10-yr	
Sandy Mai	10661.15	50-yr	
Sandy Mai	10661.15	100-yr	
Sandy Mai	10661.15	500-yr	
Sandy Mai	10118.31	10-yr	
Sandy Mai	10118.31	50-yr	
Sandy Mai	10118.31	100-yr	
Sandy Mai	10118.31	500-yr	
Sandy Mai	9744.554	10-yr	
Sandy Mai	9744.554	50-yr	
Sandy Mai	9744.554	100-yr	
Sandy Mai	9744.554	500-yr	

Sandy Mai	9685		Bridge
Sandy Mai	9639.641	10-yr	
Sandy Mai	9639.641	50-yr	
Sandy Mai	9639.641	100-yr	
Sandy Mai	9639.641	500-yr	
Sandy Mai	8975.758	10-yr	
Sandy Mai	8975.758	50-yr	
Sandy Mai	8975.758	100-yr	
Sandy Mai	8975.758	500-yr	
Sandy Mai	8504.5	10-yr	
Sandy Mai	8504.5	50-yr	
Sandy Mai	8504.5	100-yr	
Sandy Mai	8504.5	500-yr	
Sandy Mai	8350		Mult Open
Sandy Mai	8235.939	10-yr	
Sandy Mai	8235.939	50-yr	
Sandy Mai	8235.939	100-yr	
Sandy Mai	8235.939	500-yr	
Sandy Mai	8063.602	10-yr	
Sandy Mai	8063.602	50-yr	
Sandy Mai	8063.602	100-yr	
Sandy Mai	8063.602	500-yr	
Sandy Mai	8000		Bridge
Sandy Mai	7966.54	10-yr	
Sandy Mai	7966.54	50-yr	
Sandy Mai	7966.54	100-yr	
Sandy Mai	7966.54	500-yr	
Sandy Mai	7570.986	10-yr	
Sandy Mai	7570.986	50-yr	
Sandy Mai	7570.986	100-yr	
Sandy Mai	7570.986	500-yr	
Sandy Mai	7173.807	10-yr	
Sandy Mai	7173.807	50-yr	
Sandy Mai	7173.807	100-yr	
Sandy Mai	7173.807	500-yr	

Sandy Mai	6825.559	10-yr	
Sandy Mai	6825.559	50-yr	
Sandy Mai	6825.559	100-yr	
Sandy Mai	6825.559	500-yr	
Sandy Mai	6765		Bridge
Sandy Mai	6709.658	10-yr	
Sandy Mai	6709.658	50-yr	
Sandy Mai	6709.658	100-yr	
Sandy Mai	6709.658	500-yr	
Sandy Mai	6668.16	10-yr	
Sandy Mai	6668.16	50-yr	
Sandy Mai	6668.16	100-yr	
Sandy Mai	6668.16	500-yr	
Sandy Mai	6600		Bridge
Sandy Mai	6572.639	10-yr	
Sandy Mai	6572.639	50-yr	
Sandy Mai	6572.639	100-yr	
Sandy Mai	6572.639	500-yr	
Sandy Mai	6414.98	10-yr	
Sandy Mai	6414.98	50-yr	
Sandy Mai	6414.98	100-yr	
Sandy Mai	6414.98	500-yr	
Sandy Mai	6300		Mult Open
Sandy Mai	6189.177	10-yr	
Sandy Mai	6189.177	50-yr	
Sandy Mai	6189.177	100-yr	
Sandy Mai	6189.177	500-yr	
Sandy Mai	5508.105	10-yr	
Sandy Mai	5508.105	50-yr	
Sandy Mai	5508.105	100-yr	
Sandy Mai	5508.105	500-yr	
Sandy Mai	5084.678	10-yr	
Sandy Mai	5084.678	50-yr	
Sandy Mai	5084.678	100-yr	
Sandy Mai	5084.678	500-yr	
Sandy Mai	5065.378	10-yr	

Sandy Mai	5065.378	50-yr	
Sandy Mai	5065.378	100-yr	
Sandy Mai	5065.378	500-yr	
Sandy Mai	5039.878	10-yr	
Sandy Mai	5039.878	50-yr	
Sandy Mai	5039.878	100-yr	
Sandy Mai	5039.878	500-yr	
Sandy Mai	4865.578	10-yr	
Sandy Mai	4865.578	50-yr	
Sandy Mai	4865.578	100-yr	
Sandy Mai	4865.578	500-yr	
Sandy Mai	4790.088	10-yr	
Sandy Mai	4790.088	50-yr	
Sandy Mai	4790.088	100-yr	
Sandy Mai	4790.088	500-yr	
Sandy Mai	4777.088	10-yr	
Sandy Mai	4777.088	50-yr	
Sandy Mai	4777.088	100-yr	
Sandy Mai	4777.088	500-yr	
Sandy Mai	4740		Bridge
Sandy Mai	4685.592	10-yr	
Sandy Mai	4685.592	50-yr	
Sandy Mai	4685.592	100-yr	
Sandy Mai	4685.592	500-yr	
Sandy Mai	4327.181	10-yr	
Sandy Mai	4327.181	50-yr	
Sandy Mai	4327.181	100-yr	
Sandy Mai	4327.181	500-yr	
Sandy Mai	3964.325	10-yr	
Sandy Mai	3964.325	50-yr	
Sandy Mai	3964.325	100-yr	
Sandy Mai	3964.325	500-yr	
Sandy Mai	3515.389	10-yr	
Sandy Mai	3515.389	50-yr	
Sandy Mai	3515.389	100-yr	
Sandy Mai	3515.389	500-yr	
Sandy Mai	3004.364	10-yr	

Sandy Mai	3004.364	50-yr	
Sandy Mai	3004.364	100-yr	
Sandy Mai	3004.364	500-yr	
Sandy Mai	2590.359	10-yr	
Sandy Mai	2590.359	50-yr	
Sandy Mai	2590.359	100-yr	
Sandy Mai	2590.359	500-yr	
Sandy Mai	2500		Bridge
Sandy Mai	2417.391	10-yr	
Sandy Mai	2417.391	50-yr	
Sandy Mai	2417.391	100-yr	
Sandy Mai	2417.391	500-yr	
Sandy Mai	2072.963	10-yr	
Sandy Mai	2072.963	50-yr	
Sandy Mai	2072.963	100-yr	
Sandy Mai	2072.963	500-yr	
Sandy Mai	1688.606	10-yr	
Sandy Mai	1688.606	50-yr	
Sandy Mai	1688.606	100-yr	
Sandy Mai	1688.606	500-yr	
Sandy Mai	1299.523	10-yr	
Sandy Mai	1299.523	50-yr	
Sandy Mai	1299.523	100-yr	
Sandy Mai	1299.523	500-yr	
Sandy Mai	663.061	10-yr	
Sandy Mai	663.061	50-yr	
Sandy Mai	663.061	100-yr	
Sandy Mai	663.061	500-yr	
Sandy Mai	143.571	10-yr	
Sandy Mai	143.571	50-yr	
Sandy Mai	143.571	100-yr	
Sandy Mai	143.571	500-yr	

Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)	Froude # Chl

Reach	River Sta	Profile	Sta W.S. Lf (ft)	Sta W.S. Rgt (ft)
Sandy Mai	38835.32	100 yr	85.42	313.98
Sandy Mai	38835.32	100 yr enc	140	255
Sandy Mai	38353.13	100 yr	119.19	197.66
Sandy Mai	38353.13	100 yr enc	151.31	190
Sandy Mai	37880.8	100 yr	301.62	461.96
Sandy Mai	37880.8	100 yr enc	315	425
Sandy Mai	37489.56	100 yr	233.85	390.33
Sandy Mai	37489.56	100 yr enc	245	331
Sandy Mai	37270		Culvert	
Sandy Mai	37056.92	100 yr	142.44	404.46
Sandy Mai	37056.92	100 yr enc	155	265
Sandy Mai	36678.73	100 yr	161.52	458.25
Sandy Mai	36678.73	100 yr enc	230	324.41
Sandy Mai	36275.49	100 yr	179.03	677.77
Sandy Mai	36275.49	100 yr enc	200	376
Sandy Mai	36000		Culvert	
Sandy Mai	35791.32	100 yr	98.14	289.18
Sandy Mai	35791.32	100 yr enc	200	270
Sandy Mai	35582.96	100 yr	137.23	360.84
Sandy Mai	35582.96	100 yr enc	268	332
Sandy Mai	35513		Culvert	
Sandy Mai	35420.3	100 yr	298.06	376.29
Sandy Mai	35420.3	100 yr enc	312.08	343.24
Sandy Mai	35237.49	100 yr	187.01	643.89
Sandy Mai	35237.49	100 yr enc	245	366
Sandy Mai	34267		Culvert	
Sandy Mai	33297.82	100 yr	232.97	505.45
Sandy Mai	33297.82	100 yr enc	413	485
Sandy Mai	32874.91	100 yr	86.17	602.63

Sandy Mai	32874.91	100 yr enc	272	321.6
Sandy Mai	32432.32	100 yr	149.47	491.89
Sandy Mai	32432.32	100 yr enc	186	239
Sandy Mai	32009.44	100 yr	205.83	590.71
Sandy Mai	32009.44	100 yr enc	223	410
Sandy Mai	31828		Culvert	
Sandy Mai	31647.46	100 yr	171.69	521.82
Sandy Mai	31647.46	100 yr enc	245	360
Sandy Mai	31476.58	100 yr	58.21	393.92
Sandy Mai	31476.58	100 yr enc	160	290
Sandy Mai	31435		Culvert	
Sandy Mai	31392.94	100 yr	167.18	310.86
Sandy Mai	31392.94	100 yr enc	205	310.86
Sandy Mai	31259.8	100 yr	169	510.21
Sandy Mai	31259.8	100 yr enc	210	375
Sandy Mai	31220		Culvert	
Sandy Mai	31182.62	100 yr	190.38	335.88
Sandy Mai	31182.62	100 yr enc	194	335
Sandy Mai	31033.98	100 yr	70.34	193.31
Sandy Mai	31033.98	100 yr enc	100	193
Sandy Mai	30579.27	100 yr	141.59	297.38
Sandy Mai	30579.27	100 yr enc	150	200
Sandy Mai	30235.35	100 yr	116.57	349.95
Sandy Mai	30235.35	100 yr enc	165	230
Sandy Mai	29939.91	100 yr	112.14	276.95
Sandy Mai	29939.91	100 yr enc	165	236
Sandy Mai	29533.61	100 yr	256.91	508.18
Sandy Mai	29533.61	100 yr enc	325	405
Sandy Mai	29203.58	100 yr	220.57	660.99
Sandy Mai	29203.58	100 yr enc	412.37	442.09

