

**Upper Nazareth Township, Northampton County PA
Proposed Resurfacing and Widening of the Gun Club Road At-Grade Crossing
at Norfolk Southern Railway Company
Keystone Division, MP SE-13.35
NS File: CX0120675**

100% Plans Submission Response

Sean Dooley, PH.D. P.E.
Keystone Consulting Engineers Inc.
2870 Emrick Boulevard
Bethlehem, PA 18020

Dear Mr. Dooley:

Reference is made to the 100% Plans Submission for the proposed resurfacing and widening of the Gun Club Road at-grade crossing of Norfolk Southern in Upper Nazareth Twp., Pa. Our contract engineering firm (AECOM) has completed the engineering review and provided their comments in the attached Excel tracking form.

1. The 100% Plans are approved as submitted.
2. Prior to the start of construction on, below, or adjacent to Norfolk Southern right-of-way, the following will be required by the contractor/ Upper Nazareth Township:
 - The construction agreement must be fully executed by Norfolk Southern and Upper Nazareth Township.
 - The Contractor Right of Entry Agreement must be fully executed.
 - The Contractor's insurance must be approved by Norfolk Southern Risk Management.
 - A preconstruction meeting must be held between Norfolk Southern, AECOM, the contractor, and Upper Nazareth Township.
 - Contractor has obtained Contractor Protective Services as required in the NS Special Provisions.
 - Contractor has provided a written schedule for all construction activities which may impact the railroad' property or operations.
 - A start-of-work meeting has been held between the Contractor, Contractor Protective Services personnel, Norfolk Southern, and AECOM.
 - The Norfolk Southern Checklist for Construction must be completed and signed by all parties.
 - Construction Authorization must be issued by Norfolk Southern.
 - Any construction submissions identified during the preconstruction meeting must be approved by Norfolk Southern.
3. Please note that NS will not guarantee extended track windows and track window availability is subject to change based on train operations. Requests for extended outages will require at least 45 days of notice for review.

I agree with their comments and request if any additional Plan or Specification revisions occur, please submit those documents to Norfolk Southern for review and approval.

Should you have any questions concerning this project, please contact me at 470-463-6721, or David Reichmann at 215-789-2074.

Thanks,

Shawn Starling, P.E.
Senior Engineer Public Improvements
Norfolk Southern Railway Company
Engineering - Design & Construction
650 West Peachtree Street NW - Box 45
Atlanta, GA 30308

States Covered: PA, NY, NJ, TN
Phone (470) 463-6721



AECOM File	60603767.941	Location	Upper Nazareth Township, Northampton County, Pennsylvania
NS File	CX0120675	Project	Proposed widening and resurfacing of Gun Club Rd. existing XAG
MP	SE-13.35	Submittal	100% Plan Submission
Reviewed By:		David Reichmann, PE	

ITEM NO.	Date	Comment/Response By	COMMENT	STATUS
Status Legend			Closed	
			Open	
-		NS/AECOM Comment	The project plans have been distributed internally to various departments. As soon as we receive comments from all involved departments, we will advise. In the interim, we offer the attached comments from the Engineering Department. <u>These interim review comments should not be construed as project approval.</u>	Closed
	1/25/2022	GM/DS Response	Approved.	
	8/11/2023	Signals Response	Estimate approximately \$80,000.00 to relocate existing signals and add LED inserts.	
	1/25/2022	Lumen	No involvement.	
	1/25/2022	AT&T	No involvement.	
	1/17/2022	Communications Response	No involvement.	
	1/18/2022	T-Cubed Response	No involvement.	
	11/3/2022	Crossing Response	No exceptions taken.	
	1/12/2022	Industrial Development Response	No exceptions taken.	
	1/14/2022	Strategic Planning Response	No exceptions taken.	
	1/14/2022	D&C Response	No involvement.	
	11/3/2022	Real Estate Response	No exceptions taken.	
	1/12/2022	Does NS have Maintenance Resp?	Yes- for at-grade crossing warning devices.	
-	1/12/2022	NS/AECOM Comment	Refer to the Norfolk Southern Public Projects Manual for additional policies, criteria, and standards for design and construction of projects over, under, or adjacent to NS. The Public Projects Manual is located at: www.nscorp.com .	Closed
-	1/12/2022	NS/AECOM Comment	All email correspondence with Norfolk Southern should use the subject line " <i>Subject</i> - Upper Nazareth Twp PA CX0120675 SE-13.35 Gun Club Road 851943H - Task 941". Failure to use this subject line may result in delayed handling of submissions. AECOM should be carbon copied on all email correspondence. Please carbon copy Project Engineer David Reichmann (David.Reichmann2@aecom.com).	Closed
-	1/12/2022	NS/AECOM Comment	Please utilize the comment tracking form attached when returning the revised plans and special provisions for Norfolk Southern to review.	Closed
1	1/12/2022	NS/AECOM Comment	Provide the comprehensive list of utility installations and relocations on, over, or under NS Right-of-Way proposed as part of this project.	Closed
	9/21/2022	Upper Nazareth Twp. Comment	<i>No utilities are being installed or relocated in the NS Right-of-Way as part of the proposed Project.</i>	
	10/12/2022	NS/AECOM Response	No exceptions taken to the offered response.	

2	1/12/2022	NS/AECOM Comment	Please add the following note to the project plans or special provisions: All utility installations or relocations that are required in conjunction with this project can be installed or relocated as part of the project provided the construction is performed by the project contractor or project contractor's sub-contractor. However, the utility must submit an application for-the installation-or relocation to NS Pipe and Wire for appropriate handling for license agreement and applicable fees. For utility applications go to: http://www.nscorp.com/content/nscorp/en/real-estate/norfolk-southern-services/wire-pipeline-fiber-optic-projects.html . Note: License agreement must be executed prior to utility being installed or relocated.	Closed - Conforms as Noted
	9/21/2022	Upper Nazareth Twp. Comment	<i>This note was added as AECOM General Note #1 to the cover sheet of Railroad Crossing plans included with this submission. Response Conforms as noted.</i>	
	10/26/2022	NS/AECOM Response	Please change the heading "AECOM General Notes" on the Railroad Crossing Plan cover sheet to "Norfolk Southern General Notes"	
3	1/12/2022	NS/AECOM Comment	Confirm no under roadway utility modifications are required on NS property to support the project scope.	Closed
	9/21/2022	Upper Nazareth Twp. Comment	No under roadway utility modifications are required on NS property as part of the proposed Project.	
	10/26/2022	NS/AECOM Response	No exceptions taken to the offered response.	
4	1/12/2022	NS/AECOM Comment	Please provide minimum dimension from centerline of nearest track to all drainage pipes to be replaced. Additionally, please provide anticipated depth of excavation to complete proposed repairs.	Closed
	9/21/2022	Upper Nazareth Twp. Comment	<i>Horizontal Distances provided on Sht. RR4, and drainage utility depths shown on Sht. RR3 of Railroad Crossing Plans included with this submission. All drainage utilities are outside of the NS Right-of-Way.</i>	
	10/26/2022	NS/AECOM Response	No exceptions taken to the offered response.	
5	1/12/2022	NS/AECOM Comment	Please provide additional information regarding drainage control measures during construction. No site drainage is being directed to NS ROW as required by section H.1.5.J of the NS Public Projects Manual.	Closed
	9/21/2022	Upper Nazareth Twp. Comment	<i>The NS RR Crossing is at a high point in Gun Club Rd. All stormwater drains away from the crossing. The project Erosion and Sedimentation Plan approved by the Northampton County Conservation District in conjunction with the PA-DEP NPDES Permit approved for the Project is included with this submission for reference. (See Shts. E6, E14, and E22 - there is a short section of compost filter sock at the NW quadrant of the crossing within NS property, but away from the NS tracks.)</i>	
	10/26/2022	NS/AECOM Response	No exceptions taken to the offered response.	

6	1/12/2022	NS/AECOM Comment	<p>Please note that the typical Norfolk Southern at-grade crossing detail is asphalt with a rubber rail seal. Any deviation from this (including the use of the proposed concrete panels) will require special approval Norfolk Southern. Additionally, please note and/or include the following:</p> <ol style="list-style-type: none"> 1. 100% of all installation and future maintenance costs of the concrete panels will be completed by Norfolk Southern at the sole expense of the township. 2. Provide a note on the project plans stating Norfolk Southern forces will install the proposed concrete panel vehicular crossing as shown on the plans (or to 2'-0" beyond the outside edge of each rail if using asphalt with rubber rail seal) at sponsor's expense. 3. Clearly identify and show on the plans the limits of installation for the proposed concrete panel at-grade crossing. This should include (but is not limited to) the width of the crossing as well as distance beyond edge of rail.
	9/21/2022	Upper Nazareth Twp. Comment	<ol style="list-style-type: none"> <i>1. The Upper Nazareth Board of Supervisors agreed to Condition 1 at their January 19, 2022 meeting. Meeting minutes included with this submission. (ref. Pg. 3)</i> <i>2. This Note was added as AECOM General Note #2 to the Cover Sheet of Railroad Crossing plans included with this submission.</i> <i>3. Dimensional limits of the proposed concrete panel at-grade crossing have been added to Sht. RR4 of Railroad Crossing plans included with this submission. Edge Panels on the north side and south side of the double-track crossing will be standard width 2'-3" field panels beyond the outside edge of each outside rail. Area between the two sets of tracks to be filled in with concrete panels to fit the gap.</i>
	11/18/2022	NS/AECOM Response	<p>Please add a note to the project plans stating 100% of all installation and future maintenance costs of the proposed concrete crossing will be at the sole expense of Upper Nazareth Township. Any costs incurred by Norfolk Southern associated with the installation or maintenance of the proposed concrete crossing will be 100% reimbursed by the Township.</p>
	6/14/2023	Upper Nazareth Twp. Comment	<p><i>This note was added as Norfolk Southern General Note #7 to the cover sheet of Railroad Crossing plans included with this submission. Response Conforms as noted.</i></p>
	8/28/2023	NS/AECOM Response	<p>As discussed at the PUC meeting on 7/26/23, please confirm the proposed crossing material. If necessary, please update all plan sheets and notes to accurately reflect the proposed material crossing.</p>

	12/14/2023	Upper Nazareth Twp. Comment	<i>The Upper Nazareth Board of Supervisors agreed at their August 2, 2023 regular meeting to change its prior decision concerning the RR x-ing construction material and allow use of Norfolk Southern's standard asphalt with rubber rail seal construction detail. (ref. copy of meeting minutes provide with this submission) This decision nullifies previous Norfolk Southern comment of 11/18/2022 as Norfolk Southern will retain 100% responsibility for future materials and replacement costs. Norfolk Southern General Note #7 has been deleted accordingly from Sht. RR1.</i>	
	1/18/2024	NS/AECOM Response	<i>No exceptions taken to the offered response.</i>	
7	1/12/2022	NS/AECOM Comment	Please label the length of the crossing parallel to the rails on the plans.	Closed
	9/21/2022	Upper Nazareth Twp. Comment	<i>The length of the crossing parallel to the rails is shown on Sht. RR4 of Railroad Crossing plans included with this submission.</i>	
	11/18/2022	NS/AECOM Response	Please provide additional information and details regarding the proposed concrete panel layout. Per Sheet RR4, the proposed width of the widened crossing is 28.86', while the concrete panel detail included on plan Sheet RR5 indicates a panel width of 8'-1 1/2". The use of full panels would result in a crossing width of either 24'-4 1/2" or 32'-6". Please revise the plans to indicate an accurate crossing width using full panel sections or detail how the proposed 28.86' crossing width will be achieved.	
	6/14/2023	Upper Nazareth Twp. Comment	<i>Drawing sheet RR3 has been revised to clarify actual crossing width relative to standard panel lengths will be 40'-7 1/2" - see new panel layout plan on sheet RR3.</i>	
	8/28/2023	NS/AECOM Response	As discussed at the PUC meeting on 7/26/23, please confirm the proposed crossing material and, if necessary, please update all plan sheets and notes to accurately reflect the proposed material crossing. Note: Should the township decide to utilize asphalt for the crossing material, the crossing length must be in 8'-0" increments due to the length of the rubber flangeways.	
	12/14/2023	Upper Nazareth Twp. Comment	<i>Drawings have been updated to show limits of new asphalt crossing at 40-ft wide.</i>	
	1/18/2024	NS/AECOM Response	<i>No exceptions taken to the offered response.</i>	

8	1/12/2022	NS/AECOM Comment	On sheet R5 of R12, please call out the existing NS warning devices and confirm location of signals is correct as shown. Provide on the plans the distance between the existing warning devices and the proposed edge of travel lane.	Closed
	9/21/2022	Upper Nazareth Twp. Comment	<i>The information was added and is shown on Sht. RR4 of Railroad Crossing plans included with this submission.</i>	
	11/18/2022	NS/AECOM Response	The minimum horizontal distance from edge of travel lane to center of signal mast must be, at minimum, 8'-3". As such, the existing signal on the west side of the crossing will need to be relocated as it is only 5.93' from the edge of travel lane. The estimated cost for Norfolk Southern to relocate the existing signal is approximately \$100,000.	
	6/14/2023	Upper Nazareth Twp. Comment	<i>Understood - no exceptions taken.</i> <i>Plan sheet RR3 has been revised to label the existing west side signal as "TO BE RELOCATED BY NORFOLK SOUTHERN".</i>	
	8/28/2023	NS/AECOM Response	Please include the attached updated signal design plans in the revised plan set. Please ensure that the signal locations shown on sheets RR2 and RR3 match the proposed layout on the attached signal design plans.	
	12/14/2023	Upper Nazareth Twp. Comment	<i>Plan sheets RR2 and RR3 have been so revised.</i>	
	1/18/2024	NS/AECOM Response	<i>No exceptions taken to the offered response.</i>	
9	1/12/2022	NS/AECOM Comment	Update the plans as applicable to indicate NS forces will do all track and signal work including installation, removal or relocation, if necessary. The plans should show existing at-grade crossing signals as well as any facilities located adjacent to the crossing.	Closed - Conforms as Noted
	9/21/2022	Upper Nazareth Twp. Comment	<i>The Note was added as AECOM General Note #3 to the Cover Sheet of Railroad Crossing plans included with this submission.</i>	
	10/12/2022	NS/AECOM Response	Please change the heading "AECOM General Notes" on the Railroad Crossing Plan cover sheet to "Norfolk Southern General Notes"	
10	1/12/2022	NS/AECOM Comment	Provide a note on the project plans stating that the contractor shall coordinate with the Norfolk Southern Signal Department for protection of the equipment impacted by the proposed construction.	Closed - Conforms as Noted
	9/21/2022	Upper Nazareth Twp. Comment	<i>The Note was added as AECOM General Note #4 to the Cover Sheet of Railroad Crossing plans included with this submission.</i>	
	10/12/2022	NS/AECOM Response	Please change the heading "AECOM General Notes" on the Railroad Crossing Plan cover sheet to "Norfolk Southern General Notes"	
11	1/12/2022	NS/AECOM Comment	Please provide a cross section of the roadway at the location of the at-grade crossing with Norfolk Southern. Please indicate the roadway width including travel lanes and shoulder widths.	Closed
	9/21/2022	Upper Nazareth Twp. Comment	<i>This information was added and is shown on Sht. RR4 of Railroad Crossing plans included with this submission.</i>	
	10/12/2022	NS/AECOM Response	<i>No exceptions taken to the offered response.</i>	

12	1/12/2022	NS/AECOM Comment	Please confirm whether a separate pedestrian at-grade crossing is to be constructed adjacent to the roadway crossing. If a separate pedestrian at-grade crossing is not anticipated, please clearly identify and show all related pavement markings and their respective locations on the plans.	Closed
	9/21/2022	Upper Nazareth Twp. Comment	<i>A separate at-grade crossing is not proposed.</i>	
	11/18/2022	NS/AECOM Response	Please update the plans to consistently identify the striped shoulder area on the west side of the proposed crossing. Sheet RR4 refers to the 4.75' shoulder as "Pedestrian Access" or a "Pedestrian Crossing", while the cross section on Sheet RR5 identifies the proposed "Shoulder". Additionally, please provide additional information or reasoning as to why the proposed widened shoulder is located on the west side of the crossing. All buildings/businesses in the immediate vicinity of the crossing with Norfolk Southern are located along the east side of Gun Club Road.	
	6/14/2023	Upper Nazareth Twp. Comment	<i>The plans have been revised to label the westerly shoulder as the designated "Pedestrian Access".</i> <i>The reason for the crossing being on the west side of the crossing is that it ties into a future pedestrian connectivity plan to pedestrian ways to the west and north. An east-west pedestrian crossing is being constructed south of the railroad track that will link to future sidewalk along the west side of Gun Club Road that will tie into the proposed RR x-ing.</i> <i>We note that this area is of rural character and the Township finds a road shoulder used as the designated pedestrian pathway consistent with PennDOT regulations (PennDOT Pub. 13M DM-2, Ch.6), and FHWA Safety Program Policy to be adequate for this location. A copy of a FHWA Safety Program policy brochure is included for reference with this response. The minimum width for a pedestrian access route is 4 ft wide per the U.S. Access Board Public Rights-of-Way Accessibility Guidelines and PennDOT Pub. 13M DM-2, Ch. 6.</i>	
8/28/2023	NS/AECOM Response	<i>No exceptions taken to the offered response.</i>		
13	1/12/2022	NS/AECOM Comment	Update the plan callouts for Rail-Road Tracks to read "Norfolk Southern Railway Company". Additionally, please clearly identify and label Norfolk Southern ROW and provide the Norfolk Southern ROW width on the plans.	Closed
	9/21/2022	Upper Nazareth Twp. Comment	<i>The plans were so revised - reference Shts. RR3 and RR4 of Railroad Crossing plans included with this submission.</i>	
	10/26/2022	NS/AECOM Response	<i>No exceptions taken to the offered response.</i>	

14	1/12/2022	NS/AECOM Comment	Add a note to the applicable plans or special provisions that the contractor will not be permitted to store any equipment on NS property without permission from the NS Railroad Engineer in accordance with Section E.5.K.1 of the NS Public Project Manual.	Closed - Conforms as Noted
	9/21/2022	Upper Nazareth Twp. Comment	<i>The Note was added as AECOM General Note #5 to the Cover Sheet of Railroad Crossing plans included with this submission.</i>	
	10/26/2022	NS/AECOM Response	<i>Please change the heading "AECOM General Notes" on the Railroad Crossing Plan cover sheet to "Norfolk Southern General Notes"</i>	
15	1/12/2022	NS/AECOM Comment	Confirm that the railroad crossing marking details and signage are in conformance with the latest edition of MUTCD and PennDOT Pub. 111. Please provide a plan clearly indicating the type and location of all proposed pavement markings and signs.	Closed
	9/21/2022	Upper Nazareth Twp. Comment	<i>RR crossing marking details and signage conform with the latest edition of the MUTCD and PennDOT Pub. 111 - pavement marking and signage details are provided on Sht. RR5 of Railroad Crossing plans included with this submission. RR X-Ing advance warning sign and pavement legend locations are shown on Shts. RR2 and RR3. Sht. RR4 illustrates additional pavement marking associated with the Township roadway and shoulder area pedestrian crossing.</i>	
	11/18/2022	NS/AECOM Response	On Sheet RR5, please identify the specific "C" dimension for the proposed project site/location. Additionally, on Sheets RR2, RR3, and RR4, please confirm the locations of the proposed railroad crossing pavement marking and W10-1 warning signs. The plan sheets appear to show the location of these markings at 400' to the north of the crossing, and 325' to the south of the crossing. However, the pavement marking detail included on Sheet RR5 shows the pavement marking to be symmetrical about the centerline of track for both the north and south roadway approaches.	
	6/14/2023	Upper Nazareth Twp. Comment	<i>Plans have been revised. Pavement markings and signs have been relocated with distace "C" clarified independently for the northbound and southbound approaches. Previous plan sheet RR2 has been eliminated because advance RR sign and pavement marking is now located in conformance with PennDOT standards and shown on new RR2 and RR3 sheets, with detail on RR4 updated with measurment "C" info for both approaches.</i>	
	8/28/2023	NS/AECOM Response	<i>No exceptions taken to the offered response.</i>	

16	1/12/2022	NS/AECOM Comment	Please include the latest attached "NS Special Provisions for the Protection of Railway Interests" dated 3-11-21 in the specifications as a standalone specification. The attached special provisions shall remain unaltered and may not be modified without written approval from NS.
	9/21/2022	Upper Nazareth Twp. Comment	<i>"NS Special Provisions for the Protection of Railway Interests" dated 3-11/2021 will be included in the specifications for this Work. A Note explaining the above conditions was added as AECOM General Note #5 to the Cover Sheet of Railroad Crossing plans included with this submission.</i>
	11/18/2022	NS/AECOM Response	Please include the latest attached "NS Special Provisions for the Protection of Railway Interests" dated 1-1-22 in the specifications as a standalone specification. The attached special provisions shall remain unaltered and may not be modified without written approval from NS.
	6/14/2023	Upper Nazareth Twp. Comment	<i>Acknowledged - "NS Special Provisions for the Protection of Railway Interests" dated 1-1-22 will be issued as a stand alone specification for completion of the work.</i>
	8/28/2023	NS/AECOM Response	Please include the latest attached "NS Special Provisions for the Protection of Railway Interests" dated 11-4-22 in the specifications as a standalone specification. The attached special provisions shall remain unaltered and may not be modified without written approval from NS.
	12/14/2023	Upper Nazareth Twp. Comment	<i>Acknowledged - "NS Special Provisions for the Protection of Railway Interests" dated 11-4-22 will be issued as a stand alone specification for completion of the work.</i>
	1/18/2024	NS/AECOM Response	<i>No exceptions taken to the offered response.</i>

Closed

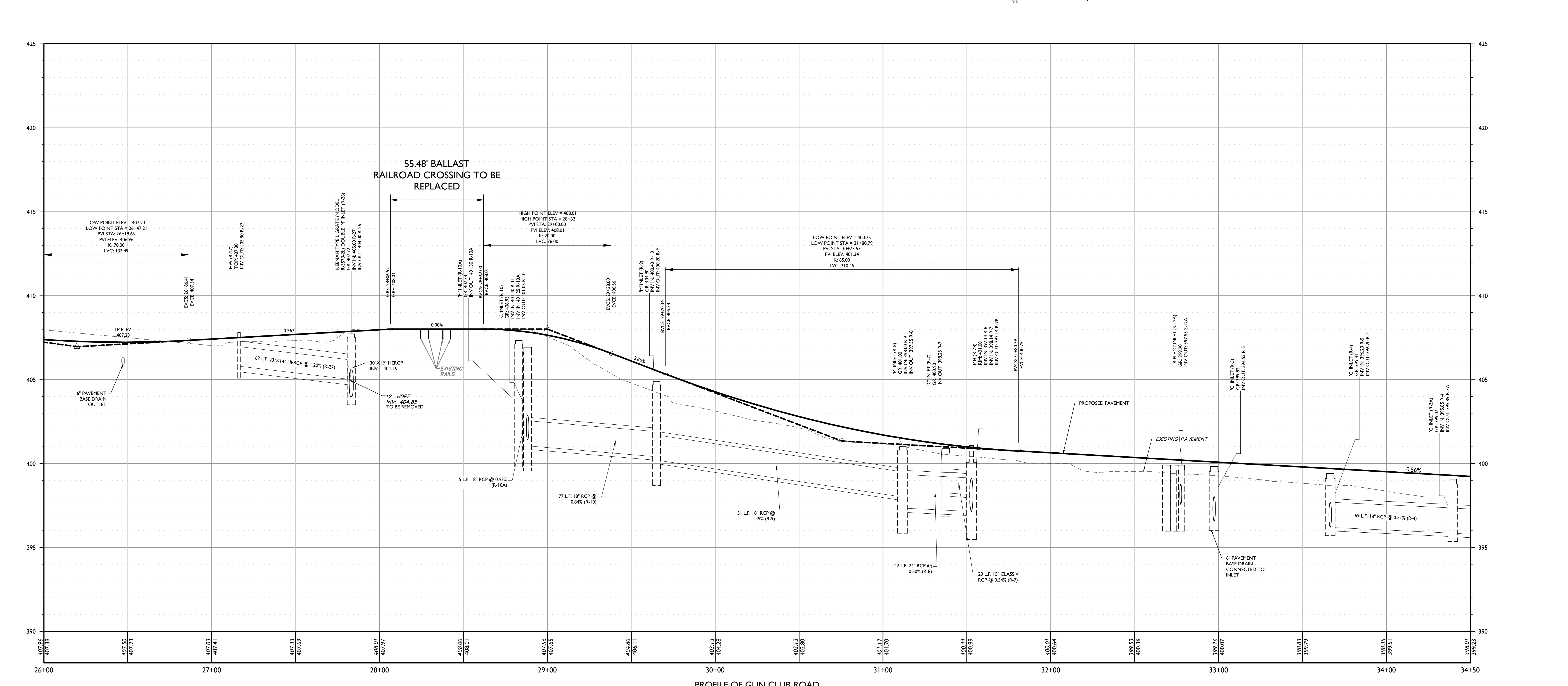
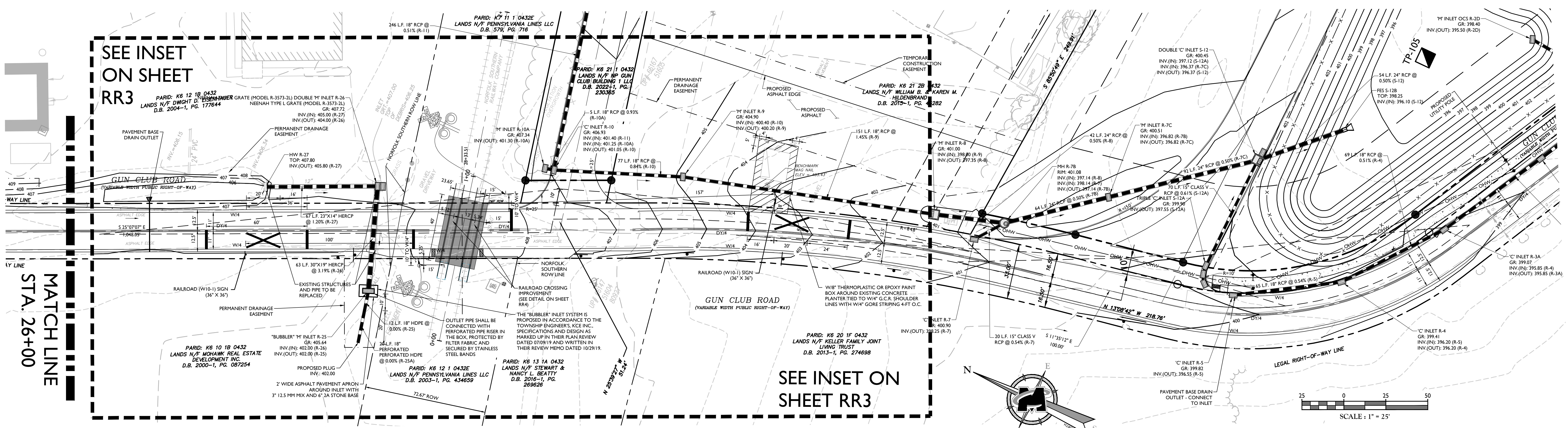
17	11/18/2022	NS/AECOM Comment	Please provide additional information regarding the drainage system on the north side of the crossing and where any water is proposed to be outletted. The plans currently indicate a "proposed plug" at the lowest invert/outlet of the drainage pipe. It is unclear where any storm water in this system is anticipated to be directed.	Closed
	6/14/2023	Upper Nazareth Twp. Comment	<p><i>Proposed 'M' Inlet R-25 is labeled as a "bubbler" inlet that will discharge by bubbling out of the inlet grate and flowing overland as low depth sheet flow to a creek approximately 450 ft to the west. This mimics but improves upon the existing condition whereby the pipe crossing Gun Club Road discharges into an earthen hole. The reason for this unconventional discharge method is that the topographic grade is essentially dead flat between the Inlet R-25 and the creek, dropping just about 6 inches over 450 feet. We note that this is the way this area has drained for decades without reported problem.</i></p> <p><i>The proposed design improves upon the existing condition by: replacing the earthen hole with an inlet; adding an asphalt apron at grade around the top of the inlet grate to minimize localized erosion; and, by adding the 20 feet of perforated HDPE pipe extending from Inlet R-25 that will help drain water retained in the pipe and inlet system between storms. Most water in the system is expected to infiltrate in the existing basin on the east side of Gun Club Road, while the perforated pipe will dissipate water below the invert of the pipe leaving the basin.</i></p>	
	8/28/2023	NS/AECOM Comment	In order to verify that no additional runoff will be directed onto NS ROW, please include hydraulic calculations comparing the existing and proposed conditions for the drainage system detailed above. These calculations should include a 100 year design storm, as well as, any other assumptions and references used to complete the analysis.	
	12/14/2023	Upper Nazareth Twp. Comment	<i>See stormwater report transmitted with this submission.</i>	
	1/18/2024	NS/AECOM Response	<i>No exceptions taken to the offered response.</i>	
18	11/18/2022	NS/AECOM Comment	Please provide an update regarding the status of the PUC application and whether or not the application has been submitted at this time. As it relates to comment #6 above, please note that the PUC Letter must clearly identify Upper Nazareth Township as being responsible for 100% of all cost associated with installation and future maintenance costs of the proposed concrete crossing.	Closed
	6/14/2023	Upper Nazareth Twp. Comment	<i>The PUC application was submitted - awaiting PUC response.</i>	
	8/28/2023	NS/AECOM Comment	Comment to remain open due to continued discussion of topics covered at the PUC meeting. Please confirm the proposed crossing material.	
	12/14/2023	Upper Nazareth Twp. Comment	<i>Acknowledged. Reference above response to Comment 6.</i>	
	1/18/2024	NS/AECOM Response	<i>No exceptions taken.</i>	

19	1/12/2022	NS/AECOM Comment	Please provide 60% Roadway Plans, Traffic Control Plans, E&S Plans, and Special Provisions for further review and approval.	Closed - Conforms as Noted
	9/21/2022	Upper Nazareth Twp. Comment	<i>The requested plans are included with this submission.</i>	
	10/26/2022	NS/AECOM Response	Provide the updated plans (roadway, drainage, and E&S) incorporating these comments, along with Special Provisions, for further review and approval. The plans should cover all improvements along NS ROW.	
	6/14/2023	Upper Nazareth Twp. Comment	<i>Updated plans submitted herewith.</i>	
20	8/28/2023	NS/AECOM Comment	Based on the provided typical sections on sheet RR4, the roadway cross-slope in the northbound lane at stations 28+12 and 28+57, would not match between the typical road section (-2%-0%) and the section across the railroad crossing (+0.67%). Please provide additional details, or update the provided sections, to account for the transition of the cross-slope between the roadway and railroad typical sections.	Closed
	12/14/2023	Upper Nazareth Twp. Comment	<i>Gun Club Road Typical section for STA 27.76.45 to 28+12 and STA 28+57 to STA 29+02.32 has been revised to indicate transition from crowned roadway section to RR X-ing section, and back.</i>	
	1/18/2024	NS/AECOM Response	<i>No exceptions taken to the offered response.</i>	



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 SURFACE FOR ANY REASON.
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REV	DATE	DRAWN BY	DESCRIPTION
1	4/23/21	MM	ISSUED FOR NORFOLK SOUTHERN REVIEW COMMENTS DATED 3/11/2022
2	10/12/21	MM	ISSUED TO HAVE ASPHALT PAVED AND CURBS
3	11/23/21	MM	ISSUED FOR NORFOLK SOUTHERN REVIEW COMMENTS DATED 10/29/21

REV	DATE	DRAWN BY	DESCRIPTION

PROFESSIONAL ENGINEER
 C. RICHARD ROSEBERRY
 LICENSE NUMBER: PE046162R
 COLLIER ENGINEERING & DESIGN, INC.

PROPOSED WIDENING AND RESURFACING OF GUN CLUB ROAD EXISTING RAILROAD CROSSING FOR UPPER NAZARETH TOWNSHIP

UPPER NAZARETH TOWNSHIP
 NORTHAMPTON COUNTY
 PENNSYLVANIA

LEHIGH VALLEY OFFICE
 941 Plenton Boulevard
 Suite 801
 Allentown, PA 18109
 Phone: 610.868.4201
 Fax: 610.264.4672

SCALE: AS SHOWN
 DATE: 7/21/2022
 DRAWN BY: MCJ
 CHECKED BY: NMG
 PROJECT NUMBER: 18001-458
 DRAWING NAME: C-RAIL
PLAN AND PROFILE
 SHEET NUMBER: RR2 of RR4

NOTE: ONLY NORFOLK SOUTHERN RAILROAD ROAD SIGNS ARE SHOWN ON THIS PLAN. ALL OTHER SIGNS ARE LISTED ON OTHER PLANS.

REV	DATE	DRAWN BY	DESCRIPTION

REV	DATE	DRAWN BY	DESCRIPTION
1	4/23	MJ	ISSUED FOR NORFOLK SOUTHERN REVIEW COMMENTS DATED 11/13/22
2	8/17/23	MJ	ISSUED TO HAVE ASPHALT PAVEMENT CROSSING
3	1/17/23	MJ	ISSUED FOR NORFOLK SOUTHERN REVIEW COMMENTS DATED 8/28/23

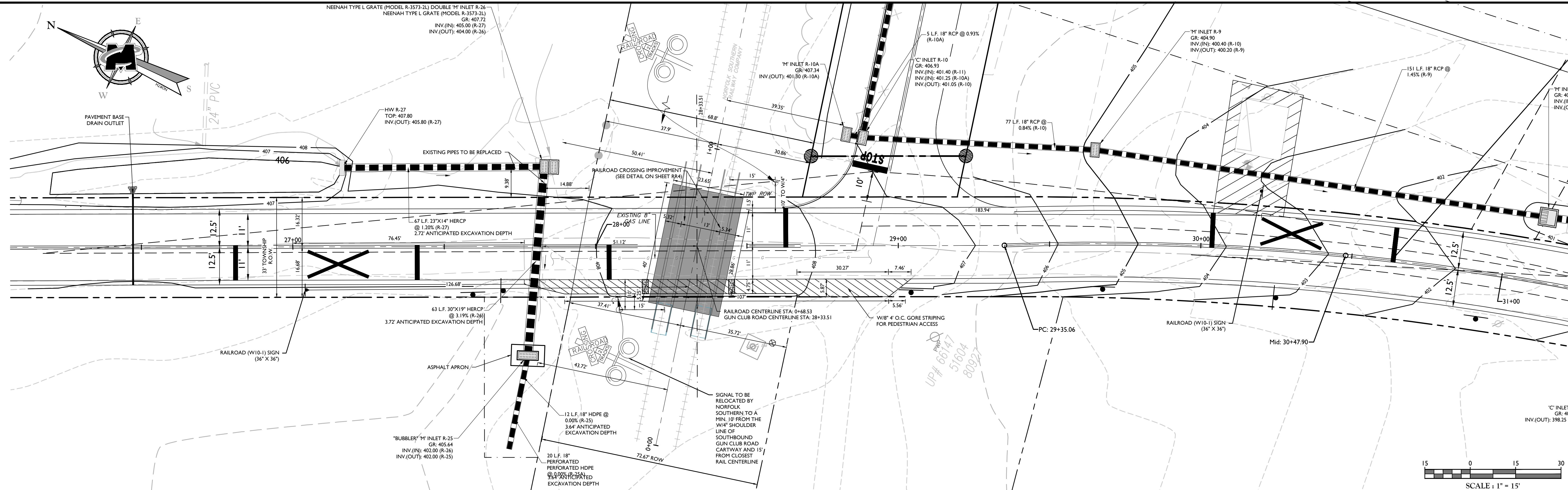
C. Richard Roseberry
 PENNSYLVANIA REGISTERED PROFESSIONAL ENGINEER
 LICENSE NUMBER: PE046162R
 COLLIER ENGINEERING & DESIGN, INC.

PROPOSED WIDENING AND RESURFACING OF GUN CLUB ROAD EXISTING RAILROAD CROSSING FOR UPPER NAZARETH TOWNSHIP

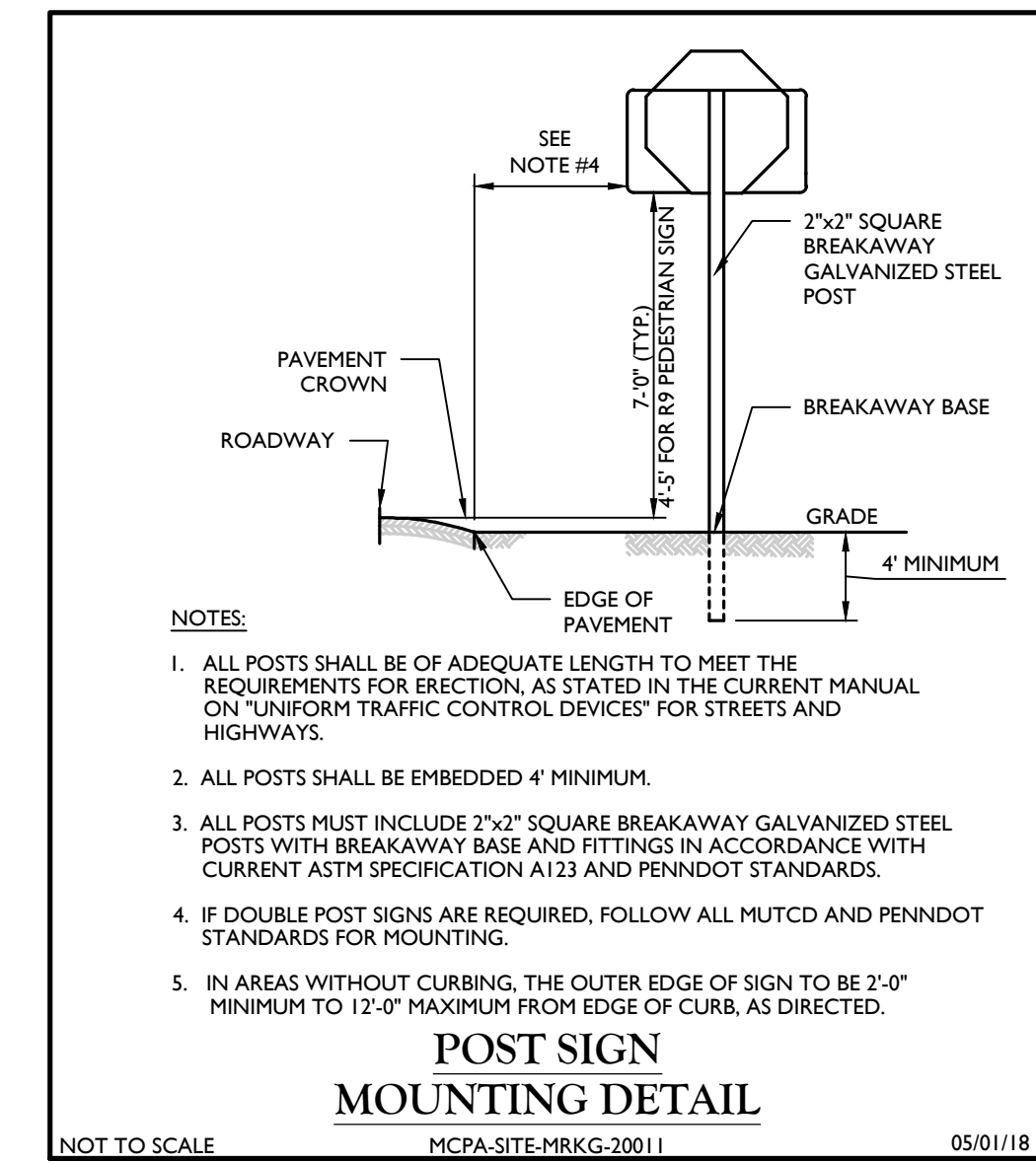
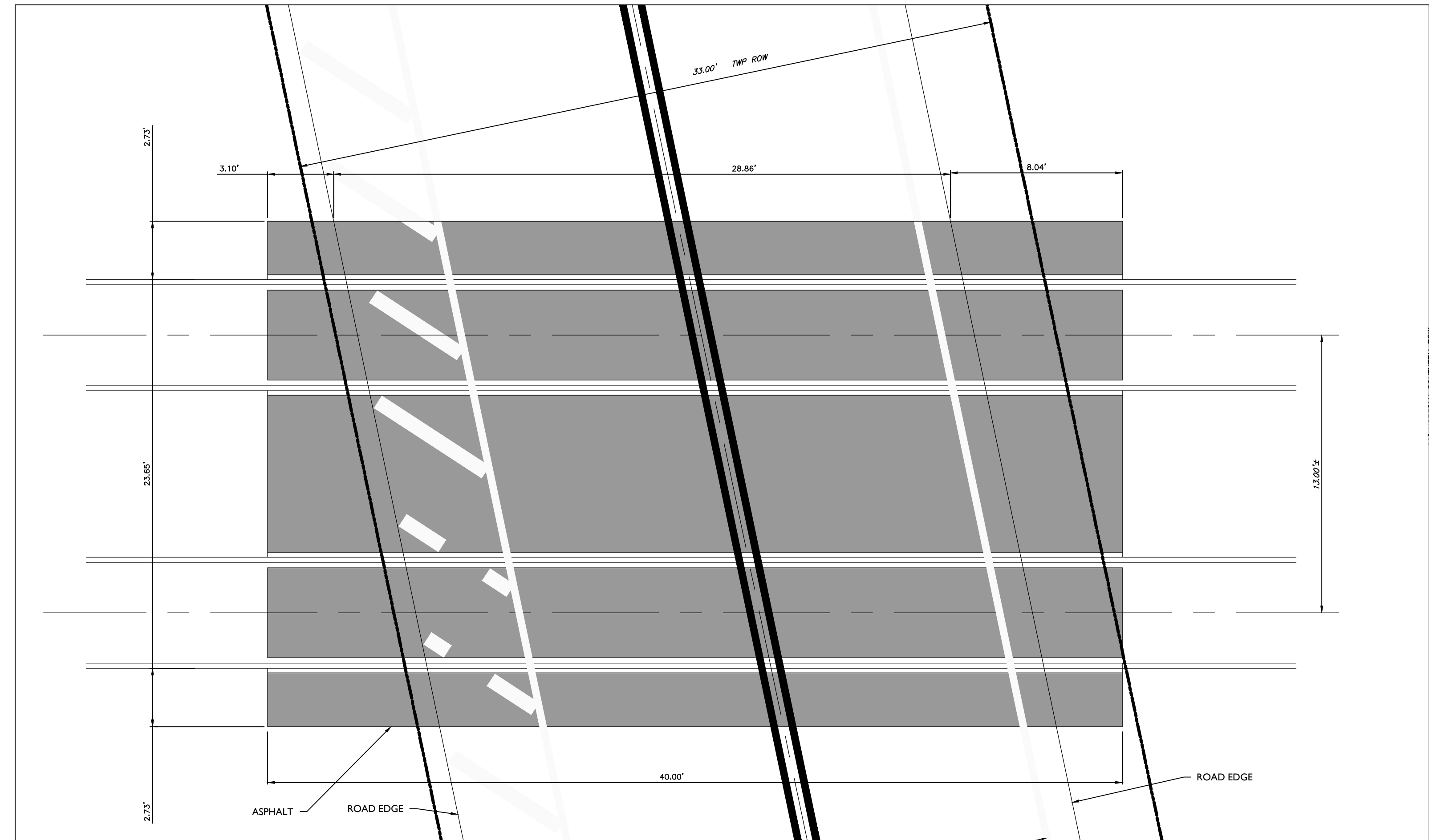
UPPER NAZARETH TOWNSHIP
 NORTHAMPTON COUNTY
 PENNSYLVANIA

LEHIGH VALLEY OFFICE
 941 Plinton Boulevard
 Suite 801
 Allentown, PA 18109
 Phone: 610.868.4201
 Fax: 610.264.4672

SCALE: AS SHOWN DATE: 7/25/2022 DRAWN BY: MCJ CHECKED BY: NMG
 PROJECT NUMBER: 180201458 DRAWING NAME: C-RAIL
 SHEET TITLE: **PLAN AND PROFILE**
 SHEET NUMBER: **RR3 of RR4**



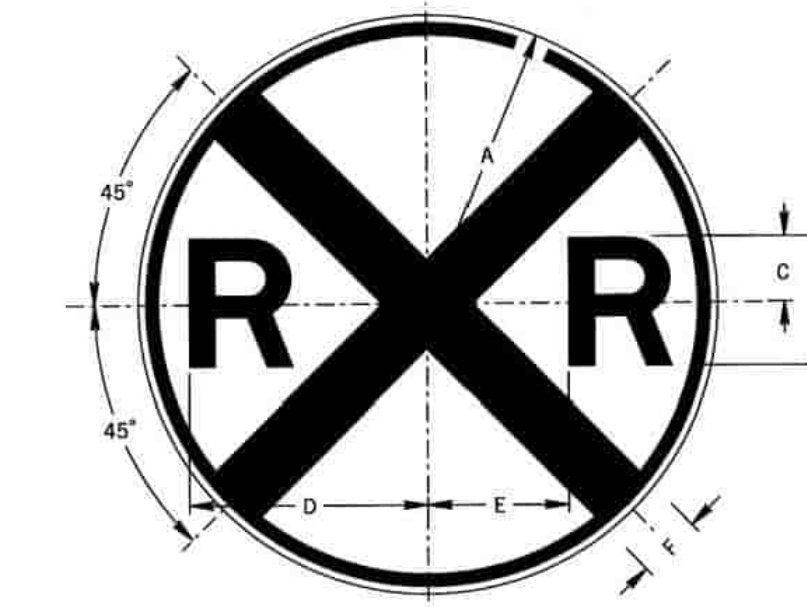
NOTE: ONLY NORFOLK SOUTHERN RAILROAD ROAD SIGNS ARE SHOWN ON THIS PLAN. ALL OTHER SIGNS ARE LISTED ON OTHER PLANS.



- NOTES:**
- ALL POSTS SHALL BE OF ADEQUATE LENGTH TO MEET THE REQUIREMENTS FOR ERECTION, AS STATED IN THE CURRENT MANUAL ON "UNIFORM TRAFFIC CONTROL DEVICES" FOR STREETS AND HIGHWAYS.
 - ALL POSTS SHALL BE EMBEDDED 4" MINIMUM.
 - ALL POSTS MUST INCLUDE 2"x2" SQUARE BREAKAWAY GALVANIZED STEEL POSTS WITH BREAKAWAY BASE AND FITTINGS IN ACCORDANCE WITH CURRENT ASTM SPECIFICATION A123 AND PENNDOT STANDARDS.
 - IF DOUBLE POST SIGNS ARE REQUIRED, FOLLOW ALL MUTCD AND PENNDOT STANDARDS FOR MOUNTING.
 - IN AREAS WITHOUT CURBING, THE OUTER EDGE OF SIGN TO BE 2'-0" MINIMUM TO 12'-0" MAXIMUM FROM EDGE OF CURB, AS DIRECTED.

(a) Justification: The Railroad Warning Sign (W10-1) may be used in advance of railroad crossings where an intersection is not located within 100' in advance of the railroad crossing.

(b) Placement: The W10-1 sign shall be placed not less than 100' in advance of the crossing but may be placed a greater distance because of roadway alignment or prevailing speeds. If a Yield Ahead (W3-2) or Stop Ahead (W3-1) sign is installed on the approach to the crossing, the W10-1 sign shall be installed upstream from the W3-2 or W3-1 sign.

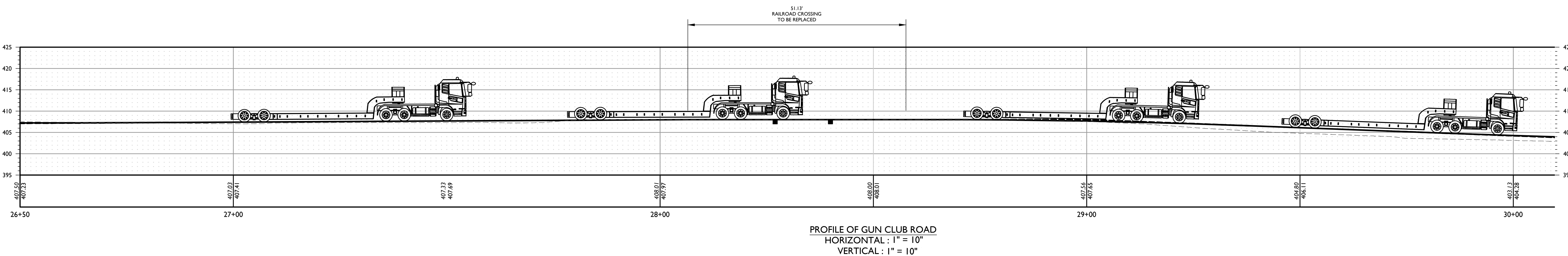


SIGN SIZE	A	B	C	D	E	F	MIN. GUN.	BOR. DRN.	BLANK STD.
24" DIA.	12	12	2.5	9.2	5.8	2.5	0.4	0.6	---
36" DIA.	18	18	4	14.4	8.6	4	0.5	0.8	B4-36
48" DIA.	24	10E	5	18.4	11.6	5	0.8	1.2	---

COLOR:
 LEGEND, SYMBOL AND BORDER:
 BLACK (NON-REFLECTORIZED)

BACKGROUND:
 YELLOW (REFLECTORIZED)

APPROVED FOR THE SECRETARY OF TRANSPORTATION
 By: *C. Rose* Date: 02-29-12
 Chief, Traffic Engineering and Permits Section
 Bureau of Maintenance and Operations




SH. NO.	CONTENTS
NX1	INDEX SHEET
1	LAYOUT
2	PROFILE
3	CABLE PLAN
4	LOAD CENTER
5	CABLE TERMINATION PANEL
6	GCP4000 CHASSIS & MODULE LAYOUT
7	GCP4000 PROGRAMMING
8	GCP4000 PROGRAMMING
9	CONNECTORS FOR TRACK MODULES
10	CPU MODULE, SEAR III HOOK-UPS & VHF RADIO
11	SEAR III PROGRAMMING
12	SSCC#1 MODULE HOOK-UP
13	SSCC#2 MODULE HOOK-UP
14	DC SHUNT ENHANCER
15	SIDING TRACK STYLE "C" CIRCUITS
16	FLASHER LIGHTS
17	BACKBOARD DETAIL - 1A & 1B
18	FARADAY SHIELD DETAIL - 1A & 1B
19	FARADAY SHIELD DETAIL - 1C
20	RACK PLACEMENT 6'X6' HOUSE - SIDE C
21	6'X6' HOUSE - SIDE A
22	6'X6' HOUSE - SIDE B & TOP VIEW

PROJECT:
#19.6003
RED = IN
YELLOW = OUT
DESIGN: 03-03-22
PROGRESS RAIL
CHECK: 05-03-22
JMW

NEW SHEET

IN SERVICE _____ SIGNED _____ DATE _____
 S&E ENGINEERING COPY
 CONSTRUCTION OFFICE COPY
 RETURN TO S&E ENG. AFTER COMPLETION
 FIELD COPY
 RETURN TO CASE AFTER COMPLETION
 PROJECT ENGINEER COPY

INDEX SHEET

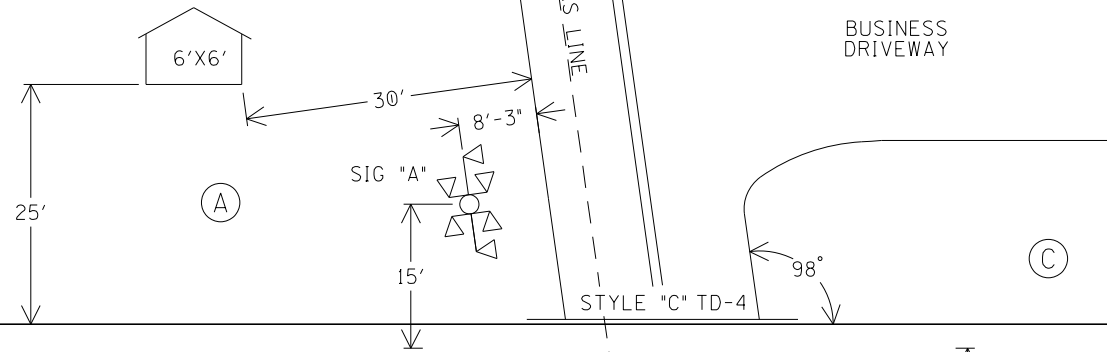
DESIGNED BY: MST 03-03-22		OFFICE OF ASS'T. VICE PRESIDENT COMM. & SIGNAL, ATLANTA, GA.	M.P.: SE-13.35
DRAWN BY: PRS 03-03-22		NAZARETH, PA FLS AT GUN CLUB RD.	
CHECKED BY: JMW 05-03-22	CEMENT SECONDARY		FILE NO. R-
IN SERVICE: - -	CADD or DWG. No. 02240134.NX1	SHEET No. 1	

REVISION INITIALS																			
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PROPERTY
PENNSYLVANIA R.R.

TO JU
(R.R. WEST)

TO UHLERS
(R.R. EAST)



SIDING



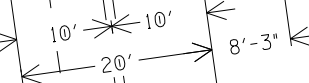
MAIN

AC SERVICE

(D)

SIG "B"

(B)



GUN CLUB RD.
AAR #851 943H

ACCESS RD.

ACCESS RD.

TO BE VOIDED

PROJECT:
#19.6003
RED = IN
YELLOW = OUT
DESIGN: 03-03-22
PROGRESS RAIL
CHECK: 05-03-22
JMW

NOTES:

1. MAX. TRAIN SPEED MAIN: 25 M.P.H., SIDING: 10 M.P.H.
2. LATITUDE N 40° 43' 32" LONGITUDE W 75° 21' 45" ELEVATION 408'

(A) (B) (C) (D) = QUADRANT MARKERS

SCALE: 1" = 20'
PROJECT #19.0071

LAYOUT

FILE NO. CX0120675

DESIGNED BY: WOR 12-01-08	NS NORFOLK SOUTHERN	
DRAWN BY: IRE 12-01-08	OFFICE OF ASS'T. VICE PRESIDENT COMM. & SIGNAL, ATLANTA, GA.	M.P.: SE-13.35
CHECKED BY: JFK 12-02-08	NAZARETH, PA FLS AT GUN CLUB RD.	
IN SERVICE: NS 08-27-09	CEMENT SECONDARY	FILE NO. R-
	CADD or DWG. No. 02240134.01	SHEET No. 1 of 21

REVISION	M-2704
INITIALS	TJM/12-02-13 URL/10-08-14

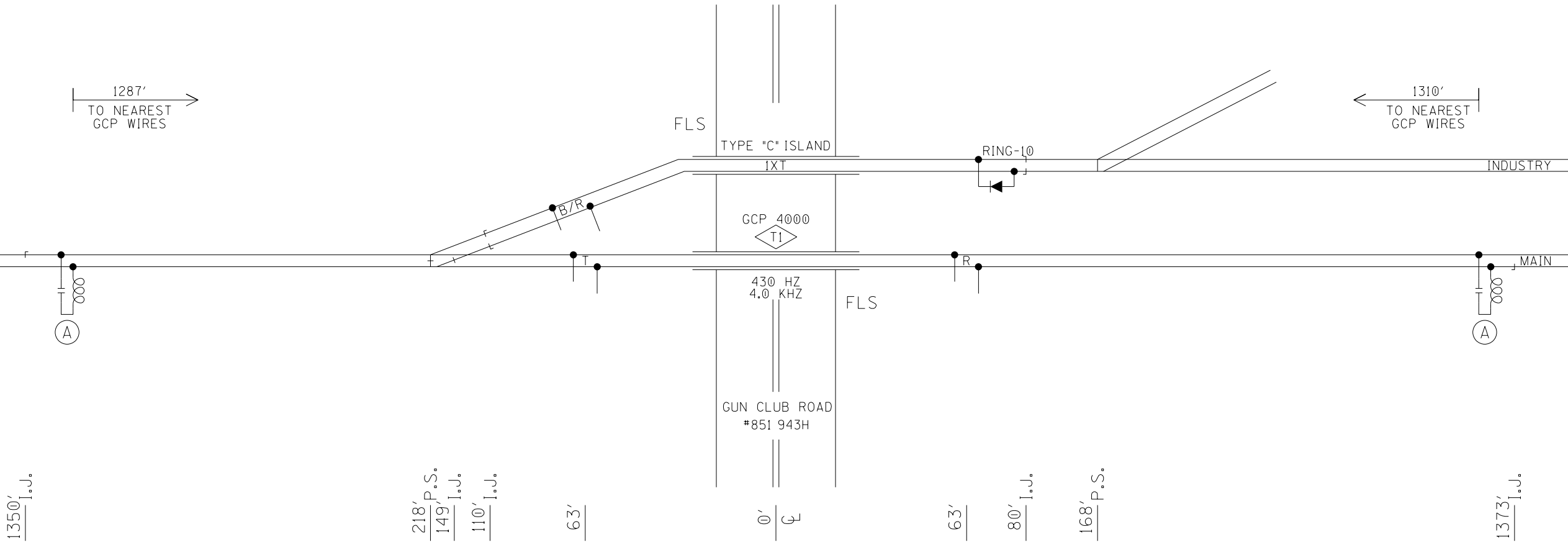
PROPERTY
PENNSYLVANIA R.R.

TO BETHLEHEM
R.R. WEST
M.P. DECREASING

TO UHLERS
R.R. EAST
M.P. INCREASING

1287'
TO NEAREST
GCP WIRES

1310'
TO NEAREST
GCP WIRES



(A) - MF-NBS 62775-3497 (430HZ)

PROFILE

DESIGNED BY: MST 03-03-22	NS NORFOLK SOUTHERN	
DRAWN BY: PRS 03-03-22	OFFICE OF ASS'T. VICE PRESIDENT COMM. & SIGNAL, ATLANTA, GA.	M.P.: SE-13.35
CHECKED BY: JMW 05-03-22	NAZARETH, PA FLS AT GUN CLUB RD.	
IN SERVICE: - -	CEMENT SECONDARY	FILE NO. R-
	CADD or DWG. No. 02240134.002	SHEET No. 2 of 22

REVISION INITIALS																				
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PROPERTY
PENNSYLVANIA R.R.

TO JU
(R.R. WEST)

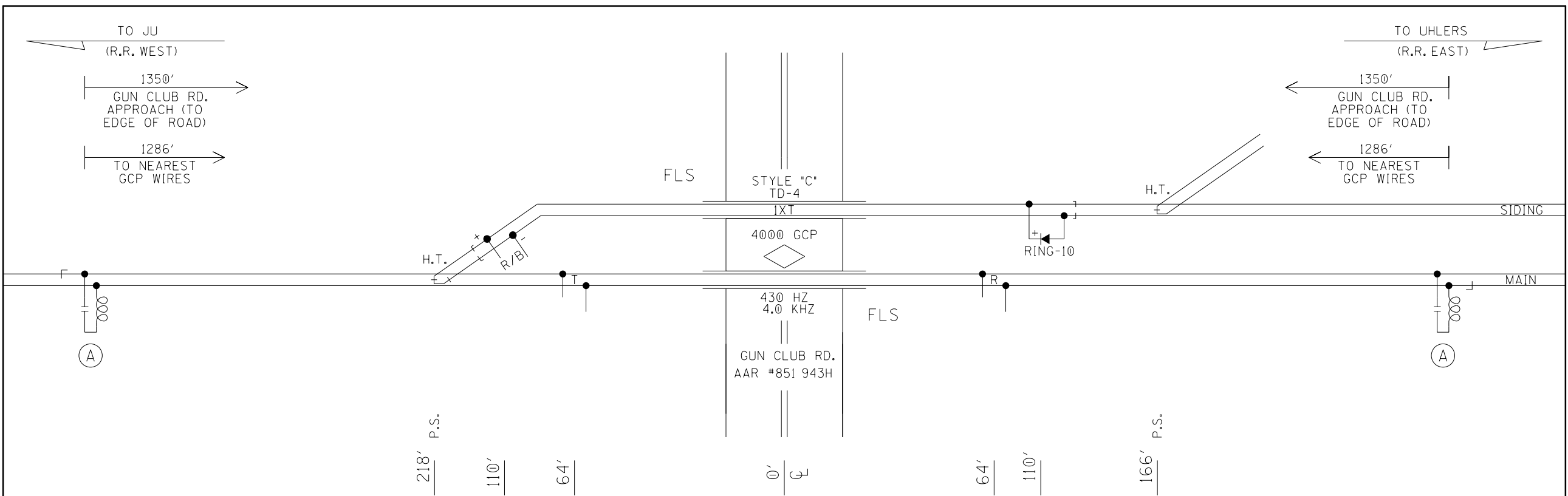
1350'
GUN CLUB RD.
APPROACH (TO
EDGE OF ROAD)

1286'
TO NEAREST
GCP WIRES

TO UHLERS
(R.R. EAST)

1350'
GUN CLUB RD.
APPROACH (TO
EDGE OF ROAD)

1286'
TO NEAREST
GCP WIRES



TO BE VOIDED

PROJECT:
 #19.6003
 RED = IN
 YELLOW = OUT
 DESIGN: 03-03-22
 PROGRESS RAIL
 CHECK: 05-03-22
 JMW

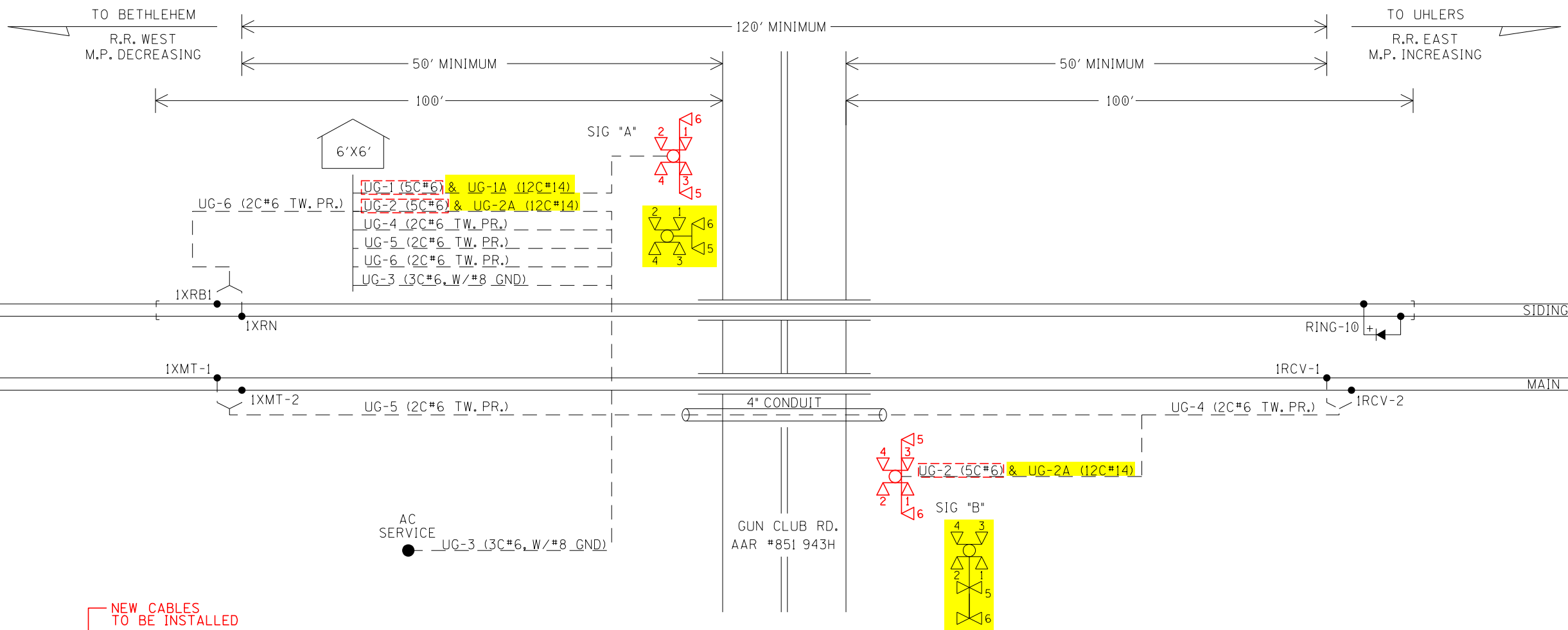
(A) - MF-NBS 62775-3497 (430HZ)

PROFILE

DESIGNED BY: WOR 12-01-08	NORFOLK SOUTHERN	OFFICE OF ASS'T. VICE PRESIDENT COMM. & SIGNAL, ATLANTA, GA.	M.P.: SE-13.35
DRAWN BY: IRE 12-01-08		NAZARETH, PA FLS AT GUN CLUB RD.	
CHECKED BY: JFK 12-02-08	CEMENT SECONDARY		
IN SERVICE: NS 08-27-09	CADD or DWG. No. 02240134.02	FILE No. R-	SHEET 2 of 21

REVISION	M-2704								
INITIALS	TJM/12-02-13								
	URL/10-08-14								

PROPERTY
PENNSYLVANIA R.R.



NEW CABLES TO BE INSTALLED

UG-1-5CUG #6	
AEC	
AEZ	
AEB	
AXX	AXX-1
SPARE	
UG-2-5CUG #6	
BEC	
BEZ	
BEB	
SPARE	
SPARE	

UG-1A-12CUG #14	
SPARE	
SPARE	
SPARE	
SPARE	
SPARE	
SPARE	
SPARE	
SPARE	
SPARE	
SPARE	
SPARE	
SPARE	
SPARE	

UG-2A-12CUG #14	
SPARE	
SPARE	
SPARE	
SPARE	
SPARE	
SPARE	
SPARE	
SPARE	
SPARE	
SPARE	
SPARE	
SPARE	
SPARE	

UG-3-3CUG #6 W/#8 GND	
BX120-A	
BX120-B	
NX120	
GND	

UG-4-TW. PR. #6	
1RCV-1	
1RCV-2	
UG-5-TW. PR. #6	
1XMT-1	
1XMT-2	

UG-6-TW. PR. #6	
1XRBI	
1XRN	

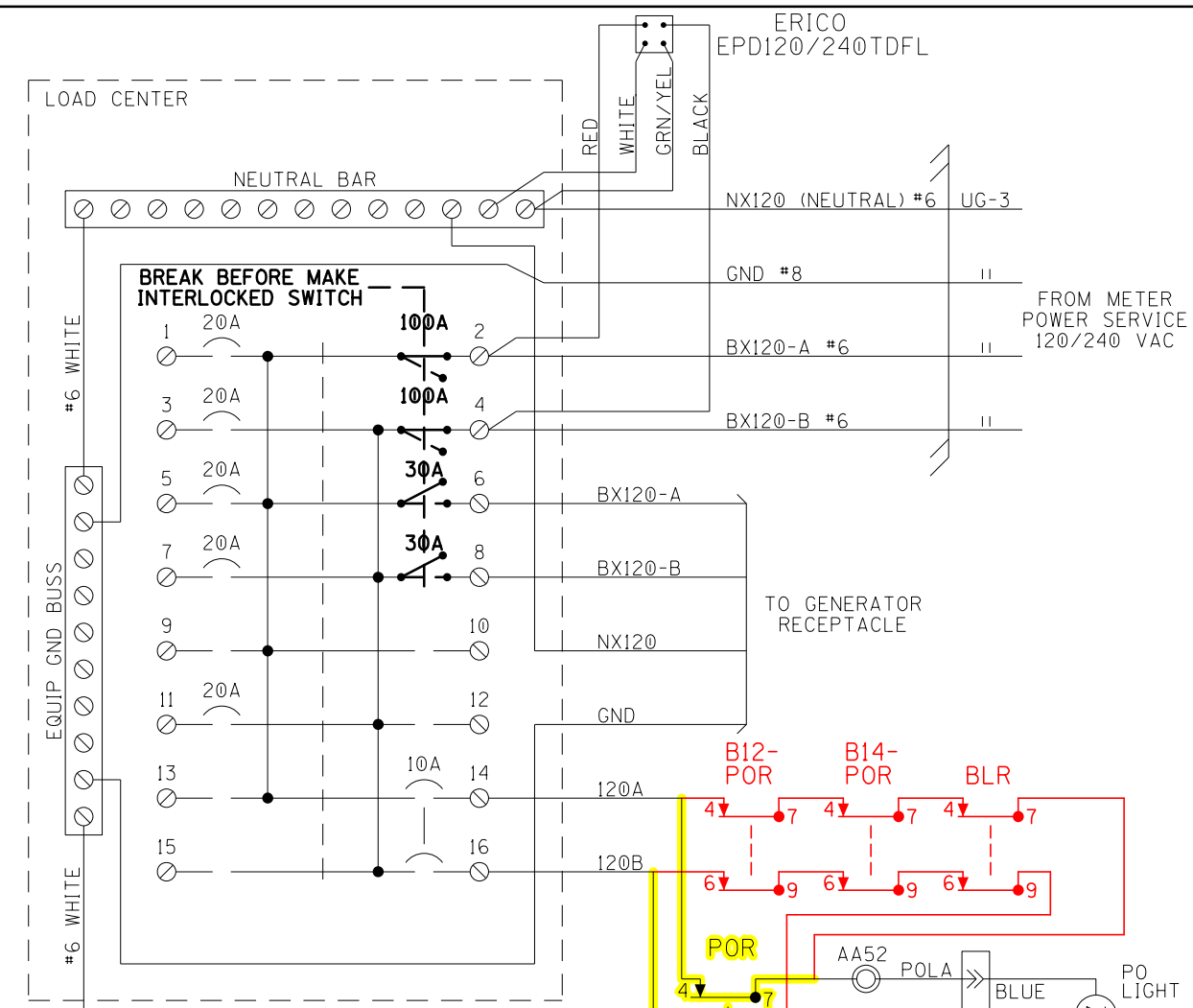
PROJECT: #19.6003
 RED = IN
 YELLOW = OUT
 DESIGN: 03-03-22
 PROGRESS RAIL
 CHECK: 05-03-22
 JMW

CABLE PLAN

DESIGNED BY: WOR 12-01-08		OFFICE OF ASS'T. VICE PRESIDENT COMM. & SIGNAL, ATLANTA, GA. M.P.: SE-13.35
DRAWN BY: IRE 12-01-08		
CHECKED BY: JFK 12-02-08	NAZARETH, PA FLS AT GUN CLUB RD.	
IN SERVICE: NS 08-27-09	CEMENT SECONDARY	FILE No. R-
	CADD or DWG. No. 02240134.03	SHEET No. 3 of 22

REVISION	M-2704
INITIALS	TJM/12-02-13
	URL/10-08-14

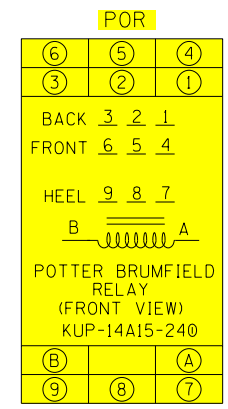
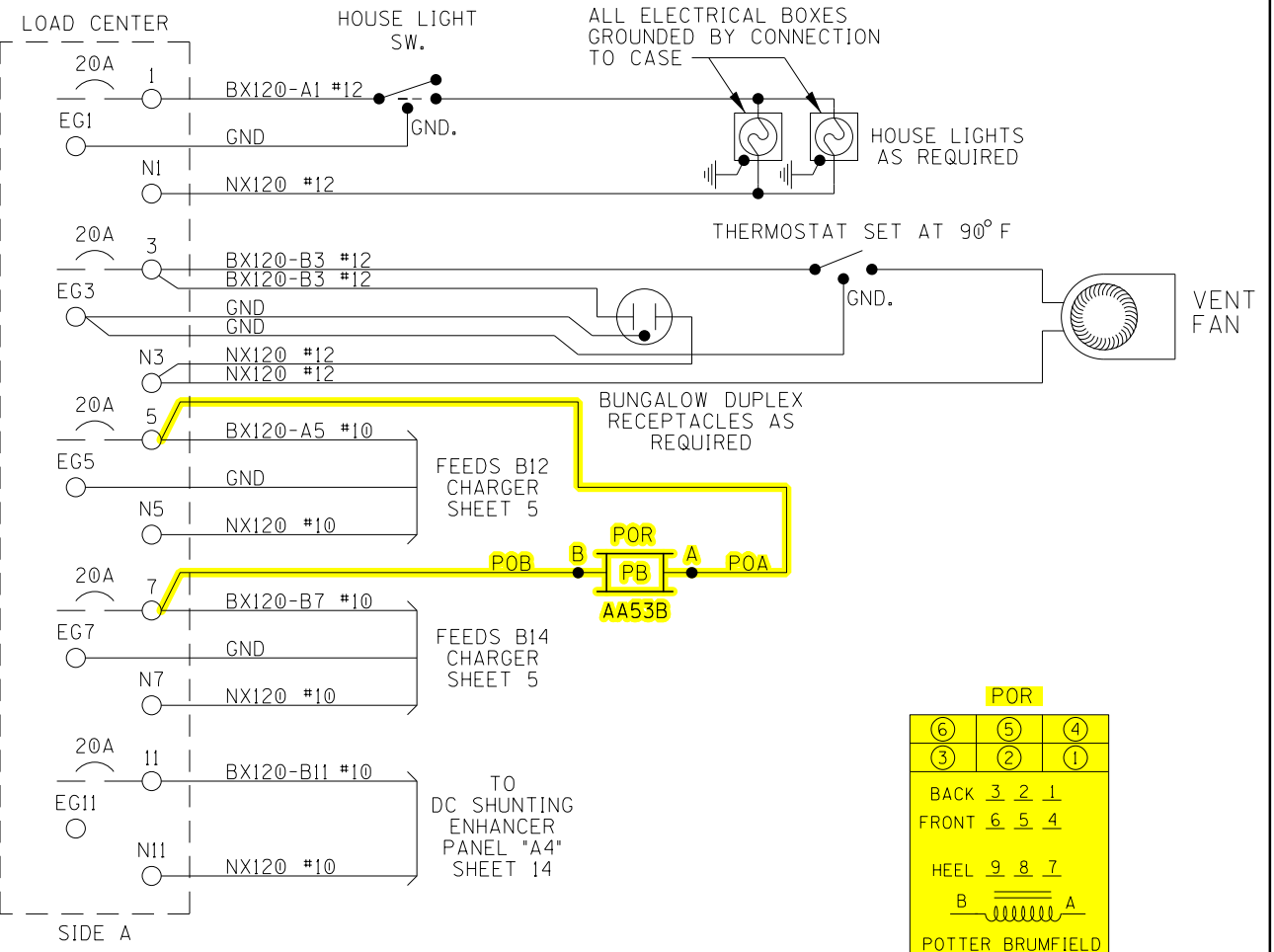
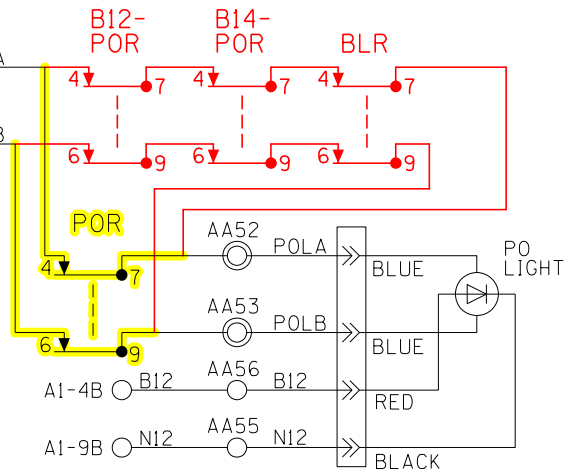
PROPERTY
 PENNSYLVANIA R.R.



NOTE: ALL AC WIRING IS TO BE IN METALLIC CONDUIT WITH NO EXPOSED TERMINALS. ALL AC 120V AND 240V EQUIPMENT IS TO BE PROPERLY GROUNDED.

- SQUARE "D" PART NUMBERS:
- LOAD CENTER — Q0116L125G
 - 10A 1P CIR BKR — Q0110
 - 10A 2P CIR BKR — Q0210
 - 20A 1P CIR BKR — Q0120
 - 30A 1P CIR BKR — Q0130
 - 30A 2P CIR BKR — Q0230
 - 60A 2P CIR BKR — Q0260
 - 100A 2P CIR BKR — Q02100
 - MECH INTERLOCK — PK4DT1M4LA

GENERATOR RECEPTACLE:
MALE CONNECTOR - NEMA L1430-F1



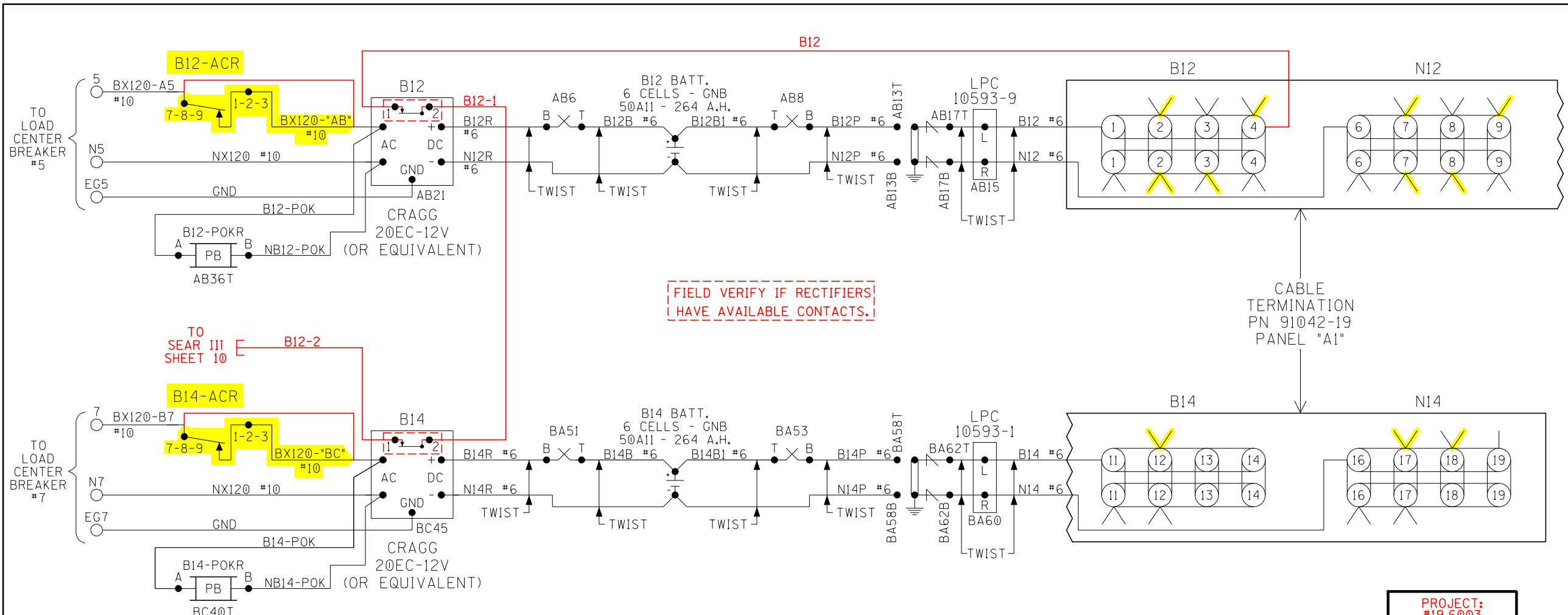
PROJECT:
#19.6003
RED = IN
YELLOW = OUT
DESIGN: 03-03-22
PROGRESS RAIL
CHECK: 05-03-22
JMW

LOAD CENTER WIRING

DESIGNED BY: WOR 12-01-08	NS NORFOLK SOUTHERN	OFFICE OF ASS'T. VICE PRESIDENT COMM. & SIGNAL, ATLANTA, GA.	M.P.: SE-13.35
DRAWN BY: IRE 12-01-08		NAZARETH, PA FLS AT GUN CLUB RD.	
CHECKED BY: JFK 12-02-08	CEMENT SECONDARY		FILE R-
IN SERVICE: NS 08-27-09	CADD or DWG. No. 02240134.04	SHEET 4 of 22	

REVISION	M-2704
INITIALS	TJM/12-02-13
	URL/10-08-14

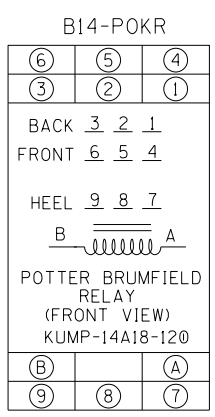
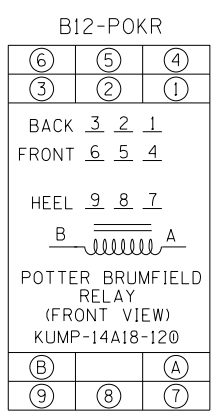
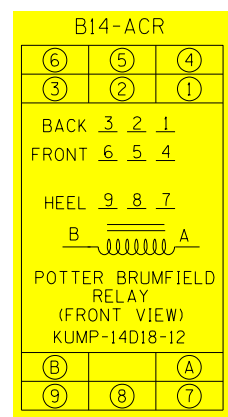
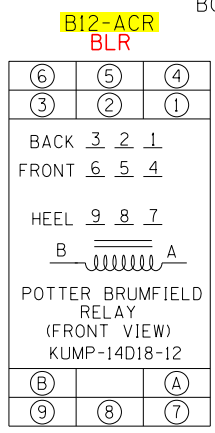
PROPERTY
NORFOLK SOUTHERN RAILWAY CO.



FIELD VERIFY IF RECTIFIERS
HAVE AVAILABLE CONTACTS.

CABLE
TERMINATION
PN 91042-19
PANEL "A1"

PROJECT:
#19.6003
RED = IN
YELLOW = OUT
DESIGN: 03-03-22
PROGRESS RAIL
CHECK: 05-03-22
JMW



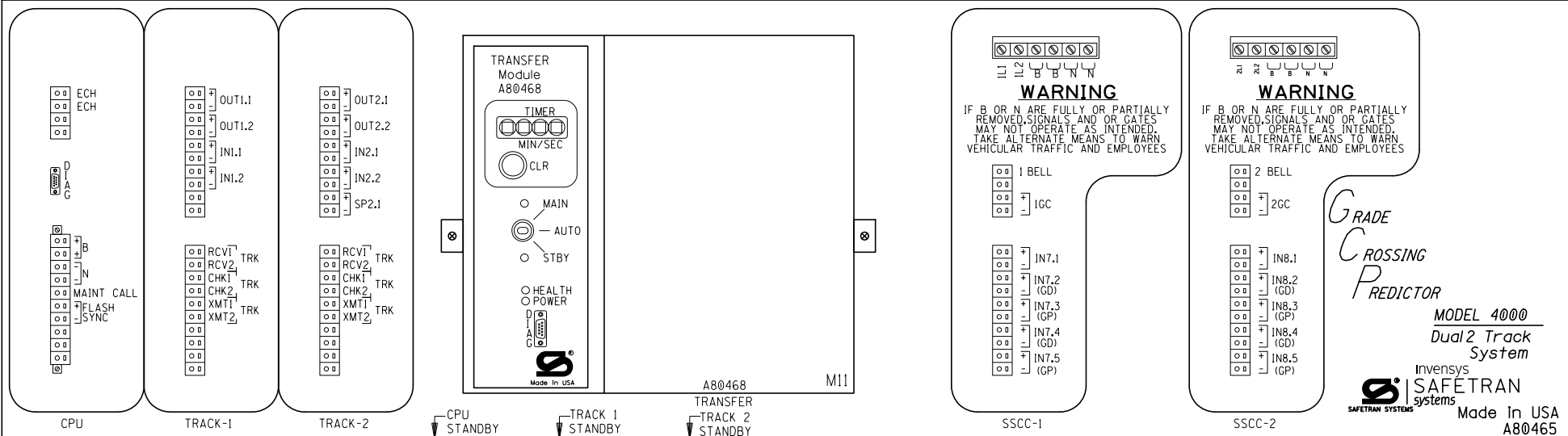
NOTE:
ALL WIRING TO BE #16AWG
UNLESS NOTED OTHERWISE.

PANEL "A1" CABLE TERMINATION PANEL
B12 & B14 RECTIFIER HOOK-UP

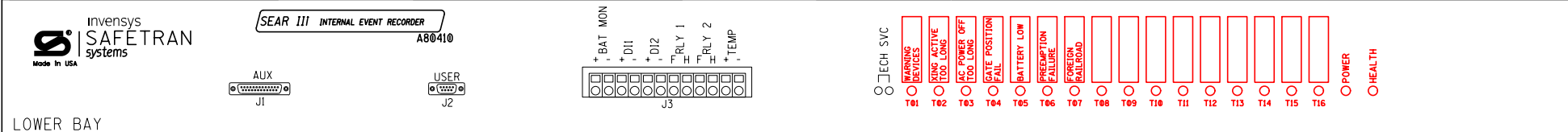
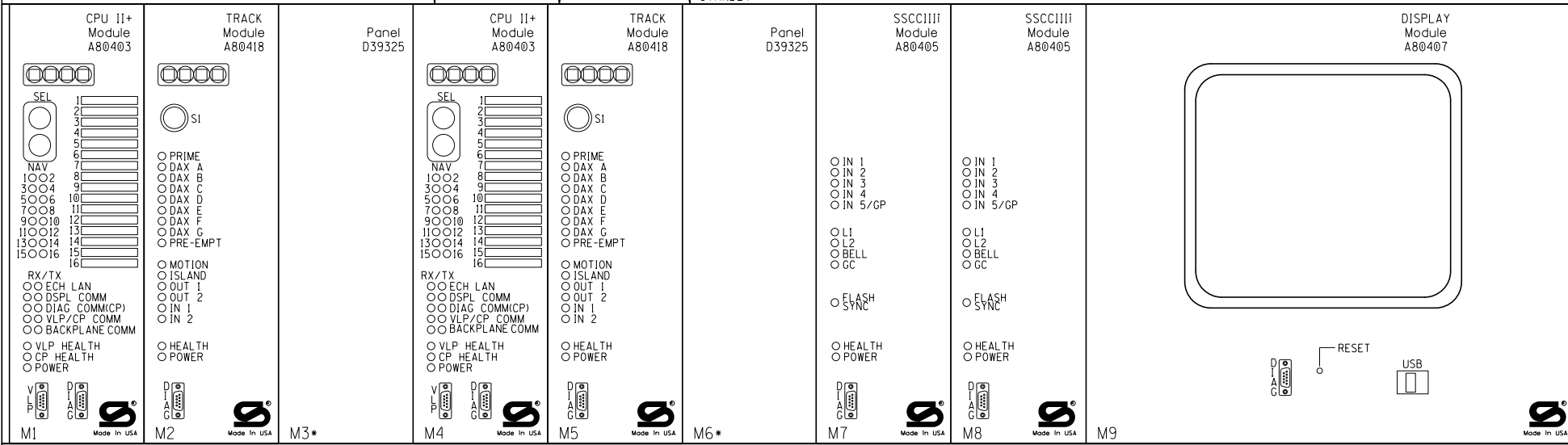
DESIGNED BY: WOR 12-01-08	NS NORFOLK SOUTHERN	OFFICE OF ASS'T. VICE PRESIDENT COMM. & SIGNAL, ATLANTA, GA.	M.P.: SE-13.35
DRAWN BY: IRE 12-01-08		NAZARETH, PA FLS AT GUN CLUB RD.	
CHECKED BY: JFK 12-02-08	CEMENT SECONDARY		FILE R-
IN SERVICE: NS 08-27-09	CADD or DWG. No. 02240134.05	SHEET 5 of 22	

REVISION M-2704
INITIALS TJM/12-02-13
URL/10-08-14

PROPERTY
NORFOLK SOUTHERN RAILWAY CO.



PROJECT:
#19.6003
RED = IN
YELLOW = OUT
DESIGN: 03-03-22
PROGRESS RAIL
CHECK: 05-03-22
JMW



PANEL "A2" 4000 GCP REDUNDANT 2-TK CHASSIS AND MODULE LAYOUT

REVISION M-2704
INITIALS TJM/12-02-13
URL/10-08-14

PROPERTY
NORFOLK SOUTHERN RAILWAY CO.

DESIGNED BY:
WOR 12-01-08
DRAWN BY:
IRE 12-01-08
CHECKED BY:
JFK 12-02-08
IN SERVICE:
NS 08-27-09

NS NORFOLK SOUTHERN

OFFICE OF ASS'T. VICE PRESIDENT
COMM. & SIGNAL, ATLANTA, GA. M.P.: SE-13.35

NAZARETH, PA
FLS AT GUN CLUB RD.

CEMENT SECONDARY FILE No. R-
CADD or SHEET No. 02240134.06 6 of 22

Program Report

Location and SIN

DOT Number: 851943H
Milepost Number: SE-13.35
Site Name: GUN CLUB RD

SIN: 755058402216

MCF and Template Selection

MCF Name: GCP-T6X-02-1.mcf
MCF Revision: 021
MCF CRC: 6076E435
UCN: FFFFFFFF

Template = 1A:6 Trk Bi

Check Numbers

Office Check No. (DT 4.6.0): 3B4DBE73 56BC2BF0
Office Check Number: 3B4DBE73 56BC2BF0
Config. Check Number: 35E82EFE 344D5EBE
(Based on MCF Revision 021)

Program

BASIC: module configuration
Track 1 Slot = Track
Track 2/RIO 1 Slot = Not Used
Track 3 Slot = Not Used
Track 4 Slot = Not Used
Track 5/RIO 2 Slot = Not Used
Track 6/RIO 3 Slot = Not Used
SSCC-1 Slot = SSCC31
SSCC-2 Slot = SSCC31
SEAR Used = Yes

BASIC: MS/GCP operation
Track 1: MS/GCP Operation = Yes

BASIC: island operation
Track 1: Island Used = Internal

BASIC: preemption
Preempt Logic = No

BASIC: radio Dax links
Radio DAX link A Used = No
Radio DAX link B Used = No

BASIC: Vital Comms links
Vital Comms link 1 Used = No
Vital Comms link 2 Used = No

PREDICTORS: track 1
Track 1: Prime Used = Yes
Track 1: Dax A Used = No
Track 1: Dax B Used = No
Track 1: Dax C Used = No
Track 1: Dax D Used = No
Track 1: Dax E Used = No
Track 1: Dax F Used = No
Track 1: Dax G Used = No

GCP: track 1
Track 1: GCP Freq Category = Standard
Track 1: GCP Frequency = 430 Hz
Track 1: Approach Distance = 1236 ft
Track 1: Uni/Bi/Sim-Bidirnl = Bidirnl
Track 1: GCP Transmit Level = High
Track 1: Island Connection = Isl1
Track 1: Island Distance = 128 ft
Track 1: Computed Distance = 1462 ft
Track 1: Linearization Steps = 100

GCP: track 1 enhanced det
Track 1: Inbound PS Sensitivity = Off
Track 1: Speed Limiting Used = Yes
Track 1: Outbound False Act Lvl = Normal
Track 1: Outbound PS Timer = 20 sec
Track 1: Trailing Switch Logic = On
Track 1: Post Joint Detn Time = 15 sec
Track 1: Adv Appr Predn = No
Track 1: Cancel Pickup Delay = This Isl

GCP: track 1 prime
Track 1: Prime Warning Time = 30 sec
Track 1: Prime Offset Distance = 0 ft
Track 1: Switch MS EZ Level = 10
Track 1: Prime MS/GCP Mode = Pred
Track 1: Prime Pickup Delay = 15 sec
Track 1: Prime UAX = IP
Track 1: Prime UAX Pickup = 5 sec

GCP: track 1 pos start
Track 1: Positive Start = Off
Track 1: Sudden Shnt Det Used = No
Track 1: Low EZ Detection Used = No

GCP: track 1 MS Control
Track 1: MS/GCP CtrlIP Used = No
Track 1: MS Sensitivity Level = 0
Track 1: Compensation Level = 1300
Track 1: Warn Time-Ballast Comp = High
Track 1: Low EX Adjustment = 39
Track 1: Bidirn Dax Passthru = No
Track 1: False Act on Train Stop = No
Track 1: EX Limiting Used = Yes
Track 1: EZ Correction Used = Yes

ISLAND: track 1
Track 1: Isl Frequency = 4.0 kHz
Track 1: Pickup Delay (2s +) = 0 sec
Track 1: Isl Enable IP Used = No

AND: track Anding
AND 1 XR Used = Yes
AND 2 Used = No
AND 3 Used = No
AND 4 Used = No
AND 5 Used = No
AND 6 Used = No
AND 7 Used = No
AND 8 Used = No

AND: AND 1 XR
AND 1 XR Track 1 = Prime
AND 1 Enable Used = Yes
And 1 Enable Pickup = 5 sec
AND 1 Enable Drop = 0 sec
AND 1 Wrap Used = No

ADVANCED: MS restart
MS/GCP Restart Used = No

ADVANCED: out of service
OOS Control = Display+OOS IPs
OOS Timeout = Yes
OOS Timeout = 1 hrs

ADVANCED: out of service 2
T1 OOS Control = OOS Input 1

ADVANCED: track wrap circuits
Wrap LOS Timer = 5 sec
Track 1 Wrap Used = No

ADVANCED: trk 1 overrides
Track 1: All Predictors Override Used = No

ADVANCED: OR logic
OR 1 Used = No
OR 2 Used = No
OR 3 Used = No
OR 4 Used = No

ADVANCED: internal I/O 1
Pass Thrus = No
Int.1 Sets = Not Used
Int.1 Set by = Not Used
Int.2 Sets = Not Used
Int.2 Set by = Not Used
Int.3 Sets = Not Used
Int.3 Set by = Not Used
Int.4 Sets = Not Used
Int.4 Set by = Not Used

ADVANCED: internal I/O 2
Int.5 Sets = Not Used
Int.5 Set by = Not Used
Int.6 Sets = Not Used
Int.6 Set by = Not Used
Int.7 Sets = Not Used
Int.7 Set by = Not Used
Int.8 Sets = Not Used
Int.8 Set by = Not Used

ADVANCED: internal I/O 3
Int.9 Sets = Not Used
Int.9 Set by = Not Used
Int.10 Sets = Not Used
Int.10 Set by = Not Used
Int.11 Sets = Not Used
Int.11 Set by = Not Used
Int.12 Sets = Not Used
Int.12 Set by = Not Used

ADVANCED: internal I/O 4
Int.13 Sets = Not Used
Int.13 Set by = Not Used
Int.14 Sets = Not Used
Int.14 Set by = Not Used
Int.15 Sets = Not Used
Int.15 Set by = Not Used
Int.16 Sets = Not Used
Int.16 Set by = Not Used

ADVANCED: site options
Daylight Savings = On
Units = Standard
Maint CallRpt IP Used = No
Emergency Activate IP = No
EZ/EX Logging = Change
EZ/EX Point Change = 3

SSCC
Gates Used = No
Min Activation = 0 sec
Rmt Activation Cancel = 2 min
Bell On Gate Rising = No
Mute Bell On Gate Down = No
SSCCIV Controller Used = No

SSCC: 1
SSCC-1 Activation = AND 1 XR
SSCC 1: Flash Rate = 40
SSCC 1: Low Battery Detection = No
SSCC 1: Flash Sync = master
SSCC 1: Invert Gate Output = No
SSCC 1: Lamp Neutral Test = On Off
Aux-1 Xng Ctrl Used = No

SSCC: 2
SSCC-2 Activation = AND 1 XR
SSCC 2: Flash Rate = 40
SSCC 2: Low Battery Detection = No
SSCC 2: Flash Sync = slave
SSCC 2: Invert Gate Output = No
SSCC 2: Lamp Neutral Test = On Off
Aux-2 Xng Ctrl Used = No

OUTPUT: assignment page 1
OUT 1.1 = Not Used
OUT 1.2 = Not Used

INPUT: assignment page 1
IN 1.1 = T1 Prime UAX
IN 1.2 = AND 1 XR Enable

IO: assignment SSCC
OUT GC 1 = Not Used
OUT GC 2 = Not Used
IN 7.1 = Not Used
IN 7.2 = Not Used
IN 7.3 = AND 1 XR Enable
IN 7.4 = Not Used
IN 7.5 = Not Used
IN 8.1 = Not Used
IN 8.2 = Out Of Service IP 1
IN 8.3 = Not Used
IN 8.4 = Not Used
IN 8.5 = Not Used

PROJECT: *19.6003
RED = IN
YELLOW = OUT
DESIGN: 03-03-22
PROGRESS RAIL
CHECK: 05-03-22
JMW

4000 GCP PROGRAMMING SETUP

Table with 4 columns: DESIGNED BY, DRAWN BY, CHECKED BY, IN SERVICE, and project details including NORFOLK SOUTHERN logo and address.

SEAR
 SEAR Subnode = 3
 DI 1 = Gnd Flt Tester 1 Not Used
 DI 2 = Not Used Not Used
 Rly 1 = Ground Fault Test Not Used
 Rly 2 = AC Control General2

SEAR: inputs
 SP 2.1 = POK 1
 SP 3.1 = Not Used
 SP 4.1 = Not Used
 SP 5.1 = Not Used
 SP 6.1 = Not Used

SEAR: slot 1-4 inputs
 IN 2.1 = Not Used
 IN 2.2 = Not Used
 IN 3.1 = Not Used
 IN 3.2 = Not Used
 IN 4.1 = Not Used
 IN 4.2 = Not Used

SEAR: inputs slot 5
 IN 5.1 = Not Used
 IN 5.2 = Not Used

SEAR: inputs slot 6
 IN 6.1 = Not Used
 IN 6.2 = Not Used

SEAR: slot 7-8 inputs
 IN 7.1 = ISS 1 Not Used
 IN 7.2 = Not Used
 IN 7.4 = Not Used
 IN 7.5 = Not Used
 IN 8.1 = Not Used
 IN 8.3 = POK 2 Not Used
 IN 8.4 = Not Used
 IN 8.5 = Not Used


SITE: programming
 Radio Subnode = 1
 Field Password = Off
 Low Battery Enabled = Off

Configuration Package File

 Filename: 02240134.pac

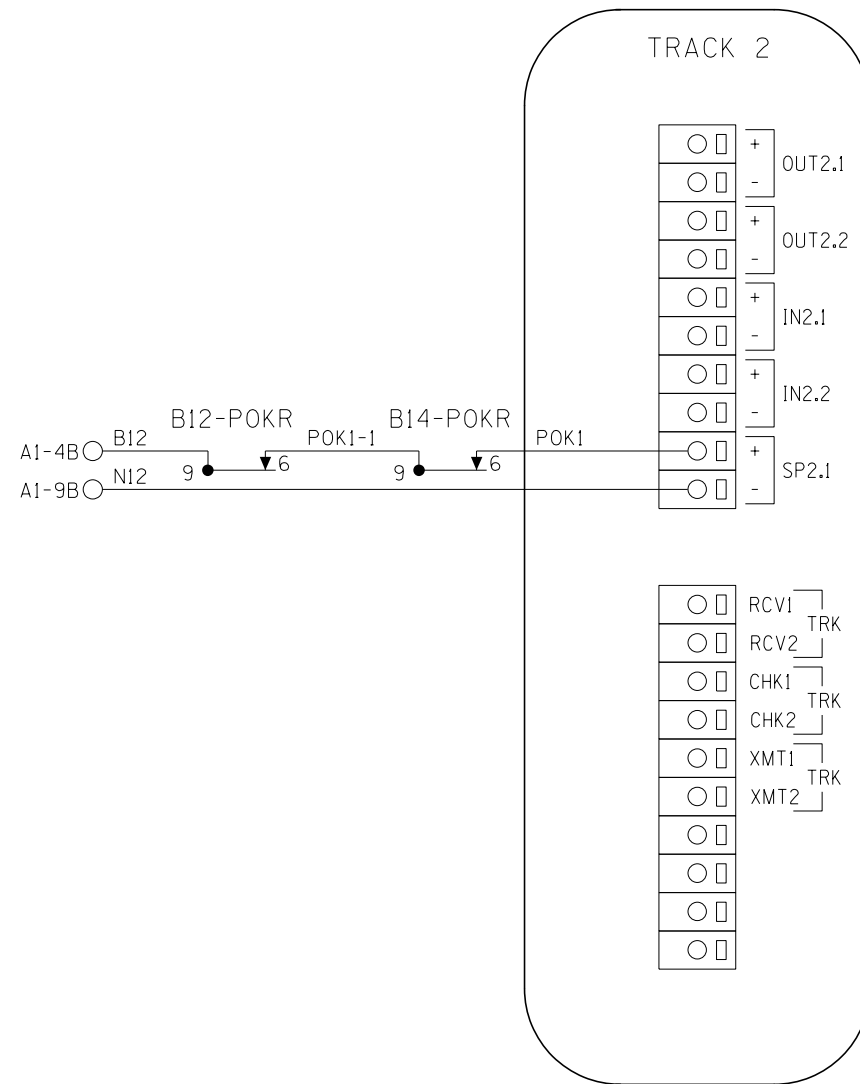
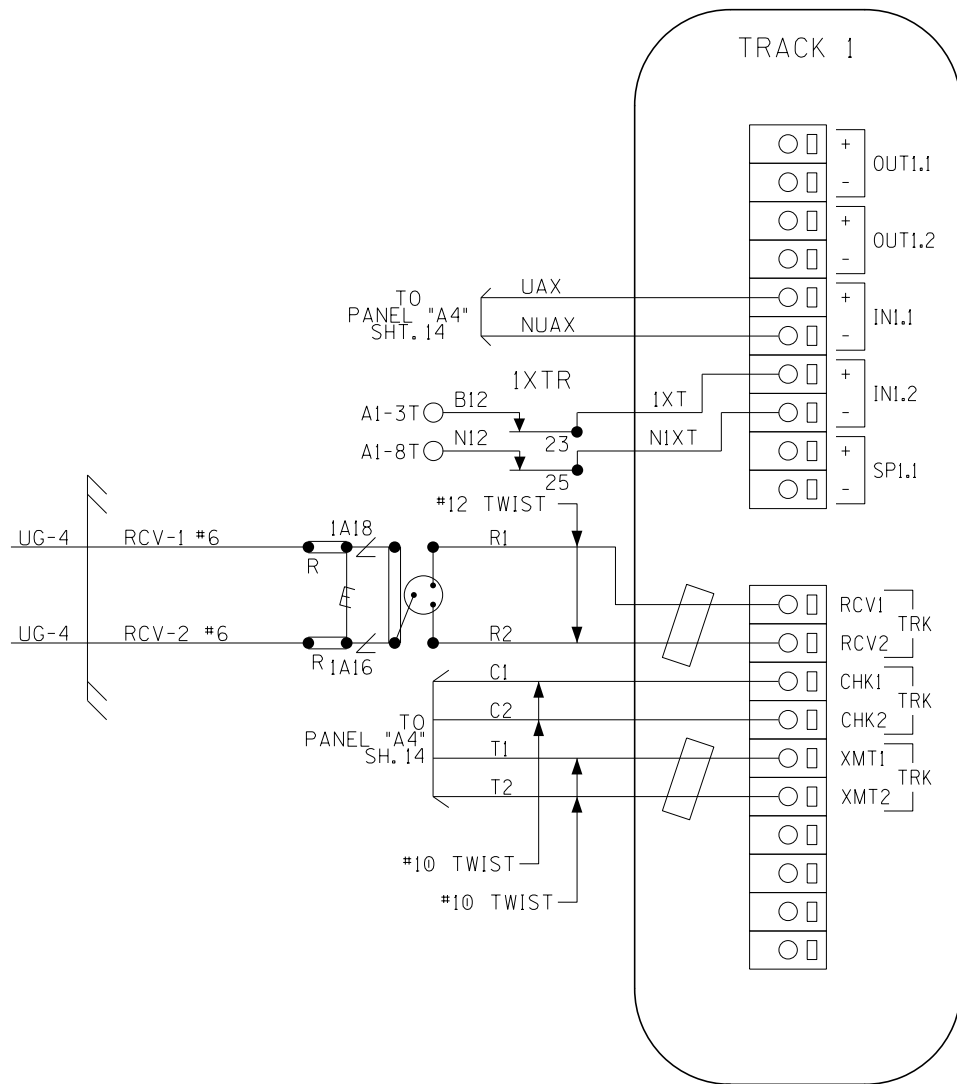
PROJECT:
 #19.6003
 RED = IN
 YELLOW = OUT
 DESIGN: 03-03-22
 PROGRESS RAIL
 CHECK: 05-03-22
 JMW

4000 GCP PROGRAMMING SETUP

DESIGNED BY:		
URL 10-08-14	OFFICE OF ASS'T. VICE PRESIDENT COMM. & SIGNAL, ATLANTA, GA.	M.P.: SE-13.35
DRAWN BY:	NAZARETH, PA	
URL 10-08-14	FLS AT GUN CLUB RD.	
CHECKED BY:	CEMENT SECONDARY	
RHW 10-23-14	FILE No.	M-2704
IN SERVICE:	CADD or DWG. No.	02240134.08
NS - -	SHEET No.	8 of 22

REVISION INITIALS																				
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PROPERTY
 NORFOLK SOUTHERN RAILWAY CO.




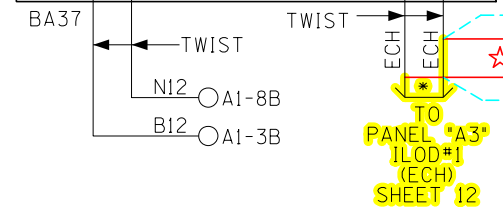
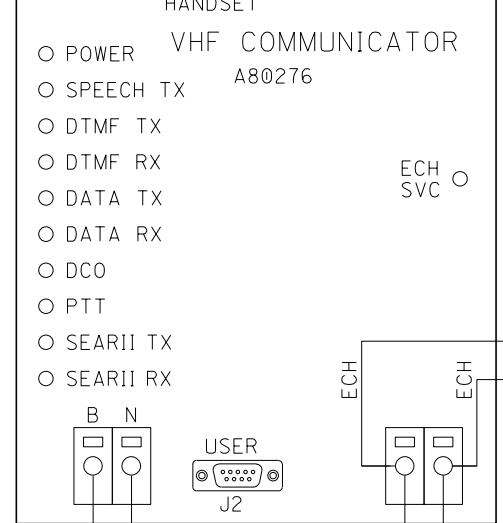
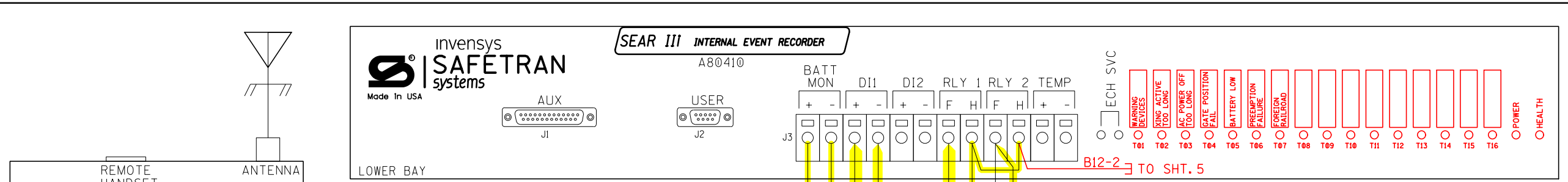
NOTES:

1. ALL WIRING TO BE #16AWG UNLESS NOTED OTHERWISE.

2.  = FERRITE BEAD

PANEL "A2" CONNECTORS FOR MODULES (A80418)

DESIGNED BY: WOR 12-01-08		OFFICE OF ASS'T. VICE PRESIDENT COMM. & SIGNAL, ATLANTA, GA. M.P.: SE-13.35
DRAWN BY: IRE 12-01-08		
CHECKED BY: JFK 12-02-08	NAZARETH, PA FLS AT GUN CLUB RD.	
IN SERVICE: NS 08-27-09	CEMENT SECONDARY	FILE No. R-
	CADD or DWG. No. 02240134.09	SHEET No. 9 of 22

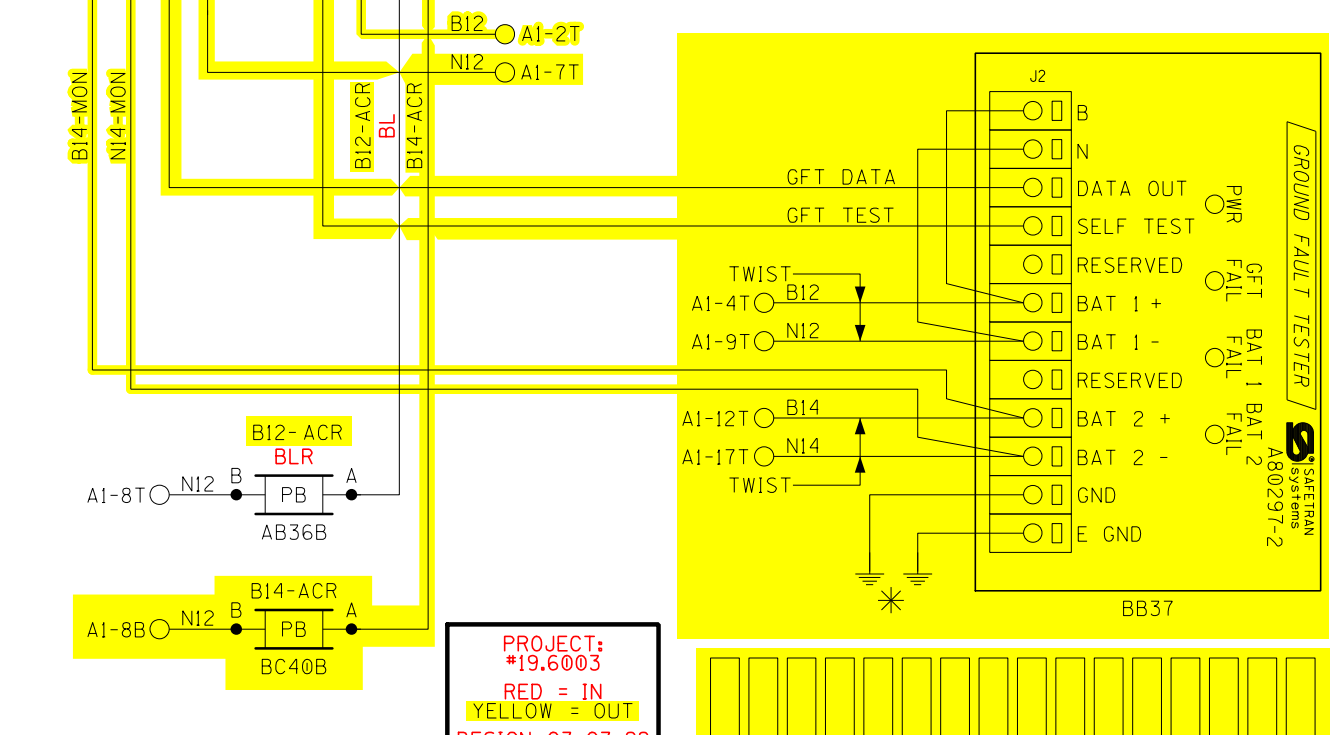
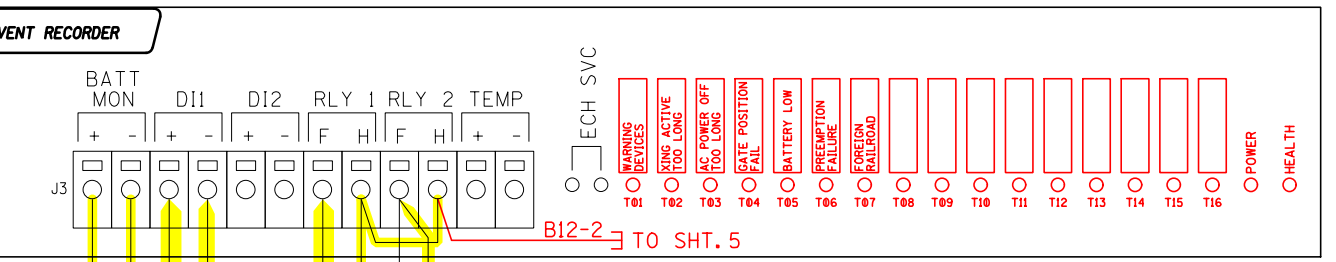
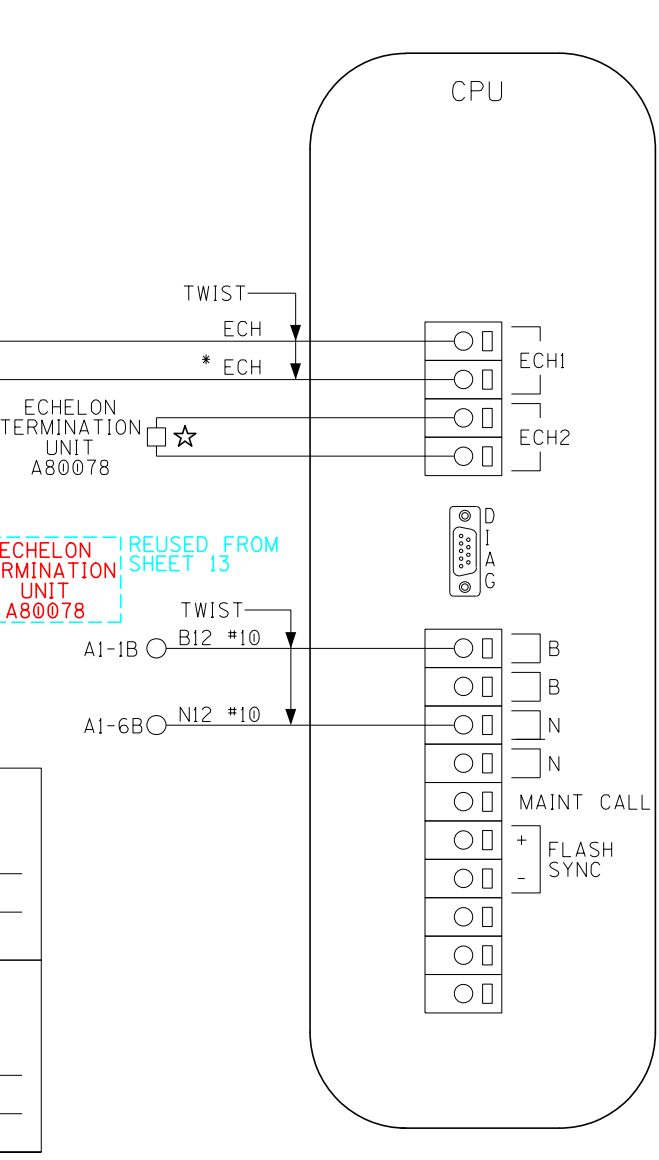
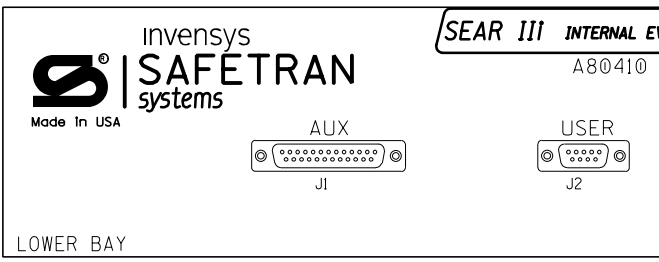


GCP PROGRAMMING FOR VHF RADIO

REMOTE DTMF CROSSING ACTIVATION (ACTIVATES ENTIRE CROSSING)
 TO ACTIVATE PRESS: 943#
 TO DE-ACTIVATE PRESS: 943*
 (ACTIVATION WILL TIME OUT AFTER 60 SEC.)

REMOTE DTMF LIGHTING ACTIVATION (ACTIVATES FLASHING LIGHTS ONLY)
 TO ACTIVATE PRESS: 9431#
 TO DE-ACTIVATE PRESS: 9431*
 (ACTIVATION WILL TIME OUT AFTER 60 SEC.)

REVISION	M-2704
INITIALS	TJM/12-02-13
	URL/10-08-14



PROJECT: #19.6003
 RED = IN
 YELLOW = OUT
 DESIGN: 03-03-22
 PROGRESS RAIL
 CHECK: 05-03-22
 JMW

NOTES:
 ALL WIRING TO BE #16AWG UNLESS NOTED OTHERWISE.
 * = ECHELON CONNECTIONS NOT TO EXCEED 53' IN LENGTH AND TOTAL LENGTH NOT TO EXCEED 430' WITH A MAXIMUM OF 8 NODES. RECOMMEND USE BELDEN WIRE CABLE #8461 OR EQUIVALENT.
 * = CONNECT "E GND 1" AND "E GND 2" TO INDEPENDENT GROUND POINTS ON SIDE A AND SIDE B.
 ☆ = A80078 ECHELON TERMINATION UNIT TO TERMINATE ECHELON NETWORK.

PANEL "A2" CONNECTORS FOR CPU MODULE (A80403)
 PANEL "A2" SEAR III (A80410), GFT (A80297-2) AND VHF (A80276) HOOK-UPS

DESIGNED BY: WOR 12-01-08	NS NORFOLK SOUTHERN	OFFICE OF ASS'T. VICE PRESIDENT COMM. & SIGNAL, ATLANTA, GA.	M.P.: SE-13.35
DRAWN BY: IRE 12-01-08		NAZARETH, PA FLS AT GUN CLUB RD.	
CHECKED BY: JFK 12-02-08	CEMENT SECONDARY		FILE NO. R-
IN SERVICE: NS 08-27-09	CADD or DWG. No. 02240134.10	SHEET 10 of 22	

PROPERTY
 NORFOLK SOUTHERN RAILWAY CO.

SITE SET UP PROCEDURE	
FUNCTION	LED DISPLAY
SITE NAME	GUN CLUB ROAD
MILEPOST	SE-13.35
DOT NUMBER	851-943H
TESTER TYPE	CROSSING
AUTO DST ADJUST	NO
TIMEZONE	OTHER
GMT OFFSET	-00:00
DATE FORMAT	MM-DD-YYYY
TEMP. FORMAT	FAHRENHEIT
INDICATE HOLDOFF (SEC)	0
INDICATE REFRESH (SEC)	60
GEO CTL REFRESH (SEC)	0
SITE ADDRESS (ATCS)	7.550.584.022.03.01
SITE TYPE	NO COMMUNICATION
# OFFICE ADDRESS (ATCS)	2.550.00.0000
# PRIMARY HOP ADDR	7.RRR.LLL.GGG.XX.XX
# BACKUP HOP ADDR 1	7.RRR.LLL.GGG.XX.XX
# BACKUP HOP ADDR 2	7.RRR.LLL.GGG.XX.XX
# POLL ID	1
# MODE	GEN/ATCS
# WAMS XID	DISABLED
# OFFICE COMM DEVICE	MCM (ECHELON)
# RADIO ATCS ADDR	7.RRR.LLL.GGG.01.01
# PHONE #	(OFFICE NUMBER)
# INIT STRING	
# FIELD COMM DEVICE	NONE
★ USER PORT BAUD	57600
★ USER PORT DATA BITS	8
★ USER PORT PARITY	NONE
★ USER PORT STOP BITS	1
★ USER PORT FLOW CONTROL	NONE
★ AUX PORT BAUD	9600
★ AUX PORT DATA BITS	8
★ AUX PORT PARITY	NONE
★ AUX PORT STOP BITS	1
★ AUX PORT FLOW CONTROL	NONE

CONTROL SYSTEM CONFIGURATION MENU QUESTIONS	
THE QUESTION	SELECT FROM MENU OPTION
RESET NAMES AND MODULES?	YES
RAILROAD NUMBER?	550
CROSSING CONFIGURATION?	NORMAL
AND1 USED AS XR?	YES
AND2 USED AS XR?	NO
AND3 USED AS XR?	NO
AND4 USED AS XR?	NO
AND5 USED AS XR?	NO
AND6 USED AS XR?	NO
AND7 USED AS XR?	NO
AND8 USED AS XR?	NO
* XR CONTROLLED BY FOREIGN RR?	
ENTRANCE GATES?	0
85% VOLTAGE RELAY OUT?	NO
BATTERY BANKS?	2
BATT MON USED?	NO
PREEMPTION?	NO
INTERNAL CROSSING CONTROLLERS?	2
EXTERNAL CROSSING CONTROLLERS?	0
VHF COMMUNICATOR?	1
DTMF ACTIVATION?	YES
ILOD MODULES?	0
USE CELL MODEM NON-CRITICAL FEATURE?	NO


PROGRAM MENU QUESTIONS	PROGRAM
EDIT DIGITAL INPUTS	NO
EDIT BATTERIES	NO
EDIT RELAYS	NO
EDIT INDICATOR LEDS	NO
EDIT TEST LEDS	NO
GCP4K ATCS SUBNODE	16

TO CONFIGURE SEARIII PRESS SITE SETUP KEY.
USE ARROW KEYS TO MAKE SELECTION,
PRESS ENTER AFTER SELECTION HAS BEEN MADE.

PROJECT:
#19.6003
RED = IN
YELLOW = OUT
DESIGN: 03-03-22
PROGRESS RAIL
CHECK: 05-03-22
JMW

NEW SHEET

SEAR III PROGRAMMING

DESIGNED BY: MST 03-03-22		OFFICE OF ASS'T. VICE PRESIDENT COMM. & SIGNAL, ATLANTA, GA.	M.P.: SE-13.35
DRAWN BY: PRS 03-03-22		NAZARETH, PA FLS AT GUN CLUB RD.	
CHECKED BY: JMW 05-03-22	CEMENT SECONDARY		FILE NO. R-
IN SERVICE: - -	CADD or DWG. No. 02240134.011	SHEET 11 of 22	

NOTES:

- # = NOT DISPLAYED IF SITE TYPE = NO COMMUNICATION
- ★ = USE DEFAULT SETTINGS
- * = ONLY DISPLAYED IF CROSSING CONFIGURATION = SPLIT GATE

REVISION
INITIALS

PROPERTY
NORFOLK SOUTHERN RAILWAY CO.

TO CONFIGURE SEARIII PRESS SITE SETUP KEY.
USE ARROW KEYS TO MAKE SELECTION.
PRESS ENTER AFTER SELECTION HAS BEEN MADE.

SITE SET UP PROCEDURE	
FUNCTION	LED DISPLAY
DATE/TIME	
AUTOMATIC DST ADJUSTMENT	YES
TIME ZONE	EST
SITE NAME	GUN CLUB RD.
MILEPOST	SE-13.35
DOT #	851 943H
TESTER TYPE	CROSSING
DATE FORMAT	MM-DD-YYYY
TEMP FORMAT	FAHRENHEIT
INDICATE HOLD (SEC)	0
INDICATE REFRESH (SEC)	60
SITE ATCS	7.550.584.022.03.01
SITE TYPE	NO COMMUNICATION
*** OFFICE ATCS ADDRESS	2.550.00.0000
*** PRIMARY HOP ADDR	7.RRR.LLL.GGG.XX.XX
*** BACKUP HOP ADDR 1	7.RRR.LLL.GGG.XX.XX
*** BACKUP HOP ADDR 2	7.RRR.LLL.GGG.XX.XX
*** POLL ID	1
*** MODE	GEN/ATCS
*** WAMS XID	DISABLED
*** OFFICE COMM DEVICE	MCM (ECHELON)
*** RADIO ATCS ADDR	7.RRR.LLL.GGG.01.01
*** PHONE #	(OFFICE NUMBER)
*** INIT STRING	
*** FIELD COMM	NONE
**** USER PORT	BAUD 57600, N, 8, 1, NONE
**** AUX PORT	BAUD 9600, N, 8, 1, NONE

VERIFY NUMBER OF BULBS: SENSOR #1	
CURR 1: LAMP SET UP	3 BULBS
CURR 2: LAMP SET UP	3 BULBS

VERIFY NUMBER OF BULBS: SENSOR #2	
CURR 1: LAMP SET UP	4 BULBS
CURR 2: LAMP SET UP	4 BULBS

CONTROL SYSTEM CONFIGURATION MENU QUESTIONS	
THE QUESTION	SELECT FROM MENU OPTION
RESET NAMES AND MODULES?	YES
RAILROAD NUMBER	550
CROSSING CONFIGURATION	NORMAL
AND 1 USED AS XR?	YES
AND 2 USED AS XR?	NO
AND 3 USED AS XR?	NO
AND 4 USED AS XR?	NO
AND 5 USED AS XR?	NO
AND 6 USED AS XR?	NO
AND 7 USED AS XR?	NO
AND 8 USED AS XR?	NO
* XR CONTROLLED BY FOREIGN RR	
ENTRANCE GATES	0
* GATES CONTROLLED BY FOREIGN RR	
GATE POSITION FAIL TIME (SECONDS)	
BATTERY BANKS	2
BATTERY MON USED	YES
INTERNAL CROSSING CONTROLLERS	2
EXTERNAL CROSSING CONTROLLERS	0
VHF COMMUNICATOR	YES
DTMF ACTIVATION	YES
***** ACTIVATION CODE	943
ACTIVATION TIMEOUT (SECONDS)	60
ILOD MODULES	2
ANY LED BULBS USED	NO
AUTO INSPECTIONS	NO
BELL SENSORS	1
** BELL SENSOR TSS1	YES
** BELL SENSOR TSS2	NO
** BELL SENSOR TSS3	NO
** BELL SENSOR TSS4	NO
** BELL SENSOR TSS5	NO
** BELL SENSOR TSS6	NO
** BELL SENSOR TSS7	NO
** BELL SENSOR TSS8	NO

CONTROL SYSTEM CONFIGURATION MENU QUESTIONS (CONT.)	
BELL ON	ALWAYS
GFT'S	YES
BATTERIES ON GFT1	2
GATE TIP SENSORS	NO
RTU	NO
VHF VOICE CHANNEL	2
VHF DATA CHANNEL	2
USE CELL MODEM NON-CRITICAL FEATURE	NO
FULL APPROACH MOVES ALARM	ACTIVATE

PROGRAM MENU QUESTIONS	PROGRAM
EDIT DIGITAL INPUTS	NO
EDIT BATTERIES	NO
EDIT RELAYS	NO
EDIT INDICATOR LEDES	NO
EDIT TEST LEDES	NO
EDIT ILOD SENSORS	NO
EDIT VHF SETTINGS	NO
GCP4K ATCS SUBNODE	16


TO BE VOIDED

PROJECT:
*19.6003
RED = IN
YELLOW = OUT
DESIGN: 03-03-22
PROGRESS RAIL
CHECK: 05-03-22
JMW

NOTES:

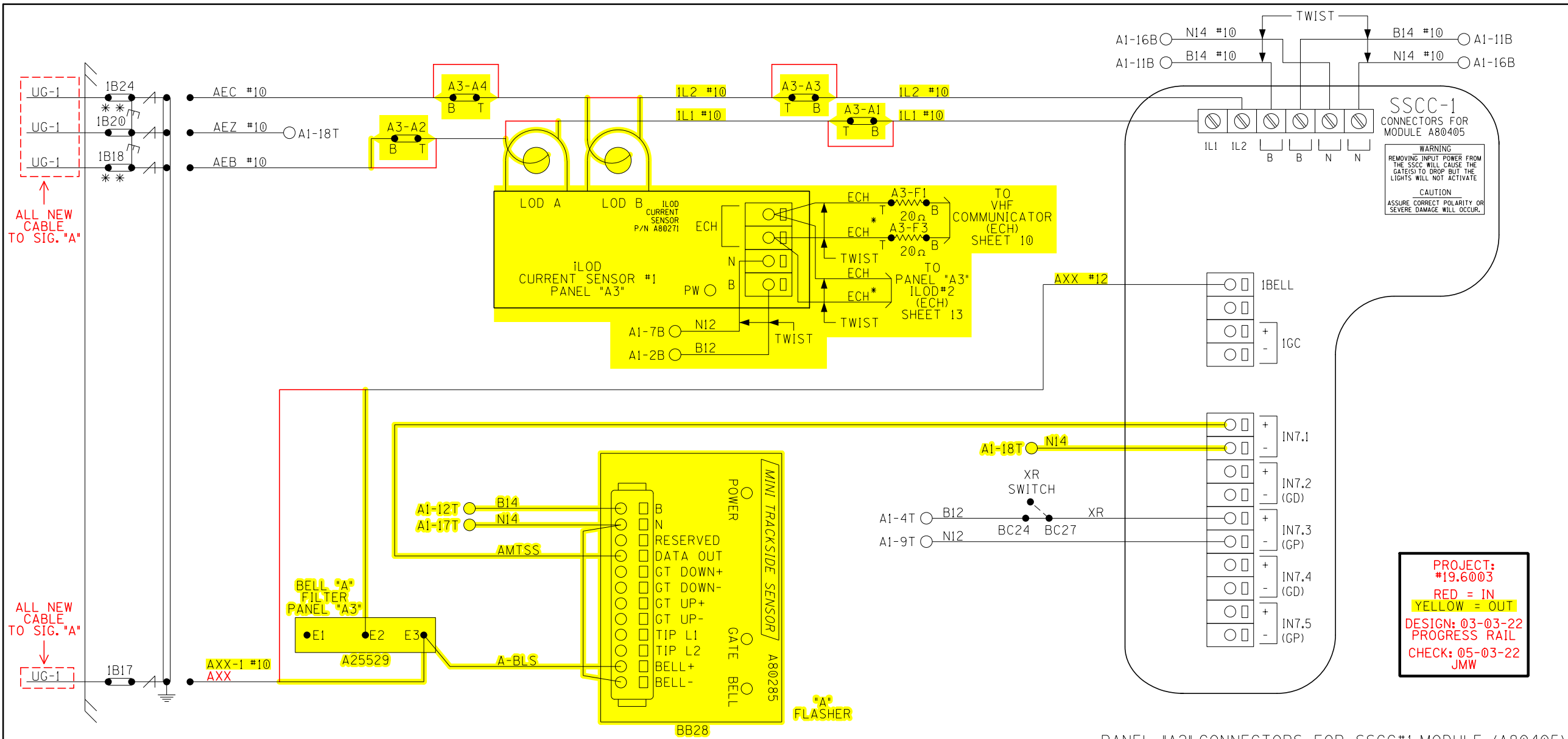
- * = DISPLAYED IF CROSSING CONFIGURATION IS SPLIT GATE
- ** = OPTIONS: IF BELL SENSOR = 0, THEN BELL FIELDS ARE NOT USED.
- *** = IF SITE TYPE = NO COMMUNICATION, THEN THESE OPTIONS ARE NOT DISPLAYED
- **** = THESE SETTINGS SHOULD BE LEFT AT THE DEFAULT SETTING.
- ***** = USE LAST 3 NUMBERS FROM DOT NUMBER

SEAR III PROGRAMMING SETUP

DESIGNED BY: WOR 12-01-08		OFFICE OF ASS'T. VICE PRESIDENT COMM. & SIGNAL, ATLANTA, GA.	M.P.: SE-13.35
DRAWN BY: IRE 12-01-08		NAZARETH, PA FLS AT GUN CLUB RD.	
CHECKED BY: JFK 12-02-08	CEMENT SECONDARY		FILE NO. R-
IN SERVICE: NS 08-27-09	CADD or DWG. No. 02240134.11	SHEET 11 of 22	

REVISION INITIALS														
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PROPERTY
NORFOLK SOUTHERN RAILWAY CO.



ALL NEW CABLE TO SIG. "A"

ALL NEW CABLE TO SIG. "A"

PROJECT:
*19.6003
RED = IN
YELLOW = OUT
DESIGN: 03-03-22
PROGRESS RAIL
CHECK: 05-03-22
JMW

NOTES: ALL WIRING TO BE #16AWG UNLESS NOTED OTHERWISE.

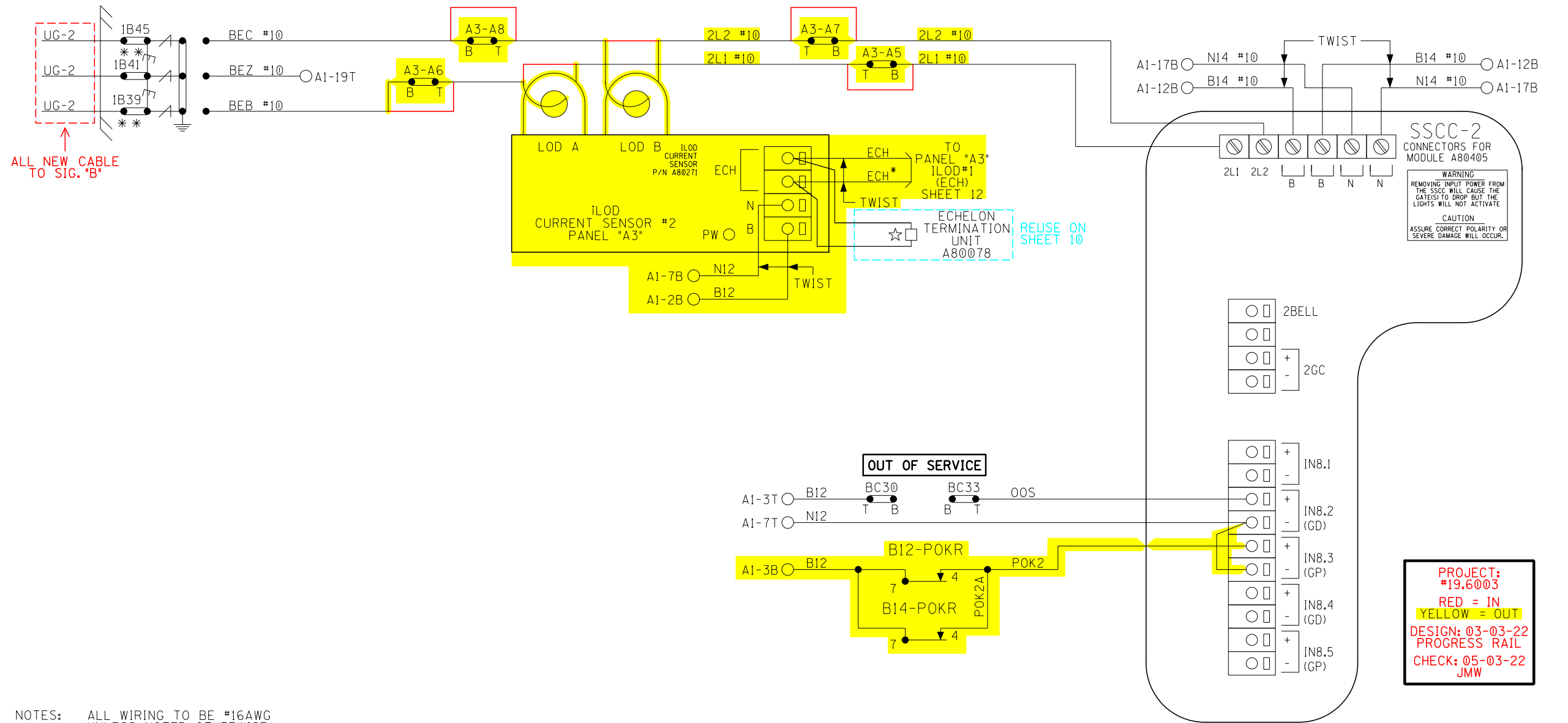
* = ECHELON CONNECTIONS NOT TO EXCEED 53' IN LENGTH AND TOTAL LENGTH NOT TO EXCEED 430' WITH A MAXIMUM OF 8 NODES, RECOMMEND USE BELDEN WIRE CABLE #8461 OR EQUIVALENT.

** = TEST LINKS MUST BE OPENED TEMPORARILY FOR NEW COLD START OF NEW OR REPLACEMENT SSCC MODULE AND CAN ONLY BE CLOSED IN SEQUENCE WITH MFR. INSTRUCTIONS: SECTION 8.8 OF THE GCP 4000 REFERENCE MANUAL.

PANEL "A2" CONNECTORS FOR SSCC#1 MODULE (A80405)
PANEL "A3" iLOD#1 (A80217) HOOK-UP, & MINI TRACKSIDE SENSOR HOOK-UP

REVISION	M-2704	PROPERTY	NORFOLK SOUTHERN RAILWAY CO.
INITIALS	TJM/12-02-13 URL/10-08-14	IN SERVICE:	NS 08-27-09
		CADD or DWG. No.	02240134.12
		FILE No.	R- SHEET 12 of 22

DESIGNED BY: WOR 12-01-08	NS NORFOLK SOUTHERN	
DRAWN BY: IRE 12-01-08	OFFICE OF ASS'T. VICE PRESIDENT COMM. & SIGNAL, ATLANTA, GA.	M.P.: SE-13.35
CHECKED BY: JFK 12-02-08	NAZARETH, PA FLS AT GUN CLUB RD.	
	CEMENT SECONDARY	



NOTES: ALL WIRING TO BE #16AWG UNLESS NOTED OTHERWISE.

* = ECHELON CONNECTIONS NOT TO EXCEED 53' IN LENGTH AND TOTAL LENGTH NOT TO EXCEED 430' WITH A MAXIMUM OF 8 NODES, RECOMMEND USE BELDEN WIRE CABLE #8461 OR EQUIVALENT.

** = TEST LINKS MUST BE OPENED TEMPORARILY FOR NEW COLD START OF NEW OR REPLACEMENT SSCC MODULE AND CAN ONLY BE CLOSED IN SEQUENCE WITH MFR. INSTRUCTIONS: SECTION 8.8 OF THE GCP 4000 REFERENCE MANUAL.

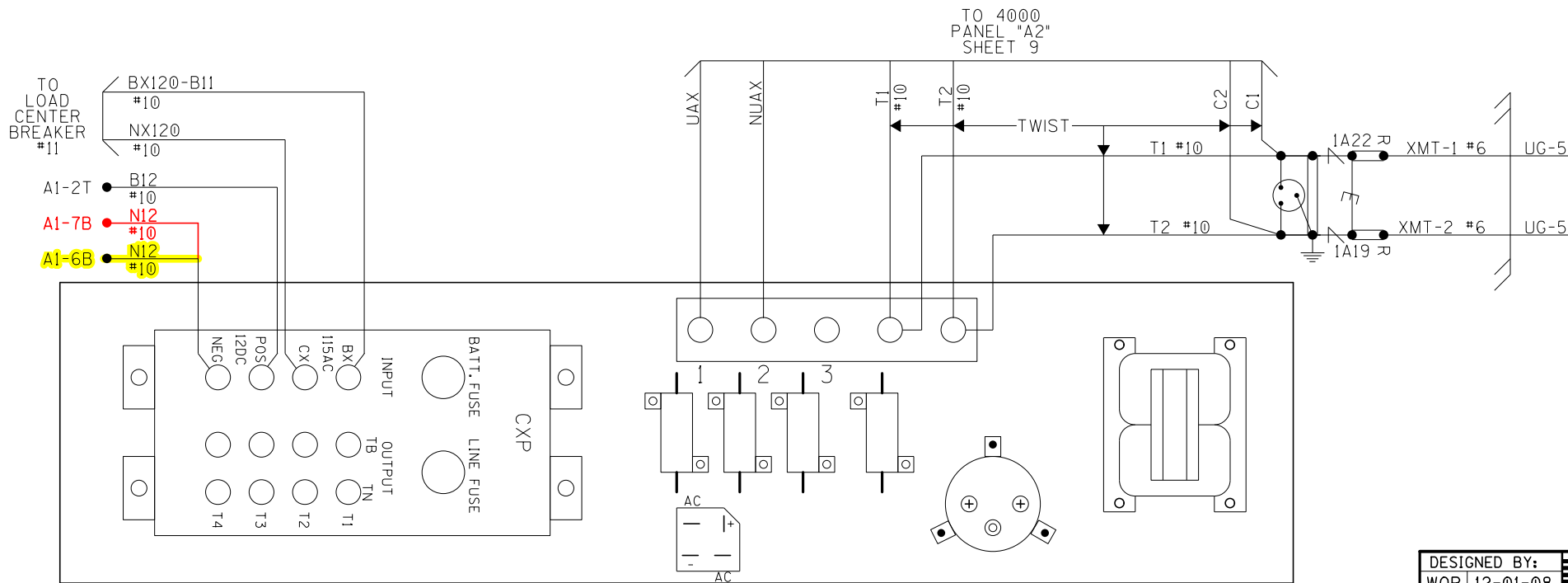
☆ = A80078 ECHELON TERMINATION UNIT TO TERMINATE ECHELON NETWORK.

