



Planning Commission Meeting Agenda

Tuesday, July 14, 2026 at 6:00 PM

The Tom Hardin Room – 100 Public Square, Mount Pleasant, TN

1. Call to Order
2. Pledge of Allegiance / Invocation
3. Roll Call

A. John Hunter - *Chair*
Jennifer Graham - *Vice Chair*
Pam Johnston - *Secretary / City Commissioner*
Kris Irvin - *Member*
Cedric Hollis - *Member*

4. Approval / Correction of Minutes from Prior Meetings

A. Regular Session minutes 6-9-26

5. Completion / Review of Unfinished Business from prior meeting
6. Special reports from other City Departments or Committees if applicable
7. New Business

(Comments from citizens may or may not be included, dependent on the issues.)

- A. **Applicant:** Mark Smith, True Rail Enterprises, LLC has submitted a request for the review and consideration of a site development plan for a proposed industrial facility by True Rail Enterprises, LLC. The proposed site encompasses approximately 62.05 acres located along South Main Street. The applicant seeks approval of the site plan in accordance with the City of Mount Pleasant's zoning and subdivision regulations.
- B. **Public Hearing, Applicant:** Joseph N Bone has submitted a rezone request for a property located at 1681 N Main St, better described as Map 126, Parcel 016.00. The applicant requests for 2.58 acres to be rezoned from R-1 Low Density Residential to CH Highway Commercial.
- C. **Applicant:** Billy Hill, on behalf of Lineage Metals **Request a** Site plan approval for a proposed 25,000- square- foot building to be **located** on Joe Frank Porter Road, within the Cherry Glen Industrial Park on 6.85 acres, better identified as Map 126, Parcel 041.69 zoned IL (Light Industrial)
- D. **Applicant:** Roger Kelly request to subdivide 6681 Polk Lane consisting of 7.11 acres into two parcels consisting of 1.80 acres and 5.11 acres. The property is more identified as Map 126 Parcel 037.01 zoned R-1 Low Density Residential.
- E. **Applicant:** Derrick Mayberry, DTM Enterprise, LLC has submitted a Preliminary Plat for the construction of 4 town homes on .23 acres identified on Tax Map 133J; Group F Parcel 001.00; and located at 222 Appletree St. The property is zoned R-3 (High Density Residential).

8. General comments from citizens (May be limited in time and/or number of comments.)
9. Board / Staff Comments / Adjournment



Planning Commission Meeting Minutes

Tuesday, June 09, 2026 at 6:00 PM

The Tom Hardin Room – 100 Public Square, Mount Pleasant, TN

1. Call to Order

Chair John Hunter calls the meeting to order.

2. Pledge of Allegiance / Invocation

Member Cedric Hollis leads the Pledge of Allegiance and Secretary Pam Johnston does the Invocation.

3. Roll Call

A. John Hunter - *Chair*

Jennifer Graham - *Vice Chair*

Pam Johnston - *Secretary / City Commissioner*

Kris Irvin - *Member*

Cedric Hollis - *Member*

All present.

4. Approval / Correction of Minutes from Prior Meetings

A. Regular Session - May 12, 2026

Member Cedric Hollis makes a motion to approve the minutes from May 12, 2026. Secretary Pam Johnston seconds the motion.

Voting Yea: Chair John Hunter, Vice Chair Jennifer Graham, Secretary Pam Johnston, Member Cedric Hollis, Member Kris Irvin. All were in favor. Motion passed.

5. Completion / Review of Unfinished Business from prior meeting

6. Special reports from other City Departments or Committees if applicable

7. New Business

(Comments from citizens may or may not be included, dependent on the issues.)

A. **Applicant:** Billy Hill, on behalf of Lineage Metals **Request** a Site plan approval for a proposed 25,000- square- foot building to be **located** on Joe Frank Road, within the Cherry Glen Industrial Park on 6.85 acres, better identified as Map 126, Parcel 041.69 zoned IL (Light Industrial)

Chris Brooks reads the agenda item as applicant Billy Hill, on behalf of Lineage Metals, request a site plan approval for a proposed 25,000- square- foot building to be located on Joe Frank Road, within the Cherry Glen Industrial Park on 6.85 acres, better identified as Map 126, Parcel 041.69 zoned IL (Light Industrial)

Will Hager speaks on the agenda item. Chris Brooks speaks that the only remaining comments would be CEC comments that are in the packets. The Stormwater comments would need to be addressed.

Billy Hill comes up to speak as the general contractor of the project. The Planning Commission defers this agenda item for one month until all questions, etc. have been answered.

Member Kris Irvin makes a motion to defer the agenda item for one month. Member Cedric Hollis seconds the motion.

Voting Yea: Chair John Hunter, Vice Chair Jennifer Graham, Secretary Pam Johnston, Member Cedric Hollis, Member Kris Irvin. All were in favor. Motion passed.

For more details, please refer to the audio/visual recording attached to the agenda.

- B. Consideration of **Resolution 2026- PC- 02**, establishing and accepting a **two- year sanitary sewer maintenance bond** for Tractor Supply Company (TSC) for the completed **off- site sewer line extension**. The required public improvement consists of approximately **800 linear feet of sanitary sewer main** and associated structures.

Chris Brooks reads the agenda item as the Consideration of Resolution 2026- PC- 02, establishing and accepting a two- year sanitary sewer maintenance bond for Tractor Supply Company (TSC) for the completed off- site sewer line extension. The required public improvement consists of approximately 800 linear feet of sanitary sewer main and associated structures.

Mr. Brooks states he replaced the new Resolution in the packets. The change is it is now a letter of credit instead of a bond and the amount on the Resolution was also increased and changed.

Kori Jones then stated that a letter of credit gives more protection to the City of Mount Pleasant than a bond would.

Vice Chair Jennifer Graham makes a motion to approve the agenda item and Secretary Pam Johnston seconds the motion.

Voting Yea: Chair John Hunter, Vice Chair Jennifer Graham, Secretary Pam Johnston, Member Cedric Hollis, Member Kris Irvin. All were in favor. Motion passed.

For more details, please refer to the audio/visual recording attached to the agenda.

- C. Consideration of **Resolution 2026- PC- 03** of a **sidewalk performance bond** for construction of the required sidewalk improvements along South Cross Bridges Road. The Sidewalk construction cannot be completed before Certificate of Occupancy due to utility pole and line relocation.

Chris Brooks reads the agenda item as the consideration of Resolution 2026- PC- 03 of a sidewalk performance bond for construction of the required sidewalk improvements along South Cross Bridges Road. The Sidewalk construction cannot be completed before Certificate of Occupancy due to utility pole and line relocation.

Chris Brooks explains the utility pole situation on private property. Mr. Brooks states this is not a safety issue that needs to be done before the TSC opening.

Secretary Pam Johnston makes a motion to approve the agenda item and Member Cedric Hollis seconds the motion.

Voting Yea: Chair John Hunter, Vice Chair Jennifer Graham, Secretary Pam Johnston, Member Cedric Hollis, Member Kris Irvin. All were in favor. Motion passed.

For more details, please refer to the audio/visual recording attached to the agenda.

8. General comments from citizens (May be limited in time and/or number of comments.)

There are none at this time.

9. Board / Staff Comments / Adjournment

Chair John Hunter makes a motion for adjournment and Member Cedric Hollis seconds the motion.



City of Mount Pleasant

"Experience Our History.....Explore Our Possibilities"

Department of Planning and Zoning

Application for Review



209 Bond Street, Mt. Pleasant TN 38474

MPMPC FILE # _____ Date: 10/14/25

Application Submitted for True Rail Enterprises, LLC

Title of Project: True Rail New Site Development

Street Location: approx. 1041 S. Main Street, Mt. Pleasant, TN 38474

Tax Map: 150 Group: _____ Parcel: 063.11

Total Acreage: 62.05 Number of Lots: 1

Applicant:

Name: Mark Smith

Company/Partnership: True Rail Enterprises, LLC

Address: 500 1st Avenue

City: Mt. Pleasant State: TN Zip: 38474

Telephone: 931 Mobile: _____ Email: mar'

Owner (if applicant is not owner):

Name: same as applicant

Company/Partnership: _____

Address: _____

City: _____ State: _____ Zip: _____

Telephone: _____ Mobile: _____ Email: _____

Surveyor/Engineer:

Name: Jason L. Reynolds, PE

Company/Partnership: CSR Engineering, Inc.

Address: 2010 Hwy 49E

City: Pleasant View State: TN Zip: 37146

Telephone: 615 Mobile: _____ Email: jason.



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Department of Planning and Zoning

Application for Review



209 Bond Street, Mt. Pleasant TN 38474

Provided with Submittal (yes, no, n/a)	Project Title: <u>True Rail Enterprises New Site Development</u>	For office use
yes	Non-refundable application fee (See current fee schedule)	
yes	Completed Preliminary Application	
na	Seven (7) copies 24x36 (1) pdf. (for final submittal) Review submittal 2 copies. PDF	
yes	Location of property with respect to surrounding property and streets	
yes	Names of all adjoining property owners, or names of adjoining developments	
yes	Location and dimensions of all boundary lines of the property to the nearest one hundredth (1/100) of a foot	
yes	The size and location of any water and sewer mains	
yes	Location of existing easements and utilities	
na	Lots numbered	
na	Names of new streets, address's approved by Maury County E911	
yes	Locations, dimensions, and areas of all proposed or existing lots with building setbacks	
na	Location and dimensions of all property proposed to be set aside for park or playground use or other public or private reservation, with designation of the purpose thereof, and conditions, if any, of the dedication or reservation	
yes	Building & Site Design, See the Design Review Guidelines online	
yes	Appropriate true north point	
yes	Data from which the location, bearing, and length of all lines can be determined and reproduced on the ground	
na	Location and description of all proposed monuments	
na	Performance Bond: Water ☐ Sewer ☐ Streets ☐ Misc. ☐	
na	Plat Certificates: Ownership ___ Accuracy ___ Utilities water ___ sewer ___ Approval by E-911 ___ Approval of Streets ___ Approval of Recording ___	
yes	The location of existing public ways, easements, water bodies, wetlands, streams, and other pertinent features, such as swamps, railroads, buildings, parks, cemeteries, drainage ditches, and bridges, as determined by the planning commission	
	the distance and bearing of one of the corners of the boundary of the subdivision to the nearest intersection of an existing public street and to the original corner of the original survey of which it is a part	
yes	Limits of proposed fill and proposed final grading (existing contours at a minimum of two (2) foot intervals)	



City of Mount Pleasant
"Experience Our History.....Explore Our Possibilities"
Department of Planning and Zoning
Application for Review



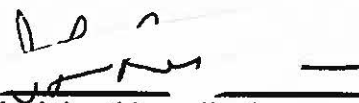
This application shall be accompanied by maps, drawings, or other supportive information necessary to explain the request. It is recommended that the applicant or a representative be present at the Planning Commission.

TCA 134-304(a) states, in part, "The Commission shall approve or disapprove a plat within thirty (30) Days after submission of such plat...." By signing this application, the applicant (and owners, as applicable) acknowledges that items for consideration by the Planning Commission shall be considered submitted when all required information, a completed submittal application, and fee have been received by the City of Mount Pleasant.

Failure by the applicant to address all the requirements of the City of Mount Pleasant Zoning Ordinance and/or Subdivision Regulations may result in a deferral or denial of the proposed development by the Mount Pleasant Planning Commission.

As the applicant or the applicant's agent, I understand that it is my sole responsibility to notify my client of the time, date, and location of the Planning Commission and subsequent Mount Pleasant City Commission meetings at which this application will be heard and to ensure that someone representing this item is in attendance at each of these meetings.

I hereby attest that I have provided a complete application and included all of the necessary attachments as required. I understand that if information is incomplete and/or otherwise not provided, this application may be deferred until such time as the necessary information is provided.



Owner/Agent submitting this application

14OCT25

Date

STAFF USE ONLY – DO NOT WRITE BELOW THIS LINE

Recording Fee\$ _____ Review Fee.....\$ _____ Appeal Fee..... \$ _____

Check # _____ Cash _____ Debit or Charge _____ Amount Paid \$ _____

Receipt # _____ Date Paid _____

Date of Review: _____ Approved Denied _____ Withdrawn _____

SITE DEVELOPMENT PLANS

OF

RAIL YARD AND SITE DEVELOPMENT

FOR

REVISIONS			
NO.	DATE	BY	DESCRIPTION

CONTRACTOR'S NOTES:

THE CONTRACTOR'S WORK TO BE PERFORMED UNDER THIS PROJECT WILL CONSIST OF FURNISHING ALL EQUIPMENT, LABOR, MATERIALS, TOOLS AND SUPERVISION NECESSARY FOR THE CONSTRUCTION OF THE PROPOSED NORTH STAR FACILITY AND OTHER RELATED WORK AS LISTED IN THE PLANS AND SPECIFICATIONS.

THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS, UTILITY LOCATIONS, ELEVATIONS, EXISTING INVERTS PRIOR TO ORDERING ANY MATERIAL. IF A DISCREPANCY IS FOUND, THE CONTRACTOR SHALL NOTIFY THE ENGINEER OR REPRESENTATIVE IMMEDIATELY.

ALL WORK SHALL COMPLY WITH ALL LOCAL, STATE AND FEDERAL CODES AND LAWS. ALL NECESSARY LICENSES AND PERMITS NOT OBTAINED BY THE OWNER SHALL BE THE CONTRACTOR'S RESPONSIBILITY.

ALL MATERIALS SHALL BE NEW UNLESS USED OR SALVAGED MATERIALS ARE AUTHORIZED BY OWNER.

THE CONCRETE SHALL HAVE A 4000 PSI MINIMUM COMPRESSIVE STRENGTH IN 28 DAYS. MAXIMUM SLUMP SHALL BE 4 INCHES, UNLESS NOTED OTHERWISE.

ALL EXTERIOR CONCRETE SHALL BE FINISHED WITH A FINE HAIR BROOM.

ALL WORK PERFORMED SHALL BE IN THE BEST RECOGNIZED TRADE PRACTICES AND TO THE ENTIRE SATISFACTION OF THE OWNER.

ALL DESIGNATED GRASS AREAS WITHIN THE PROPERTY LINE SHALL BE SEEDED AND MULCHED.

TRUE RAIL ENTERPRISES, LLC.

S MAIN STREET
MT. PLEASANT, TENNESSEE
MAURY COUNTY
TAX MAP 150 PARCEL 063.11

MAY 2026

INDEX OF DRAWINGS

SHEET	DESCRIPTION
T1.0	TITLE SHEET
C1.0	EXISTING SITE PLAN

PROPOSED	
C2.0	OVERALL SITE PLAN
C2.1	ENLARGED SITE PLAN
C2.2	ENLARGED SITE PLAN
C3.0	GRADING PLAN AREA 1
C3.1	GRADING PLAN AREA 2
C3.2	GRADING PLAN AREA 3
C3.4	EXISTING DRAINAGE MAP
C3.5	PROPOSED DRAINAGE MAP
C4.0	INITIAL EPSC PLAN
C4.1	INTERMEDIATE EPSC PLAN
C4.2	FINAL EPSC PLAN
C4.3	EPSC DETAILS
C4.4	SEDIMENT BASIN DETAILS
C5.0	UTILITY PLAN
C5.1	LIGHTING PLAN
C6.0	STORMWATER DETAILS
C7.0	SITE DETAILS
C8.0	SITE PROFILES
A-1-A-3	ARCHITECTURAL PLANS
L-1.0-L1.2	LANDSCAPING PLANS

RAILROAD PLANS	
RR1.	ESTIMATED QUANTITIES AND NOTES
RR2.	PROPOSED TRACK LAYOUTS - OVERALL

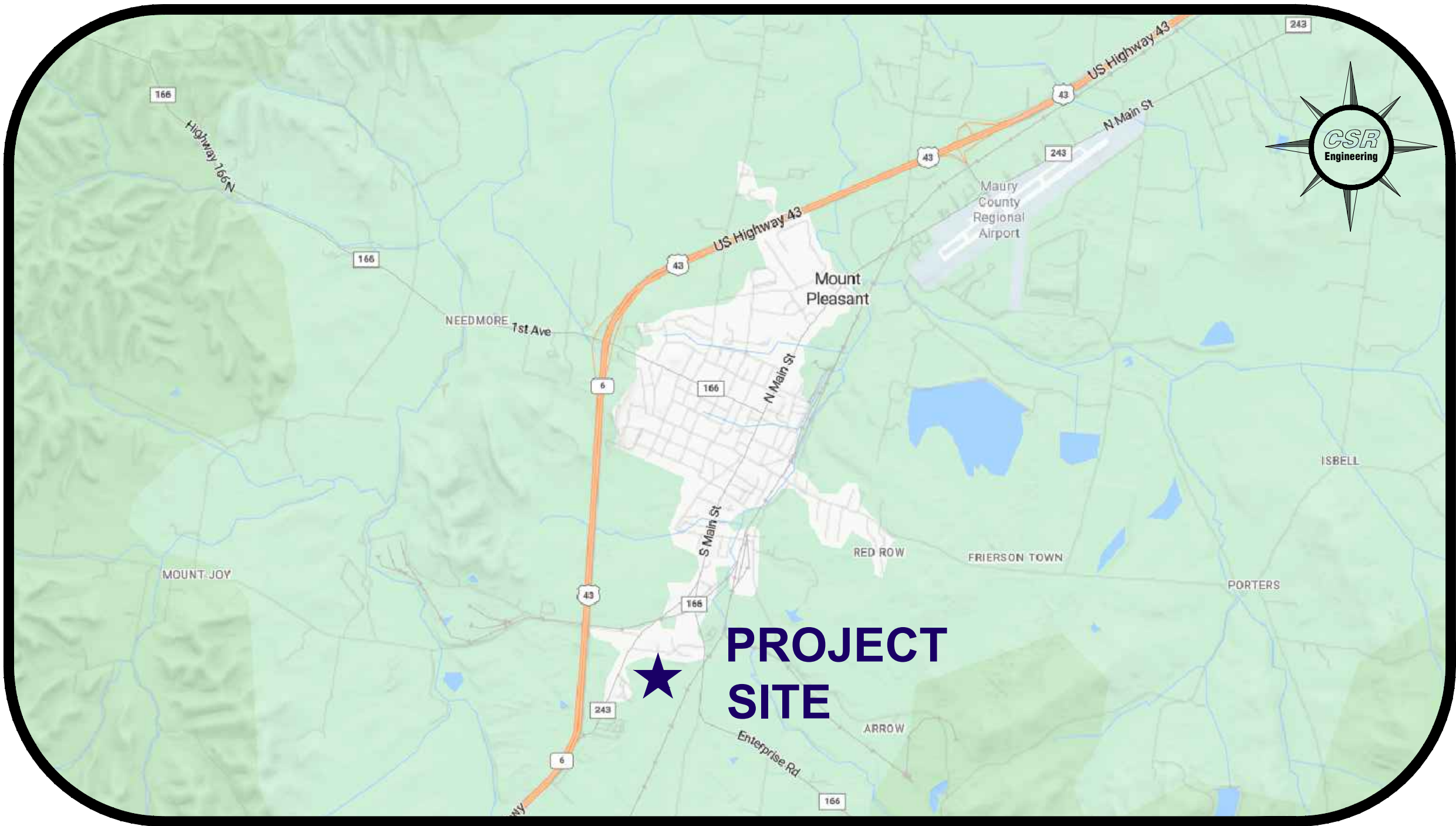
UTILITY COMPANIES:

NATURAL GAS -
CITY OF MOUNT PLEASANT
100 PUBLIC SQUARE
(931) 379-7717

WATER-
CITY OF MOUNT PLEASANT
100 PUBLIC SQUARE
(931) 379-7717

SEWER-
CITY OF MOUNT PLEASANT
100 PUBLIC SQUARE
(931) 379-7717

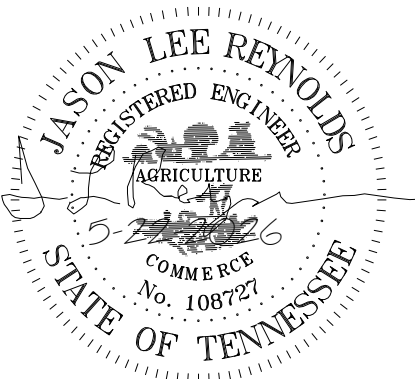
ELECTRIC -
MOUNT PLEASANT POWER SYSTEM
123 N. MAIN STREET
(931) 379-3233



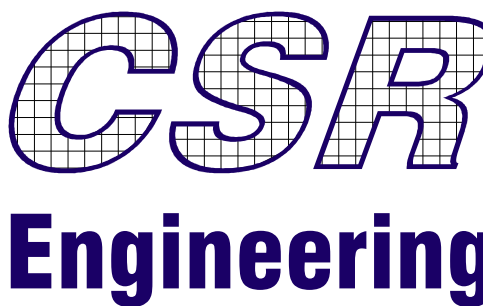
LOCATION MAP

SCALE: 1"=3,000'

ZONED "IL"
LIGHT INDUSTRIAL DISTRICT
MINIMUM BUILDING SETBACKS
FRONT - 50'
REAR - 50'
SIDE - 50'



True Rail Enterprises, LLC
Mark Smith
500 1st Avenue
Mt. Pleasant, TN 38474
P: 931.325.5570
C: 423.244.6057
mark@truerail.com



Jason Reynolds PE
CSR Engineering, Inc.
2010 Highway 49E
Pleasant View, TN 37146
P: 615.247.5381
F: 615.246.3815
jason.reynolds@csrengineers.com

CSR

Engineering

CSR Engineering, Inc.

2010 Highway 49E

Pleasant View, TN 37146

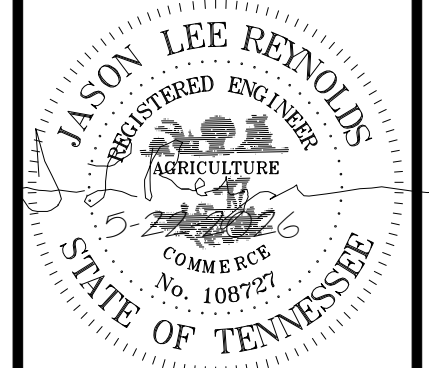
P: 615.212.2389

F: 615.246.3815

www.csrengineers.com



EXISTING SITE PLAN
OF
BULK STORAGE RAIL YARD
FOR
TRUE RAIL ENTERPRISES, LLC
S MAIN STREET
MT. PLEASANT, TENNESSEE
MAURY COUNTY



REVISIONS	
NO.	DESCRIPTION

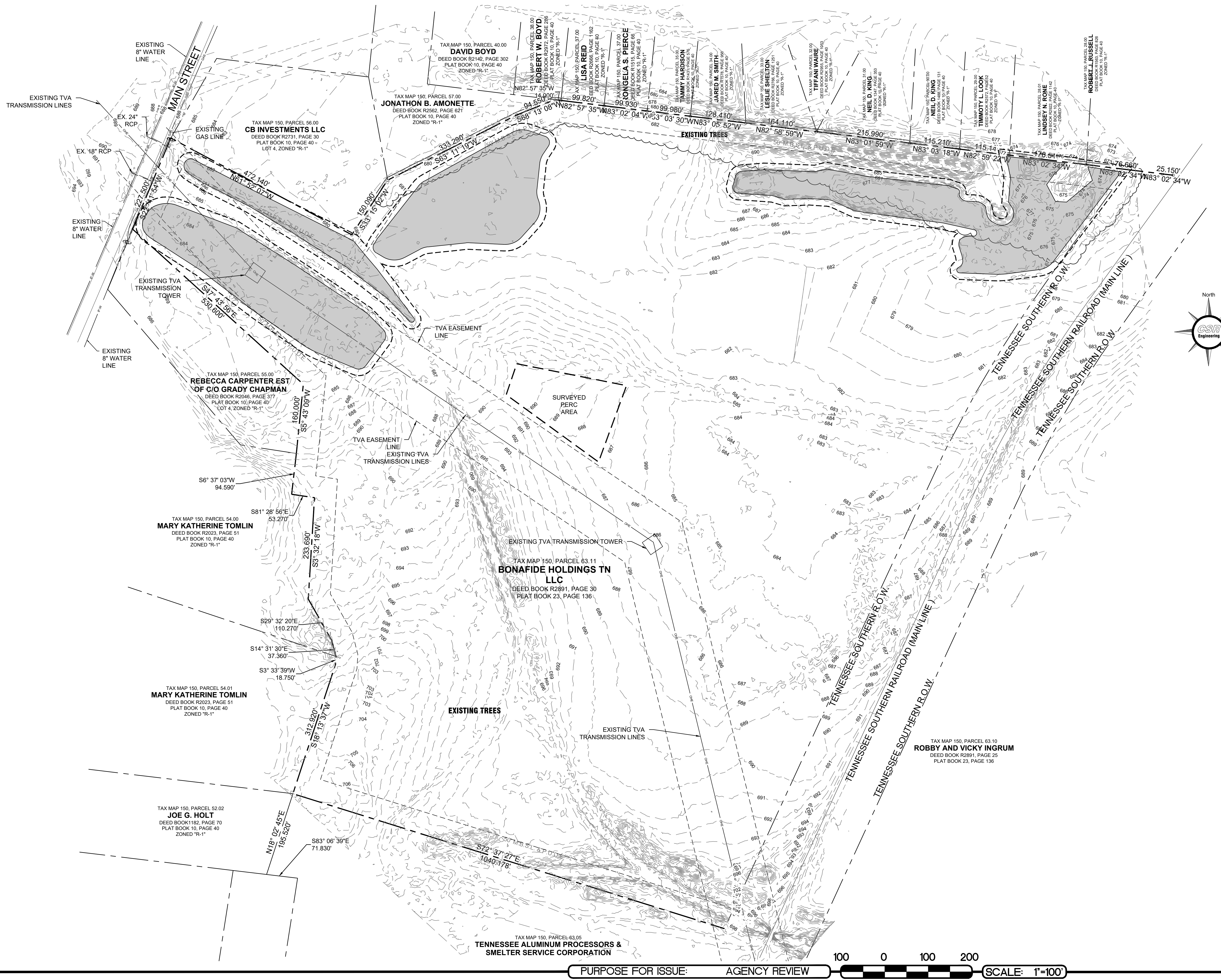
DESIGNER MJS

REVIEWER JLR

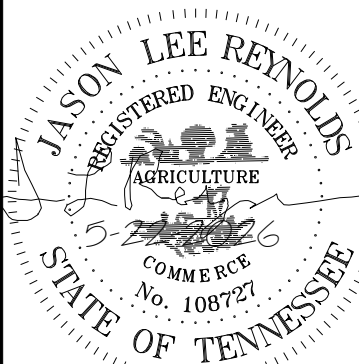
PROJECT 23-040

DATE 5-22-2026

SHEET C1.0



OVERALL SITE PLAN
 OF
 BULK STORAGE RAIL YARD
 FOR
TRUE RAIL ENTERPRISES, LLC
 S MAIN STREET
 MT. PLEASANT, TENNESSEE
 MAURY COUNTY



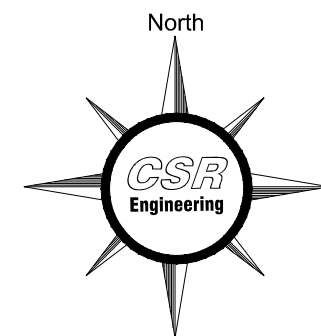
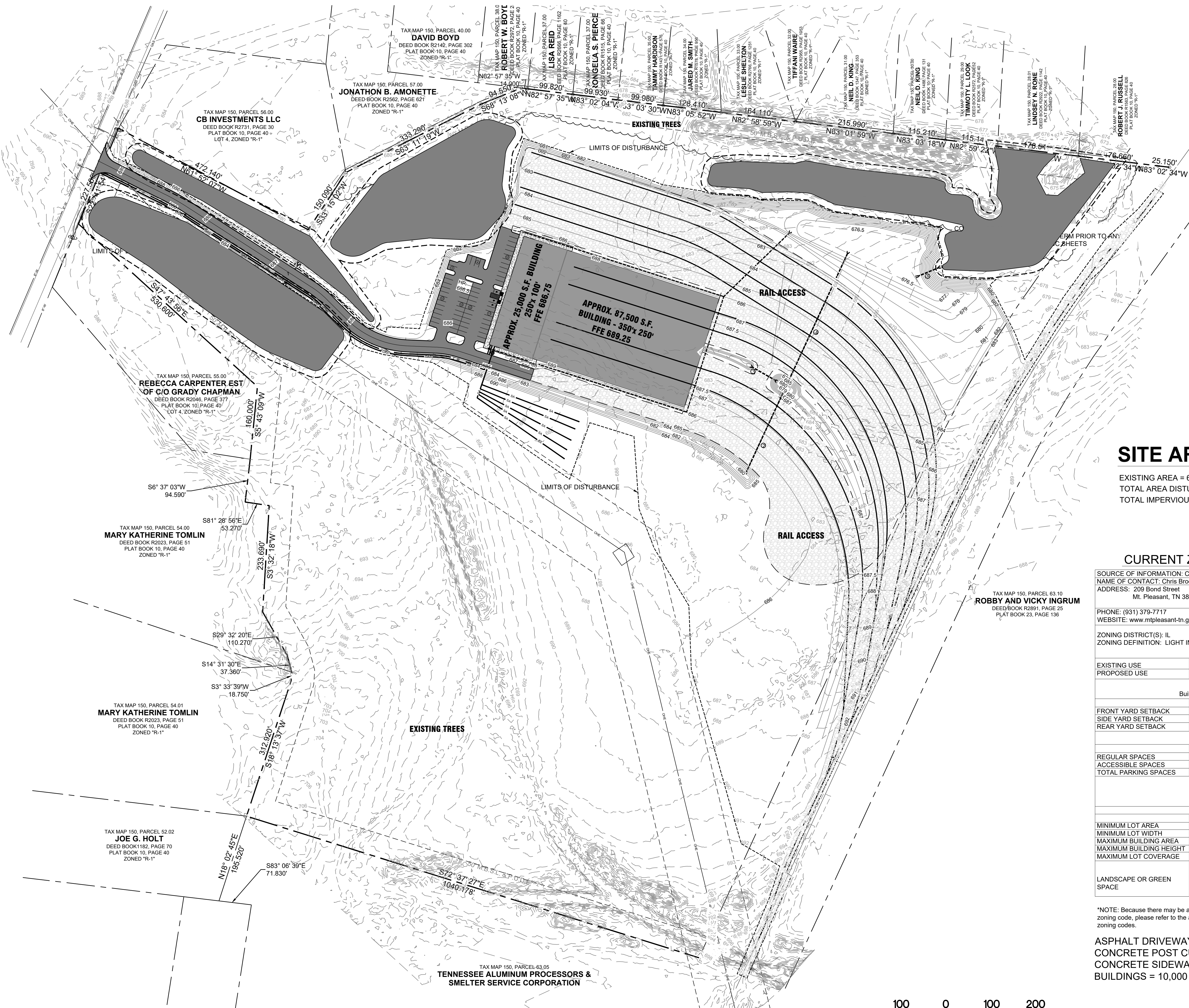
NO.	DATE	BY	DESCRIPTION

DESIGNER **MSS**
 REVIEWER **JLR**

PROJECT **23-040**

DATE **5-22-2026**

SHEET **C2.0**



SITE AREA

EXISTING AREA = 62.16 ACRES (2,707,846 S.F.)
 TOTAL AREA DISTURBED = 25.45 ACRES (1,108,585 S.F.)
 TOTAL IMPERVIOUS AREA = 3.83 ACRES (166,705 S.F.)

CURRENT ZONING INFORMATION

SOURCE OF INFORMATION: City of Mt. Pleasant and Planning Department
 NAME OF CONTACT: Chris Brooks, Planning Director
 ADDRESS: 209 Bond Street
 Mt. Pleasant, TN 38474

PHONE: (931) 379-7717
 WEBSITE: www.mtpleasant-tn.gov/building-planning

ZONING DISTRICT(S): IL
 ZONING DEFINITION: LIGHT INDUSTRIAL
 TAX MAP 150, PARCEL 063.11

EXISTING USE: Vacant - Undeveloped
 PROPOSED USE: Office, Warehouse, and Maintenance Facility

Building Setback Requirements			
	Proposed	Required	Notes
FRONT YARD SETBACK	225'	50'	
SIDE YARD SETBACK	350'	50'	
REAR YARD SETBACK	780'	50'	

Parking Tabulation			
	Proposed	Required	Notes
REGULAR SPACES	67	62	
ACCESSIBLE SPACES	3	3	
TOTAL PARKING SPACES	60	65	

Bulk Restrictions			
	Proposed	Required	Notes
MINIMUM LOT AREA	2,707,846 S.F.	40,000 S.F.	
MINIMUM LOT WIDTH	1,230 FT.	100 FT.	
MAXIMUM BUILDING AREA	1.26%	50% MAX.	
MAXIMUM BUILDING HEIGHT	39 FT.	60 FT.	
MAXIMUM LOT COVERAGE		-	

LANDSCAPE OR GREEN SPACE: See "Landscaping Plan"

*NOTE: Because there may be a need for further interpretation of the applicable zoning code, please refer to the above referenced municipality and the applicable zoning codes.

ASPHALT DRIVEWAY/PARKING = 43,487 S.F.
 CONCRETE POST CURB = 1,938 S.F.
 CONCRETE SIDEWALK = 4,815 S.F.
 BUILDINGS = 10,000 S.F. OFFICE & 102,500 S.F. WH

PURPOSE FOR ISSUE: AGENCY REVIEW

100 0 100 200

SCALE: 1"=100'

CSR

Engineering

CSR Engineering, Inc.

2010 Highway 49E

Pleasant View, TN 37146

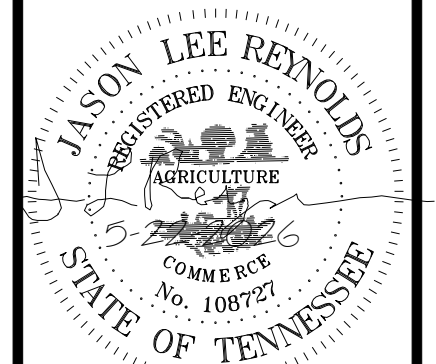
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ENLARGED SITE PLAN
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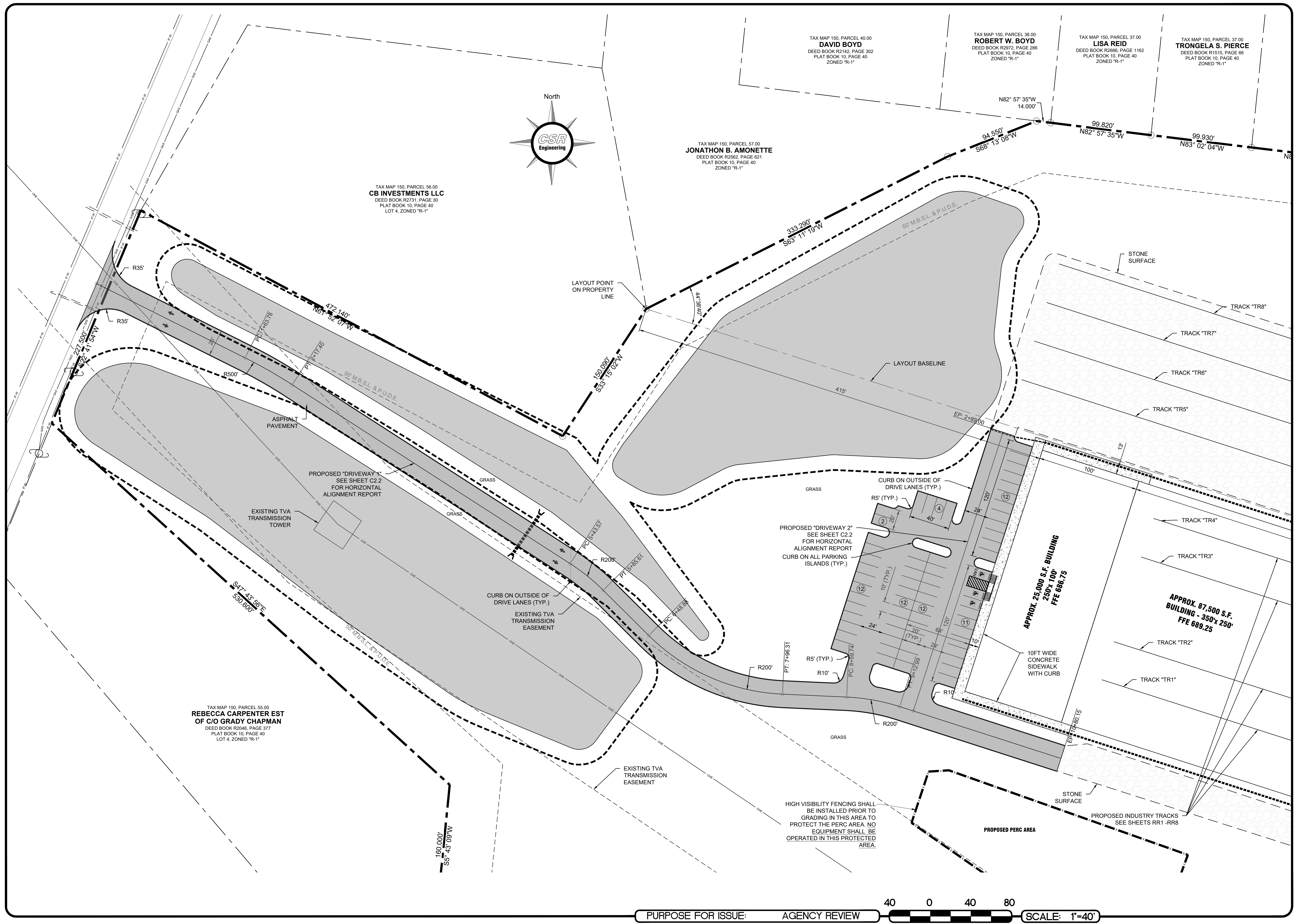
REVISIONS	
NO.	DESCRIPTION

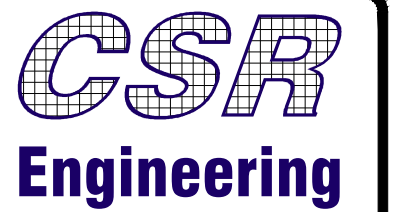
DESIGNER MSS
REVIEWER JLR

PROJECT 23-040

DATE 5-22-2026

SHEET C2.1

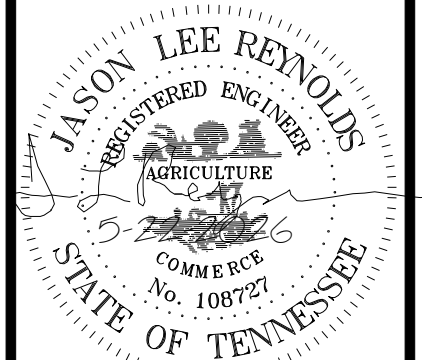




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ENLARGED SITE PLAN
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MAURY COUNTY



REVISIONS		DESCRIPTION	
NO.	DATE	BY	DESCRIPTION

DESIGNER MSS
REVIEWER JLR

PROJECT 23-040

DATE 5-22-2026

SHEET C2.2

Horizontal Alignment Report

File: P:\23-040 True Rail\20260115 True Rail Building Shift.dwg
Report Date: 3/12/2026 12:41:55 PM
Alignment Name: Driveway 1
Station Range: Start: 0+00.00, End: 10+80.15
Description:

Begin Driveway 1
N 433,342.8714 E 1,605,754.6949 0+00.00

Line (1)
S83° 25' 31"E 163.78'
N 433,269.5998 E 1,605,901.1756 1+63.78
Line (1)

Curve (2)
BC N 433,269.5998 E 1,605,901.1756 1+63.78
CTR N 432,830.2517 E 1,605,681.4077
PI N 433,257.5954 E 1,605,925.1741

Direction Back S63° 25' 31"E
Radius 491.25'
Delta 6°15'11"(RT)
Length 53.61'
Tangent 26.83'
Chord Direction S80° 17' 55"E Distance 53.59'
Direction Ahead S57° 10' 19"E

EC N 433,243.0485 E 1,605,947.7223 2+17.40
Curve (2)

Line (3)
Non-Tangent Radial Bearing N32° 49' 41"E
S57° 13' 37"E 326.17'
N 433,066.4879 E 1,606,221.9752 5+43.57
Line (3)

Curve (4)
BC N 433,066.4879 E 1,606,221.9752 5+43.57
CTR N 432,898.3234 E 1,606,113.7130
PI N 433,055.0688 E 1,606,239.7126

Direction Back S57° 13' 37"E
Radius 200.00'
Delta 2°02'32"(RT)
Length 42.04'
Tangent 21.10'
Chord Direction S51° 12' 21"E Distance 41.96'
Direction Ahead S45° 11' 05"E

EC N 433,040.2003 E 1,606,254.6774 5+85.61
Curve (4)

Line (5)
S45° 11' 05"E 63.27'
N 432,995.6059 E 1,606,299.5604 6+48.88
Line (5)

Curve (6)
BC N 432,995.6059 E 1,606,299.5604 6+48.88
CTR N 433,137.4828 E 1,606,440.5248
PI N 432,941.1583 E 1,606,354.3604

Direction Back S45° 11' 05"E
Radius 200.00'
Delta 42°14'17"(LT)
Length 147.44'
Tangent 77.25'
Chord Direction S86° 18' 14"E Distance 144.12'
Direction Ahead S87° 25' 23"E

EC N 432,937.6850 E 1,606,431.5324 7+96.31
Curve (6)

Line (7)
S87° 25' 23"E 63.42'
N 432,934.8334 E 1,606,494.8908 8+59.74
Line (7)

Curve (8)
BC N 432,934.8334 E 1,606,494.8908 8+59.74
CTR N 432,735.0357 E 1,606,485.8984
PI N 432,933.6291 E 1,606,521.6492

Direction Back S87° 25' 23"E
Radius 200.00'
Delta 15°15'22"(RT)
Length 53.25'
Tangent 26.79'
Chord Direction S79° 47' 42"E Distance 53.10'
Direction Ahead S72° 10' 01"E

EC N 432,925.4262 E 1,606,547.1476 9+12.99
Curve (8)

Line (9)
S72° 10' 01"E 167.16'
N 432,874.2345 E 1,606,706.2748 10+80.15
Line (9)

N 432,874.2345 E 1,606,706.2748 10+80.15
End Driveway 1

Alignment Length: 1,080.15'

File: P:\23-040 True Rail\20260115 True Rail Building Shift.dwg
Report Date: 3/12/2026 12:41:55 PM
Alignment Name: Driveway 2
Station Range: Start: 0+00.00, End: 2+89.00
Description:

Begin Driveway 2
N 432,921.0901 E 1,606,560.6261 0+00.00

Line (1)
N17° 49' 59"E 289.00'
N 433,196.2043 E 1,606,649.1312 2+89.00
Line (1)

N 433,196.2043 E 1,606,649.1312 2+89.00
End Driveway 2

Alignment Length: 289.00'



1"=1431', PAGE 575
OK 10, PAGE 40
NED "R-1"

TAX MAP 150, PARCEL 34.00
JARED M. SMITH
DEED BOOK R1518, PAGE 556
PLAT BOOK 10, PAGE 40
ZONED "R-1"

TAX MAP 150, PARCEL 33.00
LESLIE SHELTON
DEED BOOK R2766, PAGE 1251
PLAT BOOK 10, PAGE 40
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TAX MAP 150, PARCEL 32.00
TIFFANY WAIRE
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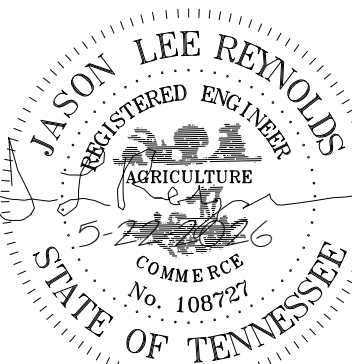
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TrueRail
ENTERPRISES, LLC

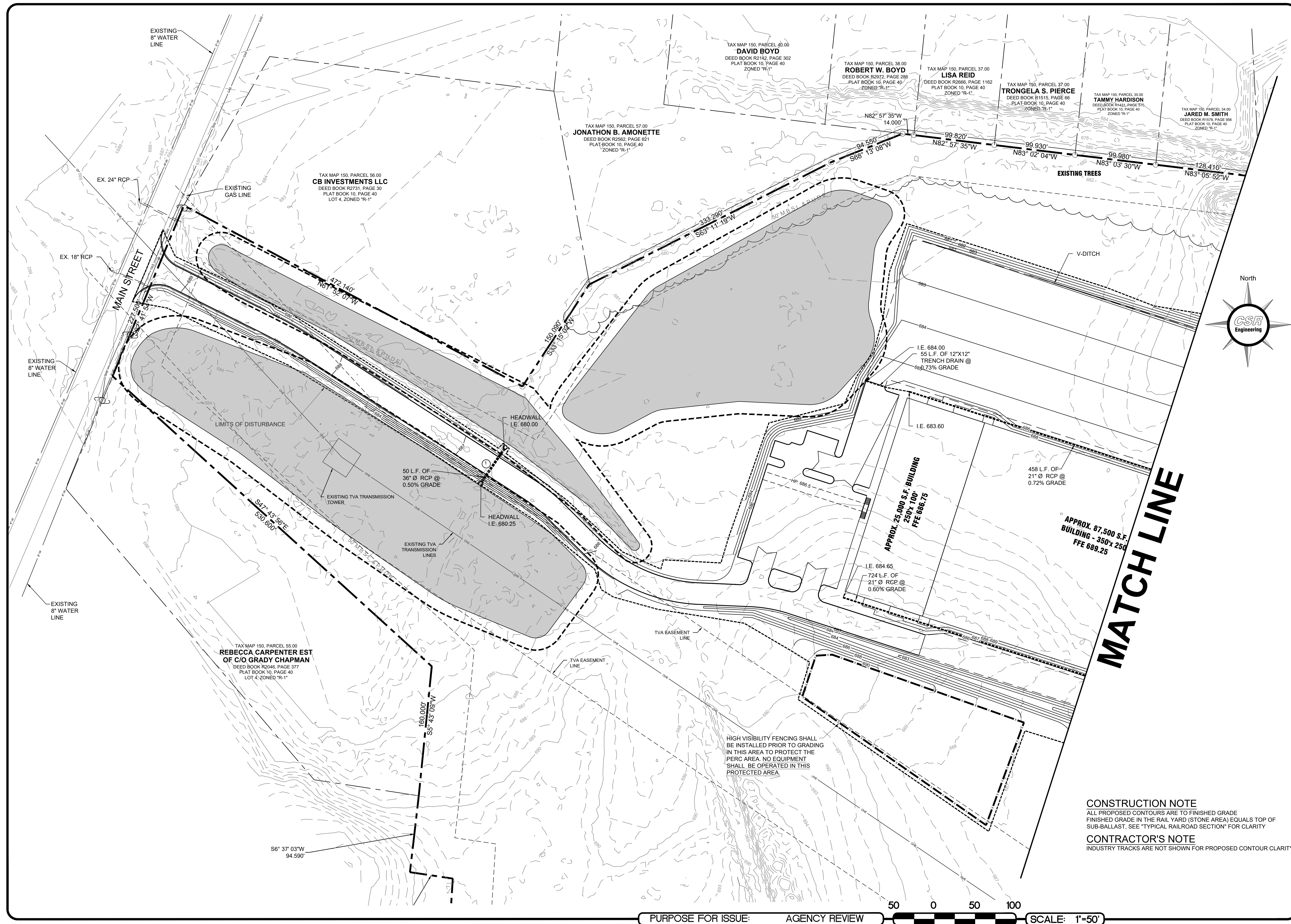
GRADING PLAN AREA 1
BULK STORAGE RAILYARD
TRUE RAIL ENTERPRISES, LLC
S MAIN STREET
MT. PLEASANT, TENNESSEE

[illegible]

DESIGNER	MSS
REVIEWER	JLR

PROJECT 23-040

DATE **5-22-2026**

SHEET **C3.0**

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GRADING PLAN AREA 2

OF

FOR

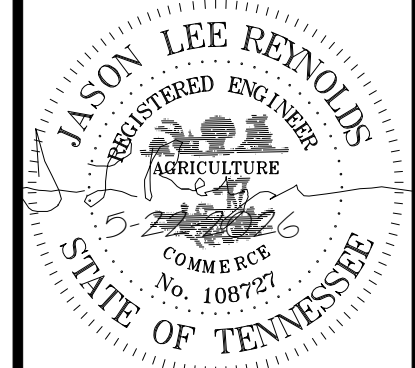
BULK STORAGE RAIL YARD

TRUE RAIL ENTERPRISES, LLC

S MAIN STREET

MT. PLEASANT, TENNESSEE

MAURY COUNTY



REVISIONS	
NO.	DESCRIPTION

DESIGNER

MSS

REVIEWER

JLR

PROJECT

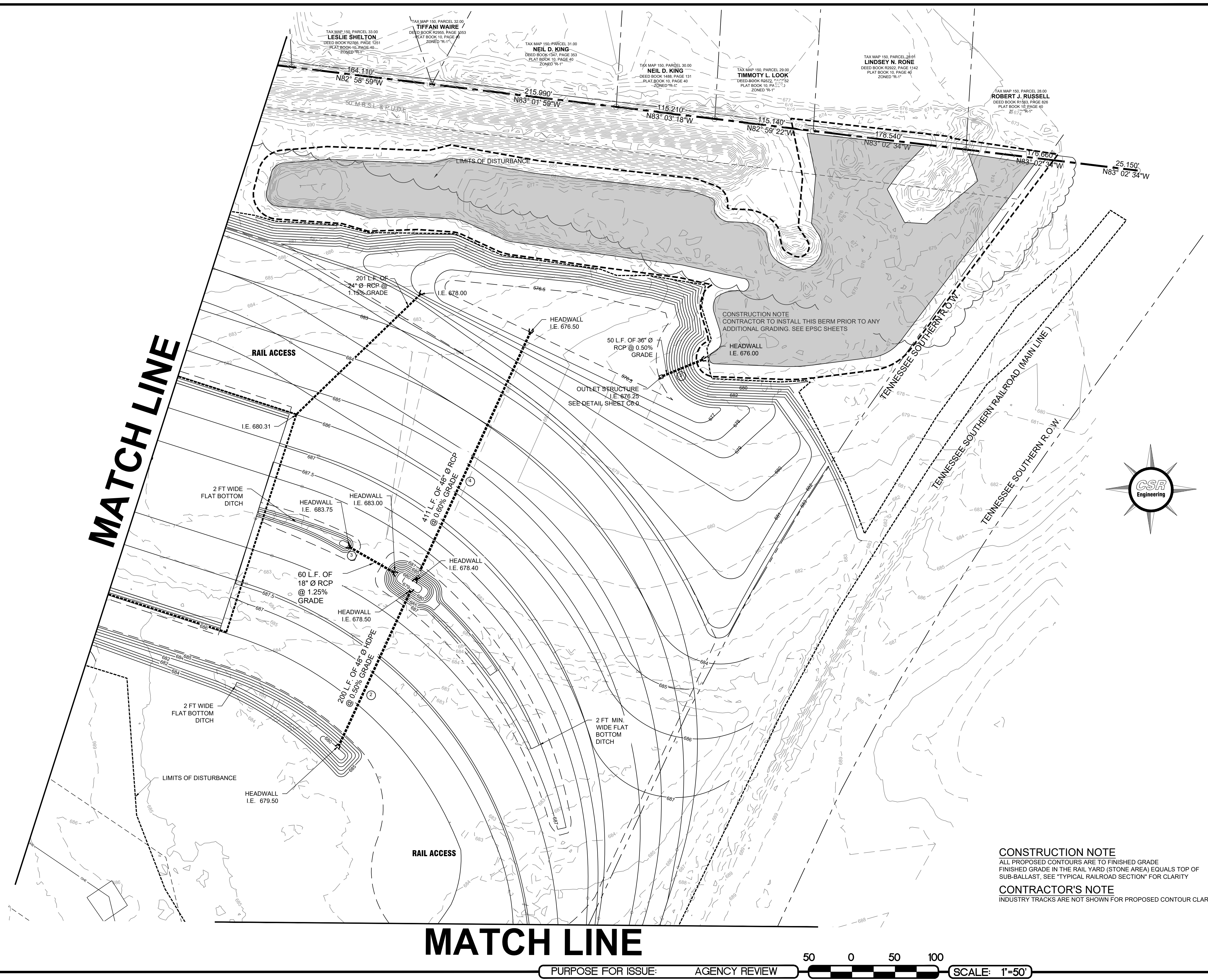
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5-22-2026

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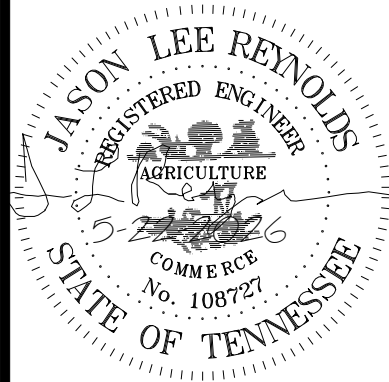




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GRADING PLAN AREA 3
OF
FOR
BULK STORAGE RAIL YARD
TRUE RAIL ENTERPRISES, LLC
S MAIN STREET
MT. PLEASANT, TENNESSEE
MAURY COUNTY



REVISIONS	
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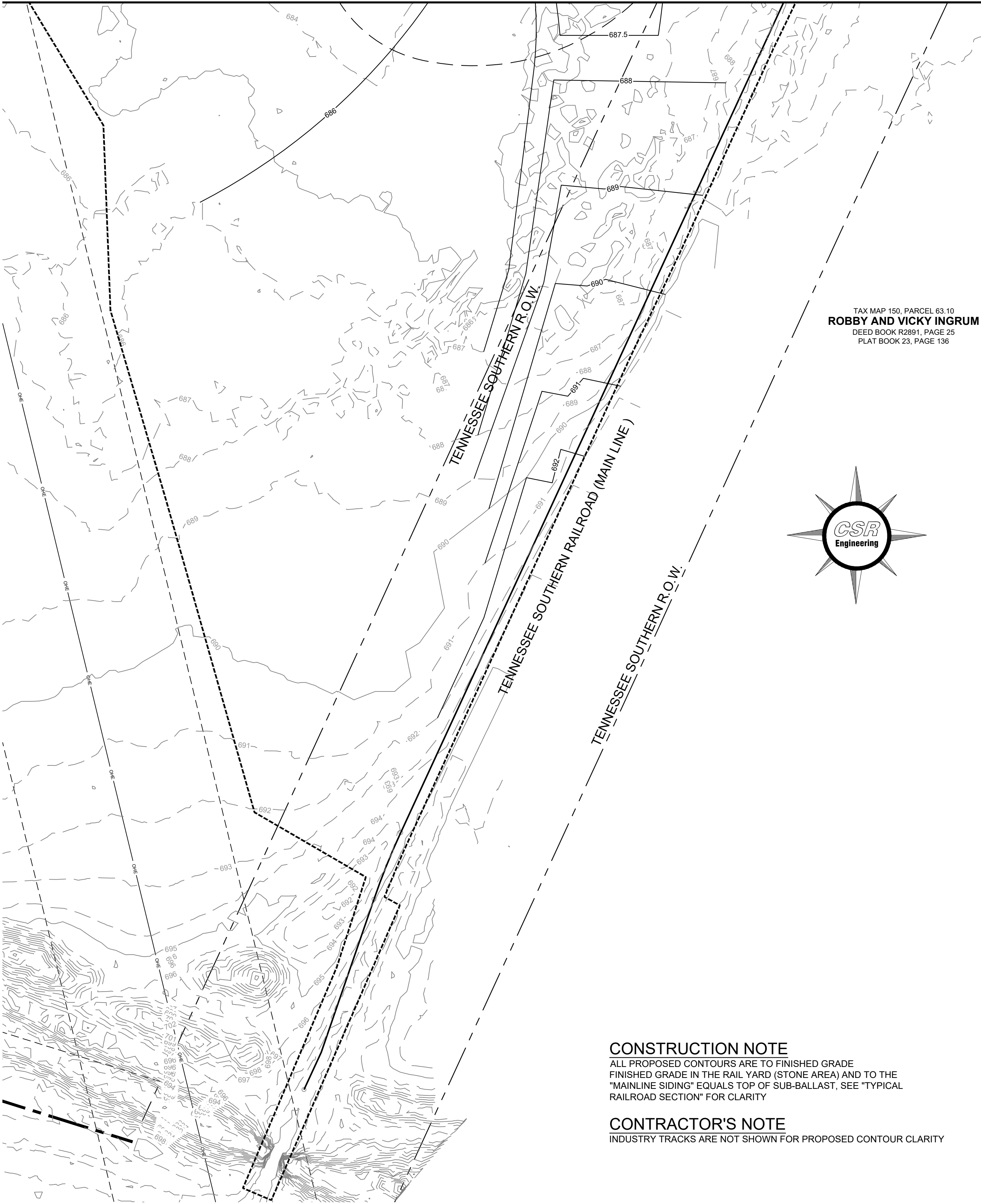
DESIGNER MSS
REVIEWER JLR

PROJECT 23-040

DATE 5-22-2026

SHEET C3.2

MATCH LINE



CONSTRUCTION NOTE

ALL PROPOSED CONTOURS ARE TO FINISHED GRADE.
FINISHED GRADE IN THE RAIL YARD (STONE AREA) AND TO THE
"MAINLINE SIDING" EQUALS TOP OF SUB-BALLAST. SEE "TYPICAL
RAILROAD SECTION" FOR CLARITY

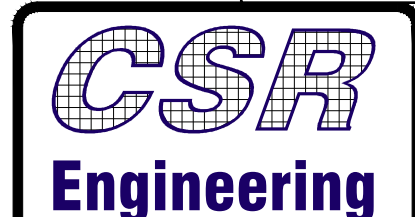
CONTRACTOR'S NOTE

INDUSTRY TRACKS ARE NOT SHOWN FOR PROPOSED CONTOUR CLARITY

PURPOSE FOR ISSUE: AGENCY REVIEW



SCALE: 1"=50'



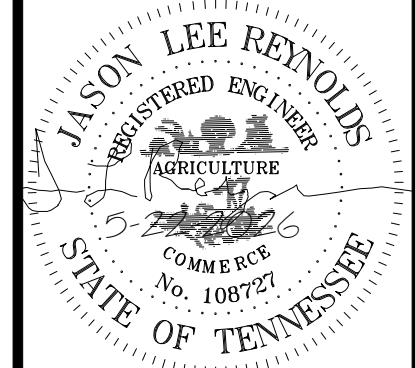
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EXISTING DRAINAGE MAP
OF
BULK STORAGE RAIL YARD
FOR
TRUE RAIL ENTERPRISES, LLC
S MAIN STREET
MT. PLEASANT, TENNESSEE
MAURY COUNTY



JASON LEE REYNOLDS
REGISTERED ENGINEER
No. 108727
STATE OF TENNESSEE

REVISIONS	
NO.	DESCRIPTION

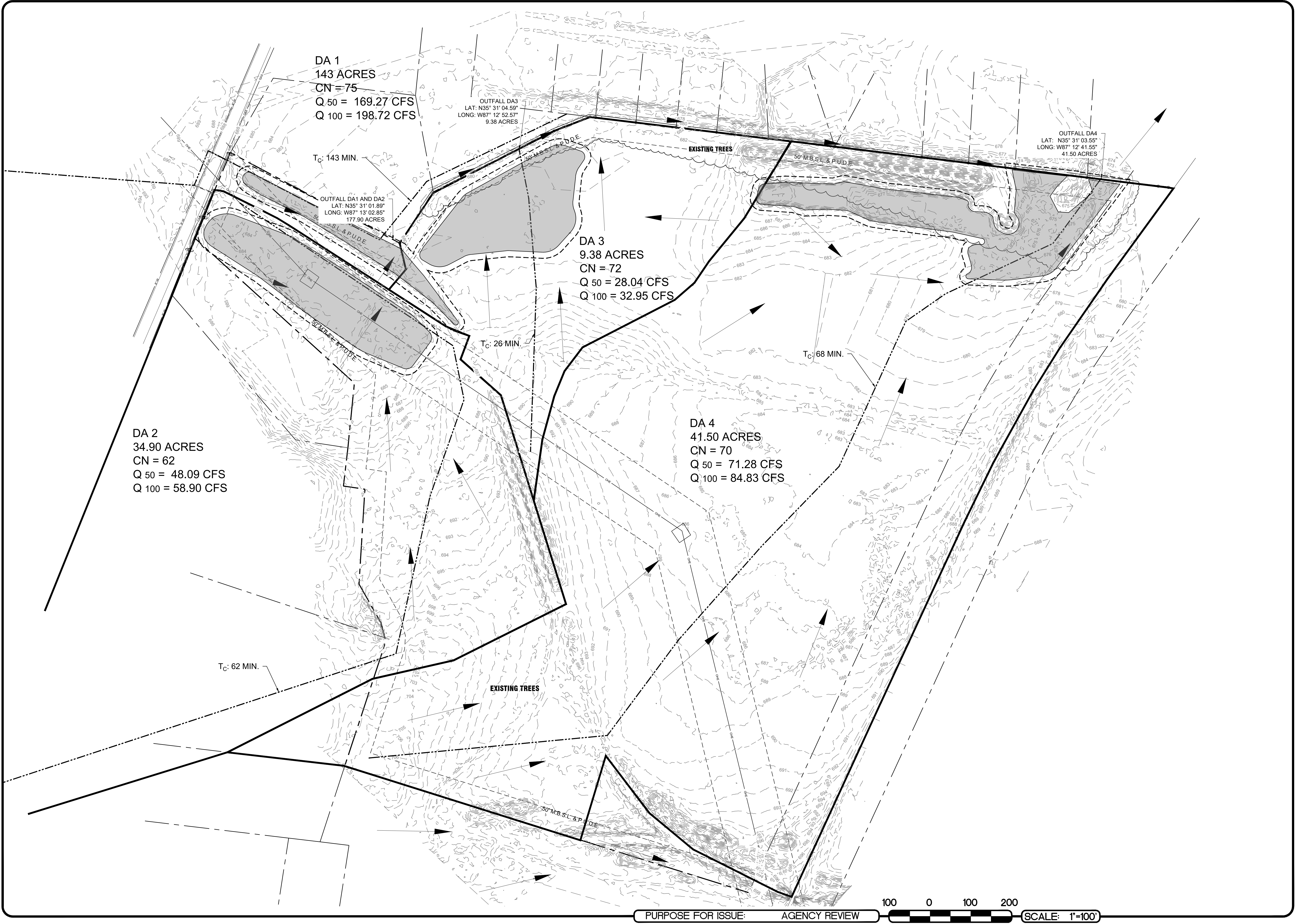
DESIGNER **MSS**

REVIEWER **JLR**

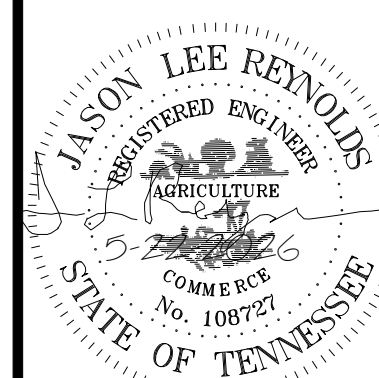
PROJECT **23-040**

DATE **5-22-2026**

SHEET **C3.4**



PROPOSED DRAINAGE MAP
OF
BULK STORAGE RAIL YARD
FOR
TRUE RAIL ENTERPRISES, LLC
S MAIN STREET
MT. PLEASANT, TENNESSEE
MAURY COUNTY



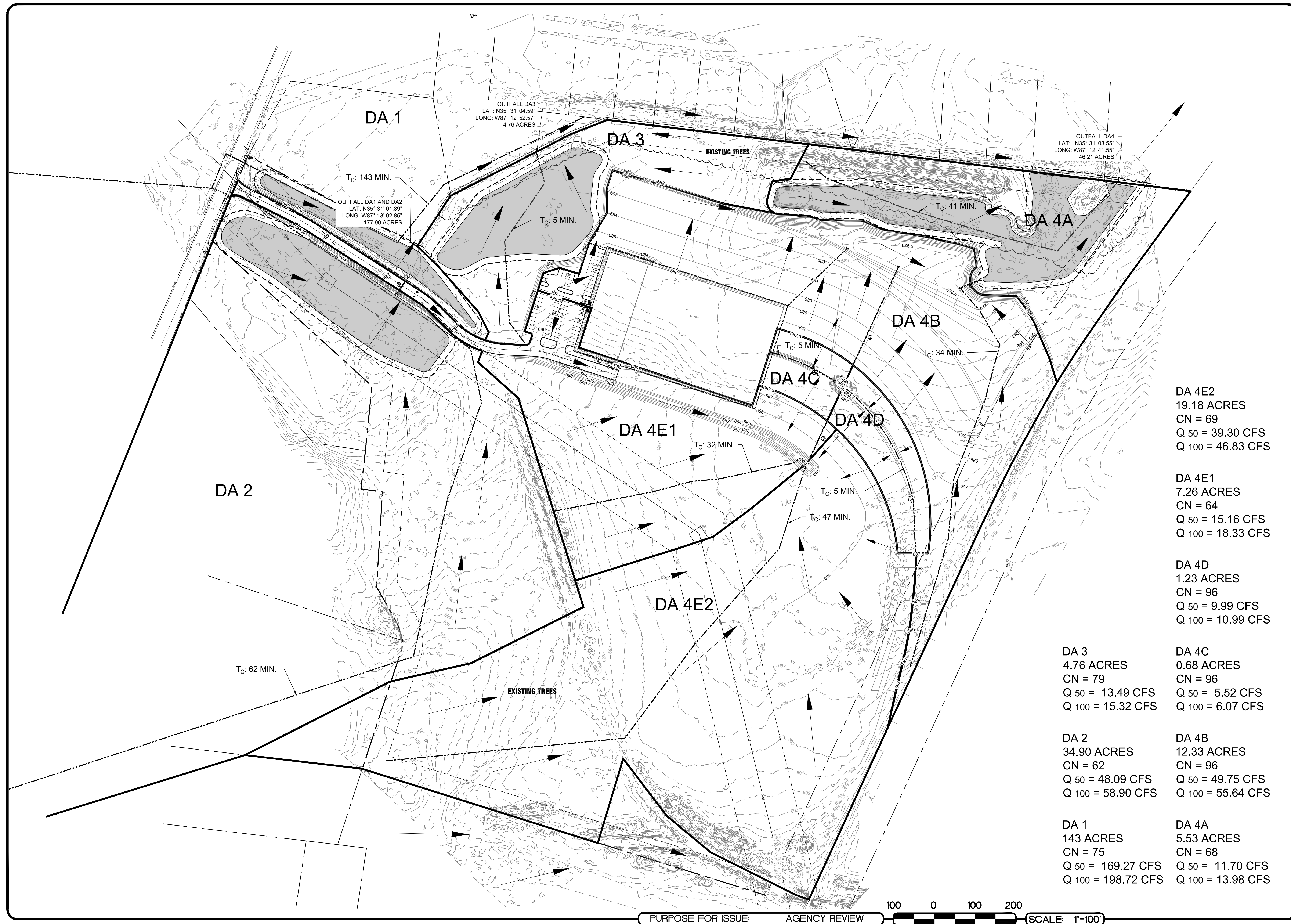
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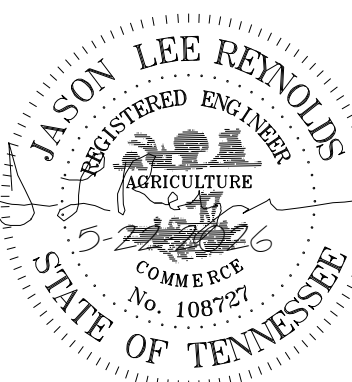
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REVIEWER: JLR

PROJECT: 23-040

DATE: 5-22-2026

SHEET: **C3.5**



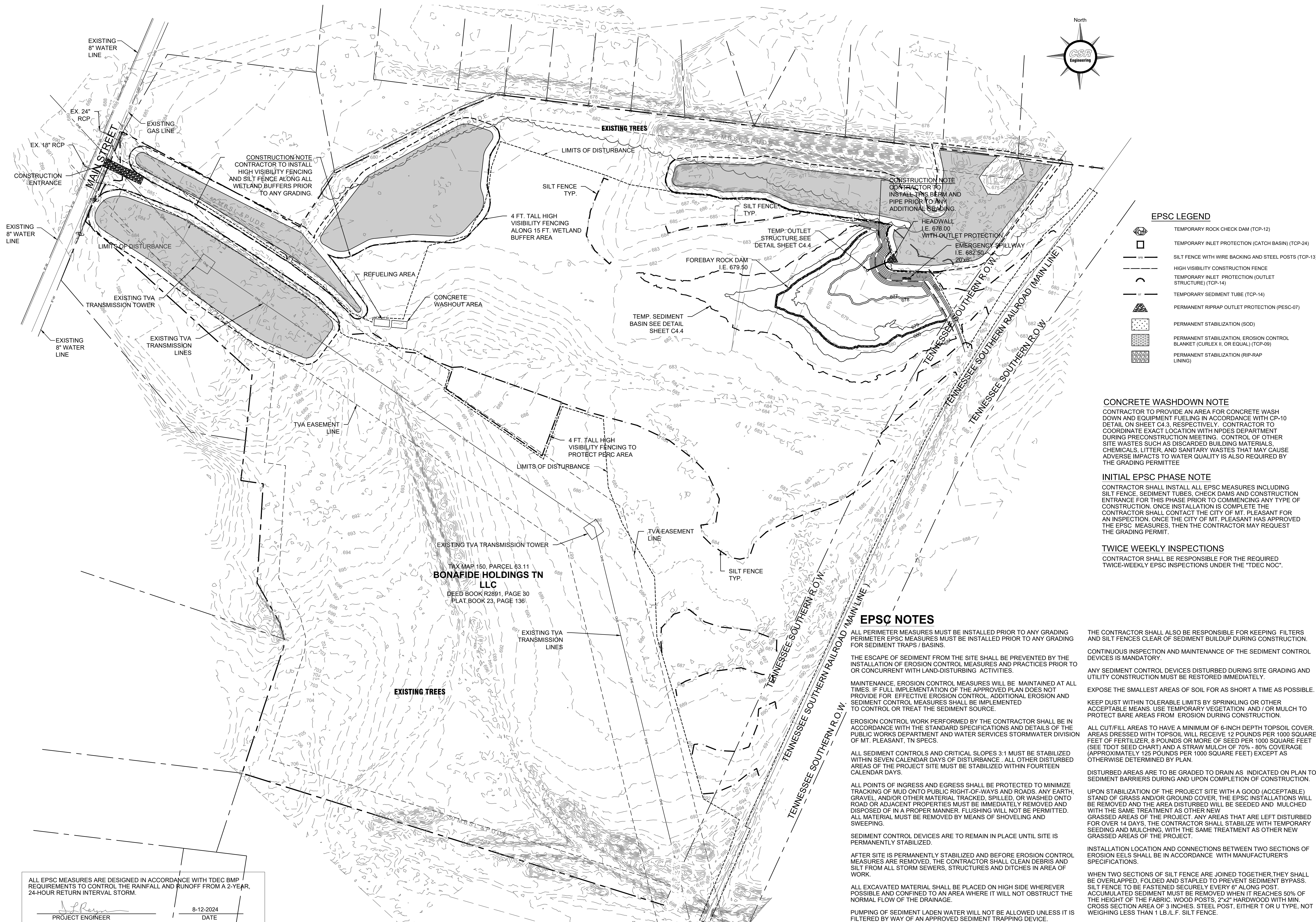
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DESIGNER MSS

REVIEWER JLF

PROJECT 23-040

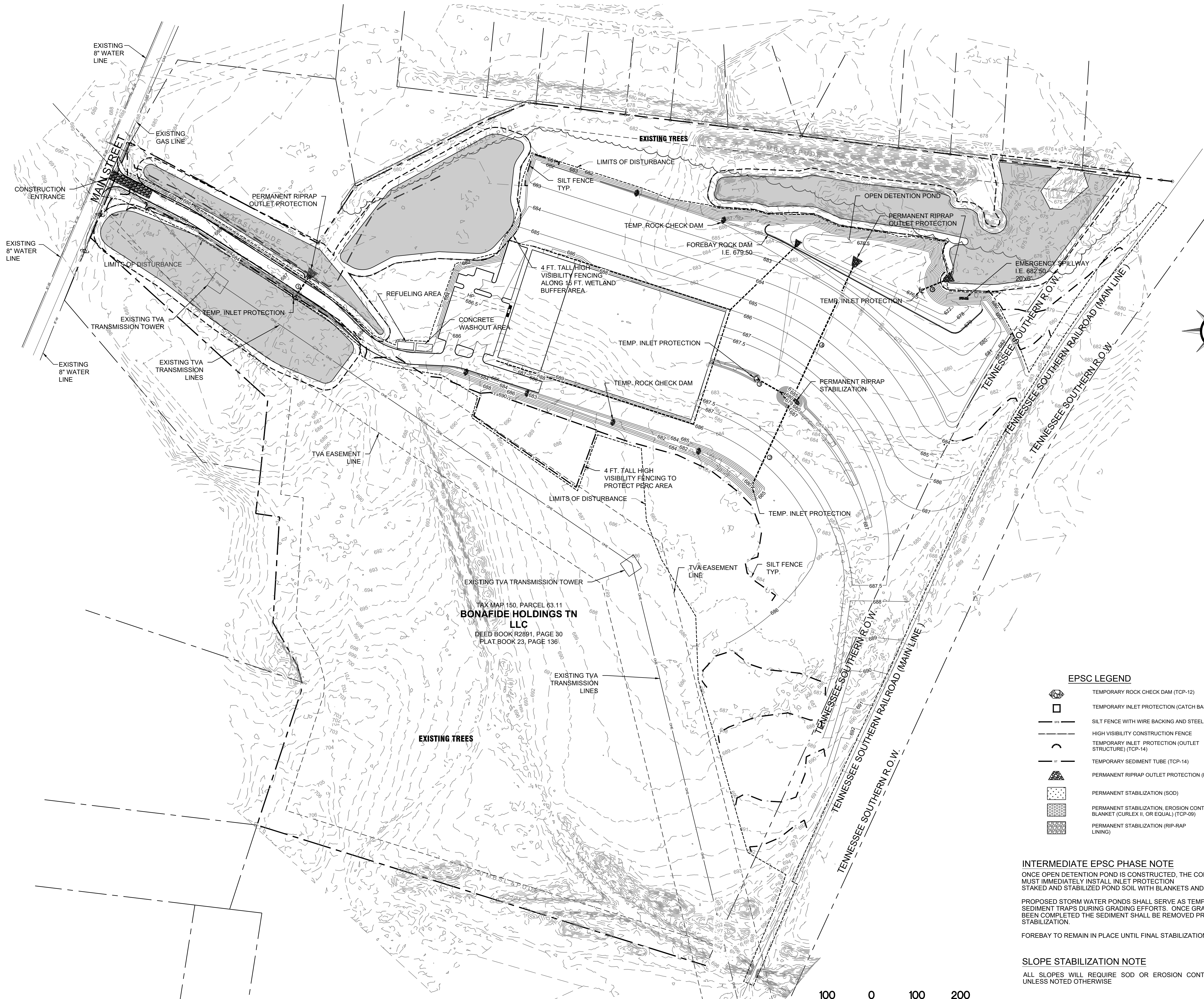
DATE 5-22-2026

SHEET **C4.0**

PURPOSE FOR ISSUE:	AGENCY REVIEW
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SCALE: 1"=100'

TRANSMISSION
LINES



TAX MAP 150, PARCEL 63.11
**BONAFIDE HOLDINGS TN
LLC**
DEED BOOK R2891, PAGE 30
PLAT BOOK 23, PAGE 136

EPSC LEGEND

- TEMPORARY ROCK CHECK DAM (TCP-12)
- TEMPORARY INLET PROTECTION (CATCH BASIN) (TCP-24)
- SILT FENCE WITH WIRE BACKING AND STEEL POSTS (TCP-13)
- HIGH VISIBILITY CONSTRUCTION FENCE
- TEMPORARY INLET PROTECTION (OUTLET STRUCTURE) (TCP-14)
- TEMPORARY SEDIMENT TUBE (TCP-14)
- PERMANENT RIPRAP OUTLET PROTECTION (PESC-07)
- PERMANENT STABILIZATION (SOD)
- PERMANENT STABILIZATION, EROSION CONTROL BLANKET (CURLX II, OR EQUAL) (TCP-09)
- PERMANENT STABILIZATION (RIP-RAP LINING)

INTERMEDIATE EPSC PHASE NOTE

ONCE OPEN DETENTION POND IS CONSTRUCTED, THE CONTRACTOR MUST IMMEDIATELY INSTALL INLET PROTECTION STAKED AND STABILIZED POND SOIL WITH BLANKETS AND OR SOD.

PROPOSED STORM WATER PONDS SHALL SERVE AS TEMPORARY SEDIMENT TRAPS DURING GRADING EFFORTS. ONCE GRADING HAS BEEN COMPLETED THE SEDIMENT SHALL BE REMOVED PRIOR TO FINAL STABILIZATION.

FOREBAY TO REMAIN IN PLACE UNTIL FINAL STABILIZATION OCCURS.

SLOPE STABILIZATION NOTE

ALL SLOPES WILL REQUIRE SOD OR EROSION CONTROL MATTING, UNLESS NOTED OTHERWISE

PURPOSE FOR ISSUE: AGENCY REVIEW

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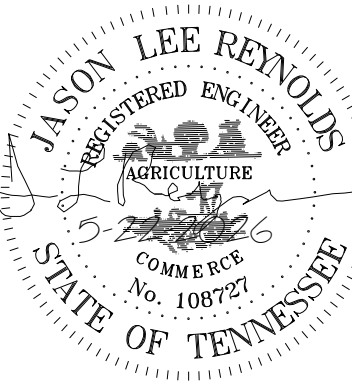
SCALE: 1"=100'

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INTERMEDIATE EPSC
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FOR
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MAURY COUNTY



NO.	REVISIONS		DESCRIPTION
	BY	DATE	

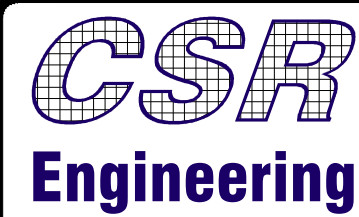
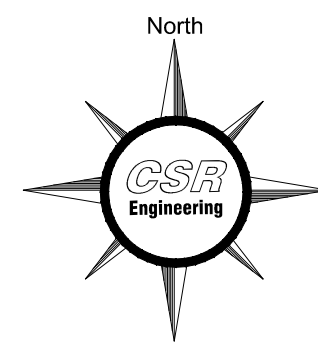
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REVIEWER: JLR

PROJECT: 23-040

DATE: 5-22-2026

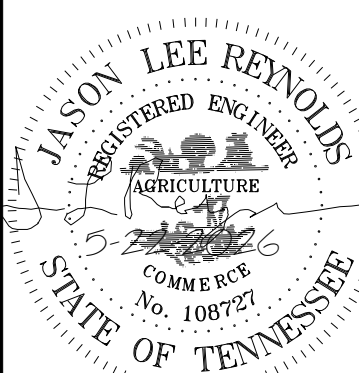
SHEET: **C4.1**



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FINAL EPSC
OF
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FOR
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S MAIN STREET
MT. PLEASANT, TENNESSEE
MAURY COUNTY



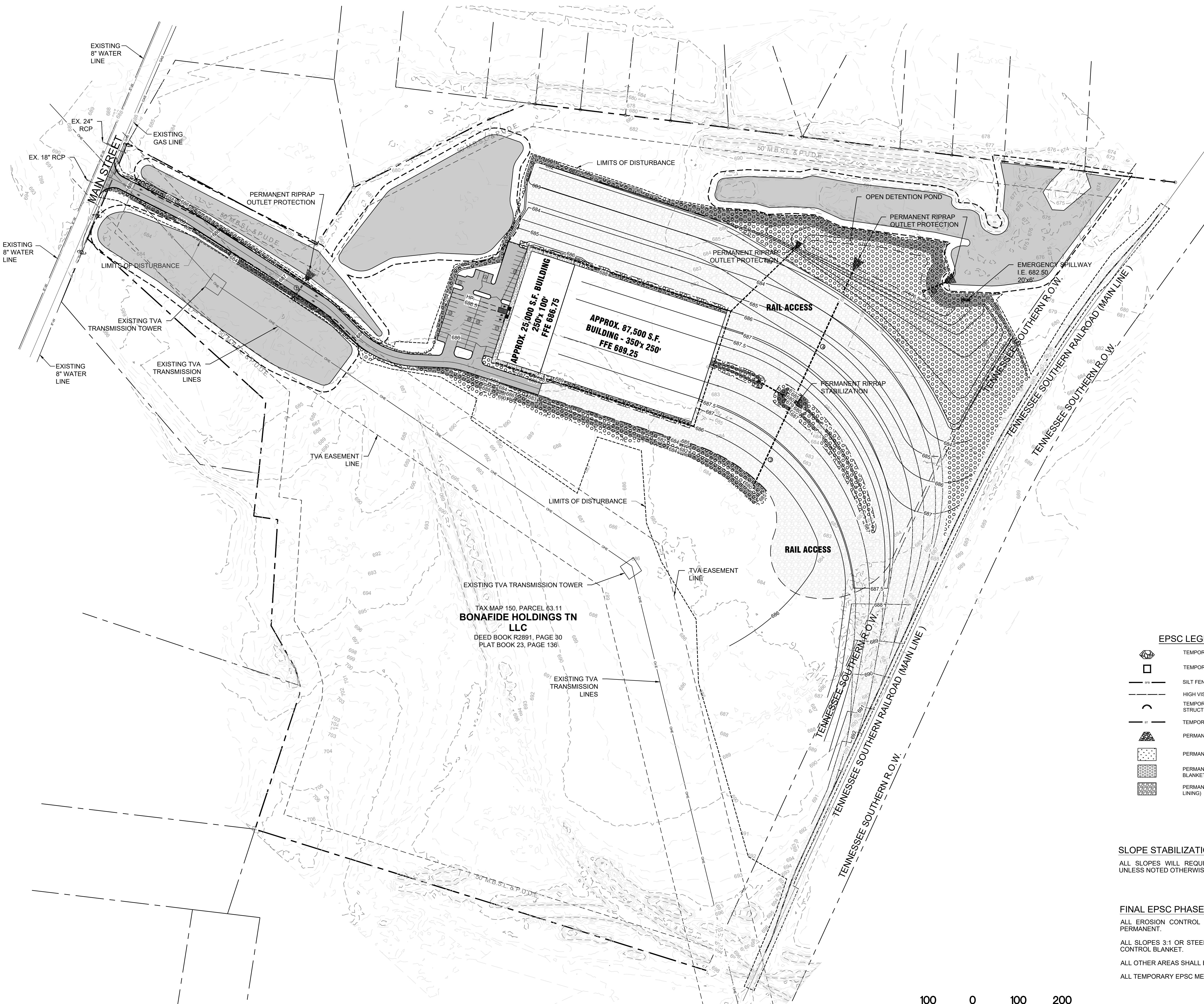
REVISIONS		DESCRIPTION
NO.	DATE	BY

DESIGNER **MSS**
REVIEWER **JLR**

PROJECT **23-040**

DATE **5-22-2026**

SHEET **C4.2**



EPSC LEGEND

- TEMPORARY ROCK CHECK DAM (TCP-12)
- TEMPORARY INLET PROTECTION (CATCH BASIN) (TCP-24)
- SILT FENCE WITH WIRE BACKING AND STEEL POSTS (TCP-13)
- HIGH VISIBILITY CONSTRUCTION FENCE
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- TEMPORARY SEDIMENT TUBE (TCP-14)
- PERMANENT RIPRAP OUTLET PROTECTION (PESC-07)
- PERMANENT STABILIZATION (SOD)
- PERMANENT STABILIZATION, EROSION CONTROL BLANKET (CURLX II, OR EQUAL) (TCP-09)
- PERMANENT STABILIZATION (RIP-RAP LINING)

SLOPE STABILIZATION NOTE

ALL SLOPES WILL REQUIRE SOD OR EROSION CONTROL MATTING, UNLESS NOTED OTHERWISE

FINAL EPSC PHASE NOTE

ALL EROSION CONTROL MEASURES SHOWN IN THIS PHASE ARE PERMANENT.

ALL SLOPES 3:1 OR STEEPER SHALL BE STABILIZED WITH EROSION CONTROL BLANKET.

ALL OTHER AREAS SHALL BE STABILIZED WITH SEED/STRAW.

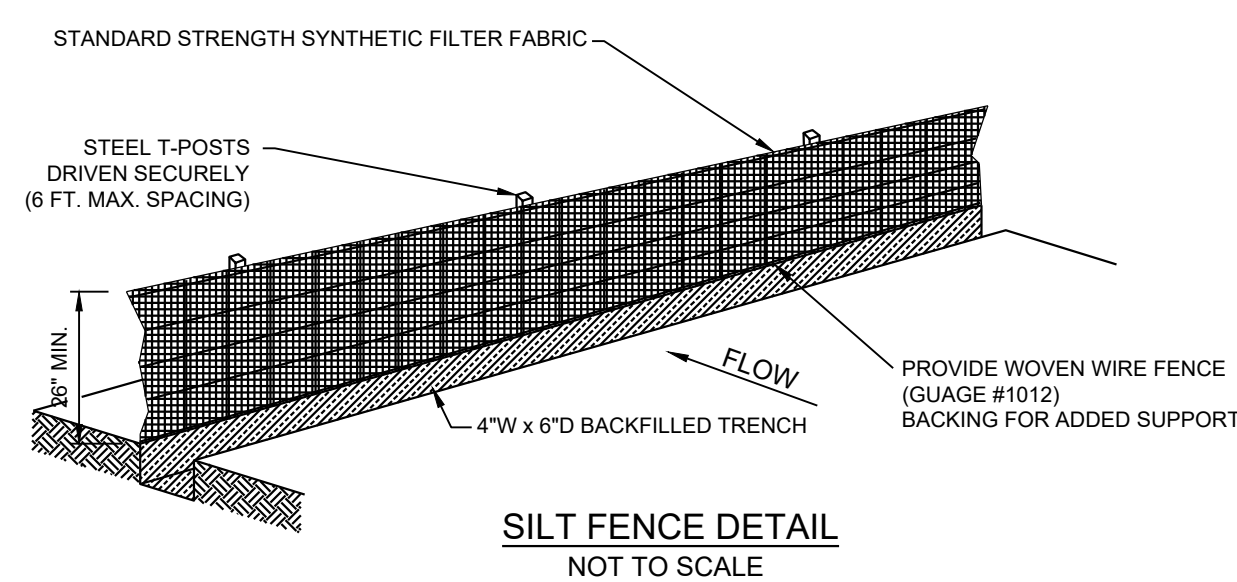
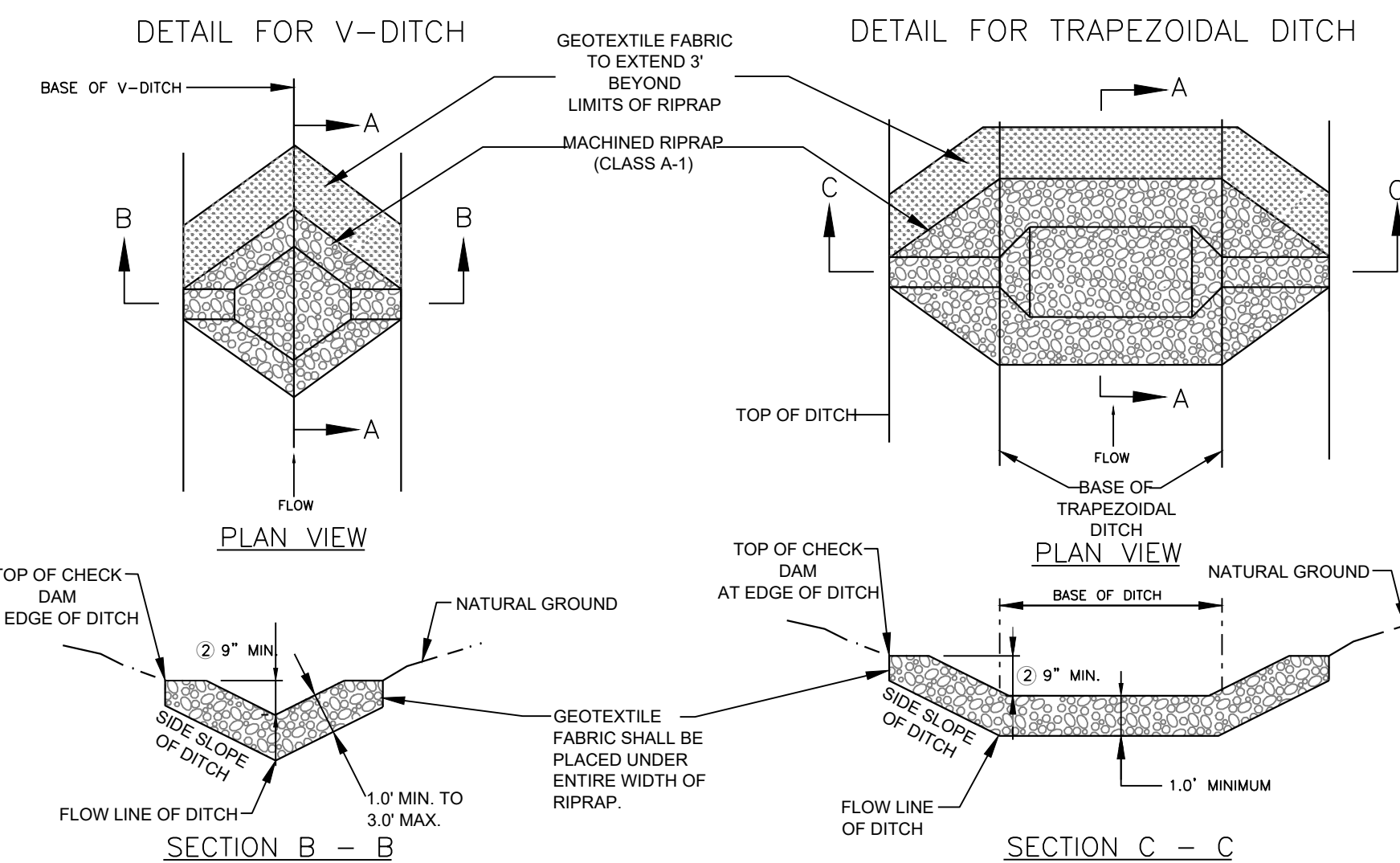
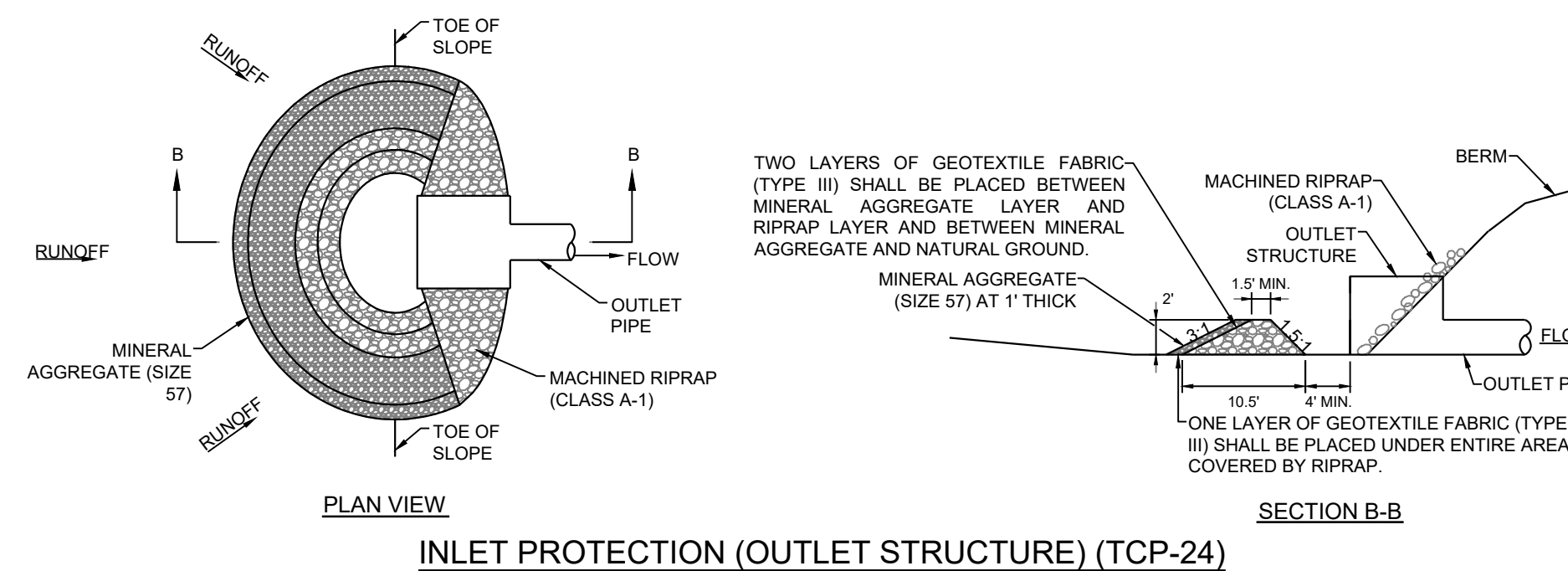
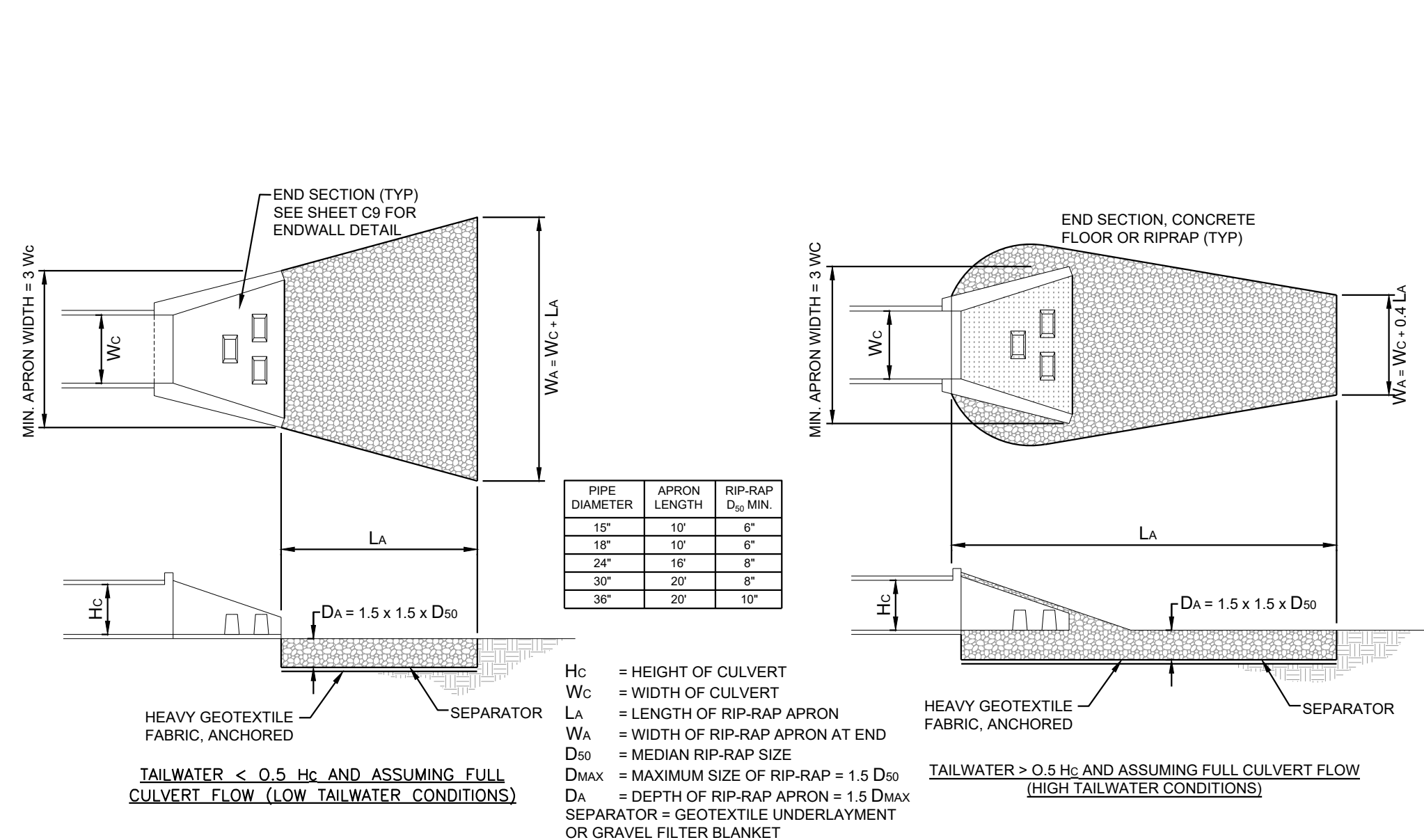
ALL TEMPORARY EPSC MEASURES SHOULD BE REMOVED.

PURPOSE FOR ISSUE: AGENCY REVIEW

100 0 100 200

SCALE: 1"=100'

NO.	DATE	BY	DESCRIPTION

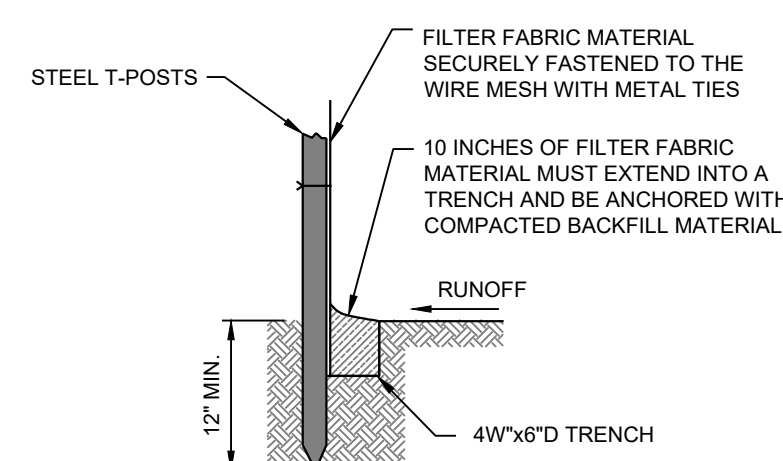
 DESIGNER **MSS**
 REVIEWER **JLR**
PROJECT **23-040**DATE **5-22-2026**SHEET **C4.3**

SILT FENCE NOTES

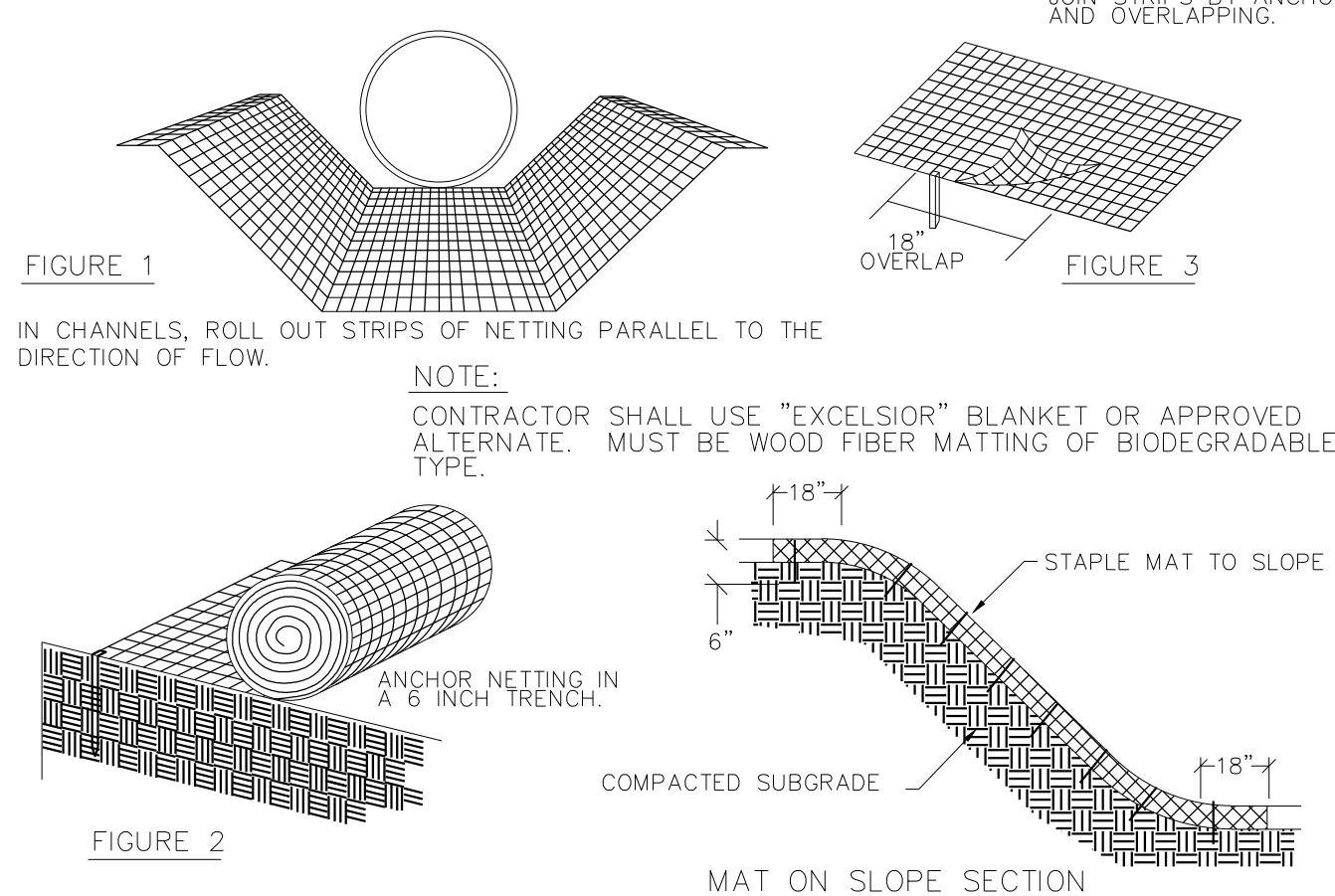
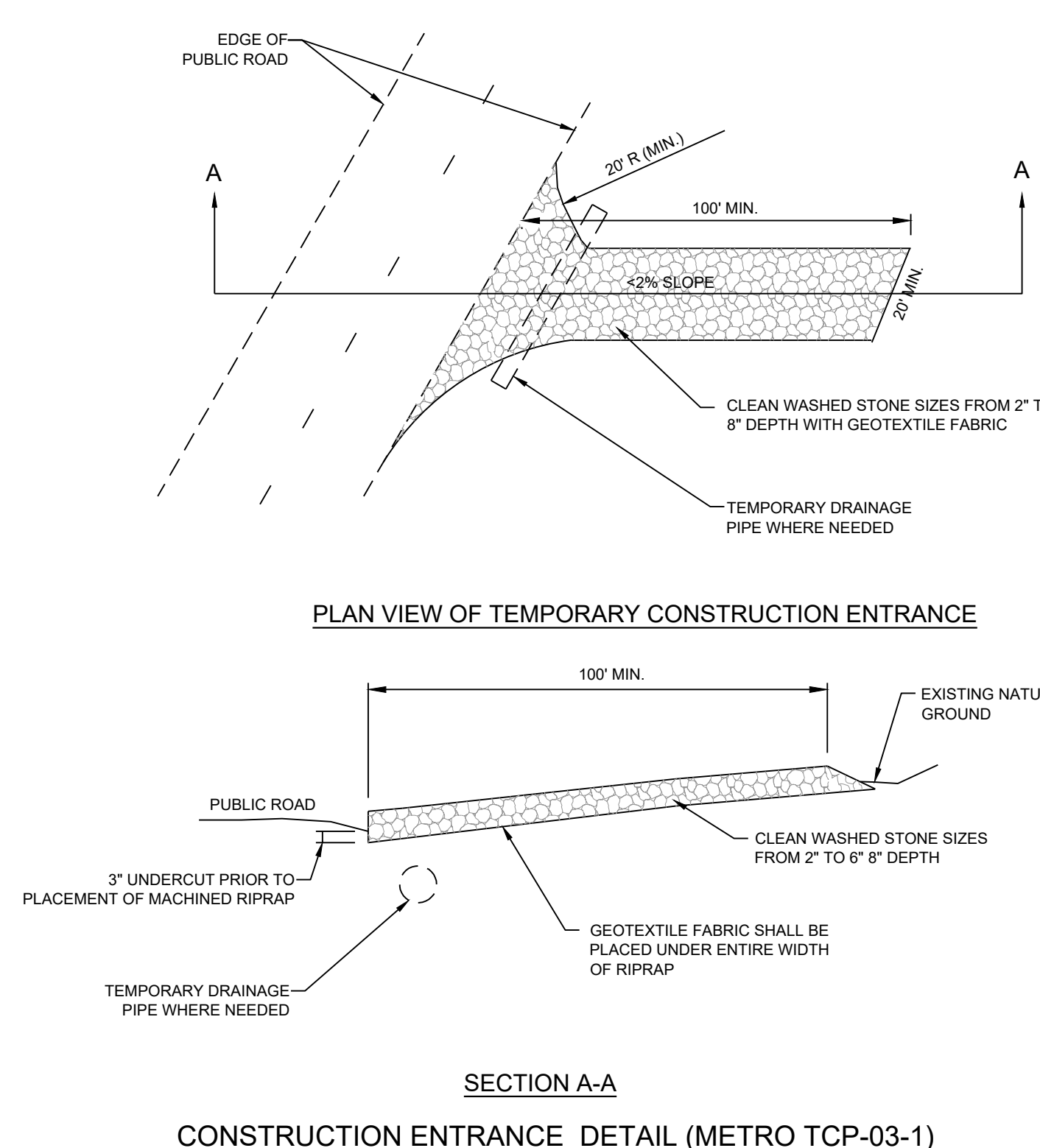
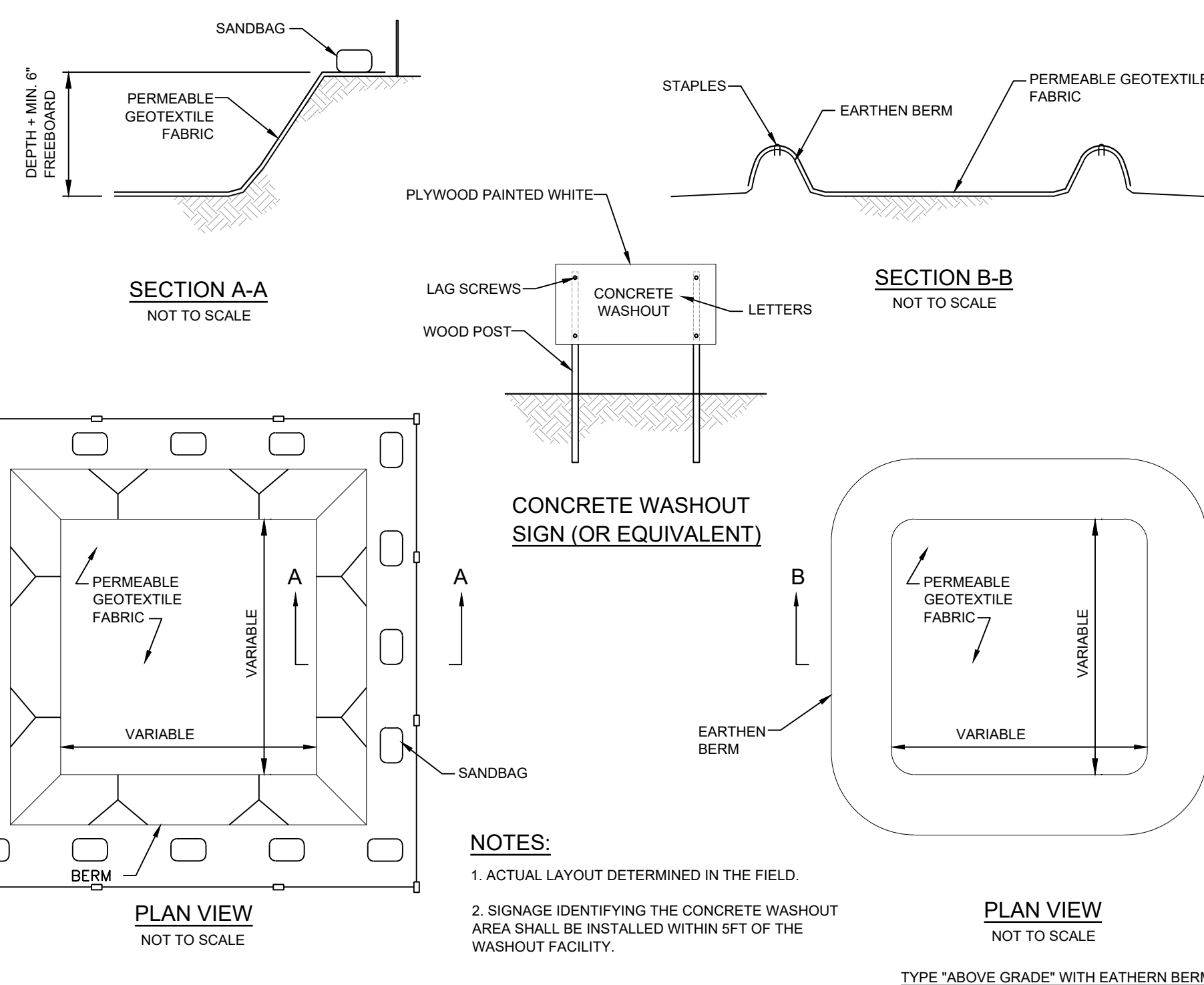
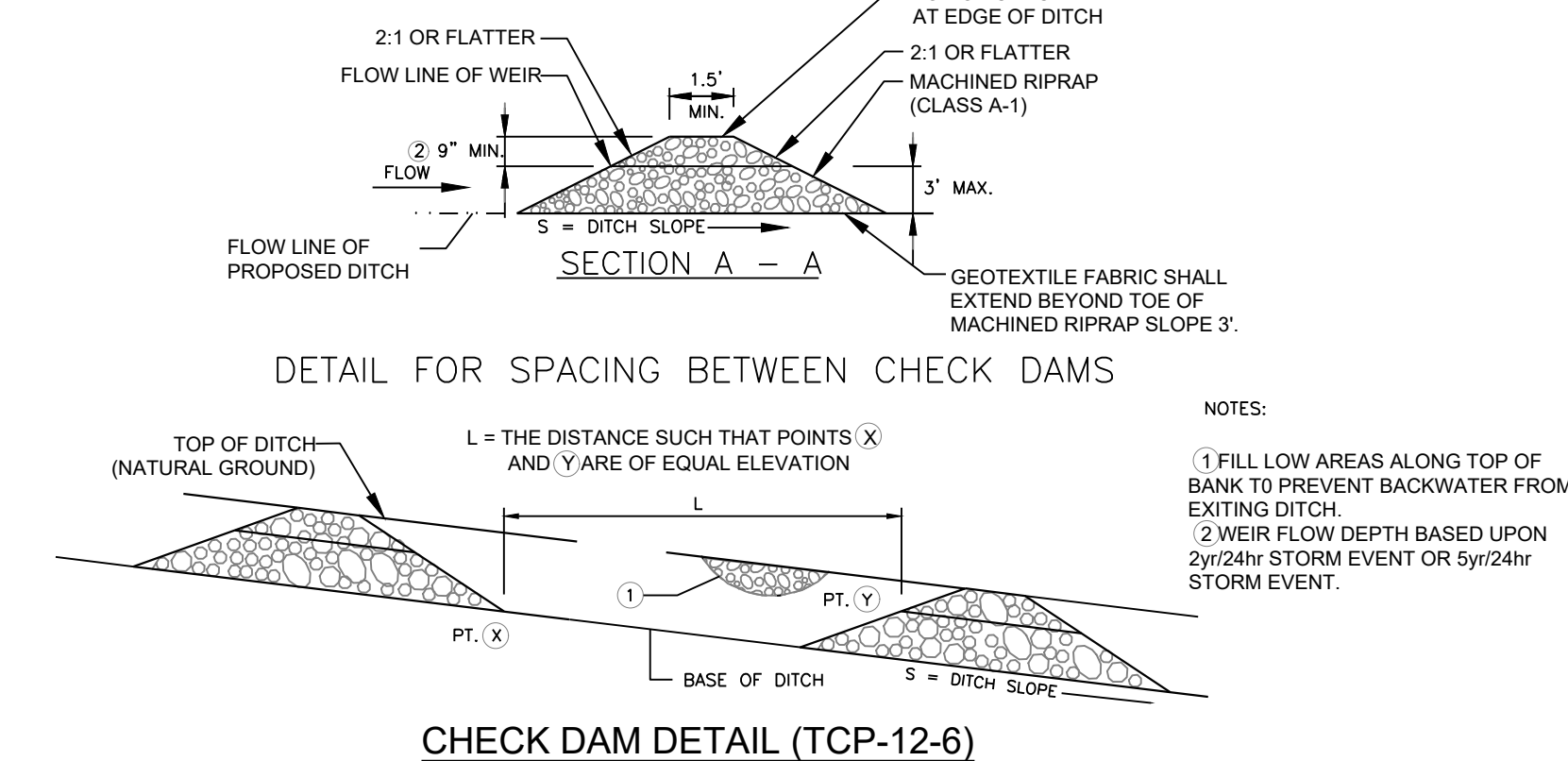
1. FILTER FABRIC SHALL BE PURCHASED IN A CONTINUOUS ROLL AND CUT TO THE LENGTH OF THE BARRIER TO AVOID THE USE OF JOINTS.
2. USE METAL TIES TO SECURE SILT FENCE TO METAL FENCE.
3. SILT FENCE SHALL COMPLY WITH THE TN. DEPT. OF ENVIRONMENT AND CONSERVATION EROSION AND SEDIMENT CONTROL HANDBOOK, LATEST EDITION.
4. INSTALL PERIMETER SILTATION CONTROL PRIOR TO APPLICATION OF GRADING PERMIT.

SILT FENCE MAINTENANCE PLAN

1. CARE SHALL BE TAKEN TO MINIMIZE THE MOVEMENT OF SEDIMENT INTO ALL STORM DRAIN APPURTENANCES AND PUBLIC ROADS UNTIL THE IMPERVIOUS MATERIAL (ROAD/PARKING AREA SURFACE) IS APPLIED.
2. ALL EROSION AND SEDIMENT CONTROL MEASURES WILL BE CHECKED FOR STABILITY AND OPERATIONAL INTEGRITY FOLLOWING EVERY RUNOFF PRODUCING RAINFALL BUT IN NO CASE LESS THAN EVERY WEEK. ANY NECESSARY REPAIRS WILL BE MADE IMMEDIATELY TO MAINTAIN THE MEASURES PERFORMANCE AS DESIGNATED.
3. SEDIMENT WILL BE REMOVED FROM THE UPSTREAM FACE OF SILT FENCE WHEN IT REACHES A MAXIMUM SIX-INCH (6") DEPTH AT THE FENCE. THE FENCE WILL BE REPLACED AS NECESSARY TO MAINTAIN A BARRIER.



SILT FENCE DETAILS (TCP-13)



INSTALLATION INSTRUCTIONS: FOR DITCH & SLOPES

1. SEED (PER SPEC) BEFORE PLACEMENT OF MATTING. ROLL STRIPS OUT PARALLEL TO THE DIRECTION OF WATER FLOW, OR DOWN SLOPE. (SEE FIGURE 1)
2. START LAYING THE NET FROM THE TOP OF THE CHANNEL OR SLOPE AND UNROLL IT DOWN THE GRADE. ALLOW MATTING TO LAY LOOSELY ON THE SOIL BUT WITHOUT WRINKLES- DO NOT STRETCH.
3. TO SECURE THE NET, BURY THE UP-SLOPE END IN A TRENCH NO LESS THAN 6" DEEP, COVER WITH SOIL AND TAMP FIRMLY (SEE FIGURE 2). STAPLE THE MAT EVERY 12" ACROSS THE TOP END AND EVERY 3' AROUND THE EDGES AND BOTTOM. WHERE 2 STRIPS OF NET ARE LAID SIDE BY SIDE, THE ADJACENT EDGES SHOULD BE OVERLAPPED 3 INCHES AND STAPLED TOGETHER. EACH STRIP OF MATTING SHOULD ALSO BE STAPLED DOWN THE CENTER, EVERY 3'. DO NOT STRETCH THE MAT WHEN APPLYING STAPLES.
4. TO JOIN TWO STRIPS, CUT A TRENCH TO ANCHOR THE END OF THE NEW MAT. OVERLAP THE END OF THE PREVIOUS ROLL 18" (SEE FIGURE 2), AND STAPLE EVERY 12" JUST BELOW THE ANCHOR SLOT.
5. INSPECT PERIODICALLY AND AFTER EACH RAINSTORM UNTIL VEGETATION IS COMPLETELY ESTABLISHED.
6. ERODED OR EXPOSED AREAS SHOULD BE SEEDED AND STABILIZED WITH MULCH AS QUICKLY AS POSSIBLE.

PURPOSE FOR ISSUE: **AGENCY REVIEW**SCALE: **NONE**

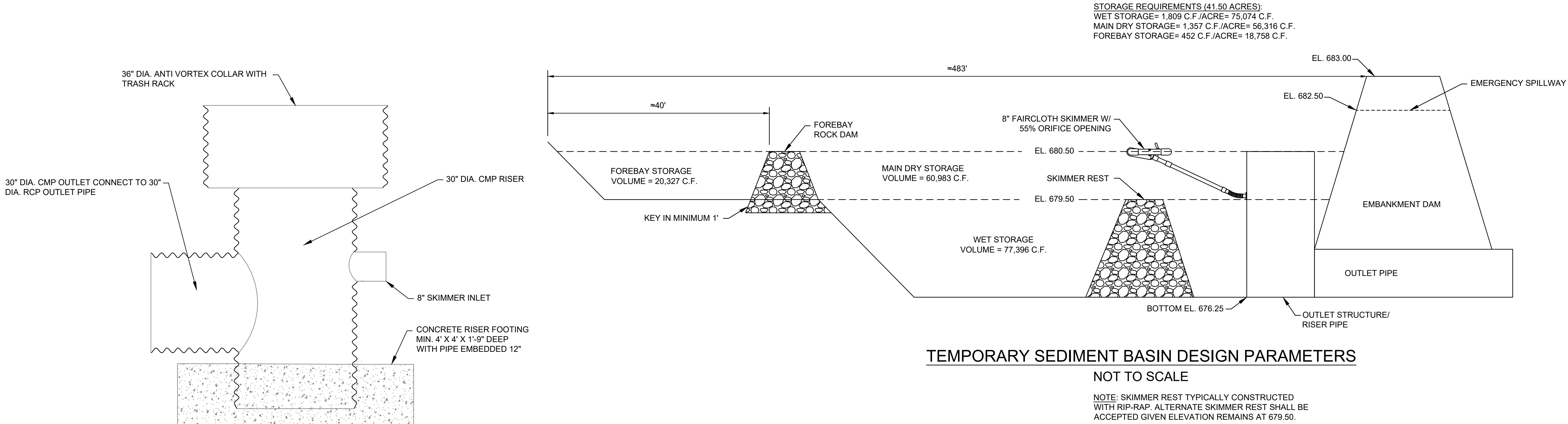
REVISIONS		DESCRIPTION	
NO.	DATE	BY	

DESIGNER MSS
REVIEWER JLR

PROJECT 23-040

DATE 5-22-2026

SHEET C4.4



TEMPORARY OUTLET CONTROL STRUCTURE
NOT TO SCALE

NOTE: PERMANENT OUTLET STRUCTURE MAY BE USED IN LIEU OF A TEMPORARY STRUCTURE PROVIDED ANY ORIFICES BELOW THE WET POOL ELEVATION ARE COVERED.

TEMPORARY SEDIMENT BASIN DESIGN PARAMETERS
NOT TO SCALE

NOTE: SKIMMER REST TYPICALLY CONSTRUCTED WITH RIP-RAP. ALTERNATE SKIMMER REST SHALL BE ACCEPTED GIVEN ELEVATION REMAINS AT 679.50.

SEDIMENT BASIN CONVERSION NOTES:

- TEMPORARY SEDIMENT BASIN TO BE CONVERTED TO DETENTION POND AFTER GRADING AND FINAL SITE STABILIZATION IS COMPLETED.
- TEMPORARY OUTLET CONTROL STRUCTURE SHALL BE REMOVED AND REPLACED WITH HEADWALL.
- ANY REMAINING SEDIMENT SHALL BE REMOVED AND DISPOSED OF PROPERLY PRIOR TO FINAL SITE STABILIZATION.
- DETENTION POND TO BE STABILIZED WITH EROSION CONTROL BLANKET.
- FOREBAY TO REMAIN IN PLACE UNTIL FINAL STABILIZATION OCCURS.

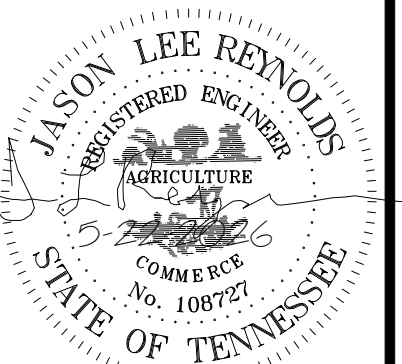
SEDIMENT BASIN CONSTRUCTION NOTES:

- CLEAR, GRUB, AND STRIP THE AREA UNDER THE EMBANKMENT OF ALL VEGETATION AND ROOT MAT. REMOVE ALL SURFACE SOIL CONTAINING HIGH AMOUNTS OF ORGANIC MATTER, AND STOCKPILE IT OR DISPOSE OF IT PROPERLY. HAUL ALL OBJECTIONABLE MATERIAL TO THE DESIGNATED DISPOSAL AREA.
- ENSURE THAT FILL MATERIAL FOR THE EMBANKMENT IS FREE OF ROOTS, WOODY VEGETATION, ORGANIC MATTER, AND OTHER OBJECTIONABLE MATERIAL. PLACE THE FILL IN LIFTS NOT TO EXCEED 9 INCHES, AND MACHINE COMPACT IT. OVERFILL THE EMBANKMENT 6 INCHES TO ALLOW FOR SETTLEMENT.
- CONSTRUCT THE OUTLET SECTION IN THE EMBANKMENT. PROTECT THE CONNECTION BETWEEN THE RIPRAP AND THE SOIL FROM PIPING BY USING GEOTEXTILE FABRIC BETWEEN THE RIP RAP AND SOIL. PLACE THE FILTER FABRIC BETWEEN THE SOIL AND RIP RAP. EXTEND THE FABRIC ACROSS THE SPILLWAY FOUNDATION AND SIDES TO THE TOP OF THE DAM.
- CLEAR THE SEDIMENT TRAP STORAGE ZONE AREA BELOW THE ELEVATION OF THE CREST OF THE SPILLWAY TO FACILITATE CLEANOUT.
- ALL CUT AND FILL SLOPES MUST BE 2:1 OR FLATTER.
- ENSURE THAT THE STONE SECTION OF THE EMBANKMENT HAS A MINIMUM BOTTOM WIDTH OF 3 FEET AND MAXIMUM SIDE SLOPES OF 1:1 THAT EXTEND TO THE BOTTOM OF THE SPILLWAY SECTION.
- CONSTRUCT THE MINIMUM FINISHED STONE SPILLWAY BOTTOM WIDTH, AS SHOWN ON THE PLANS, WITH 3:1 SIDE SLOPES EXTENDING TO THE TOP OF THE OVER FILLED EMBANKMENT. THE WEIR MUST BE LEVEL AND CONSTRUCTED TO THE WIDTH NOTED ON THE PLANS.
- MATERIAL USED IN THE STONE SECTION SHOULD BE A WELL GRADED MIXTURE OF STONE WITH A D50 SIZE OF 9 INCHES (CLASS A-1). THE STONE CAN BE MACHINE PLACED AND THE SMALLER STONES WORKED INTO THE VOIDS OF THE LARGER STONES.
- RUNOFF SHOULD BE DISCHARGED INTO THE TRAP IN A MANNER TO PREVENT EROSION. USE TEMPORARY SLOPE DRAINS OR DIVERSIONS WITH OUTLET PROTECTION TO DIVERT RUNOFF TO THE UPPER END OF THE STORAGE AREA TO IMPROVE TRAP EFFICIENCY. AVOID DISCHARGING RUNOFF OVER UNPROTECTED STEEP SIDE SLOPES.
- ENSURE THAT THE STONE SPILLWAY OUTLET SECTION EXTENDS DOWNSTREAM PAST THE TOE OF THE EMBANKMENT UNTIL STABLE CONDITIONS ARE REACHED AND OUTLET VELOCITY IS ACCEPTABLE FOR THE RECEIVING SYSTEM. KEEP THE EDGES OF THE STONE SECTION FLUSH WITH THE SURROUNDING GROUND.
- STABILIZE THE EMBANKMENT AND ALL DISTURBED AREAS ABOVE THE SEDIMENT POOL AND DOWNSTREAM FROM THE TRAP IMMEDIATELY AFTER CONSTRUCTION.
- INSTALL AT LEAST TWO POROUS BAFFLES AS SPECIFIED IN SECTION 7.33 OF TDEC 4TH EDITION HANDBOOK.
- THE EMBANKMENT SHOULD BE NO TALLER THAN SIX (6) FEET. SIDE SLOPES MUST BE 2:1 OR FLATTER AND STABILIZED AS SOON AS CONSTRUCTION ON THE TRAP HAS BEEN COMPLETED. KEEP THE CREST OF THE SPILLWAY OUTLET 0.5 FEET BELOW THE SETTLED TOP OF THE EMBANKMENT. EMBANKMENTS MUST HAVE A MINIMUM TOP WIDTH OF 3 FEET. MACHINE COMPACT EMBANKMENTS.
- FOREBAY ROCK DAM TO BE KEYED INTO GROUND A MINIMUM OF 1'.

CSR Engineering, Inc.
2010 Highway 49E
Pleasant View, TN 37146
P: 615.212.2389
F: 615.246.3815
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UTILITY PLAN
OF
BULK STORAGE RAILYARD
FOR
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MT. PLEASANT, TENNESSEE
MAURY COUNTY

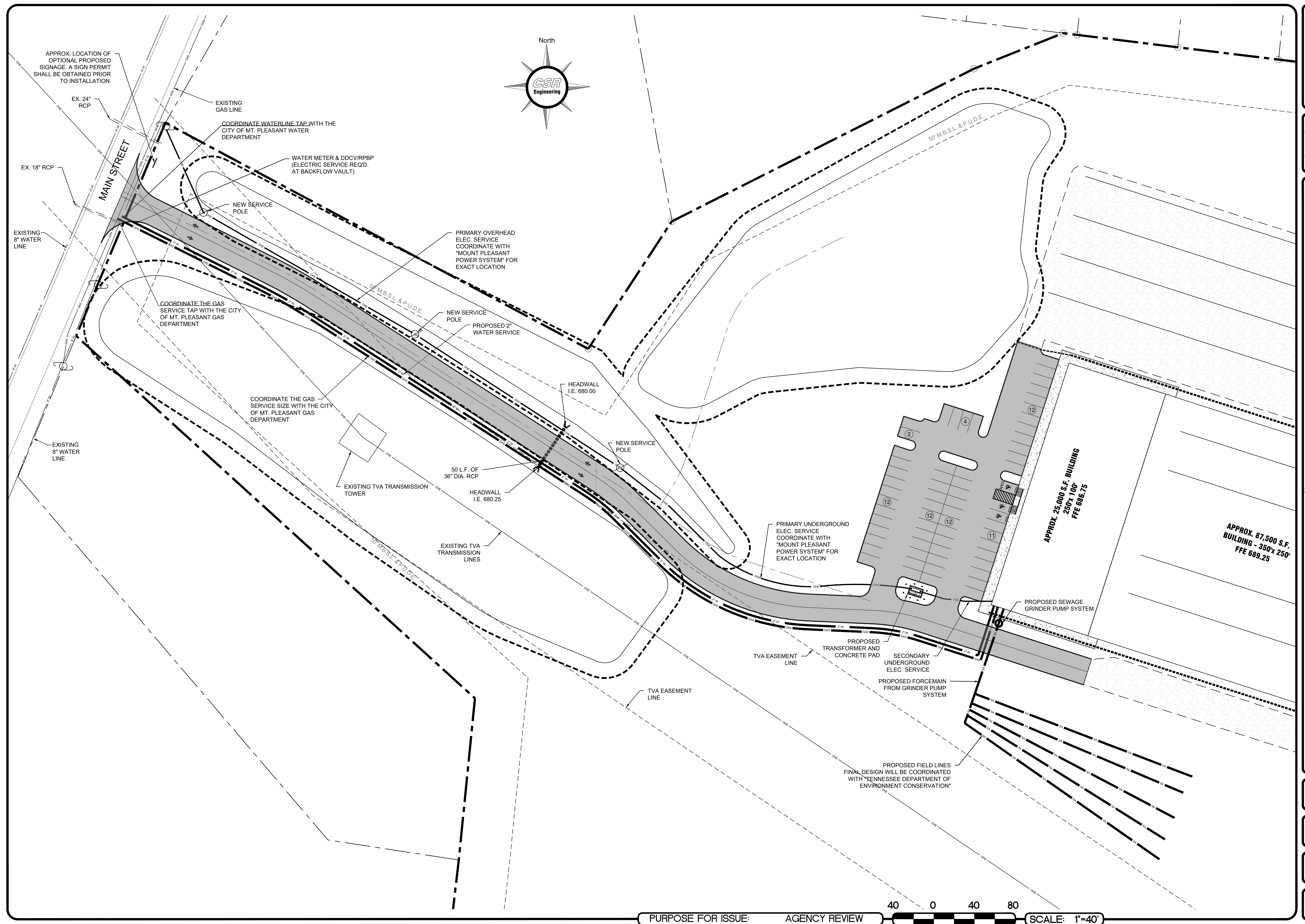
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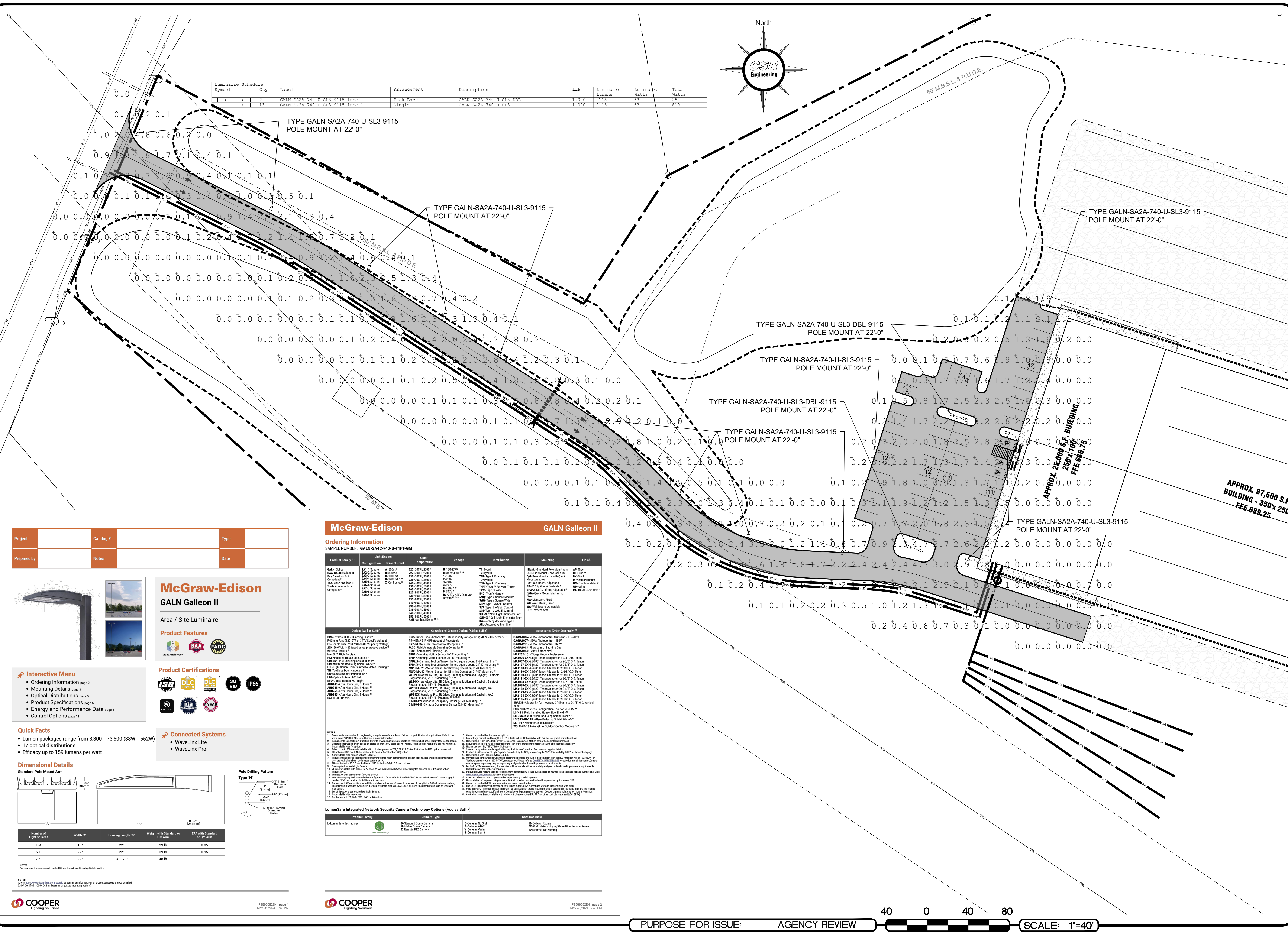
DESIGNER	MSS
REVIEWER	JLR

PROJECT 23-040

DATE 5-22-2026

SHEET **C5.0**





REVISIONS

NO.	DATE	BY	DESCRIPTION

DESIGNER MSS

REVIEWER JLR

PROJECT 23-040

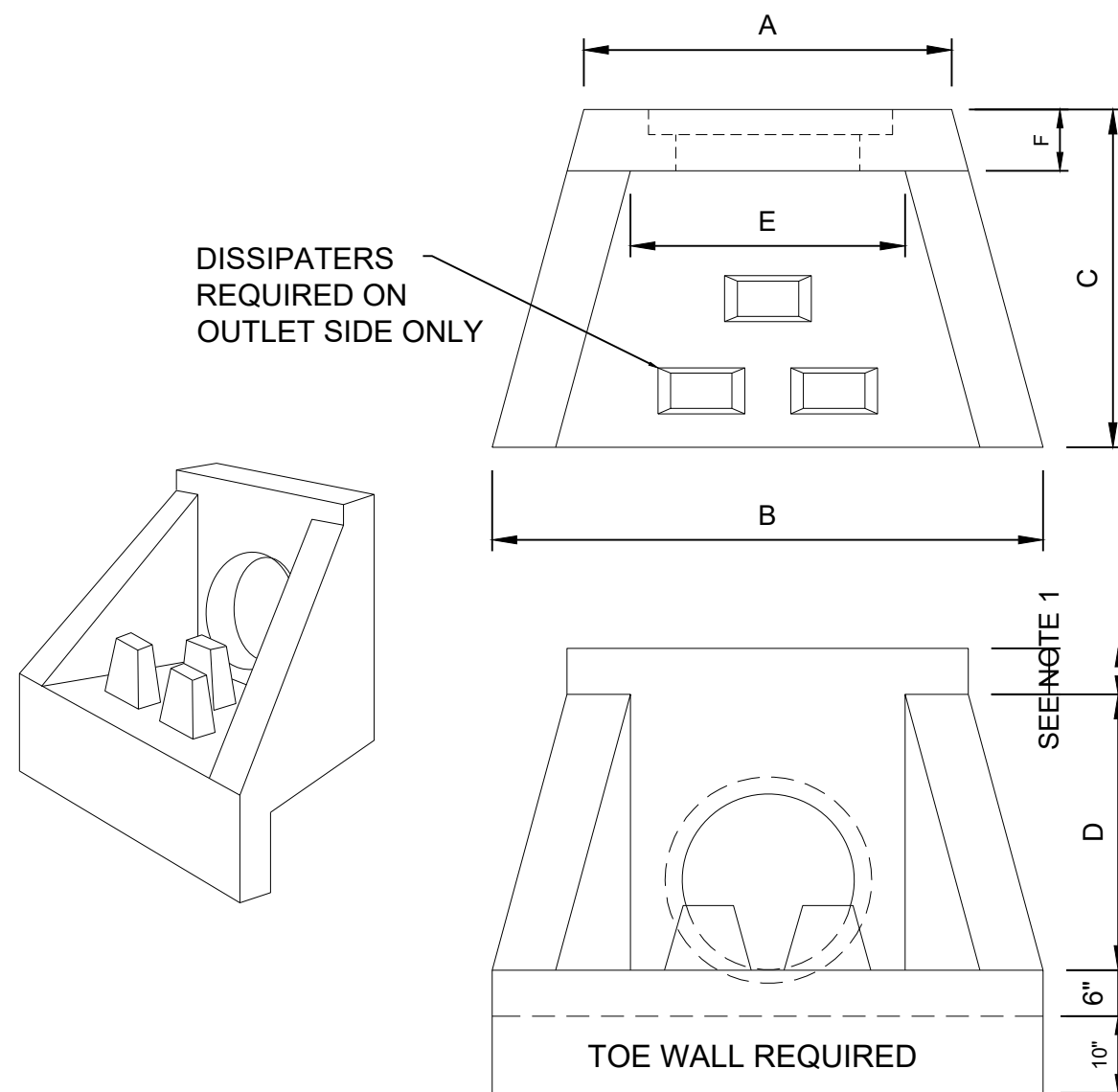
DATE 5-22-2026

SHEET

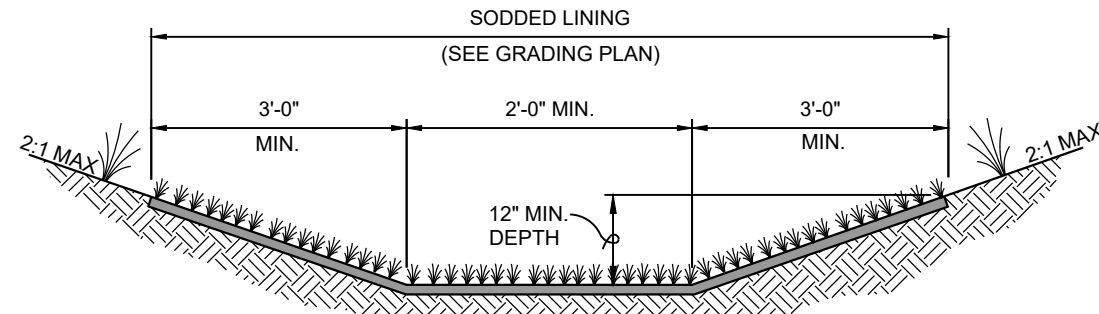
C6.0

PIPE SIZE	AW 12"-15"-18"	BW 24"	CW 30"-36"-42"	DW 48"-54"-60"
A	32"	48"	80"	97.25"
B	48"	72"	102"	120"
C	30"	44"	54"	56"
D	26"	36"	54"	60"
E	24"	36"	64"	83"
F	6"	8"	8"	8"
MAX. OPENING	26"	32"	55"	78"
WT/LB	1,380	3,100	8,100	11,400

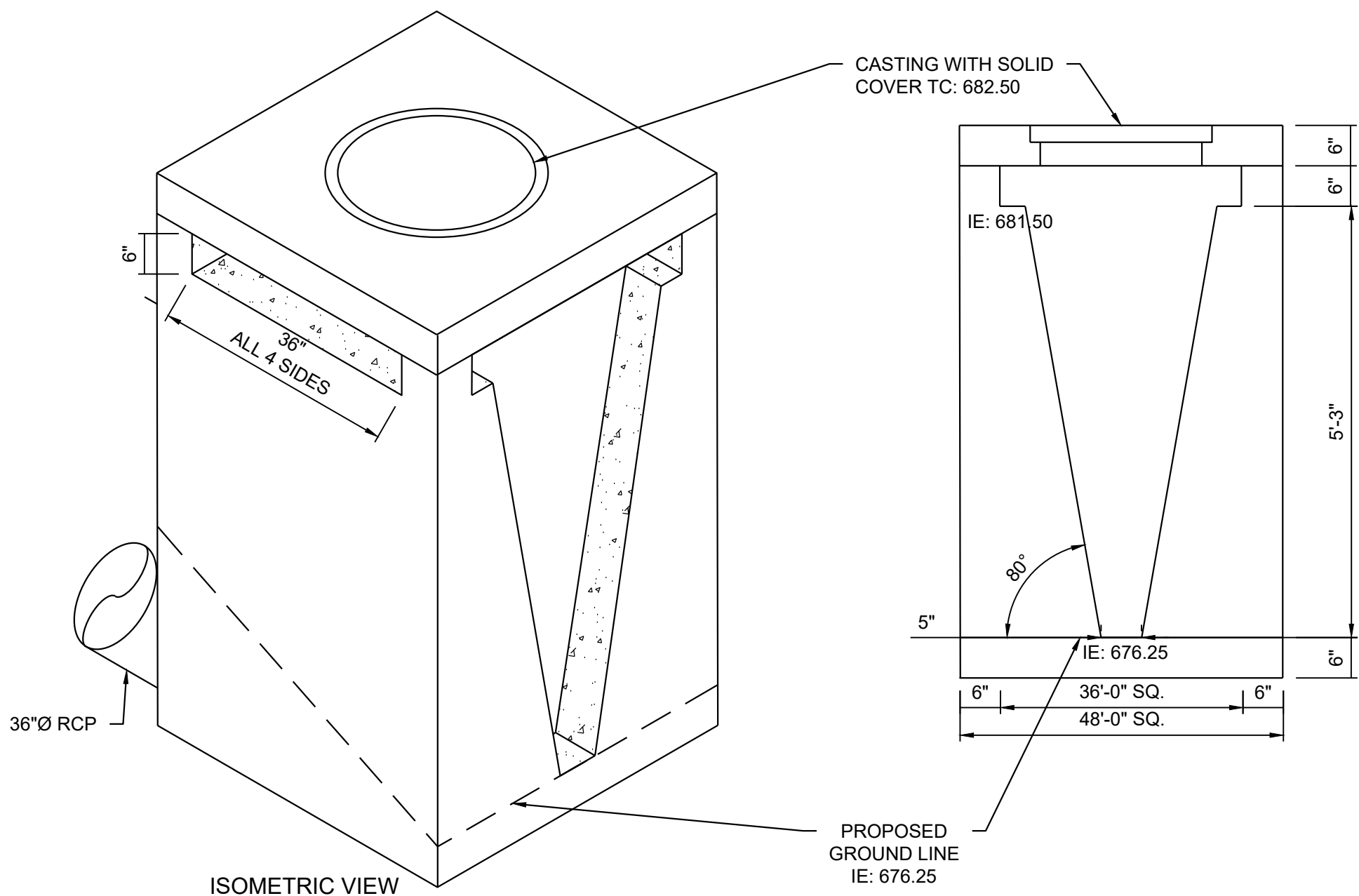
NOTE 1:
0" FOR AW HEADWALL
6" FOR BW & CW
HEADWALL
6" TO 27 " FOR DW
HEADWALL



PRECAST ENDWALL STRUCTURES - "EW"

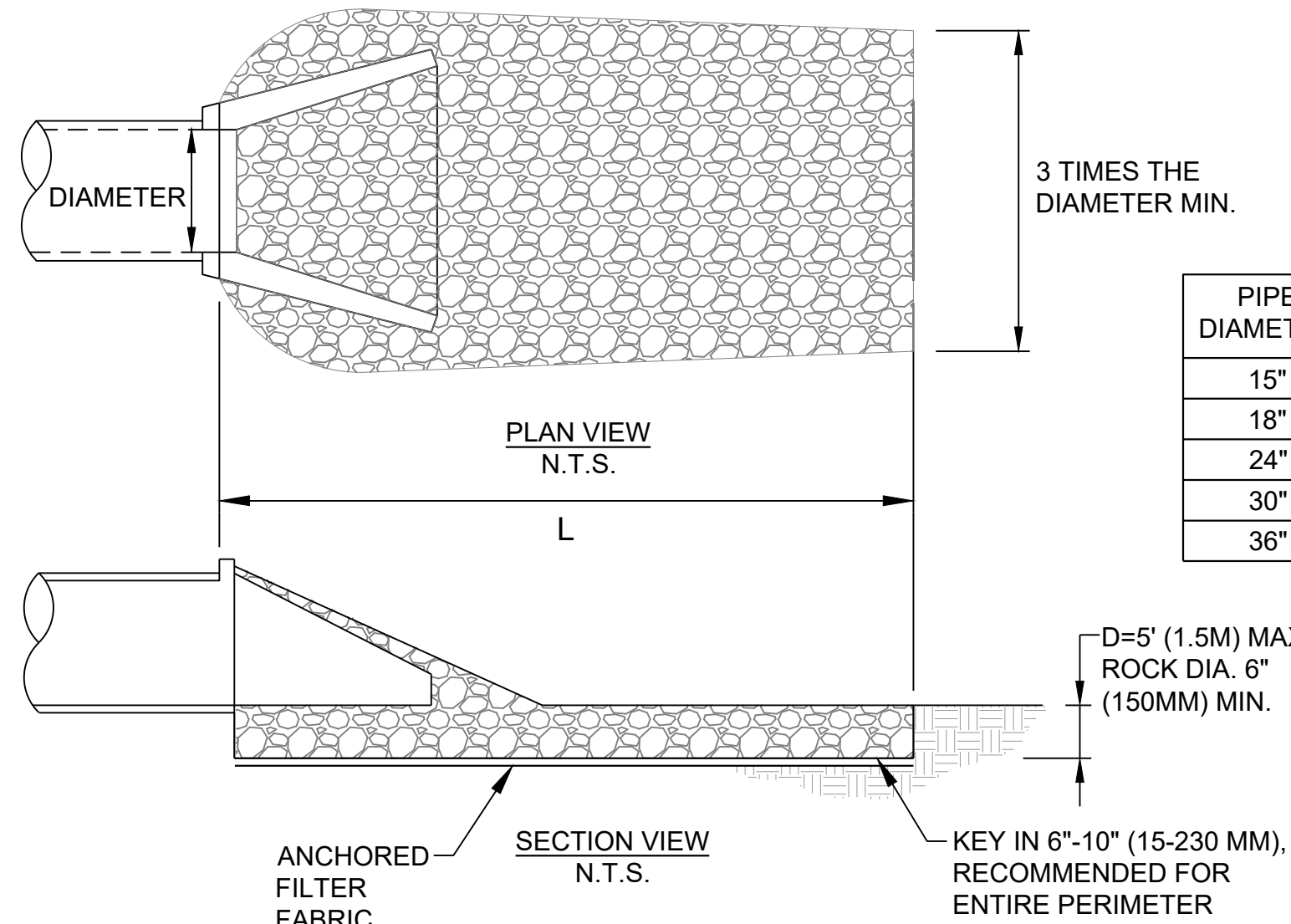


SODDED DITCH DETAIL



OUTLET CONTROL STRUCTURE

NOT TO SCALE



PIPE DIAMETER	APRON LENGTH	RIP-RAP D ₅₀ MIN.
15"	10'	6"
18"	10'	6"
24"	16'	8"
30"	20'	8"
36"	20'	10"

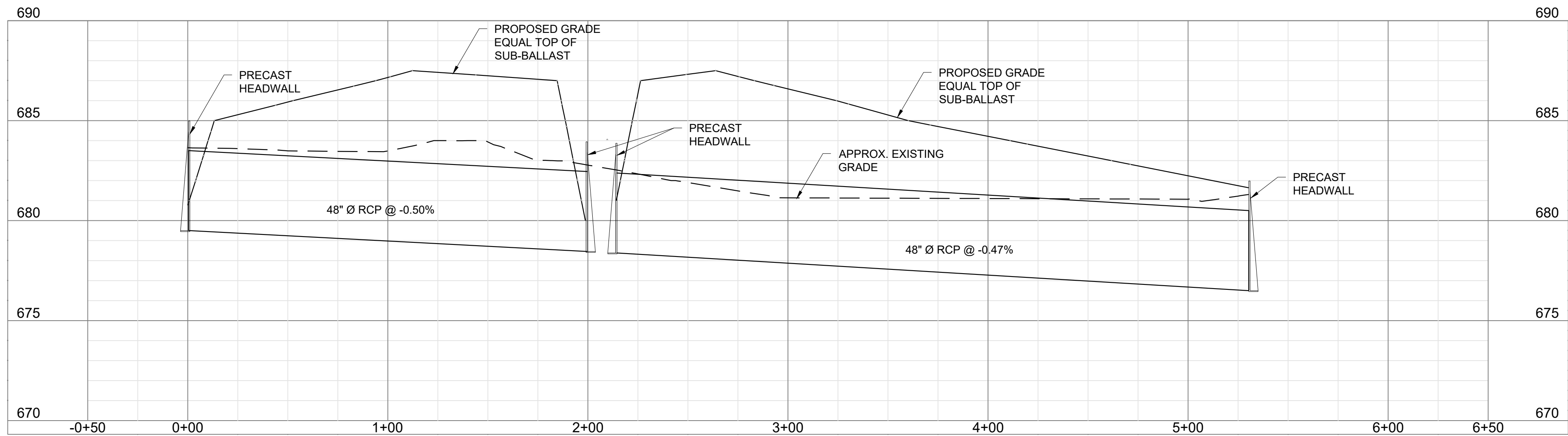
PERMANENT OUTLET PROTECTION (PESC-07)

PURPOSE FOR ISSUE:

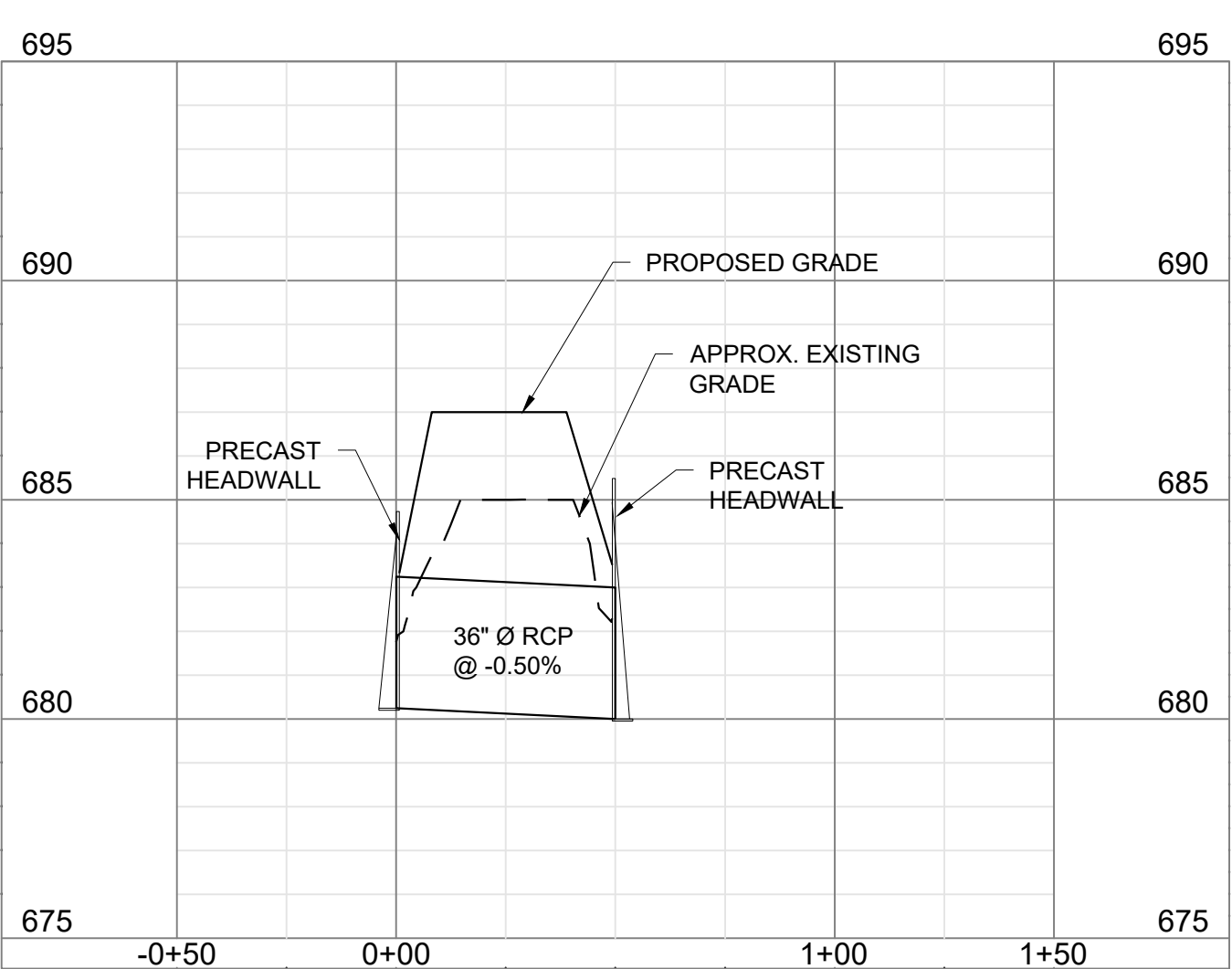
AGENCY REVIEW

SCALE: NONE

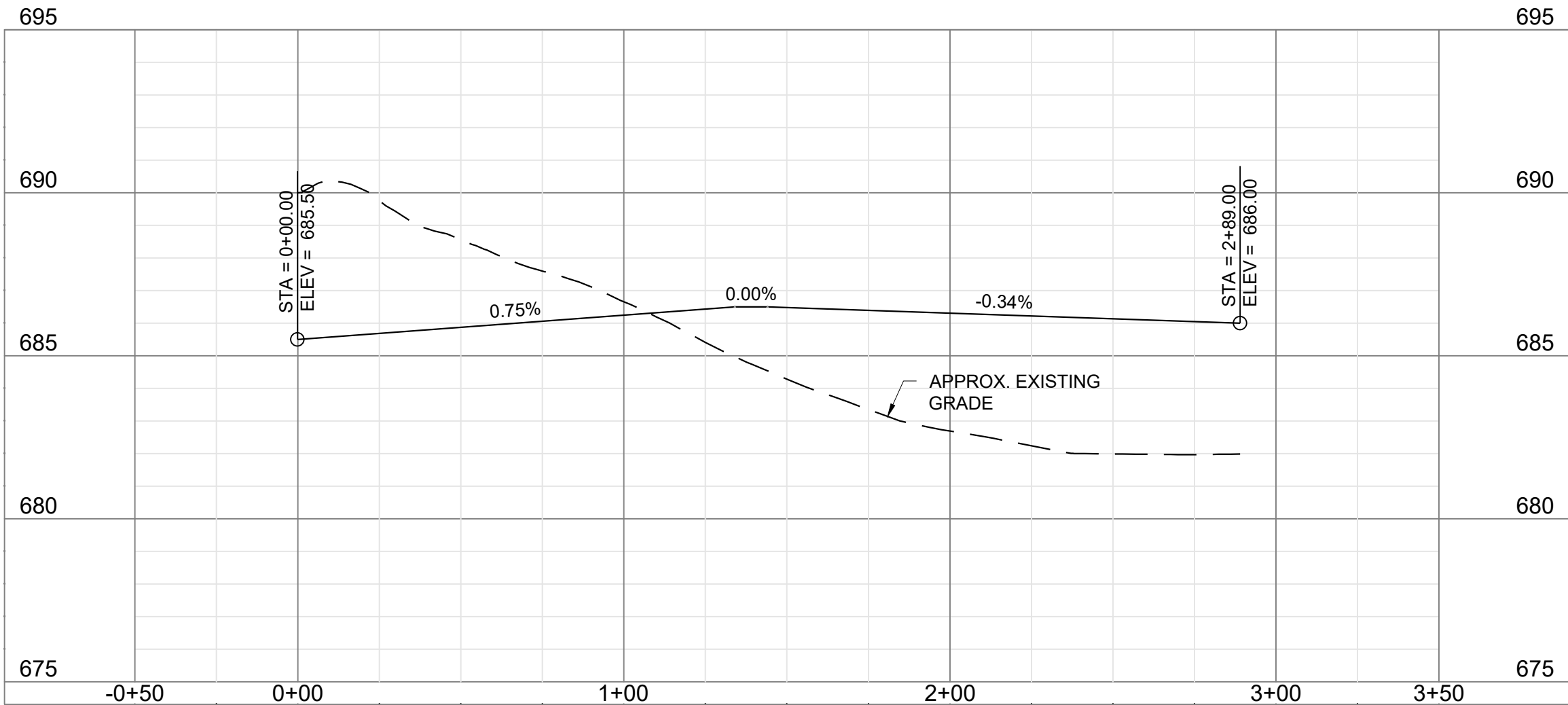




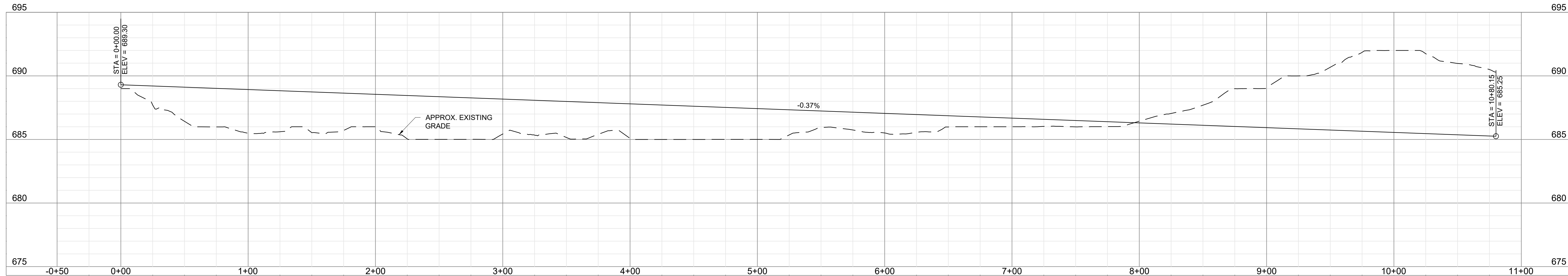
YARD PIPES 2 AND 4 PROFILE



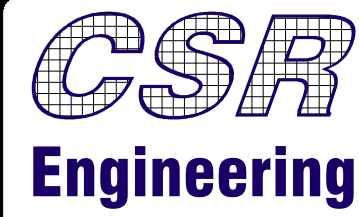
PIPE 1 ACROSS DRIVEWAY 1



DRIVEWAY 2



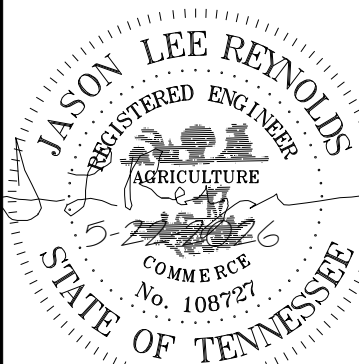
DRIVEWAY 1



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Pleasant View, TN 37146
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F: 615.246.3815
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SITE PROFILES
OF
FOR
BULK STORAGE RAIL YARD
TRUE RAIL ENTERPRISES, LLC
S MAIN STREET
MT. PLEASANT, TENNESSEE
MAURY COUNTY



REVISIONS		DESCRIPTION
NO.	DATE	BY

DESIGNER MSS
REVIEWER JLR

PROJECT 23-040

DATE 5-22-2026

SHEET C8.0

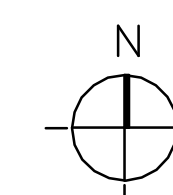
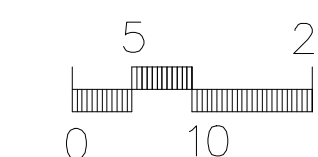
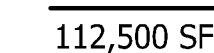


Section 7, Item A.

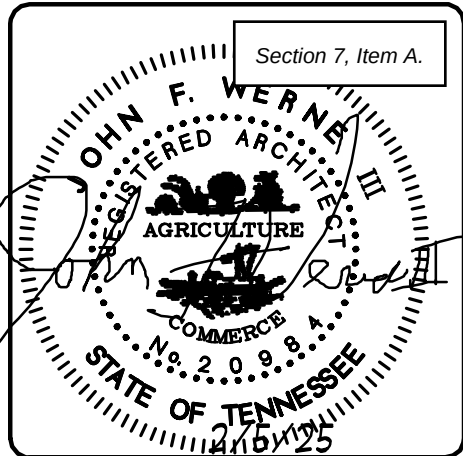
P.O. BOX 183, LAWRENCEBURG, TENNESSEE 38464 615-792-3966 jwerner3@gmail.com

MT Pleasant, TN

SHEET



PRELIMINARY
NOT FOR
CONSTRUCTION



JOHN F. WERNE
ARCHITECT

PO BOX 183 LAWRENCEBURG, TENNESSEE 39464 615-792-3966 jwerne3@gmail.com

True Rail Enterprises, LLC

MT Pleasant, TN

DESIGNER
REVIEWER

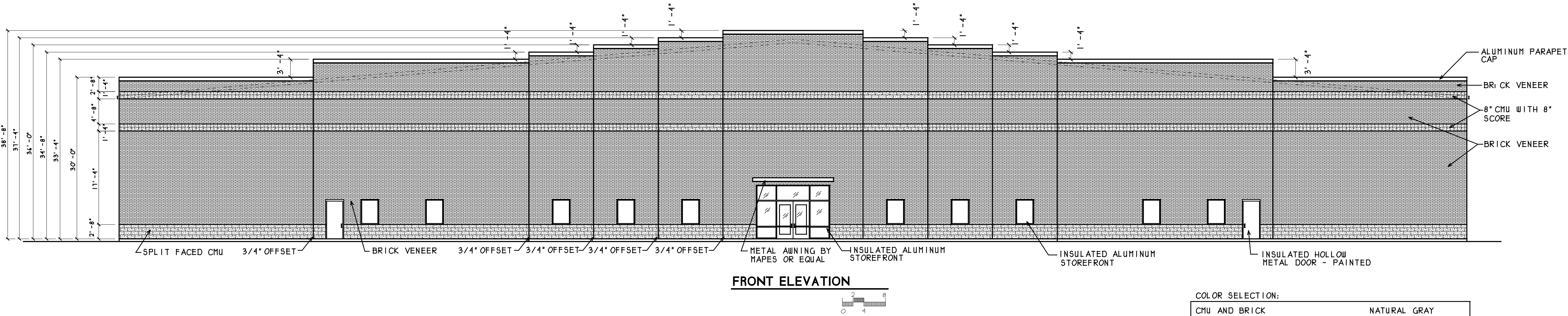
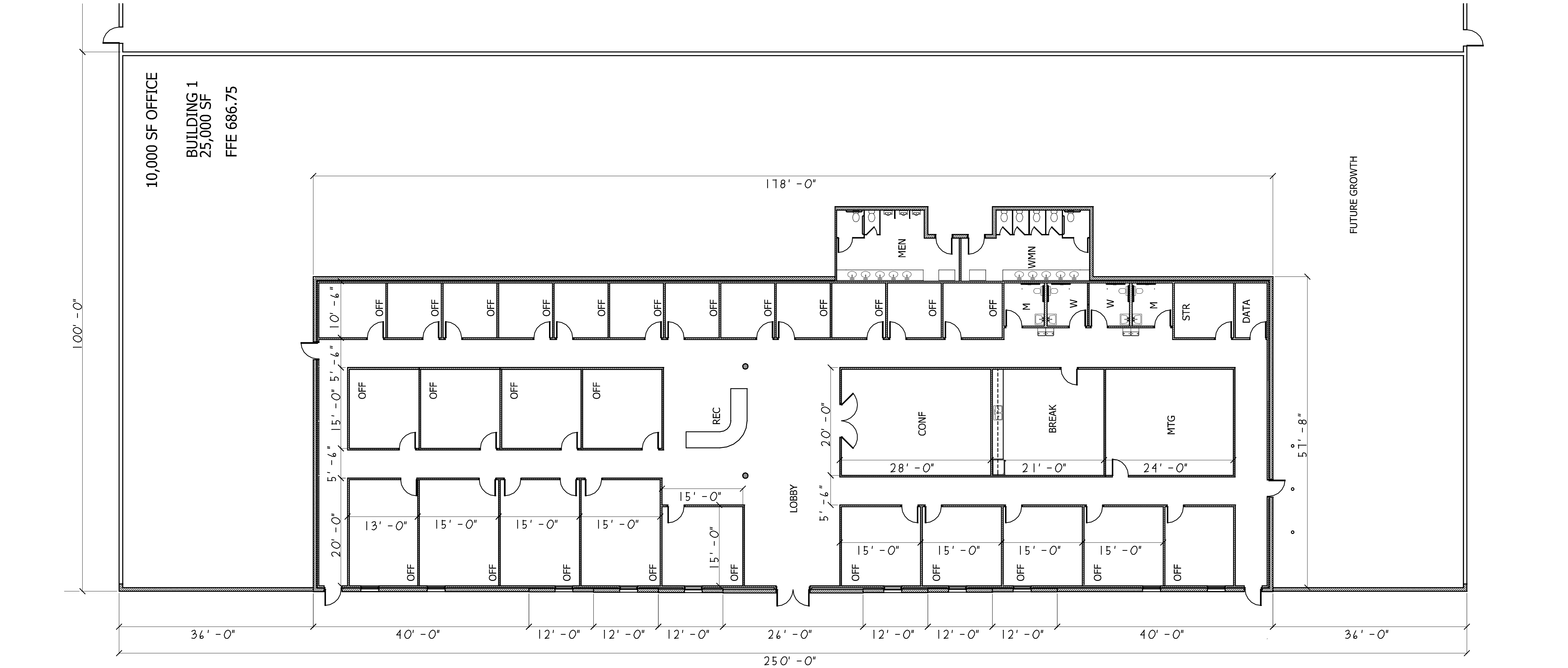
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DATE 12/11/25

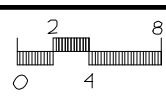
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A-2

30



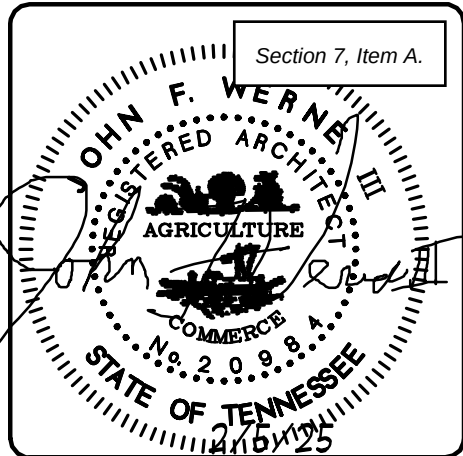
FRONT ELEVATION



COLOR SELECTION:

CMU AND BRICK	NATURAL GRAY
METAL SIDING	BLACK
TRIM AND FLASHING	BLACK
GUTTERS & DOWNSPOUTS	BLACK
DOORS & WINDOWS	BLACK
FLAT AWNINGS	BLACK

PRELIMINARY
NOT FOR
CONSTRUCTION



JOHN F. WERNE
ARCHITECT

PO BOX 183 LAWRENCEBURG, TENNESSEE 39464 615-792-3966 jwerne3@gmail.com

True Rail Enterprises, LLC

MT Pleasant, TN

DESIGNER

REVIEWER

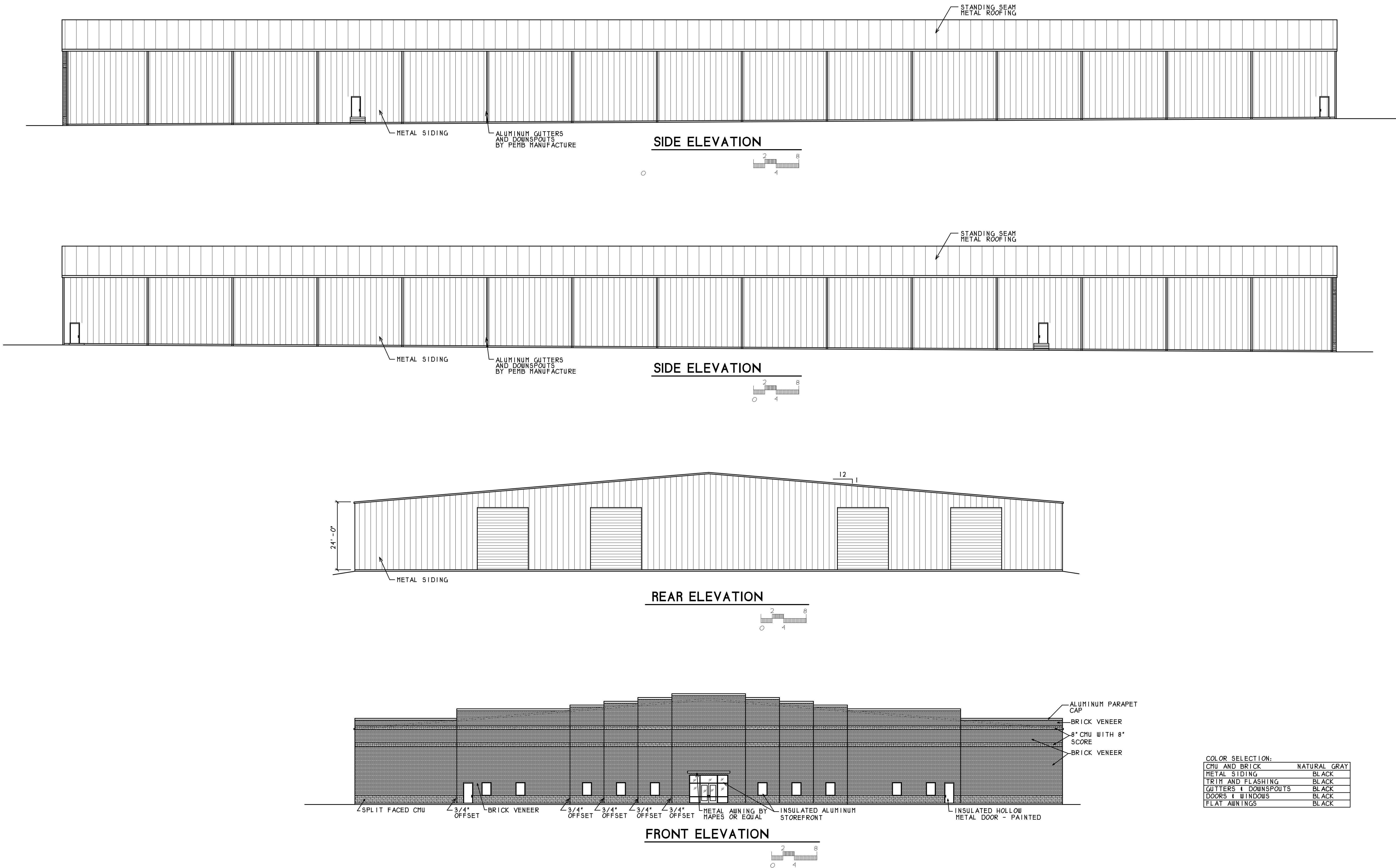
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DATE 12/11/25

SHEET

A-3

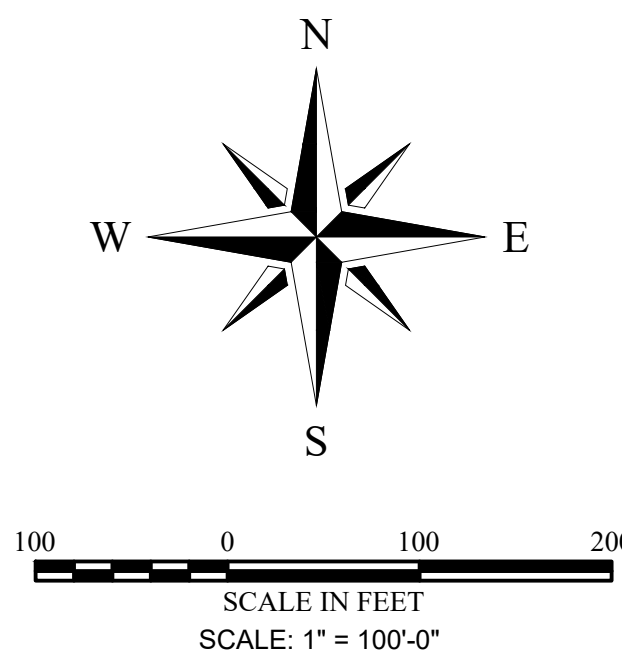
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Kyle Smith, PLA
521 Tobyllynn Drive
Nashville, TN 37211
(408) 835 - 7003 Cell.
kyle@kitadesigns.com

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L-0.0



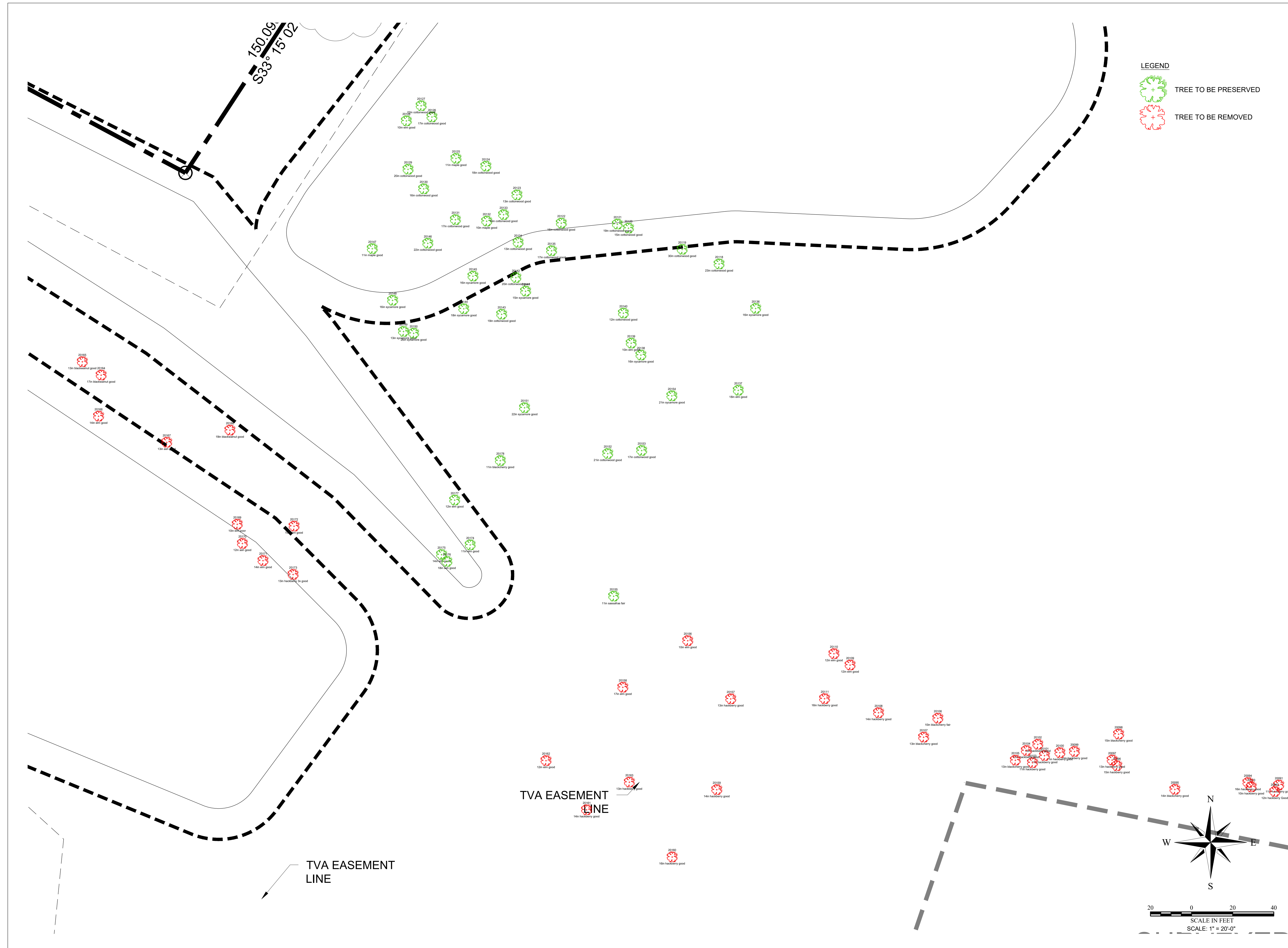
TRUE RAIL INTERPRISES, LLC
1029/1045 S. MAIN ST.
MT. PLEASANT, TN

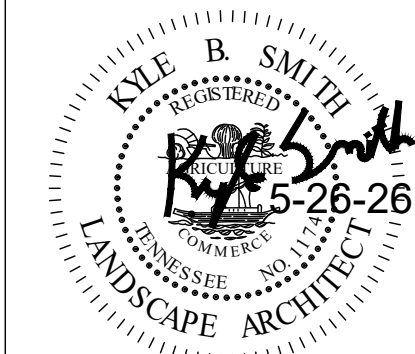
Kyle Smith, PLA
521 Tobyllynn Drive
Nashville, TN 37211
(408) 835 - 7003 Cell.
kyle@kitadesigns.com

[illegible]

TREE PRESERVATION & REMOVAL PLAN

L-O.1





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1029/1045 S. MAIN ST.
MT. PLEASANT, TN

Kyle Smith, PLA
521 Tobylvnn Drive
Nashville, TN 37211
(408) 835 - 7003 Cell.
kyle@kitadesigns.com

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TREE PRESERVATION & REMOVAL PLAN

L-0.2

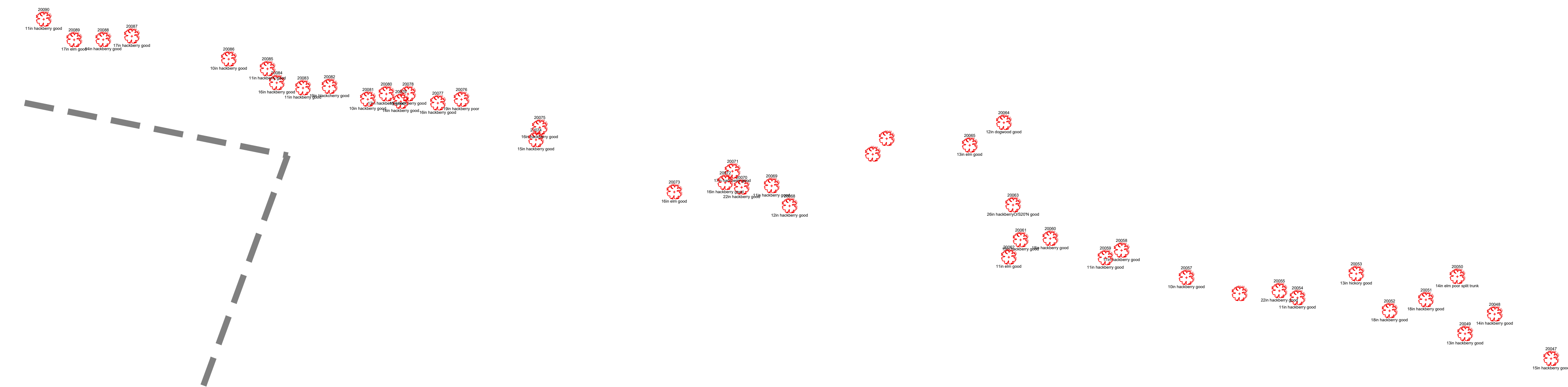
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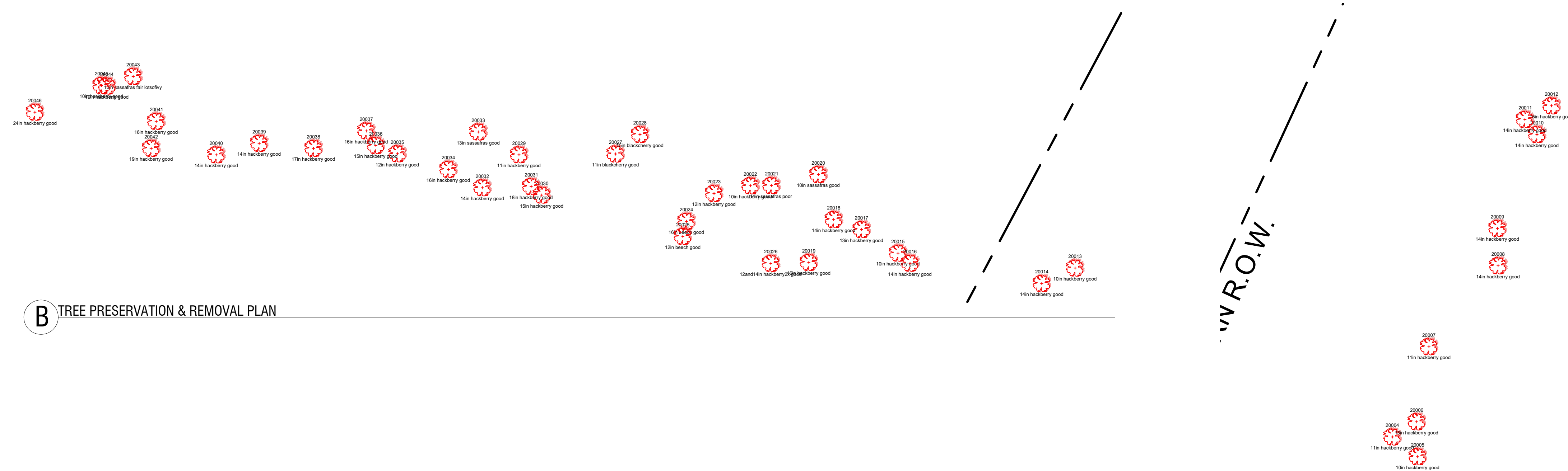
TREE TO BE PRESERVED



TREE TO BE REMOVED

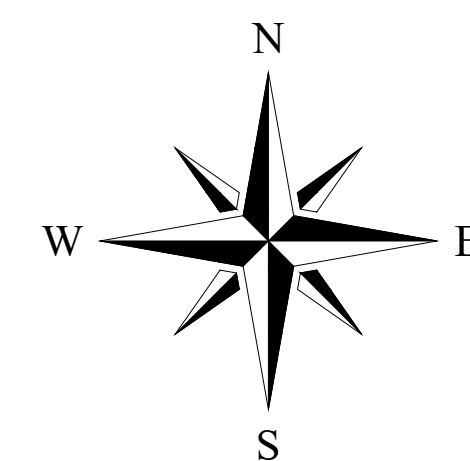


A TREE PRESERVATION & REMOVAL PLAN



B TREE PRESERVATION & REMOVAL PLAN

C TREE PRESERVATION & REMOVAL PLAN



20 0 20 40

SCALE IN FEET

SCALE: 1" = 20'-0"

TRUE RAIL INTERPRISES, LLC
1029/1045 S. MAIN ST.
MT. PLEASANT, TN

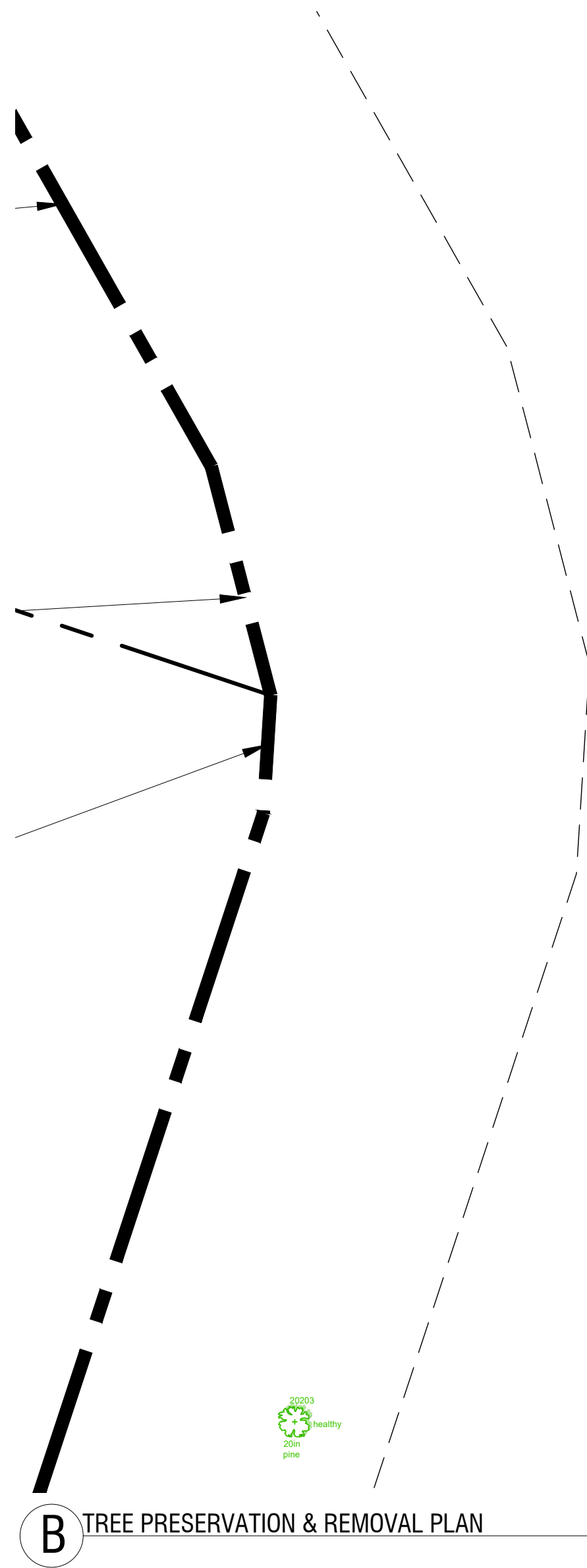


KITTA
designs

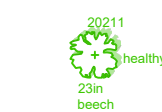
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TREE PRESERVATION & REMOVAL PLAN

L-0.3



B



A

©

S72° 37' 27"E
1040.178'

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521 Tobyllynn Drive

Nashville, TN 37211

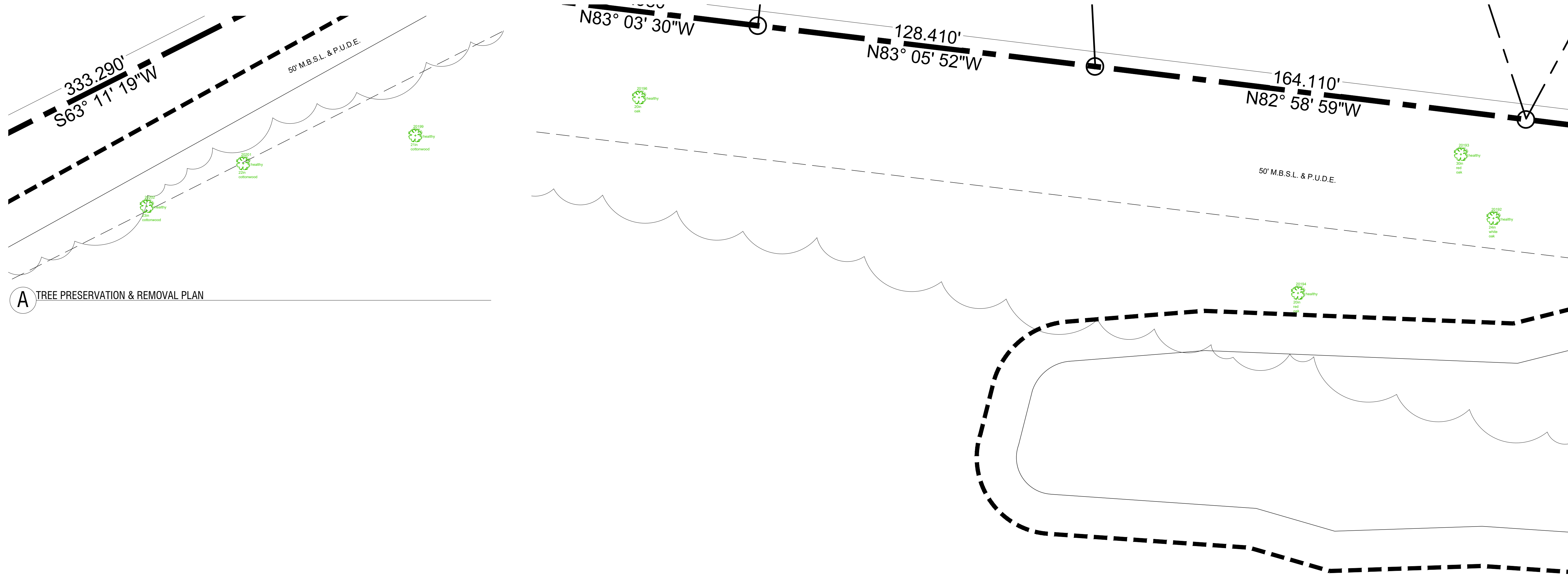
(408) 835 - 7003 Cell.

kyle@kitadesigns.com

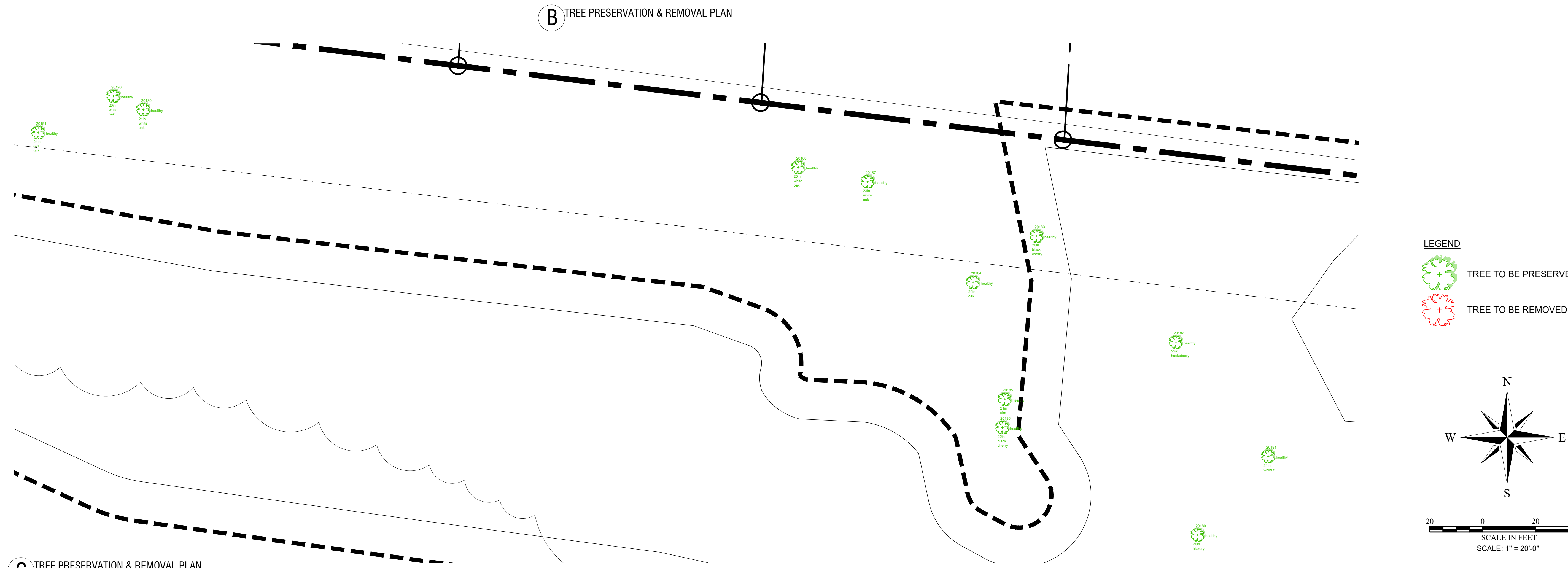
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**TREE PRESERVATION
& REMOVAL PLAN**

L-0.4

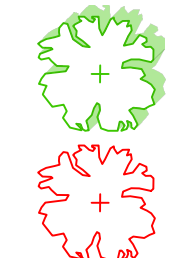


A TREE PRESERVATION & REMOVAL PLAN



C TREE PRESERVATION & REMOVAL PLAN

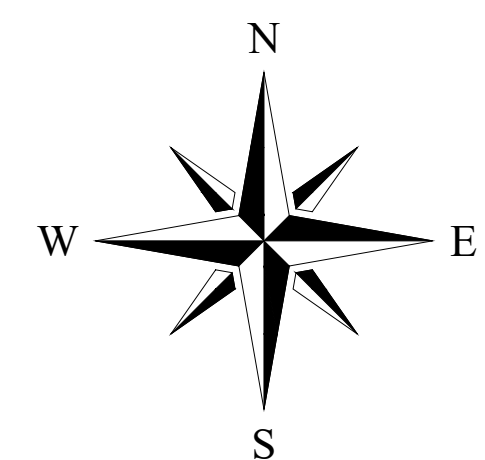
LEGEND



TREE TO BE PRESERVED



TREE TO BE REMOVED



20 0 20 40

SCALE IN FEET

SCALE: 1" = 20'-0"

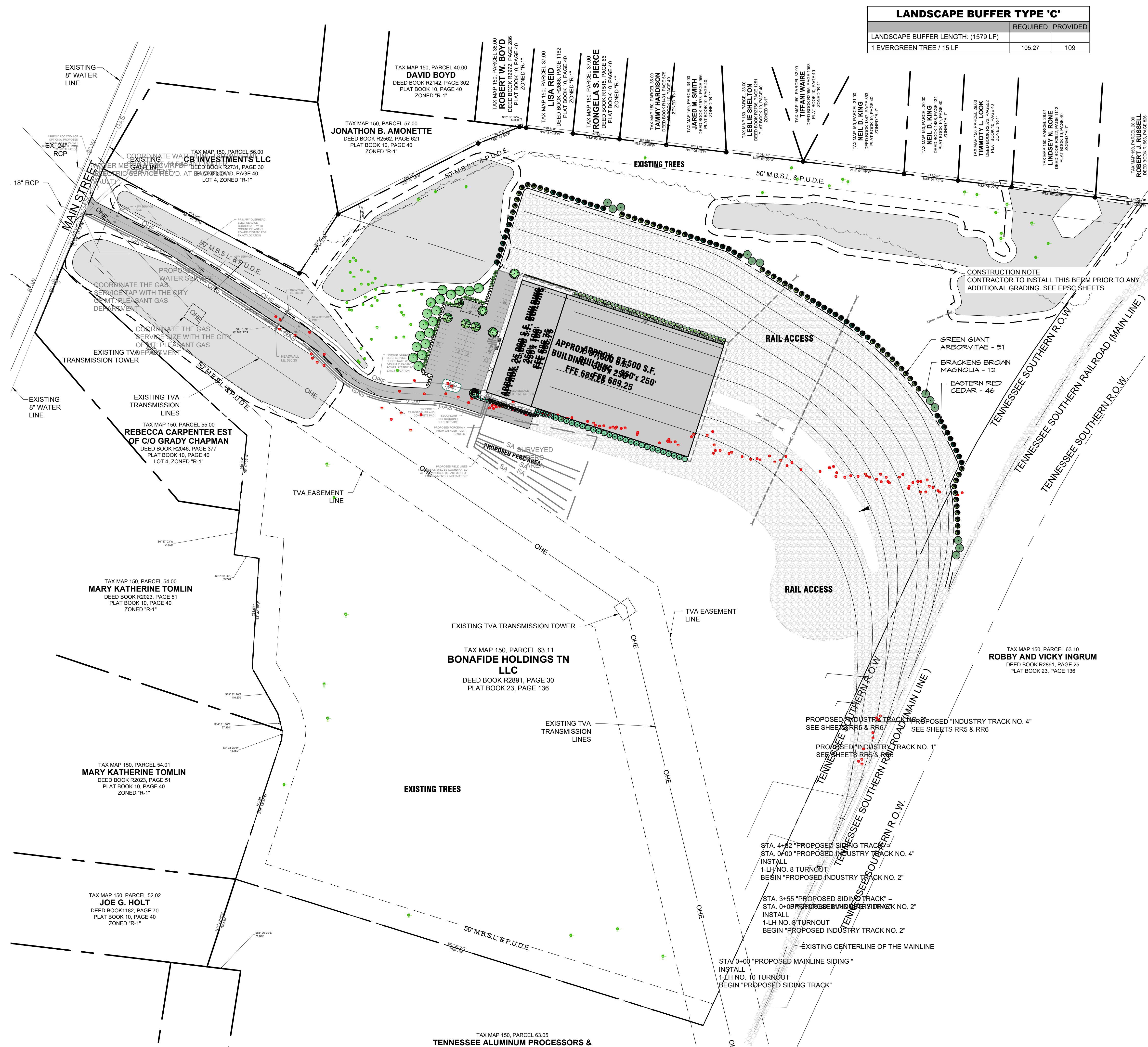
TRUE RAIL INTERPRISES, LLC
1029/1045 S. MAIN ST.
MT. PLEASANT, TN

Kyle Smith, PLA
521 Tobylonn Drive
Nashville, TN 37211
(408) 835 - 7003 Cell.
kyle@kitadesigns.com

[illegible]

OVERALL SITE PLAN

L-1.1



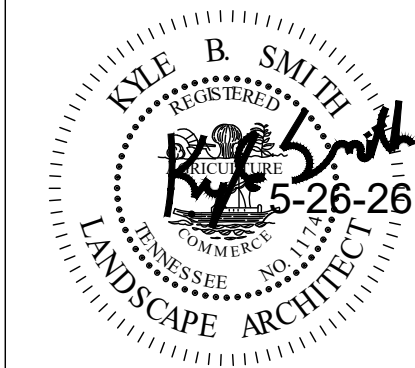
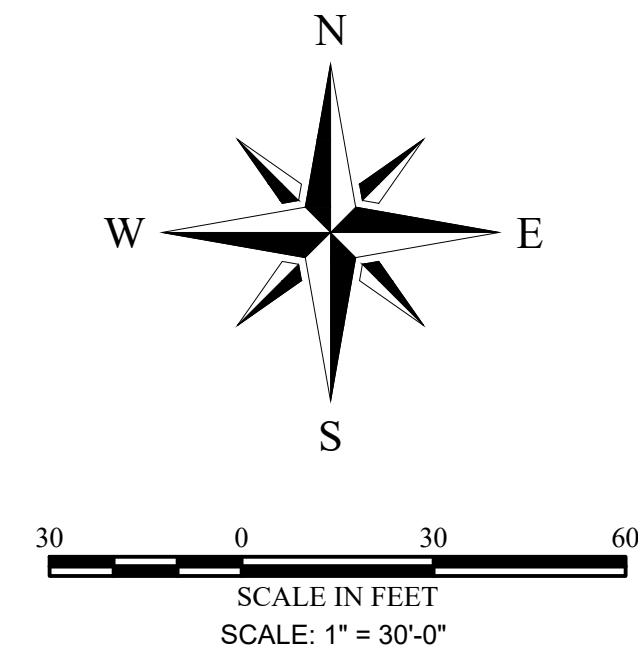
LANDSCAPE GENERAL NOTES:

1. NO PLANT SUBSTITUTIONS, TYPE OR QUANTITY DEVIATION FROM THE APPROVED LANDSCAPE PLANS SHALL BE PERMITTED WITHOUT PRIOR APPROVAL FROM THE LANDSCAPE ARCHITECT, AND THE CITY OF MT. PLEASANT, TN.
2. ALL PLANT MATERIAL AND SPECIFICATIONS TO CONFORM TO THE TENNESSEE NURSERY ASSOCIATION STANDARDS.
3. ALL RIGHT-OF-WAY MATERIAL TO BE IN COMPLIANCE WITH THE DEPT. OF WATER RESOURCES LOW WATER USE PLAN LIST.
4. COORDINATE WORK WITH ALL TRADES.
5. CONTRACTOR SHALL HAVE PROJECT BLUE STAKED PRIOR TO COMMENCEMENT OF WORK.
6. ALL PLANT MATERIALS SHALL BE APPROVED BY THE LANDSCAPE ARCHITECT, OR OWNER'S REPRESENTATIVE PRIOR TO INSTALLATION.
7. TREE HEIGHT AND CALIPER SIZE IS TO COMPLY WITH TENNESSEE NURSERY ASSOCIATION STANDARDS PER TREE SPECIES. NURSERY ASSOCIATION STANDARDS PER TREE SPECIES.
8. CONTRACTOR TO STAKE LOCATIONS OF ALL PLANT MATERIAL FOR APPROVAL BY THE LANDSCAPE ARCHITECT OR THE OWNER'S REPRESENTATIVE PRIOR TO INSTALLATION.
9. ALL LANDSCAPE AREAS SHALL RECEIVE DECORATIVE STONE COVER AT A MINIMUM DEPTH OF 2". SEE LEGENDS FOR LOCATIONS, COLORS AND SIZES. ALL DECORATIVE STONE IS TO BE APPROVED BY THE LANDSCAPE ARCHITECT PRIOR TO INSTALLATION, AND MATCH EXISTING IN CENTER.
10. TOP OF SHREDDED PINE MULCH SHALL BE 1" BELOW ADJACENT TOP OF CURBS OR PAVEMENT.
11. LANDSCAPE AREAS SHALL BE AT +/- .10 OF A FOOT FROM FINISHED GRADE PRIOR TO THE COMMENCEMENT OF WORK. ALL GRADING SHALL BE APPROVED BY THE LANDSCAPE ARCHITECT PRIOR TO THE INSTALLATION OF PLANT MATERIALS, OR THE IRRIGATION SYSTEM.
12. ALL TREES TO BE GUARANTEED FOR ONE YEAR AFTER FINAL ACCEPTANCE.
13. PROVIDE POSITIVE DRAINAGE AWAY FROM ALL WALLS AND STRUCTURES.
14. ALL SLOPES NOT TO EXCEED 4:1 IN LANDSCAPED AREAS.
15. CONTRACTOR IS TO VERIFY ALL QUANTITIES BASED ON THE APPROVED LANDSCAPE PLAN.
16. CONTRACTOR TO VISIT SITE AND VERIFY ALL EXISTING CONDITIONS PRIOR TO THE COMMENCEMENT OF WORK. ALL POTENTIAL CONFLICTS, OR DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE LANDSCAPE ARCHITECT, OR OWNER'S REPRESENTATIVE IMMEDIATELY.
17. CONTRACTOR SHALL PROTECT ALL EXISTING PAVEMENT AND LANDSCAPE TO REMAIN. THROUGHOUT CONSTRUCTION ALL DAMAGE CAUSED BY THE CONTRACTOR SHALL BE REPAIRED AT NO EXPENSE TO THE OWNER.
18. CONSTRUCTION AND INSTALLATION SHALL BE IN ACCORDANCE WITH THIS PLAN. ANY AND ALL DEVIATION WILL SERVICES PRIOR TO CERTIFICATE OF OCCUPANCY BEING ISSUED.
19. ALL LANDSCAPE AREAS & MATERIALS SHALL BE MAINTAINED IN A HEALTHY, NEAT, CLEAN, AND WEED-FREE CONDITION DURING CONSTRUCTION. THIS SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
20. AREAS WITHIN THE SIGHT DISTANCE TRIANGLE SHALL BE KEPT CLEAR OF ANY OBSTRUCTIONS WITH A RICHTH greater than 2'-0". TREE CANOPIES SHALL BE KEPT HIGHER THAN 7'-0".
21. COMMON LANDSCAPE AREAS SHALL BE MAINTAINED BY THE OWNER AND/OR ASSOCIATION.
22. ALL PLANTING SHALL BE MAINTAINED IN HEALTHY GROWING CONDITION. FERTILIZATION, CULTIVATION, AND PRUNING SHALL BE CARRIED OUT ON A REGULAR BASIS.
23. DEAD OR DYING PLANTS SHALL BE REMOVED AND REPLACED PROMPTLY.
24. ALL PLANTINGS ARE TO BE IRRIGATED AS OFTEN AS NECESSARY TO PROVIDE HEALTHY GROWING CONDITIONS.
25. NO TURF SHALL BE PERMITTED WITHIN THE PUBLIC RIGHT-OF-WAY.
26. THE PROPRIETOR, OWNER AND/OR ASSOCIATION SHALL BE RESPONSIBLE FOR THE INSTALLATION AND MAINTENANCE ALL LANDSCAPING WITHIN THE RIGHT-OF-WAY.
27. PLANTERS AND OTHER SURFACE FEATURES WHICH COULD RETAIN WATER IN AREAS ADJACENT TO THE STRUCTURE OR PAVEMENTS SHOULD BE SEALED OR ELIMINATED. SPRINKLER SYSTEMS SHOULD NOT BE INSTALLED WITHIN 5 FEET OF FOUNDATION WALL. LANDSCAPED IRRIGATION ADJACENT TO THE FOUNDATION SYSTEMS SHOULD BE MINIMIZED OR ELIMINATED.

LANDSCAPE CALCULATIONS		
	REQUIRED	PROVIDED
INTERIOR PARKING AREA:		
VEHICLE USE AREA		53,241 SF
1 SHADE TREE / 2,000 SF VUA	26.6	27
TREE PRESERVATION		
1574 CAL. INCHES REMOVED		
REPLACEMENT TREES	787.0	
+20" CALIPER TREES RETAINED		857
REPLACEMENT TREE TOTAL CALIPER INCHES	787	791
TREE BANK (\$50 PER CALIPER INCH)	0	0

PLANT SCHEDULE						
QTY.	COMMON NAME	BOTANICAL NAME	HEIGHT	TRUNK	COMMENTS	
CANOPY TREES						
12	'Bracken's Brown Beauty'	Magnolia grandiflora 'Bracken's Brown Beauty'	8'-10'	2" Cal.	B&B	
46	Eastern Red Cedar	Juniperus virginia	8'-10'	2" Cal.	B&B	
4	'Green Vase' Japanese Zelkova	Zelkova serrata 'Green Vase'	8'-10'	2" Cal.	B&B	
51	'Green Giant' Arborvitae	Thuja (standish x plicata) 'Green Giant'	8'-10'	2" Cal.	Full to ground, well formed	
4	Princeton Elm	Ulmus americana 'Princeton'	8'-10'	2" Cal.	B&B	
18	Red Maple	Acer rubrum	10' - 12'	3" Cal.	B&B	
135	TOTAL - CANOPY TREES					
UNDERSTORY/COLUMNAR TREES						
25	'Nellie R. Stevens' Holly	Ilex x 'Nellie R. Stevens'	10' - 12'	3" Cal.	Well formed	
25	TOTAL - UNDERSTORY TREES					
160	TOTAL - ALL TREES					
SHRUBS						
15	Compact Inkberry Holly	Ilex glabra 'Compacta'	18" Min.	3 Gal.	Container	
64	Dwarf Burford Holly	Ilex cornuta 'Burfordii nana'	24" Min.	5 Gal.	Container	
22	'Grey Owl' Juniper	Juniperus virginiana 'Grey Owl'	18" Min.	3 Gal.	Container	
104	'Kaleidoscope' Abelia	Abelia grandiflora 'Kaleidoscope'	12" Min.	3 Gal.	Container	
7	'Little Lime' Hydrangea	Hydrangea paniculata 'Jane'	18" Min.	3 Gal.	Container	
42	Snow Queen Oakleaf Hydrangea	Hydrangea quercifolia 'Snow Queen'	24" Min.	5 Gal.	Full and Heavy; Container	
67	Schip Laurel	Prunus laurocerasus 'Schipkaensis'	30" Min.	5 Gal.	Full and Heavy; Container	
321	TOTAL - SHRUBS					
GRASSES, PERENNIALS AND GROUND COVER						
31	'Heavy Metal' Switch Grass	Panicum virgatum 'Heavy Metal'	24"	3 Gal.		

NOTE: SPECIFIED CALIPER IS
THE MINIMUM ACCEPTABLE
SIZE; HEIGHTS ARE
APPROXIMATE AND
SECONDARY.



TRUE RAIL INTERPRISES, LLC
1029/1045 S. MAIN ST.
MT. PLEASANT, TN

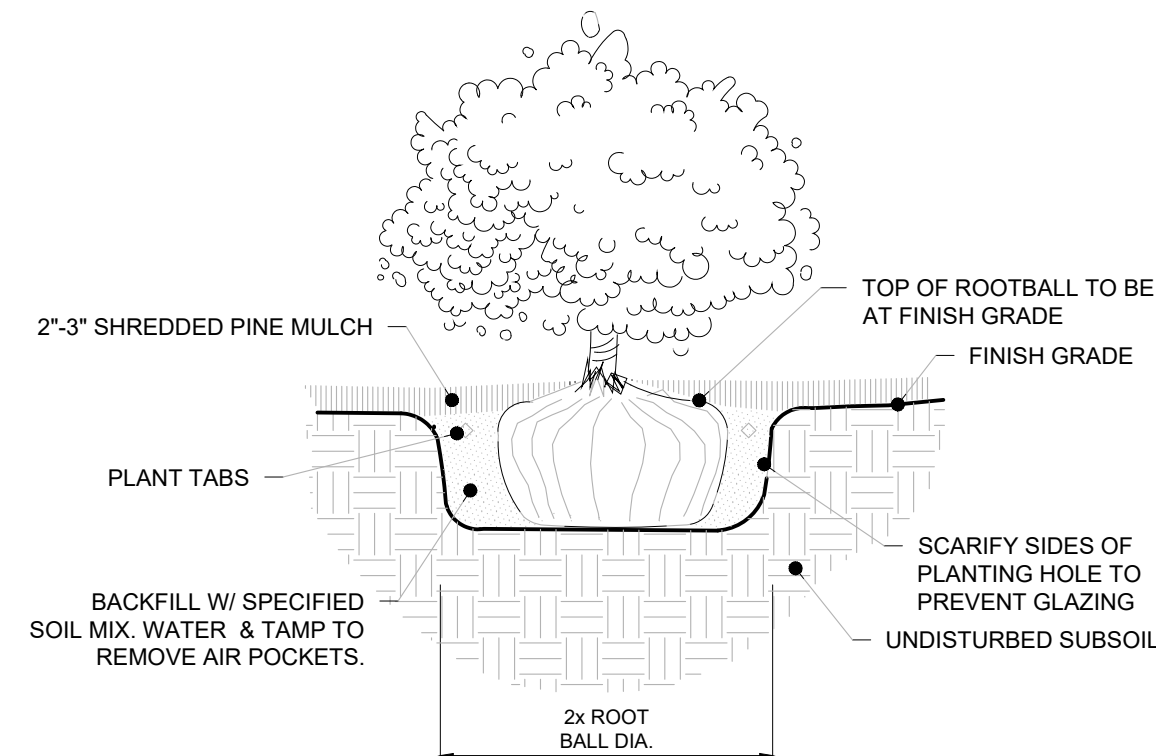
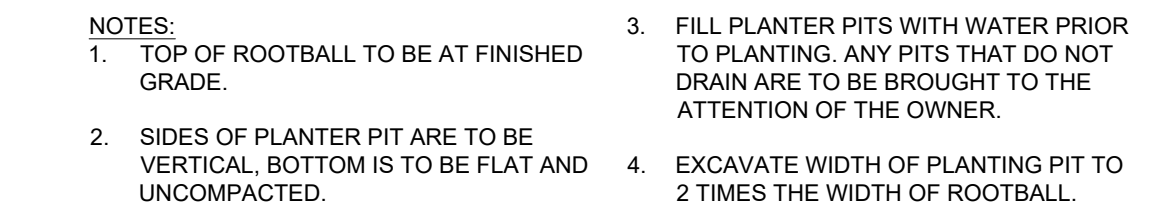
Kyle Smith, PLA
521 Tobyllynn Drive
Nashville, TN 37211
(408) 835 - 7003 Cell.
kyle@kitadesigns.com

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LANDSCAPE PLAN

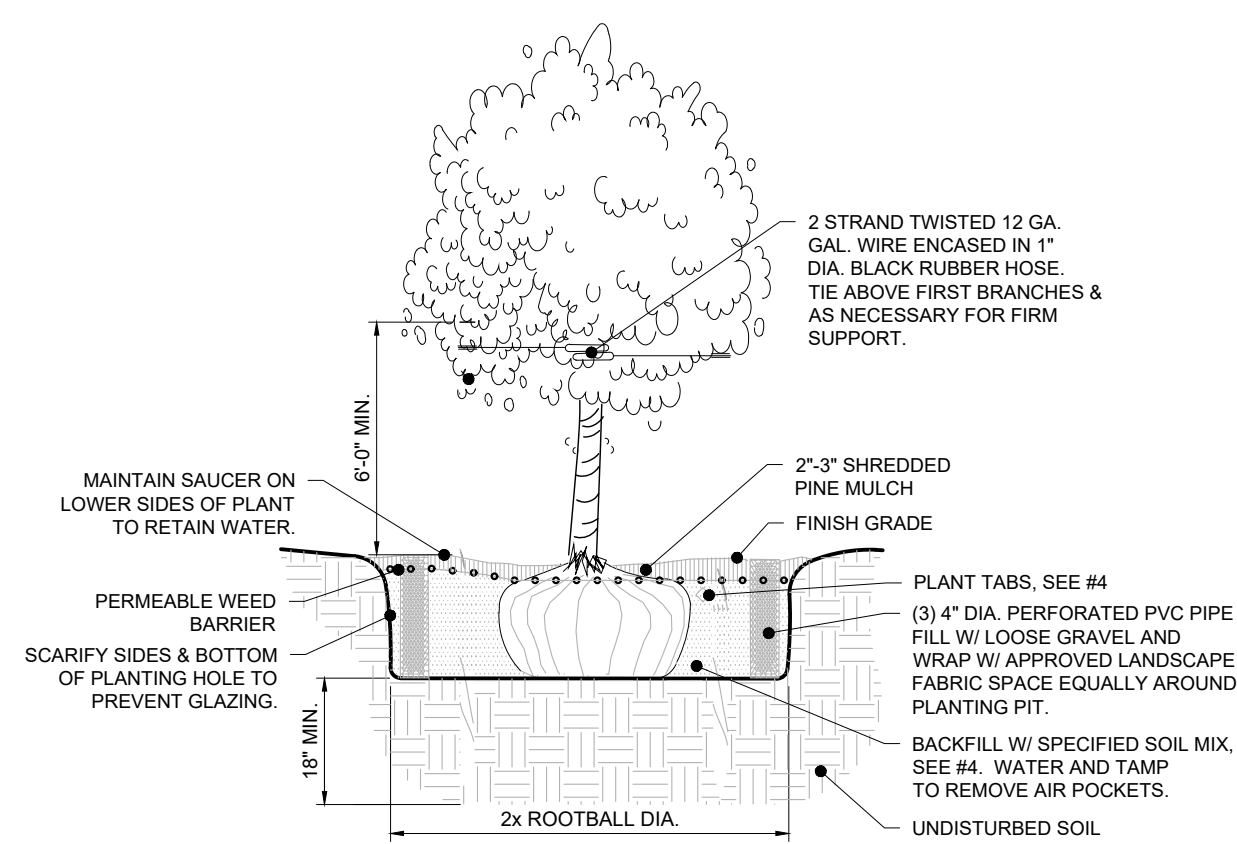
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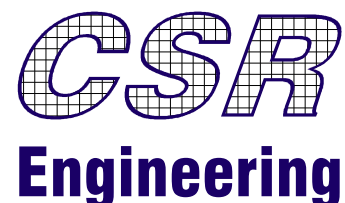
SHRUB PLANTING DETAIL
NOT TO SCALE

- NOTES:**
1. TOP OF ROOTBALL TO BE AT FINISHED GRADE.
 2. RUN (1) DRIP TUBE TO EACH 4" DIA. DRAIN PIPE.
 3. SIDES OF PLANTER PIT ARE TO BE VERTICAL, BOTTOM IS TO BE FLAT AND UNCOMPACTED.
 4. FILL PLANTER PITS WITH WATER PRIOR TO PLANTING. ANY PITS THAT DO NOT DRAIN ARE TO BE BROUGHT TO THE ATTENTION OF THE OWNER.



TYPICAL TREE PLANTING DETAIL
NOT TO SCALE





CSR Engineering, Inc.
2010 Highway 49E
Pleasant View, TN 37146
P: 615.212.2389
F: 615.246.3815
www.csrengineers.com



ESTIMATED QUANTITIES AND NOTES
OF
FOR
BULK STORAGE RAIL YARD
TRUE RAIL ENTERPRISES, LLC
S MAIN STREET
MT. PLEASANT, TENNESSEE
MAURY COUNTY

REVISIONS		DESCRIPTION	
NO.	DATE	BY	

DESIGNER	DKH
REVIEWER	KCW

PROJECT	23-040
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DATE	4-2-26
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SHEET	RR1
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SCOPE OF WORK

THE CONTRACTOR'S WORK TO BE PERFORMED UNDER THIS PROJECT WILL CONSIST OF FURNISHING ALL EQUIPMENT, LABOR, MATERIALS, TOOLS AND SUPERVISION NECESSARY FOR THE GRADING, SUB BALLAST, ALL DRAINAGE RELATED WORK, CONSTRUCTION AND INSTALLATION OF THE PROPOSED INDUSTRIAL SIDING AND SPUR, APPROACH WORK, AND ALL OTHER RELATED WORK AS LISTED IN THE PLANS AND SPECIFICATIONS AT MILEPOST 238.1 ON THE TENNESSEE SOUTHERN RAILROAD. THE DETAILED SCOPE OF WORK IS AS FOLLOWS:

- INSTALL EROSION PREVENTION AND SEDIMENT CONTROL MEASURES.
- EXCAVATION AND EMBANKMENT FOR THE PLACEMENT OF THE NEW INDUSTRIAL SIDING AND INDUSTRY TRACKS.
- INSTALL DRAINAGE APPURTENANCES.
- INSTALL NEW GRAVEL GRADE CROSSING.
- INSTALL NEW DRIVEWAY AS SHOWN IN THE PLANS.
- INSTALL TIES, RAIL, AND COMPROMISE BARS..
- INSTALL NEW NO. 8 AND NO. 10 TURNOUTS
- FURNISH AND PLACE BALLAST; SURFACE AND LINE TRACK; AND, REGULATE THE BALLAST SO THAT THE TOP OF RAIL CONFORMS TO THE ELEVATIONS PROPOSED ON THE PROFILE.

GENERAL NOTES:

PROTECTION OF EXISTING RAILROAD
THE CONTRACTOR SHALL CONDUCT HIS WORK SO AS TO PROTECT THE RAILROAD TRACKS AND PROPERTIES FROM ANY DAMAGE. THE WORK SHALL BE PERFORMED IN ACCORDANCE WITH REGULATIONS STIPULATED BY THE TENNESSEE SOUTHERN RAILROAD SO AS MAINTAIN CLEARANCE AND NOT INTERRUPT TRAFFIC UNLESS GIVEN PERMISSION.

FIELD LAYOUT
THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL FIELD STAKING (LINES AND GRADES). IF ANY DISCREPANCIES ARE FOUND, THE CONTRACTOR SHALL NOTIFY THE ENGINEER IMMEDIATELY

GRADING
ANY AREA THAT IS DISTURBED OUTSIDE THE LIMITS OF CONSTRUCTION DURING THE LIFE OF THIS PROJECT WILL BE REPAIRED TO ITS ORIGINAL CONDITION OR BETTER BY THE CONTRACTOR AT HIS EXPENSE.

TRACK WORK
THE CONTRACTOR WILL BE RESPONSIBLE FOR ALL TRACK WORK. THE CONTRACTOR SHALL COORDINATE WITH THE TENNESSEE SOUTHERN RAILROAD FOR ANY NEEDED TRACK OUTAGES. THEN THE CONTRACTOR SHALL HAVE ALL TRACK WORK INSTALLED AND COMPLETE IN-PLACE AND ACCEPTED BY THE ENGINEER.

RIGHT - OF - WAY
ALL CONSTRUCTION ACTIVITIES WILL BE CONFINED WITHIN THE TENNESSEE SOUTHERN RAILROAD 200 FT. (100 FEET EACH SIDE OF MAIN LINE CENTER LINE) RIGHT-OF-WAY AND TRU RAIL PARCEL UNLESS ARRANGEMENTS HAVE BEEN MADE BY THE CONTRACTOR, IN WRITING, WITH ADJOINING PROPERTY OWNERS.

IF ADDITIONAL STAGING ROOM OR SITE ACCESS IS REQUIRED, THE CONTRACTOR WILL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY EASEMENTS, AND WILL FURNISH PROOF OF EASEMENTS TO THE ENGINEER.

ANY AREAS DISTURBED BY ANY DIRECT OR INDIRECT ACTION ASSOCIATED WITH CONSTRUCTION INCLUDING ALL SITE ACCESS ROADS, WILL BE RETURNED TO PRE-CONSTRUCTION CONDITIONS OR BETTER, AND/OR FINISHED IN ACCORDANCE WITH THE PLANS AND SPECIFICATIONS, AT THE CONTRACTOR'S EXPENSE.

SAFETY
THE CONTRACTOR WILL BE REQUIRED TO CONFORM TO ALL FRA AND OSHA SAFETY REGULATIONS REGARDING TRACK AND BRIDGE WORKER SAFETY.

THE CONTRACTOR IS RESPONSIBLE FOR ALL ASPECTS OF WORKER AND SITE SAFETY, AND WILL HAVE A RESPONSIBLE EMPLOYEE IN CHARGE ON SITE AT ALL TIMES DURING CONSTRUCTION.

OCCUPATION OR FOULING OF THE MAIN LINE WILL ONLY TAKE PLACE IF THE CONTRACTOR HAS PERMISSION FOR TRACK TIME FROM THE RAILROAD, CONFORMING TO THE RAILROAD'S RULES.

UTILITIES
THE LOCATIONS OF UTILITIES SHOWN WITHIN THESE PLANS ARE APPROXIMATE ONLY. EXACT LOCATIONS ARE THE RESPONSIBILITY OF THE CONTRACTOR AND WILL BE DETERMINED IN THE FIELD PRIOR TO CONSTRUCTION BY CONTACTING THE UTILITY COMPANIES INVOLVED. UNLESS OTHERWISE NOTED, ALL UTILITY ADJUSTMENTS WILL BE PERFORMED BY THE UTILITY OR ITS REPRESENTATIVE. THE CONTRACTOR AND UTILITY OWNERS WILL BE REQUIRED TO COOPERATE WITH EACH OTHER IN ORDER TO EXPEDITE THE WORK REQUIRED BY THIS CONTRACT.

THE CONTRACTOR WILL PROVIDE ALL NECESSARY PROTECTIVE MEASURES TO SAFEGUARD EXISTING UTILITIES FROM DAMAGE DURING CONSTRUCTION OF THIS PROJECT. IN THE EVENT THAT SPECIAL EQUIPMENT IS REQUIRED TO WORK OVER AND AROUND THE UTILITIES, THE CONTRACTOR WILL BE REQUIRED TO FURNISH SUCH EQUIPMENT. THE COST OF PROTECTING UTILITIES FROM DAMAGE AND FURNISHING SPECIAL EQUIPMENT WILL BE INCLUDED IN THE PRICE BID FOR OTHER ITEMS OF CONSTRUCTION. NO ADDITIONAL PAYMENT WILL BE MADE FOR ANY UTILITY ISSUES.

THE CONTRACTOR WILL NOTIFY EACH INDIVIDUAL UTILITY OWNER OF HIS PLAN OF OPERATION IN THE AREA OF THE UTILITIES. PRIOR TO COMMENCING WORK, THE CONTRACTOR WILL CONTACT THE UTILITY OWNERS AND REQUEST THEM TO PROPERLY LOCATE THEIR RESPECTIVE UTILITY ON THE GROUND. THIS NOTIFICATION WILL BE GIVEN AT LEAST THREE (3) BUSINESS DAY PRIOR TO COMMENCEMENT OF OPERATIONS AROUND THE UTILITY.

SOME UTILITIES CAN BE LOCATED BY CALLING THE TENNESSEE ONE CALL SYSTEM, INC. AT 811.

GENERAL TRACKWORK NOTES

- ALL WORK SHALL BE OF GOOD QUALITY IN MATERIALS, EQUIPMENT AND WORKMANSHIP AND SHALL CONFORM IN EVERY RESPECT WITH THE SPECIFICATIONS AND INSTRUCTIONS
- ALL MATERIALS AND WORK WILL COMPLY WITH CURRENT AREMA STANDARDS
- ALL MATERIALS WILL BE UNLOADED AND HANDLED IN SUCH A MANNER AS NOT TO DAMAGE THE MATERIAL, AND IT IS REQUIRED THAT PROPER HANDLING EQUIPMENT BE USED TO UNLOAD AND TRANSPORT MATERIAL.

BALLAST

- BALLAST SHALL BE MINIMUM OF AREMA SIZE 4. BALLAST SHALL BE FREE OF LOAM, DUST, AND OTHER FOREIGN PARTICLES AND SHALL NOT HAVE LESS THAN 75% CRUSHED PARTICLES WITH TWO OR MORE FRACTURED FACES, UNLESS OTHERWISE APPROVED BY THE ENGINEER.
- PERFORM BALLAST TAMPING, USING POWER TAMPING MACHINES WHEREVER POSSIBLE, USING APPROVED AREMA TAMPING TOOLS FOR TYPE OF BALLAST BEING PLACED. TAMPERS SHALL BE CAPABLE OF LINING TRACK AS WELL AS LIFTING. TAMP EACH LAYER OF BALLAST FROM A LINE 15" INSIDE EACH RAIL, ON BOTH SIDES OF AND TO THE ENDS OF TIES. CENTER AREA BETWEEN THESE LIMITS SHALL BE FILLED LIGHTLY WITH BALLAST BUT NOT TAMPED. FOR TURNOUTS TAMP BALLAST UNIFORMLY FOR FULL LENGTHS OF TIES. TAMPING SHALL PROCEED SIMULTANEOUSLY AT BOTH ENDS OF SAME TIE, MAKING SURE BALLAST IS FORCED DIRECTLY UNDER THE TIES AND AGAINST SIDES AND ENDS OF TIES.
- WALKWAY BALLAST SHALL BE CRUSHED STONE (GRADED AGGREGATE), PREFERBALLY LIMESTONE OR GRANITE AND SHALL MEET THE FOLLOWING REQUIREMENTS:
 - : MATERIALS INTENDED FOR USE, AS WALKWAY-BALLAST SHALL CONFORM TO CURRENT A.S.T.M. DESIGNATION D-1241 AS TO QUALITY. FOR GRADATION OF THE WALKWAY BALLAST SEE SECTION 903 OF THE TDOT STANDARD SPECIFICATIONS FOR ROADS AND BRIDGES. THE SIZE SHALL BE NO. 8 OR NO. 89
 - :WALKWAY BALLAST SHALL BE SPREAD ON A GRADED ROADBED, AND IN SUFFICIENT WIDTH ACCORDING TO THE PLANS. THE WALKWAY-BALLAST SHALL BE ROLLED TO PRODUCE A SMOOTH SURFACE AND HAVE A MINIMUM DEPTH OF FOUR (4) INCHES.

GRADE TIES

- TIES SHALL BE IN ACCORDANCE WITH AREMA MANUAL, CHAPTER 30
- ALL TIES WILL BE NEW 7"x9"x8'-6" OAK OR MIXED HARDWOOD INDUSTRIAL GRADE TIES
- NO POPLAR TIES ALLOWED
- TIES SHALL BE PLACED ON 20" CENTERS
- TIES SHALL BE TREATED BY THE EMPTY CELL METHOD WITH 60/40 CREOSOTE COAL TAR SOLUTION IN ACCORDANCE WITH AWWA STANDARD P-2. PRESERVATIVE RETENTION SHALL NOT BE LESS THAN 8 LBS.
- TIES SHALL BE TRANSPORTED AND HANDLED PER CURRENT AREMA STANDARDS. TIES SHALL BE TRANSPORTED IN A HORIZONTAL POSITION AND BRACED TO PREVENT MOVEMENT THAT COULD CAUSE DAMAGE.
- LAY WOOD TIES WITH HEARTWOOD FACING DOWN, AND IF NOT POSSIBLE TO DETERMINE POSITION OF THE HEARTWOODOD, LAY THE WIDEST SURFACE OF THE TIE DOWN.
- BORING OR ADZING OF TIES SHALL BE KEPT TO A MINIMUM.
- IF SPIKES ARE PULLED FROM ANY TIES, THE HOLE SHALL BE FILLED BY DRIVING IN A TREATED WOOD TIE PLUG THE FULL DEPTH OF THE HOLE.

SPIKING

- DRIVE SPIKES THROUGH TIE PLATE HOLE INTO TIES, LOCATED DIAGONALLY OPPOSITE EACH OTHER BUT NOT LESS THAN 2" FROM EDGE OF TIE. DRIVE SPIKES VERTICALLY AND SQUARE WITH RAIL. DO NOT SLANT, BEND OR CAUSE SIDEWAYS MOVEMENT OF SPIKE. WHEN SPIKES ARE DRIVEN BY MACHINE, WORK SHALL BE CLOSELY SUPERVISED TO INSURE THAT SPIKES ARE DRIVEN WITH HAMMER CENTERED DIRECTLY OVER EACH SPIKE HEAD AND DRIVEN VERTICALLY. STOP BOLT MUST BE USED TO PREVENT MACHINE FROM OVER-DRIVING.
- SPIKES THAT ARE INCORRECTLY DRIVEN OR PULLED AWAY FROM TIE, MUST BE REMOVED AND THE HOLE FILLED WITH A TIE PLUG DRIVEN TO FULL DEPTH OF HOLE. THE REPLACEMENT SPIKE WILL BE PLACE IN ANOTHER HOLE IN THE TIE PLATE.
- ALL SPIKES SHALL BE NEW 5/8"x6" CUT TRACK SPIKES. ALL SPIKES WILL CONFORM TO AREMA REQUIREMENTS.
- EACH RAIL WILL BE SPIKED WITH TWO SPIKES PER TIE PLATE FOR TANGENT TRACK AND CURVED TRACK WITH LESS THAN A 2 DEGREE CURVE, STAGGERED WITH INSIDE SPIKES TO THE EAST OR NORTH AND OUTSIDE SPIKES TO THE WEST OR SOUTH. ON CURVES THAT ARE MORE THAN 2 DEGREES A THIRD SPIKE WILL BE REQUIRED ON THE GAUGE SIDE OF THE RAIL.

TIE PLATES

- ALL TIE PLATES FOR 100#RE AND 115# RAIL SHALL BE NEW OR GOOD SECONDHAND, FREE OF INJURIOUS DEFECTS AND FOREIGN MATERIALS AND CONFORMING TO AREMA SPECS, NO. 8 AREMA 14 INCH TIE PLATE FOR 5.5" RAIL BASE, WITH PUNCHING A
- ALL TIE PLATES FOR 136# RAIL SHALL BE NEW OR GOOD SECONDHAND, FREE OF INJURIOUS DEFECTS AND FOREIGN MATERIALS AND CONFORMING TO AREMA SPECS, NO. 8 AREMA 14 INCH TIE PLATE FOR 6" RAIL BASE, WITH PUNCHING A
- THE CONTRACTOR SHALL PROVIDE ANY EXTRA 90# OR 100# PLATES NEEDED FOR THE SUCCESSFUL INSTALLATION OF THE SPUR.
- CLEAN TIE PLATE SEAT AREAS SO THEY ARE FREE OF ALL LOOSE MATERIAL PRIOR TO PLACEMENT OF THE TIE PLATES. CENTER THE PLATES ON THE TIE AND PLACE NORMAL TO THE CENTERLINE OF RAIL SO THAT THE OUTSIDE SHOULDER OF THE PLATES WILL HAVE FULL BEARING AGAINST THE BASE OF THE RAIL.

TURNOUTS

- THE SWITCH STAND SHALL BE SHALL BE AS MANUFACTURED BY NORTRAK INDUSTRIES (RACOR) MODEL 22-E TRI-GLIDE TRAILABLE SWITCH STANDS WITH ERGONOMIC HANDLE OR EQUAL. ALL STANDS ARE TO BE NEW AND REQUIRED TO BE ABLE TO ACCEPT A PADLOCK.
- THE SWITCH TIMBER SHALL BE 7"x9" TIES OF THE APPROPRIATE LENGTH. SWITCH TIMBER SHALL BE MIXED HARDWOOD TREATED THE SAME AS GRADE TIES.
- THE TURNOUT INSTALLED IN THE MAINLINE SHALL INCLUDED (2) INSULATED JOINTS.

RAIL

- CONTRACTOR SHALL SUPPLY THE 115# RE OR BETTER RAIL AND OTM.
- ALL 115# RAIL WILL BE NEW PRIME OR IQ RAIL IN 39'+ LENGTHS
- NO RAIL SHORTER THAN 15' SHALL BE INSTALLED OR LEFT IN TRACK
- UNDER NO CIRCUMSTANCES SHOULD RAIL BE STRUCK IN WEB WITH ANY TOOL OR ANY METAL OBJECT
- THE RIGHT-HAND RAIL FACING IN DIRECTION OF INCREASING CONSTRUCTION SHALL BE SPIKED TO TIES, AND THE OPPOSITE RAIL SHALL BE BROUGHT TO GAGE OF 4'-8 3/4", MEASURED AT RIGHT ANGLES BETWEEN THE RAILS, IN A PLACE 5/8" BELOW TOP OF RAIL. GAGE TO BE CHECKED EVERY THIRD TIE.

RAIL ANCHORS

- RAIL SHALL BE BOXED ANCHORED EVERY FOURTH TIE IN TANGENT SECTIONS. RAIL SHALL BE BOXED ANCHORED ON EVERY OTHER TIE IN CURVES OF MORE THAN 3 DEGREES. EVERY TIE SHALL BE BOXED ANCHORED THRU TURNOUTS AND FOR 234 FEET TO EITHER SIDE OF THE TURNOUT.
- ANCHORS SHALL BE INSTALLED WHEN THE RAIL IS AT A NEUTRAL TEMPERATURE OF 105 DEGREES (+/- 5 DEGREES) ALL DE-STRESSING SHALL CONFORM TO INDUSTRY STANDARDS
- THE RAIL ANCHORS SHALL BE A UNIT 5 ANCHOR BY UNIT RAIL ANCHOR COMPANY OR EQUAL, APPROVED BY ENGINEER.

TRACK

- CONSTRUCT BALLASTED TRACK WITH RAIL CANT AT 40 TO 1 INWARD INCLINATION OF RAILS
- TRACK SURFACE IS THE RELATIONSHIP OF BOTH RAILS OPPOSITE EACH OTHER IN PROFILE AND CROSS LEVEL. TRACK PROFILE IS THE RUNNING SURFACE ALONG THE TOP OF THE RAILS OR GRADE RAIL. CROSS LEVEL IS THE DIFFERENCE IN ELEVATION BETWEEN THE TOP OF HEADS OF OPPOSITE RAILS OR GRADE RAIL. MEASURED AT RIGHT ANGLES TO THE TRACK ALIGNMENT. THE IDEAL SURFACE IS A UNIFORM PROFILE CONSISTING OF STRAIGHT GRADIENTS CONNECTED BY VERTICAL CURVES, WITH ZERO CROSS LEVEL ON TANGENTS AND PREDETERMINED CROSS LEVEL ON CURVES.
- TOLERANCES:
 - GAUGE VARIATIONS: +/- 3/16"
 - CROSS-LEVEL: +/- 3/16" (VARIATION FROM DESIGN)
 - i. RATE OF CHANGE 1/4" IN 31' (VARIATION FROM DESIGN)
 - HORIZONTAL ALIGNMENT: +/- 1/2" FROM DESIGN
 - i. RATE OF CHANGE 1/16" MIDDLE ORDINATE TO A 31 FOOT CORD ON CURVES AND 3/16" MIDDLE ORDINATE TO A 31 FOOT CORD ON TANGENT
 - VERTICAL ALIGNMENT: +/- 1/2" FROM DESIGN
 - i. RATE OF CHANGE 1/8" MIDDLE ORDINATE OF A 31 FOOT, VARIATION FROM DESIGN

-RAISE TRACK BY MEANS OF JACKS CLOSE ENOUGH TOGETHER TO PREVENT EXCESSIVE BENDING OF RAILS. LIFT BOTH RAILS SIMULTANEOUSLY AND AS UNIFORMLY AS POSSIBLE. POWER JACKS MAY ALSO BE USED. EACH TRACK RAISE SHALL NOT EXCEED 4" WITH TIES TAMPED PRIOR TO ADDITIONAL RAISE.



TrueRail
ENTERPRISES, LLC

BULK STORAGE RAIL YARD
OF
BULK STORAGE RAIL YARD
FOR
TRUE RAIL ENTERPRISES, LLC

RR2

Site Plan- True Rail

July 14, 2026

The applicant is requesting approval of a site plan located off S. Main Street for True Rail Enterprises. This is a site development plan for a rail yard. The property is approximately 62.16 acres and is zoned IL (Light Industrial). This project will create a building that is 112,500 square feet in total with space dedicated to both office and warehouse. Approximately 25.45 acres of land will be disturbed area.

Sheet C2.0 shows the building as being split with 25,000 square feet dedicated to office space and 87,500 square feet dedicated to warehouse/distribution. The Stormwater Prevention Plan has the same square footages in its site description. However, on sheet C2.0 under the Current Zoning Information, it has the office space called out as 10,000 square feet and the warehouse space as 102,500 square feet. These differences would affect the required parking spaces.

The plan proposes a total building size of 112,500 square feet. The plan shows 10,000 square feet of proposed office with the remaining square footage for the purpose of servicing the rail cars. We are classifying this as “warehousing” for the purposes of calculating the parking requirements. According to Section 14-1102 *Off-Street Parking and loading standards*, the office portion of the plan that totals 10,000 square feet requires 3 parking spaces per 1,000 square feet of gross floor area, meaning this would require 30 parking spaces. The warehouse portion of the plan is 87,500 square feet and requires 1 parking space per 1,000 square feet of gross floor area, meaning that this would require 88. This would require 118 total parking spaces including 5 handicapped spaces. Some sheets refer to the size of the office as 25,000 square feet. If the office portion of the building is 25,000 square feet and the warehouse portion is 87,500 square feet then 163 parking spaces would be required.

An option that could alleviate a portion of the parking requirement is Section 14-1102 *Off-street parking and loading* subsection E. *Land banked future parking* of the Zoning Ordinance. This would allow the planning commission to permit up to 25% of the required parking spaces through the site plan review process. The following standards must be met to allow this:

1. Sufficient evidence shall be provided by the applicant that supports the reduced parking needs.
2. The area proposed for land banking of parking spaces shall be an area suitable for parking at a future time.
3. Landscaping of the land banked area shall be in full compliance of the zoning regulations and at a minimum landscaped with turf. As a result of the site plan review process, the planning commission may require additional landscaping of the land-banked area.
4. The land banking area cannot be used for any other permanent use without amendment of the site plan.
5. As part of the site plan review process, the applicant shall show the area to be banked on the site plan and marked as "land banked future parking."

6. The planning department, on the basis of increased parking demand for the use, shall require the conversion of all or part of the land-banked area to off-street parking spaces. Evidence of increased demand includes the fact the parking lot is 100 percent occupied more than once per week.
7. Failure to construct land-banked parking within 120 days of notification by the planning department shall be cause for revocation of the use and occupancy permit and to invoke other penalties authorized by this ordinance.

Another factor to consider is that depending on the use that is classified for the site, parking requirements may be based on number of employees. We recommend adding the number of employees to the site plan.

Items you may want to require as a condition of approval are:

- Verify square footage dedicated to the office portion of the building and the warehouse portion. Adjust required parking accordingly.
- Meet the parking requirements based on Section 14-1102 of the Zoning Ordinance and the correct delineation of square footage dedicated to each portion of the building.

The Planning Commission may approve or deny the request based on your deliberation.



Tracking Number TNR183389

**NOTICE OF COVERAGE UNDER THE GENERAL NPDES PERMIT FOR STORMWATER
DISCHARGES ASSOCIATED WITH CONSTRUCTION ACTIVITY (CGP)**

Tennessee Department of Environment and Conservation
Division of Water Resources
William R. Snodgrass Tennessee Tower
312 Rosa L. Parks Avenue, 11th Floor
Nashville, TN 37243

Under authority of the Tennessee Water Quality Control Act of 1977 (T.C.A. 69-3-101 et seq.) and the delegation of authority from the United States Environmental Protection Agency under the Federal Water Pollution Control Act, as amended by the Clean Water Act of 1977 (33 U.S.C. 1251, et seq.):

Name of the Construction Project: **Bulk Storage Railyard (29.21 acres)**
Master Tracking Number at the Site: **TNR183389**
Permittee Name: **True Rail Enterprises LLC**
Project Name: **Bulk Storage Railyard**
Contractor(s): **no contractor**
is authorized to discharge: **storm water associated with construction activity**
from site located at: **South Main Street, Maury County**
to receiving waters named: **Sugar Creek**
in accordance with effluent limitations, monitoring requirements and other conditions set forth herein.

Likely presence of threatened or endangered species in one mile radius: **NO**

Likely presence of threatened or endangered species downstream: **NO**

Additional pollution prevention requirements apply for discharges into waters which TDEC identifies as:

- Unavailable Condition - Siltation

- Exceptional Tennessee Waters: NO

Your coverage under the CGP shall become effective on **April 20, 2026**, and shall be terminated upon receipt of [Notice of Termination](#).

A copy of the CGP can be obtained from

<https://www.tn.gov/content/tn/environment/permit-permits/water-permits1/npdes-permits1/npdes-stormwater-permitting-program/npdes-stormwater-construction-permit.html>



STATE OF TENNESSEE
DEPARTMENT OF ENVIRONMENT AND CONSERVATION
DIVISION OF WATER RESOURCES

Columbia Environmental Field Office
1421 Hampshire Pike
Columbia, TN 38401

Phone 931-380-3371 Statewide 1-888-891-8332 Fax 931-380-3397

April 20, 2026

Mr. Mark Smith
CEO
True Rail Enterprises, LLC
e-copy: mark@truerail.com
500 1st Avenue
Mt. Pleasant, TN 38474

Subject: **NPDES Construction General Permit Tracking No. TNR183389**
 Master Tracking Number: TNR183389
 Bulk Storage Railyard
 True Rail Enterprises LLC
 Mt. Pleasant, Maury County, Tennessee

Dear Mr. Smith:

You recently submitted a Notice of Intent (NOI) form as part of an application package to obtain coverage under a General NPDES Permit for Storm Water Discharges Associated with Construction Activity (CGP). The Division of Water Resources (the division) acknowledges receipt of the most recent version of the application for the above referenced project on April 8, 2026. After review, the application was deemed to be complete on April 14, 2026. Enclosed is the Notice of Coverage (NOC) form which shows the site name and location, receiving stream, effective date of coverage, etc.

Please be aware that for future CGP NOI submittals, the NOI should be submitted through the MyTDEC Forms portal [MyTDEC Forms - CGP](#). The MyTDEC Forms portal was created to comply with EPA's National Pollutant Discharge Elimination System (NPDES) [Electronic Reporting Rule \(eRule\)](#), which requires electronic reporting and sharing of NPDES program data.

Contractor Information

You have not identified a contractor on the NOI. You must identify a primary contractor, or contractor otherwise responsible for sediment and erosion controls on the construction site, if appropriate, and submit a revised NOI to this office prior to beginning earth clearing operations onsite. When submitting the NOI, please include the above referenced permit tracking number.

Storm Water Pollution Prevention Plan (SWPPP)

You have submitted a Storm Water Pollution Prevention Plan (SWPPP) as required by Section 1.4.2 of the CGP. Please note that the division has not performed an engineering review of the SWPPP and does not certify whether the SWPPP adequately provides for the pollution prevention requirements at the site as described in the general permit. The division acknowledges that you have submitted a SWPPP that appears to include the required components of a SWPPP. It is the responsibility of all site operators to design,

implement, and maintain measures that are sufficient to prevent pollution at the referenced site, and to remain in compliance with the terms and conditions of the general permit.

Receiving Stream not Supporting Designated Uses

The receiving stream for the construction site for which the NOI was submitted appears on the state's list for partially supporting or for not supporting a stream's designated use due to siltation. Since the discharge from the proposed construction site may contain significant amounts of silt, the division considers the potential for degradation to the receiving stream from the discharge to be significant. Therefore, the additional pollution prevention requirements described in Subpart 6.4 of the General Permit are applicable to your construction site; requirements of Section 6.4.2. apply only if the stream is located on or adjacent to the disturbed area.

Site Assessment

Per Subsection 5.5.3.8 of the permit, a quality assurance of erosion prevention and sediment controls (EPSCs) shall be done by performing site assessments by a qualified individual. Site assessment shall be conducted at each outfall draining 10 or more acres (Subsection 5.5.3.5) or 5 or more acres if draining to waters with unavailable parameters or Exceptional Tennessee Waters (Section 6.4.1). Site assessments must cover the entire disturbed area and occur within 30 days of construction commencing at each portion of the site that drains the qualifying acreage. At a minimum, site assessments should be performed to verify the installation, functionality and performance of the EPSC measures described in the SWPPP. If structural BMPs (or equivalent EPSC measures) are not constructed or construction is in progress at the time of the site assessment, a follow-up monthly assessment(s) is required until the BMPs are constructed per the SWPPP.

Annual Maintenance Fee and Termination of Permit Coverage

Effective July 1, 2014, permit fees for the General Permit have been revised. In addition to new application fee amounts, annual maintenance fees are now required for projects that exceed one year of coverage. Permittees wishing to terminate coverage must submit a completed notice of termination (NOT) form, which is available on the division's construction stormwater webpage at <https://www.tn.gov/content/tn/environment/permit-permits/water-permits/npdes-permits/npdes-stormwater-permitting-program/npdes-stormwater-construction-permit.html>.

The division will review the NOT for completeness and accuracy and, when necessary, investigate the site for which the NOT was submitted. The division will notify the applicant that either the NOT form was received and accepted, or that the permit coverage is not eligible for termination and has not been terminated. If applicable, the notification will include a summary of existing deficiencies.

Issuance of this NOC does not imply that the permittee has any other development authorizations, including rights or expectations of approval for any other permits, authorizations, or coverages, either federal, state, or local. CGP coverage does not delineate or authorize impact to waters of the state. Coverage under the CGP cannot be used by permittees as a relevant factor in the review and approval and issuance of any other TDEC permits, authorizations, or coverages, including but not limited to other NPDES permits, Aquatic Resource Alteration Permits, engineering plans approval, or wastewater disposal issues. Proceeding with construction prior to resolution of any other regulatory requirement is at your own risk.

We appreciate your attention to the general construction storm water permit and its requirements. A copy of the CGP can be obtained from <https://www.tn.gov/content/tn/environment/permit-permits/water-permits/npdes-permits/npdes-stormwater-permitting-program/npdes-stormwater-construction-permit.html>.

[permit.html](#). We believe this does make a difference to the quality of state waters. If you have any questions, please contact Ms. Alex Fleming at (931) 287-3595 or by e-mail at Alex.Fleming@tn.gov.

Sincerely,

A handwritten signature in blue ink that reads "Sherry R. Glass". The signature is written in a cursive style with a large, stylized 'S' and 'G'.

Sherry R. Glass, Environmental Manager
Division of Water Resources
Columbia Environmental Field Office

Stormwater Pollution Prevention Plan

Bulk Storage Railyard

South Main Street
Tax Map 150 Parcel 063.11
Mt. Pleasant, Maury County, Tennessee 38474

Prepared For:

True Rail Enterprises, LLC
500 1st Avenue
Mt. Pleasant, Tennessee 38474

Prepared By:



2010 Highway 49E
Pleasant View, Tennessee 37146

CSR Project No. 23-040

October 27, 2025

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OWNER CERTIFICATION PAGE

Name of Construction Project: Bulk Storage Railyard
Location of Project: South Main Street
Tax Map 150 Parcel 063.11
Mt. Pleasant, Maury County, Tennessee 38474

Owner/Permittee responsible for Stormwater Pollution Prevention during construction:

Mark Smith
True Rail Enterprises, LLC
500 1st Avenue
Mt. Pleasant, Tennessee 38474

MANAGEMENT CERTIFICATION

I certify under penalty of law that this document and all attachments were prepared by me, or under my direction or supervision. The submitted information is to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment. As specified in Tennessee Code Annotated Section 39-16-702(a)(4), this declaration is made under penalty of perjury.

Plan Reviewed and Accepted by:

Mark Smith Digitally signed by Mark Smith
Date: 2025.10.28 10:46:44
-05'00'

Signature

(must be signed by President, V.P., or equivalent)

CEO

Title

10/28/25

Date

Bonafide Holdings TN, LLC / True Rail Enterprises, LLC

Company/Municipality/Owner

GENERAL CONTRACTOR CERTIFICATION PAGE

Name of Construction Project: Bulk Storage Railyard
Location of Project: South Main Street
Tax Map 150 Parcel 063.11
Mt. Pleasant, Maury County, Tennessee 38474

Operator responsible for Stormwater Pollution Prevention during construction:

Contractor: TBD

Address: _____

Phone: _____

GENERAL CONTRACTOR CERTIFICATION

I certify under penalty of law that I have reviewed this document, any attachments, and the SWPPP referenced above. Based on my inquiry of the construction site owner/developer identified above and/or my inquiry of the person directly responsible for assembling this NOI and SWPPP, I believe the information submitted is accurate. I am aware that this NOI, if approved, makes the above described construction activity subject to NPDES permit number TNR100000, and that certain of my activities on-site are thereby regulated. I am aware that there are significant penalties, including the possibility of fine and imprisonment for knowing violations, and for failure to comply with these permit requirements. As specified in Tennessee Code Annotated Section 39-16-702(a)(4), this declaration is made under penalty of perjury.

Plan Reviewed and Accepted by:

_____ Signature (must be signed by President, V.P., or equivalent)	_____ Title	_____ Date
--	----------------	---------------

Company/Municipality/Owner

1.0 INTRODUCTION AND GENERAL INFORMATION

True Rail Enterprises, LLC, as the owner and primary permittee, is overseeing the construction activities outlined in this Stormwater Pollution Prevention Plan (SWPPP). This SWPPP has been developed under the authority of the National Pollutant Discharge Elimination System (NPDES) and complies with the Tennessee Department of Environment and Conservation's (TDEC) Tennessee General Permit No. TNR100000 for Stormwater Discharges from Construction Activities (CGP), effective October 1, 2021. This SWPPP is a living document and will be amended as necessary to reflect changes in site conditions or permit requirements.

This SWPPP identifies potential pollution sources that could affect stormwater discharges during construction and describes Best Management Practices (BMPs) and EPSC measures to mitigate these impacts. All EPSC measures are designed to manage stormwater from a 2-year/24-hour storm event or greater.

The owner and all contractors will comply with the CGP requirements to protect water quality. Non-compliance with permit conditions violates the Clean Water Act (CWA) and may result in enforcement actions, permit termination, or denial of permit renewal. A copy of the Notice of Intent (NOI) submitted electronically through the MyTDEC platform, along with this SWPPP, is included in **Appendix A**.

Table 1: Project Overview and Team	
Project Name	Bulk Storage Railyard
Location	South Main Street Tax Map 150 Parcel 063.11 Mt. Pleasant, Maury County, Tennessee 38474
Owner / Primary Permittee	True Rail Enterprises, LLC (931) 325-5570
Secondary Permittee / General Contractor	To Be Determined (TBD)
Engineer	Jason Reynolds, P.E., CSR Engineering
Level I EPSC Inspector(s)	TBD

The following information will be posted at a conspicuous location near the main entrance of the construction site, such as the job bulletin board:

1. A copy of the Notice of Coverage (NOC) with the NPDES permit tracking number.
2. Contact information for the project owner or a local representative.
3. A brief project description.
4. The SWPPP location, if the site is inactive or has no on-site storage location.
5. Proof that the twice-weekly inspector has completed the Level 1 course on the Fundamentals of Erosion Prevention and Sediment Control.

2.0 SITE DESCRIPTION

The subject property currently consists of vacant cropland and undeveloped wooded areas. The Tennessee Southern Railroad bounds the eastern property boundary. The proposed development includes a ±25,000 square-foot (ft²) office building, a ±87,500 ft² warehouse building, rail turnout and mainline siding, industry tracks, stone driveways, sidewalks, and asphalt roadways, covering 62.16 acres of Light Industrial (IP) zoning, with a disturbed area of approximately 29.21 acres.

The surrounding area consists of residential properties to the north and west, and agricultural properties to the east and south. An aerial site location map and topographic location map are included in **Appendix B**.

2.1 Site Drainage Areas

The site currently drains through four primary drainage areas (DAs) to an unnamed drainage feature along the northern portion of the property, which conveys water eastward off-site. During construction and post-construction, the same four drainage areas will manage runoff, with DA 4 subdivided into six sub-basins (DA 4A–DA 4F) to control flows and meet water quality and quantity requirements. Existing and proposed conditions are summarized in **Table 2** and shown on the Existing and Proposed Drainage Maps in **Appendix C**.

Table 2: Stormwater Drainage Descriptions

Drainage Area / Sub-basin	Existing Size (acres)	Existing Flow Direction / Notes	Proposed Size (acres)	Proposed Flow Path	Outfall
DA 1	143	Northwest portion of overall site, outside LOD; drains off-site to existing feature	143	Unchanged; drains to existing feature	-
DA 2	34.9	Western portion of overall site, mostly outside LOD; areas within LOD drain northeast	29.16	Drains northeast through an under-road culvert	Outfall 1
DA 3	9.54	North-central portion, includes portion of drainage feature; drains north	2.13	Drains north; includes drainage feature	Outfall 2
DA 4	41.5	Eastern portion; drains generally northeast	49.06	Collected in six sub-basins (DA 4A through DA 4F); flows generally northeast via swales and conveyance systems	Outfall 3

All drainage areas will be managed using BMPs consistent with the CGP. Temporary controls will be installed during construction, and permanent measures will be implemented post-construction to manage runoff quantity and quality.

2.2 Soils Descriptions

According to the USDA NRCS Soil Survey, five soil types are on-site, as summarized in **Table 3**. The site-specific Soil Survey is provided in **Appendix D**.

Table 3: Soil Descriptions						
Soil Name	Landform	Parent Material	Hydric Rating	Horizon Layer Descriptions	Drainage Class	K Factor
Armour silt loam (Ae)	Hillslopes	Silty alluvium and/or loamy alluvium over clayey residuum weathered from phosphatic limestone	No	0-14": silt loam 14-60": silty clay loam	Well drained	.37
Burgin silt loam (Bm)	Flood plains	Clayey alluvium derived from limestone	No	0-14": silt loam 14-35": clay	Somewhat poorly drained	.37
Donerail silt loam (Df)	Hillslopes	Clayey alluvium derived from limestone	No	0-10": silt loam 10-20": silty clay loam 20-60": silty clay	Moderately well-drained	.37
Lindell silt loam (Ld)	Flood plains	Fine-loamy alluvium derived from limestone and siltstone	No	0-52": silt loam 52-79": silty clay loam	Moderately well-drained	.32
Maury silt loam (Mb)	Hillslopes	Loess over clayey residuum and/or alluvium derived from limestone	No	0-14": silt loam 14-26": silty clay loam 26-40": silty clay 40-60": clay	Well drained	.32

2.3 Aquatic Resources and Receiving Waters

The subject property is not located within a Federal Emergency Management Agency (FEMA)-identified floodplain and does not contain wetlands, streams, or other aquatic resources, as determined through site reconnaissance and a review of available mapping resources, including the National Wetlands Inventory (NWI) and topographic maps. No hydrologic features subject to regulation under Section 404 of the CWA or the Tennessee Water Quality Control Act are present within the subject property boundary. Copies of the FEMA FIRMette (derived from FIRM 47119C0265E, effective April 16, 2007) and NWI map are included in Appendix D.

Stormwater from the subject property travels off-site in a northeast direction to an unnamed drainage feature, where it eventually discharges into Sugar Creek (TN Waterbody ID TN06040003023_0250), which is located approximately 0.3 miles northeast of the subject property. A 30-foot undisturbed buffer will be maintained on both sides of the existing drainage feature to minimize potential impacts from construction activities. If site conditions change or impacts to the drainage feature become unavoidable, the operator will be responsible for obtaining any necessary permits, including ARAP, USACE Section 404, and TVA Section 26A permits

3.0 CONSTRUCTION ACTIVITIES AND SEQUENCING

The construction activities proposed for coverage under this SWPPP include clearing, grubbing, grading, construction of the proposed structures and associated paved areas, and site stabilization. Additional supporting activities will involve the installation of erosion control

measures, utility installation, placement of sod, riprap, spreading of topsoil, seeding, mulching, watering, and fertilizing.