Sandy Mai	29175		Culvert	
Sandy Mai	29148	100 yr	336.04	477.94
Sandy Mai	29148	100 yr enc	446.21	475.93
Sandy Mai	28902.69	100 yr	249.22	415.37
Sandy Mai	28902.69	100 yr enc	300	390
Sandy Mai	28536.39	100 yr	249.19	516.93
Sandy Mai	28536.39	100 yr enc	285	370
Sandy Mai	28078.23	100 yr	142.53	665.4
Sandy Mai	28078.23	100 yr enc	295	415
Sandy Mai	27678.42	100 yr	305.4	827.4
Sandy Mai	27678.42	100 yr enc	318	475
Sandy Mai	27191.04	100 yr	184.73	624.79
Sandy Mai	27191.04	100 yr enc	306	413.88
Sandy Mai	26877.54	100 yr	269.29	1016.34
Sandy Mai	26877.54	100 yr enc	415	645
Sandy Mai	26835		Bridge	
Sandy Mai	26794.7	100 yr	392.11	823.58
Sandy Mai	26794.7	100 yr enc	445	610
Sandy Mai	26382.38	100 yr	155.87	362.83
Sandy Mai	26382.38	100 yr enc	230	331.32
Sandy Mai	26107.58	100 yr	99.21	470.49
Sandy Mai	26107.58	100 yr enc	157.94	261.41
Sandy Mai	25737.96	100 yr	147.31	475.79
Sandy Mai	25737.96	100 yr enc	207.1	388.3
Sandy Mai	25309.8	100 yr	189.39	606.85
Sandy Mai	25309.8	100 yr enc	240	415.43
Sandy Mai	24900.93	100 yr	175.12	549.81
Sandy Mai	24900.93	100 yr enc	212.73	420
Sandy Mai	24402.5	100 yr	111.8	407.58
Sandy Mai	24402.5	100 yr enc	150	345.31
Sandy Mai	24129.68	100 yr	44.58	544.34

Sandy Mai	24129.68	100 yr enc	130	398.39
Sandy Mai	24085		Bridge	
Sandy Mai	24042.15	100 yr	226.24	553.04
Sandy Mai	24042.15	100 yr enc	286	490
Sandy Mai	23662.23	100 yr	277.67	362.66
Sandy Mai	23662.23	100 yr enc	290	345
Sandy Mai	23396.78	100 yr	355.5	460.78
Sandy Mai	23396.78	100 yr enc	380	460
Sandy Mai	23076.73	100 yr	135.34	527.43
Sandy Mai	23076.73	100 yr enc	290	432.91
Sandy Mai	22719.89	100 yr	348.91	805.04
Sandy Mai	22719.89	100 yr enc	500	740.56
Sandy Mai	22305.19	100 yr	130.37	589.84
Sandy Mai	22305.19	100 yr enc	275	536.1
Sandy Mai	21973.79	100 yr	110.13	625.77
Sandy Mai	21973.79	100 yr enc	212.12	557.71
Sandy Mai	21498.81	100 yr	124.62	702.22
Sandy Mai	21498.81	100 yr enc	300	580
Sandy Mai	21070	100 yr	159.96	778.67
Sandy Mai	21070	100 yr enc	345	650
Sandy Mai	20558.49	100 yr	267.43	948.66
Sandy Mai	20558.49	100 yr enc	570	789
Sandy Mai	20488		Culvert	
Sandy Mai	20450.5	100 yr	781.52	1084.28
Sandy Mai	20450.5	100 yr enc	785.8	950.28
Sandy Mai	20135.83	100 yr	600.67	1024.85
Sandy Mai	20135.83	100 yr enc	650.98	900.68
Sandy Mai	19889.56	100 yr	223.9	913.57
Sandy Mai	19889.56	100 yr enc	367.57	775.64
Sandy Mai	19820		Bridge	

Sandy Mai	19756.97	100 yr	245.53	971.72
Sandy Mai	19756.97	100 yr enc	409.58	817.65
Sandy Mai	19546.85	100 yr	201.14	685.54
Sandy Mai	19546.85	100 yr enc	338.08	563.24
Sandy Mai	19352.67	100 yr	189.84	709.51
Sandy Mai	19352.67	100 yr enc	337.16	640.15
Sandy Mai	19300		Bridge	
Sandy Mai	19245.94	100 yr	284.67	515.41
Sandy Mai	19245.94	100 yr enc	285.93	485
Sandy Mai	19054.38	100 yr	165.89	492.19
Sandy Mai	19054.38	100 yr enc	218	418.04
Sandy Mai	18845.69	100 yr	178.21	541.97
Sandy Mai	18845.69	100 yr enc	253.41	487.97
Sandy Mai	18634.5	100 yr	138.32	571.27
Sandy Mai	18634.5	100 yr enc	259.59	516.45
Sandy Mai	18463	100 yr	84.5	560.64
Sandy Mai	18463	100 yr enc	182.96	472.12
Sandy Mai	18269.19	100 yr	84.2	403.44
Sandy Mai	18269.19	100 yr enc	115	361.8
Sandy Mai	18240		Culvert	
Sandy Mai	18211.69	100 yr	99.06	325.02
Sandy Mai	18211.69	100 yr enc	171.75	290
Sandy Mai	18010.15	100 yr	125.93	379.64
Sandy Mai	18010.15	100 yr enc	185	320
Sandy Mai	17718.32	100 yr	184.82	603.51
Sandy Mai	17718.32	100 yr enc	257.56	400
Sandy Mai	17333.24	100 yr	299.84	669.09
Sandy Mai	17333.24	100 yr enc	386.42	520
Sandy Mai	16976.28	100 yr	574.45	858.64
Sandy Mai	16976.28	100 yr enc	615	767.86
Sandy Mai	16566.37	100 yr	284.16	730.33

Sandy Mai	16566.37	100 yr enc	380	615
Sandy Mai	16177.16	100 yr	242.6	616.87
Sandy Mai	16177.16	100 yr enc	320.98	530.94
Sandy Mai	15741.39	100 yr	160.97	519.35
Sandy Mai	15741.39	100 yr enc	228.58	441.09
Sandy Mai	15036.05	100 yr	231.09	561.7
Sandy Mai	15036.05	100 yr enc	291.91	461.78
Sandy Mai	14643.01	100 yr	229.85	677.52
Sandy Mai	14643.01	100 yr enc	290	510
Sandy Mai	14242.08	100 yr	377.28	759.12
Sandy Mai	14242.08	100 yr enc	494.11	656.13
Sandy Mai	13869.62	100 yr	344.87	664
Sandy Mai	13869.62	100 yr enc	415.81	549.58
Sandy Mai	13438.13	100 yr	346.82	693.58
Sandy Mai	13438.13	100 yr enc	424.93	572.89
Sandy Mai	12942.35	100 yr	541.03	868.22
Sandy Mai	12942.35	100 yr enc	610.85	810.12
Sandy Mai	12648.67	100 yr	193.7	835.78
Sandy Mai	12648.67	100 yr enc	440	766
Sandy Mai	12600		Mult Open	
Sandy Mai	12591.62	100 yr	370.1	900.83
Sandy Mai	12591.62	100 yr enc	440	755
Sandy Mai	12103.89	100 yr	301.33	772.15
Sandy Mai	12103.89	100 yr enc	400	670
Sandy Mai	11764.28	100 yr	375.49	983.07
Sandy Mai	11764.28	100 yr enc	510	790
Sandy Mai	11405.26	100 yr	562.46	1217.51
Sandy Mai	11405.26	100 yr enc	791	1078.94
Sandy Mai	11350		Mult Open	
Sandy Mai	11303	100 yr	763.75	1042.67
Sandy Mai	11303	100 yr enc	768	1040

Sandy Mai	10733.77	100 yr	393.44	1046.12
Sandy Mai	10733.77	100 yr enc	561.87	925.08
Sandy Mai	10700		Bridge	
Sandy Mai	10661.15	100 yr	513.35	1242.34
Sandy Mai	10661.15	100 yr enc	670	1080
Sandy Mai	10118.31	100 yr	441.69	1080.67
Sandy Mai	10118.31	100 yr enc	560	910
Sandy Mai	9744.554	100 yr	452.8	1170.7
Sandy Mai	9744.554	100 yr enc	640	1055.49
Sandy Mai	9685		Bridge	
Sandy Mai	9639.641	100 yr	500.97	1201.34
Sandy Mai	9639.641	100 yr enc	670	1085.15
Sandy Mai	8975.758	100 yr	755.14	1751.99
Sandy Mai	8975.758	100 yr enc	1000	1500
Sandy Mai	8504.5	100 yr	832.09	2022.95
Sandy Mai	8504.5	100 yr enc	1392	1715
Sandy Mai	8350		Mult Open	
Sandy Mai	8235.939	100 yr	474.14	1068.29
Sandy Mai	8235.939	100 yr enc	850	1050
Sandy Mai	8063.602	100 yr	338.59	1178.94
Sandy Mai	8063.602	100 yr enc	970	1150
Sandy Mai	8000		Bridge	
Sandy Mai	7966.54	100 yr	553.22	1181.23
Sandy Mai	7966.54	100 yr enc	1000	1130
Sandy Mai	7570.986	100 yr	670	1001.13
Sandy Mai	7570.986	100 yr enc	700	850
Sandy Mai	7173.807	100 yr	305.01	734.55
Sandy Mai	7173.807	100 yr enc	450	600
Sandy Mai	6825.559	100 yr	620.13	891.79
Sandy Mai	6825.559	100 yr enc	700	813

Sandy Mai	6765		Bridge	
Sandy Mai	6709.658	100 yr	554.36	883.97
Sandy Mai	6709.658	100 yr enc	700	810
Sandy Mai	6668.16	100 yr	221.35	662.58
Sandy Mai	6668.16	100 yr enc	340	500
Sandy Mai	6600		Bridge	
Sandy Mai	6572.639	100 yr	182.61	617.12
Sandy Mai	6572.639	100 yr enc	327	505
Sandy Mai	6414.98	100 yr	286.15	1033.91
Sandy Mai	6414.98	100 yr enc	430	550
Sandy Mai	6300		Mult Open	
Sandy Mai	6189.177	100 yr	519.38	654.77
Sandy Mai	6189.177	100 yr enc	558	650
Sandy Mai	5508.105	100 yr	204.98	2085.5
Sandy Mai	5508.105	100 yr enc	294	810
Sandy Mai	5084.678	100 yr	286.11	1654.28
Sandy Mai	5084.678	100 yr enc	525	780
Sandy Mai	5065.378	100 yr	89.87	1524.91
Sandy Mai	5065.378	100 yr enc	336.7	560
Sandy Mai	5039.878	100 yr	88.69	1745.01
Sandy Mai	5039.878	100 yr enc	345.53	540
Sandy Mai	4865.578	100 yr	84.8	1644.37
Sandy Mai	4865.578	100 yr enc	359.68	535
Sandy Mai	4790.088	100 yr	199.63	1696.05
Sandy Mai	4790.088	100 yr enc	493.39	630
Sandy Mai	4777.088	100 yr	86.59	1539.9
Sandy Mai	4777.088	100 yr enc	378.18	499
Sandy Mai	4740		Bridge	
Sandy Mai	4685.592	100 yr	248.02	1083.3
Sandy Mai	4685.592	100 yr enc	400	580