PANEL "A2" CONNECTORS FOR SSCC#2 MODULE (A80405)
PANEL "A3" iLOD#2 (A80217) HOOK-UP

DESIGNED BY: WOR 12-01-08		OFFICE OF ASS'T. VICE PRESIDENT COMM. & SIGNAL, ATLANTA, GA.	M.P.: SE-13.35
DRAWN BY: IRE 12-01-08		NAZARETH, PA FLS AT GUN CLUB RD.	
CHECKED BY: JFK 12-02-08	CEMENT SECONDARY		
IN SERVICE: NS 08-27-09	CADD or DWG. No. 02240134.13	FILE No. R-	SHEET 13 of 22

REVISION	M-2704																			
INITIALS	TJM/12-02-13																			
	URL/10-08-14																			

PROPERTY
NORFOLK SOUTHERN RAILWAY CO.



80049 DC SHUNTING ENHANCER PANEL "A4"

ALL WIRE #16 AWG
UNLESS SPECIFIED.

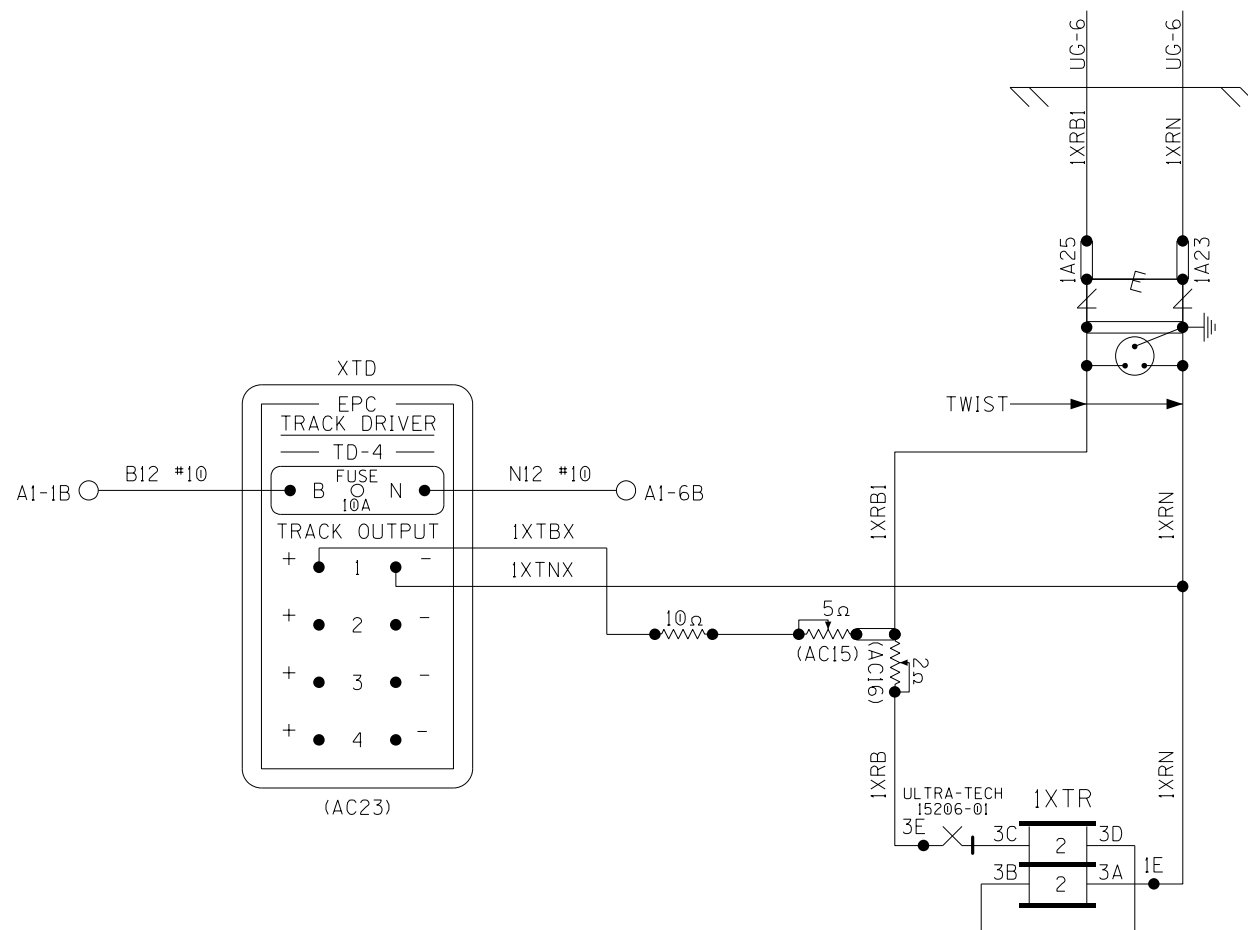
PROJECT:
#19.6003
RED = IN
YELLOW = OUT
DESIGN: 03-03-22
PROGRESS RAIL
CHECK: 05-03-22
JMW

DC SHUNTING ENHANCER PANEL "A4"

DESIGNED BY: WOR 12-01-08		OFFICE OF ASS'T. VICE PRESIDENT COMM. & SIGNAL, ATLANTA, GA.	M.P.: SE-13.35
DRAWN BY: IRE 12-01-08		NAZARETH, PA FLS AT GUN CLUB RD.	
CHECKED BY: JFK 12-02-08	CEMENT SECONDARY		FILE R-
IN SERVICE: NS 08-27-09	CADD or DWG. No. 02240134.14	SHEET 14 of 22	

REVISION	M-2704
INITIALS	TJM/12-02-13
	URL/10-08-14

PROPERTY
PENNSYLVANIA R.R.



SIDING TRACK
STYLE "C" CIRCUITS

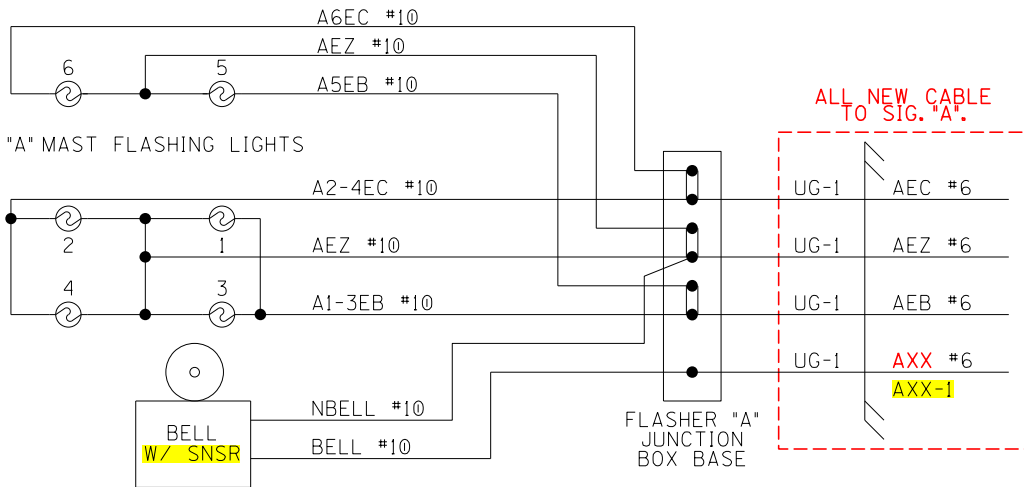
ALL WIRING THIS SHEET #10
* = CABLE PROVIDED WITH SEAR II

DESIGNED BY: WOR 12-01-08		
DRAWN BY: IRE 12-01-08	OFFICE OF ASS'T. VICE PRESIDENT COMM. & SIGNAL, ATLANTA, GA.	M.P.: SE-13.35
CHECKED BY: JFK 12-02-08	NAZARETH, PA FLS AT GUN CLUB RD.	
IN SERVICE: NS 08-27-09	CEMENT SECONDARY	FILE No. R-
	CADD or DWG. No. 02240134.15	SHEET No. 15 of 22

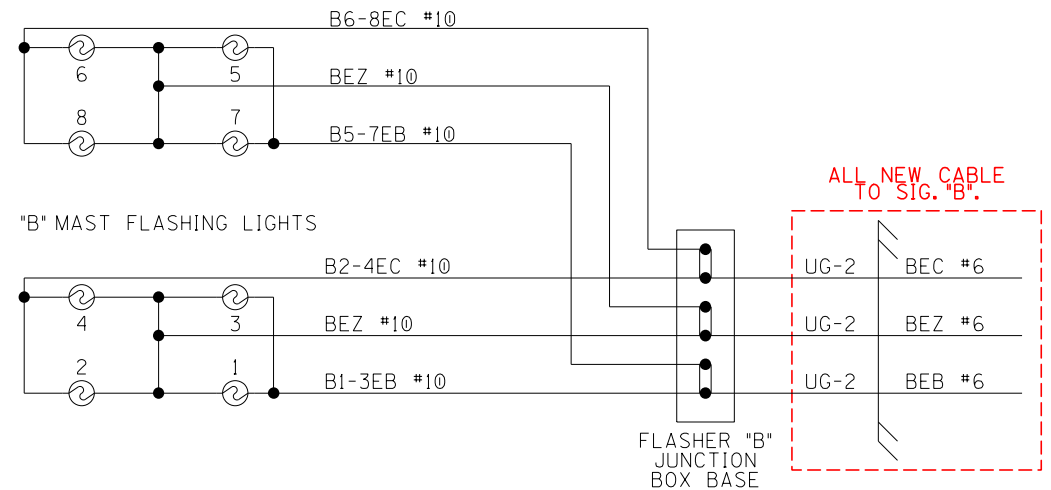
REVISION INITIALS M-2704 TJM/12-02-13 URL/10-08-14

PROPERTY PENNSYLVANIA R.R.

"A" FLASHING SIDE LIGHTS



"B" FLASHING SIDE LIGHTS



PROJECT:
#19.6003
RED = IN
YELLOW = OUT
DESIGN: 03-03-22
PROGRESS RAIL
CHECK: 05-03-22
JMW

FLASHER LIGHTS

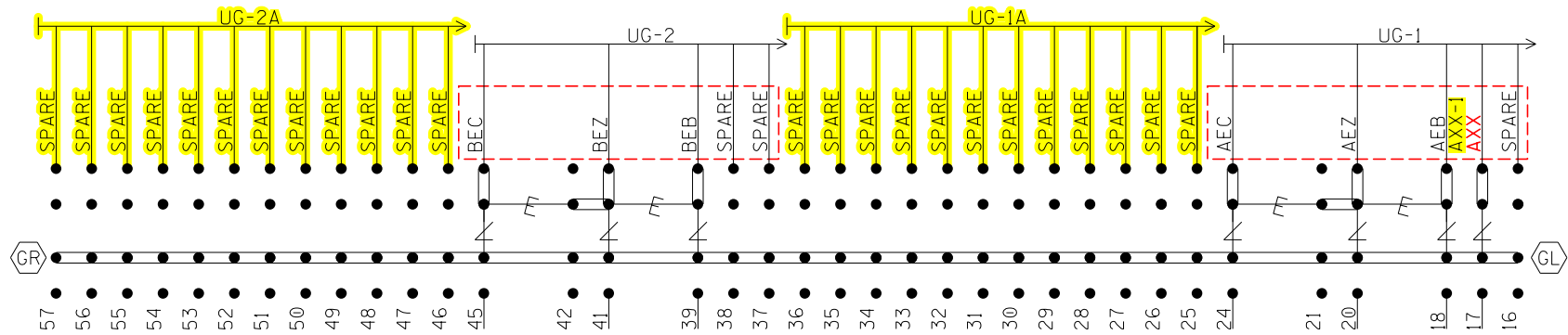
DESIGNED BY: WOR 12-01-08		
DRAWN BY: IRE 12-01-08	OFFICE OF ASS'T. VICE PRESIDENT COMM. & SIGNAL, ATLANTA, GA.	M.P.: SE-13.35
CHECKED BY: JFK 12-02-08	NAZARETH, PA FLS AT GUN CLUB RD.	
IN SERVICE: NS 08-27-09	CEMENT SECONDARY	FILE No. R-
	CADD or DWG. No. 02240134.16	SHEET 16 of 22

REVISION INITIALS | M-2704 | TJM/12-02-13 | URL/10-08-14

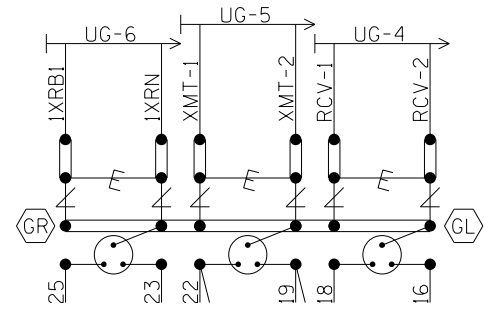
PROPERTY
NORFOLK SOUTHERN RAILWAY CO.

LEFT TWO ROWS TERMINAL BOARD 1
"1B"

"1A"



ALL NEW CABLE TO SIGNALS.



NOTE: INSTALL TEST LINKS ON ALL TRACK WIRES AND ON ALL LOW VOLTAGE UNDERGROUND CABLE TERMINATIONS.

SEE FARADAY SHIELD DETAILS - 1A & 1B FOR HOW THIS PORTION OF THE FARADAY SHIELD IS PREDRILLED. ONLY INSTALL AND USE THE TERMINALS NEEDED.

⚡ = Heavy Duty Equalizer (022700-1X)

⚡ = Clearview Lightning Arrester (022585-1X)

⊙ = LPC-10560-51

⊙ = TERMINALS GROUNDED TO SHIELD. 4 POST BLOCKS USE EITHER - GR - SERMMI PART NO. 61278 GL - SERMMI PART NO. 61278-1.

PROJECT: #19.6003
RED = IN
YELLOW = OUT
DESIGN: 03-03-22
PROGRESS RAIL
CHECK: 05-03-22
JMW

BACKBOARD DETAIL - 1A & 1B

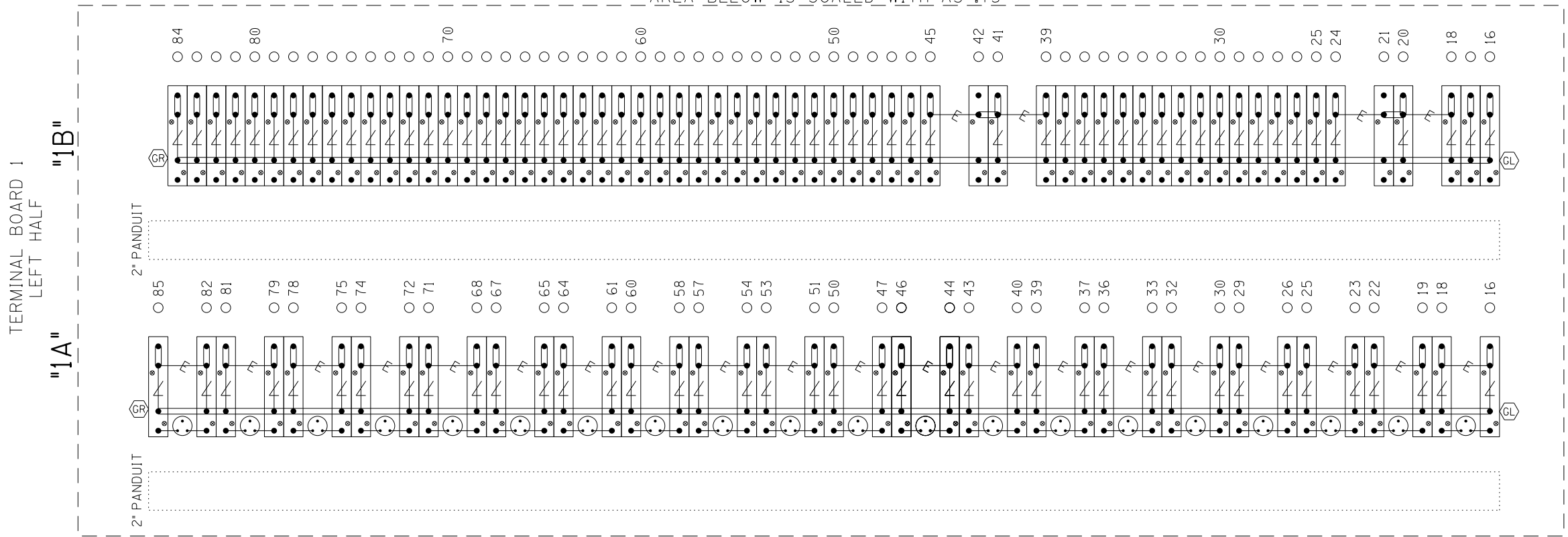
DESIGNED BY: WOR 12-01-08	NS NORFOLK SOUTHERN	
DRAWN BY: IRE 12-01-08	OFFICE OF ASS'T. VICE PRESIDENT COMM. & SIGNAL, ATLANTA, GA.	M.P.: SE-13.35
CHECKED BY: JFK 12-02-08	NAZARETH, PA FLS AT GUN CLUB RD.	
IN SERVICE: NS 08-27-09	CEMENT SECONDARY	FILE NO. R-
	CADD or DWG. No. 02240134.17	SHEET No. 17 of 22

REVISION	M-2704
INITIALS	TJM/12-02-13 URL/10-08-14

PROPERTY
NORFOLK SOUTHERN RAILWAY CO.

NOTE: IF THE FARADAY SHIELD WOULD EVER NEED TO BE DRILLED IN THE FIELD, PROPER PRECAUTIONS MUST BE TAKEN TO INSURE METAL SHAVINGS DO NOT GET INTO EXISTING TERMINALS/WIRES.

AREA BELOW IS SCALED WITH AS=.75



TERMINAL BOARD 1
LEFT HALF

"1B"

"1A"

E = Heavy Duty Equalizer
(022700-1X)

Z = Clearview
Lightning Arrester
(022585-1X)

⊙ = LPC-10560-51

GR = TERMINALS GROUNDED TO SHIELD.
GL = SERMMI PART NO. 61278-1.

TERMINAL BOARD 1
LEFT TWO ROWS
FARADAY SHIELD DETAIL - 1A & 1B

= INDICATES PLACEMENT
OF PANDUIT

THIS SHEET IS FOR REFERENCE ONLY,
TO REFLECT HOW THE FARADAY SHIELD
IS PREDRILLED. ONLY INSTALL AND USE
THE TERMINALS NEEDED.

DESIGNED BY: WOR 12-01-08	NS NORFOLK SOUTHERN	
DRAWN BY: IRE 12-01-08	OFFICE OF ASS'T. VICE PRESIDENT COMM. & SIGNAL, ATLANTA, GA.	M.P.: SE-13.35
CHECKED BY: JFK 12-02-08	NAZARETH, PA FLS AT GUN CLUB RD.	
IN SERVICE: NS 08-27-09	CEMENT SECONDARY	FILE No. R-
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REVISION	M-2704
INITIALS	TJM/12-02-13
	URL/10-08-14

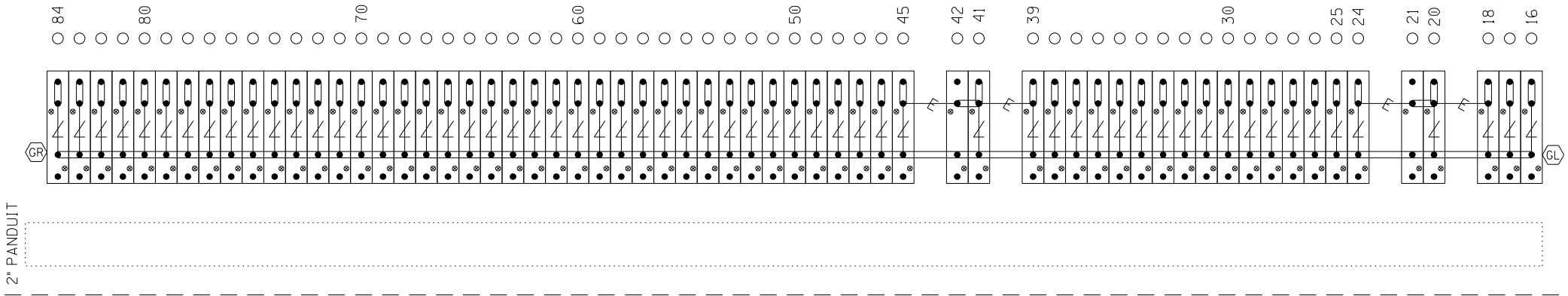
PROPERTY
NORFOLK SOUTHERN RAILWAY CO.

NOTE: IF THE FARADAY SHIELD WOULD EVER NEED TO BE DRILLED IN THE FIELD, PROPER PRECAUTIONS MUST BE TAKEN TO INSURE METAL SHAVINGS DO NOT GET INTO EXISTING TERMINALS/WIRES.

AREA BELOW IS SCALED WITH AS=.75

TERMINAL BOARD 1
RIGHT HALF

"1C"



⚡ = Heavy Duty Equalizer
(022700-1X)

△ = Clearview
Lightning Arrester
(022585-1X)

⊙ = LPC-10560-51

⊙ (GR) = TERMINALS GROUNDED TO SHIELD.
4 POST BLOCKS USE EITHER -
GR - SERMMI PART NO. 61278
GL - SERMMI PART NO. 61278-1.

⊙ (dashed) = INDICATES PLACEMENT
OF PANDUIT

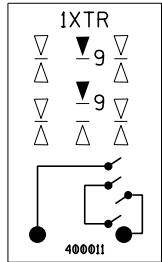
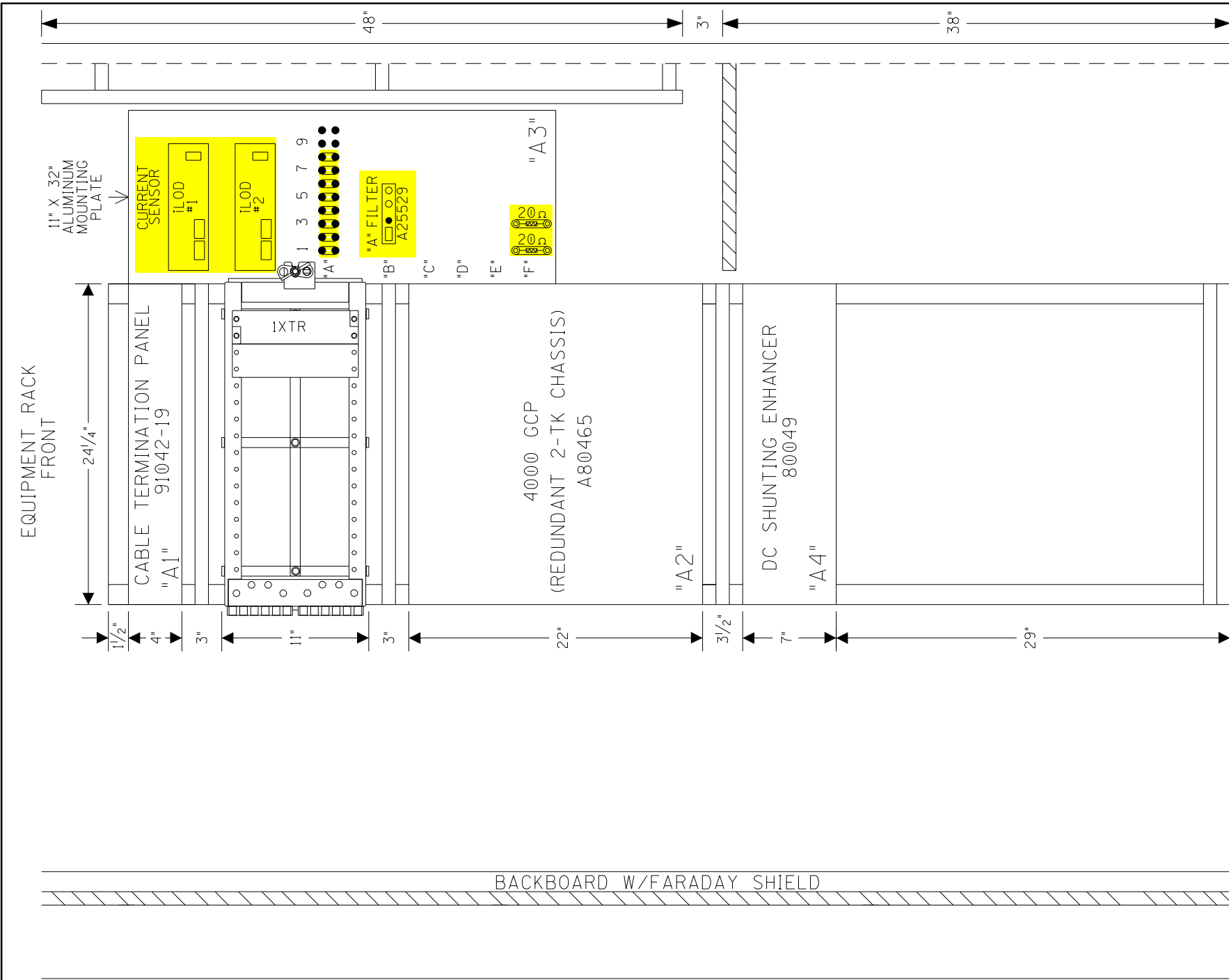
THIS SHEET IS FOR REFERENCE ONLY,
TO REFLECT HOW THE FARADAY SHIELD
IS PREDRILLED. ONLY INSTALL AND USE
THE TERMINALS NEEDED.

TERMINAL BOARD 1
RIGHT ROW
FARADAY SHIELD DETAIL - 1C

DESIGNED BY: WOR 12-01-08	NS NORFOLK SOUTHERN	
DRAWN BY: IRE 12-01-08	OFFICE OF ASS'T. VICE PRESIDENT COMM. & SIGNAL, ATLANTA, GA.	M.P.: SE-13.35
CHECKED BY: JFK 12-02-08	NAZARETH, PA FLS AT GUN CLUB RD.	
IN SERVICE: NS 08-27-09	CEMENT SECONDARY	FILE No. R-
	CADD or DWG. No. 02240134.19	SHEET No. 19 of 22

REVISION	M-2704
INITIALS	TJM/12-02-13 URL/10-08-14

PROPERTY
NORFOLK SOUTHERN RAILWAY CO.



SAFETRAN, ALSTOM(GRS) RELAY
 CROSS REFERENCE LIST
 SAFETRAN ALSTOM(GRS)
 400011 - A62-276

SIDE "C"

PROJECT: #19.6003
 RED = IN
 YELLOW = OUT
 DESIGN: 03-03-22
 PROGRESS RAIL
 CHECK: 05-03-22
 JMW

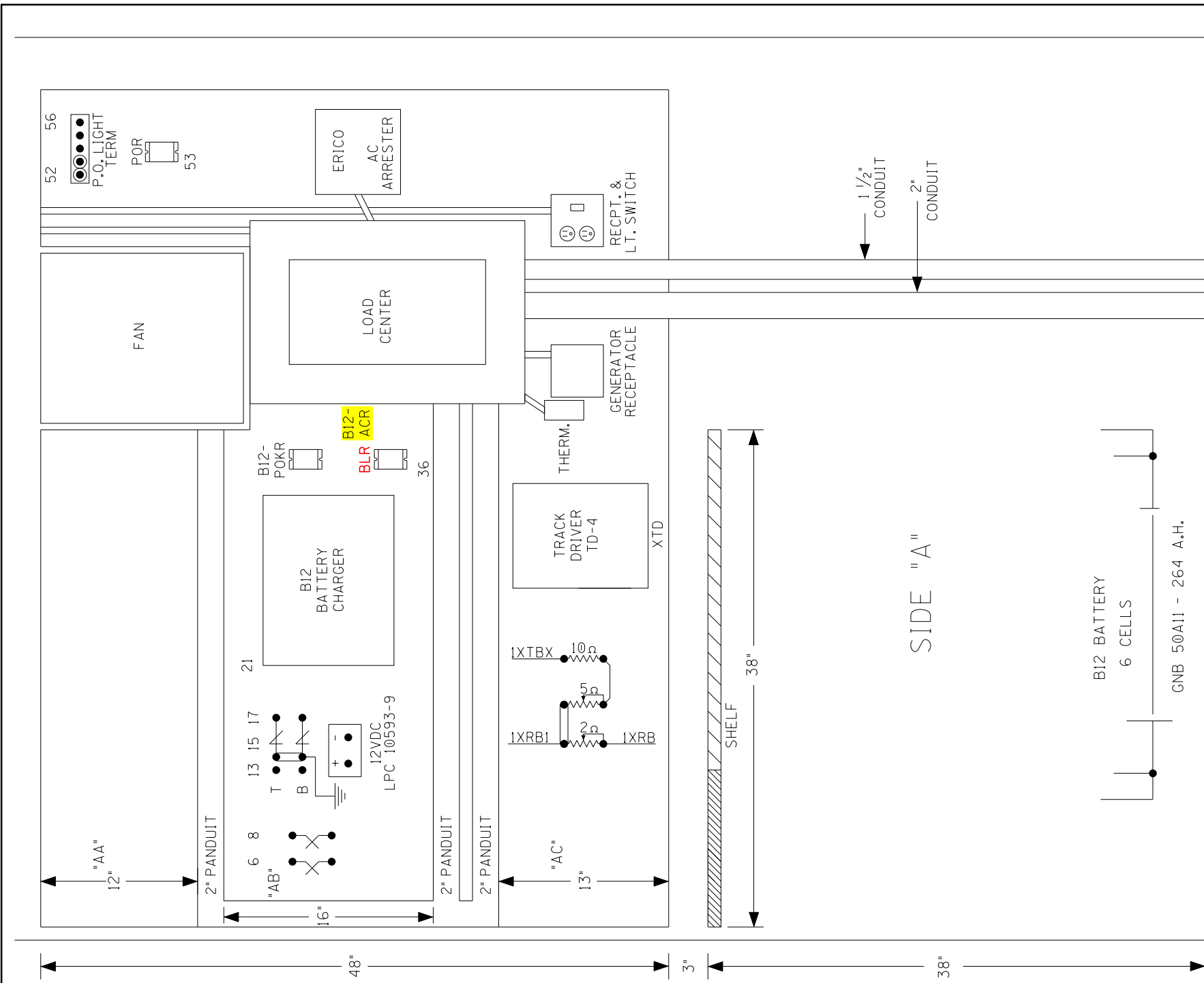


RACK PLACEMENT
 6' X 6' HOUSE - SIDE "C"

DESIGNED BY: WOR 12-01-08	NS NORFOLK SOUTHERN	
DRAWN BY: IRE 12-01-08	OFFICE OF ASS'T. VICE PRESIDENT COMM. & SIGNAL, ATLANTA, GA.	M.P.: SE-13.35
CHECKED BY: JFK 12-02-08	NAZARETH, PA FLS AT GUN CLUB RD.	
IN SERVICE: NS 08-27-09	CEMENT SECONDARY	FILE NO. R-
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REVISION	M-2704
INITIALS	TJM/12-02-13 URL/10-08-14

PROPERTY
 NORFOLK SOUTHERN RAILWAY CO.



FLOOR

PROJECT:
#19.6003
RED = IN
YELLOW = OUT
DESIGN: 03-03-22
PROGRESS RAIL
CHECK: 05-03-22
JMW

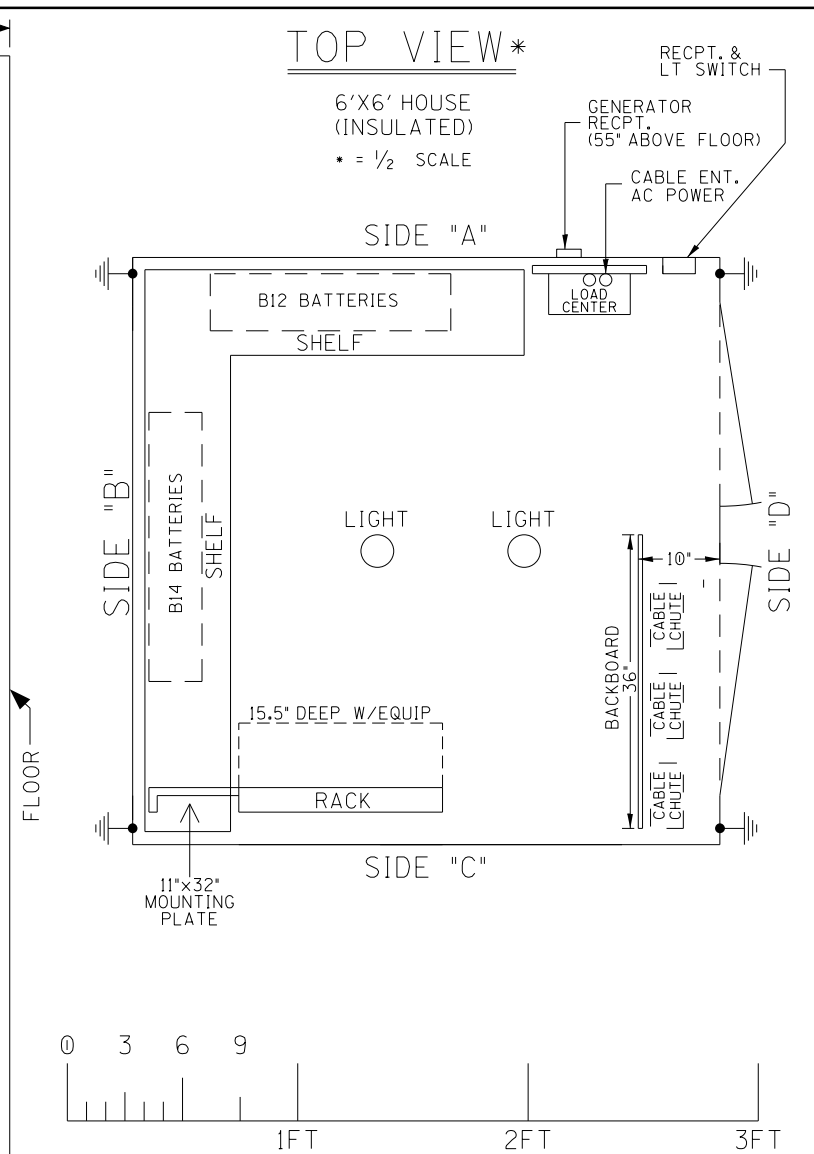
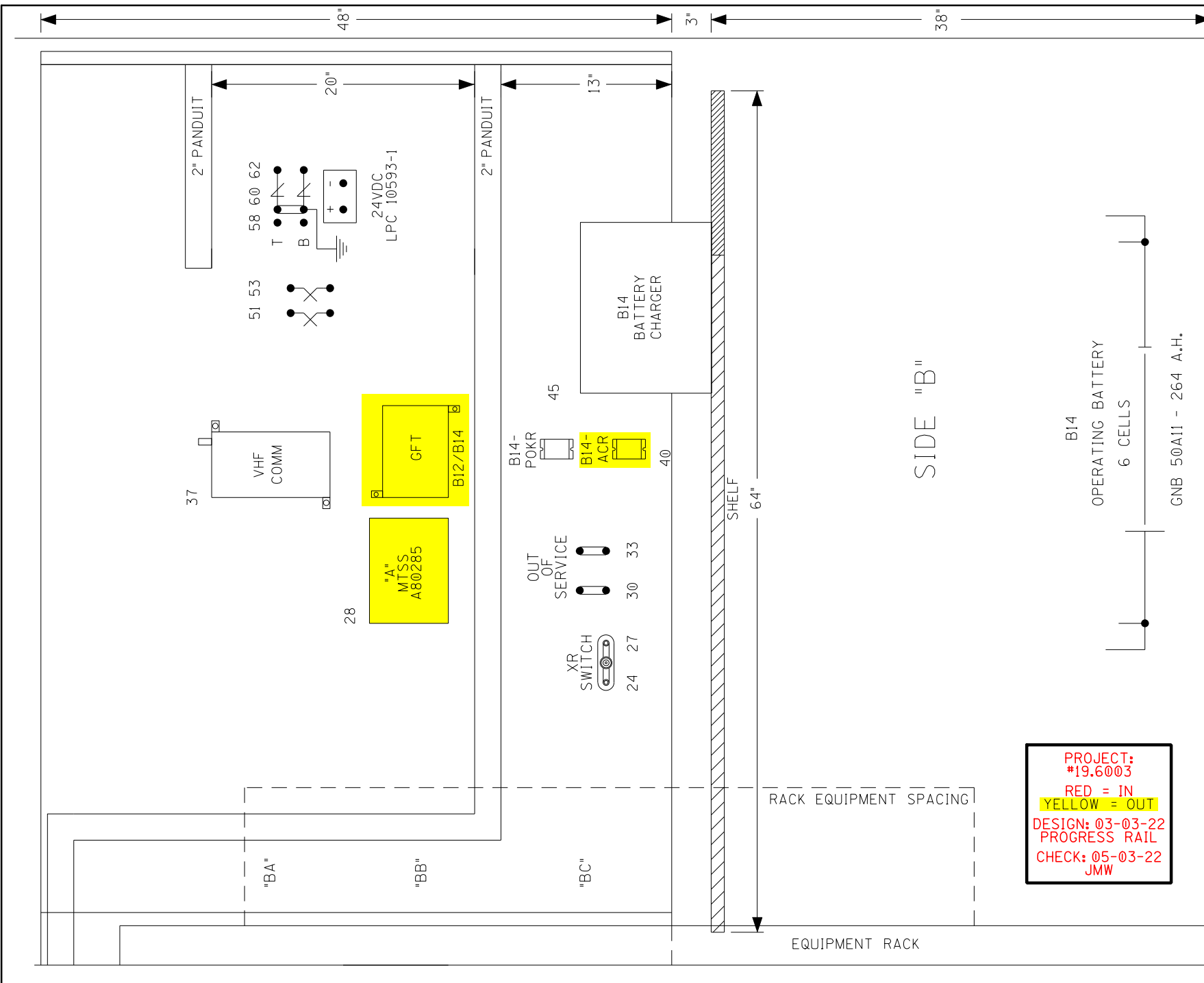


6' X 6' HOUSE - SIDE "A"

DESIGNED BY: WOR 12-01-08	NS NORFOLK SOUTHERN	
DRAWN BY: IRE 12-01-08	OFFICE OF ASS'T. VICE PRESIDENT COMM. & SIGNAL, ATLANTA, GA.	M.P.: SE-13.35
CHECKED BY: JFK 12-02-08	NAZARETH, PA FLS AT GUN CLUB RD.	
IN SERVICE: NS 08-27-09	CEMENT SECONDARY	FILE NO. R-
	CADD or DWG. No. 02240134.21	SHEET No. 21 of 22

REVISION	M-2704
INITIALS	TJM/12-02-13
	URL/10-08-14

PROPERTY
NORFOLK SOUTHERN RAILWAY CO.



6' X 6' HOUSE (SIDE "B" & TOP VIEW)

DESIGNED BY: WOR 12-01-08	NS NORFOLK SOUTHERN	
DRAWN BY: IRE 12-01-08	OFFICE OF ASS'T. VICE PRESIDENT COMM. & SIGNAL, ATLANTA, GA.	M.P.: SE-13.35
CHECKED BY: JFK 12-02-08	NAZARETH, PA FLS AT GUN CLUB RD.	
IN SERVICE: NS 08-27-09	CEMENT SECONDARY	FILE No. R-
	CADD or DWG. No. 02240134.22	SHEET 22 of 22

REVISION	M-2704
INITIALS	TJM/12-02-13
	URL/10-08-14

PROPERTY
NORFOLK SOUTHERN RAILWAY CO.



Norfolk Southern Railroad- Stormwater Management Report

Project Tadmor 2
Upper Nazareth Township
Project No. 18000145B

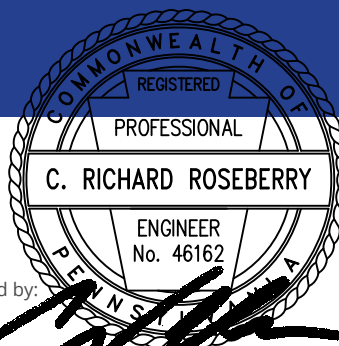
December 2023

Prepared for:

Crossroads XOX, LLC
1265 Miller Road
Wind Gap, PA 18091

Prepared by:

C. Richard Roseberry, P.E.
Pennsylvania Professional Engineer
License No. PE046162R



941 Marcon Boulevard Suite 801
Allentown, Pennsylvania 18109
Main: 610 868 4201
Colliersengineering.com

Appendices

Appendix A – Drainage Area Maps

Appendix B – Post-Construction Stormwater Management Report Excerpts

Appendix C- Supplemental Discharge Point 003 (DP 003) Peak Rate Calculations

Introduction

Crossroads XOX, LLC is constructing a warehouse at 3363 Gun Club Road in Upper Nazareth Township (Tax Parcel: K6-21-1-0432, k7-14-1-0432, and K7-13-1A-0432). As part of the development, Gun Club Road will be improved along the frontage of the site up to the intersection with State Route 248. The Gun Club Road improvements include the renovation of the Norfolk Southern railroad crossing near the northeast corner of the development property.

This report was created to analyze the development’s drainage impacts to the Norfolk Southern right-of-way and railroad crossing area.

Drainage Analysis

Stormwater Management for this development was carefully designed in conjunction with the Township and National Discharge Elimination System (NPDES) reviews. A Post-Construction Stormwater Management (PCSM) Report was created for the site, which demonstrates that peak rate and volume from the site are reduced from the pre-development condition. Multiple detention basins are utilized to manage the flow going out of the property. **Runoff headed to the adjacent area south of the railroad crossing will be captured by a stormsewer network along the property frontage which will direct all the runoff to the proposed Detention Basin B and away from Gun Club Road.**

In the PCSM report, we analyzed the pre-development versus post-development drainage conditions at the overall study point DP 001, located in the Unnamed Tributary to the Monocacy Creek downslope of the existing culvert approximately 1,000 feet south of the railroad crossing. DP 001 includes the entire site drainage area and Gun Club Road drainage area. **The analysis at DP001 demonstrates that peak rates from the development, including the entire site and Gun Club Road, are reduced when compared to the pre-development condition.** The chart below summarizes the peak rates at DP 001:

DP 001 PEAK RATE SUMMARY		
Design Storm	PRE-DEVELOPMENT FLOWS	POST-DEVELOPMENT FLOWS
2-year	56.36 cfs	55.32 cfs
10-year	76.45 cfs	66.28 cfs
25-year	103.25 cfs	80.21 cfs
50-year	112.22 cfs	88.31 cfs
100-year	120.89 cfs	96.42 cfs

In addition to the overall drainage analysis, we also evaluated the drainage conditions at the bubbler inlet which is adjacent to the Norfolk Southern railroad crossing. This evaluation was included as part of the discharge point DP 003. Because the post-development drainage area to the discharge point is minimal, a peak rate was not required during the NPDES review, only volume and water quality were evaluated. As such, **a supplemental analysis using HydroCAD software (SCS method) was completed for this report for the purposes of evaluating the railroad crossing drainage area.** This analysis can be used to determine the drainage impacts immediately adjacent to the railroad crossing. **The DP 003 analysis demonstrates the post-development peak rates to the railroad crossing area are reduced when compared to the pre-development condition.** The chart below summarizes the peak rates at DP 003.

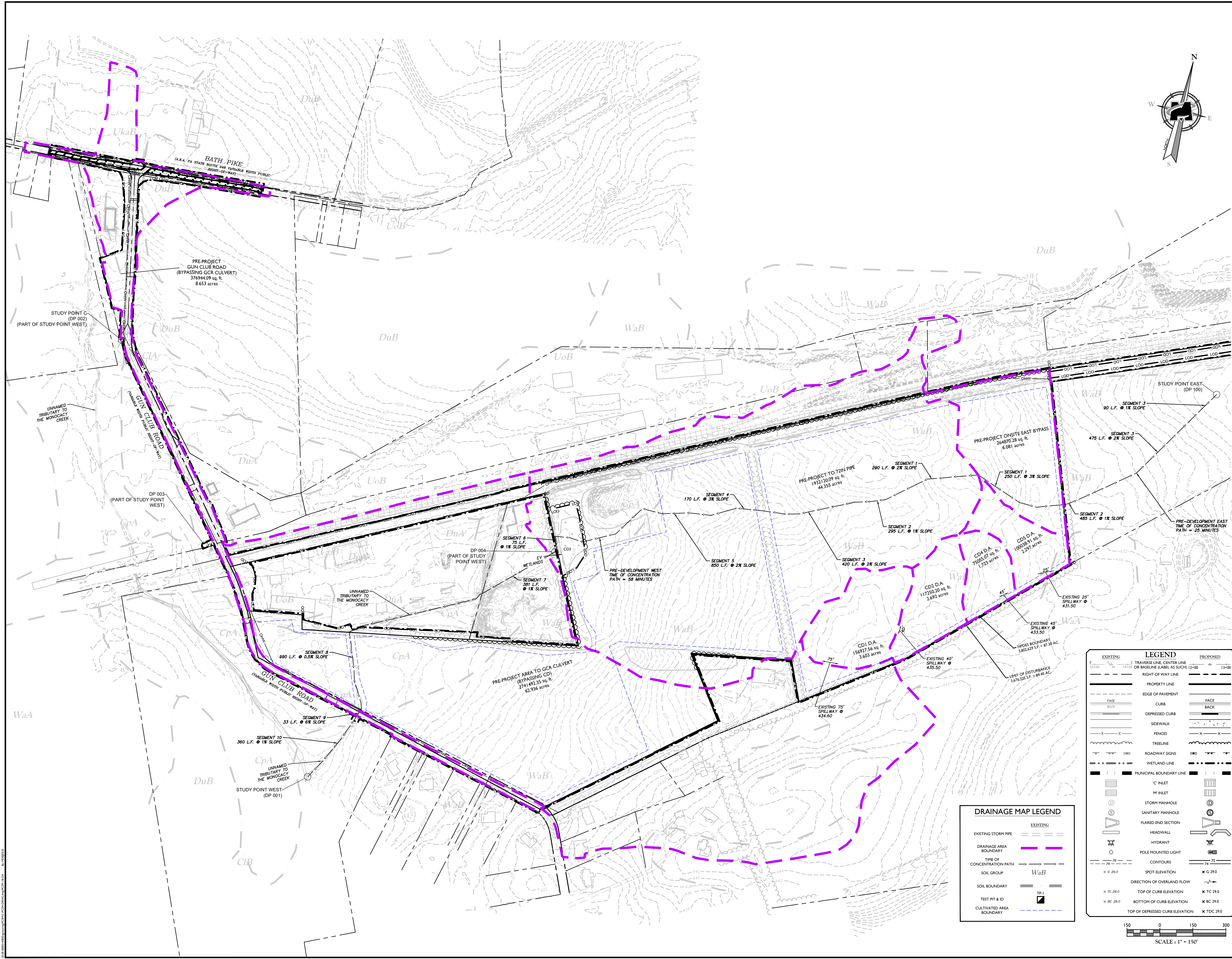
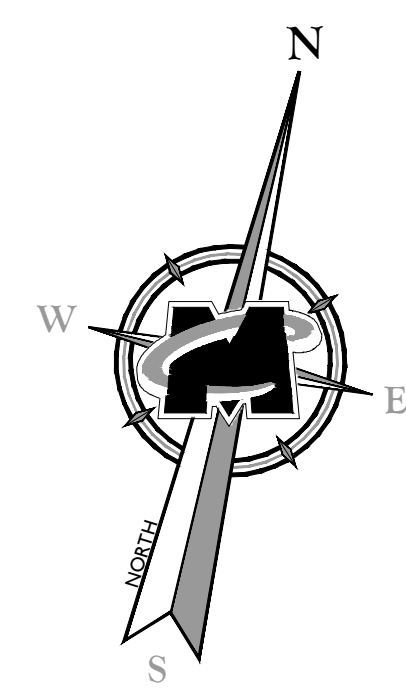
DP 003 PEAK RATE SUMMARY		
Design Storm	PRE-DEVELOPMENT FLOWS	POST-DEVELOPMENT FLOWS
2-year	1.88 cfs	1.78 cfs
10-year	3.52 cfs	3.31 cfs
25-year	4.79 cfs	4.52 cfs
50-year	5.96 cfs	5.62 cfs
100-year	7.37 cfs	6.94 cfs

Appendix A includes the drainage area maps which were used for the Post-Construction Stormwater Management analysis. **Appendix B** includes excerpts of the PCSM report which show the peak rate calculations for DP 001. **Appendix C** includes the supplemental DP 003 analysis.

Conclusion

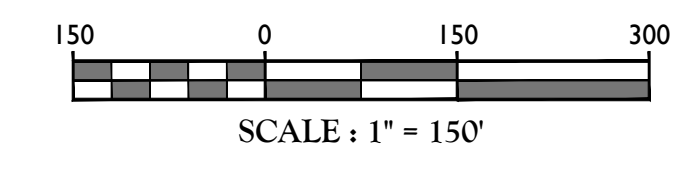
As demonstrated in this report, runoff to the Norfolk Southern railroad crossing area is reduced to less than pre-development conditions as a result of this development. As coordinated with the Township and Northampton County Conservation District (NPDES permit), the stormwater facilities and other improvements of the development site adequately manage the runoff from the site both in the overall confluence at DP 001. The supplemental peak rate analysis at DP 003 also confirms that runoff is adequately reduced at the area immediately adjacent to the railroad crossing.

APPENDIX A
Drainage Area Maps



EXISTING	LEGEND	PROPOSED
12+00	TRaverse LINE CENTER LINE OR BASELINE (LABEL AS SUCH) 12+00	13+00
---	RIGHT-OF-WAY LINE	---
---	PROPERTY LINE	---
---	EDGE OF PAVEMENT	---
---	CURB	---
---	DEPRESSED CURB	---
---	SIDEWALK	---
---	FENCES	---
---	TREELINE	---
---	ROADWAY SIGNS	---
---	WETLAND LINE	---
---	MUNICIPAL BOUNDARY LINE	---
---	'C' INLET	---
---	'M' INLET	---
---	STORM MANHOLE	---
---	SANITARY MANHOLE	---
---	FLARED END SECTION	---
---	HEADWALL	---
---	HYDRANT	---
---	POLE MOUNTED LIGHT	---
---	CONTOURS	---
---	SPOT ELEVATION	---
---	DIRECTION OF OVERLAND FLOW	---
---	TOP OF CURB ELEVATION	---
---	BOTTOM OF CURB ELEVATION	---
---	TOP OF DEPRESSED CURB ELEVATION	---

EXISTING	DRAINAGE MAP LEGEND
---	EXISTING STORM PIPE
---	DRAINAGE AREA BOUNDARY
---	TIME OF CONCENTRATION PATH
---	SOIL GROUP
---	SOIL BOUNDARY
---	TEST PIT & ID
---	CULTIVATED AREA BOUNDARY



REV	DATE	DRAWN BY	DESCRIPTION

REV	DATE	DRAWN BY	DESCRIPTION
1	03/20/20	MD	ISSUED FOR 30000 ACCESS CONCRETE LETTERS AND REVISED LAYOUT
2	03/20/20	MD	ISSUED FOR 30000 RAINFALL TECHNICAL EMERGENCY LETTER DATED 03/20/20
3	03/20/20	MD	ISSUED FOR 30000 RAINFALL TECHNICAL EMERGENCY LETTER DATED 03/20/20
4	03/20/20	MD	ISSUED FOR 30000 RAINFALL TECHNICAL EMERGENCY LETTER DATED 03/20/20

Nicole M. Gallo
 REGISTERED PROFESSIONAL ENGINEER
 ENGINEER
 LICENSE NUMBER: PE079435
 MASAER CONSULTING, INC.

POST-CONSTRUCTION STORMWATER MANAGEMENT PLANS FOR PROJECT TADMOR 2

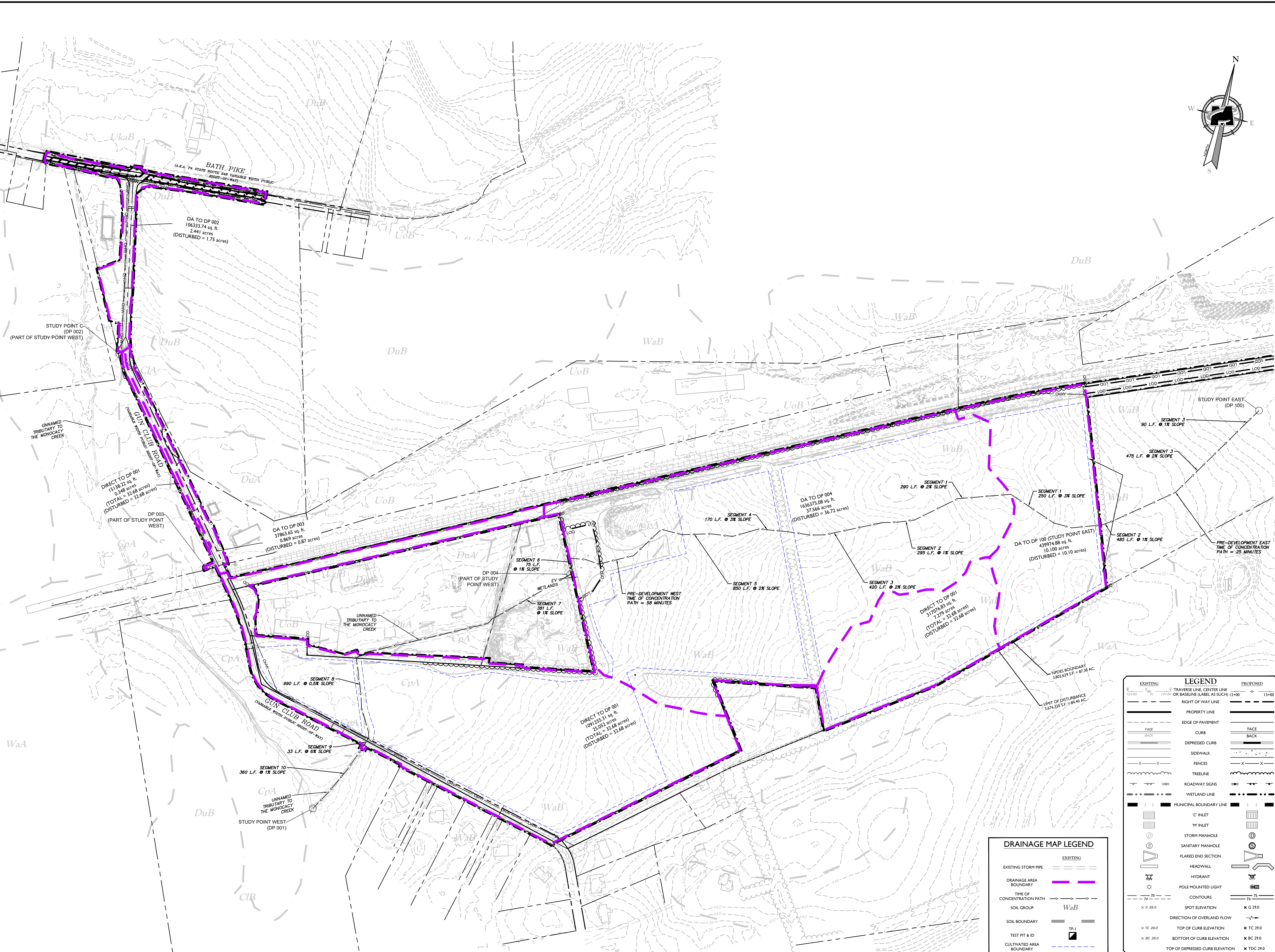
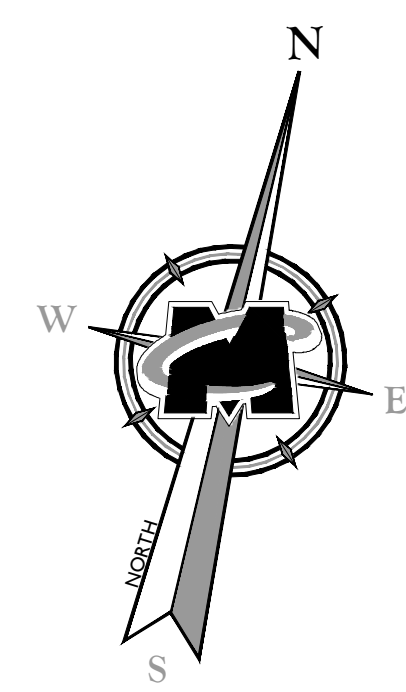
3363 GUN CLUB ROAD
 UPPER NAZARETH TOWNSHIP
 NORTHAMPTON COUNTY PENNSYLVANIA

LEHIGH VALLEY OFFICE
 941 Flinton Boulevard
 Suite 501
 Allentown, PA 18109
 Phone: 610.868.4201
 Fax: 610.264.4672

SCALE: AS SHOWN DATE: 5/8/2020 DRAWN BY: MD CHECKED BY: NMG
 PROJECT NUMBER: 18001458 DRAWING NAME: C:\P3M-DWG

ACT 167 DRAINAGE AREAS PRE-PROJECT CASE I

SHEET NUMBER: P18 of P27



REV	DATE	DRAWN BY	DESCRIPTION

REV	DATE	DRAWN BY	DESCRIPTION



Nicole M. Gallo
 PENNSYLVANIA REGISTERED PROFESSIONAL ENGINEER
 LICENSE NUMBER: PE079435
 MASER CONSULTING, INC.

POST-CONSTRUCTION STORMWATER MANAGEMENT PLANS FOR PROJECT TADMOR 2

3363 GUN CLUB ROAD
 UPPER NAZARETH TOWNSHIP
 NORTHAMPTON COUNTY
 PENNSYLVANIA

SCALE	DATE	DRAWN BY	CHECKED BY
AS SHOWN	5/8/2020	MD	NHG
PROJECT NUMBER:	18001458	DRAWING NAME:	C-PCSM-DRNG

PCSM PRE-PROJECT DRAINAGE AREAS

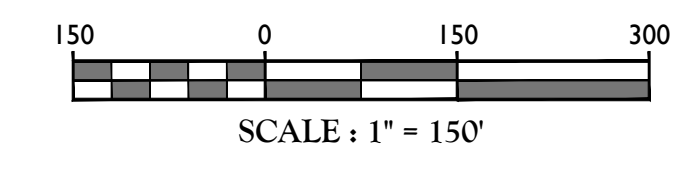
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 P20 of P27

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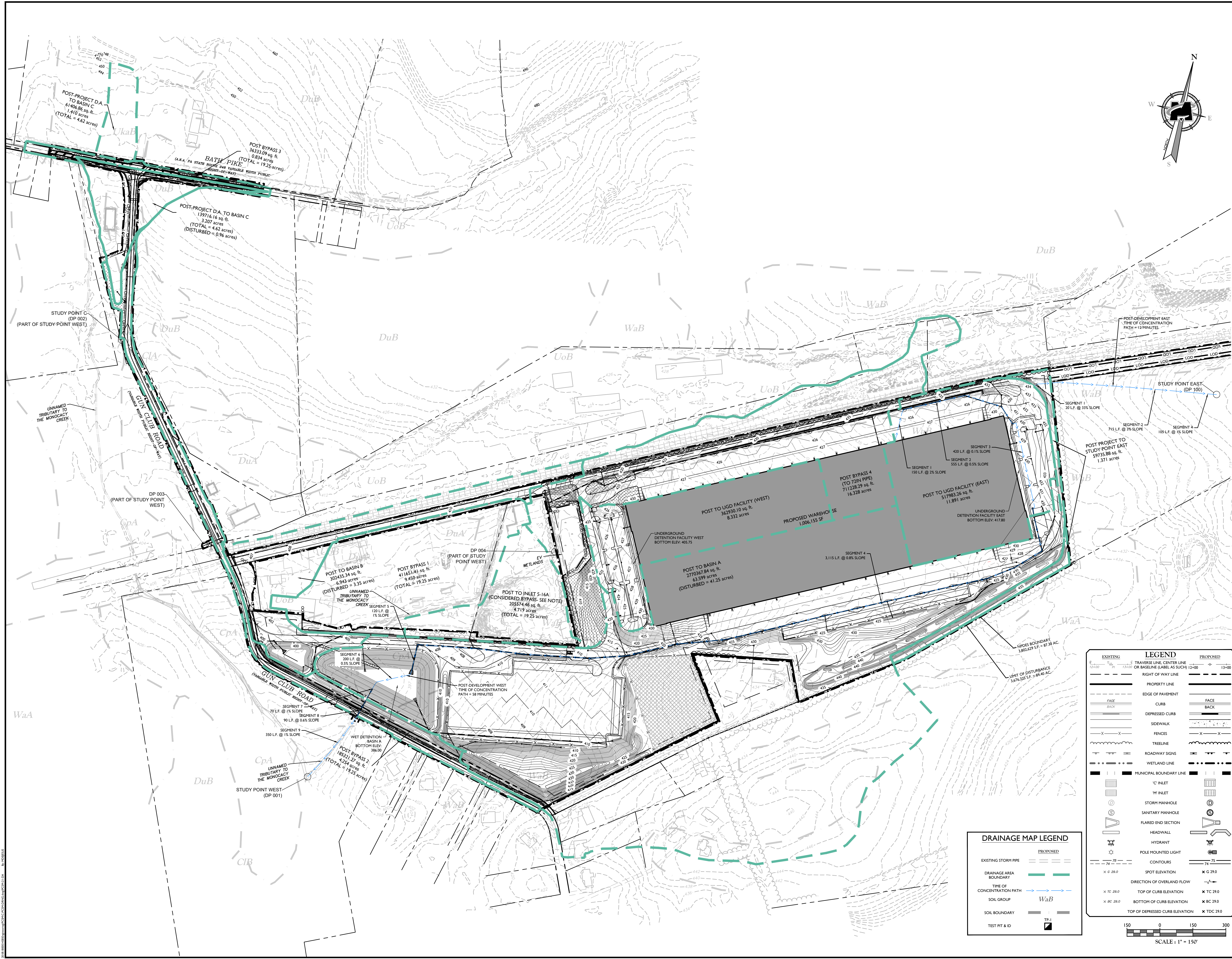
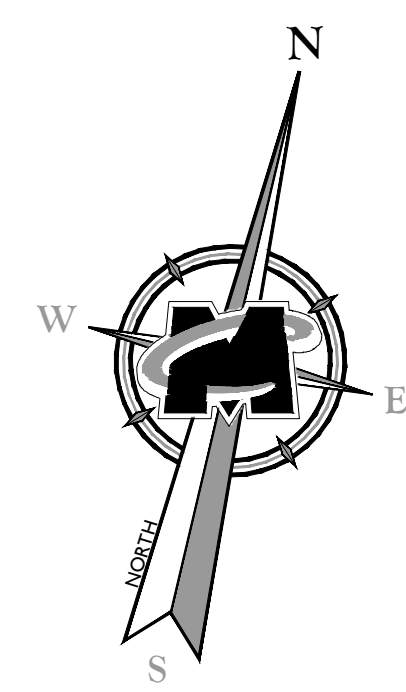
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Traverse line center line	Traverse line center line
Right-of-way line	Right-of-way line
Property line	Property line
Edge of pavement	Edge of pavement
Curb	Curb
Depressed curb	Depressed curb
Sidewalk	Sidewalk
Fences	Fences
Treeline	Treeline
Roadway signs	Roadway signs
Wetland line	Wetland line
Municipal boundary line	Municipal boundary line
C' INLET	C' INLET
M' INLET	M' INLET
Storm manhole	Storm manhole
Sanitary manhole	Sanitary manhole
Flared end section	Flared end section
Headwall	Headwall
Hydrant	Hydrant
Pole mounted light	Pole mounted light
Contours	Contours
Spot elevation	Spot elevation
Direction of overland flow	Direction of overland flow
Top of curb elevation	Top of curb elevation
Bottom of curb elevation	Bottom of curb elevation
Top of depressed curb elevation	Top of depressed curb elevation

DRAINAGE MAP LEGEND

EXISTING STORM PIPE	EXISTING
DRAINAGE AREA BOUNDARY	WAB
TIME OF CONCENTRATION PATH	TC-1
SOIL BOUNDARY	TR-1
TEST PIT & ID	
CULTIVATED AREA BOUNDARY	



NOTE: DO NOT SCALE DRAWINGS FOR CONSTRUCTION.



REV	DATE	DESCRIPTION
1	03/20/20	ISSUED FOR PERMITS
2	03/20/20	ISSUED FOR PERMITS
3	03/20/20	ISSUED FOR PERMITS
4	03/20/20	ISSUED FOR PERMITS
5	03/20/20	ISSUED FOR PERMITS

REV	DATE	DESCRIPTION
1	03/20/20	ISSUED FOR PERMITS
2	03/20/20	ISSUED FOR PERMITS
3	03/20/20	ISSUED FOR PERMITS
4	03/20/20	ISSUED FOR PERMITS
5	03/20/20	ISSUED FOR PERMITS

Nicole M. Gallo
 REGISTERED PROFESSIONAL ENGINEER
 LICENSE NUMBER: PE079435
 MASER CONSULTING, INC.

POST-CONSTRUCTION STORMWATER MANAGEMENT PLANS FOR PROJECT TADMOR 2

3363 GUN CLUB ROAD
 UPPER NAZARETH TOWNSHIP
 NORTHAMPTON COUNTY
 PENNSYLVANIA

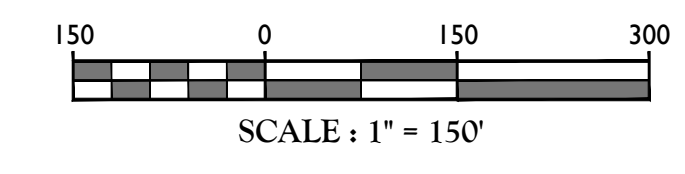
LEHIGH VALLEY OFFICE
 741 Plenton Boulevard
 Suite 901
 Allentown, PA 18109
 Phone: 610.868.4201
 Fax: 610.264.4672

LEGEND

EXISTING	PROPOSED
12+00	12+00
13+00	13+00
14+00	14+00
15+00	15+00
16+00	16+00
17+00	17+00
18+00	18+00
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99+00	99+00
100+00	100+00

DRAINAGE MAP LEGEND

EXISTING	PROPOSED
EXISTING STORM PIPE	PROPOSED STORM PIPE
DRAINAGE AREA BOUNDARY	DRAINAGE AREA BOUNDARY
TIME OF CONCENTRATION PATH	TIME OF CONCENTRATION PATH
SOIL GROUP	SOIL GROUP
SOIL BOUNDARY	SOIL BOUNDARY
TEST PIT & ID	TEST PIT & ID





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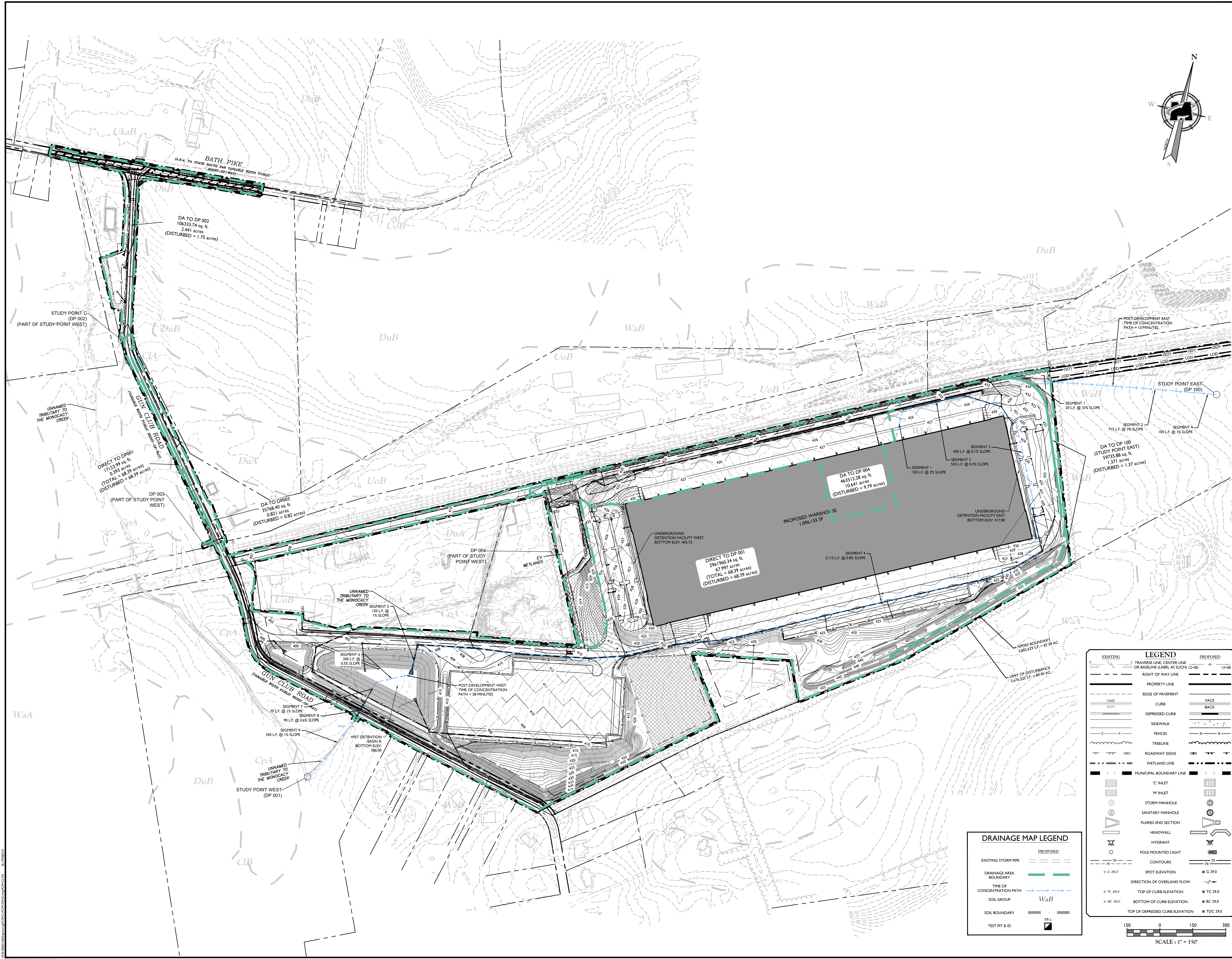
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2	12/08/20	MD	ISSUED FOR RAINFALL TECHNICAL EMERGENCY LETTER DATED 11/20/20
3	06/20/21	MD	ISSUED FOR RAINFALL TECHNICAL EMERGENCY LETTER DATED 05/27/21

REV	DATE	DRAWN BY	DESCRIPTION
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2	12/08/20	MD	ISSUED FOR RAINFALL TECHNICAL EMERGENCY LETTER DATED 11/20/20
3	06/20/21	MD	ISSUED FOR RAINFALL TECHNICAL EMERGENCY LETTER DATED 05/27/21

Nicole M. Gallo
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 LICENSE NUMBER: PE079435
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POST-CONSTRUCTION STORMWATER MANAGEMENT PLANS FOR PROJECT TADMOR 2
 3363 GUN CLUB ROAD
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 PENNSYLVANIA

LEHIGH VALLEY OFFICE
 741 Plinton Boulevard
 Suite 901
 Allentown, PA 18109
 Phone: 610.868.4201
 Fax: 610.264.4672



LEGEND

	EXISTING		PROPOSED
	EXISTING		PROPOSED
	PROPERTY LINE		EDGE OF PAVEMENT
	CURB		FACE
	DEPRESSED CURB		BACK
	SIDEWALK		FENCE
	TREELINE		ROADWAY SIGN
	WETLAND LINE		MUNICIPAL BOUNDARY LINE
	C INLET		M INLET
	STORM MANHOLE		SANITARY MANHOLE
	FLARED END SECTION		HEADWALL
	HYDRANT		POLE MOUNTED LIGHT
	CONTOURS		SPOT ELEVATION
	DIRECTION OF OVERLAND FLOW		TOP OF CURB ELEVATION
	BOTTOM OF CURB ELEVATION		TOP OF DEPRESSED CURB ELEVATION

SCALE: 1" = 150'

DRAINAGE MAP LEGEND

	EXISTING STORM PIPE		PROPOSED
	DRAINAGE AREA BOUNDARY		TIME OF CONCENTRATION PATH
	SOIL GROUP		SOIL BOUNDARY
	TEST PIT & ID		

NOTE: DO NOT SCALE DRAWINGS FOR CONSTRUCTION.

APPENDIX B
POST-CONSTRUCTION STORMWATER MANAGEMENT REPORT EXCERPTS

Table of Contents:

Pre-Development CalculationsBegins Page B - 5 of 360
Post-Development Calculations.....Begins Page B -147 of 360

**CASE 1: PRE-PROJECT ANALYSIS
WITH CLOSED DEPRESSIONS**

Travel Time

Summary for Travel Time Calculations with 10 segments:

Segment 1: SCS Average Velocity

Short grass pasture and lawn
Length = 290 ft
Slope = 0.02 ft/ft

Calculated Velocity = 1.01 ft/s
Travel Time for Segment = 4.78 minutes

Segment 2: SCS Average Velocity

Short grass pasture and lawn
Length = 295 ft
Slope = 0.01 ft/ft

Calculated Velocity = 0.72 ft/s
Travel Time for Segment = 6.88 minutes

Segment 3: SCS Average Velocity

Short grass pasture and lawn
Length = 420 ft
Slope = 0.02 ft/ft

Calculated Velocity = 1.01 ft/s
Travel Time for Segment = 6.92 minutes

Segment 4: SCS Average Velocity

Short grass pasture and lawn
Length = 170 ft
Slope = 0.03 ft/ft

Calculated Velocity = 1.24 ft/s
Travel Time for Segment = 2.29 minutes

Segment 5: SCS Average Velocity

Short grass pasture and lawn
Length = 850 ft
Slope = 0.02 ft/ft

Calculated Velocity = 1.01 ft/s
Travel Time for Segment = 14.01 minutes

Segment 6: SCS Average Velocity

Grassed waterway
Length = 75 ft
Slope = 0.01 ft/ft

Calculated Velocity = 1.52 ft/s
Travel Time for Segment = 0.82 minutes

Segment 7: SCS Average Velocity

Paved area or shallow gutter flow
Length = 381 ft
Slope = 0.01 ft/ft

Calculated Velocity = 2.00 ft/s
Travel Time for Segment = 3.18 minutes

Segment 8: SCS Average Velocity

Grassed waterway
Length = 990 ft
Slope = 0.005 ft/ft

Calculated Velocity = 1.07 ft/s
Travel Time for Segment = 15.35 minutes

Segment 9: SCS Average Velocity

Paved area or shallow gutter flow
Length = 33 ft
Slope = 0.06 ft/ft

Calculated Velocity = 4.90 ft/s
Travel Time for Segment = 0.11 minutes

Segment 10: SCS Average Velocity

Grassed waterway
Length = 360 ft
Slope = 0.01 ft/ft

Calculated Velocity = 1.52 ft/s
Travel Time for Segment = 3.95 minutes

Composite Travel Time = 58.29 minutes

*PRE-PROJECT T_c WEST IS USED FOR BOTH CASE 1 AND CASE 2.



Project: PROJECT TADMOR Sheet: 1 of 2
 Project #: 18000145B Scale: _____
 Calculated By: NMG Date: 5/4/2021 Checked By: _____ Date: _____
 Element: PRE-PROJECT FLOW RATES Date: _____
 Engineers | Planners | Surveyors | Landscape Architects | Environmental Scientists

STUDY POINT WEST: CASE 1

SUB-WATERSHED AREA INFORMATION:

	Weighted c	AREA (AC)
AREA TO GCR CULVERT (BYPASS CD _s)	0.34 / 0.41	62.94
AREA TO CD1	0.28 / 0.35	3.60
AREA TO CD2	0.28 / 0.35	2.69
AREA TO 72" Pipe (INCLUDES CD3)	0.27 / 0.33	44.36
PRE GCR (BYPASS GCR CULVERT)	0.48 / 0.55	8.65
TOTAL SUB-WATERSHED AREA:		122.24

T_c WEST = 58 MIN (FROM VTPSUHM OUTPUT, PATH SHOWN ON PLANS)

PRE-PROJECT FLOW RATES:

DETERMINE THE PRE-PROJECT ALLOWABLE RELEASE RATES. CALCULATE FLOW RATES USING SUB-WATERSHED AREA (A), WEIGHTED MANNING 'S COEFFICIENT (c), AND T_c IN VTPSUHM. ALLOWABLE RELEASE RATE CRITERIA ARE FROM ACT 167 PLAN FOR MONACACY CREEK SUB-WATERSHED. THE SITE IS LOCATED IN SUBAREAS 45, 46, AND 58. RAINFALL DEPTHS ARE FROM PENNDOT PUB 584.

	CLOSED DEPRESSION 1 (CD1)		CLOSED DEPRESSION 2 (CD2)	
	INFLOW	OUTFLOW	INFLOW	OUTFLOW
Q ₂ =	1.37 CFS	0.00 CFS	1.02 CFS	0.00 CFS
Q ₁₀ =	1.96 CFS	0.00 CFS	1.47 CFS	0.00 CFS
Q ₂₅ =	2.88 CFS	0.06 CFS	2.15 CFS	0.00 CFS
Q ₅₀ =	3.26 CFS	0.15 CFS	2.43 CFS	0.00 CFS
Q ₁₀₀ =	3.61 CFS	0.26 CFS	2.70 CFS	0.00 CFS

***HYDROGRAPH COMBINATION A:**

	**MILLER PIPE OUTFLOW	+	PRE TO 72" PIPE	=	COMBINATION A -	=	OUTFLOW FROM
	PRE FLOW RATES		PRE FLOW RATES		TOTAL INFLOW TO 72"		72" PIPE
	PRE FLOW RATES		PRE FLOW RATES		PRE FLOW RATES		PRE FLOW RATES
Q ₂ =	31.88 CFS	+	16.26 CFS	=	48.13 CFS	=	36.81 CFS
Q ₁₀ =	32.12 CFS	+	23.33 CFS	=	55.44 CFS	=	38.46 CFS
Q ₂₅ =	32.35 CFS	+	33.45 CFS	=	65.79 CFS	=	40.43 CFS
Q ₅₀ =	32.46 CFS	+	37.84 CFS	=	70.29 CFS	=	41.26 CFS
Q ₁₀₀ =	32.56 CFS	+	41.96 CFS	=	74.51 CFS	=	41.97 CFS

***HYDROGRAPH COMBINATION B:**

	OUTFLOW FROM 72" PIPE	+	AREA TO GCR CULVERT	=	COMBINATION B -
	PRE FLOW RATES		(BYPASSING CD & 72" PIPE)		INFLOW TO GCR CULVERT
	PRE FLOW RATES		PRE FLOW RATES		PRE FLOW RATES
Q ₂ =	36.81 CFS	+	29.05 CFS	=	63.46 CFS
Q ₁₀ =	38.46 CFS	+	41.69 CFS	=	77.98 CFS
Q ₂₅ =	40.43 CFS	+	58.96 CFS	=	96.84 CFS
Q ₅₀ =	41.26 CFS	+	66.70 CFS	=	105.43 CFS
Q ₁₀₀ =	41.97 CFS	+	73.97 CFS	=	113.18 CFS



Project: PROJECT TADMOR Sheet: 2 of 2
 Project #: 18000145B Scale: _____
 Calculated By: NMG Date: 5/4/2021 Checked By: _____ Date: _____
 Element: PRE-PROJECT FLOW RATES Date: _____
 Engineers | Planners | Surveyors | Landscape Architects | Environmental Scientists

STUDY POINT WEST: CASE 1

PRE-PROJECT ALLOWABLE RELEASE RATE:

	<u>GCR CULVERT</u>		<u>GUN CLUB RD (BYPASSING GCR CULVERT)</u>		<u>TOTAL PRE WEST</u>	<u>TOTAL ALLOWABLE</u>	
	<u>OUTFLOW</u>		<u>FLOW RATE</u>		<u>FLOW RATE</u>	<u>FLOW RATE</u>	
Q ₂ =	50.72 CFS	+	5.64 CFS	=	56.36 CFS	56.36 CFS	LESS THAN CASE 2
Q ₁₀ =	68.36 CFS	+	8.09 CFS	=	76.45 CFS	76.45 CFS	
Q ₂₅ =	92.38 CFS	+	10.87 CFS	=	103.25 CFS	103.25 CFS	
Q ₅₀ =	99.92 CFS	+	12.30 CFS	=	112.22 CFS	112.22 CFS	
Q ₁₀₀ =	107.25 CFS	+	13.64 CFS	=	120.89 CFS	120.89 CFS	

CALCULATION NOTES:

1) THE WESTERN STUDY POINT IS IN THE CHANNEL DOWNSTREAM OF THE EXISTING CULVERT UNDER GUN CLUB ROAD.

2) SOILS ARE A EITHER TYPE "B" OR TYPE "C".

*** HYDROGRAPH COMBINATIONS ACCOUNT FOR THE TRAVEL TIME DIFFERENTIAL. THEREFORE, THE HYDROGRAPH COMBINATION MAY BE LESS THAN THE ADDITION OF THE PEAK FLOW RATES, BECAUSE THE PEAK FLOW RATES MAY OCCUR AT DIFFERENT TIMES.**

**** ONLY THE OUTFLOW THROUGH THE MILLER CULVERT REACHES THE STUDY POINT AND IS CONSIDERED FOR THIS ANALYSIS. OVERTOPPING FLOW IS NATURALLY DIRECTED AWAY FROM THE SITE.**



Project Name: PROJECT TADMOR	
Project No.: 18000145B	Date: 5/4/2021
Prepared By: MD	Checked By:

STORMWATER MANAGEMENT CALCULATIONS

Pre-Development

PRE TO GCR CULVERT (BYPASSING CD) - WEST

SOIL	SLOPE	AREA	C (<=10)	c (25+)	C x A (<= 10YR)	C x A (25 YR+)	
IMPERVIOUS							
B	0-2%	= 1.67 x 0.85	0.95	=	1.42	1.59	
B	2-6%	= 6.60 x 0.86	0.96	=	5.68	6.34	
B	+6%	= 0.07 x 0.87	0.97	=	0.06	0.07	
GRAVEL							
B	0-2%	= 0.84 x 0.32	0.38	=	0.27	0.32	
B	2-6%	= 2.88 x 0.36	0.43	=	1.04	1.24	
B	+6%	= 0.46 x 0.40	0.47	=	0.18	0.22	
MEADOW/LAWN							
B	0-2%	= 0.91 x 0.15	0.19	=	0.14	0.17	
B	2-6%	= 16.96 x 0.20	0.25	=	3.39	4.24	
B	+6%	= 6.19 x 0.24	0.30	=	1.49	1.86	
FOREST/WOODS							
B	0-2%	= 0.51 x 0.11	0.15	=	0.06	0.08	
B	2-6%	= 1.61 x 0.16	0.21	=	0.26	0.34	
B	+6%	= 0.55 x 0.20	0.26	=	0.11	0.14	
IMPERVIOUS							
C	0-2%	= 0.19 x 0.85	0.95	=	0.16	0.18	
C	2-6%	= 0.18 x 0.86	0.96	=	0.15	0.17	
C	+6%	= 0.00 x 0.87	0.97	=	0.00	0.00	
GRAVEL							
C	0-2%	= 0.91 x 0.35	0.42	=	0.32	0.38	
C	2-6%	= 2.55 x 0.39	0.46	=	0.99	1.17	
C	+6%	= 0.27 x 0.43	0.50	=	0.12	0.14	
MEADOW/LAWN							
C	0-2%	= 0.37 x 0.23	0.28	=	0.09	0.10	
C	2-6%	= 0.21 x 0.28	0.34	=	0.06	0.07	
C	+6%	= 1.20 x 0.32	0.39	=	0.38	0.47	
FOREST/WOODS							
C	0-2%	= 0.25 x 0.20	0.25	=	0.05	0.06	
C	2-6%	= 0.16 x 0.25	0.31	=	0.04	0.05	
C	+6%	= 0.55 x 0.29	0.36	=	0.16	0.20	
CULTIVATED							
B	0-2%	= 0.07 x 0.24	0.30	=	0.02	0.02	
B	2-6%	= 11.61 x 0.29	0.36	=	3.37	4.18	
B	+6%	= 0.00 x 0.33	0.40	=	0.00	0.00	
CULTIVATED							
C	0-2%	= 4.41 x 0.30	0.36	=	1.32	1.59	
C	2-6%	= 0.00 x 0.34	0.41	=	0.00	0.00	
C	+6%	= 0.76 x 0.38	0.45	=	0.29	0.34	
TOTAL =					62.94	21.60	25.72
C_w					=	0.34	0.41

PRE GUN CLUB ROAD TOTAL (BYPASSING GCR CULVERT) - WEST

SOIL	SLOPE	AREA	C (<=10)	c (25+)	C x A (<= 10YR)	C x A (25 YR+)	
IMPERVIOUS							
B	0-2%	= 0.00 x 0.85	0.95	=	0.00	0.00	
B	2-6%	= 1.30 x 0.86	0.96	=	1.12	1.25	
B	+6%	= 0.00 x 0.87	0.97	=	0.00	0.00	
MEADOW/LAWN							
B	0-2%	= 0.01 x 0.15	0.19	=	0.00	0.00	
B	2-6%	= 1.39 x 0.20	0.25	=	0.28	0.35	
B	+6%	= 0.39 x 0.24	0.30	=	0.09	0.12	
IMPERVIOUS							
C	0-2%	= 0.12 x 0.85	0.95	=	0.10	0.11	
C	2-6%	= 1.74 x 0.86	0.96	=	1.50	1.67	
C	+6%	= 0.00 x 0.87	0.97	=	0.00	0.00	
MEADOW/LAWN							
C	0-2%	= 0.07 x 0.23	0.28	=	0.02	0.02	
C	2-6%	= 3.34 x 0.28	0.34	=	0.94	1.14	
C	+6%	= 0.29 x 0.32	0.39	=	0.09	0.11	
TOTAL =					8.65	4.13	4.77
C_w					=	0.48	0.55



Project Name: PROJECT TADMOR	
Project No.: 18000145B	Date: 5/4/2021
Prepared By: MD	Checked By:

STORMWATER MANAGEMENT CALCULATIONS

Pre-Development

PRE DA TO CD1 - WEST

SOIL	SLOPE	AREA	C (<=10)	c (25+)	C x A (<= 10YR)	C x A (25 YR+)
CULTIVATED						
B	0-2%	= 0.65 x 0.24	0.30	=	0.16	0.20
B	2-6%	= 2.95 x 0.29	0.36	=	0.86	1.06
B	+6%	= 0.00 x 0.33	0.40	=	0.00	0.00
TOTAL =		3.60			1.01	1.26
		C_w	=		0.28	0.35

PRE DA TO CD2 - WEST

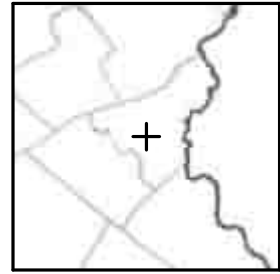
SOIL	SLOPE	AREA	C (<=10)	c (25+)	C x A (<= 10YR)	C x A (25 YR+)
MEADOW/LAWN						
B	0-2%	= 0.00 x 0.15	0.19	=	0.00	0.00
B	2-6%	= 0.17 x 0.20	0.25	=	0.03	0.04
B	+6%	= 0.00 x 0.24	0.30	=	0.00	0.00
CULTIVATED						
B	0-2%	= 0.00 x 0.24	0.30	=	0.00	0.00
B	2-6%	= 2.52 x 0.29	0.36	=	0.73	0.91
B	+6%	= 0.00 x 0.33	0.40	=	0.00	0.00
TOTAL =		2.69			0.76	0.95
		C_w	=		0.28	0.35

TOTAL PRE DA TO 72 IN PIPE (INCLUDING CD3)

SOIL	SLOPE	AREA	C (<=10)	c (25+)	C x A (<= 10YR)	C x A (25 YR+)
GRAVEL						
B	0-2%	= 1.87 x 0.32	0.38	=	0.60	0.71
B	2-6%	= 0.14 x 0.36	0.43	=	0.05	0.06
B	+6%	= 0.00 x 0.40	0.47	=	0.00	0.00
MEADOW/LAWN						
B	0-2%	= 0.00 x 0.15	0.19	=	0.00	0.00
B	2-6%	= 4.61 x 0.20	0.25	=	0.92	1.15
B	+6%	= 0.94 x 0.24	0.30	=	0.23	0.28
FOREST/WOODS						
B	0-2%	= 0.00 x 0.11	0.15	=	0.00	0.00
B	2-6%	= 2.78 x 0.16	0.21	=	0.44	0.58
B	+6%	= 1.69 x 0.20	0.26	=	0.34	0.44
MEADOW/LAWN						
C	0-2%	= 0.00 x 0.23	0.28	=	0.00	0.00
C	2-6%	= 1.85 x 0.28	0.34	=	0.52	0.63
C	+6%	= 0.00 x 0.32	0.39	=	0.00	0.00
GRAVEL						
C	0-2%	= 0.00 x 0.35	0.42	=	0.00	0.00
C	2-6%	= 0.04 x 0.39	0.46	=	0.02	0.02
C	+6%	= 0.34 x 0.43	0.50	=	0.15	0.17
FOREST/WOODS						
C	0-2%	= 0.00 x 0.20	0.25	=	0.00	0.00
C	2-6%	= 1.73 x 0.25	0.31	=	0.43	0.54
C	+6%	= 0.26 x 0.29	0.36	=	0.08	0.09
CULTIVATED						
B	0-2%	= 0.00 x 0.24	0.30	=	0.00	0.00
B	2-6%	= 27.43 x 0.29	0.36	=	7.95	9.87
B	+6%	= 0.28 x 0.33	0.40	=	0.09	0.11
CULTIVATED						
C	0-2%	= 0.00 x 0.30	0.36	=	0.00	0.00
C	2-6%	= 0.40 x 0.34	0.41	=	0.14	0.16
C	+6%	= 0.00 x 0.38	0.45	=	0.00	0.00
TOTAL =		44.36			11.95	14.83
		C_w	=		0.27	0.33

**Rational Formula Hydrograph
Publication 584 Intensity Calculation**

2 Year Storm at Pre-Project GCR Culvert (Bypass CDs)
 Time of Concentration: 58 min.
 Drainage Area: 62.9400 acres.
 Weighted 'C' Factor: 0.3400
 Map X Coordinate=9375
 Map Y Coordinate=3750



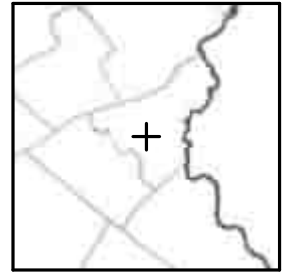
Project Location

Time (min)	Rainfall Incr. (inches)	Rainfall Total (inches)	Rainfall Intensity (in/hr)	Flow (cfs)
0.000	0.000	0.000	0.000	0.000
0.967	1.312	1.312	0.127	2.727
1.933	0.248	1.560	0.156	3.336
2.900	0.144	1.704	1.358	29.051
3.867	0.151	1.855	0.256	5.485
4.833	0.138	1.993	0.149	3.186
5.800	0.123	2.116	0.143	3.059
6.767	0.109	2.225	0.113	2.421
7.733	0.097	2.323	0.101	2.155
8.700	0.087	2.410	0.090	1.929
9.667	0.078	2.488	0.081	1.737
10.633	0.071	2.559	0.074	1.574
11.600	0.065	2.624	0.067	1.435
12.567	0.059	2.684	0.061	1.316
13.533	0.055	2.739	0.057	1.214
14.500	0.051	2.789	0.053	1.125
15.467	0.047	2.837	0.049	1.049
16.433	0.044	2.881	0.046	0.982
17.400	0.042	2.923	0.043	0.924
18.367	0.039	2.962	0.041	0.873
19.333	0.037	3.000	0.039	0.829
20.300	0.036	3.035	0.037	0.789
21.267	0.034	3.069	0.035	0.755
22.233	0.033	3.102	0.034	0.724
23.200	0.031	3.134	0.033	0.697
24.167	0.030	3.164	0.031	0.673

Publication 584 Intensity Calculation

**Rational Formula Hydrograph
Publication 584 Intensity Calculation**

10 Year Storm at Pre-Project GCR Culvert (Bypass CDs)
Time of Concentration: 58 min.
Drainage Area: 62.9400 acres.
Weighted 'C' Factor: 0.3400
Map X Coordinate=9375
Map Y Coordinate=3750



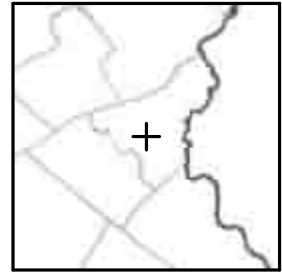
Project Location

Time (min)	Rainfall Incr. (inches)	Rainfall Total (inches)	Rainfall Intensity (in/hr)	Flow (cfs)
0.000	0.000	0.000	0.000	0.000
0.967	1.883	1.883	0.191	4.091
1.933	0.384	2.267	0.241	5.166
2.900	0.219	2.485	1.948	41.685
3.867	0.233	2.718	0.397	8.490
4.833	0.211	2.930	0.226	4.838
5.800	0.185	3.114	0.218	4.675
6.767	0.161	3.275	0.166	3.561
7.733	0.141	3.416	0.145	3.110
8.700	0.124	3.539	0.128	2.735
9.667	0.109	3.649	0.113	2.424
10.633	0.098	3.747	0.101	2.167
11.600	0.088	3.835	0.091	1.954
12.567	0.080	3.915	0.083	1.777
13.533	0.074	3.989	0.076	1.630
14.500	0.068	4.057	0.070	1.507
15.467	0.063	4.120	0.066	1.405
16.433	0.060	4.180	0.062	1.319
17.400	0.056	4.236	0.058	1.247
18.367	0.054	4.290	0.055	1.187
19.333	0.051	4.341	0.053	1.137
20.300	0.049	4.391	0.051	1.095
21.267	0.048	4.439	0.050	1.060
22.233	0.047	4.485	0.048	1.032
23.200	0.046	4.531	0.047	1.008
24.167	0.045	4.576	0.046	0.990

Publication 584 Intensity Calculation

**Rational Formula Hydrograph
Publication 584 Intensity Calculation**

25 Year Storm at Pre-Project GCR Culvert (Bypass CDs)
 Time of Concentration: 58 min.
 Drainage Area: 62.9400 acres.
 Weighted 'C' Factor: 0.4100
 Map X Coordinate=9375
 Map Y Coordinate=3750



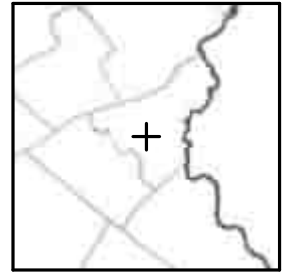
Project Location

Time (min)	Rainfall Incr. (inches)	Rainfall Total (inches)	Rainfall Intensity (in/hr)	Flow (cfs)
0.000	0.000	0.000	0.000	0.000
0.967	2.209	2.209	0.239	6.162
1.933	0.492	2.701	0.295	7.610
2.900	0.279	2.980	2.285	58.960
3.867	0.285	3.265	0.509	13.147
4.833	0.260	3.524	0.288	7.436
5.800	0.231	3.755	0.269	6.934
6.767	0.204	3.960	0.211	5.453
7.733	0.181	4.141	0.187	4.835
8.700	0.161	4.302	0.167	4.306
9.667	0.144	4.446	0.149	3.854
10.633	0.130	4.576	0.134	3.467
11.600	0.117	4.694	0.121	3.135
12.567	0.107	4.800	0.110	2.850
13.533	0.097	4.898	0.101	2.602
14.500	0.089	4.987	0.093	2.387
15.467	0.082	5.070	0.085	2.200
16.433	0.076	5.146	0.079	2.036
17.400	0.071	5.217	0.073	1.891
18.367	0.066	5.283	0.068	1.764
19.333	0.062	5.345	0.064	1.652
20.300	0.058	5.403	0.060	1.552
21.267	0.055	5.458	0.057	1.463
22.233	0.052	5.510	0.054	1.384
23.200	0.049	5.559	0.051	1.314
24.167	0.047	5.606	0.048	1.250

Publication 584 Intensity Calculation

**Rational Formula Hydrograph
Publication 584 Intensity Calculation**

50 Year Storm at Pre-Project GCR Culvert (Bypass CDs)
 Time of Concentration: 58 min.
 Drainage Area: 62.9400 acres.
 Weighted 'C' Factor: 0.4100
 Map X Coordinate=9375
 Map Y Coordinate=3750



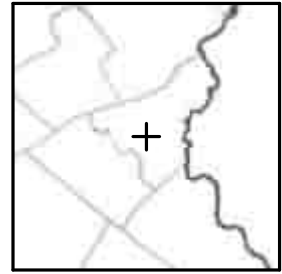
Project Location

Time (min)	Incr. (inches)	Rainfall Total (inches)	Rainfall Intensity (in/hr)	Flow (cfs)
0.000	0.000	0.000	0.000	0.000
0.967	2.499	2.499	0.267	6.894
1.933	0.576	3.074	0.353	9.118
2.900	0.342	3.416	2.585	66.701
3.867	0.319	3.735	0.595	15.363
4.833	0.287	4.022	0.330	8.524
5.800	0.258	4.280	0.297	7.660
6.767	0.233	4.514	0.241	6.229
7.733	0.212	4.725	0.219	5.651
8.700	0.193	4.918	0.199	5.145
9.667	0.176	5.094	0.182	4.698
10.633	0.161	5.255	0.167	4.302
11.600	0.148	5.403	0.153	3.947
12.567	0.136	5.539	0.141	3.628
13.533	0.125	5.664	0.129	3.339
14.500	0.115	5.779	0.119	3.076
15.467	0.106	5.885	0.110	2.837
16.433	0.098	5.983	0.101	2.618
17.400	0.091	6.074	0.094	2.416
18.367	0.084	6.158	0.086	2.231
19.333	0.077	6.235	0.080	2.059
20.300	0.071	6.306	0.074	1.901
21.267	0.066	6.372	0.068	1.754
22.233	0.061	6.432	0.063	1.617
23.200	0.056	6.488	0.058	1.489
24.167	0.051	6.539	0.053	1.370

Publication 584 Intensity Calculation

**Rational Formula Hydrograph
Publication 584 Intensity Calculation**

100 Year Storm at Pre-Project GCR Culvert (Bypass CDs)
 Time of Concentration: 58 min.
 Drainage Area: 62.9400 acres.
 Weighted 'C' Factor: 0.4100
 Map X Coordinate=9375
 Map Y Coordinate=3750



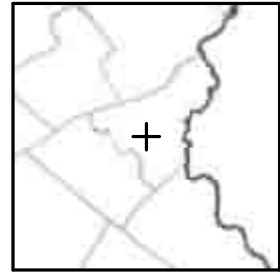
Project Location

Time (min)	Rainfall Incr. (inches)	Rainfall Total (inches)	Rainfall Intensity (in/hr)	Flow (cfs)
0.000	0.000	0.000	0.000	0.000
0.967	2.771	2.771	0.284	7.341
1.933	0.773	3.544	0.415	10.703
2.900	0.401	3.944	2.867	73.972
3.867	0.323	4.267	0.799	20.623
4.833	0.293	4.561	0.334	8.613
5.800	0.275	4.835	0.304	7.834
6.767	0.260	5.095	0.269	6.932
7.733	0.245	5.341	0.254	6.551
8.700	0.232	5.572	0.240	6.182
9.667	0.218	5.790	0.226	5.820
10.633	0.205	5.995	0.212	5.464
11.600	0.192	6.186	0.198	5.115
12.567	0.179	6.365	0.185	4.774
13.533	0.166	6.532	0.172	4.441
14.500	0.154	6.686	0.160	4.117
15.467	0.142	6.828	0.147	3.803
16.433	0.131	6.959	0.136	3.498
17.400	0.120	7.079	0.124	3.204
18.367	0.109	7.189	0.113	2.921
19.333	0.099	7.288	0.103	2.648
20.300	0.089	7.377	0.092	2.385
21.267	0.080	7.457	0.083	2.133
22.233	0.071	7.528	0.073	1.892
23.200	0.062	7.590	0.064	1.660
24.167	0.054	7.644	0.056	1.439

Publication 584 Intensity Calculation

**Rational Formula Hydrograph
Publication 584 Intensity Calculation**

2 Year Storm at Pre-Project to CD1
 Time of Concentration: 58 min.
 Drainage Area: 3.6000 acres.
 Weighted 'C' Factor: 0.2800
 Map X Coordinate=9375
 Map Y Coordinate=3750



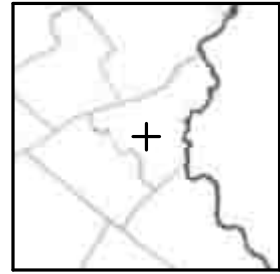
Project Location

Time (min)	Rainfall Incr. (inches)	Rainfall Total (inches)	Rainfall Intensity (in/hr)	Flow (cfs)
0.000	0.000	0.000	0.000	0.000
0.967	1.312	1.312	0.127	0.128
1.933	0.248	1.560	0.156	0.157
2.900	0.144	1.704	1.358	1.368
3.867	0.151	1.855	0.256	0.258
4.833	0.138	1.993	0.149	0.150
5.800	0.123	2.116	0.143	0.144
6.767	0.109	2.225	0.113	0.114
7.733	0.097	2.323	0.101	0.102
8.700	0.087	2.410	0.090	0.091
9.667	0.078	2.488	0.081	0.082
10.633	0.071	2.559	0.074	0.074
11.600	0.065	2.624	0.067	0.068
12.567	0.059	2.684	0.061	0.062
13.533	0.055	2.739	0.057	0.057
14.500	0.051	2.789	0.053	0.053
15.467	0.047	2.837	0.049	0.049
16.433	0.044	2.881	0.046	0.046
17.400	0.042	2.923	0.043	0.044
18.367	0.039	2.962	0.041	0.041
19.333	0.037	3.000	0.039	0.039
20.300	0.036	3.035	0.037	0.037
21.267	0.034	3.069	0.035	0.036
22.233	0.033	3.102	0.034	0.034
23.200	0.031	3.134	0.033	0.033
24.167	0.030	3.164	0.031	0.032

Publication 584 Intensity Calculation

**Rational Formula Hydrograph
Publication 584 Intensity Calculation**

10 Year Storm at Pre-Project to CD1
 Time of Concentration: 58 min.
 Drainage Area: 3.6000 acres.
 Weighted 'C' Factor: 0.2800
 Map X Coordinate=9375
 Map Y Coordinate=3750



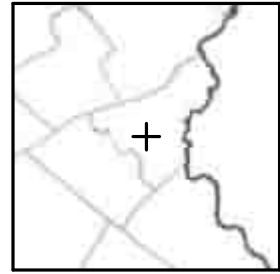
Project Location

Time (min)	Rainfall Incr. (inches)	Rainfall Total (inches)	Rainfall Intensity (in/hr)	Flow (cfs)
0.000	0.000	0.000	0.000	0.000
0.967	1.883	1.883	0.191	0.193
1.933	0.384	2.267	0.241	0.243
2.900	0.219	2.485	1.948	1.964
3.867	0.233	2.718	0.397	0.400
4.833	0.211	2.930	0.226	0.228
5.800	0.185	3.114	0.218	0.220
6.767	0.161	3.275	0.166	0.168
7.733	0.141	3.416	0.145	0.147
8.700	0.124	3.539	0.128	0.129
9.667	0.109	3.649	0.113	0.114
10.633	0.098	3.747	0.101	0.102
11.600	0.088	3.835	0.091	0.092
12.567	0.080	3.915	0.083	0.084
13.533	0.074	3.989	0.076	0.077
14.500	0.068	4.057	0.070	0.071
15.467	0.063	4.120	0.066	0.066
16.433	0.060	4.180	0.062	0.062
17.400	0.056	4.236	0.058	0.059
18.367	0.054	4.290	0.055	0.056
19.333	0.051	4.341	0.053	0.054
20.300	0.049	4.391	0.051	0.052
21.267	0.048	4.439	0.050	0.050
22.233	0.047	4.485	0.048	0.049
23.200	0.046	4.531	0.047	0.047
24.167	0.045	4.576	0.046	0.047

Publication 584 Intensity Calculation

**Rational Formula Hydrograph
Publication 584 Intensity Calculation**

25 Year Storm at Pre-Project to CD1
 Time of Concentration: 58 min.
 Drainage Area: 3.6000 acres.
 Weighted 'C' Factor: 0.3500
 Map X Coordinate=9375
 Map Y Coordinate=3750



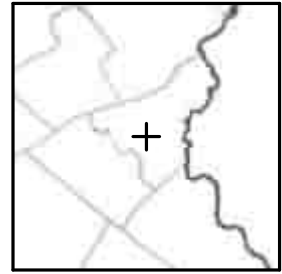
Project Location

Time (min)	Incr. (inches)	Total (inches)	Rainfall Intensity (in/hr)	Flow (cfs)
0.000	0.000	0.000	0.000	0.000
0.967	2.209	2.209	0.239	0.301
1.933	0.492	2.701	0.295	0.372
2.900	0.279	2.980	2.285	2.879
3.867	0.285	3.265	0.509	0.642
4.833	0.260	3.524	0.288	0.363
5.800	0.231	3.755	0.269	0.339
6.767	0.204	3.960	0.211	0.266
7.733	0.181	4.141	0.187	0.236
8.700	0.161	4.302	0.167	0.210
9.667	0.144	4.446	0.149	0.188
10.633	0.130	4.576	0.134	0.169
11.600	0.117	4.694	0.121	0.153
12.567	0.107	4.800	0.110	0.139
13.533	0.097	4.898	0.101	0.127
14.500	0.089	4.987	0.093	0.117
15.467	0.082	5.070	0.085	0.107
16.433	0.076	5.146	0.079	0.099
17.400	0.071	5.217	0.073	0.092
18.367	0.066	5.283	0.068	0.086
19.333	0.062	5.345	0.064	0.081
20.300	0.058	5.403	0.060	0.076
21.267	0.055	5.458	0.057	0.071
22.233	0.052	5.510	0.054	0.068
23.200	0.049	5.559	0.051	0.064
24.167	0.047	5.606	0.048	0.061

Publication 584 Intensity Calculation

**Rational Formula Hydrograph
Publication 584 Intensity Calculation**

50 Year Storm at Pre-Project to CD1
 Time of Concentration: 58 min.
 Drainage Area: 3.6000 acres.
 Weighted 'C' Factor: 0.3500
 Map X Coordinate=9375
 Map Y Coordinate=3750



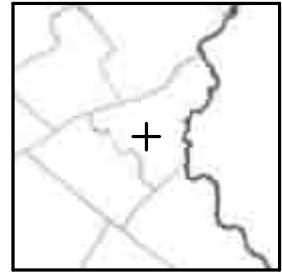
Project Location

Time (min)	Incr. (inches)	Total (inches)	Rainfall Intensity (in/hr)	Flow (cfs)
0.000	0.000	0.000	0.000	0.000
0.967	2.499	2.499	0.267	0.337
1.933	0.576	3.074	0.353	0.445
2.900	0.342	3.416	2.585	3.257
3.867	0.319	3.735	0.595	0.750
4.833	0.287	4.022	0.330	0.416
5.800	0.258	4.280	0.297	0.374
6.767	0.233	4.514	0.241	0.304
7.733	0.212	4.725	0.219	0.276
8.700	0.193	4.918	0.199	0.251
9.667	0.176	5.094	0.182	0.229
10.633	0.161	5.255	0.167	0.210
11.600	0.148	5.403	0.153	0.193
12.567	0.136	5.539	0.141	0.177
13.533	0.125	5.664	0.129	0.163
14.500	0.115	5.779	0.119	0.150
15.467	0.106	5.885	0.110	0.139
16.433	0.098	5.983	0.101	0.128
17.400	0.091	6.074	0.094	0.118
18.367	0.084	6.158	0.086	0.109
19.333	0.077	6.235	0.080	0.101
20.300	0.071	6.306	0.074	0.093
21.267	0.066	6.372	0.068	0.086
22.233	0.061	6.432	0.063	0.079
23.200	0.056	6.488	0.058	0.073
24.167	0.051	6.539	0.053	0.067

Publication 584 Intensity Calculation

**Rational Formula Hydrograph
Publication 584 Intensity Calculation**

100 Year Storm at Pre-Project to CD1
 Time of Concentration: 58 min.
 Drainage Area: 3.6000 acres.
 Weighted 'C' Factor: 0.3500
 Map X Coordinate=9375
 Map Y Coordinate=3750



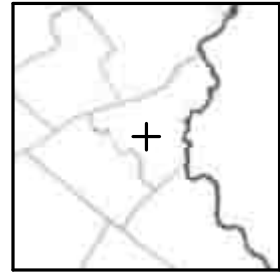
Project Location

Time (min)	Incr. (inches)	Total (inches)	Rainfall Intensity (in/hr)	Flow (cfs)
0.000	0.000	0.000	0.000	0.000
0.967	2.771	2.771	0.284	0.358
1.933	0.773	3.544	0.415	0.523
2.900	0.401	3.944	2.867	3.612
3.867	0.323	4.267	0.799	1.007
4.833	0.293	4.561	0.334	0.421
5.800	0.275	4.835	0.304	0.382
6.767	0.260	5.095	0.269	0.338
7.733	0.245	5.341	0.254	0.320
8.700	0.232	5.572	0.240	0.302
9.667	0.218	5.790	0.226	0.284
10.633	0.205	5.995	0.212	0.267
11.600	0.192	6.186	0.198	0.250
12.567	0.179	6.365	0.185	0.233
13.533	0.166	6.532	0.172	0.217
14.500	0.154	6.686	0.160	0.201
15.467	0.142	6.828	0.147	0.186
16.433	0.131	6.959	0.136	0.171
17.400	0.120	7.079	0.124	0.156
18.367	0.109	7.189	0.113	0.143
19.333	0.099	7.288	0.103	0.129
20.300	0.089	7.377	0.092	0.116
21.267	0.080	7.457	0.083	0.104
22.233	0.071	7.528	0.073	0.092
23.200	0.062	7.590	0.064	0.081
24.167	0.054	7.644	0.056	0.070

Publication 584 Intensity Calculation

**Rational Formula Hydrograph
Publication 584 Intensity Calculation**

2 Year Storm at Pre-Project to CD2
 Time of Concentration: 58 min.
 Drainage Area: 2.6900 acres.
 Weighted 'C' Factor: 0.2800
 Map X Coordinate=9375
 Map Y Coordinate=3750



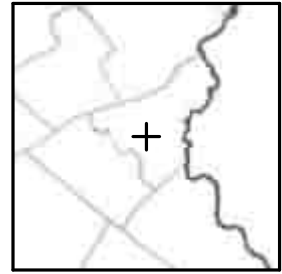
Project Location

Time (min)	Rainfall Incr. (inches)	Rainfall Total (inches)	Rainfall Intensity (in/hr)	Flow (cfs)
0.000	0.000	0.000	0.000	0.000
0.967	1.312	1.312	0.127	0.096
1.933	0.248	1.560	0.156	0.117
2.900	0.144	1.704	1.358	1.022
3.867	0.151	1.855	0.256	0.193
4.833	0.138	1.993	0.149	0.112
5.800	0.123	2.116	0.143	0.108
6.767	0.109	2.225	0.113	0.085
7.733	0.097	2.323	0.101	0.076
8.700	0.087	2.410	0.090	0.068
9.667	0.078	2.488	0.081	0.061
10.633	0.071	2.559	0.074	0.055
11.600	0.065	2.624	0.067	0.051
12.567	0.059	2.684	0.061	0.046
13.533	0.055	2.739	0.057	0.043
14.500	0.051	2.789	0.053	0.040
15.467	0.047	2.837	0.049	0.037
16.433	0.044	2.881	0.046	0.035
17.400	0.042	2.923	0.043	0.033
18.367	0.039	2.962	0.041	0.031
19.333	0.037	3.000	0.039	0.029
20.300	0.036	3.035	0.037	0.028
21.267	0.034	3.069	0.035	0.027
22.233	0.033	3.102	0.034	0.025
23.200	0.031	3.134	0.033	0.025
24.167	0.030	3.164	0.031	0.024

Publication 584 Intensity Calculation

**Rational Formula Hydrograph
Publication 584 Intensity Calculation**

10 Year Storm at Pre-Project to CD2
 Time of Concentration: 58 min.
 Drainage Area: 2.6900 acres.
 Weighted 'C' Factor: 0.2800
 Map X Coordinate=9375
 Map Y Coordinate=3750



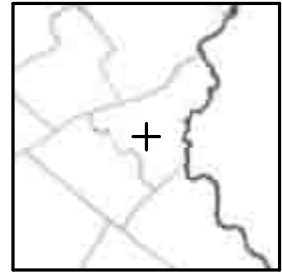
Project Location

Time (min)	Incr. (inches)	Rainfall Total (inches)	Rainfall Intensity (in/hr)	Flow (cfs)
0.000	0.000	0.000	0.000	0.000
0.967	1.883	1.883	0.191	0.144
1.933	0.384	2.267	0.241	0.182
2.900	0.219	2.485	1.948	1.467
3.867	0.233	2.718	0.397	0.299
4.833	0.211	2.930	0.226	0.170
5.800	0.185	3.114	0.218	0.165
6.767	0.161	3.275	0.166	0.125
7.733	0.141	3.416	0.145	0.109
8.700	0.124	3.539	0.128	0.096
9.667	0.109	3.649	0.113	0.085
10.633	0.098	3.747	0.101	0.076
11.600	0.088	3.835	0.091	0.069
12.567	0.080	3.915	0.083	0.063
13.533	0.074	3.989	0.076	0.057
14.500	0.068	4.057	0.070	0.053
15.467	0.063	4.120	0.066	0.049
16.433	0.060	4.180	0.062	0.046
17.400	0.056	4.236	0.058	0.044
18.367	0.054	4.290	0.055	0.042
19.333	0.051	4.341	0.053	0.040
20.300	0.049	4.391	0.051	0.039
21.267	0.048	4.439	0.050	0.037
22.233	0.047	4.485	0.048	0.036
23.200	0.046	4.531	0.047	0.035
24.167	0.045	4.576	0.046	0.035

Publication 584 Intensity Calculation

**Rational Formula Hydrograph
Publication 584 Intensity Calculation**

25 Year Storm at Pre-Project to CD2
 Time of Concentration: 58 min.
 Drainage Area: 2.6900 acres.
 Weighted 'C' Factor: 0.3500
 Map X Coordinate=9375
 Map Y Coordinate=3750



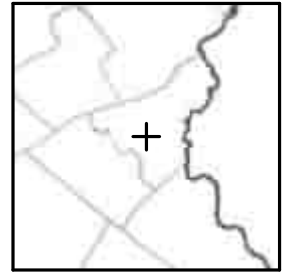
Project Location

Time (min)	Incr. (inches)	Rainfall Total (inches)	Rainfall Intensity (in/hr)	Flow (cfs)
0.000	0.000	0.000	0.000	0.000
0.967	2.209	2.209	0.239	0.225
1.933	0.492	2.701	0.295	0.278
2.900	0.279	2.980	2.285	2.151
3.867	0.285	3.265	0.509	0.480
4.833	0.260	3.524	0.288	0.271
5.800	0.231	3.755	0.269	0.253
6.767	0.204	3.960	0.211	0.199
7.733	0.181	4.141	0.187	0.176
8.700	0.161	4.302	0.167	0.157
9.667	0.144	4.446	0.149	0.141
10.633	0.130	4.576	0.134	0.126
11.600	0.117	4.694	0.121	0.114
12.567	0.107	4.800	0.110	0.104
13.533	0.097	4.898	0.101	0.095
14.500	0.089	4.987	0.093	0.087
15.467	0.082	5.070	0.085	0.080
16.433	0.076	5.146	0.079	0.074
17.400	0.071	5.217	0.073	0.069
18.367	0.066	5.283	0.068	0.064
19.333	0.062	5.345	0.064	0.060
20.300	0.058	5.403	0.060	0.057
21.267	0.055	5.458	0.057	0.053
22.233	0.052	5.510	0.054	0.051
23.200	0.049	5.559	0.051	0.048
24.167	0.047	5.606	0.048	0.046

Publication 584 Intensity Calculation

**Rational Formula Hydrograph
Publication 584 Intensity Calculation**

50 Year Storm at Pre-Project to CD2
 Time of Concentration: 58 min.
 Drainage Area: 2.6900 acres.
 Weighted 'C' Factor: 0.3500
 Map X Coordinate=9375
 Map Y Coordinate=3750



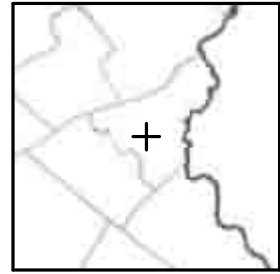
Project Location

Time (min)	Incr. (inches)	Total (inches)	Rainfall Intensity (in/hr)	Flow (cfs)
0.000	0.000	0.000	0.000	0.000
0.967	2.499	2.499	0.267	0.252
1.933	0.576	3.074	0.353	0.333
2.900	0.342	3.416	2.585	2.434
3.867	0.319	3.735	0.595	0.561
4.833	0.287	4.022	0.330	0.311
5.800	0.258	4.280	0.297	0.279
6.767	0.233	4.514	0.241	0.227
7.733	0.212	4.725	0.219	0.206
8.700	0.193	4.918	0.199	0.188
9.667	0.176	5.094	0.182	0.171
10.633	0.161	5.255	0.167	0.157
11.600	0.148	5.403	0.153	0.144
12.567	0.136	5.539	0.141	0.132
13.533	0.125	5.664	0.129	0.122
14.500	0.115	5.779	0.119	0.112
15.467	0.106	5.885	0.110	0.104
16.433	0.098	5.983	0.101	0.096
17.400	0.091	6.074	0.094	0.088
18.367	0.084	6.158	0.086	0.081
19.333	0.077	6.235	0.080	0.075
20.300	0.071	6.306	0.074	0.069
21.267	0.066	6.372	0.068	0.064
22.233	0.061	6.432	0.063	0.059
23.200	0.056	6.488	0.058	0.054
24.167	0.051	6.539	0.053	0.050

Publication 584 Intensity Calculation

**Rational Formula Hydrograph
Publication 584 Intensity Calculation**

100 Year Storm at Pre-Project to CD2
 Time of Concentration: 58 min.
 Drainage Area: 2.6900 acres.
 Weighted 'C' Factor: 0.3500
 Map X Coordinate=9375
 Map Y Coordinate=3750



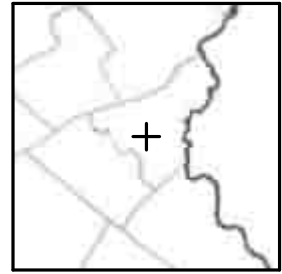
Project Location

Time (min)	Incr. (inches)	Total (inches)	Rainfall Intensity (in/hr)	Flow (cfs)
0.000	0.000	0.000	0.000	0.000
0.967	2.771	2.771	0.284	0.268
1.933	0.773	3.544	0.415	0.390
2.900	0.401	3.944	2.867	2.699
3.867	0.323	4.267	0.799	0.752
4.833	0.293	4.561	0.334	0.314
5.800	0.275	4.835	0.304	0.286
6.767	0.260	5.095	0.269	0.253
7.733	0.245	5.341	0.254	0.239
8.700	0.232	5.572	0.240	0.226
9.667	0.218	5.790	0.226	0.212
10.633	0.205	5.995	0.212	0.199
11.600	0.192	6.186	0.198	0.187
12.567	0.179	6.365	0.185	0.174
13.533	0.166	6.532	0.172	0.162
14.500	0.154	6.686	0.160	0.150
15.467	0.142	6.828	0.147	0.139
16.433	0.131	6.959	0.136	0.128
17.400	0.120	7.079	0.124	0.117
18.367	0.109	7.189	0.113	0.107
19.333	0.099	7.288	0.103	0.097
20.300	0.089	7.377	0.092	0.087
21.267	0.080	7.457	0.083	0.078
22.233	0.071	7.528	0.073	0.069
23.200	0.062	7.590	0.064	0.061
24.167	0.054	7.644	0.056	0.053

Publication 584 Intensity Calculation

**Rational Formula Hydrograph
Publication 584 Intensity Calculation**

2 Year Storm at Pre-Project to 72in Pipe
 Time of Concentration: 58 min.
 Drainage Area: 44.3600 acres.
 Weighted 'C' Factor: 0.2700
 Map X Coordinate=9375
 Map Y Coordinate=3750



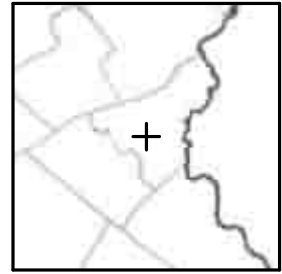
Project Location

Time (min)	Incr. (inches)	Rainfall Total (inches)	Rainfall Intensity (in/hr)	Flow (cfs)
0.000	0.000	0.000	0.000	0.000
0.967	1.312	1.312	0.127	1.526
1.933	0.248	1.560	0.156	1.867
2.900	0.144	1.704	1.358	16.259
3.867	0.151	1.855	0.256	3.070
4.833	0.138	1.993	0.149	1.783
5.800	0.123	2.116	0.143	1.712
6.767	0.109	2.225	0.113	1.355
7.733	0.097	2.323	0.101	1.206
8.700	0.087	2.410	0.090	1.080
9.667	0.078	2.488	0.081	0.972
10.633	0.071	2.559	0.074	0.881
11.600	0.065	2.624	0.067	0.803
12.567	0.059	2.684	0.061	0.736
13.533	0.055	2.739	0.057	0.679
14.500	0.051	2.789	0.053	0.630
15.467	0.047	2.837	0.049	0.587
16.433	0.044	2.881	0.046	0.550
17.400	0.042	2.923	0.043	0.517
18.367	0.039	2.962	0.041	0.489
19.333	0.037	3.000	0.039	0.464
20.300	0.036	3.035	0.037	0.442
21.267	0.034	3.069	0.035	0.422
22.233	0.033	3.102	0.034	0.405
23.200	0.031	3.134	0.033	0.390
24.167	0.030	3.164	0.031	0.377

Publication 584 Intensity Calculation

**Rational Formula Hydrograph
Publication 584 Intensity Calculation**

10 Year Storm at Pre-Project to 72in Pipe
 Time of Concentration: 58 min.
 Drainage Area: 44.3600 acres.
 Weighted 'C' Factor: 0.2700
 Map X Coordinate=9375
 Map Y Coordinate=3750



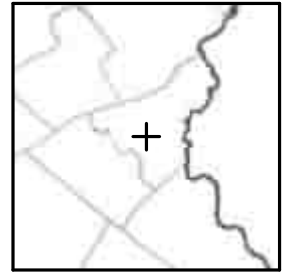
Project Location

Time (min)	Incr. (inches)	Rainfall Total (inches)	Rainfall Intensity (in/hr)	Flow (cfs)
0.000	0.000	0.000	0.000	0.000
0.967	1.883	1.883	0.191	2.290
1.933	0.384	2.267	0.241	2.892
2.900	0.219	2.485	1.948	23.331
3.867	0.233	2.718	0.397	4.752
4.833	0.211	2.930	0.226	2.708
5.800	0.185	3.114	0.218	2.616
6.767	0.161	3.275	0.166	1.993
7.733	0.141	3.416	0.145	1.741
8.700	0.124	3.539	0.128	1.531
9.667	0.109	3.649	0.113	1.357
10.633	0.098	3.747	0.101	1.213
11.600	0.088	3.835	0.091	1.094
12.567	0.080	3.915	0.083	0.995
13.533	0.074	3.989	0.076	0.912
14.500	0.068	4.057	0.070	0.844
15.467	0.063	4.120	0.066	0.786
16.433	0.060	4.180	0.062	0.738
17.400	0.056	4.236	0.058	0.698
18.367	0.054	4.290	0.055	0.664
19.333	0.051	4.341	0.053	0.636
20.300	0.049	4.391	0.051	0.613
21.267	0.048	4.439	0.050	0.593
22.233	0.047	4.485	0.048	0.577
23.200	0.046	4.531	0.047	0.564
24.167	0.045	4.576	0.046	0.554

Publication 584 Intensity Calculation

**Rational Formula Hydrograph
Publication 584 Intensity Calculation**

25 Year Storm at Pre-Project to 72in Pipe
 Time of Concentration: 58 min.
 Drainage Area: 44.3600 acres.
 Weighted 'C' Factor: 0.3300
 Map X Coordinate=9375
 Map Y Coordinate=3750



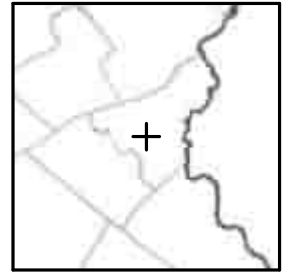
Project Location

Time (min)	Incr. (inches)	Rainfall Total (inches)	Rainfall Intensity (in/hr)	Flow (cfs)
0.000	0.000	0.000	0.000	0.000
0.967	2.209	2.209	0.239	3.496
1.933	0.492	2.701	0.295	4.317
2.900	0.279	2.980	2.285	33.446
3.867	0.285	3.265	0.509	7.458
4.833	0.260	3.524	0.288	4.218
5.800	0.231	3.755	0.269	3.933
6.767	0.204	3.960	0.211	3.093
7.733	0.181	4.141	0.187	2.743
8.700	0.161	4.302	0.167	2.443
9.667	0.144	4.446	0.149	2.186
10.633	0.130	4.576	0.134	1.967
11.600	0.117	4.694	0.121	1.779
12.567	0.107	4.800	0.110	1.616
13.533	0.097	4.898	0.101	1.476
14.500	0.089	4.987	0.093	1.354
15.467	0.082	5.070	0.085	1.248
16.433	0.076	5.146	0.079	1.155
17.400	0.071	5.217	0.073	1.073
18.367	0.066	5.283	0.068	1.001
19.333	0.062	5.345	0.064	0.937
20.300	0.058	5.403	0.060	0.880
21.267	0.055	5.458	0.057	0.830
22.233	0.052	5.510	0.054	0.785
23.200	0.049	5.559	0.051	0.745
24.167	0.047	5.606	0.048	0.709

Publication 584 Intensity Calculation

**Rational Formula Hydrograph
Publication 584 Intensity Calculation**

50 Year Storm at Pre-Project to 72in Pipe
 Time of Concentration: 58 min.
 Drainage Area: 44.3600 acres.
 Weighted 'C' Factor: 0.3300
 Map X Coordinate=9375
 Map Y Coordinate=3750



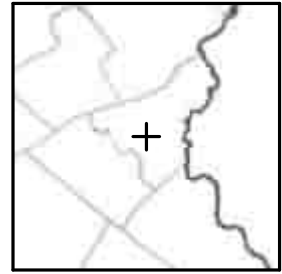
Project Location

Time (min)	Incr. (inches)	Total (inches)	Rainfall Intensity (in/hr)	Flow (cfs)
0.000	0.000	0.000	0.000	0.000
0.967	2.499	2.499	0.267	3.911
1.933	0.576	3.074	0.353	5.173
2.900	0.342	3.416	2.585	37.838
3.867	0.319	3.735	0.595	8.715
4.833	0.287	4.022	0.330	4.835
5.800	0.258	4.280	0.297	4.346
6.767	0.233	4.514	0.241	3.533
7.733	0.212	4.725	0.219	3.206
8.700	0.193	4.918	0.199	2.919
9.667	0.176	5.094	0.182	2.665
10.633	0.161	5.255	0.167	2.440
11.600	0.148	5.403	0.153	2.239
12.567	0.136	5.539	0.141	2.058
13.533	0.125	5.664	0.129	1.894
14.500	0.115	5.779	0.119	1.745
15.467	0.106	5.885	0.110	1.609
16.433	0.098	5.983	0.101	1.485
17.400	0.091	6.074	0.094	1.371
18.367	0.084	6.158	0.086	1.265
19.333	0.077	6.235	0.080	1.168
20.300	0.071	6.306	0.074	1.078
21.267	0.066	6.372	0.068	0.995
22.233	0.061	6.432	0.063	0.917
23.200	0.056	6.488	0.058	0.845
24.167	0.051	6.539	0.053	0.777

Publication 584 Intensity Calculation

**Rational Formula Hydrograph
Publication 584 Intensity Calculation**

100 Year Storm at Pre-Project to 72in Pipe
 Time of Concentration: 58 min.
 Drainage Area: 44.3600 acres.
 Weighted 'C' Factor: 0.3300
 Map X Coordinate=9375
 Map Y Coordinate=3750



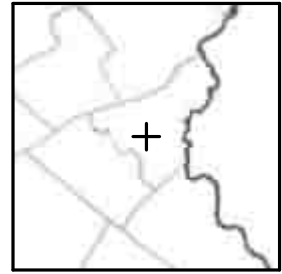
Project Location

Time (min)	Incr. (inches)	Rainfall Total (inches)	Rainfall Intensity (in/hr)	Flow (cfs)
0.000	0.000	0.000	0.000	0.000
0.967	2.771	2.771	0.284	4.164
1.933	0.773	3.544	0.415	6.071
2.900	0.401	3.944	2.867	41.962
3.867	0.323	4.267	0.799	11.699
4.833	0.293	4.561	0.334	4.886
5.800	0.275	4.835	0.304	4.444
6.767	0.260	5.095	0.269	3.932
7.733	0.245	5.341	0.254	3.716
8.700	0.232	5.572	0.240	3.507
9.667	0.218	5.790	0.226	3.301
10.633	0.205	5.995	0.212	3.100
11.600	0.192	6.186	0.198	2.902
12.567	0.179	6.365	0.185	2.708
13.533	0.166	6.532	0.172	2.519
14.500	0.154	6.686	0.160	2.336
15.467	0.142	6.828	0.147	2.157
16.433	0.131	6.959	0.136	1.985
17.400	0.120	7.079	0.124	1.818
18.367	0.109	7.189	0.113	1.657
19.333	0.099	7.288	0.103	1.502
20.300	0.089	7.377	0.092	1.353
21.267	0.080	7.457	0.083	1.210
22.233	0.071	7.528	0.073	1.073
23.200	0.062	7.590	0.064	0.942
24.167	0.054	7.644	0.056	0.816

Publication 584 Intensity Calculation

**Rational Formula Hydrograph
Publication 584 Intensity Calculation**

2 Year Storm at Pre-Project - Gun Club Road (Bypass GCR Culvert)
 Time of Concentration: 58 min.
 Drainage Area: 8.6500 acres.
 Weighted 'C' Factor: 0.4800
 Map X Coordinate=9375
 Map Y Coordinate=3750



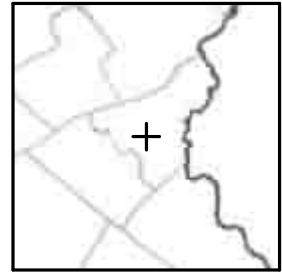
Project Location

Time (min)	Incr. (inches)	Rainfall Total (inches)	Rainfall Intensity (in/hr)	Flow (cfs)
0.000	0.000	0.000	0.000	0.000
0.967	1.312	1.312	0.127	0.529
1.933	0.248	1.560	0.156	0.647
2.900	0.144	1.704	1.358	5.636
3.867	0.151	1.855	0.256	1.064
4.833	0.138	1.993	0.149	0.618
5.800	0.123	2.116	0.143	0.593
6.767	0.109	2.225	0.113	0.470
7.733	0.097	2.323	0.101	0.418
8.700	0.087	2.410	0.090	0.374
9.667	0.078	2.488	0.081	0.337
10.633	0.071	2.559	0.074	0.305
11.600	0.065	2.624	0.067	0.278
12.567	0.059	2.684	0.061	0.255
13.533	0.055	2.739	0.057	0.235
14.500	0.051	2.789	0.053	0.218
15.467	0.047	2.837	0.049	0.203
16.433	0.044	2.881	0.046	0.191
17.400	0.042	2.923	0.043	0.179
18.367	0.039	2.962	0.041	0.169
19.333	0.037	3.000	0.039	0.161
20.300	0.036	3.035	0.037	0.153
21.267	0.034	3.069	0.035	0.146
22.233	0.033	3.102	0.034	0.141
23.200	0.031	3.134	0.033	0.135
24.167	0.030	3.164	0.031	0.131

Publication 584 Intensity Calculation

**Rational Formula Hydrograph
Publication 584 Intensity Calculation**

10 Year Storm at Pre-Project - Gun Club Road (Bypass GCR Culvert)
 Time of Concentration: 58 min.
 Drainage Area: 8.6500 acres.
 Weighted 'C' Factor: 0.4800
 Map X Coordinate=9375
 Map Y Coordinate=3750



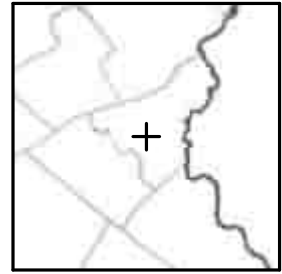
Project Location

Time (min)	Rainfall Incr. (inches)	Rainfall Total (inches)	Rainfall Intensity (in/hr)	Flow (cfs)
0.000	0.000	0.000	0.000	0.000
0.967	1.883	1.883	0.191	0.794
1.933	0.384	2.267	0.241	1.002
2.900	0.219	2.485	1.948	8.088
3.867	0.233	2.718	0.397	1.647
4.833	0.211	2.930	0.226	0.939
5.800	0.185	3.114	0.218	0.907
6.767	0.161	3.275	0.166	0.691
7.733	0.141	3.416	0.145	0.603
8.700	0.124	3.539	0.128	0.531
9.667	0.109	3.649	0.113	0.470
10.633	0.098	3.747	0.101	0.420
11.600	0.088	3.835	0.091	0.379
12.567	0.080	3.915	0.083	0.345
13.533	0.074	3.989	0.076	0.316
14.500	0.068	4.057	0.070	0.292
15.467	0.063	4.120	0.066	0.273
16.433	0.060	4.180	0.062	0.256
17.400	0.056	4.236	0.058	0.242
18.367	0.054	4.290	0.055	0.230
19.333	0.051	4.341	0.053	0.221
20.300	0.049	4.391	0.051	0.212
21.267	0.048	4.439	0.050	0.206
22.233	0.047	4.485	0.048	0.200
23.200	0.046	4.531	0.047	0.196
24.167	0.045	4.576	0.046	0.192

Publication 584 Intensity Calculation

**Rational Formula Hydrograph
Publication 584 Intensity Calculation**

25 Year Storm at Pre-Project - Gun Club Road (Bypass GCR Culvert)
 Time of Concentration: 58 min.
 Drainage Area: 8.6500 acres.
 Weighted 'C' Factor: 0.5500
 Map X Coordinate=9375
 Map Y Coordinate=3750



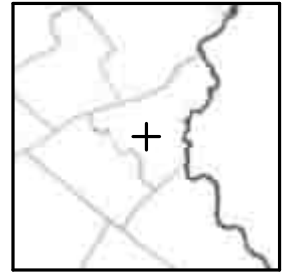
Project Location

Time (min)	Incr. (inches)	Total (inches)	Rainfall Intensity (in/hr)	Flow (cfs)
0.000	0.000	0.000	0.000	0.000
0.967	2.209	2.209	0.239	1.136
1.933	0.492	2.701	0.295	1.403
2.900	0.279	2.980	2.285	10.870
3.867	0.285	3.265	0.509	2.424
4.833	0.260	3.524	0.288	1.371
5.800	0.231	3.755	0.269	1.278
6.767	0.204	3.960	0.211	1.005
7.733	0.181	4.141	0.187	0.891
8.700	0.161	4.302	0.167	0.794
9.667	0.144	4.446	0.149	0.710
10.633	0.130	4.576	0.134	0.639
11.600	0.117	4.694	0.121	0.578
12.567	0.107	4.800	0.110	0.525
13.533	0.097	4.898	0.101	0.480
14.500	0.089	4.987	0.093	0.440
15.467	0.082	5.070	0.085	0.406
16.433	0.076	5.146	0.079	0.375
17.400	0.071	5.217	0.073	0.349
18.367	0.066	5.283	0.068	0.325
19.333	0.062	5.345	0.064	0.305
20.300	0.058	5.403	0.060	0.286
21.267	0.055	5.458	0.057	0.270
22.233	0.052	5.510	0.054	0.255
23.200	0.049	5.559	0.051	0.242
24.167	0.047	5.606	0.048	0.231

Publication 584 Intensity Calculation

**Rational Formula Hydrograph
Publication 584 Intensity Calculation**

50 Year Storm at Pre-Project - Gun Club Road (Bypass GCR Culvert)
 Time of Concentration: 58 min.
 Drainage Area: 8.6500 acres.
 Weighted 'C' Factor: 0.5500
 Map X Coordinate=9375
 Map Y Coordinate=3750



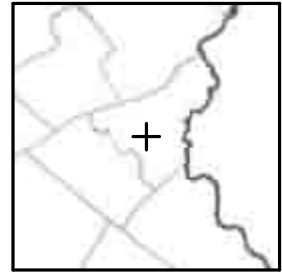
Project Location

Time (min)	Incr. (inches)	Total (inches)	Rainfall Intensity (in/hr)	Flow (cfs)
0.000	0.000	0.000	0.000	0.000
0.967	2.499	2.499	0.267	1.271
1.933	0.576	3.074	0.353	1.681
2.900	0.342	3.416	2.585	12.297
3.867	0.319	3.735	0.595	2.832
4.833	0.287	4.022	0.330	1.571
5.800	0.258	4.280	0.297	1.412
6.767	0.233	4.514	0.241	1.148
7.733	0.212	4.725	0.219	1.042
8.700	0.193	4.918	0.199	0.948
9.667	0.176	5.094	0.182	0.866
10.633	0.161	5.255	0.167	0.793
11.600	0.148	5.403	0.153	0.728
12.567	0.136	5.539	0.141	0.669
13.533	0.125	5.664	0.129	0.616
14.500	0.115	5.779	0.119	0.567
15.467	0.106	5.885	0.110	0.523
16.433	0.098	5.983	0.101	0.483
17.400	0.091	6.074	0.094	0.445
18.367	0.084	6.158	0.086	0.411
19.333	0.077	6.235	0.080	0.380
20.300	0.071	6.306	0.074	0.350
21.267	0.066	6.372	0.068	0.323
22.233	0.061	6.432	0.063	0.298
23.200	0.056	6.488	0.058	0.275
24.167	0.051	6.539	0.053	0.253

Publication 584 Intensity Calculation

**Rational Formula Hydrograph
Publication 584 Intensity Calculation**

100 Year Storm at Pre-Project - Gun Club Road (Bypass GCR Culvert)
 Time of Concentration: 58 min.
 Drainage Area: 8.6500 acres.
 Weighted 'C' Factor: 0.5500
 Map X Coordinate=9375
 Map Y Coordinate=3750