EPSC measures will be installed before any earthmoving operations begin. These measures are designed with good engineering practices to be consistent with the requirements and recommendations of the Tennessee EPSC Handbook. The design provides the following:

- Minimize or eliminate the dislodging or suspension of soil in stormwater runoff.
- Retain mobilized sediment on-site to the maximum extent practical.
- Slow down runoff to prevent rill and gully formation.
- Minimize the tracking of sediment, dirt, or mud off-site or onto public roads and reduce dust generation.

Construction sequencing is outlined below. The contractor is required to implement the BMPs outlined in the EPSC plan sheets (Appendix C), as described in this SWPPP, and in accordance with the Tennessee EPSC Handbook.

3.1 Initial EPSC Phase

The initial phase includes installing and activating EPSC measures before starting land-disturbing activities. EPSC devices will be maintained and adjusted as construction progresses.

1. Install initial EPSC measures, including the construction entrance, designated refueling area, concrete washout area, and silt fencing.
2. Install 4ft tall high-visibility construction fencing around the septic perc area to prevent disturbance.
3. Install 4ft tall high-visibility construction fencing and a layer of silt fencing along the existing drainage feature, maintaining a 30-foot undisturbed buffer on each side.
4. Install berm and construct the temporary sediment basin with outfall stabilized using rip-rap.
5. Contact the City of Mt. Pleasant for an inspection of EPSC measures and to apply for the grading permit.

3.2 Intermediate EPSC Phase

This phase includes grading and installing the stormwater conveyance system. EPSC measures will be maintained and adjusted as needed. The 30-foot buffer along the existing drainage feature must be maintained and protected throughout construction.

1. Complete grading activities. In disturbed areas, maintain slopes no steeper than 3:1, with efforts to preserve sheet flow where feasible. Stabilize critical slopes of 3:1 or steeper within seven calendar days of disturbance. Stabilize all other disturbed areas within 14 calendar days.
2. Once the open detention pond is constructed, immediately install inlet protection and stabilize pond soil with blankets and/or sod.
3. Install the stormwater conveyance system, including flat-bottom ditches and associated rock check dams, trench drains, and underground piping. Provide temporary inlet and outlet protections.

3.3 Final EPSC Phase

The final phase includes constructing the structures, paving, permanent stabilization, and removal of temporary controls.

1. Install utilities.
2. Construct structures, including asphalt roads, stone driveways, office and warehouse buildings, and associated rail infrastructure.
3. Install permanent EPSC measures, including erosion control blankets on all slopes 3:1 or steeper and riprap on all slopes 2:1 or greater. All other disturbed areas shall be stabilized with seed and straw.
4. Finalize grading and stabilization, maintaining slopes no steeper than 3:1 where feasible and preserving sheet flow where possible.
5. Address landscaping needs.
6. Remove temporary EPSC devices, leaving permanent stormwater controls in place, including the open detention pond.

Once construction activities have ceased, a Notice of Termination (NOT) form and photographs showing site stabilization must be submitted to TDEC via MyTDEC. A copy of the required NOT form is included in **Appendix E**.

4.0 STORMWATER RUNOFF CONTROLS

This section outlines the stormwater runoff control measures to be implemented during construction to minimize pollution. It includes a description of EPSC practices, stormwater management systems, procedures for handling other potential pollutants, and measures to manage non-stormwater and prohibited discharges. The site operator is responsible for ensuring that all measures are implemented as described and within the prescribed timelines to comply with the requirements set forth by the CGP and Tennessee's stormwater regulations.

4.1 Erosion Prevention and Sediment Control

The site operator implements, maintains, and inspects EPSC measures throughout construction. The EPSC Plan in Appendix C provides detailed locations and specifications for all control measures.

- Installation of EPSC Devices
EPSC devices must be installed and functional before any earth-moving activities begin. These measures include a stabilized construction entrance, designated refueling and concrete washout areas, silt fencing along cuts and fills, and high-visibility fencing to protect the existing drainage feature and septic perc area. The temporary sediment basin, with an associated berm, must also be installed during this phase. Temporary erosion control measures that are removed at the beginning of the workday must be replaced by the end of the day.
- Grading and Excavation Controls
Grading and excavation will be phased to limit the exposure of disturbed soil. Slopes

steeper than 3:1 must be stabilized with erosion control blankets, while slopes 2:1 or greater require riprap. All other disturbed areas must be stabilized with seed and straw within 14 days of the last disturbance.

➤ **Stormwater Conveyance and Inlet Protection**

As the stormwater conveyance system is installed, temporary protection must be placed at inlets to prevent sediment from entering the system. The site will include a permanent open detention pond designed to manage stormwater runoff. The pond must be constructed with appropriate stabilization measures, such as riprap at inlets and outlets, and maintained throughout the project to ensure proper function.

➤ **Permanent Stabilization**

Final stabilization measures will be implemented after grading and major earth-moving activities are complete. Permanent stabilization includes establishing a perennial, native vegetative cover with a minimum of 70 percent uniform density. Paved areas will be completed, and permanent stormwater features will be installed. All stabilization measures, including paving or vegetation, must be completed within 14 days of final grading to prevent erosion.

➤ **Removal of Temporary EPSC Measures**

Once final stabilization has been achieved, all temporary EPSC devices, including high-visibility construction fencing, check dams, silt fencing, and inlet protection, must be removed.

4.2 Stormwater Management

Post-construction stormwater management measures will be implemented to control sediment and minimize the discharge of pollutants from the subject property. These measures include one permanent open detention pond. The pond is designed to treat runoff and reduce sediment loading to receiving waters. The design will meet the requirements for managing stormwater from the 2-year, 24-hour storm event in accordance with the Tennessee Erosion and Sediment Control Handbook. The property owner will be responsible for regular maintenance and inspections to ensure the continued function of the stormwater management systems.

4.3 Other Items Needing Control

This subsection identifies construction materials, wastes, and other potential pollutants that require proper handling, storage, and disposal to minimize the risk of contaminating stormwater during construction activities. The operator shall establish and maintain a proactive method to prevent litter, construction debris, and construction chemicals from entering the waters of the state/U.S. BMPs will be implemented to ensure these items do not contribute to pollution in accordance with the requirements of the CGP.

➤ **Construction Materials**

The construction items anticipated at this subject property include earth, rock, concrete, asphalt, corrugated steel pipe, mineral aggregates, timber, and structural

components. Stockpiled control measures will secure erodible construction materials downgradient of the stockpiles.

➤ **Management of Construction Materials and Chemicals**

In addition to the above-referenced materials, the site will handle materials such as asphalt, paints, solvents, and other chemicals. These materials will be stored in designated areas with appropriate containment measures to prevent spillage. Any waste materials generated from the handling of these substances will be appropriately disposed of off-site in accordance with local, state, and federal regulations. Asphalt will be stored in covered containers to prevent exposure to rainfall. Paint and solvent containers will be tightly sealed when not in use, and the operator will ensure that all construction staff are trained on the proper handling and emergency response procedures in case of a spill. Spill kits will be available at storage areas and refueling points, and regular inspections will be conducted to ensure proper containment and management.

➤ **Waste Materials**

Waste material (earth, rock, concrete, litter) not required for the construction of the project will be disposed of by the operator off-site in a legal manner.

➤ **Other Materials**

Other materials not used for construction but needed at the proposed site must be controlled to prevent pollution of the receiving waters. These items include, but are not limited to, the storage and dispensing of fertilizers and lime, diesel fuel and gasoline, and machinery and lubricants (oil and grease).

Soils at fueling areas should be checked daily for signs of spillage and staining of the soil. Machinery should be serviced or repaired off-site to prevent leaks of fluids. The contractor is responsible for reporting all hazardous materials in accordance with all applicable federal, state, and local regulations.

4.4 Non-Stormwater Discharges

The following non-stormwater discharges have the potential to occur at the site during construction:

- Groundwater may be intercepted during excavation. While locations are unknown, this SWPPP will be modified as necessary as groundwater is discovered.
- Dust suppression water.
- Water used to wash vehicles (where detergents are not used and filtering is provided before water leaves the site).

4.5 Prohibited Discharges

The following discharges are prohibited:

- Wastewater from washout of concrete, unless managed by an appropriate control.
- Wastewater from washout and cleanout of stucco, paint, form release oils, curing compounds, and other construction materials.
- Fuels, oils, and other potential pollutants used in vehicle and equipment operation and

- maintenance.
- Soaps or solvents used in vehicle and equipment washing.
- Discharges from dewatering activities, including discharges from dewatering trenches and excavations, are prohibited unless managed by appropriate controls.

4.6 General Stormwater Quality Measures

Locations where vehicles enter and exit the site shall be inspected for evidence of off-site roadway sediment tracking. The operator shall take appropriate steps to ensure that petroleum products or other chemical pollutants are prevented from entering the waters of the state/U.S.

All equipment refueling, servicing, and staging areas shall comply with all local, state, and federal laws, rules, regulations, and ordinances, including those of the National Fire Protection Association. Appropriate containment measures for these areas shall be utilized. All spills must be reported to the appropriate agency, and measures shall be taken immediately to prevent the pollution of the waters of the state/U.S., including groundwater, should a spill occur.

Borrow and waste disposal areas shall be located in non-wetland areas and above the 100-year FEMA floodplain. Borrow and waste disposal areas shall not affect any waters of the state/U.S. unless these areas are addressed explicitly in the EPSC plans.

The operation of equipment in waters of the state/U.S., including wetlands, shall be only as shown on the project plans and/or as so specified in any ARAP and/or section 404 permits. Any additional permits required by the operator's method(s) of construction shall be the responsibility of the contractor to obtain after receiving the approval of the TDEC Division of Water Pollution Control.

5.0 INSPECTIONS AND MAINTENANCE

This section outlines the procedures for assessing, inspecting, and maintaining EPSC measures throughout the project. Inspections will be conducted regularly to ensure the effectiveness of the EPSC measures, and corrective actions will be taken to prevent pollutant discharge and maintain compliance with the CGP.

5.1 Site Assessments

For outfalls draining 10 or more acres or 5 or more acres if draining to waters with unavailable parameters, a site assessment will be conducted by a qualified individual, such as a licensed Professional Engineer (PE), Certified Professional in Erosion and Sediment Control (CPESC), or a TDEC-certified Level II EPSC professional. This site assessment ensures that the design and implementation of erosion prevention and sediment control measures are sufficient to minimize the discharge of pollutants from these larger drainage areas.

Outfalls #1 and #3 both drain over 10 acres; therefore, a site assessment is required for the subject property.

5.2 Twice-Weekly Inspections

Inspection, maintenance, and overall effectiveness of EPSCs will be performed regularly throughout the project's life. Twice-weekly inspections (at least 72 hours apart) shall be performed to verify and document the functionality and performance of EPSC measures as

described in the EPSC plans and SWPPP. Qualified personnel, such as a licensed PE, CPESC, or TDEC-certified Level I EPSC professional, shall inspect disturbed areas of the construction site not permanently stabilized, areas of exposed material storage and structural controls, vehicle access points, and outfalls.

Outfall points shall be inspected to determine whether EPSC measures effectively prevent siltation impacts to surrounding waters. Upon conclusion of the inspections, EPSC measures found to be ineffective shall be repaired, replaced, or modified before the next rain event, if possible, but no more than seven days after the condition is identified. A copy of the Inspection Certification Form is included in **Appendix F**.

The operator shall install a rain gage on-site at a central location, preferably near the construction entrance or another easily accessible area. The rain gage will be maintained in good working condition, and daily precipitation amounts will be recorded. The recorded rainfall data shall be provided to the engineer on a monthly basis for review and to support the determination of BMP functionality. The rain gage will be inspected during each of the twice-weekly inspections, and any necessary maintenance will be performed promptly.

5.3 Maintenance

Sediment shall be removed from sediment control structures when the design capacity has been reduced by fifty percent. Sediment removed from sediment control structures shall be placed and treated in a manner so that the sediment is contained within the project limits and does not migrate into the waters of the state/U.S. During sediment removal, the operator shall ensure that structural components of erosion control structures are not damaged and thus made ineffective. If damage does occur, the operator shall repair the structures at the operator's own expense.

The operator shall establish and maintain a proactive method to prevent the off-site migration or deposit of sediment on roadways used by the general public.

6.0 STORMWATER MANAGEMENT RECORDS

The site operator shall maintain a copy of this SWPPP on-site (or at a nearby office) and place copies of any project-related permits on the project bulletin board. The site operator must also post the telephone number and address of a person the public can contact for information and a brief project description.

The operator will also maintain at the site the following records of construction activities:

- The dates when major grading activities occur.
- The dates when construction activities temporarily or permanently cease on a portion of the site.
- The dates when stabilization measures are initiated.
- Inspection reports and daily rainfall amounts.

All records related to this SWPPP will be retained for a minimum of three years from the date the NOT is submitted and coverage under the CGP ends. These records will be made available to TDEC or other regulatory authorities upon request.

APPENDIX A

NOTICE OF INTENT (NOI)



**TENNESSEE DEPARTMENT OF ENVIRONMENT AND CONSERVATION
DIVISION OF WATER RESOURCES**

Davy Crockett Tower, 500 James Robertson Parkway 9th Floor Nashville, TN 37243
Toll Free Number: 1-888-891-8332 (TDEC)

**NOTICE OF INTENT (NOI) FOR GENERAL NPDES PERMIT FOR
STORMWATER DISCHARGES FROM CONSTRUCTION ACTIVITIES (TNR100000)**

Site or Project Name: Bulk Storage Railyard		NPDES Tracking Number: TNR	
Street Address: South Main Street, Tax Map 150 Parcel 063.11		Construction Start Date: 01/01/2026	
including city or zip: Mt. Pleasant, Tennessee 38474		Estimated End Date: 12/31/2027	
code or Location:		Latitude (dd.dddd): 35.5167	
Site Description: True Rail Bulk Storage Railyard		Longitude (-dd.dddd): -87.2147	
County(ies): Maury	MS4 Jurisdiction (if applicable): N/A	Acres Disturbed: 29.21	
		Total Acres: 62.16	
Are there any streams ☐ and/or wetlands ☐ on or adjacent to the construction site? If wetlands are located on-site and may be impacted, attach wetlands delineation report. If an Aquatic Resource Alteration Permit has been obtained for this site, what is the permit number? ARAP Number: N/A			
Receiving waters: Sugar Creek (TN06040003023_0250)			
Include the SWPPP with the NOI ☒ SWPPP Included		Include a site location map ☒ Map Included	

Name of Site Owner or Developer (Site-Wide Permittee): (correct legal name of person, company, or entity that has operational or design control over construction plans and specifications)			
True Rail Enterprises, LLC			
For corporate entities only, provide the Tennessee Secretary of State (SOS) Control Number: 001060798			
Site Owner or Developer Contact Name: (individual responsible for site)		Title or Position: (the party who signs the certification below):	
Mark Smith		CEO	
Mailing Address:	City:	State:	Zip:
500 1st Avenue	Mt. Pleasant	TN	38474
Phone:	E-mail:		
931-325-5570	mark@truerail.com		

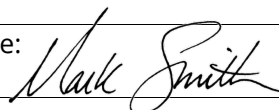
Optional Contact Name:		Title or Position:	
Katherine L. Clifton, P.G.		Environmental Geologist	
Mailing Address:	City:	State:	Zip:
2010 Highway 49	Pleasant View	TN	37146
Phone:	E-mail:		
615-619-9784	katherine.clifton@csrengineers.com		

Owner or Developer Certification: (must be signed by president, vice-president or equivalent, or ranking elected official) (Primary Permittee)
True Rail Enterprises, LLC

I certify under penalty of law that this document and all attachments were prepared by me, or under my direction or supervision. The submitted information is to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment. As specified in Tennessee Code Annotated Section 39-16-702(a)(4), this declaration is made under penalty of perjury.

Owner or Developer Name: (print or type):
Mark Smith

Signature:



Date:
10/28/25

Contractor(s) Certification: (must be signed by president, vice-president or equivalent, or ranking elected official) (Secondary Permittee)

I certify under penalty of law that I have reviewed this document, any attachments, and the SWPPP referenced above. Based on my inquiry of the construction site owner/developer identified above and/or my inquiry of the person directly responsible for assembling this NOI and SWPPP, I believe the information submitted is accurate. I am aware that this NOI, if approved, makes the above-described construction activity subject to NPDES permit number TNR100000, and that certain of my activities on-site are thereby regulated. I am aware that there are significant penalties, including the possibility of fine and imprisonment for knowing violations, and for failure to comply with these permit requirements. As specified in Tennessee Code Annotated Section 39-16-702(a)(4), this declaration is made under penalty of perjury.

Primary contractor name, address, and SOS control number
(if applicable): (print or type)

Signature:

Date:

Primary contractor name, address, and SOS control number
(if applicable): (print or type)

Signature:

Date:

Primary contractor name, address, and SOS control number
(if applicable): (print or type)

Signature:

Date:

**NOTICE OF INTENT (NOI) FOR GENERAL NPDES PERMIT FOR
STORMWATER DISCHARGES FROM CONSTRUCTION ACTIVITIES (TNR100000)**

Purpose of this form - A completed notice of intent (NOI) must be submitted to obtain coverage under the Tennessee General NPDES Permit for Discharges of Stormwater Associated with Construction Activity (permit). **Requesting coverage under this permit means that an applicant has obtained and examined a copy of this permit, and thereby acknowledges applicant's claim of ability to be in compliance with permit terms and conditions.** This permit is required for stormwater discharge(s) from construction activities including clearing, grading, filling, and excavating (including borrow pits) of one or more acres of land. This form should be submitted at least 30 days prior to the commencement of land disturbing activities, or no later than 48 hours prior to when a new operator assumes operational control over site specifications or commences work at the site.

The appropriate permit application fee must accompany the NOI and is based on total acreage to be disturbed by an entire project, including any associated construction support activities (e.g., equipment staging yards, material storage areas, excavated material disposal areas, borrow or waste sites):

(i) Projects equal to or greater than 150 acres	\$10,000
(ii) Projects equal to or greater than 50 acres and less than 150 acres	\$6,000
(iii) Projects equal to or greater than 20 acres and less than 50 acres	\$3,000
(iv) Projects equal to or greater than 5 acres and less than 20 acres	\$1,000
(v) Projects equal to or greater than 1 acre and less than 5 acres	\$250
(vi) Projects seeking subsequent coverage under an actively covered larger common plan of development or sale	\$100

There is no fee for sites less than 1 acre. A separate annual maintenance fee is also required for construction activities that exceed 1 year under general permit coverage. Tennessee Rules, Chapter 0400-40-11-.02(b)(12)).

Who must submit the NOI form? Per Section 2 of the permit, all site operators must submit an NOI form. "Operator" for the purpose of this permit and in the context of stormwater associated with construction activity means any person associated with a construction project who meets either or both of the following two criteria: (1) The person has operational or design control over construction plans and specifications, including the ability to make modifications to those plans and specifications. This person is typically the owner or developer of the project or a portion of the project (e.g. subsequent builder), or the person that is the current landowner of the construction site. This person is considered the primary permittee; or (2) The person has day-to-day operational control of those activities at a project which are necessary to ensure compliance with a SWPPP for the site or other permit conditions. This person is typically a contractor or a commercial builder who is hired by the primary permittee and is considered a secondary permittee.

Owners, developers, and all contractors that meet the definition of the operator in subsection 2.2 of the permit shall apply for permit coverage on the same NOI, insofar as possible. After permit coverage has been granted to the primary permittee, any separate or subsequent NOI submittals must include the site's previously assigned permit tracking number and the project name. The site-wide site-specific SWPPP shall be prepared in accordance with the requirements of part 5 of the permit and must be submitted with the NOI unless the NOI being submitted is to only add a contractor (secondary permittee) to an existing coverage. Artificial entities (e.g., corporations or partnerships excluding entities not required to register) must submit the TN Secretary of State, Division of Business Services, control number. The Division reserves the right to deny coverage to artificial entities that are not properly registered and in good standing with the TN Secretary of State.

Notice of Coverage - The division will review the NOI for completeness and accuracy and prepare a notice of coverage (NOC). Stormwater discharge from the construction site is authorized as of the effective date of the NOC.

Complete the form - Type or print clearly, using ink and not markers or pencil. Answer each item or enter "NA," for not applicable, if a particular item does not fit the circumstances or characteristics of your construction site or activity. If you need additional space, attach a separate piece of paper to the NOI form. **The NOI will be considered incomplete without a permit fee, a map, and the SWPPP.**

Describe and locate the project - Use the legal or official name of the construction site. If a construction site lacks street name or route number, give the most accurate geographic information available to describe the location (reference to adjacent highways, roads, and structures, e.g., intersection of state highways 70 and 100). Latitude and longitude (expressed in decimal degrees) of the center of the site can be located on USGS quadrangle maps. The maps can be obtained at the USGS World Wide Web site: <http://www.usgs.gov/>; latitude and longitude information can be found at numerous other web sites. Attach a copy of a portion of a 7.5-minute topographic map, a city map, or a county map showing location of site, with boundaries at least one mile outside the site boundaries. Provide estimated starting date of clearing activities and completion date of the project, and an estimate of the number of acres of the site on which soil will be disturbed, including borrow areas, fill areas, stockpiles and the total acres. For linear projects, give location at each end of the construction area.

Give name of the receiving waters - Trace the route of stormwater runoff from the construction site and determine the name of the river(s), stream(s), creek(s), wetland(s), lake(s) or any other water course(s) into which the stormwater runoff drains. Note that the receiving water course may or may not be located on the construction site. If the first water body receiving construction site runoff is unnamed ("unnamed tributary"), determine the name of the water body that the unnamed tributary enters.

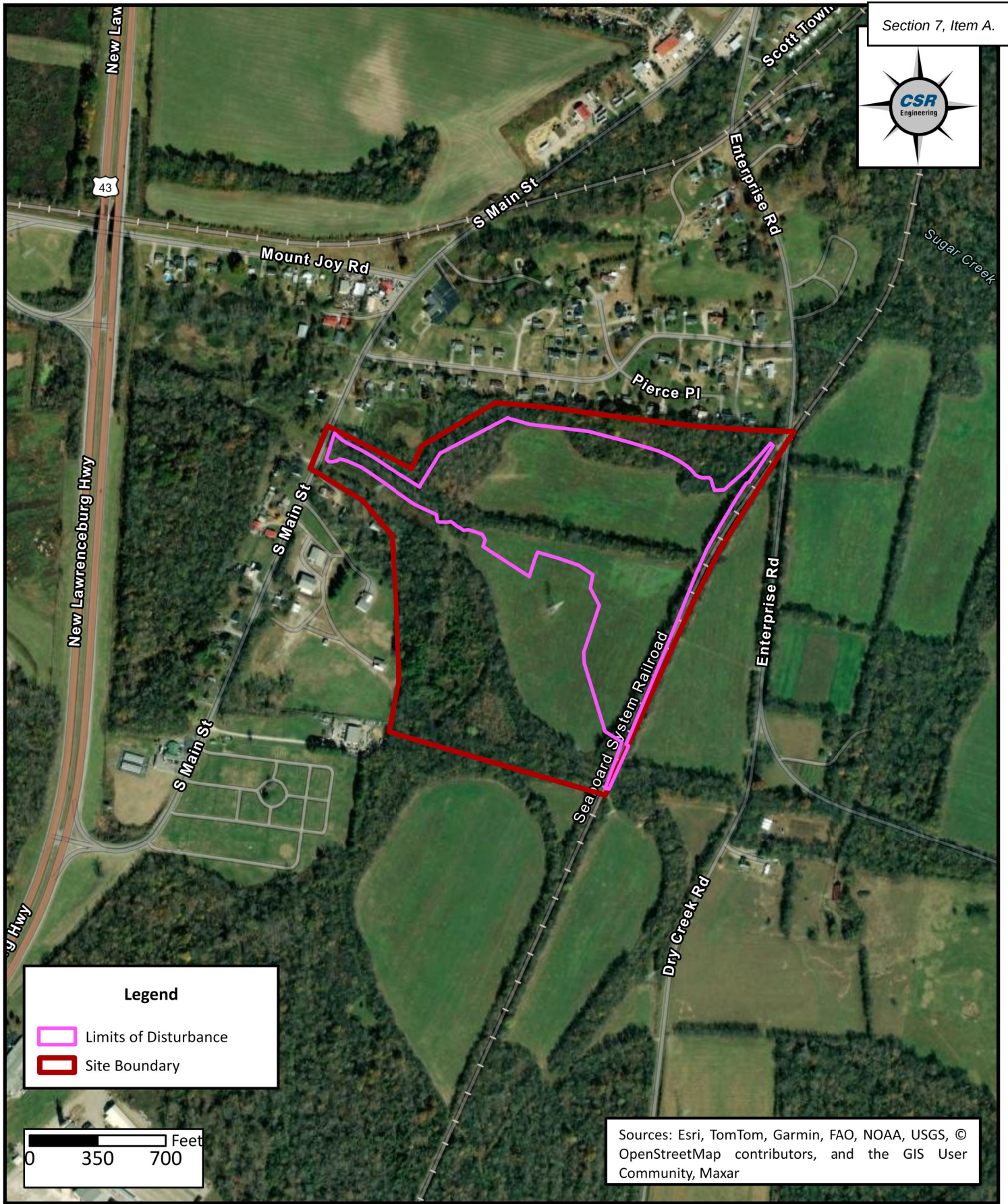
An ARAP may be required - If your work will disturb or cause alterations of a stream or wetland, you must obtain an appropriate Aquatic Resource Alteration Permit (ARAP). If you have a question about the ARAP program, contact your local Environmental Field Office (EFO).

Submitting the form and obtaining more information - Note that this form must be signed by the company President, Vice-President, or a ranking elected official in the case of a municipality, for details see subpart 2.5. For more information, contact your local EFO at the toll-free number 1-888-891-8332 (TDEC). Submit the completed NOI form (keep a copy for your records) to the appropriate EFO for the county(ies) where the construction activity is located, addressed to **Attention: Stormwater NOI Processing** or use MyTDEC Forms for electronic submittal.

EFO	Street Address	Zip Code	EFO	Street Address	Zip Code
Memphis	8383 Wolf Lake Drive, Bartlett	38133-4119	Cookeville	1221 South Willow Ave.	38506
Jackson	1625 Hollywood Drive	38305-4316	Chattanooga	1301 Riverfront Parkway, Suite 206	37402-2013
Nashville	711 R S Gass Boulevard	37243	Knoxville	3711 Middlebrook Pike	37921
Columbia	1421 Hampshire Pike	38401	Johnson City	2305 Silverdale Road	37601

APPENDIX B

SITE FIGURES



SITE LOCATION MAP
BULK STORAGE RAILYARD
SOUTH MAIN STREET - TAX MAP 150 PARCEL 063.11
MT. PLEASANT, MAURY COUNTY, TENNESSEE

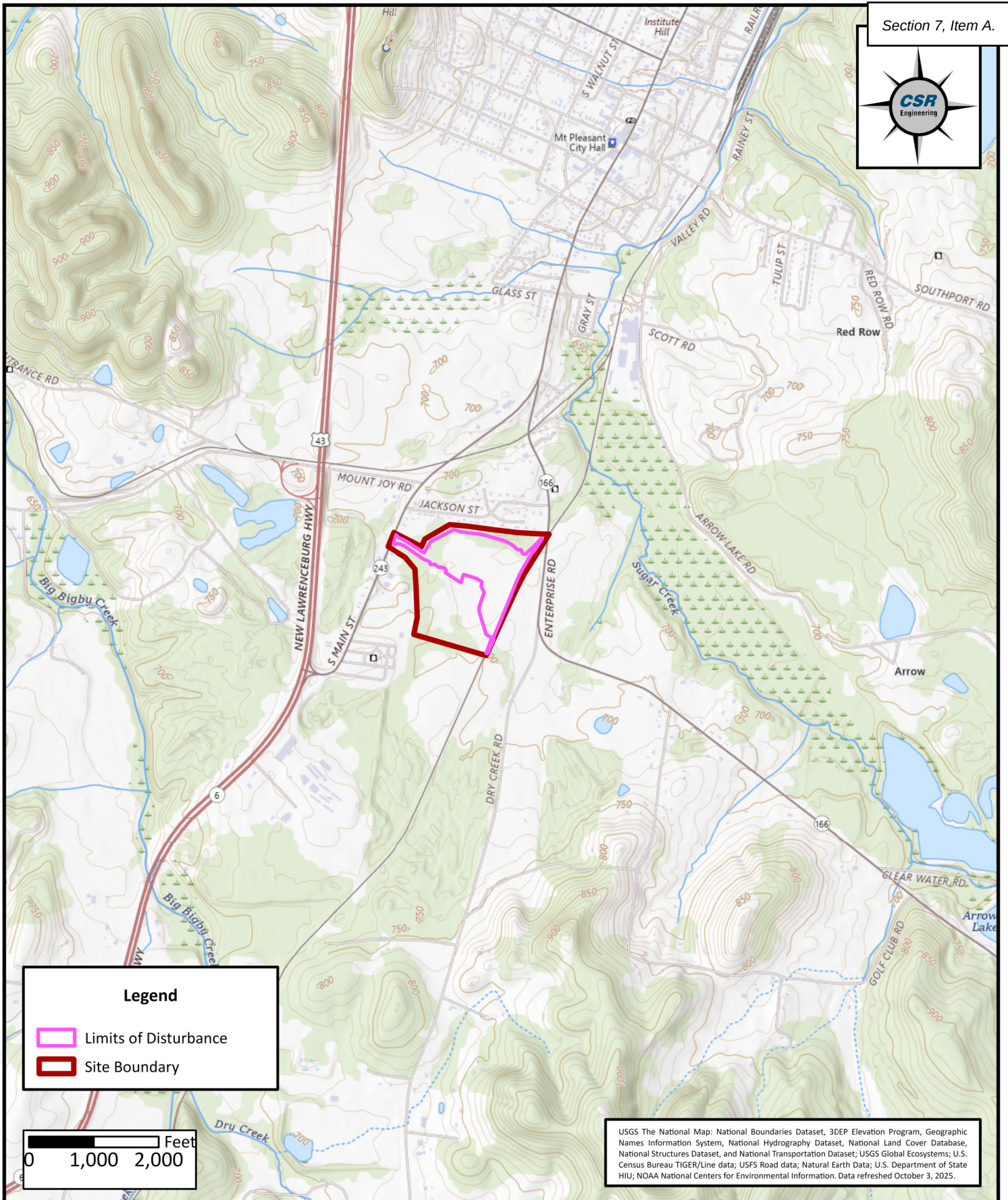
Drawn by: kclifton

Date: 10/21/2025

Project No.: 23-040

FIGURE

1



SITE LOCATION TOPOGRAPHIC MAP
BULK STORAGE RAILYARD
SOUTH MAIN STREET - TAX MAP 150 PARCEL 063.11
MT. PLEASANT, MAURY COUNTY, TENNESSEE

Drawn by: kclifton

Date: 10/21/2025

Project No.: 23-040

FIGURE

2

APPENDIX C

EPSC PLANS AND NOTES

SITE DEVELOPMENT PLANS

OF

RAIL YARD AND SITE DEVELOPMENT

FOR

REVISIONS			
NO.	DATE	BY	DESCRIPTION

CONTRACTOR'S NOTES:

THE CONTRACTOR'S WORK TO BE PERFORMED UNDER THIS PROJECT WILL CONSIST OF FURNISHING ALL EQUIPMENT, LABOR, MATERIALS, TOOLS AND SUPERVISION NECESSARY FOR THE CONSTRUCTION OF THE PROPOSED NORTH STAR FACILITY AND OTHER RELATED WORK AS LISTED IN THE PLANS AND SPECIFICATIONS.

THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS, UTILITY LOCATIONS, ELEVATIONS, EXISTING INVERTS PRIOR TO ORDERING ANY MATERIAL. IF A DISCREPANCY IS FOUND, THE CONTRACTOR SHALL NOTIFY THE ENGINEER OR REPRESENTATIVE IMMEDIATELY.

ALL WORK SHALL COMPLY WITH ALL LOCAL, STATE AND FEDERAL CODES AND LAWS. ALL NECESSARY LICENSES AND PERMITS NOT OBTAINED BY THE OWNER SHALL BE THE CONTRACTOR'S RESPONSIBILITY.

ALL MATERIALS SHALL BE NEW UNLESS USED OR SALVAGED MATERIALS ARE AUTHORIZED BY OWNER.

THE CONCRETE SHALL HAVE A 4000 PSI MINIMUM COMPRESSIVE STRENGTH IN 28 DAYS. MAXIMUM SLUMP SHALL BE 4 INCHES, UNLESS NOTED OTHERWISE.

ALL EXTERIOR CONCRETE SHALL BE FINISHED WITH A FINE HAIR BROOM.

ALL WORK PERFORMED SHALL BE IN THE BEST RECOGNIZED TRADE PRACTICES AND TO THE ENTIRE SATISFACTION OF THE OWNER.

ALL DESIGNATED GRASS AREAS WITHIN THE PROPERTY LINE SHALL BE SEEDED AND MULCHED.

TRUE RAIL ENTERPRISES, LLC.

S MAIN STREET
MT. PLEASANT, TENNESSEE
MAURY COUNTY
TAX MAP 150 PARCEL 063.11

OCTOBER 2025

INDEX OF DRAWINGS

SHEET	DESCRIPTION
T1.0	TITLE SHEET
C1.0	EXISTING SITE PLAN

PROPOSED	
C2.0	OVERALL SITE PLAN
C2.1	ENLARGED SITE PLAN
C2.2	ENLARGED SITE PLAN
C3.0	GRADING PLAN AREA 1
C3.1	GRADING PLAN AREA 2
C3.2	GRADING PLAN AREA 3
C3.3	CUT AND FILL QUANTITIES
C3.4	EXISTING DRAINAGE MAP
C3.5	PROPOSED DRAINAGE MAP
C4.0	INITIAL EPSC PLAN
C4.1	INTERMEDIATE EPSC PLAN
C4.2	FINAL EPSC PLAN
C4.3	EPSC DETAILS
C4.4	SEDIMENT BASIN DETAILS
C5.0	UTILITY PLAN
C5.1	LIGHTING PLAN
C6.0	STORMWATER DETAILS
C7.0	SITE DETAILS
C8.0	SITE PROFILES
A-1-A-3	ARCHITECTURAL PLANS
L-1.0-L1.2	LANDSCAPING PLANS

RAILROAD PLANS	
RR1.	ESTIMATED QUANTITIES AND NOTES
RR2.	PROPOSED TRACK LAYOUTS - OVERALL
RR3.	PROPOSED SIDING TRACK - STA. 0+00 TO STA. 10+00
RR4.	PROPOSED SIDING TRACK - STA. 10+00 TO E.O.L.
RR5.	PROPOSED INDUSTRY TRACK 4 - STA. 0+00 TO STA. 7+00
RR6.	PROPOSED INDUSTRY TRACK 4 - STA. 7+00 TO E.O.L.
RR7.	PROPOSED TRACK 2 - PROFILE
RR8.	TYPICAL TRACK DETAILS

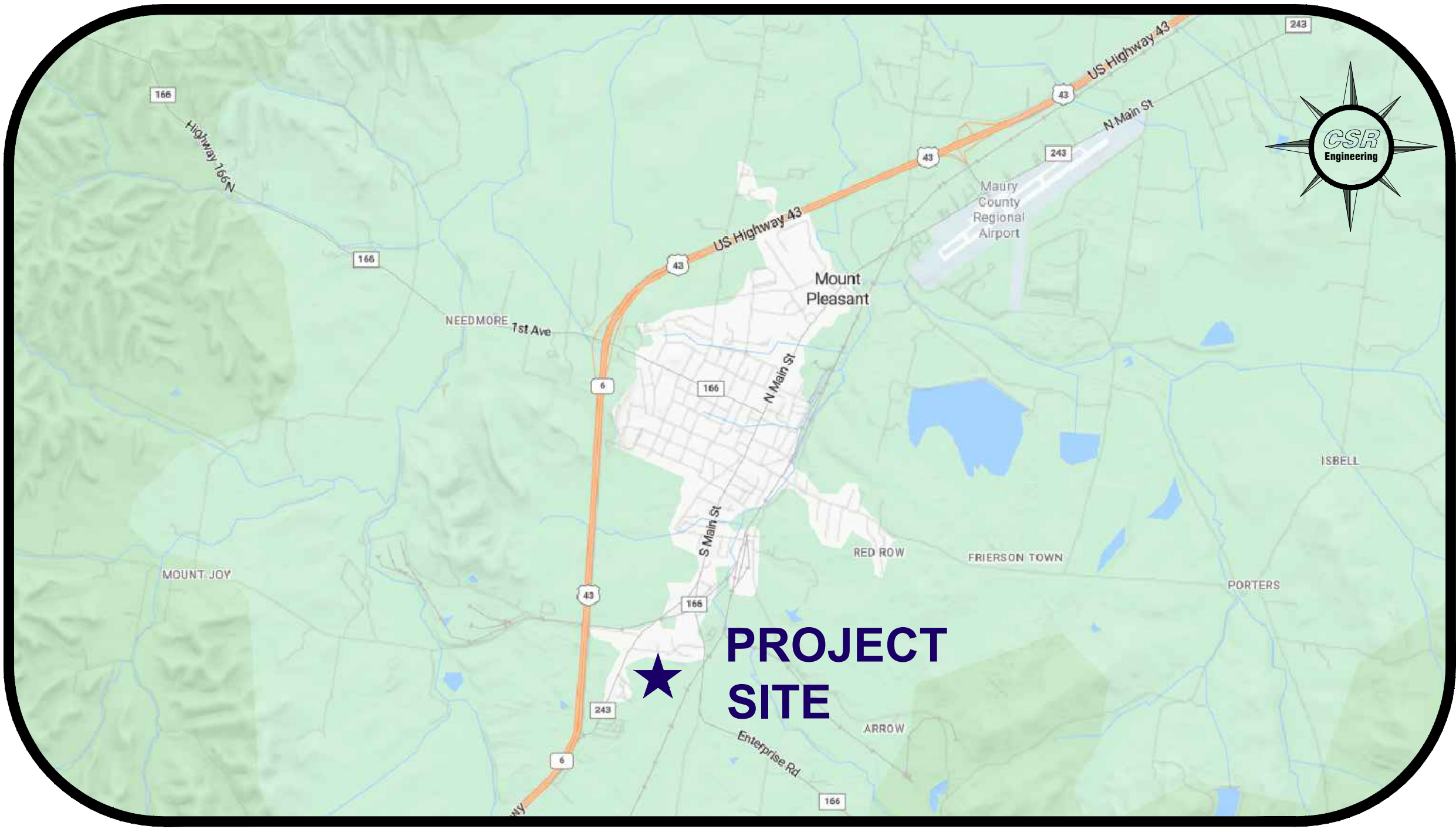
UTILITY COMPANIES:

NATURAL GAS -
CITY OF MOUNT PLEASANT
100 PUBLIC SQUARE
(931) 379-7717

WATER-
CITY OF MOUNT PLEASANT
100 PUBLIC SQUARE
(931) 379-7717

SEWER-
CITY OF MOUNT PLEASANT
100 PUBLIC SQUARE
(931) 379-7717

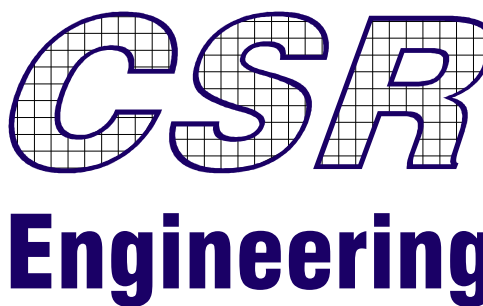
ELECTRIC -
MOUNT PLEASANT POWER SYSTEM
123 N. MAIN STREET
(931) 379-3233



LOCATION MAP

SCALE: 1"=3,000'

ZONED "IL"
LIGHT INDUSTRIAL DISTRICT
MINIMUM BUILDING SETBACKS
FRONT - 50'
REAR - 50'
SIDE - 50'



Jason Reynolds PE
CSR Engineering, Inc.
2010 Highway 49E
Pleasant View, TN 37146
P: 615.247.5381
F: 615.246.3815
jason.reynolds@csrengineers.com



True Rail Enterprises, LLC
Mark Smith
500 1st Avenue
Mt. Pleasant, TN 38474
P: 931.325.5570
C: 423.244.6057
mark@truerail.com

CSR

Engineering

CSR Engineering, Inc.

2010 Highway 49E

Pleasant View, TN 37146

P: 615.212.2389

F: 615.246.3815

www.csrengineers.com

TrueRail

ENTERPRISES, LLC

EXISTING SITE PLAN
OF
BULK STORAGE RAIL YARD
FOR
TRUE RAIL ENTERPRISES, LLC
S MAIN STREET
MT. PLEASANT, TENNESSEE
MAURY COUNTY

REVISIONS	
NO.	DESCRIPTION

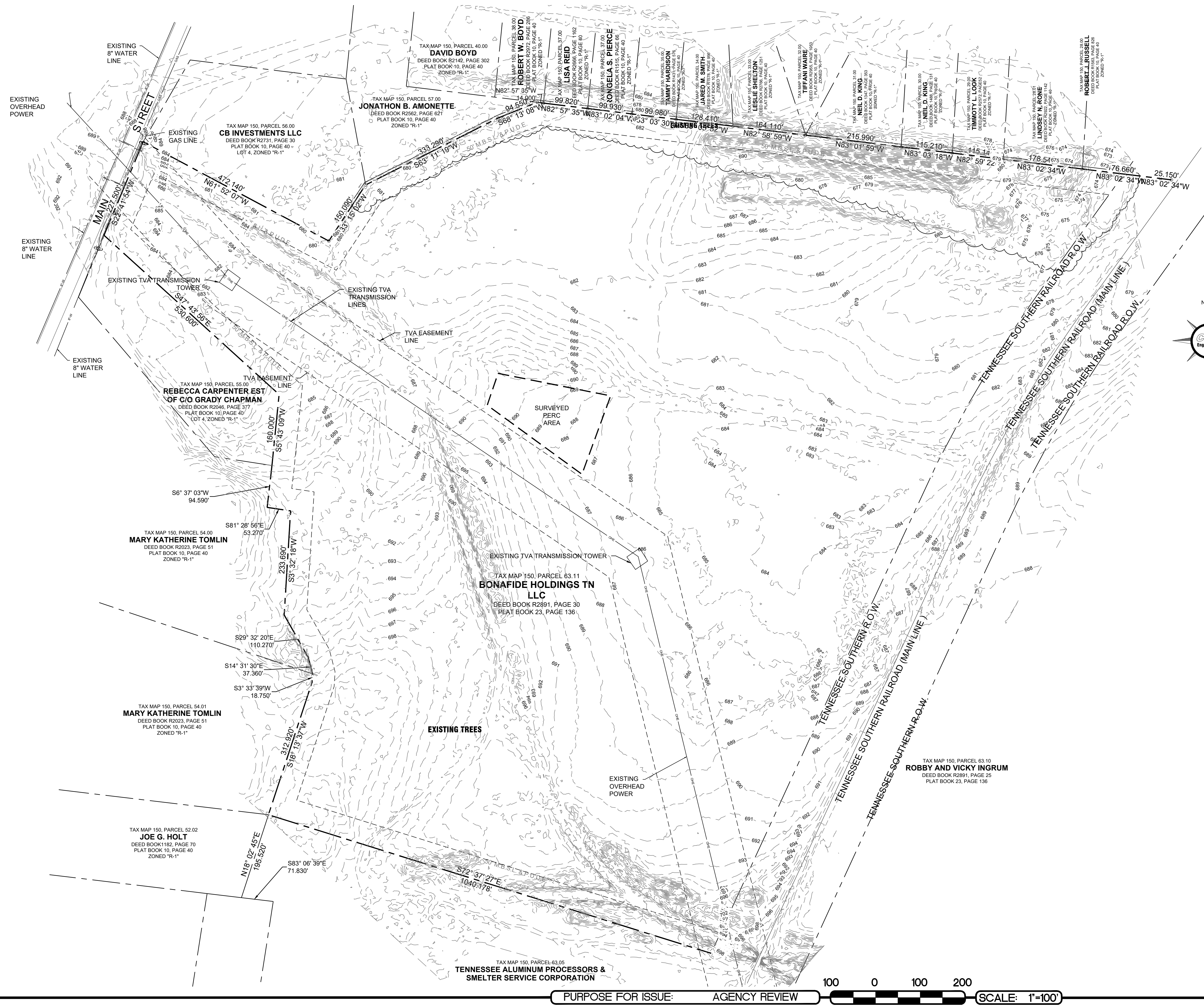
DESIGNER MSS

REVIEWER JLR

PROJECT 23-040

DATE 10-14-2025

SHEET C1.0



CSR

Engineering

CSR Engineering, Inc.

2010 Highway 49E

Pleasant View, TN 37146

P: 615.212.2389

F: 615.246.3815

www.csrengineers.com

TrueRail

ENTERPRISES, LLC

OVERALL SITE PLAN

OF

FOR

BULK STORAGE RAIL YARD

TRUE RAIL ENTERPRISES, LLC

S MAIN STREET

MT. PLEASANT, TENNESSEE

MAURY COUNTY

REVISIONS		DESCRIPTION	
NO.	DATE	BY	

DESIGNER

MSS

REVIEWER

JLR

PROJECT

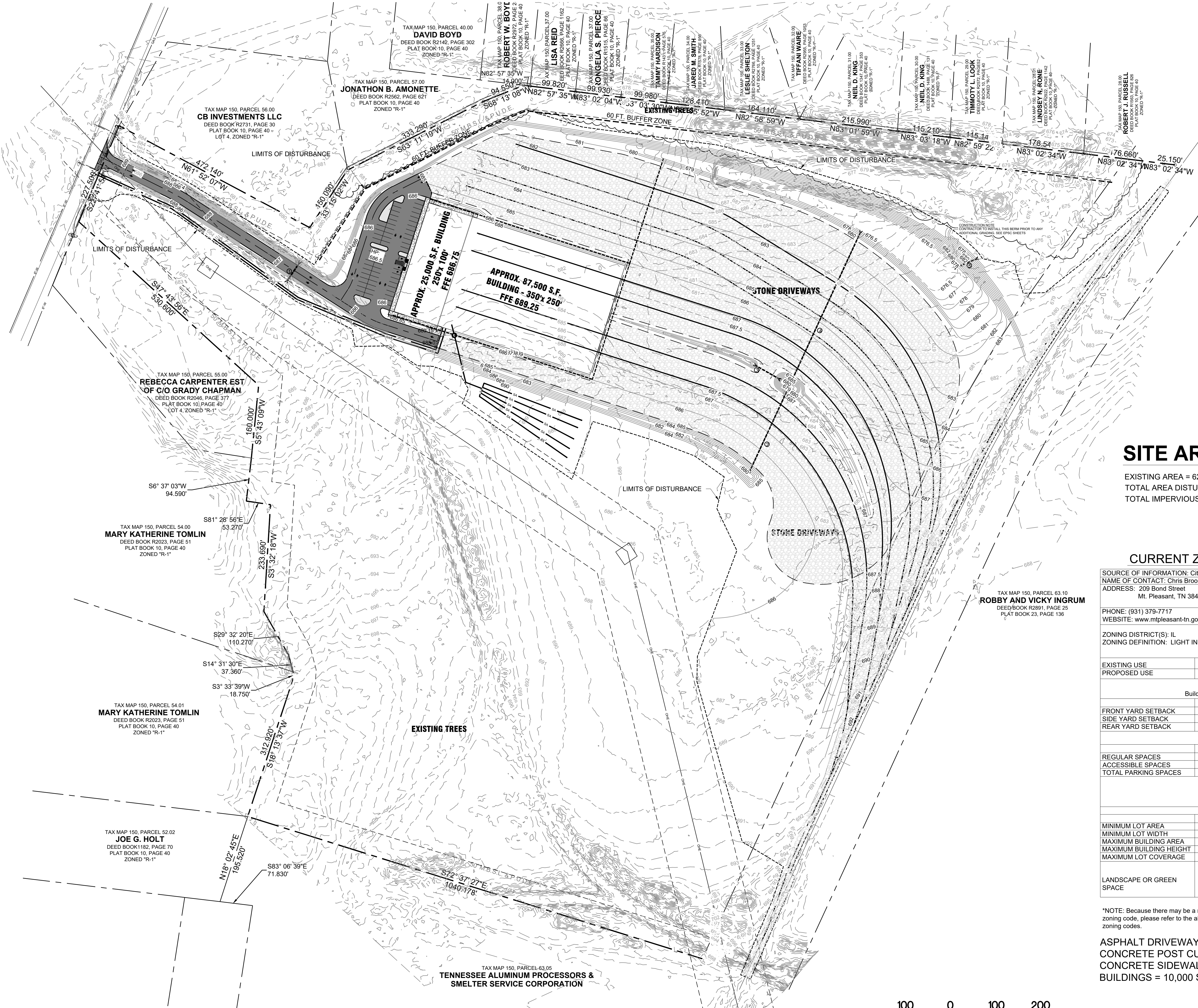
23-040

DATE

10-14-2025

SHEET

C2.0



SITE AREA

EXISTING AREA = 62.16 ACRES (2,707,846 S.F.)
TOTAL AREA DISTURBED = 29.21 ACRES (1,272,346 S.F.)
TOTAL IMPERVIOUS AREA = 3.83 ACRES (166,705 S.F.)

CURRENT ZONING INFORMATION

SOURCE OF INFORMATION: City of Mt. Pleasant and Planning Department
NAME OF CONTACT: Chris Brooks, Planning Director
ADDRESS: 209 Bond Street
Mt. Pleasant, TN 38474

PHONE: (931) 379-7717
WEBSITE: www.mtleasant-tn.gov/building-planning

ZONING DISTRICT(S): IL
ZONING DEFINITION: LIGHT INDUSTRIAL
TAX MAP 150, PARCEL 063.11

EXISTING USE	Vacant - Undeveloped
PROPOSED USE	Office, Warehouse, and Maintenance Facility

Building Setback Requirements			
	Proposed	Required	Notes
FRONT YARD SETBACK	225'	50'	
SIDE YARD SETBACK	350'	50'	
REAR YARD SETBACK	780'	50'	

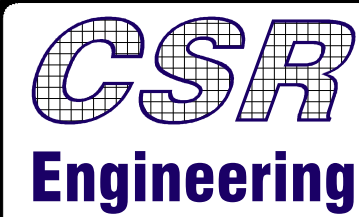
Parking Tabulation			
	Proposed	Required	Notes
REGULAR SPACES	67	62	
ACCESSIBLE SPACES	3	3	
TOTAL PARKING SPACES	60	65	

Bulk Restrictions			
	Proposed	Required	Notes
MINIMUM LOT AREA	2,707,846 S.F.	40,000 S.F.	
MINIMUM LOT WIDTH	1,230 FT.	100 FT.	
MAXIMUM BUILDING AREA	1.26%	50% MAX.	
MAXIMUM BUILDING HEIGHT	39 FT.	60 FT.	
MAXIMUM LOT COVERAGE			

LANDSCAPE OR GREEN SPACE			See "Landscaping Plan"
--------------------------	--	--	------------------------

*NOTE: Because there may be a need for further interpretation of the applicable zoning code, please refer to the above referenced municipality and the applicable zoning codes.

ASPHALT DRIVEWAY/PARKING = 43,487 S.F.
CONCRETE POST CURB = 1,938 S.F.
CONCRETE SIDEWALK = 4,815 S.F.
BUILDINGS = 10,000 S.F. OFFICE & 102,500 S.F. WH



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ENLARGED SITE PLAN
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S MAIN STREET
MT. PLEASANT, TENNESSEE
MAURY COUNTY

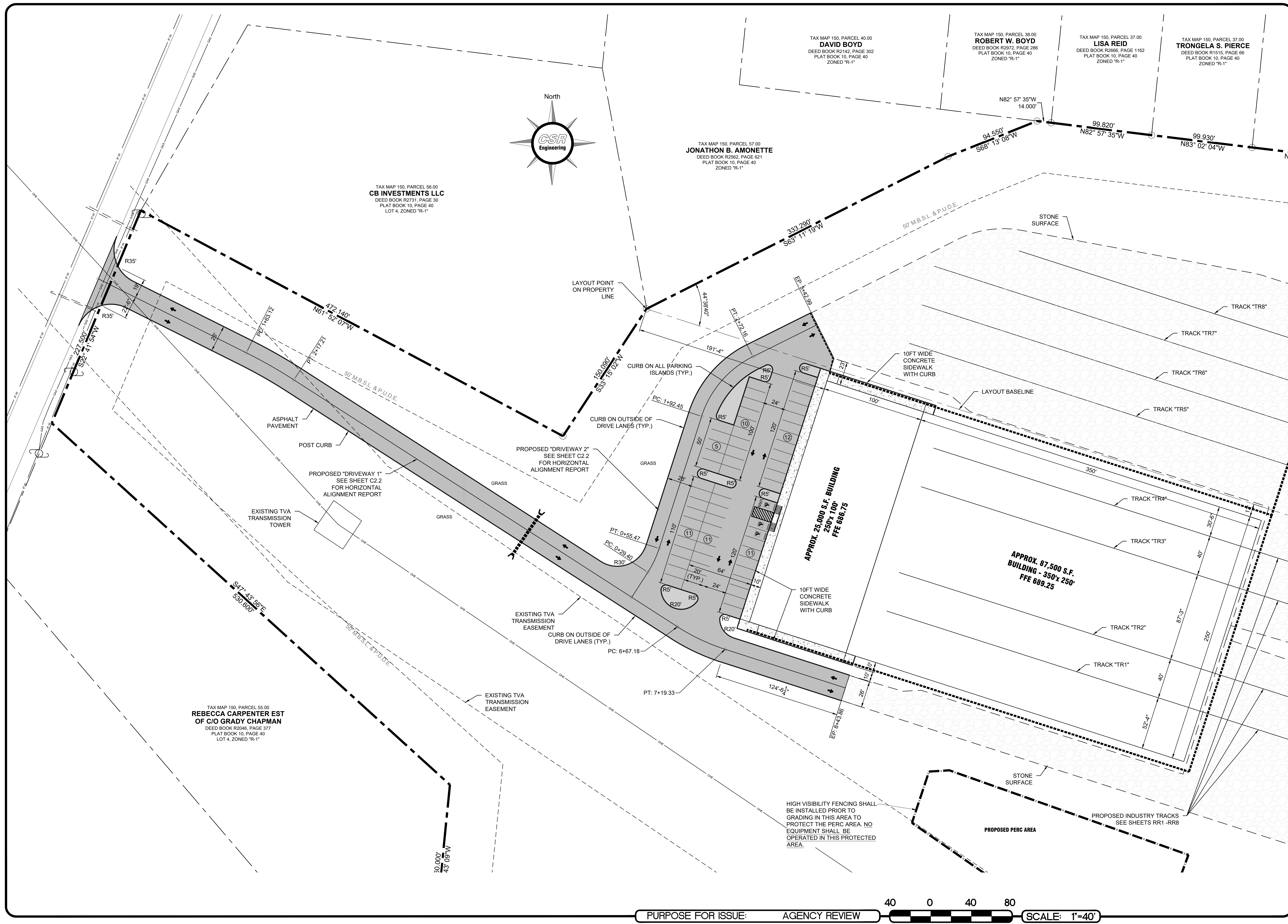
REVISIONS		DESCRIPTION	
NO.	DATE	BY	DESCRIPTION

DESIGNER MBS
REVIEWER JLR

PROJECT 23-040

DATE 10-14-2025

SHEET C2.1



PURPOSE FOR ISSUE: AGENCY REVIEW



SCALE: 1"=40'

NO.	DATE	BY	DESCRIPTION

TAX MAP 150, PAGE 575
OR 10, PAGE 40
NED "R-1"

TAX MAP 150, PARCEL 34.00
JARED M. SMITH
DEED BOOK R1518, PAGE 556
PLAT BOOK 10, PAGE 40
ZONED "R-1"

TAX MAP 150, PARCEL 33.00
LESLIE SHELTON
DEED BOOK R2766, PAGE 1251
PLAT BOOK 10, PAGE 40
ZONED "R-1"

TAX MAP 150, PARCEL 32.00
TIFFANI WAIRE
DEED BOOK R2955, PAGE 1053
PLAT BOOK 10, PAGE 40
ZONED "R-1"

TAX MAP 150, PARCEL 31.00
NEIL D. KING
DEED BOOK 1447, PAGE 353
PLAT BOOK 10, PAGE 40
ZONED "R-1"

TAX MAP 150, PARCEL 30.00
NEIL D. KING
DEED BOOK 1488, PAGE 131
PLAT BOOK 10, PAGE 40
ZONED "R-1"

TAX MAP 150, PARCEL 29.00
TIMMOTY L. LOOK
DEED BOOK R2572, PAGE 552
PLAT BOOK 10, PAGE 40
ZONED "R-1"

TAX MAP 150, PARCEL 28.01
LINDSEY N. RONE
DEED BOOK R2922, PAGE 1142
PLAT BOOK 10, PAGE 40
ZONED "R-1"

TAX MAP 150, PARCEL 28.00
ROBERT J. RUSSELL
DEED BOOK R1563, PAGE 826
PLAT BOOK 10, PAGE 40
ZONED "R-1"

"Driveway 1"
Horizontal Alignment Report

Begin Driveway 1
N 433,347.5470 E 1,605,756.3945 0+00.00

Line (1)
S63° 25' 31"E 163.12'
N 433,274.5725 E 1,605,902.2812 1+63.12
Line (1)

Curve (2)
BC N 433,274.5725 E 1,605,902.2812 1+63.12
CTR N 432,827.3971 E 1,605,678.5980
PI N 433,262.4620 E 1,605,926.4919

Direction Back S63° 25' 31"E
Radius 500.00'
Delta 6°11'53"(RT)
Length 54.09'
Tangent 27.07'
Chord Direction S60° 19' 34"E Distance 54.06'
Direction Ahead S57° 13' 37"E

EC N 433,247.8083 E 1,605,949.2535 2+17.21
Curve (2)

Line (3)
S57° 13' 37"E 449.98'
N 433,004.2318 E 1,606,327.6026 6+67.18
Line (3)

Curve (4)
BC N 433,004.2318 E 1,606,327.6026 6+67.18
CTR N 433,172.3963 E 1,606,435.8649
PI N 432,990.0367 E 1,606,349.6520

Direction Back S57° 13' 37"E
Radius 200.00'
Delta 14°56'23"(LT)
Length 52.15'
Tangent 26.22'
Chord Direction S64° 41' 49"E Distance 52.00'
Direction Ahead S72° 10' 01"E

EC N 432,982.0058 E 1,606,374.6156 7+19.33
Curve (4)

Line (5)
S72° 10' 01"E 124.53'
N 432,943.8693 E 1,606,493.1612 8+43.86
Line (5)

N 432,943.8693 E 1,606,493.1612 8+43.86
End Driveway 1

Alignment Length: 843.86'

"Driveway 2"
Horizontal Alignment Report

Begin Driveway 2
N 433,044.2824 E 1,606,265.3917 0+00.00

Line (1)
N32° 46' 23"E 25.90'
N 433,066.0561 E 1,606,279.4093 0+25.90
Line (1)

Curve (2)
BC N 433,066.0561 E 1,606,279.4093 0+25.90
CTR N 433,336.7116 E 1,605,858.9981
PI N 433,121.1794 E 1,606,314.8970

Direction Back N32° 46' 23"E
Radius 500.00'
Delta 14°56'23"(LT)
Length 130.37'
Tangent 65.56'
Chord Direction N25° 18' 11"E Distance 130.00'
Direction Ahead N17° 49' 59"E

EC N 433,183.5883 E 1,606,334.9742 1+56.27
Curve (2)

Line (3)
N17° 49' 59"E 24.14'
N 433,206.5723 E 1,606,342.3682 1+80.41
Line (3)

Non-Tangent Radial Bearing N72° 43' 57"W
Curve (4)
BC N 433,206.5723 E 1,606,342.3682 1+80.41
CTR N 433,176.8797 E 1,606,437.9909
PI N 433,247.3498 E 1,606,355.0437

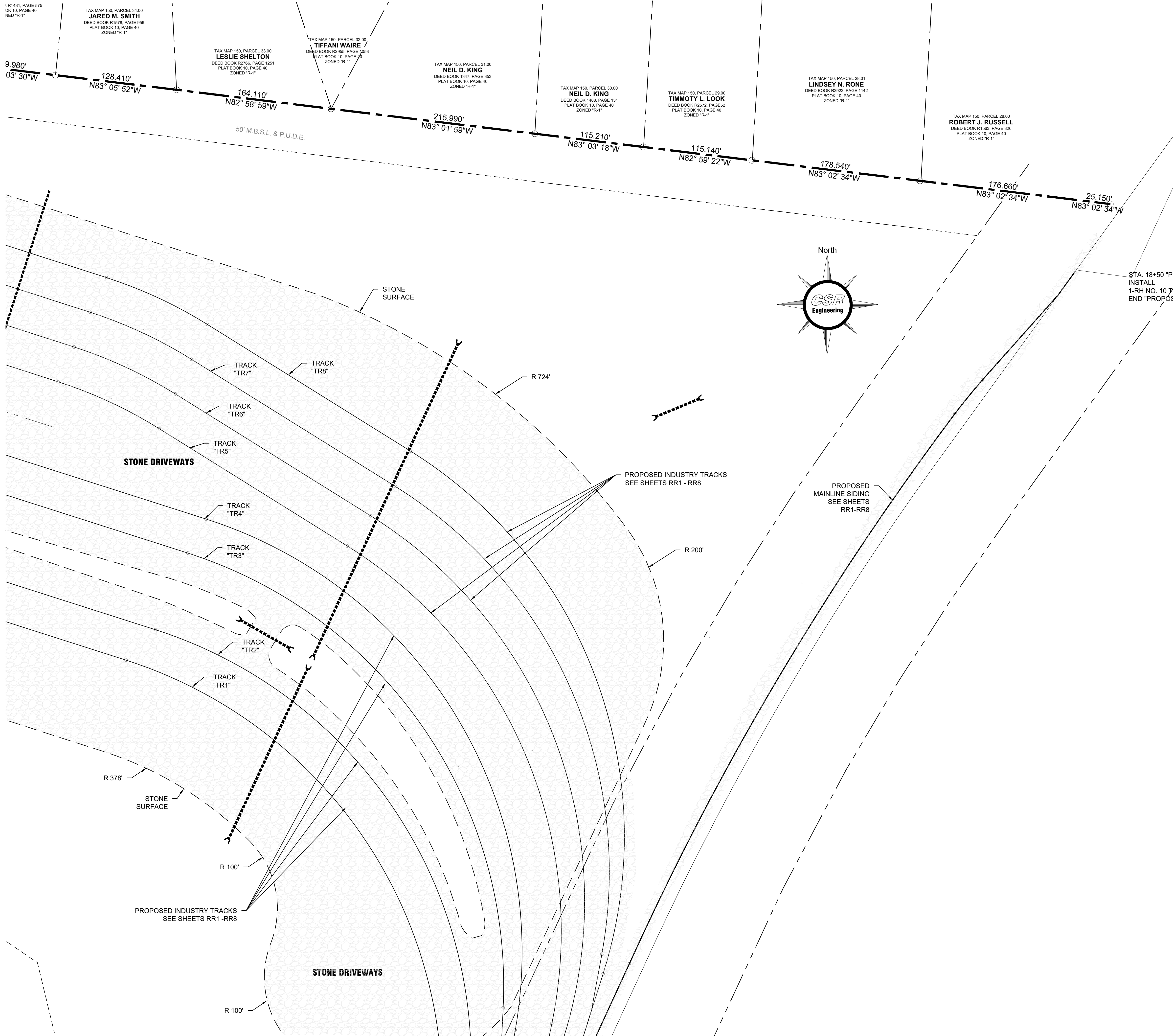
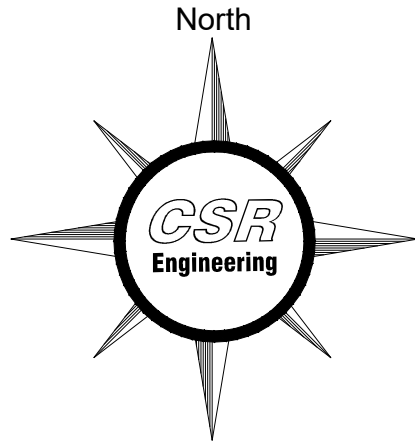
Direction Back N17° 16' 03"E
Radius 100.03'
Delta 46°14'03"(RT)
Length 80.72'
Tangent 42.70'
Chord Direction N40° 23' 05"E Distance 78.55'
Direction Ahead N63° 30' 06"E

EC N 433,266.4023 E 1,606,393.2599 2+61.13
Curve (4)

Line (5)
Non-Tangent Radial Bearing N26° 29' 54"W
N63° 30' 19"E 80.63'
N 433,302.3731 E 1,606,465.4227 3+41.76
Line (5)

N 433,302.3731 E 1,606,465.4227 3+41.76
End Driveway 2

Alignment Length: 341.76'



CSR
Engineering

CSR Engineering, Inc.
2010 Highway 49E
Pleasant View, TN 37146
P: 615.212.2389
F: 615.246.3815
www.csrengineers.com

TrueRail

ENTERPRISES, LLC

GRADING PLAN AREA 1
OF
BULK STORAGE RAIL YARD
FOR
TRUE RAIL ENTERPRISES, LLC
S MAIN STREET
MT. PLEASANT, TENNESSEE
MAURY COUNTY

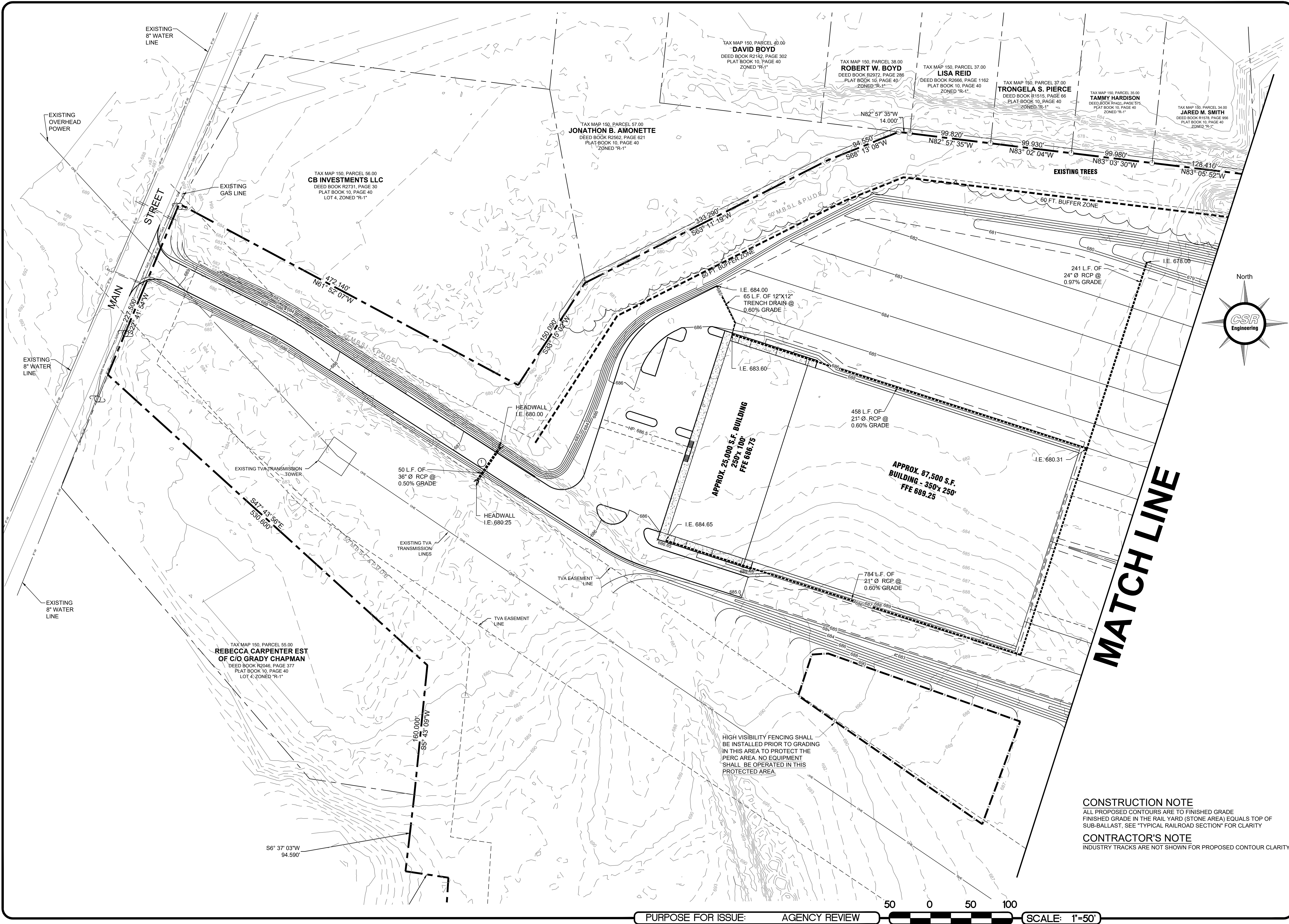
REVISIONS	
NO.	DESCRIPTION

DESIGNER MSS
REVIEWER JLR

PROJECT 23-040

DATE 10-14-2025

SHEET C3.0



PURPOSE FOR ISSUE: AGENCY REVIEW



SCALE: 1"=50'

CSR

Engineering

CSR Engineering, Inc.

2010 Highway 49E

Pleasant View, TN 37146

P: 615.212.2389

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GRADING PLAN AREA 2
OF
FOR
BULK STORAGE RAIL YARD
TRUE RAIL ENTERPRISES, LLC
S MAIN STREET
MT. PLEASANT, TENNESSEE
MAURY COUNTY

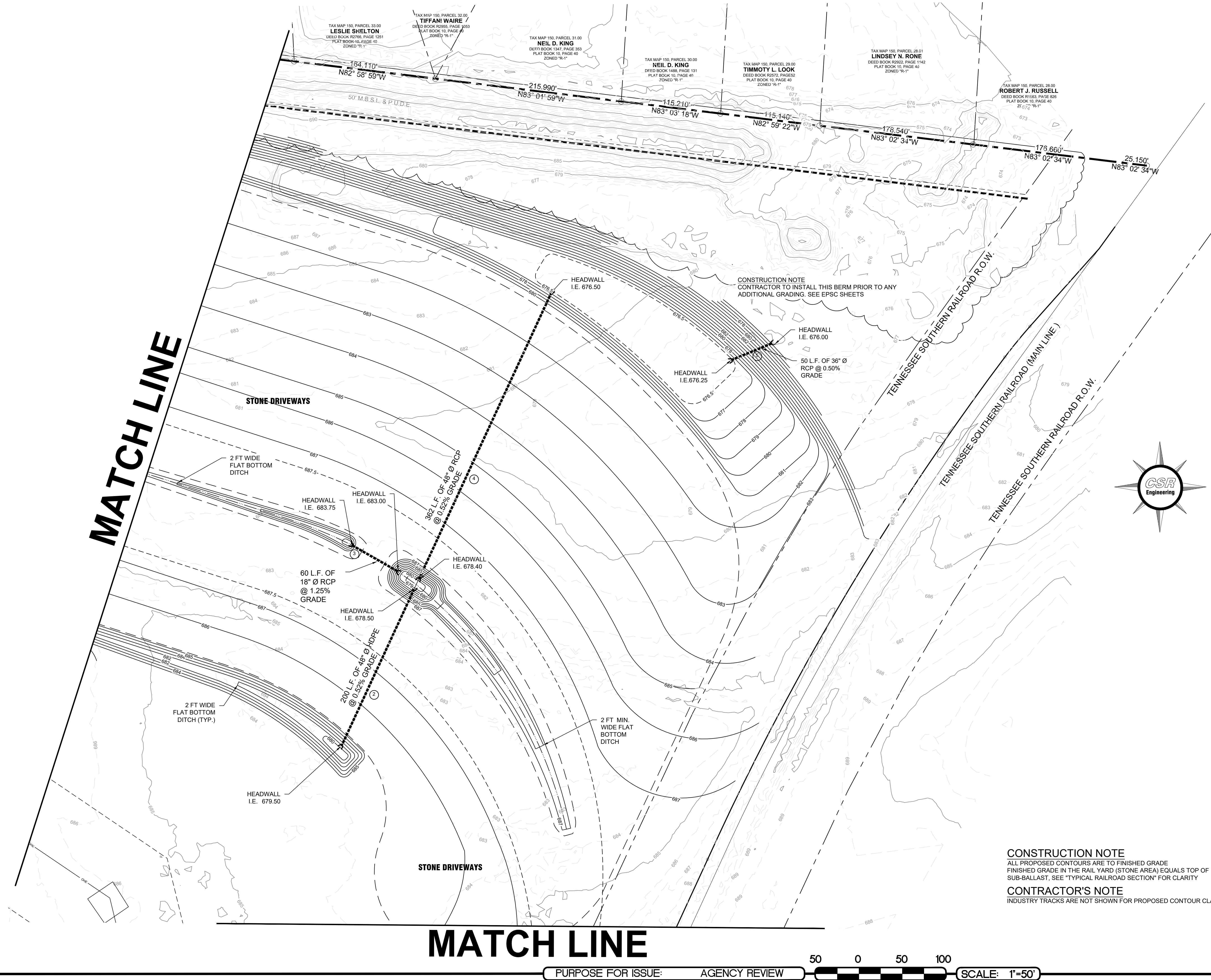
REVISIONS	
NO.	DESCRIPTION

DESIGNER MSS
REVIEWER JLR

PROJECT 23-040

DATE 10-14-2025

SHEET C3.1





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GRADING PLAN AREA 3
OF
FOR
BULK STORAGE RAIL YARD
TRUE RAIL ENTERPRISES, LLC
S MAIN STREET
MT. PLEASANT, TENNESSEE
MAURY COUNTY

REVISIONS

NO.	DATE	BY	DESCRIPTION

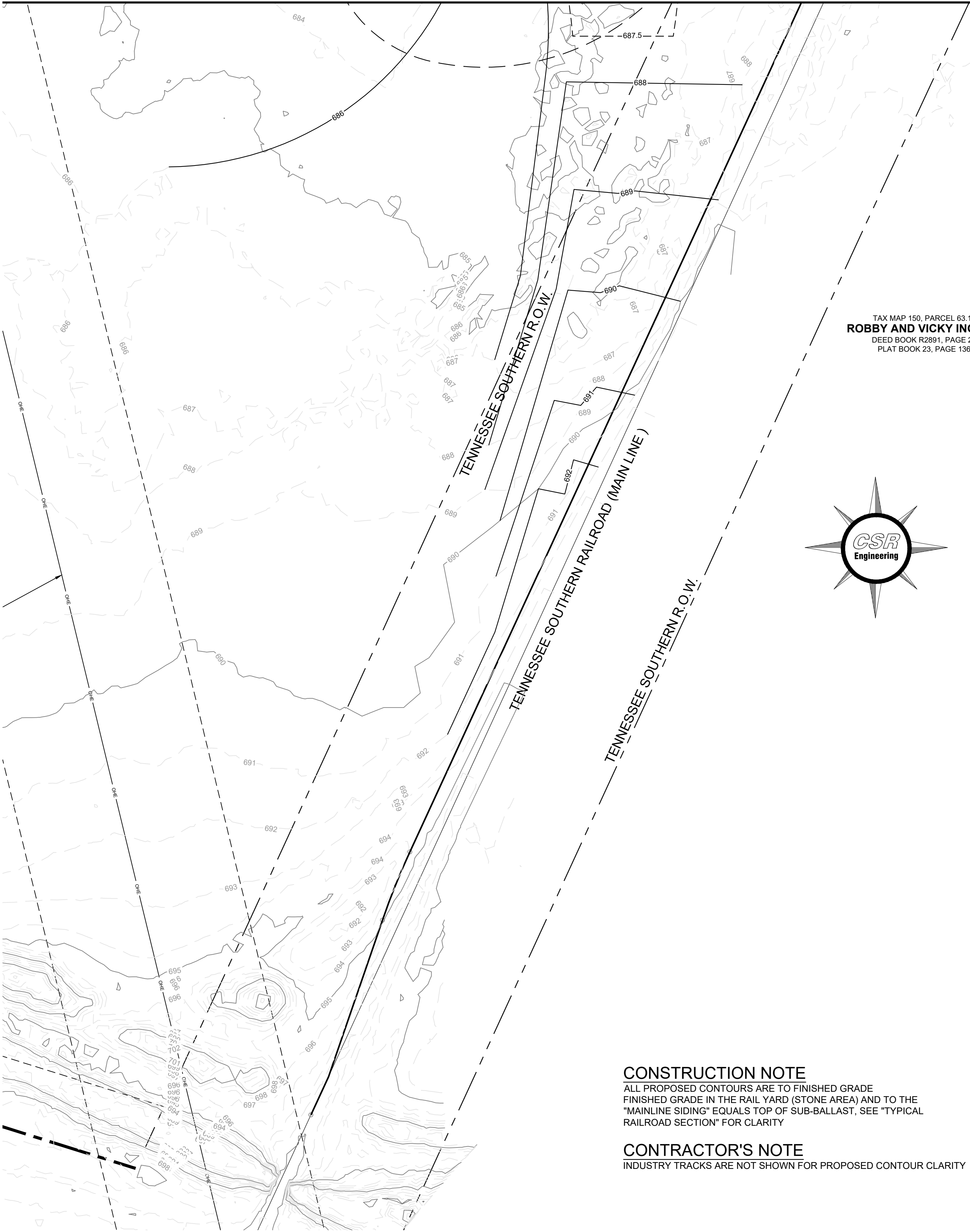
DESIGNER MSS
REVIEWER JLR

PROJECT 23-040

DATE 10-14-2025

SHEET C3.2

MATCH LINE



CONSTRUCTION NOTE

ALL PROPOSED CONTOURS ARE TO FINISHED GRADE.
FINISHED GRADE IN THE RAIL YARD (STONE AREA) AND TO THE
"MAINLINE SIDING" EQUALS TOP OF SUB-BALLAST. SEE "TYPICAL
RAILROAD SECTION" FOR CLARITY

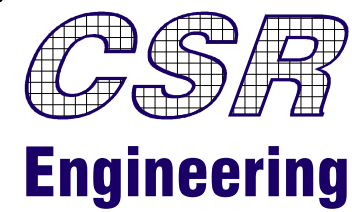
CONTRACTOR'S NOTE

INDUSTRY TRACKS ARE NOT SHOWN FOR PROPOSED CONTOUR CLARITY

PURPOSE FOR ISSUE: AGENCY REVIEW



SCALE: 1"=50'



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CUT AND FILL QUANTITIES
OF
BULK STORAGE RAIL YARD
FOR
TRUE RAIL ENTERPRISES, LLC
S MAIN STREET
MT. PLEASANT, TENNESSEE
MAURY COUNTY

REVISIONS	
NO.	DESCRIPTION

DESIGNER MSS
REVIEWER JLR

PROJECT 23-040

DATE 10-14-2025

SHEET C3.3



Cut/Fill Summary

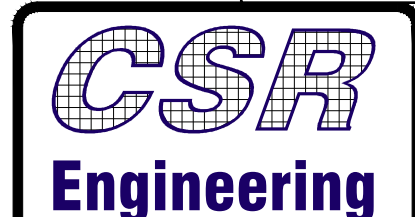
Name	Cut Factor	Fill Factor	2d Area	Cut	Fill	Net
Tru Rail Cut and Fill	1.000	1.000	1219722.07 Sq. Ft.	17607.69 Cu. Yd.	107320.31 Cu. Yd.	89712.62 Cu. Yd.<Fill>
Totals			1219722.07 Sq. Ft.	17607.69 Cu. Yd.	107320.31 Cu. Yd.	89712.62 Cu. Yd.<Fill>

PURPOSE FOR ISSUE:

AGENCY REVIEW



SCALE: 1"=100'



CSR Engineering

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EXISTING DRAINAGE MAP
OF
BULK STORAGE RAIL YARD
FOR
TRUE RAIL ENTERPRISES, LLC
S MAIN STREET
MT. PLEASANT, TENNESSEE
MAURY COUNTY

REVISIONS	
NO.	DESCRIPTION

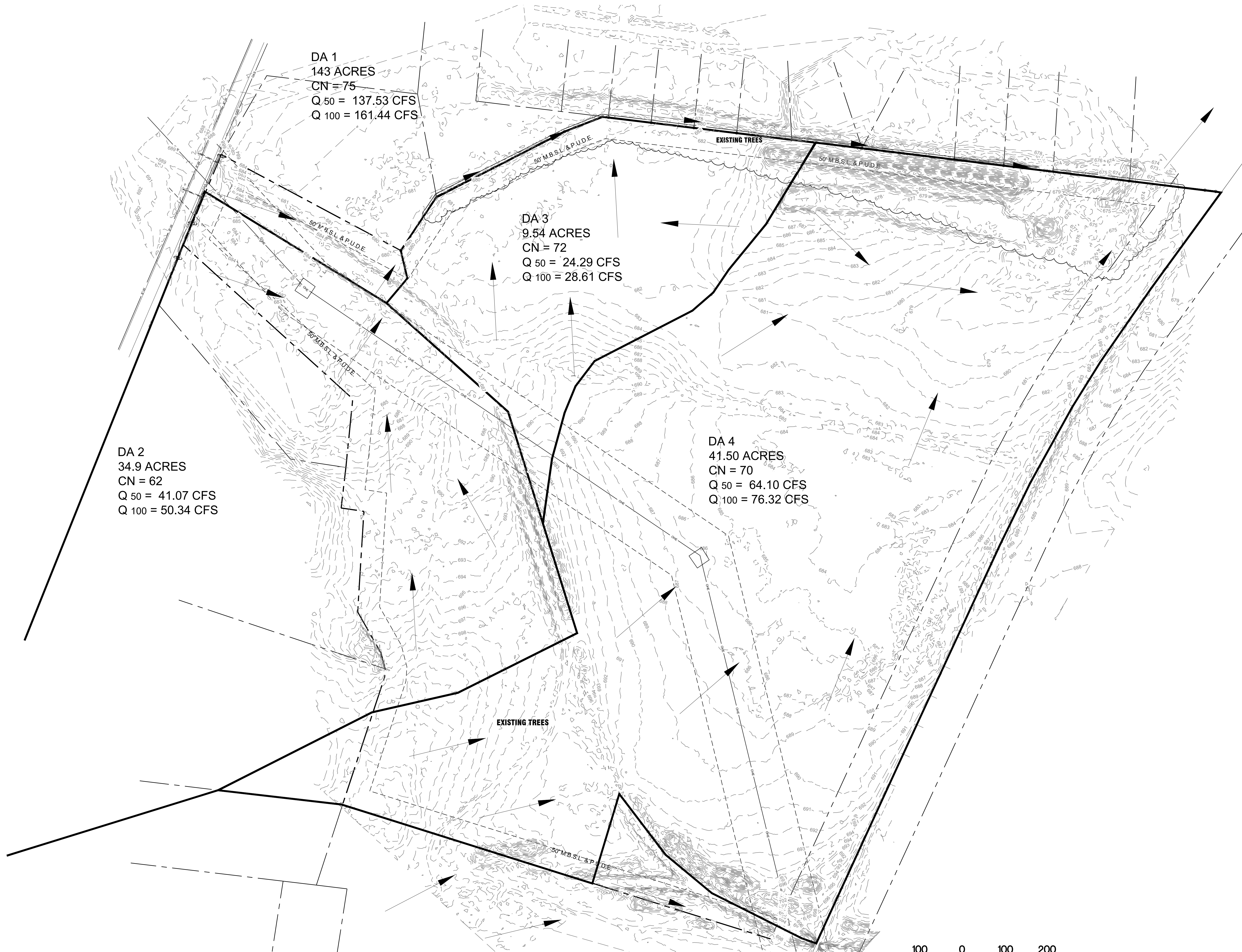
DESIGNER **MSS**

REVIEWER **JLR**

PROJECT **23-040**

DATE **10-14-2025**

SHEET **C3.4**



DA 2
34.9 ACRES
CN = 62
Q 50 = 41.07 CFS
Q 100 = 50.34 CFS

DA 1
143 ACRES
CN = 75
Q 50 = 137.53 CFS
Q 100 = 161.44 CFS

DA 3
9.54 ACRES
CN = 72
Q 50 = 24.29 CFS
Q 100 = 28.61 CFS

DA 4
41.50 ACRES
CN = 70
Q 50 = 64.10 CFS
Q 100 = 76.32 CFS

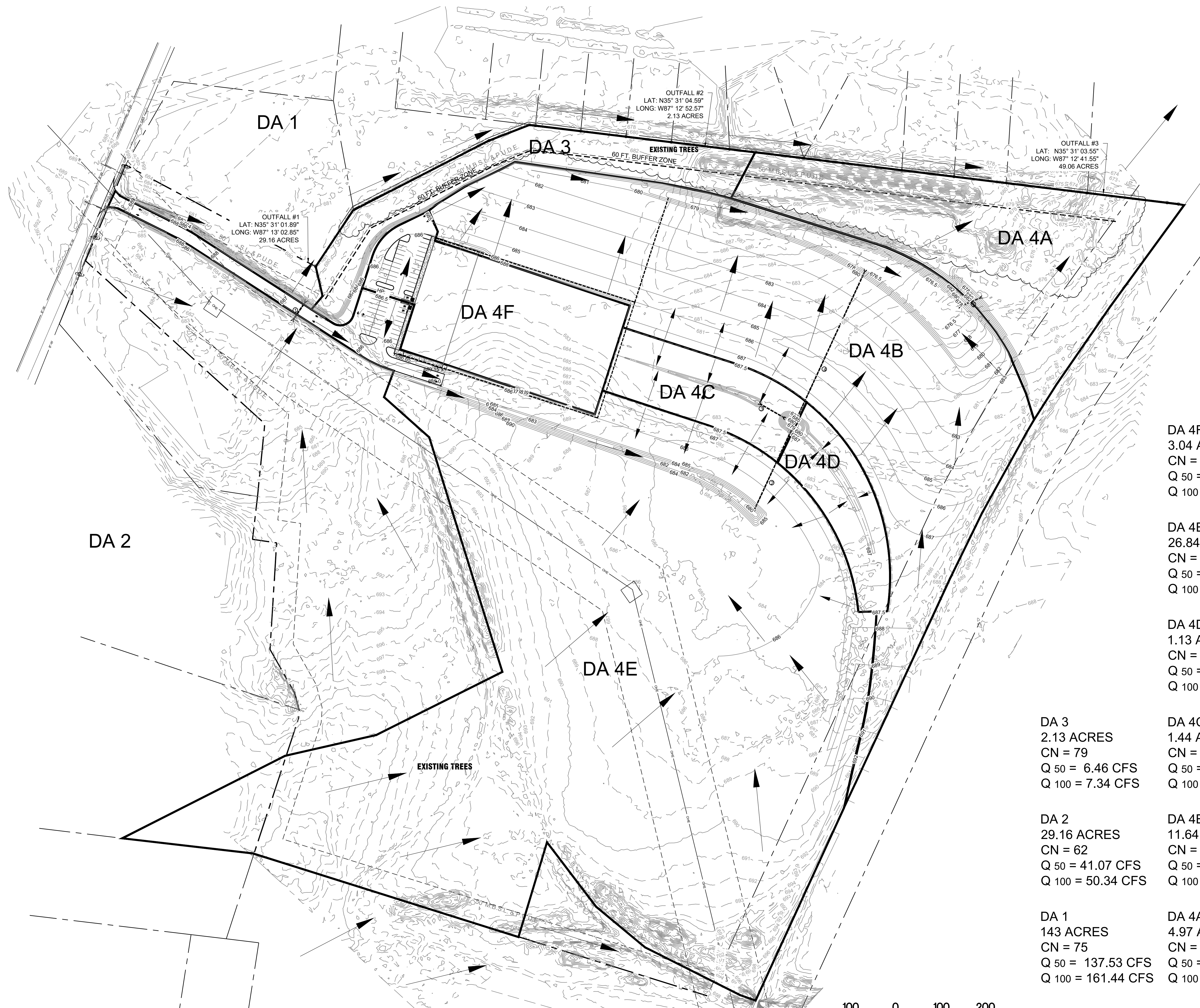
NO.	DATE	BY	REVISIONS	
			DESCRIPTION	

DESIGNER DKH
REVIEWER KCW

PROJECT 23-040

DATE 10-14-25

SHEET **C3.5**



PURPOSE FOR ISSUE: AGENCY REVIEW



SCALE: 1"=100'

DA 4F
3.04 ACRES
CN = 98
Q 50 = 26.98 CFS
Q 100 = 29.57 CFS

DA 4E
26.84 ACRES
CN = 68
Q 50 = 45.39 CFS
Q 100 = 54.32 CFS

DA 4D
1.13 ACRES
CN = 96
Q 50 = 12.02 CFS
Q 100 = 13.22 CFS

DA 3
2.13 ACRES
CN = 79
Q 50 = 6.46 CFS
Q 100 = 7.34 CFS

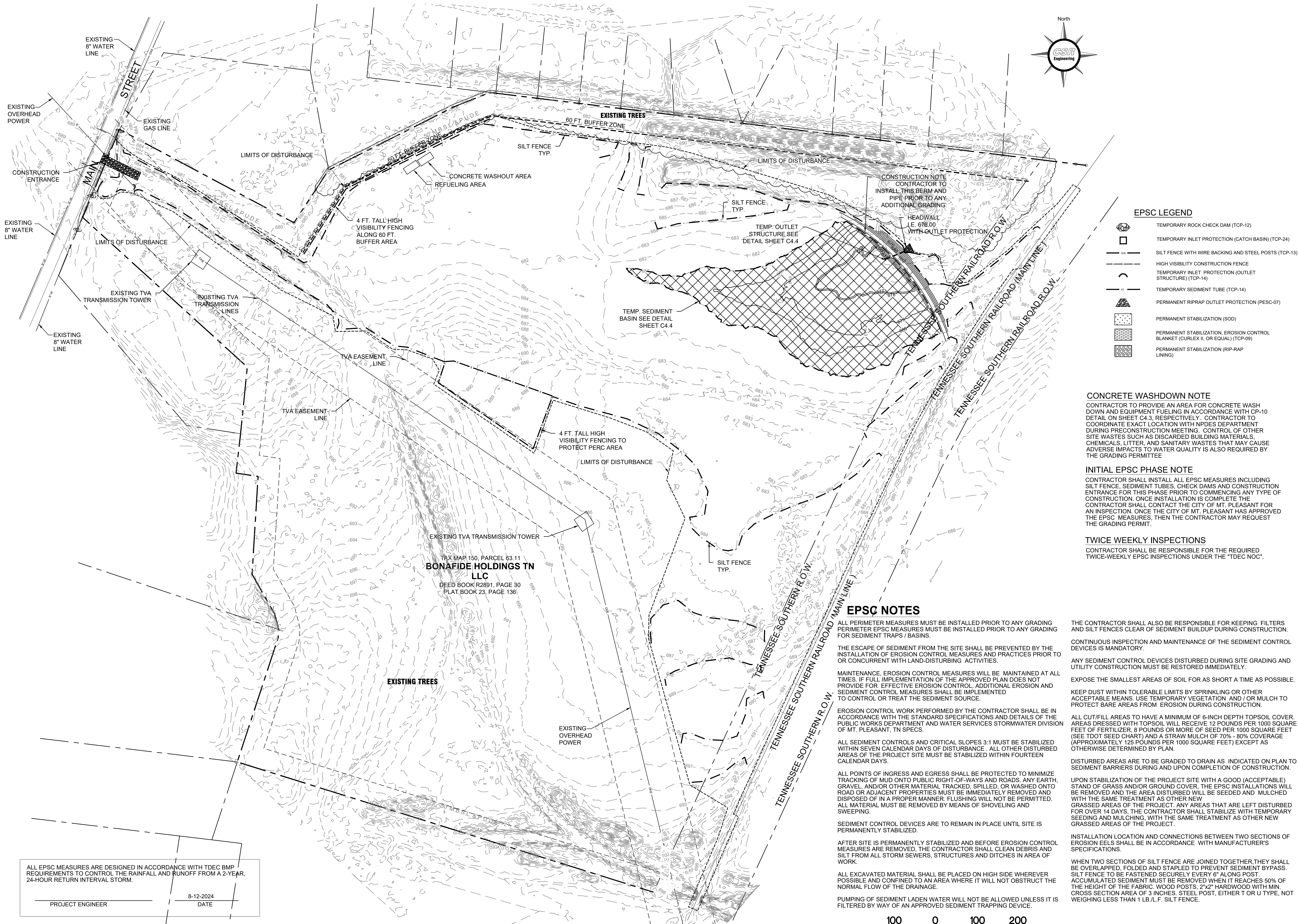
DA 4C
1.44 ACRES
CN = 96
Q 50 = 8.86 CFS
Q 100 = 9.74 CFS

DA 2
29.16 ACRES
CN = 62
Q 50 = 41.07 CFS
Q 100 = 50.34 CFS

DA 4B
11.64 ACRES
CN = 96
Q 50 = 91.07 CFS
Q 100 = 100.14 CFS

DA 1
143 ACRES
CN = 75
Q 50 = 137.53 CFS
Q 100 = 161.44 CFS

DA 4A
4.97 ACRES
CN = 68
Q 50 = 8.73 CFS
Q 100 = 10.45 CFS



EPSC LEGEND

- TEMPORARY ROCK CHECK DAM (TCP-12)
- TEMPORARY INLET PROTECTION (CATCH BASIN) (TCP-24)
- SILT FENCE WITH WIRE BACKING AND STEEL POSTS (TCP-13)
- HIGH VISIBILITY CONSTRUCTION FENCE
- TEMPORARY INLET PROTECTION (OUTLET STRUCTURE) (TCP-14)
- TEMPORARY SEDIMENT TUBE (TCP-14)
- PERMANENT RIPRAP OUTLET PROTECTION (PESC-07)
- PERMANENT STABILIZATION (SOD)
- PERMANENT STABILIZATION, EROSION CONTROL BLANKET (CURLLEX II, OR EQUAL) (TCP-09)
- PERMANENT STABILIZATION (RIP-RAP LINING)

CONCRETE WASHDOWN NOTE

CONTRACTOR TO PROVIDE AN AREA FOR CONCRETE WASH DOWN AND EQUIPMENT FUELING IN ACCORDANCE WITH CP-10 DETAIL ON SHEET C4.3, RESPECTIVELY. CONTRACTOR TO COORDINATE EXACT LOCATION WITH NPDES DEPARTMENT DURING PRECONSTRUCTION MEETING. CONTROL OF OTHER SITE WASTES SUCH AS DISCARDED BUILDING MATERIALS, CHEMICALS, LITTER, AND SANITARY WASTES THAT MAY CAUSE ADVERSE IMPACTS TO WATER QUALITY IS ALSO REQUIRED BY THE GRADING PERMITEE

INITIAL EPSC PHASE NOTE

CONTRACTOR SHALL INSTALL ALL EPSC MEASURES INCLUDING SILT FENCE, SEDIMENT TUBES, CHECK DAMS AND CONSTRUCTION ENTRANCE FOR THIS PHASE PRIOR TO COMMENCING ANY TYPE OF CONSTRUCTION. ONCE INSTALLATION IS COMPLETE THE CONTRACTOR SHALL CONTACT THE CITY OF MT. PLEASANT FOR AN INSPECTION. ONCE THE CITY OF MT. PLEASANT HAS APPROVED THE EPSC MEASURES, THEN THE CONTRACTOR MAY REQUEST THE GRADING PERMIT.

TWICE WEEKLY INSPECTIONS

CONTRACTOR SHALL BE RESPONSIBLE FOR THE REQUIRED TWICE-WEEKLY EPSC INSPECTIONS UNDER THE "TDEC NOC".

EPSC NOTES

ALL PERIMETER MEASURES MUST BE INSTALLED PRIOR TO ANY GRADING. PERIMETER EPSC MEASURES MUST BE INSTALLED PRIOR TO ANY GRADING FOR SEDIMENT TRAPS / BASINS.

THE ESCAPE OF SEDIMENT FROM THE SITE SHALL BE PREVENTED BY THE INSTALLATION OF EROSION CONTROL MEASURES AND PRACTICES PRIOR TO OR CONCURRENT WITH LAND-DISTURBING ACTIVITIES.

MAINTENANCE, EROSION CONTROL MEASURES WILL BE MAINTAINED AT ALL TIMES. IF FULL IMPLEMENTATION OF THE APPROVED PLAN DOES NOT PROVIDE FOR EFFECTIVE EROSION CONTROL, ADDITIONAL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE IMPLEMENTED TO CONTROL OR TREAT THE SEDIMENT SOURCE.

EROSION CONTROL WORK PERFORMED BY THE CONTRACTOR SHALL BE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS AND DETAILS OF THE PUBLIC WORKS DEPARTMENT AND WATER SERVICES STORMWATER DIVISION OF MT. PLEASANT, TN SPECS.

ALL SEDIMENT CONTROLS AND CRITICAL SLOPES 3:1 MUST BE STABILIZED WITHIN SEVEN CALENDAR DAYS OF DISTURBANCE. ALL OTHER DISTURBED AREAS OF THE PROJECT SITE MUST BE STABILIZED WITHIN FOURTEEN CALENDAR DAYS.

ALL POINTS OF INGRESS AND EGRESS SHALL BE PROTECTED TO MINIMIZE TRACKING OF MUD ONTO PUBLIC RIGHT-OF-WAY AND ROADS. ANY EARTH, GRAVEL AND/OR OTHER MATERIAL TRACKED, SPILLED, OR WASHED ONTO ROAD OR ADJACENT PROPERTIES MUST BE IMMEDIATELY REMOVED AND DISPOSED OF IN A PROPER MANNER. FLUSHING WILL NOT BE PERMITTED. ALL MATERIAL MUST BE REMOVED BY MEANS OF SHOVELING AND SWEEPING.

SEDIMENT CONTROL DEVICES ARE TO REMAIN IN PLACE UNTIL SITE IS PERMANENTLY STABILIZED.

AFTER SITE IS PERMANENTLY STABILIZED AND BEFORE EROSION CONTROL MEASURES ARE REMOVED, THE CONTRACTOR SHALL CLEAN DEBRIS AND SILT FROM ALL STORM SEWERS, STRUCTURES AND DITCHES IN AREA OF WORK.

ALL EXCAVATED MATERIAL SHALL BE PLACED ON HIGH SIDE WHEREVER POSSIBLE AND CONFINED TO AN AREA WHERE IT WILL NOT OBSTRUCT THE NORMAL FLOW OF THE DRAINAGE.

PUMPING OF SEDIMENT LADEN WATER WILL NOT BE ALLOWED UNLESS IT IS FILTERED BY WAY OF AN APPROVED SEDIMENT TRAPPING DEVICE.

THE CONTRACTOR SHALL ALSO BE RESPONSIBLE FOR KEEPING FILTERS AND SILT FENCES CLEAR OF SEDIMENT BUILDUP DURING CONSTRUCTION.

CONTINUOUS INSPECTION AND MAINTENANCE OF THE SEDIMENT CONTROL DEVICES IS MANDATORY.

ANY SEDIMENT CONTROL DEVICES DISTURBED DURING SITE GRADING AND UTILITY CONSTRUCTION MUST BE RESTORED IMMEDIATELY.

EXPOSE THE SMALLEST AREAS OF SOIL FOR AS SHORT A TIME AS POSSIBLE.

KEEP DUST WITHIN TOLERABLE LIMITS BY SPRINKLING OR OTHER ACCEPTABLE MEANS. USE TEMPORARY VEGETATION AND / OR MULCH TO PROTECT BARE AREAS FROM EROSION DURING CONSTRUCTION.

ALL CUT/FILL AREAS TO HAVE A MINIMUM OF 6-INCH DEPTH TOPSOIL COVER. AREAS DRESSED WITH TOPSOIL WILL RECEIVE 12 POUNDS PER 1000 SQUARE FEET OF FERTILIZER, 8 POUNDS OR MORE OF SEED PER 1000 SQUARE FEET (SEE TDOT SEED CHART) AND A STRAW MULCH OF 70% - 80% COVERAGE (APPROXIMATELY 125 POUNDS PER 1000 SQUARE FEET) EXCEPT AS OTHERWISE DETERMINED BY PLAN.

DISTURBED AREAS ARE TO BE GRADED TO DRAIN AS INDICATED ON PLAN TO SEDIMENT BARRIERS DURING AND UPON COMPLETION OF CONSTRUCTION.

UPON STABILIZATION OF THE PROJECT SITE WITH A GOOD (ACCEPTABLE) STAND OF GRASS AND/OR GROUND COVER, THE EPSC INSTALLATIONS WILL BE REMOVED AND THE AREA DISTURBED WILL BE SEEDED AND MULCHED WITH THE SAME TREATMENT AS OTHER NEW GRASSSED AREAS OF THE PROJECT. ANY AREAS THAT ARE LEFT DISTURBED FOR OVER 14 DAYS, THE CONTRACTOR SHALL STABILIZE WITH TEMPORARY SEEDING AND MULCHING, WITH THE SAME TREATMENT AS OTHER NEW GRASSSED AREAS OF THE PROJECT.

INSTALLATION LOCATION AND CONNECTIONS BETWEEN TWO SECTIONS OF EROSION FELS SHALL BE IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS.

WHEN TWO SECTIONS OF SILT FENCE ARE JOINED TOGETHER, THEY SHALL BE OVERLAPPED, FOLDED AND STAPLED TO PREVENT SEDIMENT BYPASS. SILT FENCE TO BE FASTENED SECURELY EVERY 6' ALONG POST. ACCUMULATED SEDIMENT MUST BE REMOVED WHEN IT REACHES 50% OF THE HEIGHT OF THE FABRIC. WOOD POSTS, 2"x2" HARDWOOD WITH MIN. CROSS SECTION AREA OF 3 INCHES. STEEL POST, EITHER T OR U TYPE, NOT WEIGHING LESS THAN 1 LB./L.F. SILT FENCE.

ALL EPSC MEASURES ARE DESIGNED IN ACCORDANCE WITH TDEC BMP REQUIREMENTS TO CONTROL THE RAINFALL AND RUNOFF FROM A 2-YEAR, 24-HOUR RETURN INTERVAL STORM.

PROJECT ENGINEER

8-12-2024
DATE

PURPOSE FOR ISSUE:

AGENCY REVIEW



SCALE: 1"=100'

NO.	DATE	BY	DESCRIPTION

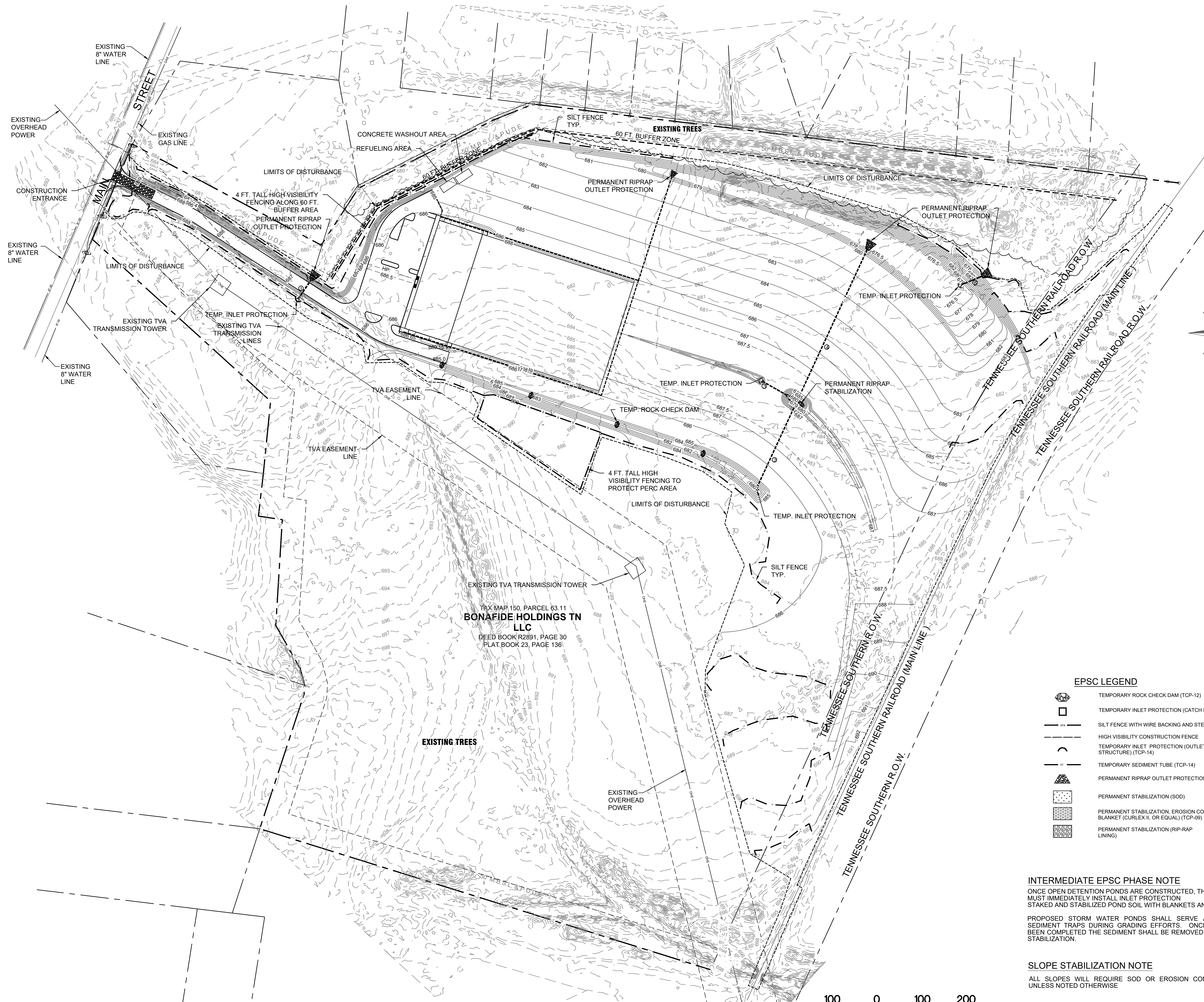
DESIGNER MBS

REVIEWER JLR

PROJECT 23-040

DATE 10-14-2025

SHEET **C4.0**



TRX MAP 150, PARCEL 63.11
BONAFIDE HOLDINGS TN LLC
DEED BOOK R2891, PAGE 30
PLAT BOOK 23, PAGE 136

EPSC LEGEND

- TEMPORARY ROCK CHECK DAM (TCP-12)
- TEMPORARY INLET PROTECTION (CATCH BASIN) (TCP-24)
- SILT FENCE WITH WIRE BACKING AND STEEL POSTS (TCP-13)
- HIGH VISIBILITY CONSTRUCTION FENCE
- TEMPORARY INLET PROTECTION (OUTLET STRUCTURE) (TCP-14)
- TEMPORARY SEDIMENT TUBE (TCP-14)
- PERMANENT RIPRAP OUTLET PROTECTION (PESC-07)
- PERMANENT STABILIZATION (SOD)
- PERMANENT STABILIZATION, EROSION CONTROL BLANKET (CURLX II, OR EQUAL) (TCP-09)
- PERMANENT STABILIZATION (RIP-RAP LINING)

INTERMEDIATE EPSC PHASE NOTE
ONCE OPEN DETENTION PONDS ARE CONSTRUCTED, THE CONTRACTOR MUST IMMEDIATELY INSTALL INLET PROTECTION STAKED AND STABILIZED POND SOIL WITH BLANKETS AND OR SOD.

PROPOSED STORM WATER PONDS SHALL SERVE AS TEMPORARY SEDIMENT TRAPS DURING GRADING EFFORTS. ONCE GRADING HAS BEEN COMPLETED THE SEDIMENT SHALL BE REMOVED PRIOR TO FINAL STABILIZATION.

SLOPE STABILIZATION NOTE
ALL SLOPES WILL REQUIRE SOD OR EROSION CONTROL MATTING, UNLESS NOTED OTHERWISE

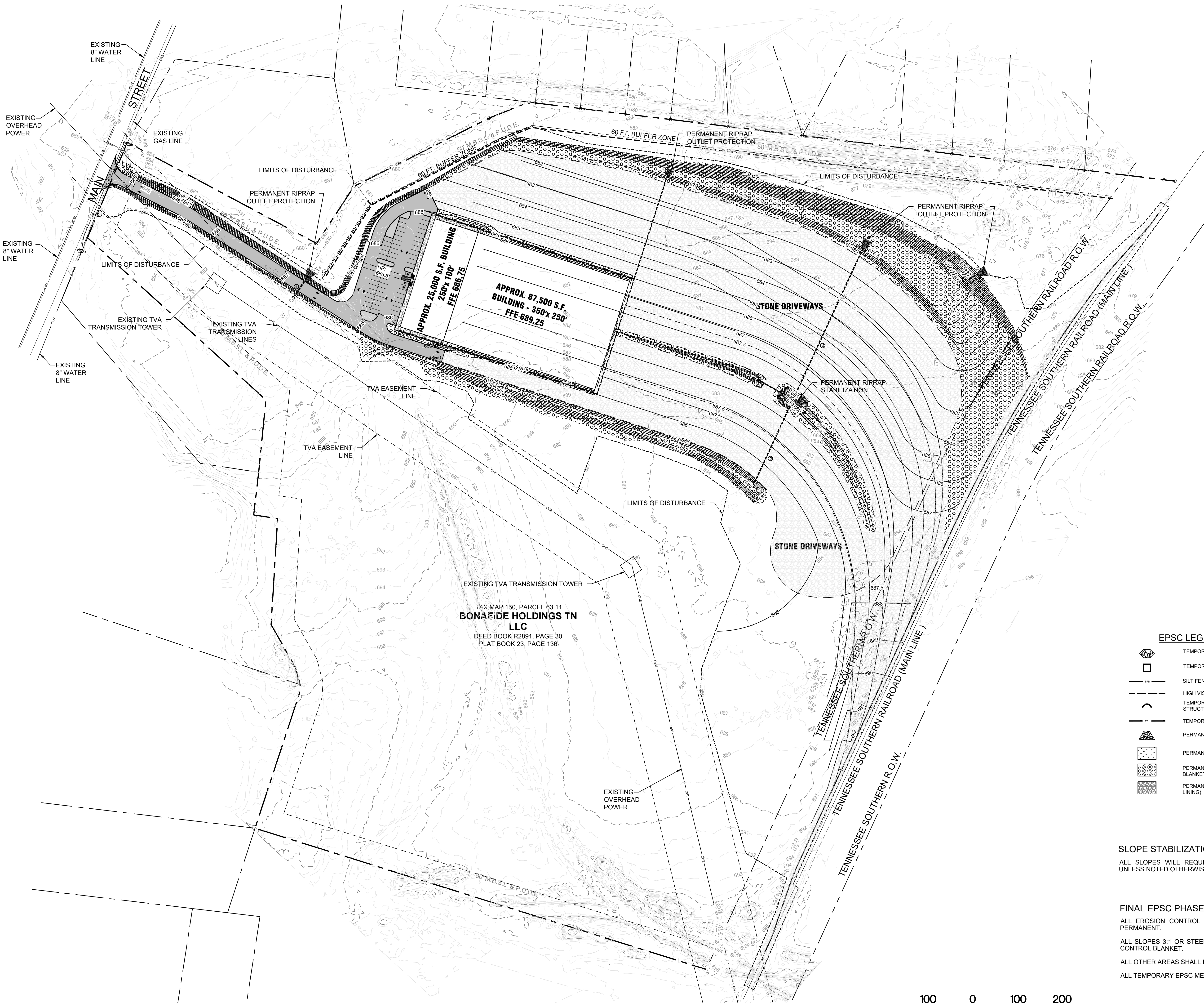
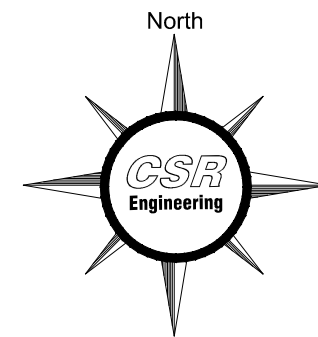
REVISIONS		DESCRIPTION	
NO.	DATE	BY	DESCRIPTION

DESIGNER: MSS
REVIEWER: JLR

PROJECT: 23-040

DATE: 10-14-2025

SHEET: **C4.1**



EPSC LEGEND

- TEMPORARY ROCK CHECK DAM (TCP-12)
- TEMPORARY INLET PROTECTION (CATCH BASIN) (TCP-24)
- SILT FENCE WITH WIRE BACKING AND STEEL POSTS (TCP-13)
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SLOPE STABILIZATION NOTE

ALL SLOPES WILL REQUIRE SOD OR EROSION CONTROL MATTING, UNLESS NOTED OTHERWISE

FINAL EPSC PHASE NOTE

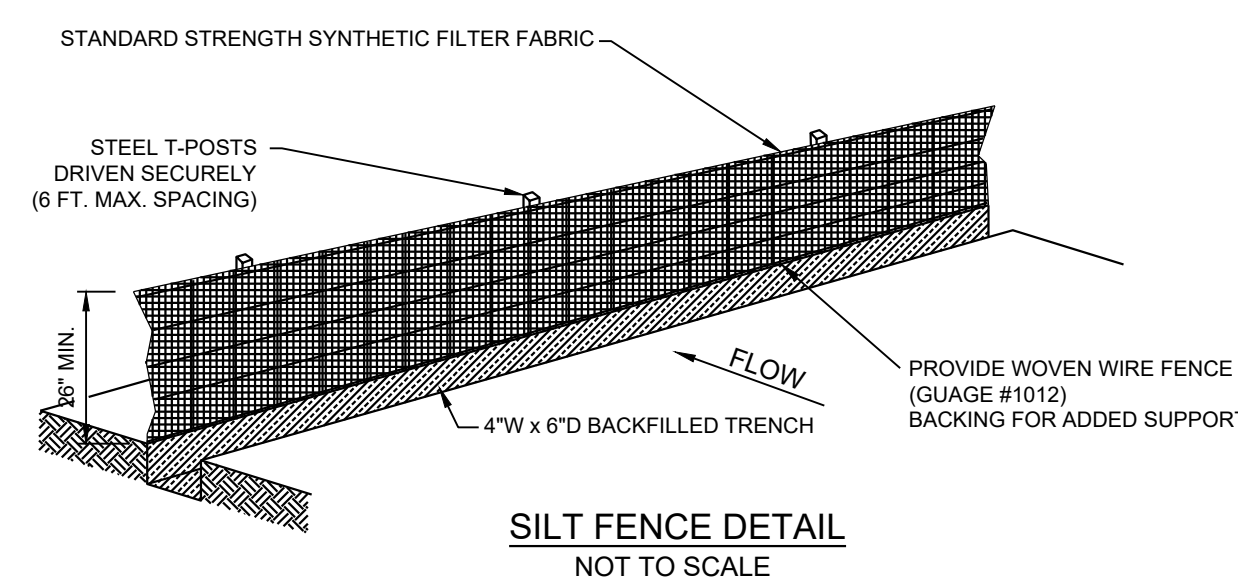
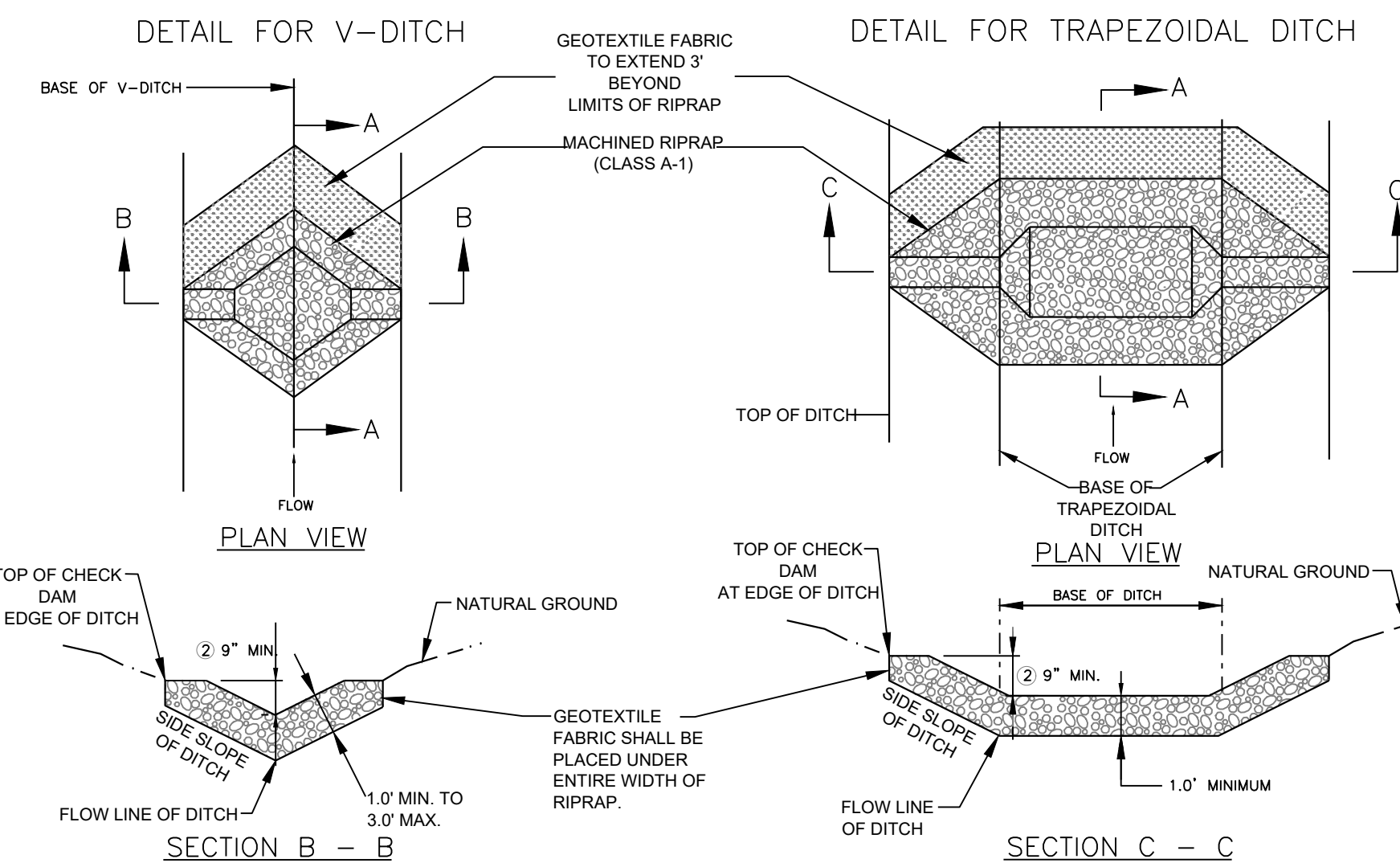
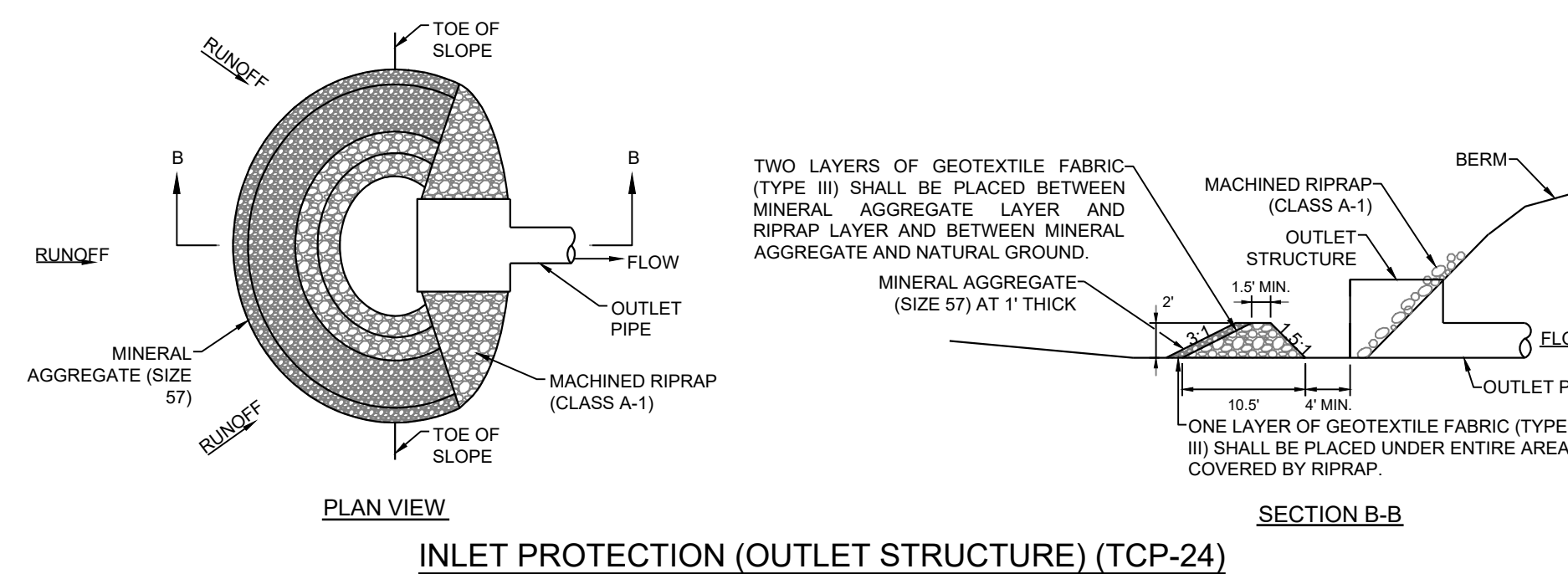
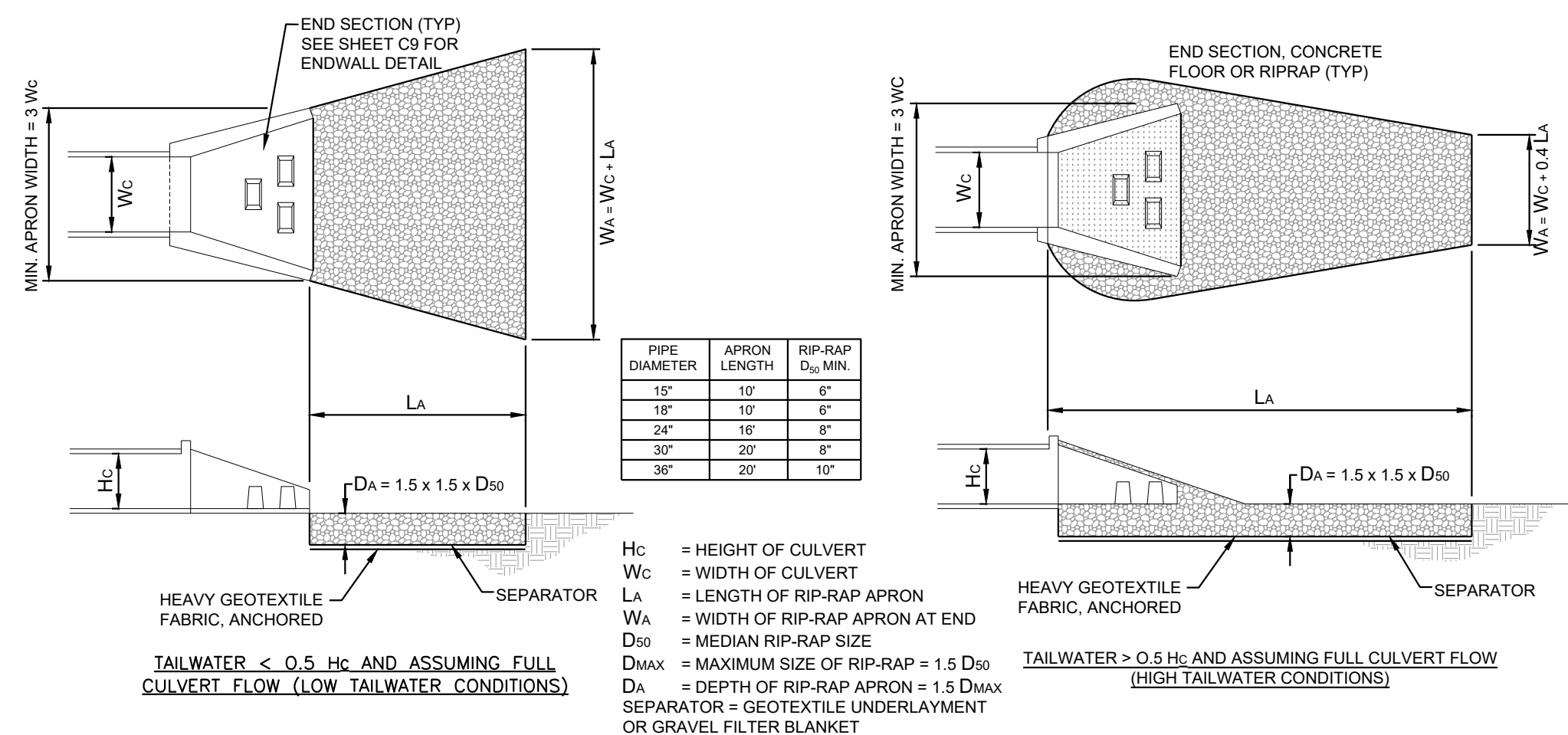
ALL EROSION CONTROL MEASURES SHOWN IN THIS PHASE ARE PERMANENT.

ALL SLOPES 3:1 OR STEEPER SHALL BE STABILIZED WITH EROSION CONTROL BLANKET.

ALL OTHER AREAS SHALL BE STABILIZED WITH SEED/STRAW.

ALL TEMPORARY EPSC MEASURES SHOULD BE REMOVED.

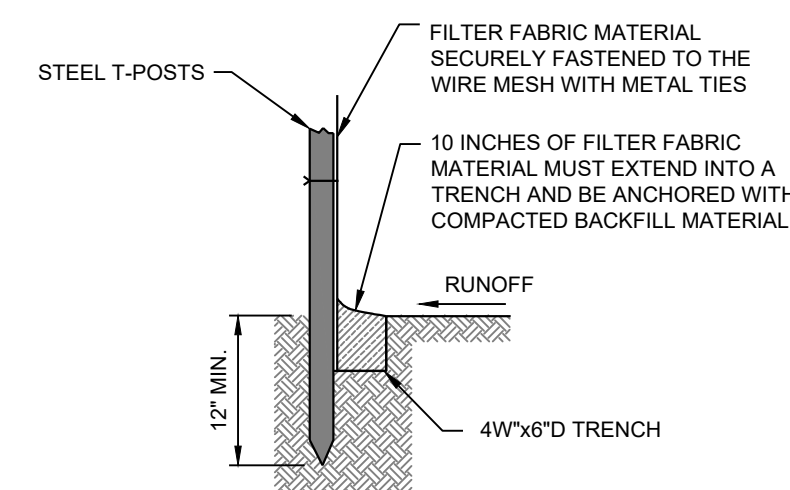
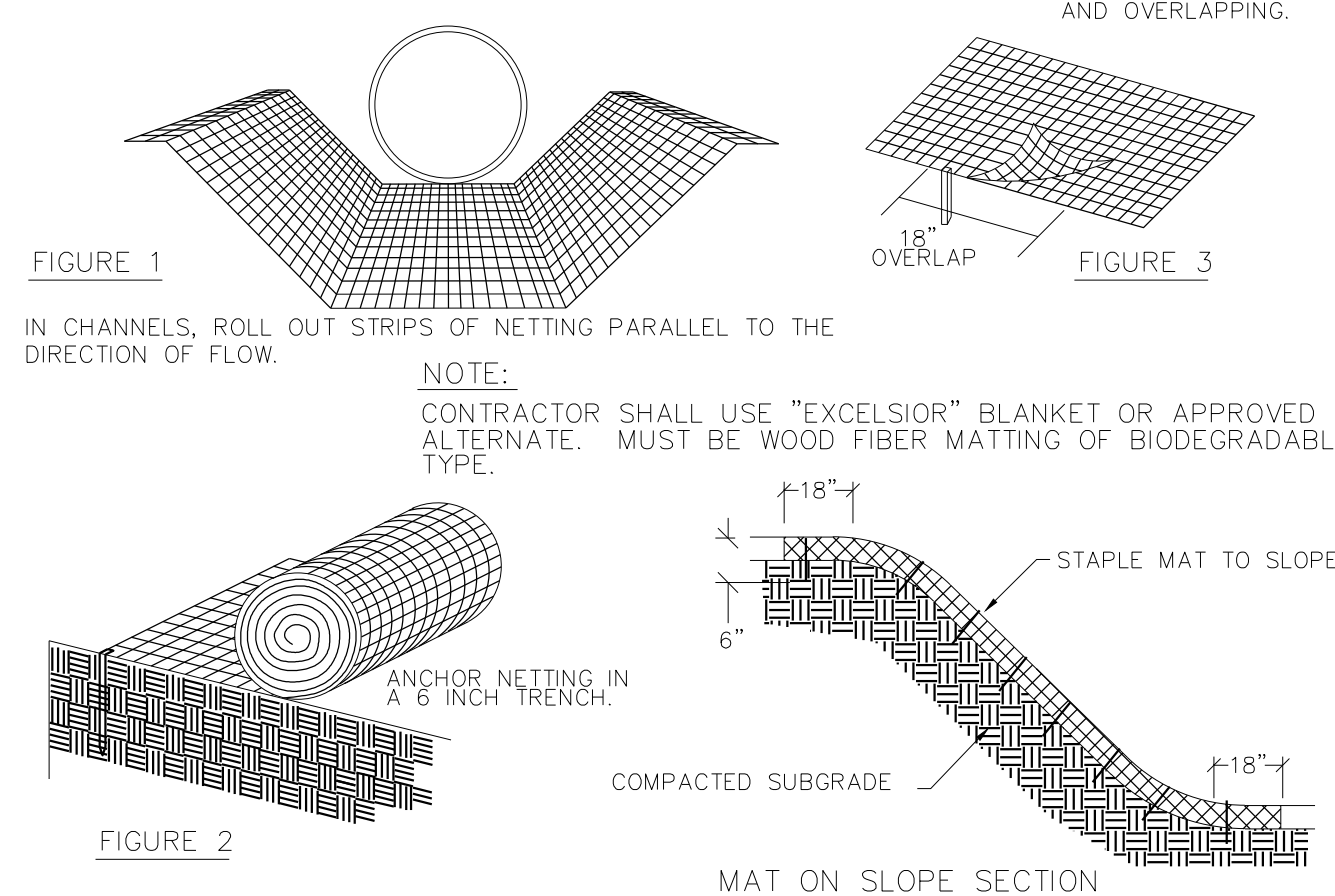
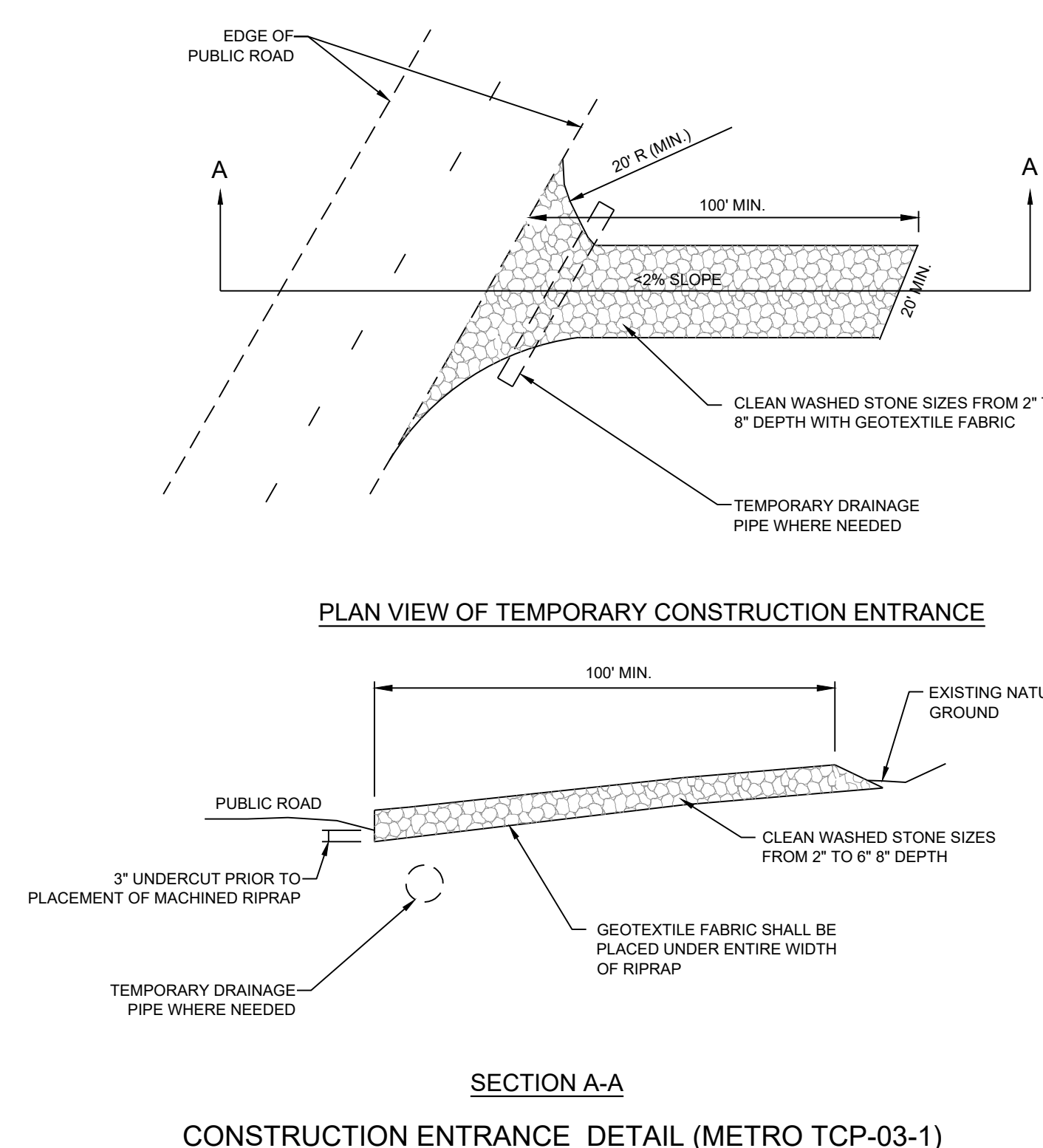
NO.	DATE	BY	DESCRIPTION


SILT FENCE NOTES

1. FILTER FABRIC SHALL BE PURCHASED IN A CONTINUOUS ROLL AND CUT TO THE LENGTH OF THE BARRIER TO AVOID THE USE OF JOINTS.
2. USE METAL TIES TO SECURE SILT FENCE TO METAL FENCE.
3. SILT FENCE SHALL COMPLY WITH THE TN. DEPT. OF ENVIRONMENT AND CONSERVATION EROSION AND SEDIMENT CONTROL HANDBOOK, LATEST EDITION.
4. INSTALL PERIMETER SILTATION CONTROL PRIOR TO APPLICATION OF GRADING PERMIT.

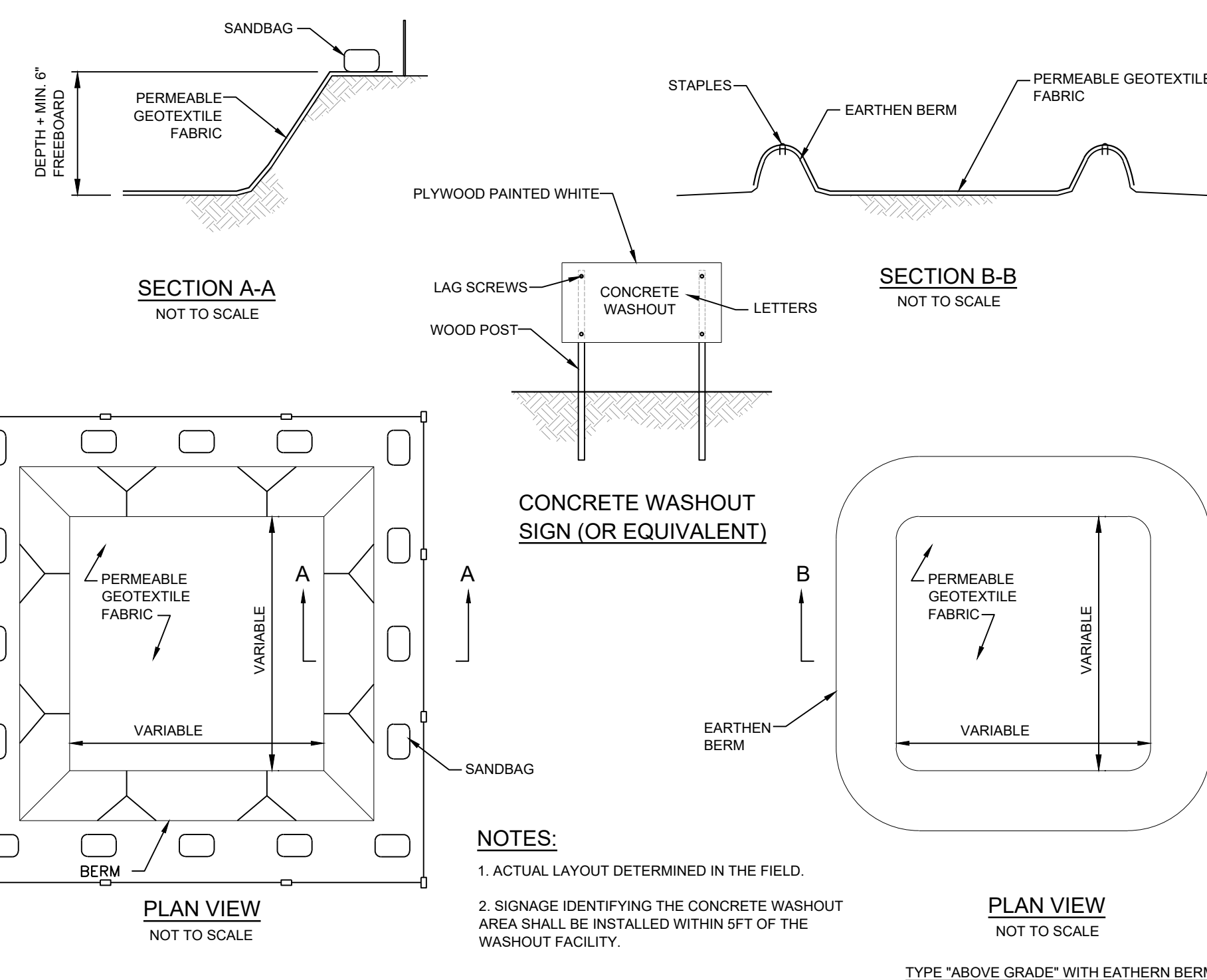
SILT FENCE MAINTENANCE PLAN

1. CARE SHALL BE TAKEN TO MINIMIZE THE MOVEMENT OF SEDIMENT INTO ALL STORM DRAIN APPURTENANCES AND PUBLIC ROADS UNTIL THE IMPERVIOUS MATERIAL (ROAD/PARKING AREA SURFACE) IS APPLIED.
2. ALL EROSION AND SEDIMENT CONTROL MEASURES WILL BE CHECKED FOR STABILITY AND OPERATIONAL INTEGRITY FOLLOWING EVERY RUNOFF PRODUCING RAINFALL BUT IN NO CASE LESS THAN EVERY WEEK. ANY NECESSARY REPAIRS WILL BE MADE IMMEDIATELY TO MAINTAIN THE MEASURES PERFORMANCE AS DESIGNATED.
3. SEDIMENT WILL BE REMOVED FROM THE UPSTREAM FACE OF SILT FENCE WHEN IT REACHES A MAXIMUM SIX-INCH (6") DEPTH AT THE FENCE. THE FENCE WILL BE REPLACED AS NECESSARY TO MAINTAIN A BARRIER.


SILT FENCE DETAILS (TCP-13)

EROSION CONTROL MATTING DETAIL
 NOT TO SCALE

INSTALLATION INSTRUCTIONS: FOR DITCH & SLOPES

1. SEED (PER SPEC) BEFORE PLACEMENT OF MATTING. ROLL STRIPS OUT PARALLEL TO THE DIRECTION OF WATER FLOW, OR DOWN SLOPE. (SEE FIGURE 1)
2. START LAYING THE NET FROM THE TOP OF THE CHANNEL OR SLOPE AND UNROLL IT DOWN THE GRADE. ALLOW MATTING TO LAY LOOSELY ON THE SOIL BUT WITHOUT WRINKLES- DO NOT STRETCH.
3. TO SECURE THE NET, BURY THE UP-SLOPE END IN A TRENCH NO LESS THAN 6" DEEP, COVER WITH SOIL AND TAMP FIRMLY (SEE FIGURE 2). STAPLE THE MAT EVERY 12" ACROSS THE TOP END AND EVERY 3' AROUND THE EDGES AND BOTTOM. WHERE 2 STRIPS OF NET ARE LAID SIDE BY SIDE, THE ADJACENT EDGES SHOULD BE OVERLAPPED 3 INCHES AND STAPLED TOGETHER. EACH STRIP OF MATTING SHOULD ALSO BE STAPLED DOWN THE CENTER, EVERY 3'. DO NOT STRETCH THE MAT WHEN APPLYING STAPLES.
4. TO JOIN TWO STRIPS, CUT A TRENCH TO ANCHOR THE END OF THE NEW MAT. OVERLAP THE END OF THE PREVIOUS ROLL 18" (SEE FIGURE 2), AND STAPLE EVERY 12" JUST BELOW THE ANCHOR SLOT.
5. INSPECT PERIODICALLY AND AFTER EACH RAINSTORM UNTIL VEGETATION IS COMPLETELY ESTABLISHED.
6. ERODED OR EXPOSED AREAS SHOULD BE SEEDED AND STABILIZED WITH MULCH AS QUICKLY AS POSSIBLE.



- NOTES:
 1. ACTUAL LAYOUT DETERMINED IN THE FIELD.
 2. SIGNAGE IDENTIFYING THE CONCRETE WASHOUT AREA SHALL BE INSTALLED WITHIN 5 FT OF THE WASHOUT FACILITY.

PLAN VIEW
 NOT TO SCALE

NO.	DATE	BY	DESCRIPTION

 DESIGNER: MSS
 REVIEWER: JLR

PROJECT: 23-040

DATE: 10-14-2025

SHEET: C4.3

PURPOSE FOR ISSUE: AGENCY REVIEW

SCALE: NONE

REVISIONS

NO.	DATE	BY	DESCRIPTION

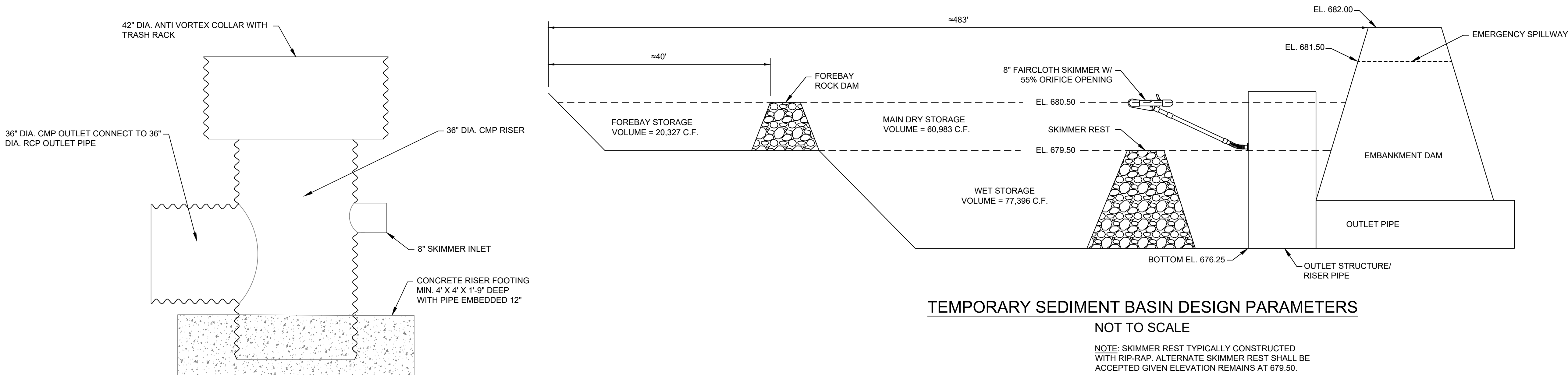
DESIGNER MSS

REVIEWER JLR

PROJECT 23-040

DATE 10-14-2025

SHEET C4.4



TEMPORARY OUTLET CONTROL STRUCTURE

NOT TO SCALE

NOTE: PERMANENT OUTLET STRUCTURE MAY BE USED IN LIEU OF A TEMPORARY STRUCTURE PROVIDED ANY ORIFICES BELOW THE WET POOL ELEVATION ARE COVERED.

TEMPORARY SEDIMENT BASIN DESIGN PARAMETERS

NOT TO SCALE

NOTE: SKIMMER REST TYPICALLY CONSTRUCTED WITH RIP-RAP. ALTERNATE SKIMMER REST SHALL BE ACCEPTED GIVEN ELEVATION REMAINS AT 679.50.



APPENDIX D

SOILS, FLOODPLAIN, AND WETLANDS DOCUMENTS



United States
Department of
Agriculture

NRCS

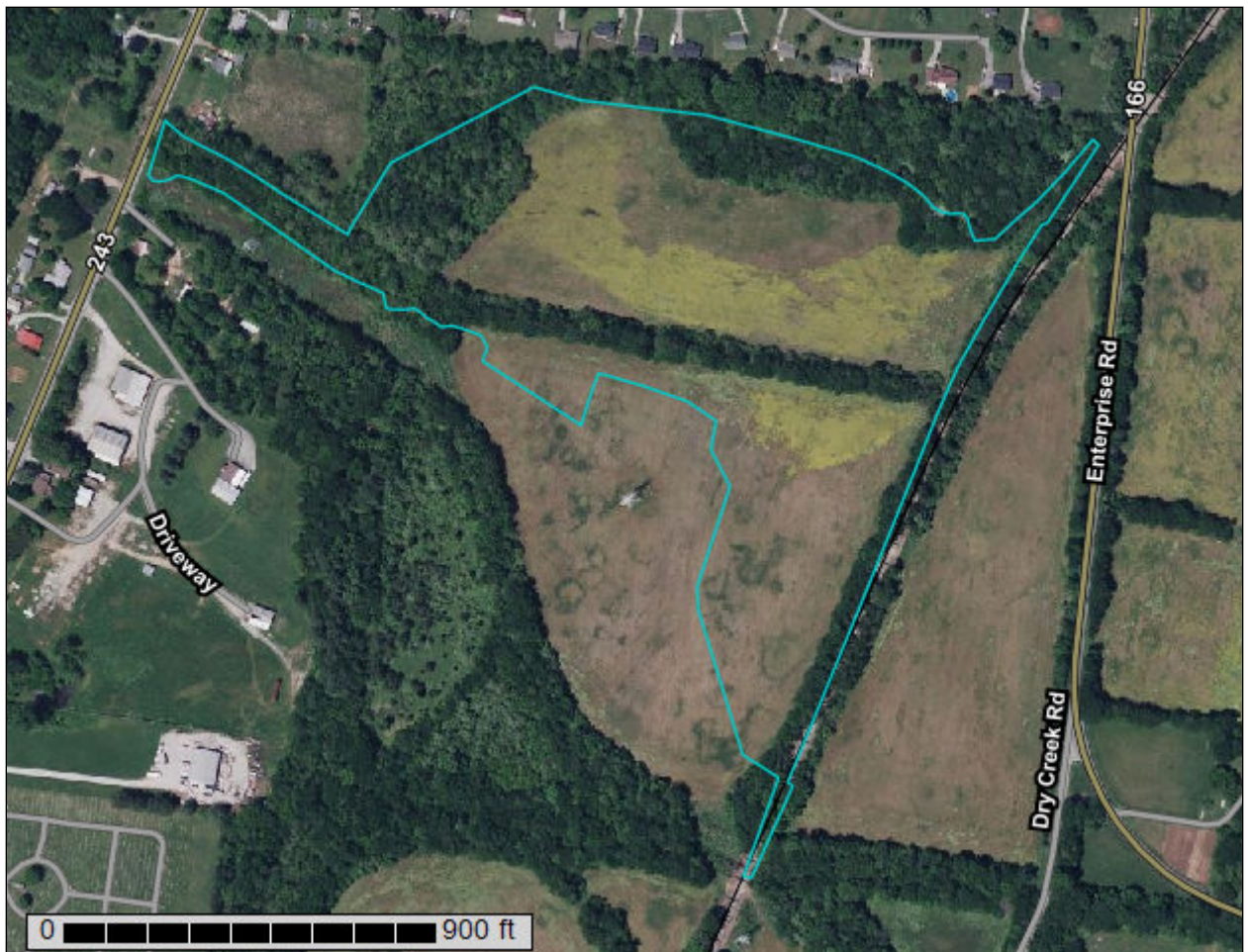
Natural
Resources
Conservation
Service

A product of the National
Cooperative Soil Survey,
a joint effort of the United
States Department of
Agriculture and other
Federal agencies, State
agencies including the
Agricultural Experiment
Stations, and local
participants

Section 7, Item A.

Custom Soil Resource Report for **Maury County, Tennessee**

Bulk Storage Railyard



Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (<http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/>) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (<https://offices.sc.egov.usda.gov/locator/app?agency=nrcs>) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

The U.S. Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, age, disability, and where applicable, sex, marital status, familial status, parental status, religion, sexual orientation, genetic information, political beliefs, reprisal, or because all or a part of an individual's income is derived from any public assistance program. (Not all prohibited bases apply to all programs.) Persons with disabilities who require

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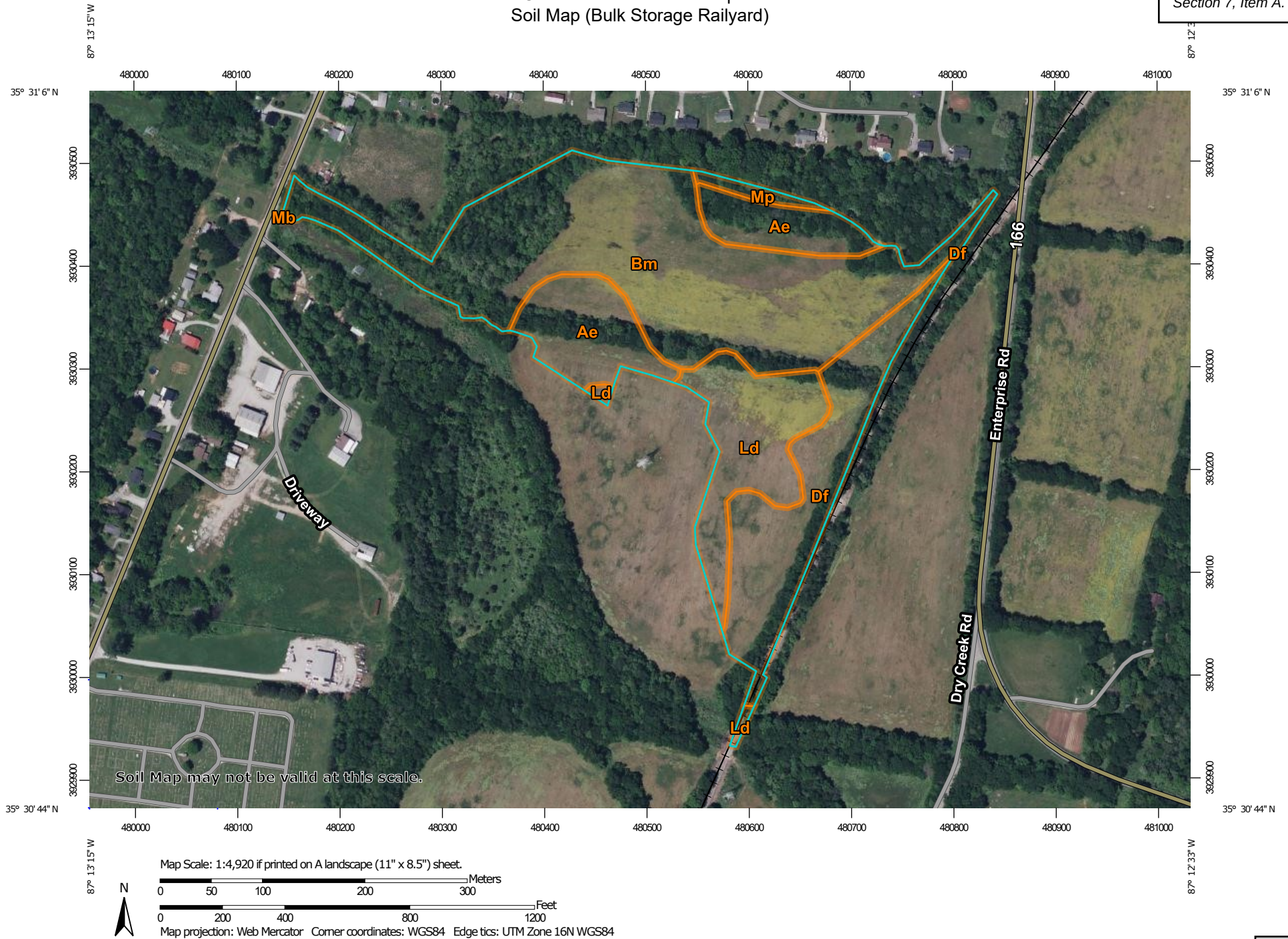
 K Factor, Whole Soil (Bulk Storage Railyard)..... 16

Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

Custom Soil Resource Report Soil Map (Bulk Storage Railyard)

Section 7, Item A.



MAP LEGEND**Area of Interest (AOI)**
 Area of Interest (AOI)
Soils
 Soil Map Unit Polygons

 Soil Map Unit Lines

 Soil Map Unit Points
Special Point Features
 Blowout

 Borrow Pit

 Clay Spot

 Closed Depression

 Gravel Pit

 Gravelly Spot

 Landfill

 Lava Flow

 Marsh or swamp

 Mine or Quarry

 Miscellaneous Water

 Perennial Water

 Rock Outcrop

 Saline Spot

 Sandy Spot

 Severely Eroded Spot

 Sinkhole

 Slide or Slip

 Sodic Spot

 Spoil Area

 Stony Spot

 Very Stony Spot

 Wet Spot

 Other

 Special Line Features
Water Features
 Streams and Canals
Transportation
 Rails

 Interstate Highways

 US Routes

 Major Roads

 Local Roads
Background
 Aerial Photography
MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:20,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Maury County, Tennessee
Survey Area Data: Version 20, Aug 29, 2025

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Mar 20, 2021—Jun 14, 2021

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend (Bulk Storage Railyard)

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
Ae	Armour silt loam, eroded gently sloping phase	4.5	15.3%
Bm	Burgin silt loam, phosphatic phase (Eagleville)	15.0	51.1%
Df	Donerail silt loam, gently sloping phase	5.3	18.1%
Ld	Lindell silt loam, 0 to 2 percent slopes, occasionally flooded	4.2	14.2%
Mb	Maury silt loam, eroded gently sloping phase	0.0	0.0%
Mp	Mines, Pits, and Dumps	0.4	1.2%
Totals for Area of Interest		29.3	100.0%

Map Unit Descriptions (Bulk Storage Railyard)

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not

mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

Maury County, Tennessee

Ae—Armour silt loam, eroded gently sloping phase

Map Unit Setting

National map unit symbol: kq4h
Elevation: 450 to 700 feet
Mean annual precipitation: 46 to 60 inches
Mean annual air temperature: 57 to 61 degrees F
Frost-free period: 190 to 200 days
Farmland classification: All areas are prime farmland

Map Unit Composition

Armour and similar soils: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Armour

Setting

Landform: Hillslopes
Landform position (three-dimensional): Base slope
Parent material: Silty alluvium and/or loamy alluvium over clayey residuum weathered from phosphatic limestone

Typical profile

H1 - 0 to 14 inches: silt loam
H2 - 14 to 40 inches: silty clay loam
H3 - 40 to 60 inches: silty clay loam

Properties and qualities

Slope: 0 to 5 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.60 to 2.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: High (about 10.7 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2e
Hydrologic Soil Group: B
Ecological site: F123XY004TN - Deep Loamy Terraces And Depressions
Hydric soil rating: No

Bm—Burgin silt loam, phosphatic phase (Eagleville)

Map Unit Setting

National map unit symbol: kq51

Elevation: 610 to 2,090 feet
Mean annual precipitation: 48 to 63 inches
Mean annual air temperature: 45 to 72 degrees F
Frost-free period: 154 to 189 days
Farmland classification: All areas are prime farmland

Map Unit Composition

Eagleville and similar soils: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Eagleville

Setting

Landform: Flood plains
Landform position (three-dimensional): Tread
Parent material: Clayey alluvium derived from limestone

Typical profile

H1 - 0 to 14 inches: silt loam
H2 - 14 to 35 inches: clay
R - 35 to 45 inches: bedrock

Properties and qualities

Slope: 0 to 3 percent
Depth to restrictive feature: 20 to 40 inches to lithic bedrock
Drainage class: Somewhat poorly drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.06 in/hr)
Depth to water table: About 12 to 18 inches
Frequency of flooding: Occasional
Frequency of ponding: None
Available water supply, 0 to 60 inches: Low (about 4.8 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3w
Hydrologic Soil Group: D
Ecological site: F123XY005TN - Floodplains
Hydric soil rating: No

Df—Donerail silt loam, gently sloping phase

Map Unit Setting

National map unit symbol: kq5l
Elevation: 610 to 820 feet
Mean annual precipitation: 46 to 60 inches
Mean annual air temperature: 57 to 61 degrees F
Frost-free period: 190 to 200 days
Farmland classification: All areas are prime farmland

Map Unit Composition*Donerail and similar soils: 100 percent**Estimates are based on observations, descriptions, and transects of the mapunit.***Description of Donerail****Setting***Landform: Hillslopes**Landform position (three-dimensional): Crest**Parent material: Clayey alluvium derived from limestone***Typical profile***H1 - 0 to 10 inches: silt loam**H2 - 10 to 20 inches: silty clay loam**H3 - 20 to 40 inches: silty clay**H4 - 40 to 60 inches: silty clay***Properties and qualities***Slope: 0 to 5 percent**Depth to restrictive feature: More than 80 inches**Drainage class: Moderately well drained**Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)**Depth to water table: About 18 to 36 inches**Frequency of flooding: None**Frequency of ponding: None**Available water supply, 0 to 60 inches: High (about 10.6 inches)***Interpretive groups***Land capability classification (irrigated): None specified**Land capability classification (nonirrigated): 2e**Hydrologic Soil Group: C**Ecological site: F123XY004TN - Deep Loamy Terraces And Depressions**Hydric soil rating: No***Ld—Lindell silt loam, 0 to 2 percent slopes, occasionally flooded****Map Unit Setting***National map unit symbol: 2td2y**Elevation: 500 to 850 feet**Mean annual precipitation: 48 to 58 inches**Mean annual air temperature: 57 to 61 degrees F**Frost-free period: 190 to 230 days**Farmland classification: All areas are prime farmland***Map Unit Composition***Lindell and similar soils: 90 percent**Minor components: 10 percent**Estimates are based on observations, descriptions, and transects of the mapunit.*

Description of Lindell

Setting

Landform: Flood plains
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Base slope
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Fine-loamy alluvium derived from limestone and siltstone

Typical profile

Ap - 0 to 7 inches: silt loam
Bw - 7 to 15 inches: silt loam
Bg - 15 to 52 inches: silt loam
Cg - 52 to 79 inches: silty clay loam

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Moderately well drained
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
 (0.60 to 2.00 in/hr)
Depth to water table: About 12 to 16 inches
Frequency of flooding: Occasional
Frequency of ponding: None
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water supply, 0 to 60 inches: High (about 11.2 inches)

Interpretive groups

Land capability classification (irrigated): 2w
Land capability classification (nonirrigated): 2w
Hydrologic Soil Group: B/D
Ecological site: F123XY005TN - Floodplains
Hydric soil rating: No

Minor Components

Arrington

Percent of map unit: 4 percent
Landform: Flood plains
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Base slope
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

Norene

Percent of map unit: 4 percent
Landform: Flood plains
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Base slope
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: Yes

Armour

Percent of map unit: 2 percent
Landform: Flood plains
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Base slope
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

Mb—Maury silt loam, eroded gently sloping phase**Map Unit Setting**

National map unit symbol: kq72
Elevation: 540 to 930 feet
Mean annual precipitation: 46 to 60 inches
Mean annual air temperature: 57 to 61 degrees F
Frost-free period: 190 to 200 days
Farmland classification: All areas are prime farmland

Map Unit Composition

Maury and similar soils: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Maury**Setting**

Landform: Hillslopes
Landform position (three-dimensional): Crest
Parent material: Loess over clayey residuum and/or alluvium derived from limestone

Typical profile

H1 - 0 to 14 inches: silt loam
H2 - 14 to 26 inches: silty clay loam
H3 - 26 to 40 inches: silty clay
H4 - 40 to 60 inches: clay

Properties and qualities

Slope: 2 to 5 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.60 to 2.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: High (about 11.0 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 2e
Hydrologic Soil Group: A
Ecological site: F123XY001TN - Limestone Uplands
Hydric soil rating: No

Mp—Mines, Pits, and Dumps

Map Unit Composition

Mines: 40 percent

Pits: 30 percent

Dumps: 30 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Soil Information for All Uses

Soil Properties and Qualities

The Soil Properties and Qualities section includes various soil properties and qualities displayed as thematic maps with a summary table for the soil map units in the selected area of interest. A single value or rating for each map unit is generated by aggregating the interpretive ratings of individual map unit components. This aggregation process is defined for each property or quality.

Soil Erosion Factors

Soil Erosion Factors are soil properties and interpretations used in evaluating the soil for potential erosion. Example soil erosion factors can include K factor for the whole soil or on a rock free basis, T factor, wind erodibility group and wind erodibility index.

K Factor, Whole Soil (Bulk Storage Railyard)

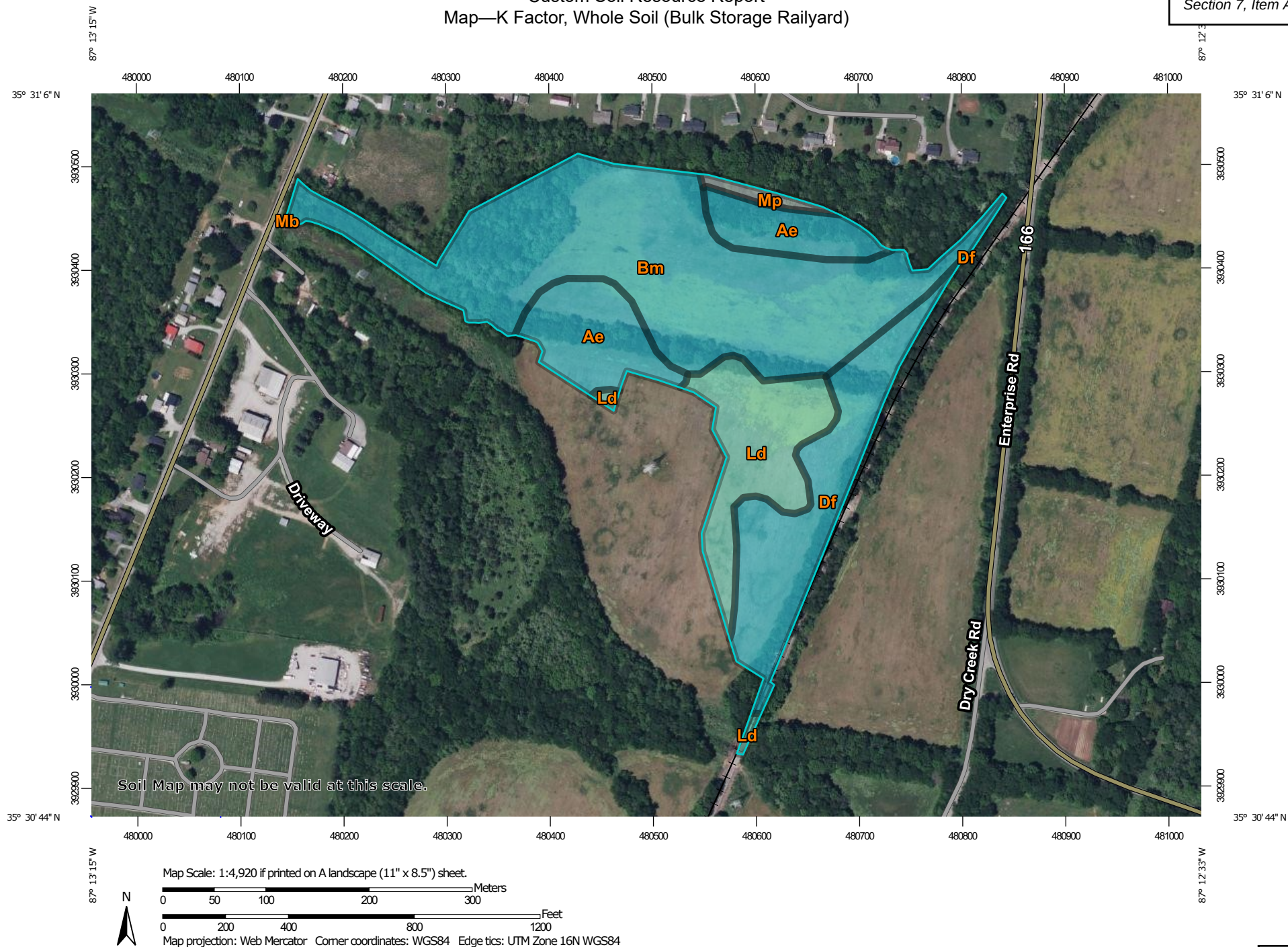
Erosion factor K indicates the susceptibility of a soil to sheet and rill erosion by water. Factor K is one of six factors used in the Universal Soil Loss Equation (USLE) and the Revised Universal Soil Loss Equation (RUSLE) to predict the average annual rate of soil loss by sheet and rill erosion in tons per acre per year. The estimates are based primarily on percentage of silt, sand, and organic matter and on soil structure and saturated hydraulic conductivity (Ksat). Values of K range from 0.02 to 0.69. Other factors being equal, the higher the value, the more susceptible the soil is to sheet and rill erosion by water.

"Erosion factor Kw (whole soil)" indicates the erodibility of the whole soil. The estimates are modified by the presence of rock fragments.

Factor K does not apply to organic horizons and is not reported for those layers.

Custom Soil Resource Report
Map—K Factor, Whole Soil (Bulk Storage Railyard)

Section 7, Item A.



MAP LEGEND**Area of Interest (AOI)**
 Area of Interest (AOI)
Soils**Soil Rating Polygons**

	.02
	.05
	.10
	.15
	.17
	.20
	.24
	.28
	.32
	.37
	.43
	.49
	.55
	.64
	Not rated or not available

Soil Rating Lines

	.02
	.05
	.10
	.15
	.17
	.20

	.24
	.28
	.32
	.37
	.43
	.49
	.55
	.64
	Not rated or not available

Soil Rating Points

	.02
	.05
	.10
	.15
	.17
	.20
	.24
	.28
	.32
	.37
	.43
	.49
	.55
	.64
	Not rated or not available

Water Features

	Streams and Canals
	Rails
	Interstate Highways
	US Routes
	Major Roads
	Local Roads
	Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:20,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Maury County, Tennessee
Survey Area Data: Version 20, Aug 29, 2025

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Mar 20, 2021—Jun 14, 2021

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Table—K Factor, Whole Soil (Bulk Storage Railyard)

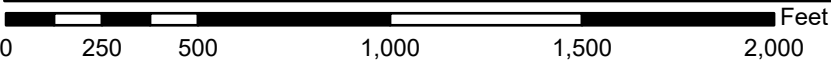
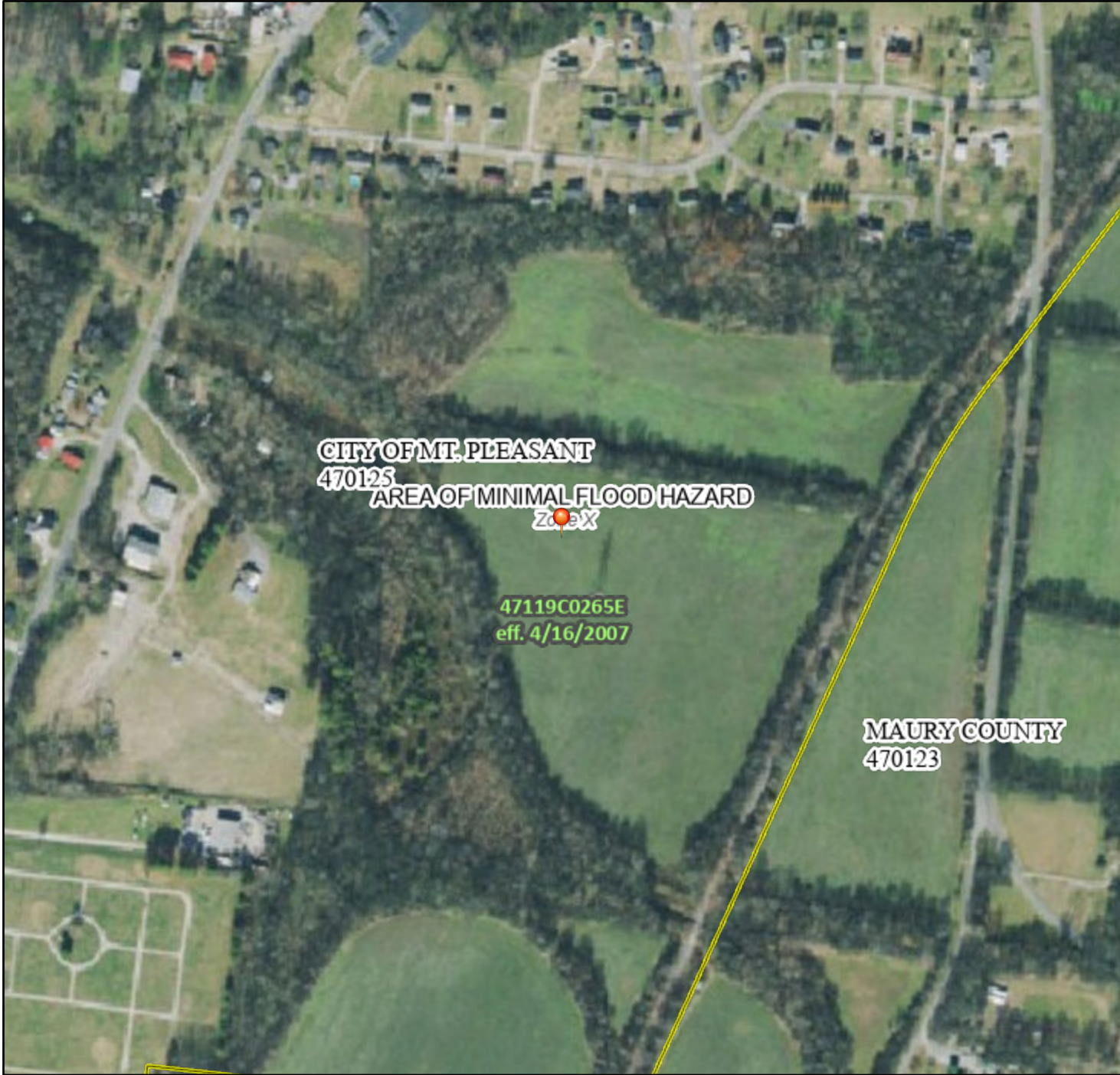
Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
Ae	Armour silt loam, eroded gently sloping phase	.37	4.5	15.3%
Bm	Burgin silt loam, phosphatic phase (Eagleville)	.37	15.0	51.1%
Df	Donerail silt loam, gently sloping phase	.37	5.3	18.1%
Ld	Lindell silt loam, 0 to 2 percent slopes, occasionally flooded	.32	4.2	14.2%
Mb	Maury silt loam, eroded gently sloping phase	.32	0.0	0.0%
Mp	Mines, Pits, and Dumps		0.4	1.2%
Totals for Area of Interest			29.3	100.0%

Rating Options—K Factor, Whole Soil (Bulk Storage Railyard)*Aggregation Method:* Dominant Condition*Component Percent Cutoff:* None Specified*Tie-break Rule:* Higher*Layer Options (Horizon Aggregation Method):* Surface Layer (Not applicable)

National Flood Hazard Layer FIRMette



87°13'14"W 35°31'11"N



1:6,000

87°12'37"W 35°30'42"N

Basemap Imagery Source: USGS National Map 2023

Legend

Section 7, Item A.

SEE FIS REPORT FOR DETAILED LEGEND AND INFORMATION

SPECIAL FLOOD HAZARD AREAS		Without Base Flood Elevation (BFE) Zone A, V, A99
		With BFE or Depth Zone AE, AO, AH, VE, AR
		Regulatory Floodway
OTHER AREAS OF FLOOD HAZARD		0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile Zone X
		Future Conditions 1% Annual Chance Flood Hazard Zone X
		Area with Reduced Flood Risk due to Levee. See Notes. Zone X
		Area with Flood Risk due to Levee Zone D
OTHER AREAS		NO SCREEN Area of Minimal Flood Hazard Zone X
		Effective LOMRs
		Area of Undetermined Flood Hazard Zone D
GENERAL STRUCTURES		Channel, Culvert, or Storm Sewer
		Levee, Dike, or Floodwall
OTHER FEATURES		20.2 Cross Sections with 1% Annual Chance Water Surface Elevation
		17.5 Cross Sections with 1% Annual Chance Water Surface Elevation
		Coastal Transect
		Base Flood Elevation Line (BFE)
		Limit of Study
		Jurisdiction Boundary
		Coastal Transect Baseline
		Profile Baseline
		Hydrographic Feature
		Digital Data Available
MAP PANELS		No Digital Data Available
		Unmapped



The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.

This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on **10/10/2025 at 4:43 PM** and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community id, FIRM panel number, and FIRM effective date. Map is unmapped and unmodernized areas cannot be used for regulatory purposes.



Section 7, Item A.

APPENDIX E

NOTICE OF TERMINATION

To be completed and submitted to the local EFO when all construction and stabilization activities have been completed and stabilization measures are effective or if an operator's responsibilities at this site have ended.


TENNESSEE DEPARTMENT OF ENVIRONMENT AND CONSERVATION (TDEC)

DIVISION OF WATER RESOURCES (DWR)
 Davy Crockett Tower, 500 James Robertson Parkway, 9th Floor
 Nashville, Tennessee 37243
 1-888-891-TDEC (8332)

**NOTICE OF TERMINATION (NOT) FOR
 GENERAL NPDES PERMIT FOR STORMWATER DISCHARGES FROM CONSTRUCTION ACTIVITIES (CGP)**

This form is required to be submitted when requesting termination of coverage from the CGP. The purpose of this form is to notify the TDEC that either all stormwater discharges associated with construction activity from the portion of the identified facility where you, as an operator, have ceased or have been eliminated; or you are no longer an operator at the construction site. Specifically, this means that all disturbed soils at the portion of the construction site where the operator had control have been permanently stabilized, the temporary erosion and sediment control measures have been removed, and/or subsequent operators have obtained permit coverage for the site or portions of the site where the operator had control. Submission of this form shall in no way relieve the permittee of permit obligations required prior to submission of this form.

Submit this form to the local DWR Environmental Field Office (EFO) address (see table below) or using MyTDEC Forms electronic submittal process. For more information, contact your local EFO at the toll-free number 1-888-891-8332 (TDEC).

Site or Project Name: Bulk Storage Railyard	NPDES Tracking Number: TNR
Street Address or Location: South Main Street, Tax Map 150 Parcel 063.11 Mt. Pleasant, Tennessee 38474	County(ies):Maury

Name of Permittee Requesting Termination of Coverage: True Rail Enterprises, LLC			
Permittee Contact Name: Mark Smith		Title or Position: Environmental Geologist	
Mailing Address: 500 1st Avenue	City: Mt. Pleasant	State: TN	Zip: 38474
Phone: 931-325-5570		E-mail: mark@truerail.com	

Check the reason(s) for termination of permit coverage: (check only one)

☐	Primary permittee termination: all requirements for termination under Permit Part 9.1.1. a) through c) have been met. This includes, but is not limited to, for areas the primary permittee has control all earth-disturbing activities at the site are complete and permanent stabilization as defined in Part 10 of the CGP has been achieved. (attach photo documentation)
☐	When applicable, and you are a primary permittee seeking termination, list who is responsible for ongoing maintenance of stormwater controls left on the site subject for long-term use following termination of coverage:
☐	Secondary permittee termination: all requirements for termination under Permit Part 9.2.1. have been met (no longer an operator at the construction site).

Certification and Signature:

(must be signed by president, vice-president or equivalent ranking elected official)

I certify under penalty of law that either: (a) all stormwater discharges associated with construction activity from the portion of the identified facility where I was an operator have ceased or have been eliminated or (b) I am no longer an operator at the construction site. I understand that by submitting this notice of termination, I am no longer authorized to discharge stormwater associated with construction activity under this general permit, and that discharging pollutants in stormwater associated with construction activity to waters of the state is unlawful under the Tennessee Water Quality Control Act where the discharge is not authorized by a NPDES permit. I also understand that the submittal of this notice of termination does not release an operator from liability for any violations of this permit or the Tennessee Water Quality Control Act. I certify under penalty of law that this document and all attachments were prepared by me, or under my direction or supervision. The submitted information is to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment. As specified in Tennessee Code Annotated Section 39-16-702(a)(4), this declaration is made under penalty of perjury.

Permittee name (print or type): Mark Smith, True Rail Enterprises, LLC	Signature:	Date: 10/28/25
---	------------	--------------------------

EFO	Address	EFO	Street Address
Memphis	8383 Wolf Lake Drive, Bartlett, TN 38133	Cookeville	1221 South Willow Ave., TN 38506
Jackson	1625 Hollywood Drive, TN 38305	Chattanooga	1301 Riverfront Parkway, Ste. 206, TN 37402
Nashville	711 R S Gass Boulevard, TN 37243	Knoxville	3711 Middlebrook Pike, TN 37921
Columbia	1421 Hampshire Pike, TN 38401	Johnson City	2305 Silverdale Road, TN 37601

APPENDIX F

INSPECTION CERTIFICATION



TENNESSEE DEPARTMENT OF ENVIRONMENT AND CONSERVATION (TDEC)
DIVISION OF WATER RESOURCES
 Davy Crockett Tower 500 James Robertson Parkway, 9th Floor
 Nashville, Tennessee 37243
 1-888-891-8332 (TDEC)

Section 7, Item A.

General NPDES Permit for Stormwater Discharges from Construction Activities (CGP)
Construction Stormwater Inspection Certification (Inspection Form)

Site or Project Name: Bulk Storage Railyard		NPDES Tracking Number: TNR
Primary Permittee Name: True Rail Enterprises, LLC		Date of Inspection:
Current approximate disturbed acreage:	Has rainfall been checked/documented daily? ☐ Yes ☐ No	Name of Inspector:
Current weather/ground conditions:	Rainfall total since last inspection:	Inspector's TNEPSC Certification Number:
Site Assessment ☐ Yes ☐ No	Assessor's TN PE registration number:	Assessor's TNEPSC Level II/CPESC number:

Check the box if the following items are on-site:	
☐	Notice of Coverage (NOC)
☐	Stormwater Pollution Prevention Plan (SWPPP)
☐	Weekly inspection documentation
☐	Site contact information
☐	Rain Gage
Off-site Reference Rain Gage Location	

Best Management Practices (BMPs):

Are the Erosion Prevention and Sediment Controls (EPSCs) functioning correctly?			
If "No," describe below in Comment Section			
1.	Are all applicable EPSCs installed and maintained per the SWPPP per the current phase?	☐ Yes	☐ No
2.	Are EPSCs functioning correctly at all disturbed areas/material storage areas? (permit section 5.5.3)	☐ Yes	☐ No
3.	Are EPSCs functioning correctly at outfall/discharge points such that there is no objectionable color contrast in the receiving stream, and no other water quality impacts? (permit section 5.5.3.5 and 6.3.2)	☐ Yes	☐ No
4.	Are EPSCs functioning correctly at ingress/egress points such that there is no evidence of track-out? (permit section 5.5.3.1)	☐ Yes	☐ No
5.	If applicable, have discharges from dewatering activities been managed by appropriate controls? (permit section 4.1.3) If "No," describe below the measure to be implemented to address deficiencies.	☐ N/A	☐ Yes ☐ No
6.	If construction activity at any location on-site has temporarily/permanently ceased, was the area stabilized within 14 days? (permit section 5.5.3.4) If "No," describe below each location and measures taken to stabilize the area(s).	☐ N/A	☐ Yes ☐ No
7.	Have pollution prevention measures been installed, implemented, and maintained to minimize the discharge of pollutants from wash waters, exposure of materials and discharges from spills and leaks per section 4.1.4? If "No," describe below the measure to be implemented to address deficiencies.	☐ N/A	☐ Yes ☐ No

Site or Project Name: Bulk Storage Railyard		NPDES Tracking Number: TNR		
Primary Permittee Name: True Rail Enterprises, LLC		Date of Inspection:		
8.	If a concrete washout facility is located on site, is it clearly identified on the project and maintained? If “No,” describe below the measures to be implemented to address deficiencies. (permit section 1.2.2)	☐ N/A	☐ Yes	☐ No
9.	Have all previous deficiencies been addressed? If “No,” describe the remaining deficiencies in the Comments section. ☐ Check if deficiencies/corrective measures have been reported on a previous form.	☐ N/A	☐ Yes	☐ No
Comment Section. If the answer is “No” for any of the above, describe the problem and summarize corrective actions to be taken. Otherwise, describe any pertinent observations:				
Certification and Signature (must be signed by the certified inspector and the permittee per Sections 5.5.3.11 (g) and 8.7.2 of the CGP)				
I certify under penalty of law that this document and all attachments were prepared by me, or under my direction or supervision. The submitted information is to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment. As specified in Tennessee Code Annotated Section 39-16-702(a)(4), this declaration is made under penalty of perjury.				
Inspector Name and Title :		Signature:	Date: 10/28/25	
Primary Permittee Name and Title:		Signature:	Date:	

Construction Stormwater Inspection Certification Form (Inspection Form)

Purpose of this form / Instructions

An inspection, as described in subsection 5.5.3.9. of the General Permit for Stormwater Discharges from Construction Activities ("Permit"), shall be performed at the specified frequency and documented on this form. Inspections shall be performed at least 72 hours apart. Where sites or portion(s) of construction sites have been temporarily stabilized, or runoff is unlikely due to winter conditions (e.g., site covered with snow or ice), such inspection only has to be conducted once per month until thawing results in runoff or construction activity resumes.

Inspections can be performed by:

- a) a person with a valid certification from the "Fundamentals of Erosion Prevention and Sediment Control Level I" course,
- b) a licensed professional engineer or landscape architect,
- c) a Certified Professional in Erosion and Sediment Control (CPESC), or
- d) a person who has successfully completed the "Level II Design Principles for Erosion Prevention and Sediment Control for Construction Sites" course.

Qualified personnel, as defined in subsection 5.5.3.10 of the Permit (provided by the permittee or cooperatively by multiple permittees) shall inspect disturbed areas of the construction site that have not been permanently stabilized, areas used for storage of materials that are exposed to precipitation, structural control measures, locations where vehicles enter or exit the site, and each outfall.

Disturbed areas and areas used for storage of materials that are exposed to precipitation shall be inspected for evidence of, or the potential for, pollutants entering the site's drainage system. Erosion prevention and sediment control measures shall be observed to ensure that they are operating correctly.

Outfall points (where discharges leave the site and/or enter waters of the state) shall be inspected to determine whether erosion prevention and sediment control measures are effective in preventing significant impacts to receiving waters. Where discharge locations are inaccessible, nearby downstream locations shall be inspected. Locations where vehicles enter or exit the site shall be inspected for evidence of offsite sediment tracking.

Based on the results of the inspection, any inadequate control measures or control measures in disrepair shall be replaced or modified, or repaired as necessary, before the next rain event if possible, but in no case more than 7 days after the need is identified.

Based on the results of the inspection, the site description identified in the SWPPP in accordance with section 5.5.1 of the Permit and pollution prevention measures identified in the SWPPP in accordance with section 5.5.2 of the Permit, shall be revised as appropriate, but in no case later than 7 days following the inspection. Such modifications shall provide for timely implementation of any changes to the SWPPP, but in no case later than 14 days following the inspection.

All inspections shall be documented on this Construction Stormwater Inspection Certification form. Alternative inspection forms may be used as long as the form contents and the inspection certification language are, at a minimum, equivalent to the Division's form and the permittee has obtained a written approval from the Division to use the alternative form. Inspection documentation will be maintained on site and made available to the Division upon request. Inspection reports must be submitted to the Division within 10 days of the request.

Trained certified inspectors shall complete inspection documentation to the best of their ability. Falsifying inspection records or other documentation or failure to complete inspection documentation shall result in a violation of this permit and any other applicable acts or rules.

EQUIPMENT SERVICING FACILITY for TRUE RAIL

Mt. Pleasant, Tennessee

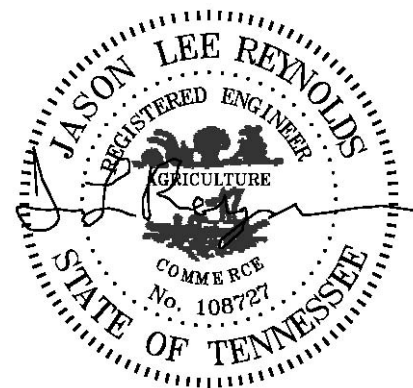
DRAINAGE CALCULATIONS WITH SITE PLAN SUBMITTAL

May 22, 2026

Prepared By:



CSR Project #: 24-040



Abstract

This report presents a detailed summary of stormwater quality and quantity treatment for an industrial 62-acre site in Mt. Pleasant, TN. In compliance with City regulations, the site will require additional quantity controls for stormwater due to the proposed site conditions having an increased rate of runoff vs. the existing conditions. The primary factor for increased runoff is the existing undeveloped property will be converted to industrial work areas and impervious areas (building and asphalt parking). Stormwater quality treatment is not provided on this development.

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Section I Site Information

The subject property consists of 62 acres, described as parcel 63.11, located Main Street, south of Town. (see Figure 1). The property is shown on Maury County Property Map 150, Parcel 11.01 (presented in Figure 2), and is currently owned by Bonafide Holdings TN, LLC. The site is currently vacant, undeveloped, predominately grass/vegetation with a gravel entrance driveway. The proposed development will consist of aligning the entrance drive with Main St. and then extending the asphalt entrance east to a proposed asphalt parking area adjacent to a proposed equipment servicing building. The servicing building will include rail cars into the structure from eastern rail spur tie ins. None of this site is within a flood hazard area according to FEMA's National Flood Hazard Map, Panel 47119C0265E with an effective date of April 16, 2007 (see Figure 3). Currently, the site drains via sheet flow generally to the northeast. There are two offsite drainage basins moving in the same direction but are relatively unaffected by the developed and remain flowing in a similar fashion after development. The site increased stormwater due to impervious and related development surfaces is routed to a detention pond to detain flows less than existing for the site. After detention the water is routed to the northeast along the existing drainage paths at amounts less than existing for the 2 through 100 year events.



Figure 1: Vicinity Map



Figure 2: Maury County Property Map 150, Parcel 63.11

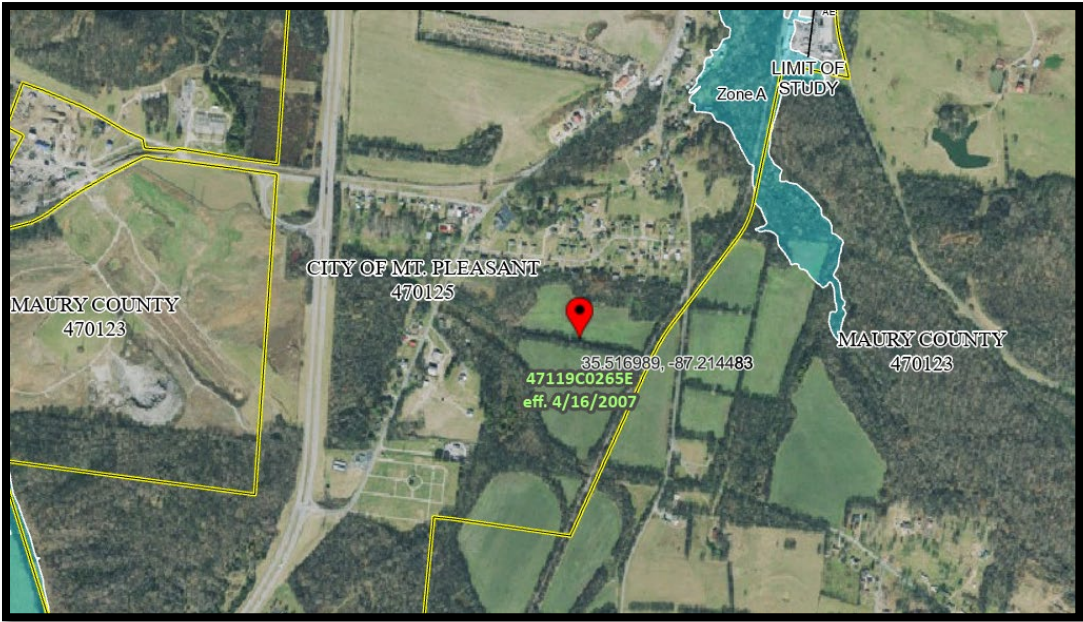


Figure 3: FEMA Map 47119C0265E

Section II Drainage Calculations

Using the existing data detailed below, analysis transpired using the SCS (TR-20) method to determine the pre-developed discharge rates for this site. A curve number varied on the grass or wooded areas and was used for all pervious areas given the site cover and condition observations coupled with the existing soil types detailed shown hereinafter.

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
Ae	Armour silt loam, eroded gently sloping phase	17.5	27.1%
Bg	Braxton cherty silty clay loam, severely eroded sloping phase	0.9	1.4%
Bm	Burgin silt loam, phosphatic phase (Eagleville)	20.9	32.4%
Df	Donerail silt loam, gently sloping phase	6.3	9.8%
Hr	Huntington silt loam, local alluvium phosphatic phase	1.1	1.7%
Ld	Lindell silt loam, 0 to 2 percent slopes, occasionally flooded	13.4	20.8%
Mb	Maury silt loam, eroded gently sloping phase	0.1	0.2%
Mp	Mines, Pits, and Dumps	4.2	6.5%
W	Water	0.1	0.2%
Totals for Area of Interest		64.7	100.0%

Figure 4: NRCS Soil Data



Figure 5: NRCS Soil Data Map

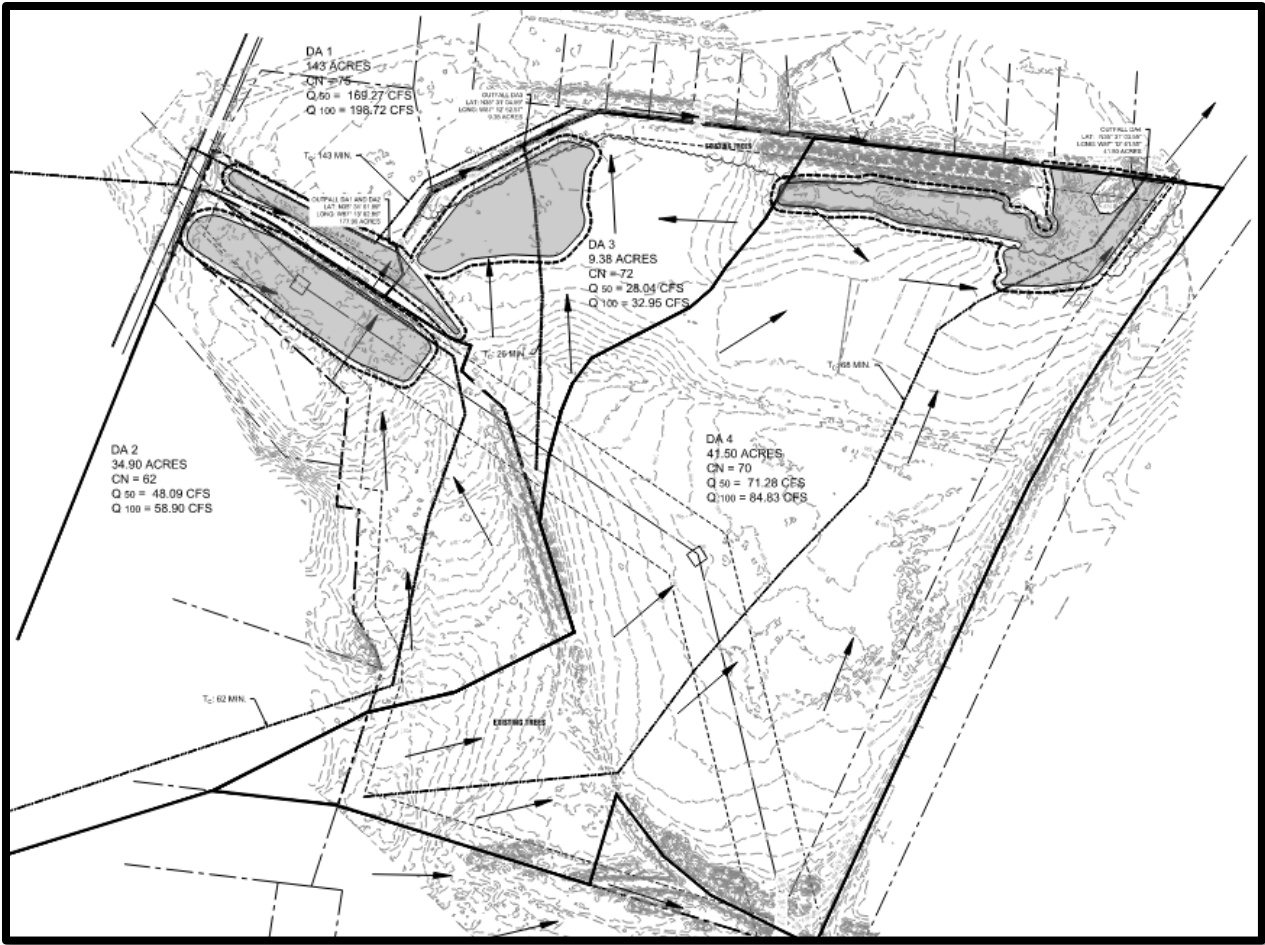


Figure 6: Existing Drainage Basin Map

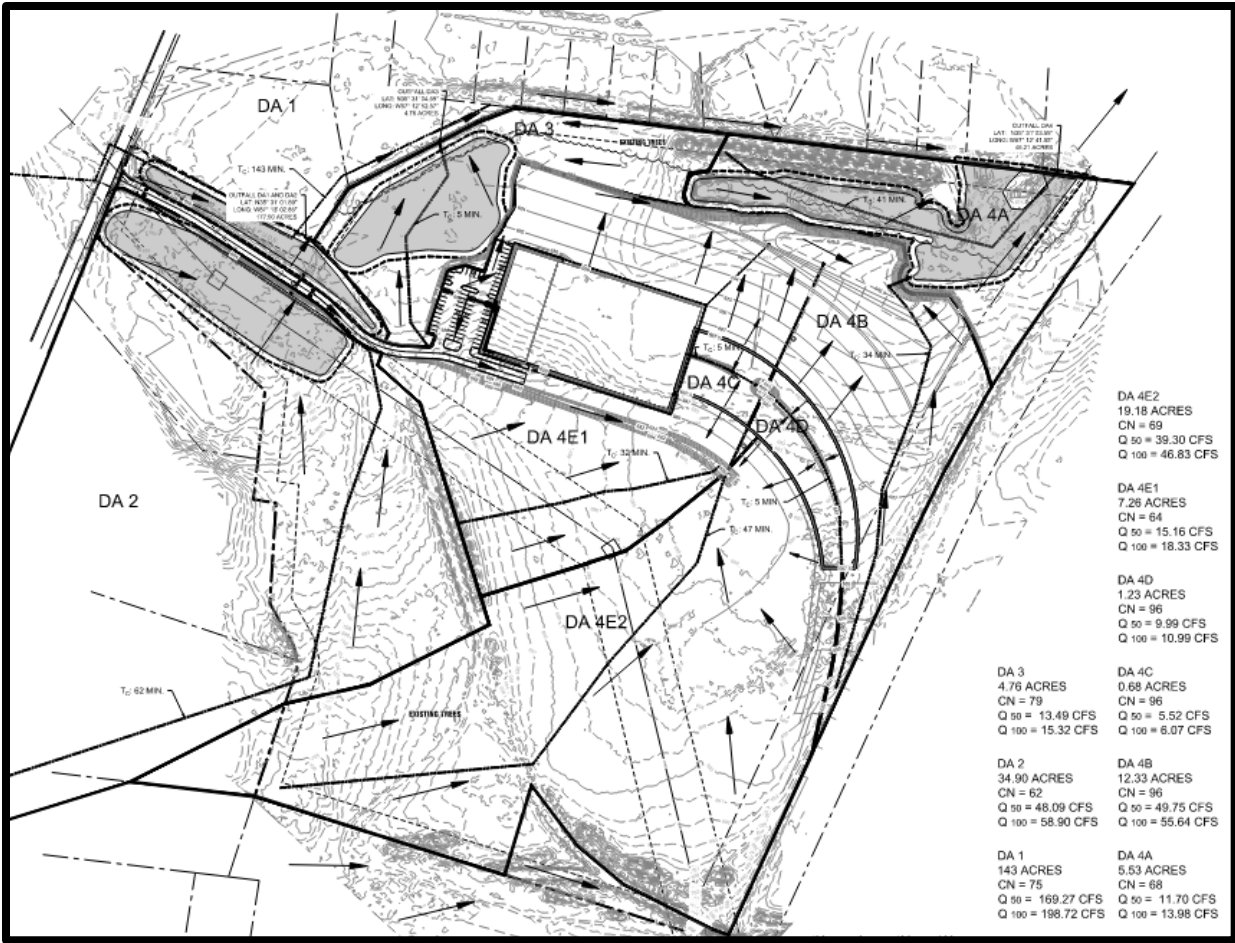


Figure 7: Proposed Drainage Basin Map

The 2, 5, 10, 25, 50 and 100-year storms were each analyzed using a 24-hour period in accordance with the original development of the SCS model. Design rainfall data from NOAA Atlas 14 for Mt Pleasant, TN was used for the intensity of all rainfall events. The resulting runoff rates for each storm can be found in Figure 9 below and as attached in detail in Appendix A.

2.1 General Plan

The site's topography and natural drainage patterns allow the site under development consideration to be analyzed as four subbasins as shown in Figure 6 above the cut into smaller, developed subbasin in the proposed site in Figure 7. The site development will meet the City regulation requirements for quantity pre vs. post measures. The detained flows from the site are then returned to existing drainage features, and the associated runoff follows natural pathways

offsite. Downstream analysis was not performed since the flows are reduced in the pre vs post conditions and any capacity issues would pre-exist the site development, yet be improved because of the site detention.

A general schematic plan of this design is presented in Figure 8 which shows runoff being collected via sheet and shallow concentrated flow and some ditches into the detention pond. No water quality measures are provided.

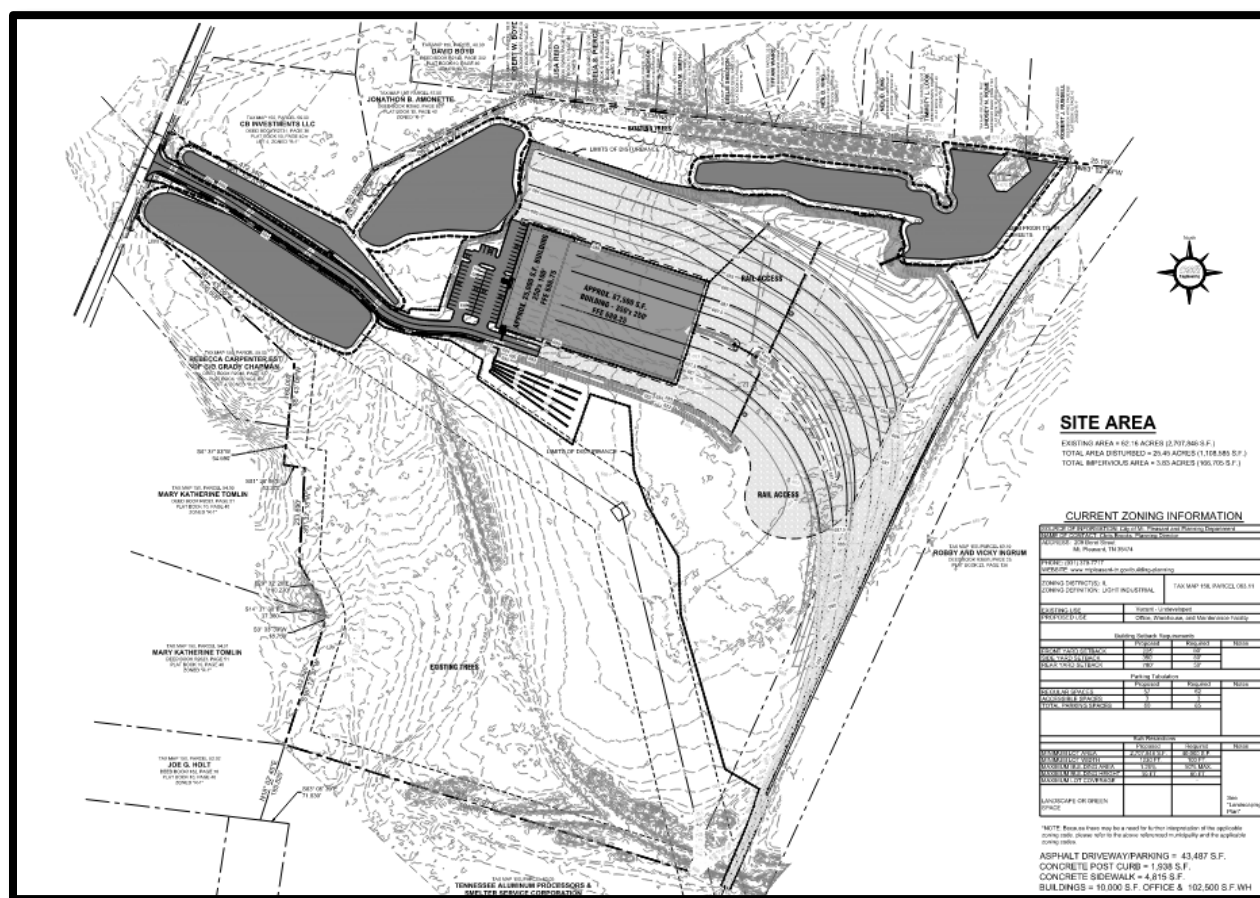


Figure 8: Grading Sheet

Section IV Proposed Stormwater Quantity Controls

The stormwater flow control occurs with the application of an individual detention management facility. The SCS (TR-20) method utilizing HydroCAD was used to analyze all flows through the existing and proposed drainage system. The curve number for the proposed site was developed from the weighted site curve numbers in pervious areas (varies) and 98 for improved asphalt, concrete and building areas. Stone covered access and storage areas have a varied CN based upon the underlying soils composition and drainage classification. The resultant flows for the proposed site are based on the proposed development as shown on the plans and further detailed in the Appendix A report.

4.1 Storm Water Quantity Conditions

Pre vs. Post stormwater runoff results in a slight increase to site quantities as tabled below. The images below reveal the drainage areas prior to and after construction.

Storm Event	Predeveloped Flows (CFS) Areas 3&4	Proposed Flows after Detention (CFS) Areas 3/4/Pond
2-year	31.32	30.52
5-year	47.49	42.75
10-year	61.46	53.30
25-year	81.97	66.64
50-year	99.32	82.9
100-year	117.78	91.69

Figure 9: Site Pre vs. Post Runoff Summary

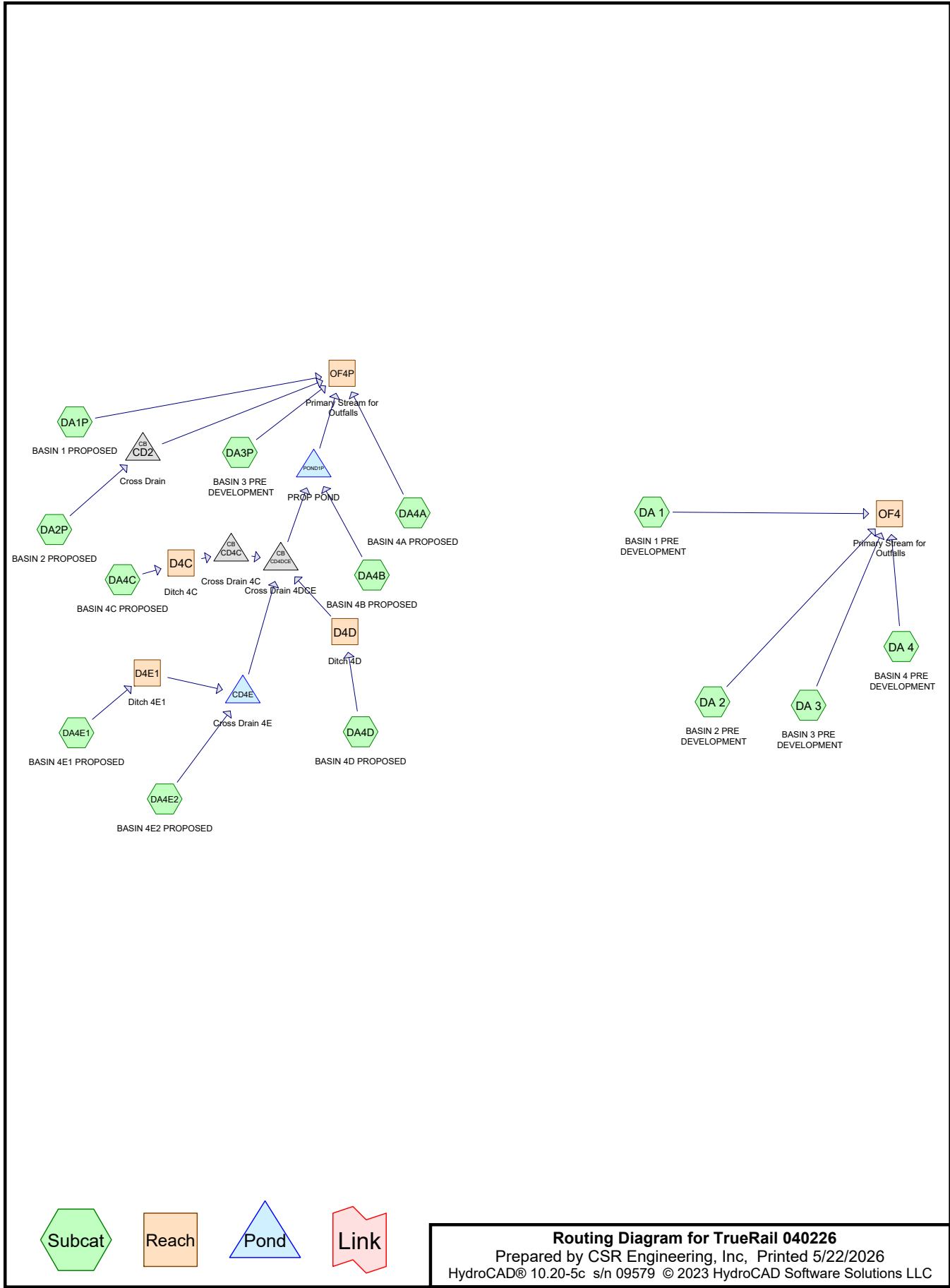
With the quantity increased due to the change in cover and added impervious areas, storm water storage is provided for by a standard detention with controlled release rates. An emergency overflow designed to pass storm events greater than the 100 year event is also included as part of this design. All peak volume calculations are based on the SCS TR-20 method.

Section V Conclusion

The proposed storm sewer system has been designed to meet the requirements of the City of Mt. Pleasant Regulations and prior recommendations of the Department Staff. The system will reduce the post-developed site discharge rate from the 2, 5, 10, 25, 50 and 100-year rainfall events to be less than the pre-developed discharge rates from the same storms.

APPENDIX A

Drainage Model Reports



TrueRail 040226

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Project Notes

Copied 6 events from Springfield 24-hr S1 storm
Copied 7 events from dickson 24-hr S1 storm
Copied 7 events from stockbridge 24-hr S1 storm
Copied 6 events from Tiptonville 24-hr S1 storm
Copied 7 events from Mt Pleasant 24-hr S1 storm
Copied 6 events from Tiptonville 24-hr S1 storm
Copied 7 events from Mt Pleasant 24-hr S1 storm
Copied 6 events from Tiptonville 24-hr S1 storm
Copied 7 events from Mt Pleasant 24-hr S1 storm

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Rainfall Events Listing

Event#	Event Name	Storm Type	Curve	Mode	Duration (hours)	B/B	Depth (inches)	AMC
1	2-yr	Mt Pleasant 24-hr S1	2-yr	Default	24.00	1	3.90	2
2	5-yr	Mt Pleasant 24-hr S1	5-yr	Default	24.00	1	4.75	2
3	10-yr	Mt Pleasant 24-hr S1	10-yr	Default	24.00	1	5.42	2
4	25-yr	Mt Pleasant 24-hr S1	25-yr	Default	24.00	1	6.34	2
5	50-yr	Mt Pleasant 24-hr S1	50-yr	Default	24.00	1	7.08	2
6	100-yr	Mt Pleasant 24-hr S1	100-yr	Default	24.00	1	7.83	2

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Area Listing (selected nodes)

Area (sq-ft)	CN	Description (subcatchment-numbers)
6,054,840	74	>75% Grass cover, Good, HSG C (DA 1, DA1P)
750,974	96	Gravel surface, HSG C (DA 2, DA2P, DA4B, DA4C, DA4D)
2,302,582	58	Meadow, non-grazed, HSG B (DA 2, DA 3, DA 4, DA2P, DA4E1, DA4E2)
650,351	71	Meadow, non-grazed, HSG C (DA 4)
461,736	78	Meadow, non-grazed, HSG D (DA 3, DA 4)
217,800	98	Paved parking, HSG C (DA 1, DA1P)
43,560	98	Paved parking, HSG D (DA4B)
43,560	98	Paved roads w/curbs & sewers, HSG B (DA4E1)
87,120	98	Roofs, HSG D (DA4B)
1,812,532	60	Woods, Fair, HSG B (DA 2, DA 3, DA 4, DA2P, DA4A, DA4E1, DA4E2)
488,743	73	Woods, Fair, HSG C (DA 4, DA4A)
835,916	79	Woods, Fair, HSG D (DA 3, DA 4, DA3P, DA4E2)
6,185,520	76	Woods/grass comb., Fair, HSG C (DA 1, DA1P)
19,935,234	73	TOTAL AREA

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Soil Listing (selected nodes)

Area (sq-ft)	Soil Group	Subcatchment Numbers
0	HSG A	
4,158,673	HSG B	DA 2, DA 3, DA 4, DA2P, DA4A, DA4E1, DA4E2
14,348,228	HSG C	DA 1, DA 2, DA 4, DA1P, DA2P, DA4A, DA4B, DA4C, DA4D
1,428,332	HSG D	DA 3, DA 4, DA3P, DA4B, DA4E2
0	Other	
19,935,234		TOTAL AREA

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Ground Covers (selected nodes)

HSG-A (sq-ft)	HSG-B (sq-ft)	HSG-C (sq-ft)	HSG-D (sq-ft)	Other (sq-ft)	Total (sq-ft)	Ground Cover
0	0	6,054,840	0	0	6,054,840	>75% Grass cover, Good
0	0	750,974	0	0	750,974	Gravel surface
0	2,302,582	650,351	461,736	0	3,414,668	Meadow, non-grazed
0	0	217,800	43,560	0	261,360	Paved parking
0	43,560	0	0	0	43,560	Paved roads w/curbs & sewers
0	0	0	87,120	0	87,120	Roofs
0	1,812,532	488,743	835,916	0	3,137,191	Woods, Fair
0	0	6,185,520	0	0	6,185,520	Woods/grass comb., Fair
0	4,158,673	14,348,228	1,428,332	0	19,935,234	TOTAL AREA

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Pipe Listing (selected nodes)

Line#	Node Number	In-Invert (feet)	Out-Invert (feet)	Length (feet)	Slope (ft/ft)	n	Width (inches)	Diam/Height (inches)	Inside-Fill (inches)	Node Name
1	CD2	680.25	680.00	50.0	0.0050	0.011	0.0	36.0	0.0	
2	CD4C	683.75	679.00	60.0	0.0792	0.011	0.0	18.0	0.0	
3	CD4DCE	678.39	676.50	360.0	0.0052	0.011	0.0	48.0	0.0	
4	CD4E	679.50	678.46	200.0	0.0052	0.011	0.0	48.0	0.0	
5	POND1P	676.25	676.00	50.0	0.0050	0.011	0.0	36.0	0.0	

TrueRail 040226*Mt Pleasant 24-hr S1 2-yr Rainfall=3.90"*

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Time span=0.00-48.00 hrs, dt=0.01 hrs, 4801 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

Subcatchment DA 1: BASIN 1 PRE Runoff Area=143.000 ac 1.75% Impervious Runoff Depth=1.59"
 Flow Length=5,750' Tc=143.0 min CN=75 Runoff=58.46 cfs 826,416 cf

Subcatchment DA 2: BASIN 2 PRE Runoff Area=34.900 ac 0.00% Impervious Runoff Depth=0.81"
 Flow Length=2,150' Slope=0.0150 '/' Tc=62.3 min CN=62 Runoff=11.06 cfs 102,914 cf

Subcatchment DA 3: BASIN 3 PRE Runoff Area=9.380 ac 0.00% Impervious Runoff Depth=1.46"
 Flow Length=838' Slope=0.0200 '/' Tc=25.9 min CN=73 Runoff=9.84 cfs 49,580 cf

Subcatchment DA 4: BASIN 4 PRE Runoff Area=41.500 ac 0.00% Impervious Runoff Depth=1.26"
 Flow Length=2,468' Tc=68.1 min CN=70 Runoff=21.84 cfs 190,326 cf

Subcatchment DA1P: BASIN 1 PROPOSED Runoff Area=143.000 ac 1.75% Impervious Runoff Depth=1.59"
 Flow Length=5,750' Tc=143.0 min CN=75 Runoff=58.46 cfs 826,416 cf

Subcatchment DA2P: BASIN 2 PROPOSED Runoff Area=34.900 ac 0.00% Impervious Runoff Depth=0.81"
 Flow Length=2,150' Slope=0.0150 '/' Tc=62.3 min CN=62 Runoff=11.06 cfs 102,914 cf

Subcatchment DA3P: BASIN 3 PRE Runoff Area=4.760 ac 0.00% Impervious Runoff Depth=1.88"
 Tc=5.0 min CN=79 Runoff=13.13 cfs 32,530 cf

Subcatchment DA4A: BASIN 4A PROPOSED Runoff Area=5.530 ac 0.00% Impervious Runoff Depth=1.14"
 Flow Length=945' Tc=40.9 min CN=68 Runoff=3.44 cfs 22,928 cf

Subcatchment DA4B: BASIN 4B Runoff Area=12.330 ac 24.33% Impervious Runoff Depth=3.44"
 Flow Length=996' Tc=33.8 min CN=96 Runoff=26.19 cfs 154,012 cf

Subcatchment DA4C: BASIN 4C PROPOSED Runoff Area=0.680 ac 0.00% Impervious Runoff Depth=3.44"
 Tc=5.0 min CN=96 Runoff=3.21 cfs 8,494 cf

Subcatchment DA4D: BASIN 4D PROPOSED Runoff Area=1.230 ac 0.00% Impervious Runoff Depth=3.44"
 Tc=5.0 min CN=96 Runoff=5.81 cfs 15,364 cf

Subcatchment DA4E1: BASIN 4E1 Runoff Area=7.260 ac 13.77% Impervious Runoff Depth=0.92"
 Flow Length=640' Tc=31.5 min CN=64 Runoff=3.86 cfs 24,160 cf

Subcatchment DA4E2: BASIN 4E2 Runoff Area=19.180 ac 0.00% Impervious Runoff Depth=1.20"
 Flow Length=1,313' Tc=46.8 min CN=69 Runoff=11.82 cfs 83,694 cf

Reach D4C: Ditch 4C Avg. Flow Depth=0.52' Max Vel=2.25 fps Inflow=3.21 cfs 8,494 cf
 n=0.033 L=313.0' S=0.0104 '/' Capacity=27.19 cfs Outflow=2.96 cfs 8,494 cf

Reach D4D: Ditch 4D Avg. Flow Depth=0.65' Max Vel=3.03 fps Inflow=5.81 cfs 15,364 cf
 n=0.033 L=337.0' S=0.0148 '/' Capacity=32.50 cfs Outflow=5.49 cfs 15,364 cf

Reach D4E1: Ditch 4E1 Avg. Flow Depth=0.43' Max Vel=1.22 fps Inflow=3.86 cfs 24,160 cf
 n=0.033 L=1,788.0' S=0.0031 '/' Capacity=197.27 cfs Outflow=2.79 cfs 24,160 cf

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Reach OF4: Primary Stream for Avg. Flow Depth=1.84' Max Vel=3.38 fps Inflow=75.72 cfs 1,169,236 cf
 n=0.035 L=1,000.0' S=0.0050 ' / ' Capacity=640.46 cfs Outflow=75.62 cfs 1,169,236 cf

Reach OF4P: Primary Stream for Avg. Flow Depth=1.88' Max Vel=3.43 fps Inflow=79.43 cfs 1,270,504 cf
 n=0.035 L=1,000.0' S=0.0050 ' / ' Capacity=640.46 cfs Outflow=79.29 cfs 1,270,503 cf

Pond CD2: Cross Drain Peak Elev=681.73' Inflow=11.06 cfs 102,914 cf
 36.0" Round Culvert n=0.011 L=50.0' S=0.0050 ' / ' Outflow=11.06 cfs 102,914 cf

Pond CD4C: Cross Drain 4C Peak Elev=684.56' Inflow=2.96 cfs 8,494 cf
 18.0" Round Culvert n=0.011 L=60.0' S=0.0792 ' / ' Outflow=2.96 cfs 8,494 cf

Pond CD4DCE: Cross Drain 4DCE Peak Elev=680.19' Inflow=15.18 cfs 131,709 cf
 48.0" Round Culvert n=0.011 L=360.0' S=0.0052 ' / ' Outflow=15.18 cfs 131,709 cf

Pond CD4E: Cross Drain 4E Peak Elev=681.07' Storage=1,039 cf Inflow=14.52 cfs 107,853 cf
 48.0" Round Culvert n=0.011 L=200.0' S=0.0052 ' / ' Outflow=14.40 cfs 107,852 cf

Pond POND1P: PROP POND Peak Elev=679.53' Storage=98,788 cf Inflow=38.46 cfs 285,722 cf
 Outflow=17.22 cfs 285,716 cf

Total Runoff Area = 19,935,234 sf Runoff Volume = 2,439,747 cf Average Runoff Depth = 1.47"
98.03% Pervious = 19,543,194 sf 1.97% Impervious = 392,040 sf

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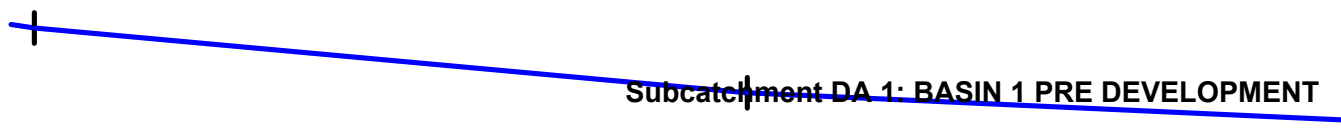
Summary for Subcatchment DA 1: BASIN 1 PRE DEVELOPMENT

Runoff = 58.46 cfs @ 13.83 hrs, Volume= 826,416 cf, Depth= 1.59"
Routed to Reach OF4 : Primary Stream for Outfalls

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Mt Pleasant 24-hr S1 2-yr Rainfall=3.90"

Area (ac)	CN	Description
69.500	74	>75% Grass cover, Good, HSG C
71.000	76	Woods/grass comb., Fair, HSG C
2.500	98	Paved parking, HSG C
143.000	75	Weighted Average
140.500		98.25% Pervious Area
2.500		1.75% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
35.4	100	0.0200	0.05		Sheet Flow, Woods: Dense underbrush n= 0.800 P2= 3.57"
92.8	3,050	0.0120	0.55		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
14.8	2,600	0.0060	2.93	11.71	Channel Flow, Area= 4.0 sf Perim= 6.0' r= 0.67' n= 0.030
143.0	5,750	Total			



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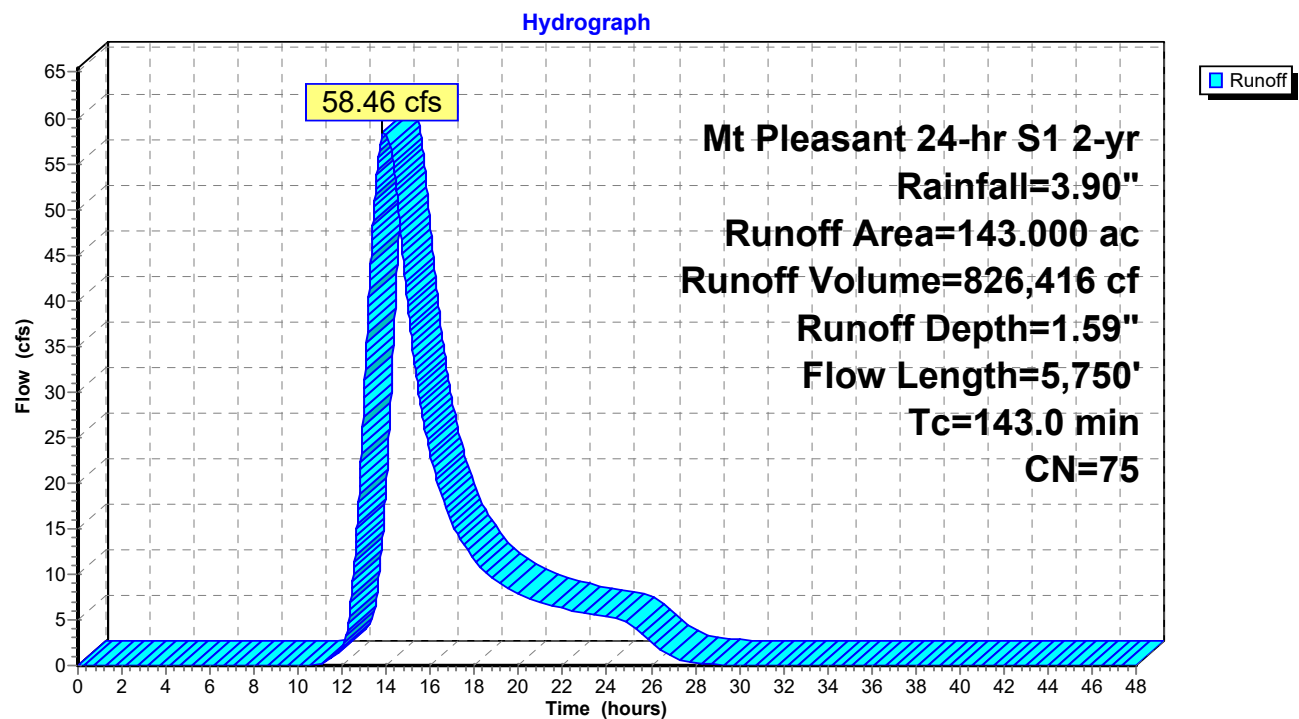
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Subcatchment DA 1: BASIN 1 PRE DEVELOPMENT



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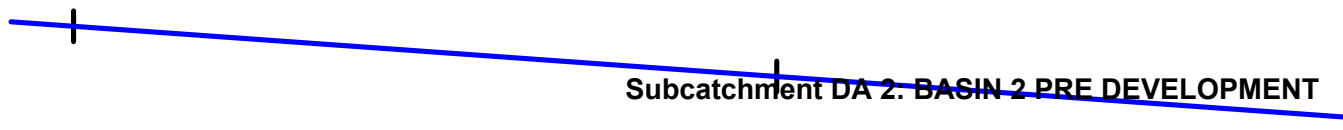
Summary for Subcatchment DA 2: BASIN 2 PRE DEVELOPMENT

Runoff = 11.06 cfs @ 12.95 hrs, Volume= 102,914 cf, Depth= 0.81"
Routed to Reach OF4 : Primary Stream for Outfalls

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Mt Pleasant 24-hr S1 2-yr Rainfall=3.90"

Area (ac)	CN	Description
17.450	58	Meadow, non-grazed, HSG B
14.450	60	Woods, Fair, HSG B
3.000	96	Gravel surface, HSG C
34.900	62	Weighted Average
34.900		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.2	100	0.0150	0.11		Sheet Flow, Grass: Dense n= 0.240 P2= 3.57"
21.9	1,125	0.0150	0.86		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
25.2	925	0.0150	0.61		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
62.3	2,150	Total			



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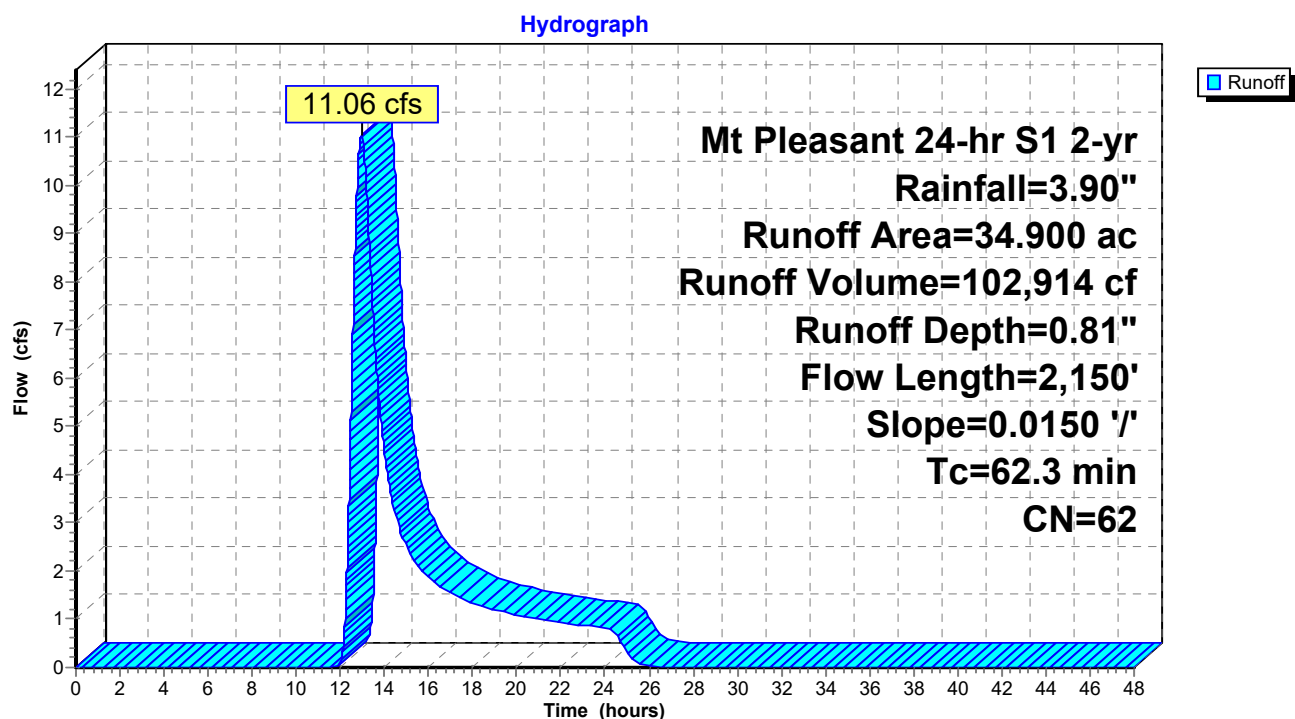
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Subcatchment DA 2: BASIN 2 PRE DEVELOPMENT



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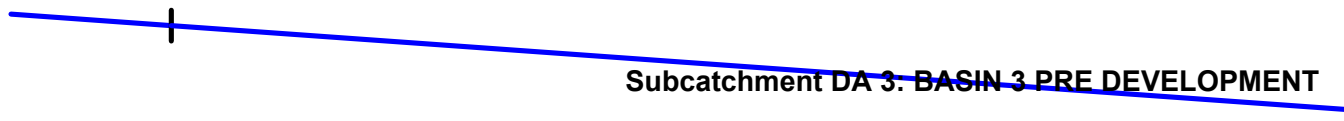
Summary for Subcatchment DA 3: BASIN 3 PRE DEVELOPMENT

Runoff = 9.84 cfs @ 12.34 hrs, Volume= 49,580 cf, Depth= 1.46"
Routed to Reach OF4 : Primary Stream for Outfalls

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Mt Pleasant 24-hr S1 2-yr Rainfall=3.90"

Area (ac)	CN	Description
3.300	78	Meadow, non-grazed, HSG D
3.300	79	Woods, Fair, HSG D
2.250	58	Meadow, non-grazed, HSG B
0.530	60	Woods, Fair, HSG B
9.380	73	Weighted Average
9.380		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.5	100	0.0200	0.12		Sheet Flow, Grass: Dense n= 0.240 P2= 3.57"
12.4	738	0.0200	0.99		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
25.9	838	Total			



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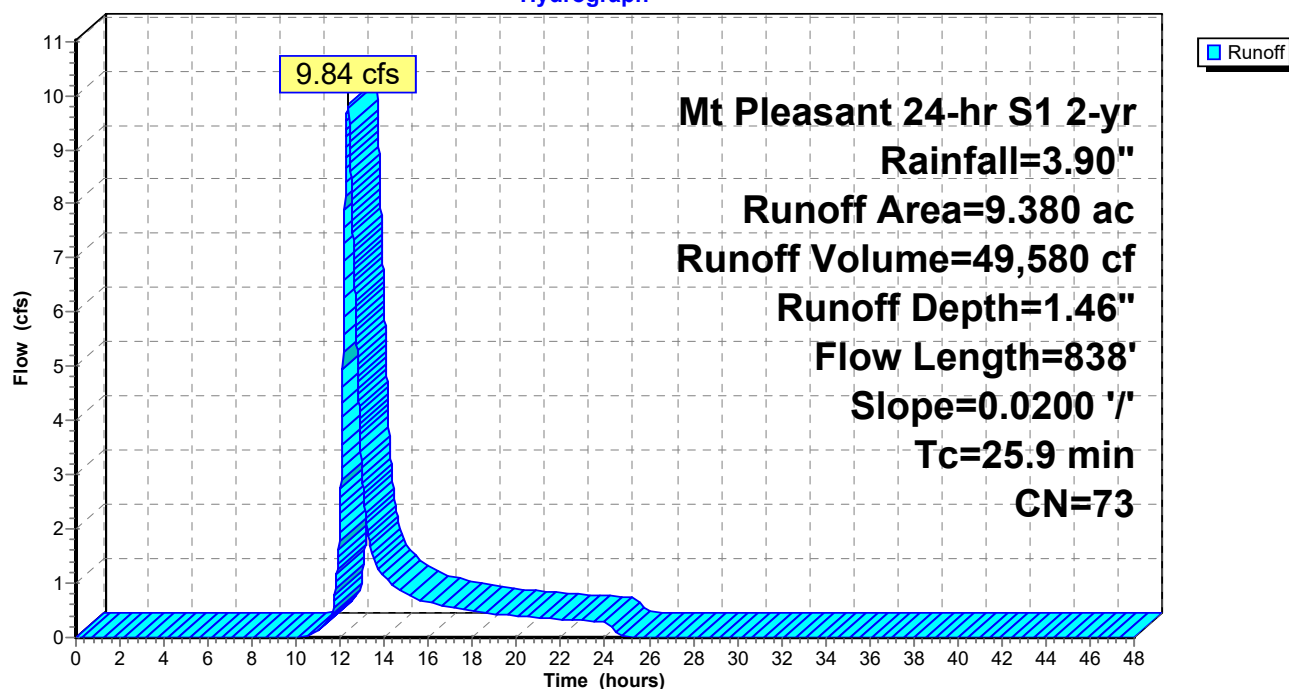
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Subcatchment DA 3: BASIN 3 PRE DEVELOPMENT

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Summary for Subcatchment DA 4: BASIN 4 PRE DEVELOPMENT

Runoff = 21.84 cfs @ 12.94 hrs, Volume= 190,326 cf, Depth= 1.26"
Routed to Reach OF4 : Primary Stream for Outfalls

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Mt Pleasant 24-hr S1 2-yr Rainfall=3.90"

Area (ac)	CN	Description
7.300	78	Meadow, non-grazed, HSG D
1.830	79	Woods, Fair, HSG D
7.640	58	Meadow, non-grazed, HSG B
1.910	60	Woods, Fair, HSG B
4.150	73	Woods, Fair, HSG C
9.960	71	Meadow, non-grazed, HSG C
2.490	73	Woods, Fair, HSG C
4.970	71	Meadow, non-grazed, HSG C
1.250	73	Woods, Fair, HSG C
41.500	70	Weighted Average
41.500		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
24.5	100	0.0500	0.07		Sheet Flow, Woods: Dense underbrush n= 0.800 P2= 3.57"
43.6	2,368	0.0167	0.90		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
68.1	2,468	Total			

Subcatchment DA 4: BASIN 4 PRE DEVELOPMENT

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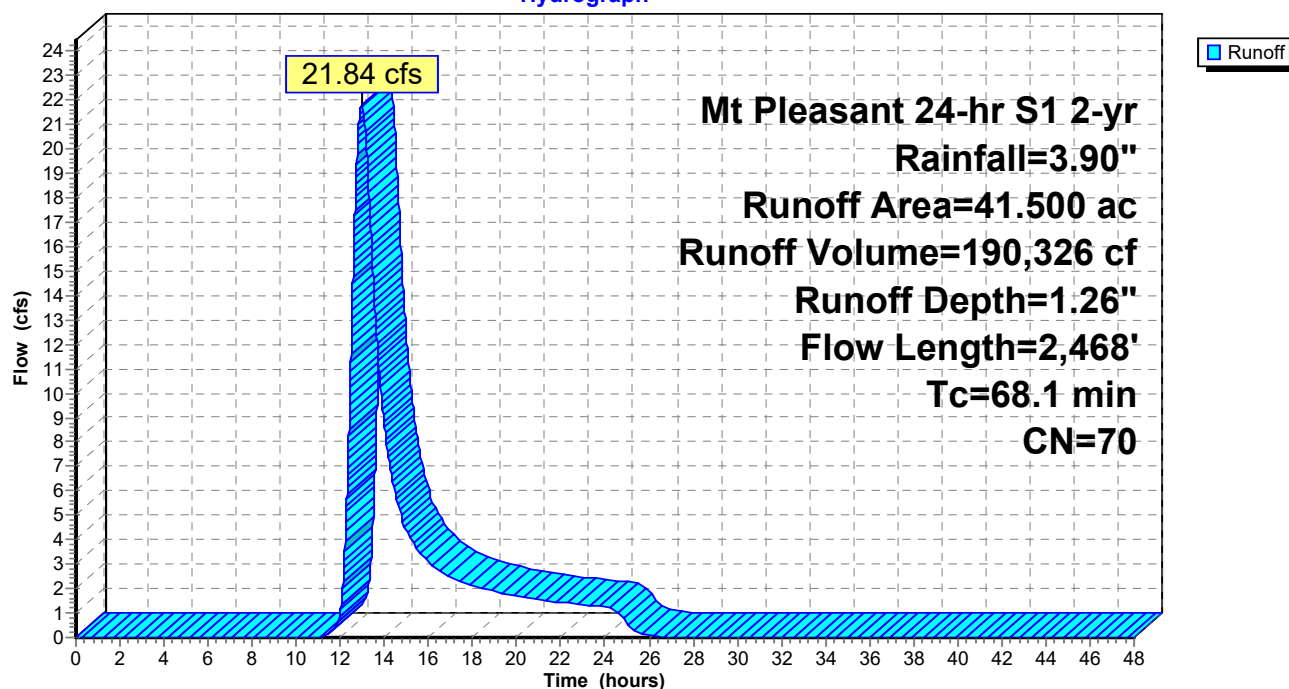
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Subcatchment DA 4: BASIN 4 PRE DEVELOPMENT

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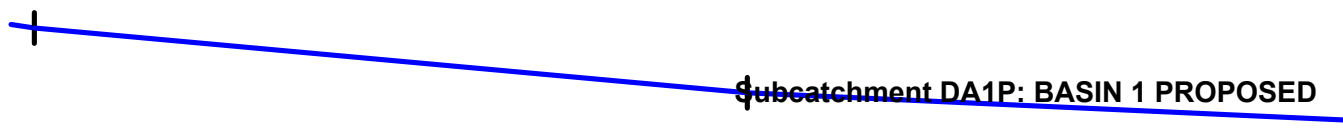
Summary for Subcatchment DA1P: BASIN 1 PROPOSED

Runoff = 58.46 cfs @ 13.83 hrs, Volume= 826,416 cf, Depth= 1.59"
 Routed to Reach OF4P : Primary Stream for Outfalls

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
 Mt Pleasant 24-hr S1 2-yr Rainfall=3.90"

Area (ac)	CN	Description
69.500	74	>75% Grass cover, Good, HSG C
71.000	76	Woods/grass comb., Fair, HSG C
2.500	98	Paved parking, HSG C
143.000	75	Weighted Average
140.500		98.25% Pervious Area
2.500		1.75% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
35.4	100	0.0200	0.05		Sheet Flow, Woods: Dense underbrush n= 0.800 P2= 3.57"
92.8	3,050	0.0120	0.55		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
14.8	2,600	0.0060	2.93	11.71	Channel Flow, Area= 4.0 sf Perim= 6.0' r= 0.67' n= 0.030
143.0	5,750	Total			



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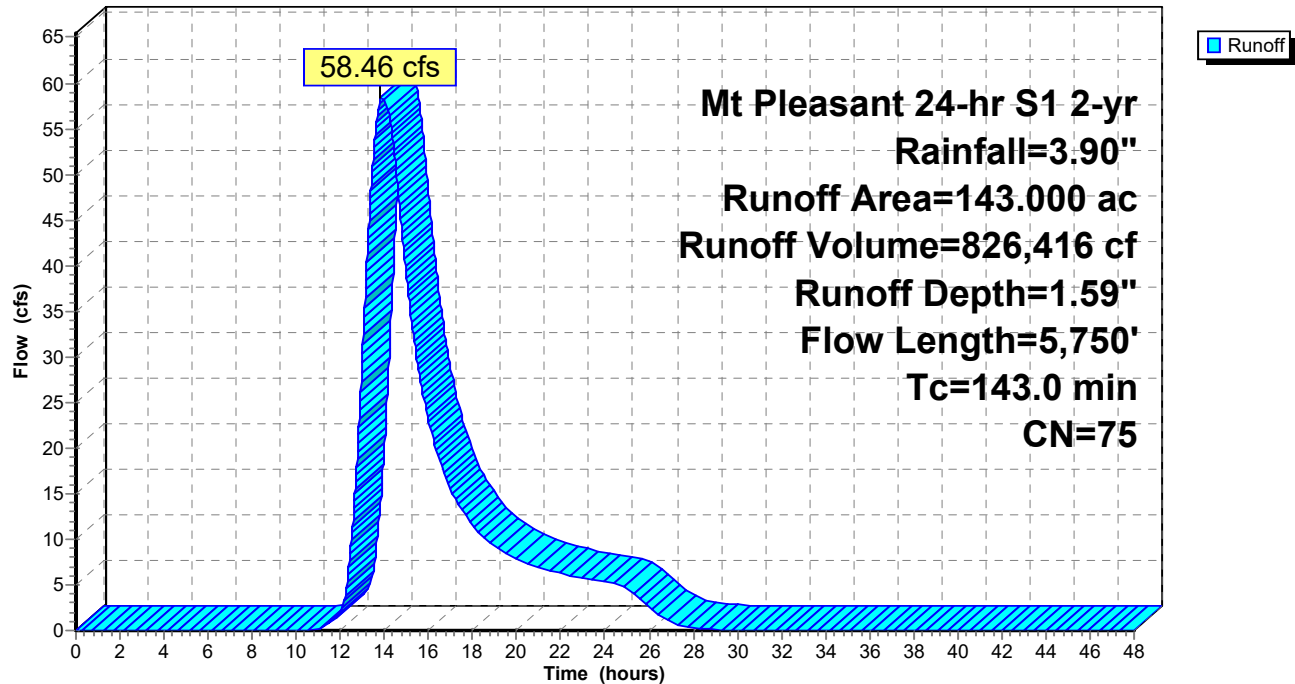
Mt Pleasant 24-hr S1 2-yr Rainfall=3.90"

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Subcatchment DA1P: BASIN 1 PROPOSED

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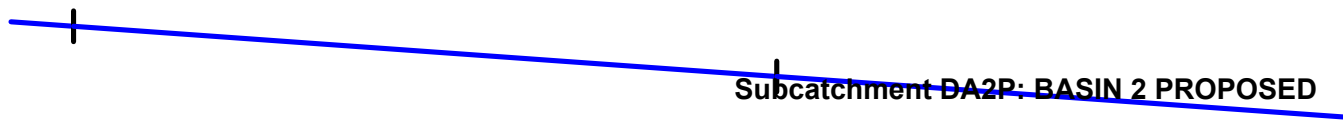
Summary for Subcatchment DA2P: BASIN 2 PROPOSED

Runoff = 11.06 cfs @ 12.95 hrs, Volume= 102,914 cf, Depth= 0.81"
Routed to Pond CD2 : Cross Drain

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Mt Pleasant 24-hr S1 2-yr Rainfall=3.90"

Area (ac)	CN	Description
17.450	58	Meadow, non-grazed, HSG B
14.450	60	Woods, Fair, HSG B
3.000	96	Gravel surface, HSG C
34.900	62	Weighted Average
34.900		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.2	100	0.0150	0.11		Sheet Flow, Grass: Dense n= 0.240 P2= 3.57"
21.9	1,125	0.0150	0.86		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
25.2	925	0.0150	0.61		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
62.3	2,150	Total			



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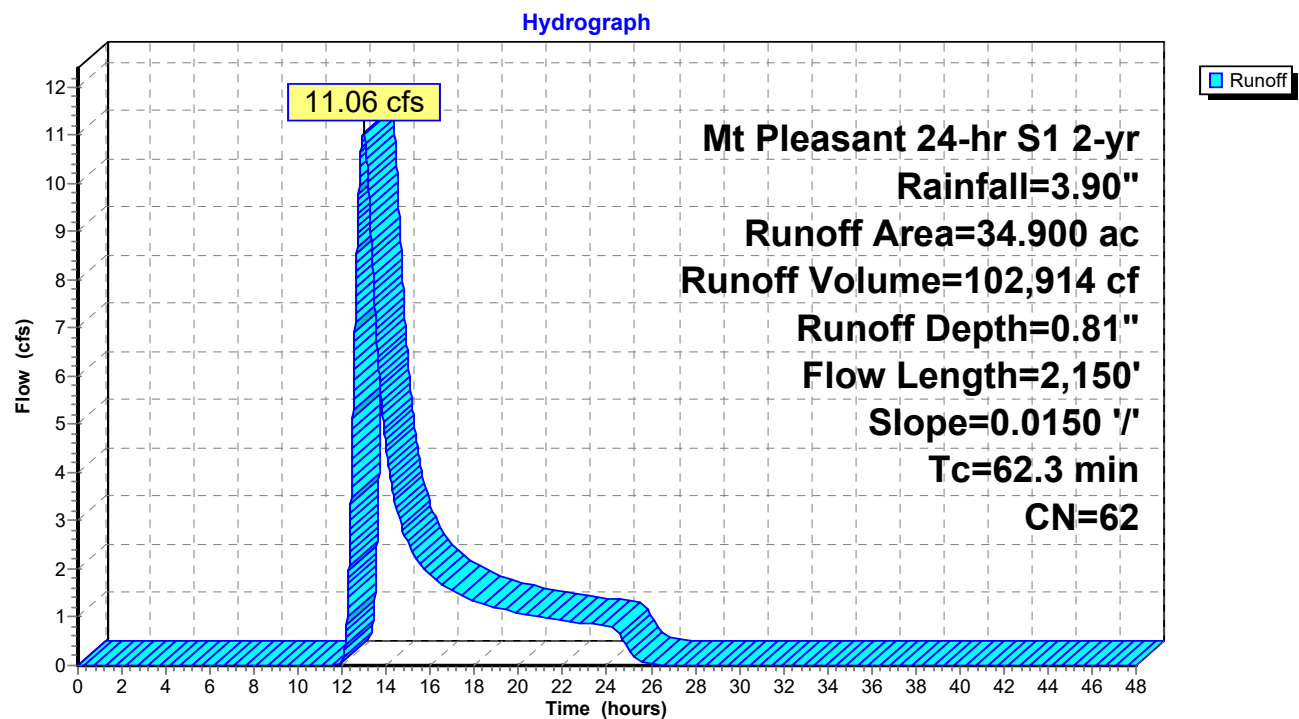
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Subcatchment DA2P: BASIN 2 PROPOSED



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Summary for Subcatchment DA3P: BASIN 3 PRE DEVELOPMENT

Runoff = 13.13 cfs @ 12.03 hrs, Volume= 32,530 cf, Depth= 1.88"
 Routed to Reach OF4P : Primary Stream for Outfalls

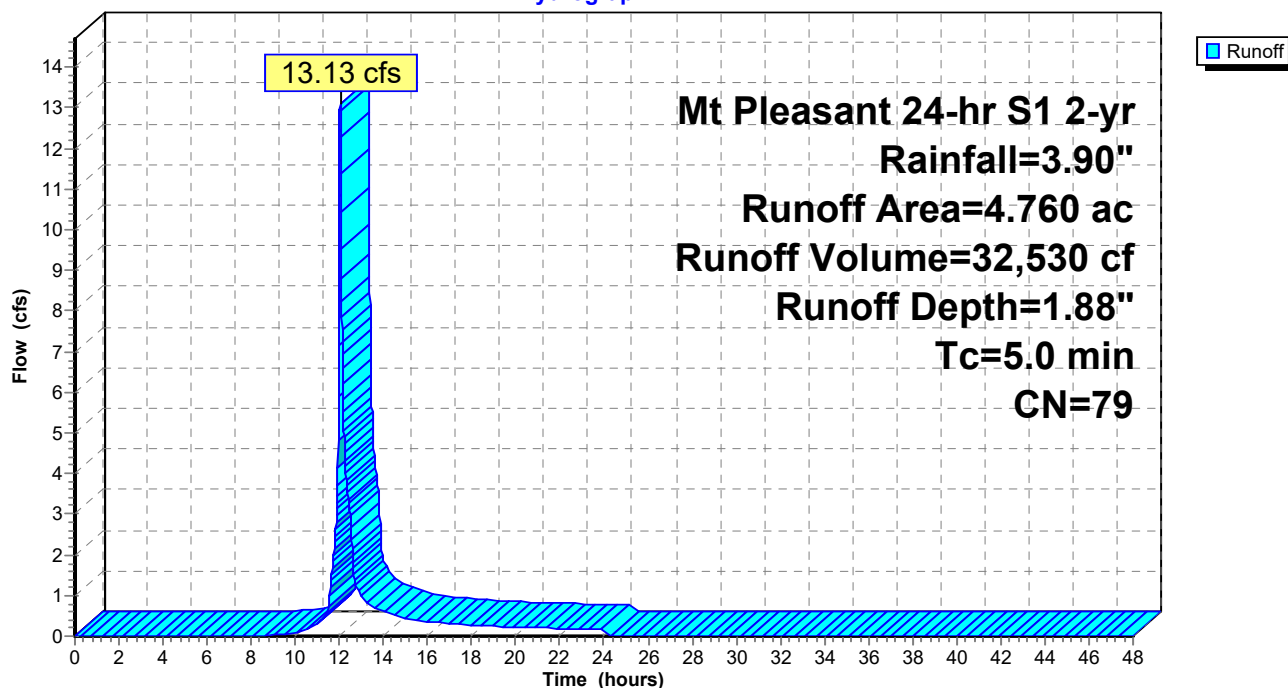
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
 Mt Pleasant 24-hr S1 2-yr Rainfall=3.90"

Area (ac)	CN	Description
4.760	79	Woods, Fair, HSG D
4.760		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					Direct Entry,

Subcatchment DA3P: BASIN 3 PRE DEVELOPMENT

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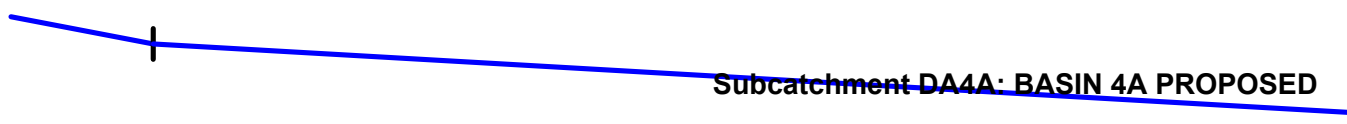
Summary for Subcatchment DA4A: BASIN 4A PROPOSED

Runoff = 3.44 cfs @ 12.59 hrs, Volume= 22,928 cf, Depth= 1.14"
Routed to Reach OF4P : Primary Stream for Outfalls

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Mt Pleasant 24-hr S1 2-yr Rainfall=3.90"

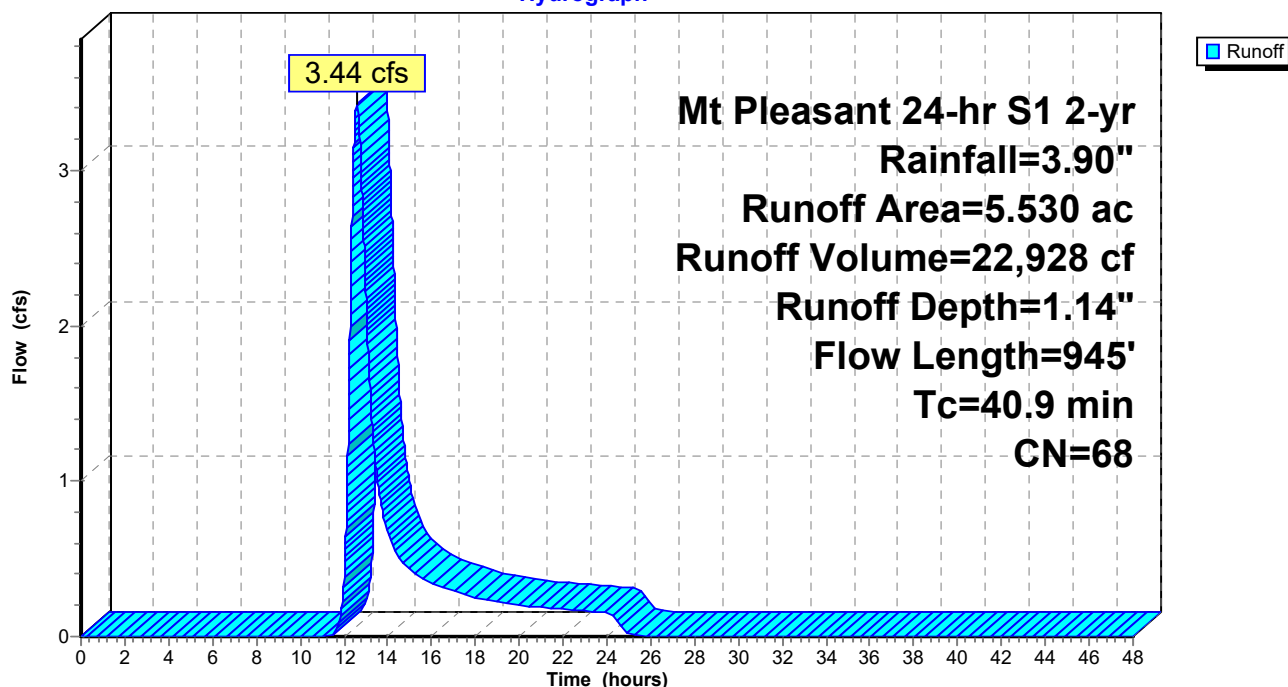
Area (ac)	CN	Description
2.200	60	Woods, Fair, HSG B
3.330	73	Woods, Fair, HSG C
5.530	68	Weighted Average
5.530		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
24.5	100	0.0500	0.07		Sheet Flow, Woods: Dense underbrush n= 0.800 P2= 3.57"
16.4	845	0.0150	0.86		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
40.9	945	Total			



Subcatchment DA4A: BASIN 4A PROPOSED

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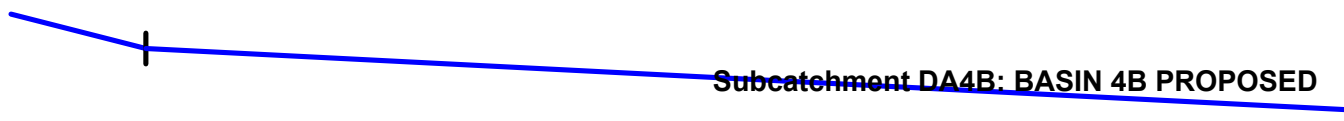
Summary for Subcatchment DA4B: BASIN 4B PROPOSED

Runoff = 26.19 cfs @ 12.40 hrs, Volume= 154,012 cf, Depth= 3.44"
Routed to Pond POND1P : PROP POND

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Mt Pleasant 24-hr S1 2-yr Rainfall=3.90"

Area (ac)	CN	Description
9.330	96	Gravel surface, HSG C
1.000	98	Paved parking, HSG D
2.000	98	Roofs, HSG D
12.330	96	Weighted Average
9.330		75.67% Pervious Area
3.000		24.33% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
24.5	100	0.0500	0.07		Sheet Flow, n= 0.800 P2= 3.57"
9.3	896	0.0100	1.61		Shallow Concentrated Flow, Unpaved Kv= 16.1 fps
33.8	996	Total			



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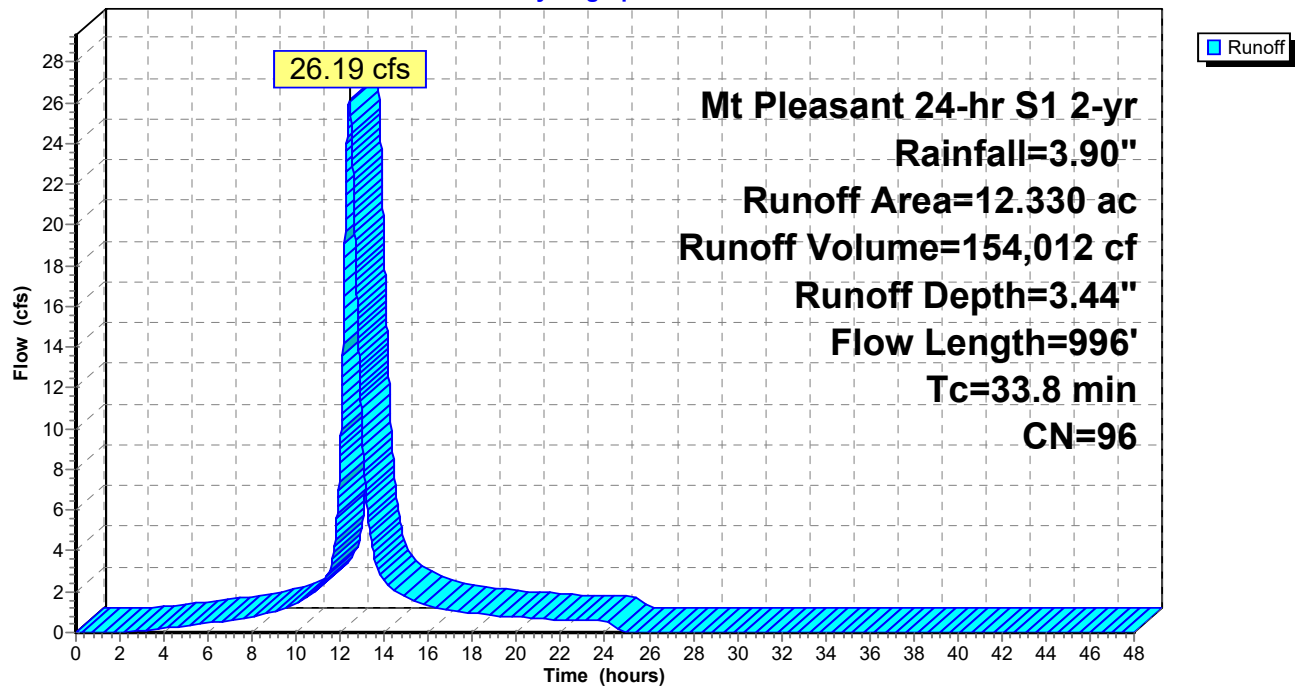
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Subcatchment DA4B: BASIN 4B PROPOSED