Sandy Mai	4327.181	100 yr	298.94	868.97
Sandy Mai	4327.181	100 yr enc	315	835
Sandy Mai	3964.325	100 yr	258.41	781.41
Sandy Mai	3964.325	100 yr enc	358	713.74
Sandy Mai	3515.389	100 yr	213.7	887.66
Sandy Mai	3515.389	100 yr enc	344.09	792.13
Sandy Mai	3004.364	100 yr	226.47	966.8
Sandy Mai	3004.364	100 yr enc	396.09	840
Sandy Mai	2590.359	100 yr	313.98	945.48
Sandy Mai	2590.359	100 yr enc	380	620
Sandy Mai	2500		Bridge	
Sandy Mai	2417.391	100 yr	358.4	831.11
Sandy Mai	2417.391	100 yr enc	373	600
Sandy Mai	2072.963	100 yr	188.84	809.29
Sandy Mai	2072.963	100 yr enc	275	575
Sandy Mai	1688.606	100 yr	240.33	818.84
Sandy Mai	1688.606	100 yr enc	329.77	705
Sandy Mai	1299.523	100 yr	274.47	1143.55
Sandy Mai	1299.523	100 yr enc	409.81	945
Sandy Mai	663.061	100 yr	284.15	1242.59
Sandy Mai	663.061	100 yr enc	542.96	1117
Sandy Mai	143.571	100 yr	343.36	1442.46
Sandy Mai	143.571	100 yr enc	517.88	1041.31
Sandy Mai	12942.35	50-yr	543.6	847.05
Sandy Mai	12942.35	100-yr	541.01	868.3
Sandy Mai	12942.35	500-yr	453.16	954.74
Sandy Mai	12648.67	10-yr	230.18	814.07
Sandy Mai	12648.67	50-yr	204.25	818.56
Sandy Mai	12648.67	100-yr	193.61	835.84
Sandy Mai	12648.67	500-yr	159.7	895.02
Sandy Mai	12600		Mult Open	
Sandy Mai	12591.62	10-yr	383.84	803.49

Sandy Mai	12591.62	50-yr	375.01	879.77
Sandy Mai	12591.62	100-yr	370.1	900.83
Sandy Mai	12591.62	500-yr	144.23	988.79
Sandy Mai	12103.89	10-yr	361.83	706.28
Sandy Mai	12103.89	50-yr	317.86	752.78
Sandy Mai	12103.89	100-yr	301.33	772.15
Sandy Mai	12103.89	500-yr	248.17	845.12
Sandy Mai	11764.28	10-yr	444.77	875.56
Sandy Mai	11764.28	50-yr	419.87	938.24
Sandy Mai	11764.28	100-yr	375.49	983.07
Sandy Mai	11764.28	500-yr	297.35	1001.05
Sandy Mai	11405.26	10-yr	780.95	1069.35
Sandy Mai	11405.26	50-yr	660.69	1176.67
Sandy Mai	11405.26	100-yr	562.46	1217.51
Sandy Mai	11405.26	500-yr	494.16	1336.32
Sandy Mai	11350		Mult Open	
Sandy Mai	11303	10-yr	768.25	1021.59
Sandy Mai	11303	50-yr	765.56	1028.41
Sandy Mai	11303	100-yr	763.75	1042.67
Sandy Mai	11303	500-yr	760.33	1190.7
Sandy Mai	10733.77	10-yr	544.56	1036.87
Sandy Mai	10733.77	50-yr	424.97	1043
Sandy Mai	10733.77	100-yr	393.44	1046.12
Sandy Mai	10733.77	500-yr	321.36	1070.68
Sandy Mai	10700		Bridge	
Sandy Mai	10661.15	10-yr	600.92	1234.29
Sandy Mai	10661.15	50-yr	527.13	1239.61
Sandy Mai	10661.15	100-yr	513.37	1242.34
Sandy Mai	10661.15	500-yr	370.7	1502.64
Sandy Mai	10118.31	10-yr	472.63	1034.98
Sandy Mai	10118.31	50-yr	452.21	1072.54
Sandy Mai	10118.31	100-yr	441.7	1080.66
Sandy Mai	10118.31	500-yr	387.58	1142.62
Sandy Mai	9744.554	10-yr	493.63	1110.95
Sandy Mai	9744.554	50-yr	459.43	1153.21
Sandy Mai	9744.554	100-yr	452.8	1170.7
Sandy Mai	9744.554	500-yr	408.38	1216.51

Sandy Mai	9685		Bridge	
Sandy Mai	9639.641	10-yr	562.91	1137.73
Sandy Mai	9639.641	50-yr	524.16	1178.29
Sandy Mai	9639.641	100-yr	500.97	1201.34
Sandy Mai	9639.641	500-yr	466.08	1256.99
Sandy Mai	8975.758	10-yr	848.28	1642.1
Sandy Mai	8975.758	50-yr	798.6	1727.24
Sandy Mai	8975.758	100-yr	755.14	1751.99
Sandy Mai	8975.758	500-yr	693.13	1791.76
Sandy Mai	8504.5	10-yr	984.91	1948.23
Sandy Mai	8504.5	50-yr	875.26	2002.38
Sandy Mai	8504.5	100-yr	832.1	2022.94
Sandy Mai	8504.5	500-yr	802.03	2071.84
Sandy Mai	8350		Mult Open	
Sandy Mai	8235.939	10-yr	638.87	1016.18
Sandy Mai	8235.939	50-yr	556.85	1065.37
Sandy Mai	8235.939	100-yr	474.15	1068.29
Sandy Mai	8235.939	500-yr	414.02	1073.01
Sandy Mai	8063.602	10-yr	635.61	1120.37
Sandy Mai	8063.602	50-yr	423.24	1175.48
Sandy Mai	8063.602	100-yr	338.6	1178.94
Sandy Mai	8063.602	500-yr	317.56	1183.72
Sandy Mai	8000		Bridge	
Sandy Mai	7966.54	10-yr	1001.63	1134.98
Sandy Mai	7966.54	50-yr	664.8	1155.1
Sandy Mai	7966.54	100-yr	553.21	1181.23
Sandy Mai	7966.54	500-yr	513.39	1185.37
Sandy Mai	7570.986	10-yr	671.35	956.92
Sandy Mai	7570.986	50-yr	670	994.18
Sandy Mai	7570.986	100-yr	670	1001.13
Sandy Mai	7570.986	500-yr	414.74	1006.27
Sandy Mai	7173.807	10-yr	330.68	721.86
Sandy Mai	7173.807	50-yr	316.13	729.02
Sandy Mai	7173.807	100-yr	305.01	734.55
Sandy Mai	7173.807	500-yr	297.81	789.79

Sandy Mai	6825.559	10-yr	693	877.88
Sandy Mai	6825.559	50-yr	633.71	886.32
Sandy Mai	6825.559	100-yr	620.13	891.79
Sandy Mai	6825.559	500-yr	604.04	900.41
Sandy Mai	6765		Bridge	
Sandy Mai	6709.658	10-yr	669.82	877.32
Sandy Mai	6709.658	50-yr	577.45	880.97
Sandy Mai	6709.658	100-yr	554.35	883.97
Sandy Mai	6709.658	500-yr	520.29	887.31
Sandy Mai	6668.16	10-yr	261.8	611.1
Sandy Mai	6668.16	50-yr	241.66	646.31
Sandy Mai	6668.16	100-yr	221.34	662.58
Sandy Mai	6668.16	500-yr	203.07	684.63
Sandy Mai	6600		Bridge	
Sandy Mai	6572.639	10-yr	297	551.17
Sandy Mai	6572.639	50-yr	189.72	606.4
Sandy Mai	6572.639	100-yr	182.62	617.1
Sandy Mai	6572.639	500-yr	168.9	638.09
Sandy Mai	6414.98	10-yr	425.15	526.63
Sandy Mai	6414.98	50-yr	347	1030.44
Sandy Mai	6414.98	100-yr	286.16	1033.9
Sandy Mai	6414.98	500-yr	280.8	1038.65
Sandy Mai	6300		Mult Open	
Sandy Mai	6189.177	10-yr	527.67	648.73
Sandy Mai	6189.177	50-yr	521.94	652.95
Sandy Mai	6189.177	100-yr	519.47	654.71
Sandy Mai	6189.177	500-yr	512.99	1026.47
Sandy Mai	5508.105	10-yr	303.13	1457.25
Sandy Mai	5508.105	50-yr	206.66	1779.72
Sandy Mai	5508.105	100-yr	205.04	2085.5
Sandy Mai	5508.105	500-yr	201.71	2085.5
Sandy Mai	5084.678	10-yr	343.19	1411.21
Sandy Mai	5084.678	50-yr	294.99	1653.3
Sandy Mai	5084.678	100-yr	273.76	1654.28
Sandy Mai	5084.678	500-yr	252.98	1864.52
Sandy Mai	5065.378	10-yr	166.25	915

Sandy Mai	5065.378	50-yr	103.77	1502.9
Sandy Mai	5065.378	100-yr	88.58	1516
Sandy Mai	5065.378	500-yr	62.72	1817.78
Sandy Mai	5039.878	10-yr	178.95	821.83
Sandy Mai	5039.878	50-yr	106.29	1420.15
Sandy Mai	5039.878	100-yr	93.24	1733.96
Sandy Mai	5039.878	500-yr	62.34	1756.41
Sandy Mai	4865.578	10-yr	152.7	987.42
Sandy Mai	4865.578	50-yr	101.33	1627.14
Sandy Mai	4865.578	100-yr	88.3	1639.17
Sandy Mai	4865.578	500-yr	59.37	1659.73
Sandy Mai	4790.088	10-yr	259.53	1036.21
Sandy Mai	4790.088	50-yr	208.03	1504.61
Sandy Mai	4790.088	100-yr	196.45	1701.35
Sandy Mai	4790.088	500-yr	169.05	1725.85
Sandy Mai	4777.088	10-yr	143.89	1488.55
Sandy Mai	4777.088	50-yr	97.45	1530.78
Sandy Mai	4777.088	100-yr	85.92	1540.37
Sandy Mai	4777.088	500-yr	56.85	1553.27
Sandy Mai	4740		Bridge	
Sandy Mai	4685.592	10-yr	272.95	1078.16
Sandy Mai	4685.592	50-yr	253.82	1081.48
Sandy Mai	4685.592	100-yr	248.02	1083.3
Sandy Mai	4685.592	500-yr	200.64	1093.01
Sandy Mai	4327.181	10-yr	320.99	859.59
Sandy Mai	4327.181	50-yr	303.85	865.7
Sandy Mai	4327.181	100-yr	298.94	868.97
Sandy Mai	4327.181	500-yr	274.86	875.79
Sandy Mai	3964.325	10-yr	302.77	776.52
Sandy Mai	3964.325	50-yr	286.67	779.72
Sandy Mai	3964.325	100-yr	258.41	781.41
Sandy Mai	3964.325	500-yr	227.91	785.85
Sandy Mai	3515.389	10-yr	261.52	882.78
Sandy Mai	3515.389	50-yr	222.84	886.38
Sandy Mai	3515.389	100-yr	213.7	887.66
Sandy Mai	3515.389	500-yr	175.06	890.94
Sandy Mai	3004.364	10-yr	261.93	917.31