Project Location

Time (min)	Rainfall Incr. (inches)	Rainfall Total (inches)	Rainfall Intensity (in/hr)	Flow (cfs)
0.000	0.000	0.000	0.000	0.000
0.967	2.771	2.771	0.284	1.353
1.933	0.773	3.544	0.415	1.973
2.900	0.401	3.944	2.867	13.637
3.867	0.323	4.267	0.799	3.802
4.833	0.293	4.561	0.334	1.588
5.800	0.275	4.835	0.304	1.444
6.767	0.260	5.095	0.269	1.278
7.733	0.245	5.341	0.254	1.208
8.700	0.232	5.572	0.240	1.140
9.667	0.218	5.790	0.226	1.073
10.633	0.205	5.995	0.212	1.007
11.600	0.192	6.186	0.198	0.943
12.567	0.179	6.365	0.185	0.880
13.533	0.166	6.532	0.172	0.819
14.500	0.154	6.686	0.160	0.759
15.467	0.142	6.828	0.147	0.701
16.433	0.131	6.959	0.136	0.645
17.400	0.120	7.079	0.124	0.591
18.367	0.109	7.189	0.113	0.538
19.333	0.099	7.288	0.103	0.488
20.300	0.089	7.377	0.092	0.440
21.267	0.080	7.457	0.083	0.393
22.233	0.071	7.528	0.073	0.349
23.200	0.062	7.590	0.064	0.306
24.167	0.054	7.644	0.056	0.265

Publication 584 Intensity Calculation

**CASE 1: PRE-PROJECT ANALYSIS
CLOSED DEPRESSION 1 (CD1) ROUTING**

Basin Storage/Elevation Input

Elevation (ft)	Area (acres)	Storage (acre-ft)
434.0	0.65	0.000
434.5	1.14	0.448
434.6	1.29	0.570
435.0	1.63	1.154

Project Files:

Outlet Structure Configuration: C:\Users\ngalio\OneDrive - Maser Consulting\Desktop\Working Files\VTPSUHM\PRE w Depression\CD1.OSC

Discharge/Elevation Curve: C:\Users\ngalio\OneDrive - Maser Consulting\Desktop\Working Files\VTPSUHM\PRE w Depression\CD1.EO

Outlet Structure Configuration

Stage 1: Emergency Spillway

Crest Elevation = 434.6 feet

Crest Length = 75 feet

Discharge Coefficient = 3

Basin Rating Curve

Basin Water Elevation	Basin Outflow (cfs)	Riser Box Water Elevation	Tailwater Elevation (ft)	Outfall Culvert Control	Outfall Culvert Override?
434.00	0.00	N/A	N/A	N/A	N/A
434.01	0.00	N/A	N/A	N/A	N/A
434.02	0.00	N/A	N/A	N/A	N/A
434.03	0.00	N/A	N/A	N/A	N/A
434.04	0.00	N/A	N/A	N/A	N/A
434.05	0.00	N/A	N/A	N/A	N/A
434.06	0.00	N/A	N/A	N/A	N/A
434.07	0.00	N/A	N/A	N/A	N/A
434.08	0.00	N/A	N/A	N/A	N/A
434.09	0.00	N/A	N/A	N/A	N/A
434.10	0.00	N/A	N/A	N/A	N/A
434.11	0.00	N/A	N/A	N/A	N/A
434.12	0.00	N/A	N/A	N/A	N/A
434.13	0.00	N/A	N/A	N/A	N/A
434.14	0.00	N/A	N/A	N/A	N/A
434.15	0.00	N/A	N/A	N/A	N/A
434.16	0.00	N/A	N/A	N/A	N/A
434.17	0.00	N/A	N/A	N/A	N/A
434.18	0.00	N/A	N/A	N/A	N/A
434.19	0.00	N/A	N/A	N/A	N/A
434.20	0.00	N/A	N/A	N/A	N/A
434.21	0.00	N/A	N/A	N/A	N/A
434.22	0.00	N/A	N/A	N/A	N/A
434.23	0.00	N/A	N/A	N/A	N/A
434.24	0.00	N/A	N/A	N/A	N/A
434.25	0.00	N/A	N/A	N/A	N/A
434.26	0.00	N/A	N/A	N/A	N/A
434.27	0.00	N/A	N/A	N/A	N/A
434.28	0.00	N/A	N/A	N/A	N/A
434.29	0.00	N/A	N/A	N/A	N/A
434.30	0.00	N/A	N/A	N/A	N/A
434.31	0.00	N/A	N/A	N/A	N/A
434.32	0.00	N/A	N/A	N/A	N/A
434.33	0.00	N/A	N/A	N/A	N/A
434.34	0.00	N/A	N/A	N/A	N/A
434.35	0.00	N/A	N/A	N/A	N/A
434.36	0.00	N/A	N/A	N/A	N/A
434.37	0.00	N/A	N/A	N/A	N/A
434.38	0.00	N/A	N/A	N/A	N/A
434.39	0.00	N/A	N/A	N/A	N/A
434.40	0.00	N/A	N/A	N/A	N/A
434.41	0.00	N/A	N/A	N/A	N/A
434.42	0.00	N/A	N/A	N/A	N/A
434.43	0.00	N/A	N/A	N/A	N/A
434.44	0.00	N/A	N/A	N/A	N/A
434.45	0.00	N/A	N/A	N/A	N/A
434.46	0.00	N/A	N/A	N/A	N/A

Basin Water Elevation	Basin Outflow (cfs)	Riser Box Water Elevation	Tailwater Elevation (ft)	Outfall Culvert Control	Outfall Culvert Override?
434.47	0.00	N/A	N/A	N/A	N/A
434.48	0.00	N/A	N/A	N/A	N/A
434.49	0.00	N/A	N/A	N/A	N/A
434.50	0.00	N/A	N/A	N/A	N/A
434.51	0.00	N/A	N/A	N/A	N/A
434.52	0.00	N/A	N/A	N/A	N/A
434.53	0.00	N/A	N/A	N/A	N/A
434.54	0.00	N/A	N/A	N/A	N/A
434.55	0.00	N/A	N/A	N/A	N/A
434.56	0.00	N/A	N/A	N/A	N/A
434.57	0.00	N/A	N/A	N/A	N/A
434.58	0.00	N/A	N/A	N/A	N/A
434.59	0.00	N/A	N/A	N/A	N/A
434.60	0.00	N/A	N/A	N/A	N/A
434.61	0.23	N/A	N/A	N/A	N/A
434.62	0.64	N/A	N/A	N/A	N/A
434.63	1.17	N/A	N/A	N/A	N/A
434.64	1.80	N/A	N/A	N/A	N/A
434.65	2.52	N/A	N/A	N/A	N/A
434.66	3.31	N/A	N/A	N/A	N/A
434.67	4.17	N/A	N/A	N/A	N/A
434.68	5.09	N/A	N/A	N/A	N/A
434.69	6.08	N/A	N/A	N/A	N/A
434.70	7.12	N/A	N/A	N/A	N/A
434.71	8.21	N/A	N/A	N/A	N/A
434.72	9.35	N/A	N/A	N/A	N/A
434.73	10.55	N/A	N/A	N/A	N/A
434.74	11.79	N/A	N/A	N/A	N/A
434.75	13.07	N/A	N/A	N/A	N/A
434.76	14.40	N/A	N/A	N/A	N/A
434.77	15.77	N/A	N/A	N/A	N/A
434.78	17.18	N/A	N/A	N/A	N/A
434.79	18.63	N/A	N/A	N/A	N/A
434.80	20.12	N/A	N/A	N/A	N/A
434.81	21.65	N/A	N/A	N/A	N/A
434.82	23.22	N/A	N/A	N/A	N/A
434.83	24.82	N/A	N/A	N/A	N/A
434.84	26.45	N/A	N/A	N/A	N/A
434.85	28.13	N/A	N/A	N/A	N/A
434.86	29.83	N/A	N/A	N/A	N/A
434.87	31.57	N/A	N/A	N/A	N/A
434.88	33.34	N/A	N/A	N/A	N/A
434.89	35.14	N/A	N/A	N/A	N/A
434.90	36.97	N/A	N/A	N/A	N/A
434.91	38.84	N/A	N/A	N/A	N/A
434.92	40.73	N/A	N/A	N/A	N/A
434.93	42.65	N/A	N/A	N/A	N/A
434.94	44.61	N/A	N/A	N/A	N/A
434.95	46.59	N/A	N/A	N/A	N/A
434.96	48.60	N/A	N/A	N/A	N/A
434.97	50.64	N/A	N/A	N/A	N/A
434.98	52.71	N/A	N/A	N/A	N/A
434.99	54.80	N/A	N/A	N/A	N/A
435.00	56.92	N/A	N/A	N/A	N/A
435.01	59.07	N/A	N/A	N/A	N/A

**Modified Puls Routing
Summary of Results**

Inflow Hydrograph: D:\Working Files\VTPSUHM\PRE w Depression\DA TO CD1-2 Year Storm.HYD
Storage/Elevation Curve: D:\Working Files\VTPSUHM\PRE w Depression\CD1 Storage.ES

Basin Bypass Capacity = 0.00 cfs
Starting Pool Elevation = 434.00 feet
Time Interval = 0.242 hours
Total number of Inflow points = 102

	Event Time (hours)	Hydrograph Inflow (cfs)	Basin Inflow (cfs)	Storage Used (acre-ft)	Elevation Above MSL (feet)	Basin Outflow (cfs)	Outflow Total (cfs)
Start	0.00	0.00	0.00	0.0000	434.00	0.00	0.00
Max. Inflow	2.90	1.37	1.37	0.0774	434.09	0.00	0.00
Max. Outflow	24.41	0.00	0.00	0.2629	434.29	0.00	0.00
Final	24.41	0.00	0.00	0.2629	434.29	0.00	0.00

Modified Puls Routing

Inflow Hydrograph: D:\Working Files\VTSPUHM\PRE w Depression\DA TO CD1-2 Year Storm.HYD
 Storage/Elevation Curve: D:\Working Files\VTSPUHM\PRE w Depression\CD1 Storage.ES

Basin Bypass Capacity = 0.00 cfs
 Starting Pool Elevation = 434.00 feet
 Time Interval = 0.242 hours

Event Time (hours)	Hydrograph Inflow (cfs)	Basin Inflow (cfs)	Storage Used (acre-ft)	Elevation Above MSL (feet)	Basin Outflow (cfs)	Outflow Total (cfs)
0.00	0.00	0.00	0.0000	434.00	0.00	0.00
0.24	0.03	0.03	0.0003	434.00	0.00	0.00
0.48	0.06	0.06	0.0013	434.00	0.00	0.00
0.73	0.10	0.10	0.0029	434.00	0.00	0.00
0.97	0.13	0.13	0.0051	434.01	0.00	0.00
1.21	0.14	0.14	0.0077	434.01	0.00	0.00
1.45	0.14	0.14	0.0105	434.01	0.00	0.00
1.69	0.15	0.15	0.0134	434.02	0.00	0.00
1.93	0.16	0.16	0.0165	434.02	0.00	0.00
2.18	0.46	0.46	0.0227	434.03	0.00	0.00
2.42	0.76	0.76	0.0349	434.04	0.00	0.00
2.66	1.07	1.07	0.0531	434.06	0.00	0.00
2.90	1.37	1.37	0.0774	434.09	0.00	0.00
3.14	1.09	1.09	0.1020	434.11	0.00	0.00
3.38	0.81	0.81	0.1210	434.14	0.00	0.00
3.63	0.54	0.54	0.1345	434.15	0.00	0.00
3.87	0.26	0.26	0.1424	434.16	0.00	0.00
4.11	0.23	0.23	0.1473	434.16	0.00	0.00
4.35	0.20	0.20	0.1516	434.17	0.00	0.00
4.59	0.18	0.18	0.1554	434.17	0.00	0.00
4.83	0.15	0.15	0.1587	434.18	0.00	0.00
5.08	0.15	0.15	0.1617	434.18	0.00	0.00
5.32	0.15	0.15	0.1646	434.18	0.00	0.00
5.56	0.15	0.15	0.1676	434.19	0.00	0.00
5.80	0.14	0.14	0.1705	434.19	0.00	0.00
6.04	0.14	0.14	0.1733	434.19	0.00	0.00
6.28	0.13	0.13	0.1759	434.20	0.00	0.00
6.53	0.12	0.12	0.1784	434.20	0.00	0.00
6.77	0.11	0.11	0.1808	434.20	0.00	0.00
7.01	0.11	0.11	0.1830	434.20	0.00	0.00
7.25	0.11	0.11	0.1852	434.21	0.00	0.00
7.49	0.11	0.11	0.1874	434.21	0.00	0.00
7.73	0.10	0.10	0.1894	434.21	0.00	0.00
7.98	0.10	0.10	0.1914	434.21	0.00	0.00
8.22	0.10	0.10	0.1934	434.22	0.00	0.00
8.46	0.09	0.09	0.1953	434.22	0.00	0.00
8.70	0.09	0.09	0.1971	434.22	0.00	0.00
8.94	0.09	0.09	0.1989	434.22	0.00	0.00
9.18	0.09	0.09	0.2007	434.22	0.00	0.00
9.43	0.08	0.08	0.2024	434.23	0.00	0.00
9.67	0.08	0.08	0.2041	434.23	0.00	0.00
9.91	0.08	0.08	0.2057	434.23	0.00	0.00
10.15	0.08	0.08	0.2073	434.23	0.00	0.00
10.39	0.08	0.08	0.2088	434.23	0.00	0.00
10.63	0.07	0.07	0.2103	434.23	0.00	0.00
10.88	0.07	0.07	0.2118	434.24	0.00	0.00
11.12	0.07	0.07	0.2132	434.24	0.00	0.00
11.36	0.07	0.07	0.2146	434.24	0.00	0.00
11.60	0.07	0.07	0.2160	434.24	0.00	0.00
11.84	0.07	0.07	0.2173	434.24	0.00	0.00
12.08	0.06	0.06	0.2186	434.24	0.00	0.00
12.33	0.06	0.06	0.2199	434.25	0.00	0.00

Event Time (hours)	Hydrograph Inflow (cfs)	Basin Inflow (cfs)	Storage Used (acre-ft)	Elevation Above MSL (feet)	Basin Outflow (cfs)	Outflow Total (cfs)
12.57	0.06	0.06	0.2212	434.25	0.00	0.00
12.81	0.06	0.06	0.2224	434.25	0.00	0.00
13.05	0.06	0.06	0.2236	434.25	0.00	0.00
13.29	0.06	0.06	0.2248	434.25	0.00	0.00
13.53	0.06	0.06	0.2260	434.25	0.00	0.00
13.78	0.06	0.06	0.2271	434.25	0.00	0.00
14.02	0.05	0.05	0.2282	434.25	0.00	0.00
14.26	0.05	0.05	0.2293	434.26	0.00	0.00
14.50	0.05	0.05	0.2304	434.26	0.00	0.00
14.74	0.05	0.05	0.2314	434.26	0.00	0.00
14.98	0.05	0.05	0.2324	434.26	0.00	0.00
15.23	0.05	0.05	0.2334	434.26	0.00	0.00
15.47	0.05	0.05	0.2344	434.26	0.00	0.00
15.71	0.05	0.05	0.2354	434.26	0.00	0.00
15.95	0.05	0.05	0.2364	434.26	0.00	0.00
16.19	0.05	0.05	0.2373	434.26	0.00	0.00
16.43	0.05	0.05	0.2382	434.27	0.00	0.00
16.68	0.05	0.05	0.2392	434.27	0.00	0.00
16.92	0.05	0.05	0.2401	434.27	0.00	0.00
17.16	0.04	0.04	0.2410	434.27	0.00	0.00
17.40	0.04	0.04	0.2418	434.27	0.00	0.00
17.64	0.04	0.04	0.2427	434.27	0.00	0.00
17.88	0.04	0.04	0.2436	434.27	0.00	0.00
18.13	0.04	0.04	0.2444	434.27	0.00	0.00
18.37	0.04	0.04	0.2453	434.27	0.00	0.00
18.61	0.04	0.04	0.2461	434.27	0.00	0.00
18.85	0.04	0.04	0.2469	434.28	0.00	0.00
19.09	0.04	0.04	0.2477	434.28	0.00	0.00
19.33	0.04	0.04	0.2485	434.28	0.00	0.00
19.58	0.04	0.04	0.2492	434.28	0.00	0.00
19.82	0.04	0.04	0.2500	434.28	0.00	0.00
20.06	0.04	0.04	0.2508	434.28	0.00	0.00
20.30	0.04	0.04	0.2515	434.28	0.00	0.00
20.54	0.04	0.04	0.2523	434.28	0.00	0.00
20.78	0.04	0.04	0.2530	434.28	0.00	0.00
21.03	0.04	0.04	0.2537	434.28	0.00	0.00
21.27	0.04	0.04	0.2544	434.28	0.00	0.00
21.51	0.04	0.04	0.2552	434.28	0.00	0.00
21.75	0.04	0.04	0.2559	434.29	0.00	0.00
21.99	0.03	0.03	0.2566	434.29	0.00	0.00
22.23	0.03	0.03	0.2573	434.29	0.00	0.00
22.48	0.03	0.03	0.2579	434.29	0.00	0.00
22.72	0.03	0.03	0.2586	434.29	0.00	0.00
22.96	0.03	0.03	0.2593	434.29	0.00	0.00
23.20	0.03	0.03	0.2600	434.29	0.00	0.00
23.44	0.03	0.03	0.2606	434.29	0.00	0.00
23.68	0.03	0.03	0.2613	434.29	0.00	0.00
23.93	0.03	0.03	0.2619	434.29	0.00	0.00
24.17	0.03	0.03	0.2626	434.29	0.00	0.00
24.41	0.00	0.00	0.2629	434.29	0.00	0.00

**Modified Puls Routing
Summary of Results**

Inflow Hydrograph: D:\Working Files\VTPSUHM\PRE w Depression\DA TO CD1-10 Year Storm.HYD
Storage/Elevation Curve: D:\Working Files\VTPSUHM\PRE w Depression\CD1 Storage.ES

Basin Bypass Capacity = 0.00 cfs
Starting Pool Elevation = 434.00 feet
Time Interval = 0.242 hours
Total number of Inflow points = 102

	Event Time (hours)	Hydrograph Inflow (cfs)	Basin Inflow (cfs)	Storage Used (acre-ft)	Elevation Above MSL (feet)	Basin Outflow (cfs)	Outflow Total (cfs)
Start	0.00	0.00	0.00	0.0000	434.00	0.00	0.00
Max. Inflow	2.90	1.96	1.96	0.1133	434.13	0.00	0.00
Max. Outflow	24.41	0.00	0.00	0.3802	434.42	0.00	0.00
Final	24.41	0.00	0.00	0.3802	434.42	0.00	0.00

Modified Puls Routing

Inflow Hydrograph: D:\Working Files\VTSPUHMPRE w Depression\DA TO CD1-10 Year Storm.HYD
 Storage/Elevation Curve: D:\Working Files\VTSPUHMPRE w Depression\CD1 Storage.ES

Basin Bypass Capacity = 0.00 cfs
 Starting Pool Elevation = 434.00 feet
 Time Interval = 0.242 hours

Event Time (hours)	Hydrograph Inflow (cfs)	Basin Inflow (cfs)	Storage Used (acre-ft)	Elevation Above MSL (feet)	Basin Outflow (cfs)	Outflow Total (cfs)
0.00	0.00	0.00	0.0000	434.00	0.00	0.00
0.24	0.05	0.05	0.0005	434.00	0.00	0.00
0.48	0.10	0.10	0.0019	434.00	0.00	0.00
0.73	0.15	0.15	0.0043	434.00	0.00	0.00
0.97	0.19	0.19	0.0077	434.01	0.00	0.00
1.21	0.21	0.21	0.0117	434.01	0.00	0.00
1.45	0.22	0.22	0.0159	434.02	0.00	0.00
1.69	0.23	0.23	0.0204	434.02	0.00	0.00
1.93	0.24	0.24	0.0252	434.03	0.00	0.00
2.18	0.67	0.67	0.0343	434.04	0.00	0.00
2.42	1.10	1.10	0.0520	434.06	0.00	0.00
2.66	1.53	1.53	0.0784	434.09	0.00	0.00
2.90	1.96	1.96	0.1133	434.13	0.00	0.00
3.14	1.57	1.57	0.1486	434.17	0.00	0.00
3.38	1.18	1.18	0.1762	434.20	0.00	0.00
3.63	0.79	0.79	0.1959	434.22	0.00	0.00
3.87	0.40	0.40	0.2078	434.23	0.00	0.00
4.11	0.36	0.36	0.2153	434.24	0.00	0.00
4.35	0.31	0.31	0.2220	434.25	0.00	0.00
4.59	0.27	0.27	0.2279	434.25	0.00	0.00
4.83	0.23	0.23	0.2328	434.26	0.00	0.00
5.08	0.23	0.23	0.2374	434.26	0.00	0.00
5.32	0.22	0.22	0.2419	434.27	0.00	0.00
5.56	0.22	0.22	0.2463	434.27	0.00	0.00
5.80	0.22	0.22	0.2507	434.28	0.00	0.00
6.04	0.21	0.21	0.2550	434.28	0.00	0.00
6.28	0.19	0.19	0.2590	434.29	0.00	0.00
6.53	0.18	0.18	0.2627	434.29	0.00	0.00
6.77	0.17	0.17	0.2662	434.30	0.00	0.00
7.01	0.16	0.16	0.2695	434.30	0.00	0.00
7.25	0.16	0.16	0.2727	434.30	0.00	0.00
7.49	0.15	0.15	0.2758	434.31	0.00	0.00
7.73	0.15	0.15	0.2788	434.31	0.00	0.00
7.98	0.14	0.14	0.2817	434.31	0.00	0.00
8.22	0.14	0.14	0.2845	434.32	0.00	0.00
8.46	0.13	0.13	0.2872	434.32	0.00	0.00
8.70	0.13	0.13	0.2899	434.32	0.00	0.00
8.94	0.13	0.13	0.2924	434.33	0.00	0.00
9.18	0.12	0.12	0.2949	434.33	0.00	0.00
9.43	0.12	0.12	0.2973	434.33	0.00	0.00
9.67	0.11	0.11	0.2996	434.33	0.00	0.00
9.91	0.11	0.11	0.3018	434.34	0.00	0.00
10.15	0.11	0.11	0.3040	434.34	0.00	0.00
10.39	0.11	0.11	0.3061	434.34	0.00	0.00
10.63	0.10	0.10	0.3082	434.34	0.00	0.00
10.88	0.10	0.10	0.3102	434.35	0.00	0.00
11.12	0.10	0.10	0.3122	434.35	0.00	0.00
11.36	0.09	0.09	0.3141	434.35	0.00	0.00
11.60	0.09	0.09	0.3160	434.35	0.00	0.00
11.84	0.09	0.09	0.3178	434.35	0.00	0.00
12.08	0.09	0.09	0.3196	434.36	0.00	0.00
12.33	0.09	0.09	0.3213	434.36	0.00	0.00

Event Time (hours)	Hydrograph Inflow (cfs)	Basin Inflow (cfs)	Storage Used (acre-ft)	Elevation Above MSL (feet)	Basin Outflow (cfs)	Outflow Total (cfs)
12.57	0.08	0.08	0.3230	434.36	0.00	0.00
12.81	0.08	0.08	0.3247	434.36	0.00	0.00
13.05	0.08	0.08	0.3263	434.36	0.00	0.00
13.29	0.08	0.08	0.3279	434.37	0.00	0.00
13.53	0.08	0.08	0.3295	434.37	0.00	0.00
13.78	0.08	0.08	0.3310	434.37	0.00	0.00
14.02	0.07	0.07	0.3325	434.37	0.00	0.00
14.26	0.07	0.07	0.3339	434.37	0.00	0.00
14.50	0.07	0.07	0.3354	434.37	0.00	0.00
14.74	0.07	0.07	0.3368	434.38	0.00	0.00
14.98	0.07	0.07	0.3382	434.38	0.00	0.00
15.23	0.07	0.07	0.3395	434.38	0.00	0.00
15.47	0.07	0.07	0.3409	434.38	0.00	0.00
15.71	0.06	0.06	0.3422	434.38	0.00	0.00
15.95	0.06	0.06	0.3435	434.38	0.00	0.00
16.19	0.06	0.06	0.3447	434.38	0.00	0.00
16.43	0.06	0.06	0.3460	434.39	0.00	0.00
16.68	0.06	0.06	0.3472	434.39	0.00	0.00
16.92	0.06	0.06	0.3484	434.39	0.00	0.00
17.16	0.06	0.06	0.3496	434.39	0.00	0.00
17.40	0.06	0.06	0.3508	434.39	0.00	0.00
17.64	0.06	0.06	0.3520	434.39	0.00	0.00
17.88	0.06	0.06	0.3532	434.39	0.00	0.00
18.13	0.06	0.06	0.3543	434.40	0.00	0.00
18.37	0.06	0.06	0.3554	434.40	0.00	0.00
18.61	0.06	0.06	0.3565	434.40	0.00	0.00
18.85	0.06	0.06	0.3577	434.40	0.00	0.00
19.09	0.05	0.05	0.3588	434.40	0.00	0.00
19.33	0.05	0.05	0.3598	434.40	0.00	0.00
19.58	0.05	0.05	0.3609	434.40	0.00	0.00
19.82	0.05	0.05	0.3620	434.40	0.00	0.00
20.06	0.05	0.05	0.3630	434.41	0.00	0.00
20.30	0.05	0.05	0.3641	434.41	0.00	0.00
20.54	0.05	0.05	0.3651	434.41	0.00	0.00
20.78	0.05	0.05	0.3662	434.41	0.00	0.00
21.03	0.05	0.05	0.3672	434.41	0.00	0.00
21.27	0.05	0.05	0.3682	434.41	0.00	0.00
21.51	0.05	0.05	0.3692	434.41	0.00	0.00
21.75	0.05	0.05	0.3702	434.41	0.00	0.00
21.99	0.05	0.05	0.3712	434.41	0.00	0.00
22.23	0.05	0.05	0.3722	434.42	0.00	0.00
22.48	0.05	0.05	0.3731	434.42	0.00	0.00
22.72	0.05	0.05	0.3741	434.42	0.00	0.00
22.96	0.05	0.05	0.3751	434.42	0.00	0.00
23.20	0.05	0.05	0.3760	434.42	0.00	0.00
23.44	0.05	0.05	0.3770	434.42	0.00	0.00
23.68	0.05	0.05	0.3779	434.42	0.00	0.00
23.93	0.05	0.05	0.3788	434.42	0.00	0.00
24.17	0.05	0.05	0.3798	434.42	0.00	0.00
24.41	0.00	0.00	0.3802	434.42	0.00	0.00

**Modified Puls Routing
Summary of Results**

Inflow Hydrograph: D:\Working Files\VTPSUHM\PRE w Depression\DA TO CD1-25 Year Storm.HYD
Storage/Elevation Curve: D:\Working Files\VTPSUHM\PRE w Depression\CD1 Storage.ES

Basin Bypass Capacity = 0.00 cfs
Starting Pool Elevation = 434.00 feet
Time Interval = 0.242 hours
Total number of Inflow points = 102

	Event Time (hours)	Hydrograph Inflow (cfs)	Basin Inflow (cfs)	Storage Used (acre-ft)	Elevation Above MSL (feet)	Basin Outflow (cfs)	Outflow Total (cfs)
Start	0.00	0.00	0.00	0.0000	434.00	0.00	0.00
Max. Inflow	2.90	2.88	2.88	0.1688	434.19	0.00	0.00
Max. Outflow	24.17	0.06	0.06	0.5738	434.60	0.06	0.06
Max. Elev.	24.41	0.00	0.00	0.5733	434.60	0.05	0.05
Final	24.41	0.00	0.00	0.5733	434.60	0.05	0.05

Modified Puls Routing

Inflow Hydrograph: D:\Working Files\VTSPUHM\PRE w Depression\DA TO CD1-25 Year Storm.HYD
 Storage/Elevation Curve: D:\Working Files\VTSPUHM\PRE w Depression\CD1 Storage.ES

Basin Bypass Capacity = 0.00 cfs
 Starting Pool Elevation = 434.00 feet
 Time Interval = 0.242 hours

Event Time (hours)	Hydrograph Inflow (cfs)	Basin Inflow (cfs)	Storage Used (acre-ft)	Elevation Above MSL (feet)	Basin Outflow (cfs)	Outflow Total (cfs)
0.00	0.00	0.00	0.0000	434.00	0.00	0.00
0.24	0.08	0.08	0.0007	434.00	0.00	0.00
0.48	0.15	0.15	0.0030	434.00	0.00	0.00
0.73	0.23	0.23	0.0068	434.01	0.00	0.00
0.97	0.30	0.30	0.0120	434.01	0.00	0.00
1.21	0.32	0.32	0.0182	434.02	0.00	0.00
1.45	0.34	0.34	0.0248	434.03	0.00	0.00
1.69	0.35	0.35	0.0317	434.04	0.00	0.00
1.93	0.37	0.37	0.0389	434.04	0.00	0.00
2.18	1.00	1.00	0.0526	434.06	0.00	0.00
2.42	1.63	1.63	0.0788	434.09	0.00	0.00
2.66	2.25	2.25	0.1176	434.13	0.00	0.00
2.90	2.88	2.88	0.1688	434.19	0.00	0.00
3.14	2.32	2.32	0.2207	434.25	0.00	0.00
3.38	1.76	1.76	0.2615	434.29	0.00	0.00
3.63	1.20	1.20	0.2910	434.32	0.00	0.00
3.87	0.64	0.64	0.3095	434.35	0.00	0.00
4.11	0.57	0.57	0.3216	434.36	0.00	0.00
4.35	0.50	0.50	0.3323	434.37	0.00	0.00
4.59	0.43	0.43	0.3416	434.38	0.00	0.00
4.83	0.36	0.36	0.3496	434.39	0.00	0.00
5.08	0.36	0.36	0.3568	434.40	0.00	0.00
5.32	0.35	0.35	0.3638	434.41	0.00	0.00
5.56	0.35	0.35	0.3708	434.41	0.00	0.00
5.80	0.34	0.34	0.3776	434.42	0.00	0.00
6.04	0.32	0.32	0.3842	434.43	0.00	0.00
6.28	0.30	0.30	0.3904	434.44	0.00	0.00
6.53	0.28	0.28	0.3963	434.44	0.00	0.00
6.77	0.27	0.27	0.4018	434.45	0.00	0.00
7.01	0.26	0.26	0.4070	434.45	0.00	0.00
7.25	0.25	0.25	0.4121	434.46	0.00	0.00
7.49	0.24	0.24	0.4170	434.47	0.00	0.00
7.73	0.24	0.24	0.4218	434.47	0.00	0.00
7.98	0.23	0.23	0.4265	434.48	0.00	0.00
8.22	0.22	0.22	0.4310	434.48	0.00	0.00
8.46	0.22	0.22	0.4354	434.49	0.00	0.00
8.70	0.21	0.21	0.4396	434.49	0.00	0.00
8.94	0.20	0.20	0.4437	434.50	0.00	0.00
9.18	0.20	0.20	0.4478	434.50	0.00	0.00
9.43	0.19	0.19	0.4517	434.50	0.00	0.00
9.67	0.19	0.19	0.4555	434.51	0.00	0.00
9.91	0.18	0.18	0.4592	434.51	0.00	0.00
10.15	0.18	0.18	0.4628	434.51	0.00	0.00
10.39	0.17	0.17	0.4663	434.52	0.00	0.00
10.63	0.17	0.17	0.4697	434.52	0.00	0.00
10.88	0.17	0.17	0.4731	434.52	0.00	0.00
11.12	0.16	0.16	0.4763	434.52	0.00	0.00
11.36	0.16	0.16	0.4795	434.53	0.00	0.00
11.60	0.15	0.15	0.4826	434.53	0.00	0.00
11.84	0.15	0.15	0.4856	434.53	0.00	0.00
12.08	0.15	0.15	0.4886	434.53	0.00	0.00
12.33	0.14	0.14	0.4914	434.54	0.00	0.00

Event Time (hours)	Hydrograph Inflow (cfs)	Basin Inflow (cfs)	Storage Used (acre-ft)	Elevation Above MSL (feet)	Basin Outflow (cfs)	Outflow Total (cfs)
12.57	0.14	0.14	0.4942	434.54	0.00	0.00
12.81	0.14	0.14	0.4970	434.54	0.00	0.00
13.05	0.13	0.13	0.4997	434.54	0.00	0.00
13.29	0.13	0.13	0.5023	434.54	0.00	0.00
13.53	0.13	0.13	0.5049	434.55	0.00	0.00
13.78	0.12	0.12	0.5074	434.55	0.00	0.00
14.02	0.12	0.12	0.5098	434.55	0.00	0.00
14.26	0.12	0.12	0.5122	434.55	0.00	0.00
14.50	0.12	0.12	0.5146	434.55	0.00	0.00
14.74	0.11	0.11	0.5169	434.56	0.00	0.00
14.98	0.11	0.11	0.5192	434.56	0.00	0.00
15.23	0.11	0.11	0.5214	434.56	0.00	0.00
15.47	0.11	0.11	0.5235	434.56	0.00	0.00
15.71	0.11	0.11	0.5256	434.56	0.00	0.00
15.95	0.10	0.10	0.5277	434.57	0.00	0.00
16.19	0.10	0.10	0.5298	434.57	0.00	0.00
16.43	0.10	0.10	0.5318	434.57	0.00	0.00
16.68	0.10	0.10	0.5337	434.57	0.00	0.00
16.92	0.09	0.09	0.5356	434.57	0.00	0.00
17.16	0.09	0.09	0.5375	434.57	0.00	0.00
17.40	0.09	0.09	0.5394	434.57	0.00	0.00
17.64	0.09	0.09	0.5412	434.58	0.00	0.00
17.88	0.09	0.09	0.5430	434.58	0.00	0.00
18.13	0.09	0.09	0.5447	434.58	0.00	0.00
18.37	0.09	0.09	0.5465	434.58	0.00	0.00
18.61	0.08	0.08	0.5482	434.58	0.00	0.00
18.85	0.08	0.08	0.5499	434.58	0.00	0.00
19.09	0.08	0.08	0.5515	434.58	0.00	0.00
19.33	0.08	0.08	0.5531	434.59	0.00	0.00
19.58	0.08	0.08	0.5547	434.59	0.00	0.00
19.82	0.08	0.08	0.5563	434.59	0.00	0.00
20.06	0.08	0.08	0.5579	434.59	0.00	0.00
20.30	0.08	0.08	0.5594	434.59	0.00	0.00
20.54	0.07	0.07	0.5609	434.59	0.00	0.00
20.78	0.07	0.07	0.5624	434.59	0.00	0.00
21.03	0.07	0.07	0.5638	434.59	0.00	0.00
21.27	0.07	0.07	0.5653	434.60	0.00	0.00
21.51	0.07	0.07	0.5667	434.60	0.00	0.00
21.75	0.07	0.07	0.5680	434.60	0.00	0.00
21.99	0.07	0.07	0.5694	434.60	0.00	0.00
22.23	0.07	0.07	0.5707	434.60	0.01	0.01
22.48	0.07	0.07	0.5717	434.60	0.03	0.03
22.72	0.07	0.07	0.5724	434.60	0.04	0.04
22.96	0.06	0.06	0.5729	434.60	0.04	0.04
23.20	0.06	0.06	0.5732	434.60	0.05	0.05
23.44	0.06	0.06	0.5735	434.60	0.05	0.05
23.68	0.06	0.06	0.5736	434.60	0.06	0.06
23.93	0.06	0.06	0.5737	434.60	0.06	0.06
24.17	0.06	0.06	0.5738	434.60	0.06	0.06
24.41	0.00	0.00	0.5733	434.60	0.05	0.05

**Modified Puls Routing
Summary of Results**

Inflow Hydrograph: D:\Working Files\VTPSUHM\PRE w Depression\DA TO CD1-50 Year Storm.HYD
Storage/Elevation Curve: D:\Working Files\VTPSUHM\PRE w Depression\CD1 Storage.ES

Basin Bypass Capacity = 0.00 cfs
Starting Pool Elevation = 434.00 feet
Time Interval = 0.242 hours
Total number of Inflow points = 102

	Event Time (hours)	Hydrograph Inflow (cfs)	Basin Inflow (cfs)	Storage Used (acre-ft)	Elevation Above MSL (feet)	Basin Outflow (cfs)	Outflow Total (cfs)
Start	0.00	0.00	0.00	0.0000	434.00	0.00	0.00
Max. Inflow	2.90	3.26	3.26	0.1926	434.21	0.00	0.00
Max. Outflow	15.23	0.14	0.14	0.5794	434.61	0.15	0.15
Max. Elev.	18.85	0.11	0.11	0.5773	434.61	0.11	0.11
Final	24.41	0.00	0.00	0.5740	434.60	0.06	0.06

Modified Puls Routing

Inflow Hydrograph: D:\Working Files\VTSPUHM\PRE w Depression\DA TO CD1-50 Year Storm.HYD
 Storage/Elevation Curve: D:\Working Files\VTSPUHM\PRE w Depression\CD1 Storage.ES

Basin Bypass Capacity = 0.00 cfs
 Starting Pool Elevation = 434.00 feet
 Time Interval = 0.242 hours

Event Time (hours)	Hydrograph Inflow (cfs)	Basin Inflow (cfs)	Storage Used (acre-ft)	Elevation Above MSL (feet)	Basin Outflow (cfs)	Outflow Total (cfs)
0.00	0.00	0.00	0.0000	434.00	0.00	0.00
0.24	0.08	0.08	0.0008	434.00	0.00	0.00
0.48	0.17	0.17	0.0034	434.00	0.00	0.00
0.73	0.25	0.25	0.0076	434.01	0.00	0.00
0.97	0.34	0.34	0.0135	434.02	0.00	0.00
1.21	0.36	0.36	0.0205	434.02	0.00	0.00
1.45	0.39	0.39	0.0280	434.03	0.00	0.00
1.69	0.42	0.42	0.0361	434.04	0.00	0.00
1.93	0.45	0.45	0.0447	434.05	0.00	0.00
2.18	1.15	1.15	0.0606	434.07	0.00	0.00
2.42	1.85	1.85	0.0906	434.10	0.00	0.00
2.66	2.55	2.55	0.1346	434.15	0.00	0.00
2.90	3.26	3.26	0.1926	434.21	0.00	0.00
3.14	2.63	2.63	0.2514	434.28	0.00	0.00
3.38	2.00	2.00	0.2976	434.33	0.00	0.00
3.63	1.38	1.38	0.3314	434.37	0.00	0.00
3.87	0.75	0.75	0.3527	434.39	0.00	0.00
4.11	0.67	0.67	0.3668	434.41	0.00	0.00
4.35	0.58	0.58	0.3793	434.42	0.00	0.00
4.59	0.50	0.50	0.3901	434.44	0.00	0.00
4.83	0.42	0.42	0.3992	434.45	0.00	0.00
5.08	0.41	0.41	0.4074	434.45	0.00	0.00
5.32	0.40	0.40	0.4154	434.46	0.00	0.00
5.56	0.38	0.38	0.4232	434.47	0.00	0.00
5.80	0.37	0.37	0.4308	434.48	0.00	0.00
6.04	0.36	0.36	0.4381	434.49	0.00	0.00
6.28	0.34	0.34	0.4450	434.50	0.00	0.00
6.53	0.32	0.32	0.4516	434.50	0.00	0.00
6.77	0.30	0.30	0.4578	434.51	0.00	0.00
7.01	0.30	0.30	0.4638	434.51	0.00	0.00
7.25	0.29	0.29	0.4697	434.52	0.00	0.00
7.49	0.28	0.28	0.4754	434.52	0.00	0.00
7.73	0.28	0.28	0.4810	434.53	0.00	0.00
7.98	0.27	0.27	0.4864	434.53	0.00	0.00
8.22	0.26	0.26	0.4918	434.54	0.00	0.00
8.46	0.26	0.26	0.4970	434.54	0.00	0.00
8.70	0.25	0.25	0.5020	434.54	0.00	0.00
8.94	0.25	0.25	0.5070	434.55	0.00	0.00
9.18	0.24	0.24	0.5118	434.55	0.00	0.00
9.43	0.23	0.23	0.5166	434.56	0.00	0.00
9.67	0.23	0.23	0.5212	434.56	0.00	0.00
9.91	0.22	0.22	0.5257	434.56	0.00	0.00
10.15	0.22	0.22	0.5301	434.57	0.00	0.00
10.39	0.22	0.22	0.5345	434.57	0.00	0.00
10.63	0.21	0.21	0.5387	434.57	0.00	0.00
10.88	0.21	0.21	0.5429	434.58	0.00	0.00
11.12	0.20	0.20	0.5469	434.58	0.00	0.00
11.36	0.20	0.20	0.5509	434.58	0.00	0.00
11.60	0.19	0.19	0.5548	434.59	0.00	0.00
11.84	0.19	0.19	0.5586	434.59	0.00	0.00
12.08	0.19	0.19	0.5624	434.59	0.00	0.00
12.33	0.18	0.18	0.5660	434.60	0.00	0.00

Event Time (hours)	Hydrograph Inflow (cfs)	Basin Inflow (cfs)	Storage Used (acre-ft)	Elevation Above MSL (feet)	Basin Outflow (cfs)	Outflow Total (cfs)
12.57	0.18	0.18	0.5696	434.60	0.00	0.00
12.81	0.17	0.17	0.5727	434.60	0.04	0.04
13.05	0.17	0.17	0.5749	434.60	0.08	0.08
13.29	0.17	0.17	0.5765	434.60	0.10	0.10
13.53	0.16	0.16	0.5776	434.61	0.12	0.12
13.78	0.16	0.16	0.5784	434.61	0.13	0.13
14.02	0.16	0.16	0.5789	434.61	0.14	0.14
14.26	0.15	0.15	0.5792	434.61	0.14	0.14
14.50	0.15	0.15	0.5794	434.61	0.14	0.14
14.74	0.15	0.15	0.5794	434.61	0.15	0.15
14.98	0.14	0.14	0.5794	434.61	0.15	0.15
15.23	0.14	0.14	0.5794	434.61	0.15	0.15
15.47	0.14	0.14	0.5793	434.61	0.14	0.14
15.71	0.14	0.14	0.5792	434.61	0.14	0.14
15.95	0.13	0.13	0.5791	434.61	0.14	0.14
16.19	0.13	0.13	0.5789	434.61	0.14	0.14
16.43	0.13	0.13	0.5788	434.61	0.14	0.14
16.68	0.13	0.13	0.5786	434.61	0.13	0.13
16.92	0.12	0.12	0.5785	434.61	0.13	0.13
17.16	0.12	0.12	0.5783	434.61	0.13	0.13
17.40	0.12	0.12	0.5782	434.61	0.13	0.13
17.64	0.12	0.12	0.5780	434.61	0.12	0.12
17.88	0.11	0.11	0.5779	434.61	0.12	0.12
18.13	0.11	0.11	0.5777	434.61	0.12	0.12
18.37	0.11	0.11	0.5775	434.61	0.12	0.12
18.61	0.11	0.11	0.5774	434.61	0.11	0.11
18.85	0.11	0.11	0.5773	434.61	0.11	0.11
19.09	0.10	0.10	0.5771	434.60	0.11	0.11
19.33	0.10	0.10	0.5770	434.60	0.11	0.11
19.58	0.10	0.10	0.5769	434.60	0.11	0.11
19.82	0.10	0.10	0.5767	434.60	0.10	0.10
20.06	0.09	0.09	0.5766	434.60	0.10	0.10
20.30	0.09	0.09	0.5765	434.60	0.10	0.10
20.54	0.09	0.09	0.5763	434.60	0.10	0.10
20.78	0.09	0.09	0.5762	434.60	0.10	0.10
21.03	0.09	0.09	0.5761	434.60	0.09	0.09
21.27	0.09	0.09	0.5760	434.60	0.09	0.09
21.51	0.08	0.08	0.5758	434.60	0.09	0.09
21.75	0.08	0.08	0.5757	434.60	0.09	0.09
21.99	0.08	0.08	0.5756	434.60	0.09	0.09
22.23	0.08	0.08	0.5755	434.60	0.09	0.09
22.48	0.08	0.08	0.5754	434.60	0.08	0.08
22.72	0.08	0.08	0.5753	434.60	0.08	0.08
22.96	0.07	0.07	0.5752	434.60	0.08	0.08
23.20	0.07	0.07	0.5751	434.60	0.08	0.08
23.44	0.07	0.07	0.5749	434.60	0.08	0.08
23.68	0.07	0.07	0.5748	434.60	0.08	0.08
23.93	0.07	0.07	0.5747	434.60	0.07	0.07
24.17	0.07	0.07	0.5746	434.60	0.07	0.07
24.41	0.00	0.00	0.5740	434.60	0.06	0.06

**Modified Puls Routing
Summary of Results**

Inflow Hydrograph: D:\Working Files\VTPSUHM\PRE w Depression\DA TO CD1-100 Year Storm.HYD
Storage/Elevation Curve: D:\Working Files\VTPSUHM\PRE w Depression\CD1 Storage.ES

Basin Bypass Capacity = 0.00 cfs
Starting Pool Elevation = 434.00 feet
Time Interval = 0.242 hours
Total number of Inflow points = 102

	Event Time (hours)	Hydrograph Inflow (cfs)	Basin Inflow (cfs)	Storage Used (acre-ft)	Elevation Above MSL (feet)	Basin Outflow (cfs)	Outflow Total (cfs)
Start	0.00	0.00	0.00	0.0000	434.00	0.00	0.00
Max. Inflow	2.90	3.61	3.61	0.2147	434.24	0.00	0.00
Max. Outflow	10.88	0.26	0.26	0.5860	434.61	0.26	0.26
Max. Elev.	21.27	0.10	0.10	0.5774	434.61	0.11	0.11
Final	24.41	0.00	0.00	0.5744	434.60	0.07	0.07

Modified Puls Routing

Inflow Hydrograph: D:\Working Files\VTSPUHM\PRE w Depression\DA TO CD1-100 Year Storm.HYD
 Storage/Elevation Curve: D:\Working Files\VTSPUHM\PRE w Depression\CD1 Storage.ES

Basin Bypass Capacity = 0.00 cfs
 Starting Pool Elevation = 434.00 feet
 Time Interval = 0.242 hours

Event Time (hours)	Hydrograph Inflow (cfs)	Basin Inflow (cfs)	Storage Used (acre-ft)	Elevation Above MSL (feet)	Basin Outflow (cfs)	Outflow Total (cfs)
0.00	0.00	0.00	0.0000	434.00	0.00	0.00
0.24	0.09	0.09	0.0009	434.00	0.00	0.00
0.48	0.18	0.18	0.0036	434.00	0.00	0.00
0.73	0.27	0.27	0.0081	434.01	0.00	0.00
0.97	0.36	0.36	0.0143	434.02	0.00	0.00
1.21	0.40	0.40	0.0219	434.02	0.00	0.00
1.45	0.44	0.44	0.0303	434.03	0.00	0.00
1.69	0.48	0.48	0.0395	434.04	0.00	0.00
1.93	0.52	0.52	0.0495	434.06	0.00	0.00
2.18	1.30	1.30	0.0677	434.08	0.00	0.00
2.42	2.07	2.07	0.1013	434.11	0.00	0.00
2.66	2.84	2.84	0.1503	434.17	0.00	0.00
2.90	3.61	3.61	0.2147	434.24	0.00	0.00
3.14	2.96	2.96	0.2803	434.31	0.00	0.00
3.38	2.31	2.31	0.3330	434.37	0.00	0.00
3.63	1.66	1.66	0.3726	434.42	0.00	0.00
3.87	1.01	1.01	0.3992	434.45	0.00	0.00
4.11	0.86	0.86	0.4179	434.47	0.00	0.00
4.35	0.71	0.71	0.4336	434.48	0.00	0.00
4.59	0.57	0.57	0.4464	434.50	0.00	0.00
4.83	0.42	0.42	0.4563	434.51	0.00	0.00
5.08	0.41	0.41	0.4646	434.51	0.00	0.00
5.32	0.40	0.40	0.4727	434.52	0.00	0.00
5.56	0.39	0.39	0.4806	434.53	0.00	0.00
5.80	0.38	0.38	0.4884	434.53	0.00	0.00
6.04	0.37	0.37	0.4959	434.54	0.00	0.00
6.28	0.36	0.36	0.5032	434.55	0.00	0.00
6.53	0.35	0.35	0.5103	434.55	0.00	0.00
6.77	0.34	0.34	0.5171	434.56	0.00	0.00
7.01	0.33	0.33	0.5238	434.56	0.00	0.00
7.25	0.33	0.33	0.5305	434.57	0.00	0.00
7.49	0.33	0.33	0.5370	434.57	0.00	0.00
7.73	0.32	0.32	0.5434	434.58	0.00	0.00
7.98	0.32	0.32	0.5498	434.58	0.00	0.00
8.22	0.31	0.31	0.5560	434.59	0.00	0.00
8.46	0.31	0.31	0.5622	434.59	0.00	0.00
8.70	0.30	0.30	0.5683	434.60	0.00	0.00
8.94	0.30	0.30	0.5737	434.60	0.06	0.06
9.18	0.29	0.29	0.5778	434.61	0.12	0.12
9.43	0.29	0.29	0.5808	434.61	0.17	0.17
9.67	0.28	0.28	0.5829	434.61	0.20	0.20
9.91	0.28	0.28	0.5843	434.61	0.22	0.22
10.15	0.28	0.28	0.5852	434.61	0.24	0.24
10.39	0.27	0.27	0.5857	434.61	0.26	0.26
10.63	0.27	0.27	0.5859	434.61	0.26	0.26
10.88	0.26	0.26	0.5860	434.61	0.26	0.26
11.12	0.26	0.26	0.5859	434.61	0.26	0.26
11.36	0.25	0.25	0.5858	434.61	0.26	0.26
11.60	0.25	0.25	0.5857	434.61	0.26	0.26
11.84	0.25	0.25	0.5856	434.61	0.25	0.25
12.08	0.24	0.24	0.5854	434.61	0.25	0.25
12.33	0.24	0.24	0.5853	434.61	0.25	0.25

Event Time (hours)	Hydrograph Inflow (cfs)	Basin Inflow (cfs)	Storage Used (acre-ft)	Elevation Above MSL (feet)	Basin Outflow (cfs)	Outflow Total (cfs)
12.57	0.23	0.23	0.5851	434.61	0.24	0.24
12.81	0.23	0.23	0.5850	434.61	0.24	0.24
13.05	0.23	0.23	0.5849	434.61	0.23	0.23
13.29	0.22	0.22	0.5847	434.61	0.23	0.23
13.53	0.22	0.22	0.5846	434.61	0.22	0.22
13.78	0.21	0.21	0.5844	434.61	0.22	0.22
14.02	0.21	0.21	0.5842	434.61	0.22	0.22
14.26	0.21	0.21	0.5840	434.61	0.22	0.22
14.50	0.20	0.20	0.5838	434.61	0.21	0.21
14.74	0.20	0.20	0.5836	434.61	0.21	0.21
14.98	0.19	0.19	0.5833	434.61	0.21	0.21
15.23	0.19	0.19	0.5831	434.61	0.20	0.20
15.47	0.19	0.19	0.5829	434.61	0.20	0.20
15.71	0.18	0.18	0.5826	434.61	0.19	0.19
15.95	0.18	0.18	0.5824	434.61	0.19	0.19
16.19	0.18	0.18	0.5821	434.61	0.19	0.19
16.43	0.17	0.17	0.5819	434.61	0.18	0.18
16.68	0.17	0.17	0.5816	434.61	0.18	0.18
16.92	0.16	0.16	0.5814	434.61	0.18	0.18
17.16	0.16	0.16	0.5812	434.61	0.17	0.17
17.40	0.16	0.16	0.5809	434.61	0.17	0.17
17.64	0.15	0.15	0.5807	434.61	0.17	0.17
17.88	0.15	0.15	0.5805	434.61	0.16	0.16
18.13	0.15	0.15	0.5802	434.61	0.16	0.16
18.37	0.14	0.14	0.5800	434.61	0.15	0.15
18.61	0.14	0.14	0.5798	434.61	0.15	0.15
18.85	0.14	0.14	0.5796	434.61	0.15	0.15
19.09	0.13	0.13	0.5793	434.61	0.14	0.14
19.33	0.13	0.13	0.5791	434.61	0.14	0.14
19.58	0.13	0.13	0.5789	434.61	0.14	0.14
19.82	0.12	0.12	0.5787	434.61	0.13	0.13
20.06	0.12	0.12	0.5785	434.61	0.13	0.13
20.30	0.12	0.12	0.5782	434.61	0.13	0.13
20.54	0.11	0.11	0.5780	434.61	0.12	0.12
20.78	0.11	0.11	0.5778	434.61	0.12	0.12
21.03	0.11	0.11	0.5776	434.61	0.12	0.12
21.27	0.10	0.10	0.5774	434.61	0.11	0.11
21.51	0.10	0.10	0.5772	434.60	0.11	0.11
21.75	0.10	0.10	0.5770	434.60	0.11	0.11
21.99	0.09	0.09	0.5768	434.60	0.11	0.11
22.23	0.09	0.09	0.5766	434.60	0.10	0.10
22.48	0.09	0.09	0.5764	434.60	0.10	0.10
22.72	0.09	0.09	0.5762	434.60	0.10	0.10
22.96	0.08	0.08	0.5760	434.60	0.09	0.09
23.20	0.08	0.08	0.5759	434.60	0.09	0.09
23.44	0.08	0.08	0.5757	434.60	0.09	0.09
23.68	0.08	0.08	0.5755	434.60	0.09	0.09
23.93	0.07	0.07	0.5753	434.60	0.08	0.08
24.17	0.07	0.07	0.5751	434.60	0.08	0.08
24.41	0.00	0.00	0.5744	434.60	0.07	0.07

**CASE 1: PRE-PROJECT ANALYSIS
CLOSED DEPRESSION 2 (CD2) ROUTING**

Basin Storage/Elevation Input

Elevation (ft)	Area (acres)	Storage (acre-ft)
434	0.168	0.000
435	0.674	0.421
435.5	1.061	0.855

Project Files:

Outlet Structure Configuration: C:\Users\ngalio\OneDrive - Maser Consulting\Desktop\Working Files\VTPSUHM\PRE w Depression\CD2.OSC

Discharge/Elevation Curve: C:\Users\ngalio\OneDrive - Maser Consulting\Desktop\Working Files\VTPSUHM\PRE w Depression\CD2.EO

Outlet Structure Configuration

Stage 1: Emergency Spillway

Crest Elevation = 435.5 feet

Crest Length = 40 feet

Discharge Coefficient = 3

Basin Rating Curve

Basin Water Elevation	Basin Outflow (cfs)	Riser Box Water Elevation	Tailwater Elevation (ft)	Outfall Culvert Control	Outfall Culvert Override?
434.00	0.00	N/A	N/A	N/A	N/A
434.01	0.00	N/A	N/A	N/A	N/A
434.02	0.00	N/A	N/A	N/A	N/A
434.03	0.00	N/A	N/A	N/A	N/A
434.04	0.00	N/A	N/A	N/A	N/A
434.05	0.00	N/A	N/A	N/A	N/A
434.06	0.00	N/A	N/A	N/A	N/A
434.07	0.00	N/A	N/A	N/A	N/A
434.08	0.00	N/A	N/A	N/A	N/A
434.09	0.00	N/A	N/A	N/A	N/A
434.10	0.00	N/A	N/A	N/A	N/A
434.11	0.00	N/A	N/A	N/A	N/A
434.12	0.00	N/A	N/A	N/A	N/A
434.13	0.00	N/A	N/A	N/A	N/A
434.14	0.00	N/A	N/A	N/A	N/A
434.15	0.00	N/A	N/A	N/A	N/A
434.16	0.00	N/A	N/A	N/A	N/A
434.17	0.00	N/A	N/A	N/A	N/A
434.18	0.00	N/A	N/A	N/A	N/A
434.19	0.00	N/A	N/A	N/A	N/A
434.20	0.00	N/A	N/A	N/A	N/A
434.21	0.00	N/A	N/A	N/A	N/A
434.22	0.00	N/A	N/A	N/A	N/A
434.23	0.00	N/A	N/A	N/A	N/A
434.24	0.00	N/A	N/A	N/A	N/A
434.25	0.00	N/A	N/A	N/A	N/A
434.26	0.00	N/A	N/A	N/A	N/A
434.27	0.00	N/A	N/A	N/A	N/A
434.28	0.00	N/A	N/A	N/A	N/A
434.29	0.00	N/A	N/A	N/A	N/A
434.30	0.00	N/A	N/A	N/A	N/A
434.31	0.00	N/A	N/A	N/A	N/A
434.32	0.00	N/A	N/A	N/A	N/A
434.33	0.00	N/A	N/A	N/A	N/A
434.34	0.00	N/A	N/A	N/A	N/A
434.35	0.00	N/A	N/A	N/A	N/A
434.36	0.00	N/A	N/A	N/A	N/A
434.37	0.00	N/A	N/A	N/A	N/A
434.38	0.00	N/A	N/A	N/A	N/A
434.39	0.00	N/A	N/A	N/A	N/A
434.40	0.00	N/A	N/A	N/A	N/A
434.41	0.00	N/A	N/A	N/A	N/A
434.42	0.00	N/A	N/A	N/A	N/A
434.43	0.00	N/A	N/A	N/A	N/A
434.44	0.00	N/A	N/A	N/A	N/A
434.45	0.00	N/A	N/A	N/A	N/A
434.46	0.00	N/A	N/A	N/A	N/A

Basin Water Elevation	Basin Outflow (cfs)	Riser Box Water Elevation	Tailwater Elevation (ft)	Outfall Culvert Control	Outfall Culvert Override?
434.47	0.00	N/A	N/A	N/A	N/A
434.48	0.00	N/A	N/A	N/A	N/A
434.49	0.00	N/A	N/A	N/A	N/A
434.50	0.00	N/A	N/A	N/A	N/A
434.51	0.00	N/A	N/A	N/A	N/A
434.52	0.00	N/A	N/A	N/A	N/A
434.53	0.00	N/A	N/A	N/A	N/A
434.54	0.00	N/A	N/A	N/A	N/A
434.55	0.00	N/A	N/A	N/A	N/A
434.56	0.00	N/A	N/A	N/A	N/A
434.57	0.00	N/A	N/A	N/A	N/A
434.58	0.00	N/A	N/A	N/A	N/A
434.59	0.00	N/A	N/A	N/A	N/A
434.60	0.00	N/A	N/A	N/A	N/A
434.61	0.00	N/A	N/A	N/A	N/A
434.62	0.00	N/A	N/A	N/A	N/A
434.63	0.00	N/A	N/A	N/A	N/A
434.64	0.00	N/A	N/A	N/A	N/A
434.65	0.00	N/A	N/A	N/A	N/A
434.66	0.00	N/A	N/A	N/A	N/A
434.67	0.00	N/A	N/A	N/A	N/A
434.68	0.00	N/A	N/A	N/A	N/A
434.69	0.00	N/A	N/A	N/A	N/A
434.70	0.00	N/A	N/A	N/A	N/A
434.71	0.00	N/A	N/A	N/A	N/A
434.72	0.00	N/A	N/A	N/A	N/A
434.73	0.00	N/A	N/A	N/A	N/A
434.74	0.00	N/A	N/A	N/A	N/A
434.75	0.00	N/A	N/A	N/A	N/A
434.76	0.00	N/A	N/A	N/A	N/A
434.77	0.00	N/A	N/A	N/A	N/A
434.78	0.00	N/A	N/A	N/A	N/A
434.79	0.00	N/A	N/A	N/A	N/A
434.80	0.00	N/A	N/A	N/A	N/A
434.81	0.00	N/A	N/A	N/A	N/A
434.82	0.00	N/A	N/A	N/A	N/A
434.83	0.00	N/A	N/A	N/A	N/A
434.84	0.00	N/A	N/A	N/A	N/A
434.85	0.00	N/A	N/A	N/A	N/A
434.86	0.00	N/A	N/A	N/A	N/A
434.87	0.00	N/A	N/A	N/A	N/A
434.88	0.00	N/A	N/A	N/A	N/A
434.89	0.00	N/A	N/A	N/A	N/A
434.90	0.00	N/A	N/A	N/A	N/A
434.91	0.00	N/A	N/A	N/A	N/A
434.92	0.00	N/A	N/A	N/A	N/A
434.93	0.00	N/A	N/A	N/A	N/A
434.94	0.00	N/A	N/A	N/A	N/A
434.95	0.00	N/A	N/A	N/A	N/A
434.96	0.00	N/A	N/A	N/A	N/A
434.97	0.00	N/A	N/A	N/A	N/A
434.98	0.00	N/A	N/A	N/A	N/A
434.99	0.00	N/A	N/A	N/A	N/A
435.00	0.00	N/A	N/A	N/A	N/A
435.01	0.00	N/A	N/A	N/A	N/A
435.02	0.00	N/A	N/A	N/A	N/A
435.03	0.00	N/A	N/A	N/A	N/A
435.04	0.00	N/A	N/A	N/A	N/A
435.05	0.00	N/A	N/A	N/A	N/A
435.06	0.00	N/A	N/A	N/A	N/A

Basin Water Elevation	Basin Outflow (cfs)	Riser Box Water Elevation	Tailwater Elevation (ft)	Outfall Culvert Control	Outfall Culvert Override?
435.07	0.00	N/A	N/A	N/A	N/A
435.08	0.00	N/A	N/A	N/A	N/A
435.09	0.00	N/A	N/A	N/A	N/A
435.10	0.00	N/A	N/A	N/A	N/A
435.11	0.00	N/A	N/A	N/A	N/A
435.12	0.00	N/A	N/A	N/A	N/A
435.13	0.00	N/A	N/A	N/A	N/A
435.14	0.00	N/A	N/A	N/A	N/A
435.15	0.00	N/A	N/A	N/A	N/A
435.16	0.00	N/A	N/A	N/A	N/A
435.17	0.00	N/A	N/A	N/A	N/A
435.18	0.00	N/A	N/A	N/A	N/A
435.19	0.00	N/A	N/A	N/A	N/A
435.20	0.00	N/A	N/A	N/A	N/A
435.21	0.00	N/A	N/A	N/A	N/A
435.22	0.00	N/A	N/A	N/A	N/A
435.23	0.00	N/A	N/A	N/A	N/A
435.24	0.00	N/A	N/A	N/A	N/A
435.25	0.00	N/A	N/A	N/A	N/A
435.26	0.00	N/A	N/A	N/A	N/A
435.27	0.00	N/A	N/A	N/A	N/A
435.28	0.00	N/A	N/A	N/A	N/A
435.29	0.00	N/A	N/A	N/A	N/A
435.30	0.00	N/A	N/A	N/A	N/A
435.31	0.00	N/A	N/A	N/A	N/A
435.32	0.00	N/A	N/A	N/A	N/A
435.33	0.00	N/A	N/A	N/A	N/A
435.34	0.00	N/A	N/A	N/A	N/A
435.35	0.00	N/A	N/A	N/A	N/A
435.36	0.00	N/A	N/A	N/A	N/A
435.37	0.00	N/A	N/A	N/A	N/A
435.38	0.00	N/A	N/A	N/A	N/A
435.39	0.00	N/A	N/A	N/A	N/A
435.40	0.00	N/A	N/A	N/A	N/A
435.41	0.00	N/A	N/A	N/A	N/A
435.42	0.00	N/A	N/A	N/A	N/A
435.43	0.00	N/A	N/A	N/A	N/A
435.44	0.00	N/A	N/A	N/A	N/A
435.45	0.00	N/A	N/A	N/A	N/A
435.46	0.00	N/A	N/A	N/A	N/A
435.47	0.00	N/A	N/A	N/A	N/A
435.48	0.00	N/A	N/A	N/A	N/A
435.49	0.00	N/A	N/A	N/A	N/A
435.50	0.00	N/A	N/A	N/A	N/A
435.51	0.12	N/A	N/A	N/A	N/A

**Modified Puls Routing
Summary of Results**

Inflow Hydrograph: D:\Working Files\VTPSUHM\PRE w Depression\DA TO CD2-2 Year Storm.HYD
Storage/Elevation Curve: D:\Working Files\VTPSUHM\PRE w Depression\CD2 Storage.ES

Basin Bypass Capacity = 0.00 cfs
Starting Pool Elevation = 434.00 feet
Time Interval = 0.242 hours
Total number of Inflow points = 102

	Event Time (hours)	Hydrograph Inflow (cfs)	Basin Inflow (cfs)	Storage Used (acre-ft)	Elevation Above MSL (feet)	Basin Outflow (cfs)	Outflow Total (cfs)
Start	0.00	0.00	0.00	0.0000	434.00	0.00	0.00
Max. Inflow	2.90	1.02	1.02	0.0579	434.14	0.00	0.00
Max. Outflow	24.41	0.00	0.00	0.1962	434.47	0.00	0.00
Final	24.41	0.00	0.00	0.1962	434.47	0.00	0.00

Modified Puls Routing

Inflow Hydrograph: D:\Working Files\VTSPUHMPRE w Depression\DA TO CD2-2 Year Storm.HYD
 Storage/Elevation Curve: D:\Working Files\VTSPUHMPRE w Depression\CD2 Storage.ES

Basin Bypass Capacity = 0.00 cfs
 Starting Pool Elevation = 434.00 feet
 Time Interval = 0.242 hours

Event Time (hours)	Hydrograph Inflow (cfs)	Basin Inflow (cfs)	Storage Used (acre-ft)	Elevation Above MSL (feet)	Basin Outflow (cfs)	Outflow Total (cfs)
0.00	0.00	0.00	0.0000	434.00	0.00	0.00
0.24	0.02	0.02	0.0002	434.00	0.00	0.00
0.48	0.05	0.05	0.0010	434.00	0.00	0.00
0.73	0.07	0.07	0.0022	434.01	0.00	0.00
0.97	0.10	0.10	0.0038	434.01	0.00	0.00
1.21	0.10	0.10	0.0058	434.01	0.00	0.00
1.45	0.11	0.11	0.0079	434.02	0.00	0.00
1.69	0.11	0.11	0.0101	434.02	0.00	0.00
1.93	0.12	0.12	0.0124	434.03	0.00	0.00
2.18	0.34	0.34	0.0169	434.04	0.00	0.00
2.42	0.57	0.57	0.0261	434.06	0.00	0.00
2.66	0.80	0.80	0.0397	434.09	0.00	0.00
2.90	1.02	1.02	0.0579	434.14	0.00	0.00
3.14	0.81	0.81	0.0762	434.18	0.00	0.00
3.38	0.61	0.61	0.0904	434.21	0.00	0.00
3.63	0.40	0.40	0.1005	434.24	0.00	0.00
3.87	0.19	0.19	0.1064	434.25	0.00	0.00
4.11	0.17	0.17	0.1101	434.26	0.00	0.00
4.35	0.15	0.15	0.1133	434.27	0.00	0.00
4.59	0.13	0.13	0.1162	434.28	0.00	0.00
4.83	0.11	0.11	0.1186	434.28	0.00	0.00
5.08	0.11	0.11	0.1208	434.29	0.00	0.00
5.32	0.11	0.11	0.1230	434.29	0.00	0.00
5.56	0.11	0.11	0.1252	434.30	0.00	0.00
5.80	0.11	0.11	0.1274	434.30	0.00	0.00
6.04	0.10	0.10	0.1295	434.31	0.00	0.00
6.28	0.10	0.10	0.1315	434.31	0.00	0.00
6.53	0.09	0.09	0.1333	434.32	0.00	0.00
6.77	0.08	0.08	0.1351	434.32	0.00	0.00
7.01	0.08	0.08	0.1368	434.32	0.00	0.00
7.25	0.08	0.08	0.1384	434.33	0.00	0.00
7.49	0.08	0.08	0.1400	434.33	0.00	0.00
7.73	0.08	0.08	0.1415	434.34	0.00	0.00
7.98	0.07	0.07	0.1430	434.34	0.00	0.00
8.22	0.07	0.07	0.1445	434.34	0.00	0.00
8.46	0.07	0.07	0.1459	434.35	0.00	0.00
8.70	0.07	0.07	0.1473	434.35	0.00	0.00
8.94	0.07	0.07	0.1486	434.35	0.00	0.00
9.18	0.06	0.06	0.1499	434.36	0.00	0.00
9.43	0.06	0.06	0.1512	434.36	0.00	0.00
9.67	0.06	0.06	0.1524	434.36	0.00	0.00
9.91	0.06	0.06	0.1536	434.36	0.00	0.00
10.15	0.06	0.06	0.1548	434.37	0.00	0.00
10.39	0.06	0.06	0.1559	434.37	0.00	0.00
10.63	0.05	0.05	0.1570	434.37	0.00	0.00
10.88	0.05	0.05	0.1581	434.38	0.00	0.00
11.12	0.05	0.05	0.1592	434.38	0.00	0.00
11.36	0.05	0.05	0.1602	434.38	0.00	0.00
11.60	0.05	0.05	0.1612	434.38	0.00	0.00
11.84	0.05	0.05	0.1623	434.39	0.00	0.00
12.08	0.05	0.05	0.1632	434.39	0.00	0.00
12.33	0.05	0.05	0.1642	434.39	0.00	0.00

Event Time (hours)	Hydrograph Inflow (cfs)	Basin Inflow (cfs)	Storage Used (acre-ft)	Elevation Above MSL (feet)	Basin Outflow (cfs)	Outflow Total (cfs)
12.57	0.05	0.05	0.1651	434.39	0.00	0.00
12.81	0.04	0.04	0.1660	434.39	0.00	0.00
13.05	0.04	0.04	0.1669	434.40	0.00	0.00
13.29	0.04	0.04	0.1678	434.40	0.00	0.00
13.53	0.04	0.04	0.1687	434.40	0.00	0.00
13.78	0.04	0.04	0.1695	434.40	0.00	0.00
14.02	0.04	0.04	0.1703	434.40	0.00	0.00
14.26	0.04	0.04	0.1712	434.41	0.00	0.00
14.50	0.04	0.04	0.1720	434.41	0.00	0.00
14.74	0.04	0.04	0.1728	434.41	0.00	0.00
14.98	0.04	0.04	0.1735	434.41	0.00	0.00
15.23	0.04	0.04	0.1743	434.41	0.00	0.00
15.47	0.04	0.04	0.1750	434.42	0.00	0.00
15.71	0.04	0.04	0.1758	434.42	0.00	0.00
15.95	0.04	0.04	0.1765	434.42	0.00	0.00
16.19	0.04	0.04	0.1772	434.42	0.00	0.00
16.43	0.03	0.03	0.1779	434.42	0.00	0.00
16.68	0.03	0.03	0.1786	434.42	0.00	0.00
16.92	0.03	0.03	0.1793	434.43	0.00	0.00
17.16	0.03	0.03	0.1799	434.43	0.00	0.00
17.40	0.03	0.03	0.1806	434.43	0.00	0.00
17.64	0.03	0.03	0.1812	434.43	0.00	0.00
17.88	0.03	0.03	0.1819	434.43	0.00	0.00
18.13	0.03	0.03	0.1825	434.43	0.00	0.00
18.37	0.03	0.03	0.1831	434.44	0.00	0.00
18.61	0.03	0.03	0.1837	434.44	0.00	0.00
18.85	0.03	0.03	0.1843	434.44	0.00	0.00
19.09	0.03	0.03	0.1849	434.44	0.00	0.00
19.33	0.03	0.03	0.1855	434.44	0.00	0.00
19.58	0.03	0.03	0.1861	434.44	0.00	0.00
19.82	0.03	0.03	0.1866	434.44	0.00	0.00
20.06	0.03	0.03	0.1872	434.44	0.00	0.00
20.30	0.03	0.03	0.1878	434.45	0.00	0.00
20.54	0.03	0.03	0.1883	434.45	0.00	0.00
20.78	0.03	0.03	0.1889	434.45	0.00	0.00
21.03	0.03	0.03	0.1894	434.45	0.00	0.00
21.27	0.03	0.03	0.1899	434.45	0.00	0.00
21.51	0.03	0.03	0.1905	434.45	0.00	0.00
21.75	0.03	0.03	0.1910	434.45	0.00	0.00
21.99	0.03	0.03	0.1915	434.45	0.00	0.00
22.23	0.03	0.03	0.1920	434.46	0.00	0.00
22.48	0.03	0.03	0.1925	434.46	0.00	0.00
22.72	0.03	0.03	0.1930	434.46	0.00	0.00
22.96	0.03	0.03	0.1935	434.46	0.00	0.00
23.20	0.03	0.03	0.1940	434.46	0.00	0.00
23.44	0.02	0.02	0.1945	434.46	0.00	0.00
23.68	0.02	0.02	0.1950	434.46	0.00	0.00
23.93	0.02	0.02	0.1955	434.46	0.00	0.00
24.17	0.02	0.02	0.1959	434.47	0.00	0.00
24.41	0.00	0.00	0.1962	434.47	0.00	0.00

**Modified Puls Routing
Summary of Results**

Inflow Hydrograph: D:\Working Files\VTPSUHM\PRE w Depression\DA TO CD2-10 Year Storm.HYD
Storage/Elevation Curve: D:\Working Files\VTPSUHM\PRE w Depression\CD2 Storage.ES

Basin Bypass Capacity = 0.00 cfs
Starting Pool Elevation = 434.00 feet
Time Interval = 0.242 hours
Total number of Inflow points = 102

	Event Time (hours)	Hydrograph Inflow (cfs)	Basin Inflow (cfs)	Storage Used (acre-ft)	Elevation Above MSL (feet)	Basin Outflow (cfs)	Outflow Total (cfs)
Start	0.00	0.00	0.00	0.0000	434.00	0.00	0.00
Max. Inflow	2.90	1.47	1.47	0.0847	434.20	0.00	0.00
Max. Outflow	24.41	0.00	0.00	0.2835	434.67	0.00	0.00
Final	24.41	0.00	0.00	0.2835	434.67	0.00	0.00

Modified Puls Routing

Inflow Hydrograph: D:\Working Files\VTSPUHM\PRE w Depression\DA TO CD2-10 Year Storm.HYD
 Storage/Elevation Curve: D:\Working Files\VTSPUHM\PRE w Depression\CD2 Storage.ES

Basin Bypass Capacity = 0.00 cfs
 Starting Pool Elevation = 434.00 feet
 Time Interval = 0.242 hours

Event Time (hours)	Hydrograph Inflow (cfs)	Basin Inflow (cfs)	Storage Used (acre-ft)	Elevation Above MSL (feet)	Basin Outflow (cfs)	Outflow Total (cfs)
0.00	0.00	0.00	0.0000	434.00	0.00	0.00
0.24	0.04	0.04	0.0004	434.00	0.00	0.00
0.48	0.07	0.07	0.0014	434.00	0.00	0.00
0.73	0.11	0.11	0.0032	434.01	0.00	0.00
0.97	0.14	0.14	0.0058	434.01	0.00	0.00
1.21	0.15	0.15	0.0087	434.02	0.00	0.00
1.45	0.16	0.16	0.0119	434.03	0.00	0.00
1.69	0.17	0.17	0.0152	434.04	0.00	0.00
1.93	0.18	0.18	0.0188	434.04	0.00	0.00
2.18	0.50	0.50	0.0256	434.06	0.00	0.00
2.42	0.83	0.83	0.0389	434.09	0.00	0.00
2.66	1.15	1.15	0.0586	434.14	0.00	0.00
2.90	1.47	1.47	0.0847	434.20	0.00	0.00
3.14	1.17	1.17	0.1111	434.26	0.00	0.00
3.38	0.88	0.88	0.1316	434.31	0.00	0.00
3.63	0.59	0.59	0.1463	434.35	0.00	0.00
3.87	0.30	0.30	0.1552	434.37	0.00	0.00
4.11	0.27	0.27	0.1609	434.38	0.00	0.00
4.35	0.23	0.23	0.1659	434.39	0.00	0.00
4.59	0.20	0.20	0.1702	434.40	0.00	0.00
4.83	0.17	0.17	0.1740	434.41	0.00	0.00
5.08	0.17	0.17	0.1773	434.42	0.00	0.00
5.32	0.17	0.17	0.1807	434.43	0.00	0.00
5.56	0.17	0.17	0.1840	434.44	0.00	0.00
5.80	0.17	0.17	0.1874	434.45	0.00	0.00
6.04	0.16	0.16	0.1905	434.45	0.00	0.00
6.28	0.15	0.15	0.1935	434.46	0.00	0.00
6.53	0.14	0.14	0.1963	434.47	0.00	0.00
6.77	0.13	0.13	0.1989	434.47	0.00	0.00
7.01	0.12	0.12	0.2014	434.48	0.00	0.00
7.25	0.12	0.12	0.2038	434.48	0.00	0.00
7.49	0.11	0.11	0.2061	434.49	0.00	0.00
7.73	0.11	0.11	0.2083	434.49	0.00	0.00
7.98	0.11	0.11	0.2104	434.50	0.00	0.00
8.22	0.10	0.10	0.2125	434.50	0.00	0.00
8.46	0.10	0.10	0.2145	434.51	0.00	0.00
8.70	0.10	0.10	0.2165	434.51	0.00	0.00
8.94	0.09	0.09	0.2184	434.52	0.00	0.00
9.18	0.09	0.09	0.2202	434.52	0.00	0.00
9.43	0.09	0.09	0.2220	434.53	0.00	0.00
9.67	0.08	0.08	0.2237	434.53	0.00	0.00
9.91	0.08	0.08	0.2254	434.54	0.00	0.00
10.15	0.08	0.08	0.2270	434.54	0.00	0.00
10.39	0.08	0.08	0.2286	434.54	0.00	0.00
10.63	0.08	0.08	0.2301	434.55	0.00	0.00
10.88	0.07	0.07	0.2316	434.55	0.00	0.00
11.12	0.07	0.07	0.2331	434.55	0.00	0.00
11.36	0.07	0.07	0.2345	434.56	0.00	0.00
11.60	0.07	0.07	0.2359	434.56	0.00	0.00
11.84	0.07	0.07	0.2373	434.56	0.00	0.00
12.08	0.07	0.07	0.2386	434.57	0.00	0.00
12.33	0.06	0.06	0.2399	434.57	0.00	0.00

Event Time (hours)	Hydrograph Inflow (cfs)	Basin Inflow (cfs)	Storage Used (acre-ft)	Elevation Above MSL (feet)	Basin Outflow (cfs)	Outflow Total (cfs)
12.57	0.06	0.06	0.2412	434.57	0.00	0.00
12.81	0.06	0.06	0.2424	434.58	0.00	0.00
13.05	0.06	0.06	0.2436	434.58	0.00	0.00
13.29	0.06	0.06	0.2448	434.58	0.00	0.00
13.53	0.06	0.06	0.2459	434.58	0.00	0.00
13.78	0.06	0.06	0.2471	434.59	0.00	0.00
14.02	0.05	0.05	0.2482	434.59	0.00	0.00
14.26	0.05	0.05	0.2493	434.59	0.00	0.00
14.50	0.05	0.05	0.2503	434.59	0.00	0.00
14.74	0.05	0.05	0.2514	434.60	0.00	0.00
14.98	0.05	0.05	0.2524	434.60	0.00	0.00
15.23	0.05	0.05	0.2534	434.60	0.00	0.00
15.47	0.05	0.05	0.2544	434.60	0.00	0.00
15.71	0.05	0.05	0.2554	434.61	0.00	0.00
15.95	0.05	0.05	0.2563	434.61	0.00	0.00
16.19	0.05	0.05	0.2573	434.61	0.00	0.00
16.43	0.05	0.05	0.2582	434.61	0.00	0.00
16.68	0.05	0.05	0.2591	434.62	0.00	0.00
16.92	0.04	0.04	0.2600	434.62	0.00	0.00
17.16	0.04	0.04	0.2609	434.62	0.00	0.00
17.40	0.04	0.04	0.2618	434.62	0.00	0.00
17.64	0.04	0.04	0.2626	434.62	0.00	0.00
17.88	0.04	0.04	0.2635	434.63	0.00	0.00
18.13	0.04	0.04	0.2643	434.63	0.00	0.00
18.37	0.04	0.04	0.2652	434.63	0.00	0.00
18.61	0.04	0.04	0.2660	434.63	0.00	0.00
18.85	0.04	0.04	0.2668	434.63	0.00	0.00
19.09	0.04	0.04	0.2676	434.64	0.00	0.00
19.33	0.04	0.04	0.2684	434.64	0.00	0.00
19.58	0.04	0.04	0.2692	434.64	0.00	0.00
19.82	0.04	0.04	0.2700	434.64	0.00	0.00
20.06	0.04	0.04	0.2708	434.64	0.00	0.00
20.30	0.04	0.04	0.2716	434.65	0.00	0.00
20.54	0.04	0.04	0.2723	434.65	0.00	0.00
20.78	0.04	0.04	0.2731	434.65	0.00	0.00
21.03	0.04	0.04	0.2739	434.65	0.00	0.00
21.27	0.04	0.04	0.2746	434.65	0.00	0.00
21.51	0.04	0.04	0.2753	434.65	0.00	0.00
21.75	0.04	0.04	0.2761	434.66	0.00	0.00
21.99	0.04	0.04	0.2768	434.66	0.00	0.00
22.23	0.04	0.04	0.2775	434.66	0.00	0.00
22.48	0.04	0.04	0.2782	434.66	0.00	0.00
22.72	0.04	0.04	0.2789	434.66	0.00	0.00
22.96	0.04	0.04	0.2796	434.66	0.00	0.00
23.20	0.04	0.04	0.2803	434.67	0.00	0.00
23.44	0.04	0.04	0.2810	434.67	0.00	0.00
23.68	0.04	0.04	0.2817	434.67	0.00	0.00
23.93	0.04	0.04	0.2824	434.67	0.00	0.00
24.17	0.03	0.03	0.2831	434.67	0.00	0.00
24.41	0.00	0.00	0.2835	434.67	0.00	0.00

**Modified Puls Routing
Summary of Results**

Inflow Hydrograph: D:\Working Files\VTPSUHM\PRE w Depression\DA TO CD2-25 Year Storm.HYD
Storage/Elevation Curve: D:\Working Files\VTPSUHM\PRE w Depression\CD2 Storage.ES

Basin Bypass Capacity = 0.00 cfs
Starting Pool Elevation = 434.00 feet
Time Interval = 0.242 hours
Total number of Inflow points = 102

	Event Time (hours)	Hydrograph Inflow (cfs)	Basin Inflow (cfs)	Storage Used (acre-ft)	Elevation Above MSL (feet)	Basin Outflow (cfs)	Outflow Total (cfs)
Start	0.00	0.00	0.00	0.0000	434.00	0.00	0.00
Max. Inflow	2.90	2.15	2.15	0.1261	434.30	0.00	0.00
Max. Outflow	24.41	0.00	0.00	0.4350	435.02	0.00	0.00
Final	24.41	0.00	0.00	0.4350	435.02	0.00	0.00

Modified Puls Routing

Inflow Hydrograph: D:\Working Files\VTSPUHMPRE w Depression\DA TO CD2-25 Year Storm.HYD
 Storage/Elevation Curve: D:\Working Files\VTSPUHMPRE w Depression\CD2 Storage.ES

Basin Bypass Capacity = 0.00 cfs
 Starting Pool Elevation = 434.00 feet
 Time Interval = 0.242 hours

Event Time (hours)	Hydrograph Inflow (cfs)	Basin Inflow (cfs)	Storage Used (acre-ft)	Elevation Above MSL (feet)	Basin Outflow (cfs)	Outflow Total (cfs)
0.00	0.00	0.00	0.0000	434.00	0.00	0.00
0.24	0.06	0.06	0.0006	434.00	0.00	0.00
0.48	0.11	0.11	0.0022	434.01	0.00	0.00
0.73	0.17	0.17	0.0051	434.01	0.00	0.00
0.97	0.23	0.23	0.0090	434.02	0.00	0.00
1.21	0.24	0.24	0.0136	434.03	0.00	0.00
1.45	0.25	0.25	0.0185	434.04	0.00	0.00
1.69	0.27	0.27	0.0237	434.06	0.00	0.00
1.93	0.28	0.28	0.0291	434.07	0.00	0.00
2.18	0.75	0.75	0.0393	434.09	0.00	0.00
2.42	1.22	1.22	0.0589	434.14	0.00	0.00
2.66	1.68	1.68	0.0878	434.21	0.00	0.00
2.90	2.15	2.15	0.1261	434.30	0.00	0.00
3.14	1.73	1.73	0.1649	434.39	0.00	0.00
3.38	1.32	1.32	0.1954	434.46	0.00	0.00
3.63	0.90	0.90	0.2175	434.52	0.00	0.00
3.87	0.48	0.48	0.2312	434.55	0.00	0.00
4.11	0.43	0.43	0.2403	434.57	0.00	0.00
4.35	0.38	0.38	0.2483	434.59	0.00	0.00
4.59	0.32	0.32	0.2553	434.61	0.00	0.00
4.83	0.27	0.27	0.2612	434.62	0.00	0.00
5.08	0.27	0.27	0.2666	434.63	0.00	0.00
5.32	0.26	0.26	0.2719	434.65	0.00	0.00
5.56	0.26	0.26	0.2771	434.66	0.00	0.00
5.80	0.25	0.25	0.2822	434.67	0.00	0.00
6.04	0.24	0.24	0.2871	434.68	0.00	0.00
6.28	0.23	0.23	0.2918	434.69	0.00	0.00
6.53	0.21	0.21	0.2962	434.70	0.00	0.00
6.77	0.20	0.20	0.3003	434.71	0.00	0.00
7.01	0.19	0.19	0.3042	434.72	0.00	0.00
7.25	0.19	0.19	0.3080	434.73	0.00	0.00
7.49	0.18	0.18	0.3117	434.74	0.00	0.00
7.73	0.18	0.18	0.3153	434.75	0.00	0.00
7.98	0.17	0.17	0.3187	434.76	0.00	0.00
8.22	0.17	0.17	0.3221	434.77	0.00	0.00
8.46	0.16	0.16	0.3254	434.77	0.00	0.00
8.70	0.16	0.16	0.3286	434.78	0.00	0.00
8.94	0.15	0.15	0.3317	434.79	0.00	0.00
9.18	0.15	0.15	0.3347	434.80	0.00	0.00
9.43	0.15	0.15	0.3376	434.80	0.00	0.00
9.67	0.14	0.14	0.3405	434.81	0.00	0.00
9.91	0.14	0.14	0.3433	434.82	0.00	0.00
10.15	0.13	0.13	0.3460	434.82	0.00	0.00
10.39	0.13	0.13	0.3486	434.83	0.00	0.00
10.63	0.13	0.13	0.3512	434.83	0.00	0.00
10.88	0.12	0.12	0.3536	434.84	0.00	0.00
11.12	0.12	0.12	0.3561	434.85	0.00	0.00
11.36	0.12	0.12	0.3584	434.85	0.00	0.00
11.60	0.11	0.11	0.3607	434.86	0.00	0.00
11.84	0.11	0.11	0.3630	434.86	0.00	0.00
12.08	0.11	0.11	0.3652	434.87	0.00	0.00
12.33	0.11	0.11	0.3674	434.87	0.00	0.00

Event Time (hours)	Hydrograph Inflow (cfs)	Basin Inflow (cfs)	Storage Used (acre-ft)	Elevation Above MSL (feet)	Basin Outflow (cfs)	Outflow Total (cfs)
12.57	0.10	0.10	0.3695	434.88	0.00	0.00
12.81	0.10	0.10	0.3715	434.88	0.00	0.00
13.05	0.10	0.10	0.3735	434.89	0.00	0.00
13.29	0.10	0.10	0.3755	434.89	0.00	0.00
13.53	0.09	0.09	0.3774	434.90	0.00	0.00
13.78	0.09	0.09	0.3793	434.90	0.00	0.00
14.02	0.09	0.09	0.3811	434.91	0.00	0.00
14.26	0.09	0.09	0.3829	434.91	0.00	0.00
14.50	0.09	0.09	0.3847	434.91	0.00	0.00
14.74	0.08	0.08	0.3864	434.92	0.00	0.00
14.98	0.08	0.08	0.3881	434.92	0.00	0.00
15.23	0.08	0.08	0.3898	434.93	0.00	0.00
15.47	0.08	0.08	0.3914	434.93	0.00	0.00
15.71	0.08	0.08	0.3930	434.93	0.00	0.00
15.95	0.08	0.08	0.3945	434.94	0.00	0.00
16.19	0.08	0.08	0.3961	434.94	0.00	0.00
16.43	0.07	0.07	0.3976	434.94	0.00	0.00
16.68	0.07	0.07	0.3990	434.95	0.00	0.00
16.92	0.07	0.07	0.4005	434.95	0.00	0.00
17.16	0.07	0.07	0.4019	434.95	0.00	0.00
17.40	0.07	0.07	0.4033	434.96	0.00	0.00
17.64	0.07	0.07	0.4046	434.96	0.00	0.00
17.88	0.07	0.07	0.4060	434.96	0.00	0.00
18.13	0.06	0.06	0.4073	434.97	0.00	0.00
18.37	0.06	0.06	0.4086	434.97	0.00	0.00
18.61	0.06	0.06	0.4099	434.97	0.00	0.00
18.85	0.06	0.06	0.4111	434.98	0.00	0.00
19.09	0.06	0.06	0.4123	434.98	0.00	0.00
19.33	0.06	0.06	0.4135	434.98	0.00	0.00
19.58	0.06	0.06	0.4147	434.99	0.00	0.00
19.82	0.06	0.06	0.4159	434.99	0.00	0.00
20.06	0.06	0.06	0.4171	434.99	0.00	0.00
20.30	0.06	0.06	0.4182	434.99	0.00	0.00
20.54	0.06	0.06	0.4194	435.00	0.00	0.00
20.78	0.05	0.05	0.4205	435.00	0.00	0.00
21.03	0.05	0.05	0.4216	435.00	0.00	0.00
21.27	0.05	0.05	0.4226	435.00	0.00	0.00
21.51	0.05	0.05	0.4237	435.00	0.00	0.00
21.75	0.05	0.05	0.4247	435.00	0.00	0.00
21.99	0.05	0.05	0.4258	435.01	0.00	0.00
22.23	0.05	0.05	0.4268	435.01	0.00	0.00
22.48	0.05	0.05	0.4278	435.01	0.00	0.00
22.72	0.05	0.05	0.4288	435.01	0.00	0.00
22.96	0.05	0.05	0.4298	435.01	0.00	0.00
23.20	0.05	0.05	0.4308	435.01	0.00	0.00
23.44	0.05	0.05	0.4317	435.01	0.00	0.00
23.68	0.05	0.05	0.4327	435.01	0.00	0.00
23.93	0.05	0.05	0.4336	435.01	0.00	0.00
24.17	0.05	0.05	0.4345	435.02	0.00	0.00
24.41	0.00	0.00	0.4350	435.02	0.00	0.00

**Modified Puls Routing
Summary of Results**

Inflow Hydrograph: D:\Working Files\VTPSUHM\PRE w Depression\DA TO CD2-50 Year Storm.HYD
Storage/Elevation Curve: D:\Working Files\VTPSUHM\PRE w Depression\CD2 Storage.ES

Basin Bypass Capacity = 0.00 cfs
Starting Pool Elevation = 434.00 feet
Time Interval = 0.242 hours
Total number of Inflow points = 102

	Event Time (hours)	Hydrograph Inflow (cfs)	Basin Inflow (cfs)	Storage Used (acre-ft)	Elevation Above MSL (feet)	Basin Outflow (cfs)	Outflow Total (cfs)
Start	0.00	0.00	0.00	0.0000	434.00	0.00	0.00
Max. Inflow	2.90	2.43	2.43	0.1440	434.34	0.00	0.00
Max. Outflow	24.41	0.00	0.00	0.5072	435.10	0.00	0.00
Final	24.41	0.00	0.00	0.5072	435.10	0.00	0.00

Modified Puls Routing

Inflow Hydrograph: D:\Working Files\VTSPUHM\PRE w Depression\DA TO CD2-50 Year Storm.HYD
 Storage/Elevation Curve: D:\Working Files\VTSPUHM\PRE w Depression\CD2 Storage.ES

Basin Bypass Capacity = 0.00 cfs
 Starting Pool Elevation = 434.00 feet
 Time Interval = 0.242 hours

Event Time (hours)	Hydrograph Inflow (cfs)	Basin Inflow (cfs)	Storage Used (acre-ft)	Elevation Above MSL (feet)	Basin Outflow (cfs)	Outflow Total (cfs)
0.00	0.00	0.00	0.0000	434.00	0.00	0.00
0.24	0.06	0.06	0.0006	434.00	0.00	0.00
0.48	0.13	0.13	0.0025	434.01	0.00	0.00
0.73	0.19	0.19	0.0057	434.01	0.00	0.00
0.97	0.25	0.25	0.0101	434.02	0.00	0.00
1.21	0.27	0.27	0.0153	434.04	0.00	0.00
1.45	0.29	0.29	0.0209	434.05	0.00	0.00
1.69	0.31	0.31	0.0270	434.06	0.00	0.00
1.93	0.33	0.33	0.0334	434.08	0.00	0.00
2.18	0.86	0.86	0.0453	434.11	0.00	0.00
2.42	1.38	1.38	0.0677	434.16	0.00	0.00
2.66	1.91	1.91	0.1006	434.24	0.00	0.00
2.90	2.43	2.43	0.1440	434.34	0.00	0.00
3.14	1.97	1.97	0.1879	434.45	0.00	0.00
3.38	1.50	1.50	0.2225	434.53	0.00	0.00
3.63	1.03	1.03	0.2477	434.59	0.00	0.00
3.87	0.56	0.56	0.2636	434.63	0.00	0.00
4.11	0.50	0.50	0.2742	434.65	0.00	0.00
4.35	0.44	0.44	0.2835	434.67	0.00	0.00
4.59	0.37	0.37	0.2916	434.69	0.00	0.00
4.83	0.31	0.31	0.2984	434.71	0.00	0.00
5.08	0.30	0.30	0.3046	434.72	0.00	0.00
5.32	0.30	0.30	0.3105	434.74	0.00	0.00
5.56	0.29	0.29	0.3164	434.75	0.00	0.00
5.80	0.28	0.28	0.3220	434.76	0.00	0.00
6.04	0.27	0.27	0.3274	434.78	0.00	0.00
6.28	0.25	0.25	0.3326	434.79	0.00	0.00
6.53	0.24	0.24	0.3376	434.80	0.00	0.00
6.77	0.23	0.23	0.3422	434.81	0.00	0.00
7.01	0.22	0.22	0.3467	434.82	0.00	0.00
7.25	0.22	0.22	0.3511	434.83	0.00	0.00
7.49	0.21	0.21	0.3554	434.84	0.00	0.00
7.73	0.21	0.21	0.3595	434.85	0.00	0.00
7.98	0.20	0.20	0.3636	434.86	0.00	0.00
8.22	0.20	0.20	0.3676	434.87	0.00	0.00
8.46	0.19	0.19	0.3714	434.88	0.00	0.00
8.70	0.19	0.19	0.3752	434.89	0.00	0.00
8.94	0.18	0.18	0.3790	434.90	0.00	0.00
9.18	0.18	0.18	0.3826	434.91	0.00	0.00
9.43	0.18	0.18	0.3861	434.92	0.00	0.00
9.67	0.17	0.17	0.3896	434.93	0.00	0.00
9.91	0.17	0.17	0.3929	434.93	0.00	0.00
10.15	0.16	0.16	0.3963	434.94	0.00	0.00
10.39	0.16	0.16	0.3995	434.95	0.00	0.00
10.63	0.16	0.16	0.4027	434.96	0.00	0.00
10.88	0.15	0.15	0.4058	434.96	0.00	0.00
11.12	0.15	0.15	0.4088	434.97	0.00	0.00
11.36	0.15	0.15	0.4118	434.98	0.00	0.00
11.60	0.14	0.14	0.4147	434.99	0.00	0.00
11.84	0.14	0.14	0.4175	434.99	0.00	0.00
12.08	0.14	0.14	0.4203	435.00	0.00	0.00
12.33	0.14	0.14	0.4230	435.00	0.00	0.00

Event Time (hours)	Hydrograph Inflow (cfs)	Basin Inflow (cfs)	Storage Used (acre-ft)	Elevation Above MSL (feet)	Basin Outflow (cfs)	Outflow Total (cfs)
12.57	0.13	0.13	0.4257	435.01	0.00	0.00
12.81	0.13	0.13	0.4283	435.01	0.00	0.00
13.05	0.13	0.13	0.4309	435.01	0.00	0.00
13.29	0.12	0.12	0.4334	435.01	0.00	0.00
13.53	0.12	0.12	0.4358	435.02	0.00	0.00
13.78	0.12	0.12	0.4382	435.02	0.00	0.00
14.02	0.12	0.12	0.4406	435.02	0.00	0.00
14.26	0.11	0.11	0.4429	435.03	0.00	0.00
14.50	0.11	0.11	0.4451	435.03	0.00	0.00
14.74	0.11	0.11	0.4474	435.03	0.00	0.00
14.98	0.11	0.11	0.4495	435.03	0.00	0.00
15.23	0.11	0.11	0.4517	435.04	0.00	0.00
15.47	0.10	0.10	0.4538	435.04	0.00	0.00
15.71	0.10	0.10	0.4558	435.04	0.00	0.00
15.95	0.10	0.10	0.4578	435.04	0.00	0.00
16.19	0.10	0.10	0.4598	435.04	0.00	0.00
16.43	0.10	0.10	0.4618	435.05	0.00	0.00
16.68	0.09	0.09	0.4637	435.05	0.00	0.00
16.92	0.09	0.09	0.4655	435.05	0.00	0.00
17.16	0.09	0.09	0.4673	435.05	0.00	0.00
17.40	0.09	0.09	0.4691	435.06	0.00	0.00
17.64	0.09	0.09	0.4709	435.06	0.00	0.00
17.88	0.08	0.08	0.4725	435.06	0.00	0.00
18.13	0.08	0.08	0.4742	435.06	0.00	0.00
18.37	0.08	0.08	0.4759	435.06	0.00	0.00
18.61	0.08	0.08	0.4775	435.07	0.00	0.00
18.85	0.08	0.08	0.4790	435.07	0.00	0.00
19.09	0.08	0.08	0.4806	435.07	0.00	0.00
19.33	0.07	0.07	0.4821	435.07	0.00	0.00
19.58	0.07	0.07	0.4835	435.07	0.00	0.00
19.82	0.07	0.07	0.4850	435.07	0.00	0.00
20.06	0.07	0.07	0.4864	435.08	0.00	0.00
20.30	0.07	0.07	0.4878	435.08	0.00	0.00
20.54	0.07	0.07	0.4892	435.08	0.00	0.00
20.78	0.07	0.07	0.4905	435.08	0.00	0.00
21.03	0.06	0.06	0.4918	435.08	0.00	0.00
21.27	0.06	0.06	0.4931	435.08	0.00	0.00
21.51	0.06	0.06	0.4944	435.08	0.00	0.00
21.75	0.06	0.06	0.4956	435.09	0.00	0.00
21.99	0.06	0.06	0.4968	435.09	0.00	0.00
22.23	0.06	0.06	0.4980	435.09	0.00	0.00
22.48	0.06	0.06	0.4992	435.09	0.00	0.00
22.72	0.06	0.06	0.5003	435.09	0.00	0.00
22.96	0.05	0.05	0.5014	435.09	0.00	0.00
23.20	0.05	0.05	0.5025	435.09	0.00	0.00
23.44	0.05	0.05	0.5036	435.10	0.00	0.00
23.68	0.05	0.05	0.5046	435.10	0.00	0.00
23.93	0.05	0.05	0.5057	435.10	0.00	0.00
24.17	0.05	0.05	0.5067	435.10	0.00	0.00
24.41	0.00	0.00	0.5072	435.10	0.00	0.00

**Modified Puls Routing
Summary of Results**

Inflow Hydrograph: D:\Working Files\VTPSUHM\PRE w Depression\DA TO CD2-100 Year Storm.HYD
Storage/Elevation Curve: D:\Working Files\VTPSUHM\PRE w Depression\CD2 Storage.ES

Basin Bypass Capacity = 0.00 cfs
Starting Pool Elevation = 434.00 feet
Time Interval = 0.242 hours
Total number of Inflow points = 102

	Event Time (hours)	Hydrograph Inflow (cfs)	Basin Inflow (cfs)	Storage Used (acre-ft)	Elevation Above MSL (feet)	Basin Outflow (cfs)	Outflow Total (cfs)
Start	0.00	0.00	0.00	0.0000	434.00	0.00	0.00
Max. Inflow	2.90	2.70	2.70	0.1604	434.38	0.00	0.00
Max. Outflow	24.41	0.00	0.00	0.5935	435.20	0.00	0.00
Final	24.41	0.00	0.00	0.5935	435.20	0.00	0.00

Modified Puls Routing

Inflow Hydrograph: D:\Working Files\VTSPSUHM\PRE w Depression\DA TO CD2-100 Year Storm.HYD
 Storage/Elevation Curve: D:\Working Files\VTSPSUHM\PRE w Depression\CD2 Storage.ES

Basin Bypass Capacity = 0.00 cfs
 Starting Pool Elevation = 434.00 feet
 Time Interval = 0.242 hours

Event Time (hours)	Hydrograph Inflow (cfs)	Basin Inflow (cfs)	Storage Used (acre-ft)	Elevation Above MSL (feet)	Basin Outflow (cfs)	Outflow Total (cfs)
0.00	0.00	0.00	0.0000	434.00	0.00	0.00
0.24	0.07	0.07	0.0007	434.00	0.00	0.00
0.48	0.13	0.13	0.0027	434.01	0.00	0.00
0.73	0.20	0.20	0.0060	434.01	0.00	0.00
0.97	0.27	0.27	0.0107	434.03	0.00	0.00
1.21	0.30	0.30	0.0164	434.04	0.00	0.00
1.45	0.33	0.33	0.0226	434.05	0.00	0.00
1.69	0.36	0.36	0.0295	434.07	0.00	0.00
1.93	0.39	0.39	0.0370	434.09	0.00	0.00
2.18	0.97	0.97	0.0506	434.12	0.00	0.00
2.42	1.55	1.55	0.0756	434.18	0.00	0.00
2.66	2.12	2.12	0.1123	434.27	0.00	0.00
2.90	2.70	2.70	0.1604	434.38	0.00	0.00
3.14	2.21	2.21	0.2095	434.50	0.00	0.00
3.38	1.73	1.73	0.2488	434.59	0.00	0.00
3.63	1.24	1.24	0.2784	434.66	0.00	0.00
3.87	0.75	0.75	0.2983	434.71	0.00	0.00
4.11	0.64	0.64	0.3122	434.74	0.00	0.00
4.35	0.53	0.53	0.3239	434.77	0.00	0.00
4.59	0.42	0.42	0.3335	434.79	0.00	0.00
4.83	0.31	0.31	0.3409	434.81	0.00	0.00
5.08	0.31	0.31	0.3471	434.82	0.00	0.00
5.32	0.30	0.30	0.3531	434.84	0.00	0.00
5.56	0.29	0.29	0.3591	434.85	0.00	0.00
5.80	0.29	0.29	0.3648	434.87	0.00	0.00
6.04	0.28	0.28	0.3705	434.88	0.00	0.00
6.28	0.27	0.27	0.3759	434.89	0.00	0.00
6.53	0.26	0.26	0.3812	434.91	0.00	0.00
6.77	0.25	0.25	0.3864	434.92	0.00	0.00
7.01	0.25	0.25	0.3914	434.93	0.00	0.00
7.25	0.25	0.25	0.3964	434.94	0.00	0.00
7.49	0.24	0.24	0.4012	434.95	0.00	0.00
7.73	0.24	0.24	0.4060	434.96	0.00	0.00
7.98	0.24	0.24	0.4108	434.98	0.00	0.00
8.22	0.23	0.23	0.4155	434.99	0.00	0.00
8.46	0.23	0.23	0.4201	435.00	0.00	0.00
8.70	0.23	0.23	0.4246	435.00	0.00	0.00
8.94	0.22	0.22	0.4291	435.01	0.00	0.00
9.18	0.22	0.22	0.4335	435.01	0.00	0.00
9.43	0.22	0.22	0.4379	435.02	0.00	0.00
9.67	0.21	0.21	0.4422	435.02	0.00	0.00
9.91	0.21	0.21	0.4464	435.03	0.00	0.00
10.15	0.21	0.21	0.4505	435.03	0.00	0.00
10.39	0.20	0.20	0.4546	435.04	0.00	0.00
10.63	0.20	0.20	0.4586	435.04	0.00	0.00
10.88	0.20	0.20	0.4625	435.05	0.00	0.00
11.12	0.19	0.19	0.4664	435.05	0.00	0.00
11.36	0.19	0.19	0.4702	435.06	0.00	0.00
11.60	0.19	0.19	0.4740	435.06	0.00	0.00
11.84	0.18	0.18	0.4777	435.07	0.00	0.00
12.08	0.18	0.18	0.4813	435.07	0.00	0.00
12.33	0.18	0.18	0.4849	435.07	0.00	0.00

Event Time (hours)	Hydrograph Inflow (cfs)	Basin Inflow (cfs)	Storage Used (acre-ft)	Elevation Above MSL (feet)	Basin Outflow (cfs)	Outflow Total (cfs)
12.57	0.17	0.17	0.4884	435.08	0.00	0.00
12.81	0.17	0.17	0.4919	435.08	0.00	0.00
13.05	0.17	0.17	0.4953	435.09	0.00	0.00
13.29	0.17	0.17	0.4986	435.09	0.00	0.00
13.53	0.16	0.16	0.5018	435.09	0.00	0.00
13.78	0.16	0.16	0.5051	435.10	0.00	0.00
14.02	0.16	0.16	0.5082	435.10	0.00	0.00
14.26	0.15	0.15	0.5113	435.10	0.00	0.00
14.50	0.15	0.15	0.5143	435.11	0.00	0.00
14.74	0.15	0.15	0.5173	435.11	0.00	0.00
14.98	0.14	0.14	0.5202	435.11	0.00	0.00
15.23	0.14	0.14	0.5230	435.12	0.00	0.00
15.47	0.14	0.14	0.5258	435.12	0.00	0.00
15.71	0.14	0.14	0.5286	435.12	0.00	0.00
15.95	0.13	0.13	0.5313	435.13	0.00	0.00
16.19	0.13	0.13	0.5339	435.13	0.00	0.00
16.43	0.13	0.13	0.5365	435.13	0.00	0.00
16.68	0.13	0.13	0.5390	435.14	0.00	0.00
16.92	0.12	0.12	0.5415	435.14	0.00	0.00
17.16	0.12	0.12	0.5439	435.14	0.00	0.00
17.40	0.12	0.12	0.5463	435.14	0.00	0.00
17.64	0.12	0.12	0.5486	435.15	0.00	0.00
17.88	0.11	0.11	0.5509	435.15	0.00	0.00
18.13	0.11	0.11	0.5531	435.15	0.00	0.00
18.37	0.11	0.11	0.5553	435.15	0.00	0.00
18.61	0.11	0.11	0.5574	435.16	0.00	0.00
18.85	0.10	0.10	0.5595	435.16	0.00	0.00
19.09	0.10	0.10	0.5615	435.16	0.00	0.00
19.33	0.10	0.10	0.5634	435.16	0.00	0.00
19.58	0.09	0.09	0.5653	435.17	0.00	0.00
19.82	0.09	0.09	0.5672	435.17	0.00	0.00
20.06	0.09	0.09	0.5690	435.17	0.00	0.00
20.30	0.09	0.09	0.5708	435.17	0.00	0.00
20.54	0.08	0.08	0.5725	435.17	0.00	0.00
20.78	0.08	0.08	0.5741	435.18	0.00	0.00
21.03	0.08	0.08	0.5758	435.18	0.00	0.00
21.27	0.08	0.08	0.5773	435.18	0.00	0.00
21.51	0.08	0.08	0.5789	435.18	0.00	0.00
21.75	0.07	0.07	0.5804	435.18	0.00	0.00
21.99	0.07	0.07	0.5818	435.19	0.00	0.00
22.23	0.07	0.07	0.5832	435.19	0.00	0.00
22.48	0.07	0.07	0.5846	435.19	0.00	0.00
22.72	0.06	0.06	0.5859	435.19	0.00	0.00
22.96	0.06	0.06	0.5872	435.19	0.00	0.00
23.20	0.06	0.06	0.5884	435.19	0.00	0.00
23.44	0.06	0.06	0.5896	435.19	0.00	0.00
23.68	0.06	0.06	0.5908	435.20	0.00	0.00
23.93	0.05	0.05	0.5919	435.20	0.00	0.00
24.17	0.05	0.05	0.5930	435.20	0.00	0.00
24.41	0.00	0.00	0.5935	435.20	0.00	0.00

**CASE 1: PRE-PROJECT ANALYSIS
HYDROGRAPH COMBINATION A
(MILLER CULVERT + D.A. TO 72" PIPE)**

Hydrograph Combination

Filename	Start Date (mo/da/year)	Start Time (hr:min)	Points	Step (hours)
C:\Users\ngalio\OneDrive - Maser Consulting\Desktop\Working Files\2021\05\04\2021\MillerHydrograph\Miller Pipe Outflow Hydrographs - N2437	05/04/2021	0000	100	0.2417
C:\Users\ngalio\OneDrive - Maser Consulting\Desktop\Working Files\2021\05\04\2021\MillerHydrograph\Miller Pipe Outflow 2yr.HYD	05/04/2021	0000	101	0.2417
COMBINED HYDROGRAPH	05/04/2021	0000	101	0.2417

Date	Time	Hyd A Contribution	Hyd B Contribution	Combined Hydrograph
05/04/2021	0000	0.00	0.00	0.00
05/04/2021	0015	0.00	0.38	0.38
05/04/2021	0029	0.00	0.76	0.76
05/04/2021	0044	0.00	1.15	1.15
05/04/2021	0058	0.00	1.53	1.53
05/04/2021	0113	0.00	1.61	1.61
05/04/2021	0127	0.00	1.70	1.70
05/04/2021	0142	0.00	1.78	1.78
05/04/2021	0156	0.00	1.87	1.87
05/04/2021	0211	0.00	5.47	5.47
05/04/2021	0225	0.04	9.07	9.11
05/04/2021	0240	28.65	12.67	41.32
05/04/2021	0254	31.88	16.25	48.13
05/04/2021	0309	31.88	12.96	44.84
05/04/2021	0323	31.88	9.66	41.54
05/04/2021	0338	31.87	6.36	38.23
05/04/2021	0352	26.96	3.07	30.03
05/04/2021	0407	17.49	2.75	20.23
05/04/2021	0421	14.71	2.43	17.14
05/04/2021	0436	12.82	2.10	14.93
05/04/2021	0450	11.10	1.78	12.88
05/04/2021	0505	10.01	1.76	11.77
05/04/2021	0519	9.65	1.75	11.40
05/04/2021	0534	9.48	1.73	11.21
05/04/2021	0548	9.36	1.71	11.07
05/04/2021	0603	9.12	1.62	10.74
05/04/2021	0617	8.71	1.53	10.24
05/04/2021	0632	8.25	1.44	9.70
05/04/2021	0646	7.79	1.35	9.14
05/04/2021	0701	7.41	1.32	8.73
05/04/2021	0715	7.15	1.28	8.43
05/04/2021	0730	6.94	1.24	8.18
05/04/2021	0744	6.73	1.21	7.94
05/04/2021	0759	6.54	1.17	7.72
05/04/2021	0813	6.36	1.14	7.51
05/04/2021	0828	6.19	1.11	7.30
05/04/2021	0842	6.02	1.08	7.10
05/04/2021	0857	5.86	1.05	6.91
05/04/2021	0911	5.71	1.03	6.74
05/04/2021	0926	5.56	1.00	6.56
05/04/2021	0940	5.42	0.97	6.39
05/04/2021	0955	5.28	0.95	6.23
05/04/2021	1009	5.15	0.93	6.08
05/04/2021	1024	5.03	0.90	5.93
05/04/2021	1038	4.91	0.88	5.79
05/04/2021	1053	4.79	0.86	5.65
05/04/2021	1107	4.68	0.84	5.52
05/04/2021	1122	4.57	0.82	5.39
05/04/2021	1136	4.46	0.80	5.27
05/04/2021	1151	4.36	0.79	5.15
05/04/2021	1205	4.27	0.77	5.04
05/04/2021	1220	4.18	0.75	4.94
05/04/2021	1234	4.09	0.74	4.83

Date	Time	Hyd A Contribution	Hyd B Contribution	Combined Hydrograph
05/04/2021	1249	4.01	0.72	4.73
05/04/2021	1303	3.93	0.71	4.63
05/04/2021	1318	3.85	0.69	4.54
05/04/2021	1332	3.77	0.68	4.45
05/04/2021	1347	3.69	0.67	4.36
05/04/2021	1401	3.62	0.65	4.28
05/04/2021	1416	3.56	0.64	4.20
05/04/2021	1430	3.49	0.63	4.12
05/04/2021	1445	3.43	0.62	4.05
05/04/2021	1459	3.37	0.61	3.98
05/04/2021	1514	3.31	0.60	3.91
05/04/2021	1528	3.25	0.59	3.84
05/04/2021	1543	3.20	0.58	3.77
05/04/2021	1557	3.14	0.57	3.71
05/04/2021	1612	3.09	0.56	3.65
05/04/2021	1626	3.04	0.55	3.59
05/04/2021	1641	2.99	0.54	3.53
05/04/2021	1655	2.95	0.53	3.48
05/04/2021	1710	2.90	0.52	3.43
05/04/2021	1724	2.86	0.52	3.37
05/04/2021	1739	2.81	0.51	3.32
05/04/2021	1753	2.78	0.50	3.28
05/04/2021	1808	2.74	0.50	3.23
05/04/2021	1822	2.70	0.49	3.19
05/04/2021	1837	2.66	0.48	3.14
05/04/2021	1851	2.63	0.48	3.10
05/04/2021	1906	2.59	0.47	3.06
05/04/2021	1920	2.56	0.46	3.02
05/04/2021	1935	2.53	0.46	2.98
05/04/2021	1949	2.49	0.45	2.95
05/04/2021	2004	2.46	0.45	2.91
05/04/2021	2018	2.43	0.44	2.88
05/04/2021	2033	2.40	0.44	2.84
05/04/2021	2047	2.38	0.43	2.81
05/04/2021	2102	2.35	0.43	2.78
05/04/2021	2116	2.32	0.42	2.75
05/04/2021	2131	2.30	0.42	2.72
05/04/2021	2145	2.27	0.41	2.69
05/04/2021	2160	2.25	0.41	2.66
05/04/2021	2214	2.23	0.40	2.63
05/04/2021	2229	2.20	0.40	2.60
05/04/2021	2243	2.18	0.40	2.58
05/04/2021	2258	2.16	0.39	2.55
05/04/2021	2312	2.14	0.39	2.53
05/04/2021	2327	2.12	0.39	2.51
05/04/2021	2341	2.10	0.38	2.49
05/04/2021	2356	2.09	0.38	2.46
05/05/2021	0010	0.00	0.00	0.00

Hydrograph Combination

Filename	Start Date (mo/da/year)	Start Time (hr:min)	Points	Step (hours)
C:\Users\ngalio\OneDrive - Maser Consulting\Desktop\Working Files\17/04/2021\Miller Hydrograph\100 Miller Pipe Outflow 10yr.HYD	05/04/2021	0000	101	0.2417
C:\Users\ngalio\OneDrive - Maser Consulting\Desktop\Working Files\17/04/2021\PRE w Depression\100A to 72in-10 Year Storm.HYD	05/04/2021	0000	101	0.2417
COMBINED HYDROGRAPH				

Date	Time	Hyd A Contribution	Hyd B Contribution	Combined Hydrograph
05/04/2021	0000	0.00	0.00	0.00
05/04/2021	0015	0.00	0.57	0.57
05/04/2021	0029	0.00	1.15	1.15
05/04/2021	0044	0.00	1.72	1.72
05/04/2021	0058	0.00	2.29	2.29
05/04/2021	0113	0.00	2.44	2.44
05/04/2021	0127	0.00	2.59	2.59
05/04/2021	0142	0.00	2.74	2.74
05/04/2021	0156	0.00	2.90	2.90
05/04/2021	0211	0.03	8.01	8.04
05/04/2021	0225	25.39	13.12	38.51
05/04/2021	0240	32.12	18.23	50.35
05/04/2021	0254	32.12	23.32	55.44
05/04/2021	0309	32.12	18.68	50.80
05/04/2021	0323	32.12	14.03	46.15
05/04/2021	0338	32.12	9.39	41.51
05/04/2021	0352	32.11	4.75	36.86
05/04/2021	0407	25.69	4.24	29.93
05/04/2021	0421	22.15	3.73	25.88
05/04/2021	0436	19.35	3.22	22.57
05/04/2021	0450	16.66	2.71	19.36
05/04/2021	0505	15.02	2.68	17.71
05/04/2021	0519	14.59	2.66	17.25
05/04/2021	0534	14.40	2.64	17.04
05/04/2021	0548	14.26	2.62	16.87
05/04/2021	0603	13.85	2.46	16.31
05/04/2021	0617	13.11	2.30	15.42
05/04/2021	0632	12.30	2.15	14.45
05/04/2021	0646	11.49	1.99	13.48
05/04/2021	0701	10.84	1.93	12.77
05/04/2021	0715	10.43	1.87	12.29
05/04/2021	0730	10.06	1.80	11.87
05/04/2021	0744	9.73	1.74	11.47
05/04/2021	0759	9.41	1.69	11.09
05/04/2021	0813	9.11	1.64	10.75
05/04/2021	0828	8.83	1.58	10.41
05/04/2021	0842	8.55	1.53	10.08
05/04/2021	0857	8.28	1.49	9.77
05/04/2021	0911	8.04	1.44	9.48
05/04/2021	0926	7.80	1.40	9.20
05/04/2021	0940	7.57	1.36	8.93
05/04/2021	0955	7.35	1.32	8.67
05/04/2021	1009	7.14	1.28	8.43
05/04/2021	1024	6.95	1.25	8.20
05/04/2021	1038	6.76	1.21	7.97
05/04/2021	1053	6.58	1.18	7.76
05/04/2021	1107	6.41	1.15	7.56
05/04/2021	1122	6.24	1.12	7.37
05/04/2021	1136	6.08	1.09	7.18
05/04/2021	1151	5.93	1.07	7.00
05/04/2021	1205	5.80	1.04	6.84
05/04/2021	1220	5.66	1.02	6.68
05/04/2021	1234	5.52	0.99	6.52

Date	Time	Hyd A Contribution	Hyd B Contribution	Combined Hydrograph
05/04/2021	1249	5.40	0.97	6.37
05/04/2021	1303	5.28	0.95	6.24
05/04/2021	1318	5.17	0.93	6.10
05/04/2021	1332	5.06	0.91	5.97
05/04/2021	1347	4.96	0.89	5.85
05/04/2021	1401	4.86	0.88	5.74
05/04/2021	1416	4.76	0.86	5.62
05/04/2021	1430	4.67	0.84	5.51
05/04/2021	1445	4.58	0.83	5.41
05/04/2021	1459	4.50	0.81	5.31
05/04/2021	1514	4.42	0.80	5.22
05/04/2021	1528	4.34	0.79	5.13
05/04/2021	1543	4.27	0.77	5.05
05/04/2021	1557	4.20	0.76	4.97
05/04/2021	1612	4.14	0.75	4.89
05/04/2021	1626	4.07	0.74	4.81
05/04/2021	1641	4.01	0.73	4.74
05/04/2021	1655	3.95	0.72	4.67
05/04/2021	1710	3.90	0.71	4.61
05/04/2021	1724	3.84	0.70	4.54
05/04/2021	1739	3.79	0.69	4.48
05/04/2021	1753	3.74	0.68	4.42
05/04/2021	1808	3.70	0.67	4.37
05/04/2021	1822	3.65	0.66	4.31
05/04/2021	1837	3.61	0.66	4.26
05/04/2021	1851	3.57	0.65	4.22
05/04/2021	1906	3.53	0.64	4.17
05/04/2021	1920	3.49	0.64	4.13
05/04/2021	1935	3.45	0.63	4.08
05/04/2021	1949	3.42	0.62	4.05
05/04/2021	2004	3.39	0.62	4.01
05/04/2021	2018	3.36	0.61	3.97
05/04/2021	2033	3.33	0.61	3.93
05/04/2021	2047	3.30	0.60	3.90
05/04/2021	2102	3.27	0.60	3.87
05/04/2021	2116	3.25	0.59	3.84
05/04/2021	2131	3.22	0.59	3.81
05/04/2021	2145	3.20	0.58	3.78
05/04/2021	2160	3.17	0.58	3.76
05/04/2021	2214	3.15	0.58	3.73
05/04/2021	2229	3.13	0.57	3.71
05/04/2021	2243	3.11	0.57	3.68
05/04/2021	2258	3.09	0.57	3.66
05/04/2021	2312	3.08	0.56	3.64
05/04/2021	2327	3.06	0.56	3.62
05/04/2021	2341	3.04	0.56	3.60
05/04/2021	2356	3.03	0.56	3.59
05/05/2021	0010	0.00	0.00	0.00

Hydrograph Combination

Filename	Start Date (mo/da/year)	Start Time (hr:min)	Points	Step (hours)
C:\Users\ngalio\OneDrive - Maser Consulting\Desktop\Working Files\17042021\Miller Hydrograph\Miller Pipe Outflow Hydrographs - N2437	05/04/2021	0000	100	0.2417
C:\Users\ngalio\OneDrive - Maser Consulting\Desktop\Working Files\17042021\PRE w Depression\00A to 72in-25 Year Storm.HYD	05/04/2021	0000	101	0.2417
COMBINED HYDROGRAPH				

Date	Time	Hyd A Contribution	Hyd B Contribution	Combined Hydrograph
05/04/2021	0000	0.00	0.00	0.00
05/04/2021	0015	0.00	0.87	0.87
05/04/2021	0029	0.00	1.75	1.75
05/04/2021	0044	0.00	2.62	2.62
05/04/2021	0058	0.00	3.50	3.50
05/04/2021	0113	0.00	3.70	3.70
05/04/2021	0127	0.00	3.91	3.91
05/04/2021	0142	0.00	4.11	4.11
05/04/2021	0156	0.02	4.33	4.34
05/04/2021	0211	15.18	11.61	26.79
05/04/2021	0225	32.35	18.89	51.24
05/04/2021	0240	32.35	26.18	58.53
05/04/2021	0254	32.35	33.44	65.79
05/04/2021	0309	32.35	26.94	59.29
05/04/2021	0323	32.35	20.44	52.79
05/04/2021	0338	32.35	13.94	46.29
05/04/2021	0352	32.35	7.46	39.81
05/04/2021	0407	32.35	6.65	39.00
05/04/2021	0421	32.06	5.84	37.89
05/04/2021	0436	28.02	5.03	33.05
05/04/2021	0450	24.03	4.22	28.25
05/04/2021	0505	21.64	4.15	25.78
05/04/2021	0519	20.98	4.08	25.05
05/04/2021	0534	20.57	4.00	24.58
05/04/2021	0548	20.20	3.93	24.14
05/04/2021	0603	19.55	3.72	23.27
05/04/2021	0617	18.56	3.51	22.08
05/04/2021	0632	17.53	3.30	20.83
05/04/2021	0646	16.48	3.09	19.57
05/04/2021	0701	15.67	3.01	18.68
05/04/2021	0715	15.16	2.92	18.08
05/04/2021	0730	14.70	2.83	17.53
05/04/2021	0744	14.26	2.74	17.00
05/04/2021	0759	13.84	2.67	16.51
05/04/2021	0813	13.45	2.59	16.05
05/04/2021	0828	13.08	2.52	15.60
05/04/2021	0842	12.70	2.44	15.14
05/04/2021	0857	12.34	2.38	14.72
05/04/2021	0911	12.01	2.31	14.33
05/04/2021	0926	11.69	2.25	13.94
05/04/2021	0940	11.36	2.19	13.55
05/04/2021	0955	11.06	2.13	13.19
05/04/2021	1009	10.77	2.08	12.85
05/04/2021	1024	10.50	2.02	12.52
05/04/2021	1038	10.22	1.97	12.18
05/04/2021	1053	9.96	1.92	11.88
05/04/2021	1107	9.71	1.87	11.59
05/04/2021	1122	9.48	1.83	11.30
05/04/2021	1136	9.24	1.78	11.01
05/04/2021	1151	9.01	1.74	10.75
05/04/2021	1205	8.80	1.70	10.50
05/04/2021	1220	8.60	1.66	10.25
05/04/2021	1234	8.39	1.62	10.01

Date	Time	Hyd A Contribution	Hyd B Contribution	Combined Hydrograph
05/04/2021	1249	8.20	1.58	9.78
05/04/2021	1303	8.01	1.55	9.56
05/04/2021	1318	7.84	1.51	9.35
05/04/2021	1332	7.66	1.48	9.14
05/04/2021	1347	7.49	1.44	8.93
05/04/2021	1401	7.33	1.41	8.75
05/04/2021	1416	7.17	1.38	8.56
05/04/2021	1430	7.02	1.35	8.37
05/04/2021	1445	6.88	1.33	8.20
05/04/2021	1459	6.74	1.30	8.04
05/04/2021	1514	6.60	1.27	7.88
05/04/2021	1528	6.47	1.25	7.71
05/04/2021	1543	6.34	1.22	7.56
05/04/2021	1557	6.22	1.20	7.42
05/04/2021	1612	6.10	1.18	7.27
05/04/2021	1626	5.98	1.15	7.14
05/04/2021	1641	5.87	1.13	7.00
05/04/2021	1655	5.76	1.11	6.88
05/04/2021	1710	5.66	1.09	6.75
05/04/2021	1724	5.55	1.07	6.63
05/04/2021	1739	5.45	1.05	6.51
05/04/2021	1753	5.36	1.04	6.40
05/04/2021	1808	5.27	1.02	6.28
05/04/2021	1822	5.17	1.00	6.18
05/04/2021	1837	5.09	0.98	6.07
05/04/2021	1851	5.01	0.97	5.98
05/04/2021	1906	4.93	0.95	5.88
05/04/2021	1920	4.84	0.94	5.78
05/04/2021	1935	4.77	0.92	5.69
05/04/2021	1949	4.69	0.91	5.60
05/04/2021	2004	4.62	0.89	5.51
05/04/2021	2018	4.55	0.88	5.43
05/04/2021	2033	4.48	0.87	5.34
05/04/2021	2047	4.41	0.85	5.27
05/04/2021	2102	4.35	0.84	5.19
05/04/2021	2116	4.29	0.83	5.12
05/04/2021	2131	4.22	0.82	5.04
05/04/2021	2145	4.17	0.81	4.97
05/04/2021	2160	4.11	0.80	4.90
05/04/2021	2214	4.05	0.78	4.84
05/04/2021	2229	4.00	0.77	4.77
05/04/2021	2243	3.94	0.76	4.71
05/04/2021	2258	3.89	0.75	4.65
05/04/2021	2312	3.84	0.74	4.59
05/04/2021	2327	3.79	0.74	4.53
05/04/2021	2341	3.75	0.73	4.47
05/04/2021	2356	3.70	0.72	4.42
05/05/2021	0010	0.00	0.00	0.00

Hydrograph Combination

Filename	Start Date (mo/da/year)	Start Time (hr:min)	Points	Step (hours)
C:\Users\ngalio\OneDrive - Maser Consulting\Desktop\Working Files\2021\05\04\2021\MillerHydrograph\Miller Pipe Outflow Hydrographs - N2437	05/04/2021	0000	100	0.2417
C:\Users\ngalio\OneDrive - Maser Consulting\Desktop\Working Files\2021\05\04\2021\MillerHydrograph\Miller Pipe Outflow 50yr.HYD	05/04/2021	0000	100	0.2417
COMBINED HYDROGRAPH	05/04/2021	0000	101	0.2417

Date	Time	Hyd A Contribution	Hyd B Contribution	Combined Hydrograph
05/04/2021	0000	0.00	0.00	0.00
05/04/2021	0015	0.00	0.98	0.98
05/04/2021	0029	0.00	1.96	1.96
05/04/2021	0044	0.00	2.93	2.93
05/04/2021	0058	0.00	3.91	3.91
05/04/2021	0113	0.00	4.23	4.23
05/04/2021	0127	0.00	4.54	4.54
05/04/2021	0142	0.00	4.86	4.86
05/04/2021	0156	0.50	5.18	5.69
05/04/2021	0211	32.46	13.35	45.81
05/04/2021	0225	32.46	21.52	53.98
05/04/2021	0240	32.46	29.68	62.14
05/04/2021	0254	32.46	37.83	70.29
05/04/2021	0309	32.46	30.54	63.00
05/04/2021	0323	32.46	23.26	55.72
05/04/2021	0338	32.46	15.98	48.44
05/04/2021	0352	32.46	8.71	41.17
05/04/2021	0407	32.46	7.74	40.20
05/04/2021	0421	32.46	6.77	39.23
05/04/2021	0436	32.32	5.80	38.12
05/04/2021	0450	27.54	4.83	32.38
05/04/2021	0505	24.64	4.71	29.35
05/04/2021	0519	23.74	4.59	28.33
05/04/2021	0534	23.08	4.47	27.55
05/04/2021	0548	22.46	4.35	26.80
05/04/2021	0603	21.67	4.14	25.81
05/04/2021	0617	20.68	3.94	24.62
05/04/2021	0632	19.67	3.74	23.41
05/04/2021	0646	18.65	3.53	22.19
05/04/2021	0701	17.89	3.45	21.34
05/04/2021	0715	17.41	3.37	20.78
05/04/2021	0730	16.98	3.29	20.27
05/04/2021	0744	16.57	3.21	19.78
05/04/2021	0759	16.18	3.13	19.31
05/04/2021	0813	15.81	3.06	18.87
05/04/2021	0828	15.45	2.99	18.44
05/04/2021	0842	15.08	2.92	18.00
05/04/2021	0857	14.74	2.85	17.59
05/04/2021	0911	14.41	2.79	17.21
05/04/2021	0926	14.09	2.73	16.82
05/04/2021	0940	13.77	2.66	16.44
05/04/2021	0955	13.47	2.61	16.07
05/04/2021	1009	13.18	2.55	15.73
05/04/2021	1024	12.90	2.50	15.39
05/04/2021	1038	12.61	2.44	15.05
05/04/2021	1053	12.34	2.39	14.73
05/04/2021	1107	12.08	2.34	14.42
05/04/2021	1122	11.83	2.29	14.11
05/04/2021	1136	11.57	2.24	13.81
05/04/2021	1151	11.33	2.19	13.52
05/04/2021	1205	11.09	2.15	13.24
05/04/2021	1220	10.87	2.10	12.97
05/04/2021	1234	10.64	2.06	12.69

Date	Time	Hyd A Contribution	Hyd B Contribution	Combined Hydrograph
05/04/2021	1249	10.42	2.02	12.43
05/04/2021	1303	10.20	1.98	12.18
05/04/2021	1318	10.00	1.93	11.93
05/04/2021	1332	9.79	1.89	11.69
05/04/2021	1347	9.59	1.86	11.45
05/04/2021	1401	9.40	1.82	11.22
05/04/2021	1416	9.21	1.78	10.99
05/04/2021	1430	9.02	1.74	10.77
05/04/2021	1445	8.84	1.71	10.55
05/04/2021	1459	8.67	1.68	10.35
05/04/2021	1514	8.50	1.64	10.14
05/04/2021	1528	8.32	1.61	9.93
05/04/2021	1543	8.16	1.58	9.73
05/04/2021	1557	8.00	1.55	9.54
05/04/2021	1612	7.84	1.52	9.36
05/04/2021	1626	7.68	1.48	9.17
05/04/2021	1641	7.53	1.46	8.99
05/04/2021	1655	7.38	1.43	8.81
05/04/2021	1710	7.24	1.40	8.64
05/04/2021	1724	7.09	1.37	8.46
05/04/2021	1739	6.95	1.34	8.30
05/04/2021	1753	6.82	1.32	8.14
05/04/2021	1808	6.69	1.29	7.98
05/04/2021	1822	6.55	1.26	7.82
05/04/2021	1837	6.42	1.24	7.67
05/04/2021	1851	6.30	1.22	7.51
05/04/2021	1906	6.17	1.19	7.37
05/04/2021	1920	6.05	1.17	7.22
05/04/2021	1935	5.94	1.14	7.08
05/04/2021	1949	5.82	1.12	6.94
05/04/2021	2004	5.71	1.10	6.80
05/04/2021	2018	5.59	1.08	6.67
05/04/2021	2033	5.48	1.06	6.54
05/04/2021	2047	5.37	1.04	6.41
05/04/2021	2102	5.26	1.02	6.28
05/04/2021	2116	5.16	0.99	6.15
05/04/2021	2131	5.06	0.97	6.03
05/04/2021	2145	4.96	0.96	5.92
05/04/2021	2160	4.86	0.94	5.80
05/04/2021	2214	4.76	0.92	5.68
05/04/2021	2229	4.67	0.90	5.57
05/04/2021	2243	4.57	0.88	5.45
05/04/2021	2258	4.48	0.86	5.34
05/04/2021	2312	4.39	0.84	5.23
05/04/2021	2327	4.30	0.83	5.13
05/04/2021	2341	4.22	0.81	5.03
05/04/2021	2356	4.13	0.79	4.92
05/05/2021	0010	0.00	0.00	0.00

Hydrograph Combination

Filename	Start Date (mo/da/year)	Start Time (hr:min)	Points	Step (hours)
C:\Users\ngalio\OneDrive - Maser Consulting\Desktop\Working Files\17042021\Miller Hydrograph\100\Miller Pipe Outflow 100yr.HYD	05/04/2021	0000	101	0.2417
C:\Users\ngalio\OneDrive - Maser Consulting\Desktop\Working Files\17042021\PRE w Depression to 72in-100 Year Storm.HYD	05/04/2021	0000	101	0.2417
COMBINED HYDROGRAPH				

Date	Time	Hyd A Contribution	Hyd B Contribution	Combined Hydrograph
05/04/2021	0000	0.00	0.00	0.00
05/04/2021	0015	0.00	1.04	1.04
05/04/2021	0029	0.00	2.08	2.08
05/04/2021	0044	0.00	3.12	3.12
05/04/2021	0058	0.00	4.16	4.16
05/04/2021	0113	0.00	4.64	4.64
05/04/2021	0127	0.00	5.12	5.12
05/04/2021	0142	0.01	5.59	5.60
05/04/2021	0156	8.51	6.08	14.59
05/04/2021	0211	32.56	15.06	47.62
05/04/2021	0225	32.56	24.03	56.59
05/04/2021	0240	32.56	33.00	65.56
05/04/2021	0254	32.56	41.95	74.51
05/04/2021	0309	32.56	34.38	66.94
05/04/2021	0323	32.56	26.82	59.38
05/04/2021	0338	32.56	19.25	51.81
05/04/2021	0352	32.56	11.70	44.26
05/04/2021	0407	32.56	9.99	42.55
05/04/2021	0421	32.56	8.29	40.85
05/04/2021	0436	32.55	6.58	39.14
05/04/2021	0450	29.86	4.89	34.75
05/04/2021	0505	25.14	4.78	29.92
05/04/2021	0519	24.10	4.66	28.77
05/04/2021	0534	23.48	4.55	28.04
05/04/2021	0548	22.92	4.44	27.36
05/04/2021	0603	22.32	4.32	26.64
05/04/2021	0617	21.68	4.19	25.87
05/04/2021	0632	21.04	4.06	25.10
05/04/2021	0646	20.40	3.93	24.33
05/04/2021	0701	19.91	3.88	23.78
05/04/2021	0715	19.60	3.82	23.42
05/04/2021	0730	19.32	3.77	23.09
05/04/2021	0744	19.04	3.72	22.76
05/04/2021	0759	18.77	3.66	22.44
05/04/2021	0813	18.51	3.61	22.12
05/04/2021	0828	18.25	3.56	21.80
05/04/2021	0842	17.98	3.51	21.49
05/04/2021	0857	17.72	3.46	21.17
05/04/2021	0911	17.46	3.40	20.86
05/04/2021	0926	17.20	3.35	20.55
05/04/2021	0940	16.94	3.30	20.24
05/04/2021	0955	16.68	3.25	19.93
05/04/2021	1009	16.42	3.20	19.63
05/04/2021	1024	16.17	3.15	19.32
05/04/2021	1038	15.91	3.10	19.01
05/04/2021	1053	15.66	3.05	18.71
05/04/2021	1107	15.41	3.00	18.41
05/04/2021	1122	15.16	2.95	18.11
05/04/2021	1136	14.91	2.90	17.81
05/04/2021	1151	14.66	2.85	17.52
05/04/2021	1205	14.42	2.80	17.22
05/04/2021	1220	14.17	2.76	16.93
05/04/2021	1234	13.93	2.71	16.64

Date	Time	Hyd A Contribution	Hyd B Contribution	Combined Hydrograph
05/04/2021	1249	13.69	2.66	16.35
05/04/2021	1303	13.45	2.61	16.06
05/04/2021	1318	13.21	2.57	15.78
05/04/2021	1332	12.97	2.52	15.49
05/04/2021	1347	12.74	2.47	15.21
05/04/2021	1401	12.50	2.43	14.93
05/04/2021	1416	12.27	2.38	14.65
05/04/2021	1430	12.04	2.34	14.38
05/04/2021	1445	11.81	2.29	14.10
05/04/2021	1459	11.58	2.25	13.83
05/04/2021	1514	11.36	2.20	13.56
05/04/2021	1528	11.13	2.16	13.29
05/04/2021	1543	10.91	2.11	13.03
05/04/2021	1557	10.69	2.07	12.76
05/04/2021	1612	10.47	2.03	12.50
05/04/2021	1626	10.26	1.98	12.24
05/04/2021	1641	10.04	1.94	11.98
05/04/2021	1655	9.83	1.90	11.73
05/04/2021	1710	9.62	1.86	11.48
05/04/2021	1724	9.41	1.82	11.23
05/04/2021	1739	9.20	1.78	10.98
05/04/2021	1753	9.00	1.74	10.73
05/04/2021	1808	8.80	1.70	10.49
05/04/2021	1822	8.59	1.66	10.25
05/04/2021	1837	8.39	1.62	10.01
05/04/2021	1851	8.19	1.58	9.77
05/04/2021	1906	8.00	1.54	9.54
05/04/2021	1920	7.81	1.50	9.31
05/04/2021	1935	7.61	1.46	9.08
05/04/2021	1949	7.42	1.43	8.85
05/04/2021	2004	7.24	1.39	8.62
05/04/2021	2018	7.05	1.35	8.40
05/04/2021	2033	6.86	1.32	8.18
05/04/2021	2047	6.68	1.28	7.97
05/04/2021	2102	6.50	1.25	7.75
05/04/2021	2116	6.32	1.21	7.53
05/04/2021	2131	6.14	1.18	7.32
05/04/2021	2145	5.97	1.14	7.11
05/04/2021	2160	5.80	1.11	6.91
05/04/2021	2214	5.63	1.07	6.70
05/04/2021	2229	5.46	1.04	6.50
05/04/2021	2243	5.29	1.01	6.30
05/04/2021	2258	5.12	0.97	6.10
05/04/2021	2312	4.96	0.94	5.90
05/04/2021	2327	4.80	0.91	5.71
05/04/2021	2341	4.64	0.88	5.52
05/04/2021	2356	4.48	0.85	5.33
05/05/2021	0010	0.00	0.00	0.00