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Summary for Subcatchment DA4C: BASIN 4C PROPOSED

Runoff = 3.21 cfs @ 12.03 hrs, Volume= 8,494 cf, Depth= 3.44"
Routed to Reach D4C : Ditch 4C

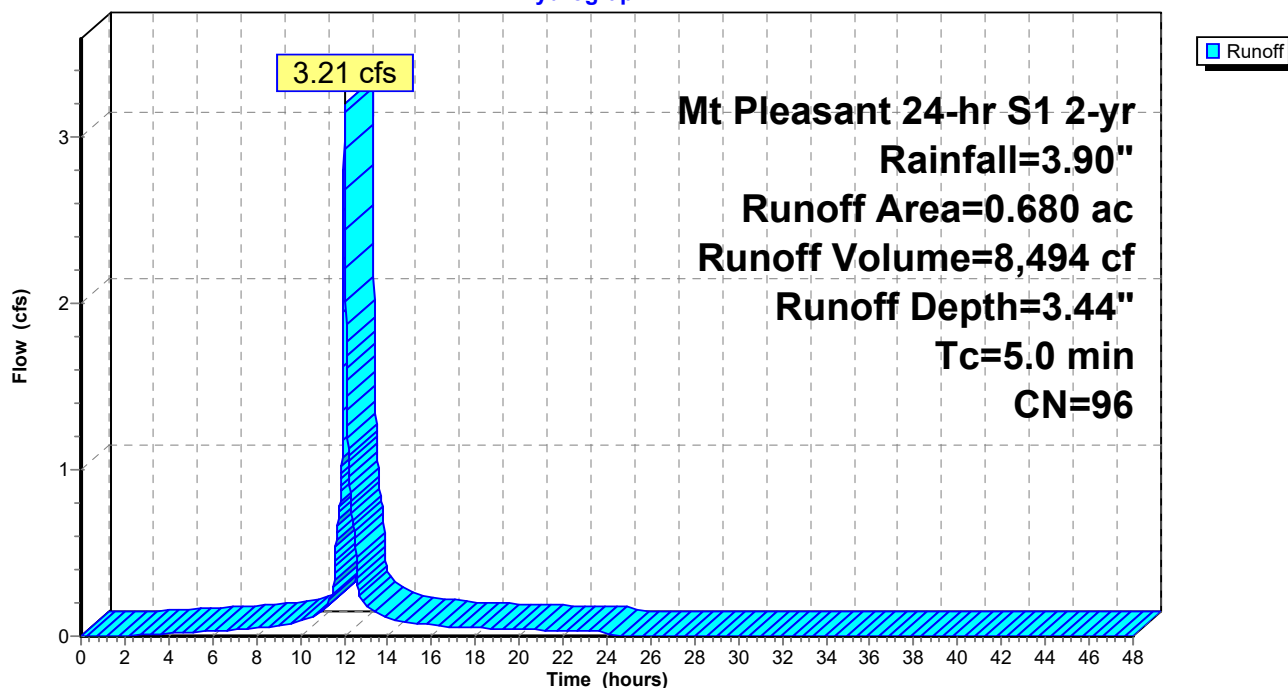
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Mt Pleasant 24-hr S1 2-yr Rainfall=3.90"

Area (ac)	CN	Description
0.680	96	Gravel surface, HSG C
0.680		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					Direct Entry,

Subcatchment DA4C: BASIN 4C PROPOSED

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Summary for Subcatchment DA4D: BASIN 4D PROPOSED

Runoff = 5.81 cfs @ 12.03 hrs, Volume= 15,364 cf, Depth= 3.44"
Routed to Reach D4D : Ditch 4D

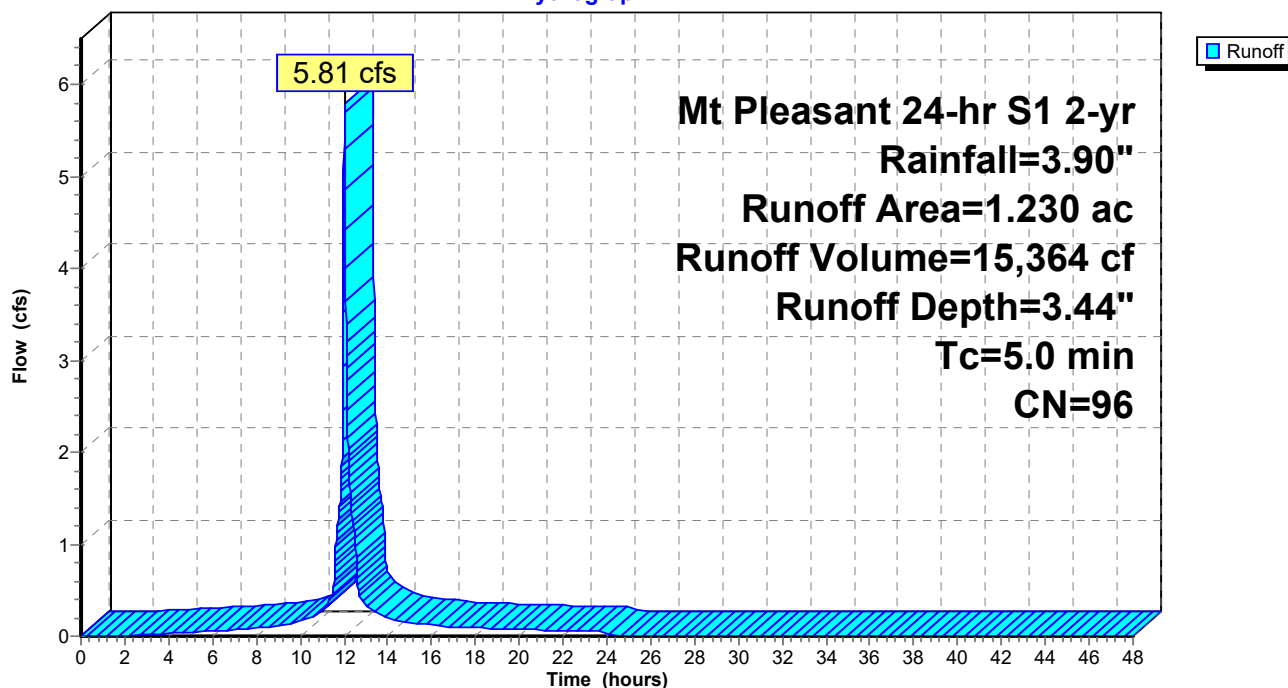
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Mt Pleasant 24-hr S1 2-yr Rainfall=3.90"

Area (ac)	CN	Description
1.230	96	Gravel surface, HSG C
1.230		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					Direct Entry,

Subcatchment DA4D: BASIN 4D PROPOSED

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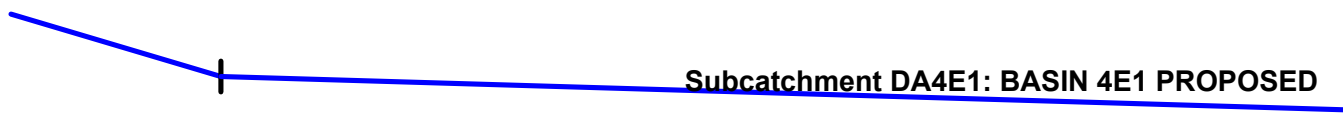
Summary for Subcatchment DA4E1: BASIN 4E1 PROPOSED

Runoff = 3.86 cfs @ 12.46 hrs, Volume= 24,160 cf, Depth= 0.92"
Routed to Reach D4E1 : Ditch 4E1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Mt Pleasant 24-hr S1 2-yr Rainfall=3.90"

Area (ac)	CN	Description
3.130	58	Meadow, non-grazed, HSG B
3.130	60	Woods, Fair, HSG B
1.000	98	Paved roads w/curbs & sewers, HSG B
7.260	64	Weighted Average
6.260		86.23% Pervious Area
1.000		13.77% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
18.6	100	0.1000	0.09		Sheet Flow, Woods: Dense underbrush n= 0.800 P2= 3.57"
12.9	540	0.0100	0.70		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
31.5	640	Total			



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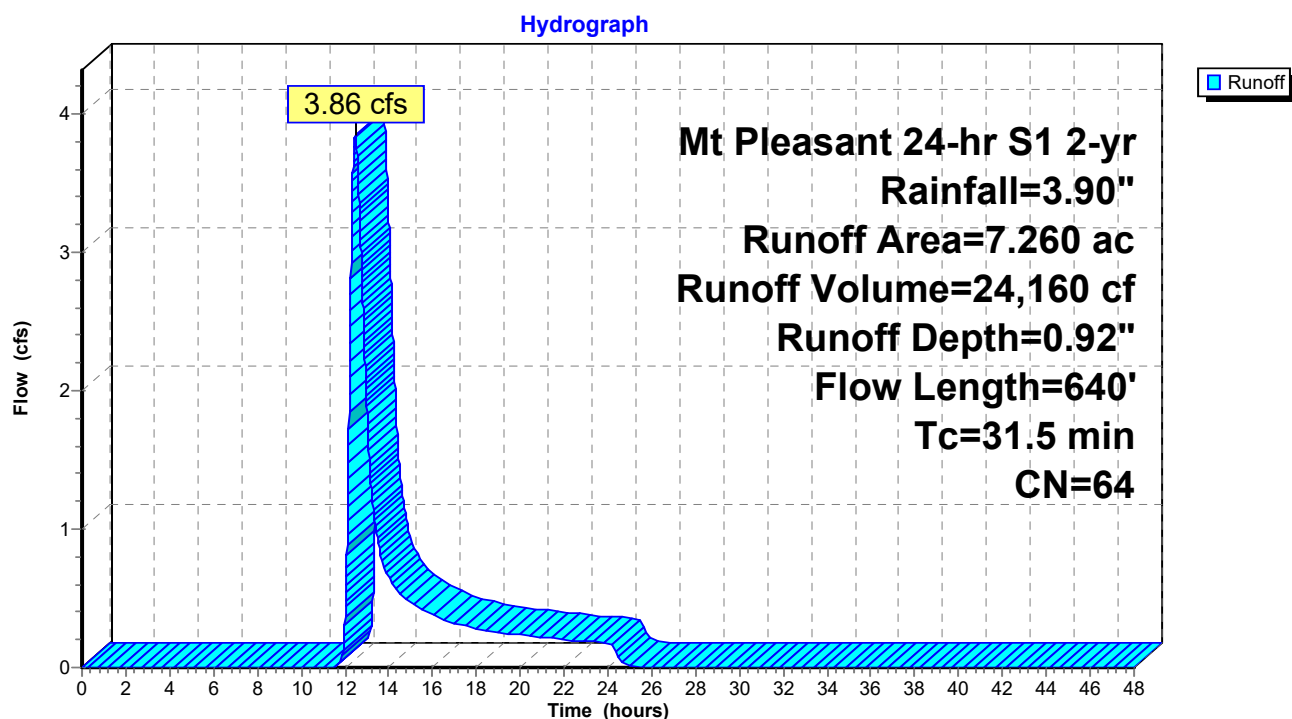
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Mt Pleasant 24-hr S1 2-yr Rainfall=3.90"

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Subcatchment DA4E1: BASIN 4E1 PROPOSED



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Mt Pleasant 24-hr S1 2-yr Rainfall=3.90"

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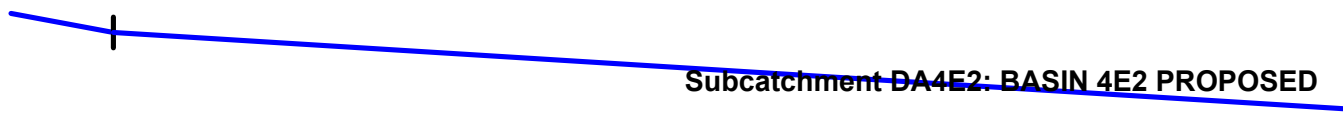
Summary for Subcatchment DA4E2: BASIN 4E2 PROPOSED

Runoff = 11.82 cfs @ 12.68 hrs, Volume= 83,694 cf, Depth= 1.20"
Routed to Pond CD4E : Cross Drain 4E

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Mt Pleasant 24-hr S1 2-yr Rainfall=3.90"

Area (ac)	CN	Description
9.300	79	Woods, Fair, HSG D
4.940	58	Meadow, non-grazed, HSG B
4.940	60	Woods, Fair, HSG B
19.180	69	Weighted Average
19.180		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
24.5	100	0.0500	0.07		Sheet Flow, Woods: Dense underbrush n= 0.800 P2= 3.57"
22.3	1,213	0.0167	0.90		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
46.8	1,313	Total			



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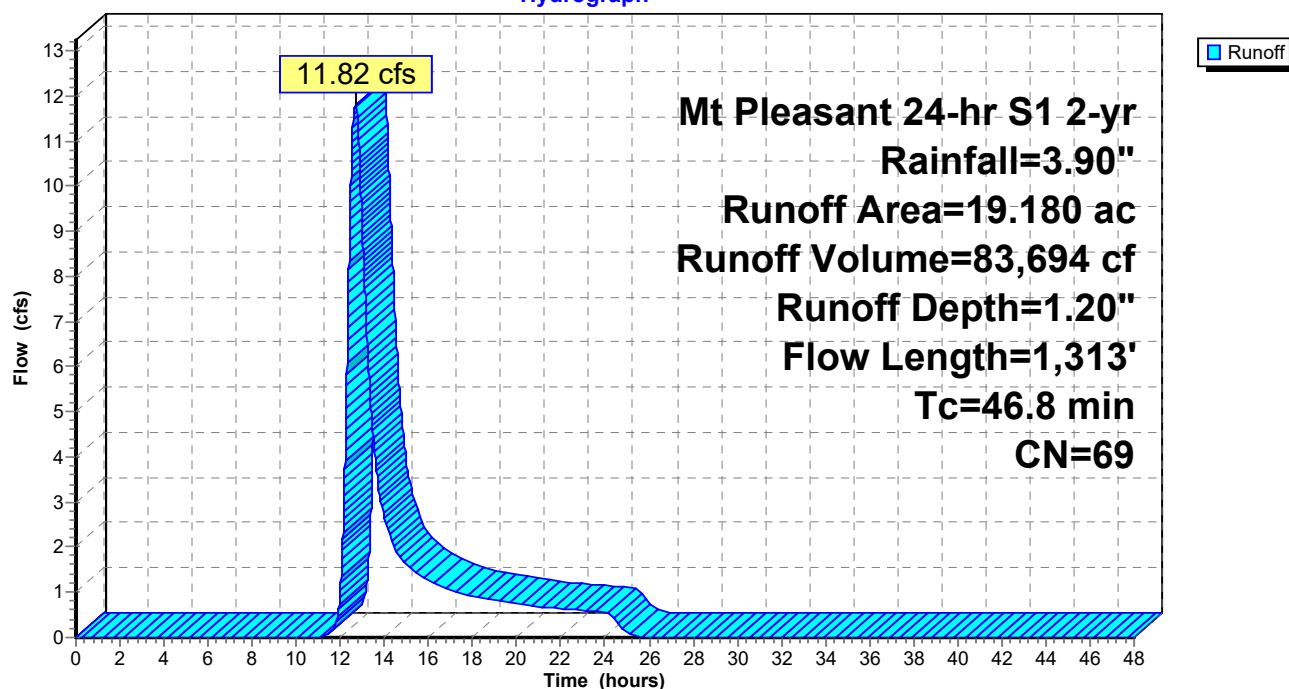
Mt Pleasant 24-hr S1 2-yr Rainfall=3.90"

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Subcatchment DA4E2: BASIN 4E2 PROPOSED

Hydrograph



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Mt Pleasant 24-hr S1 2-yr Rainfall=3.90"

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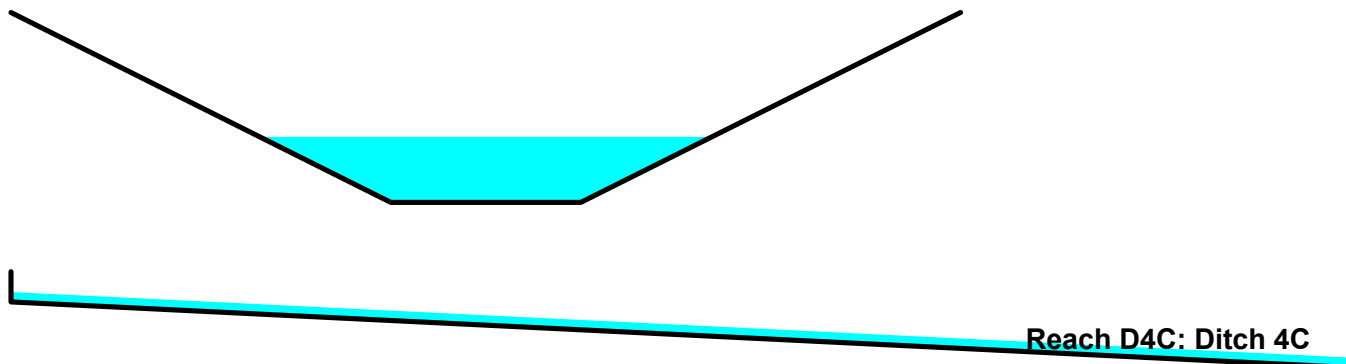
Summary for Reach D4C: Ditch 4C

Inflow Area = 29,621 sf, 0.00% Impervious, Inflow Depth = 3.44" for 2-yr event
 Inflow = 3.21 cfs @ 12.03 hrs, Volume= 8,494 cf
 Outflow = 2.96 cfs @ 12.05 hrs, Volume= 8,494 cf, Atten= 8%, Lag= 1.4 min
 Routed to Pond CD4C : Cross Drain 4C

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
 Max. Velocity= 2.25 fps, Min. Travel Time= 2.3 min
 Avg. Velocity = 0.62 fps, Avg. Travel Time= 8.4 min

Peak Storage= 411 cf @ 12.05 hrs
 Average Depth at Peak Storage= 0.52' , Surface Width= 3.57'
 Bank-Full Depth= 1.50' Flow Area= 6.8 sf, Capacity= 27.19 cfs

1.50' x 1.50' deep channel, n= 0.033 Riprap, 1-inch
 Side Slope Z-value= 2.0 '/' Top Width= 7.50'
 Length= 313.0' Slope= 0.0104 '/'
 Inlet Invert= 687.00', Outlet Invert= 683.75'



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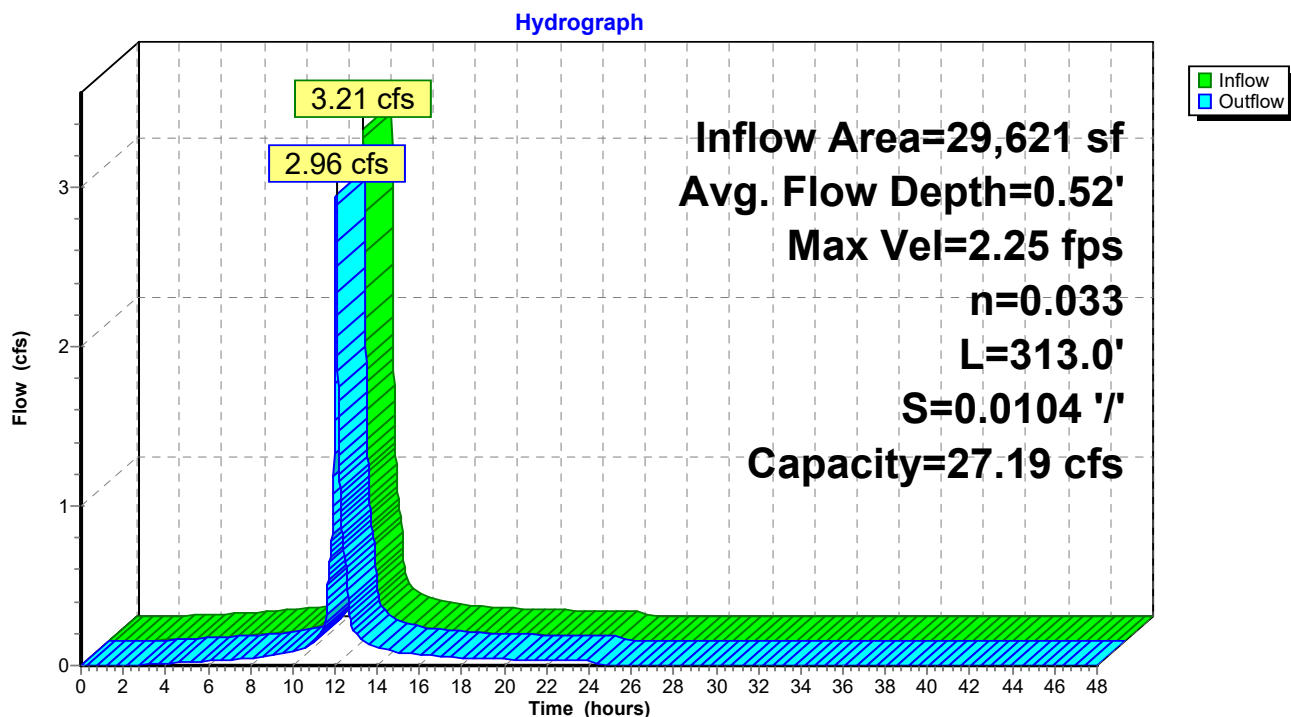
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Mt Pleasant 24-hr S1 2-yr Rainfall=3.90"

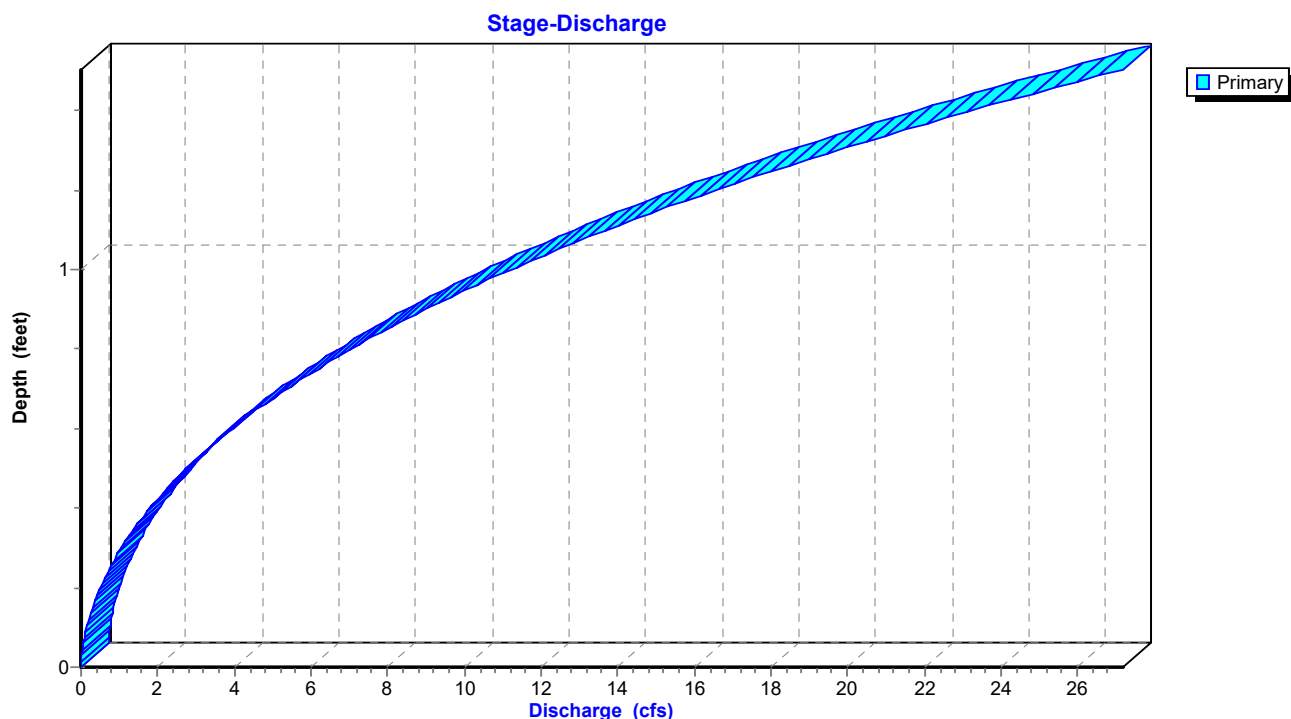
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Reach D4C: Ditch 4C



Reach D4C: Ditch 4C



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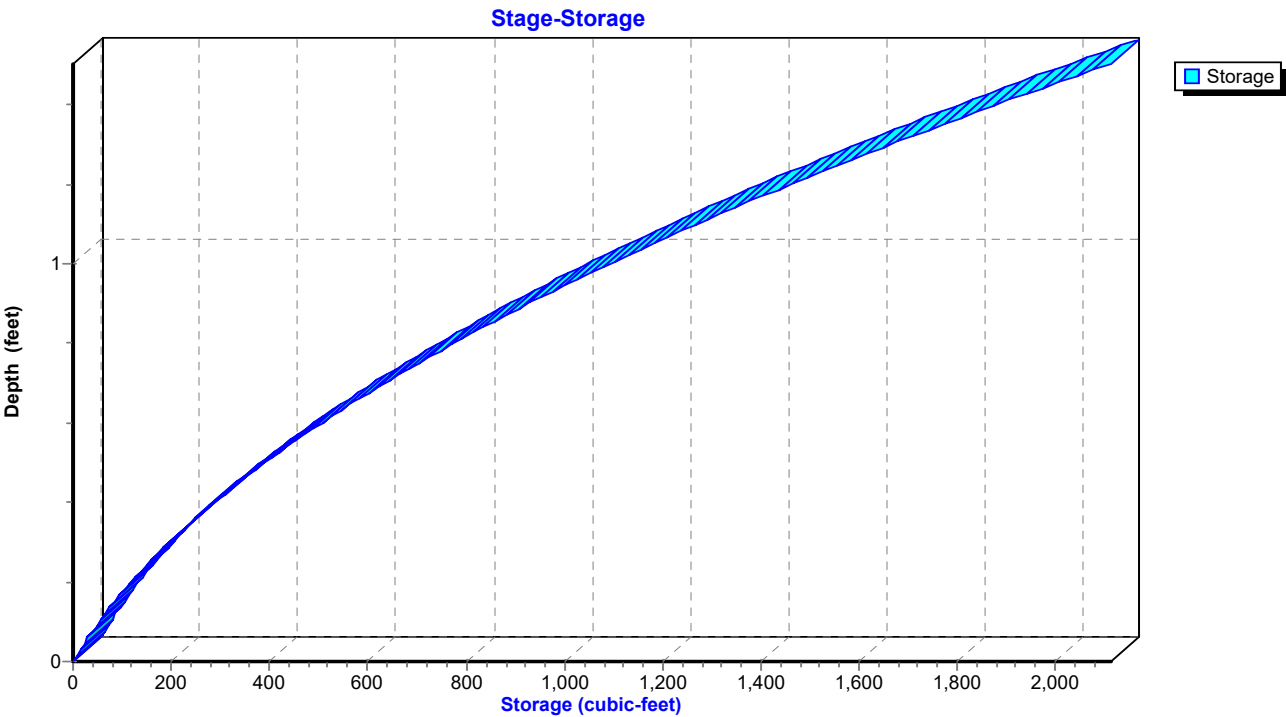
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Mt Pleasant 24-hr S1 2-yr Rainfall=3.90"

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Reach D4C: Ditch 4C



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Mt Pleasant 24-hr S1 2-yr Rainfall=3.90"

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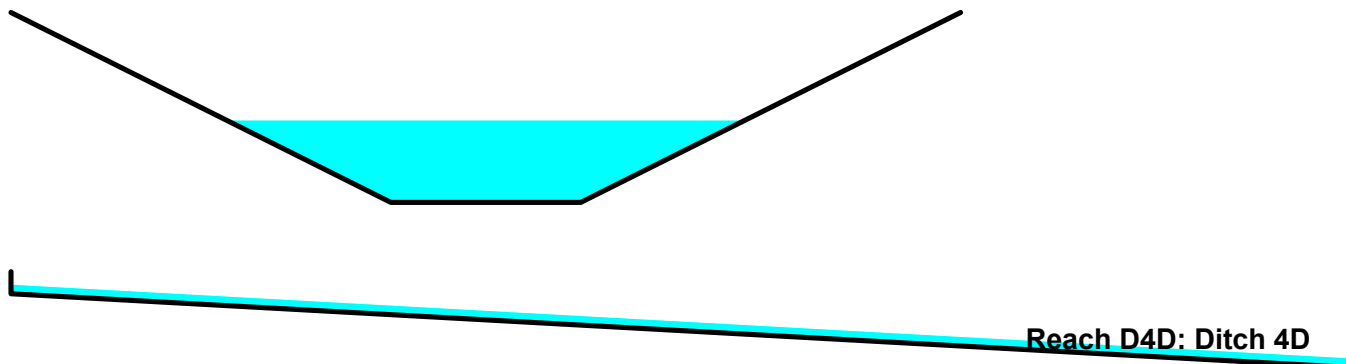
Summary for Reach D4D: Ditch 4D

Inflow Area = 53,579 sf, 0.00% Impervious, Inflow Depth = 3.44" for 2-yr event
 Inflow = 5.81 cfs @ 12.03 hrs, Volume= 15,364 cf
 Outflow = 5.49 cfs @ 12.04 hrs, Volume= 15,364 cf, Atten= 5%, Lag= 1.1 min
 Routed to Pond CD4DCE : Cross Drain 4DCE

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
 Max. Velocity= 3.03 fps, Min. Travel Time= 1.9 min
 Avg. Velocity = 0.85 fps, Avg. Travel Time= 6.6 min

Peak Storage= 609 cf @ 12.04 hrs
 Average Depth at Peak Storage= 0.65' , Surface Width= 4.09'
 Bank-Full Depth= 1.50' Flow Area= 6.8 sf, Capacity= 32.50 cfs

1.50' x 1.50' deep channel, n= 0.033 Riprap, 1-inch
 Side Slope Z-value= 2.0 '/' Top Width= 7.50'
 Length= 337.0' Slope= 0.0148 '/'
 Inlet Invert= 688.00', Outlet Invert= 683.00'



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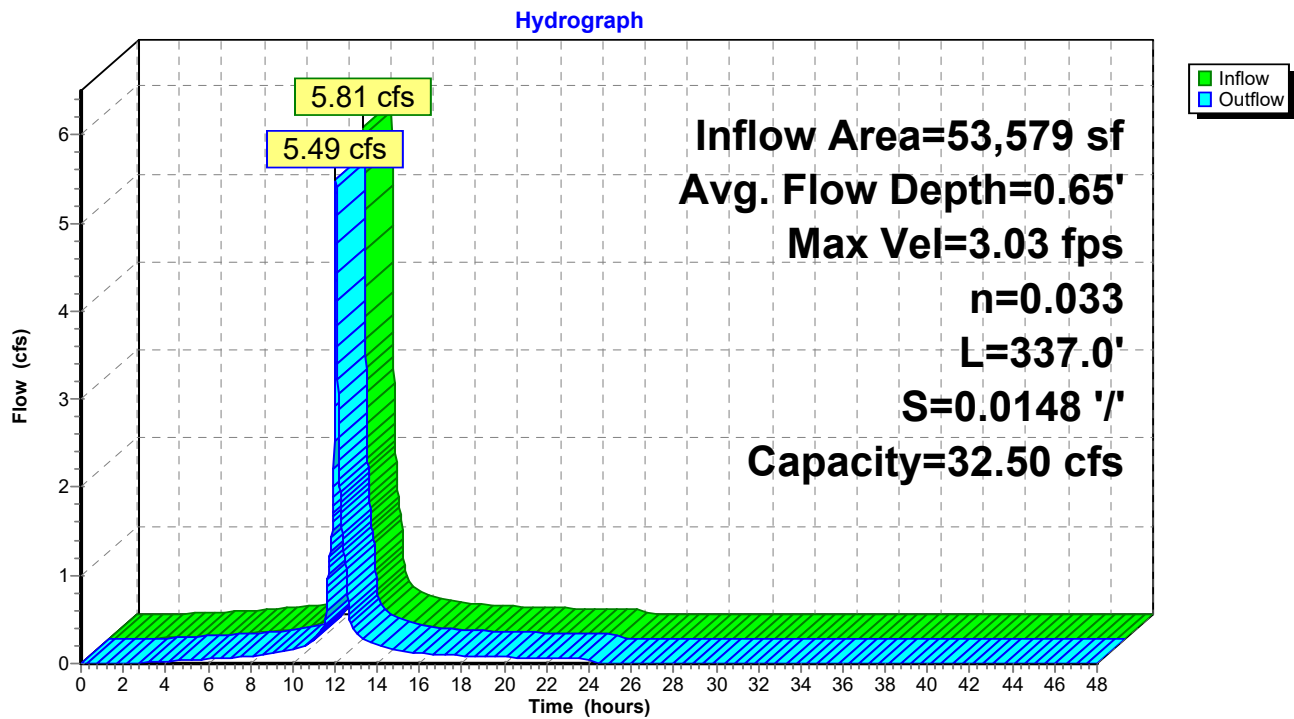
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Mt Pleasant 24-hr S1 2-yr Rainfall=3.90"

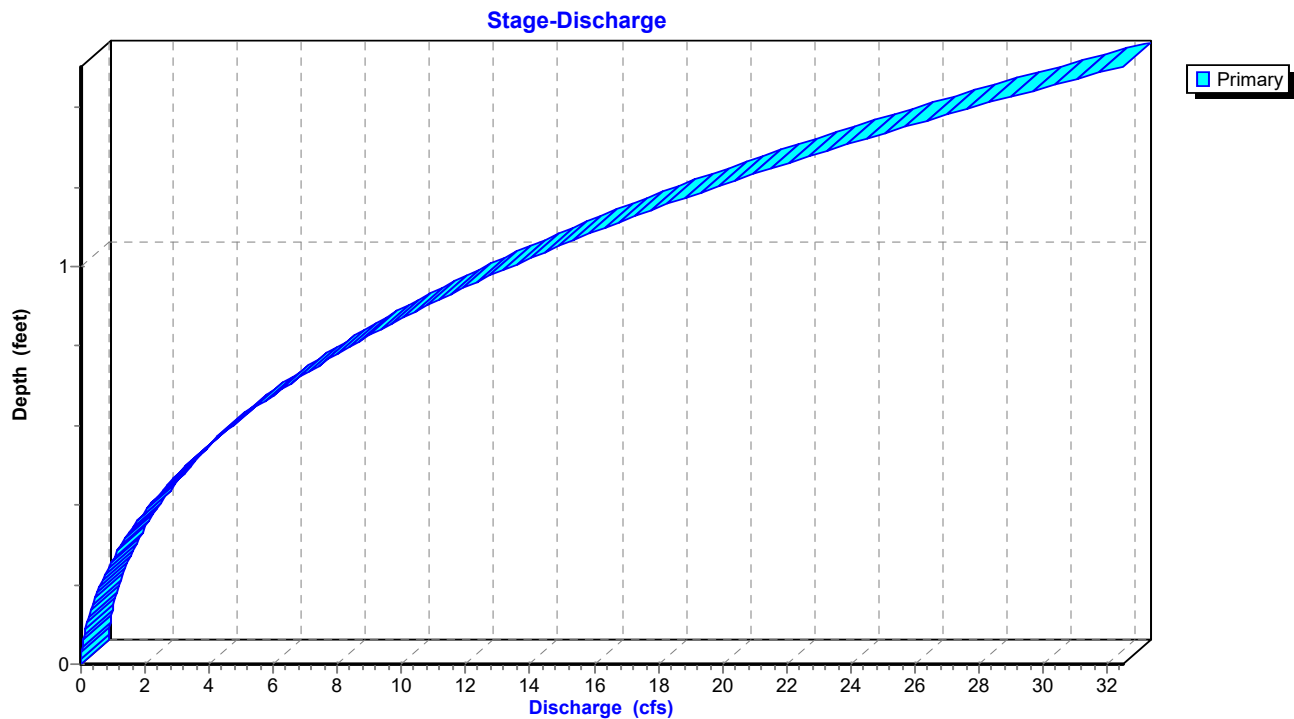
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Reach D4D: Ditch 4D



Reach D4D: Ditch 4D



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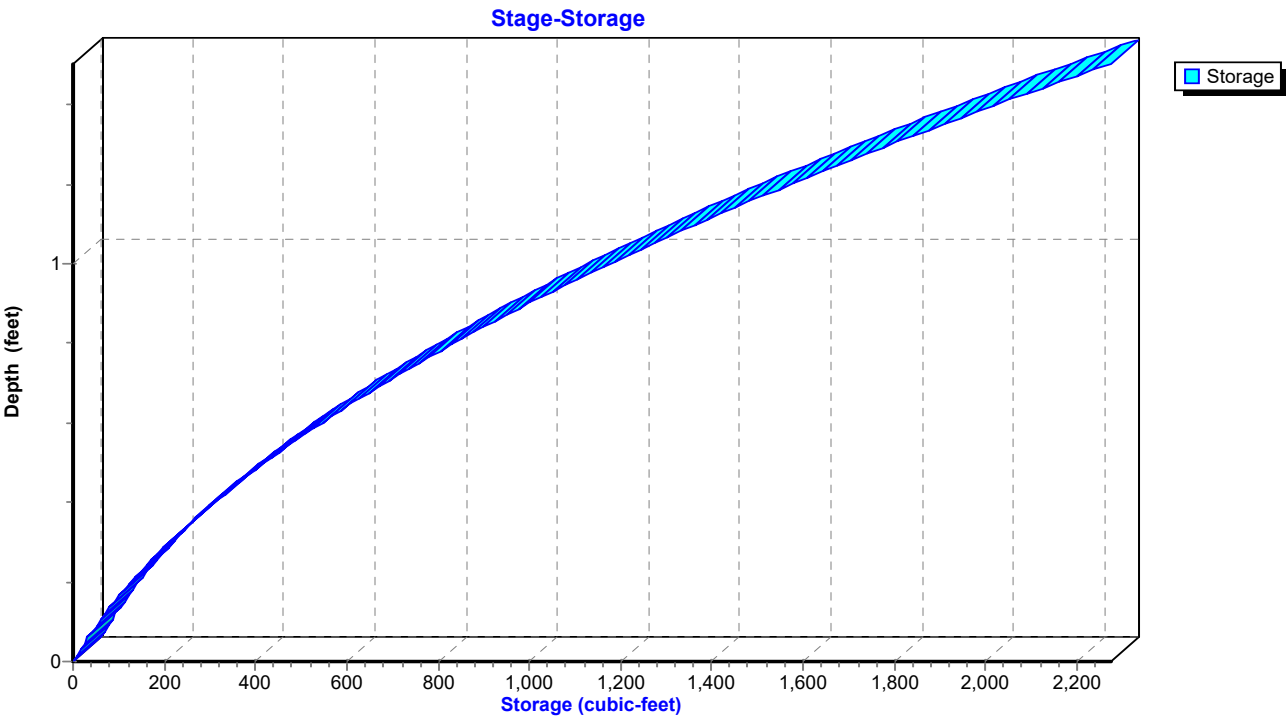
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Reach D4D: Ditch 4D



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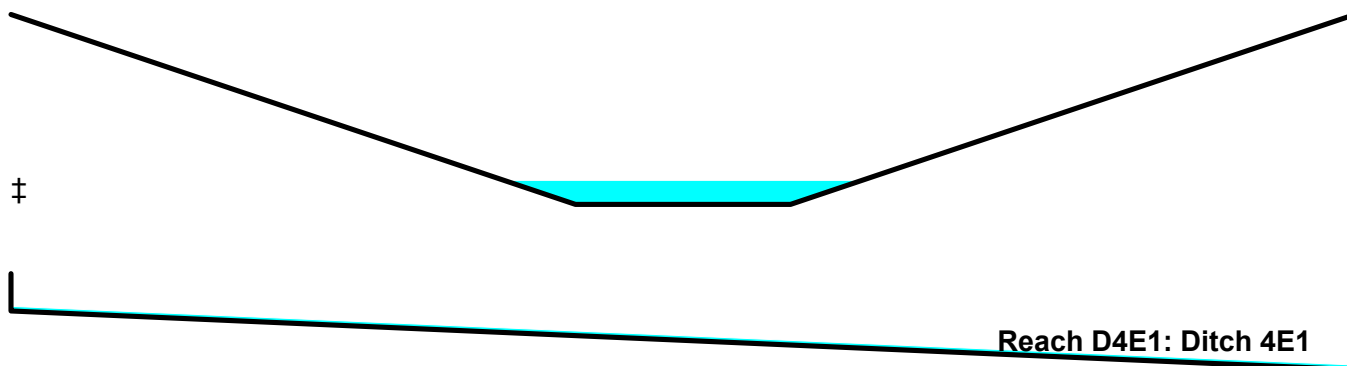
Summary for Reach D4E1: Ditch 4E1

Inflow Area = 316,246 sf, 13.77% Impervious, Inflow Depth = 0.92" for 2-yr event
 Inflow = 3.86 cfs @ 12.46 hrs, Volume= 24,160 cf
 Outflow = 2.79 cfs @ 12.79 hrs, Volume= 24,160 cf, Atten= 28%, Lag= 19.5 min
 Routed to Pond CD4E : Cross Drain 4E

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
 Max. Velocity= 1.22 fps, Min. Travel Time= 24.5 min
 Avg. Velocity= 0.43 fps, Avg. Travel Time= 68.5 min

Peak Storage= 4,096 cf @ 12.79 hrs
 Average Depth at Peak Storage= 0.43' , Surface Width= 6.59'
 Bank-Full Depth= 3.50' Flow Area= 50.8 sf, Capacity= 197.27 cfs

4.00' x 3.50' deep channel, n= 0.033 Riprap, 1-inch
 Side Slope Z-value= 3.0 '/' Top Width= 25.00'
 Length= 1,788.0' Slope= 0.0031 '/'
 Inlet Invert= 685.00', Outlet Invert= 679.50'



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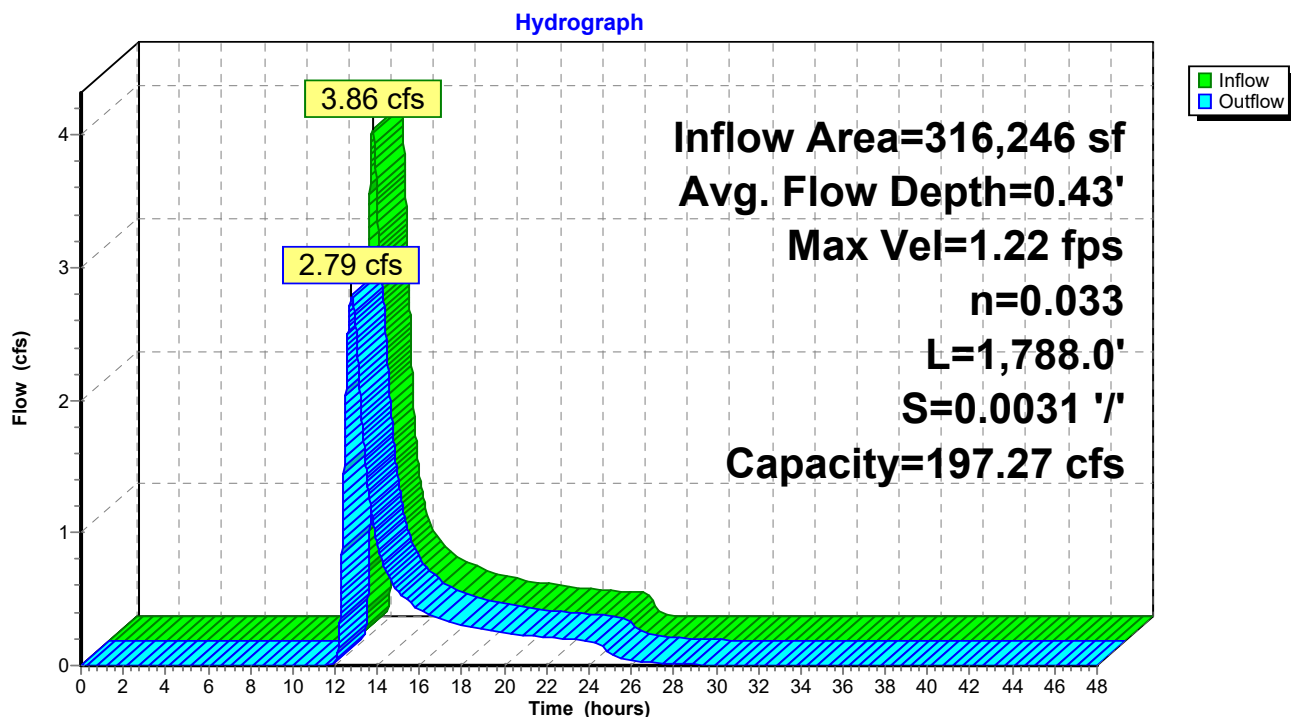
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Mt Pleasant 24-hr S1 2-yr Rainfall=3.90"

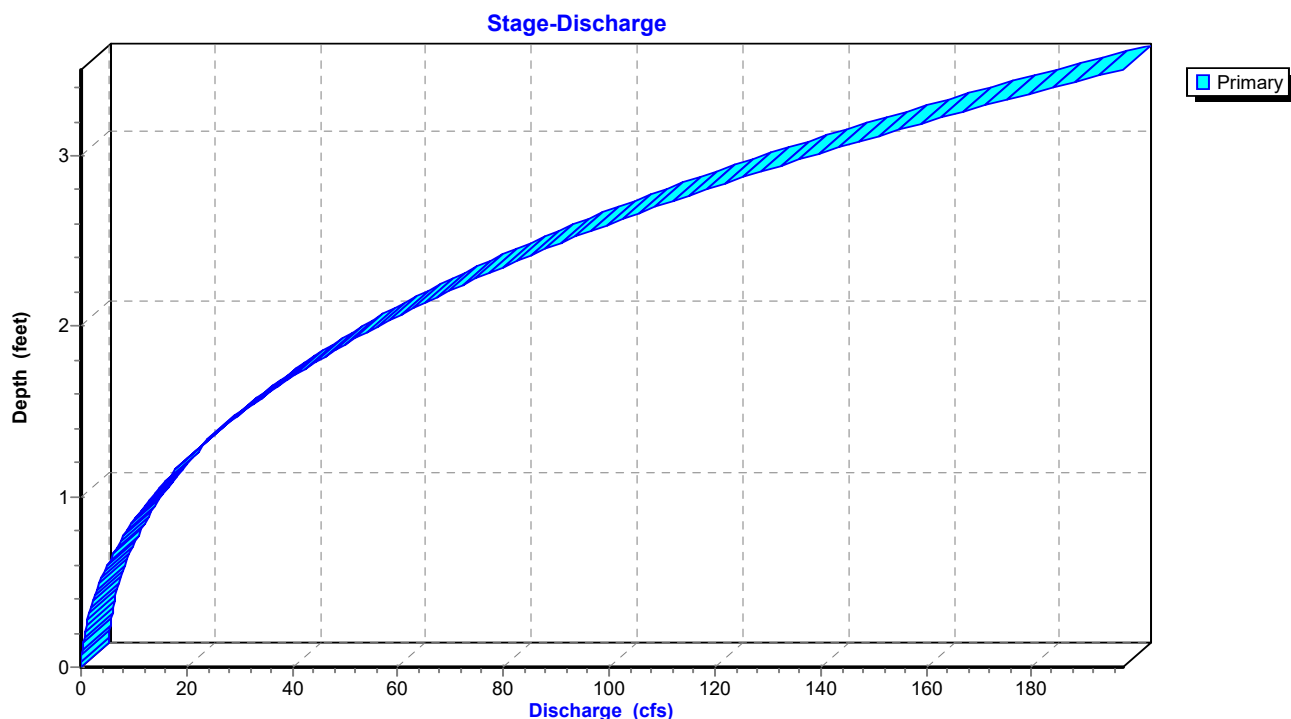
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Reach D4E1: Ditch 4E1



Reach D4E1: Ditch 4E1



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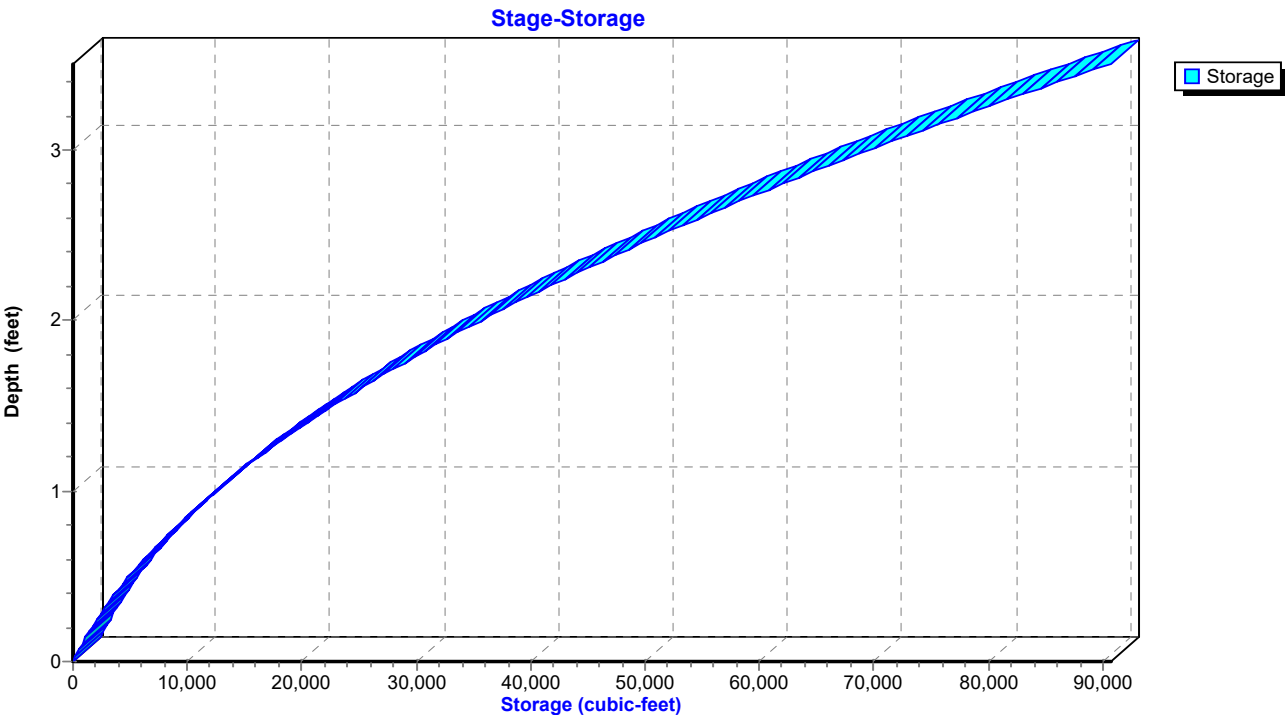
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Reach D4E1: Ditch 4E1



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Mt Pleasant 24-hr S1 2-yr Rainfall=3.90"

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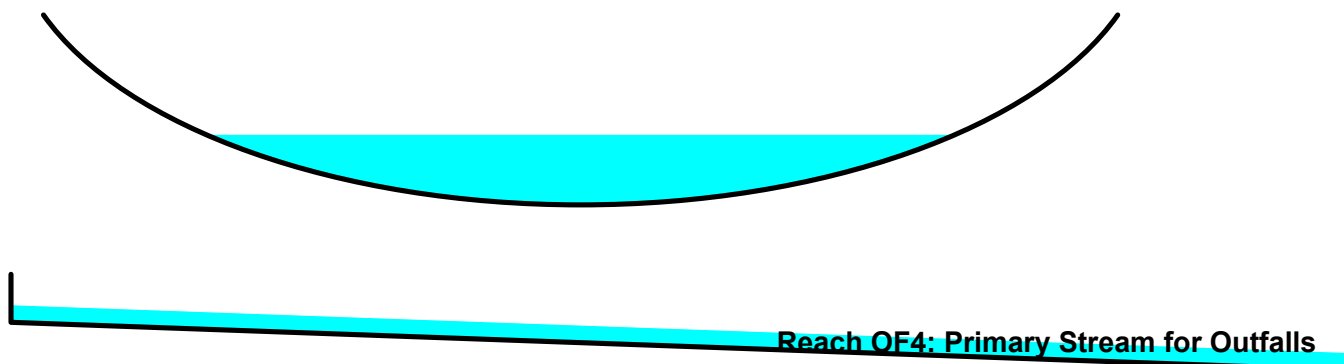
Summary for Reach OF4: Primary Stream for Outfalls

Inflow Area = 9,965,657 sf, 1.09% Impervious, Inflow Depth = 1.41" for 2-yr event
 Inflow = 75.72 cfs @ 13.51 hrs, Volume= 1,169,236 cf
 Outflow = 75.62 cfs @ 13.68 hrs, Volume= 1,169,236 cf, Atten= 0%, Lag= 9.9 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
 Max. Velocity= 3.38 fps, Min. Travel Time= 4.9 min
 Avg. Velocity = 1.36 fps, Avg. Travel Time= 12.3 min

Peak Storage= 22,354 cf @ 13.68 hrs
 Average Depth at Peak Storage= 1.84' , Surface Width= 18.21'
 Bank-Full Depth= 5.00' Flow Area= 100.0 sf, Capacity= 640.46 cfs

30.00' x 5.00' deep Parabolic Channel, n= 0.035
 Length= 1,000.0' Slope= 0.0050 '/'
 Inlet Invert= 675.00', Outlet Invert= 670.00'



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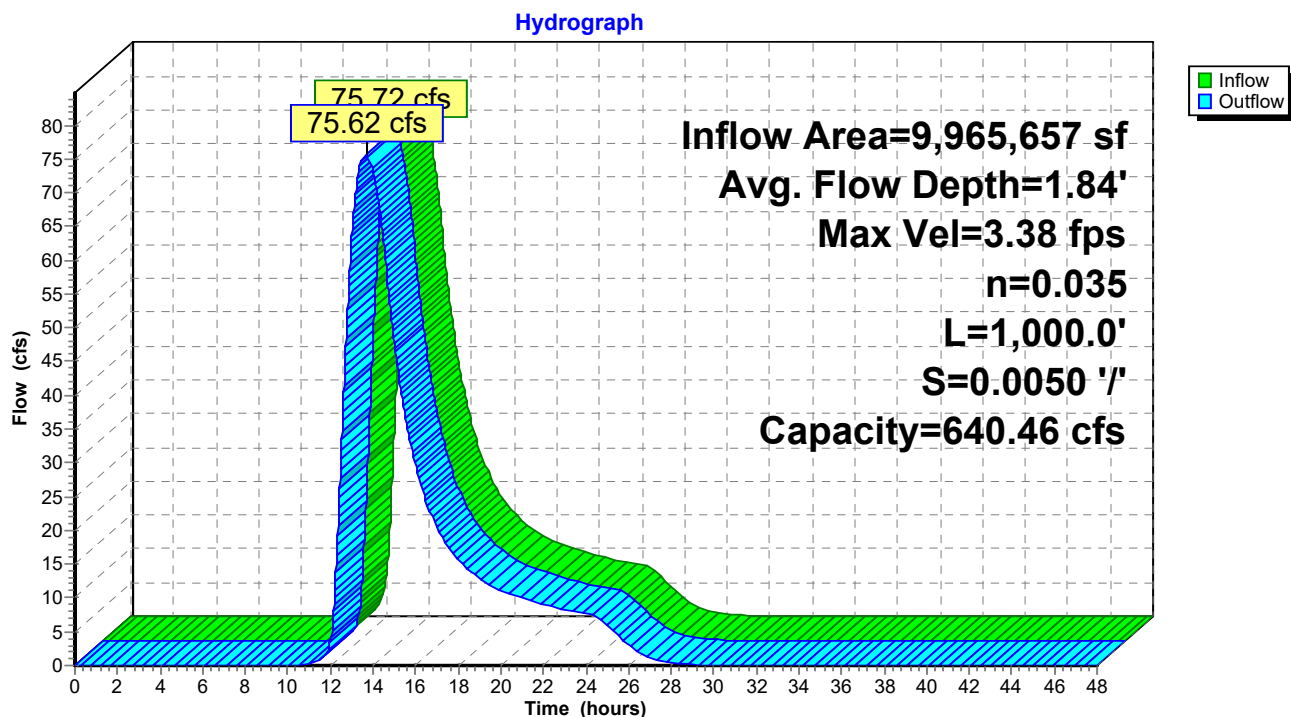
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Mt Pleasant 24-hr S1 2-yr Rainfall=3.90"

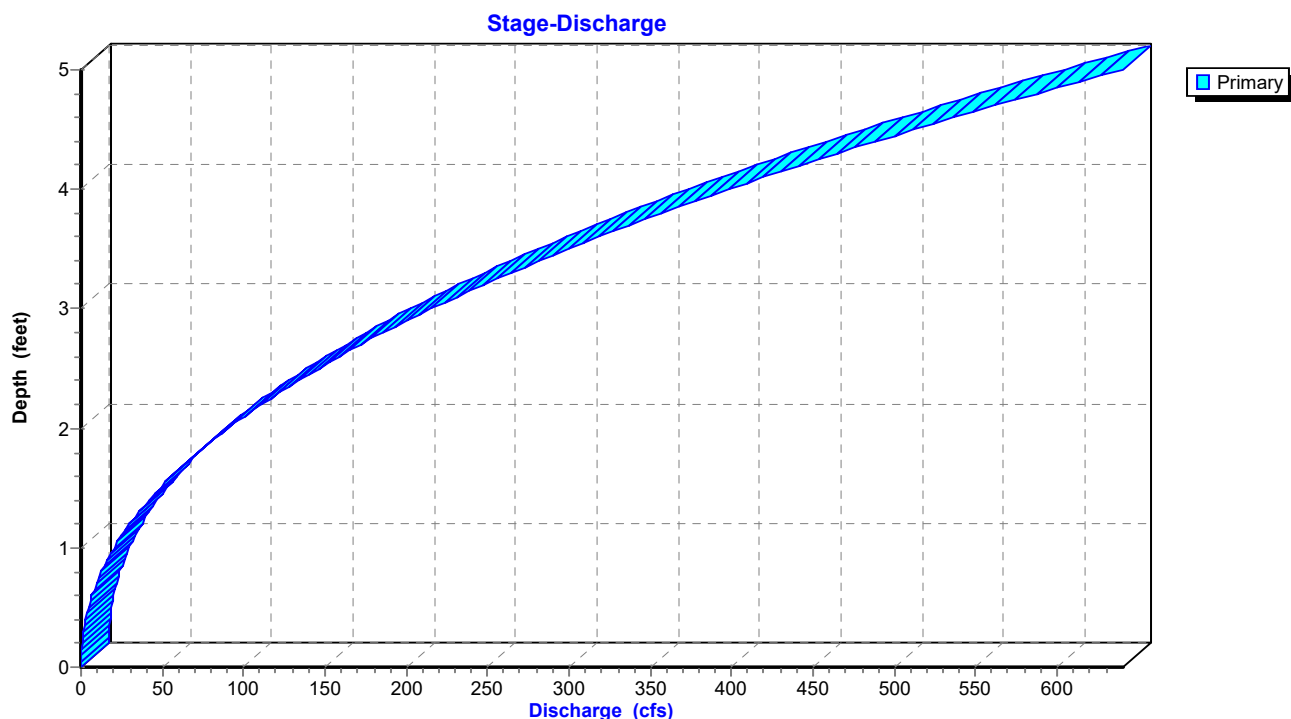
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Reach OF4: Primary Stream for Outfalls



Reach OF4: Primary Stream for Outfalls



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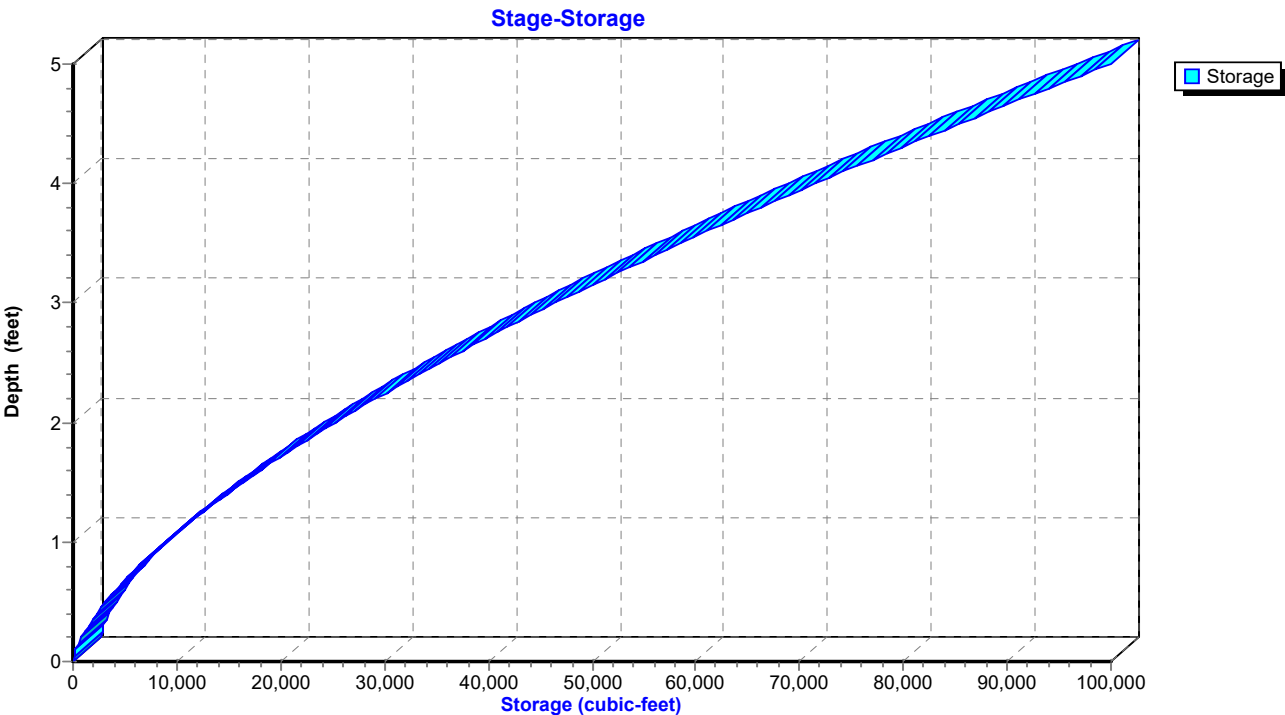
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Mt Pleasant 24-hr S1 2-yr Rainfall=3.90"

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Reach OF4: Primary Stream for Outfalls



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Mt Pleasant 24-hr S1 2-yr Rainfall=3.90"

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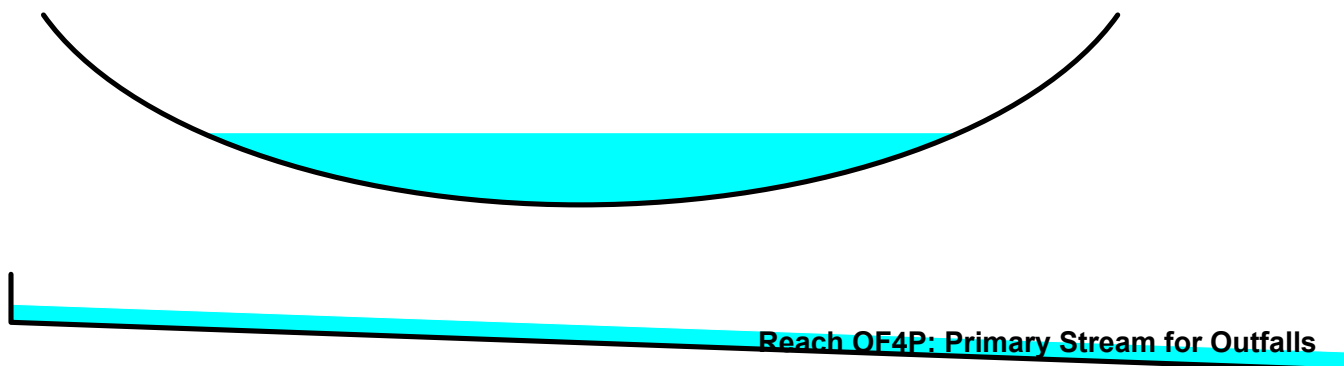
Summary for Reach OF4P: Primary Stream for Outfalls

Inflow Area = 9,969,577 sf, 2.84% Impervious, Inflow Depth = 1.53" for 2-yr event
 Inflow = 79.43 cfs @ 13.82 hrs, Volume= 1,270,504 cf
 Outflow = 79.29 cfs @ 13.84 hrs, Volume= 1,270,503 cf, Atten= 0%, Lag= 1.1 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
 Max. Velocity= 3.43 fps, Min. Travel Time= 4.9 min
 Avg. Velocity = 1.05 fps, Avg. Travel Time= 15.8 min

Peak Storage= 23,106 cf @ 13.84 hrs
 Average Depth at Peak Storage= 1.88' , Surface Width= 18.41'
 Bank-Full Depth= 5.00' Flow Area= 100.0 sf, Capacity= 640.46 cfs

30.00' x 5.00' deep Parabolic Channel, n= 0.035
 Length= 1,000.0' Slope= 0.0050 '/'
 Inlet Invert= 675.00', Outlet Invert= 670.00'



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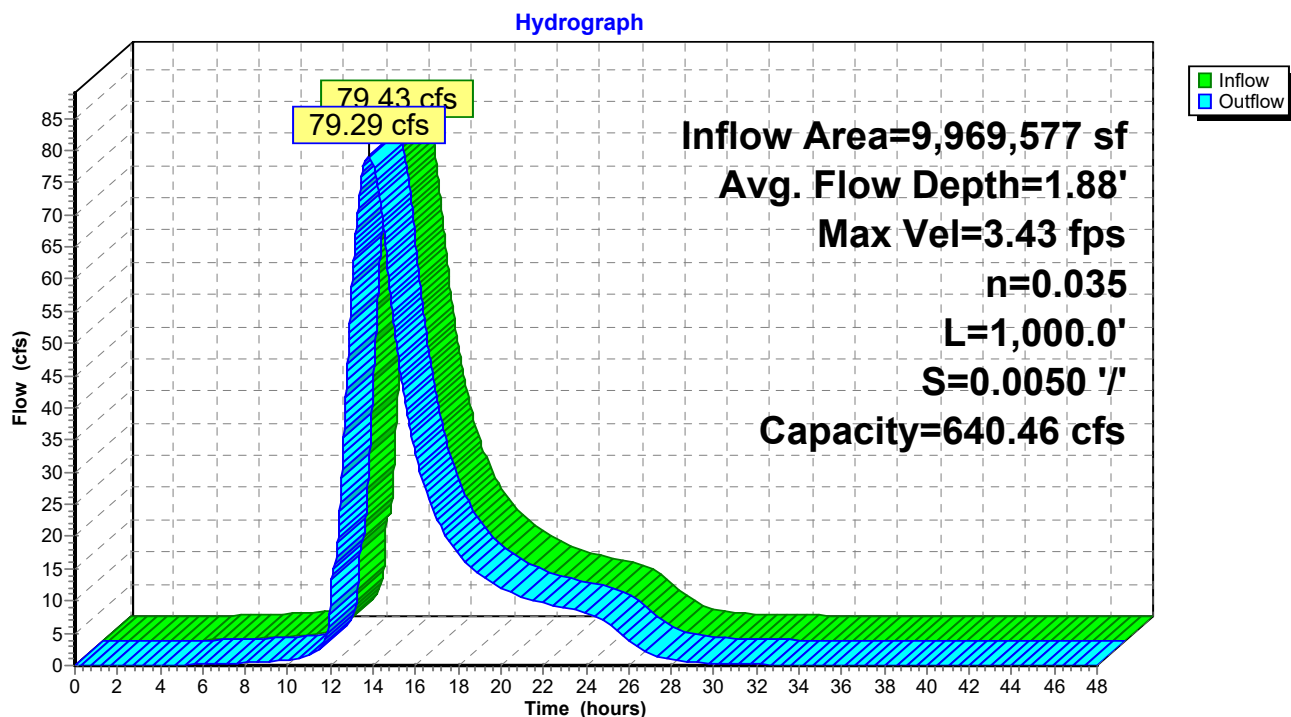
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Mt Pleasant 24-hr S1 2-yr Rainfall=3.90"

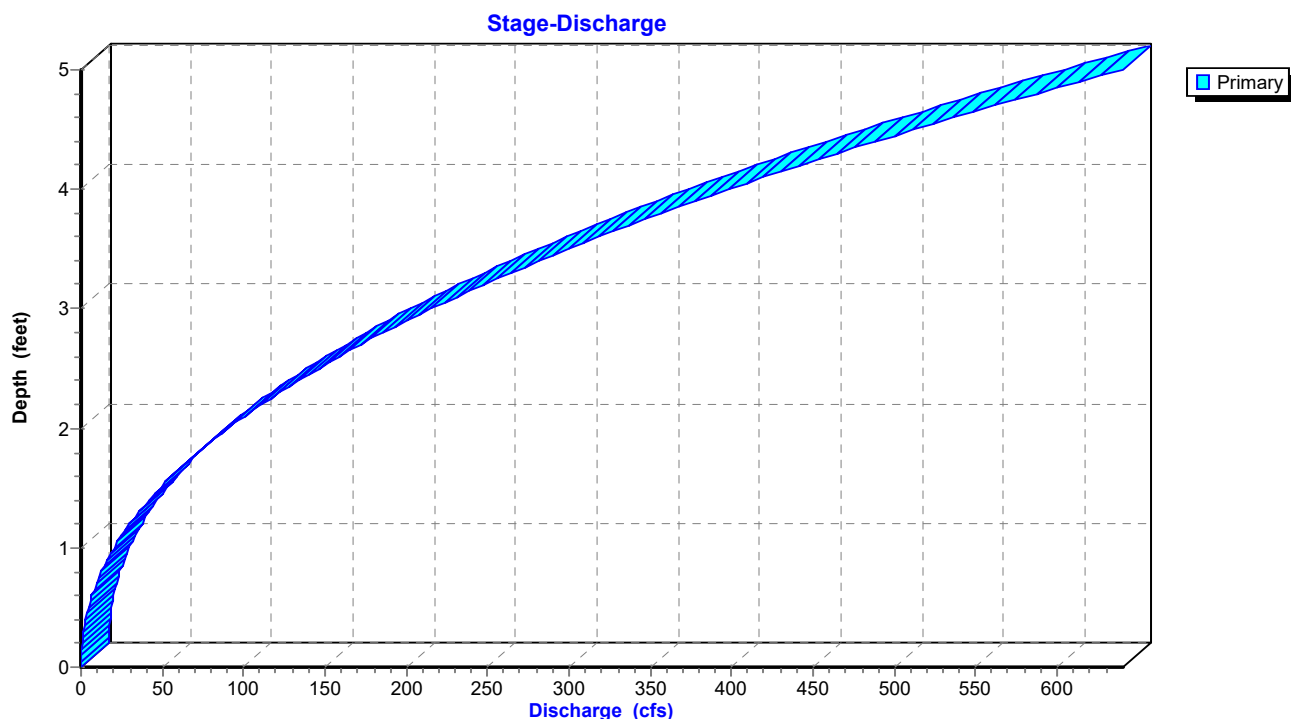
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Reach OF4P: Primary Stream for Outfalls



Reach OF4P: Primary Stream for Outfalls



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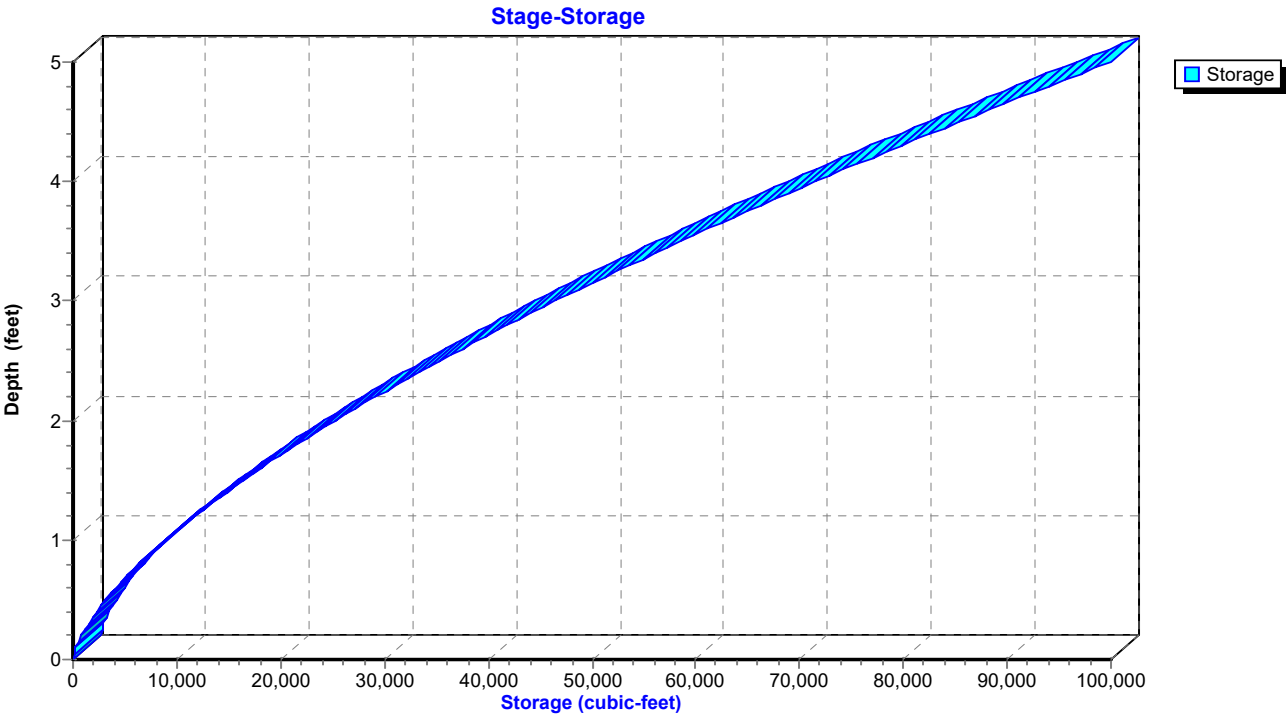
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Mt Pleasant 24-hr S1 2-yr Rainfall=3.90"

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Reach OF4P: Primary Stream for Outfalls



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Mt Pleasant 24-hr S1 2-yr Rainfall=3.90"

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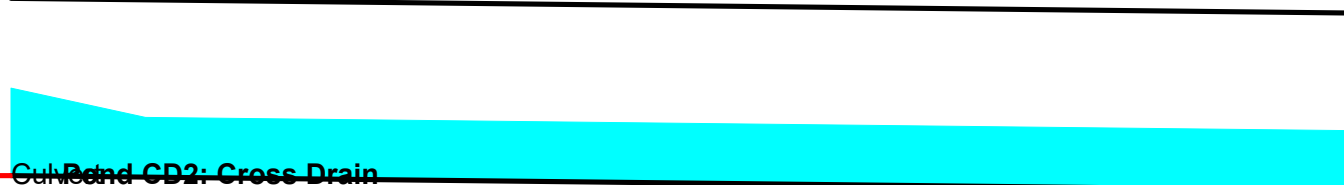
Summary for Pond CD2: Cross Drain

Inflow Area = 1,520,244 sf, 0.00% Impervious, Inflow Depth = 0.81" for 2-yr event
 Inflow = 11.06 cfs @ 12.95 hrs, Volume= 102,914 cf
 Outflow = 11.06 cfs @ 12.95 hrs, Volume= 102,914 cf, Atten= 0%, Lag= 0.0 min
 Primary = 11.06 cfs @ 12.95 hrs, Volume= 102,914 cf
 Routed to Reach OF4P : Primary Stream for Outfalls

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
 Peak Elev= 681.73' @ 12.95 hrs

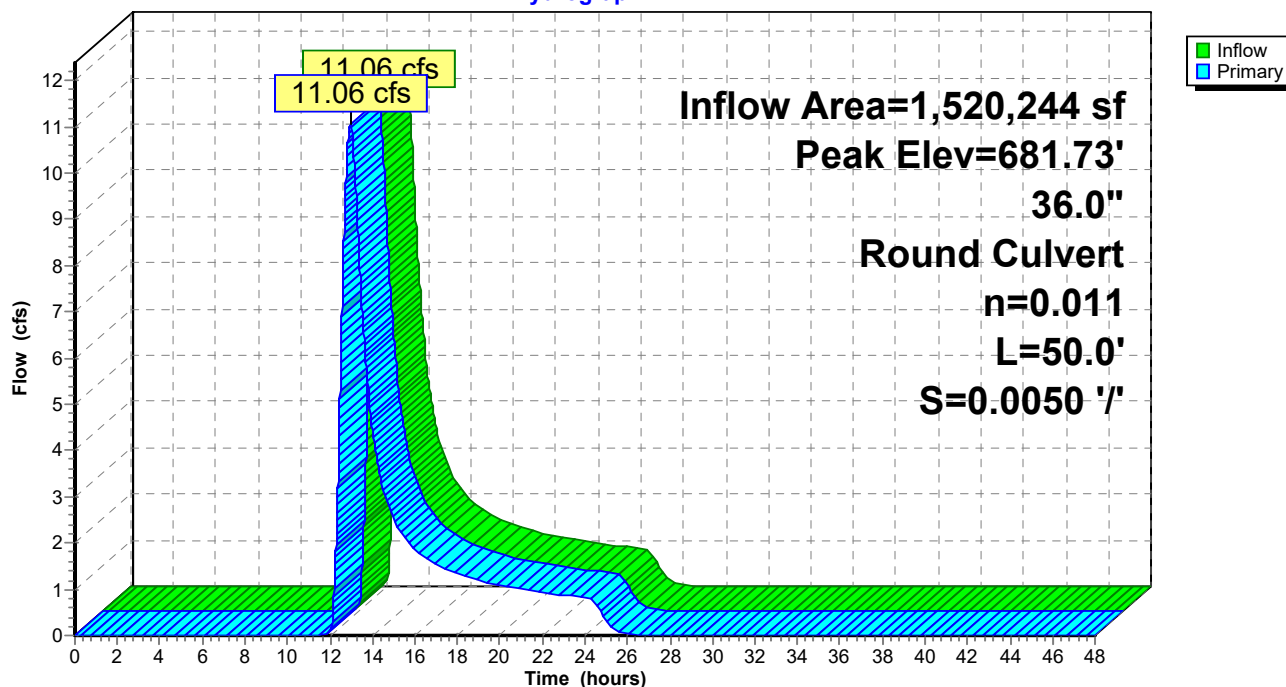
Device	Routing	Invert	Outlet Devices
#1	Primary	680.25'	36.0" Round Culvert L= 50.0' Ke= 0.500 Inlet / Outlet Invert= 680.25' / 680.00' S= 0.0050 '/' Cc= 0.900 n= 0.011 Concrete pipe, straight & clean, Flow Area= 7.07 sf

Primary OutFlow Max=11.06 cfs @ 12.95 hrs HW=681.73' TW=676.59' (Dynamic Tailwater)
 1=Culvert (Barrel Controls 11.06 cfs @ 4.65 fps)



Pond CD2: Cross Drain

Hydrograph



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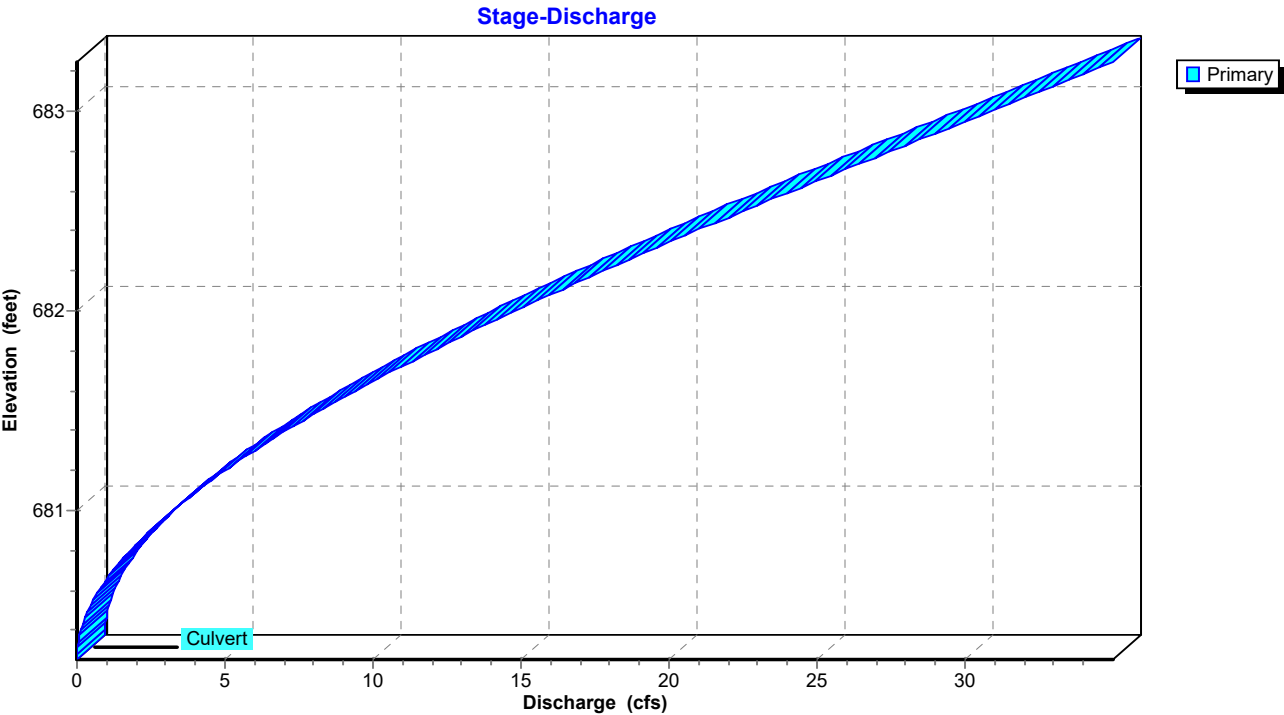
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Mt Pleasant 24-hr S1 2-yr Rainfall=3.90"

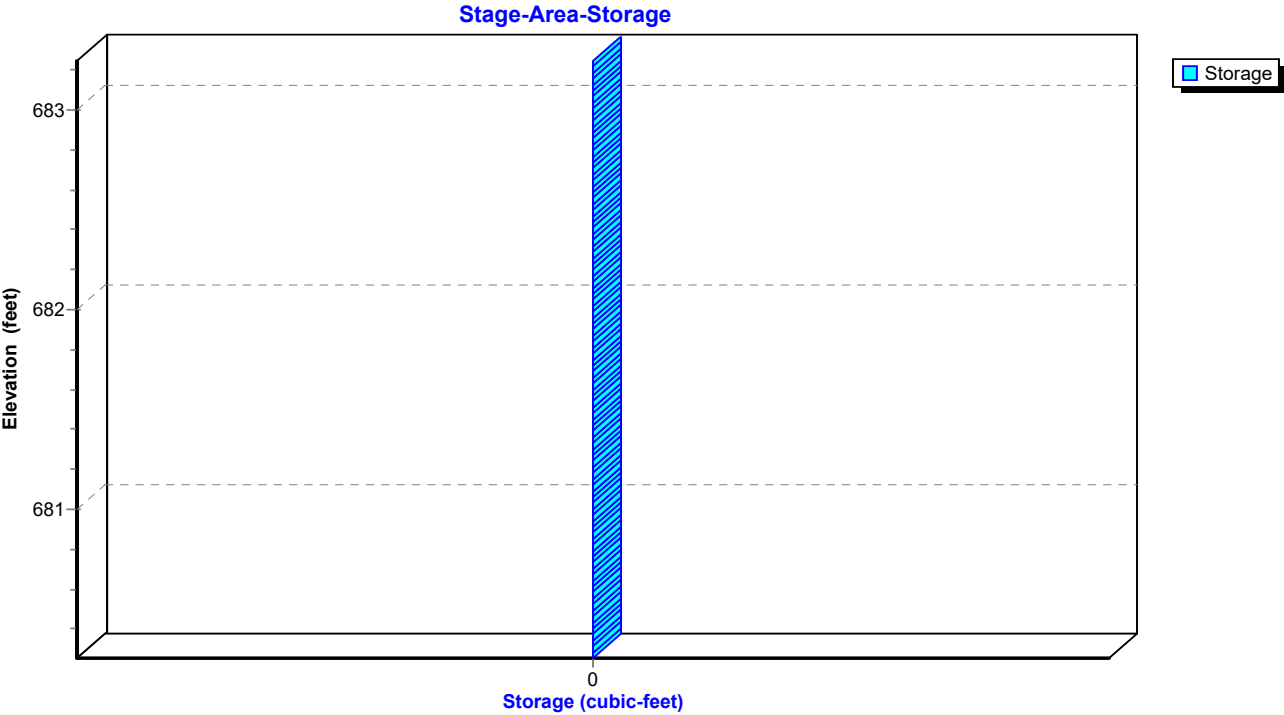
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Pond CD2: Cross Drain



Pond CD2: Cross Drain



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Mt Pleasant 24-hr S1 2-yr Rainfall=3.90"

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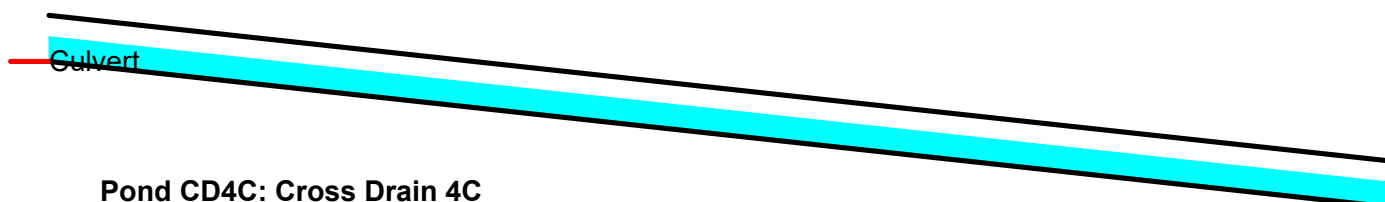
Summary for Pond CD4C: Cross Drain 4C

Inflow Area = 29,621 sf, 0.00% Impervious, Inflow Depth = 3.44" for 2-yr event
 Inflow = 2.96 cfs @ 12.05 hrs, Volume= 8,494 cf
 Outflow = 2.96 cfs @ 12.05 hrs, Volume= 8,494 cf, Atten= 0%, Lag= 0.0 min
 Primary = 2.96 cfs @ 12.05 hrs, Volume= 8,494 cf
 Routed to Pond CD4DCE : Cross Drain 4DCE

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
 Peak Elev= 684.56' @ 12.05 hrs

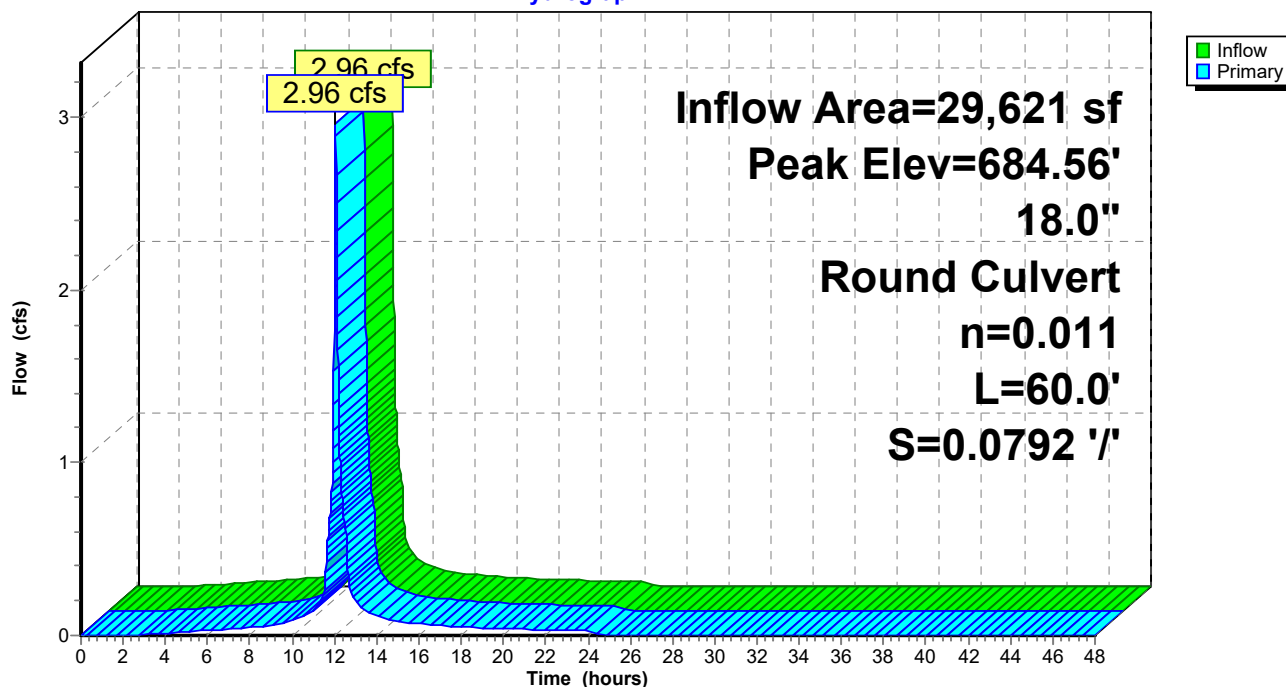
Device	Routing	Invert	Outlet Devices
#1	Primary	683.75'	18.0" Round Culvert L= 60.0' Square-edged headwall, Ke= 0.500 Inlet / Outlet Invert= 683.75' / 679.00' S= 0.0792 '/' Cc= 0.900 n= 0.011 Concrete pipe, straight & clean, Flow Area= 1.77 sf

Primary OutFlow Max=2.96 cfs @ 12.05 hrs HW=684.56' TW=679.51' (Dynamic Tailwater)
 ←**1=Culvert** (Inlet Controls 2.96 cfs @ 3.06 fps)



Pond CD4C: Cross Drain 4C

Hydrograph



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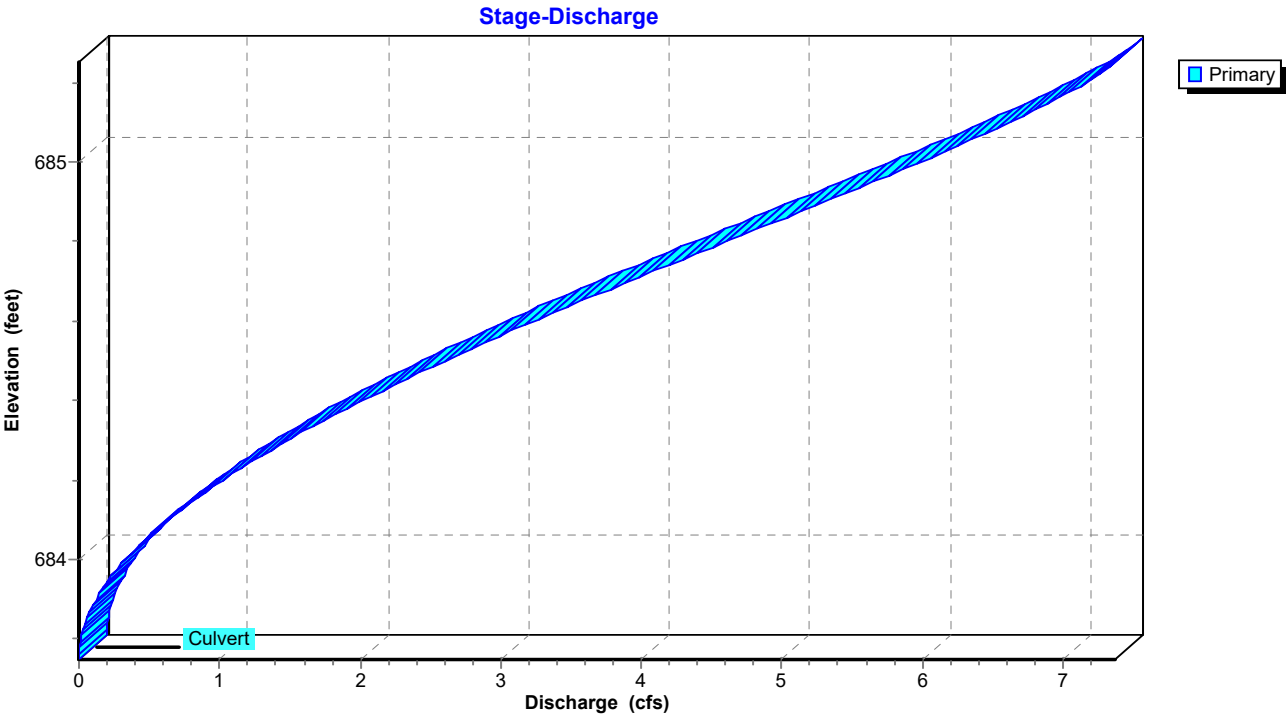
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Mt Pleasant 24-hr S1 2-yr Rainfall=3.90"

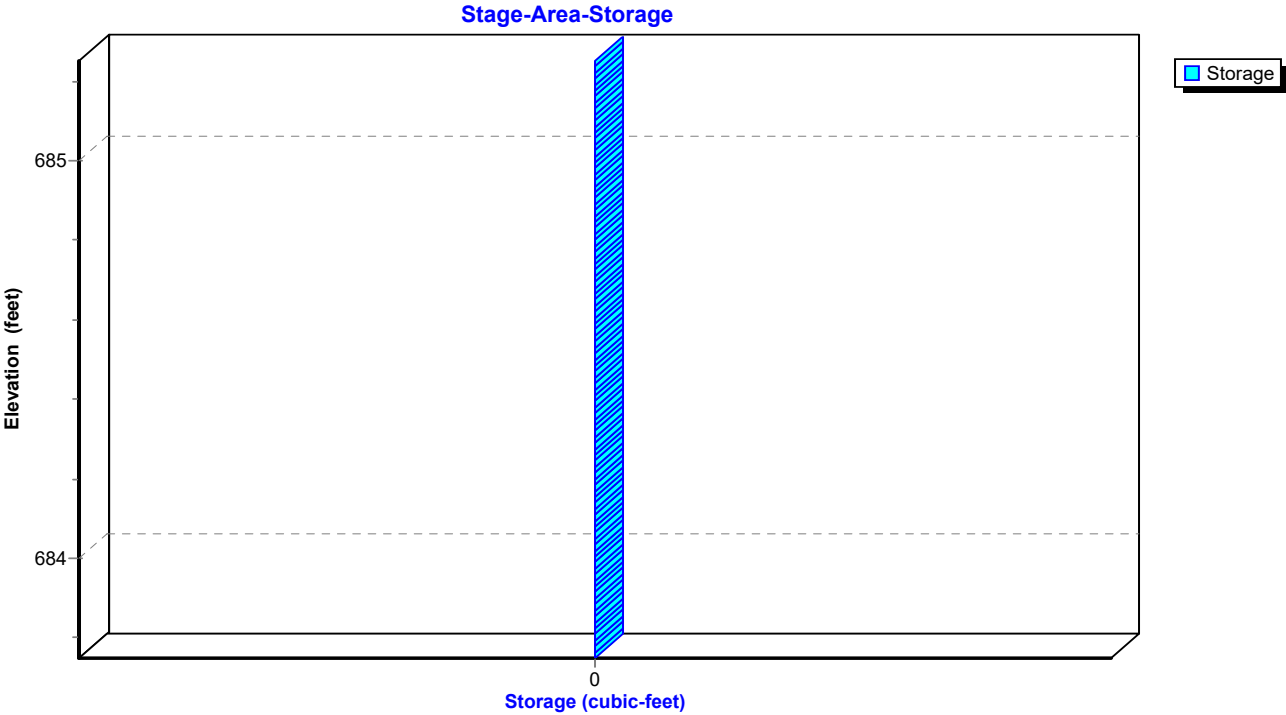
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Pond CD4C: Cross Drain 4C



Pond CD4C: Cross Drain 4C



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Mt Pleasant 24-hr S1 2-yr Rainfall=3.90"

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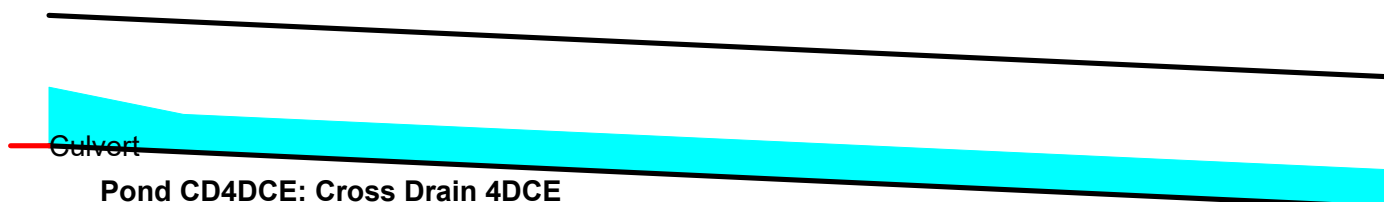
Summary for Pond CD4DCE: Cross Drain 4DCE

Inflow Area = 1,234,926 sf, 3.53% Impervious, Inflow Depth = 1.28" for 2-yr event
 Inflow = 15.18 cfs @ 12.70 hrs, Volume= 131,709 cf
 Outflow = 15.18 cfs @ 12.70 hrs, Volume= 131,709 cf, Atten= 0%, Lag= 0.0 min
 Primary = 15.18 cfs @ 12.70 hrs, Volume= 131,709 cf
 Routed to Pond POND1P : PROP POND

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
 Peak Elev= 680.19' @ 12.83 hrs

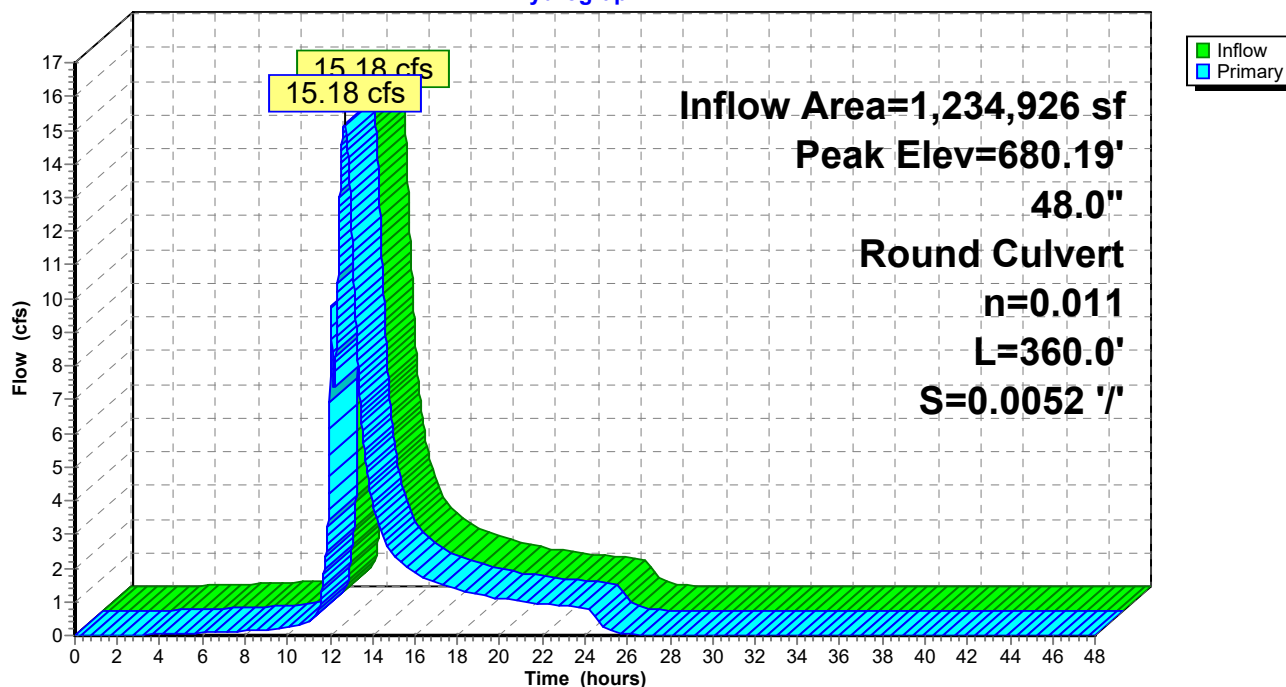
Device	Routing	Invert	Outlet Devices
#1	Primary	678.39'	48.0" Round Culvert L= 360.0' Ke= 0.500 Inlet / Outlet Invert= 678.39' / 676.50' S= 0.0052 '/' Cc= 0.900 n= 0.011 Concrete pipe, straight & clean, Flow Area= 12.57 sf

Primary OutFlow Max=15.05 cfs @ 12.70 hrs HW=680.15' TW=679.23' (Dynamic Tailwater)
 ↳ **1=Culvert** (Outlet Controls 15.05 cfs @ 4.17 fps)



Pond CD4DCE: Cross Drain 4DCE

Hydrograph



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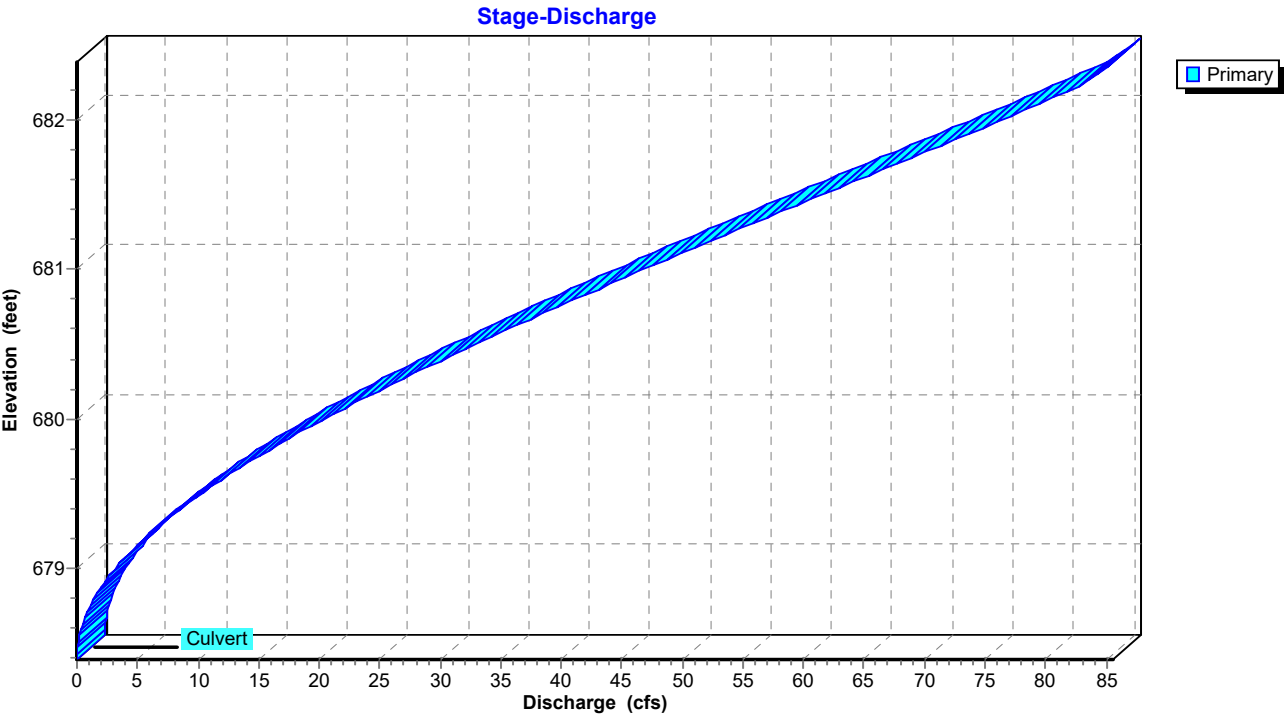
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Mt Pleasant 24-hr S1 2-yr Rainfall=3.90"

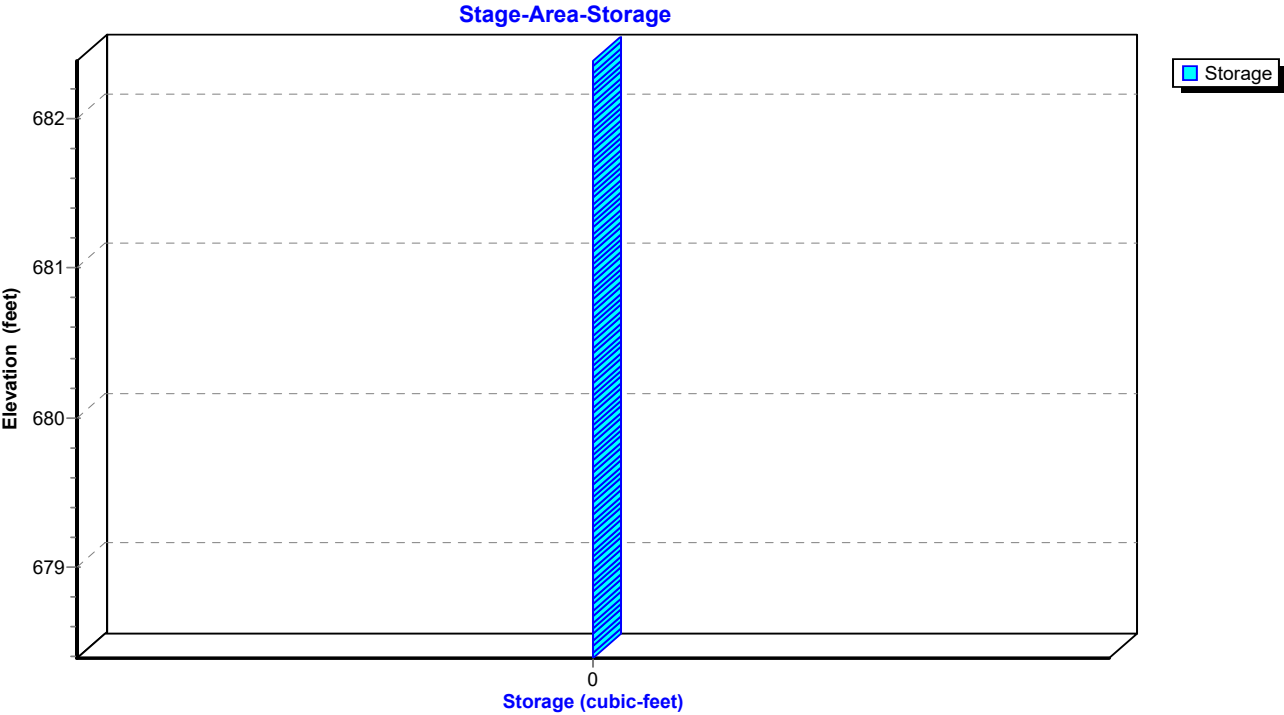
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Pond CD4DCE: Cross Drain 4DCE



Pond CD4DCE: Cross Drain 4DCE



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Mt Pleasant 24-hr S1 2-yr Rainfall=3.90"

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Summary for Pond CD4E: Cross Drain 4E

Inflow Area = 1,151,726 sf, 3.78% Impervious, Inflow Depth = 1.12" for 2-yr event
 Inflow = 14.52 cfs @ 12.69 hrs, Volume= 107,853 cf
 Outflow = 14.40 cfs @ 12.73 hrs, Volume= 107,852 cf, Atten= 1%, Lag= 2.1 min
 Primary = 14.40 cfs @ 12.73 hrs, Volume= 107,852 cf
 Routed to Pond CD4DCE : Cross Drain 4DCE

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
 Peak Elev= 681.07' @ 12.76 hrs Surf.Area= 1,740 sf Storage= 1,039 cf

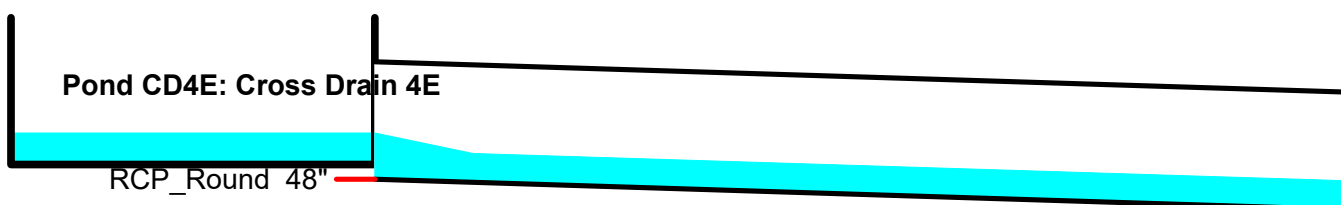
Plug-Flow detention time= (not calculated: outflow precedes inflow)
 Center-of-Mass det. time= 0.6 min (920.2 - 919.6)

Volume	Invert	Avail.Storage	Storage Description
#1	680.00'	33,779 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
680.00	274	0	0
681.00	1,562	918	918
682.00	3,975	2,769	3,687
683.00	7,355	5,665	9,352
684.00	12,090	9,723	19,074
685.00	17,320	14,705	33,779

Device	Routing	Invert	Outlet Devices
#1	Primary	679.50'	48.0" Round RCP_Round 48" L= 200.0' Ke= 0.500 Inlet / Outlet Invert= 679.50' / 678.46' S= 0.0052 ' S= 0.0052 ' Cc= 0.900 n= 0.011 Concrete pipe, straight & clean, Flow Area= 12.57 sf

Primary OutFlow Max=14.36 cfs @ 12.73 hrs HW=681.07' TW=680.17' (Dynamic Tailwater)
 ↑1=RCP_Round 48" (Outlet Controls 14.36 cfs @ 4.65 fps)



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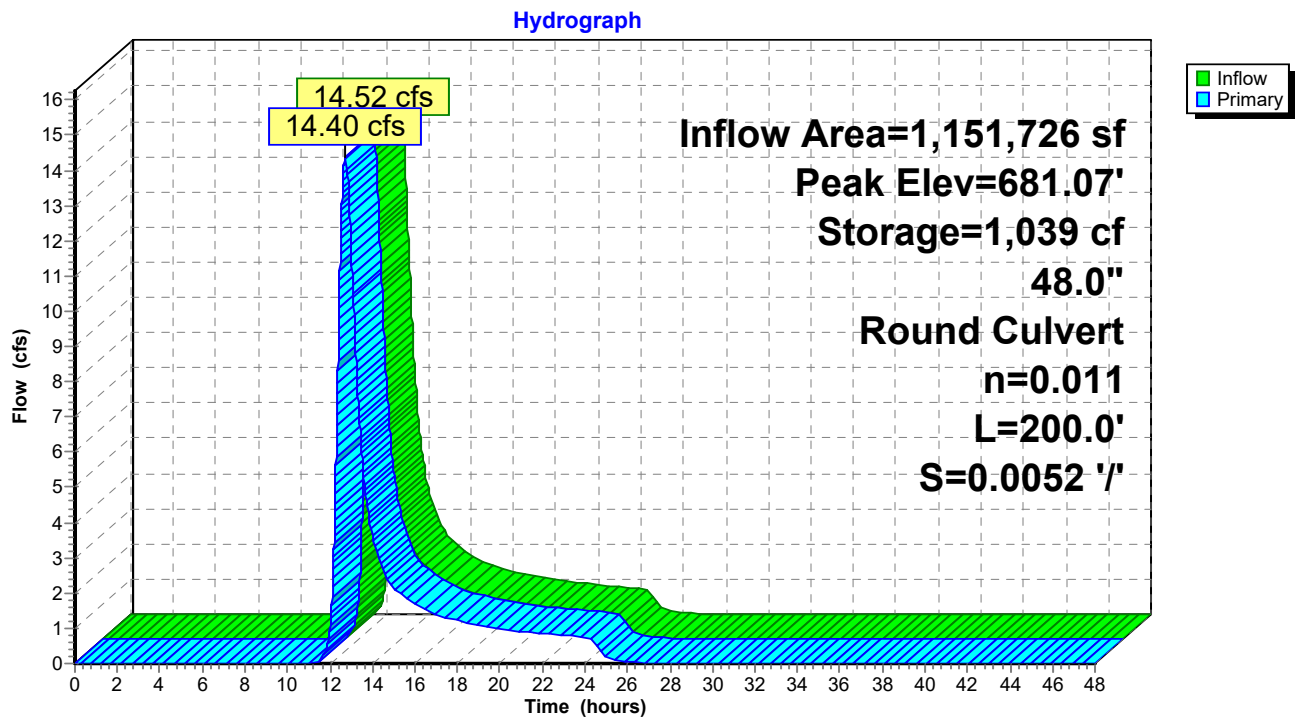
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Mt Pleasant 24-hr S1 2-yr Rainfall=3.90"

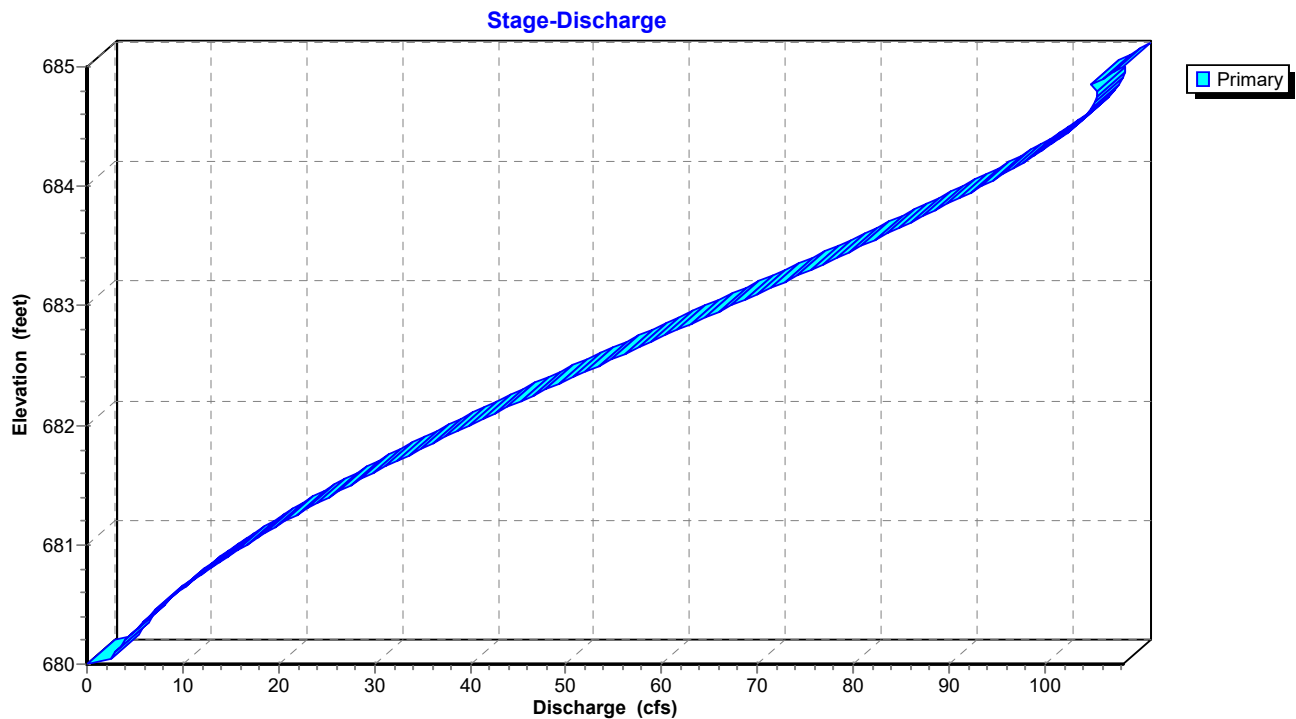
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Pond CD4E: Cross Drain 4E



Pond CD4E: Cross Drain 4E



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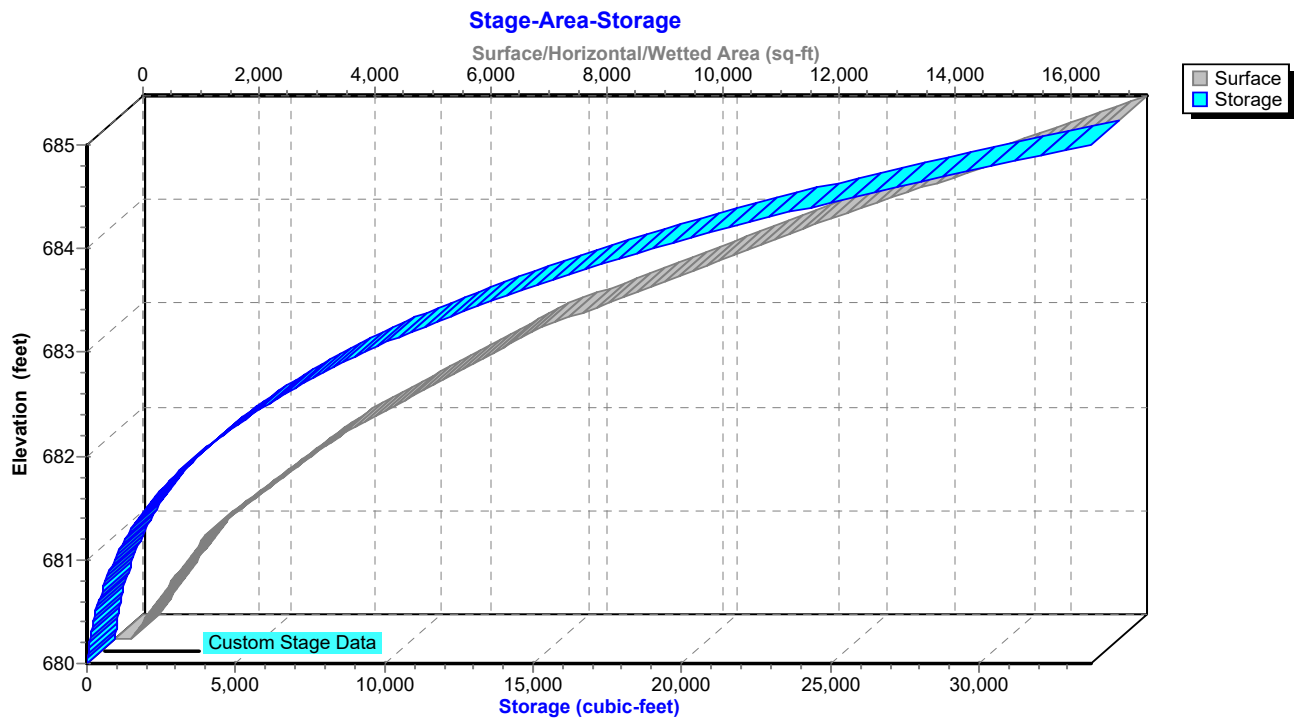
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Mt Pleasant 24-hr S1 2-yr Rainfall=3.90"

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Pond CD4E: Cross Drain 4E



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Mt Pleasant 24-hr S1 2-yr Rainfall=3.90"

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Summary for Pond POND1P: PROP POND

Inflow Area = 1,772,021 sf, 9.83% Impervious, Inflow Depth = 1.93" for 2-yr event
 Inflow = 38.46 cfs @ 12.48 hrs, Volume= 285,722 cf
 Outflow = 17.22 cfs @ 13.13 hrs, Volume= 285,716 cf, Atten= 55%, Lag= 39.4 min
 Primary = 17.22 cfs @ 13.13 hrs, Volume= 285,716 cf
 Routed to Reach OF4P : Primary Stream for Outfalls

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
 Peak Elev= 679.53' @ 13.14 hrs Surf.Area= 48,568 sf Storage= 98,788 cf

Plug-Flow detention time= 126.6 min calculated for 285,657 cf (100% of inflow)
 Center-of-Mass det. time= 126.7 min (967.5 - 840.8)

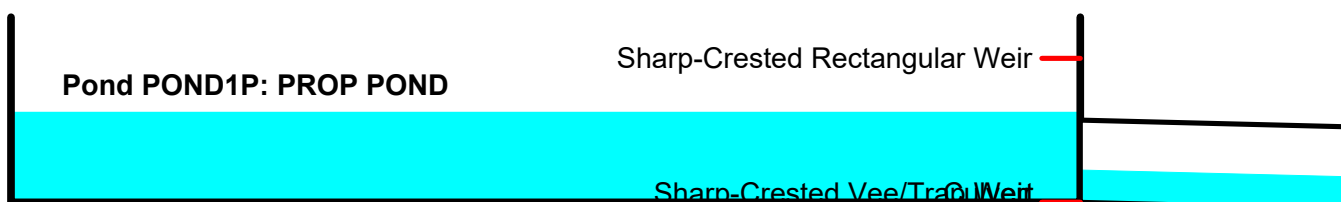
Volume	Invert	Avail.Storage	Storage Description
#1	676.25'	386,863 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
676.25	505	0	0
676.50	14,826	1,916	1,916
677.00	24,194	9,755	11,671
678.00	31,409	27,802	39,473
679.00	39,965	35,687	75,160
680.00	56,082	48,024	123,183
681.00	77,468	66,775	189,958
682.00	98,642	88,055	278,013
683.00	119,057	108,850	386,863

Device	Routing	Invert	Outlet Devices
#1	Primary	676.25'	36.0" Round Culvert L= 50.0' Ke= 0.600 Inlet / Outlet Invert= 676.25' / 676.00' S= 0.0050 '/' Cc= 0.900 n= 0.011, Flow Area= 7.07 sf
#2	Device 1	676.25'	20.0 deg x 0.4' long Sharp-Crested Vee/Trap Weir Cv= 2.69 (C= 3.36)
#3	Device 1	681.50'	16.0' long Sharp-Crested Rectangular Weir 2 End Contraction(s)

Primary OutFlow Max=17.22 cfs @ 13.13 hrs HW=679.53' TW=676.72' (Dynamic Tailwater)

- 1=Culvert (Passes 17.22 cfs of 38.44 cfs potential flow)
- 2=Sharp-Crested Vee/Trap Weir (Weir Controls 17.22 cfs @ 5.36 fps)
- 3=Sharp-Crested Rectangular Weir (Controls 0.00 cfs)



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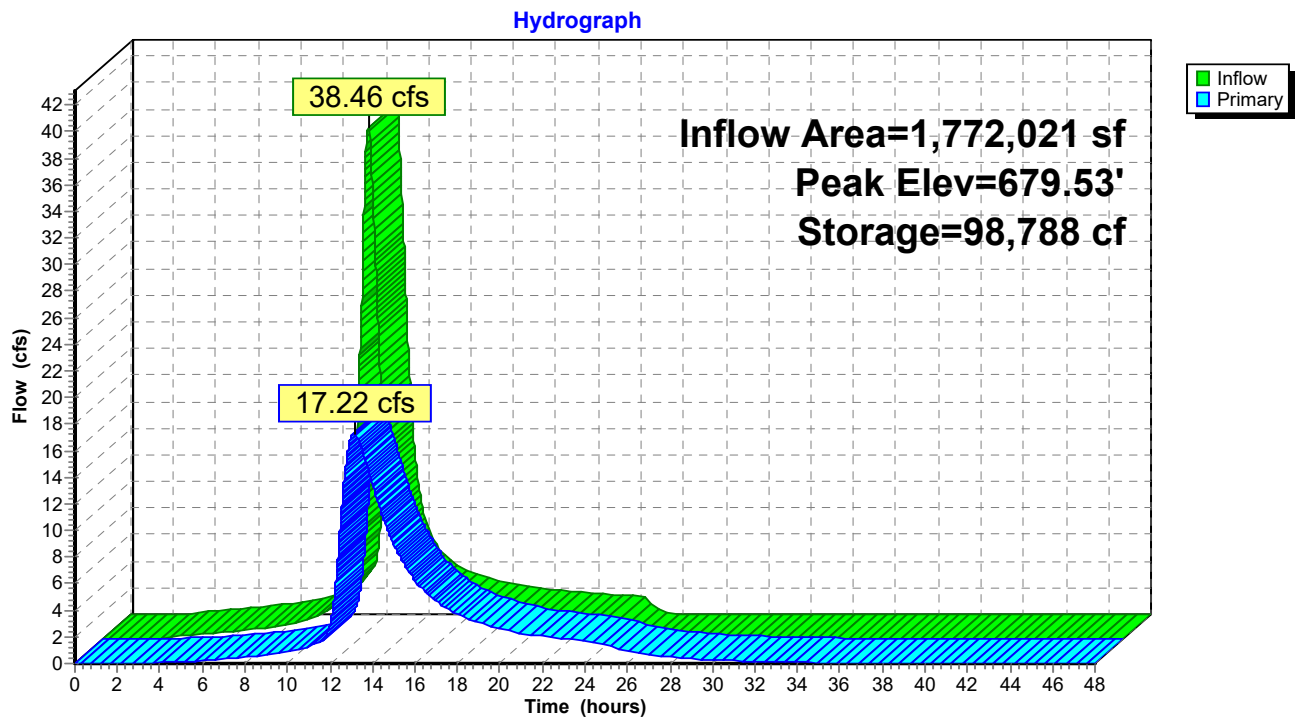
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Mt Pleasant 24-hr S1 2-yr Rainfall=3.90"

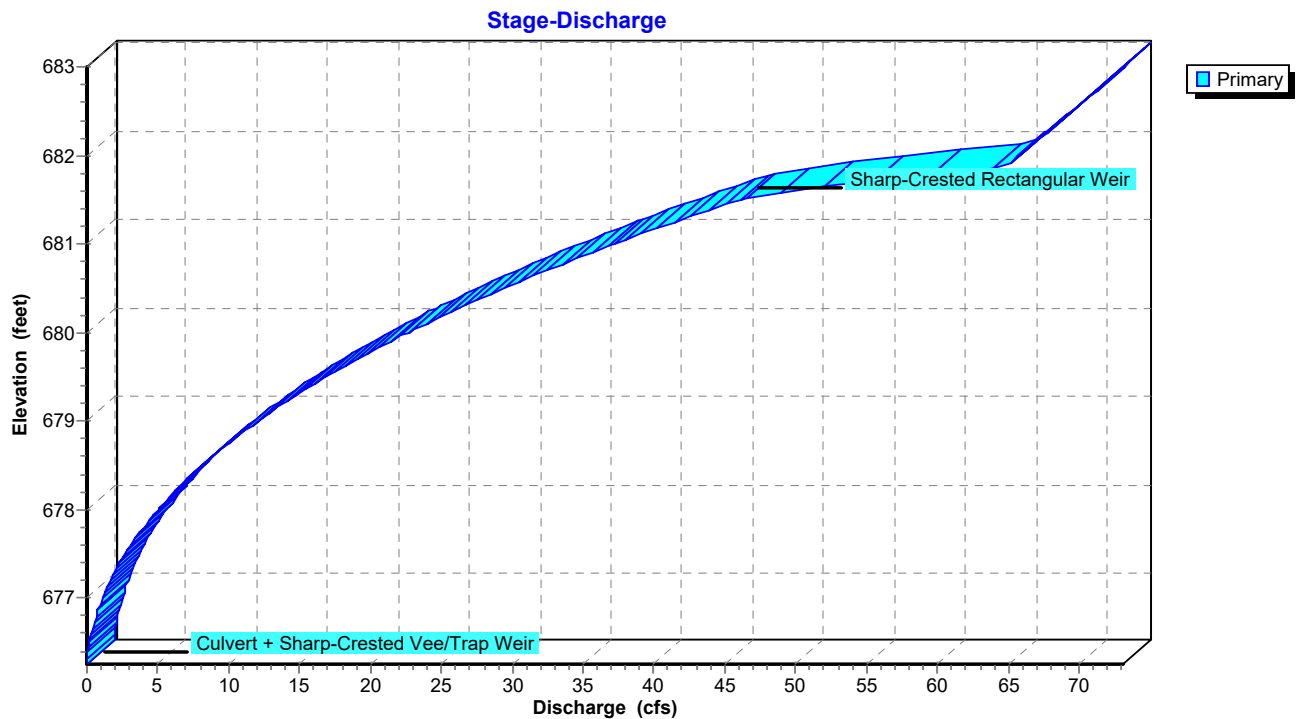
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Pond POND1P: PROP POND



Pond POND1P: PROP POND



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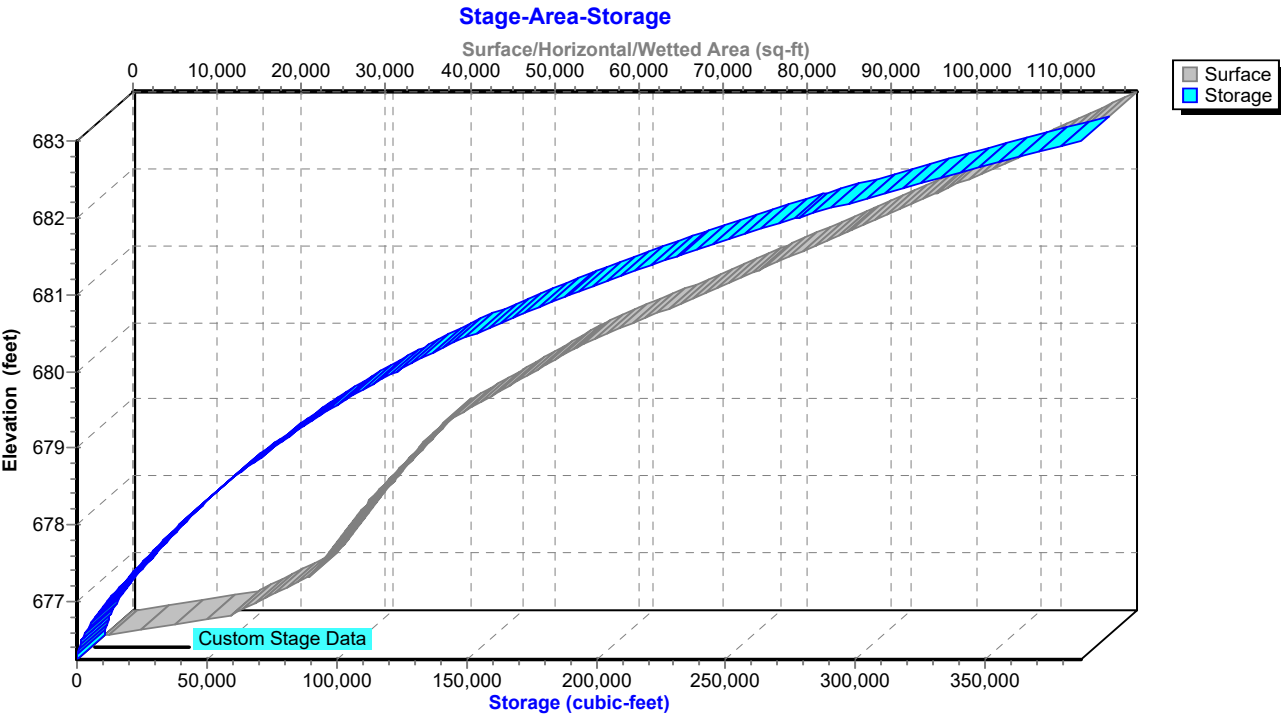
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Mt Pleasant 24-hr S1 2-yr Rainfall=3.90"

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Pond POND1P: PROP POND



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Time span=0.00-48.00 hrs, dt=0.01 hrs, 4801 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

Subcatchment DA 1: BASIN 1 PRE Runoff Area=143.000 ac 1.75% Impervious Runoff Depth=2.25"
 Flow Length=5,750' Tc=143.0 min CN=75 Runoff=85.33 cfs 1,166,980 cf

Subcatchment DA 2: BASIN 2 PRE Runoff Area=34.900 ac 0.00% Impervious Runoff Depth=1.29"
 Flow Length=2,150' Slope=0.0150 '/' Tc=62.3 min CN=62 Runoff=19.26 cfs 162,997 cf

Subcatchment DA 3: BASIN 3 PRE Runoff Area=9.380 ac 0.00% Impervious Runoff Depth=2.09"
 Flow Length=838' Slope=0.0200 '/' Tc=25.9 min CN=73 Runoff=14.35 cfs 71,034 cf

Subcatchment DA 4: BASIN 4 PRE Runoff Area=41.500 ac 0.00% Impervious Runoff Depth=1.85"
 Flow Length=2,468' Tc=68.1 min CN=70 Runoff=33.51 cfs 279,135 cf

Subcatchment DA1P: BASIN 1 PROPOSED Runoff Area=143.000 ac 1.75% Impervious Runoff Depth=2.25"
 Flow Length=5,750' Tc=143.0 min CN=75 Runoff=85.33 cfs 1,166,980 cf

Subcatchment DA2P: BASIN 2 PROPOSED Runoff Area=34.900 ac 0.00% Impervious Runoff Depth=1.29"
 Flow Length=2,150' Slope=0.0150 '/' Tc=62.3 min CN=62 Runoff=19.26 cfs 162,997 cf

Subcatchment DA3P: BASIN 3 PRE Runoff Area=4.760 ac 0.00% Impervious Runoff Depth=2.59"
 Tc=5.0 min CN=79 Runoff=17.54 cfs 44,712 cf

Subcatchment DA4A: BASIN 4A PROPOSED Runoff Area=5.530 ac 0.00% Impervious Runoff Depth=1.70"
 Flow Length=945' Tc=40.9 min CN=68 Runoff=5.38 cfs 34,201 cf

Subcatchment DA4B: BASIN 4B Runoff Area=12.330 ac 24.33% Impervious Runoff Depth=4.28"
 Flow Length=996' Tc=33.8 min CN=96 Runoff=32.22 cfs 191,750 cf

Subcatchment DA4C: BASIN 4C PROPOSED Runoff Area=0.680 ac 0.00% Impervious Runoff Depth=4.28"
 Tc=5.0 min CN=96 Runoff=3.82 cfs 10,575 cf

Subcatchment DA4D: BASIN 4D PROPOSED Runoff Area=1.230 ac 0.00% Impervious Runoff Depth=4.28"
 Tc=5.0 min CN=96 Runoff=6.90 cfs 19,128 cf

Subcatchment DA4E1: BASIN 4E1 Runoff Area=7.260 ac 13.77% Impervious Runoff Depth=1.42"
 Flow Length=640' Tc=31.5 min CN=64 Runoff=6.44 cfs 37,438 cf

Subcatchment DA4E2: BASIN 4E2 Runoff Area=19.180 ac 0.00% Impervious Runoff Depth=1.78"
 Flow Length=1,313' Tc=46.8 min CN=69 Runoff=18.28 cfs 123,771 cf

Reach D4C: Ditch 4C Avg. Flow Depth=0.57' Max Vel=2.37 fps Inflow=3.82 cfs 10,575 cf
 n=0.033 L=313.0' S=0.0104 '/' Capacity=27.19 cfs Outflow=3.55 cfs 10,575 cf

Reach D4D: Ditch 4D Avg. Flow Depth=0.71' Max Vel=3.18 fps Inflow=6.90 cfs 19,128 cf
 n=0.033 L=337.0' S=0.0148 '/' Capacity=32.50 cfs Outflow=6.57 cfs 19,128 cf

Reach D4E1: Ditch 4E1 Avg. Flow Depth=0.59' Max Vel=1.45 fps Inflow=6.44 cfs 37,438 cf
 n=0.033 L=1,788.0' S=0.0031 '/' Capacity=197.27 cfs Outflow=4.99 cfs 37,438 cf

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Reach OF4: Primary Stream for Avg. Flow Depth=2.22' Max Vel=3.81 fps Inflow=112.82 cfs 1,680,146 cf
 n=0.035 L=1,000.0' S=0.0050 '/' Capacity=640.46 cfs Outflow=112.58 cfs 1,680,146 cf

Reach OF4P: Primary Stream for Avg. Flow Depth=2.24' Max Vel=3.84 fps Inflow=115.76 cfs 1,791,545 cf
 n=0.035 L=1,000.0' S=0.0050 '/' Capacity=640.46 cfs Outflow=115.59 cfs 1,791,544 cf

Pond CD2: Cross Drain Peak Elev=682.30' Inflow=19.26 cfs 162,997 cf
 36.0" Round Culvert n=0.011 L=50.0' S=0.0050 '/' Outflow=19.26 cfs 162,997 cf

Pond CD4C: Cross Drain 4C Peak Elev=684.65' Inflow=3.55 cfs 10,575 cf
 18.0" Round Culvert n=0.011 L=60.0' S=0.0792 '/' Outflow=3.55 cfs 10,575 cf

Pond CD4DCE: Cross Drain 4DCE Peak Elev=680.77' Inflow=23.79 cfs 190,911 cf
 48.0" Round Culvert n=0.011 L=360.0' S=0.0052 '/' Outflow=23.79 cfs 190,911 cf

Pond CD4E: Cross Drain 4E Peak Elev=681.62' Storage=2,352 cf Inflow=23.21 cfs 161,209 cf
 48.0" Round Culvert n=0.011 L=200.0' S=0.0052 '/' Outflow=22.81 cfs 161,207 cf

Pond POND1P: PROP POND Peak Elev=680.15' Storage=131,541 cf Inflow=52.23 cfs 382,660 cf
 Outflow=24.34 cfs 382,654 cf

Total Runoff Area = 19,935,234 sf Runoff Volume = 3,471,699 cf Average Runoff Depth = 2.09"
98.03% Pervious = 19,543,194 sf 1.97% Impervious = 392,040 sf

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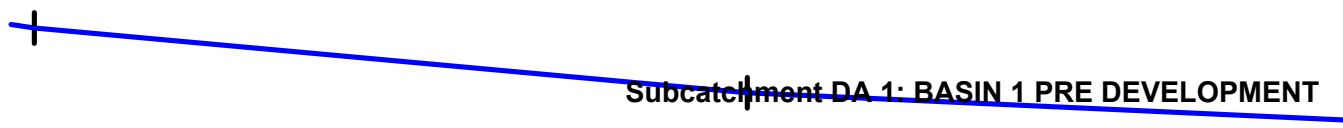
Summary for Subcatchment DA 1: BASIN 1 PRE DEVELOPMENT

Runoff = 85.33 cfs @ 13.83 hrs, Volume= 1,166,980 cf, Depth= 2.25"
Routed to Reach OF4 : Primary Stream for Outfalls

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Mt Pleasant 24-hr S1 5-yr Rainfall=4.75"

Area (ac)	CN	Description
69.500	74	>75% Grass cover, Good, HSG C
71.000	76	Woods/grass comb., Fair, HSG C
2.500	98	Paved parking, HSG C
143.000	75	Weighted Average
140.500		98.25% Pervious Area
2.500		1.75% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
35.4	100	0.0200	0.05		Sheet Flow, Woods: Dense underbrush n= 0.800 P2= 3.57"
92.8	3,050	0.0120	0.55		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
14.8	2,600	0.0060	2.93	11.71	Channel Flow, Area= 4.0 sf Perim= 6.0' r= 0.67' n= 0.030
143.0	5,750	Total			



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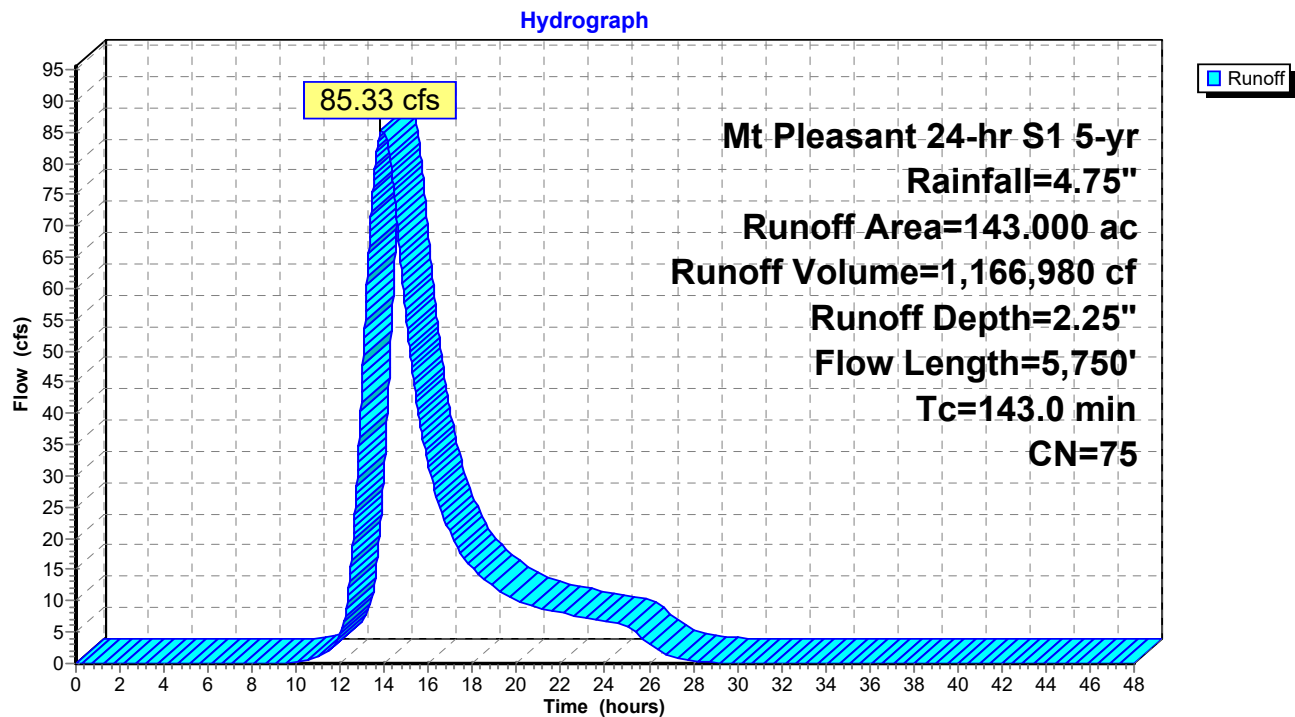
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Mt Pleasant 24-hr S1 5-yr Rainfall=4.75"

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Subcatchment DA 1: BASIN 1 PRE DEVELOPMENT



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Mt Pleasant 24-hr S1 5-yr Rainfall=4.75"

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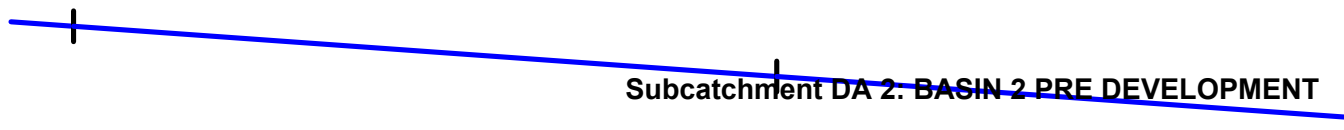
Summary for Subcatchment DA 2: BASIN 2 PRE DEVELOPMENT

Runoff = 19.26 cfs @ 12.94 hrs, Volume= 162,997 cf, Depth= 1.29"
Routed to Reach OF4 : Primary Stream for Outfalls

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Mt Pleasant 24-hr S1 5-yr Rainfall=4.75"

Area (ac)	CN	Description
17.450	58	Meadow, non-grazed, HSG B
14.450	60	Woods, Fair, HSG B
3.000	96	Gravel surface, HSG C
34.900	62	Weighted Average
34.900		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.2	100	0.0150	0.11		Sheet Flow, Grass: Dense n= 0.240 P2= 3.57"
21.9	1,125	0.0150	0.86		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
25.2	925	0.0150	0.61		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
62.3	2,150	Total			



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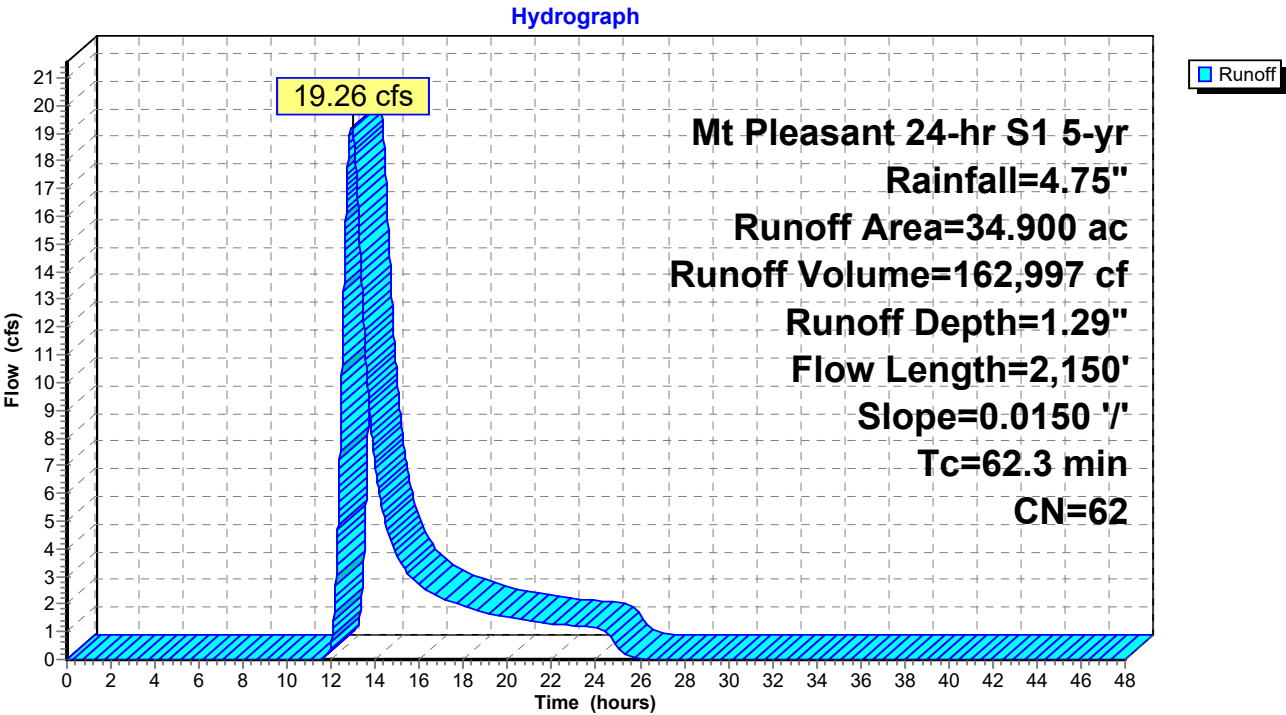
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Subcatchment DA 2: BASIN 2 PRE DEVELOPMENT



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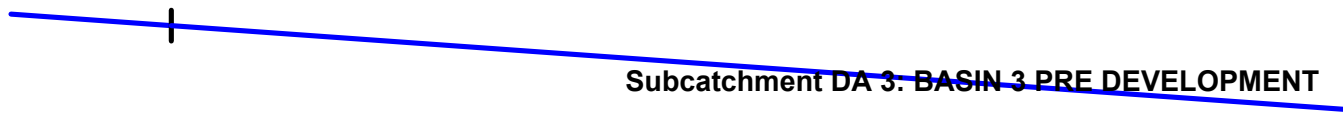
Summary for Subcatchment DA 3: BASIN 3 PRE DEVELOPMENT

Runoff = 14.35 cfs @ 12.34 hrs, Volume= 71,034 cf, Depth= 2.09"
Routed to Reach OF4 : Primary Stream for Outfalls

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Mt Pleasant 24-hr S1 5-yr Rainfall=4.75"

Area (ac)	CN	Description
3.300	78	Meadow, non-grazed, HSG D
3.300	79	Woods, Fair, HSG D
2.250	58	Meadow, non-grazed, HSG B
0.530	60	Woods, Fair, HSG B
9.380	73	Weighted Average
9.380		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.5	100	0.0200	0.12		Sheet Flow, Grass: Dense n= 0.240 P2= 3.57"
12.4	738	0.0200	0.99		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
25.9	838	Total			



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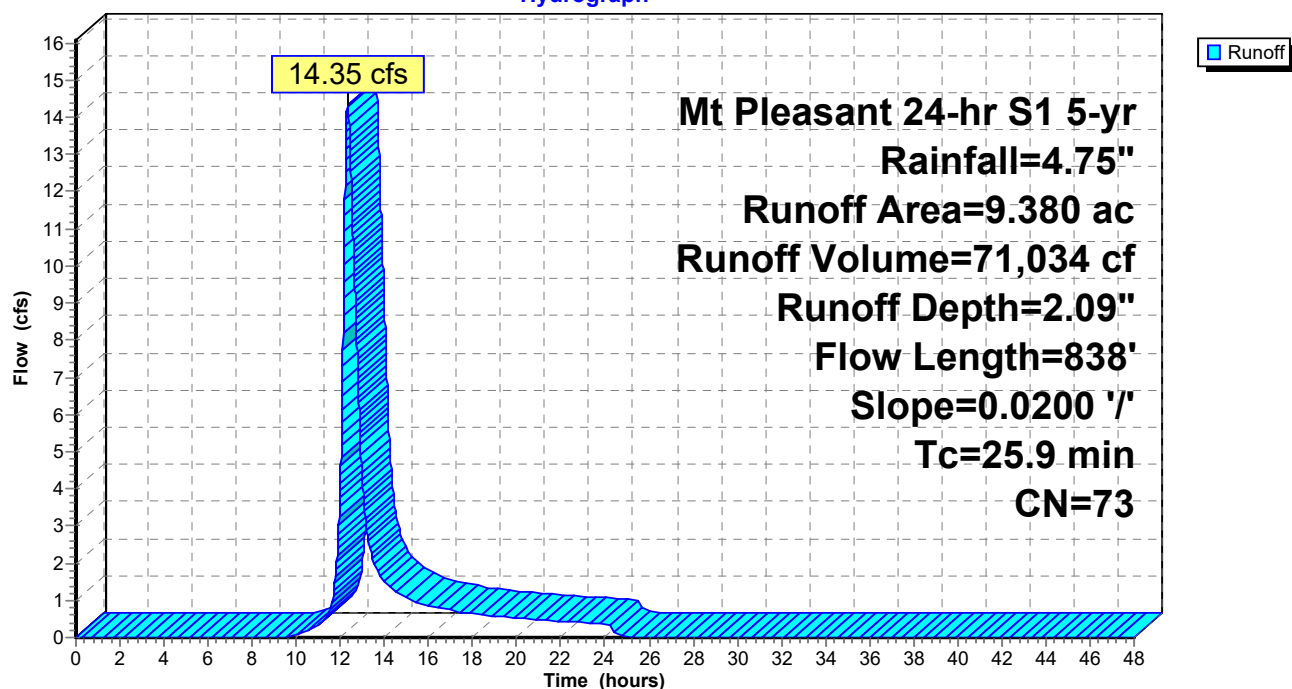
Mt Pleasant 24-hr S1 5-yr Rainfall=4.75"

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Subcatchment DA 3: BASIN 3 PRE DEVELOPMENT

Hydrograph



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Mt Pleasant 24-hr S1 5-yr Rainfall=4.75"

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Summary for Subcatchment DA 4: BASIN 4 PRE DEVELOPMENT

Runoff = 33.51 cfs @ 12.94 hrs, Volume= 279,135 cf, Depth= 1.85"
 Routed to Reach OF4 : Primary Stream for Outfalls

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
 Mt Pleasant 24-hr S1 5-yr Rainfall=4.75"

Area (ac)	CN	Description
7.300	78	Meadow, non-grazed, HSG D
1.830	79	Woods, Fair, HSG D
7.640	58	Meadow, non-grazed, HSG B
1.910	60	Woods, Fair, HSG B
4.150	73	Woods, Fair, HSG C
9.960	71	Meadow, non-grazed, HSG C
2.490	73	Woods, Fair, HSG C
4.970	71	Meadow, non-grazed, HSG C
1.250	73	Woods, Fair, HSG C
41.500	70	Weighted Average
41.500		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
24.5	100	0.0500	0.07		Sheet Flow, Woods: Dense underbrush n= 0.800 P2= 3.57"
43.6	2,368	0.0167	0.90		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
68.1	2,468	Total			

Subcatchment DA 4: BASIN 4 PRE DEVELOPMENT

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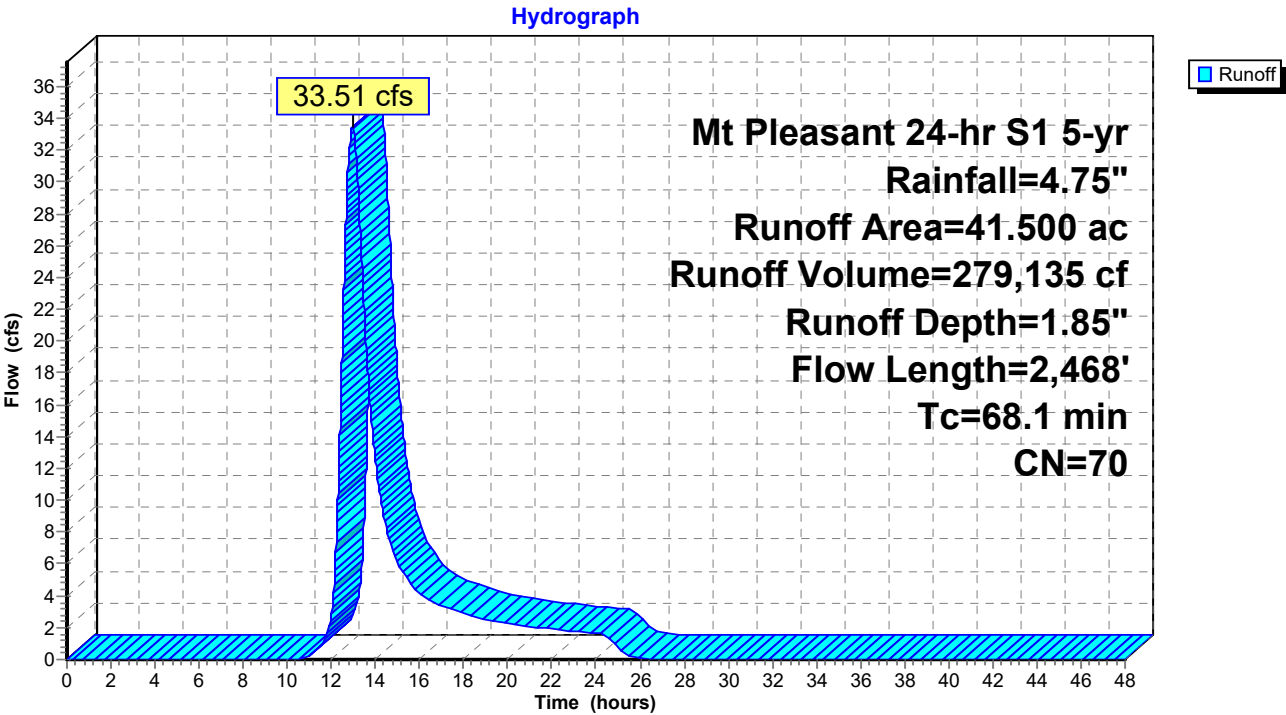
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Subcatchment DA 4: BASIN 4 PRE DEVELOPMENT



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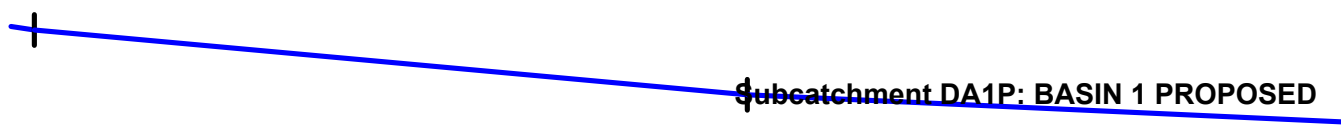
Summary for Subcatchment DA1P: BASIN 1 PROPOSED

Runoff = 85.33 cfs @ 13.83 hrs, Volume= 1,166,980 cf, Depth= 2.25"
Routed to Reach OF4P : Primary Stream for Outfalls

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Mt Pleasant 24-hr S1 5-yr Rainfall=4.75"

Area (ac)	CN	Description
69.500	74	>75% Grass cover, Good, HSG C
71.000	76	Woods/grass comb., Fair, HSG C
2.500	98	Paved parking, HSG C
143.000	75	Weighted Average
140.500		98.25% Pervious Area
2.500		1.75% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
35.4	100	0.0200	0.05		Sheet Flow, Woods: Dense underbrush n= 0.800 P2= 3.57"
92.8	3,050	0.0120	0.55		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
14.8	2,600	0.0060	2.93	11.71	Channel Flow, Area= 4.0 sf Perim= 6.0' r= 0.67' n= 0.030
143.0	5,750	Total			



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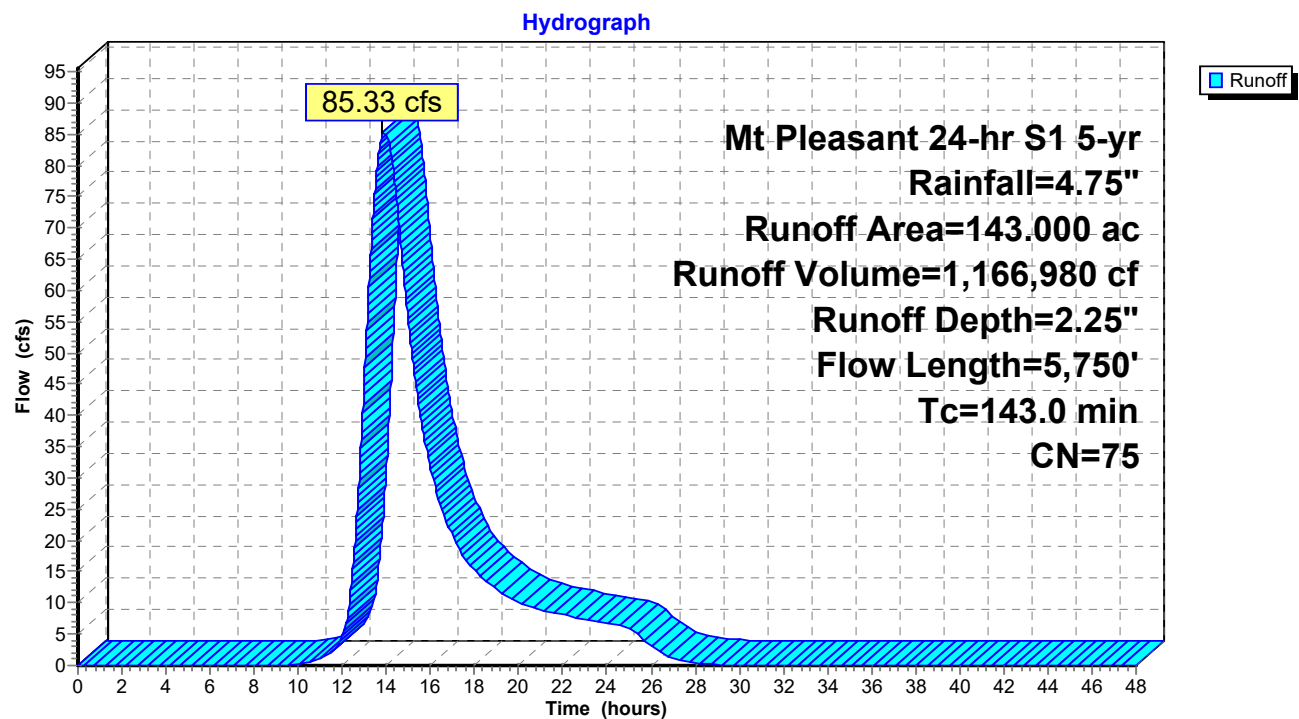
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Mt Pleasant 24-hr S1 5-yr Rainfall=4.75"

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Subcatchment DA1P: BASIN 1 PROPOSED



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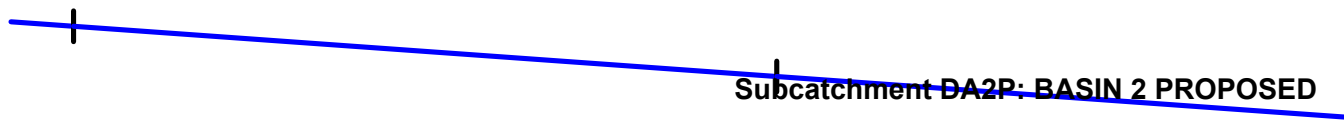
Summary for Subcatchment DA2P: BASIN 2 PROPOSED

Runoff = 19.26 cfs @ 12.94 hrs, Volume= 162,997 cf, Depth= 1.29"
Routed to Pond CD2 : Cross Drain

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Mt Pleasant 24-hr S1 5-yr Rainfall=4.75"

Area (ac)	CN	Description
17.450	58	Meadow, non-grazed, HSG B
14.450	60	Woods, Fair, HSG B
3.000	96	Gravel surface, HSG C
34.900	62	Weighted Average
34.900		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.2	100	0.0150	0.11		Sheet Flow, Grass: Dense n= 0.240 P2= 3.57"
21.9	1,125	0.0150	0.86		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
25.2	925	0.0150	0.61		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
62.3	2,150	Total			



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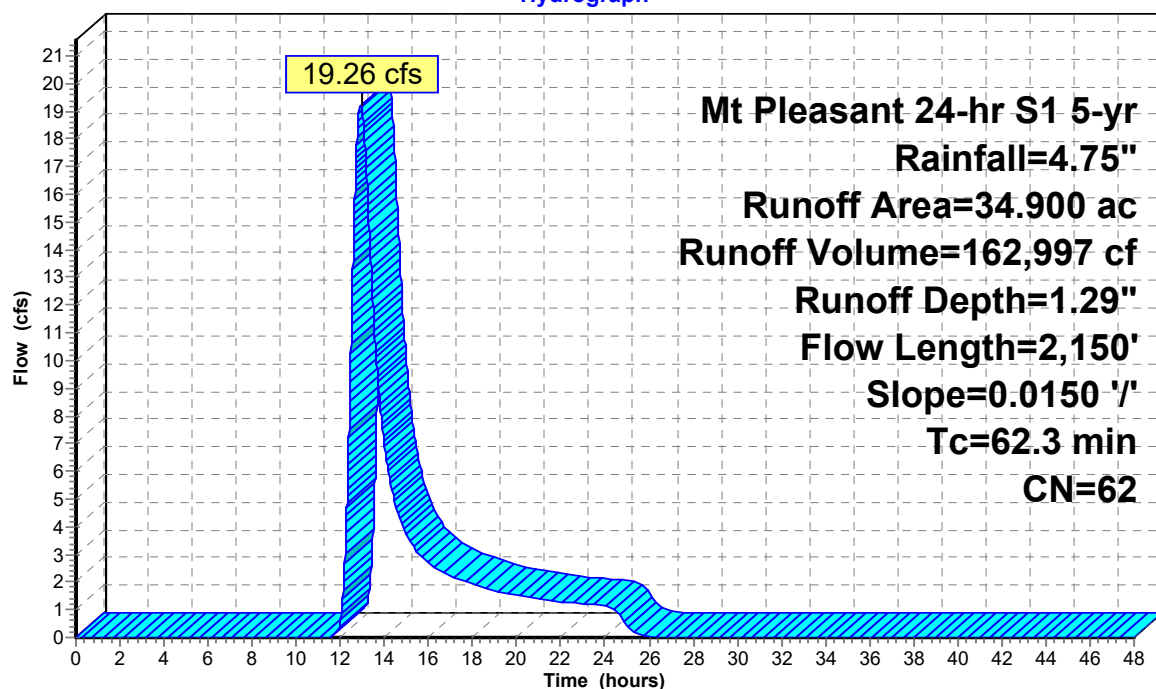
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Subcatchment DA2P: BASIN 2 PROPOSED

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Mt Pleasant 24-hr S1 5-yr Rainfall=4.75"

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Summary for Subcatchment DA3P: BASIN 3 PRE DEVELOPMENT

Runoff = 17.54 cfs @ 12.03 hrs, Volume= 44,712 cf, Depth= 2.59"
Routed to Reach OF4P : Primary Stream for Outfalls

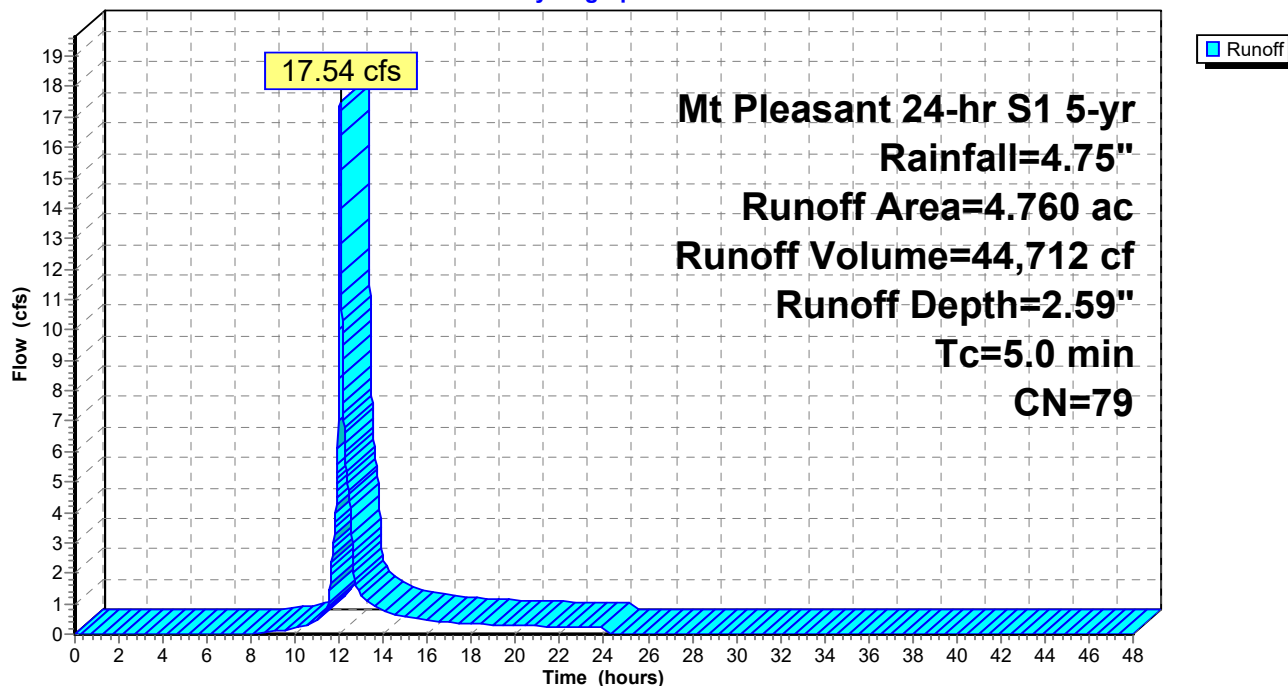
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Mt Pleasant 24-hr S1 5-yr Rainfall=4.75"

Area (ac)	CN	Description
4.760	79	Woods, Fair, HSG D
4.760		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					Direct Entry,

Subcatchment DA3P: BASIN 3 PRE DEVELOPMENT

Hydrograph



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Mt Pleasant 24-hr S1 5-yr Rainfall=4.75"

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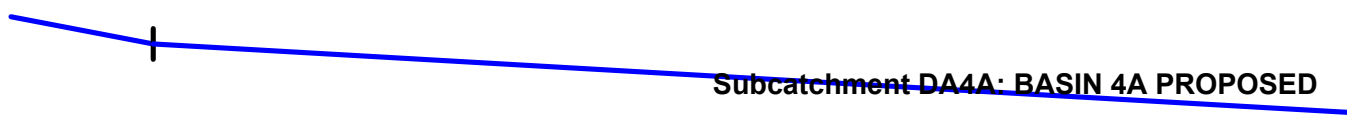
Summary for Subcatchment DA4A: BASIN 4A PROPOSED

Runoff = 5.38 cfs @ 12.59 hrs, Volume= 34,201 cf, Depth= 1.70"
Routed to Reach OF4P : Primary Stream for Outfalls

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Mt Pleasant 24-hr S1 5-yr Rainfall=4.75"

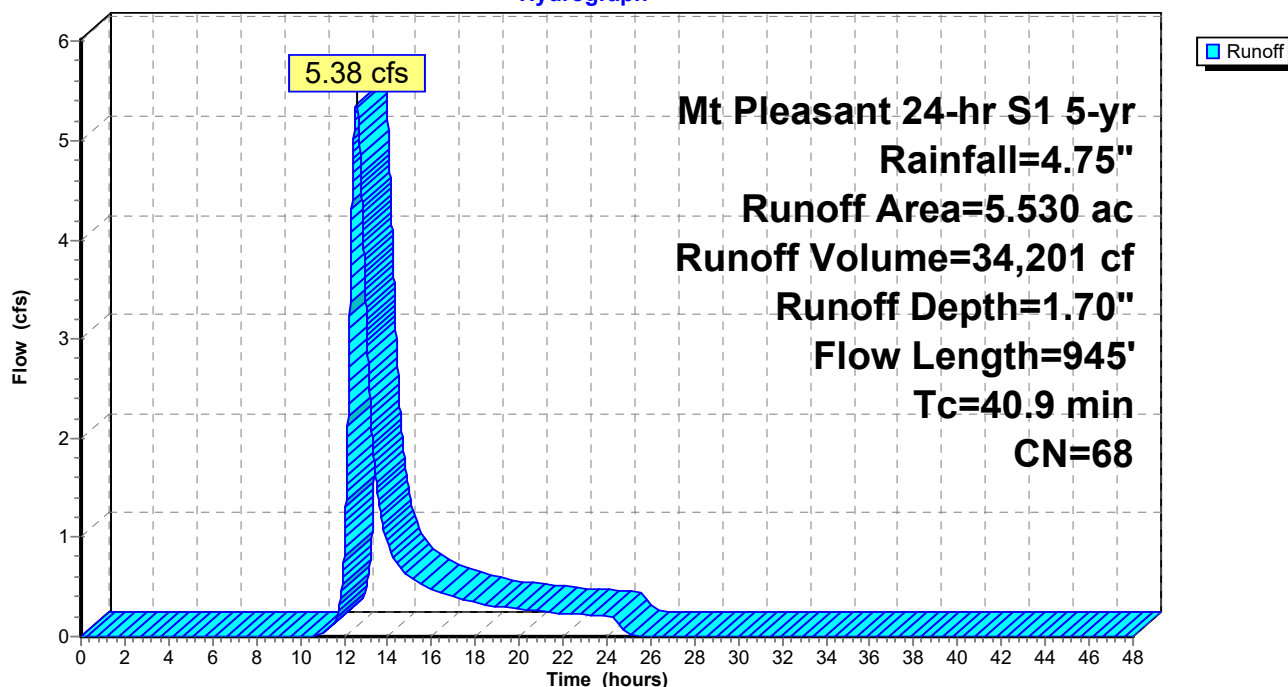
Area (ac)	CN	Description
2.200	60	Woods, Fair, HSG B
3.330	73	Woods, Fair, HSG C
5.530	68	Weighted Average
5.530		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
24.5	100	0.0500	0.07		Sheet Flow, Woods: Dense underbrush n= 0.800 P2= 3.57"
16.4	845	0.0150	0.86		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
40.9	945	Total			



Subcatchment DA4A: BASIN 4A PROPOSED

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Mt Pleasant 24-hr S1 5-yr Rainfall=4.75"

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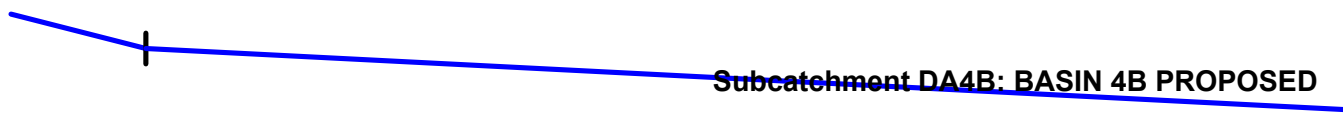
Summary for Subcatchment DA4B: BASIN 4B PROPOSED

Runoff = 32.22 cfs @ 12.40 hrs, Volume= 191,750 cf, Depth= 4.28"
Routed to Pond POND1P : PROP POND

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Mt Pleasant 24-hr S1 5-yr Rainfall=4.75"

Area (ac)	CN	Description
9.330	96	Gravel surface, HSG C
1.000	98	Paved parking, HSG D
2.000	98	Roofs, HSG D
12.330	96	Weighted Average
9.330		75.67% Pervious Area
3.000		24.33% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
24.5	100	0.0500	0.07		Sheet Flow, n= 0.800 P2= 3.57"
9.3	896	0.0100	1.61		Shallow Concentrated Flow, Unpaved Kv= 16.1 fps
33.8	996	Total			



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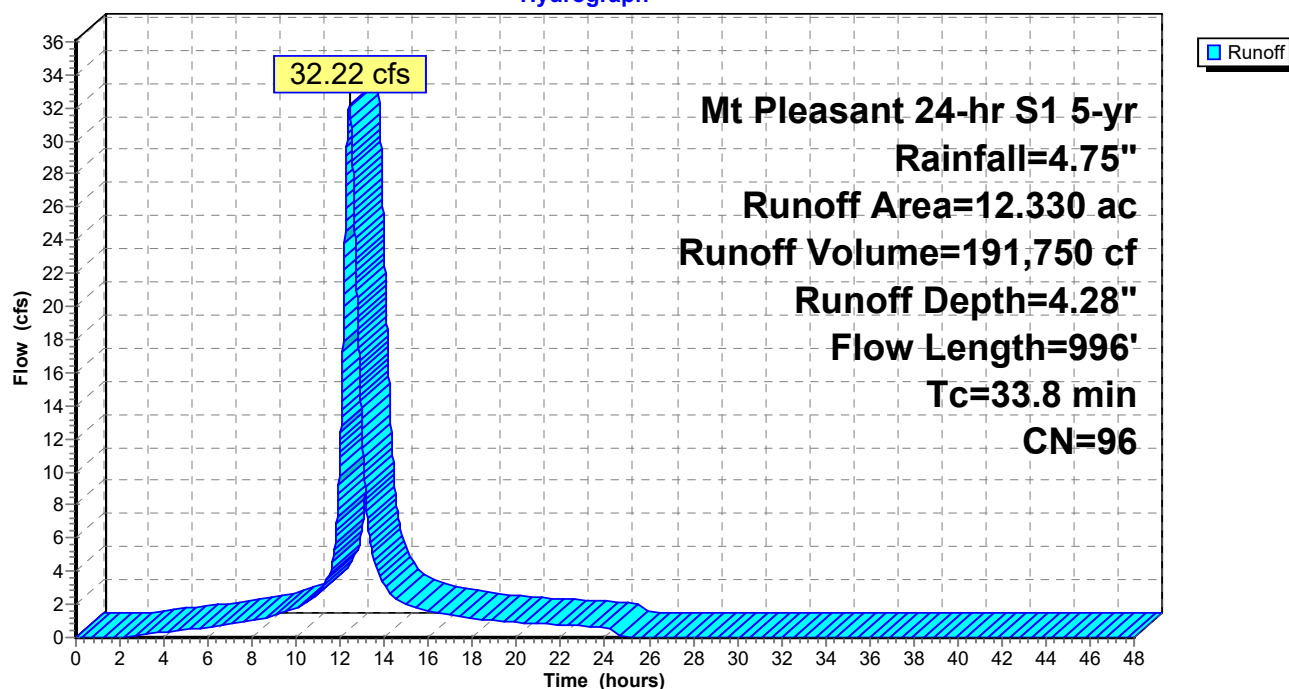
Mt Pleasant 24-hr S1 5-yr Rainfall=4.75"

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Subcatchment DA4B: BASIN 4B PROPOSED

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Summary for Subcatchment DA4C: BASIN 4C PROPOSED

Runoff = 3.82 cfs @ 12.03 hrs, Volume= 10,575 cf, Depth= 4.28"
Routed to Reach D4C : Ditch 4C

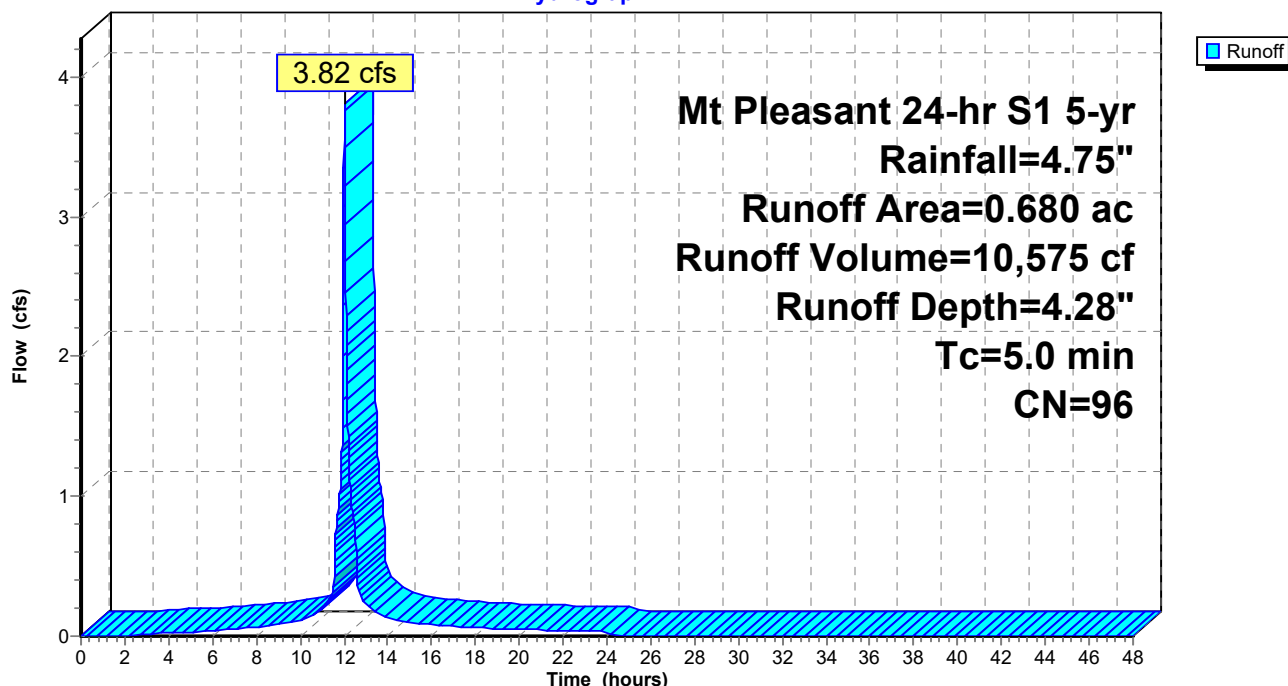
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Mt Pleasant 24-hr S1 5-yr Rainfall=4.75"

Area (ac)	CN	Description
0.680	96	Gravel surface, HSG C
0.680		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					Direct Entry,

Subcatchment DA4C: BASIN 4C PROPOSED

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Mt Pleasant 24-hr S1 5-yr Rainfall=4.75"

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Summary for Subcatchment DA4D: BASIN 4D PROPOSED

Runoff = 6.90 cfs @ 12.03 hrs, Volume= 19,128 cf, Depth= 4.28"
Routed to Reach D4D : Ditch 4D

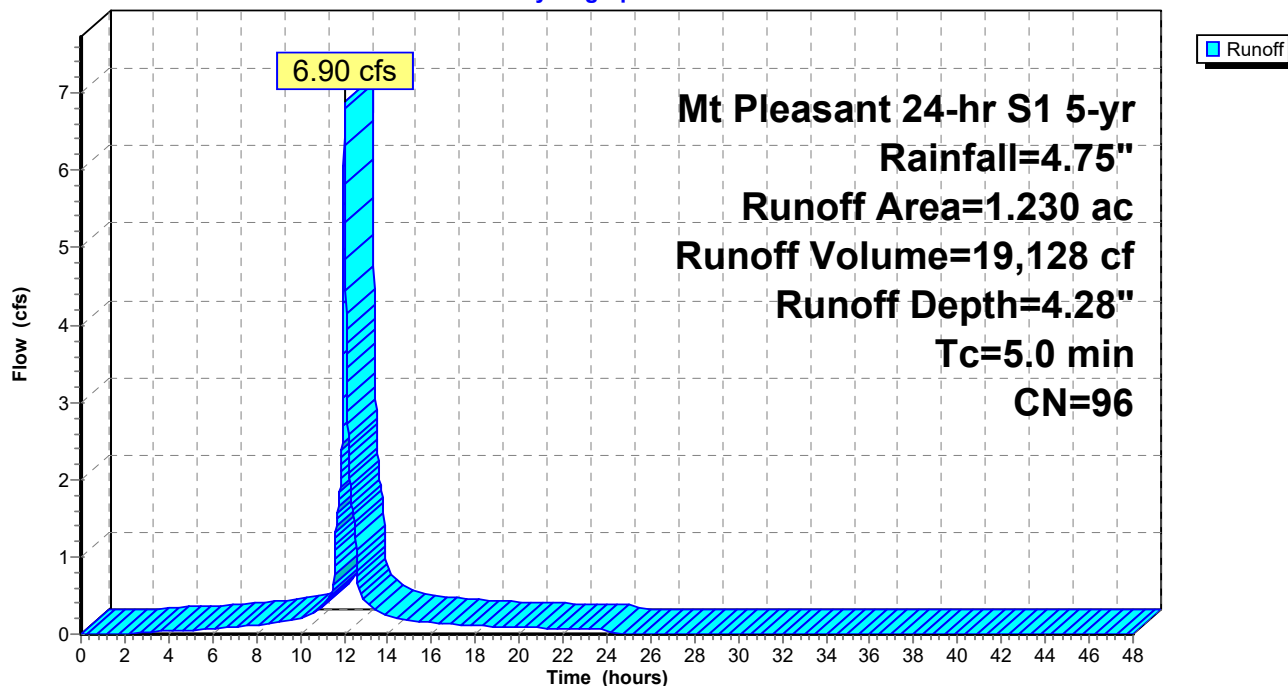
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Mt Pleasant 24-hr S1 5-yr Rainfall=4.75"

Area (ac)	CN	Description
1.230	96	Gravel surface, HSG C
1.230		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					Direct Entry,

Subcatchment DA4D: BASIN 4D PROPOSED

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Mt Pleasant 24-hr S1 5-yr Rainfall=4.75"

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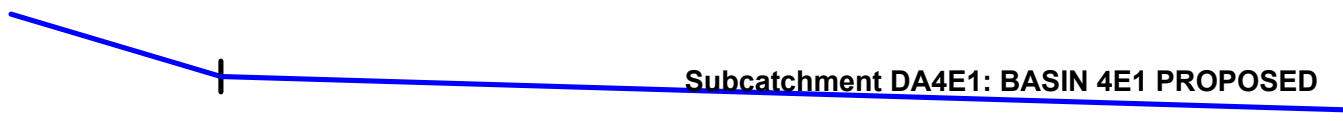
Summary for Subcatchment DA4E1: BASIN 4E1 PROPOSED

Runoff = 6.44 cfs @ 12.45 hrs, Volume= 37,438 cf, Depth= 1.42"
Routed to Reach D4E1 : Ditch 4E1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Mt Pleasant 24-hr S1 5-yr Rainfall=4.75"

Area (ac)	CN	Description
3.130	58	Meadow, non-grazed, HSG B
3.130	60	Woods, Fair, HSG B
1.000	98	Paved roads w/curbs & sewers, HSG B
7.260	64	Weighted Average
6.260		86.23% Pervious Area
1.000		13.77% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
18.6	100	0.1000	0.09		Sheet Flow, Woods: Dense underbrush n= 0.800 P2= 3.57"
12.9	540	0.0100	0.70		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
31.5	640	Total			



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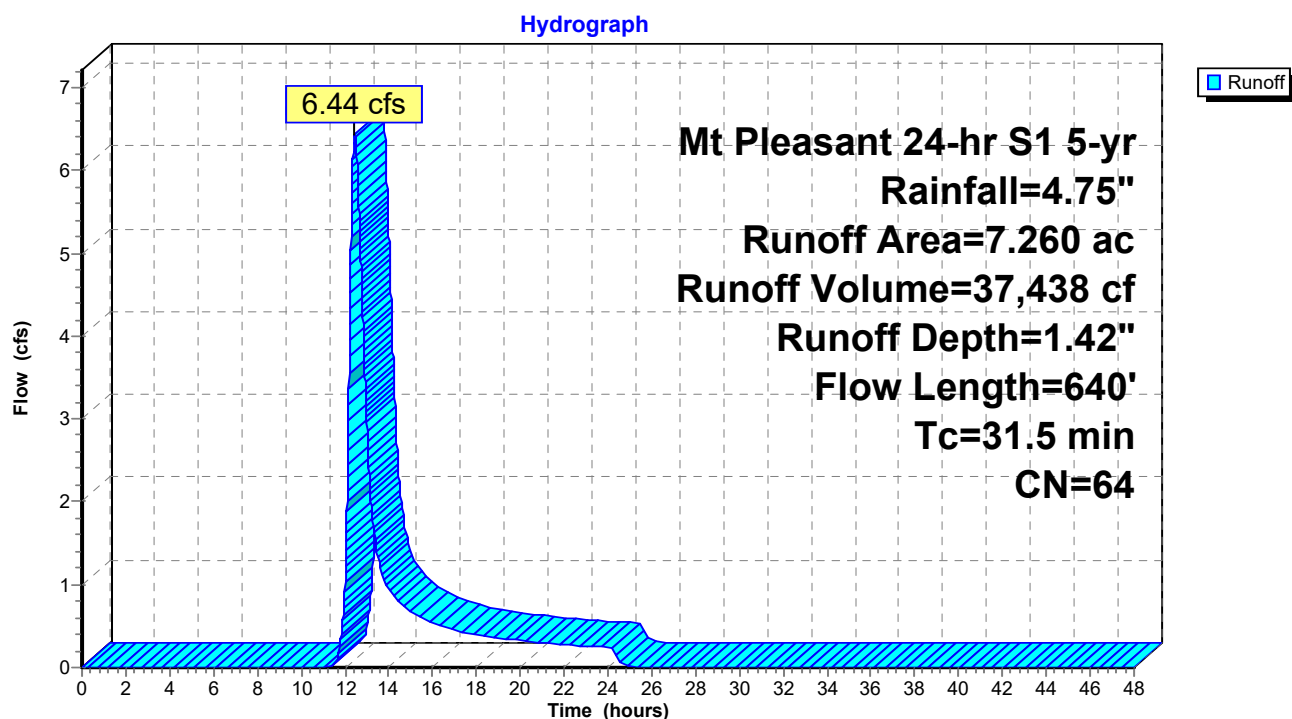
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Subcatchment DA4E1: BASIN 4E1 PROPOSED



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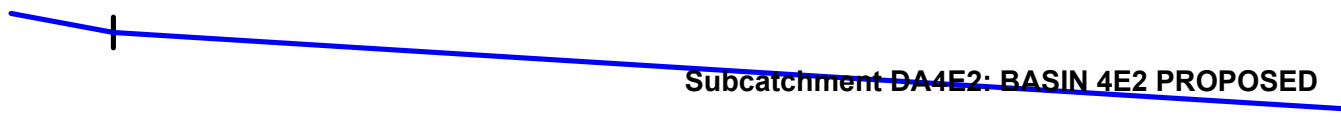
Summary for Subcatchment DA4E2: BASIN 4E2 PROPOSED

Runoff = 18.28 cfs @ 12.64 hrs, Volume= 123,771 cf, Depth= 1.78"
Routed to Pond CD4E : Cross Drain 4E

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Mt Pleasant 24-hr S1 5-yr Rainfall=4.75"

Area (ac)	CN	Description
9.300	79	Woods, Fair, HSG D
4.940	58	Meadow, non-grazed, HSG B
4.940	60	Woods, Fair, HSG B
19.180	69	Weighted Average
19.180		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
24.5	100	0.0500	0.07		Sheet Flow, Woods: Dense underbrush n= 0.800 P2= 3.57"
22.3	1,213	0.0167	0.90		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
46.8	1,313	Total			



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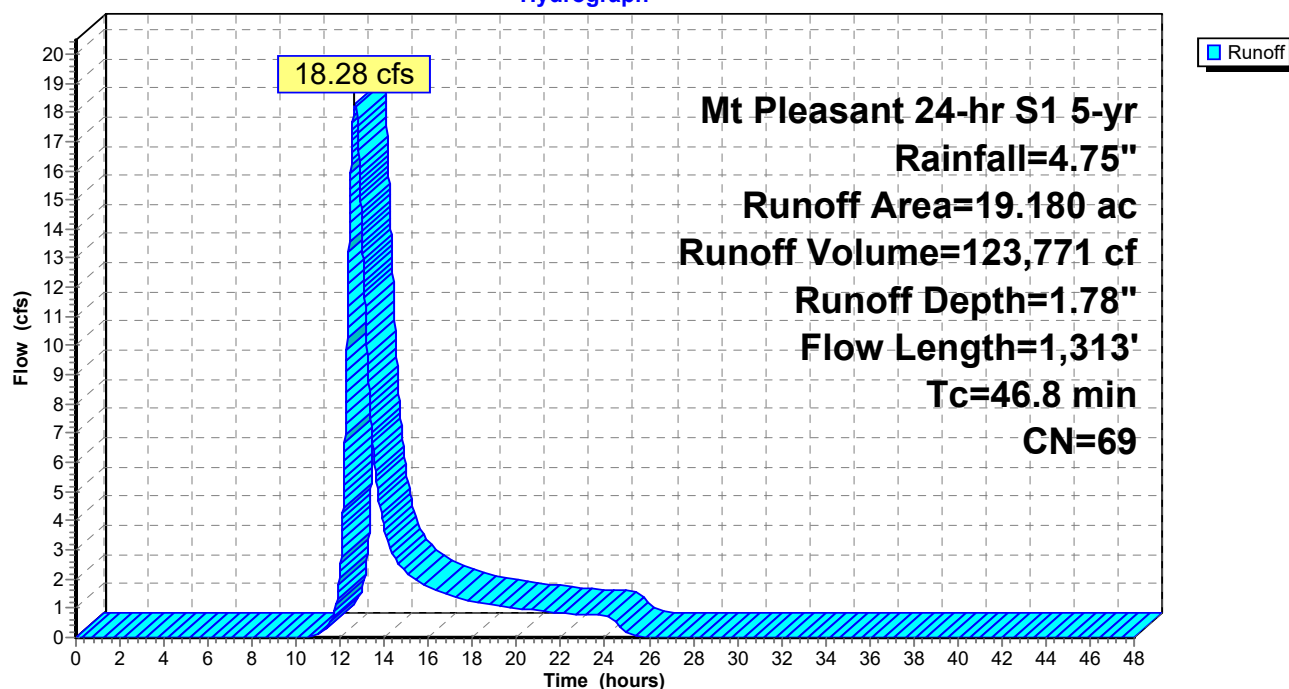
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Subcatchment DA4E2: BASIN 4E2 PROPOSED

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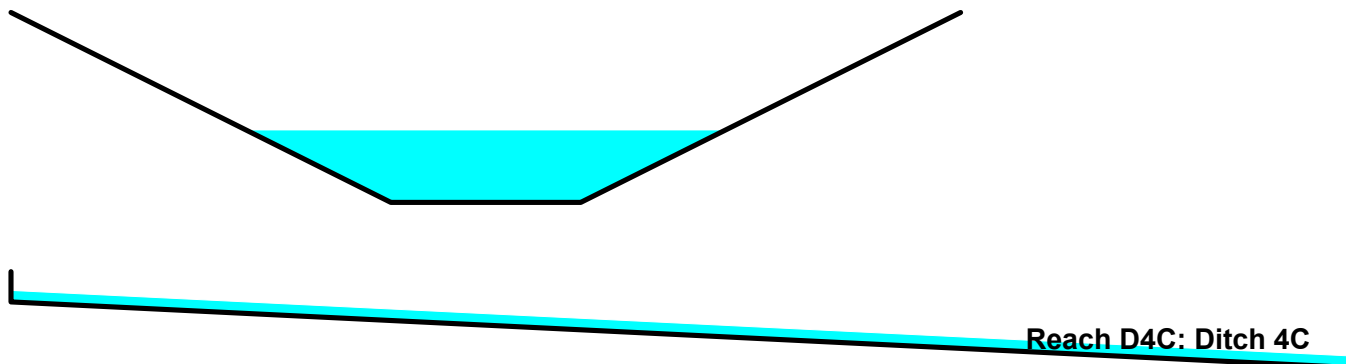
Summary for Reach D4C: Ditch 4C

Inflow Area = 29,621 sf, 0.00% Impervious, Inflow Depth = 4.28" for 5-yr event
 Inflow = 3.82 cfs @ 12.03 hrs, Volume= 10,575 cf
 Outflow = 3.55 cfs @ 12.05 hrs, Volume= 10,575 cf, Atten= 7%, Lag= 1.3 min
 Routed to Pond CD4C : Cross Drain 4C

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
 Max. Velocity= 2.37 fps, Min. Travel Time= 2.2 min
 Avg. Velocity = 0.66 fps, Avg. Travel Time= 7.9 min

Peak Storage= 469 cf @ 12.05 hrs
 Average Depth at Peak Storage= 0.57' , Surface Width= 3.77'
 Bank-Full Depth= 1.50' Flow Area= 6.8 sf, Capacity= 27.19 cfs

1.50' x 1.50' deep channel, n= 0.033 Riprap, 1-inch
 Side Slope Z-value= 2.0 '/' Top Width= 7.50'
 Length= 313.0' Slope= 0.0104 '/'
 Inlet Invert= 687.00', Outlet Invert= 683.75'



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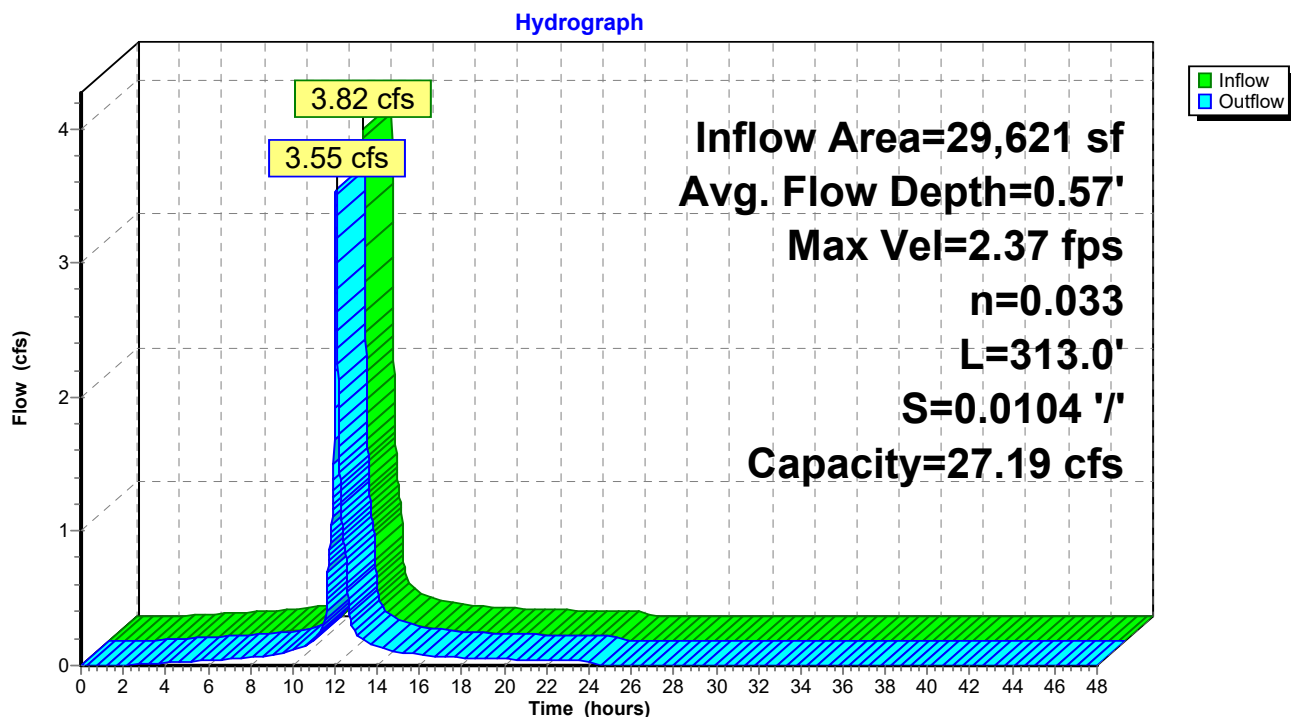
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Mt Pleasant 24-hr S1 5-yr Rainfall=4.75"

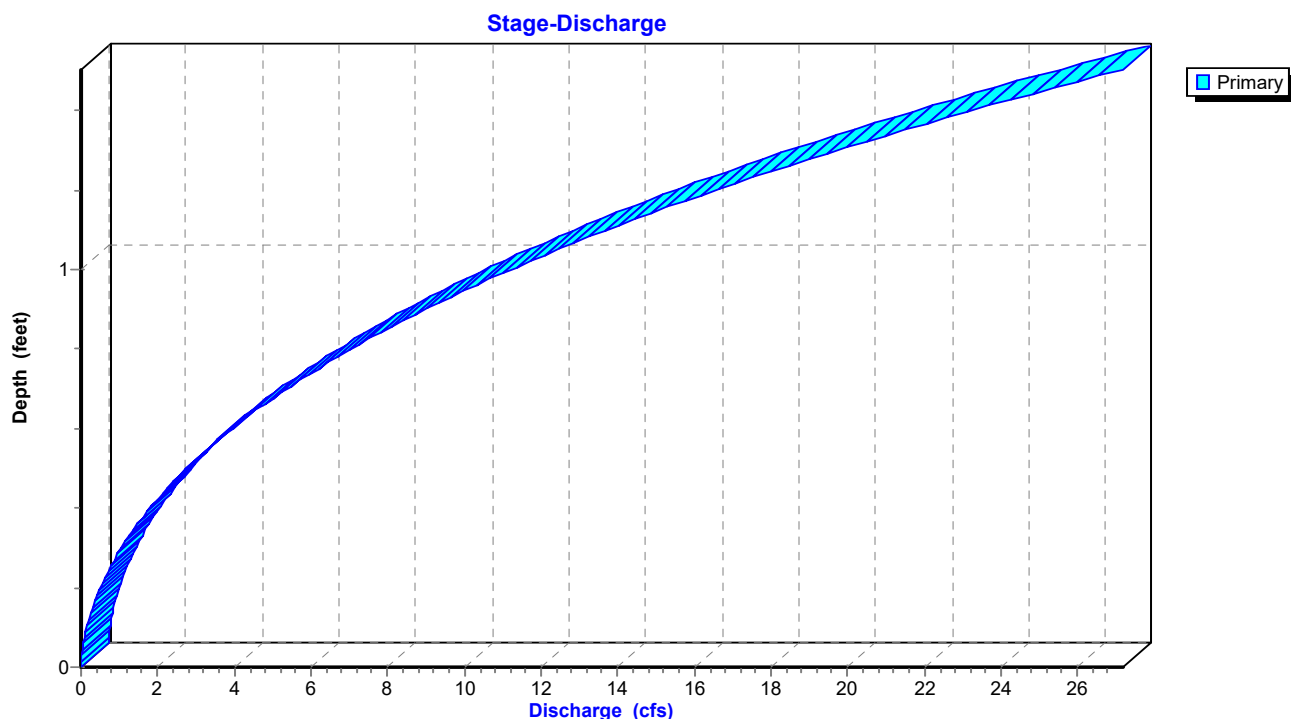
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Reach D4C: Ditch 4C



Reach D4C: Ditch 4C



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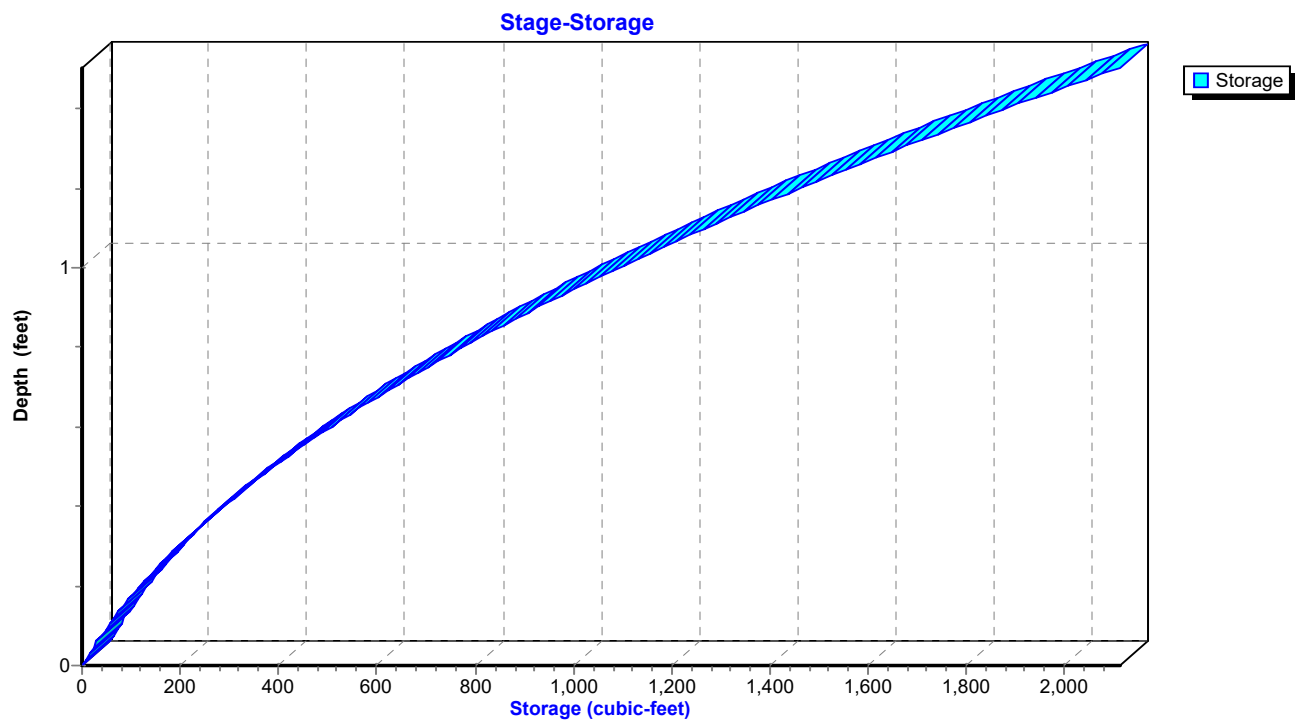
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Reach D4C: Ditch 4C



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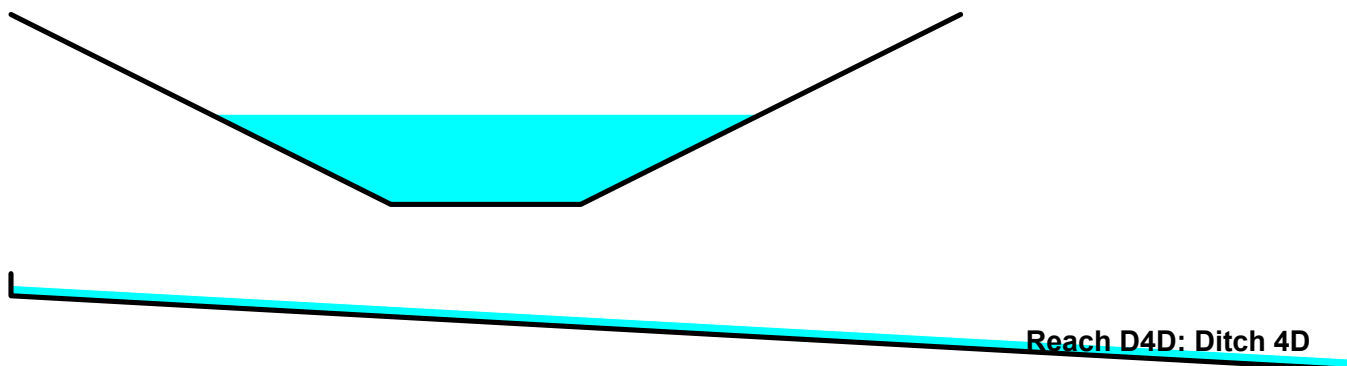
Summary for Reach D4D: Ditch 4D

Inflow Area = 53,579 sf, 0.00% Impervious, Inflow Depth = 4.28" for 5-yr event
 Inflow = 6.90 cfs @ 12.03 hrs, Volume= 19,128 cf
 Outflow = 6.57 cfs @ 12.04 hrs, Volume= 19,128 cf, Atten= 5%, Lag= 1.1 min
 Routed to Pond CD4DCE : Cross Drain 4DCE

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
 Max. Velocity= 3.18 fps, Min. Travel Time= 1.8 min
 Avg. Velocity = 0.91 fps, Avg. Travel Time= 6.2 min

Peak Storage= 695 cf @ 12.04 hrs
 Average Depth at Peak Storage= 0.71' , Surface Width= 4.33'
 Bank-Full Depth= 1.50' Flow Area= 6.8 sf, Capacity= 32.50 cfs

1.50' x 1.50' deep channel, n= 0.033 Riprap, 1-inch
 Side Slope Z-value= 2.0 '/' Top Width= 7.50'
 Length= 337.0' Slope= 0.0148 '/'
 Inlet Invert= 688.00', Outlet Invert= 683.00'



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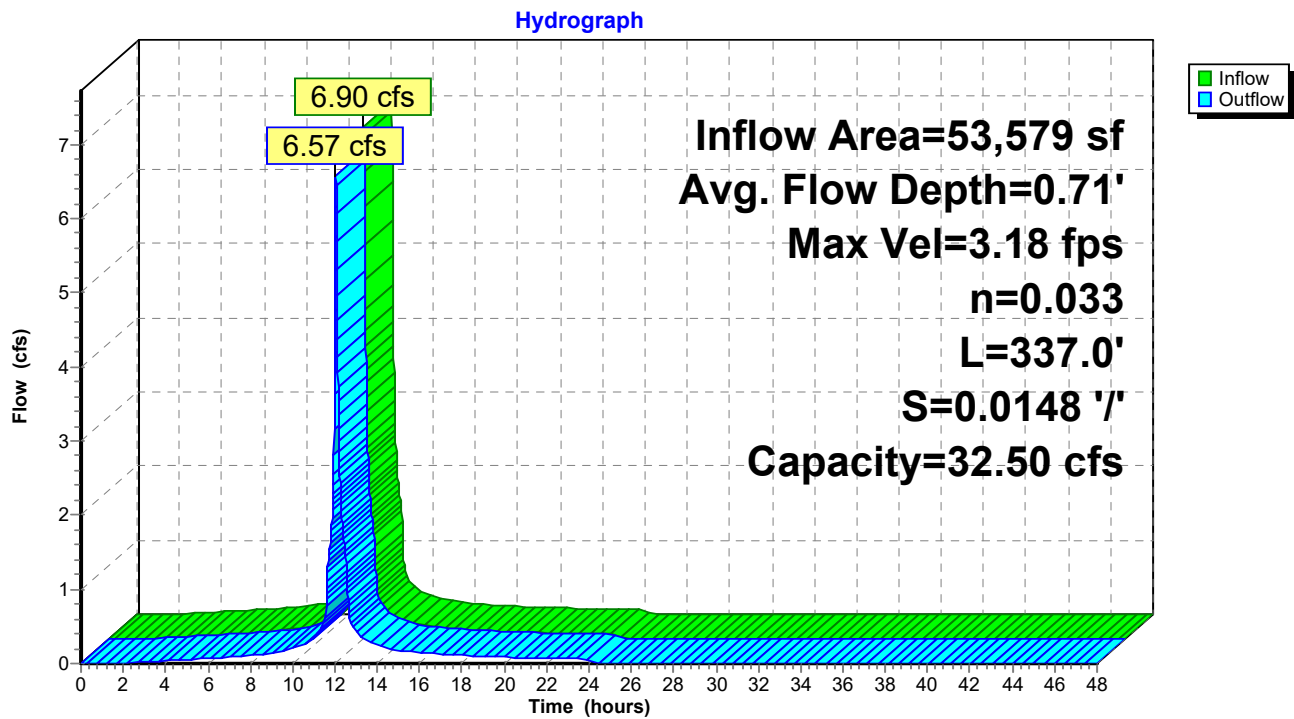
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Mt Pleasant 24-hr S1 5-yr Rainfall=4.75"

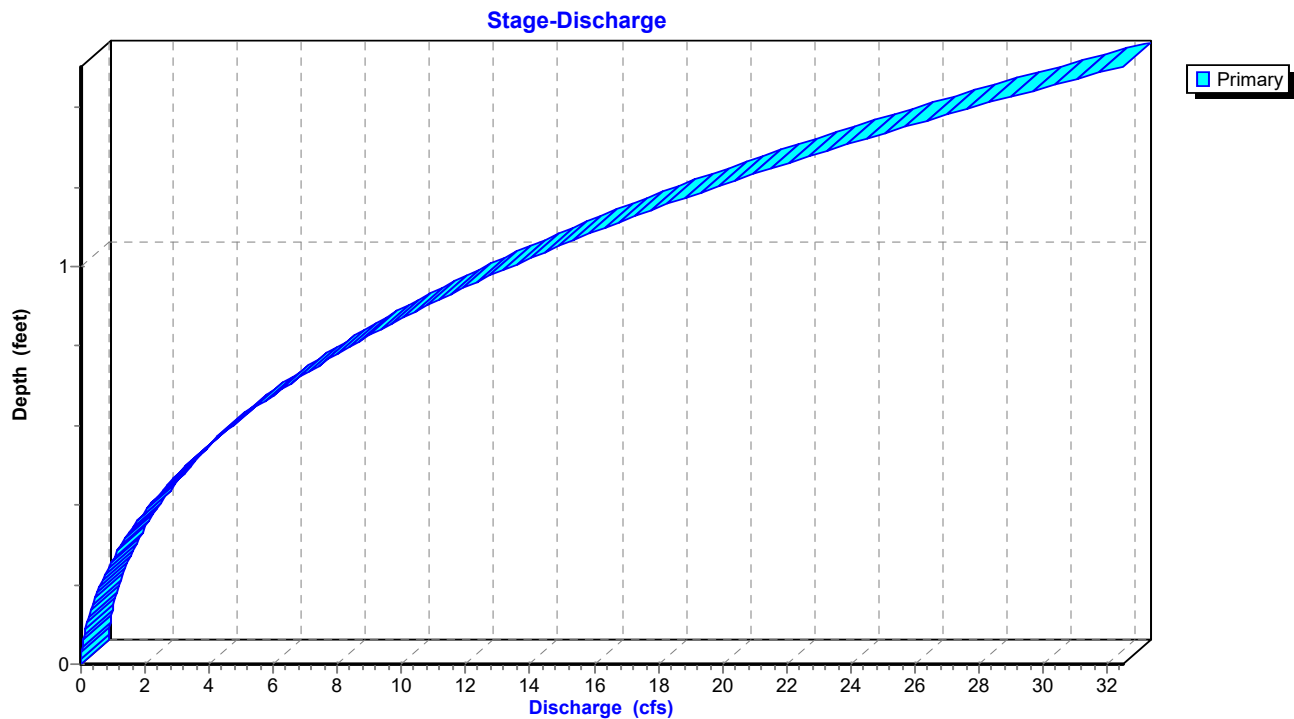
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Reach D4D: Ditch 4D



Reach D4D: Ditch 4D



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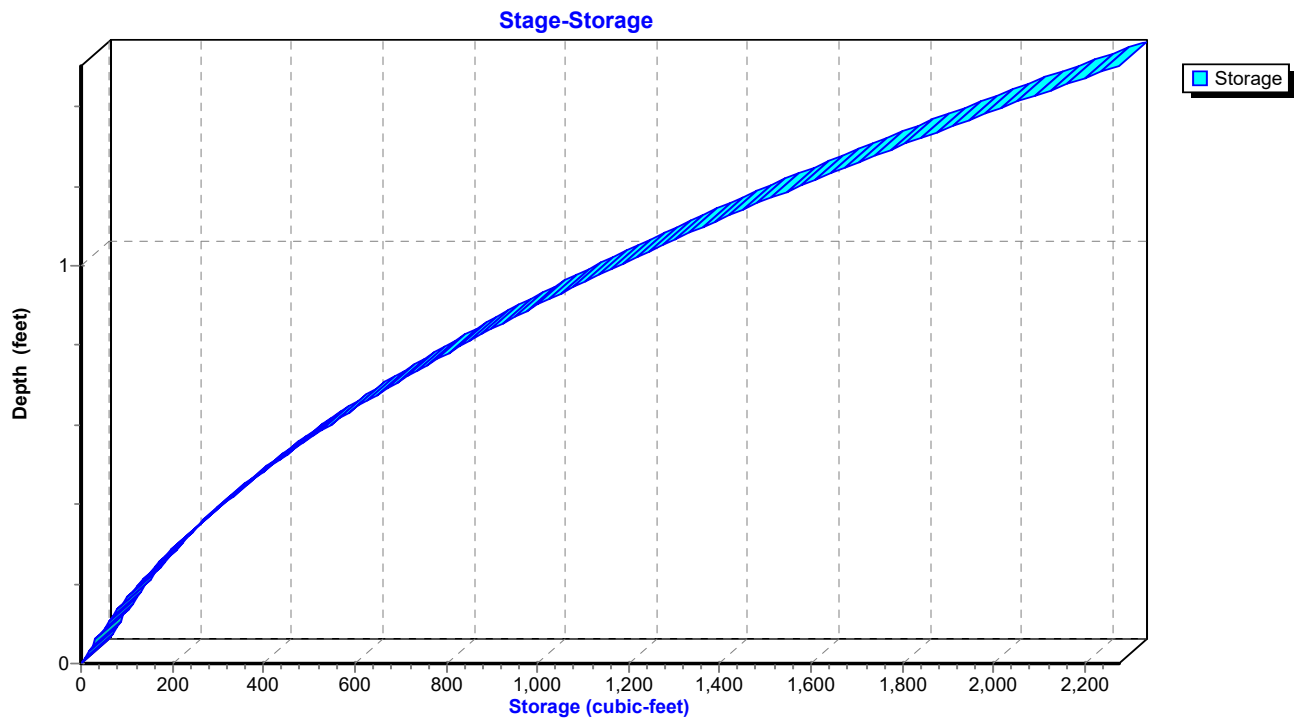
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Reach D4D: Ditch 4D



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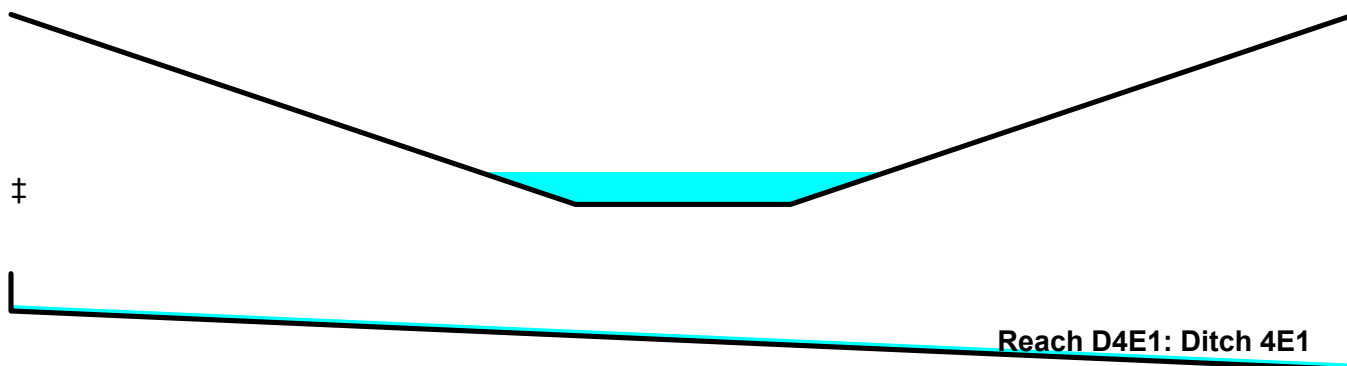
Summary for Reach D4E1: Ditch 4E1

Inflow Area = 316,246 sf, 13.77% Impervious, Inflow Depth = 1.42" for 5-yr event
 Inflow = 6.44 cfs @ 12.45 hrs, Volume= 37,438 cf
 Outflow = 4.99 cfs @ 12.72 hrs, Volume= 37,438 cf, Atten= 23%, Lag= 16.4 min
 Routed to Pond CD4E : Cross Drain 4E

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
 Max. Velocity= 1.45 fps, Min. Travel Time= 20.5 min
 Avg. Velocity= 0.47 fps, Avg. Travel Time= 63.1 min

Peak Storage= 6,143 cf @ 12.72 hrs
 Average Depth at Peak Storage= 0.59' , Surface Width= 7.57'
 Bank-Full Depth= 3.50' Flow Area= 50.8 sf, Capacity= 197.27 cfs

4.00' x 3.50' deep channel, n= 0.033 Riprap, 1-inch
 Side Slope Z-value= 3.0 '/' Top Width= 25.00'
 Length= 1,788.0' Slope= 0.0031 '/'
 Inlet Invert= 685.00', Outlet Invert= 679.50'



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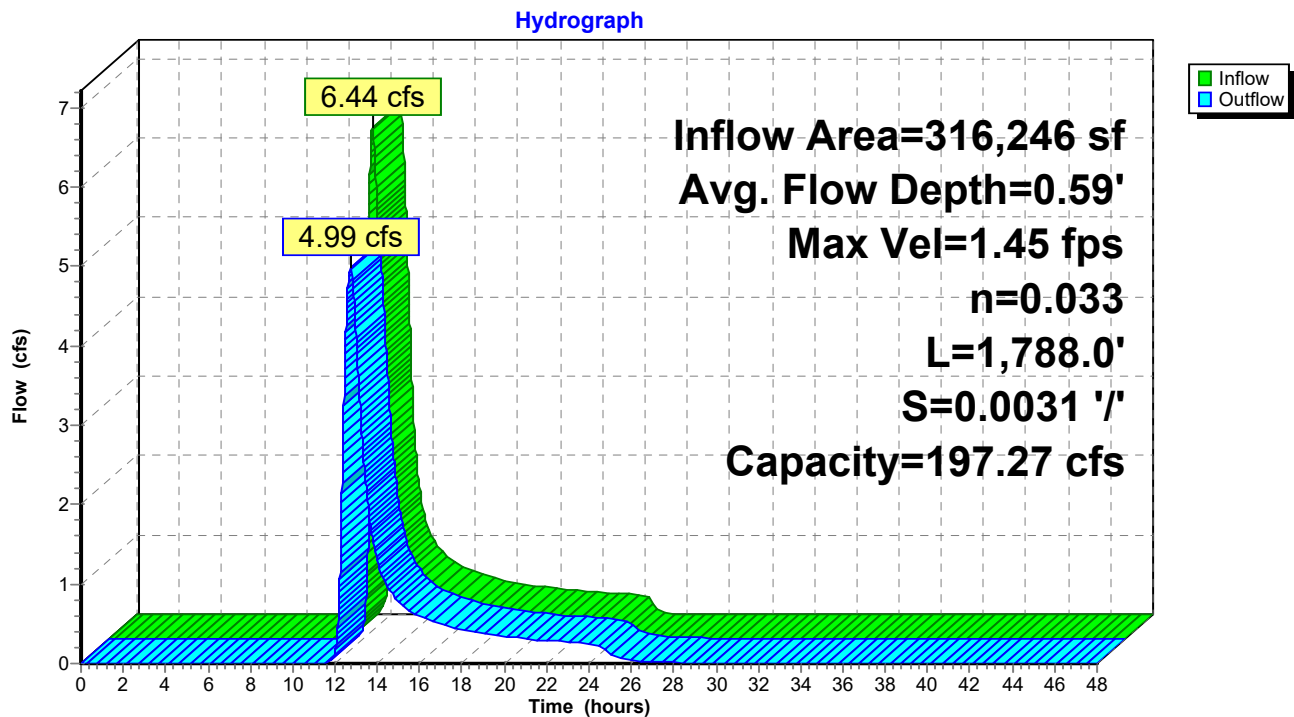
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Mt Pleasant 24-hr S1 5-yr Rainfall=4.75"

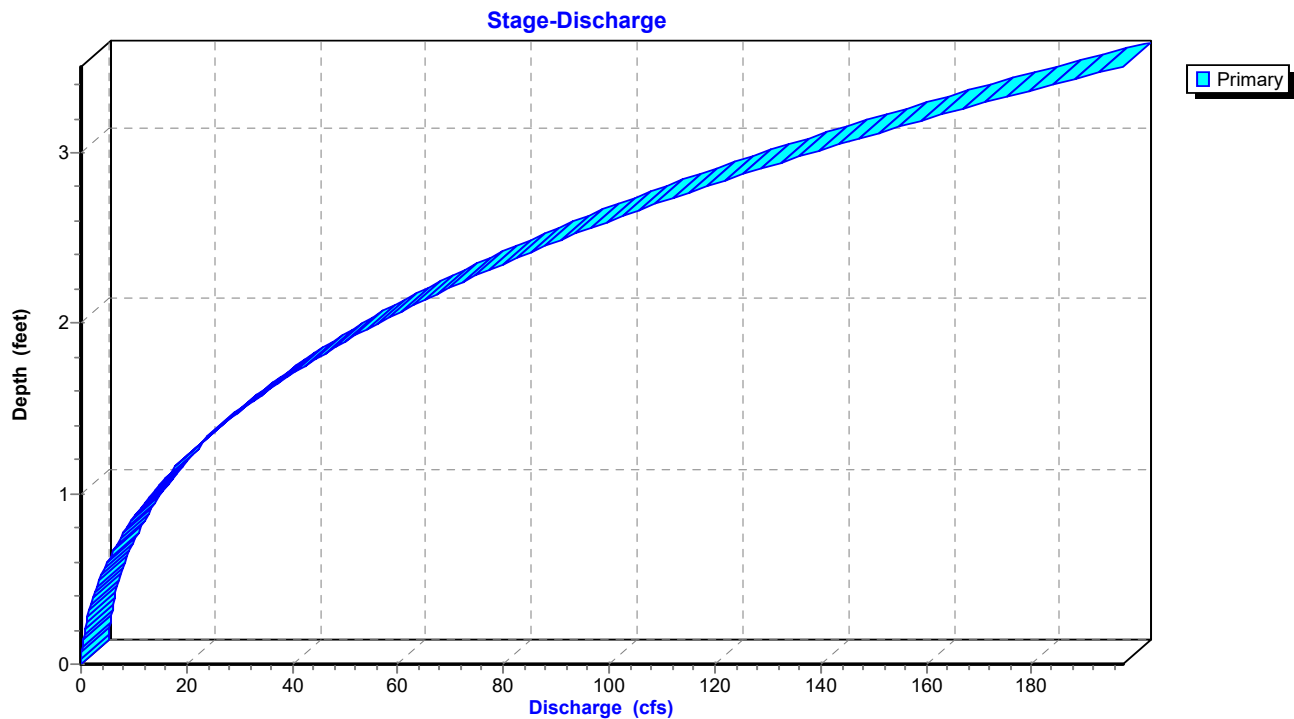
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Reach D4E1: Ditch 4E1



Reach D4E1: Ditch 4E1



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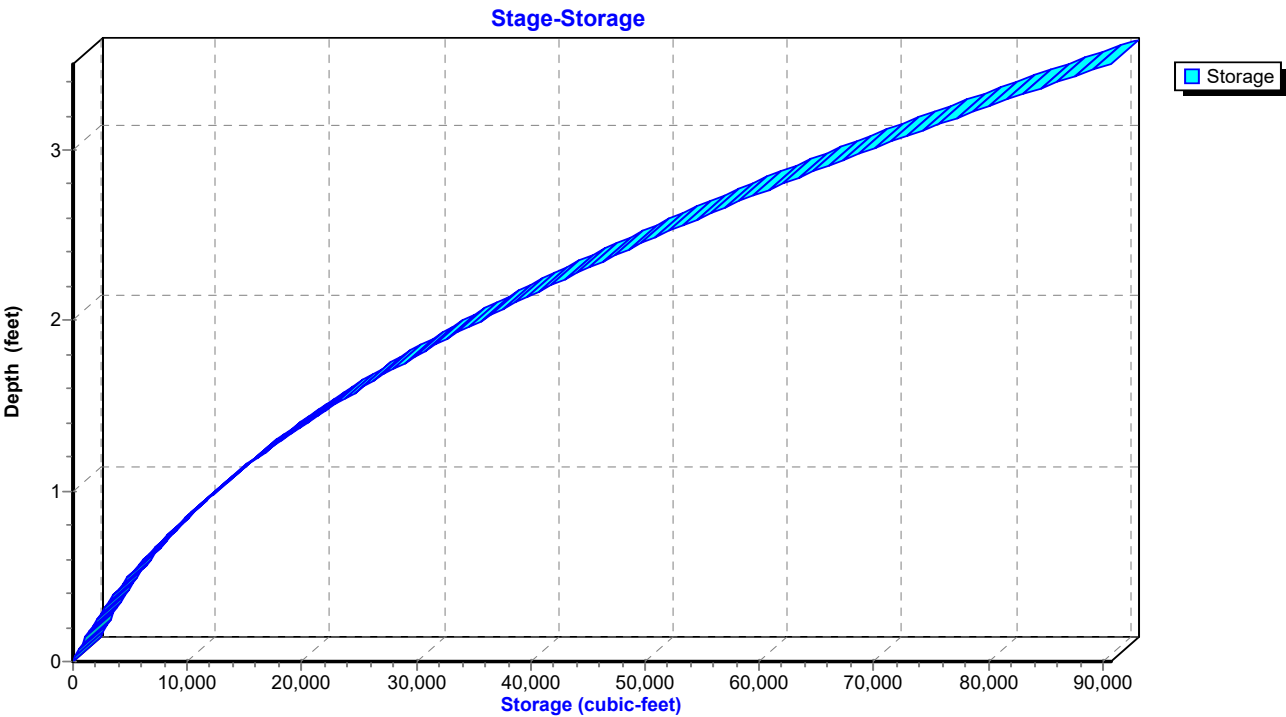
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Reach D4E1: Ditch 4E1



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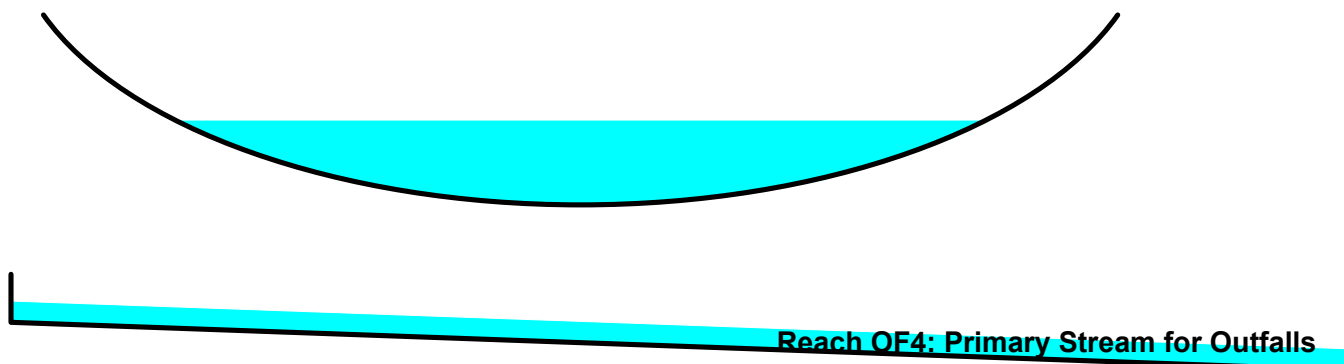
Summary for Reach OF4: Primary Stream for Outfalls

Inflow Area = 9,965,657 sf, 1.09% Impervious, Inflow Depth = 2.02" for 5-yr event
 Inflow = 112.82 cfs @ 13.51 hrs, Volume= 1,680,146 cf
 Outflow = 112.58 cfs @ 13.53 hrs, Volume= 1,680,146 cf, Atten= 0%, Lag= 1.7 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
 Max. Velocity= 3.81 fps, Min. Travel Time= 4.4 min
 Avg. Velocity = 1.47 fps, Avg. Travel Time= 11.4 min

Peak Storage= 29,515 cf @ 13.53 hrs
 Average Depth at Peak Storage= 2.22' , Surface Width= 19.97'
 Bank-Full Depth= 5.00' Flow Area= 100.0 sf, Capacity= 640.46 cfs

30.00' x 5.00' deep Parabolic Channel, n= 0.035
 Length= 1,000.0' Slope= 0.0050 '/'
 Inlet Invert= 675.00', Outlet Invert= 670.00'



TrueRail 040226

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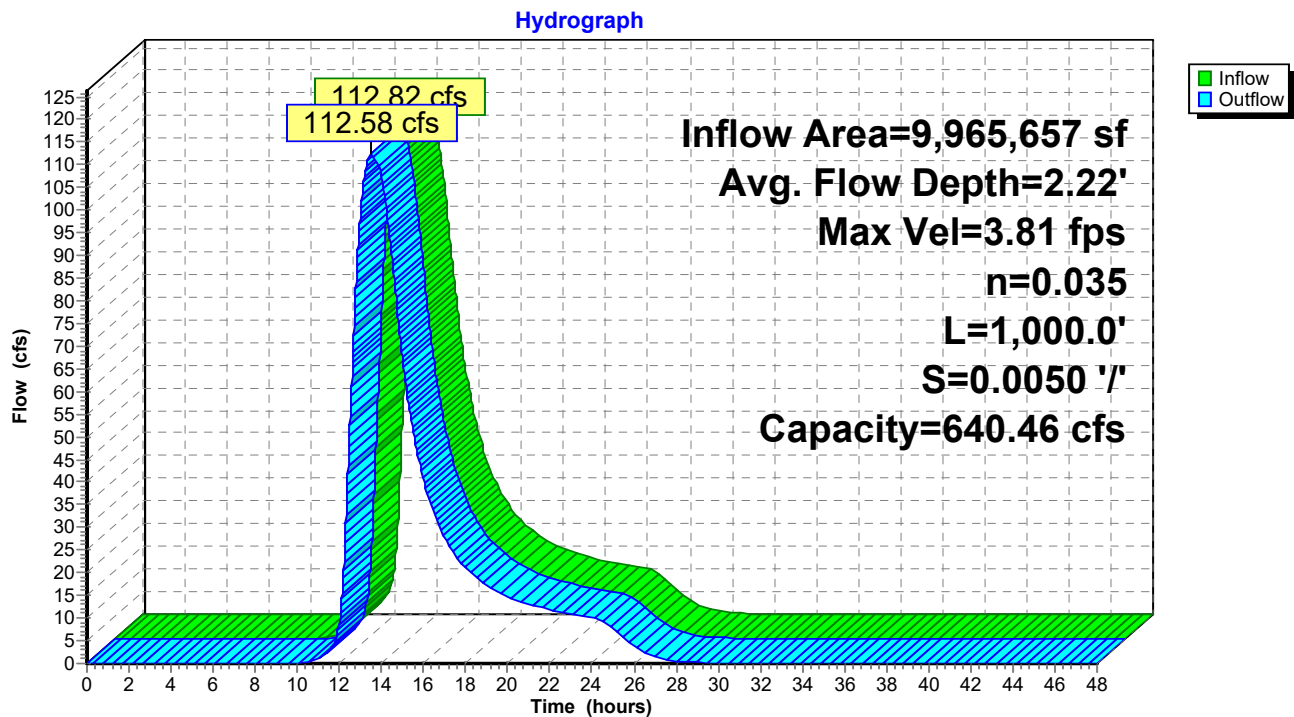
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Mt Pleasant 24-hr S1 5-yr Rainfall=4.75"

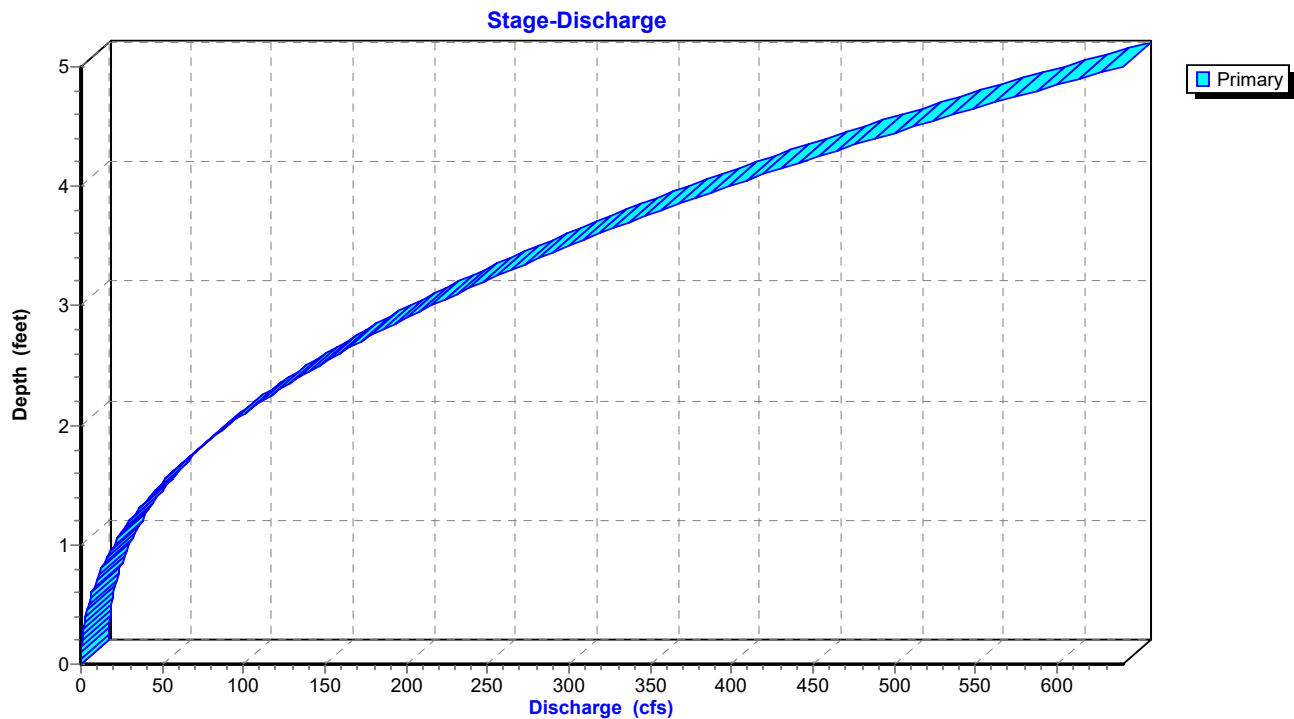
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Reach OF4: Primary Stream for Outfalls



Reach OF4: Primary Stream for Outfalls



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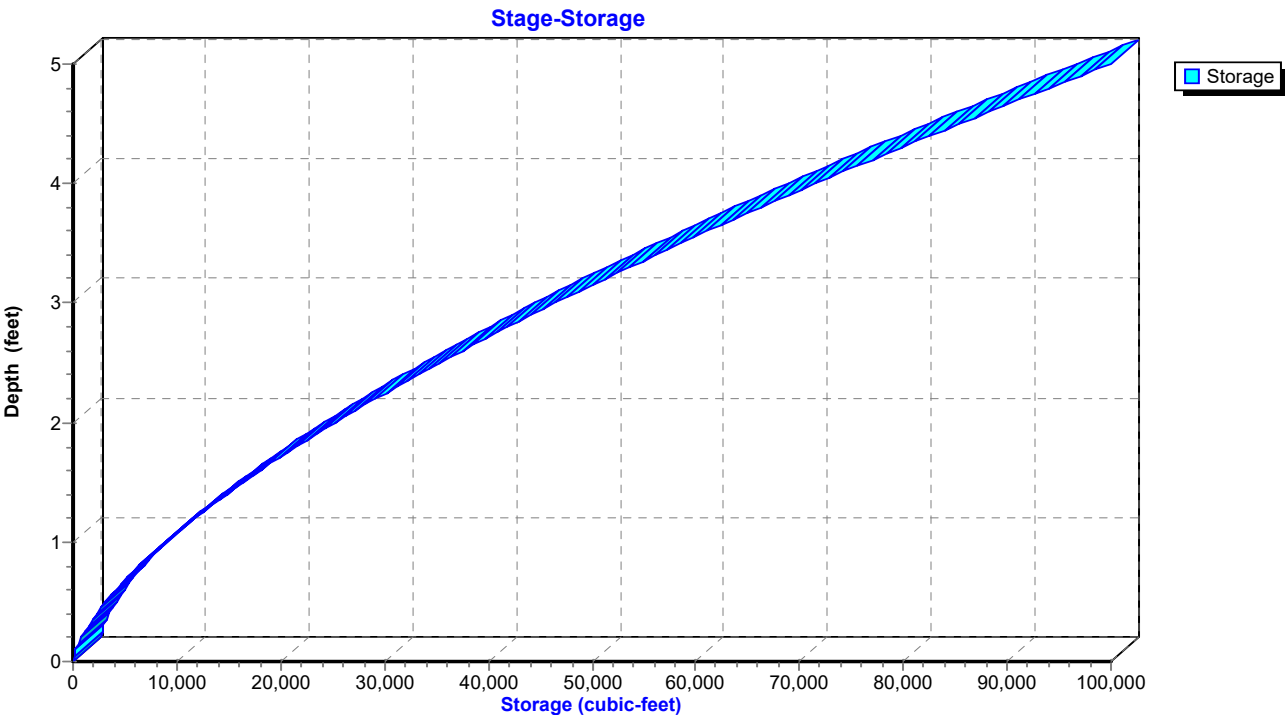
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Mt Pleasant 24-hr S1 5-yr Rainfall=4.75"

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Reach OF4: Primary Stream for Outfalls



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Mt Pleasant 24-hr S1 5-yr Rainfall=4.75"

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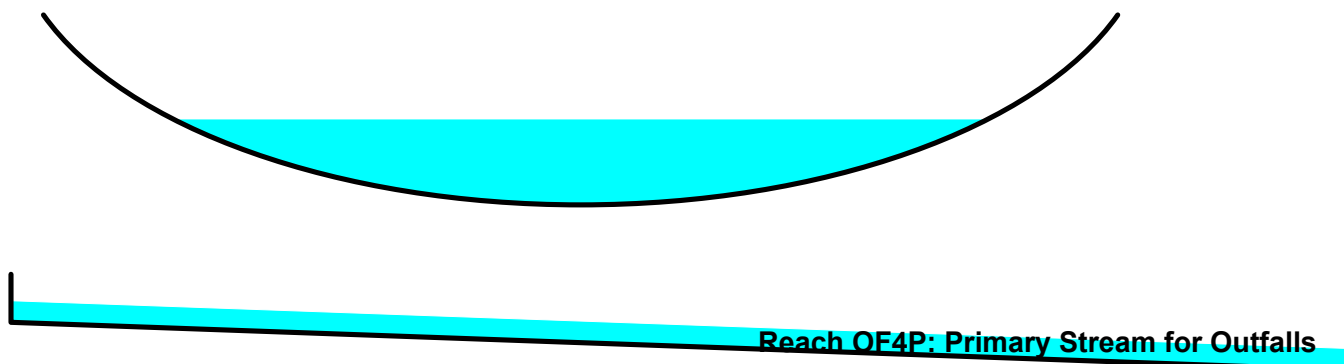
Summary for Reach OF4P: Primary Stream for Outfalls

Inflow Area = 9,969,577 sf, 2.84% Impervious, Inflow Depth = 2.16" for 5-yr event
 Inflow = 115.76 cfs @ 13.67 hrs, Volume= 1,791,545 cf
 Outflow = 115.59 cfs @ 13.77 hrs, Volume= 1,791,544 cf, Atten= 0%, Lag= 5.8 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
 Max. Velocity= 3.84 fps, Min. Travel Time= 4.3 min
 Avg. Velocity = 1.15 fps, Avg. Travel Time= 14.6 min

Peak Storage= 30,066 cf @ 13.77 hrs
 Average Depth at Peak Storage= 2.24' , Surface Width= 20.10'
 Bank-Full Depth= 5.00' Flow Area= 100.0 sf, Capacity= 640.46 cfs

30.00' x 5.00' deep Parabolic Channel, n= 0.035
 Length= 1,000.0' Slope= 0.0050 '/'
 Inlet Invert= 675.00', Outlet Invert= 670.00'



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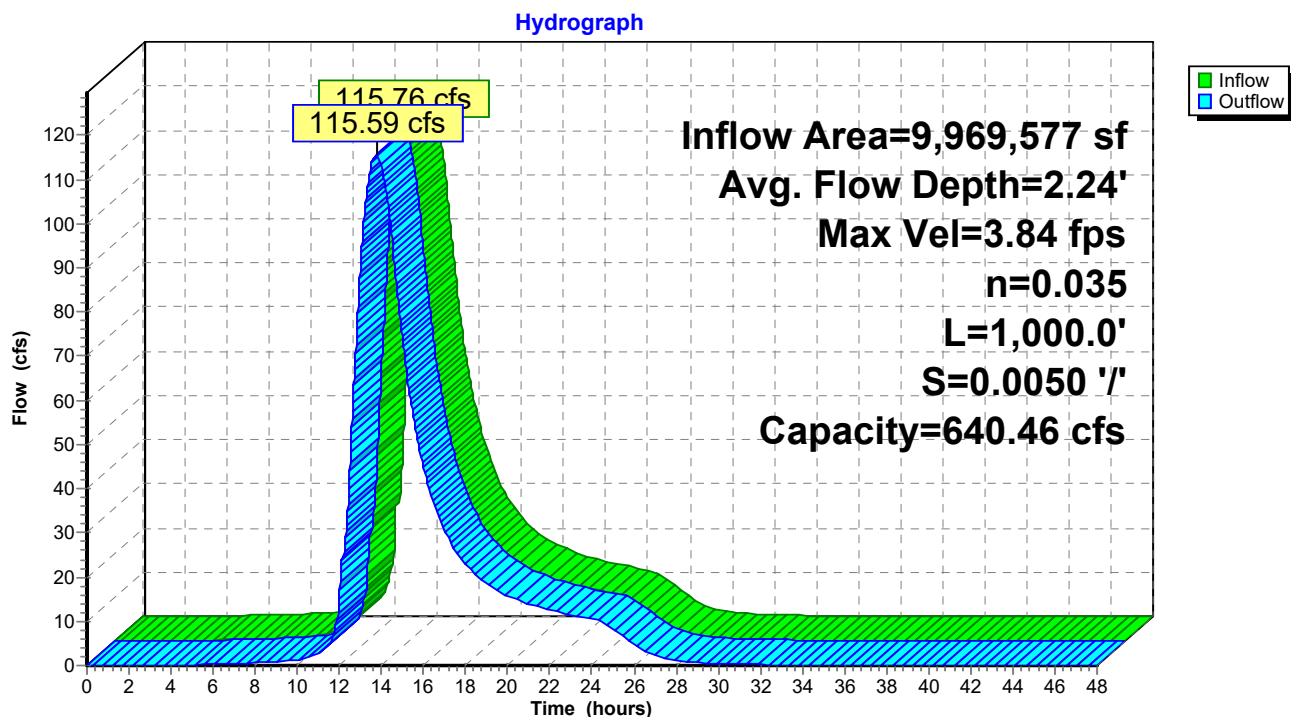
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Mt Pleasant 24-hr S1 5-yr Rainfall=4.75"

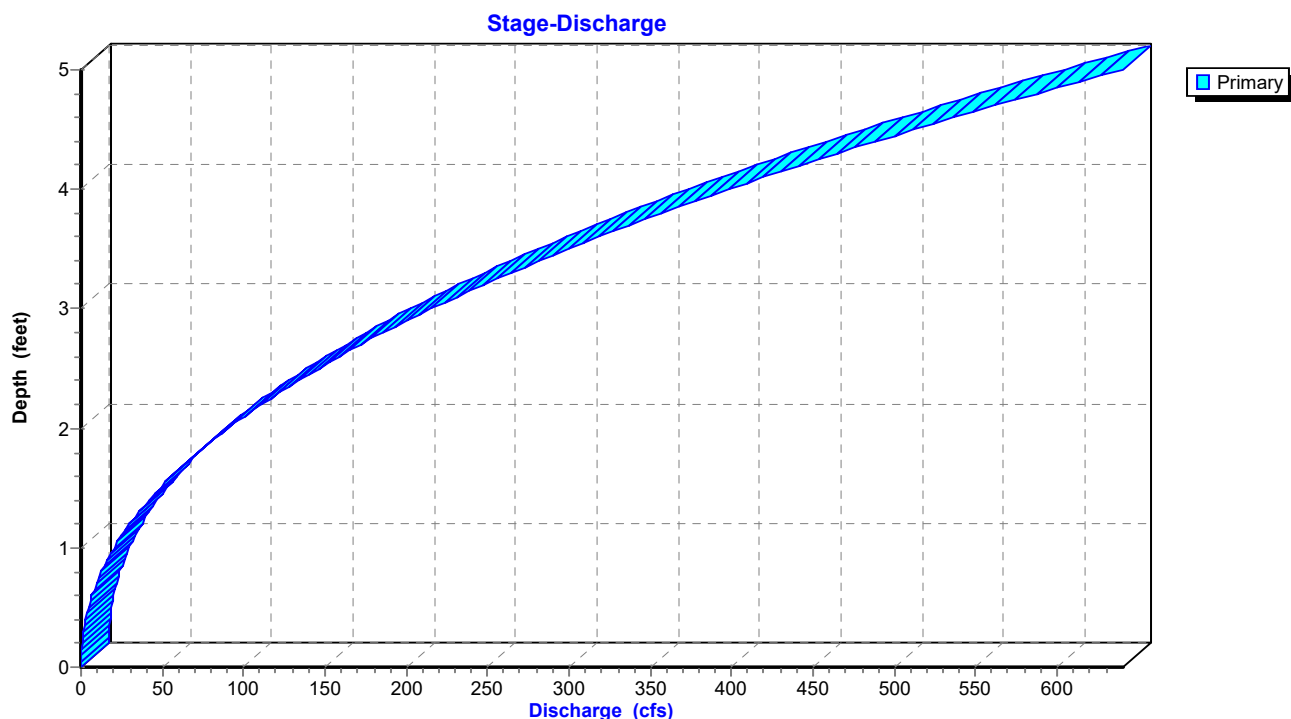
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Reach OF4P: Primary Stream for Outfalls



Reach OF4P: Primary Stream for Outfalls



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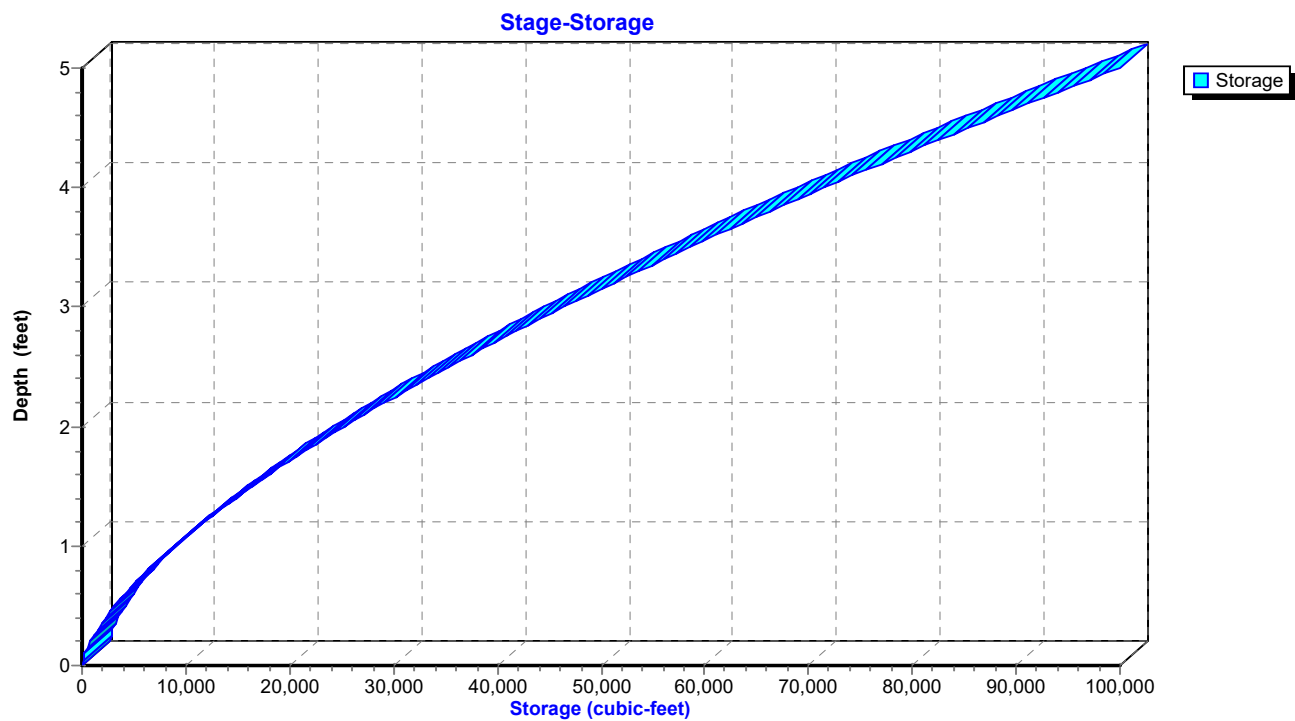
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Mt Pleasant 24-hr S1 5-yr Rainfall=4.75"

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Reach OF4P: Primary Stream for Outfalls



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Mt Pleasant 24-hr S1 5-yr Rainfall=4.75"

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Summary for Pond CD2: Cross Drain

Inflow Area = 1,520,244 sf, 0.00% Impervious, Inflow Depth = 1.29" for 5-yr event
 Inflow = 19.26 cfs @ 12.94 hrs, Volume= 162,997 cf
 Outflow = 19.26 cfs @ 12.94 hrs, Volume= 162,997 cf, Atten= 0%, Lag= 0.0 min
 Primary = 19.26 cfs @ 12.94 hrs, Volume= 162,997 cf
 Routed to Reach OF4P : Primary Stream for Outfalls

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
 Peak Elev= 682.30' @ 12.94 hrs

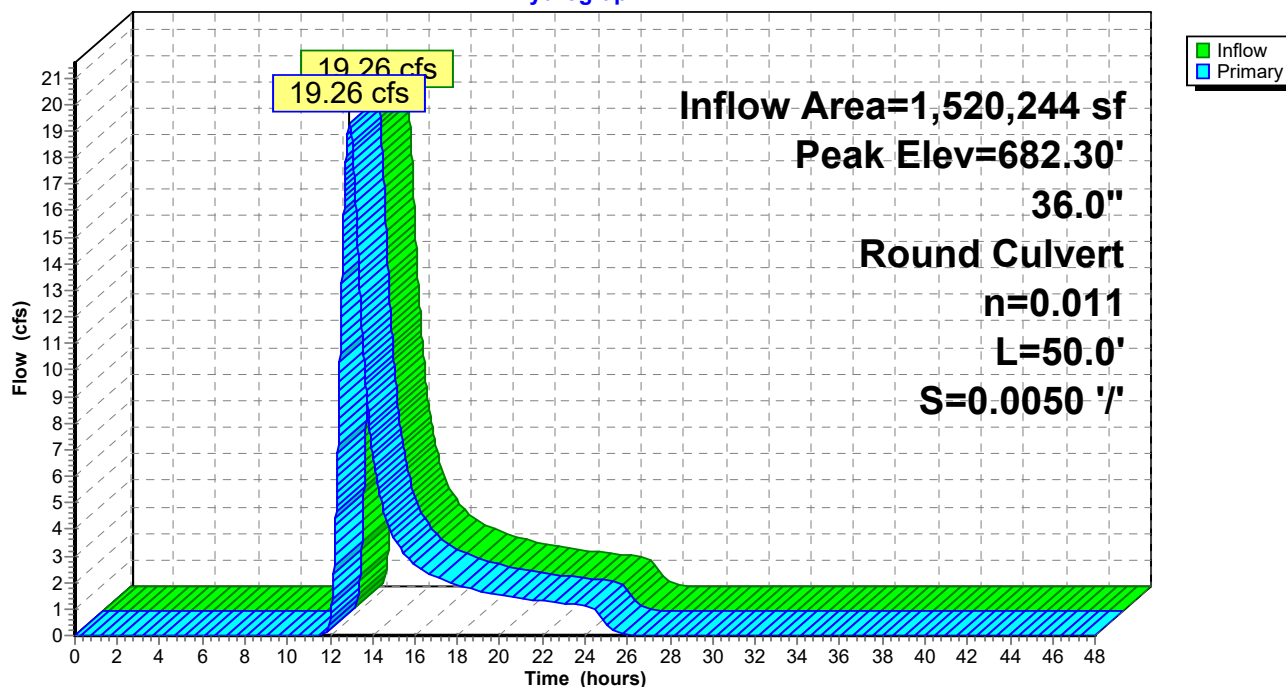
Device	Routing	Invert	Outlet Devices
#1	Primary	680.25'	36.0" Round Culvert L= 50.0' Ke= 0.500 Inlet / Outlet Invert= 680.25' / 680.00' S= 0.0050 '/' Cc= 0.900 n= 0.011 Concrete pipe, straight & clean, Flow Area= 7.07 sf

Primary OutFlow Max=19.26 cfs @ 12.94 hrs HW=682.30' TW=676.95' (Dynamic Tailwater)
 ↑ **1=Culvert** (Barrel Controls 19.26 cfs @ 5.29 fps)

~~Culvert~~ **Pond CD2: Cross Drain**

Pond CD2: Cross Drain

Hydrograph



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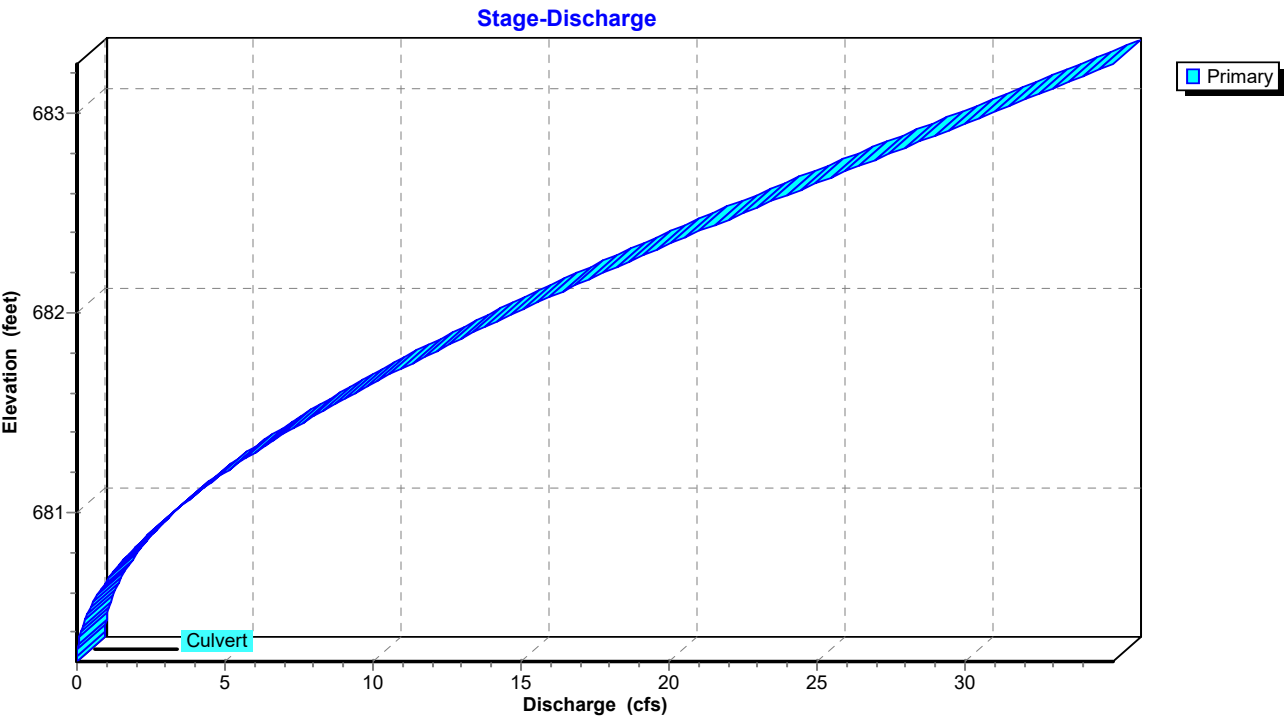
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Mt Pleasant 24-hr S1 5-yr Rainfall=4.75"