Sandy Mai	3004.364	50-yr	236.88	955.61
Sandy Mai	3004.364	100-yr	226.47	966.8
Sandy Mai	3004.364	500-yr	202.05	1021.22
Sandy Mai	2590.359	10-yr	368.05	929.46
Sandy Mai	2590.359	50-yr	322.06	945.48
Sandy Mai	2590.359	100-yr	313.98	945.48
Sandy Mai	2590.359	500-yr	301.86	945.48
Sandy Mai	2500		Bridge	
Sandy Mai	2417.391	10-yr	367.84	822.62
Sandy Mai	2417.391	50-yr	362.36	828.59
Sandy Mai	2417.391	100-yr	358.4	831.11
Sandy Mai	2417.391	500-yr	257.8	865.41
Sandy Mai	2072.963	10-yr	205.49	710.65
Sandy Mai	2072.963	50-yr	194.1	793.31
Sandy Mai	2072.963	100-yr	188.84	809.29
Sandy Mai	2072.963	500-yr	157.69	870.41
Sandy Mai	1688.606	10-yr	289.24	818.84
Sandy Mai	1688.606	50-yr	246.68	818.84
Sandy Mai	1688.606	100-yr	240.33	818.84
Sandy Mai	1688.606	500-yr	219.95	818.84
Sandy Mai	1299.523	10-yr	306.74	1137.79
Sandy Mai	1299.523	50-yr	281.83	1141.68
Sandy Mai	1299.523	100-yr	274.47	1143.55
Sandy Mai	1299.523	500-yr	219.01	1167.8
Sandy Mai	663.061	10-yr	313.06	1188.38
Sandy Mai	663.061	50-yr	293	1236.06
Sandy Mai	663.061	100-yr	284.15	1242.59
Sandy Mai	663.061	500-yr	231.29	1295.43
Sandy Mai	143.571	10-yr	371.65	1422.32
Sandy Mai	143.571	50-yr	354.5	1429.69
Sandy Mai	143.571	100-yr	343.36	1442.46
Sandy Mai	143.571	500-yr	312.59	1605.15

Sandy Main Stem (NAVD 88)

River Sta	Profile	Duplicate W.S. Elev	Corrected W.S. Elev	Proposed W.S. Elev	Proposed Comparison	
					Duplicate	Corrected
7966.54	10-yr	168.16	167.58	167.61	-0.55	+0.03
7966.54	50-yr	171.81	171.88	171.83	0.02	-0.05
7966.54	100-yr	174.57	174.59	174.57	0	-0.02
7966.54	500-yr	177.91	177.29	177.29	-0.62	0.00
0	0	0	0	0	0	0.00
7570.986	10-yr	168.16	167.58	167.61	-0.55	+0.03
7570.986	50-yr	171.82	171.88	171.83	0.01	-0.05
7570.986	100-yr	174.57	174.59	174.57	0	-0.02
7570.986	500-yr	177.9	177.27	177.27	-0.63	0.00
0	0	0	0	0	0	0.00
7173.807	10-yr	168.17	167.59	167.61	-0.56	+0.02
7173.807	50-yr	171.82	171.88	171.84	0.02	-0.04
7173.807	100-yr	174.57	174.59	174.57	0	-0.02
7173.807	500-yr	177.91	177.28	177.28	-0.63	0.00
0	0	0	0	0	0	0.00
6825.559	10-yr	167.88	167.21	167.24	-0.64	+0.03
6825.559	50-yr	171.51	171.58	171.53	0.02	-0.05
6825.559	100-yr	174.29	174.32	174.29	0	-0.03
6825.559	500-yr	177.62	176.96	176.96	-0.66	0.00
0	0	0	0	0	0	0.00
6765	0	0	0	0	0	0.00
0	0	0	0	0	0	0.00
6709.658	10-yr	167.58	166.81	166.85	-0.73	+0.04
6709.658	50-yr	171.14	171.22	171.16	0.02	-0.06
6709.658	100-yr	173.95	173.98	173.95	0	-0.03
6709.658	500-yr	177.15	176.4	176.4	-0.75	0.00
0	0	0	0	0	0	0.00
6668.16	10-yr	167.67	166.94	166.98	-0.69	+0.04
6668.16	50-yr	171.18	171.25	171.2	0.02	-0.05
6668.16	100-yr	174.07	174.09	174.06	-0.01	-0.03
6668.16	500-yr	177.24	176.5	176.5	-0.74	0.00
0	0	0	0	0	0	0.00
6600	0	0	0	0	0	0.00
0	0	0	0	0	0	0.00
6572.639	10-yr	167.44	166.68	166.71	-0.73	+0.03
6572.639	50-yr	170.43	170.5	170.45	0.02	-0.05
6572.639	100-yr	172.84	172.88	172.84	0	-0.04
6572.639	500-yr	176.93	175.73	175.73	-1.2	0.00
0	0	0	0	0	0	0.00
6414.98	10-yr	167.39	166.61	166.64	-0.75	+0.03
6414.98	50-yr	170.38	170.45	170.4	0.02	-0.05
6414.98	100-yr	172.45	172.49	172.45	0	-0.04
6414.98	500-yr	176.38	174.98	174.98	-1.4	0.00

0	0	0	0	0	0	0.00
6300	0	0	0	0	0	0.00
0	0	0	0	0	0	0.00
6189.177	10-yr	166.48	165.48	165.53	-0.95	+0.05
6189.177	50-yr	167.89	168.03	167.92	0.03	-0.11
6189.177	100-yr	168.91	169.05	168.88	-0.03	-0.17
6189.177	500-yr	170.76	170.81	170.85	0.09	+0.04
0	0	0	0	0	0	0.00
5508.105	10-yr	164.71	164.99	165.06	0.35	+0.07
5508.105	50-yr	168.09	168.23	168.13	0.04	-0.10
5508.105	100-yr	169.23	169.37	169.2	-0.03	-0.17
5508.105	500-yr	171.41	171.45	171.48	0.07	+0.03
0	0	0	0	0	0	0.00
5084.678	10-yr	164.5	164.01	164.37	-0.13	+0.36
5084.678	50-yr	167.79	167.95	167.98	0.19	+0.03
5084.678	100-yr	169.16	169.07	169.05	-0.11	-0.02
5084.678	500-yr	171.35	171.43	171.47	0.12	+0.04
0	0		0	0	0	0.00
5065.378	10-yr		163.7	163.75	163.75	+0.05
5065.378	50-yr		168	167.91	167.91	-0.09
5065.378	100-yr		169.12	168.96	168.96	-0.16
5065.378	500-yr		171.4	171.4	171.4	0.00
0	0		0	0	0	0.00
5039.878	10-yr		163.97	163.61	163.61	-0.36
5039.878	50-yr		167.99	167.73	167.73	-0.26
5039.878	100-yr		169.11	168.79	168.79	-0.32
5039.878	500-yr		171.42	171.43	171.43	+0.01
0	0		0	0	0	0.00
4865.578	10-yr		163.91	163.91	163.91	0.00
4865.578	50-yr		167.89	167.67	167.67	-0.22
4865.578	100-yr		169	168.69	168.69	-0.31
4865.578	500-yr		171.39	171.4	171.4	+0.01
0	0	0	0	0	0	0.00
4790.088	10-yr	163.68	163.63	163.58	-0.1	-0.05
4790.088	50-yr	167.83	167.49	167.24	-0.59	-0.25
4790.088	100-yr	169.17	168.44	168.1	-1.07	-0.34
4790.088	500-yr	171.35	171.37	171.36	0.01	-0.01
0	0		0	0	0	0.00
4777.088	10-yr		163.31	163.62	163.62	+0.31
4777.088	50-yr		167.35	167.31	167.31	-0.04
4777.088	100-yr		168.28	168.19	168.19	-0.09
4777.088	500-yr		171.38	171.38	171.38	0.00
0	0	0	0	0	0	0.00
4740	0	163.52	0	0	-163.52	0.00
0	0	167.54	0	0	-167.54	0.00
4685.592	10-yr	168.67	161.51	161.51	-7.16	0.00
4685.592	50-yr	171.37	162.84	162.84	-8.53	0.00

4685.592	100-yr	0	163.53	163.53	163.53	0.00
4685.592	500-yr	163.8	167.22	167.22	3.42	0.00
0	0	167.56	0	0	-167.56	0.00
4327.181	10-yr	168.68	161.72	161.72	-6.96	0.00
4327.181	50-yr	171.36	163.43	163.43	-7.93	0.00
4327.181	100-yr	0	164.33	164.33	164.33	0.00
4327.181	500-yr	163.63	166.74	166.74	3.11	0.00
0	0	167.51	0	0	-167.51	0.00
3964.325	10-yr	168.63	161.44	161.44	-7.19	0.00
3964.325	50-yr	171.34	162.99	162.99	-8.35	0.00
3964.325	100-yr	0	163.8	163.8	163.8	0.00
3964.325	500-yr	163.61	165.93	165.93	2.32	0.00

= River stations within project limits

= Non-existent river stations in duplicate effective model

= Decrease in proposed water surface elevations vs comparison model

= Increase in proposed water surface elevations vs comparison model

Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Crit W.S. (ft)	E.G. Elev (ft)	E.G. Slope (ft/ft)	Vel Chnl (ft/s)
Sandy Mai	38835.32	100-yr	1443	335	339.2	339.2	339.87	0.004571	7.27
Sandy Mai	38353.13	100-yr	1443	327	332.64	332.64	333.79	0.006468	10.71
Sandy Mai	37880.8	100-yr	1443	319	324.83	324.83	325.57	0.004579	8.71
Sandy Mai	37489.56	100-yr	1443	311.79	320.49	319	321.1	0.001831	7.43
Sandy Mai	37270		Culvert						
Sandy Mai	37056.92	100-yr	1443	306.66	313.8	313.8	315.39	0.004856	11.2
Sandy Mai	36678.73	100-yr	1443	301	305.92	304.94	306.51	0.004274	8.63
Sandy Mai	36275.49	100-yr	1443	296.1	304.65	303.83	304.99	0.002853	5.14
Sandy Mai	36000		Culvert						
Sandy Mai	35791.32	100-yr	1443	286.09	294.29		294.41	0.001521	3.78
Sandy Mai	35582.96	100-yr	1443	285	294	290.8	294.13	0.001052	3.92
Sandy Mai	35513		Culvert						
Sandy Mai	35420.3	100-yr	1443	283	291.04		291.69	0.004615	7.18
Sandy Mai	35237.49	100-yr	1443	279.02	291.19	285.86	291.23	0.000337	2.36
Sandy Mai	34267		Culvert						
Sandy Mai	33297.82	100-yr	1443	253	259.06	259.06	260.79	0.005174	11.11
Sandy Mai	32874.91	100-yr	1443	251	255.13	255.13	255.76	0.004336	8.23
Sandy Mai	32432.32	100-yr	1443	249	253.53	252.93	253.63	0.000652	3.44
Sandy Mai	32009.44	100-yr	1443	246	253.3	251.24	253.35	0.00057	2.54
Sandy Mai	31828		Culvert						
Sandy Mai	31647.46	100-yr	1443	239	248.85	246.31	248.99	0.0004	4.32
Sandy Mai	31476.58	100-yr	1443	240	248.52	246.29	248.83	0.000921	5.42
Sandy Mai	31435		Culvert						
Sandy Mai	31392.94	100-yr	1443	239.99	247.14		247.69	0.004807	6.78
Sandy Mai	31259.8	100-yr	1443	239	247.02	245.08	247.34	0.00103	5.76
Sandy Mai	31220		Culvert						
Sandy Mai	31182.62	100-yr	1443	239	245.23	245.23	246.23	0.003704	9.09
Sandy Mai	31033.98	100-yr	1443	239	243.39		243.82	0.003069	7.21
Sandy Mai	30579.27	100-yr	1443	235	240.2	240.2	241.76	0.00649	11.85
Sandy Mai	30235.35	100-yr	1443	233	237.64	236.7	237.99	0.003303	7.81
Sandy Mai	29939.91	100-yr	1443	231	236.74		236.95	0.003416	5.41
Sandy Mai	29533.61	100-yr	1443	229	236.36		236.49	0.00052	3.98
Sandy Mai	29203.58	100-yr	1443	227	235.29	231.92	236.02	0.001789	6.89
Sandy Mai	29175		Culvert						
Sandy Mai	29148	100-yr	1443	227	233.57	231.63	234.56	0.003215	8.02
Sandy Mai	28902.69	100-yr	3146	225	232.43	232.22	233.52	0.004645	12.81
Sandy Mai	28536.39	100-yr	3146	225	230.51	230.19	231.41	0.006984	12.91
Sandy Mai	28078.23	100-yr	3146	221	230.3	227.9	230.55	0.0006	5.23
Sandy Mai	27678.42	100-yr	3146	221	228.98	228.98	230.03	0.00274	10.04
Sandy Mai	27191.04	100-yr	3146	219	227.44	226.33	227.83	0.001204	6.72
Sandy Mai	26877.54	100-yr	3146	217	227.37	224.02	227.52	0.000379	4.5
Sandy Mai	26835		Bridge						
Sandy Mai	26794.7	100-yr	3146	217	224.68	224.68	225.83	0.002942	10.04
Sandy Mai	26382.38	100-yr	3146	215	223.93	222.28	224.66	0.001727	8.49
Sandy Mai	26107.58	100-yr	4317	213	223.22	222.14	224.13	0.00195	10.06