**CASE 1: PRE-PROJECT ANALYSIS
72" PIPE ROUTING (INCLUDES CD3)**

72IN PIPE & CD3 Storage

Prepared by Maser Consulting PA

HydroCAD® 10.00-20 s/n 08841 © 2017 HydroCAD Software Solutions LLC

Type II 24-hr 10yr Rainfall=4.57"

Printed 5/4/2021

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Summary for Pond 1P: 72" Cast Iron Pipe & CD3

[43] Hint: Has no inflow (Outflow=Zero)

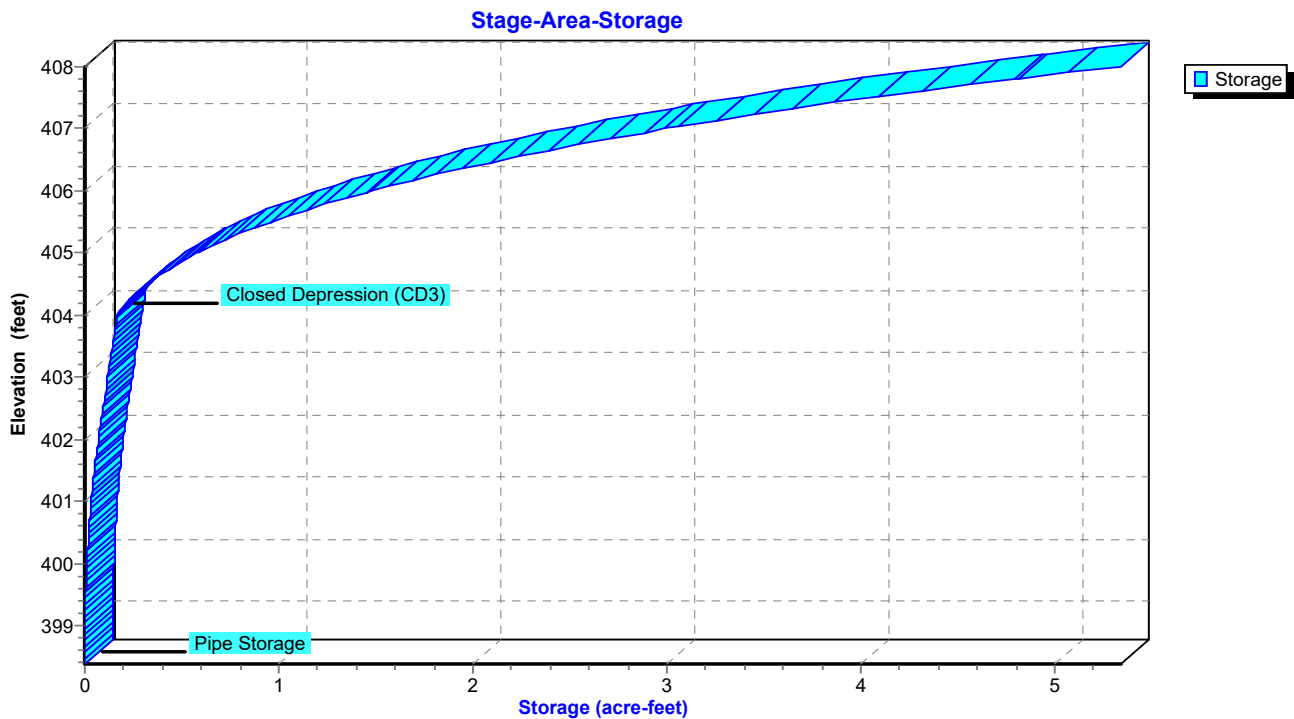
Volume	Invert	Avail.Storage	Storage Description
#1	404.00'	5.099 af	Closed Depression (CD3) (Prismatic) Listed below (Recalc)
#2	398.39'	0.246 af	72.0" Round Pipe Storage L= 379.0' S= 0.0090 '/'
		5.346 af	Total Available Storage

Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
404.00	0.157	0.000	0.000
405.00	0.589	0.373	0.373
406.00	1.156	0.872	1.245
407.00	1.856	1.506	2.751
408.00	2.840	2.348	5.099

Device	Routing	Invert	Outlet Devices
#1	Primary	398.39'	24.0" Vert. Orifice/Grate C= 0.600

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=0.00' (Free Discharge)
 ↑1=Orifice/Grate (Controls 0.00 cfs)

Pond 1P: 72" Cast Iron Pipe & CD3



72IN PIPE & CD3 Storage

Prepared by Maser Consulting PA

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Type II 24-hr 10yr Rainfall=4.57"

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Stage-Area-Storage for Pond 1P: 72" Cast Iron Pipe & CD3

Elevation (feet)	Storage (acre-feet)	Elevation (feet)	Storage (acre-feet)
398.39	0.000	403.59	0.147
398.49	0.000	403.69	0.152
398.59	0.000	403.79	0.157
398.69	0.000	403.89	0.162
398.79	0.000	403.99	0.166
398.89	0.001	404.09	0.187
398.99	0.001	404.19	0.213
399.09	0.001	404.29	0.243
399.19	0.002	404.39	0.278
399.29	0.002	404.49	0.317
399.39	0.003	404.59	0.360
399.49	0.004	404.69	0.407
399.59	0.005	404.79	0.459
399.69	0.006	404.89	0.514
399.79	0.007	404.99	0.574
399.89	0.009	405.09	0.638
399.99	0.010	405.19	0.708
400.09	0.012	405.29	0.784
400.19	0.014	405.39	0.865
400.29	0.015	405.49	0.951
400.39	0.017	405.59	1.043
400.49	0.020	405.69	1.141
400.59	0.022	405.79	1.244
400.69	0.024	405.89	1.352
400.79	0.027	405.99	1.466
400.89	0.030	406.09	1.586
400.99	0.033	406.19	1.713
401.09	0.036	406.29	1.847
401.19	0.039	406.39	1.988
401.29	0.042	406.49	2.136
401.39	0.046	406.59	2.290
401.49	0.050	406.69	2.452
401.59	0.053	406.79	2.620
401.69	0.057	406.89	2.795
401.79	0.062	406.99	2.977
401.89	0.066	407.09	3.167
401.99	0.070	407.19	3.367
402.09	0.075	407.29	3.577
402.19	0.079	407.39	3.796
402.29	0.084	407.49	4.025
402.39	0.089	407.59	4.264
402.49	0.093	407.69	4.512
402.59	0.098	407.79	4.771
402.69	0.103	407.89	5.039
402.79	0.108	407.99	5.317
402.89	0.113		
402.99	0.118		
403.09	0.123		
403.19	0.128		
403.29	0.133		
403.39	0.137		
403.49	0.142		

Basin Storage/Elevation Input

Elevation (ft)	Storage (acre-ft)
398.39	0.0000
399.39	0.0030
400.39	0.0170
401.39	0.0460
402.39	0.0890
403.39	0.1370
404.39	0.2780
405.39	0.8650
406.39	1.9880
406.99	2.9770
407.39	3.7960

Project Files:

Outlet Structure Configuration: R:\Projects\2018\18000145B\Reports\PCSM\210426 PCSM\VTSPUHMPRE w Depression\72in Pipe.OSC

Discharge/Elevation Curve: R:\Projects\2018\18000145B\Reports\PCSM\210426 PCSM\VTSPUHMPRE w Depression\72in Pipe.EO

Outlet Structure Configuration

Stage 1: Circular Orifice

Invert Elevation = 398.39 feet

Diameter = 2 feet

Discharge Coefficient = 0.6

Basin Rating Curve

Basin Water Elevation	Basin Outflow (cfs)	Riser Box Water Elevation	Tailwater Elevation (ft)	Outfall Culvert Control	Outfall Culvert Override?
398.39	0.00	N/A	N/A	N/A	N/A
398.49	0.05	N/A	N/A	N/A	N/A
398.59	0.19	N/A	N/A	N/A	N/A
398.69	0.42	N/A	N/A	N/A	N/A
398.79	0.72	N/A	N/A	N/A	N/A
398.89	1.11	N/A	N/A	N/A	N/A
398.99	1.56	N/A	N/A	N/A	N/A
399.09	2.10	N/A	N/A	N/A	N/A
399.19	2.70	N/A	N/A	N/A	N/A
399.29	3.38	N/A	N/A	N/A	N/A
399.39	4.13	N/A	N/A	N/A	N/A
399.49	4.95	N/A	N/A	N/A	N/A
399.59	5.84	N/A	N/A	N/A	N/A
399.69	6.80	N/A	N/A	N/A	N/A
399.79	7.82	N/A	N/A	N/A	N/A
399.89	8.92	N/A	N/A	N/A	N/A
399.99	10.08	N/A	N/A	N/A	N/A
400.09	11.07	N/A	N/A	N/A	N/A
400.19	12.06	N/A	N/A	N/A	N/A
400.29	13.08	N/A	N/A	N/A	N/A
400.39	14.12	N/A	N/A	N/A	N/A
400.49	15.87	N/A	N/A	N/A	N/A
400.59	16.57	N/A	N/A	N/A	N/A
400.69	17.25	N/A	N/A	N/A	N/A
400.79	17.90	N/A	N/A	N/A	N/A
400.89	18.53	N/A	N/A	N/A	N/A
400.99	19.13	N/A	N/A	N/A	N/A
401.09	19.72	N/A	N/A	N/A	N/A
401.19	20.29	N/A	N/A	N/A	N/A
401.29	20.85	N/A	N/A	N/A	N/A
401.39	21.39	N/A	N/A	N/A	N/A
401.49	21.92	N/A	N/A	N/A	N/A
401.59	22.44	N/A	N/A	N/A	N/A
401.69	22.94	N/A	N/A	N/A	N/A
401.79	23.43	N/A	N/A	N/A	N/A
401.89	23.92	N/A	N/A	N/A	N/A
401.99	24.39	N/A	N/A	N/A	N/A
402.09	24.86	N/A	N/A	N/A	N/A
402.19	25.31	N/A	N/A	N/A	N/A
402.29	25.76	N/A	N/A	N/A	N/A
402.39	26.20	N/A	N/A	N/A	N/A
402.49	26.63	N/A	N/A	N/A	N/A
402.59	27.06	N/A	N/A	N/A	N/A
402.69	27.48	N/A	N/A	N/A	N/A
402.79	27.89	N/A	N/A	N/A	N/A
402.89	28.30	N/A	N/A	N/A	N/A
402.99	28.70	N/A	N/A	N/A	N/A

Basin Water Elevation	Basin Outflow (cfs)	Riser Box Water Elevation	Tailwater Elevation (ft)	Outfall Culvert Control	Outfall Culvert Override?
403.09	29.10	N/A	N/A	N/A	N/A
403.19	29.49	N/A	N/A	N/A	N/A
403.29	29.87	N/A	N/A	N/A	N/A
403.39	30.25	N/A	N/A	N/A	N/A
403.49	30.63	N/A	N/A	N/A	N/A
403.59	31.00	N/A	N/A	N/A	N/A
403.69	31.37	N/A	N/A	N/A	N/A
403.79	31.73	N/A	N/A	N/A	N/A
403.89	32.09	N/A	N/A	N/A	N/A
403.99	32.44	N/A	N/A	N/A	N/A
404.09	32.79	N/A	N/A	N/A	N/A
404.19	33.14	N/A	N/A	N/A	N/A
404.29	33.48	N/A	N/A	N/A	N/A
404.39	33.82	N/A	N/A	N/A	N/A
404.49	34.16	N/A	N/A	N/A	N/A
404.59	34.49	N/A	N/A	N/A	N/A
404.69	34.82	N/A	N/A	N/A	N/A
404.79	35.15	N/A	N/A	N/A	N/A
404.89	35.48	N/A	N/A	N/A	N/A
404.99	35.80	N/A	N/A	N/A	N/A
405.09	36.11	N/A	N/A	N/A	N/A
405.19	36.43	N/A	N/A	N/A	N/A
405.29	36.74	N/A	N/A	N/A	N/A
405.39	37.05	N/A	N/A	N/A	N/A
405.49	37.36	N/A	N/A	N/A	N/A
405.59	37.67	N/A	N/A	N/A	N/A
405.69	37.97	N/A	N/A	N/A	N/A
405.79	38.27	N/A	N/A	N/A	N/A
405.89	38.57	N/A	N/A	N/A	N/A
405.99	38.86	N/A	N/A	N/A	N/A
406.09	39.15	N/A	N/A	N/A	N/A
406.19	39.45	N/A	N/A	N/A	N/A
406.29	39.73	N/A	N/A	N/A	N/A
406.39	40.02	N/A	N/A	N/A	N/A
406.49	40.31	N/A	N/A	N/A	N/A
406.59	40.59	N/A	N/A	N/A	N/A
406.69	40.87	N/A	N/A	N/A	N/A
406.79	41.15	N/A	N/A	N/A	N/A
406.89	41.43	N/A	N/A	N/A	N/A
406.99	41.70	N/A	N/A	N/A	N/A
407.09	41.97	N/A	N/A	N/A	N/A
407.19	42.25	N/A	N/A	N/A	N/A
407.29	42.52	N/A	N/A	N/A	N/A
407.39	42.78	N/A	N/A	N/A	N/A

**Modified Puls Routing
Summary of Results**

Inflow Hydrograph: R:\Projects\2018\18000145B\Reports\PCSM\210426 PCSM\VTPSUHM\PRE w Depression\Hydrograph Combinations\Combined Flow A 2yr.HYD
Storage/Elevation Curve: R:\Projects\2018\18000145B\Reports\PCSM\210426 PCSM\VTPSUHM\72in Pipe Storage\PRE\Pre 72in Storage.ES

Basin Bypass Capacity = 0.00 cfs
Starting Pool Elevation = 398.39 feet
Time Interval = 0.242 hours
Total number of Inflow points = 101

	Event Time (hours)	Hydrograph Inflow (cfs)	Basin Inflow (cfs)	Storage Used (acre-ft)	Elevation Above MSL (feet)	Basin Outflow (cfs)	Outflow Total (cfs)
Start	0.00	0.00	0.00	0.0000	398.39	0.00	0.00
Max. Inflow	2.90	48.13	48.13	0.3828	404.57	34.42	34.42
Max. Outflow	3.63	38.23	38.23	0.8181	405.31	36.81	36.81
Final	24.17	0.00	0.00	0.0269	400.73	0.17	0.17

Modified Puls Routing

Inflow Hydrograph: R:\Projects\2018\18000145B\Reports\PCSM\210426 PCSM\WTPSUHM\PRE w Depression\Hydrograph Combinations\Combined Flow A 2yr.HYD
 Storage/Elevation Curve: R:\Projects\2018\18000145B\Reports\PCSM\210426 PCSM\WTPSUHM\72in Pipe Storage\PRE\Pre 72in Storage.ES

Basin Bypass Capacity = 0.00 cfs
 Starting Pool Elevation = 398.39 feet
 Time Interval = 0.242 hours

Event Time (hours)	Hydrograph Inflow (cfs)	Basin Inflow (cfs)	Storage Used (acre-ft)	Elevation Above MSL (feet)	Basin Outflow (cfs)	Outflow Total (cfs)
0.00	0.00	0.00	0.0000	398.39	0.00	0.00
0.24	0.38	0.38	0.0008	398.64	0.30	0.30
0.48	0.76	0.76	0.0013	398.81	0.79	0.79
0.73	1.15	1.15	0.0015	398.89	1.10	1.10
0.97	1.53	1.53	0.0018	398.99	1.55	1.55
1.21	1.61	1.61	0.0018	398.99	1.59	1.59
1.45	1.70	1.70	0.0019	399.02	1.72	1.72
1.69	1.78	1.78	0.0019	399.03	1.76	1.76
1.93	1.87	1.87	0.0020	399.05	1.88	1.88
2.18	5.47	5.47	0.0048	399.52	5.18	5.18
2.42	9.11	9.11	0.0100	399.89	8.88	8.88
2.66	41.32	41.32	0.1291	403.22	29.62	29.62
2.90	48.13	48.13	0.3828	404.57	34.42	34.42
3.14	44.84	44.84	0.6111	404.96	35.69	35.69
3.38	41.54	41.54	0.7532	405.20	36.46	36.46
3.63	38.23	38.23	0.8181	405.31	36.81	36.81
3.87	30.03	30.03	0.7674	405.22	36.54	36.54
4.11	20.23	20.23	0.5513	404.86	35.36	35.36
4.35	17.14	17.14	0.2422	404.14	32.95	32.95
4.59	14.93	14.93	0.0370	401.08	19.66	19.66
4.83	12.88	12.88	0.0122	400.05	10.63	10.63
5.08	11.77	11.77	0.0163	400.34	13.60	13.60
5.32	11.40	11.40	0.0114	399.99	10.06	10.06
5.56	11.21	11.21	0.0145	400.21	12.24	12.24
5.80	11.07	11.07	0.0117	400.01	10.31	10.31
6.04	10.74	10.74	0.0132	400.12	11.35	11.35
6.28	10.24	10.24	0.0111	399.97	9.84	9.84
6.53	9.70	9.70	0.0114	399.99	10.07	10.07
6.77	9.14	9.14	0.0100	399.89	8.91	8.91
7.01	8.73	8.73	0.0100	399.89	8.96	8.96
7.25	8.43	8.43	0.0092	399.83	8.29	8.29
7.49	8.18	8.18	0.0092	399.84	8.32	8.32
7.73	7.94	7.94	0.0086	399.79	7.86	7.86
7.98	7.72	7.72	0.0086	399.79	7.81	7.81
8.22	7.51	7.51	0.0081	399.76	7.47	7.47
8.46	7.30	7.30	0.0080	399.75	7.36	7.36
8.70	7.10	7.10	0.0076	399.72	7.08	7.08
8.94	6.91	6.91	0.0074	399.71	6.95	6.95
9.18	6.74	6.74	0.0071	399.68	6.73	6.73
9.43	6.56	6.56	0.0069	399.67	6.59	6.59
9.67	6.39	6.39	0.0066	399.65	6.39	6.39
9.91	6.23	6.23	0.0064	399.63	6.25	6.25
10.15	6.08	6.08	0.0062	399.62	6.08	6.08
10.39	5.93	5.93	0.0060	399.60	5.95	5.95
10.63	5.79	5.79	0.0057	399.59	5.80	5.80
10.88	5.65	5.65	0.0055	399.57	5.66	5.66
11.12	5.52	5.52	0.0053	399.56	5.53	5.53
11.36	5.39	5.39	0.0051	399.54	5.40	5.40
11.60	5.27	5.27	0.0049	399.53	5.28	5.28
11.84	5.15	5.15	0.0047	399.51	5.16	5.16
12.08	5.04	5.04	0.0046	399.50	5.05	5.05
12.33	4.94	4.94	0.0044	399.49	4.95	4.95

Event Time (hours)	Hydrograph Inflow (cfs)	Basin Inflow (cfs)	Storage Used (acre-ft)	Elevation Above MSL (feet)	Basin Outflow (cfs)	Outflow Total (cfs)
12.57	4.83	4.83	0.0042	399.48	4.84	4.84
12.81	4.73	4.73	0.0041	399.47	4.74	4.74
13.05	4.63	4.63	0.0039	399.45	4.64	4.64
13.29	4.54	4.54	0.0037	399.44	4.55	4.55
13.54	4.45	4.45	0.0036	399.43	4.46	4.46
13.78	4.36	4.36	0.0034	399.42	4.37	4.37
14.02	4.28	4.28	0.0033	399.41	4.29	4.29
14.26	4.20	4.20	0.0031	399.40	4.21	4.21
14.50	4.12	4.12	0.0030	399.39	4.13	4.13
14.74	4.05	4.05	0.0030	399.38	4.05	4.05
14.99	3.98	3.98	0.0029	399.37	3.99	3.99
15.23	3.91	3.91	0.0029	399.36	3.91	3.91
15.47	3.84	3.84	0.0029	399.35	3.85	3.85
15.71	3.77	3.77	0.0029	399.34	3.77	3.77
15.95	3.71	3.71	0.0028	399.34	3.71	3.71
16.19	3.65	3.65	0.0028	399.33	3.65	3.65
16.44	3.59	3.59	0.0028	399.32	3.59	3.59
16.68	3.53	3.53	0.0028	399.31	3.53	3.53
16.92	3.48	3.48	0.0027	399.30	3.48	3.48
17.16	3.43	3.43	0.0027	399.30	3.43	3.43
17.40	3.37	3.37	0.0027	399.29	3.37	3.37
17.64	3.32	3.32	0.0027	399.28	3.32	3.32
17.89	3.28	3.28	0.0027	399.28	3.28	3.28
18.13	3.23	3.23	0.0026	399.27	3.23	3.23
18.37	3.19	3.19	0.0026	399.26	3.19	3.19
18.61	3.14	3.14	0.0026	399.26	3.14	3.14
18.85	3.10	3.10	0.0026	399.25	3.10	3.10
19.09	3.06	3.06	0.0026	399.24	3.06	3.06
19.34	3.02	3.02	0.0025	399.24	3.02	3.02
19.58	2.98	2.98	0.0025	399.23	2.98	2.98
19.82	2.95	2.95	0.0025	399.23	2.95	2.95
20.06	2.91	2.91	0.0025	399.22	2.91	2.91
20.30	2.88	2.88	0.0025	399.22	2.88	2.88
20.54	2.84	2.84	0.0025	399.21	2.84	2.84
20.79	2.81	2.81	0.0025	399.21	2.81	2.81
21.03	2.78	2.78	0.0024	399.20	2.78	2.78
21.27	2.75	2.75	0.0024	399.20	2.75	2.75
21.51	2.72	2.72	0.0024	399.19	2.72	2.72
21.75	2.69	2.69	0.0024	399.19	2.69	2.69
21.99	2.66	2.66	0.0024	399.18	2.66	2.66
22.24	2.63	2.63	0.0024	399.18	2.63	2.63
22.48	2.60	2.60	0.0024	399.17	2.60	2.60
22.72	2.58	2.58	0.0023	399.17	2.58	2.58
22.96	2.55	2.55	0.0023	399.17	2.55	2.55
23.20	2.53	2.53	0.0023	399.16	2.53	2.53
23.44	2.51	2.51	0.0023	399.16	2.51	2.51
23.69	2.49	2.49	0.0023	399.16	2.49	2.49
23.93	2.46	2.46	0.0023	399.15	2.46	2.46
24.17	0.00	0.00	0.0269	400.73	0.17	0.17

**Modified Puls Routing
Summary of Results**

Inflow Hydrograph: R:\Projects\2018\18000145B\Reports\PCSM\210426 PCSM\VTSPUHM\PRE w Depression\Hydrograph Combinations\Combined Flow A 10yr.HY
Storage/Elevation Curve: R:\Projects\2018\18000145B\Reports\PCSM\210426 PCSM\VTSPUHM\72in Pipe Storage\PRE\Pre 72in Storage.ES

Basin Bypass Capacity = 0.00 cfs
Starting Pool Elevation = 398.39 feet
Time Interval = 0.242 hours
Total number of Inflow points = 101

	Event Time (hours)	Hydrograph Inflow (cfs)	Basin Inflow (cfs)	Storage Used (acre-ft)	Elevation Above MSL (feet)	Basin Outflow (cfs)	Outflow Total (cfs)
Start	0.00	0.00	0.00	0.0000	398.39	0.00	0.00
Max. Inflow	2.90	55.44	55.44	0.7253	405.15	36.31	36.31
Max. Outflow	3.87	36.86	36.86	1.3869	405.85	38.46	38.46
Final	24.17	0.00	0.00	0.0386	401.14	0.22	0.22

Modified Puls Routing

Inflow Hydrograph: R:\Projects\2018\18000145B\Reports\PCSM\210426 PCSM\WTPSUHM\PRE w Depression\Hydrograph Combinations\Combined Flow A 10yr.HY
 Storage/Elevation Curve: R:\Projects\2018\18000145B\Reports\PCSM\210426 PCSM\WTPSUHM\72in Pipe Storage\PRE\Pre 72in Storage.ES

Basin Bypass Capacity = 0.00 cfs
 Starting Pool Elevation = 398.39 feet
 Time Interval = 0.242 hours

Event Time (hours)	Hydrograph Inflow (cfs)	Basin Inflow (cfs)	Storage Used (acre-ft)	Elevation Above MSL (feet)	Basin Outflow (cfs)	Outflow Total (cfs)
0.00	0.00	0.00	0.0000	398.39	0.00	0.00
0.24	0.57	0.57	0.0010	398.71	0.47	0.47
0.48	1.15	1.15	0.0016	398.91	1.19	1.19
0.73	1.72	1.72	0.0019	399.01	1.65	1.65
0.97	2.29	2.29	0.0022	399.13	2.32	2.32
1.21	2.44	2.44	0.0023	399.14	2.41	2.41
1.45	2.59	2.59	0.0024	399.18	2.61	2.61
1.69	2.74	2.74	0.0024	399.19	2.71	2.71
1.93	2.90	2.90	0.0025	399.22	2.92	2.92
2.18	8.04	8.04	0.0081	399.76	7.46	7.46
2.42	38.51	38.51	0.1146	402.92	28.43	28.43
2.66	50.35	50.35	0.3748	404.55	34.38	34.38
2.90	55.44	55.44	0.7253	405.15	36.31	36.31
3.14	50.80	50.80	1.0487	405.55	37.55	37.55
3.38	46.15	46.15	1.2611	405.74	38.13	38.13
3.63	41.51	41.51	1.3721	405.84	38.42	38.42
3.87	36.86	36.86	1.3869	405.85	38.46	38.46
4.11	29.93	29.93	1.2884	405.77	38.20	38.20
4.35	25.88	25.88	1.0881	405.59	37.66	37.66
4.59	22.57	22.57	0.8278	405.33	36.86	36.86
4.83	19.36	19.36	0.5266	404.81	35.23	35.23
5.08	17.71	17.71	0.2211	403.99	32.43	32.43
5.32	17.25	17.25	0.0414	401.23	20.52	20.52
5.56	17.04	17.04	0.0201	400.50	15.90	15.90
5.80	16.87	16.87	0.0263	400.71	17.38	17.38
6.04	16.31	16.31	0.0216	400.55	16.27	16.27
6.28	15.42	15.42	0.0192	400.47	15.69	15.69
6.53	14.45	14.45	0.0171	400.39	14.39	14.39
6.77	13.48	13.48	0.0163	400.34	13.61	13.61
7.01	12.77	12.77	0.0152	400.26	12.75	12.75
7.25	12.29	12.29	0.0146	400.22	12.36	12.36
7.49	11.87	11.87	0.0139	400.17	11.87	11.87
7.73	11.47	11.47	0.0134	400.14	11.52	11.52
7.98	11.09	11.09	0.0128	400.09	11.10	11.10
8.22	10.75	10.75	0.0124	400.06	10.79	10.79
8.46	10.41	10.41	0.0119	400.02	10.43	10.43
8.70	10.08	10.08	0.0114	399.99	10.11	10.11
8.94	9.77	9.77	0.0110	399.96	9.78	9.78
9.18	9.48	9.48	0.0107	399.94	9.50	9.50
9.43	9.20	9.20	0.0104	399.92	9.21	9.21
9.67	8.93	8.93	0.0100	399.89	8.95	8.95
9.91	8.67	8.67	0.0097	399.87	8.68	8.68
10.15	8.43	8.43	0.0094	399.85	8.45	8.45
10.39	8.20	8.20	0.0091	399.83	8.21	8.21
10.63	7.97	7.97	0.0088	399.81	7.99	7.99
10.88	7.76	7.76	0.0085	399.79	7.77	7.77
11.12	7.56	7.56	0.0083	399.77	7.57	7.57
11.36	7.37	7.37	0.0080	399.75	7.38	7.38
11.60	7.18	7.18	0.0078	399.73	7.19	7.19
11.84	7.00	7.00	0.0075	399.71	7.01	7.01
12.08	6.84	6.84	0.0073	399.70	6.85	6.85
12.33	6.68	6.68	0.0071	399.68	6.69	6.69

Event Time (hours)	Hydrograph Inflow (cfs)	Basin Inflow (cfs)	Storage Used (acre-ft)	Elevation Above MSL (feet)	Basin Outflow (cfs)	Outflow Total (cfs)
12.57	6.52	6.52	0.0068	399.66	6.53	6.53
12.81	6.37	6.37	0.0066	399.65	6.38	6.38
13.05	6.24	6.24	0.0064	399.63	6.25	6.25
13.29	6.10	6.10	0.0062	399.62	6.11	6.11
13.54	5.97	5.97	0.0060	399.61	5.98	5.98
13.78	5.85	5.85	0.0058	399.59	5.86	5.86
14.02	5.74	5.74	0.0057	399.58	5.75	5.75
14.26	5.62	5.62	0.0055	399.57	5.63	5.63
14.50	5.51	5.51	0.0053	399.55	5.52	5.52
14.74	5.41	5.41	0.0052	399.54	5.42	5.42
14.99	5.31	5.31	0.0050	399.53	5.32	5.32
15.23	5.22	5.22	0.0049	399.52	5.23	5.23
15.47	5.13	5.13	0.0047	399.51	5.14	5.14
15.71	5.05	5.05	0.0046	399.50	5.06	5.06
15.95	4.97	4.97	0.0044	399.49	4.98	4.98
16.19	4.89	4.89	0.0043	399.48	4.90	4.90
16.44	4.81	4.81	0.0042	399.47	4.82	4.82
16.68	4.74	4.74	0.0041	399.47	4.75	4.75
16.92	4.67	4.67	0.0039	399.46	4.68	4.68
17.16	4.61	4.61	0.0038	399.45	4.61	4.61
17.40	4.54	4.54	0.0037	399.44	4.55	4.55
17.64	4.48	4.48	0.0036	399.43	4.48	4.48
17.89	4.42	4.42	0.0035	399.43	4.43	4.43
18.13	4.37	4.37	0.0034	399.42	4.37	4.37
18.37	4.31	4.31	0.0033	399.41	4.32	4.32
18.61	4.26	4.26	0.0032	399.41	4.26	4.26
18.85	4.22	4.22	0.0032	399.40	4.22	4.22
19.09	4.17	4.17	0.0031	399.40	4.17	4.17
19.34	4.13	4.13	0.0030	399.39	4.13	4.13
19.58	4.08	4.08	0.0030	399.38	4.08	4.08
19.82	4.05	4.05	0.0030	399.38	4.05	4.05
20.06	4.01	4.01	0.0030	399.37	4.01	4.01
20.30	3.97	3.97	0.0029	399.37	3.97	3.97
20.54	3.93	3.93	0.0029	399.36	3.93	3.93
20.79	3.90	3.90	0.0029	399.36	3.90	3.90
21.03	3.87	3.87	0.0029	399.36	3.87	3.87
21.27	3.84	3.84	0.0029	399.35	3.84	3.84
21.51	3.81	3.81	0.0029	399.35	3.81	3.81
21.75	3.78	3.78	0.0029	399.34	3.78	3.78
21.99	3.76	3.76	0.0029	399.34	3.76	3.76
22.24	3.73	3.73	0.0028	399.34	3.73	3.73
22.48	3.71	3.71	0.0028	399.34	3.71	3.71
22.72	3.68	3.68	0.0028	399.33	3.68	3.68
22.96	3.66	3.66	0.0028	399.33	3.66	3.66
23.20	3.64	3.64	0.0028	399.33	3.64	3.64
23.44	3.62	3.62	0.0028	399.32	3.62	3.62
23.69	3.60	3.60	0.0028	399.32	3.60	3.60
23.93	3.59	3.59	0.0028	399.32	3.59	3.59
24.17	0.00	0.00	0.0386	401.14	0.22	0.22

**Modified Puls Routing
Summary of Results**

Inflow Hydrograph: R:\Projects\2018\18000145B\Reports\PCSM\210426 PCSM\VTSPUHM\PRE w Depression\Hydrograph Combinations\Combined Flow A 25yr.HY
Storage/Elevation Curve: R:\Projects\2018\18000145B\Reports\PCSM\210426 PCSM\VTSPUHM\72in Pipe Storage\PRE\Pre 72in Storage.ES

Basin Bypass Capacity = 0.00 cfs
Starting Pool Elevation = 398.39 feet
Time Interval = 0.242 hours
Total number of Inflow points = 101

	Event Time (hours)	Hydrograph Inflow (cfs)	Basin Inflow (cfs)	Storage Used (acre-ft)	Elevation Above MSL (feet)	Basin Outflow (cfs)	Outflow Total (cfs)
Start	0.00	0.00	0.00	0.0000	398.39	0.00	0.00
Max. Inflow	2.90	65.79	65.79	1.1767	405.67	37.90	37.90
Max. Outflow	3.87	39.81	39.81	2.2251	406.53	40.43	40.43
Final	24.17	0.00	0.00	0.0477	401.43	0.28	0.28

Modified Puls Routing

Inflow Hydrograph: R:\Projects\2018\18000145B\Reports\PCSM\210426 PCSM\WTPSUHM\PRE w Depression\Hydrograph Combinations\Combined Flow A 25yr.HY
 Storage/Elevation Curve: R:\Projects\2018\18000145B\Reports\PCSM\210426 PCSM\WTPSUHM\72in Pipe Storage\PRE\Pre 72in Storage.ES

Basin Bypass Capacity = 0.00 cfs
 Starting Pool Elevation = 398.39 feet
 Time Interval = 0.242 hours

Event Time (hours)	Hydrograph Inflow (cfs)	Basin Inflow (cfs)	Storage Used (acre-ft)	Elevation Above MSL (feet)	Basin Outflow (cfs)	Outflow Total (cfs)
0.00	0.00	0.00	0.0000	398.39	0.00	0.00
0.24	0.87	0.87	0.0012	398.80	0.75	0.75
0.48	1.75	1.75	0.0019	399.04	1.80	1.80
0.73	2.62	2.62	0.0023	399.16	2.53	2.53
0.97	3.50	3.50	0.0028	399.31	3.54	3.54
1.21	3.70	3.70	0.0028	399.33	3.65	3.65
1.45	3.91	3.91	0.0029	399.37	3.95	3.95
1.69	4.11	4.11	0.0030	399.38	4.07	4.07
1.93	4.34	4.34	0.0034	399.42	4.34	4.34
2.18	26.79	26.79	0.0511	401.51	22.01	22.01
2.42	51.24	51.24	0.2737	404.36	33.72	33.72
2.66	58.53	58.53	0.6734	405.06	36.03	36.03
2.90	65.79	65.79	1.1767	405.67	37.90	37.90
3.14	59.29	59.29	1.6562	406.09	39.17	39.17
3.38	52.79	52.79	1.9848	406.39	40.01	40.01
3.63	46.29	46.29	2.1718	406.50	40.34	40.34
3.87	39.81	39.81	2.2251	406.53	40.43	40.43
4.11	39.00	39.00	2.2049	406.52	40.40	40.40
4.35	37.89	37.89	2.1666	406.50	40.33	40.33
4.59	33.05	33.05	2.0712	406.44	40.17	40.17
4.83	28.25	28.25	1.8852	406.30	39.76	39.76
5.08	25.78	25.78	1.6370	406.08	39.12	39.12
5.32	25.05	25.05	1.3703	405.84	38.42	38.42
5.56	24.58	24.58	1.1057	405.60	37.71	37.71
5.80	24.14	24.14	0.8465	405.36	36.96	36.96
6.04	23.27	23.27	0.5953	404.93	35.61	35.61
6.28	22.08	22.08	0.3507	404.51	34.24	34.24
6.53	20.83	20.83	0.1359	403.37	30.17	30.17
6.77	19.57	19.57	0.0386	401.13	19.98	19.98
7.01	18.68	18.68	0.0330	400.94	18.84	18.84
7.25	18.08	18.08	0.0301	400.84	18.22	18.22
7.49	17.53	17.53	0.0275	400.75	17.65	17.65
7.73	17.00	17.00	0.0251	400.67	17.12	17.12
7.98	16.51	16.51	0.0230	400.60	16.61	16.61
8.22	16.05	16.05	0.0210	400.53	16.14	16.14
8.46	15.60	15.60	0.0192	400.47	15.69	15.69
8.70	15.14	15.14	0.0174	400.40	15.23	15.23
8.94	14.72	14.72	0.0171	400.39	14.66	14.66
9.18	14.33	14.33	0.0171	400.39	14.40	14.40
9.43	13.94	13.94	0.0167	400.37	13.91	13.91
9.67	13.55	13.55	0.0163	400.34	13.62	13.62
9.91	13.19	13.19	0.0157	400.30	13.18	13.18
10.15	12.85	12.85	0.0154	400.27	12.90	12.90
10.39	12.52	12.52	0.0148	400.24	12.52	12.52
10.63	12.18	12.18	0.0144	400.21	12.22	12.22
10.88	11.88	11.88	0.0140	400.17	11.89	11.89
11.12	11.59	11.59	0.0136	400.15	11.62	11.62
11.36	11.30	11.30	0.0131	400.12	11.31	11.31
11.60	11.01	11.01	0.0128	400.09	11.04	11.04
11.84	10.75	10.75	0.0124	400.06	10.76	10.76
12.08	10.50	10.50	0.0120	400.03	10.52	10.52
12.33	10.25	10.25	0.0116	400.01	10.27	10.27

Event Time (hours)	Hydrograph Inflow (cfs)	Basin Inflow (cfs)	Storage Used (acre-ft)	Elevation Above MSL (feet)	Basin Outflow (cfs)	Outflow Total (cfs)
12.57	10.01	10.01	0.0113	399.99	10.03	10.03
12.81	9.78	9.78	0.0111	399.97	9.79	9.79
13.05	9.56	9.56	0.0108	399.95	9.57	9.57
13.29	9.35	9.35	0.0105	399.93	9.36	9.36
13.54	9.14	9.14	0.0103	399.91	9.15	9.15
13.78	8.93	8.93	0.0100	399.89	8.94	8.94
14.02	8.75	8.75	0.0098	399.88	8.76	8.76
14.26	8.56	8.56	0.0096	399.86	8.57	8.57
14.50	8.37	8.37	0.0093	399.84	8.38	8.38
14.74	8.20	8.20	0.0091	399.83	8.21	8.21
14.99	8.04	8.04	0.0089	399.81	8.05	8.05
15.23	7.88	7.88	0.0087	399.80	7.89	7.89
15.47	7.71	7.71	0.0085	399.78	7.72	7.72
15.71	7.56	7.56	0.0083	399.77	7.57	7.57
15.95	7.42	7.42	0.0081	399.75	7.43	7.43
16.19	7.27	7.27	0.0079	399.74	7.28	7.28
16.44	7.14	7.14	0.0077	399.73	7.15	7.15
16.68	7.00	7.00	0.0075	399.71	7.01	7.01
16.92	6.88	6.88	0.0073	399.70	6.89	6.89
17.16	6.75	6.75	0.0072	399.69	6.76	6.76
17.40	6.63	6.63	0.0070	399.67	6.64	6.64
17.64	6.51	6.51	0.0068	399.66	6.52	6.52
17.89	6.40	6.40	0.0066	399.65	6.41	6.41
18.13	6.28	6.28	0.0065	399.64	6.29	6.29
18.37	6.18	6.18	0.0063	399.63	6.19	6.19
18.61	6.07	6.07	0.0062	399.62	6.08	6.08
18.85	5.98	5.98	0.0060	399.61	5.98	5.98
19.09	5.88	5.88	0.0059	399.60	5.89	5.89
19.34	5.78	5.78	0.0057	399.58	5.79	5.79
19.58	5.69	5.69	0.0056	399.57	5.70	5.70
19.82	5.60	5.60	0.0054	399.56	5.61	5.61
20.06	5.51	5.51	0.0053	399.56	5.52	5.52
20.30	5.43	5.43	0.0052	399.55	5.44	5.44
20.54	5.34	5.34	0.0050	399.54	5.35	5.35
20.79	5.27	5.27	0.0049	399.53	5.27	5.27
21.03	5.19	5.19	0.0048	399.52	5.20	5.20
21.27	5.12	5.12	0.0047	399.51	5.12	5.12
21.51	5.04	5.04	0.0046	399.50	5.05	5.05
21.75	4.97	4.97	0.0044	399.49	4.97	4.97
21.99	4.90	4.90	0.0043	399.49	4.91	4.91
22.24	4.84	4.84	0.0042	399.48	4.84	4.84
22.48	4.77	4.77	0.0041	399.47	4.78	4.78
22.72	4.71	4.71	0.0040	399.46	4.71	4.71
22.96	4.65	4.65	0.0039	399.46	4.66	4.66
23.20	4.59	4.59	0.0038	399.45	4.59	4.59
23.44	4.53	4.53	0.0037	399.44	4.54	4.54
23.69	4.47	4.47	0.0036	399.43	4.47	4.47
23.93	4.42	4.42	0.0035	399.43	4.42	4.42
24.17	0.00	0.00	0.0477	401.43	0.28	0.28

**Modified Puls Routing
Summary of Results**

Inflow Hydrograph: R:\Projects\2018\18000145B\Reports\PCSM\210426 PCSM\VTSPUHM\PRE w Depression\Hydrograph Combinations\Combined Flow A 50yr.HY
Storage/Elevation Curve: R:\Projects\2018\18000145B\Reports\PCSM\210426 PCSM\VTSPUHM\72in Pipe Storage\PRE\Pre 72in Storage.ES

Basin Bypass Capacity = 0.00 cfs
Starting Pool Elevation = 398.39 feet
Time Interval = 0.242 hours
Total number of Inflow points = 101

	Event Time (hours)	Hydrograph Inflow (cfs)	Basin Inflow (cfs)	Storage Used (acre-ft)	Elevation Above MSL (feet)	Basin Outflow (cfs)	Outflow Total (cfs)
Start	0.00	0.00	0.00	0.0000	398.39	0.00	0.00
Max. Inflow	2.90	70.29	70.29	1.4970	405.95	38.75	38.75
Max. Outflow	3.87	41.17	41.17	2.7130	406.83	41.26	41.26
Final	24.17	0.00	0.00	0.0535	401.56	0.35	0.35

Modified Puls Routing

Inflow Hydrograph: R:\Projects\2018\18000145B\Reports\PCSM\210426 PCSM\WTPSUHM\PRE w Depression\Hydrograph Combinations\Combined Flow A 50yr.HY
 Storage/Elevation Curve: R:\Projects\2018\18000145B\Reports\PCSM\210426 PCSM\WTPSUHM\72in Pipe Storage\PRE\Pre 72in Storage.ES

Basin Bypass Capacity = 0.00 cfs
 Starting Pool Elevation = 398.39 feet
 Time Interval = 0.242 hours

Event Time (hours)	Hydrograph Inflow (cfs)	Basin Inflow (cfs)	Storage Used (acre-ft)	Elevation Above MSL (feet)	Basin Outflow (cfs)	Outflow Total (cfs)
0.00	0.00	0.00	0.0000	398.39	0.00	0.00
0.24	0.98	0.98	0.0013	398.83	0.85	0.85
0.48	1.96	1.96	0.0021	399.08	2.02	2.02
0.73	2.93	2.93	0.0025	399.21	2.83	2.83
0.97	3.91	3.91	0.0029	399.37	3.96	3.96
1.21	4.23	4.23	0.0031	399.40	4.17	4.17
1.45	4.54	4.54	0.0037	399.44	4.54	4.54
1.69	4.86	4.86	0.0042	399.47	4.82	4.82
1.93	5.69	5.69	0.0054	399.56	5.61	5.61
2.18	45.81	45.81	0.1565	403.53	30.77	30.77
2.42	53.98	53.98	0.4957	404.76	35.06	35.06
2.66	62.14	62.14	0.9334	405.45	37.24	37.24
2.90	70.29	70.29	1.4970	405.95	38.75	38.75
3.14	63.00	63.00	2.0406	406.42	40.11	40.11
3.38	55.72	55.72	2.4186	406.65	40.76	40.76
3.63	48.44	48.44	2.6409	406.79	41.14	41.14
3.87	41.17	41.17	2.7130	406.83	41.26	41.26
4.11	40.20	40.20	2.7017	406.82	41.24	41.24
4.35	39.23	39.23	2.6717	406.80	41.19	41.19
4.59	38.12	38.12	2.6223	406.77	41.11	41.11
4.83	32.38	32.38	2.5073	406.71	40.91	40.91
5.08	29.35	29.35	2.3099	406.59	40.58	40.58
5.32	28.33	28.33	2.0795	406.45	40.18	40.18
5.56	27.55	27.55	1.8403	406.26	39.64	39.64
5.80	26.80	26.80	1.5975	406.04	39.01	39.01
6.04	25.81	25.81	1.3502	405.82	38.36	38.36
6.28	24.62	24.62	1.0944	405.59	37.68	37.68
6.53	23.41	23.41	0.8295	405.33	36.87	36.87
6.77	22.19	22.19	0.5629	404.88	35.43	35.43
7.01	21.34	21.34	0.3045	404.44	33.98	33.98
7.25	20.78	20.78	0.1077	402.78	27.85	27.85
7.49	20.27	20.27	0.0391	401.15	20.07	20.07
7.73	19.78	19.78	0.0387	401.14	20.01	20.01
7.98	19.31	19.31	0.0356	401.03	19.39	19.39
8.22	18.87	18.87	0.0337	400.97	18.99	18.99
8.46	18.44	18.44	0.0316	400.89	18.54	18.54
8.70	18.00	18.00	0.0295	400.82	18.10	18.10
8.94	17.59	17.59	0.0276	400.76	17.68	17.68
9.18	17.21	17.21	0.0259	400.70	17.29	17.29
9.43	16.82	16.82	0.0242	400.64	16.91	16.91
9.67	16.44	16.44	0.0226	400.58	16.52	16.52
9.91	16.07	16.07	0.0210	400.53	16.15	16.15
10.15	15.73	15.73	0.0196	400.48	15.80	15.80
10.39	15.39	15.39	0.0183	400.43	15.46	15.46
10.63	15.05	15.05	0.0173	400.40	15.08	15.08
10.88	14.73	14.73	0.0172	400.40	14.71	14.71
11.12	14.42	14.42	0.0171	400.39	14.45	14.45
11.36	14.11	14.11	0.0170	400.39	14.09	14.09
11.60	13.81	13.81	0.0166	400.36	13.86	13.86
11.84	13.52	13.52	0.0162	400.33	13.52	13.52
12.08	13.24	13.24	0.0159	400.31	13.28	13.28
12.33	12.97	12.97	0.0155	400.28	12.97	12.97

Event Time (hours)	Hydrograph Inflow (cfs)	Basin Inflow (cfs)	Storage Used (acre-ft)	Elevation Above MSL (feet)	Basin Outflow (cfs)	Outflow Total (cfs)
12.57	12.69	12.69	0.0151	400.26	12.72	12.72
12.81	12.43	12.43	0.0147	400.23	12.44	12.44
13.05	12.18	12.18	0.0144	400.20	12.20	12.20
13.29	11.93	11.93	0.0140	400.18	11.94	11.94
13.54	11.69	11.69	0.0137	400.16	11.71	11.71
13.78	11.45	11.45	0.0134	400.13	11.46	11.46
14.02	11.22	11.22	0.0130	400.11	11.24	11.24
14.26	10.99	10.99	0.0127	400.08	11.01	11.01
14.50	10.77	10.77	0.0124	400.06	10.79	10.79
14.74	10.55	10.55	0.0121	400.04	10.57	10.57
14.99	10.35	10.35	0.0118	400.02	10.36	10.36
15.23	10.14	10.14	0.0115	400.00	10.16	10.16
15.47	9.93	9.93	0.0112	399.98	9.94	9.94
15.71	9.73	9.73	0.0110	399.96	9.74	9.74
15.95	9.54	9.54	0.0108	399.94	9.55	9.55
16.19	9.36	9.36	0.0106	399.93	9.37	9.37
16.44	9.17	9.17	0.0103	399.91	9.18	9.18
16.68	8.99	8.99	0.0101	399.90	9.00	9.00
16.92	8.81	8.81	0.0099	399.88	8.82	8.82
17.16	8.64	8.64	0.0097	399.87	8.65	8.65
17.40	8.46	8.46	0.0094	399.85	8.47	8.47
17.64	8.30	8.30	0.0092	399.84	8.31	8.31
17.89	8.14	8.14	0.0090	399.82	8.15	8.15
18.13	7.98	7.98	0.0088	399.81	7.99	7.99
18.37	7.82	7.82	0.0086	399.79	7.83	7.83
18.61	7.67	7.67	0.0084	399.78	7.68	7.68
18.85	7.51	7.51	0.0082	399.76	7.52	7.52
19.09	7.37	7.37	0.0080	399.75	7.38	7.38
19.34	7.22	7.22	0.0078	399.73	7.23	7.23
19.58	7.08	7.08	0.0076	399.72	7.09	7.09
19.82	6.94	6.94	0.0074	399.71	6.95	6.95
20.06	6.80	6.80	0.0072	399.69	6.81	6.81
20.30	6.67	6.67	0.0070	399.68	6.68	6.68
20.54	6.54	6.54	0.0068	399.66	6.55	6.55
20.79	6.41	6.41	0.0067	399.65	6.42	6.42
21.03	6.28	6.28	0.0065	399.64	6.29	6.29
21.27	6.15	6.15	0.0063	399.62	6.16	6.16
21.51	6.03	6.03	0.0061	399.61	6.04	6.04
21.75	5.92	5.92	0.0059	399.60	5.93	5.93
21.99	5.80	5.80	0.0058	399.59	5.81	5.81
22.24	5.68	5.68	0.0056	399.57	5.69	5.69
22.48	5.57	5.57	0.0054	399.56	5.58	5.58
22.72	5.45	5.45	0.0052	399.55	5.46	5.46
22.96	5.34	5.34	0.0050	399.54	5.35	5.35
23.20	5.23	5.23	0.0049	399.52	5.24	5.24
23.44	5.13	5.13	0.0047	399.51	5.14	5.14
23.69	5.03	5.03	0.0045	399.50	5.04	5.04
23.93	4.92	4.92	0.0044	399.49	4.93	4.93
24.17	0.00	0.00	0.0535	401.56	0.35	0.35

**Modified Puls Routing
Summary of Results**

Inflow Hydrograph: R:\Projects\2018\18000145B\Reports\PCSM\210426 PCSM\VTPSUHM\PRE w Depression\Hydrograph Combinations\Combined Flow A 100yr.H
Storage/Elevation Curve: R:\Projects\2018\18000145B\Reports\PCSM\210426 PCSM\VTPSUHM\72in Pipe Storage\PRE\Pre 72in Storage.ES

Basin Bypass Capacity = 0.00 cfs
Starting Pool Elevation = 398.39 feet
Time Interval = 0.242 hours
Total number of Inflow points = 101

	Event Time (hours)	Hydrograph Inflow (cfs)	Basin Inflow (cfs)	Storage Used (acre-ft)	Elevation Above MSL (feet)	Basin Outflow (cfs)	Outflow Total (cfs)
Start	0.00	0.00	0.00	0.0000	398.39	0.00	0.00
Max. Inflow	2.90	74.51	74.51	1.6821	406.12	39.23	39.23
Max. Outflow	4.11	42.55	42.55	3.1755	407.09	41.97	41.97
Final	24.17	0.00	0.00	0.0583	401.68	0.40	0.40

Modified Puls Routing

Inflow Hydrograph: R:\Projects\2018\18000145B\Reports\PCSM\210426 PCSM\WTPSUHM\PRE w Depression\Hydrograph Combinations\Combined Flow A 100yr.H
 Storage/Elevation Curve: R:\Projects\2018\18000145B\Reports\PCSM\210426 PCSM\WTPSUHM\72in Pipe Storage\PRE\Pre 72in Storage.ES

Basin Bypass Capacity = 0.00 cfs
 Starting Pool Elevation = 398.39 feet
 Time Interval = 0.242 hours

Event Time (hours)	Hydrograph Inflow (cfs)	Basin Inflow (cfs)	Storage Used (acre-ft)	Elevation Above MSL (feet)	Basin Outflow (cfs)	Outflow Total (cfs)
0.00	0.00	0.00	0.0000	398.39	0.00	0.00
0.24	1.04	1.04	0.0013	398.84	0.90	0.90
0.48	2.08	2.08	0.0021	399.10	2.14	2.14
0.73	3.12	3.12	0.0025	399.24	3.02	3.02
0.97	4.16	4.16	0.0031	399.40	4.20	4.20
1.21	4.64	4.64	0.0037	399.44	4.54	4.54
1.45	5.12	5.12	0.0047	399.51	5.12	5.12
1.69	5.60	5.60	0.0053	399.56	5.53	5.53
1.93	14.59	14.59	0.0163	400.34	13.56	13.56
2.18	47.62	47.62	0.1869	403.74	31.56	31.56
2.42	56.59	56.59	0.5588	404.87	35.41	35.41
2.66	65.56	65.56	1.0501	405.55	37.56	37.56
2.90	74.51	74.51	1.6821	406.12	39.23	39.23
3.14	66.94	66.94	2.2979	406.58	40.56	40.56
3.38	59.38	59.38	2.7419	406.85	41.31	41.31
3.63	51.81	51.81	3.0227	407.01	41.76	41.76
3.87	44.26	44.26	3.1464	407.07	41.93	41.93
4.11	42.55	42.55	3.1755	407.09	41.97	41.97
4.35	40.85	40.85	3.1702	407.08	41.96	41.96
4.59	39.14	39.14	3.1315	407.07	41.91	41.91
4.83	34.75	34.75	3.0337	407.02	41.78	41.78
5.08	29.92	29.92	2.8480	406.91	41.49	41.49
5.32	28.77	28.77	2.6095	406.77	41.09	41.09
5.56	28.04	28.04	2.3604	406.62	40.66	40.66
5.80	27.36	27.36	2.1058	406.46	40.23	40.23
6.04	26.64	26.64	1.8473	406.26	39.66	39.66
6.28	25.87	25.87	1.5862	406.03	38.99	38.99
6.53	25.10	25.10	1.3235	405.80	38.29	38.29
6.77	24.33	24.33	1.0593	405.56	37.58	37.58
7.01	23.78	23.78	0.7980	405.28	36.70	36.70
7.25	23.42	23.42	0.5497	404.85	35.36	35.36
7.49	23.09	23.09	0.3209	404.46	34.07	34.07
7.73	22.76	22.76	0.1366	403.38	30.22	30.22
7.98	22.44	22.44	0.0581	401.67	22.84	22.84
8.22	22.12	22.12	0.0529	401.55	22.23	22.23
8.46	21.80	21.80	0.0504	401.49	21.93	21.93
8.70	21.49	21.49	0.0478	401.43	21.62	21.62
8.94	21.17	21.17	0.0454	401.37	21.28	21.28
9.18	20.86	20.86	0.0435	401.31	20.93	20.93
9.43	20.55	20.55	0.0420	401.25	20.63	20.63
9.67	20.24	20.24	0.0403	401.19	20.32	20.32
9.91	19.93	19.93	0.0387	401.14	20.01	20.01
10.15	19.63	19.63	0.0372	401.09	19.70	19.70
10.39	19.32	19.32	0.0357	401.03	19.40	19.40
10.63	19.01	19.01	0.0342	400.98	19.08	19.08
10.88	18.71	18.71	0.0327	400.93	18.78	18.78
11.12	18.41	18.41	0.0313	400.88	18.48	18.48
11.36	18.11	18.11	0.0299	400.83	18.18	18.18
11.60	17.81	17.81	0.0285	400.79	17.88	17.88
11.84	17.52	17.52	0.0272	400.74	17.58	17.58
12.08	17.22	17.22	0.0259	400.70	17.29	17.29
12.33	16.93	16.93	0.0246	400.65	16.99	16.99

Event Time (hours)	Hydrograph Inflow (cfs)	Basin Inflow (cfs)	Storage Used (acre-ft)	Elevation Above MSL (feet)	Basin Outflow (cfs)	Outflow Total (cfs)
12.57	16.64	16.64	0.0234	400.61	16.70	16.70
12.81	16.35	16.35	0.0221	400.57	16.41	16.41
13.05	16.06	16.06	0.0209	400.53	16.12	16.12
13.29	15.78	15.78	0.0198	400.49	15.84	15.84
13.54	15.49	15.49	0.0186	400.45	15.55	15.55
13.78	15.21	15.21	0.0175	400.41	15.26	15.26
14.02	14.93	14.93	0.0172	400.40	14.91	14.91
14.26	14.65	14.65	0.0171	400.40	14.68	14.68
14.50	14.38	14.38	0.0171	400.39	14.36	14.36
14.74	14.10	14.10	0.0170	400.39	14.13	14.13
14.99	13.83	13.83	0.0166	400.36	13.84	13.84
15.23	13.56	13.56	0.0163	400.34	13.58	13.58
15.47	13.29	13.29	0.0159	400.31	13.30	13.30
15.71	13.03	13.03	0.0156	400.29	13.05	13.05
15.95	12.76	12.76	0.0152	400.26	12.78	12.78
16.19	12.50	12.50	0.0148	400.24	12.52	12.52
16.44	12.24	12.24	0.0145	400.21	12.26	12.26
16.68	11.98	11.98	0.0141	400.18	12.00	12.00
16.92	11.73	11.73	0.0138	400.16	11.75	11.75
17.16	11.48	11.48	0.0134	400.13	11.50	11.50
17.40	11.23	11.23	0.0131	400.11	11.25	11.25
17.64	10.98	10.98	0.0127	400.08	11.00	11.00
17.89	10.73	10.73	0.0123	400.06	10.75	10.75
18.13	10.49	10.49	0.0120	400.03	10.51	10.51
18.37	10.25	10.25	0.0116	400.01	10.27	10.27
18.61	10.01	10.01	0.0113	399.99	10.02	10.02
18.85	9.77	9.77	0.0110	399.96	9.78	9.78
19.09	9.54	9.54	0.0108	399.95	9.55	9.55
19.34	9.31	9.31	0.0105	399.93	9.32	9.32
19.58	9.08	9.08	0.0102	399.91	9.09	9.09
19.82	8.85	8.85	0.0099	399.89	8.86	8.86
20.06	8.62	8.62	0.0096	399.86	8.63	8.63
20.30	8.40	8.40	0.0094	399.84	8.41	8.41
20.54	8.18	8.18	0.0091	399.82	8.19	8.19
20.79	7.97	7.97	0.0088	399.80	7.98	7.98
21.03	7.75	7.75	0.0085	399.78	7.77	7.77
21.27	7.53	7.53	0.0082	399.76	7.54	7.54
21.51	7.32	7.32	0.0079	399.74	7.33	7.33
21.75	7.11	7.11	0.0077	399.72	7.12	7.12
21.99	6.91	6.91	0.0074	399.70	6.92	6.92
22.24	6.70	6.70	0.0071	399.68	6.72	6.72
22.48	6.50	6.50	0.0068	399.66	6.51	6.51
22.72	6.30	6.30	0.0065	399.64	6.32	6.32
22.96	6.10	6.10	0.0062	399.62	6.11	6.11
23.20	5.90	5.90	0.0059	399.60	5.92	5.92
23.44	5.71	5.71	0.0056	399.58	5.72	5.72
23.69	5.52	5.52	0.0053	399.56	5.54	5.54
23.93	5.33	5.33	0.0050	399.54	5.34	5.34
24.17	0.00	0.00	0.0583	401.68	0.40	0.40

**CASE 1: PRE-PROJECT ANALYSIS
HYDROGRAPH COMBINATION B
(OUTFLOW FROM 72" PIPE + D.A. TO GUN CLUB ROAD CULVERT)**

Hydrograph Combination

Filename	Start Date (mo/da/year)	Start Time (hr:min)	Points	Step (hours)
C:\Users\ngalio\OneDrive - Maser Consulting\Desktop\Working Files\17042021\PRE w Depression to GCR Culvert-2 Year Storm.HYD	05/04/2021	0000	102	0.2417
C:\Users\ngalio\OneDrive - Maser Consulting\Desktop\Working Files\17042021\PRE w Depression to GCR Culvert-2 Year Storm.HYD	05/04/2021	0000	102	0.2417
COMBINED HYDROGRAPH	05/04/2021	0000	102	0.2417

Date	Time	Hyd A Contribution	Hyd B Contribution	Combined Hydrograph
05/04/2021	0000	0.00	0.00	0.00
05/04/2021	0015	0.30	0.68	0.99
05/04/2021	0029	0.79	1.36	2.15
05/04/2021	0044	1.10	2.05	3.14
05/04/2021	0058	1.55	2.73	4.28
05/04/2021	0113	1.59	2.88	4.47
05/04/2021	0127	1.72	3.03	4.75
05/04/2021	0142	1.76	3.18	4.95
05/04/2021	0156	1.88	3.34	5.22
05/04/2021	0211	5.18	9.77	14.95
05/04/2021	0225	8.88	16.20	25.09
05/04/2021	0240	29.62	22.63	52.25
05/04/2021	0254	34.42	29.04	63.46
05/04/2021	0309	35.69	23.15	58.84
05/04/2021	0323	36.46	17.26	53.72
05/04/2021	0338	36.81	11.36	48.17
05/04/2021	0352	36.54	5.48	42.02
05/04/2021	0407	35.36	4.91	40.27
05/04/2021	0421	32.95	4.33	37.29
05/04/2021	0436	19.66	3.76	23.42
05/04/2021	0450	10.63	3.19	13.82
05/04/2021	0505	13.60	3.15	16.76
05/04/2021	0519	10.06	3.12	13.18
05/04/2021	0534	12.24	3.09	15.33
05/04/2021	0548	10.31	3.06	13.37
05/04/2021	0603	11.35	2.90	14.24
05/04/2021	0617	9.84	2.74	12.58
05/04/2021	0632	10.07	2.58	12.65
05/04/2021	0646	8.91	2.42	11.33
05/04/2021	0701	8.96	2.35	11.31
05/04/2021	0715	8.29	2.29	10.58
05/04/2021	0730	8.32	2.22	10.54
05/04/2021	0744	7.86	2.15	10.02
05/04/2021	0759	7.81	2.10	9.90
05/04/2021	0813	7.47	2.04	9.51
05/04/2021	0828	7.36	1.98	9.34
05/04/2021	0842	7.08	1.93	9.01
05/04/2021	0857	6.95	1.88	8.83
05/04/2021	0911	6.73	1.83	8.57
05/04/2021	0926	6.59	1.78	8.37
05/04/2021	0940	6.39	1.74	8.13
05/04/2021	0955	6.25	1.70	7.95
05/04/2021	1009	6.08	1.65	7.74
05/04/2021	1024	5.95	1.61	7.56
05/04/2021	1038	5.80	1.57	7.37
05/04/2021	1053	5.66	1.54	7.20
05/04/2021	1107	5.53	1.50	7.03
05/04/2021	1122	5.40	1.47	6.87
05/04/2021	1136	5.28	1.43	6.71
05/04/2021	1151	5.16	1.40	6.57
05/04/2021	1205	5.05	1.37	6.42
05/04/2021	1220	4.95	1.35	6.29
05/04/2021	1234	4.84	1.32	6.16

Date	Time	Hyd A Contribution	Hyd B Contribution	Combined Hydrograph
05/04/2021	1249	4.74	1.29	6.03
05/04/2021	1303	4.64	1.26	5.90
05/04/2021	1318	4.55	1.24	5.79
05/04/2021	1332	4.46	1.21	5.67
05/04/2021	1347	4.37	1.19	5.56
05/04/2021	1401	4.29	1.17	5.46
05/04/2021	1416	4.21	1.15	5.35
05/04/2021	1430	4.13	1.12	5.25
05/04/2021	1445	4.05	1.11	5.15
05/04/2021	1459	3.99	1.09	5.07
05/04/2021	1514	3.91	1.07	4.97
05/04/2021	1528	3.85	1.05	4.89
05/04/2021	1543	3.77	1.03	4.80
05/04/2021	1557	3.71	1.01	4.73
05/04/2021	1612	3.65	1.00	4.65
05/04/2021	1626	3.59	0.98	4.58
05/04/2021	1641	3.53	0.97	4.50
05/04/2021	1655	3.48	0.95	4.44
05/04/2021	1710	3.43	0.94	4.37
05/04/2021	1724	3.37	0.92	4.30
05/04/2021	1739	3.32	0.91	4.23
05/04/2021	1753	3.28	0.90	4.18
05/04/2021	1808	3.23	0.89	4.12
05/04/2021	1822	3.19	0.87	4.06
05/04/2021	1837	3.14	0.86	4.00
05/04/2021	1851	3.10	0.85	3.95
05/04/2021	1906	3.06	0.84	3.90
05/04/2021	1920	3.02	0.83	3.85
05/04/2021	1935	2.98	0.82	3.80
05/04/2021	1949	2.95	0.81	3.76
05/04/2021	2004	2.91	0.80	3.71
05/04/2021	2018	2.88	0.79	3.67
05/04/2021	2033	2.84	0.78	3.62
05/04/2021	2047	2.81	0.77	3.58
05/04/2021	2102	2.78	0.76	3.54
05/04/2021	2116	2.75	0.75	3.51
05/04/2021	2131	2.72	0.75	3.47
05/04/2021	2145	2.69	0.74	3.43
05/04/2021	2160	2.66	0.73	3.39
05/04/2021	2214	2.63	0.72	3.35
05/04/2021	2229	2.60	0.72	3.32
05/04/2021	2243	2.58	0.71	3.29
05/04/2021	2258	2.55	0.70	3.26
05/04/2021	2312	2.53	0.70	3.23
05/04/2021	2327	2.51	0.69	3.20
05/04/2021	2341	2.49	0.68	3.17
05/04/2021	2356	2.46	0.68	3.14
05/05/2021	0010	0.17	0.00	0.17
05/05/2021	0025	0.00	0.00	0.00

Hydrograph Combination

Filename	Start Date (mo/da/year)	Start Time (hr:min)	Points	Step (hours)
C:\Users\ngalio\OneDrive - Maser Consulting\Desktop\Working Files\17042021\PRE w Depression to GCR Culvert-10 Year Storm	05/04/2021	0000	102	0.2417
C:\Users\ngalio\OneDrive - Maser Consulting\Desktop\Working Files\17042021\PRE w Depression to GCR Culvert-10 Year Storm	05/04/2021	0000	102	0.2417
COMBINED HYDROGRAPH	05/04/2021	0000	102	0.2417

Date	Time	Hyd A Contribution	Hyd B Contribution	Combined Hydrograph
05/04/2021	0000	0.00	0.00	0.00
05/04/2021	0015	0.47	1.02	1.50
05/04/2021	0029	1.19	2.05	3.23
05/04/2021	0044	1.65	3.07	4.72
05/04/2021	0058	2.32	4.09	6.41
05/04/2021	0113	2.41	4.36	6.77
05/04/2021	0127	2.61	4.63	7.24
05/04/2021	0142	2.71	4.90	7.61
05/04/2021	0156	2.92	5.18	8.10
05/04/2021	0211	7.46	14.31	21.77
05/04/2021	0225	28.43	23.44	51.87
05/04/2021	0240	34.38	32.57	66.95
05/04/2021	0254	36.31	41.67	77.98
05/04/2021	0309	37.55	33.37	70.93
05/04/2021	0323	38.13	25.07	63.20
05/04/2021	0338	38.42	16.77	55.19
05/04/2021	0352	38.46	8.49	46.95
05/04/2021	0407	38.20	7.57	45.77
05/04/2021	0421	37.66	6.66	44.32
05/04/2021	0436	36.86	5.75	42.60
05/04/2021	0450	35.23	4.84	40.07
05/04/2021	0505	32.43	4.80	37.23
05/04/2021	0519	20.52	4.76	25.28
05/04/2021	0534	15.90	4.72	20.62
05/04/2021	0548	17.38	4.67	22.06
05/04/2021	0603	16.27	4.40	20.67
05/04/2021	0617	15.69	4.12	19.81
05/04/2021	0632	14.39	3.84	18.23
05/04/2021	0646	13.61	3.56	17.17
05/04/2021	0701	12.75	3.45	16.20
05/04/2021	0715	12.36	3.33	15.70
05/04/2021	0730	11.87	3.22	15.09
05/04/2021	0744	11.52	3.11	14.63
05/04/2021	0759	11.10	3.02	14.11
05/04/2021	0813	10.79	2.92	13.71
05/04/2021	0828	10.43	2.83	13.25
05/04/2021	0842	10.11	2.73	12.84
05/04/2021	0857	9.78	2.66	12.44
05/04/2021	0911	9.50	2.58	12.08
05/04/2021	0926	9.21	2.50	11.71
05/04/2021	0940	8.95	2.42	11.37
05/04/2021	0955	8.68	2.36	11.04
05/04/2021	1009	8.45	2.29	10.74
05/04/2021	1024	8.21	2.23	10.44
05/04/2021	1038	7.99	2.17	10.15
05/04/2021	1053	7.77	2.11	9.89
05/04/2021	1107	7.57	2.06	9.63
05/04/2021	1122	7.38	2.01	9.39
05/04/2021	1136	7.19	1.95	9.15
05/04/2021	1151	7.01	1.91	8.92
05/04/2021	1205	6.85	1.86	8.72
05/04/2021	1220	6.69	1.82	8.51
05/04/2021	1234	6.53	1.78	8.31

Date	Time	Hyd A Contribution	Hyd B Contribution	Combined Hydrograph
05/04/2021	1249	6.38	1.74	8.12
05/04/2021	1303	6.25	1.70	7.95
05/04/2021	1318	6.11	1.67	7.78
05/04/2021	1332	5.98	1.63	7.61
05/04/2021	1347	5.86	1.60	7.46
05/04/2021	1401	5.75	1.57	7.32
05/04/2021	1416	5.63	1.54	7.17
05/04/2021	1430	5.52	1.51	7.02
05/04/2021	1445	5.42	1.48	6.90
05/04/2021	1459	5.32	1.46	6.77
05/04/2021	1514	5.23	1.43	6.66
05/04/2021	1528	5.14	1.40	6.54
05/04/2021	1543	5.06	1.38	6.44
05/04/2021	1557	4.98	1.36	6.34
05/04/2021	1612	4.90	1.34	6.24
05/04/2021	1626	4.82	1.32	6.14
05/04/2021	1641	4.75	1.30	6.05
05/04/2021	1655	4.68	1.28	5.96
05/04/2021	1710	4.61	1.26	5.88
05/04/2021	1724	4.55	1.25	5.79
05/04/2021	1739	4.48	1.23	5.72
05/04/2021	1753	4.43	1.22	5.64
05/04/2021	1808	4.37	1.20	5.57
05/04/2021	1822	4.32	1.19	5.50
05/04/2021	1837	4.26	1.17	5.44
05/04/2021	1851	4.22	1.16	5.39
05/04/2021	1906	4.17	1.15	5.32
05/04/2021	1920	4.13	1.14	5.27
05/04/2021	1935	4.08	1.13	5.21
05/04/2021	1949	4.05	1.12	5.17
05/04/2021	2004	4.01	1.10	5.12
05/04/2021	2018	3.97	1.09	5.07
05/04/2021	2033	3.93	1.09	5.02
05/04/2021	2047	3.90	1.08	4.98
05/04/2021	2102	3.87	1.07	4.94
05/04/2021	2116	3.84	1.06	4.90
05/04/2021	2131	3.81	1.05	4.86
05/04/2021	2145	3.78	1.05	4.83
05/04/2021	2160	3.76	1.04	4.80
05/04/2021	2214	3.73	1.03	4.76
05/04/2021	2229	3.71	1.03	4.74
05/04/2021	2243	3.68	1.02	4.70
05/04/2021	2258	3.66	1.01	4.67
05/04/2021	2312	3.64	1.01	4.65
05/04/2021	2327	3.62	1.00	4.62
05/04/2021	2341	3.60	1.00	4.60
05/04/2021	2356	3.59	0.99	4.58
05/05/2021	0010	0.22	0.00	0.22
05/05/2021	0025	0.00	0.00	0.00

Hydrograph Combination

Filename	Start Date (mo/da/year)	Start Time (hr:min)	Points	Step (hours)
C:\Users\ngalio\OneDrive - Maser Consulting\Desktop\Working Files\17042021\PRE w Depression to GCR Culvert-25 Year Storm-17042021	05/04/2021	0000	102	0.2417
C:\Users\ngalio\OneDrive - Maser Consulting\Desktop\Working Files\17042021\PRE w Depression to GCR Culvert-25 Year Storm-17042021	05/04/2021	0000	102	0.2417
COMBINED HYDROGRAPH	05/04/2021	0000	102	0.2417

Date	Time	Hyd A Contribution	Hyd B Contribution	Combined Hydrograph
05/04/2021	0000	0.00	0.00	0.00
05/04/2021	0015	0.75	1.54	2.29
05/04/2021	0029	1.80	3.08	4.88
05/04/2021	0044	2.53	4.62	7.15
05/04/2021	0058	3.54	6.16	9.71
05/04/2021	0113	3.65	6.52	10.18
05/04/2021	0127	3.95	6.89	10.83
05/04/2021	0142	4.07	7.25	11.32
05/04/2021	0156	4.34	7.62	11.97
05/04/2021	0211	22.01	20.46	42.48
05/04/2021	0225	33.72	33.30	67.02
05/04/2021	0240	36.03	46.14	82.17
05/04/2021	0254	37.90	58.94	96.84
05/04/2021	0309	39.17	47.49	86.65
05/04/2021	0323	40.01	36.03	76.05
05/04/2021	0338	40.34	24.58	64.92
05/04/2021	0352	40.43	13.14	53.57
05/04/2021	0407	40.40	11.72	52.11
05/04/2021	0421	40.33	10.29	50.62
05/04/2021	0436	40.17	8.86	49.03
05/04/2021	0450	39.76	7.44	47.19
05/04/2021	0505	39.12	7.31	46.43
05/04/2021	0519	38.42	7.18	45.60
05/04/2021	0534	37.71	7.06	44.77
05/04/2021	0548	36.96	6.93	43.89
05/04/2021	0603	35.61	6.56	42.17
05/04/2021	0617	34.24	6.19	40.43
05/04/2021	0632	30.17	5.82	35.99
05/04/2021	0646	19.98	5.45	25.43
05/04/2021	0701	18.84	5.30	24.13
05/04/2021	0715	18.22	5.14	23.36
05/04/2021	0730	17.65	4.99	22.64
05/04/2021	0744	17.12	4.83	21.95
05/04/2021	0759	16.61	4.70	21.31
05/04/2021	0813	16.14	4.57	20.71
05/04/2021	0828	15.69	4.44	20.13
05/04/2021	0842	15.23	4.31	19.54
05/04/2021	0857	14.66	4.19	18.85
05/04/2021	0911	14.40	4.08	18.48
05/04/2021	0926	13.91	3.97	17.87
05/04/2021	0940	13.62	3.85	17.48
05/04/2021	0955	13.18	3.76	16.93
05/04/2021	1009	12.90	3.66	16.56
05/04/2021	1024	12.52	3.56	16.08
05/04/2021	1038	12.22	3.47	15.69
05/04/2021	1053	11.89	3.38	15.27
05/04/2021	1107	11.62	3.30	14.92
05/04/2021	1122	11.31	3.22	14.53
05/04/2021	1136	11.04	3.13	14.17
05/04/2021	1151	10.76	3.06	13.83
05/04/2021	1205	10.52	2.99	13.51
05/04/2021	1220	10.27	2.92	13.19
05/04/2021	1234	10.03	2.85	12.87

Date	Time	Hyd A Contribution	Hyd B Contribution	Combined Hydrograph
05/04/2021	1249	9.79	2.79	12.58
05/04/2021	1303	9.57	2.73	12.30
05/04/2021	1318	9.36	2.66	12.03
05/04/2021	1332	9.15	2.60	11.76
05/04/2021	1347	8.94	2.55	11.49
05/04/2021	1401	8.76	2.49	11.25
05/04/2021	1416	8.57	2.44	11.01
05/04/2021	1430	8.38	2.39	10.77
05/04/2021	1445	8.21	2.34	10.55
05/04/2021	1459	8.05	2.29	10.34
05/04/2021	1514	7.89	2.25	10.14
05/04/2021	1528	7.72	2.20	9.92
05/04/2021	1543	7.57	2.16	9.73
05/04/2021	1557	7.43	2.12	9.55
05/04/2021	1612	7.28	2.08	9.36
05/04/2021	1626	7.15	2.04	9.18
05/04/2021	1641	7.01	2.00	9.01
05/04/2021	1655	6.89	1.96	8.85
05/04/2021	1710	6.76	1.93	8.69
05/04/2021	1724	6.64	1.89	8.53
05/04/2021	1739	6.52	1.86	8.38
05/04/2021	1753	6.41	1.83	8.23
05/04/2021	1808	6.29	1.80	8.09
05/04/2021	1822	6.19	1.76	7.95
05/04/2021	1837	6.08	1.74	7.82
05/04/2021	1851	5.98	1.71	7.69
05/04/2021	1906	5.89	1.68	7.57
05/04/2021	1920	5.79	1.65	7.44
05/04/2021	1935	5.70	1.63	7.32
05/04/2021	1949	5.61	1.60	7.21
05/04/2021	2004	5.52	1.58	7.09
05/04/2021	2018	5.44	1.55	6.99
05/04/2021	2033	5.35	1.53	6.88
05/04/2021	2047	5.27	1.51	6.78
05/04/2021	2102	5.20	1.48	6.68
05/04/2021	2116	5.12	1.46	6.59
05/04/2021	2131	5.05	1.44	6.49
05/04/2021	2145	4.97	1.42	6.40
05/04/2021	2160	4.91	1.40	6.31
05/04/2021	2214	4.84	1.38	6.23
05/04/2021	2229	4.78	1.37	6.14
05/04/2021	2243	4.71	1.35	6.06
05/04/2021	2258	4.66	1.33	5.99
05/04/2021	2312	4.59	1.31	5.91
05/04/2021	2327	4.54	1.30	5.83
05/04/2021	2341	4.47	1.28	5.76
05/04/2021	2356	4.42	1.27	5.69
05/05/2021	0010	0.28	0.00	0.28
05/05/2021	0025	0.00	0.00	0.00

Hydrograph Combination

Filename	Start Date (mo/da/year)	Start Time (hr:min)	Points	Step (hours)
C:\Users\ngalio\OneDrive - Maser Consulting\Desktop\Working Files\17042021\PRE w Depression to GCR Culvert-50 Year Storm	05/04/2021	0000	102	0.2417
C:\Users\ngalio\OneDrive - Maser Consulting\Desktop\Working Files\17042021\PRE w Depression to GCR Culvert-50 Year Storm	05/04/2021	0000	102	0.2417
COMBINED HYDROGRAPH	05/04/2021	0000	102	0.2417

Date	Time	Hyd A Contribution	Hyd B Contribution	Combined Hydrograph
05/04/2021	0000	0.00	0.00	0.00
05/04/2021	0015	0.85	1.72	2.57
05/04/2021	0029	2.02	3.45	5.46
05/04/2021	0044	2.83	5.17	8.01
05/04/2021	0058	3.96	6.89	10.85
05/04/2021	0113	4.17	7.45	11.62
05/04/2021	0127	4.54	8.01	12.54
05/04/2021	0142	4.82	8.56	13.38
05/04/2021	0156	5.61	9.13	14.74
05/04/2021	0211	30.77	23.53	54.30
05/04/2021	0225	35.06	37.93	72.99
05/04/2021	0240	37.24	52.33	89.57
05/04/2021	0254	38.75	66.68	105.43
05/04/2021	0309	40.11	53.84	93.96
05/04/2021	0323	40.76	41.01	81.77
05/04/2021	0338	41.14	28.17	69.31
05/04/2021	0352	41.26	15.36	56.62
05/04/2021	0407	41.24	13.65	54.89
05/04/2021	0421	41.19	11.94	53.13
05/04/2021	0436	41.11	10.23	51.34
05/04/2021	0450	40.91	8.52	49.44
05/04/2021	0505	40.58	8.31	48.88
05/04/2021	0519	40.18	8.09	48.27
05/04/2021	0534	39.64	7.88	47.52
05/04/2021	0548	39.01	7.66	46.67
05/04/2021	0603	38.36	7.30	45.66
05/04/2021	0617	37.68	6.94	44.62
05/04/2021	0632	36.87	6.59	43.45
05/04/2021	0646	35.43	6.23	41.66
05/04/2021	0701	33.98	6.08	40.06
05/04/2021	0715	27.85	5.94	33.79
05/04/2021	0730	20.07	5.79	25.87
05/04/2021	0744	20.01	5.65	25.66
05/04/2021	0759	19.39	5.52	24.91
05/04/2021	0813	18.99	5.40	24.38
05/04/2021	0828	18.54	5.27	23.81
05/04/2021	0842	18.10	5.14	23.25
05/04/2021	0857	17.68	5.03	22.71
05/04/2021	0911	17.29	4.92	22.21
05/04/2021	0926	16.91	4.81	21.71
05/04/2021	0940	16.52	4.70	21.22
05/04/2021	0955	16.15	4.60	20.74
05/04/2021	1009	15.80	4.50	20.30
05/04/2021	1024	15.46	4.40	19.86
05/04/2021	1038	15.08	4.30	19.39
05/04/2021	1053	14.71	4.21	18.92
05/04/2021	1107	14.45	4.12	18.57
05/04/2021	1122	14.09	4.04	18.13
05/04/2021	1136	13.86	3.95	17.81
05/04/2021	1151	13.52	3.87	17.38
05/04/2021	1205	13.28	3.79	17.06
05/04/2021	1220	12.97	3.71	16.68
05/04/2021	1234	12.72	3.63	16.35

Date	Time	Hyd A Contribution	Hyd B Contribution	Combined Hydrograph
05/04/2021	1249	12.44	3.56	15.99
05/04/2021	1303	12.20	3.48	15.69
05/04/2021	1318	11.94	3.41	15.35
05/04/2021	1332	11.71	3.34	15.05
05/04/2021	1347	11.46	3.27	14.74
05/04/2021	1401	11.24	3.21	14.44
05/04/2021	1416	11.01	3.14	14.15
05/04/2021	1430	10.79	3.08	13.86
05/04/2021	1445	10.57	3.02	13.58
05/04/2021	1459	10.36	2.96	13.32
05/04/2021	1514	10.16	2.90	13.05
05/04/2021	1528	9.94	2.84	12.78
05/04/2021	1543	9.74	2.78	12.52
05/04/2021	1557	9.55	2.73	12.28
05/04/2021	1612	9.37	2.67	12.04
05/04/2021	1626	9.18	2.62	11.80
05/04/2021	1641	9.00	2.57	11.57
05/04/2021	1655	8.82	2.52	11.34
05/04/2021	1710	8.65	2.47	11.12
05/04/2021	1724	8.47	2.42	10.89
05/04/2021	1739	8.31	2.37	10.68
05/04/2021	1753	8.15	2.32	10.47
05/04/2021	1808	7.99	2.28	10.27
05/04/2021	1822	7.83	2.23	10.06
05/04/2021	1837	7.68	2.19	9.87
05/04/2021	1851	7.52	2.14	9.67
05/04/2021	1906	7.38	2.10	9.48
05/04/2021	1920	7.23	2.06	9.29
05/04/2021	1935	7.09	2.02	9.11
05/04/2021	1949	6.95	1.98	8.93
05/04/2021	2004	6.81	1.94	8.75
05/04/2021	2018	6.68	1.90	8.58
05/04/2021	2033	6.55	1.86	8.41
05/04/2021	2047	6.42	1.83	8.25
05/04/2021	2102	6.29	1.79	8.08
05/04/2021	2116	6.16	1.75	7.91
05/04/2021	2131	6.04	1.72	7.76
05/04/2021	2145	5.93	1.68	7.61
05/04/2021	2160	5.81	1.65	7.46
05/04/2021	2214	5.69	1.62	7.31
05/04/2021	2229	5.58	1.58	7.16
05/04/2021	2243	5.46	1.55	7.01
05/04/2021	2258	5.35	1.52	6.87
05/04/2021	2312	5.24	1.49	6.73
05/04/2021	2327	5.14	1.46	6.60
05/04/2021	2341	5.04	1.43	6.47
05/04/2021	2356	4.93	1.40	6.33
05/05/2021	0010	0.35	0.00	0.35
05/05/2021	0025	0.00	0.00	0.00

Hydrograph Combination

Filename	Start Date (mo/da/year)	Start Time (hr:min)	Points	Step (hours)
C:\Users\ngalio\OneDrive - Maser Consulting\Desktop\Working Files\17042021\PRE w Depression to GCR Culvert-100 Year Storm	05/04/2021	0000	102	0.2417
C:\Users\ngalio\OneDrive - Maser Consulting\Desktop\Working Files\17042021\PRE w Depression to GCR Culvert-100 Year Storm	05/04/2021	0000	102	0.2417
COMBINED HYDROGRAPH	05/04/2021	0000	102	0.2417

Date	Time	Hyd A Contribution	Hyd B Contribution	Combined Hydrograph
05/04/2021	0000	0.00	0.00	0.00
05/04/2021	0015	0.90	1.84	2.74
05/04/2021	0029	2.14	3.67	5.81
05/04/2021	0044	3.02	5.51	8.53
05/04/2021	0058	4.20	7.34	11.54
05/04/2021	0113	4.54	8.18	12.72
05/04/2021	0127	5.12	9.02	14.15
05/04/2021	0142	5.53	9.86	15.40
05/04/2021	0156	13.56	10.72	24.28
05/04/2021	0211	31.56	26.54	58.10
05/04/2021	0225	35.41	42.36	77.77
05/04/2021	0240	37.56	58.18	95.74
05/04/2021	0254	39.23	73.95	113.18
05/04/2021	0309	40.56	60.61	101.17
05/04/2021	0323	41.31	47.27	88.58
05/04/2021	0338	41.76	33.93	75.69
05/04/2021	0352	41.93	20.62	62.54
05/04/2021	0407	41.97	17.61	59.58
05/04/2021	0421	41.96	14.61	56.57
05/04/2021	0436	41.91	11.61	53.52
05/04/2021	0450	41.78	8.61	50.39
05/04/2021	0505	41.49	8.42	49.90
05/04/2021	0519	41.09	8.22	49.31
05/04/2021	0534	40.66	8.03	48.69
05/04/2021	0548	40.23	7.83	48.06
05/04/2021	0603	39.66	7.61	47.27
05/04/2021	0617	38.99	7.38	46.37
05/04/2021	0632	38.29	7.16	45.45
05/04/2021	0646	37.58	6.93	44.51
05/04/2021	0701	36.70	6.84	43.54
05/04/2021	0715	35.36	6.74	42.10
05/04/2021	0730	34.07	6.65	40.72
05/04/2021	0744	30.22	6.55	36.78
05/04/2021	0759	22.84	6.46	29.30
05/04/2021	0813	22.23	6.37	28.60
05/04/2021	0828	21.93	6.27	28.21
05/04/2021	0842	21.62	6.18	27.80
05/04/2021	0857	21.28	6.09	27.38
05/04/2021	0911	20.93	6.00	26.93
05/04/2021	0926	20.63	5.91	26.54
05/04/2021	0940	20.32	5.82	26.14
05/04/2021	0955	20.01	5.73	25.74
05/04/2021	1009	19.70	5.64	25.35
05/04/2021	1024	19.40	5.55	24.95
05/04/2021	1038	19.08	5.46	24.55
05/04/2021	1053	18.78	5.38	24.16
05/04/2021	1107	18.48	5.29	23.77
05/04/2021	1122	18.18	5.20	23.38
05/04/2021	1136	17.88	5.11	22.99
05/04/2021	1151	17.58	5.03	22.61
05/04/2021	1205	17.29	4.94	22.23
05/04/2021	1220	16.99	4.86	21.85
05/04/2021	1234	16.70	4.77	21.48

Date	Time	Hyd A Contribution	Hyd B Contribution	Combined Hydrograph
05/04/2021	1249	16.41	4.69	21.10
05/04/2021	1303	16.12	4.61	20.73
05/04/2021	1318	15.84	4.52	20.36
05/04/2021	1332	15.55	4.44	19.99
05/04/2021	1347	15.26	4.36	19.62
05/04/2021	1401	14.91	4.28	19.19
05/04/2021	1416	14.68	4.20	18.88
05/04/2021	1430	14.36	4.12	18.48
05/04/2021	1445	14.13	4.04	18.16
05/04/2021	1459	13.84	3.96	17.80
05/04/2021	1514	13.58	3.88	17.46
05/04/2021	1528	13.30	3.80	17.11
05/04/2021	1543	13.05	3.73	16.78
05/04/2021	1557	12.78	3.65	16.43
05/04/2021	1612	12.52	3.57	16.09
05/04/2021	1626	12.26	3.50	15.76
05/04/2021	1641	12.00	3.42	15.42
05/04/2021	1655	11.75	3.35	15.10
05/04/2021	1710	11.50	3.28	14.78
05/04/2021	1724	11.25	3.20	14.45
05/04/2021	1739	11.00	3.13	14.13
05/04/2021	1753	10.75	3.06	13.81
05/04/2021	1808	10.51	2.99	13.50
05/04/2021	1822	10.27	2.92	13.19
05/04/2021	1837	10.02	2.85	12.88
05/04/2021	1851	9.78	2.78	12.57
05/04/2021	1906	9.55	2.72	12.27
05/04/2021	1920	9.32	2.65	11.97
05/04/2021	1935	9.09	2.58	11.67
05/04/2021	1949	8.86	2.52	11.38
05/04/2021	2004	8.63	2.45	11.08
05/04/2021	2018	8.41	2.38	10.80
05/04/2021	2033	8.19	2.32	10.52
05/04/2021	2047	7.98	2.26	10.24
05/04/2021	2102	7.77	2.20	9.96
05/04/2021	2116	7.54	2.13	9.68
05/04/2021	2131	7.33	2.07	9.41
05/04/2021	2145	7.12	2.01	9.14
05/04/2021	2160	6.92	1.95	8.87
05/04/2021	2214	6.72	1.89	8.61
05/04/2021	2229	6.51	1.83	8.35
05/04/2021	2243	6.32	1.78	8.09
05/04/2021	2258	6.11	1.72	7.83
05/04/2021	2312	5.92	1.66	7.57
05/04/2021	2327	5.72	1.60	7.33
05/04/2021	2341	5.54	1.55	7.08
05/04/2021	2356	5.34	1.49	6.84
05/05/2021	0010	0.40	0.00	0.40
05/05/2021	0025	0.00	0.00	0.00

**CASE 1: PRE-PROJECT ANALYSIS
GUN CLUB ROAD CULVERT
DETENTION BASIN ROUTING**

Basin Storage/Elevation Input

Elevation (ft)	Area (acres)	Storage (acre-ft)
395.00	0.033	0.000
396.00	1.455	0.744
397.00	3.837	3.390
398.00	5.159	7.888

Project Files:

Outlet Structure Configuration: R:\Projects\2018\18000145B\Reports\PCSM\210426 PCSM\VTSPUHMPRE w Depression\GCR CULVERT BASIN.C

Discharge/Elevation Curve: R:\Projects\2018\18000145B\Reports\PCSM\210426 PCSM\VTSPUHMPRE w Depression\GCR CULVERT BASIN.EO

Outlet Structure Configuration

Stage 1: Emergency Spillway

Crest Elevation = 397 feet
Crest Length = 230 feet
Discharge Coefficient = 3.1

Stage 2: Emergency Spillway

Crest Elevation = 397.5 feet
Crest Length = 100 feet
Discharge Coefficient = 3.1

Stage 3: Emergency Spillway

Crest Elevation = 398 feet
Crest Length = 125 feet
Discharge Coefficient = 3.1

Stage 4: Discharge Pipe

Invert Elevation = 394.89 feet
Pipe Diameter = 2 feet
Pipe Length = 32 feet
Pipe Slope = 0.0575 ft/ft
Manning n = 0.012
Entrance Condition = SEP

Basin Rating Curve

Basin Water Elevation	Basin Outflow (cfs)	Riser Box Water Elevation	Tailwater Elevation (ft)	Outfall Culvert Control	Outfall Culvert Override?
395.00	0.06	N/A	N/A	INLET	N/A
395.10	0.21	N/A	N/A	INLET	N/A
395.20	0.45	N/A	N/A	INLET	N/A
395.30	0.76	N/A	N/A	INLET	N/A
395.40	1.15	N/A	N/A	INLET	N/A
395.50	1.61	N/A	N/A	INLET	N/A
395.60	2.15	N/A	N/A	INLET	N/A
395.70	2.77	N/A	N/A	INLET	N/A
395.80	3.45	N/A	N/A	INLET	N/A
395.90	4.21	N/A	N/A	INLET	N/A
396.00	5.03	N/A	N/A	INLET	N/A
396.10	5.65	N/A	N/A	INLET	N/A
396.20	6.39	N/A	N/A	INLET	N/A
396.30	7.17	N/A	N/A	INLET	N/A
396.40	7.98	N/A	N/A	INLET	N/A
396.50	8.82	N/A	N/A	INLET	N/A
396.60	9.69	N/A	N/A	INLET	N/A
396.70	10.59	N/A	N/A	INLET	N/A
396.80	11.52	N/A	N/A	INLET	N/A
396.90	12.48	N/A	N/A	INLET	N/A
397.00	13.46	N/A	N/A	INLET	N/A
397.10	37.02	N/A	N/A	INLET	N/A
397.20	79.28	N/A	N/A	INLET	N/A
397.30	133.73	N/A	N/A	INLET	N/A
397.40	198.03	N/A	N/A	INLET	N/A
397.50	270.85	N/A	N/A	INLET	N/A
397.60	361.08	N/A	N/A	INLET	N/A
397.70	466.36	N/A	N/A	INLET	N/A
397.80	583.35	N/A	N/A	INLET	N/A

Basin Water Elevation	Basin Outflow (cfs)	Riser Box Water Elevation	Tailwater Elevation (ft)	Outfall Culvert Control	Outfall Culvert Override?
397.90	710.12	N/A	N/A	INLET	N/A
398.00	846.19	N/A	N/A	INLET	N/A

**Modified Puls Routing
Summary of Results**

Inflow Hydrograph: R:\Projects\2018\18000145B\Reports\PCSM\210426 PCSM\VTSPUHM\PRE w Depression\Hydrograph Combinations\Combined Flow B 2yr.HYD
Storage/Elevation Curve: R:\Projects\2018\18000145B\Reports\PCSM\210426 PCSM\VTSPUHM\PRE w Depression\GCR Culvert Basin (PRE).ES

Basin Bypass Capacity = 0.00 cfs
Starting Pool Elevation = 395.00 feet
Time Interval = 0.242 hours
Total number of Inflow points = 102

	Event Time (hours)	Hydrograph Inflow (cfs)	Basin Inflow (cfs)	Storage Used (acre-ft)	Elevation Above MSL (feet)	Basin Outflow (cfs)	Outflow Total (cfs)
Start	0.00	0.00	0.00	0.0000	395.00	0.00	0.00
Max. Inflow	2.90	63.46	63.46	2.5013	396.66	11.12	11.12
Max. Outflow	3.63	48.17	48.17	4.0028	397.14	50.72	50.72
Final	24.41	0.00	0.00	0.4978	395.67	2.57	2.57

Modified Puls Routing

Inflow Hydrograph: R:\Projects\2018\18000145B\Reports\PCSM\210426 PCSM\WTPSUHM\PRE w Depression\Hydrograph Combinations\Combined Flow B 2yr.HYD
 Storage/Elevation Curve: R:\Projects\2018\18000145B\Reports\PCSM\210426 PCSM\WTPSUHM\PRE w Depression\GCR Culvert Basin (PRE).ES

Basin Bypass Capacity = 0.00 cfs
 Starting Pool Elevation = 395.00 feet
 Time Interval = 0.242 hours

Event Time (hours)	Hydrograph Inflow (cfs)	Basin Inflow (cfs)	Storage Used (acre-ft)	Elevation Above MSL (feet)	Basin Outflow (cfs)	Outflow Total (cfs)
0.00	0.00	0.00	0.0000	395.00	0.00	0.00
0.24	0.99	0.99	0.0091	395.01	0.08	0.08
0.48	2.15	2.15	0.0384	395.05	0.13	0.13
0.73	3.14	3.14	0.0875	395.12	0.25	0.25
0.97	4.28	4.28	0.1545	395.21	0.47	0.47
1.21	4.47	4.47	0.2293	395.31	0.79	0.79
1.45	4.75	4.75	0.3018	395.41	1.17	1.17
1.69	4.95	4.95	0.3709	395.50	1.61	1.61
1.93	5.22	5.22	0.4358	395.59	2.07	2.07
2.18	14.95	14.95	0.5832	395.78	3.34	3.34
2.42	25.09	25.09	0.8945	396.06	5.53	5.53
2.66	52.25	52.25	1.5342	396.30	7.76	7.76
2.90	63.46	63.46	2.5013	396.66	11.12	11.12
3.14	58.84	58.84	3.4610	397.02	15.08	15.08
3.38	53.72	53.72	3.9631	397.13	47.20	47.20
3.63	48.17	48.17	4.0028	397.14	50.72	50.72
3.87	42.02	42.02	3.9430	397.12	45.46	45.46
4.11	40.27	40.27	3.8961	397.11	41.53	41.53
4.35	37.29	37.29	3.8658	397.11	39.08	39.08
4.59	23.42	23.42	3.7664	397.08	31.58	31.58
4.83	13.82	13.82	3.6076	397.05	21.55	21.55
5.08	16.76	16.76	3.5238	397.03	17.42	17.42
5.32	13.18	13.18	3.4888	397.02	16.03	16.03
5.56	15.33	15.33	3.4624	397.02	15.13	15.13
5.80	13.37	13.37	3.4505	397.01	14.76	14.76
6.04	14.24	14.24	3.4360	397.01	14.31	14.31
6.28	12.58	12.58	3.4210	397.01	14.02	14.02
6.53	12.65	12.65	3.3972	397.00	13.59	13.59
6.77	11.33	11.33	3.3674	396.99	13.38	13.38
7.01	11.31	11.31	3.3278	396.98	13.23	13.23
7.25	10.58	10.58	3.2839	396.96	13.06	13.06
7.49	10.54	10.54	3.2357	396.94	12.88	12.88
7.73	10.02	10.02	3.1855	396.92	12.70	12.70
7.98	9.90	9.90	3.1328	396.90	12.50	12.50
8.22	9.51	9.51	3.0708	396.88	13.11	13.11
8.46	9.34	9.34	2.9998	396.85	12.86	12.86
8.70	9.01	9.01	2.9287	396.83	12.61	12.61
8.94	8.83	8.83	2.8574	396.80	12.36	12.36
9.18	8.57	8.57	2.7867	396.77	12.12	12.12
9.43	8.37	8.37	2.7163	396.75	11.87	11.87
9.67	8.13	8.13	2.6463	396.72	11.63	11.63
9.91	7.95	7.95	2.5771	396.69	11.39	11.39
10.15	7.74	7.74	2.5087	396.67	11.15	11.15
10.39	7.56	7.56	2.4411	396.64	10.91	10.91
10.63	7.37	7.37	2.3745	396.62	10.68	10.68
10.88	7.20	7.20	2.3089	396.59	10.46	10.46
11.12	7.03	7.03	2.2444	396.57	10.23	10.23
11.36	6.87	6.87	2.1811	396.54	10.01	10.01
11.60	6.71	6.71	2.1190	396.52	9.79	9.79
11.84	6.57	6.57	2.0581	396.50	9.58	9.58
12.08	6.42	6.42	1.9985	396.47	9.37	9.37
12.33	6.29	6.29	1.9402	396.45	9.17	9.17

Event Time (hours)	Hydrograph Inflow (cfs)	Basin Inflow (cfs)	Storage Used (acre-ft)	Elevation Above MSL (feet)	Basin Outflow (cfs)	Outflow Total (cfs)
12.57	6.16	6.16	1.8833	396.43	8.97	8.97
12.81	6.03	6.03	1.8278	396.41	8.78	8.78
13.05	5.90	5.90	1.7734	396.39	8.59	8.59
13.29	5.79	5.79	1.7204	396.37	8.41	8.41
13.54	5.67	5.67	1.6687	396.35	8.23	8.23
13.78	5.56	5.56	1.6183	396.33	8.05	8.05
14.02	5.46	5.46	1.5692	396.31	7.88	7.88
14.26	5.35	5.35	1.5214	396.29	7.71	7.71
14.50	5.25	5.25	1.4748	396.28	7.55	7.55
14.74	5.15	5.15	1.4294	396.26	7.39	7.39
14.99	5.07	5.07	1.3853	396.24	7.24	7.24
15.23	4.97	4.97	1.3425	396.23	7.09	7.09
15.47	4.89	4.89	1.3007	396.21	6.95	6.95
15.71	4.80	4.80	1.2602	396.20	6.80	6.80
15.95	4.73	4.73	1.2208	396.18	6.67	6.67
16.19	4.65	4.65	1.1826	396.17	6.54	6.54
16.44	4.58	4.58	1.1455	396.15	6.41	6.41
16.68	4.50	4.50	1.1095	396.14	6.28	6.28
16.92	4.44	4.44	1.0746	396.12	6.16	6.16
17.16	4.37	4.37	1.0407	396.11	6.04	6.04
17.40	4.30	4.30	1.0077	396.10	5.93	5.93
17.64	4.23	4.23	0.9757	396.09	5.82	5.82
17.89	4.18	4.18	0.9446	396.08	5.71	5.71
18.13	4.12	4.12	0.9145	396.06	5.60	5.60
18.37	4.06	4.06	0.8853	396.05	5.50	5.50
18.61	4.00	4.00	0.8568	396.04	5.41	5.41
18.85	3.95	3.95	0.8291	396.03	5.31	5.31
19.09	3.90	3.90	0.8023	396.02	5.23	5.23
19.34	3.85	3.85	0.7761	396.01	5.14	5.14
19.58	3.80	3.80	0.7507	396.00	5.06	5.06
19.82	3.76	3.76	0.7274	395.98	4.84	4.84
20.06	3.71	3.71	0.7075	395.95	4.62	4.62
20.30	3.67	3.67	0.6907	395.93	4.44	4.44
20.54	3.62	3.62	0.6765	395.91	4.28	4.28
20.79	3.58	3.58	0.6642	395.89	4.15	4.15
21.03	3.54	3.54	0.6535	395.88	4.04	4.04
21.27	3.51	3.51	0.6443	395.87	3.94	3.94
21.51	3.47	3.47	0.6361	395.85	3.86	3.86
21.75	3.43	3.43	0.6287	395.85	3.78	3.78
21.99	3.39	3.39	0.6219	395.84	3.71	3.71
22.24	3.35	3.35	0.6157	395.83	3.65	3.65
22.48	3.32	3.32	0.6099	395.82	3.60	3.60
22.72	3.29	3.29	0.6046	395.81	3.54	3.54
22.96	3.26	3.26	0.5997	395.81	3.50	3.50
23.20	3.23	3.23	0.5952	395.80	3.45	3.45
23.44	3.20	3.20	0.5909	395.79	3.41	3.41
23.69	3.17	3.17	0.5868	395.79	3.37	3.37
23.93	3.14	3.14	0.5829	395.78	3.33	3.33
24.17	0.17	0.17	0.5522	395.74	3.05	3.05
24.41	0.00	0.00	0.4978	395.67	2.57	2.57

**Modified Puls Routing
Summary of Results**

Inflow Hydrograph: R:\Projects\2018\18000145B\Reports\PCSM\210426 PCSM\VTSPUHM\PRE w Depression\Hydrograph Combinations\Combined Flow B 10yr.HY
Storage/Elevation Curve: R:\Projects\2018\18000145B\Reports\PCSM\210426 PCSM\VTSPUHM\PRE w Depression\GCR Culvert Basin (PRE).ES

Basin Bypass Capacity = 0.00 cfs
Starting Pool Elevation = 395.00 feet
Time Interval = 0.242 hours
Total number of Inflow points = 102

	Event Time (hours)	Hydrograph Inflow (cfs)	Basin Inflow (cfs)	Storage Used (acre-ft)	Elevation Above MSL (feet)	Basin Outflow (cfs)	Outflow Total (cfs)
Start	0.00	0.00	0.00	0.0000	395.00	0.00	0.00
Max. Inflow	2.90	77.98	77.98	3.5846	397.04	20.34	20.34
Max. Outflow	3.14	70.93	70.93	4.1860	397.18	68.36	68.36
Final	24.41	0.00	0.00	0.6889	395.93	4.41	4.41

Modified Puls Routing

Inflow Hydrograph: R:\Projects\2018\18000145B\Reports\PCSM\210426 PCSM\WTPSUHM\PRE w Depression\Hydrograph Combinations\Combined Flow B 10yr.HY
 Storage/Elevation Curve: R:\Projects\2018\18000145B\Reports\PCSM\210426 PCSM\WTPSUHM\PRE w Depression\GCR Culvert Basin (PRE).ES

Basin Bypass Capacity = 0.00 cfs
 Starting Pool Elevation = 395.00 feet
 Time Interval = 0.242 hours

Event Time (hours)	Hydrograph Inflow (cfs)	Basin Inflow (cfs)	Storage Used (acre-ft)	Elevation Above MSL (feet)	Basin Outflow (cfs)	Outflow Total (cfs)
0.00	0.00	0.00	0.0000	395.00	0.00	0.00
0.24	1.50	1.50	0.0141	395.02	0.09	0.09
0.48	3.23	3.23	0.0588	395.08	0.17	0.17
0.73	4.72	4.72	0.1326	395.18	0.39	0.39
0.97	6.41	6.41	0.2319	395.31	0.80	0.80
1.21	6.77	6.77	0.3414	395.46	1.41	1.41
1.45	7.24	7.24	0.4457	395.60	2.15	2.15
1.69	7.61	7.61	0.5430	395.73	2.96	2.96
1.93	8.10	8.10	0.6322	395.85	3.82	3.82
2.18	21.77	21.77	0.8390	396.04	5.35	5.35
2.42	51.87	51.87	1.4466	396.27	7.45	7.45
2.66	66.95	66.95	2.4496	396.64	10.94	10.94
2.90	77.98	77.98	3.5846	397.04	20.34	20.34
3.14	70.93	70.93	4.1860	397.18	68.36	68.36
3.38	63.20	63.20	4.1732	397.17	67.05	67.05
3.63	55.19	55.19	4.0942	397.16	59.24	59.24
3.87	46.95	46.95	4.0099	397.14	51.35	51.35
4.11	45.77	45.77	3.9570	397.13	46.67	46.67
4.35	44.32	44.32	3.9396	397.12	45.16	45.16
4.59	42.60	42.60	3.9212	397.12	43.60	43.60
4.83	40.07	40.07	3.8964	397.11	41.55	41.55
5.08	37.23	37.23	3.8643	397.11	38.96	38.96
5.32	25.28	25.28	3.7767	397.09	32.32	32.32
5.56	20.62	20.62	3.6644	397.06	24.82	24.82
5.80	22.06	22.06	3.6204	397.05	22.25	22.25
6.04	20.67	20.67	3.6090	397.05	21.62	21.62
6.28	19.81	19.81	3.5909	397.04	20.67	20.67
6.53	18.23	18.23	3.5693	397.04	19.54	19.54
6.77	17.17	17.17	3.5443	397.03	18.37	18.37
7.01	16.20	16.20	3.5212	397.03	17.32	17.32
7.25	15.70	15.70	3.5017	397.02	16.54	16.54
7.49	15.09	15.09	3.4853	397.02	15.89	15.89
7.73	14.63	14.63	3.4700	397.02	15.37	15.37
7.98	14.11	14.11	3.4548	397.01	14.89	14.89
8.22	13.71	13.71	3.4399	397.01	14.43	14.43
8.46	13.25	13.25	3.4244	397.01	14.08	14.08
8.70	12.84	12.84	3.4069	397.00	13.76	13.76
8.94	12.44	12.44	3.3875	397.00	13.45	13.45
9.18	12.08	12.08	3.3646	396.99	13.36	13.36
9.43	11.71	11.71	3.3363	396.98	13.26	13.26
9.67	11.37	11.37	3.3032	396.97	13.13	13.13
9.91	11.04	11.04	3.2661	396.95	13.00	13.00
10.15	10.74	10.74	3.2255	396.94	12.85	12.85
10.39	10.44	10.44	3.1820	396.92	12.68	12.68
10.63	10.15	10.15	3.1360	396.90	12.52	12.52
10.88	9.89	9.89	3.0799	396.88	13.14	13.14
11.12	9.63	9.63	3.0147	396.86	12.91	12.91
11.36	9.39	9.39	2.9491	396.83	12.68	12.68
11.60	9.15	9.15	2.8832	396.81	12.45	12.45
11.84	8.92	8.92	2.8172	396.78	12.22	12.22
12.08	8.72	8.72	2.7515	396.76	11.99	11.99
12.33	8.51	8.51	2.6862	396.73	11.77	11.77

Event Time (hours)	Hydrograph Inflow (cfs)	Basin Inflow (cfs)	Storage Used (acre-ft)	Elevation Above MSL (feet)	Basin Outflow (cfs)	Outflow Total (cfs)
12.57	8.31	8.31	2.6214	396.71	11.54	11.54
12.81	8.12	8.12	2.5572	396.69	11.32	11.32
13.05	7.95	7.95	2.4938	396.66	11.10	11.10
13.29	7.78	7.78	2.4314	396.64	10.88	10.88
13.54	7.61	7.61	2.3699	396.61	10.67	10.67
13.78	7.46	7.46	2.3094	396.59	10.46	10.46
14.02	7.32	7.32	2.2502	396.57	10.25	10.25
14.26	7.17	7.17	2.1922	396.55	10.05	10.05
14.50	7.02	7.02	2.1352	396.53	9.85	9.85
14.74	6.90	6.90	2.0794	396.50	9.66	9.66
14.99	6.77	6.77	2.0249	396.48	9.47	9.47
15.23	6.66	6.66	1.9718	396.46	9.28	9.28
15.47	6.54	6.54	1.9201	396.44	9.10	9.10
15.71	6.44	6.44	1.8696	396.43	8.93	8.93
15.95	6.34	6.34	1.8207	396.41	8.76	8.76
16.19	6.24	6.24	1.7731	396.39	8.59	8.59
16.44	6.14	6.14	1.7268	396.37	8.43	8.43
16.68	6.05	6.05	1.6817	396.35	8.27	8.27
16.92	5.96	5.96	1.6379	396.34	8.12	8.12
17.16	5.88	5.88	1.5955	396.32	7.97	7.97
17.40	5.79	5.79	1.5542	396.31	7.83	7.83
17.64	5.72	5.72	1.5142	396.29	7.69	7.69
17.89	5.64	5.64	1.4754	396.28	7.55	7.55
18.13	5.57	5.57	1.4378	396.26	7.42	7.42
18.37	5.50	5.50	1.4013	396.25	7.30	7.30
18.61	5.44	5.44	1.3661	396.24	7.17	7.17
18.85	5.39	5.39	1.3321	396.22	7.06	7.06
19.09	5.32	5.32	1.2993	396.21	6.94	6.94
19.34	5.27	5.27	1.2675	396.20	6.83	6.83
19.58	5.21	5.21	1.2368	396.19	6.72	6.72
19.82	5.17	5.17	1.2072	396.18	6.62	6.62
20.06	5.12	5.12	1.1787	396.16	6.52	6.52
20.30	5.07	5.07	1.1512	396.15	6.43	6.43
20.54	5.02	5.02	1.1245	396.14	6.33	6.33
20.79	4.98	4.98	1.0988	396.13	6.24	6.24
21.03	4.94	4.94	1.0740	396.12	6.16	6.16
21.27	4.90	4.90	1.0501	396.12	6.07	6.07
21.51	4.86	4.86	1.0271	396.11	5.99	5.99
21.75	4.83	4.83	1.0049	396.10	5.92	5.92
21.99	4.80	4.80	0.9836	396.09	5.84	5.84
22.24	4.76	4.76	0.9631	396.08	5.77	5.77
22.48	4.74	4.74	0.9434	396.08	5.70	5.70
22.72	4.70	4.70	0.9244	396.07	5.64	5.64
22.96	4.67	4.67	0.9060	396.06	5.57	5.57
23.20	4.65	4.65	0.8883	396.05	5.51	5.51
23.44	4.62	4.62	0.8714	396.05	5.46	5.46
23.69	4.60	4.60	0.8550	396.04	5.40	5.40
23.93	4.58	4.58	0.8393	396.04	5.35	5.35
24.17	0.22	0.22	0.7823	396.01	5.16	5.16
24.41	0.00	0.00	0.6889	395.93	4.41	4.41

**Modified Puls Routing
Summary of Results**

Inflow Hydrograph: R:\Projects\2018\18000145B\Reports\PCSM\210426 PCSM\VTSPUHM\PRE w Depression\Hydrograph Combinations\Combined Flow B 25yr.HY
Storage/Elevation Curve: R:\Projects\2018\18000145B\Reports\PCSM\210426 PCSM\VTSPUHM\PRE w Depression\GCR Culvert Basin (PRE).ES

Basin Bypass Capacity = 0.00 cfs
Starting Pool Elevation = 395.00 feet
Time Interval = 0.242 hours
Total number of Inflow points = 102

	Event Time (hours)	Hydrograph Inflow (cfs)	Basin Inflow (cfs)	Storage Used (acre-ft)	Elevation Above MSL (feet)	Basin Outflow (cfs)	Outflow Total (cfs)
Start	0.00	0.00	0.00	0.0000	395.00	0.00	0.00
Max. Inflow	2.90	96.84	96.84	4.3028	397.20	80.73	80.73
Max. Outflow	3.14	86.65	86.65	4.4064	397.23	92.38	92.38
Final	24.41	0.00	0.00	1.1713	396.16	6.50	6.50

Modified Puls Routing

Inflow Hydrograph: R:\Projects\2018\18000145B\Reports\PCSM\210426 PCSM\WTPSUHM\PRE w Depression\Hydrograph Combinations\Combined Flow B 25yr.HY
 Storage/Elevation Curve: R:\Projects\2018\18000145B\Reports\PCSM\210426 PCSM\WTPSUHM\PRE w Depression\GCR Culvert Basin (PRE).ES

Basin Bypass Capacity = 0.00 cfs
 Starting Pool Elevation = 395.00 feet
 Time Interval = 0.242 hours

Event Time (hours)	Hydrograph Inflow (cfs)	Basin Inflow (cfs)	Storage Used (acre-ft)	Elevation Above MSL (feet)	Basin Outflow (cfs)	Outflow Total (cfs)
0.00	0.00	0.00	0.0000	395.00	0.00	0.00
0.24	2.29	2.29	0.0219	395.03	0.10	0.10
0.48	4.88	4.88	0.0900	395.12	0.26	0.26
0.73	7.15	7.15	0.2010	395.27	0.66	0.66
0.97	9.71	9.71	0.3483	395.47	1.46	1.46
1.21	10.18	10.18	0.5060	395.68	2.64	2.64
1.45	10.83	10.83	0.6496	395.87	4.00	4.00
1.69	11.32	11.32	0.7795	396.01	5.15	5.15
1.93	11.97	11.97	0.9050	396.06	5.57	5.57
2.18	42.48	42.48	1.3230	396.22	7.02	7.02
2.42	67.02	67.02	2.2443	396.57	10.23	10.23
2.66	82.17	82.17	3.4767	397.02	15.57	15.57
2.90	96.84	96.84	4.3028	397.20	80.73	80.73
3.14	86.65	86.65	4.4064	397.23	92.38	92.38
3.38	76.05	76.05	4.3026	397.20	80.71	80.71
3.63	64.92	64.92	4.2037	397.18	70.17	70.17
3.87	53.57	53.57	4.0944	397.16	59.26	59.26
4.11	52.11	52.11	4.0284	397.14	53.03	53.03
4.35	50.62	50.62	4.0109	397.14	51.44	51.44
4.59	49.03	49.03	3.9939	397.13	49.91	49.91
4.83	47.19	47.19	3.9749	397.13	48.21	48.21
5.08	46.43	46.43	3.9599	397.13	46.91	46.91
5.32	45.60	45.60	3.9502	397.12	46.08	46.08
5.56	44.77	44.77	3.9406	397.12	45.25	45.25
5.80	43.89	43.89	3.9307	397.12	44.40	44.40
6.04	42.17	42.17	3.9158	397.12	43.16	43.16
6.28	40.43	40.43	3.8955	397.11	41.47	41.47
6.53	35.99	35.99	3.8593	397.10	38.57	38.57
6.77	25.43	25.43	3.7697	397.08	31.82	31.82
7.01	24.13	24.13	3.6856	397.07	26.16	26.16
7.25	23.36	23.36	3.6559	397.06	24.31	24.31
7.49	22.64	22.64	3.6393	397.06	23.35	23.35
7.73	21.95	21.95	3.6260	397.05	22.58	22.58
7.98	21.31	21.31	3.6140	397.05	21.88	21.88
8.22	20.71	20.71	3.6025	397.05	21.28	21.28
8.46	20.13	20.13	3.5912	397.04	20.69	20.69
8.70	19.54	19.54	3.5801	397.04	20.10	20.10
8.94	18.85	18.85	3.5682	397.04	19.48	19.48
9.18	18.48	18.48	3.5570	397.04	18.96	18.96
9.43	17.87	17.87	3.5463	397.03	18.46	18.46
9.67	17.48	17.48	3.5356	397.03	17.96	17.96
9.91	16.93	16.93	3.5253	397.03	17.48	17.48
10.15	16.56	16.56	3.5148	397.03	17.06	17.06
10.39	16.08	16.08	3.5042	397.03	16.64	16.64
10.63	15.69	15.69	3.4934	397.02	16.21	16.21
10.88	15.27	15.27	3.4829	397.02	15.80	15.80
11.12	14.92	14.92	3.4725	397.02	15.44	15.44
11.36	14.53	14.53	3.4615	397.02	15.10	15.10
11.60	14.17	14.17	3.4501	397.01	14.74	14.74
11.84	13.83	13.83	3.4387	397.01	14.39	14.39
12.08	13.51	13.51	3.4270	397.01	14.13	14.13
12.33	13.19	13.19	3.4138	397.01	13.89	13.89

Event Time (hours)	Hydrograph Inflow (cfs)	Basin Inflow (cfs)	Storage Used (acre-ft)	Elevation Above MSL (feet)	Basin Outflow (cfs)	Outflow Total (cfs)
12.57	12.87	12.87	3.3992	397.00	13.63	13.63
12.81	12.58	12.58	3.3832	397.00	13.43	13.43
13.05	12.30	12.30	3.3640	396.99	13.36	13.36
13.29	12.03	12.03	3.3410	396.98	13.28	13.28
13.54	11.76	11.76	3.3144	396.97	13.18	13.18
13.78	11.49	11.49	3.2845	396.96	13.07	13.07
14.02	11.25	11.25	3.2518	396.95	12.94	12.94
14.26	11.01	11.01	3.2169	396.93	12.81	12.81
14.50	10.77	10.77	3.1799	396.92	12.68	12.68
14.74	10.55	10.55	3.1410	396.91	12.53	12.53
14.99	10.34	10.34	3.0928	396.89	13.18	13.18
15.23	10.14	10.14	3.0360	396.87	12.99	12.99
15.47	9.92	9.92	2.9789	396.84	12.79	12.79
15.71	9.73	9.73	2.9218	396.82	12.59	12.59
15.95	9.55	9.55	2.8649	396.80	12.39	12.39
16.19	9.36	9.36	2.8082	396.78	12.19	12.19
16.44	9.18	9.18	2.7518	396.76	12.00	12.00
16.68	9.01	9.01	2.6958	396.74	11.80	11.80
16.92	8.85	8.85	2.6404	396.72	11.61	11.61
17.16	8.69	8.69	2.5856	396.70	11.42	11.42
17.40	8.53	8.53	2.5314	396.68	11.23	11.23
17.64	8.38	8.38	2.4778	396.66	11.04	11.04
17.89	8.23	8.23	2.4250	396.64	10.86	10.86
18.13	8.09	8.09	2.3729	396.62	10.68	10.68
18.37	7.95	7.95	2.3216	396.60	10.50	10.50
18.61	7.82	7.82	2.2711	396.58	10.32	10.32
18.85	7.69	7.69	2.2215	396.56	10.15	10.15
19.09	7.57	7.57	2.1729	396.54	9.98	9.98
19.34	7.44	7.44	2.1251	396.52	9.81	9.81
19.58	7.32	7.32	2.0781	396.50	9.65	9.65
19.82	7.21	7.21	2.0320	396.49	9.49	9.49
20.06	7.09	7.09	1.9868	396.47	9.33	9.33
20.30	6.99	6.99	1.9425	396.45	9.18	9.18
20.54	6.88	6.88	1.8992	396.44	9.03	9.03
20.79	6.78	6.78	1.8568	396.42	8.88	8.88
21.03	6.68	6.68	1.8152	396.40	8.74	8.74
21.27	6.59	6.59	1.7747	396.39	8.60	8.60
21.51	6.49	6.49	1.7350	396.37	8.46	8.46
21.75	6.40	6.40	1.6961	396.36	8.32	8.32
21.99	6.31	6.31	1.6581	396.35	8.19	8.19
22.24	6.23	6.23	1.6211	396.33	8.06	8.06
22.48	6.14	6.14	1.5849	396.32	7.93	7.93
22.72	6.06	6.06	1.5494	396.30	7.81	7.81
22.96	5.99	5.99	1.5150	396.29	7.69	7.69
23.20	5.91	5.91	1.4813	396.28	7.57	7.57
23.44	5.83	5.83	1.4484	396.27	7.46	7.46
23.69	5.76	5.76	1.4163	396.25	7.35	7.35
23.93	5.69	5.69	1.3849	396.24	7.24	7.24
24.17	0.28	0.28	1.3028	396.21	6.95	6.95
24.41	0.00	0.00	1.1713	396.16	6.50	6.50

**Modified Puls Routing
Summary of Results**

Inflow Hydrograph: R:\Projects\2018\18000145B\Reports\PCSM\210426 PCSM\VTSPUHM\PRE w Depression\Hydrograph Combinations\Combined Flow B 50yr.HY
Storage/Elevation Curve: R:\Projects\2018\18000145B\Reports\PCSM\210426 PCSM\VTSPUHM\PRE w Depression\GCR Culvert Basin (PRE).ES

Basin Bypass Capacity = 0.00 cfs
Starting Pool Elevation = 395.00 feet
Time Interval = 0.242 hours
Total number of Inflow points = 102

	Event Time (hours)	Hydrograph Inflow (cfs)	Basin Inflow (cfs)	Storage Used (acre-ft)	Elevation Above MSL (feet)	Basin Outflow (cfs)	Outflow Total (cfs)
Start	0.00	0.00	0.00	0.0000	395.00	0.00	0.00
Max. Inflow	2.90	105.43	105.43	4.4453	397.23	96.91	96.91
Max. Outflow	3.14	93.96	93.96	4.4709	397.24	99.92	99.92
Final	24.41	0.00	0.00	1.5315	396.30	7.75	7.75

Modified Puls Routing

Inflow Hydrograph: R:\Projects\2018\18000145B\Reports\PCSM\210426 PCSM\WTPSUHM\PRE w Depression\Hydrograph Combinations\Combined Flow B 50yr.HY
 Storage/Elevation Curve: R:\Projects\2018\18000145B\Reports\PCSM\210426 PCSM\WTPSUHM\PRE w Depression\GCR Culvert Basin (PRE).ES

Basin Bypass Capacity = 0.00 cfs
 Starting Pool Elevation = 395.00 feet
 Time Interval = 0.242 hours

Event Time (hours)	Hydrograph Inflow (cfs)	Basin Inflow (cfs)	Storage Used (acre-ft)	Elevation Above MSL (feet)	Basin Outflow (cfs)	Outflow Total (cfs)
0.00	0.00	0.00	0.0000	395.00	0.00	0.00
0.24	2.57	2.57	0.0246	395.03	0.10	0.10
0.48	5.46	5.46	0.1010	395.14	0.29	0.29
0.73	8.01	8.01	0.2250	395.30	0.77	0.77
0.97	10.85	10.85	0.3884	395.52	1.73	1.73
1.21	11.62	11.62	0.5641	395.76	3.16	3.16
1.45	12.54	12.54	0.7257	395.98	4.82	4.82
1.69	13.38	13.38	0.8815	396.05	5.49	5.49
1.93	14.74	14.74	1.0470	396.11	6.06	6.06
2.18	54.30	54.30	1.5963	396.32	7.97	7.97
2.42	72.99	72.99	2.6710	396.73	11.72	11.72
2.66	89.57	89.57	3.8216	397.10	35.64	35.64
2.90	105.43	105.43	4.4453	397.23	96.91	96.91
3.14	93.96	93.96	4.4709	397.24	99.92	99.92
3.38	81.77	81.77	4.3592	397.22	86.99	86.99
3.63	69.31	69.31	4.2499	397.19	75.02	75.02
3.87	56.62	56.62	4.1309	397.16	62.82	62.82
4.11	54.89	54.89	4.0591	397.15	55.88	55.88
4.35	53.13	53.13	4.0397	397.14	54.08	54.08
4.59	51.34	51.34	4.0205	397.14	52.30	52.30
4.83	49.44	49.44	4.0003	397.14	50.49	50.49
5.08	48.88	48.88	3.9863	397.13	49.23	49.23
5.32	48.27	48.27	3.9793	397.13	48.61	48.61
5.56	47.52	47.52	3.9717	397.13	47.94	47.94
5.80	46.67	46.67	3.9627	397.13	47.16	47.16
6.04	45.66	45.66	3.9520	397.13	46.24	46.24
6.28	44.62	44.62	3.9403	397.12	45.22	45.22
6.53	43.45	43.45	3.9275	397.12	44.13	44.13
6.77	41.66	41.66	3.9103	397.12	42.70	42.70
7.01	40.06	40.06	3.8902	397.11	41.03	41.03
7.25	33.79	33.79	3.8445	397.10	37.39	37.39
7.49	25.87	25.87	3.7577	397.08	30.96	30.96
7.73	25.66	25.66	3.6956	397.07	26.79	26.79
7.98	24.91	24.91	3.6772	397.06	25.63	25.63
8.22	24.38	24.38	3.6651	397.06	24.87	24.87
8.46	23.81	23.81	3.6555	397.06	24.29	24.29
8.70	23.25	23.25	3.6459	397.06	23.73	23.73
8.94	22.71	22.71	3.6364	397.05	23.18	23.18
9.18	22.21	22.21	3.6273	397.05	22.65	22.65
9.43	21.71	21.71	3.6185	397.05	22.14	22.14
9.67	21.22	21.22	3.6098	397.05	21.66	21.66
9.91	20.74	20.74	3.6008	397.05	21.19	21.19
10.15	20.30	20.30	3.5920	397.04	20.73	20.73
10.39	19.86	19.86	3.5835	397.04	20.28	20.28
10.63	19.39	19.39	3.5749	397.04	19.83	19.83
10.88	18.92	18.92	3.5660	397.04	19.38	19.38
11.12	18.57	18.57	3.5573	397.04	18.98	18.98
11.36	18.13	18.13	3.5488	397.04	18.58	18.58
11.60	17.81	17.81	3.5405	397.03	18.19	18.19
11.84	17.38	17.38	3.5324	397.03	17.81	17.81
12.08	17.06	17.06	3.5243	397.03	17.44	17.44
12.33	16.68	16.68	3.5161	397.03	17.12	17.12

Event Time (hours)	Hydrograph Inflow (cfs)	Basin Inflow (cfs)	Storage Used (acre-ft)	Elevation Above MSL (feet)	Basin Outflow (cfs)	Outflow Total (cfs)
12.57	16.35	16.35	3.5076	397.03	16.77	16.77
12.81	15.99	15.99	3.4989	397.02	16.43	16.43
13.05	15.69	15.69	3.4905	397.02	16.09	16.09
13.29	15.35	15.35	3.4823	397.02	15.77	15.77
13.54	15.05	15.05	3.4738	397.02	15.48	15.48
13.78	14.74	14.74	3.4648	397.02	15.20	15.20
14.02	14.44	14.44	3.4555	397.01	14.91	14.91
14.26	14.15	14.15	3.4461	397.01	14.62	14.62
14.50	13.86	13.86	3.4367	397.01	14.33	14.33
14.74	13.58	13.58	3.4266	397.01	14.12	14.12
14.99	13.32	13.32	3.4153	397.01	13.92	13.92
15.23	13.05	13.05	3.4029	397.00	13.69	13.69
15.47	12.78	12.78	3.3897	397.00	13.46	13.46
15.71	12.52	12.52	3.3741	396.99	13.40	13.40
15.95	12.28	12.28	3.3548	396.99	13.33	13.33
16.19	12.04	12.04	3.3324	396.98	13.24	13.24
16.44	11.80	11.80	3.3069	396.97	13.15	13.15
16.68	11.57	11.57	3.2787	396.96	13.04	13.04
16.92	11.34	11.34	3.2481	396.95	12.93	12.93
17.16	11.12	11.12	3.2154	396.93	12.81	12.81
17.40	10.89	10.89	3.1806	396.92	12.68	12.68
17.64	10.68	10.68	3.1441	396.91	12.55	12.55
17.89	10.47	10.47	3.0982	396.89	13.20	13.20
18.13	10.27	10.27	3.0435	396.87	13.01	13.01
18.37	10.06	10.06	2.9886	396.85	12.82	12.82
18.61	9.87	9.87	2.9335	396.83	12.63	12.63
18.85	9.67	9.67	2.8783	396.81	12.44	12.44
19.09	9.48	9.48	2.8231	396.79	12.24	12.24
19.34	9.29	9.29	2.7679	396.76	12.05	12.05
19.58	9.11	9.11	2.7128	396.74	11.86	11.86
19.82	8.93	8.93	2.6580	396.72	11.67	11.67
20.06	8.75	8.75	2.6034	396.70	11.48	11.48
20.30	8.58	8.58	2.5490	396.68	11.29	11.29
20.54	8.41	8.41	2.4951	396.66	11.10	11.10
20.79	8.25	8.25	2.4416	396.64	10.92	10.92
21.03	8.08	8.08	2.3884	396.62	10.73	10.73
21.27	7.91	7.91	2.3356	396.60	10.55	10.55
21.51	7.76	7.76	2.2832	396.58	10.37	10.37
21.75	7.61	7.61	2.2315	396.56	10.18	10.18
21.99	7.46	7.46	2.1803	396.54	10.01	10.01
22.24	7.31	7.31	2.1297	396.52	9.83	9.83
22.48	7.16	7.16	2.0796	396.50	9.66	9.66
22.72	7.01	7.01	2.0300	396.49	9.48	9.48
22.96	6.87	6.87	1.9808	396.47	9.31	9.31
23.20	6.73	6.73	1.9323	396.45	9.14	9.14
23.44	6.60	6.60	1.8845	396.43	8.98	8.98
23.69	6.47	6.47	1.8373	396.41	8.81	8.81
23.93	6.33	6.33	1.7907	396.40	8.65	8.65
24.17	0.35	0.35	1.6882	396.36	8.29	8.29
24.41	0.00	0.00	1.5315	396.30	7.75	7.75

**Modified Puls Routing
Summary of Results**

Inflow Hydrograph: R:\Projects\2018\18000145B\Reports\PCSM\210426 PCSM\VTSPUHM\PRE w Depression\Hydrograph Combinations\Combined Flow B 100yr.H
Storage/Elevation Curve: R:\Projects\2018\18000145B\Reports\PCSM\210426 PCSM\VTSPUHM\PRE w Depression\GCR Culvert Basin (PRE).ES

Basin Bypass Capacity = 0.00 cfs
Starting Pool Elevation = 395.00 feet
Time Interval = 0.242 hours
Total number of Inflow points = 102

	Event Time (hours)	Hydrograph Inflow (cfs)	Basin Inflow (cfs)	Storage Used (acre-ft)	Elevation Above MSL (feet)	Basin Outflow (cfs)	Outflow Total (cfs)
Start	0.00	0.00	0.00	0.0000	395.00	0.00	0.00
Max. Inflow	2.90	113.18	113.18	4.5251	397.25	106.45	106.45
Max. Outflow	3.14	101.17	101.17	4.5316	397.25	107.25	107.25
Final	24.41	0.00	0.00	1.9481	396.46	9.20	9.20

Modified Puls Routing

Inflow Hydrograph: R:\Projects\2018\18000145B\Reports\PCSM\210426 PCSM\WTPSUHM\PRE w Depression\Hydrograph Combinations\Combined Flow B 100yr.H
 Storage/Elevation Curve: R:\Projects\2018\18000145B\Reports\PCSM\210426 PCSM\WTPSUHM\PRE w Depression\GCR Culvert Basin (PRE).ES

Basin Bypass Capacity = 0.00 cfs
 Starting Pool Elevation = 395.00 feet
 Time Interval = 0.242 hours

Event Time (hours)	Hydrograph Inflow (cfs)	Basin Inflow (cfs)	Storage Used (acre-ft)	Elevation Above MSL (feet)	Basin Outflow (cfs)	Outflow Total (cfs)
0.00	0.00	0.00	0.0000	395.00	0.00	0.00
0.24	2.74	2.74	0.0263	395.04	0.11	0.11
0.48	5.81	5.81	0.1076	395.14	0.31	0.31
0.73	8.53	8.53	0.2394	395.32	0.84	0.84
0.97	11.54	11.54	0.4125	395.55	1.90	1.90
1.21	12.72	12.72	0.6008	395.81	3.51	3.51
1.45	14.15	14.15	0.7826	396.01	5.16	5.16
1.69	15.40	15.40	0.9684	396.08	5.79	5.79
1.93	24.28	24.28	1.2396	396.19	6.73	6.73
2.18	58.10	58.10	1.9048	396.44	9.05	9.05
2.42	77.77	77.77	3.0416	396.87	13.00	13.00
2.66	95.74	95.74	4.0732	397.15	57.22	57.22
2.90	113.18	113.18	4.5251	397.25	106.45	106.45
3.14	101.17	101.17	4.5316	397.25	107.25	107.25
3.38	88.58	88.58	4.4187	397.23	93.80	93.80
3.63	75.69	75.69	4.3092	397.20	81.44	81.44
3.87	62.54	62.54	4.1898	397.18	68.75	68.75
4.11	59.58	59.58	4.1131	397.16	61.06	61.06
4.35	56.57	56.57	4.0827	397.15	58.13	58.13
4.59	53.52	53.52	4.0510	397.15	55.13	55.13
4.83	50.39	50.39	4.0180	397.14	52.08	52.08
5.08	49.90	49.90	3.9976	397.14	50.25	50.25
5.32	49.31	49.31	3.9908	397.13	49.64	49.64
5.56	48.69	48.69	3.9841	397.13	49.04	49.04
5.80	48.06	48.06	3.9771	397.13	48.41	48.41
6.04	47.27	47.27	3.9692	397.13	47.72	47.72
6.28	46.37	46.37	3.9595	397.13	46.89	46.89
6.53	45.45	45.45	3.9491	397.12	45.98	45.98
6.77	44.51	44.51	3.9383	397.12	45.05	45.05
7.01	43.54	43.54	3.9272	397.12	44.11	44.11
7.25	42.10	42.10	3.9132	397.12	42.94	42.94
7.49	40.72	40.72	3.8965	397.11	41.55	41.55
7.73	36.78	36.78	3.8655	397.11	39.05	39.05
7.98	29.30	29.30	3.7976	397.09	33.83	33.83
8.22	28.60	28.60	3.7406	397.08	29.78	29.78
8.46	28.21	28.21	3.7242	397.07	28.67	28.67
8.70	27.80	27.80	3.7162	397.07	28.14	28.14
8.94	27.38	27.38	3.7097	397.07	27.70	27.70
9.18	26.93	26.93	3.7032	397.07	27.27	27.27
9.43	26.54	26.54	3.6967	397.07	26.86	26.86
9.67	26.14	26.14	3.6904	397.07	26.46	26.46
9.91	25.74	25.74	3.6840	397.07	26.06	26.06
10.15	25.35	25.35	3.6777	397.06	25.66	25.66
10.39	24.95	24.95	3.6714	397.06	25.27	25.27
10.63	24.55	24.55	3.6651	397.06	24.87	24.87
10.88	24.16	24.16	3.6587	397.06	24.48	24.48
11.12	23.77	23.77	3.6523	397.06	24.10	24.10
11.36	23.38	23.38	3.6456	397.06	23.72	23.72
11.60	22.99	22.99	3.6389	397.06	23.33	23.33
11.84	22.61	22.61	3.6323	397.05	22.94	22.94
12.08	22.23	22.23	3.6257	397.05	22.56	22.56
12.33	21.85	21.85	3.6191	397.05	22.18	22.18

Event Time (hours)	Hydrograph Inflow (cfs)	Basin Inflow (cfs)	Storage Used (acre-ft)	Elevation Above MSL (feet)	Basin Outflow (cfs)	Outflow Total (cfs)
12.57	21.48	21.48	3.6126	397.05	21.81	21.81
12.81	21.10	21.10	3.6058	397.05	21.45	21.45
13.05	20.73	20.73	3.5987	397.05	21.08	21.08
13.29	20.36	20.36	3.5917	397.04	20.71	20.71
13.54	19.99	19.99	3.5847	397.04	20.34	20.34
13.78	19.62	19.62	3.5776	397.04	19.97	19.97
14.02	19.19	19.19	3.5702	397.04	19.58	19.58
14.26	18.88	18.88	3.5628	397.04	19.23	19.23
14.50	18.48	18.48	3.5553	397.04	18.88	18.88
14.74	18.16	18.16	3.5476	397.04	18.52	18.52
14.99	17.80	17.80	3.5402	397.03	18.18	18.18
15.23	17.46	17.46	3.5327	397.03	17.83	17.83
15.47	17.11	17.11	3.5253	397.03	17.48	17.48
15.71	16.78	16.78	3.5177	397.03	17.18	17.18
15.95	16.43	16.43	3.5095	397.03	16.85	16.85
16.19	16.09	16.09	3.5010	397.02	16.52	16.52
16.44	15.76	15.76	3.4926	397.02	16.18	16.18
16.68	15.42	15.42	3.4842	397.02	15.84	15.84
16.92	15.10	15.10	3.4755	397.02	15.54	15.54
17.16	14.78	14.78	3.4664	397.02	15.25	15.25
17.40	14.45	14.45	3.4567	397.01	14.95	14.95
17.64	14.13	14.13	3.4466	397.01	14.64	14.64
17.89	13.81	13.81	3.4365	397.01	14.32	14.32
18.13	13.50	13.50	3.4254	397.01	14.10	14.10
18.37	13.19	13.19	3.4126	397.01	13.87	13.87
18.61	12.88	12.88	3.3985	397.00	13.61	13.61
18.85	12.57	12.57	3.3826	397.00	13.43	13.43
19.09	12.27	12.27	3.3631	396.99	13.36	13.36
19.34	11.97	11.97	3.3392	396.98	13.27	13.27
19.58	11.67	11.67	3.3113	396.97	13.16	13.16
19.82	11.38	11.38	3.2797	396.96	13.05	13.05
20.06	11.08	11.08	3.2447	396.95	12.92	12.92
20.30	10.80	10.80	3.2067	396.93	12.78	12.78
20.54	10.52	10.52	3.1659	396.92	12.63	12.63
20.79	10.24	10.24	3.1214	396.90	12.59	12.59
21.03	9.96	9.96	3.0667	396.88	13.09	13.09
21.27	9.68	9.68	3.0036	396.85	12.87	12.87
21.51	9.41	9.41	2.9393	396.83	12.65	12.65
21.75	9.14	9.14	2.8742	396.81	12.42	12.42
21.99	8.87	8.87	2.8082	396.78	12.19	12.19
22.24	8.61	8.61	2.7416	396.75	11.96	11.96
22.48	8.35	8.35	2.6744	396.73	11.73	11.73
22.72	8.09	8.09	2.6067	396.70	11.49	11.49
22.96	7.83	7.83	2.5385	396.68	11.25	11.25
23.20	7.57	7.57	2.4699	396.65	11.02	11.02
23.44	7.33	7.33	2.4011	396.63	10.78	10.78
23.69	7.08	7.08	2.3322	396.60	10.54	10.54
23.93	6.84	6.84	2.2632	396.57	10.30	10.30
24.17	0.40	0.40	2.1343	396.53	9.85	9.85
24.41	0.00	0.00	1.9481	396.46	9.20	9.20

**POST-PROJECT RELEASE RATE CALCULATIONS
STUDY POINT WEST (DP001)**



Project: PROJECT TADMOR Sheet: 1 of 2
 Project #: 18000145B Scale: _____
 Calculated By: MD Date: 5/4/2021 Checked By: _____ Date: _____
 Element: POST PROJECT RELEASE RATES Date: _____
 Engineers | Planners | Surveyors | Landscape Architects | Environmental Scientists

STUDY POINT WEST

SUB-WATERSHED AREA INFORMATION:

	<u>Weighted c</u>	<u>AREA (AC)</u>
***POST TO BASIN A AREA:	0.45 / 0.53	63.60
POST TO UGD WEST AREA:	0.81 / 0.91	8.33
POST TO UGD EAST AREA:	0.77 / 0.87	11.89
POST TO BASIN B AREA:	0.46 / 0.53	6.94
POST TO BASIN C AREA:	0.41 / 0.48	4.62
POST BYPASS TO 72" PIPE AREA:	0.52 / 0.59	16.33
***BASIN BYPASS (WEST) AREA:	0.53 / 0.61	19.25
TOTAL SUB-WATERSHED AREA:		130.96

*ALL POST WEST AREAS WILL USE THE COMMON T_c = 58 MINUTES

POST-PROJECT WITHOUT DETENTION FLOW RATE:

CALCULATE FLOW RATES USING SUB-WATERSHED AREA, MANNING'S COEFFICIENT "c", T_c, AND A IN VTPSUHM. RAINFALL DEPTHS ARE FROM PENNDOT PUB 584, CHAPTER 7, APPENDIX A.