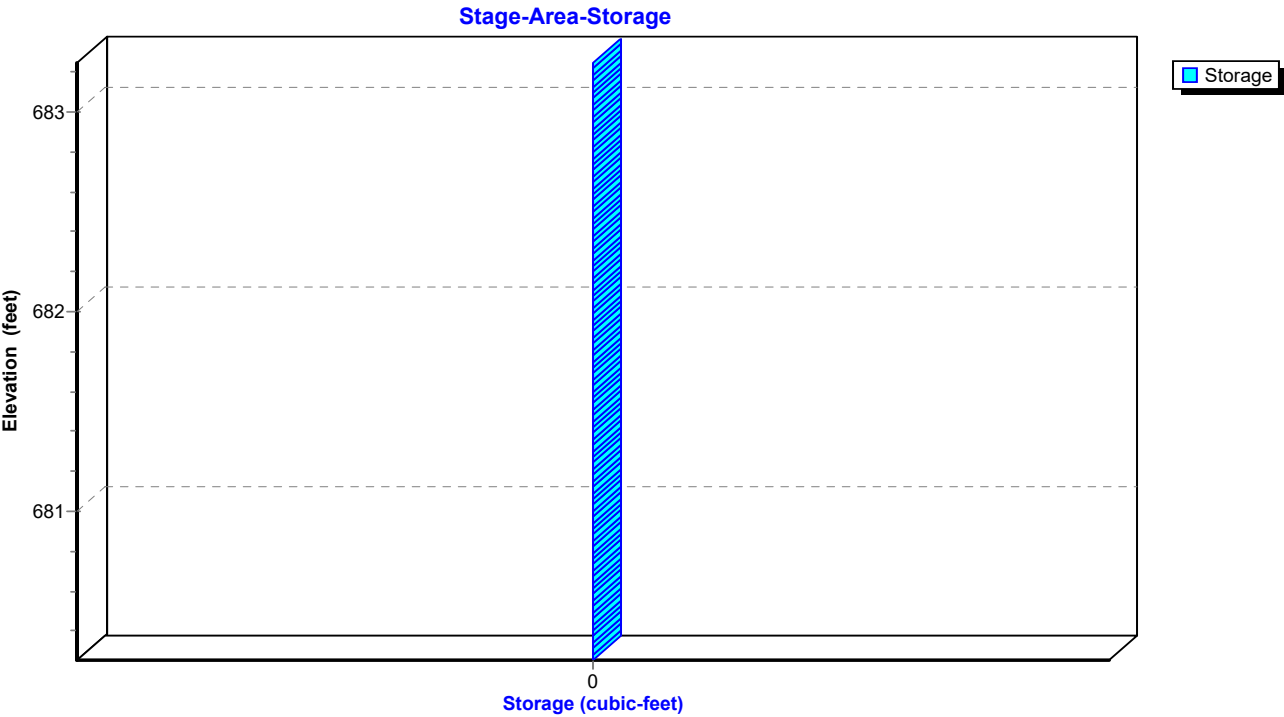
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Pond CD2: Cross Drain



Pond CD2: Cross Drain



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Mt Pleasant 24-hr S1 5-yr Rainfall=4.75"

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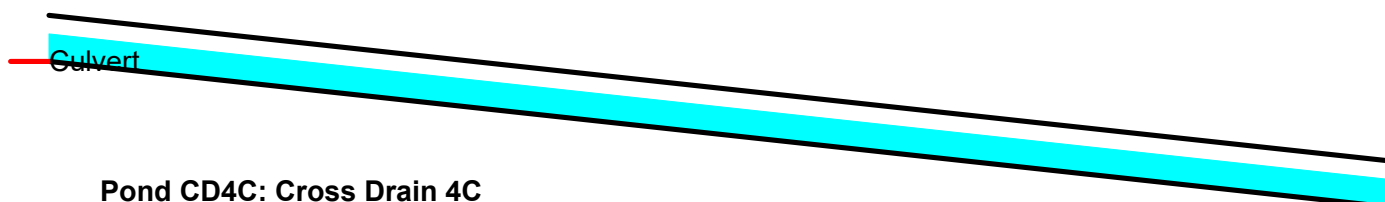
Summary for Pond CD4C: Cross Drain 4C

Inflow Area = 29,621 sf, 0.00% Impervious, Inflow Depth = 4.28" for 5-yr event
 Inflow = 3.55 cfs @ 12.05 hrs, Volume= 10,575 cf
 Outflow = 3.55 cfs @ 12.05 hrs, Volume= 10,575 cf, Atten= 0%, Lag= 0.0 min
 Primary = 3.55 cfs @ 12.05 hrs, Volume= 10,575 cf
 Routed to Pond CD4DCE : Cross Drain 4DCE

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
 Peak Elev= 684.65' @ 12.05 hrs

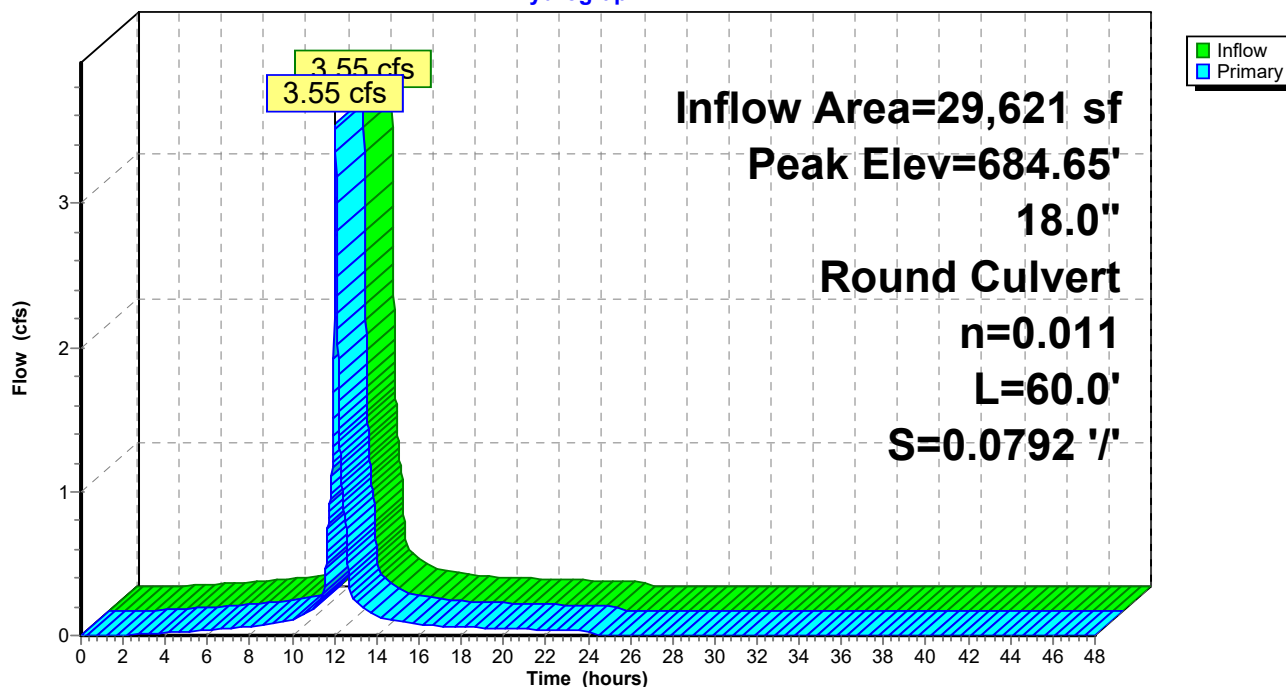
Device	Routing	Invert	Outlet Devices
#1	Primary	683.75'	18.0" Round Culvert L= 60.0' Square-edged headwall, Ke= 0.500 Inlet / Outlet Invert= 683.75' / 679.00' S= 0.0792 '/' Cc= 0.900 n= 0.011 Concrete pipe, straight & clean, Flow Area= 1.77 sf

Primary OutFlow Max=3.55 cfs @ 12.05 hrs HW=684.65' TW=679.72' (Dynamic Tailwater)
 1=Culvert (Inlet Controls 3.55 cfs @ 3.22 fps)



Pond CD4C: Cross Drain 4C

Hydrograph



TrueRail 040226

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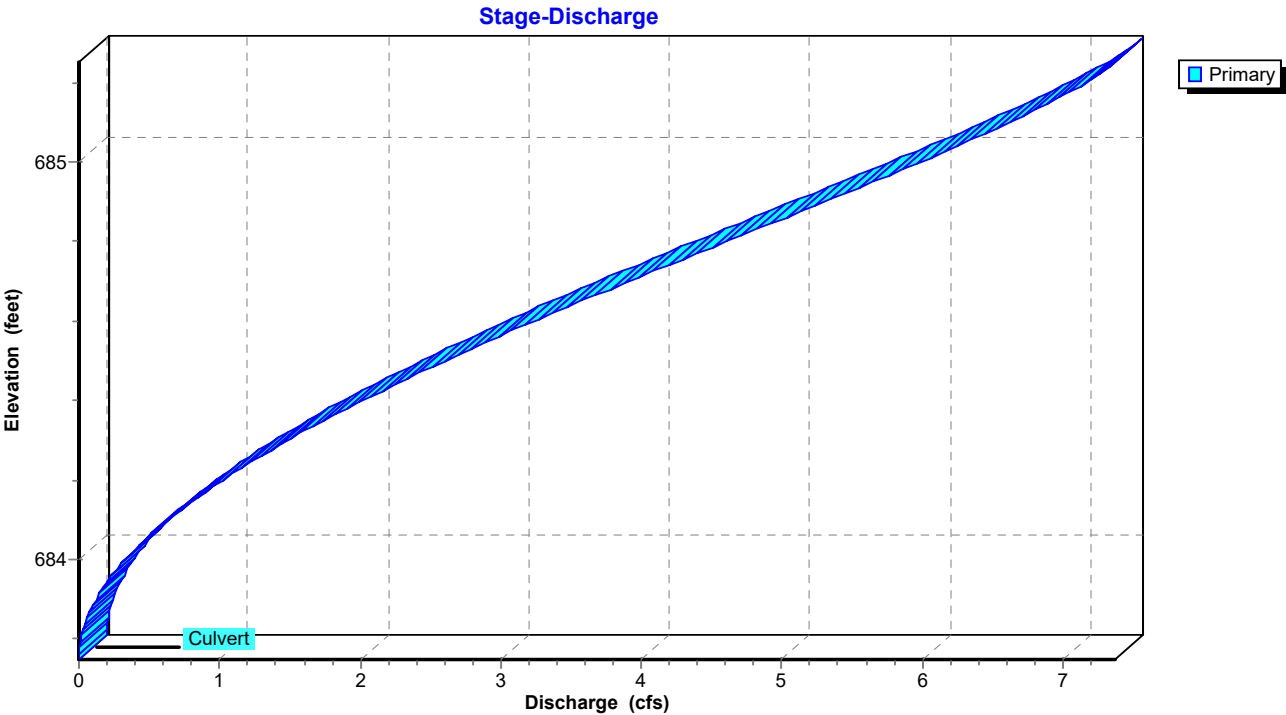
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Mt Pleasant 24-hr S1 5-yr Rainfall=4.75"

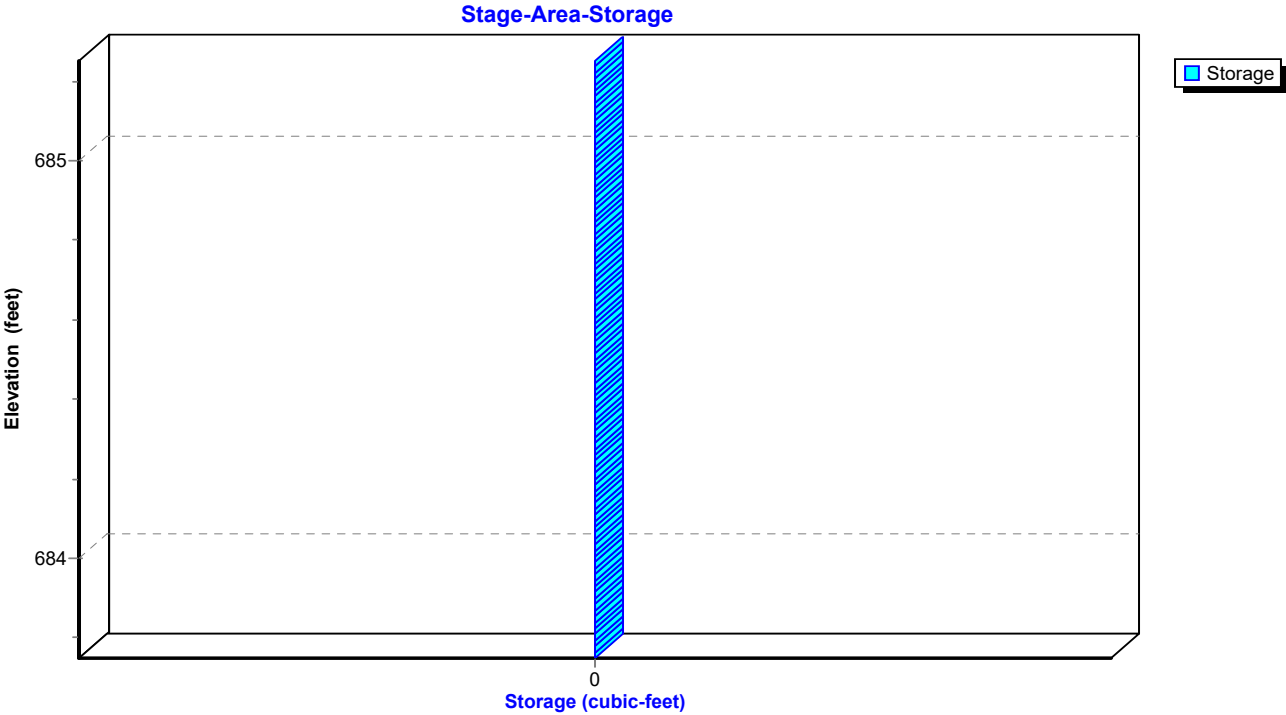
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Pond CD4C: Cross Drain 4C



Pond CD4C: Cross Drain 4C



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Mt Pleasant 24-hr S1 5-yr Rainfall=4.75"

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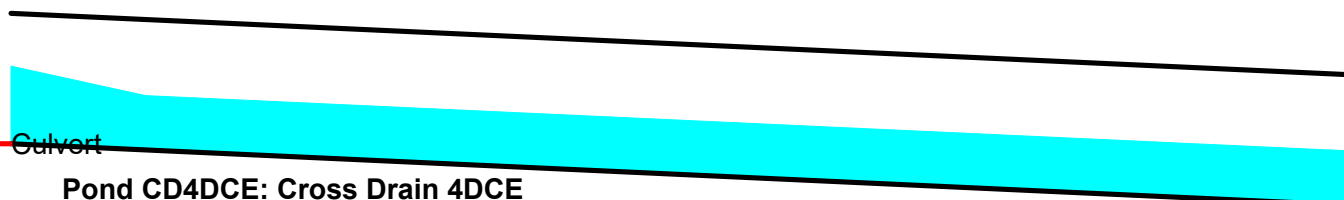
Summary for Pond CD4DCE: Cross Drain 4DCE

Inflow Area = 1,234,926 sf, 3.53% Impervious, Inflow Depth = 1.86" for 5-yr event
 Inflow = 23.79 cfs @ 12.69 hrs, Volume= 190,911 cf
 Outflow = 23.79 cfs @ 12.69 hrs, Volume= 190,911 cf, Atten= 0%, Lag= 0.0 min
 Primary = 23.79 cfs @ 12.69 hrs, Volume= 190,911 cf
 Routed to Pond POND1P : PROP POND

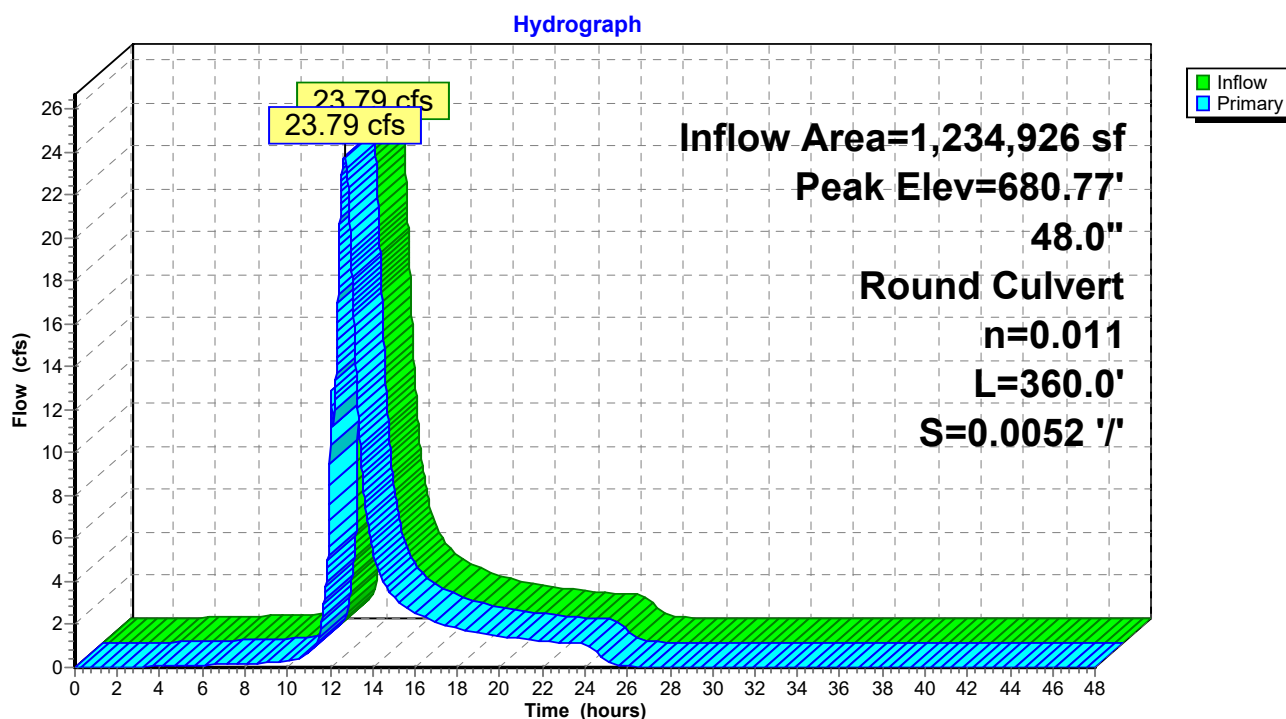
Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
 Peak Elev= 680.77' @ 12.85 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	678.39'	48.0" Round Culvert L= 360.0' Ke= 0.500 Inlet / Outlet Invert= 678.39' / 676.50' S= 0.0052 ' / ' Cc= 0.900 n= 0.011 Concrete pipe, straight & clean, Flow Area= 12.57 sf

Primary OutFlow Max=23.56 cfs @ 12.69 hrs HW=680.70' TW=679.77' (Dynamic Tailwater)
 ↳ **1=Culvert** (Outlet Controls 23.56 cfs @ 4.51 fps)



Pond CD4DCE: Cross Drain 4DCE



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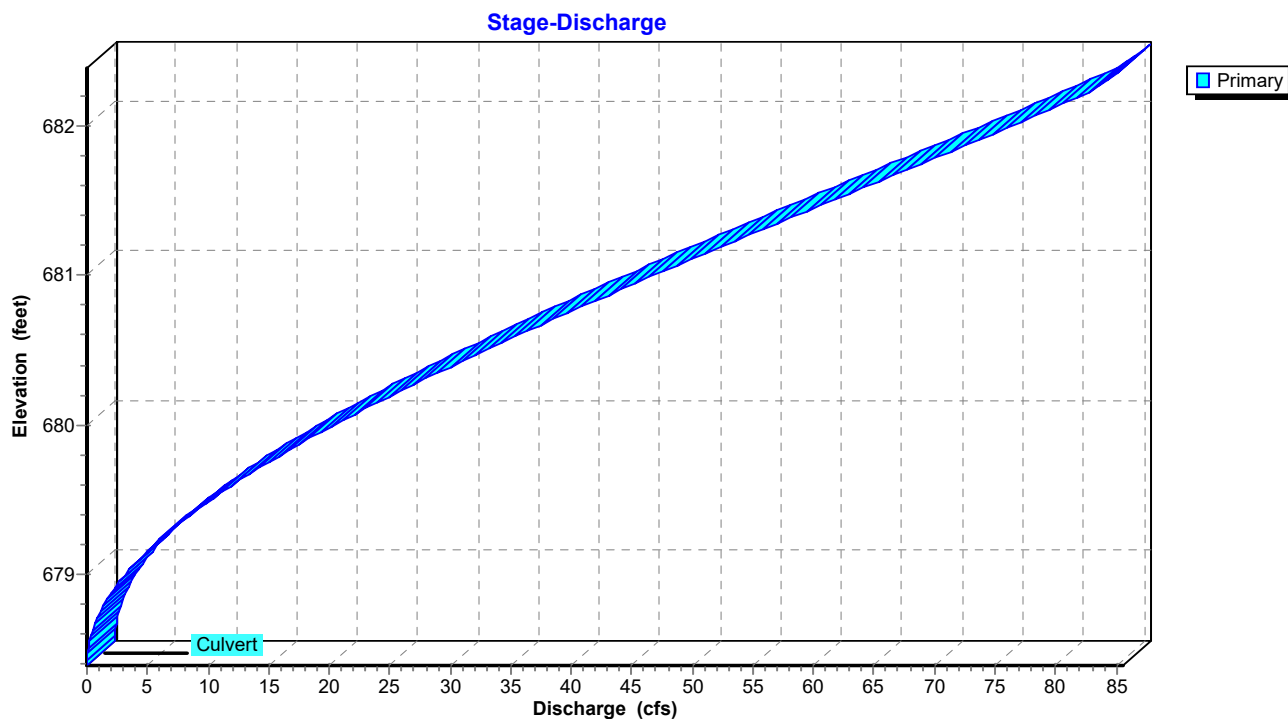
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Mt Pleasant 24-hr S1 5-yr Rainfall=4.75"

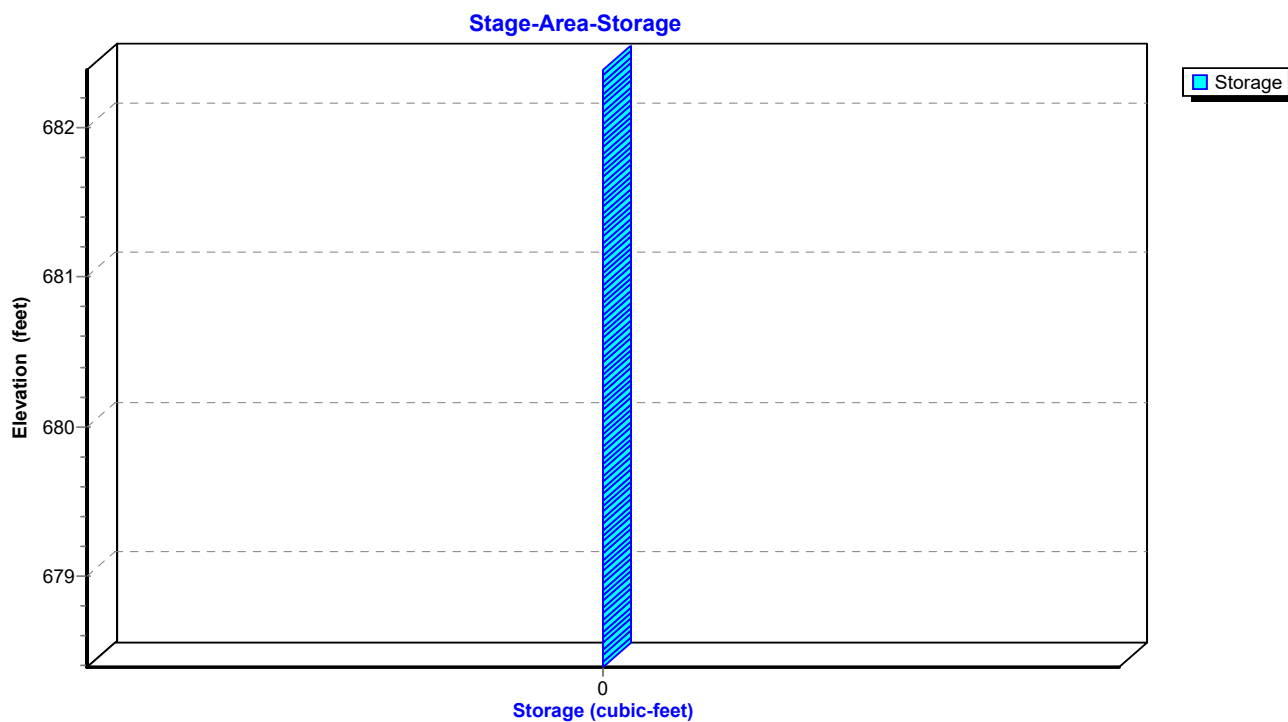
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Pond CD4DCE: Cross Drain 4DCE



Pond CD4DCE: Cross Drain 4DCE



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Mt Pleasant 24-hr S1 5-yr Rainfall=4.75"

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Summary for Pond CD4E: Cross Drain 4E

Inflow Area = 1,151,726 sf, 3.78% Impervious, Inflow Depth = 1.68" for 5-yr event
 Inflow = 23.21 cfs @ 12.68 hrs, Volume= 161,209 cf
 Outflow = 22.81 cfs @ 12.71 hrs, Volume= 161,207 cf, Atten= 2%, Lag= 2.0 min
 Primary = 22.81 cfs @ 12.71 hrs, Volume= 161,207 cf
 Routed to Pond CD4DCE : Cross Drain 4DCE

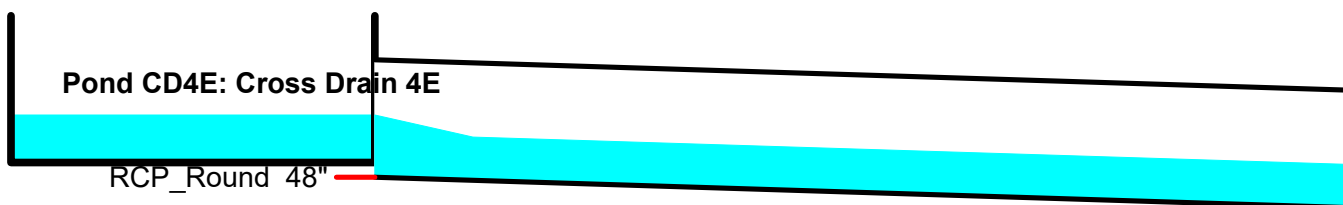
Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
 Peak Elev= 681.62' @ 12.76 hrs Surf.Area= 3,060 sf Storage= 2,352 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
 Center-of-Mass det. time= 0.9 min (904.4 - 903.5)

Volume	Invert	Avail.Storage	Storage Description
#1	680.00'	33,779 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
680.00	274	0	0
681.00	1,562	918	918
682.00	3,975	2,769	3,687
683.00	7,355	5,665	9,352
684.00	12,090	9,723	19,074
685.00	17,320	14,705	33,779

Device	Routing	Invert	Outlet Devices
#1	Primary	679.50'	48.0" Round RCP_Round 48" L= 200.0' Ke= 0.500 Inlet / Outlet Invert= 679.50' / 678.46' S= 0.0052 ' / Cc= 0.900 n= 0.011 Concrete pipe, straight & clean, Flow Area= 12.57 sf

Primary OutFlow Max=22.72 cfs @ 12.71 hrs HW=681.61' TW=680.72' (Dynamic Tailwater)
 ↑1=RCP_Round 48" (Outlet Controls 22.72 cfs @ 4.91 fps)



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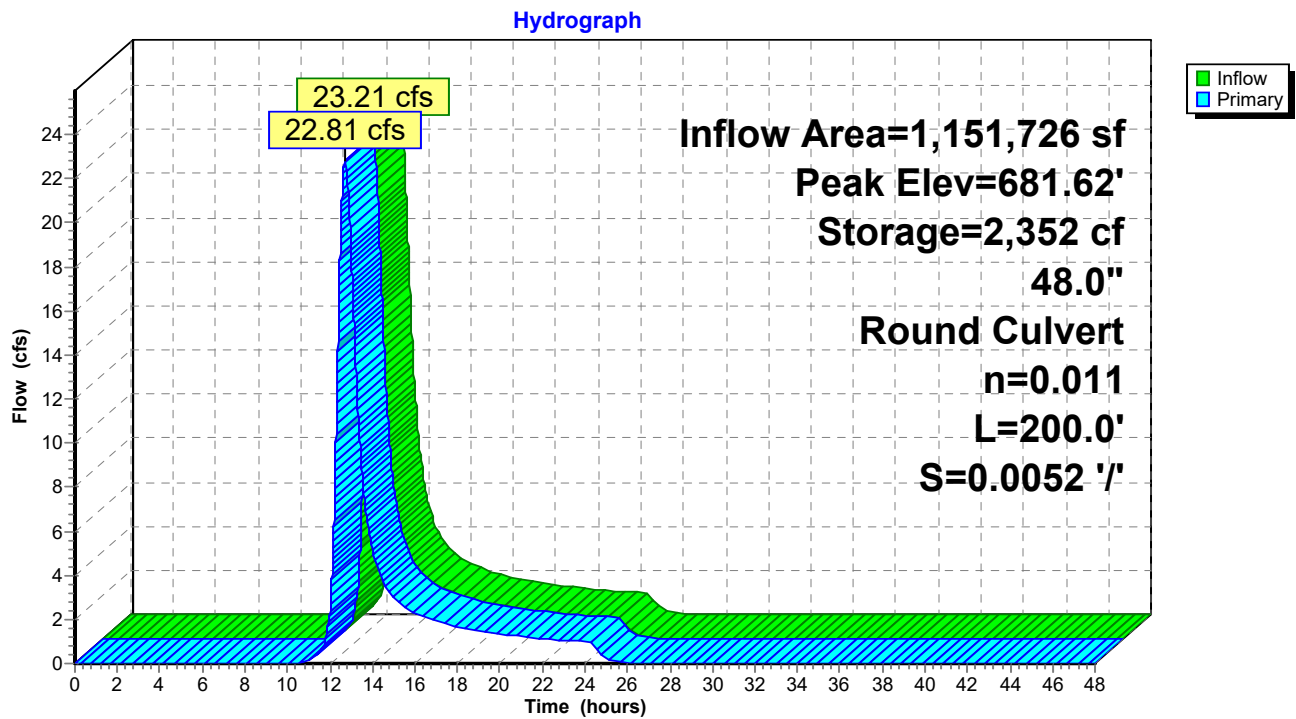
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Mt Pleasant 24-hr S1 5-yr Rainfall=4.75"

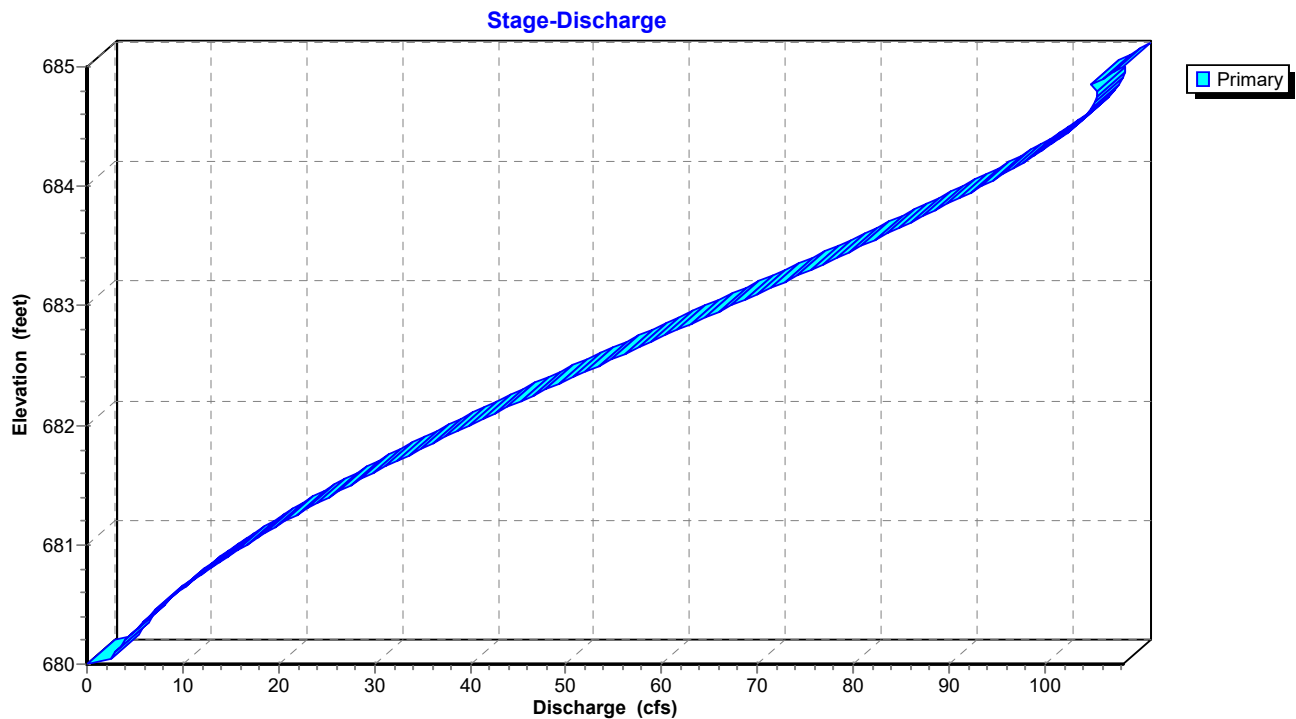
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Pond CD4E: Cross Drain 4E



Pond CD4E: Cross Drain 4E



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Mt Pleasant 24-hr S1 5-yr Rainfall=4.75"

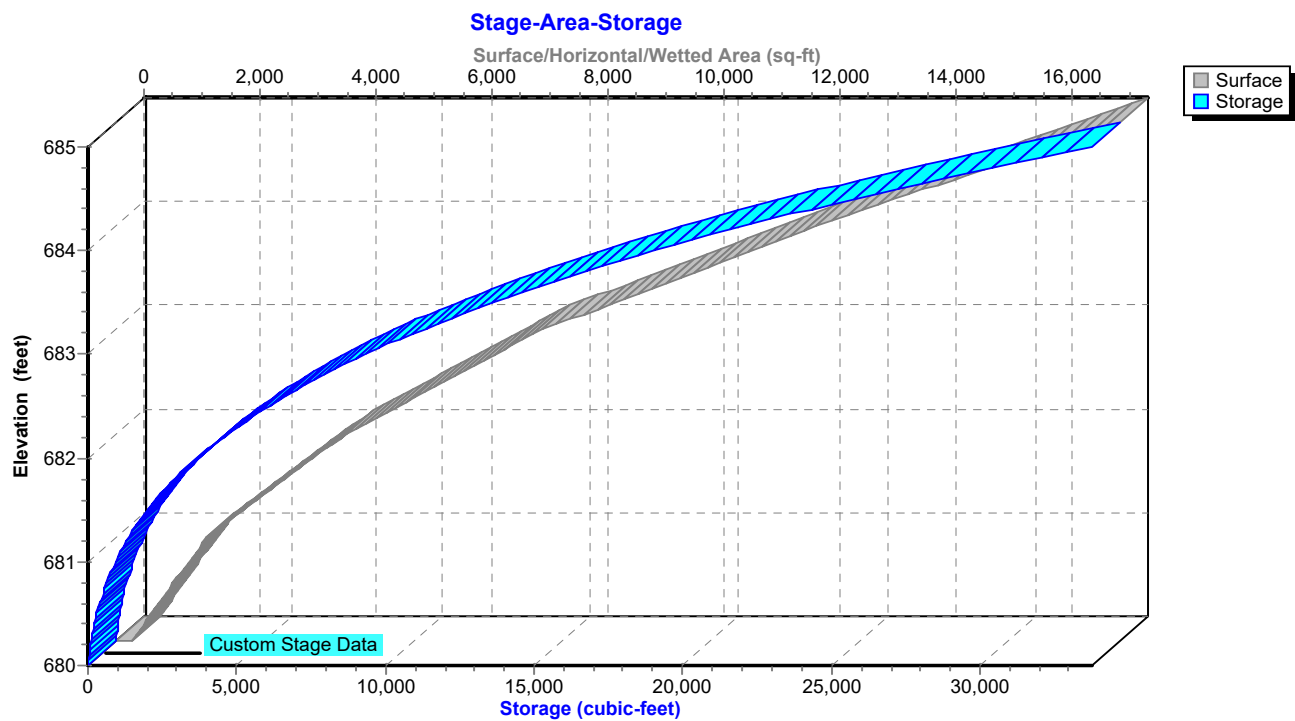
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Pond CD4E: Cross Drain 4E



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Summary for Pond POND1P: PROP POND

Inflow Area = 1,772,021 sf, 9.83% Impervious, Inflow Depth = 2.59" for 5-yr event
 Inflow = 52.23 cfs @ 12.50 hrs, Volume= 382,660 cf
 Outflow = 24.34 cfs @ 13.13 hrs, Volume= 382,654 cf, Atten= 53%, Lag= 37.8 min
 Primary = 24.34 cfs @ 13.13 hrs, Volume= 382,654 cf
 Routed to Reach OF4P : Primary Stream for Outfalls

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
 Peak Elev= 680.15' @ 13.14 hrs Surf.Area= 59,183 sf Storage= 131,541 cf

Plug-Flow detention time= 118.7 min calculated for 382,654 cf (100% of inflow)
 Center-of-Mass det. time= 118.6 min (955.1 - 836.5)

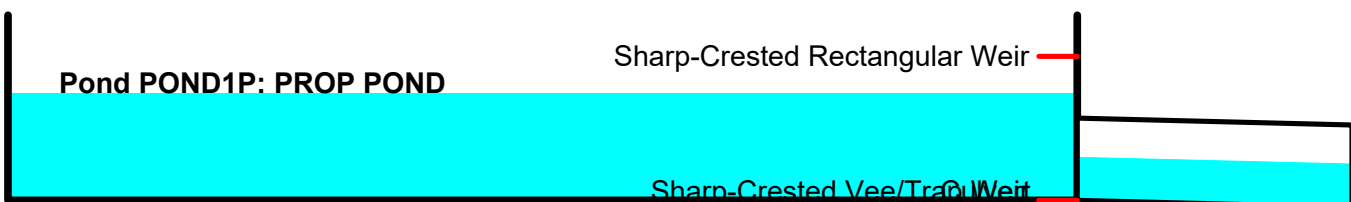
Volume	Invert	Avail.Storage	Storage Description
#1	676.25'	386,863 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
676.25	505	0	0
676.50	14,826	1,916	1,916
677.00	24,194	9,755	11,671
678.00	31,409	27,802	39,473
679.00	39,965	35,687	75,160
680.00	56,082	48,024	123,183
681.00	77,468	66,775	189,958
682.00	98,642	88,055	278,013
683.00	119,057	108,850	386,863

Device	Routing	Invert	Outlet Devices
#1	Primary	676.25'	36.0" Round Culvert L= 50.0' Ke= 0.600 Inlet / Outlet Invert= 676.25' / 676.00' S= 0.0050 '/' Cc= 0.900 n= 0.011, Flow Area= 7.07 sf
#2	Device 1	676.25'	20.0 deg x 0.4' long Sharp-Crested Vee/Trap Weir Cv= 2.69 (C= 3.36)
#3	Device 1	681.50'	16.0' long Sharp-Crested Rectangular Weir 2 End Contraction(s)

Primary OutFlow Max=24.34 cfs @ 13.13 hrs HW=680.14' TW=677.09' (Dynamic Tailwater)

1=Culvert (Passes 24.34 cfs of 46.09 cfs potential flow)
 2=Sharp-Crested Vee/Trap Weir (Weir Controls 24.34 cfs @ 5.75 fps)
 3=Sharp-Crested Rectangular Weir (Controls 0.00 cfs)



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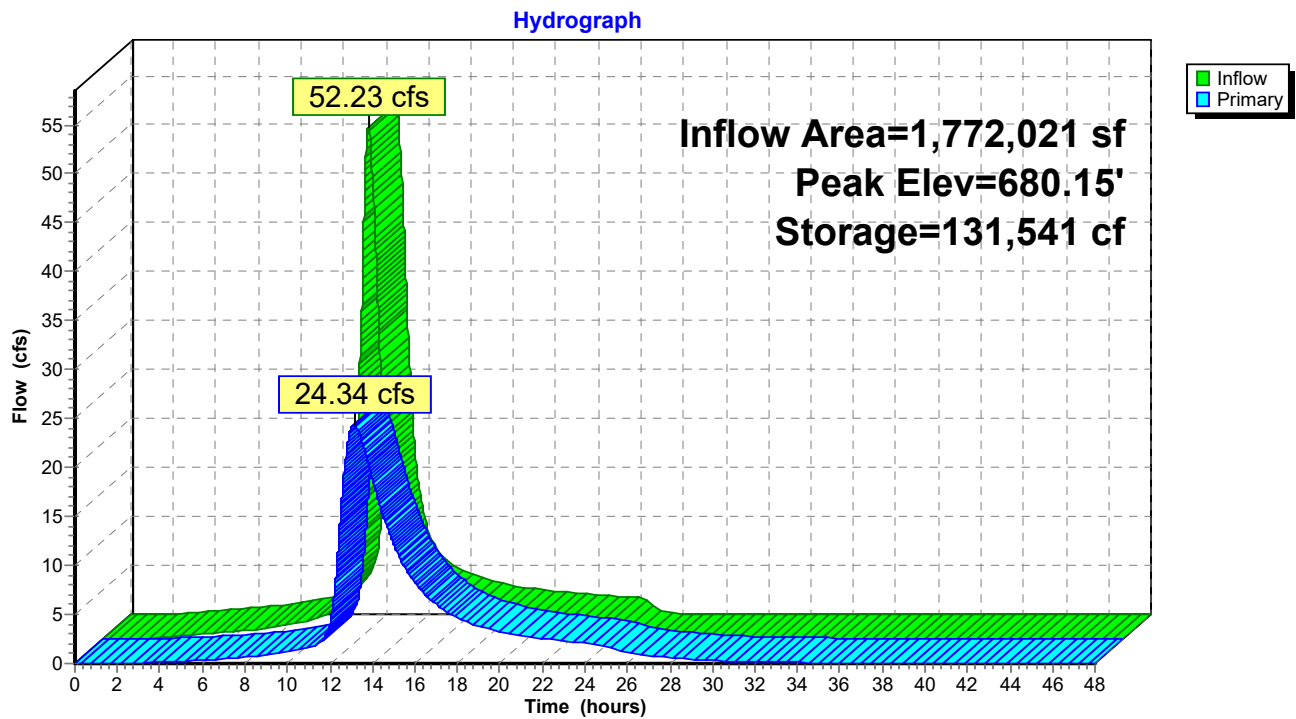
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Mt Pleasant 24-hr S1 5-yr Rainfall=4.75"

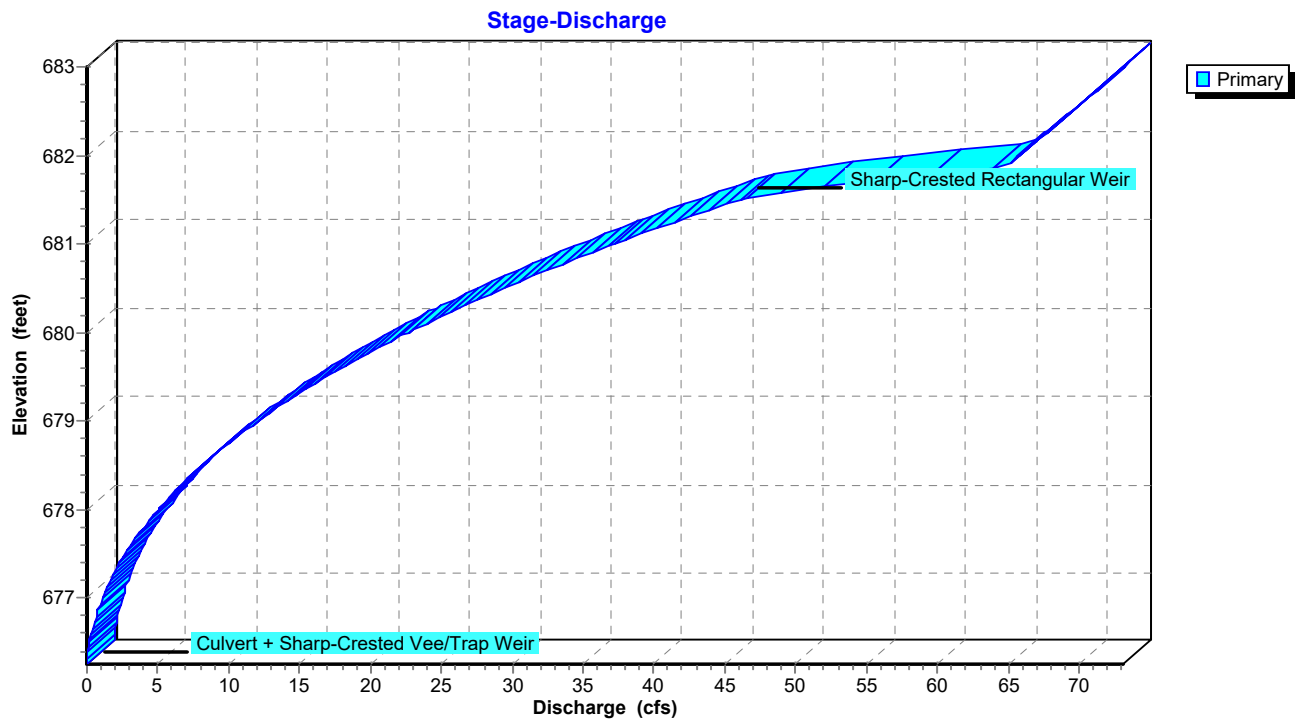
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Pond POND1P: PROP POND



Pond POND1P: PROP POND



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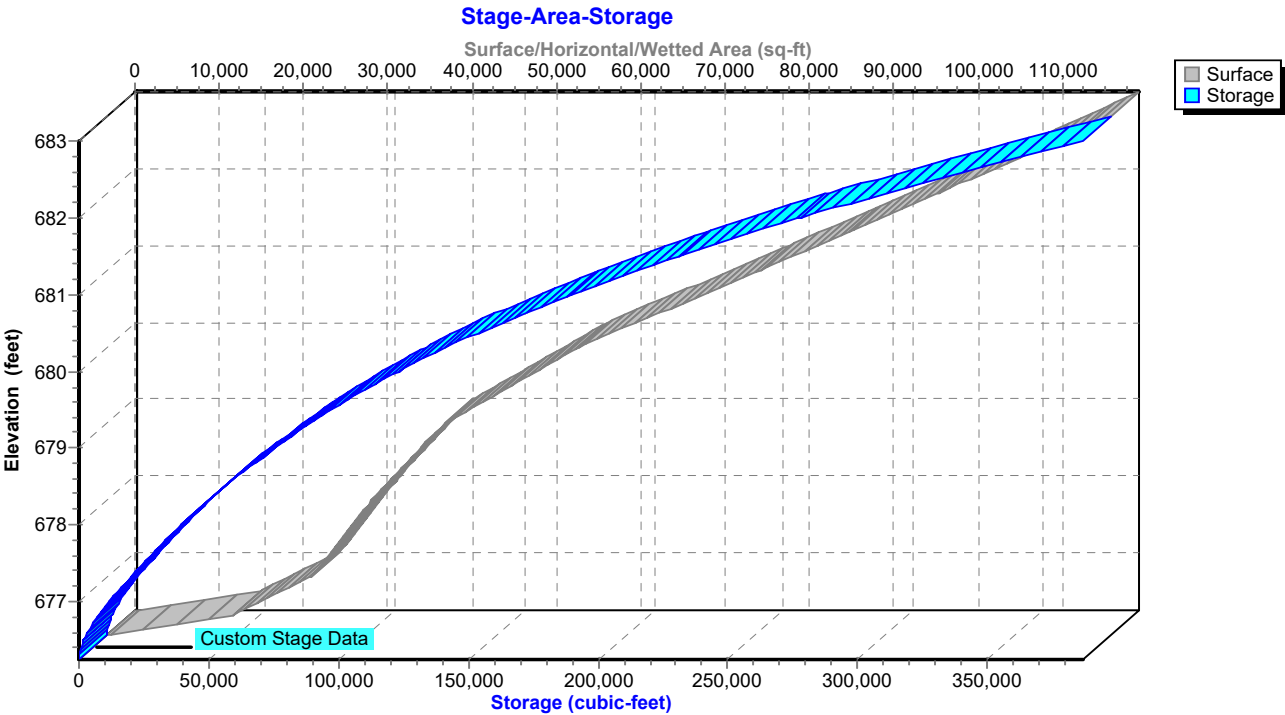
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Mt Pleasant 24-hr S1 5-yr Rainfall=4.75"

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Pond POND1P: PROP POND



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Time span=0.00-48.00 hrs, dt=0.01 hrs, 4801 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

Subcatchment DA 1: BASIN 1 PRE Runoff Area=143.000 ac 1.75% Impervious Runoff Depth=2.79"
 Flow Length=5,750' Tc=143.0 min CN=75 Runoff=108.16 cfs 1,450,339 cf

Subcatchment DA 2: BASIN 2 PRE Runoff Area=34.900 ac 0.00% Impervious Runoff Depth=1.70"
 Flow Length=2,150' Slope=0.0150 '/' Tc=62.3 min CN=62 Runoff=26.69 cfs 215,881 cf

Subcatchment DA 3: BASIN 3 PRE Runoff Area=9.380 ac 0.00% Impervious Runoff Depth=2.61"
 Flow Length=838' Slope=0.0200 '/' Tc=25.9 min CN=73 Runoff=18.20 cfs 89,015 cf

Subcatchment DA 4: BASIN 4 PRE Runoff Area=41.500 ac 0.00% Impervious Runoff Depth=2.35"
 Flow Length=2,468' Tc=68.1 min CN=70 Runoff=43.63 cfs 354,450 cf

Subcatchment DA1P: BASIN 1 PROPOSED Runoff Area=143.000 ac 1.75% Impervious Runoff Depth=2.79"
 Flow Length=5,750' Tc=143.0 min CN=75 Runoff=108.16 cfs 1,450,339 cf

Subcatchment DA2P: BASIN 2 PROPOSED Runoff Area=34.900 ac 0.00% Impervious Runoff Depth=1.70"
 Flow Length=2,150' Slope=0.0150 '/' Tc=62.3 min CN=62 Runoff=26.69 cfs 215,881 cf

Subcatchment DA3P: BASIN 3 PRE Runoff Area=4.760 ac 0.00% Impervious Runoff Depth=3.17"
 Tc=5.0 min CN=79 Runoff=21.18 cfs 54,713 cf

Subcatchment DA4A: BASIN 4A PROPOSED Runoff Area=5.530 ac 0.00% Impervious Runoff Depth=2.18"
 Flow Length=945' Tc=40.9 min CN=68 Runoff=7.07 cfs 43,842 cf

Subcatchment DA4B: BASIN 4B Runoff Area=12.330 ac 24.33% Impervious Runoff Depth=4.95"
 Flow Length=996' Tc=33.8 min CN=96 Runoff=37.18 cfs 221,559 cf

Subcatchment DA4C: BASIN 4C PROPOSED Runoff Area=0.680 ac 0.00% Impervious Runoff Depth=4.95"
 Tc=5.0 min CN=96 Runoff=4.32 cfs 12,219 cf

Subcatchment DA4D: BASIN 4D PROPOSED Runoff Area=1.230 ac 0.00% Impervious Runoff Depth=4.95"
 Tc=5.0 min CN=96 Runoff=7.81 cfs 22,102 cf

Subcatchment DA4E1: BASIN 4E1 Runoff Area=7.260 ac 13.77% Impervious Runoff Depth=1.86"
 Flow Length=640' Tc=31.5 min CN=64 Runoff=8.75 cfs 49,007 cf

Subcatchment DA4E2: BASIN 4E2 Runoff Area=19.180 ac 0.00% Impervious Runoff Depth=2.27"
 Flow Length=1,313' Tc=46.8 min CN=69 Runoff=23.91 cfs 157,900 cf

Reach D4C: Ditch 4C Avg. Flow Depth=0.61' Max Vel=2.45 fps Inflow=4.32 cfs 12,219 cf
 n=0.033 L=313.0' S=0.0104 '/' Capacity=27.19 cfs Outflow=4.04 cfs 12,219 cf

Reach D4D: Ditch 4D Avg. Flow Depth=0.75' Max Vel=3.29 fps Inflow=7.81 cfs 22,102 cf
 n=0.033 L=337.0' S=0.0148 '/' Capacity=32.50 cfs Outflow=7.46 cfs 22,102 cf

Reach D4E1: Ditch 4E1 Avg. Flow Depth=0.71' Max Vel=1.60 fps Inflow=8.75 cfs 49,007 cf
 n=0.033 L=1,788.0' S=0.0031 '/' Capacity=197.27 cfs Outflow=7.01 cfs 49,007 cf

TrueRail 040226*Mt Pleasant 24-hr S1 10-yr Rainfall=5.42"*

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Reach OF4: Primary Stream for Avg. Flow Depth=2.49' Max Vel=4.11 fps Inflow=144.59 cfs 2,109,686 cf
 n=0.035 L=1,000.0' S=0.0050 '/' Capacity=640.46 cfs Outflow=144.45 cfs 2,109,686 cf

Reach OF4P: Primary Stream for Avg. Flow Depth=2.51' Max Vel=4.13 fps Inflow=147.00 cfs 2,227,554 cf
 n=0.035 L=1,000.0' S=0.0050 '/' Capacity=640.46 cfs Outflow=146.78 cfs 2,227,553 cf

Pond CD2: Cross Drain Peak Elev=682.76' Inflow=26.69 cfs 215,881 cf
 36.0" Round Culvert n=0.011 L=50.0' S=0.0050 '/' Outflow=26.69 cfs 215,881 cf

Pond CD4C: Cross Drain 4C Peak Elev=684.72' Inflow=4.04 cfs 12,219 cf
 18.0" Round Culvert n=0.011 L=60.0' S=0.0792 '/' Outflow=4.04 cfs 12,219 cf

Pond CD4DCE: Cross Drain 4DCE Peak Elev=681.21' Inflow=31.24 cfs 241,226 cf
 48.0" Round Culvert n=0.011 L=360.0' S=0.0052 '/' Outflow=31.24 cfs 241,226 cf

Pond CD4E: Cross Drain 4E Peak Elev=682.06' Storage=3,926 cf Inflow=30.88 cfs 206,907 cf
 48.0" Round Culvert n=0.011 L=200.0' S=0.0052 '/' Outflow=30.12 cfs 206,905 cf

Pond POND1P: PROP POND Peak Elev=680.58' Storage=159,375 cf Inflow=63.88 cfs 462,785 cf
 Outflow=30.25 cfs 462,779 cf

Total Runoff Area = 19,935,234 sf Runoff Volume = 4,337,249 cf Average Runoff Depth = 2.61"
98.03% Pervious = 19,543,194 sf 1.97% Impervious = 392,040 sf

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Mt Pleasant 24-hr S1 10-yr Rainfall=5.42"

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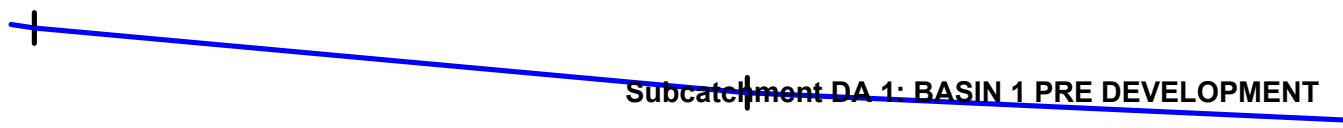
Summary for Subcatchment DA 1: BASIN 1 PRE DEVELOPMENT

Runoff = 108.16 cfs @ 13.83 hrs, Volume= 1,450,339 cf, Depth= 2.79"
Routed to Reach OF4 : Primary Stream for Outfalls

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Mt Pleasant 24-hr S1 10-yr Rainfall=5.42"

Area (ac)	CN	Description
69.500	74	>75% Grass cover, Good, HSG C
71.000	76	Woods/grass comb., Fair, HSG C
2.500	98	Paved parking, HSG C
143.000	75	Weighted Average
140.500		98.25% Pervious Area
2.500		1.75% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
35.4	100	0.0200	0.05		Sheet Flow, Woods: Dense underbrush n= 0.800 P2= 3.57"
92.8	3,050	0.0120	0.55		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
14.8	2,600	0.0060	2.93	11.71	Channel Flow, Area= 4.0 sf Perim= 6.0' r= 0.67' n= 0.030
143.0	5,750	Total			



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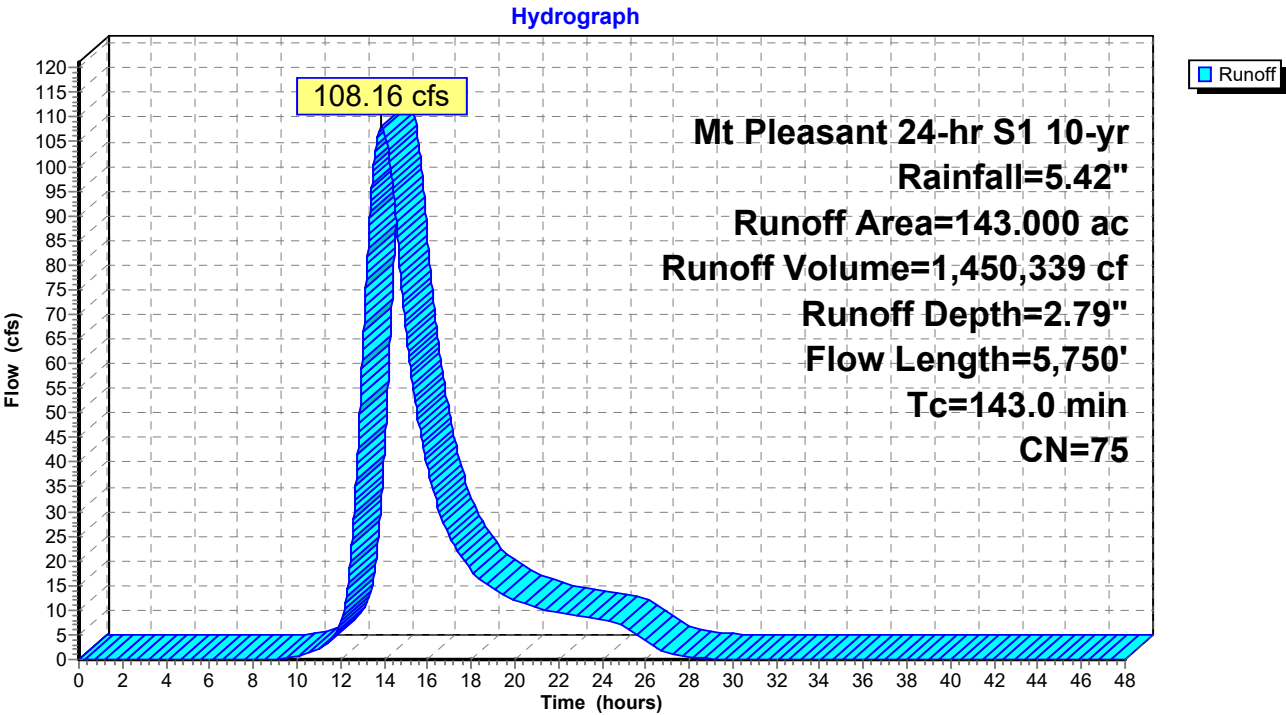
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Mt Pleasant 24-hr S1 10-yr Rainfall=5.42"

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Subcatchment DA 1: BASIN 1 PRE DEVELOPMENT



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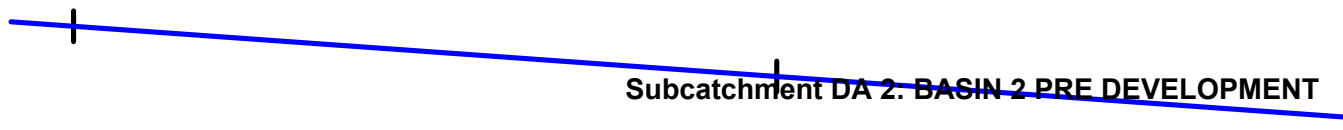
Summary for Subcatchment DA 2: BASIN 2 PRE DEVELOPMENT

Runoff = 26.69 cfs @ 12.94 hrs, Volume= 215,881 cf, Depth= 1.70"
Routed to Reach OF4 : Primary Stream for Outfalls

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Mt Pleasant 24-hr S1 10-yr Rainfall=5.42"

Area (ac)	CN	Description
17.450	58	Meadow, non-grazed, HSG B
14.450	60	Woods, Fair, HSG B
3.000	96	Gravel surface, HSG C
34.900	62	Weighted Average
34.900		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.2	100	0.0150	0.11		Sheet Flow, Grass: Dense n= 0.240 P2= 3.57"
21.9	1,125	0.0150	0.86		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
25.2	925	0.0150	0.61		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
62.3	2,150	Total			



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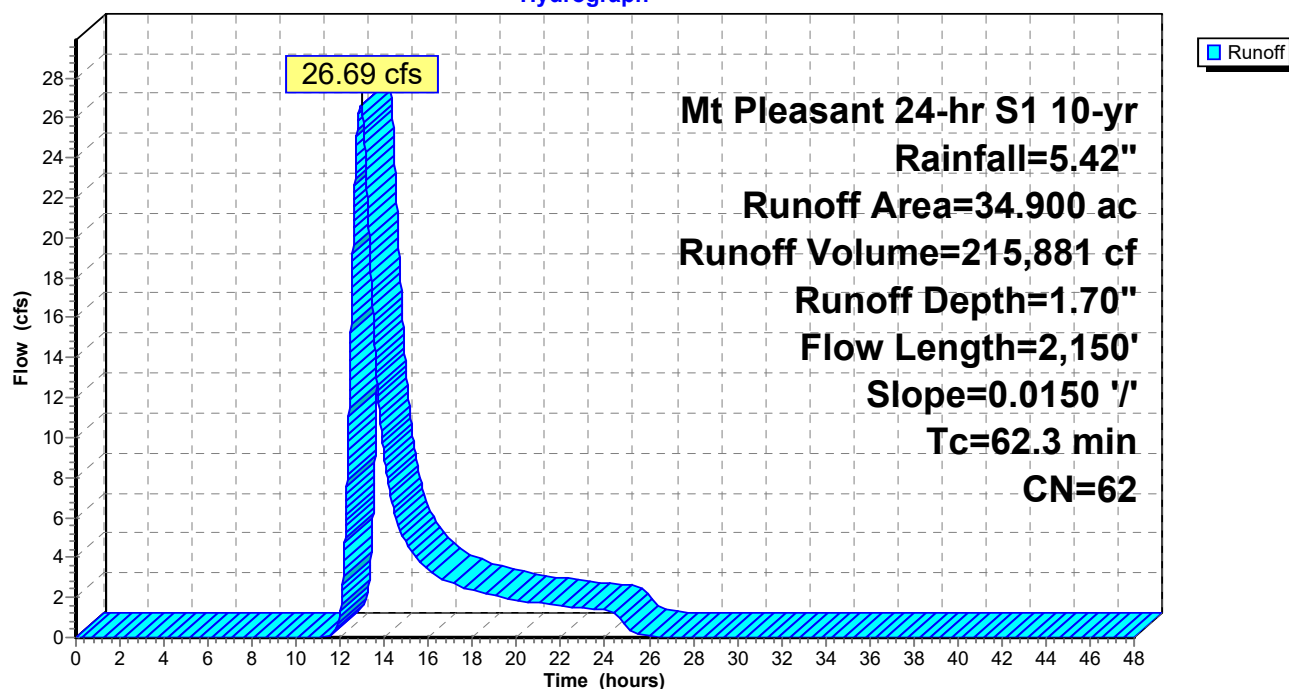
Mt Pleasant 24-hr S1 10-yr Rainfall=5.42"

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Subcatchment DA 2: BASIN 2 PRE DEVELOPMENT

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Mt Pleasant 24-hr S1 10-yr Rainfall=5.42"

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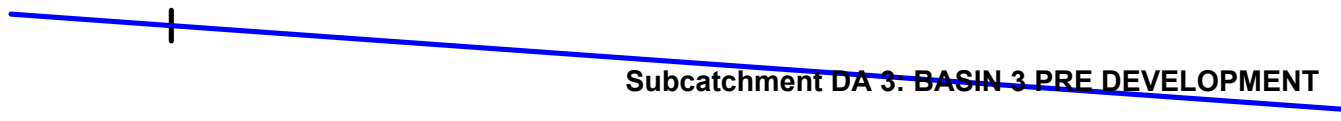
Summary for Subcatchment DA 3: BASIN 3 PRE DEVELOPMENT

Runoff = 18.20 cfs @ 12.34 hrs, Volume= 89,015 cf, Depth= 2.61"
Routed to Reach OF4 : Primary Stream for Outfalls

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Mt Pleasant 24-hr S1 10-yr Rainfall=5.42"

Area (ac)	CN	Description
3.300	78	Meadow, non-grazed, HSG D
3.300	79	Woods, Fair, HSG D
2.250	58	Meadow, non-grazed, HSG B
0.530	60	Woods, Fair, HSG B
9.380	73	Weighted Average
9.380		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.5	100	0.0200	0.12		Sheet Flow, Grass: Dense n= 0.240 P2= 3.57"
12.4	738	0.0200	0.99		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
25.9	838	Total			



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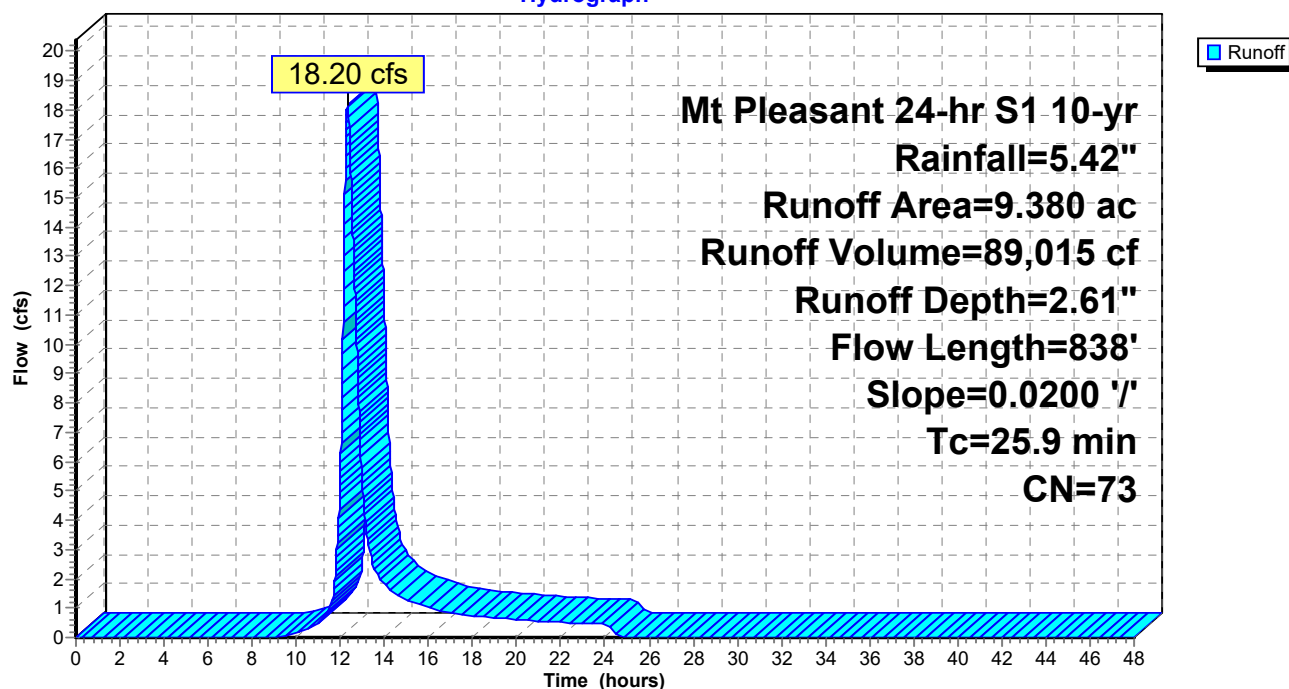
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Subcatchment DA 3: BASIN 3 PRE DEVELOPMENT

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Summary for Subcatchment DA 4: BASIN 4 PRE DEVELOPMENT

Runoff = 43.63 cfs @ 12.94 hrs, Volume= 354,450 cf, Depth= 2.35"
Routed to Reach OF4 : Primary Stream for Outfalls

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Mt Pleasant 24-hr S1 10-yr Rainfall=5.42"

Area (ac)	CN	Description
7.300	78	Meadow, non-grazed, HSG D
1.830	79	Woods, Fair, HSG D
7.640	58	Meadow, non-grazed, HSG B
1.910	60	Woods, Fair, HSG B
4.150	73	Woods, Fair, HSG C
9.960	71	Meadow, non-grazed, HSG C
2.490	73	Woods, Fair, HSG C
4.970	71	Meadow, non-grazed, HSG C
1.250	73	Woods, Fair, HSG C
41.500	70	Weighted Average
41.500		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
24.5	100	0.0500	0.07		Sheet Flow, Woods: Dense underbrush n= 0.800 P2= 3.57"
43.6	2,368	0.0167	0.90		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
68.1	2,468	Total			

Subcatchment DA 4: BASIN 4 PRE DEVELOPMENT

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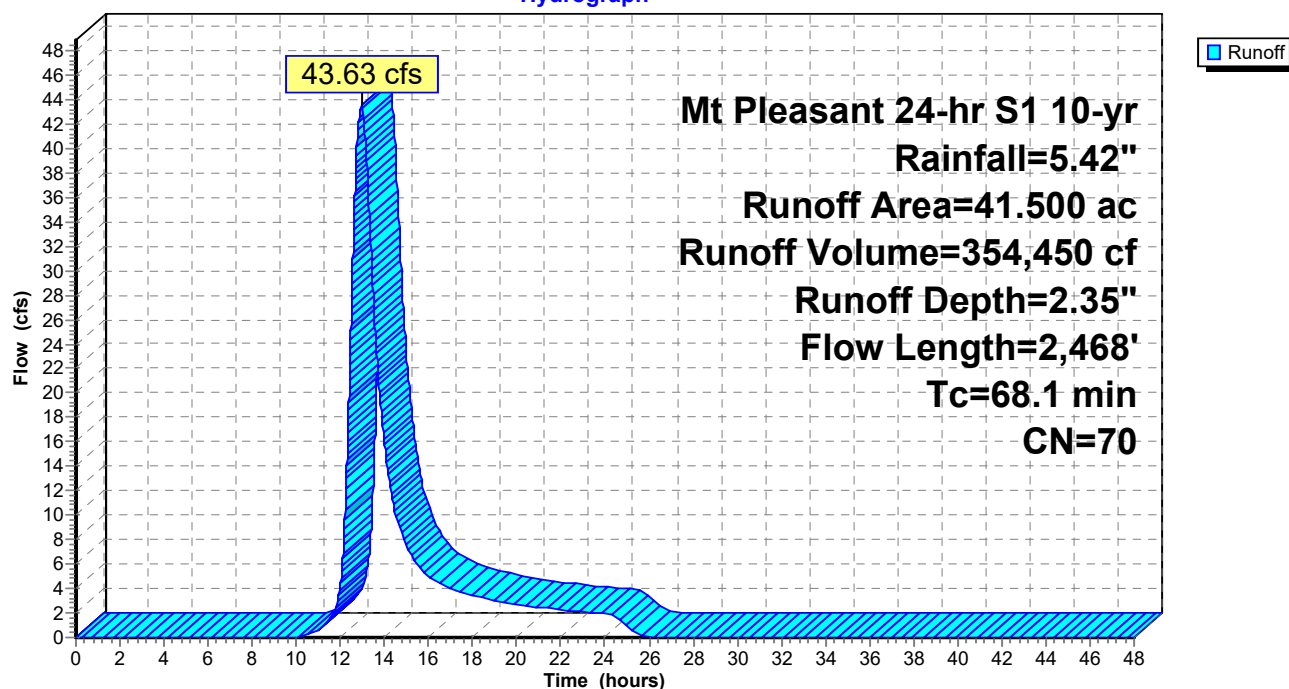
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Subcatchment DA 4: BASIN 4 PRE DEVELOPMENT

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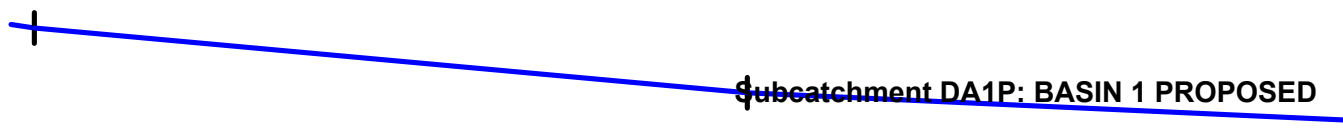
Summary for Subcatchment DA1P: BASIN 1 PROPOSED

Runoff = 108.16 cfs @ 13.83 hrs, Volume= 1,450,339 cf, Depth= 2.79"
 Routed to Reach OF4P : Primary Stream for Outfalls

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
 Mt Pleasant 24-hr S1 10-yr Rainfall=5.42"

Area (ac)	CN	Description
69.500	74	>75% Grass cover, Good, HSG C
71.000	76	Woods/grass comb., Fair, HSG C
2.500	98	Paved parking, HSG C
143.000	75	Weighted Average
140.500		98.25% Pervious Area
2.500		1.75% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
35.4	100	0.0200	0.05		Sheet Flow, Woods: Dense underbrush n= 0.800 P2= 3.57"
92.8	3,050	0.0120	0.55		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
14.8	2,600	0.0060	2.93	11.71	Channel Flow, Area= 4.0 sf Perim= 6.0' r= 0.67' n= 0.030
143.0	5,750	Total			



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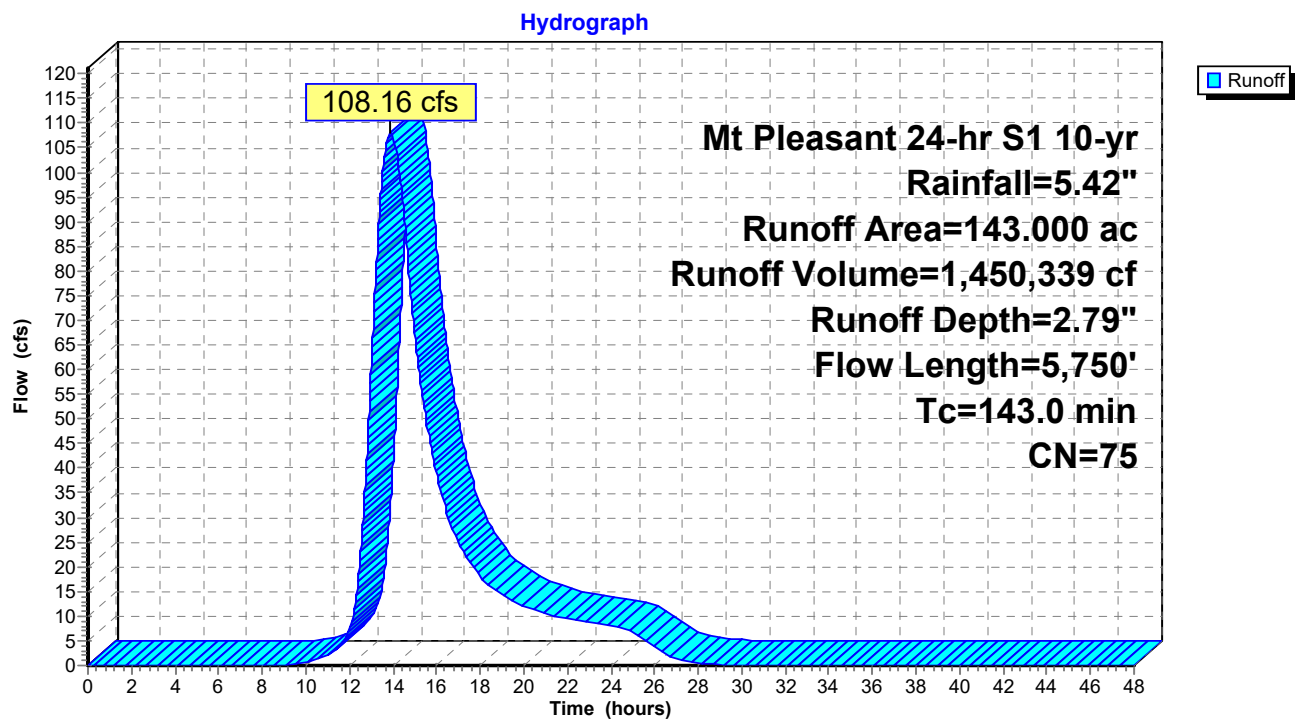
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Subcatchment DA1P: BASIN 1 PROPOSED



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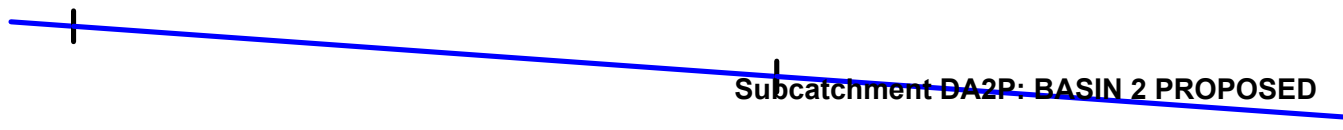
Summary for Subcatchment DA2P: BASIN 2 PROPOSED

Runoff = 26.69 cfs @ 12.94 hrs, Volume= 215,881 cf, Depth= 1.70"
Routed to Pond CD2 : Cross Drain

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Mt Pleasant 24-hr S1 10-yr Rainfall=5.42"

Area (ac)	CN	Description
17.450	58	Meadow, non-grazed, HSG B
14.450	60	Woods, Fair, HSG B
3.000	96	Gravel surface, HSG C
34.900	62	Weighted Average
34.900		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.2	100	0.0150	0.11		Sheet Flow, Grass: Dense n= 0.240 P2= 3.57"
21.9	1,125	0.0150	0.86		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
25.2	925	0.0150	0.61		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
62.3	2,150	Total			



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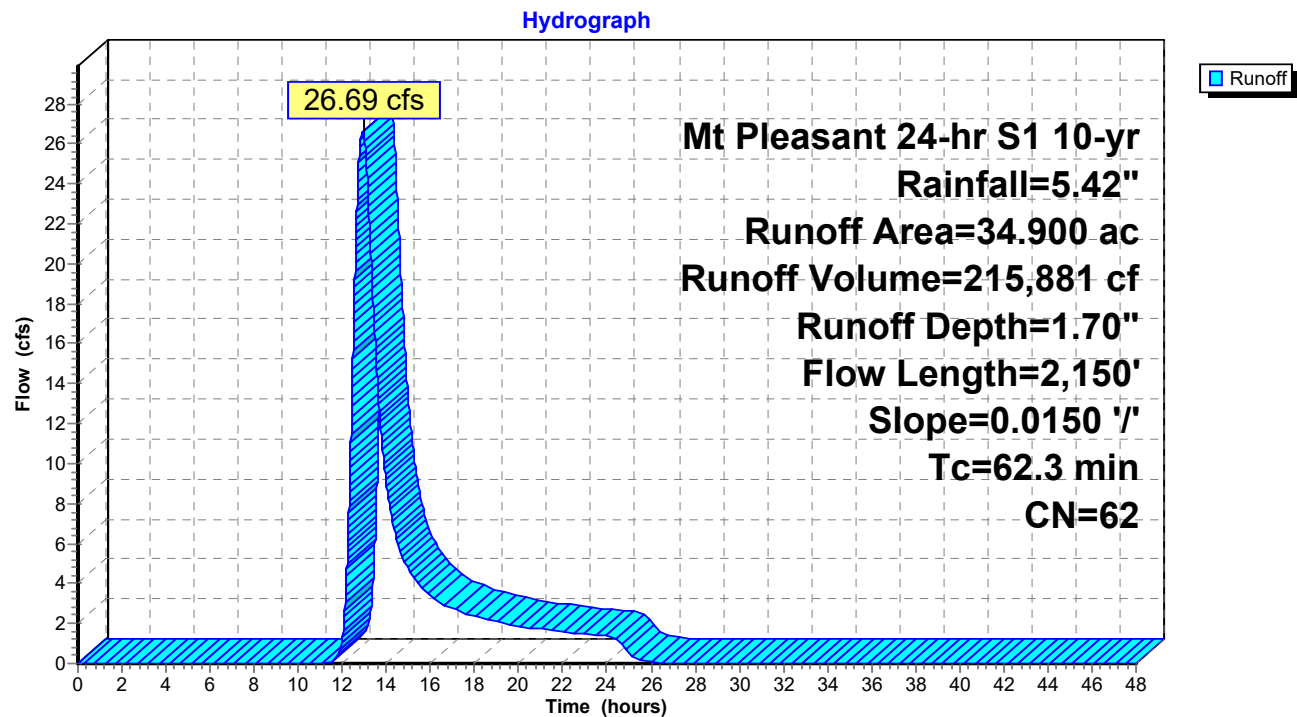
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Subcatchment DA2P: BASIN 2 PROPOSED



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Summary for Subcatchment DA3P: BASIN 3 PRE DEVELOPMENT

Runoff = 21.18 cfs @ 12.03 hrs, Volume= 54,713 cf, Depth= 3.17"
 Routed to Reach OF4P : Primary Stream for Outfalls

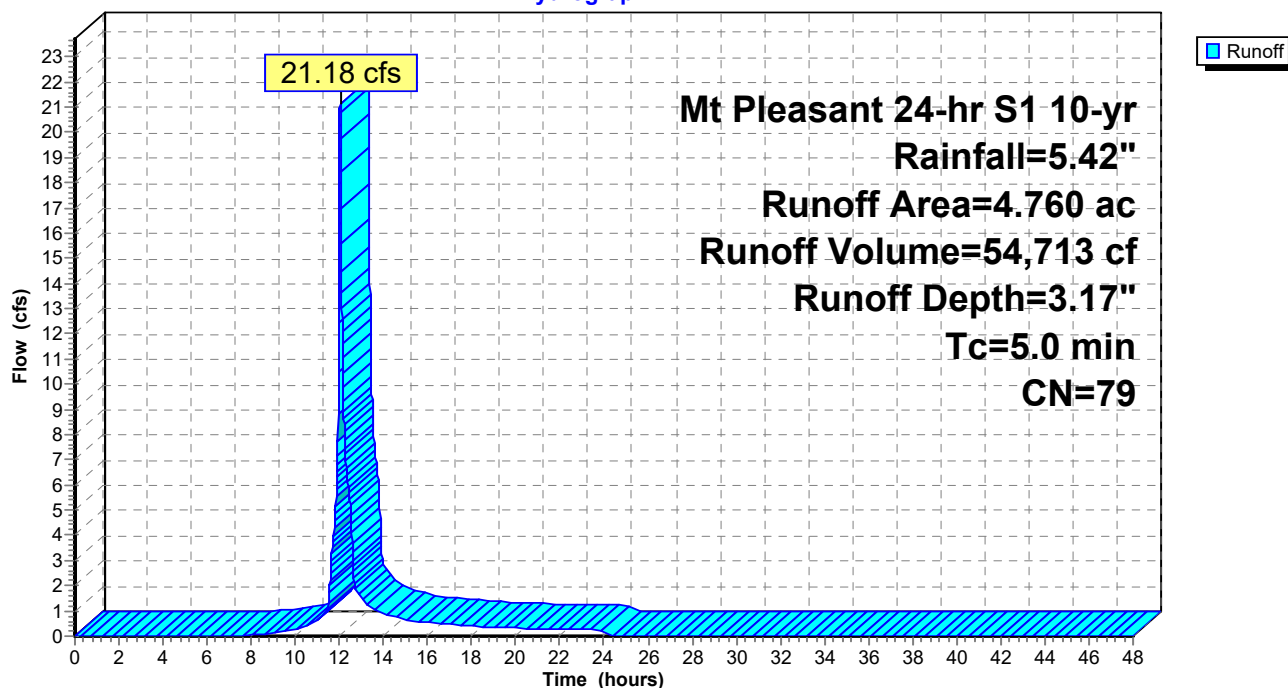
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
 Mt Pleasant 24-hr S1 10-yr Rainfall=5.42"

Area (ac)	CN	Description
4.760	79	Woods, Fair, HSG D
4.760		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					Direct Entry,

Subcatchment DA3P: BASIN 3 PRE DEVELOPMENT

Hydrograph



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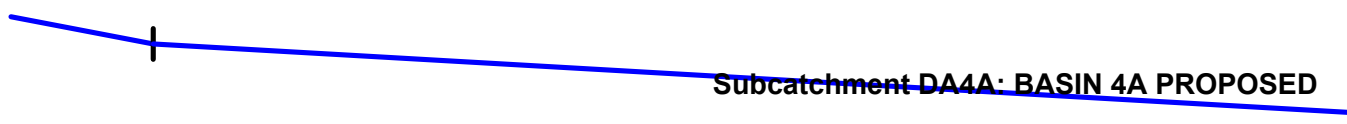
Summary for Subcatchment DA4A: BASIN 4A PROPOSED

Runoff = 7.07 cfs @ 12.58 hrs, Volume= 43,842 cf, Depth= 2.18"
Routed to Reach OF4P : Primary Stream for Outfalls

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Mt Pleasant 24-hr S1 10-yr Rainfall=5.42"

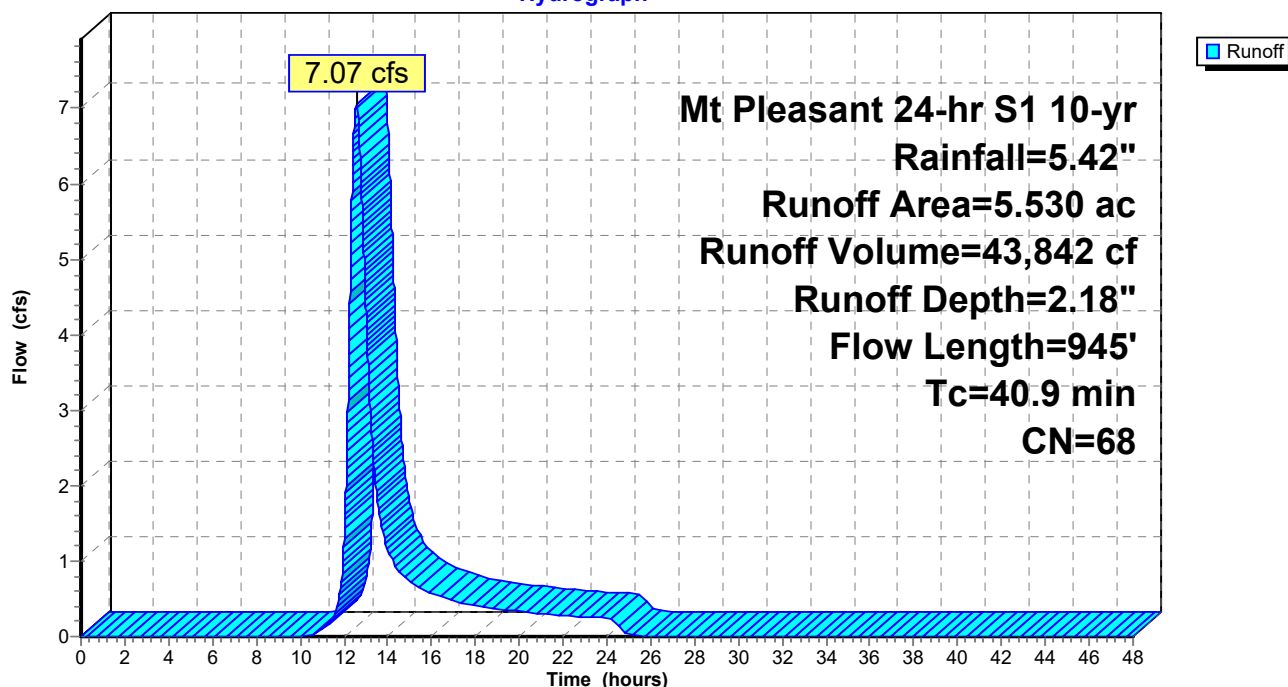
Area (ac)	CN	Description
2.200	60	Woods, Fair, HSG B
3.330	73	Woods, Fair, HSG C
5.530	68	Weighted Average
5.530		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
24.5	100	0.0500	0.07		Sheet Flow, Woods: Dense underbrush n= 0.800 P2= 3.57"
16.4	845	0.0150	0.86		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
40.9	945	Total			



Subcatchment DA4A: BASIN 4A PROPOSED

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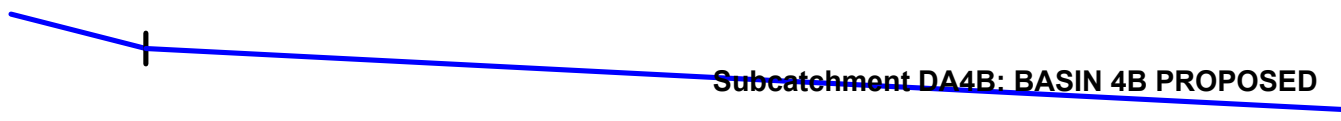
Summary for Subcatchment DA4B: BASIN 4B PROPOSED

Runoff = 37.18 cfs @ 12.40 hrs, Volume= 221,559 cf, Depth= 4.95"
Routed to Pond POND1P : PROP POND

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Mt Pleasant 24-hr S1 10-yr Rainfall=5.42"

Area (ac)	CN	Description
9.330	96	Gravel surface, HSG C
1.000	98	Paved parking, HSG D
2.000	98	Roofs, HSG D
12.330	96	Weighted Average
9.330		75.67% Pervious Area
3.000		24.33% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
24.5	100	0.0500	0.07		Sheet Flow, n= 0.800 P2= 3.57"
9.3	896	0.0100	1.61		Shallow Concentrated Flow, Unpaved Kv= 16.1 fps
33.8	996	Total			



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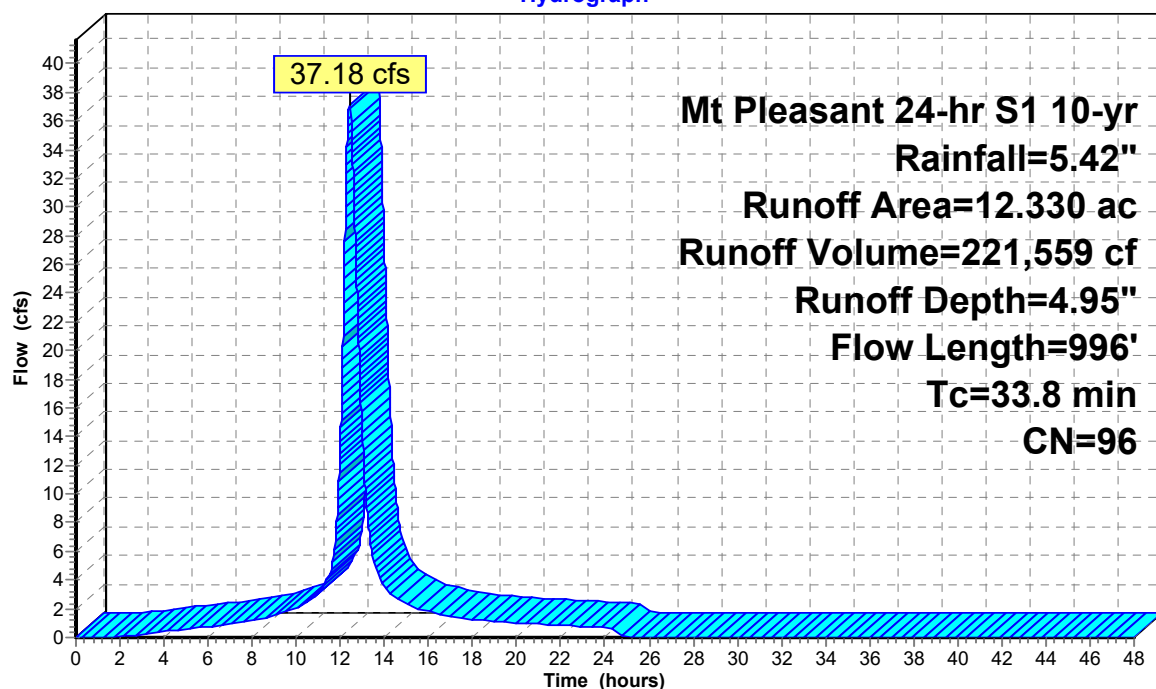
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Subcatchment DA4B: BASIN 4B PROPOSED

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Summary for Subcatchment DA4C: BASIN 4C PROPOSED

Runoff = 4.32 cfs @ 12.03 hrs, Volume= 12,219 cf, Depth= 4.95"
Routed to Reach D4C : Ditch 4C

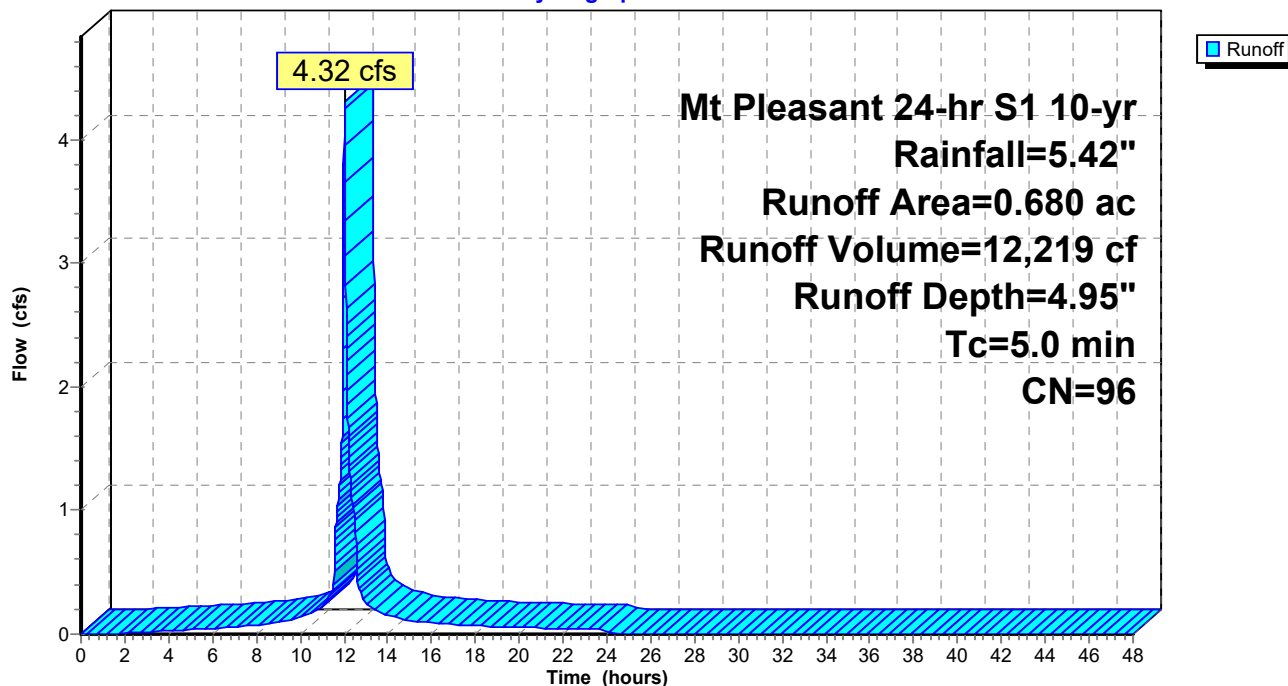
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Mt Pleasant 24-hr S1 10-yr Rainfall=5.42"

Area (ac)	CN	Description
0.680	96	Gravel surface, HSG C
0.680		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					Direct Entry,

Subcatchment DA4C: BASIN 4C PROPOSED

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Summary for Subcatchment DA4D: BASIN 4D PROPOSED

Runoff = 7.81 cfs @ 12.03 hrs, Volume= 22,102 cf, Depth= 4.95"
Routed to Reach D4D : Ditch 4D

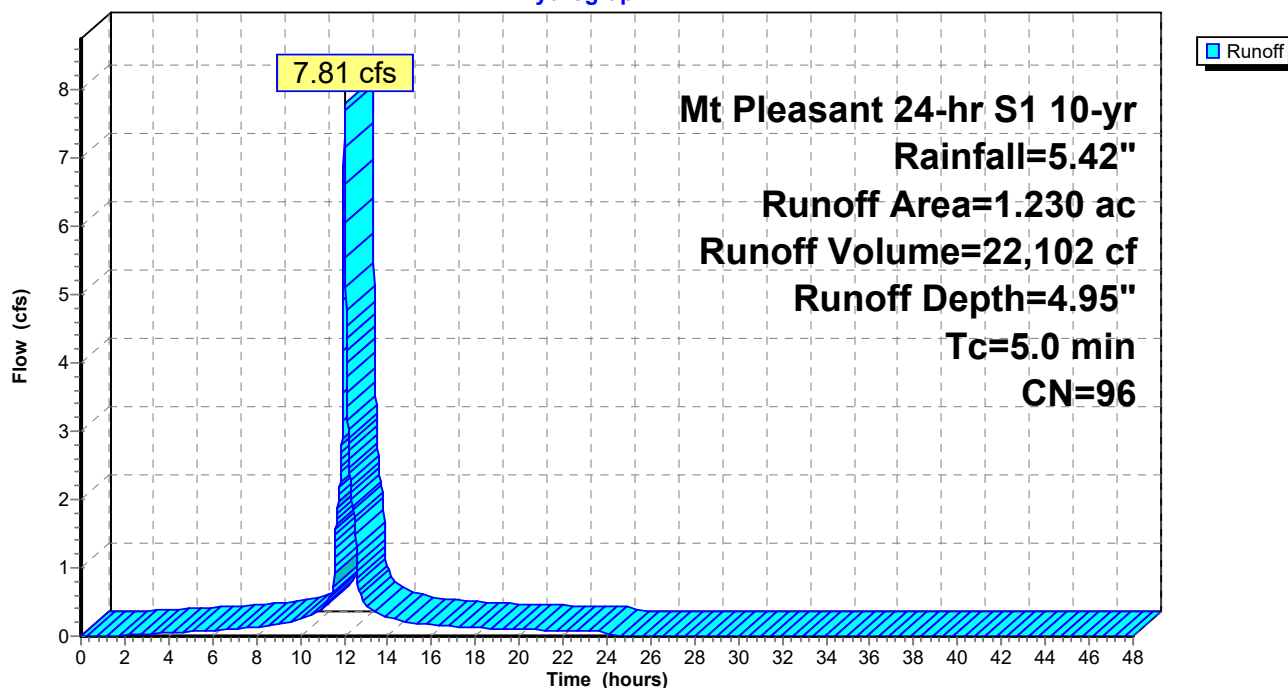
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Mt Pleasant 24-hr S1 10-yr Rainfall=5.42"

Area (ac)	CN	Description
1.230	96	Gravel surface, HSG C
1.230		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					Direct Entry,

Subcatchment DA4D: BASIN 4D PROPOSED

Hydrograph



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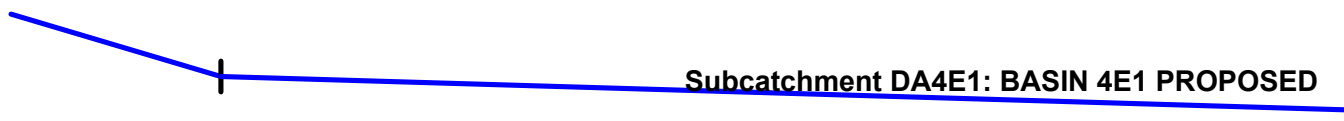
Summary for Subcatchment DA4E1: BASIN 4E1 PROPOSED

Runoff = 8.75 cfs @ 12.43 hrs, Volume= 49,007 cf, Depth= 1.86"
Routed to Reach D4E1 : Ditch 4E1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Mt Pleasant 24-hr S1 10-yr Rainfall=5.42"

Area (ac)	CN	Description
3.130	58	Meadow, non-grazed, HSG B
3.130	60	Woods, Fair, HSG B
1.000	98	Paved roads w/curbs & sewers, HSG B
7.260	64	Weighted Average
6.260		86.23% Pervious Area
1.000		13.77% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
18.6	100	0.1000	0.09		Sheet Flow, Woods: Dense underbrush n= 0.800 P2= 3.57"
12.9	540	0.0100	0.70		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
31.5	640	Total			



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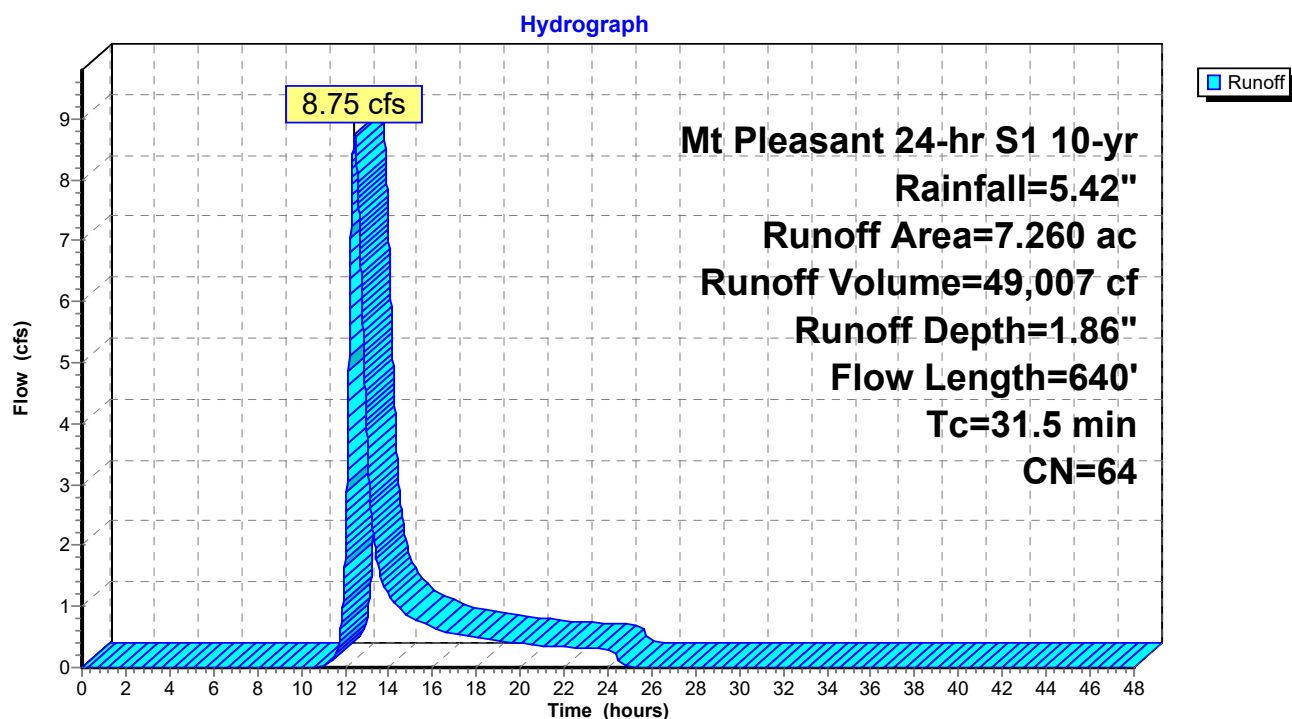
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Subcatchment DA4E1: BASIN 4E1 PROPOSED



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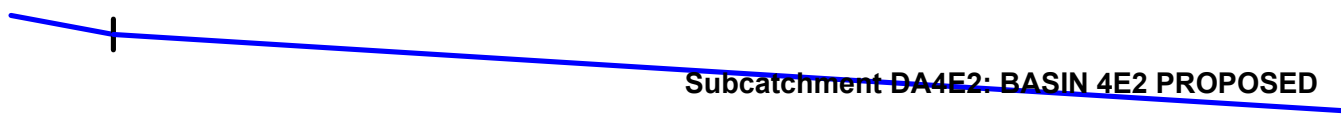
Summary for Subcatchment DA4E2: BASIN 4E2 PROPOSED

Runoff = 23.91 cfs @ 12.64 hrs, Volume= 157,900 cf, Depth= 2.27"
Routed to Pond CD4E : Cross Drain 4E

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Mt Pleasant 24-hr S1 10-yr Rainfall=5.42"

Area (ac)	CN	Description
9.300	79	Woods, Fair, HSG D
4.940	58	Meadow, non-grazed, HSG B
4.940	60	Woods, Fair, HSG B
19.180	69	Weighted Average
19.180		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
24.5	100	0.0500	0.07		Sheet Flow, Woods: Dense underbrush n= 0.800 P2= 3.57"
22.3	1,213	0.0167	0.90		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
46.8	1,313	Total			



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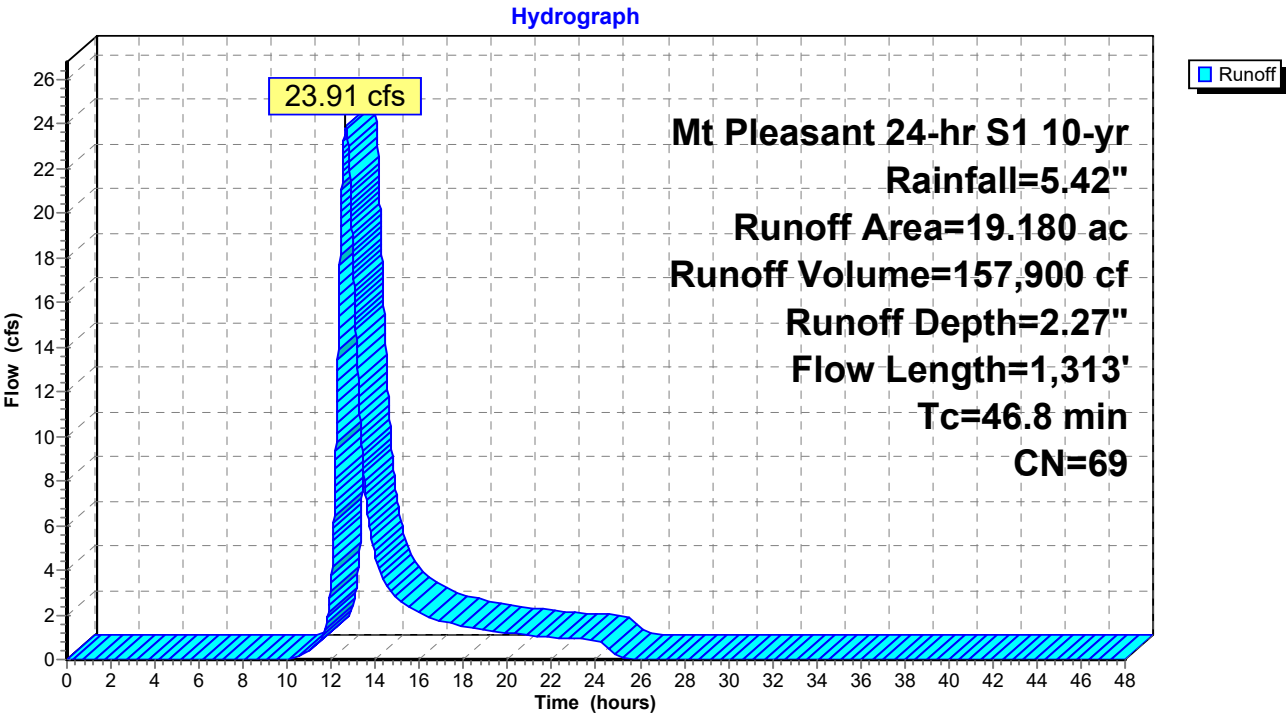
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Subcatchment DA4E2: BASIN 4E2 PROPOSED



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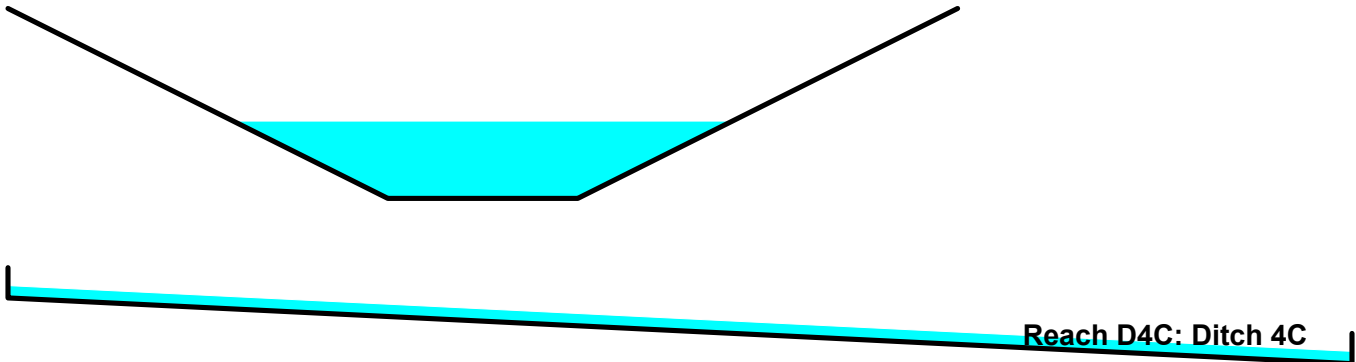
Summary for Reach D4C: Ditch 4C

Inflow Area = 29,621 sf, 0.00% Impervious, Inflow Depth = 4.95" for 10-yr event
 Inflow = 4.32 cfs @ 12.03 hrs, Volume= 12,219 cf
 Outflow = 4.04 cfs @ 12.05 hrs, Volume= 12,219 cf, Atten= 6%, Lag= 1.3 min
 Routed to Pond CD4C : Cross Drain 4C

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
 Max. Velocity= 2.45 fps, Min. Travel Time= 2.1 min
 Avg. Velocity = 0.69 fps, Avg. Travel Time= 7.5 min

Peak Storage= 516 cf @ 12.05 hrs
 Average Depth at Peak Storage= 0.61' , Surface Width= 3.93'
 Bank-Full Depth= 1.50' Flow Area= 6.8 sf, Capacity= 27.19 cfs

1.50' x 1.50' deep channel, n= 0.033 Riprap, 1-inch
 Side Slope Z-value= 2.0 '/' Top Width= 7.50'
 Length= 313.0' Slope= 0.0104 '/'
 Inlet Invert= 687.00', Outlet Invert= 683.75'



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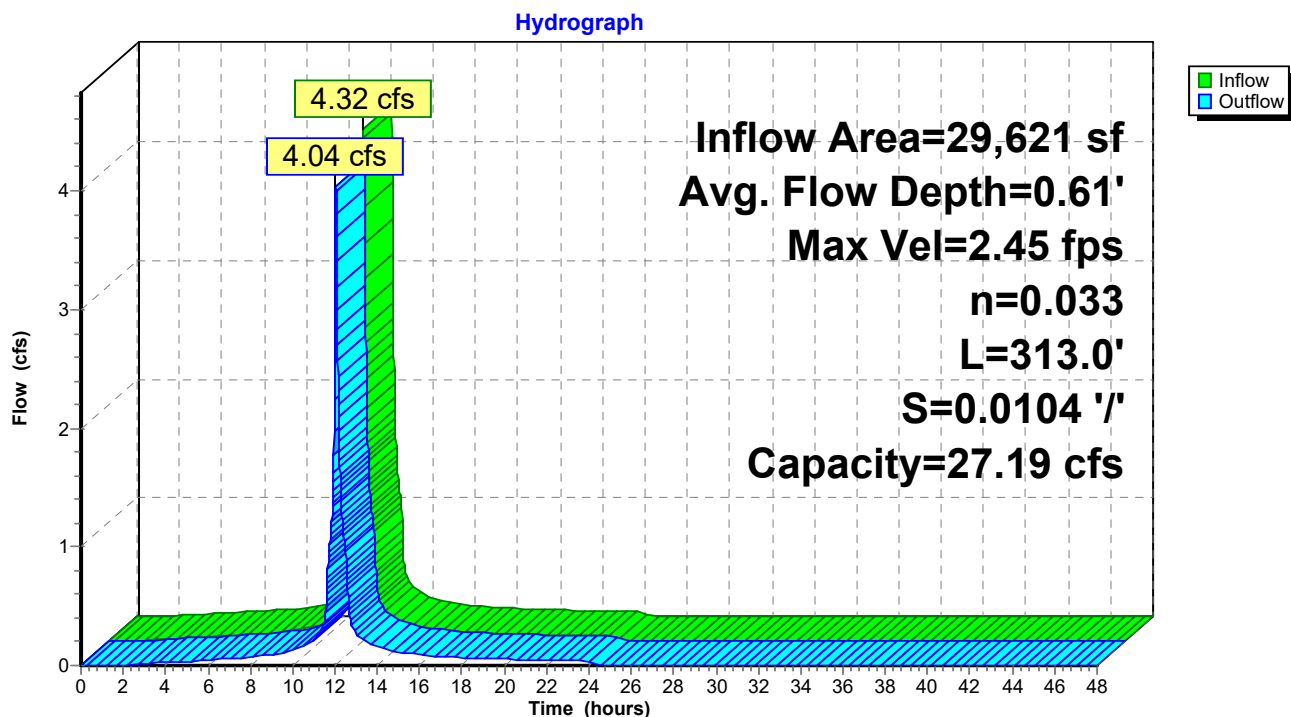
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Mt Pleasant 24-hr S1 10-yr Rainfall=5.42"

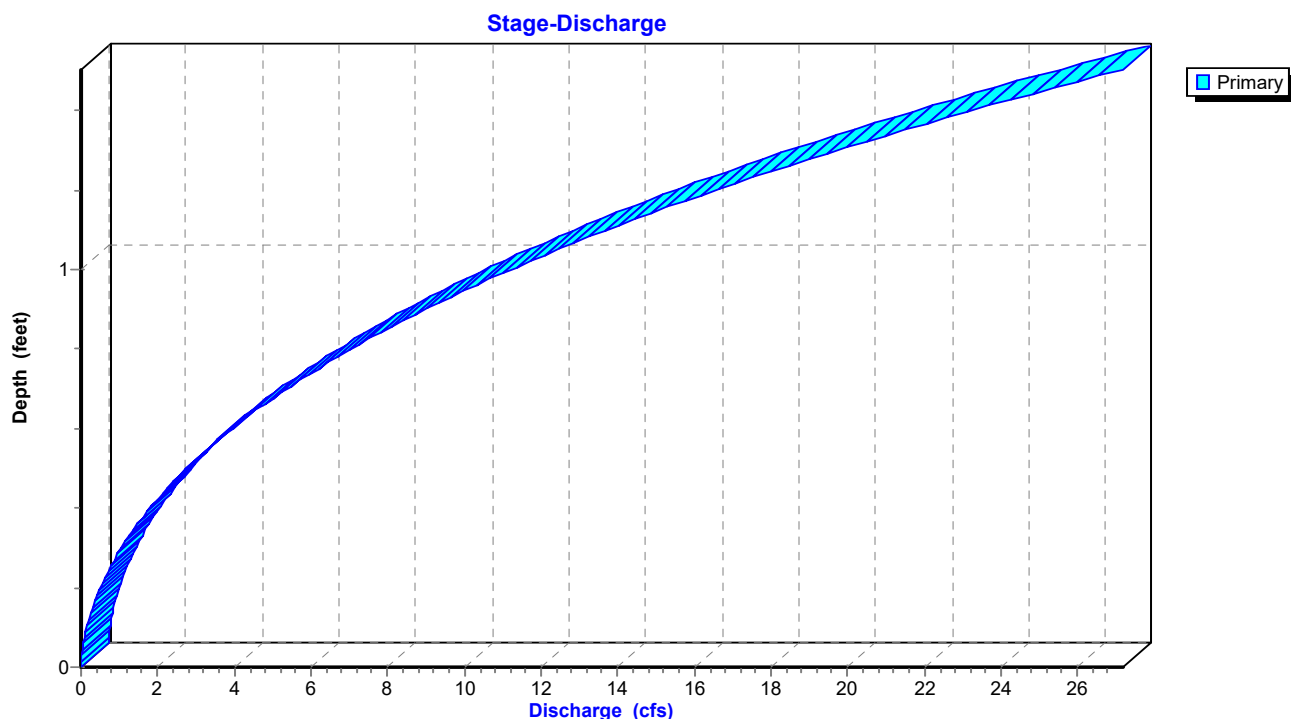
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Reach D4C: Ditch 4C



Reach D4C: Ditch 4C



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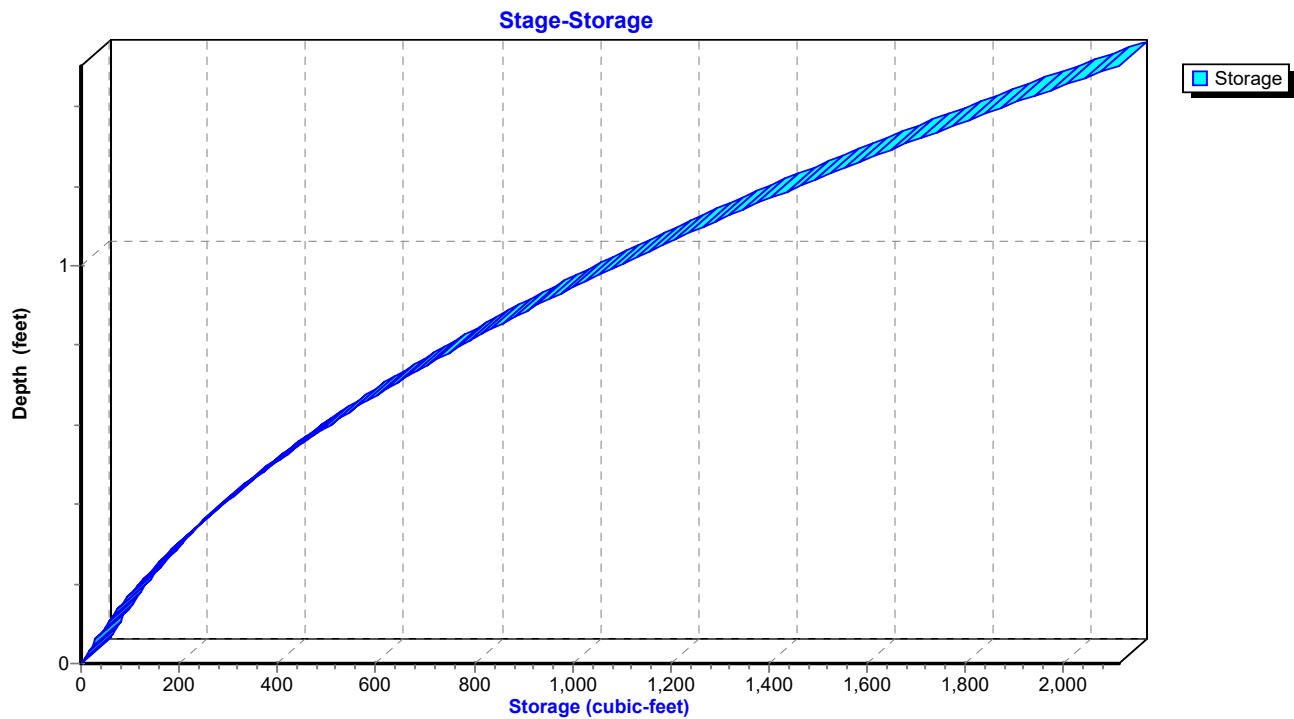
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Reach D4C: Ditch 4C



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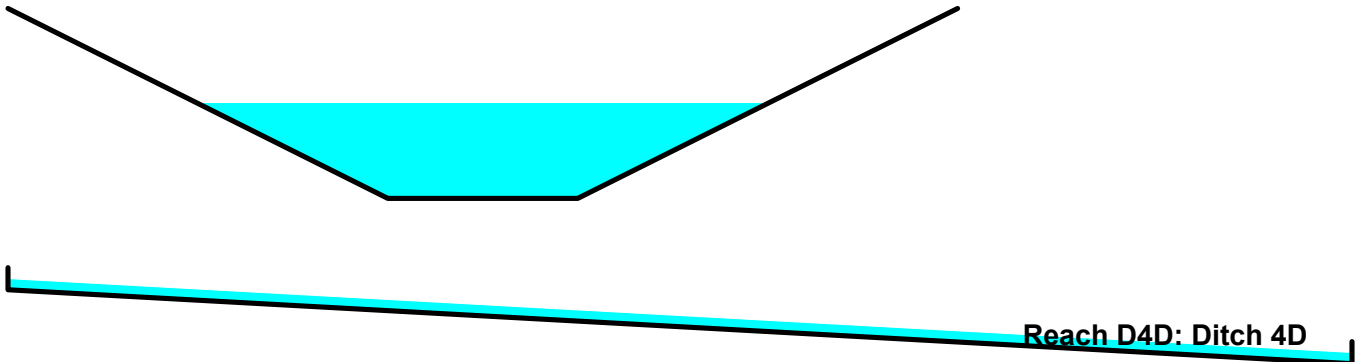
Summary for Reach D4D: Ditch 4D

Inflow Area = 53,579 sf, 0.00% Impervious, Inflow Depth = 4.95" for 10-yr event
 Inflow = 7.81 cfs @ 12.03 hrs, Volume= 22,102 cf
 Outflow = 7.46 cfs @ 12.04 hrs, Volume= 22,102 cf, Atten= 4%, Lag= 1.1 min
 Routed to Pond CD4DCE : Cross Drain 4DCE

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
 Max. Velocity= 3.29 fps, Min. Travel Time= 1.7 min
 Avg. Velocity = 0.95 fps, Avg. Travel Time= 5.9 min

Peak Storage= 763 cf @ 12.04 hrs
 Average Depth at Peak Storage= 0.75' , Surface Width= 4.51'
 Bank-Full Depth= 1.50' Flow Area= 6.8 sf, Capacity= 32.50 cfs

1.50' x 1.50' deep channel, n= 0.033 Riprap, 1-inch
 Side Slope Z-value= 2.0 '/' Top Width= 7.50'
 Length= 337.0' Slope= 0.0148 '/'
 Inlet Invert= 688.00', Outlet Invert= 683.00'



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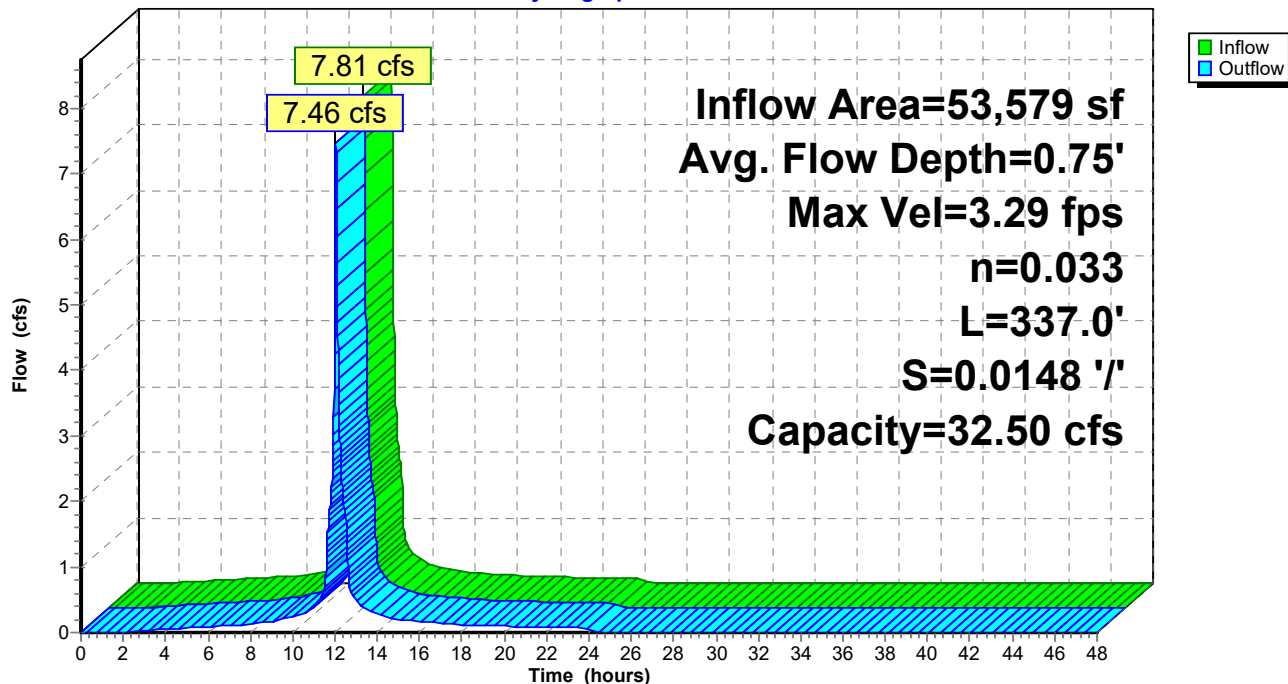
Mt Pleasant 24-hr S1 10-yr Rainfall=5.42"

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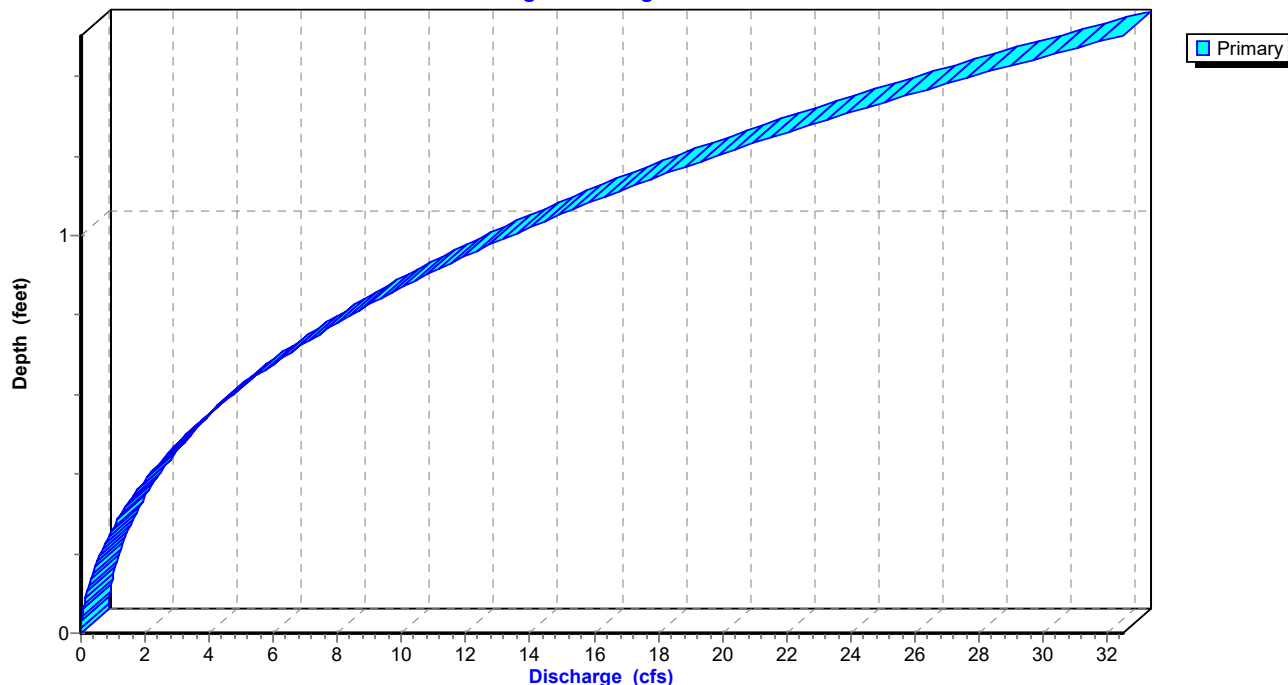
Reach D4D: Ditch 4D

Hydrograph



Reach D4D: Ditch 4D

Stage-Discharge



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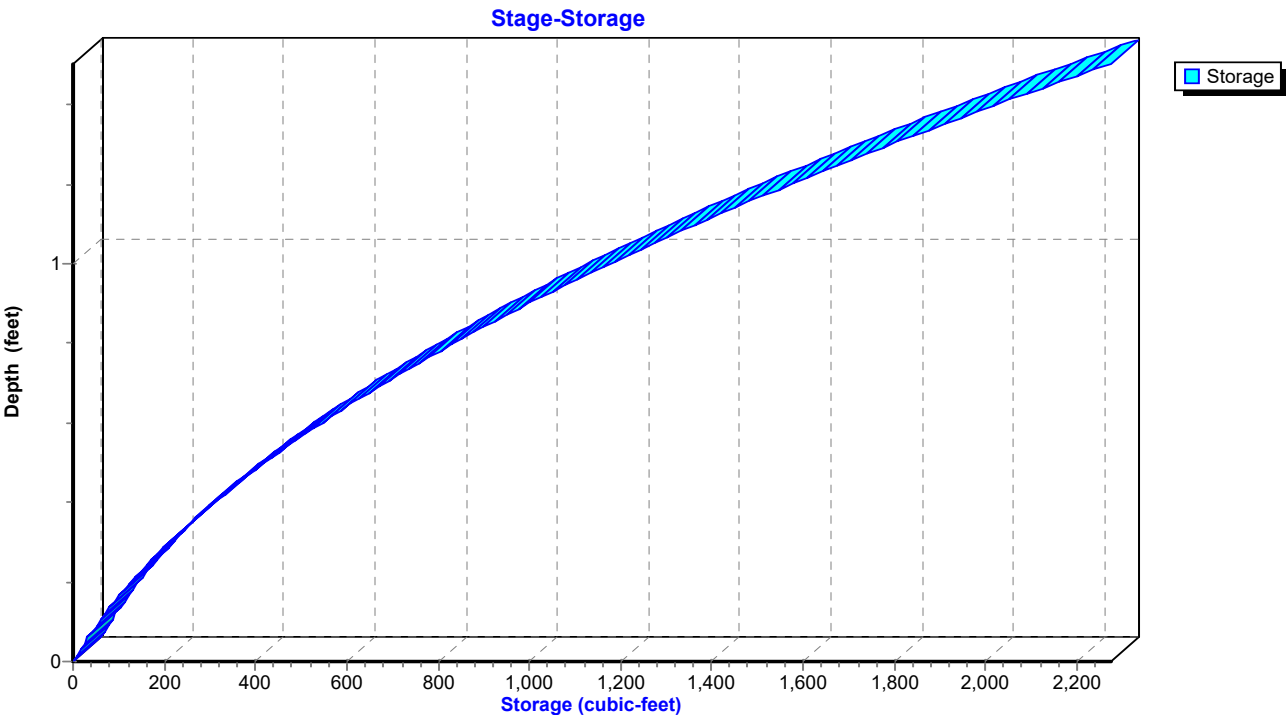
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Reach D4D: Ditch 4D



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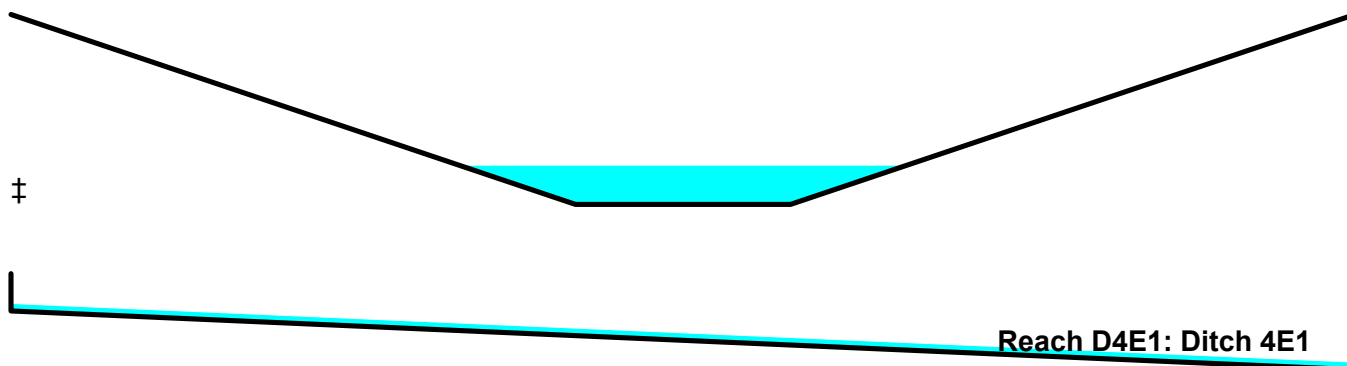
Summary for Reach D4E1: Ditch 4E1

Inflow Area = 316,246 sf, 13.77% Impervious, Inflow Depth = 1.86" for 10-yr event
 Inflow = 8.75 cfs @ 12.43 hrs, Volume= 49,007 cf
 Outflow = 7.01 cfs @ 12.68 hrs, Volume= 49,007 cf, Atten= 20%, Lag= 15.2 min
 Routed to Pond CD4E : Cross Drain 4E

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
 Max. Velocity= 1.60 fps, Min. Travel Time= 18.6 min
 Avg. Velocity= 0.50 fps, Avg. Travel Time= 60.0 min

Peak Storage= 7,819 cf @ 12.68 hrs
 Average Depth at Peak Storage= 0.71' , Surface Width= 8.27'
 Bank-Full Depth= 3.50' Flow Area= 50.8 sf, Capacity= 197.27 cfs

4.00' x 3.50' deep channel, n= 0.033 Riprap, 1-inch
 Side Slope Z-value= 3.0 ' / ' Top Width= 25.00'
 Length= 1,788.0' Slope= 0.0031 ' / '
 Inlet Invert= 685.00', Outlet Invert= 679.50'



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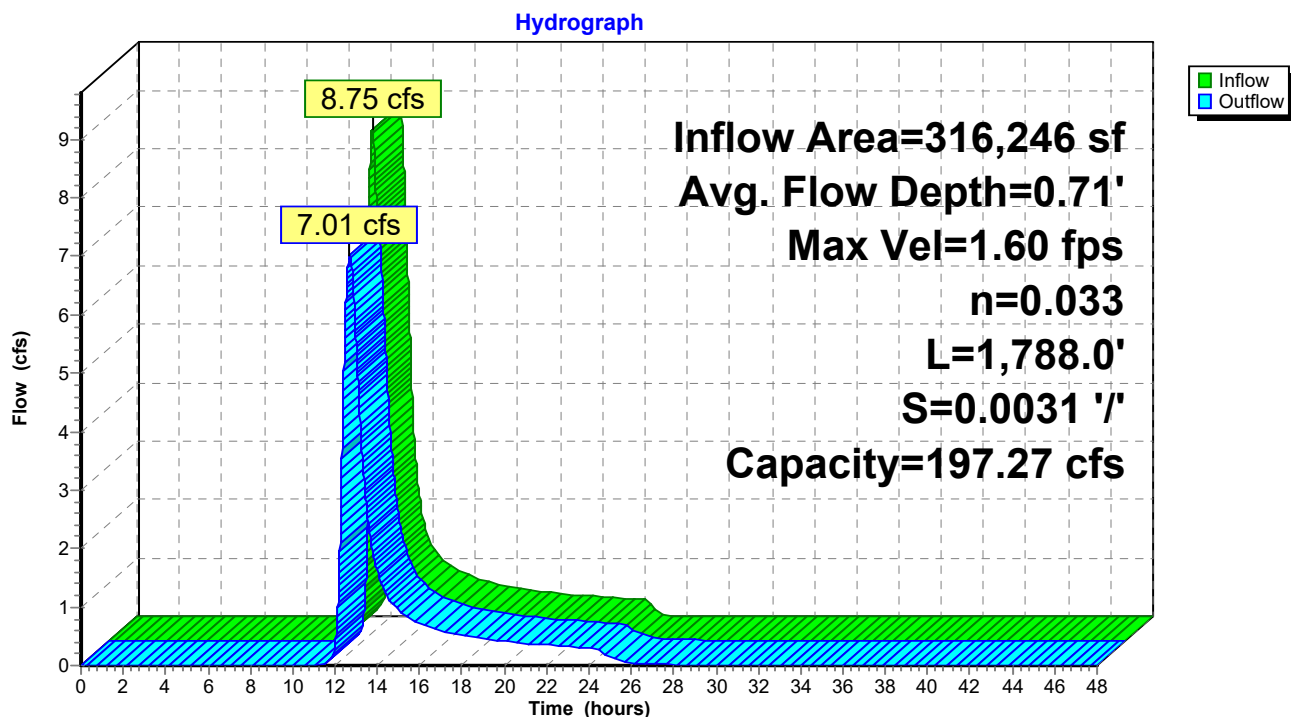
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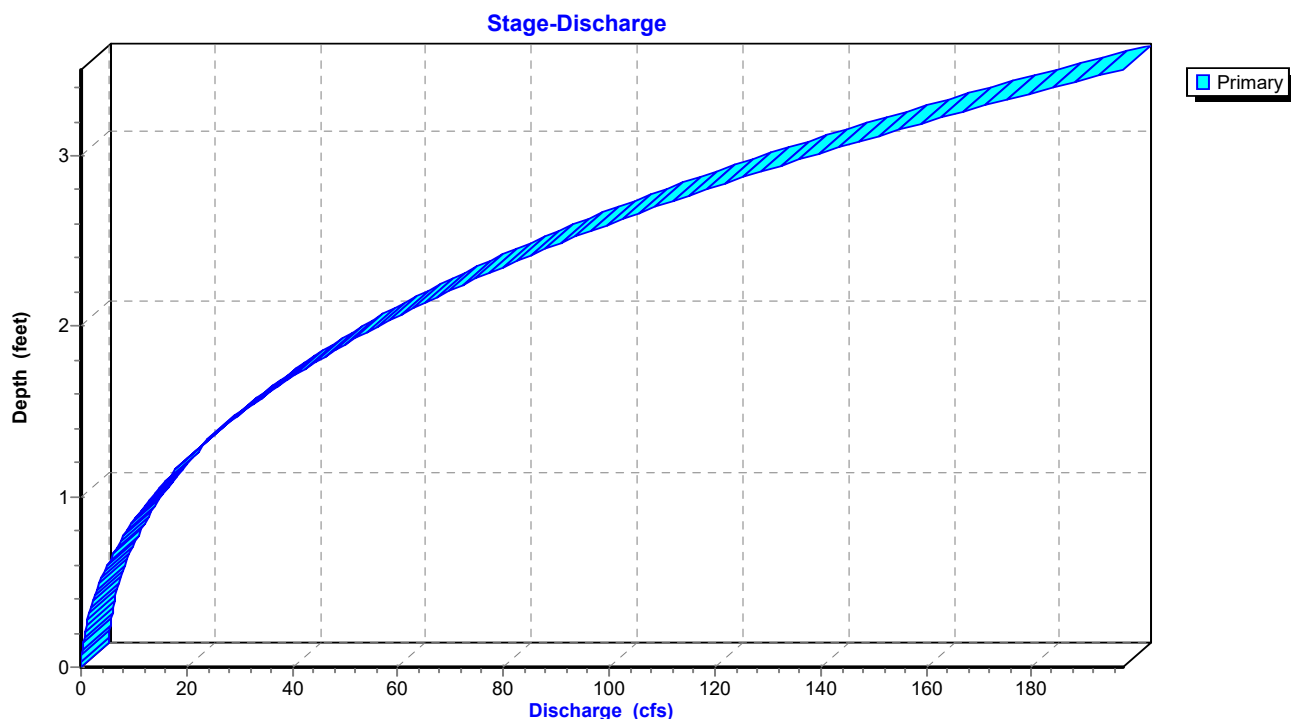
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Reach D4E1: Ditch 4E1



Reach D4E1: Ditch 4E1



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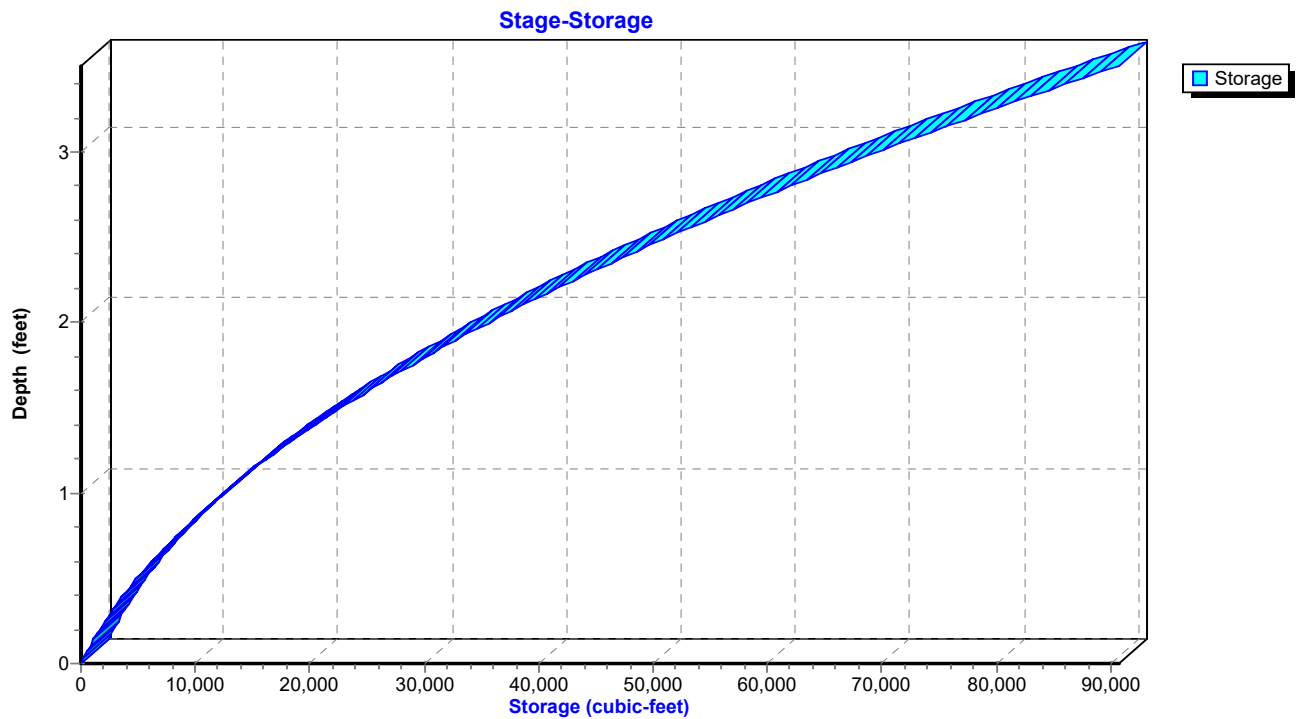
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Reach D4E1: Ditch 4E1



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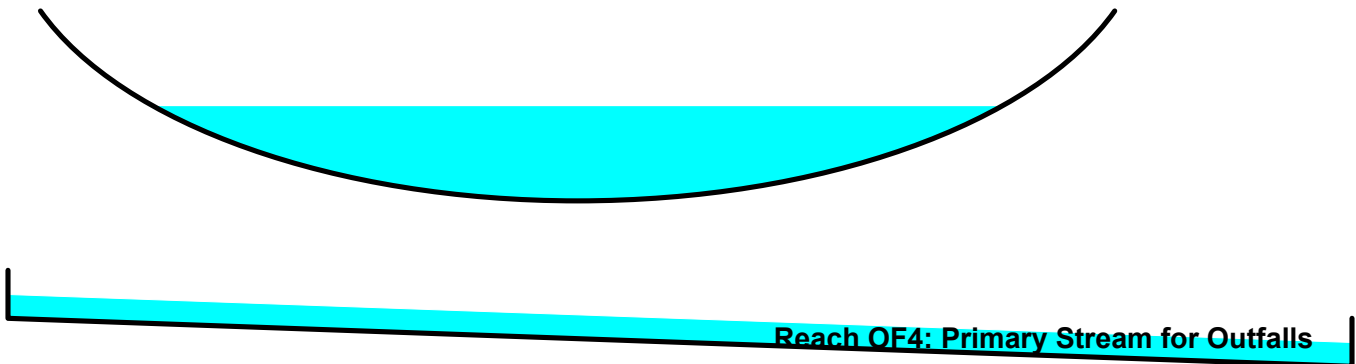
Summary for Reach OF4: Primary Stream for Outfalls

Inflow Area = 9,965,657 sf, 1.09% Impervious, Inflow Depth = 2.54" for 10-yr event
 Inflow = 144.59 cfs @ 13.50 hrs, Volume= 2,109,686 cf
 Outflow = 144.45 cfs @ 13.52 hrs, Volume= 2,109,686 cf, Atten= 0%, Lag= 0.9 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
 Max. Velocity= 4.11 fps, Min. Travel Time= 4.1 min
 Avg. Velocity = 1.54 fps, Avg. Travel Time= 10.8 min

Peak Storage= 35,136 cf @ 13.52 hrs
 Average Depth at Peak Storage= 2.49' , Surface Width= 21.17'
 Bank-Full Depth= 5.00' Flow Area= 100.0 sf, Capacity= 640.46 cfs

30.00' x 5.00' deep Parabolic Channel, n= 0.035
 Length= 1,000.0' Slope= 0.0050 '/'
 Inlet Invert= 675.00', Outlet Invert= 670.00'



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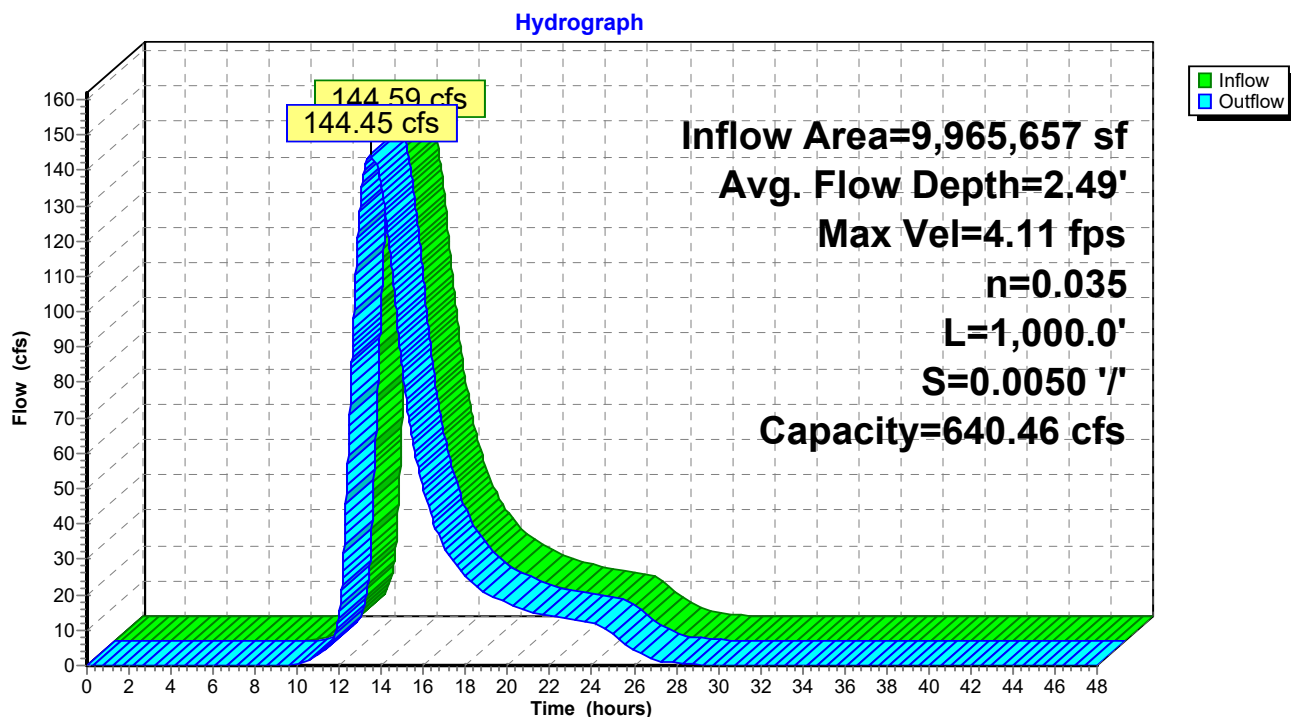
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Mt Pleasant 24-hr S1 10-yr Rainfall=5.42"

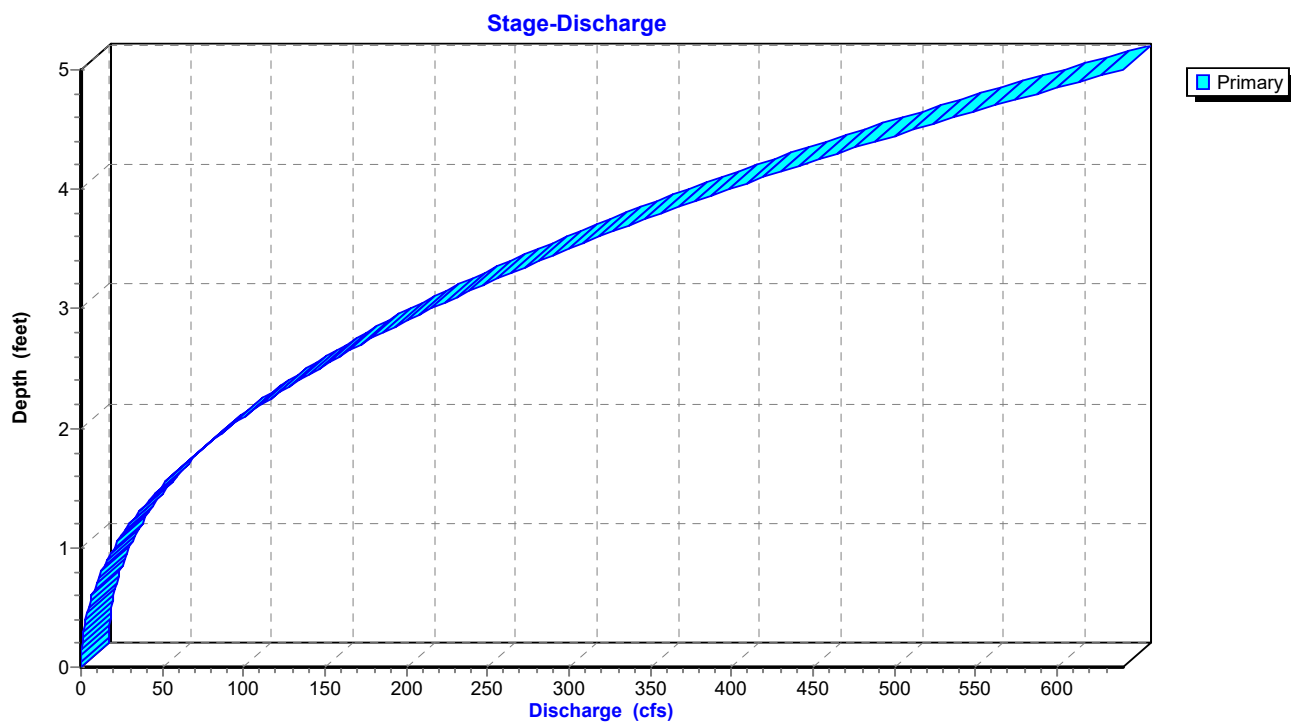
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Reach OF4: Primary Stream for Outfalls



Reach OF4: Primary Stream for Outfalls



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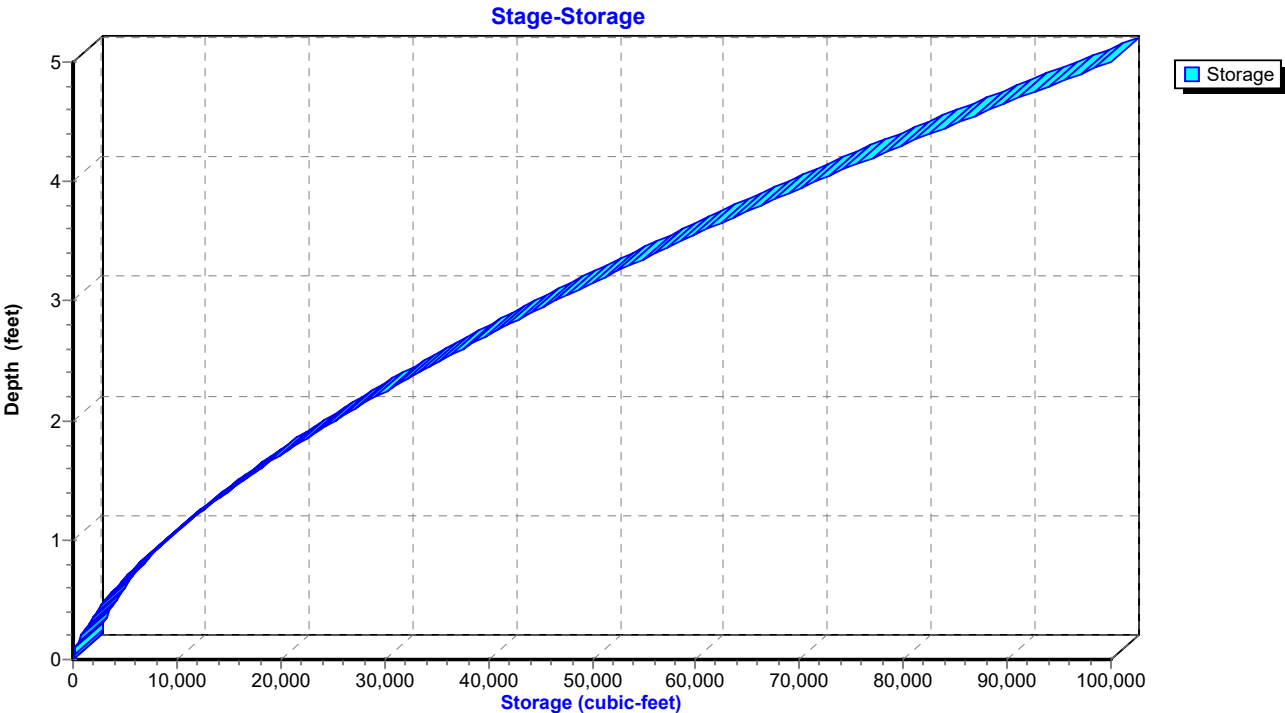
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Reach OF4: Primary Stream for Outfalls



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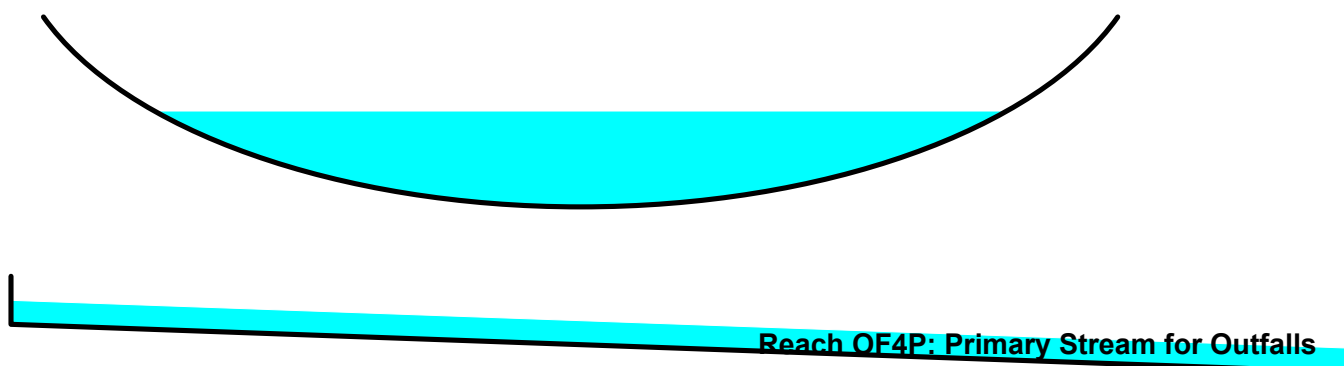
Summary for Reach OF4P: Primary Stream for Outfalls

Inflow Area = 9,969,577 sf, 2.84% Impervious, Inflow Depth = 2.68" for 10-yr event
 Inflow = 147.00 cfs @ 13.67 hrs, Volume= 2,227,554 cf
 Outflow = 146.78 cfs @ 13.70 hrs, Volume= 2,227,553 cf, Atten= 0%, Lag= 2.3 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
 Max. Velocity= 4.13 fps, Min. Travel Time= 4.0 min
 Avg. Velocity = 1.21 fps, Avg. Travel Time= 13.8 min

Peak Storage= 35,530 cf @ 13.70 hrs
 Average Depth at Peak Storage= 2.51' , Surface Width= 21.25'
 Bank-Full Depth= 5.00' Flow Area= 100.0 sf, Capacity= 640.46 cfs

30.00' x 5.00' deep Parabolic Channel, n= 0.035
 Length= 1,000.0' Slope= 0.0050 '/'
 Inlet Invert= 675.00', Outlet Invert= 670.00'



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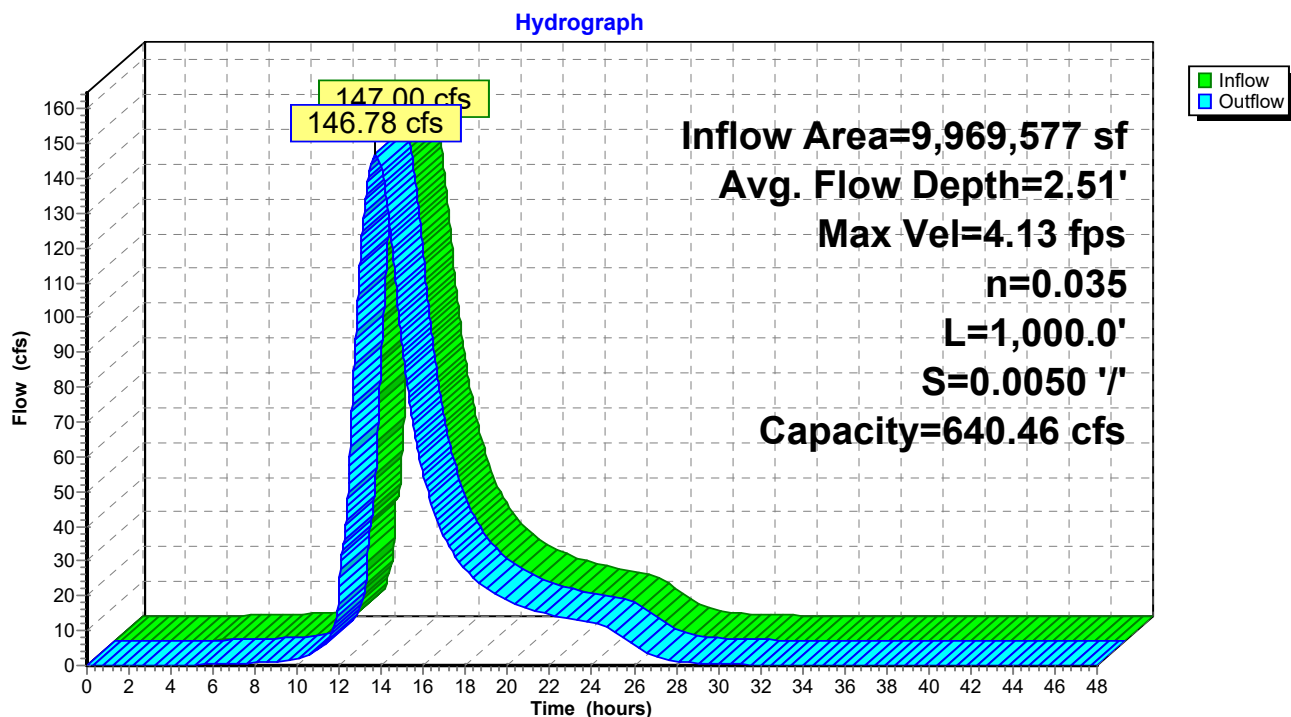
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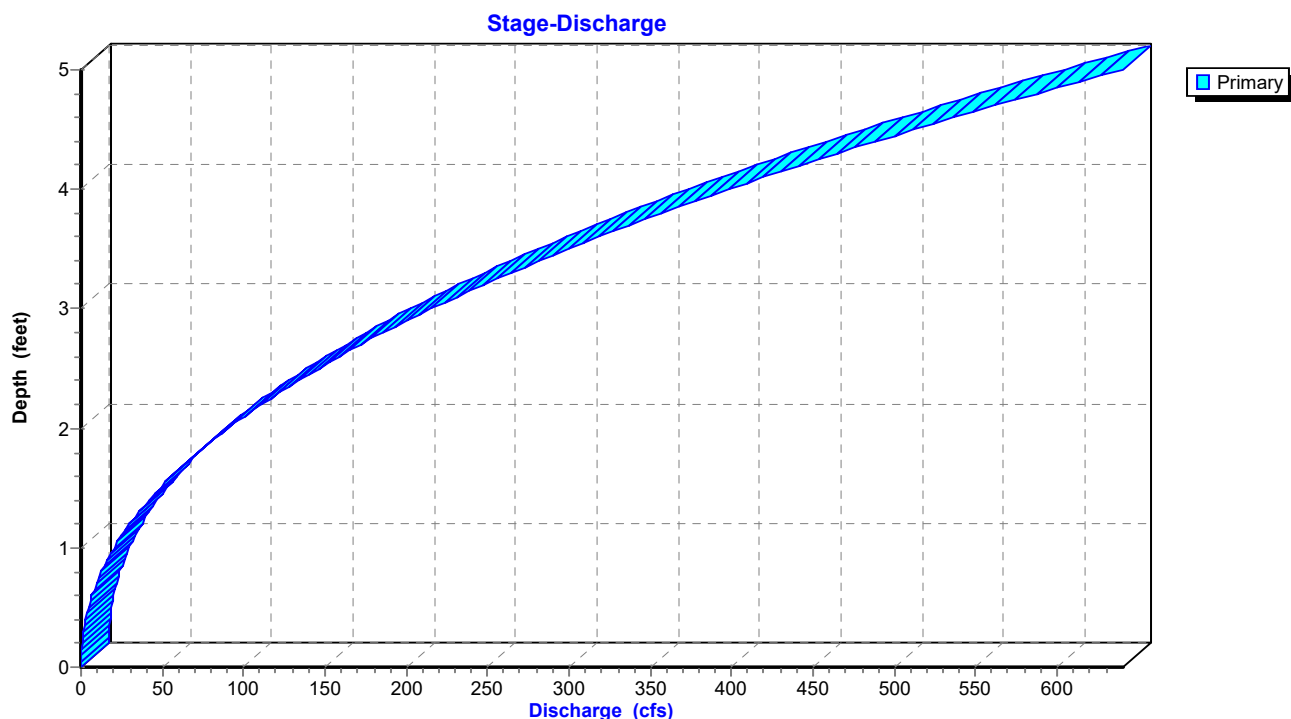
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Reach OF4P: Primary Stream for Outfalls



Reach OF4P: Primary Stream for Outfalls



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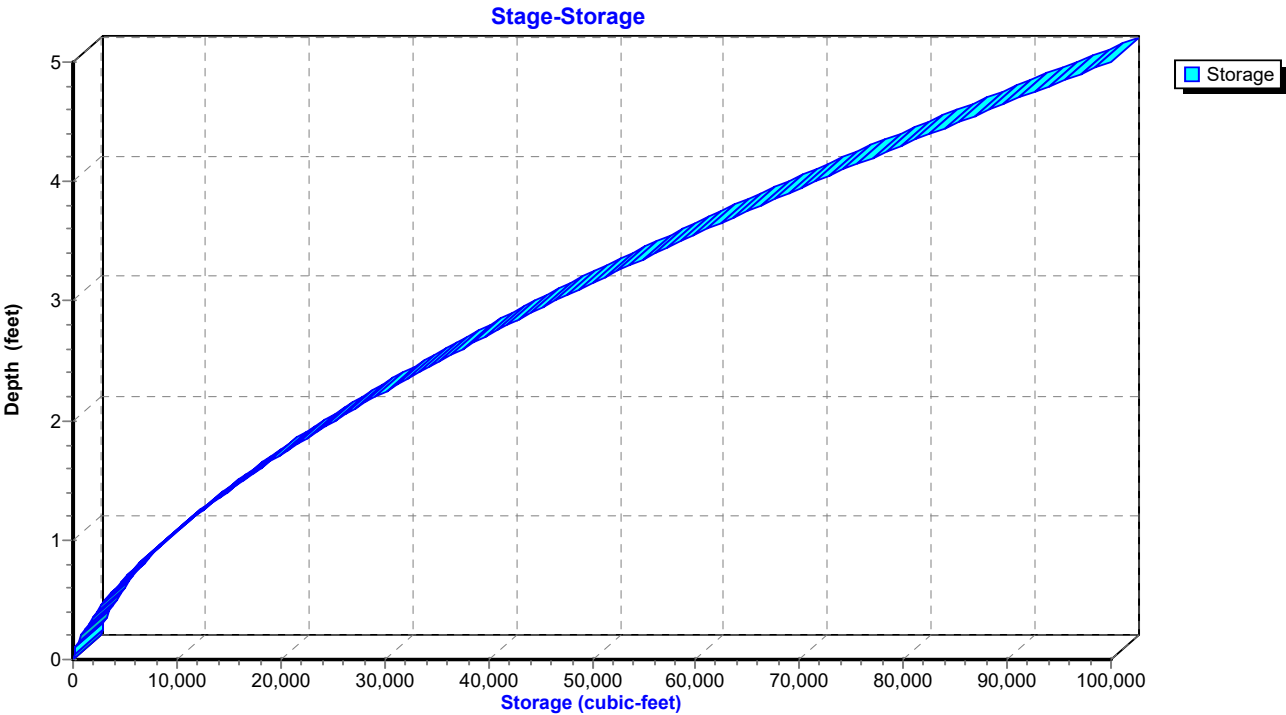
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Reach OF4P: Primary Stream for Outfalls



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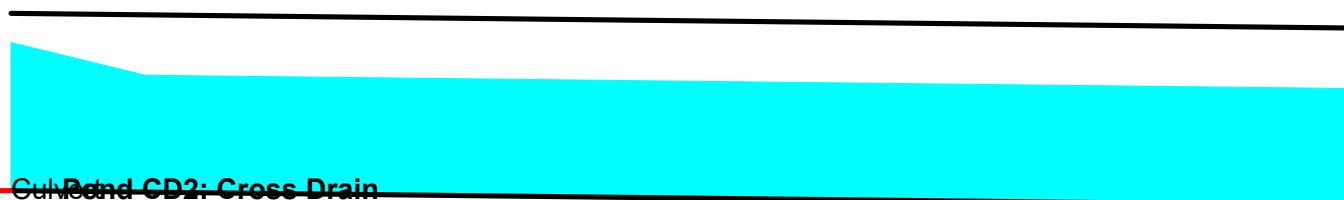
Summary for Pond CD2: Cross Drain

Inflow Area = 1,520,244 sf, 0.00% Impervious, Inflow Depth = 1.70" for 10-yr event
 Inflow = 26.69 cfs @ 12.94 hrs, Volume= 215,881 cf
 Outflow = 26.69 cfs @ 12.94 hrs, Volume= 215,881 cf, Atten= 0%, Lag= 0.0 min
 Primary = 26.69 cfs @ 12.94 hrs, Volume= 215,881 cf
 Routed to Reach OF4P : Primary Stream for Outfalls

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
 Peak Elev= 682.76' @ 12.94 hrs

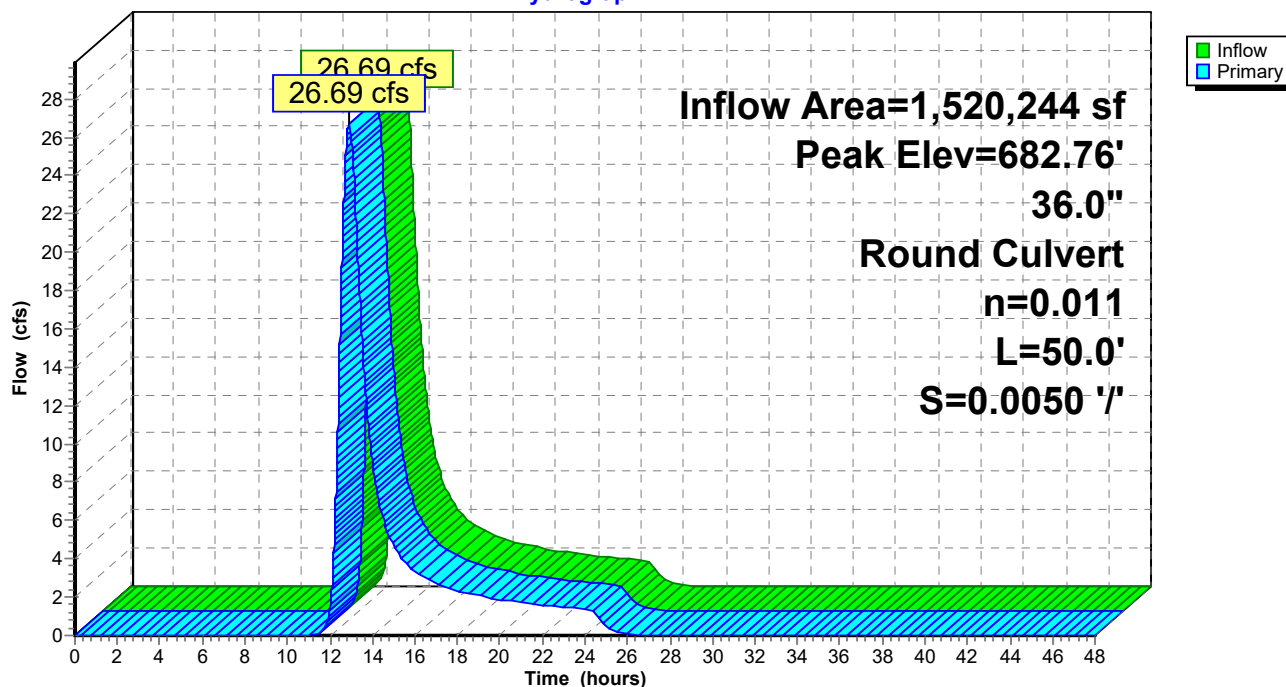
Device	Routing	Invert	Outlet Devices
#1	Primary	680.25'	36.0" Round Culvert L= 50.0' Ke= 0.500 Inlet / Outlet Invert= 680.25' / 680.00' S= 0.0050 '/' Cc= 0.900 n= 0.011 Concrete pipe, straight & clean, Flow Area= 7.07 sf

Primary OutFlow Max=26.69 cfs @ 12.94 hrs HW=682.76' TW=677.21' (Dynamic Tailwater)
 1=Culvert (Barrel Controls 26.69 cfs @ 5.73 fps)



Pond CD2: Cross Drain

Hydrograph



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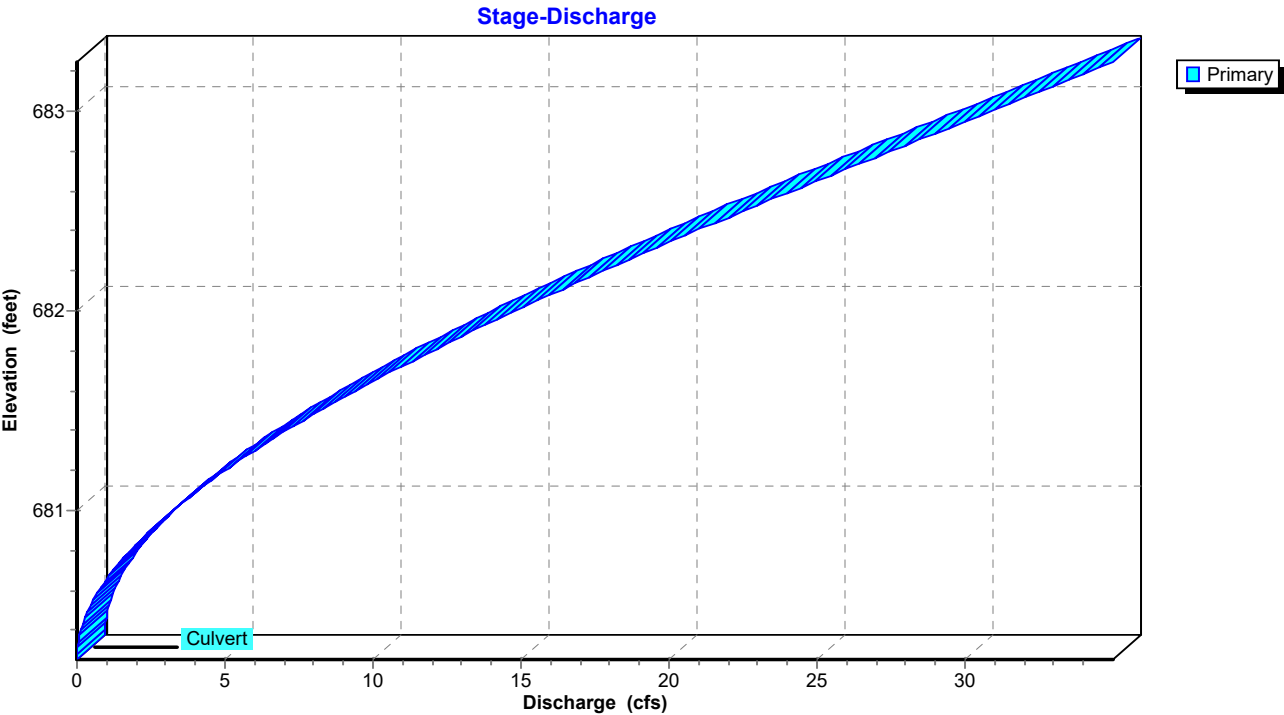
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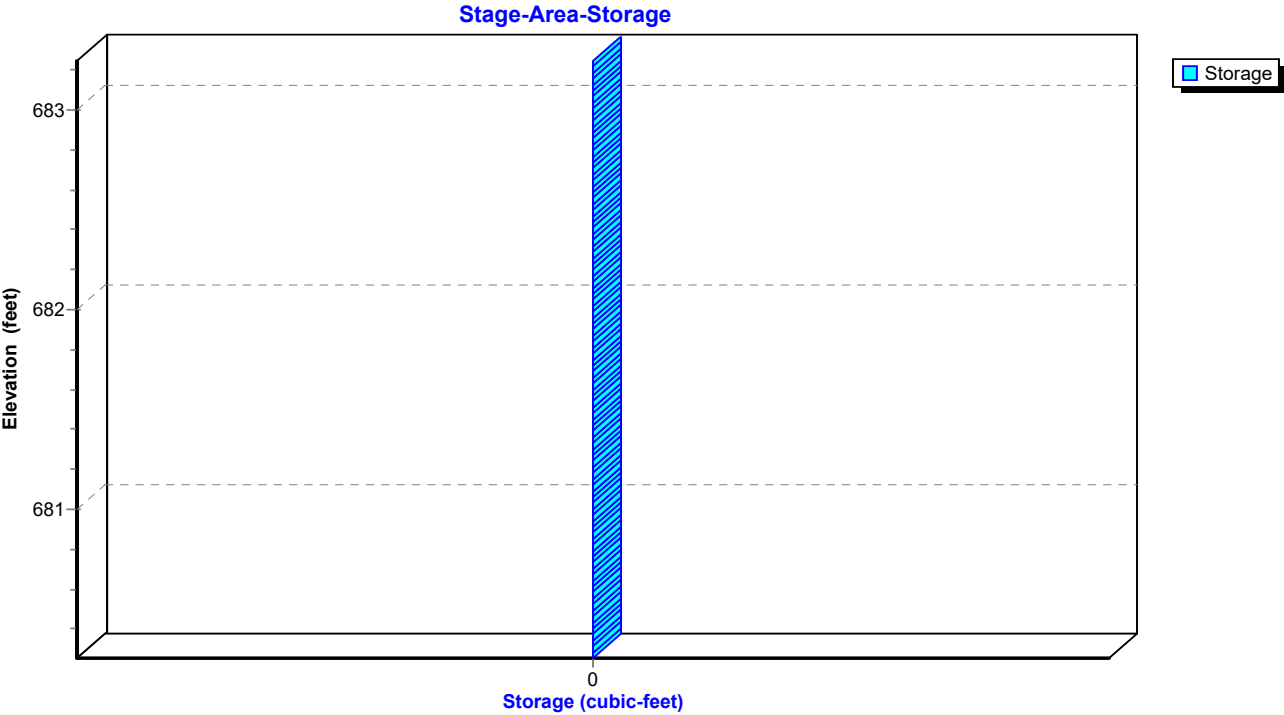
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Pond CD2: Cross Drain



Pond CD2: Cross Drain



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Summary for Pond CD4C: Cross Drain 4C

Inflow Area = 29,621 sf, 0.00% Impervious, Inflow Depth = 4.95" for 10-yr event
 Inflow = 4.04 cfs @ 12.05 hrs, Volume= 12,219 cf
 Outflow = 4.04 cfs @ 12.05 hrs, Volume= 12,219 cf, Atten= 0%, Lag= 0.0 min
 Primary = 4.04 cfs @ 12.05 hrs, Volume= 12,219 cf
 Routed to Pond CD4DCE : Cross Drain 4DCE

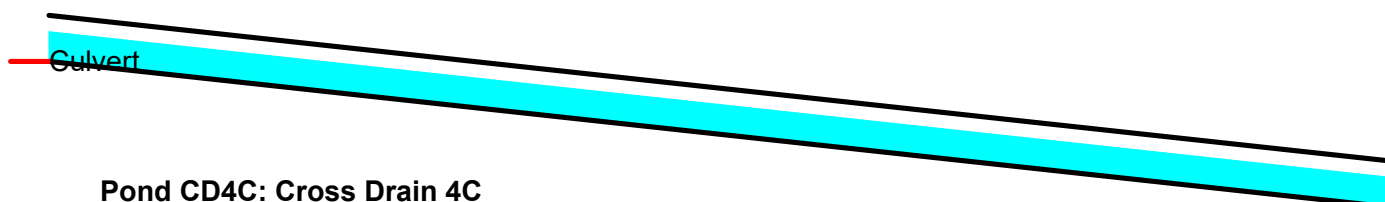
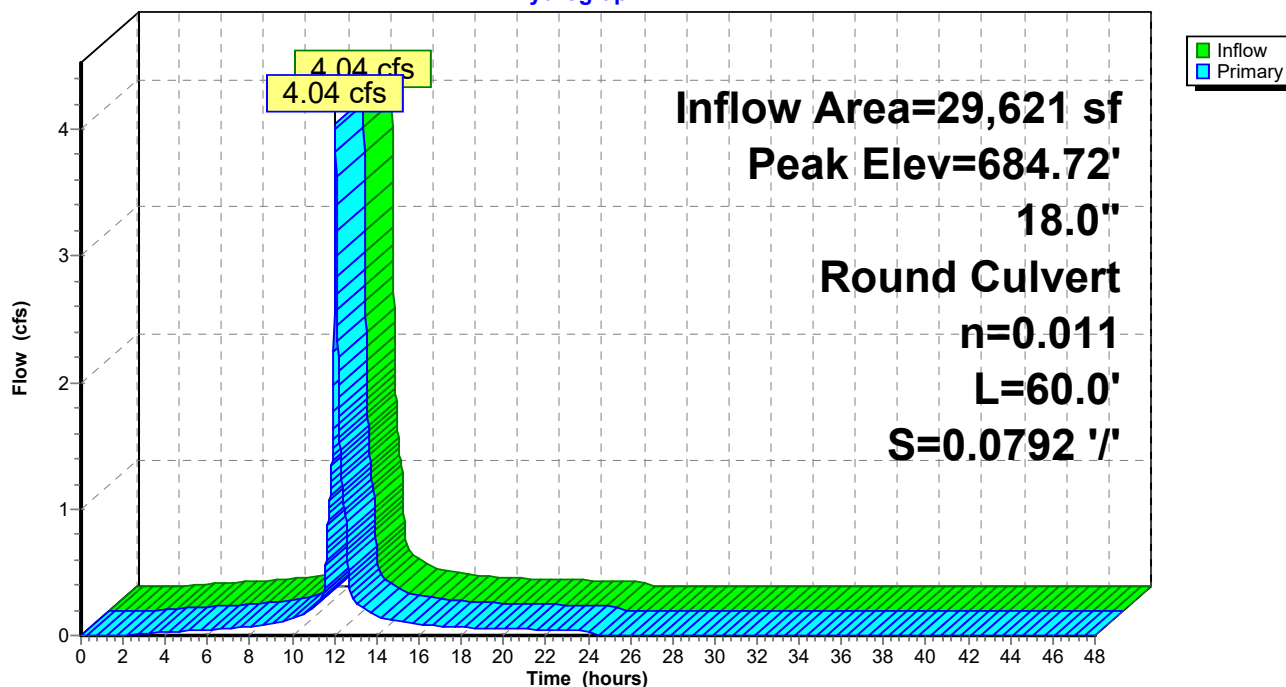
Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Peak Elev= 684.72' @ 12.05 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	683.75'	18.0" Round Culvert L= 60.0' Square-edged headwall, Ke= 0.500 Inlet / Outlet Invert= 683.75' / 679.00' S= 0.0792 '/' Cc= 0.900 n= 0.011 Concrete pipe, straight & clean, Flow Area= 1.77 sf

Primary OutFlow Max=4.03 cfs @ 12.05 hrs HW=684.72' TW=679.89' (Dynamic Tailwater)

1=Culvert (Inlet Controls 4.03 cfs @ 3.35 fps)

**Pond CD4C: Cross Drain 4C****Hydrograph**

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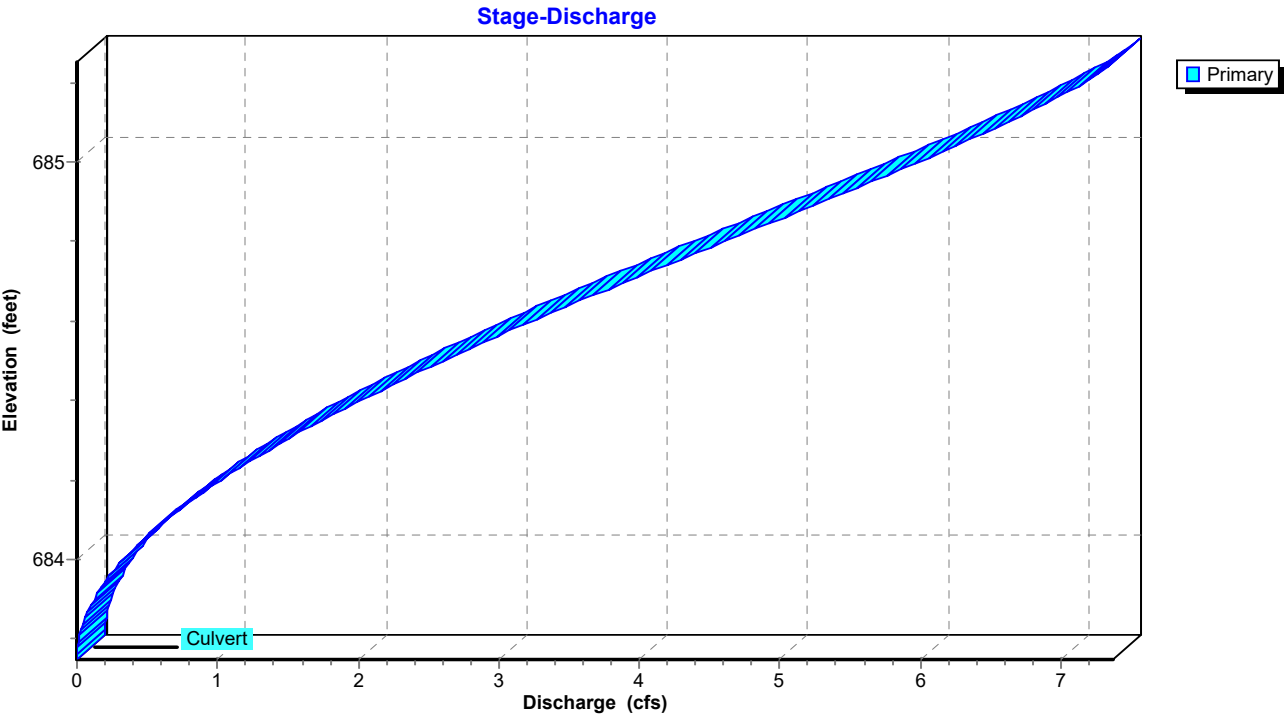
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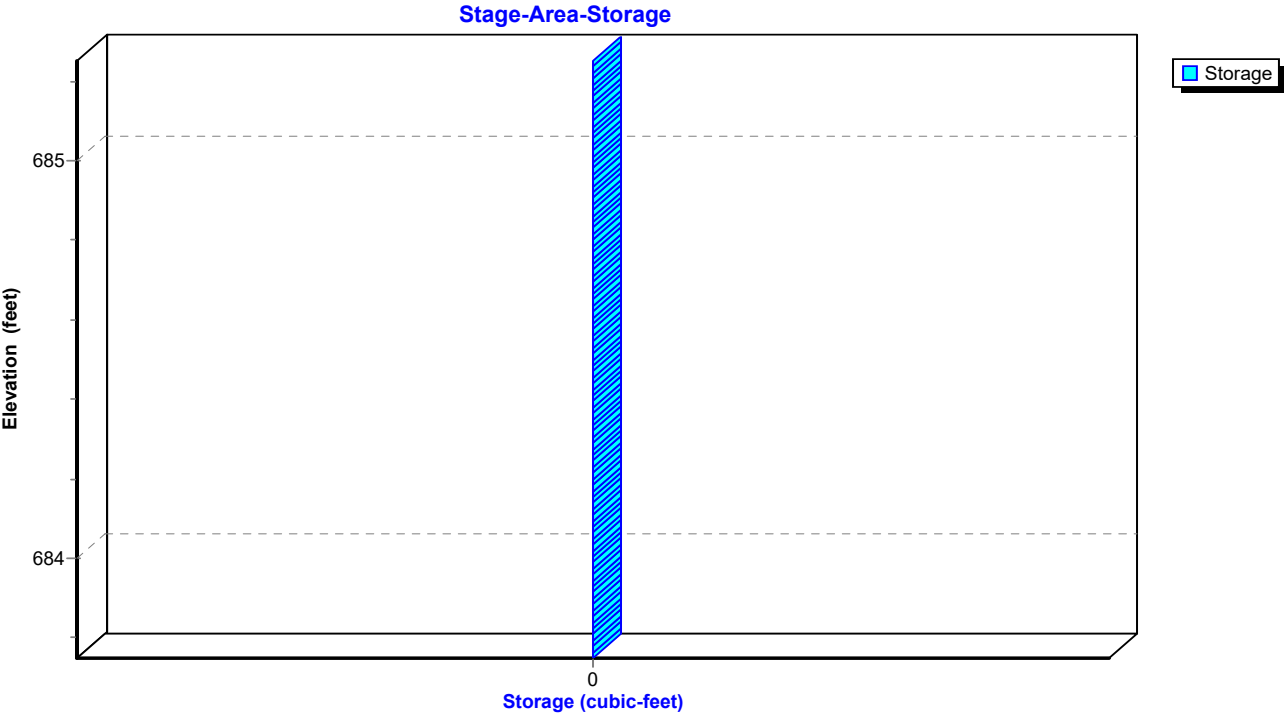
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Pond CD4C: Cross Drain 4C



Pond CD4C: Cross Drain 4C



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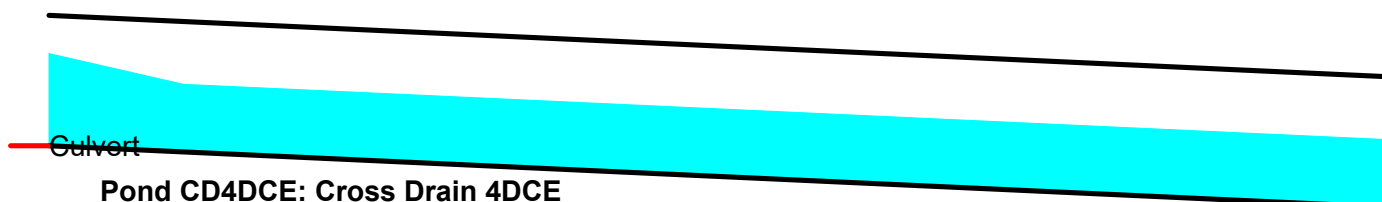
Summary for Pond CD4DCE: Cross Drain 4DCE

Inflow Area = 1,234,926 sf, 3.53% Impervious, Inflow Depth = 2.34" for 10-yr event
 Inflow = 31.24 cfs @ 12.69 hrs, Volume= 241,226 cf
 Outflow = 31.24 cfs @ 12.69 hrs, Volume= 241,226 cf, Atten= 0%, Lag= 0.0 min
 Primary = 31.24 cfs @ 12.69 hrs, Volume= 241,226 cf
 Routed to Pond POND1P : PROP POND

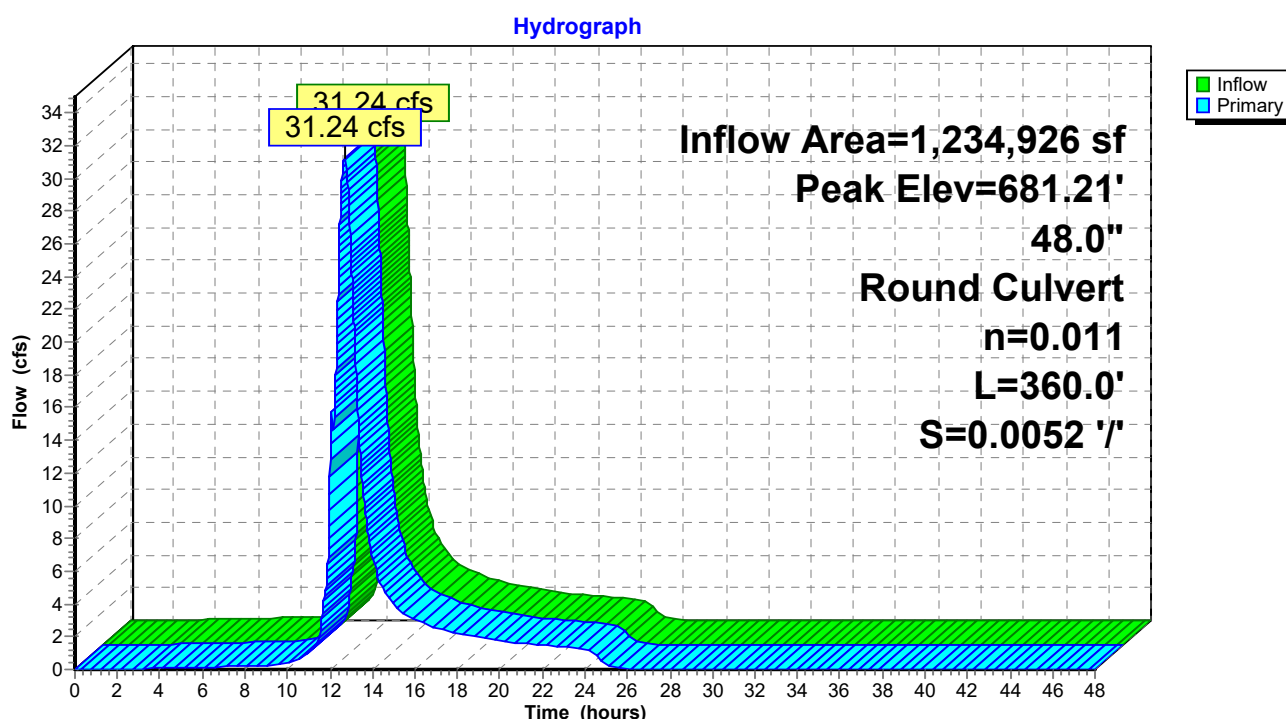
Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
 Peak Elev= 681.21' @ 12.85 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	678.39'	48.0" Round Culvert L= 360.0' Ke= 0.500 Inlet / Outlet Invert= 678.39' / 676.50' S= 0.0052 '/' Cc= 0.900 n= 0.011 Concrete pipe, straight & clean, Flow Area= 12.57 sf

Primary OutFlow Max=30.92 cfs @ 12.69 hrs HW=681.13' TW=680.17' (Dynamic Tailwater)
 1=Culvert (Outlet Controls 30.92 cfs @ 4.75 fps)



Pond CD4DCE: Cross Drain 4DCE

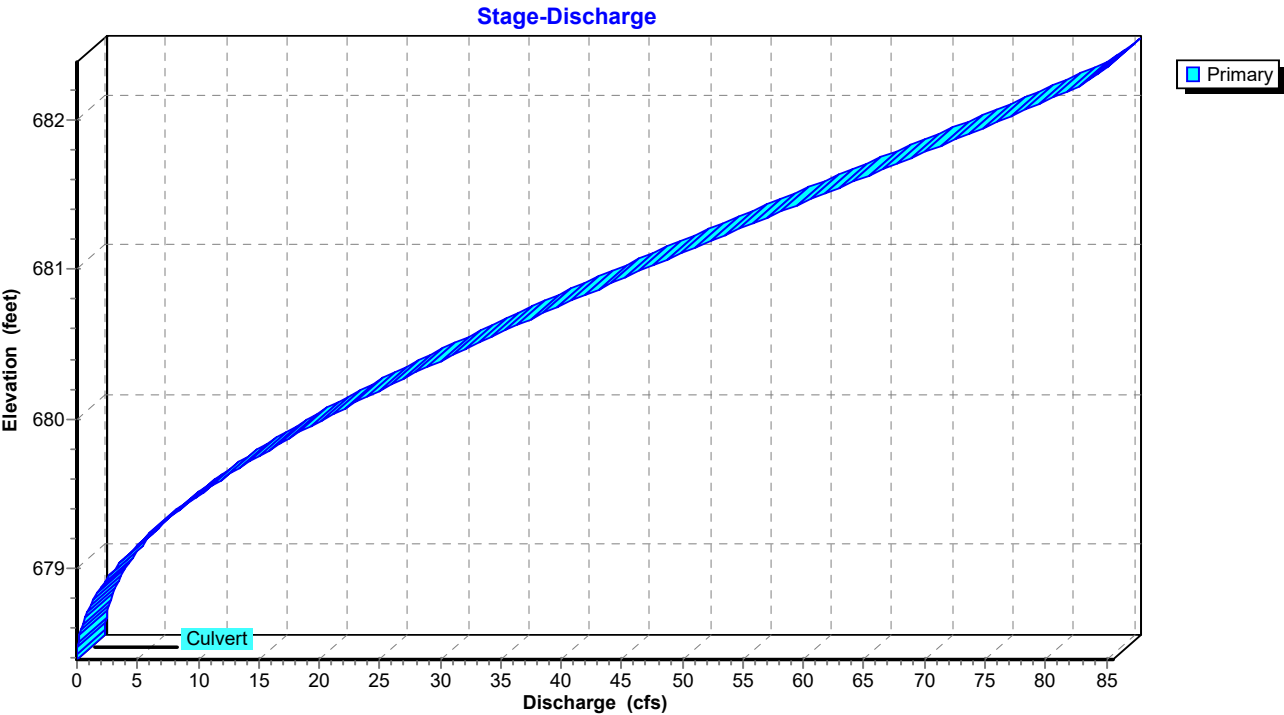


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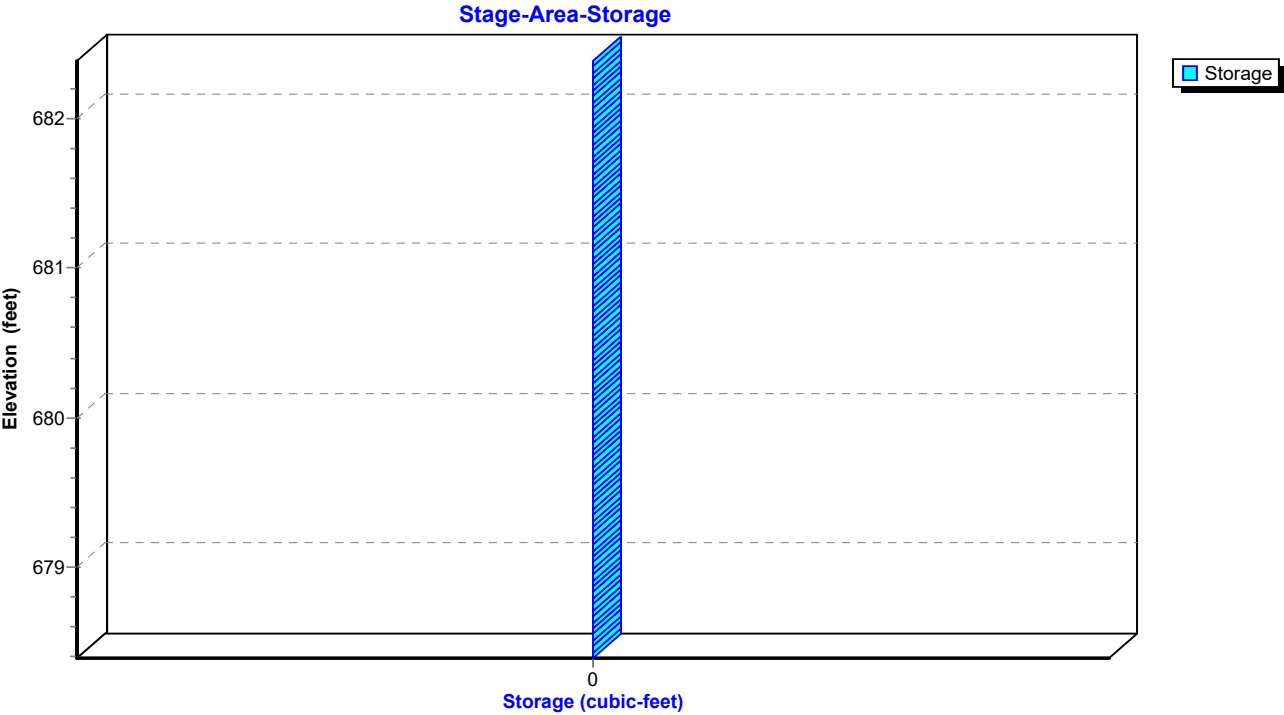
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Pond CD4DCE: Cross Drain 4DCE



Pond CD4DCE: Cross Drain 4DCE



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Summary for Pond CD4E: Cross Drain 4E

Inflow Area = 1,151,726 sf, 3.78% Impervious, Inflow Depth = 2.16" for 10-yr event
 Inflow = 30.88 cfs @ 12.64 hrs, Volume= 206,907 cf
 Outflow = 30.12 cfs @ 12.71 hrs, Volume= 206,905 cf, Atten= 2%, Lag= 3.8 min
 Primary = 30.12 cfs @ 12.71 hrs, Volume= 206,905 cf
 Routed to Pond CD4DCE : Cross Drain 4DCE

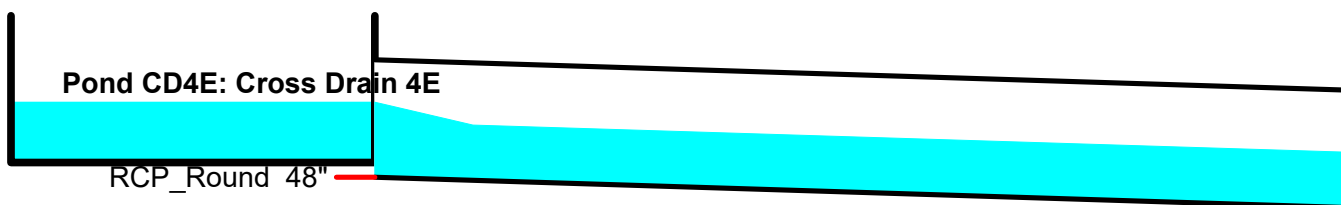
Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
 Peak Elev= 682.06' @ 12.77 hrs Surf.Area= 4,174 sf Storage= 3,926 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
 Center-of-Mass det. time= 1.2 min (894.7 - 893.5)

Volume	Invert	Avail.Storage	Storage Description
#1	680.00'	33,779 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
680.00	274	0	0
681.00	1,562	918	918
682.00	3,975	2,769	3,687
683.00	7,355	5,665	9,352
684.00	12,090	9,723	19,074
685.00	17,320	14,705	33,779

Device	Routing	Invert	Outlet Devices
#1	Primary	679.50'	48.0" Round RCP_Round 48" L= 200.0' Ke= 0.500 Inlet / Outlet Invert= 679.50' / 678.46' S= 0.0052 ' / Cc= 0.900 n= 0.011 Concrete pipe, straight & clean, Flow Area= 12.57 sf

Primary OutFlow Max=29.97 cfs @ 12.71 hrs HW=682.04' TW=681.15' (Dynamic Tailwater)
 ↑1=RCP_Round 48" (Outlet Controls 29.97 cfs @ 5.06 fps)



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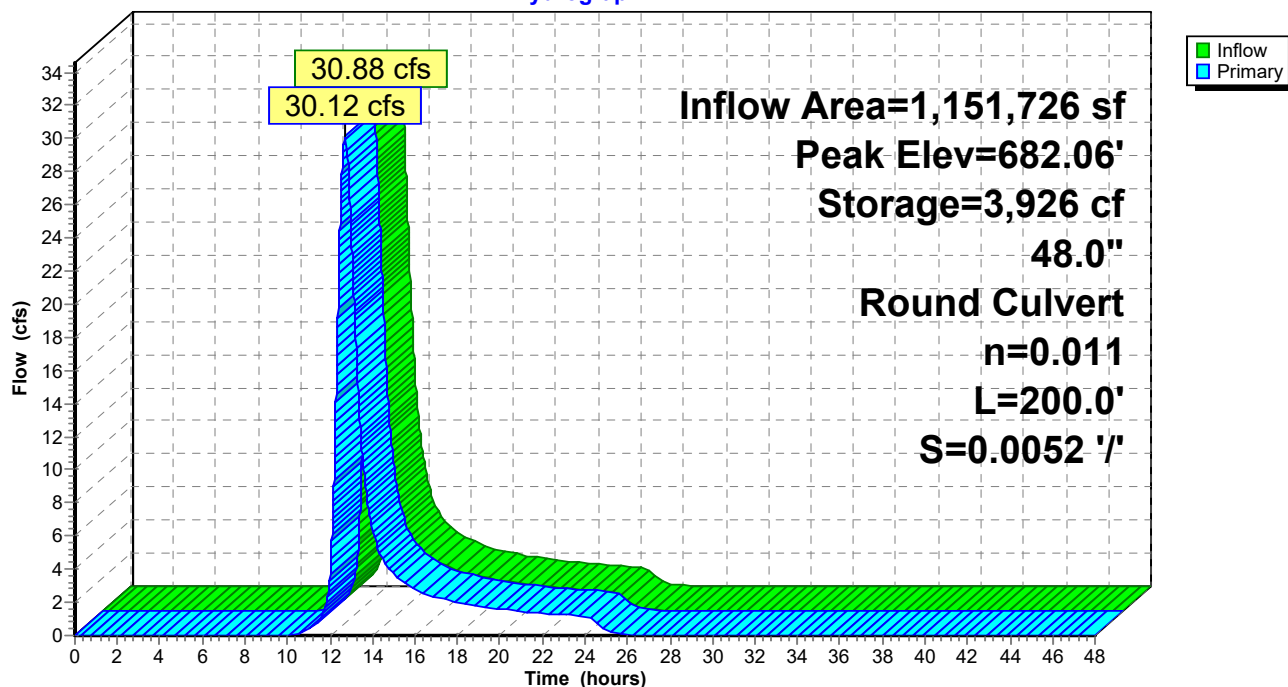
Mt Pleasant 24-hr S1 10-yr Rainfall=5.42"

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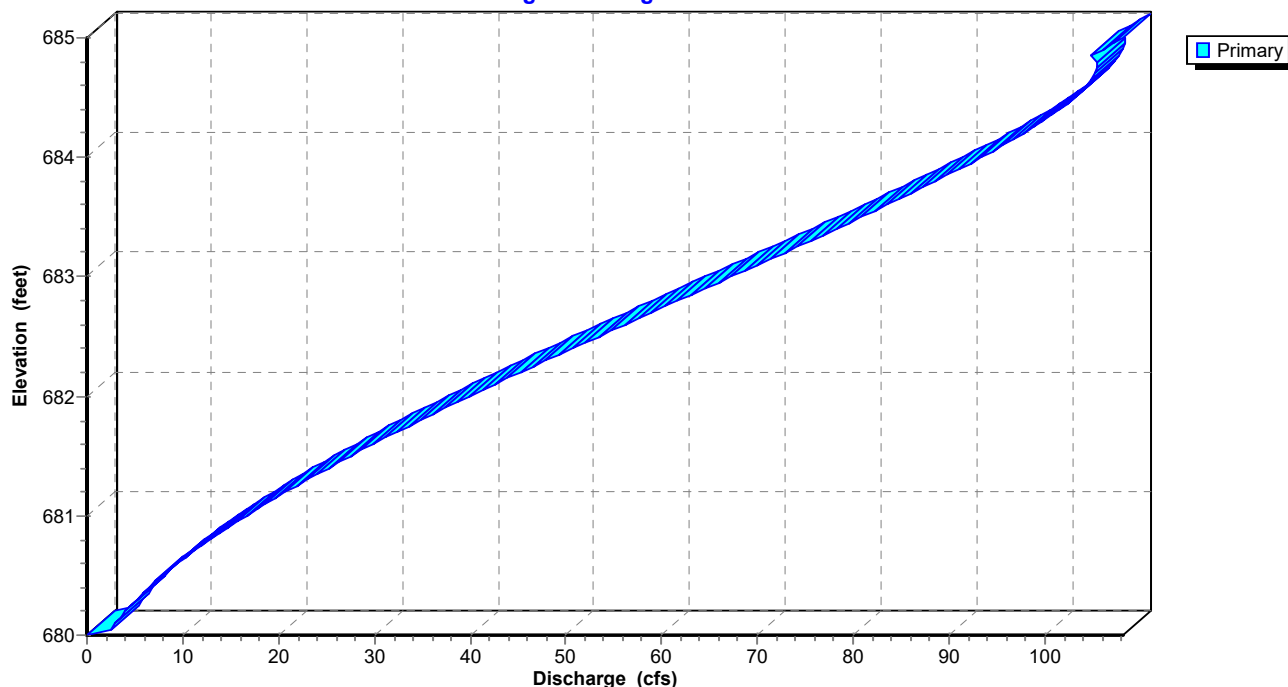
Pond CD4E: Cross Drain 4E

Hydrograph



Pond CD4E: Cross Drain 4E

Stage-Discharge



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Mt Pleasant 24-hr S1 10-yr Rainfall=5.42"

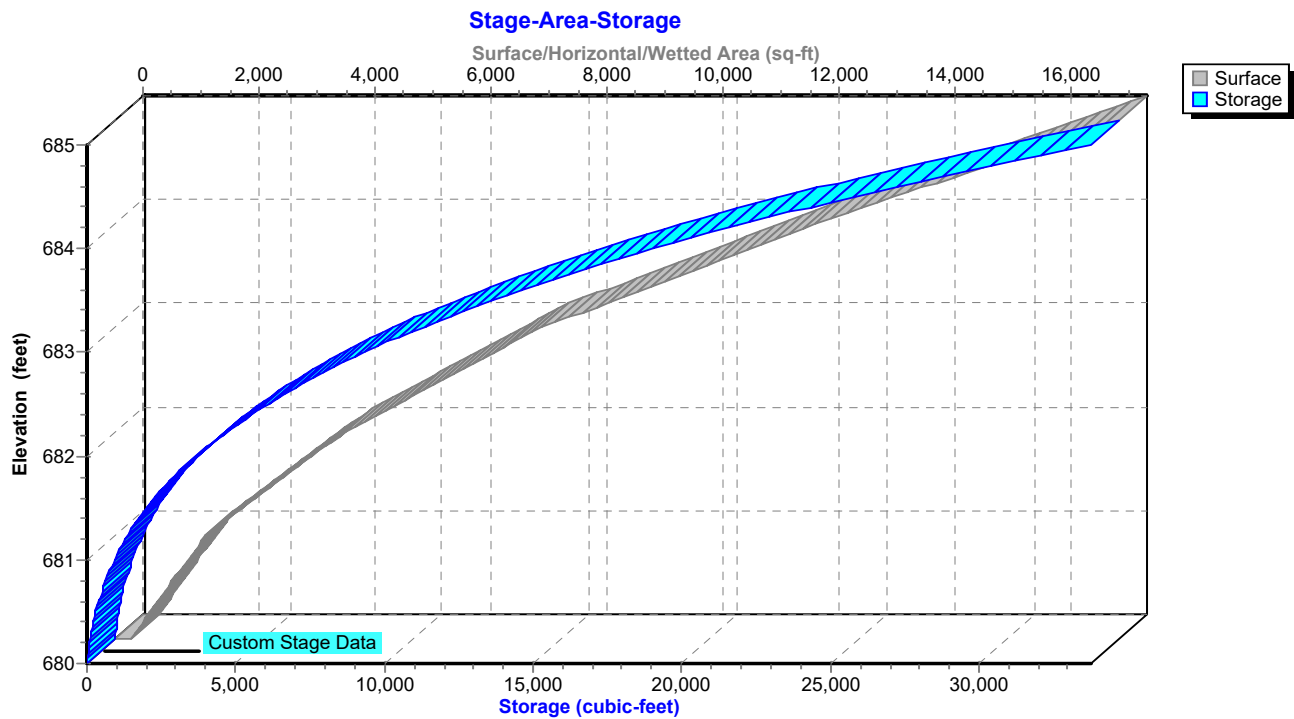
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Pond CD4E: Cross Drain 4E



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Summary for Pond POND1P: PROP POND

Inflow Area = 1,772,021 sf, 9.83% Impervious, Inflow Depth = 3.13" for 10-yr event
 Inflow = 63.88 cfs @ 12.51 hrs, Volume= 462,785 cf
 Outflow = 30.25 cfs @ 13.13 hrs, Volume= 462,779 cf, Atten= 53%, Lag= 37.6 min
 Primary = 30.25 cfs @ 13.13 hrs, Volume= 462,779 cf
 Routed to Reach OF4P : Primary Stream for Outfalls

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
 Peak Elev= 680.58' @ 13.15 hrs Surf.Area= 68,507 sf Storage= 159,375 cf

Plug-Flow detention time= 113.8 min calculated for 462,682 cf (100% of inflow)
 Center-of-Mass det. time= 113.9 min (947.1 - 833.2)

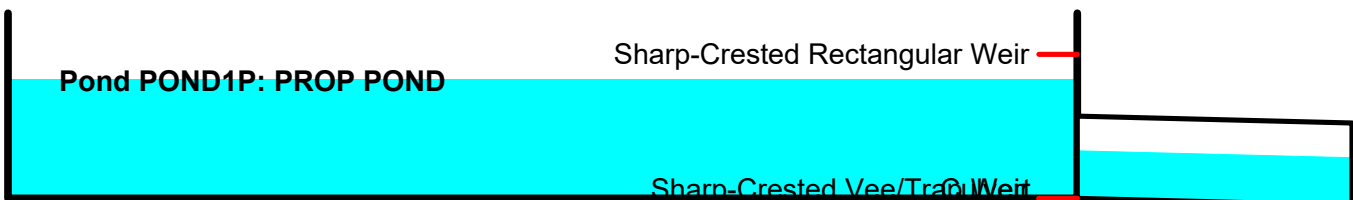
Volume	Invert	Avail.Storage	Storage Description
#1	676.25'	386,863 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
676.25	505	0	0
676.50	14,826	1,916	1,916
677.00	24,194	9,755	11,671
678.00	31,409	27,802	39,473
679.00	39,965	35,687	75,160
680.00	56,082	48,024	123,183
681.00	77,468	66,775	189,958
682.00	98,642	88,055	278,013
683.00	119,057	108,850	386,863

Device	Routing	Invert	Outlet Devices
#1	Primary	676.25'	36.0" Round Culvert L= 50.0' Ke= 0.600 Inlet / Outlet Invert= 676.25' / 676.00' S= 0.0050 '/' Cc= 0.900 n= 0.011, Flow Area= 7.07 sf
#2	Device 1	676.25'	20.0 deg x 0.4' long Sharp-Crested Vee/Trap Weir Cv= 2.69 (C= 3.36)
#3	Device 1	681.50'	16.0' long Sharp-Crested Rectangular Weir 2 End Contraction(s)

Primary OutFlow Max=30.24 cfs @ 13.13 hrs HW=680.58' TW=677.36' (Dynamic Tailwater)

1=Culvert (Passes 30.24 cfs of 52.30 cfs potential flow)
 2=Sharp-Crested Vee/Trap Weir (Weir Controls 30.24 cfs @ 6.00 fps)
 3=Sharp-Crested Rectangular Weir (Controls 0.00 cfs)



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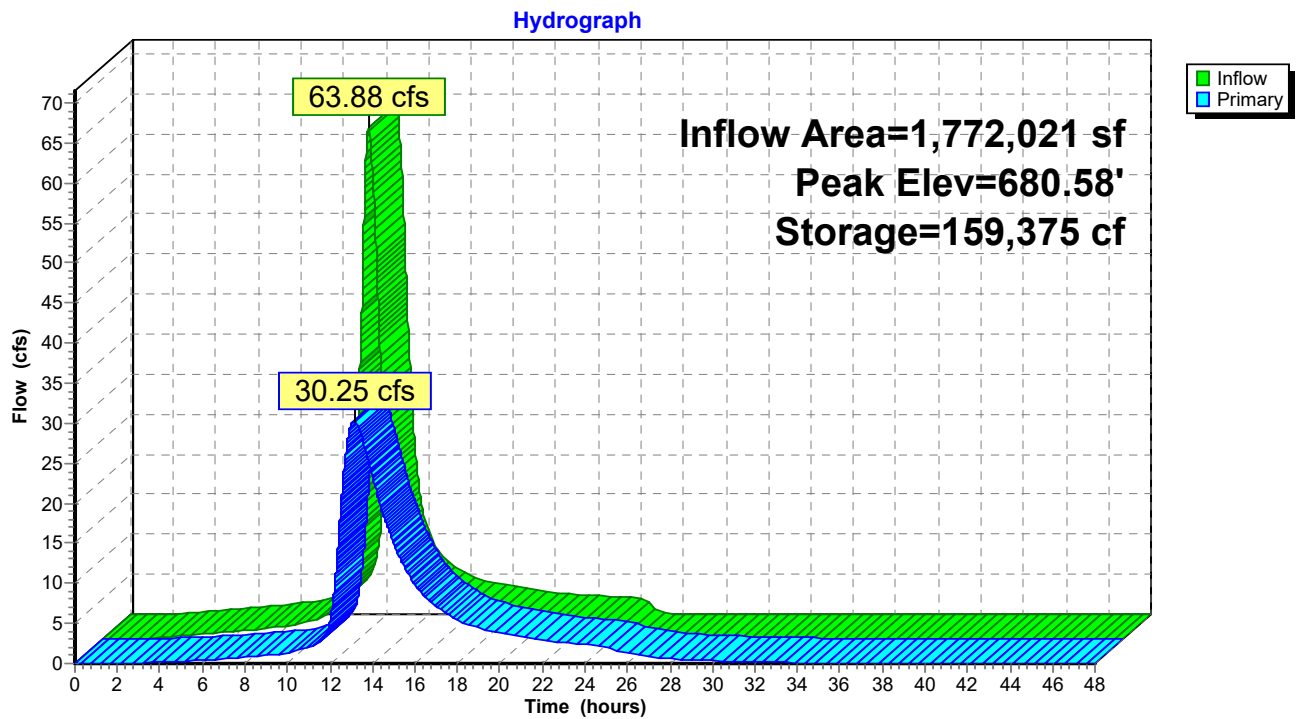
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Mt Pleasant 24-hr S1 10-yr Rainfall=5.42"

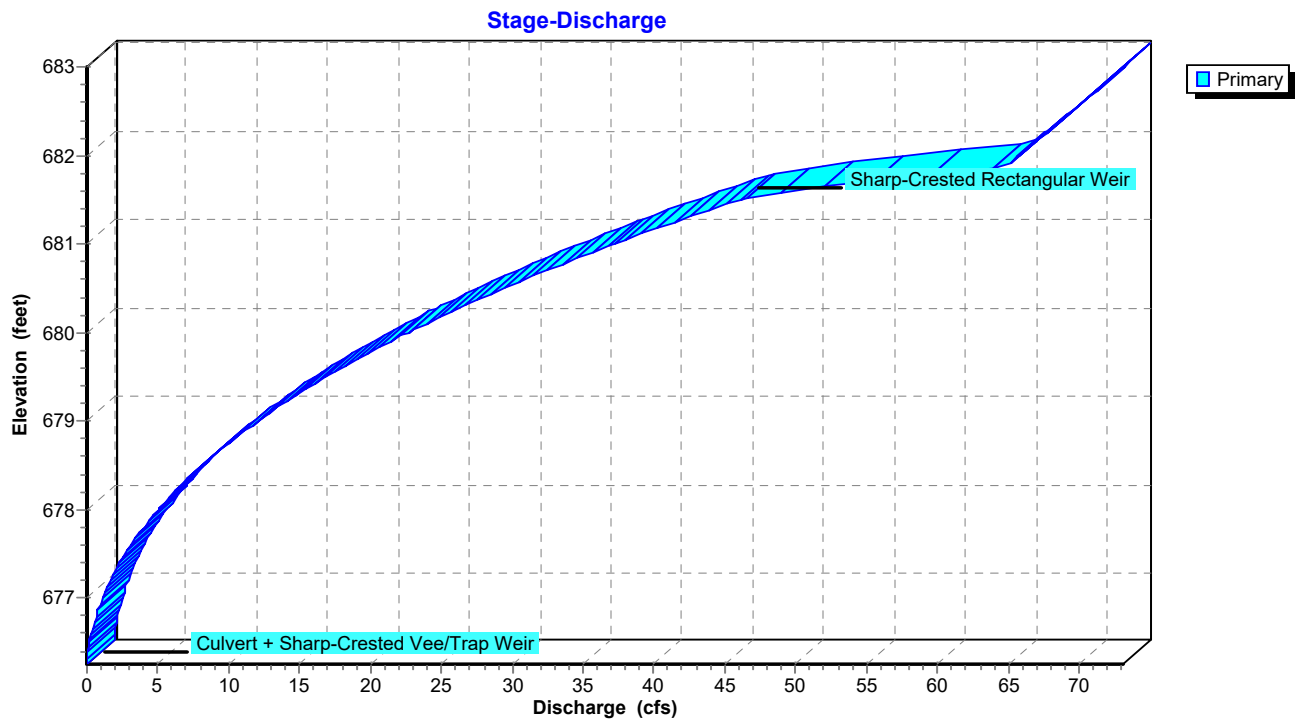
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Pond POND1P: PROP POND



Pond POND1P: PROP POND



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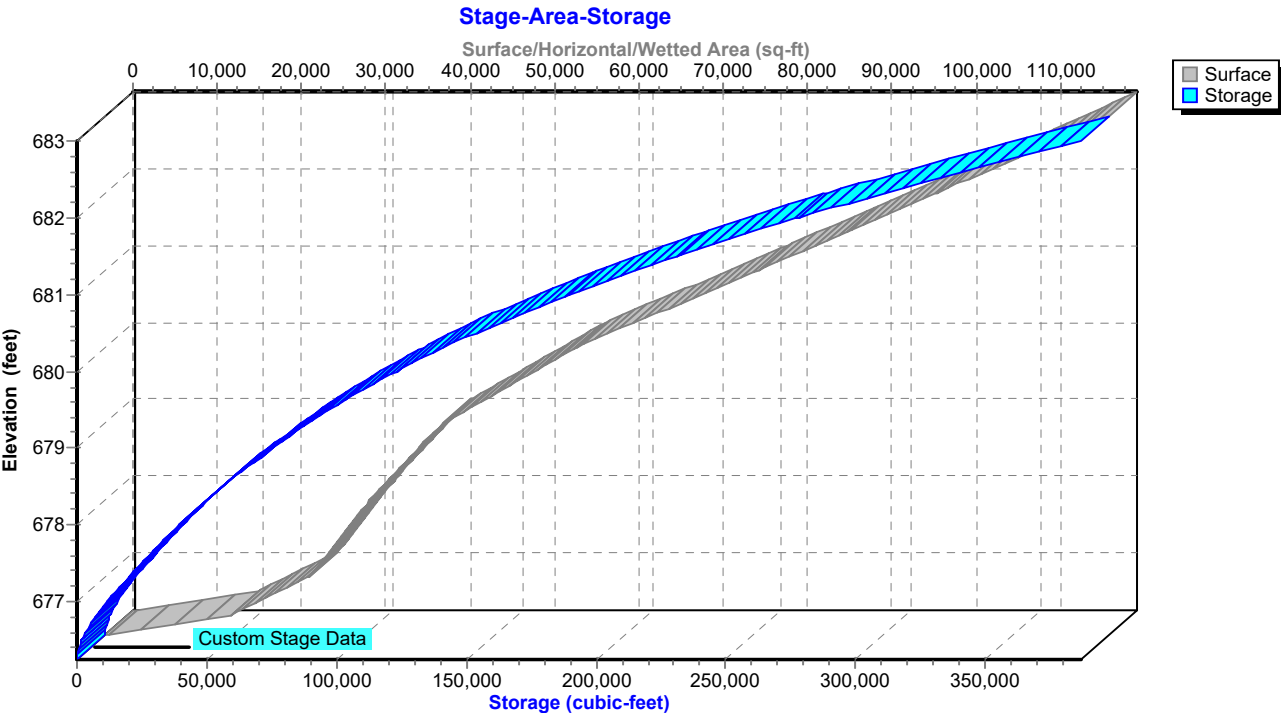
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Mt Pleasant 24-hr S1 10-yr Rainfall=5.42"

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Pond POND1P: PROP POND



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Time span=0.00-48.00 hrs, dt=0.01 hrs, 4801 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

Subcatchment DA 1: BASIN 1 PRE Runoff Area=143.000 ac 1.75% Impervious Runoff Depth=3.57"
 Flow Length=5,750' Tc=143.0 min CN=75 Runoff=141.35 cfs 1,855,048 cf

Subcatchment DA 2: BASIN 2 PRE Runoff Area=34.900 ac 0.00% Impervious Runoff Depth=2.33"
 Flow Length=2,150' Slope=0.0150 '/' Tc=62.3 min CN=62 Runoff=38.11 cfs 294,710 cf

Subcatchment DA 3: BASIN 3 PRE Runoff Area=9.380 ac 0.00% Impervious Runoff Depth=3.37"
 Flow Length=838' Slope=0.0200 '/' Tc=25.9 min CN=73 Runoff=23.74 cfs 114,841 cf

Subcatchment DA 4: BASIN 4 PRE Runoff Area=41.500 ac 0.00% Impervious Runoff Depth=3.08"
 Flow Length=2,468' Tc=68.1 min CN=70 Runoff=58.56 cfs 463,594 cf

Subcatchment DA1P: BASIN 1 PROPOSED Runoff Area=143.000 ac 1.75% Impervious Runoff Depth=3.57"
 Flow Length=5,750' Tc=143.0 min CN=75 Runoff=141.35 cfs 1,855,048 cf

Subcatchment DA2P: BASIN 2 PROPOSED Runoff Area=34.900 ac 0.00% Impervious Runoff Depth=2.33"
 Flow Length=2,150' Slope=0.0150 '/' Tc=62.3 min CN=62 Runoff=38.11 cfs 294,710 cf

Subcatchment DA3P: BASIN 3 PRE Runoff Area=4.760 ac 0.00% Impervious Runoff Depth=3.98"
 Tc=5.0 min CN=79 Runoff=26.19 cfs 68,851 cf

Subcatchment DA4A: BASIN 4A PROPOSED Runoff Area=5.530 ac 0.00% Impervious Runoff Depth=2.88"
 Flow Length=945' Tc=40.9 min CN=68 Runoff=9.57 cfs 57,904 cf

Subcatchment DA4B: BASIN 4B Runoff Area=12.330 ac 24.33% Impervious Runoff Depth=5.87"
 Flow Length=996' Tc=33.8 min CN=96 Runoff=44.12 cfs 262,551 cf

Subcatchment DA4C: BASIN 4C PROPOSED Runoff Area=0.680 ac 0.00% Impervious Runoff Depth=5.87"
 Tc=5.0 min CN=96 Runoff=5.00 cfs 14,480 cf

Subcatchment DA4D: BASIN 4D PROPOSED Runoff Area=1.230 ac 0.00% Impervious Runoff Depth=5.87"
 Tc=5.0 min CN=96 Runoff=9.04 cfs 26,191 cf

Subcatchment DA4E1: BASIN 4E1 Runoff Area=7.260 ac 13.77% Impervious Runoff Depth=2.51"
 Flow Length=640' Tc=31.5 min CN=64 Runoff=12.20 cfs 66,118 cf

Subcatchment DA4E2: BASIN 4E2 Runoff Area=19.180 ac 0.00% Impervious Runoff Depth=2.98"
 Flow Length=1,313' Tc=46.8 min CN=69 Runoff=32.23 cfs 207,516 cf

Reach D4C: Ditch 4C Avg. Flow Depth=0.66' Max Vel=2.55 fps Inflow=5.00 cfs 14,480 cf
 n=0.033 L=313.0' S=0.0104 '/' Capacity=27.19 cfs Outflow=4.71 cfs 14,480 cf

Reach D4D: Ditch 4D Avg. Flow Depth=0.81' Max Vel=3.43 fps Inflow=9.04 cfs 26,191 cf
 n=0.033 L=337.0' S=0.0148 '/' Capacity=32.50 cfs Outflow=8.67 cfs 26,191 cf

Reach D4E1: Ditch 4E1 Avg. Flow Depth=0.86' Max Vel=1.78 fps Inflow=12.20 cfs 66,118 cf
 n=0.033 L=1,788.0' S=0.0031 '/' Capacity=197.27 cfs Outflow=10.11 cfs 66,118 cf

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Reach OF4: Primary Stream for Avg. Flow Depth=2.84' Max Vel=4.48 fps Inflow=191.93 cfs 2,728,193 cf
 n=0.035 L=1,000.0' S=0.0050 '/' Capacity=640.46 cfs Outflow=191.64 cfs 2,728,193 cf

Reach OF4P: Primary Stream for Avg. Flow Depth=2.84' Max Vel=4.48 fps Inflow=192.43 cfs 2,853,359 cf
 n=0.035 L=1,000.0' S=0.0050 '/' Capacity=640.46 cfs Outflow=192.23 cfs 2,853,357 cf

Pond CD2: Cross Drain Peak Elev=683.44' Inflow=38.11 cfs 294,710 cf
 36.0" Round Culvert n=0.011 L=50.0' S=0.0050 '/' Outflow=38.11 cfs 294,710 cf

Pond CD4C: Cross Drain 4C Peak Elev=684.81' Inflow=4.71 cfs 14,480 cf
 18.0" Round Culvert n=0.011 L=60.0' S=0.0792 '/' Outflow=4.71 cfs 14,480 cf

Pond CD4DCE: Cross Drain 4DCE Peak Elev=681.80' Inflow=41.96 cfs 314,301 cf
 48.0" Round Culvert n=0.011 L=360.0' S=0.0052 '/' Outflow=41.96 cfs 314,301 cf

Pond CD4E: Cross Drain 4E Peak Elev=682.66' Storage=7,049 cf Inflow=42.33 cfs 273,634 cf
 48.0" Round Culvert n=0.011 L=200.0' S=0.0052 '/' Outflow=40.67 cfs 273,631 cf

Pond POND1P: PROP POND Peak Elev=681.13' Storage=200,001 cf Inflow=80.52 cfs 576,852 cf
 Outflow=38.67 cfs 576,845 cf

Total Runoff Area = 19,935,234 sf Runoff Volume = 5,581,562 cf Average Runoff Depth = 3.36"
98.03% Pervious = 19,543,194 sf 1.97% Impervious = 392,040 sf

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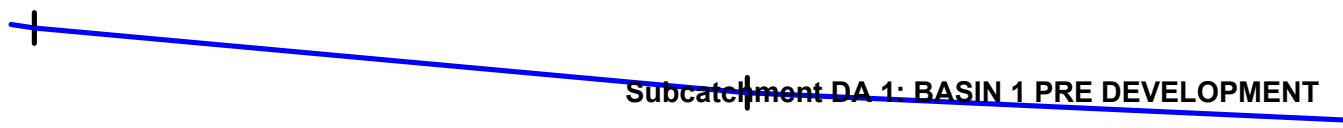
Summary for Subcatchment DA 1: BASIN 1 PRE DEVELOPMENT

Runoff = 141.35 cfs @ 13.83 hrs, Volume= 1,855,048 cf, Depth= 3.57"
Routed to Reach OF4 : Primary Stream for Outfalls

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Mt Pleasant 24-hr S1 25-yr Rainfall=6.34"

Area (ac)	CN	Description
69.500	74	>75% Grass cover, Good, HSG C
71.000	76	Woods/grass comb., Fair, HSG C
2.500	98	Paved parking, HSG C
143.000	75	Weighted Average
140.500		98.25% Pervious Area
2.500		1.75% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
35.4	100	0.0200	0.05		Sheet Flow, Woods: Dense underbrush n= 0.800 P2= 3.57"
92.8	3,050	0.0120	0.55		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
14.8	2,600	0.0060	2.93	11.71	Channel Flow, Area= 4.0 sf Perim= 6.0' r= 0.67' n= 0.030
143.0	5,750	Total			



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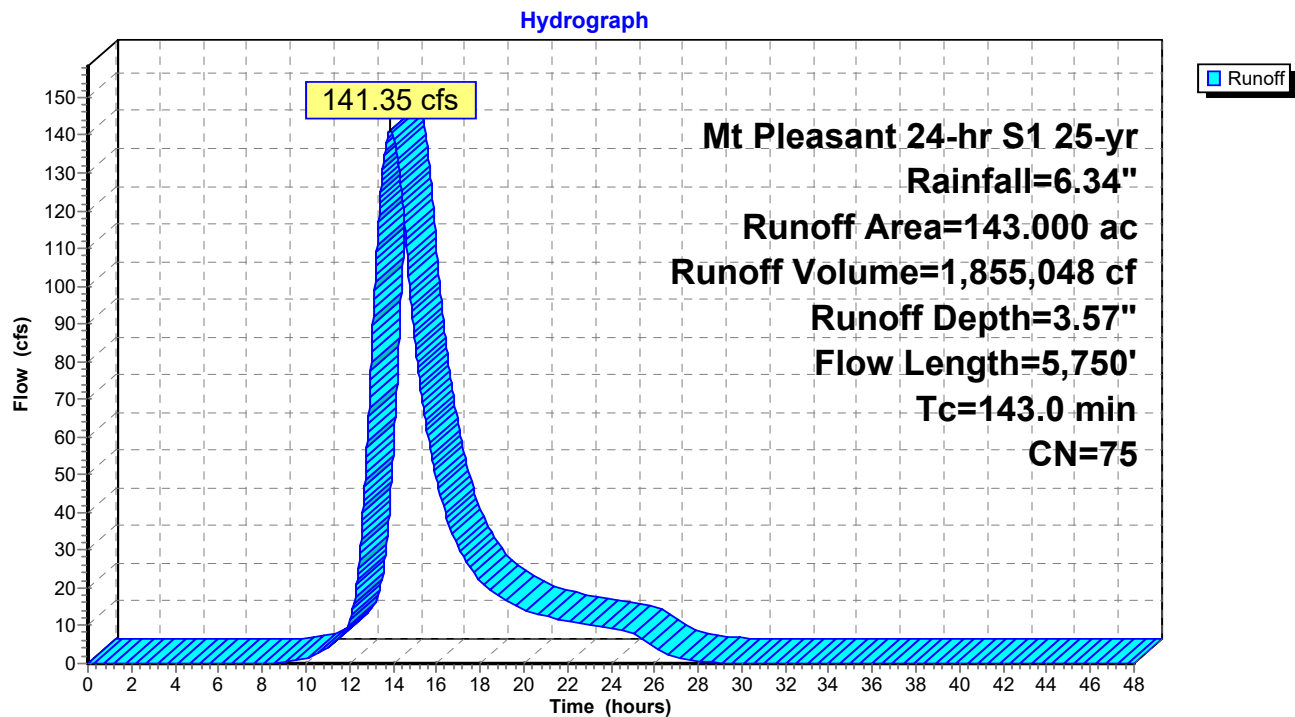
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Subcatchment DA 1: BASIN 1 PRE DEVELOPMENT



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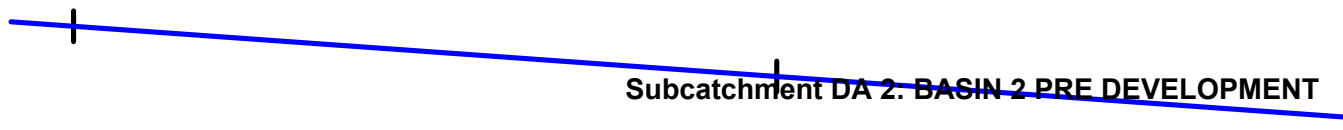
Summary for Subcatchment DA 2: BASIN 2 PRE DEVELOPMENT

Runoff = 38.11 cfs @ 12.88 hrs, Volume= 294,710 cf, Depth= 2.33"
Routed to Reach OF4 : Primary Stream for Outfalls

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Mt Pleasant 24-hr S1 25-yr Rainfall=6.34"

Area (ac)	CN	Description
17.450	58	Meadow, non-grazed, HSG B
14.450	60	Woods, Fair, HSG B
3.000	96	Gravel surface, HSG C
34.900	62	Weighted Average
34.900		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.2	100	0.0150	0.11		Sheet Flow, Grass: Dense n= 0.240 P2= 3.57"
21.9	1,125	0.0150	0.86		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
25.2	925	0.0150	0.61		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
62.3	2,150	Total			



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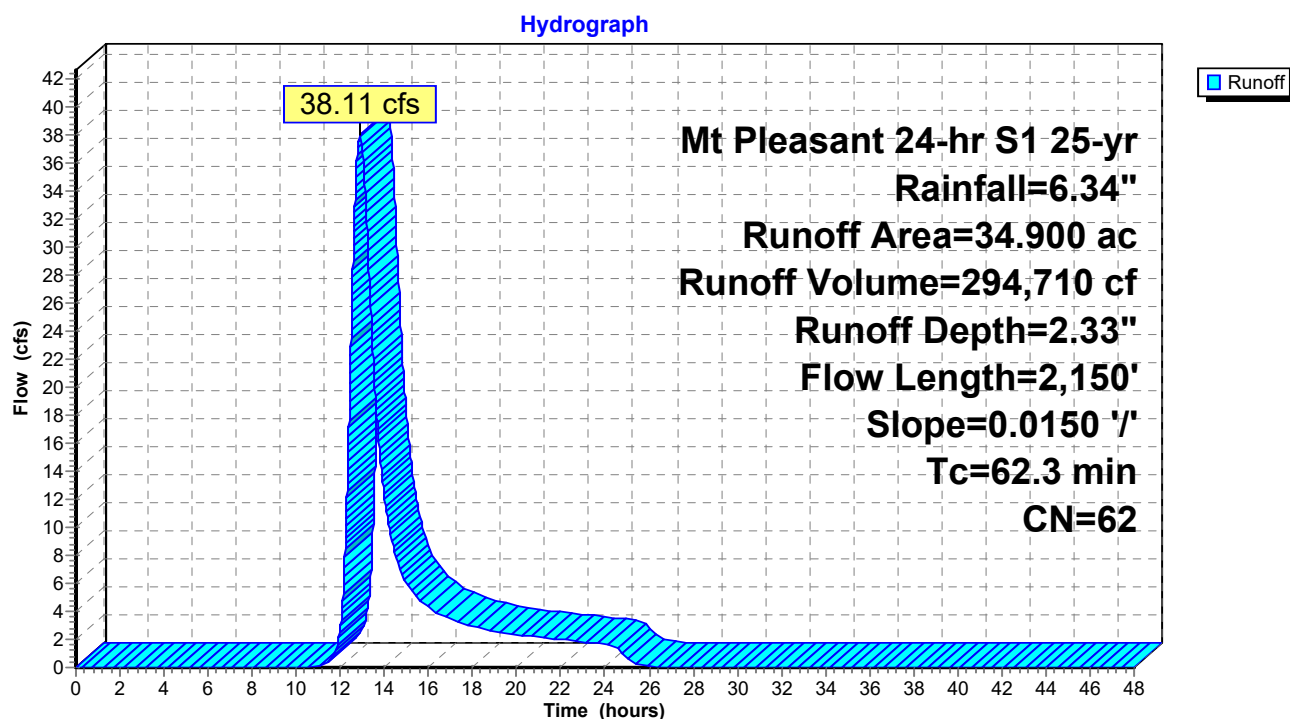
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Subcatchment DA 2: BASIN 2 PRE DEVELOPMENT



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Mt Pleasant 24-hr S1 25-yr Rainfall=6.34"

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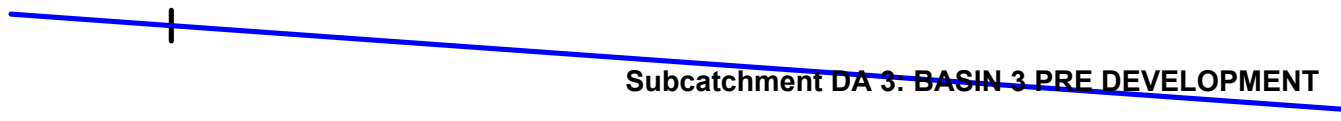
Summary for Subcatchment DA 3: BASIN 3 PRE DEVELOPMENT

Runoff = 23.74 cfs @ 12.33 hrs, Volume= 114,841 cf, Depth= 3.37"
Routed to Reach OF4 : Primary Stream for Outfalls

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Mt Pleasant 24-hr S1 25-yr Rainfall=6.34"

Area (ac)	CN	Description
3.300	78	Meadow, non-grazed, HSG D
3.300	79	Woods, Fair, HSG D
2.250	58	Meadow, non-grazed, HSG B
0.530	60	Woods, Fair, HSG B
9.380	73	Weighted Average
9.380		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.5	100	0.0200	0.12		Sheet Flow, Grass: Dense n= 0.240 P2= 3.57"
12.4	738	0.0200	0.99		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
25.9	838	Total			



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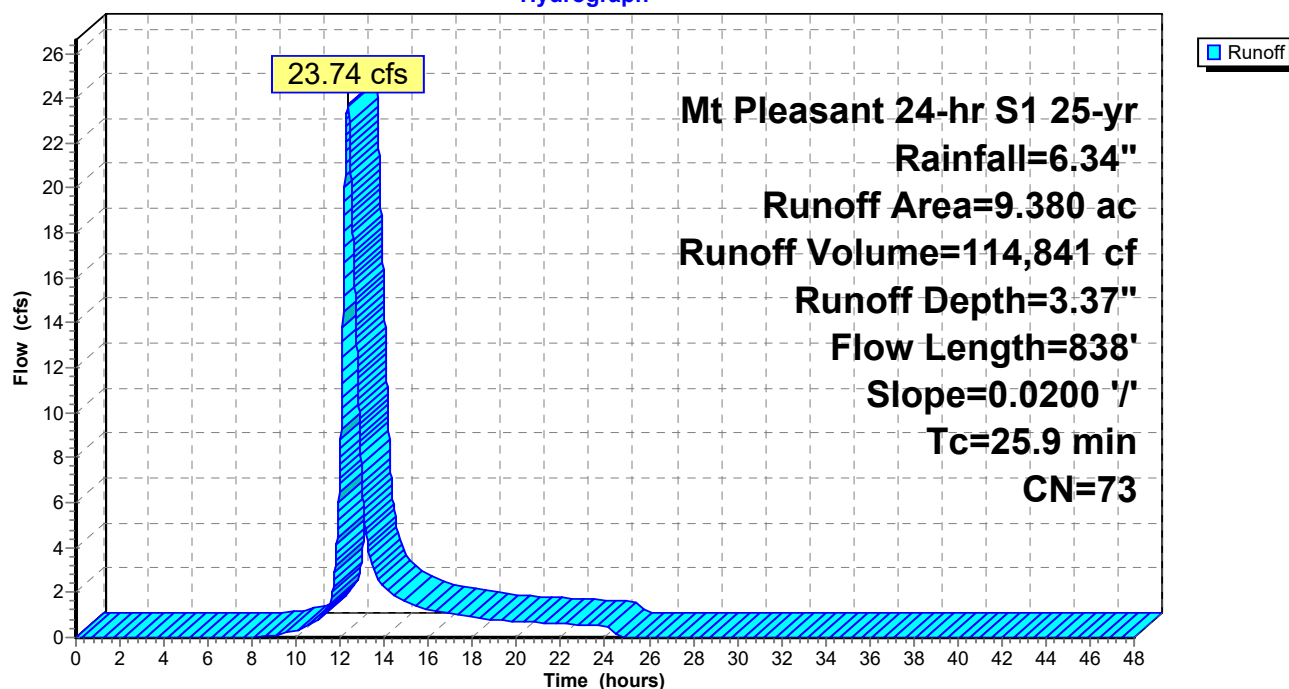
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Subcatchment DA 3: BASIN 3 PRE DEVELOPMENT

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Summary for Subcatchment DA 4: BASIN 4 PRE DEVELOPMENT

Runoff = 58.56 cfs @ 12.94 hrs, Volume= 463,594 cf, Depth= 3.08"
 Routed to Reach OF4 : Primary Stream for Outfalls

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
 Mt Pleasant 24-hr S1 25-yr Rainfall=6.34"

Area (ac)	CN	Description
7.300	78	Meadow, non-grazed, HSG D
1.830	79	Woods, Fair, HSG D
7.640	58	Meadow, non-grazed, HSG B
1.910	60	Woods, Fair, HSG B
4.150	73	Woods, Fair, HSG C
9.960	71	Meadow, non-grazed, HSG C
2.490	73	Woods, Fair, HSG C
4.970	71	Meadow, non-grazed, HSG C
1.250	73	Woods, Fair, HSG C
41.500	70	Weighted Average
41.500		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
24.5	100	0.0500	0.07		Sheet Flow, Woods: Dense underbrush n= 0.800 P2= 3.57"
43.6	2,368	0.0167	0.90		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
68.1	2,468	Total			

Subcatchment DA 4: BASIN 4 PRE DEVELOPMENT

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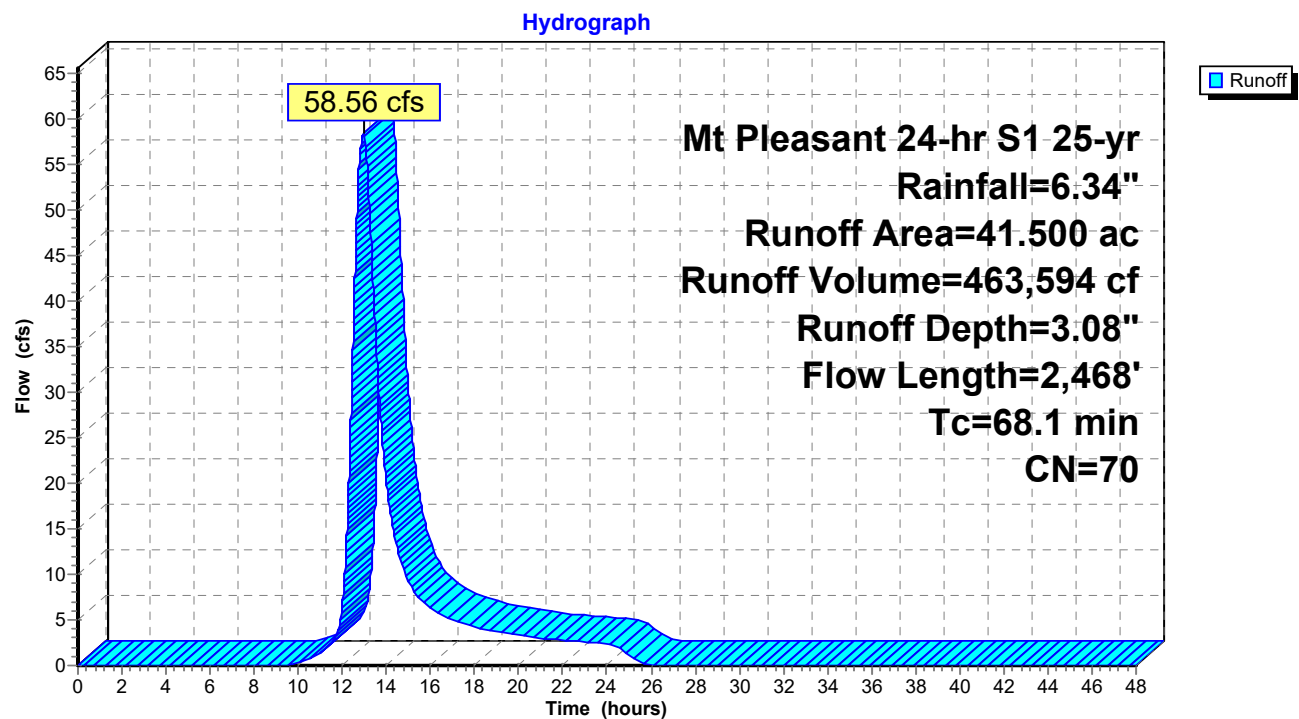
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Subcatchment DA 4: BASIN 4 PRE DEVELOPMENT



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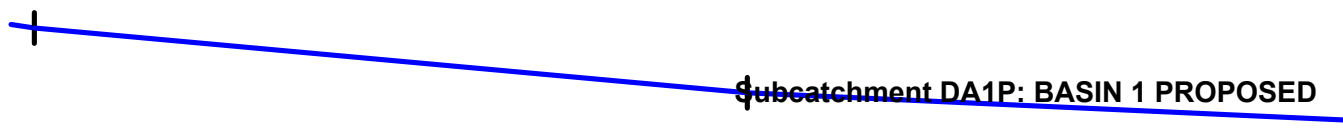
Summary for Subcatchment DA1P: BASIN 1 PROPOSED

Runoff = 141.35 cfs @ 13.83 hrs, Volume= 1,855,048 cf, Depth= 3.57"
 Routed to Reach OF4P : Primary Stream for Outfalls

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
 Mt Pleasant 24-hr S1 25-yr Rainfall=6.34"

Area (ac)	CN	Description
69.500	74	>75% Grass cover, Good, HSG C
71.000	76	Woods/grass comb., Fair, HSG C
2.500	98	Paved parking, HSG C
143.000	75	Weighted Average
140.500		98.25% Pervious Area
2.500		1.75% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
35.4	100	0.0200	0.05		Sheet Flow, Woods: Dense underbrush n= 0.800 P2= 3.57"
92.8	3,050	0.0120	0.55		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
14.8	2,600	0.0060	2.93	11.71	Channel Flow, Area= 4.0 sf Perim= 6.0' r= 0.67' n= 0.030
143.0	5,750	Total			



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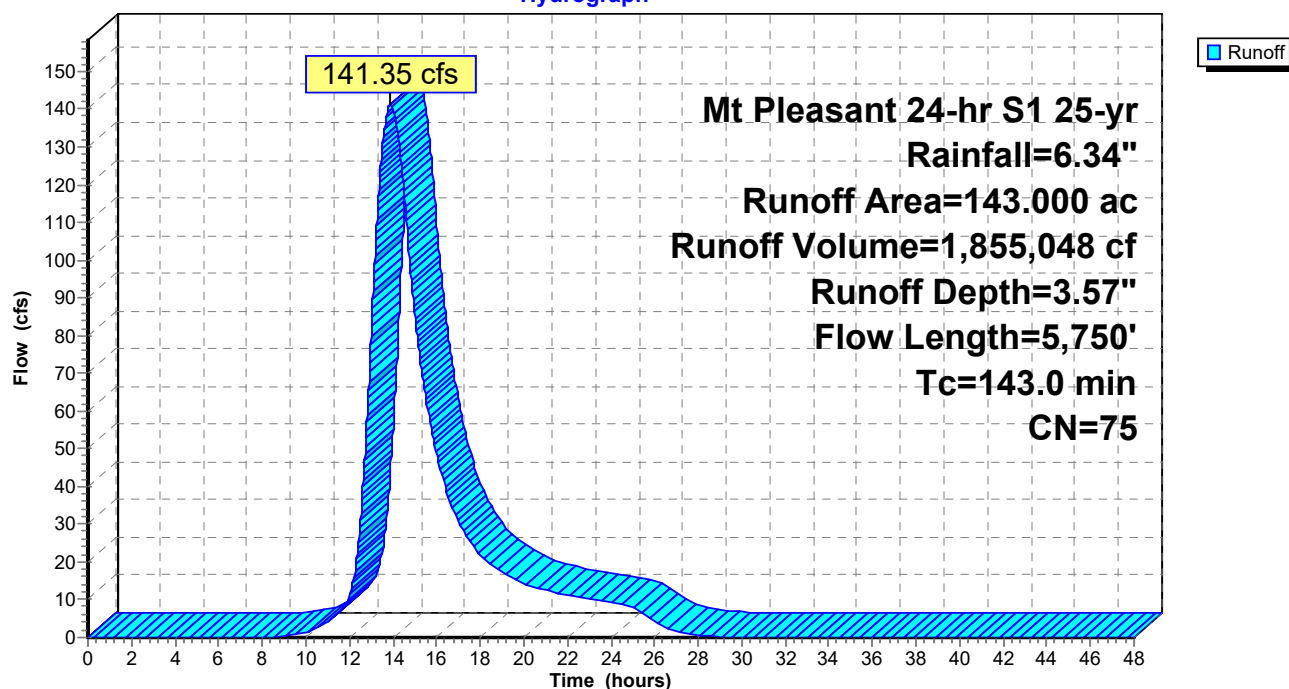
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Subcatchment DA1P: BASIN 1 PROPOSED

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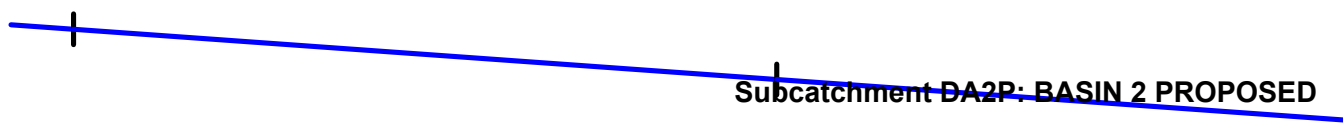
Summary for Subcatchment DA2P: BASIN 2 PROPOSED

Runoff = 38.11 cfs @ 12.88 hrs, Volume= 294,710 cf, Depth= 2.33"
Routed to Pond CD2 : Cross Drain

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Mt Pleasant 24-hr S1 25-yr Rainfall=6.34"

Area (ac)	CN	Description
17.450	58	Meadow, non-grazed, HSG B
14.450	60	Woods, Fair, HSG B
3.000	96	Gravel surface, HSG C
34.900	62	Weighted Average
34.900		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.2	100	0.0150	0.11		Sheet Flow, Grass: Dense n= 0.240 P2= 3.57"
21.9	1,125	0.0150	0.86		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
25.2	925	0.0150	0.61		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
62.3	2,150	Total			



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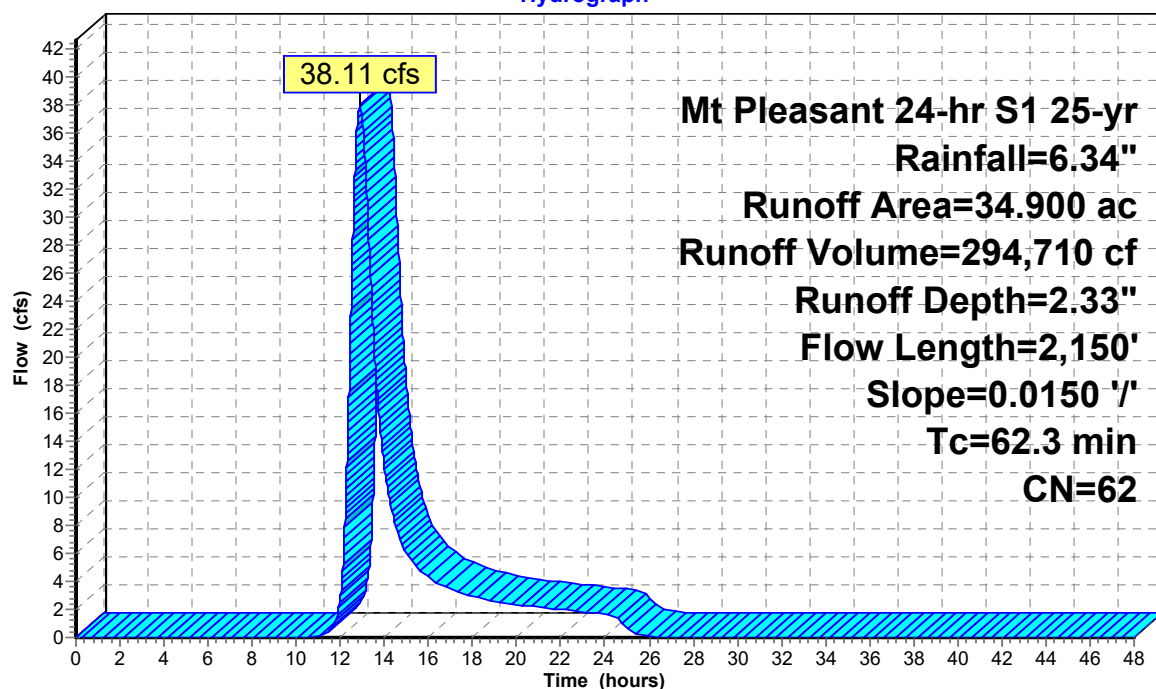
Mt Pleasant 24-hr S1 25-yr Rainfall=6.34"

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Subcatchment DA2P: BASIN 2 PROPOSED

Hydrograph



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Summary for Subcatchment DA3P: BASIN 3 PRE DEVELOPMENT

Runoff = 26.19 cfs @ 12.03 hrs, Volume= 68,851 cf, Depth= 3.98"
 Routed to Reach OF4P : Primary Stream for Outfalls

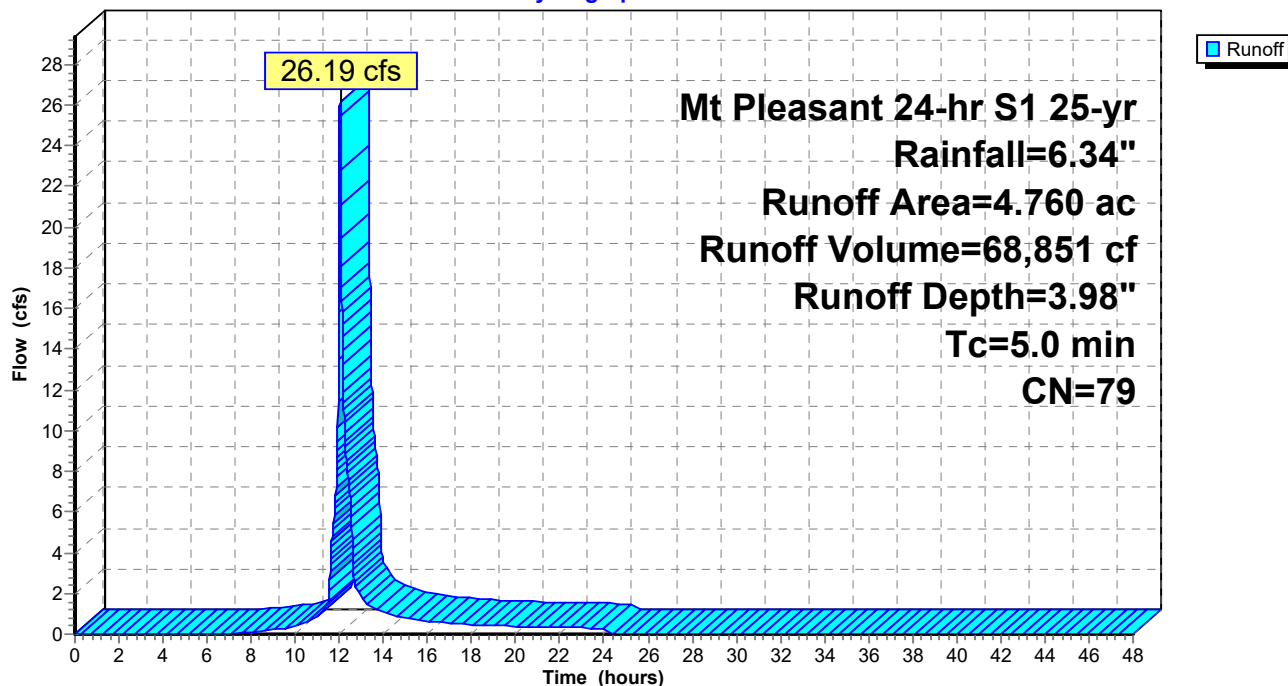
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
 Mt Pleasant 24-hr S1 25-yr Rainfall=6.34"