Sandy Mai	25737.96	100-yr	4317	213	223.26		223.54	0.000699	6.1
Sandy Mai	25309.8	100-yr	4317	213.64	222.88	218.8	223.16	0.001107	7.22
Sandy Mai	24900.93	100-yr	4317	212	222.54		222.6	0.001324	2.59
Sandy Mai	24402.5	100-yr	4317	210	221.98		222.06	0.000944	2.38
Sandy Mai	24129.68	100-yr	4317	210	221.69	216.79	221.76	0.001307	2.72
Sandy Mai	24085		Bridge						
Sandy Mai	24042.15	100-yr	4317	210	219.29	216.49	219.58	0.000658	5.45
Sandy Mai	23662.23	100-yr	4317	208	216.01	216.01	218.39	0.005483	14.69
Sandy Mai	23396.78	100-yr	4317	208	214.79		216.11	0.002934	9.6
Sandy Mai	23076.73	100-yr	4317	206	214.93		215.23	0.001223	6.77
Sandy Mai	22719.89	100-yr	4317	206	214.34		214.47	0.00383	3.78
Sandy Mai	22305.19	100-yr	4945	204	212.52	209.51	212.68	0.004461	4.14
Sandy Mai	21973.79	100-yr	4945	204	211.59		211.67	0.002117	2.64
Sandy Mai	21498.81	100-yr	4945	202	210.6		210.68	0.001993	2.78
Sandy Mai	21070	100-yr	4945	200	210.15		210.2	0.000807	1.97
Sandy Mai	20558.49	100-yr	4945	200	209.56	205.35	209.65	0.001873	2.78
Sandy Mai	20488		Culvert						
Sandy Mai	20450.5	100-yr	4945	200	204.96	204.96	205.96	0.004904	9.79
Sandy Mai	20135.83	100-yr	4945	196	204.99		205.08	0.000284	3.61
Sandy Mai	19889.56	100-yr	4945	195	204.96	201.08	205.01	0.000143	2.71
Sandy Mai	19820		Bridge						
Sandy Mai	19756.97	100-yr	4945	194.5	204.87		204.92	0.00013	2.6
Sandy Mai	19546.85	100-yr	4945	194	204.75		204.87	0.000251	3.54
Sandy Mai	19352.67	100-yr	4945	193.47	204.73	200.83	204.82	0.000206	3.36
Sandy Mai	19300		Bridge						
Sandy Mai	19245.94	100-yr	4945	193.25	201.39	201.39	202.96	0.003406	11.06
Sandy Mai	19054.38	100-yr	4945	193.25	199.78		200	0.000819	4.75
Sandy Mai	18845.69	100-yr	4945	193	199.69	196.88	199.84	0.000523	3.81
Sandy Mai	18634.5	100-yr	4945	192	199.62		199.74	0.000363	3.65
Sandy Mai	18463	100-yr	4945	191	199.61		199.68	0.000208	2.87
Sandy Mai	18269.19	100-yr	4945	188	198.7	197.86	199.41	0.001369	8.08
Sandy Mai	18240		Culvert						
Sandy Mai	18211.69	100-yr	4945	188	195.64	195.64	197.01	0.003637	10.63
Sandy Mai	18010.15	100-yr	4945	188	194.72	194.72	195.88	0.005107	10.97
Sandy Mai	17718.32	100-yr	4945	187	192.01		192.47	0.003218	7.69
Sandy Mai	17333.24	100-yr	4945	186	191.3		191.6	0.001496	5.83
Sandy Mai	16976.28	100-yr	4945	186	189.42	189.38	190.46	0.008652	10.46
Sandy Mai	16566.37	100-yr	4945	185.31	188.8		189.03	0.001412	4.25
Sandy Mai	16177.16	100-yr	4945	184.88	187.98		188.34	0.002278	5.02
Sandy Mai	15741.39	100-yr	4945	182	187.35	185.56	187.63	0.001196	5
Sandy Mai	15036.05	100-yr	4945	180	185.9	185.19	186.46	0.002985	8.43
Sandy Mai	14643.01	100-yr	4945	176.16	185.51	182.94	185.75	0.000949	6.57
Sandy Mai	14242.08	100-yr	4945	174	183.67	183.22	185	0.003188	11.74
Sandy Mai	13869.62	100-yr	4945	175	182.87	181.77	183.67	0.003106	10.87
Sandy Mai	13438.13	100-yr	4945	172	182.13	179.27	182.4	0.002158	6.02
Sandy Mai	12942.35	100-yr	4945	173	181.36	177.94	181.55	0.00135	4.39
Sandy Mai	12648.67	100-yr	4945	170	181.27	177.16	181.32	0.000264	2.38

Sandy Mai	12600		Mult Open						
Sandy Mai	12591.62	100-yr	4945	171	180.89	177.85	181.24	0.000966	6.9
Sandy Mai	12103.89	100-yr	4945	171	180.51	176.87	180.76	0.000821	6.36
Sandy Mai	11764.28	100-yr	4945	171.05	180.42	174.92	180.52	0.000429	4.52
Sandy Mai	11405.26	100-yr	4945	168.7	180	175.31	180.31	0.00044	5
Sandy Mai	11350		Mult Open						
Sandy Mai	11303	100-yr	4945	168.66	175.65	175.65	177.45	0.00522	12.44
Sandy Mai	10733.77	100-yr	4945	166.86	175.72	171.86	175.79	0.000179	2.79
Sandy Mai	10700		Bridge						
Sandy Mai	10661.15	100-yr	4945	166.01	175.72	170.99	175.75	0.000071	1.82
Sandy Mai	10118.31	100-yr	4945	165	175.69	169.13	175.71	0.000051	1.69
Sandy Mai	9744.554	100-yr	4945	163.7	175.67	172.19	175.7	0.000056	1.82
Sandy Mai	9685		Bridge						
Sandy Mai	9639.641	100-yr	4945	163	175.42	167.68	175.48	0.000153	3.14
Sandy Mai	8975.758	100-yr	4945	161	175.37	167.2	175.39	0.000079	2.52
Sandy Mai	8504.5	100-yr	4945	161.39	175.2	166.14	175.32	0.000146	3.44
Sandy Mai	8350		Mult Open						
Sandy Mai	8235.939	100-yr	4945	159	174.59	165.83	174.79	0.000191	4.21
Sandy Mai	8063.602	100-yr	4945	158.71	174.67	168.67	174.69	0.000033	1.73
Sandy Mai	8000		Bridge						
Sandy Mai	7966.54	100-yr	4945	158.47	174.57		174.62	0.000079	2.75
Sandy Mai	7570.986	100-yr	4945	159	174.56		174.59	0.00003	1.67
Sandy Mai	7173.807	100-yr	4945	159	174.57	161.58	174.58	0.00001	0.95
Sandy Mai	6825.559	100-yr	4945	156	174.29	165.23	174.51	0.000182	4.54
Sandy Mai	6765		Bridge						
Sandy Mai	6709.658	100-yr	4945	156	173.95	167	174.23	0.000256	5.12
Sandy Mai	6668.16	100-yr	4945	156.01	174.06	163.85	174.11	0.000048	2.29
Sandy Mai	6600		Bridge						
Sandy Mai	6572.639	100-yr	4945	156	172.83	163.93	172.87	0.000043	2.07
Sandy Mai	6414.98	100-yr	4945	157	172.43	163.92	172.76	0.000309	5.35
Sandy Mai	6300		Mult Open						
Sandy Mai	6189.177	100-yr	4945	155	168.74	164.39	169.72	0.001121	9.32
Sandy Mai	5508.105	100-yr	9741	154	169.06	164.93	169.14	0.000106	3.04
Sandy Mai	5084.678	100-yr	9741	154	169.02	165.37	169.08	0.000132	3.35
Sandy Mai	5065.378	100-yr	9741	154.25	168.86	165.42	169.07	0.000235	4.33
Sandy Mai	5039.878	100-yr	9741	154.25	168.95	164.7	169.01	0.000069	2.35
Sandy Mai	4865.578	100-yr	9741	154.25	168.92	161.52	168.97	0.000049	1.97
Sandy Mai	4790.088	100-yr	9741	154	168.91	163.67	168.96	0.000059	2.22
Sandy Mai	4777.088	100-yr	9741	154.25	168.44	162.48	168.85	0.000288	4.74
Sandy Mai	4740		Bridge						
Sandy Mai	4685.592	100-yr	9741	154	163.53	163.53	166.72	0.005758	16.15
Sandy Mai	4327.181	100-yr	9741	152	164.33		164.57	0.00088	6.71
Sandy Mai	3964.325	100-yr	9741	152	163.8		164.22	0.001012	7.81
Sandy Mai	3515.389	100-yr	9741	150.35	163.59		163.83	0.000607	6.61
Sandy Mai	3004.364	100-yr	9741	150	163.31	159.11	163.53	0.000532	6.18
Sandy Mai	2590.359	100-yr	9741	150	163.09	159.46	163.31	0.000595	5.43
Sandy Mai	2500		Bridge						

Sandy Mai	2417.391	100-yr	9741	150	158.77	157.19	159.18	0.001111	6.95
Sandy Mai	2072.963	100-yr	9741	148.51	158.41	156.55	158.78	0.000992	6.92
Sandy Mai	1688.606	100-yr	9741	149	157.76		158.22	0.002047	9.38
Sandy Mai	1299.523	100-yr	9741	149	157.31	155.39	157.55	0.001265	7.16
Sandy Mai	663.061	100-yr	9741	146.71	156.25	155.37	156.62	0.001678	8.74
Sandy Mai	143.571	100-yr	9741	147	154.39	154.39	155.16	0.005715	13.67