	<u>POST TO BASIN A</u>	<u>POST TO UGD W</u>	<u>POST TO UGD E</u>	<u>POST TO BASIN B</u>	<u>POST TO BASIN C</u>	<u>POST BYPASS</u>
	<u>POST FLOW</u>	<u>POST FLOW</u>	<u>POST FLOW</u>	<u>POST FLOW</u>	<u>POST FLOW</u>	<u>POST FLOW</u>
Q ₂ =	38.85 CFS	9.16 CFS	12.43 CFS	4.33 CFS	2.57 CFS	13.85 CFS
Q ₁₀ =	55.75 CFS	13.14 CFS	17.83 CFS	6.22 CFS	3.69 CFS	19.87 CFS
Q ₂₅ =	77.02 CFS	17.32 CFS	23.63 CFS	8.40 CFS	5.07 CFS	26.83 CFS
Q ₅₀ =	87.13 CFS	19.59 CFS	26.74 CFS	9.51 CFS	5.73 CFS	30.35 CFS
Q ₁₀₀ =	96.63 CFS	21.73 CFS	29.65 CFS	10.54 CFS	6.36 CFS	33.66 CFS

***HYDROGRAPH COMBINATION E:**

	<u>UGD EAST OUTFLOW</u>		<u>UGD WEST OUTFLOW</u>		<u>COMBINATION E -</u>
	<u>POST FLOW RATES</u>		<u>POST FLOW RATES</u>		<u>UGD OUTFLOW COMB.</u>
	<u>POST FLOW RATES</u>		<u>POST FLOW RATES</u>		<u>POST FLOW RATES</u>
Q ₂ =	7.69 CFS	+	0.74 CFS	=	8.37 CFS
Q ₁₀ =	10.63 CFS	+	0.88 CFS	=	11.41 CFS
Q ₂₅ =	12.87 CFS	+	1.02 CFS	=	13.75 CFS
Q ₅₀ =	14.15 CFS	+	1.11 CFS	=	15.08 CFS
Q ₁₀₀ =	15.77 CFS	+	1.42 CFS	=	16.79 CFS

***HYDROGRAPH COMBINATION F:**

	<u>COMBINATION E -</u>		<u>BASIN A INFLOW</u>		<u>COMBINATION F -</u>
	<u>UGD OUTFLOW COMB.</u>		<u>POST FLOW RATES</u>		<u>INFLOW TO BASIN A</u>
	<u>POST FLOW RATES</u>		<u>POST FLOW RATES</u>		<u>POST FLOW RATES</u>
Q ₂ =	8.37 CFS	+	38.85 CFS	=	45.53 CFS
Q ₁₀ =	11.41 CFS	+	55.75 CFS	=	65.46 CFS
Q ₂₅ =	13.75 CFS	+	77.02 CFS	=	88.51 CFS
Q ₅₀ =	15.08 CFS	+	87.13 CFS	=	99.58 CFS
Q ₁₀₀ =	16.79 CFS	+	96.63 CFS	=	109.94 CFS



Project: PROJECT TADMOR Sheet: 2 of 2
 Project #: 18000145B Scale: _____
 Calculated By: MD Date: 5/4/2021 Checked By: _____ Date: _____
 Element: POST PROJECT RELEASE RATES Date: _____
 Engineers | Planners | Surveyors | Landscape Architects | Environmental Scientists

STUDY POINT WEST

***HYDROGRAPH COMBINATION G:**

	<u>**MILLER PIPE OUTFLOW</u>		<u>BYPASS TO 72" PIPE</u>		<u>COMBINATION G -</u>
	<u>POST FLOW RATES</u>		<u>POST FLOW RATES</u>		<u>TOTAL POST TO 72" PIPE</u>
	<u>POST FLOW RATES</u>		<u>POST FLOW RATES</u>		<u>POST FLOW RATES</u>
Q ₂ =	31.88 CFS	+	11.53 CFS	=	43.40 CFS
Q ₁₀ =	32.12 CFS	+	16.54 CFS	=	48.66 CFS
Q ₂₅ =	32.35 CFS	+	22.01 CFS	=	54.36 CFS
Q ₅₀ =	32.46 CFS	+	24.90 CFS	=	57.36 CFS
Q ₁₀₀ =	32.56 CFS	+	27.62 CFS	=	60.17 CFS

POST-PROJECT WITH DETENTION FLOW RATE:

CALCULATE FLOW RATES USING SUB-WATERSHED AREA, MANNING'S COEFFICIENT "c", T_c, AND A IN VTPSUHM. RAINFALL DEPTHS ARE FROM PENNDOT PUB 584, CHAPTER 7, APPENDIX A.

	<u>BASIN</u>		<u>BASIN A</u>		<u>BASIN B</u>		<u>BASIN C</u>		<u>72IN PIPE</u>		<u>TOTAL</u>		<u>TOTAL POST</u>
	<u>BYPASS</u>		<u>OUTFLOW</u>		<u>OUTFLOW</u>		<u>OUTFLOW</u>		<u>OUTFLOW</u>		<u>RELEASED</u>		<u>ALLOWABLE</u>
	<u>(WEST)</u>		<u>OUTFLOW</u>		<u>OUTFLOW</u>		<u>OUTFLOW</u>		<u>OUTFLOW</u>		<u>(WEST)</u>		<u>(WEST)</u>
Q ₂ =	13.85 CFS	+	1.87 CFS	+	1.74 CFS	+	2.24 CFS	+	35.62 CFS	=	55.32 CFS	<	56.36 CFS
Q ₁₀ =	19.87 CFS	+	3.84 CFS	+	2.16 CFS	+	3.05 CFS	+	37.36 CFS	=	66.28 CFS	<	66.31 CFS
Q ₂₅ =	26.83 CFS	+	7.41 CFS	+	3.40 CFS	+	3.83 CFS	+	38.74 CFS	=	80.21 CFS	<	84.74 CFS
Q ₅₀ =	30.35 CFS	+	8.68 CFS	+	5.39 CFS	+	4.26 CFS	+	39.63 CFS	=	88.31 CFS	<	91.79 CFS
Q ₁₀₀ =	33.66 CFS	+	10.48 CFS	+	7.38 CFS	+	4.55 CFS	+	40.35 CFS	=	96.42 CFS	<	98.74 CFS

THE TOTAL RELEASED FOR THE 2-YEAR THROUGH THE 100-YEAR STORMS IS LESS THAN THE TOTAL POST ALLOWABLE, THEREFORE THE SITE DESIGN MEETS THE RELEASE RATE CRITERIA.

CALCULATION NOTES:

- 1) THE WESTERN STUDY POINT IS IN THE CHANNEL DOWNSTREAM OF THE EXISTING CULVERT UNDER GUN CLUB ROAD.
- 2) SOILS ARE EITHER TYPE "B" OR TYPE "C".

*** HYDROGRAPH COMBINATIONS ACCOUNT FOR THE TRAVEL TIME DIFFERENTIAL. THEREFORE, THE HYDROGRAPH COMBINATION MAY BE LESS THAN THE ADDITION OF THE PEAK FLOW RATES, BECAUSE THE PEAK FLOW RATES MAY OCCUR AT DIFFERENT TIMES.**

**** ONLY THE OUTFLOW THROUGH THE MILLER CULVERT REACHES THE STUDY POINT AND IS CONSIDERED FOR THIS ANALYSIS. OVERTOPPING FLOW IS NATURALLY DIRECTED AWAY FROM THE SITE.**

***** INLET S-16A FLOWS TOWARDS WET DETENTION BASIN A. HOWEVER, THE DOWNSTREAM PIPE CONTAINS A BACKFLOW PREVENTOR TO AVOID SURCHARGING OF THE INLET WHEN THE WATER SURFACE ELEVATION WITHIN WET DETENTION BASIN A AND THE UPSLOPE STORMSEWER SYSTEM RISES ABOVE THE TOP OF GRATE ELEVATION OF INLET S-16A. WHILE THE BACKFLOW PREVENTOR IS IN USE, FLOW FROM INLET S-16A WILL NOT BE CONVEYED TO WET DETENTION BASIN A. IN ORDER TO BE CONSERVATIVE, RELEASE RATES CALCULATIONS ASSUME THAT ALL FLOW DIRECTED TO INLET S-16A WILL NOT BE CONVEYED TO THE BASIN. AS SUCH, THE DRAINAGE AREA TO INLET S-16A IS CONSIDERED BYPASS, ALTHOUGH A PORTION OF THIS DRAINAGE AREA WILL REACH THE BASIN PRIOR TO THE CLOSURE OF THE BACKFLOW PREVENTOR.**

Travel Time

Summary for Travel Time Calculations with 9 segments:

Segment 1: SCS Average Velocity

Paved area or shallow gutter flow
Length = 150 ft
Slope = 0.02 ft/ft

Calculated Velocity = 2.83 ft/s
Travel Time for Segment = 0.88 minutes

Segment 2: SCS Average Velocity

Paved area or shallow gutter flow
Length = 555 ft
Slope = 0.005 ft/ft

Calculated Velocity = 1.41 ft/s
Travel Time for Segment = 6.54 minutes

Segment 3: SCS Average Velocity

Paved area or shallow gutter flow
Length = 420 ft
Slope = 0.001 ft/ft

Calculated Velocity = 0.63 ft/s
Travel Time for Segment = 11.07 minutes

Segment 4: SCS Average Velocity

Paved area or shallow gutter flow
Length = 3115 ft
Slope = 0.008 ft/ft

Calculated Velocity = 1.79 ft/s
Travel Time for Segment = 29.02 minutes

Segment 5: SCS Average Velocity

Paved area or shallow gutter flow
Length = 120 ft
Slope = 0.01 ft/ft

Calculated Velocity = 2.00 ft/s
Travel Time for Segment = 1.00 minutes

Segment 6: SCS Average Velocity

Nearly bare ground
Length = 200 ft
Slope = 0.005 ft/ft

Calculated Velocity = 0.70 ft/s
Travel Time for Segment = 4.76 minutes

Segment 7: SCS Average Velocity

Paved area or shallow gutter flow
Length = 70 ft
Slope = 0.01 ft/ft

Calculated Velocity = 2.00 ft/s
Travel Time for Segment = 0.58 minutes

Segment 8: SCS Average Velocity

Paved area or shallow gutter flow
Length = 90 ft
Slope = 0.006 ft/ft

Calculated Velocity = 1.55 ft/s
Travel Time for Segment = 0.97 minutes

Segment 9: SCS Average Velocity

Grassed waterway
Length = 350 ft
Slope = 0.01 ft/ft

Calculated Velocity = 1.52 ft/s
Travel Time for Segment = 3.84 minutes

Composite Travel Time = 58.66 minutes

*DUE TO MULTIPLE UNDERGROUND DETENTION FACILITIES AND THE WET DETENTION BASIN, THE T_c IS LONGER THAN 59 MINUTES; HOWEVER, THE POST-PROJECT T_c CANNOT EXCEED THE PRE-PROJECT T_c . THEREFORE, THE POST-PROJECT T_c IS EQUAL TO THE PRE-PROJECT T_c OF **58 MINUTES**.



Project Name: PROJECT TADMOR	
Project No.: 18000145B	Date: 4/22/2020
Prepared By: MD	Checked By:

STORMWATER MANAGEMENT CALCULATIONS

Post-Development

POST TO BASIN A

SOIL SLOPE	AREA	C (<=10)	c (25+)	C x A (<= 10YR)	C x A (25 YR+)
IMPERVIOUS					
B 0-2%	= 7.86	x 0.85	0.95	= 6.68	7.47
B 2-6%	= 14.85	x 0.86	0.96	= 12.77	14.26
B +6%	= 0.02	x 0.87	0.97	= 0.02	0.02
MEADOW/LAWN					
B 0-2%	= 0.40	x 0.15	0.19	= 0.06	0.08
B 2-6%	= 19.96	x 0.20	0.25	= 3.99	4.99
B +6%	= 12.80	x 0.24	0.30	= 3.07	3.84
FOREST/WOODS					
B 0-2%	= 0.00	x 0.11	0.15	= 0.00	0.00
B 2-6%	= 3.64	x 0.16	0.21	= 0.58	0.76
B +6%	= 0.00	x 0.20	0.26	= 0.00	0.00
IMPERVIOUS					
C 0-2%	= 0.00	x 0.85	0.95	= 0.00	0.00
C 2-6%	= 0.88	x 0.86	0.96	= 0.76	0.84
C +6%	= 0.00	x 0.87	0.97	= 0.00	0.00
MEADOW/LAWN					
C 0-2%	= 0.53	x 0.23	0.28	= 0.12	0.15
C 2-6%	= 0.27	x 0.28	0.34	= 0.08	0.09
C +6%	= 2.38	x 0.32	0.39	= 0.76	0.93
TOTAL	= 63.60			28.90	33.43
		C_w		= 0.45	0.53

POST TO UGD EAST

SOIL SLOPE	AREA	C (<=10)	c (25+)	C x A (<= 10YR)	C x A (25 YR+)
IMPERVIOUS					
B 0-2%	= 7.37	x 0.85	0.95	= 6.26	7.00
B 2-6%	= 3.02	x 0.86	0.96	= 2.60	2.90
B +6%	= 0.00	x 0.87	0.97	= 0.00	0.00
MEADOW/LAWN					
B 0-2%	= 0.00	x 0.15	0.19	= 0.00	0.00
B 2-6%	= 1.28	x 0.20	0.25	= 0.26	0.32
B +6%	= 0.22	x 0.24	0.30	= 0.05	0.07
TOTAL	= 11.89			9.17	10.28
		C_w		= 0.77	0.87

POST TO BASIN C

SOIL SLOPE	AREA	C (<=10)	c (25+)	C x A (<= 10YR)	C x A (25 YR+)
IMPERVIOUS					
B 0-2%	= 0.00	x 0.85	0.95	= 0.00	0.00
B 2-6%	= 0.26	x 0.86	0.96	= 0.22	0.25
B +6%	= 0.00	x 0.87	0.97	= 0.00	0.00
MEADOW/LAWN					
B 0-2%	= 0.00	x 0.15	0.19	= 0.00	0.00
B 2-6%	= 0.70	x 0.20	0.25	= 0.14	0.18
B +6%	= 0.00	x 0.24	0.30	= 0.00	0.00
IMPERVIOUS					
C 0-2%	= 0.12	x 0.85	0.95	= 0.10	0.11
C 2-6%	= 0.73	x 0.86	0.96	= 0.63	0.70
C +6%	= 0.00	x 0.87	0.97	= 0.00	0.00
MEADOW/LAWN					
C 0-2%	= 0.00	x 0.23	0.28	= 0.00	0.00
C 2-6%	= 2.62	x 0.28	0.34	= 0.73	0.89
C +6%	= 0.19	x 0.32	0.39	= 0.06	0.07
TOTAL	= 4.62			1.89	2.20
		C_w		= 0.41	0.48

POST TO UGD WEST

SOIL SLOPE	AREA	C (<=10)	c (25+)	C x A (<= 10YR)	C x A (25 YR+)
IMPERVIOUS					
B 0-2%	= 5.90	x 0.85	0.95	= 5.02	5.61
B 2-6%	= 0.99	x 0.86	0.96	= 0.85	0.95
B +6%	= 0.00	x 0.87	0.97	= 0.00	0.00
MEADOW/LAWN					
B 0-2%	= 0.00	x 0.15	0.19	= 0.00	0.00
B 2-6%	= 0.09	x 0.20	0.25	= 0.02	0.02
B +6%	= 0.27	x 0.24	0.30	= 0.06	0.08
IMPERVIOUS					
C 0-2%	= 0.00	x 0.85	0.95	= 0.00	0.00
C 2-6%	= 0.83	x 0.86	0.96	= 0.71	0.80
C +6%	= 0.00	x 0.87	0.97	= 0.00	0.00
MEADOW/LAWN					
C 0-2%	= 0.00	x 0.23	0.28	= 0.00	0.00
C 2-6%	= 0.18	x 0.28	0.34	= 0.05	0.06
C +6%	= 0.07	x 0.32	0.39	= 0.02	0.03
TOTAL	= 8.33			6.74	7.54
		C_w		= 0.81	0.91

POST TO BASIN B

SOIL SLOPE	AREA	C (<=10)	c (25+)	C x A (<= 10YR)	C x A (25 YR+)
IMPERVIOUS					
B 0-2%	= 0.68	x 0.85	0.95	= 0.58	0.65
B 2-6%	= 1.62	x 0.86	0.96	= 1.39	1.56
B +6%	= 0.00	x 0.87	0.97	= 0.00	0.00
MEADOW/LAWN					
B 0-2%	= 0.50	x 0.15	0.19	= 0.08	0.10
B 2-6%	= 2.03	x 0.20	0.25	= 0.41	0.51
B +6%	= 1.05	x 0.24	0.30	= 0.25	0.32
GRAVEL					
B 0-2%	= 0.27	x 0.32	0.38	= 0.09	0.10
B 2-6%	= 0.05	x 0.36	0.43	= 0.02	0.02
B +6%	= 0.00	x 0.40	0.47	= 0.00	0.00
FOREST/WOODS					
B 0-2%	= 0.00	x 0.11	0.15	= 0.00	0.00
B 2-6%	= 0.03	x 0.16	0.21	= 0.00	0.01
B +6%	= 0.03	x 0.20	0.26	= 0.01	0.01
IMPERVIOUS					
C 0-2%	= 0.00	x 0.85	0.95	= 0.00	0.00
C 2-6%	= 0.30	x 0.86	0.96	= 0.26	0.29
C +6%	= 0.00	x 0.87	0.97	= 0.00	0.00
MEADOW/LAWN					
C 0-2%	= 0.00	x 0.23	0.28	= 0.00	0.00
C 2-6%	= 0.35	x 0.28	0.34	= 0.10	0.12
C +6%	= 0.03	x 0.32	0.39	= 0.01	0.01
TOTAL	= 6.94			3.19	3.68
		C_w		= 0.46	0.53



Project Name: PROJECT TADMOR	
Project No.: 18000145B	Date: 4/22/2020
Prepared By: MD	Checked By:

STORMWATER MANAGEMENT CALCULATIONS

Post-Development

POST BYPASS 1

SOIL	SLOPE	AREA	C (<=10)	c (25+)	C x A (<= 10YR)	C x A (25 YR+)
GRAVEL						
B	0-2%	= 0.00 x 0.32	0.38	=	0.00	0.00
B	2-6%	= 1.39 x 0.36	0.43	=	0.50	0.60
B	+6%	= 0.08 x 0.40	0.47	=	0.03	0.04
MEADOW/LAWN						
B	0-2%	= 0.11 x 0.15	0.19	=	0.02	0.02
B	2-6%	= 0.57 x 0.20	0.25	=	0.11	0.14
B	+6%	= 0.42 x 0.24	0.30	=	0.10	0.13
IMPERVIOUS						
B	0-2%	= 0.75 x 0.85	0.95	=	0.64	0.71
B	2-6%	= 3.97 x 0.86	0.96	=	3.41	3.81
B	+6%	= 0.00 x 0.87	0.97	=	0.00	0.00
GRAVEL						
C	0-2%	= 0.61 x 0.35	0.42	=	0.21	0.26
C	2-6%	= 0.32 x 0.39	0.46	=	0.12	0.15
C	+6%	= 0.11 x 0.43	0.50	=	0.05	0.06
MEADOW/LAWN						
C	0-2%	= 0.06 x 0.23	0.28	=	0.01	0.02
C	2-6%	= 0.14 x 0.28	0.34	=	0.04	0.05
C	+6%	= 0.55 x 0.32	0.39	=	0.18	0.21
IMPERVIOUS						
C	0-2%	= 0.19 x 0.85	0.95	=	0.16	0.18
C	2-6%	= 0.18 x 0.86	0.96	=	0.15	0.17
C	+6%	= 0.00 x 0.87	0.97	=	0.00	0.00
TOTAL =			9.45		5.43	6.19
			C_w	=	0.57	0.65

POST BYPASS 2

SOIL	SLOPE	AREA	C (<=10)	c (25+)	C x A (<= 10YR)	C x A (25 YR+)
IMPERVIOUS						
B	0-2%	= 0.01 x 0.85	0.95	=	0.01	0.01
B	2-6%	= 0.84 x 0.86	0.96	=	0.72	0.81
B	+6%	= 0.00 x 0.87	0.97	=	0.00	0.00
MEADOW/LAWN						
B	0-2%	= 0.01 x 0.15	0.19	=	0.00	0.00
B	2-6%	= 0.53 x 0.20	0.25	=	0.11	0.13
B	+6%	= 0.36 x 0.24	0.30	=	0.09	0.11
GRAVEL						
B	0-2%	= 0.00 x 0.32	0.38	=	0.00	0.00
B	2-6%	= 0.00 x 0.36	0.43	=	0.00	0.00
B	+6%	= 0.00 x 0.40	0.47	=	0.00	0.00
IMPERVIOUS						
C	0-2%	= 0.08 x 0.85	0.95	=	0.07	0.08
C	2-6%	= 0.90 x 0.86	0.96	=	0.77	0.86
C	+6%	= 0.00 x 0.87	0.97	=	0.00	0.00
GRAVEL						
C	0-2%	= 0.00 x 0.35	0.42	=	0.00	0.00
C	2-6%	= 0.00 x 0.39	0.46	=	0.00	0.00
C	+6%	= 0.00 x 0.43	0.50	=	0.00	0.00
MEADOW/LAWN						
C	0-2%	= 0.00 x 0.23	0.28	=	0.00	0.00
C	2-6%	= 0.40 x 0.28	0.34	=	0.11	0.14
C	+6%	= 1.12 x 0.32	0.39	=	0.36	0.44
TOTAL =			4.25		2.24	2.57
			C_w	=	0.53	0.60

POST BYPASS 3

SOIL	SLOPE	AREA	C (<=10)	c (25+)	C x A (<= 10YR)	C x A (25 YR+)
IMPERVIOUS						
B	0-2%	= 0.00 x 0.85	0.95	=	0.00	0.00
B	2-6%	= 0.31 x 0.86	0.96	=	0.27	0.30
B	+6%	= 0.00 x 0.87	0.97	=	0.00	0.00
MEADOW/LAWN						
B	0-2%	= 0.00 x 0.15	0.19	=	0.00	0.00
B	2-6%	= 0.08 x 0.20	0.25	=	0.02	0.02
B	+6%	= 0.05 x 0.24	0.30	=	0.01	0.02
IMPERVIOUS						
C	0-2%	= 0.15 x 0.85	0.95	=	0.13	0.14
C	2-6%	= 0.17 x 0.86	0.96	=	0.15	0.16
C	+6%	= 0.00 x 0.87	0.97	=	0.00	0.00
MEADOW/LAWN						
C	0-2%	= 0.03 x 0.23	0.28	=	0.01	0.01
C	2-6%	= 0.00 x 0.28	0.34	=	0.00	0.00
C	+6%	= 0.04 x 0.32	0.39	=	0.01	0.02
TOTAL =			0.83		0.59	0.66
			C_w	=	0.71	0.80



Project Name: PROJECT TADMOR	
Project No.: 18000145B	Date: 4/22/2020
Prepared By: MD	Checked By:

STORMWATER MANAGEMENT CALCULATIONS

Post-Development

POST BYPASS 4 (TO 72IN PIPE)

SOIL SLOPE	AREA	C (<=10)	c (25+)	C x A (<= 10YR)	C x A (25 YR+)
IMPERVIOUS					
B 0-2%	= 1.96 x 0.85	0.95	=	1.67	1.86
B 2-6%	= 4.33 x 0.86	0.96	=	3.73	4.16
B +6%	= 0.00 x 0.87	0.97	=	0.00	0.00
MEADOW/LAWN					
B 0-2%	= 0.00 x 0.15	0.19	=	0.00	0.00
B 2-6%	= 1.75 x 0.20	0.25	=	0.35	0.44
B +6%	= 2.47 x 0.24	0.30	=	0.59	0.74
GRAVEL					
B 0-2%	= 1.87 x 0.32	0.38	=	0.60	0.71
B 2-6%	= 0.01 x 0.36	0.43	=	0.00	0.00
B +6%	= 0.00 x 0.40	0.47	=	0.00	0.00
FOREST/WOODS					
B 0-2%	= 0.00 x 0.11	0.15	=	0.00	0.00
B 2-6%	= 0.00 x 0.16	0.21	=	0.00	0.00
B +6%	= 0.72 x 0.20	0.26	=	0.14	0.19
GRAVEL					
C 0-2%	= 0.00 x 0.35	0.42	=	0.00	0.00
C 2-6%	= 0.39 x 0.39	0.46	=	0.15	0.18
C +6%	= 0.00 x 0.43	0.50	=	0.00	0.00
IMPERVIOUS					
C 0-2%	= 0.00 x 0.85	0.95	=	0.00	0.00
C 2-6%	= 0.63 x 0.86	0.96	=	0.55	0.61
C +6%	= 0.02 x 0.87	0.97	=	0.02	0.02
MEADOW/LAWN					
C 0-2%	= 0.00 x 0.23	0.28	=	0.00	0.00
C 2-6%	= 0.19 x 0.28	0.34	=	0.05	0.06
C +6%	= 0.83 x 0.32	0.39	=	0.27	0.32
FOREST/WOODS					
C 0-2%	= 0.00 x 0.20	0.25	=	0.00	0.00
C 2-6%	= 0.82 x 0.25	0.31	=	0.21	0.25
C +6%	= 0.33 x 0.29	0.36	=	0.10	0.12
TOTAL	= 16.33			8.42	9.67
C_w	=			0.52	0.59

POST TO INLET S-16A (CONSIDERED BYPASS)*

SOIL SLOPE	AREA	C (<=10)	c (25+)	C x A (<= 10YR)	C x A (25 YR+)
IMPERVIOUS					
B 0-2%	= 0.07 x 0.85	0.95	=	0.06	0.07
B 2-6%	= 0.00 x 0.86	0.96	=	0.00	0.00
B +6%	= 0.00 x 0.87	0.97	=	0.00	0.00
MEADOW/LAWN					
B 0-2%	= 0.00 x 0.15	0.19	=	0.00	0.00
B 2-6%	= 0.23 x 0.20	0.25	=	0.05	0.06
B +6%	= 0.01 x 0.24	0.30	=	0.00	0.00
GRAVEL					
B 0-2%	= 0.00 x 0.32	0.38	=	0.00	0.00
B 2-6%	= 0.37 x 0.36	0.43	=	0.13	0.16
B +6%	= 0.23 x 0.40	0.47	=	0.09	0.11
IMPERVIOUS					
C 0-2%	= 0.00 x 0.85	0.95	=	0.00	0.00
C 2-6%	= 0.00 x 0.86	0.96	=	0.00	0.00
C +6%	= 0.00 x 0.87	0.97	=	0.00	0.00
MEADOW/LAWN					
C 0-2%	= 0.45 x 0.23	0.28	=	0.10	0.13
C 2-6%	= 0.00 x 0.28	0.34	=	0.00	0.00
C +6%	= 0.78 x 0.32	0.39	=	0.25	0.30
GRAVEL					
C 0-2%	= 0.30 x 0.35	0.42	=	0.11	0.13
C 2-6%	= 1.78 x 0.39	0.46	=	0.69	0.82
C +6%	= 0.50 x 0.43	0.50	=	0.22	0.25
TOTAL	= 4.72			1.70	2.02
C_w	=			0.36	0.43

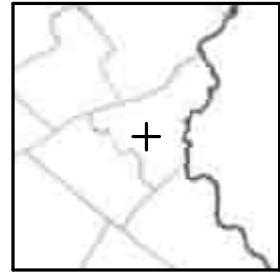
POST BYPASS WEST - TOTAL (BYPASS 1 THROUGH 3 AND S-16A BYPASS)

SOIL SLOPE	AREA	C (<=10)	c (25+)	C x A (<= 10YR)	C x A (25 YR+)
IMPERVIOUS					
B 0-2%	= 0.83 x 0.85	0.95	=	0.71	0.79
B 2-6%	= 5.12 x 0.86	0.96	=	4.40	4.92
B +6%	= 0.00 x 0.87	0.97	=	0.00	0.00
MEADOW/LAWN					
B 0-2%	= 0.12 x 0.15	0.19	=	0.02	0.02
B 2-6%	= 1.41 x 0.20	0.25	=	0.28	0.35
B +6%	= 0.84 x 0.24	0.30	=	0.20	0.25
GRAVEL					
B 0-2%	= 0.00 x 0.32	0.38	=	0.00	0.00
B 2-6%	= 1.76 x 0.36	0.43	=	0.63	0.76
B +6%	= 0.31 x 0.40	0.47	=	0.12	0.15
FOREST/WOODS					
B 0-2%	= 0.00 x 0.11	0.15	=	0.00	0.00
B 2-6%	= 0.00 x 0.16	0.21	=	0.00	0.00
B +6%	= 0.00 x 0.20	0.26	=	0.00	0.00
IMPERVIOUS					
C 0-2%	= 0.42 x 0.85	0.95	=	0.36	0.40
C 2-6%	= 1.25 x 0.86	0.96	=	1.08	1.20
C +6%	= 0.00 x 0.87	0.97	=	0.00	0.00
GRAVEL					
C 0-2%	= 0.91 x 0.35	0.42	=	0.32	0.38
C 2-6%	= 2.10 x 0.39	0.46	=	0.82	0.97
C +6%	= 0.61 x 0.43	0.50	=	0.26	0.31
MEADOW/LAWN					
C 0-2%	= 0.54 x 0.23	0.28	=	0.12	0.15
C 2-6%	= 0.54 x 0.28	0.34	=	0.15	0.18
C +6%	= 2.49 x 0.32	0.39	=	0.80	0.97
TOTAL	= 19.25			10.27	11.79
C_w	=			0.53	0.61

* INLET S-16A FLOWS TOWARDS WET DETENTION BASIN A. HOWEVER, THE DOWNSTREAM PIPE CONTAINS A BACKFLOW PREVENTOR TO AVOID SURCHARGING OF THE INLET WHEN THE WATER SURFACE ELEVATION WITHIN WET DETENTION BASIN A AND THE UPSLOPE STORMSEWER SYSTEM RISES ABOVE THE TOP OF GRATE ELEVATION OF INLET S-16A. WHILE THE BACKFLOW PREVENTOR IS IN USE, FLOW FROM INLET S-16A WILL NOT BE CONVEYED TO WET DETENTION BASIN A. IN ORDER TO BE CONSERVATIVE, RELEASE RATES CALCULATIONS ASSUME THAT ALL FLOW DIRECTED TO INLET S-16A WILL NOT BE CONVEYED TO THE BASIN. AS SUCH, THE DRAINAGE AREA TO INLET S-16A IS CONSIDERED BYPASS, ALTHOUGH A PORTION OF THIS DRAINAGE AREA WILL REACH THE BASIN PRIOR TO THE CLOSURE OF THE BACKFLOW PREVENTOR.

**Rational Formula Hydrograph
Publication 584 Intensity Calculation**

2 Year Storm at Post to Basin A
 Time of Concentration: 58 min.
 Drainage Area: 63.6000 acres.
 Weighted 'C' Factor: 0.4500
 Map X Coordinate=9375
 Map Y Coordinate=3750



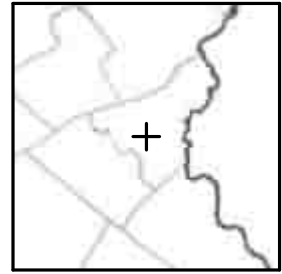
Project Location

Time (min)	Rainfall Incr. (inches)	Rainfall Total (inches)	Rainfall Intensity (in/hr)	Flow (cfs)
0.000	0.000	0.000	0.000	0.000
0.967	1.312	1.312	0.127	3.647
1.933	0.248	1.560	0.156	4.462
2.900	0.144	1.704	1.358	38.852
3.867	0.151	1.855	0.256	7.335
4.833	0.138	1.993	0.149	4.261
5.800	0.123	2.116	0.143	4.091
6.767	0.109	2.225	0.113	3.238
7.733	0.097	2.323	0.101	2.883
8.700	0.087	2.410	0.090	2.580
9.667	0.078	2.488	0.081	2.323
10.633	0.071	2.559	0.074	2.105
11.600	0.065	2.624	0.067	1.919
12.567	0.059	2.684	0.061	1.760
13.533	0.055	2.739	0.057	1.623
14.500	0.051	2.789	0.053	1.505
15.467	0.047	2.837	0.049	1.403
16.433	0.044	2.881	0.046	1.314
17.400	0.042	2.923	0.043	1.236
18.367	0.039	2.962	0.041	1.168
19.333	0.037	3.000	0.039	1.108
20.300	0.036	3.035	0.037	1.056
21.267	0.034	3.069	0.035	1.009
22.233	0.033	3.102	0.034	0.969
23.200	0.031	3.134	0.033	0.932
24.167	0.030	3.164	0.031	0.900

Publication 584 Intensity Calculation

**Rational Formula Hydrograph
Publication 584 Intensity Calculation**

10 Year Storm at Post to Basin A
 Time of Concentration: 58 min.
 Drainage Area: 63.6000 acres.
 Weighted 'C' Factor: 0.4500
 Map X Coordinate=9375
 Map Y Coordinate=3750



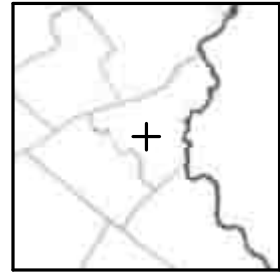
Project Location

Time (min)	Rainfall Incr. (inches)	Rainfall Total (inches)	Rainfall Intensity (in/hr)	Flow (cfs)
0.000	0.000	0.000	0.000	0.000
0.967	1.883	1.883	0.191	5.472
1.933	0.384	2.267	0.241	6.910
2.900	0.219	2.485	1.948	55.751
3.867	0.233	2.718	0.397	11.355
4.833	0.211	2.930	0.226	6.471
5.800	0.185	3.114	0.218	6.252
6.767	0.161	3.275	0.166	4.763
7.733	0.141	3.416	0.145	4.160
8.700	0.124	3.539	0.128	3.658
9.667	0.109	3.649	0.113	3.242
10.633	0.098	3.747	0.101	2.898
11.600	0.088	3.835	0.091	2.613
12.567	0.080	3.915	0.083	2.377
13.533	0.074	3.989	0.076	2.180
14.500	0.068	4.057	0.070	2.016
15.467	0.063	4.120	0.066	1.879
16.433	0.060	4.180	0.062	1.764
17.400	0.056	4.236	0.058	1.668
18.367	0.054	4.290	0.055	1.588
19.333	0.051	4.341	0.053	1.520
20.300	0.049	4.391	0.051	1.464
21.267	0.048	4.439	0.050	1.418
22.233	0.047	4.485	0.048	1.380
23.200	0.046	4.531	0.047	1.349
24.167	0.045	4.576	0.046	1.323

Publication 584 Intensity Calculation

**Rational Formula Hydrograph
Publication 584 Intensity Calculation**

25 Year Storm at Post to Basin A
 Time of Concentration: 58 min.
 Drainage Area: 63.6000 acres.
 Weighted 'C' Factor: 0.5300
 Map X Coordinate=9375
 Map Y Coordinate=3750



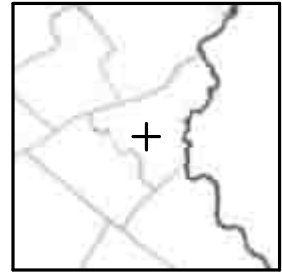
Project Location

Time (min)	Incr. (inches)	Total (inches)	Rainfall Intensity (in/hr)	Flow (cfs)
0.000	0.000	0.000	0.000	0.000
0.967	2.209	2.209	0.239	8.049
1.933	0.492	2.701	0.295	9.940
2.900	0.279	2.980	2.285	77.015
3.867	0.285	3.265	0.509	17.173
4.833	0.260	3.524	0.288	9.713
5.800	0.231	3.755	0.269	9.057
6.767	0.204	3.960	0.211	7.123
7.733	0.181	4.141	0.187	6.316
8.700	0.161	4.302	0.167	5.624
9.667	0.144	4.446	0.149	5.034
10.633	0.130	4.576	0.134	4.529
11.600	0.117	4.694	0.121	4.095
12.567	0.107	4.800	0.110	3.722
13.533	0.097	4.898	0.101	3.399
14.500	0.089	4.987	0.093	3.118
15.467	0.082	5.070	0.085	2.873
16.433	0.076	5.146	0.079	2.659
17.400	0.071	5.217	0.073	2.471
18.367	0.066	5.283	0.068	2.304
19.333	0.062	5.345	0.064	2.157
20.300	0.058	5.403	0.060	2.027
21.267	0.055	5.458	0.057	1.911
22.233	0.052	5.510	0.054	1.808
23.200	0.049	5.559	0.051	1.716
24.167	0.047	5.606	0.048	1.633

Publication 584 Intensity Calculation

**Rational Formula Hydrograph
Publication 584 Intensity Calculation**

50 Year Storm at Post to Basin A
 Time of Concentration: 58 min.
 Drainage Area: 63.6000 acres.
 Weighted 'C' Factor: 0.5300
 Map X Coordinate=9375
 Map Y Coordinate=3750



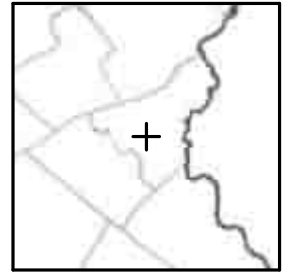
Project Location

Time (min)	Incr. (inches)	Total (inches)	Rainfall Intensity (in/hr)	Flow (cfs)
0.000	0.000	0.000	0.000	0.000
0.967	2.499	2.499	0.267	9.005
1.933	0.576	3.074	0.353	11.911
2.900	0.342	3.416	2.585	87.128
3.867	0.319	3.735	0.595	20.068
4.833	0.287	4.022	0.330	11.134
5.800	0.258	4.280	0.297	10.006
6.767	0.233	4.514	0.241	8.136
7.733	0.212	4.725	0.219	7.381
8.700	0.193	4.918	0.199	6.720
9.667	0.176	5.094	0.182	6.137
10.633	0.161	5.255	0.167	5.619
11.600	0.148	5.403	0.153	5.156
12.567	0.136	5.539	0.141	4.739
13.533	0.125	5.664	0.129	4.361
14.500	0.115	5.779	0.119	4.018
15.467	0.106	5.885	0.110	3.706
16.433	0.098	5.983	0.101	3.419
17.400	0.091	6.074	0.094	3.156
18.367	0.084	6.158	0.086	2.914
19.333	0.077	6.235	0.080	2.690
20.300	0.071	6.306	0.074	2.483
21.267	0.066	6.372	0.068	2.291
22.233	0.061	6.432	0.063	2.112
23.200	0.056	6.488	0.058	1.945
24.167	0.051	6.539	0.053	1.790

Publication 584 Intensity Calculation

**Rational Formula Hydrograph
Publication 584 Intensity Calculation**

100 Year Storm at Post to Basin A
 Time of Concentration: 58 min.
 Drainage Area: 63.6000 acres.
 Weighted 'C' Factor: 0.5300
 Map X Coordinate=9375
 Map Y Coordinate=3750



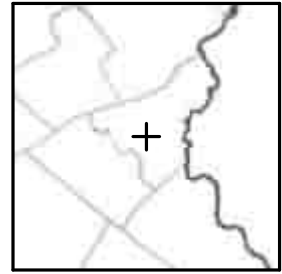
Project Location

Time (min)	Incr. (inches)	Total (inches)	Rainfall Intensity (in/hr)	Flow (cfs)
0.000	0.000	0.000	0.000	0.000
0.967	2.771	2.771	0.284	9.589
1.933	0.773	3.544	0.415	13.980
2.900	0.401	3.944	2.867	96.625
3.867	0.323	4.267	0.799	26.939
4.833	0.293	4.561	0.334	11.250
5.800	0.275	4.835	0.304	10.233
6.767	0.260	5.095	0.269	9.054
7.733	0.245	5.341	0.254	8.557
8.700	0.232	5.572	0.240	8.075
9.667	0.218	5.790	0.226	7.602
10.633	0.205	5.995	0.212	7.137
11.600	0.192	6.186	0.198	6.682
12.567	0.179	6.365	0.185	6.236
13.533	0.166	6.532	0.172	5.801
14.500	0.154	6.686	0.160	5.378
15.467	0.142	6.828	0.147	4.967
16.433	0.131	6.959	0.136	4.570
17.400	0.120	7.079	0.124	4.186
18.367	0.109	7.189	0.113	3.815
19.333	0.099	7.288	0.103	3.459
20.300	0.089	7.377	0.092	3.116
21.267	0.080	7.457	0.083	2.787
22.233	0.071	7.528	0.073	2.471
23.200	0.062	7.590	0.064	2.169
24.167	0.054	7.644	0.056	1.880

Publication 584 Intensity Calculation

**Rational Formula Hydrograph
Publication 584 Intensity Calculation**

2 Year Storm at Post to Western UGD
 Time of Concentration: 58 min.
 Drainage Area: 8.3300 acres.
 Weighted 'C' Factor: 0.8100
 Map X Coordinate=9375
 Map Y Coordinate=3750



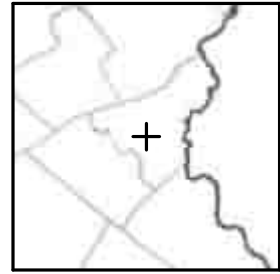
Project Location

Time (min)	Incr. (inches)	Rainfall Total (inches)	Rainfall Intensity (in/hr)	Flow (cfs)
0.000	0.000	0.000	0.000	0.000
0.967	1.312	1.312	0.127	0.860
1.933	0.248	1.560	0.156	1.052
2.900	0.144	1.704	1.358	9.160
3.867	0.151	1.855	0.256	1.729
4.833	0.138	1.993	0.149	1.005
5.800	0.123	2.116	0.143	0.964
6.767	0.109	2.225	0.113	0.763
7.733	0.097	2.323	0.101	0.680
8.700	0.087	2.410	0.090	0.608
9.667	0.078	2.488	0.081	0.548
10.633	0.071	2.559	0.074	0.496
11.600	0.065	2.624	0.067	0.452
12.567	0.059	2.684	0.061	0.415
13.533	0.055	2.739	0.057	0.383
14.500	0.051	2.789	0.053	0.355
15.467	0.047	2.837	0.049	0.331
16.433	0.044	2.881	0.046	0.310
17.400	0.042	2.923	0.043	0.291
18.367	0.039	2.962	0.041	0.275
19.333	0.037	3.000	0.039	0.261
20.300	0.036	3.035	0.037	0.249
21.267	0.034	3.069	0.035	0.238
22.233	0.033	3.102	0.034	0.228
23.200	0.031	3.134	0.033	0.220
24.167	0.030	3.164	0.031	0.212

Publication 584 Intensity Calculation

**Rational Formula Hydrograph
Publication 584 Intensity Calculation**

10 Year Storm at Post to Western UGD
 Time of Concentration: 58 min.
 Drainage Area: 8.3300 acres.
 Weighted 'C' Factor: 0.8100
 Map X Coordinate=9375
 Map Y Coordinate=3750



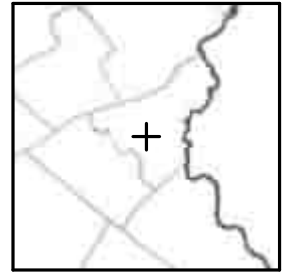
Project Location

Time (min)	Incr. (inches)	Total (inches)	Rainfall Intensity (in/hr)	Flow (cfs)
0.000	0.000	0.000	0.000	0.000
0.967	1.883	1.883	0.191	1.290
1.933	0.384	2.267	0.241	1.629
2.900	0.219	2.485	1.948	13.143
3.867	0.233	2.718	0.397	2.677
4.833	0.211	2.930	0.226	1.526
5.800	0.185	3.114	0.218	1.474
6.767	0.161	3.275	0.166	1.123
7.733	0.141	3.416	0.145	0.981
8.700	0.124	3.539	0.128	0.862
9.667	0.109	3.649	0.113	0.764
10.633	0.098	3.747	0.101	0.683
11.600	0.088	3.835	0.091	0.616
12.567	0.080	3.915	0.083	0.560
13.533	0.074	3.989	0.076	0.514
14.500	0.068	4.057	0.070	0.475
15.467	0.063	4.120	0.066	0.443
16.433	0.060	4.180	0.062	0.416
17.400	0.056	4.236	0.058	0.393
18.367	0.054	4.290	0.055	0.374
19.333	0.051	4.341	0.053	0.358
20.300	0.049	4.391	0.051	0.345
21.267	0.048	4.439	0.050	0.334
22.233	0.047	4.485	0.048	0.325
23.200	0.046	4.531	0.047	0.318
24.167	0.045	4.576	0.046	0.312

Publication 584 Intensity Calculation

**Rational Formula Hydrograph
Publication 584 Intensity Calculation**

25 Year Storm at Post to Western UGD
 Time of Concentration: 58 min.
 Drainage Area: 8.3300 acres.
 Weighted 'C' Factor: 0.9100
 Map X Coordinate=9375
 Map Y Coordinate=3750



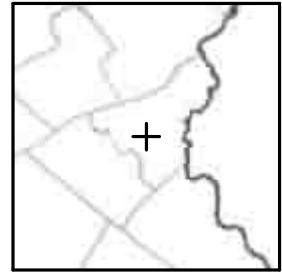
Project Location

Time (min)	Incr. (inches)	Total (inches)	Rainfall Intensity (in/hr)	Flow (cfs)
0.000	0.000	0.000	0.000	0.000
0.967	2.209	2.209	0.239	1.810
1.933	0.492	2.701	0.295	2.235
2.900	0.279	2.980	2.285	17.319
3.867	0.285	3.265	0.509	3.862
4.833	0.260	3.524	0.288	2.184
5.800	0.231	3.755	0.269	2.037
6.767	0.204	3.960	0.211	1.602
7.733	0.181	4.141	0.187	1.420
8.700	0.161	4.302	0.167	1.265
9.667	0.144	4.446	0.149	1.132
10.633	0.130	4.576	0.134	1.018
11.600	0.117	4.694	0.121	0.921
12.567	0.107	4.800	0.110	0.837
13.533	0.097	4.898	0.101	0.764
14.500	0.089	4.987	0.093	0.701
15.467	0.082	5.070	0.085	0.646
16.433	0.076	5.146	0.079	0.598
17.400	0.071	5.217	0.073	0.556
18.367	0.066	5.283	0.068	0.518
19.333	0.062	5.345	0.064	0.485
20.300	0.058	5.403	0.060	0.456
21.267	0.055	5.458	0.057	0.430
22.233	0.052	5.510	0.054	0.407
23.200	0.049	5.559	0.051	0.386
24.167	0.047	5.606	0.048	0.367

Publication 584 Intensity Calculation

**Rational Formula Hydrograph
Publication 584 Intensity Calculation**

50 Year Storm at Post to Western UGD
 Time of Concentration: 58 min.
 Drainage Area: 8.3300 acres.
 Weighted 'C' Factor: 0.9100
 Map X Coordinate=9375
 Map Y Coordinate=3750



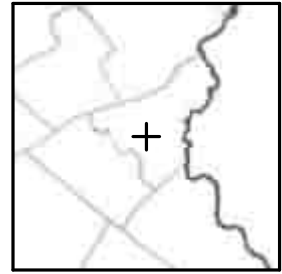
Project Location

Time (min)	Incr. (inches)	Rainfall Total (inches)	Rainfall Intensity (in/hr)	Flow (cfs)
0.000	0.000	0.000	0.000	0.000
0.967	2.499	2.499	0.267	2.025
1.933	0.576	3.074	0.353	2.679
2.900	0.342	3.416	2.585	19.593
3.867	0.319	3.735	0.595	4.513
4.833	0.287	4.022	0.330	2.504
5.800	0.258	4.280	0.297	2.250
6.767	0.233	4.514	0.241	1.830
7.733	0.212	4.725	0.219	1.660
8.700	0.193	4.918	0.199	1.511
9.667	0.176	5.094	0.182	1.380
10.633	0.161	5.255	0.167	1.264
11.600	0.148	5.403	0.153	1.159
12.567	0.136	5.539	0.141	1.066
13.533	0.125	5.664	0.129	0.981
14.500	0.115	5.779	0.119	0.904
15.467	0.106	5.885	0.110	0.833
16.433	0.098	5.983	0.101	0.769
17.400	0.091	6.074	0.094	0.710
18.367	0.084	6.158	0.086	0.655
19.333	0.077	6.235	0.080	0.605
20.300	0.071	6.306	0.074	0.558
21.267	0.066	6.372	0.068	0.515
22.233	0.061	6.432	0.063	0.475
23.200	0.056	6.488	0.058	0.437
24.167	0.051	6.539	0.053	0.403

Publication 584 Intensity Calculation

**Rational Formula Hydrograph
Publication 584 Intensity Calculation**

**100 Year Storm at Post to Western UGD
Time of Concentration: 58 min.
Drainage Area: 8.3300 acres.
Weighted 'C' Factor: 0.9100
Map X Coordinate=9375
Map Y Coordinate=3750**



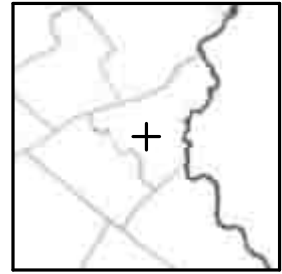
Project Location

Time (min)	Rainfall Incr. (inches)	Rainfall Total (inches)	Rainfall Intensity (in/hr)	Flow (cfs)
0.000	0.000	0.000	0.000	0.000
0.967	2.771	2.771	0.284	2.156
1.933	0.773	3.544	0.415	3.144
2.900	0.401	3.944	2.867	21.729
3.867	0.323	4.267	0.799	6.058
4.833	0.293	4.561	0.334	2.530
5.800	0.275	4.835	0.304	2.301
6.767	0.260	5.095	0.269	2.036
7.733	0.245	5.341	0.254	1.924
8.700	0.232	5.572	0.240	1.816
9.667	0.218	5.790	0.226	1.710
10.633	0.205	5.995	0.212	1.605
11.600	0.192	6.186	0.198	1.503
12.567	0.179	6.365	0.185	1.402
13.533	0.166	6.532	0.172	1.305
14.500	0.154	6.686	0.160	1.209
15.467	0.142	6.828	0.147	1.117
16.433	0.131	6.959	0.136	1.028
17.400	0.120	7.079	0.124	0.941
18.367	0.109	7.189	0.113	0.858
19.333	0.099	7.288	0.103	0.778
20.300	0.089	7.377	0.092	0.701
21.267	0.080	7.457	0.083	0.627
22.233	0.071	7.528	0.073	0.556
23.200	0.062	7.590	0.064	0.488
24.167	0.054	7.644	0.056	0.423

Publication 584 Intensity Calculation

**Rational Formula Hydrograph
Publication 584 Intensity Calculation**

2 Year Storm at Post to Eastern UGD
 Time of Concentration: 58 min.
 Drainage Area: 11.8900 acres.
 Weighted 'C' Factor: 0.7700
 Map X Coordinate=9375
 Map Y Coordinate=3750



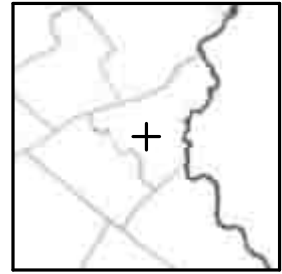
Project Location

Time (min)	Rainfall Incr. (inches)	Rainfall Total (inches)	Rainfall Intensity (in/hr)	Flow (cfs)
0.000	0.000	0.000	0.000	0.000
0.967	1.312	1.312	0.127	1.167
1.933	0.248	1.560	0.156	1.427
2.900	0.144	1.704	1.358	12.429
3.867	0.151	1.855	0.256	2.346
4.833	0.138	1.993	0.149	1.363
5.800	0.123	2.116	0.143	1.309
6.767	0.109	2.225	0.113	1.036
7.733	0.097	2.323	0.101	0.922
8.700	0.087	2.410	0.090	0.825
9.667	0.078	2.488	0.081	0.743
10.633	0.071	2.559	0.074	0.673
11.600	0.065	2.624	0.067	0.614
12.567	0.059	2.684	0.061	0.563
13.533	0.055	2.739	0.057	0.519
14.500	0.051	2.789	0.053	0.481
15.467	0.047	2.837	0.049	0.449
16.433	0.044	2.881	0.046	0.420
17.400	0.042	2.923	0.043	0.395
18.367	0.039	2.962	0.041	0.374
19.333	0.037	3.000	0.039	0.355
20.300	0.036	3.035	0.037	0.338
21.267	0.034	3.069	0.035	0.323
22.233	0.033	3.102	0.034	0.310
23.200	0.031	3.134	0.033	0.298
24.167	0.030	3.164	0.031	0.288

Publication 584 Intensity Calculation

**Rational Formula Hydrograph
Publication 584 Intensity Calculation**

10 Year Storm at Post to Eastern UGD
 Time of Concentration: 58 min.
 Drainage Area: 11.8900 acres.
 Weighted 'C' Factor: 0.7700
 Map X Coordinate=9375
 Map Y Coordinate=3750



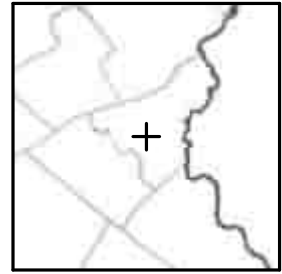
Project Location

Time (min)	Incr. (inches)	Rainfall Total (inches)	Rainfall Intensity (in/hr)	Flow (cfs)
0.000	0.000	0.000	0.000	0.000
0.967	1.883	1.883	0.191	1.750
1.933	0.384	2.267	0.241	2.210
2.900	0.219	2.485	1.948	17.834
3.867	0.233	2.718	0.397	3.632
4.833	0.211	2.930	0.226	2.070
5.800	0.185	3.114	0.218	2.000
6.767	0.161	3.275	0.166	1.524
7.733	0.141	3.416	0.145	1.331
8.700	0.124	3.539	0.128	1.170
9.667	0.109	3.649	0.113	1.037
10.633	0.098	3.747	0.101	0.927
11.600	0.088	3.835	0.091	0.836
12.567	0.080	3.915	0.083	0.760
13.533	0.074	3.989	0.076	0.697
14.500	0.068	4.057	0.070	0.645
15.467	0.063	4.120	0.066	0.601
16.433	0.060	4.180	0.062	0.564
17.400	0.056	4.236	0.058	0.534
18.367	0.054	4.290	0.055	0.508
19.333	0.051	4.341	0.053	0.486
20.300	0.049	4.391	0.051	0.468
21.267	0.048	4.439	0.050	0.454
22.233	0.047	4.485	0.048	0.441
23.200	0.046	4.531	0.047	0.431
24.167	0.045	4.576	0.046	0.423

Publication 584 Intensity Calculation

**Rational Formula Hydrograph
Publication 584 Intensity Calculation**

25 Year Storm at Post to Eastern UGD
 Time of Concentration: 58 min.
 Drainage Area: 11.8900 acres.
 Weighted 'C' Factor: 0.8700
 Map X Coordinate=9375
 Map Y Coordinate=3750



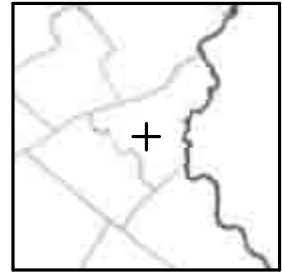
Project Location

Time (min)	Incr. (inches)	Rainfall Total (inches)	Rainfall Intensity (in/hr)	Flow (cfs)
0.000	0.000	0.000	0.000	0.000
0.967	2.209	2.209	0.239	2.470
1.933	0.492	2.701	0.295	3.050
2.900	0.279	2.980	2.285	23.634
3.867	0.285	3.265	0.509	5.270
4.833	0.260	3.524	0.288	2.981
5.800	0.231	3.755	0.269	2.780
6.767	0.204	3.960	0.211	2.186
7.733	0.181	4.141	0.187	1.938
8.700	0.161	4.302	0.167	1.726
9.667	0.144	4.446	0.149	1.545
10.633	0.130	4.576	0.134	1.390
11.600	0.117	4.694	0.121	1.257
12.567	0.107	4.800	0.110	1.142
13.533	0.097	4.898	0.101	1.043
14.500	0.089	4.987	0.093	0.957
15.467	0.082	5.070	0.085	0.882
16.433	0.076	5.146	0.079	0.816
17.400	0.071	5.217	0.073	0.758
18.367	0.066	5.283	0.068	0.707
19.333	0.062	5.345	0.064	0.662
20.300	0.058	5.403	0.060	0.622
21.267	0.055	5.458	0.057	0.587
22.233	0.052	5.510	0.054	0.555
23.200	0.049	5.559	0.051	0.527
24.167	0.047	5.606	0.048	0.501

Publication 584 Intensity Calculation

**Rational Formula Hydrograph
Publication 584 Intensity Calculation**

50 Year Storm at Post to Eastern UGD
 Time of Concentration: 58 min.
 Drainage Area: 11.8900 acres.
 Weighted 'C' Factor: 0.8700
 Map X Coordinate=9375
 Map Y Coordinate=3750



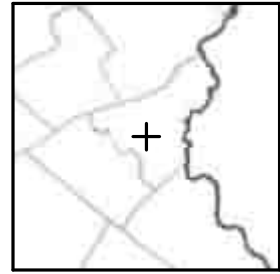
Project Location

Time (min)	Incr. (inches)	Rainfall Total (inches)	Rainfall Intensity (in/hr)	Flow (cfs)
0.000	0.000	0.000	0.000	0.000
0.967	2.499	2.499	0.267	2.763
1.933	0.576	3.074	0.353	3.655
2.900	0.342	3.416	2.585	26.738
3.867	0.319	3.735	0.595	6.158
4.833	0.287	4.022	0.330	3.417
5.800	0.258	4.280	0.297	3.071
6.767	0.233	4.514	0.241	2.497
7.733	0.212	4.725	0.219	2.265
8.700	0.193	4.918	0.199	2.062
9.667	0.176	5.094	0.182	1.883
10.633	0.161	5.255	0.167	1.724
11.600	0.148	5.403	0.153	1.582
12.567	0.136	5.539	0.141	1.454
13.533	0.125	5.664	0.129	1.338
14.500	0.115	5.779	0.119	1.233
15.467	0.106	5.885	0.110	1.137
16.433	0.098	5.983	0.101	1.049
17.400	0.091	6.074	0.094	0.969
18.367	0.084	6.158	0.086	0.894
19.333	0.077	6.235	0.080	0.826
20.300	0.071	6.306	0.074	0.762
21.267	0.066	6.372	0.068	0.703
22.233	0.061	6.432	0.063	0.648
23.200	0.056	6.488	0.058	0.597
24.167	0.051	6.539	0.053	0.549

Publication 584 Intensity Calculation

**Rational Formula Hydrograph
Publication 584 Intensity Calculation**

100 Year Storm at Post to Eastern UGD
 Time of Concentration: 58 min.
 Drainage Area: 11.8900 acres.
 Weighted 'C' Factor: 0.8700
 Map X Coordinate=9375
 Map Y Coordinate=3750



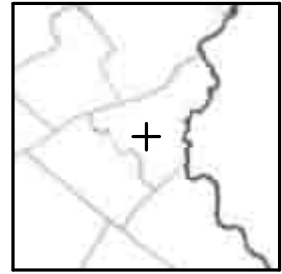
Project Location

Time (min)	Incr. (inches)	Rainfall Total (inches)	Rainfall Intensity (in/hr)	Flow (cfs)
0.000	0.000	0.000	0.000	0.000
0.967	2.771	2.771	0.284	2.943
1.933	0.773	3.544	0.415	4.290
2.900	0.401	3.944	2.867	29.652
3.867	0.323	4.267	0.799	8.267
4.833	0.293	4.561	0.334	3.452
5.800	0.275	4.835	0.304	3.140
6.767	0.260	5.095	0.269	2.779
7.733	0.245	5.341	0.254	2.626
8.700	0.232	5.572	0.240	2.478
9.667	0.218	5.790	0.226	2.333
10.633	0.205	5.995	0.212	2.190
11.600	0.192	6.186	0.198	2.050
12.567	0.179	6.365	0.185	1.914
13.533	0.166	6.532	0.172	1.780
14.500	0.154	6.686	0.160	1.650
15.467	0.142	6.828	0.147	1.524
16.433	0.131	6.959	0.136	1.402
17.400	0.120	7.079	0.124	1.285
18.367	0.109	7.189	0.113	1.171
19.333	0.099	7.288	0.103	1.061
20.300	0.089	7.377	0.092	0.956
21.267	0.080	7.457	0.083	0.855
22.233	0.071	7.528	0.073	0.758
23.200	0.062	7.590	0.064	0.666
24.167	0.054	7.644	0.056	0.577

Publication 584 Intensity Calculation

**Rational Formula Hydrograph
Publication 584 Intensity Calculation**

2 Year Storm at Post to Basin B
 Time of Concentration: 58 min.
 Drainage Area: 6.9400 acres.
 Weighted 'C' Factor: 0.4600
 Map X Coordinate=9375
 Map Y Coordinate=3750



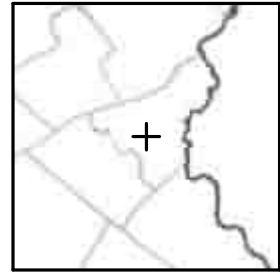
Project Location

Time (min)	Incr. (inches)	Total (inches)	Rainfall Intensity (in/hr)	Flow (cfs)
0.000	0.000	0.000	0.000	0.000
0.967	1.312	1.312	0.127	0.407
1.933	0.248	1.560	0.156	0.498
2.900	0.144	1.704	1.358	4.334
3.867	0.151	1.855	0.256	0.818
4.833	0.138	1.993	0.149	0.475
5.800	0.123	2.116	0.143	0.456
6.767	0.109	2.225	0.113	0.361
7.733	0.097	2.323	0.101	0.322
8.700	0.087	2.410	0.090	0.288
9.667	0.078	2.488	0.081	0.259
10.633	0.071	2.559	0.074	0.235
11.600	0.065	2.624	0.067	0.214
12.567	0.059	2.684	0.061	0.196
13.533	0.055	2.739	0.057	0.181
14.500	0.051	2.789	0.053	0.168
15.467	0.047	2.837	0.049	0.156
16.433	0.044	2.881	0.046	0.147
17.400	0.042	2.923	0.043	0.138
18.367	0.039	2.962	0.041	0.130
19.333	0.037	3.000	0.039	0.124
20.300	0.036	3.035	0.037	0.118
21.267	0.034	3.069	0.035	0.113
22.233	0.033	3.102	0.034	0.108
23.200	0.031	3.134	0.033	0.104
24.167	0.030	3.164	0.031	0.100

Publication 584 Intensity Calculation

**Rational Formula Hydrograph
Publication 584 Intensity Calculation**

10 Year Storm at Post to Basin B
 Time of Concentration: 58 min.
 Drainage Area: 6.9400 acres.
 Weighted 'C' Factor: 0.4600
 Map X Coordinate=9375
 Map Y Coordinate=3750



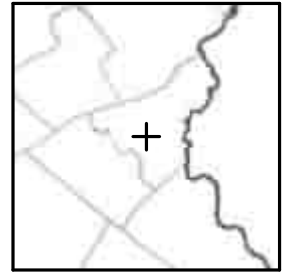
Project Location

Time (min)	Incr. (inches)	Total (inches)	Rainfall Intensity (in/hr)	Flow (cfs)
0.000	0.000	0.000	0.000	0.000
0.967	1.883	1.883	0.191	0.610
1.933	0.384	2.267	0.241	0.771
2.900	0.219	2.485	1.948	6.219
3.867	0.233	2.718	0.397	1.267
4.833	0.211	2.930	0.226	0.722
5.800	0.185	3.114	0.218	0.697
6.767	0.161	3.275	0.166	0.531
7.733	0.141	3.416	0.145	0.464
8.700	0.124	3.539	0.128	0.408
9.667	0.109	3.649	0.113	0.362
10.633	0.098	3.747	0.101	0.323
11.600	0.088	3.835	0.091	0.291
12.567	0.080	3.915	0.083	0.265
13.533	0.074	3.989	0.076	0.243
14.500	0.068	4.057	0.070	0.225
15.467	0.063	4.120	0.066	0.210
16.433	0.060	4.180	0.062	0.197
17.400	0.056	4.236	0.058	0.186
18.367	0.054	4.290	0.055	0.177
19.333	0.051	4.341	0.053	0.170
20.300	0.049	4.391	0.051	0.163
21.267	0.048	4.439	0.050	0.158
22.233	0.047	4.485	0.048	0.154
23.200	0.046	4.531	0.047	0.150
24.167	0.045	4.576	0.046	0.148

Publication 584 Intensity Calculation

**Rational Formula Hydrograph
Publication 584 Intensity Calculation**

25 Year Storm at Post to Basin B
 Time of Concentration: 58 min.
 Drainage Area: 6.9400 acres.
 Weighted 'C' Factor: 0.5300
 Map X Coordinate=9375
 Map Y Coordinate=3750



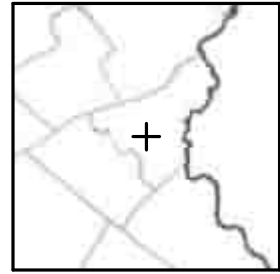
Project Location

Time (min)	Incr. (inches)	Total (inches)	Rainfall Intensity (in/hr)	Flow (cfs)
0.000	0.000	0.000	0.000	0.000
0.967	2.209	2.209	0.239	0.878
1.933	0.492	2.701	0.295	1.085
2.900	0.279	2.980	2.285	8.404
3.867	0.285	3.265	0.509	1.874
4.833	0.260	3.524	0.288	1.060
5.800	0.231	3.755	0.269	0.988
6.767	0.204	3.960	0.211	0.777
7.733	0.181	4.141	0.187	0.689
8.700	0.161	4.302	0.167	0.614
9.667	0.144	4.446	0.149	0.549
10.633	0.130	4.576	0.134	0.494
11.600	0.117	4.694	0.121	0.447
12.567	0.107	4.800	0.110	0.406
13.533	0.097	4.898	0.101	0.371
14.500	0.089	4.987	0.093	0.340
15.467	0.082	5.070	0.085	0.314
16.433	0.076	5.146	0.079	0.290
17.400	0.071	5.217	0.073	0.270
18.367	0.066	5.283	0.068	0.251
19.333	0.062	5.345	0.064	0.235
20.300	0.058	5.403	0.060	0.221
21.267	0.055	5.458	0.057	0.209
22.233	0.052	5.510	0.054	0.197
23.200	0.049	5.559	0.051	0.187
24.167	0.047	5.606	0.048	0.178

Publication 584 Intensity Calculation

**Rational Formula Hydrograph
Publication 584 Intensity Calculation**

50 Year Storm at Post to Basin B
 Time of Concentration: 58 min.
 Drainage Area: 6.9400 acres.
 Weighted 'C' Factor: 0.5300
 Map X Coordinate=9375
 Map Y Coordinate=3750



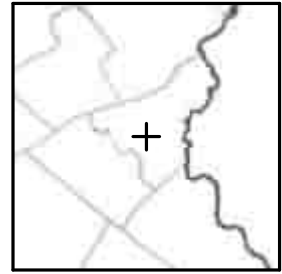
Project Location

Time (min)	Incr. (inches)	Total (inches)	Rainfall Intensity (in/hr)	Flow (cfs)
0.000	0.000	0.000	0.000	0.000
0.967	2.499	2.499	0.267	0.983
1.933	0.576	3.074	0.353	1.300
2.900	0.342	3.416	2.585	9.507
3.867	0.319	3.735	0.595	2.190
4.833	0.287	4.022	0.330	1.215
5.800	0.258	4.280	0.297	1.092
6.767	0.233	4.514	0.241	0.888
7.733	0.212	4.725	0.219	0.805
8.700	0.193	4.918	0.199	0.733
9.667	0.176	5.094	0.182	0.670
10.633	0.161	5.255	0.167	0.613
11.600	0.148	5.403	0.153	0.563
12.567	0.136	5.539	0.141	0.517
13.533	0.125	5.664	0.129	0.476
14.500	0.115	5.779	0.119	0.438
15.467	0.106	5.885	0.110	0.404
16.433	0.098	5.983	0.101	0.373
17.400	0.091	6.074	0.094	0.344
18.367	0.084	6.158	0.086	0.318
19.333	0.077	6.235	0.080	0.294
20.300	0.071	6.306	0.074	0.271
21.267	0.066	6.372	0.068	0.250
22.233	0.061	6.432	0.063	0.230
23.200	0.056	6.488	0.058	0.212
24.167	0.051	6.539	0.053	0.195

Publication 584 Intensity Calculation

**Rational Formula Hydrograph
Publication 584 Intensity Calculation**

100 Year Storm at Post to Basin B
 Time of Concentration: 58 min.
 Drainage Area: 6.9400 acres.
 Weighted 'C' Factor: 0.5300
 Map X Coordinate=9375
 Map Y Coordinate=3750



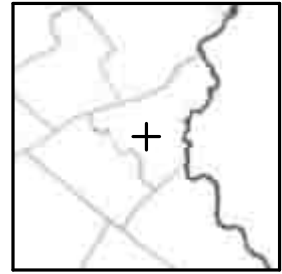
Project Location

Time (min)	Incr. (inches)	Total (inches)	Rainfall Intensity (in/hr)	Flow (cfs)
0.000	0.000	0.000	0.000	0.000
0.967	2.771	2.771	0.284	1.046
1.933	0.773	3.544	0.415	1.526
2.900	0.401	3.944	2.867	10.544
3.867	0.323	4.267	0.799	2.940
4.833	0.293	4.561	0.334	1.228
5.800	0.275	4.835	0.304	1.117
6.767	0.260	5.095	0.269	0.988
7.733	0.245	5.341	0.254	0.934
8.700	0.232	5.572	0.240	0.881
9.667	0.218	5.790	0.226	0.830
10.633	0.205	5.995	0.212	0.779
11.600	0.192	6.186	0.198	0.729
12.567	0.179	6.365	0.185	0.680
13.533	0.166	6.532	0.172	0.633
14.500	0.154	6.686	0.160	0.587
15.467	0.142	6.828	0.147	0.542
16.433	0.131	6.959	0.136	0.499
17.400	0.120	7.079	0.124	0.457
18.367	0.109	7.189	0.113	0.416
19.333	0.099	7.288	0.103	0.377
20.300	0.089	7.377	0.092	0.340
21.267	0.080	7.457	0.083	0.304
22.233	0.071	7.528	0.073	0.270
23.200	0.062	7.590	0.064	0.237
24.167	0.054	7.644	0.056	0.205

Publication 584 Intensity Calculation

**Rational Formula Hydrograph
Publication 584 Intensity Calculation**

2 Year Storm at Post to Basin C
 Time of Concentration: 58 min.
 Drainage Area: 4.6200 acres.
 Weighted 'C' Factor: 0.4100
 Map X Coordinate=9375
 Map Y Coordinate=3750



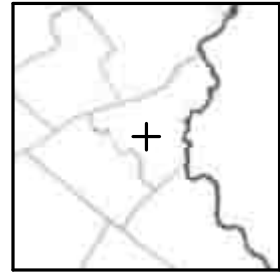
Project Location

Time (min)	Incr. (inches)	Total (inches)	Rainfall Intensity (in/hr)	Flow (cfs)
0.000	0.000	0.000	0.000	0.000
0.967	1.312	1.312	0.127	0.241
1.933	0.248	1.560	0.156	0.295
2.900	0.144	1.704	1.358	2.571
3.867	0.151	1.855	0.256	0.485
4.833	0.138	1.993	0.149	0.282
5.800	0.123	2.116	0.143	0.271
6.767	0.109	2.225	0.113	0.214
7.733	0.097	2.323	0.101	0.191
8.700	0.087	2.410	0.090	0.171
9.667	0.078	2.488	0.081	0.154
10.633	0.071	2.559	0.074	0.139
11.600	0.065	2.624	0.067	0.127
12.567	0.059	2.684	0.061	0.116
13.533	0.055	2.739	0.057	0.107
14.500	0.051	2.789	0.053	0.100
15.467	0.047	2.837	0.049	0.093
16.433	0.044	2.881	0.046	0.087
17.400	0.042	2.923	0.043	0.082
18.367	0.039	2.962	0.041	0.077
19.333	0.037	3.000	0.039	0.073
20.300	0.036	3.035	0.037	0.070
21.267	0.034	3.069	0.035	0.067
22.233	0.033	3.102	0.034	0.064
23.200	0.031	3.134	0.033	0.062
24.167	0.030	3.164	0.031	0.060

Publication 584 Intensity Calculation

**Rational Formula Hydrograph
Publication 584 Intensity Calculation**

10 Year Storm at Post to Basin C
 Time of Concentration: 58 min.
 Drainage Area: 4.6200 acres.
 Weighted 'C' Factor: 0.4100
 Map X Coordinate=9375
 Map Y Coordinate=3750



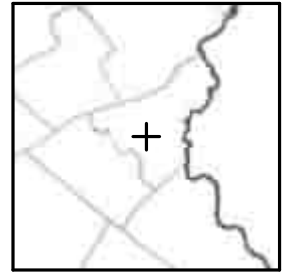
Project Location

Time (min)	Incr. (inches)	Total (inches)	Rainfall Intensity (in/hr)	Flow (cfs)
0.000	0.000	0.000	0.000	0.000
0.967	1.883	1.883	0.191	0.362
1.933	0.384	2.267	0.241	0.457
2.900	0.219	2.485	1.948	3.690
3.867	0.233	2.718	0.397	0.752
4.833	0.211	2.930	0.226	0.428
5.800	0.185	3.114	0.218	0.414
6.767	0.161	3.275	0.166	0.315
7.733	0.141	3.416	0.145	0.275
8.700	0.124	3.539	0.128	0.242
9.667	0.109	3.649	0.113	0.215
10.633	0.098	3.747	0.101	0.192
11.600	0.088	3.835	0.091	0.173
12.567	0.080	3.915	0.083	0.157
13.533	0.074	3.989	0.076	0.144
14.500	0.068	4.057	0.070	0.133
15.467	0.063	4.120	0.066	0.124
16.433	0.060	4.180	0.062	0.117
17.400	0.056	4.236	0.058	0.110
18.367	0.054	4.290	0.055	0.105
19.333	0.051	4.341	0.053	0.101
20.300	0.049	4.391	0.051	0.097
21.267	0.048	4.439	0.050	0.094
22.233	0.047	4.485	0.048	0.091
23.200	0.046	4.531	0.047	0.089
24.167	0.045	4.576	0.046	0.088

Publication 584 Intensity Calculation

**Rational Formula Hydrograph
Publication 584 Intensity Calculation**

25 Year Storm at Post to Basin C
 Time of Concentration: 58 min.
 Drainage Area: 4.6200 acres.
 Weighted 'C' Factor: 0.4800
 Map X Coordinate=9375
 Map Y Coordinate=3750



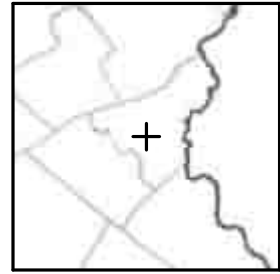
Project Location

Time (min)	Incr. (inches)	Total (inches)	Rainfall Intensity (in/hr)	Flow (cfs)
0.000	0.000	0.000	0.000	0.000
0.967	2.209	2.209	0.239	0.530
1.933	0.492	2.701	0.295	0.654
2.900	0.279	2.980	2.285	5.067
3.867	0.285	3.265	0.509	1.130
4.833	0.260	3.524	0.288	0.639
5.800	0.231	3.755	0.269	0.596
6.767	0.204	3.960	0.211	0.469
7.733	0.181	4.141	0.187	0.416
8.700	0.161	4.302	0.167	0.370
9.667	0.144	4.446	0.149	0.331
10.633	0.130	4.576	0.134	0.298
11.600	0.117	4.694	0.121	0.269
12.567	0.107	4.800	0.110	0.245
13.533	0.097	4.898	0.101	0.224
14.500	0.089	4.987	0.093	0.205
15.467	0.082	5.070	0.085	0.189
16.433	0.076	5.146	0.079	0.175
17.400	0.071	5.217	0.073	0.163
18.367	0.066	5.283	0.068	0.152
19.333	0.062	5.345	0.064	0.142
20.300	0.058	5.403	0.060	0.133
21.267	0.055	5.458	0.057	0.126
22.233	0.052	5.510	0.054	0.119
23.200	0.049	5.559	0.051	0.113
24.167	0.047	5.606	0.048	0.107

Publication 584 Intensity Calculation

**Rational Formula Hydrograph
Publication 584 Intensity Calculation**

50 Year Storm at Post to Basin C
 Time of Concentration: 58 min.
 Drainage Area: 4.6200 acres.
 Weighted 'C' Factor: 0.4800
 Map X Coordinate=9375
 Map Y Coordinate=3750



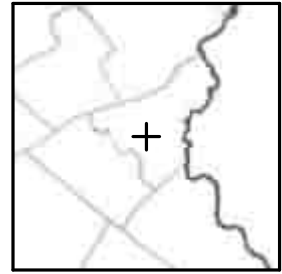
Project Location

Time (min)	Incr. (inches)	Total (inches)	Rainfall Intensity (in/hr)	Flow (cfs)
0.000	0.000	0.000	0.000	0.000
0.967	2.499	2.499	0.267	0.592
1.933	0.576	3.074	0.353	0.784
2.900	0.342	3.416	2.585	5.732
3.867	0.319	3.735	0.595	1.320
4.833	0.287	4.022	0.330	0.733
5.800	0.258	4.280	0.297	0.658
6.767	0.233	4.514	0.241	0.535
7.733	0.212	4.725	0.219	0.486
8.700	0.193	4.918	0.199	0.442
9.667	0.176	5.094	0.182	0.404
10.633	0.161	5.255	0.167	0.370
11.600	0.148	5.403	0.153	0.339
12.567	0.136	5.539	0.141	0.312
13.533	0.125	5.664	0.129	0.287
14.500	0.115	5.779	0.119	0.264
15.467	0.106	5.885	0.110	0.244
16.433	0.098	5.983	0.101	0.225
17.400	0.091	6.074	0.094	0.208
18.367	0.084	6.158	0.086	0.192
19.333	0.077	6.235	0.080	0.177
20.300	0.071	6.306	0.074	0.163
21.267	0.066	6.372	0.068	0.151
22.233	0.061	6.432	0.063	0.139
23.200	0.056	6.488	0.058	0.128
24.167	0.051	6.539	0.053	0.118

Publication 584 Intensity Calculation

**Rational Formula Hydrograph
Publication 584 Intensity Calculation**

100 Year Storm at Post to Basin C
 Time of Concentration: 58 min.
 Drainage Area: 4.6200 acres.
 Weighted 'C' Factor: 0.4800
 Map X Coordinate=9375
 Map Y Coordinate=3750



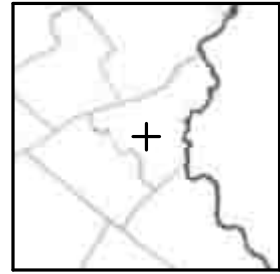
Project Location

Time (min)	Incr. (inches)	Total (inches)	Rainfall Intensity (in/hr)	Flow (cfs)
0.000	0.000	0.000	0.000	0.000
0.967	2.771	2.771	0.284	0.631
1.933	0.773	3.544	0.415	0.920
2.900	0.401	3.944	2.867	6.357
3.867	0.323	4.267	0.799	1.772
4.833	0.293	4.561	0.334	0.740
5.800	0.275	4.835	0.304	0.673
6.767	0.260	5.095	0.269	0.596
7.733	0.245	5.341	0.254	0.563
8.700	0.232	5.572	0.240	0.531
9.667	0.218	5.790	0.226	0.500
10.633	0.205	5.995	0.212	0.470
11.600	0.192	6.186	0.198	0.440
12.567	0.179	6.365	0.185	0.410
13.533	0.166	6.532	0.172	0.382
14.500	0.154	6.686	0.160	0.354
15.467	0.142	6.828	0.147	0.327
16.433	0.131	6.959	0.136	0.301
17.400	0.120	7.079	0.124	0.275
18.367	0.109	7.189	0.113	0.251
19.333	0.099	7.288	0.103	0.228
20.300	0.089	7.377	0.092	0.205
21.267	0.080	7.457	0.083	0.183
22.233	0.071	7.528	0.073	0.163
23.200	0.062	7.590	0.064	0.143
24.167	0.054	7.644	0.056	0.124

Publication 584 Intensity Calculation

**Rational Formula Hydrograph
Publication 584 Intensity Calculation**

2 Year Storm at Post Bypass to 72in Pipe
 Time of Concentration: 58 min.
 Drainage Area: 16.3300 acres.
 Weighted 'C' Factor: 0.5200
 Map X Coordinate=9375
 Map Y Coordinate=3750



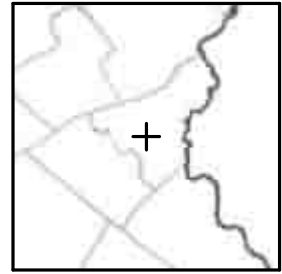
Project Location

Time (min)	Incr. (inches)	Rainfall Total (inches)	Rainfall Intensity (in/hr)	Flow (cfs)
0.000	0.000	0.000	0.000	0.000
0.967	1.312	1.312	0.127	1.082
1.933	0.248	1.560	0.156	1.324
2.900	0.144	1.704	1.358	11.528
3.867	0.151	1.855	0.256	2.176
4.833	0.138	1.993	0.149	1.264
5.800	0.123	2.116	0.143	1.214
6.767	0.109	2.225	0.113	0.961
7.733	0.097	2.323	0.101	0.855
8.700	0.087	2.410	0.090	0.765
9.667	0.078	2.488	0.081	0.689
10.633	0.071	2.559	0.074	0.625
11.600	0.065	2.624	0.067	0.569
12.567	0.059	2.684	0.061	0.522
13.533	0.055	2.739	0.057	0.482
14.500	0.051	2.789	0.053	0.447
15.467	0.047	2.837	0.049	0.416
16.433	0.044	2.881	0.046	0.390
17.400	0.042	2.923	0.043	0.367
18.367	0.039	2.962	0.041	0.347
19.333	0.037	3.000	0.039	0.329
20.300	0.036	3.035	0.037	0.313
21.267	0.034	3.069	0.035	0.300
22.233	0.033	3.102	0.034	0.287
23.200	0.031	3.134	0.033	0.277
24.167	0.030	3.164	0.031	0.267

Publication 584 Intensity Calculation

**Rational Formula Hydrograph
Publication 584 Intensity Calculation**

10 Year Storm at Post Bypass to 72in Pipe
 Time of Concentration: 58 min.
 Drainage Area: 16.3300 acres.
 Weighted 'C' Factor: 0.5200
 Map X Coordinate=9375
 Map Y Coordinate=3750



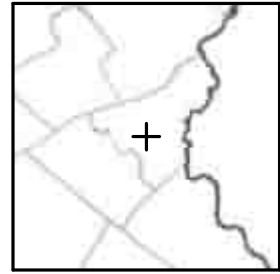
Project Location

Time (min)	Incr. (inches)	Rainfall Total (inches)	Rainfall Intensity (in/hr)	Flow (cfs)
0.000	0.000	0.000	0.000	0.000
0.967	1.883	1.883	0.191	1.623
1.933	0.384	2.267	0.241	2.050
2.900	0.219	2.485	1.948	16.541
3.867	0.233	2.718	0.397	3.369
4.833	0.211	2.930	0.226	1.920
5.800	0.185	3.114	0.218	1.855
6.767	0.161	3.275	0.166	1.413
7.733	0.141	3.416	0.145	1.234
8.700	0.124	3.539	0.128	1.085
9.667	0.109	3.649	0.113	0.962
10.633	0.098	3.747	0.101	0.860
11.600	0.088	3.835	0.091	0.775
12.567	0.080	3.915	0.083	0.705
13.533	0.074	3.989	0.076	0.647
14.500	0.068	4.057	0.070	0.598
15.467	0.063	4.120	0.066	0.557
16.433	0.060	4.180	0.062	0.523
17.400	0.056	4.236	0.058	0.495
18.367	0.054	4.290	0.055	0.471
19.333	0.051	4.341	0.053	0.451
20.300	0.049	4.391	0.051	0.435
21.267	0.048	4.439	0.050	0.421
22.233	0.047	4.485	0.048	0.409
23.200	0.046	4.531	0.047	0.400
24.167	0.045	4.576	0.046	0.393

Publication 584 Intensity Calculation

**Rational Formula Hydrograph
Publication 584 Intensity Calculation**

25 Year Storm at Post Bypass to 72in Pipe
 Time of Concentration: 58 min.
 Drainage Area: 16.3300 acres.
 Weighted 'C' Factor: 0.5900
 Map X Coordinate=9375
 Map Y Coordinate=3750



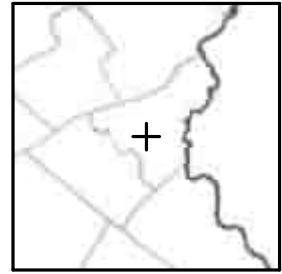
Project Location

Time (min)	Incr. (inches)	Total (inches)	Rainfall Intensity (in/hr)	Flow (cfs)
0.000	0.000	0.000	0.000	0.000
0.967	2.209	2.209	0.239	2.301
1.933	0.492	2.701	0.295	2.841
2.900	0.279	2.980	2.285	22.013
3.867	0.285	3.265	0.509	4.909
4.833	0.260	3.524	0.288	2.776
5.800	0.231	3.755	0.269	2.589
6.767	0.204	3.960	0.211	2.036
7.733	0.181	4.141	0.187	1.805
8.700	0.161	4.302	0.167	1.608
9.667	0.144	4.446	0.149	1.439
10.633	0.130	4.576	0.134	1.294
11.600	0.117	4.694	0.121	1.171
12.567	0.107	4.800	0.110	1.064
13.533	0.097	4.898	0.101	0.972
14.500	0.089	4.987	0.093	0.891
15.467	0.082	5.070	0.085	0.821
16.433	0.076	5.146	0.079	0.760
17.400	0.071	5.217	0.073	0.706
18.367	0.066	5.283	0.068	0.659
19.333	0.062	5.345	0.064	0.617
20.300	0.058	5.403	0.060	0.579
21.267	0.055	5.458	0.057	0.546
22.233	0.052	5.510	0.054	0.517
23.200	0.049	5.559	0.051	0.490
24.167	0.047	5.606	0.048	0.467

Publication 584 Intensity Calculation

**Rational Formula Hydrograph
Publication 584 Intensity Calculation**

50 Year Storm at Post Bypass to 72in Pipe
 Time of Concentration: 58 min.
 Drainage Area: 16.3300 acres.
 Weighted 'C' Factor: 0.5900
 Map X Coordinate=9375
 Map Y Coordinate=3750



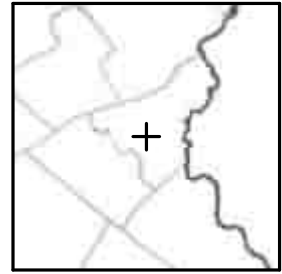
Project Location

Time (min)	Incr. (inches)	Total (inches)	Rainfall Intensity (in/hr)	Flow (cfs)
0.000	0.000	0.000	0.000	0.000
0.967	2.499	2.499	0.267	2.574
1.933	0.576	3.074	0.353	3.404
2.900	0.342	3.416	2.585	24.904
3.867	0.319	3.735	0.595	5.736
4.833	0.287	4.022	0.330	3.183
5.800	0.258	4.280	0.297	2.860
6.767	0.233	4.514	0.241	2.326
7.733	0.212	4.725	0.219	2.110
8.700	0.193	4.918	0.199	1.921
9.667	0.176	5.094	0.182	1.754
10.633	0.161	5.255	0.167	1.606
11.600	0.148	5.403	0.153	1.474
12.567	0.136	5.539	0.141	1.354
13.533	0.125	5.664	0.129	1.247
14.500	0.115	5.779	0.119	1.149
15.467	0.106	5.885	0.110	1.059
16.433	0.098	5.983	0.101	0.977
17.400	0.091	6.074	0.094	0.902
18.367	0.084	6.158	0.086	0.833
19.333	0.077	6.235	0.080	0.769
20.300	0.071	6.306	0.074	0.710
21.267	0.066	6.372	0.068	0.655
22.233	0.061	6.432	0.063	0.604
23.200	0.056	6.488	0.058	0.556
24.167	0.051	6.539	0.053	0.512

Publication 584 Intensity Calculation

**Rational Formula Hydrograph
Publication 584 Intensity Calculation**

100 Year Storm at Post Bypass to 72in Pipe
 Time of Concentration: 58 min.
 Drainage Area: 16.3300 acres.
 Weighted 'C' Factor: 0.5900
 Map X Coordinate=9375
 Map Y Coordinate=3750



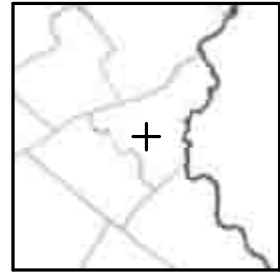
Project Location

Time (min)	Incr. (inches)	Rainfall Total (inches)	Rainfall Intensity (in/hr)	Flow (cfs)
0.000	0.000	0.000	0.000	0.000
0.967	2.771	2.771	0.284	2.741
1.933	0.773	3.544	0.415	3.996
2.900	0.401	3.944	2.867	27.618
3.867	0.323	4.267	0.799	7.700
4.833	0.293	4.561	0.334	3.216
5.800	0.275	4.835	0.304	2.925
6.767	0.260	5.095	0.269	2.588
7.733	0.245	5.341	0.254	2.446
8.700	0.232	5.572	0.240	2.308
9.667	0.218	5.790	0.226	2.173
10.633	0.205	5.995	0.212	2.040
11.600	0.192	6.186	0.198	1.910
12.567	0.179	6.365	0.185	1.782
13.533	0.166	6.532	0.172	1.658
14.500	0.154	6.686	0.160	1.537
15.467	0.142	6.828	0.147	1.420
16.433	0.131	6.959	0.136	1.306
17.400	0.120	7.079	0.124	1.196
18.367	0.109	7.189	0.113	1.091
19.333	0.099	7.288	0.103	0.989
20.300	0.089	7.377	0.092	0.891
21.267	0.080	7.457	0.083	0.797
22.233	0.071	7.528	0.073	0.706
23.200	0.062	7.590	0.064	0.620
24.167	0.054	7.644	0.056	0.537

Publication 584 Intensity Calculation

**Rational Formula Hydrograph
Publication 584 Intensity Calculation**

2 Year Storm at Post Bypass (West)
 Time of Concentration: 58 min.
 Drainage Area: 19.2500 acres.
 Weighted 'C' Factor: 0.5300
 Map X Coordinate=9375
 Map Y Coordinate=3750



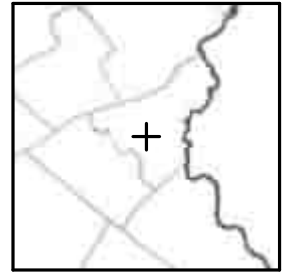
Project Location

Time (min)	Rainfall Incr. (inches)	Rainfall Total (inches)	Rainfall Intensity (in/hr)	Flow (cfs)
0.000	0.000	0.000	0.000	0.000
0.967	1.312	1.312	0.127	1.300
1.933	0.248	1.560	0.156	1.591
2.900	0.144	1.704	1.358	13.850
3.867	0.151	1.855	0.256	2.615
4.833	0.138	1.993	0.149	1.519
5.800	0.123	2.116	0.143	1.458
6.767	0.109	2.225	0.113	1.154
7.733	0.097	2.323	0.101	1.028
8.700	0.087	2.410	0.090	0.920
9.667	0.078	2.488	0.081	0.828
10.633	0.071	2.559	0.074	0.750
11.600	0.065	2.624	0.067	0.684
12.567	0.059	2.684	0.061	0.627
13.533	0.055	2.739	0.057	0.579
14.500	0.051	2.789	0.053	0.537
15.467	0.047	2.837	0.049	0.500
16.433	0.044	2.881	0.046	0.468
17.400	0.042	2.923	0.043	0.441
18.367	0.039	2.962	0.041	0.416
19.333	0.037	3.000	0.039	0.395
20.300	0.036	3.035	0.037	0.376
21.267	0.034	3.069	0.035	0.360
22.233	0.033	3.102	0.034	0.345
23.200	0.031	3.134	0.033	0.332
24.167	0.030	3.164	0.031	0.321

Publication 584 Intensity Calculation

**Rational Formula Hydrograph
Publication 584 Intensity Calculation**

10 Year Storm at Post Bypass (West)
Time of Concentration: 58 min.
Drainage Area: 19.2500 acres.
Weighted 'C' Factor: 0.5300
Map X Coordinate=9375
Map Y Coordinate=3750



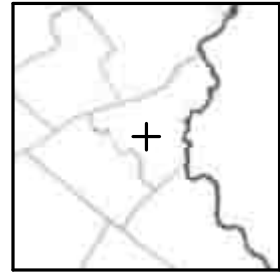
Project Location

Time (min)	Rainfall Incr. (inches)	Rainfall Total (inches)	Rainfall Intensity (in/hr)	Flow (cfs)
0.000	0.000	0.000	0.000	0.000
0.967	1.883	1.883	0.191	1.951
1.933	0.384	2.267	0.241	2.463
2.900	0.219	2.485	1.948	19.874
3.867	0.233	2.718	0.397	4.048
4.833	0.211	2.930	0.226	2.307
5.800	0.185	3.114	0.218	2.229
6.767	0.161	3.275	0.166	1.698
7.733	0.141	3.416	0.145	1.483
8.700	0.124	3.539	0.128	1.304
9.667	0.109	3.649	0.113	1.156
10.633	0.098	3.747	0.101	1.033
11.600	0.088	3.835	0.091	0.932
12.567	0.080	3.915	0.083	0.847
13.533	0.074	3.989	0.076	0.777
14.500	0.068	4.057	0.070	0.719
15.467	0.063	4.120	0.066	0.670
16.433	0.060	4.180	0.062	0.629
17.400	0.056	4.236	0.058	0.595
18.367	0.054	4.290	0.055	0.566
19.333	0.051	4.341	0.053	0.542
20.300	0.049	4.391	0.051	0.522
21.267	0.048	4.439	0.050	0.506
22.233	0.047	4.485	0.048	0.492
23.200	0.046	4.531	0.047	0.481
24.167	0.045	4.576	0.046	0.472

Publication 584 Intensity Calculation

**Rational Formula Hydrograph
Publication 584 Intensity Calculation**

25 Year Storm at Post Bypass (West)
 Time of Concentration: 58 min.
 Drainage Area: 19.2500 acres.
 Weighted 'C' Factor: 0.6100
 Map X Coordinate=9375
 Map Y Coordinate=3750



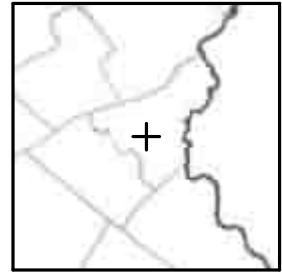
Project Location

Time (min)	Incr. (inches)	Rainfall Total (inches)	Rainfall Intensity (in/hr)	Flow (cfs)
0.000	0.000	0.000	0.000	0.000
0.967	2.209	2.209	0.239	2.804
1.933	0.492	2.701	0.295	3.463
2.900	0.279	2.980	2.285	26.829
3.867	0.285	3.265	0.509	5.982
4.833	0.260	3.524	0.288	3.384
5.800	0.231	3.755	0.269	3.155
6.767	0.204	3.960	0.211	2.481
7.733	0.181	4.141	0.187	2.200
8.700	0.161	4.302	0.167	1.959
9.667	0.144	4.446	0.149	1.754
10.633	0.130	4.576	0.134	1.578
11.600	0.117	4.694	0.121	1.427
12.567	0.107	4.800	0.110	1.297
13.533	0.097	4.898	0.101	1.184
14.500	0.089	4.987	0.093	1.086
15.467	0.082	5.070	0.085	1.001
16.433	0.076	5.146	0.079	0.926
17.400	0.071	5.217	0.073	0.861
18.367	0.066	5.283	0.068	0.803
19.333	0.062	5.345	0.064	0.752
20.300	0.058	5.403	0.060	0.706
21.267	0.055	5.458	0.057	0.666
22.233	0.052	5.510	0.054	0.630
23.200	0.049	5.559	0.051	0.598
24.167	0.047	5.606	0.048	0.569

Publication 584 Intensity Calculation

**Rational Formula Hydrograph
Publication 584 Intensity Calculation**

50 Year Storm at Post Bypass (West)
 Time of Concentration: 58 min.
 Drainage Area: 19.2500 acres.
 Weighted 'C' Factor: 0.6100
 Map X Coordinate=9375
 Map Y Coordinate=3750



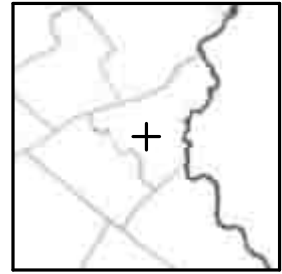
Project Location

Time (min)	Incr. (inches)	Total (inches)	Rainfall Intensity (in/hr)	Flow (cfs)
0.000	0.000	0.000	0.000	0.000
0.967	2.499	2.499	0.267	3.137
1.933	0.576	3.074	0.353	4.149
2.900	0.342	3.416	2.585	30.352
3.867	0.319	3.735	0.595	6.991
4.833	0.287	4.022	0.330	3.879
5.800	0.258	4.280	0.297	3.486
6.767	0.233	4.514	0.241	2.834
7.733	0.212	4.725	0.219	2.571
8.700	0.193	4.918	0.199	2.341
9.667	0.176	5.094	0.182	2.138
10.633	0.161	5.255	0.167	1.957
11.600	0.148	5.403	0.153	1.796
12.567	0.136	5.539	0.141	1.651
13.533	0.125	5.664	0.129	1.519
14.500	0.115	5.779	0.119	1.400
15.467	0.106	5.885	0.110	1.291
16.433	0.098	5.983	0.101	1.191
17.400	0.091	6.074	0.094	1.100
18.367	0.084	6.158	0.086	1.015
19.333	0.077	6.235	0.080	0.937
20.300	0.071	6.306	0.074	0.865
21.267	0.066	6.372	0.068	0.798
22.233	0.061	6.432	0.063	0.736
23.200	0.056	6.488	0.058	0.678
24.167	0.051	6.539	0.053	0.624

Publication 584 Intensity Calculation

**Rational Formula Hydrograph
Publication 584 Intensity Calculation**

100 Year Storm at Post Bypass (West)
 Time of Concentration: 58 min.
 Drainage Area: 19.2500 acres.
 Weighted 'C' Factor: 0.6100
 Map X Coordinate=9375
 Map Y Coordinate=3750



Project Location

Time (min)	Incr. (inches)	Rainfall Total (inches)	Rainfall Intensity (in/hr)	Flow (cfs)
0.000	0.000	0.000	0.000	0.000
0.967	2.771	2.771	0.284	3.340
1.933	0.773	3.544	0.415	4.870
2.900	0.401	3.944	2.867	33.660
3.867	0.323	4.267	0.799	9.384
4.833	0.293	4.561	0.334	3.919
5.800	0.275	4.835	0.304	3.565
6.767	0.260	5.095	0.269	3.154
7.733	0.245	5.341	0.254	2.981
8.700	0.232	5.572	0.240	2.813
9.667	0.218	5.790	0.226	2.648
10.633	0.205	5.995	0.212	2.486
11.600	0.192	6.186	0.198	2.328
12.567	0.179	6.365	0.185	2.172
13.533	0.166	6.532	0.172	2.021
14.500	0.154	6.686	0.160	1.873
15.467	0.142	6.828	0.147	1.730
16.433	0.131	6.959	0.136	1.592
17.400	0.120	7.079	0.124	1.458
18.367	0.109	7.189	0.113	1.329
19.333	0.099	7.288	0.103	1.205
20.300	0.089	7.377	0.092	1.085
21.267	0.080	7.457	0.083	0.971
22.233	0.071	7.528	0.073	0.861
23.200	0.062	7.590	0.064	0.756
24.167	0.054	7.644	0.056	0.655

Publication 584 Intensity Calculation

UGD EAST ROUTING

Proposed Underground Beds.030719

Prepared by Maser Consulting PA

HydroCAD® 10.00-20 s/n 08841 © 2017 HydroCAD Software Solutions LLC

Rainfall not specified

Printed 3/11/2019

Pond 2P: Eastern Underground Bed - Chamber Wizard Field A

Chamber Model = ADS N-12 24" (ADS N-12® Pipe)

Inside= 23.8"W x 23.8"H => 3.10 sf x 20.00'L = 62.0 cf

Outside= 28.0"W x 28.0"H => 3.92 sf x 20.00'L = 78.4 cf

28.0" Wide + 13.4" Spacing = 41.4" C-C Row Spacing

20 Chambers/Row x 20.00' Long = 400.00' Row Length +12.0" End Stone x 2 = 402.00' Base Length

29 Rows x 28.0" Wide + 13.4" Spacing x 28 + 12.0" Side Stone x 2 = 100.93' Base Width

6.0" Base + 28.0" Chamber Height + 6.0" Cover = 3.33' Field Height

580 Chambers x 62.0 cf = 35,960.0 cf Chamber Storage

580 Chambers x 78.4 cf = 45,487.2 cf Displacement

135,254.6 cf Field - 45,487.2 cf Chambers = 89,767.4 cf Stone x 40.0% Voids = 35,907.0 cf Stone Storage

Chamber Storage + Stone Storage = 71,867.0 cf = 1.650 af

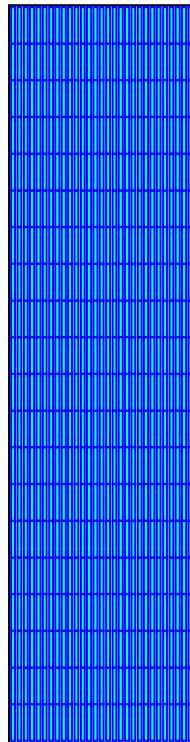
Overall Storage Efficiency = 53.1%

Overall System Size = 402.00' x 100.93' x 3.33'

580 Chambers

5,009.4 cy Field

3,324.7 cy Stone



Proposed Underground Beds.030719

Prepared by Maser Consulting PA

HydroCAD® 10.00-20 s/n 08841 © 2017 HydroCAD Software Solutions LLC

Rainfall not specified

Printed 3/11/2019

Stage-Area-Storage for Pond 2P: Eastern Underground Bed

Elevation (feet)	Storage (acre-feet)	Elevation (feet)	Storage (acre-feet)
417.80	0.000	420.40	1.391
417.85	0.019	420.45	1.410
417.90	0.037	420.50	1.423
417.95	0.056	420.55	1.437
418.00	0.075	420.60	1.452
418.05	0.093	420.65	1.470
418.10	0.112	420.70	1.488
418.15	0.130	420.75	1.507
418.20	0.149	420.80	1.526
418.25	0.168	420.85	1.544
418.30	0.186	420.90	1.563
418.35	0.203	420.95	1.582
418.40	0.217	421.00	1.600
418.45	0.231	421.05	1.619
418.50	0.246	421.10	1.637
418.55	0.266		
418.60	0.289		
418.65	0.314		
418.70	0.340		
418.75	0.367		
418.80	0.396		
418.85	0.425		
418.90	0.455		
418.95	0.486		
419.00	0.517		
419.05	0.549		
419.10	0.581		
419.15	0.614		
419.20	0.646		
419.25	0.680		
419.30	0.713		
419.35	0.746		
419.40	0.780		
419.45	0.814		
419.50	0.847		
419.55	0.881		
419.60	0.915		
419.65	0.948		
419.70	0.981		
419.75	1.014		
419.80	1.047		
419.85	1.080		
419.90	1.112		
419.95	1.143		
420.00	1.174		
420.05	1.205		
420.10	1.235		
420.15	1.264		
420.20	1.292		
420.25	1.319		
420.30	1.345		
420.35	1.369		

Basin Storage/Elevation Input

Elevation (ft)	Storage (acre-ft)
417.80	0.0000
418.30	0.1860
418.80	0.3960
419.30	0.7130
419.80	1.0470
420.30	1.3450
420.80	1.5260
421.10	1.6370

Project Files:

Outlet Structure Configuration: R:\Projects\2018\18000145B\Reports\Stormwater Management\2003xx\Working Files\Peak Rate Calculations\POST

Discharge/Elevation Curve: R:\Projects\2018\18000145B\Reports\Stormwater Management\2003xx\Working Files\Peak Rate Calculations\POSTIE

Outlet Structure Configuration

Stage 1: Rectangular Orifice

Invert Elevation = 417.8 feet

Width = 1.8 feet

Height = 1.25 feet

Discharge Coefficient = 0.6

Stage 2: Rectangular Weir

Crest Elevation = 420.75 feet

Length = 4 feet

Discharge Coefficient = 3.1

Basin Rating Curve

Basin Water Elevation	Basin Outflow (cfs)	Riser Box Water Elevation	Tailwater Elevation (ft)	Outfall Culvert Control	Outfall Culvert Override?
417.80	0.00	N/A	N/A	N/A	N/A
417.90	0.18	N/A	N/A	N/A	N/A
418.00	0.50	N/A	N/A	N/A	N/A
418.10	0.92	N/A	N/A	N/A	N/A
418.20	1.42	N/A	N/A	N/A	N/A
418.30	1.98	N/A	N/A	N/A	N/A
418.40	2.61	N/A	N/A	N/A	N/A
418.50	3.28	N/A	N/A	N/A	N/A
418.60	4.01	N/A	N/A	N/A	N/A
418.70	4.79	N/A	N/A	N/A	N/A
418.80	5.61	N/A	N/A	N/A	N/A
418.90	6.47	N/A	N/A	N/A	N/A
419.00	7.37	N/A	N/A	N/A	N/A
419.10	8.90	N/A	N/A	N/A	N/A
419.20	9.54	N/A	N/A	N/A	N/A
419.30	10.13	N/A	N/A	N/A	N/A
419.40	10.70	N/A	N/A	N/A	N/A
419.50	11.23	N/A	N/A	N/A	N/A
419.60	11.74	N/A	N/A	N/A	N/A
419.70	12.23	N/A	N/A	N/A	N/A
419.80	12.70	N/A	N/A	N/A	N/A
419.90	13.16	N/A	N/A	N/A	N/A
420.00	13.60	N/A	N/A	N/A	N/A
420.10	14.02	N/A	N/A	N/A	N/A
420.20	14.43	N/A	N/A	N/A	N/A
420.30	14.83	N/A	N/A	N/A	N/A
420.40	15.23	N/A	N/A	N/A	N/A
420.50	15.61	N/A	N/A	N/A	N/A
420.60	15.98	N/A	N/A	N/A	N/A
420.70	16.34	N/A	N/A	N/A	N/A
420.80	16.85	N/A	N/A	N/A	N/A
420.90	17.79	N/A	N/A	N/A	N/A
421.00	18.97	N/A	N/A	N/A	N/A
421.10	20.32	N/A	N/A	N/A	N/A

**Modified Puls Routing
Summary of Results**

Inflow Hydrograph: R:\Projects\2018\18000145B\Reports\Stormwater Management\2003xx\Working Files\Peak Rate Calculations\POST\Eastern UGD\Eastern UGD
Storage/Elevation Curve: R:\Projects\2018\18000145B\Reports\Stormwater Management\2003xx\Working Files\Peak Rate Calculations\POST\Eastern UGD\Eastern

Basin Bypass Capacity = 0.00 cfs
Starting Pool Elevation = 417.80 feet
Time Interval = 0.242 hours
Total number of Inflow points = 102

	Event Time (hours)	Hydrograph Inflow (cfs)	Basin Inflow (cfs)	Storage Used (acre-ft)	Elevation Above MSL (feet)	Basin Outflow (cfs)	Outflow Total (cfs)
Start	0.00	0.00	0.00	0.0000	417.80	0.00	0.00
Max. Inflow	2.90	12.43	12.43	0.4338	418.86	6.12	6.12
Max. Outflow	3.38	7.39	7.39	0.5446	419.03	7.69	7.69
Final	24.41	0.00	0.00	0.0504	417.94	0.28	0.28

Modified Puls Routing

Inflow Hydrograph: R:\Projects\2018\18000145B\Reports\Stormwater Management\2003xx\Working Files\Peak Rate Calculations\POST\Eastern UGD\Eastern UGD
 Storage/Elevation Curve: R:\Projects\2018\18000145B\Reports\Stormwater Management\2003xx\Working Files\Peak Rate Calculations\POST\Eastern UGD\Eastern UGD

Basin Bypass Capacity = 0.00 cfs
 Starting Pool Elevation = 417.80 feet
 Time Interval = 0.242 hours

Event Time (hours)	Hydrograph Inflow (cfs)	Basin Inflow (cfs)	Storage Used (acre-ft)	Elevation Above MSL (feet)	Basin Outflow (cfs)	Outflow Total (cfs)
0.00	0.00	0.00	0.0000	417.80	0.00	0.00
0.24	0.29	0.29	0.0029	417.81	0.01	0.01
0.48	0.58	0.58	0.0113	417.83	0.03	0.03
0.73	0.88	0.88	0.0246	417.87	0.10	0.10
0.97	1.17	1.17	0.0419	417.91	0.21	0.21
1.21	1.23	1.23	0.0601	417.96	0.36	0.36
1.45	1.30	1.30	0.0765	418.01	0.52	0.52
1.69	1.36	1.36	0.0910	418.04	0.68	0.68
1.93	1.43	1.43	0.1039	418.08	0.83	0.83
2.18	4.18	4.18	0.1388	418.17	1.28	1.28
2.42	6.93	6.93	0.2132	418.36	2.38	2.38
2.66	9.68	9.68	0.3147	418.61	4.06	4.06
2.90	12.43	12.43	0.4338	418.86	6.12	6.12
3.14	9.91	9.91	0.5222	419.00	7.36	7.36
3.38	7.39	7.39	0.5446	419.03	7.69	7.69
3.63	4.87	4.87	0.5173	418.99	7.29	7.29
3.87	2.35	2.35	0.4528	418.89	6.38	6.38
4.11	2.10	2.10	0.3806	418.76	5.30	5.30
4.35	1.85	1.85	0.3248	418.63	4.24	4.24
4.59	1.61	1.61	0.2821	418.53	3.49	3.49
4.83	1.36	1.36	0.2478	418.45	2.92	2.92
5.08	1.35	1.35	0.2208	418.38	2.50	2.50
5.32	1.34	1.34	0.2008	418.34	2.20	2.20
5.56	1.32	1.32	0.1857	418.30	1.98	1.98
5.80	1.31	1.31	0.1742	418.27	1.80	1.80
6.04	1.24	1.24	0.1652	418.24	1.66	1.66
6.28	1.17	1.17	0.1573	418.22	1.54	1.54
6.53	1.10	1.10	0.1503	418.20	1.44	1.44
6.77	1.04	1.04	0.1438	418.19	1.35	1.35
7.01	1.01	1.01	0.1381	418.17	1.27	1.27
7.25	0.98	0.98	0.1333	418.16	1.20	1.20
7.49	0.95	0.95	0.1291	418.15	1.15	1.15
7.73	0.92	0.92	0.1254	418.14	1.10	1.10
7.98	0.90	0.90	0.1221	418.13	1.05	1.05
8.22	0.87	0.87	0.1191	418.12	1.02	1.02
8.46	0.85	0.85	0.1164	418.11	0.98	0.98
8.70	0.82	0.82	0.1138	418.11	0.95	0.95
8.94	0.80	0.80	0.1114	418.10	0.92	0.92
9.18	0.78	0.78	0.1092	418.09	0.89	0.89
9.43	0.76	0.76	0.1071	418.09	0.87	0.87
9.67	0.74	0.74	0.1051	418.08	0.84	0.84
9.91	0.73	0.73	0.1032	418.08	0.82	0.82
10.15	0.71	0.71	0.1013	418.07	0.80	0.80
10.39	0.69	0.69	0.0996	418.07	0.78	0.78
10.63	0.67	0.67	0.0979	418.06	0.76	0.76
10.88	0.66	0.66	0.0962	418.06	0.74	0.74
11.12	0.64	0.64	0.0947	418.05	0.72	0.72
11.36	0.63	0.63	0.0932	418.05	0.70	0.70
11.60	0.61	0.61	0.0917	418.05	0.69	0.69
11.84	0.60	0.60	0.0903	418.04	0.67	0.67
12.08	0.59	0.59	0.0889	418.04	0.66	0.66
12.33	0.58	0.58	0.0876	418.04	0.64	0.64

Event Time (hours)	Hydrograph Inflow (cfs)	Basin Inflow (cfs)	Storage Used (acre-ft)	Elevation Above MSL (feet)	Basin Outflow (cfs)	Outflow Total (cfs)
12.57	0.56	0.56	0.0863	418.03	0.63	0.63
12.81	0.55	0.55	0.0851	418.03	0.61	0.61
13.05	0.54	0.54	0.0839	418.03	0.60	0.60
13.29	0.53	0.53	0.0827	418.02	0.59	0.59
13.53	0.52	0.52	0.0815	418.02	0.58	0.58
13.78	0.51	0.51	0.0804	418.02	0.56	0.56
14.02	0.50	0.50	0.0794	418.01	0.55	0.55
14.26	0.49	0.49	0.0783	418.01	0.54	0.54
14.50	0.48	0.48	0.0773	418.01	0.53	0.53
14.74	0.47	0.47	0.0763	418.01	0.52	0.52
14.98	0.46	0.46	0.0754	418.00	0.51	0.51
15.23	0.46	0.46	0.0744	418.00	0.50	0.50
15.47	0.45	0.45	0.0735	418.00	0.49	0.49
15.71	0.44	0.44	0.0727	418.00	0.48	0.48
15.95	0.43	0.43	0.0718	417.99	0.48	0.48
16.19	0.43	0.43	0.0710	417.99	0.47	0.47
16.43	0.42	0.42	0.0702	417.99	0.46	0.46
16.68	0.41	0.41	0.0695	417.99	0.45	0.45
16.92	0.41	0.41	0.0687	417.98	0.45	0.45
17.16	0.40	0.40	0.0680	417.98	0.44	0.44
17.40	0.40	0.40	0.0672	417.98	0.43	0.43
17.64	0.39	0.39	0.0665	417.98	0.42	0.42
17.88	0.38	0.38	0.0659	417.98	0.42	0.42
18.13	0.38	0.38	0.0652	417.98	0.41	0.41
18.37	0.37	0.37	0.0646	417.97	0.41	0.41
18.61	0.37	0.37	0.0640	417.97	0.40	0.40
18.85	0.36	0.36	0.0634	417.97	0.39	0.39
19.09	0.36	0.36	0.0628	417.97	0.39	0.39
19.33	0.36	0.36	0.0622	417.97	0.38	0.38
19.58	0.35	0.35	0.0616	417.97	0.38	0.38
19.82	0.35	0.35	0.0611	417.96	0.37	0.37
20.06	0.34	0.34	0.0606	417.96	0.37	0.37
20.30	0.34	0.34	0.0601	417.96	0.36	0.36
20.54	0.33	0.33	0.0595	417.96	0.36	0.36
20.78	0.33	0.33	0.0591	417.96	0.36	0.36
21.03	0.33	0.33	0.0586	417.96	0.35	0.35
21.27	0.32	0.32	0.0581	417.96	0.35	0.35
21.51	0.32	0.32	0.0577	417.96	0.34	0.34
21.75	0.32	0.32	0.0572	417.95	0.34	0.34
21.99	0.31	0.31	0.0568	417.95	0.34	0.34
22.23	0.31	0.31	0.0564	417.95	0.33	0.33
22.48	0.31	0.31	0.0559	417.95	0.33	0.33
22.72	0.30	0.30	0.0555	417.95	0.32	0.32
22.96	0.30	0.30	0.0552	417.95	0.32	0.32
23.20	0.30	0.30	0.0548	417.95	0.32	0.32
23.44	0.30	0.30	0.0544	417.95	0.31	0.31
23.68	0.29	0.29	0.0540	417.95	0.31	0.31
23.93	0.29	0.29	0.0537	417.94	0.31	0.31
24.17	0.29	0.29	0.0534	417.94	0.31	0.31
24.41	0.00	0.00	0.0504	417.94	0.28	0.28

**Modified Puls Routing
Summary of Results**

Inflow Hydrograph: R:\Projects\2018\18000145B\Reports\Stormwater Management\2003xx\Working Files\Peak Rate Calculations\POST\Eastern UGD\Eastern UGD
Storage/Elevation Curve: R:\Projects\2018\18000145B\Reports\Stormwater Management\2003xx\Working Files\Peak Rate Calculations\POST\Eastern UGD\Eastern

Basin Bypass Capacity = 0.00 cfs
Starting Pool Elevation = 417.80 feet
Time Interval = 0.242 hours
Total number of Inflow points = 102

	Event Time (hours)	Hydrograph Inflow (cfs)	Basin Inflow (cfs)	Storage Used (acre-ft)	Elevation Above MSL (feet)	Basin Outflow (cfs)	Outflow Total (cfs)
Start	0.00	0.00	0.00	0.0000	417.80	0.00	0.00
Max. Inflow	2.90	17.83	17.83	0.6029	419.13	9.07	9.07
Max. Outflow	3.38	10.73	10.73	0.7714	419.39	10.63	10.63
Final	24.41	0.00	0.00	0.0637	417.97	0.40	0.40

Modified Puls Routing

Inflow Hydrograph: R:\Projects\2018\18000145B\Reports\Stormwater Management\2003xx\Working Files\Peak Rate Calculations\POST\Eastern UGD\Eastern UGD
 Storage/Elevation Curve: R:\Projects\2018\18000145B\Reports\Stormwater Management\2003xx\Working Files\Peak Rate Calculations\POST\Eastern UGD\Eastern UGD

Basin Bypass Capacity = 0.00 cfs
 Starting Pool Elevation = 417.80 feet
 Time Interval = 0.242 hours

Event Time (hours)	Hydrograph Inflow (cfs)	Basin Inflow (cfs)	Storage Used (acre-ft)	Elevation Above MSL (feet)	Basin Outflow (cfs)	Outflow Total (cfs)
0.00	0.00	0.00	0.0000	417.80	0.00	0.00
0.24	0.44	0.44	0.0043	417.81	0.01	0.01
0.48	0.88	0.88	0.0168	417.85	0.05	0.05
0.73	1.31	1.31	0.0364	417.90	0.17	0.17
0.97	1.75	1.75	0.0615	417.97	0.38	0.38
1.21	1.87	1.87	0.0875	418.04	0.64	0.64
1.45	1.98	1.98	0.1104	418.10	0.91	0.91
1.69	2.10	2.10	0.1304	418.15	1.16	1.16
1.93	2.21	2.21	0.1478	418.20	1.40	1.40
2.18	6.12	6.12	0.1957	418.32	2.12	2.12
2.42	10.02	10.02	0.2981	418.57	3.77	3.77
2.66	13.93	13.93	0.4380	418.87	6.17	6.17
2.90	17.83	17.83	0.6029	419.13	9.07	9.07
3.14	14.28	14.28	0.7303	419.33	10.28	10.28
3.38	10.73	10.73	0.7714	419.39	10.63	10.63
3.63	7.18	7.18	0.7406	419.34	10.37	10.37
3.87	3.63	3.63	0.6498	419.20	9.54	9.54
4.11	3.24	3.24	0.5461	419.04	7.71	7.71
4.35	2.85	2.85	0.4646	418.91	6.54	6.54
4.59	2.46	2.46	0.3963	418.80	5.61	5.61
4.83	2.07	2.07	0.3402	418.67	4.53	4.53
5.08	2.05	2.05	0.2985	418.57	3.77	3.77
5.32	2.04	2.04	0.2690	418.50	3.27	3.27
5.56	2.02	2.02	0.2477	418.45	2.92	2.92
5.80	2.00	2.00	0.2320	418.41	2.67	2.67
6.04	1.88	1.88	0.2194	418.38	2.47	2.47
6.28	1.76	1.76	0.2081	418.35	2.30	2.30
6.53	1.64	1.64	0.1976	418.33	2.15	2.15
6.77	1.52	1.52	0.1877	418.30	2.01	2.01
7.01	1.48	1.48	0.1789	418.28	1.87	1.87
7.25	1.43	1.43	0.1717	418.26	1.76	1.76
7.49	1.38	1.38	0.1655	418.25	1.66	1.66
7.73	1.33	1.33	0.1602	418.23	1.58	1.58
7.98	1.29	1.29	0.1554	418.22	1.51	1.51
8.22	1.25	1.25	0.1512	418.21	1.45	1.45
8.46	1.21	1.21	0.1473	418.20	1.40	1.40
8.70	1.17	1.17	0.1436	418.19	1.35	1.35
8.94	1.14	1.14	0.1403	418.18	1.30	1.30
9.18	1.10	1.10	0.1371	418.17	1.26	1.26
9.43	1.07	1.07	0.1342	418.16	1.21	1.21
9.67	1.04	1.04	0.1314	418.15	1.18	1.18
9.91	1.01	1.01	0.1287	418.15	1.14	1.14
10.15	0.98	0.98	0.1261	418.14	1.11	1.11
10.39	0.95	0.95	0.1237	418.13	1.07	1.07
10.63	0.93	0.93	0.1213	418.13	1.04	1.04
10.88	0.90	0.90	0.1190	418.12	1.01	1.01
11.12	0.88	0.88	0.1169	418.11	0.99	0.99
11.36	0.86	0.86	0.1148	418.11	0.96	0.96
11.60	0.84	0.84	0.1128	418.10	0.94	0.94
11.84	0.82	0.82	0.1108	418.10	0.91	0.91
12.08	0.80	0.80	0.1089	418.09	0.89	0.89
12.33	0.78	0.78	0.1072	418.09	0.87	0.87

Event Time (hours)	Hydrograph Inflow (cfs)	Basin Inflow (cfs)	Storage Used (acre-ft)	Elevation Above MSL (feet)	Basin Outflow (cfs)	Outflow Total (cfs)
12.57	0.76	0.76	0.1054	418.08	0.85	0.85
12.81	0.74	0.74	0.1037	418.08	0.83	0.83
13.05	0.73	0.73	0.1021	418.07	0.81	0.81
13.29	0.71	0.71	0.1006	418.07	0.79	0.79
13.53	0.70	0.70	0.0991	418.07	0.77	0.77
13.78	0.68	0.68	0.0976	418.06	0.75	0.75
14.02	0.67	0.67	0.0963	418.06	0.74	0.74
14.26	0.66	0.66	0.0949	418.06	0.72	0.72
14.50	0.64	0.64	0.0936	418.05	0.71	0.71
14.74	0.63	0.63	0.0924	418.05	0.69	0.69
14.98	0.62	0.62	0.0912	418.05	0.68	0.68
15.23	0.61	0.61	0.0901	418.04	0.67	0.67
15.47	0.60	0.60	0.0890	418.04	0.66	0.66
15.71	0.59	0.59	0.0879	418.04	0.64	0.64
15.95	0.58	0.58	0.0869	418.03	0.63	0.63
16.19	0.57	0.57	0.0859	418.03	0.62	0.62
16.43	0.56	0.56	0.0849	418.03	0.61	0.61
16.68	0.56	0.56	0.0840	418.03	0.60	0.60
16.92	0.55	0.55	0.0831	418.02	0.59	0.59
17.16	0.54	0.54	0.0823	418.02	0.58	0.58
17.40	0.53	0.53	0.0814	418.02	0.57	0.57
17.64	0.53	0.53	0.0806	418.02	0.57	0.57
17.88	0.52	0.52	0.0799	418.01	0.56	0.56
18.13	0.51	0.51	0.0792	418.01	0.55	0.55
18.37	0.51	0.51	0.0784	418.01	0.54	0.54
18.61	0.50	0.50	0.0778	418.01	0.54	0.54
18.85	0.50	0.50	0.0771	418.01	0.53	0.53
19.09	0.49	0.49	0.0765	418.01	0.52	0.52
19.33	0.49	0.49	0.0758	418.00	0.52	0.52
19.58	0.48	0.48	0.0753	418.00	0.51	0.51
19.82	0.48	0.48	0.0747	418.00	0.50	0.50
20.06	0.47	0.47	0.0741	418.00	0.50	0.50
20.30	0.47	0.47	0.0736	418.00	0.49	0.49
20.54	0.46	0.46	0.0731	418.00	0.49	0.49
20.78	0.46	0.46	0.0727	418.00	0.48	0.48
21.03	0.46	0.46	0.0722	417.99	0.48	0.48
21.27	0.45	0.45	0.0718	417.99	0.48	0.48
21.51	0.45	0.45	0.0714	417.99	0.47	0.47
21.75	0.45	0.45	0.0710	417.99	0.47	0.47
21.99	0.44	0.44	0.0706	417.99	0.46	0.46
22.23	0.44	0.44	0.0702	417.99	0.46	0.46
22.48	0.44	0.44	0.0699	417.99	0.46	0.46
22.72	0.44	0.44	0.0695	417.99	0.45	0.45
22.96	0.43	0.43	0.0692	417.99	0.45	0.45
23.20	0.43	0.43	0.0689	417.99	0.45	0.45
23.44	0.43	0.43	0.0686	417.98	0.44	0.44
23.68	0.43	0.43	0.0683	417.98	0.44	0.44
23.93	0.43	0.43	0.0680	417.98	0.44	0.44
24.17	0.42	0.42	0.0678	417.98	0.44	0.44
24.41	0.00	0.00	0.0637	417.97	0.40	0.40

**Modified Puls Routing
Summary of Results**

Inflow Hydrograph: R:\Projects\2018\18000145B\Reports\Stormwater Management\2003xx\Working Files\Peak Rate Calculations\POST\Eastern UGD\Eastern UGD
Storage/Elevation Curve: R:\Projects\2018\18000145B\Reports\Stormwater Management\2003xx\Working Files\Peak Rate Calculations\POST\Eastern UGD\Eastern

Basin Bypass Capacity = 0.00 cfs
Starting Pool Elevation = 417.80 feet
Time Interval = 0.242 hours
Total number of Inflow points = 102

	Event Time (hours)	Hydrograph Inflow (cfs)	Basin Inflow (cfs)	Storage Used (acre-ft)	Elevation Above MSL (feet)	Basin Outflow (cfs)	Outflow Total (cfs)
Start	0.00	0.00	0.00	0.0000	417.80	0.00	0.00
Max. Inflow	2.90	23.63	23.63	0.7898	419.41	10.78	10.78
Max. Outflow	3.38	14.45	14.45	1.0691	419.84	12.87	12.87
Final	24.41	0.00	0.00	0.0724	417.99	0.48	0.48

Modified Puls Routing

Inflow Hydrograph: R:\Projects\2018\18000145B\Reports\Stormwater Management\2003xx\Working Files\Peak Rate Calculations\POST\Eastern UGD\Eastern UGD
 Storage/Elevation Curve: R:\Projects\2018\18000145B\Reports\Stormwater Management\2003xx\Working Files\Peak Rate Calculations\POST\Eastern UGD\Eastern UGD

Basin Bypass Capacity = 0.00 cfs
 Starting Pool Elevation = 417.80 feet
 Time Interval = 0.242 hours

Event Time (hours)	Hydrograph Inflow (cfs)	Basin Inflow (cfs)	Storage Used (acre-ft)	Elevation Above MSL (feet)	Basin Outflow (cfs)	Outflow Total (cfs)
0.00	0.00	0.00	0.0000	417.80	0.00	0.00
0.24	0.62	0.62	0.0060	417.82	0.01	0.01
0.48	1.24	1.24	0.0235	417.86	0.09	0.09
0.73	1.85	1.85	0.0507	417.94	0.28	0.28
0.97	2.47	2.47	0.0849	418.03	0.61	0.61
1.21	2.62	2.62	0.1194	418.12	1.02	1.02
1.45	2.76	2.76	0.1487	418.20	1.42	1.42
1.69	2.91	2.91	0.1733	418.27	1.78	1.78
1.93	3.05	3.05	0.1940	418.32	2.10	2.10
2.18	8.20	8.20	0.2551	418.46	3.04	3.04
2.42	13.34	13.34	0.3858	418.78	5.41	5.41
2.66	18.49	18.49	0.5632	419.06	8.66	8.66
2.90	23.63	23.63	0.7898	419.41	10.78	10.78
3.14	19.04	19.04	0.9857	419.71	12.27	12.27
3.38	14.45	14.45	1.0691	419.84	12.87	12.87
3.63	9.86	9.86	1.0558	419.81	12.77	12.77
3.87	5.27	5.27	0.9588	419.67	12.08	12.08
4.11	4.70	4.70	0.8270	419.47	11.08	11.08
4.35	4.13	4.13	0.7041	419.29	10.05	10.05
4.59	3.55	3.55	0.5910	419.11	8.95	8.95
4.83	2.98	2.98	0.4970	418.96	7.00	7.00
5.08	2.93	2.93	0.4261	418.85	6.01	6.01
5.32	2.88	2.88	0.3727	418.74	5.15	5.15
5.56	2.83	2.83	0.3342	418.65	4.42	4.42
5.80	2.78	2.78	0.3069	418.59	3.92	3.92
6.04	2.63	2.63	0.2863	418.54	3.56	3.56
6.28	2.48	2.48	0.2691	418.50	3.27	3.27
6.53	2.34	2.34	0.2544	418.46	3.03	3.03
6.77	2.19	2.19	0.2412	418.43	2.81	2.81
7.01	2.12	2.12	0.2298	418.40	2.64	2.64
7.25	2.06	2.06	0.2204	418.38	2.49	2.49
7.49	2.00	2.00	0.2125	418.36	2.37	2.37
7.73	1.94	1.94	0.2055	418.35	2.27	2.27
7.98	1.89	1.89	0.1993	418.33	2.17	2.17
8.22	1.83	1.83	0.1938	418.32	2.09	2.09
8.46	1.78	1.78	0.1888	418.31	2.02	2.02
8.70	1.73	1.73	0.1841	418.29	1.95	1.95
8.94	1.68	1.68	0.1798	418.28	1.88	1.88
9.18	1.64	1.64	0.1759	418.27	1.82	1.82
9.43	1.59	1.59	0.1722	418.26	1.77	1.77
9.67	1.55	1.55	0.1688	418.25	1.71	1.71
9.91	1.51	1.51	0.1655	418.24	1.66	1.66
10.15	1.47	1.47	0.1624	418.24	1.62	1.62
10.39	1.43	1.43	0.1595	418.23	1.57	1.57
10.63	1.39	1.39	0.1566	418.22	1.53	1.53
10.88	1.36	1.36	0.1538	418.21	1.49	1.49
11.12	1.32	1.32	0.1512	418.21	1.45	1.45
11.36	1.29	1.29	0.1487	418.20	1.42	1.42
11.60	1.26	1.26	0.1461	418.19	1.38	1.38
11.84	1.23	1.23	0.1437	418.19	1.35	1.35
12.08	1.20	1.20	0.1414	418.18	1.31	1.31
12.33	1.17	1.17	0.1391	418.17	1.28	1.28

Event Time (hours)	Hydrograph Inflow (cfs)	Basin Inflow (cfs)	Storage Used (acre-ft)	Elevation Above MSL (feet)	Basin Outflow (cfs)	Outflow Total (cfs)
12.57	1.14	1.14	0.1369	418.17	1.25	1.25
12.81	1.12	1.12	0.1348	418.16	1.22	1.22
13.05	1.09	1.09	0.1327	418.16	1.19	1.19
13.29	1.07	1.07	0.1307	418.15	1.17	1.17
13.53	1.04	1.04	0.1287	418.15	1.14	1.14
13.78	1.02	1.02	0.1268	418.14	1.12	1.12
14.02	1.00	1.00	0.1249	418.14	1.09	1.09
14.26	0.98	0.98	0.1231	418.13	1.07	1.07
14.50	0.96	0.96	0.1214	418.13	1.04	1.04
14.74	0.94	0.94	0.1196	418.12	1.02	1.02
14.98	0.92	0.92	0.1180	418.12	1.00	1.00
15.23	0.90	0.90	0.1164	418.11	0.98	0.98
15.47	0.88	0.88	0.1148	418.11	0.96	0.96
15.71	0.87	0.87	0.1132	418.10	0.94	0.94
15.95	0.85	0.85	0.1117	418.10	0.92	0.92
16.19	0.83	0.83	0.1103	418.10	0.91	0.91
16.43	0.82	0.82	0.1088	418.09	0.89	0.89
16.68	0.80	0.80	0.1074	418.09	0.87	0.87
16.92	0.79	0.79	0.1061	418.09	0.85	0.85
17.16	0.77	0.77	0.1047	418.08	0.84	0.84
17.40	0.76	0.76	0.1035	418.08	0.82	0.82
17.64	0.74	0.74	0.1022	418.07	0.81	0.81
17.88	0.73	0.73	0.1010	418.07	0.79	0.79
18.13	0.72	0.72	0.0998	418.07	0.78	0.78
18.37	0.71	0.71	0.0986	418.07	0.77	0.77
18.61	0.70	0.70	0.0974	418.06	0.75	0.75
18.85	0.68	0.68	0.0963	418.06	0.74	0.74
19.09	0.67	0.67	0.0952	418.06	0.73	0.73
19.33	0.66	0.66	0.0942	418.05	0.71	0.71
19.58	0.65	0.65	0.0932	418.05	0.70	0.70
19.82	0.64	0.64	0.0922	418.05	0.69	0.69
20.06	0.63	0.63	0.0912	418.05	0.68	0.68
20.30	0.62	0.62	0.0902	418.04	0.67	0.67
20.54	0.61	0.61	0.0893	418.04	0.66	0.66
20.78	0.60	0.60	0.0884	418.04	0.65	0.65
21.03	0.60	0.60	0.0875	418.04	0.64	0.64
21.27	0.59	0.59	0.0866	418.03	0.63	0.63
21.51	0.58	0.58	0.0858	418.03	0.62	0.62
21.75	0.57	0.57	0.0849	418.03	0.61	0.61
21.99	0.56	0.56	0.0841	418.03	0.60	0.60
22.23	0.55	0.55	0.0833	418.02	0.59	0.59
22.48	0.55	0.55	0.0825	418.02	0.59	0.59
22.72	0.54	0.54	0.0818	418.02	0.58	0.58
22.96	0.53	0.53	0.0810	418.02	0.57	0.57
23.20	0.53	0.53	0.0803	418.02	0.56	0.56
23.44	0.52	0.52	0.0796	418.01	0.56	0.56
23.68	0.51	0.51	0.0789	418.01	0.55	0.55
23.93	0.51	0.51	0.0782	418.01	0.54	0.54
24.17	0.50	0.50	0.0776	418.01	0.53	0.53
24.41	0.00	0.00	0.0724	417.99	0.48	0.48

**Modified Puls Routing
Summary of Results**

Inflow Hydrograph: R:\Projects\2018\18000145B\Reports\Stormwater Management\2003xx\Working Files\Peak Rate Calculations\POST\Eastern UGD\Eastern UGD
Storage/Elevation Curve: R:\Projects\2018\18000145B\Reports\Stormwater Management\2003xx\Working Files\Peak Rate Calculations\POST\Eastern UGD\Eastern

Basin Bypass Capacity = 0.00 cfs
Starting Pool Elevation = 417.80 feet
Time Interval = 0.242 hours
Total number of Inflow points = 102

	Event Time (hours)	Hydrograph Inflow (cfs)	Basin Inflow (cfs)	Storage Used (acre-ft)	Elevation Above MSL (feet)	Basin Outflow (cfs)	Outflow Total (cfs)
Start	0.00	0.00	0.00	0.0000	417.80	0.00	0.00
Max. Inflow	2.90	26.74	26.74	0.9075	419.59	11.70	11.70
Max. Outflow	3.38	16.45	16.45	1.2443	420.13	14.15	14.15
Final	24.41	0.00	0.00	0.0784	418.01	0.54	0.54

Modified Puls Routing

Inflow Hydrograph: R:\Projects\2018\18000145B\Reports\Stormwater Management\2003xx\Working Files\Peak Rate Calculations\POST\Eastern UGD\Eastern UGD
 Storage/Elevation Curve: R:\Projects\2018\18000145B\Reports\Stormwater Management\2003xx\Working Files\Peak Rate Calculations\POST\Eastern UGD\Eastern UGD

Basin Bypass Capacity = 0.00 cfs
 Starting Pool Elevation = 417.80 feet
 Time Interval = 0.242 hours