Area (ac)	CN	Description
4.760	79	Woods, Fair, HSG D
4.760		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					Direct Entry,

Subcatchment DA3P: BASIN 3 PRE DEVELOPMENT

Hydrograph



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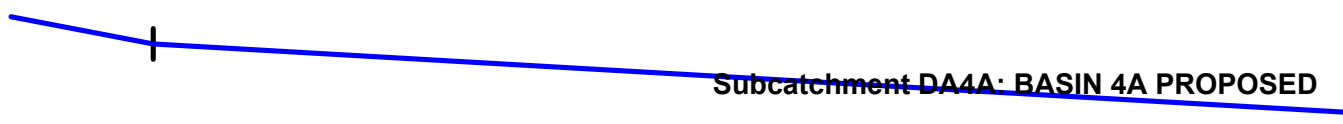
Summary for Subcatchment DA4A: BASIN 4A PROPOSED

Runoff = 9.57 cfs @ 12.58 hrs, Volume= 57,904 cf, Depth= 2.88"
Routed to Reach OF4P : Primary Stream for Outfalls

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Mt Pleasant 24-hr S1 25-yr Rainfall=6.34"

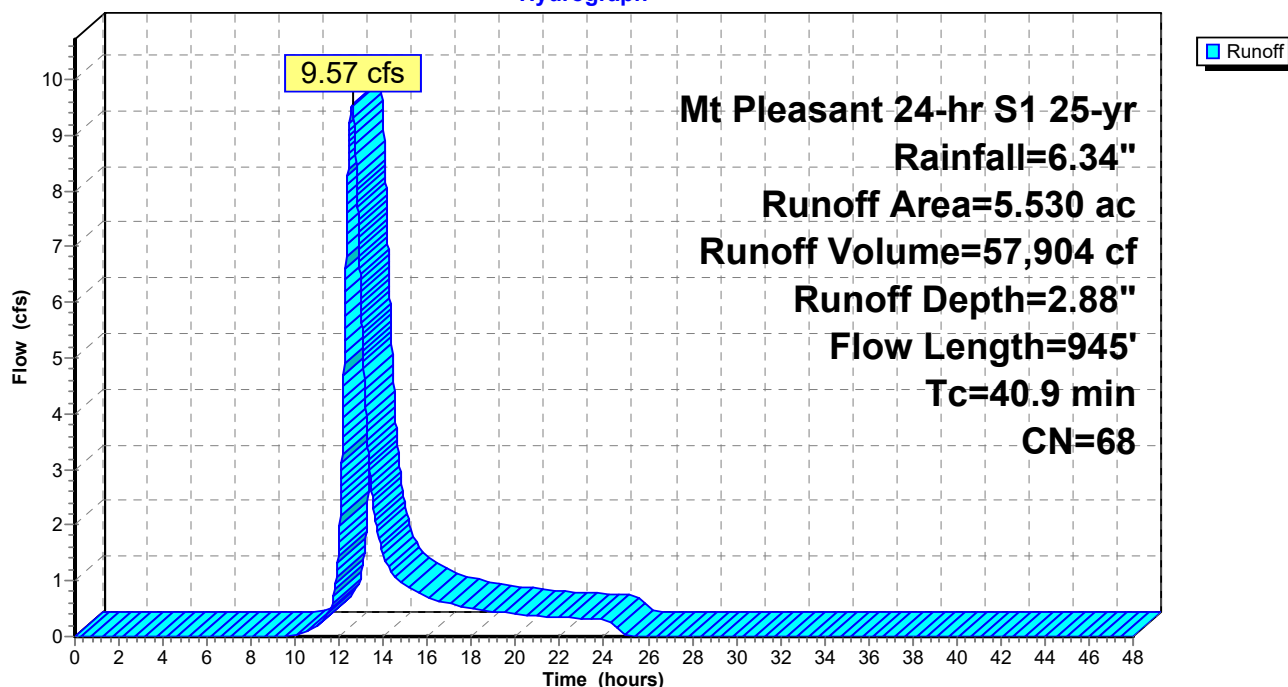
Area (ac)	CN	Description
2.200	60	Woods, Fair, HSG B
3.330	73	Woods, Fair, HSG C
5.530	68	Weighted Average
5.530		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
24.5	100	0.0500	0.07		Sheet Flow, Woods: Dense underbrush n= 0.800 P2= 3.57"
16.4	845	0.0150	0.86		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
40.9	945	Total			



Subcatchment DA4A: BASIN 4A PROPOSED

Hydrograph



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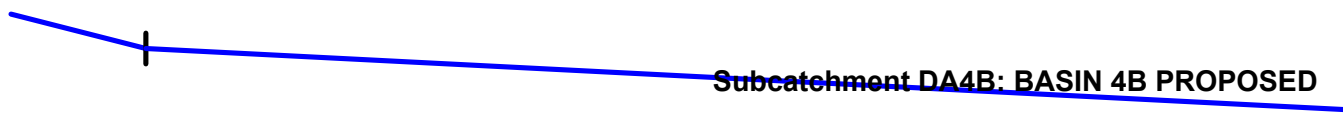
Summary for Subcatchment DA4B: BASIN 4B PROPOSED

Runoff = 44.12 cfs @ 12.40 hrs, Volume= 262,551 cf, Depth= 5.87"
Routed to Pond POND1P : PROP POND

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Mt Pleasant 24-hr S1 25-yr Rainfall=6.34"

Area (ac)	CN	Description
9.330	96	Gravel surface, HSG C
1.000	98	Paved parking, HSG D
2.000	98	Roofs, HSG D
12.330	96	Weighted Average
9.330		75.67% Pervious Area
3.000		24.33% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
24.5	100	0.0500	0.07		Sheet Flow, n= 0.800 P2= 3.57"
9.3	896	0.0100	1.61		Shallow Concentrated Flow, Unpaved Kv= 16.1 fps
33.8	996	Total			



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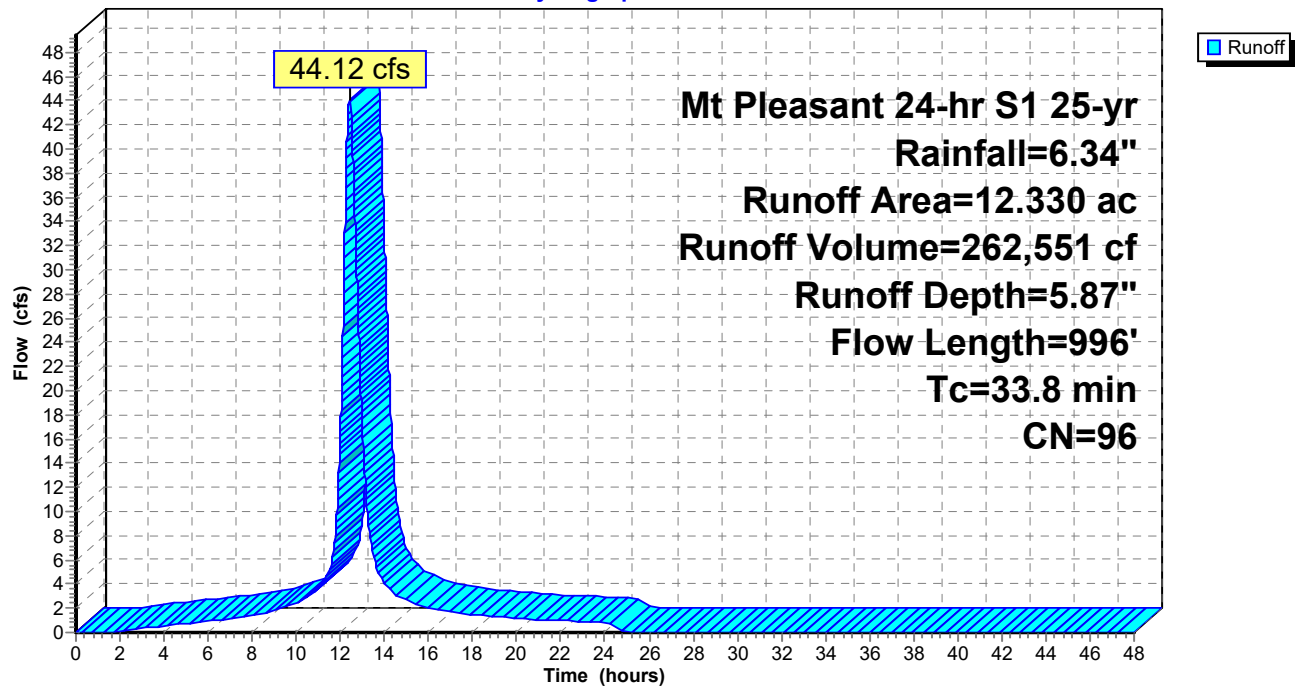
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Subcatchment DA4B: BASIN 4B PROPOSED

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Summary for Subcatchment DA4C: BASIN 4C PROPOSED

Runoff = 5.00 cfs @ 12.03 hrs, Volume= 14,480 cf, Depth= 5.87"
Routed to Reach D4C : Ditch 4C

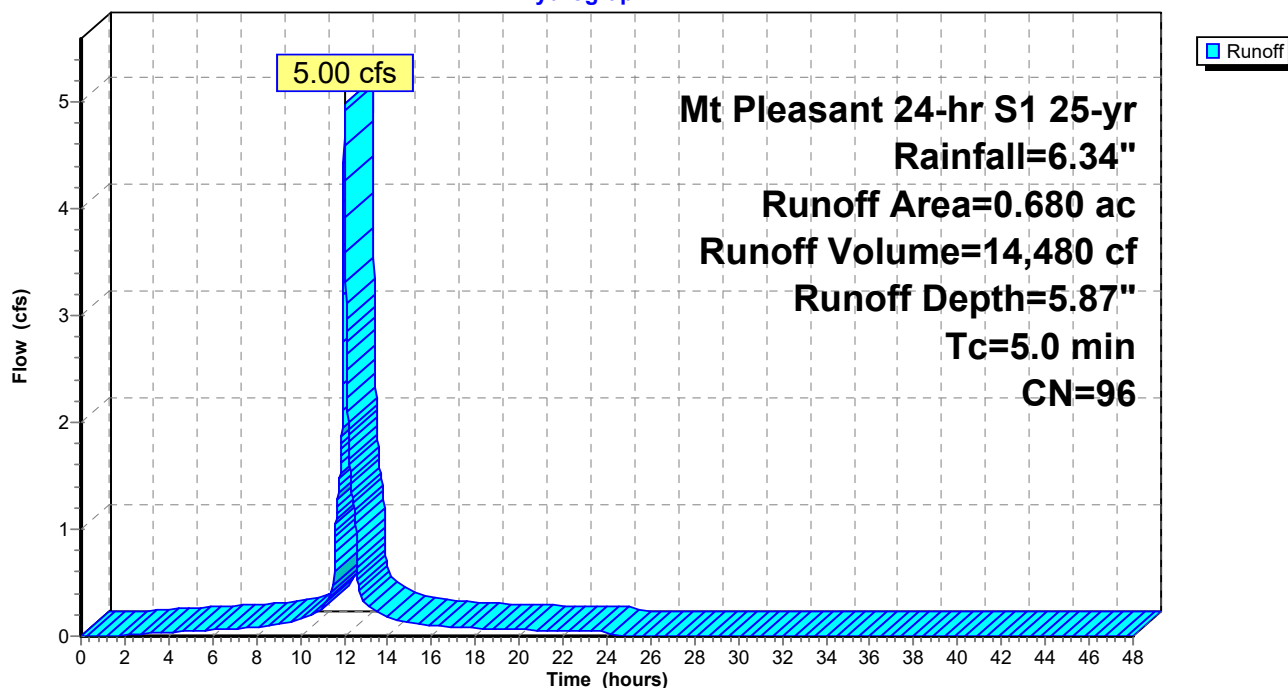
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Mt Pleasant 24-hr S1 25-yr Rainfall=6.34"

Area (ac)	CN	Description
0.680	96	Gravel surface, HSG C
0.680		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					Direct Entry,

Subcatchment DA4C: BASIN 4C PROPOSED

Hydrograph



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Summary for Subcatchment DA4D: BASIN 4D PROPOSED

Runoff = 9.04 cfs @ 12.03 hrs, Volume= 26,191 cf, Depth= 5.87"
Routed to Reach D4D : Ditch 4D

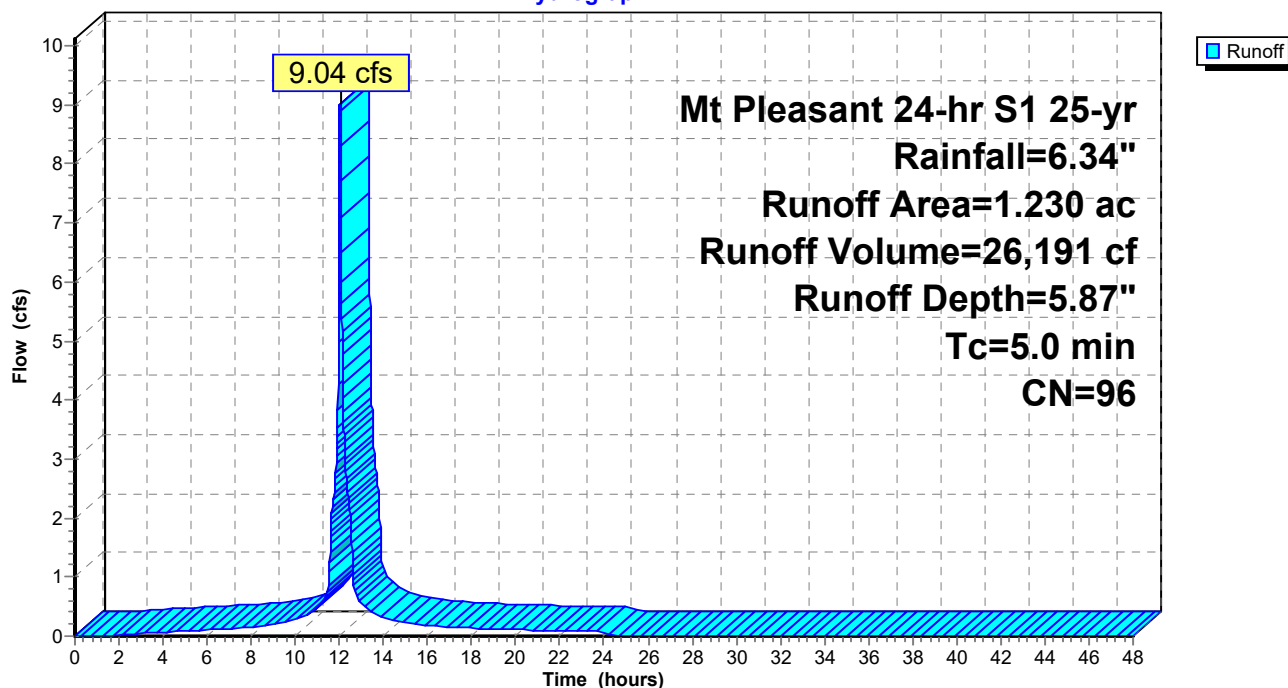
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Mt Pleasant 24-hr S1 25-yr Rainfall=6.34"

Area (ac)	CN	Description
1.230	96	Gravel surface, HSG C
1.230		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					Direct Entry,

Subcatchment DA4D: BASIN 4D PROPOSED

Hydrograph



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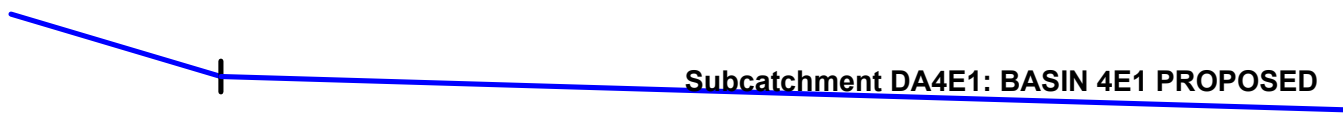
Summary for Subcatchment DA4E1: BASIN 4E1 PROPOSED

Runoff = 12.20 cfs @ 12.43 hrs, Volume= 66,118 cf, Depth= 2.51"
Routed to Reach D4E1 : Ditch 4E1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Mt Pleasant 24-hr S1 25-yr Rainfall=6.34"

Area (ac)	CN	Description
3.130	58	Meadow, non-grazed, HSG B
3.130	60	Woods, Fair, HSG B
1.000	98	Paved roads w/curbs & sewers, HSG B
7.260	64	Weighted Average
6.260		86.23% Pervious Area
1.000		13.77% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
18.6	100	0.1000	0.09		Sheet Flow, Woods: Dense underbrush n= 0.800 P2= 3.57"
12.9	540	0.0100	0.70		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
31.5	640	Total			



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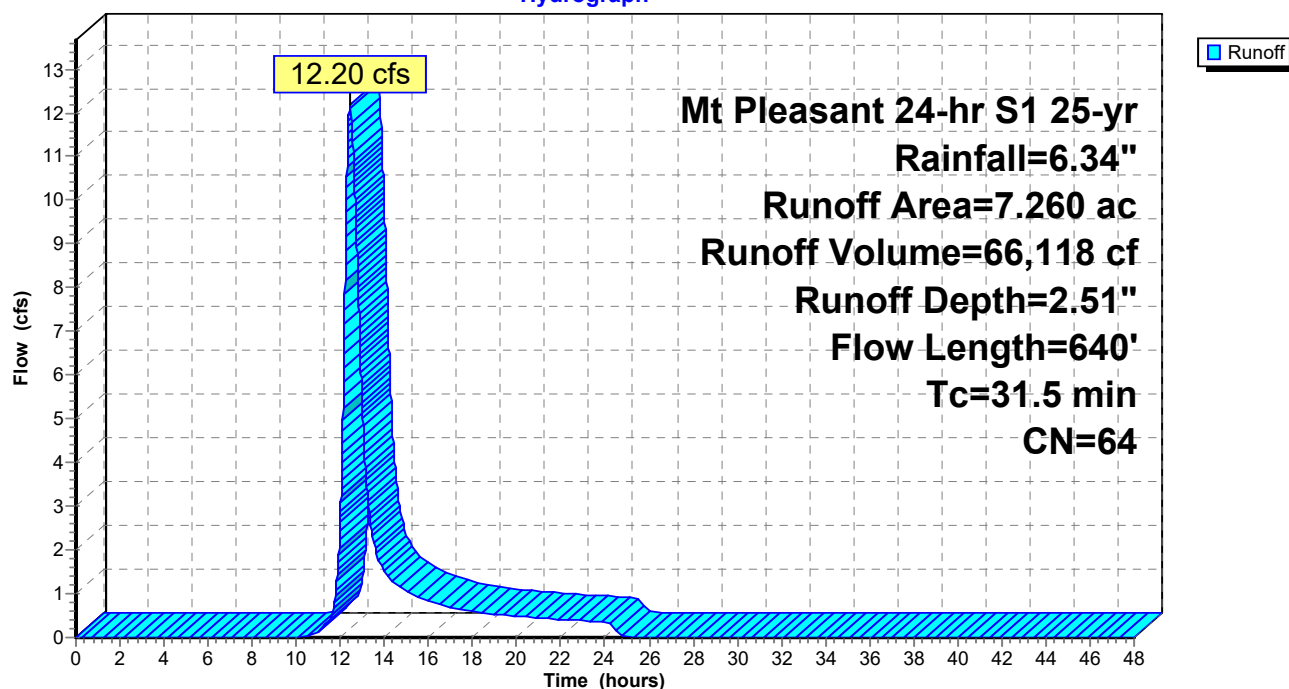
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Subcatchment DA4E1: BASIN 4E1 PROPOSED

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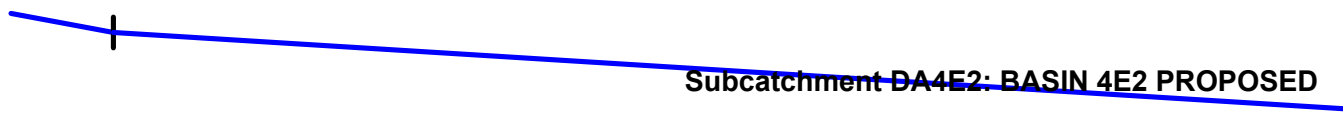
Summary for Subcatchment DA4E2: BASIN 4E2 PROPOSED

Runoff = 32.23 cfs @ 12.64 hrs, Volume= 207,516 cf, Depth= 2.98"
Routed to Pond CD4E : Cross Drain 4E

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Mt Pleasant 24-hr S1 25-yr Rainfall=6.34"

Area (ac)	CN	Description
9.300	79	Woods, Fair, HSG D
4.940	58	Meadow, non-grazed, HSG B
4.940	60	Woods, Fair, HSG B
19.180	69	Weighted Average
19.180		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
24.5	100	0.0500	0.07		Sheet Flow, Woods: Dense underbrush n= 0.800 P2= 3.57"
22.3	1,213	0.0167	0.90		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
46.8	1,313	Total			



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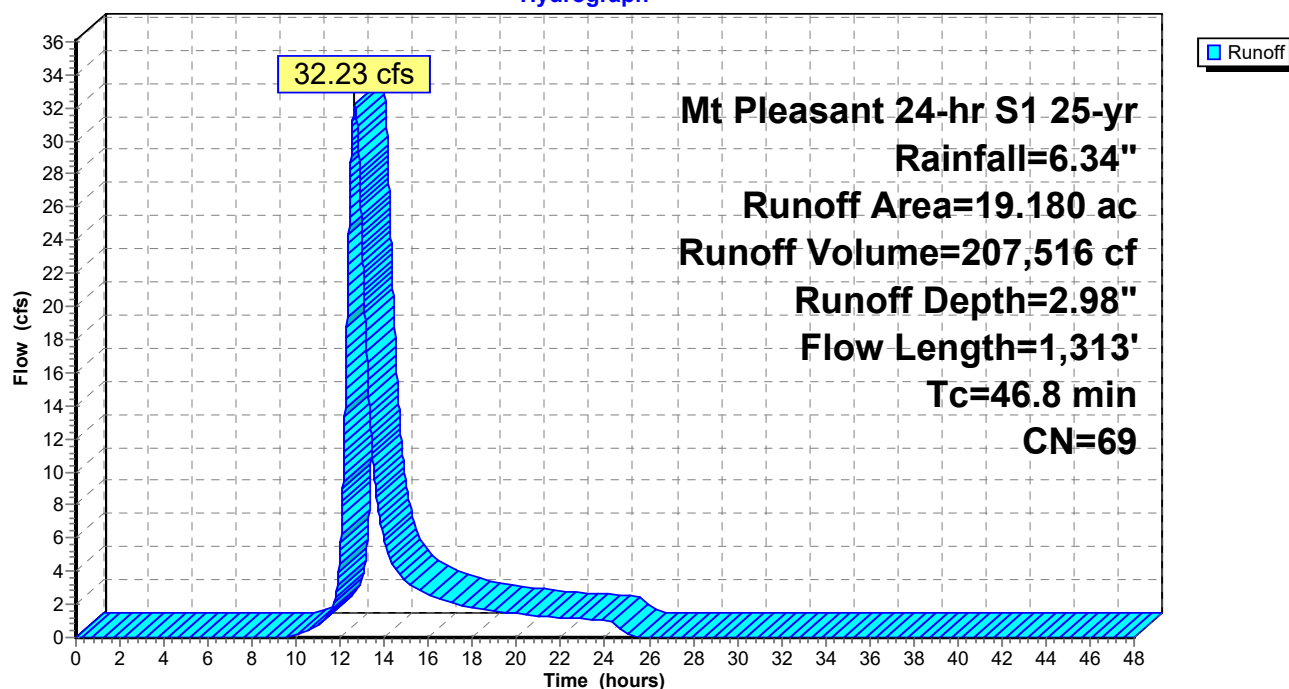
Mt Pleasant 24-hr S1 25-yr Rainfall=6.34"

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Subcatchment DA4E2: BASIN 4E2 PROPOSED

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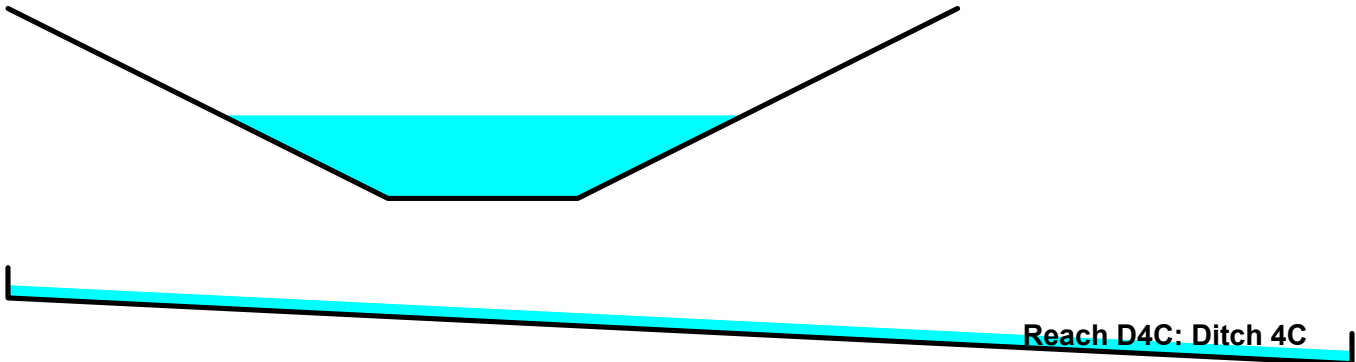
Summary for Reach D4C: Ditch 4C

Inflow Area = 29,621 sf, 0.00% Impervious, Inflow Depth = 5.87" for 25-yr event
 Inflow = 5.00 cfs @ 12.03 hrs, Volume= 14,480 cf
 Outflow = 4.71 cfs @ 12.05 hrs, Volume= 14,480 cf, Atten= 6%, Lag= 1.2 min
 Routed to Pond CD4C : Cross Drain 4C

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
 Max. Velocity= 2.55 fps, Min. Travel Time= 2.0 min
 Avg. Velocity = 0.73 fps, Avg. Travel Time= 7.2 min

Peak Storage= 576 cf @ 12.05 hrs
 Average Depth at Peak Storage= 0.66' , Surface Width= 4.12'
 Bank-Full Depth= 1.50' Flow Area= 6.8 sf, Capacity= 27.19 cfs

1.50' x 1.50' deep channel, n= 0.033 Riprap, 1-inch
 Side Slope Z-value= 2.0 '/' Top Width= 7.50'
 Length= 313.0' Slope= 0.0104 '/'
 Inlet Invert= 687.00', Outlet Invert= 683.75'



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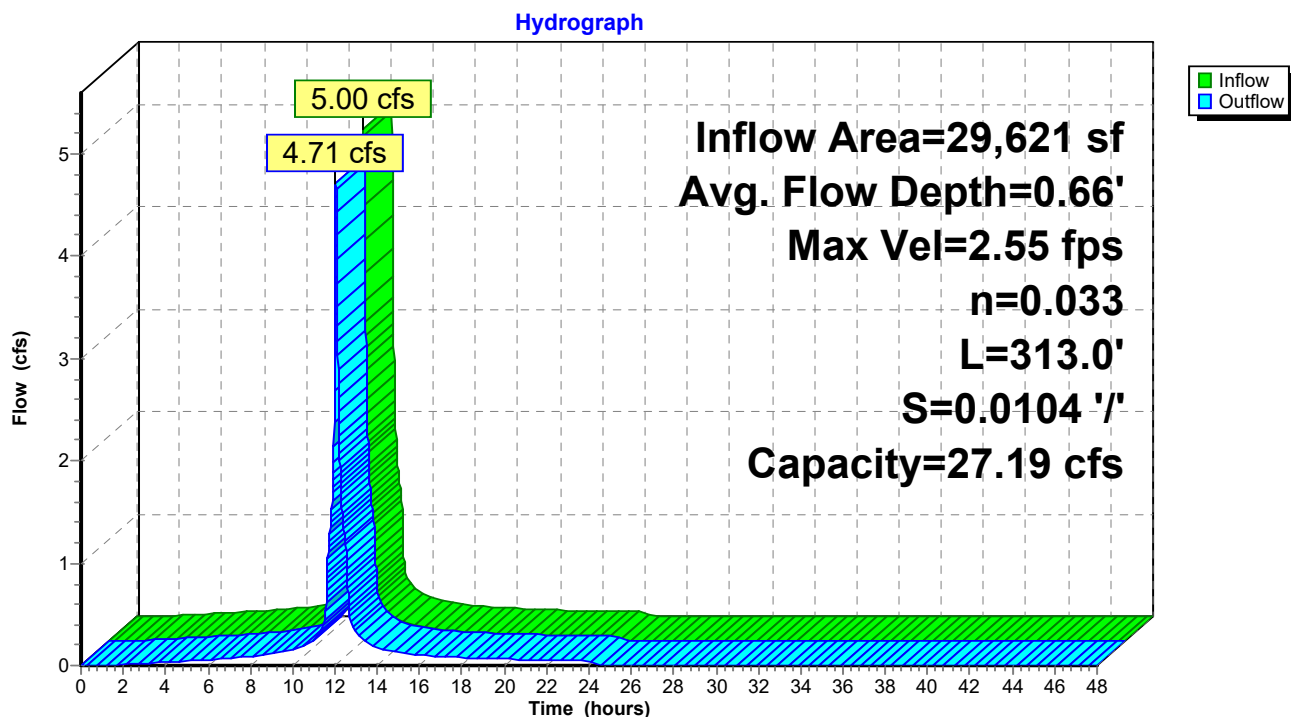
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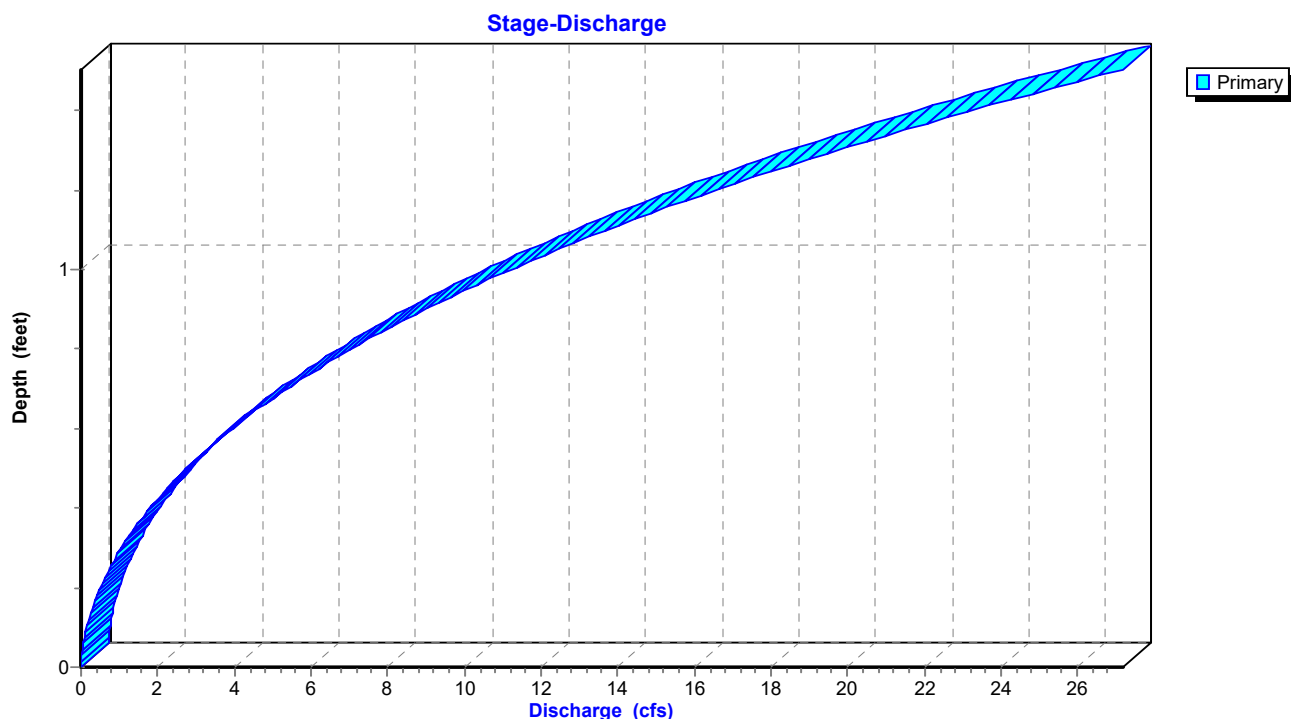
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Reach D4C: Ditch 4C



Reach D4C: Ditch 4C



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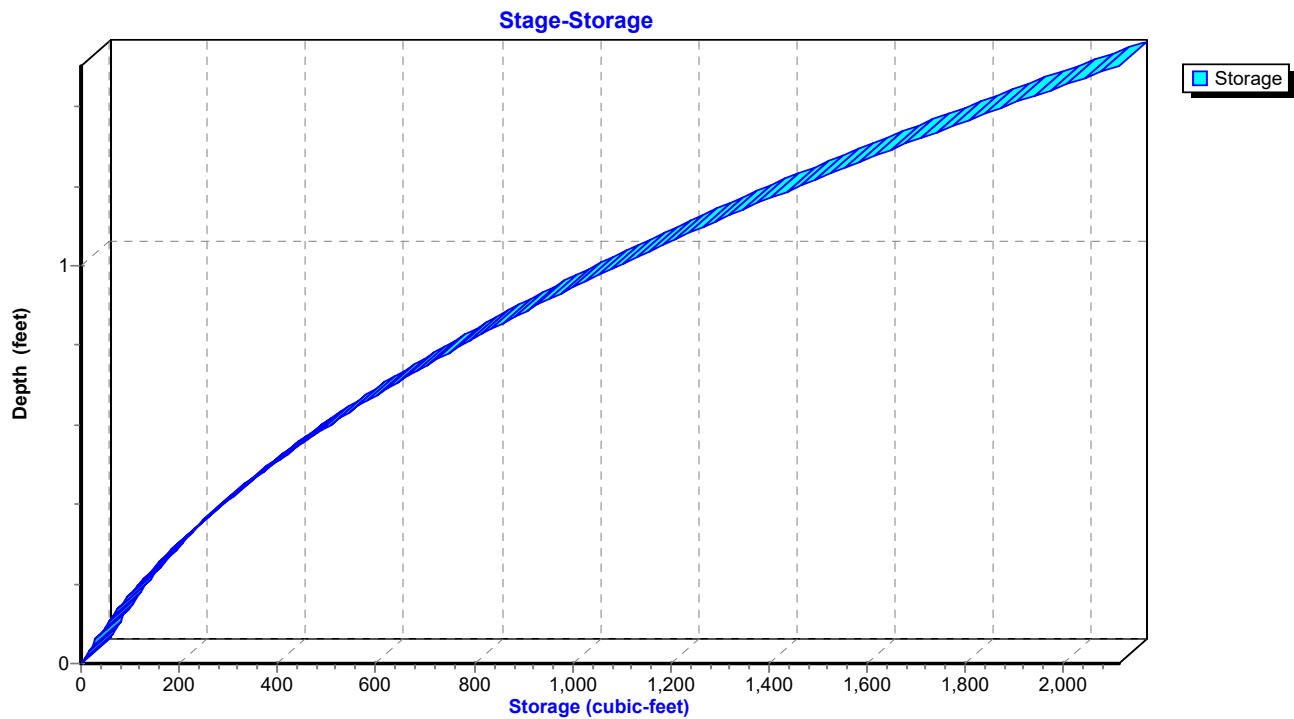
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Mt Pleasant 24-hr S1 25-yr Rainfall=6.34"

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Reach D4C: Ditch 4C



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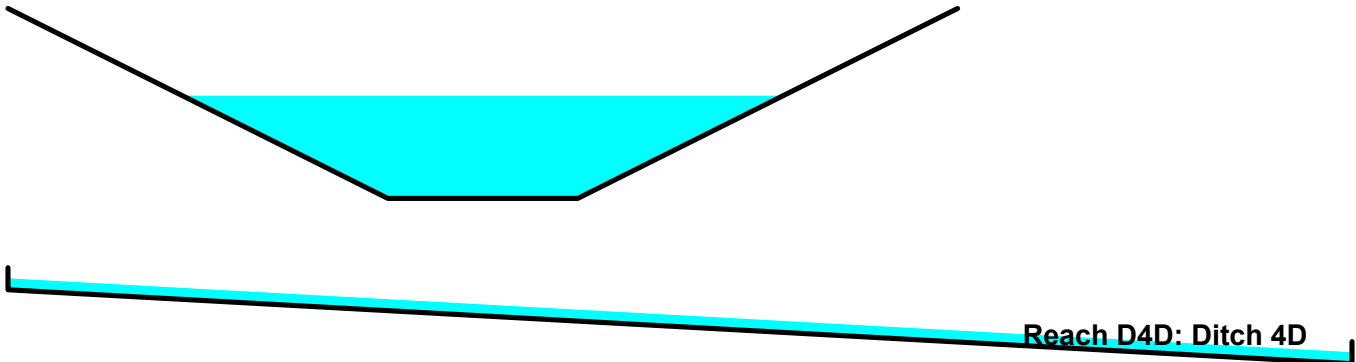
Summary for Reach D4D: Ditch 4D

Inflow Area = 53,579 sf, 0.00% Impervious, Inflow Depth = 5.87" for 25-yr event
 Inflow = 9.04 cfs @ 12.03 hrs, Volume= 26,191 cf
 Outflow = 8.67 cfs @ 12.04 hrs, Volume= 26,191 cf, Atten= 4%, Lag= 1.0 min
 Routed to Pond CD4DCE : Cross Drain 4DCE

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
 Max. Velocity= 3.43 fps, Min. Travel Time= 1.6 min
 Avg. Velocity = 1.00 fps, Avg. Travel Time= 5.6 min

Peak Storage= 853 cf @ 12.04 hrs
 Average Depth at Peak Storage= 0.81' , Surface Width= 4.74'
 Bank-Full Depth= 1.50' Flow Area= 6.8 sf, Capacity= 32.50 cfs

1.50' x 1.50' deep channel, n= 0.033 Riprap, 1-inch
 Side Slope Z-value= 2.0 '/' Top Width= 7.50'
 Length= 337.0' Slope= 0.0148 '/'
 Inlet Invert= 688.00', Outlet Invert= 683.00'



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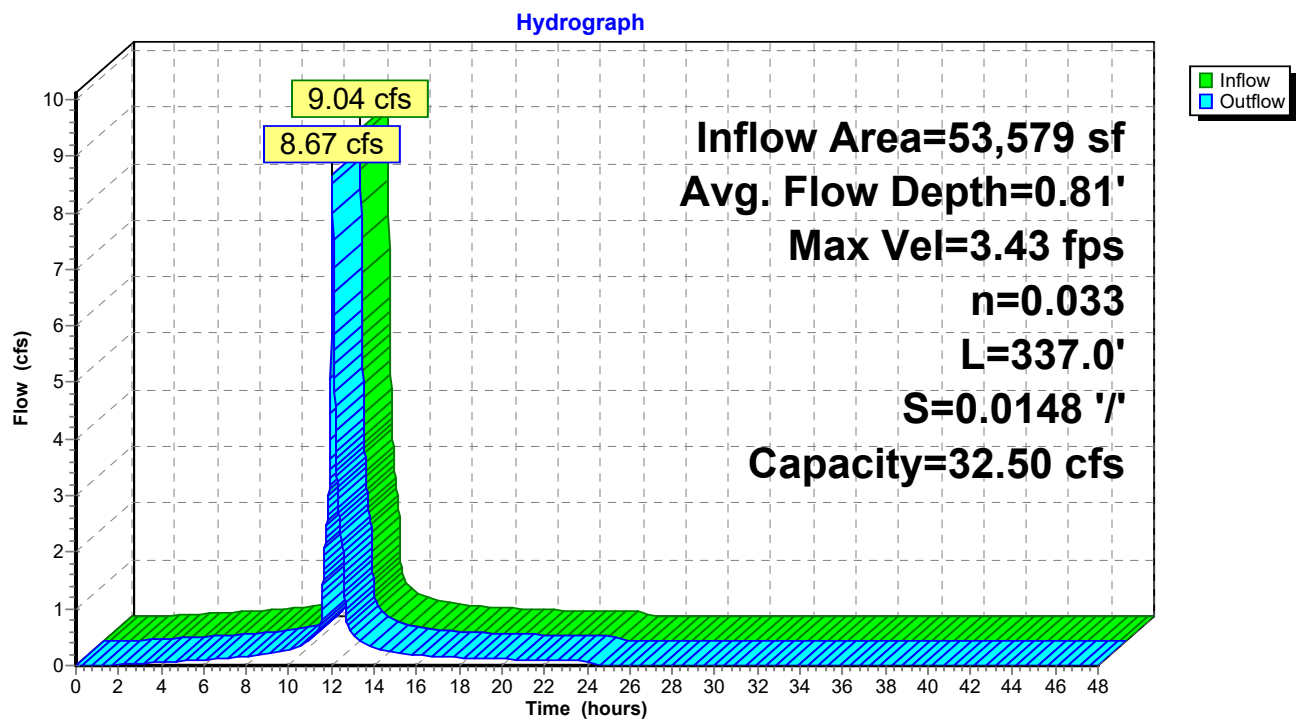
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Mt Pleasant 24-hr S1 25-yr Rainfall=6.34"

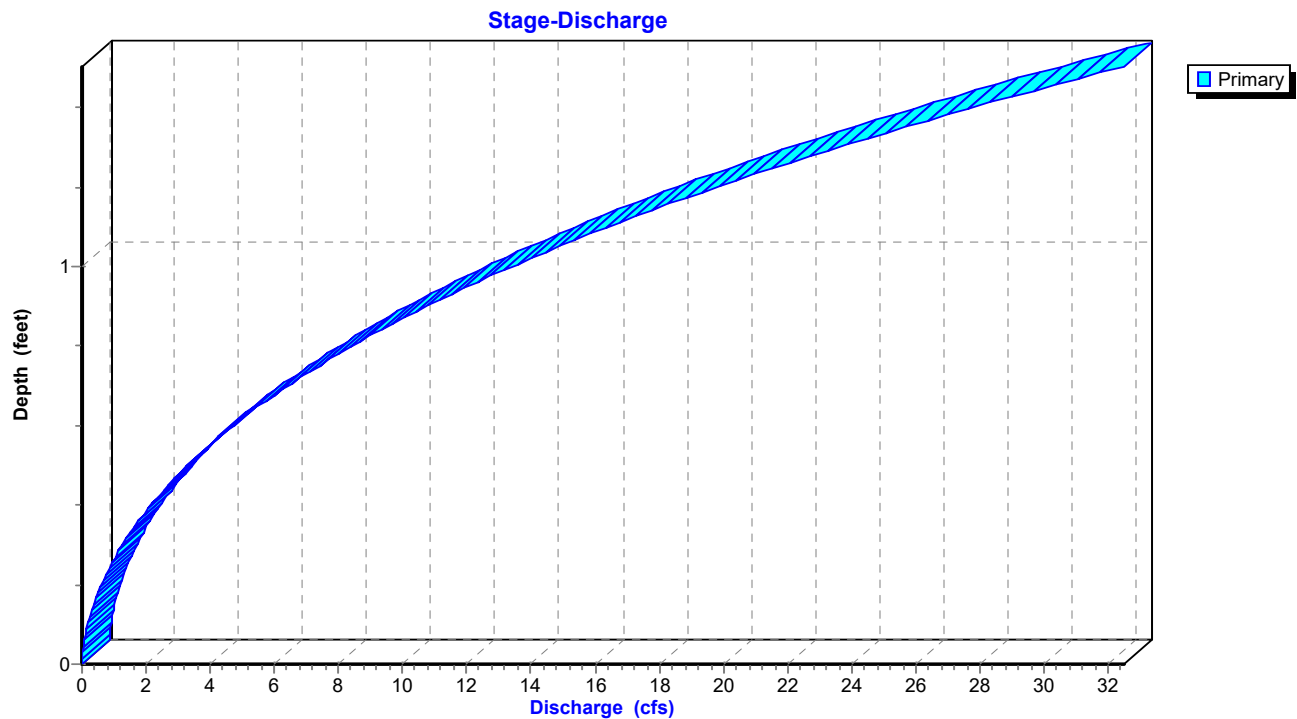
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Reach D4D: Ditch 4D



Reach D4D: Ditch 4D



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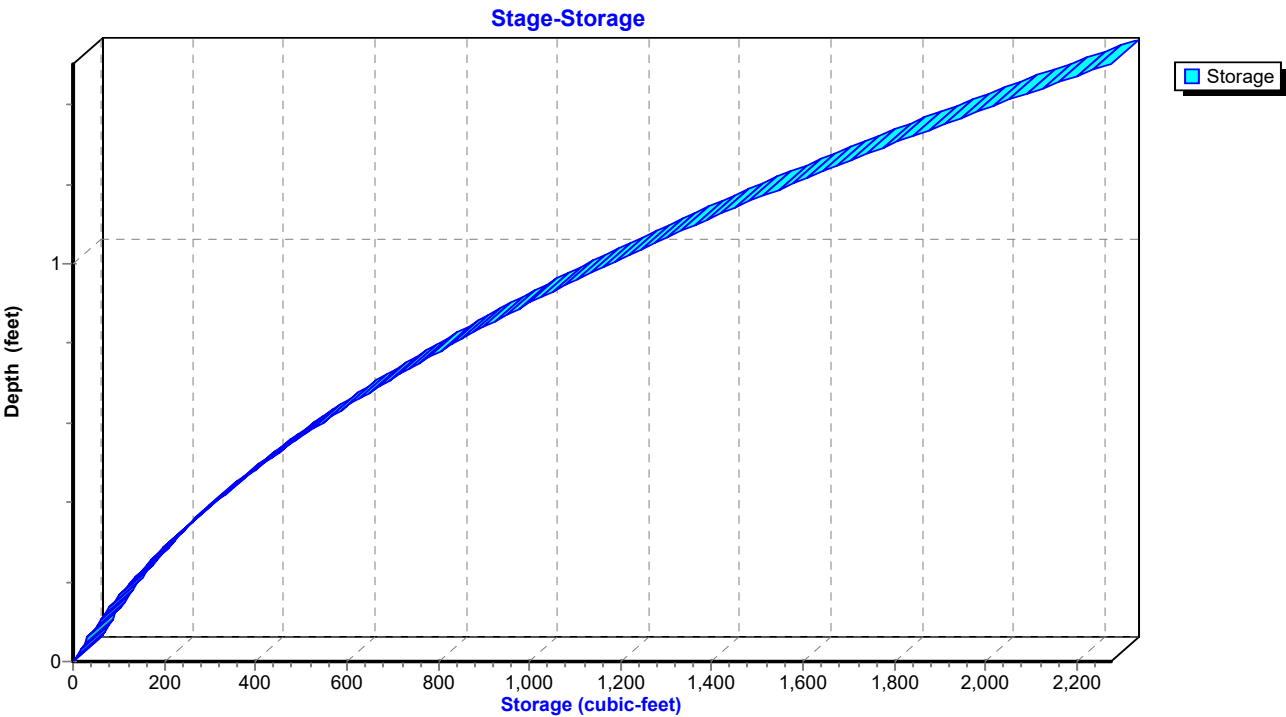
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Reach D4D: Ditch 4D



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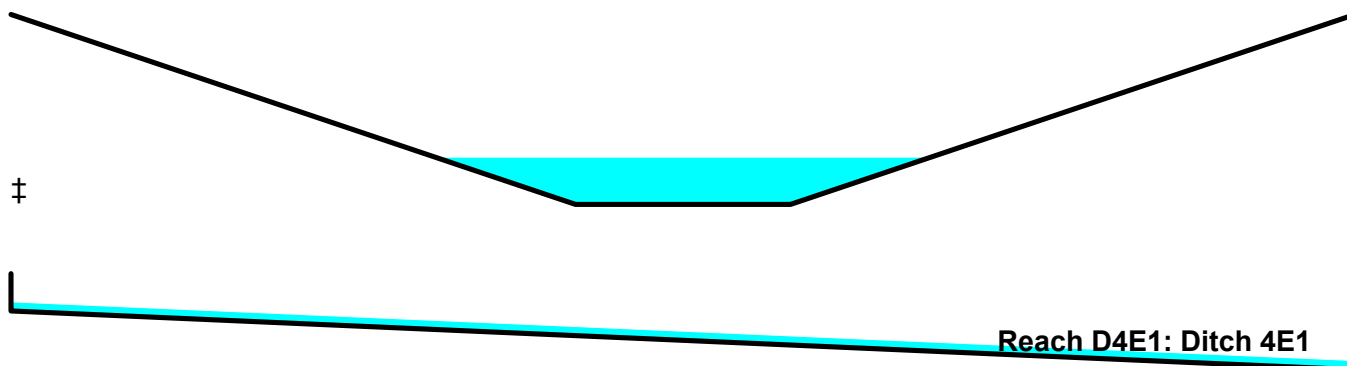
Summary for Reach D4E1: Ditch 4E1

Inflow Area = 316,246 sf, 13.77% Impervious, Inflow Depth = 2.51" for 25-yr event
 Inflow = 12.20 cfs @ 12.43 hrs, Volume= 66,118 cf
 Outflow = 10.11 cfs @ 12.65 hrs, Volume= 66,118 cf, Atten= 17%, Lag= 13.4 min
 Routed to Pond CD4E : Cross Drain 4E

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
 Max. Velocity= 1.78 fps, Min. Travel Time= 16.8 min
 Avg. Velocity= 0.52 fps, Avg. Travel Time= 56.8 min

Peak Storage= 10,160 cf @ 12.65 hrs
 Average Depth at Peak Storage= 0.86' , Surface Width= 9.17'
 Bank-Full Depth= 3.50' Flow Area= 50.8 sf, Capacity= 197.27 cfs

4.00' x 3.50' deep channel, n= 0.033 Riprap, 1-inch
 Side Slope Z-value= 3.0 ' / ' Top Width= 25.00'
 Length= 1,788.0' Slope= 0.0031 ' / '
 Inlet Invert= 685.00', Outlet Invert= 679.50'



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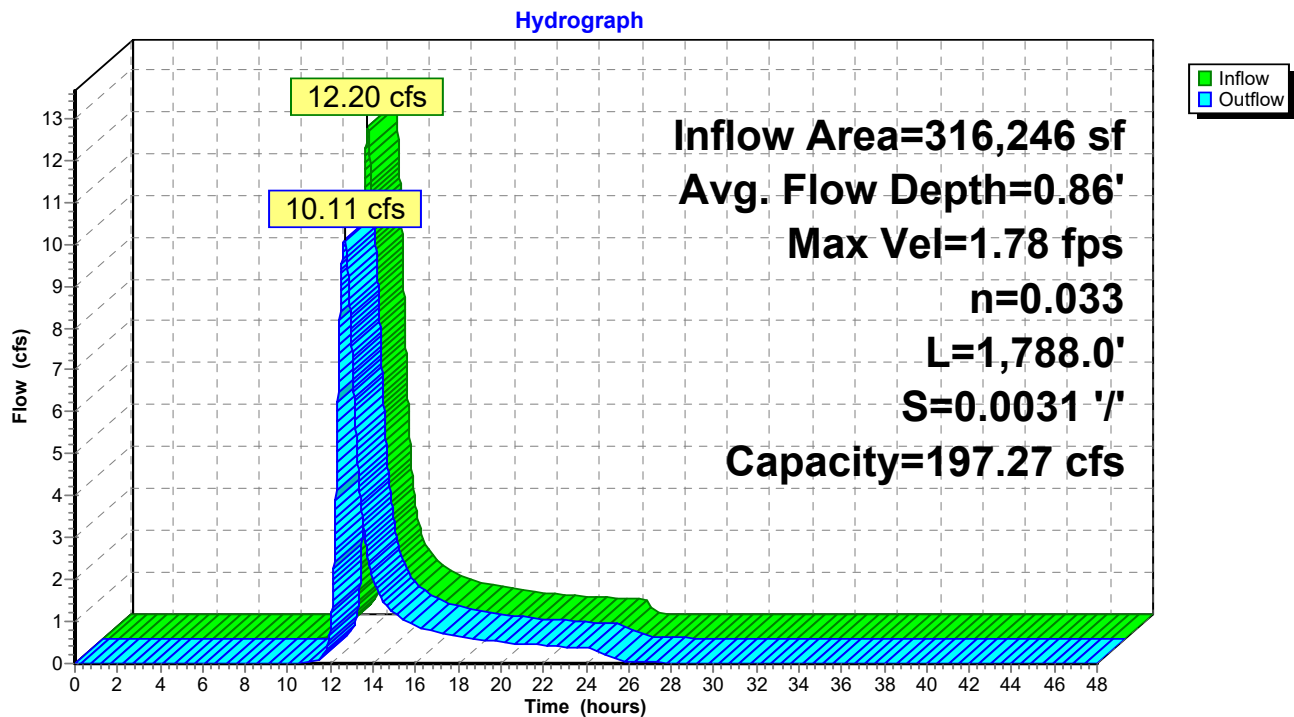
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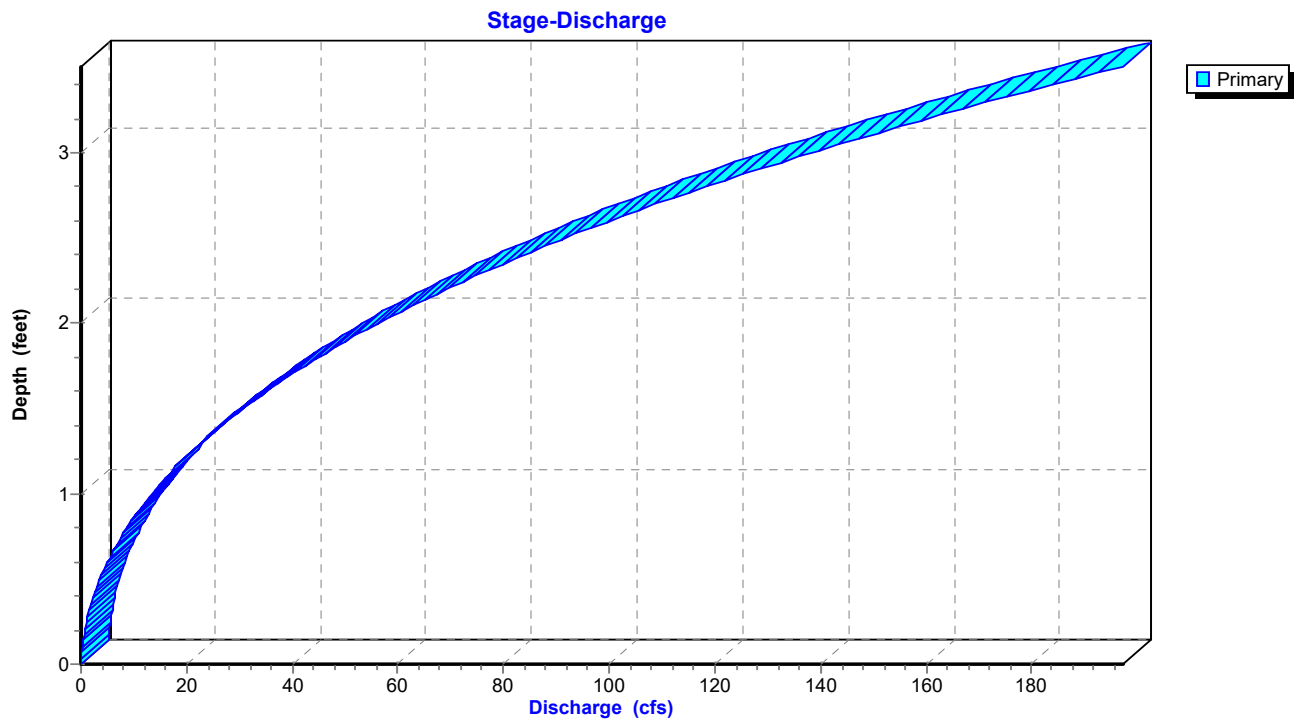
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Reach D4E1: Ditch 4E1



Reach D4E1: Ditch 4E1



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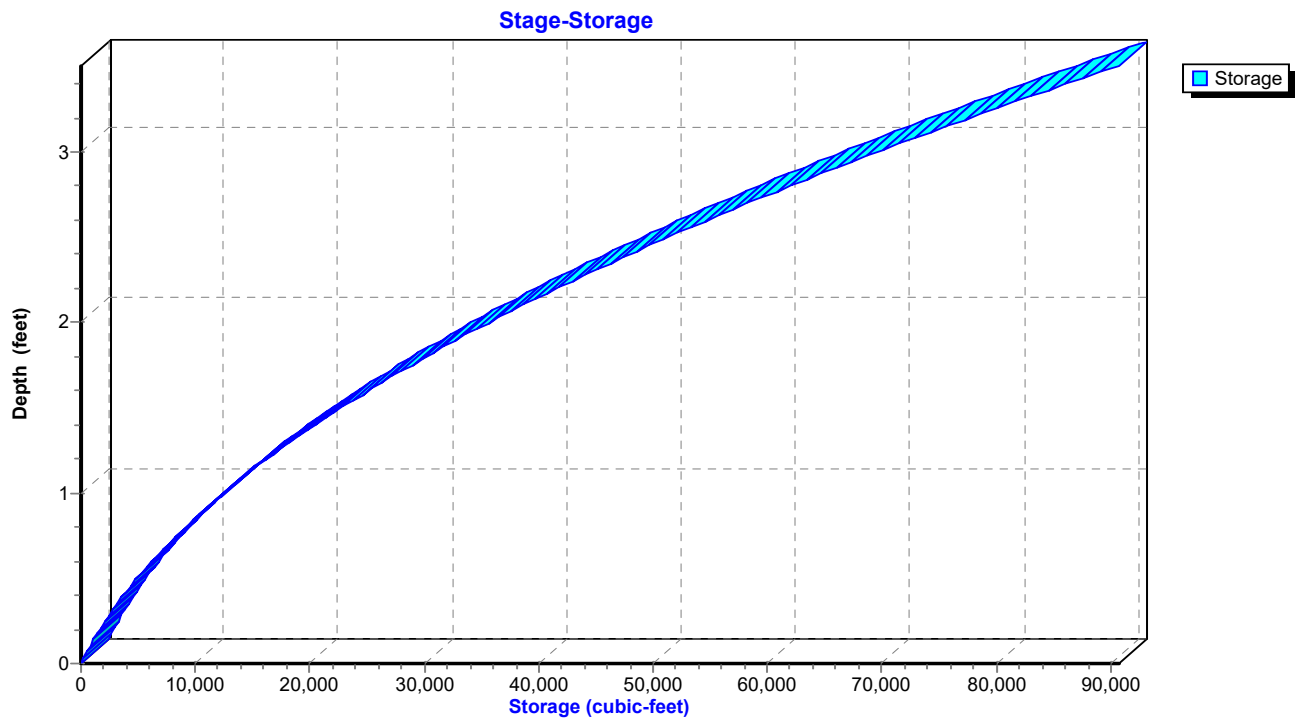
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Reach D4E1: Ditch 4E1



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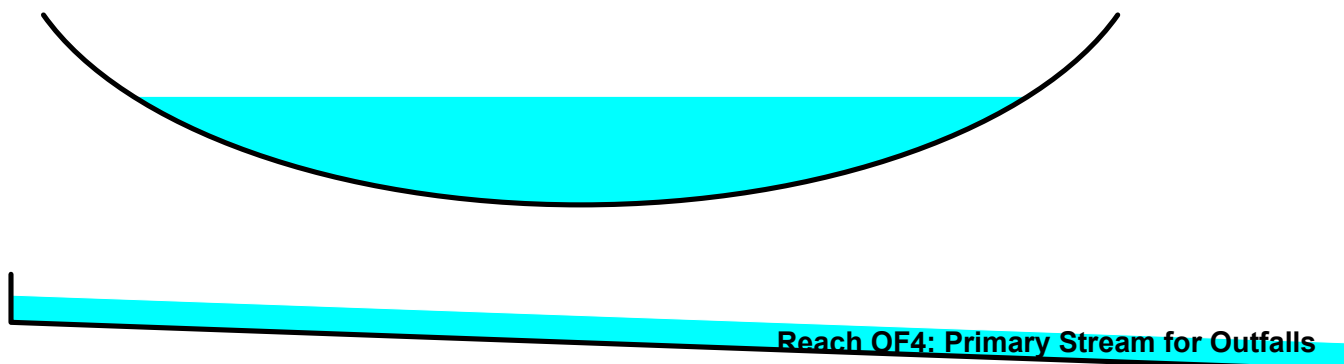
Summary for Reach OF4: Primary Stream for Outfalls

Inflow Area = 9,965,657 sf, 1.09% Impervious, Inflow Depth = 3.29" for 25-yr event
 Inflow = 191.93 cfs @ 13.35 hrs, Volume= 2,728,193 cf
 Outflow = 191.64 cfs @ 13.38 hrs, Volume= 2,728,193 cf, Atten= 0%, Lag= 1.8 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
 Max. Velocity= 4.48 fps, Min. Travel Time= 3.7 min
 Avg. Velocity = 1.63 fps, Avg. Travel Time= 10.2 min

Peak Storage= 42,824 cf @ 13.38 hrs
 Average Depth at Peak Storage= 2.84' , Surface Width= 22.61'
 Bank-Full Depth= 5.00' Flow Area= 100.0 sf, Capacity= 640.46 cfs

30.00' x 5.00' deep Parabolic Channel, n= 0.035
 Length= 1,000.0' Slope= 0.0050 '/'
 Inlet Invert= 675.00', Outlet Invert= 670.00'



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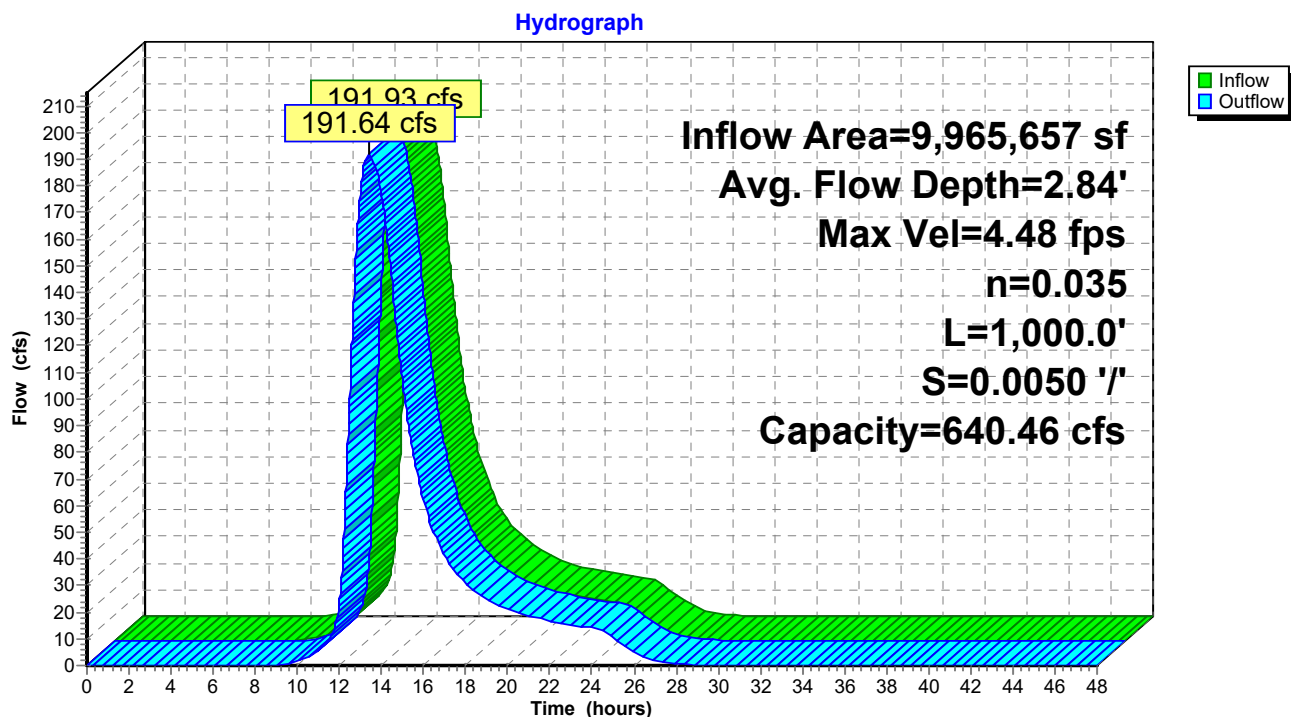
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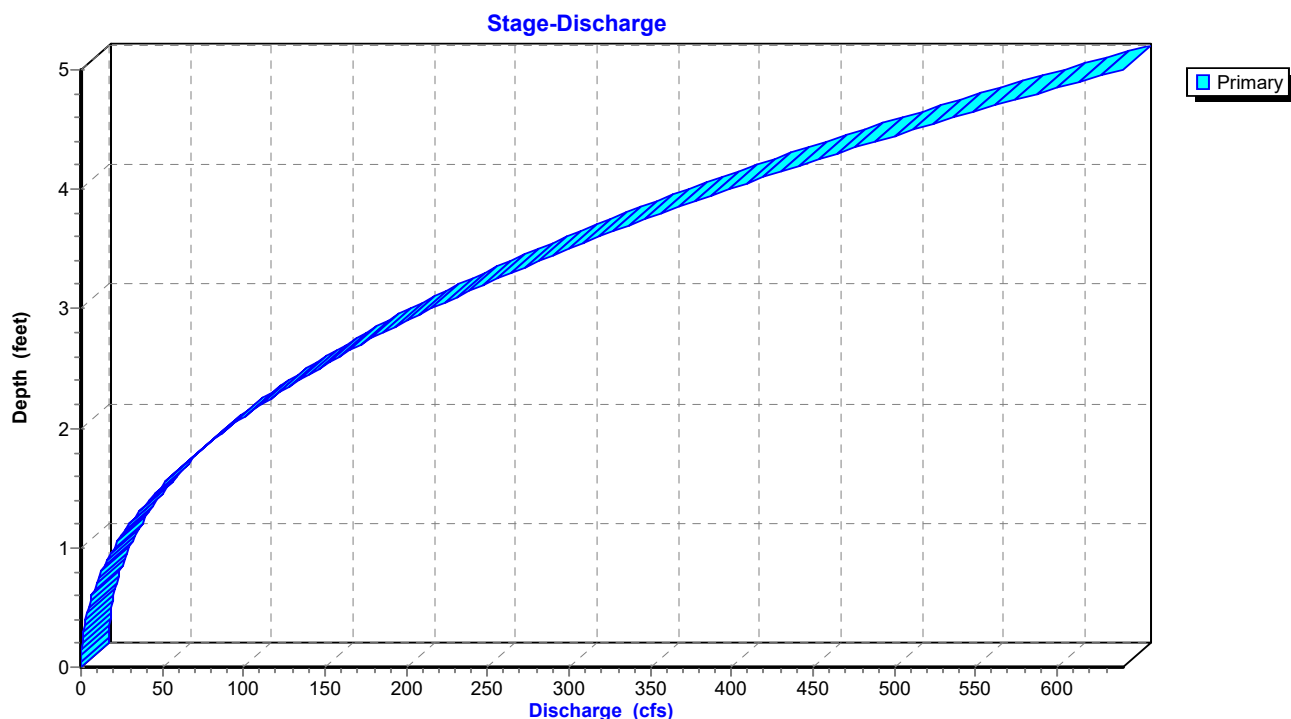
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Reach OF4: Primary Stream for Outfalls



Reach OF4: Primary Stream for Outfalls



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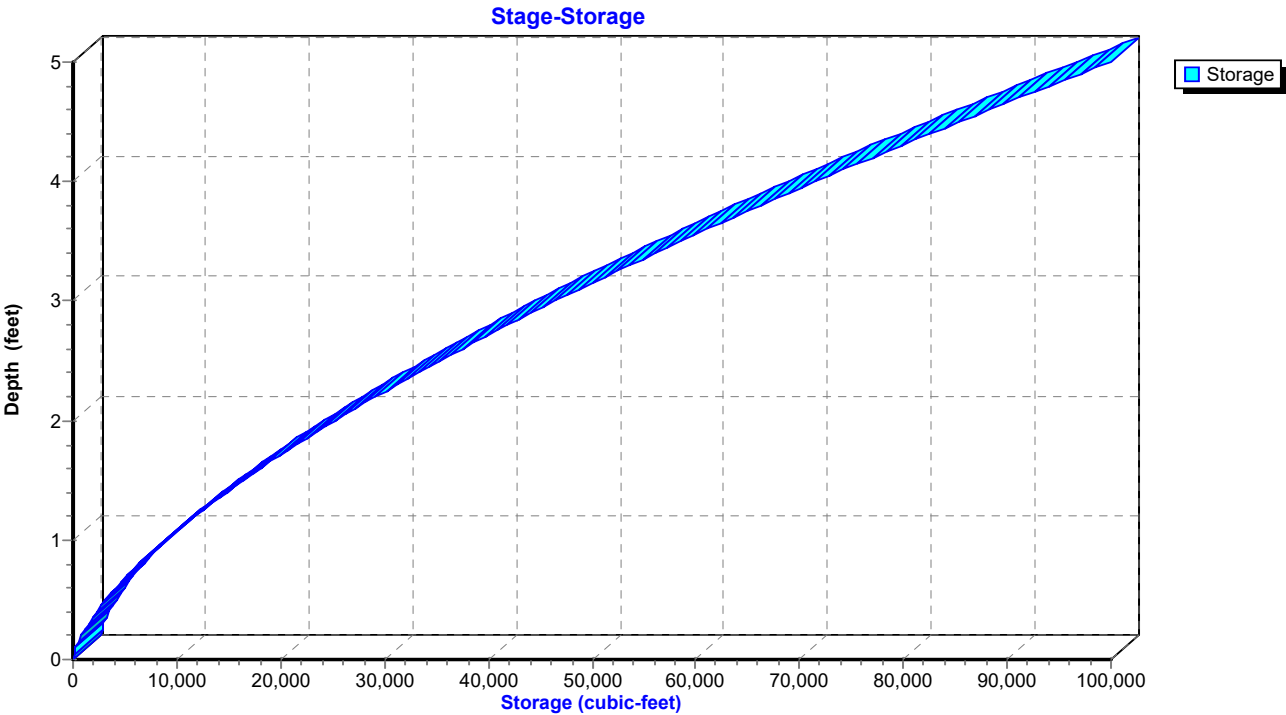
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Mt Pleasant 24-hr S1 25-yr Rainfall=6.34"

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Reach OF4: Primary Stream for Outfalls



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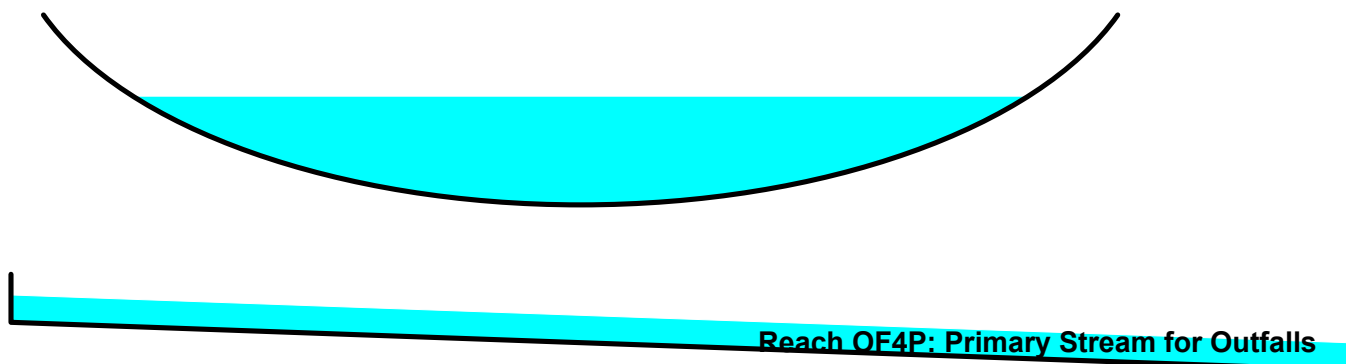
Summary for Reach OF4P: Primary Stream for Outfalls

Inflow Area = 9,969,577 sf, 2.84% Impervious, Inflow Depth = 3.43" for 25-yr event
 Inflow = 192.43 cfs @ 13.66 hrs, Volume= 2,853,359 cf
 Outflow = 192.23 cfs @ 13.68 hrs, Volume= 2,853,357 cf, Atten= 0%, Lag= 1.3 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
 Max. Velocity= 4.48 fps, Min. Travel Time= 3.7 min
 Avg. Velocity = 1.29 fps, Avg. Travel Time= 13.0 min

Peak Storage= 42,915 cf @ 13.68 hrs
 Average Depth at Peak Storage= 2.84' , Surface Width= 22.63'
 Bank-Full Depth= 5.00' Flow Area= 100.0 sf, Capacity= 640.46 cfs

30.00' x 5.00' deep Parabolic Channel, n= 0.035
 Length= 1,000.0' Slope= 0.0050 '/'
 Inlet Invert= 675.00', Outlet Invert= 670.00'



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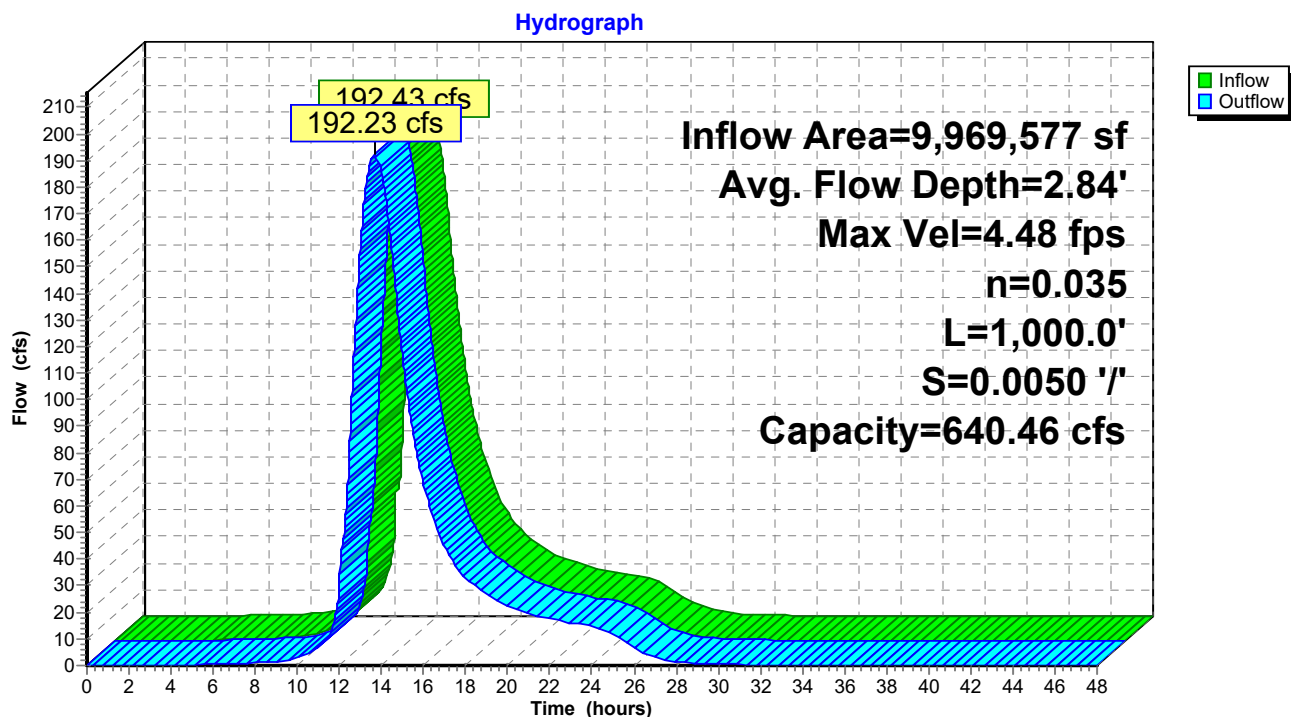
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Mt Pleasant 24-hr S1 25-yr Rainfall=6.34"

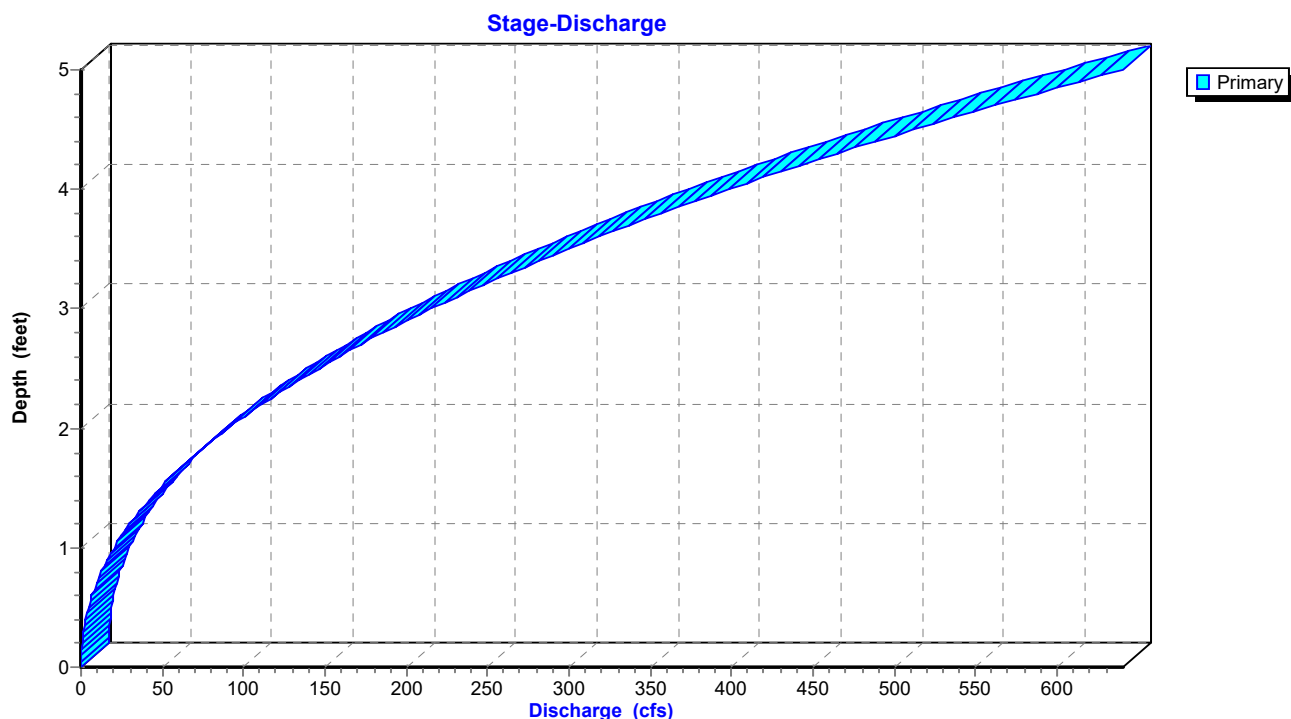
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Reach OF4P: Primary Stream for Outfalls



Reach OF4P: Primary Stream for Outfalls



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Mt Pleasant 24-hr S1 25-yr Rainfall=6.34"

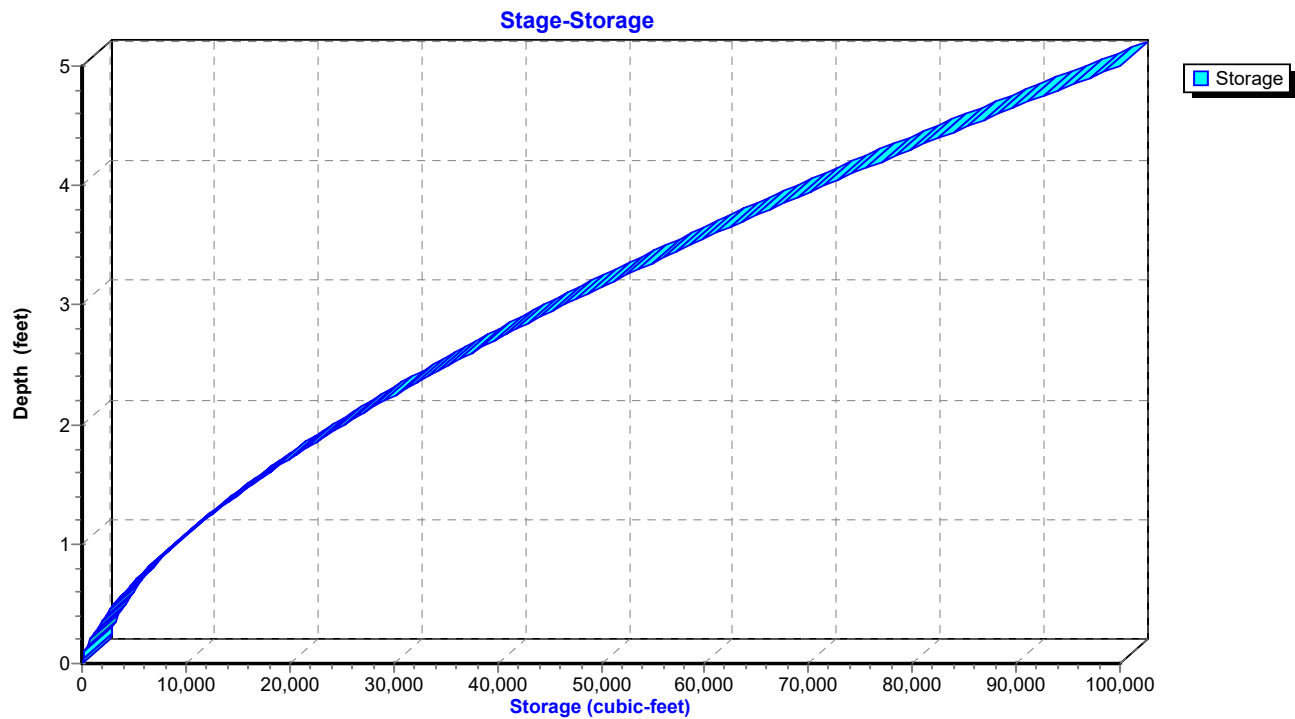
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Reach OF4P: Primary Stream for Outfalls



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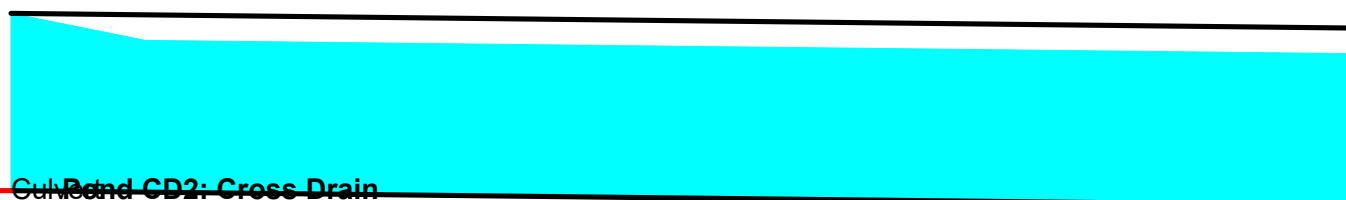
Summary for Pond CD2: Cross Drain

Inflow Area = 1,520,244 sf, 0.00% Impervious, Inflow Depth = 2.33" for 25-yr event
 Inflow = 38.11 cfs @ 12.88 hrs, Volume= 294,710 cf
 Outflow = 38.11 cfs @ 12.88 hrs, Volume= 294,710 cf, Atten= 0%, Lag= 0.0 min
 Primary = 38.11 cfs @ 12.88 hrs, Volume= 294,710 cf
 Routed to Reach OF4P : Primary Stream for Outfalls

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
 Peak Elev= 683.44' @ 12.88 hrs

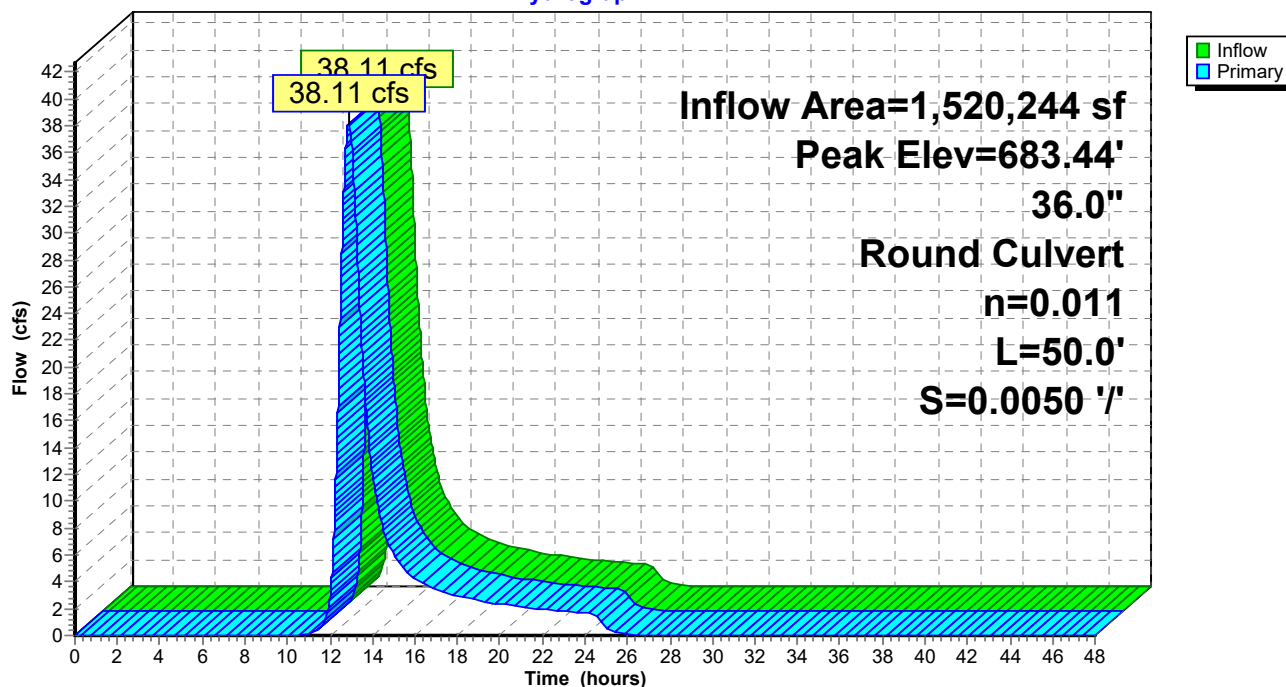
Device	Routing	Invert	Outlet Devices
#1	Primary	680.25'	36.0" Round Culvert L= 50.0' Ke= 0.500 Inlet / Outlet Invert= 680.25' / 680.00' S= 0.0050 '/' Cc= 0.900 n= 0.011 Concrete pipe, straight & clean, Flow Area= 7.07 sf

Primary OutFlow Max=38.11 cfs @ 12.88 hrs HW=683.44' TW=677.49' (Dynamic Tailwater)
 1=Culvert (Barrel Controls 38.11 cfs @ 6.30 fps)



Pond CD2: Cross Drain

Hydrograph

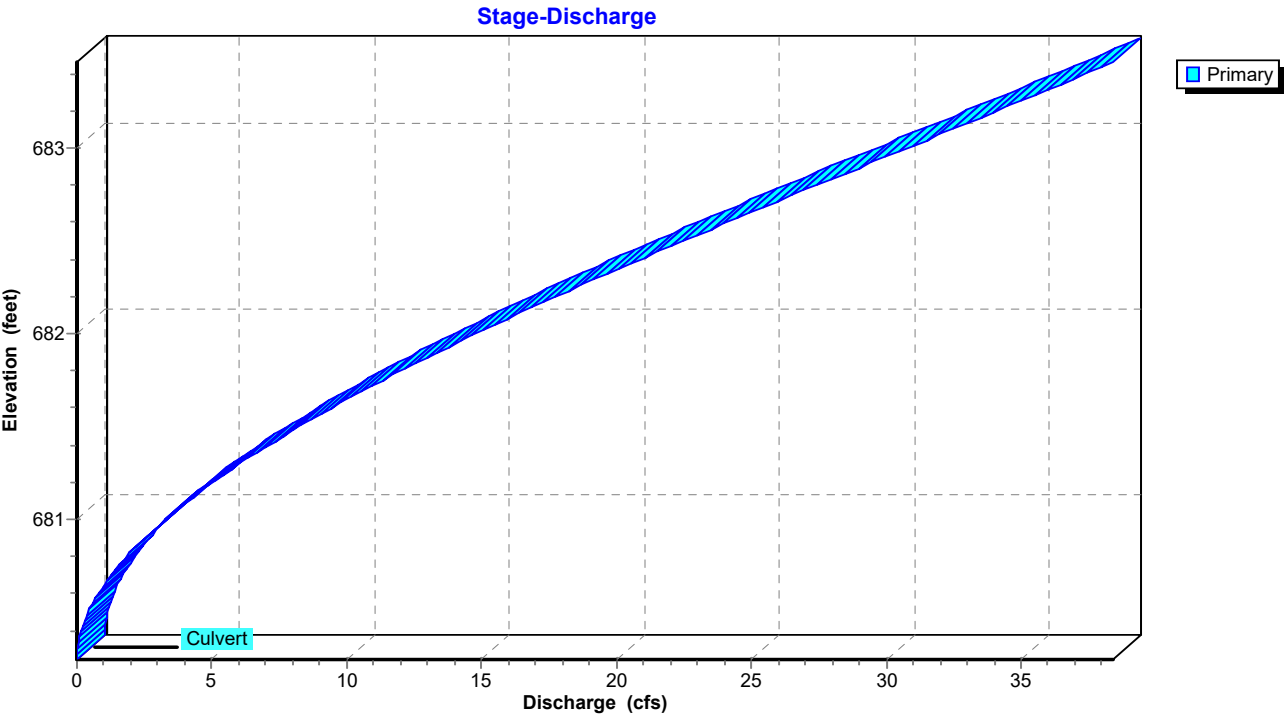


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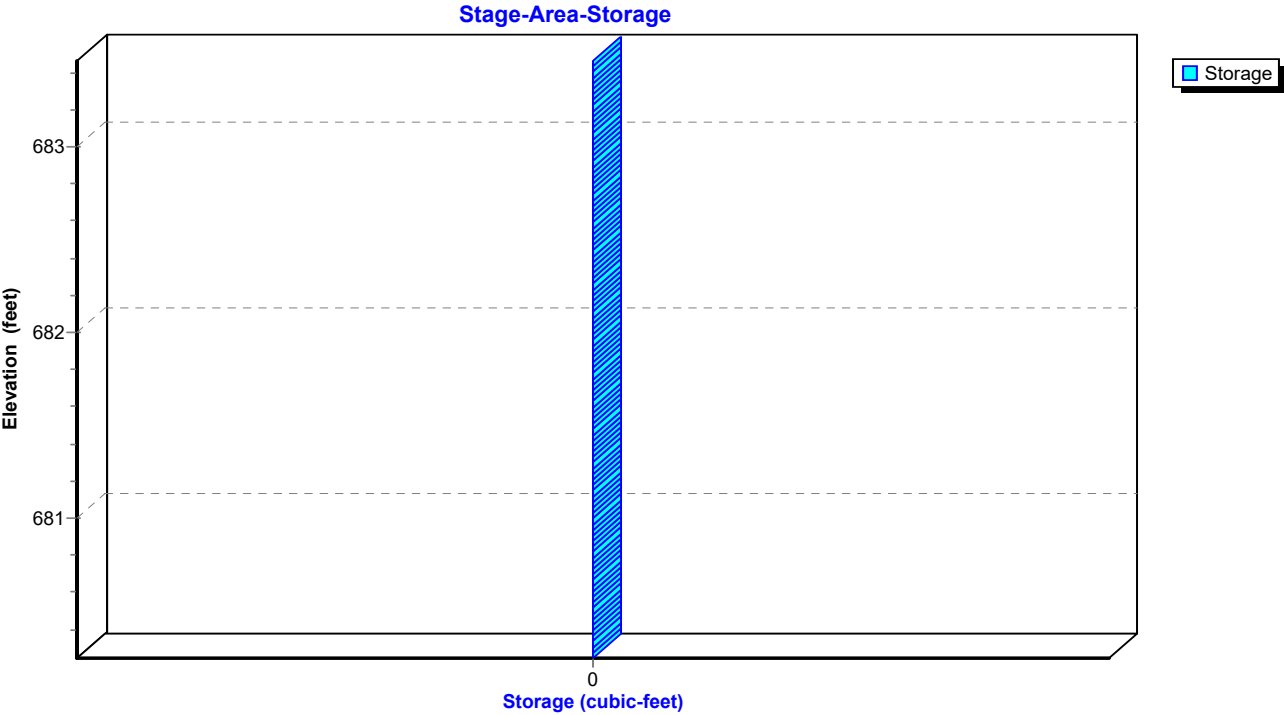
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Mt Pleasant 24-hr S1 25-yr Rainfall=6.34"
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Pond CD2: Cross Drain



Pond CD2: Cross Drain



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Mt Pleasant 24-hr S1 25-yr Rainfall=6.34"

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Summary for Pond CD4C: Cross Drain 4C

Inflow Area = 29,621 sf, 0.00% Impervious, Inflow Depth = 5.87" for 25-yr event
 Inflow = 4.71 cfs @ 12.05 hrs, Volume= 14,480 cf
 Outflow = 4.71 cfs @ 12.05 hrs, Volume= 14,480 cf, Atten= 0%, Lag= 0.0 min
 Primary = 4.71 cfs @ 12.05 hrs, Volume= 14,480 cf
 Routed to Pond CD4DCE : Cross Drain 4DCE

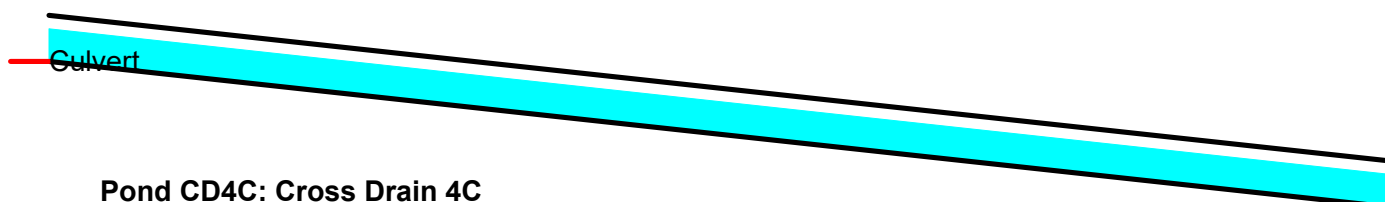
Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Peak Elev= 684.81' @ 12.05 hrs

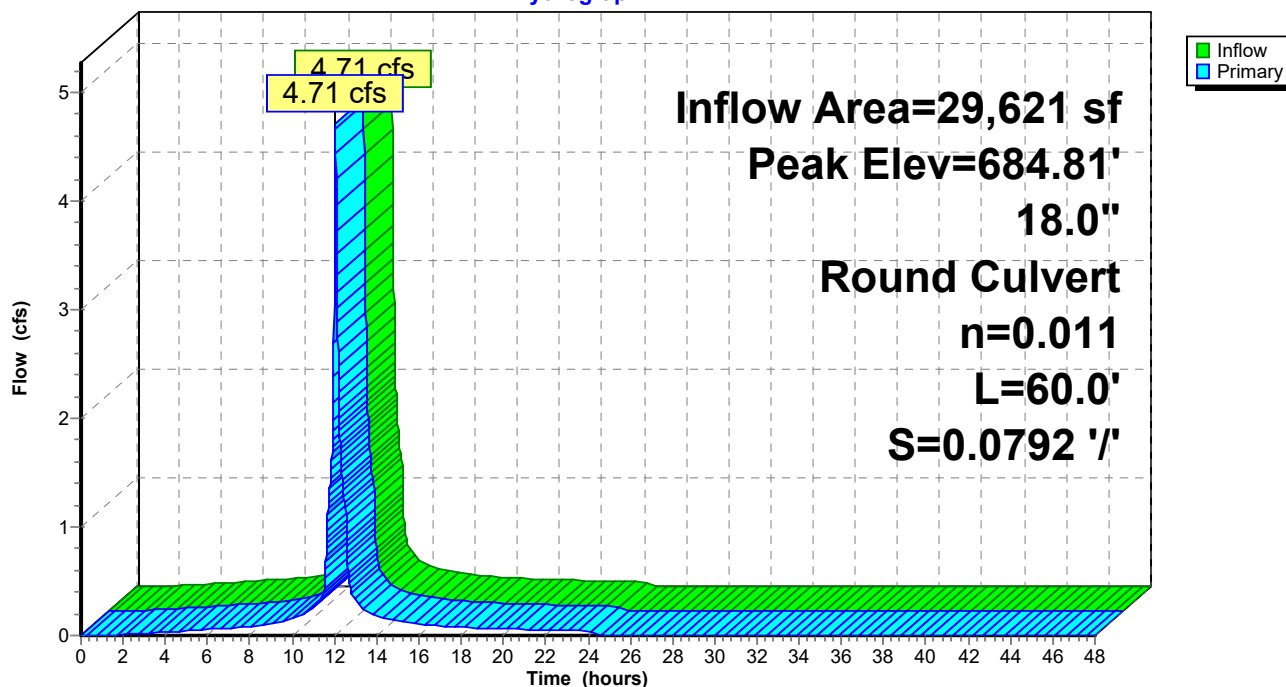
Device	Routing	Invert	Outlet Devices
#1	Primary	683.75'	18.0" Round Culvert L= 60.0' Square-edged headwall, Ke= 0.500 Inlet / Outlet Invert= 683.75' / 679.00' S= 0.0792 '/' Cc= 0.900 n= 0.011 Concrete pipe, straight & clean, Flow Area= 1.77 sf

Primary OutFlow Max=4.69 cfs @ 12.05 hrs HW=684.81' TW=680.13' (Dynamic Tailwater)

1=Culvert (Inlet Controls 4.69 cfs @ 3.51 fps)

**Pond CD4C: Cross Drain 4C**

Hydrograph



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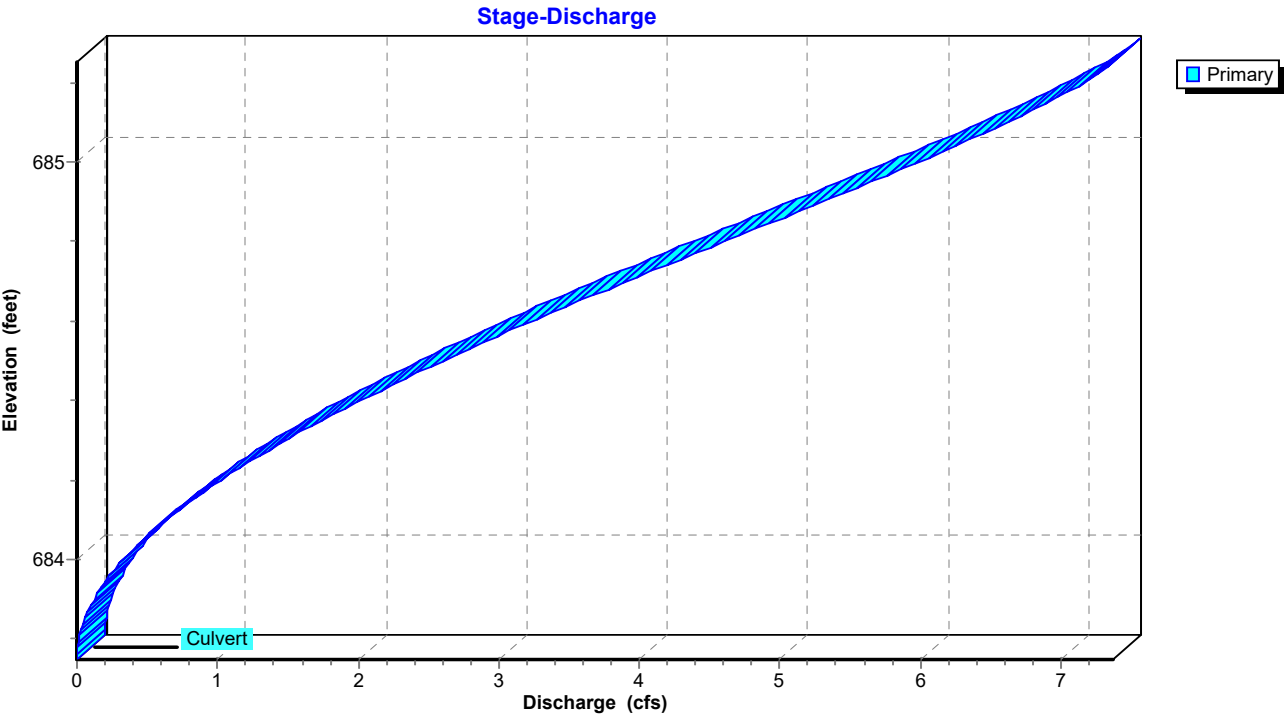
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Mt Pleasant 24-hr S1 25-yr Rainfall=6.34"

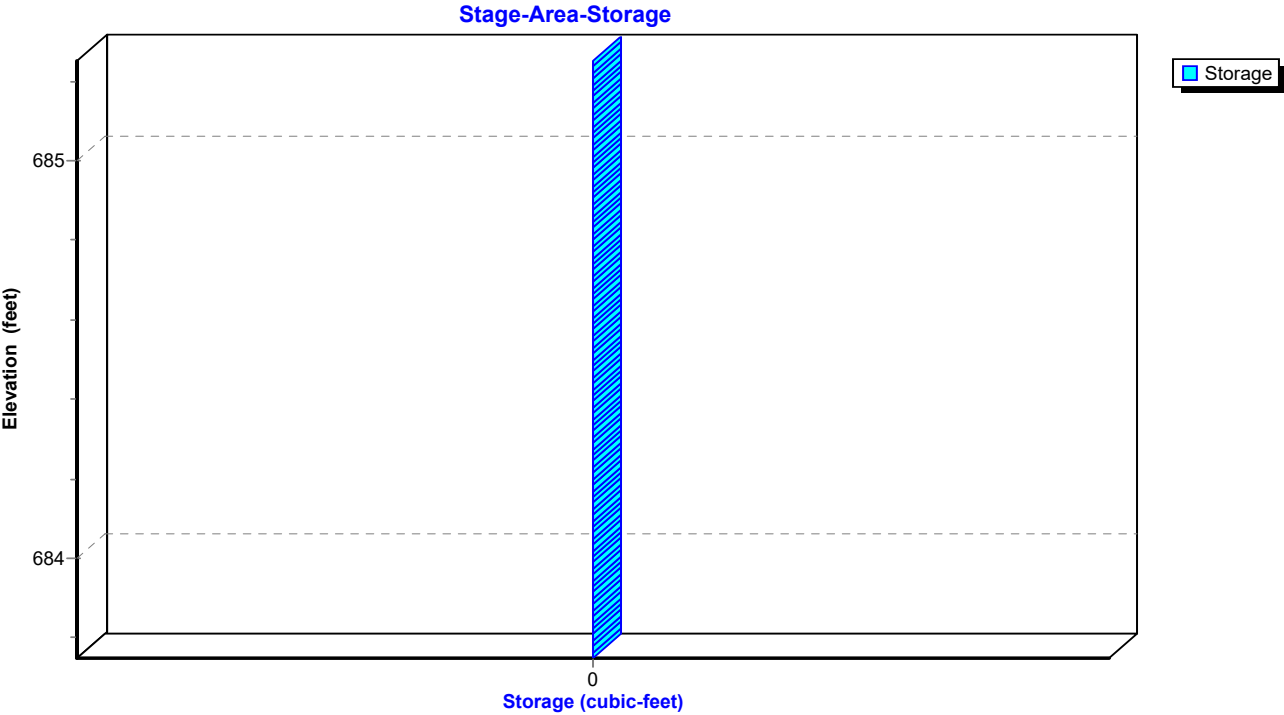
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Pond CD4C: Cross Drain 4C



Pond CD4C: Cross Drain 4C



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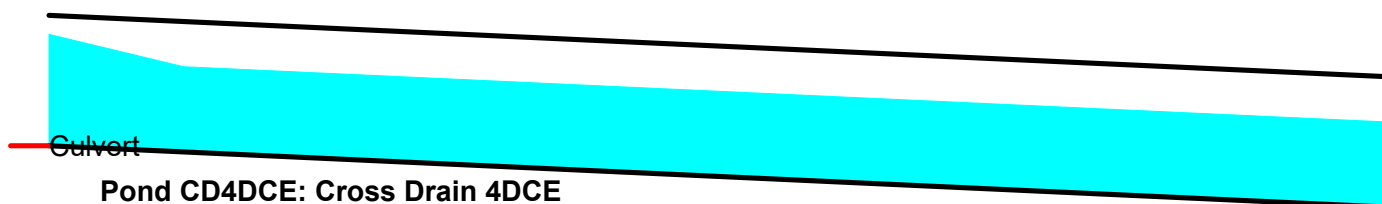
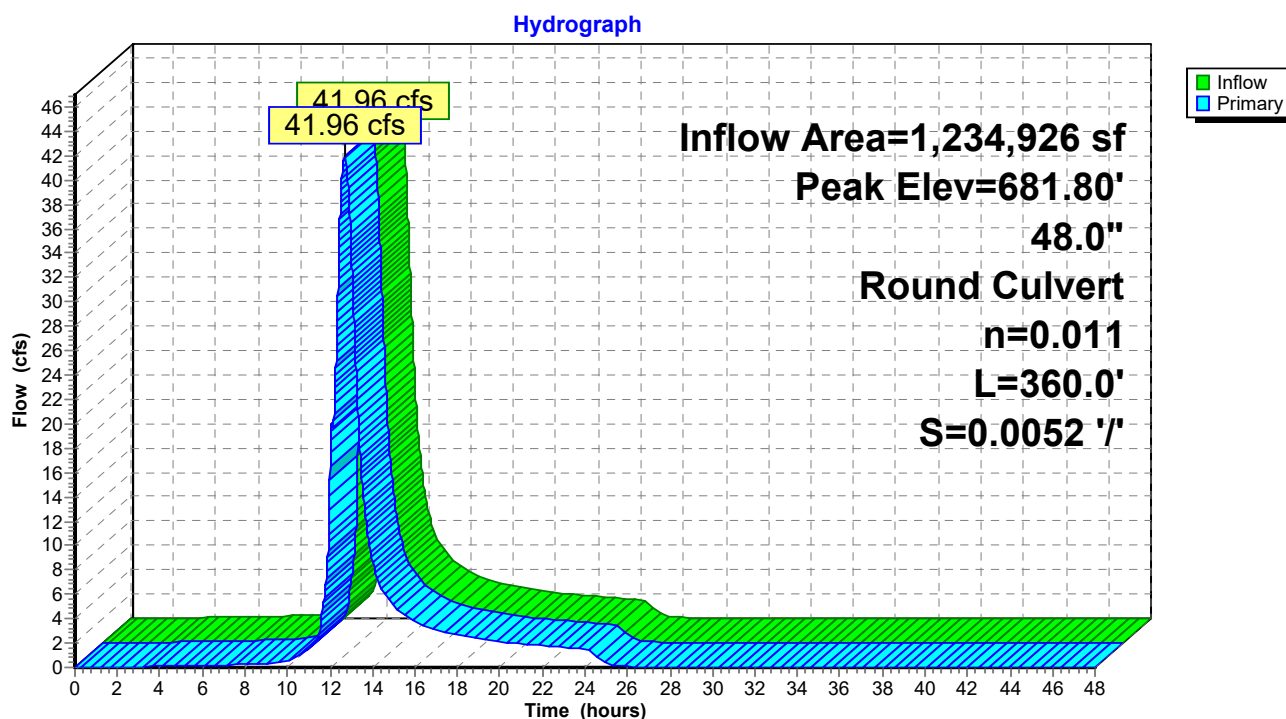
Summary for Pond CD4DCE: Cross Drain 4DCE

Inflow Area = 1,234,926 sf, 3.53% Impervious, Inflow Depth = 3.05" for 25-yr event
 Inflow = 41.96 cfs @ 12.69 hrs, Volume= 314,301 cf
 Outflow = 41.96 cfs @ 12.69 hrs, Volume= 314,301 cf, Atten= 0%, Lag= 0.0 min
 Primary = 41.96 cfs @ 12.69 hrs, Volume= 314,301 cf
 Routed to Pond POND1P : PROP POND

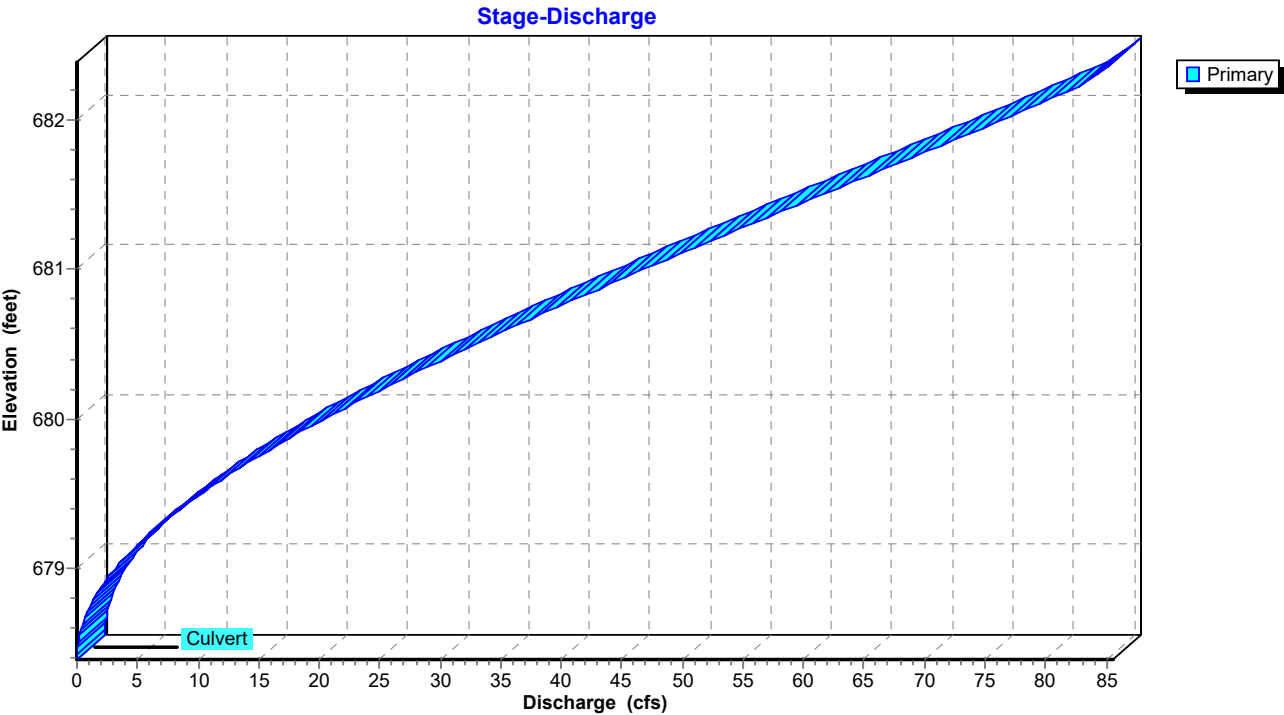
Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
 Peak Elev= 681.80' @ 12.86 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	678.39'	48.0" Round Culvert L= 360.0' Ke= 0.500 Inlet / Outlet Invert= 678.39' / 676.50' S= 0.0052 '/' Cc= 0.900 n= 0.011 Concrete pipe, straight & clean, Flow Area= 12.57 sf

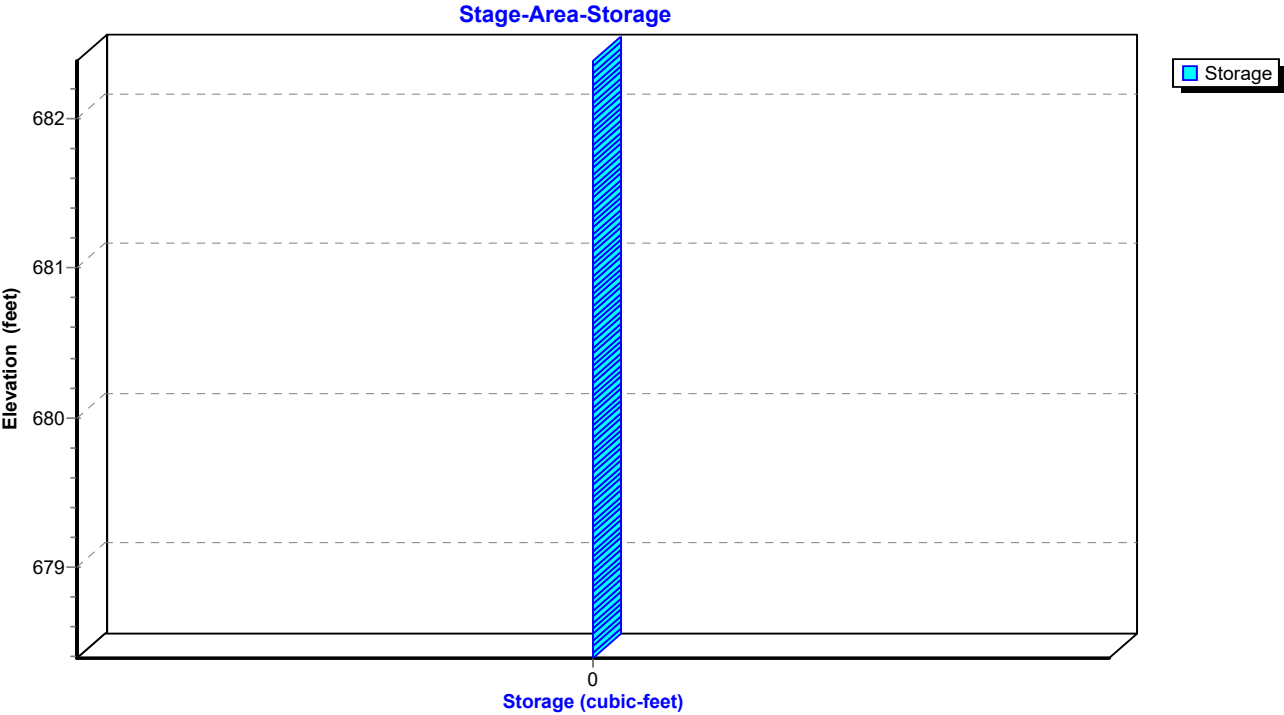
Primary OutFlow Max=41.52 cfs @ 12.69 hrs HW=681.70' TW=680.68' (Dynamic Tailwater)
 ↑ **1=Culvert** (Outlet Controls 41.52 cfs @ 5.06 fps)

**Pond CD4DCE: Cross Drain 4DCE**

Pond CD4DCE: Cross Drain 4DCE



Pond CD4DCE: Cross Drain 4DCE



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Mt Pleasant 24-hr S1 25-yr Rainfall=6.34"

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Summary for Pond CD4E: Cross Drain 4E

Inflow Area = 1,151,726 sf, 3.78% Impervious, Inflow Depth = 2.85" for 25-yr event
 Inflow = 42.33 cfs @ 12.64 hrs, Volume= 273,634 cf
 Outflow = 40.67 cfs @ 12.71 hrs, Volume= 273,631 cf, Atten= 4%, Lag= 4.3 min
 Primary = 40.67 cfs @ 12.71 hrs, Volume= 273,631 cf
 Routed to Pond CD4DCE : Cross Drain 4DCE

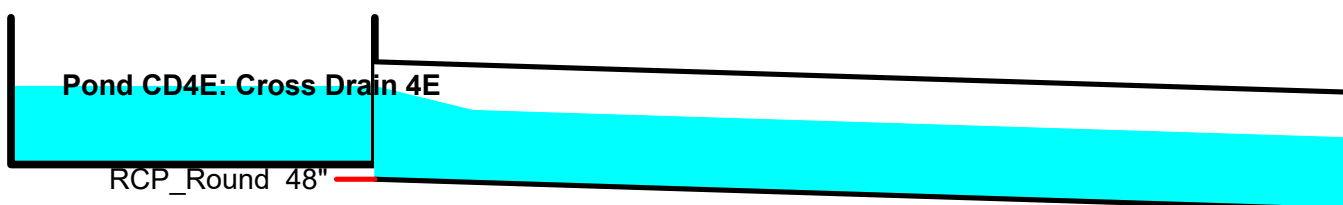
Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
 Peak Elev= 682.66' @ 12.78 hrs Surf.Area= 6,207 sf Storage= 7,049 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
 Center-of-Mass det. time= 1.7 min (884.1 - 882.4)

Volume	Invert	Avail.Storage	Storage Description
#1	680.00'	33,779 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
680.00	274	0	0
681.00	1,562	918	918
682.00	3,975	2,769	3,687
683.00	7,355	5,665	9,352
684.00	12,090	9,723	19,074
685.00	17,320	14,705	33,779

Device	Routing	Invert	Outlet Devices
#1	Primary	679.50'	48.0" Round RCP_Round 48" L= 200.0' Ke= 0.500 Inlet / Outlet Invert= 679.50' / 678.46' S= 0.0052 ' / Cc= 0.900 n= 0.011 Concrete pipe, straight & clean, Flow Area= 12.57 sf

Primary OutFlow Max=40.42 cfs @ 12.71 hrs HW=682.64' TW=681.73' (Dynamic Tailwater)
 ↑1=RCP_Round 48" (Outlet Controls 40.42 cfs @ 5.26 fps)



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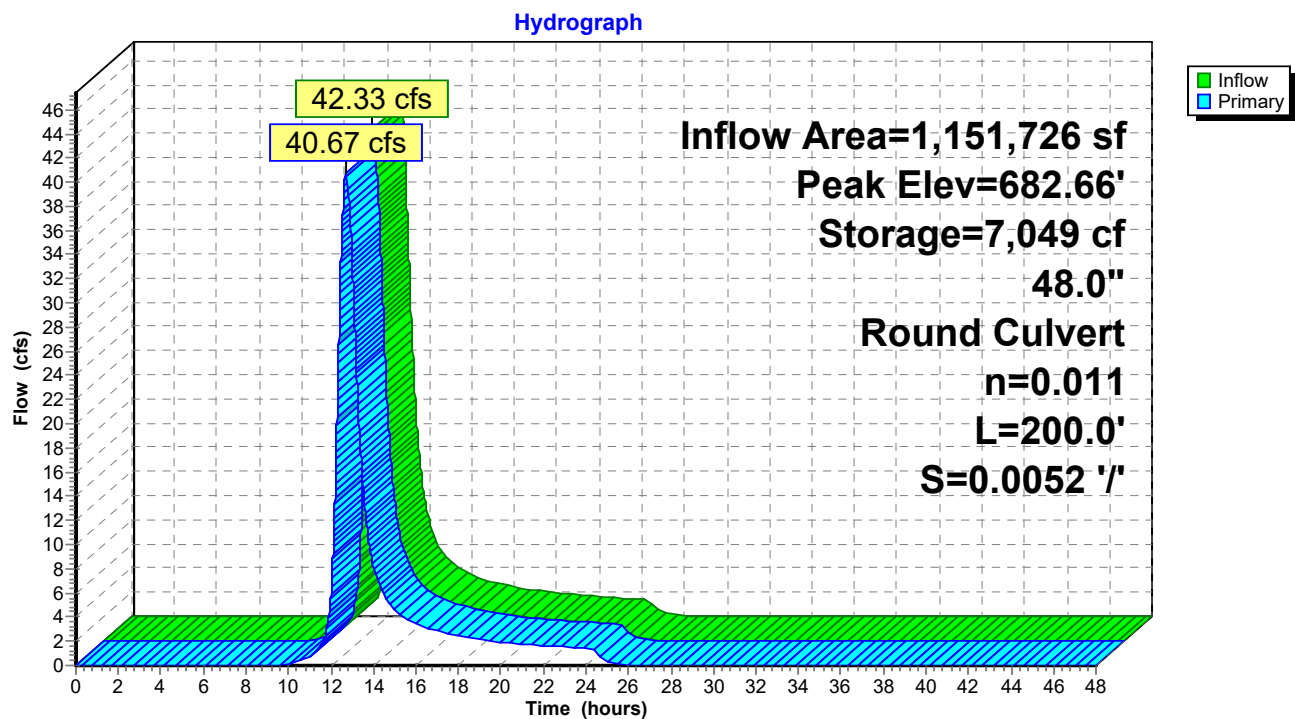
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Mt Pleasant 24-hr S1 25-yr Rainfall=6.34"

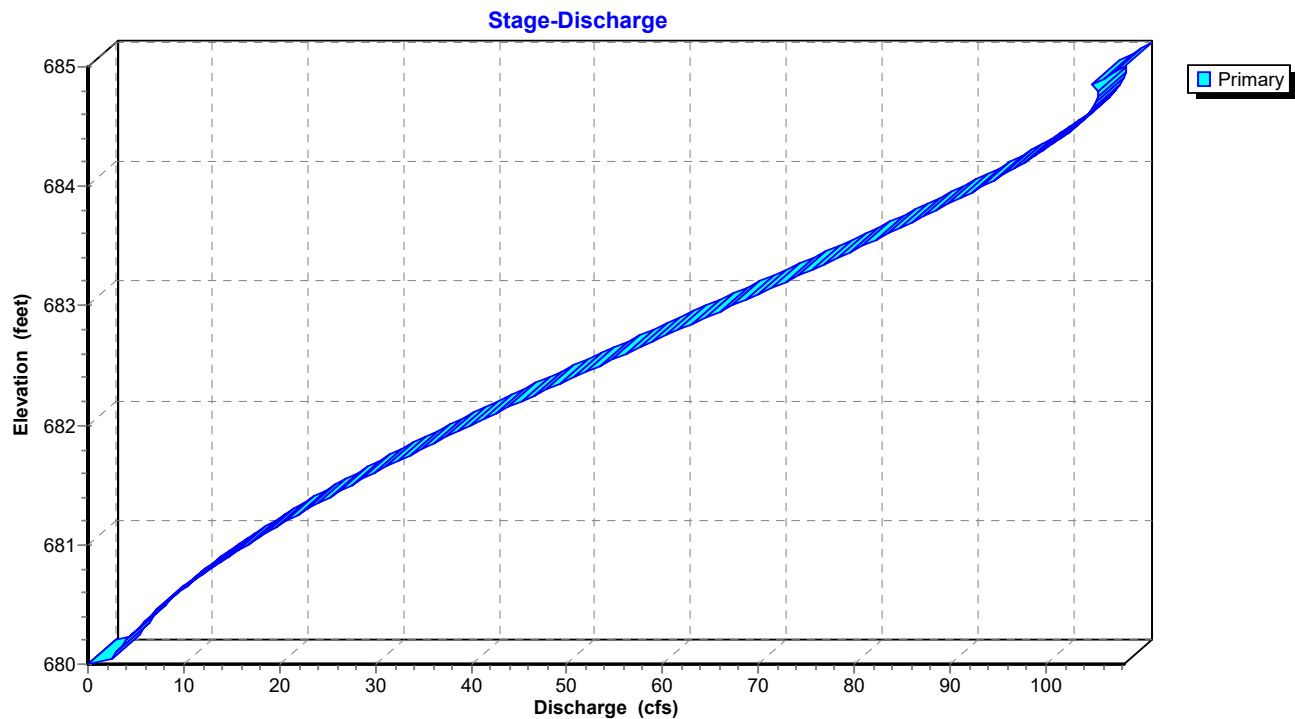
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Pond CD4E: Cross Drain 4E



Pond CD4E: Cross Drain 4E



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Mt Pleasant 24-hr S1 25-yr Rainfall=6.34"

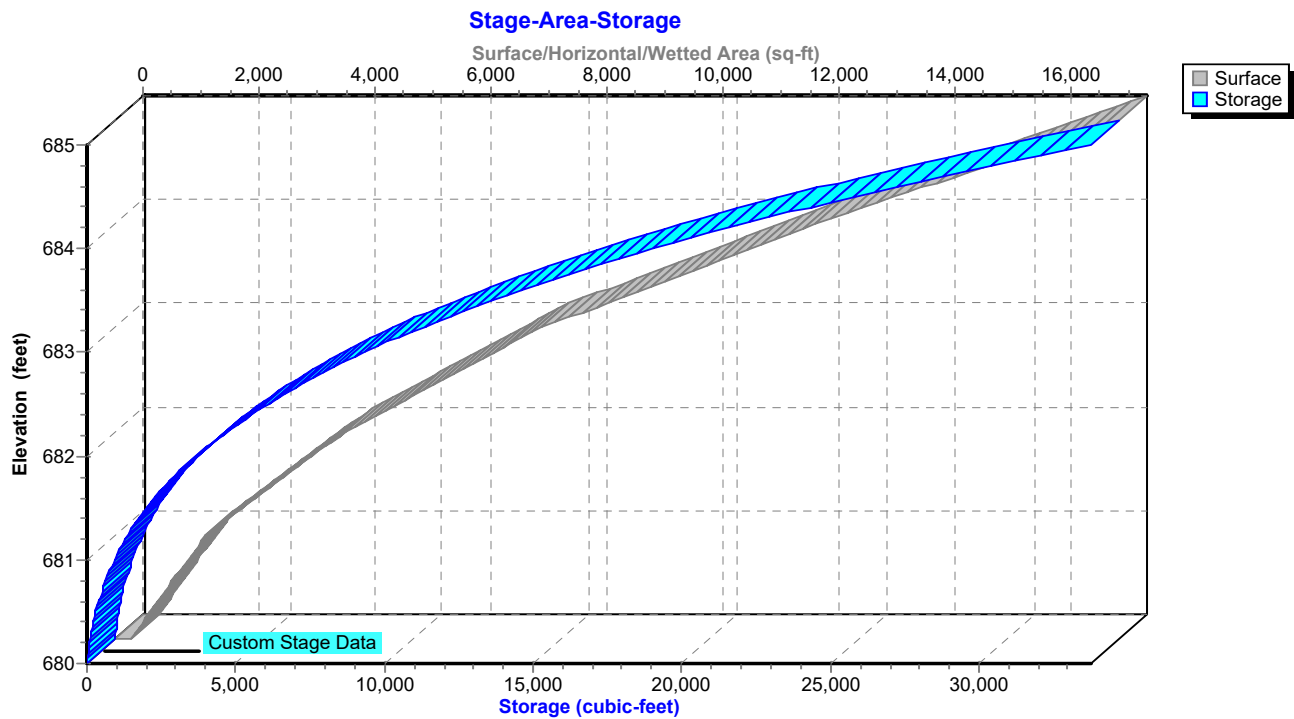
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Pond CD4E: Cross Drain 4E



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Mt Pleasant 24-hr S1 25-yr Rainfall=6.34"

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Summary for Pond POND1P: PROP POND

Inflow Area = 1,772,021 sf, 9.83% Impervious, Inflow Depth = 3.91" for 25-yr event
 Inflow = 80.52 cfs @ 12.51 hrs, Volume= 576,852 cf
 Outflow = 38.67 cfs @ 13.14 hrs, Volume= 576,845 cf, Atten= 52%, Lag= 37.8 min
 Primary = 38.67 cfs @ 13.14 hrs, Volume= 576,845 cf
 Routed to Reach OF4P : Primary Stream for Outfalls

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
 Peak Elev= 681.13' @ 13.16 hrs Surf.Area= 80,166 sf Storage= 200,001 cf

Plug-Flow detention time= 109.1 min calculated for 576,845 cf (100% of inflow)
 Center-of-Mass det. time= 109.1 min (938.3 - 829.2)

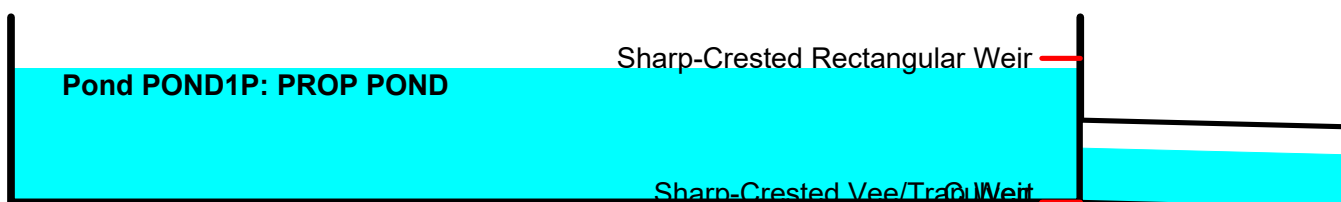
Volume	Invert	Avail.Storage	Storage Description
#1	676.25'	386,863 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
676.25	505	0	0
676.50	14,826	1,916	1,916
677.00	24,194	9,755	11,671
678.00	31,409	27,802	39,473
679.00	39,965	35,687	75,160
680.00	56,082	48,024	123,183
681.00	77,468	66,775	189,958
682.00	98,642	88,055	278,013
683.00	119,057	108,850	386,863

Device	Routing	Invert	Outlet Devices
#1	Primary	676.25'	36.0" Round Culvert L= 50.0' Ke= 0.600 Inlet / Outlet Invert= 676.25' / 676.00' S= 0.0050 '/' Cc= 0.900 n= 0.011, Flow Area= 7.07 sf
#2	Device 1	676.25'	20.0 deg x 0.4' long Sharp-Crested Vee/Trap Weir Cv= 2.69 (C= 3.36)
#3	Device 1	681.50'	16.0' long Sharp-Crested Rectangular Weir 2 End Contraction(s)

Primary OutFlow Max=38.66 cfs @ 13.14 hrs HW=681.13' TW=677.70' (Dynamic Tailwater)

- 1=Culvert (Passes 38.66 cfs of 58.64 cfs potential flow)
- 2=Sharp-Crested Vee/Trap Weir (Weir Controls 38.66 cfs @ 6.29 fps)
- 3=Sharp-Crested Rectangular Weir (Controls 0.00 cfs)



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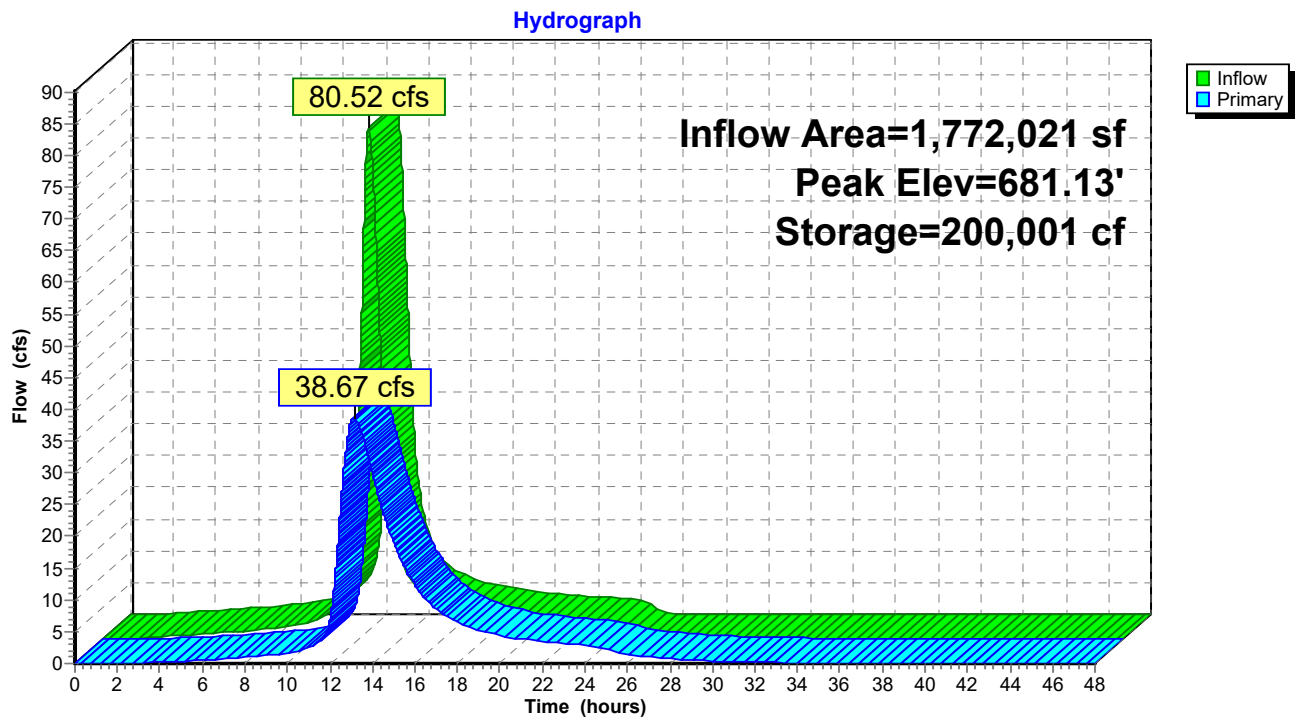
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Mt Pleasant 24-hr S1 25-yr Rainfall=6.34"

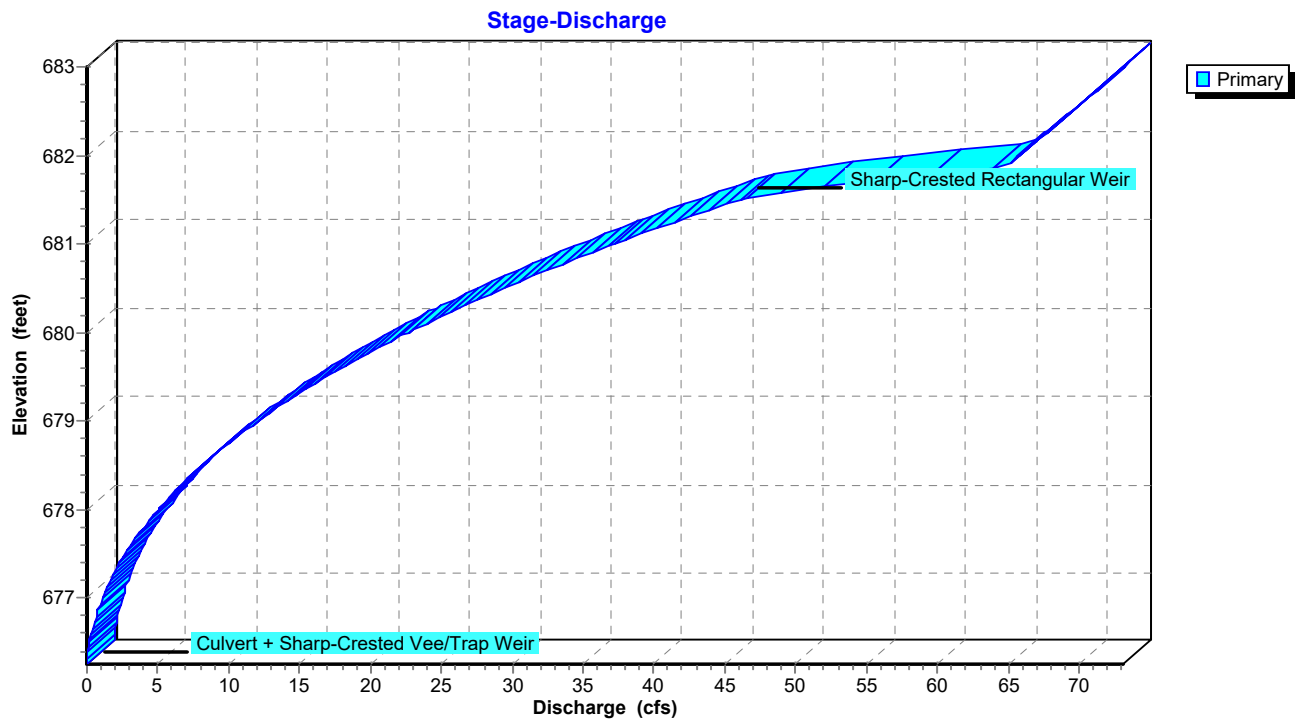
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Pond POND1P: PROP POND



Pond POND1P: PROP POND



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Mt Pleasant 24-hr S1 25-yr Rainfall=6.34"

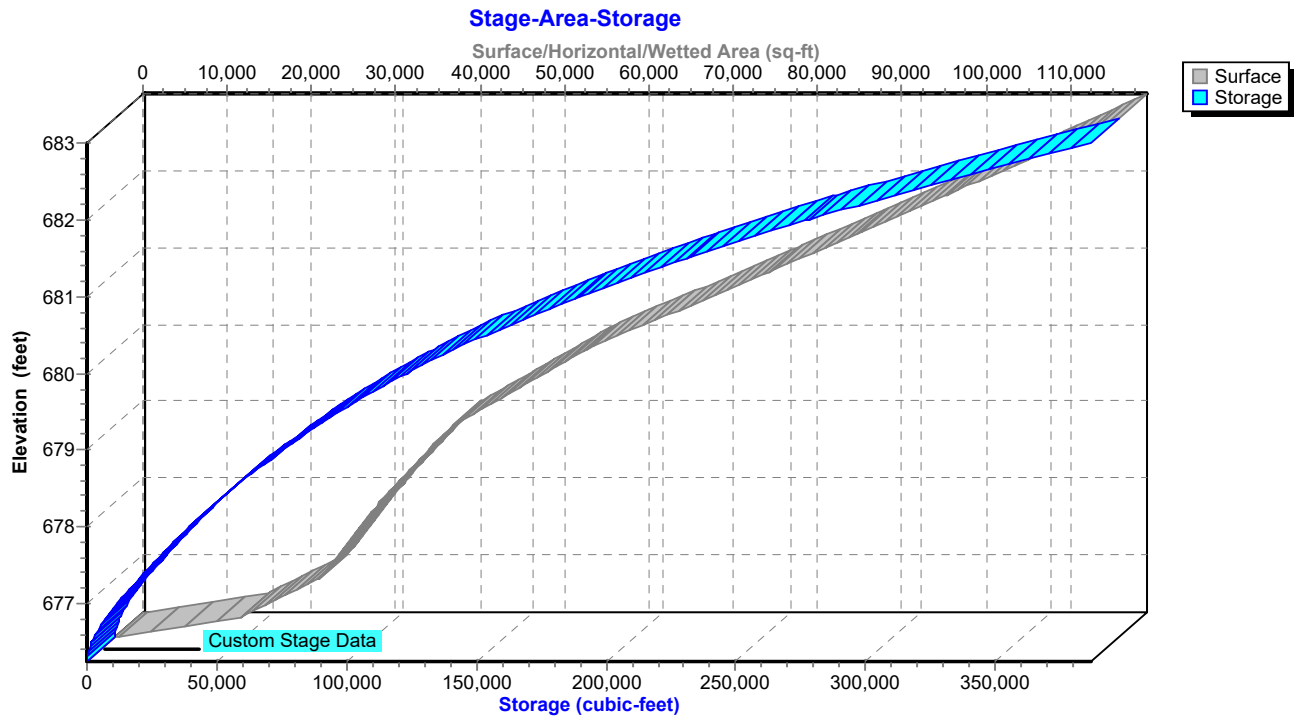
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Pond POND1P: PROP POND



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Time span=0.00-48.00 hrs, dt=0.01 hrs, 4801 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

Subcatchment DA 1: BASIN 1 PRE Runoff Area=143.000 ac 1.75% Impervious Runoff Depth=4.22"
 Flow Length=5,750' Tc=143.0 min CN=75 Runoff=169.27 cfs 2,190,555 cf

Subcatchment DA 2: BASIN 2 PRE Runoff Area=34.900 ac 0.00% Impervious Runoff Depth=2.86"
 Flow Length=2,150' Slope=0.0150 '/' Tc=62.3 min CN=62 Runoff=48.09 cfs 362,320 cf

Subcatchment DA 3: BASIN 3 PRE Runoff Area=9.380 ac 0.00% Impervious Runoff Depth=4.00"
 Flow Length=838' Slope=0.0200 '/' Tc=25.9 min CN=73 Runoff=28.36 cfs 136,345 cf

Subcatchment DA 4: BASIN 4 PRE Runoff Area=41.500 ac 0.00% Impervious Runoff Depth=3.68"
 Flow Length=2,468' Tc=68.1 min CN=70 Runoff=71.28 cfs 555,125 cf

Subcatchment DA1P: BASIN 1 PROPOSED Runoff Area=143.000 ac 1.75% Impervious Runoff Depth=4.22"
 Flow Length=5,750' Tc=143.0 min CN=75 Runoff=169.27 cfs 2,190,555 cf

Subcatchment DA2P: BASIN 2 PROPOSED Runoff Area=34.900 ac 0.00% Impervious Runoff Depth=2.86"
 Flow Length=2,150' Slope=0.0150 '/' Tc=62.3 min CN=62 Runoff=48.09 cfs 362,320 cf

Subcatchment DA3P: BASIN 3 PRE Runoff Area=4.760 ac 0.00% Impervious Runoff Depth=4.66"
 Tc=5.0 min CN=79 Runoff=30.15 cfs 80,478 cf

Subcatchment DA4A: BASIN 4A PROPOSED Runoff Area=5.530 ac 0.00% Impervious Runoff Depth=3.47"
 Flow Length=945' Tc=40.9 min CN=68 Runoff=11.70 cfs 69,756 cf

Subcatchment DA4B: BASIN 4B Runoff Area=12.330 ac 24.33% Impervious Runoff Depth=6.60"
 Flow Length=996' Tc=33.8 min CN=96 Runoff=49.75 cfs 295,555 cf

Subcatchment DA4C: BASIN 4C PROPOSED Runoff Area=0.680 ac 0.00% Impervious Runoff Depth=6.60"
 Tc=5.0 min CN=96 Runoff=5.52 cfs 16,300 cf

Subcatchment DA4D: BASIN 4D PROPOSED Runoff Area=1.230 ac 0.00% Impervious Runoff Depth=6.60"
 Tc=5.0 min CN=96 Runoff=9.99 cfs 29,484 cf

Subcatchment DA4E1: BASIN 4E1 Runoff Area=7.260 ac 13.77% Impervious Runoff Depth=3.06"
 Flow Length=640' Tc=31.5 min CN=64 Runoff=15.16 cfs 80,705 cf

Subcatchment DA4E2: BASIN 4E2 Runoff Area=19.180 ac 0.00% Impervious Runoff Depth=3.58"
 Flow Length=1,313' Tc=46.8 min CN=69 Runoff=39.30 cfs 249,230 cf

Reach D4C: Ditch 4C Avg. Flow Depth=0.69' Max Vel=2.63 fps Inflow=5.52 cfs 16,300 cf
 n=0.033 L=313.0' S=0.0104 '/' Capacity=27.19 cfs Outflow=5.23 cfs 16,300 cf

Reach D4D: Ditch 4D Avg. Flow Depth=0.85' Max Vel=3.52 fps Inflow=9.99 cfs 29,484 cf
 n=0.033 L=337.0' S=0.0148 '/' Capacity=32.50 cfs Outflow=9.62 cfs 29,484 cf

Reach D4E1: Ditch 4E1 Avg. Flow Depth=0.97' Max Vel=1.90 fps Inflow=15.16 cfs 80,705 cf
 n=0.033 L=1,788.0' S=0.0031 '/' Capacity=197.27 cfs Outflow=12.81 cfs 80,705 cf

TrueRail 040226*Mt Pleasant 24-hr S1 50-yr Rainfall=7.08"*

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Reach OF4: Primary Stream for Avg. Flow Depth=3.11' Max Vel=4.74 fps Inflow=232.20 cfs 3,244,345 cf
 n=0.035 L=1,000.0' S=0.0050 '/' Capacity=640.46 cfs Outflow=232.00 cfs 3,244,345 cf

Reach OF4P: Primary Stream for Avg. Flow Depth=3.10' Max Vel=4.73 fps Inflow=230.65 cfs 3,374,372 cf
 n=0.035 L=1,000.0' S=0.0050 '/' Capacity=640.46 cfs Outflow=230.51 cfs 3,374,370 cf

Pond CD2: Cross Drain Peak Elev=684.27' Inflow=48.09 cfs 362,320 cf
 36.0" Round Culvert n=0.011 L=50.0' S=0.0050 '/' Outflow=48.09 cfs 362,320 cf

Pond CD4C: Cross Drain 4C Peak Elev=684.89' Inflow=5.23 cfs 16,300 cf
 18.0" Round Culvert n=0.011 L=60.0' S=0.0792 '/' Outflow=5.23 cfs 16,300 cf

Pond CD4DCE: Cross Drain 4DCE Peak Elev=682.27' Inflow=50.83 cfs 375,714 cf
 48.0" Round Culvert n=0.011 L=360.0' S=0.0052 '/' Outflow=50.83 cfs 375,714 cf

Pond CD4E: Cross Drain 4E Peak Elev=683.15' Storage=10,490 cf Inflow=52.11 cfs 329,935 cf
 48.0" Round Culvert n=0.011 L=200.0' S=0.0052 '/' Outflow=49.42 cfs 329,930 cf

Pond POND1P: PROP POND Peak Elev=681.53' Storage=234,094 cf Inflow=94.09 cfs 671,269 cf
 Outflow=45.92 cfs 671,262 cf

Total Runoff Area = 19,935,234 sf Runoff Volume = 6,618,728 cf Average Runoff Depth = 3.98"
98.03% Pervious = 19,543,194 sf 1.97% Impervious = 392,040 sf

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Mt Pleasant 24-hr S1 50-yr Rainfall=7.08"

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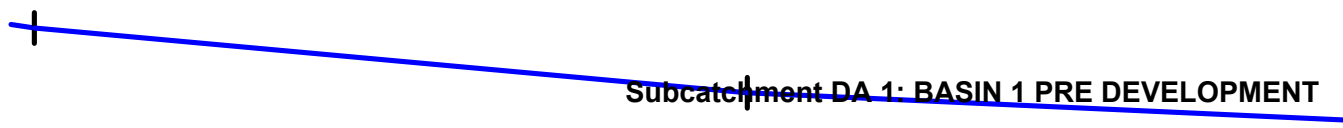
Summary for Subcatchment DA 1: BASIN 1 PRE DEVELOPMENT

Runoff = 169.27 cfs @ 13.83 hrs, Volume= 2,190,555 cf, Depth= 4.22"
Routed to Reach OF4 : Primary Stream for Outfalls

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Mt Pleasant 24-hr S1 50-yr Rainfall=7.08"

Area (ac)	CN	Description
69.500	74	>75% Grass cover, Good, HSG C
71.000	76	Woods/grass comb., Fair, HSG C
2.500	98	Paved parking, HSG C
143.000	75	Weighted Average
140.500		98.25% Pervious Area
2.500		1.75% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
35.4	100	0.0200	0.05		Sheet Flow, Woods: Dense underbrush n= 0.800 P2= 3.57"
92.8	3,050	0.0120	0.55		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
14.8	2,600	0.0060	2.93	11.71	Channel Flow, Area= 4.0 sf Perim= 6.0' r= 0.67' n= 0.030
143.0	5,750	Total			



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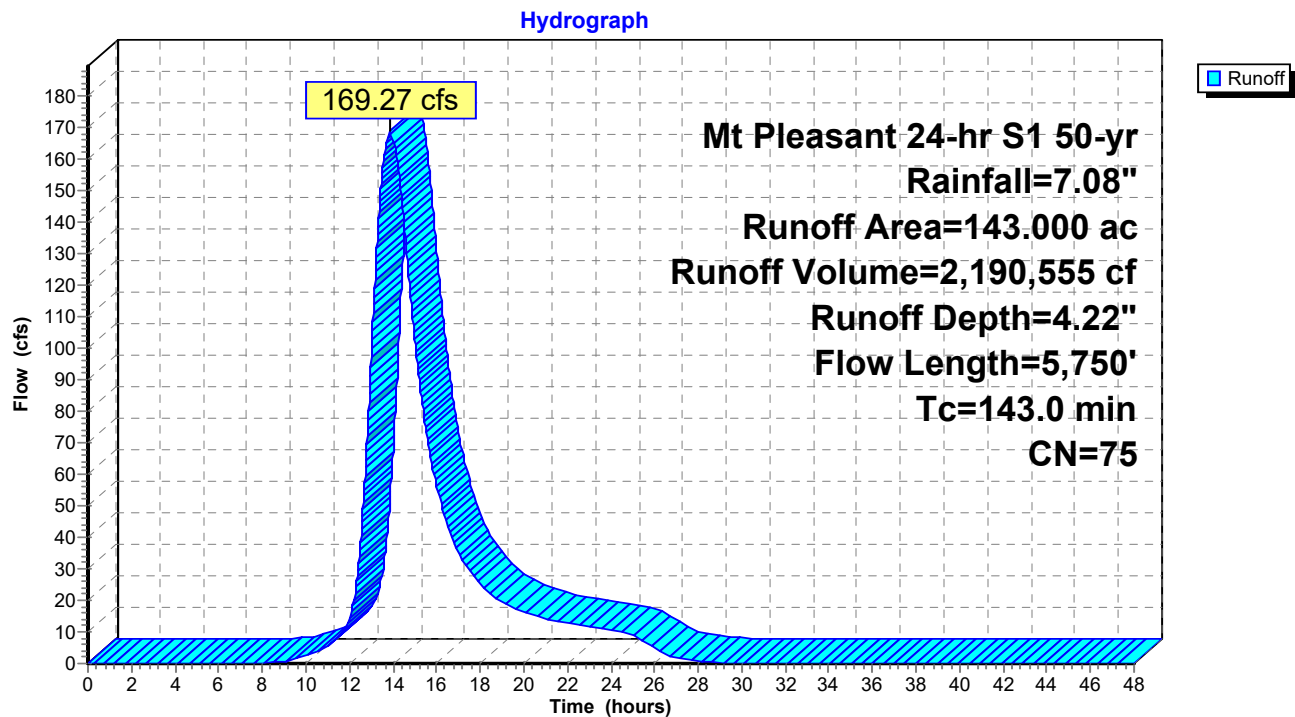
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Mt Pleasant 24-hr S1 50-yr Rainfall=7.08"

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Subcatchment DA 1: BASIN 1 PRE DEVELOPMENT



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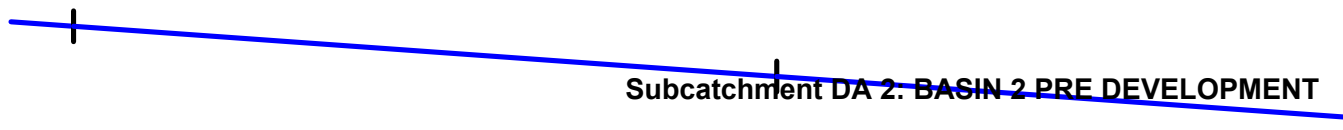
Summary for Subcatchment DA 2: BASIN 2 PRE DEVELOPMENT

Runoff = 48.09 cfs @ 12.88 hrs, Volume= 362,320 cf, Depth= 2.86"
Routed to Reach OF4 : Primary Stream for Outfalls

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Mt Pleasant 24-hr S1 50-yr Rainfall=7.08"

Area (ac)	CN	Description
17.450	58	Meadow, non-grazed, HSG B
14.450	60	Woods, Fair, HSG B
3.000	96	Gravel surface, HSG C
34.900	62	Weighted Average
34.900		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.2	100	0.0150	0.11		Sheet Flow, Grass: Dense n= 0.240 P2= 3.57"
21.9	1,125	0.0150	0.86		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
25.2	925	0.0150	0.61		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
62.3	2,150	Total			



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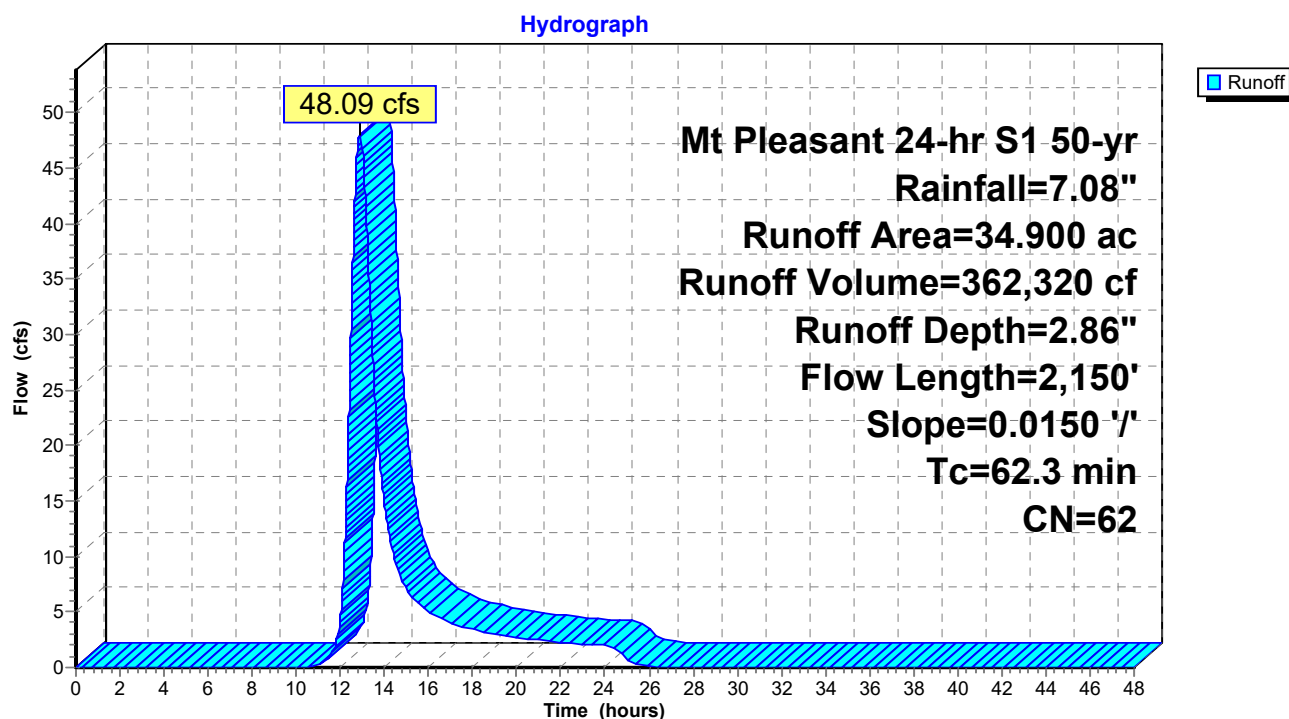
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Subcatchment DA 2: BASIN 2 PRE DEVELOPMENT



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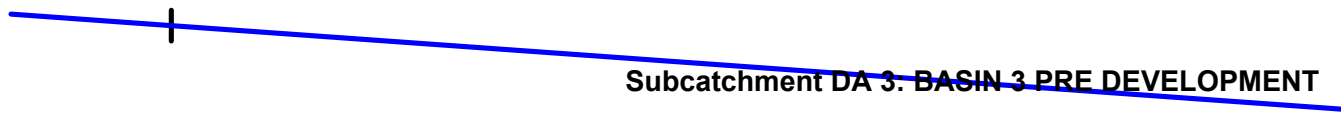
Summary for Subcatchment DA 3: BASIN 3 PRE DEVELOPMENT

Runoff = 28.36 cfs @ 12.32 hrs, Volume= 136,345 cf, Depth= 4.00"
Routed to Reach OF4 : Primary Stream for Outfalls

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Mt Pleasant 24-hr S1 50-yr Rainfall=7.08"

Area (ac)	CN	Description
3.300	78	Meadow, non-grazed, HSG D
3.300	79	Woods, Fair, HSG D
2.250	58	Meadow, non-grazed, HSG B
0.530	60	Woods, Fair, HSG B
9.380	73	Weighted Average
9.380		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.5	100	0.0200	0.12		Sheet Flow, Grass: Dense n= 0.240 P2= 3.57"
12.4	738	0.0200	0.99		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
25.9	838	Total			



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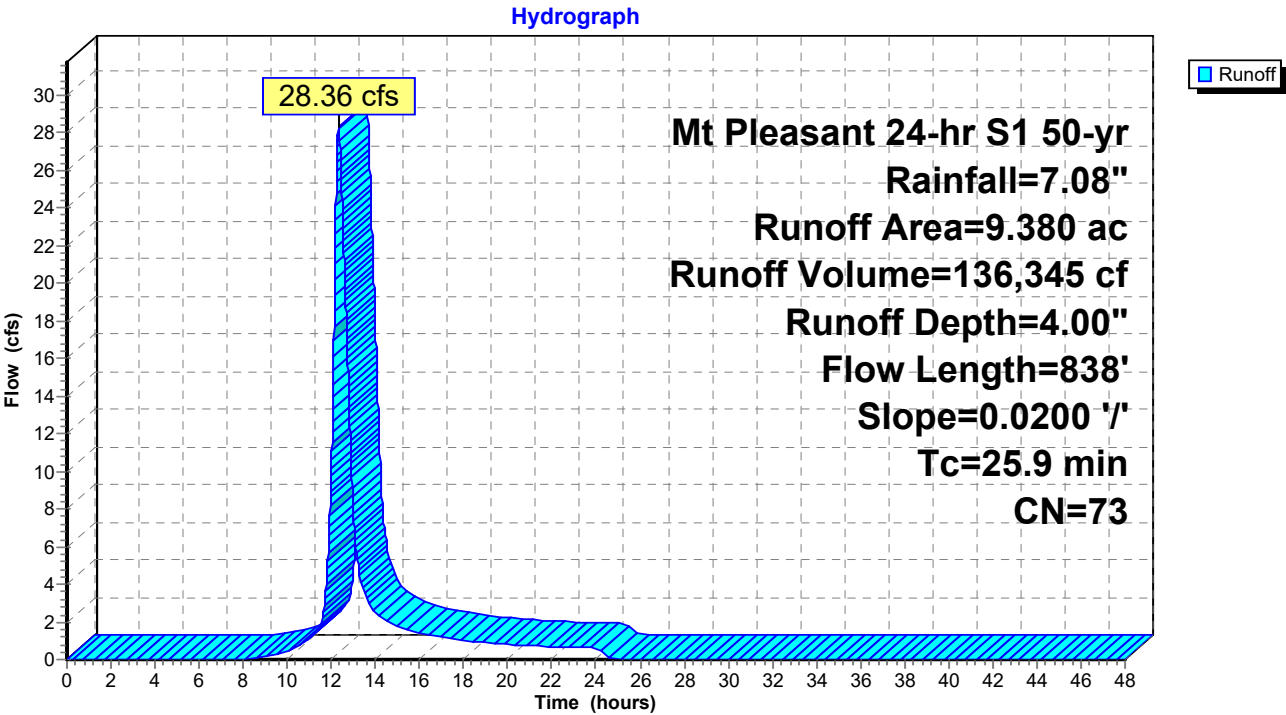
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Subcatchment DA 3: BASIN 3 PRE DEVELOPMENT



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Mt Pleasant 24-hr S1 50-yr Rainfall=7.08"

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Summary for Subcatchment DA 4: BASIN 4 PRE DEVELOPMENT

Runoff = 71.28 cfs @ 12.94 hrs, Volume= 555,125 cf, Depth= 3.68"
Routed to Reach OF4 : Primary Stream for Outfalls

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Mt Pleasant 24-hr S1 50-yr Rainfall=7.08"

Area (ac)	CN	Description
7.300	78	Meadow, non-grazed, HSG D
1.830	79	Woods, Fair, HSG D
7.640	58	Meadow, non-grazed, HSG B
1.910	60	Woods, Fair, HSG B
4.150	73	Woods, Fair, HSG C
9.960	71	Meadow, non-grazed, HSG C
2.490	73	Woods, Fair, HSG C
4.970	71	Meadow, non-grazed, HSG C
1.250	73	Woods, Fair, HSG C
41.500	70	Weighted Average
41.500		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
24.5	100	0.0500	0.07		Sheet Flow, Woods: Dense underbrush n= 0.800 P2= 3.57"
43.6	2,368	0.0167	0.90		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
68.1	2,468	Total			

Subcatchment DA 4: BASIN 4 PRE DEVELOPMENT

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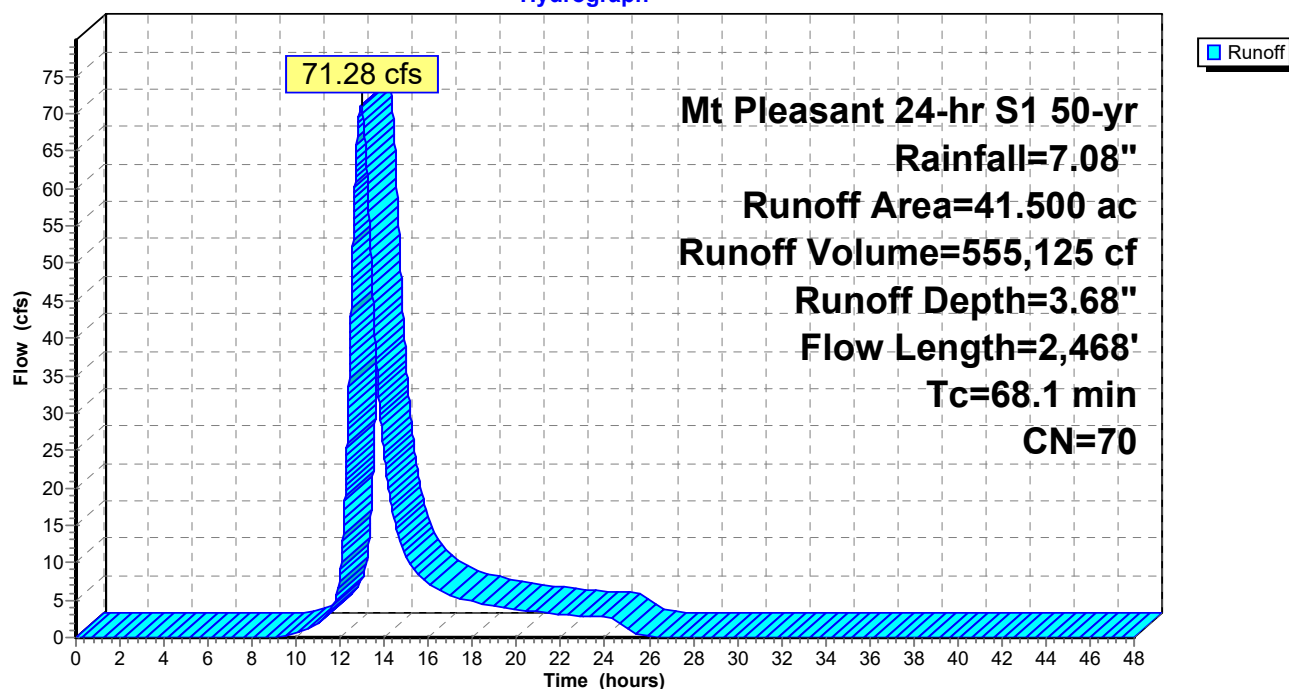
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Subcatchment DA 4: BASIN 4 PRE DEVELOPMENT

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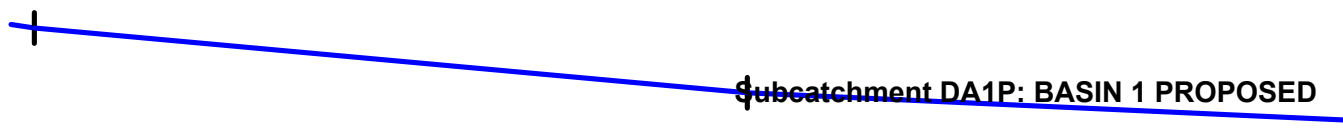
Summary for Subcatchment DA1P: BASIN 1 PROPOSED

Runoff = 169.27 cfs @ 13.83 hrs, Volume= 2,190,555 cf, Depth= 4.22"
Routed to Reach OF4P : Primary Stream for Outfalls

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Mt Pleasant 24-hr S1 50-yr Rainfall=7.08"

Area (ac)	CN	Description
69.500	74	>75% Grass cover, Good, HSG C
71.000	76	Woods/grass comb., Fair, HSG C
2.500	98	Paved parking, HSG C
143.000	75	Weighted Average
140.500		98.25% Pervious Area
2.500		1.75% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
35.4	100	0.0200	0.05		Sheet Flow, Woods: Dense underbrush n= 0.800 P2= 3.57"
92.8	3,050	0.0120	0.55		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
14.8	2,600	0.0060	2.93	11.71	Channel Flow, Area= 4.0 sf Perim= 6.0' r= 0.67' n= 0.030
143.0	5,750	Total			



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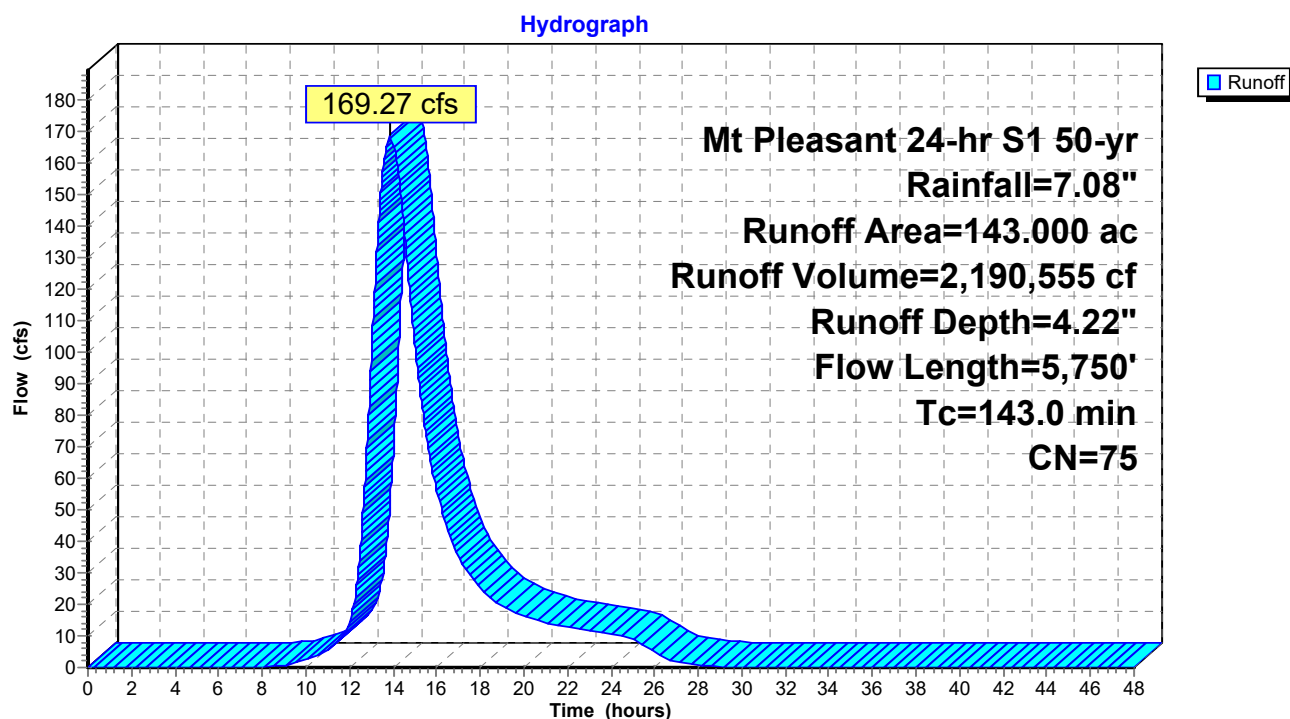
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Mt Pleasant 24-hr S1 50-yr Rainfall=7.08"

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Subcatchment DA1P: BASIN 1 PROPOSED



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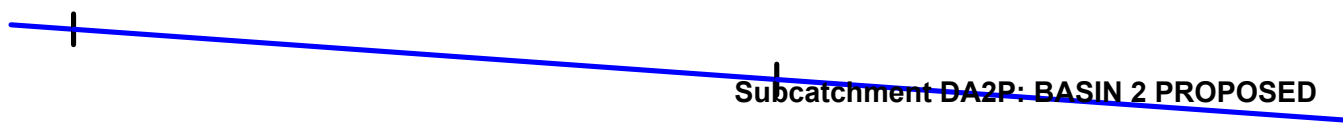
Summary for Subcatchment DA2P: BASIN 2 PROPOSED

Runoff = 48.09 cfs @ 12.88 hrs, Volume= 362,320 cf, Depth= 2.86"
Routed to Pond CD2 : Cross Drain

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Mt Pleasant 24-hr S1 50-yr Rainfall=7.08"

Area (ac)	CN	Description
17.450	58	Meadow, non-grazed, HSG B
14.450	60	Woods, Fair, HSG B
3.000	96	Gravel surface, HSG C
34.900	62	Weighted Average
34.900		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.2	100	0.0150	0.11		Sheet Flow, Grass: Dense n= 0.240 P2= 3.57"
21.9	1,125	0.0150	0.86		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
25.2	925	0.0150	0.61		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
62.3	2,150	Total			



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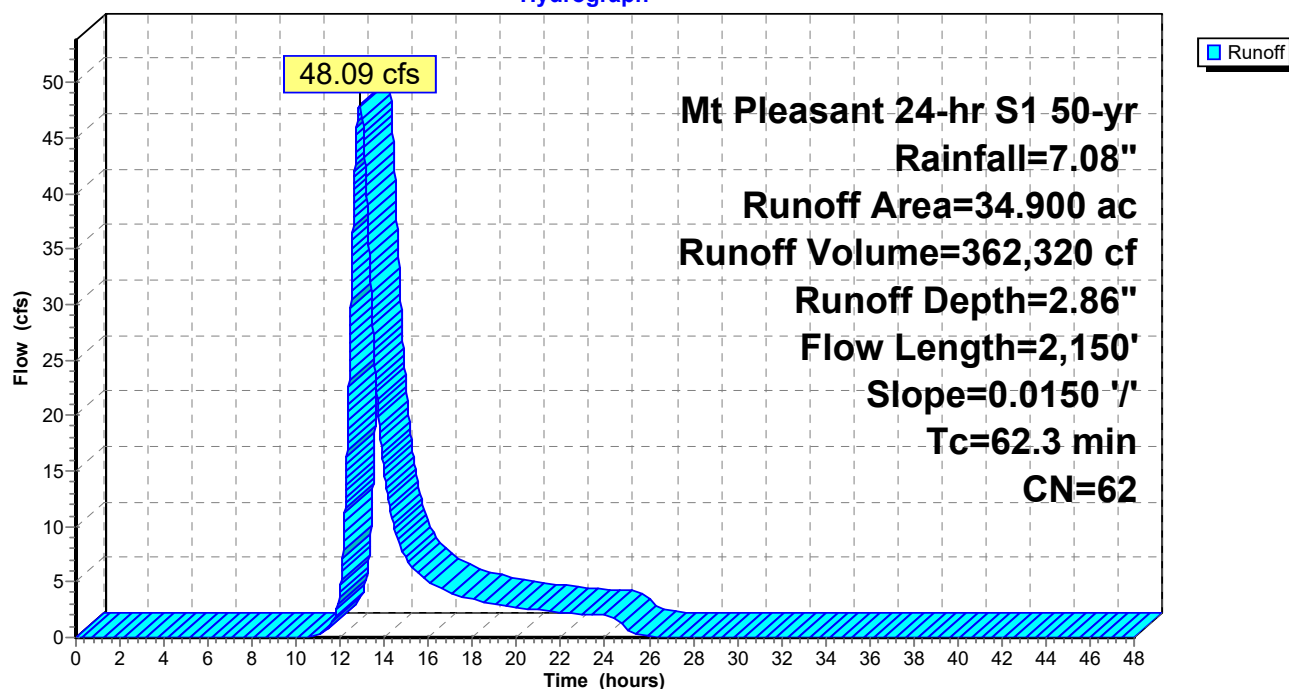
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Subcatchment DA2P: BASIN 2 PROPOSED

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Summary for Subcatchment DA3P: BASIN 3 PRE DEVELOPMENT

Runoff = 30.15 cfs @ 12.03 hrs, Volume= 80,478 cf, Depth= 4.66"
 Routed to Reach OF4P : Primary Stream for Outfalls

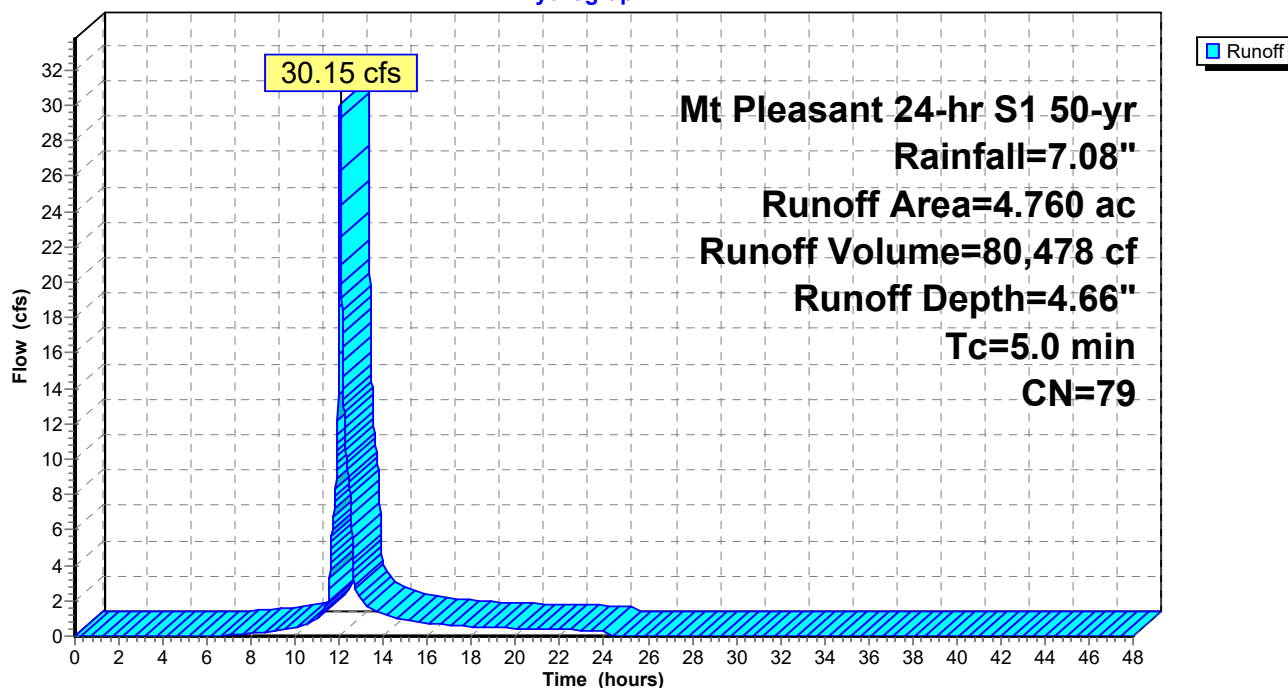
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
 Mt Pleasant 24-hr S1 50-yr Rainfall=7.08"

Area (ac)	CN	Description
4.760	79	Woods, Fair, HSG D
4.760		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					Direct Entry,

Subcatchment DA3P: BASIN 3 PRE DEVELOPMENT

Hydrograph



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Mt Pleasant 24-hr S1 50-yr Rainfall=7.08"

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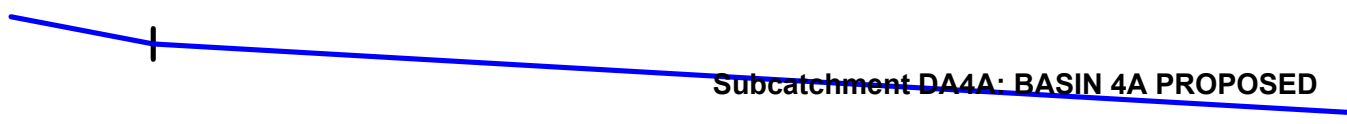
Summary for Subcatchment DA4A: BASIN 4A PROPOSED

Runoff = 11.70 cfs @ 12.58 hrs, Volume= 69,756 cf, Depth= 3.47"
Routed to Reach OF4P : Primary Stream for Outfalls

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Mt Pleasant 24-hr S1 50-yr Rainfall=7.08"

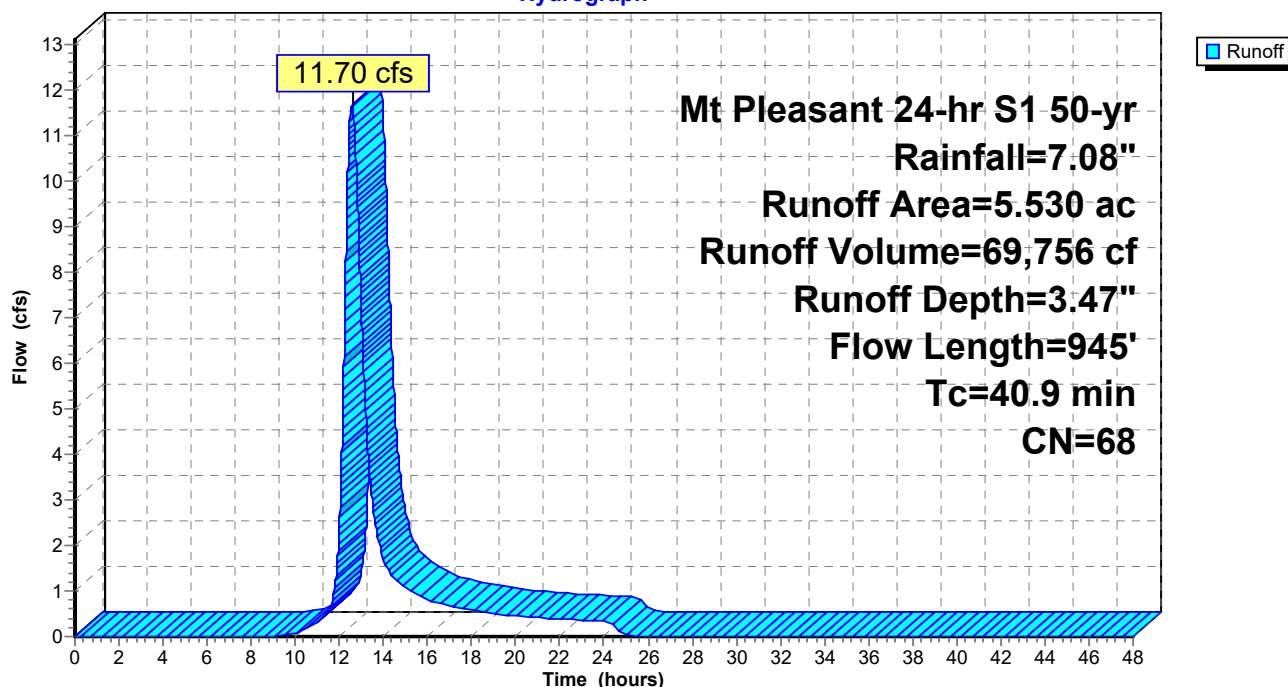
Area (ac)	CN	Description
2.200	60	Woods, Fair, HSG B
3.330	73	Woods, Fair, HSG C
5.530	68	Weighted Average
5.530		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
24.5	100	0.0500	0.07		Sheet Flow, Woods: Dense underbrush n= 0.800 P2= 3.57"
16.4	845	0.0150	0.86		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
40.9	945	Total			



Subcatchment DA4A: BASIN 4A PROPOSED

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Mt Pleasant 24-hr S1 50-yr Rainfall=7.08"

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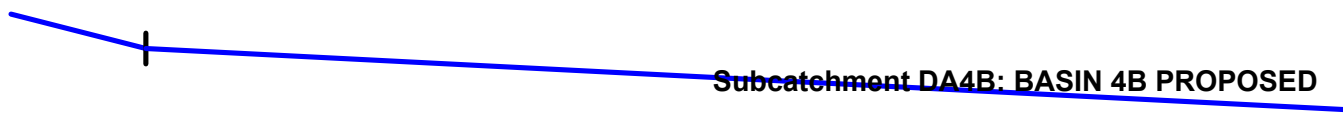
Summary for Subcatchment DA4B: BASIN 4B PROPOSED

Runoff = 49.75 cfs @ 12.40 hrs, Volume= 295,555 cf, Depth= 6.60"
Routed to Pond POND1P : PROP POND

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Mt Pleasant 24-hr S1 50-yr Rainfall=7.08"

Area (ac)	CN	Description
9.330	96	Gravel surface, HSG C
1.000	98	Paved parking, HSG D
2.000	98	Roofs, HSG D
12.330	96	Weighted Average
9.330		75.67% Pervious Area
3.000		24.33% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
24.5	100	0.0500	0.07		Sheet Flow, n= 0.800 P2= 3.57"
9.3	896	0.0100	1.61		Shallow Concentrated Flow, Unpaved Kv= 16.1 fps
33.8	996	Total			



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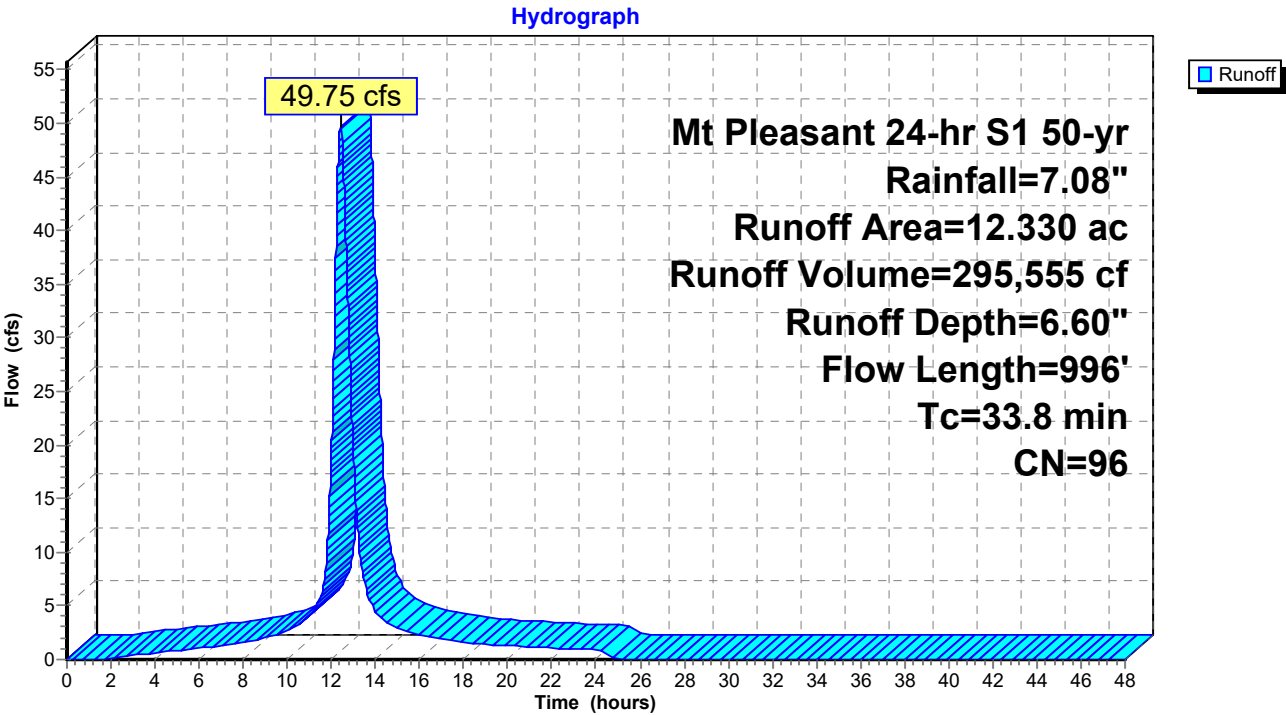
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Subcatchment DA4B: BASIN 4B PROPOSED



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Summary for Subcatchment DA4C: BASIN 4C PROPOSED

Runoff = 5.52 cfs @ 12.03 hrs, Volume= 16,300 cf, Depth= 6.60"
Routed to Reach D4C : Ditch 4C

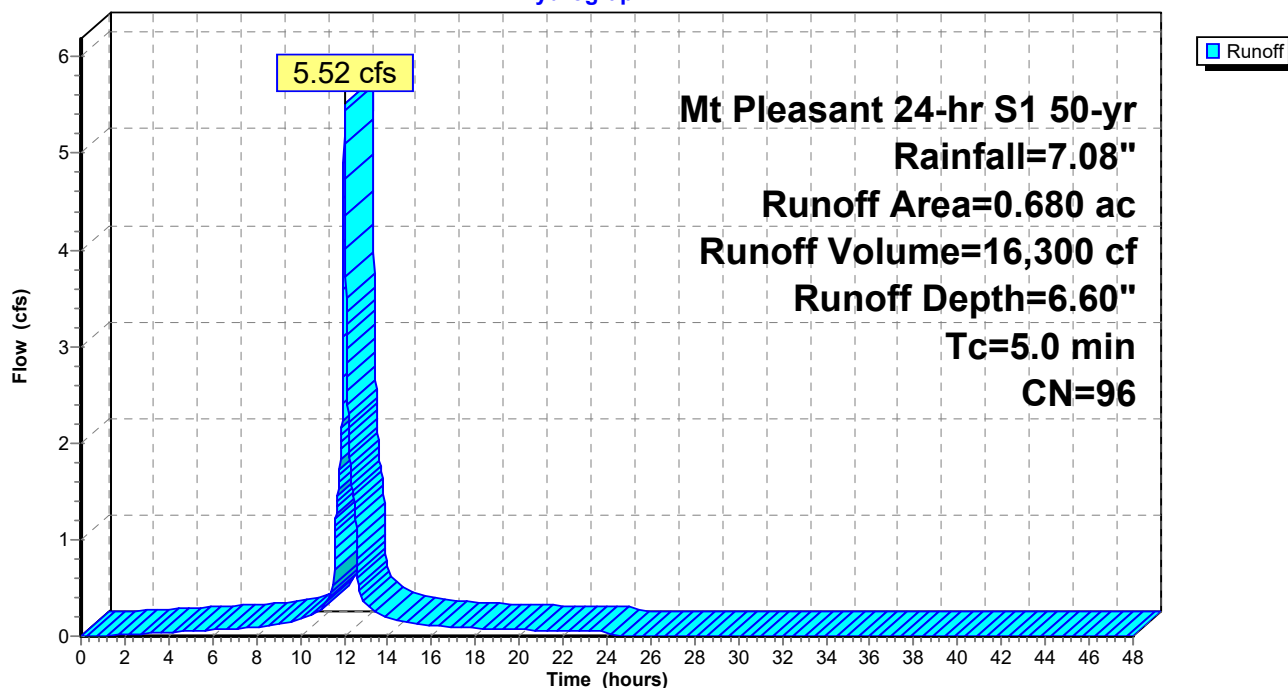
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Mt Pleasant 24-hr S1 50-yr Rainfall=7.08"

Area (ac)	CN	Description
0.680	96	Gravel surface, HSG C
0.680		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					Direct Entry,

Subcatchment DA4C: BASIN 4C PROPOSED

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Summary for Subcatchment DA4D: BASIN 4D PROPOSED

Runoff = 9.99 cfs @ 12.03 hrs, Volume= 29,484 cf, Depth= 6.60"
Routed to Reach D4D : Ditch 4D

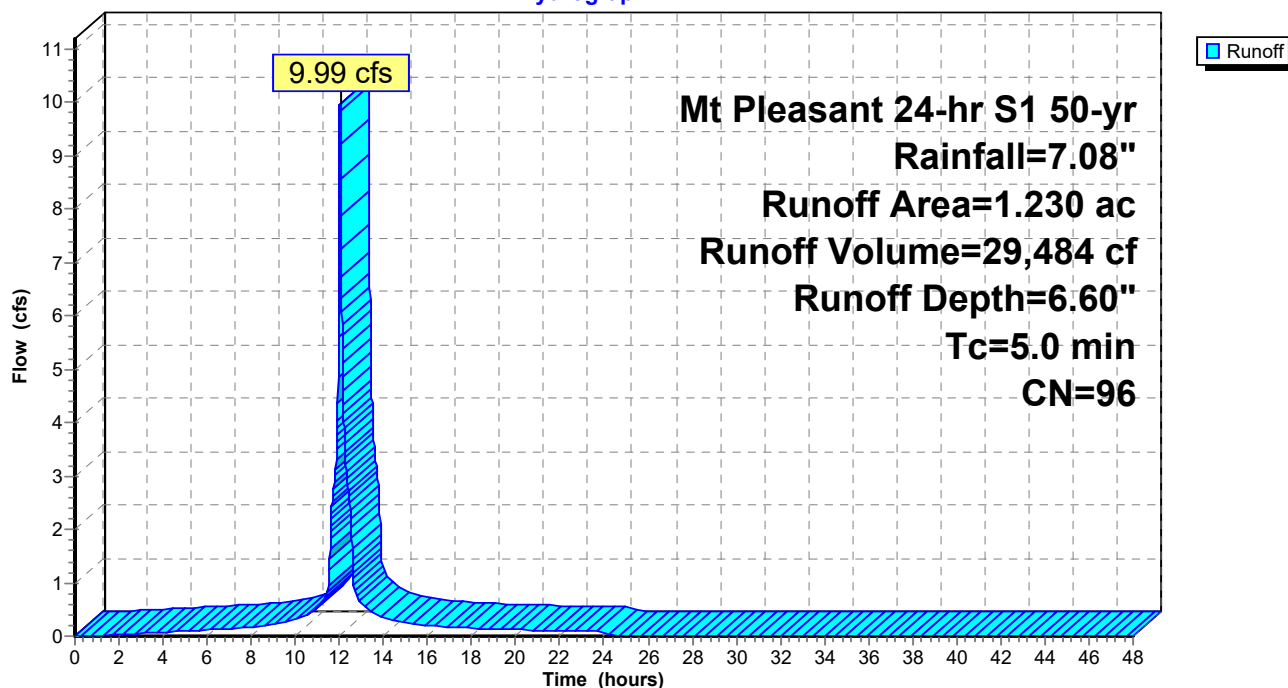
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Mt Pleasant 24-hr S1 50-yr Rainfall=7.08"

Area (ac)	CN	Description
1.230	96	Gravel surface, HSG C
1.230		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					Direct Entry,

Subcatchment DA4D: BASIN 4D PROPOSED

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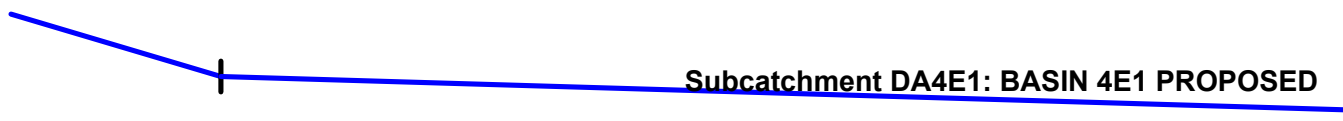
Summary for Subcatchment DA4E1: BASIN 4E1 PROPOSED

Runoff = 15.16 cfs @ 12.43 hrs, Volume= 80,705 cf, Depth= 3.06"
Routed to Reach D4E1 : Ditch 4E1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Mt Pleasant 24-hr S1 50-yr Rainfall=7.08"

Area (ac)	CN	Description
3.130	58	Meadow, non-grazed, HSG B
3.130	60	Woods, Fair, HSG B
1.000	98	Paved roads w/curbs & sewers, HSG B
7.260	64	Weighted Average
6.260		86.23% Pervious Area
1.000		13.77% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
18.6	100	0.1000	0.09		Sheet Flow, Woods: Dense underbrush n= 0.800 P2= 3.57"
12.9	540	0.0100	0.70		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
31.5	640	Total			



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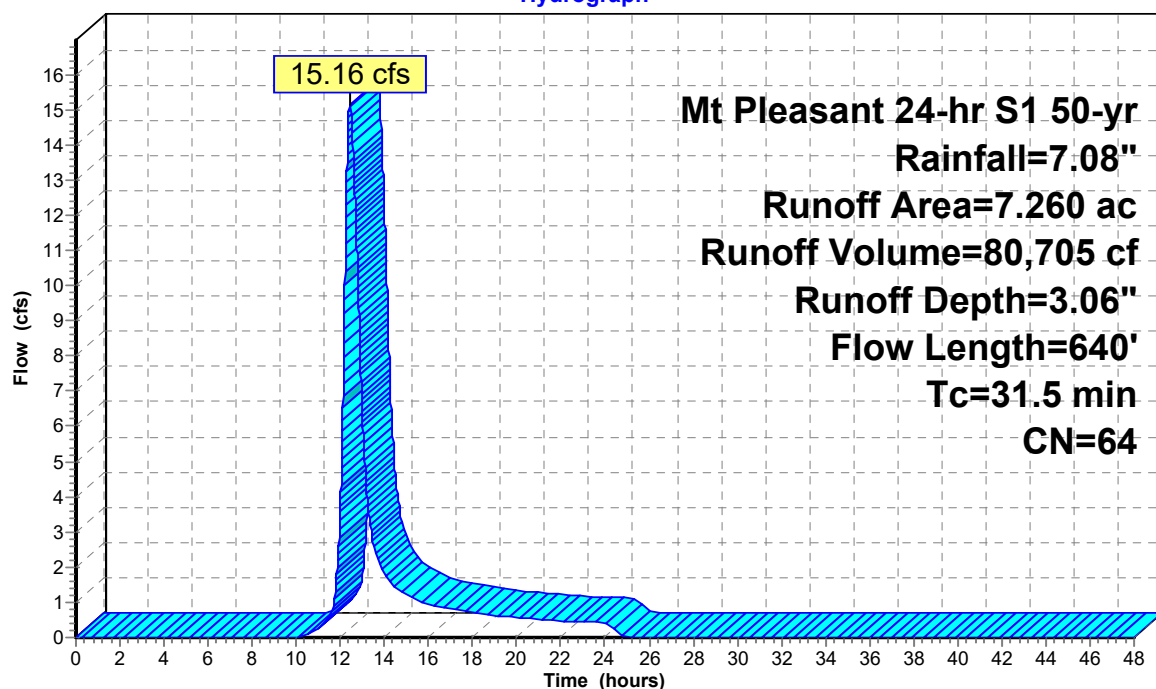
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Subcatchment DA4E1: BASIN 4E1 PROPOSED

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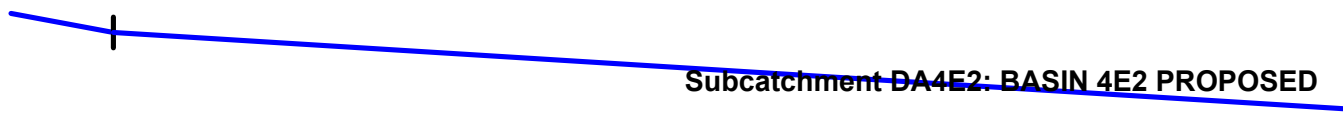
Summary for Subcatchment DA4E2: BASIN 4E2 PROPOSED

Runoff = 39.30 cfs @ 12.64 hrs, Volume= 249,230 cf, Depth= 3.58"
 Routed to Pond CD4E : Cross Drain 4E

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
 Mt Pleasant 24-hr S1 50-yr Rainfall=7.08"

Area (ac)	CN	Description
9.300	79	Woods, Fair, HSG D
4.940	58	Meadow, non-grazed, HSG B
4.940	60	Woods, Fair, HSG B
19.180	69	Weighted Average
19.180		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
24.5	100	0.0500	0.07		Sheet Flow, Woods: Dense underbrush n= 0.800 P2= 3.57"
22.3	1,213	0.0167	0.90		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
46.8	1,313	Total			



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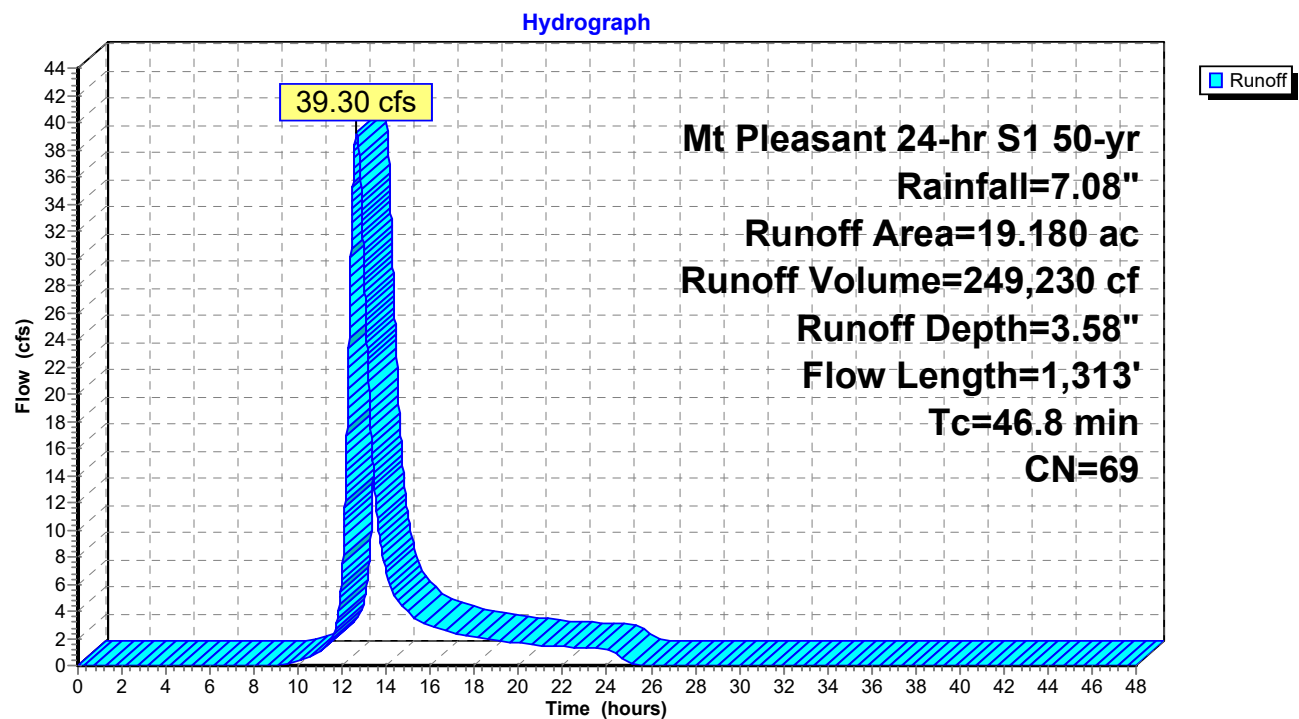
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Subcatchment DA4E2: BASIN 4E2 PROPOSED



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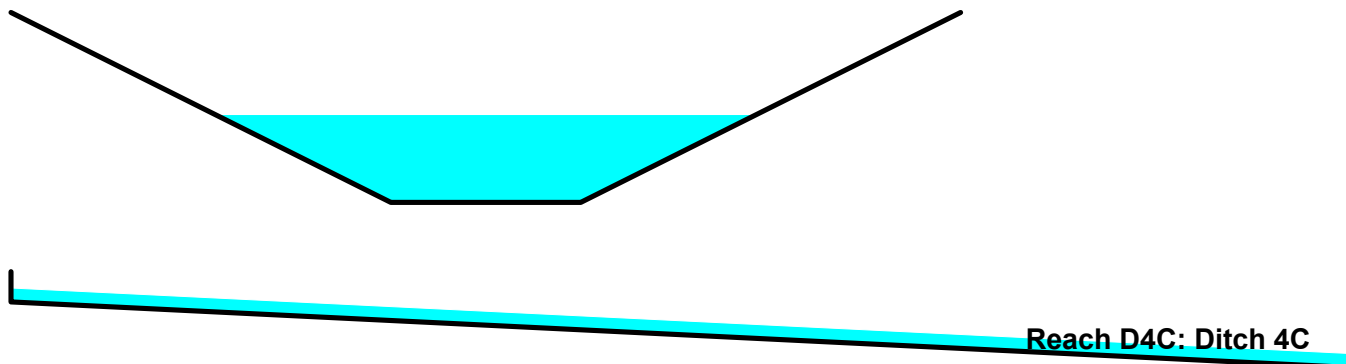
Summary for Reach D4C: Ditch 4C

Inflow Area = 29,621 sf, 0.00% Impervious, Inflow Depth = 6.60" for 50-yr event
 Inflow = 5.52 cfs @ 12.03 hrs, Volume= 16,300 cf
 Outflow = 5.23 cfs @ 12.05 hrs, Volume= 16,300 cf, Atten= 5%, Lag= 1.2 min
 Routed to Pond CD4C : Cross Drain 4C

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
 Max. Velocity= 2.63 fps, Min. Travel Time= 2.0 min
 Avg. Velocity = 0.75 fps, Avg. Travel Time= 6.9 min

Peak Storage= 622 cf @ 12.05 hrs
 Average Depth at Peak Storage= 0.69' , Surface Width= 4.26'
 Bank-Full Depth= 1.50' Flow Area= 6.8 sf, Capacity= 27.19 cfs

1.50' x 1.50' deep channel, n= 0.033 Riprap, 1-inch
 Side Slope Z-value= 2.0 '/' Top Width= 7.50'
 Length= 313.0' Slope= 0.0104 '/'
 Inlet Invert= 687.00', Outlet Invert= 683.75'



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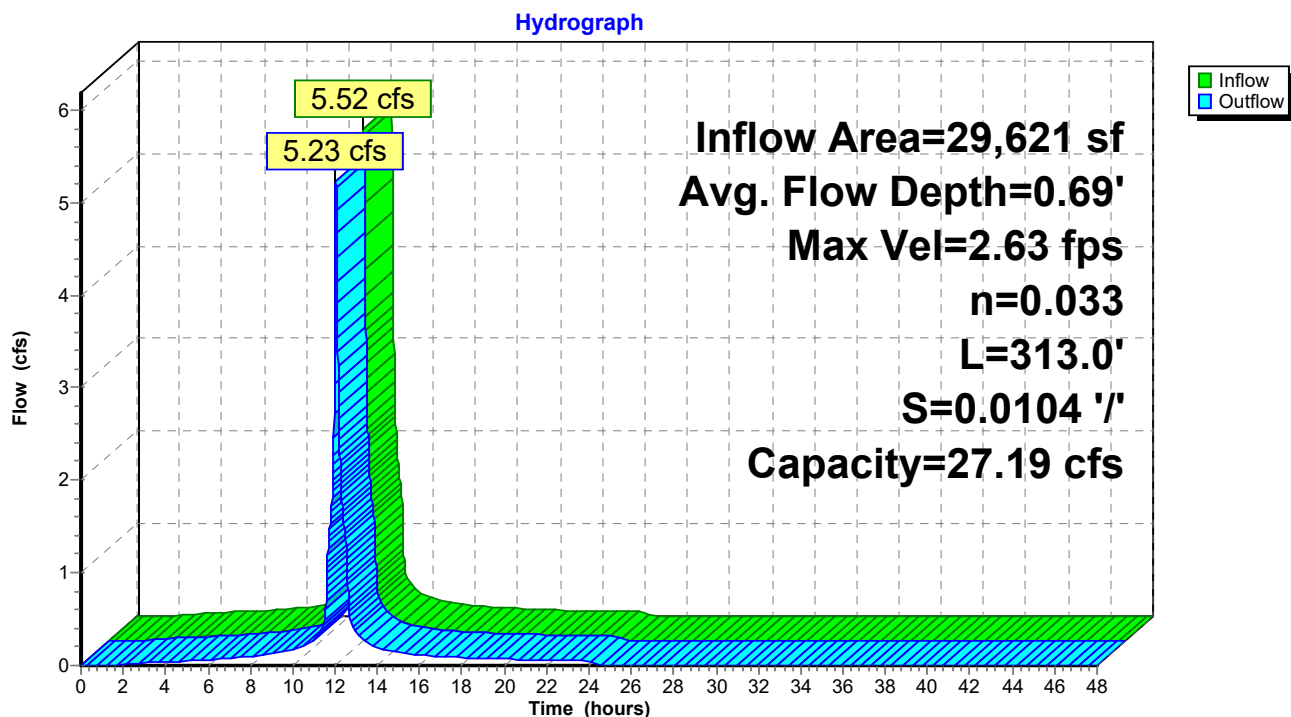
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Mt Pleasant 24-hr S1 50-yr Rainfall=7.08"

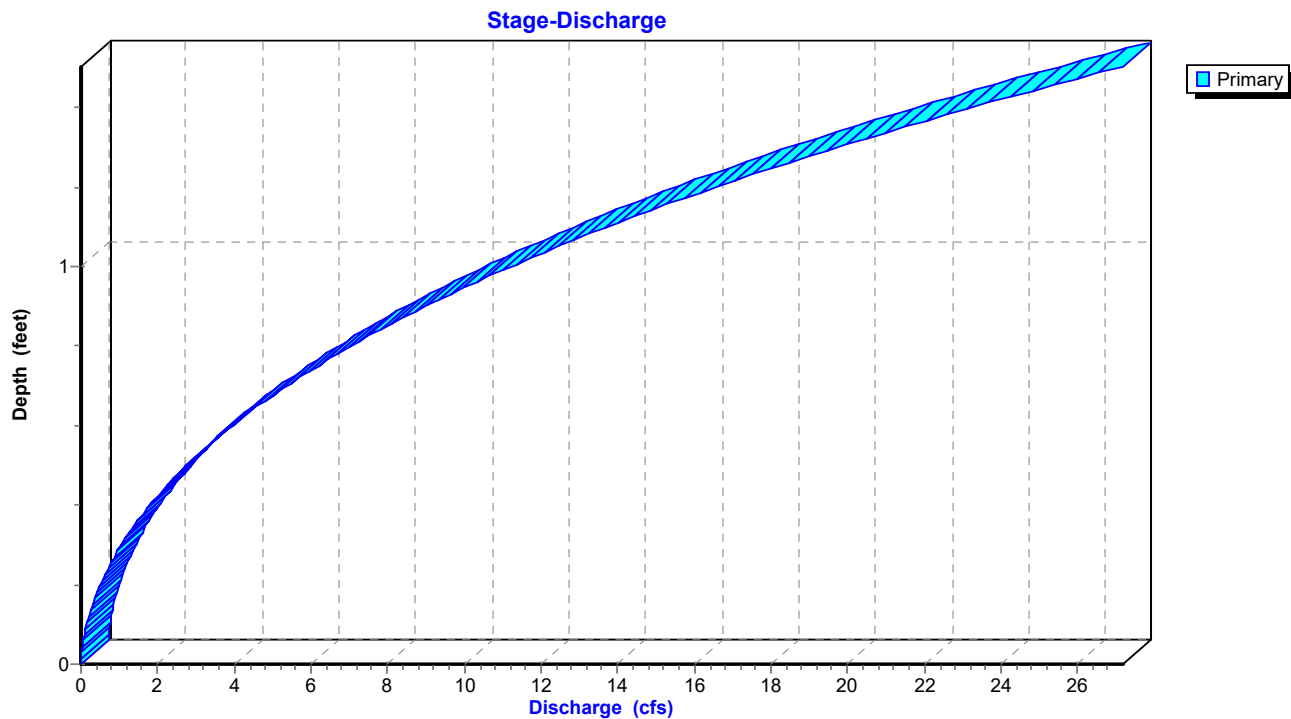
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Reach D4C: Ditch 4C



Reach D4C: Ditch 4C



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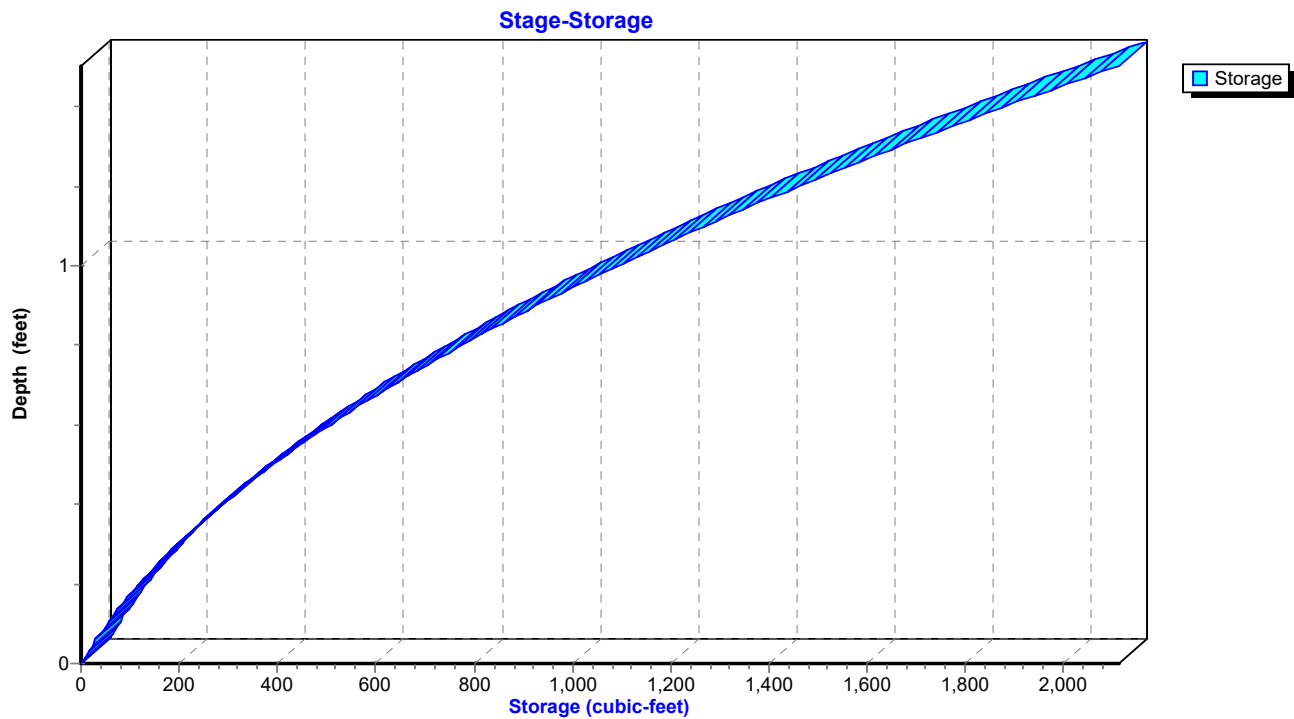
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Mt Pleasant 24-hr S1 50-yr Rainfall=7.08"

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Reach D4C: Ditch 4C



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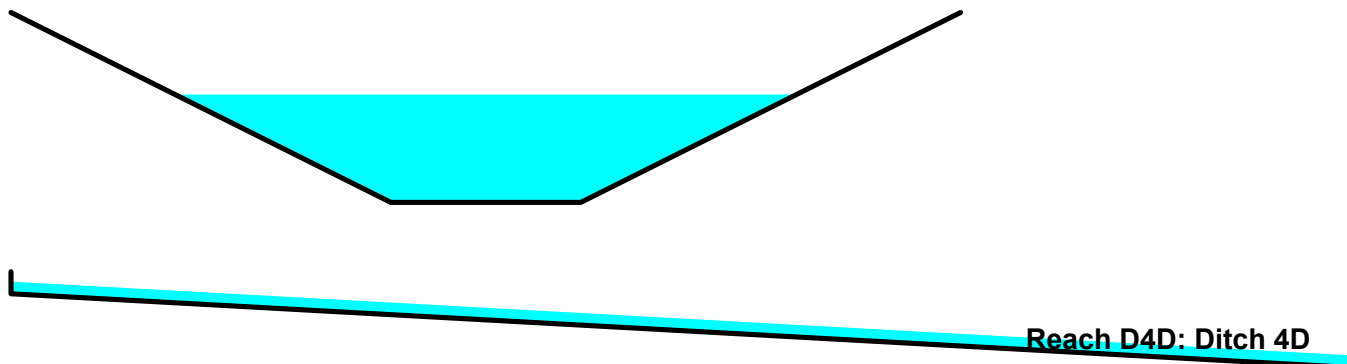
Summary for Reach D4D: Ditch 4D

Inflow Area = 53,579 sf, 0.00% Impervious, Inflow Depth = 6.60" for 50-yr event
 Inflow = 9.99 cfs @ 12.03 hrs, Volume= 29,484 cf
 Outflow = 9.62 cfs @ 12.04 hrs, Volume= 29,484 cf, Atten= 4%, Lag= 1.0 min
 Routed to Pond CD4DCE : Cross Drain 4DCE

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
 Max. Velocity= 3.52 fps, Min. Travel Time= 1.6 min
 Avg. Velocity = 1.04 fps, Avg. Travel Time= 5.4 min

Peak Storage= 920 cf @ 12.04 hrs
 Average Depth at Peak Storage= 0.85' , Surface Width= 4.91'
 Bank-Full Depth= 1.50' Flow Area= 6.8 sf, Capacity= 32.50 cfs

1.50' x 1.50' deep channel, n= 0.033 Riprap, 1-inch
 Side Slope Z-value= 2.0 '/' Top Width= 7.50'
 Length= 337.0' Slope= 0.0148 '/'
 Inlet Invert= 688.00', Outlet Invert= 683.00'



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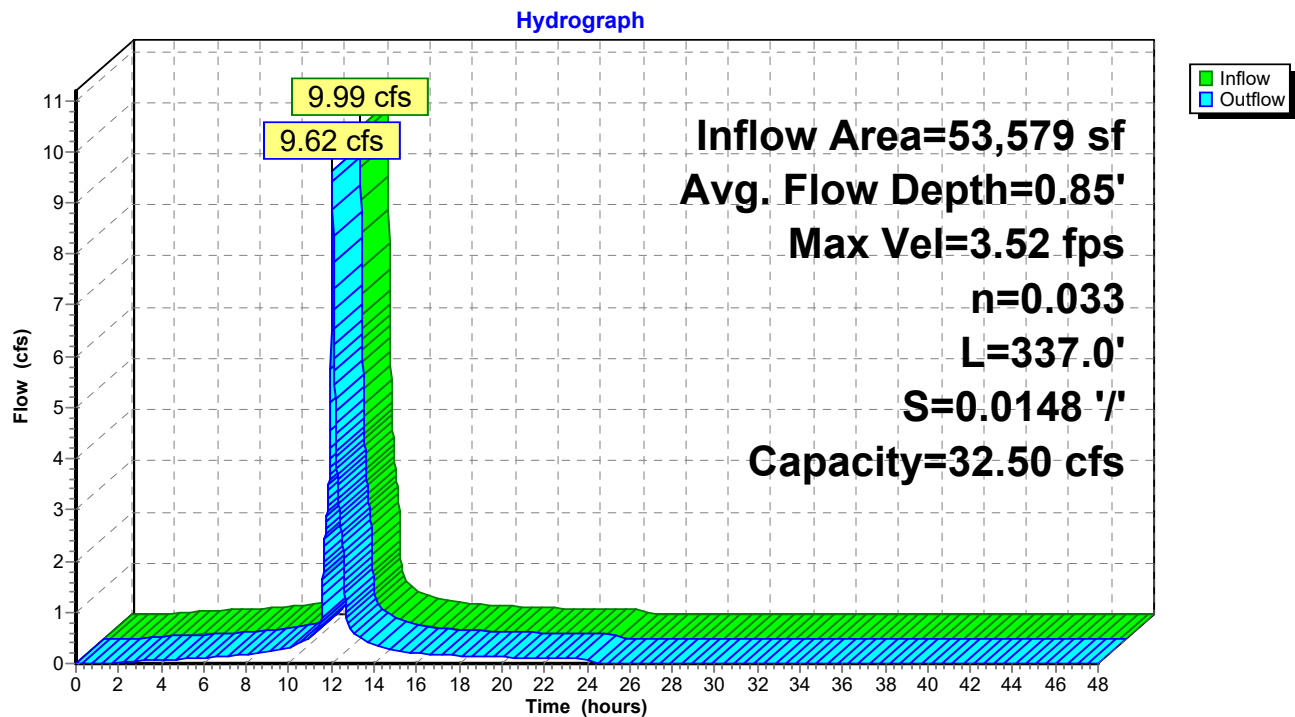
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Mt Pleasant 24-hr S1 50-yr Rainfall=7.08"

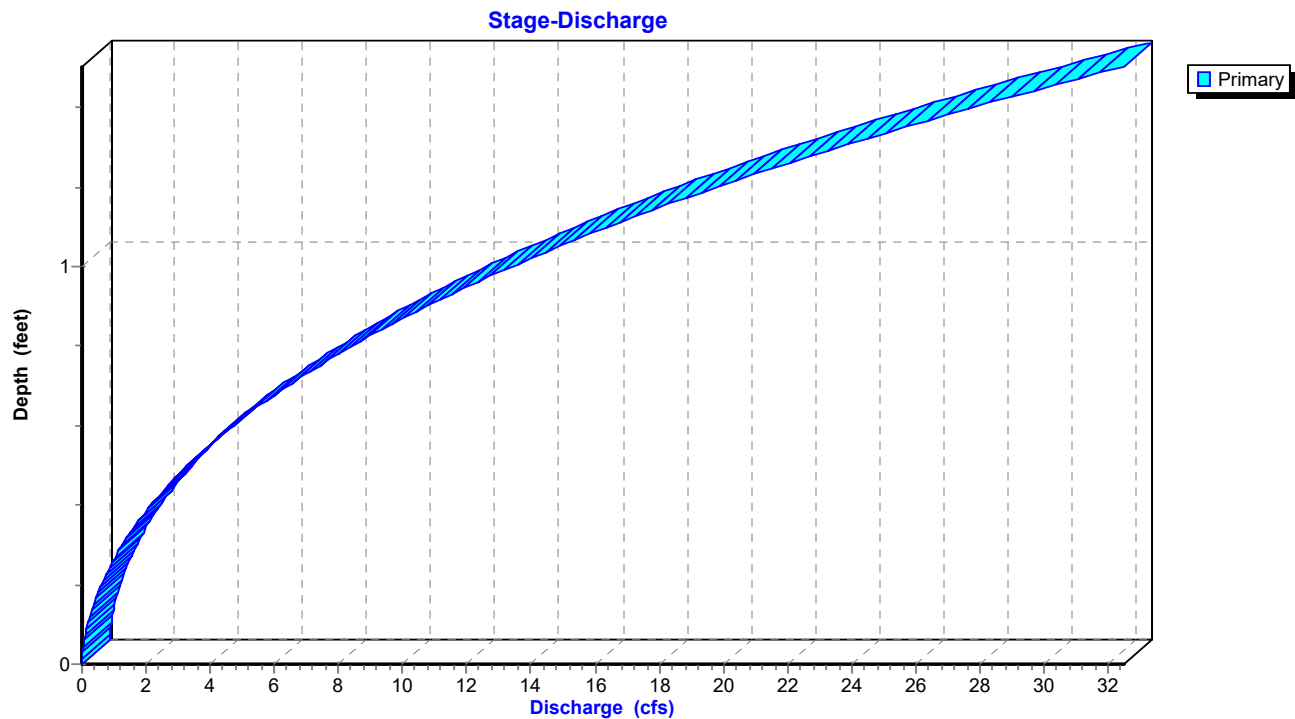
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Reach D4D: Ditch 4D



Reach D4D: Ditch 4D



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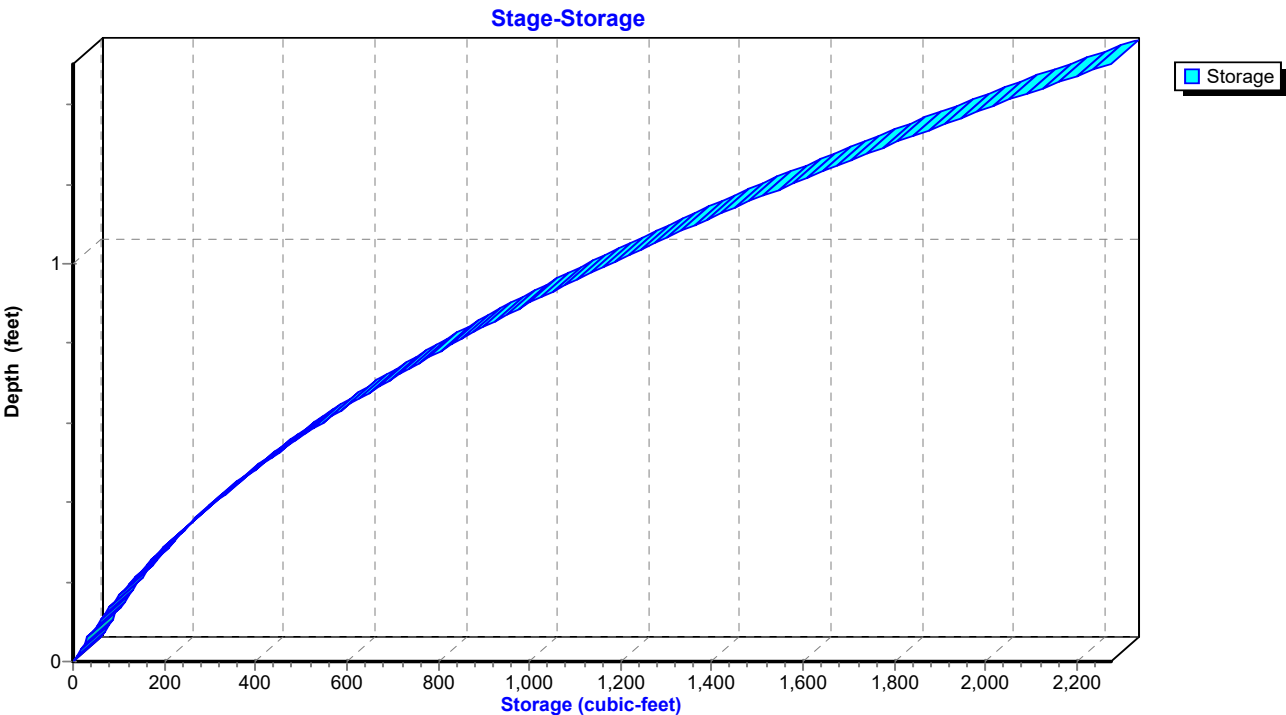
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Reach D4D: Ditch 4D



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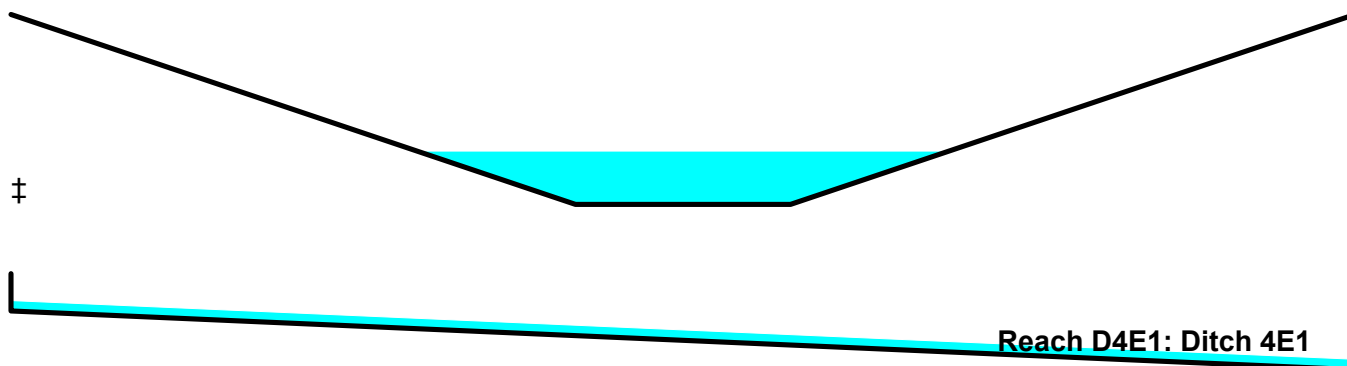
Summary for Reach D4E1: Ditch 4E1

Inflow Area = 316,246 sf, 13.77% Impervious, Inflow Depth = 3.06" for 50-yr event
 Inflow = 15.16 cfs @ 12.43 hrs, Volume= 80,705 cf
 Outflow = 12.81 cfs @ 12.64 hrs, Volume= 80,705 cf, Atten= 15%, Lag= 12.5 min
 Routed to Pond CD4E : Cross Drain 4E

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
 Max. Velocity= 1.90 fps, Min. Travel Time= 15.7 min
 Avg. Velocity= 0.55 fps, Avg. Travel Time= 54.7 min

Peak Storage= 12,053 cf @ 12.64 hrs
 Average Depth at Peak Storage= 0.97' , Surface Width= 9.84'
 Bank-Full Depth= 3.50' Flow Area= 50.8 sf, Capacity= 197.27 cfs

4.00' x 3.50' deep channel, n= 0.033 Riprap, 1-inch
 Side Slope Z-value= 3.0 '/' Top Width= 25.00'
 Length= 1,788.0' Slope= 0.0031 '/'
 Inlet Invert= 685.00', Outlet Invert= 679.50'



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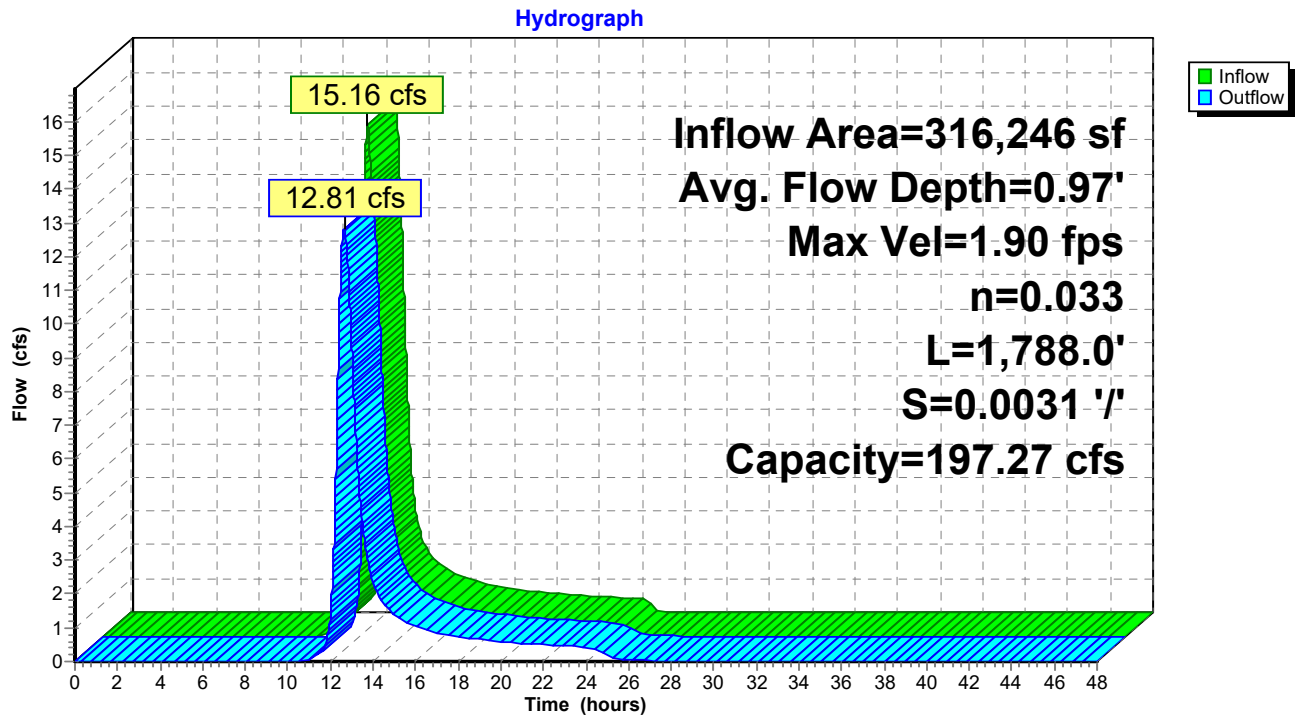
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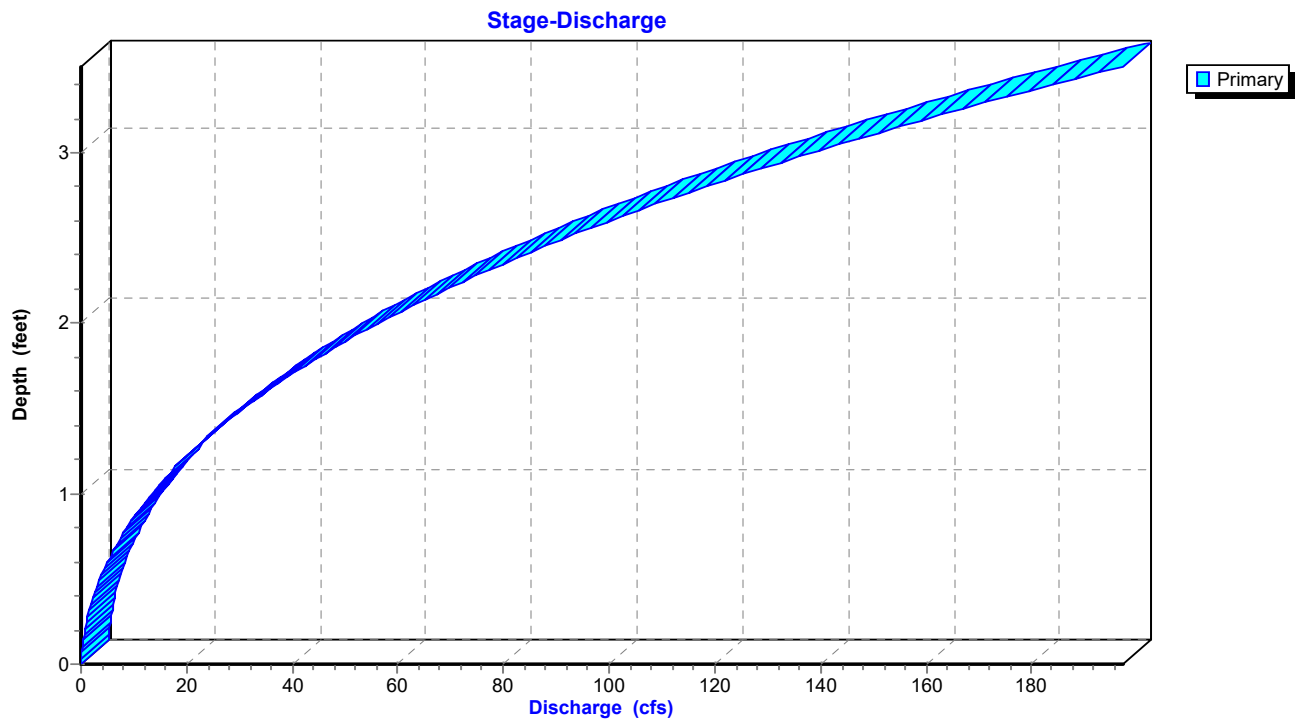
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Reach D4E1: Ditch 4E1



Reach D4E1: Ditch 4E1



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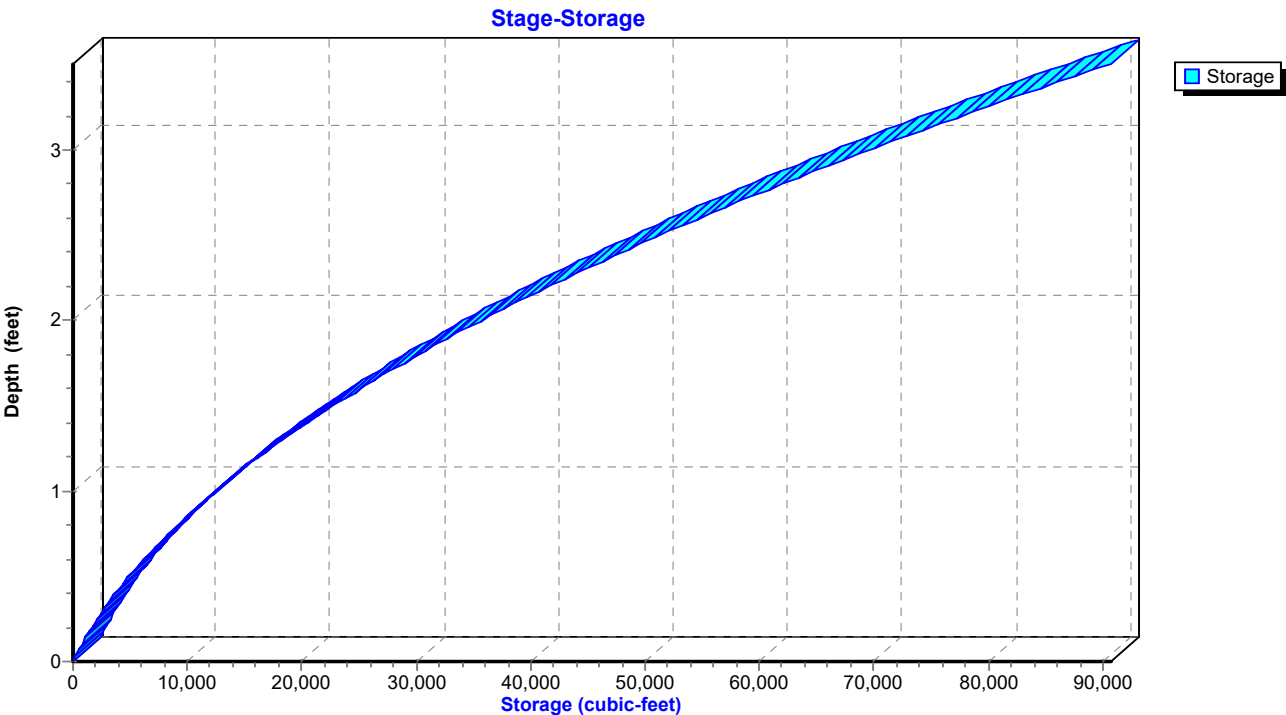
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Reach D4E1: Ditch 4E1



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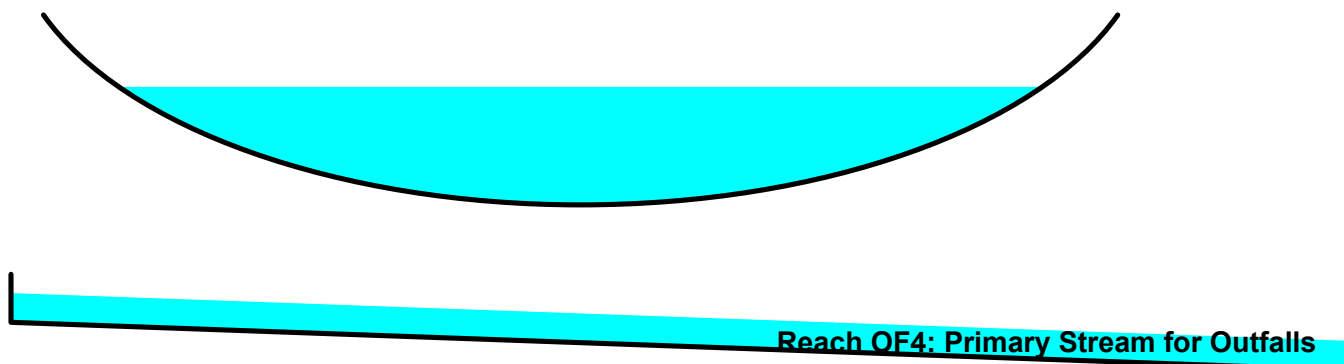
Summary for Reach OF4: Primary Stream for Outfalls

Inflow Area = 9,965,657 sf, 1.09% Impervious, Inflow Depth = 3.91" for 50-yr event
 Inflow = 232.20 cfs @ 13.34 hrs, Volume= 3,244,345 cf
 Outflow = 232.00 cfs @ 13.36 hrs, Volume= 3,244,345 cf, Atten= 0%, Lag= 1.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
 Max. Velocity= 4.74 fps, Min. Travel Time= 3.5 min
 Avg. Velocity = 1.70 fps, Avg. Travel Time= 9.8 min

Peak Storage= 48,961 cf @ 13.36 hrs
 Average Depth at Peak Storage= 3.11', Surface Width= 23.64'
 Bank-Full Depth= 5.00' Flow Area= 100.0 sf, Capacity= 640.46 cfs

30.00' x 5.00' deep Parabolic Channel, n= 0.035
 Length= 1,000.0' Slope= 0.0050 '/'
 Inlet Invert= 675.00', Outlet Invert= 670.00'



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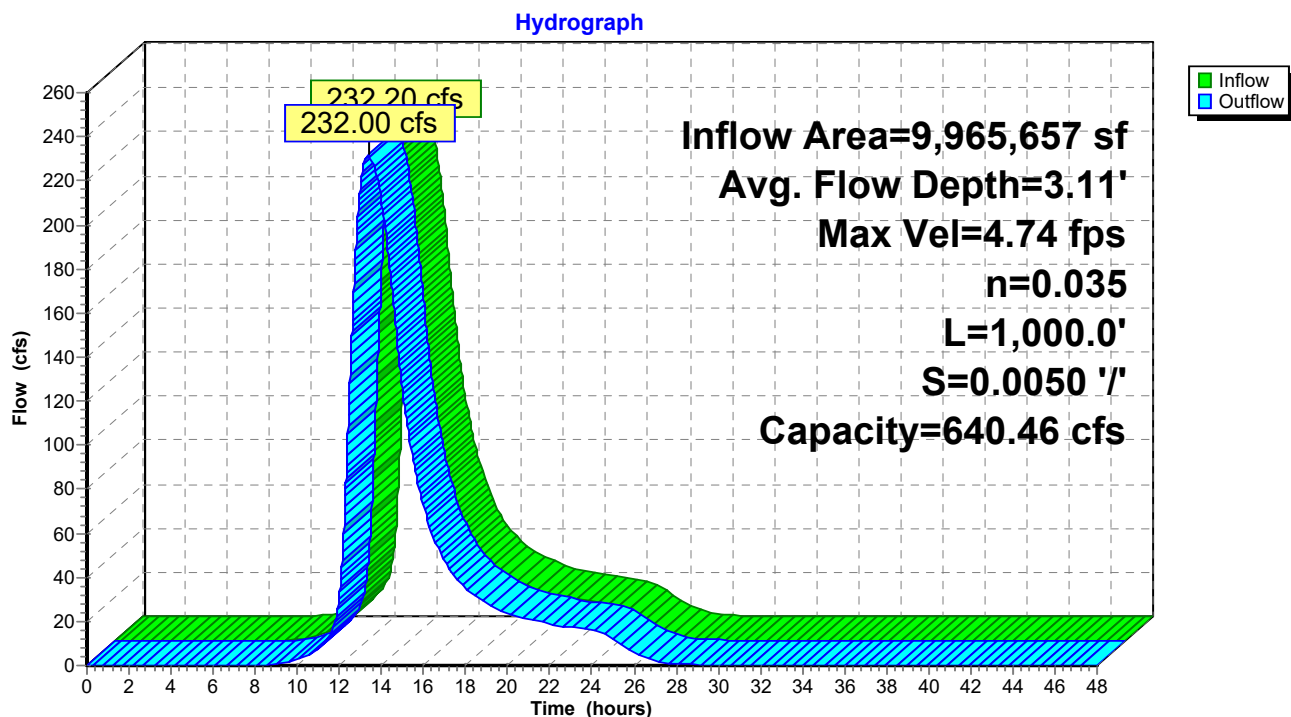
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Mt Pleasant 24-hr S1 50-yr Rainfall=7.08"

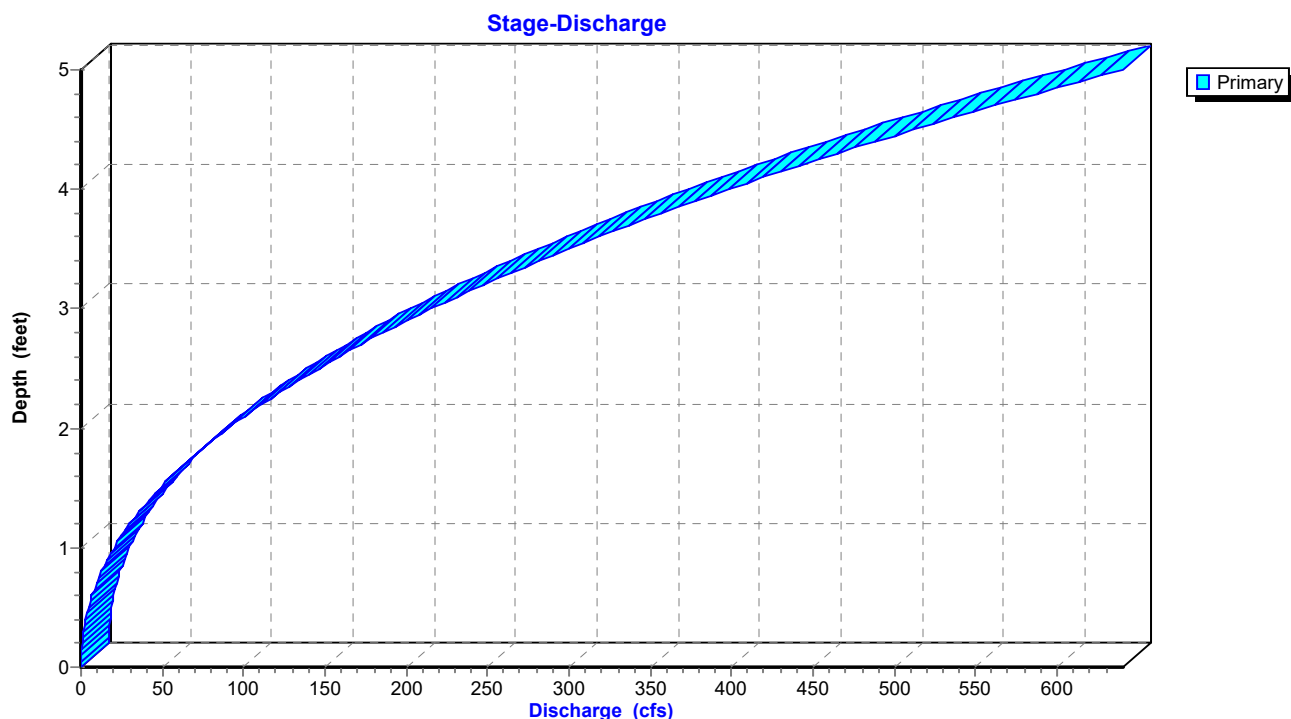
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Reach OF4: Primary Stream for Outfalls



Reach OF4: Primary Stream for Outfalls



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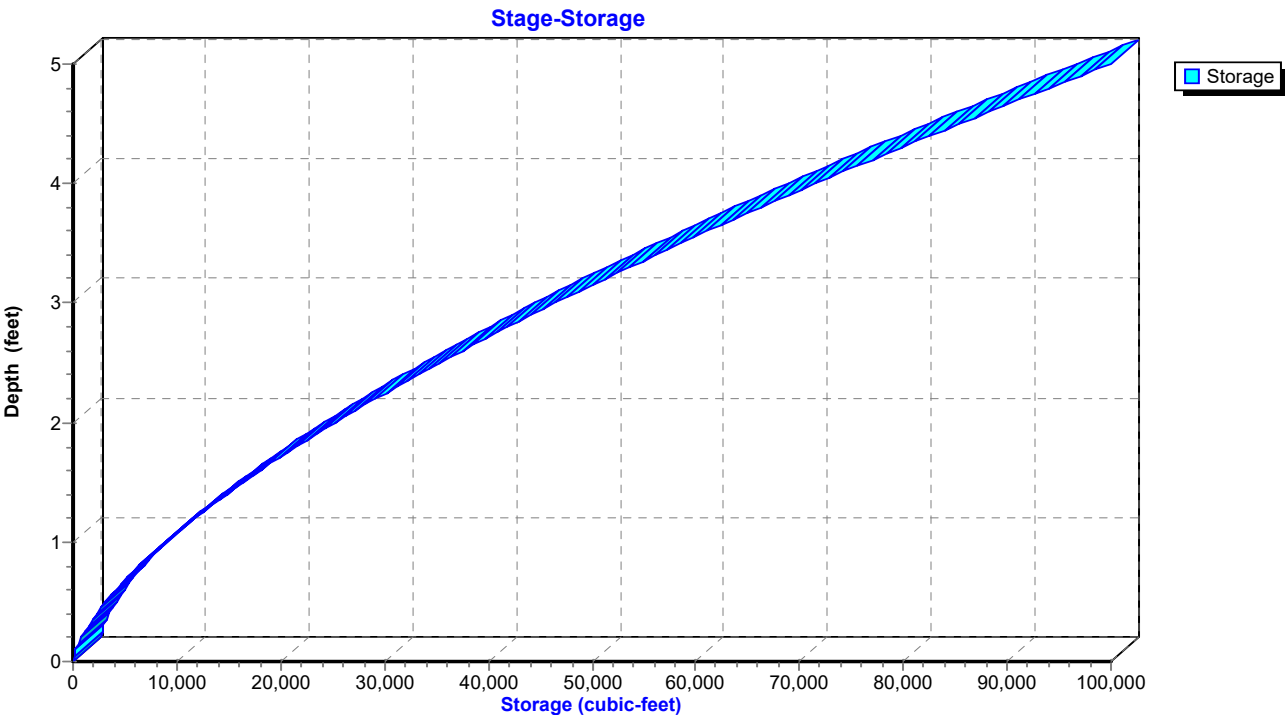
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Reach OF4: Primary Stream for Outfalls



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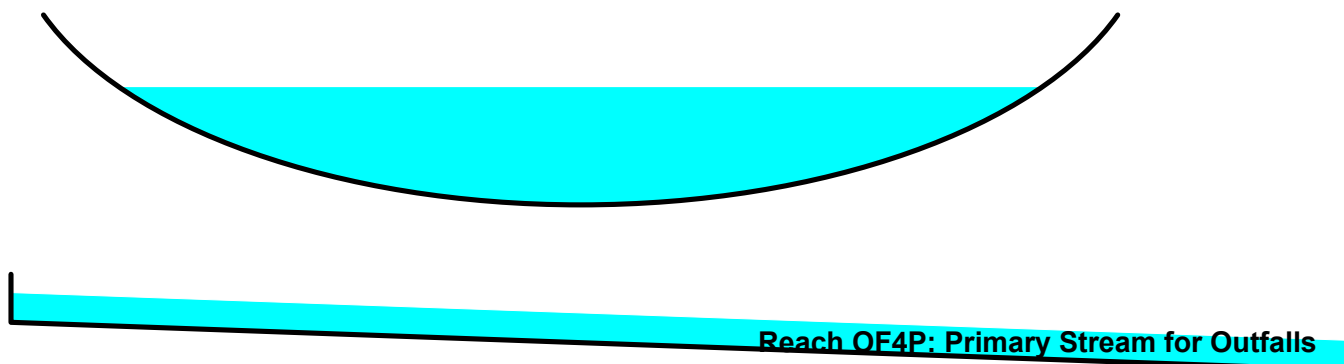
Summary for Reach OF4P: Primary Stream for Outfalls

Inflow Area = 9,969,577 sf, 2.84% Impervious, Inflow Depth = 4.06" for 50-yr event
 Inflow = 230.65 cfs @ 13.66 hrs, Volume= 3,374,372 cf
 Outflow = 230.51 cfs @ 13.67 hrs, Volume= 3,374,370 cf, Atten= 0%, Lag= 0.9 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
 Max. Velocity= 4.73 fps, Min. Travel Time= 3.5 min
 Avg. Velocity = 1.34 fps, Avg. Travel Time= 12.4 min

Peak Storage= 48,740 cf @ 13.67 hrs
 Average Depth at Peak Storage= 3.10' , Surface Width= 23.61'
 Bank-Full Depth= 5.00' Flow Area= 100.0 sf, Capacity= 640.46 cfs

30.00' x 5.00' deep Parabolic Channel, n= 0.035
 Length= 1,000.0' Slope= 0.0050 '/'
 Inlet Invert= 675.00', Outlet Invert= 670.00'



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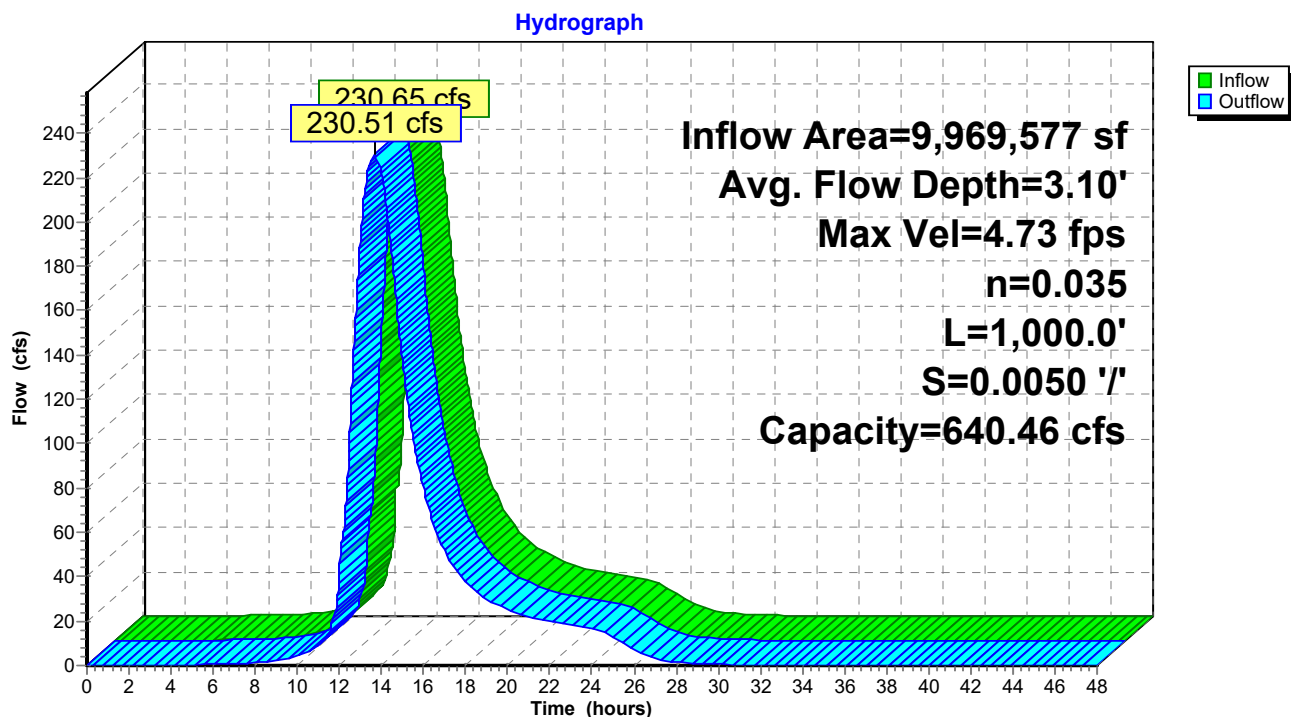
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Mt Pleasant 24-hr S1 50-yr Rainfall=7.08"

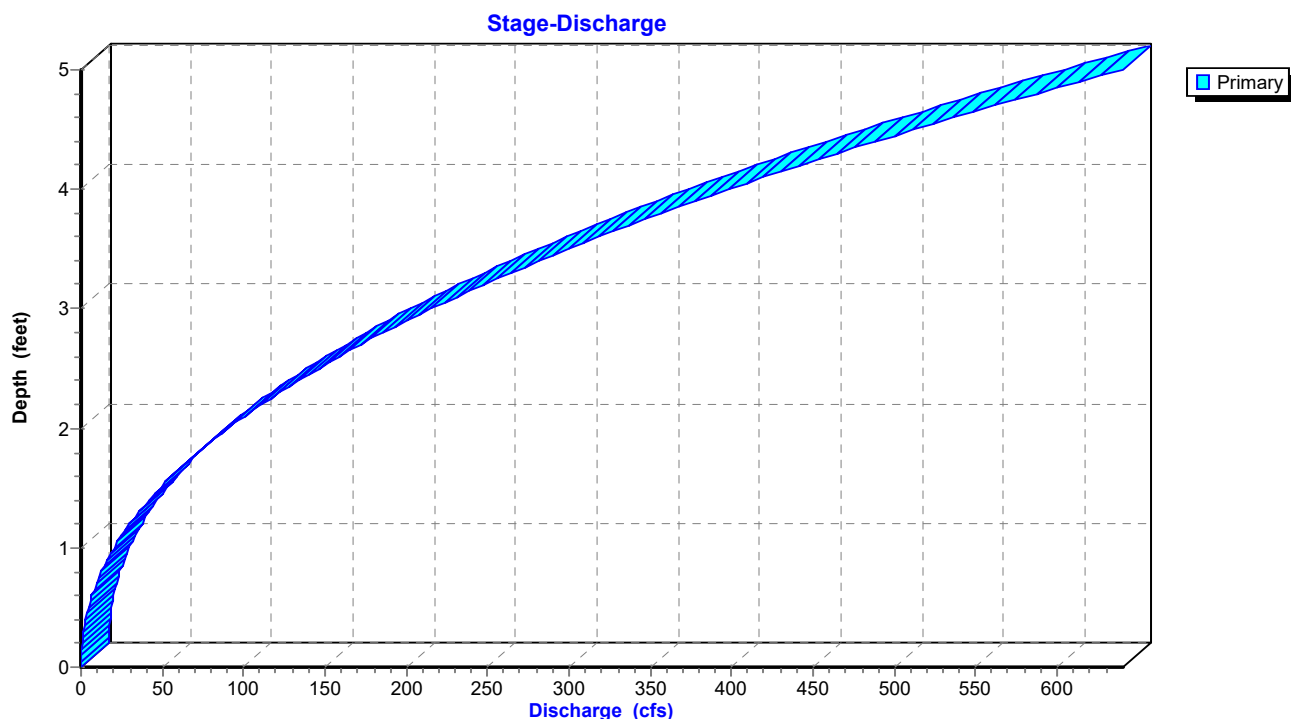
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Reach OF4P: Primary Stream for Outfalls



Reach OF4P: Primary Stream for Outfalls



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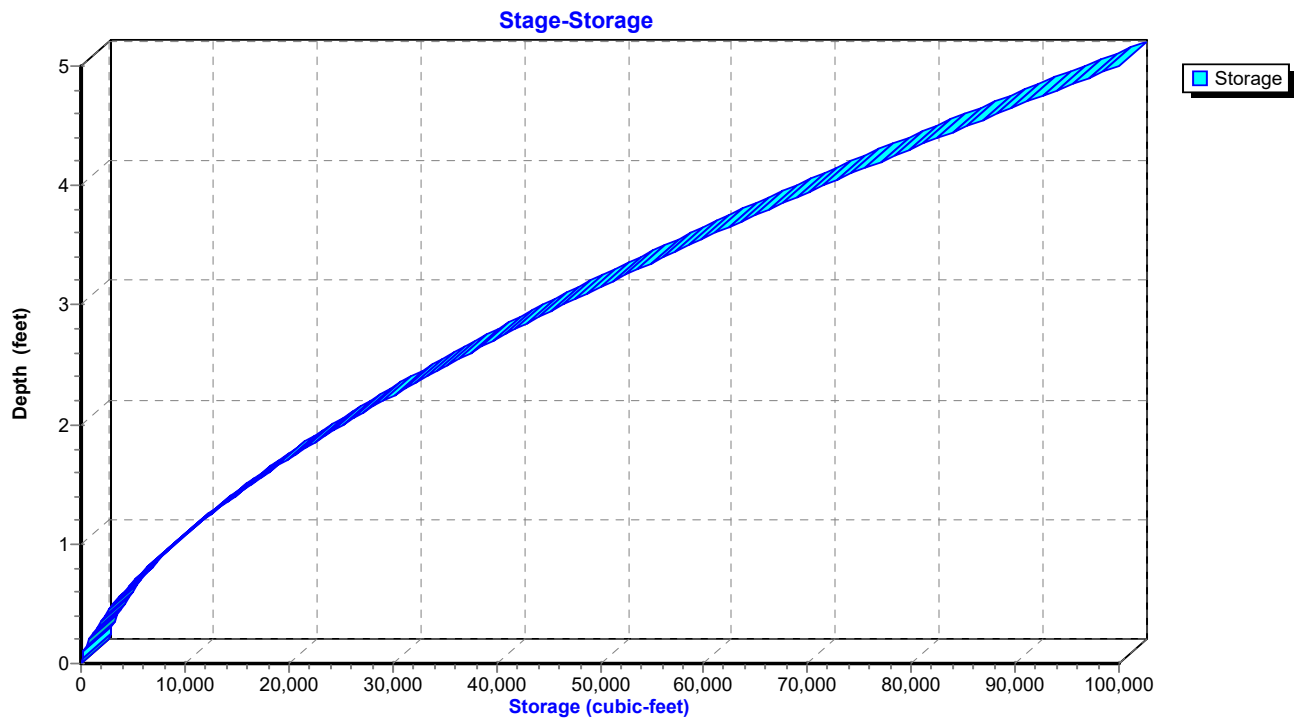
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Reach OF4P: Primary Stream for Outfalls