Flow Area (sq ft)	Top Width (ft)	Froude # Chl
269.56	213.05	0.71
188.05	78.47	0.88
260.8	160.34	0.73
316.67	126.74	0.48
197.39	97.83	0.79
341.73	225.59	0.73
348.92	170.35	0.33
573.36	191.04	0.25
597.14	183.71	0.23
238.66	78.23	0.46
1010.37	269.78	0.12
227.51	106.32	0.82
319.8	245.02	0.72
645.18	313.51	0.29
944.7	332.83	0.17
855.67	307.5	0.25
485.04	173.15	0.33
296.71	106.03	0.45
603.07	341.2	0.38
276.91	145.5	0.69
354.62	122.97	0.62
200.51	80.2	0.92
450.89	233.39	0.65
427.97	164.81	0.4
683.09	181.75	0.27
218.55	199.72	0.43
181.22	92.09	0.57
563.35	166.15	0.83
529.12	194.64	0.97
972.04	458.55	0.3
591.03	421.6	0.64
902.7	440.06	0.42
1543.51	567.52	0.25
614.1	288.22	0.66
819.68	206.96	0.52
1016.05	236.6	0.56

1700.79	328.48	0.34
2059.87	417.46	0.42
2079.12	283.49	0.14
1967.74	295.77	0.12
2341.01	499.76	0.14
1154.15	326.79	0.32
392.24	85	0.91
503.92	105.27	0.65
1216.22	319.22	0.4
1621.3	456.14	0.23
1584.43	370.79	0.25
2374.58	515.64	0.17
2231.78	525.56	0.17
2917.95	574.1	0.11
2023.71	620.51	0.16
716.07	302.76	0.78
2040.78	424.17	0.21
2994.98	689.67	0.15
3144.64	726.19	0.14
2096.92	484.39	0.2
2380.36	519.68	0.18
623.69	230.74	0.7
1339.8	326.31	0.34
1607.5	363.76	0.27
1892.31	432.95	0.23
2358.81	476.14	0.18
969.34	319.24	0.44
647.53	225.96	0.68
668.06	253.71	0.75
968.54	418.7	0.64
1170.51	369.25	0.45
623.7	284.19	1
1299.29	446.17	0.4
1044.56	374.26	0.5
1212.63	358.38	0.39
971.26	330.62	0.62
2166	447.68	0.39
1303.02	377.54	0.7
1171.86	319.13	0.69
1458.37	346.75	0.35
1508.72	311.02	0.27
3027.32	576.27	0.13

2397.8	530.73	0.39
2676.41	470.82	0.36
3708.92	584.23	0.26
1201.14	463.11	0.27
510.5	136.57	0.85
2639.33	652.66	0.17
3787.22	728.91	0.11
4014.3	638.94	0.09
4127.44	711.58	0.1
5236.27	700.34	0.16
7977.15	996.82	0.12
2120.12	1190.83	0.16
1428.4	549.6	0.19
5102.69	840.33	0.08
3322.56	628	0.12
3694.35	331.13	0.08
5761.85	429.53	0.04
1410.44	257.88	0.19
1249.77	328.32	0.22
3003.17	441.21	0.1
3259.19	401.73	0.09
1331.7	454.04	0.24
1158.06	134.96	0.45
4929.67	1201.13	0.14
5416.77	1226.01	0.15
2687.35	1038.5	0.2
5156.66	1402.57	0.11
6100.72	1327.07	0.09
5837.21	1339.65	0.1
1912.92	1395.65	0.23
1117.2	835.28	0.95
4077.84	570.03	0.34
3760.85	523.01	0.41
5172.71	673.96	0.33
4722.14	740.33	0.31
3180.76	537.82	0.27

2072.37	472.71	0.42
2305.71	566.67	0.4
2891.07	578.51	0.56
3751.53	869.08	0.44
3177.81	958.44	0.51
2556.32	1099.1	0.91

Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Crit W.S. (ft)	E.G. Elev (ft)	E.G. Slope (ft/ft)	Vel Chnl (ft/s)
Sandy Mai	38835.32	100-yr	1443	335	339.2	339.2	339.87	0.004571	7.27
Sandy Mai	38353.13	100-yr	1443	327	332.64	332.64	333.79	0.006468	10.71
Sandy Mai	37880.8	100-yr	1443	319	324.83	324.83	325.57	0.004579	8.71
Sandy Mai	37489.56	100-yr	1443	311.79	320.49	319	321.1	0.001831	7.43
Sandy Mai	37270		Culvert						
Sandy Mai	37056.92	100-yr	1443	306.66	313.8	313.8	315.39	0.004856	11.2
Sandy Mai	36678.73	100-yr	1443	301	305.92	304.94	306.51	0.004274	8.63
Sandy Mai	36275.49	100-yr	1443	296.1	304.65	303.83	304.99	0.002853	5.14
Sandy Mai	36000		Culvert						
Sandy Mai	35791.32	100-yr	1443	286.09	294.29		294.41	0.001521	3.78
Sandy Mai	35582.96	100-yr	1443	285	294	290.8	294.13	0.001052	3.92
Sandy Mai	35513		Culvert						
Sandy Mai	35420.3	100-yr	1443	283	291.04		291.69	0.004615	7.18
Sandy Mai	35237.49	100-yr	1443	279.02	291.19	285.86	291.23	0.000337	2.36
Sandy Mai	34267		Culvert						
Sandy Mai	33297.82	100-yr	1443	253	259.06	259.06	260.79	0.005174	11.11
Sandy Mai	32874.91	100-yr	1443	251	255.13	255.13	255.76	0.004336	8.23
Sandy Mai	32432.32	100-yr	1443	249	253.53	252.93	253.63	0.000652	3.44
Sandy Mai	32009.44	100-yr	1443	246	253.3	251.24	253.35	0.00057	2.54
Sandy Mai	31828		Culvert						
Sandy Mai	31647.46	100-yr	1443	239	248.85	246.31	248.99	0.0004	4.32
Sandy Mai	31476.58	100-yr	1443	240	248.52	246.29	248.83	0.000921	5.42
Sandy Mai	31435		Culvert						
Sandy Mai	31392.94	100-yr	1443	239.99	247.14		247.69	0.004807	6.78
Sandy Mai	31259.8	100-yr	1443	239	247.02	245.08	247.34	0.00103	5.76
Sandy Mai	31220		Culvert						
Sandy Mai	31182.62	100-yr	1443	239	245.23	245.23	246.23	0.003704	9.09
Sandy Mai	31033.98	100-yr	1443	239	243.39		243.82	0.003069	7.21
Sandy Mai	30579.27	100-yr	1443	235	240.2	240.2	241.76	0.00649	11.85
Sandy Mai	30235.35	100-yr	1443	233	237.64	236.7	237.99	0.003303	7.81
Sandy Mai	29939.91	100-yr	1443	231	236.74		236.95	0.003416	5.41
Sandy Mai	29533.61	100-yr	1443	229	236.36		236.49	0.00052	3.98
Sandy Mai	29203.58	100-yr	1443	227	235.29	231.92	236.02	0.001789	6.89
Sandy Mai	29175		Culvert						
Sandy Mai	29148	100-yr	1443	227	233.57	231.63	234.56	0.003215	8.02
Sandy Mai	28902.69	100-yr	3146	225	232.43	232.22	233.52	0.004645	12.81
Sandy Mai	28536.39	100-yr	3146	225	230.51	230.19	231.41	0.006984	12.91
Sandy Mai	28078.23	100-yr	3146	221	230.3	227.9	230.55	0.0006	5.23
Sandy Mai	27678.42	100-yr	3146	221	228.98	228.98	230.03	0.00274	10.04
Sandy Mai	27191.04	100-yr	3146	219	227.44	226.33	227.83	0.001204	6.72
Sandy Mai	26877.54	100-yr	3146	217	227.37	224.02	227.52	0.000379	4.5
Sandy Mai	26835		Bridge						
Sandy Mai	26794.7	100-yr	3146	217	224.68	224.68	225.83	0.002942	10.04
Sandy Mai	26382.38	100-yr	3146	215	223.93	222.28	224.66	0.001727	8.49
Sandy Mai	26107.58	100-yr	4317	213	223.22	222.14	224.13	0.00195	10.06

Sandy Mai	25737.96	100-yr	4317	213	223.26		223.54	0.000699	6.1
Sandy Mai	25309.8	100-yr	4317	213.64	222.88	218.8	223.16	0.001107	7.22
Sandy Mai	24900.93	100-yr	4317	212	222.54		222.6	0.001324	2.59
Sandy Mai	24402.5	100-yr	4317	210	221.98		222.06	0.000944	2.38
Sandy Mai	24129.68	100-yr	4317	210	221.69	216.79	221.76	0.001307	2.72
Sandy Mai	24085		Bridge						
Sandy Mai	24042.15	100-yr	4317	210	219.29	216.49	219.58	0.000658	5.45
Sandy Mai	23662.23	100-yr	4317	208	216.01	216.01	218.39	0.005483	14.69
Sandy Mai	23396.78	100-yr	4317	208	214.79		216.11	0.002934	9.6
Sandy Mai	23076.73	100-yr	4317	206	214.93		215.23	0.001223	6.77
Sandy Mai	22719.89	100-yr	4317	206	214.34		214.47	0.00383	3.78
Sandy Mai	22305.19	100-yr	4945	204	212.52	209.51	212.68	0.004461	4.14
Sandy Mai	21973.79	100-yr	4945	204	211.59		211.67	0.002117	2.64
Sandy Mai	21498.81	100-yr	4945	202	210.6		210.68	0.001993	2.78
Sandy Mai	21070	100-yr	4945	200	210.15		210.2	0.000807	1.97
Sandy Mai	20558.49	100-yr	4945	200	209.56	205.35	209.65	0.001873	2.78
Sandy Mai	20488		Culvert						
Sandy Mai	20450.5	100-yr	4945	200	204.96	204.96	205.96	0.004904	9.79
Sandy Mai	20135.83	100-yr	4945	196	204.99		205.08	0.000284	3.61
Sandy Mai	19889.56	100-yr	4945	195	204.96	201.08	205.01	0.000143	2.71
Sandy Mai	19820		Bridge						
Sandy Mai	19756.97	100-yr	4945	194.5	204.87		204.92	0.00013	2.6
Sandy Mai	19546.85	100-yr	4945	194	204.75		204.87	0.000251	3.54
Sandy Mai	19352.67	100-yr	4945	193.47	204.73	200.83	204.82	0.000206	3.36
Sandy Mai	19300		Bridge						
Sandy Mai	19245.94	100-yr	4945	193.25	201.39	201.39	202.96	0.003406	11.06
Sandy Mai	19054.38	100-yr	4945	193.25	199.78		200	0.000819	4.75
Sandy Mai	18845.69	100-yr	4945	193	199.69	196.88	199.84	0.000523	3.81
Sandy Mai	18634.5	100-yr	4945	192	199.62		199.74	0.000363	3.65
Sandy Mai	18463	100-yr	4945	191	199.61		199.68	0.000208	2.87
Sandy Mai	18269.19	100-yr	4945	188	198.7	197.86	199.41	0.001369	8.08
Sandy Mai	18240		Culvert						
Sandy Mai	18211.69	100-yr	4945	188	195.64	195.64	197.01	0.003637	10.63
Sandy Mai	18010.15	100-yr	4945	188	194.72	194.72	195.88	0.005107	10.97
Sandy Mai	17718.32	100-yr	4945	187	192.01		192.47	0.003218	7.69
Sandy Mai	17333.24	100-yr	4945	186	191.3		191.6	0.001496	5.83
Sandy Mai	16976.28	100-yr	4945	186	189.42	189.38	190.46	0.008652	10.46
Sandy Mai	16566.37	100-yr	4945	185.31	188.8		189.03	0.001412	4.25
Sandy Mai	16177.16	100-yr	4945	184.88	187.98		188.34	0.002278	5.02
Sandy Mai	15741.39	100-yr	4945	182	187.35	185.56	187.63	0.001196	5
Sandy Mai	15036.05	100-yr	4945	180	185.9	185.19	186.46	0.002985	8.43
Sandy Mai	14643.01	100-yr	4945	176.16	185.51	182.94	185.75	0.000949	6.57
Sandy Mai	14242.08	100-yr	4945	174	183.67	183.22	185	0.003188	11.74
Sandy Mai	13869.62	100-yr	4945	175	182.87	181.77	183.67	0.003106	10.87
Sandy Mai	13438.13	100-yr	4945	172	182.13	179.27	182.4	0.002158	6.02
Sandy Mai	12942.35	100-yr	4945	173	181.36	177.94	181.55	0.00135	4.39
Sandy Mai	12648.67	100-yr	4945	170	181.27	177.16	181.32	0.000264	2.38