Event Time (hours)	Hydrograph Inflow (cfs)	Basin Inflow (cfs)	Storage Used (acre-ft)	Elevation Above MSL (feet)	Basin Outflow (cfs)	Outflow Total (cfs)
0.00	0.00	0.00	0.0000	417.80	0.00	0.00
0.24	0.69	0.69	0.0068	417.82	0.01	0.01
0.48	1.38	1.38	0.0263	417.87	0.11	0.11
0.73	2.07	2.07	0.0564	417.95	0.33	0.33
0.97	2.76	2.76	0.0942	418.05	0.72	0.72
1.21	2.99	2.99	0.1326	418.16	1.19	1.19
1.45	3.21	3.21	0.1659	418.25	1.67	1.67
1.69	3.43	3.43	0.1945	418.32	2.10	2.10
1.93	3.66	3.66	0.2195	418.38	2.48	2.48
2.18	9.43	9.43	0.2893	418.55	3.61	3.61
2.42	15.20	15.20	0.4375	418.87	6.17	6.17
2.66	20.97	20.97	0.6425	419.19	9.47	9.47
2.90	26.74	26.74	0.9075	419.59	11.70	11.70
3.14	21.59	21.59	1.1395	419.96	13.40	13.40
3.38	16.45	16.45	1.2443	420.13	14.15	14.15
3.63	11.30	11.30	1.2391	420.12	14.11	14.11
3.87	6.16	6.16	1.1388	419.95	13.40	13.40
4.11	5.47	5.47	0.9977	419.73	12.36	12.36
4.35	4.79	4.79	0.8633	419.53	11.36	11.36
4.59	4.10	4.10	0.7355	419.33	10.33	10.33
4.83	3.42	3.42	0.6156	419.15	9.20	9.20
5.08	3.33	3.33	0.5181	418.99	7.30	7.30
5.32	3.24	3.24	0.4478	418.88	6.31	6.31
5.56	3.16	3.16	0.3933	418.79	5.55	5.55
5.80	3.07	3.07	0.3525	418.70	4.76	4.76
6.04	2.93	2.93	0.3228	418.63	4.21	4.21
6.28	2.78	2.78	0.2999	418.57	3.80	3.80
6.53	2.64	2.64	0.2814	418.53	3.48	3.48
6.77	2.50	2.50	0.2659	418.49	3.22	3.22
7.01	2.44	2.44	0.2530	418.46	3.00	3.00
7.25	2.38	2.38	0.2428	418.44	2.84	2.84
7.49	2.32	2.32	0.2344	418.42	2.71	2.71
7.73	2.27	2.27	0.2273	418.40	2.60	2.60
7.98	2.21	2.21	0.2211	418.38	2.50	2.50
8.22	2.16	2.16	0.2157	418.37	2.42	2.42
8.46	2.11	2.11	0.2108	418.36	2.34	2.34
8.70	2.06	2.06	0.2064	418.35	2.28	2.28
8.94	2.02	2.02	0.2022	418.34	2.22	2.22
9.18	1.97	1.97	0.1983	418.33	2.16	2.16
9.43	1.93	1.93	0.1947	418.32	2.11	2.11
9.67	1.88	1.88	0.1911	418.31	2.06	2.06
9.91	1.84	1.84	0.1878	418.30	2.01	2.01
10.15	1.80	1.80	0.1845	418.30	1.96	1.96
10.39	1.76	1.76	0.1815	418.29	1.91	1.91
10.63	1.72	1.72	0.1786	418.28	1.87	1.87
10.88	1.69	1.69	0.1758	418.27	1.82	1.82
11.12	1.65	1.65	0.1732	418.27	1.78	1.78
11.36	1.62	1.62	0.1707	418.26	1.74	1.74
11.60	1.58	1.58	0.1682	418.25	1.70	1.70
11.84	1.55	1.55	0.1658	418.25	1.67	1.67
12.08	1.52	1.52	0.1634	418.24	1.63	1.63
12.33	1.49	1.49	0.1612	418.23	1.60	1.60

Event Time (hours)	Hydrograph Inflow (cfs)	Basin Inflow (cfs)	Storage Used (acre-ft)	Elevation Above MSL (feet)	Basin Outflow (cfs)	Outflow Total (cfs)
12.57	1.45	1.45	0.1589	418.23	1.57	1.57
12.81	1.43	1.43	0.1567	418.22	1.53	1.53
13.05	1.40	1.40	0.1546	418.22	1.50	1.50
13.29	1.37	1.37	0.1525	418.21	1.47	1.47
13.53	1.34	1.34	0.1504	418.20	1.44	1.44
13.78	1.31	1.31	0.1483	418.20	1.41	1.41
14.02	1.29	1.29	0.1464	418.19	1.38	1.38
14.26	1.26	1.26	0.1444	418.19	1.36	1.36
14.50	1.23	1.23	0.1425	418.18	1.33	1.33
14.74	1.21	1.21	0.1406	418.18	1.30	1.30
14.98	1.19	1.19	0.1387	418.17	1.28	1.28
15.23	1.16	1.16	0.1369	418.17	1.25	1.25
15.47	1.14	1.14	0.1351	418.16	1.23	1.23
15.71	1.12	1.12	0.1333	418.16	1.20	1.20
15.95	1.09	1.09	0.1316	418.15	1.18	1.18
16.19	1.07	1.07	0.1299	418.15	1.16	1.16
16.43	1.05	1.05	0.1281	418.14	1.13	1.13
16.68	1.03	1.03	0.1265	418.14	1.11	1.11
16.92	1.01	1.01	0.1248	418.14	1.09	1.09
17.16	0.99	0.99	0.1232	418.13	1.07	1.07
17.40	0.97	0.97	0.1216	418.13	1.05	1.05
17.64	0.95	0.95	0.1201	418.12	1.03	1.03
17.88	0.93	0.93	0.1185	418.12	1.01	1.01
18.13	0.91	0.91	0.1170	418.11	0.99	0.99
18.37	0.89	0.89	0.1155	418.11	0.97	0.97
18.61	0.88	0.88	0.1140	418.11	0.95	0.95
18.85	0.86	0.86	0.1125	418.10	0.93	0.93
19.09	0.84	0.84	0.1110	418.10	0.92	0.92
19.33	0.83	0.83	0.1096	418.09	0.90	0.90
19.58	0.81	0.81	0.1082	418.09	0.88	0.88
19.82	0.79	0.79	0.1068	418.09	0.86	0.86
20.06	0.78	0.78	0.1054	418.08	0.85	0.85
20.30	0.76	0.76	0.1041	418.08	0.83	0.83
20.54	0.75	0.75	0.1027	418.08	0.81	0.81
20.78	0.73	0.73	0.1014	418.07	0.80	0.80
21.03	0.72	0.72	0.1001	418.07	0.78	0.78
21.27	0.70	0.70	0.0988	418.07	0.77	0.77
21.51	0.69	0.69	0.0975	418.06	0.75	0.75
21.75	0.67	0.67	0.0962	418.06	0.74	0.74
21.99	0.66	0.66	0.0950	418.06	0.72	0.72
22.23	0.65	0.65	0.0937	418.05	0.71	0.71
22.48	0.63	0.63	0.0925	418.05	0.70	0.70
22.72	0.62	0.62	0.0913	418.05	0.68	0.68
22.96	0.61	0.61	0.0901	418.04	0.67	0.67
23.20	0.60	0.60	0.0890	418.04	0.66	0.66
23.44	0.58	0.58	0.0878	418.04	0.64	0.64
23.68	0.57	0.57	0.0866	418.03	0.63	0.63
23.93	0.56	0.56	0.0855	418.03	0.62	0.62
24.17	0.55	0.55	0.0844	418.03	0.61	0.61
24.41	0.00	0.00	0.0784	418.01	0.54	0.54

**Modified Puls Routing
Summary of Results**

Inflow Hydrograph: R:\Projects\2018\18000145B\Reports\Stormwater Management\2003xx\Working Files\Peak Rate Calculations\POST\Eastern UGD\Eastern UGD
Storage/Elevation Curve: R:\Projects\2018\18000145B\Reports\Stormwater Management\2003xx\Working Files\Peak Rate Calculations\POST\Eastern UGD\Eastern

Basin Bypass Capacity = 0.00 cfs
Starting Pool Elevation = 417.80 feet
Time Interval = 0.242 hours
Total number of Inflow points = 102

	Event Time (hours)	Hydrograph Inflow (cfs)	Basin Inflow (cfs)	Storage Used (acre-ft)	Elevation Above MSL (feet)	Basin Outflow (cfs)	Outflow Total (cfs)
Start	0.00	0.00	0.00	0.0000	417.80	0.00	0.00
Max. Inflow	2.90	29.65	29.65	1.0210	419.76	12.52	12.52
Max. Outflow	3.63	13.61	13.61	1.4332	420.54	15.77	15.77
Final	24.41	0.00	0.00	0.0837	418.03	0.60	0.60

Modified Puls Routing

Inflow Hydrograph: R:\Projects\2018\18000145B\Reports\Stormwater Management\2003xx\Working Files\Peak Rate Calculations\POST\Eastern UGD\Eastern UGD
Storage/Elevation Curve: R:\Projects\2018\18000145B\Reports\Stormwater Management\2003xx\Working Files\Peak Rate Calculations\POST\Eastern UGD\Eastern UGD

Basin Bypass Capacity = 0.00 cfs
Starting Pool Elevation = 417.80 feet
Time Interval = 0.242 hours

Event Time (hours)	Hydrograph Inflow (cfs)	Basin Inflow (cfs)	Storage Used (acre-ft)	Elevation Above MSL (feet)	Basin Outflow (cfs)	Outflow Total (cfs)
0.00	0.00	0.00	0.0000	417.80	0.00	0.00
0.24	0.74	0.74	0.0072	417.82	0.02	0.02
0.48	1.47	1.47	0.0279	417.88	0.12	0.12
0.73	2.21	2.21	0.0599	417.96	0.36	0.36
0.97	2.94	2.94	0.0999	418.07	0.78	0.78
1.21	3.28	3.28	0.1412	418.18	1.31	1.31
1.45	3.62	3.62	0.1784	418.28	1.86	1.86
1.69	3.95	3.95	0.2118	418.36	2.36	2.36
1.93	4.29	4.29	0.2423	418.43	2.83	2.83
2.18	10.63	10.63	0.3213	418.62	4.18	4.18
2.42	16.97	16.97	0.4867	418.94	6.85	6.85
2.66	23.31	23.31	0.7188	419.31	10.18	10.18
2.90	29.65	29.65	1.0210	419.76	12.52	12.52
3.14	24.31	24.31	1.2903	420.21	14.47	14.47
3.38	18.96	18.96	1.4216	420.51	15.65	15.65
3.63	13.61	13.61	1.4332	420.54	15.77	15.77
3.87	8.27	8.27	1.3459	420.30	14.85	14.85
4.11	7.06	7.06	1.2118	420.08	13.92	13.92
4.35	5.86	5.86	1.0729	419.84	12.90	12.90
4.59	4.66	4.66	0.9305	419.63	11.87	11.87
4.83	3.45	3.45	0.7857	419.41	10.75	10.75
5.08	3.37	3.37	0.6511	419.20	9.55	9.55
5.32	3.30	3.30	0.5454	419.04	7.70	7.70
5.56	3.22	3.22	0.4678	418.91	6.59	6.59
5.80	3.14	3.14	0.4079	418.82	5.77	5.77
6.04	3.05	3.05	0.3626	418.72	4.95	4.95
6.28	2.96	2.96	0.3299	418.64	4.34	4.34
6.53	2.87	2.87	0.3058	418.59	3.90	3.90
6.77	2.78	2.78	0.2875	418.54	3.58	3.58
7.01	2.74	2.74	0.2734	418.51	3.34	3.34
7.25	2.70	2.70	0.2628	418.48	3.17	3.17
7.49	2.66	2.66	0.2546	418.46	3.03	3.03
7.73	2.63	2.63	0.2479	418.45	2.92	2.92
7.98	2.59	2.59	0.2425	418.43	2.84	2.84
8.22	2.55	2.55	0.2380	418.42	2.76	2.76
8.46	2.52	2.52	0.2340	418.41	2.70	2.70
8.70	2.48	2.48	0.2305	418.41	2.65	2.65
8.94	2.44	2.44	0.2273	418.40	2.60	2.60
9.18	2.41	2.41	0.2243	418.39	2.55	2.55
9.43	2.37	2.37	0.2215	418.38	2.51	2.51
9.67	2.33	2.33	0.2188	418.38	2.47	2.47
9.91	2.30	2.30	0.2162	418.37	2.43	2.43
10.15	2.26	2.26	0.2137	418.37	2.39	2.39
10.39	2.23	2.23	0.2112	418.36	2.35	2.35
10.63	2.19	2.19	0.2087	418.35	2.31	2.31
10.88	2.16	2.16	0.2063	418.35	2.28	2.28
11.12	2.12	2.12	0.2038	418.34	2.24	2.24
11.36	2.09	2.09	0.2014	418.34	2.21	2.21
11.60	2.05	2.05	0.1990	418.33	2.17	2.17
11.84	2.02	2.02	0.1966	418.33	2.14	2.14
12.08	1.98	1.98	0.1942	418.32	2.10	2.10
12.33	1.95	1.95	0.1919	418.31	2.07	2.07

Event Time (hours)	Hydrograph Inflow (cfs)	Basin Inflow (cfs)	Storage Used (acre-ft)	Elevation Above MSL (feet)	Basin Outflow (cfs)	Outflow Total (cfs)
12.57	1.91	1.91	0.1895	418.31	2.03	2.03
12.81	1.88	1.88	0.1871	418.30	2.00	2.00
13.05	1.85	1.85	0.1848	418.30	1.96	1.96
13.29	1.81	1.81	0.1825	418.29	1.93	1.93
13.53	1.78	1.78	0.1802	418.28	1.89	1.89
13.78	1.75	1.75	0.1780	418.28	1.86	1.86
14.02	1.72	1.72	0.1759	418.27	1.82	1.82
14.26	1.68	1.68	0.1737	418.27	1.79	1.79
14.50	1.65	1.65	0.1716	418.26	1.76	1.76
14.74	1.62	1.62	0.1695	418.26	1.72	1.72
14.98	1.59	1.59	0.1674	418.25	1.69	1.69
15.23	1.56	1.56	0.1653	418.24	1.66	1.66
15.47	1.52	1.52	0.1632	418.24	1.63	1.63
15.71	1.49	1.49	0.1611	418.23	1.60	1.60
15.95	1.46	1.46	0.1590	418.23	1.57	1.57
16.19	1.43	1.43	0.1569	418.22	1.54	1.54
16.43	1.40	1.40	0.1548	418.22	1.51	1.51
16.68	1.37	1.37	0.1528	418.21	1.48	1.48
16.92	1.34	1.34	0.1507	418.21	1.45	1.45
17.16	1.31	1.31	0.1487	418.20	1.42	1.42
17.40	1.29	1.29	0.1466	418.19	1.39	1.39
17.64	1.26	1.26	0.1445	418.19	1.36	1.36
17.88	1.23	1.23	0.1425	418.18	1.33	1.33
18.13	1.20	1.20	0.1405	418.18	1.30	1.30
18.37	1.17	1.17	0.1384	418.17	1.27	1.27
18.61	1.14	1.14	0.1364	418.17	1.24	1.24
18.85	1.12	1.12	0.1344	418.16	1.22	1.22
19.09	1.09	1.09	0.1323	418.16	1.19	1.19
19.33	1.06	1.06	0.1303	418.15	1.16	1.16
19.58	1.04	1.04	0.1283	418.14	1.14	1.14
19.82	1.01	1.01	0.1263	418.14	1.11	1.11
20.06	0.98	0.98	0.1243	418.13	1.08	1.08
20.30	0.96	0.96	0.1222	418.13	1.06	1.06
20.54	0.93	0.93	0.1202	418.12	1.03	1.03
20.78	0.90	0.90	0.1183	418.12	1.01	1.01
21.03	0.88	0.88	0.1163	418.11	0.98	0.98
21.27	0.85	0.85	0.1143	418.11	0.95	0.95
21.51	0.83	0.83	0.1123	418.10	0.93	0.93
21.75	0.81	0.81	0.1103	418.10	0.91	0.91
21.99	0.78	0.78	0.1083	418.09	0.88	0.88
22.23	0.76	0.76	0.1063	418.09	0.86	0.86
22.48	0.73	0.73	0.1043	418.08	0.83	0.83
22.72	0.71	0.71	0.1024	418.08	0.81	0.81
22.96	0.69	0.69	0.1004	418.07	0.79	0.79
23.20	0.67	0.67	0.0985	418.06	0.76	0.76
23.44	0.64	0.64	0.0965	418.06	0.74	0.74
23.68	0.62	0.62	0.0946	418.05	0.72	0.72
23.93	0.60	0.60	0.0926	418.05	0.70	0.70
24.17	0.58	0.58	0.0907	418.04	0.67	0.67
24.41	0.00	0.00	0.0837	418.03	0.60	0.60

UGD WEST ROUTING

Proposed Underground Beds.030719

Prepared by Maser Consulting PA

HydroCAD® 10.00-20 s/n 08841 © 2017 HydroCAD Software Solutions LLC

Rainfall not specified

Printed 3/11/2019

Pond 1P: Western Underground Bed - Chamber Wizard Field A

Chamber Model = ADS N-12 36" (ADS N-12® Pipe)

Inside= 36.1"W x 36.1"H => 7.10 sf x 20.00'L = 142.0 cf

Outside= 42.0"W x 42.0"H => 8.86 sf x 20.00'L = 177.2 cf

42.0" Wide + 13.4" Spacing = 55.4" C-C Row Spacing

22 Chambers/Row x 20.00' Long = 440.00' Row Length +24.0" End Stone x 2 = 444.00' Base Length

24 Rows x 42.0" Wide + 13.4" Spacing x 23 + 24.0" Side Stone x 2 = 113.68' Base Width

6.0" Base + 42.0" Chamber Height + 6.0" Cover = 4.50' Field Height

528 Chambers x 142.0 cf = 74,975.9 cf Chamber Storage

528 Chambers x 177.2 cf = 93,572.3 cf Displacement

227,138.5 cf Field - 93,572.3 cf Chambers = 133,566.1 cf Stone x 40.0% Voids = 53,426.5 cf Stone Storage

Chamber Storage + Stone Storage = 128,402.4 cf = 2.948 af

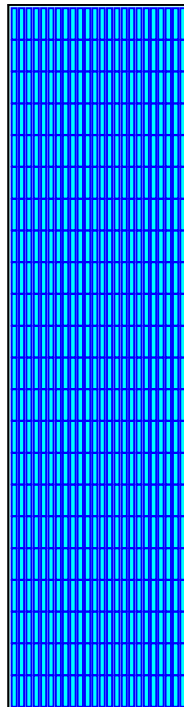
Overall Storage Efficiency = 56.5%

Overall System Size = 444.00' x 113.68' x 4.50'

528 Chambers

8,412.5 cy Field

4,946.9 cy Stone



Proposed Underground Beds.030719

Prepared by Maser Consulting PA

HydroCAD® 10.00-20 s/n 08841 © 2017 HydroCAD Software Solutions LLC

Rainfall not specified

Printed 3/11/2019

Stage-Area-Storage for Pond 1P: Western Underground Bed

Elevation (feet)	Storage (acre-feet)	Elevation (feet)	Storage (acre-feet)
405.75	0.000	408.35	1.780
405.80	0.023	408.40	1.823
405.85	0.046	408.45	1.866
405.90	0.070	408.50	1.909
405.95	0.093	408.55	1.951
406.00	0.116	408.60	1.994
406.05	0.139	408.65	2.035
406.10	0.162	408.70	2.077
406.15	0.185	408.75	2.117
406.20	0.209	408.80	2.158
406.25	0.232	408.85	2.198
406.30	0.252	408.90	2.237
406.35	0.271	408.95	2.276
406.40	0.289	409.00	2.314
406.45	0.305	409.05	2.351
406.50	0.320	409.10	2.387
406.55	0.342	409.15	2.422
406.60	0.368	409.20	2.457
406.65	0.396	409.25	2.490
406.70	0.426	409.30	2.522
406.75	0.458	409.35	2.552
406.80	0.491	409.40	2.580
406.85	0.525	409.45	2.606
406.90	0.561	409.50	2.627
406.95	0.597	409.55	2.643
407.00	0.634	409.60	2.659
407.05	0.672	409.65	2.677
407.10	0.711	409.70	2.695
407.15	0.750	409.75	2.716
407.20	0.790	409.80	2.739
407.25	0.830	409.85	2.762
407.30	0.871	409.90	2.785
407.35	0.912	409.95	2.809
407.40	0.954	410.00	2.832
407.45	0.996	410.05	2.855
407.50	1.039	410.10	2.878
407.55	1.081	410.15	2.901
407.60	1.124	410.20	2.925
407.65	1.168	410.25	2.948
407.70	1.211		
407.75	1.254		
407.80	1.298		
407.85	1.342		
407.90	1.386		
407.95	1.430		
408.00	1.474		
408.05	1.518		
408.10	1.562		
408.15	1.606		
408.20	1.650		
408.25	1.693		
408.30	1.737		

Basin Storage/Elevation Input

Elevation (ft)	Storage (acre-ft)
405.75	0.0000
406.25	0.2320
406.75	0.4580
407.25	0.8300
407.75	1.2540
408.25	1.6930
408.75	2.1170
409.25	2.4900
409.75	2.7160
410.25	2.9480

Project Files:

Outlet Structure Configuration: R:\Projects\2018\18000145B\Reports\Stormwater Management\2003xx\Working Files\Peak Rate Calculations\POS

Discharge/Elevation Curve: R:\Projects\2018\18000145B\Reports\Stormwater Management\2003xx\Working Files\Peak Rate Calculations\POSTW

Outlet Structure Configuration

Stage 1: Rectangular Orifice

Invert Elevation = 405.75 feet

Width = 0.5 feet

Height = 0.25 feet

Discharge Coefficient = 0.6

Stage 2: Rectangular Weir

Crest Elevation = 410.1 feet

Length = 4 feet

Discharge Coefficient = 3.1

Basin Rating Curve

Basin Water Elevation	Basin Outflow (cfs)	Riser Box Water Elevation	Tailwater Elevation (ft)	Outfall Culvert Control	Outfall Culvert Override?
405.75	0.00	N/A	N/A	N/A	N/A
405.85	0.05	N/A	N/A	N/A	N/A
405.95	0.14	N/A	N/A	N/A	N/A
406.05	0.25	N/A	N/A	N/A	N/A
406.15	0.32	N/A	N/A	N/A	N/A
406.25	0.37	N/A	N/A	N/A	N/A
406.35	0.41	N/A	N/A	N/A	N/A
406.45	0.46	N/A	N/A	N/A	N/A
406.55	0.49	N/A	N/A	N/A	N/A
406.65	0.53	N/A	N/A	N/A	N/A
406.75	0.56	N/A	N/A	N/A	N/A
406.85	0.59	N/A	N/A	N/A	N/A
406.95	0.62	N/A	N/A	N/A	N/A
407.05	0.65	N/A	N/A	N/A	N/A
407.15	0.68	N/A	N/A	N/A	N/A
407.25	0.71	N/A	N/A	N/A	N/A
407.35	0.73	N/A	N/A	N/A	N/A
407.45	0.76	N/A	N/A	N/A	N/A
407.55	0.78	N/A	N/A	N/A	N/A
407.65	0.80	N/A	N/A	N/A	N/A
407.75	0.82	N/A	N/A	N/A	N/A
407.85	0.85	N/A	N/A	N/A	N/A
407.95	0.87	N/A	N/A	N/A	N/A
408.05	0.89	N/A	N/A	N/A	N/A
408.15	0.91	N/A	N/A	N/A	N/A
408.25	0.93	N/A	N/A	N/A	N/A
408.35	0.95	N/A	N/A	N/A	N/A
408.45	0.97	N/A	N/A	N/A	N/A
408.55	0.98	N/A	N/A	N/A	N/A
408.65	1.00	N/A	N/A	N/A	N/A
408.75	1.02	N/A	N/A	N/A	N/A
408.85	1.04	N/A	N/A	N/A	N/A
408.95	1.06	N/A	N/A	N/A	N/A
409.05	1.07	N/A	N/A	N/A	N/A
409.15	1.09	N/A	N/A	N/A	N/A
409.25	1.11	N/A	N/A	N/A	N/A
409.35	1.12	N/A	N/A	N/A	N/A
409.45	1.14	N/A	N/A	N/A	N/A
409.55	1.15	N/A	N/A	N/A	N/A
409.65	1.17	N/A	N/A	N/A	N/A
409.75	1.18	N/A	N/A	N/A	N/A

Basin Water Elevation	Basin Outflow (cfs)	Riser Box Water Elevation	Tailwater Elevation (ft)	Outfall Culvert Control	Outfall Culvert Override?
409.85	1.20	N/A	N/A	N/A	N/A
409.95	1.21	N/A	N/A	N/A	N/A
410.05	1.23	N/A	N/A	N/A	N/A
410.15	1.40	N/A	N/A	N/A	N/A
410.25	2.00	N/A	N/A	N/A	N/A

**Modified Puls Routing
Summary of Results**

Inflow Hydrograph: R:\Projects\2018\18000145B\Reports\Stormwater Management\2003xx\Working Files\Peak Rate Calculations\POST\Western UGD\Western UG
Storage/Elevation Curve: R:\Projects\2018\18000145B\Reports\Stormwater Management\2003xx\Working Files\Peak Rate Calculations\POST\Western UGD\Western

Basin Bypass Capacity = 0.00 cfs
Starting Pool Elevation = 405.75 feet
Time Interval = 0.242 hours
Total number of Inflow points = 102

	Event Time (hours)	Hydrograph Inflow (cfs)	Basin Inflow (cfs)	Storage Used (acre-ft)	Elevation Above MSL (feet)	Basin Outflow (cfs)	Outflow Total (cfs)
Start	0.00	0.00	0.00	0.0000	405.75	0.00	0.00
Max. Inflow	2.90	9.16	9.16	0.4820	406.78	0.57	0.57
Max. Outflow	9.18	0.58	0.58	0.9305	407.37	0.74	0.74
Max. Elev.	7.49	0.70	0.70	0.9447	407.39	0.74	0.74
Final	24.41	0.00	0.00	0.5022	406.81	0.58	0.58

Modified Puls Routing

Inflow Hydrograph: R:\Projects\2018\18000145B\Reports\Stormwater Management\2003xx\Working Files\Peak Rate Calculations\POST\Western UGD\Western UGD
 Storage/Elevation Curve: R:\Projects\2018\18000145B\Reports\Stormwater Management\2003xx\Working Files\Peak Rate Calculations\POST\Western UGD\Western UGD

Basin Bypass Capacity = 0.00 cfs
 Starting Pool Elevation = 405.75 feet
 Time Interval = 0.242 hours

Event Time (hours)	Hydrograph Inflow (cfs)	Basin Inflow (cfs)	Storage Used (acre-ft)	Elevation Above MSL (feet)	Basin Outflow (cfs)	Outflow Total (cfs)
0.00	0.00	0.00	0.0000	405.75	0.00	0.00
0.24	0.22	0.22	0.0021	405.75	0.00	0.00
0.48	0.43	0.43	0.0085	405.77	0.00	0.00
0.73	0.65	0.65	0.0191	405.79	0.01	0.01
0.97	0.86	0.86	0.0337	405.82	0.03	0.03
1.21	0.91	0.91	0.0505	405.86	0.06	0.06
1.45	0.96	0.96	0.0676	405.90	0.09	0.09
1.69	1.00	1.00	0.0851	405.93	0.12	0.12
1.93	1.05	1.05	0.1028	405.97	0.17	0.17
2.18	3.08	3.08	0.1398	406.05	0.25	0.25
2.42	5.11	5.11	0.2155	406.21	0.35	0.35
2.66	7.13	7.13	0.3296	406.47	0.46	0.46
2.90	9.16	9.16	0.4820	406.78	0.57	0.57
3.14	7.30	7.30	0.6343	406.99	0.64	0.64
3.38	5.44	5.44	0.7485	407.14	0.68	0.68
3.63	3.59	3.59	0.8249	407.24	0.70	0.70
3.87	1.73	1.73	0.8638	407.29	0.72	0.72
4.11	1.55	1.55	0.8822	407.31	0.72	0.72
4.35	1.37	1.37	0.8969	407.33	0.73	0.73
4.59	1.19	1.19	0.9078	407.34	0.73	0.73
4.83	1.01	1.01	0.9151	407.35	0.73	0.73
5.08	1.00	1.00	0.9205	407.36	0.73	0.73
5.32	0.99	0.99	0.9256	407.36	0.73	0.73
5.56	0.97	0.97	0.9305	407.37	0.74	0.74
5.80	0.96	0.96	0.9352	407.37	0.74	0.74
6.04	0.91	0.91	0.9392	407.38	0.74	0.74
6.28	0.86	0.86	0.9422	407.38	0.74	0.74
6.53	0.81	0.81	0.9442	407.38	0.74	0.74
6.77	0.76	0.76	0.9452	407.39	0.74	0.74
7.01	0.74	0.74	0.9454	407.39	0.74	0.74
7.25	0.72	0.72	0.9453	407.39	0.74	0.74
7.49	0.70	0.70	0.9447	407.39	0.74	0.74
7.73	0.68	0.68	0.9437	407.38	0.74	0.74
7.98	0.66	0.66	0.9424	407.38	0.74	0.74
8.22	0.64	0.64	0.9407	407.38	0.74	0.74
8.46	0.63	0.63	0.9386	407.38	0.74	0.74
8.70	0.61	0.61	0.9362	407.38	0.74	0.74
8.94	0.59	0.59	0.9335	407.37	0.74	0.74
9.18	0.58	0.58	0.9305	407.37	0.74	0.74
9.43	0.56	0.56	0.9272	407.36	0.73	0.73
9.67	0.55	0.55	0.9236	407.36	0.73	0.73
9.91	0.54	0.54	0.9198	407.36	0.73	0.73
10.15	0.52	0.52	0.9157	407.35	0.73	0.73
10.39	0.51	0.51	0.9115	407.35	0.73	0.73
10.63	0.50	0.50	0.9069	407.34	0.73	0.73
10.88	0.49	0.49	0.9022	407.34	0.73	0.73
11.12	0.47	0.47	0.8973	407.33	0.73	0.73
11.36	0.46	0.46	0.8921	407.32	0.72	0.72
11.60	0.45	0.45	0.8868	407.32	0.72	0.72
11.84	0.44	0.44	0.8814	407.31	0.72	0.72
12.08	0.43	0.43	0.8757	407.30	0.72	0.72
12.33	0.42	0.42	0.8700	407.30	0.72	0.72

Event Time (hours)	Hydrograph Inflow (cfs)	Basin Inflow (cfs)	Storage Used (acre-ft)	Elevation Above MSL (feet)	Basin Outflow (cfs)	Outflow Total (cfs)
12.57	0.41	0.41	0.8640	407.29	0.72	0.72
12.81	0.41	0.41	0.8579	407.28	0.71	0.71
13.05	0.40	0.40	0.8518	407.28	0.71	0.71
13.29	0.39	0.39	0.8454	407.27	0.71	0.71
13.53	0.38	0.38	0.8390	407.26	0.71	0.71
13.78	0.38	0.38	0.8325	407.25	0.71	0.71
14.02	0.37	0.37	0.8258	407.24	0.70	0.70
14.26	0.36	0.36	0.8191	407.24	0.70	0.70
14.50	0.35	0.35	0.8122	407.23	0.70	0.70
14.74	0.35	0.35	0.8053	407.22	0.70	0.70
14.98	0.34	0.34	0.7983	407.21	0.69	0.69
15.23	0.34	0.34	0.7913	407.20	0.69	0.69
15.47	0.33	0.33	0.7841	407.19	0.69	0.69
15.71	0.33	0.33	0.7769	407.18	0.69	0.69
15.95	0.32	0.32	0.7697	407.17	0.68	0.68
16.19	0.31	0.31	0.7624	407.16	0.68	0.68
16.43	0.31	0.31	0.7550	407.15	0.68	0.68
16.68	0.31	0.31	0.7476	407.14	0.68	0.68
16.92	0.30	0.30	0.7402	407.13	0.67	0.67
17.16	0.30	0.30	0.7327	407.12	0.67	0.67
17.40	0.29	0.29	0.7252	407.11	0.67	0.67
17.64	0.29	0.29	0.7176	407.10	0.67	0.67
17.88	0.28	0.28	0.7101	407.09	0.66	0.66
18.13	0.28	0.28	0.7025	407.08	0.66	0.66
18.37	0.28	0.28	0.6948	407.07	0.66	0.66
18.61	0.27	0.27	0.6872	407.06	0.65	0.65
18.85	0.27	0.27	0.6795	407.05	0.65	0.65
19.09	0.27	0.27	0.6719	407.04	0.65	0.65
19.33	0.26	0.26	0.6642	407.03	0.65	0.65
19.58	0.26	0.26	0.6565	407.02	0.64	0.64
19.82	0.26	0.26	0.6488	407.01	0.64	0.64
20.06	0.25	0.25	0.6411	407.00	0.64	0.64
20.30	0.25	0.25	0.6334	406.99	0.63	0.63
20.54	0.25	0.25	0.6257	406.98	0.63	0.63
20.78	0.24	0.24	0.6180	406.97	0.63	0.63
21.03	0.24	0.24	0.6104	406.95	0.63	0.63
21.27	0.24	0.24	0.6027	406.94	0.62	0.62
21.51	0.24	0.24	0.5950	406.93	0.62	0.62
21.75	0.23	0.23	0.5874	406.92	0.62	0.62
21.99	0.23	0.23	0.5797	406.91	0.61	0.61
22.23	0.23	0.23	0.5721	406.90	0.61	0.61
22.48	0.23	0.23	0.5645	406.89	0.61	0.61
22.72	0.22	0.22	0.5569	406.88	0.60	0.60
22.96	0.22	0.22	0.5493	406.87	0.60	0.60
23.20	0.22	0.22	0.5417	406.86	0.60	0.60
23.44	0.22	0.22	0.5342	406.85	0.59	0.59
23.68	0.22	0.22	0.5267	406.84	0.59	0.59
23.93	0.21	0.21	0.5192	406.83	0.59	0.59
24.17	0.21	0.21	0.5117	406.82	0.59	0.59
24.41	0.00	0.00	0.5022	406.81	0.58	0.58

**Modified Puls Routing
Summary of Results**

Inflow Hydrograph: R:\Projects\2018\18000145B\Reports\Stormwater Management\2003xx\Working Files\Peak Rate Calculations\POST\Western UGD\Western UG
Storage/Elevation Curve: R:\Projects\2018\18000145B\Reports\Stormwater Management\2003xx\Working Files\Peak Rate Calculations\POST\Western UGD\Western

Basin Bypass Capacity = 0.00 cfs
Starting Pool Elevation = 405.75 feet
Time Interval = 0.242 hours
Total number of Inflow points = 102

	Event Time (hours)	Hydrograph Inflow (cfs)	Basin Inflow (cfs)	Storage Used (acre-ft)	Elevation Above MSL (feet)	Basin Outflow (cfs)	Outflow Total (cfs)
Start	0.00	0.00	0.00	0.0000	405.75	0.00	0.00
Max. Inflow	2.90	13.14	13.14	0.7071	407.08	0.66	0.66
Max. Outflow	10.39	0.70	0.70	1.4670	407.99	0.88	0.88
Max. Elev.	9.18	0.81	0.81	1.4791	408.01	0.88	0.88
Final	24.41	0.00	0.00	1.0058	407.46	0.76	0.76

Modified Puls Routing

Inflow Hydrograph: R:\Projects\2018\18000145B\Reports\Stormwater Management\2003xx\Working Files\Peak Rate Calculations\POST\Western UGD\Western UGD
 Storage/Elevation Curve: R:\Projects\2018\18000145B\Reports\Stormwater Management\2003xx\Working Files\Peak Rate Calculations\POST\Western UGD\Western UGD

Basin Bypass Capacity = 0.00 cfs
 Starting Pool Elevation = 405.75 feet
 Time Interval = 0.242 hours

Event Time (hours)	Hydrograph Inflow (cfs)	Basin Inflow (cfs)	Storage Used (acre-ft)	Elevation Above MSL (feet)	Basin Outflow (cfs)	Outflow Total (cfs)
0.00	0.00	0.00	0.0000	405.75	0.00	0.00
0.24	0.32	0.32	0.0032	405.76	0.00	0.00
0.48	0.65	0.65	0.0128	405.78	0.01	0.01
0.73	0.97	0.97	0.0286	405.81	0.02	0.02
0.97	1.29	1.29	0.0503	405.86	0.06	0.06
1.21	1.38	1.38	0.0754	405.91	0.10	0.10
1.45	1.46	1.46	0.1010	405.97	0.16	0.16
1.69	1.54	1.54	0.1271	406.02	0.23	0.23
1.93	1.63	1.63	0.1538	406.08	0.27	0.27
2.18	4.51	4.51	0.2089	406.20	0.34	0.34
2.42	7.39	7.39	0.3197	406.44	0.45	0.45
2.66	10.27	10.27	0.4857	406.79	0.58	0.58
2.90	13.14	13.14	0.7071	407.08	0.66	0.66
3.14	10.53	10.53	0.9295	407.37	0.74	0.74
3.38	7.91	7.91	1.0985	407.57	0.78	0.78
3.63	5.29	5.29	1.2144	407.70	0.81	0.81
3.87	2.68	2.68	1.2776	407.78	0.83	0.83
4.11	2.39	2.39	1.3115	407.82	0.84	0.84
4.35	2.10	2.10	1.3395	407.85	0.85	0.85
4.59	1.81	1.81	1.3617	407.87	0.85	0.85
4.83	1.53	1.53	1.3780	407.89	0.85	0.85
5.08	1.51	1.51	1.3913	407.91	0.86	0.86
5.32	1.50	1.50	1.4042	407.92	0.86	0.86
5.56	1.49	1.49	1.4168	407.94	0.86	0.86
5.80	1.47	1.47	1.4291	407.95	0.87	0.87
6.04	1.39	1.39	1.4403	407.96	0.87	0.87
6.28	1.30	1.30	1.4497	407.97	0.87	0.87
6.53	1.21	1.21	1.4574	407.98	0.87	0.87
6.77	1.12	1.12	1.4632	407.99	0.87	0.87
7.01	1.09	1.09	1.4678	407.99	0.88	0.88
7.25	1.05	1.05	1.4717	408.00	0.88	0.88
7.49	1.02	1.02	1.4748	408.00	0.88	0.88
7.73	0.98	0.98	1.4773	408.00	0.88	0.88
7.98	0.95	0.95	1.4790	408.01	0.88	0.88
8.22	0.92	0.92	1.4802	408.01	0.88	0.88
8.46	0.89	0.89	1.4808	408.01	0.88	0.88
8.70	0.86	0.86	1.4807	408.01	0.88	0.88
8.94	0.84	0.84	1.4802	408.01	0.88	0.88
9.18	0.81	0.81	1.4791	408.01	0.88	0.88
9.43	0.79	0.79	1.4776	408.00	0.88	0.88
9.67	0.76	0.76	1.4755	408.00	0.88	0.88
9.91	0.74	0.74	1.4731	408.00	0.88	0.88
10.15	0.72	0.72	1.4702	408.00	0.88	0.88
10.39	0.70	0.70	1.4670	407.99	0.88	0.88
10.63	0.68	0.68	1.4633	407.99	0.87	0.87
10.88	0.67	0.67	1.4594	407.98	0.87	0.87
11.12	0.65	0.65	1.4551	407.98	0.87	0.87
11.36	0.63	0.63	1.4504	407.97	0.87	0.87
11.60	0.62	0.62	1.4455	407.97	0.87	0.87
11.84	0.60	0.60	1.4403	407.96	0.87	0.87
12.08	0.59	0.59	1.4348	407.96	0.87	0.87
12.33	0.57	0.57	1.4291	407.95	0.87	0.87

Event Time (hours)	Hydrograph Inflow (cfs)	Basin Inflow (cfs)	Storage Used (acre-ft)	Elevation Above MSL (feet)	Basin Outflow (cfs)	Outflow Total (cfs)
12.57	0.56	0.56	1.4231	407.94	0.87	0.87
12.81	0.55	0.55	1.4169	407.94	0.86	0.86
13.05	0.54	0.54	1.4105	407.93	0.86	0.86
13.29	0.53	0.53	1.4039	407.92	0.86	0.86
13.53	0.51	0.51	1.3971	407.91	0.86	0.86
13.78	0.50	0.50	1.3902	407.91	0.86	0.86
14.02	0.49	0.49	1.3830	407.90	0.86	0.86
14.26	0.48	0.48	1.3758	407.89	0.85	0.85
14.50	0.47	0.47	1.3683	407.88	0.85	0.85
14.74	0.47	0.47	1.3607	407.87	0.85	0.85
14.98	0.46	0.46	1.3530	407.86	0.85	0.85
15.23	0.45	0.45	1.3452	407.85	0.85	0.85
15.47	0.44	0.44	1.3372	407.84	0.84	0.84
15.71	0.44	0.44	1.3291	407.84	0.84	0.84
15.95	0.43	0.43	1.3209	407.83	0.84	0.84
16.19	0.42	0.42	1.3127	407.82	0.84	0.84
16.43	0.42	0.42	1.3043	407.81	0.84	0.84
16.68	0.41	0.41	1.2959	407.80	0.83	0.83
16.92	0.40	0.40	1.2874	407.79	0.83	0.83
17.16	0.40	0.40	1.2788	407.78	0.83	0.83
17.40	0.39	0.39	1.2702	407.77	0.83	0.83
17.64	0.39	0.39	1.2614	407.76	0.83	0.83
17.88	0.38	0.38	1.2527	407.75	0.82	0.82
18.13	0.38	0.38	1.2439	407.74	0.82	0.82
18.37	0.37	0.37	1.2350	407.73	0.82	0.82
18.61	0.37	0.37	1.2261	407.72	0.82	0.82
18.85	0.37	0.37	1.2171	407.71	0.81	0.81
19.09	0.36	0.36	1.2082	407.70	0.81	0.81
19.33	0.36	0.36	1.1992	407.69	0.81	0.81
19.58	0.36	0.36	1.1901	407.67	0.81	0.81
19.82	0.35	0.35	1.1811	407.66	0.80	0.80
20.06	0.35	0.35	1.1720	407.65	0.80	0.80
20.30	0.35	0.35	1.1629	407.64	0.80	0.80
20.54	0.34	0.34	1.1538	407.63	0.80	0.80
20.78	0.34	0.34	1.1447	407.62	0.80	0.80
21.03	0.34	0.34	1.1356	407.61	0.79	0.79
21.27	0.33	0.33	1.1265	407.60	0.79	0.79
21.51	0.33	0.33	1.1174	407.59	0.79	0.79
21.75	0.33	0.33	1.1083	407.58	0.79	0.79
21.99	0.33	0.33	1.0992	407.57	0.78	0.78
22.23	0.33	0.33	1.0901	407.56	0.78	0.78
22.48	0.32	0.32	1.0810	407.55	0.78	0.78
22.72	0.32	0.32	1.0719	407.54	0.78	0.78
22.96	0.32	0.32	1.0629	407.52	0.77	0.77
23.20	0.32	0.32	1.0538	407.51	0.77	0.77
23.44	0.32	0.32	1.0448	407.50	0.77	0.77
23.68	0.32	0.32	1.0358	407.49	0.77	0.77
23.93	0.31	0.31	1.0268	407.48	0.76	0.76
24.17	0.31	0.31	1.0179	407.47	0.76	0.76
24.41	0.00	0.00	1.0058	407.46	0.76	0.76

**Modified Puls Routing
Summary of Results**

Inflow Hydrograph: R:\Projects\2018\18000145B\Reports\Stormwater Management\2003xx\Working Files\Peak Rate Calculations\POST\Western UGD\Western UG
Storage/Elevation Curve: R:\Projects\2018\18000145B\Reports\Stormwater Management\2003xx\Working Files\Peak Rate Calculations\POST\Western UGD\Western

Basin Bypass Capacity = 0.00 cfs
Starting Pool Elevation = 405.75 feet
Time Interval = 0.242 hours
Total number of Inflow points = 102

	Event Time (hours)	Hydrograph Inflow (cfs)	Basin Inflow (cfs)	Storage Used (acre-ft)	Elevation Above MSL (feet)	Basin Outflow (cfs)	Outflow Total (cfs)
Start	0.00	0.00	0.00	0.0000	405.75	0.00	0.00
Max. Inflow	2.90	17.32	17.32	0.9509	407.39	0.74	0.74
Max. Outflow	13.78	0.75	0.75	2.0943	408.72	1.02	1.02
Max. Elev.	11.60	0.92	0.92	2.1284	408.77	1.02	1.02
Final	24.41	0.00	0.00	1.6842	408.24	0.93	0.93

Modified Puls Routing

Inflow Hydrograph: R:\Projects\2018\18000145B\Reports\Stormwater Management\2003xx\Working Files\Peak Rate Calculations\POST\Western UGD\Western UGD
 Storage/Elevation Curve: R:\Projects\2018\18000145B\Reports\Stormwater Management\2003xx\Working Files\Peak Rate Calculations\POST\Western UGD\Western UGD

Basin Bypass Capacity = 0.00 cfs
 Starting Pool Elevation = 405.75 feet
 Time Interval = 0.242 hours

Event Time (hours)	Hydrograph Inflow (cfs)	Basin Inflow (cfs)	Storage Used (acre-ft)	Elevation Above MSL (feet)	Basin Outflow (cfs)	Outflow Total (cfs)
0.00	0.00	0.00	0.0000	405.75	0.00	0.00
0.24	0.45	0.45	0.0045	405.76	0.00	0.00
0.48	0.91	0.91	0.0179	405.79	0.01	0.01
0.73	1.36	1.36	0.0400	405.84	0.04	0.04
0.97	1.81	1.81	0.0703	405.90	0.09	0.09
1.21	1.92	1.92	0.1049	405.98	0.17	0.17
1.45	2.02	2.02	0.1400	406.05	0.25	0.25
1.69	2.13	2.13	0.1759	406.13	0.30	0.30
1.93	2.24	2.24	0.2130	406.21	0.35	0.35
2.18	6.01	6.01	0.2876	406.37	0.42	0.42
2.42	9.78	9.78	0.4355	406.70	0.55	0.55
2.66	13.55	13.55	0.6565	407.02	0.64	0.64
2.90	17.32	17.32	0.9509	407.39	0.74	0.74
3.14	13.95	13.95	1.2476	407.74	0.82	0.82
3.38	10.59	10.59	1.4758	408.00	0.88	0.88
3.63	7.23	7.23	1.6358	408.18	0.91	0.91
3.87	3.86	3.86	1.7280	408.29	0.94	0.94
4.11	3.44	3.44	1.7822	408.36	0.95	0.95
4.35	3.02	3.02	1.8277	408.41	0.96	0.96
4.59	2.60	2.60	1.8647	408.45	0.97	0.97
4.83	2.18	2.18	1.8931	408.49	0.97	0.97
5.08	2.15	2.15	1.9169	408.51	0.98	0.98
5.32	2.11	2.11	1.9398	408.54	0.98	0.98
5.56	2.07	2.07	1.9619	408.57	0.99	0.99
5.80	2.04	2.04	1.9832	408.59	0.99	0.99
6.04	1.93	1.93	2.0030	408.62	1.00	1.00
6.28	1.82	1.82	2.0205	408.64	1.00	1.00
6.53	1.71	1.71	2.0357	408.65	1.00	1.00
6.77	1.60	1.60	2.0487	408.67	1.01	1.01
7.01	1.56	1.56	2.0601	408.68	1.01	1.01
7.25	1.51	1.51	2.0706	408.70	1.01	1.01
7.49	1.47	1.47	2.0801	408.71	1.01	1.01
7.73	1.42	1.42	2.0887	408.72	1.01	1.01
7.98	1.38	1.38	2.0964	408.73	1.02	1.02
8.22	1.34	1.34	2.1032	408.73	1.02	1.02
8.46	1.30	1.30	2.1093	408.74	1.02	1.02
8.70	1.27	1.27	2.1146	408.75	1.02	1.02
8.94	1.23	1.23	2.1192	408.75	1.02	1.02
9.18	1.20	1.20	2.1230	408.76	1.02	1.02
9.43	1.17	1.17	2.1262	408.76	1.02	1.02
9.67	1.13	1.13	2.1287	408.77	1.02	1.02
9.91	1.10	1.10	2.1306	408.77	1.02	1.02
10.15	1.08	1.08	2.1319	408.77	1.02	1.02
10.39	1.05	1.05	2.1326	408.77	1.02	1.02
10.63	1.02	1.02	2.1328	408.77	1.02	1.02
10.88	0.99	0.99	2.1324	408.77	1.02	1.02
11.12	0.97	0.97	2.1316	408.77	1.02	1.02
11.36	0.94	0.94	2.1302	408.77	1.02	1.02
11.60	0.92	0.92	2.1284	408.77	1.02	1.02
11.84	0.90	0.90	2.1262	408.76	1.02	1.02
12.08	0.88	0.88	2.1235	408.76	1.02	1.02
12.33	0.86	0.86	2.1205	408.75	1.02	1.02

Event Time (hours)	Hydrograph Inflow (cfs)	Basin Inflow (cfs)	Storage Used (acre-ft)	Elevation Above MSL (feet)	Basin Outflow (cfs)	Outflow Total (cfs)
12.57	0.84	0.84	2.1170	408.75	1.02	1.02
12.81	0.82	0.82	2.1132	408.75	1.02	1.02
13.05	0.80	0.80	2.1090	408.74	1.02	1.02
13.29	0.78	0.78	2.1044	408.74	1.02	1.02
13.53	0.76	0.76	2.0995	408.73	1.02	1.02
13.78	0.75	0.75	2.0943	408.72	1.02	1.02
14.02	0.73	0.73	2.0889	408.72	1.01	1.01
14.26	0.72	0.72	2.0831	408.71	1.01	1.01
14.50	0.70	0.70	2.0770	408.70	1.01	1.01
14.74	0.69	0.69	2.0707	408.70	1.01	1.01
14.98	0.67	0.67	2.0641	408.69	1.01	1.01
15.23	0.66	0.66	2.0572	408.68	1.01	1.01
15.47	0.65	0.65	2.0502	408.67	1.01	1.01
15.71	0.63	0.63	2.0429	408.66	1.00	1.00
15.95	0.62	0.62	2.0354	408.65	1.00	1.00
16.19	0.61	0.61	2.0276	408.64	1.00	1.00
16.43	0.60	0.60	2.0197	408.64	1.00	1.00
16.68	0.59	0.59	2.0116	408.63	1.00	1.00
16.92	0.58	0.58	2.0033	408.62	1.00	1.00
17.16	0.57	0.57	1.9948	408.61	0.99	0.99
17.40	0.56	0.56	1.9862	408.60	0.99	0.99
17.64	0.55	0.55	1.9774	408.59	0.99	0.99
17.88	0.54	0.54	1.9684	408.57	0.99	0.99
18.13	0.53	0.53	1.9593	408.56	0.99	0.99
18.37	0.52	0.52	1.9501	408.55	0.98	0.98
18.61	0.51	0.51	1.9407	408.54	0.98	0.98
18.85	0.50	0.50	1.9312	408.53	0.98	0.98
19.09	0.49	0.49	1.9215	408.52	0.98	0.98
19.33	0.48	0.48	1.9117	408.51	0.98	0.98
19.58	0.48	0.48	1.9019	408.50	0.97	0.97
19.82	0.47	0.47	1.8919	408.48	0.97	0.97
20.06	0.46	0.46	1.8818	408.47	0.97	0.97
20.30	0.46	0.46	1.8717	408.46	0.97	0.97
20.54	0.45	0.45	1.8614	408.45	0.97	0.97
20.78	0.44	0.44	1.8510	408.44	0.96	0.96
21.03	0.44	0.44	1.8406	408.42	0.96	0.96
21.27	0.43	0.43	1.8301	408.41	0.96	0.96
21.51	0.42	0.42	1.8195	408.40	0.96	0.96
21.75	0.42	0.42	1.8088	408.39	0.95	0.95
21.99	0.41	0.41	1.7981	408.37	0.95	0.95
22.23	0.41	0.41	1.7873	408.36	0.95	0.95
22.48	0.40	0.40	1.7764	408.35	0.95	0.95
22.72	0.40	0.40	1.7655	408.34	0.94	0.94
22.96	0.39	0.39	1.7546	408.32	0.94	0.94
23.20	0.39	0.39	1.7435	408.31	0.94	0.94
23.44	0.38	0.38	1.7325	408.30	0.94	0.94
23.68	0.38	0.38	1.7214	408.28	0.93	0.93
23.93	0.37	0.37	1.7102	408.27	0.93	0.93
24.17	0.37	0.37	1.6990	408.26	0.93	0.93
24.41	0.00	0.00	1.6842	408.24	0.93	0.93

**Modified Puls Routing
Summary of Results**

Inflow Hydrograph: R:\Projects\2018\18000145B\Reports\Stormwater Management\2003xx\Working Files\Peak Rate Calculations\POST\Western UGD\Western UG
Storage/Elevation Curve: R:\Projects\2018\18000145B\Reports\Stormwater Management\2003xx\Working Files\Peak Rate Calculations\POST\Western UGD\Western

Basin Bypass Capacity = 0.00 cfs
Starting Pool Elevation = 405.75 feet
Time Interval = 0.242 hours
Total number of Inflow points = 102

	Event Time (hours)	Hydrograph Inflow (cfs)	Basin Inflow (cfs)	Storage Used (acre-ft)	Elevation Above MSL (feet)	Basin Outflow (cfs)	Outflow Total (cfs)
Start	0.00	0.00	0.00	0.0000	405.75	0.00	0.00
Max. Inflow	2.90	19.59	19.59	1.0888	407.56	0.78	0.78
Max. Outflow	14.50	0.90	0.90	2.4866	409.25	1.11	1.11
Max. Elev.	12.57	1.07	1.07	2.5067	409.29	1.11	1.11
Final	24.41	0.00	0.00	2.1109	408.74	1.02	1.02

Modified Puls Routing

Inflow Hydrograph: R:\Projects\2018\18000145B\Reports\Stormwater Management\2003xx\Working Files\Peak Rate Calculations\POST\Western UGD\Western UGD
 Storage/Elevation Curve: R:\Projects\2018\18000145B\Reports\Stormwater Management\2003xx\Working Files\Peak Rate Calculations\POST\Western UGD\Western UGD

Basin Bypass Capacity = 0.00 cfs
 Starting Pool Elevation = 405.75 feet
 Time Interval = 0.242 hours

Event Time (hours)	Hydrograph Inflow (cfs)	Basin Inflow (cfs)	Storage Used (acre-ft)	Elevation Above MSL (feet)	Basin Outflow (cfs)	Outflow Total (cfs)
0.00	0.00	0.00	0.0000	405.75	0.00	0.00
0.24	0.51	0.51	0.0050	405.76	0.00	0.00
0.48	1.01	1.01	0.0200	405.79	0.02	0.02
0.73	1.52	1.52	0.0447	405.85	0.05	0.05
0.97	2.03	2.03	0.0785	405.92	0.11	0.11
1.21	2.19	2.19	0.1175	406.00	0.21	0.21
1.45	2.35	2.35	0.1580	406.09	0.28	0.28
1.69	2.52	2.52	0.2005	406.18	0.33	0.33
1.93	2.68	2.68	0.2452	406.28	0.38	0.38
2.18	6.91	6.91	0.3325	406.47	0.47	0.47
2.42	11.14	11.14	0.5022	406.81	0.58	0.58
2.66	15.37	15.37	0.7543	407.15	0.68	0.68
2.90	19.59	19.59	1.0888	407.56	0.78	0.78
3.14	15.82	15.82	1.4260	407.95	0.87	0.87
3.38	12.05	12.05	1.6865	408.24	0.93	0.93
3.63	8.28	8.28	1.8707	408.46	0.97	0.97
3.87	4.51	4.51	1.9789	408.59	0.99	0.99
4.11	4.01	4.01	2.0441	408.66	1.00	1.00
4.35	3.51	3.51	2.0990	408.73	1.02	1.02
4.59	3.01	3.01	2.1436	408.79	1.03	1.03
4.83	2.50	2.50	2.1780	408.83	1.04	1.04
5.08	2.44	2.44	2.2067	408.87	1.04	1.04
5.32	2.38	2.38	2.2339	408.91	1.05	1.05
5.56	2.31	2.31	2.2597	408.94	1.05	1.05
5.80	2.25	2.25	2.2842	408.97	1.06	1.06
6.04	2.15	2.15	2.3069	409.00	1.06	1.06
6.28	2.04	2.04	2.3273	409.03	1.07	1.07
6.53	1.94	1.94	2.3456	409.06	1.07	1.07
6.77	1.83	1.83	2.3618	409.08	1.08	1.08
7.01	1.79	1.79	2.3763	409.10	1.08	1.08
7.25	1.75	1.75	2.3900	409.12	1.08	1.08
7.49	1.70	1.70	2.4027	409.13	1.09	1.09
7.73	1.66	1.66	2.4146	409.15	1.09	1.09
7.98	1.62	1.62	2.4256	409.16	1.09	1.09
8.22	1.59	1.59	2.4358	409.18	1.09	1.09
8.46	1.55	1.55	2.4452	409.19	1.10	1.10
8.70	1.51	1.51	2.4539	409.20	1.10	1.10
8.94	1.48	1.48	2.4618	409.21	1.10	1.10
9.18	1.45	1.45	2.4690	409.22	1.10	1.10
9.43	1.41	1.41	2.4755	409.23	1.10	1.10
9.67	1.38	1.38	2.4814	409.24	1.10	1.10
9.91	1.35	1.35	2.4866	409.25	1.11	1.11
10.15	1.32	1.32	2.4912	409.25	1.11	1.11
10.39	1.29	1.29	2.4952	409.26	1.11	1.11
10.63	1.26	1.26	2.4986	409.27	1.11	1.11
10.88	1.24	1.24	2.5015	409.28	1.11	1.11
11.12	1.21	1.21	2.5037	409.28	1.11	1.11
11.36	1.19	1.19	2.5055	409.28	1.11	1.11
11.60	1.16	1.16	2.5067	409.29	1.11	1.11
11.84	1.14	1.14	2.5074	409.29	1.11	1.11
12.08	1.11	1.11	2.5076	409.29	1.11	1.11
12.33	1.09	1.09	2.5074	409.29	1.11	1.11

Event Time (hours)	Hydrograph Inflow (cfs)	Basin Inflow (cfs)	Storage Used (acre-ft)	Elevation Above MSL (feet)	Basin Outflow (cfs)	Outflow Total (cfs)
12.57	1.07	1.07	2.5067	409.29	1.11	1.11
12.81	1.05	1.05	2.5056	409.28	1.11	1.11
13.05	1.02	1.02	2.5041	409.28	1.11	1.11
13.29	1.00	1.00	2.5021	409.28	1.11	1.11
13.53	0.98	0.98	2.4997	409.27	1.11	1.11
13.78	0.96	0.96	2.4970	409.27	1.11	1.11
14.02	0.94	0.94	2.4939	409.26	1.11	1.11
14.26	0.92	0.92	2.4904	409.25	1.11	1.11
14.50	0.90	0.90	2.4866	409.25	1.11	1.11
14.74	0.89	0.89	2.4824	409.24	1.10	1.10
14.98	0.87	0.87	2.4779	409.23	1.10	1.10
15.23	0.85	0.85	2.4730	409.23	1.10	1.10
15.47	0.83	0.83	2.4678	409.22	1.10	1.10
15.71	0.82	0.82	2.4623	409.21	1.10	1.10
15.95	0.80	0.80	2.4566	409.21	1.10	1.10
16.19	0.78	0.78	2.4505	409.20	1.10	1.10
16.43	0.77	0.77	2.4441	409.19	1.10	1.10
16.68	0.75	0.75	2.4374	409.18	1.09	1.09
16.92	0.74	0.74	2.4305	409.17	1.09	1.09
17.16	0.72	0.72	2.4233	409.16	1.09	1.09
17.40	0.71	0.71	2.4159	409.15	1.09	1.09
17.64	0.70	0.70	2.4082	409.14	1.09	1.09
17.88	0.68	0.68	2.4002	409.13	1.09	1.09
18.13	0.67	0.67	2.3921	409.12	1.08	1.08
18.37	0.65	0.65	2.3836	409.11	1.08	1.08
18.61	0.64	0.64	2.3750	409.10	1.08	1.08
18.85	0.63	0.63	2.3661	409.08	1.08	1.08
19.09	0.62	0.62	2.3571	409.07	1.08	1.08
19.33	0.60	0.60	2.3478	409.06	1.07	1.07
19.58	0.59	0.59	2.3383	409.05	1.07	1.07
19.82	0.58	0.58	2.3287	409.03	1.07	1.07
20.06	0.57	0.57	2.3188	409.02	1.07	1.07
20.30	0.56	0.56	2.3088	409.01	1.07	1.07
20.54	0.55	0.55	2.2986	408.99	1.06	1.06
20.78	0.54	0.54	2.2882	408.98	1.06	1.06
21.03	0.53	0.53	2.2776	408.97	1.06	1.06
21.27	0.51	0.51	2.2669	408.95	1.06	1.06
21.51	0.50	0.50	2.2561	408.94	1.05	1.05
21.75	0.49	0.49	2.2450	408.92	1.05	1.05
21.99	0.48	0.48	2.2339	408.91	1.05	1.05
22.23	0.47	0.47	2.2226	408.89	1.05	1.05
22.48	0.46	0.46	2.2111	408.88	1.04	1.04
22.72	0.46	0.46	2.1995	408.86	1.04	1.04
22.96	0.45	0.45	2.1878	408.84	1.04	1.04
23.20	0.44	0.44	2.1759	408.83	1.03	1.03
23.44	0.43	0.43	2.1639	408.81	1.03	1.03
23.68	0.42	0.42	2.1518	408.80	1.03	1.03
23.93	0.41	0.41	2.1396	408.78	1.03	1.03
24.17	0.40	0.40	2.1272	408.76	1.02	1.02
24.41	0.00	0.00	2.1109	408.74	1.02	1.02

**Modified Puls Routing
Summary of Results**

Inflow Hydrograph: R:\Projects\2018\18000145B\Reports\Stormwater Management\2003xx\Working Files\Peak Rate Calculations\POST\Western UGD\Western UG
Storage/Elevation Curve: R:\Projects\2018\18000145B\Reports\Stormwater Management\2003xx\Working Files\Peak Rate Calculations\POST\Western UGD\Western

Basin Bypass Capacity = 0.00 cfs
Starting Pool Elevation = 405.75 feet
Time Interval = 0.242 hours
Total number of Inflow points = 102

	Event Time (hours)	Hydrograph Inflow (cfs)	Basin Inflow (cfs)	Storage Used (acre-ft)	Elevation Above MSL (feet)	Basin Outflow (cfs)	Outflow Total (cfs)
Start	0.00	0.00	0.00	0.0000	405.75	0.00	0.00
Max. Inflow	2.90	21.73	21.73	1.2174	407.71	0.81	0.81
Max. Outflow	12.81	1.38	1.38	2.9036	410.15	1.42	1.42
Max. Elev.	12.57	1.40	1.40	2.9042	410.16	1.42	1.42
Final	24.41	0.00	0.00	2.5422	409.37	1.12	1.12

Modified Puls Routing

Inflow Hydrograph: R:\Projects\2018\18000145B\Reports\Stormwater Management\2003xx\Working Files\Peak Rate Calculations\POST\Western UGD\Western UGD
 Storage/Elevation Curve: R:\Projects\2018\18000145B\Reports\Stormwater Management\2003xx\Working Files\Peak Rate Calculations\POST\Western UGD\Western UGD

Basin Bypass Capacity = 0.00 cfs
 Starting Pool Elevation = 405.75 feet
 Time Interval = 0.242 hours

Event Time (hours)	Hydrograph Inflow (cfs)	Basin Inflow (cfs)	Storage Used (acre-ft)	Elevation Above MSL (feet)	Basin Outflow (cfs)	Outflow Total (cfs)
0.00	0.00	0.00	0.0000	405.75	0.00	0.00
0.24	0.54	0.54	0.0054	405.76	0.00	0.00
0.48	1.08	1.08	0.0213	405.80	0.02	0.02
0.73	1.62	1.62	0.0476	405.85	0.05	0.05
0.97	2.16	2.16	0.0835	405.93	0.12	0.12
1.21	2.40	2.40	0.1256	406.02	0.23	0.23
1.45	2.65	2.65	0.1708	406.12	0.30	0.30
1.69	2.90	2.90	0.2196	406.22	0.36	0.36
1.93	3.14	3.14	0.2723	406.34	0.41	0.41
2.18	7.79	7.79	0.3724	406.56	0.50	0.50
2.42	12.44	12.44	0.5634	406.89	0.61	0.61
2.66	17.08	17.08	0.8451	407.27	0.71	0.71
2.90	21.73	21.73	1.2174	407.71	0.81	0.81
3.14	17.81	17.81	1.5951	408.14	0.91	0.91
3.38	13.89	13.89	1.8929	408.49	0.97	0.97
3.63	9.98	9.98	2.1114	408.74	1.02	1.02
3.87	6.06	6.06	2.2509	408.93	1.05	1.05
4.11	5.18	5.18	2.3418	409.05	1.07	1.07
4.35	4.29	4.29	2.4148	409.15	1.09	1.09
4.59	3.41	3.41	2.4699	409.22	1.10	1.10
4.83	2.53	2.53	2.5071	409.29	1.11	1.11
5.08	2.47	2.47	2.5348	409.35	1.12	1.12
5.32	2.42	2.42	2.5611	409.41	1.13	1.13
5.56	2.36	2.36	2.5861	409.46	1.14	1.14
5.80	2.30	2.30	2.6098	409.52	1.15	1.15
6.04	2.24	2.24	2.6321	409.56	1.16	1.16
6.28	2.17	2.17	2.6529	409.61	1.16	1.16
6.53	2.10	2.10	2.6722	409.65	1.17	1.17
6.77	2.04	2.04	2.6901	409.69	1.18	1.18
7.01	2.01	2.01	2.7070	409.73	1.18	1.18
7.25	1.98	1.98	2.7231	409.77	1.19	1.19
7.49	1.95	1.95	2.7386	409.80	1.19	1.19
7.73	1.92	1.92	2.7535	409.83	1.20	1.20
7.98	1.90	1.90	2.7677	409.86	1.20	1.20
8.22	1.87	1.87	2.7813	409.89	1.21	1.21
8.46	1.84	1.84	2.7942	409.92	1.21	1.21
8.70	1.82	1.82	2.8066	409.95	1.21	1.21
8.94	1.79	1.79	2.8183	409.97	1.22	1.22
9.18	1.76	1.76	2.8294	409.99	1.22	1.22
9.43	1.74	1.74	2.8399	410.02	1.22	1.22
9.67	1.71	1.71	2.8499	410.04	1.23	1.23
9.91	1.68	1.68	2.8592	410.06	1.23	1.23
10.15	1.66	1.66	2.8680	410.08	1.23	1.23
10.39	1.63	1.63	2.8761	410.10	1.24	1.24
10.63	1.61	1.61	2.8835	410.11	1.26	1.26
10.88	1.58	1.58	2.8898	410.12	1.30	1.30
11.12	1.55	1.55	2.8948	410.14	1.34	1.34
11.36	1.53	1.53	2.8986	410.14	1.37	1.37
11.60	1.50	1.50	2.9013	410.15	1.39	1.39
11.84	1.48	1.48	2.9030	410.15	1.41	1.41
12.08	1.45	1.45	2.9040	410.16	1.42	1.42
12.33	1.43	1.43	2.9044	410.16	1.42	1.42

Event Time (hours)	Hydrograph Inflow (cfs)	Basin Inflow (cfs)	Storage Used (acre-ft)	Elevation Above MSL (feet)	Basin Outflow (cfs)	Outflow Total (cfs)
12.57	1.40	1.40	2.9042	410.16	1.42	1.42
12.81	1.38	1.38	2.9036	410.15	1.42	1.42
13.05	1.35	1.35	2.9027	410.15	1.41	1.41
13.29	1.33	1.33	2.9015	410.15	1.40	1.40
13.53	1.31	1.31	2.9001	410.15	1.38	1.38
13.78	1.28	1.28	2.8985	410.14	1.37	1.37
14.02	1.26	1.26	2.8967	410.14	1.35	1.35
14.26	1.23	1.23	2.8947	410.14	1.34	1.34
14.50	1.21	1.21	2.8926	410.13	1.32	1.32
14.74	1.19	1.19	2.8903	410.13	1.30	1.30
14.98	1.16	1.16	2.8880	410.12	1.28	1.28
15.23	1.14	1.14	2.8854	410.12	1.27	1.27
15.47	1.12	1.12	2.8827	410.11	1.26	1.26
15.71	1.10	1.10	2.8799	410.10	1.24	1.24
15.95	1.07	1.07	2.8768	410.10	1.24	1.24
16.19	1.05	1.05	2.8733	410.09	1.24	1.24
16.43	1.03	1.03	2.8693	410.08	1.23	1.23
16.68	1.01	1.01	2.8650	410.07	1.23	1.23
16.92	0.98	0.98	2.8603	410.06	1.23	1.23
17.16	0.96	0.96	2.8551	410.05	1.23	1.23
17.40	0.94	0.94	2.8496	410.04	1.23	1.23
17.64	0.92	0.92	2.8437	410.03	1.23	1.23
17.88	0.90	0.90	2.8374	410.01	1.22	1.22
18.13	0.88	0.88	2.8307	410.00	1.22	1.22
18.37	0.86	0.86	2.8237	409.98	1.22	1.22
18.61	0.84	0.84	2.8163	409.97	1.22	1.22
18.85	0.82	0.82	2.8085	409.95	1.21	1.21
19.09	0.80	0.80	2.8004	409.93	1.21	1.21
19.33	0.78	0.78	2.7920	409.91	1.21	1.21
19.58	0.76	0.76	2.7832	409.89	1.21	1.21
19.82	0.74	0.74	2.7741	409.88	1.20	1.20
20.06	0.72	0.72	2.7647	409.85	1.20	1.20
20.30	0.70	0.70	2.7549	409.83	1.20	1.20
20.54	0.68	0.68	2.7448	409.81	1.19	1.19
20.78	0.66	0.66	2.7345	409.79	1.19	1.19
21.03	0.64	0.64	2.7238	409.77	1.19	1.19
21.27	0.63	0.63	2.7128	409.74	1.18	1.18
21.51	0.61	0.61	2.7016	409.72	1.18	1.18
21.75	0.59	0.59	2.6900	409.69	1.18	1.18
21.99	0.57	0.57	2.6782	409.67	1.17	1.17
22.23	0.56	0.56	2.6661	409.64	1.17	1.17
22.48	0.54	0.54	2.6538	409.61	1.16	1.16
22.72	0.52	0.52	2.6412	409.58	1.16	1.16
22.96	0.50	0.50	2.6283	409.56	1.15	1.15
23.20	0.49	0.49	2.6152	409.53	1.15	1.15
23.44	0.47	0.47	2.6019	409.50	1.15	1.15
23.68	0.45	0.45	2.5883	409.47	1.14	1.14
23.93	0.44	0.44	2.5745	409.44	1.14	1.14
24.17	0.42	0.42	2.5605	409.41	1.13	1.13
24.41	0.00	0.00	2.5422	409.37	1.12	1.12

**HYDROGRAPH COMBINATION E
STUDY POINT WEST – POST-PROJECT
(UGD EAST OUTFLOW + UGD WEST OUTFLOW)**

Hydrograph Combination

Filename	Start Date (mo/da/year)	Start Time (hr:min)	Points	Step (hours)
C:\TADMOR\Eastern UGD Outflow-2 Year Storm-R.HYD	04/27/2020	0000	101	0.2417
C:\TADMOR\Western UGD Outflow-2 Year Storm-R.HYD	04/27/2020	0000	101	0.2417
COMBINED HYDROGRAPH	04/27/2020	0000	103	0.2417

Date	Time	Hyd A Contribution	Hyd B Contribution	Combined Hydrograph
04/27/2020	0000	0.00	0.00	0.00
04/27/2020	0015	0.00	0.00	0.01
04/27/2020	0029	0.03	0.00	0.03
04/27/2020	0044	0.10	0.01	0.11
04/27/2020	0058	0.21	0.03	0.24
04/27/2020	0113	0.36	0.06	0.42
04/27/2020	0127	0.52	0.09	0.61
04/27/2020	0142	0.68	0.12	0.80
04/27/2020	0156	0.83	0.16	0.99
04/27/2020	0211	1.28	0.25	1.53
04/27/2020	0225	2.38	0.35	2.73
04/27/2020	0240	4.06	0.46	4.52
04/27/2020	0254	6.12	0.57	6.69
04/27/2020	0309	7.36	0.64	8.00
04/27/2020	0323	7.69	0.68	8.37
04/27/2020	0338	7.29	0.70	8.00
04/27/2020	0352	6.38	0.72	7.10
04/27/2020	0407	5.30	0.72	6.02
04/27/2020	0421	4.24	0.73	4.97
04/27/2020	0436	3.49	0.73	4.22
04/27/2020	0450	2.92	0.73	3.65
04/27/2020	0505	2.50	0.73	3.23
04/27/2020	0519	2.20	0.73	2.93
04/27/2020	0534	1.98	0.74	2.71
04/27/2020	0548	1.80	0.74	2.53
04/27/2020	0603	1.66	0.74	2.40
04/27/2020	0617	1.54	0.74	2.28
04/27/2020	0632	1.44	0.74	2.18
04/27/2020	0646	1.35	0.74	2.09
04/27/2020	0701	1.27	0.74	2.01
04/27/2020	0715	1.20	0.74	1.94
04/27/2020	0730	1.15	0.74	1.89
04/27/2020	0744	1.10	0.74	1.84
04/27/2020	0759	1.05	0.74	1.79
04/27/2020	0813	1.02	0.74	1.75
04/27/2020	0828	0.98	0.74	1.72
04/27/2020	0842	0.95	0.74	1.69
04/27/2020	0857	0.92	0.74	1.66
04/27/2020	0911	0.89	0.74	1.63
04/27/2020	0926	0.87	0.73	1.60
04/27/2020	0940	0.84	0.73	1.58
04/27/2020	0955	0.82	0.73	1.55
04/27/2020	1009	0.80	0.73	1.53
04/27/2020	1024	0.78	0.73	1.51
04/27/2020	1038	0.76	0.73	1.49
04/27/2020	1053	0.74	0.73	1.47
04/27/2020	1107	0.72	0.73	1.45
04/27/2020	1122	0.70	0.72	1.43
04/27/2020	1136	0.69	0.72	1.41
04/27/2020	1151	0.67	0.72	1.39
04/27/2020	1205	0.66	0.72	1.37
04/27/2020	1220	0.64	0.72	1.36
04/27/2020	1234	0.63	0.72	1.34

Date	Time	Hyd A Contribution	Hyd B Contribution	Combined Hydrograph
04/27/2020	1249	0.61	0.71	1.33
04/27/2020	1303	0.60	0.71	1.31
04/27/2020	1318	0.59	0.71	1.30
04/27/2020	1332	0.58	0.71	1.28
04/27/2020	1347	0.56	0.71	1.27
04/27/2020	1401	0.55	0.70	1.26
04/27/2020	1416	0.54	0.70	1.24
04/27/2020	1430	0.53	0.70	1.23
04/27/2020	1445	0.52	0.70	1.22
04/27/2020	1459	0.51	0.69	1.21
04/27/2020	1514	0.50	0.69	1.19
04/27/2020	1528	0.49	0.69	1.18
04/27/2020	1543	0.48	0.69	1.17
04/27/2020	1557	0.48	0.68	1.16
04/27/2020	1612	0.47	0.68	1.15
04/27/2020	1626	0.46	0.68	1.14
04/27/2020	1641	0.45	0.68	1.13
04/27/2020	1655	0.44	0.67	1.12
04/27/2020	1710	0.44	0.67	1.11
04/27/2020	1724	0.43	0.67	1.10
04/27/2020	1739	0.42	0.67	1.09
04/27/2020	1753	0.42	0.66	1.08
04/27/2020	1808	0.41	0.66	1.07
04/27/2020	1822	0.41	0.66	1.06
04/27/2020	1837	0.40	0.65	1.05
04/27/2020	1851	0.39	0.65	1.05
04/27/2020	1906	0.39	0.65	1.04
04/27/2020	1920	0.38	0.65	1.03
04/27/2020	1935	0.38	0.64	1.02
04/27/2020	1949	0.37	0.64	1.01
04/27/2020	2004	0.37	0.64	1.01
04/27/2020	2018	0.36	0.63	1.00
04/27/2020	2033	0.36	0.63	0.99
04/27/2020	2047	0.35	0.63	0.98
04/27/2020	2102	0.35	0.63	0.98
04/27/2020	2116	0.35	0.62	0.97
04/27/2020	2131	0.34	0.62	0.96
04/27/2020	2145	0.34	0.62	0.95
04/27/2020	2160	0.33	0.61	0.95
04/27/2020	2214	0.33	0.61	0.94
04/27/2020	2229	0.33	0.61	0.93
04/27/2020	2243	0.32	0.60	0.93
04/27/2020	2258	0.32	0.60	0.92
04/27/2020	2312	0.32	0.60	0.91
04/27/2020	2327	0.31	0.59	0.91
04/27/2020	2341	0.31	0.59	0.90
04/27/2020	2356	0.31	0.59	0.90
04/28/2020	0010	0.30	0.59	0.89
04/28/2020	0025	0.28	0.00	0.28
04/28/2020	0039	0.00	0.00	0.00

Hydrograph Combination

Filename	Start Date (mo/da/year)	Start Time (hr:min)	Points	Step (hours)
C:\TADMOR\Eastern UGD Outflow-10 Year Storm-R.HYD	04/27/2020	0000	101	0.2417
C:\TADMOR\Western UGD Outflow-10 Year Storm-R.HYD	04/27/2020	0000	101	0.2417
COMBINED HYDROGRAPH	04/27/2020	0000	103	0.2417

Date	Time	Hyd A Contribution	Hyd B Contribution	Combined Hydrograph
04/27/2020	0000	0.00	0.00	0.00
04/27/2020	0015	0.01	0.00	0.01
04/27/2020	0029	0.05	0.01	0.06
04/27/2020	0044	0.17	0.02	0.20
04/27/2020	0058	0.38	0.06	0.43
04/27/2020	0113	0.64	0.10	0.74
04/27/2020	0127	0.91	0.16	1.07
04/27/2020	0142	1.16	0.23	1.40
04/27/2020	0156	1.40	0.27	1.68
04/27/2020	0211	2.12	0.34	2.46
04/27/2020	0225	3.77	0.45	4.22
04/27/2020	0240	6.17	0.58	6.75
04/27/2020	0254	9.07	0.66	9.73
04/27/2020	0309	10.28	0.74	11.02
04/27/2020	0323	10.63	0.78	11.41
04/27/2020	0338	10.37	0.81	11.18
04/27/2020	0352	9.54	0.83	10.37
04/27/2020	0407	7.71	0.84	8.55
04/27/2020	0421	6.54	0.85	7.39
04/27/2020	0436	5.61	0.85	6.46
04/27/2020	0450	4.53	0.85	5.38
04/27/2020	0505	3.77	0.86	4.63
04/27/2020	0519	3.27	0.86	4.13
04/27/2020	0534	2.92	0.86	3.78
04/27/2020	0548	2.67	0.87	3.54
04/27/2020	0603	2.47	0.87	3.34
04/27/2020	0617	2.30	0.87	3.18
04/27/2020	0632	2.15	0.87	3.02
04/27/2020	0646	2.01	0.87	2.88
04/27/2020	0701	1.87	0.88	2.75
04/27/2020	0715	1.76	0.88	2.64
04/27/2020	0730	1.66	0.88	2.54
04/27/2020	0744	1.58	0.88	2.46
04/27/2020	0759	1.51	0.88	2.39
04/27/2020	0813	1.45	0.88	2.33
04/27/2020	0828	1.40	0.88	2.28
04/27/2020	0842	1.35	0.88	2.22
04/27/2020	0857	1.30	0.88	2.18
04/27/2020	0911	1.26	0.88	2.13
04/27/2020	0926	1.21	0.88	2.09
04/27/2020	0940	1.18	0.88	2.05
04/27/2020	0955	1.14	0.88	2.02
04/27/2020	1009	1.11	0.88	1.98
04/27/2020	1024	1.07	0.88	1.95
04/27/2020	1038	1.04	0.87	1.92
04/27/2020	1053	1.01	0.87	1.89
04/27/2020	1107	0.99	0.87	1.86
04/27/2020	1122	0.96	0.87	1.83
04/27/2020	1136	0.94	0.87	1.81
04/27/2020	1151	0.91	0.87	1.78
04/27/2020	1205	0.89	0.87	1.76
04/27/2020	1220	0.87	0.87	1.73
04/27/2020	1234	0.85	0.87	1.71

Date	Time	Hyd A Contribution	Hyd B Contribution	Combined Hydrograph
04/27/2020	1249	0.83	0.86	1.69
04/27/2020	1303	0.81	0.86	1.67
04/27/2020	1318	0.79	0.86	1.65
04/27/2020	1332	0.77	0.86	1.63
04/27/2020	1347	0.75	0.86	1.61
04/27/2020	1401	0.74	0.86	1.59
04/27/2020	1416	0.72	0.85	1.58
04/27/2020	1430	0.71	0.85	1.56
04/27/2020	1445	0.69	0.85	1.54
04/27/2020	1459	0.68	0.85	1.53
04/27/2020	1514	0.67	0.85	1.51
04/27/2020	1528	0.66	0.84	1.50
04/27/2020	1543	0.64	0.84	1.49
04/27/2020	1557	0.63	0.84	1.47
04/27/2020	1612	0.62	0.84	1.46
04/27/2020	1626	0.61	0.84	1.45
04/27/2020	1641	0.60	0.83	1.44
04/27/2020	1655	0.59	0.83	1.43
04/27/2020	1710	0.58	0.83	1.41
04/27/2020	1724	0.57	0.83	1.40
04/27/2020	1739	0.57	0.83	1.39
04/27/2020	1753	0.56	0.82	1.38
04/27/2020	1808	0.55	0.82	1.37
04/27/2020	1822	0.54	0.82	1.36
04/27/2020	1837	0.54	0.82	1.35
04/27/2020	1851	0.53	0.81	1.34
04/27/2020	1906	0.52	0.81	1.34
04/27/2020	1920	0.52	0.81	1.33
04/27/2020	1935	0.51	0.81	1.32
04/27/2020	1949	0.50	0.80	1.31
04/27/2020	2004	0.50	0.80	1.30
04/27/2020	2018	0.49	0.80	1.29
04/27/2020	2033	0.49	0.80	1.29
04/27/2020	2047	0.48	0.80	1.28
04/27/2020	2102	0.48	0.79	1.27
04/27/2020	2116	0.48	0.79	1.27
04/27/2020	2131	0.47	0.79	1.26
04/27/2020	2145	0.47	0.79	1.25
04/27/2020	2160	0.46	0.78	1.25
04/27/2020	2214	0.46	0.78	1.24
04/27/2020	2229	0.46	0.78	1.23
04/27/2020	2243	0.45	0.78	1.23
04/27/2020	2258	0.45	0.77	1.22
04/27/2020	2312	0.45	0.77	1.22
04/27/2020	2327	0.44	0.77	1.21
04/27/2020	2341	0.44	0.77	1.21
04/27/2020	2356	0.44	0.76	1.20
04/28/2020	0010	0.44	0.76	1.20
04/28/2020	0025	0.40	0.00	0.40
04/28/2020	0039	0.00	0.00	0.00

Hydrograph Combination

Filename	Start Date (mo/da/year)	Start Time (hr:min)	Points	Step (hours)
C:\TADMOR\Eastern UGD Outflow-25 Year Storm-R.HYD	04/27/2020	0000	101	0.2417
C:\TADMOR\Western UGD Outflow-25 Year Storm-R.HYD	04/27/2020	0000	101	0.2417
COMBINED HYDROGRAPH	04/27/2020	0000	103	0.2417

Date	Time	Hyd A Contribution	Hyd B Contribution	Combined Hydrograph
04/27/2020	0000	0.00	0.00	0.00
04/27/2020	0015	0.01	0.00	0.01
04/27/2020	0029	0.09	0.01	0.10
04/27/2020	0044	0.28	0.04	0.32
04/27/2020	0058	0.61	0.09	0.71
04/27/2020	0113	1.02	0.17	1.19
04/27/2020	0127	1.42	0.25	1.67
04/27/2020	0142	1.78	0.30	2.09
04/27/2020	0156	2.10	0.35	2.45
04/27/2020	0211	3.04	0.42	3.46
04/27/2020	0225	5.41	0.55	5.95
04/27/2020	0240	8.66	0.64	9.30
04/27/2020	0254	10.78	0.74	11.52
04/27/2020	0309	12.27	0.82	13.10
04/27/2020	0323	12.87	0.88	13.75
04/27/2020	0338	12.77	0.91	13.69
04/27/2020	0352	12.08	0.94	13.01
04/27/2020	0407	11.08	0.95	12.03
04/27/2020	0421	10.05	0.96	11.01
04/27/2020	0436	8.95	0.97	9.92
04/27/2020	0450	7.00	0.97	7.97
04/27/2020	0505	6.01	0.98	6.99
04/27/2020	0519	5.15	0.98	6.13
04/27/2020	0534	4.42	0.99	5.40
04/27/2020	0548	3.92	0.99	4.92
04/27/2020	0603	3.56	1.00	4.56
04/27/2020	0617	3.27	1.00	4.27
04/27/2020	0632	3.03	1.00	4.03
04/27/2020	0646	2.81	1.01	3.82
04/27/2020	0701	2.64	1.01	3.64
04/27/2020	0715	2.49	1.01	3.50
04/27/2020	0730	2.37	1.01	3.38
04/27/2020	0744	2.27	1.01	3.28
04/27/2020	0759	2.17	1.02	3.19
04/27/2020	0813	2.09	1.02	3.11
04/27/2020	0828	2.02	1.02	3.04
04/27/2020	0842	1.95	1.02	2.97
04/27/2020	0857	1.88	1.02	2.91
04/27/2020	0911	1.82	1.02	2.85
04/27/2020	0926	1.77	1.02	2.79
04/27/2020	0940	1.71	1.02	2.74
04/27/2020	0955	1.66	1.02	2.69
04/27/2020	1009	1.62	1.02	2.64
04/27/2020	1024	1.57	1.02	2.60
04/27/2020	1038	1.53	1.02	2.56
04/27/2020	1053	1.49	1.02	2.52
04/27/2020	1107	1.45	1.02	2.48
04/27/2020	1122	1.42	1.02	2.44
04/27/2020	1136	1.38	1.02	2.40
04/27/2020	1151	1.35	1.02	2.37
04/27/2020	1205	1.31	1.02	2.34
04/27/2020	1220	1.28	1.02	2.30
04/27/2020	1234	1.25	1.02	2.27

Date	Time	Hyd A Contribution	Hyd B Contribution	Combined Hydrograph
04/27/2020	1249	1.22	1.02	2.24
04/27/2020	1303	1.19	1.02	2.21
04/27/2020	1318	1.17	1.02	2.19
04/27/2020	1332	1.14	1.02	2.16
04/27/2020	1347	1.12	1.02	2.13
04/27/2020	1401	1.09	1.01	2.11
04/27/2020	1416	1.07	1.01	2.08
04/27/2020	1430	1.04	1.01	2.06
04/27/2020	1445	1.02	1.01	2.03
04/27/2020	1459	1.00	1.01	2.01
04/27/2020	1514	0.98	1.01	1.99
04/27/2020	1528	0.96	1.01	1.97
04/27/2020	1543	0.94	1.00	1.95
04/27/2020	1557	0.92	1.00	1.93
04/27/2020	1612	0.91	1.00	1.91
04/27/2020	1626	0.89	1.00	1.89
04/27/2020	1641	0.87	1.00	1.87
04/27/2020	1655	0.85	1.00	1.85
04/27/2020	1710	0.84	0.99	1.83
04/27/2020	1724	0.82	0.99	1.82
04/27/2020	1739	0.81	0.99	1.80
04/27/2020	1753	0.79	0.99	1.78
04/27/2020	1808	0.78	0.99	1.77
04/27/2020	1822	0.77	0.98	1.75
04/27/2020	1837	0.75	0.98	1.74
04/27/2020	1851	0.74	0.98	1.72
04/27/2020	1906	0.73	0.98	1.71
04/27/2020	1920	0.71	0.98	1.69
04/27/2020	1935	0.70	0.97	1.68
04/27/2020	1949	0.69	0.97	1.66
04/27/2020	2004	0.68	0.97	1.65
04/27/2020	2018	0.67	0.97	1.64
04/27/2020	2033	0.66	0.97	1.62
04/27/2020	2047	0.65	0.96	1.61
04/27/2020	2102	0.64	0.96	1.60
04/27/2020	2116	0.63	0.96	1.59
04/27/2020	2131	0.62	0.96	1.58
04/27/2020	2145	0.61	0.95	1.57
04/27/2020	2160	0.60	0.95	1.56
04/27/2020	2214	0.59	0.95	1.54
04/27/2020	2229	0.59	0.95	1.53
04/27/2020	2243	0.58	0.94	1.52
04/27/2020	2258	0.57	0.94	1.51
04/27/2020	2312	0.56	0.94	1.50
04/27/2020	2327	0.56	0.94	1.49
04/27/2020	2341	0.55	0.93	1.48
04/27/2020	2356	0.54	0.93	1.47
04/28/2020	0010	0.53	0.93	1.46
04/28/2020	0025	0.48	0.00	0.48
04/28/2020	0039	0.00	0.00	0.00

Hydrograph Combination

Filename	Start Date (mo/da/year)	Start Time (hr:min)	Points	Step (hours)
C:\TADMOR\Eastern UGD Outflow-50 Year Storm-R.HYD	04/27/2020	0000	101	0.2417
C:\TADMOR\Western UGD Outflow-50 Year Storm-R.HYD	04/27/2020	0000	101	0.2417
COMBINED HYDROGRAPH	04/27/2020	0000	103	0.2417

Date	Time	Hyd A Contribution	Hyd B Contribution	Combined Hydrograph
04/27/2020	0000	0.00	0.00	0.00
04/27/2020	0015	0.01	0.00	0.02
04/27/2020	0029	0.11	0.01	0.12
04/27/2020	0044	0.33	0.05	0.38
04/27/2020	0058	0.72	0.11	0.82
04/27/2020	0113	1.19	0.20	1.40
04/27/2020	0127	1.67	0.28	1.95
04/27/2020	0142	2.10	0.33	2.44
04/27/2020	0156	2.48	0.38	2.86
04/27/2020	0211	3.61	0.46	4.08
04/27/2020	0225	6.17	0.58	6.75
04/27/2020	0240	9.47	0.68	10.15
04/27/2020	0254	11.70	0.78	12.48
04/27/2020	0309	13.40	0.87	14.27
04/27/2020	0323	14.15	0.93	15.08
04/27/2020	0338	14.11	0.97	15.08
04/27/2020	0352	13.40	0.99	14.39
04/27/2020	0407	12.36	1.00	13.36
04/27/2020	0421	11.36	1.02	12.38
04/27/2020	0436	10.33	1.03	11.35
04/27/2020	0450	9.20	1.04	10.24
04/27/2020	0505	7.30	1.04	8.35
04/27/2020	0519	6.31	1.05	7.36
04/27/2020	0534	5.55	1.05	6.61
04/27/2020	0548	4.76	1.06	5.82
04/27/2020	0603	4.21	1.06	5.27
04/27/2020	0617	3.80	1.07	4.87
04/27/2020	0632	3.48	1.07	4.55
04/27/2020	0646	3.22	1.08	4.29
04/27/2020	0701	3.00	1.08	4.08
04/27/2020	0715	2.84	1.08	3.92
04/27/2020	0730	2.71	1.09	3.79
04/27/2020	0744	2.60	1.09	3.68
04/27/2020	0759	2.50	1.09	3.59
04/27/2020	0813	2.42	1.09	3.51
04/27/2020	0828	2.34	1.10	3.44
04/27/2020	0842	2.28	1.10	3.38
04/27/2020	0857	2.22	1.10	3.32
04/27/2020	0911	2.16	1.10	3.26
04/27/2020	0926	2.11	1.10	3.21
04/27/2020	0940	2.06	1.10	3.16
04/27/2020	0955	2.01	1.11	3.11
04/27/2020	1009	1.96	1.11	3.07
04/27/2020	1024	1.91	1.11	3.02
04/27/2020	1038	1.87	1.11	2.97
04/27/2020	1053	1.82	1.11	2.93
04/27/2020	1107	1.78	1.11	2.89
04/27/2020	1122	1.74	1.11	2.85
04/27/2020	1136	1.70	1.11	2.82
04/27/2020	1151	1.67	1.11	2.78
04/27/2020	1205	1.63	1.11	2.75
04/27/2020	1220	1.60	1.11	2.71
04/27/2020	1234	1.57	1.11	2.68

Date	Time	Hyd A Contribution	Hyd B Contribution	Combined Hydrograph
04/27/2020	1249	1.53	1.11	2.65
04/27/2020	1303	1.50	1.11	2.61
04/27/2020	1318	1.47	1.11	2.58
04/27/2020	1332	1.44	1.11	2.55
04/27/2020	1347	1.41	1.11	2.52
04/27/2020	1401	1.38	1.11	2.49
04/27/2020	1416	1.36	1.11	2.46
04/27/2020	1430	1.33	1.11	2.43
04/27/2020	1445	1.30	1.10	2.41
04/27/2020	1459	1.28	1.10	2.38
04/27/2020	1514	1.25	1.10	2.35
04/27/2020	1528	1.23	1.10	2.33
04/27/2020	1543	1.20	1.10	2.30
04/27/2020	1557	1.18	1.10	2.28
04/27/2020	1612	1.16	1.10	2.25
04/27/2020	1626	1.13	1.10	2.23
04/27/2020	1641	1.11	1.09	2.21
04/27/2020	1655	1.09	1.09	2.18
04/27/2020	1710	1.07	1.09	2.16
04/27/2020	1724	1.05	1.09	2.14
04/27/2020	1739	1.03	1.09	2.12
04/27/2020	1753	1.01	1.09	2.09
04/27/2020	1808	0.99	1.08	2.07
04/27/2020	1822	0.97	1.08	2.05
04/27/2020	1837	0.95	1.08	2.03
04/27/2020	1851	0.93	1.08	2.01
04/27/2020	1906	0.92	1.08	1.99
04/27/2020	1920	0.90	1.07	1.97
04/27/2020	1935	0.88	1.07	1.95
04/27/2020	1949	0.86	1.07	1.93
04/27/2020	2004	0.85	1.07	1.91
04/27/2020	2018	0.83	1.07	1.90
04/27/2020	2033	0.81	1.06	1.88
04/27/2020	2047	0.80	1.06	1.86
04/27/2020	2102	0.78	1.06	1.84
04/27/2020	2116	0.77	1.06	1.82
04/27/2020	2131	0.75	1.05	1.81
04/27/2020	2145	0.74	1.05	1.79
04/27/2020	2160	0.72	1.05	1.77
04/27/2020	2214	0.71	1.05	1.75
04/27/2020	2229	0.70	1.04	1.74
04/27/2020	2243	0.68	1.04	1.72
04/27/2020	2258	0.67	1.04	1.71
04/27/2020	2312	0.66	1.03	1.69
04/27/2020	2327	0.64	1.03	1.67
04/27/2020	2341	0.63	1.03	1.66
04/27/2020	2356	0.62	1.03	1.64
04/28/2020	0010	0.61	1.02	1.63
04/28/2020	0025	0.54	0.00	0.54
04/28/2020	0039	0.00	0.00	0.00

Hydrograph Combination

Filename	Start Date (mo/da/year)	Start Time (hr:min)	Points	Step (hours)
C:\TADMOR\Eastern UGD Outflow-100 Year Storm-R.HYD	04/27/2020	0000	101	0.2417
C:\TADMOR\Western UGD Outflow-100 Year Storm-R.HYD	04/27/2020	0000	101	0.2417
COMBINED HYDROGRAPH	04/27/2020	0000	103	0.2417

Date	Time	Hyd A Contribution	Hyd B Contribution	Combined Hydrograph
04/27/2020	0000	0.00	0.00	0.00
04/27/2020	0015	0.02	0.00	0.02
04/27/2020	0029	0.12	0.02	0.13
04/27/2020	0044	0.36	0.05	0.41
04/27/2020	0058	0.78	0.12	0.90
04/27/2020	0113	1.31	0.23	1.54
04/27/2020	0127	1.86	0.30	2.16
04/27/2020	0142	2.36	0.36	2.71
04/27/2020	0156	2.83	0.41	3.24
04/27/2020	0211	4.18	0.50	4.68
04/27/2020	0225	6.85	0.61	7.46
04/27/2020	0240	10.18	0.71	10.90
04/27/2020	0254	12.52	0.81	13.34
04/27/2020	0309	14.47	0.91	15.37
04/27/2020	0323	15.65	0.97	16.62
04/27/2020	0338	15.77	1.02	16.79
04/27/2020	0352	14.85	1.05	15.90
04/27/2020	0407	13.92	1.07	14.99
04/27/2020	0421	12.90	1.09	13.99
04/27/2020	0436	11.87	1.10	12.97
04/27/2020	0450	10.75	1.11	11.86
04/27/2020	0505	9.55	1.12	10.67
04/27/2020	0519	7.70	1.13	8.84
04/27/2020	0534	6.59	1.14	7.73
04/27/2020	0548	5.77	1.15	6.92
04/27/2020	0603	4.95	1.16	6.11
04/27/2020	0617	4.34	1.16	5.50
04/27/2020	0632	3.90	1.17	5.07
04/27/2020	0646	3.58	1.18	4.76
04/27/2020	0701	3.34	1.18	4.52
04/27/2020	0715	3.17	1.19	4.35
04/27/2020	0730	3.03	1.19	4.22
04/27/2020	0744	2.92	1.20	4.12
04/27/2020	0759	2.84	1.20	4.04
04/27/2020	0813	2.76	1.21	3.97
04/27/2020	0828	2.70	1.21	3.91
04/27/2020	0842	2.65	1.21	3.86
04/27/2020	0857	2.60	1.22	3.81
04/27/2020	0911	2.55	1.22	3.77
04/27/2020	0926	2.51	1.22	3.73
04/27/2020	0940	2.47	1.23	3.69
04/27/2020	0955	2.43	1.23	3.66
04/27/2020	1009	2.39	1.23	3.62
04/27/2020	1024	2.35	1.24	3.59
04/27/2020	1038	2.31	1.26	3.57
04/27/2020	1053	2.28	1.30	3.58
04/27/2020	1107	2.24	1.34	3.58
04/27/2020	1122	2.21	1.37	3.57
04/27/2020	1136	2.17	1.39	3.56
04/27/2020	1151	2.14	1.41	3.55
04/27/2020	1205	2.10	1.42	3.52
04/27/2020	1220	2.07	1.42	3.49
04/27/2020	1234	2.03	1.42	3.46

Date	Time	Hyd A Contribution	Hyd B Contribution	Combined Hydrograph
04/27/2020	1249	2.00	1.42	3.42
04/27/2020	1303	1.96	1.41	3.37
04/27/2020	1318	1.93	1.40	3.32
04/27/2020	1332	1.89	1.38	3.27
04/27/2020	1347	1.86	1.37	3.22
04/27/2020	1401	1.82	1.35	3.17
04/27/2020	1416	1.79	1.34	3.13
04/27/2020	1430	1.76	1.32	3.08
04/27/2020	1445	1.72	1.30	3.03
04/27/2020	1459	1.69	1.28	2.98
04/27/2020	1514	1.66	1.27	2.93
04/27/2020	1528	1.63	1.26	2.88
04/27/2020	1543	1.60	1.24	2.84
04/27/2020	1557	1.57	1.24	2.80
04/27/2020	1612	1.54	1.24	2.77
04/27/2020	1626	1.51	1.23	2.74
04/27/2020	1641	1.48	1.23	2.71
04/27/2020	1655	1.45	1.23	2.68
04/27/2020	1710	1.42	1.23	2.65
04/27/2020	1724	1.39	1.23	2.62
04/27/2020	1739	1.36	1.23	2.58
04/27/2020	1753	1.33	1.22	2.55
04/27/2020	1808	1.30	1.22	2.52
04/27/2020	1822	1.27	1.22	2.49
04/27/2020	1837	1.24	1.22	2.46
04/27/2020	1851	1.22	1.21	2.43
04/27/2020	1906	1.19	1.21	2.40
04/27/2020	1920	1.16	1.21	2.37
04/27/2020	1935	1.14	1.21	2.34
04/27/2020	1949	1.11	1.20	2.31
04/27/2020	2004	1.08	1.20	2.28
04/27/2020	2018	1.06	1.20	2.25
04/27/2020	2033	1.03	1.19	2.22
04/27/2020	2047	1.01	1.19	2.20
04/27/2020	2102	0.98	1.19	2.17
04/27/2020	2116	0.95	1.18	2.14
04/27/2020	2131	0.93	1.18	2.11
04/27/2020	2145	0.91	1.18	2.08
04/27/2020	2160	0.88	1.17	2.05
04/27/2020	2214	0.86	1.17	2.03
04/27/2020	2229	0.83	1.16	2.00
04/27/2020	2243	0.81	1.16	1.97
04/27/2020	2258	0.79	1.15	1.94
04/27/2020	2312	0.76	1.15	1.91
04/27/2020	2327	0.74	1.15	1.89
04/27/2020	2341	0.72	1.14	1.86
04/27/2020	2356	0.70	1.14	1.83
04/28/2020	0010	0.67	1.13	1.81
04/28/2020	0025	0.60	0.00	0.60
04/28/2020	0039	0.00	0.00	0.00

**HYDROGRAPH COMBINATION F
STUDY POINT WEST – POST-PROJECT
(COMBINATION E + POST TO BASIN A)**

Hydrograph Combination

Filename	Start Date (mo/da/year)	Start Time (hr:min)	Points	Step (hours)
C:\TADMOR\Combined Flow E 2yr.HYD	04/27/2020	0000	102	0.2417
C:\TADMOR\Post to Basin A-2 Year Storm.HYD	04/27/2020	0000	101	0.2417
COMBINED HYDROGRAPH	04/27/2020	0000	103	0.2417

Date	Time	Hyd A Contribution	Hyd B Contribution	Combined Hydrograph
04/27/2020	0000	0.00	0.00	0.00
04/27/2020	0015	0.01	0.91	0.92
04/27/2020	0029	0.03	1.82	1.85
04/27/2020	0044	0.11	2.74	2.85
04/27/2020	0058	0.24	3.65	3.89
04/27/2020	0113	0.42	3.85	4.27
04/27/2020	0127	0.61	4.06	4.67
04/27/2020	0142	0.80	4.26	5.06
04/27/2020	0156	0.99	4.47	5.46
04/27/2020	0211	1.53	13.07	14.60
04/27/2020	0225	2.73	21.67	24.40
04/27/2020	0240	4.52	30.27	34.79
04/27/2020	0254	6.69	38.84	45.53
04/27/2020	0309	8.00	30.96	38.96
04/27/2020	0323	8.37	23.08	31.45
04/27/2020	0338	8.00	15.20	23.20
04/27/2020	0352	7.10	7.33	14.43
04/27/2020	0407	6.02	6.57	12.58
04/27/2020	0421	4.97	5.80	10.76
04/27/2020	0436	4.22	5.03	9.25
04/27/2020	0450	3.65	4.26	7.91
04/27/2020	0505	3.23	4.22	7.45
04/27/2020	0519	2.93	4.18	7.11
04/27/2020	0534	2.71	4.13	6.84
04/27/2020	0548	2.53	4.09	6.62
04/27/2020	0603	2.40	3.88	6.28
04/27/2020	0617	2.28	3.66	5.94
04/27/2020	0632	2.18	3.45	5.63
04/27/2020	0646	2.09	3.24	5.33
04/27/2020	0701	2.01	3.15	5.16
04/27/2020	0715	1.94	3.06	5.00
04/27/2020	0730	1.89	2.97	4.86
04/27/2020	0744	1.84	2.88	4.72
04/27/2020	0759	1.79	2.81	4.60
04/27/2020	0813	1.75	2.73	4.48
04/27/2020	0828	1.72	2.66	4.38
04/27/2020	0842	1.69	2.58	4.27
04/27/2020	0857	1.66	2.52	4.18
04/27/2020	0911	1.63	2.45	4.08
04/27/2020	0926	1.60	2.39	3.99
04/27/2020	0940	1.58	2.32	3.90
04/27/2020	0955	1.55	2.27	3.82
04/27/2020	1009	1.53	2.21	3.74
04/27/2020	1024	1.51	2.16	3.67
04/27/2020	1038	1.49	2.10	3.59
04/27/2020	1053	1.47	2.06	3.53
04/27/2020	1107	1.45	2.01	3.46
04/27/2020	1122	1.43	1.97	3.40
04/27/2020	1136	1.41	1.92	3.33
04/27/2020	1151	1.39	1.88	3.27
04/27/2020	1205	1.37	1.84	3.21
04/27/2020	1220	1.36	1.80	3.16
04/27/2020	1234	1.34	1.76	3.10

Date	Time	Hyd A Contribution	Hyd B Contribution	Combined Hydrograph
04/27/2020	1249	1.33	1.73	3.06
04/27/2020	1303	1.31	1.69	3.00
04/27/2020	1318	1.30	1.66	2.96
04/27/2020	1332	1.28	1.62	2.90
04/27/2020	1347	1.27	1.59	2.86
04/27/2020	1401	1.26	1.56	2.82
04/27/2020	1416	1.24	1.53	2.77
04/27/2020	1430	1.23	1.50	2.73
04/27/2020	1445	1.22	1.48	2.70
04/27/2020	1459	1.21	1.45	2.66
04/27/2020	1514	1.19	1.43	2.62
04/27/2020	1528	1.18	1.40	2.58
04/27/2020	1543	1.17	1.38	2.55
04/27/2020	1557	1.16	1.36	2.52
04/27/2020	1612	1.15	1.34	2.49
04/27/2020	1626	1.14	1.31	2.45
04/27/2020	1641	1.13	1.29	2.42
04/27/2020	1655	1.12	1.27	2.39
04/27/2020	1710	1.11	1.26	2.37
04/27/2020	1724	1.10	1.24	2.34
04/27/2020	1739	1.09	1.22	2.31
04/27/2020	1753	1.08	1.20	2.28
04/27/2020	1808	1.07	1.18	2.25
04/27/2020	1822	1.06	1.17	2.23
04/27/2020	1837	1.05	1.15	2.20
04/27/2020	1851	1.05	1.14	2.19
04/27/2020	1906	1.04	1.12	2.16
04/27/2020	1920	1.03	1.11	2.14
04/27/2020	1935	1.02	1.09	2.11
04/27/2020	1949	1.01	1.08	2.09
04/27/2020	2004	1.01	1.07	2.08
04/27/2020	2018	1.00	1.06	2.06
04/27/2020	2033	0.99	1.04	2.03
04/27/2020	2047	0.98	1.03	2.01
04/27/2020	2102	0.98	1.02	2.00
04/27/2020	2116	0.97	1.01	1.98
04/27/2020	2131	0.96	1.00	1.96
04/27/2020	2145	0.95	0.99	1.94
04/27/2020	2160	0.95	0.98	1.93
04/27/2020	2214	0.94	0.97	1.91
04/27/2020	2229	0.93	0.96	1.89
04/27/2020	2243	0.93	0.95	1.88
04/27/2020	2258	0.92	0.94	1.86
04/27/2020	2312	0.91	0.93	1.84
04/27/2020	2327	0.91	0.92	1.83
04/27/2020	2341	0.90	0.92	1.82
04/27/2020	2356	0.90	0.91	1.81
04/28/2020	0010	0.88	0.00	0.88
04/28/2020	0025	0.28	0.00	0.28
04/28/2020	0039	0.00	0.00	0.00

Hydrograph Combination

Filename	Start Date (mo/da/year)	Start Time (hr:min)	Points	Step (hours)
C:\TADMOR\Combined Flow E 10yr.HYD	04/27/2020	0000	102	0.2417
C:\TADMOR\Post to Basin A-10 Year Storm.HYD	04/27/2020	0000	101	0.2417
COMBINED HYDROGRAPH	04/27/2020	0000	103	0.2417

Date	Time	Hyd A Contribution	Hyd B Contribution	Combined Hydrograph
04/27/2020	0000	0.00	0.00	0.00
04/27/2020	0015	0.01	1.37	1.38
04/27/2020	0029	0.06	2.74	2.80
04/27/2020	0044	0.20	4.10	4.30
04/27/2020	0058	0.43	5.47	5.90
04/27/2020	0113	0.74	5.83	6.57
04/27/2020	0127	1.07	6.19	7.26
04/27/2020	0142	1.40	6.55	7.95
04/27/2020	0156	1.68	6.92	8.60
04/27/2020	0211	2.46	19.14	21.60
04/27/2020	0225	4.22	31.35	35.57
04/27/2020	0240	6.75	43.56	50.31
04/27/2020	0254	9.73	55.73	65.46
04/27/2020	0309	11.02	44.63	55.65
04/27/2020	0323	11.41	33.53	44.94
04/27/2020	0338	11.18	22.43	33.61
04/27/2020	0352	10.37	11.35	21.72
04/27/2020	0407	8.55	10.13	18.68
04/27/2020	0421	7.39	8.91	16.30
04/27/2020	0436	6.46	7.69	14.15
04/27/2020	0450	5.38	6.47	11.85
04/27/2020	0505	4.63	6.42	11.04
04/27/2020	0519	4.13	6.36	10.49
04/27/2020	0534	3.78	6.31	10.09
04/27/2020	0548	3.54	6.25	9.79
04/27/2020	0603	3.34	5.88	9.22
04/27/2020	0617	3.18	5.51	8.69
04/27/2020	0632	3.02	5.13	8.15
04/27/2020	0646	2.88	4.76	7.64
04/27/2020	0701	2.75	4.61	7.36
04/27/2020	0715	2.64	4.46	7.10
04/27/2020	0730	2.54	4.31	6.85
04/27/2020	0744	2.46	4.16	6.62
04/27/2020	0759	2.39	4.03	6.42
04/27/2020	0813	2.33	3.91	6.24
04/27/2020	0828	2.28	3.78	6.06
04/27/2020	0842	2.22	3.66	5.88
04/27/2020	0857	2.18	3.55	5.73
04/27/2020	0911	2.13	3.45	5.58
04/27/2020	0926	2.09	3.35	5.44
04/27/2020	0940	2.05	3.24	5.29
04/27/2020	0955	2.02	3.16	5.18
04/27/2020	1009	1.98	3.07	5.05
04/27/2020	1024	1.95	2.98	4.93
04/27/2020	1038	1.92	2.90	4.82
04/27/2020	1053	1.89	2.83	4.72
04/27/2020	1107	1.86	2.76	4.62
04/27/2020	1122	1.83	2.68	4.51
04/27/2020	1136	1.81	2.61	4.42
04/27/2020	1151	1.78	2.55	4.33
04/27/2020	1205	1.76	2.49	4.25
04/27/2020	1220	1.73	2.44	4.17
04/27/2020	1234	1.71	2.38	4.09

Date	Time	Hyd A Contribution	Hyd B Contribution	Combined Hydrograph
04/27/2020	1249	1.69	2.33	4.02
04/27/2020	1303	1.67	2.28	3.95
04/27/2020	1318	1.65	2.23	3.88
04/27/2020	1332	1.63	2.18	3.81
04/27/2020	1347	1.61	2.14	3.75
04/27/2020	1401	1.59	2.10	3.69
04/27/2020	1416	1.58	2.06	3.64
04/27/2020	1430	1.56	2.02	3.58
04/27/2020	1445	1.54	1.98	3.52
04/27/2020	1459	1.53	1.95	3.48
04/27/2020	1514	1.51	1.91	3.42
04/27/2020	1528	1.50	1.88	3.38
04/27/2020	1543	1.49	1.85	3.34
04/27/2020	1557	1.47	1.82	3.29
04/27/2020	1612	1.46	1.79	3.25
04/27/2020	1626	1.45	1.76	3.21
04/27/2020	1641	1.44	1.74	3.18
04/27/2020	1655	1.43	1.72	3.15
04/27/2020	1710	1.41	1.69	3.10
04/27/2020	1724	1.40	1.67	3.07
04/27/2020	1739	1.39	1.65	3.04
04/27/2020	1753	1.38	1.63	3.01
04/27/2020	1808	1.37	1.61	2.98
04/27/2020	1822	1.36	1.59	2.95
04/27/2020	1837	1.35	1.57	2.92
04/27/2020	1851	1.34	1.55	2.89
04/27/2020	1906	1.34	1.54	2.88
04/27/2020	1920	1.33	1.52	2.85
04/27/2020	1935	1.32	1.51	2.83
04/27/2020	1949	1.31	1.49	2.80
04/27/2020	2004	1.30	1.48	2.78
04/27/2020	2018	1.29	1.46	2.75
04/27/2020	2033	1.29	1.45	2.74
04/27/2020	2047	1.28	1.44	2.72
04/27/2020	2102	1.27	1.43	2.70
04/27/2020	2116	1.27	1.42	2.69
04/27/2020	2131	1.26	1.41	2.67
04/27/2020	2145	1.25	1.40	2.65
04/27/2020	2160	1.25	1.39	2.64
04/27/2020	2214	1.24	1.38	2.62
04/27/2020	2229	1.23	1.37	2.60
04/27/2020	2243	1.23	1.36	2.59
04/27/2020	2258	1.22	1.36	2.58
04/27/2020	2312	1.22	1.35	2.57
04/27/2020	2327	1.21	1.34	2.55
04/27/2020	2341	1.21	1.34	2.55
04/27/2020	2356	1.20	1.33	2.53
04/28/2020	0010	1.19	0.00	1.19
04/28/2020	0025	0.39	0.00	0.39
04/28/2020	0039	0.00	0.00	0.00

Hydrograph Combination

Filename	Start Date (mo/da/year)	Start Time (hr:min)	Points	Step (hours)
C:\TADMOR\Combined Flow E 25yr.HYD	04/27/2020	0000	102	0.2417
C:\TADMOR\Post to Basin A-25 Year Storm.HYD	04/27/2020	0000	101	0.2417
COMBINED HYDROGRAPH	04/27/2020	0000	103	0.2417

Date	Time	Hyd A Contribution	Hyd B Contribution	Combined Hydrograph
04/27/2020	0000	0.00	0.00	0.00
04/27/2020	0015	0.01	2.01	2.02
04/27/2020	0029	0.10	4.03	4.13
04/27/2020	0044	0.32	6.04	6.36
04/27/2020	0058	0.71	8.05	8.76
04/27/2020	0113	1.19	8.52	9.71
04/27/2020	0127	1.67	8.99	10.66
04/27/2020	0142	2.09	9.47	11.56
04/27/2020	0156	2.45	9.96	12.41
04/27/2020	0211	3.46	26.73	30.19
04/27/2020	0225	5.95	43.50	49.46
04/27/2020	0240	9.30	60.27	69.57
04/27/2020	0254	11.52	76.99	88.51
04/27/2020	0309	13.10	62.03	75.13
04/27/2020	0323	13.75	47.07	60.81
04/27/2020	0338	13.69	32.10	45.79
04/27/2020	0352	13.01	17.17	30.18
04/27/2020	0407	12.03	15.30	27.33
04/27/2020	0421	11.01	13.44	24.45
04/27/2020	0436	9.91	11.57	21.49
04/27/2020	0450	7.97	9.71	17.68
04/27/2020	0505	6.99	9.55	16.54
04/27/2020	0519	6.13	9.38	15.51
04/27/2020	0534	5.40	9.22	14.62
04/27/2020	0548	4.92	9.06	13.97
04/27/2020	0603	4.56	8.57	13.13
04/27/2020	0617	4.27	8.09	12.36
04/27/2020	0632	4.03	7.61	11.63
04/27/2020	0646	3.82	7.12	10.94
04/27/2020	0701	3.64	6.92	10.56
04/27/2020	0715	3.50	6.72	10.22
04/27/2020	0730	3.38	6.52	9.90
04/27/2020	0744	3.28	6.32	9.59
04/27/2020	0759	3.19	6.14	9.33
04/27/2020	0813	3.11	5.97	9.08
04/27/2020	0828	3.04	5.80	8.84
04/27/2020	0842	2.97	5.62	8.59
04/27/2020	0857	2.91	5.48	8.39
04/27/2020	0911	2.85	5.33	8.18
04/27/2020	0926	2.79	5.18	7.97
04/27/2020	0940	2.74	5.03	7.77
04/27/2020	0955	2.69	4.91	7.60
04/27/2020	1009	2.64	4.78	7.42
04/27/2020	1024	2.60	4.65	7.25
04/27/2020	1038	2.56	4.53	7.09
04/27/2020	1053	2.52	4.42	6.94
04/27/2020	1107	2.48	4.31	6.79
04/27/2020	1122	2.44	4.20	6.64
04/27/2020	1136	2.40	4.09	6.49
04/27/2020	1151	2.37	4.00	6.37
04/27/2020	1205	2.34	3.91	6.25
04/27/2020	1220	2.30	3.81	6.11
04/27/2020	1234	2.27	3.72	5.99

Date	Time	Hyd A Contribution	Hyd B Contribution	Combined Hydrograph
04/27/2020	1249	2.24	3.64	5.88
04/27/2020	1303	2.21	3.56	5.77
04/27/2020	1318	2.19	3.48	5.67
04/27/2020	1332	2.16	3.40	5.56
04/27/2020	1347	2.13	3.33	5.46
04/27/2020	1401	2.11	3.26	5.37
04/27/2020	1416	2.08	3.19	5.27
04/27/2020	1430	2.06	3.12	5.18
04/27/2020	1445	2.03	3.06	5.09
04/27/2020	1459	2.01	3.00	5.01
04/27/2020	1514	1.99	2.93	4.92
04/27/2020	1528	1.97	2.87	4.84
04/27/2020	1543	1.95	2.82	4.77
04/27/2020	1557	1.93	2.77	4.70
04/27/2020	1612	1.91	2.71	4.62
04/27/2020	1626	1.89	2.66	4.55
04/27/2020	1641	1.87	2.61	4.48
04/27/2020	1655	1.85	2.56	4.41
04/27/2020	1710	1.83	2.52	4.35
04/27/2020	1724	1.82	2.47	4.29
04/27/2020	1739	1.80	2.43	4.23
04/27/2020	1753	1.78	2.39	4.17
04/27/2020	1808	1.77	2.35	4.12
04/27/2020	1822	1.75	2.30	4.05
04/27/2020	1837	1.74	2.27	4.01
04/27/2020	1851	1.72	2.23	3.95
04/27/2020	1906	1.71	2.19	3.90
04/27/2020	1920	1.69	2.16	3.85
04/27/2020	1935	1.68	2.12	3.80
04/27/2020	1949	1.66	2.09	3.75
04/27/2020	2004	1.65	2.06	3.71
04/27/2020	2018	1.64	2.03	3.67
04/27/2020	2033	1.62	2.00	3.62
04/27/2020	2047	1.61	1.97	3.58
04/27/2020	2102	1.60	1.94	3.54
04/27/2020	2116	1.59	1.91	3.50
04/27/2020	2131	1.58	1.88	3.46
04/27/2020	2145	1.57	1.86	3.43
04/27/2020	2160	1.56	1.83	3.39
04/27/2020	2214	1.54	1.81	3.35
04/27/2020	2229	1.53	1.78	3.31
04/27/2020	2243	1.52	1.76	3.28
04/27/2020	2258	1.51	1.74	3.25
04/27/2020	2312	1.50	1.72	3.22
04/27/2020	2327	1.49	1.69	3.18
04/27/2020	2341	1.48	1.67	3.15
04/27/2020	2356	1.47	1.65	3.12
04/28/2020	0010	1.45	0.00	1.45
04/28/2020	0025	0.47	0.00	0.47
04/28/2020	0039	0.00	0.00	0.00

Hydrograph Combination

Filename	Start Date (mo/da/year)	Start Time (hr:min)	Points	Step (hours)
C:\TADMOR\Combined Flow E 50yr.HYD	04/27/2020	0000	102	0.2417
C:\TADMOR\Post to Basin A-50 Year Storm.HYD	04/27/2020	0000	101	0.2417
COMBINED HYDROGRAPH	04/27/2020	0000	103	0.2417

Date	Time	Hyd A Contribution	Hyd B Contribution	Combined Hydrograph
04/27/2020	0000	0.00	0.00	0.00
04/27/2020	0015	0.02	2.25	2.27
04/27/2020	0029	0.12	4.50	4.62
04/27/2020	0044	0.38	6.75	7.14
04/27/2020	0058	0.82	9.01	9.83
04/27/2020	0113	1.40	9.73	11.13
04/27/2020	0127	1.95	10.46	12.41
04/27/2020	0142	2.44	11.19	13.63
04/27/2020	0156	2.86	11.93	14.79
04/27/2020	0211	4.08	30.74	34.82
04/27/2020	0225	6.75	49.55	56.30
04/27/2020	0240	10.15	68.35	78.51
04/27/2020	0254	12.48	87.10	99.58
04/27/2020	0309	14.27	70.33	84.60
04/27/2020	0323	15.08	53.57	68.65
04/27/2020	0338	15.08	36.80	51.88
04/27/2020	0352	14.39	20.06	34.45
04/27/2020	0407	13.36	17.83	31.19
04/27/2020	0421	12.38	15.60	27.97
04/27/2020	0436	11.35	13.36	24.71
04/27/2020	0450	10.23	11.13	21.37
04/27/2020	0505	8.35	10.85	19.20
04/27/2020	0519	7.36	10.57	17.93
04/27/2020	0534	6.61	10.29	16.89
04/27/2020	0548	5.82	10.00	15.82
04/27/2020	0603	5.27	9.54	14.81
04/27/2020	0617	4.87	9.07	13.94
04/27/2020	0632	4.55	8.60	13.15
04/27/2020	0646	4.29	8.14	12.42
04/27/2020	0701	4.08	7.95	12.03
04/27/2020	0715	3.92	7.76	11.68
04/27/2020	0730	3.79	7.57	11.36
04/27/2020	0744	3.68	7.38	11.06
04/27/2020	0759	3.59	7.22	10.80
04/27/2020	0813	3.51	7.05	10.56
04/27/2020	0828	3.44	6.88	10.32
04/27/2020	0842	3.38	6.72	10.10
04/27/2020	0857	3.32	6.57	9.89
04/27/2020	0911	3.26	6.43	9.69
04/27/2020	0926	3.21	6.28	9.49
04/27/2020	0940	3.16	6.14	9.30
04/27/2020	0955	3.11	6.01	9.12
04/27/2020	1009	3.07	5.88	8.95
04/27/2020	1024	3.02	5.75	8.77
04/27/2020	1038	2.97	5.62	8.59
04/27/2020	1053	2.93	5.50	8.43
04/27/2020	1107	2.89	5.39	8.28
04/27/2020	1122	2.85	5.27	8.12
04/27/2020	1136	2.82	5.16	7.98
04/27/2020	1151	2.78	5.05	7.83
04/27/2020	1205	2.75	4.95	7.70
04/27/2020	1220	2.71	4.84	7.55
04/27/2020	1234	2.68	4.74	7.42

Date	Time	Hyd A Contribution	Hyd B Contribution	Combined Hydrograph
04/27/2020	1249	2.65	4.64	7.29
04/27/2020	1303	2.61	4.55	7.16
04/27/2020	1318	2.58	4.46	7.04
04/27/2020	1332	2.55	4.36	6.91
04/27/2020	1347	2.52	4.27	6.79
04/27/2020	1401	2.49	4.19	6.68
04/27/2020	1416	2.46	4.10	6.56
04/27/2020	1430	2.43	4.02	6.45
04/27/2020	1445	2.41	3.94	6.35
04/27/2020	1459	2.38	3.86	6.24
04/27/2020	1514	2.35	3.78	6.13
04/27/2020	1528	2.33	3.71	6.04
04/27/2020	1543	2.30	3.63	5.93
04/27/2020	1557	2.28	3.56	5.84
04/27/2020	1612	2.25	3.49	5.74
04/27/2020	1626	2.23	3.42	5.65
04/27/2020	1641	2.21	3.35	5.56
04/27/2020	1655	2.18	3.29	5.47
04/27/2020	1710	2.16	3.22	5.38
04/27/2020	1724	2.14	3.16	5.30
04/27/2020	1739	2.12	3.10	5.22
04/27/2020	1753	2.09	3.03	5.12
04/27/2020	1808	2.07	2.97	5.04
04/27/2020	1822	2.05	2.91	4.96
04/27/2020	1837	2.03	2.86	4.89
04/27/2020	1851	2.01	2.80	4.81
04/27/2020	1906	1.99	2.75	4.74
04/27/2020	1920	1.97	2.69	4.66
04/27/2020	1935	1.95	2.64	4.59
04/27/2020	1949	1.93	2.59	4.52
04/27/2020	2004	1.91	2.53	4.44
04/27/2020	2018	1.90	2.48	4.38
04/27/2020	2033	1.88	2.43	4.31
04/27/2020	2047	1.86	2.39	4.25
04/27/2020	2102	1.84	2.34	4.18
04/27/2020	2116	1.82	2.29	4.11
04/27/2020	2131	1.81	2.25	4.06
04/27/2020	2145	1.79	2.20	3.99
04/27/2020	2160	1.77	2.16	3.93
04/27/2020	2214	1.75	2.11	3.86
04/27/2020	2229	1.74	2.07	3.81
04/27/2020	2243	1.72	2.03	3.75
04/27/2020	2258	1.71	1.99	3.70
04/27/2020	2312	1.69	1.94	3.63
04/27/2020	2327	1.67	1.91	3.58
04/27/2020	2341	1.66	1.87	3.53
04/27/2020	2356	1.64	1.83	3.47
04/28/2020	0010	1.61	0.00	1.61
04/28/2020	0025	0.53	0.00	0.53
04/28/2020	0039	0.00	0.00	0.00

Hydrograph Combination

Filename	Start Date (mo/da/year)	Start Time (hr:min)	Points	Step (hours)
C:\TADMOR\Combined Flow E 100yr.HYD	04/27/2020	0000	102	0.2417
C:\TADMOR\Post to Basin A-100 Year Storm.HYD	04/27/2020	0000	101	0.2417
COMBINED HYDROGRAPH	04/27/2020	0000	103	0.2417

Date	Time	Hyd A Contribution	Hyd B Contribution	Combined Hydrograph
04/27/2020	0000	0.00	0.00	0.00
04/27/2020	0015	0.02	2.40	2.42
04/27/2020	0029	0.13	4.80	4.93
04/27/2020	0044	0.41	7.19	7.60
04/27/2020	0058	0.90	9.59	10.49
04/27/2020	0113	1.54	10.69	12.23
04/27/2020	0127	2.16	11.79	13.95
04/27/2020	0142	2.71	12.88	15.59
04/27/2020	0156	3.24	14.00	17.24
04/27/2020	0211	4.68	34.67	39.35
04/27/2020	0225	7.46	55.33	62.80
04/27/2020	0240	10.90	76.00	86.90
04/27/2020	0254	13.34	96.60	109.94
04/27/2020	0309	15.37	79.17	94.54
04/27/2020	0323	16.62	61.75	78.37
04/27/2020	0338	16.79	44.32	61.11
04/27/2020	0352	15.90	26.93	42.83
04/27/2020	0407	14.99	23.01	38.00
04/27/2020	0421	13.99	19.08	33.07
04/27/2020	0436	12.97	15.16	28.13
04/27/2020	0450	11.86	11.25	23.11
04/27/2020	0505	10.66	11.00	21.66
04/27/2020	0519	8.84	10.74	19.58
04/27/2020	0534	7.73	10.49	18.21
04/27/2020	0548	6.92	10.23	17.15
04/27/2020	0603	6.11	9.94	16.04
04/27/2020	0617	5.50	9.64	15.14
04/27/2020	0632	5.07	9.35	14.42
04/27/2020	0646	4.76	9.05	13.81
04/27/2020	0701	4.52	8.93	13.45
04/27/2020	0715	4.35	8.80	13.15
04/27/2020	0730	4.22	8.68	12.90
04/27/2020	0744	4.12	8.56	12.68
04/27/2020	0759	4.04	8.44	12.48
04/27/2020	0813	3.97	8.32	12.29
04/27/2020	0828	3.91	8.19	12.10
04/27/2020	0842	3.86	8.07	11.93
04/27/2020	0857	3.81	7.96	11.77
04/27/2020	0911	3.77	7.84	11.61
04/27/2020	0926	3.73	7.72	11.45
04/27/2020	0940	3.69	7.60	11.29
04/27/2020	0955	3.66	7.49	11.15
04/27/2020	1009	3.62	7.37	10.99
04/27/2020	1024	3.59	7.25	10.84
04/27/2020	1038	3.57	7.14	10.71
04/27/2020	1053	3.58	7.02	10.60
04/27/2020	1107	3.58	6.91	10.49
04/27/2020	1122	3.57	6.80	10.37
04/27/2020	1136	3.56	6.68	10.24
04/27/2020	1151	3.55	6.57	10.12
04/27/2020	1205	3.52	6.46	9.98
04/27/2020	1220	3.49	6.35	9.84
04/27/2020	1234	3.46	6.24	9.69

Date	Time	Hyd A Contribution	Hyd B Contribution	Combined Hydrograph
04/27/2020	1249	3.42	6.13	9.55
04/27/2020	1303	3.37	6.02	9.39
04/27/2020	1318	3.32	5.91	9.23
04/27/2020	1332	3.27	5.80	9.07
04/27/2020	1347	3.22	5.69	8.91
04/27/2020	1401	3.17	5.59	8.76
04/27/2020	1416	3.13	5.48	8.61
04/27/2020	1430	3.08	5.38	8.46
04/27/2020	1445	3.03	5.27	8.30
04/27/2020	1459	2.98	5.17	8.15
04/27/2020	1514	2.93	5.07	8.00
04/27/2020	1528	2.88	4.97	7.85
04/27/2020	1543	2.84	4.87	7.71
04/27/2020	1557	2.80	4.77	7.57
04/27/2020	1612	2.77	4.67	7.44
04/27/2020	1626	2.74	4.57	7.31
04/27/2020	1641	2.71	4.47	7.18
04/27/2020	1655	2.68	4.38	7.06
04/27/2020	1710	2.65	4.28	6.93
04/27/2020	1724	2.62	4.19	6.80
04/27/2020	1739	2.58	4.09	6.67
04/27/2020	1753	2.55	4.00	6.55
04/27/2020	1808	2.52	3.91	6.43
04/27/2020	1822	2.49	3.81	6.30
04/27/2020	1837	2.46	3.73	6.18
04/27/2020	1851	2.43	3.64	6.07
04/27/2020	1906	2.40	3.55	5.95
04/27/2020	1920	2.37	3.46	5.83
04/27/2020	1935	2.34	3.37	5.71
04/27/2020	1949	2.31	3.29	5.60
04/27/2020	2004	2.28	3.20	5.48
04/27/2020	2018	2.25	3.12	5.36
04/27/2020	2033	2.22	3.03	5.25
04/27/2020	2047	2.20	2.95	5.15
04/27/2020	2102	2.17	2.87	5.04
04/27/2020	2116	2.14	2.79	4.93
04/27/2020	2131	2.11	2.71	4.82
04/27/2020	2145	2.08	2.63	4.71
04/27/2020	2160	2.05	2.55	4.60
04/27/2020	2214	2.03	2.47	4.50
04/27/2020	2229	2.00	2.39	4.39
04/27/2020	2243	1.97	2.32	4.29
04/27/2020	2258	1.94	2.24	4.18
04/27/2020	2312	1.91	2.17	4.08
04/27/2020	2327	1.89	2.10	3.99
04/27/2020	2341	1.86	2.02	3.88
04/27/2020	2356	1.83	1.95	3.78
04/28/2020	0010	1.79	0.00	1.79
04/28/2020	0025	0.59	0.00	0.59
04/28/2020	0039	0.00	0.00	0.00

**HYDROGRAPH COMBINATION G
STUDY POINT WEST- POST-PROJECT
(MILLER CULVERT + D.A. TO 72" PIPE)**

Hydrograph Combination

Filename	Start Date (mo/da/year)	Start Time (hr:min)	Points	Step (hours)
C:\TADMOR\Miller Pipe Outflow 2yr.HYD	04/27/2020	0000	100	0.2417
C:\TADMOR\IDA to 72in-2 Year Storm.HYD	04/27/2020	0000	101	0.2417
COMBINED HYDROGRAPH	04/27/2020	0000	101	0.2417

Date	Time	Hyd A Contribution	Hyd B Contribution	Combined Hydrograph
04/27/2020	0000	0.00	0.00	0.00
04/27/2020	0015	0.00	0.27	0.27
04/27/2020	0029	0.00	0.54	0.54
04/27/2020	0044	0.00	0.81	0.81
04/27/2020	0058	0.00	1.08	1.08
04/27/2020	0113	0.00	1.14	1.14
04/27/2020	0127	0.00	1.20	1.20
04/27/2020	0142	0.00	1.26	1.26
04/27/2020	0156	0.00	1.33	1.33
04/27/2020	0211	0.00	3.88	3.88
04/27/2020	0225	0.04	6.43	6.47
04/27/2020	0240	28.65	8.98	37.63
04/27/2020	0254	31.88	11.52	43.40
04/27/2020	0309	31.88	9.19	41.07
04/27/2020	0323	31.88	6.85	38.73
04/27/2020	0338	31.87	4.51	36.38
04/27/2020	0352	26.96	2.18	29.14
04/27/2020	0407	17.49	1.95	19.44
04/27/2020	0421	14.71	1.72	16.43
04/27/2020	0436	12.82	1.49	14.32
04/27/2020	0450	11.10	1.26	12.36
04/27/2020	0505	10.01	1.25	11.26
04/27/2020	0519	9.65	1.24	10.89
04/27/2020	0534	9.48	1.23	10.70
04/27/2020	0548	9.36	1.21	10.57
04/27/2020	0603	9.12	1.15	10.27
04/27/2020	0617	8.71	1.09	9.80
04/27/2020	0632	8.25	1.02	9.28
04/27/2020	0646	7.79	0.96	8.75
04/27/2020	0701	7.41	0.93	8.34
04/27/2020	0715	7.15	0.91	8.06
04/27/2020	0730	6.94	0.88	7.82
04/27/2020	0744	6.73	0.85	7.59
04/27/2020	0759	6.54	0.83	7.37
04/27/2020	0813	6.36	0.81	7.17
04/27/2020	0828	6.19	0.79	6.98
04/27/2020	0842	6.02	0.76	6.78
04/27/2020	0857	5.86	0.75	6.61
04/27/2020	0911	5.71	0.73	6.44
04/27/2020	0926	5.56	0.71	6.27
04/27/2020	0940	5.42	0.69	6.11
04/27/2020	0955	5.28	0.67	5.95
04/27/2020	1009	5.15	0.66	5.81
04/27/2020	1024	5.03	0.64	5.67
04/27/2020	1038	4.91	0.62	5.53
04/27/2020	1053	4.79	0.61	5.40
04/27/2020	1107	4.68	0.60	5.28
04/27/2020	1122	4.57	0.58	5.15
04/27/2020	1136	4.46	0.57	5.03
04/27/2020	1151	4.36	0.56	4.92
04/27/2020	1205	4.27	0.55	4.82
04/27/2020	1220	4.18	0.53	4.72
04/27/2020	1234	4.09	0.52	4.62

Date	Time	Hyd A Contribution	Hyd B Contribution	Combined Hydrograph
04/27/2020	1249	4.01	0.51	4.52
04/27/2020	1303	3.93	0.50	4.43
04/27/2020	1318	3.85	0.49	4.34
04/27/2020	1332	3.77	0.48	4.25
04/27/2020	1347	3.69	0.47	4.17
04/27/2020	1401	3.62	0.46	4.09
04/27/2020	1416	3.56	0.46	4.01
04/27/2020	1430	3.49	0.45	3.94
04/27/2020	1445	3.43	0.44	3.87
04/27/2020	1459	3.37	0.43	3.80
04/27/2020	1514	3.31	0.42	3.73
04/27/2020	1528	3.25	0.42	3.67
04/27/2020	1543	3.20	0.41	3.61
04/27/2020	1557	3.14	0.40	3.55
04/27/2020	1612	3.09	0.40	3.49
04/27/2020	1626	3.04	0.39	3.43
04/27/2020	1641	2.99	0.38	3.37
04/27/2020	1655	2.95	0.38	3.32
04/27/2020	1710	2.90	0.37	3.27
04/27/2020	1724	2.86	0.37	3.22
04/27/2020	1739	2.81	0.36	3.18
04/27/2020	1753	2.78	0.36	3.13
04/27/2020	1808	2.74	0.35	3.09
04/27/2020	1822	2.70	0.35	3.05
04/27/2020	1837	2.66	0.34	3.00
04/27/2020	1851	2.63	0.34	2.96
04/27/2020	1906	2.59	0.33	2.93
04/27/2020	1920	2.56	0.33	2.89
04/27/2020	1935	2.53	0.32	2.85
04/27/2020	1949	2.49	0.32	2.81
04/27/2020	2004	2.46	0.32	2.78
04/27/2020	2018	2.43	0.31	2.75
04/27/2020	2033	2.40	0.31	2.71
04/27/2020	2047	2.38	0.31	2.68
04/27/2020	2102	2.35	0.30	2.65
04/27/2020	2116	2.32	0.30	2.62
04/27/2020	2131	2.30	0.30	2.59
04/27/2020	2145	2.27	0.29	2.57
04/27/2020	2160	2.25	0.29	2.54
04/27/2020	2214	2.23	0.29	2.51
04/27/2020	2229	2.20	0.28	2.49
04/27/2020	2243	2.18	0.28	2.46
04/27/2020	2258	2.16	0.28	2.44
04/27/2020	2312	2.14	0.28	2.42
04/27/2020	2327	2.12	0.27	2.40
04/27/2020	2341	2.10	0.27	2.38
04/27/2020	2356	2.09	0.27	2.35
04/28/2020	0010	0.00	0.00	0.00

Hydrograph Combination

Filename	Start Date (mo/da/year)	Start Time (hr:min)	Points	Step (hours)
C:\TADMOR\Miller Pipe Outflow 10yr.HYD	04/27/2020	0000	100	0.2417
C:\TADMOR\IDA to 72in-10 Year Storm.HYD	04/27/2020	0000	101	0.2417
COMBINED HYDROGRAPH	04/27/2020	0000	101	0.2417

Date	Time	Hyd A Contribution	Hyd B Contribution	Combined Hydrograph
04/27/2020	0000	0.00	0.00	0.00
04/27/2020	0015	0.00	0.41	0.41
04/27/2020	0029	0.00	0.81	0.81
04/27/2020	0044	0.00	1.22	1.22
04/27/2020	0058	0.00	1.62	1.62
04/27/2020	0113	0.00	1.73	1.73
04/27/2020	0127	0.00	1.84	1.84
04/27/2020	0142	0.00	1.94	1.94
04/27/2020	0156	0.00	2.05	2.05
04/27/2020	0211	0.03	5.68	5.71
04/27/2020	0225	25.39	9.30	34.70
04/27/2020	0240	32.12	12.92	45.04
04/27/2020	0254	32.12	16.54	48.66
04/27/2020	0309	32.12	13.24	45.36
04/27/2020	0323	32.12	9.95	42.07
04/27/2020	0338	32.12	6.66	38.78
04/27/2020	0352	32.11	3.37	35.47
04/27/2020	0407	25.69	3.01	28.70
04/27/2020	0421	22.15	2.64	24.79
04/27/2020	0436	19.35	2.28	21.63
04/27/2020	0450	16.66	1.92	18.58
04/27/2020	0505	15.02	1.90	16.92
04/27/2020	0519	14.59	1.89	16.47
04/27/2020	0534	14.40	1.87	16.27
04/27/2020	0548	14.26	1.85	16.11
04/27/2020	0603	13.85	1.74	15.60
04/27/2020	0617	13.11	1.63	14.75
04/27/2020	0632	12.30	1.52	13.83
04/27/2020	0646	11.49	1.41	12.90
04/27/2020	0701	10.84	1.37	12.21
04/27/2020	0715	10.43	1.32	11.75
04/27/2020	0730	10.06	1.28	11.34
04/27/2020	0744	9.73	1.23	10.96
04/27/2020	0759	9.41	1.20	10.60
04/27/2020	0813	9.11	1.16	10.27
04/27/2020	0828	8.83	1.12	9.95
04/27/2020	0842	8.55	1.08	9.63
04/27/2020	0857	8.28	1.05	9.33
04/27/2020	0911	8.04	1.02	9.06
04/27/2020	0926	7.80	0.99	8.79
04/27/2020	0940	7.57	0.96	8.53
04/27/2020	0955	7.35	0.94	8.28
04/27/2020	1009	7.14	0.91	8.06
04/27/2020	1024	6.95	0.88	7.83
04/27/2020	1038	6.76	0.86	7.62
04/27/2020	1053	6.58	0.84	7.42
04/27/2020	1107	6.41	0.82	7.22
04/27/2020	1122	6.24	0.80	7.04
04/27/2020	1136	6.08	0.77	6.86
04/27/2020	1151	5.93	0.76	6.69
04/27/2020	1205	5.80	0.74	6.54
04/27/2020	1220	5.66	0.72	6.38
04/27/2020	1234	5.52	0.70	6.23