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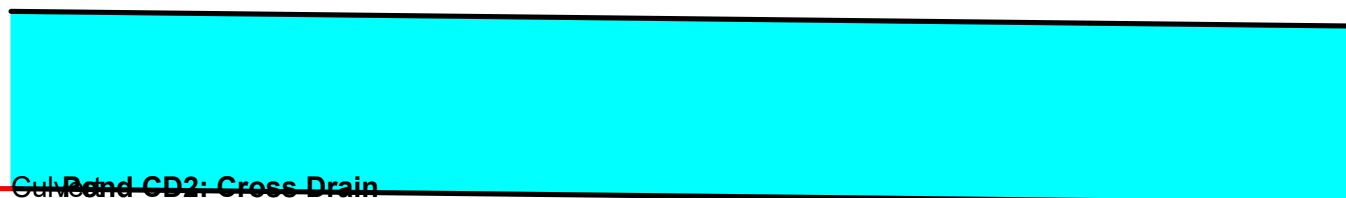
Summary for Pond CD2: Cross Drain

Inflow Area = 1,520,244 sf, 0.00% Impervious, Inflow Depth = 2.86" for 50-yr event
 Inflow = 48.09 cfs @ 12.88 hrs, Volume= 362,320 cf
 Outflow = 48.09 cfs @ 12.88 hrs, Volume= 362,320 cf, Atten= 0%, Lag= 0.0 min
 Primary = 48.09 cfs @ 12.88 hrs, Volume= 362,320 cf
 Routed to Reach OF4P : Primary Stream for Outfalls

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
 Peak Elev= 684.27' @ 12.88 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	680.25'	36.0" Round Culvert L= 50.0' Ke= 0.500 Inlet / Outlet Invert= 680.25' / 680.00' S= 0.0050 '/' Cc= 0.900 n= 0.011 Concrete pipe, straight & clean, Flow Area= 7.07 sf

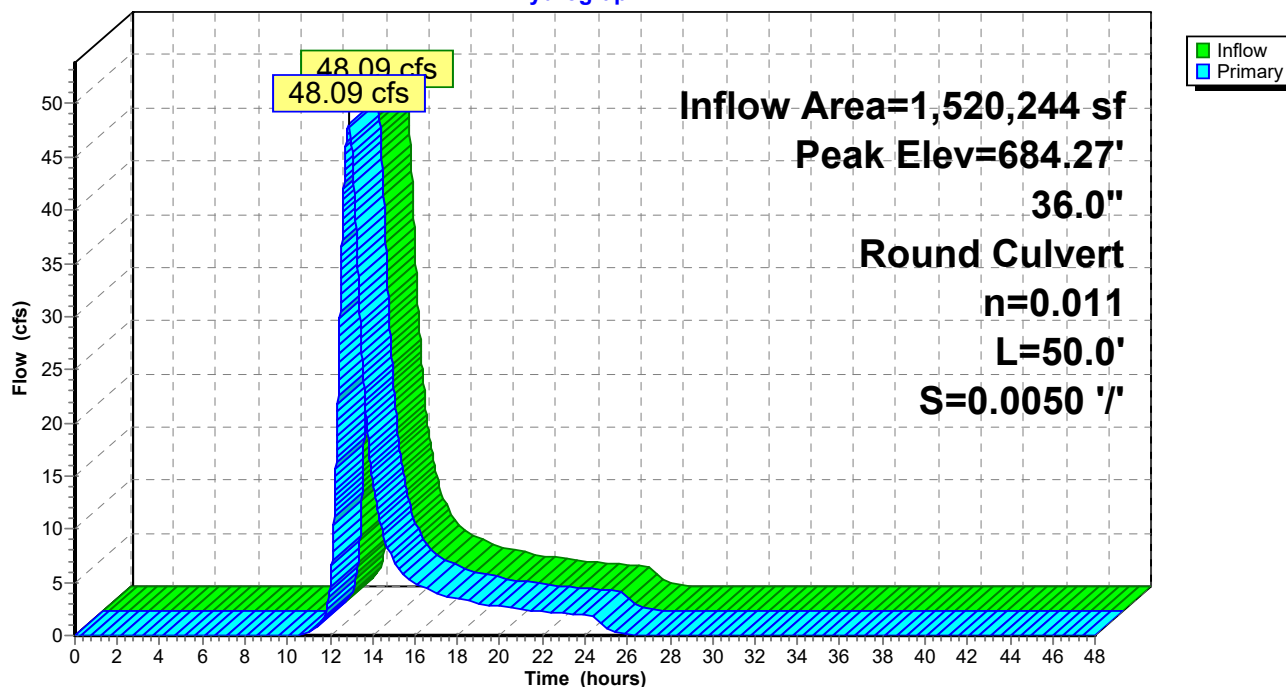
Primary OutFlow Max=48.09 cfs @ 12.88 hrs HW=684.26' TW=677.73' (Dynamic Tailwater)
 1=Culvert (Barrel Controls 48.09 cfs @ 6.80 fps)



~~Culvert CD2: Cross Drain~~

Pond CD2: Cross Drain

Hydrograph



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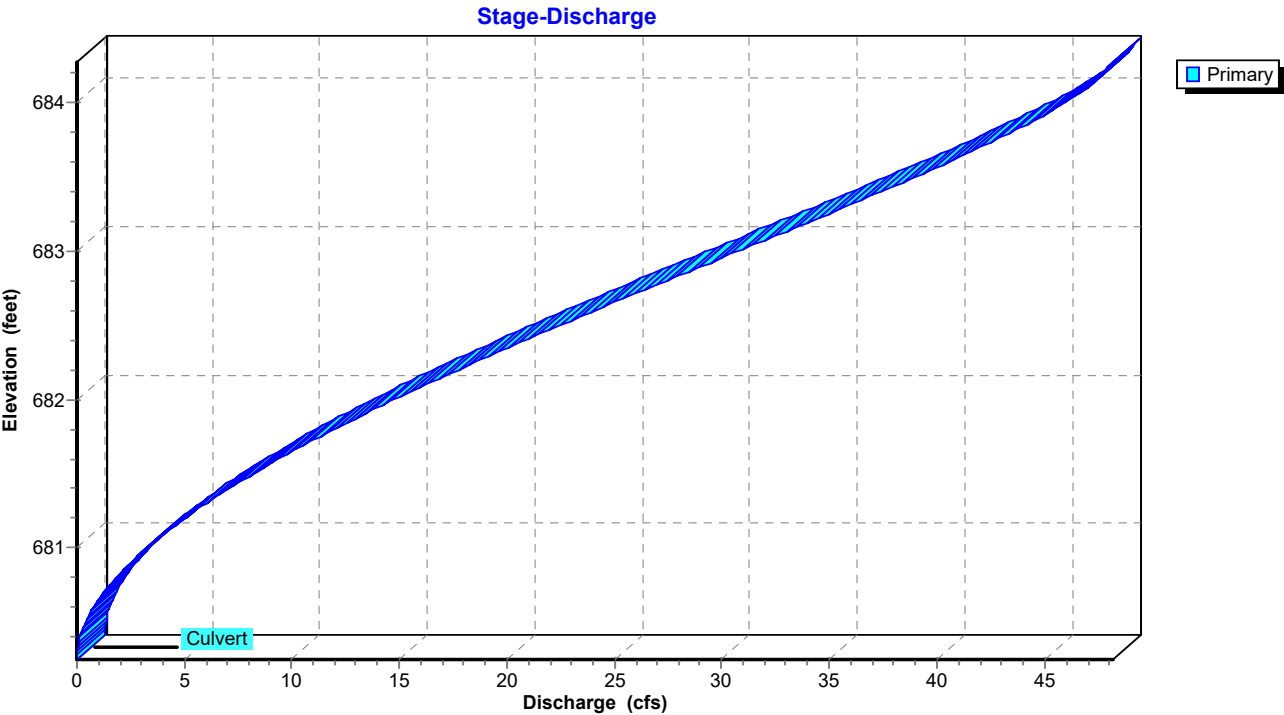
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Mt Pleasant 24-hr S1 50-yr Rainfall=7.08"

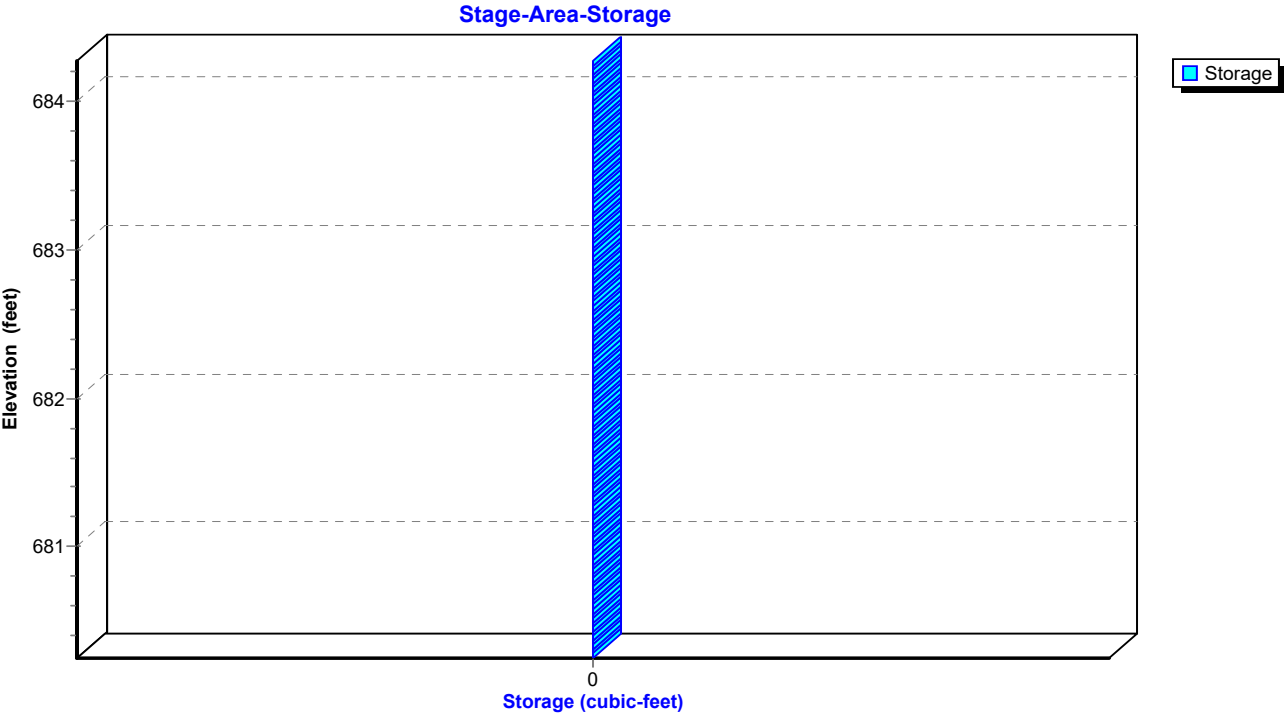
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Pond CD2: Cross Drain



Pond CD2: Cross Drain



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Mt Pleasant 24-hr S1 50-yr Rainfall=7.08"

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Summary for Pond CD4C: Cross Drain 4C

Inflow Area = 29,621 sf, 0.00% Impervious, Inflow Depth = 6.60" for 50-yr event
 Inflow = 5.23 cfs @ 12.05 hrs, Volume= 16,300 cf
 Outflow = 5.23 cfs @ 12.05 hrs, Volume= 16,300 cf, Atten= 0%, Lag= 0.0 min
 Primary = 5.23 cfs @ 12.05 hrs, Volume= 16,300 cf
 Routed to Pond CD4DCE : Cross Drain 4DCE

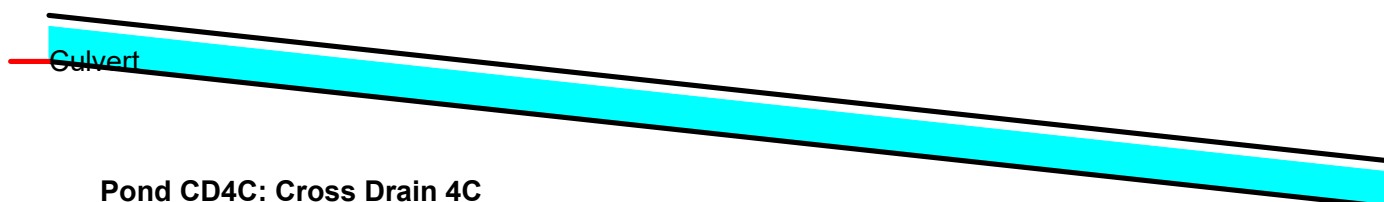
Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Peak Elev= 684.89' @ 12.05 hrs

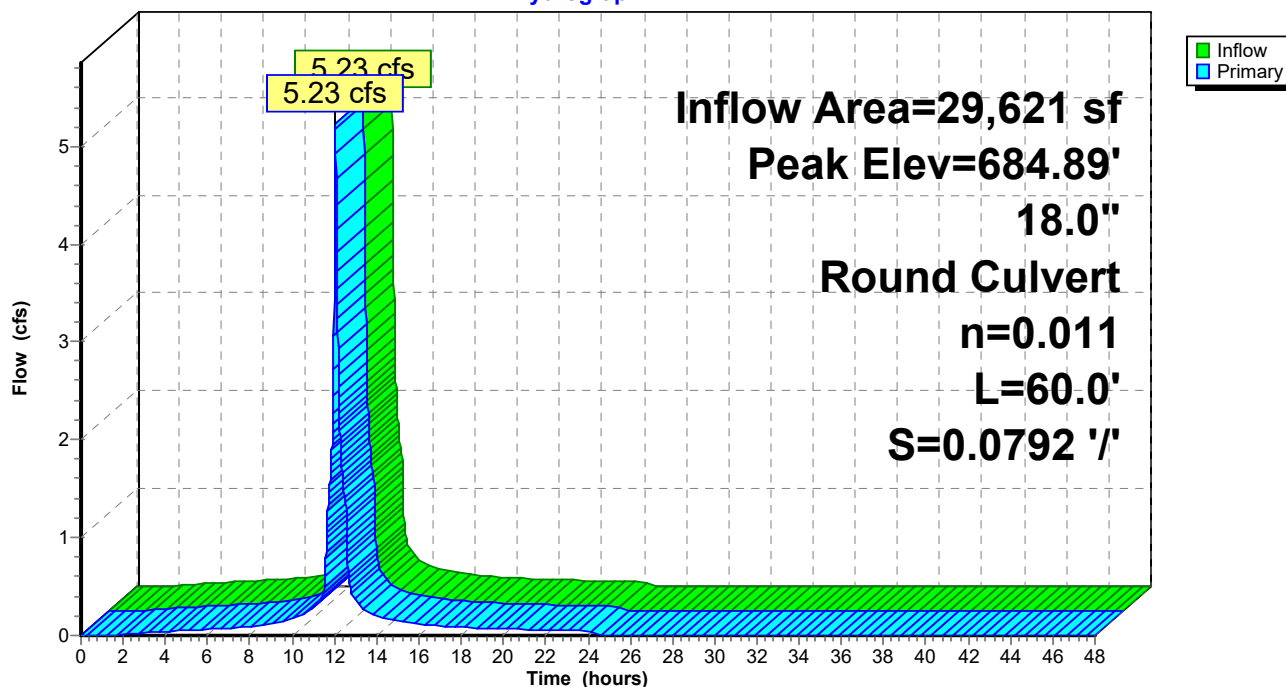
Device	Routing	Invert	Outlet Devices
#1	Primary	683.75'	18.0" Round Culvert L= 60.0' Square-edged headwall, Ke= 0.500 Inlet / Outlet Invert= 683.75' / 679.00' S= 0.0792 '/' Cc= 0.900 n= 0.011 Concrete pipe, straight & clean, Flow Area= 1.77 sf

Primary OutFlow Max=5.21 cfs @ 12.05 hrs HW=684.89' TW=680.33' (Dynamic Tailwater)

1=Culvert (Inlet Controls 5.21 cfs @ 3.63 fps)

**Pond CD4C: Cross Drain 4C**

Hydrograph



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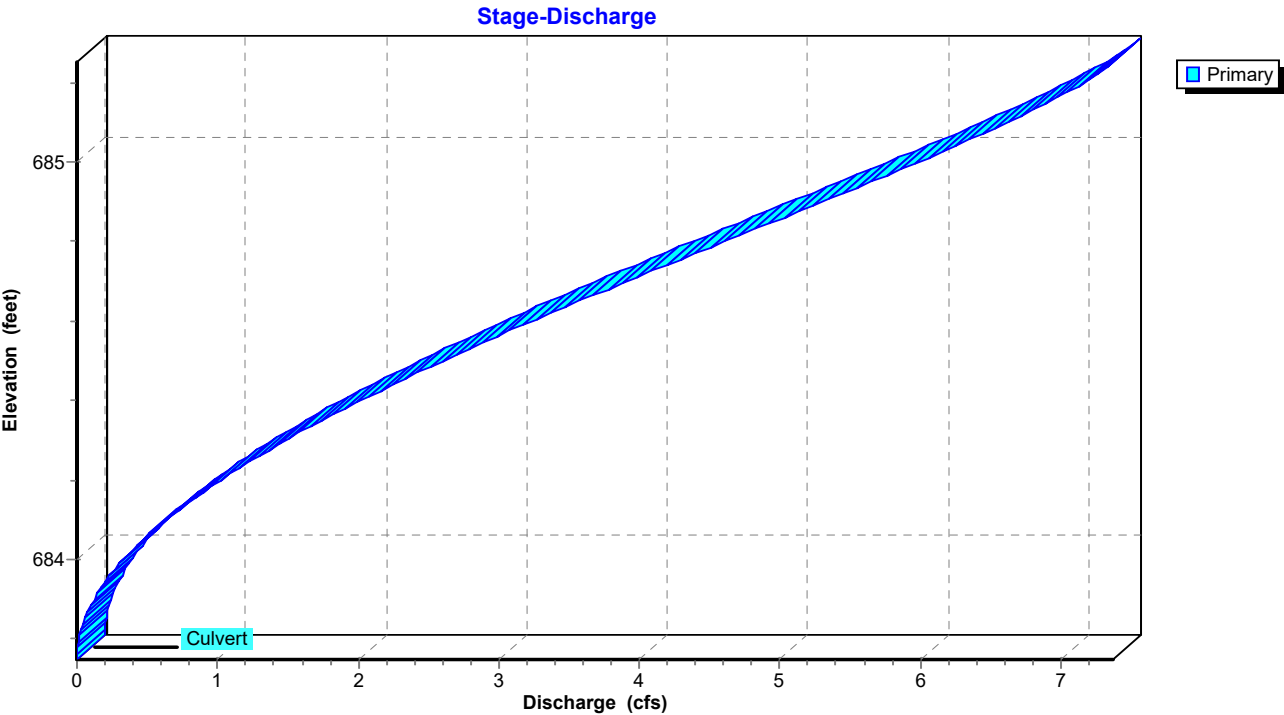
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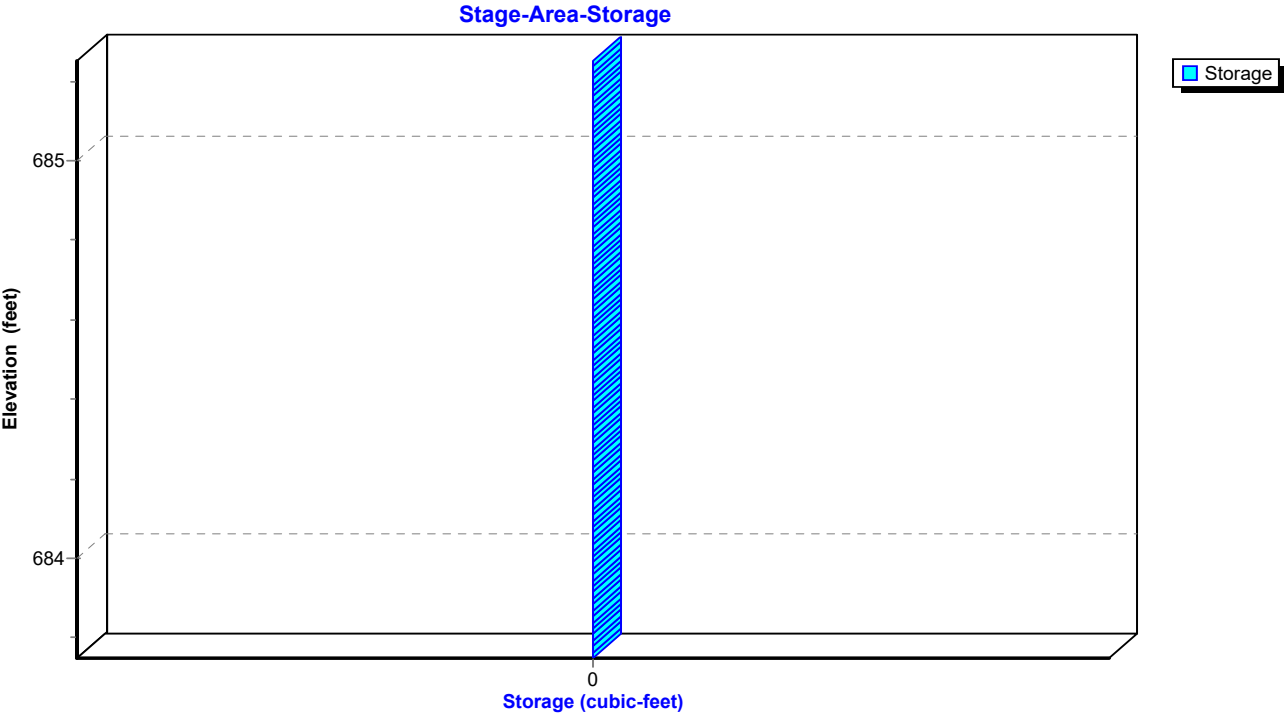
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Pond CD4C: Cross Drain 4C



Pond CD4C: Cross Drain 4C



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Mt Pleasant 24-hr S1 50-yr Rainfall=7.08"

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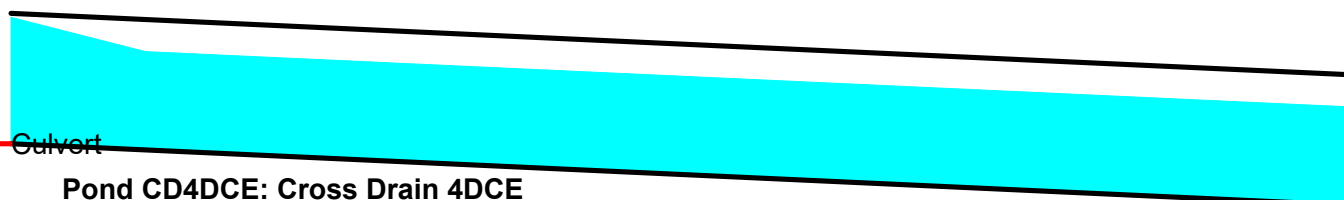
Summary for Pond CD4DCE: Cross Drain 4DCE

Inflow Area = 1,234,926 sf, 3.53% Impervious, Inflow Depth = 3.65" for 50-yr event
 Inflow = 50.83 cfs @ 12.70 hrs, Volume= 375,714 cf
 Outflow = 50.83 cfs @ 12.70 hrs, Volume= 375,714 cf, Atten= 0%, Lag= 0.0 min
 Primary = 50.83 cfs @ 12.70 hrs, Volume= 375,714 cf
 Routed to Pond POND1P : PROP POND

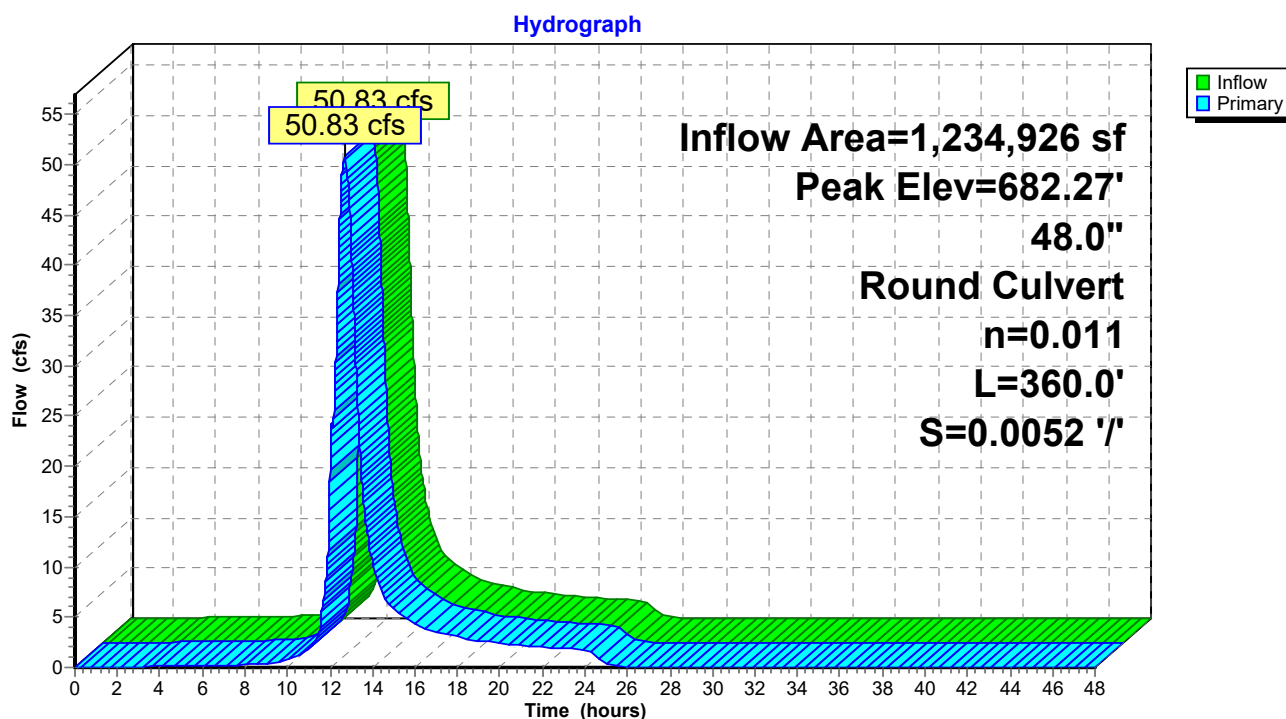
Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
 Peak Elev= 682.27' @ 12.87 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	678.39'	48.0" Round Culvert L= 360.0' Ke= 0.500 Inlet / Outlet Invert= 678.39' / 676.50' S= 0.0052 '/' Cc= 0.900 n= 0.011 Concrete pipe, straight & clean, Flow Area= 12.57 sf

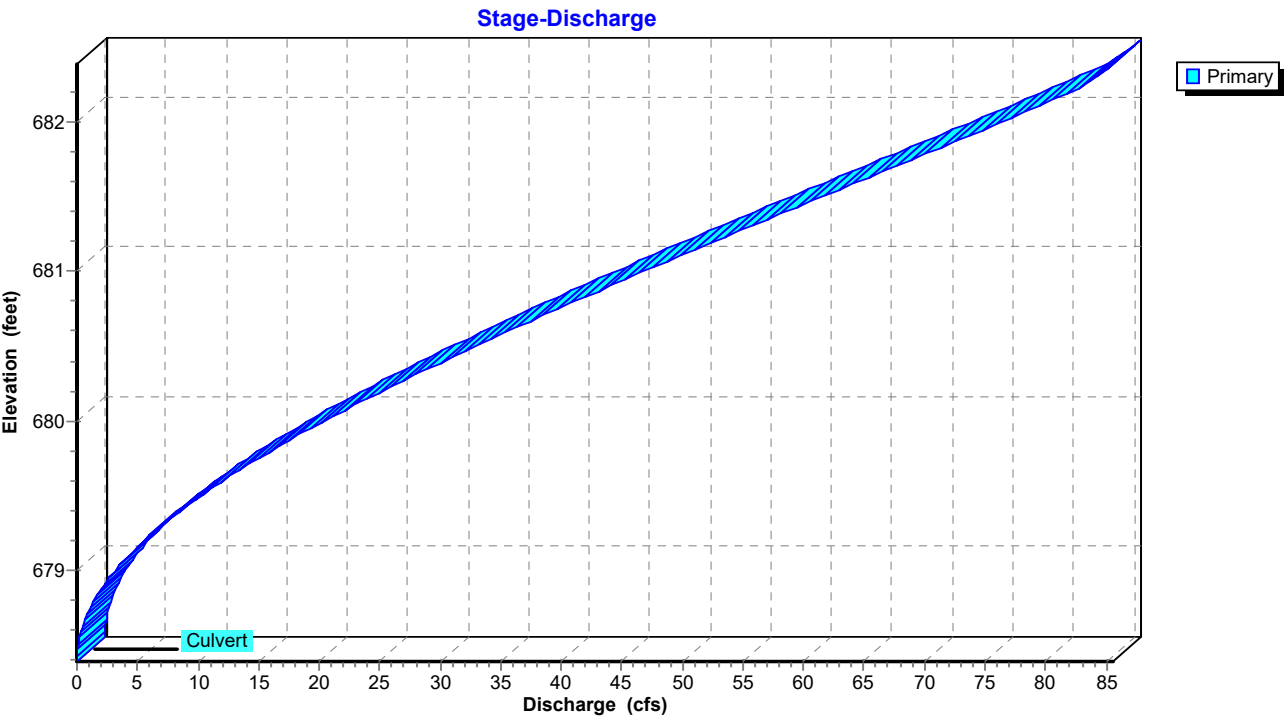
Primary OutFlow Max=50.31 cfs @ 12.70 hrs HW=682.15' TW=681.05' (Dynamic Tailwater)
 1=Culvert (Outlet Controls 50.31 cfs @ 5.31 fps)



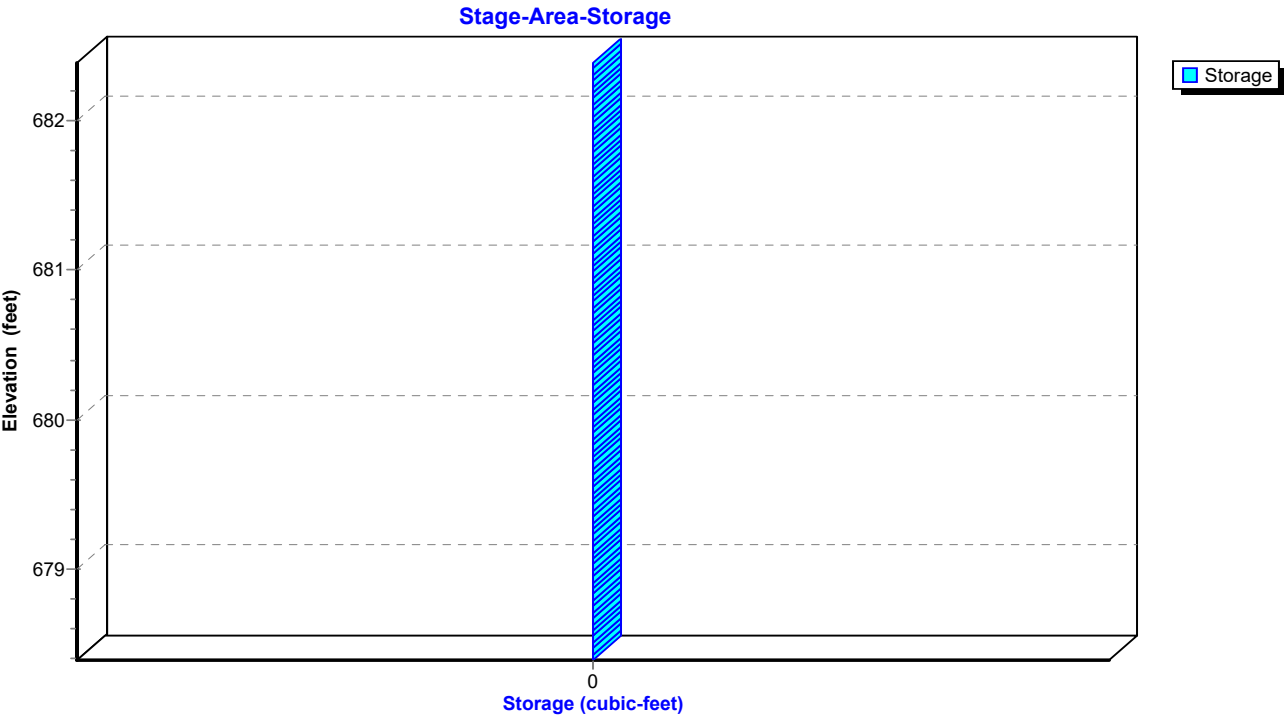
Pond CD4DCE: Cross Drain 4DCE



Pond CD4DCE: Cross Drain 4DCE



Pond CD4DCE: Cross Drain 4DCE



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Summary for Pond CD4E: Cross Drain 4E

Inflow Area = 1,151,726 sf, 3.78% Impervious, Inflow Depth = 3.44" for 50-yr event
 Inflow = 52.11 cfs @ 12.64 hrs, Volume= 329,935 cf
 Outflow = 49.42 cfs @ 12.72 hrs, Volume= 329,930 cf, Atten= 5%, Lag= 4.8 min
 Primary = 49.42 cfs @ 12.72 hrs, Volume= 329,930 cf
 Routed to Pond CD4DCE : Cross Drain 4DCE

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
 Peak Elev= 683.15' @ 12.79 hrs Surf.Area= 8,055 sf Storage= 10,490 cf

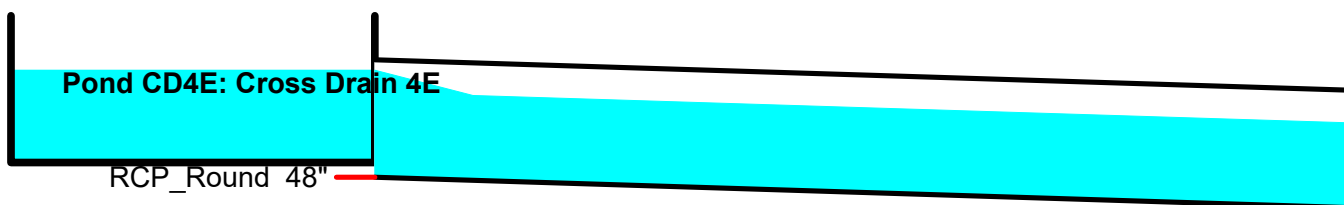
Plug-Flow detention time= (not calculated: outflow precedes inflow)
 Center-of-Mass det. time= 2.1 min (877.2 - 875.1)

Volume	Invert	Avail.Storage	Storage Description
#1	680.00'	33,779 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
680.00	274	0	0
681.00	1,562	918	918
682.00	3,975	2,769	3,687
683.00	7,355	5,665	9,352
684.00	12,090	9,723	19,074
685.00	17,320	14,705	33,779

Device	Routing	Invert	Outlet Devices
#1	Primary	679.50'	48.0" Round RCP_Round 48" L= 200.0' Ke= 0.500 Inlet / Outlet Invert= 679.50' / 678.46' S= 0.0052 ' /' Cc= 0.900 n= 0.011 Concrete pipe, straight & clean, Flow Area= 12.57 sf

Primary OutFlow Max=49.09 cfs @ 12.72 hrs HW=683.12' TW=682.17' (Dynamic Tailwater)
 ↑1=RCP_Round 48" (Outlet Controls 49.09 cfs @ 5.41 fps)



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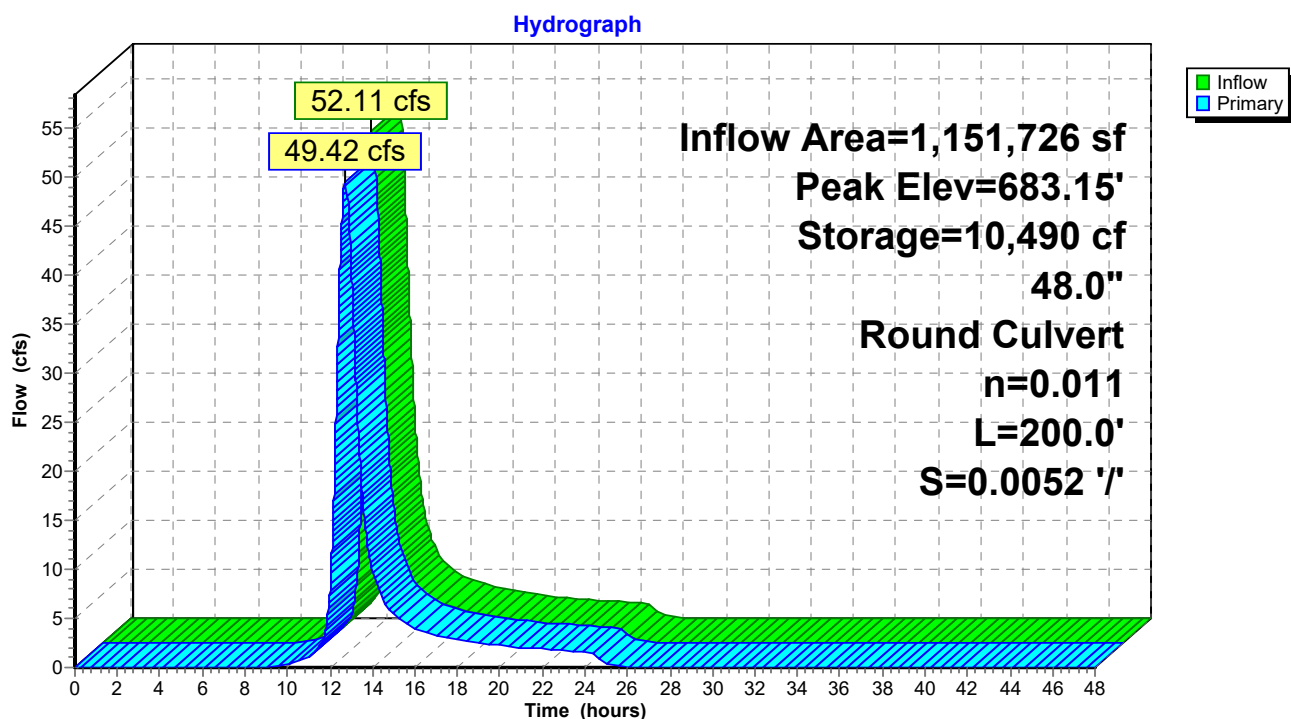
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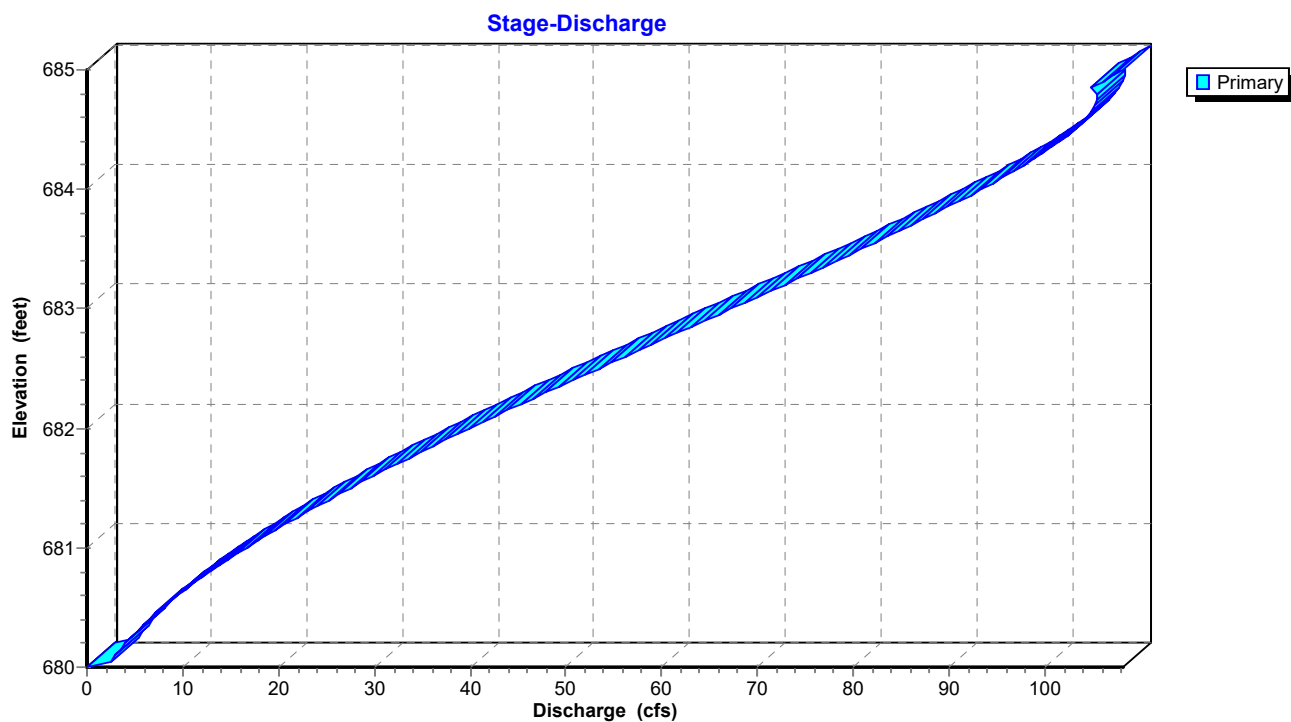
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Pond CD4E: Cross Drain 4E



Pond CD4E: Cross Drain 4E



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Mt Pleasant 24-hr S1 50-yr Rainfall=7.08"

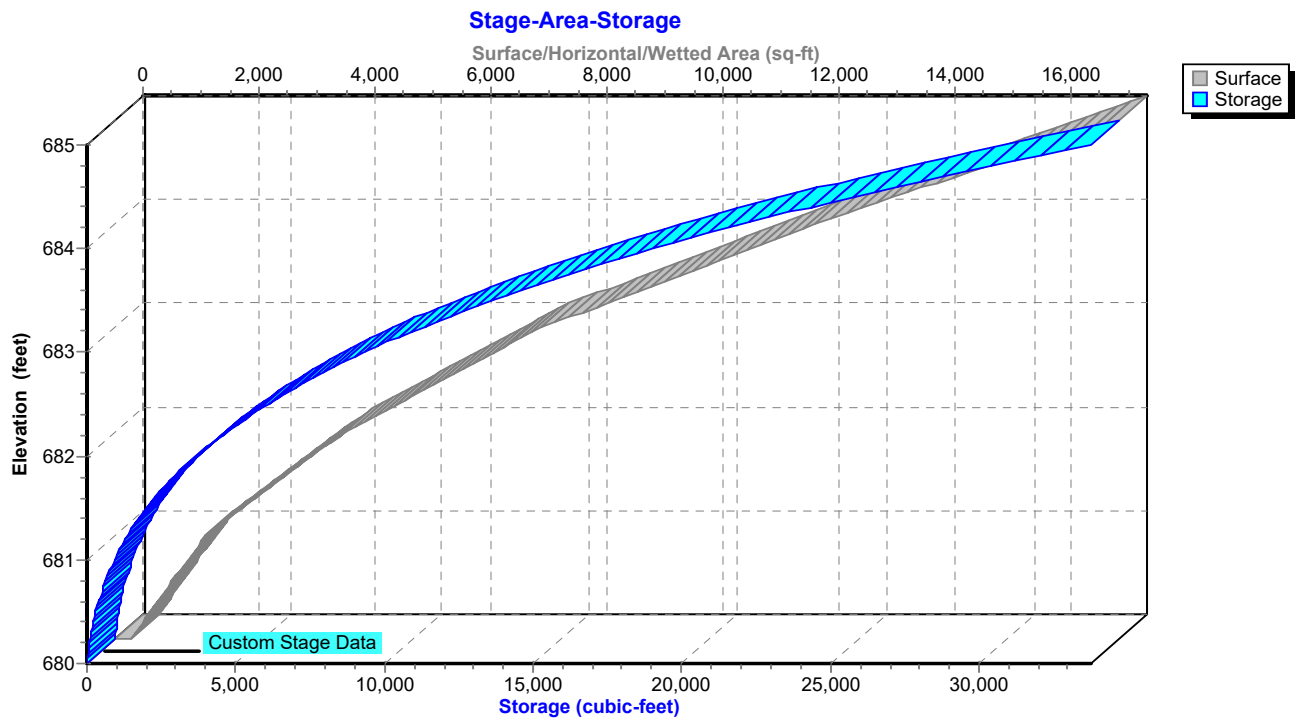
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Pond CD4E: Cross Drain 4E



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Summary for Pond POND1P: PROP POND

Inflow Area = 1,772,021 sf, 9.83% Impervious, Inflow Depth = 4.55" for 50-yr event
 Inflow = 94.09 cfs @ 12.52 hrs, Volume= 671,269 cf
 Outflow = 45.92 cfs @ 13.15 hrs, Volume= 671,262 cf, Atten= 51%, Lag= 38.1 min
 Primary = 45.92 cfs @ 13.15 hrs, Volume= 671,262 cf
 Routed to Reach OF4P : Primary Stream for Outfalls

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
 Peak Elev= 681.53' @ 13.16 hrs Surf.Area= 88,715 sf Storage= 234,094 cf

Plug-Flow detention time= 106.2 min calculated for 671,262 cf (100% of inflow)
 Center-of-Mass det. time= 106.2 min (932.4 - 826.3)

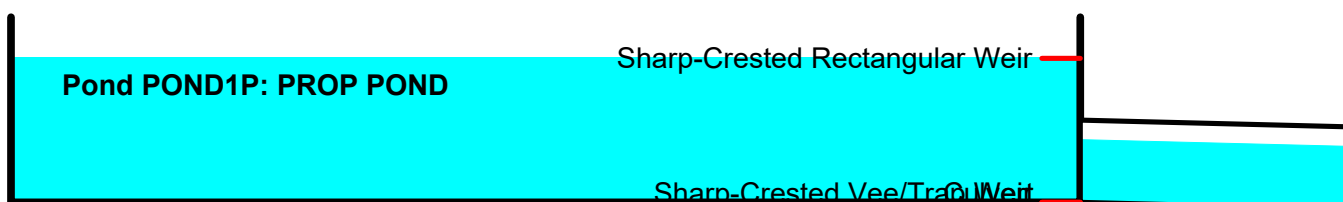
Volume	Invert	Avail.Storage	Storage Description
#1	676.25'	386,863 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
676.25	505	0	0
676.50	14,826	1,916	1,916
677.00	24,194	9,755	11,671
678.00	31,409	27,802	39,473
679.00	39,965	35,687	75,160
680.00	56,082	48,024	123,183
681.00	77,468	66,775	189,958
682.00	98,642	88,055	278,013
683.00	119,057	108,850	386,863

Device	Routing	Invert	Outlet Devices
#1	Primary	676.25'	36.0" Round Culvert L= 50.0' Ke= 0.600 Inlet / Outlet Invert= 676.25' / 676.00' S= 0.0050 '/' Cc= 0.900 n= 0.011, Flow Area= 7.07 sf
#2	Device 1	676.25'	20.0 deg x 0.4' long Sharp-Crested Vee/Trap Weir Cv= 2.69 (C= 3.36)
#3	Device 1	681.50'	16.0' long Sharp-Crested Rectangular Weir 2 End Contraction(s)

Primary OutFlow Max=45.91 cfs @ 13.15 hrs HW=681.53' TW=677.96' (Dynamic Tailwater)

1=Culvert (Passes 45.91 cfs of 60.28 cfs potential flow)
 2=Sharp-Crested Vee/Trap Weir (Weir Controls 45.62 cfs @ 6.49 fps)
 3=Sharp-Crested Rectangular Weir (Weir Controls 0.29 cfs @ 0.58 fps)



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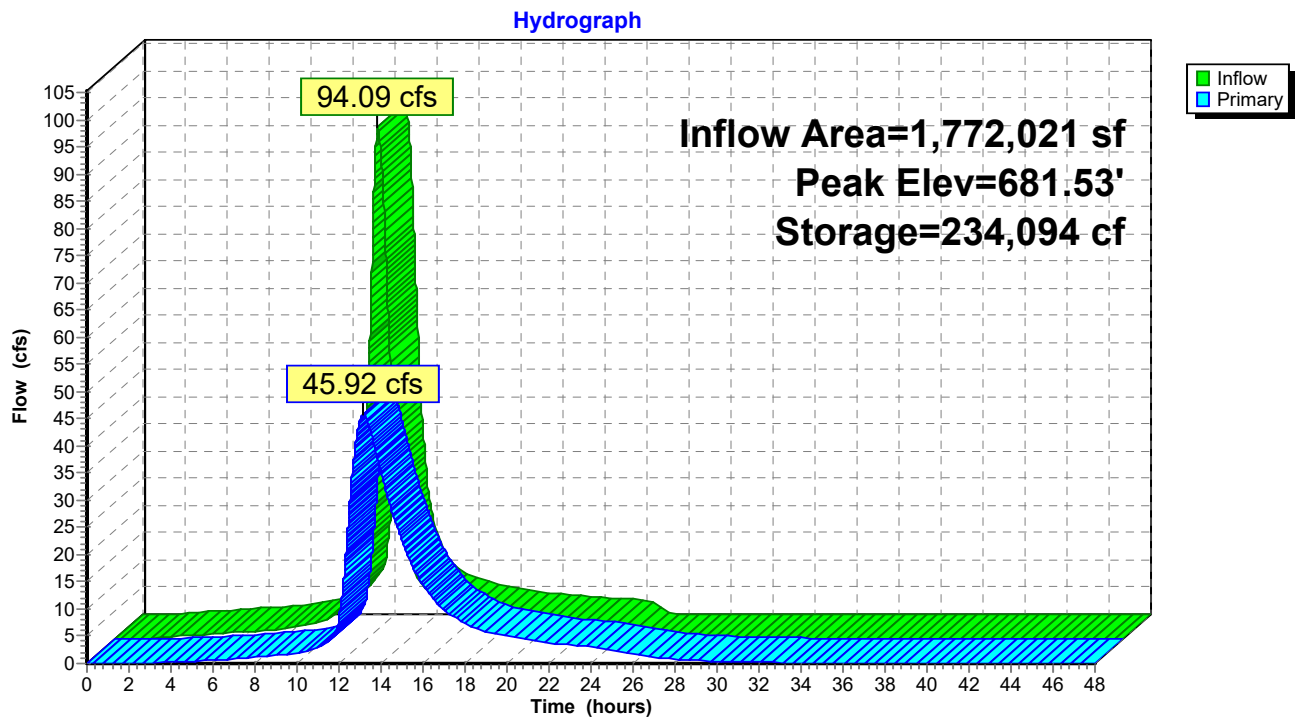
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Mt Pleasant 24-hr S1 50-yr Rainfall=7.08"

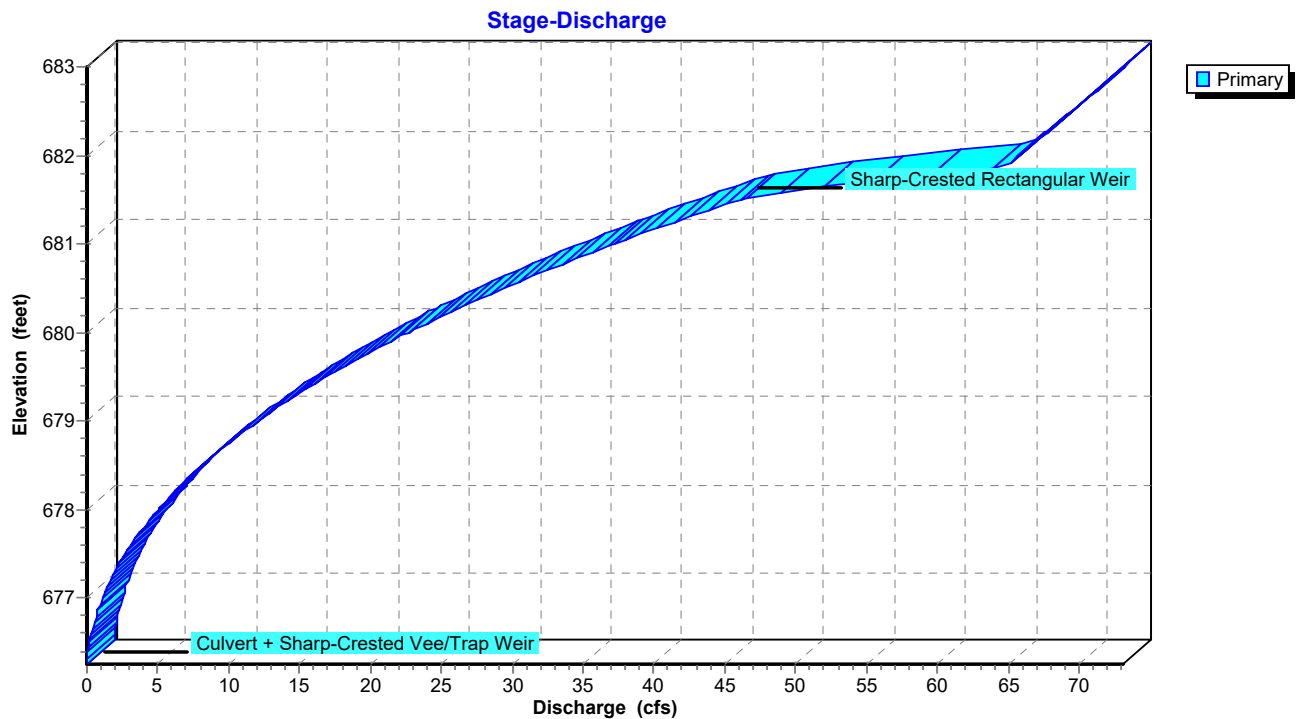
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Pond POND1P: PROP POND



Pond POND1P: PROP POND



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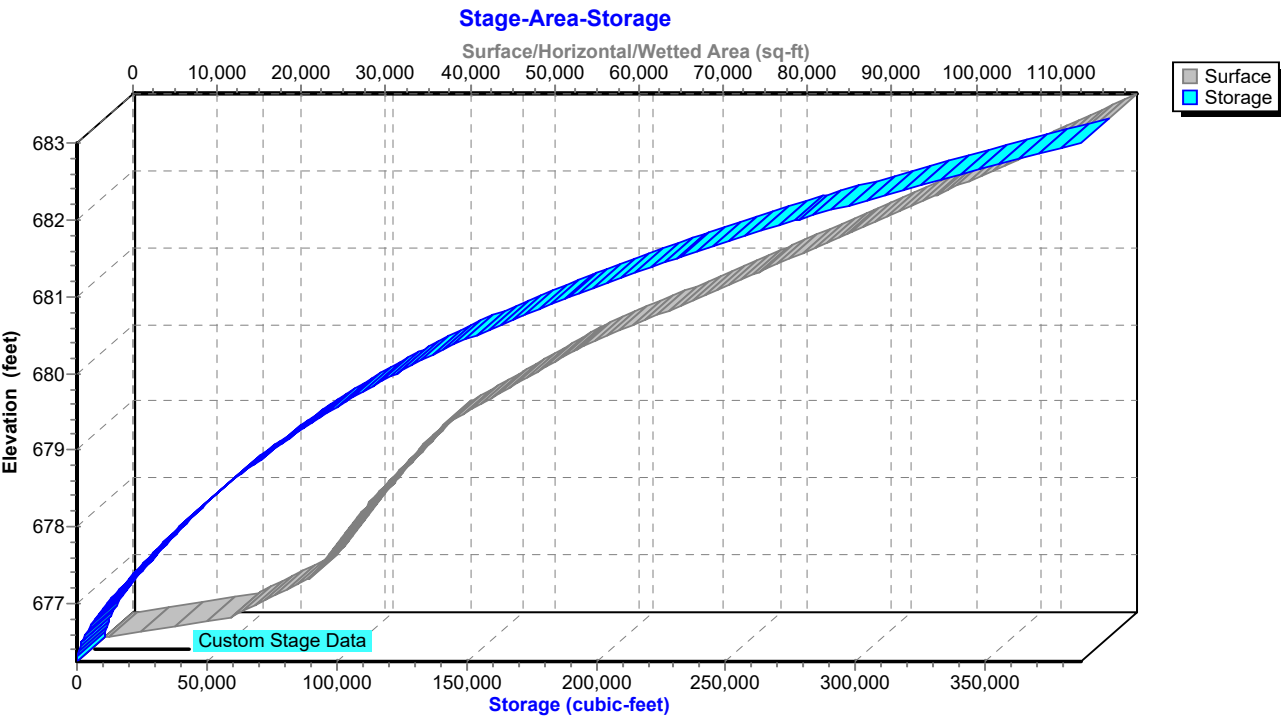
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Mt Pleasant 24-hr S1 50-yr Rainfall=7.08"

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Pond POND1P: PROP POND



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Time span=0.00-48.00 hrs, dt=0.01 hrs, 4801 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

Subcatchment DA 1: BASIN 1 PRE Runoff Area=143.000 ac 1.75% Impervious Runoff Depth=4.89"
 Flow Length=5,750' Tc=143.0 min CN=75 Runoff=198.72 cfs 2,537,591 cf

Subcatchment DA 2: BASIN 2 PRE Runoff Area=34.900 ac 0.00% Impervious Runoff Depth=3.43"
 Flow Length=2,150' Slope=0.0150 '/' Tc=62.3 min CN=62 Runoff=58.90 cfs 433,944 cf

Subcatchment DA 3: BASIN 3 PRE Runoff Area=9.380 ac 0.00% Impervious Runoff Depth=4.66"
 Flow Length=838' Slope=0.0200 '/' Tc=25.9 min CN=73 Runoff=33.23 cfs 158,657 cf

Subcatchment DA 4: BASIN 4 PRE Runoff Area=41.500 ac 0.00% Impervious Runoff Depth=4.32"
 Flow Length=2,468' Tc=68.1 min CN=70 Runoff=84.83 cfs 650,568 cf

Subcatchment DA1P: BASIN 1 PROPOSED Runoff Area=143.000 ac 1.75% Impervious Runoff Depth=4.89"
 Flow Length=5,750' Tc=143.0 min CN=75 Runoff=198.72 cfs 2,537,591 cf

Subcatchment DA2P: BASIN 2 PROPOSED Runoff Area=34.900 ac 0.00% Impervious Runoff Depth=3.43"
 Flow Length=2,150' Slope=0.0150 '/' Tc=62.3 min CN=62 Runoff=58.90 cfs 433,944 cf

Subcatchment DA3P: BASIN 3 PRE Runoff Area=4.760 ac 0.00% Impervious Runoff Depth=5.35"
 Tc=5.0 min CN=79 Runoff=34.23 cfs 92,439 cf

Subcatchment DA4A: BASIN 4A PROPOSED Runoff Area=5.530 ac 0.00% Impervious Runoff Depth=4.09"
 Flow Length=945' Tc=40.9 min CN=68 Runoff=13.98 cfs 82,160 cf

Subcatchment DA4B: BASIN 4B Runoff Area=12.330 ac 24.33% Impervious Runoff Depth=7.35"
 Flow Length=996' Tc=33.8 min CN=96 Runoff=55.64 cfs 329,027 cf

Subcatchment DA4C: BASIN 4C PROPOSED Runoff Area=0.680 ac 0.00% Impervious Runoff Depth=7.35"
 Tc=5.0 min CN=96 Runoff=6.07 cfs 18,146 cf

Subcatchment DA4D: BASIN 4D PROPOSED Runoff Area=1.230 ac 0.00% Impervious Runoff Depth=7.35"
 Tc=5.0 min CN=96 Runoff=10.99 cfs 32,823 cf

Subcatchment DA4E1: BASIN 4E1 Runoff Area=7.260 ac 13.77% Impervious Runoff Depth=3.65"
 Flow Length=640' Tc=31.5 min CN=64 Runoff=18.33 cfs 96,090 cf

Subcatchment DA4E2: BASIN 4E2 Runoff Area=19.180 ac 0.00% Impervious Runoff Depth=4.21"
 Flow Length=1,313' Tc=46.8 min CN=69 Runoff=46.83 cfs 292,804 cf

Reach D4C: Ditch 4C Avg. Flow Depth=0.72' Max Vel=2.70 fps Inflow=6.07 cfs 18,146 cf
 n=0.033 L=313.0' S=0.0104 '/' Capacity=27.19 cfs Outflow=5.77 cfs 18,146 cf

Reach D4D: Ditch 4D Avg. Flow Depth=0.89' Max Vel=3.61 fps Inflow=10.99 cfs 32,823 cf
 n=0.033 L=337.0' S=0.0148 '/' Capacity=32.50 cfs Outflow=10.60 cfs 32,823 cf

Reach D4E1: Ditch 4E1 Avg. Flow Depth=1.08' Max Vel=2.01 fps Inflow=18.33 cfs 96,090 cf
 n=0.033 L=1,788.0' S=0.0031 '/' Capacity=197.27 cfs Outflow=15.73 cfs 96,090 cf

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Reach OF4: Primary Stream for Avg. Flow Depth=3.36' Max Vel=4.98 fps Inflow=274.93 cfs 3,780,759 cf
 n=0.035 L=1,000.0' S=0.0050 '/' Capacity=640.46 cfs Outflow=274.79 cfs 3,780,759 cf

Reach OF4P: Primary Stream for Avg. Flow Depth=3.34' Max Vel=4.96 fps Inflow=270.89 cfs 3,915,011 cf
 n=0.035 L=1,000.0' S=0.0050 '/' Capacity=640.46 cfs Outflow=270.52 cfs 3,915,010 cf

Pond CD2: Cross Drain Peak Elev=684.90' Inflow=58.90 cfs 433,944 cf
 36.0" Round Culvert n=0.011 L=50.0' S=0.0050 '/' Outflow=58.90 cfs 433,944 cf

Pond CD4C: Cross Drain 4C Peak Elev=684.97' Inflow=5.77 cfs 18,146 cf
 18.0" Round Culvert n=0.011 L=60.0' S=0.0792 '/' Outflow=5.77 cfs 18,146 cf

Pond CD4DCE: Cross Drain 4DCE Peak Elev=682.73' Inflow=59.73 cfs 439,858 cf
 48.0" Round Culvert n=0.011 L=360.0' S=0.0052 '/' Outflow=59.73 cfs 439,858 cf

Pond CD4E: Cross Drain 4E Peak Elev=683.65' Storage=15,164 cf Inflow=62.56 cfs 388,894 cf
 48.0" Round Culvert n=0.011 L=200.0' S=0.0052 '/' Outflow=58.22 cfs 388,890 cf

Pond POND1P: PROP POND Peak Elev=681.84' Storage=262,115 cf Inflow=108.15 cfs 768,885 cf
 Outflow=61.01 cfs 768,878 cf

Total Runoff Area = 19,935,234 sf Runoff Volume = 7,695,782 cf Average Runoff Depth = 4.63"
98.03% Pervious = 19,543,194 sf 1.97% Impervious = 392,040 sf

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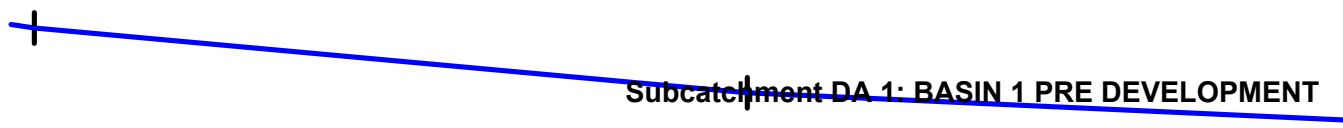
Summary for Subcatchment DA 1: BASIN 1 PRE DEVELOPMENT

Runoff = 198.72 cfs @ 13.82 hrs, Volume= 2,537,591 cf, Depth= 4.89"
Routed to Reach OF4 : Primary Stream for Outfalls

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Mt Pleasant 24-hr S1 100-yr Rainfall=7.83"

Area (ac)	CN	Description
69.500	74	>75% Grass cover, Good, HSG C
71.000	76	Woods/grass comb., Fair, HSG C
2.500	98	Paved parking, HSG C
143.000	75	Weighted Average
140.500		98.25% Pervious Area
2.500		1.75% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
35.4	100	0.0200	0.05		Sheet Flow, Woods: Dense underbrush n= 0.800 P2= 3.57"
92.8	3,050	0.0120	0.55		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
14.8	2,600	0.0060	2.93	11.71	Channel Flow, Area= 4.0 sf Perim= 6.0' r= 0.67' n= 0.030
143.0	5,750	Total			



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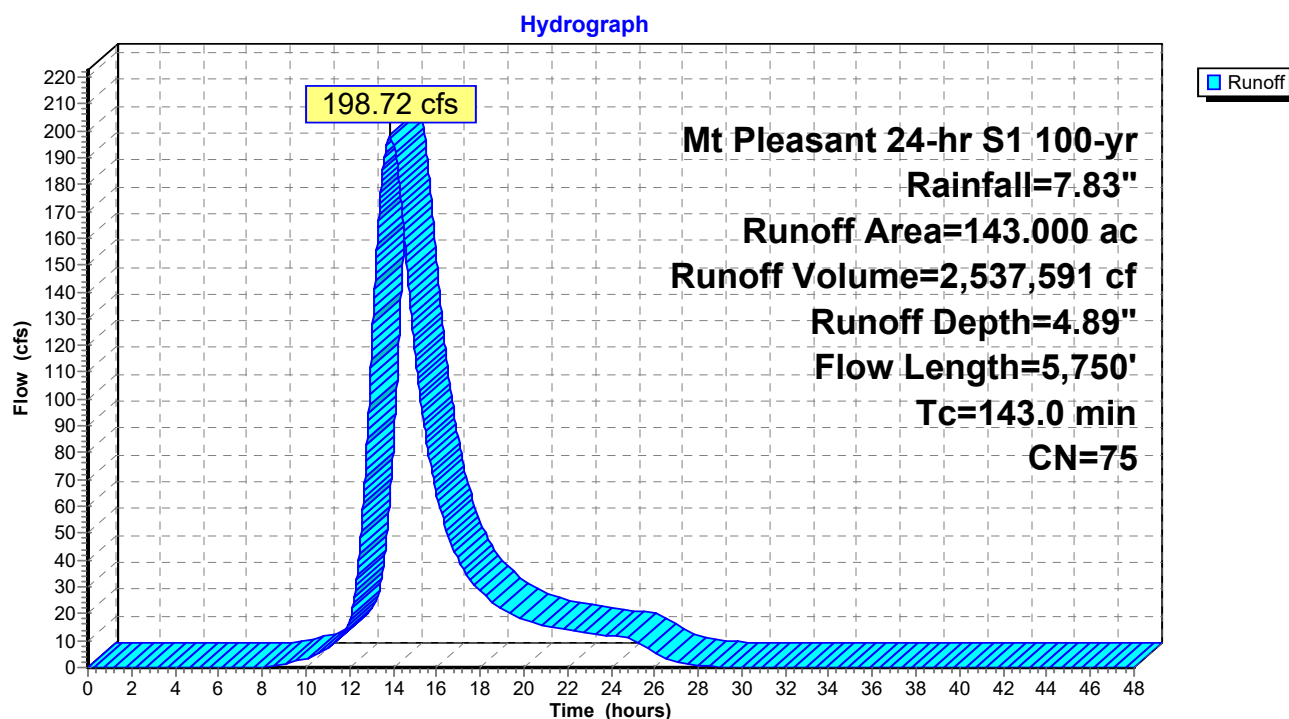
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Subcatchment DA 1: BASIN 1 PRE DEVELOPMENT



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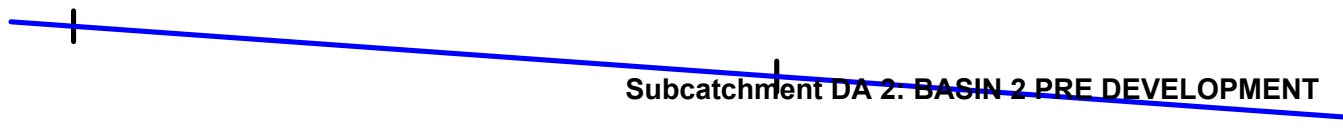
Summary for Subcatchment DA 2: BASIN 2 PRE DEVELOPMENT

Runoff = 58.90 cfs @ 12.88 hrs, Volume= 433,944 cf, Depth= 3.43"
Routed to Reach OF4 : Primary Stream for Outfalls

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Mt Pleasant 24-hr S1 100-yr Rainfall=7.83"

Area (ac)	CN	Description
17.450	58	Meadow, non-grazed, HSG B
14.450	60	Woods, Fair, HSG B
3.000	96	Gravel surface, HSG C
34.900	62	Weighted Average
34.900		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.2	100	0.0150	0.11		Sheet Flow, Grass: Dense n= 0.240 P2= 3.57"
21.9	1,125	0.0150	0.86		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
25.2	925	0.0150	0.61		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
62.3	2,150	Total			



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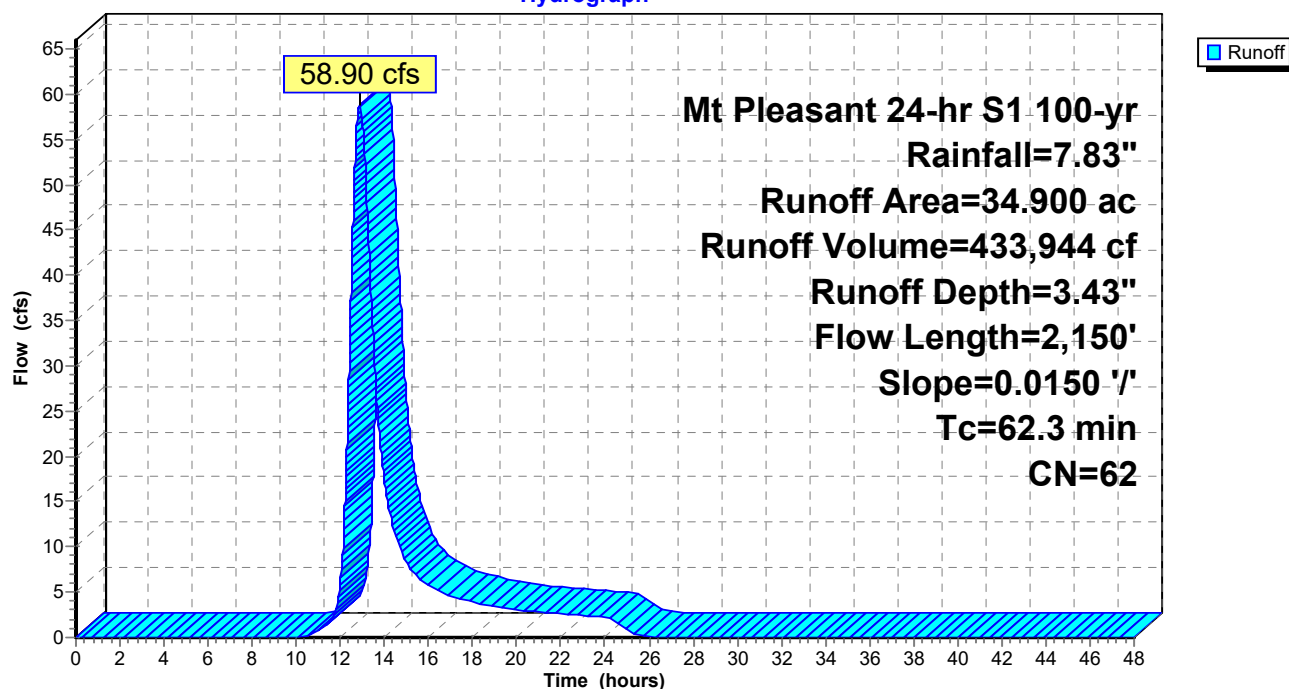
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Subcatchment DA 2: BASIN 2 PRE DEVELOPMENT

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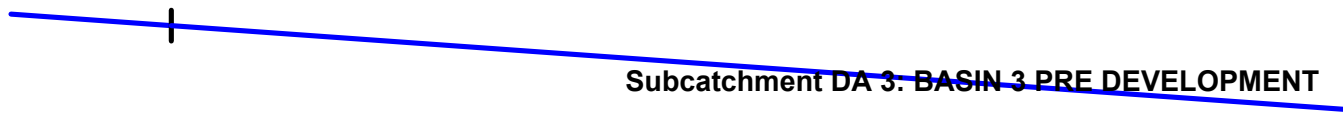
Summary for Subcatchment DA 3: BASIN 3 PRE DEVELOPMENT

Runoff = 33.23 cfs @ 12.32 hrs, Volume= 158,657 cf, Depth= 4.66"
Routed to Reach OF4 : Primary Stream for Outfalls

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Mt Pleasant 24-hr S1 100-yr Rainfall=7.83"

Area (ac)	CN	Description
3.300	78	Meadow, non-grazed, HSG D
3.300	79	Woods, Fair, HSG D
2.250	58	Meadow, non-grazed, HSG B
0.530	60	Woods, Fair, HSG B
9.380	73	Weighted Average
9.380		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.5	100	0.0200	0.12		Sheet Flow, Grass: Dense n= 0.240 P2= 3.57"
12.4	738	0.0200	0.99		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
25.9	838	Total			



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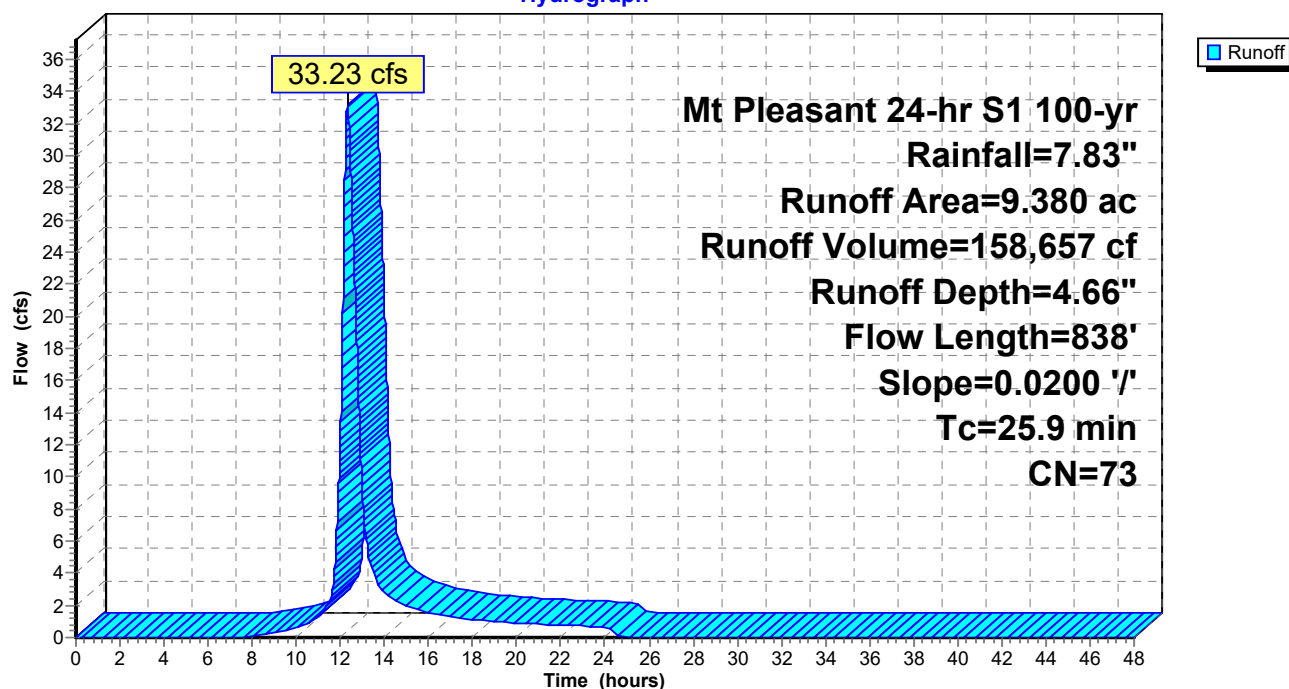
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Subcatchment DA 3: BASIN 3 PRE DEVELOPMENT

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Summary for Subcatchment DA 4: BASIN 4 PRE DEVELOPMENT

Runoff = 84.83 cfs @ 12.94 hrs, Volume= 650,568 cf, Depth= 4.32"
Routed to Reach OF4 : Primary Stream for Outfalls

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Mt Pleasant 24-hr S1 100-yr Rainfall=7.83"

Area (ac)	CN	Description
7.300	78	Meadow, non-grazed, HSG D
1.830	79	Woods, Fair, HSG D
7.640	58	Meadow, non-grazed, HSG B
1.910	60	Woods, Fair, HSG B
4.150	73	Woods, Fair, HSG C
9.960	71	Meadow, non-grazed, HSG C
2.490	73	Woods, Fair, HSG C
4.970	71	Meadow, non-grazed, HSG C
1.250	73	Woods, Fair, HSG C
41.500	70	Weighted Average
41.500		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
24.5	100	0.0500	0.07		Sheet Flow, Woods: Dense underbrush n= 0.800 P2= 3.57"
43.6	2,368	0.0167	0.90		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
68.1	2,468	Total			

Subcatchment DA 4: BASIN 4 PRE DEVELOPMENT

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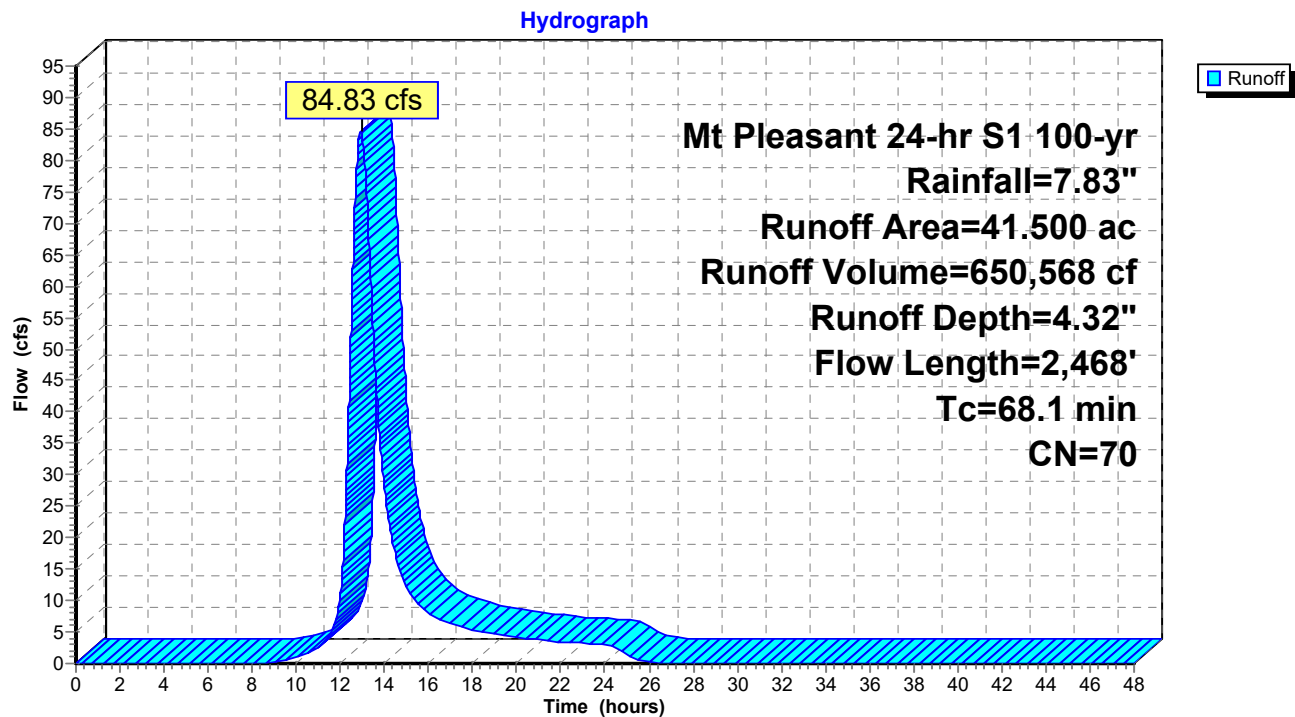
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Subcatchment DA 4: BASIN 4 PRE DEVELOPMENT



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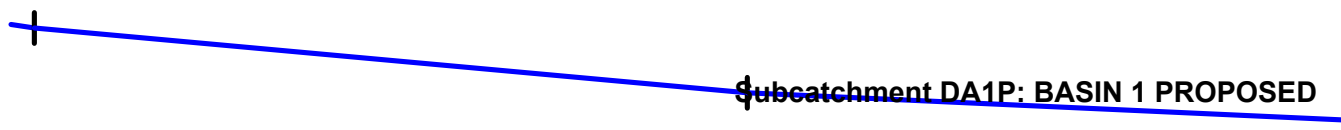
Summary for Subcatchment DA1P: BASIN 1 PROPOSED

Runoff = 198.72 cfs @ 13.82 hrs, Volume= 2,537,591 cf, Depth= 4.89"
 Routed to Reach OF4P : Primary Stream for Outfalls

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
 Mt Pleasant 24-hr S1 100-yr Rainfall=7.83"

Area (ac)	CN	Description
69.500	74	>75% Grass cover, Good, HSG C
71.000	76	Woods/grass comb., Fair, HSG C
2.500	98	Paved parking, HSG C
143.000	75	Weighted Average
140.500		98.25% Pervious Area
2.500		1.75% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
35.4	100	0.0200	0.05		Sheet Flow, Woods: Dense underbrush n= 0.800 P2= 3.57"
92.8	3,050	0.0120	0.55		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
14.8	2,600	0.0060	2.93	11.71	Channel Flow, Area= 4.0 sf Perim= 6.0' r= 0.67' n= 0.030
143.0	5,750	Total			



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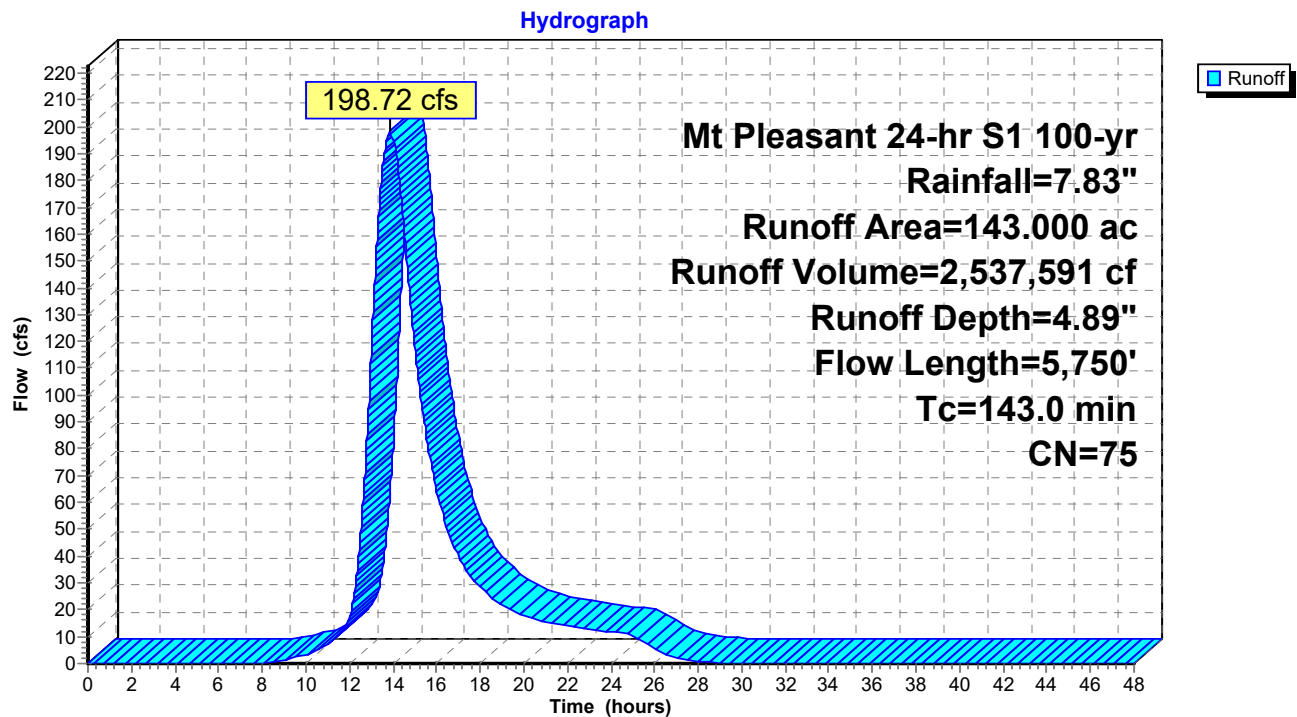
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Subcatchment DA1P: BASIN 1 PROPOSED



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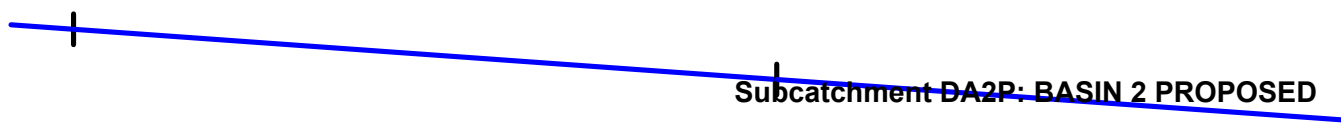
Summary for Subcatchment DA2P: BASIN 2 PROPOSED

Runoff = 58.90 cfs @ 12.88 hrs, Volume= 433,944 cf, Depth= 3.43"
Routed to Pond CD2 : Cross Drain

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Mt Pleasant 24-hr S1 100-yr Rainfall=7.83"

Area (ac)	CN	Description
17.450	58	Meadow, non-grazed, HSG B
14.450	60	Woods, Fair, HSG B
3.000	96	Gravel surface, HSG C
34.900	62	Weighted Average
34.900		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.2	100	0.0150	0.11		Sheet Flow, Grass: Dense n= 0.240 P2= 3.57"
21.9	1,125	0.0150	0.86		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
25.2	925	0.0150	0.61		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
62.3	2,150	Total			



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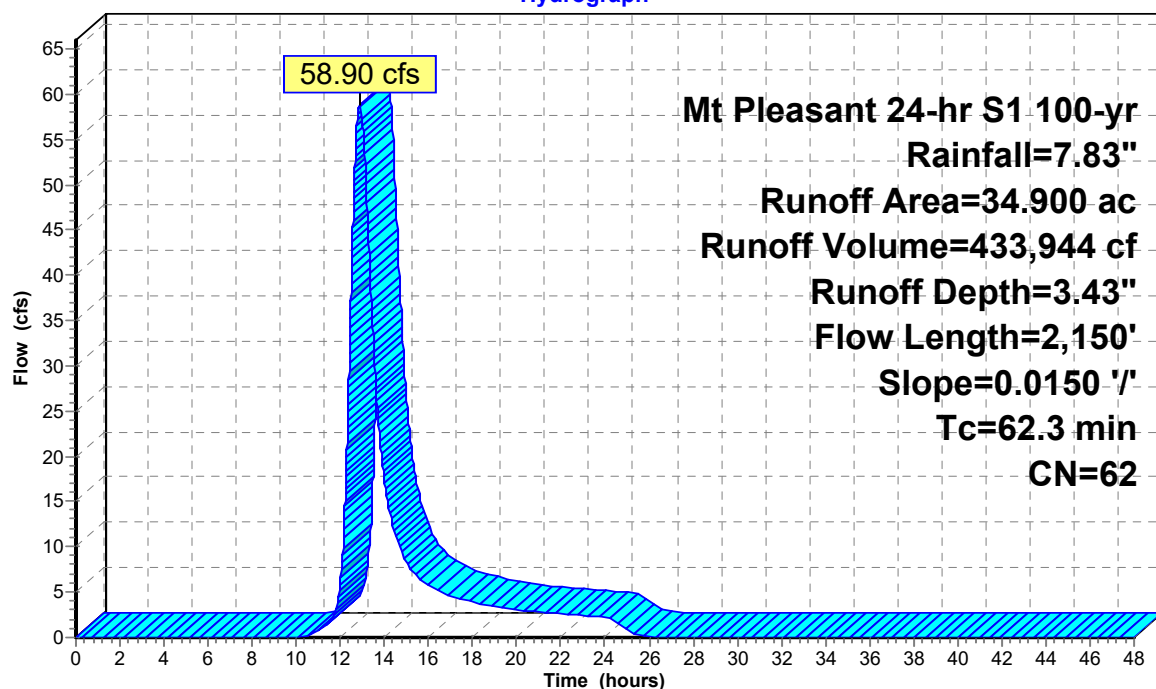
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Subcatchment DA2P: BASIN 2 PROPOSED

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Summary for Subcatchment DA3P: BASIN 3 PRE DEVELOPMENT

Runoff = 34.23 cfs @ 12.03 hrs, Volume= 92,439 cf, Depth= 5.35"
Routed to Reach OF4P : Primary Stream for Outfalls

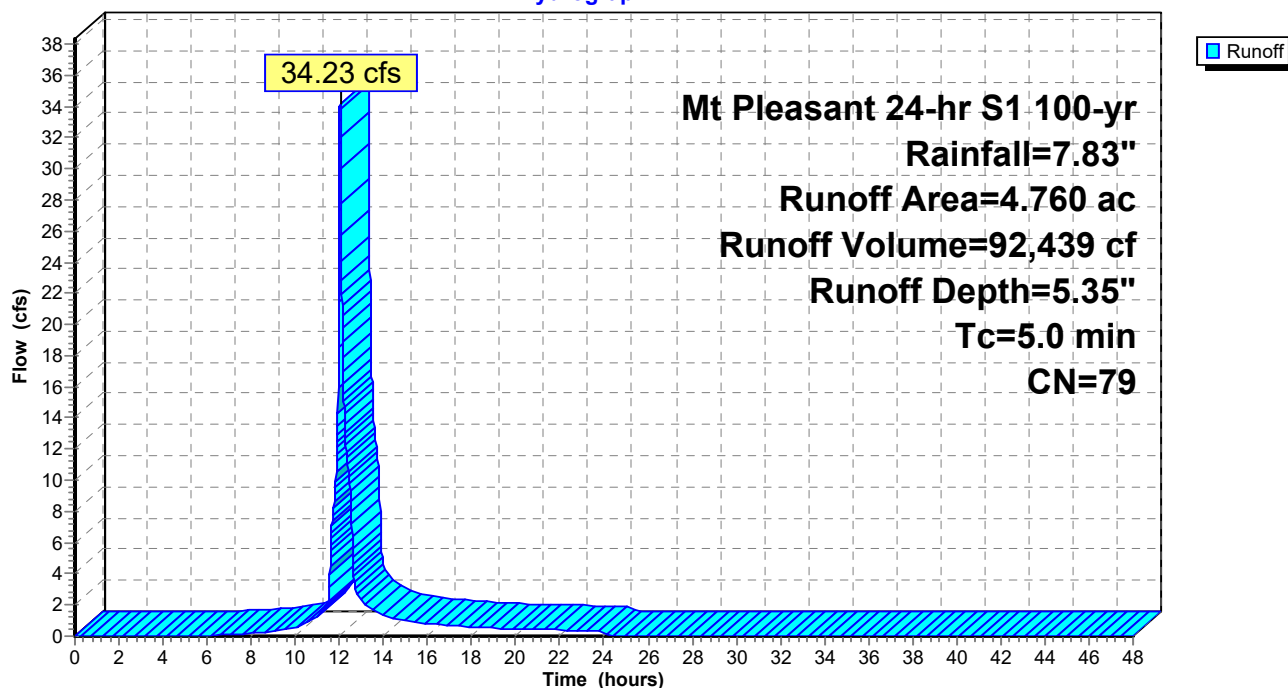
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Mt Pleasant 24-hr S1 100-yr Rainfall=7.83"

Area (ac)	CN	Description
4.760	79	Woods, Fair, HSG D
4.760		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					Direct Entry,

Subcatchment DA3P: BASIN 3 PRE DEVELOPMENT

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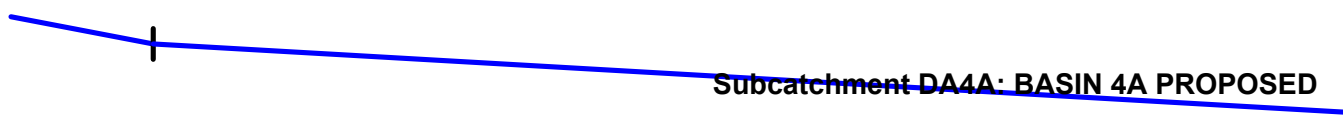
Summary for Subcatchment DA4A: BASIN 4A PROPOSED

Runoff = 13.98 cfs @ 12.55 hrs, Volume= 82,160 cf, Depth= 4.09"
Routed to Reach OF4P : Primary Stream for Outfalls

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Mt Pleasant 24-hr S1 100-yr Rainfall=7.83"

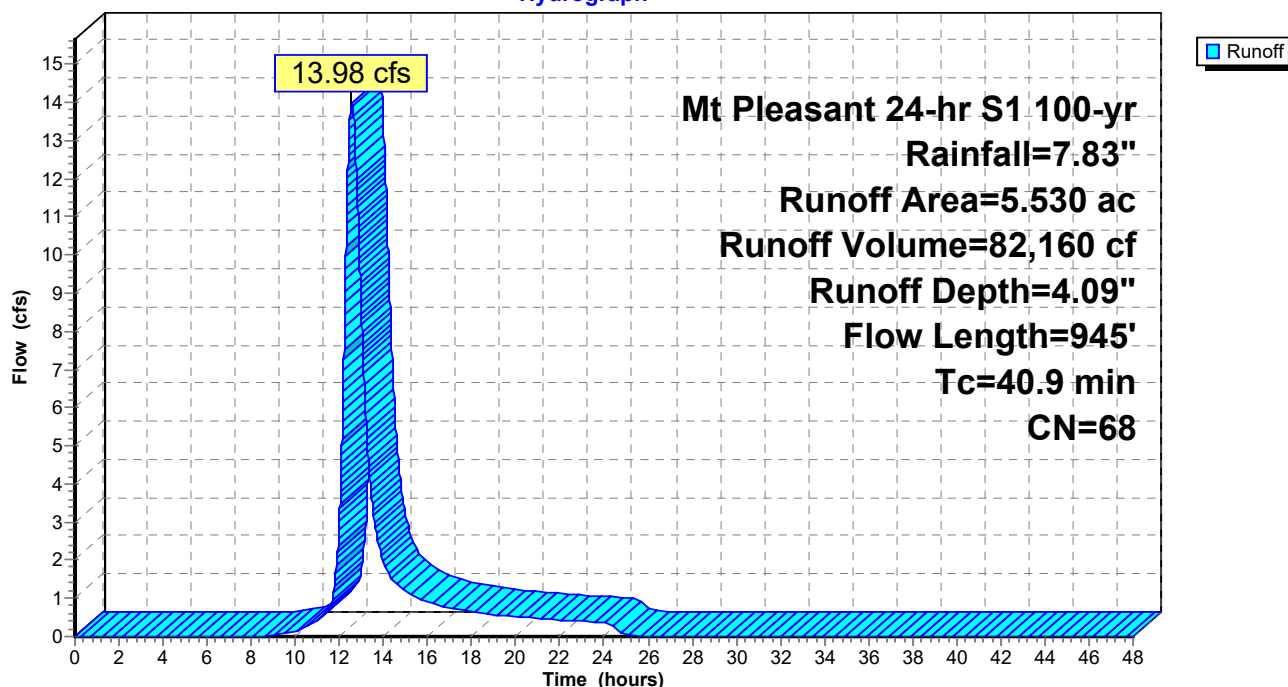
Area (ac)	CN	Description
2.200	60	Woods, Fair, HSG B
3.330	73	Woods, Fair, HSG C
5.530	68	Weighted Average
5.530		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
24.5	100	0.0500	0.07		Sheet Flow, Woods: Dense underbrush n= 0.800 P2= 3.57"
16.4	845	0.0150	0.86		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
40.9	945	Total			



Subcatchment DA4A: BASIN 4A PROPOSED

Hydrograph



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Mt Pleasant 24-hr S1 100-yr Rainfall=7.83"

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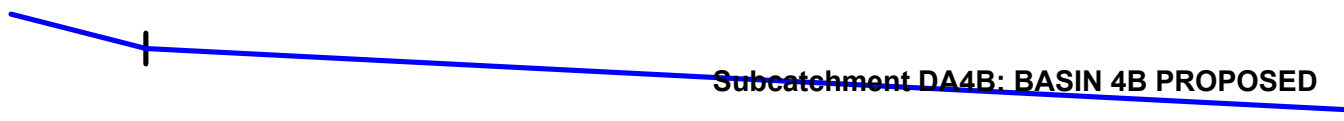
Summary for Subcatchment DA4B: BASIN 4B PROPOSED

Runoff = 55.64 cfs @ 12.42 hrs, Volume= 329,027 cf, Depth= 7.35"
Routed to Pond POND1P : PROP POND

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Mt Pleasant 24-hr S1 100-yr Rainfall=7.83"

Area (ac)	CN	Description
9.330	96	Gravel surface, HSG C
1.000	98	Paved parking, HSG D
2.000	98	Roofs, HSG D
12.330	96	Weighted Average
9.330		75.67% Pervious Area
3.000		24.33% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
24.5	100	0.0500	0.07		Sheet Flow, n= 0.800 P2= 3.57"
9.3	896	0.0100	1.61		Shallow Concentrated Flow, Unpaved Kv= 16.1 fps
33.8	996	Total			



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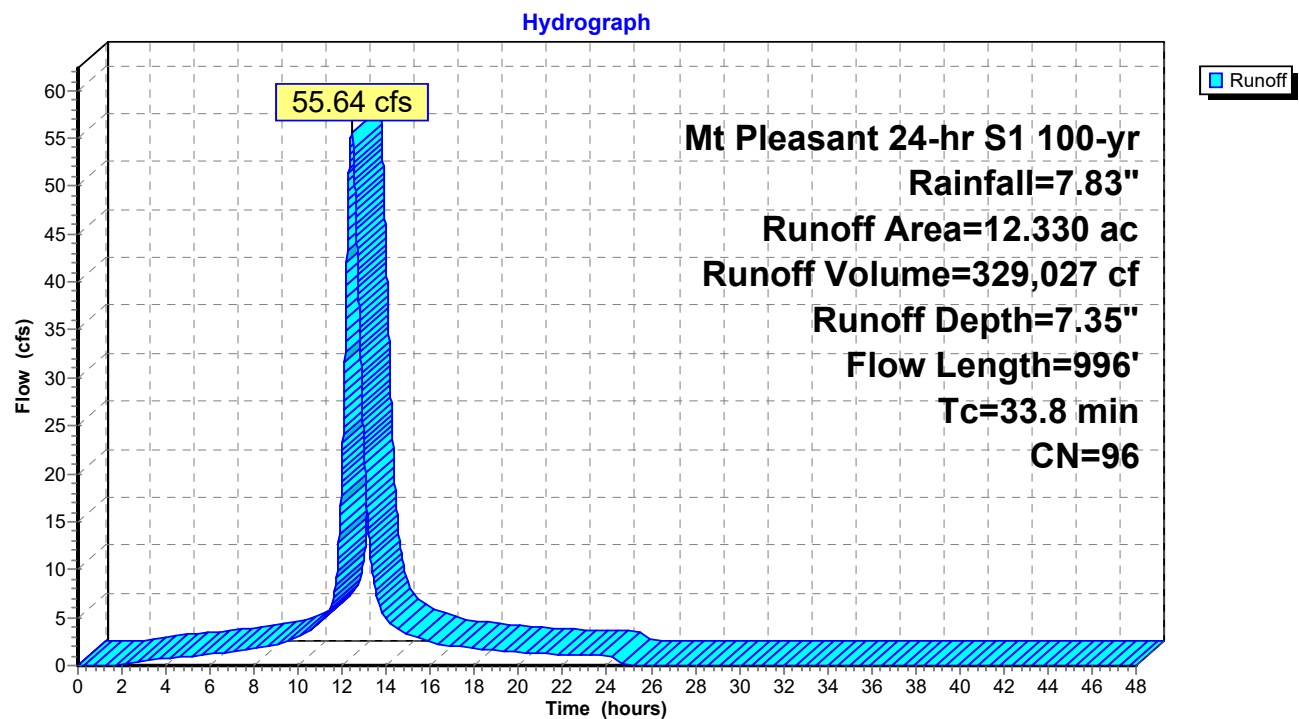
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Mt Pleasant 24-hr S1 100-yr Rainfall=7.83"

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Subcatchment DA4B: BASIN 4B PROPOSED



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Mt Pleasant 24-hr S1 100-yr Rainfall=7.83"

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Summary for Subcatchment DA4C: BASIN 4C PROPOSED

Runoff = 6.07 cfs @ 12.03 hrs, Volume= 18,146 cf, Depth= 7.35"
Routed to Reach D4C : Ditch 4C

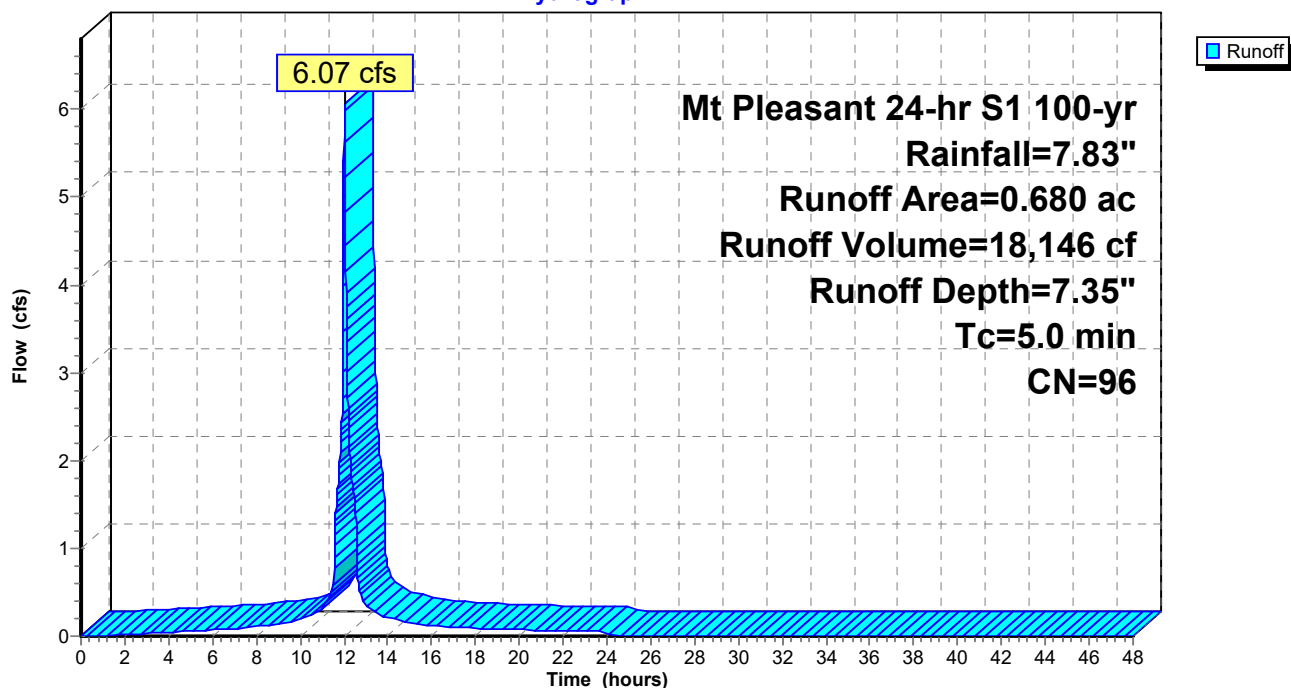
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Mt Pleasant 24-hr S1 100-yr Rainfall=7.83"

Area (ac)	CN	Description
0.680	96	Gravel surface, HSG C
0.680		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					Direct Entry,

Subcatchment DA4C: BASIN 4C PROPOSED

Hydrograph



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Mt Pleasant 24-hr S1 100-yr Rainfall=7.83"

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Summary for Subcatchment DA4D: BASIN 4D PROPOSED

Runoff = 10.99 cfs @ 12.03 hrs, Volume= 32,823 cf, Depth= 7.35"
Routed to Reach D4D : Ditch 4D

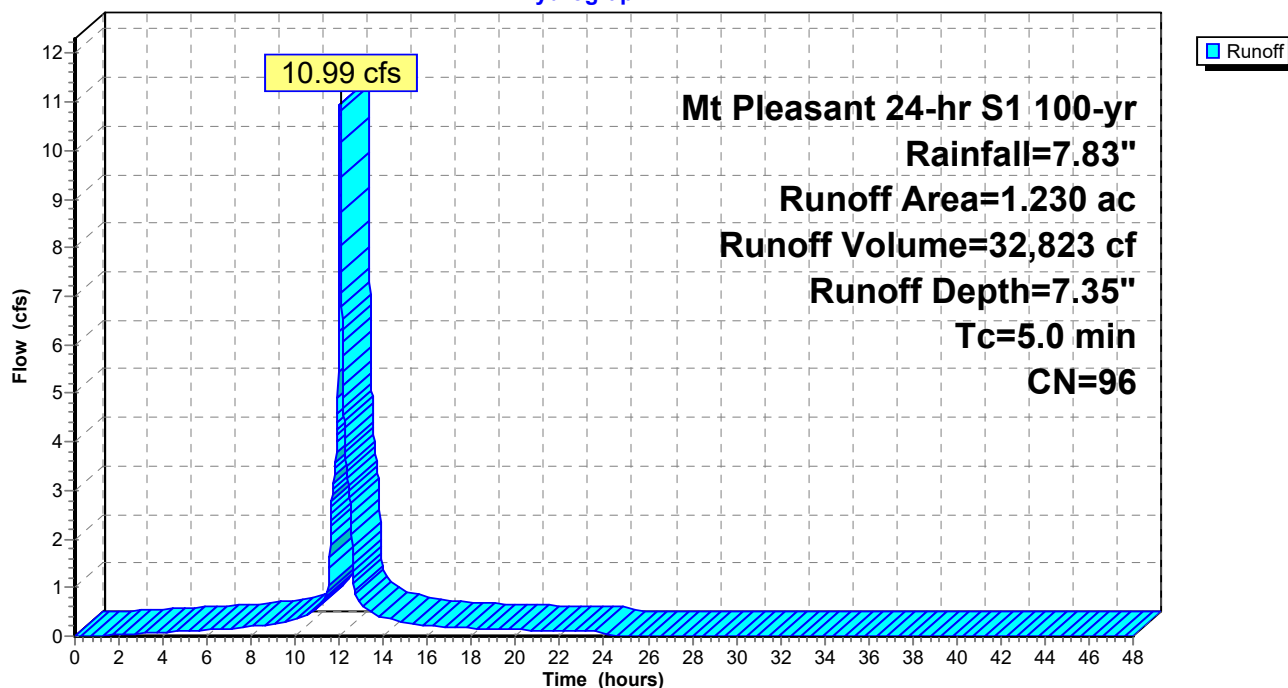
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Mt Pleasant 24-hr S1 100-yr Rainfall=7.83"

Area (ac)	CN	Description
1.230	96	Gravel surface, HSG C
1.230		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					Direct Entry,

Subcatchment DA4D: BASIN 4D PROPOSED

Hydrograph



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Mt Pleasant 24-hr S1 100-yr Rainfall=7.83"

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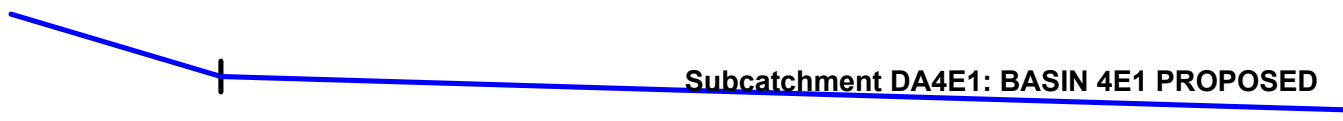
Summary for Subcatchment DA4E1: BASIN 4E1 PROPOSED

Runoff = 18.33 cfs @ 12.43 hrs, Volume= 96,090 cf, Depth= 3.65"
Routed to Reach D4E1 : Ditch 4E1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Mt Pleasant 24-hr S1 100-yr Rainfall=7.83"

Area (ac)	CN	Description
3.130	58	Meadow, non-grazed, HSG B
3.130	60	Woods, Fair, HSG B
1.000	98	Paved roads w/curbs & sewers, HSG B
7.260	64	Weighted Average
6.260		86.23% Pervious Area
1.000		13.77% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
18.6	100	0.1000	0.09		Sheet Flow, Woods: Dense underbrush n= 0.800 P2= 3.57"
12.9	540	0.0100	0.70		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
31.5	640	Total			



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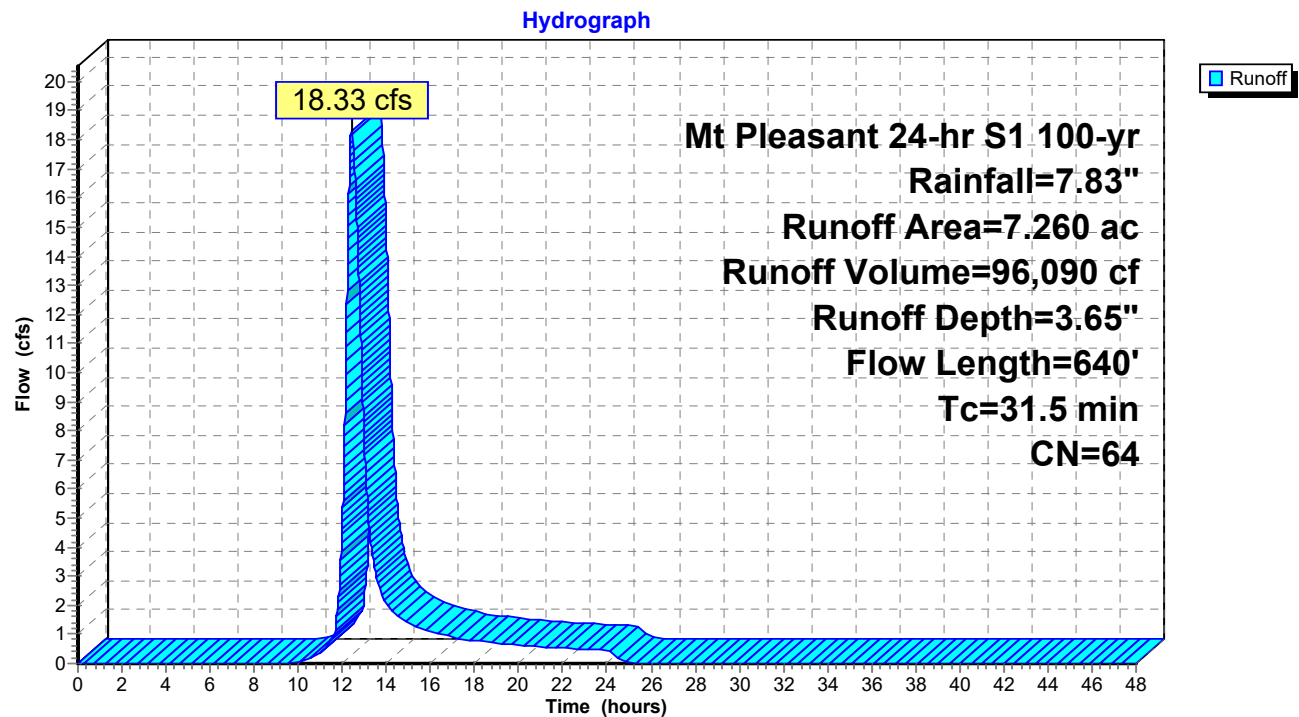
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Subcatchment DA4E1: BASIN 4E1 PROPOSED



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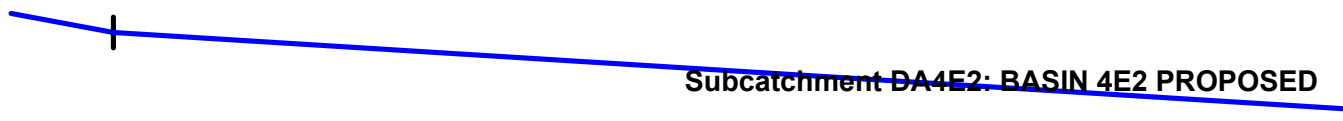
Summary for Subcatchment DA4E2: BASIN 4E2 PROPOSED

Runoff = 46.83 cfs @ 12.64 hrs, Volume= 292,804 cf, Depth= 4.21"
Routed to Pond CD4E : Cross Drain 4E

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Mt Pleasant 24-hr S1 100-yr Rainfall=7.83"

Area (ac)	CN	Description
9.300	79	Woods, Fair, HSG D
4.940	58	Meadow, non-grazed, HSG B
4.940	60	Woods, Fair, HSG B
19.180	69	Weighted Average
19.180		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
24.5	100	0.0500	0.07		Sheet Flow, Woods: Dense underbrush n= 0.800 P2= 3.57"
22.3	1,213	0.0167	0.90		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
46.8	1,313	Total			



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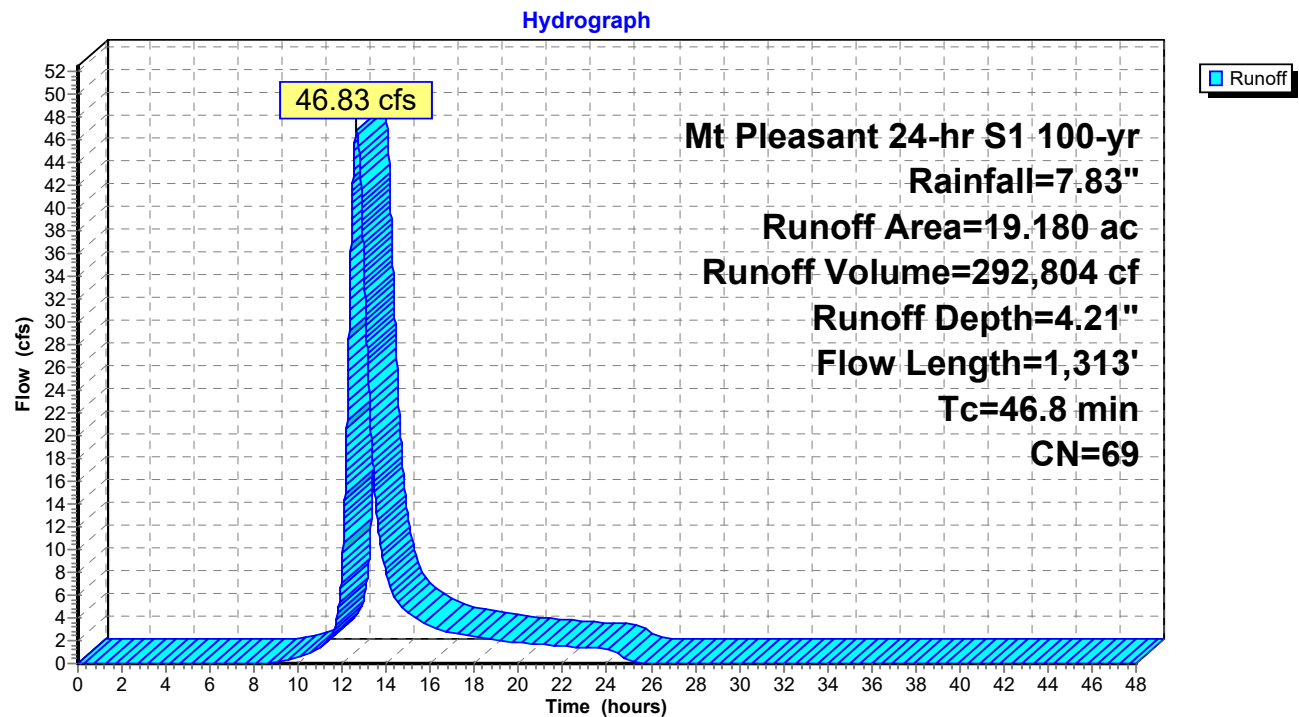
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Subcatchment DA4E2: BASIN 4E2 PROPOSED



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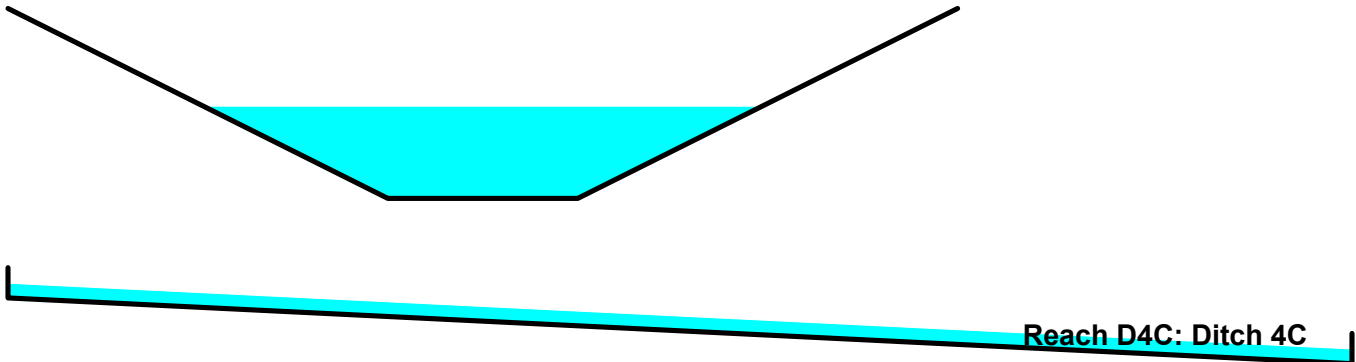
Summary for Reach D4C: Ditch 4C

Inflow Area = 29,621 sf, 0.00% Impervious, Inflow Depth = 7.35" for 100-yr event
 Inflow = 6.07 cfs @ 12.03 hrs, Volume= 18,146 cf
 Outflow = 5.77 cfs @ 12.05 hrs, Volume= 18,146 cf, Atten= 5%, Lag= 1.2 min
 Routed to Pond CD4C : Cross Drain 4C

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
 Max. Velocity= 2.70 fps, Min. Travel Time= 1.9 min
 Avg. Velocity = 0.78 fps, Avg. Travel Time= 6.7 min

Peak Storage= 669 cf @ 12.05 hrs
 Average Depth at Peak Storage= 0.72' , Surface Width= 4.40'
 Bank-Full Depth= 1.50' Flow Area= 6.8 sf, Capacity= 27.19 cfs

1.50' x 1.50' deep channel, n= 0.033 Riprap, 1-inch
 Side Slope Z-value= 2.0 '/' Top Width= 7.50'
 Length= 313.0' Slope= 0.0104 '/'
 Inlet Invert= 687.00', Outlet Invert= 683.75'



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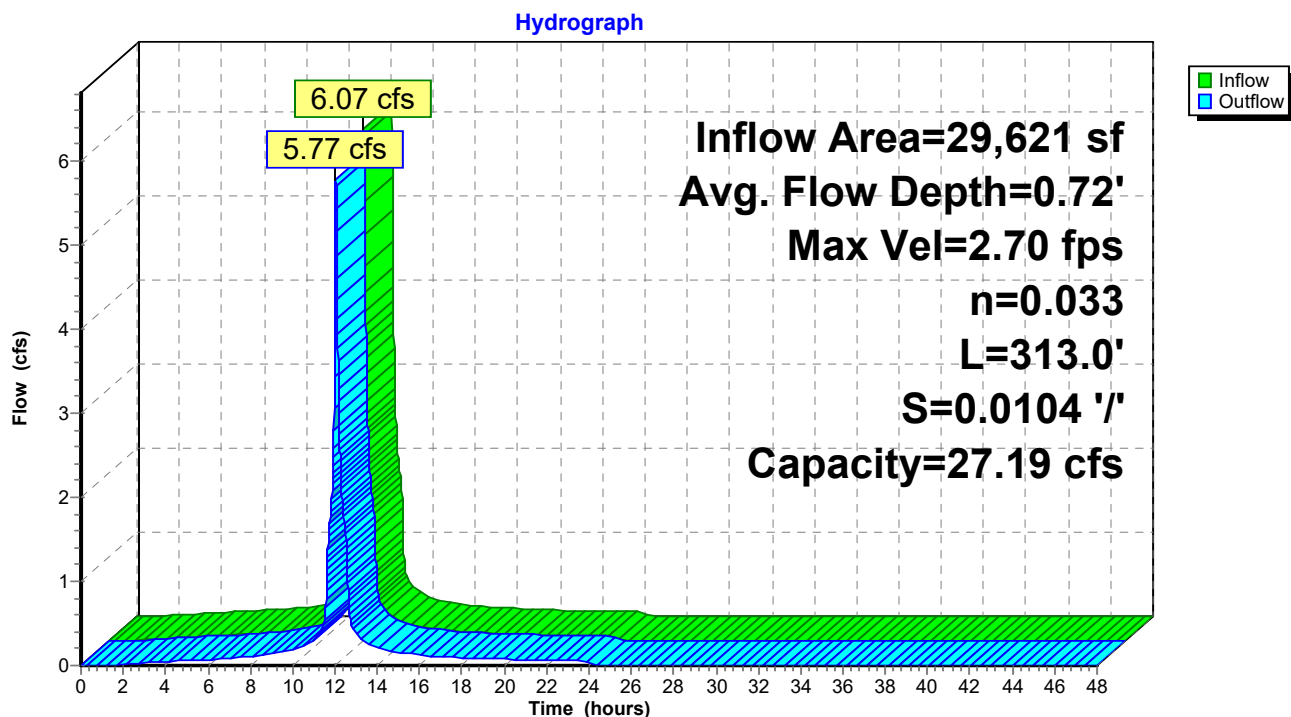
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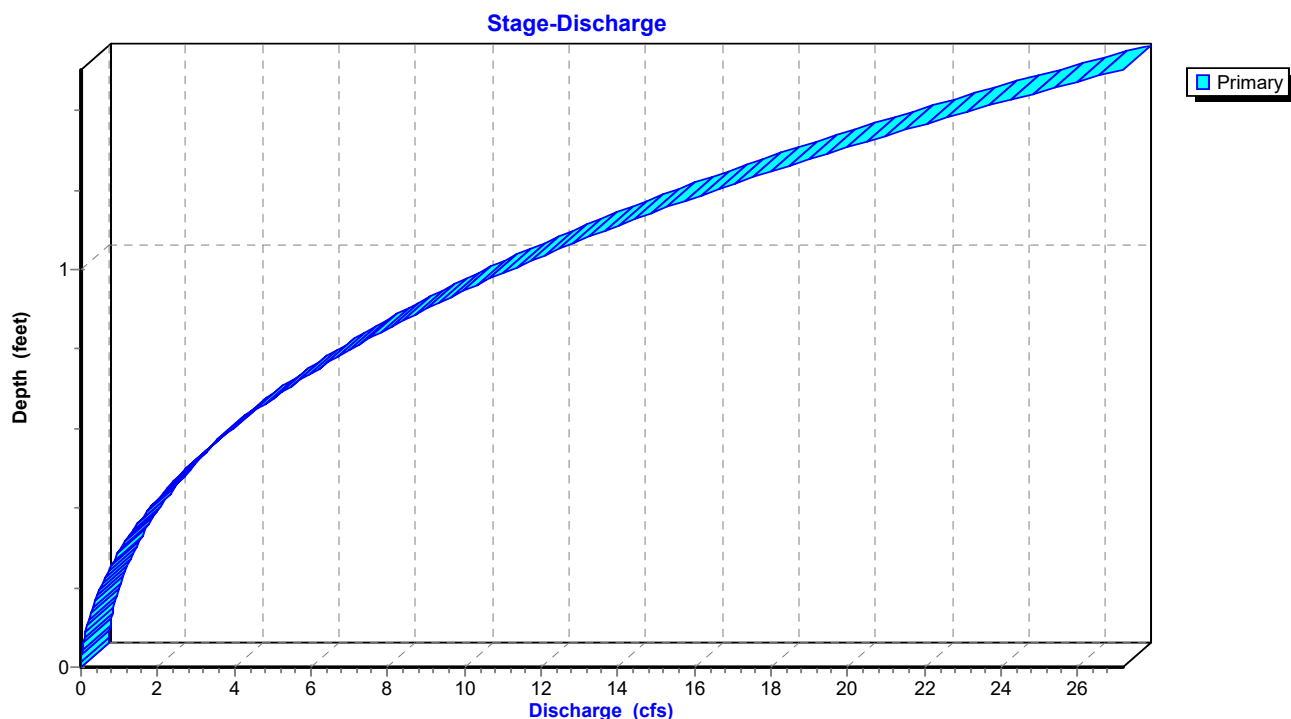
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Reach D4C: Ditch 4C



Reach D4C: Ditch 4C



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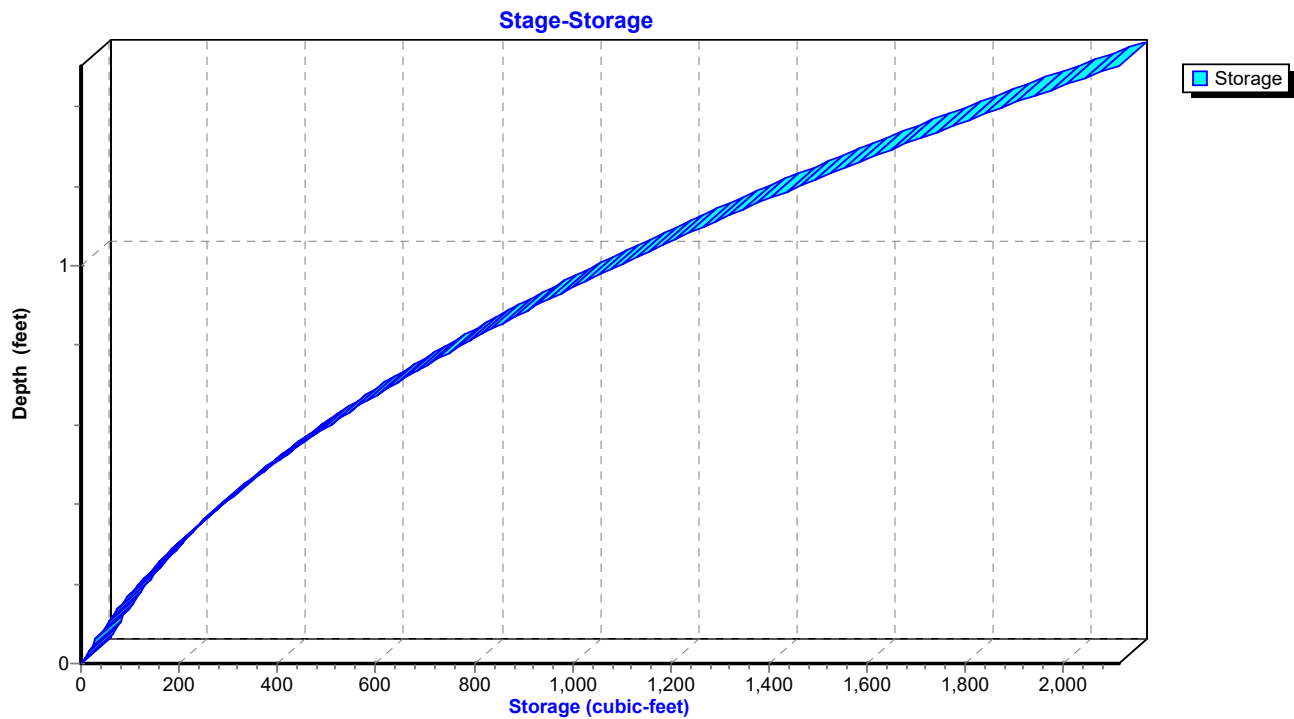
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Reach D4C: Ditch 4C



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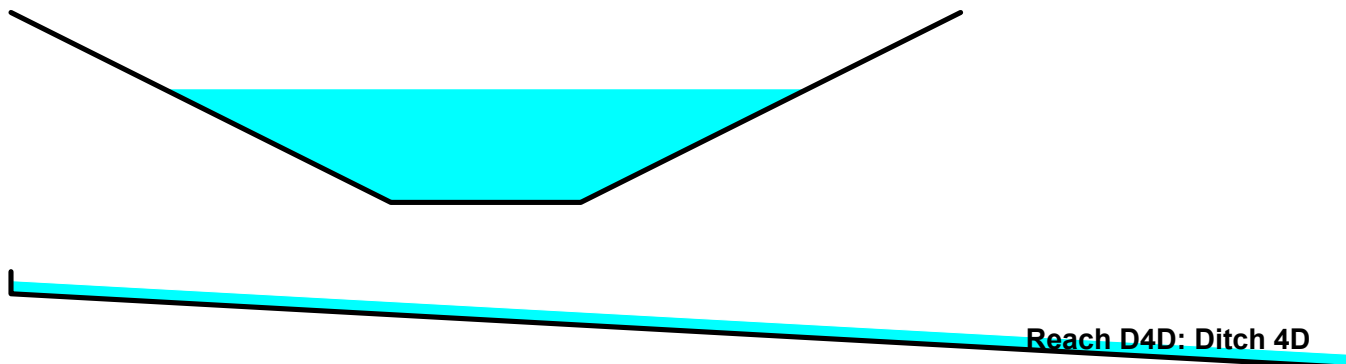
Summary for Reach D4D: Ditch 4D

Inflow Area = 53,579 sf, 0.00% Impervious, Inflow Depth = 7.35" for 100-yr event
 Inflow = 10.99 cfs @ 12.03 hrs, Volume= 32,823 cf
 Outflow = 10.60 cfs @ 12.04 hrs, Volume= 32,823 cf, Atten= 4%, Lag= 1.0 min
 Routed to Pond CD4DCE : Cross Drain 4DCE

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
 Max. Velocity= 3.61 fps, Min. Travel Time= 1.6 min
 Avg. Velocity = 1.07 fps, Avg. Travel Time= 5.2 min

Peak Storage= 989 cf @ 12.04 hrs
 Average Depth at Peak Storage= 0.89' , Surface Width= 5.07'
 Bank-Full Depth= 1.50' Flow Area= 6.8 sf, Capacity= 32.50 cfs

1.50' x 1.50' deep channel, n= 0.033 Riprap, 1-inch
 Side Slope Z-value= 2.0 '/' Top Width= 7.50'
 Length= 337.0' Slope= 0.0148 '/'
 Inlet Invert= 688.00', Outlet Invert= 683.00'



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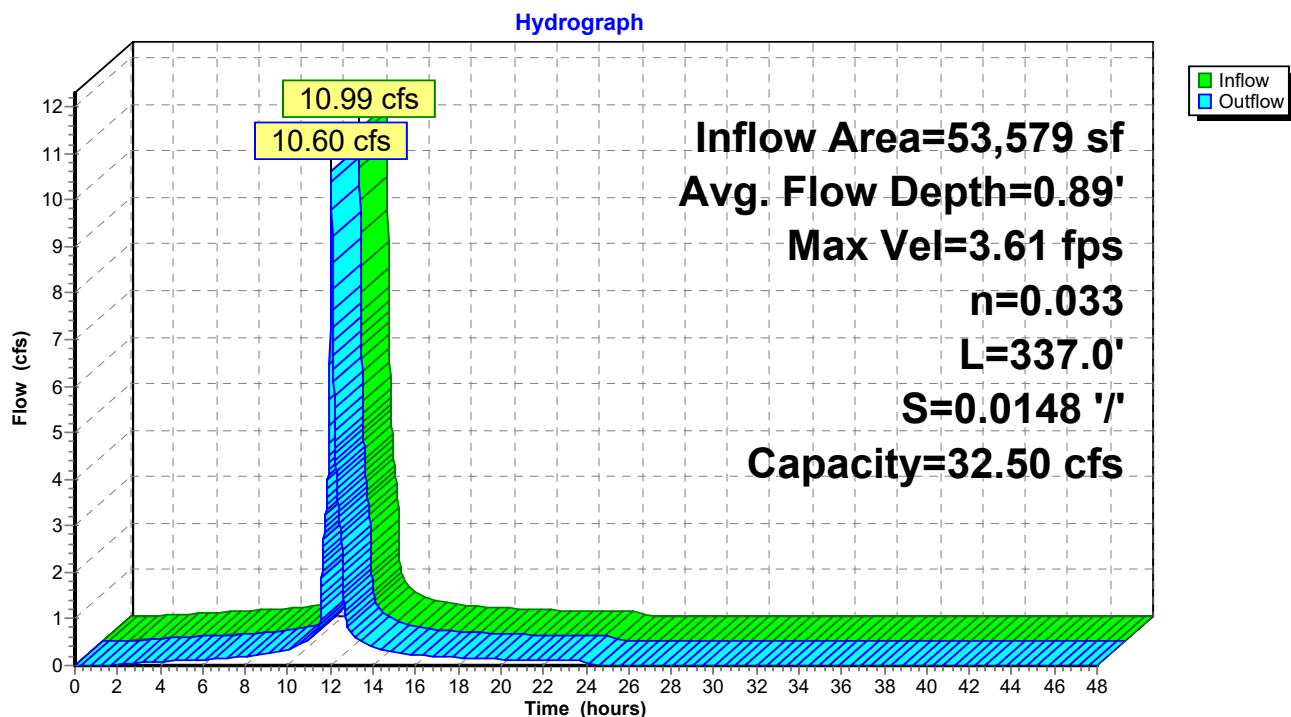
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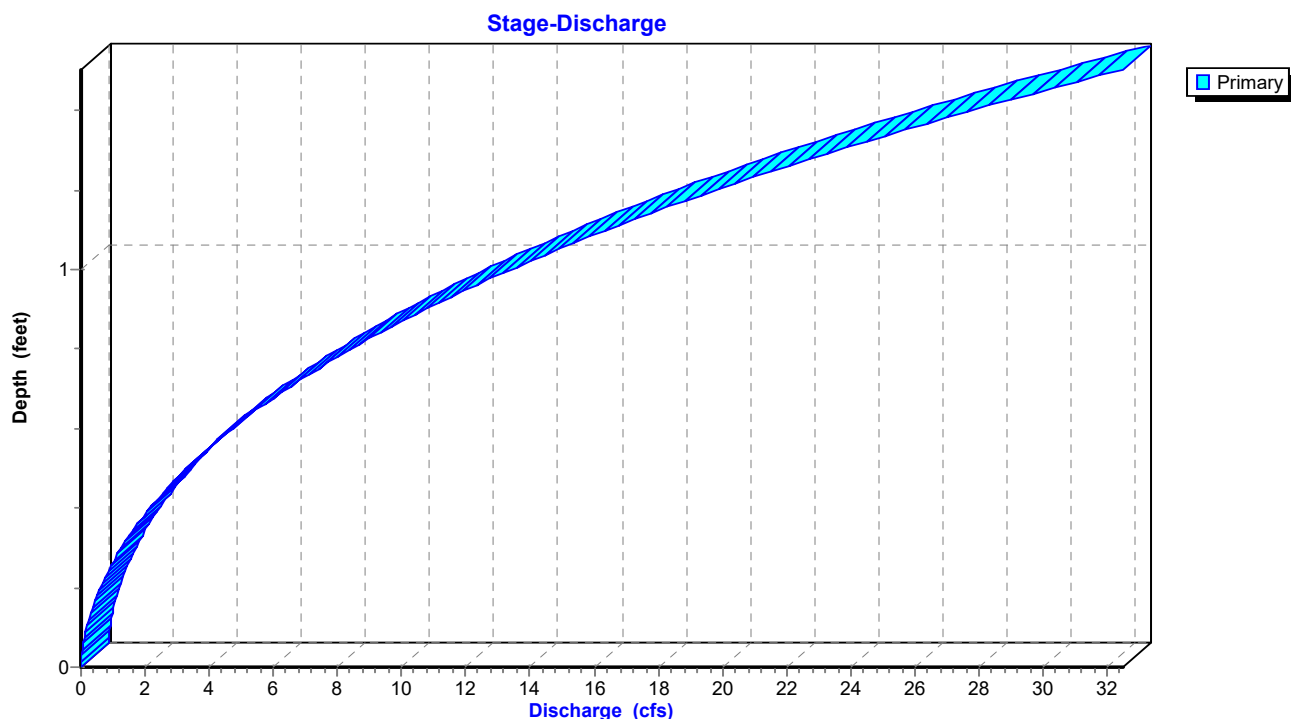
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Reach D4D: Ditch 4D



Reach D4D: Ditch 4D



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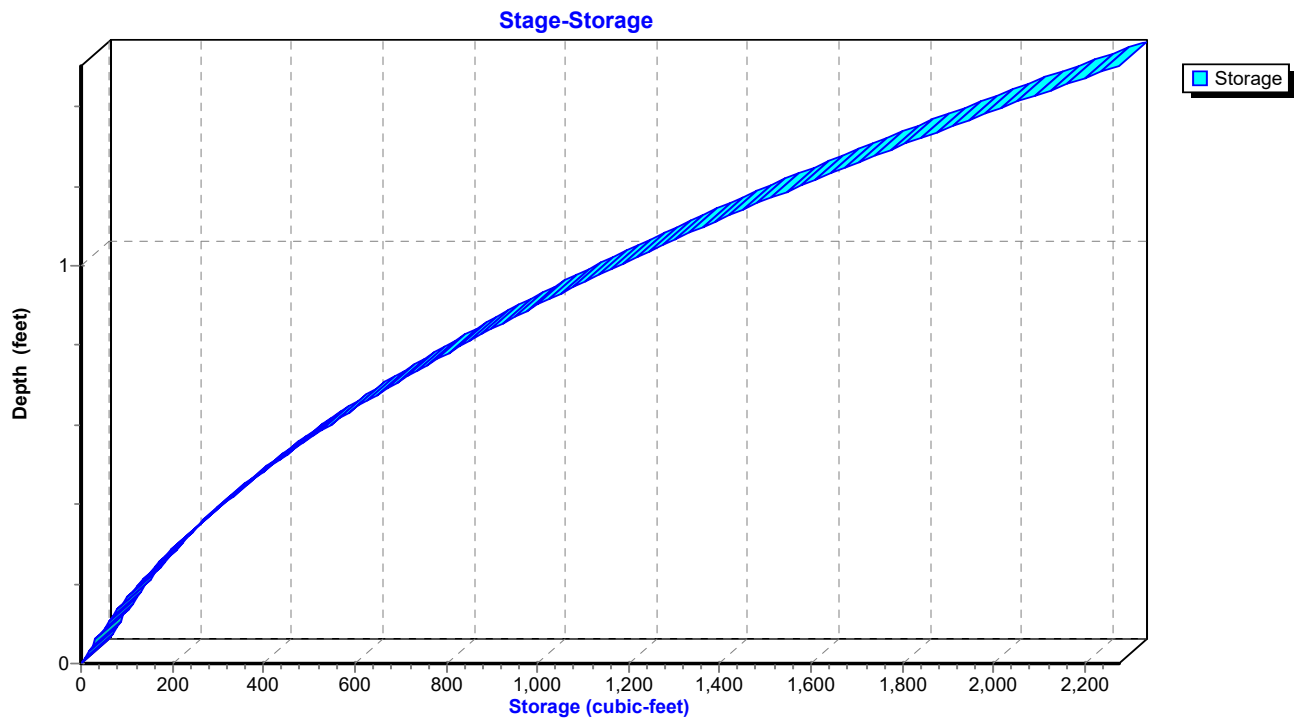
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Reach D4D: Ditch 4D



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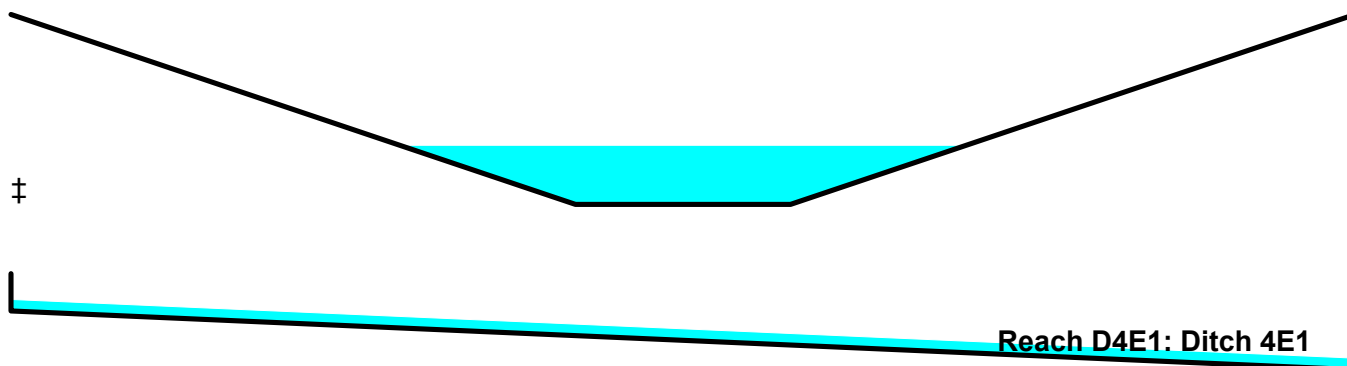
Summary for Reach D4E1: Ditch 4E1

Inflow Area = 316,246 sf, 13.77% Impervious, Inflow Depth = 3.65" for 100-yr event
 Inflow = 18.33 cfs @ 12.43 hrs, Volume= 96,090 cf
 Outflow = 15.73 cfs @ 12.62 hrs, Volume= 96,090 cf, Atten= 14%, Lag= 11.8 min
 Routed to Pond CD4E : Cross Drain 4E

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
 Max. Velocity= 2.01 fps, Min. Travel Time= 14.8 min
 Avg. Velocity= 0.56 fps, Avg. Travel Time= 52.9 min

Peak Storage= 13,992 cf @ 12.62 hrs
 Average Depth at Peak Storage= 1.08' , Surface Width= 10.48'
 Bank-Full Depth= 3.50' Flow Area= 50.8 sf, Capacity= 197.27 cfs

4.00' x 3.50' deep channel, n= 0.033 Riprap, 1-inch
 Side Slope Z-value= 3.0 '/' Top Width= 25.00'
 Length= 1,788.0' Slope= 0.0031 '/'
 Inlet Invert= 685.00', Outlet Invert= 679.50'



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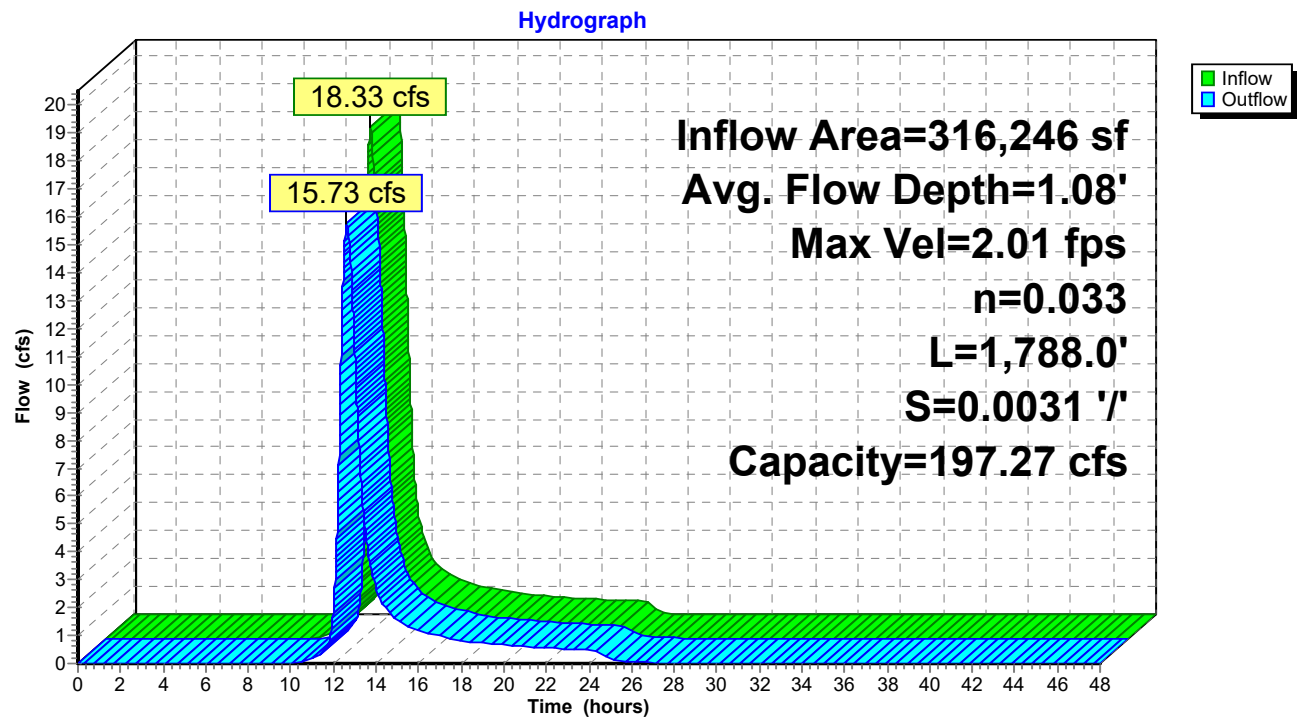
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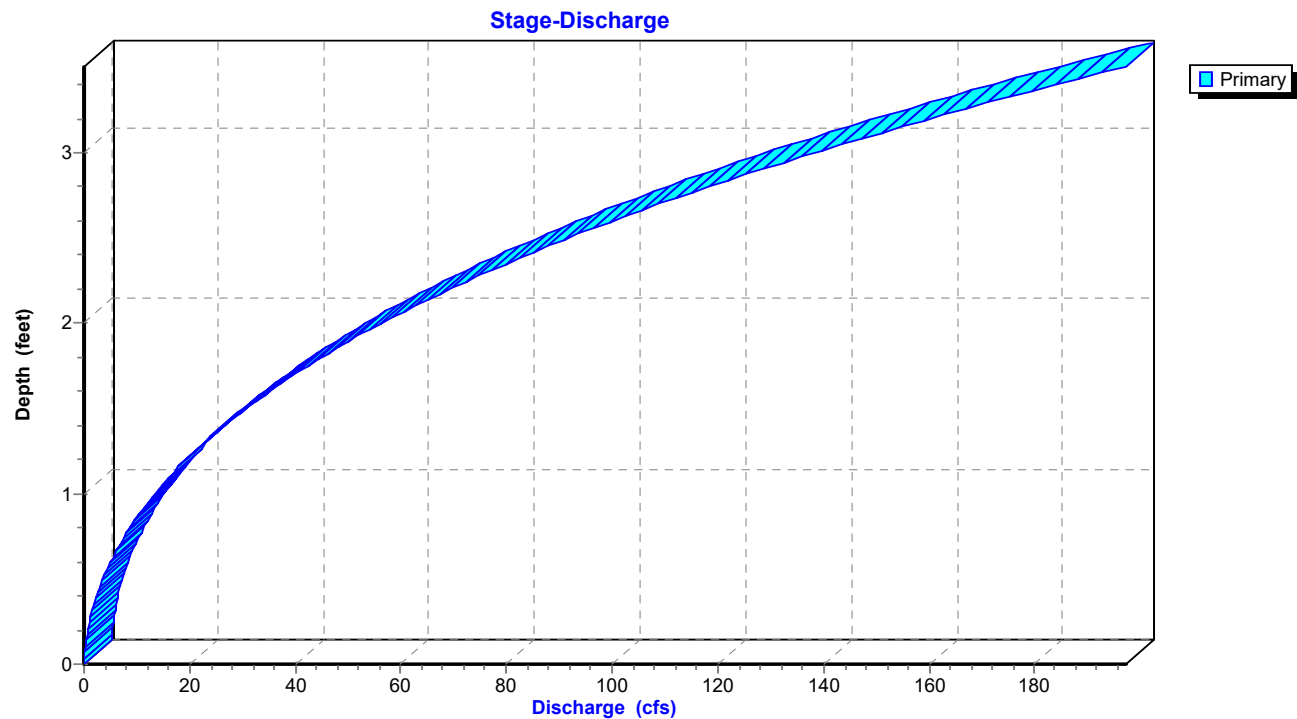
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Reach D4E1: Ditch 4E1



Reach D4E1: Ditch 4E1



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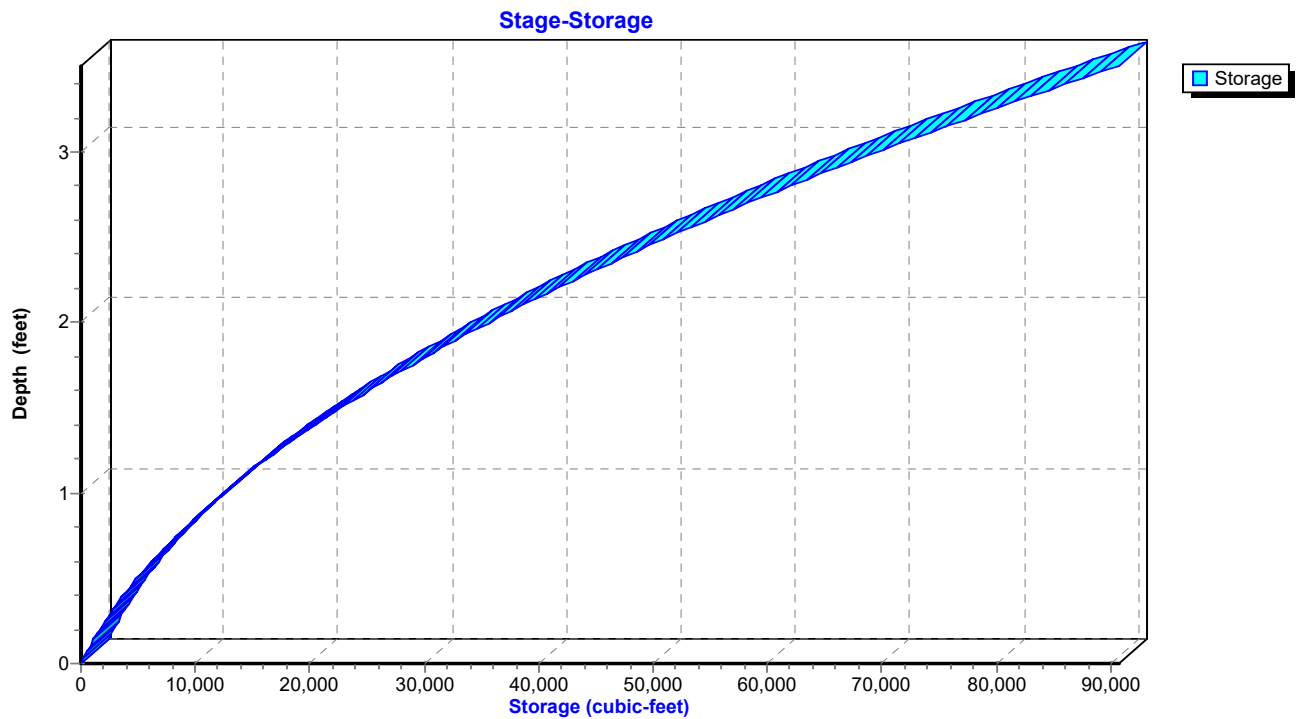
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Reach D4E1: Ditch 4E1



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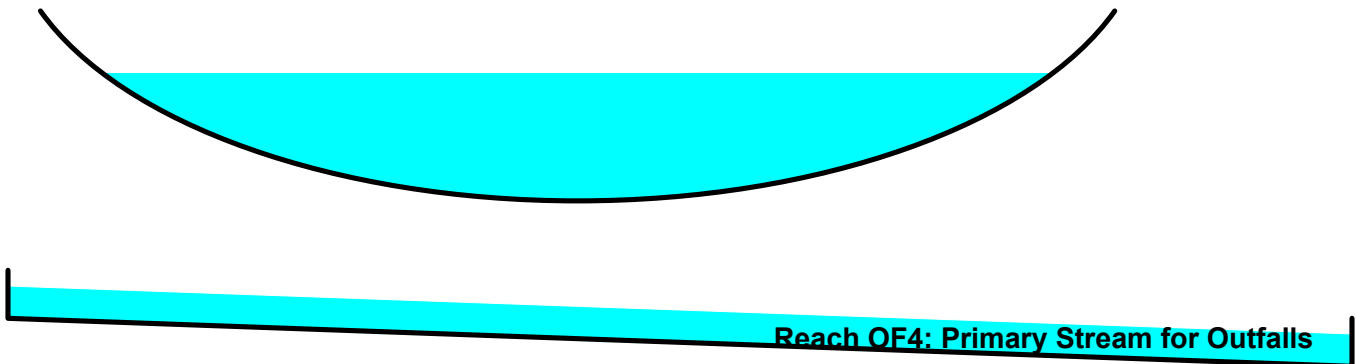
Summary for Reach OF4: Primary Stream for Outfalls

Inflow Area = 9,965,657 sf, 1.09% Impervious, Inflow Depth = 4.55" for 100-yr event
 Inflow = 274.93 cfs @ 13.24 hrs, Volume= 3,780,759 cf
 Outflow = 274.79 cfs @ 13.35 hrs, Volume= 3,780,759 cf, Atten= 0%, Lag= 6.3 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
 Max. Velocity= 4.98 fps, Min. Travel Time= 3.3 min
 Avg. Velocity = 1.76 fps, Avg. Travel Time= 9.5 min

Peak Storage= 55,132 cf @ 13.35 hrs
 Average Depth at Peak Storage= 3.36' , Surface Width= 24.60'
 Bank-Full Depth= 5.00' Flow Area= 100.0 sf, Capacity= 640.46 cfs

30.00' x 5.00' deep Parabolic Channel, n= 0.035
 Length= 1,000.0' Slope= 0.0050 '/'
 Inlet Invert= 675.00', Outlet Invert= 670.00'



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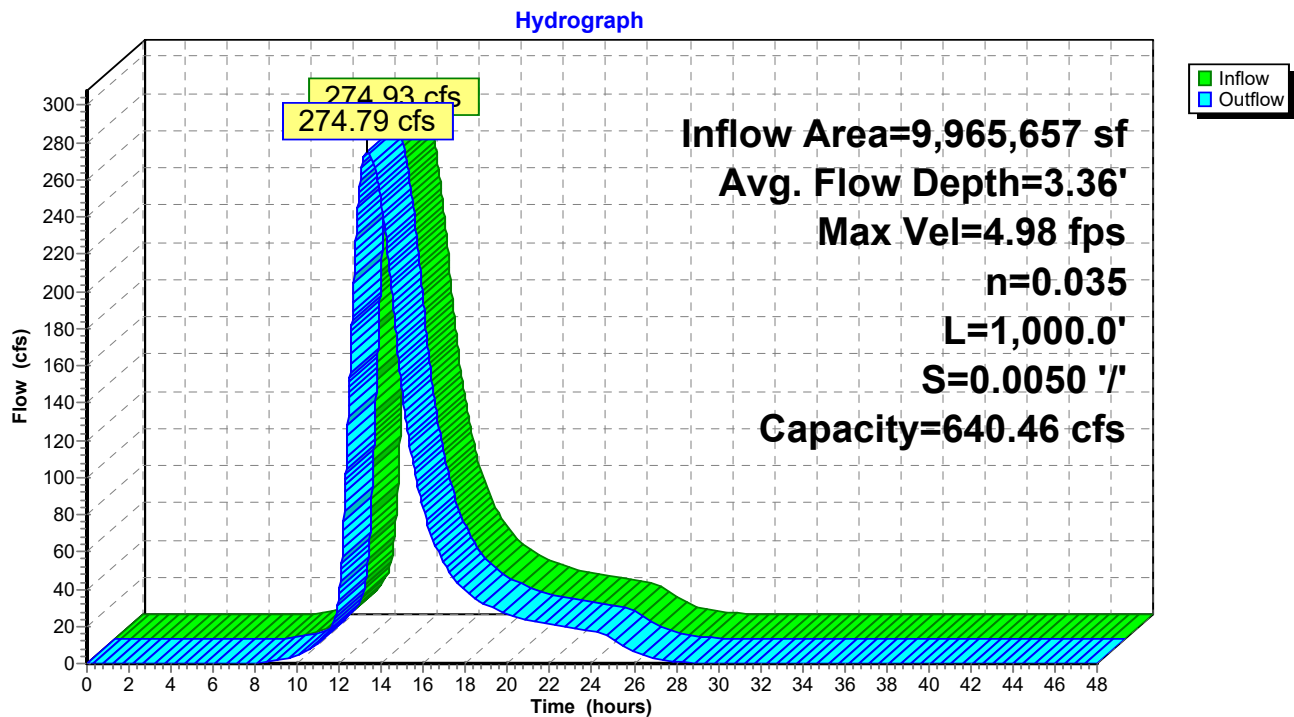
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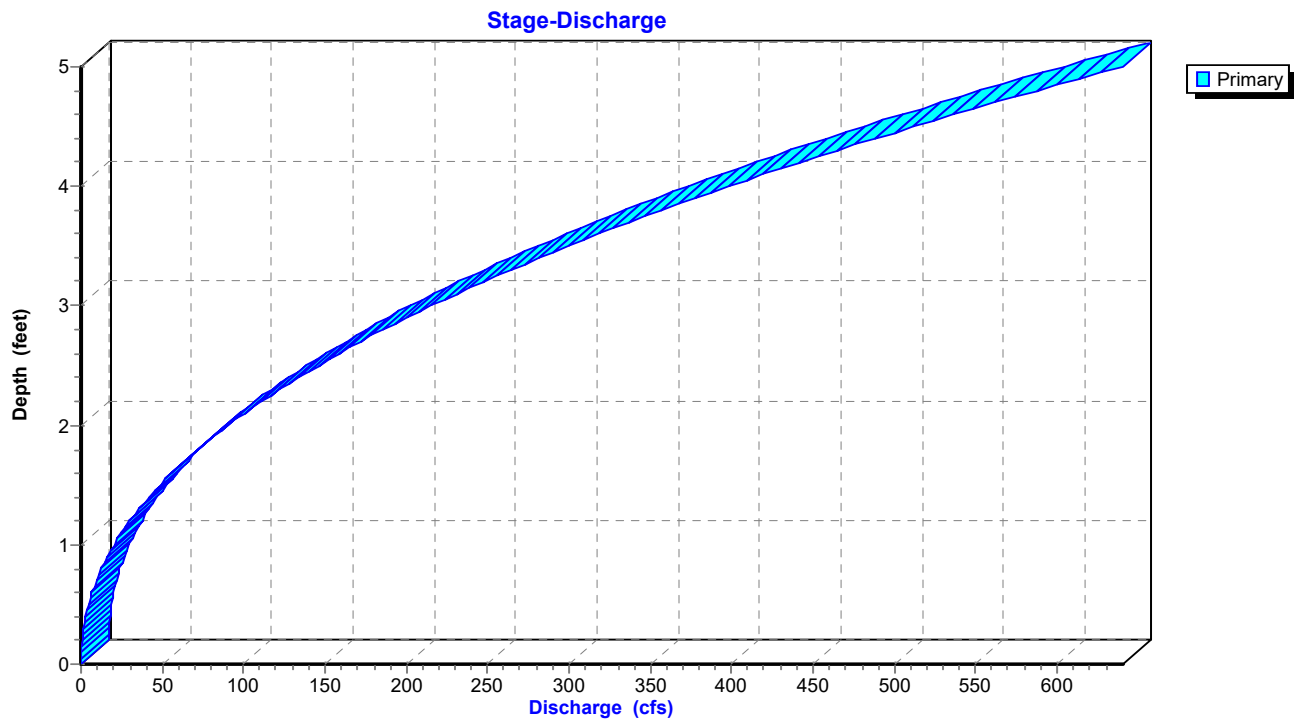
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Reach OF4: Primary Stream for Outfalls



Reach OF4: Primary Stream for Outfalls



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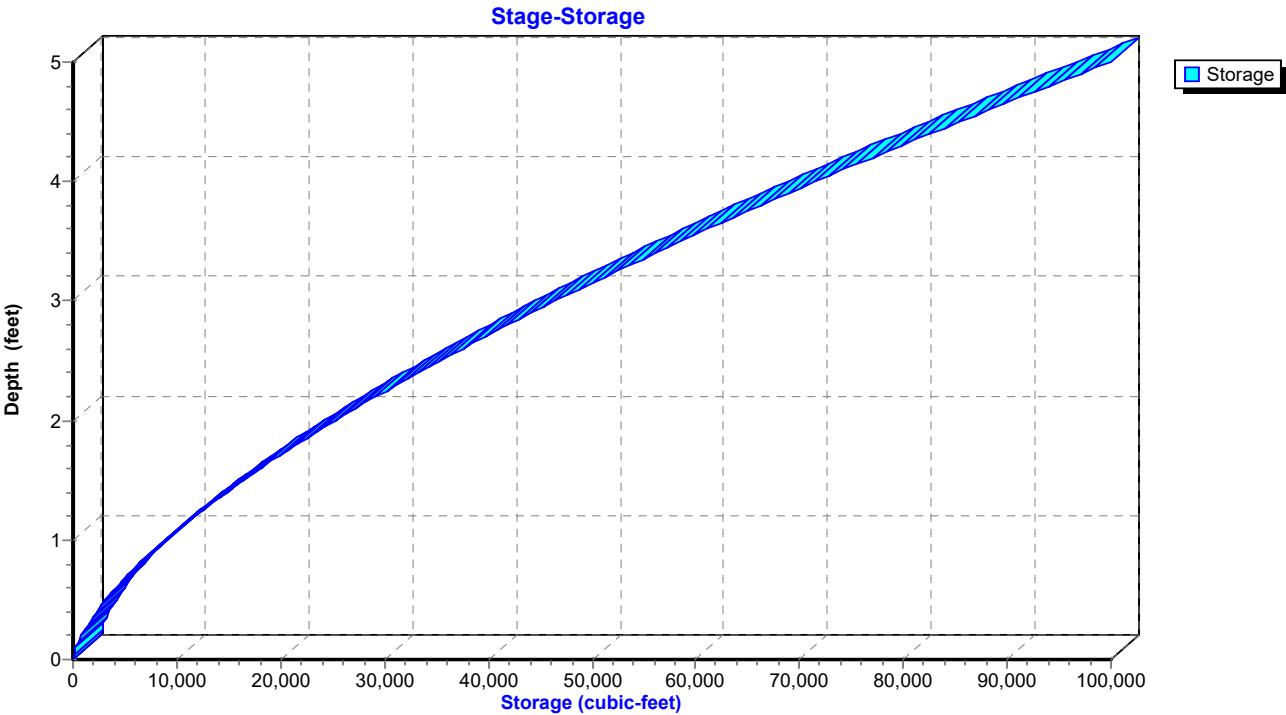
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Reach OF4: Primary Stream for Outfalls



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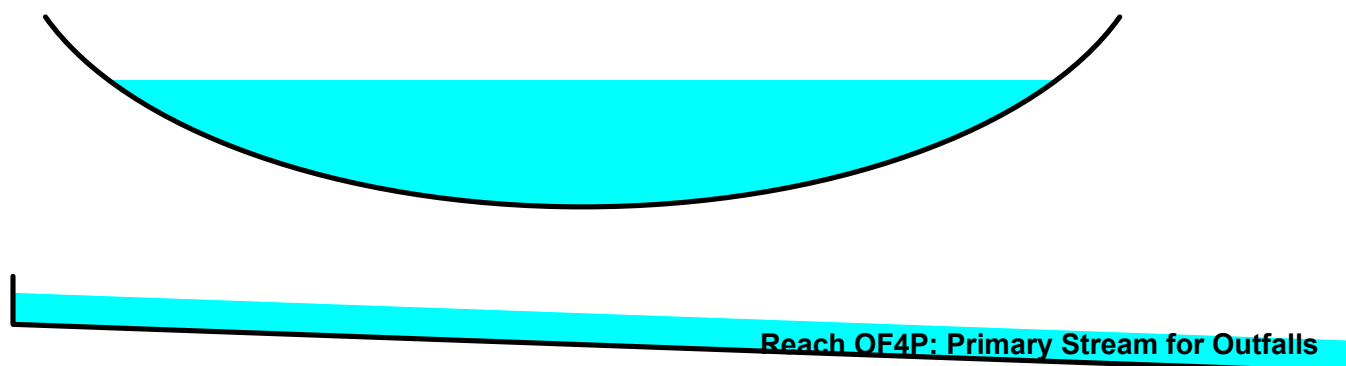
Summary for Reach OF4P: Primary Stream for Outfalls

Inflow Area = 9,969,577 sf, 2.84% Impervious, Inflow Depth = 4.71" for 100-yr event
 Inflow = 270.89 cfs @ 13.50 hrs, Volume= 3,915,011 cf
 Outflow = 270.52 cfs @ 13.52 hrs, Volume= 3,915,010 cf, Atten= 0%, Lag= 1.2 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
 Max. Velocity= 4.96 fps, Min. Travel Time= 3.4 min
 Avg. Velocity = 1.39 fps, Avg. Travel Time= 12.0 min

Peak Storage= 54,530 cf @ 13.52 hrs
 Average Depth at Peak Storage= 3.34' , Surface Width= 24.51'
 Bank-Full Depth= 5.00' Flow Area= 100.0 sf, Capacity= 640.46 cfs

30.00' x 5.00' deep Parabolic Channel, n= 0.035
 Length= 1,000.0' Slope= 0.0050 '/'
 Inlet Invert= 675.00', Outlet Invert= 670.00'



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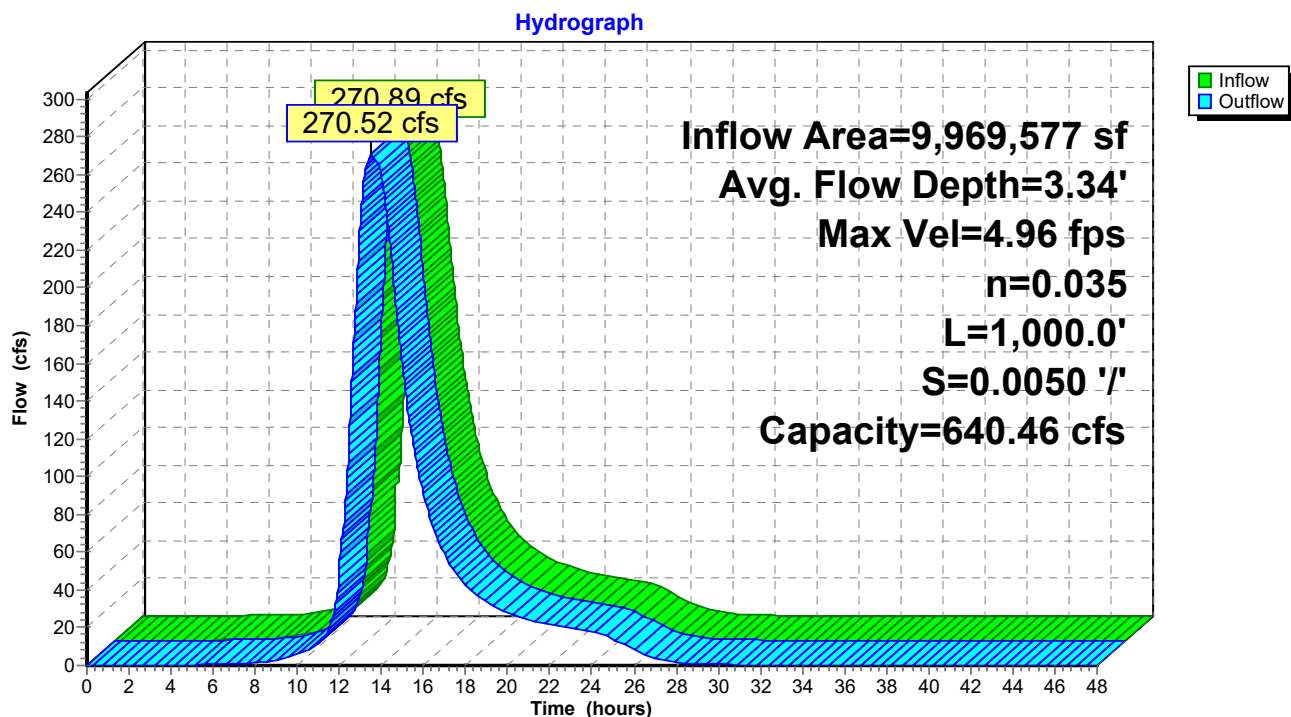
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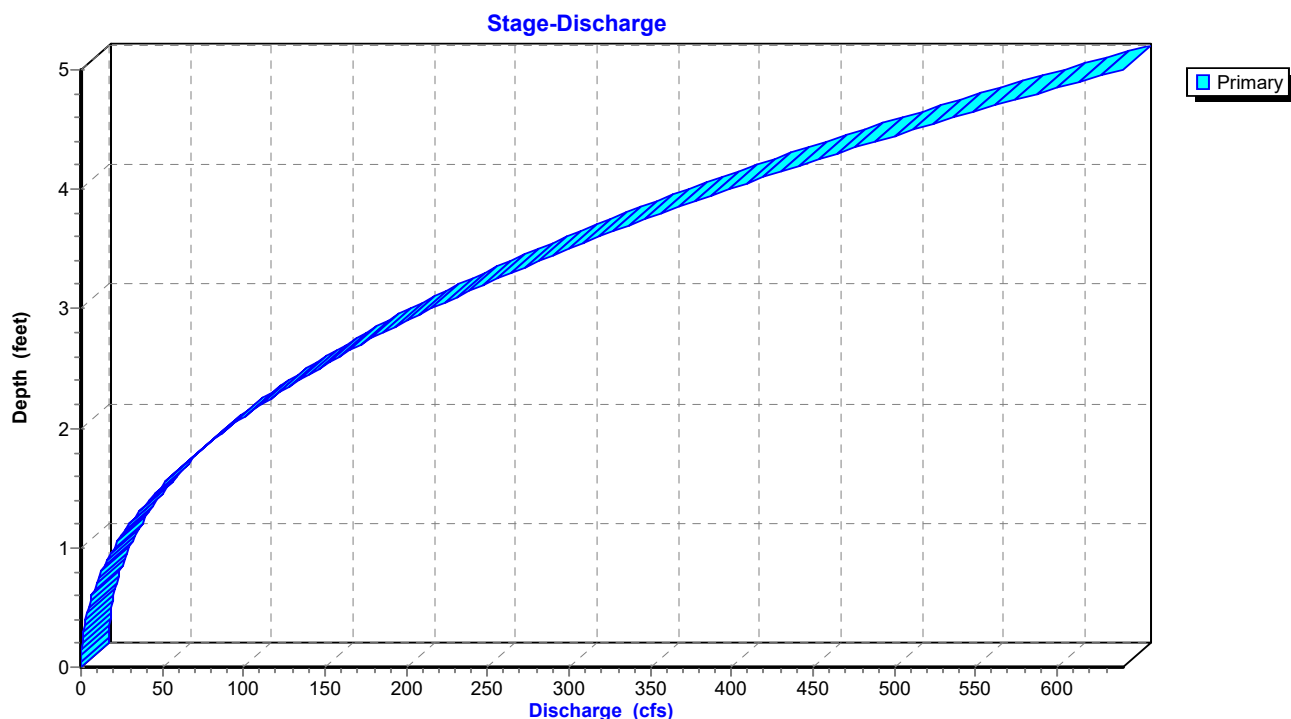
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Reach OF4P: Primary Stream for Outfalls



Reach OF4P: Primary Stream for Outfalls



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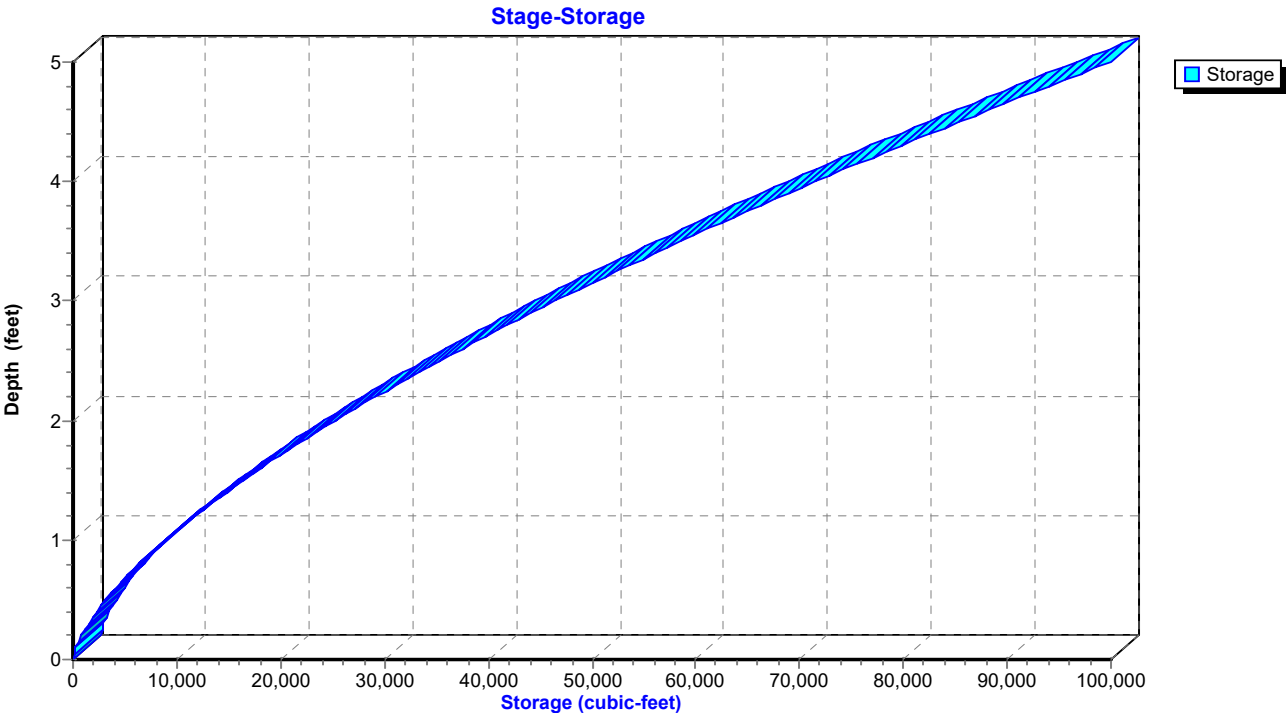
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Reach OF4P: Primary Stream for Outfalls



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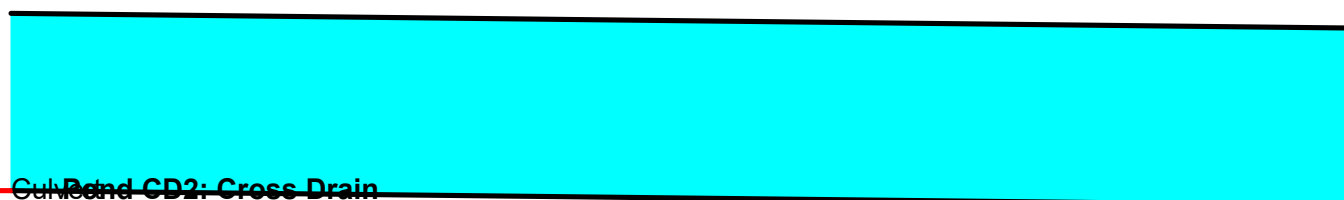
Summary for Pond CD2: Cross Drain

Inflow Area = 1,520,244 sf, 0.00% Impervious, Inflow Depth = 3.43" for 100-yr event
 Inflow = 58.90 cfs @ 12.88 hrs, Volume= 433,944 cf
 Outflow = 58.90 cfs @ 12.88 hrs, Volume= 433,944 cf, Atten= 0%, Lag= 0.0 min
 Primary = 58.90 cfs @ 12.88 hrs, Volume= 433,944 cf
 Routed to Reach OF4P : Primary Stream for Outfalls

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
 Peak Elev= 684.90' @ 12.88 hrs

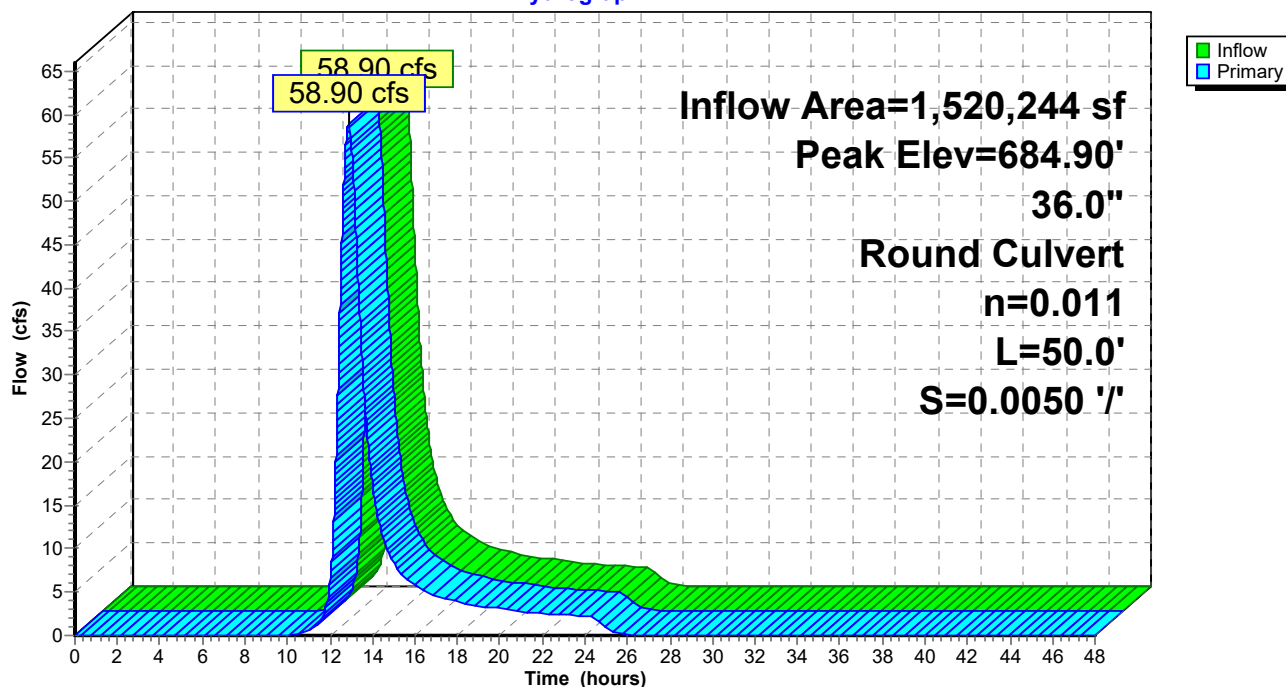
Device	Routing	Invert	Outlet Devices
#1	Primary	680.25'	36.0" Round Culvert L= 50.0' Ke= 0.500 Inlet / Outlet Invert= 680.25' / 680.00' S= 0.0050 '/' Cc= 0.900 n= 0.011 Concrete pipe, straight & clean, Flow Area= 7.07 sf

Primary OutFlow Max=58.89 cfs @ 12.88 hrs HW=684.90' TW=677.98' (Dynamic Tailwater)
 1=Culvert (Barrel Controls 58.89 cfs @ 8.33 fps)



Pond CD2: Cross Drain

Hydrograph



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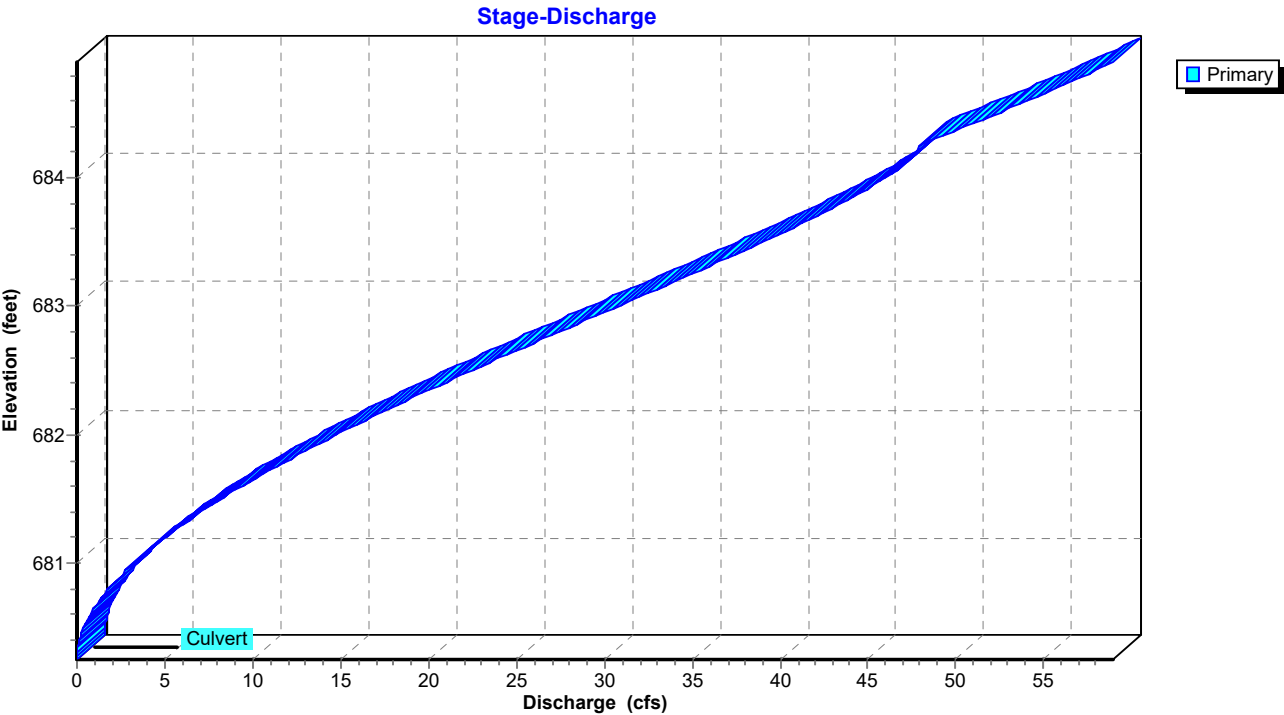
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Mt Pleasant 24-hr S1 100-yr Rainfall=7.83"

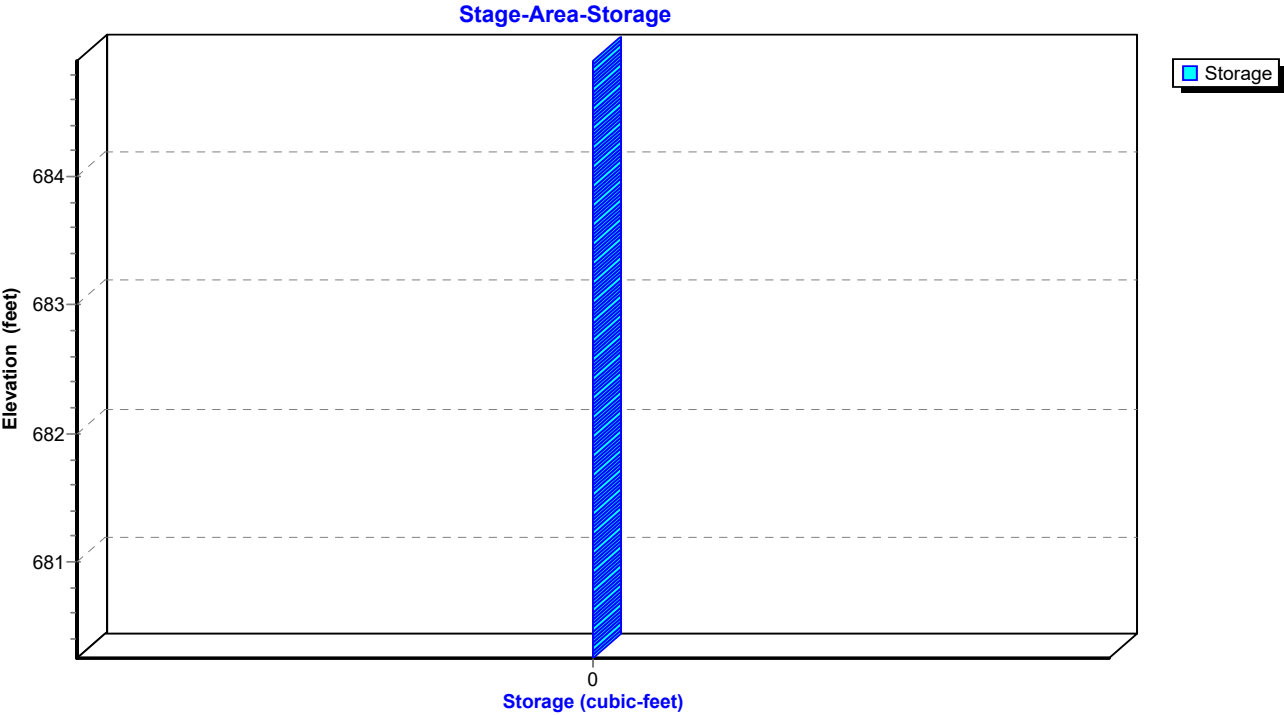
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Pond CD2: Cross Drain



Pond CD2: Cross Drain



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Summary for Pond CD4C: Cross Drain 4C

Inflow Area = 29,621 sf, 0.00% Impervious, Inflow Depth = 7.35" for 100-yr event
 Inflow = 5.77 cfs @ 12.05 hrs, Volume= 18,146 cf
 Outflow = 5.77 cfs @ 12.05 hrs, Volume= 18,146 cf, Atten= 0%, Lag= 0.0 min
 Primary = 5.77 cfs @ 12.05 hrs, Volume= 18,146 cf
 Routed to Pond CD4DCE : Cross Drain 4DCE

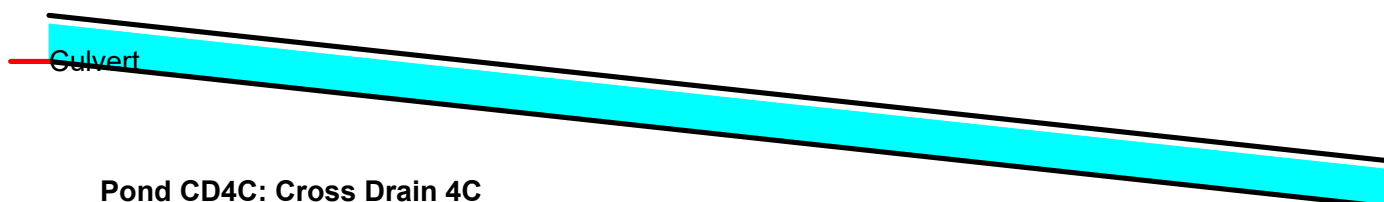
Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Peak Elev= 684.97' @ 12.05 hrs

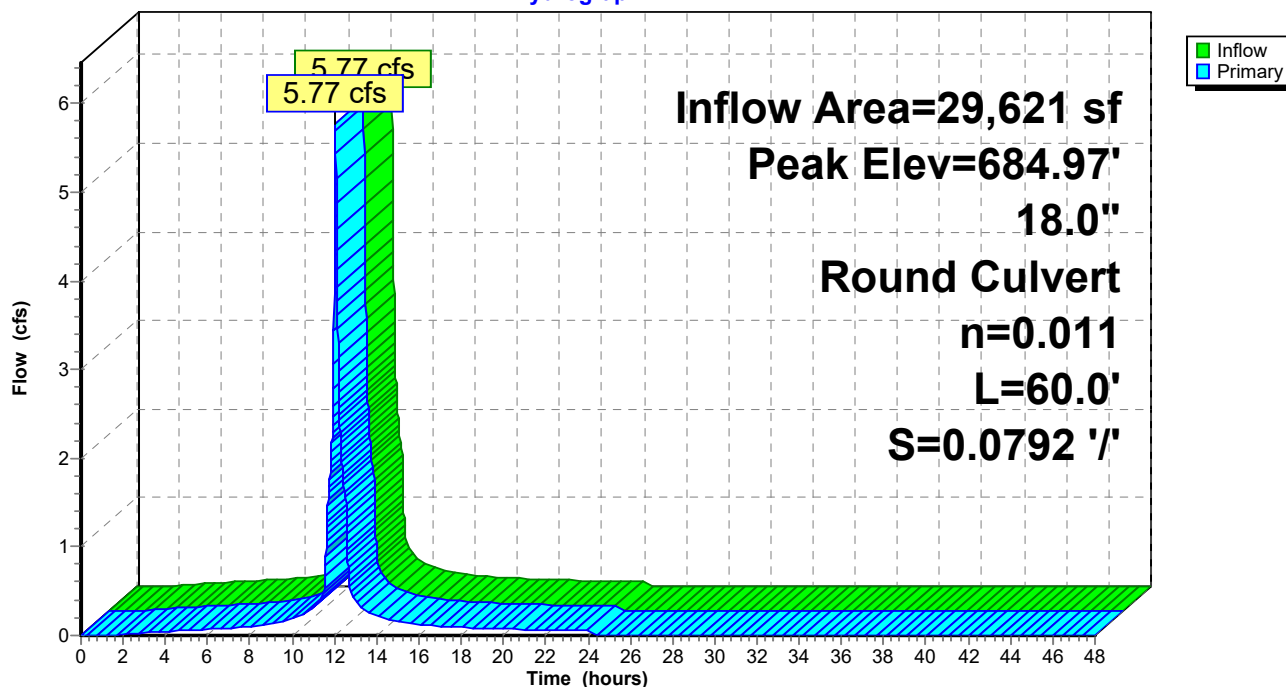
Device	Routing	Invert	Outlet Devices
#1	Primary	683.75'	18.0" Round Culvert L= 60.0' Square-edged headwall, Ke= 0.500 Inlet / Outlet Invert= 683.75' / 679.00' S= 0.0792 '/' Cc= 0.900 n= 0.011 Concrete pipe, straight & clean, Flow Area= 1.77 sf

Primary OutFlow Max=5.75 cfs @ 12.05 hrs HW=684.96' TW=680.53' (Dynamic Tailwater)

1=Culvert (Inlet Controls 5.75 cfs @ 3.75 fps)

**Pond CD4C: Cross Drain 4C****Pond CD4C: Cross Drain 4C**

Hydrograph



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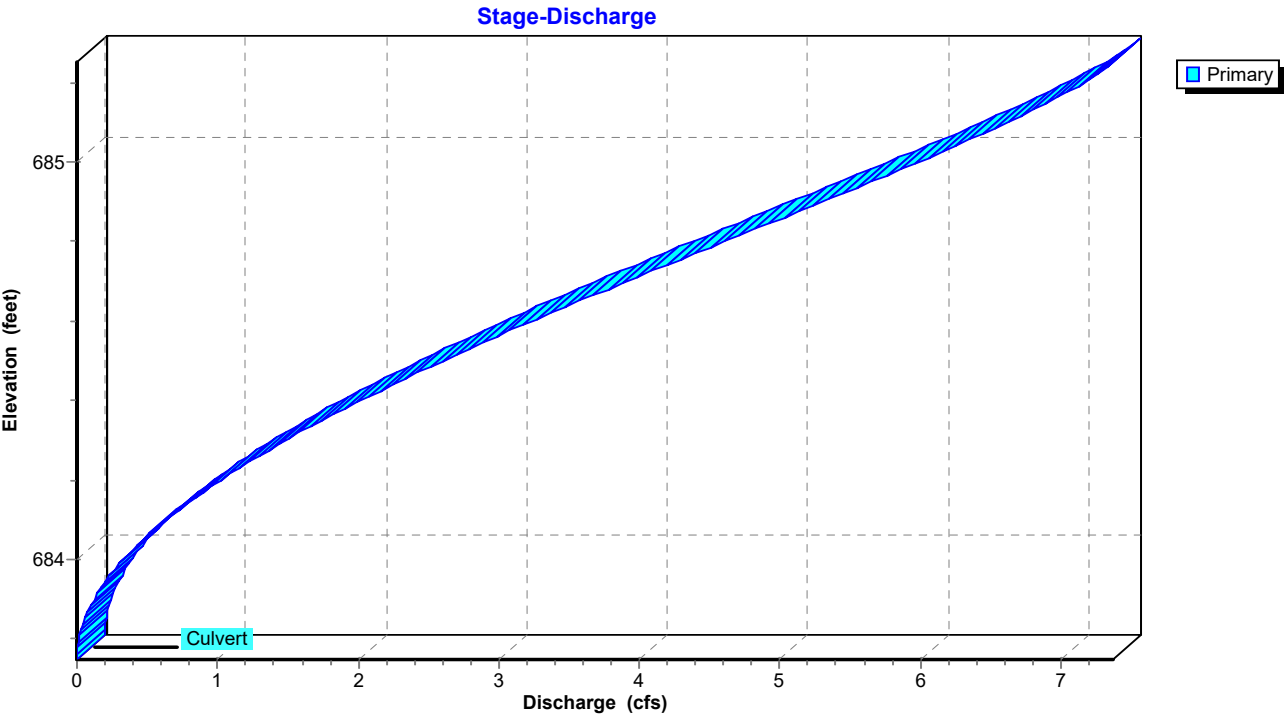
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Mt Pleasant 24-hr S1 100-yr Rainfall=7.83"

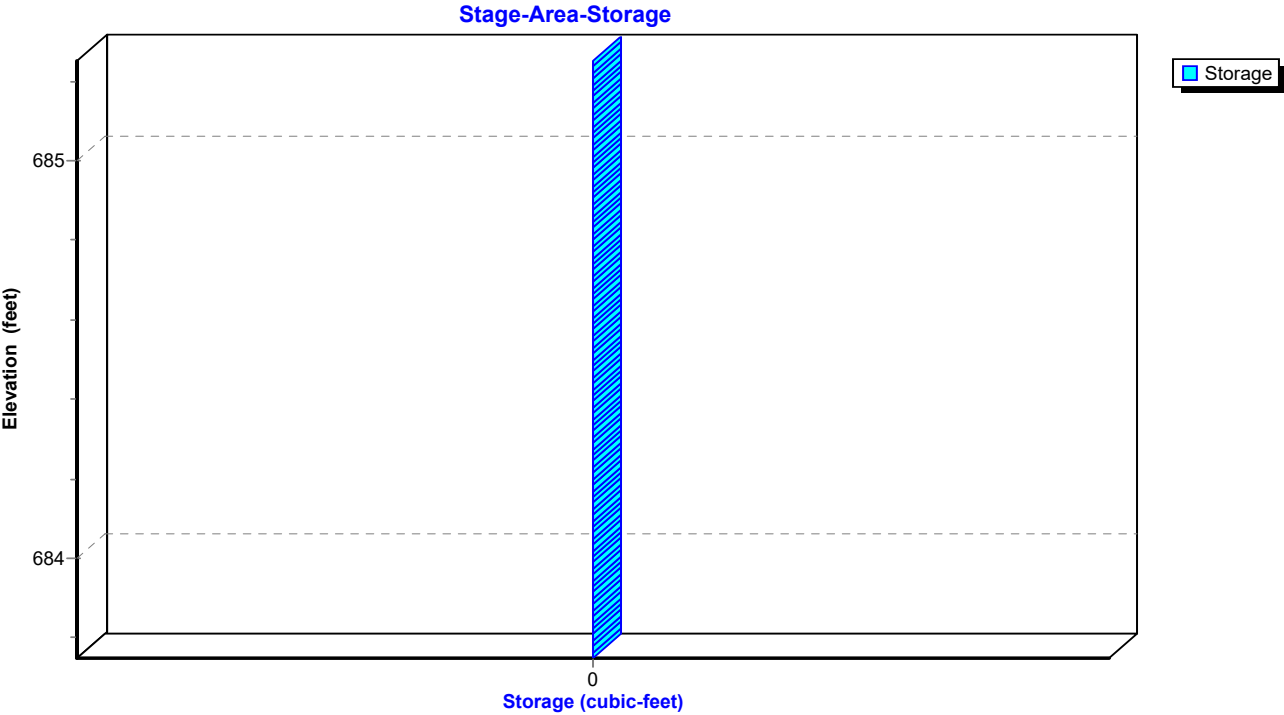
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Pond CD4C: Cross Drain 4C



Pond CD4C: Cross Drain 4C



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Mt Pleasant 24-hr S1 100-yr Rainfall=7.83"

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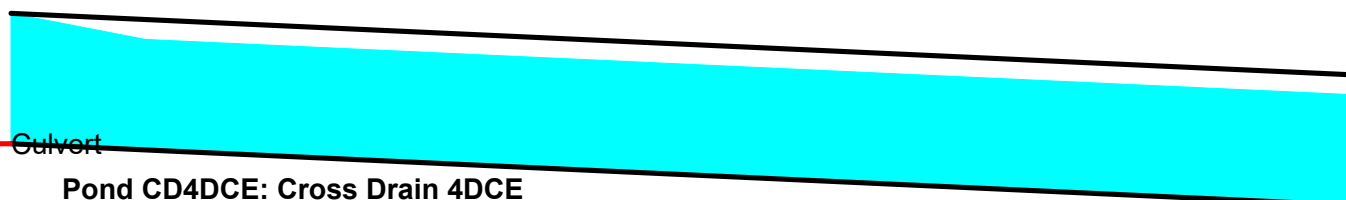
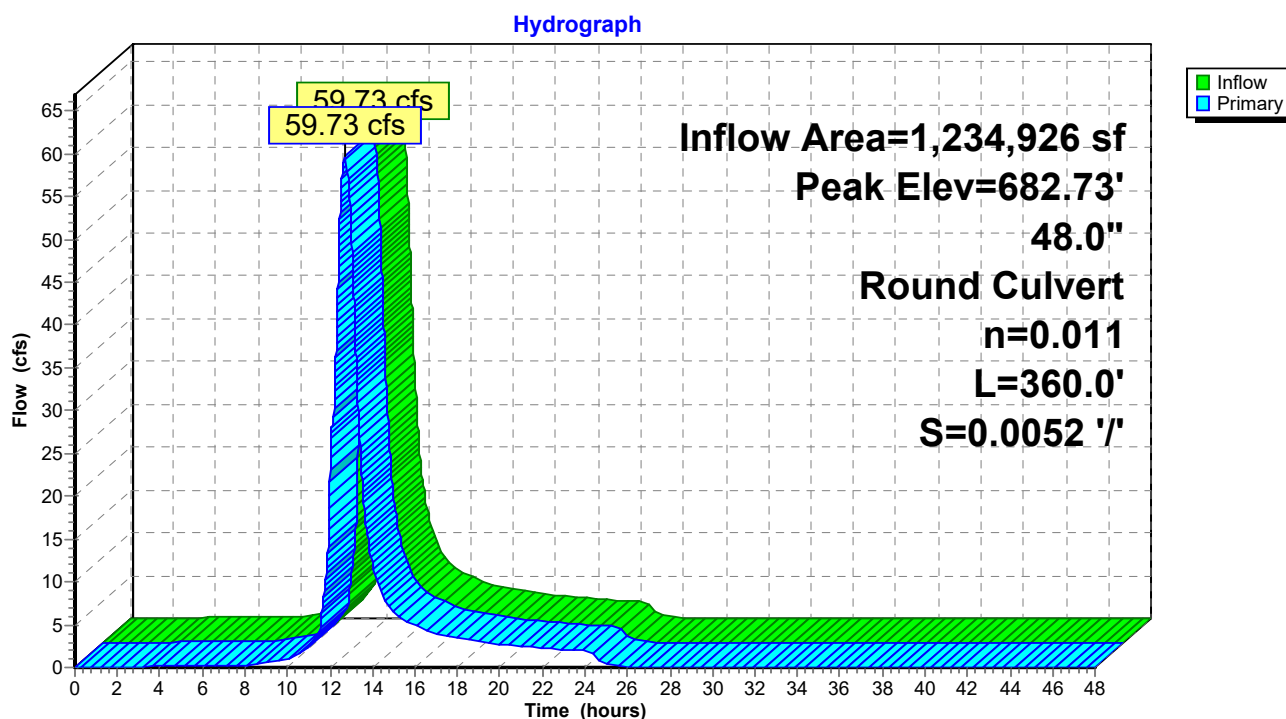
Summary for Pond CD4DCE: Cross Drain 4DCE

Inflow Area = 1,234,926 sf, 3.53% Impervious, Inflow Depth = 4.27" for 100-yr event
 Inflow = 59.73 cfs @ 12.71 hrs, Volume= 439,858 cf
 Outflow = 59.73 cfs @ 12.71 hrs, Volume= 439,858 cf, Atten= 0%, Lag= 0.0 min
 Primary = 59.73 cfs @ 12.71 hrs, Volume= 439,858 cf
 Routed to Pond POND1P : PROP POND

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
 Peak Elev= 682.73' @ 12.87 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	678.39'	48.0" Round Culvert L= 360.0' Ke= 0.500 Inlet / Outlet Invert= 678.39' / 676.50' S= 0.0052 '/' Cc= 0.900 n= 0.011 Concrete pipe, straight & clean, Flow Area= 12.57 sf

Primary OutFlow Max=59.14 cfs @ 12.71 hrs HW=682.60' TW=681.41' (Dynamic Tailwater)
 ↑ **1=Culvert** (Outlet Controls 59.14 cfs @ 5.55 fps)

**Pond CD4DCE: Cross Drain 4DCE**

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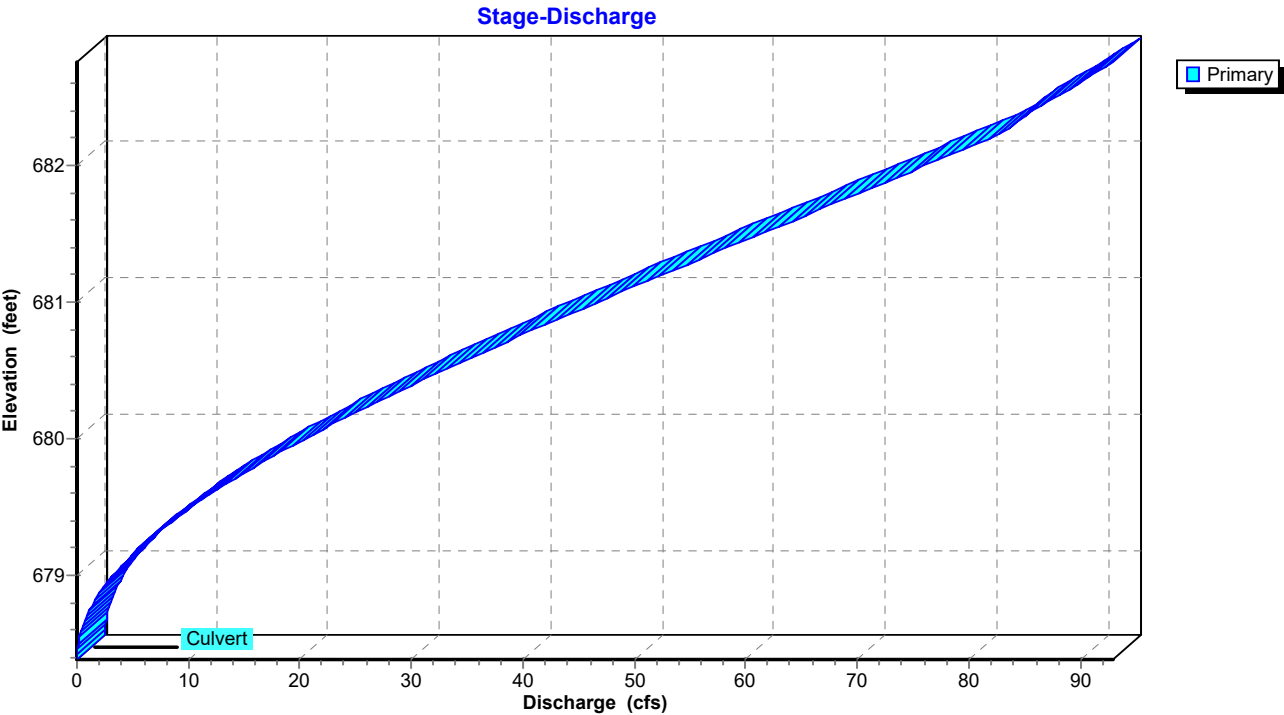
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Mt Pleasant 24-hr S1 100-yr Rainfall=7.83"

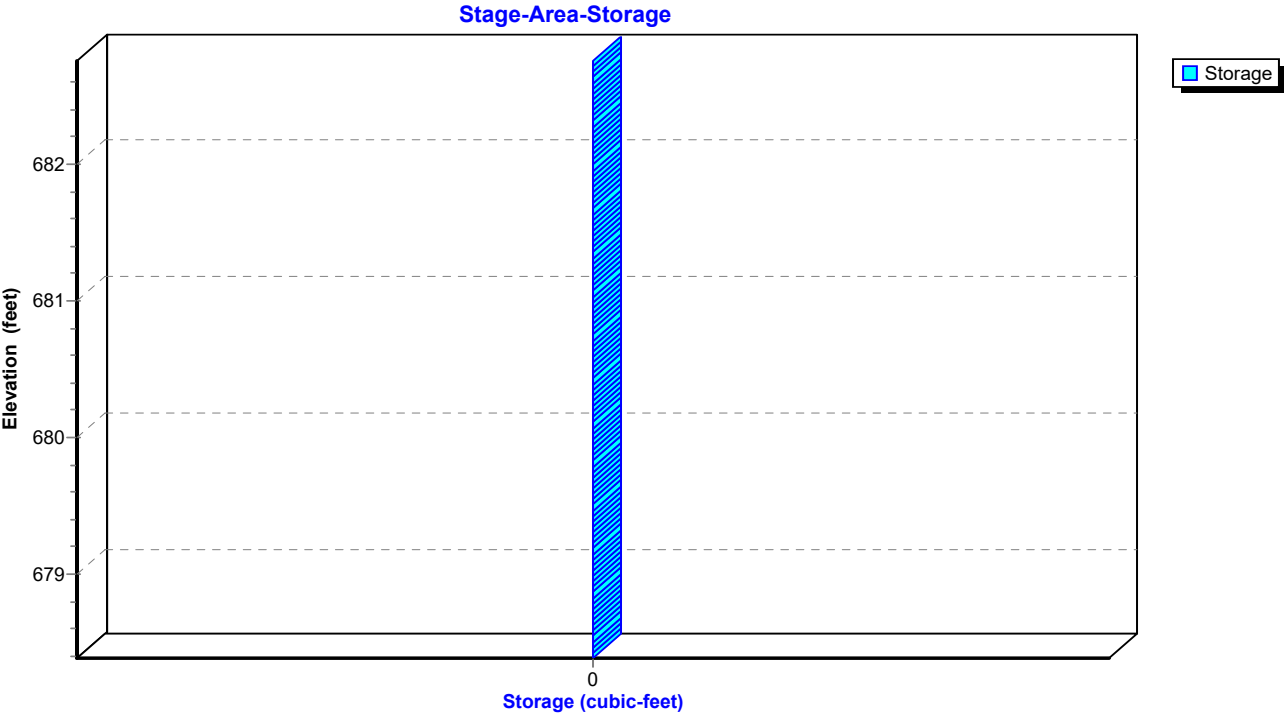
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Pond CD4DCE: Cross Drain 4DCE



Pond CD4DCE: Cross Drain 4DCE



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Summary for Pond CD4E: Cross Drain 4E

Inflow Area = 1,151,726 sf, 3.78% Impervious, Inflow Depth = 4.05" for 100-yr event
 Inflow = 62.56 cfs @ 12.64 hrs, Volume= 388,894 cf
 Outflow = 58.22 cfs @ 12.73 hrs, Volume= 388,890 cf, Atten= 7%, Lag= 5.5 min
 Primary = 58.22 cfs @ 12.73 hrs, Volume= 388,890 cf
 Routed to Pond CD4DCE : Cross Drain 4DCE

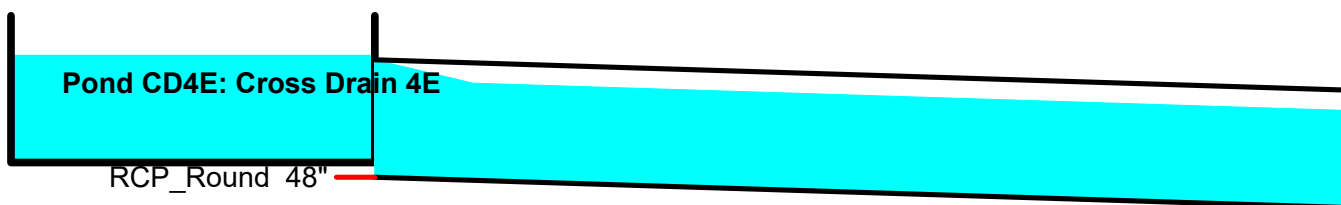
Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
 Peak Elev= 683.65' @ 12.81 hrs Surf.Area= 10,447 sf Storage= 15,164 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
 Center-of-Mass det. time= 2.6 min (871.1 - 868.6)

Volume	Invert	Avail.Storage	Storage Description
#1	680.00'	33,779 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
680.00	274	0	0
681.00	1,562	918	918
682.00	3,975	2,769	3,687
683.00	7,355	5,665	9,352
684.00	12,090	9,723	19,074
685.00	17,320	14,705	33,779

Device	Routing	Invert	Outlet Devices
#1	Primary	679.50'	48.0" Round RCP_Round 48" L= 200.0' Ke= 0.500 Inlet / Outlet Invert= 679.50' / 678.46' S= 0.0052 '/' Cc= 0.900 n= 0.011 Concrete pipe, straight & clean, Flow Area= 12.57 sf

Primary OutFlow Max=57.80 cfs @ 12.73 hrs HW=683.61' TW=682.63' (Dynamic Tailwater)
 ↑1=RCP_Round 48" (Outlet Controls 57.80 cfs @ 5.56 fps)



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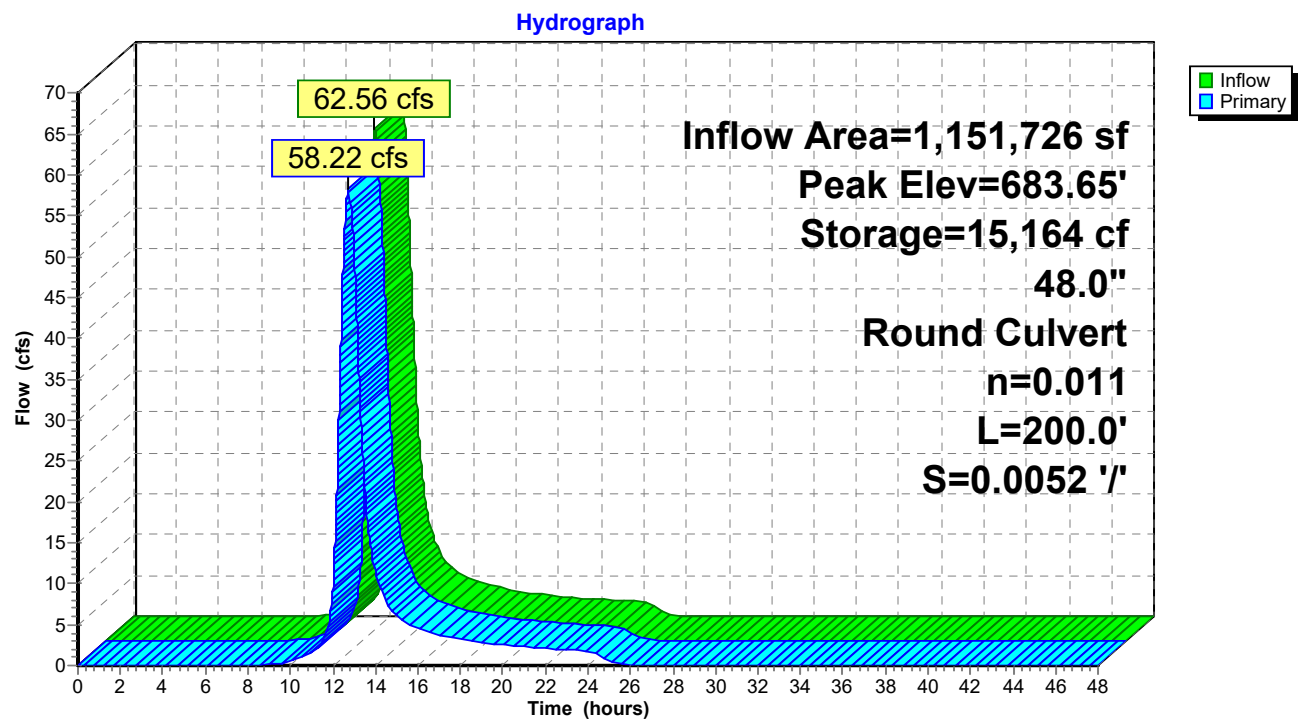
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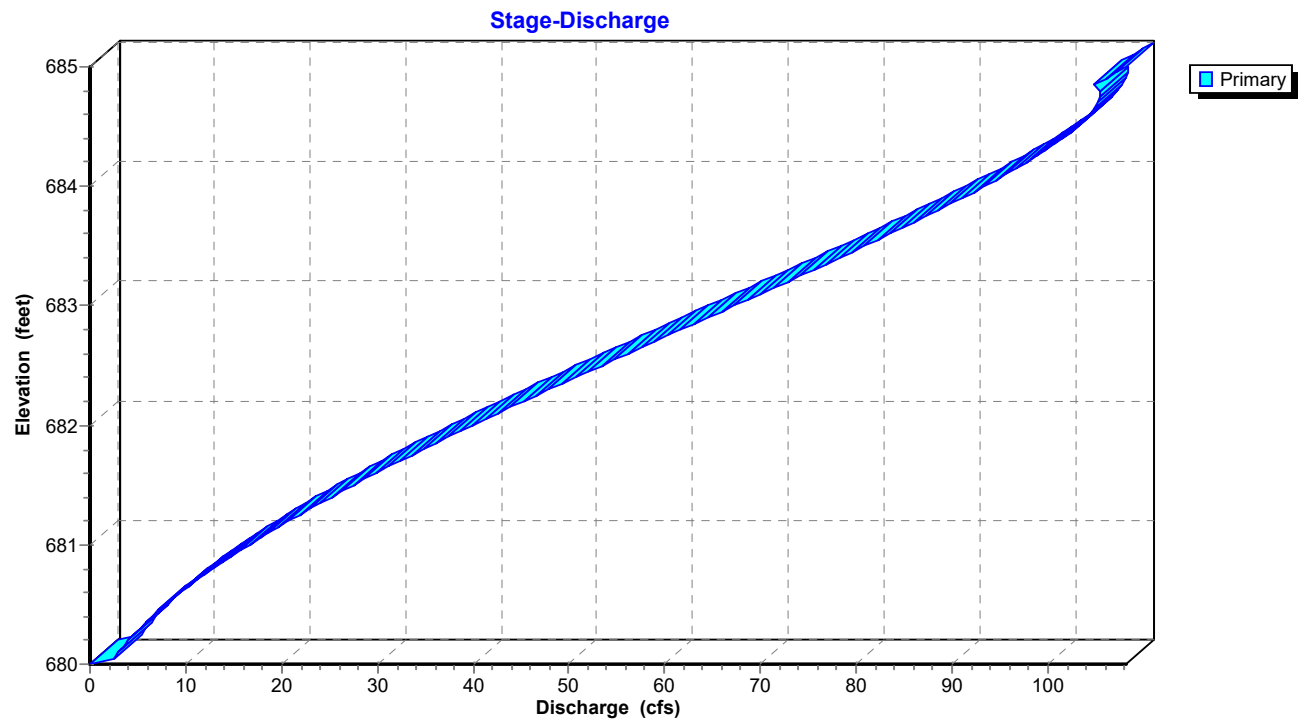
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Pond CD4E: Cross Drain 4E



Pond CD4E: Cross Drain 4E



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Mt Pleasant 24-hr S1 100-yr Rainfall=7.83"

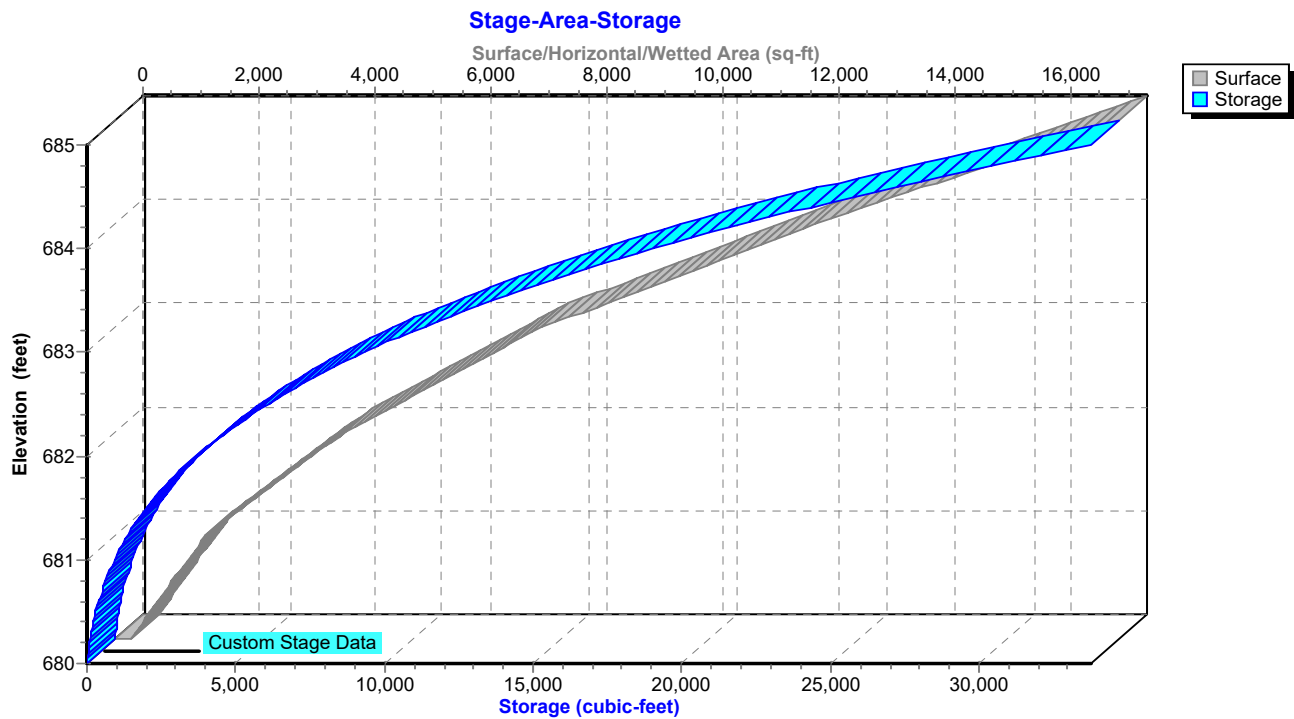
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Pond CD4E: Cross Drain 4E



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Summary for Pond POND1P: PROP POND

Inflow Area = 1,772,021 sf, 9.83% Impervious, Inflow Depth = 5.21" for 100-yr event
 Inflow = 108.15 cfs @ 12.53 hrs, Volume= 768,885 cf
 Outflow = 61.01 cfs @ 13.05 hrs, Volume= 768,878 cf, Atten= 44%, Lag= 31.6 min
 Primary = 61.01 cfs @ 13.05 hrs, Volume= 768,878 cf
 Routed to Reach OF4P : Primary Stream for Outfalls

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
 Peak Elev= 681.84' @ 13.11 hrs Surf.Area= 95,168 sf Storage= 262,115 cf

Plug-Flow detention time= 101.9 min calculated for 768,718 cf (100% of inflow)
 Center-of-Mass det. time= 102.0 min (925.5 - 823.5)

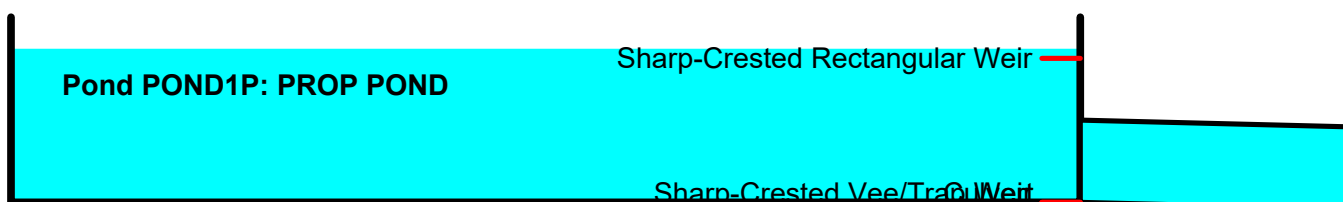
Volume	Invert	Avail.Storage	Storage Description
#1	676.25'	386,863 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
676.25	505	0	0
676.50	14,826	1,916	1,916
677.00	24,194	9,755	11,671
678.00	31,409	27,802	39,473
679.00	39,965	35,687	75,160
680.00	56,082	48,024	123,183
681.00	77,468	66,775	189,958
682.00	98,642	88,055	278,013
683.00	119,057	108,850	386,863

Device	Routing	Invert	Outlet Devices
#1	Primary	676.25'	36.0" Round Culvert L= 50.0' Ke= 0.600 Inlet / Outlet Invert= 676.25' / 676.00' S= 0.0050 '/' Cc= 0.900 n= 0.011, Flow Area= 7.07 sf
#2	Device 1	676.25'	20.0 deg x 0.4' long Sharp-Crested Vee/Trap Weir Cv= 2.69 (C= 3.36)
#3	Device 1	681.50'	16.0' long Sharp-Crested Rectangular Weir 2 End Contraction(s)

Primary OutFlow Max=60.92 cfs @ 13.05 hrs HW=681.83' TW=678.18' (Dynamic Tailwater)

1=Culvert (Inlet Controls 60.92 cfs @ 8.62 fps)
 2=Sharp-Crested Vee/Trap Weir (Passes < 51.15 cfs potential flow)
 3=Sharp-Crested Rectangular Weir (Passes < 9.88 cfs potential flow)



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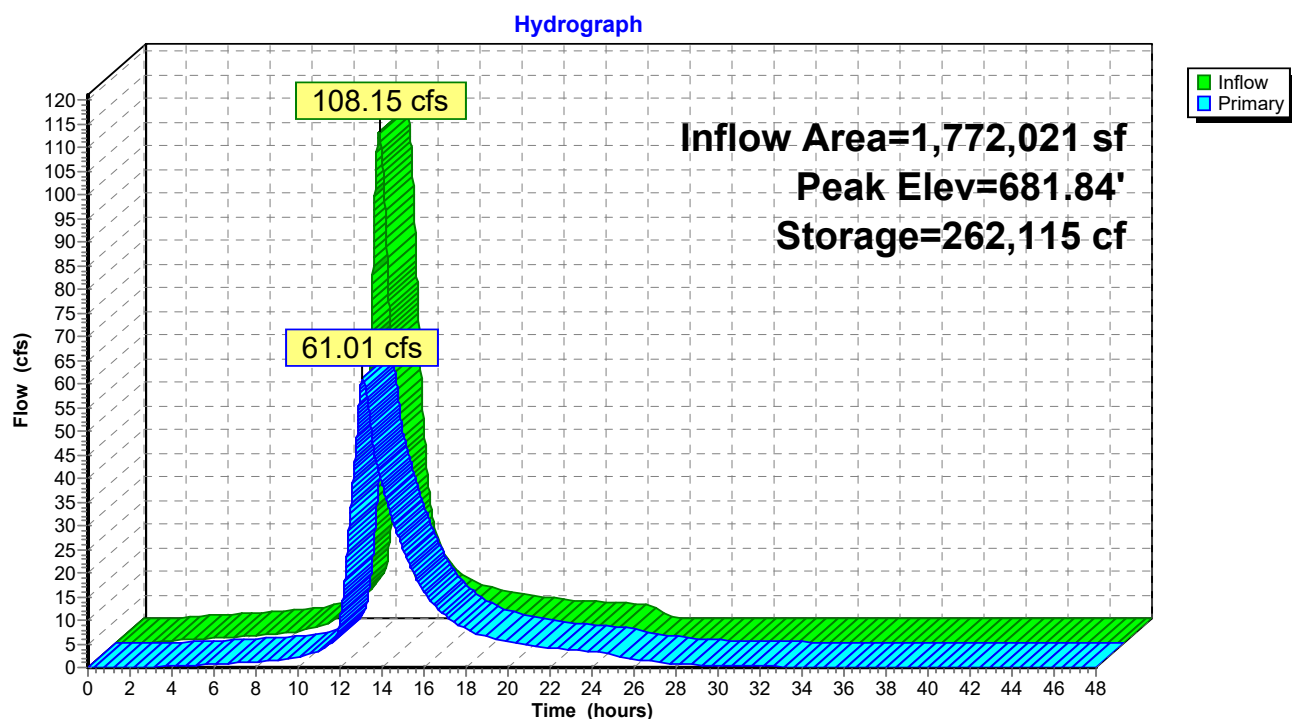
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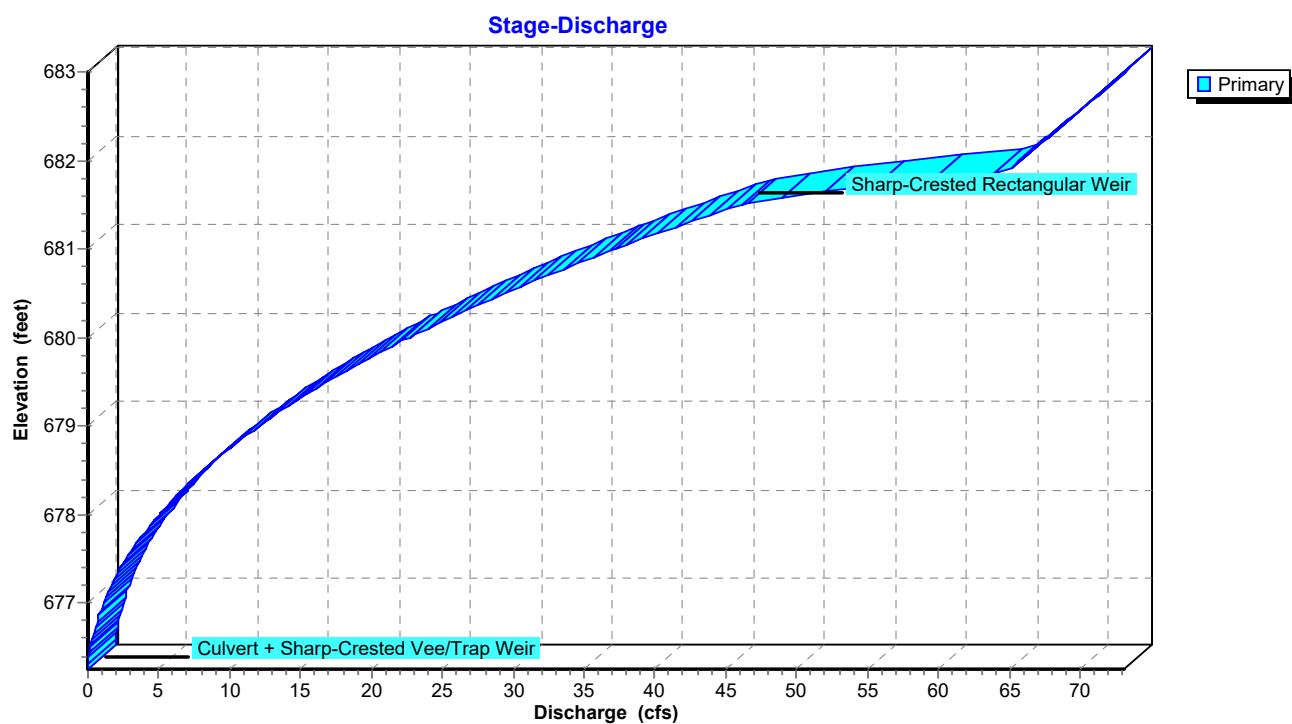
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Pond POND1P: PROP POND



Pond POND1P: PROP POND



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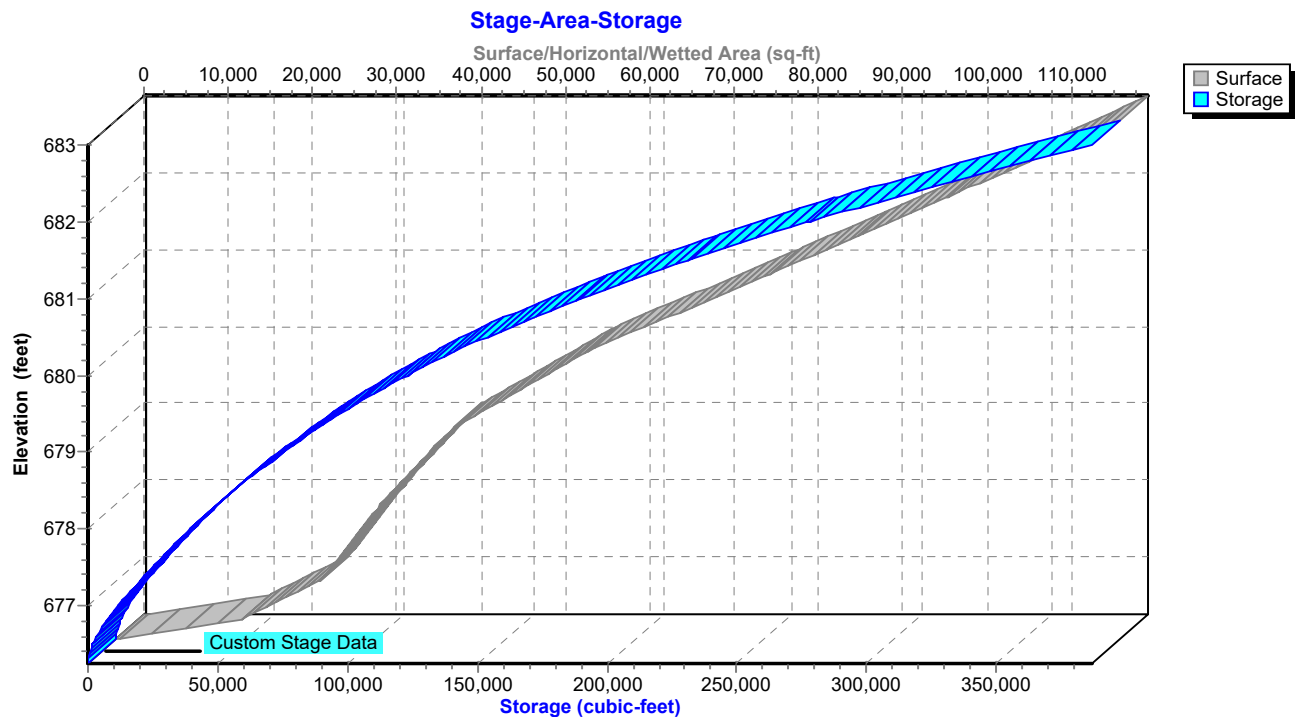
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Pond POND1P: PROP POND



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Mt. Pleasant, Tennessee

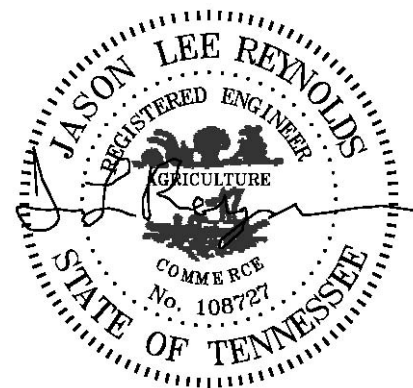
DRAINAGE CALCULATIONS WITH SITE PLAN SUBMITTAL

May 22, 2026

Prepared By:



CSR Project #: 24-040



Abstract

This report presents a detailed summary of stormwater quality and quantity treatment for an industrial 62-acre site in Mt. Pleasant, TN. In compliance with City regulations, the site will require additional quantity controls for stormwater due to the proposed site conditions having an increased rate of runoff vs. the existing conditions. The primary factor for increased runoff is the existing undeveloped property will be converted to industrial work areas and impervious areas (building and asphalt parking). Stormwater quality treatment is not provided on this development.

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Figure 9: Site Pre vs. Post Runoff Summary - 10 -

Section I Site Information

The subject property consists of 62 acres, described as parcel 63.11, located Main Street, south of Town. (see Figure 1). The property is shown on Maury County Property Map 150, Parcel 11.01 (presented in Figure 2), and is currently owned by Bonafide Holdings TN, LLC. The site is currently vacant, undeveloped, predominately grass/vegetation with a gravel entrance driveway. The proposed development will consist of aligning the entrance drive with Main St. and then extending the asphalt entrance east to a proposed asphalt parking area adjacent to a proposed equipment servicing building. The servicing building will include rail cars into the structure from eastern rail spur tie ins. None of this site is within a flood hazard area according to FEMA's National Flood Hazard Map, Panel 47119C0265E with an effective date of April 16, 2007 (see Figure 3). Currently, the site drains via sheet flow generally to the northeast. There are two offsite drainage basins moving in the same direction but are relatively unaffected by the developed and remain flowing in a similar fashion after development. The site increased stormwater due to impervious and related development surfaces is routed to a detention pond to detain flows less than existing for the site. After detention the water is routed to the northeast along the existing drainage paths at amounts less than existing for the 2 through 100 year events.



Figure 1: Vicinity Map



Figure 2: Maury County Property Map 150, Parcel 63.11

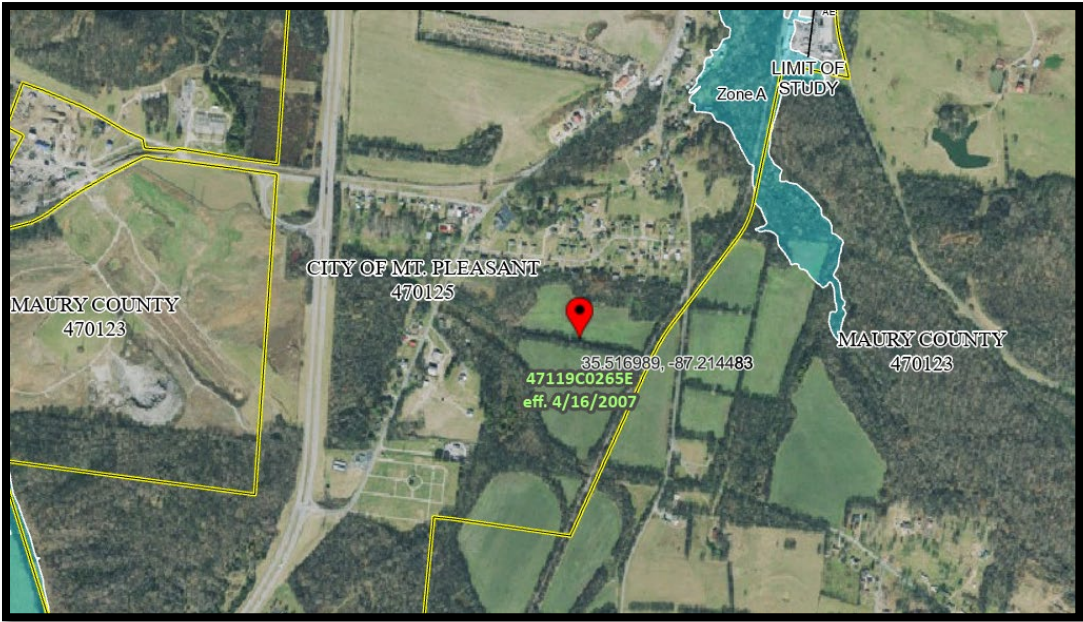


Figure 3: FEMA Map 47119C0265E

Section II Drainage Calculations

Using the existing data detailed below, analysis transpired using the SCS (TR-20) method to determine the pre-developed discharge rates for this site. A curve number varied on the grass or wooded areas and was used for all pervious areas given the site cover and condition observations coupled with the existing soil types detailed shown hereinafter.

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
Ae	Armour silt loam, eroded gently sloping phase	17.5	27.1%
Bg	Braxton cherty silty clay loam, severely eroded sloping phase	0.9	1.4%
Bm	Burgin silt loam, phosphatic phase (Eagleville)	20.9	32.4%
Df	Donerail silt loam, gently sloping phase	6.3	9.8%
Hr	Huntington silt loam, local alluvium phosphatic phase	1.1	1.7%
Ld	Lindell silt loam, 0 to 2 percent slopes, occasionally flooded	13.4	20.8%
Mb	Maury silt loam, eroded gently sloping phase	0.1	0.2%
Mp	Mines, Pits, and Dumps	4.2	6.5%
W	Water	0.1	0.2%
Totals for Area of Interest		64.7	100.0%

Figure 4: NRCS Soil Data



Figure 5: NRCS Soil Data Map

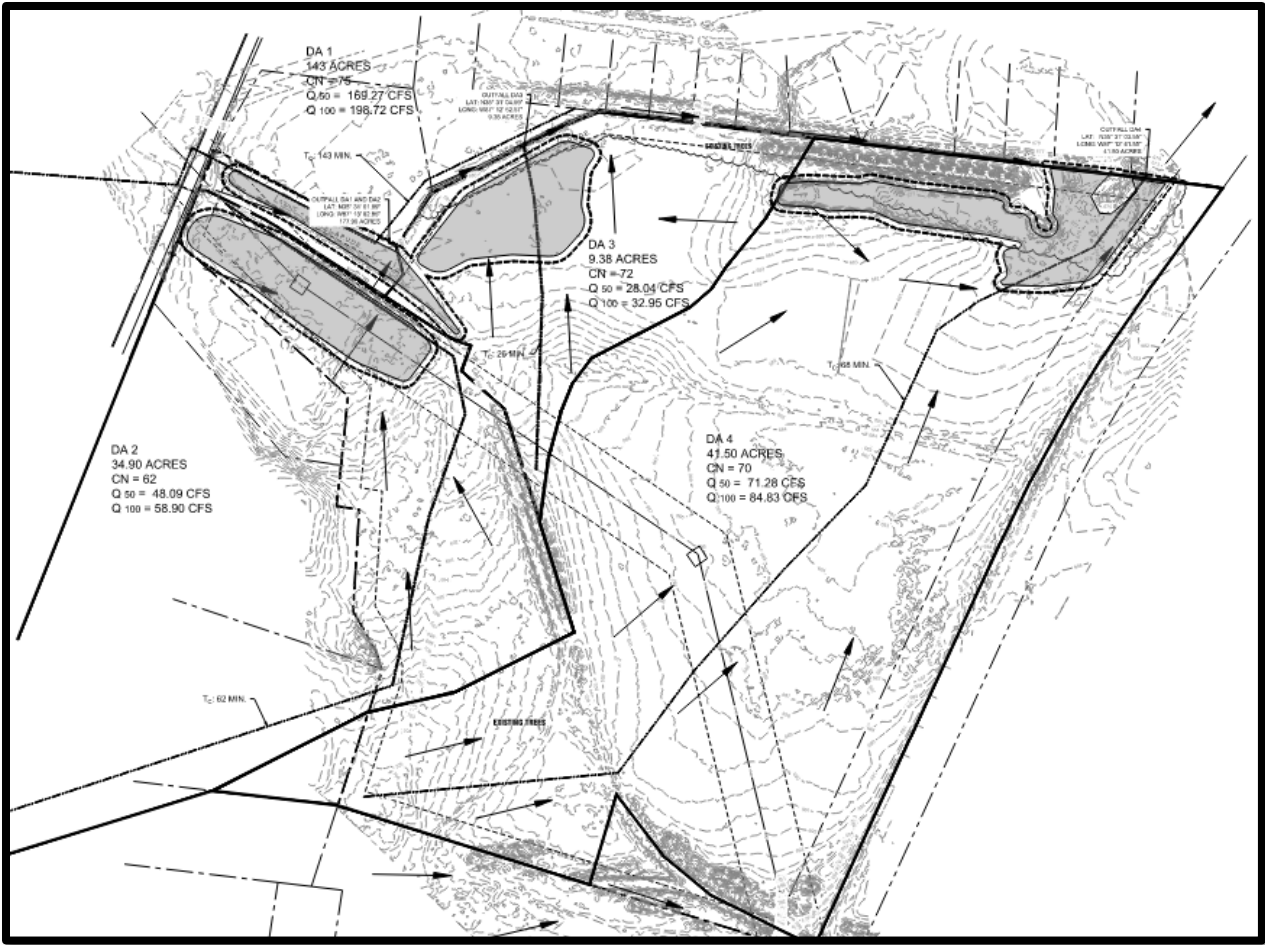


Figure 6: Existing Drainage Basin Map

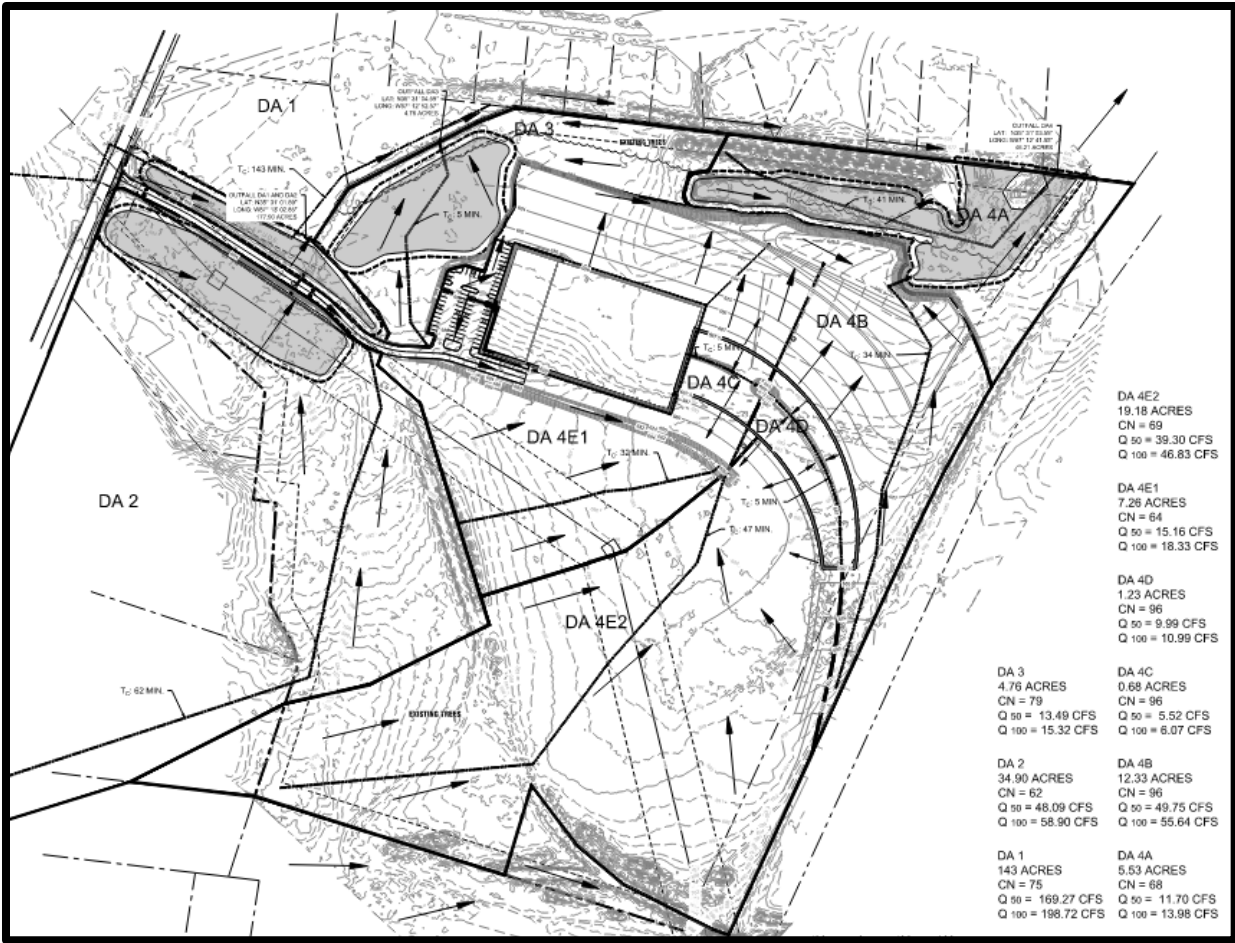


Figure 7: Proposed Drainage Basin Map

The 2, 5, 10, 25, 50 and 100-year storms were each analyzed using a 24-hour period in accordance with the original development of the SCS model. Design rainfall data from NOAA Atlas 14 for Mt Pleasant, TN was used for the intensity of all rainfall events. The resulting runoff rates for each storm can be found in Figure 9 below and as attached in detail in Appendix A.

2.1 General Plan

The site's topography and natural drainage patterns allow the site under development consideration to be analyzed as four subbasins as shown in Figure 6 above the cut into smaller, developed subbasin in the proposed site in Figure 7. The site development will meet the City regulation requirements for quantity pre vs. post measures. The detained flows from the site are then returned to existing drainage features, and the associated runoff follows natural pathways

offsite. Downstream analysis was not performed since the flows are reduced in the pre vs post conditions and any capacity issues would pre-exist the site development, yet be improved because of the site detention.

A general schematic plan of this design is presented in Figure 8 which shows runoff being collected via sheet and shallow concentrated flow and some ditches into the detention pond. No water quality measures are provided.

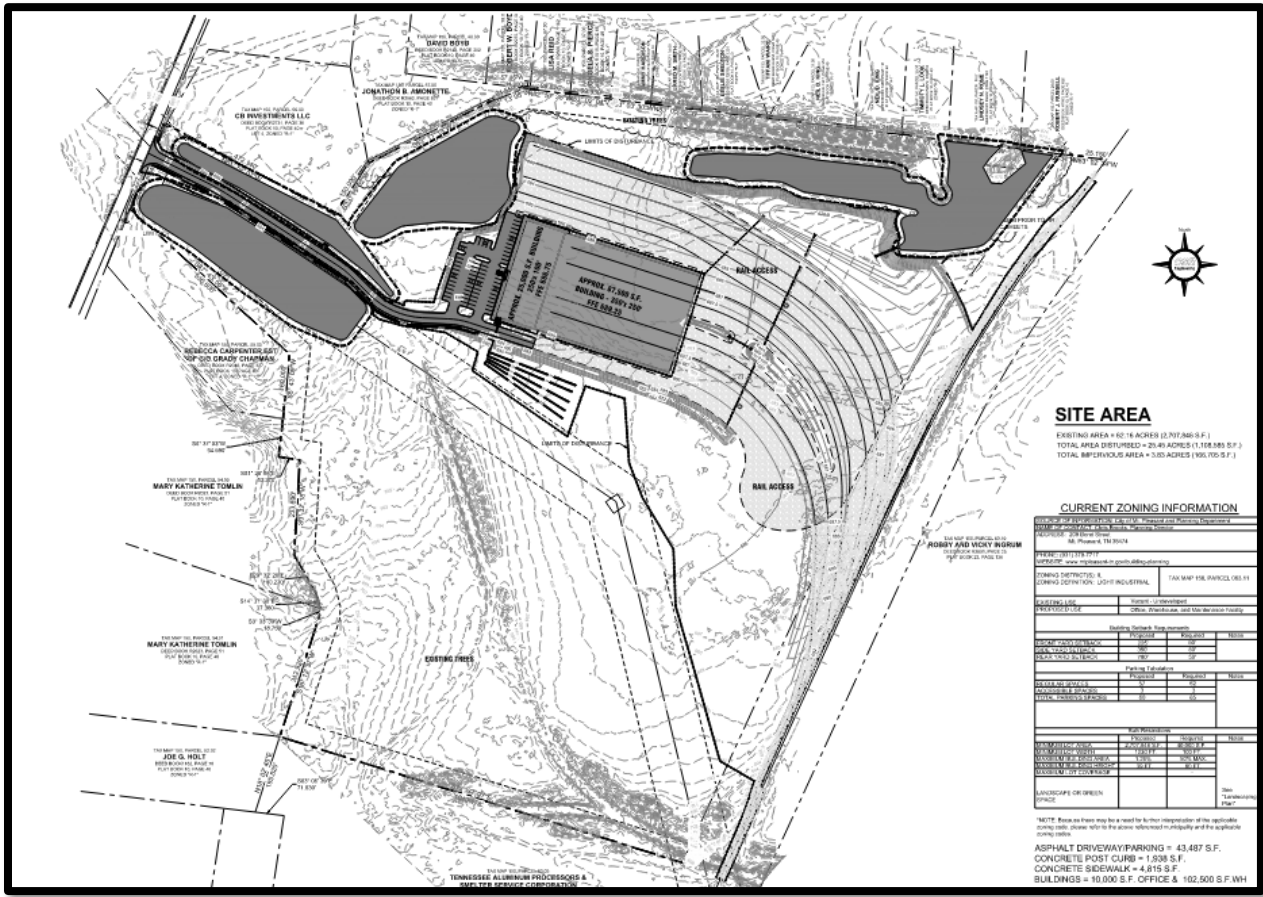


Figure 8: Grading Sheet

Section IV Proposed Stormwater Quantity Controls

The stormwater flow control occurs with the application of an individual detention management facility. The SCS (TR-20) method utilizing HydroCAD was used to analyze all flows through the existing and proposed drainage system. The curve number for the proposed site was developed from the weighted site curve numbers in pervious areas (varies) and 98 for improved asphalt, concrete and building areas. Stone covered access and storage areas have a varied CN based upon the underlying soils composition and drainage classification. The resultant flows for the proposed site are based on the proposed development as shown on the plans and further detailed in the Appendix A report.

4.1 Storm Water Quantity Conditions

Pre vs. Post stormwater runoff results in a slight increase to site quantities as tabled below. The images below reveal the drainage areas prior to and after construction.

Storm Event	Predeveloped Flows (CFS) Areas 3&4	Proposed Flows after Detention (CFS) Areas 3/4/Pond
2-year	31.32	30.52
5-year	47.49	42.75
10-year	61.46	53.30
25-year	81.97	66.64
50-year	99.32	82.9
100-year	117.78	91.69

Figure 9: Site Pre vs. Post Runoff Summary

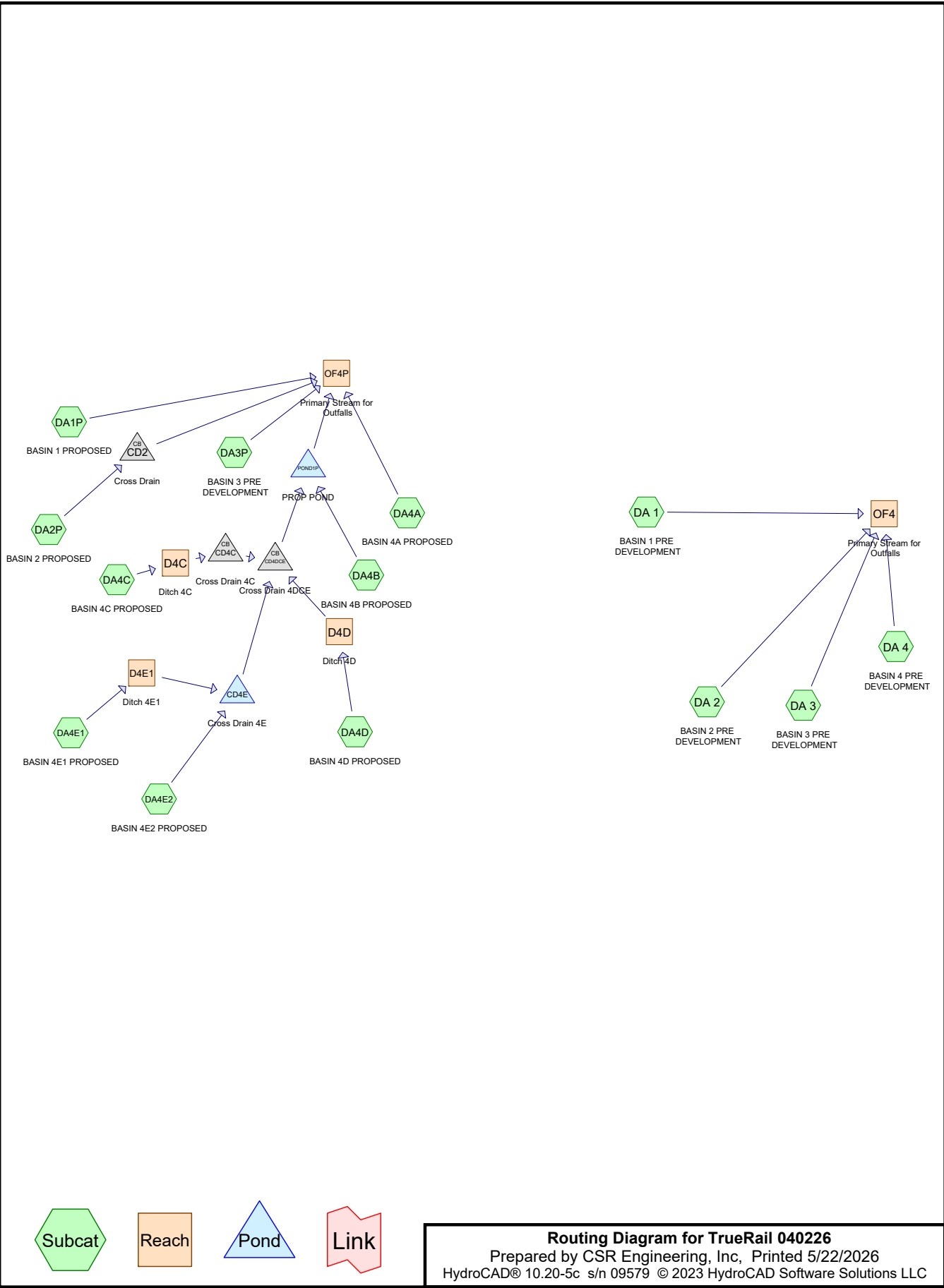
With the quantity increased due to the change in cover and added impervious areas, storm water storage is provided for by a standard detention with controlled release rates. An emergency overflow designed to pass storm events greater than the 100 year event is also included as part of this design. All peak volume calculations are based on the SCS TR-20 method.

Section V Conclusion

The proposed storm sewer system has been designed to meet the requirements of the City of Mt. Pleasant Regulations and prior recommendations of the Department Staff. The system will reduce the post-developed site discharge rate from the 2, 5, 10, 25, 50 and 100-year rainfall events to be less than the pre-developed discharge rates from the same storms.