Sandy Mai	12600		Mult Open						
Sandy Mai	12591.62	100-yr	4945	171	180.89	177.85	181.24	0.000966	6.9
Sandy Mai	12103.89	100-yr	4945	171	180.51	176.87	180.76	0.000821	6.36
Sandy Mai	11764.28	100-yr	4945	171.05	180.42	174.92	180.52	0.000429	4.52
Sandy Mai	11405.26	100-yr	4945	168.7	180	175.31	180.31	0.00044	5
Sandy Mai	11350		Mult Open						
Sandy Mai	11303	100-yr	4945	168.66	175.65	175.65	177.45	0.00522	12.44
Sandy Mai	10733.77	100-yr	4945	166.86	175.73	171.86	175.8	0.000178	2.78
Sandy Mai	10700		Bridge						
Sandy Mai	10661.15	100-yr	4945	166.01	175.73	170.99	175.76	0.000071	1.82
Sandy Mai	10118.31	100-yr	4945	165	175.7	169.13	175.72	0.000051	1.69
Sandy Mai	9744.554	100-yr	4945	163.7	175.68	172.19	175.7	0.000056	1.81
Sandy Mai	9685		Bridge						
Sandy Mai	9639.641	100-yr	4945	163	175.44	167.68	175.49	0.000152	3.13
Sandy Mai	8975.758	100-yr	4945	161	175.38	167.2	175.41	0.000079	2.52
Sandy Mai	8504.5	100-yr	4945	161.39	175.22	166.14	175.33	0.000146	3.43
Sandy Mai	8350		Mult Open						
Sandy Mai	8235.939	100-yr	4945	159	174.6	165.83	174.81	0.00019	4.2
Sandy Mai	8063.602	100-yr	4945	158.71	174.69	168.67	174.7	0.000032	1.73
Sandy Mai	8000		Bridge						
Sandy Mai	7966.54	100-yr	4945	158.47	174.59		174.64	0.000078	2.74
Sandy Mai	7570.986	100-yr	4945	159	174.58		174.61	0.00003	1.67
Sandy Mai	7173.807	100-yr	4945	159	174.59	161.58	174.6	0.00001	0.95
Sandy Mai	6825.559	100-yr	4945	156	174.31	165.23	174.53	0.000181	4.53
Sandy Mai	6765		Bridge						
Sandy Mai	6709.658	100-yr	4945	156	173.97	167	174.26	0.000254	5.11
Sandy Mai	6668.16	100-yr	4945	156.01	174.08	163.85	174.13	0.000047	2.28
Sandy Mai	6600		Bridge						
Sandy Mai	6572.639	100-yr	4945	156	172.86	163.93	172.9	0.000043	2.06
Sandy Mai	6414.98	100-yr	4945	157	172.47	163.92	172.8	0.000305	5.33
Sandy Mai	6300		Mult Open						
Sandy Mai	6189.177	100-yr	4945	155	169	164.39	169.92	0.00104	9.09
Sandy Mai	5508.105	100-yr	9741	154	169.32	164.93	169.39	0.000092	2.86
Sandy Mai	5084.678	100-yr	9741	154	169.14	165.23	169.31	0.000249	4.63
Sandy Mai	5065.378	100-yr	9741	154.25	169.06	165.45	169.3	0.000269	4.68
Sandy Mai	5039.878	100-yr	9741	154.25	169.18	165.21	169.23	0.000079	2.54
Sandy Mai	4865.578	100-yr	9741	154.25	168.96	161.52	169.15	0.00015	3.46
Sandy Mai	4790.088	100-yr	9741	154	167.87	163.18	169.02	0.001263	9.75
Sandy Mai	4777.088	100-yr	9741	154.25	168.25	161.39	168.62	0.000223	4.12
Sandy Mai	4740		Bridge						
Sandy Mai	4685.592	100-yr	9741	154	163.53	163.53	166.72	0.005758	16.15
Sandy Mai	4327.181	100-yr	9741	152	164.33		164.57	0.00088	6.71
Sandy Mai	3964.325	100-yr	9741	152	163.8		164.22	0.001012	7.81
Sandy Mai	3515.389	100-yr	9741	150.35	163.59		163.83	0.000607	6.61
Sandy Mai	3004.364	100-yr	9741	150	163.31	159.11	163.53	0.000532	6.18
Sandy Mai	2590.359	100-yr	9741	150	163.09	159.46	163.31	0.000595	5.43
Sandy Mai	2500		Bridge						

Sandy Mai	2417.391	100-yr	9741	150	158.77	157.19	159.18	0.001111	6.95
Sandy Mai	2072.963	100-yr	9741	148.51	158.41	156.55	158.78	0.000992	6.92
Sandy Mai	1688.606	100-yr	9741	149	157.76		158.22	0.002047	9.38
Sandy Mai	1299.523	100-yr	9741	149	157.31	155.39	157.55	0.001265	7.16
Sandy Mai	663.061	100-yr	9741	146.71	156.25	155.37	156.62	0.001678	8.74
Sandy Mai	143.571	100-yr	9741	147	154.39	154.39	155.16	0.005715	13.67

Flow Area (sq ft)	Top Width (ft)	Froude # Chl
269.56	213.05	0.71
188.05	78.47	0.88
260.8	160.34	0.73
316.67	126.74	0.48
197.39	97.83	0.79
341.73	225.59	0.73
348.92	170.35	0.33
573.36	191.04	0.25
597.14	183.71	0.23
238.66	78.23	0.46
1010.37	269.78	0.12
227.51	106.32	0.82
319.8	245.02	0.72
645.18	313.51	0.29
944.7	332.83	0.17
855.67	307.5	0.25
485.04	173.15	0.33
296.71	106.03	0.45
603.07	341.2	0.38
276.91	145.5	0.69
354.62	122.97	0.62
200.51	80.2	0.92
450.89	233.39	0.65
427.97	164.81	0.4
683.09	181.75	0.27
218.55	199.72	0.43
181.22	92.09	0.57
563.35	166.15	0.83
529.12	194.64	0.97
972.04	458.55	0.3
591.03	421.6	0.64
902.7	440.06	0.42
1543.51	567.52	0.25
614.1	288.22	0.66
819.68	206.96	0.52
1016.05	236.6	0.56

1700.79	328.48	0.34
2059.87	417.46	0.42
2079.12	283.49	0.14
1967.74	295.77	0.12
2341.01	499.76	0.14
1154.15	326.79	0.32
392.24	85	0.91
503.92	105.27	0.65
1216.22	319.22	0.4
1621.3	456.14	0.23
1584.43	370.79	0.25
2374.58	515.64	0.17
2231.78	525.56	0.17
2917.95	574.1	0.11
2023.71	620.51	0.16
716.07	302.76	0.78
2040.78	424.17	0.21
2994.98	689.67	0.15
3144.64	726.19	0.14
2096.92	484.39	0.2
2380.36	519.68	0.18
623.69	230.74	0.7
1339.8	326.31	0.34
1607.5	363.76	0.27
1892.31	432.95	0.23
2358.81	476.14	0.18
969.34	319.24	0.44
647.53	225.96	0.68
668.06	253.71	0.75
968.54	418.7	0.64
1170.51	369.25	0.45
623.7	284.19	1
1299.29	446.17	0.4
1044.56	374.26	0.5
1212.63	358.38	0.39
971.26	330.62	0.62
2166	447.68	0.39
1303.02	377.54	0.7
1171.86	319.13	0.69
1458.37	346.75	0.35
1508.72	311.02	0.27
3027.32	576.27	0.13

2397.8	530.73	0.39
2676.41	470.82	0.36
3708.92	584.23	0.26
1201.14	463.11	0.27
510.5	136.57	0.85
2643.8	652.76	0.17
3792.25	729.35	0.11
4018.76	639.1	0.09
4132.48	712.04	0.1
5246.77	700.71	0.16
7992.42	997.27	0.12
2123.76	1191.17	0.16
1431.29	549.98	0.19
5118.11	840.54	0.08
3336.24	628.17	0.12
3701.56	331.17	0.07
5771.19	429.69	0.04
1413.25	258.49	0.19
1252.79	329.13	0.22
3010.42	441.54	0.1
3271.89	402.29	0.09
1337	459.06	0.24
1193.49	138.9	0.43
5224.76	1203.23	0.13
3329.62	1287.52	0.21
2505.1	925.5	0.22
5453.78	1548.82	0.12
2801.55	1327.97	0.16
1954.05	1214.45	0.47
2046.2	1391.54	0.2
1117.2	835.28	0.95
4077.84	570.03	0.34
3760.85	523.01	0.41
5172.71	673.96	0.33
4722.14	740.33	0.31
3180.76	537.82	0.27

2072.37	472.71	0.42
2305.71	566.67	0.4
2891.07	578.51	0.56
3751.53	869.08	0.44
3177.81	958.44	0.51
2556.32	1099.1	0.91

Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Crit W.S. (ft)	E.G. Elev (ft)	E.G. Slope (ft/ft)	Vel Chnl (ft/s)
Sandy Mai	38835.32	100-yr	0	0	0	0	0	0	0
Sandy Mai	38353.13	100-yr	0	0	0	0	0	0	0
Sandy Mai	37880.8	100-yr	0	0	0	0	0	0	0
Sandy Mai	37489.56	100-yr	0	0	0	0	0	0	0
Sandy Mai	37270		#VALUE!	0	0	0	0	0	0
Sandy Mai	37056.92	100-yr	0	0	0	0	0	0	0
Sandy Mai	36678.73	100-yr	0	0	0	0	0	0	0
Sandy Mai	36275.49	100-yr	0	0	0	0	0	0	0
Sandy Mai	36000		#VALUE!	0	0	0	0	0	0
Sandy Mai	35791.32	100-yr	0	0	0	0	0	0	0
Sandy Mai	35582.96	100-yr	0	0	0	0	0	0	0
Sandy Mai	35513		#VALUE!	0	0	0	0	0	0
Sandy Mai	35420.3	100-yr	0	0	0	0	0	0	0
Sandy Mai	35237.49	100-yr	0	0	0	0	0	0	0
Sandy Mai	34267		#VALUE!	0	0	0	0	0	0
Sandy Mai	33297.82	100-yr	0	0	0	0	0	0	0
Sandy Mai	32874.91	100-yr	0	0	0	0	0	0	0
Sandy Mai	32432.32	100-yr	0	0	0	0	0	0	0
Sandy Mai	32009.44	100-yr	0	0	0	0	0	0	0
Sandy Mai	31828		#VALUE!	0	0	0	0	0	0
Sandy Mai	31647.46	100-yr	0	0	0	0	0	0	0
Sandy Mai	31476.58	100-yr	0	0	0	0	0	0	0
Sandy Mai	31435		#VALUE!	0	0	0	0	0	0
Sandy Mai	31392.94	100-yr	0	0	0	0	0	0	0
Sandy Mai	31259.8	100-yr	0	0	0	0	0	0	0
Sandy Mai	31220		#VALUE!	0	0	0	0	0	0
Sandy Mai	31182.62	100-yr	0	0	0	0	0	0	0
Sandy Mai	31033.98	100-yr	0	0	0	0	0	0	0
Sandy Mai	30579.27	100-yr	0	0	0	0	0	0	0
Sandy Mai	30235.35	100-yr	0	0	0	0	0	0	0
Sandy Mai	29939.91	100-yr	0	0	0	0	0	0	0
Sandy Mai	29533.61	100-yr	0	0	0	0	0	0	0
Sandy Mai	29203.58	100-yr	0	0	0	0	0	0	0
Sandy Mai	29175		#VALUE!	0	0	0	0	0	0
Sandy Mai	29148	100-yr	0	0	0	0	0	0	0
Sandy Mai	28902.69	100-yr	0	0	0	0	0	0	0
Sandy Mai	28536.39	100-yr	0	0	0	0	0	0	0
Sandy Mai	28078.23	100-yr	0	0	0	0	0	0	0
Sandy Mai	27678.42	100-yr	0	0	0	0	0	0	0
Sandy Mai	27191.04	100-yr	0	0	0	0	0	0	0
Sandy Mai	26877.54	100-yr	0	0	0	0	0	0	0
Sandy Mai	26835		#VALUE!	0	0	0	0	0	0
Sandy Mai	26794.7	100-yr	0	0	0	0	0	0	0
Sandy Mai	26382.38	100-yr	0	0	0	0	0	0	0
Sandy Mai	26107.58	100-yr	0	0	0	0	0	0	0

Sandy Mai	25737.96	100-yr	0	0	0	0	0	0	0
Sandy Mai	25309.8	100-yr	0	0	0	0	0	0	0
Sandy Mai	24900.93	100-yr	0	0	0	0	0	0	0
Sandy Mai	24402.5	100-yr	0	0	0	0	0	0	0
Sandy Mai	24129.68	100-yr	0	0	0	0	0	0	0
Sandy Mai	24085		#VALUE!	0	0	0	0	0	0
Sandy Mai	24042.15	100-yr	0	0	0	0	0	0	0
Sandy Mai	23662.23	100-yr	0	0	0	0	0	0	0
Sandy Mai	23396.78	100-yr	0	0	0	0	0	0	0
Sandy Mai	23076.73	100-yr	0	0	0	0	0	0	0
Sandy Mai	22719.89	100-yr	0	0	0	0	0	0	0
Sandy Mai	22305.19	100-yr	0	0	0	0	0	0	0
Sandy Mai	21973.79	100-yr	0	0	0	0	0	0	0
Sandy Mai	21498.81	100-yr	0	0	0	0	0	0	0
Sandy Mai	21070	100-yr	0	0	0	0	0	0	0
Sandy Mai	20558.49	100-yr	0	0	0	0	0	0	0
Sandy Mai	20488		#VALUE!	0	0	0	0	0	0
Sandy Mai	20450.5	100-yr	0	0	0	0	0	0	0
Sandy Mai	20135.83	100-yr	0	0	0	0	0	0	0
Sandy Mai	19889.56	100-yr	0	0	0	0	0	0	0
Sandy Mai	19820		#VALUE!	0	0	0	0	0	0
Sandy Mai	19756.97	100-yr	0	0	0	0	0	0	0
Sandy Mai	19546.85	100-yr	0	0	0	0	0	0	0
Sandy Mai	19352.67	100-yr	0	0	0	0	0	0	0
Sandy Mai	19300		#VALUE!	0	0	0	0	0	0
Sandy Mai	19245.94	100-yr	0	0	0	0	0	0	0
Sandy Mai	19054.38	100-yr	0	0	0	0	0	0	0
Sandy Mai	18845.69	100-yr	0	0	0	0	0	0	0
Sandy Mai	18634.5	100-yr	0	0	0	0	0	0	0
Sandy Mai	18463	100-yr	0	0	0	0	0	0	0
Sandy Mai	18269.19	100-yr	0	0	0	0	0	0	0
Sandy Mai	18240		#VALUE!	0	0	0	0	0	0
Sandy Mai	18211.69	100-yr	0	0	0	0	0	0	0
Sandy Mai	18010.15	100-yr	0	0	0	0	0	0	0
Sandy Mai	17718.32	100-yr	0	0	0	0	0	0	0
Sandy Mai	17333.24	100-yr	0	0	0	0	0	0	0
Sandy Mai	16976.28	100-yr	0	0	0	0	0	0	0
Sandy Mai	16566.37	100-yr	0	0	0	0	0	0	0
Sandy Mai	16177.16	100-yr	0	0	0	0	0	0	0
Sandy Mai	15741.39	100-yr	0	0	0	0	0	0	0
Sandy Mai	15036.05	100-yr	0	0	0	0	0	0	0
Sandy Mai	14643.01	100-yr	0	0	0	0	0	0	0
Sandy Mai	14242.08	100-yr	0	0	0	0	0	0	0
Sandy Mai	13869.62	100-yr	0	0	0	0	0	0	0
Sandy Mai	13438.13	100-yr	0	0	0	0	0	0	0
Sandy Mai	12942.35	100-yr	0	0	0	0	0	0	0
Sandy Mai	12648.67	100-yr	0	0	0	0	0	0	0

Sandy Mai	12600		#VALUE!	0	0	0	0	0	0
Sandy Mai	12591.62	100-yr	0	0	0	0	0	0	0
Sandy Mai	12103.89	100-yr	0	0	0	0	0	0	0
Sandy Mai	11764.28	100-yr	0	0	0	0	0	0	0
Sandy Mai	11405.26	100-yr	0	0	0	0	0	0	0
Sandy Mai	11350		#VALUE!	0	0	0	0	0	0
Sandy Mai	11303	100-yr	0	0	0	0	0	0	0
Sandy Mai	10733.77	100-yr	0	0	0.01	0	0.01	-1E-06	-0.01
Sandy Mai	10700		#VALUE!	0	0	0	0	0	0
Sandy Mai	10661.15	100-yr	0	0	0.01	0	0.01	0	0
Sandy Mai	10118.31	100-yr	0	0	0.01	0	0.01	0	0
Sandy Mai	9744.554	100-yr	0	0	0.01	0	0	0	-0.01
Sandy Mai	9685		#VALUE!	0	0	0	0	0	0
Sandy Mai	9639.641	100-yr	0	0	0.02	0	0.01	-1E-06	-0.01
Sandy Mai	8975.758	100-yr	0	0	0.01	0	0.02	0	0
Sandy Mai	8504.5	100-yr	0	0	0.02	0	0.01	0	-0.01
Sandy Mai	8350		#VALUE!	0	0	0	0	0	0
Sandy Mai	8235.939	100-yr	0	0	0.01	0	0.02	-1E-06	-0.01
Sandy Mai	8063.602	100-yr	0	0	0.02	0	0.01	-1E-06	0
Sandy Mai	8000		#VALUE!	0	0	0	0	0	0
Sandy Mai	7966.54	100-yr	0	0	0.02	0	0.02	-1E-06	-0.01
Sandy Mai	7570.986	100-yr	0	0	0.02	0	0.02	0	0
Sandy Mai	7173.807	100-yr	0	0	0.02	0	0.02	0	0
Sandy Mai	6825.559	100-yr	0	0	0.02	0	0.02	-1E-06	-0.01
Sandy Mai	6765		#VALUE!	0	0	0	0	0	0
Sandy Mai	6709.658	100-yr	0	0	0.02	0	0.03	-2E-06	-0.01
Sandy Mai	6668.16	100-yr	0	0	0.02	0	0.02	-1E-06	-0.01
Sandy Mai	6600		#VALUE!	0	0	0	0	0	0
Sandy Mai	6572.639	100-yr	0	0	0.03	0	0.03	0	-0.01
Sandy Mai	6414.98	100-yr	0	0	0.04	0	0.04	-4E-06	-0.02
Sandy Mai	6300		#VALUE!	0	0	0	0	0	0
Sandy Mai	6189.177	100-yr	0	0	0.26	0	0.2	-8.1E-05	-0.23
Sandy Mai	5508.105	100-yr	0	0	0.26	0	0.25	-1.4E-05	-0.18
Sandy Mai	5084.678	100-yr	0	0	0.12	-0.14	0.23	0.000117	1.28
Sandy Mai	5065.378	100-yr	0	0	0.2	0.03	0.23	0.000034	0.35
Sandy Mai	5039.878	100-yr	0	0	0.23	0.51	0.22	0.00001	0.19
Sandy Mai	4865.578	100-yr	0	0	0.04	0	0.18	0.000101	1.49
Sandy Mai	4790.088	100-yr	0	0	-1.04	-0.49	0.06	0.001204	7.53
Sandy Mai	4777.088	100-yr	0	0	-0.19	-1.09	-0.23	-6.5E-05	-0.62
Sandy Mai	4740		#VALUE!	0	0	0	0	0	0
Sandy Mai	4685.592	100-yr	0	0	0	0	0	0	0
Sandy Mai	4327.181	100-yr	0	0	0	0	0	0	0
Sandy Mai	3964.325	100-yr	0	0	0	0	0	0	0
Sandy Mai	3515.389	100-yr	0	0	0	0	0	0	0
Sandy Mai	3004.364	100-yr	0	0	0	0	0	0	0
Sandy Mai	2590.359	100-yr	0	0	0	0	0	0	0
Sandy Mai	2500		#VALUE!	0	0	0	0	0	0

Sandy Mai	2417.391	100-yr	0	0	0	0	0	0	0
Sandy Mai	2072.963	100-yr	0	0	0	0	0	0	0
Sandy Mai	1688.606	100-yr	0	0	0	0	0	0	0
Sandy Mai	1299.523	100-yr	0	0	0	0	0	0	0
Sandy Mai	663.061	100-yr	0	0	0	0	0	0	0
Sandy Mai	143.571	100-yr	0	0	0	0	0	0	0

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0	0	0	0	0	0	0
0	0	0	0	0	0	0
0	0	0	0	0	0	0

Flow Area (sq ft)	Top Width (ft)	Froude # C	0	0	0	0
0	0	0				
0	0	0				
0	0	0				

0	0	0
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0	0	0
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0	0	0
0	0	0
4.47	0.1	0
0	0	0
5.03	0.44	0
4.46	0.16	0
5.04	0.46	0
0	0	0
10.5	0.37	0
15.27	0.45	0
3.64	0.34	0
0	0	0
2.89	0.38	0
15.42	0.21	0
0	0	0
13.68	0.17	0
7.21	0.04	-0.01
9.34	0.16	0
2.81	0.61	0
0	0	0
3.02	0.81	0
7.25	0.33	0
0	0	0
12.7	0.56	0
5.3	5.02	0
0	0	0
35.43	3.94	-0.02
295.09	2.1	-0.01
-2087.15	61.51	0.06
-182.25	-113	0.02
297.12	146.25	0.01
-3299.17	0.9	0.07
-3883.16	-125.2	0.37
133.28	-4.11	-0.03
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