Date	Time	Hyd A Contribution	Hyd B Contribution	Combined Hydrograph
04/27/2020	1249	5.40	0.69	6.09
04/27/2020	1303	5.28	0.68	5.96
04/27/2020	1318	5.17	0.66	5.83
04/27/2020	1332	5.06	0.65	5.71
04/27/2020	1347	4.96	0.63	5.59
04/27/2020	1401	4.86	0.62	5.48
04/27/2020	1416	4.76	0.61	5.37
04/27/2020	1430	4.67	0.60	5.27
04/27/2020	1445	4.58	0.59	5.17
04/27/2020	1459	4.50	0.58	5.08
04/27/2020	1514	4.42	0.57	4.99
04/27/2020	1528	4.34	0.56	4.90
04/27/2020	1543	4.27	0.55	4.82
04/27/2020	1557	4.20	0.54	4.74
04/27/2020	1612	4.14	0.53	4.67
04/27/2020	1626	4.07	0.52	4.60
04/27/2020	1641	4.01	0.52	4.53
04/27/2020	1655	3.95	0.51	4.46
04/27/2020	1710	3.90	0.50	4.40
04/27/2020	1724	3.84	0.49	4.34
04/27/2020	1739	3.79	0.49	4.28
04/27/2020	1753	3.74	0.48	4.22
04/27/2020	1808	3.70	0.48	4.17
04/27/2020	1822	3.65	0.47	4.12
04/27/2020	1837	3.61	0.47	4.07
04/27/2020	1851	3.57	0.46	4.03
04/27/2020	1906	3.53	0.46	3.98
04/27/2020	1920	3.49	0.45	3.94
04/27/2020	1935	3.45	0.45	3.90
04/27/2020	1949	3.42	0.44	3.86
04/27/2020	2004	3.39	0.44	3.83
04/27/2020	2018	3.36	0.43	3.79
04/27/2020	2033	3.33	0.43	3.76
04/27/2020	2047	3.30	0.43	3.73
04/27/2020	2102	3.27	0.42	3.70
04/27/2020	2116	3.25	0.42	3.67
04/27/2020	2131	3.22	0.42	3.64
04/27/2020	2145	3.20	0.41	3.61
04/27/2020	2160	3.17	0.41	3.59
04/27/2020	2214	3.15	0.41	3.56
04/27/2020	2229	3.13	0.41	3.54
04/27/2020	2243	3.11	0.40	3.52
04/27/2020	2258	3.09	0.40	3.50
04/27/2020	2312	3.08	0.40	3.48
04/27/2020	2327	3.06	0.40	3.46
04/27/2020	2341	3.04	0.40	3.44
04/27/2020	2356	3.03	0.39	3.42
04/28/2020	0010	0.00	0.00	0.00

Hydrograph Combination

Filename	Start Date (mo/da/year)	Start Time (hr:min)	Points	Step (hours)
C:\TADMOR\Miller Pipe Outflow 25yr.HYD	04/27/2020	0000	100	0.2417
C:\TADMOR\IDA to 72in-25 Year Storm.HYD	04/27/2020	0000	101	0.2417
COMBINED HYDROGRAPH	04/27/2020	0000	101	0.2417

Date	Time	Hyd A Contribution	Hyd B Contribution	Combined Hydrograph
04/27/2020	0000	0.00	0.00	0.00
04/27/2020	0015	0.00	0.58	0.58
04/27/2020	0029	0.00	1.15	1.15
04/27/2020	0044	0.00	1.73	1.73
04/27/2020	0058	0.00	2.30	2.30
04/27/2020	0113	0.00	2.44	2.44
04/27/2020	0127	0.00	2.57	2.57
04/27/2020	0142	0.00	2.71	2.71
04/27/2020	0156	0.02	2.85	2.86
04/27/2020	0211	15.18	7.64	22.82
04/27/2020	0225	32.35	12.43	44.78
04/27/2020	0240	32.35	17.23	49.58
04/27/2020	0254	32.35	22.01	54.36
04/27/2020	0309	32.35	17.73	50.08
04/27/2020	0323	32.35	13.45	45.80
04/27/2020	0338	32.35	9.18	41.53
04/27/2020	0352	32.35	4.91	37.26
04/27/2020	0407	32.35	4.37	36.72
04/27/2020	0421	32.06	3.84	35.90
04/27/2020	0436	28.02	3.31	31.33
04/27/2020	0450	24.03	2.78	26.81
04/27/2020	0505	21.64	2.73	24.37
04/27/2020	0519	20.98	2.68	23.66
04/27/2020	0534	20.57	2.64	23.21
04/27/2020	0548	20.20	2.59	22.79
04/27/2020	0603	19.55	2.45	22.00
04/27/2020	0617	18.56	2.31	20.88
04/27/2020	0632	17.53	2.17	19.70
04/27/2020	0646	16.48	2.04	18.51
04/27/2020	0701	15.67	1.98	17.65
04/27/2020	0715	15.16	1.92	17.08
04/27/2020	0730	14.70	1.86	16.56
04/27/2020	0744	14.26	1.80	16.07
04/27/2020	0759	13.84	1.76	15.60
04/27/2020	0813	13.45	1.71	15.16
04/27/2020	0828	13.08	1.66	14.74
04/27/2020	0842	12.70	1.61	14.31
04/27/2020	0857	12.34	1.57	13.91
04/27/2020	0911	12.01	1.52	13.53
04/27/2020	0926	11.69	1.48	13.17
04/27/2020	0940	11.36	1.44	12.80
04/27/2020	0955	11.06	1.40	12.46
04/27/2020	1009	10.77	1.37	12.14
04/27/2020	1024	10.50	1.33	11.83
04/27/2020	1038	10.22	1.29	11.51
04/27/2020	1053	9.96	1.26	11.22
04/27/2020	1107	9.71	1.23	10.95
04/27/2020	1122	9.48	1.20	10.68
04/27/2020	1136	9.24	1.17	10.41
04/27/2020	1151	9.01	1.14	10.15
04/27/2020	1205	8.80	1.12	9.92
04/27/2020	1220	8.60	1.09	9.69
04/27/2020	1234	8.39	1.06	9.46

Date	Time	Hyd A Contribution	Hyd B Contribution	Combined Hydrograph
04/27/2020	1249	8.20	1.04	9.24
04/27/2020	1303	8.01	1.02	9.03
04/27/2020	1318	7.84	0.99	8.83
04/27/2020	1332	7.66	0.97	8.63
04/27/2020	1347	7.49	0.95	8.44
04/27/2020	1401	7.33	0.93	8.26
04/27/2020	1416	7.17	0.91	8.09
04/27/2020	1430	7.02	0.89	7.91
04/27/2020	1445	6.88	0.87	7.75
04/27/2020	1459	6.74	0.86	7.59
04/27/2020	1514	6.60	0.84	7.44
04/27/2020	1528	6.47	0.82	7.29
04/27/2020	1543	6.34	0.81	7.14
04/27/2020	1557	6.22	0.79	7.01
04/27/2020	1612	6.10	0.77	6.87
04/27/2020	1626	5.98	0.76	6.74
04/27/2020	1641	5.87	0.75	6.61
04/27/2020	1655	5.76	0.73	6.50
04/27/2020	1710	5.66	0.72	6.38
04/27/2020	1724	5.55	0.71	6.26
04/27/2020	1739	5.45	0.69	6.15
04/27/2020	1753	5.36	0.68	6.04
04/27/2020	1808	5.27	0.67	5.94
04/27/2020	1822	5.17	0.66	5.83
04/27/2020	1837	5.09	0.65	5.74
04/27/2020	1851	5.01	0.64	5.64
04/27/2020	1906	4.93	0.63	5.55
04/27/2020	1920	4.84	0.62	5.46
04/27/2020	1935	4.77	0.61	5.37
04/27/2020	1949	4.69	0.60	5.29
04/27/2020	2004	4.62	0.59	5.21
04/27/2020	2018	4.55	0.58	5.13
04/27/2020	2033	4.48	0.57	5.05
04/27/2020	2047	4.41	0.56	4.97
04/27/2020	2102	4.35	0.55	4.90
04/27/2020	2116	4.29	0.55	4.83
04/27/2020	2131	4.22	0.54	4.76
04/27/2020	2145	4.17	0.53	4.70
04/27/2020	2160	4.11	0.52	4.63
04/27/2020	2214	4.05	0.52	4.57
04/27/2020	2229	4.00	0.51	4.51
04/27/2020	2243	3.94	0.50	4.45
04/27/2020	2258	3.89	0.50	4.39
04/27/2020	2312	3.84	0.49	4.33
04/27/2020	2327	3.79	0.48	4.28
04/27/2020	2341	3.75	0.48	4.22
04/27/2020	2356	3.70	0.47	4.17
04/28/2020	0010	0.00	0.00	0.00

Hydrograph Combination

Filename	Start Date (mo/da/year)	Start Time (hr:min)	Points	Step (hours)
C:\TADMOR\Miller Pipe Outflow 50yr.HYD	04/27/2020	0000	100	0.2417
C:\TADMOR\IDA to 72in-50 Year Storm.HYD	04/27/2020	0000	101	0.2417
COMBINED HYDROGRAPH	04/27/2020	0000	101	0.2417

Date	Time	Hyd A Contribution	Hyd B Contribution	Combined Hydrograph
04/27/2020	0000	0.00	0.00	0.00
04/27/2020	0015	0.00	0.64	0.64
04/27/2020	0029	0.00	1.29	1.29
04/27/2020	0044	0.00	1.93	1.93
04/27/2020	0058	0.00	2.57	2.57
04/27/2020	0113	0.00	2.78	2.78
04/27/2020	0127	0.00	2.99	2.99
04/27/2020	0142	0.00	3.20	3.20
04/27/2020	0156	0.50	3.41	3.91
04/27/2020	0211	32.46	8.79	41.25
04/27/2020	0225	32.46	14.16	46.62
04/27/2020	0240	32.46	19.54	52.00
04/27/2020	0254	32.46	24.90	57.36
04/27/2020	0309	32.46	20.10	52.56
04/27/2020	0323	32.46	15.31	47.77
04/27/2020	0338	32.46	10.52	42.98
04/27/2020	0352	32.46	5.73	38.19
04/27/2020	0407	32.46	5.10	37.56
04/27/2020	0421	32.46	4.46	36.92
04/27/2020	0436	32.32	3.82	36.14
04/27/2020	0450	27.54	3.18	30.73
04/27/2020	0505	24.64	3.10	27.74
04/27/2020	0519	23.74	3.02	26.76
04/27/2020	0534	23.08	2.94	26.02
04/27/2020	0548	22.46	2.86	25.32
04/27/2020	0603	21.67	2.73	24.40
04/27/2020	0617	20.68	2.59	23.28
04/27/2020	0632	19.67	2.46	22.13
04/27/2020	0646	18.65	2.33	20.98
04/27/2020	0701	17.89	2.27	20.16
04/27/2020	0715	17.41	2.22	19.63
04/27/2020	0730	16.98	2.16	19.15
04/27/2020	0744	16.57	2.11	18.68
04/27/2020	0759	16.18	2.06	18.24
04/27/2020	0813	15.81	2.02	17.82
04/27/2020	0828	15.45	1.97	17.41
04/27/2020	0842	15.08	1.92	17.00
04/27/2020	0857	14.74	1.88	16.61
04/27/2020	0911	14.41	1.84	16.25
04/27/2020	0926	14.09	1.80	15.89
04/27/2020	0940	13.77	1.75	15.53
04/27/2020	0955	13.47	1.72	15.18
04/27/2020	1009	13.18	1.68	14.86
04/27/2020	1024	12.90	1.64	14.54
04/27/2020	1038	12.61	1.61	14.22
04/27/2020	1053	12.34	1.57	13.91
04/27/2020	1107	12.08	1.54	13.62
04/27/2020	1122	11.83	1.51	13.33
04/27/2020	1136	11.57	1.47	13.04
04/27/2020	1151	11.33	1.44	12.77
04/27/2020	1205	11.09	1.41	12.51
04/27/2020	1220	10.87	1.38	12.25
04/27/2020	1234	10.64	1.35	11.99

Date	Time	Hyd A Contribution	Hyd B Contribution	Combined Hydrograph
04/27/2020	1249	10.42	1.33	11.74
04/27/2020	1303	10.20	1.30	11.50
04/27/2020	1318	10.00	1.27	11.27
04/27/2020	1332	9.79	1.25	11.04
04/27/2020	1347	9.59	1.22	10.81
04/27/2020	1401	9.40	1.20	10.60
04/27/2020	1416	9.21	1.17	10.38
04/27/2020	1430	9.02	1.15	10.17
04/27/2020	1445	8.84	1.13	9.97
04/27/2020	1459	8.67	1.10	9.77
04/27/2020	1514	8.50	1.08	9.58
04/27/2020	1528	8.32	1.06	9.38
04/27/2020	1543	8.16	1.04	9.20
04/27/2020	1557	8.00	1.02	9.01
04/27/2020	1612	7.84	1.00	8.84
04/27/2020	1626	7.68	0.98	8.66
04/27/2020	1641	7.53	0.96	8.49
04/27/2020	1655	7.38	0.94	8.32
04/27/2020	1710	7.24	0.92	8.16
04/27/2020	1724	7.09	0.90	7.99
04/27/2020	1739	6.95	0.88	7.84
04/27/2020	1753	6.82	0.87	7.69
04/27/2020	1808	6.69	0.85	7.54
04/27/2020	1822	6.55	0.83	7.39
04/27/2020	1837	6.42	0.82	7.24
04/27/2020	1851	6.30	0.80	7.10
04/27/2020	1906	6.17	0.78	6.96
04/27/2020	1920	6.05	0.77	6.82
04/27/2020	1935	5.94	0.75	6.69
04/27/2020	1949	5.82	0.74	6.56
04/27/2020	2004	5.71	0.72	6.43
04/27/2020	2018	5.59	0.71	6.30
04/27/2020	2033	5.48	0.70	6.18
04/27/2020	2047	5.37	0.68	6.05
04/27/2020	2102	5.26	0.67	5.93
04/27/2020	2116	5.16	0.65	5.81
04/27/2020	2131	5.06	0.64	5.70
04/27/2020	2145	4.96	0.63	5.59
04/27/2020	2160	4.86	0.62	5.48
04/27/2020	2214	4.76	0.60	5.37
04/27/2020	2229	4.67	0.59	5.26
04/27/2020	2243	4.57	0.58	5.15
04/27/2020	2258	4.48	0.57	5.05
04/27/2020	2312	4.39	0.56	4.94
04/27/2020	2327	4.30	0.54	4.85
04/27/2020	2341	4.22	0.53	4.75
04/27/2020	2356	4.13	0.52	4.65
04/28/2020	0010	0.00	0.00	0.00

Hydrograph Combination

Filename	Start Date (mo/da/year)	Start Time (hr:min)	Points	Step (hours)
C:\TADMOR\Miller Pipe Outflow 100yr.HYD	04/27/2020	0000	100	0.2417
C:\TADMOR\IDA to 72in-100 Year Storm.HYD	04/27/2020	0000	101	0.2417
COMBINED HYDROGRAPH	04/27/2020	0000	101	0.2417

Date	Time	Hyd A Contribution	Hyd B Contribution	Combined Hydrograph
04/27/2020	0000	0.00	0.00	0.00
04/27/2020	0015	0.00	0.69	0.69
04/27/2020	0029	0.00	1.37	1.37
04/27/2020	0044	0.00	2.06	2.06
04/27/2020	0058	0.00	2.74	2.74
04/27/2020	0113	0.00	3.06	3.06
04/27/2020	0127	0.00	3.37	3.37
04/27/2020	0142	0.01	3.68	3.69
04/27/2020	0156	8.51	4.00	12.51
04/27/2020	0211	32.56	9.91	42.47
04/27/2020	0225	32.56	15.82	48.38
04/27/2020	0240	32.56	21.72	54.28
04/27/2020	0254	32.56	27.61	60.17
04/27/2020	0309	32.56	22.63	55.19
04/27/2020	0323	32.56	17.65	50.21
04/27/2020	0338	32.56	12.67	45.23
04/27/2020	0352	32.56	7.70	40.26
04/27/2020	0407	32.56	6.58	39.14
04/27/2020	0421	32.56	5.46	38.02
04/27/2020	0436	32.55	4.33	36.89
04/27/2020	0450	29.86	3.22	33.08
04/27/2020	0505	25.14	3.14	28.29
04/27/2020	0519	24.10	3.07	27.17
04/27/2020	0534	23.48	3.00	26.48
04/27/2020	0548	22.92	2.92	25.84
04/27/2020	0603	22.32	2.84	25.16
04/27/2020	0617	21.68	2.76	24.44
04/27/2020	0632	21.04	2.67	23.71
04/27/2020	0646	20.40	2.59	22.98
04/27/2020	0701	19.91	2.55	22.46
04/27/2020	0715	19.60	2.52	22.12
04/27/2020	0730	19.32	2.48	21.80
04/27/2020	0744	19.04	2.45	21.49
04/27/2020	0759	18.77	2.41	21.19
04/27/2020	0813	18.51	2.38	20.88
04/27/2020	0828	18.25	2.34	20.59
04/27/2020	0842	17.98	2.31	20.29
04/27/2020	0857	17.72	2.27	19.99
04/27/2020	0911	17.46	2.24	19.70
04/27/2020	0926	17.20	2.21	19.40
04/27/2020	0940	16.94	2.17	19.11
04/27/2020	0955	16.68	2.14	18.82
04/27/2020	1009	16.42	2.11	18.53
04/27/2020	1024	16.17	2.07	18.24
04/27/2020	1038	15.91	2.04	17.95
04/27/2020	1053	15.66	2.01	17.67
04/27/2020	1107	15.41	1.97	17.39
04/27/2020	1122	15.16	1.94	17.10
04/27/2020	1136	14.91	1.91	16.82
04/27/2020	1151	14.66	1.88	16.54
04/27/2020	1205	14.42	1.85	16.27
04/27/2020	1220	14.17	1.81	15.99
04/27/2020	1234	13.93	1.78	15.71

Date	Time	Hyd A Contribution	Hyd B Contribution	Combined Hydrograph
04/27/2020	1249	13.69	1.75	15.44
04/27/2020	1303	13.45	1.72	15.17
04/27/2020	1318	13.21	1.69	14.90
04/27/2020	1332	12.97	1.66	14.63
04/27/2020	1347	12.74	1.63	14.36
04/27/2020	1401	12.50	1.60	14.10
04/27/2020	1416	12.27	1.57	13.84
04/27/2020	1430	12.04	1.54	13.58
04/27/2020	1445	11.81	1.51	13.32
04/27/2020	1459	11.58	1.48	13.06
04/27/2020	1514	11.36	1.45	12.81
04/27/2020	1528	11.13	1.42	12.55
04/27/2020	1543	10.91	1.39	12.30
04/27/2020	1557	10.69	1.36	12.06
04/27/2020	1612	10.47	1.33	11.81
04/27/2020	1626	10.26	1.31	11.56
04/27/2020	1641	10.04	1.28	11.32
04/27/2020	1655	9.83	1.25	11.08
04/27/2020	1710	9.62	1.22	10.84
04/27/2020	1724	9.41	1.20	10.61
04/27/2020	1739	9.20	1.17	10.37
04/27/2020	1753	9.00	1.14	10.14
04/27/2020	1808	8.80	1.12	9.91
04/27/2020	1822	8.59	1.09	9.68
04/27/2020	1837	8.39	1.07	9.46
04/27/2020	1851	8.19	1.04	9.23
04/27/2020	1906	8.00	1.01	9.01
04/27/2020	1920	7.81	0.99	8.79
04/27/2020	1935	7.61	0.96	8.58
04/27/2020	1949	7.42	0.94	8.36
04/27/2020	2004	7.24	0.92	8.15
04/27/2020	2018	7.05	0.89	7.94
04/27/2020	2033	6.86	0.87	7.73
04/27/2020	2047	6.68	0.84	7.53
04/27/2020	2102	6.50	0.82	7.32
04/27/2020	2116	6.32	0.80	7.12
04/27/2020	2131	6.14	0.77	6.92
04/27/2020	2145	5.97	0.75	6.72
04/27/2020	2160	5.80	0.73	6.53
04/27/2020	2214	5.63	0.71	6.33
04/27/2020	2229	5.46	0.68	6.14
04/27/2020	2243	5.29	0.66	5.95
04/27/2020	2258	5.12	0.64	5.77
04/27/2020	2312	4.96	0.62	5.58
04/27/2020	2327	4.80	0.60	5.40
04/27/2020	2341	4.64	0.58	5.22
04/27/2020	2356	4.48	0.56	5.04
04/28/2020	0010	0.00	0.00	0.00

72" PIPE ROUTING (INCLUDES CD3)

72IN PIPE & CD3 Storage

Prepared by Maser Consulting PA

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Type II 24-hr 100yr Rainfall=7.63"

Printed 11/19/2020

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Summary for Pond 1P: 72" Cast Iron Pipe & CD3

[43] Hint: Has no inflow (Outflow=Zero)

Volume	Invert	Avail.Storage	Storage Description
#1	404.00'	2.294 af	Closed Depression (CD3) (Prismatic) Listed below (Recalc)
#2	398.39'	0.246 af	72.0" Round Pipe Storage L= 379.0' S= 0.0090 '/'
		2.540 af	Total Available Storage

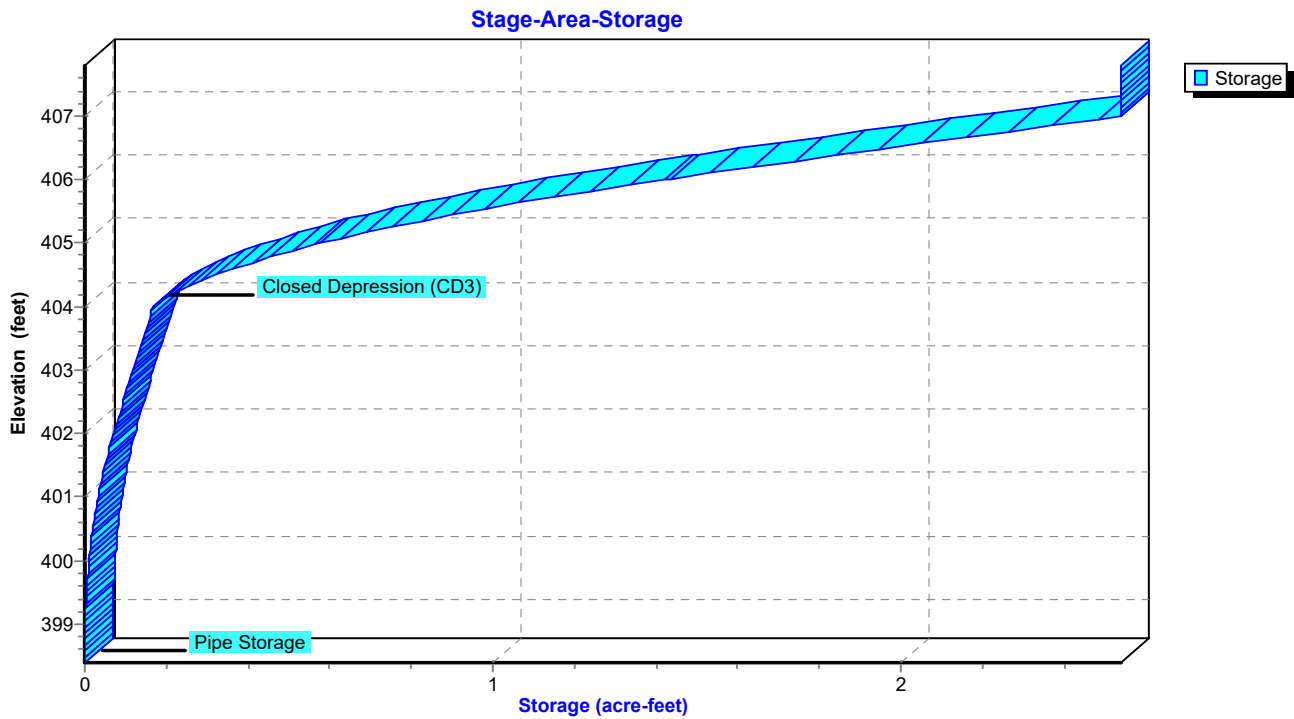
Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
404.00	0.157	0.000	0.000
405.00	0.589	0.373	0.373
406.00	1.045	0.817	1.190
407.00	1.163	1.104	2.294

Device	Routing	Invert	Outlet Devices
#1	Primary	398.39'	24.0" Vert. Orifice/Grate C= 0.600

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=0.00' (Free Discharge)

↑1=Orifice/Grate (Controls 0.00 cfs)

Pond 1P: 72" Cast Iron Pipe & CD3



72IN PIPE & CD3 Storage

Prepared by Maser Consulting PA

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Type II 24-hr 100yr Rainfall=7.63"

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Stage-Area-Storage for Pond 1P: 72" Cast Iron Pipe & CD3

Elevation (feet)	Storage (acre-feet)	Elevation (feet)	Storage (acre-feet)
398.39	0.000	403.59	0.147
398.49	0.000	403.69	0.152
398.59	0.000	403.79	0.157
398.69	0.000	403.89	0.162
398.79	0.000	403.99	0.166
398.89	0.001	404.09	0.187
398.99	0.001	404.19	0.213
399.09	0.001	404.29	0.243
399.19	0.002	404.39	0.278
399.29	0.002	404.49	0.317
399.39	0.003	404.59	0.360
399.49	0.004	404.69	0.407
399.59	0.005	404.79	0.459
399.69	0.006	404.89	0.514
399.79	0.007	404.99	0.574
399.89	0.009	405.09	0.638
399.99	0.010	405.19	0.706
400.09	0.012	405.29	0.779
400.19	0.014	405.39	0.856
400.29	0.015	405.49	0.938
400.39	0.017	405.59	1.024
400.49	0.020	405.69	1.114
400.59	0.022	405.79	1.209
400.69	0.024	405.89	1.308
400.79	0.027	405.99	1.412
400.89	0.030	406.09	1.519
400.99	0.033	406.19	1.626
401.09	0.036	406.29	1.735
401.19	0.039	406.39	1.845
401.29	0.042	406.49	1.956
401.39	0.046	406.59	2.068
401.49	0.050	406.69	2.181
401.59	0.053	406.79	2.295
401.69	0.057	406.89	2.410
401.79	0.062	406.99	2.526
401.89	0.066	407.09	2.539
401.99	0.070	407.19	2.539
402.09	0.075	407.29	2.539
402.19	0.079	407.39	2.540
402.29	0.084	407.49	2.540
402.39	0.089	407.59	2.540
402.49	0.093	407.69	2.540
402.59	0.098	407.79	2.540
402.69	0.103		
402.79	0.108		
402.89	0.113		
402.99	0.118		
403.09	0.123		
403.19	0.128		
403.29	0.133		
403.39	0.137		
403.49	0.142		

Basin Storage/Elevation Input

Elevation (ft)	Storage (acre-ft)
398.39	0.0000
399.39	0.0030
400.39	0.0170
401.39	0.0460
402.39	0.0890
403.39	0.1370
404.39	0.2780
405.39	0.8560
406.39	1.8450
406.99	2.5260

Project Files:

Outlet Structure Configuration: R:\Projects\2018\18000145B\Reports\Stormwater Management\210426 LVPC (updated CD3 and Hydroflow)\Work

Discharge/Elevation Curve: R:\Projects\2018\18000145B\Reports\Stormwater Management\210426 LVPC (updated CD3 and Hydroflow)\Working

Outlet Structure Configuration

Stage 1: Circular Orifice

Invert Elevation = 398.39 feet

Diameter = 2 feet

Discharge Coefficient = 0.6

Basin Rating Curve

Basin Water Elevation	Basin Outflow (cfs)	Riser Box Water Elevation	Tailwater Elevation (ft)	Outfall Culvert Control	Outfall Culvert Override?
398.39	0.00	N/A	N/A	N/A	N/A
398.49	0.05	N/A	N/A	N/A	N/A
398.59	0.19	N/A	N/A	N/A	N/A
398.69	0.42	N/A	N/A	N/A	N/A
398.79	0.72	N/A	N/A	N/A	N/A
398.89	1.11	N/A	N/A	N/A	N/A
398.99	1.56	N/A	N/A	N/A	N/A
399.09	2.10	N/A	N/A	N/A	N/A
399.19	2.70	N/A	N/A	N/A	N/A
399.29	3.38	N/A	N/A	N/A	N/A
399.39	4.13	N/A	N/A	N/A	N/A
399.49	4.95	N/A	N/A	N/A	N/A
399.59	5.84	N/A	N/A	N/A	N/A
399.69	6.80	N/A	N/A	N/A	N/A
399.79	7.82	N/A	N/A	N/A	N/A
399.89	8.92	N/A	N/A	N/A	N/A
399.99	10.08	N/A	N/A	N/A	N/A
400.09	11.07	N/A	N/A	N/A	N/A
400.19	12.06	N/A	N/A	N/A	N/A
400.29	13.08	N/A	N/A	N/A	N/A
400.39	14.12	N/A	N/A	N/A	N/A
400.49	15.87	N/A	N/A	N/A	N/A
400.59	16.57	N/A	N/A	N/A	N/A
400.69	17.25	N/A	N/A	N/A	N/A
400.79	17.90	N/A	N/A	N/A	N/A
400.89	18.53	N/A	N/A	N/A	N/A
400.99	19.13	N/A	N/A	N/A	N/A
401.09	19.72	N/A	N/A	N/A	N/A
401.19	20.29	N/A	N/A	N/A	N/A
401.29	20.85	N/A	N/A	N/A	N/A
401.39	21.39	N/A	N/A	N/A	N/A
401.49	21.92	N/A	N/A	N/A	N/A
401.59	22.44	N/A	N/A	N/A	N/A
401.69	22.94	N/A	N/A	N/A	N/A
401.79	23.43	N/A	N/A	N/A	N/A
401.89	23.92	N/A	N/A	N/A	N/A
401.99	24.39	N/A	N/A	N/A	N/A
402.09	24.86	N/A	N/A	N/A	N/A
402.19	25.31	N/A	N/A	N/A	N/A
402.29	25.76	N/A	N/A	N/A	N/A
402.39	26.20	N/A	N/A	N/A	N/A
402.49	26.63	N/A	N/A	N/A	N/A
402.59	27.06	N/A	N/A	N/A	N/A
402.69	27.48	N/A	N/A	N/A	N/A
402.79	27.89	N/A	N/A	N/A	N/A
402.89	28.30	N/A	N/A	N/A	N/A
402.99	28.70	N/A	N/A	N/A	N/A

Basin Water Elevation	Basin Outflow (cfs)	Riser Box Water Elevation	Tailwater Elevation (ft)	Outfall Culvert Control	Outfall Culvert Override?
403.09	29.10	N/A	N/A	N/A	N/A
403.19	29.49	N/A	N/A	N/A	N/A
403.29	29.87	N/A	N/A	N/A	N/A
403.39	30.25	N/A	N/A	N/A	N/A
403.49	30.63	N/A	N/A	N/A	N/A
403.59	31.00	N/A	N/A	N/A	N/A
403.69	31.37	N/A	N/A	N/A	N/A
403.79	31.73	N/A	N/A	N/A	N/A
403.89	32.09	N/A	N/A	N/A	N/A
403.99	32.44	N/A	N/A	N/A	N/A
404.09	32.79	N/A	N/A	N/A	N/A
404.19	33.14	N/A	N/A	N/A	N/A
404.29	33.48	N/A	N/A	N/A	N/A
404.39	33.82	N/A	N/A	N/A	N/A
404.49	34.16	N/A	N/A	N/A	N/A
404.59	34.49	N/A	N/A	N/A	N/A
404.69	34.82	N/A	N/A	N/A	N/A
404.79	35.15	N/A	N/A	N/A	N/A
404.89	35.48	N/A	N/A	N/A	N/A
404.99	35.80	N/A	N/A	N/A	N/A
405.09	36.11	N/A	N/A	N/A	N/A
405.19	36.43	N/A	N/A	N/A	N/A
405.29	36.74	N/A	N/A	N/A	N/A
405.39	37.05	N/A	N/A	N/A	N/A
405.49	37.36	N/A	N/A	N/A	N/A
405.59	37.67	N/A	N/A	N/A	N/A
405.69	37.97	N/A	N/A	N/A	N/A
405.79	38.27	N/A	N/A	N/A	N/A
405.89	38.57	N/A	N/A	N/A	N/A
405.99	38.86	N/A	N/A	N/A	N/A
406.09	39.15	N/A	N/A	N/A	N/A
406.19	39.45	N/A	N/A	N/A	N/A
406.29	39.73	N/A	N/A	N/A	N/A
406.39	40.02	N/A	N/A	N/A	N/A
406.49	40.31	N/A	N/A	N/A	N/A
406.59	40.59	N/A	N/A	N/A	N/A
406.69	40.87	N/A	N/A	N/A	N/A
406.79	41.15	N/A	N/A	N/A	N/A
406.89	41.43	N/A	N/A	N/A	N/A
406.99	41.70	N/A	N/A	N/A	N/A

**Modified Puls Routing
Summary of Results**

Inflow Hydrograph: R:\Projects\2018\18000145B\Reports\Stormwater Management\200615\Working Files\VTPSUHM\POST\Bypass\Combined Flow G 2yr.HYD
Storage/Elevation Curve: R:\Projects\2018\18000145B\Reports\Stormwater Management\210426 LVPC (updated CD3 and Hydroflow)\Working Files\VTPSUHM\72i

Basin Bypass Capacity = 0.00 cfs
Starting Pool Elevation = 398.39 feet
Time Interval = 0.242 hours
Total number of Inflow points = 101

	Event Time (hours)	Hydrograph Inflow (cfs)	Basin Inflow (cfs)	Storage Used (acre-ft)	Elevation Above MSL (feet)	Basin Outflow (cfs)	Outflow Total (cfs)
Start	0.00	0.00	0.00	0.0000	398.39	0.00	0.00
Max. Inflow	2.90	43.40	43.40	0.2997	404.43	33.95	33.95
Max. Outflow	3.63	36.38	36.38	0.5926	404.93	35.62	35.62
Final	24.17	0.00	0.00	0.0257	400.69	0.17	0.17

Modified Puls Routing

Inflow Hydrograph: R:\Projects\2018\18000145B\Reports\Stormwater Management\200615\Working Files\VTPSUHM\POST\Bypass\Combined Flow G 2yr.HYD
 Storage/Elevation Curve: R:\Projects\2018\18000145B\Reports\Stormwater Management\210426 LVPC (updated CD3 and Hydroflow)\Working Files\VTPSUHM\72in

Basin Bypass Capacity = 0.00 cfs
 Starting Pool Elevation = 398.39 feet
 Time Interval = 0.242 hours

Event Time (hours)	Hydrograph Inflow (cfs)	Basin Inflow (cfs)	Storage Used (acre-ft)	Elevation Above MSL (feet)	Basin Outflow (cfs)	Outflow Total (cfs)
0.00	0.00	0.00	0.0000	398.39	0.00	0.00
0.24	0.27	0.27	0.0006	398.60	0.21	0.21
0.48	0.54	0.54	0.0010	398.74	0.56	0.56
0.73	0.81	0.81	0.0012	398.80	0.77	0.77
0.97	1.08	1.08	0.0015	398.89	1.09	1.09
1.21	1.14	1.14	0.0015	398.89	1.12	1.12
1.45	1.20	1.20	0.0016	398.91	1.21	1.21
1.69	1.26	1.26	0.0016	398.92	1.25	1.25
1.93	1.33	1.33	0.0017	398.94	1.34	1.34
2.18	3.88	3.88	0.0029	399.34	3.75	3.75
2.42	6.47	6.47	0.0064	399.63	6.24	6.24
2.66	37.63	37.63	0.1070	402.76	27.79	27.79
2.90	43.40	43.40	0.2997	404.43	33.95	33.95
3.14	41.07	41.07	0.4561	404.70	34.85	34.85
3.38	38.73	38.73	0.5516	404.86	35.39	35.39
3.63	36.38	36.38	0.5926	404.93	35.62	35.62
3.87	29.14	29.14	0.5385	404.84	35.32	35.32
4.11	19.44	19.44	0.3301	404.48	34.13	34.13
4.35	16.43	16.43	0.0874	402.35	26.04	26.04
4.59	14.32	14.32	0.0142	400.19	12.04	12.04
4.83	12.36	12.36	0.0171	400.39	14.35	14.35
5.08	11.26	11.26	0.0111	399.97	9.86	9.86
5.32	10.89	10.89	0.0141	400.18	11.99	11.99
5.56	10.70	10.70	0.0112	399.97	9.89	9.89
5.80	10.57	10.57	0.0130	400.10	11.20	11.20
6.04	10.27	10.27	0.0111	399.97	9.83	9.83
6.28	9.80	9.80	0.0115	400.00	10.19	10.19
6.53	9.28	9.28	0.0101	399.90	9.03	9.03
6.77	8.75	8.75	0.0101	399.90	9.01	9.01
7.01	8.34	8.34	0.0091	399.82	8.19	8.19
7.25	8.06	8.06	0.0091	399.83	8.21	8.21
7.49	7.82	7.82	0.0085	399.78	7.73	7.73
7.73	7.59	7.59	0.0084	399.78	7.68	7.68
7.98	7.37	7.37	0.0079	399.74	7.32	7.32
8.22	7.17	7.17	0.0078	399.73	7.23	7.23
8.46	6.98	6.98	0.0074	399.71	6.96	6.96
8.70	6.78	6.78	0.0072	399.69	6.82	6.82
8.94	6.61	6.61	0.0069	399.67	6.60	6.60
9.18	6.44	6.44	0.0067	399.66	6.47	6.47
9.43	6.27	6.27	0.0064	399.64	6.27	6.27
9.67	6.11	6.11	0.0062	399.62	6.13	6.13
9.91	5.95	5.95	0.0060	399.60	5.96	5.96
10.15	5.81	5.81	0.0058	399.59	5.82	5.82
10.39	5.67	5.67	0.0056	399.57	5.68	5.68
10.63	5.53	5.53	0.0053	399.56	5.54	5.54
10.88	5.40	5.40	0.0051	399.54	5.41	5.41
11.12	5.28	5.28	0.0050	399.53	5.29	5.29
11.36	5.15	5.15	0.0047	399.51	5.16	5.16
11.60	5.03	5.03	0.0045	399.50	5.04	5.04
11.84	4.92	4.92	0.0044	399.49	4.93	4.93
12.08	4.82	4.82	0.0042	399.48	4.83	4.83
12.33	4.72	4.72	0.0040	399.46	4.73	4.73

Event Time (hours)	Hydrograph Inflow (cfs)	Basin Inflow (cfs)	Storage Used (acre-ft)	Elevation Above MSL (feet)	Basin Outflow (cfs)	Outflow Total (cfs)
12.57	4.62	4.62	0.0039	399.45	4.63	4.63
12.81	4.52	4.52	0.0037	399.44	4.53	4.53
13.05	4.43	4.43	0.0035	399.43	4.44	4.44
13.29	4.34	4.34	0.0034	399.42	4.35	4.35
13.54	4.25	4.25	0.0032	399.41	4.26	4.26
13.78	4.17	4.17	0.0031	399.40	4.18	4.18
14.02	4.09	4.09	0.0030	399.39	4.09	4.09
14.26	4.01	4.01	0.0030	399.37	4.01	4.01
14.50	3.94	3.94	0.0029	399.37	3.94	3.94
14.74	3.87	3.87	0.0029	399.36	3.87	3.87
14.99	3.80	3.80	0.0029	399.35	3.80	3.80
15.23	3.73	3.73	0.0028	399.34	3.73	3.73
15.47	3.67	3.67	0.0028	399.33	3.67	3.67
15.71	3.61	3.61	0.0028	399.32	3.61	3.61
15.95	3.55	3.55	0.0028	399.31	3.55	3.55
16.19	3.49	3.49	0.0027	399.31	3.49	3.49
16.44	3.43	3.43	0.0027	399.30	3.43	3.43
16.68	3.37	3.37	0.0027	399.29	3.37	3.37
16.92	3.32	3.32	0.0027	399.28	3.32	3.32
17.16	3.27	3.27	0.0027	399.27	3.27	3.27
17.40	3.22	3.22	0.0026	399.27	3.22	3.22
17.64	3.18	3.18	0.0026	399.26	3.18	3.18
17.89	3.13	3.13	0.0026	399.25	3.13	3.13
18.13	3.09	3.09	0.0026	399.25	3.09	3.09
18.37	3.05	3.05	0.0026	399.24	3.05	3.05
18.61	3.00	3.00	0.0025	399.24	3.00	3.00
18.85	2.96	2.96	0.0025	399.23	2.96	2.96
19.09	2.93	2.93	0.0025	399.22	2.93	2.93
19.34	2.89	2.89	0.0025	399.22	2.89	2.89
19.58	2.85	2.85	0.0025	399.21	2.85	2.85
19.82	2.81	2.81	0.0025	399.21	2.81	2.81
20.06	2.78	2.78	0.0024	399.20	2.78	2.78
20.30	2.75	2.75	0.0024	399.20	2.75	2.75
20.54	2.71	2.71	0.0024	399.19	2.71	2.71
20.79	2.68	2.68	0.0024	399.19	2.68	2.68
21.03	2.65	2.65	0.0024	399.18	2.65	2.65
21.27	2.62	2.62	0.0024	399.18	2.62	2.62
21.51	2.59	2.59	0.0023	399.17	2.59	2.59
21.75	2.57	2.57	0.0023	399.17	2.57	2.57
21.99	2.54	2.54	0.0023	399.16	2.54	2.54
22.24	2.51	2.51	0.0023	399.16	2.51	2.51
22.48	2.49	2.49	0.0023	399.16	2.49	2.49
22.72	2.46	2.46	0.0023	399.15	2.46	2.46
22.96	2.44	2.44	0.0023	399.15	2.44	2.44
23.20	2.42	2.42	0.0023	399.15	2.42	2.42
23.44	2.40	2.40	0.0023	399.14	2.40	2.40
23.69	2.38	2.38	0.0022	399.14	2.38	2.38
23.93	2.35	2.35	0.0022	399.13	2.35	2.35
24.17	0.00	0.00	0.0257	400.69	0.17	0.17

**Modified Puls Routing
Summary of Results**

Inflow Hydrograph: R:\Projects\2018\18000145B\Reports\Stormwater Management\200615\Working Files\VTPSUHM\POST\Bypass\Combined Flow G 10yr.HYD
Storage/Elevation Curve: R:\Projects\2018\18000145B\Reports\Stormwater Management\210426 LVPC (updated CD3 and Hydroflow)\Working Files\VTPSUHM\72in

Basin Bypass Capacity = 0.00 cfs
Starting Pool Elevation = 398.39 feet
Time Interval = 0.242 hours
Total number of Inflow points = 101

	Event Time (hours)	Hydrograph Inflow (cfs)	Basin Inflow (cfs)	Storage Used (acre-ft)	Elevation Above MSL (feet)	Basin Outflow (cfs)	Outflow Total (cfs)
Start	0.00	0.00	0.00	0.0000	398.39	0.00	0.00
Max. Inflow	2.90	48.66	48.66	0.5309	404.83	35.27	35.27
Max. Outflow	3.63	38.78	38.78	0.9539	405.49	37.36	37.36
Final	24.17	0.00	0.00	0.0369	401.08	0.21	0.21

Modified Puls Routing

Inflow Hydrograph: R:\Projects\2018\18000145B\Reports\Stormwater Management\200615\Working Files\VTPSUHM\POST\Bypass\Combined Flow G 10yr.HYD
 Storage/Elevation Curve: R:\Projects\2018\18000145B\Reports\Stormwater Management\210426 LVPC (updated CD3 and Hydroflow)\Working Files\VTPSUHM\72in

Basin Bypass Capacity = 0.00 cfs
 Starting Pool Elevation = 398.39 feet
 Time Interval = 0.242 hours

Event Time (hours)	Hydrograph Inflow (cfs)	Basin Inflow (cfs)	Storage Used (acre-ft)	Elevation Above MSL (feet)	Basin Outflow (cfs)	Outflow Total (cfs)
0.00	0.00	0.00	0.0000	398.39	0.00	0.00
0.24	0.41	0.41	0.0008	398.65	0.33	0.33
0.48	0.81	0.81	0.0013	398.82	0.84	0.84
0.73	1.22	1.22	0.0015	398.90	1.17	1.17
0.97	1.62	1.62	0.0018	399.01	1.64	1.64
1.21	1.73	1.73	0.0019	399.02	1.70	1.70
1.45	1.84	1.84	0.0020	399.05	1.86	1.86
1.69	1.94	1.94	0.0020	399.06	1.92	1.92
1.93	2.05	2.05	0.0021	399.08	2.06	2.06
2.18	5.71	5.71	0.0051	399.54	5.39	5.39
2.42	34.70	34.70	0.0912	402.44	26.40	26.40
2.66	45.04	45.04	0.2857	404.40	33.87	33.87
2.90	48.66	48.66	0.5309	404.83	35.27	35.27
3.14	45.36	45.36	0.7531	405.21	36.50	36.50
3.38	42.07	42.07	0.8907	405.43	37.16	37.16
3.63	38.78	38.78	0.9539	405.49	37.36	37.36
3.87	35.47	35.47	0.9494	405.48	37.34	37.34
4.11	28.70	28.70	0.8477	405.38	37.01	37.01
4.35	24.79	24.79	0.6532	405.04	35.95	35.95
4.59	21.63	21.63	0.4122	404.62	34.60	34.60
4.83	18.58	18.58	0.1600	403.55	30.86	30.86
5.08	16.92	16.92	0.0283	400.78	17.82	17.82
5.32	16.47	16.47	0.0215	400.54	16.25	16.25
5.56	16.27	16.27	0.0222	400.57	16.42	16.42
5.80	16.11	16.11	0.0208	400.52	16.09	16.09
6.04	15.60	15.60	0.0195	400.47	15.75	15.75
6.28	14.75	14.75	0.0172	400.40	14.82	14.82
6.53	13.83	13.83	0.0166	400.36	13.82	13.82
6.77	12.90	12.90	0.0155	400.28	13.02	13.02
7.01	12.21	12.21	0.0144	400.20	12.20	12.20
7.25	11.75	11.75	0.0139	400.17	11.81	11.81
7.49	11.34	11.34	0.0132	400.12	11.34	11.34
7.73	10.96	10.96	0.0127	400.08	11.00	11.00
7.98	10.60	10.60	0.0121	400.04	10.61	10.61
8.22	10.27	10.27	0.0117	400.01	10.30	10.30
8.46	9.95	9.95	0.0113	399.98	9.96	9.96
8.70	9.63	9.63	0.0109	399.95	9.66	9.66
8.94	9.33	9.33	0.0105	399.93	9.34	9.34
9.18	9.06	9.06	0.0102	399.90	9.08	9.08
9.43	8.79	8.79	0.0099	399.88	8.80	8.80
9.67	8.53	8.53	0.0095	399.86	8.55	8.55
9.91	8.28	8.28	0.0092	399.83	8.29	8.29
10.15	8.06	8.06	0.0089	399.81	8.07	8.07
10.39	7.83	7.83	0.0086	399.79	7.85	7.85
10.63	7.62	7.62	0.0083	399.77	7.63	7.63
10.88	7.42	7.42	0.0081	399.75	7.43	7.43
11.12	7.22	7.22	0.0078	399.73	7.23	7.23
11.36	7.04	7.04	0.0076	399.72	7.05	7.05
11.60	6.86	6.86	0.0073	399.70	6.87	6.87
11.84	6.69	6.69	0.0071	399.68	6.70	6.70
12.08	6.54	6.54	0.0069	399.67	6.55	6.55
12.33	6.38	6.38	0.0066	399.65	6.39	6.39

Event Time (hours)	Hydrograph Inflow (cfs)	Basin Inflow (cfs)	Storage Used (acre-ft)	Elevation Above MSL (feet)	Basin Outflow (cfs)	Outflow Total (cfs)
12.57	6.23	6.23	0.0064	399.63	6.24	6.24
12.81	6.09	6.09	0.0062	399.62	6.10	6.10
13.05	5.96	5.96	0.0060	399.60	5.97	5.97
13.29	5.83	5.83	0.0058	399.59	5.84	5.84
13.54	5.71	5.71	0.0056	399.58	5.72	5.72
13.78	5.59	5.59	0.0054	399.56	5.60	5.60
14.02	5.48	5.48	0.0053	399.55	5.49	5.49
14.26	5.37	5.37	0.0051	399.54	5.38	5.38
14.50	5.27	5.27	0.0049	399.53	5.28	5.28
14.74	5.17	5.17	0.0048	399.52	5.18	5.18
14.99	5.08	5.08	0.0046	399.51	5.09	5.09
15.23	4.99	4.99	0.0045	399.50	5.00	5.00
15.47	4.90	4.90	0.0043	399.49	4.91	4.91
15.71	4.82	4.82	0.0042	399.48	4.83	4.83
15.95	4.74	4.74	0.0041	399.47	4.75	4.75
16.19	4.67	4.67	0.0039	399.46	4.68	4.68
16.44	4.60	4.60	0.0038	399.45	4.61	4.61
16.68	4.53	4.53	0.0037	399.44	4.54	4.54
16.92	4.46	4.46	0.0036	399.43	4.47	4.47
17.16	4.40	4.40	0.0035	399.42	4.40	4.40
17.40	4.34	4.34	0.0034	399.42	4.35	4.35
17.64	4.28	4.28	0.0033	399.41	4.28	4.28
17.89	4.22	4.22	0.0032	399.40	4.23	4.23
18.13	4.17	4.17	0.0031	399.40	4.17	4.17
18.37	4.12	4.12	0.0030	399.39	4.12	4.12
18.61	4.07	4.07	0.0030	399.38	4.07	4.07
18.85	4.03	4.03	0.0030	399.38	4.03	4.03
19.09	3.98	3.98	0.0029	399.37	3.98	3.98
19.34	3.94	3.94	0.0029	399.37	3.94	3.94
19.58	3.90	3.90	0.0029	399.36	3.90	3.90
19.82	3.86	3.86	0.0029	399.36	3.86	3.86
20.06	3.83	3.83	0.0029	399.35	3.83	3.83
20.30	3.79	3.79	0.0029	399.35	3.79	3.79
20.54	3.76	3.76	0.0029	399.34	3.76	3.76
20.79	3.73	3.73	0.0028	399.34	3.73	3.73
21.03	3.70	3.70	0.0028	399.33	3.70	3.70
21.27	3.67	3.67	0.0028	399.33	3.67	3.67
21.51	3.64	3.64	0.0028	399.33	3.64	3.64
21.75	3.61	3.61	0.0028	399.32	3.61	3.61
21.99	3.59	3.59	0.0028	399.32	3.59	3.59
22.24	3.56	3.56	0.0028	399.32	3.56	3.56
22.48	3.54	3.54	0.0028	399.31	3.54	3.54
22.72	3.52	3.52	0.0028	399.31	3.52	3.52
22.96	3.50	3.50	0.0027	399.31	3.50	3.50
23.20	3.48	3.48	0.0027	399.30	3.48	3.48
23.44	3.46	3.46	0.0027	399.30	3.46	3.46
23.69	3.44	3.44	0.0027	399.30	3.44	3.44
23.93	3.42	3.42	0.0027	399.30	3.42	3.42
24.17	0.00	0.00	0.0369	401.08	0.21	0.21

**Modified Puls Routing
Summary of Results**

Inflow Hydrograph: R:\Projects\2018\18000145B\Reports\Stormwater Management\200615\Working Files\VTPSUHM\POST\Bypass\Combined Flow G 25yr.HYD
Storage/Elevation Curve: R:\Projects\2018\18000145B\Reports\Stormwater Management\210426 LVPC (updated CD3 and Hydroflow)\Working Files\VTPSUHM\72in

Basin Bypass Capacity = 0.00 cfs
Starting Pool Elevation = 398.39 feet
Time Interval = 0.242 hours
Total number of Inflow points = 101

	Event Time (hours)	Hydrograph Inflow (cfs)	Basin Inflow (cfs)	Storage Used (acre-ft)	Elevation Above MSL (feet)	Basin Outflow (cfs)	Outflow Total (cfs)
Start	0.00	0.00	0.00	0.0000	398.39	0.00	0.00
Max. Inflow	2.90	54.36	54.36	0.7959	405.29	36.73	36.73
Max. Outflow	3.87	37.26	37.26	1.4074	405.95	38.74	38.74
Final	24.17	0.00	0.00	0.0447	401.35	0.24	0.24

Modified Puls Routing

Inflow Hydrograph: R:\Projects\2018\18000145B\Reports\Stormwater Management\200615\Working Files\VTPSUHM\POST\Bypass\Combined Flow G 25yr.HYD
 Storage/Elevation Curve: R:\Projects\2018\18000145B\Reports\Stormwater Management\210426 LVPC (updated CD3 and Hydroflow)\Working Files\VTPSUHM\72in

Basin Bypass Capacity = 0.00 cfs
 Starting Pool Elevation = 398.39 feet
 Time Interval = 0.242 hours

Event Time (hours)	Hydrograph Inflow (cfs)	Basin Inflow (cfs)	Storage Used (acre-ft)	Elevation Above MSL (feet)	Basin Outflow (cfs)	Outflow Total (cfs)
0.00	0.00	0.00	0.0000	398.39	0.00	0.00
0.24	0.58	0.58	0.0010	398.71	0.48	0.48
0.48	1.15	1.15	0.0016	398.91	1.19	1.19
0.73	1.73	1.73	0.0019	399.01	1.66	1.66
0.97	2.30	2.30	0.0022	399.13	2.33	2.33
1.21	2.44	2.44	0.0023	399.14	2.40	2.40
1.45	2.57	2.57	0.0024	399.17	2.60	2.60
1.69	2.71	2.71	0.0024	399.19	2.68	2.68
1.93	2.86	2.86	0.0025	399.22	2.88	2.88
2.18	22.82	22.82	0.0359	401.04	19.45	19.45
2.42	44.78	44.78	0.1986	403.83	31.86	31.86
2.66	49.58	49.58	0.4737	404.73	34.95	34.95
2.90	54.36	54.36	0.7959	405.29	36.73	36.73
3.14	50.08	50.08	1.0947	405.63	37.79	37.79
3.38	45.80	45.80	1.2915	405.83	38.39	38.39
3.63	41.53	41.53	1.3938	405.93	38.70	38.70
3.87	37.26	37.26	1.4074	405.95	38.74	38.74
4.11	36.72	36.72	1.3735	405.91	38.63	38.63
4.35	35.90	35.90	1.3284	405.87	38.50	38.50
4.59	31.33	31.33	1.2337	405.77	38.21	38.21
4.83	26.81	26.81	1.0565	405.59	37.67	37.67
5.08	24.37	24.37	0.8231	405.33	36.88	36.88
5.32	23.66	23.66	0.5795	404.91	35.54	35.54
5.56	23.21	23.21	0.3505	404.52	34.25	34.25
5.80	22.79	22.79	0.1597	403.55	30.86	30.86
6.04	22.00	22.00	0.0640	401.81	23.52	23.52
6.28	20.88	20.88	0.0452	401.36	21.24	21.24
6.53	19.70	19.70	0.0387	401.14	19.99	19.99
6.77	18.51	18.51	0.0328	400.94	18.80	18.80
7.01	17.65	17.65	0.0282	400.78	17.82	17.82
7.25	17.08	17.08	0.0255	400.68	17.19	17.19
7.49	16.56	16.56	0.0232	400.60	16.67	16.67
7.73	16.07	16.07	0.0211	400.53	16.17	16.17
7.98	15.60	15.60	0.0192	400.47	15.69	15.69
8.22	15.16	15.16	0.0174	400.41	15.24	15.24
8.46	14.74	14.74	0.0172	400.40	14.69	14.69
8.70	14.31	14.31	0.0171	400.39	14.37	14.37
8.94	13.91	13.91	0.0167	400.37	13.89	13.89
9.18	13.53	13.53	0.0163	400.34	13.59	13.59
9.43	13.17	13.17	0.0157	400.30	13.16	13.16
9.67	12.80	12.80	0.0153	400.27	12.85	12.85
9.91	12.46	12.46	0.0148	400.23	12.46	12.46
10.15	12.14	12.14	0.0144	400.20	12.18	12.18
10.39	11.83	11.83	0.0139	400.17	11.84	11.84
10.63	11.51	11.51	0.0135	400.14	11.54	11.54
10.88	11.22	11.22	0.0130	400.11	11.23	11.23
11.12	10.95	10.95	0.0127	400.08	10.97	10.97
11.36	10.68	10.68	0.0123	400.05	10.70	10.70
11.60	10.41	10.41	0.0119	400.02	10.43	10.43
11.84	10.15	10.15	0.0115	400.00	10.17	10.17
12.08	9.92	9.92	0.0112	399.98	9.93	9.93
12.33	9.69	9.69	0.0110	399.96	9.70	9.70

Event Time (hours)	Hydrograph Inflow (cfs)	Basin Inflow (cfs)	Storage Used (acre-ft)	Elevation Above MSL (feet)	Basin Outflow (cfs)	Outflow Total (cfs)
12.57	9.46	9.46	0.0107	399.94	9.47	9.47
12.81	9.24	9.24	0.0104	399.92	9.25	9.25
13.05	9.03	9.03	0.0102	399.90	9.04	9.04
13.29	8.83	8.83	0.0099	399.88	8.84	8.84
13.54	8.63	8.63	0.0097	399.87	8.64	8.64
13.78	8.44	8.44	0.0094	399.85	8.45	8.45
14.02	8.26	8.26	0.0092	399.83	8.27	8.27
14.26	8.09	8.09	0.0090	399.82	8.10	8.10
14.50	7.91	7.91	0.0087	399.80	7.92	7.92
14.74	7.75	7.75	0.0085	399.78	7.76	7.76
14.99	7.59	7.59	0.0083	399.77	7.60	7.60
15.23	7.44	7.44	0.0081	399.75	7.45	7.45
15.47	7.29	7.29	0.0079	399.74	7.30	7.30
15.71	7.14	7.14	0.0077	399.73	7.15	7.15
15.95	7.01	7.01	0.0075	399.71	7.02	7.02
16.19	6.87	6.87	0.0073	399.70	6.88	6.88
16.44	6.74	6.74	0.0071	399.69	6.75	6.75
16.68	6.61	6.61	0.0070	399.67	6.62	6.62
16.92	6.50	6.50	0.0068	399.66	6.51	6.51
17.16	6.38	6.38	0.0066	399.65	6.39	6.39
17.40	6.26	6.26	0.0064	399.64	6.27	6.27
17.64	6.15	6.15	0.0063	399.62	6.16	6.16
17.89	6.04	6.04	0.0061	399.61	6.05	6.05
18.13	5.94	5.94	0.0060	399.60	5.95	5.95
18.37	5.83	5.83	0.0058	399.59	5.84	5.84
18.61	5.74	5.74	0.0057	399.58	5.74	5.74
18.85	5.64	5.64	0.0055	399.57	5.65	5.65
19.09	5.55	5.55	0.0054	399.56	5.55	5.55
19.34	5.46	5.46	0.0052	399.55	5.47	5.47
19.58	5.37	5.37	0.0051	399.54	5.38	5.38
19.82	5.29	5.29	0.0050	399.53	5.30	5.30
20.06	5.21	5.21	0.0048	399.52	5.22	5.22
20.30	5.13	5.13	0.0047	399.51	5.14	5.14
20.54	5.05	5.05	0.0046	399.50	5.06	5.06
20.79	4.97	4.97	0.0044	399.49	4.98	4.98
21.03	4.90	4.90	0.0043	399.49	4.91	4.91
21.27	4.83	4.83	0.0042	399.48	4.84	4.84
21.51	4.76	4.76	0.0041	399.47	4.77	4.77
21.75	4.70	4.70	0.0040	399.46	4.70	4.70
21.99	4.63	4.63	0.0039	399.45	4.64	4.64
22.24	4.57	4.57	0.0038	399.45	4.57	4.57
22.48	4.51	4.51	0.0037	399.44	4.52	4.52
22.72	4.45	4.45	0.0036	399.43	4.45	4.45
22.96	4.39	4.39	0.0035	399.42	4.40	4.40
23.20	4.33	4.33	0.0034	399.42	4.33	4.33
23.44	4.28	4.28	0.0033	399.41	4.28	4.28
23.69	4.22	4.22	0.0032	399.40	4.23	4.23
23.93	4.17	4.17	0.0031	399.40	4.17	4.17
24.17	0.00	0.00	0.0447	401.35	0.24	0.24

**Modified Puls Routing
Summary of Results**

Inflow Hydrograph: R:\Projects\2018\18000145B\Reports\Stormwater Management\200615\Working Files\VTPSUHM\POST\Bypass\Combined Flow G 50yr.HYD
Storage/Elevation Curve: R:\Projects\2018\18000145B\Reports\Stormwater Management\210426 LVPC (updated CD3 and Hydroflow)\Working Files\VTPSUHM\72in

Basin Bypass Capacity = 0.00 cfs
Starting Pool Elevation = 398.39 feet
Time Interval = 0.242 hours
Total number of Inflow points = 101

	Event Time (hours)	Hydrograph Inflow (cfs)	Basin Inflow (cfs)	Storage Used (acre-ft)	Elevation Above MSL (feet)	Basin Outflow (cfs)	Outflow Total (cfs)
Start	0.00	0.00	0.00	0.0000	398.39	0.00	0.00
Max. Inflow	2.90	57.36	57.36	1.0084	405.54	37.53	37.53
Max. Outflow	3.87	38.19	38.19	1.7107	406.25	39.63	39.63
Final	24.17	0.00	0.00	0.0504	401.49	0.31	0.31

Modified Puls Routing

Inflow Hydrograph: R:\Projects\2018\18000145B\Reports\Stormwater Management\200615\Working Files\VTPSUHM\POST\Bypass\Combined Flow G 50yr.HYD
 Storage/Elevation Curve: R:\Projects\2018\18000145B\Reports\Stormwater Management\210426 LVPC (updated CD3 and Hydroflow)\Working Files\VTPSUHM\72i

Basin Bypass Capacity = 0.00 cfs
 Starting Pool Elevation = 398.39 feet
 Time Interval = 0.242 hours

Event Time (hours)	Hydrograph Inflow (cfs)	Basin Inflow (cfs)	Storage Used (acre-ft)	Elevation Above MSL (feet)	Basin Outflow (cfs)	Outflow Total (cfs)
0.00	0.00	0.00	0.0000	398.39	0.00	0.00
0.24	0.64	0.64	0.0010	398.73	0.54	0.54
0.48	1.29	1.29	0.0017	398.94	1.33	1.33
0.73	1.93	1.93	0.0020	399.05	1.86	1.86
0.97	2.57	2.57	0.0024	399.17	2.60	2.60
1.21	2.78	2.78	0.0024	399.20	2.74	2.74
1.45	2.99	2.99	0.0025	399.24	3.02	3.02
1.69	3.20	3.20	0.0026	399.26	3.17	3.17
1.93	3.91	3.91	0.0029	399.36	3.91	3.91
2.18	41.25	41.25	0.1235	403.11	29.17	29.17
2.42	46.62	46.62	0.3668	404.54	34.34	34.34
2.66	52.00	52.00	0.6499	405.03	35.93	35.93
2.90	57.36	57.36	1.0084	405.54	37.53	37.53
3.14	52.56	52.56	1.3464	405.89	38.55	38.55
3.38	47.77	47.77	1.5717	406.11	39.22	39.22
3.63	42.98	42.98	1.6911	406.23	39.57	39.57
3.87	38.19	38.19	1.7107	406.25	39.63	39.63
4.11	37.56	37.56	1.6766	406.22	39.53	39.53
4.35	36.92	36.92	1.6321	406.17	39.40	39.40
4.59	36.14	36.14	1.5764	406.12	39.24	39.24
4.83	30.73	30.73	1.4638	406.00	38.90	38.90
5.08	27.74	27.74	1.2763	405.81	38.34	38.34
5.32	26.76	26.76	1.0612	405.60	37.69	37.69
5.56	26.02	26.02	0.8426	405.37	36.98	36.98
5.80	25.32	25.32	0.6283	405.00	35.82	35.82
6.04	24.40	24.40	0.4211	404.64	34.65	34.65
6.28	23.28	23.28	0.2261	404.02	32.55	32.55
6.53	22.13	22.13	0.0910	402.43	26.38	26.38
6.77	20.98	20.98	0.0454	401.37	21.29	21.29
7.01	20.16	20.16	0.0405	401.20	20.35	20.35
7.25	19.63	19.63	0.0374	401.09	19.75	19.75
7.49	19.15	19.15	0.0351	401.01	19.27	19.27
7.73	18.68	18.68	0.0328	400.93	18.79	18.79
7.98	18.24	18.24	0.0306	400.86	18.34	18.34
8.22	17.82	17.82	0.0287	400.79	17.92	17.92
8.46	17.41	17.41	0.0268	400.73	17.50	17.50
8.70	17.00	17.00	0.0250	400.67	17.09	17.09
8.94	16.61	16.61	0.0233	400.61	16.69	16.69
9.18	16.25	16.25	0.0218	400.55	16.32	16.32
9.43	15.89	15.89	0.0203	400.50	15.96	15.96
9.67	15.53	15.53	0.0188	400.45	15.60	15.60
9.91	15.18	15.18	0.0175	400.41	15.25	15.25
10.15	14.86	14.86	0.0172	400.40	14.82	14.82
10.39	14.54	14.54	0.0171	400.39	14.59	14.59
10.63	14.22	14.22	0.0170	400.39	14.19	14.19
10.88	13.91	13.91	0.0168	400.38	13.97	13.97
11.12	13.62	13.62	0.0163	400.34	13.61	13.61
11.36	13.33	13.33	0.0160	400.32	13.37	13.37
11.60	13.04	13.04	0.0156	400.29	13.04	13.04
11.84	12.77	12.77	0.0152	400.26	12.80	12.80
12.08	12.51	12.51	0.0148	400.24	12.52	12.52
12.33	12.25	12.25	0.0145	400.21	12.28	12.28

Event Time (hours)	Hydrograph Inflow (cfs)	Basin Inflow (cfs)	Storage Used (acre-ft)	Elevation Above MSL (feet)	Basin Outflow (cfs)	Outflow Total (cfs)
12.57	11.99	11.99	0.0141	400.18	12.00	12.00
12.81	11.74	11.74	0.0138	400.16	11.76	11.76
13.05	11.50	11.50	0.0134	400.14	11.51	11.51
13.29	11.27	11.27	0.0131	400.11	11.29	11.29
13.54	11.04	11.04	0.0128	400.09	11.06	11.06
13.78	10.81	10.81	0.0125	400.07	10.83	10.83
14.02	10.60	10.60	0.0121	400.04	10.61	10.61
14.26	10.38	10.38	0.0118	400.02	10.40	10.40
14.50	10.17	10.17	0.0115	400.00	10.18	10.18
14.74	9.97	9.97	0.0113	399.98	9.98	9.98
14.99	9.77	9.77	0.0110	399.96	9.78	9.78
15.23	9.58	9.58	0.0108	399.95	9.59	9.59
15.47	9.38	9.38	0.0106	399.93	9.39	9.39
15.71	9.20	9.20	0.0104	399.92	9.21	9.21
15.95	9.01	9.01	0.0101	399.90	9.02	9.02
16.19	8.84	8.84	0.0099	399.88	8.85	8.85
16.44	8.66	8.66	0.0097	399.87	8.67	8.67
16.68	8.49	8.49	0.0095	399.85	8.50	8.50
16.92	8.32	8.32	0.0093	399.84	8.33	8.33
17.16	8.16	8.16	0.0090	399.82	8.17	8.17
17.40	7.99	7.99	0.0088	399.81	8.00	8.00
17.64	7.84	7.84	0.0086	399.79	7.85	7.85
17.89	7.69	7.69	0.0084	399.78	7.70	7.70
18.13	7.54	7.54	0.0082	399.76	7.55	7.55
18.37	7.39	7.39	0.0080	399.75	7.40	7.40
18.61	7.24	7.24	0.0078	399.73	7.25	7.25
18.85	7.10	7.10	0.0076	399.72	7.11	7.11
19.09	6.96	6.96	0.0074	399.71	6.97	6.97
19.34	6.82	6.82	0.0072	399.69	6.83	6.83
19.58	6.69	6.69	0.0071	399.68	6.70	6.70
19.82	6.56	6.56	0.0069	399.67	6.57	6.57
20.06	6.43	6.43	0.0067	399.65	6.44	6.44
20.30	6.30	6.30	0.0065	399.64	6.31	6.31
20.54	6.18	6.18	0.0063	399.63	6.19	6.19
20.79	6.05	6.05	0.0061	399.61	6.06	6.06
21.03	5.93	5.93	0.0060	399.60	5.94	5.94
21.27	5.81	5.81	0.0058	399.59	5.82	5.82
21.51	5.70	5.70	0.0056	399.58	5.71	5.71
21.75	5.59	5.59	0.0054	399.56	5.60	5.60
21.99	5.48	5.48	0.0053	399.55	5.49	5.49
22.24	5.37	5.37	0.0051	399.54	5.38	5.38
22.48	5.26	5.26	0.0049	399.53	5.27	5.27
22.72	5.15	5.15	0.0047	399.51	5.16	5.16
22.96	5.05	5.05	0.0046	399.50	5.06	5.06
23.20	4.94	4.94	0.0044	399.49	4.95	4.95
23.44	4.85	4.85	0.0042	399.48	4.86	4.86
23.69	4.75	4.75	0.0041	399.47	4.76	4.76
23.93	4.65	4.65	0.0039	399.46	4.66	4.66
24.17	0.00	0.00	0.0504	401.49	0.31	0.31

**Modified Puls Routing
Summary of Results**

Inflow Hydrograph: R:\Projects\2018\18000145B\Reports\Stormwater Management\200615\Working Files\VTPSUHM\POST\Bypass\Combined Flow G 100yr.HYD
Storage/Elevation Curve: R:\Projects\2018\18000145B\Reports\Stormwater Management\210426 LVPC (updated CD3 and Hydroflow)\Working Files\VTPSUHM\72i

Basin Bypass Capacity = 0.00 cfs
Starting Pool Elevation = 398.39 feet
Time Interval = 0.242 hours
Total number of Inflow points = 101

	Event Time (hours)	Hydrograph Inflow (cfs)	Basin Inflow (cfs)	Storage Used (acre-ft)	Elevation Above MSL (feet)	Basin Outflow (cfs)	Outflow Total (cfs)
Start	0.00	0.00	0.00	0.0000	398.39	0.00	0.00
Max. Inflow	2.90	60.17	60.17	1.1219	405.66	37.87	37.87
Max. Outflow	3.87	40.26	40.26	1.9743	406.50	40.35	40.35
Final	24.17	0.00	0.00	0.0549	401.60	0.36	0.36

Modified Puls Routing

Inflow Hydrograph: R:\Projects\2018\18000145B\Reports\Stormwater Management\200615\Working Files\VTPSUHM\POST\Bypass\Combined Flow G 100yr.HYD
 Storage/Elevation Curve: R:\Projects\2018\18000145B\Reports\Stormwater Management\210426 LVPC (updated CD3 and Hydroflow)\Working Files\VTPSUHM\72i

Basin Bypass Capacity = 0.00 cfs
 Starting Pool Elevation = 398.39 feet
 Time Interval = 0.242 hours

Event Time (hours)	Hydrograph Inflow (cfs)	Basin Inflow (cfs)	Storage Used (acre-ft)	Elevation Above MSL (feet)	Basin Outflow (cfs)	Outflow Total (cfs)
0.00	0.00	0.00	0.0000	398.39	0.00	0.00
0.24	0.69	0.69	0.0011	398.75	0.58	0.58
0.48	1.37	1.37	0.0017	398.96	1.41	1.41
0.73	2.06	2.06	0.0020	399.07	1.98	1.98
0.97	2.74	2.74	0.0024	399.20	2.78	2.78
1.21	3.06	3.06	0.0025	399.24	3.01	3.01
1.45	3.37	3.37	0.0027	399.29	3.40	3.40
1.69	3.69	3.69	0.0028	399.33	3.65	3.65
1.93	12.51	12.51	0.0134	400.13	11.49	11.49
2.18	42.47	42.47	0.1438	403.44	30.43	30.43
2.42	48.38	48.38	0.4022	404.60	34.54	34.54
2.66	54.28	54.28	0.7198	405.15	36.32	36.32
2.90	60.17	60.17	1.1219	405.66	37.87	37.87
3.14	55.19	55.19	1.5060	406.05	39.03	39.03
3.38	50.21	50.21	1.7713	406.32	39.81	39.81
3.63	45.23	45.23	1.9252	406.46	40.22	40.22
3.87	40.26	40.26	1.9743	406.50	40.35	40.35
4.11	39.14	39.14	1.9617	406.49	40.31	40.31
4.35	38.02	38.02	1.9279	406.46	40.23	40.23
4.59	36.89	36.89	1.8738	406.42	40.09	40.09
4.83	33.08	33.08	1.7746	406.32	39.82	39.82
5.08	28.29	28.29	1.5973	406.14	39.30	39.30
5.32	27.17	27.17	1.3729	405.91	38.63	38.63
5.56	26.48	26.48	1.1439	405.68	37.94	37.94
5.80	25.84	25.84	0.9156	405.45	37.24	37.24
6.04	25.16	25.16	0.6918	405.11	36.17	36.17
6.28	24.44	24.44	0.4768	404.73	34.97	34.97
6.53	23.71	23.71	0.2720	404.35	33.68	33.68
6.77	22.98	22.98	0.1164	402.96	28.59	28.59
7.01	22.46	22.46	0.0574	401.65	22.76	22.76
7.25	22.12	22.12	0.0530	401.55	22.25	22.25
7.49	21.80	21.80	0.0504	401.49	21.93	21.93
7.73	21.49	21.49	0.0478	401.43	21.62	21.62
7.98	21.19	21.19	0.0455	401.37	21.30	21.30
8.22	20.88	20.88	0.0437	401.31	20.96	20.96
8.46	20.59	20.59	0.0421	401.26	20.67	20.67
8.70	20.29	20.29	0.0406	401.20	20.37	20.37
8.94	19.99	19.99	0.0390	401.15	20.07	20.07
9.18	19.70	19.70	0.0375	401.10	19.77	19.77
9.43	19.40	19.40	0.0361	401.05	19.48	19.48
9.67	19.11	19.11	0.0346	401.00	19.18	19.18
9.91	18.82	18.82	0.0332	400.95	18.89	18.89
10.15	18.53	18.53	0.0318	400.90	18.60	18.60
10.39	18.24	18.24	0.0305	400.85	18.31	18.31
10.63	17.95	17.95	0.0291	400.81	18.02	18.02
10.88	17.67	17.67	0.0279	400.76	17.73	17.73
11.12	17.39	17.39	0.0266	400.72	17.45	17.45
11.36	17.10	17.10	0.0253	400.68	17.16	17.16
11.60	16.82	16.82	0.0241	400.64	16.88	16.88
11.84	16.54	16.54	0.0229	400.59	16.60	16.60
12.08	16.27	16.27	0.0218	400.55	16.32	16.32
12.33	15.99	15.99	0.0206	400.52	16.05	16.05

Event Time (hours)	Hydrograph Inflow (cfs)	Basin Inflow (cfs)	Storage Used (acre-ft)	Elevation Above MSL (feet)	Basin Outflow (cfs)	Outflow Total (cfs)
12.57	15.71	15.71	0.0195	400.48	15.77	15.77
12.81	15.44	15.44	0.0184	400.44	15.49	15.49
13.05	15.17	15.17	0.0174	400.40	15.22	15.22
13.29	14.90	14.90	0.0172	400.40	14.86	14.86
13.54	14.63	14.63	0.0171	400.40	14.67	14.67
13.78	14.36	14.36	0.0171	400.39	14.33	14.33
14.02	14.10	14.10	0.0170	400.39	14.14	14.14
14.26	13.84	13.84	0.0166	400.36	13.84	13.84
14.50	13.58	13.58	0.0163	400.34	13.61	13.61
14.74	13.32	13.32	0.0159	400.31	13.33	13.33
14.99	13.06	13.06	0.0156	400.29	13.08	13.08
15.23	12.81	12.81	0.0153	400.27	12.82	12.82
15.47	12.55	12.55	0.0149	400.24	12.57	12.57
15.71	12.30	12.30	0.0146	400.22	12.31	12.31
15.95	12.06	12.06	0.0142	400.19	12.08	12.08
16.19	11.81	11.81	0.0139	400.17	11.83	11.83
16.44	11.56	11.56	0.0135	400.14	11.58	11.58
16.68	11.32	11.32	0.0132	400.12	11.34	11.34
16.92	11.08	11.08	0.0128	400.09	11.10	11.10
17.16	10.84	10.84	0.0125	400.07	10.86	10.86
17.40	10.61	10.61	0.0122	400.04	10.63	10.63
17.64	10.37	10.37	0.0118	400.02	10.39	10.39
17.89	10.14	10.14	0.0115	400.00	10.15	10.15
18.13	9.91	9.91	0.0112	399.98	9.92	9.92
18.37	9.68	9.68	0.0109	399.96	9.69	9.69
18.61	9.46	9.46	0.0107	399.94	9.47	9.47
18.85	9.23	9.23	0.0104	399.92	9.25	9.25
19.09	9.01	9.01	0.0101	399.90	9.02	9.02
19.34	8.79	8.79	0.0099	399.88	8.80	8.80
19.58	8.58	8.58	0.0096	399.86	8.59	8.59
19.82	8.36	8.36	0.0093	399.84	8.38	8.38
20.06	8.15	8.15	0.0090	399.82	8.16	8.16
20.30	7.94	7.94	0.0088	399.80	7.95	7.95
20.54	7.73	7.73	0.0085	399.78	7.74	7.74
20.79	7.53	7.53	0.0082	399.76	7.54	7.54
21.03	7.32	7.32	0.0079	399.74	7.33	7.33
21.27	7.12	7.12	0.0077	399.72	7.13	7.13
21.51	6.92	6.92	0.0074	399.70	6.93	6.93
21.75	6.72	6.72	0.0071	399.68	6.73	6.73
21.99	6.53	6.53	0.0068	399.66	6.54	6.54
22.24	6.33	6.33	0.0066	399.64	6.35	6.35
22.48	6.14	6.14	0.0063	399.62	6.15	6.15
22.72	5.95	5.95	0.0060	399.60	5.96	5.96
22.96	5.77	5.77	0.0057	399.58	5.78	5.78
23.20	5.58	5.58	0.0054	399.56	5.60	5.60
23.44	5.40	5.40	0.0051	399.54	5.41	5.41
23.69	5.22	5.22	0.0049	399.52	5.24	5.24
23.93	5.04	5.04	0.0046	399.50	5.05	5.05
24.17	0.00	0.00	0.0549	401.60	0.36	0.36

WET DETENTION BASIN A ROUTING

Basin Storage/Elevation Input

Elevation (ft)	Area (acres)	Storage (acre-ft)
386	0.5328	0.000
387	0.6071	0.570
388	0.6859	1.217
389	0.7694	1.945
390	0.8575	2.758
391	0.9501	3.662
392	1.0475	4.661
393	1.1487	5.759
394	1.2533	6.960
395	1.3611	8.267
396	1.4721	9.684
397	1.5857	11.213
398	1.7022	12.857
399	1.8214	14.619
400	1.9434	16.501
401	2.0681	18.507
402	2.1957	20.639
403	2.3256	22.900
404	2.4578	25.292
404.5	2.5239	26.537

Project Files:

Outlet Structure Configuration: R:\Projects\2018\18000145B\Reports\Stormwater Management\210426 NPDES Technical Review\Working Files\

Discharge/Elevation Curve: R:\Projects\2018\18000145B\Reports\Stormwater Management\210426 NPDES Technical Review\Working Files\VTPS

Outlet Structure Configuration

Stage 1: Grate Inlet

Crest Elevation = 404.4 feet

Effective Perimeter = 10.4 feet

Effective Flow Area = 6.5 square feet

Stage 2: Circular Orifice

Invert Elevation = 396.25 feet

Diameter = 0.5 feet

Discharge Coefficient = 0.6

Stage 3: Rectangular Orifice

Invert Elevation = 401.4 feet

Width = 1.25 feet

Height = 0.75 feet

Discharge Coefficient = 0.6

Stage 4: Outfall Culvert

Invert Elevation = 396.2 feet

Pipe Diameter = 2 feet

Pipe Length = 67 feet

Pipe Slope = 0.02 ft/ft

Manning n = 0.012

Entrance Condition = SEH

Number of Barrels = 1

Basin Rating Curve

Basin Water Elevation	Basin Outflow (cfs)	Riser Box Water Elevation	Tailwater Elevation (ft)	Outfall Culvert Control	Outfall Culvert Override?
386.00	0.00	396.20	N/A	INLET	N/A
386.25	0.00	396.20	N/A	INLET	N/A
386.50	0.00	396.20	N/A	INLET	N/A
386.75	0.00	396.20	N/A	INLET	N/A
387.00	0.00	396.20	N/A	INLET	N/A
387.25	0.00	396.20	N/A	INLET	N/A
387.50	0.00	396.20	N/A	INLET	N/A
387.75	0.00	396.20	N/A	INLET	N/A
388.00	0.00	396.20	N/A	INLET	N/A
388.25	0.00	396.20	N/A	INLET	N/A
388.50	0.00	396.20	N/A	INLET	N/A
388.75	0.00	396.20	N/A	INLET	N/A
389.00	0.00	396.20	N/A	INLET	N/A
389.25	0.00	396.20	N/A	INLET	N/A
389.50	0.00	396.20	N/A	INLET	N/A
389.75	0.00	396.20	N/A	INLET	N/A
390.00	0.00	396.20	N/A	INLET	N/A
390.25	0.00	396.20	N/A	INLET	N/A
390.50	0.00	396.20	N/A	INLET	N/A
390.75	0.00	396.20	N/A	INLET	N/A
391.00	0.00	396.20	N/A	INLET	N/A
391.25	0.00	396.20	N/A	INLET	N/A
391.50	0.00	396.20	N/A	INLET	N/A
391.75	0.00	396.20	N/A	INLET	N/A
392.00	0.00	396.20	N/A	INLET	N/A
392.25	0.00	396.20	N/A	INLET	N/A
392.50	0.00	396.20	N/A	INLET	N/A
392.75	0.00	396.20	N/A	INLET	N/A

Basin Water Elevation	Basin Outflow (cfs)	Riser Box Water Elevation	Tailwater Elevation (ft)	Outfall Culvert Control	Outfall Culvert Override?
393.00	0.00	396.20	N/A	INLET	N/A
393.25	0.00	396.20	N/A	INLET	N/A
393.50	0.00	396.20	N/A	INLET	N/A
393.75	0.00	396.20	N/A	INLET	N/A
394.00	0.00	396.20	N/A	INLET	N/A
394.25	0.00	396.20	N/A	INLET	N/A
394.50	0.00	396.20	N/A	INLET	N/A
394.75	0.00	396.20	N/A	INLET	N/A
395.00	0.00	396.20	N/A	INLET	N/A
395.25	0.00	396.20	N/A	INLET	N/A
395.50	0.00	396.20	N/A	INLET	N/A
395.75	0.00	396.20	N/A	INLET	N/A
396.00	0.00	396.20	N/A	INLET	N/A
396.25	0.00	396.20	N/A	INLET	N/A
396.50	0.12	396.33	N/A	INLET	NO
396.75	0.40	396.47	N/A	INLET	NO
397.00	0.54	396.50	N/A	INLET	NO
397.25	0.71	396.55	N/A	INLET	NO
397.50	0.84	396.58	N/A	INLET	NO
397.75	0.96	396.63	N/A	INLET	NO
398.00	1.07	396.65	N/A	INLET	NO
398.25	1.17	396.67	N/A	INLET	NO
398.50	1.26	396.69	N/A	INLET	NO
398.75	1.34	396.71	N/A	INLET	NO
399.00	1.42	396.72	N/A	INLET	NO
399.25	1.50	396.73	N/A	INLET	NO
399.50	1.57	396.75	N/A	INLET	NO
399.75	1.64	396.76	N/A	INLET	NO
400.00	1.70	396.77	N/A	INLET	NO
400.25	1.76	396.78	N/A	INLET	NO
400.50	1.82	396.79	N/A	INLET	NO
400.75	1.88	396.80	N/A	INLET	NO
401.00	1.94	396.81	N/A	INLET	NO
401.25	1.99	396.82	N/A	INLET	NO
401.50	2.16	396.84	N/A	INLET	NO
401.75	2.88	396.95	N/A	INLET	NO
402.00	3.91	397.06	N/A	INLET	NO
402.25	5.23	397.21	N/A	INLET	NO
402.50	6.00	397.28	N/A	INLET	NO
402.75	6.66	397.35	N/A	INLET	NO
403.00	7.23	397.40	N/A	INLET	NO
403.25	7.76	397.45	N/A	INLET	NO
403.50	8.25	397.49	N/A	INLET	NO
403.75	8.70	397.53	N/A	INLET	NO
404.00	9.13	397.57	N/A	INLET	NO
404.25	9.54	397.60	N/A	INLET	NO
404.50	10.93	397.72	N/A	INLET	NO
404.75	16.80	398.66	N/A	INLET	NO
405.00	25.19	400.07	N/A	INLET	NO

NOTE: When a 'YES' appears in the Outfall Culvert Override column, the outfall culvert is restricting the pond outflow. The Basin outflow is equal to the outfall culvert capacity at that riser box water elevation.

**Modified Puls Routing
Summary of Results**

Inflow Hydrograph: R:\Projects\2018\18000145B\Reports\Stormwater Management\201105\Working Files\VTPSUHM\POST\Basin A\Hydrograph Combinations\Cor
Storage/Elevation Curve: R:\Projects\2018\18000145B\Reports\Stormwater Management\201105\Working Files\VTPSUHM\POST\Basin A\Basin A SS.ES

Basin Bypass Capacity = 0.00 cfs
Starting Pool Elevation = 396.25 feet
Time Interval = 0.242 hours
Total number of Inflow points = 103

	Event Time (hours)	Hydrograph Inflow (cfs)	Basin Inflow (cfs)	Storage Used (acre-ft)	Elevation Above MSL (feet)	Basin Outflow (cfs)	Outflow Total (cfs)
Start	0.00	0.00	0.00	10.0663	396.25	0.00	0.00
Max. Inflow	2.90	45.53	45.53	12.5213	397.80	0.98	0.98
Max. Outflow	24.41	0.28	0.28	17.8872	400.69	1.87	1.87
Max. Elev.	23.93	1.81	1.81	17.9234	400.71	1.87	1.87
Final	24.65	0.00	0.00	17.8528	400.67	1.86	1.86

Modified Puls Routing

Inflow Hydrograph: R:\Projects\2018\18000145B\Reports\Stormwater Management\201105\Working Files\VTPSUHM\POST\Basin A\Hydrograph Combinations\Cor
 Storage/Elevation Curve: R:\Projects\2018\18000145B\Reports\Stormwater Management\201105\Working Files\VTPSUHM\POST\Basin A\Basin A SS.ES

Basin Bypass Capacity = 0.00 cfs
 Starting Pool Elevation = 396.25 feet
 Time Interval = 0.242 hours

Event Time (hours)	Hydrograph Inflow (cfs)	Basin Inflow (cfs)	Storage Used (acre-ft)	Elevation Above MSL (feet)	Basin Outflow (cfs)	Outflow Total (cfs)
0.00	0.00	0.00	10.0663	396.25	0.00	0.00
0.24	0.92	0.92	10.0754	396.26	0.00	0.00
0.48	1.85	1.85	10.1029	396.27	0.01	0.01
0.73	2.85	2.85	10.1496	396.30	0.01	0.01
0.97	3.89	3.89	10.2166	396.35	0.02	0.02
1.21	4.27	4.27	10.2973	396.40	0.06	0.06
1.45	4.67	4.67	10.3851	396.46	0.09	0.09
1.69	5.06	5.06	10.4799	396.52	0.15	0.15
1.93	5.46	5.46	10.5814	396.59	0.21	0.21
2.18	14.60	14.60	10.7764	396.71	0.32	0.32
2.42	24.40	24.40	11.1576	396.96	0.51	0.51
2.66	34.79	34.79	11.7363	397.32	0.75	0.75
2.90	45.53	45.53	12.5213	397.80	0.98	0.98
3.14	38.96	38.96	13.3436	398.28	1.18	1.18
3.38	31.45	31.45	14.0220	398.66	1.31	1.31
3.63	23.20	23.20	14.5406	398.96	1.41	1.41
3.87	14.43	14.43	14.8878	399.14	1.46	1.46
4.11	12.58	12.58	15.1280	399.27	1.50	1.50
4.35	10.76	10.76	15.3307	399.38	1.53	1.53
4.59	9.25	9.25	15.4997	399.47	1.56	1.56
4.83	7.91	7.91	15.6398	399.54	1.58	1.58
5.08	7.45	7.45	15.7615	399.61	1.60	1.60
5.32	7.11	7.11	15.8748	399.67	1.61	1.61
5.56	6.84	6.84	15.9818	399.72	1.63	1.63
5.80	6.62	6.62	16.0835	399.78	1.64	1.64
6.04	6.28	6.28	16.1794	399.83	1.66	1.66
6.28	5.94	5.94	16.2683	399.88	1.67	1.67
6.53	5.63	5.63	16.3504	399.92	1.68	1.68
6.77	5.33	5.33	16.4262	399.96	1.69	1.69
7.01	5.16	5.16	16.4972	400.00	1.70	1.70
7.25	5.00	5.00	16.5646	400.03	1.71	1.71
7.49	4.86	4.86	16.6289	400.06	1.71	1.71
7.73	4.72	4.72	16.6903	400.09	1.72	1.72
7.98	4.60	4.60	16.7489	400.12	1.73	1.73
8.22	4.48	4.48	16.8049	400.15	1.74	1.74
8.46	4.38	4.38	16.8586	400.18	1.74	1.74
8.70	4.27	4.27	16.9101	400.20	1.75	1.75
8.94	4.18	4.18	16.9595	400.23	1.76	1.76
9.18	4.08	4.08	17.0069	400.25	1.76	1.76
9.43	3.99	3.99	17.0522	400.27	1.77	1.77
9.67	3.90	3.90	17.0957	400.30	1.77	1.77
9.91	3.82	3.82	17.1373	400.32	1.78	1.78
10.15	3.74	3.74	17.1773	400.34	1.78	1.78
10.39	3.67	3.67	17.2157	400.36	1.79	1.79
10.63	3.59	3.59	17.2524	400.37	1.79	1.79
10.88	3.53	3.53	17.2877	400.39	1.80	1.80
11.12	3.46	3.46	17.3216	400.41	1.80	1.80
11.36	3.40	3.40	17.3541	400.43	1.80	1.80
11.60	3.33	3.33	17.3853	400.44	1.81	1.81
11.84	3.27	3.27	17.4151	400.46	1.81	1.81
12.08	3.21	3.21	17.4436	400.47	1.81	1.81
12.33	3.16	3.16	17.4709	400.48	1.82	1.82

Event Time (hours)	Hydrograph Inflow (cfs)	Basin Inflow (cfs)	Storage Used (acre-ft)	Elevation Above MSL (feet)	Basin Outflow (cfs)	Outflow Total (cfs)
12.57	3.10	3.10	17.4971	400.50	1.82	1.82
12.81	3.06	3.06	17.5223	400.51	1.82	1.82
13.05	3.00	3.00	17.5463	400.52	1.83	1.83
13.29	2.96	2.96	17.5694	400.53	1.83	1.83
13.54	2.90	2.90	17.5913	400.54	1.83	1.83
13.78	2.86	2.86	17.6122	400.55	1.83	1.83
14.02	2.82	2.82	17.6323	400.56	1.84	1.84
14.26	2.77	2.77	17.6514	400.57	1.84	1.84
14.50	2.73	2.73	17.6696	400.58	1.84	1.84
14.74	2.70	2.70	17.6871	400.59	1.84	1.84
14.99	2.66	2.66	17.7038	400.60	1.84	1.84
15.23	2.62	2.62	17.7196	400.61	1.85	1.85
15.47	2.58	2.58	17.7347	400.62	1.85	1.85
15.71	2.55	2.55	17.7490	400.62	1.85	1.85
15.95	2.52	2.52	17.7626	400.63	1.85	1.85
16.19	2.49	2.49	17.7757	400.64	1.85	1.85
16.44	2.45	2.45	17.7880	400.64	1.85	1.85
16.68	2.42	2.42	17.7995	400.65	1.86	1.86
16.92	2.39	2.39	17.8105	400.65	1.86	1.86
17.16	2.37	2.37	17.8209	400.66	1.86	1.86
17.40	2.34	2.34	17.8308	400.66	1.86	1.86
17.64	2.31	2.31	17.8401	400.67	1.86	1.86
17.89	2.28	2.28	17.8488	400.67	1.86	1.86
18.13	2.25	2.25	17.8568	400.68	1.86	1.86
18.37	2.23	2.23	17.8644	400.68	1.86	1.86
18.61	2.20	2.20	17.8714	400.68	1.86	1.86
18.85	2.19	2.19	17.8780	400.69	1.86	1.86
19.09	2.16	2.16	17.8842	400.69	1.87	1.87
19.34	2.14	2.14	17.8899	400.69	1.87	1.87
19.58	2.11	2.11	17.8950	400.69	1.87	1.87
19.82	2.09	2.09	17.8997	400.70	1.87	1.87
20.06	2.08	2.08	17.9040	400.70	1.87	1.87
20.30	2.06	2.06	17.9081	400.70	1.87	1.87
20.54	2.03	2.03	17.9116	400.70	1.87	1.87
20.79	2.01	2.01	17.9146	400.70	1.87	1.87
21.03	2.00	2.00	17.9173	400.71	1.87	1.87
21.27	1.98	1.98	17.9197	400.71	1.87	1.87
21.51	1.96	1.96	17.9217	400.71	1.87	1.87
21.75	1.94	1.94	17.9233	400.71	1.87	1.87
21.99	1.93	1.93	17.9246	400.71	1.87	1.87
22.24	1.91	1.91	17.9256	400.71	1.87	1.87
22.48	1.89	1.89	17.9262	400.71	1.87	1.87
22.72	1.88	1.88	17.9265	400.71	1.87	1.87
22.96	1.86	1.86	17.9265	400.71	1.87	1.87
23.20	1.84	1.84	17.9261	400.71	1.87	1.87
23.44	1.83	1.83	17.9254	400.71	1.87	1.87
23.69	1.82	1.82	17.9245	400.71	1.87	1.87
23.93	1.81	1.81	17.9234	400.71	1.87	1.87
24.17	0.88	0.88	17.9129	400.70	1.87	1.87
24.41	0.28	0.28	17.8872	400.69	1.87	1.87
24.65	0.00	0.00	17.8528	400.67	1.86	1.86

**Modified Puls Routing
Summary of Results**

Inflow Hydrograph: R:\Projects\2018\18000145B\Reports\Stormwater Management\201105\Working Files\VTPSUHM\POST\Basin A\Hydrograph Combinations\Cor
Storage/Elevation Curve: R:\Projects\2018\18000145B\Reports\Stormwater Management\201105\Working Files\VTPSUHM\POST\Basin A\Basin A SS.ES

Basin Bypass Capacity = 0.00 cfs
Starting Pool Elevation = 396.25 feet
Time Interval = 0.242 hours
Total number of Inflow points = 103

	Event Time (hours)	Hydrograph Inflow (cfs)	Basin Inflow (cfs)	Storage Used (acre-ft)	Elevation Above MSL (feet)	Basin Outflow (cfs)	Outflow Total (cfs)
Start	0.00	0.00	0.00	10.0663	396.25	0.00	0.00
Max. Inflow	2.90	65.46	65.46	13.6836	398.47	1.24	1.24
Max. Outflow	13.78	3.75	3.75	20.6035	401.98	3.84	3.84
Max. Elev.	14.74	3.52	3.52	20.5885	401.98	3.81	3.81
Final	24.65	0.00	0.00	20.0725	401.73	2.83	2.83

Modified Puls Routing

Inflow Hydrograph: R:\Projects\2018\18000145B\Reports\Stormwater Management\201105\Working Files\VTPSUHM\POST\Basin A\Hydrograph Combinations\Cor
 Storage/Elevation Curve: R:\Projects\2018\18000145B\Reports\Stormwater Management\201105\Working Files\VTPSUHM\POST\Basin A\Basin A SS.ES

Basin Bypass Capacity = 0.00 cfs
 Starting Pool Elevation = 396.25 feet
 Time Interval = 0.242 hours

Event Time (hours)	Hydrograph Inflow (cfs)	Basin Inflow (cfs)	Storage Used (acre-ft)	Elevation Above MSL (feet)	Basin Outflow (cfs)	Outflow Total (cfs)
0.00	0.00	0.00	10.0663	396.25	0.00	0.00
0.24	1.38	1.38	10.0799	396.26	0.01	0.01
0.48	2.80	2.80	10.1215	396.29	0.01	0.01
0.73	4.30	4.30	10.1922	396.33	0.02	0.02
0.97	5.90	5.90	10.2934	396.40	0.05	0.05
1.21	6.57	6.57	10.4163	396.48	0.11	0.11
1.45	7.26	7.26	10.5514	396.57	0.19	0.19
1.69	7.95	7.95	10.6984	396.66	0.30	0.30
1.93	8.60	8.60	10.8573	396.77	0.34	0.34
2.18	21.60	21.60	11.1506	396.96	0.50	0.50
2.42	35.57	35.57	11.7092	397.30	0.74	0.74
2.66	50.31	50.31	12.5497	397.81	0.99	0.99
2.90	65.46	65.46	13.6836	398.47	1.24	1.24
3.14	55.65	55.65	14.8662	399.13	1.46	1.46
3.38	44.94	44.94	15.8402	399.65	1.61	1.61
3.63	33.61	33.61	16.5916	400.05	1.71	1.71
3.87	21.72	21.72	17.1094	400.30	1.77	1.77
4.11	18.68	18.68	17.4770	400.49	1.82	1.82
4.35	16.30	16.30	17.7897	400.64	1.85	1.85
4.59	14.15	14.15	18.0565	400.78	1.89	1.89
4.83	11.85	11.85	18.2783	400.89	1.91	1.91
5.08	11.04	11.04	18.4685	400.98	1.93	1.93
5.32	10.49	10.49	18.6448	401.06	1.95	1.95
5.56	10.09	10.09	18.8112	401.14	1.97	1.97
5.80	9.79	9.79	18.9703	401.22	1.98	1.98
6.04	9.22	9.22	19.1204	401.29	2.00	2.00
6.28	8.69	8.69	19.2592	401.35	2.01	2.01
6.53	8.15	8.15	19.3869	401.41	2.04	2.04
6.77	7.64	7.64	19.5031	401.47	2.12	2.12
7.01	7.36	7.36	19.6097	401.52	2.20	2.20
7.25	7.10	7.10	19.7090	401.56	2.32	2.32
7.49	6.85	6.85	19.8009	401.61	2.43	2.43
7.73	6.62	6.62	19.8858	401.65	2.54	2.54
7.98	6.42	6.42	19.9641	401.68	2.66	2.66
8.22	6.24	6.24	20.0363	401.72	2.77	2.77
8.46	6.06	6.06	20.1027	401.75	2.88	2.88
8.70	5.88	5.88	20.1634	401.78	2.99	2.99
8.94	5.73	5.73	20.2187	401.80	3.08	3.08
9.18	5.58	5.58	20.2692	401.83	3.17	3.17
9.43	5.44	5.44	20.3151	401.85	3.26	3.26
9.67	5.29	5.29	20.3564	401.87	3.34	3.34
9.91	5.18	5.18	20.3935	401.88	3.41	3.41
10.15	5.05	5.05	20.4269	401.90	3.48	3.48
10.39	4.93	4.93	20.4565	401.91	3.54	3.54
10.63	4.82	4.82	20.4827	401.93	3.59	3.59
10.88	4.72	4.72	20.5058	401.94	3.63	3.63
11.12	4.62	4.62	20.5261	401.95	3.67	3.67
11.36	4.51	4.51	20.5435	401.96	3.71	3.71
11.60	4.42	4.42	20.5583	401.96	3.74	3.74
11.84	4.33	4.33	20.5707	401.97	3.77	3.77
12.08	4.25	4.25	20.5809	401.97	3.79	3.79
12.33	4.17	4.17	20.5891	401.98	3.81	3.81

Event Time (hours)	Hydrograph Inflow (cfs)	Basin Inflow (cfs)	Storage Used (acre-ft)	Elevation Above MSL (feet)	Basin Outflow (cfs)	Outflow Total (cfs)
12.57	4.09	4.09	20.5954	401.98	3.82	3.82
12.81	4.02	4.02	20.6000	401.98	3.83	3.83
13.05	3.95	3.95	20.6031	401.98	3.84	3.84
13.29	3.88	3.88	20.6046	401.98	3.84	3.84
13.54	3.81	3.81	20.6047	401.98	3.84	3.84
13.78	3.75	3.75	20.6035	401.98	3.84	3.84
14.02	3.69	3.69	20.6013	401.98	3.83	3.83
14.26	3.64	3.64	20.5980	401.98	3.83	3.83
14.50	3.58	3.58	20.5938	401.98	3.82	3.82
14.74	3.52	3.52	20.5885	401.98	3.81	3.81
14.99	3.48	3.48	20.5826	401.97	3.79	3.79
15.23	3.42	3.42	20.5759	401.97	3.78	3.78
15.47	3.38	3.38	20.5684	401.97	3.76	3.76
15.71	3.34	3.34	20.5606	401.96	3.75	3.75
15.95	3.29	3.29	20.5521	401.96	3.73	3.73
16.19	3.25	3.25	20.5431	401.96	3.71	3.71
16.44	3.21	3.21	20.5338	401.95	3.69	3.69
16.68	3.18	3.18	20.5241	401.95	3.67	3.67
16.92	3.15	3.15	20.5142	401.94	3.65	3.65
17.16	3.10	3.10	20.5039	401.94	3.63	3.63
17.40	3.07	3.07	20.4932	401.93	3.61	3.61
17.64	3.04	3.04	20.4823	401.93	3.59	3.59
17.89	3.01	3.01	20.4713	401.92	3.57	3.57
18.13	2.98	2.98	20.4601	401.92	3.54	3.54
18.37	2.95	2.95	20.4488	401.91	3.52	3.52
18.61	2.92	2.92	20.4373	401.91	3.50	3.50
18.85	2.89	2.89	20.4256	401.90	3.48	3.48
19.09	2.88	2.88	20.4141	401.89	3.45	3.45
19.34	2.85	2.85	20.4026	401.89	3.43	3.43
19.58	2.83	2.83	20.3910	401.88	3.41	3.41
19.82	2.80	2.80	20.3794	401.88	3.38	3.38
20.06	2.78	2.78	20.3678	401.87	3.36	3.36
20.30	2.75	2.75	20.3561	401.87	3.34	3.34
20.54	2.74	2.74	20.3445	401.86	3.32	3.32
20.79	2.72	2.72	20.3330	401.86	3.29	3.29
21.03	2.70	2.70	20.3216	401.85	3.27	3.27
21.27	2.69	2.69	20.3103	401.85	3.25	3.25
21.51	2.67	2.67	20.2992	401.84	3.23	3.23
21.75	2.65	2.65	20.2881	401.84	3.21	3.21
21.99	2.64	2.64	20.2771	401.83	3.19	3.19
22.24	2.62	2.62	20.2662	401.83	3.17	3.17
22.48	2.60	2.60	20.2552	401.82	3.15	3.15
22.72	2.59	2.59	20.2444	401.81	3.13	3.13
22.96	2.58	2.58	20.2337	401.81	3.11	3.11
23.20	2.57	2.57	20.2232	401.81	3.09	3.09
23.44	2.55	2.55	20.2128	401.80	3.07	3.07
23.69	2.55	2.55	20.2025	401.80	3.05	3.05
23.93	2.53	2.53	20.1924	401.79	3.04	3.04
24.17	1.19	1.19	20.1693	401.78	3.00	3.00
24.41	0.39	0.39	20.1260	401.76	2.92	2.92
24.65	0.00	0.00	20.0725	401.73	2.83	2.83

**Modified Puls Routing
Summary of Results**

Inflow Hydrograph: R:\Projects\2018\18000145B\Reports\Stormwater Management\201105\Working Files\VTPSUHM\POST\Basin A\Hydrograph Combinations\Cor
Storage/Elevation Curve: R:\Projects\2018\18000145B\Reports\Stormwater Management\201105\Working Files\VTPSUHM\POST\Basin A\Basin A SS.ES

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Time Interval = 0.242 hours
Total number of Inflow points = 103

	Event Time (hours)	Hydrograph Inflow (cfs)	Basin Inflow (cfs)	Storage Used (acre-ft)	Elevation Above MSL (feet)	Basin Outflow (cfs)	Outflow Total (cfs)
Start	0.00	0.00	0.00	10.0663	396.25	0.00	0.00
Max. Inflow	2.90	88.51	88.51	15.1358	399.27	1.50	1.50
Max. Outflow	10.39	7.25	7.25	23.0923	403.08	7.41	7.41
Max. Elev.	10.88	6.94	6.94	23.0799	403.08	7.40	7.40
Final	24.65	0.00	0.00	20.8350	402.09	4.38	4.38

Modified Puls Routing

Inflow Hydrograph: R:\Projects\2018\18000145B\Reports\Stormwater Management\201105\Working Files\VTPSUHM\POST\Basin A\Hydrograph Combinations\Cor
Storage/Elevation Curve: R:\Projects\2018\18000145B\Reports\Stormwater Management\201105\Working Files\VTPSUHM\POST\Basin A\Basin A SS.ES

Basin Bypass Capacity = 0.00 cfs
Starting Pool Elevation = 396.25 feet
Time Interval = 0.242 hours

Event Time (hours)	Hydrograph Inflow (cfs)	Basin Inflow (cfs)	Storage Used (acre-ft)	Elevation Above MSL (feet)	Basin Outflow (cfs)	Outflow Total (cfs)
0.00	0.00	0.00	10.0663	396.25	0.00	0.00
0.24	2.02	2.02	10.0863	396.26	0.01	0.01
0.48	4.13	4.13	10.1476	396.30	0.01	0.01
0.73	6.36	6.36	10.2518	396.37	0.04	0.04
0.97	8.76	8.76	10.4015	396.47	0.10	0.10
1.21	9.71	9.71	10.5828	396.59	0.21	0.21
1.45	10.66	10.66	10.7809	396.72	0.32	0.32
1.69	11.56	11.56	10.9954	396.86	0.42	0.42
1.93	12.41	12.41	11.2252	397.01	0.54	0.54
2.18	30.19	30.19	11.6382	397.26	0.71	0.71
2.42	49.46	49.46	12.4171	397.73	0.95	0.95
2.66	69.57	69.57	13.5842	398.41	1.22	1.22
2.90	88.51	88.51	15.1358	399.27	1.50	1.50
3.14	75.13	75.13	16.7379	400.12	1.73	1.73
3.38	60.81	60.81	18.0595	400.78	1.89	1.89
3.63	45.79	45.79	19.0854	401.27	1.99	1.99
3.87	30.18	30.18	19.8000	401.61	2.43	2.43
4.11	27.33	27.33	20.3176	401.85	3.26	3.26
4.35	24.45	24.45	20.7606	402.05	4.17	4.17
4.59	21.49	21.49	21.1267	402.22	5.11	5.11
4.83	17.68	17.68	21.4117	402.34	5.53	5.53
5.08	16.54	16.54	21.6399	402.44	5.84	5.84
5.32	15.51	15.51	21.8409	402.53	6.09	6.09
5.56	14.62	14.62	22.0181	402.61	6.30	6.30
5.80	13.97	13.97	22.1760	402.68	6.48	6.48
6.04	13.13	13.13	22.3157	402.74	6.63	6.63
6.28	12.36	12.36	22.4365	402.80	6.76	6.76
6.53	11.63	11.63	22.5399	402.84	6.87	6.87
6.77	10.94	10.94	22.6272	402.88	6.96	6.96
7.01	10.56	10.56	22.7021	402.91	7.04	7.04
7.25	10.22	10.22	22.7685	402.94	7.10	7.10
7.49	9.90	9.90	22.8269	402.97	7.16	7.16
7.73	9.59	9.59	22.8781	402.99	7.21	7.21
7.98	9.33	9.33	22.9227	403.01	7.25	7.25
8.22	9.08	9.08	22.9613	403.03	7.29	7.29
8.46	8.84	8.84	22.9944	403.04	7.32	7.32
8.70	8.59	8.59	23.0220	403.05	7.35	7.35
8.94	8.39	8.39	23.0447	403.06	7.37	7.37
9.18	8.18	8.18	23.0629	403.07	7.38	7.38
9.43	7.97	7.97	23.0767	403.07	7.39	7.39
9.67	7.77	7.77	23.0861	403.08	7.40	7.40
9.91	7.60	7.60	23.0917	403.08	7.41	7.41
10.15	7.42	7.42	23.0938	403.08	7.41	7.41
10.39	7.25	7.25	23.0923	403.08	7.41	7.41
10.63	7.09	7.09	23.0876	403.08	7.40	7.40
10.88	6.94	6.94	23.0799	403.08	7.40	7.40
11.12	6.79	6.79	23.0694	403.07	7.39	7.39
11.36	6.64	6.64	23.0561	403.07	7.38	7.38
11.60	6.49	6.49	23.0401	403.06	7.36	7.36
11.84	6.37	6.37	23.0216	403.05	7.34	7.34
12.08	6.25	6.25	23.0012	403.04	7.33	7.33
12.33	6.11	6.11	22.9785	403.03	7.30	7.30

Event Time (hours)	Hydrograph Inflow (cfs)	Basin Inflow (cfs)	Storage Used (acre-ft)	Elevation Above MSL (feet)	Basin Outflow (cfs)	Outflow Total (cfs)
12.57	5.99	5.99	22.9537	403.02	7.28	7.28
12.81	5.88	5.88	22.9271	403.01	7.25	7.25
13.05	5.77	5.77	22.8988	403.00	7.23	7.23
13.29	5.67	5.67	22.8689	402.99	7.20	7.20
13.54	5.56	5.56	22.8376	402.97	7.17	7.17
13.78	5.46	5.46	22.8047	402.96	7.14	7.14
14.02	5.37	5.37	22.7706	402.94	7.11	7.11
14.26	5.27	5.27	22.7353	402.93	7.07	7.07
14.50	5.18	5.18	22.6988	402.91	7.03	7.03
14.74	5.09	5.09	22.6613	402.89	7.00	7.00
14.99	5.01	5.01	22.6228	402.88	6.96	6.96
15.23	4.92	4.92	22.5834	402.86	6.92	6.92
15.47	4.84	4.84	22.5432	402.84	6.88	6.88
15.71	4.77	4.77	22.5023	402.82	6.83	6.83
15.95	4.70	4.70	22.4608	402.81	6.79	6.79
16.19	4.62	4.62	22.4187	402.79	6.74	6.74
16.44	4.55	4.55	22.3761	402.77	6.70	6.70
16.68	4.48	4.48	22.3329	402.75	6.65	6.65
16.92	4.41	4.41	22.2893	402.73	6.60	6.60
17.16	4.35	4.35	22.2454	402.71	6.56	6.56
17.40	4.29	4.29	22.2012	402.69	6.51	6.51
17.64	4.23	4.23	22.1568	402.67	6.46	6.46
17.89	4.17	4.17	22.1122	402.65	6.41	6.41
18.13	4.12	4.12	22.0675	402.63	6.36	6.36
18.37	4.05	4.05	22.0227	402.61	6.31	6.31
18.61	4.01	4.01	21.9777	402.59	6.25	6.25
18.85	3.95	3.95	21.9329	402.57	6.20	6.20
19.09	3.90	3.90	21.8880	402.55	6.14	6.14
19.34	3.85	3.85	21.8432	402.53	6.09	6.09
19.58	3.80	3.80	21.7985	402.51	6.04	6.04
19.82	3.75	3.75	21.7538	402.49	5.98	5.98
20.06	3.71	3.71	21.7094	402.47	5.93	5.93
20.30	3.67	3.67	21.6653	402.45	5.87	5.87
20.54	3.62	3.62	21.6214	402.43	5.81	5.81
20.79	3.58	3.58	21.5778	402.42	5.76	5.76
21.03	3.54	3.54	21.5345	402.40	5.70	5.70
21.27	3.50	3.50	21.4915	402.38	5.64	5.64
21.51	3.46	3.46	21.4489	402.36	5.58	5.58
21.75	3.43	3.43	21.4068	402.34	5.52	5.52
21.99	3.39	3.39	21.3652	402.32	5.47	5.47
22.24	3.35	3.35	21.3239	402.30	5.41	5.41
22.48	3.31	3.31	21.2830	402.28	5.35	5.35
22.72	3.28	3.28	21.2425	402.27	5.29	5.29
22.96	3.25	3.25	21.2027	402.25	5.23	5.23
23.20	3.22	3.22	21.1635	402.23	5.17	5.17
23.44	3.18	3.18	21.1248	402.21	5.11	5.11
23.69	3.15	3.15	21.0866	402.20	5.05	5.05
23.93	3.12	3.12	21.0490	402.18	4.99	4.99
24.17	1.45	1.45	20.9962	402.16	4.87	4.87
24.41	0.47	0.47	20.9204	402.12	4.64	4.64
24.65	0.00	0.00	20.8350	402.09	4.38	4.38

**Modified Puls Routing
Summary of Results**

Inflow Hydrograph: R:\Projects\2018\18000145B\Reports\Stormwater Management\201105\Working Files\VTPSUHM\POST\Basin A\Hydrograph Combinations\Cor
Storage/Elevation Curve: R:\Projects\2018\18000145B\Reports\Stormwater Management\201105\Working Files\VTPSUHM\POST\Basin A\Basin A SS.ES

Basin Bypass Capacity = 0.00 cfs
Starting Pool Elevation = 396.25 feet
Time Interval = 0.242 hours
Total number of Inflow points = 103

	Event Time (hours)	Hydrograph Inflow (cfs)	Basin Inflow (cfs)	Storage Used (acre-ft)	Elevation Above MSL (feet)	Basin Outflow (cfs)	Outflow Total (cfs)
Start	0.00	0.00	0.00	10.0663	396.25	0.00	0.00
Max. Inflow	2.90	99.58	99.58	15.8463	399.65	1.61	1.61
Max. Outflow	10.63	8.59	8.59	24.6593	403.74	8.68	8.68
Final	24.65	0.00	0.00	21.8493	402.54	6.10	6.10

Modified Puls Routing

Inflow Hydrograph: R:\Projects\2018\18000145B\Reports\Stormwater Management\201105\Working Files\VTPSUHM\POST\Basin A\Hydrograph Combinations\Cor
 Storage/Elevation Curve: R:\Projects\2018\18000145B\Reports\Stormwater Management\201105\Working Files\VTPSUHM\POST\Basin A\Basin A SS.ES

Basin Bypass Capacity = 0.00 cfs
 Starting Pool Elevation = 396.25 feet
 Time Interval = 0.242 hours

Event Time (hours)	Hydrograph Inflow (cfs)	Basin Inflow (cfs)	Storage Used (acre-ft)	Elevation Above MSL (feet)	Basin Outflow (cfs)	Outflow Total (cfs)
0.00	0.00	0.00	10.0663	396.25	0.00	0.00
0.24	2.27	2.27	10.0888	396.26	0.01	0.01
0.48	4.62	4.62	10.1574	396.31	0.01	0.01
0.73	7.14	7.14	10.2743	396.39	0.05	0.05
0.97	9.83	9.83	10.4421	396.50	0.12	0.12
1.21	11.13	11.13	10.6475	396.63	0.26	0.26
1.45	12.41	12.41	10.8766	396.78	0.34	0.34
1.69	13.63	13.63	11.1284	396.94	0.49	0.49
1.93	14.79	14.79	11.4011	397.11	0.62	0.62
2.18	34.82	34.82	11.8825	397.41	0.79	0.79
2.42	56.30	56.30	12.7742	397.95	1.05	1.05
2.66	78.51	78.51	14.0969	398.70	1.33	1.33
2.90	99.58	99.58	15.8463	399.65	1.61	1.61
3.14	84.60	84.60	17.6514	400.57	1.84	1.84
3.38	68.65	68.65	19.1437	401.30	2.00	2.00
3.63	51.88	51.88	20.2953	401.84	3.22	3.22
3.87	34.45	34.45	21.0752	402.19	5.03	5.03
4.11	31.19	31.19	21.6225	402.44	5.81	5.81
4.35	27.97	27.97	22.0915	402.64	6.38	6.38
4.59	24.71	24.71	22.4858	402.82	6.82	6.82
4.83	21.37	21.37	22.8067	402.96	7.14	7.14
5.08	19.20	19.20	23.0668	403.07	7.38	7.38
5.32	17.93	17.93	23.2882	403.16	7.58	7.58
5.56	16.89	16.89	23.4829	403.24	7.75	7.75
5.80	15.82	15.82	23.6534	403.32	7.89	7.89
6.04	14.81	14.81	23.8006	403.38	8.01	8.01
6.28	13.94	13.94	23.9267	403.43	8.11	8.11
6.53	13.15	13.15	24.0344	403.47	8.20	8.20
6.77	12.42	12.42	24.1253	403.51	8.27	8.27
7.01	12.03	12.03	24.2037	403.55	8.33	8.33
7.25	11.68	11.68	24.2736	403.57	8.38	8.38
7.49	11.36	11.36	24.3357	403.60	8.43	8.43
7.73	11.06	11.06	24.3908	403.62	8.47	8.47
7.98	10.80	10.80	24.4395	403.64	8.51	8.51
8.22	10.56	10.56	24.4825	403.66	8.54	8.54
8.46	10.32	10.32	24.5201	403.68	8.57	8.57
8.70	10.10	10.10	24.5526	403.69	8.60	8.60
8.94	9.89	9.89	24.5803	403.70	8.62	8.62
9.18	9.69	9.69	24.6035	403.71	8.63	8.63
9.43	9.49	9.49	24.6225	403.72	8.65	8.65
9.67	9.30	9.30	24.6373	403.73	8.66	8.66
9.91	9.12	9.12	24.6482	403.73	8.67	8.67
10.15	8.95	8.95	24.6555	403.73	8.67	8.67
10.39	8.77	8.77	24.6592	403.74	8.68	8.68
10.63	8.59	8.59	24.6593	403.74	8.68	8.68
10.88	8.43	8.43	24.6560	403.73	8.67	8.67
11.12	8.28	8.28	24.6497	403.73	8.67	8.67
11.36	8.12	8.12	24.6404	403.73	8.66	8.66
11.60	7.98	7.98	24.6282	403.72	8.65	8.65
11.84	7.83	7.83	24.6134	403.72	8.64	8.64
12.08	7.70	7.70	24.5960	403.71	8.63	8.63
12.33	7.55	7.55	24.5761	403.70	8.61	8.61

Event Time (hours)	Hydrograph Inflow (cfs)	Basin Inflow (cfs)	Storage Used (acre-ft)	Elevation Above MSL (feet)	Basin Outflow (cfs)	Outflow Total (cfs)
12.57	7.42	7.42	24.5537	403.69	8.60	8.60
12.81	7.29	7.29	24.5291	403.68	8.58	8.58
13.05	7.16	7.16	24.5023	403.67	8.56	8.56
13.29	7.04	7.04	24.4733	403.66	8.54	8.54
13.54	6.91	6.91	24.4424	403.64	8.51	8.51
13.78	6.79	6.79	24.4094	403.63	8.49	8.49
14.02	6.68	6.68	24.3747	403.62	8.46	8.46
14.26	6.56	6.56	24.3381	403.60	8.43	8.43
14.50	6.45	6.45	24.2999	403.59	8.40	8.40
14.74	6.35	6.35	24.2602	403.57	8.37	8.37
14.99	6.24	6.24	24.2190	403.55	8.34	8.34
15.23	6.13	6.13	24.1762	403.53	8.31	8.31
15.47	6.04	6.04	24.1321	403.52	8.27	8.27
15.71	5.93	5.93	24.0867	403.50	8.24	8.24
15.95	5.84	5.84	24.0401	403.48	8.20	8.20
16.19	5.74	5.74	23.9923	403.46	8.16	8.16
16.44	5.65	5.65	23.9434	403.44	8.12	8.12
16.68	5.56	5.56	23.8934	403.42	8.08	8.08
16.92	5.47	5.47	23.8425	403.39	8.04	8.04
17.16	5.38	5.38	23.7906	403.37	8.00	8.00
17.40	5.30	5.30	23.7379	403.35	7.96	7.96
17.64	5.22	5.22	23.6844	403.33	7.91	7.91
17.89	5.12	5.12	23.6300	403.31	7.87	7.87
18.13	5.04	5.04	23.5748	403.28	7.82	7.82
18.37	4.96	4.96	23.5188	403.26	7.78	7.78
18.61	4.89	4.89	23.4624	403.24	7.73	7.73
18.85	4.81	4.81	23.4053	403.21	7.68	7.68
19.09	4.74	4.74	23.3478	403.19	7.63	7.63
19.34	4.66	4.66	23.2898	403.16	7.58	7.58
19.58	4.59	4.59	23.2312	403.14	7.53	7.53
19.82	4.52	4.52	23.1723	403.11	7.48	7.48
20.06	4.44	4.44	23.1130	403.09	7.43	7.43
20.30	4.38	4.38	23.0533	403.06	7.37	7.37
20.54	4.31	4.31	22.9933	403.04	7.32	7.32
20.79	4.25	4.25	22.9332	403.01	7.26	7.26
21.03	4.18	4.18	22.8730	402.99	7.20	7.20
21.27	4.11	4.11	22.8124	402.96	7.15	7.15
21.51	4.06	4.06	22.7519	402.93	7.09	7.09
21.75	3.99	3.99	22.6913	402.91	7.03	7.03
21.99	3.93	3.93	22.6307	402.88	6.96	6.96
22.24	3.86	3.86	22.5700	402.85	6.90	6.90
22.48	3.81	3.81	22.5094	402.83	6.84	6.84
22.72	3.75	3.75	22.4489	402.80	6.78	6.78
22.96	3.70	3.70	22.3886	402.77	6.71	6.71
23.20	3.63	3.63	22.3284	402.75	6.65	6.65
23.44	3.58	3.58	22.2683	402.72	6.58	6.58
23.69	3.53	3.53	22.2085	402.69	6.52	6.52
23.93	3.47	3.47	22.1489	402.67	6.45	6.45
24.17	1.61	1.61	22.0717	402.63	6.36	6.36
24.41	0.53	0.53	21.9672	402.59	6.24	6.24
24.65	0.00	0.00	21.8493	402.54	6.10	6.10

**Modified Puls Routing
Summary of Results**

Inflow Hydrograph: R:\Projects\2018\18000145B\Reports\Stormwater Management\201105\Working Files\VTPSUHM\POST\Basin A\Hydrograph Combinations\Cor
Storage/Elevation Curve: R:\Projects\2018\18000145B\Reports\Stormwater Management\201105\Working Files\VTPSUHM\POST\Basin A\Basin A SS.ES

Basin Bypass Capacity = 0.00 cfs
Starting Pool Elevation = 396.25 feet
Time Interval = 0.242 hours
Total number of Inflow points = 103

	Event Time (hours)	Hydrograph Inflow (cfs)	Basin Inflow (cfs)	Storage Used (acre-ft)	Elevation Above MSL (feet)	Basin Outflow (cfs)	Outflow Total (cfs)
Start	0.00	0.00	0.00	10.0663	396.25	0.00	0.00
Max. Inflow	2.90	109.94	109.94	16.5005	400.00	1.70	1.70
Max. Outflow	11.36	10.37	10.37	26.4446	404.46	10.48	10.48
Max. Elev.	12.08	9.98	9.98	26.4279	404.46	10.42	10.42
Final	24.65	0.00	0.00	23.4379	403.22	7.71	7.71

Modified Puls Routing

Inflow Hydrograph: R:\Projects\2018\18000145B\Reports\Stormwater Management\201105\Working Files\VTPSUHM\POST\Basin A\Hydrograph Combinations\Cor
Storage/Elevation Curve: R:\Projects\2018\18000145B\Reports\Stormwater Management\201105\Working Files\VTPSUHM\POST\Basin A\Basin A SS.ES

Basin Bypass Capacity = 0.00 cfs
Starting Pool Elevation = 396.25 feet
Time Interval = 0.242 hours

Event Time (hours)	Hydrograph Inflow (cfs)	Basin Inflow (cfs)	Storage Used (acre-ft)	Elevation Above MSL (feet)	Basin Outflow (cfs)	Outflow Total (cfs)
0.00	0.00	0.00	10.0663	396.25	0.00	0.00
0.24	2.42	2.42	10.0903	396.27	0.01	0.01
0.48	4.93	4.93	10.1635	396.31	0.01	0.01
0.73	7.60	7.60	10.2880	396.40	0.05	0.05
0.97	10.49	10.49	10.4668	396.51	0.14	0.14
1.21	12.23	12.23	10.6894	396.66	0.30	0.30
1.45	13.95	13.95	10.9441	396.82	0.38	0.38
1.69	15.59	15.59	11.2298	397.01	0.55	0.55
1.93	17.24	17.24	11.5455	397.20	0.68	0.68
2.18	39.35	39.35	12.0953	397.54	0.86	0.86
2.42	62.80	62.80	13.0958	398.14	1.12	1.12
2.66	86.90	86.90	14.5656	398.97	1.41	1.41
2.90	109.94	109.94	16.5005	400.00	1.70	1.70
3.14	94.54	94.54	18.5065	401.00	1.94	1.94
3.38	78.37	78.37	20.1839	401.79	3.02	3.02
3.63	61.11	61.11	21.4905	402.38	5.64	5.64
3.87	42.83	42.83	22.4051	402.78	6.73	6.73
4.11	38.00	38.00	23.0714	403.07	7.39	7.39
4.35	33.07	33.07	23.6288	403.30	7.87	7.87
4.59	28.13	28.13	24.0792	403.49	8.23	8.23
4.83	23.11	23.11	24.4239	403.64	8.50	8.50
5.08	21.66	21.66	24.6992	403.75	8.70	8.70
5.32	19.58	19.58	24.9355	403.85	8.88	8.88
5.56	18.21	18.21	25.1342	403.93	9.02	9.02
5.80	17.15	17.15	25.3060	404.01	9.14	9.14
6.04	16.04	16.04	25.4539	404.07	9.24	9.24
6.28	15.14	15.14	25.5799	404.12	9.32	9.32
6.53	14.42	14.42	25.6882	404.16	9.39	9.39
6.77	13.81	13.81	25.7819	404.20	9.45	9.45
7.01	13.45	13.45	25.8648	404.23	9.51	9.51
7.25	13.15	13.15	25.9401	404.26	9.56	9.56
7.49	12.90	12.90	26.0090	404.29	9.60	9.60
7.73	12.68	12.68	26.0723	404.31	9.64	9.64
7.98	12.48	12.48	26.1307	404.34	9.68	9.68
8.22	12.29	12.29	26.1845	404.36	9.71	9.71
8.46	12.10	12.10	26.2333	404.38	9.79	9.79
8.70	11.93	11.93	26.2763	404.40	9.93	9.93
8.94	11.77	11.77	26.3134	404.41	10.05	10.05
9.18	11.61	11.61	26.3451	404.42	10.16	10.16
9.43	11.45	11.45	26.3716	404.43	10.24	10.24
9.67	11.29	11.29	26.3935	404.44	10.31	10.31
9.91	11.15	11.15	26.4110	404.45	10.37	10.37
10.15	10.99	10.99	26.4246	404.45	10.41	10.41
10.39	10.84	10.84	26.4343	404.46	10.45	10.45
10.63	10.71	10.71	26.4407	404.46	10.47	10.47
10.88	10.60	10.60	26.4443	404.46	10.48	10.48
11.12	10.49	10.49	26.4456	404.46	10.48	10.48
11.36	10.37	10.37	26.4446	404.46	10.48	10.48
11.60	10.24	10.24	26.4412	404.46	10.47	10.47
11.84	10.12	10.12	26.4357	404.46	10.45	10.45
12.08	9.98	9.98	26.4279	404.46	10.42	10.42
12.33	9.84	9.84	26.4180	404.45	10.39	10.39

Event Time (hours)	Hydrograph Inflow (cfs)	Basin Inflow (cfs)	Storage Used (acre-ft)	Elevation Above MSL (feet)	Basin Outflow (cfs)	Outflow Total (cfs)
12.57	9.69	9.69	26.4058	404.45	10.35	10.35
12.81	9.55	9.55	26.3917	404.44	10.31	10.31
13.05	9.39	9.39	26.3755	404.44	10.25	10.25
13.29	9.23	9.23	26.3572	404.43	10.20	10.20
13.54	9.07	9.07	26.3370	404.42	10.13	10.13
13.78	8.91	8.91	26.3149	404.41	10.06	10.06
14.02	8.76	8.76	26.2913	404.40	9.98	9.98
14.26	8.61	8.61	26.2662	404.39	9.90	9.90
14.50	8.46	8.46	26.2398	404.38	9.81	9.81
14.74	8.30	8.30	26.2120	404.37	9.73	9.73
14.99	8.15	8.15	26.1822	404.36	9.71	9.71
15.23	8.00	8.00	26.1498	404.34	9.69	9.69
15.47	7.85	7.85	26.1148	404.33	9.67	9.67
15.71	7.71	7.71	26.0774	404.32	9.64	9.64
15.95	7.57	7.57	26.0376	404.30	9.62	9.62
16.19	7.44	7.44	25.9957	404.28	9.59	9.59
16.44	7.31	7.31	25.9517	404.27	9.56	9.56
16.68	7.18	7.18	25.9057	404.25	9.53	9.53
16.92	7.06	7.06	25.8578	404.23	9.50	9.50
17.16	6.93	6.93	25.8080	404.21	9.47	9.47
17.40	6.80	6.80	25.7563	404.19	9.44	9.44
17.64	6.67	6.67	25.7027	404.16	9.40	9.40
17.89	6.55	6.55	25.6473	404.14	9.37	9.37
18.13	6.43	6.43	25.5902	404.12	9.33	9.33
18.37	6.30	6.30	25.5313	404.10	9.29	9.29
18.61	6.18	6.18	25.4708	404.07	9.25	9.25
18.85	6.07	6.07	25.4088	404.05	9.21	9.21
19.09	5.95	5.95	25.3453	404.02	9.17	9.17
19.34	5.83	5.83	25.2803	404.00	9.12	9.12
19.58	5.71	5.71	25.2138	403.97	9.07	9.07
19.82	5.60	5.60	25.1460	403.94	9.03	9.03
20.06	5.48	5.48	25.0768	403.91	8.98	8.98
20.30	5.36	5.36	25.0062	403.88	8.93	8.93
20.54	5.25	5.25	24.9344	403.85	8.88	8.88
20.79	5.15	5.15	24.8615	403.82	8.82	8.82
21.03	5.04	5.04	24.7875	403.79	8.77	8.77
21.27	4.93	4.93	24.7125	403.76	8.71	8.71
21.51	4.82	4.82	24.6363	403.73	8.66	8.66
21.75	4.71	4.71	24.5591	403.69	8.60	8.60
21.99	4.60	4.60	24.4809	403.66	8.54	8.54
22.24	4.50	4.50	24.4017	403.63	8.48	8.48
22.48	4.39	4.39	24.3217	403.59	8.42	8.42
22.72	4.29	4.29	24.2408	403.56	8.36	8.36
22.96	4.18	4.18	24.1591	403.53	8.30	8.30
23.20	4.08	4.08	24.0765	403.49	8.23	8.23
23.44	3.99	3.99	23.9933	403.46	8.16	8.16
23.69	3.88	3.88	23.9095	403.42	8.10	8.10
23.93	3.78	3.78	23.8249	403.39	8.03	8.03
24.17	1.79	1.79	23.7210	403.34	7.94	7.94
24.41	0.59	0.59	23.5872	403.29	7.83	7.83
24.65	0.00	0.00	23.4379	403.22	7.71	7.71



Project: PROJECT TADMOR Sheet: 1 of 1
Project #: 18000145B Scale: _____
Calculated By: MD Date: 5/5/2021 Checked By: _____ Date: _____
Element: SPILLWAY A DESIGN Date: _____
Engineers | Planners | Surveyors | Landscape Architects | Environmental Scientists

PROBLEM STATEMENT:

DETERMINE THE REQUIRED EMERGENCY SPILLWAY AND TOP OF BERM ELEVATIONS FOR EACH DETENTION FACILITY BASED ON THE FREEBOARD REQUIREMENTS FROM THE ACT 167 STORMWATER MANAGEMENT PLAN FOR THE MONOCACY CREEK WATERSHED.

FROM VTPSUHM OUTPUTS:

100-YEAR WATER SURFACE ELEVATION 404.46 FT
100-YEAR BASIN INFLOW, Q 109.94 CFS

WEIR (SPILLWAY) CALCULATIONS:

LENGTH OF EMERGENCY SPILLWAY, L 100.00 FT
GRASSED BROAD CREST, c 3.0

BROAD CRESTED WEIR EQUATION $Q = c * L * H^{(3/2)}$
SOLVE FOR HEIGHT $H = (Q / (c * L))^{(2/3)}$

HEIGHT OF 100-YEAR FLOW THROUGH WEIR, H 0.51 FT

SPILLWAY FREEBOARD CALCULATIONS:

100-YEAR REQUIRED SPILLWAY FREEBOARD 1.00 FT
100-YEAR MINIMUM SPILLWAY ELEVATION 405.46 FT
PROVIDED SPILLWAY ELEVATION 405.50 FT
100-YEAR SPILLWAY FREEBOARD PROVIDED 1.04 FT

TOP OF BERM FREEBOARD CALCULATIONS:

REQUIRED FREEBOARD FOR TOP OF BERM 0.50 FT
MINIMUM TOP OF BERM ELEVATION 406.51 FT
PROVIDED TOP OF BERM ELEVATION 406.90 FT
TOP OF BERM FREEBOARD PROVIDED 0.89 FT

BASED ON THE FREEBOARD PROVIDED, THIS BASIN MEETS THE FREEBOARD REQUIREMENTS SET FORTH IN THE ACT 167 STORMWATER MANAGEMENT PLAN FOR THE MONOCACY CREEK WATERSHED.

DETENTION BASIN B ROUTING

Basin Storage/Elevation Input

Elevation (ft)	Area (acres)	Storage (acre-ft)
395.5	0.0000	0.000
396	0.1279	0.032
397	0.1988	0.195
398	0.2394	0.414
399	0.2823	0.675
400	0.3275	0.980
401	0.3750	1.331

Project Files:

Outlet Structure Configuration: R:\Projects\2018\18000145B\Reports\Stormwater Management\201105\Working Files\VTPSUHM\POST\Basin B\B

Discharge/Elevation Curve: R:\Projects\2018\18000145B\Reports\Stormwater Management\201105\Working Files\VTPSUHM\POST\Basin B\Basin

Outlet Structure Configuration

Stage 1: Circular Orifice

Invert Elevation = 395.5 feet

Diameter = 0.667 feet

Discharge Coefficient = 0.6

Stage 2: Grate Inlet

Crest Elevation = 398.4 feet

Effective Perimeter = 10.4 feet

Effective Flow Area = 6.5 square feet

Stage 3: Outfall Culvert

Invert Elevation = 395.5 feet

Pipe Diameter = 1.5 feet

Pipe Length = 64 feet

Pipe Slope = 0.006 ft/ft

Manning n = 0.012

Entrance Condition = SEH

Number of Barrels = 1

Basin Rating Curve

Basin Water Elevation	Basin Outflow (cfs)	Riser Box Water Elevation	Tailwater Elevation (ft)	Outfall Culvert Control	Outfall Culvert Override?
395.50	0.00	395.50	N/A	INLET	N/A
395.63	0.04	395.50	N/A	INLET	NO
395.75	0.12	395.68	N/A	INLET	NO
395.88	0.26	395.77	N/A	INLET	NO
396.00	0.47	395.81	N/A	INLET	NO
396.13	0.68	395.87	N/A	INLET	NO
396.25	0.68	395.89	N/A	INLET	NO
396.38	0.88	395.93	N/A	INLET	NO
396.50	1.04	395.98	N/A	INLET	NO
396.63	1.19	396.01	N/A	INLET	NO
396.75	1.32	396.04	N/A	INLET	NO
396.88	1.44	396.07	N/A	INLET	NO
397.00	1.55	396.09	N/A	INLET	NO
397.13	1.66	396.11	N/A	INLET	NO
397.25	1.76	396.13	N/A	INLET	NO
397.38	1.85	396.14	N/A	INLET	NO
397.50	1.94	396.16	N/A	INLET	NO
397.63	2.03	396.17	N/A	INLET	NO
397.75	2.10	396.19	N/A	INLET	NO
397.88	2.18	396.20	N/A	INLET	NO
398.00	2.25	396.21	N/A	INLET	NO
398.13	2.32	396.22	N/A	INLET	NO
398.25	2.39	396.24	N/A	INLET	NO
398.38	2.45	396.25	N/A	INLET	NO
398.50	3.46	396.40	N/A	INLET	NO
398.63	5.78	396.70	N/A	INLET	NO
398.75	8.59	397.45	N/A	INLET	NO
398.88	11.83	398.30	N/A	INLET	NO
399.00	13.93	399.00	N/A	OUTLET	YES
399.13	13.96	399.13	N/A	OUTLET	YES
399.25	14.00	399.25	N/A	OUTLET	YES
399.38	14.06	399.38	N/A	OUTLET	YES
399.50	14.32	399.50	N/A	OUTLET	YES
399.63	14.58	399.63	N/A	OUTLET	YES

Basin Water Elevation	Basin Outflow (cfs)	Riser Box Water Elevation	Tailwater Elevation (ft)	Outfall Culvert Control	Outfall Culvert Override?
399.75	14.85	399.75	N/A	OUTLET	YES
399.88	15.11	399.88	N/A	OUTLET	YES
400.00	15.38	400.00	N/A	OUTLET	YES
400.13	15.64	400.13	N/A	OUTLET	YES
400.25	15.90	400.25	N/A	OUTLET	YES
400.38	16.16	400.38	N/A	OUTLET	YES
400.50	16.42	400.50	N/A	OUTLET	YES
400.63	16.68	400.63	N/A	OUTLET	YES
400.75	16.94	400.75	N/A	OUTLET	YES
400.88	17.19	400.88	N/A	OUTLET	YES
401.00	17.44	401.00	N/A	OUTLET	YES

NOTE: When a 'YES' appears in the Outfall Culvert Override column, the outfall culvert is restricting the pond outflow. The Basin outflow is equal to the outfall culvert capacity at that riser box water elevation.