APPENDIX A

Drainage Model Reports



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Project Notes

Copied 6 events from Springfield 24-hr S1 storm

Copied 7 events from dickson 24-hr S1 storm

Copied 7 events from stockbridge 24-hr S1 storm

Copied 6 events from Tiptonville 24-hr S1 storm

Copied 7 events from Mt Pleasant 24-hr S1 storm

Copied 6 events from Tiptonville 24-hr S1 storm

Copied 7 events from Mt Pleasant 24-hr S1 storm

Copied 6 events from Tiptonville 24-hr S1 storm

Copied 7 events from Mt Pleasant 24-hr S1 storm

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Rainfall Events Listing

Event#	Event Name	Storm Type	Curve	Mode	Duration (hours)	B/B	Depth (inches)	AMC
1	2-yr	Mt Pleasant 24-hr S1	2-yr	Default	24.00	1	3.90	2
2	5-yr	Mt Pleasant 24-hr S1	5-yr	Default	24.00	1	4.75	2
3	10-yr	Mt Pleasant 24-hr S1	10-yr	Default	24.00	1	5.42	2
4	25-yr	Mt Pleasant 24-hr S1	25-yr	Default	24.00	1	6.34	2
5	50-yr	Mt Pleasant 24-hr S1	50-yr	Default	24.00	1	7.08	2
6	100-yr	Mt Pleasant 24-hr S1	100-yr	Default	24.00	1	7.83	2

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Area Listing (selected nodes)

Area (sq-ft)	CN	Description (subcatchment-numbers)
6,054,840	74	>75% Grass cover, Good, HSG C (DA 1, DA1P)
750,974	96	Gravel surface, HSG C (DA 2, DA2P, DA4B, DA4C, DA4D)
2,302,582	58	Meadow, non-grazed, HSG B (DA 2, DA 3, DA 4, DA2P, DA4E1, DA4E2)
650,351	71	Meadow, non-grazed, HSG C (DA 4)
461,736	78	Meadow, non-grazed, HSG D (DA 3, DA 4)
217,800	98	Paved parking, HSG C (DA 1, DA1P)
43,560	98	Paved parking, HSG D (DA4B)
43,560	98	Paved roads w/curbs & sewers, HSG B (DA4E1)
87,120	98	Roofs, HSG D (DA4B)
1,812,532	60	Woods, Fair, HSG B (DA 2, DA 3, DA 4, DA2P, DA4A, DA4E1, DA4E2)
488,743	73	Woods, Fair, HSG C (DA 4, DA4A)
835,916	79	Woods, Fair, HSG D (DA 3, DA 4, DA3P, DA4E2)
6,185,520	76	Woods/grass comb., Fair, HSG C (DA 1, DA1P)
19,935,234	73	TOTAL AREA

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Soil Listing (selected nodes)

Area (sq-ft)	Soil Group	Subcatchment Numbers
0	HSG A	
4,158,673	HSG B	DA 2, DA 3, DA 4, DA2P, DA4A, DA4E1, DA4E2
14,348,228	HSG C	DA 1, DA 2, DA 4, DA1P, DA2P, DA4A, DA4B, DA4C, DA4D
1,428,332	HSG D	DA 3, DA 4, DA3P, DA4B, DA4E2
0	Other	
19,935,234		TOTAL AREA

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Ground Covers (selected nodes)

HSG-A (sq-ft)	HSG-B (sq-ft)	HSG-C (sq-ft)	HSG-D (sq-ft)	Other (sq-ft)	Total (sq-ft)	Ground Cover
0	0	6,054,840	0	0	6,054,840	>75% Grass cover, Good
0	0	750,974	0	0	750,974	Gravel surface
0	2,302,582	650,351	461,736	0	3,414,668	Meadow, non-grazed
0	0	217,800	43,560	0	261,360	Paved parking
0	43,560	0	0	0	43,560	Paved roads w/curbs & sewers
0	0	0	87,120	0	87,120	Roofs
0	1,812,532	488,743	835,916	0	3,137,191	Woods, Fair
0	0	6,185,520	0	0	6,185,520	Woods/grass comb., Fair
0	4,158,673	14,348,228	1,428,332	0	19,935,234	TOTAL AREA

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Pipe Listing (selected nodes)

Line#	Node Number	In-Invert (feet)	Out-Invert (feet)	Length (feet)	Slope (ft/ft)	n	Width (inches)	Diam/Height (inches)	Inside-Fill (inches)	Node Name
1	CD2	680.25	680.00	50.0	0.0050	0.011	0.0	36.0	0.0	
2	CD4C	683.75	679.00	60.0	0.0792	0.011	0.0	18.0	0.0	
3	CD4DCE	678.39	676.50	360.0	0.0052	0.011	0.0	48.0	0.0	
4	CD4E	679.50	678.46	200.0	0.0052	0.011	0.0	48.0	0.0	
5	POND1P	676.25	676.00	50.0	0.0050	0.011	0.0	36.0	0.0	

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Time span=0.00-48.00 hrs, dt=0.01 hrs, 4801 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

Subcatchment DA 1: BASIN 1 PRE Runoff Area=143.000 ac 1.75% Impervious Runoff Depth=1.59"
 Flow Length=5,750' Tc=143.0 min CN=75 Runoff=58.46 cfs 826,416 cf

Subcatchment DA 2: BASIN 2 PRE Runoff Area=34.900 ac 0.00% Impervious Runoff Depth=0.81"
 Flow Length=2,150' Slope=0.0150 '/' Tc=62.3 min CN=62 Runoff=11.06 cfs 102,914 cf

Subcatchment DA 3: BASIN 3 PRE Runoff Area=9.380 ac 0.00% Impervious Runoff Depth=1.46"
 Flow Length=838' Slope=0.0200 '/' Tc=25.9 min CN=73 Runoff=9.84 cfs 49,580 cf

Subcatchment DA 4: BASIN 4 PRE Runoff Area=41.500 ac 0.00% Impervious Runoff Depth=1.26"
 Flow Length=2,468' Tc=68.1 min CN=70 Runoff=21.84 cfs 190,326 cf

Subcatchment DA1P: BASIN 1 PROPOSED Runoff Area=143.000 ac 1.75% Impervious Runoff Depth=1.59"
 Flow Length=5,750' Tc=143.0 min CN=75 Runoff=58.46 cfs 826,416 cf

Subcatchment DA2P: BASIN 2 PROPOSED Runoff Area=34.900 ac 0.00% Impervious Runoff Depth=0.81"
 Flow Length=2,150' Slope=0.0150 '/' Tc=62.3 min CN=62 Runoff=11.06 cfs 102,914 cf

Subcatchment DA3P: BASIN 3 PRE Runoff Area=4.760 ac 0.00% Impervious Runoff Depth=1.88"
 Tc=5.0 min CN=79 Runoff=13.13 cfs 32,530 cf

Subcatchment DA4A: BASIN 4A PROPOSED Runoff Area=5.530 ac 0.00% Impervious Runoff Depth=1.14"
 Flow Length=945' Tc=40.9 min CN=68 Runoff=3.44 cfs 22,928 cf

Subcatchment DA4B: BASIN 4B Runoff Area=12.330 ac 24.33% Impervious Runoff Depth=3.44"
 Flow Length=996' Tc=33.8 min CN=96 Runoff=26.19 cfs 154,012 cf

Subcatchment DA4C: BASIN 4C PROPOSED Runoff Area=0.680 ac 0.00% Impervious Runoff Depth=3.44"
 Tc=5.0 min CN=96 Runoff=3.21 cfs 8,494 cf

Subcatchment DA4D: BASIN 4D PROPOSED Runoff Area=1.230 ac 0.00% Impervious Runoff Depth=3.44"
 Tc=5.0 min CN=96 Runoff=5.81 cfs 15,364 cf

Subcatchment DA4E1: BASIN 4E1 Runoff Area=7.260 ac 13.77% Impervious Runoff Depth=0.92"
 Flow Length=640' Tc=31.5 min CN=64 Runoff=3.86 cfs 24,160 cf

Subcatchment DA4E2: BASIN 4E2 Runoff Area=19.180 ac 0.00% Impervious Runoff Depth=1.20"
 Flow Length=1,313' Tc=46.8 min CN=69 Runoff=11.82 cfs 83,694 cf

Reach D4C: Ditch 4C Avg. Flow Depth=0.52' Max Vel=2.25 fps Inflow=3.21 cfs 8,494 cf
 n=0.033 L=313.0' S=0.0104 '/' Capacity=27.19 cfs Outflow=2.96 cfs 8,494 cf

Reach D4D: Ditch 4D Avg. Flow Depth=0.65' Max Vel=3.03 fps Inflow=5.81 cfs 15,364 cf
 n=0.033 L=337.0' S=0.0148 '/' Capacity=32.50 cfs Outflow=5.49 cfs 15,364 cf

Reach D4E1: Ditch 4E1 Avg. Flow Depth=0.43' Max Vel=1.22 fps Inflow=3.86 cfs 24,160 cf
 n=0.033 L=1,788.0' S=0.0031 '/' Capacity=197.27 cfs Outflow=2.79 cfs 24,160 cf

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Reach OF4: Primary Stream for Avg. Flow Depth=1.84' Max Vel=3.38 fps Inflow=75.72 cfs 1,169,236 cf
 n=0.035 L=1,000.0' S=0.0050 '/' Capacity=640.46 cfs Outflow=75.62 cfs 1,169,236 cf

Reach OF4P: Primary Stream for Avg. Flow Depth=1.88' Max Vel=3.43 fps Inflow=79.43 cfs 1,270,504 cf
 n=0.035 L=1,000.0' S=0.0050 '/' Capacity=640.46 cfs Outflow=79.29 cfs 1,270,503 cf

Pond CD2: Cross Drain Peak Elev=681.73' Inflow=11.06 cfs 102,914 cf
 36.0" Round Culvert n=0.011 L=50.0' S=0.0050 '/' Outflow=11.06 cfs 102,914 cf

Pond CD4C: Cross Drain 4C Peak Elev=684.56' Inflow=2.96 cfs 8,494 cf
 18.0" Round Culvert n=0.011 L=60.0' S=0.0792 '/' Outflow=2.96 cfs 8,494 cf

Pond CD4DCE: Cross Drain 4DCE Peak Elev=680.19' Inflow=15.18 cfs 131,709 cf
 48.0" Round Culvert n=0.011 L=360.0' S=0.0052 '/' Outflow=15.18 cfs 131,709 cf

Pond CD4E: Cross Drain 4E Peak Elev=681.07' Storage=1,039 cf Inflow=14.52 cfs 107,853 cf
 48.0" Round Culvert n=0.011 L=200.0' S=0.0052 '/' Outflow=14.40 cfs 107,852 cf

Pond POND1P: PROP POND Peak Elev=679.53' Storage=98,788 cf Inflow=38.46 cfs 285,722 cf
 Outflow=17.22 cfs 285,716 cf

Total Runoff Area = 19,935,234 sf Runoff Volume = 2,439,747 cf Average Runoff Depth = 1.47"
98.03% Pervious = 19,543,194 sf 1.97% Impervious = 392,040 sf

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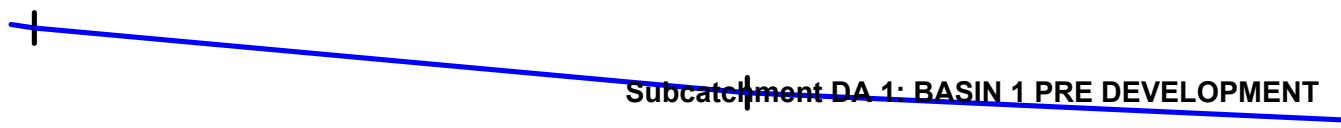
Summary for Subcatchment DA 1: BASIN 1 PRE DEVELOPMENT

Runoff = 58.46 cfs @ 13.83 hrs, Volume= 826,416 cf, Depth= 1.59"
Routed to Reach OF4 : Primary Stream for Outfalls

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Mt Pleasant 24-hr S1 2-yr Rainfall=3.90"

Area (ac)	CN	Description
69.500	74	>75% Grass cover, Good, HSG C
71.000	76	Woods/grass comb., Fair, HSG C
2.500	98	Paved parking, HSG C
143.000	75	Weighted Average
140.500		98.25% Pervious Area
2.500		1.75% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
35.4	100	0.0200	0.05		Sheet Flow, Woods: Dense underbrush n= 0.800 P2= 3.57"
92.8	3,050	0.0120	0.55		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
14.8	2,600	0.0060	2.93	11.71	Channel Flow, Area= 4.0 sf Perim= 6.0' r= 0.67' n= 0.030
143.0	5,750	Total			



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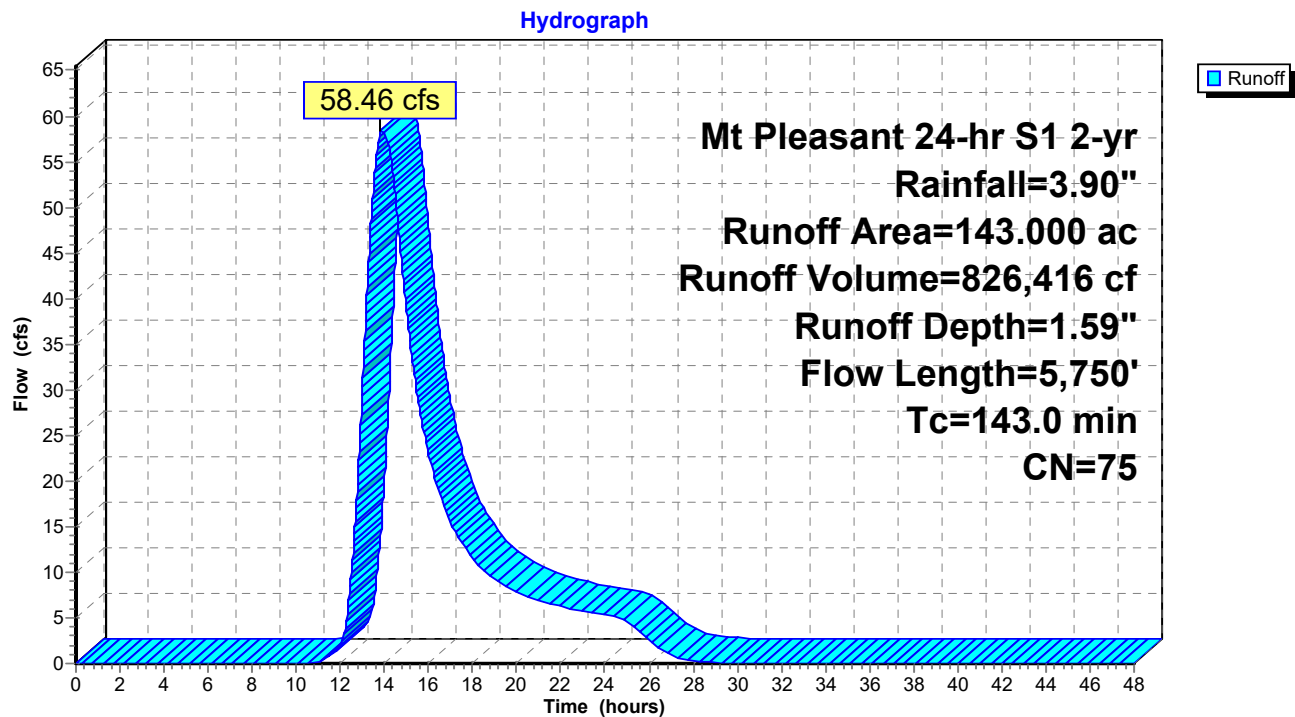
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Subcatchment DA 1: BASIN 1 PRE DEVELOPMENT



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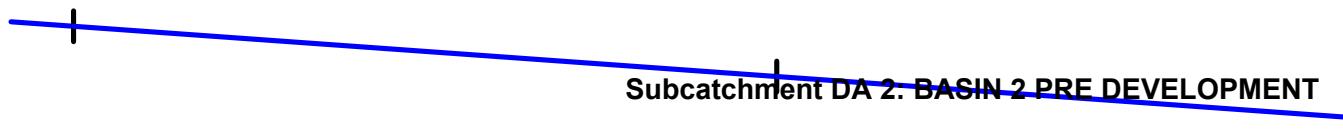
Summary for Subcatchment DA 2: BASIN 2 PRE DEVELOPMENT

Runoff = 11.06 cfs @ 12.95 hrs, Volume= 102,914 cf, Depth= 0.81"
Routed to Reach OF4 : Primary Stream for Outfalls

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Mt Pleasant 24-hr S1 2-yr Rainfall=3.90"

Area (ac)	CN	Description
17.450	58	Meadow, non-grazed, HSG B
14.450	60	Woods, Fair, HSG B
3.000	96	Gravel surface, HSG C
34.900	62	Weighted Average
34.900		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.2	100	0.0150	0.11		Sheet Flow, Grass: Dense n= 0.240 P2= 3.57"
21.9	1,125	0.0150	0.86		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
25.2	925	0.0150	0.61		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
62.3	2,150	Total			



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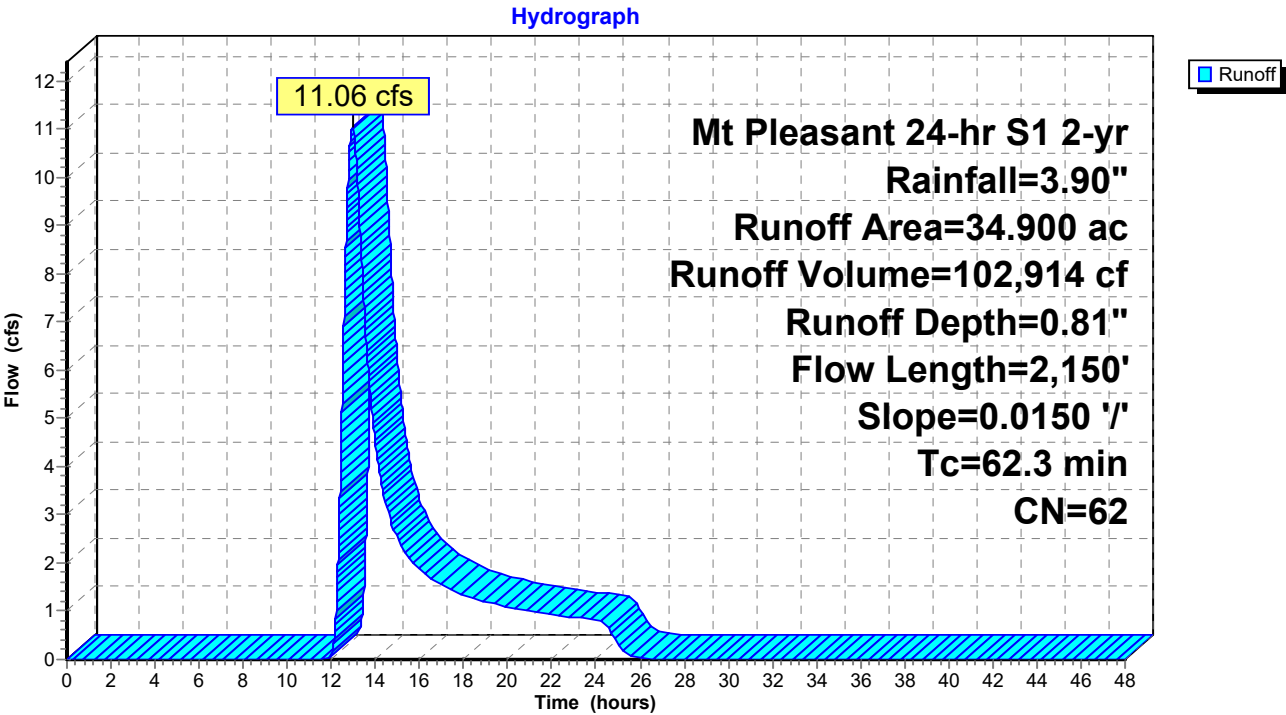
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Subcatchment DA 2: BASIN 2 PRE DEVELOPMENT



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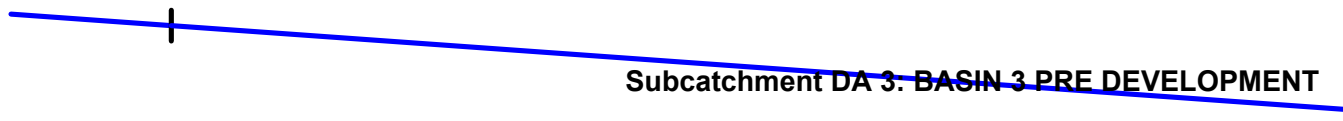
Summary for Subcatchment DA 3: BASIN 3 PRE DEVELOPMENT

Runoff = 9.84 cfs @ 12.34 hrs, Volume= 49,580 cf, Depth= 1.46"
Routed to Reach OF4 : Primary Stream for Outfalls

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Mt Pleasant 24-hr S1 2-yr Rainfall=3.90"

Area (ac)	CN	Description
3.300	78	Meadow, non-grazed, HSG D
3.300	79	Woods, Fair, HSG D
2.250	58	Meadow, non-grazed, HSG B
0.530	60	Woods, Fair, HSG B
9.380	73	Weighted Average
9.380		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.5	100	0.0200	0.12		Sheet Flow, Grass: Dense n= 0.240 P2= 3.57"
12.4	738	0.0200	0.99		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
25.9	838	Total			



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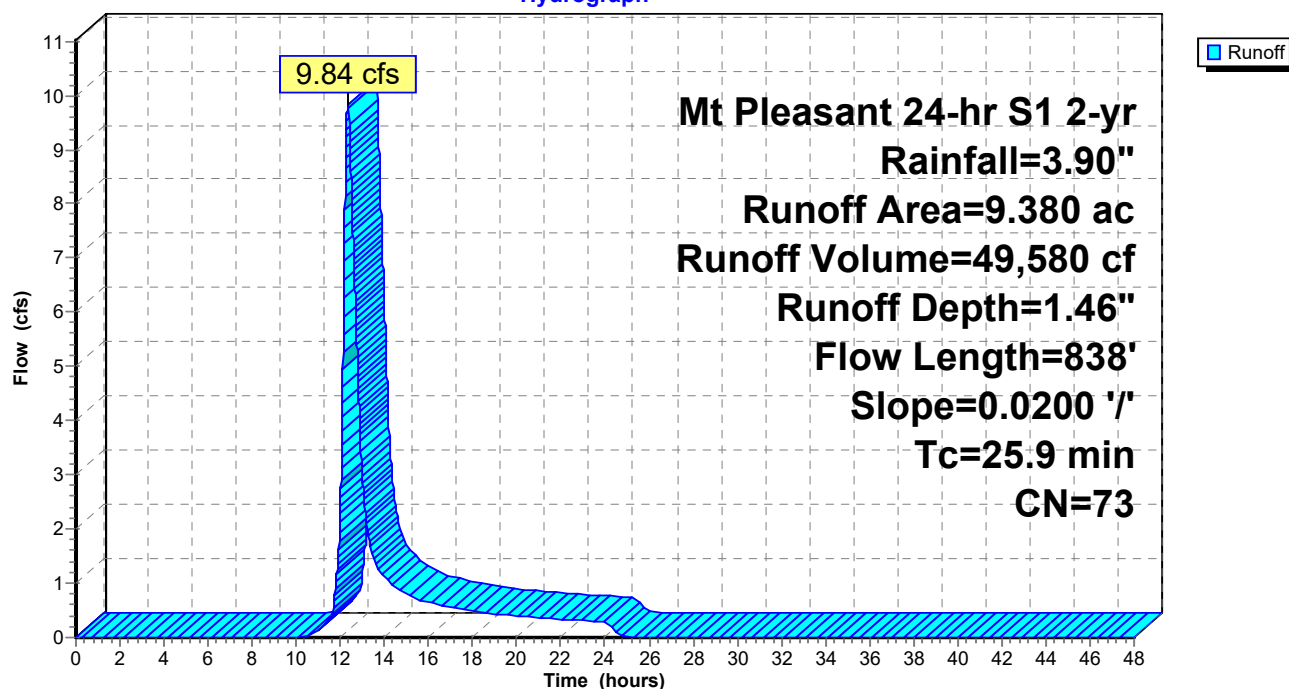
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Subcatchment DA 3: BASIN 3 PRE DEVELOPMENT

Hydrograph



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Summary for Subcatchment DA 4: BASIN 4 PRE DEVELOPMENT

Runoff = 21.84 cfs @ 12.94 hrs, Volume= 190,326 cf, Depth= 1.26"
Routed to Reach OF4 : Primary Stream for Outfalls

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Mt Pleasant 24-hr S1 2-yr Rainfall=3.90"

Area (ac)	CN	Description
7.300	78	Meadow, non-grazed, HSG D
1.830	79	Woods, Fair, HSG D
7.640	58	Meadow, non-grazed, HSG B
1.910	60	Woods, Fair, HSG B
4.150	73	Woods, Fair, HSG C
9.960	71	Meadow, non-grazed, HSG C
2.490	73	Woods, Fair, HSG C
4.970	71	Meadow, non-grazed, HSG C
1.250	73	Woods, Fair, HSG C
41.500	70	Weighted Average
41.500		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
24.5	100	0.0500	0.07		Sheet Flow, Woods: Dense underbrush n= 0.800 P2= 3.57"
43.6	2,368	0.0167	0.90		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
68.1	2,468	Total			

Subcatchment DA 4: BASIN 4 PRE DEVELOPMENT

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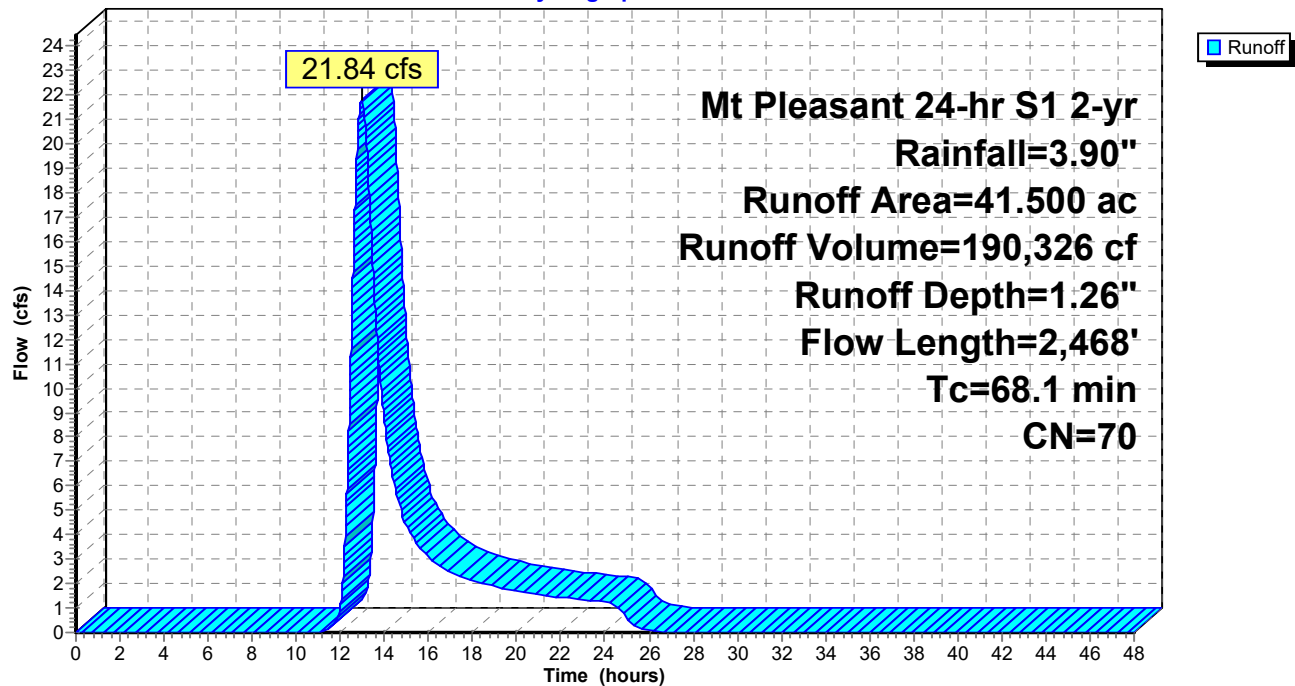
Mt Pleasant 24-hr S1 2-yr Rainfall=3.90"

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Subcatchment DA 4: BASIN 4 PRE DEVELOPMENT

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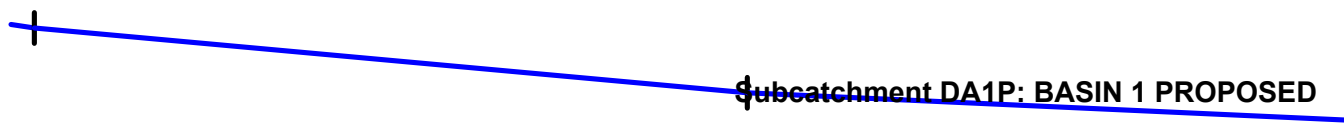
Summary for Subcatchment DA1P: BASIN 1 PROPOSED

Runoff = 58.46 cfs @ 13.83 hrs, Volume= 826,416 cf, Depth= 1.59"
 Routed to Reach OF4P : Primary Stream for Outfalls

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
 Mt Pleasant 24-hr S1 2-yr Rainfall=3.90"

Area (ac)	CN	Description
69.500	74	>75% Grass cover, Good, HSG C
71.000	76	Woods/grass comb., Fair, HSG C
2.500	98	Paved parking, HSG C
143.000	75	Weighted Average
140.500		98.25% Pervious Area
2.500		1.75% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
35.4	100	0.0200	0.05		Sheet Flow, Woods: Dense underbrush n= 0.800 P2= 3.57"
92.8	3,050	0.0120	0.55		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
14.8	2,600	0.0060	2.93	11.71	Channel Flow, Area= 4.0 sf Perim= 6.0' r= 0.67' n= 0.030
143.0	5,750	Total			



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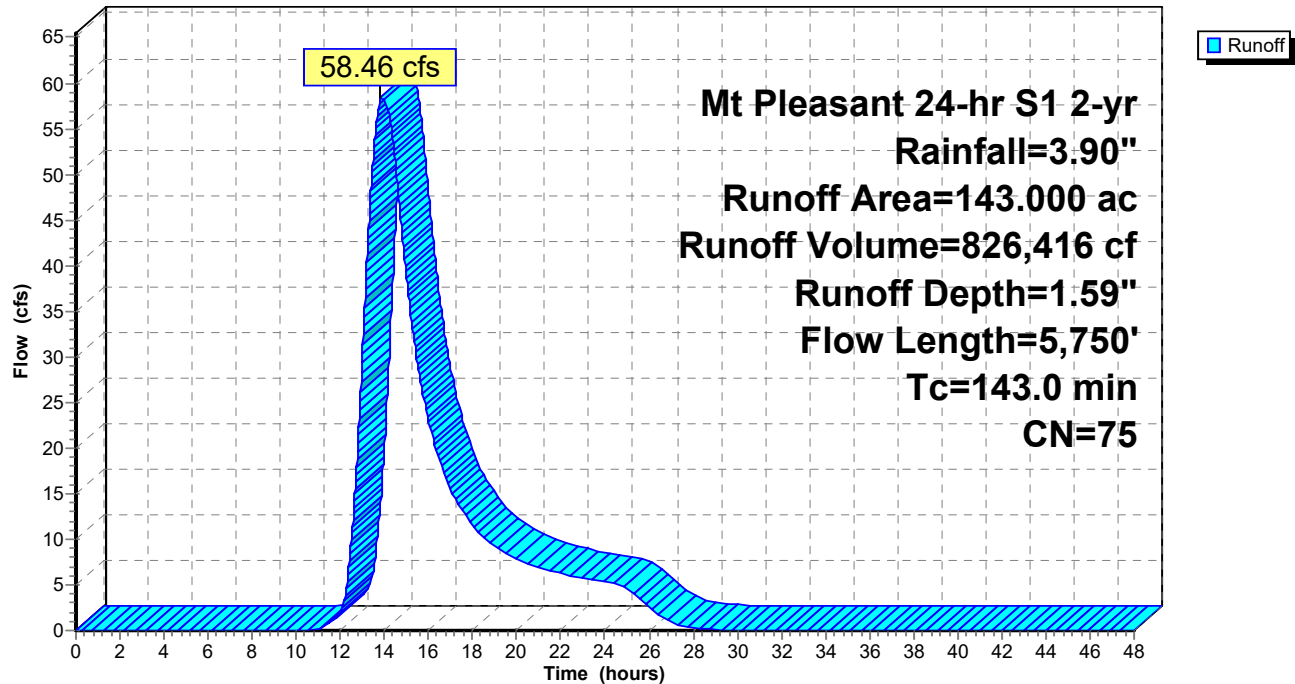
Mt Pleasant 24-hr S1 2-yr Rainfall=3.90"

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Subcatchment DA1P: BASIN 1 PROPOSED

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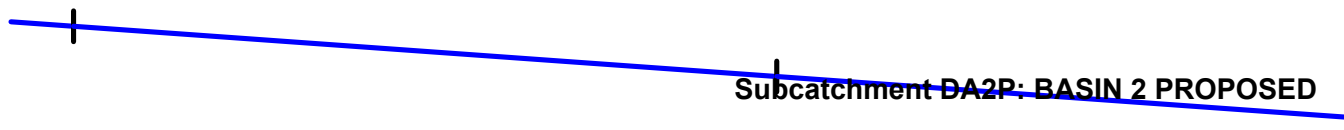
Summary for Subcatchment DA2P: BASIN 2 PROPOSED

Runoff = 11.06 cfs @ 12.95 hrs, Volume= 102,914 cf, Depth= 0.81"
Routed to Pond CD2 : Cross Drain

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Mt Pleasant 24-hr S1 2-yr Rainfall=3.90"

Area (ac)	CN	Description
17.450	58	Meadow, non-grazed, HSG B
14.450	60	Woods, Fair, HSG B
3.000	96	Gravel surface, HSG C
34.900	62	Weighted Average
34.900		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.2	100	0.0150	0.11		Sheet Flow, Grass: Dense n= 0.240 P2= 3.57"
21.9	1,125	0.0150	0.86		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
25.2	925	0.0150	0.61		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
62.3	2,150	Total			



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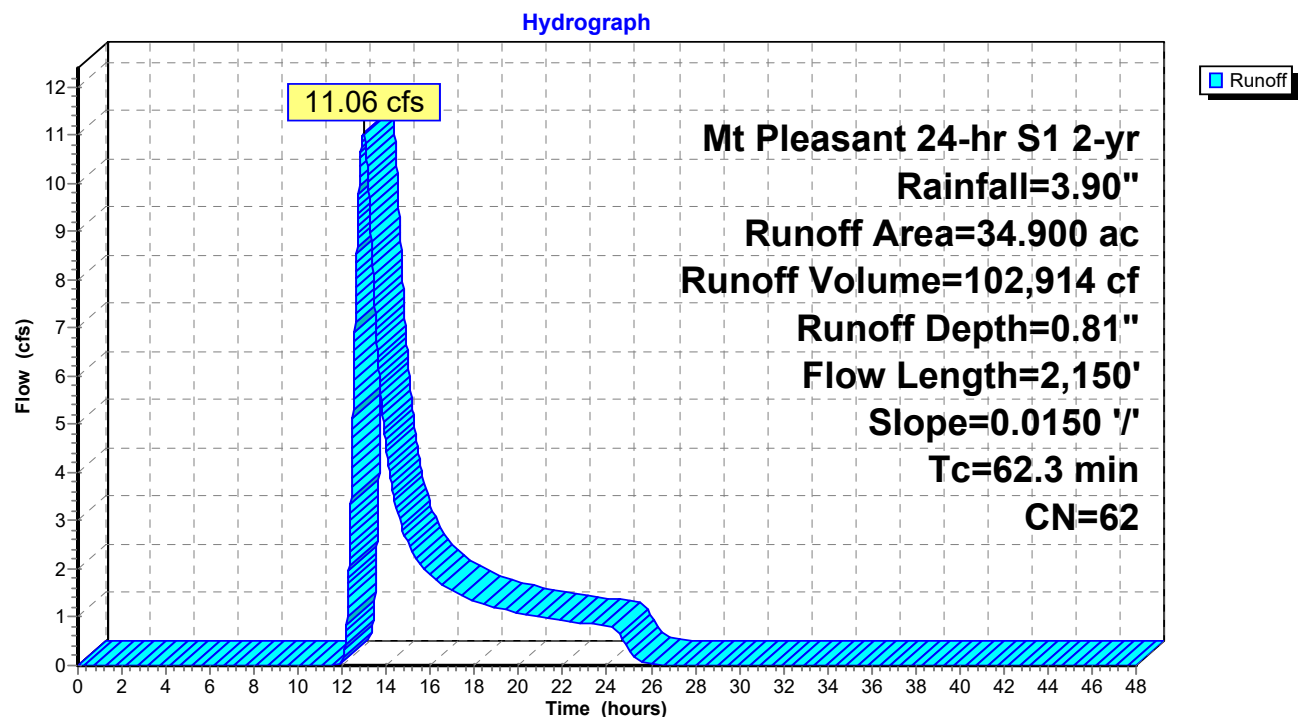
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Subcatchment DA2P: BASIN 2 PROPOSED



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Summary for Subcatchment DA3P: BASIN 3 PRE DEVELOPMENT

Runoff = 13.13 cfs @ 12.03 hrs, Volume= 32,530 cf, Depth= 1.88"
Routed to Reach OF4P : Primary Stream for Outfalls

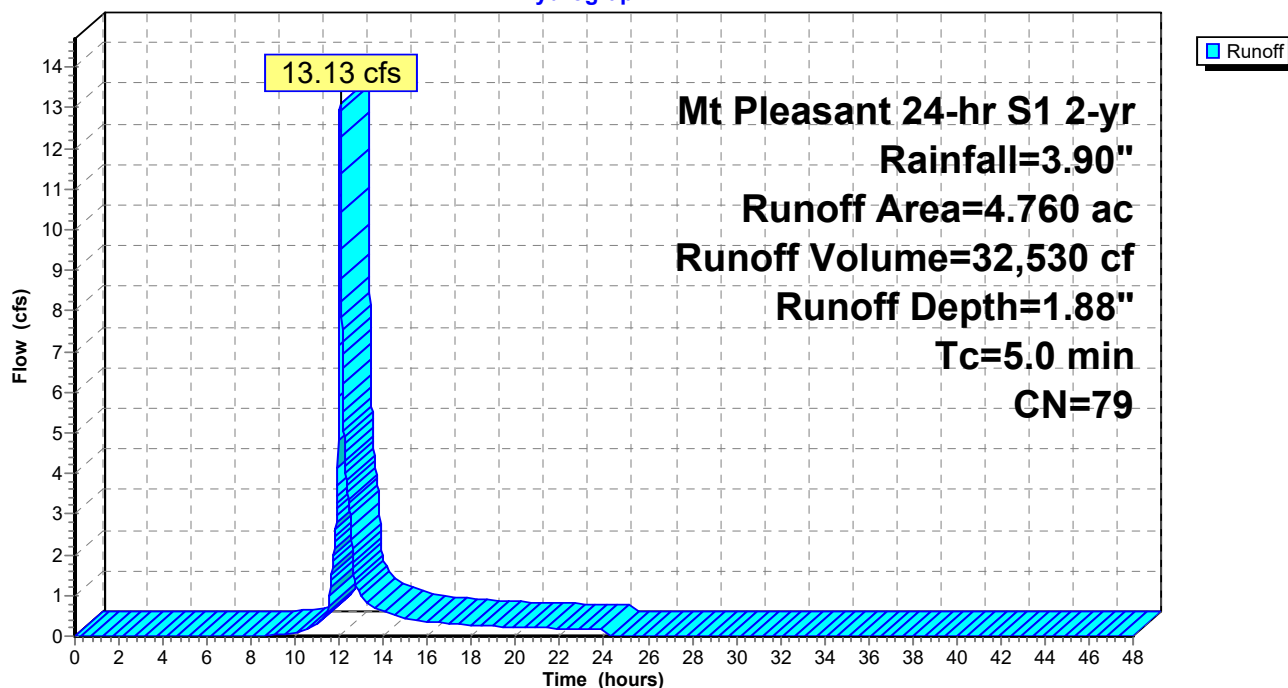
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Mt Pleasant 24-hr S1 2-yr Rainfall=3.90"

Area (ac)	CN	Description
4.760	79	Woods, Fair, HSG D
4.760		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					Direct Entry,

Subcatchment DA3P: BASIN 3 PRE DEVELOPMENT

Hydrograph



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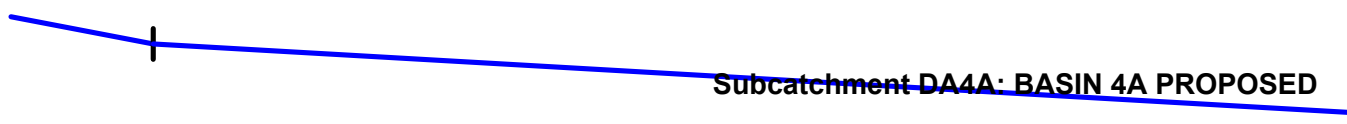
Summary for Subcatchment DA4A: BASIN 4A PROPOSED

Runoff = 3.44 cfs @ 12.59 hrs, Volume= 22,928 cf, Depth= 1.14"
Routed to Reach OF4P : Primary Stream for Outfalls

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Mt Pleasant 24-hr S1 2-yr Rainfall=3.90"

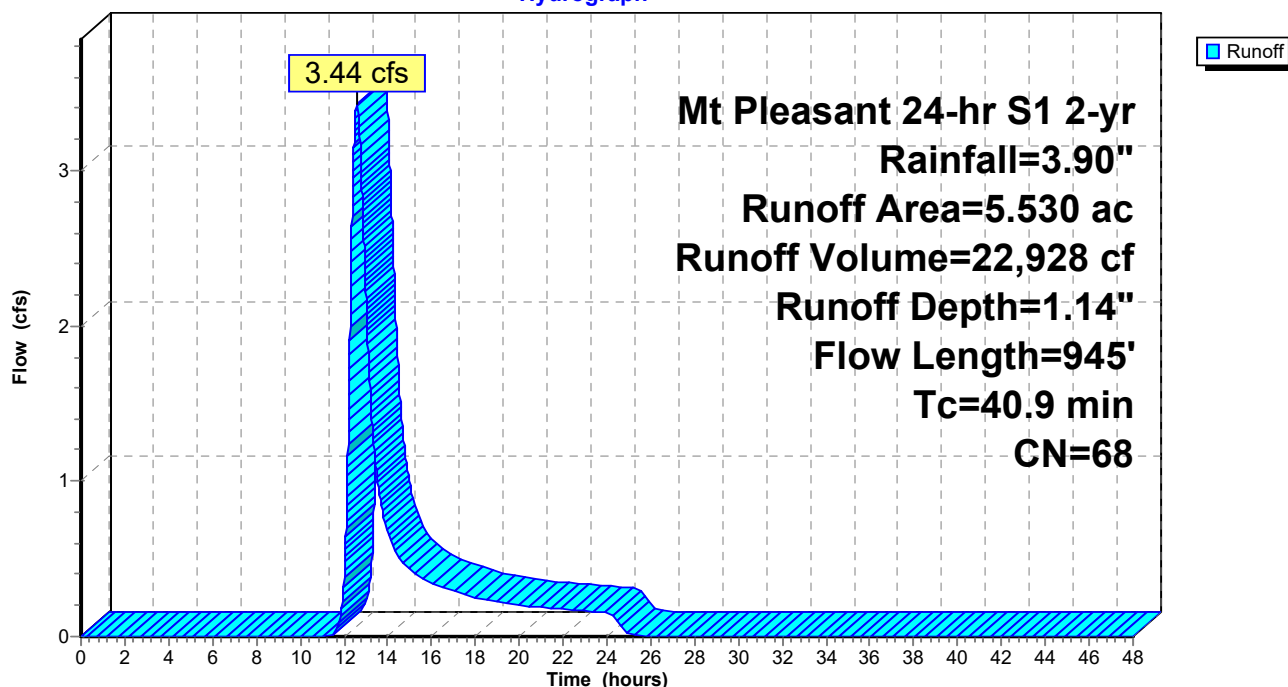
Area (ac)	CN	Description
2.200	60	Woods, Fair, HSG B
3.330	73	Woods, Fair, HSG C
5.530	68	Weighted Average
5.530		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
24.5	100	0.0500	0.07		Sheet Flow, Woods: Dense underbrush n= 0.800 P2= 3.57"
16.4	845	0.0150	0.86		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
40.9	945	Total			



Subcatchment DA4A: BASIN 4A PROPOSED

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Mt Pleasant 24-hr S1 2-yr Rainfall=3.90"

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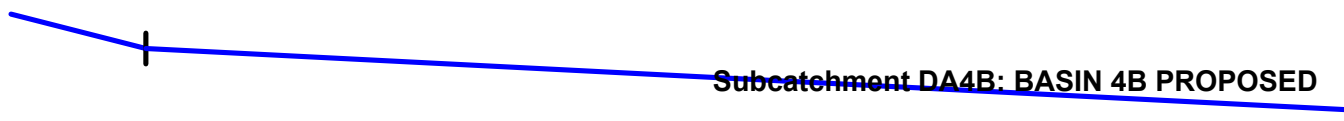
Summary for Subcatchment DA4B: BASIN 4B PROPOSED

Runoff = 26.19 cfs @ 12.40 hrs, Volume= 154,012 cf, Depth= 3.44"
Routed to Pond POND1P : PROP POND

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Mt Pleasant 24-hr S1 2-yr Rainfall=3.90"

Area (ac)	CN	Description
9.330	96	Gravel surface, HSG C
1.000	98	Paved parking, HSG D
2.000	98	Roofs, HSG D
12.330	96	Weighted Average
9.330		75.67% Pervious Area
3.000		24.33% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
24.5	100	0.0500	0.07		Sheet Flow, n= 0.800 P2= 3.57"
9.3	896	0.0100	1.61		Shallow Concentrated Flow, Unpaved Kv= 16.1 fps
33.8	996	Total			



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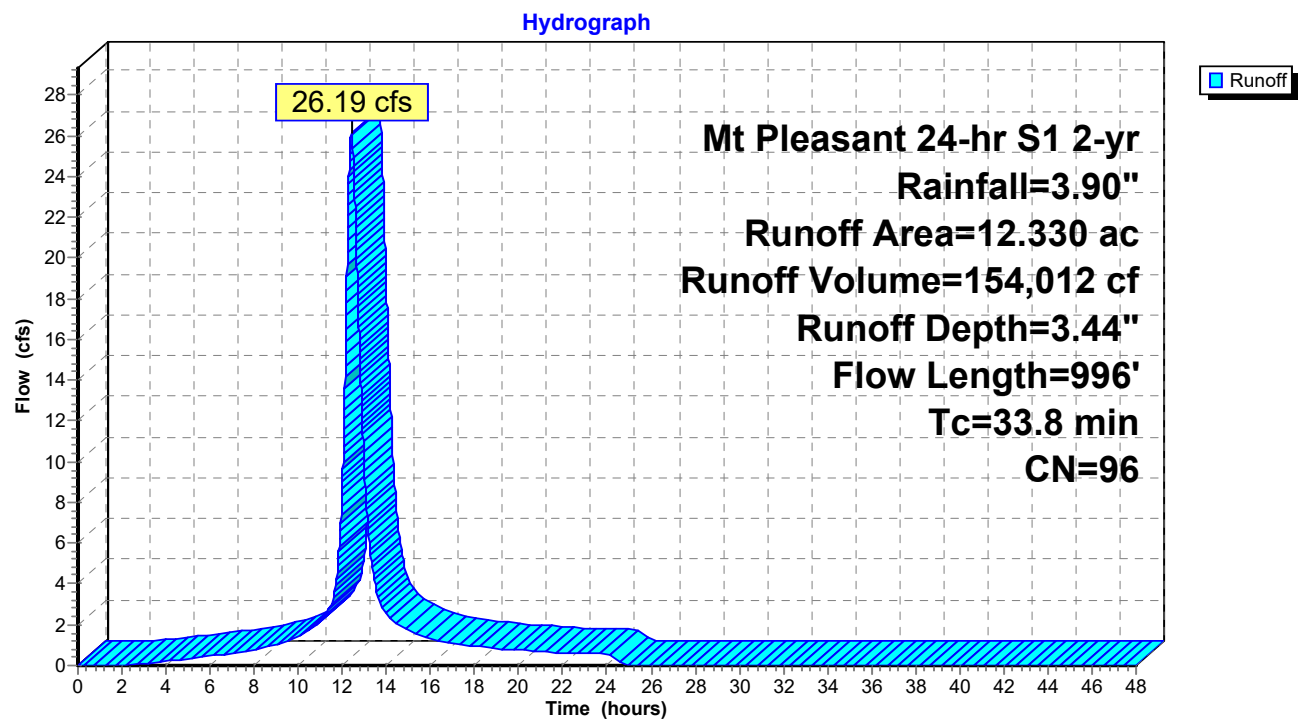
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Subcatchment DA4B: BASIN 4B PROPOSED



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Summary for Subcatchment DA4C: BASIN 4C PROPOSED

Runoff = 3.21 cfs @ 12.03 hrs, Volume= 8,494 cf, Depth= 3.44"
Routed to Reach D4C : Ditch 4C

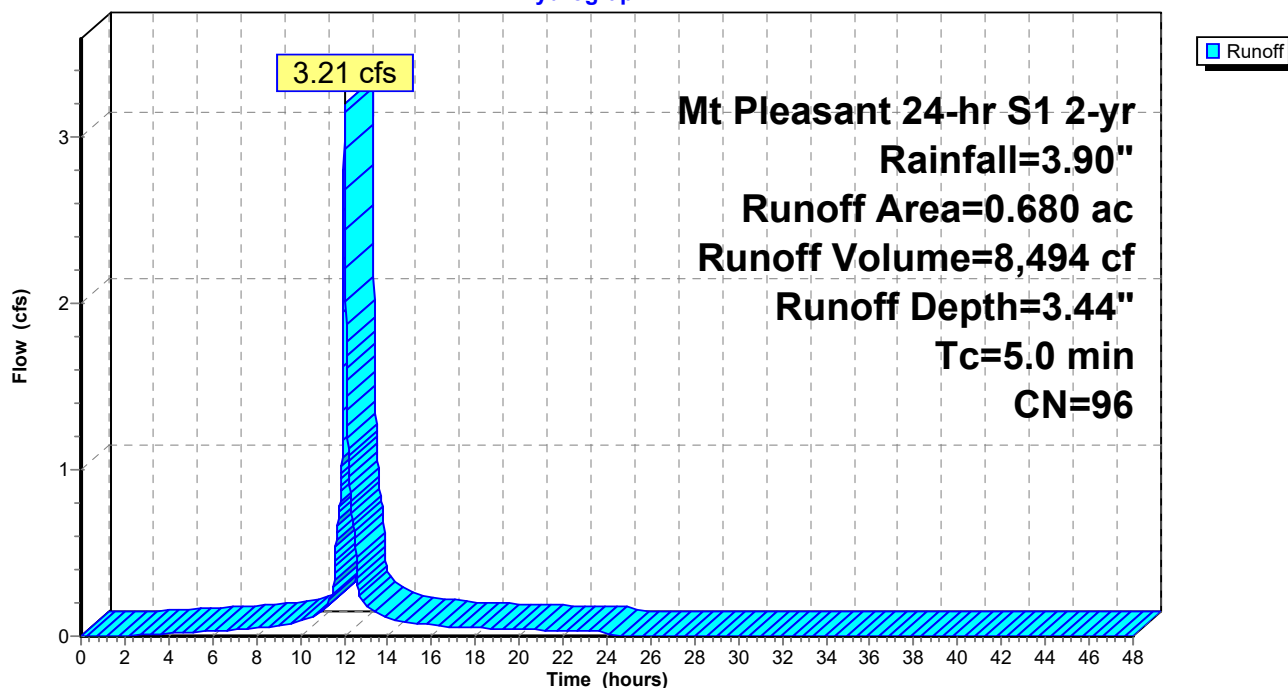
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Mt Pleasant 24-hr S1 2-yr Rainfall=3.90"

Area (ac)	CN	Description
0.680	96	Gravel surface, HSG C
0.680		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					Direct Entry,

Subcatchment DA4C: BASIN 4C PROPOSED

Hydrograph



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Mt Pleasant 24-hr S1 2-yr Rainfall=3.90"

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Summary for Subcatchment DA4D: BASIN 4D PROPOSED

Runoff = 5.81 cfs @ 12.03 hrs, Volume= 15,364 cf, Depth= 3.44"
Routed to Reach D4D : Ditch 4D

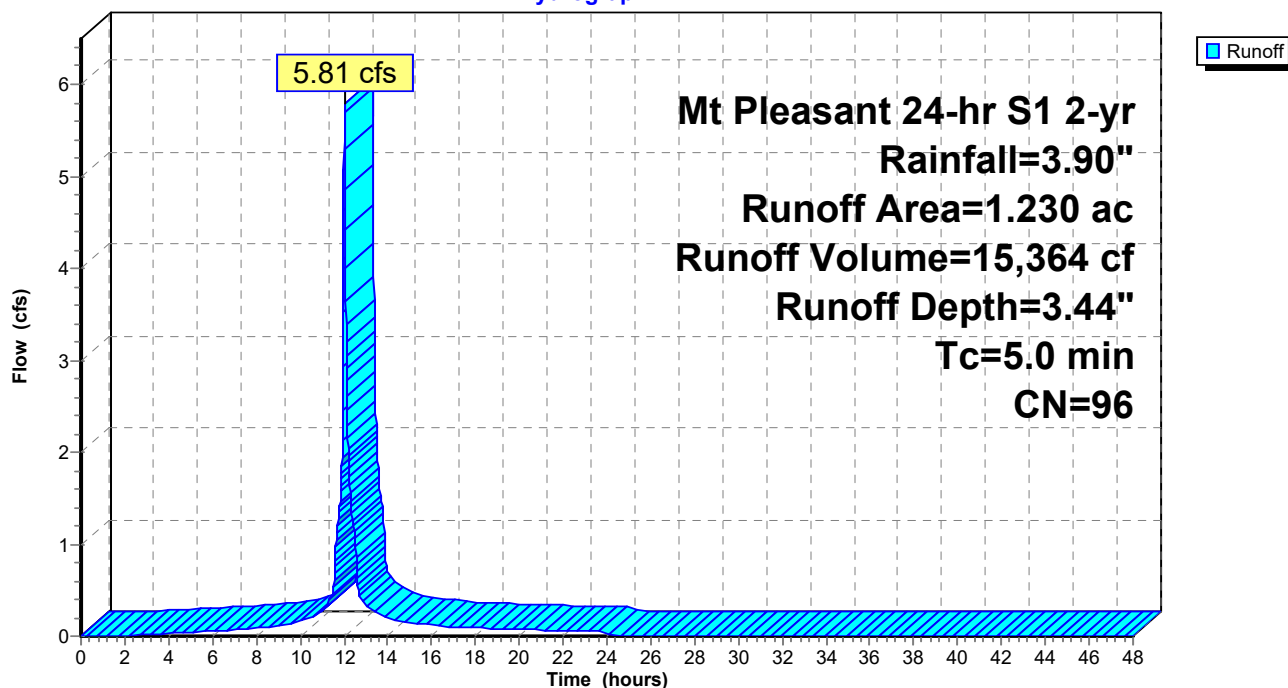
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Mt Pleasant 24-hr S1 2-yr Rainfall=3.90"

Area (ac)	CN	Description
1.230	96	Gravel surface, HSG C
1.230		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					Direct Entry,

Subcatchment DA4D: BASIN 4D PROPOSED

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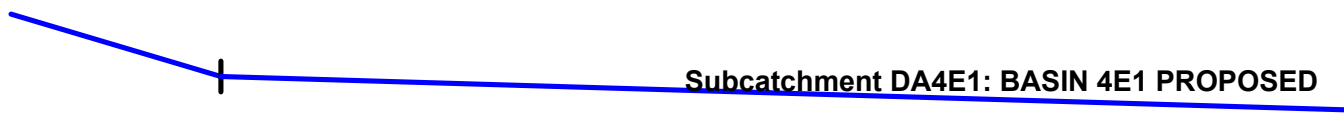
Summary for Subcatchment DA4E1: BASIN 4E1 PROPOSED

Runoff = 3.86 cfs @ 12.46 hrs, Volume= 24,160 cf, Depth= 0.92"
Routed to Reach D4E1 : Ditch 4E1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Mt Pleasant 24-hr S1 2-yr Rainfall=3.90"

Area (ac)	CN	Description
3.130	58	Meadow, non-grazed, HSG B
3.130	60	Woods, Fair, HSG B
1.000	98	Paved roads w/curbs & sewers, HSG B
7.260	64	Weighted Average
6.260		86.23% Pervious Area
1.000		13.77% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
18.6	100	0.1000	0.09		Sheet Flow, Woods: Dense underbrush n= 0.800 P2= 3.57"
12.9	540	0.0100	0.70		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
31.5	640	Total			



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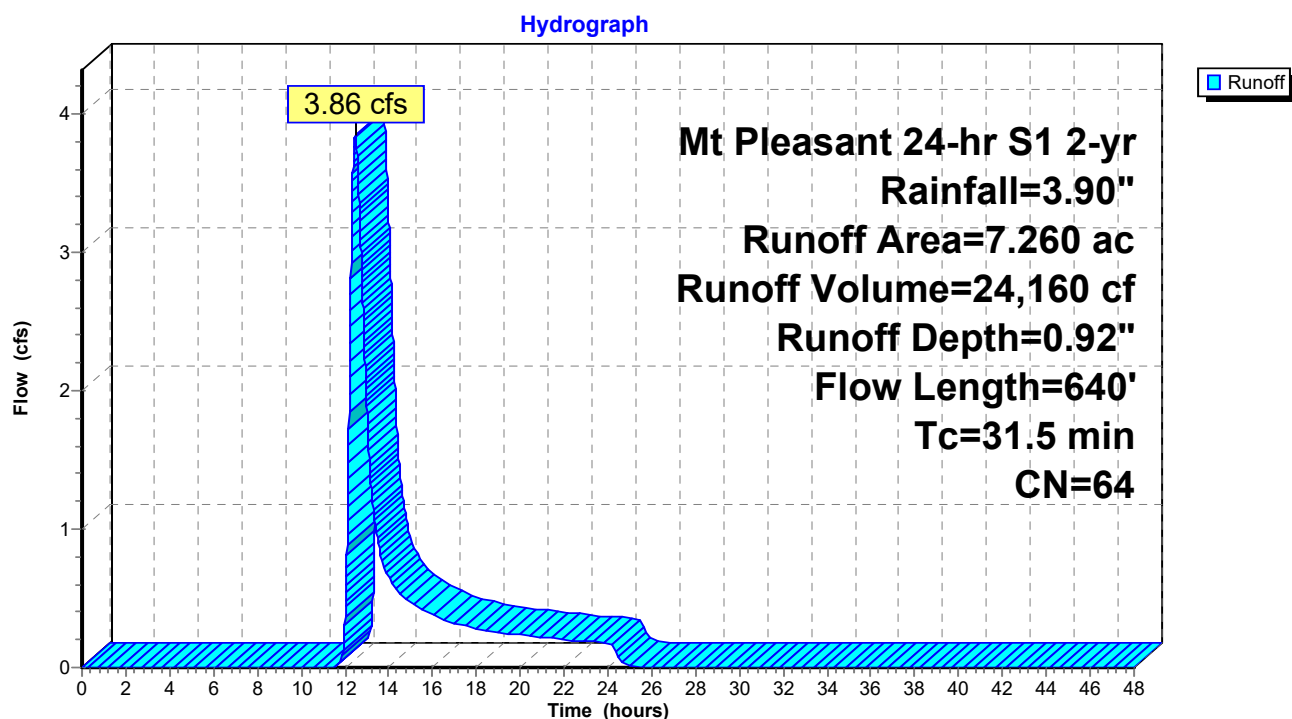
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Subcatchment DA4E1: BASIN 4E1 PROPOSED



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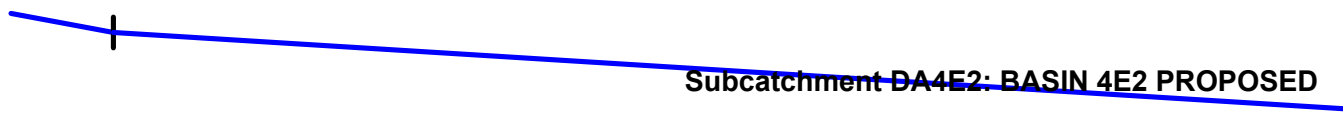
Summary for Subcatchment DA4E2: BASIN 4E2 PROPOSED

Runoff = 11.82 cfs @ 12.68 hrs, Volume= 83,694 cf, Depth= 1.20"
Routed to Pond CD4E : Cross Drain 4E

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Mt Pleasant 24-hr S1 2-yr Rainfall=3.90"

Area (ac)	CN	Description
9.300	79	Woods, Fair, HSG D
4.940	58	Meadow, non-grazed, HSG B
4.940	60	Woods, Fair, HSG B
19.180	69	Weighted Average
19.180		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
24.5	100	0.0500	0.07		Sheet Flow, Woods: Dense underbrush n= 0.800 P2= 3.57"
22.3	1,213	0.0167	0.90		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
46.8	1,313	Total			



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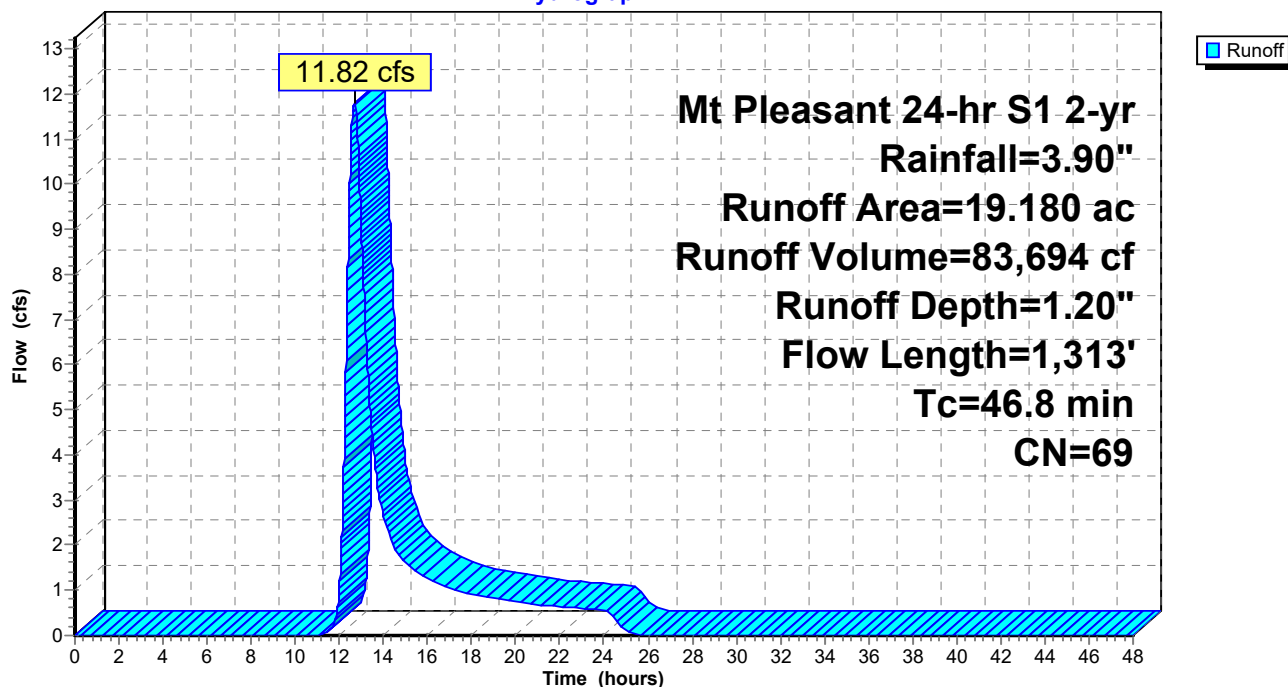
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Subcatchment DA4E2: BASIN 4E2 PROPOSED

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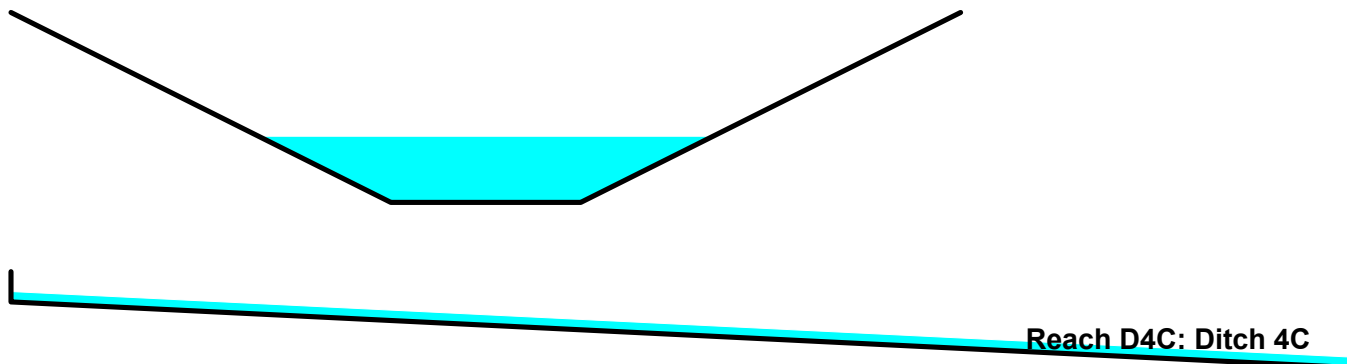
Summary for Reach D4C: Ditch 4C

Inflow Area = 29,621 sf, 0.00% Impervious, Inflow Depth = 3.44" for 2-yr event
 Inflow = 3.21 cfs @ 12.03 hrs, Volume= 8,494 cf
 Outflow = 2.96 cfs @ 12.05 hrs, Volume= 8,494 cf, Atten= 8%, Lag= 1.4 min
 Routed to Pond CD4C : Cross Drain 4C

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
 Max. Velocity= 2.25 fps, Min. Travel Time= 2.3 min
 Avg. Velocity = 0.62 fps, Avg. Travel Time= 8.4 min

Peak Storage= 411 cf @ 12.05 hrs
 Average Depth at Peak Storage= 0.52' , Surface Width= 3.57'
 Bank-Full Depth= 1.50' Flow Area= 6.8 sf, Capacity= 27.19 cfs

1.50' x 1.50' deep channel, n= 0.033 Riprap, 1-inch
 Side Slope Z-value= 2.0 '/' Top Width= 7.50'
 Length= 313.0' Slope= 0.0104 '/'
 Inlet Invert= 687.00', Outlet Invert= 683.75'



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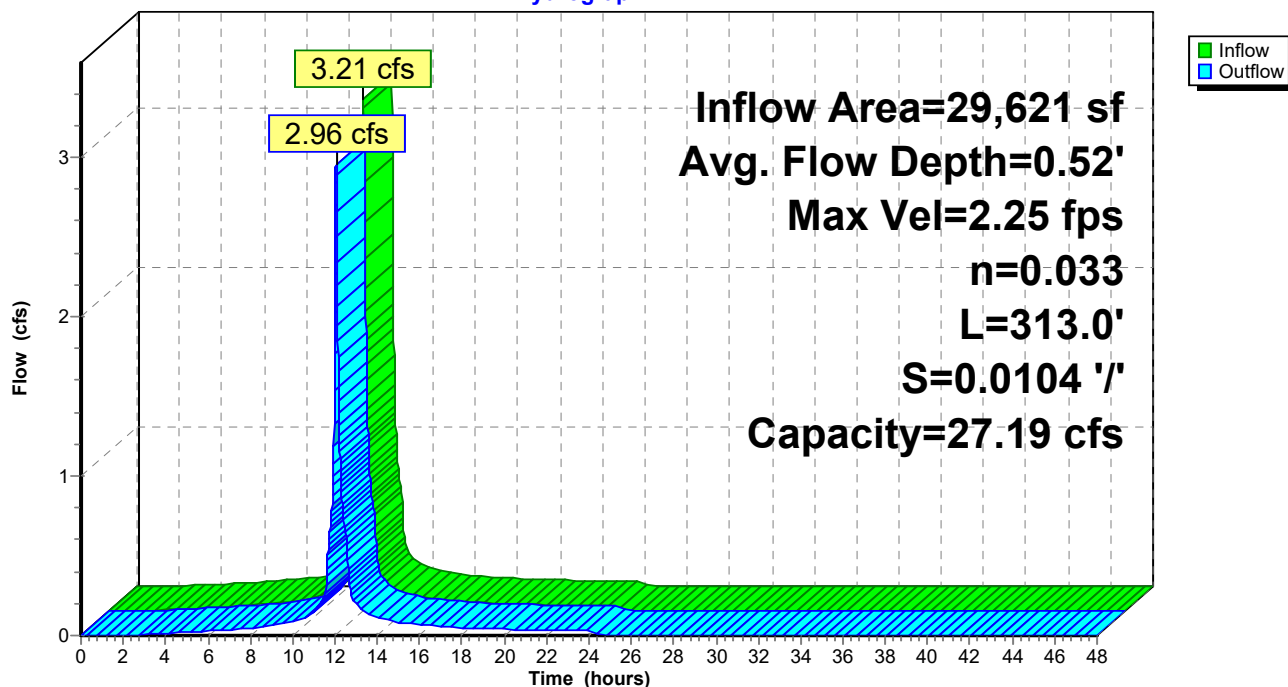
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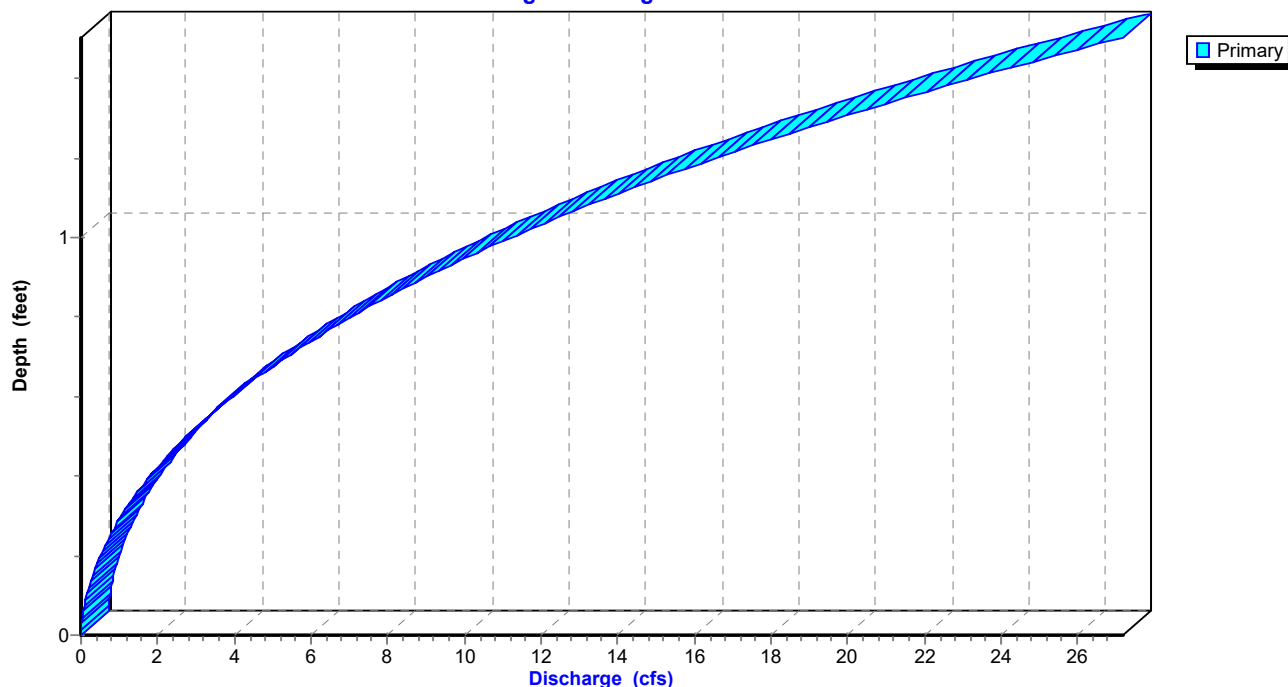
Reach D4C: Ditch 4C

Hydrograph



Reach D4C: Ditch 4C

Stage-Discharge



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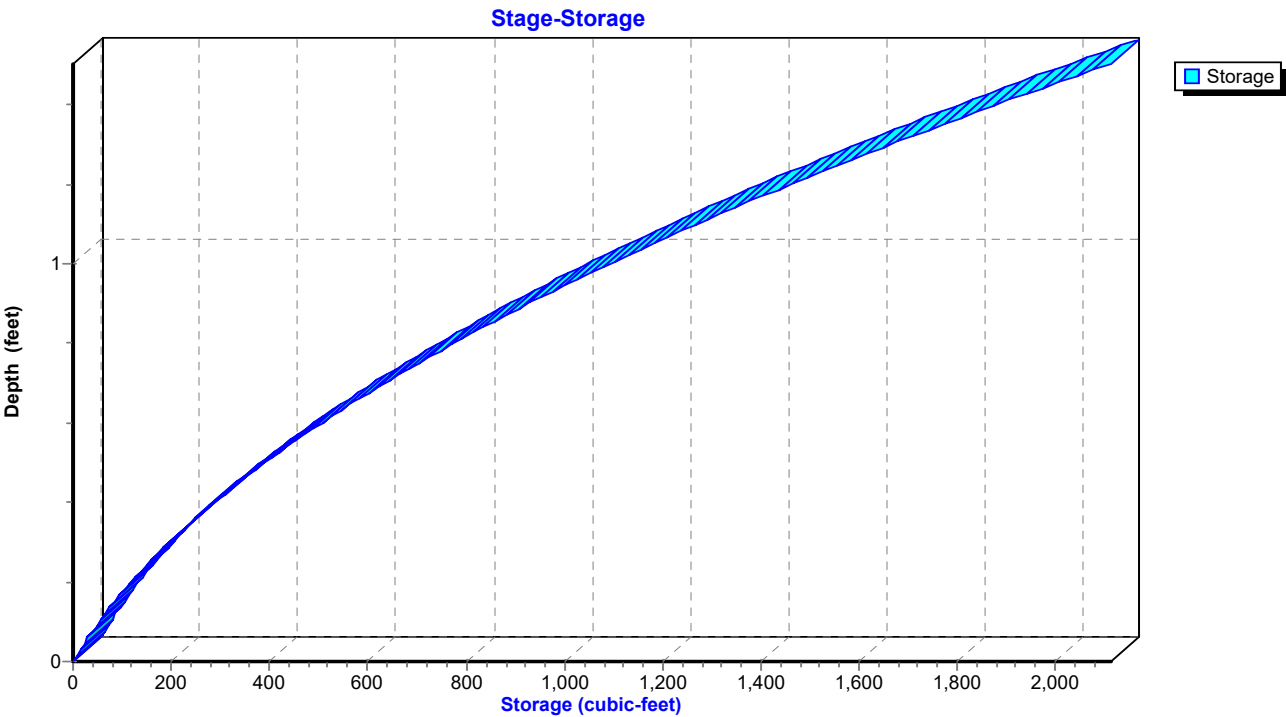
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Reach D4C: Ditch 4C



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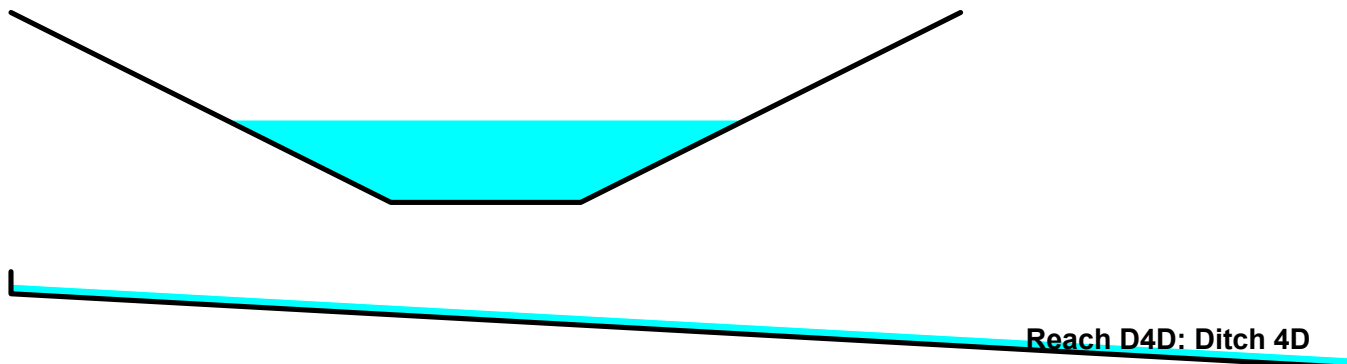
Summary for Reach D4D: Ditch 4D

Inflow Area = 53,579 sf, 0.00% Impervious, Inflow Depth = 3.44" for 2-yr event
 Inflow = 5.81 cfs @ 12.03 hrs, Volume= 15,364 cf
 Outflow = 5.49 cfs @ 12.04 hrs, Volume= 15,364 cf, Atten= 5%, Lag= 1.1 min
 Routed to Pond CD4DCE : Cross Drain 4DCE

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
 Max. Velocity= 3.03 fps, Min. Travel Time= 1.9 min
 Avg. Velocity = 0.85 fps, Avg. Travel Time= 6.6 min

Peak Storage= 609 cf @ 12.04 hrs
 Average Depth at Peak Storage= 0.65' , Surface Width= 4.09'
 Bank-Full Depth= 1.50' Flow Area= 6.8 sf, Capacity= 32.50 cfs

1.50' x 1.50' deep channel, n= 0.033 Riprap, 1-inch
 Side Slope Z-value= 2.0 '/' Top Width= 7.50'
 Length= 337.0' Slope= 0.0148 '/'
 Inlet Invert= 688.00', Outlet Invert= 683.00'



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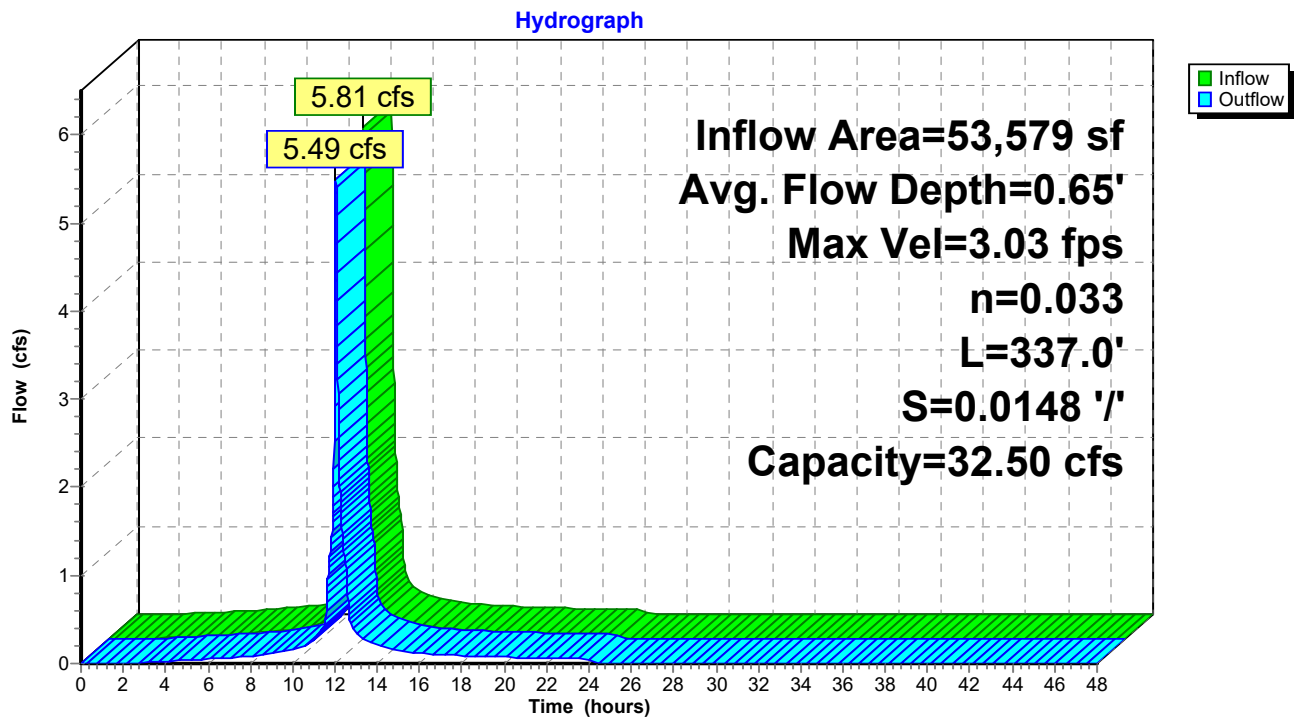
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Mt Pleasant 24-hr S1 2-yr Rainfall=3.90"

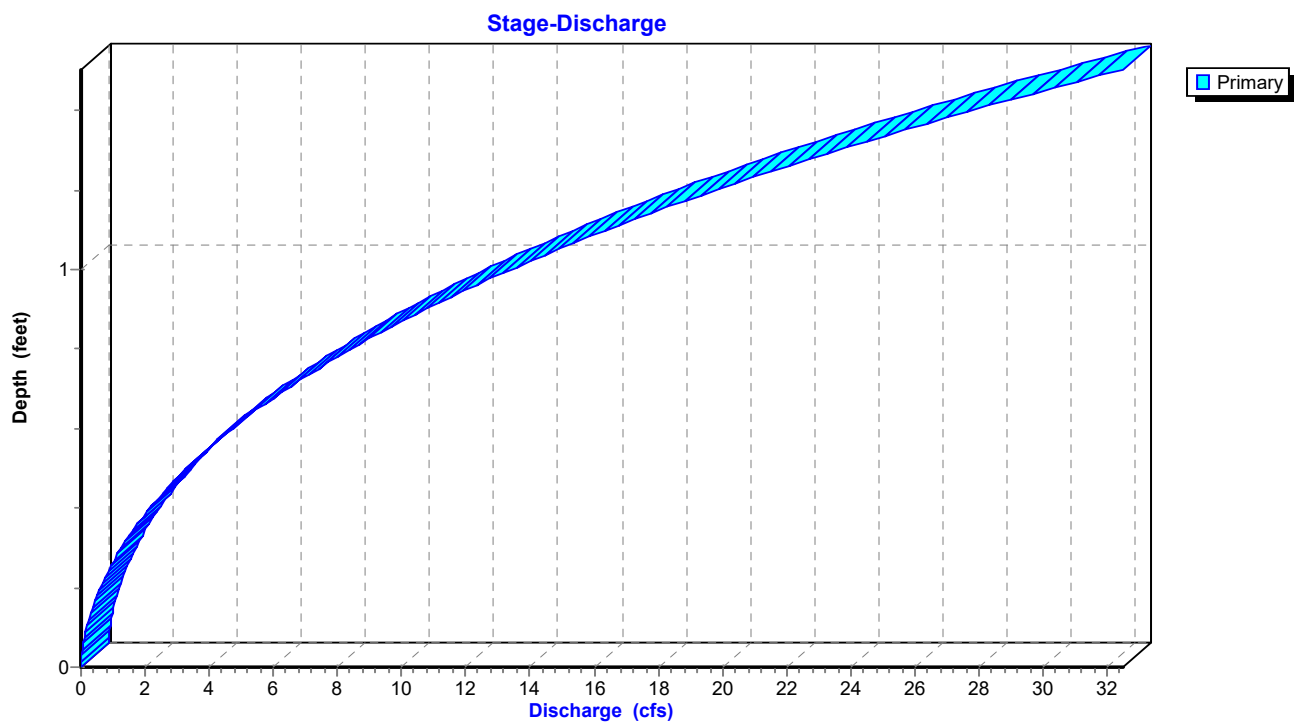
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Reach D4D: Ditch 4D



Reach D4D: Ditch 4D



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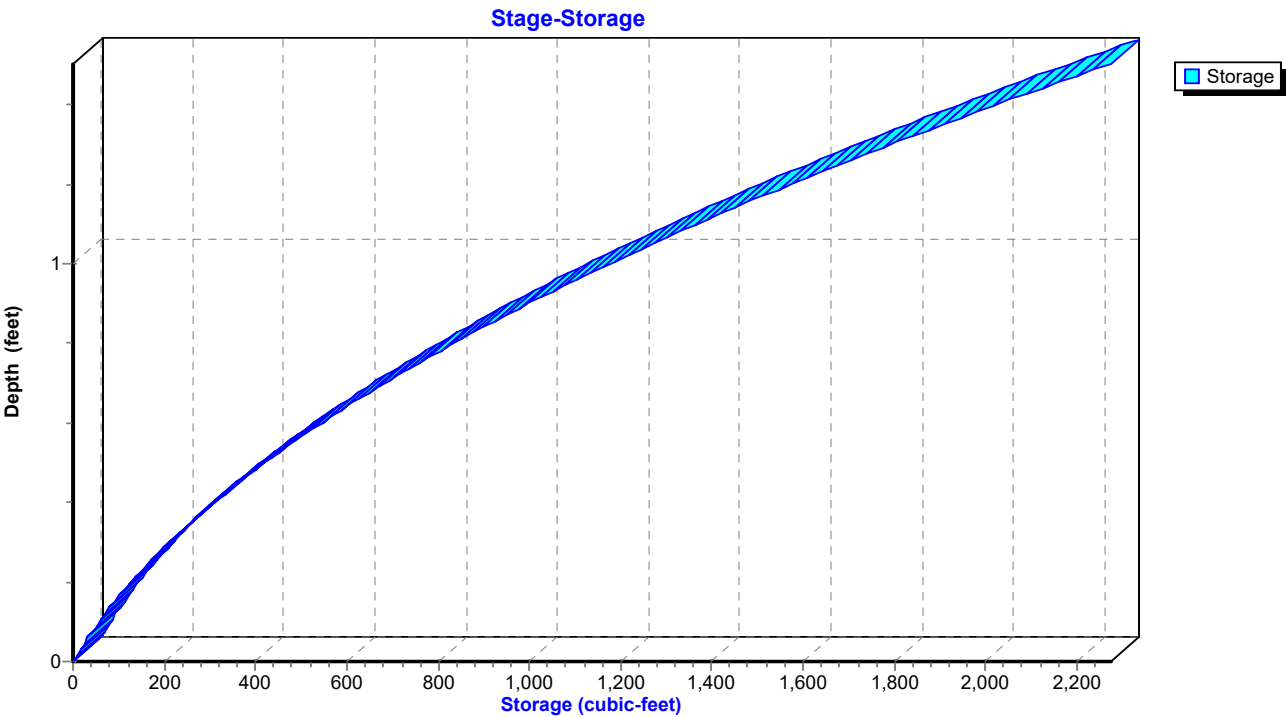
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Reach D4D: Ditch 4D



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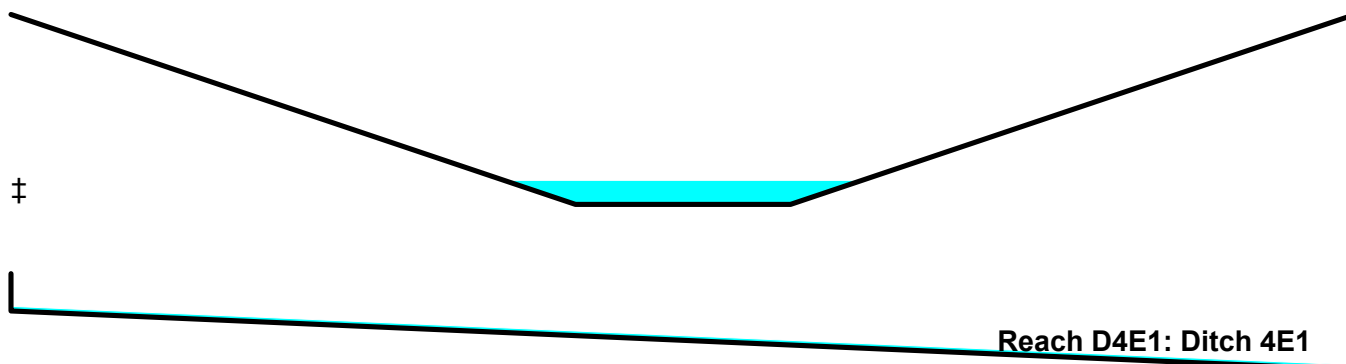
Summary for Reach D4E1: Ditch 4E1

Inflow Area = 316,246 sf, 13.77% Impervious, Inflow Depth = 0.92" for 2-yr event
 Inflow = 3.86 cfs @ 12.46 hrs, Volume= 24,160 cf
 Outflow = 2.79 cfs @ 12.79 hrs, Volume= 24,160 cf, Atten= 28%, Lag= 19.5 min
 Routed to Pond CD4E : Cross Drain 4E

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
 Max. Velocity= 1.22 fps, Min. Travel Time= 24.5 min
 Avg. Velocity= 0.43 fps, Avg. Travel Time= 68.5 min

Peak Storage= 4,096 cf @ 12.79 hrs
 Average Depth at Peak Storage= 0.43' , Surface Width= 6.59'
 Bank-Full Depth= 3.50' Flow Area= 50.8 sf, Capacity= 197.27 cfs

4.00' x 3.50' deep channel, n= 0.033 Riprap, 1-inch
 Side Slope Z-value= 3.0 '/' Top Width= 25.00'
 Length= 1,788.0' Slope= 0.0031 '/'
 Inlet Invert= 685.00', Outlet Invert= 679.50'



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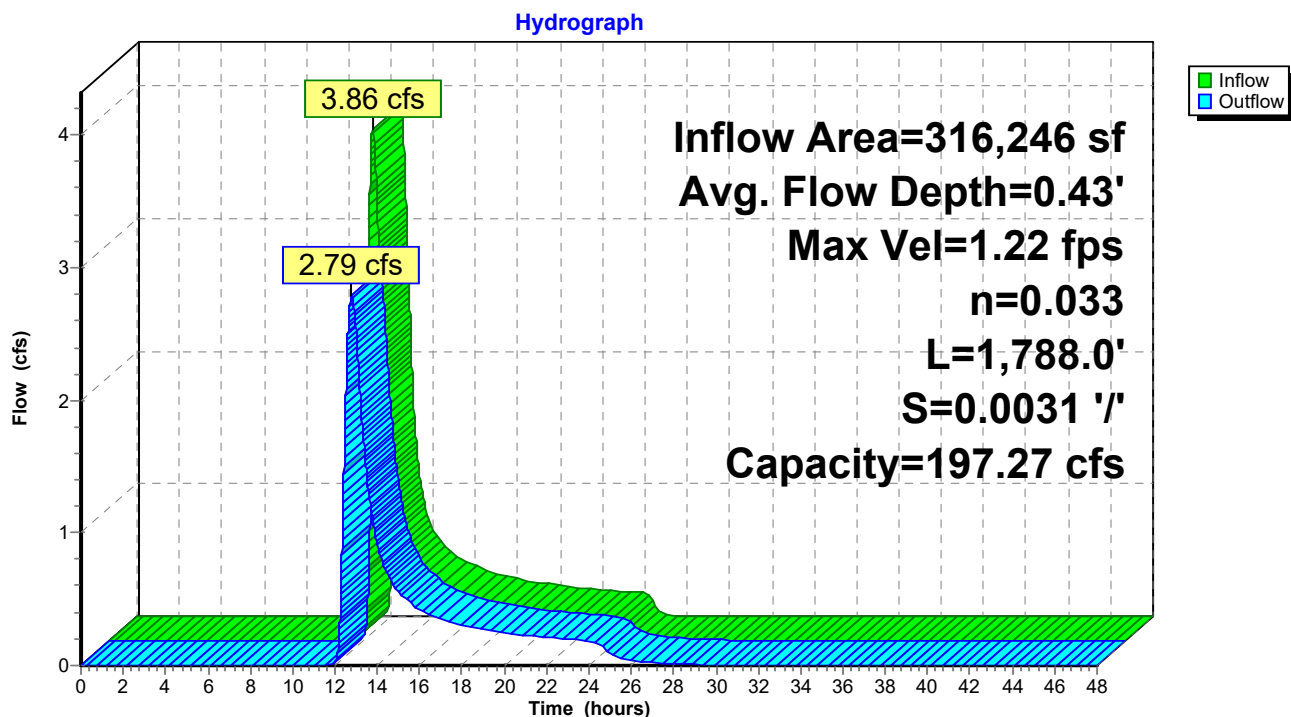
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Mt Pleasant 24-hr S1 2-yr Rainfall=3.90"

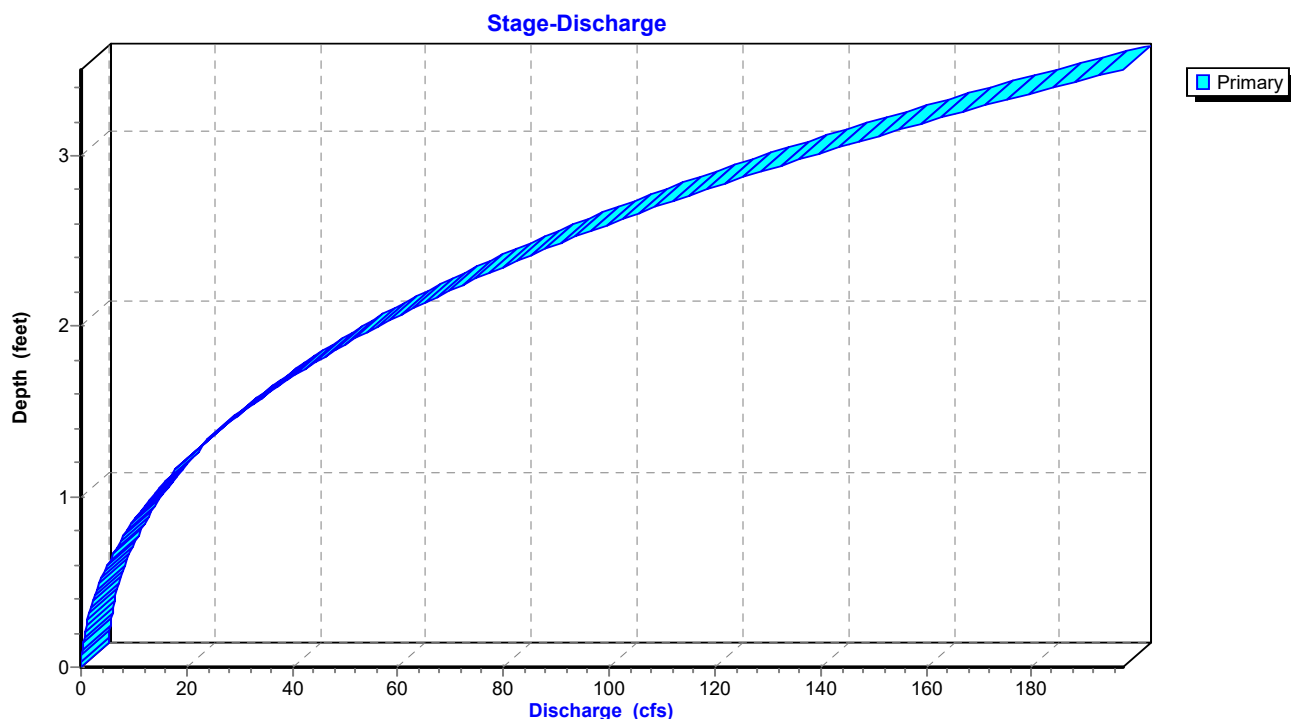
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Reach D4E1: Ditch 4E1



Reach D4E1: Ditch 4E1



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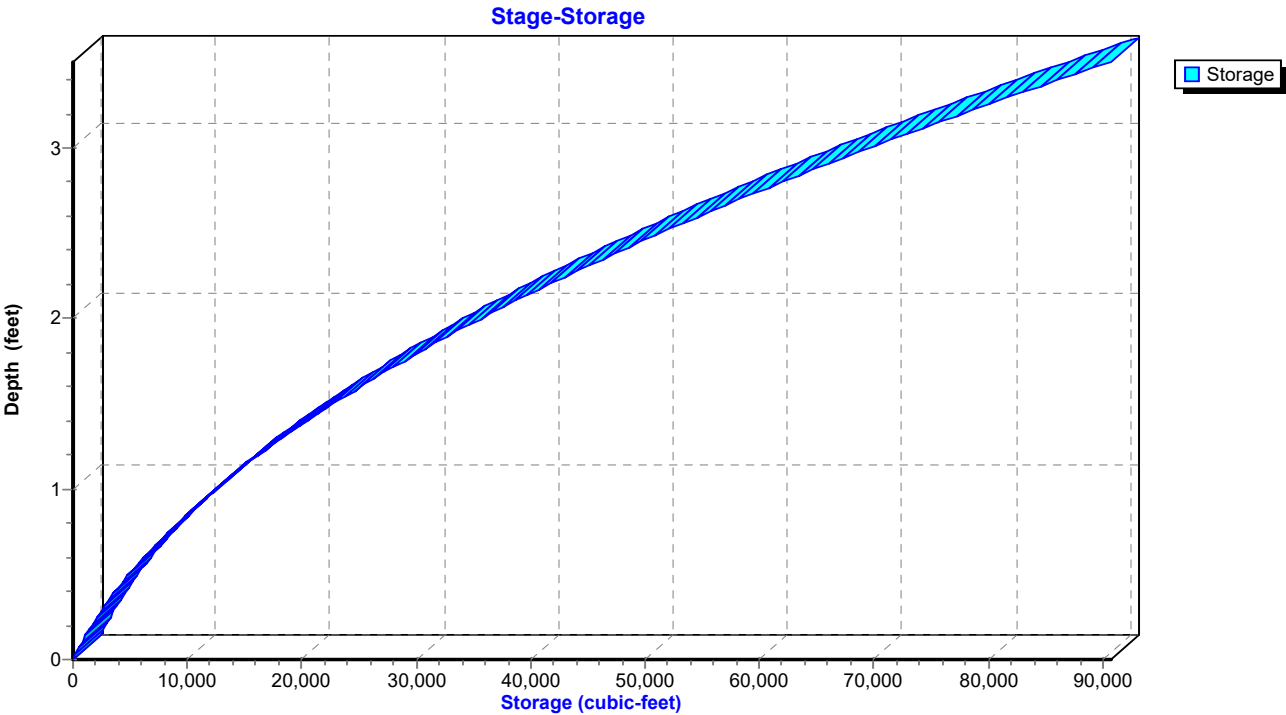
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Mt Pleasant 24-hr S1 2-yr Rainfall=3.90"

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Reach D4E1: Ditch 4E1



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Mt Pleasant 24-hr S1 2-yr Rainfall=3.90"

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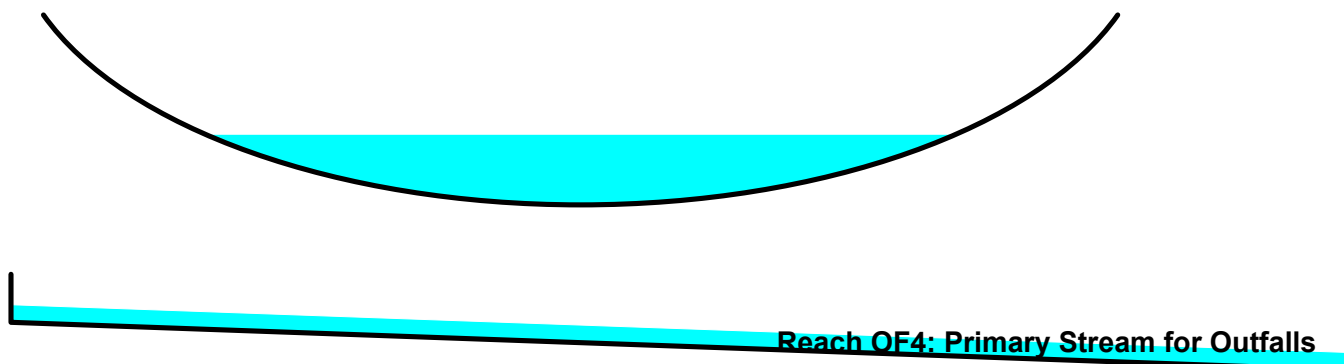
Summary for Reach OF4: Primary Stream for Outfalls

Inflow Area = 9,965,657 sf, 1.09% Impervious, Inflow Depth = 1.41" for 2-yr event
 Inflow = 75.72 cfs @ 13.51 hrs, Volume= 1,169,236 cf
 Outflow = 75.62 cfs @ 13.68 hrs, Volume= 1,169,236 cf, Atten= 0%, Lag= 9.9 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
 Max. Velocity= 3.38 fps, Min. Travel Time= 4.9 min
 Avg. Velocity = 1.36 fps, Avg. Travel Time= 12.3 min

Peak Storage= 22,354 cf @ 13.68 hrs
 Average Depth at Peak Storage= 1.84' , Surface Width= 18.21'
 Bank-Full Depth= 5.00' Flow Area= 100.0 sf, Capacity= 640.46 cfs

30.00' x 5.00' deep Parabolic Channel, n= 0.035
 Length= 1,000.0' Slope= 0.0050 '/
 Inlet Invert= 675.00', Outlet Invert= 670.00'



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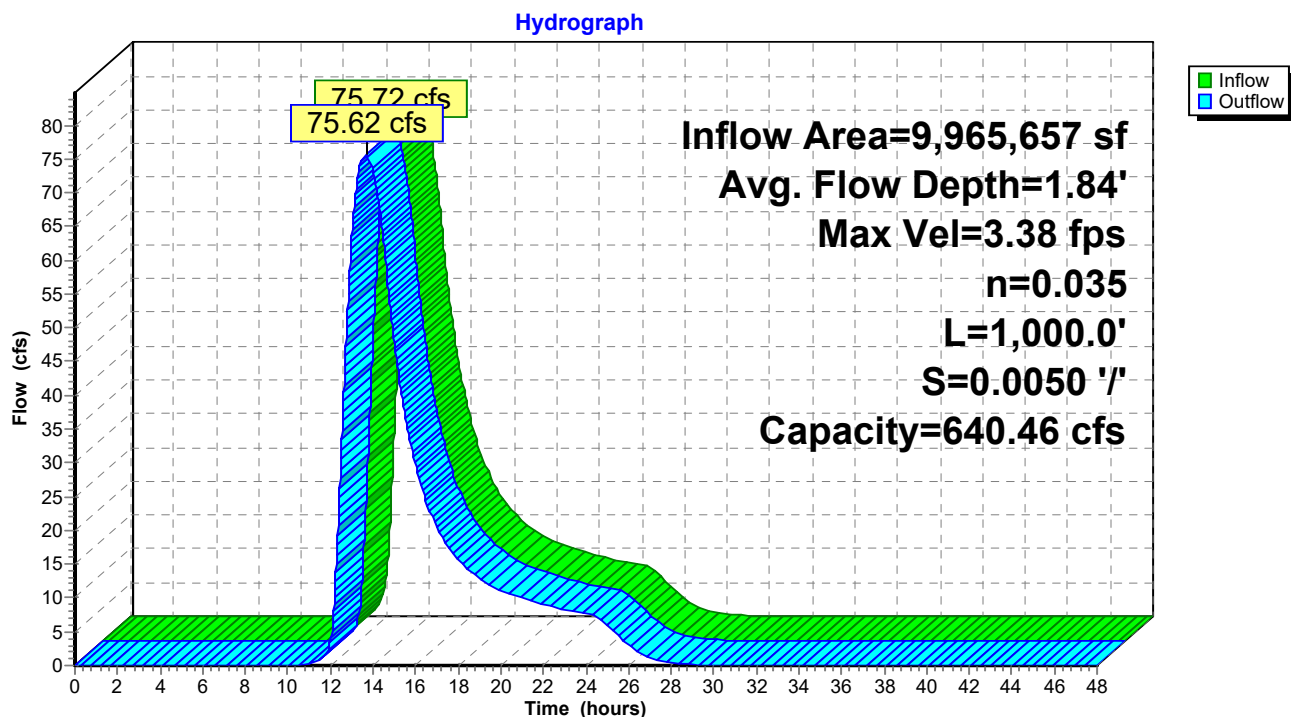
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Mt Pleasant 24-hr S1 2-yr Rainfall=3.90"

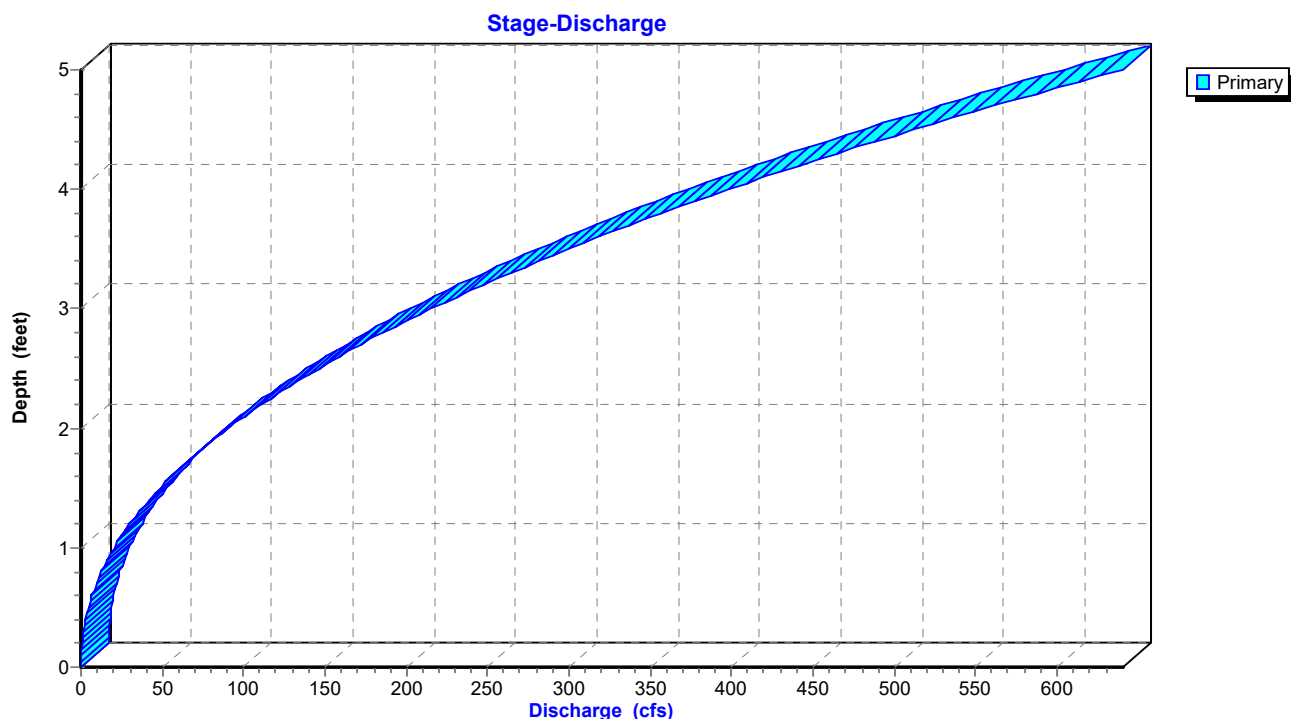
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Reach OF4: Primary Stream for Outfalls



Reach OF4: Primary Stream for Outfalls



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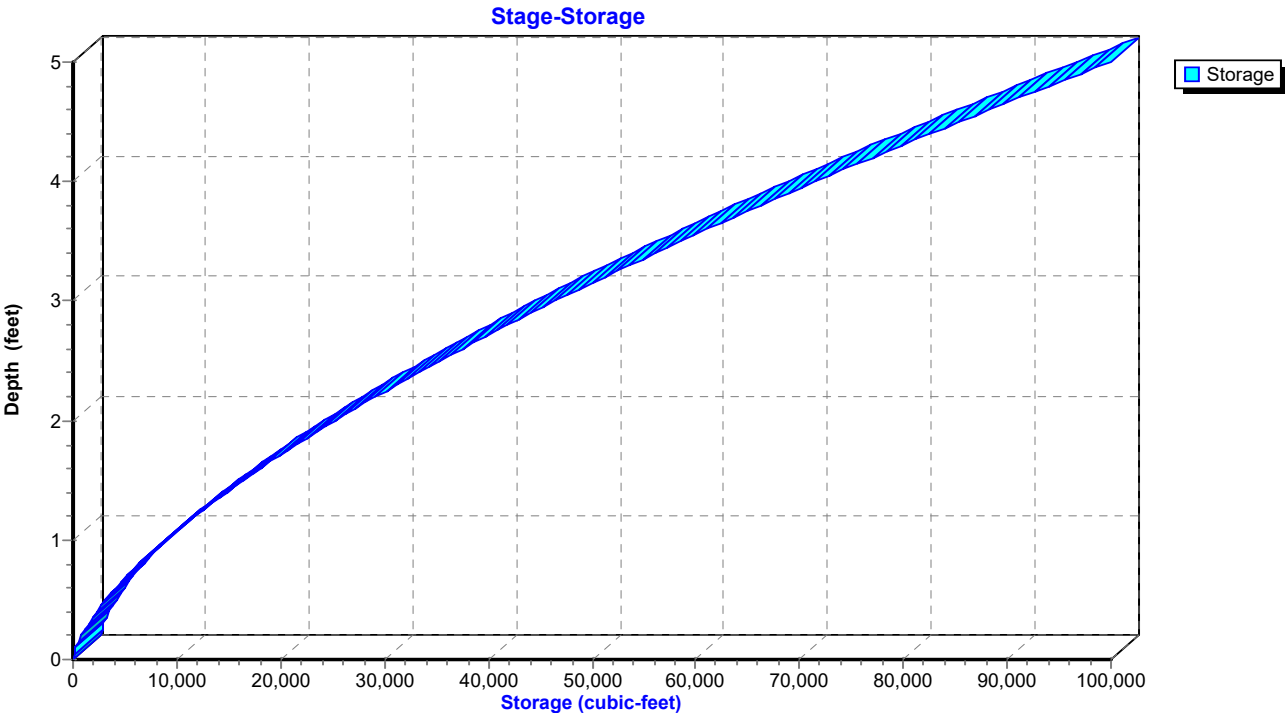
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Mt Pleasant 24-hr S1 2-yr Rainfall=3.90"

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Reach OF4: Primary Stream for Outfalls



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Mt Pleasant 24-hr S1 2-yr Rainfall=3.90"

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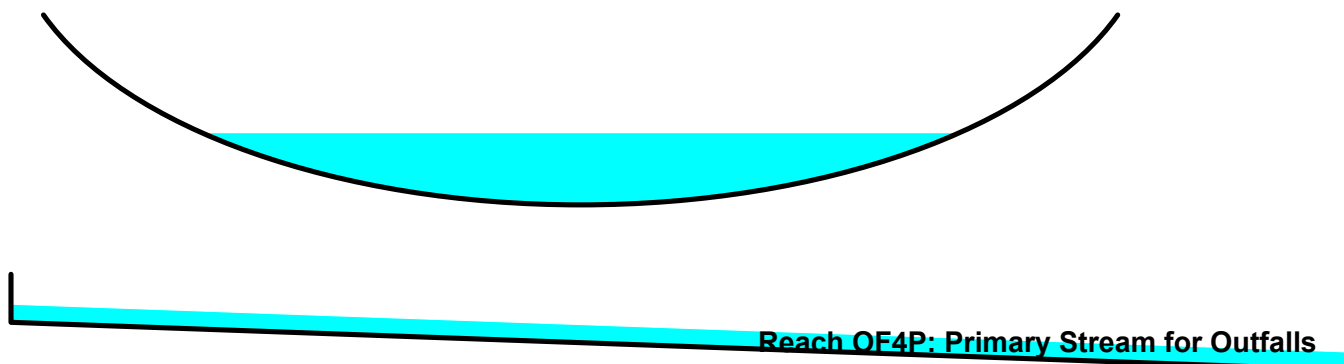
Summary for Reach OF4P: Primary Stream for Outfalls

Inflow Area = 9,969,577 sf, 2.84% Impervious, Inflow Depth = 1.53" for 2-yr event
 Inflow = 79.43 cfs @ 13.82 hrs, Volume= 1,270,504 cf
 Outflow = 79.29 cfs @ 13.84 hrs, Volume= 1,270,503 cf, Atten= 0%, Lag= 1.1 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
 Max. Velocity= 3.43 fps, Min. Travel Time= 4.9 min
 Avg. Velocity = 1.05 fps, Avg. Travel Time= 15.8 min

Peak Storage= 23,106 cf @ 13.84 hrs
 Average Depth at Peak Storage= 1.88' , Surface Width= 18.41'
 Bank-Full Depth= 5.00' Flow Area= 100.0 sf, Capacity= 640.46 cfs

30.00' x 5.00' deep Parabolic Channel, n= 0.035
 Length= 1,000.0' Slope= 0.0050 '/'
 Inlet Invert= 675.00', Outlet Invert= 670.00'



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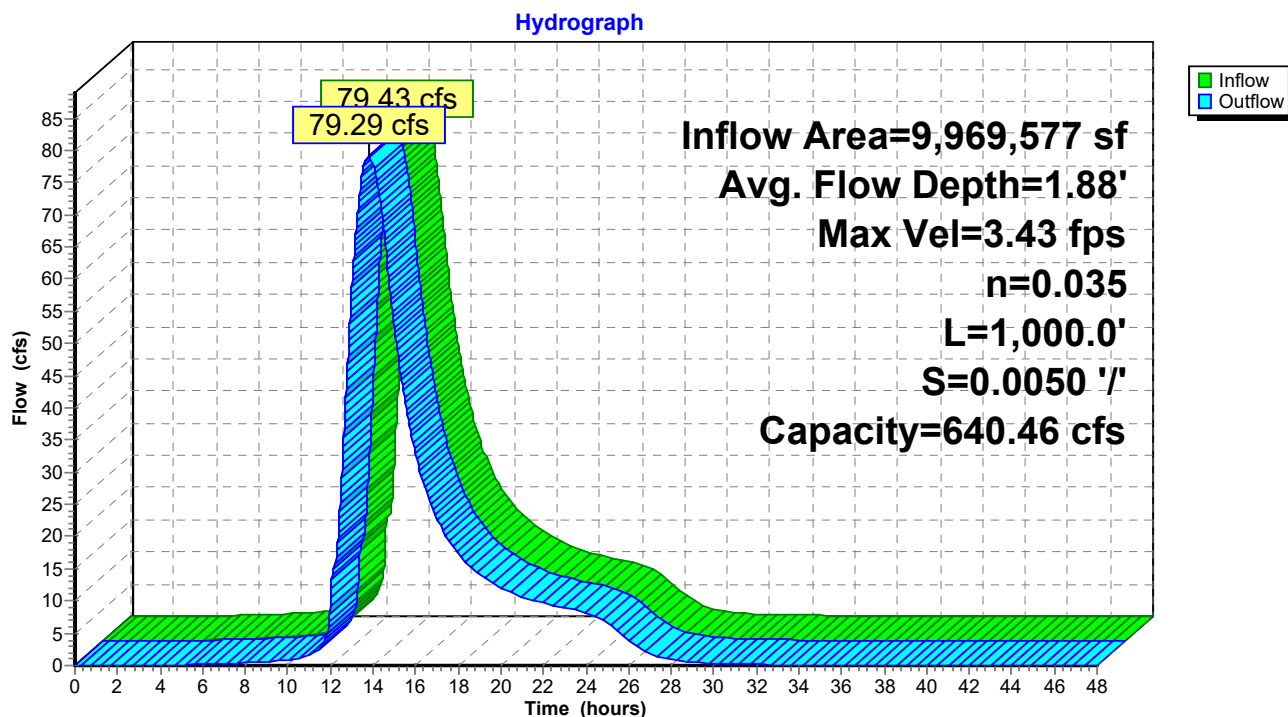
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Mt Pleasant 24-hr S1 2-yr Rainfall=3.90"

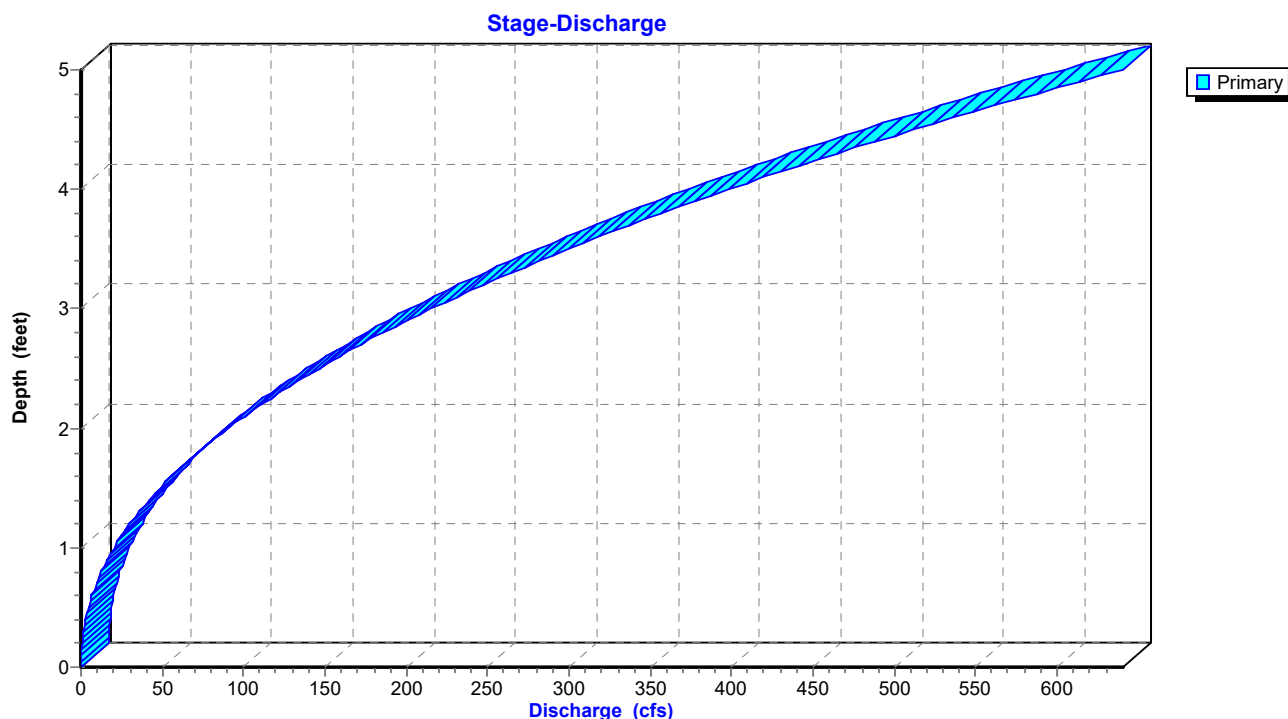
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Reach OF4P: Primary Stream for Outfalls



Reach OF4P: Primary Stream for Outfalls



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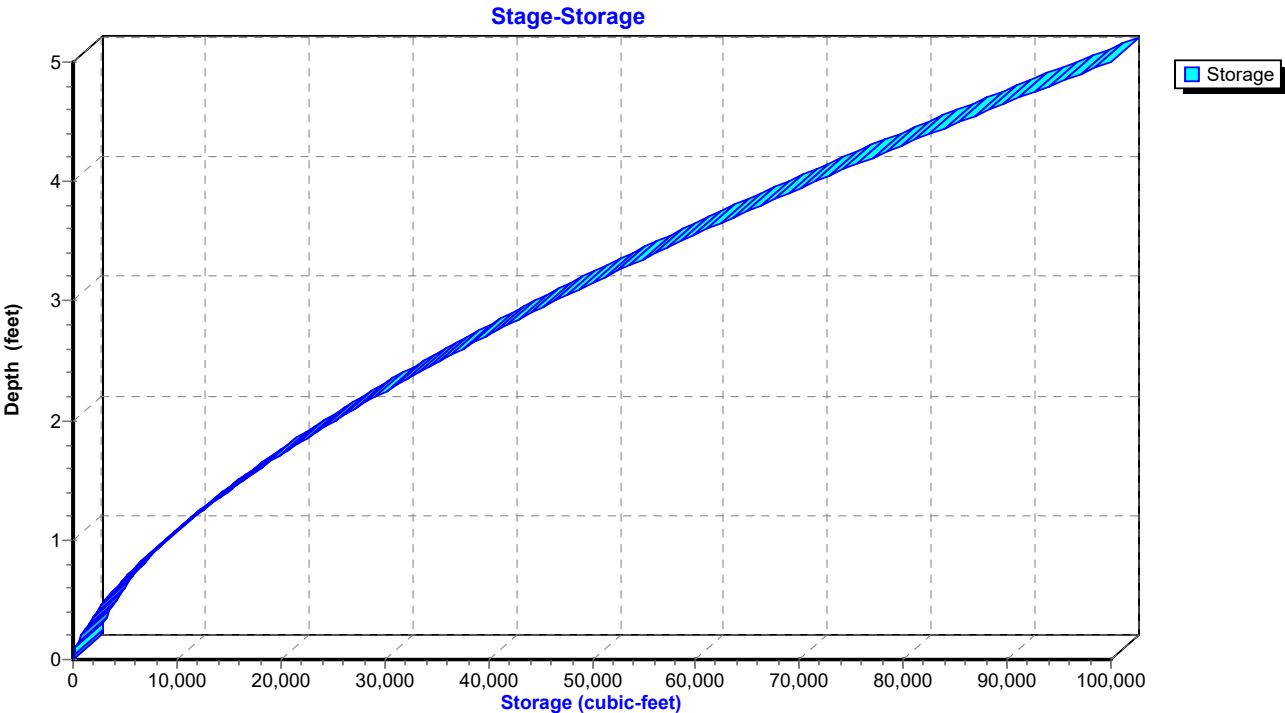
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Mt Pleasant 24-hr S1 2-yr Rainfall=3.90"

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Reach OF4P: Primary Stream for Outfalls



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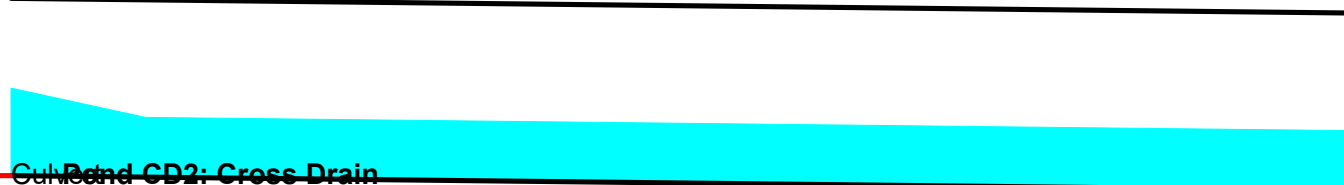
Summary for Pond CD2: Cross Drain

Inflow Area = 1,520,244 sf, 0.00% Impervious, Inflow Depth = 0.81" for 2-yr event
 Inflow = 11.06 cfs @ 12.95 hrs, Volume= 102,914 cf
 Outflow = 11.06 cfs @ 12.95 hrs, Volume= 102,914 cf, Atten= 0%, Lag= 0.0 min
 Primary = 11.06 cfs @ 12.95 hrs, Volume= 102,914 cf
 Routed to Reach OF4P : Primary Stream for Outfalls

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
 Peak Elev= 681.73' @ 12.95 hrs

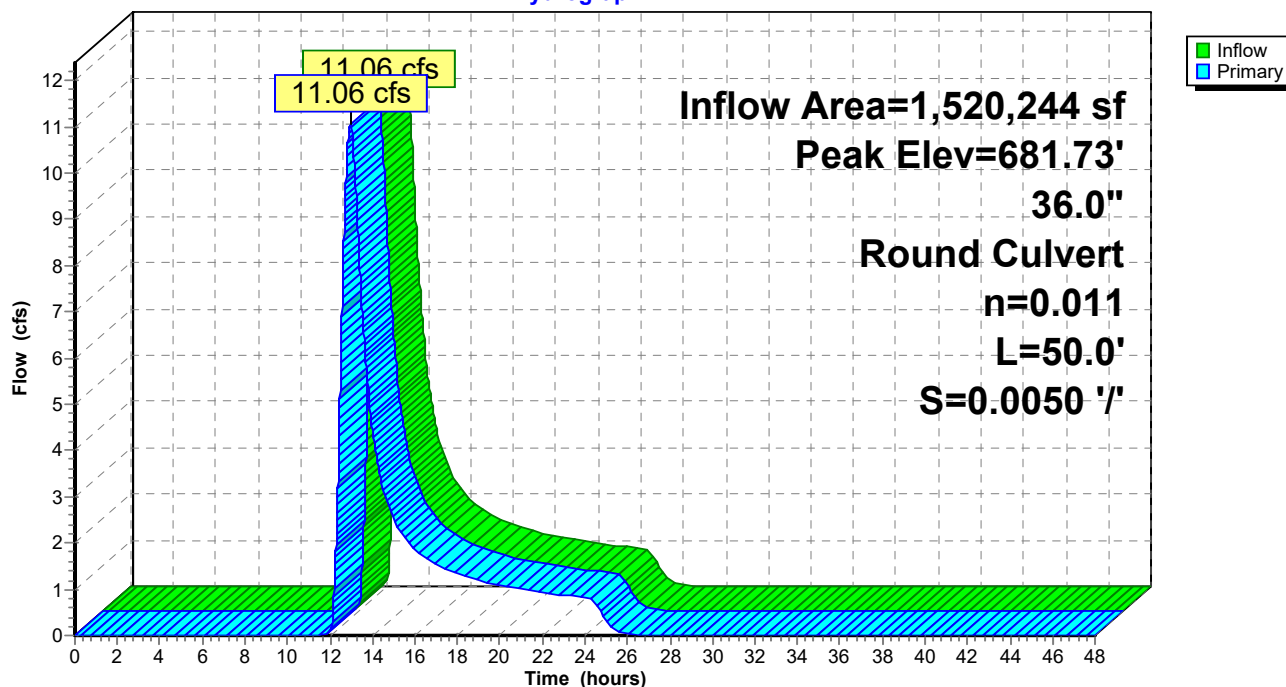
Device	Routing	Invert	Outlet Devices
#1	Primary	680.25'	36.0" Round Culvert L= 50.0' Ke= 0.500 Inlet / Outlet Invert= 680.25' / 680.00' S= 0.0050 '/' Cc= 0.900 n= 0.011 Concrete pipe, straight & clean, Flow Area= 7.07 sf

Primary OutFlow Max=11.06 cfs @ 12.95 hrs HW=681.73' TW=676.59' (Dynamic Tailwater)
 ↳ **1=Culvert** (Barrel Controls 11.06 cfs @ 4.65 fps)



Pond CD2: Cross Drain

Hydrograph



TrueRail 040226

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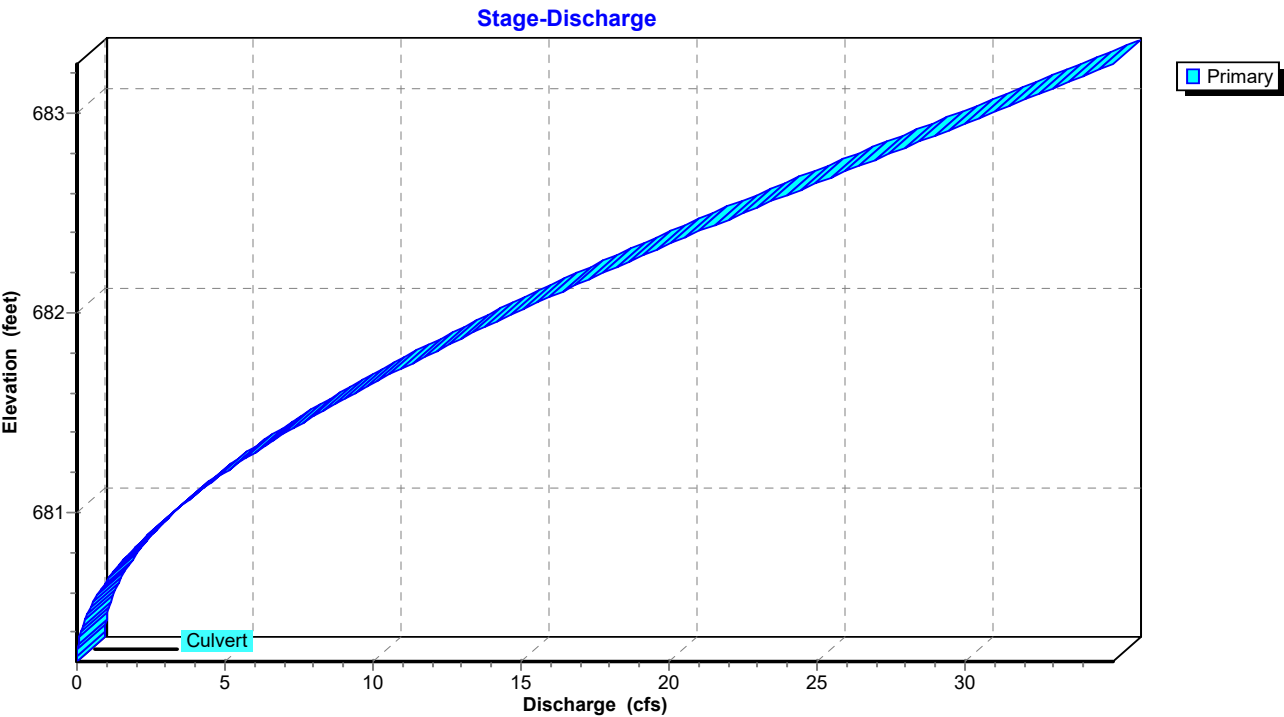
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Mt Pleasant 24-hr S1 2-yr Rainfall=3.90"

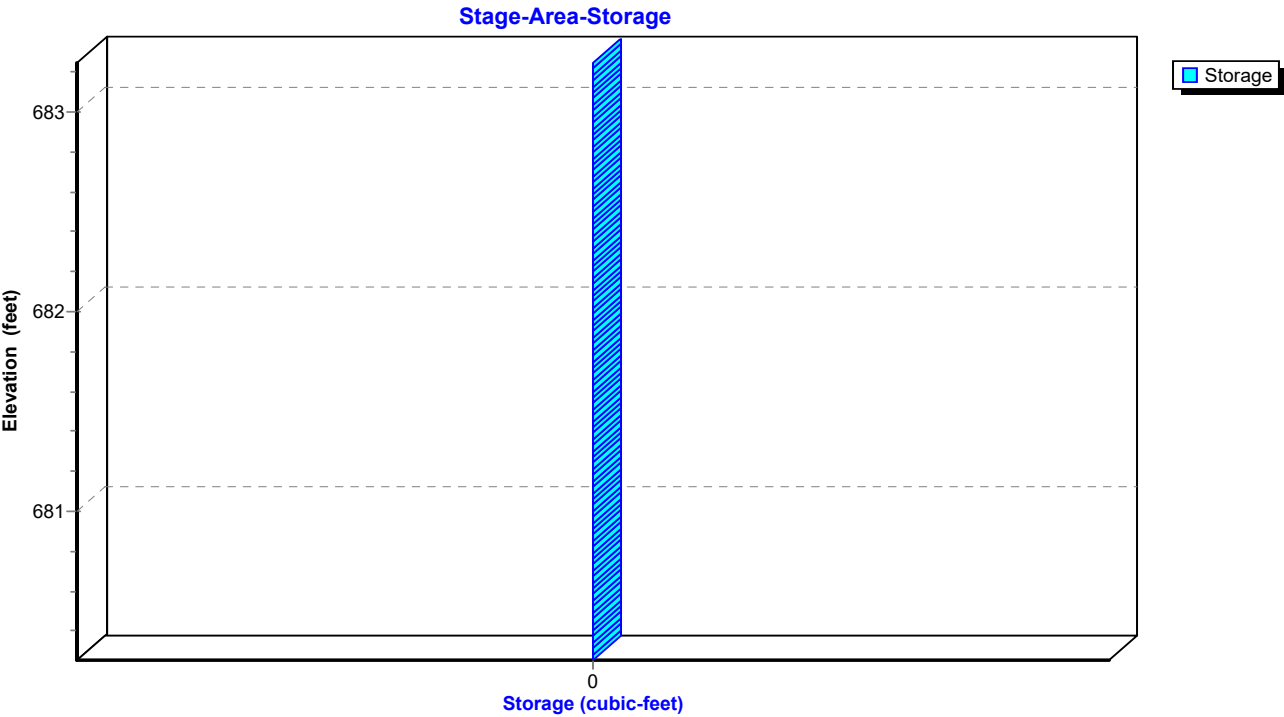
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Pond CD2: Cross Drain



Pond CD2: Cross Drain



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Mt Pleasant 24-hr S1 2-yr Rainfall=3.90"

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Summary for Pond CD4C: Cross Drain 4C

Inflow Area = 29,621 sf, 0.00% Impervious, Inflow Depth = 3.44" for 2-yr event
 Inflow = 2.96 cfs @ 12.05 hrs, Volume= 8,494 cf
 Outflow = 2.96 cfs @ 12.05 hrs, Volume= 8,494 cf, Atten= 0%, Lag= 0.0 min
 Primary = 2.96 cfs @ 12.05 hrs, Volume= 8,494 cf
 Routed to Pond CD4DCE : Cross Drain 4DCE

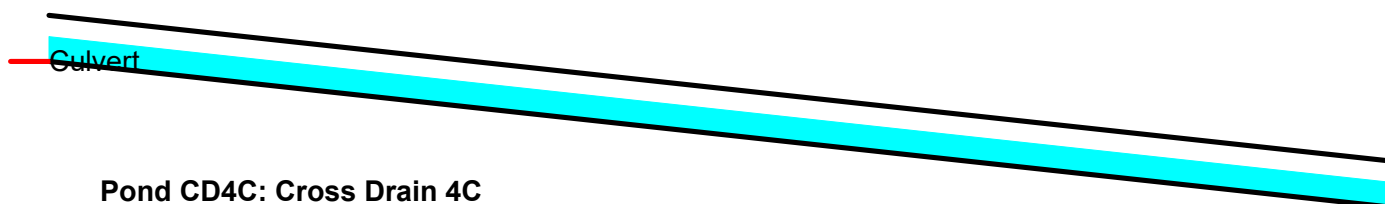
Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Peak Elev= 684.56' @ 12.05 hrs

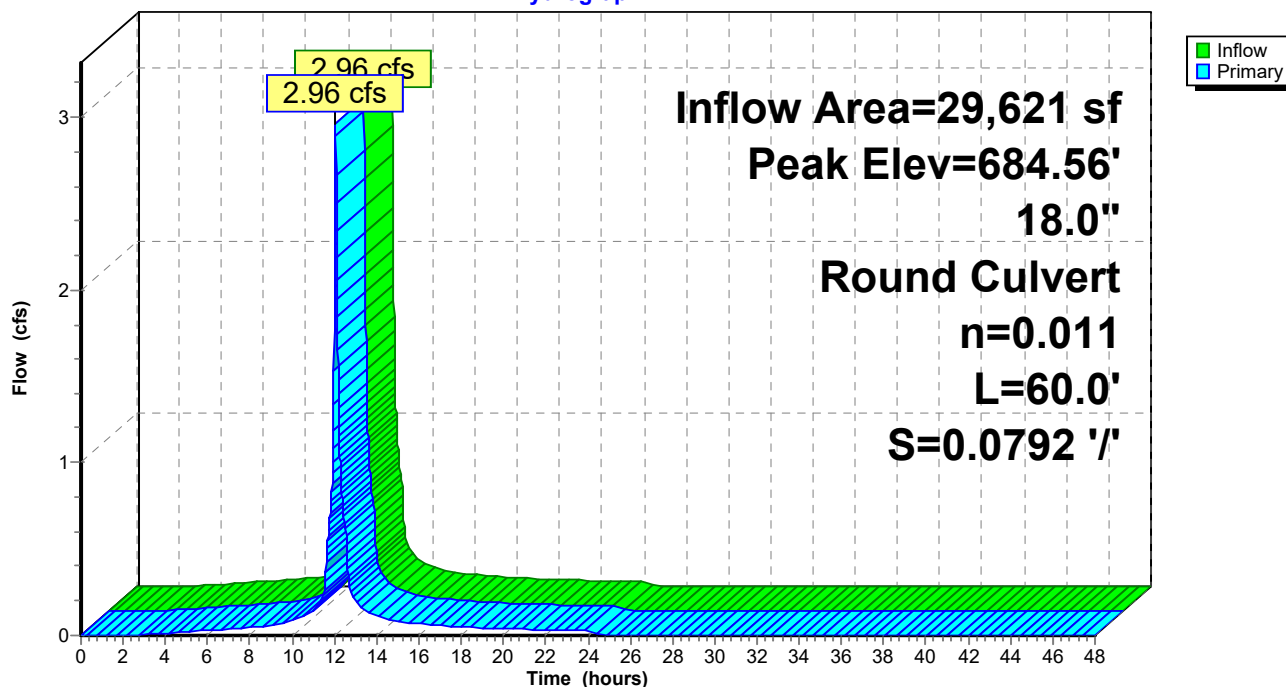
Device	Routing	Invert	Outlet Devices
#1	Primary	683.75'	18.0" Round Culvert L= 60.0' Square-edged headwall, Ke= 0.500 Inlet / Outlet Invert= 683.75' / 679.00' S= 0.0792 '/' Cc= 0.900 n= 0.011 Concrete pipe, straight & clean, Flow Area= 1.77 sf

Primary OutFlow Max=2.96 cfs @ 12.05 hrs HW=684.56' TW=679.51' (Dynamic Tailwater)

1=Culvert (Inlet Controls 2.96 cfs @ 3.06 fps)

**Pond CD4C: Cross Drain 4C**

Hydrograph



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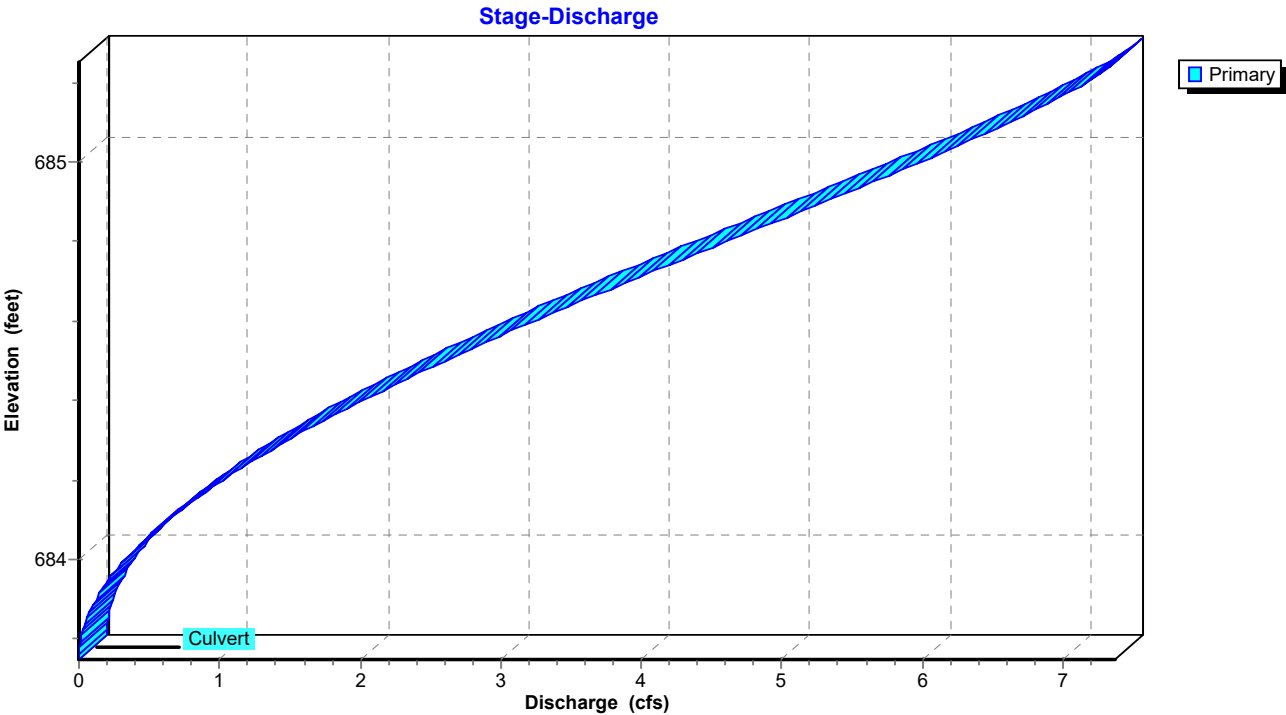
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Mt Pleasant 24-hr S1 2-yr Rainfall=3.90"

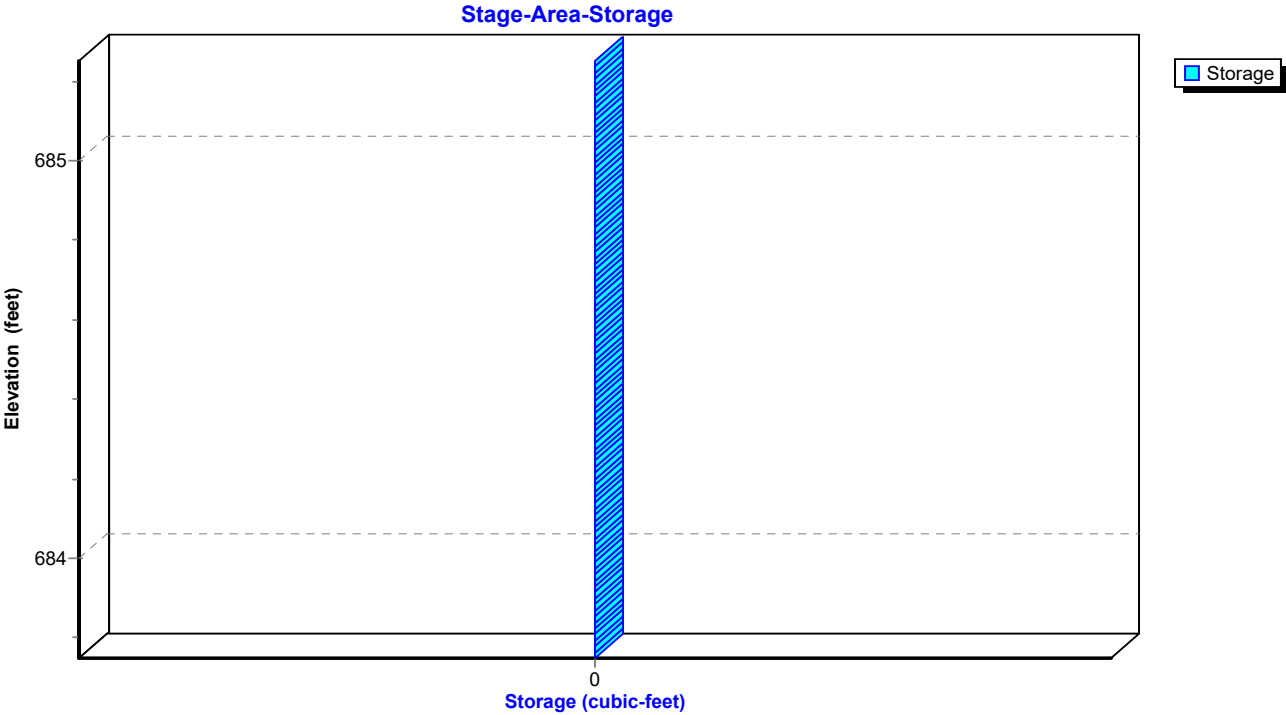
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Pond CD4C: Cross Drain 4C



Pond CD4C: Cross Drain 4C



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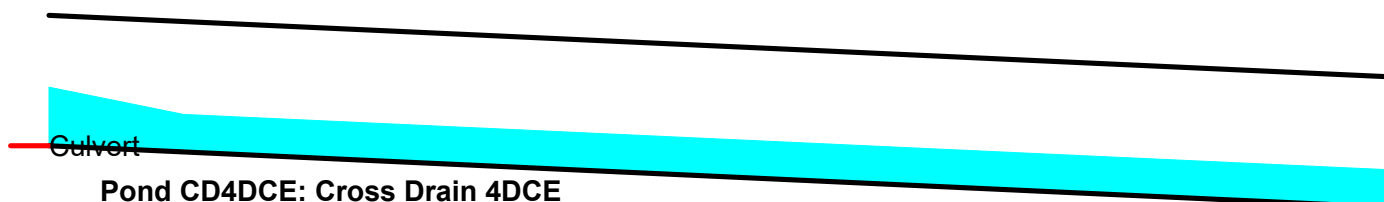
Summary for Pond CD4DCE: Cross Drain 4DCE

Inflow Area = 1,234,926 sf, 3.53% Impervious, Inflow Depth = 1.28" for 2-yr event
 Inflow = 15.18 cfs @ 12.70 hrs, Volume= 131,709 cf
 Outflow = 15.18 cfs @ 12.70 hrs, Volume= 131,709 cf, Atten= 0%, Lag= 0.0 min
 Primary = 15.18 cfs @ 12.70 hrs, Volume= 131,709 cf
 Routed to Pond POND1P : PROP POND

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
 Peak Elev= 680.19' @ 12.83 hrs

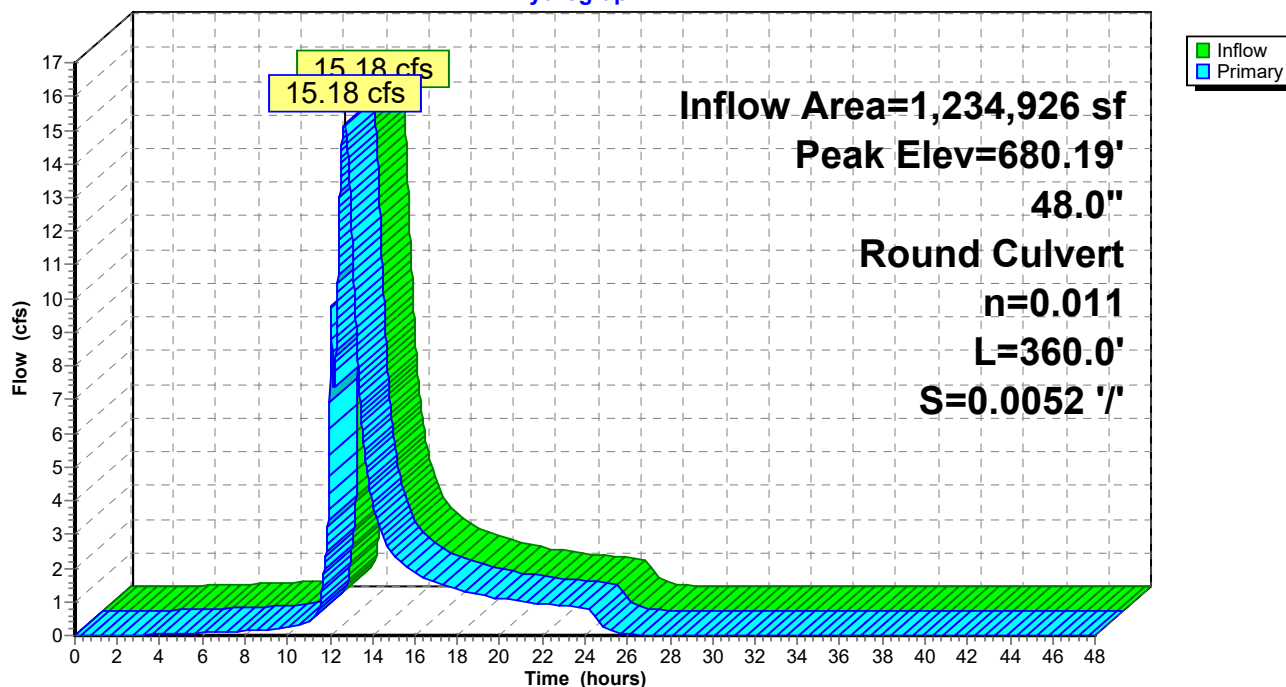
Device	Routing	Invert	Outlet Devices
#1	Primary	678.39'	48.0" Round Culvert L= 360.0' Ke= 0.500 Inlet / Outlet Invert= 678.39' / 676.50' S= 0.0052 '/' Cc= 0.900 n= 0.011 Concrete pipe, straight & clean, Flow Area= 12.57 sf

Primary OutFlow Max=15.05 cfs @ 12.70 hrs HW=680.15' TW=679.23' (Dynamic Tailwater)
 ↳ **1=Culvert** (Outlet Controls 15.05 cfs @ 4.17 fps)



Pond CD4DCE: Cross Drain 4DCE

Hydrograph



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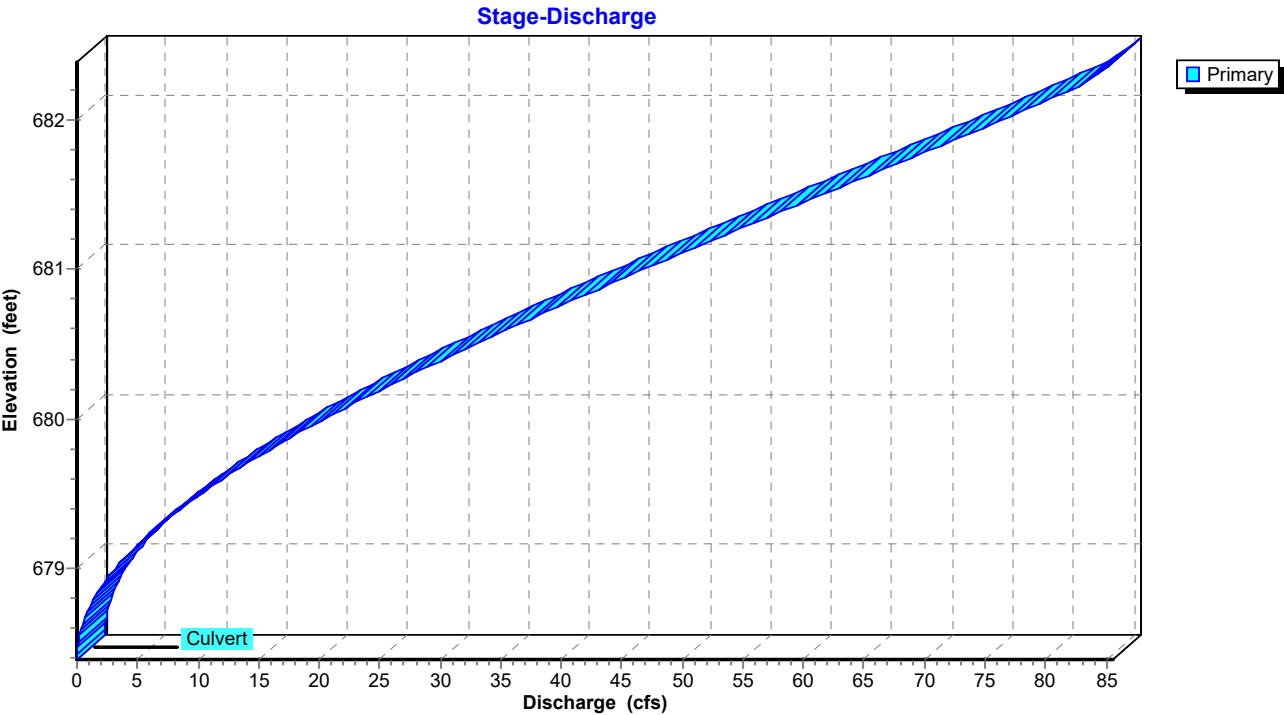
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Mt Pleasant 24-hr S1 2-yr Rainfall=3.90"

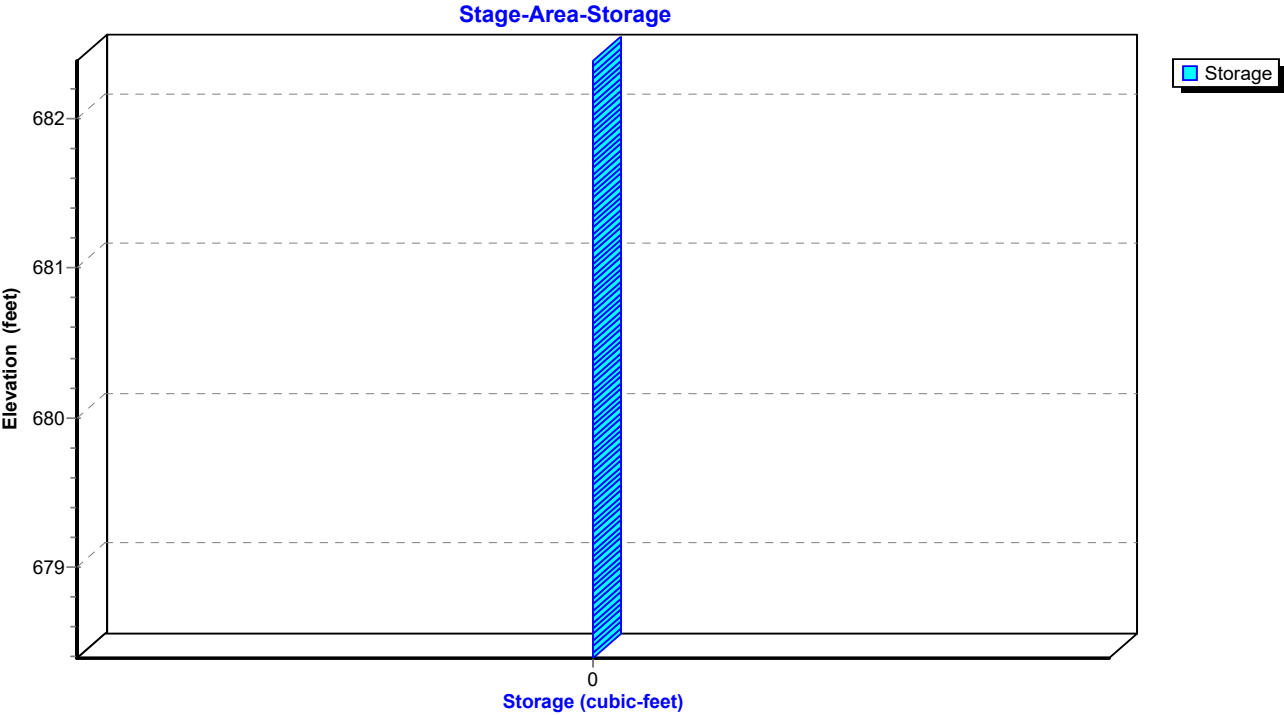
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Pond CD4DCE: Cross Drain 4DCE



Pond CD4DCE: Cross Drain 4DCE



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Summary for Pond CD4E: Cross Drain 4E

Inflow Area = 1,151,726 sf, 3.78% Impervious, Inflow Depth = 1.12" for 2-yr event
 Inflow = 14.52 cfs @ 12.69 hrs, Volume= 107,853 cf
 Outflow = 14.40 cfs @ 12.73 hrs, Volume= 107,852 cf, Atten= 1%, Lag= 2.1 min
 Primary = 14.40 cfs @ 12.73 hrs, Volume= 107,852 cf
 Routed to Pond CD4DCE : Cross Drain 4DCE

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
 Peak Elev= 681.07' @ 12.76 hrs Surf.Area= 1,740 sf Storage= 1,039 cf

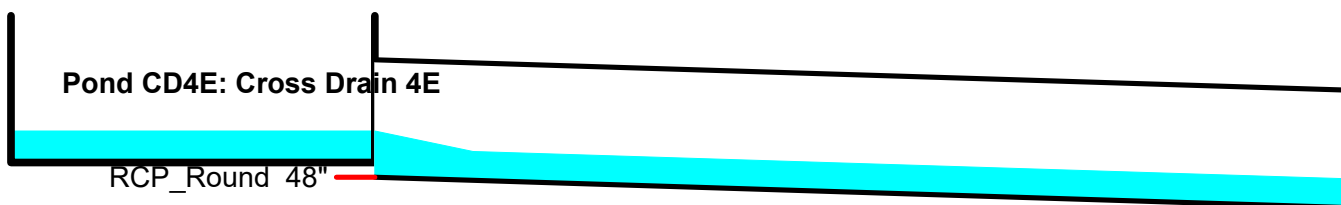
Plug-Flow detention time= (not calculated: outflow precedes inflow)
 Center-of-Mass det. time= 0.6 min (920.2 - 919.6)

Volume	Invert	Avail.Storage	Storage Description
#1	680.00'	33,779 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
680.00	274	0	0
681.00	1,562	918	918
682.00	3,975	2,769	3,687
683.00	7,355	5,665	9,352
684.00	12,090	9,723	19,074
685.00	17,320	14,705	33,779

Device	Routing	Invert	Outlet Devices
#1	Primary	679.50'	48.0" Round RCP_Round 48" L= 200.0' Ke= 0.500 Inlet / Outlet Invert= 679.50' / 678.46' S= 0.0052 ' S= 0.0052 ' Cc= 0.900 n= 0.011 Concrete pipe, straight & clean, Flow Area= 12.57 sf

Primary OutFlow Max=14.36 cfs @ 12.73 hrs HW=681.07' TW=680.17' (Dynamic Tailwater)
 ↑1=RCP_Round 48" (Outlet Controls 14.36 cfs @ 4.65 fps)



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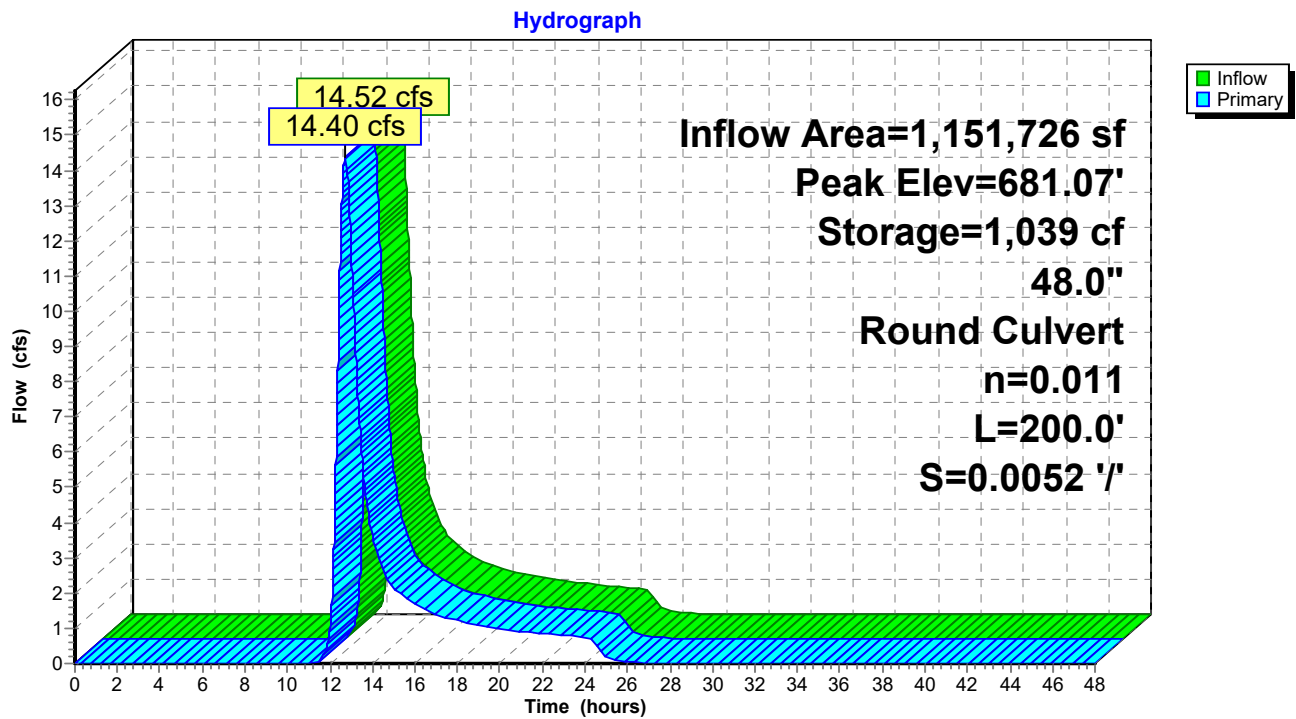
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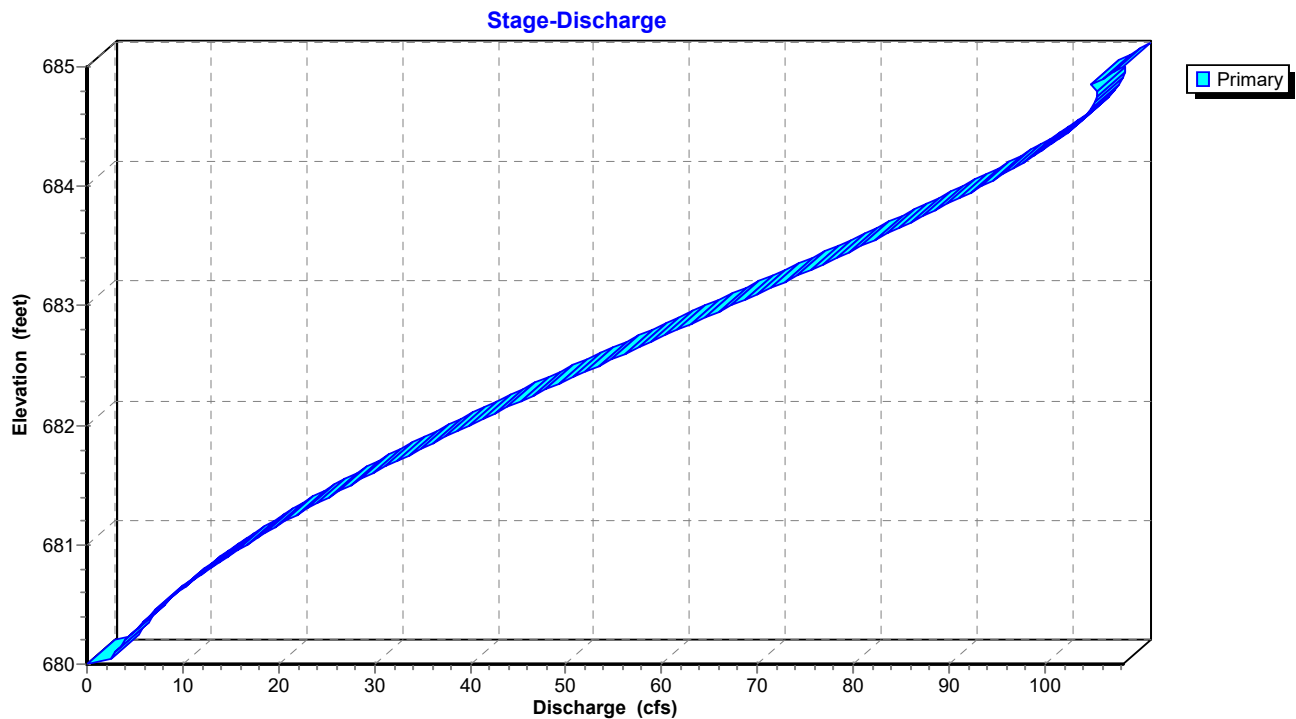
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Pond CD4E: Cross Drain 4E



Pond CD4E: Cross Drain 4E



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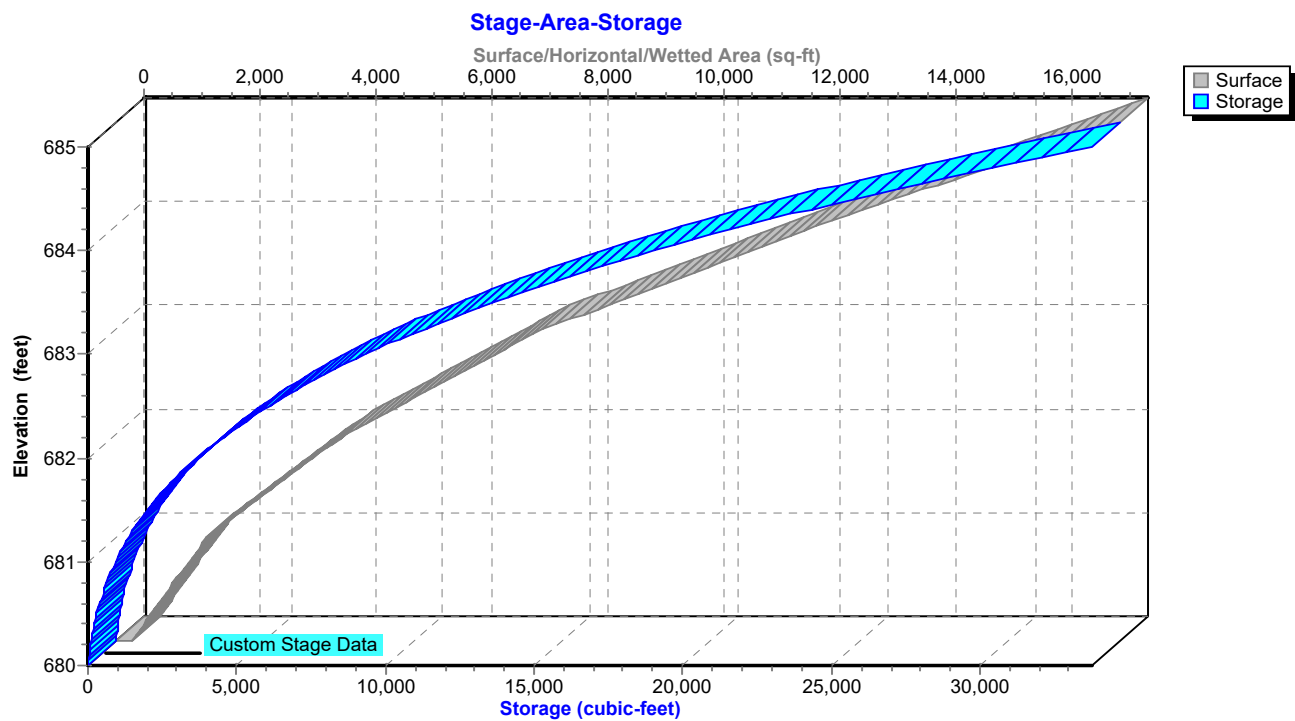
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Pond CD4E: Cross Drain 4E



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Summary for Pond POND1P: PROP POND

Inflow Area = 1,772,021 sf, 9.83% Impervious, Inflow Depth = 1.93" for 2-yr event
 Inflow = 38.46 cfs @ 12.48 hrs, Volume= 285,722 cf
 Outflow = 17.22 cfs @ 13.13 hrs, Volume= 285,716 cf, Atten= 55%, Lag= 39.4 min
 Primary = 17.22 cfs @ 13.13 hrs, Volume= 285,716 cf
 Routed to Reach OF4P : Primary Stream for Outfalls

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
 Peak Elev= 679.53' @ 13.14 hrs Surf.Area= 48,568 sf Storage= 98,788 cf

Plug-Flow detention time= 126.6 min calculated for 285,657 cf (100% of inflow)
 Center-of-Mass det. time= 126.7 min (967.5 - 840.8)

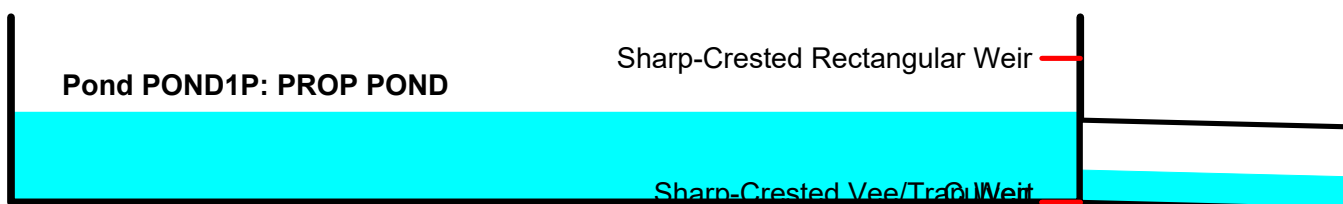
Volume	Invert	Avail.Storage	Storage Description
#1	676.25'	386,863 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
676.25	505	0	0
676.50	14,826	1,916	1,916
677.00	24,194	9,755	11,671
678.00	31,409	27,802	39,473
679.00	39,965	35,687	75,160
680.00	56,082	48,024	123,183
681.00	77,468	66,775	189,958
682.00	98,642	88,055	278,013
683.00	119,057	108,850	386,863

Device	Routing	Invert	Outlet Devices
#1	Primary	676.25'	36.0" Round Culvert L= 50.0' Ke= 0.600 Inlet / Outlet Invert= 676.25' / 676.00' S= 0.0050 '/' Cc= 0.900 n= 0.011, Flow Area= 7.07 sf
#2	Device 1	676.25'	20.0 deg x 0.4' long Sharp-Crested Vee/Trap Weir Cv= 2.69 (C= 3.36)
#3	Device 1	681.50'	16.0' long Sharp-Crested Rectangular Weir 2 End Contraction(s)

Primary OutFlow Max=17.22 cfs @ 13.13 hrs HW=679.53' TW=676.72' (Dynamic Tailwater)

1=Culvert (Passes 17.22 cfs of 38.44 cfs potential flow)
 2=Sharp-Crested Vee/Trap Weir (Weir Controls 17.22 cfs @ 5.36 fps)
 3=Sharp-Crested Rectangular Weir (Controls 0.00 cfs)



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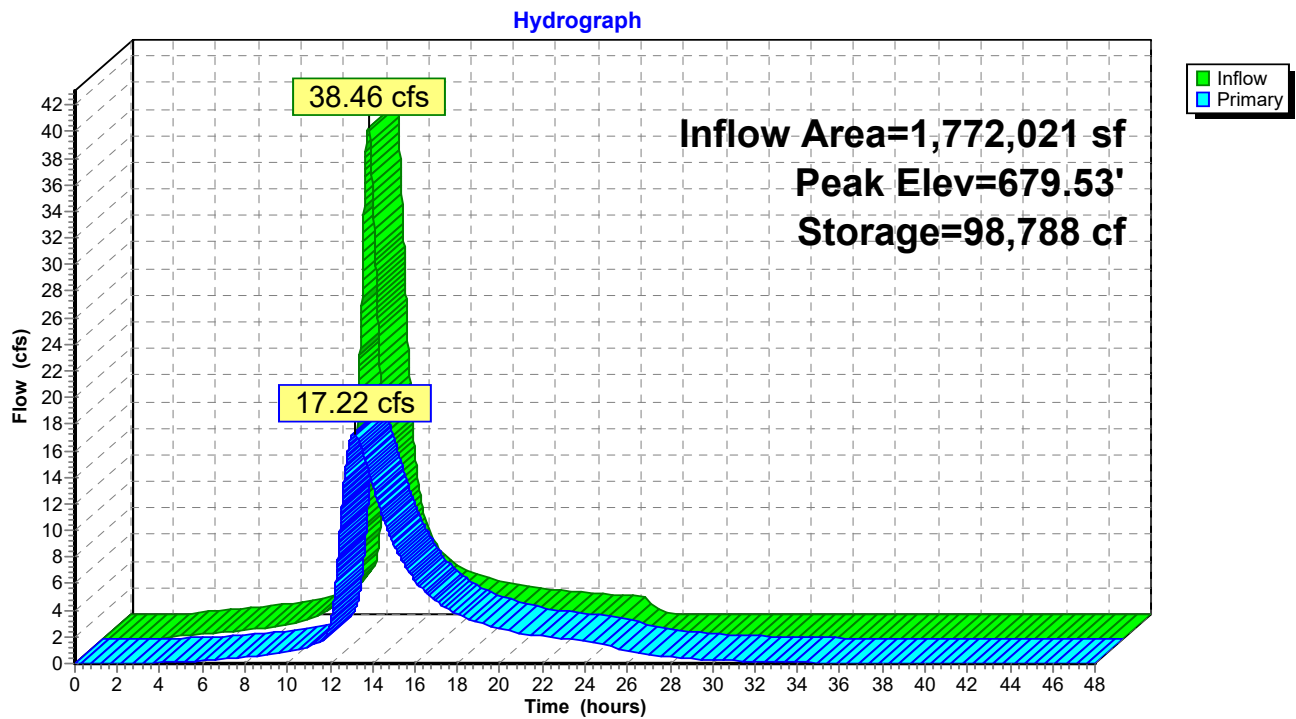
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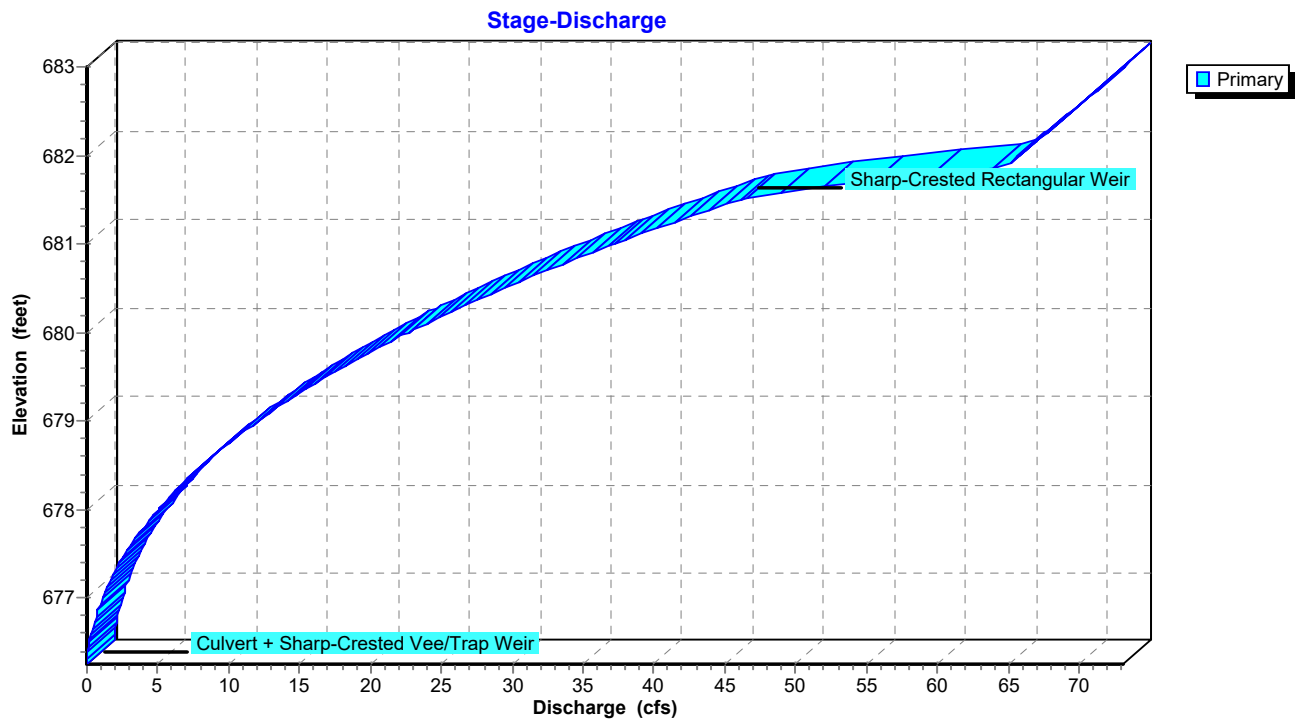
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Pond POND1P: PROP POND



Pond POND1P: PROP POND



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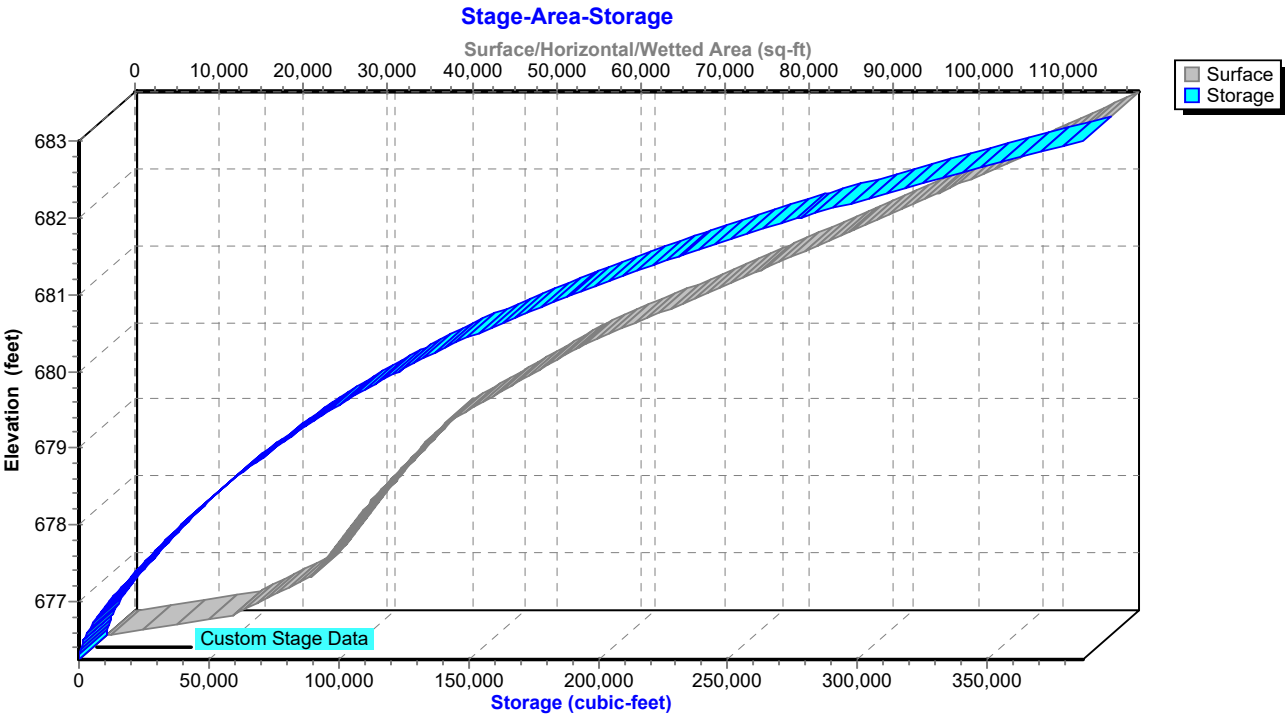
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Mt Pleasant 24-hr S1 2-yr Rainfall=3.90"

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Pond POND1P: PROP POND



TrueRail 040226*Mt Pleasant 24-hr S1 5-yr Rainfall=4.75"*

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Time span=0.00-48.00 hrs, dt=0.01 hrs, 4801 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

Subcatchment DA 1: BASIN 1 PRE Runoff Area=143.000 ac 1.75% Impervious Runoff Depth=2.25"
 Flow Length=5,750' Tc=143.0 min CN=75 Runoff=85.33 cfs 1,166,980 cf

Subcatchment DA 2: BASIN 2 PRE Runoff Area=34.900 ac 0.00% Impervious Runoff Depth=1.29"
 Flow Length=2,150' Slope=0.0150 '/' Tc=62.3 min CN=62 Runoff=19.26 cfs 162,997 cf

Subcatchment DA 3: BASIN 3 PRE Runoff Area=9.380 ac 0.00% Impervious Runoff Depth=2.09"
 Flow Length=838' Slope=0.0200 '/' Tc=25.9 min CN=73 Runoff=14.35 cfs 71,034 cf

Subcatchment DA 4: BASIN 4 PRE Runoff Area=41.500 ac 0.00% Impervious Runoff Depth=1.85"
 Flow Length=2,468' Tc=68.1 min CN=70 Runoff=33.51 cfs 279,135 cf

Subcatchment DA1P: BASIN 1 PROPOSED Runoff Area=143.000 ac 1.75% Impervious Runoff Depth=2.25"
 Flow Length=5,750' Tc=143.0 min CN=75 Runoff=85.33 cfs 1,166,980 cf

Subcatchment DA2P: BASIN 2 PROPOSED Runoff Area=34.900 ac 0.00% Impervious Runoff Depth=1.29"
 Flow Length=2,150' Slope=0.0150 '/' Tc=62.3 min CN=62 Runoff=19.26 cfs 162,997 cf

Subcatchment DA3P: BASIN 3 PRE Runoff Area=4.760 ac 0.00% Impervious Runoff Depth=2.59"
 Tc=5.0 min CN=79 Runoff=17.54 cfs 44,712 cf

Subcatchment DA4A: BASIN 4A PROPOSED Runoff Area=5.530 ac 0.00% Impervious Runoff Depth=1.70"
 Flow Length=945' Tc=40.9 min CN=68 Runoff=5.38 cfs 34,201 cf

Subcatchment DA4B: BASIN 4B Runoff Area=12.330 ac 24.33% Impervious Runoff Depth=4.28"
 Flow Length=996' Tc=33.8 min CN=96 Runoff=32.22 cfs 191,750 cf

Subcatchment DA4C: BASIN 4C PROPOSED Runoff Area=0.680 ac 0.00% Impervious Runoff Depth=4.28"
 Tc=5.0 min CN=96 Runoff=3.82 cfs 10,575 cf

Subcatchment DA4D: BASIN 4D PROPOSED Runoff Area=1.230 ac 0.00% Impervious Runoff Depth=4.28"
 Tc=5.0 min CN=96 Runoff=6.90 cfs 19,128 cf

Subcatchment DA4E1: BASIN 4E1 Runoff Area=7.260 ac 13.77% Impervious Runoff Depth=1.42"
 Flow Length=640' Tc=31.5 min CN=64 Runoff=6.44 cfs 37,438 cf

Subcatchment DA4E2: BASIN 4E2 Runoff Area=19.180 ac 0.00% Impervious Runoff Depth=1.78"
 Flow Length=1,313' Tc=46.8 min CN=69 Runoff=18.28 cfs 123,771 cf

Reach D4C: Ditch 4C Avg. Flow Depth=0.57' Max Vel=2.37 fps Inflow=3.82 cfs 10,575 cf
 n=0.033 L=313.0' S=0.0104 '/' Capacity=27.19 cfs Outflow=3.55 cfs 10,575 cf

Reach D4D: Ditch 4D Avg. Flow Depth=0.71' Max Vel=3.18 fps Inflow=6.90 cfs 19,128 cf
 n=0.033 L=337.0' S=0.0148 '/' Capacity=32.50 cfs Outflow=6.57 cfs 19,128 cf

Reach D4E1: Ditch 4E1 Avg. Flow Depth=0.59' Max Vel=1.45 fps Inflow=6.44 cfs 37,438 cf
 n=0.033 L=1,788.0' S=0.0031 '/' Capacity=197.27 cfs Outflow=4.99 cfs 37,438 cf

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Reach OF4: Primary Stream for Avg. Flow Depth=2.22' Max Vel=3.81 fps Inflow=112.82 cfs 1,680,146 cf
 n=0.035 L=1,000.0' S=0.0050 '/' Capacity=640.46 cfs Outflow=112.58 cfs 1,680,146 cf

Reach OF4P: Primary Stream for Avg. Flow Depth=2.24' Max Vel=3.84 fps Inflow=115.76 cfs 1,791,545 cf
 n=0.035 L=1,000.0' S=0.0050 '/' Capacity=640.46 cfs Outflow=115.59 cfs 1,791,544 cf

Pond CD2: Cross Drain Peak Elev=682.30' Inflow=19.26 cfs 162,997 cf
 36.0" Round Culvert n=0.011 L=50.0' S=0.0050 '/' Outflow=19.26 cfs 162,997 cf

Pond CD4C: Cross Drain 4C Peak Elev=684.65' Inflow=3.55 cfs 10,575 cf
 18.0" Round Culvert n=0.011 L=60.0' S=0.0792 '/' Outflow=3.55 cfs 10,575 cf

Pond CD4DCE: Cross Drain 4DCE Peak Elev=680.77' Inflow=23.79 cfs 190,911 cf
 48.0" Round Culvert n=0.011 L=360.0' S=0.0052 '/' Outflow=23.79 cfs 190,911 cf

Pond CD4E: Cross Drain 4E Peak Elev=681.62' Storage=2,352 cf Inflow=23.21 cfs 161,209 cf
 48.0" Round Culvert n=0.011 L=200.0' S=0.0052 '/' Outflow=22.81 cfs 161,207 cf

Pond POND1P: PROP POND Peak Elev=680.15' Storage=131,541 cf Inflow=52.23 cfs 382,660 cf
 Outflow=24.34 cfs 382,654 cf

Total Runoff Area = 19,935,234 sf Runoff Volume = 3,471,699 cf Average Runoff Depth = 2.09"
98.03% Pervious = 19,543,194 sf 1.97% Impervious = 392,040 sf

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Summary for Subcatchment DA 1: BASIN 1 PRE DEVELOPMENT

Runoff = 85.33 cfs @ 13.83 hrs, Volume= 1,166,980 cf, Depth= 2.25"
Routed to Reach OF4 : Primary Stream for Outfalls

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Mt Pleasant 24-hr S1 5-yr Rainfall=4.75"

Area (ac)	CN	Description
69.500	74	>75% Grass cover, Good, HSG C
71.000	76	Woods/grass comb., Fair, HSG C
2.500	98	Paved parking, HSG C
143.000	75	Weighted Average
140.500		98.25% Pervious Area
2.500		1.75% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
35.4	100	0.0200	0.05		Sheet Flow, Woods: Dense underbrush n= 0.800 P2= 3.57"
92.8	3,050	0.0120	0.55		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
14.8	2,600	0.0060	2.93	11.71	Channel Flow, Area= 4.0 sf Perim= 6.0' r= 0.67' n= 0.030
143.0	5,750	Total			

Subcatchment DA 1: BASIN 1 PRE DEVELOPMENT

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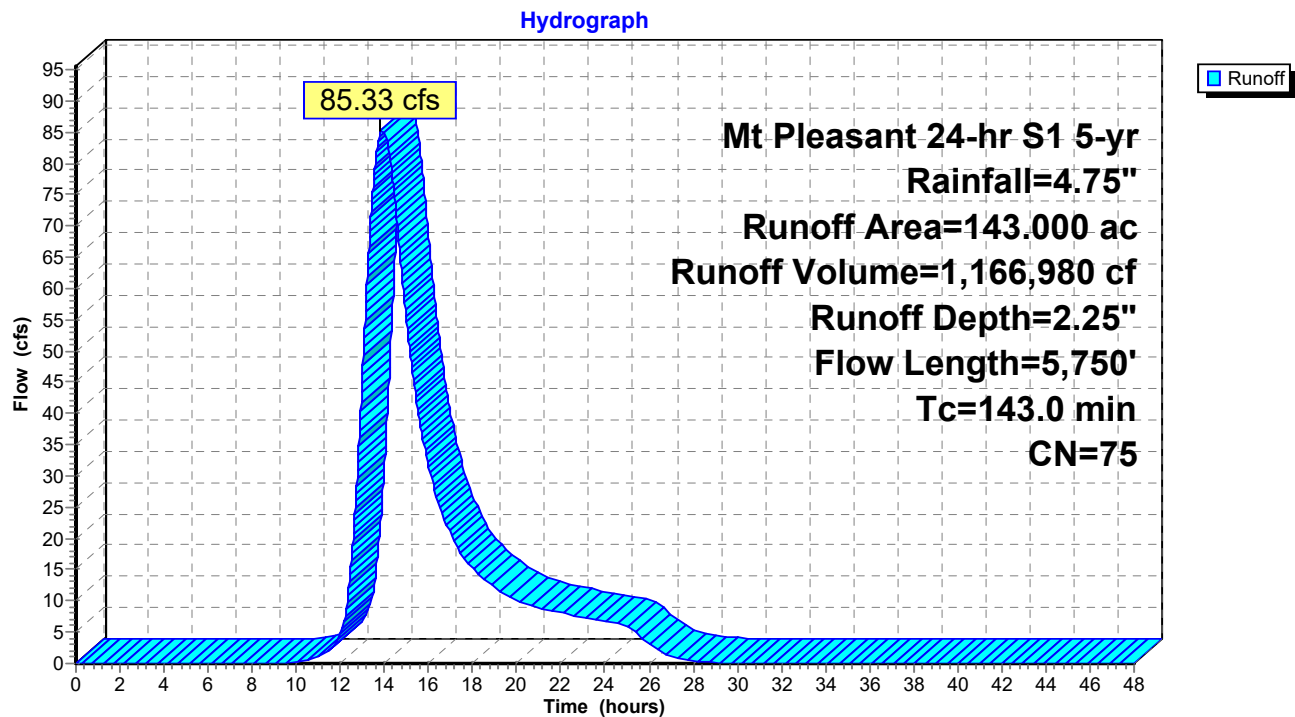
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Mt Pleasant 24-hr S1 5-yr Rainfall=4.75"

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Subcatchment DA 1: BASIN 1 PRE DEVELOPMENT



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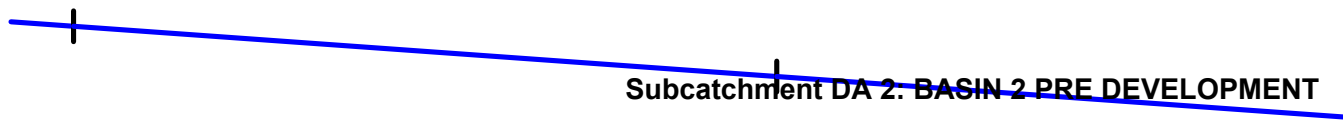
Summary for Subcatchment DA 2: BASIN 2 PRE DEVELOPMENT

Runoff = 19.26 cfs @ 12.94 hrs, Volume= 162,997 cf, Depth= 1.29"
Routed to Reach OF4 : Primary Stream for Outfalls

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Mt Pleasant 24-hr S1 5-yr Rainfall=4.75"

Area (ac)	CN	Description
17.450	58	Meadow, non-grazed, HSG B
14.450	60	Woods, Fair, HSG B
3.000	96	Gravel surface, HSG C
34.900	62	Weighted Average
34.900		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.2	100	0.0150	0.11		Sheet Flow, Grass: Dense n= 0.240 P2= 3.57"
21.9	1,125	0.0150	0.86		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
25.2	925	0.0150	0.61		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
62.3	2,150	Total			



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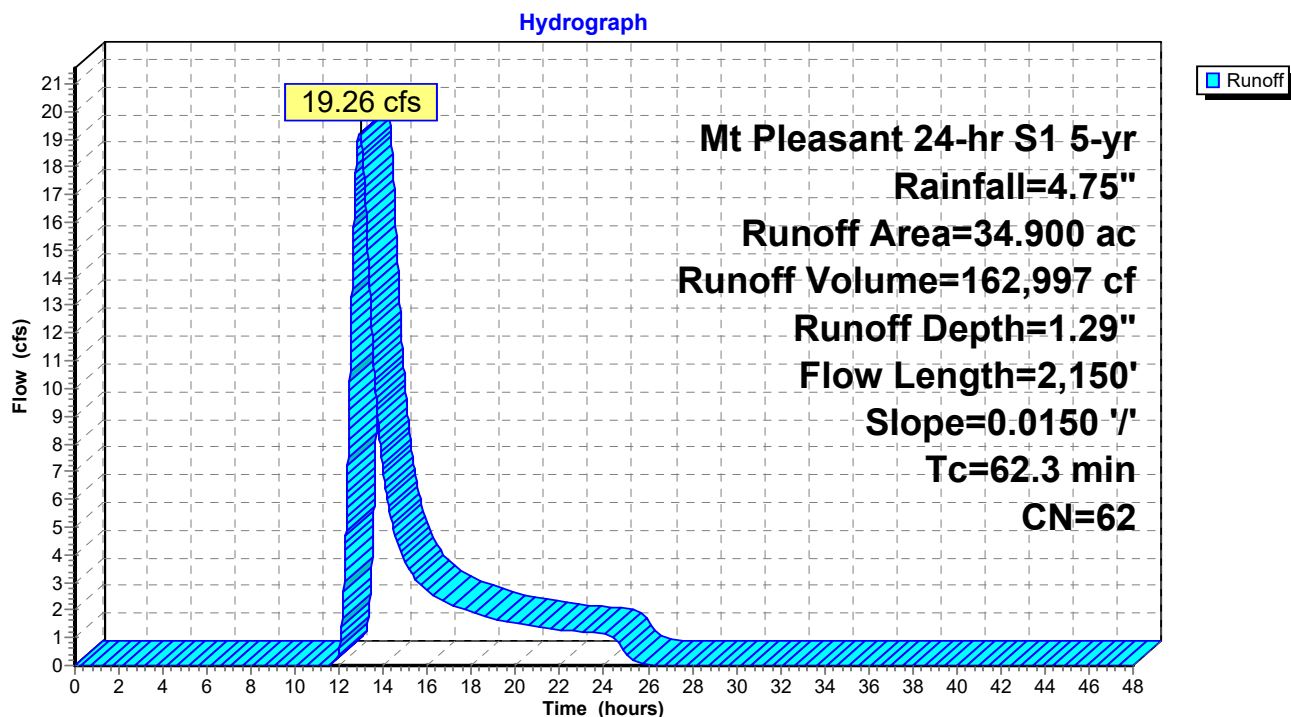
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Mt Pleasant 24-hr S1 5-yr Rainfall=4.75"

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Subcatchment DA 2: BASIN 2 PRE DEVELOPMENT



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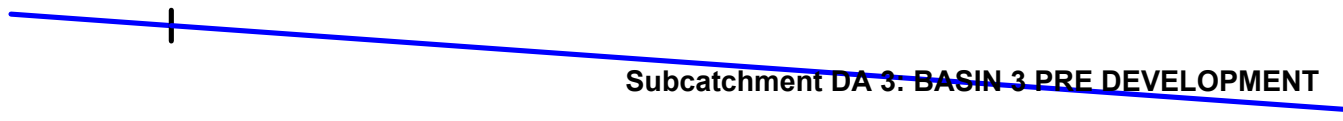
Summary for Subcatchment DA 3: BASIN 3 PRE DEVELOPMENT

Runoff = 14.35 cfs @ 12.34 hrs, Volume= 71,034 cf, Depth= 2.09"
Routed to Reach OF4 : Primary Stream for Outfalls

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Mt Pleasant 24-hr S1 5-yr Rainfall=4.75"

Area (ac)	CN	Description
3.300	78	Meadow, non-grazed, HSG D
3.300	79	Woods, Fair, HSG D
2.250	58	Meadow, non-grazed, HSG B
0.530	60	Woods, Fair, HSG B
9.380	73	Weighted Average
9.380		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.5	100	0.0200	0.12		Sheet Flow, Grass: Dense n= 0.240 P2= 3.57"
12.4	738	0.0200	0.99		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
25.9	838	Total			



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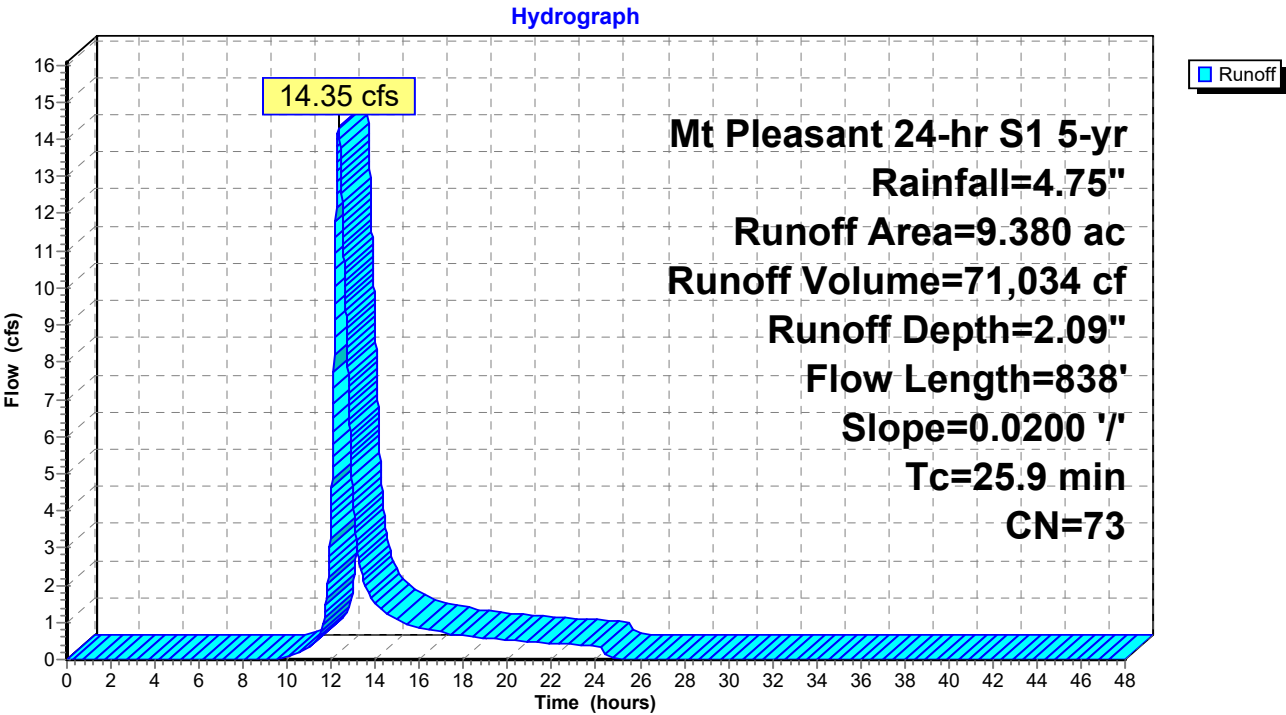
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Subcatchment DA 3: BASIN 3 PRE DEVELOPMENT



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Summary for Subcatchment DA 4: BASIN 4 PRE DEVELOPMENT

Runoff = 33.51 cfs @ 12.94 hrs, Volume= 279,135 cf, Depth= 1.85"
 Routed to Reach OF4 : Primary Stream for Outfalls

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
 Mt Pleasant 24-hr S1 5-yr Rainfall=4.75"

Area (ac)	CN	Description
7.300	78	Meadow, non-grazed, HSG D
1.830	79	Woods, Fair, HSG D
7.640	58	Meadow, non-grazed, HSG B
1.910	60	Woods, Fair, HSG B
4.150	73	Woods, Fair, HSG C
9.960	71	Meadow, non-grazed, HSG C
2.490	73	Woods, Fair, HSG C
4.970	71	Meadow, non-grazed, HSG C
1.250	73	Woods, Fair, HSG C
41.500	70	Weighted Average
41.500		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
24.5	100	0.0500	0.07		Sheet Flow, Woods: Dense underbrush n= 0.800 P2= 3.57"
43.6	2,368	0.0167	0.90		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
68.1	2,468	Total			

Subcatchment DA 4: BASIN 4 PRE DEVELOPMENT

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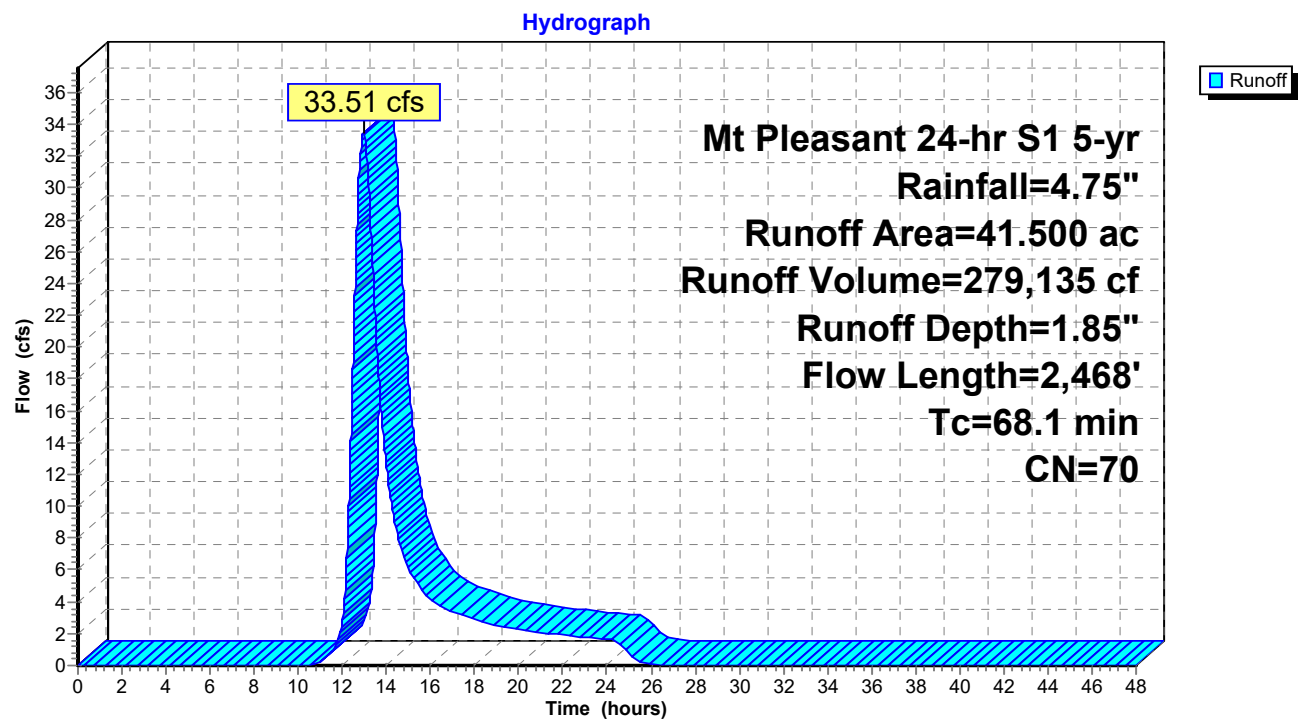
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Subcatchment DA 4: BASIN 4 PRE DEVELOPMENT



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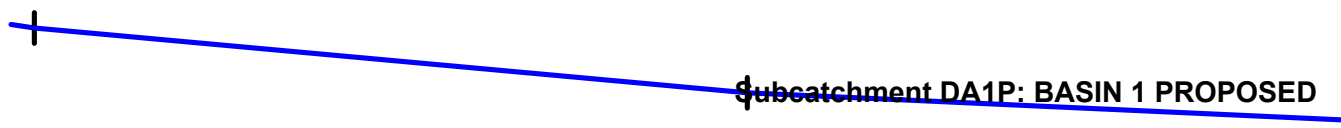
Summary for Subcatchment DA1P: BASIN 1 PROPOSED

Runoff = 85.33 cfs @ 13.83 hrs, Volume= 1,166,980 cf, Depth= 2.25"
Routed to Reach OF4P : Primary Stream for Outfalls

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Mt Pleasant 24-hr S1 5-yr Rainfall=4.75"

Area (ac)	CN	Description
69.500	74	>75% Grass cover, Good, HSG C
71.000	76	Woods/grass comb., Fair, HSG C
2.500	98	Paved parking, HSG C
143.000	75	Weighted Average
140.500		98.25% Pervious Area
2.500		1.75% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
35.4	100	0.0200	0.05		Sheet Flow, Woods: Dense underbrush n= 0.800 P2= 3.57"
92.8	3,050	0.0120	0.55		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
14.8	2,600	0.0060	2.93	11.71	Channel Flow, Area= 4.0 sf Perim= 6.0' r= 0.67' n= 0.030
143.0	5,750	Total			



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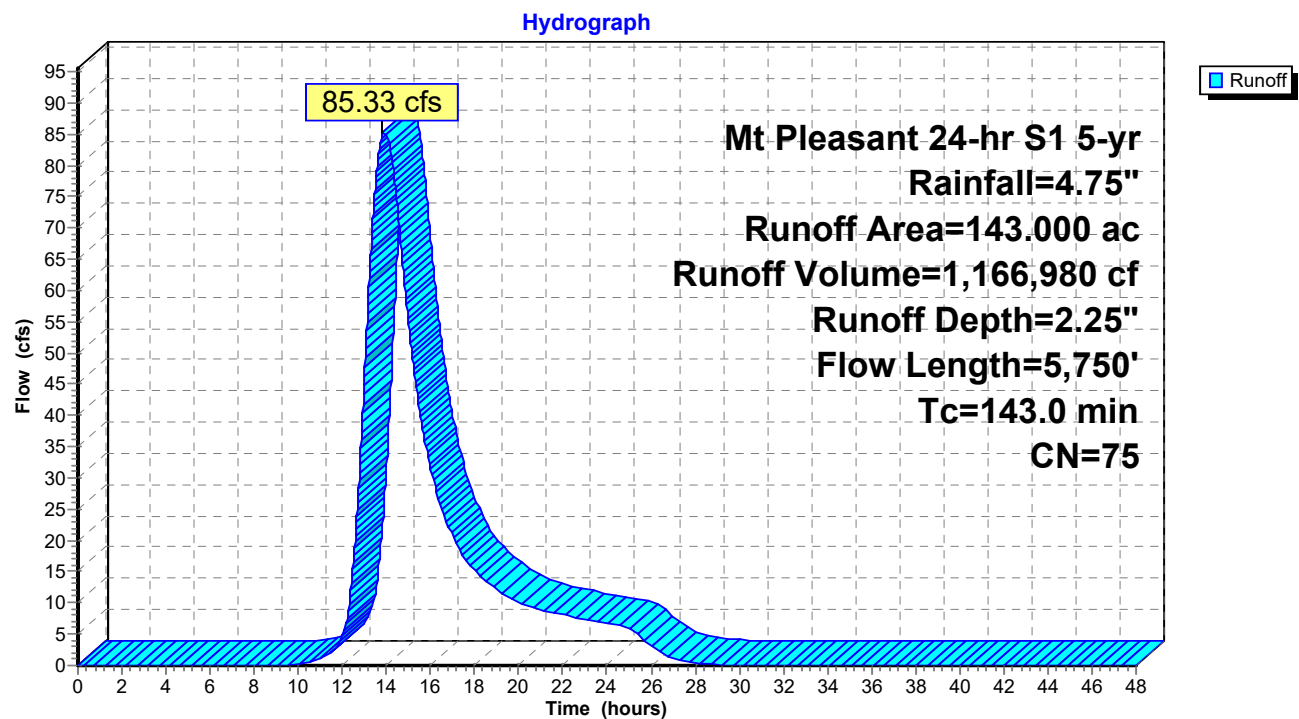
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Mt Pleasant 24-hr S1 5-yr Rainfall=4.75"

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Subcatchment DA1P: BASIN 1 PROPOSED



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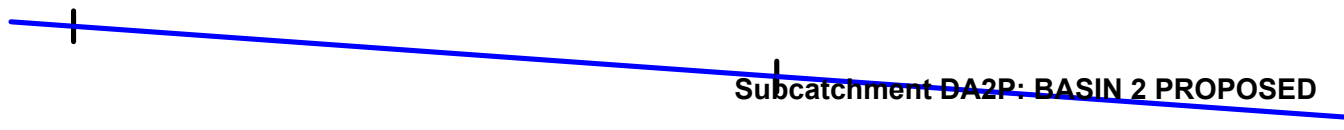
Summary for Subcatchment DA2P: BASIN 2 PROPOSED

Runoff = 19.26 cfs @ 12.94 hrs, Volume= 162,997 cf, Depth= 1.29"
Routed to Pond CD2 : Cross Drain

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Mt Pleasant 24-hr S1 5-yr Rainfall=4.75"

Area (ac)	CN	Description
17.450	58	Meadow, non-grazed, HSG B
14.450	60	Woods, Fair, HSG B
3.000	96	Gravel surface, HSG C
34.900	62	Weighted Average
34.900		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.2	100	0.0150	0.11		Sheet Flow, Grass: Dense n= 0.240 P2= 3.57"
21.9	1,125	0.0150	0.86		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
25.2	925	0.0150	0.61		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
62.3	2,150	Total			



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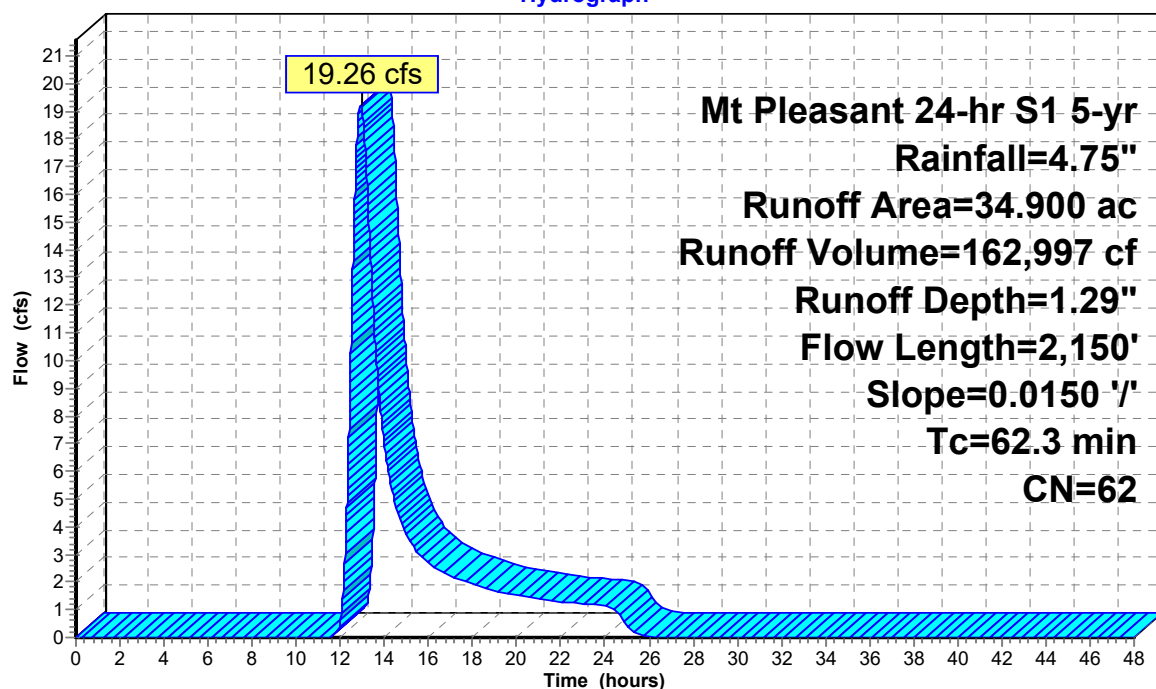
Mt Pleasant 24-hr S1 5-yr Rainfall=4.75"

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Subcatchment DA2P: BASIN 2 PROPOSED

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Summary for Subcatchment DA3P: BASIN 3 PRE DEVELOPMENT

Runoff = 17.54 cfs @ 12.03 hrs, Volume= 44,712 cf, Depth= 2.59"
 Routed to Reach OF4P : Primary Stream for Outfalls

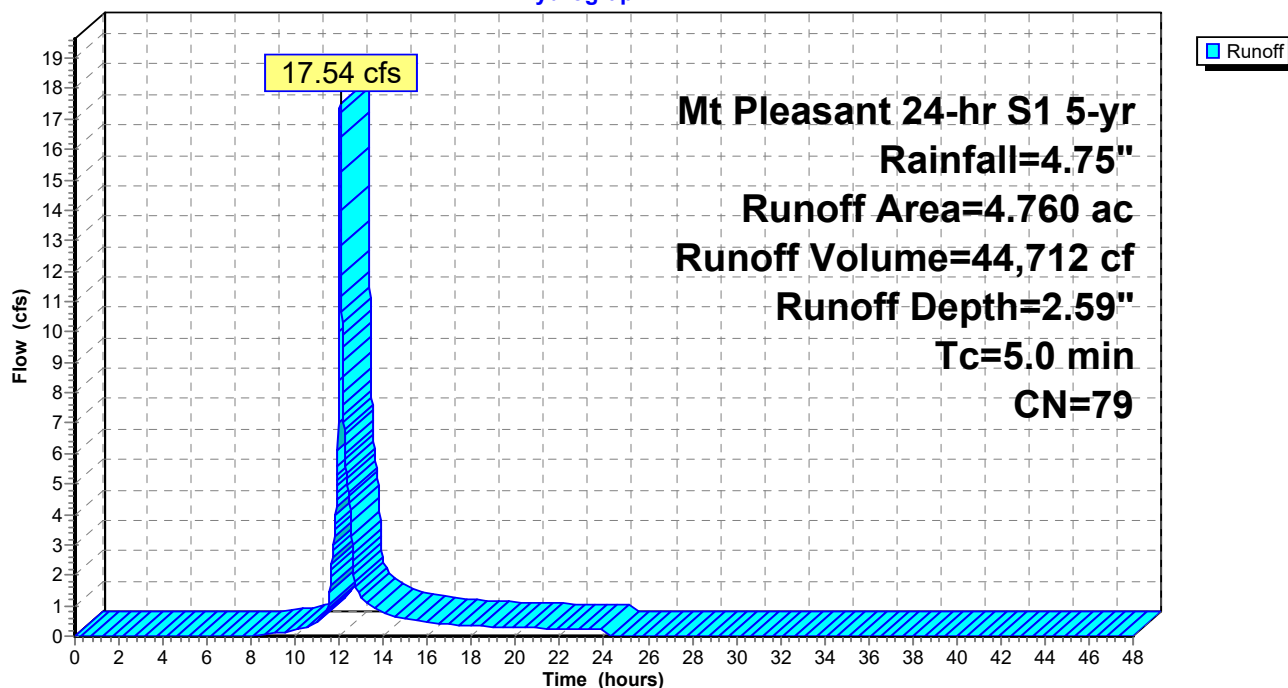
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
 Mt Pleasant 24-hr S1 5-yr Rainfall=4.75"

Area (ac)	CN	Description
4.760	79	Woods, Fair, HSG D
4.760		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					Direct Entry,

Subcatchment DA3P: BASIN 3 PRE DEVELOPMENT

Hydrograph



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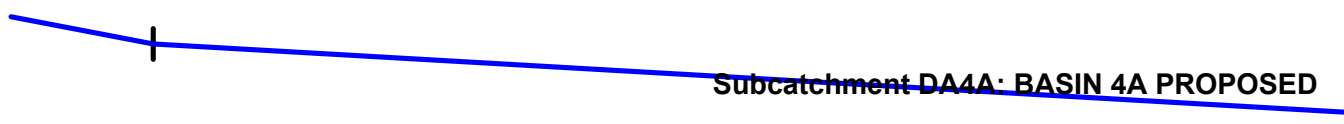
Summary for Subcatchment DA4A: BASIN 4A PROPOSED

Runoff = 5.38 cfs @ 12.59 hrs, Volume= 34,201 cf, Depth= 1.70"
Routed to Reach OF4P : Primary Stream for Outfalls

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Mt Pleasant 24-hr S1 5-yr Rainfall=4.75"

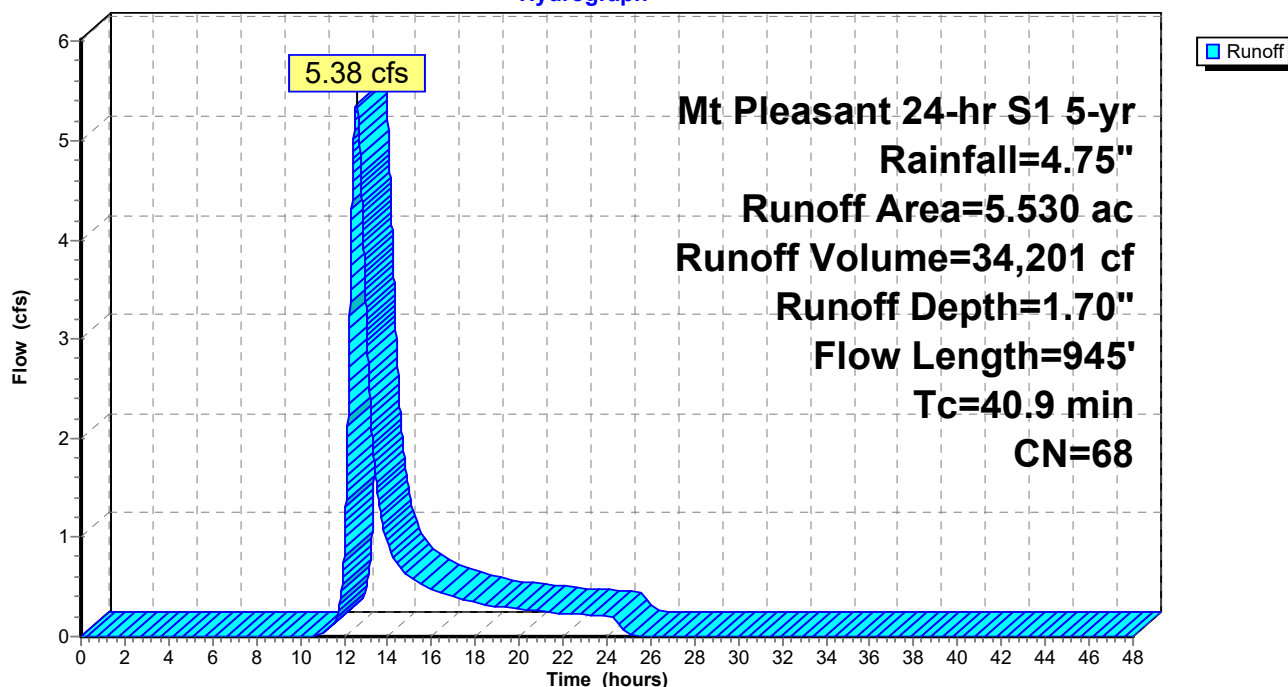
Area (ac)	CN	Description
2.200	60	Woods, Fair, HSG B
3.330	73	Woods, Fair, HSG C
5.530	68	Weighted Average
5.530		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
24.5	100	0.0500	0.07		Sheet Flow, Woods: Dense underbrush n= 0.800 P2= 3.57"
16.4	845	0.0150	0.86		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
40.9	945	Total			



Subcatchment DA4A: BASIN 4A PROPOSED

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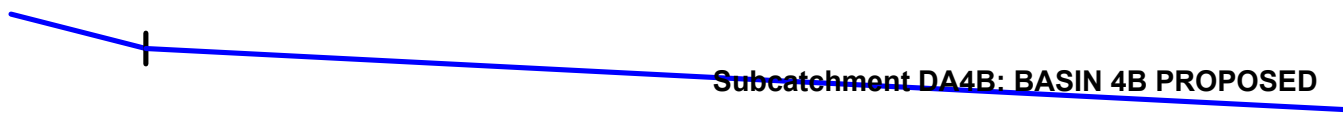
Summary for Subcatchment DA4B: BASIN 4B PROPOSED

Runoff = 32.22 cfs @ 12.40 hrs, Volume= 191,750 cf, Depth= 4.28"
Routed to Pond POND1P : PROP POND

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Mt Pleasant 24-hr S1 5-yr Rainfall=4.75"

Area (ac)	CN	Description
9.330	96	Gravel surface, HSG C
1.000	98	Paved parking, HSG D
2.000	98	Roofs, HSG D
12.330	96	Weighted Average
9.330		75.67% Pervious Area
3.000		24.33% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
24.5	100	0.0500	0.07		Sheet Flow, n= 0.800 P2= 3.57"
9.3	896	0.0100	1.61		Shallow Concentrated Flow, Unpaved Kv= 16.1 fps
33.8	996	Total			



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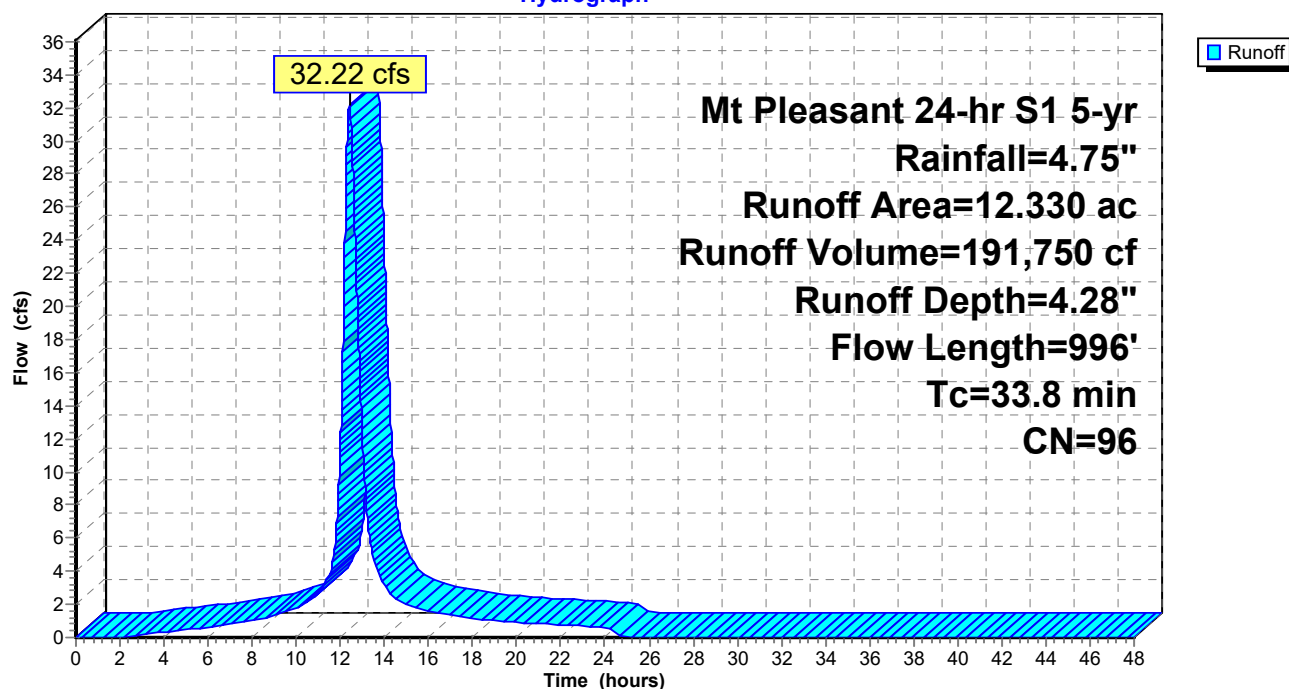
Mt Pleasant 24-hr S1 5-yr Rainfall=4.75"

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Subcatchment DA4B: BASIN 4B PROPOSED

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Summary for Subcatchment DA4C: BASIN 4C PROPOSED

Runoff = 3.82 cfs @ 12.03 hrs, Volume= 10,575 cf, Depth= 4.28"
Routed to Reach D4C : Ditch 4C

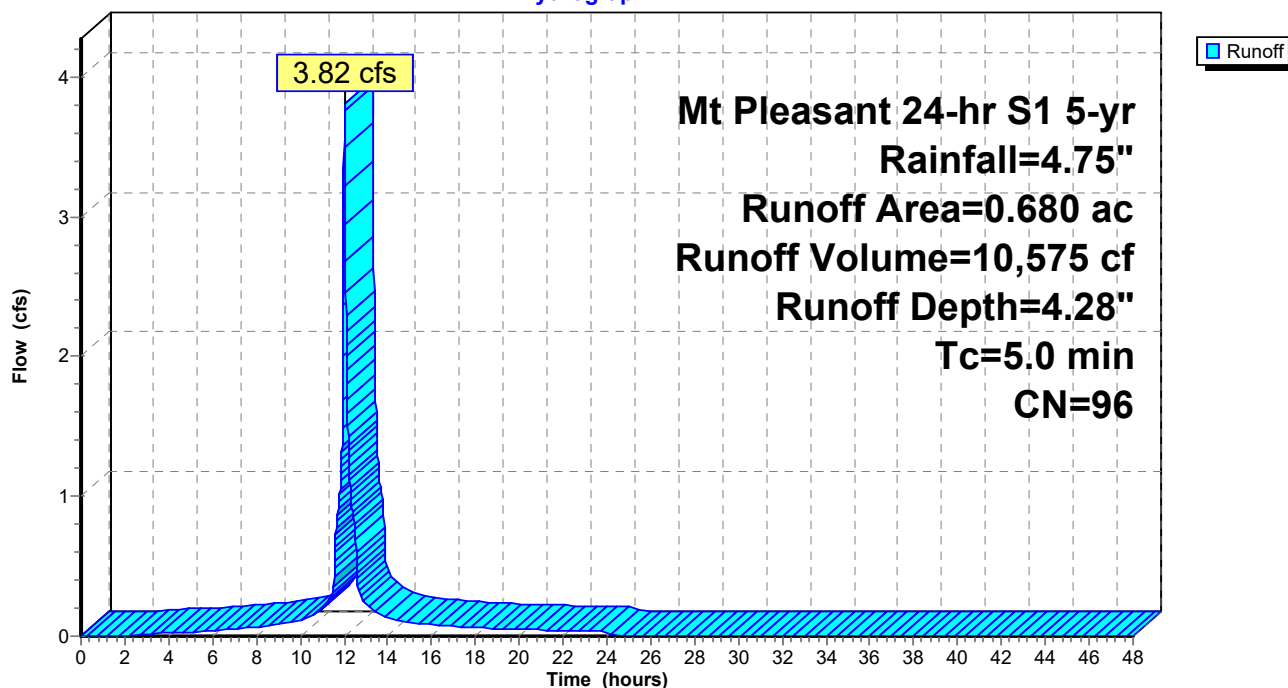
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Mt Pleasant 24-hr S1 5-yr Rainfall=4.75"

Area (ac)	CN	Description
0.680	96	Gravel surface, HSG C
0.680		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					Direct Entry,

Subcatchment DA4C: BASIN 4C PROPOSED

Hydrograph



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Mt Pleasant 24-hr S1 5-yr Rainfall=4.75"

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Summary for Subcatchment DA4D: BASIN 4D PROPOSED

Runoff = 6.90 cfs @ 12.03 hrs, Volume= 19,128 cf, Depth= 4.28"
Routed to Reach D4D : Ditch 4D

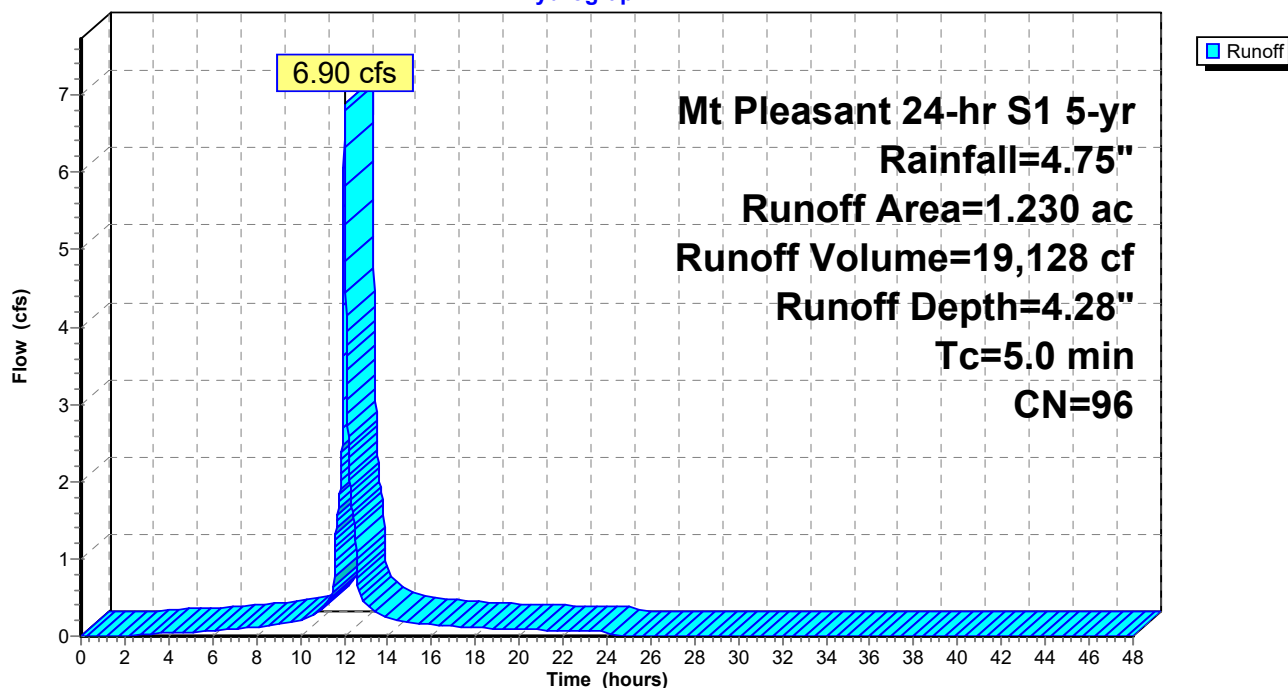
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Mt Pleasant 24-hr S1 5-yr Rainfall=4.75"

Area (ac)	CN	Description
1.230	96	Gravel surface, HSG C
1.230		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					Direct Entry,

Subcatchment DA4D: BASIN 4D PROPOSED

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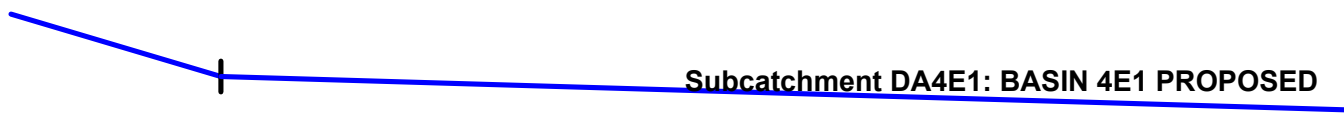
Summary for Subcatchment DA4E1: BASIN 4E1 PROPOSED

Runoff = 6.44 cfs @ 12.45 hrs, Volume= 37,438 cf, Depth= 1.42"
Routed to Reach D4E1 : Ditch 4E1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Mt Pleasant 24-hr S1 5-yr Rainfall=4.75"

Area (ac)	CN	Description
3.130	58	Meadow, non-grazed, HSG B
3.130	60	Woods, Fair, HSG B
1.000	98	Paved roads w/curbs & sewers, HSG B
7.260	64	Weighted Average
6.260		86.23% Pervious Area
1.000		13.77% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
18.6	100	0.1000	0.09		Sheet Flow, Woods: Dense underbrush n= 0.800 P2= 3.57"
12.9	540	0.0100	0.70		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
31.5	640	Total			



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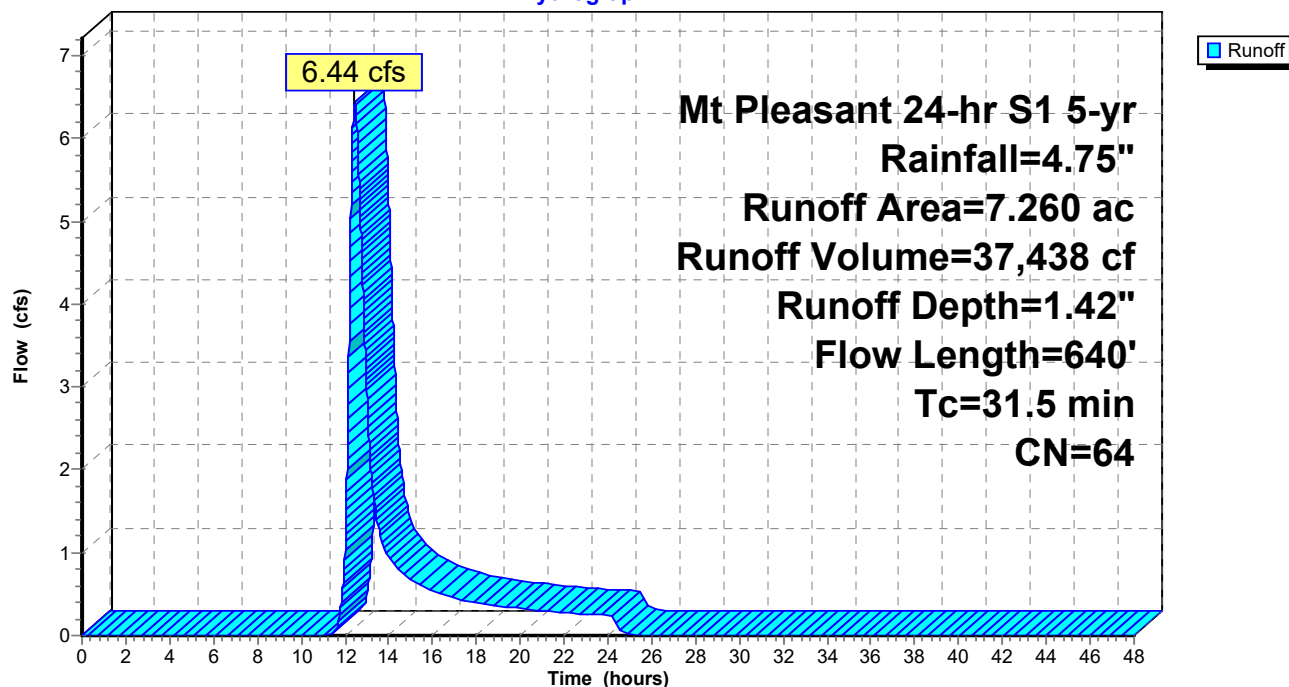
Mt Pleasant 24-hr S1 5-yr Rainfall=4.75"

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Subcatchment DA4E1: BASIN 4E1 PROPOSED

Hydrograph



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Mt Pleasant 24-hr S1 5-yr Rainfall=4.75"

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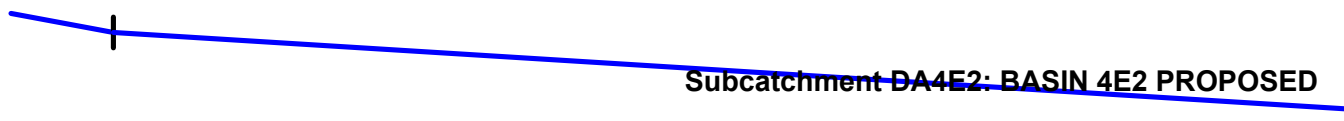
Summary for Subcatchment DA4E2: BASIN 4E2 PROPOSED

Runoff = 18.28 cfs @ 12.64 hrs, Volume= 123,771 cf, Depth= 1.78"
Routed to Pond CD4E : Cross Drain 4E

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Mt Pleasant 24-hr S1 5-yr Rainfall=4.75"

Area (ac)	CN	Description
9.300	79	Woods, Fair, HSG D
4.940	58	Meadow, non-grazed, HSG B
4.940	60	Woods, Fair, HSG B
19.180	69	Weighted Average
19.180		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
24.5	100	0.0500	0.07		Sheet Flow, Woods: Dense underbrush n= 0.800 P2= 3.57"
22.3	1,213	0.0167	0.90		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
46.8	1,313	Total			



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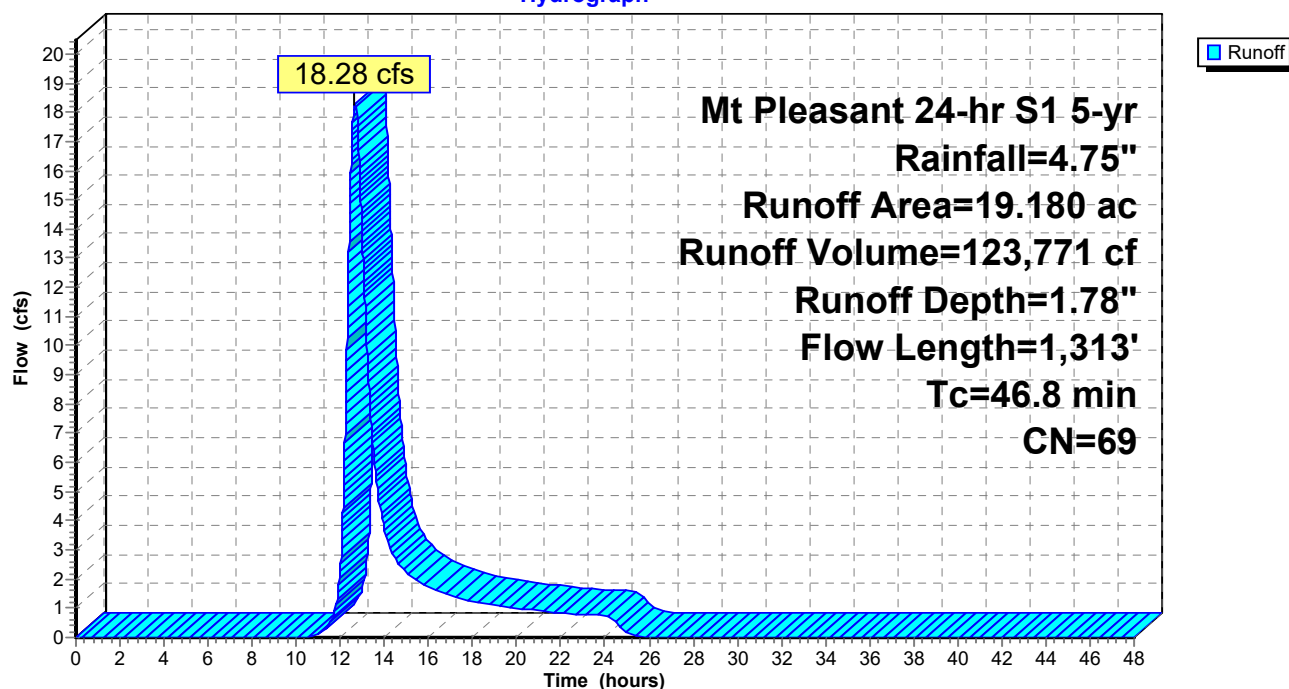
Mt Pleasant 24-hr S1 5-yr Rainfall=4.75"

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Subcatchment DA4E2: BASIN 4E2 PROPOSED

Hydrograph



TrueRail 040226*Mt Pleasant 24-hr S1 5-yr Rainfall=4.75"*

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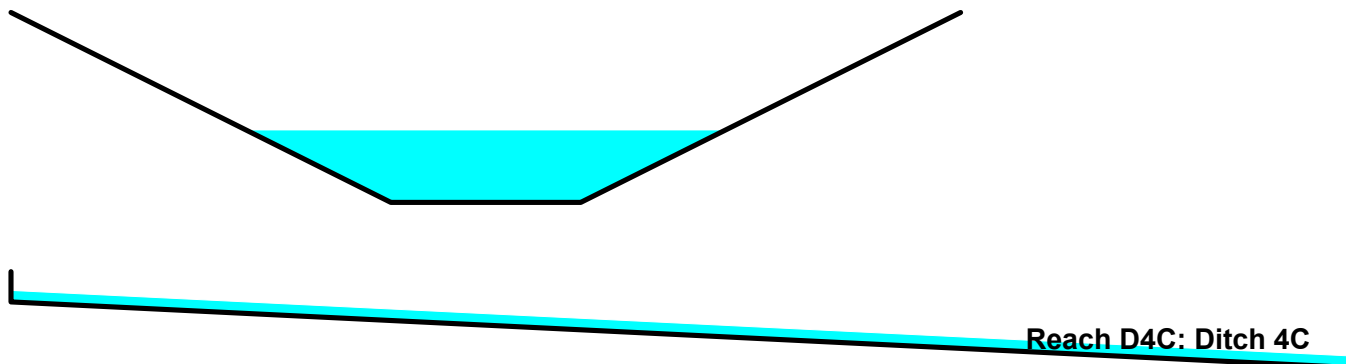
Summary for Reach D4C: Ditch 4C

Inflow Area = 29,621 sf, 0.00% Impervious, Inflow Depth = 4.28" for 5-yr event
 Inflow = 3.82 cfs @ 12.03 hrs, Volume= 10,575 cf
 Outflow = 3.55 cfs @ 12.05 hrs, Volume= 10,575 cf, Atten= 7%, Lag= 1.3 min
 Routed to Pond CD4C : Cross Drain 4C

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
 Max. Velocity= 2.37 fps, Min. Travel Time= 2.2 min
 Avg. Velocity = 0.66 fps, Avg. Travel Time= 7.9 min

Peak Storage= 469 cf @ 12.05 hrs
 Average Depth at Peak Storage= 0.57' , Surface Width= 3.77'
 Bank-Full Depth= 1.50' Flow Area= 6.8 sf, Capacity= 27.19 cfs

1.50' x 1.50' deep channel, n= 0.033 Riprap, 1-inch
 Side Slope Z-value= 2.0 '/' Top Width= 7.50'
 Length= 313.0' Slope= 0.0104 '/'
 Inlet Invert= 687.00', Outlet Invert= 683.75'



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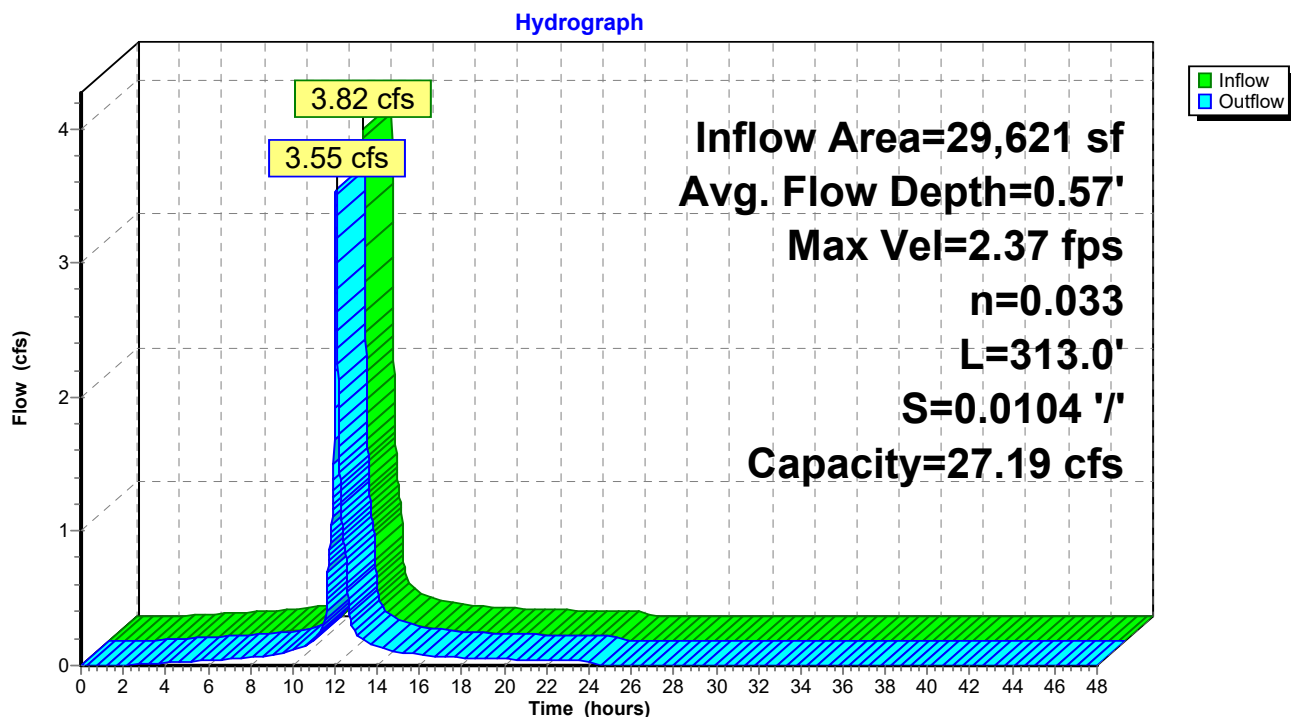
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Mt Pleasant 24-hr S1 5-yr Rainfall=4.75"

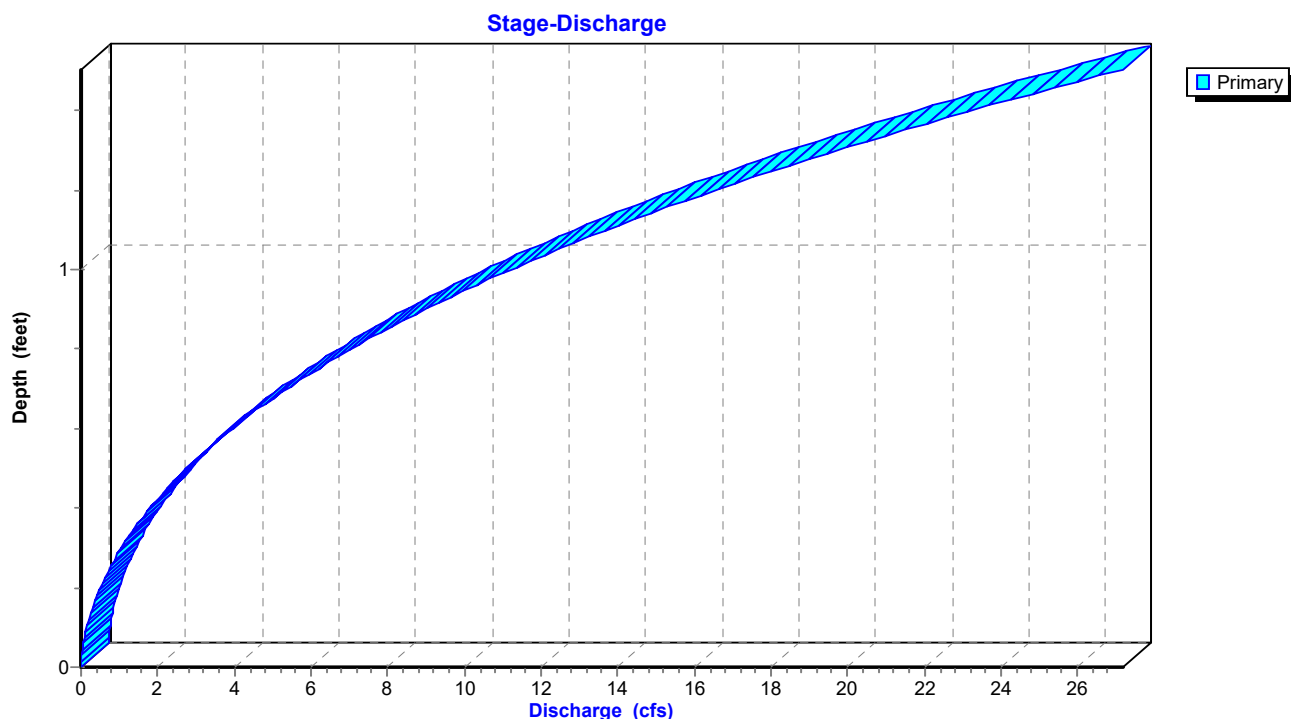
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Reach D4C: Ditch 4C



Reach D4C: Ditch 4C



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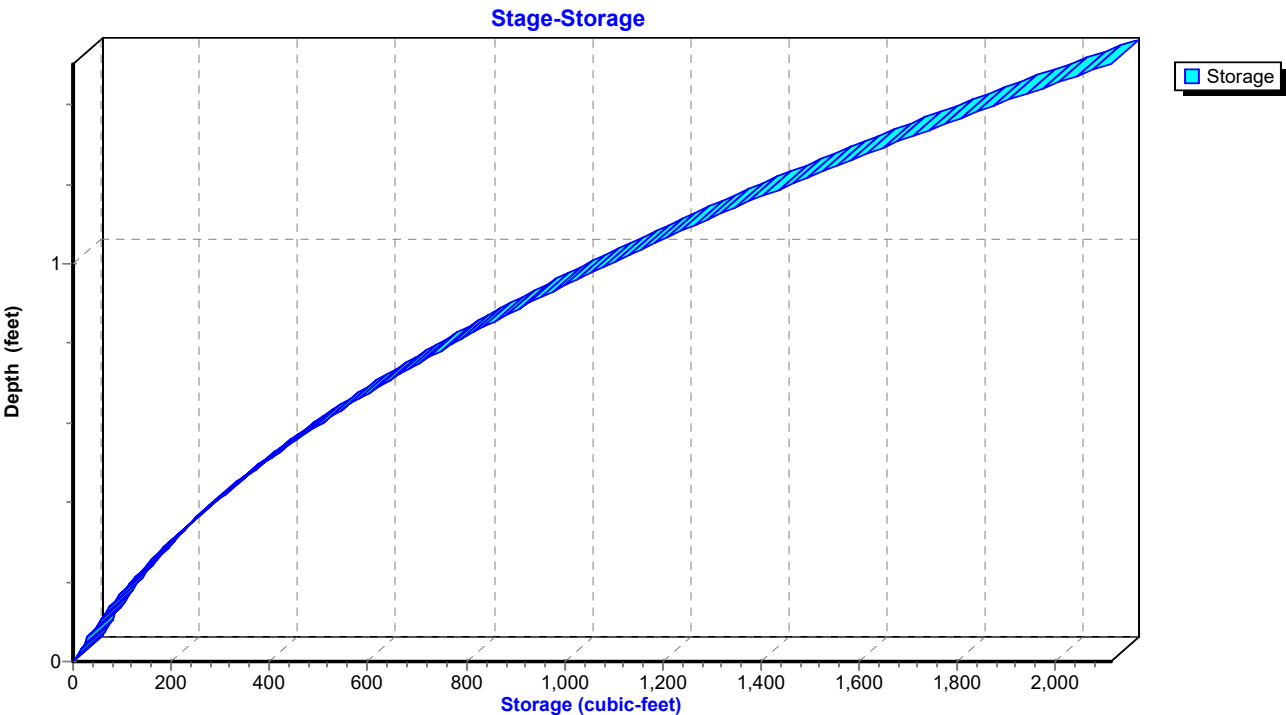
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Mt Pleasant 24-hr S1 5-yr Rainfall=4.75"

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Reach D4C: Ditch 4C



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Mt Pleasant 24-hr S1 5-yr Rainfall=4.75"

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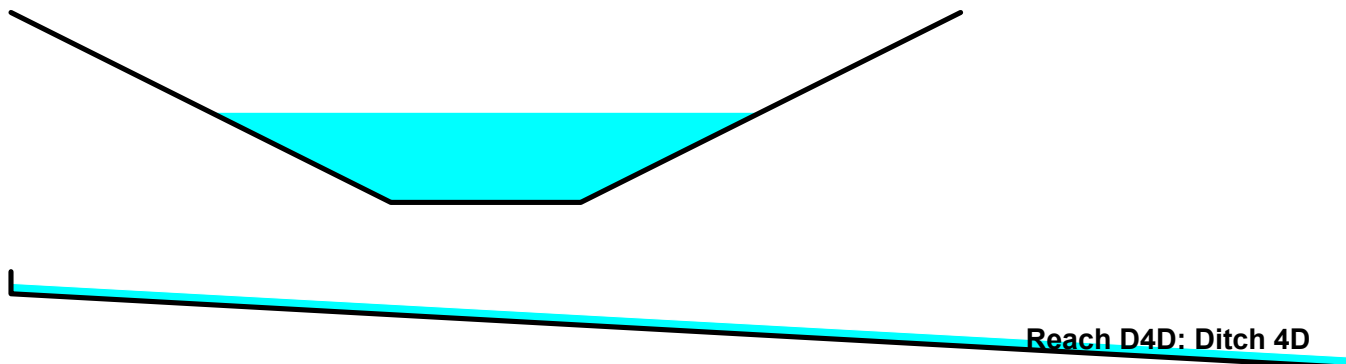
Summary for Reach D4D: Ditch 4D

Inflow Area = 53,579 sf, 0.00% Impervious, Inflow Depth = 4.28" for 5-yr event
 Inflow = 6.90 cfs @ 12.03 hrs, Volume= 19,128 cf
 Outflow = 6.57 cfs @ 12.04 hrs, Volume= 19,128 cf, Atten= 5%, Lag= 1.1 min
 Routed to Pond CD4DCE : Cross Drain 4DCE

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
 Max. Velocity= 3.18 fps, Min. Travel Time= 1.8 min
 Avg. Velocity = 0.91 fps, Avg. Travel Time= 6.2 min

Peak Storage= 695 cf @ 12.04 hrs
 Average Depth at Peak Storage= 0.71' , Surface Width= 4.33'
 Bank-Full Depth= 1.50' Flow Area= 6.8 sf, Capacity= 32.50 cfs

1.50' x 1.50' deep channel, n= 0.033 Riprap, 1-inch
 Side Slope Z-value= 2.0 '/' Top Width= 7.50'
 Length= 337.0' Slope= 0.0148 '/'
 Inlet Invert= 688.00', Outlet Invert= 683.00'



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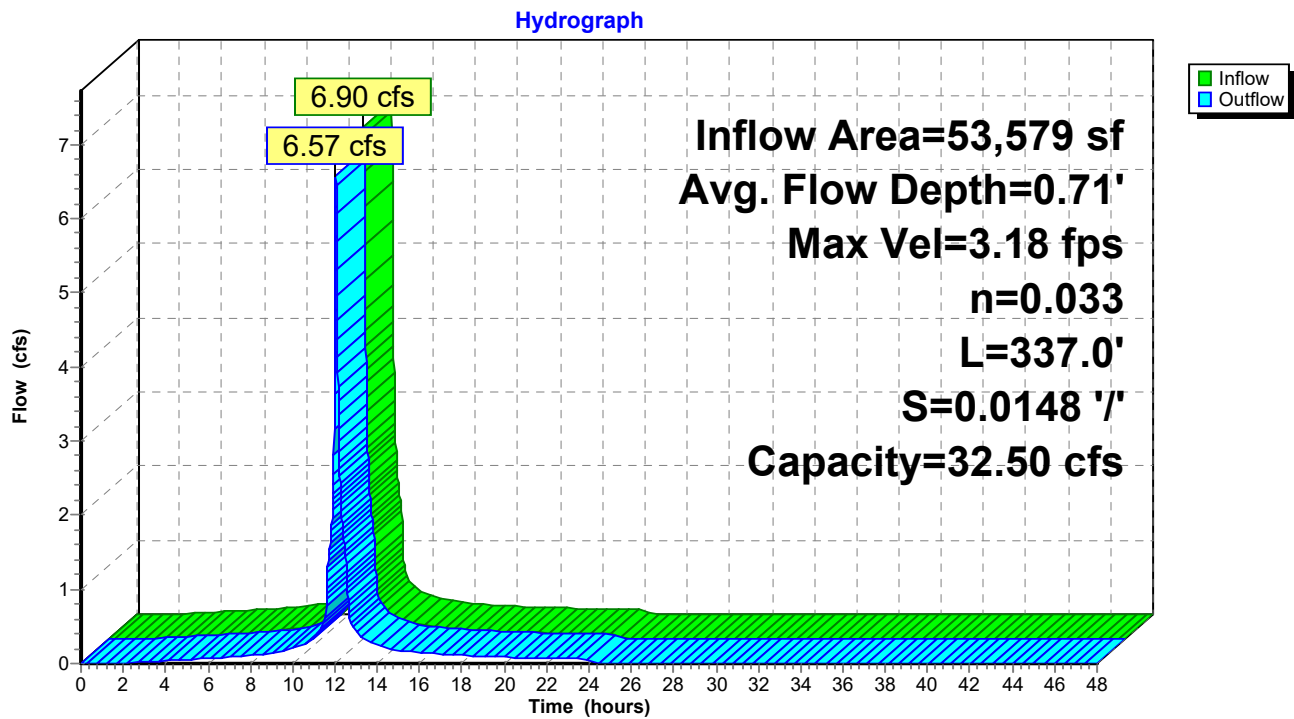
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Mt Pleasant 24-hr S1 5-yr Rainfall=4.75"

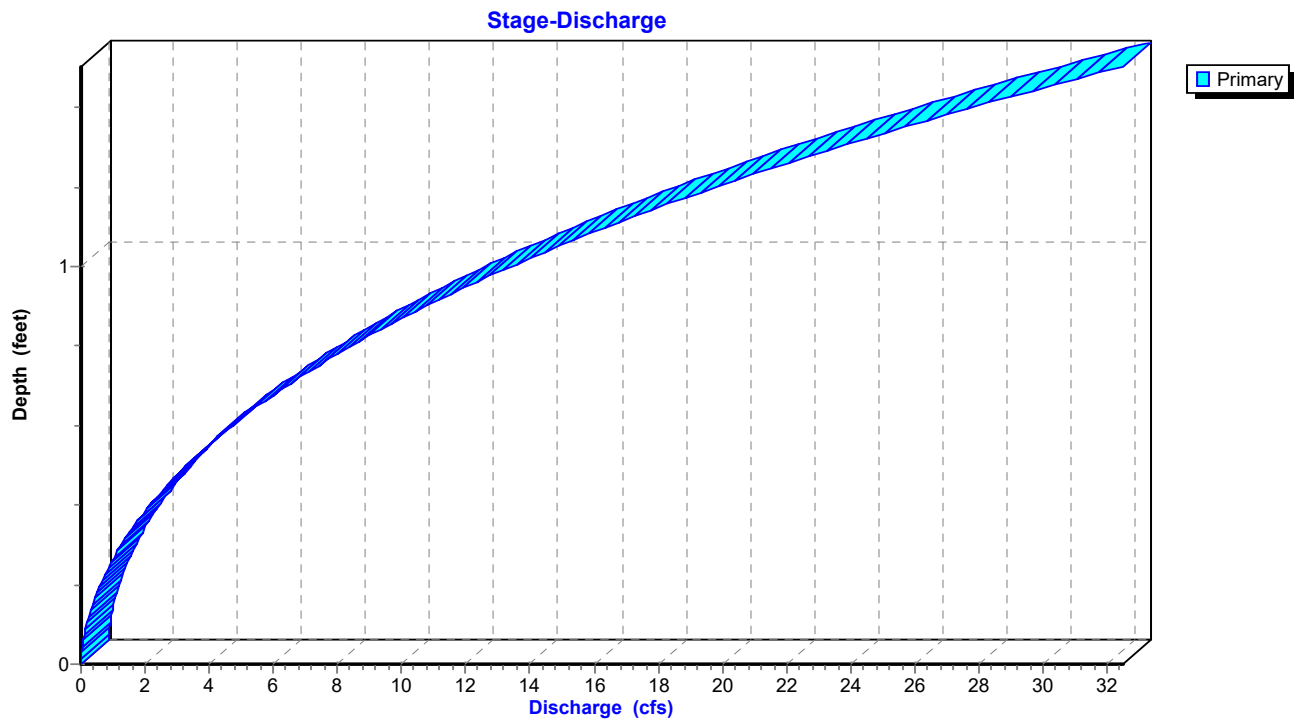
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Reach D4D: Ditch 4D