**Modified Puls Routing
Summary of Results**

Inflow Hydrograph: R:\Projects\2018\18000145B\Reports\Stormwater Management\201105\Working Files\VTPSUHM\POST\Basin B\Post to Basin B-2 Year Storm.H
Storage/Elevation Curve: R:\Projects\2018\18000145B\Reports\Stormwater Management\201105\Working Files\VTPSUHM\POST\Basin B\Basin B Storage.ES

Basin Bypass Capacity = 0.00 cfs
Starting Pool Elevation = 395.50 feet
Time Interval = 0.242 hours
Total number of Inflow points = 102

	Event Time (hours)	Hydrograph Inflow (cfs)	Basin Inflow (cfs)	Storage Used (acre-ft)	Elevation Above MSL (feet)	Basin Outflow (cfs)	Outflow Total (cfs)
Start	0.00	0.00	0.00	0.0000	395.50	0.00	0.00
Max. Inflow	2.90	4.33	4.33	0.1606	396.79	1.36	1.36
Max. Outflow	3.63	1.70	1.70	0.2442	397.22	1.74	1.74
Final	24.41	0.00	0.00	0.0140	395.72	0.10	0.10

Modified Puls Routing

Inflow Hydrograph: R:\Projects\2018\18000145B\Reports\Stormwater Management\201105\Working Files\VTPSUHM\POST\Basin B\Post to Basin B-2 Year Storm.H
 Storage/Elevation Curve: R:\Projects\2018\18000145B\Reports\Stormwater Management\201105\Working Files\VTPSUHM\POST\Basin B\Basin B Storage.ES

Basin Bypass Capacity = 0.00 cfs
 Starting Pool Elevation = 395.50 feet
 Time Interval = 0.242 hours

Event Time (hours)	Hydrograph Inflow (cfs)	Basin Inflow (cfs)	Storage Used (acre-ft)	Elevation Above MSL (feet)	Basin Outflow (cfs)	Outflow Total (cfs)
0.00	0.00	0.00	0.0000	395.50	0.00	0.00
0.24	0.10	0.10	0.0010	395.52	0.01	0.01
0.48	0.20	0.20	0.0038	395.56	0.02	0.02
0.73	0.31	0.31	0.0083	395.63	0.04	0.04
0.97	0.41	0.41	0.0140	395.72	0.10	0.10
1.21	0.43	0.43	0.0197	395.81	0.18	0.18
1.45	0.45	0.45	0.0241	395.88	0.26	0.26
1.69	0.48	0.48	0.0273	395.93	0.35	0.35
1.93	0.50	0.50	0.0296	395.96	0.41	0.41
2.18	1.46	1.46	0.0396	396.05	0.55	0.55
2.42	2.42	2.42	0.0660	396.21	0.68	0.68
2.66	3.38	3.38	0.1071	396.46	0.99	0.99
2.90	4.33	4.33	0.1606	396.79	1.36	1.36
3.14	3.45	3.45	0.2088	397.06	1.61	1.61
3.38	2.58	2.58	0.2359	397.19	1.71	1.71
3.63	1.70	1.70	0.2442	397.22	1.74	1.74
3.87	0.82	0.82	0.2349	397.18	1.70	1.70
4.11	0.73	0.73	0.2170	397.10	1.64	1.64
4.35	0.65	0.65	0.1987	397.02	1.57	1.57
4.59	0.56	0.56	0.1804	396.91	1.47	1.47
4.83	0.48	0.48	0.1624	396.80	1.37	1.37
5.08	0.47	0.47	0.1455	396.70	1.26	1.26
5.32	0.47	0.47	0.1306	396.60	1.17	1.17
5.56	0.46	0.46	0.1175	396.52	1.07	1.07
5.80	0.46	0.46	0.1061	396.45	0.98	0.98
6.04	0.43	0.43	0.0961	396.39	0.90	0.90
6.28	0.41	0.41	0.0873	396.34	0.82	0.82
6.53	0.38	0.38	0.0795	396.29	0.75	0.75
6.77	0.36	0.36	0.0728	396.25	0.68	0.68
7.01	0.35	0.35	0.0663	396.21	0.68	0.68
7.25	0.34	0.34	0.0597	396.17	0.68	0.68
7.49	0.33	0.33	0.0529	396.13	0.68	0.68
7.73	0.32	0.32	0.0465	396.09	0.62	0.62
7.98	0.31	0.31	0.0411	396.06	0.56	0.56
8.22	0.31	0.31	0.0365	396.03	0.52	0.52
8.46	0.30	0.30	0.0325	396.00	0.48	0.48
8.70	0.29	0.29	0.0296	395.96	0.41	0.41
8.94	0.28	0.28	0.0277	395.93	0.35	0.35
9.18	0.27	0.27	0.0264	395.91	0.32	0.32
9.43	0.27	0.27	0.0256	395.90	0.30	0.30
9.67	0.26	0.26	0.0251	395.89	0.28	0.28
9.91	0.25	0.25	0.0246	395.88	0.27	0.27
10.15	0.25	0.25	0.0243	395.88	0.26	0.26
10.39	0.24	0.24	0.0240	395.87	0.26	0.26
10.63	0.24	0.24	0.0237	395.87	0.25	0.25
10.88	0.23	0.23	0.0234	395.87	0.25	0.25
11.12	0.22	0.22	0.0231	395.86	0.24	0.24
11.36	0.22	0.22	0.0228	395.86	0.23	0.23
11.60	0.21	0.21	0.0225	395.85	0.23	0.23
11.84	0.21	0.21	0.0222	395.85	0.22	0.22
12.08	0.21	0.21	0.0219	395.84	0.22	0.22
12.33	0.20	0.20	0.0217	395.84	0.21	0.21

Event Time (hours)	Hydrograph Inflow (cfs)	Basin Inflow (cfs)	Storage Used (acre-ft)	Elevation Above MSL (feet)	Basin Outflow (cfs)	Outflow Total (cfs)
12.57	0.20	0.20	0.0214	395.83	0.21	0.21
12.81	0.19	0.19	0.0211	395.83	0.21	0.21
13.05	0.19	0.19	0.0209	395.83	0.20	0.20
13.29	0.19	0.19	0.0207	395.82	0.20	0.20
13.53	0.18	0.18	0.0204	395.82	0.19	0.19
13.78	0.18	0.18	0.0202	395.82	0.19	0.19
14.02	0.18	0.18	0.0200	395.81	0.19	0.19
14.26	0.17	0.17	0.0198	395.81	0.18	0.18
14.50	0.17	0.17	0.0196	395.81	0.18	0.18
14.74	0.17	0.17	0.0194	395.80	0.18	0.18
14.98	0.16	0.16	0.0192	395.80	0.17	0.17
15.23	0.16	0.16	0.0190	395.80	0.17	0.17
15.47	0.16	0.16	0.0189	395.79	0.17	0.17
15.71	0.15	0.15	0.0187	395.79	0.16	0.16
15.95	0.15	0.15	0.0185	395.79	0.16	0.16
16.19	0.15	0.15	0.0184	395.79	0.16	0.16
16.43	0.15	0.15	0.0182	395.78	0.15	0.15
16.68	0.15	0.15	0.0181	395.78	0.15	0.15
16.92	0.14	0.14	0.0180	395.78	0.15	0.15
17.16	0.14	0.14	0.0178	395.78	0.15	0.15
17.40	0.14	0.14	0.0177	395.78	0.15	0.15
17.64	0.14	0.14	0.0176	395.77	0.14	0.14
17.88	0.13	0.13	0.0174	395.77	0.14	0.14
18.13	0.13	0.13	0.0173	395.77	0.14	0.14
18.37	0.13	0.13	0.0172	395.77	0.14	0.14
18.61	0.13	0.13	0.0171	395.77	0.13	0.13
18.85	0.13	0.13	0.0170	395.77	0.13	0.13
19.09	0.13	0.13	0.0169	395.76	0.13	0.13
19.33	0.12	0.12	0.0168	395.76	0.13	0.13
19.58	0.12	0.12	0.0167	395.76	0.13	0.13
19.82	0.12	0.12	0.0166	395.76	0.13	0.13
20.06	0.12	0.12	0.0165	395.76	0.12	0.12
20.30	0.12	0.12	0.0164	395.76	0.12	0.12
20.54	0.12	0.12	0.0163	395.76	0.12	0.12
20.78	0.12	0.12	0.0163	395.75	0.12	0.12
21.03	0.11	0.11	0.0162	395.75	0.12	0.12
21.27	0.11	0.11	0.0161	395.75	0.12	0.12
21.51	0.11	0.11	0.0160	395.75	0.12	0.12
21.75	0.11	0.11	0.0160	395.75	0.12	0.12
21.99	0.11	0.11	0.0159	395.75	0.11	0.11
22.23	0.11	0.11	0.0158	395.75	0.11	0.11
22.48	0.11	0.11	0.0157	395.75	0.11	0.11
22.72	0.11	0.11	0.0156	395.74	0.11	0.11
22.96	0.11	0.11	0.0155	395.74	0.11	0.11
23.20	0.10	0.10	0.0154	395.74	0.11	0.11
23.44	0.10	0.10	0.0153	395.74	0.11	0.11
23.68	0.10	0.10	0.0152	395.74	0.11	0.11
23.93	0.10	0.10	0.0151	395.74	0.11	0.11
24.17	0.10	0.10	0.0150	395.73	0.11	0.11
24.41	0.00	0.00	0.0140	395.72	0.10	0.10

**Modified Puls Routing
Summary of Results**

Inflow Hydrograph: R:\Projects\2018\18000145B\Reports\Stormwater Management\201105\Working Files\VTPSUHM\POST\Basin B\Post to Basin B-10 Year Storm.
Storage/Elevation Curve: R:\Projects\2018\18000145B\Reports\Stormwater Management\201105\Working Files\VTPSUHM\POST\Basin B\Basin B Storage.ES

Basin Bypass Capacity = 0.00 cfs
Starting Pool Elevation = 395.50 feet
Time Interval = 0.242 hours
Total number of Inflow points = 102

	Event Time (hours)	Hydrograph Inflow (cfs)	Basin Inflow (cfs)	Storage Used (acre-ft)	Elevation Above MSL (feet)	Basin Outflow (cfs)	Outflow Total (cfs)
Start	0.00	0.00	0.00	0.0000	395.50	0.00	0.00
Max. Inflow	2.90	6.22	6.22	0.2387	397.20	1.72	1.72
Max. Outflow	3.63	2.50	2.50	0.3799	397.84	2.16	2.16
Final	24.41	0.00	0.00	0.0167	395.76	0.13	0.13

Modified Puls Routing

Inflow Hydrograph: R:\Projects\2018\18000145B\Reports\Stormwater Management\201105\Working Files\VTPSUHM\POST\Basin B\Post to Basin B-10 Year Storm.
Storage/Elevation Curve: R:\Projects\2018\18000145B\Reports\Stormwater Management\201105\Working Files\VTPSUHM\POST\Basin B\Basin B Storage.ES

Basin Bypass Capacity = 0.00 cfs
Starting Pool Elevation = 395.50 feet
Time Interval = 0.242 hours

Event Time (hours)	Hydrograph Inflow (cfs)	Basin Inflow (cfs)	Storage Used (acre-ft)	Elevation Above MSL (feet)	Basin Outflow (cfs)	Outflow Total (cfs)
0.00	0.00	0.00	0.0000	395.50	0.00	0.00
0.24	0.15	0.15	0.0015	395.52	0.01	0.01
0.48	0.31	0.31	0.0057	395.59	0.03	0.03
0.73	0.46	0.46	0.0123	395.69	0.08	0.08
0.97	0.61	0.61	0.0202	395.82	0.19	0.19
1.21	0.65	0.65	0.0275	395.93	0.35	0.35
1.45	0.69	0.69	0.0326	396.00	0.48	0.48
1.69	0.73	0.73	0.0368	396.03	0.52	0.52
1.93	0.77	0.77	0.0410	396.06	0.56	0.56
2.18	2.13	2.13	0.0576	396.16	0.68	0.68
2.42	3.50	3.50	0.0979	396.40	0.92	0.92
2.66	4.86	4.86	0.1587	396.78	1.35	1.35
2.90	6.22	6.22	0.2387	397.20	1.72	1.72
3.14	4.98	4.98	0.3137	397.54	1.97	1.97
3.38	3.74	3.74	0.3601	397.75	2.11	2.11
3.63	2.50	2.50	0.3799	397.84	2.16	2.16
3.87	1.27	1.27	0.3746	397.82	2.14	2.14
4.11	1.13	1.13	0.3562	397.74	2.09	2.09
4.35	0.99	0.99	0.3361	397.64	2.04	2.04
4.59	0.86	0.86	0.3146	397.55	1.97	1.97
4.83	0.72	0.72	0.2916	397.44	1.90	1.90
5.08	0.72	0.72	0.2688	397.34	1.82	1.82
5.32	0.71	0.71	0.2473	397.24	1.75	1.75
5.56	0.70	0.70	0.2272	397.15	1.68	1.68
5.80	0.70	0.70	0.2084	397.06	1.61	1.61
6.04	0.66	0.66	0.1906	396.97	1.53	1.53
6.28	0.61	0.61	0.1737	396.87	1.44	1.44
6.53	0.57	0.57	0.1578	396.77	1.34	1.34
6.77	0.53	0.53	0.1430	396.68	1.25	1.25
7.01	0.51	0.51	0.1294	396.60	1.16	1.16
7.25	0.50	0.50	0.1172	396.52	1.07	1.07
7.49	0.48	0.48	0.1065	396.46	0.99	0.99
7.73	0.46	0.46	0.0969	396.40	0.91	0.91
7.98	0.45	0.45	0.0886	396.35	0.84	0.84
8.22	0.44	0.44	0.0815	396.30	0.77	0.77
8.46	0.42	0.42	0.0754	396.27	0.70	0.70
8.70	0.41	0.41	0.0699	396.23	0.68	0.68
8.94	0.40	0.40	0.0643	396.20	0.68	0.68
9.18	0.38	0.38	0.0586	396.16	0.68	0.68
9.43	0.37	0.37	0.0527	396.13	0.68	0.68
9.67	0.36	0.36	0.0470	396.09	0.62	0.62
9.91	0.35	0.35	0.0422	396.06	0.57	0.57
10.15	0.34	0.34	0.0381	396.04	0.53	0.53
10.39	0.33	0.33	0.0345	396.02	0.50	0.50
10.63	0.32	0.32	0.0315	395.99	0.46	0.46
10.88	0.31	0.31	0.0293	395.96	0.40	0.40
11.12	0.31	0.31	0.0279	395.94	0.36	0.36
11.36	0.30	0.30	0.0270	395.92	0.34	0.34
11.60	0.29	0.29	0.0264	395.91	0.32	0.32
11.84	0.28	0.28	0.0259	395.90	0.31	0.31
12.08	0.28	0.28	0.0255	395.90	0.30	0.30
12.33	0.27	0.27	0.0252	395.89	0.29	0.29

Event Time (hours)	Hydrograph Inflow (cfs)	Basin Inflow (cfs)	Storage Used (acre-ft)	Elevation Above MSL (feet)	Basin Outflow (cfs)	Outflow Total (cfs)
12.57	0.27	0.27	0.0249	395.89	0.28	0.28
12.81	0.26	0.26	0.0246	395.88	0.27	0.27
13.05	0.25	0.25	0.0244	395.88	0.27	0.27
13.29	0.25	0.25	0.0242	395.88	0.26	0.26
13.53	0.24	0.24	0.0240	395.87	0.25	0.25
13.78	0.24	0.24	0.0237	395.87	0.25	0.25
14.02	0.23	0.23	0.0235	395.87	0.25	0.25
14.26	0.23	0.23	0.0233	395.86	0.24	0.24
14.50	0.23	0.23	0.0230	395.86	0.24	0.24
14.74	0.22	0.22	0.0228	395.86	0.23	0.23
14.98	0.22	0.22	0.0225	395.85	0.23	0.23
15.23	0.21	0.21	0.0223	395.85	0.23	0.23
15.47	0.21	0.21	0.0221	395.84	0.22	0.22
15.71	0.21	0.21	0.0219	395.84	0.22	0.22
15.95	0.20	0.20	0.0217	395.84	0.21	0.21
16.19	0.20	0.20	0.0215	395.84	0.21	0.21
16.43	0.20	0.20	0.0212	395.83	0.21	0.21
16.68	0.19	0.19	0.0211	395.83	0.20	0.20
16.92	0.19	0.19	0.0209	395.83	0.20	0.20
17.16	0.19	0.19	0.0207	395.82	0.20	0.20
17.40	0.19	0.19	0.0205	395.82	0.19	0.19
17.64	0.18	0.18	0.0204	395.82	0.19	0.19
17.88	0.18	0.18	0.0202	395.82	0.19	0.19
18.13	0.18	0.18	0.0201	395.81	0.19	0.19
18.37	0.18	0.18	0.0199	395.81	0.18	0.18
18.61	0.18	0.18	0.0198	395.81	0.18	0.18
18.85	0.17	0.17	0.0197	395.81	0.18	0.18
19.09	0.17	0.17	0.0196	395.81	0.18	0.18
19.33	0.17	0.17	0.0195	395.80	0.18	0.18
19.58	0.17	0.17	0.0194	395.80	0.17	0.17
19.82	0.17	0.17	0.0192	395.80	0.17	0.17
20.06	0.17	0.17	0.0191	395.80	0.17	0.17
20.30	0.16	0.16	0.0190	395.80	0.17	0.17
20.54	0.16	0.16	0.0189	395.80	0.17	0.17
20.78	0.16	0.16	0.0189	395.79	0.17	0.17
21.03	0.16	0.16	0.0188	395.79	0.16	0.16
21.27	0.16	0.16	0.0187	395.79	0.16	0.16
21.51	0.16	0.16	0.0186	395.79	0.16	0.16
21.75	0.16	0.16	0.0185	395.79	0.16	0.16
21.99	0.16	0.16	0.0185	395.79	0.16	0.16
22.23	0.15	0.15	0.0184	395.79	0.16	0.16
22.48	0.15	0.15	0.0183	395.79	0.16	0.16
22.72	0.15	0.15	0.0183	395.79	0.16	0.16
22.96	0.15	0.15	0.0182	395.78	0.15	0.15
23.20	0.15	0.15	0.0182	395.78	0.15	0.15
23.44	0.15	0.15	0.0181	395.78	0.15	0.15
23.68	0.15	0.15	0.0181	395.78	0.15	0.15
23.93	0.15	0.15	0.0180	395.78	0.15	0.15
24.17	0.15	0.15	0.0180	395.78	0.15	0.15
24.41	0.00	0.00	0.0167	395.76	0.13	0.13

**Modified Puls Routing
Summary of Results**

Inflow Hydrograph: R:\Projects\2018\18000145B\Reports\Stormwater Management\201105\Working Files\VTPSUHM\POST\Basin B\Post to Basin B-25 Year Storm.
Storage/Elevation Curve: R:\Projects\2018\18000145B\Reports\Stormwater Management\201105\Working Files\VTPSUHM\POST\Basin B\Basin B Storage.ES

Basin Bypass Capacity = 0.00 cfs
Starting Pool Elevation = 395.50 feet
Time Interval = 0.242 hours
Total number of Inflow points = 102

	Event Time (hours)	Hydrograph Inflow (cfs)	Basin Inflow (cfs)	Storage Used (acre-ft)	Elevation Above MSL (feet)	Basin Outflow (cfs)	Outflow Total (cfs)
Start	0.00	0.00	0.00	0.0000	395.50	0.00	0.00
Max. Inflow	2.90	8.40	8.40	0.3377	397.65	2.04	2.04
Max. Outflow	3.63	3.51	3.51	0.5425	398.49	3.40	3.40
Final	24.41	0.00	0.00	0.0183	395.79	0.16	0.16

Modified Puls Routing

Inflow Hydrograph: R:\Projects\2018\18000145B\Reports\Stormwater Management\201105\Working Files\VTPSUHM\POST\Basin B\Post to Basin B-25 Year Storm.
 Storage/Elevation Curve: R:\Projects\2018\18000145B\Reports\Stormwater Management\201105\Working Files\VTPSUHM\POST\Basin B\Basin B Storage.ES

Basin Bypass Capacity = 0.00 cfs
 Starting Pool Elevation = 395.50 feet
 Time Interval = 0.242 hours

Event Time (hours)	Hydrograph Inflow (cfs)	Basin Inflow (cfs)	Storage Used (acre-ft)	Elevation Above MSL (feet)	Basin Outflow (cfs)	Outflow Total (cfs)
0.00	0.00	0.00	0.0000	395.50	0.00	0.00
0.24	0.22	0.22	0.0021	395.53	0.01	0.01
0.48	0.44	0.44	0.0082	395.63	0.04	0.04
0.73	0.66	0.66	0.0174	395.77	0.14	0.14
0.97	0.88	0.88	0.0278	395.93	0.36	0.36
1.21	0.93	0.93	0.0370	396.03	0.52	0.52
1.45	0.98	0.98	0.0449	396.08	0.60	0.60
1.69	1.03	1.03	0.0523	396.12	0.68	0.68
1.93	1.09	1.09	0.0599	396.17	0.68	0.68
2.18	2.92	2.92	0.0851	396.33	0.80	0.80
2.42	4.75	4.75	0.1412	396.67	1.24	1.24
2.66	6.57	6.57	0.2252	397.14	1.67	1.67
2.90	8.40	8.40	0.3377	397.65	2.04	2.04
3.14	6.77	6.77	0.4457	398.12	2.32	2.32
3.38	5.14	5.14	0.5158	398.39	2.58	2.58
3.63	3.51	3.51	0.5425	398.49	3.40	3.40
3.87	1.87	1.87	0.5317	398.45	3.06	3.06
4.11	1.67	1.67	0.5120	398.38	2.46	2.46
4.35	1.47	1.47	0.4946	398.31	2.42	2.42
4.59	1.26	1.26	0.4740	398.23	2.38	2.38
4.83	1.06	1.06	0.4502	398.14	2.33	2.33
5.08	1.04	1.04	0.4252	398.04	2.27	2.27
5.32	1.02	1.02	0.4011	397.94	2.21	2.21
5.56	1.01	1.01	0.3777	397.83	2.15	2.15
5.80	0.99	0.99	0.3552	397.73	2.09	2.09
6.04	0.93	0.93	0.3333	397.63	2.03	2.03
6.28	0.88	0.88	0.3115	397.53	1.97	1.97
6.53	0.83	0.83	0.2900	397.43	1.90	1.90
6.77	0.78	0.78	0.2689	397.34	1.82	1.82
7.01	0.75	0.75	0.2485	397.24	1.75	1.75
7.25	0.73	0.73	0.2290	397.16	1.68	1.68
7.49	0.71	0.71	0.2105	397.07	1.61	1.61
7.73	0.69	0.69	0.1930	396.99	1.54	1.54
7.98	0.67	0.67	0.1766	396.89	1.45	1.45
8.22	0.65	0.65	0.1617	396.80	1.37	1.37
8.46	0.63	0.63	0.1481	396.71	1.28	1.28
8.70	0.61	0.61	0.1357	396.64	1.20	1.20
8.94	0.60	0.60	0.1246	396.57	1.12	1.12
9.18	0.58	0.58	0.1147	396.51	1.05	1.05
9.43	0.56	0.56	0.1058	396.45	0.98	0.98
9.67	0.55	0.55	0.0980	396.40	0.92	0.92
9.91	0.54	0.54	0.0910	396.36	0.86	0.86
10.15	0.52	0.52	0.0850	396.33	0.80	0.80
10.39	0.51	0.51	0.0798	396.29	0.75	0.75
10.63	0.49	0.49	0.0753	396.27	0.70	0.70
10.88	0.48	0.48	0.0712	396.24	0.68	0.68
11.12	0.47	0.47	0.0672	396.22	0.68	0.68
11.36	0.46	0.46	0.0629	396.19	0.68	0.68
11.60	0.45	0.45	0.0584	396.16	0.68	0.68
11.84	0.44	0.44	0.0537	396.13	0.68	0.68
12.08	0.43	0.43	0.0492	396.11	0.64	0.64
12.33	0.42	0.42	0.0451	396.08	0.60	0.60

Event Time (hours)	Hydrograph Inflow (cfs)	Basin Inflow (cfs)	Storage Used (acre-ft)	Elevation Above MSL (feet)	Basin Outflow (cfs)	Outflow Total (cfs)
12.57	0.41	0.41	0.0416	396.06	0.57	0.57
12.81	0.40	0.40	0.0386	396.04	0.54	0.54
13.05	0.39	0.39	0.0359	396.02	0.51	0.51
13.29	0.38	0.38	0.0336	396.01	0.49	0.49
13.53	0.37	0.37	0.0316	395.99	0.46	0.46
13.78	0.36	0.36	0.0301	395.97	0.42	0.42
14.02	0.35	0.35	0.0292	395.96	0.40	0.40
14.26	0.35	0.35	0.0285	395.94	0.38	0.38
14.50	0.34	0.34	0.0280	395.94	0.36	0.36
14.74	0.33	0.33	0.0276	395.93	0.35	0.35
14.98	0.33	0.33	0.0272	395.93	0.34	0.34
15.23	0.32	0.32	0.0269	395.92	0.33	0.33
15.47	0.31	0.31	0.0267	395.92	0.33	0.33
15.71	0.31	0.31	0.0264	395.91	0.32	0.32
15.95	0.30	0.30	0.0262	395.91	0.31	0.31
16.19	0.30	0.30	0.0259	395.91	0.31	0.31
16.43	0.29	0.29	0.0257	395.90	0.30	0.30
16.68	0.28	0.28	0.0255	395.90	0.30	0.30
16.92	0.28	0.28	0.0253	395.90	0.29	0.29
17.16	0.27	0.27	0.0251	395.89	0.29	0.29
17.40	0.27	0.27	0.0249	395.89	0.28	0.28
17.64	0.26	0.26	0.0247	395.89	0.27	0.27
17.88	0.26	0.26	0.0245	395.88	0.27	0.27
18.13	0.26	0.26	0.0243	395.88	0.26	0.26
18.37	0.25	0.25	0.0242	395.88	0.26	0.26
18.61	0.25	0.25	0.0240	395.88	0.26	0.26
18.85	0.24	0.24	0.0238	395.87	0.25	0.25
19.09	0.24	0.24	0.0236	395.87	0.25	0.25
19.33	0.24	0.24	0.0234	395.87	0.25	0.25
19.58	0.23	0.23	0.0232	395.86	0.24	0.24
19.82	0.23	0.23	0.0230	395.86	0.24	0.24
20.06	0.22	0.22	0.0228	395.86	0.23	0.23
20.30	0.22	0.22	0.0226	395.85	0.23	0.23
20.54	0.22	0.22	0.0224	395.85	0.23	0.23
20.78	0.22	0.22	0.0222	395.85	0.22	0.22
21.03	0.21	0.21	0.0221	395.84	0.22	0.22
21.27	0.21	0.21	0.0219	395.84	0.22	0.22
21.51	0.21	0.21	0.0217	395.84	0.22	0.22
21.75	0.20	0.20	0.0215	395.84	0.21	0.21
21.99	0.20	0.20	0.0214	395.83	0.21	0.21
22.23	0.20	0.20	0.0212	395.83	0.21	0.21
22.48	0.19	0.19	0.0210	395.83	0.20	0.20
22.72	0.19	0.19	0.0208	395.83	0.20	0.20
22.96	0.19	0.19	0.0207	395.82	0.20	0.20
23.20	0.19	0.19	0.0205	395.82	0.19	0.19
23.44	0.19	0.19	0.0204	395.82	0.19	0.19
23.68	0.18	0.18	0.0202	395.82	0.19	0.19
23.93	0.18	0.18	0.0201	395.81	0.19	0.19
24.17	0.18	0.18	0.0200	395.81	0.19	0.19
24.41	0.00	0.00	0.0183	395.79	0.16	0.16

**Modified Puls Routing
Summary of Results**

Inflow Hydrograph: R:\Projects\2018\18000145B\Reports\Stormwater Management\201105\Working Files\VTPSUHM\POST\Basin B\Post to Basin B-50 Year Storm.
Storage/Elevation Curve: R:\Projects\2018\18000145B\Reports\Stormwater Management\201105\Working Files\VTPSUHM\POST\Basin B\Basin B Storage.ES

Basin Bypass Capacity = 0.00 cfs
Starting Pool Elevation = 395.50 feet
Time Interval = 0.242 hours
Total number of Inflow points = 102

	Event Time (hours)	Hydrograph Inflow (cfs)	Basin Inflow (cfs)	Storage Used (acre-ft)	Elevation Above MSL (feet)	Basin Outflow (cfs)	Outflow Total (cfs)
Start	0.00	0.00	0.00	0.0000	395.50	0.00	0.00
Max. Inflow	2.90	9.51	9.51	0.3926	397.90	2.19	2.19
Max. Outflow	3.38	5.85	5.85	0.5717	398.60	5.39	5.39
Final	24.41	0.00	0.00	0.0194	395.80	0.18	0.18

Modified Puls Routing

Inflow Hydrograph: R:\Projects\2018\18000145B\Reports\Stormwater Management\201105\Working Files\VTPSUHM\POST\Basin B\Post to Basin B-50 Year Storm.
 Storage/Elevation Curve: R:\Projects\2018\18000145B\Reports\Stormwater Management\201105\Working Files\VTPSUHM\POST\Basin B\Basin B Storage.ES

Basin Bypass Capacity = 0.00 cfs
 Starting Pool Elevation = 395.50 feet
 Time Interval = 0.242 hours

Event Time (hours)	Hydrograph Inflow (cfs)	Basin Inflow (cfs)	Storage Used (acre-ft)	Elevation Above MSL (feet)	Basin Outflow (cfs)	Outflow Total (cfs)
0.00	0.00	0.00	0.0000	395.50	0.00	0.00
0.24	0.25	0.25	0.0023	395.54	0.01	0.01
0.48	0.49	0.49	0.0091	395.64	0.05	0.05
0.73	0.74	0.74	0.0192	395.80	0.17	0.17
0.97	0.98	0.98	0.0304	395.97	0.43	0.43
1.21	1.06	1.06	0.0409	396.05	0.56	0.56
1.45	1.14	1.14	0.0507	396.11	0.66	0.66
1.69	1.22	1.22	0.0610	396.18	0.68	0.68
1.93	1.30	1.30	0.0726	396.25	0.68	0.68
2.18	3.35	3.35	0.1027	396.43	0.96	0.96
2.42	5.40	5.40	0.1667	396.83	1.39	1.39
2.66	7.46	7.46	0.2631	397.31	1.80	1.80
2.90	9.51	9.51	0.3926	397.90	2.19	2.19
3.14	7.68	7.68	0.5164	398.39	2.59	2.59
3.38	5.85	5.85	0.5717	398.60	5.39	5.39
3.63	4.02	4.02	0.5664	398.58	5.01	5.01
3.87	2.19	2.19	0.5439	398.50	3.44	3.44
4.11	1.95	1.95	0.5230	398.42	2.80	2.80
4.35	1.70	1.70	0.5071	398.36	2.44	2.44
4.59	1.46	1.46	0.4902	398.29	2.41	2.41
4.83	1.22	1.22	0.4692	398.21	2.37	2.37
5.08	1.18	1.18	0.4463	398.12	2.32	2.32
5.32	1.15	1.15	0.4239	398.04	2.27	2.27
5.56	1.12	1.12	0.4018	397.94	2.22	2.22
5.80	1.09	1.09	0.3802	397.85	2.16	2.16
6.04	1.04	1.04	0.3590	397.75	2.10	2.10
6.28	0.99	0.99	0.3378	397.65	2.04	2.04
6.53	0.94	0.94	0.3169	397.56	1.98	1.98
6.77	0.89	0.89	0.2962	397.46	1.92	1.92
7.01	0.87	0.87	0.2761	397.37	1.85	1.85
7.25	0.85	0.85	0.2570	397.28	1.78	1.78
7.49	0.83	0.83	0.2387	397.20	1.72	1.72
7.73	0.80	0.80	0.2213	397.12	1.65	1.65
7.98	0.79	0.79	0.2048	397.04	1.59	1.59
8.22	0.77	0.77	0.1892	396.96	1.52	1.52
8.46	0.75	0.75	0.1748	396.88	1.44	1.44
8.70	0.73	0.73	0.1616	396.80	1.36	1.36
8.94	0.72	0.72	0.1495	396.72	1.29	1.29
9.18	0.70	0.70	0.1386	396.65	1.22	1.22
9.43	0.69	0.69	0.1288	396.59	1.15	1.15
9.67	0.67	0.67	0.1200	396.54	1.09	1.09
9.91	0.66	0.66	0.1120	396.49	1.03	1.03
10.15	0.64	0.64	0.1049	396.45	0.97	0.97
10.39	0.63	0.63	0.0986	396.41	0.92	0.92
10.63	0.61	0.61	0.0930	396.37	0.88	0.88
10.88	0.60	0.60	0.0881	396.34	0.83	0.83
11.12	0.59	0.59	0.0838	396.32	0.79	0.79
11.36	0.58	0.58	0.0800	396.29	0.75	0.75
11.60	0.56	0.56	0.0767	396.27	0.72	0.72
11.84	0.55	0.55	0.0738	396.26	0.69	0.69
12.08	0.54	0.54	0.0711	396.24	0.68	0.68
12.33	0.53	0.53	0.0682	396.22	0.68	0.68

Event Time (hours)	Hydrograph Inflow (cfs)	Basin Inflow (cfs)	Storage Used (acre-ft)	Elevation Above MSL (feet)	Basin Outflow (cfs)	Outflow Total (cfs)
12.57	0.52	0.52	0.0651	396.20	0.68	0.68
12.81	0.51	0.51	0.0618	396.18	0.68	0.68
13.05	0.50	0.50	0.0582	396.16	0.68	0.68
13.29	0.49	0.49	0.0545	396.14	0.68	0.68
13.53	0.48	0.48	0.0508	396.12	0.66	0.66
13.78	0.47	0.47	0.0473	396.09	0.63	0.63
14.02	0.46	0.46	0.0444	396.08	0.60	0.60
14.26	0.45	0.45	0.0417	396.06	0.57	0.57
14.50	0.44	0.44	0.0394	396.05	0.55	0.55
14.74	0.43	0.43	0.0374	396.03	0.53	0.53
14.98	0.42	0.42	0.0356	396.02	0.51	0.51
15.23	0.41	0.41	0.0339	396.01	0.49	0.49
15.47	0.40	0.40	0.0324	396.00	0.48	0.48
15.71	0.40	0.40	0.0312	395.99	0.45	0.45
15.95	0.39	0.39	0.0303	395.97	0.43	0.43
16.19	0.38	0.38	0.0296	395.96	0.41	0.41
16.43	0.37	0.37	0.0292	395.96	0.40	0.40
16.68	0.37	0.37	0.0288	395.95	0.38	0.38
16.92	0.36	0.36	0.0284	395.94	0.38	0.38
17.16	0.35	0.35	0.0281	395.94	0.37	0.37
17.40	0.34	0.34	0.0278	395.93	0.36	0.36
17.64	0.34	0.34	0.0275	395.93	0.35	0.35
17.88	0.33	0.33	0.0273	395.93	0.34	0.34
18.13	0.32	0.32	0.0270	395.92	0.34	0.34
18.37	0.32	0.32	0.0268	395.92	0.33	0.33
18.61	0.31	0.31	0.0265	395.91	0.32	0.32
18.85	0.31	0.31	0.0263	395.91	0.32	0.32
19.09	0.30	0.30	0.0261	395.91	0.31	0.31
19.33	0.29	0.29	0.0259	395.90	0.31	0.31
19.58	0.29	0.29	0.0256	395.90	0.30	0.30
19.82	0.28	0.28	0.0254	395.90	0.29	0.29
20.06	0.28	0.28	0.0252	395.89	0.29	0.29
20.30	0.27	0.27	0.0250	395.89	0.28	0.28
20.54	0.27	0.27	0.0248	395.89	0.28	0.28
20.78	0.26	0.26	0.0246	395.88	0.27	0.27
21.03	0.25	0.25	0.0244	395.88	0.27	0.27
21.27	0.25	0.25	0.0242	395.88	0.26	0.26
21.51	0.24	0.24	0.0240	395.87	0.26	0.26
21.75	0.24	0.24	0.0238	395.87	0.25	0.25
21.99	0.23	0.23	0.0235	395.87	0.25	0.25
22.23	0.23	0.23	0.0233	395.86	0.24	0.24
22.48	0.23	0.23	0.0230	395.86	0.24	0.24
22.72	0.22	0.22	0.0228	395.86	0.23	0.23
22.96	0.22	0.22	0.0225	395.85	0.23	0.23
23.20	0.21	0.21	0.0223	395.85	0.23	0.23
23.44	0.21	0.21	0.0220	395.84	0.22	0.22
23.68	0.20	0.20	0.0218	395.84	0.22	0.22
23.93	0.20	0.20	0.0215	395.84	0.21	0.21
24.17	0.19	0.19	0.0213	395.83	0.21	0.21
24.41	0.00	0.00	0.0194	395.80	0.18	0.18

**Modified Puls Routing
Summary of Results**

Inflow Hydrograph: R:\Projects\2018\18000145B\Reports\Stormwater Management\201105\Working Files\VTPSUHM\POST\Basin B\Post to Basin B-100 Year Storm
Storage/Elevation Curve: R:\Projects\2018\18000145B\Reports\Stormwater Management\201105\Working Files\VTPSUHM\POST\Basin B\Basin B Storage.ES

Basin Bypass Capacity = 0.00 cfs
Starting Pool Elevation = 395.50 feet
Time Interval = 0.242 hours
Total number of Inflow points = 102

	Event Time (hours)	Hydrograph Inflow (cfs)	Basin Inflow (cfs)	Storage Used (acre-ft)	Elevation Above MSL (feet)	Basin Outflow (cfs)	Outflow Total (cfs)
Start	0.00	0.00	0.00	0.0000	395.50	0.00	0.00
Max. Inflow	2.90	10.54	10.54	0.4442	398.12	2.31	2.31
Max. Outflow	3.38	6.74	6.74	0.5956	398.70	7.38	7.38
Final	24.41	0.00	0.00	0.0203	395.82	0.19	0.19

Modified Puls Routing

Inflow Hydrograph: R:\Projects\2018\18000145B\Reports\Stormwater Management\201105\Working Files\VTPSUHM\POST\Basin B\Post to Basin B-100 Year Storm Storage/Elevation Curve: R:\Projects\2018\18000145B\Reports\Stormwater Management\201105\Working Files\VTPSUHM\POST\Basin B\Basin B Storage.ES

Basin Bypass Capacity = 0.00 cfs
 Starting Pool Elevation = 395.50 feet
 Time Interval = 0.242 hours

Event Time (hours)	Hydrograph Inflow (cfs)	Basin Inflow (cfs)	Storage Used (acre-ft)	Elevation Above MSL (feet)	Basin Outflow (cfs)	Outflow Total (cfs)
0.00	0.00	0.00	0.0000	395.50	0.00	0.00
0.24	0.26	0.26	0.0025	395.54	0.01	0.01
0.48	0.52	0.52	0.0097	395.65	0.05	0.05
0.73	0.79	0.79	0.0203	395.82	0.19	0.19
0.97	1.05	1.05	0.0320	396.00	0.47	0.47
1.21	1.17	1.17	0.0435	396.07	0.59	0.59
1.45	1.29	1.29	0.0553	396.14	0.68	0.68
1.69	1.41	1.41	0.0687	396.23	0.68	0.68
1.93	1.53	1.53	0.0834	396.32	0.78	0.78
2.18	3.78	3.78	0.1178	396.53	1.07	1.07
2.42	6.04	6.04	0.1899	396.97	1.53	1.53
2.66	8.29	8.29	0.2985	397.47	1.92	1.92
2.90	10.54	10.54	0.4442	398.12	2.31	2.31
3.14	8.64	8.64	0.5642	398.58	4.86	4.86
3.38	6.74	6.74	0.5956	398.70	7.38	7.38
3.63	4.84	4.84	0.5786	398.63	5.91	5.91
3.87	2.94	2.94	0.5552	398.54	4.22	4.22
4.11	2.51	2.51	0.5357	398.47	3.19	3.19
4.35	2.08	2.08	0.5221	398.41	2.77	2.77
4.59	1.66	1.66	0.5074	398.36	2.44	2.44
4.83	1.23	1.23	0.4877	398.28	2.41	2.41
5.08	1.20	1.20	0.4644	398.19	2.36	2.36
5.32	1.17	1.17	0.4416	398.11	2.31	2.31
5.56	1.15	1.15	0.4191	398.02	2.26	2.26
5.80	1.12	1.12	0.3971	397.92	2.20	2.20
6.04	1.09	1.09	0.3756	397.82	2.15	2.15
6.28	1.05	1.05	0.3547	397.73	2.09	2.09
6.53	1.02	1.02	0.3342	397.64	2.03	2.03
6.77	0.99	0.99	0.3142	397.54	1.97	1.97
7.01	0.98	0.98	0.2950	397.46	1.91	1.91
7.25	0.96	0.96	0.2768	397.37	1.85	1.85
7.49	0.95	0.95	0.2594	397.29	1.79	1.79
7.73	0.93	0.93	0.2430	397.22	1.73	1.73
7.98	0.92	0.92	0.2275	397.15	1.68	1.68
8.22	0.91	0.91	0.2128	397.08	1.62	1.62
8.46	0.89	0.89	0.1989	397.02	1.57	1.57
8.70	0.88	0.88	0.1859	396.94	1.50	1.50
8.94	0.87	0.87	0.1740	396.87	1.44	1.44
9.18	0.86	0.86	0.1632	396.80	1.37	1.37
9.43	0.84	0.84	0.1533	396.74	1.31	1.31
9.67	0.83	0.83	0.1443	396.69	1.26	1.26
9.91	0.82	0.82	0.1362	396.64	1.20	1.20
10.15	0.80	0.80	0.1288	396.59	1.15	1.15
10.39	0.79	0.79	0.1222	396.55	1.11	1.11
10.63	0.78	0.78	0.1162	396.52	1.06	1.06
10.88	0.77	0.77	0.1109	396.48	1.02	1.02
11.12	0.75	0.75	0.1060	396.45	0.98	0.98
11.36	0.74	0.74	0.1016	396.43	0.95	0.95
11.60	0.73	0.73	0.0977	396.40	0.92	0.92
11.84	0.72	0.72	0.0941	396.38	0.89	0.89
12.08	0.70	0.70	0.0909	396.36	0.86	0.86
12.33	0.69	0.69	0.0880	396.34	0.83	0.83

Event Time (hours)	Hydrograph Inflow (cfs)	Basin Inflow (cfs)	Storage Used (acre-ft)	Elevation Above MSL (feet)	Basin Outflow (cfs)	Outflow Total (cfs)
12.57	0.68	0.68	0.0854	396.33	0.80	0.80
12.81	0.67	0.67	0.0830	396.31	0.78	0.78
13.05	0.66	0.66	0.0809	396.30	0.76	0.76
13.29	0.64	0.64	0.0789	396.29	0.74	0.74
13.53	0.63	0.63	0.0771	396.28	0.72	0.72
13.78	0.62	0.62	0.0754	396.27	0.70	0.70
14.02	0.61	0.61	0.0738	396.26	0.69	0.69
14.26	0.60	0.60	0.0722	396.25	0.68	0.68
14.50	0.59	0.59	0.0705	396.24	0.68	0.68
14.74	0.58	0.58	0.0685	396.22	0.68	0.68
14.98	0.56	0.56	0.0664	396.21	0.68	0.68
15.23	0.55	0.55	0.0640	396.20	0.68	0.68
15.47	0.54	0.54	0.0614	396.18	0.68	0.68
15.71	0.53	0.53	0.0585	396.16	0.68	0.68
15.95	0.52	0.52	0.0555	396.14	0.68	0.68
16.19	0.51	0.51	0.0523	396.12	0.68	0.68
16.43	0.50	0.50	0.0492	396.11	0.64	0.64
16.68	0.49	0.49	0.0464	396.09	0.62	0.62
16.92	0.48	0.48	0.0440	396.07	0.59	0.59
17.16	0.47	0.47	0.0418	396.06	0.57	0.57
17.40	0.46	0.46	0.0399	396.05	0.55	0.55
17.64	0.45	0.45	0.0381	396.04	0.53	0.53
17.88	0.44	0.44	0.0364	396.03	0.52	0.52
18.13	0.43	0.43	0.0349	396.02	0.50	0.50
18.37	0.42	0.42	0.0334	396.01	0.49	0.49
18.61	0.41	0.41	0.0321	396.00	0.47	0.47
18.85	0.40	0.40	0.0309	395.98	0.44	0.44
19.09	0.39	0.39	0.0301	395.97	0.42	0.42
19.33	0.38	0.38	0.0295	395.96	0.41	0.41
19.58	0.37	0.37	0.0290	395.95	0.39	0.39
19.82	0.36	0.36	0.0286	395.95	0.38	0.38
20.06	0.35	0.35	0.0282	395.94	0.37	0.37
20.30	0.34	0.34	0.0278	395.93	0.36	0.36
20.54	0.33	0.33	0.0274	395.93	0.35	0.35
20.78	0.32	0.32	0.0271	395.92	0.34	0.34
21.03	0.31	0.31	0.0268	395.92	0.33	0.33
21.27	0.30	0.30	0.0264	395.91	0.32	0.32
21.51	0.30	0.30	0.0261	395.91	0.31	0.31
21.75	0.29	0.29	0.0258	395.90	0.30	0.30
21.99	0.28	0.28	0.0255	395.90	0.30	0.30
22.23	0.27	0.27	0.0251	395.89	0.29	0.29
22.48	0.26	0.26	0.0248	395.89	0.28	0.28
22.72	0.25	0.25	0.0245	395.88	0.27	0.27
22.96	0.24	0.24	0.0242	395.88	0.26	0.26
23.20	0.24	0.24	0.0239	395.87	0.25	0.25
23.44	0.23	0.23	0.0236	395.87	0.25	0.25
23.68	0.22	0.22	0.0232	395.86	0.24	0.24
23.93	0.21	0.21	0.0228	395.86	0.23	0.23
24.17	0.20	0.20	0.0224	395.85	0.23	0.23
24.41	0.00	0.00	0.0203	395.82	0.19	0.19



Project: PROJECT TADMOR Sheet: 1 of 1
 Project #: 18000145B Scale: _____
 Calculated By: NMG Date: 12/22/2020 Checked By: _____ Date: _____
 Element: SPILLWAY B DESIGN Date: _____
 Engineers | Planners | Surveyors | Landscape Architects | Environmental Scientists

PROBLEM STATEMENT:

DETERMINE THE REQUIRED EMERGENCY SPILLWAY AND TOP OF BERM ELEVATIONS FOR EACH DETENTION FACILITY BASED ON THE FREEBOARD REQUIREMENTS FROM THE ACT 167 STORMWATER MANAGEMENT PLAN FOR THE MONACACY CREEK WATERSHED.

FROM VTPSUHM OUTPUTS:

100-YEAR WATER SURFACE ELEVATION 398.70 FT
 100-YEAR BASIN INFLOW, Q 10.54 CFS

WEIR (SPILLWAY) CALCULATIONS:

LENGTH OF EMERGENCY SPILLWAY, L 24.00 FT
 GRASSED BROAD CREST, c 3.0

BROAD CRESTED WEIR EQUATION $Q = c * L * H^{(3/2)}$
 SOLVE FOR HEIGHT $H = (Q / (c * L))^{(2/3)}$

HEIGHT OF 100-YEAR FLOW THROUGH WEIR, H 0.28 FT

SPILLWAY FREEBOARD CALCULATIONS:

100-YEAR REQUIRED SPILLWAY FREEBOARD 1.00 FT
 100-YEAR MINIMUM SPILLWAY ELEVATION 399.70 FT
 PROVIDED SPILLWAY ELEVATION 401.20 FT
 100-YEAR SPILLWAY FREEBOARD PROVIDED 2.50 FT

TOP OF BERM FREEBOARD CALCULATIONS:

REQUIRED FREEBOARD FOR TOP OF BERM 0.50 FT
 MINIMUM TOP OF BERM ELEVATION 401.98 FT
 PROVIDED TOP OF BERM ELEVATION 402.35 FT
 TOP OF BERM FREEBOARD PROVIDED 0.87 FT

BASED ON THE FREEBOARD PROVIDED, THIS BASIN MEETS THE FREEBOARD REQUIREMENTS SET FORTH IN THE ACT 167 STORMWATER MANAGEMENT PLAN FOR THE MONACACY CREEK WATERSHED.

DETENTION BASIN C ROUTING

Basin Storage/Elevation Input

Elevation (ft)	Area (acres)	Storage (acre-ft)
420.15	0.0000	0.000
421.00	0.0621	0.026
422.00	0.1123	0.113
423.00	0.1576	0.248
424.00	0.2055	0.430

Project Files:

Outlet Structure Configuration: R:\Projects\2018\18000145B\Reports\Stormwater Management\201229 LVPC (updated CD3 and Hydroflow)\Working

Discharge/Elevation Curve: R:\Projects\2018\18000145B\Reports\Stormwater Management\201229 LVPC (updated CD3 and Hydroflow)\Working

Outlet Structure Configuration

Stage 1: Rectangular Orifice

Invert Elevation = 420.15 feet
Width = 1.9 feet
Height = 0.583 feet
Discharge Coefficient = 0.6

Stage 2: Grate Inlet

Crest Elevation = 423.35 feet
Effective Perimeter = 10.4 feet
Effective Flow Area = 6.5 square feet

Stage 3: Outfall Culvert

Invert Elevation = 420.15 feet
Pipe Diameter = 1.25 feet
Pipe Length = 35 feet
Pipe Slope = 0.008 ft/ft
Manning n = 0.015
Entrance Condition = SEH
Number of Barrels = 1

Basin Rating Curve

Basin Water Elevation	Basin Outflow (cfs)	Riser Box Water Elevation	Tailwater Elevation (ft)	Outfall Culvert Control	Outfall Culvert Override?
420.15	0.00	420.15	N/A	INLET	N/A
420.21	0.09	420.15	N/A	INLET	NO
420.27	0.06	420.26	N/A	INLET	YES
420.33	0.12	420.33	N/A	INLET	YES
420.39	0.21	420.38	N/A	INLET	YES
420.45	0.32	420.43	N/A	INLET	YES
420.51	0.45	420.49	N/A	INLET	YES
420.57	0.60	420.55	N/A	INLET	YES
420.63	0.77	420.60	N/A	INLET	YES
420.69	0.97	420.65	N/A	INLET	YES
420.75	1.04	420.65	N/A	INLET	NO
420.81	1.41	420.74	N/A	INLET	YES
420.87	1.53	420.79	N/A	INLET	NO
420.93	1.46	420.81	N/A	OUTLET	YES
420.99	1.94	420.86	N/A	INLET	NO
421.05	2.13	420.89	N/A	INLET	NO
421.11	2.31	420.92	N/A	INLET	NO
421.17	2.49	420.95	N/A	INLET	NO
421.23	2.66	420.98	N/A	INLET	NO
421.29	2.84	421.01	N/A	INLET	NO
421.35	3.01	421.03	N/A	INLET	NO
421.41	3.14	421.06	N/A	INLET	NO
421.47	3.29	421.09	N/A	INLET	NO
421.53	3.44	421.11	N/A	INLET	NO
421.59	3.59	421.14	N/A	INLET	NO
421.65	3.63	421.19	N/A	INLET	NO
421.71	3.69	421.23	N/A	INLET	NO
421.77	3.81	421.26	N/A	INLET	NO
421.83	3.92	421.29	N/A	INLET	NO
421.89	4.03	421.32	N/A	INLET	NO
421.95	4.14	421.35	N/A	INLET	NO
422.01	4.25	421.38	N/A	INLET	NO
422.07	4.35	421.41	N/A	INLET	NO

Basin Water Elevation	Basin Outflow (cfs)	Riser Box Water Elevation	Tailwater Elevation (ft)	Outfall Culvert Control	Outfall Culvert Override?
422.13	4.45	421.43	N/A	INLET	NO
422.19	4.55	421.46	N/A	INLET	NO
422.25	4.65	421.49	N/A	INLET	NO
422.31	4.74	421.52	N/A	INLET	NO
422.37	4.88	421.53	N/A	INLET	NO
422.43	4.97	421.56	N/A	INLET	NO
422.49	5.06	421.59	N/A	INLET	NO
422.55	5.15	421.62	N/A	INLET	NO
422.61	5.19	421.66	N/A	INLET	NO
422.67	5.23	421.71	N/A	INLET	NO
422.73	5.33	421.73	N/A	INLET	NO
422.79	5.42	421.76	N/A	INLET	NO
422.85	5.52	421.78	N/A	INLET	NO
422.91	5.60	421.81	N/A	INLET	NO
422.97	5.69	421.83	N/A	INLET	NO
423.03	5.77	421.86	N/A	INLET	NO
423.09	5.86	421.88	N/A	INLET	NO
423.15	5.94	421.91	N/A	INLET	NO
423.21	6.02	421.94	N/A	INLET	NO

NOTE: When a 'YES' appears in the Outfall Culvert Override column, the outfall culvert is restricting the pond outflow. The Basin outflow is equal to the outfall culvert capacity at that riser box water elevation.

**Modified Puls Routing
Summary of Results**

Inflow Hydrograph: R:\Projects\2018\18000145B\Reports\Stormwater Management\201229 LVPC (updated CD3 and Hydroflow)\Working Files\VTPSUHM\POST\Ba
Storage/Elevation Curve: R:\Projects\2018\18000145B\Reports\Stormwater Management\201229 LVPC (updated CD3 and Hydroflow)\Working Files\VTPSUHM\PO

Basin Bypass Capacity = 0.00 cfs
Starting Pool Elevation = 420.15 feet
Time Interval = 0.242 hours
Total number of Inflow points = 102

	Event Time (hours)	Hydrograph Inflow (cfs)	Basin Inflow (cfs)	Storage Used (acre-ft)	Elevation Above MSL (feet)	Basin Outflow (cfs)	Outflow Total (cfs)
Start	0.00	0.00	0.00	0.0000	420.15	0.00	0.00
Max. Inflow	2.90	2.57	2.57	0.0317	421.07	2.17	2.17
Max. Outflow	3.14	2.05	2.05	0.0337	421.09	2.24	2.24
Final	24.41	0.00	0.00	0.0032	420.25	0.06	0.06

Modified Puls Routing

Inflow Hydrograph: R:\Projects\2018\18000145B\Reports\Stormwater Management\201229 LVPC (updated CD3 and Hydroflow)\Working Files\VTPSUHM\POST\Ba
 Storage/Elevation Curve: R:\Projects\2018\18000145B\Reports\Stormwater Management\201229 LVPC (updated CD3 and Hydroflow)\Working Files\VTPSUHM\POS

Basin Bypass Capacity = 0.00 cfs
 Starting Pool Elevation = 420.15 feet
 Time Interval = 0.242 hours

Event Time (hours)	Hydrograph Inflow (cfs)	Basin Inflow (cfs)	Storage Used (acre-ft)	Elevation Above MSL (feet)	Basin Outflow (cfs)	Outflow Total (cfs)
0.00	0.00	0.00	0.0000	420.15	0.00	0.00
0.24	0.06	0.06	0.0004	420.16	0.02	0.02
0.48	0.12	0.12	0.0014	420.19	0.07	0.07
0.73	0.18	0.18	0.0031	420.25	0.07	0.07
0.97	0.24	0.24	0.0055	420.33	0.12	0.12
1.21	0.26	0.26	0.0072	420.39	0.20	0.20
1.45	0.27	0.27	0.0080	420.41	0.25	0.25
1.69	0.28	0.28	0.0084	420.42	0.27	0.27
1.93	0.30	0.30	0.0086	420.43	0.28	0.28
2.18	0.86	0.86	0.0120	420.54	0.53	0.53
2.42	1.43	1.43	0.0187	420.76	1.10	1.10
2.66	2.00	2.00	0.0248	420.96	1.71	1.71
2.90	2.57	2.57	0.0317	421.07	2.17	2.17
3.14	2.05	2.05	0.0337	421.09	2.24	2.24
3.38	1.53	1.53	0.0271	421.01	1.99	1.99
3.63	1.01	1.01	0.0196	420.79	1.29	1.29
3.87	0.48	0.48	0.0143	420.62	0.73	0.73
4.11	0.43	0.43	0.0114	420.52	0.48	0.48
4.35	0.38	0.38	0.0106	420.50	0.42	0.42
4.59	0.33	0.33	0.0099	420.47	0.37	0.37
4.83	0.28	0.28	0.0092	420.45	0.32	0.32
5.08	0.28	0.28	0.0087	420.44	0.29	0.29
5.32	0.28	0.28	0.0086	420.43	0.28	0.28
5.56	0.27	0.27	0.0085	420.43	0.28	0.28
5.80	0.27	0.27	0.0085	420.43	0.27	0.27
6.04	0.26	0.26	0.0083	420.42	0.27	0.27
6.28	0.24	0.24	0.0081	420.42	0.25	0.25
6.53	0.23	0.23	0.0079	420.41	0.24	0.24
6.77	0.21	0.21	0.0077	420.40	0.23	0.23
7.01	0.21	0.21	0.0075	420.39	0.22	0.22
7.25	0.20	0.20	0.0073	420.39	0.21	0.21
7.49	0.20	0.20	0.0072	420.39	0.20	0.20
7.73	0.19	0.19	0.0071	420.38	0.20	0.20
7.98	0.19	0.19	0.0070	420.38	0.19	0.19
8.22	0.18	0.18	0.0069	420.38	0.19	0.19
8.46	0.18	0.18	0.0068	420.37	0.18	0.18
8.70	0.17	0.17	0.0067	420.37	0.18	0.18
8.94	0.17	0.17	0.0066	420.37	0.17	0.17
9.18	0.16	0.16	0.0065	420.36	0.17	0.17
9.43	0.16	0.16	0.0064	420.36	0.16	0.16
9.67	0.15	0.15	0.0063	420.36	0.16	0.16
9.91	0.15	0.15	0.0062	420.35	0.15	0.15
10.15	0.15	0.15	0.0061	420.35	0.15	0.15
10.39	0.14	0.14	0.0061	420.35	0.15	0.15
10.63	0.14	0.14	0.0060	420.35	0.14	0.14
10.88	0.14	0.14	0.0059	420.34	0.14	0.14
11.12	0.13	0.13	0.0058	420.34	0.14	0.14
11.36	0.13	0.13	0.0058	420.34	0.13	0.13
11.60	0.13	0.13	0.0057	420.34	0.13	0.13
11.84	0.12	0.12	0.0057	420.33	0.13	0.13
12.08	0.12	0.12	0.0056	420.33	0.12	0.12
12.33	0.12	0.12	0.0055	420.33	0.12	0.12

Event Time (hours)	Hydrograph Inflow (cfs)	Basin Inflow (cfs)	Storage Used (acre-ft)	Elevation Above MSL (feet)	Basin Outflow (cfs)	Outflow Total (cfs)
12.57	0.12	0.12	0.0055	420.33	0.12	0.12
12.81	0.11	0.11	0.0054	420.33	0.12	0.12
13.05	0.11	0.11	0.0054	420.33	0.12	0.12
13.29	0.11	0.11	0.0053	420.32	0.11	0.11
13.53	0.11	0.11	0.0052	420.32	0.11	0.11
13.78	0.11	0.11	0.0052	420.32	0.11	0.11
14.02	0.10	0.10	0.0051	420.32	0.11	0.11
14.26	0.10	0.10	0.0051	420.32	0.10	0.10
14.50	0.10	0.10	0.0050	420.31	0.10	0.10
14.74	0.10	0.10	0.0050	420.31	0.10	0.10
14.98	0.10	0.10	0.0049	420.31	0.10	0.10
15.23	0.09	0.09	0.0049	420.31	0.10	0.10
15.47	0.09	0.09	0.0048	420.31	0.10	0.10
15.71	0.09	0.09	0.0048	420.31	0.09	0.09
15.95	0.09	0.09	0.0047	420.30	0.09	0.09
16.19	0.09	0.09	0.0047	420.30	0.09	0.09
16.43	0.09	0.09	0.0046	420.30	0.09	0.09
16.68	0.09	0.09	0.0046	420.30	0.09	0.09
16.92	0.08	0.08	0.0046	420.30	0.09	0.09
17.16	0.08	0.08	0.0045	420.30	0.09	0.09
17.40	0.08	0.08	0.0045	420.30	0.08	0.08
17.64	0.08	0.08	0.0044	420.30	0.08	0.08
17.88	0.08	0.08	0.0044	420.29	0.08	0.08
18.13	0.08	0.08	0.0044	420.29	0.08	0.08
18.37	0.08	0.08	0.0043	420.29	0.08	0.08
18.61	0.08	0.08	0.0043	420.29	0.08	0.08
18.85	0.08	0.08	0.0043	420.29	0.08	0.08
19.09	0.07	0.07	0.0042	420.29	0.08	0.08
19.33	0.07	0.07	0.0042	420.29	0.07	0.07
19.58	0.07	0.07	0.0042	420.29	0.07	0.07
19.82	0.07	0.07	0.0042	420.29	0.07	0.07
20.06	0.07	0.07	0.0041	420.29	0.07	0.07
20.30	0.07	0.07	0.0041	420.28	0.07	0.07
20.54	0.07	0.07	0.0041	420.28	0.07	0.07
20.78	0.07	0.07	0.0041	420.28	0.07	0.07
21.03	0.07	0.07	0.0041	420.28	0.07	0.07
21.27	0.07	0.07	0.0040	420.28	0.07	0.07
21.51	0.07	0.07	0.0040	420.28	0.07	0.07
21.75	0.07	0.07	0.0040	420.28	0.07	0.07
21.99	0.06	0.06	0.0040	420.28	0.07	0.07
22.23	0.06	0.06	0.0040	420.28	0.07	0.07
22.48	0.06	0.06	0.0039	420.28	0.06	0.06
22.72	0.06	0.06	0.0039	420.28	0.06	0.06
22.96	0.06	0.06	0.0039	420.28	0.06	0.06
23.20	0.06	0.06	0.0039	420.28	0.06	0.06
23.44	0.06	0.06	0.0039	420.28	0.06	0.06
23.68	0.06	0.06	0.0039	420.28	0.06	0.06
23.93	0.06	0.06	0.0038	420.28	0.06	0.06
24.17	0.06	0.06	0.0038	420.28	0.06	0.06
24.41	0.00	0.00	0.0032	420.25	0.06	0.06

**Modified Puls Routing
Summary of Results**

Inflow Hydrograph: R:\Projects\2018\18000145B\Reports\Stormwater Management\201229 LVPC (updated CD3 and Hydroflow)\Working Files\VTPSUHM\POST\Ba
Storage/Elevation Curve: R:\Projects\2018\18000145B\Reports\Stormwater Management\201229 LVPC (updated CD3 and Hydroflow)\Working Files\VTPSUHM\PO

Basin Bypass Capacity = 0.00 cfs
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Time Interval = 0.242 hours
Total number of Inflow points = 102

	Event Time (hours)	Hydrograph Inflow (cfs)	Basin Inflow (cfs)	Storage Used (acre-ft)	Elevation Above MSL (feet)	Basin Outflow (cfs)	Outflow Total (cfs)
Start	0.00	0.00	0.00	0.0000	420.15	0.00	0.00
Max. Inflow	2.90	3.69	3.69	0.0499	421.27	2.80	2.80
Max. Outflow	3.14	2.96	2.96	0.0579	421.37	3.05	3.05
Final	24.41	0.00	0.00	0.0040	420.28	0.07	0.07

Modified Puls Routing

Inflow Hydrograph: R:\Projects\2018\18000145B\Reports\Stormwater Management\201229 LVPC (updated CD3 and Hydroflow)\Working Files\VTPSUHM\POST\Ba
 Storage/Elevation Curve: R:\Projects\2018\18000145B\Reports\Stormwater Management\201229 LVPC (updated CD3 and Hydroflow)\Working Files\VTPSUHM\POS

Basin Bypass Capacity = 0.00 cfs
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Event Time (hours)	Hydrograph Inflow (cfs)	Basin Inflow (cfs)	Storage Used (acre-ft)	Elevation Above MSL (feet)	Basin Outflow (cfs)	Outflow Total (cfs)
0.00	0.00	0.00	0.0000	420.15	0.00	0.00
0.24	0.09	0.09	0.0006	420.17	0.03	0.03
0.48	0.18	0.18	0.0022	420.22	0.08	0.08
0.73	0.27	0.27	0.0050	420.31	0.10	0.10
0.97	0.36	0.36	0.0079	420.41	0.24	0.24
1.21	0.39	0.39	0.0095	420.46	0.34	0.34
1.45	0.41	0.41	0.0102	420.48	0.39	0.39
1.69	0.43	0.43	0.0106	420.50	0.42	0.42
1.93	0.46	0.46	0.0109	420.51	0.44	0.44
2.18	1.27	1.27	0.0153	420.65	0.84	0.84
2.42	2.07	2.07	0.0244	420.95	1.59	1.59
2.66	2.88	2.88	0.0351	421.10	2.29	2.29
2.90	3.69	3.69	0.0499	421.27	2.80	2.80
3.14	2.96	2.96	0.0579	421.37	3.05	3.05
3.38	2.22	2.22	0.0509	421.29	2.83	2.83
3.63	1.49	1.49	0.0364	421.12	2.33	2.33
3.87	0.75	0.75	0.0209	420.83	1.46	1.46
4.11	0.67	0.67	0.0137	420.60	0.68	0.68
4.35	0.59	0.59	0.0132	420.58	0.63	0.63
4.59	0.51	0.51	0.0123	420.55	0.56	0.56
4.83	0.43	0.43	0.0114	420.52	0.48	0.48
5.08	0.43	0.43	0.0108	420.50	0.43	0.43
5.32	0.42	0.42	0.0107	420.50	0.43	0.43
5.56	0.42	0.42	0.0106	420.50	0.42	0.42
5.80	0.41	0.41	0.0106	420.50	0.42	0.42
6.04	0.39	0.39	0.0104	420.49	0.40	0.40
6.28	0.36	0.36	0.0101	420.48	0.38	0.38
6.53	0.34	0.34	0.0098	420.47	0.36	0.36
6.77	0.32	0.32	0.0094	420.46	0.33	0.33
7.01	0.31	0.31	0.0091	420.45	0.31	0.31
7.25	0.30	0.30	0.0090	420.44	0.30	0.30
7.49	0.29	0.29	0.0088	420.44	0.29	0.29
7.73	0.28	0.28	0.0086	420.43	0.28	0.28
7.98	0.27	0.27	0.0085	420.43	0.27	0.27
8.22	0.26	0.26	0.0083	420.42	0.27	0.27
8.46	0.25	0.25	0.0082	420.42	0.26	0.26
8.70	0.24	0.24	0.0080	420.41	0.25	0.25
8.94	0.24	0.24	0.0079	420.41	0.24	0.24
9.18	0.23	0.23	0.0078	420.41	0.23	0.23
9.43	0.22	0.22	0.0077	420.40	0.23	0.23
9.67	0.22	0.22	0.0076	420.40	0.22	0.22
9.91	0.21	0.21	0.0075	420.39	0.21	0.21
10.15	0.20	0.20	0.0074	420.39	0.21	0.21
10.39	0.20	0.20	0.0073	420.39	0.20	0.20
10.63	0.19	0.19	0.0072	420.38	0.20	0.20
10.88	0.19	0.19	0.0070	420.38	0.19	0.19
11.12	0.18	0.18	0.0069	420.38	0.19	0.19
11.36	0.18	0.18	0.0068	420.37	0.18	0.18
11.60	0.17	0.17	0.0067	420.37	0.18	0.18
11.84	0.17	0.17	0.0066	420.37	0.17	0.17
12.08	0.17	0.17	0.0065	420.36	0.17	0.17
12.33	0.16	0.16	0.0065	420.36	0.17	0.17

Event Time (hours)	Hydrograph Inflow (cfs)	Basin Inflow (cfs)	Storage Used (acre-ft)	Elevation Above MSL (feet)	Basin Outflow (cfs)	Outflow Total (cfs)
12.57	0.16	0.16	0.0064	420.36	0.16	0.16
12.81	0.15	0.15	0.0063	420.36	0.16	0.16
13.05	0.15	0.15	0.0062	420.35	0.15	0.15
13.29	0.15	0.15	0.0062	420.35	0.15	0.15
13.53	0.14	0.14	0.0061	420.35	0.15	0.15
13.78	0.14	0.14	0.0060	420.35	0.14	0.14
14.02	0.14	0.14	0.0060	420.34	0.14	0.14
14.26	0.14	0.14	0.0059	420.34	0.14	0.14
14.50	0.13	0.13	0.0058	420.34	0.14	0.14
14.74	0.13	0.13	0.0058	420.34	0.13	0.13
14.98	0.13	0.13	0.0057	420.34	0.13	0.13
15.23	0.13	0.13	0.0057	420.34	0.13	0.13
15.47	0.12	0.12	0.0056	420.33	0.13	0.13
15.71	0.12	0.12	0.0056	420.33	0.12	0.12
15.95	0.12	0.12	0.0056	420.33	0.12	0.12
16.19	0.12	0.12	0.0055	420.33	0.12	0.12
16.43	0.12	0.12	0.0055	420.33	0.12	0.12
16.68	0.12	0.12	0.0054	420.33	0.12	0.12
16.92	0.11	0.11	0.0054	420.33	0.12	0.12
17.16	0.11	0.11	0.0053	420.32	0.11	0.11
17.40	0.11	0.11	0.0053	420.32	0.11	0.11
17.64	0.11	0.11	0.0053	420.32	0.11	0.11
17.88	0.11	0.11	0.0052	420.32	0.11	0.11
18.13	0.11	0.11	0.0052	420.32	0.11	0.11
18.37	0.11	0.11	0.0051	420.32	0.11	0.11
18.61	0.10	0.10	0.0051	420.32	0.11	0.11
18.85	0.10	0.10	0.0051	420.32	0.11	0.11
19.09	0.10	0.10	0.0050	420.31	0.10	0.10
19.33	0.10	0.10	0.0050	420.31	0.10	0.10
19.58	0.10	0.10	0.0050	420.31	0.10	0.10
19.82	0.10	0.10	0.0050	420.31	0.10	0.10
20.06	0.10	0.10	0.0049	420.31	0.10	0.10
20.30	0.10	0.10	0.0049	420.31	0.10	0.10
20.54	0.10	0.10	0.0049	420.31	0.10	0.10
20.78	0.10	0.10	0.0048	420.31	0.10	0.10
21.03	0.09	0.09	0.0048	420.31	0.10	0.10
21.27	0.09	0.09	0.0048	420.31	0.10	0.10
21.51	0.09	0.09	0.0048	420.31	0.09	0.09
21.75	0.09	0.09	0.0048	420.31	0.09	0.09
21.99	0.09	0.09	0.0047	420.31	0.09	0.09
22.23	0.09	0.09	0.0047	420.30	0.09	0.09
22.48	0.09	0.09	0.0047	420.30	0.09	0.09
22.72	0.09	0.09	0.0047	420.30	0.09	0.09
22.96	0.09	0.09	0.0047	420.30	0.09	0.09
23.20	0.09	0.09	0.0047	420.30	0.09	0.09
23.44	0.09	0.09	0.0046	420.30	0.09	0.09
23.68	0.09	0.09	0.0046	420.30	0.09	0.09
23.93	0.09	0.09	0.0046	420.30	0.09	0.09
24.17	0.09	0.09	0.0046	420.30	0.09	0.09
24.41	0.00	0.00	0.0040	420.28	0.07	0.07

**Modified Puls Routing
Summary of Results**

Inflow Hydrograph: R:\Projects\2018\18000145B\Reports\Stormwater Management\201229 LVPC (updated CD3 and Hydroflow)\Working Files\VTPSUHM\POST\Ba
Storage/Elevation Curve: R:\Projects\2018\18000145B\Reports\Stormwater Management\201229 LVPC (updated CD3 and Hydroflow)\Working Files\VTPSUHM\PO

Basin Bypass Capacity = 0.00 cfs
Starting Pool Elevation = 420.15 feet
Time Interval = 0.242 hours
Total number of Inflow points = 102

	Event Time (hours)	Hydrograph Inflow (cfs)	Basin Inflow (cfs)	Storage Used (acre-ft)	Elevation Above MSL (feet)	Basin Outflow (cfs)	Outflow Total (cfs)
Start	0.00	0.00	0.00	0.0000	420.15	0.00	0.00
Max. Inflow	2.90	5.07	5.07	0.0766	421.58	3.57	3.57
Max. Outflow	3.14	4.08	4.08	0.0941	421.78	3.83	3.83
Final	24.41	0.00	0.00	0.0044	420.29	0.08	0.08

Modified Puls Routing

Inflow Hydrograph: R:\Projects\2018\18000145B\Reports\Stormwater Management\201229 LVPC (updated CD3 and Hydroflow)\Working Files\VTPSUHM\POSTBa
 Storage/Elevation Curve: R:\Projects\2018\18000145B\Reports\Stormwater Management\201229 LVPC (updated CD3 and Hydroflow)\Working Files\VTPSUHM\POS

Basin Bypass Capacity = 0.00 cfs
 Starting Pool Elevation = 420.15 feet
 Time Interval = 0.242 hours

Event Time (hours)	Hydrograph Inflow (cfs)	Basin Inflow (cfs)	Storage Used (acre-ft)	Elevation Above MSL (feet)	Basin Outflow (cfs)	Outflow Total (cfs)
0.00	0.00	0.00	0.0000	420.15	0.00	0.00
0.24	0.13	0.13	0.0009	420.18	0.04	0.04
0.48	0.27	0.27	0.0038	420.28	0.06	0.06
0.73	0.40	0.40	0.0076	420.40	0.22	0.22
0.97	0.53	0.53	0.0105	420.49	0.41	0.41
1.21	0.56	0.56	0.0120	420.54	0.53	0.53
1.45	0.59	0.59	0.0125	420.56	0.57	0.57
1.69	0.62	0.62	0.0129	420.57	0.60	0.60
1.93	0.65	0.65	0.0133	420.58	0.64	0.64
2.18	1.76	1.76	0.0191	420.77	1.19	1.19
2.42	2.86	2.86	0.0316	421.06	2.17	2.17
2.66	3.96	3.96	0.0501	421.28	2.80	2.80
2.90	5.07	5.07	0.0766	421.58	3.57	3.57
3.14	4.08	4.08	0.0941	421.78	3.83	3.83
3.38	3.10	3.10	0.0901	421.74	3.74	3.74
3.63	2.11	2.11	0.0708	421.52	3.41	3.41
3.87	1.13	1.13	0.0434	421.20	2.58	2.58
4.11	1.01	1.01	0.0240	420.94	1.51	1.51
4.35	0.88	0.88	0.0177	420.73	1.02	1.02
4.59	0.76	0.76	0.0155	420.66	0.86	0.86
4.83	0.64	0.64	0.0139	420.61	0.70	0.70
5.08	0.63	0.63	0.0132	420.58	0.64	0.64
5.32	0.62	0.62	0.0131	420.58	0.62	0.62
5.56	0.61	0.61	0.0130	420.57	0.61	0.61
5.80	0.60	0.60	0.0129	420.57	0.60	0.60
6.04	0.56	0.56	0.0126	420.56	0.58	0.58
6.28	0.53	0.53	0.0123	420.55	0.55	0.55
6.53	0.50	0.50	0.0119	420.54	0.52	0.52
6.77	0.47	0.47	0.0115	420.53	0.49	0.49
7.01	0.46	0.46	0.0112	420.52	0.47	0.47
7.25	0.44	0.44	0.0111	420.51	0.45	0.45
7.49	0.43	0.43	0.0109	420.51	0.44	0.44
7.73	0.42	0.42	0.0107	420.50	0.43	0.43
7.98	0.40	0.40	0.0105	420.49	0.41	0.41
8.22	0.39	0.39	0.0104	420.49	0.40	0.40
8.46	0.38	0.38	0.0102	420.48	0.39	0.39
8.70	0.37	0.37	0.0100	420.48	0.38	0.38
8.94	0.36	0.36	0.0099	420.47	0.37	0.37
9.18	0.35	0.35	0.0098	420.47	0.36	0.36
9.43	0.34	0.34	0.0096	420.46	0.35	0.35
9.67	0.33	0.33	0.0095	420.46	0.34	0.34
9.91	0.32	0.32	0.0094	420.46	0.33	0.33
10.15	0.31	0.31	0.0092	420.45	0.32	0.32
10.39	0.31	0.31	0.0091	420.45	0.31	0.31
10.63	0.30	0.30	0.0090	420.44	0.31	0.31
10.88	0.29	0.29	0.0089	420.44	0.30	0.30
11.12	0.28	0.28	0.0087	420.44	0.29	0.29
11.36	0.28	0.28	0.0086	420.43	0.28	0.28
11.60	0.27	0.27	0.0085	420.43	0.28	0.28
11.84	0.26	0.26	0.0084	420.42	0.27	0.27
12.08	0.26	0.26	0.0083	420.42	0.26	0.26
12.33	0.25	0.25	0.0082	420.42	0.26	0.26

Event Time (hours)	Hydrograph Inflow (cfs)	Basin Inflow (cfs)	Storage Used (acre-ft)	Elevation Above MSL (feet)	Basin Outflow (cfs)	Outflow Total (cfs)
12.57	0.25	0.25	0.0081	420.41	0.25	0.25
12.81	0.24	0.24	0.0080	420.41	0.24	0.24
13.05	0.23	0.23	0.0079	420.41	0.24	0.24
13.29	0.23	0.23	0.0078	420.40	0.23	0.23
13.53	0.22	0.22	0.0077	420.40	0.23	0.23
13.78	0.22	0.22	0.0076	420.40	0.22	0.22
14.02	0.21	0.21	0.0075	420.40	0.22	0.22
14.26	0.21	0.21	0.0075	420.39	0.21	0.21
14.50	0.21	0.21	0.0074	420.39	0.21	0.21
14.74	0.20	0.20	0.0073	420.39	0.21	0.21
14.98	0.20	0.20	0.0072	420.39	0.20	0.20
15.23	0.19	0.19	0.0071	420.38	0.20	0.20
15.47	0.19	0.19	0.0071	420.38	0.19	0.19
15.71	0.19	0.19	0.0070	420.38	0.19	0.19
15.95	0.18	0.18	0.0069	420.38	0.19	0.19
16.19	0.18	0.18	0.0068	420.37	0.18	0.18
16.43	0.18	0.18	0.0067	420.37	0.18	0.18
16.68	0.17	0.17	0.0067	420.37	0.18	0.18
16.92	0.17	0.17	0.0066	420.37	0.17	0.17
17.16	0.17	0.17	0.0065	420.36	0.17	0.17
17.40	0.16	0.16	0.0065	420.36	0.17	0.17
17.64	0.16	0.16	0.0064	420.36	0.16	0.16
17.88	0.16	0.16	0.0064	420.36	0.16	0.16
18.13	0.16	0.16	0.0063	420.36	0.16	0.16
18.37	0.15	0.15	0.0062	420.35	0.16	0.16
18.61	0.15	0.15	0.0062	420.35	0.15	0.15
18.85	0.15	0.15	0.0061	420.35	0.15	0.15
19.09	0.14	0.14	0.0061	420.35	0.15	0.15
19.33	0.14	0.14	0.0060	420.35	0.14	0.14
19.58	0.14	0.14	0.0060	420.35	0.14	0.14
19.82	0.14	0.14	0.0059	420.34	0.14	0.14
20.06	0.14	0.14	0.0059	420.34	0.14	0.14
20.30	0.13	0.13	0.0058	420.34	0.14	0.14
20.54	0.13	0.13	0.0058	420.34	0.13	0.13
20.78	0.13	0.13	0.0057	420.34	0.13	0.13
21.03	0.13	0.13	0.0057	420.34	0.13	0.13
21.27	0.13	0.13	0.0057	420.34	0.13	0.13
21.51	0.12	0.12	0.0056	420.33	0.13	0.13
21.75	0.12	0.12	0.0056	420.33	0.12	0.12
21.99	0.12	0.12	0.0056	420.33	0.12	0.12
22.23	0.12	0.12	0.0055	420.33	0.12	0.12
22.48	0.12	0.12	0.0055	420.33	0.12	0.12
22.72	0.12	0.12	0.0054	420.33	0.12	0.12
22.96	0.11	0.11	0.0054	420.33	0.12	0.12
23.20	0.11	0.11	0.0054	420.33	0.12	0.12
23.44	0.11	0.11	0.0053	420.32	0.11	0.11
23.68	0.11	0.11	0.0053	420.32	0.11	0.11
23.93	0.11	0.11	0.0052	420.32	0.11	0.11
24.17	0.11	0.11	0.0052	420.32	0.11	0.11
24.41	0.00	0.00	0.0044	420.29	0.08	0.08

**Modified Puls Routing
Summary of Results**

Inflow Hydrograph: R:\Projects\2018\18000145B\Reports\Stormwater Management\201229 LVPC (updated CD3 and Hydroflow)\Working Files\VTPSUHM\POST\Ba
Storage/Elevation Curve: R:\Projects\2018\18000145B\Reports\Stormwater Management\201229 LVPC (updated CD3 and Hydroflow)\Working Files\VTPSUHM\PO

Basin Bypass Capacity = 0.00 cfs
Starting Pool Elevation = 420.15 feet
Time Interval = 0.242 hours
Total number of Inflow points = 102

	Event Time (hours)	Hydrograph Inflow (cfs)	Basin Inflow (cfs)	Storage Used (acre-ft)	Elevation Above MSL (feet)	Basin Outflow (cfs)	Outflow Total (cfs)
Start	0.00	0.00	0.00	0.0000	420.15	0.00	0.00
Max. Inflow	2.90	5.73	5.73	0.0927	421.77	3.80	3.80
Max. Outflow	3.14	4.63	4.63	0.1157	422.02	4.26	4.26
Final	24.41	0.00	0.00	0.0046	420.30	0.09	0.09

Modified Puls Routing

Inflow Hydrograph: R:\Projects\2018\18000145B\Reports\Stormwater Management\201229 LVPC (updated CD3 and Hydroflow)\Working Files\VTPSUHM\POSTBa
 Storage/Elevation Curve: R:\Projects\2018\18000145B\Reports\Stormwater Management\201229 LVPC (updated CD3 and Hydroflow)\Working Files\VTPSUHM\POS

Basin Bypass Capacity = 0.00 cfs
 Starting Pool Elevation = 420.15 feet
 Time Interval = 0.242 hours

Event Time (hours)	Hydrograph Inflow (cfs)	Basin Inflow (cfs)	Storage Used (acre-ft)	Elevation Above MSL (feet)	Basin Outflow (cfs)	Outflow Total (cfs)
0.00	0.00	0.00	0.0000	420.15	0.00	0.00
0.24	0.15	0.15	0.0010	420.18	0.05	0.05
0.48	0.30	0.30	0.0042	420.29	0.07	0.07
0.73	0.44	0.44	0.0083	420.42	0.26	0.26
0.97	0.59	0.59	0.0113	420.52	0.47	0.47
1.21	0.64	0.64	0.0129	420.57	0.60	0.60
1.45	0.69	0.69	0.0135	420.59	0.66	0.66
1.69	0.74	0.74	0.0140	420.61	0.71	0.71
1.93	0.78	0.78	0.0145	420.63	0.76	0.76
2.18	2.02	2.02	0.0206	420.82	1.44	1.44
2.42	3.26	3.26	0.0358	421.11	2.32	2.32
2.66	4.50	4.50	0.0593	421.38	3.08	3.08
2.90	5.73	5.73	0.0927	421.77	3.80	3.80
3.14	4.63	4.63	0.1157	422.02	4.26	4.26
3.38	3.53	3.53	0.1125	421.99	4.21	4.21
3.63	2.42	2.42	0.0920	421.76	3.79	3.79
3.87	1.32	1.32	0.0605	421.40	3.11	3.11
4.11	1.17	1.17	0.0324	421.07	2.20	2.20
4.35	1.03	1.03	0.0196	420.79	1.29	1.29
4.59	0.88	0.88	0.0163	420.68	0.94	0.94
4.83	0.73	0.73	0.0150	420.64	0.80	0.80
5.08	0.71	0.71	0.0142	420.61	0.72	0.72
5.32	0.69	0.69	0.0140	420.61	0.71	0.71
5.56	0.68	0.68	0.0138	420.60	0.69	0.69
5.80	0.66	0.66	0.0136	420.59	0.67	0.67
6.04	0.63	0.63	0.0133	420.59	0.64	0.64
6.28	0.60	0.60	0.0130	420.57	0.61	0.61
6.53	0.57	0.57	0.0127	420.56	0.58	0.58
6.77	0.54	0.54	0.0123	420.55	0.55	0.55
7.01	0.52	0.52	0.0120	420.54	0.53	0.53
7.25	0.51	0.51	0.0119	420.54	0.52	0.52
7.49	0.50	0.50	0.0117	420.53	0.51	0.51
7.73	0.49	0.49	0.0116	420.53	0.49	0.49
7.98	0.47	0.47	0.0114	420.52	0.48	0.48
8.22	0.46	0.46	0.0113	420.52	0.47	0.47
8.46	0.45	0.45	0.0112	420.52	0.46	0.46
8.70	0.44	0.44	0.0110	420.51	0.45	0.45
8.94	0.43	0.43	0.0109	420.51	0.44	0.44
9.18	0.42	0.42	0.0108	420.50	0.43	0.43
9.43	0.41	0.41	0.0106	420.50	0.42	0.42
9.67	0.40	0.40	0.0105	420.49	0.41	0.41
9.91	0.40	0.40	0.0104	420.49	0.40	0.40
10.15	0.39	0.39	0.0103	420.49	0.39	0.39
10.39	0.38	0.38	0.0101	420.48	0.38	0.38
10.63	0.37	0.37	0.0100	420.48	0.38	0.38
10.88	0.36	0.36	0.0099	420.47	0.37	0.37
11.12	0.35	0.35	0.0098	420.47	0.36	0.36
11.36	0.35	0.35	0.0097	420.47	0.35	0.35
11.60	0.34	0.34	0.0096	420.46	0.35	0.35
11.84	0.33	0.33	0.0095	420.46	0.34	0.34
12.08	0.33	0.33	0.0094	420.46	0.33	0.33
12.33	0.32	0.32	0.0093	420.45	0.32	0.32

Event Time (hours)	Hydrograph Inflow (cfs)	Basin Inflow (cfs)	Storage Used (acre-ft)	Elevation Above MSL (feet)	Basin Outflow (cfs)	Outflow Total (cfs)
12.57	0.31	0.31	0.0092	420.45	0.32	0.32
12.81	0.31	0.31	0.0091	420.45	0.31	0.31
13.05	0.30	0.30	0.0090	420.44	0.31	0.31
13.29	0.29	0.29	0.0089	420.44	0.30	0.30
13.53	0.29	0.29	0.0088	420.44	0.29	0.29
13.78	0.28	0.28	0.0087	420.43	0.29	0.29
14.02	0.28	0.28	0.0086	420.43	0.28	0.28
14.26	0.27	0.27	0.0085	420.43	0.27	0.27
14.50	0.26	0.26	0.0084	420.42	0.27	0.27
14.74	0.26	0.26	0.0083	420.42	0.26	0.26
14.98	0.25	0.25	0.0082	420.42	0.26	0.26
15.23	0.25	0.25	0.0081	420.42	0.25	0.25
15.47	0.24	0.24	0.0080	420.41	0.25	0.25
15.71	0.24	0.24	0.0080	420.41	0.24	0.24
15.95	0.24	0.24	0.0079	420.41	0.24	0.24
16.19	0.23	0.23	0.0078	420.40	0.23	0.23
16.43	0.22	0.22	0.0077	420.40	0.23	0.23
16.68	0.22	0.22	0.0076	420.40	0.23	0.23
16.92	0.22	0.22	0.0076	420.40	0.22	0.22
17.16	0.21	0.21	0.0075	420.40	0.22	0.22
17.40	0.21	0.21	0.0074	420.39	0.21	0.21
17.64	0.20	0.20	0.0073	420.39	0.21	0.21
17.88	0.20	0.20	0.0073	420.39	0.20	0.20
18.13	0.20	0.20	0.0072	420.39	0.20	0.20
18.37	0.19	0.19	0.0071	420.38	0.20	0.20
18.61	0.19	0.19	0.0070	420.38	0.19	0.19
18.85	0.19	0.19	0.0070	420.38	0.19	0.19
19.09	0.18	0.18	0.0069	420.37	0.19	0.19
19.33	0.18	0.18	0.0068	420.37	0.18	0.18
19.58	0.17	0.17	0.0067	420.37	0.18	0.18
19.82	0.17	0.17	0.0066	420.37	0.17	0.17
20.06	0.17	0.17	0.0066	420.36	0.17	0.17
20.30	0.16	0.16	0.0065	420.36	0.17	0.17
20.54	0.16	0.16	0.0064	420.36	0.16	0.16
20.78	0.16	0.16	0.0064	420.36	0.16	0.16
21.03	0.15	0.15	0.0063	420.36	0.16	0.16
21.27	0.15	0.15	0.0062	420.35	0.15	0.15
21.51	0.15	0.15	0.0062	420.35	0.15	0.15
21.75	0.15	0.15	0.0061	420.35	0.15	0.15
21.99	0.14	0.14	0.0060	420.35	0.15	0.15
22.23	0.14	0.14	0.0060	420.35	0.14	0.14
22.48	0.14	0.14	0.0059	420.34	0.14	0.14
22.72	0.13	0.13	0.0059	420.34	0.14	0.14
22.96	0.13	0.13	0.0058	420.34	0.13	0.13
23.20	0.13	0.13	0.0057	420.34	0.13	0.13
23.44	0.13	0.13	0.0057	420.34	0.13	0.13
23.68	0.12	0.12	0.0056	420.33	0.13	0.13
23.93	0.12	0.12	0.0056	420.33	0.12	0.12
24.17	0.12	0.12	0.0055	420.33	0.12	0.12
24.41	0.00	0.00	0.0046	420.30	0.09	0.09

**Modified Puls Routing
Summary of Results**

Inflow Hydrograph: R:\Projects\2018\18000145B\Reports\Stormwater Management\201229 LVPC (updated CD3 and Hydroflow)\Working Files\VTPSUHM\POST\Ba
Storage/Elevation Curve: R:\Projects\2018\18000145B\Reports\Stormwater Management\201229 LVPC (updated CD3 and Hydroflow)\Working Files\VTPSUHM\PO

Basin Bypass Capacity = 0.00 cfs
Starting Pool Elevation = 420.15 feet
Time Interval = 0.242 hours
Total number of Inflow points = 102

	Event Time (hours)	Hydrograph Inflow (cfs)	Basin Inflow (cfs)	Storage Used (acre-ft)	Elevation Above MSL (feet)	Basin Outflow (cfs)	Outflow Total (cfs)
Start	0.00	0.00	0.00	0.0000	420.15	0.00	0.00
Max. Inflow	2.90	6.36	6.36	0.1082	421.94	4.13	4.13
Max. Outflow	3.38	4.06	4.06	0.1390	422.19	4.55	4.55
Final	24.41	0.00	0.00	0.0047	420.30	0.09	0.09

Modified Puls Routing

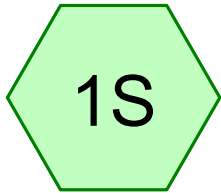
Inflow Hydrograph: R:\Projects\2018\18000145B\Reports\Stormwater Management\201229 LVPC (updated CD3 and Hydroflow)\Working Files\VTPSUHM\POSTBa
 Storage/Elevation Curve: R:\Projects\2018\18000145B\Reports\Stormwater Management\201229 LVPC (updated CD3 and Hydroflow)\Working Files\VTPSUHM\POS

Basin Bypass Capacity = 0.00 cfs
 Starting Pool Elevation = 420.15 feet
 Time Interval = 0.242 hours

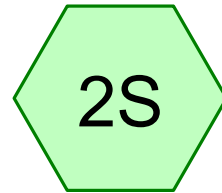
Event Time (hours)	Hydrograph Inflow (cfs)	Basin Inflow (cfs)	Storage Used (acre-ft)	Elevation Above MSL (feet)	Basin Outflow (cfs)	Outflow Total (cfs)
0.00	0.00	0.00	0.0000	420.15	0.00	0.00
0.24	0.16	0.16	0.0011	420.19	0.05	0.05
0.48	0.32	0.32	0.0045	420.30	0.08	0.08
0.73	0.47	0.47	0.0087	420.43	0.29	0.29
0.97	0.63	0.63	0.0118	420.53	0.51	0.51
1.21	0.70	0.70	0.0134	420.59	0.66	0.66
1.45	0.78	0.78	0.0143	420.62	0.74	0.74
1.69	0.85	0.85	0.0151	420.64	0.81	0.81
1.93	0.92	0.92	0.0158	420.67	0.89	0.89
2.18	2.28	2.28	0.0240	420.93	1.49	1.49
2.42	3.64	3.64	0.0427	421.19	2.55	2.55
2.66	5.00	5.00	0.0698	421.50	3.38	3.38
2.90	6.36	6.36	0.1082	421.94	4.13	4.13
3.14	5.21	5.21	0.1372	422.18	4.53	4.53
3.38	4.06	4.06	0.1390	422.19	4.55	4.55
3.63	2.92	2.92	0.1202	422.05	4.32	4.32
3.87	1.77	1.77	0.0871	421.70	3.68	3.68
4.11	1.51	1.51	0.0539	421.32	2.93	2.93
4.35	1.26	1.26	0.0309	421.06	2.15	2.15
4.59	1.00	1.00	0.0194	420.78	1.25	1.25
4.83	0.74	0.74	0.0156	420.66	0.87	0.87
5.08	0.72	0.72	0.0142	420.62	0.73	0.73
5.32	0.71	0.71	0.0141	420.61	0.72	0.72
5.56	0.69	0.69	0.0139	420.60	0.70	0.70
5.80	0.67	0.67	0.0137	420.60	0.68	0.68
6.04	0.65	0.65	0.0135	420.59	0.66	0.66
6.28	0.63	0.63	0.0133	420.59	0.65	0.65
6.53	0.61	0.61	0.0131	420.58	0.63	0.63
6.77	0.60	0.60	0.0129	420.57	0.61	0.61
7.01	0.59	0.59	0.0128	420.57	0.59	0.59
7.25	0.58	0.58	0.0127	420.56	0.58	0.58
7.49	0.57	0.57	0.0126	420.56	0.58	0.58
7.73	0.56	0.56	0.0125	420.56	0.57	0.57
7.98	0.55	0.55	0.0124	420.55	0.56	0.56
8.22	0.55	0.55	0.0123	420.55	0.55	0.55
8.46	0.54	0.54	0.0122	420.55	0.54	0.54
8.70	0.53	0.53	0.0121	420.55	0.54	0.54
8.94	0.52	0.52	0.0120	420.54	0.53	0.53
9.18	0.52	0.52	0.0119	420.54	0.52	0.52
9.43	0.51	0.51	0.0118	420.54	0.51	0.51
9.67	0.50	0.50	0.0117	420.53	0.50	0.50
9.91	0.49	0.49	0.0116	420.53	0.50	0.50
10.15	0.49	0.49	0.0115	420.53	0.49	0.49
10.39	0.48	0.48	0.0114	420.52	0.48	0.48
10.63	0.47	0.47	0.0113	420.52	0.48	0.48
10.88	0.46	0.46	0.0113	420.52	0.47	0.47
11.12	0.46	0.46	0.0112	420.52	0.46	0.46
11.36	0.45	0.45	0.0111	420.51	0.45	0.45
11.60	0.44	0.44	0.0110	420.51	0.45	0.45
11.84	0.43	0.43	0.0109	420.51	0.44	0.44
12.08	0.43	0.43	0.0108	420.50	0.43	0.43
12.33	0.42	0.42	0.0107	420.50	0.42	0.42

Event Time (hours)	Hydrograph Inflow (cfs)	Basin Inflow (cfs)	Storage Used (acre-ft)	Elevation Above MSL (feet)	Basin Outflow (cfs)	Outflow Total (cfs)
12.57	0.41	0.41	0.0106	420.50	0.42	0.42
12.81	0.40	0.40	0.0105	420.49	0.41	0.41
13.05	0.40	0.40	0.0104	420.49	0.40	0.40
13.29	0.39	0.39	0.0103	420.49	0.39	0.39
13.53	0.38	0.38	0.0102	420.48	0.39	0.39
13.78	0.37	0.37	0.0101	420.48	0.38	0.38
14.02	0.37	0.37	0.0100	420.48	0.37	0.37
14.26	0.36	0.36	0.0099	420.47	0.37	0.37
14.50	0.35	0.35	0.0098	420.47	0.36	0.36
14.74	0.35	0.35	0.0097	420.47	0.35	0.35
14.98	0.34	0.34	0.0096	420.46	0.35	0.35
15.23	0.33	0.33	0.0095	420.46	0.34	0.34
15.47	0.33	0.33	0.0094	420.46	0.33	0.33
15.71	0.32	0.32	0.0093	420.45	0.33	0.33
15.95	0.31	0.31	0.0092	420.45	0.32	0.32
16.19	0.31	0.31	0.0091	420.45	0.31	0.31
16.43	0.30	0.30	0.0090	420.44	0.31	0.31
16.68	0.29	0.29	0.0089	420.44	0.30	0.30
16.92	0.29	0.29	0.0088	420.44	0.29	0.29
17.16	0.28	0.28	0.0087	420.43	0.29	0.29
17.40	0.27	0.27	0.0086	420.43	0.28	0.28
17.64	0.27	0.27	0.0085	420.43	0.27	0.27
17.88	0.26	0.26	0.0084	420.42	0.27	0.27
18.13	0.26	0.26	0.0083	420.42	0.26	0.26
18.37	0.25	0.25	0.0082	420.42	0.26	0.26
18.61	0.24	0.24	0.0081	420.41	0.25	0.25
18.85	0.24	0.24	0.0080	420.41	0.24	0.24
19.09	0.23	0.23	0.0079	420.41	0.24	0.24
19.33	0.23	0.23	0.0078	420.40	0.23	0.23
19.58	0.22	0.22	0.0077	420.40	0.23	0.23
19.82	0.22	0.22	0.0076	420.40	0.22	0.22
20.06	0.21	0.21	0.0075	420.39	0.22	0.22
20.30	0.20	0.20	0.0074	420.39	0.21	0.21
20.54	0.20	0.20	0.0073	420.39	0.21	0.21
20.78	0.19	0.19	0.0072	420.39	0.20	0.20
21.03	0.19	0.19	0.0071	420.38	0.19	0.19
21.27	0.18	0.18	0.0070	420.38	0.19	0.19
21.51	0.18	0.18	0.0068	420.37	0.18	0.18
21.75	0.17	0.17	0.0067	420.37	0.18	0.18
21.99	0.17	0.17	0.0066	420.37	0.17	0.17
22.23	0.16	0.16	0.0065	420.36	0.17	0.17
22.48	0.16	0.16	0.0064	420.36	0.16	0.16
22.72	0.15	0.15	0.0063	420.36	0.16	0.16
22.96	0.15	0.15	0.0062	420.35	0.15	0.15
23.20	0.14	0.14	0.0061	420.35	0.15	0.15
23.44	0.14	0.14	0.0060	420.35	0.14	0.14
23.68	0.13	0.13	0.0059	420.34	0.14	0.14
23.93	0.13	0.13	0.0058	420.34	0.13	0.13
24.17	0.12	0.12	0.0057	420.34	0.13	0.13
24.41	0.00	0.00	0.0047	420.30	0.09	0.09

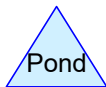
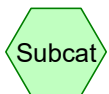
APPENDIX C
SUPPLEMENTAL DISCHARGE POINT 003 (DP 003) PEAK RATE CALCULATIONS



Pre-Development DA



Pre-Development DA



Routing Diagram for DP 003 PEAK RATE
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DP 003 PEAK RATE

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Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
0.71	61	>75% Grass cover, Good, HSG B (1S, 2S)
0.33	74	>75% Grass cover, Good, HSG C (1S, 2S)
0.37	98	Paved parking, HSG B (1S, 2S)
0.28	98	Paved parking, HSG C (1S, 2S)
1.69	78	TOTAL AREA

DP 003 PEAK RATE

Type II 24-hr 2-YR Rainfall=3.16"

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Time span=0.00-30.00 hrs, dt=0.05 hrs, 601 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment1S: Pre-DevelopmentDA Runoff Area=0.87 ac 37.93% Impervious Runoff Depth=1.24"
Tc=6.0 min CN=78 Runoff=1.88 cfs 0.090 af

Subcatchment2S: Pre-DevelopmentDA Runoff Area=0.82 ac 39.02% Impervious Runoff Depth=1.24"
Tc=6.0 min CN=78 Runoff=1.78 cfs 0.085 af

Total Runoff Area = 1.69 ac Runoff Volume = 0.175 af Average Runoff Depth = 1.24"
61.54% Pervious = 1.04 ac 38.46% Impervious = 0.65 ac

DP 003 PEAK RATE

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Type II 24-hr 2-YR Rainfall=3.16"

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Summary for Subcatchment 1S: Pre-Development DA

Runoff = 1.88 cfs @ 11.98 hrs, Volume= 0.090 af, Depth= 1.24"
 Routed to nonexistent node 6L

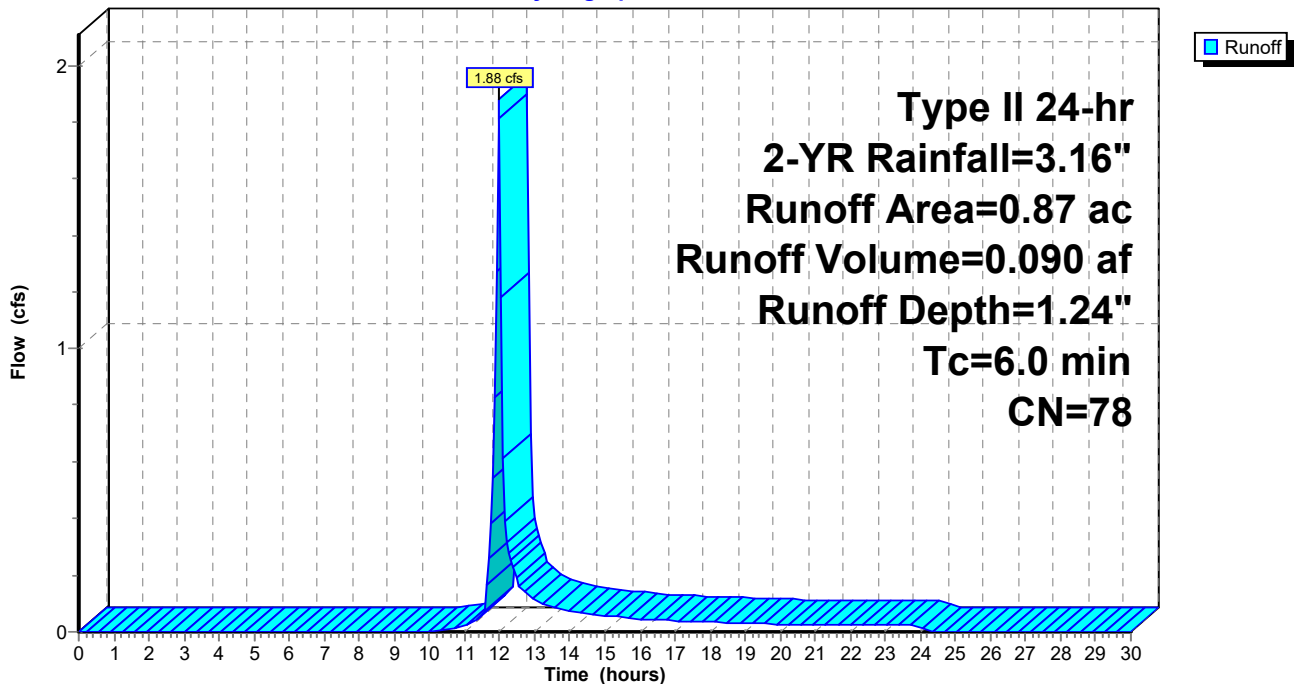
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
 Type II 24-hr 2-YR Rainfall=3.16"

Area (ac)	CN	Description
0.19	98	Paved parking, HSG B
0.35	61	>75% Grass cover, Good, HSG B
0.14	98	Paved parking, HSG C
0.19	74	>75% Grass cover, Good, HSG C
0.87	78	Weighted Average
0.54		62.07% Pervious Area
0.33		37.93% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Minimum Allowable Tc

Subcatchment 1S: Pre-Development DA

Hydrograph



DP 003 PEAK RATE

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Type II 24-hr 2-YR Rainfall=3.16"

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Summary for Subcatchment 2S: Pre-Development DA

Runoff = 1.78 cfs @ 11.98 hrs, Volume= 0.085 af, Depth= 1.24"
 Routed to nonexistent node 6L

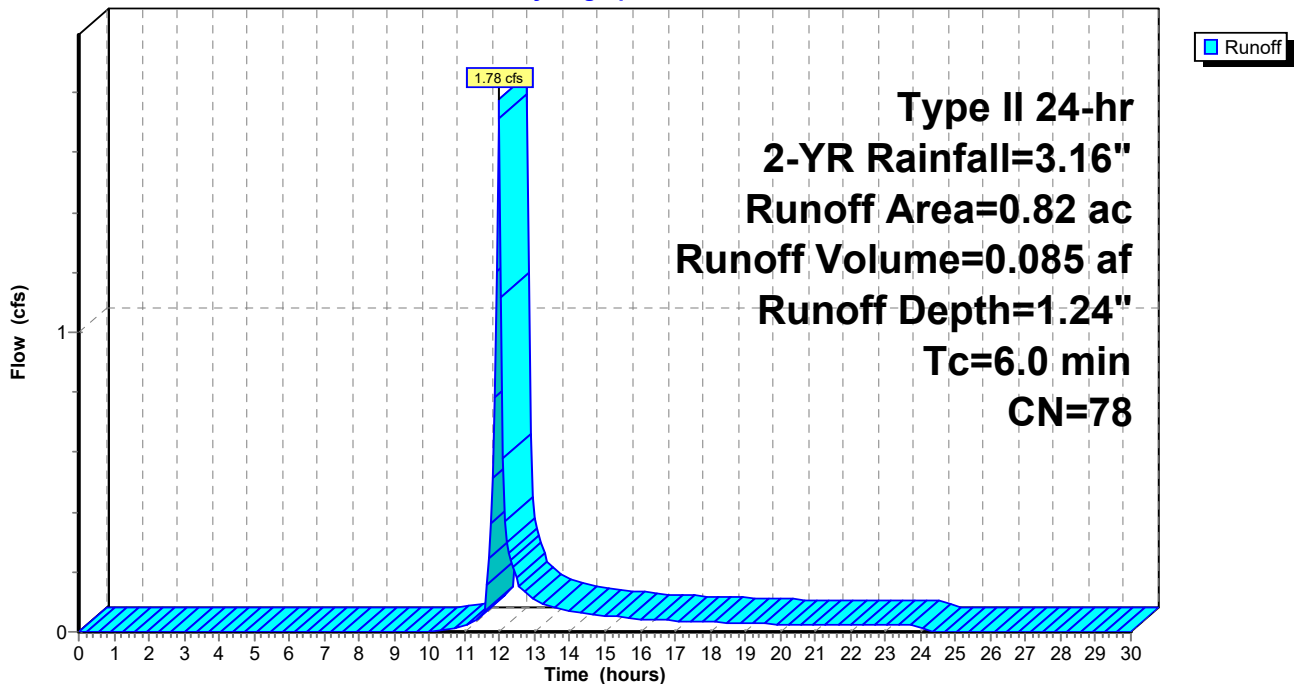
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
 Type II 24-hr 2-YR Rainfall=3.16"

Area (ac)	CN	Description
0.18	98	Paved parking, HSG B
0.36	61	>75% Grass cover, Good, HSG B
0.14	98	Paved parking, HSG C
0.14	74	>75% Grass cover, Good, HSG C
0.82	78	Weighted Average
0.50		60.98% Pervious Area
0.32		39.02% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Minimum Allowable Tc

Subcatchment 2S: Pre-Development DA

Hydrograph



DP 003 PEAK RATE

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Type II 24-hr 10-YR Rainfall=4.57"

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Summary for Subcatchment 1S: Pre-Development DA

Runoff = 3.52 cfs @ 11.97 hrs, Volume= 0.170 af, Depth= 2.35"
 Routed to nonexistent node 6L

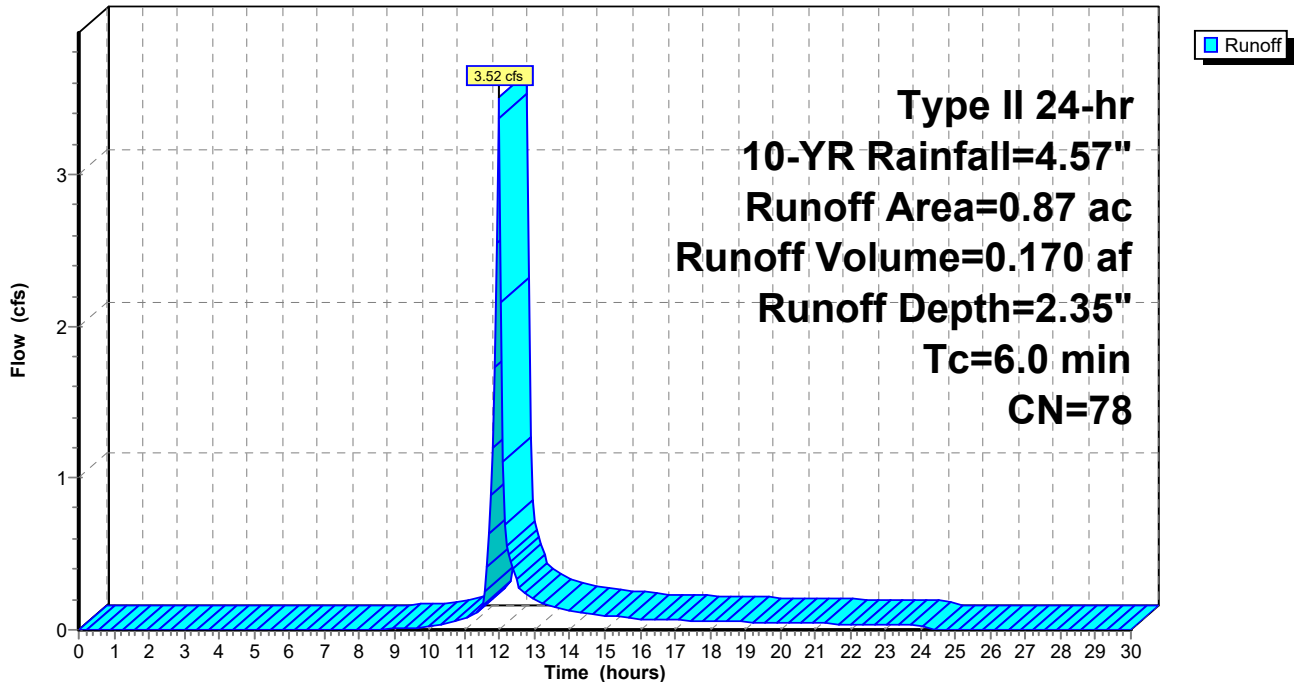
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
 Type II 24-hr 10-YR Rainfall=4.57"

Area (ac)	CN	Description
0.19	98	Paved parking, HSG B
0.35	61	>75% Grass cover, Good, HSG B
0.14	98	Paved parking, HSG C
0.19	74	>75% Grass cover, Good, HSG C
0.87	78	Weighted Average
0.54		62.07% Pervious Area
0.33		37.93% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Minimum Allowable Tc

Subcatchment 1S: Pre-Development DA

Hydrograph



DP 003 PEAK RATE

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Type II 24-hr 10-YR Rainfall=4.57"

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Summary for Subcatchment 2S: Pre-Development DA

Runoff = 3.31 cfs @ 11.97 hrs, Volume= 0.161 af, Depth= 2.35"
 Routed to nonexistent node 6L

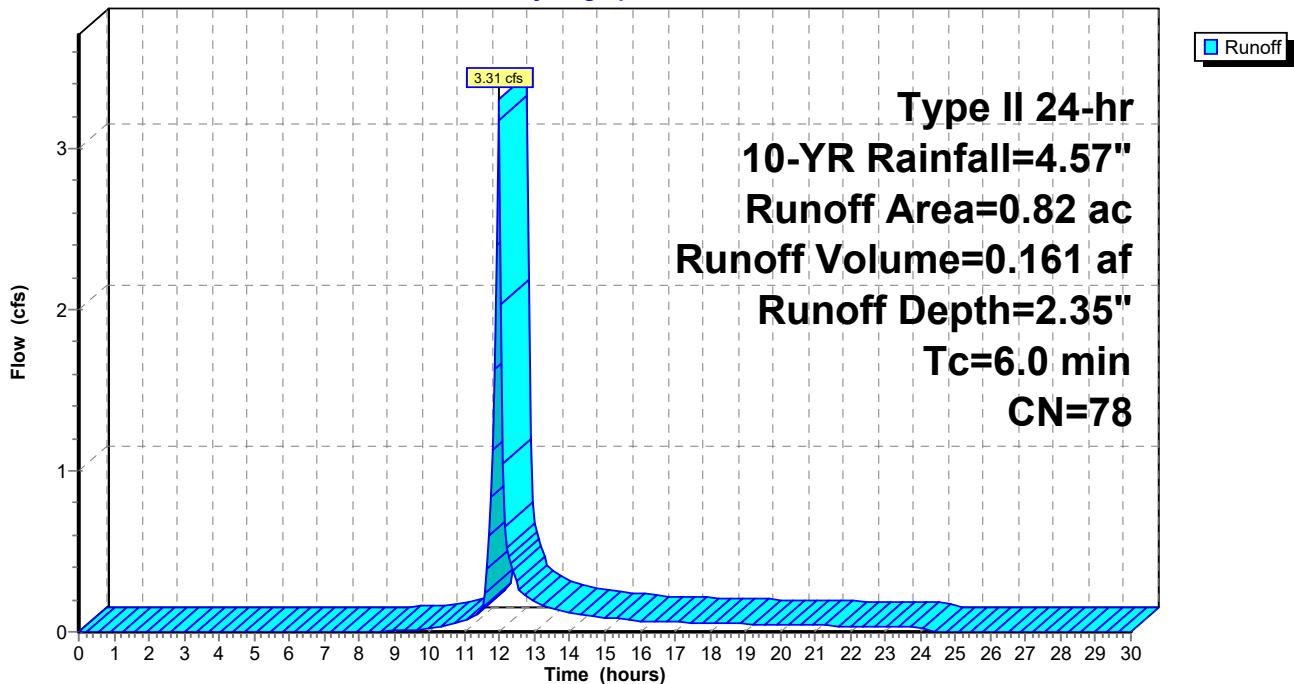
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
 Type II 24-hr 10-YR Rainfall=4.57"

Area (ac)	CN	Description
0.18	98	Paved parking, HSG B
0.36	61	>75% Grass cover, Good, HSG B
0.14	98	Paved parking, HSG C
0.14	74	>75% Grass cover, Good, HSG C
0.82	78	Weighted Average
0.50		60.98% Pervious Area
0.32		39.02% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Minimum Allowable Tc

Subcatchment 2S: Pre-Development DA

Hydrograph



DP 003 PEAK RATE

Type II 24-hr 25-YR Rainfall=5.60"

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Time span=0.00-30.00 hrs, dt=0.05 hrs, 601 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment1S: Pre-DevelopmentDA Runoff Area=0.87 ac 37.93% Impervious Runoff Depth=3.23"
Tc=6.0 min CN=78 Runoff=4.79 cfs 0.234 af

Subcatchment2S: Pre-DevelopmentDA Runoff Area=0.82 ac 39.02% Impervious Runoff Depth=3.23"
Tc=6.0 min CN=78 Runoff=4.52 cfs 0.221 af

Total Runoff Area = 1.69 ac Runoff Volume = 0.455 af Average Runoff Depth = 3.23"
61.54% Pervious = 1.04 ac 38.46% Impervious = 0.65 ac

DP 003 PEAK RATE

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Type II 24-hr 25-YR Rainfall=5.60"

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Summary for Subcatchment 1S: Pre-Development DA

Runoff = 4.79 cfs @ 11.97 hrs, Volume= 0.234 af, Depth= 3.23"
 Routed to nonexistent node 6L

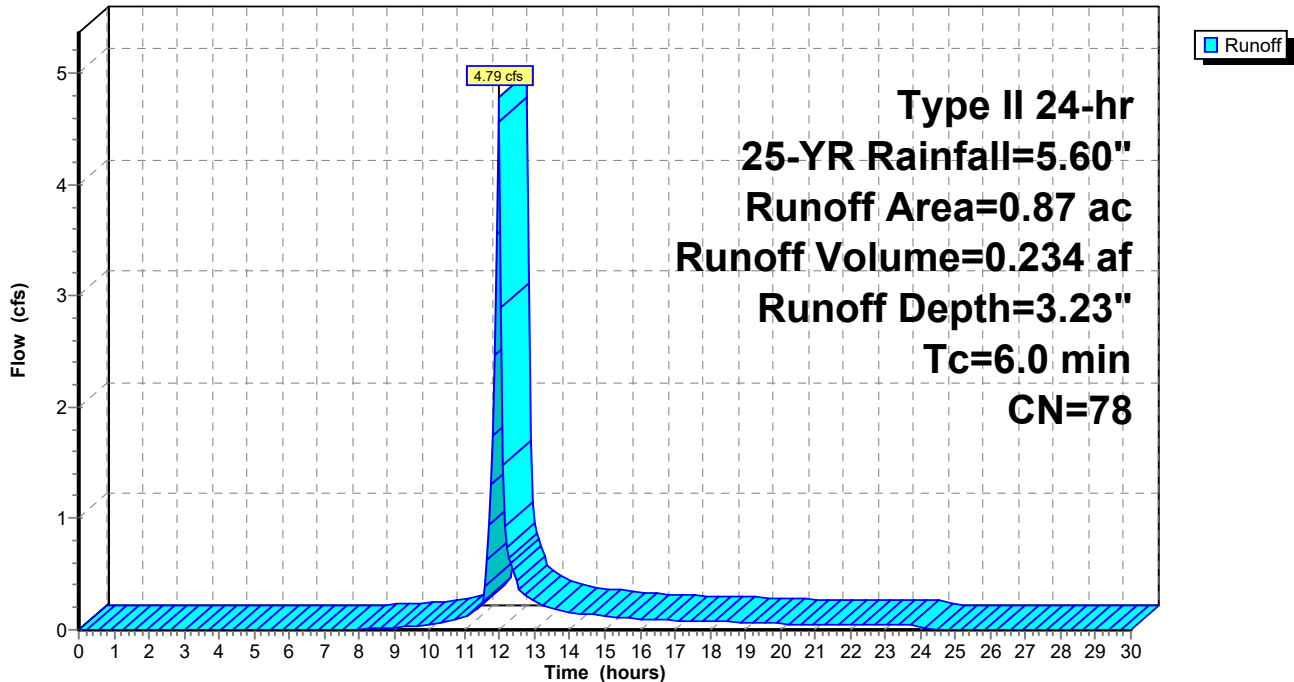
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
 Type II 24-hr 25-YR Rainfall=5.60"

Area (ac)	CN	Description
0.19	98	Paved parking, HSG B
0.35	61	>75% Grass cover, Good, HSG B
0.14	98	Paved parking, HSG C
0.19	74	>75% Grass cover, Good, HSG C
0.87	78	Weighted Average
0.54		62.07% Pervious Area
0.33		37.93% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Minimum Allowable Tc

Subcatchment 1S: Pre-Development DA

Hydrograph



DP 003 PEAK RATE

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Type II 24-hr 25-YR Rainfall=5.60"

Printed 12/7/2023

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Summary for Subcatchment 2S: Pre-Development DA

Runoff = 4.52 cfs @ 11.97 hrs, Volume= 0.221 af, Depth= 3.23"
 Routed to nonexistent node 6L

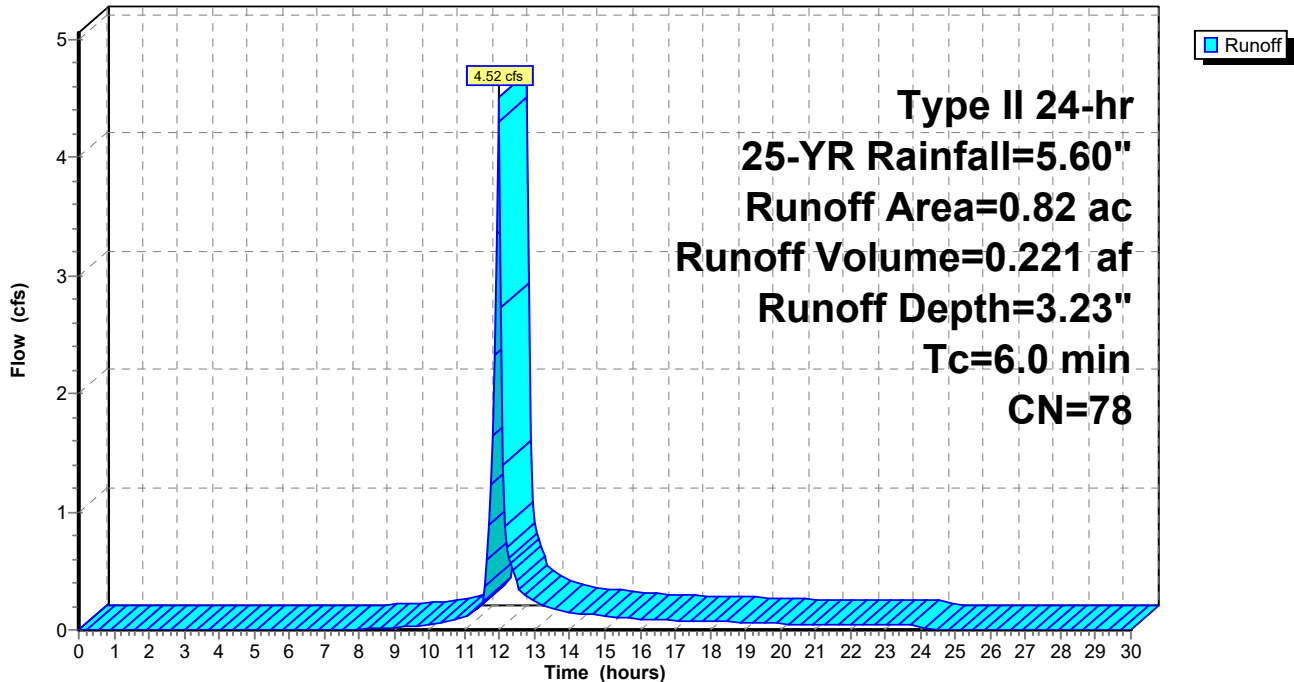
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
 Type II 24-hr 25-YR Rainfall=5.60"

Area (ac)	CN	Description
0.18	98	Paved parking, HSG B
0.36	61	>75% Grass cover, Good, HSG B
0.14	98	Paved parking, HSG C
0.14	74	>75% Grass cover, Good, HSG C
0.82	78	Weighted Average
0.50		60.98% Pervious Area
0.32		39.02% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Minimum Allowable Tc

Subcatchment 2S: Pre-Development DA

Hydrograph



DP 003 PEAK RATE

Type II 24-hr 50-YR Rainfall=6.53"

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Time span=0.00-30.00 hrs, dt=0.05 hrs, 601 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment1S: Pre-DevelopmentDA Runoff Area=0.87 ac 37.93% Impervious Runoff Depth=4.05"
Tc=6.0 min CN=78 Runoff=5.96 cfs 0.294 af

Subcatchment2S: Pre-DevelopmentDA Runoff Area=0.82 ac 39.02% Impervious Runoff Depth=4.05"
Tc=6.0 min CN=78 Runoff=5.62 cfs 0.277 af

Total Runoff Area = 1.69 ac Runoff Volume = 0.570 af Average Runoff Depth = 4.05"
61.54% Pervious = 1.04 ac 38.46% Impervious = 0.65 ac

DP 003 PEAK RATE

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Type II 24-hr 50-YR Rainfall=6.53"

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Summary for Subcatchment 1S: Pre-Development DA

Runoff = 5.96 cfs @ 11.97 hrs, Volume= 0.294 af, Depth= 4.05"
 Routed to nonexistent node 6L

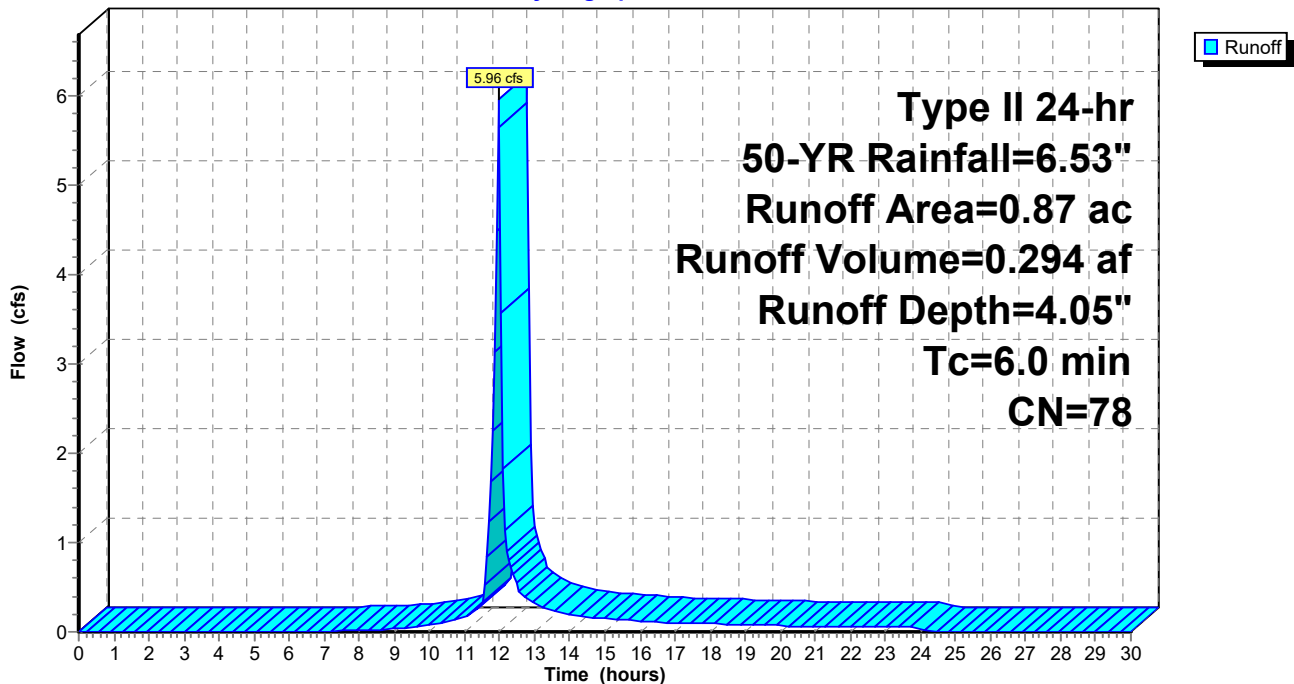
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
 Type II 24-hr 50-YR Rainfall=6.53"

Area (ac)	CN	Description
0.19	98	Paved parking, HSG B
0.35	61	>75% Grass cover, Good, HSG B
0.14	98	Paved parking, HSG C
0.19	74	>75% Grass cover, Good, HSG C
0.87	78	Weighted Average
0.54		62.07% Pervious Area
0.33		37.93% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Minimum Allowable Tc

Subcatchment 1S: Pre-Development DA

Hydrograph



DP 003 PEAK RATE

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Type II 24-hr 50-YR Rainfall=6.53"

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Summary for Subcatchment 2S: Pre-Development DA

Runoff = 5.62 cfs @ 11.97 hrs, Volume= 0.277 af, Depth= 4.05"
 Routed to nonexistent node 6L

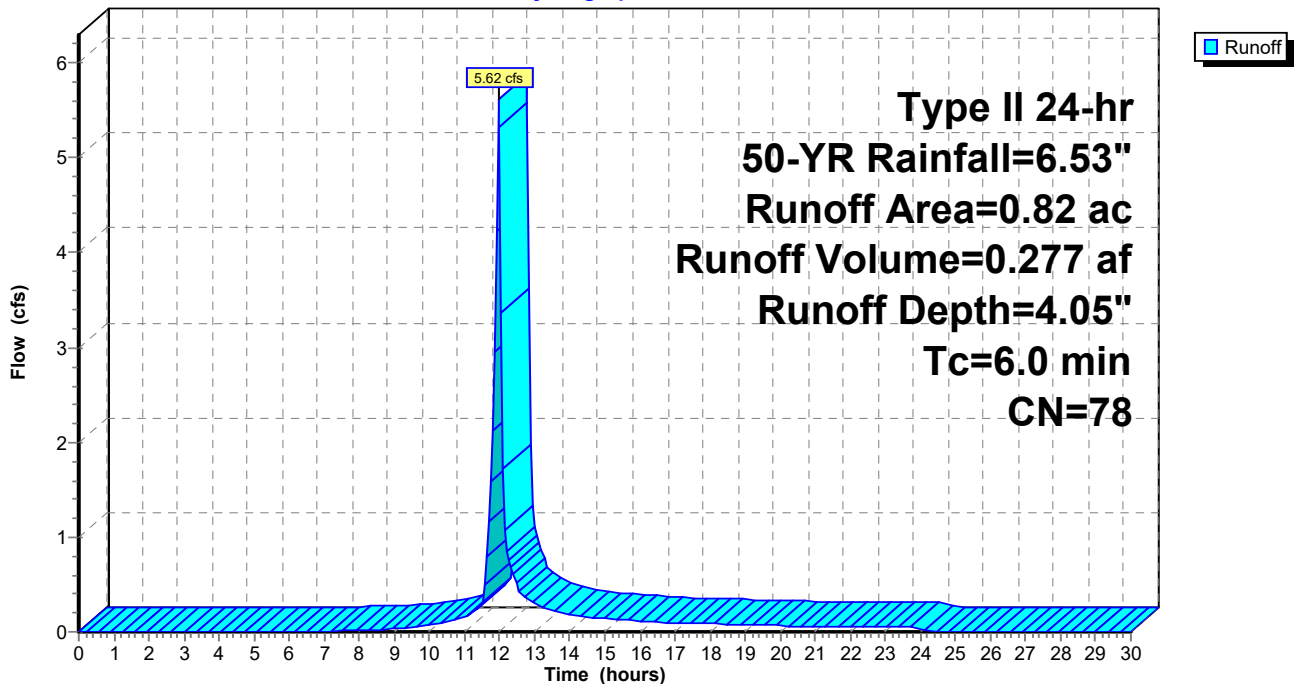
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
 Type II 24-hr 50-YR Rainfall=6.53"

Area (ac)	CN	Description
0.18	98	Paved parking, HSG B
0.36	61	>75% Grass cover, Good, HSG B
0.14	98	Paved parking, HSG C
0.14	74	>75% Grass cover, Good, HSG C
0.82	78	Weighted Average
0.50		60.98% Pervious Area
0.32		39.02% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Minimum Allowable Tc

Subcatchment 2S: Pre-Development DA

Hydrograph



DP 003 PEAK RATE

Type II 24-hr 100-YR Rainfall=7.63"

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Time span=0.00-30.00 hrs, dt=0.05 hrs, 601 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment1S: Pre-DevelopmentDA Runoff Area=0.87 ac 37.93% Impervious Runoff Depth=5.05"
Tc=6.0 min CN=78 Runoff=7.37 cfs 0.366 af

Subcatchment2S: Pre-DevelopmentDA Runoff Area=0.82 ac 39.02% Impervious Runoff Depth=5.05"
Tc=6.0 min CN=78 Runoff=6.94 cfs 0.345 af

Total Runoff Area = 1.69 ac Runoff Volume = 0.711 af Average Runoff Depth = 5.05"
61.54% Pervious = 1.04 ac 38.46% Impervious = 0.65 ac

DP 003 PEAK RATE

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Type II 24-hr 100-YR Rainfall=7.63"

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Summary for Subcatchment 1S: Pre-Development DA

Runoff = 7.37 cfs @ 11.97 hrs, Volume= 0.366 af, Depth= 5.05"
 Routed to nonexistent node 6L

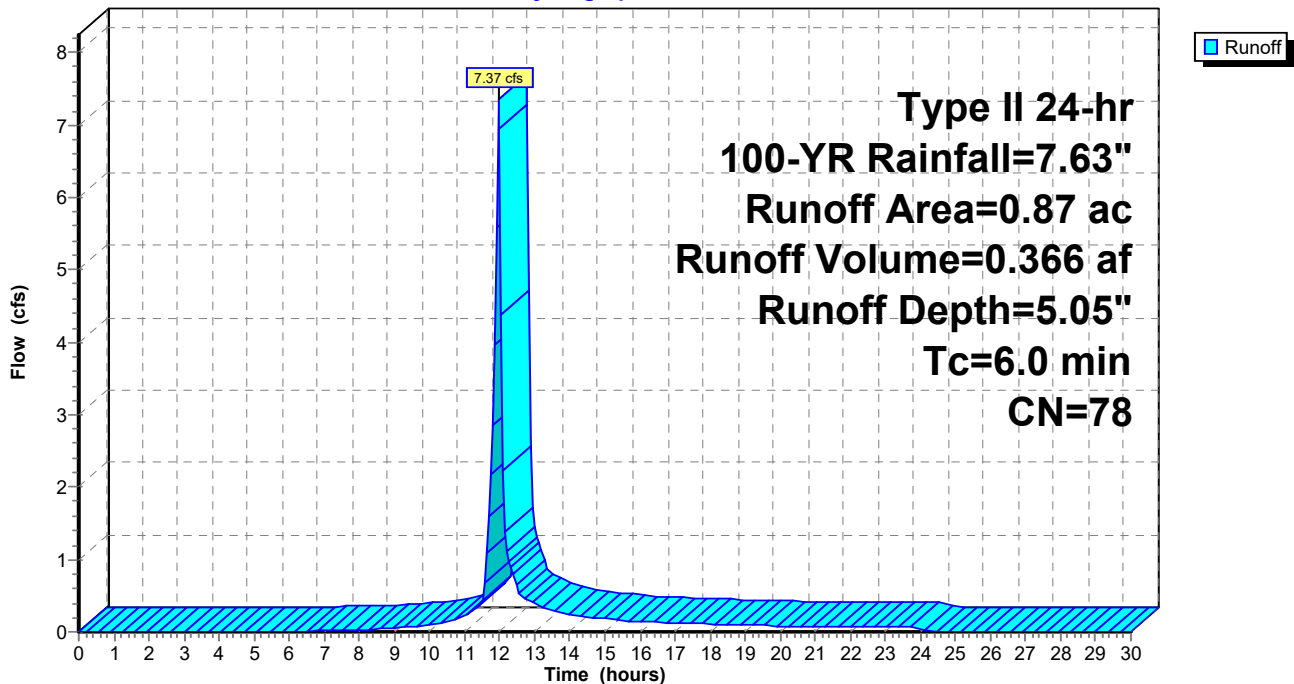
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
 Type II 24-hr 100-YR Rainfall=7.63"

Area (ac)	CN	Description
0.19	98	Paved parking, HSG B
0.35	61	>75% Grass cover, Good, HSG B
0.14	98	Paved parking, HSG C
0.19	74	>75% Grass cover, Good, HSG C
0.87	78	Weighted Average
0.54		62.07% Pervious Area
0.33		37.93% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Minimum Allowable Tc

Subcatchment 1S: Pre-Development DA

Hydrograph



DP 003 PEAK RATE

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Type II 24-hr 100-YR Rainfall=7.63"

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Summary for Subcatchment 2S: Pre-Development DA

Runoff = 6.94 cfs @ 11.97 hrs, Volume= 0.345 af, Depth= 5.05"
 Routed to nonexistent node 6L

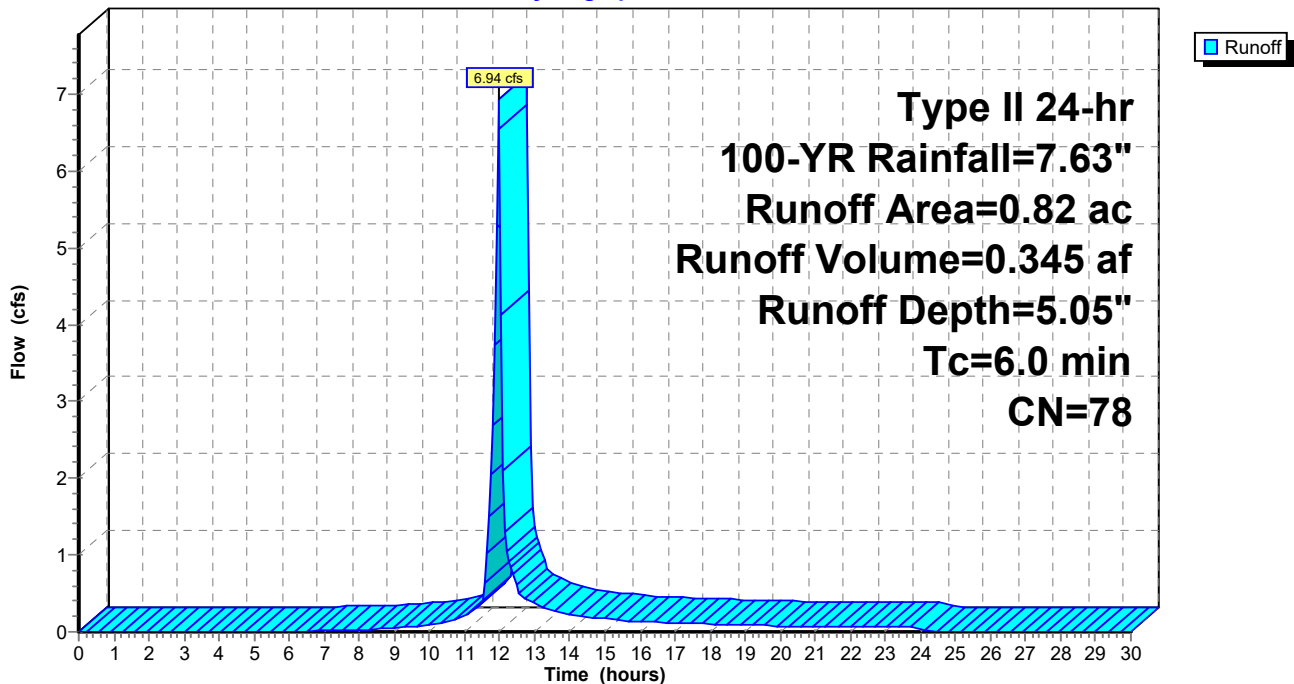
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
 Type II 24-hr 100-YR Rainfall=7.63"

Area (ac)	CN	Description
0.18	98	Paved parking, HSG B
0.36	61	>75% Grass cover, Good, HSG B
0.14	98	Paved parking, HSG C
0.14	74	>75% Grass cover, Good, HSG C
0.82	78	Weighted Average
0.50		60.98% Pervious Area
0.32		39.02% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Minimum Allowable Tc

Subcatchment 2S: Pre-Development DA

Hydrograph





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