Reach D4D: Ditch 4D



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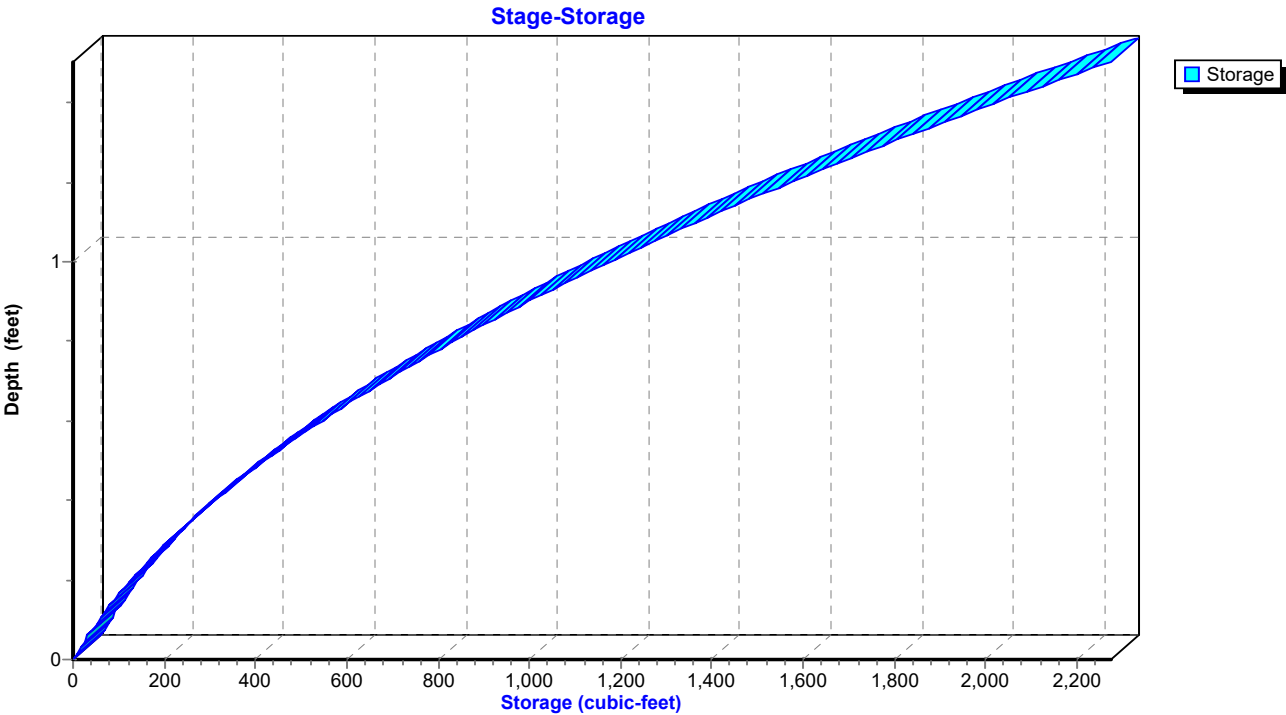
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Reach D4D: Ditch 4D



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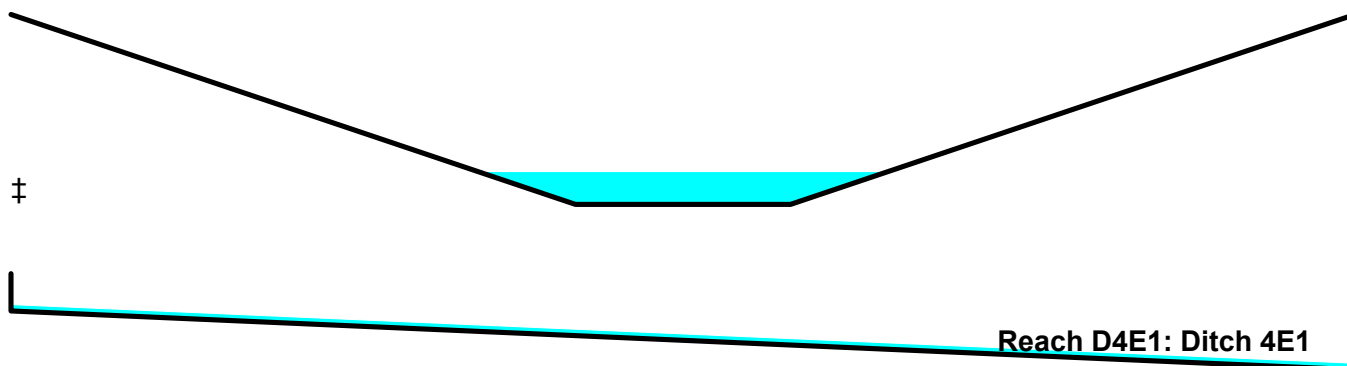
Summary for Reach D4E1: Ditch 4E1

Inflow Area = 316,246 sf, 13.77% Impervious, Inflow Depth = 1.42" for 5-yr event
 Inflow = 6.44 cfs @ 12.45 hrs, Volume= 37,438 cf
 Outflow = 4.99 cfs @ 12.72 hrs, Volume= 37,438 cf, Atten= 23%, Lag= 16.4 min
 Routed to Pond CD4E : Cross Drain 4E

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
 Max. Velocity= 1.45 fps, Min. Travel Time= 20.5 min
 Avg. Velocity= 0.47 fps, Avg. Travel Time= 63.1 min

Peak Storage= 6,143 cf @ 12.72 hrs
 Average Depth at Peak Storage= 0.59' , Surface Width= 7.57'
 Bank-Full Depth= 3.50' Flow Area= 50.8 sf, Capacity= 197.27 cfs

4.00' x 3.50' deep channel, n= 0.033 Riprap, 1-inch
 Side Slope Z-value= 3.0 '/' Top Width= 25.00'
 Length= 1,788.0' Slope= 0.0031 '/'
 Inlet Invert= 685.00', Outlet Invert= 679.50'



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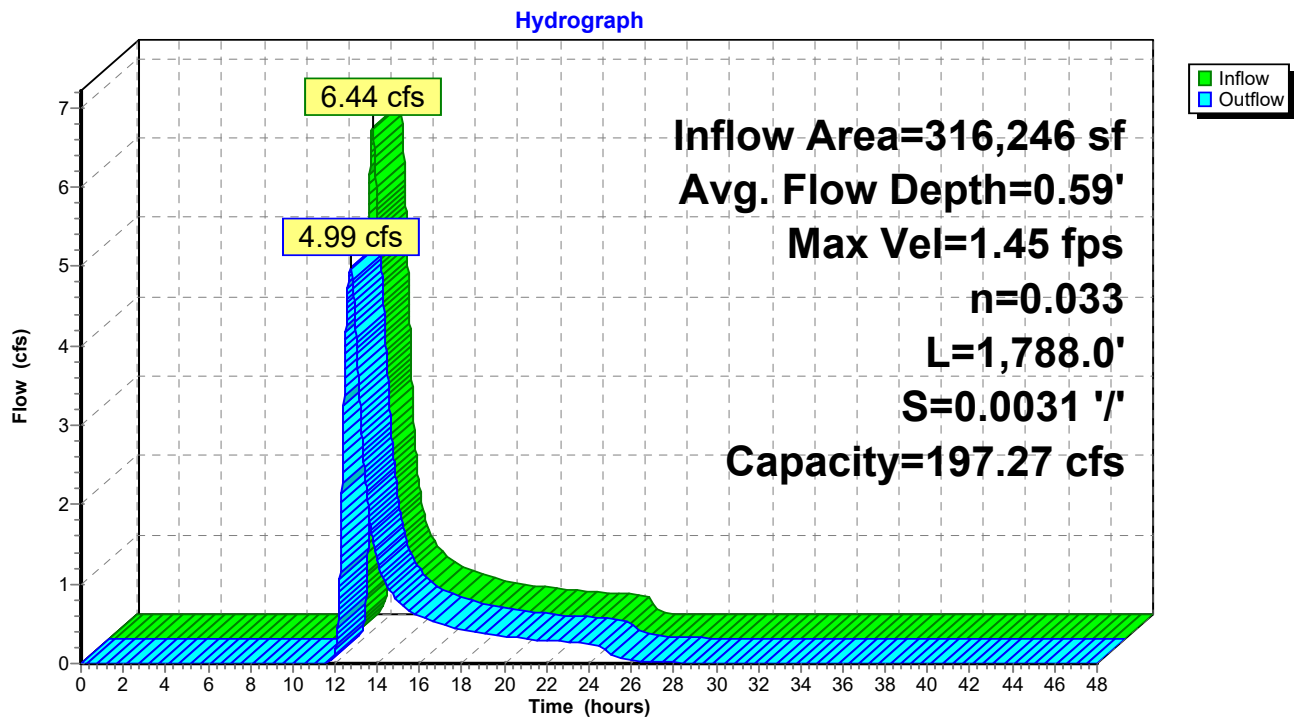
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Mt Pleasant 24-hr S1 5-yr Rainfall=4.75"

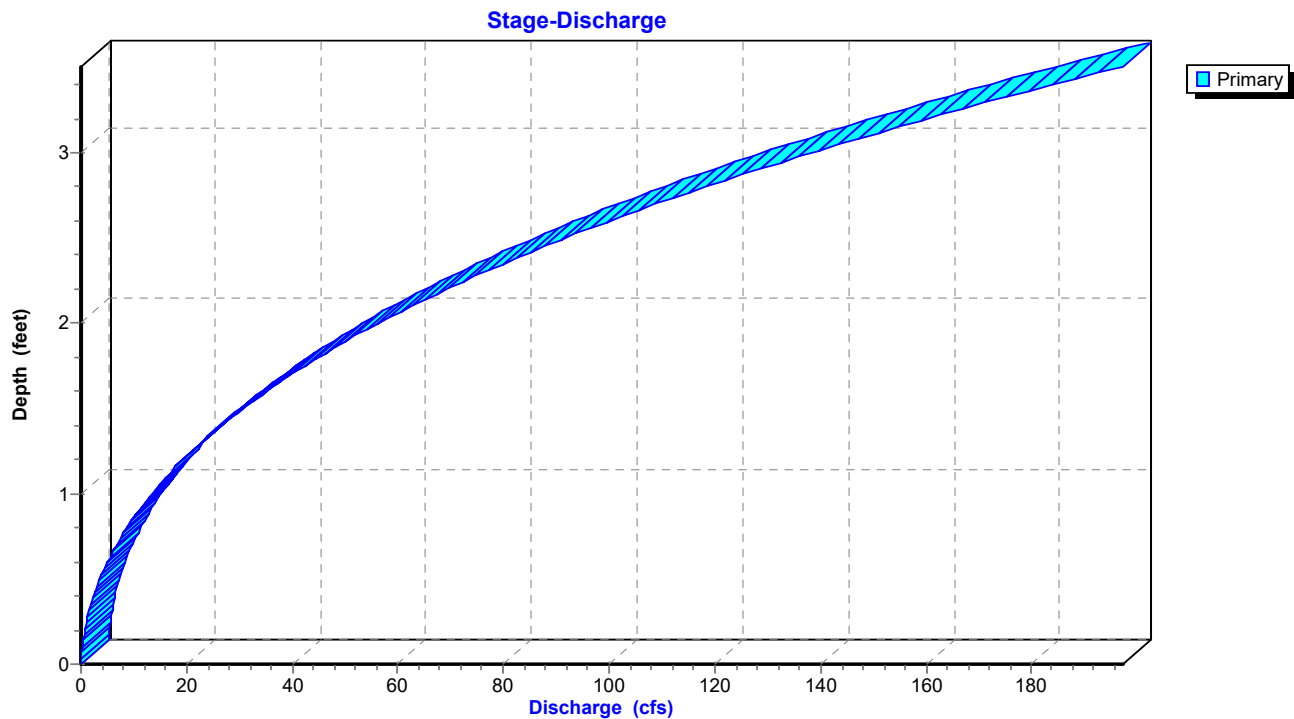
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Reach D4E1: Ditch 4E1



Reach D4E1: Ditch 4E1



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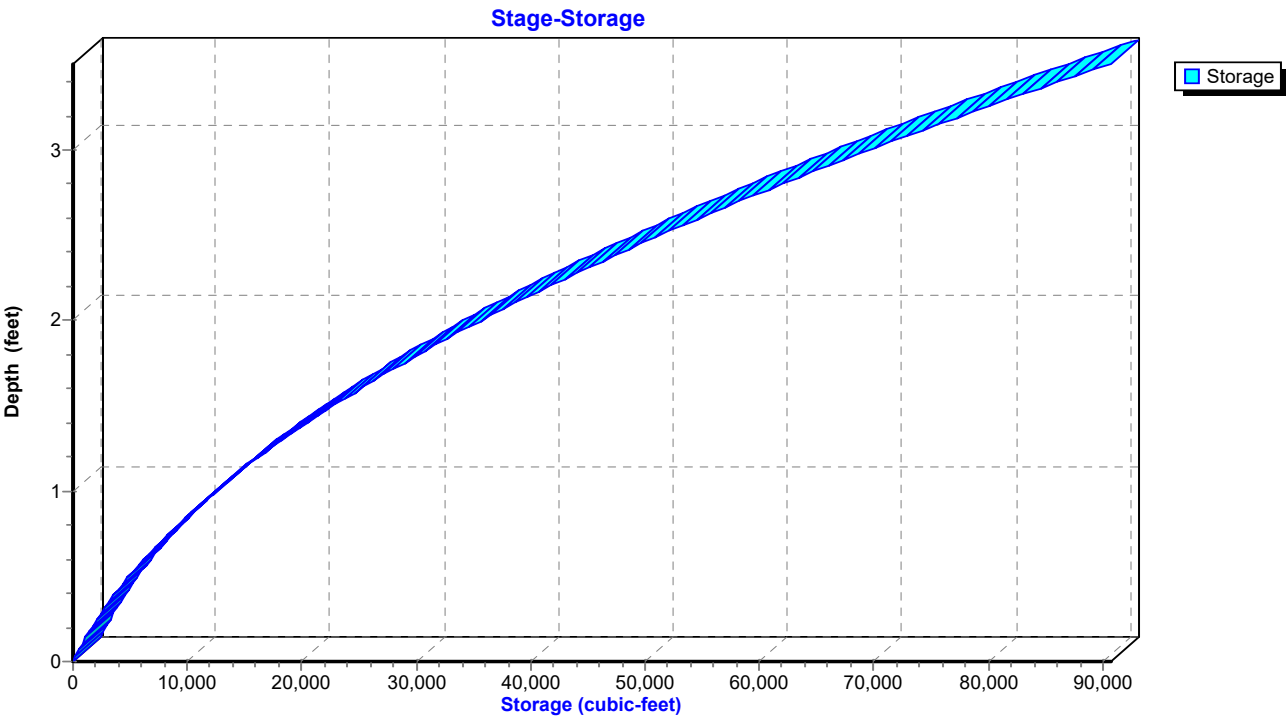
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Reach D4E1: Ditch 4E1



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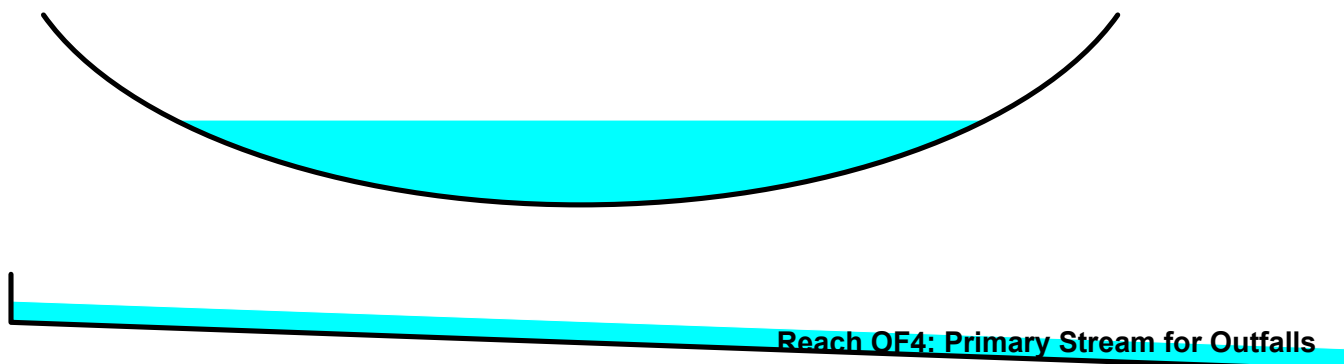
Summary for Reach OF4: Primary Stream for Outfalls

Inflow Area = 9,965,657 sf, 1.09% Impervious, Inflow Depth = 2.02" for 5-yr event
 Inflow = 112.82 cfs @ 13.51 hrs, Volume= 1,680,146 cf
 Outflow = 112.58 cfs @ 13.53 hrs, Volume= 1,680,146 cf, Atten= 0%, Lag= 1.7 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
 Max. Velocity= 3.81 fps, Min. Travel Time= 4.4 min
 Avg. Velocity = 1.47 fps, Avg. Travel Time= 11.4 min

Peak Storage= 29,515 cf @ 13.53 hrs
 Average Depth at Peak Storage= 2.22' , Surface Width= 19.97'
 Bank-Full Depth= 5.00' Flow Area= 100.0 sf, Capacity= 640.46 cfs

30.00' x 5.00' deep Parabolic Channel, n= 0.035
 Length= 1,000.0' Slope= 0.0050 '/'
 Inlet Invert= 675.00', Outlet Invert= 670.00'



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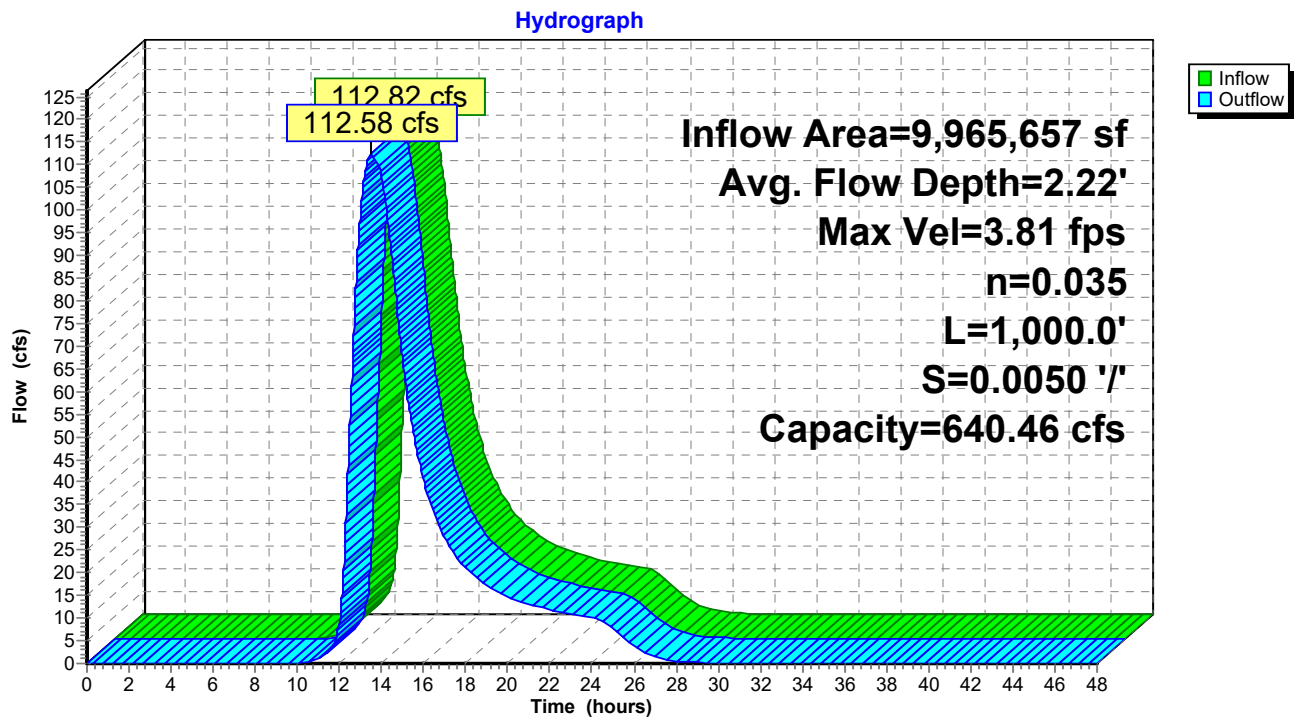
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Mt Pleasant 24-hr S1 5-yr Rainfall=4.75"

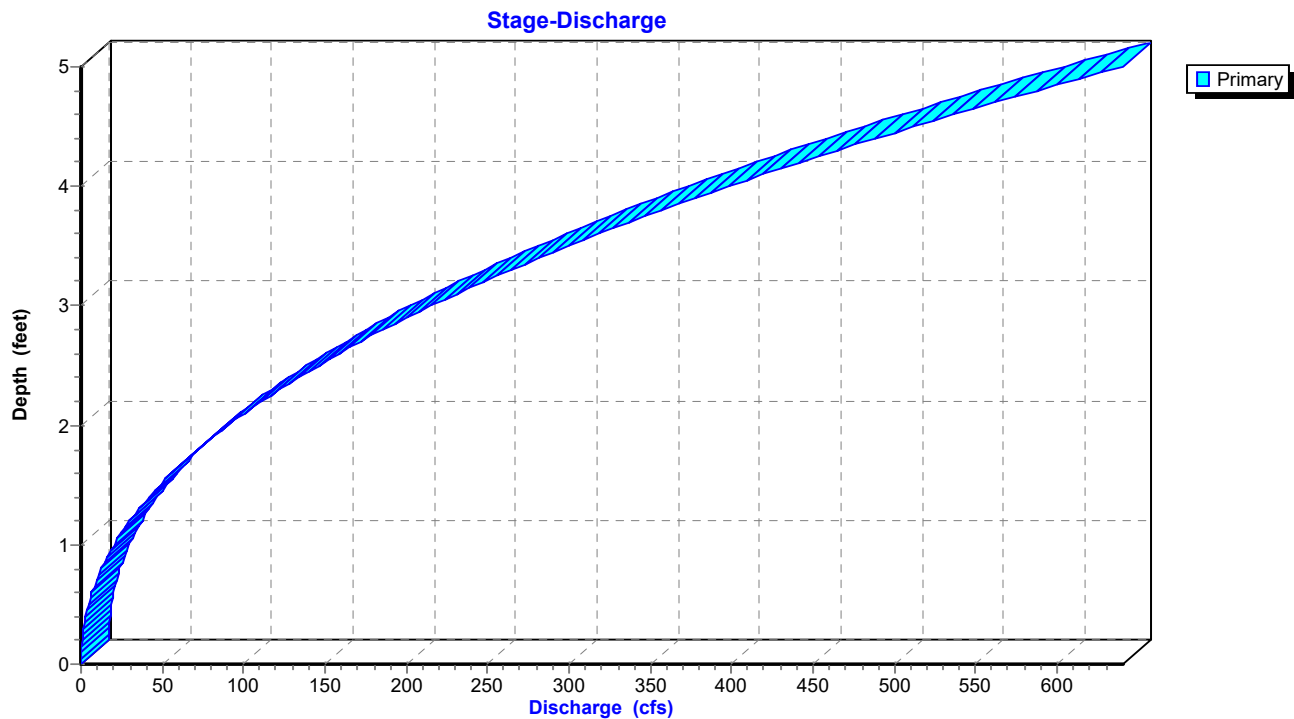
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Reach OF4: Primary Stream for Outfalls



Reach OF4: Primary Stream for Outfalls



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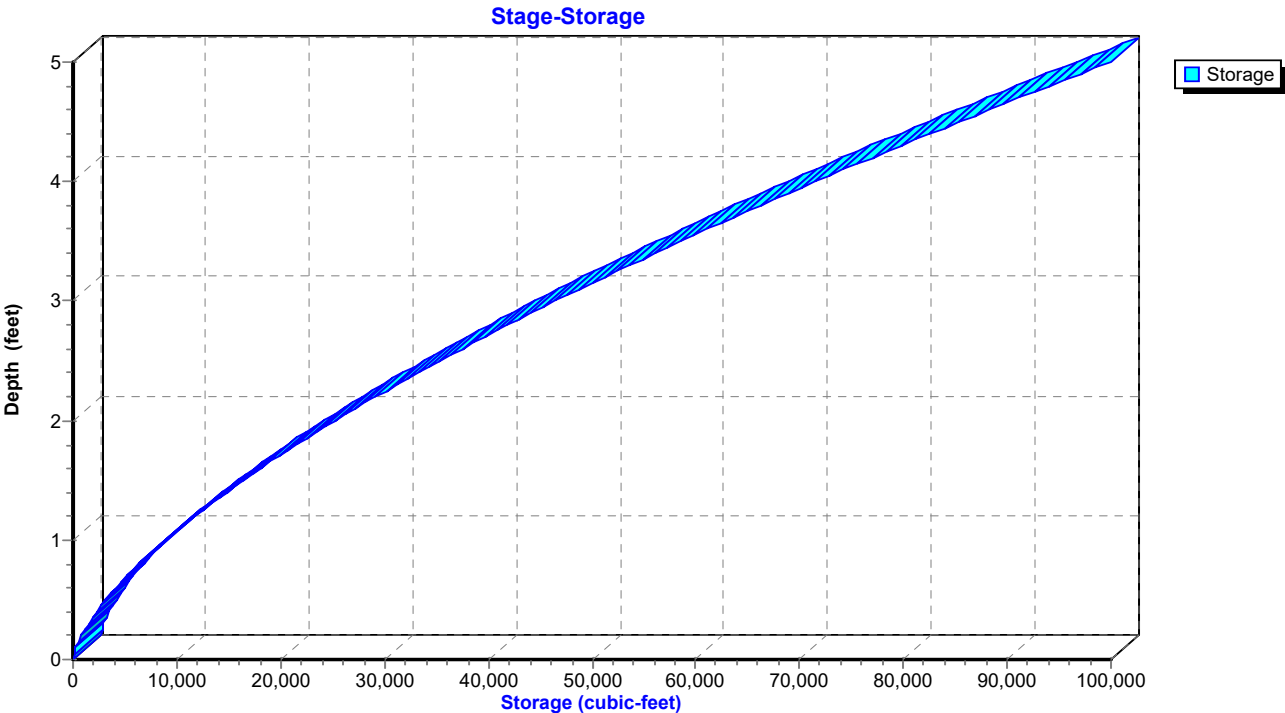
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Mt Pleasant 24-hr S1 5-yr Rainfall=4.75"

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Reach OF4: Primary Stream for Outfalls



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Mt Pleasant 24-hr S1 5-yr Rainfall=4.75"

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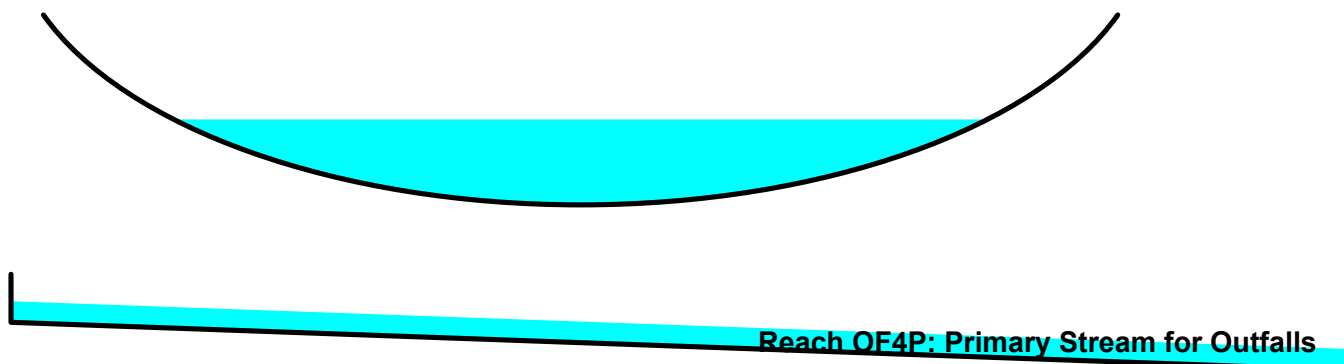
Summary for Reach OF4P: Primary Stream for Outfalls

Inflow Area = 9,969,577 sf, 2.84% Impervious, Inflow Depth = 2.16" for 5-yr event
 Inflow = 115.76 cfs @ 13.67 hrs, Volume= 1,791,545 cf
 Outflow = 115.59 cfs @ 13.77 hrs, Volume= 1,791,544 cf, Atten= 0%, Lag= 5.8 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
 Max. Velocity= 3.84 fps, Min. Travel Time= 4.3 min
 Avg. Velocity = 1.15 fps, Avg. Travel Time= 14.6 min

Peak Storage= 30,066 cf @ 13.77 hrs
 Average Depth at Peak Storage= 2.24' , Surface Width= 20.10'
 Bank-Full Depth= 5.00' Flow Area= 100.0 sf, Capacity= 640.46 cfs

30.00' x 5.00' deep Parabolic Channel, n= 0.035
 Length= 1,000.0' Slope= 0.0050 '/'
 Inlet Invert= 675.00', Outlet Invert= 670.00'



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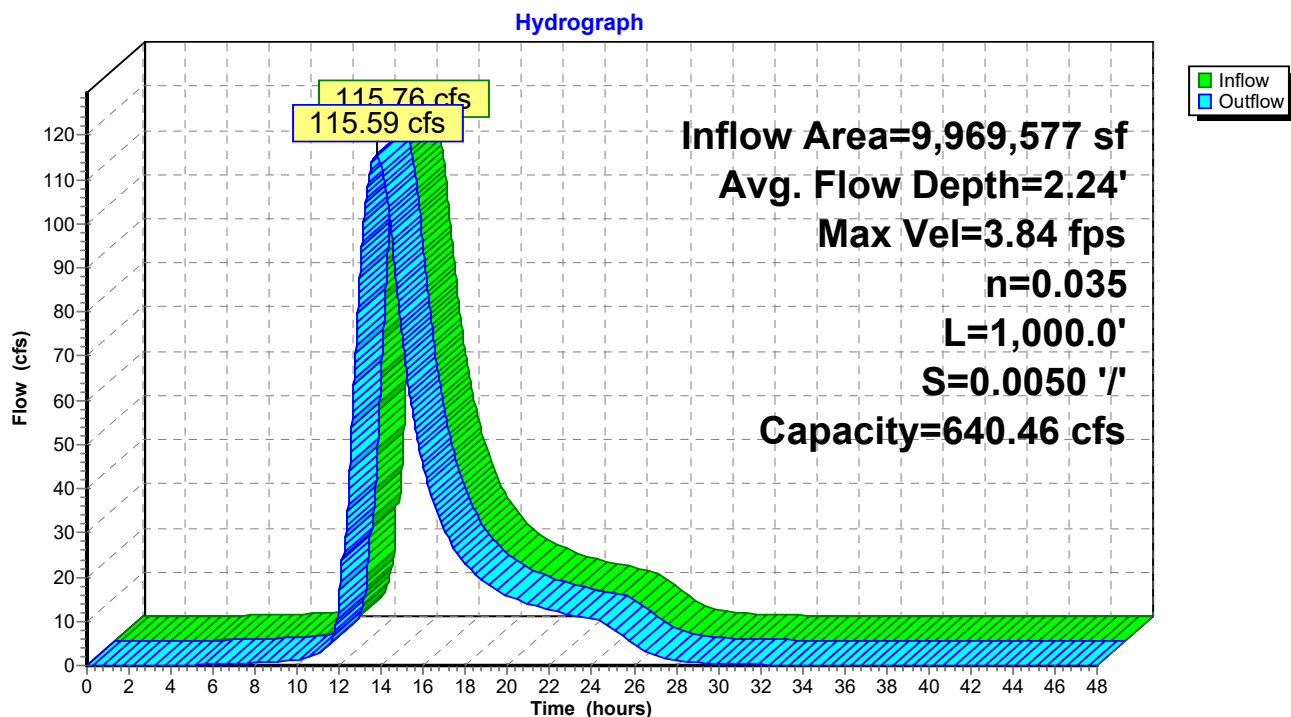
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Mt Pleasant 24-hr S1 5-yr Rainfall=4.75"

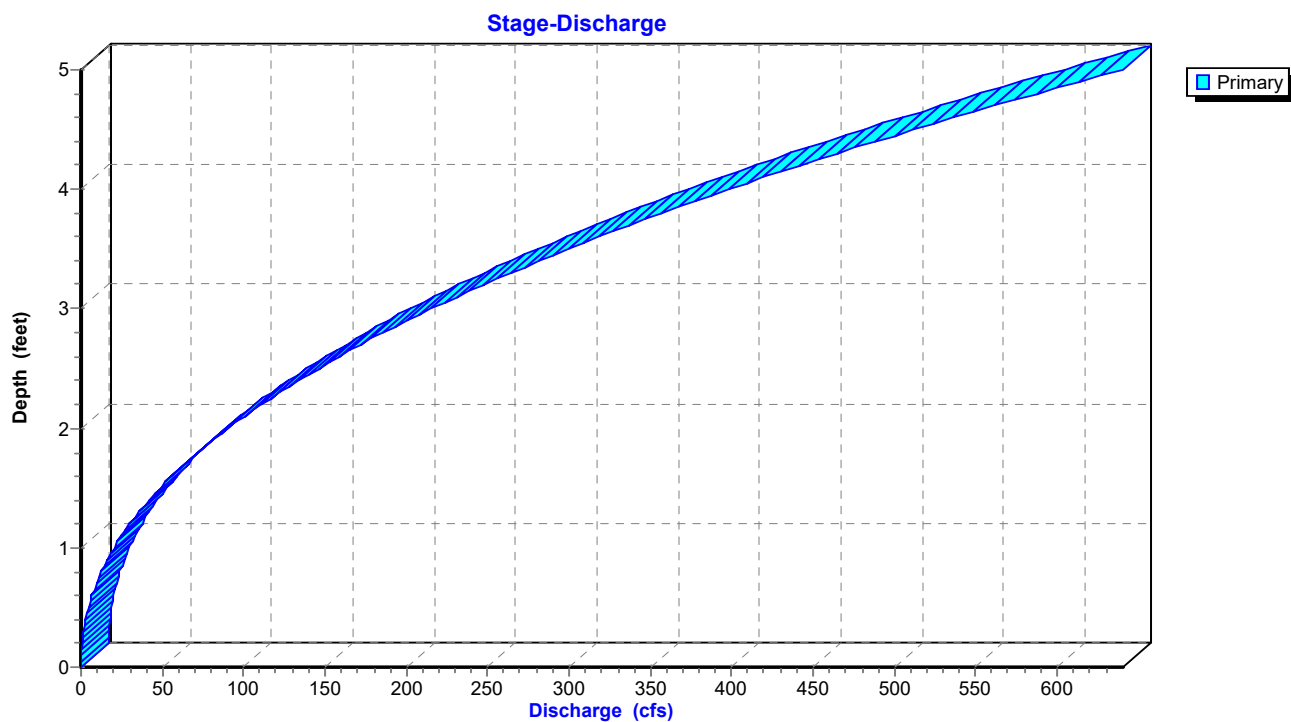
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Reach OF4P: Primary Stream for Outfalls



Reach OF4P: Primary Stream for Outfalls



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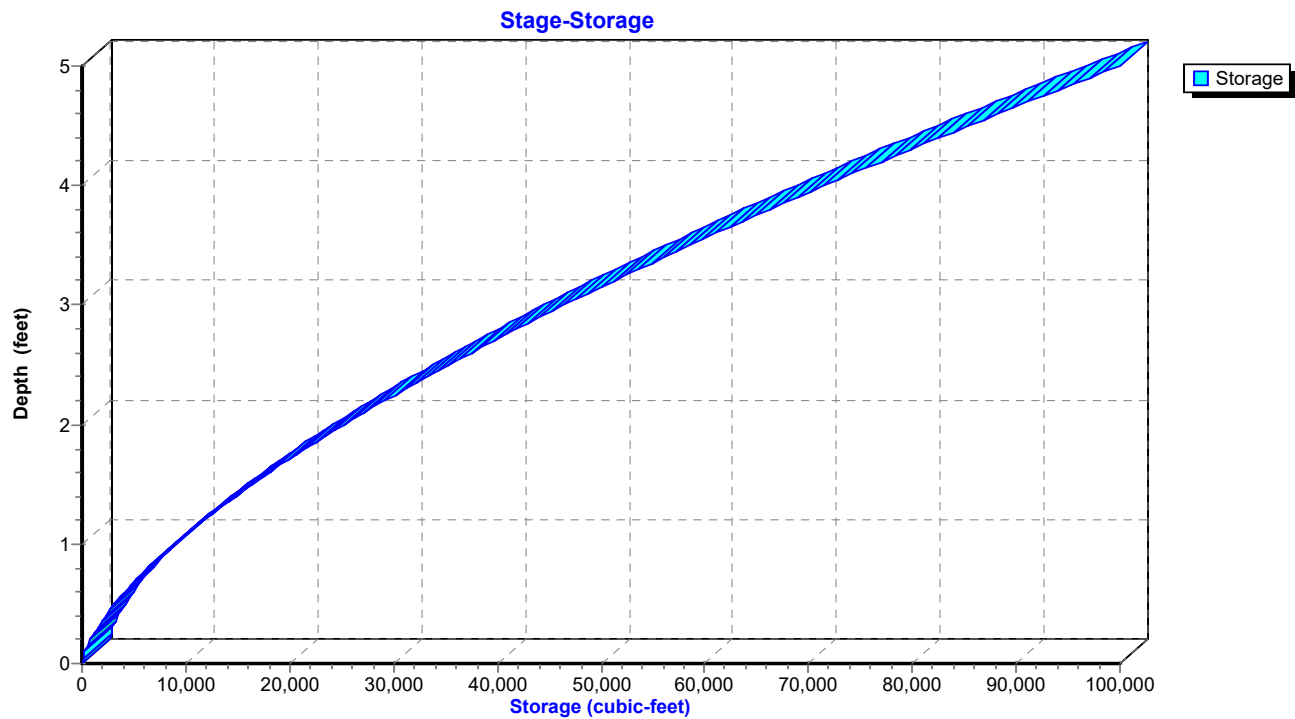
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Mt Pleasant 24-hr S1 5-yr Rainfall=4.75"

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Reach OF4P: Primary Stream for Outfalls



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Mt Pleasant 24-hr S1 5-yr Rainfall=4.75"

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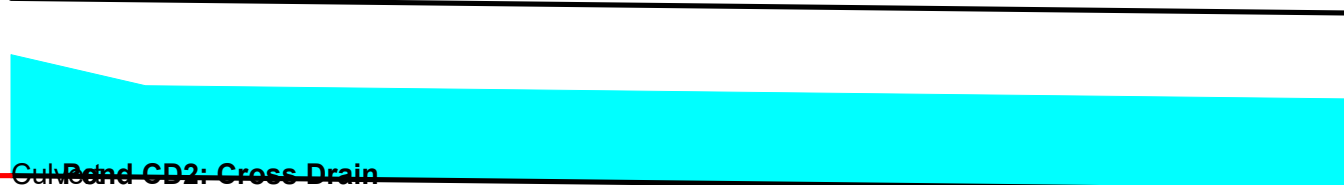
Summary for Pond CD2: Cross Drain

Inflow Area = 1,520,244 sf, 0.00% Impervious, Inflow Depth = 1.29" for 5-yr event
 Inflow = 19.26 cfs @ 12.94 hrs, Volume= 162,997 cf
 Outflow = 19.26 cfs @ 12.94 hrs, Volume= 162,997 cf, Atten= 0%, Lag= 0.0 min
 Primary = 19.26 cfs @ 12.94 hrs, Volume= 162,997 cf
 Routed to Reach OF4P : Primary Stream for Outfalls

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
 Peak Elev= 682.30' @ 12.94 hrs

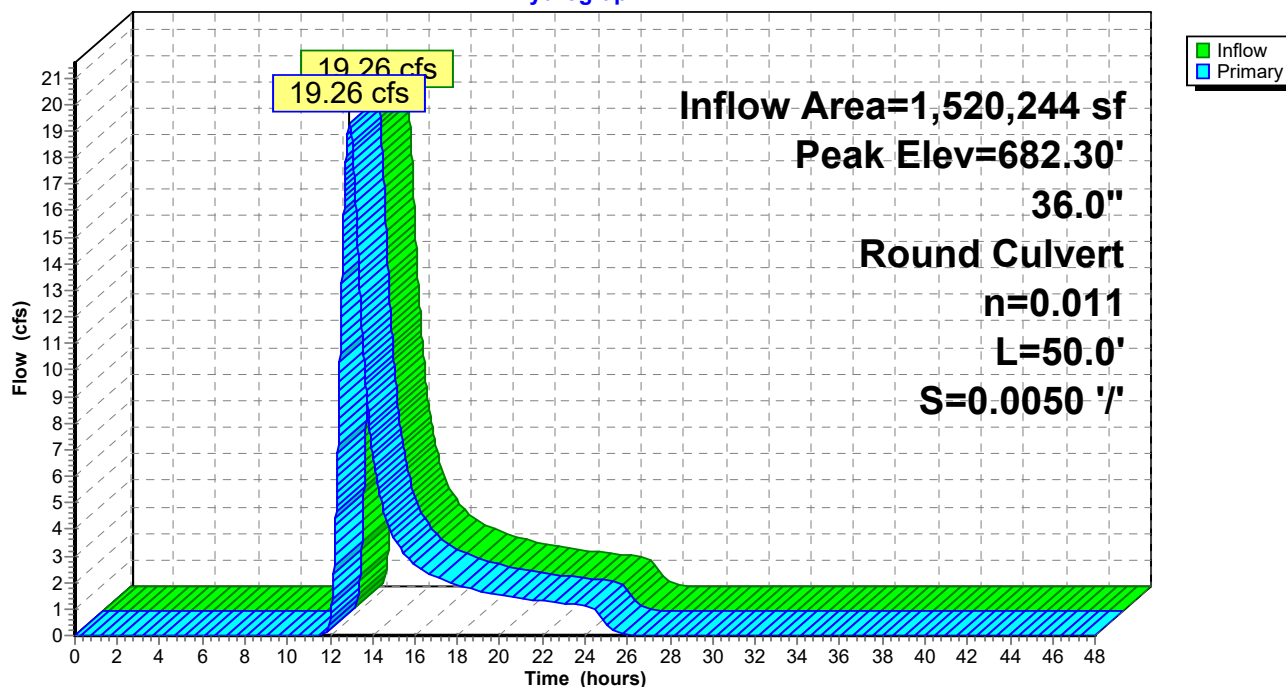
Device	Routing	Invert	Outlet Devices
#1	Primary	680.25'	36.0" Round Culvert L= 50.0' Ke= 0.500 Inlet / Outlet Invert= 680.25' / 680.00' S= 0.0050 '/' Cc= 0.900 n= 0.011 Concrete pipe, straight & clean, Flow Area= 7.07 sf

Primary OutFlow Max=19.26 cfs @ 12.94 hrs HW=682.30' TW=676.95' (Dynamic Tailwater)
 1=Culvert (Barrel Controls 19.26 cfs @ 5.29 fps)



Pond CD2: Cross Drain

Hydrograph



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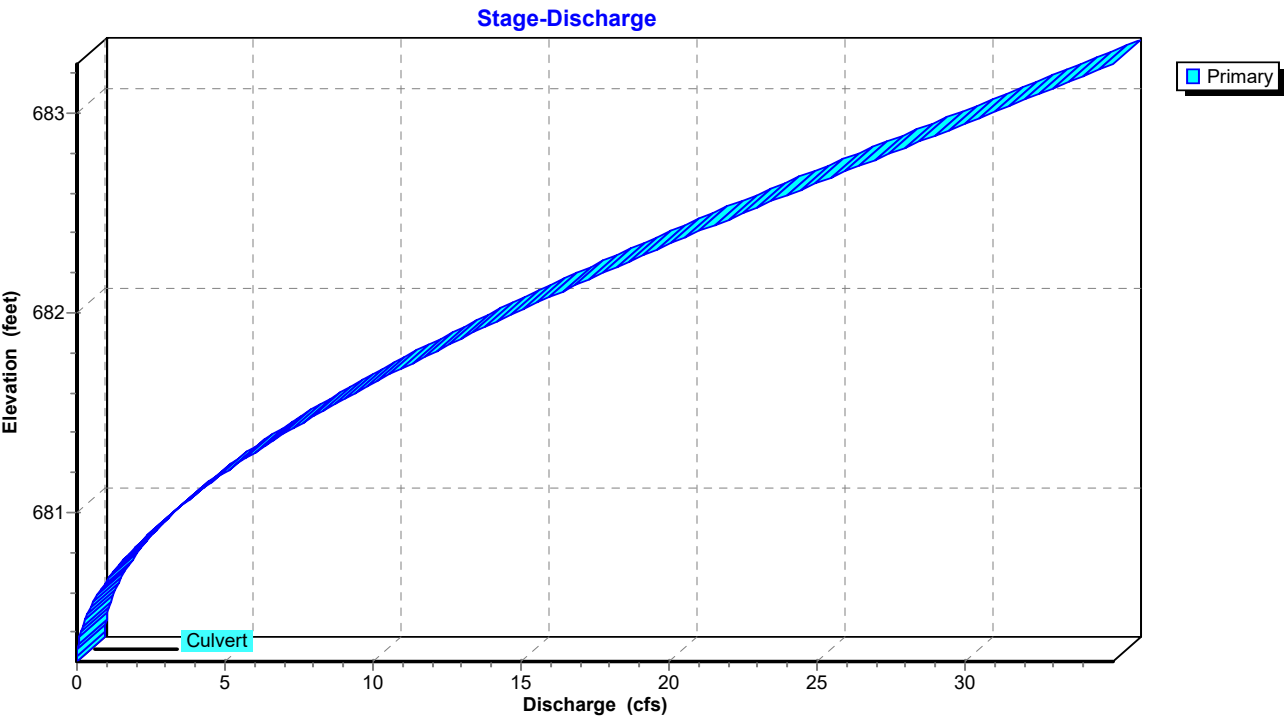
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Mt Pleasant 24-hr S1 5-yr Rainfall=4.75"

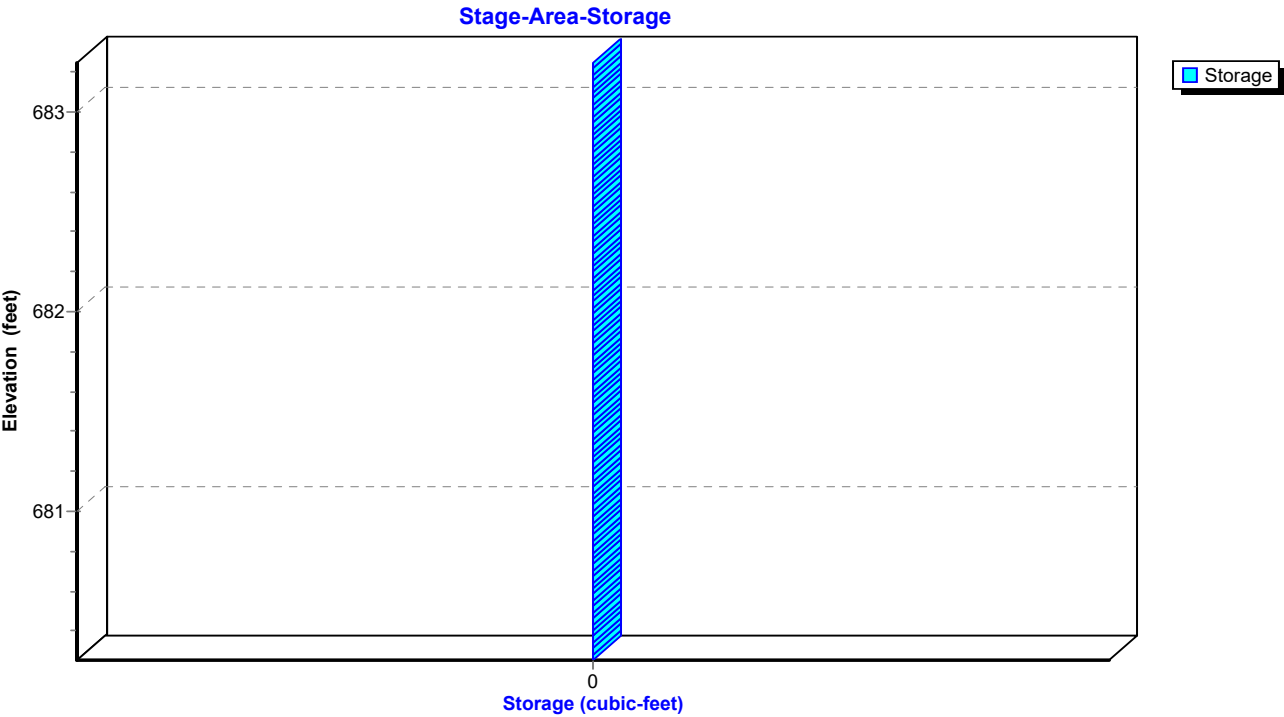
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Pond CD2: Cross Drain



Pond CD2: Cross Drain



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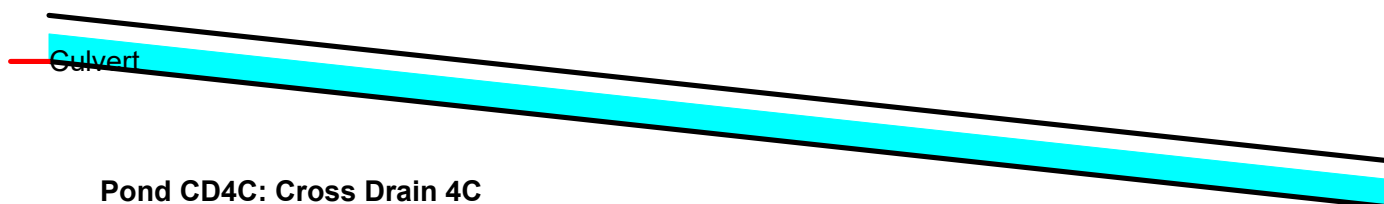
Summary for Pond CD4C: Cross Drain 4C

Inflow Area = 29,621 sf, 0.00% Impervious, Inflow Depth = 4.28" for 5-yr event
 Inflow = 3.55 cfs @ 12.05 hrs, Volume= 10,575 cf
 Outflow = 3.55 cfs @ 12.05 hrs, Volume= 10,575 cf, Atten= 0%, Lag= 0.0 min
 Primary = 3.55 cfs @ 12.05 hrs, Volume= 10,575 cf
 Routed to Pond CD4DCE : Cross Drain 4DCE

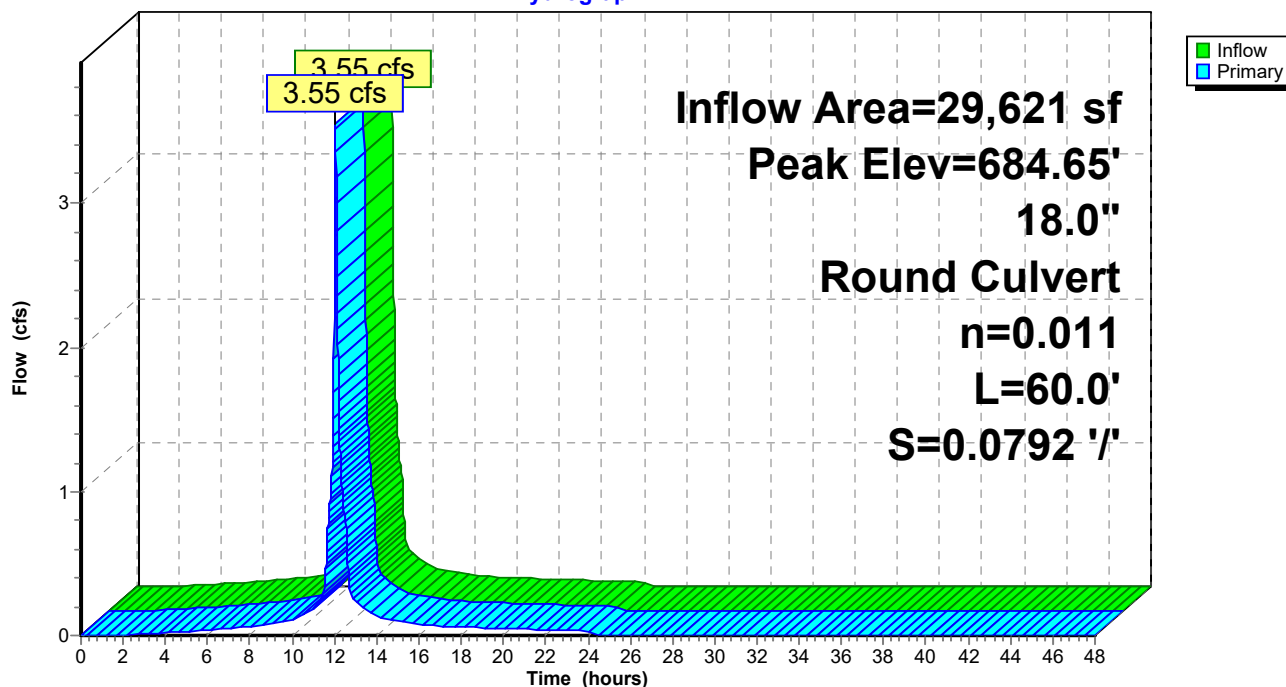
Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Peak Elev= 684.65' @ 12.05 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	683.75'	18.0" Round Culvert L= 60.0' Square-edged headwall, Ke= 0.500 Inlet / Outlet Invert= 683.75' / 679.00' S= 0.0792 '/' Cc= 0.900 n= 0.011 Concrete pipe, straight & clean, Flow Area= 1.77 sf

Primary OutFlow Max=3.55 cfs @ 12.05 hrs HW=684.65' TW=679.72' (Dynamic Tailwater)↑**1=Culvert** (Inlet Controls 3.55 cfs @ 3.22 fps)**Pond CD4C: Cross Drain 4C**

Hydrograph

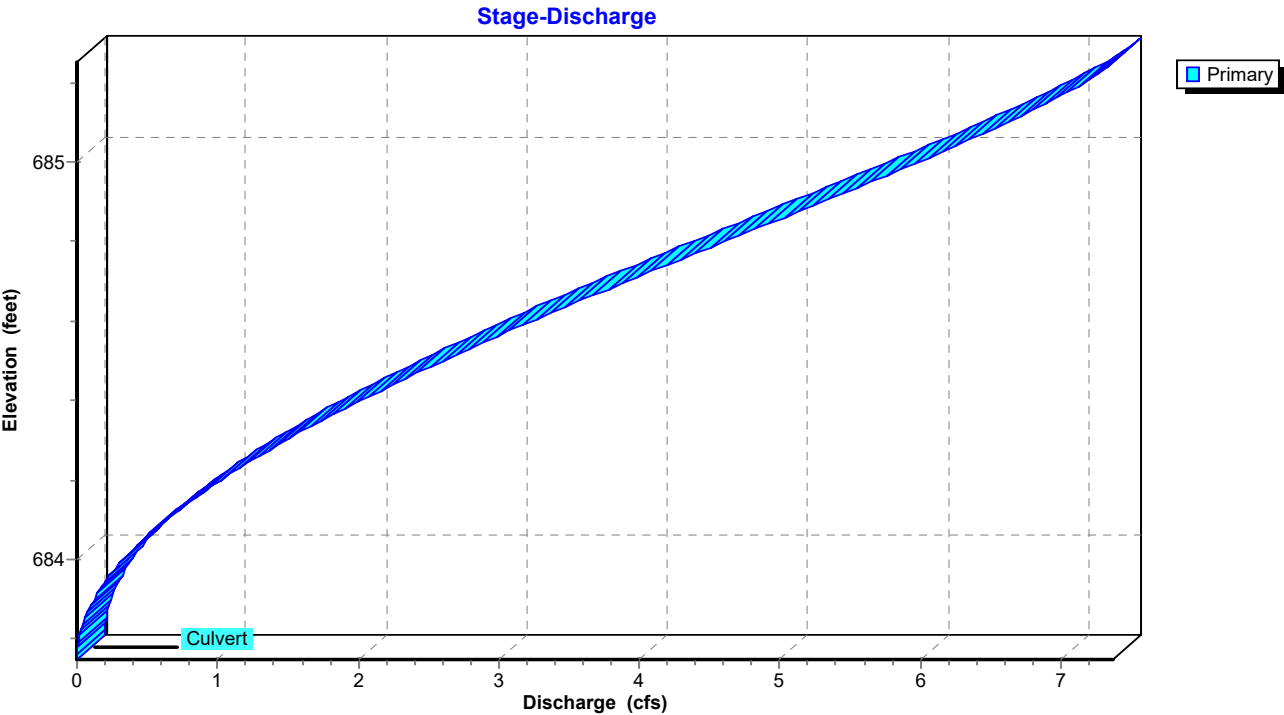


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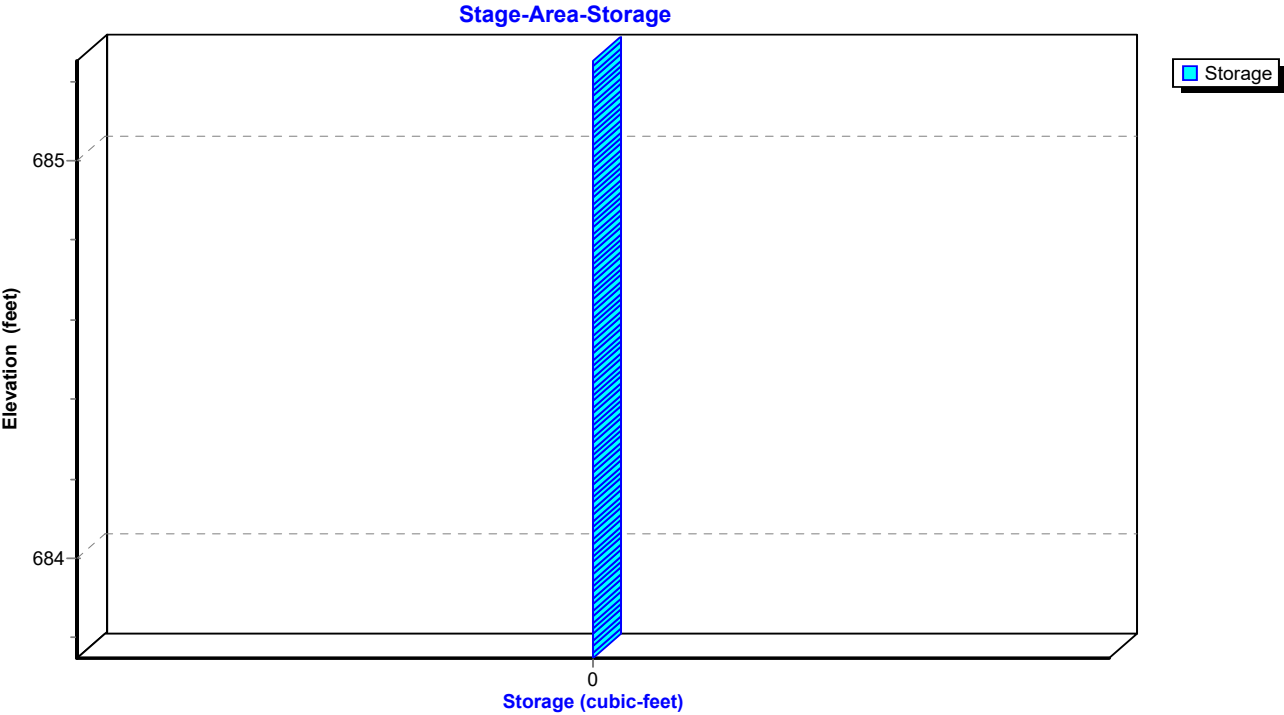
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Mt Pleasant 24-hr S1 5-yr Rainfall=4.75"
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Pond CD4C: Cross Drain 4C



Pond CD4C: Cross Drain 4C



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Mt Pleasant 24-hr S1 5-yr Rainfall=4.75"

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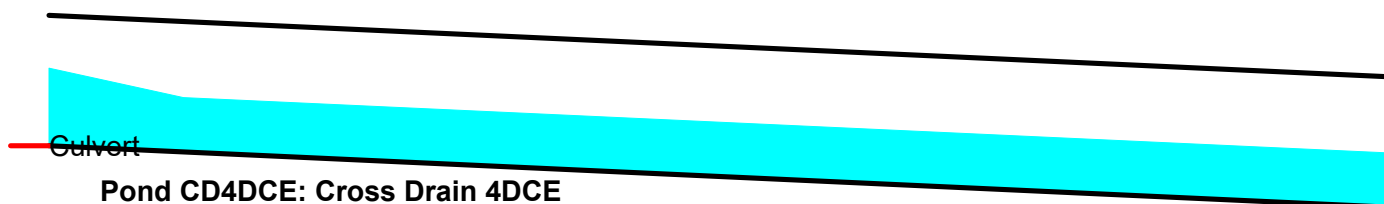
Summary for Pond CD4DCE: Cross Drain 4DCE

Inflow Area = 1,234,926 sf, 3.53% Impervious, Inflow Depth = 1.86" for 5-yr event
 Inflow = 23.79 cfs @ 12.69 hrs, Volume= 190,911 cf
 Outflow = 23.79 cfs @ 12.69 hrs, Volume= 190,911 cf, Atten= 0%, Lag= 0.0 min
 Primary = 23.79 cfs @ 12.69 hrs, Volume= 190,911 cf
 Routed to Pond POND1P : PROP POND

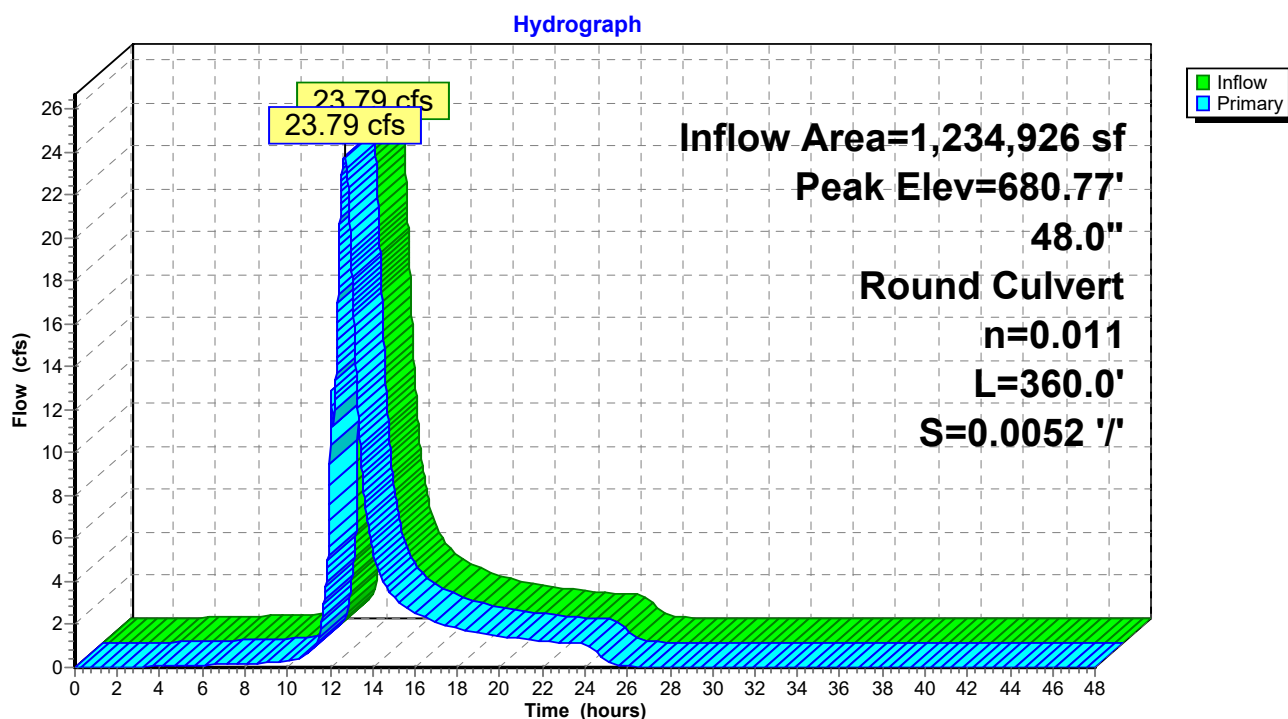
Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
 Peak Elev= 680.77' @ 12.85 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	678.39'	48.0" Round Culvert L= 360.0' Ke= 0.500 Inlet / Outlet Invert= 678.39' / 676.50' S= 0.0052 ' / ' Cc= 0.900 n= 0.011 Concrete pipe, straight & clean, Flow Area= 12.57 sf

Primary OutFlow Max=23.56 cfs @ 12.69 hrs HW=680.70' TW=679.77' (Dynamic Tailwater)
 ↳ **1=Culvert** (Outlet Controls 23.56 cfs @ 4.51 fps)



Pond CD4DCE: Cross Drain 4DCE

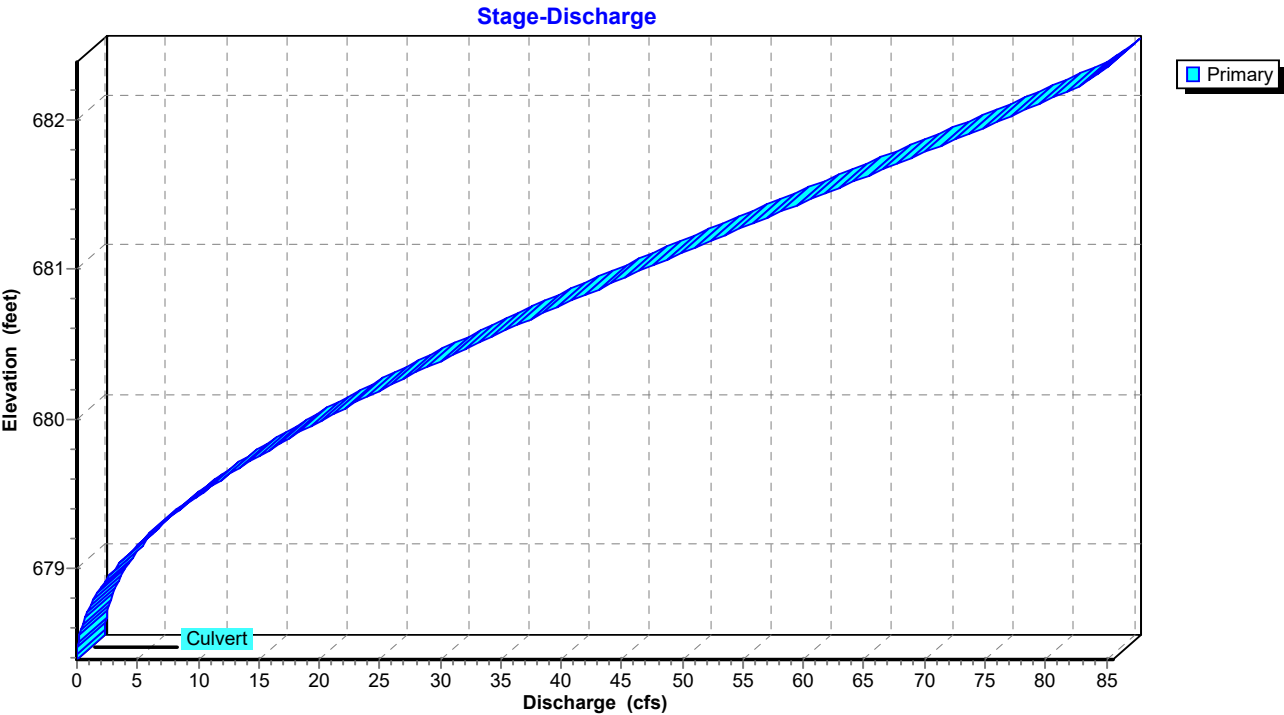


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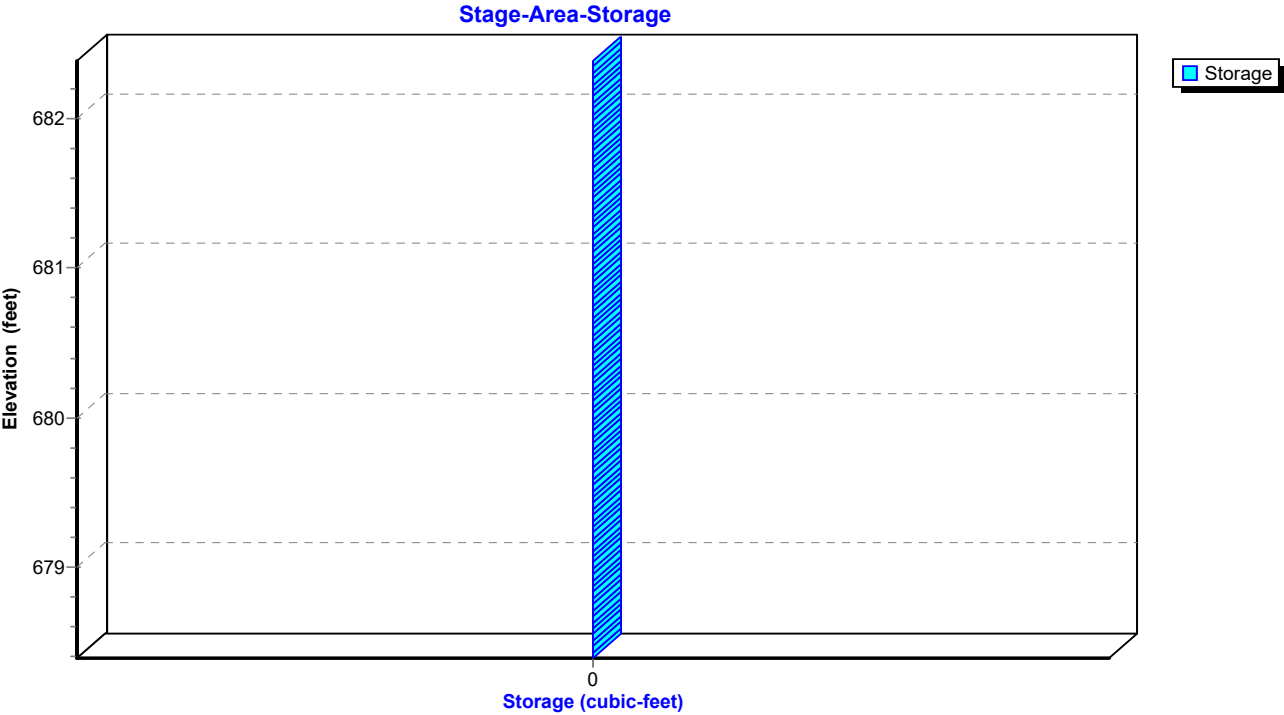
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Mt Pleasant 24-hr S1 5-yr Rainfall=4.75"
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Pond CD4DCE: Cross Drain 4DCE



Pond CD4DCE: Cross Drain 4DCE



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Summary for Pond CD4E: Cross Drain 4E

Inflow Area = 1,151,726 sf, 3.78% Impervious, Inflow Depth = 1.68" for 5-yr event
 Inflow = 23.21 cfs @ 12.68 hrs, Volume= 161,209 cf
 Outflow = 22.81 cfs @ 12.71 hrs, Volume= 161,207 cf, Atten= 2%, Lag= 2.0 min
 Primary = 22.81 cfs @ 12.71 hrs, Volume= 161,207 cf
 Routed to Pond CD4DCE : Cross Drain 4DCE

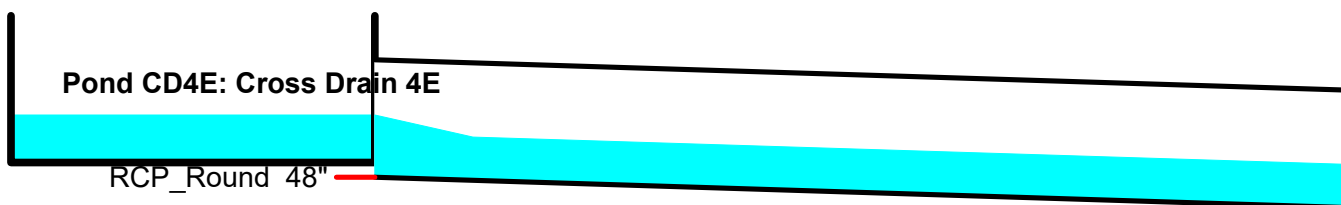
Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
 Peak Elev= 681.62' @ 12.76 hrs Surf.Area= 3,060 sf Storage= 2,352 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
 Center-of-Mass det. time= 0.9 min (904.4 - 903.5)

Volume	Invert	Avail.Storage	Storage Description
#1	680.00'	33,779 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
680.00	274	0	0
681.00	1,562	918	918
682.00	3,975	2,769	3,687
683.00	7,355	5,665	9,352
684.00	12,090	9,723	19,074
685.00	17,320	14,705	33,779

Device	Routing	Invert	Outlet Devices
#1	Primary	679.50'	48.0" Round RCP_Round 48" L= 200.0' Ke= 0.500 Inlet / Outlet Invert= 679.50' / 678.46' S= 0.0052 ' / Cc= 0.900 n= 0.011 Concrete pipe, straight & clean, Flow Area= 12.57 sf

Primary OutFlow Max=22.72 cfs @ 12.71 hrs HW=681.61' TW=680.72' (Dynamic Tailwater)
 ↑1=RCP_Round 48" (Outlet Controls 22.72 cfs @ 4.91 fps)



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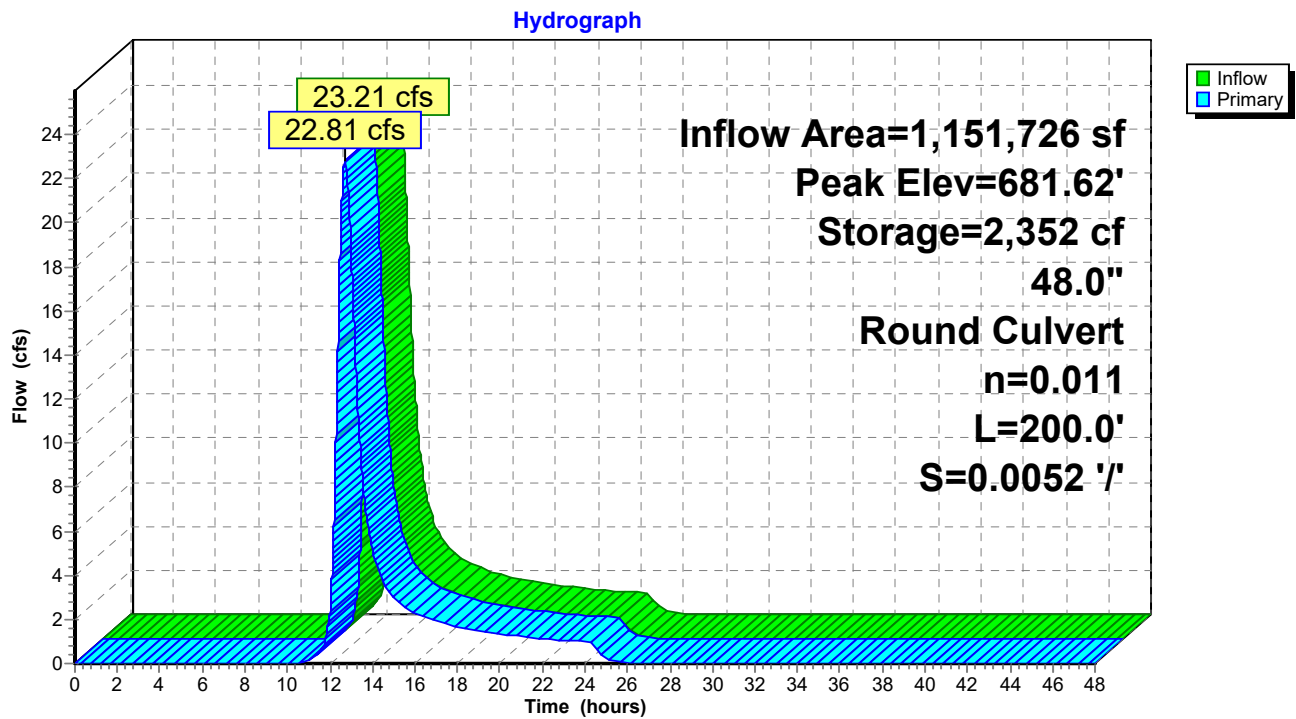
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Mt Pleasant 24-hr S1 5-yr Rainfall=4.75"

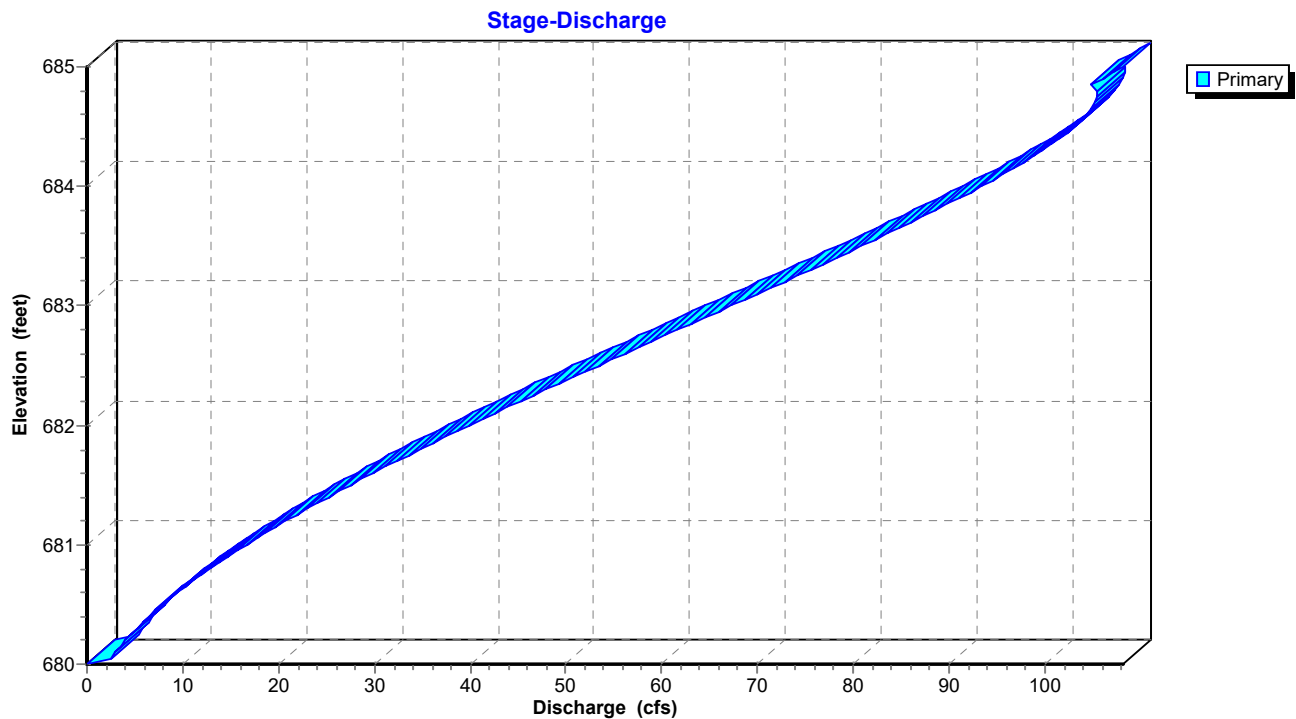
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Pond CD4E: Cross Drain 4E



Pond CD4E: Cross Drain 4E



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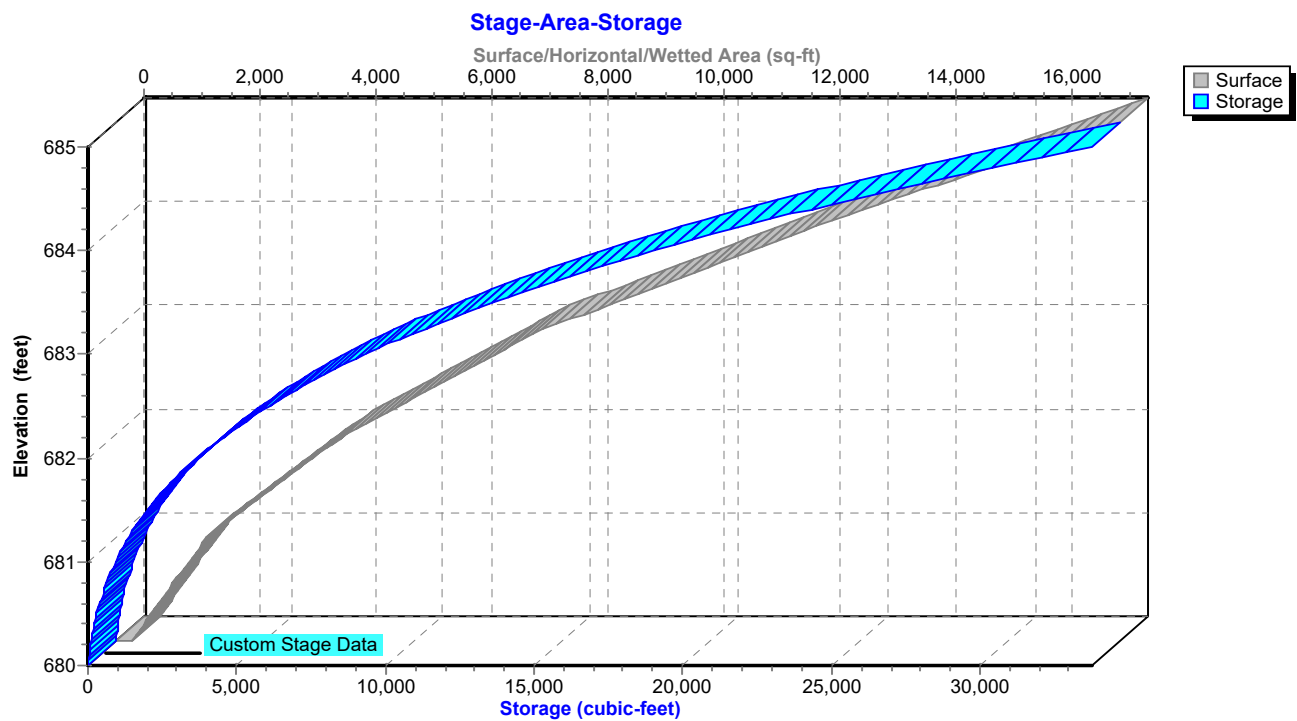
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Mt Pleasant 24-hr S1 5-yr Rainfall=4.75"

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Pond CD4E: Cross Drain 4E



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Summary for Pond POND1P: PROP POND

Inflow Area = 1,772,021 sf, 9.83% Impervious, Inflow Depth = 2.59" for 5-yr event
 Inflow = 52.23 cfs @ 12.50 hrs, Volume= 382,660 cf
 Outflow = 24.34 cfs @ 13.13 hrs, Volume= 382,654 cf, Atten= 53%, Lag= 37.8 min
 Primary = 24.34 cfs @ 13.13 hrs, Volume= 382,654 cf
 Routed to Reach OF4P : Primary Stream for Outfalls

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
 Peak Elev= 680.15' @ 13.14 hrs Surf.Area= 59,183 sf Storage= 131,541 cf

Plug-Flow detention time= 118.7 min calculated for 382,654 cf (100% of inflow)
 Center-of-Mass det. time= 118.6 min (955.1 - 836.5)

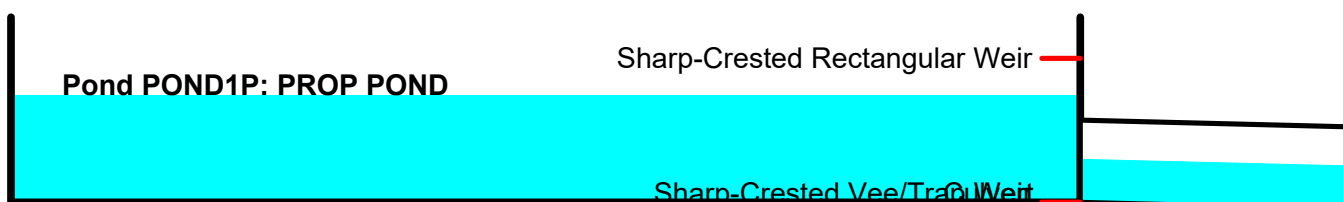
Volume	Invert	Avail.Storage	Storage Description
#1	676.25'	386,863 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
676.25	505	0	0
676.50	14,826	1,916	1,916
677.00	24,194	9,755	11,671
678.00	31,409	27,802	39,473
679.00	39,965	35,687	75,160
680.00	56,082	48,024	123,183
681.00	77,468	66,775	189,958
682.00	98,642	88,055	278,013
683.00	119,057	108,850	386,863

Device	Routing	Invert	Outlet Devices
#1	Primary	676.25'	36.0" Round Culvert L= 50.0' Ke= 0.600 Inlet / Outlet Invert= 676.25' / 676.00' S= 0.0050 '/' Cc= 0.900 n= 0.011, Flow Area= 7.07 sf
#2	Device 1	676.25'	20.0 deg x 0.4' long Sharp-Crested Vee/Trap Weir Cv= 2.69 (C= 3.36)
#3	Device 1	681.50'	16.0' long Sharp-Crested Rectangular Weir 2 End Contraction(s)

Primary OutFlow Max=24.34 cfs @ 13.13 hrs HW=680.14' TW=677.09' (Dynamic Tailwater)

1=Culvert (Passes 24.34 cfs of 46.09 cfs potential flow)
 2=Sharp-Crested Vee/Trap Weir (Weir Controls 24.34 cfs @ 5.75 fps)
 3=Sharp-Crested Rectangular Weir (Controls 0.00 cfs)



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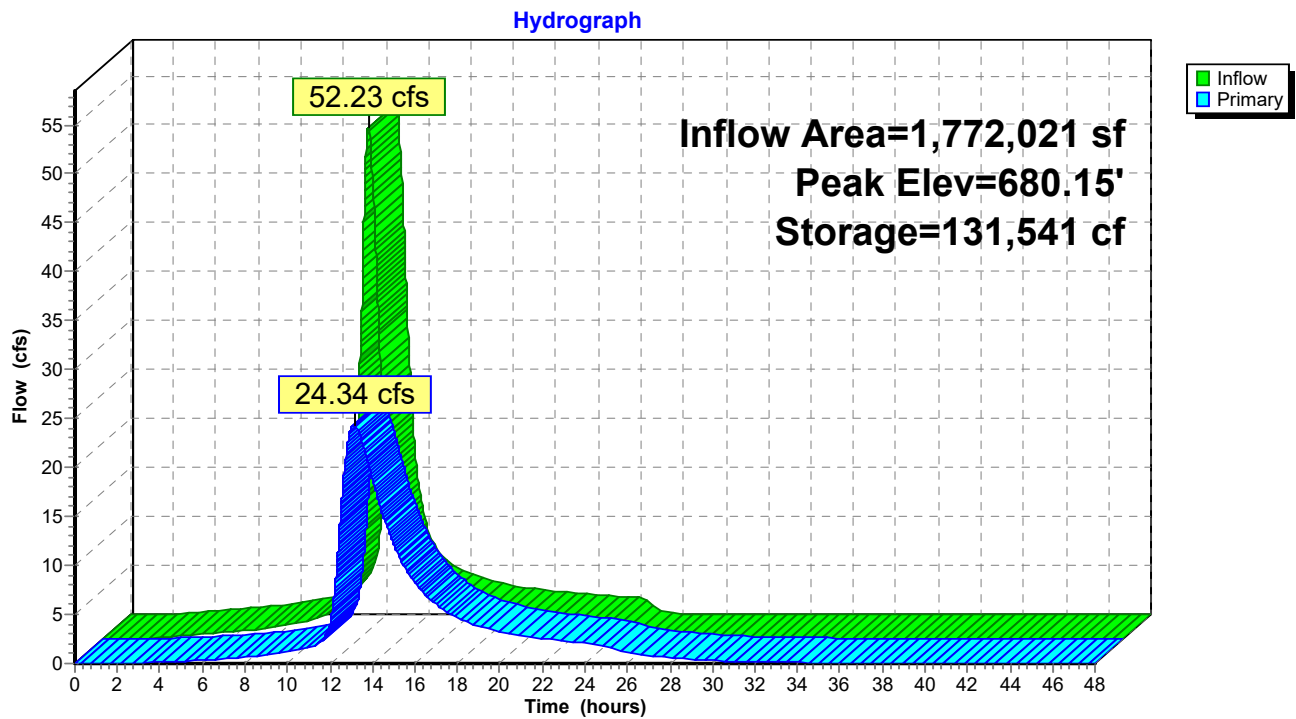
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Mt Pleasant 24-hr S1 5-yr Rainfall=4.75"

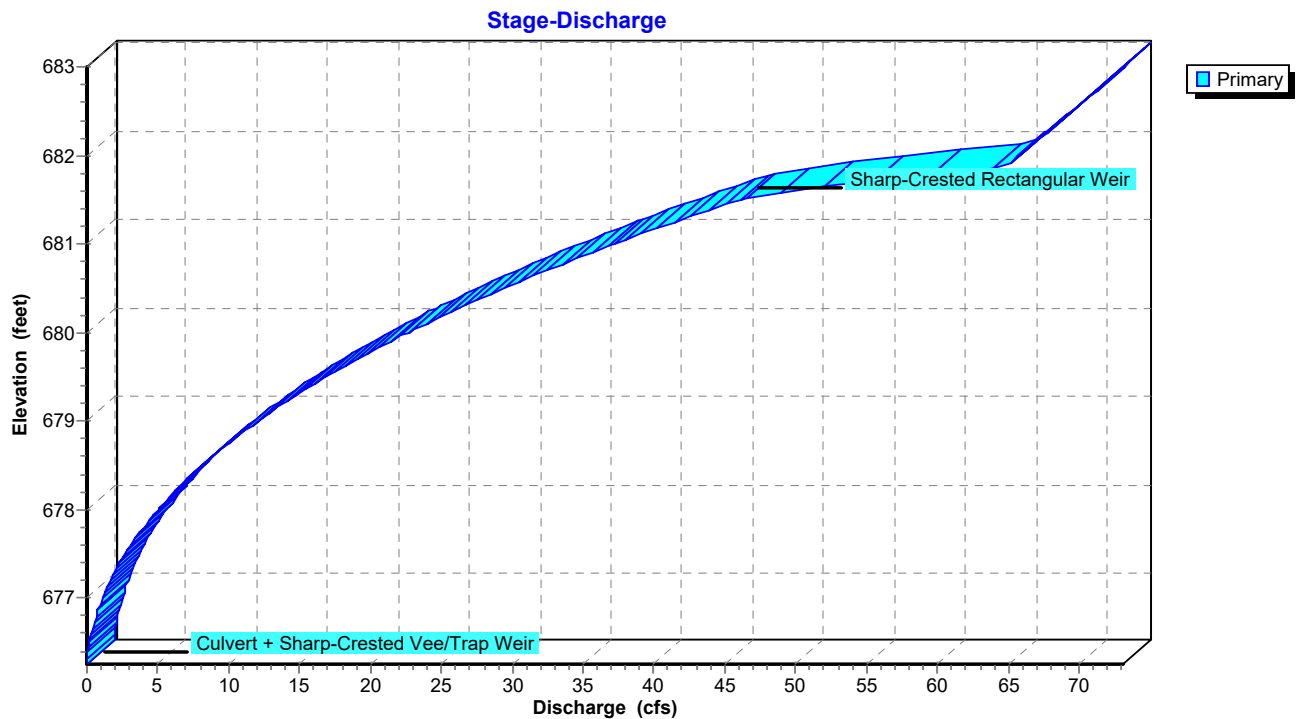
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Pond POND1P: PROP POND



Pond POND1P: PROP POND



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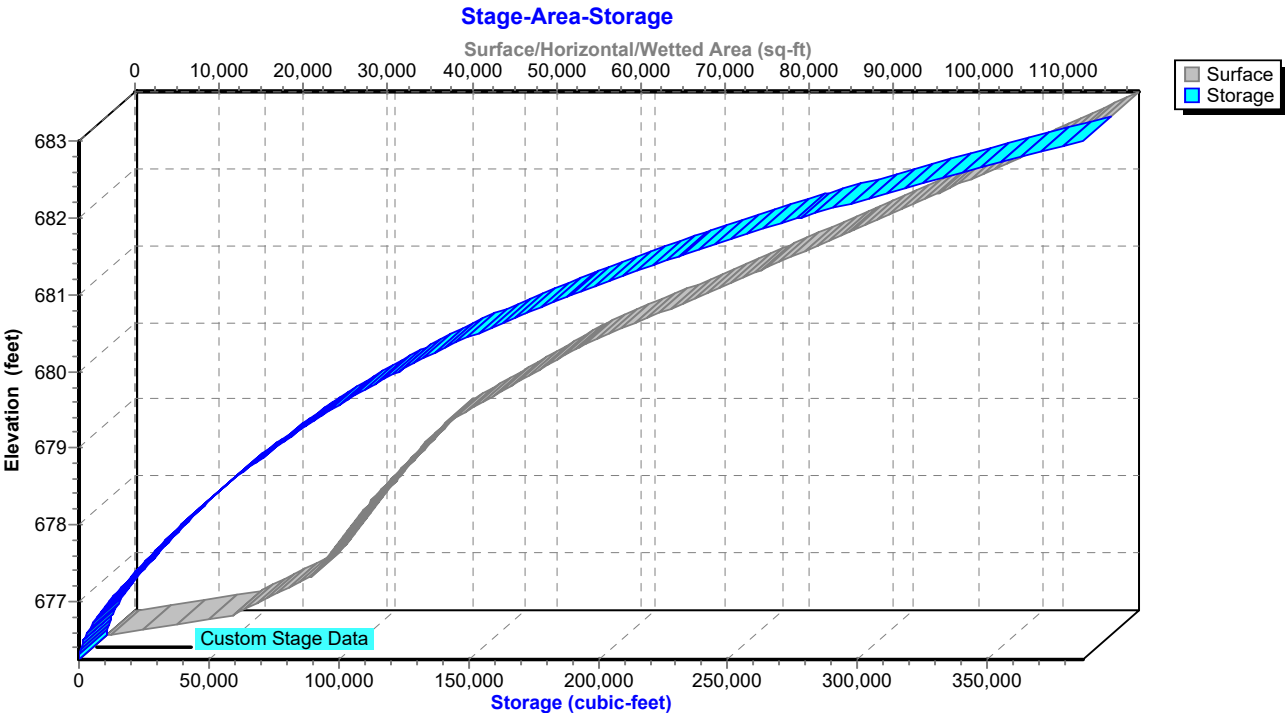
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Mt Pleasant 24-hr S1 5-yr Rainfall=4.75"

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Pond POND1P: PROP POND



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Time span=0.00-48.00 hrs, dt=0.01 hrs, 4801 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

Subcatchment DA 1: BASIN 1 PRE Runoff Area=143.000 ac 1.75% Impervious Runoff Depth=2.79"
 Flow Length=5,750' Tc=143.0 min CN=75 Runoff=108.16 cfs 1,450,339 cf

Subcatchment DA 2: BASIN 2 PRE Runoff Area=34.900 ac 0.00% Impervious Runoff Depth=1.70"
 Flow Length=2,150' Slope=0.0150 '/' Tc=62.3 min CN=62 Runoff=26.69 cfs 215,881 cf

Subcatchment DA 3: BASIN 3 PRE Runoff Area=9.380 ac 0.00% Impervious Runoff Depth=2.61"
 Flow Length=838' Slope=0.0200 '/' Tc=25.9 min CN=73 Runoff=18.20 cfs 89,015 cf

Subcatchment DA 4: BASIN 4 PRE Runoff Area=41.500 ac 0.00% Impervious Runoff Depth=2.35"
 Flow Length=2,468' Tc=68.1 min CN=70 Runoff=43.63 cfs 354,450 cf

Subcatchment DA1P: BASIN 1 PROPOSED Runoff Area=143.000 ac 1.75% Impervious Runoff Depth=2.79"
 Flow Length=5,750' Tc=143.0 min CN=75 Runoff=108.16 cfs 1,450,339 cf

Subcatchment DA2P: BASIN 2 PROPOSED Runoff Area=34.900 ac 0.00% Impervious Runoff Depth=1.70"
 Flow Length=2,150' Slope=0.0150 '/' Tc=62.3 min CN=62 Runoff=26.69 cfs 215,881 cf

Subcatchment DA3P: BASIN 3 PRE Runoff Area=4.760 ac 0.00% Impervious Runoff Depth=3.17"
 Tc=5.0 min CN=79 Runoff=21.18 cfs 54,713 cf

Subcatchment DA4A: BASIN 4A PROPOSED Runoff Area=5.530 ac 0.00% Impervious Runoff Depth=2.18"
 Flow Length=945' Tc=40.9 min CN=68 Runoff=7.07 cfs 43,842 cf

Subcatchment DA4B: BASIN 4B Runoff Area=12.330 ac 24.33% Impervious Runoff Depth=4.95"
 Flow Length=996' Tc=33.8 min CN=96 Runoff=37.18 cfs 221,559 cf

Subcatchment DA4C: BASIN 4C PROPOSED Runoff Area=0.680 ac 0.00% Impervious Runoff Depth=4.95"
 Tc=5.0 min CN=96 Runoff=4.32 cfs 12,219 cf

Subcatchment DA4D: BASIN 4D PROPOSED Runoff Area=1.230 ac 0.00% Impervious Runoff Depth=4.95"
 Tc=5.0 min CN=96 Runoff=7.81 cfs 22,102 cf

Subcatchment DA4E1: BASIN 4E1 Runoff Area=7.260 ac 13.77% Impervious Runoff Depth=1.86"
 Flow Length=640' Tc=31.5 min CN=64 Runoff=8.75 cfs 49,007 cf

Subcatchment DA4E2: BASIN 4E2 Runoff Area=19.180 ac 0.00% Impervious Runoff Depth=2.27"
 Flow Length=1,313' Tc=46.8 min CN=69 Runoff=23.91 cfs 157,900 cf

Reach D4C: Ditch 4C Avg. Flow Depth=0.61' Max Vel=2.45 fps Inflow=4.32 cfs 12,219 cf
 n=0.033 L=313.0' S=0.0104 '/' Capacity=27.19 cfs Outflow=4.04 cfs 12,219 cf

Reach D4D: Ditch 4D Avg. Flow Depth=0.75' Max Vel=3.29 fps Inflow=7.81 cfs 22,102 cf
 n=0.033 L=337.0' S=0.0148 '/' Capacity=32.50 cfs Outflow=7.46 cfs 22,102 cf

Reach D4E1: Ditch 4E1 Avg. Flow Depth=0.71' Max Vel=1.60 fps Inflow=8.75 cfs 49,007 cf
 n=0.033 L=1,788.0' S=0.0031 '/' Capacity=197.27 cfs Outflow=7.01 cfs 49,007 cf

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Reach OF4: Primary Stream for Avg. Flow Depth=2.49' Max Vel=4.11 fps Inflow=144.59 cfs 2,109,686 cf
 n=0.035 L=1,000.0' S=0.0050 '/' Capacity=640.46 cfs Outflow=144.45 cfs 2,109,686 cf

Reach OF4P: Primary Stream for Avg. Flow Depth=2.51' Max Vel=4.13 fps Inflow=147.00 cfs 2,227,554 cf
 n=0.035 L=1,000.0' S=0.0050 '/' Capacity=640.46 cfs Outflow=146.78 cfs 2,227,553 cf

Pond CD2: Cross Drain Peak Elev=682.76' Inflow=26.69 cfs 215,881 cf
 36.0" Round Culvert n=0.011 L=50.0' S=0.0050 '/' Outflow=26.69 cfs 215,881 cf

Pond CD4C: Cross Drain 4C Peak Elev=684.72' Inflow=4.04 cfs 12,219 cf
 18.0" Round Culvert n=0.011 L=60.0' S=0.0792 '/' Outflow=4.04 cfs 12,219 cf

Pond CD4DCE: Cross Drain 4DCE Peak Elev=681.21' Inflow=31.24 cfs 241,226 cf
 48.0" Round Culvert n=0.011 L=360.0' S=0.0052 '/' Outflow=31.24 cfs 241,226 cf

Pond CD4E: Cross Drain 4E Peak Elev=682.06' Storage=3,926 cf Inflow=30.88 cfs 206,907 cf
 48.0" Round Culvert n=0.011 L=200.0' S=0.0052 '/' Outflow=30.12 cfs 206,905 cf

Pond POND1P: PROP POND Peak Elev=680.58' Storage=159,375 cf Inflow=63.88 cfs 462,785 cf
 Outflow=30.25 cfs 462,779 cf

Total Runoff Area = 19,935,234 sf Runoff Volume = 4,337,249 cf Average Runoff Depth = 2.61"
98.03% Pervious = 19,543,194 sf 1.97% Impervious = 392,040 sf

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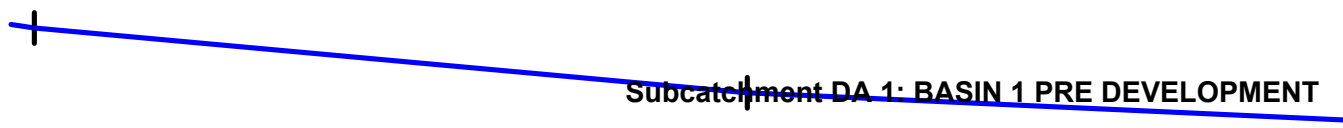
Summary for Subcatchment DA 1: BASIN 1 PRE DEVELOPMENT

Runoff = 108.16 cfs @ 13.83 hrs, Volume= 1,450,339 cf, Depth= 2.79"
Routed to Reach OF4 : Primary Stream for Outfalls

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Mt Pleasant 24-hr S1 10-yr Rainfall=5.42"

Area (ac)	CN	Description
69.500	74	>75% Grass cover, Good, HSG C
71.000	76	Woods/grass comb., Fair, HSG C
2.500	98	Paved parking, HSG C
143.000	75	Weighted Average
140.500		98.25% Pervious Area
2.500		1.75% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
35.4	100	0.0200	0.05		Sheet Flow, Woods: Dense underbrush n= 0.800 P2= 3.57"
92.8	3,050	0.0120	0.55		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
14.8	2,600	0.0060	2.93	11.71	Channel Flow, Area= 4.0 sf Perim= 6.0' r= 0.67' n= 0.030
143.0	5,750	Total			



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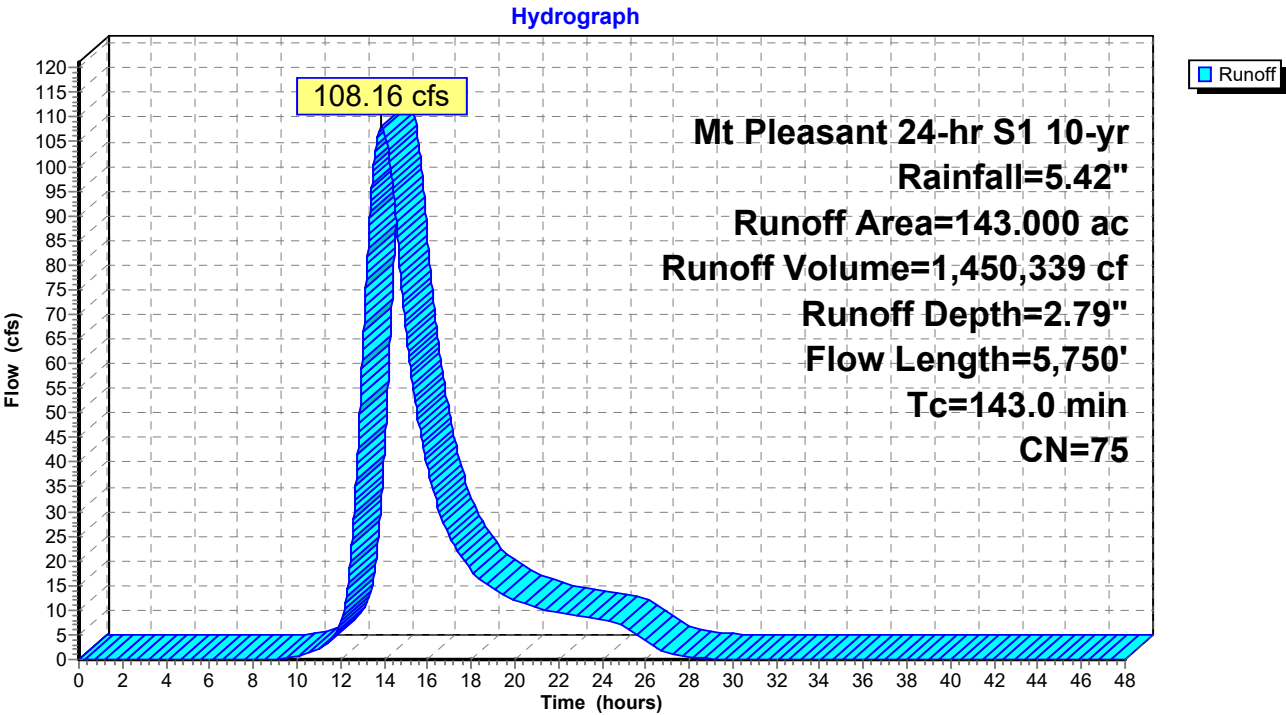
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Subcatchment DA 1: BASIN 1 PRE DEVELOPMENT



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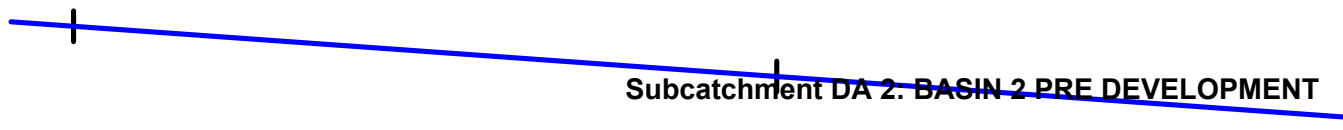
Summary for Subcatchment DA 2: BASIN 2 PRE DEVELOPMENT

Runoff = 26.69 cfs @ 12.94 hrs, Volume= 215,881 cf, Depth= 1.70"
Routed to Reach OF4 : Primary Stream for Outfalls

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Mt Pleasant 24-hr S1 10-yr Rainfall=5.42"

Area (ac)	CN	Description
17.450	58	Meadow, non-grazed, HSG B
14.450	60	Woods, Fair, HSG B
3.000	96	Gravel surface, HSG C
34.900	62	Weighted Average
34.900		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.2	100	0.0150	0.11		Sheet Flow, Grass: Dense n= 0.240 P2= 3.57"
21.9	1,125	0.0150	0.86		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
25.2	925	0.0150	0.61		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
62.3	2,150	Total			



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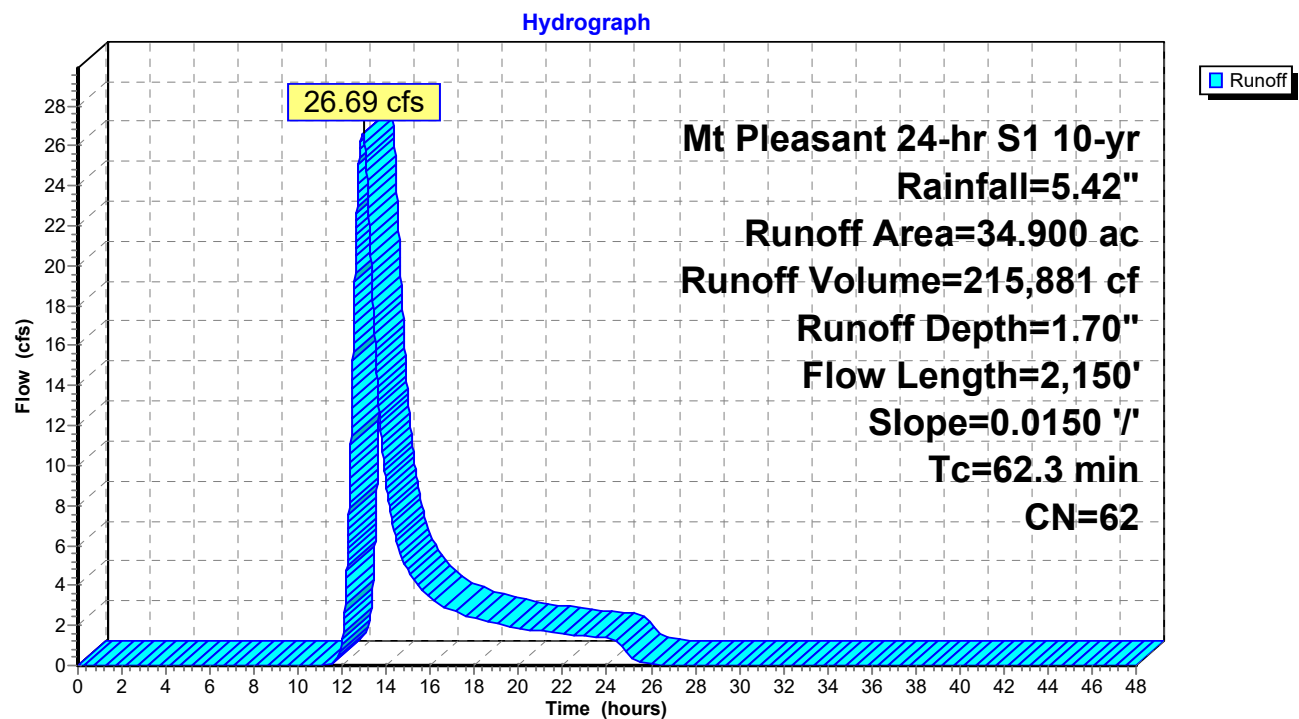
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Subcatchment DA 2: BASIN 2 PRE DEVELOPMENT



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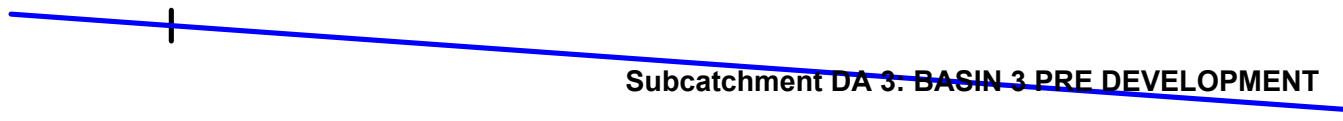
Summary for Subcatchment DA 3: BASIN 3 PRE DEVELOPMENT

Runoff = 18.20 cfs @ 12.34 hrs, Volume= 89,015 cf, Depth= 2.61"
 Routed to Reach OF4 : Primary Stream for Outfalls

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
 Mt Pleasant 24-hr S1 10-yr Rainfall=5.42"

Area (ac)	CN	Description
3.300	78	Meadow, non-grazed, HSG D
3.300	79	Woods, Fair, HSG D
2.250	58	Meadow, non-grazed, HSG B
0.530	60	Woods, Fair, HSG B
9.380	73	Weighted Average
9.380		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.5	100	0.0200	0.12		Sheet Flow, Grass: Dense n= 0.240 P2= 3.57"
12.4	738	0.0200	0.99		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
25.9	838	Total			



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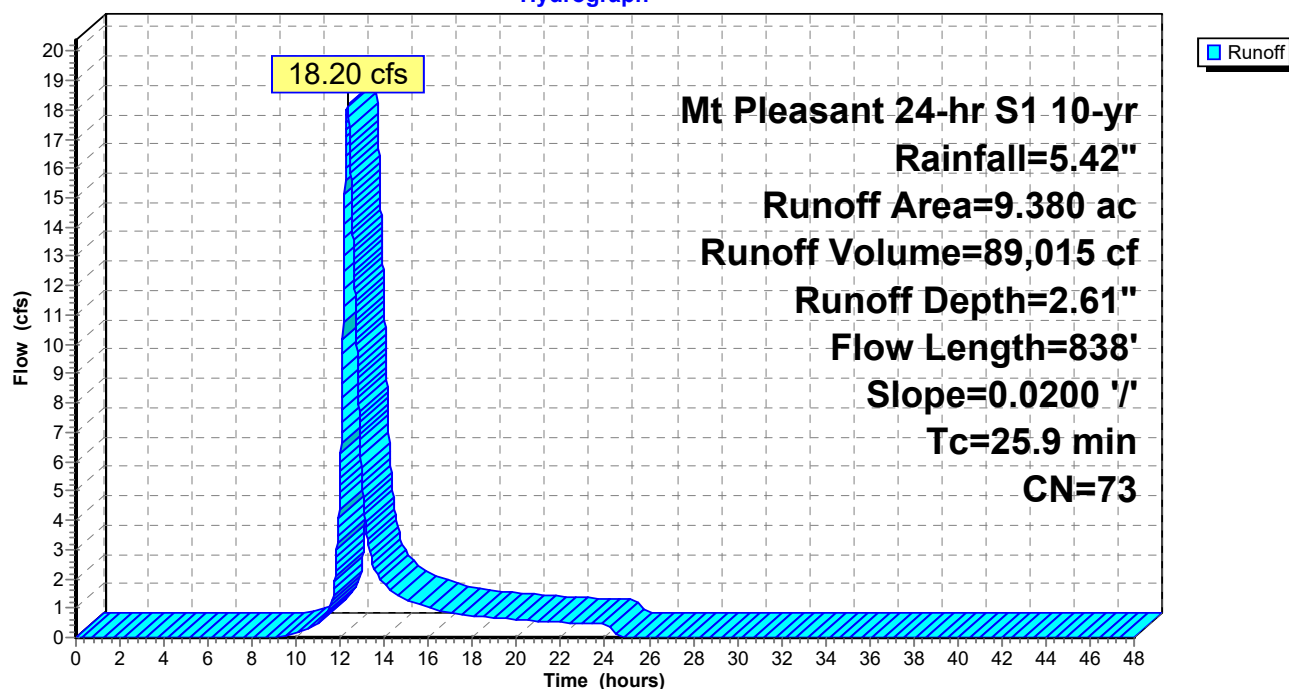
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Subcatchment DA 3: BASIN 3 PRE DEVELOPMENT

Hydrograph



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Mt Pleasant 24-hr S1 10-yr Rainfall=5.42"

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Summary for Subcatchment DA 4: BASIN 4 PRE DEVELOPMENT

Runoff = 43.63 cfs @ 12.94 hrs, Volume= 354,450 cf, Depth= 2.35"
Routed to Reach OF4 : Primary Stream for Outfalls

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Mt Pleasant 24-hr S1 10-yr Rainfall=5.42"

Area (ac)	CN	Description
7.300	78	Meadow, non-grazed, HSG D
1.830	79	Woods, Fair, HSG D
7.640	58	Meadow, non-grazed, HSG B
1.910	60	Woods, Fair, HSG B
4.150	73	Woods, Fair, HSG C
9.960	71	Meadow, non-grazed, HSG C
2.490	73	Woods, Fair, HSG C
4.970	71	Meadow, non-grazed, HSG C
1.250	73	Woods, Fair, HSG C
41.500	70	Weighted Average
41.500		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
24.5	100	0.0500	0.07		Sheet Flow, Woods: Dense underbrush n= 0.800 P2= 3.57"
43.6	2,368	0.0167	0.90		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
68.1	2,468	Total			

Subcatchment DA 4: BASIN 4 PRE DEVELOPMENT

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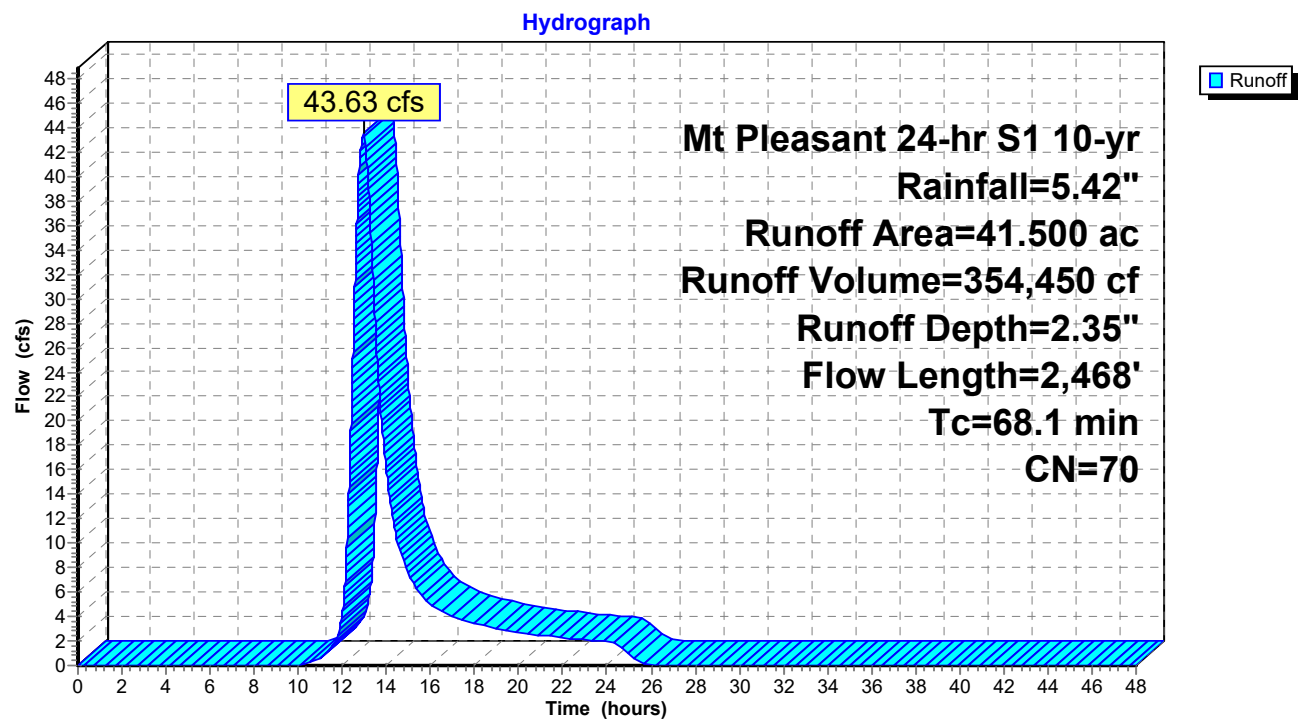
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Subcatchment DA 4: BASIN 4 PRE DEVELOPMENT



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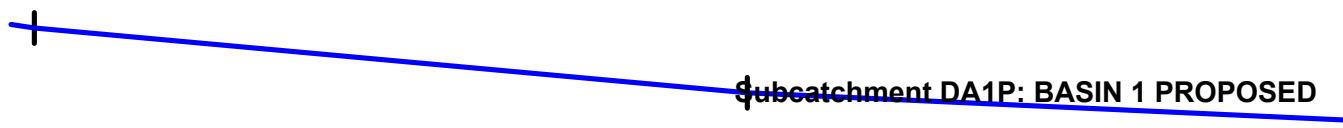
Summary for Subcatchment DA1P: BASIN 1 PROPOSED

Runoff = 108.16 cfs @ 13.83 hrs, Volume= 1,450,339 cf, Depth= 2.79"
Routed to Reach OF4P : Primary Stream for Outfalls

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Mt Pleasant 24-hr S1 10-yr Rainfall=5.42"

Area (ac)	CN	Description
69.500	74	>75% Grass cover, Good, HSG C
71.000	76	Woods/grass comb., Fair, HSG C
2.500	98	Paved parking, HSG C
143.000	75	Weighted Average
140.500		98.25% Pervious Area
2.500		1.75% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
35.4	100	0.0200	0.05		Sheet Flow, Woods: Dense underbrush n= 0.800 P2= 3.57"
92.8	3,050	0.0120	0.55		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
14.8	2,600	0.0060	2.93	11.71	Channel Flow, Area= 4.0 sf Perim= 6.0' r= 0.67' n= 0.030
143.0	5,750	Total			



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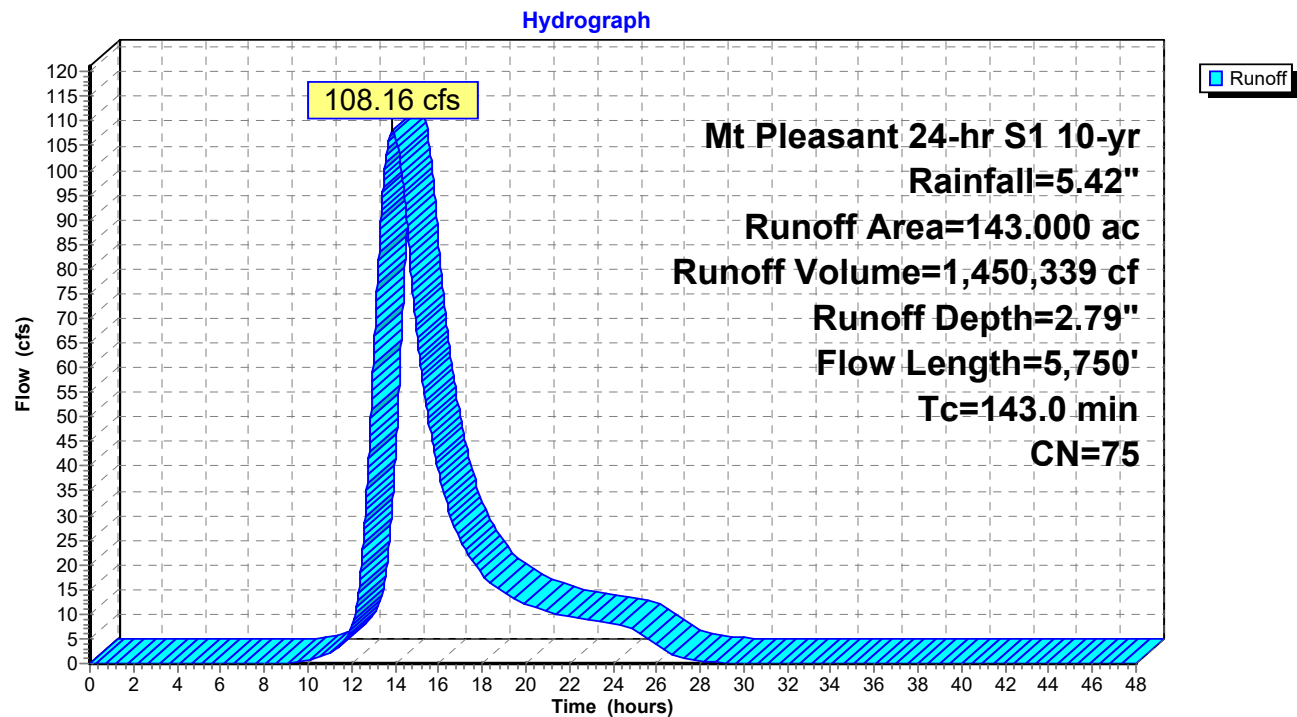
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Mt Pleasant 24-hr S1 10-yr Rainfall=5.42"

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Subcatchment DA1P: BASIN 1 PROPOSED



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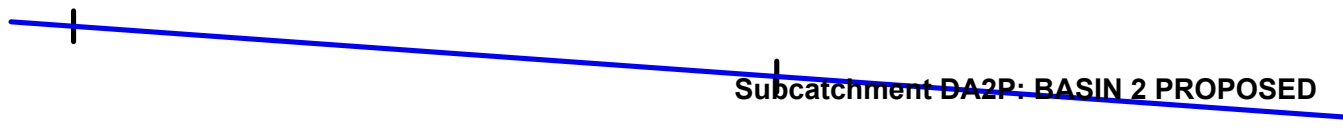
Summary for Subcatchment DA2P: BASIN 2 PROPOSED

Runoff = 26.69 cfs @ 12.94 hrs, Volume= 215,881 cf, Depth= 1.70"
Routed to Pond CD2 : Cross Drain

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Mt Pleasant 24-hr S1 10-yr Rainfall=5.42"

Area (ac)	CN	Description
17.450	58	Meadow, non-grazed, HSG B
14.450	60	Woods, Fair, HSG B
3.000	96	Gravel surface, HSG C
34.900	62	Weighted Average
34.900		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.2	100	0.0150	0.11		Sheet Flow, Grass: Dense n= 0.240 P2= 3.57"
21.9	1,125	0.0150	0.86		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
25.2	925	0.0150	0.61		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
62.3	2,150	Total			



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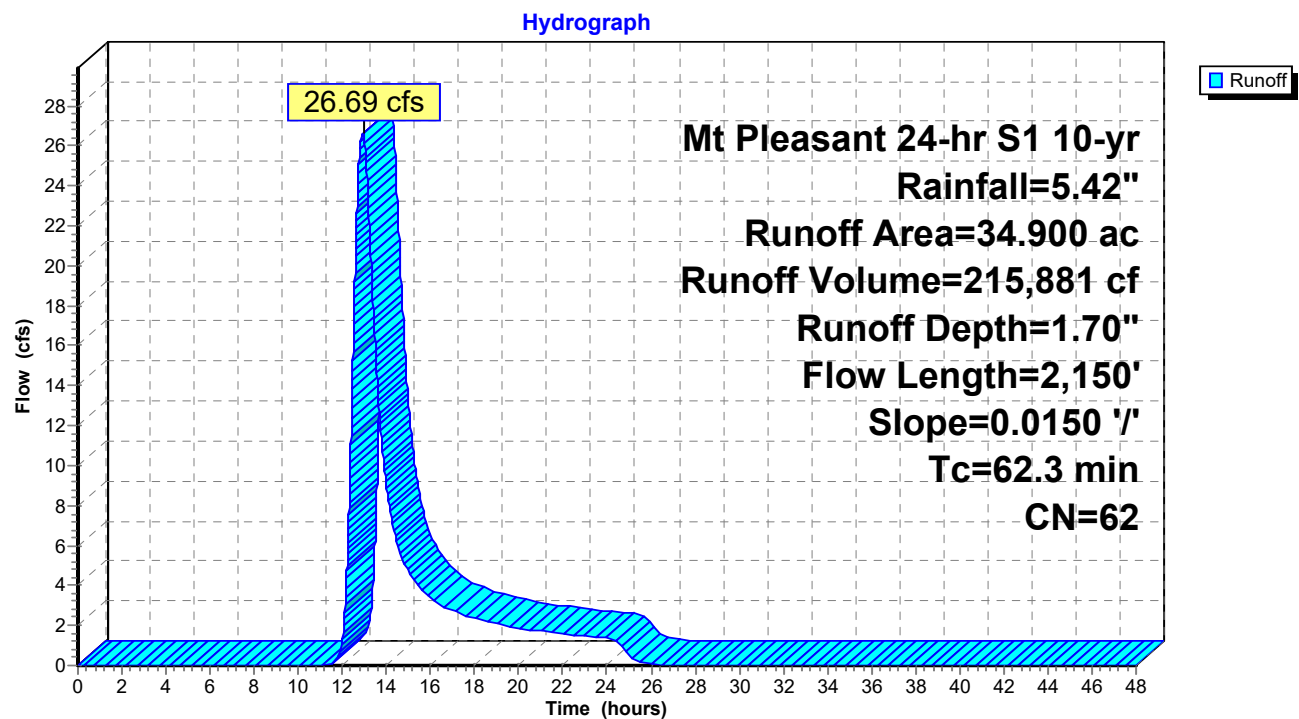
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Subcatchment DA2P: BASIN 2 PROPOSED



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Summary for Subcatchment DA3P: BASIN 3 PRE DEVELOPMENT

Runoff = 21.18 cfs @ 12.03 hrs, Volume= 54,713 cf, Depth= 3.17"
 Routed to Reach OF4P : Primary Stream for Outfalls

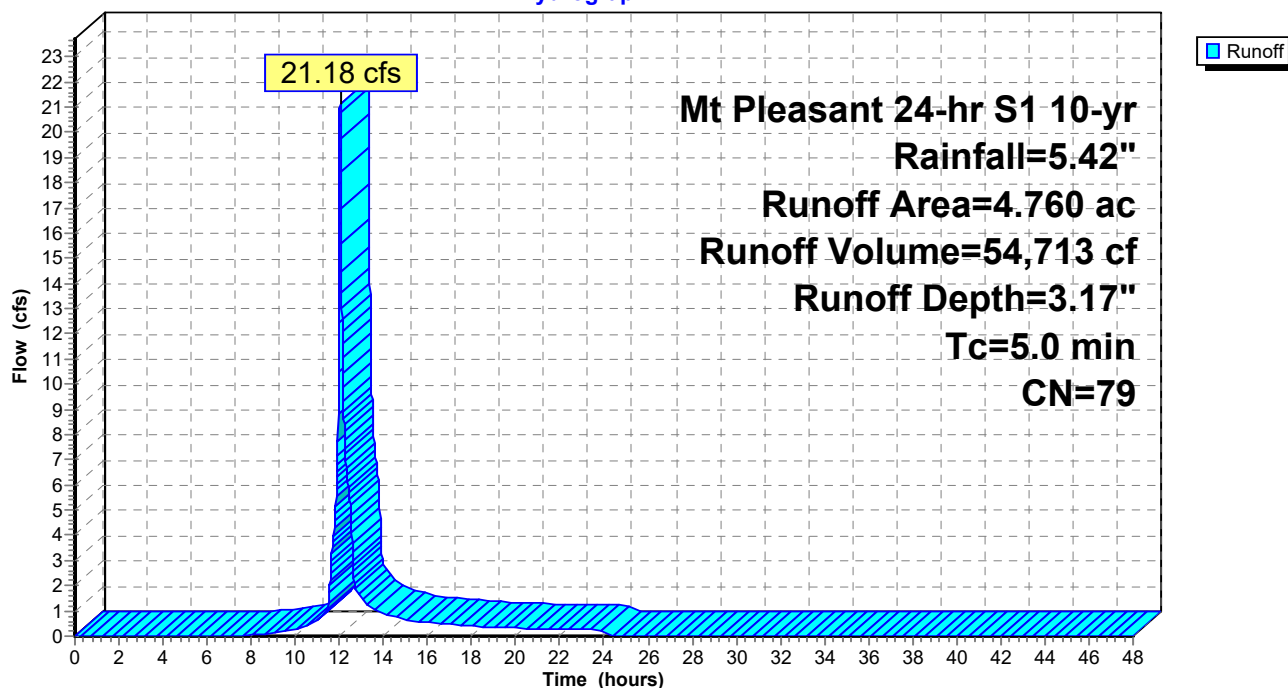
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
 Mt Pleasant 24-hr S1 10-yr Rainfall=5.42"

Area (ac)	CN	Description
4.760	79	Woods, Fair, HSG D
4.760		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					Direct Entry,

Subcatchment DA3P: BASIN 3 PRE DEVELOPMENT

Hydrograph



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Mt Pleasant 24-hr S1 10-yr Rainfall=5.42"

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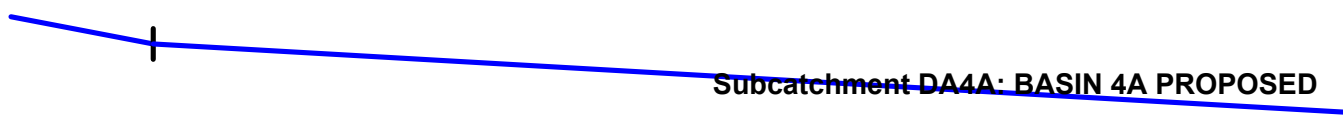
Summary for Subcatchment DA4A: BASIN 4A PROPOSED

Runoff = 7.07 cfs @ 12.58 hrs, Volume= 43,842 cf, Depth= 2.18"
Routed to Reach OF4P : Primary Stream for Outfalls

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Mt Pleasant 24-hr S1 10-yr Rainfall=5.42"

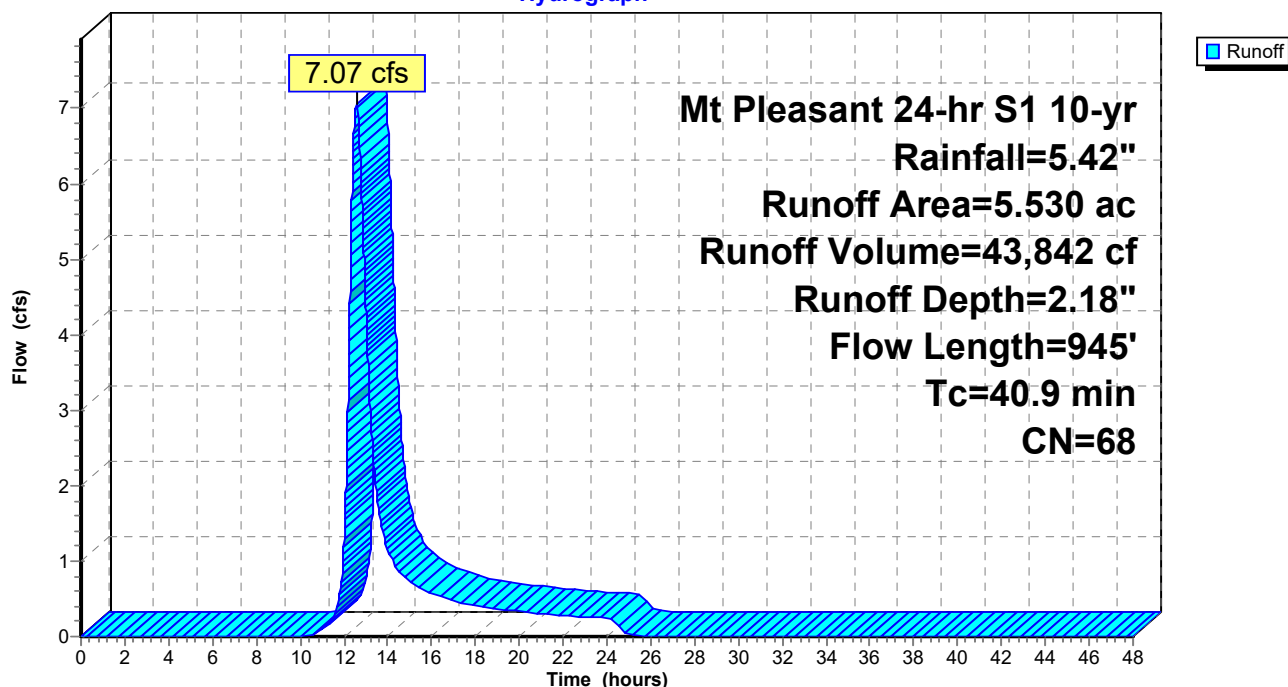
Area (ac)	CN	Description
2.200	60	Woods, Fair, HSG B
3.330	73	Woods, Fair, HSG C
5.530	68	Weighted Average
5.530		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
24.5	100	0.0500	0.07		Sheet Flow, Woods: Dense underbrush n= 0.800 P2= 3.57"
16.4	845	0.0150	0.86		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
40.9	945	Total			



Subcatchment DA4A: BASIN 4A PROPOSED

Hydrograph



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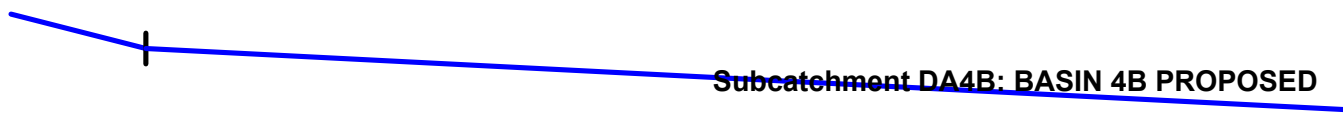
Summary for Subcatchment DA4B: BASIN 4B PROPOSED

Runoff = 37.18 cfs @ 12.40 hrs, Volume= 221,559 cf, Depth= 4.95"
Routed to Pond POND1P : PROP POND

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Mt Pleasant 24-hr S1 10-yr Rainfall=5.42"

Area (ac)	CN	Description
9.330	96	Gravel surface, HSG C
1.000	98	Paved parking, HSG D
2.000	98	Roofs, HSG D
12.330	96	Weighted Average
9.330		75.67% Pervious Area
3.000		24.33% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
24.5	100	0.0500	0.07		Sheet Flow, n= 0.800 P2= 3.57"
9.3	896	0.0100	1.61		Shallow Concentrated Flow, Unpaved Kv= 16.1 fps
33.8	996	Total			



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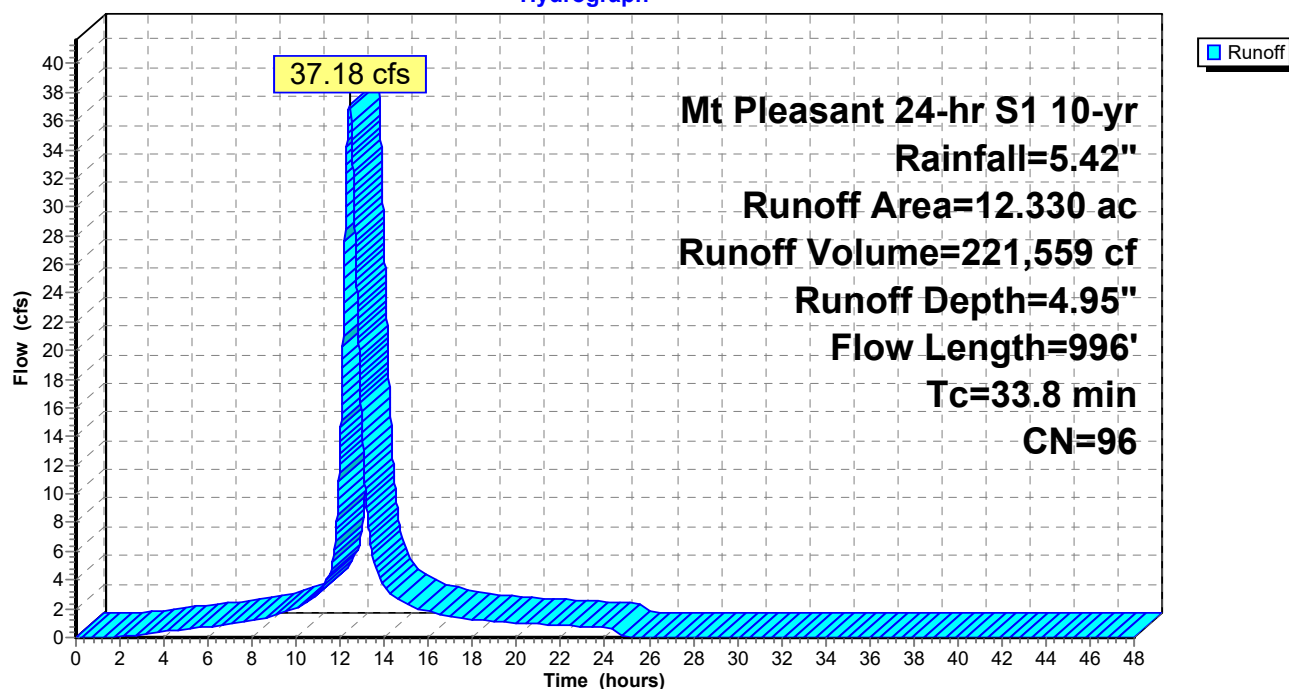
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Subcatchment DA4B: BASIN 4B PROPOSED

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Summary for Subcatchment DA4C: BASIN 4C PROPOSED

Runoff = 4.32 cfs @ 12.03 hrs, Volume= 12,219 cf, Depth= 4.95"
Routed to Reach D4C : Ditch 4C

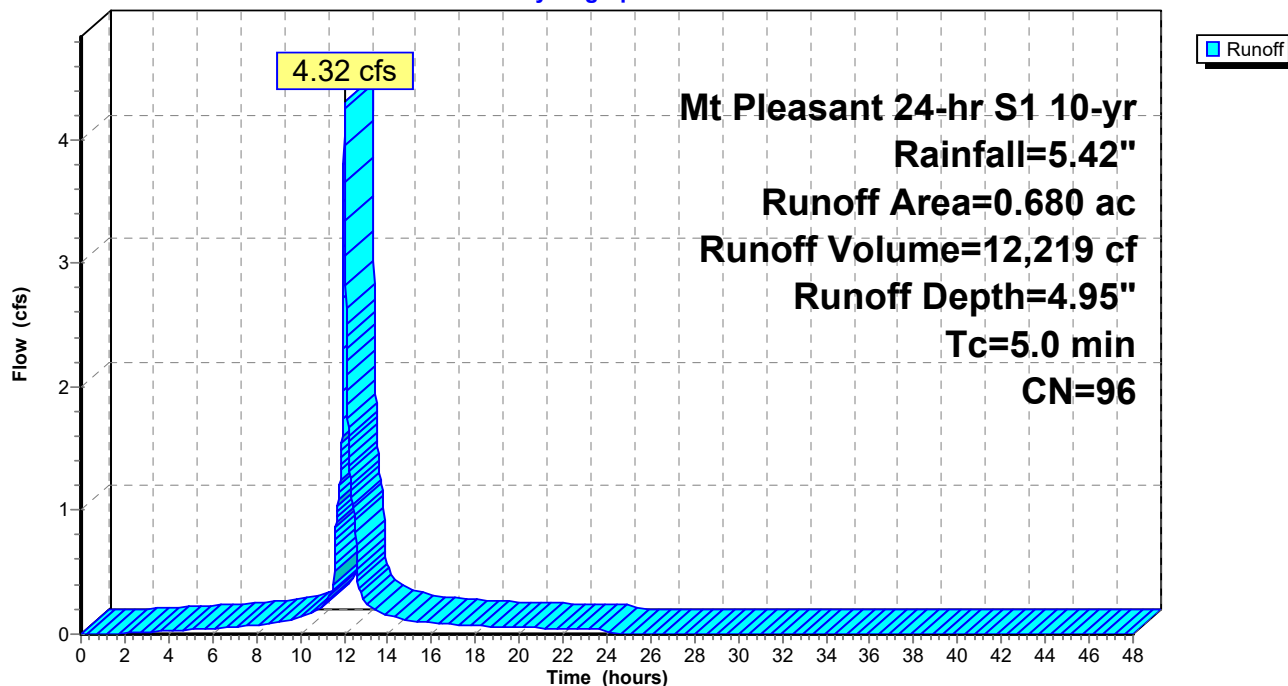
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Mt Pleasant 24-hr S1 10-yr Rainfall=5.42"

Area (ac)	CN	Description
0.680	96	Gravel surface, HSG C
0.680		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					Direct Entry,

Subcatchment DA4C: BASIN 4C PROPOSED

Hydrograph



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Summary for Subcatchment DA4D: BASIN 4D PROPOSED

Runoff = 7.81 cfs @ 12.03 hrs, Volume= 22,102 cf, Depth= 4.95"
Routed to Reach D4D : Ditch 4D

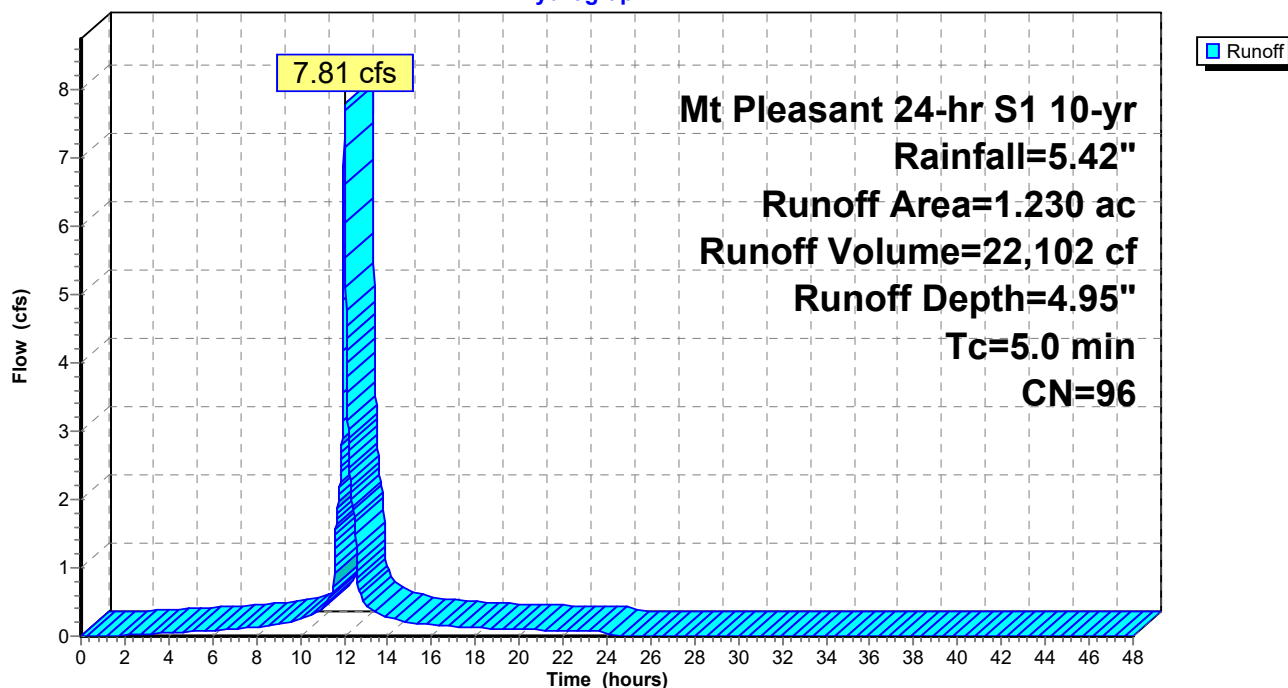
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Mt Pleasant 24-hr S1 10-yr Rainfall=5.42"

Area (ac)	CN	Description
1.230	96	Gravel surface, HSG C
1.230		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					Direct Entry,

Subcatchment DA4D: BASIN 4D PROPOSED

Hydrograph



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Mt Pleasant 24-hr S1 10-yr Rainfall=5.42"

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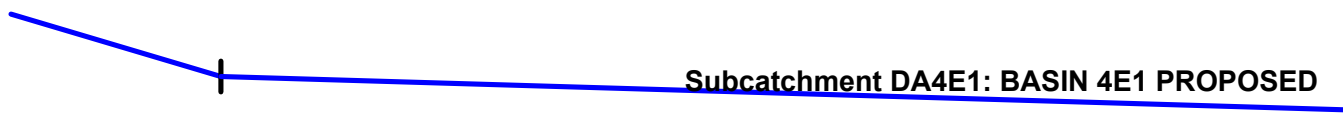
Summary for Subcatchment DA4E1: BASIN 4E1 PROPOSED

Runoff = 8.75 cfs @ 12.43 hrs, Volume= 49,007 cf, Depth= 1.86"
Routed to Reach D4E1 : Ditch 4E1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Mt Pleasant 24-hr S1 10-yr Rainfall=5.42"

Area (ac)	CN	Description
3.130	58	Meadow, non-grazed, HSG B
3.130	60	Woods, Fair, HSG B
1.000	98	Paved roads w/curbs & sewers, HSG B
7.260	64	Weighted Average
6.260		86.23% Pervious Area
1.000		13.77% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
18.6	100	0.1000	0.09		Sheet Flow, Woods: Dense underbrush n= 0.800 P2= 3.57"
12.9	540	0.0100	0.70		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
31.5	640	Total			



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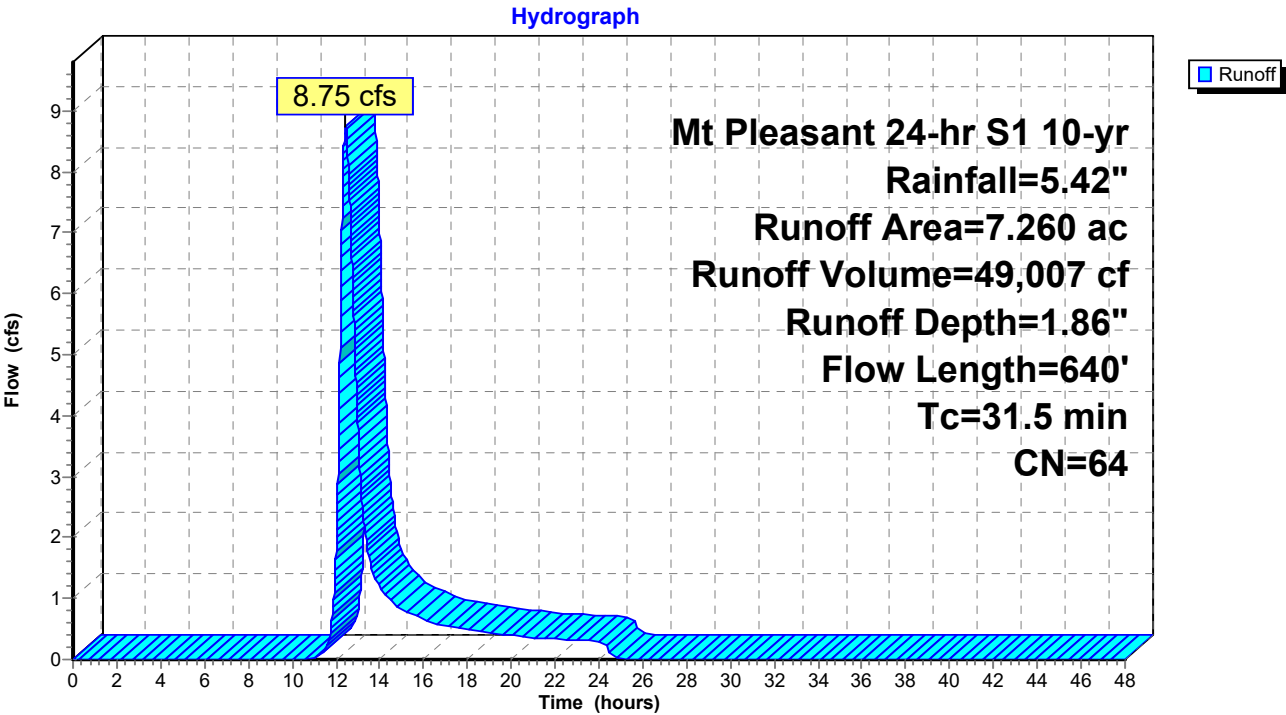
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Subcatchment DA4E1: BASIN 4E1 PROPOSED



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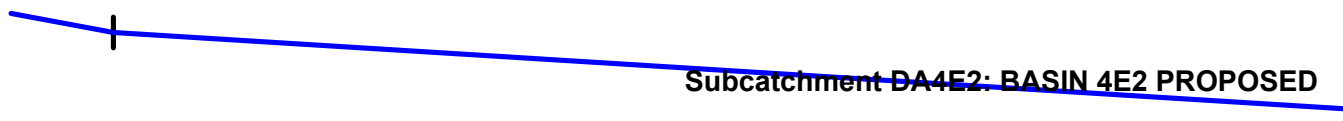
Summary for Subcatchment DA4E2: BASIN 4E2 PROPOSED

Runoff = 23.91 cfs @ 12.64 hrs, Volume= 157,900 cf, Depth= 2.27"
Routed to Pond CD4E : Cross Drain 4E

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Mt Pleasant 24-hr S1 10-yr Rainfall=5.42"

Area (ac)	CN	Description
9.300	79	Woods, Fair, HSG D
4.940	58	Meadow, non-grazed, HSG B
4.940	60	Woods, Fair, HSG B
19.180	69	Weighted Average
19.180		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
24.5	100	0.0500	0.07		Sheet Flow, Woods: Dense underbrush n= 0.800 P2= 3.57"
22.3	1,213	0.0167	0.90		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
46.8	1,313	Total			



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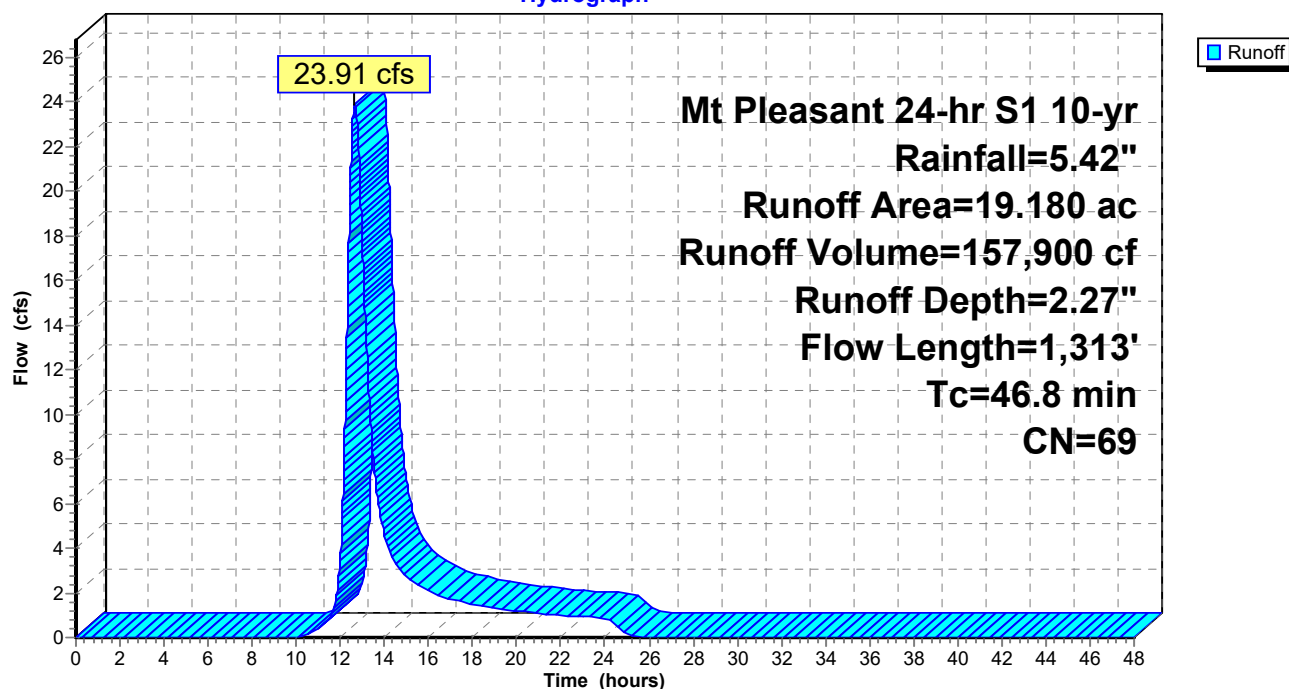
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Subcatchment DA4E2: BASIN 4E2 PROPOSED

Hydrograph



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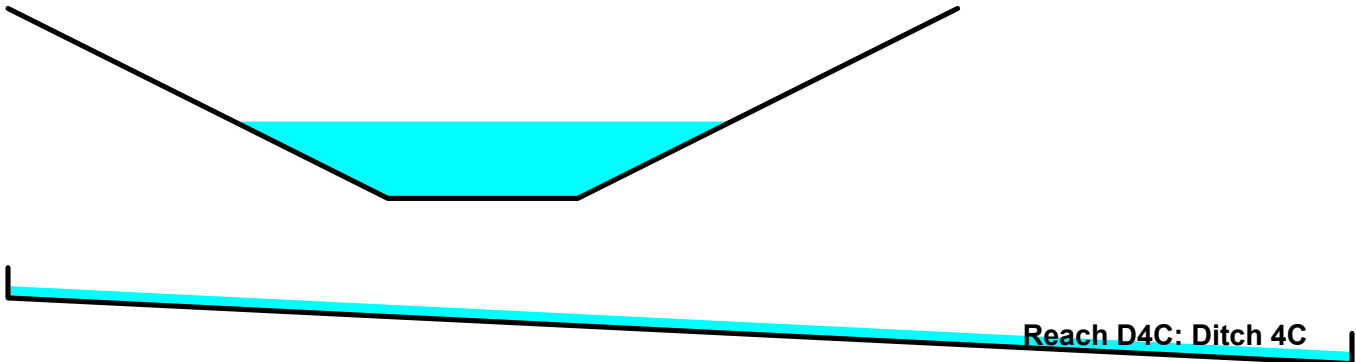
Summary for Reach D4C: Ditch 4C

Inflow Area = 29,621 sf, 0.00% Impervious, Inflow Depth = 4.95" for 10-yr event
 Inflow = 4.32 cfs @ 12.03 hrs, Volume= 12,219 cf
 Outflow = 4.04 cfs @ 12.05 hrs, Volume= 12,219 cf, Atten= 6%, Lag= 1.3 min
 Routed to Pond CD4C : Cross Drain 4C

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
 Max. Velocity= 2.45 fps, Min. Travel Time= 2.1 min
 Avg. Velocity = 0.69 fps, Avg. Travel Time= 7.5 min

Peak Storage= 516 cf @ 12.05 hrs
 Average Depth at Peak Storage= 0.61' , Surface Width= 3.93'
 Bank-Full Depth= 1.50' Flow Area= 6.8 sf, Capacity= 27.19 cfs

1.50' x 1.50' deep channel, n= 0.033 Riprap, 1-inch
 Side Slope Z-value= 2.0 '/' Top Width= 7.50'
 Length= 313.0' Slope= 0.0104 '/'
 Inlet Invert= 687.00', Outlet Invert= 683.75'



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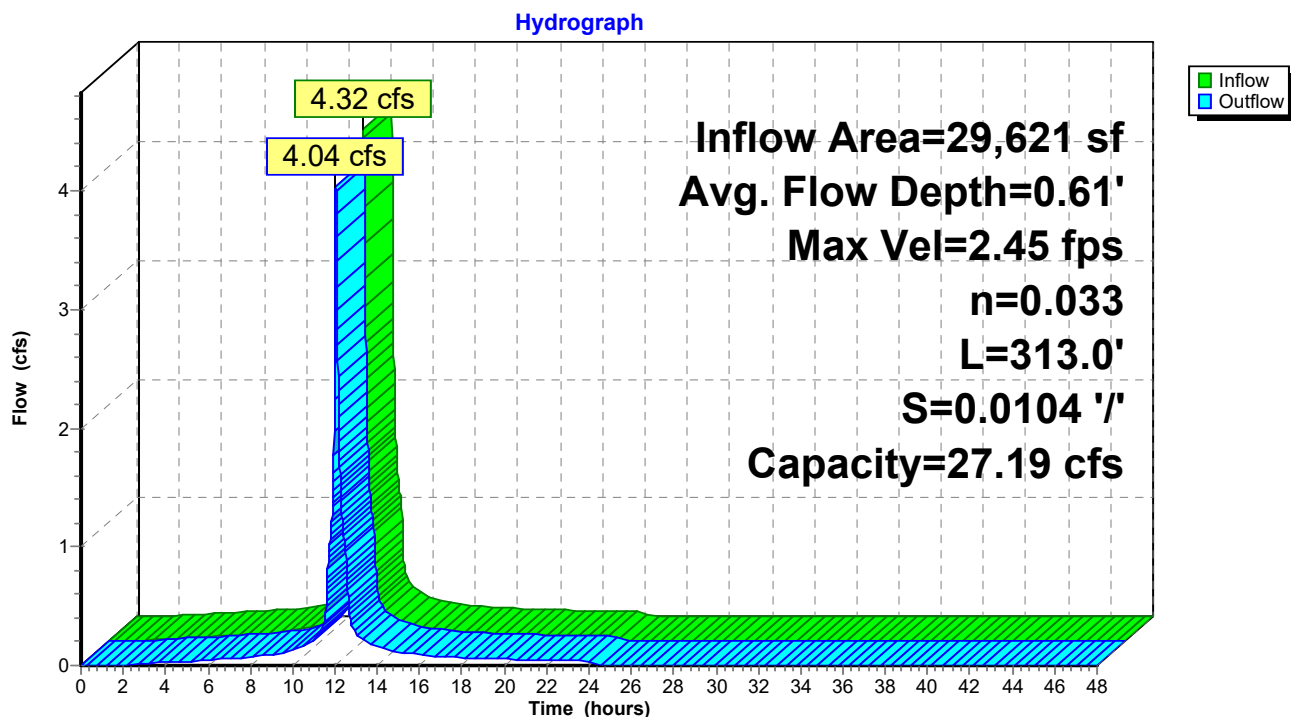
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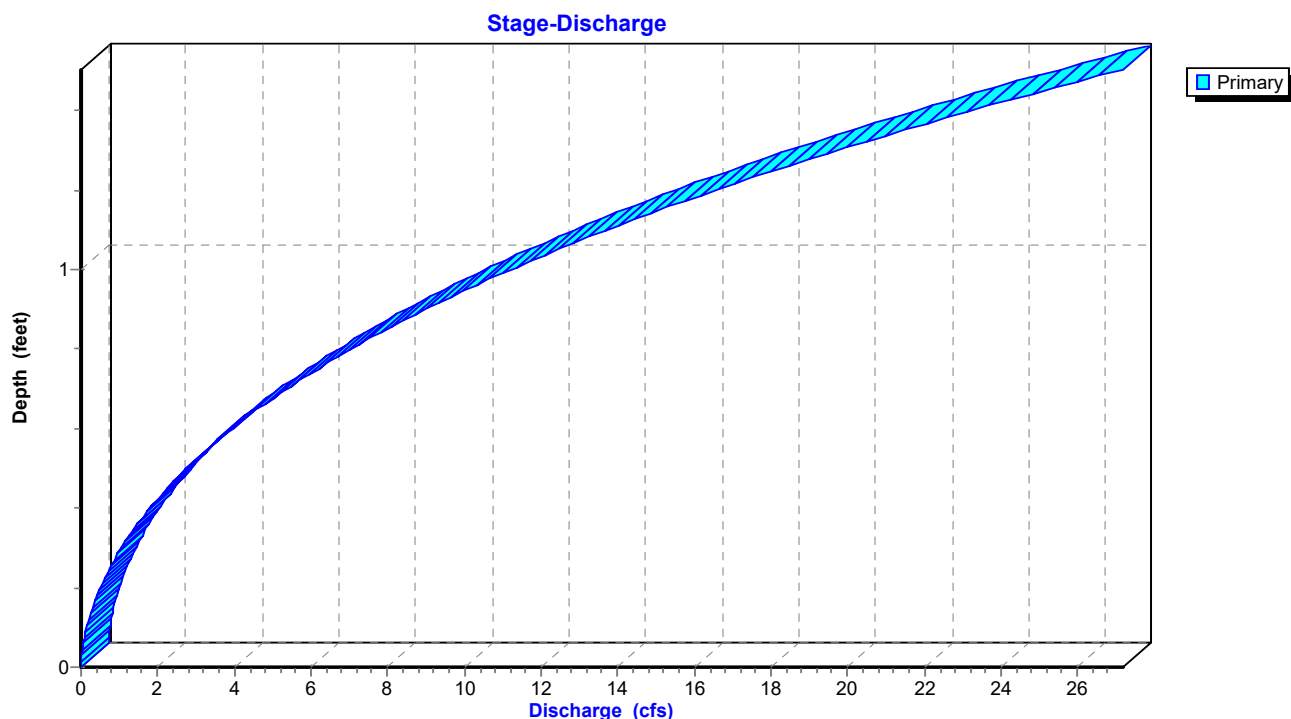
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Reach D4C: Ditch 4C



Reach D4C: Ditch 4C



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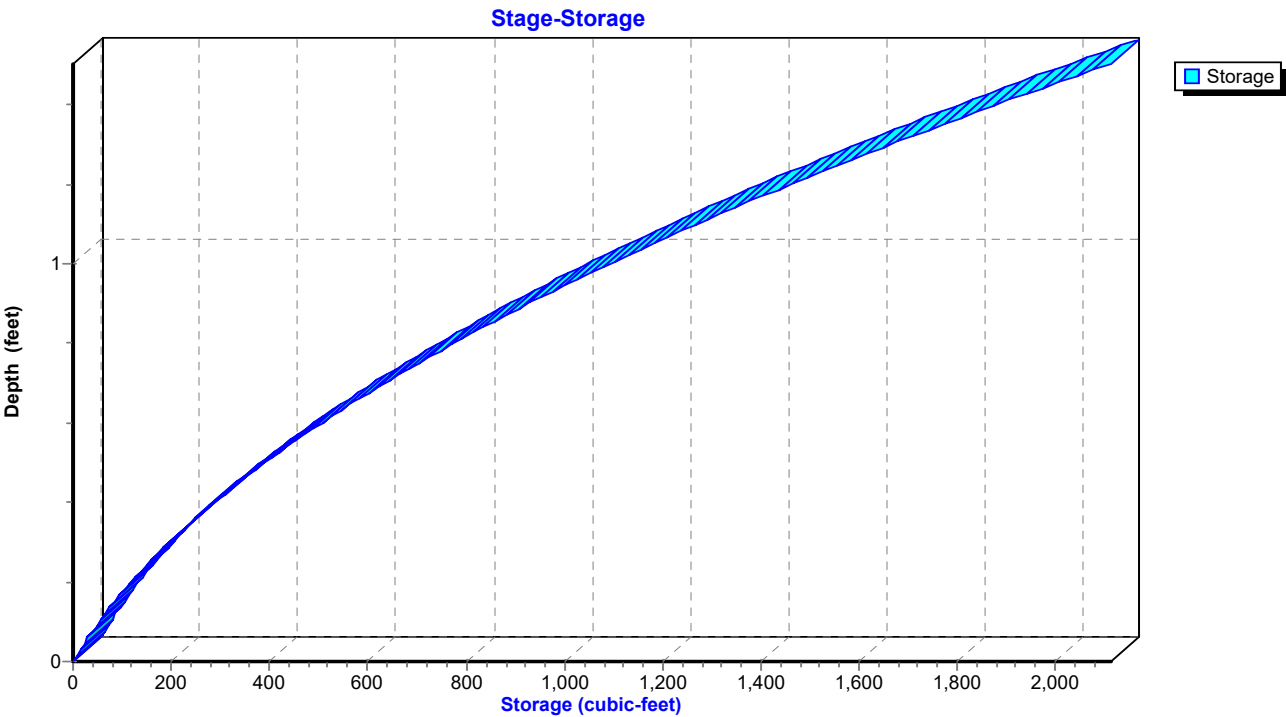
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Reach D4C: Ditch 4C



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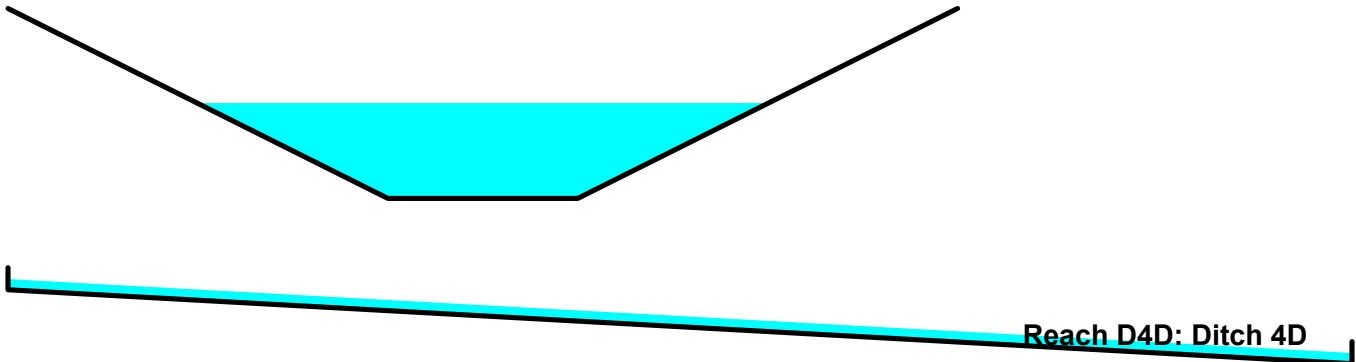
Summary for Reach D4D: Ditch 4D

Inflow Area = 53,579 sf, 0.00% Impervious, Inflow Depth = 4.95" for 10-yr event
 Inflow = 7.81 cfs @ 12.03 hrs, Volume= 22,102 cf
 Outflow = 7.46 cfs @ 12.04 hrs, Volume= 22,102 cf, Atten= 4%, Lag= 1.1 min
 Routed to Pond CD4DCE : Cross Drain 4DCE

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
 Max. Velocity= 3.29 fps, Min. Travel Time= 1.7 min
 Avg. Velocity = 0.95 fps, Avg. Travel Time= 5.9 min

Peak Storage= 763 cf @ 12.04 hrs
 Average Depth at Peak Storage= 0.75', Surface Width= 4.51'
 Bank-Full Depth= 1.50' Flow Area= 6.8 sf, Capacity= 32.50 cfs

1.50' x 1.50' deep channel, n= 0.033 Riprap, 1-inch
 Side Slope Z-value= 2.0 '/' Top Width= 7.50'
 Length= 337.0' Slope= 0.0148 '/'
 Inlet Invert= 688.00', Outlet Invert= 683.00'



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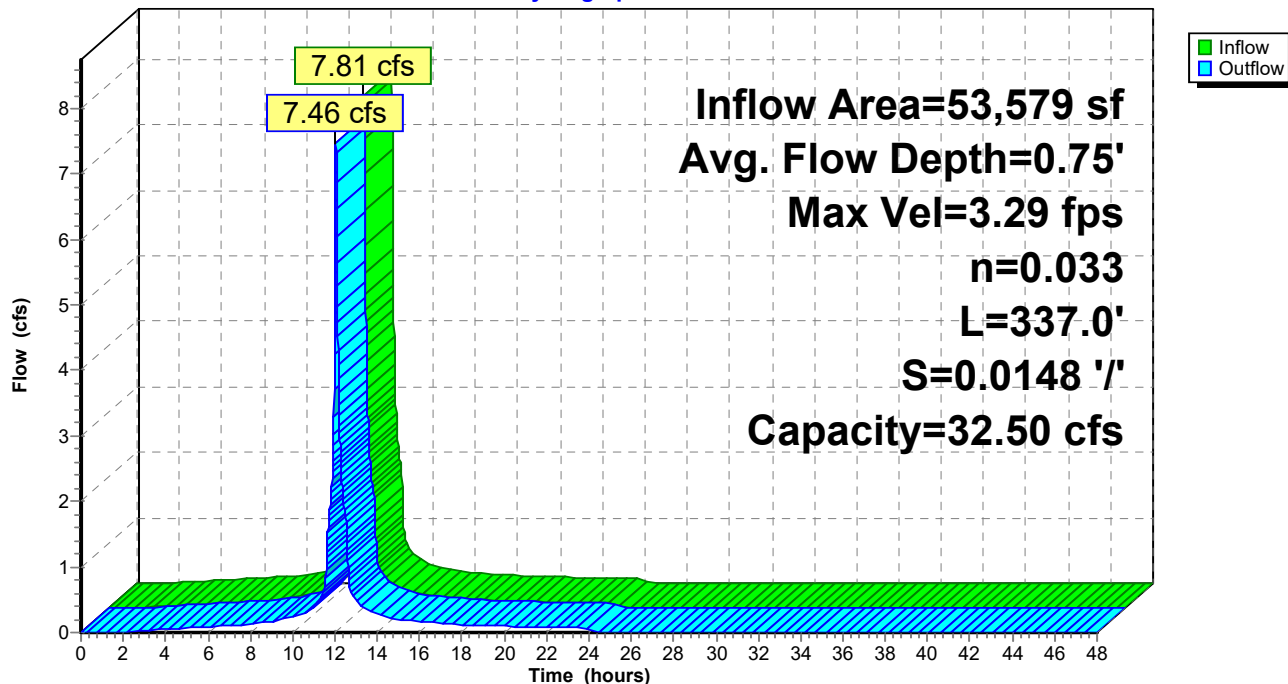
Mt Pleasant 24-hr S1 10-yr Rainfall=5.42"

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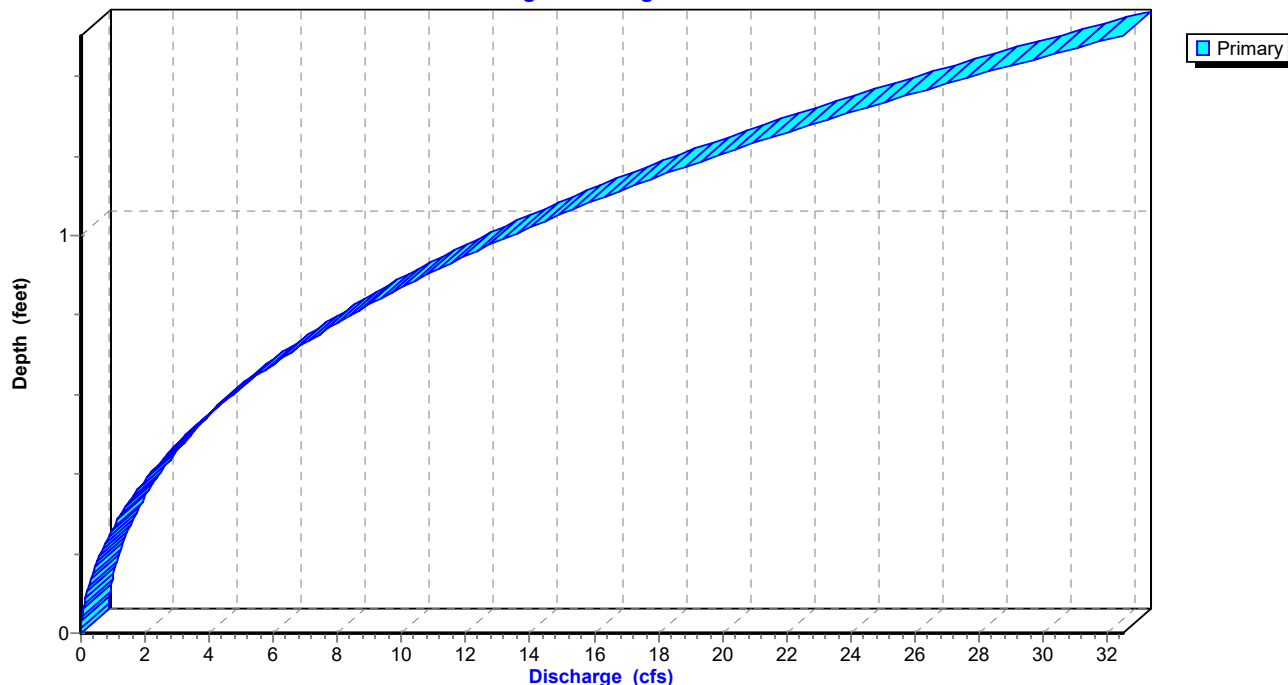
Reach D4D: Ditch 4D

Hydrograph



Reach D4D: Ditch 4D

Stage-Discharge



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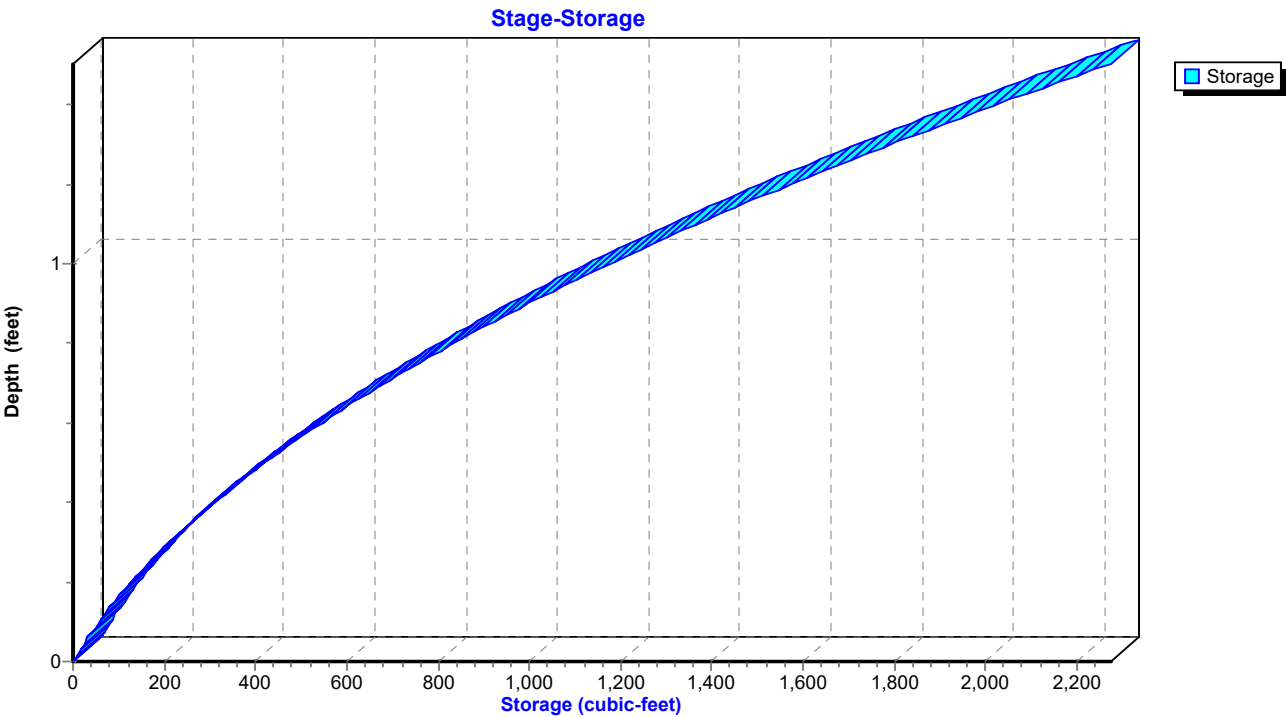
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Reach D4D: Ditch 4D



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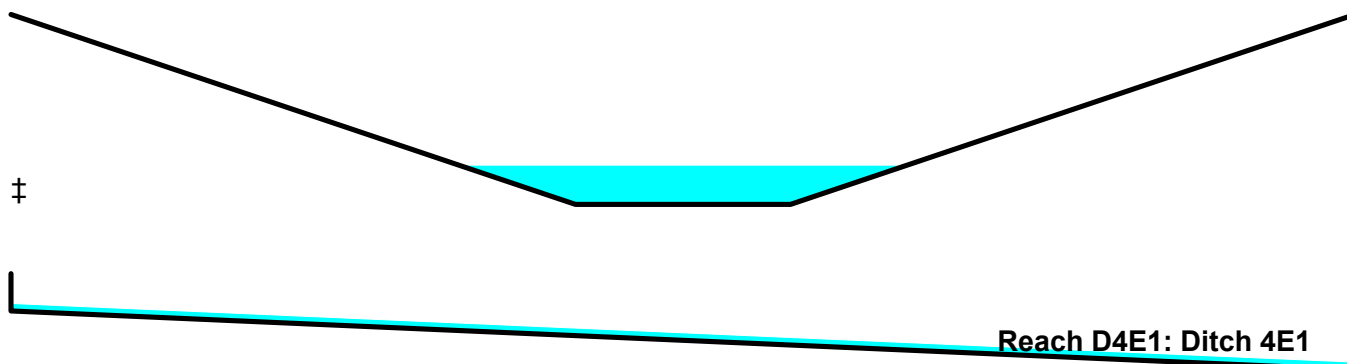
Summary for Reach D4E1: Ditch 4E1

Inflow Area = 316,246 sf, 13.77% Impervious, Inflow Depth = 1.86" for 10-yr event
 Inflow = 8.75 cfs @ 12.43 hrs, Volume= 49,007 cf
 Outflow = 7.01 cfs @ 12.68 hrs, Volume= 49,007 cf, Atten= 20%, Lag= 15.2 min
 Routed to Pond CD4E : Cross Drain 4E

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
 Max. Velocity= 1.60 fps, Min. Travel Time= 18.6 min
 Avg. Velocity= 0.50 fps, Avg. Travel Time= 60.0 min

Peak Storage= 7,819 cf @ 12.68 hrs
 Average Depth at Peak Storage= 0.71' , Surface Width= 8.27'
 Bank-Full Depth= 3.50' Flow Area= 50.8 sf, Capacity= 197.27 cfs

4.00' x 3.50' deep channel, n= 0.033 Riprap, 1-inch
 Side Slope Z-value= 3.0 ' / ' Top Width= 25.00'
 Length= 1,788.0' Slope= 0.0031 ' / '
 Inlet Invert= 685.00', Outlet Invert= 679.50'



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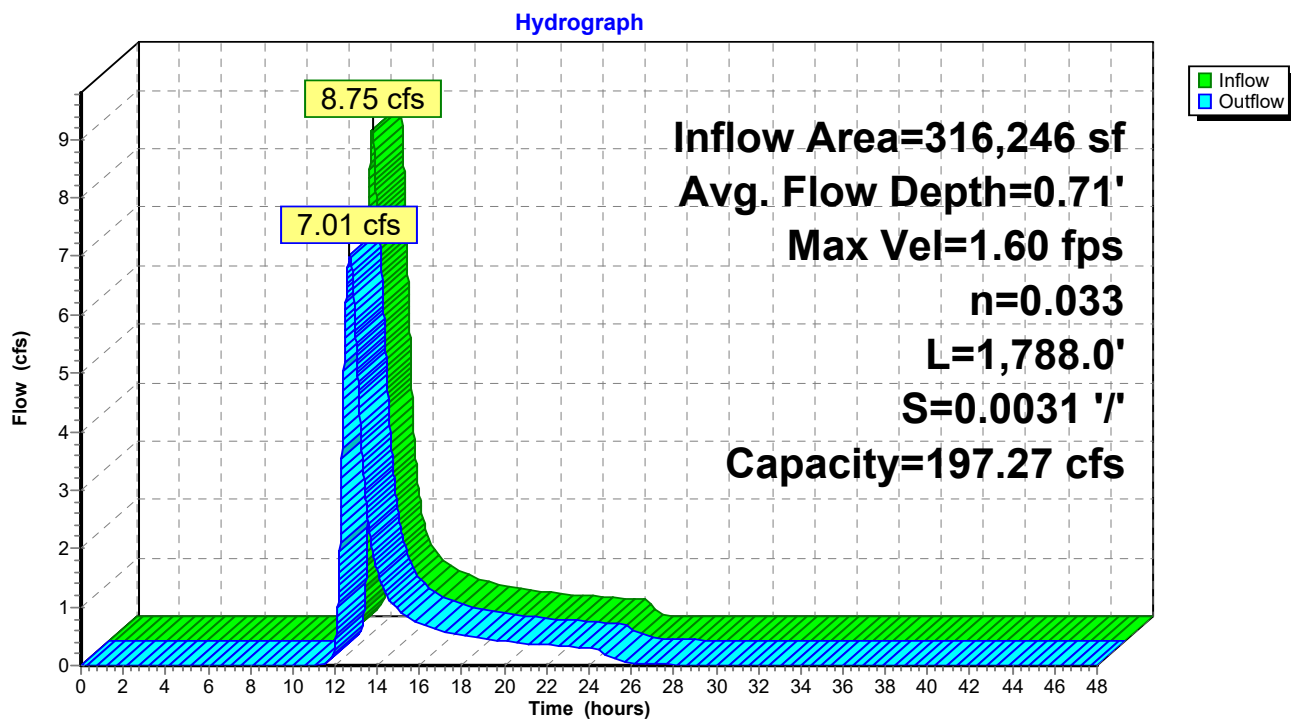
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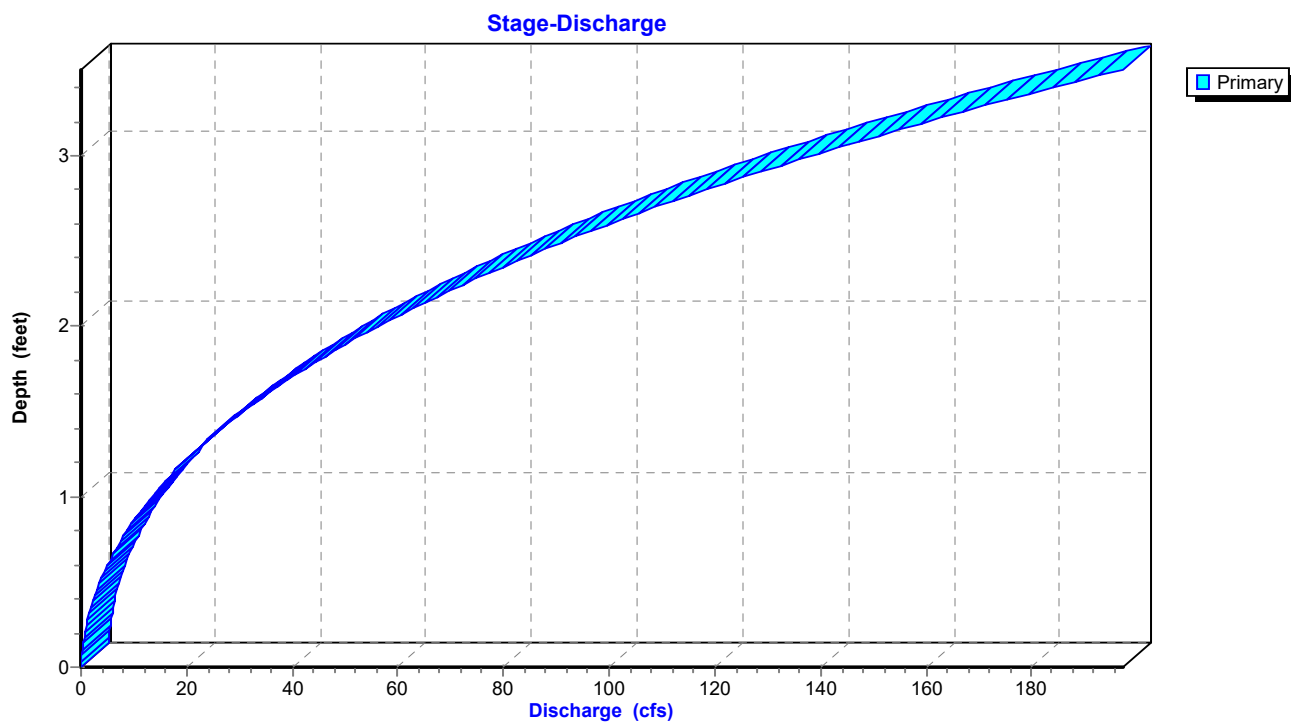
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Reach D4E1: Ditch 4E1



Reach D4E1: Ditch 4E1



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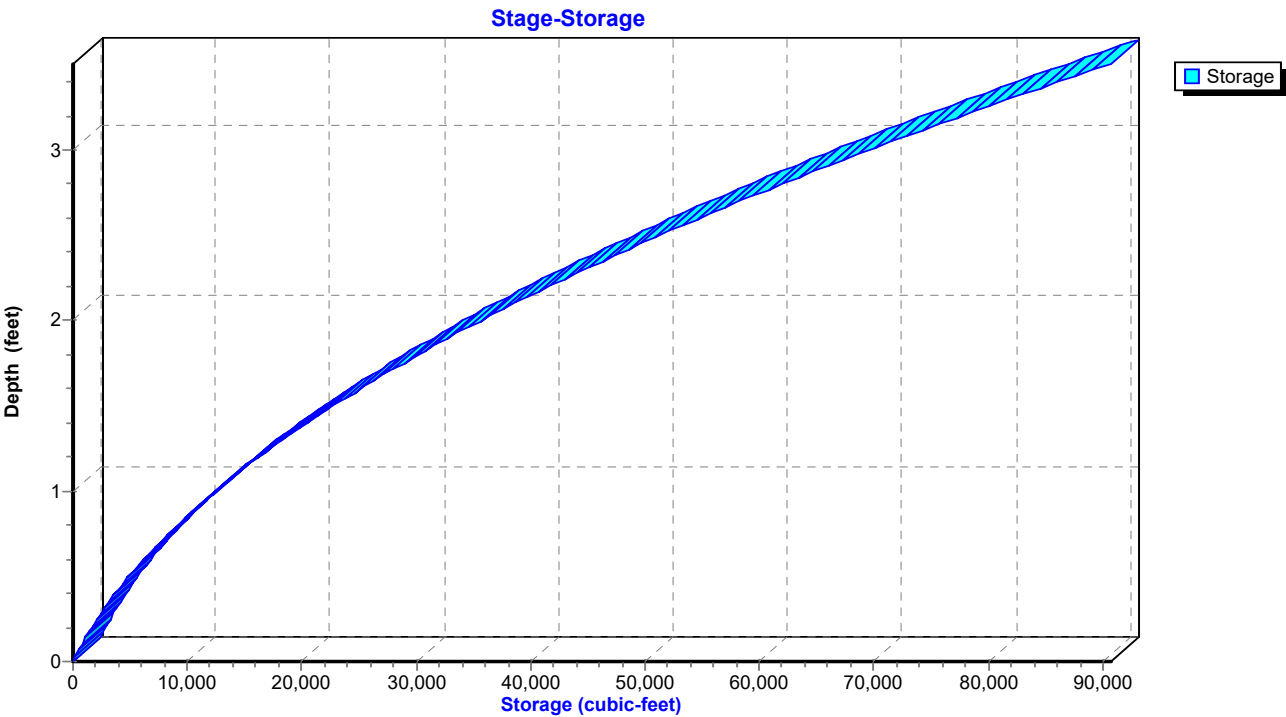
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Reach D4E1: Ditch 4E1



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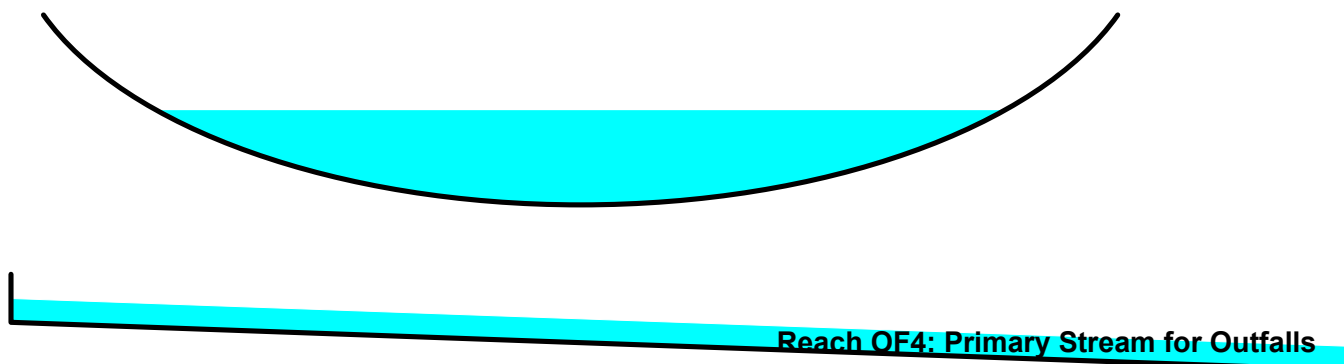
Summary for Reach OF4: Primary Stream for Outfalls

Inflow Area = 9,965,657 sf, 1.09% Impervious, Inflow Depth = 2.54" for 10-yr event
 Inflow = 144.59 cfs @ 13.50 hrs, Volume= 2,109,686 cf
 Outflow = 144.45 cfs @ 13.52 hrs, Volume= 2,109,686 cf, Atten= 0%, Lag= 0.9 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
 Max. Velocity= 4.11 fps, Min. Travel Time= 4.1 min
 Avg. Velocity = 1.54 fps, Avg. Travel Time= 10.8 min

Peak Storage= 35,136 cf @ 13.52 hrs
 Average Depth at Peak Storage= 2.49' , Surface Width= 21.17'
 Bank-Full Depth= 5.00' Flow Area= 100.0 sf, Capacity= 640.46 cfs

30.00' x 5.00' deep Parabolic Channel, n= 0.035
 Length= 1,000.0' Slope= 0.0050 '/'
 Inlet Invert= 675.00', Outlet Invert= 670.00'



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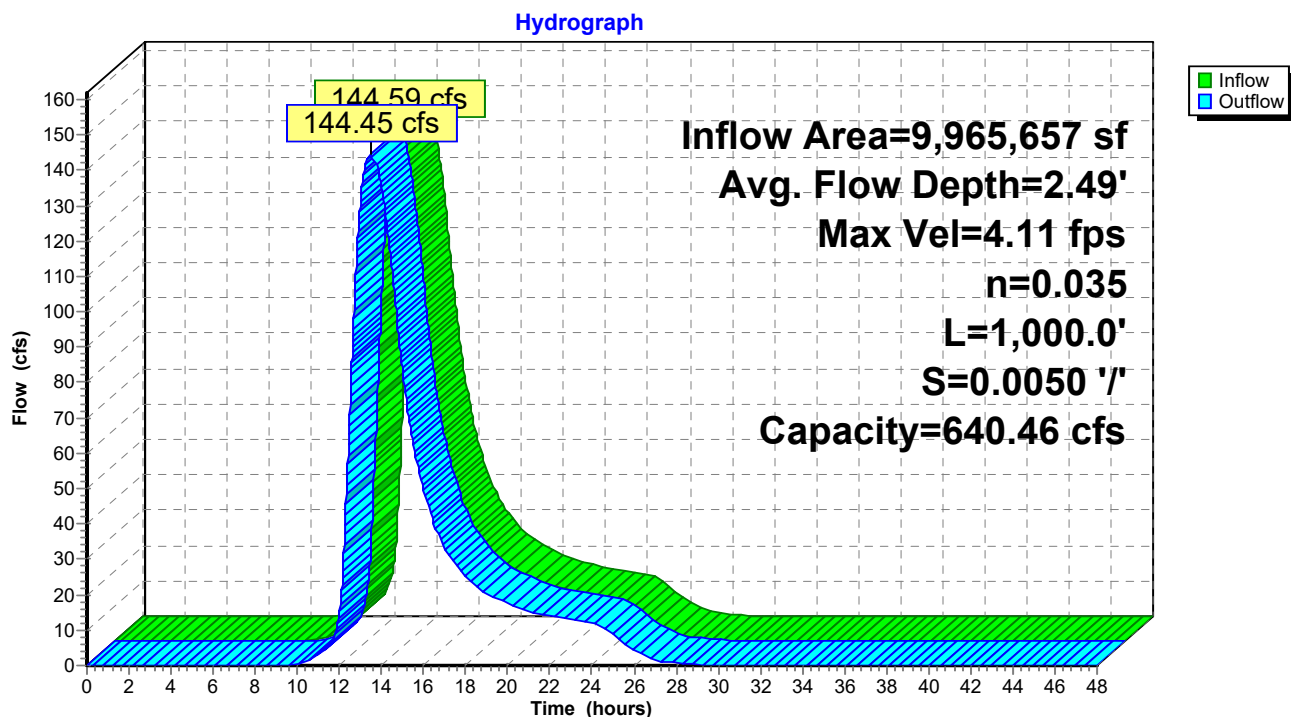
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Mt Pleasant 24-hr S1 10-yr Rainfall=5.42"

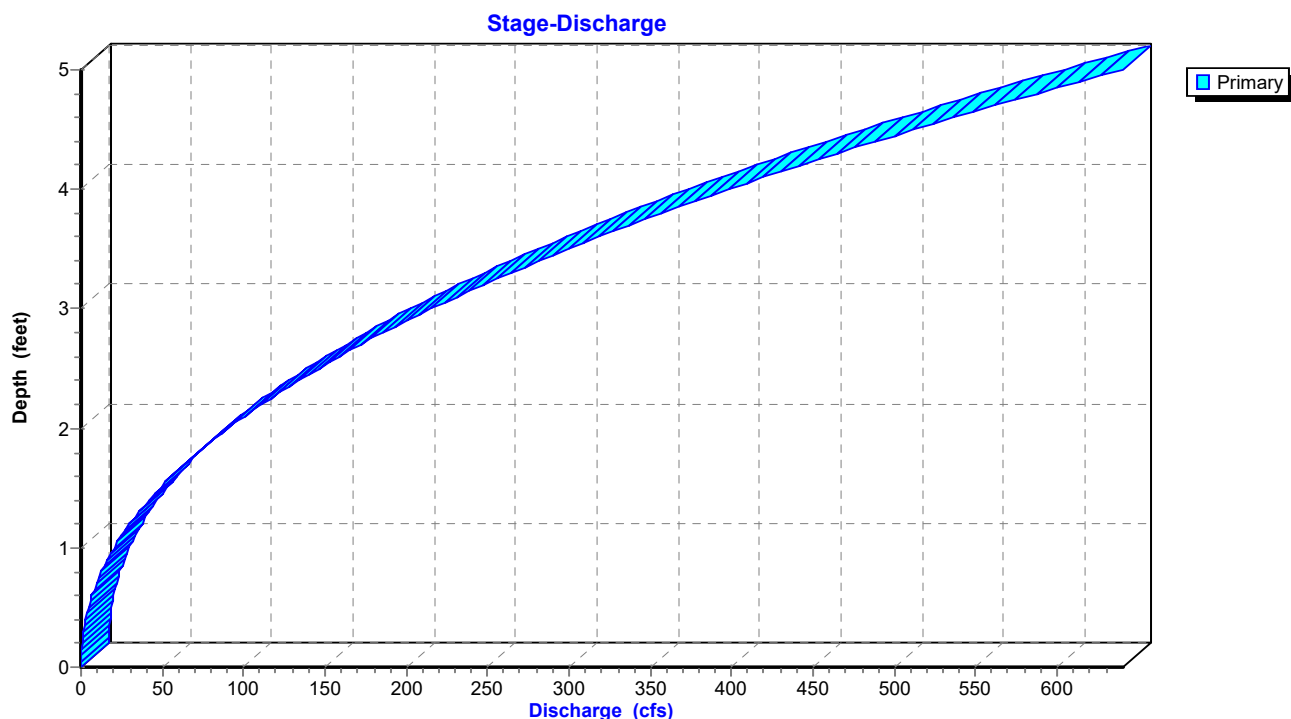
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Reach OF4: Primary Stream for Outfalls



Reach OF4: Primary Stream for Outfalls



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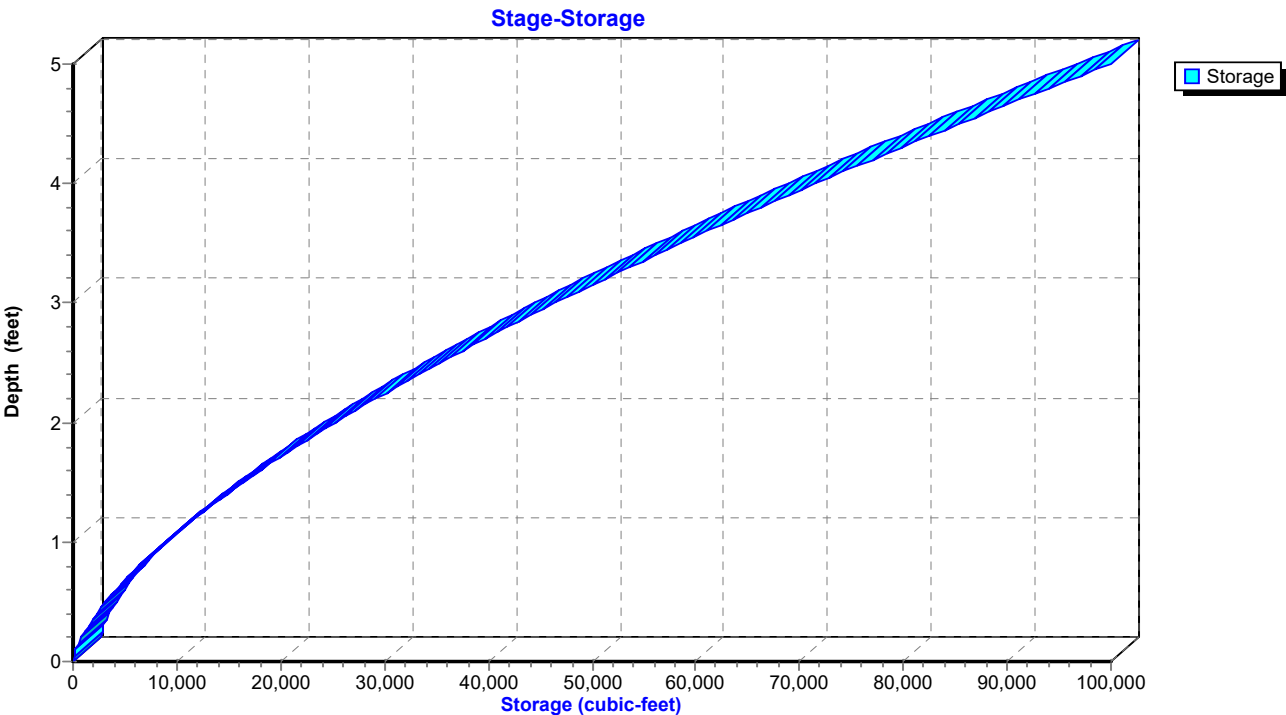
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Mt Pleasant 24-hr S1 10-yr Rainfall=5.42"

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Reach OF4: Primary Stream for Outfalls



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Mt Pleasant 24-hr S1 10-yr Rainfall=5.42"

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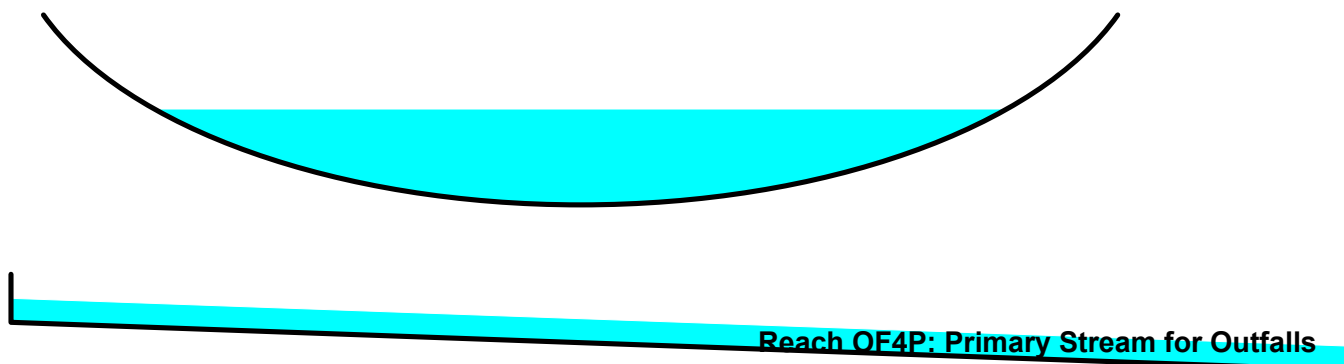
Summary for Reach OF4P: Primary Stream for Outfalls

Inflow Area = 9,969,577 sf, 2.84% Impervious, Inflow Depth = 2.68" for 10-yr event
 Inflow = 147.00 cfs @ 13.67 hrs, Volume= 2,227,554 cf
 Outflow = 146.78 cfs @ 13.70 hrs, Volume= 2,227,553 cf, Atten= 0%, Lag= 2.3 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
 Max. Velocity= 4.13 fps, Min. Travel Time= 4.0 min
 Avg. Velocity = 1.21 fps, Avg. Travel Time= 13.8 min

Peak Storage= 35,530 cf @ 13.70 hrs
 Average Depth at Peak Storage= 2.51' , Surface Width= 21.25'
 Bank-Full Depth= 5.00' Flow Area= 100.0 sf, Capacity= 640.46 cfs

30.00' x 5.00' deep Parabolic Channel, n= 0.035
 Length= 1,000.0' Slope= 0.0050 '/'
 Inlet Invert= 675.00', Outlet Invert= 670.00'



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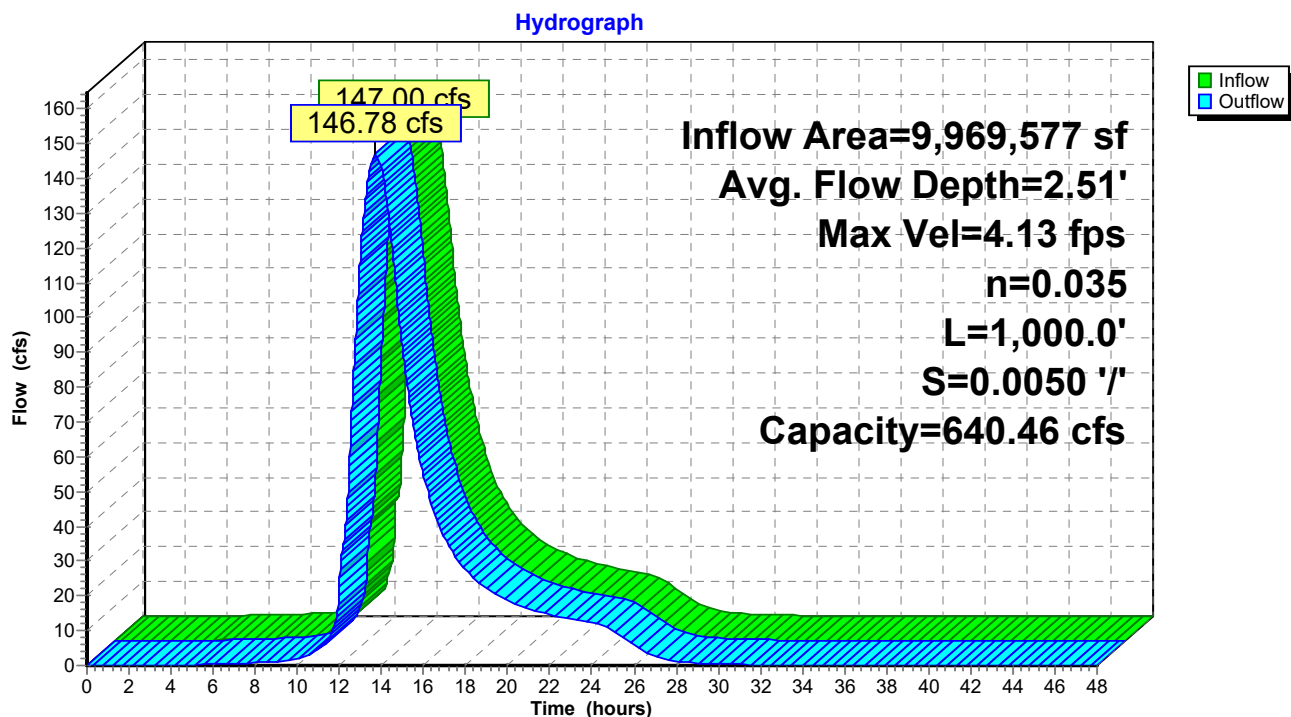
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Mt Pleasant 24-hr S1 10-yr Rainfall=5.42"

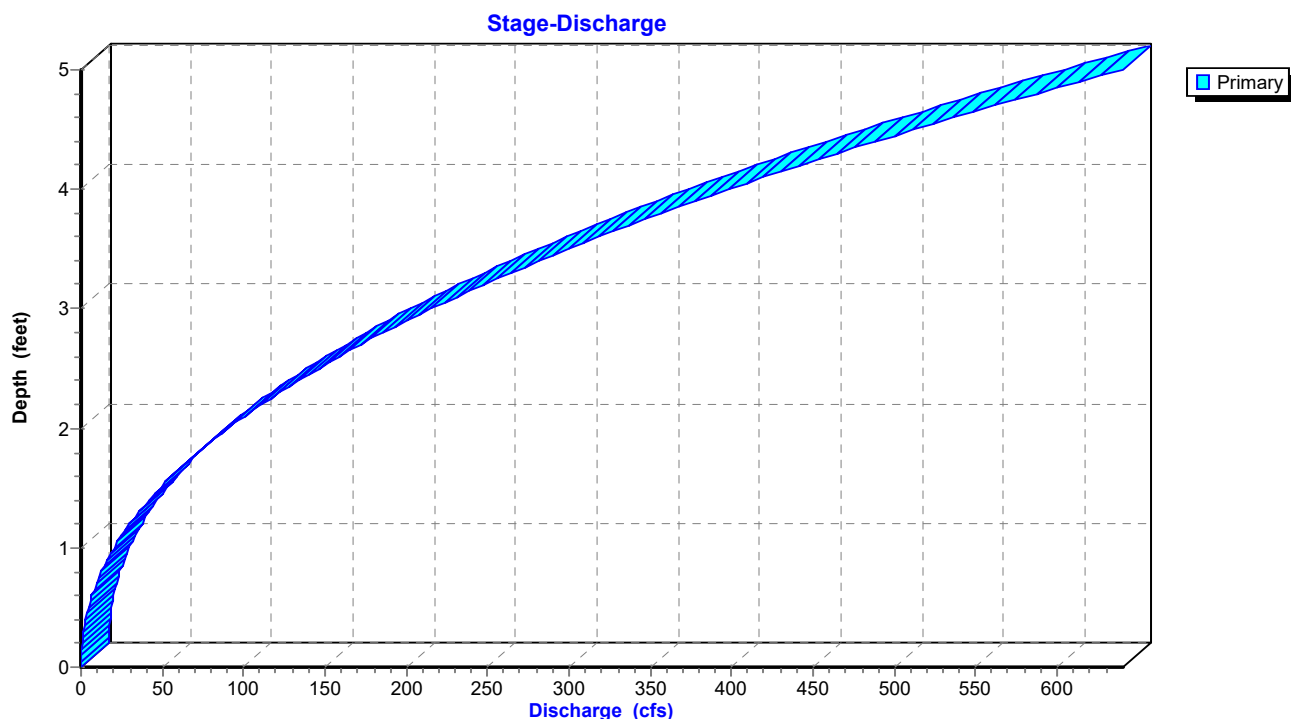
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Reach OF4P: Primary Stream for Outfalls



Reach OF4P: Primary Stream for Outfalls



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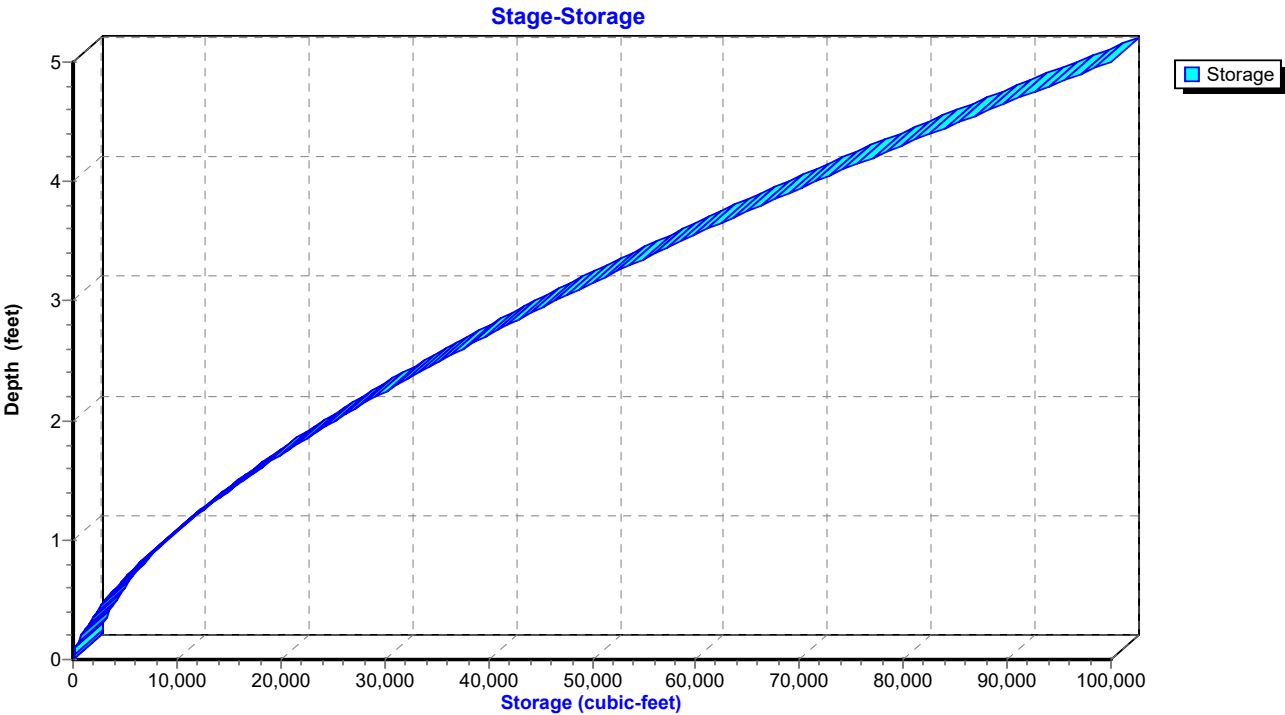
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Mt Pleasant 24-hr S1 10-yr Rainfall=5.42"

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Reach OF4P: Primary Stream for Outfalls



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Mt Pleasant 24-hr S1 10-yr Rainfall=5.42"

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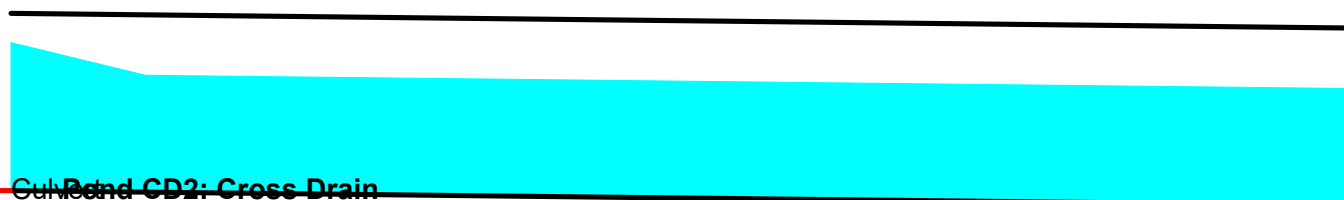
Summary for Pond CD2: Cross Drain

Inflow Area = 1,520,244 sf, 0.00% Impervious, Inflow Depth = 1.70" for 10-yr event
 Inflow = 26.69 cfs @ 12.94 hrs, Volume= 215,881 cf
 Outflow = 26.69 cfs @ 12.94 hrs, Volume= 215,881 cf, Atten= 0%, Lag= 0.0 min
 Primary = 26.69 cfs @ 12.94 hrs, Volume= 215,881 cf
 Routed to Reach OF4P : Primary Stream for Outfalls

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
 Peak Elev= 682.76' @ 12.94 hrs

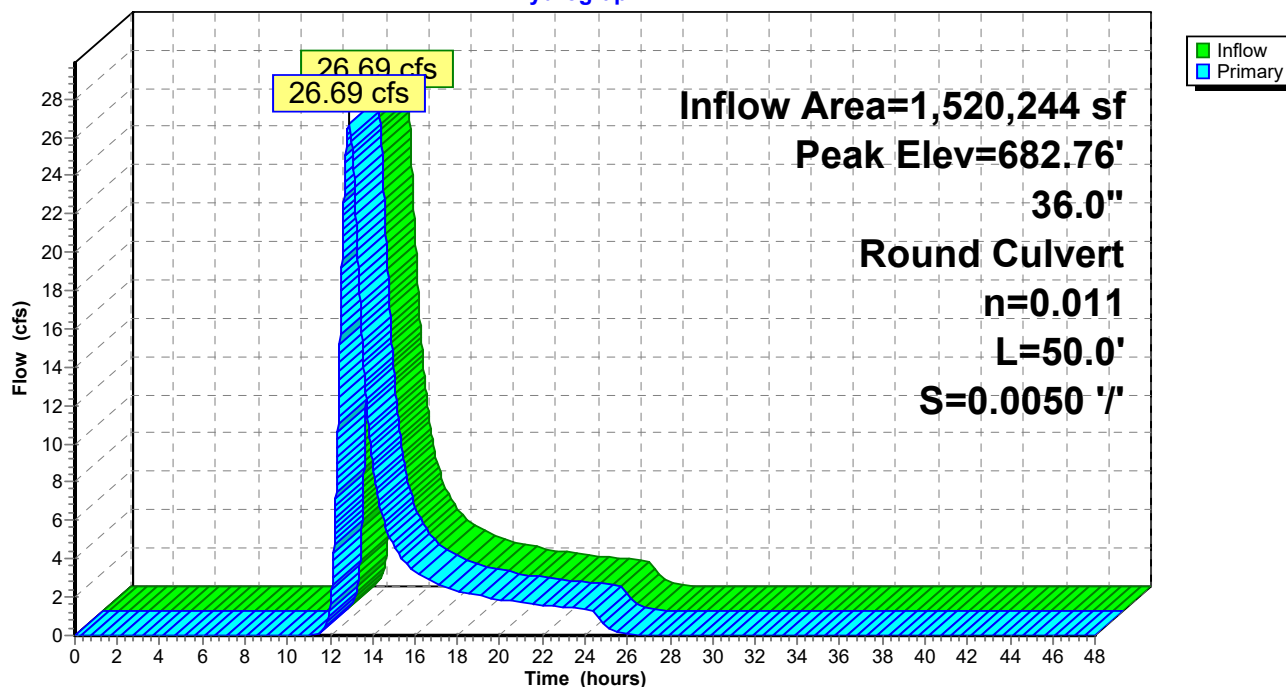
Device	Routing	Invert	Outlet Devices
#1	Primary	680.25'	36.0" Round Culvert L= 50.0' Ke= 0.500 Inlet / Outlet Invert= 680.25' / 680.00' S= 0.0050 '/' Cc= 0.900 n= 0.011 Concrete pipe, straight & clean, Flow Area= 7.07 sf

Primary OutFlow Max=26.69 cfs @ 12.94 hrs HW=682.76' TW=677.21' (Dynamic Tailwater)
 1=Culvert (Barrel Controls 26.69 cfs @ 5.73 fps)



Pond CD2: Cross Drain

Hydrograph



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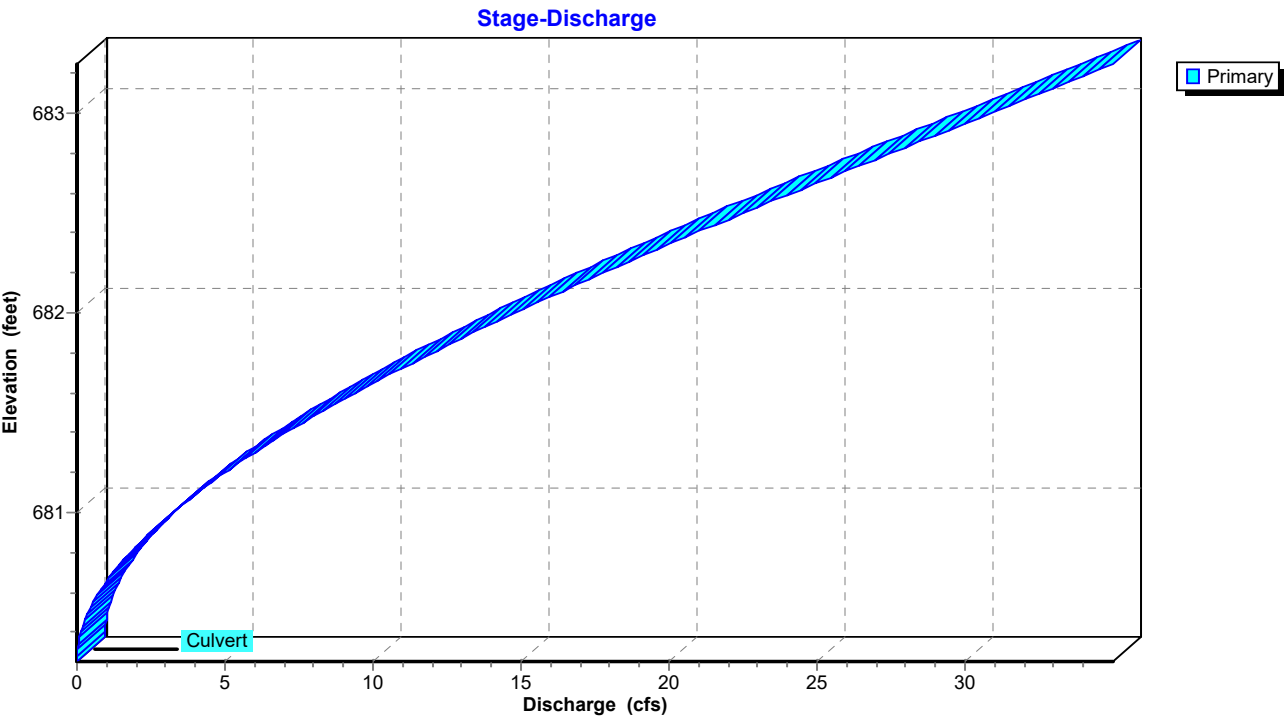
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Mt Pleasant 24-hr S1 10-yr Rainfall=5.42"

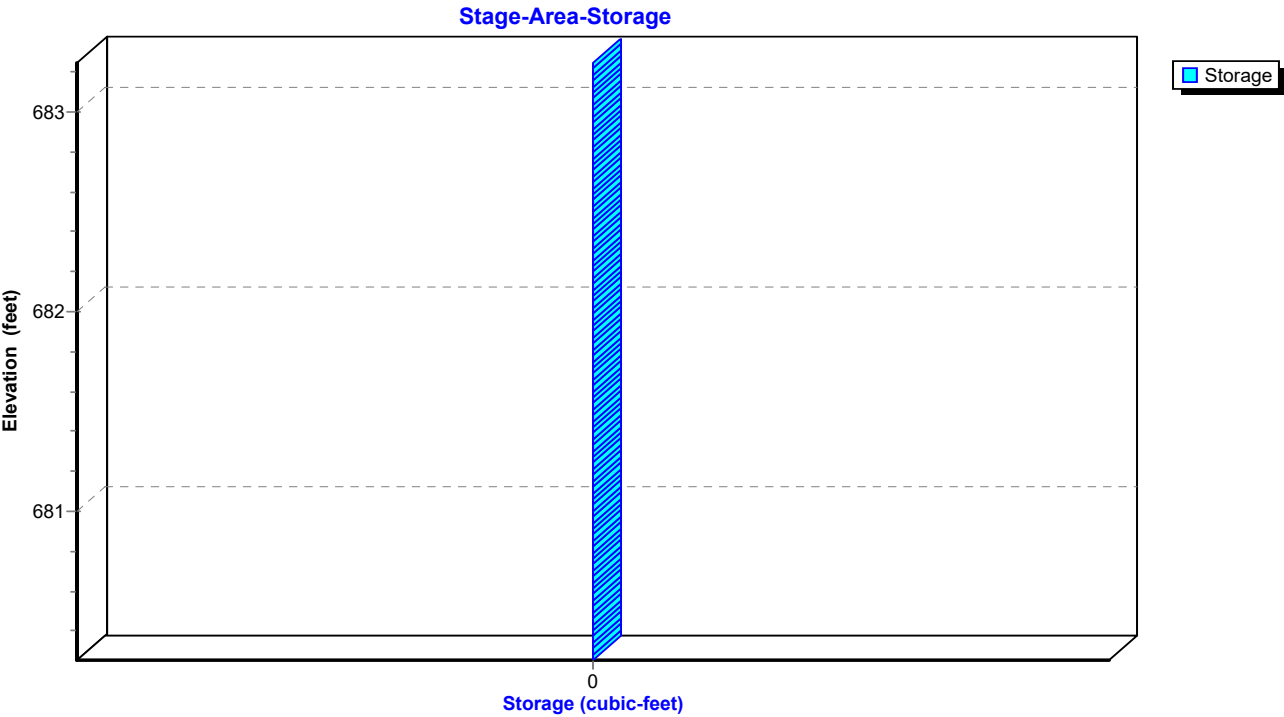
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Pond CD2: Cross Drain



Pond CD2: Cross Drain



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Mt Pleasant 24-hr S1 10-yr Rainfall=5.42"

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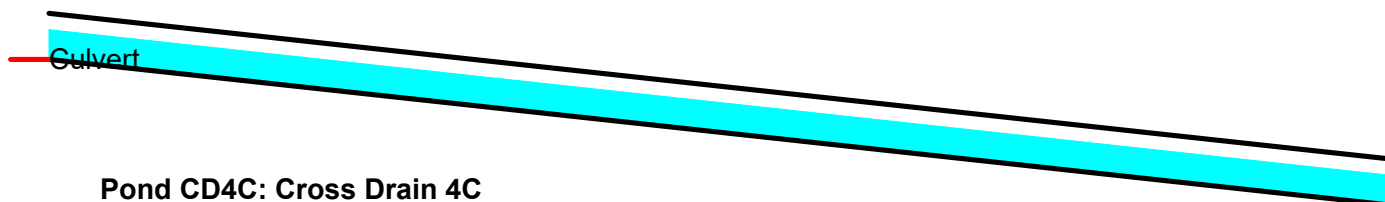
Summary for Pond CD4C: Cross Drain 4C

Inflow Area = 29,621 sf, 0.00% Impervious, Inflow Depth = 4.95" for 10-yr event
 Inflow = 4.04 cfs @ 12.05 hrs, Volume= 12,219 cf
 Outflow = 4.04 cfs @ 12.05 hrs, Volume= 12,219 cf, Atten= 0%, Lag= 0.0 min
 Primary = 4.04 cfs @ 12.05 hrs, Volume= 12,219 cf
 Routed to Pond CD4DCE : Cross Drain 4DCE

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
 Peak Elev= 684.72' @ 12.05 hrs

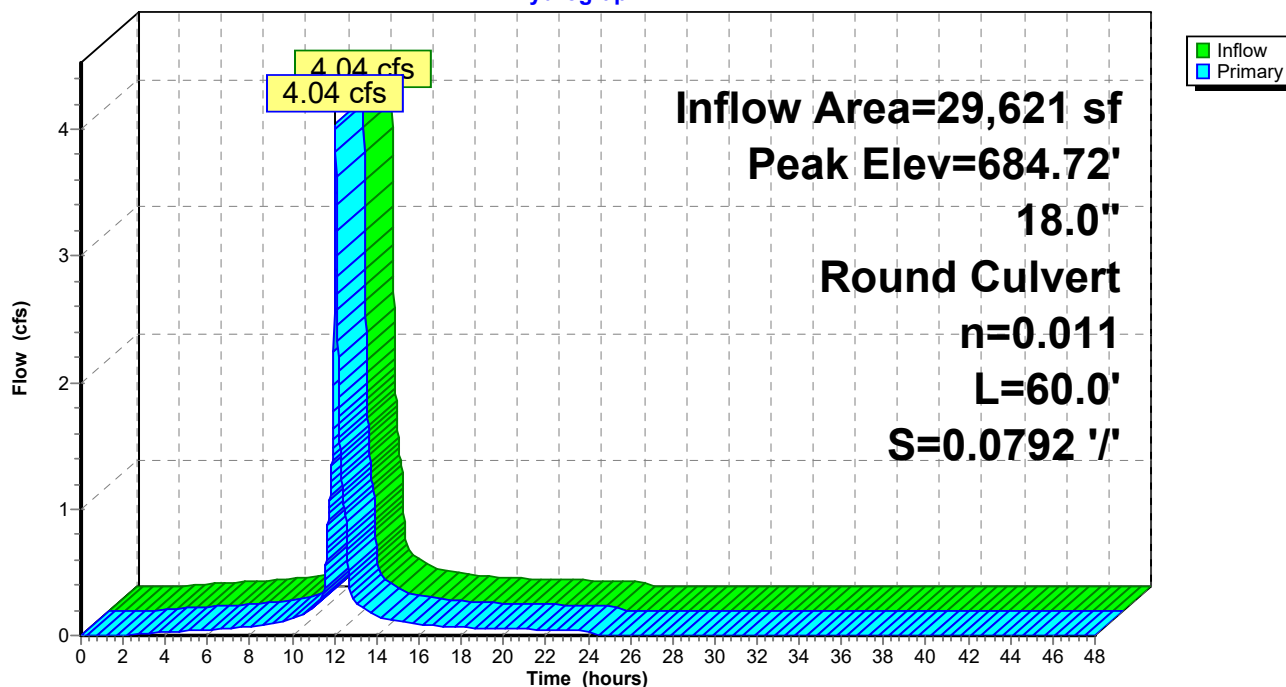
Device	Routing	Invert	Outlet Devices
#1	Primary	683.75'	18.0" Round Culvert L= 60.0' Square-edged headwall, Ke= 0.500 Inlet / Outlet Invert= 683.75' / 679.00' S= 0.0792 '/' Cc= 0.900 n= 0.011 Concrete pipe, straight & clean, Flow Area= 1.77 sf

Primary OutFlow Max=4.03 cfs @ 12.05 hrs HW=684.72' TW=679.89' (Dynamic Tailwater)
 ← **1=Culvert** (Inlet Controls 4.03 cfs @ 3.35 fps)



Pond CD4C: Cross Drain 4C

Hydrograph



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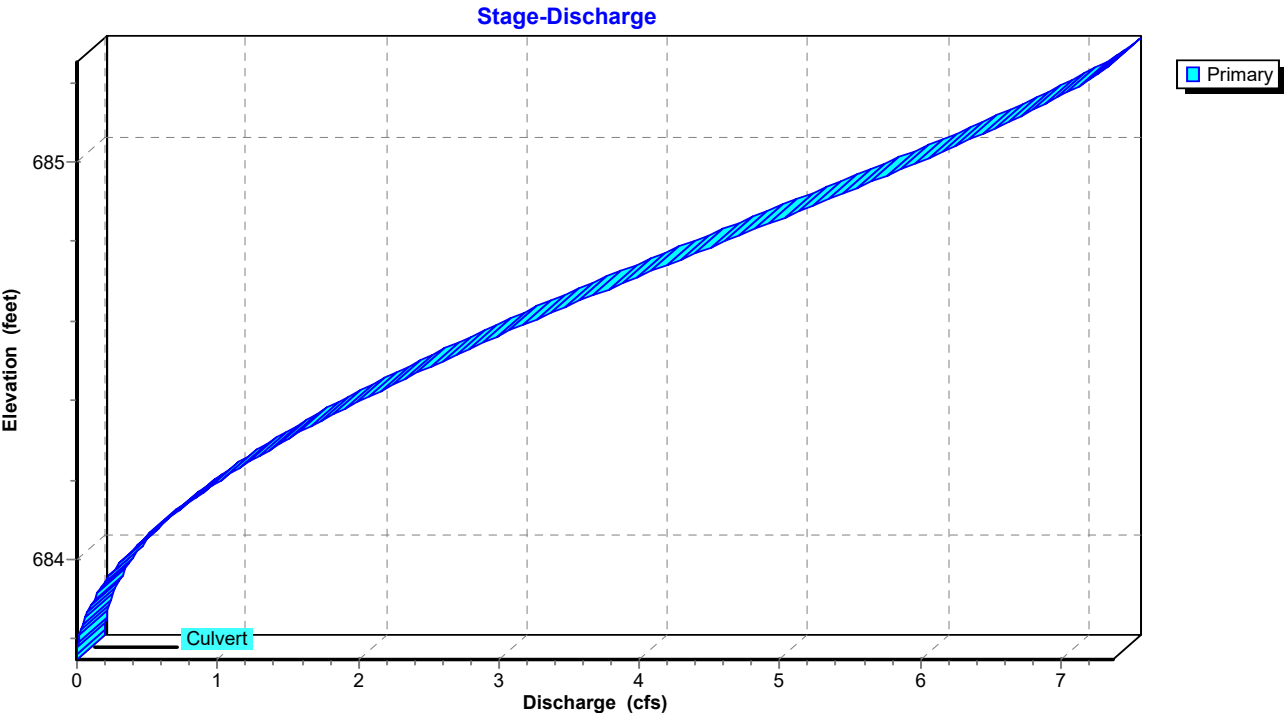
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Mt Pleasant 24-hr S1 10-yr Rainfall=5.42"

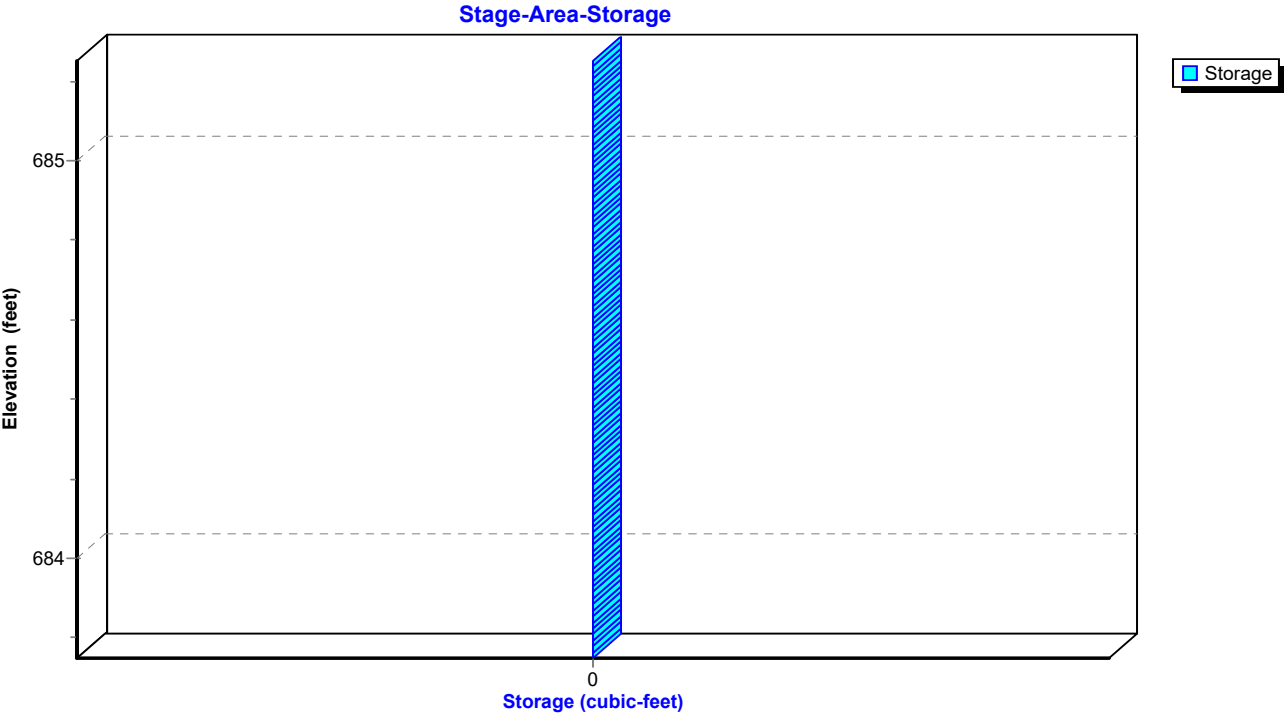
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Pond CD4C: Cross Drain 4C



Pond CD4C: Cross Drain 4C



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Mt Pleasant 24-hr S1 10-yr Rainfall=5.42"

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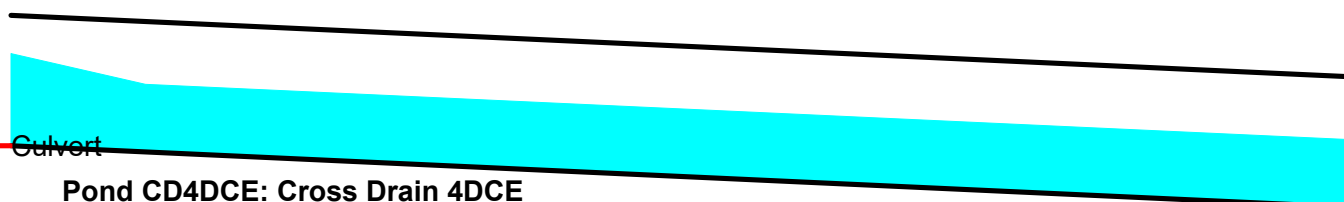
Summary for Pond CD4DCE: Cross Drain 4DCE

Inflow Area = 1,234,926 sf, 3.53% Impervious, Inflow Depth = 2.34" for 10-yr event
 Inflow = 31.24 cfs @ 12.69 hrs, Volume= 241,226 cf
 Outflow = 31.24 cfs @ 12.69 hrs, Volume= 241,226 cf, Atten= 0%, Lag= 0.0 min
 Primary = 31.24 cfs @ 12.69 hrs, Volume= 241,226 cf
 Routed to Pond POND1P : PROP POND

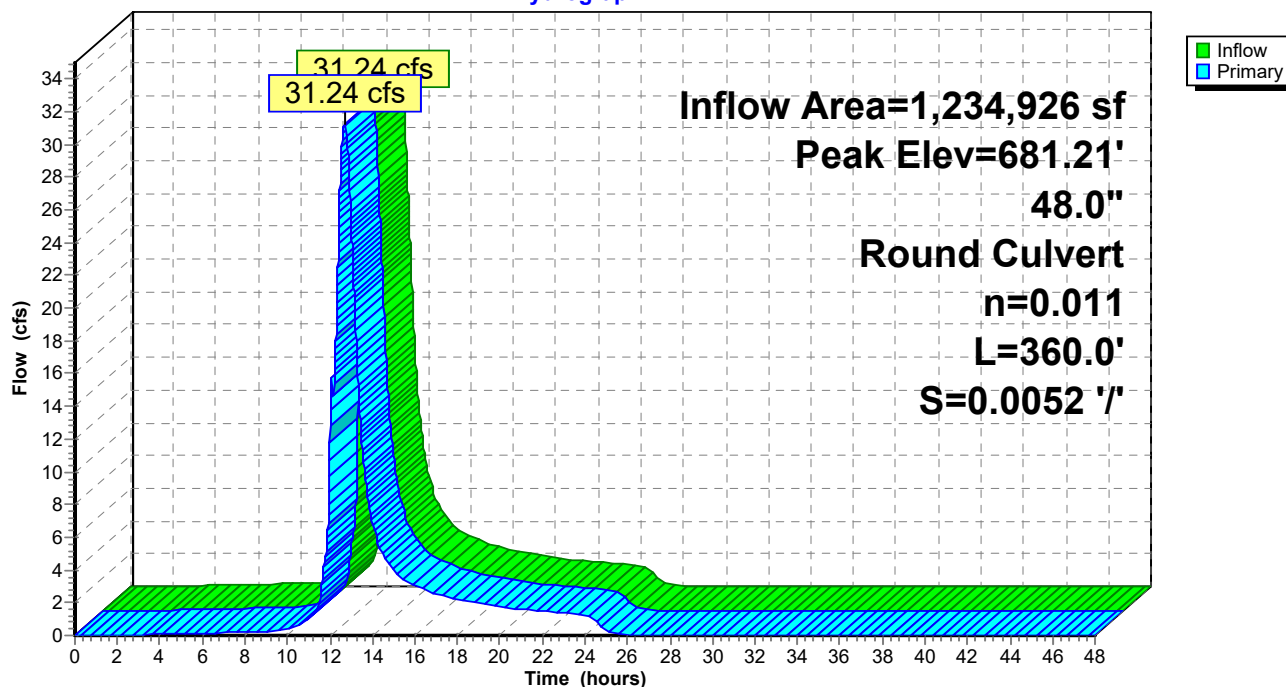
Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
 Peak Elev= 681.21' @ 12.85 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	678.39'	48.0" Round Culvert L= 360.0' Ke= 0.500 Inlet / Outlet Invert= 678.39' / 676.50' S= 0.0052 '/' Cc= 0.900 n= 0.011 Concrete pipe, straight & clean, Flow Area= 12.57 sf

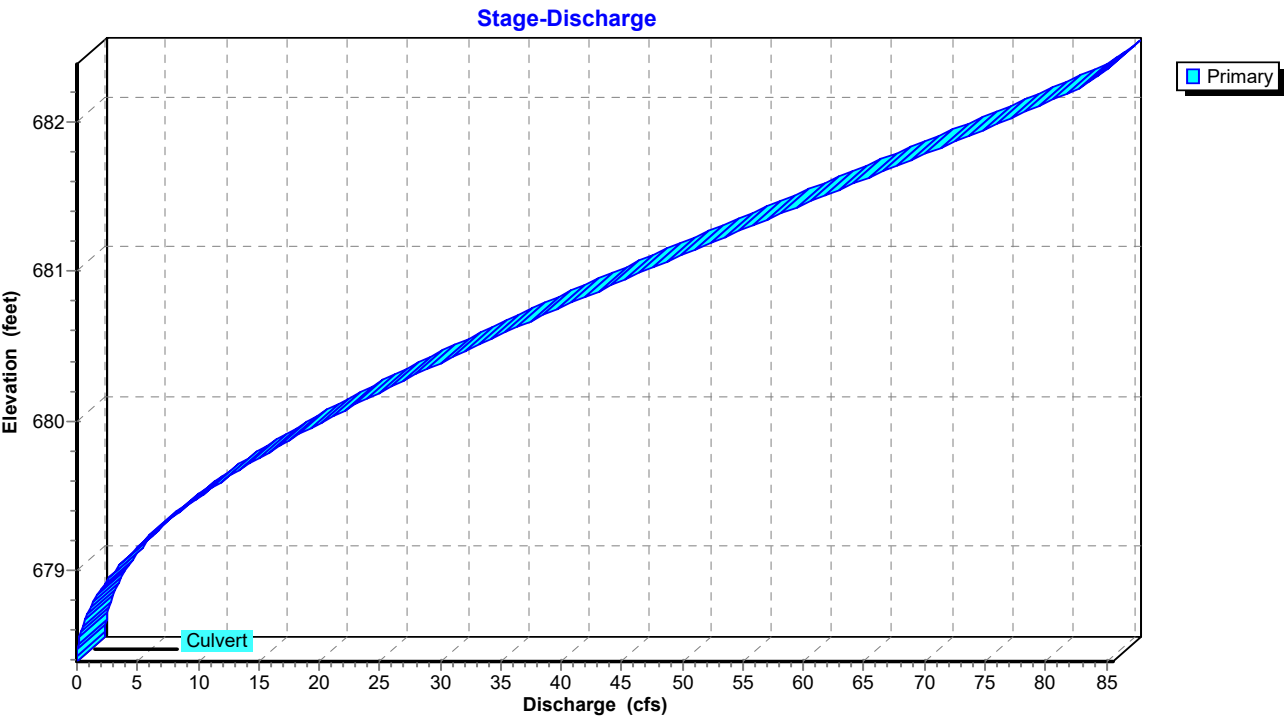
Primary OutFlow Max=30.92 cfs @ 12.69 hrs HW=681.13' TW=680.17' (Dynamic Tailwater)
 ↑ **1=Culvert** (Outlet Controls 30.92 cfs @ 4.75 fps)

**Pond CD4DCE: Cross Drain 4DCE**

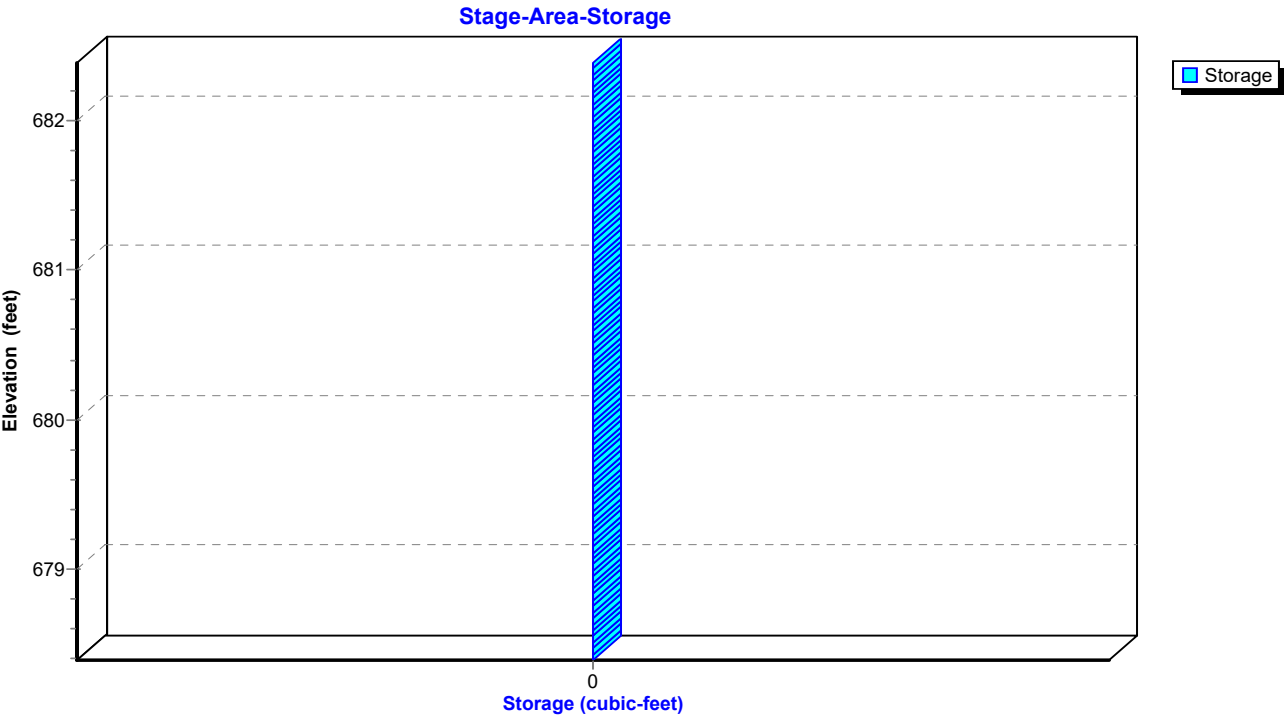
Hydrograph



Pond CD4DCE: Cross Drain 4DCE



Pond CD4DCE: Cross Drain 4DCE



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Mt Pleasant 24-hr S1 10-yr Rainfall=5.42"

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Summary for Pond CD4E: Cross Drain 4E

Inflow Area = 1,151,726 sf, 3.78% Impervious, Inflow Depth = 2.16" for 10-yr event
 Inflow = 30.88 cfs @ 12.64 hrs, Volume= 206,907 cf
 Outflow = 30.12 cfs @ 12.71 hrs, Volume= 206,905 cf, Atten= 2%, Lag= 3.8 min
 Primary = 30.12 cfs @ 12.71 hrs, Volume= 206,905 cf
 Routed to Pond CD4DCE : Cross Drain 4DCE

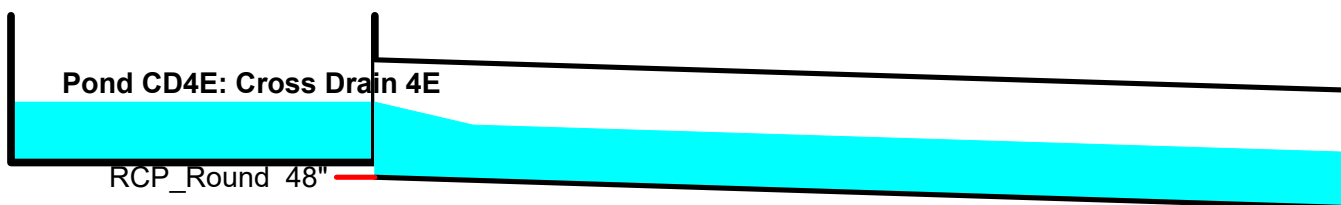
Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
 Peak Elev= 682.06' @ 12.77 hrs Surf.Area= 4,174 sf Storage= 3,926 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
 Center-of-Mass det. time= 1.2 min (894.7 - 893.5)

Volume	Invert	Avail.Storage	Storage Description
#1	680.00'	33,779 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
680.00	274	0	0
681.00	1,562	918	918
682.00	3,975	2,769	3,687
683.00	7,355	5,665	9,352
684.00	12,090	9,723	19,074
685.00	17,320	14,705	33,779

Device	Routing	Invert	Outlet Devices
#1	Primary	679.50'	48.0" Round RCP_Round 48" L= 200.0' Ke= 0.500 Inlet / Outlet Invert= 679.50' / 678.46' S= 0.0052 ' / Cc= 0.900 n= 0.011 Concrete pipe, straight & clean, Flow Area= 12.57 sf

Primary OutFlow Max=29.97 cfs @ 12.71 hrs HW=682.04' TW=681.15' (Dynamic Tailwater)
 ↑1=RCP_Round 48" (Outlet Controls 29.97 cfs @ 5.06 fps)



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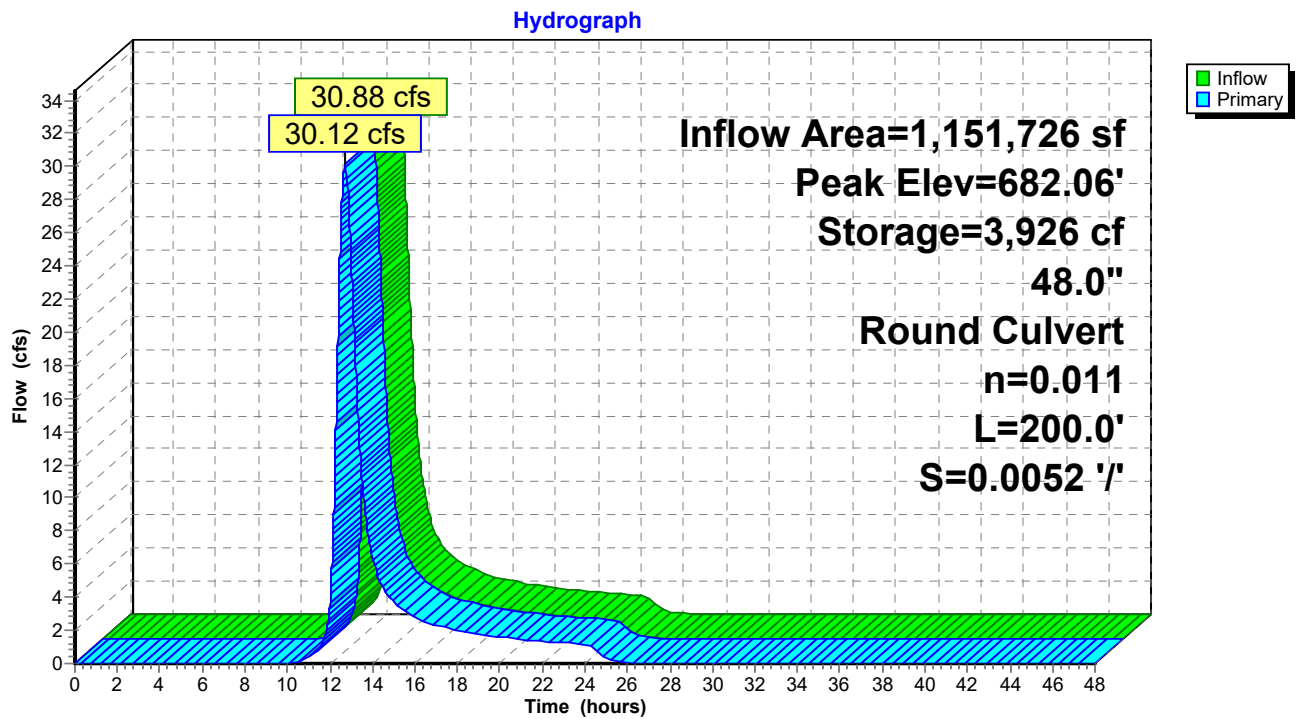
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Mt Pleasant 24-hr S1 10-yr Rainfall=5.42"

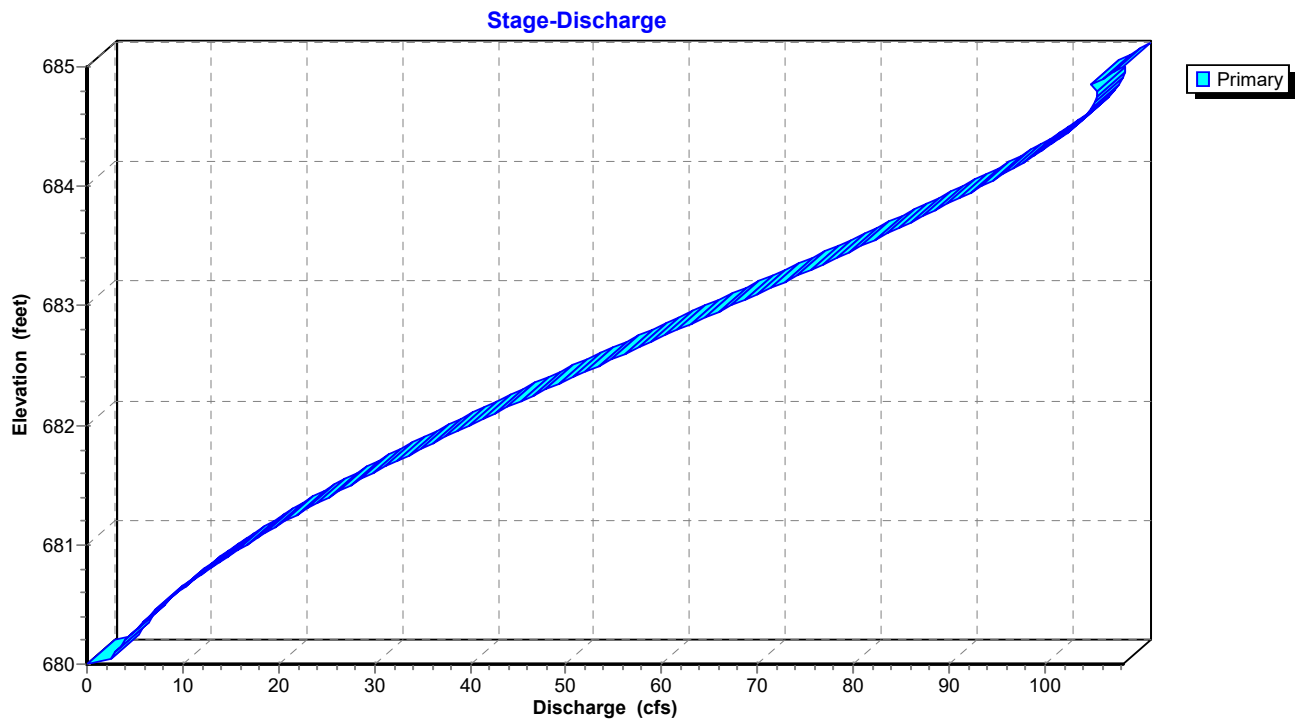
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Pond CD4E: Cross Drain 4E



Pond CD4E: Cross Drain 4E



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Mt Pleasant 24-hr S1 10-yr Rainfall=5.42"

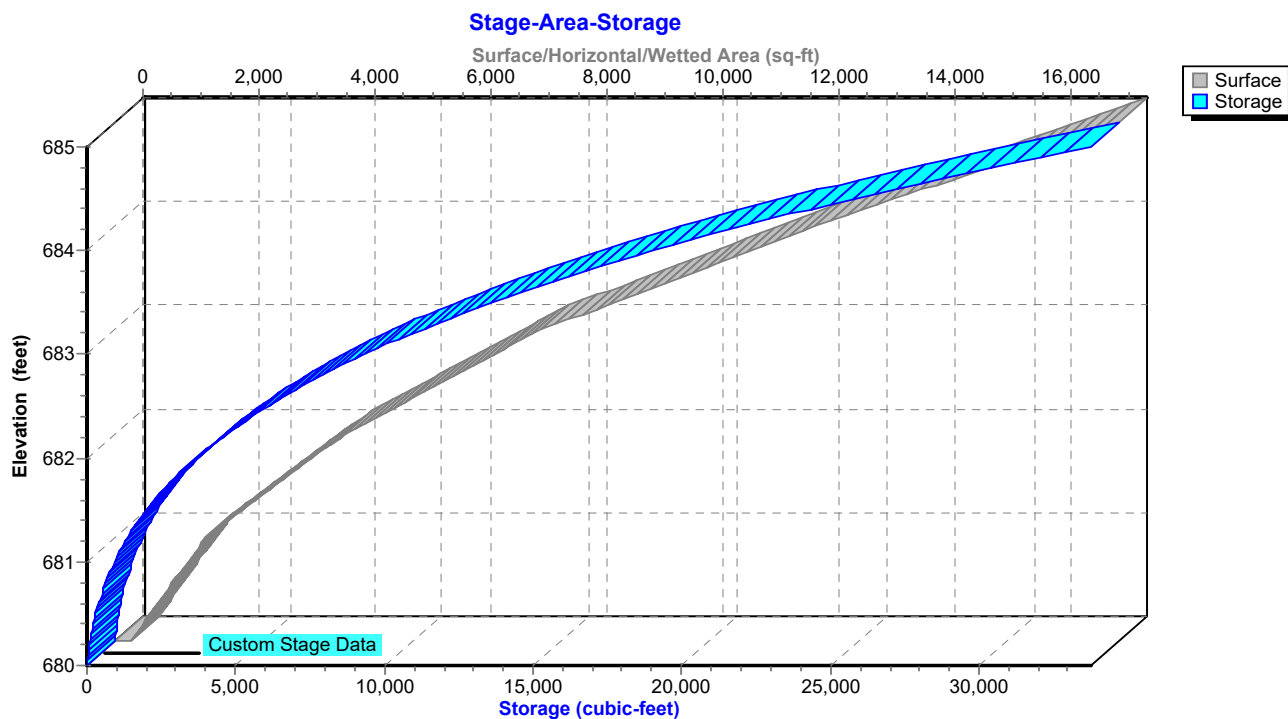
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Pond CD4E: Cross Drain 4E



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Summary for Pond POND1P: PROP POND

Inflow Area = 1,772,021 sf, 9.83% Impervious, Inflow Depth = 3.13" for 10-yr event
 Inflow = 63.88 cfs @ 12.51 hrs, Volume= 462,785 cf
 Outflow = 30.25 cfs @ 13.13 hrs, Volume= 462,779 cf, Atten= 53%, Lag= 37.6 min
 Primary = 30.25 cfs @ 13.13 hrs, Volume= 462,779 cf
 Routed to Reach OF4P : Primary Stream for Outfalls

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
 Peak Elev= 680.58' @ 13.15 hrs Surf.Area= 68,507 sf Storage= 159,375 cf

Plug-Flow detention time= 113.8 min calculated for 462,682 cf (100% of inflow)
 Center-of-Mass det. time= 113.9 min (947.1 - 833.2)

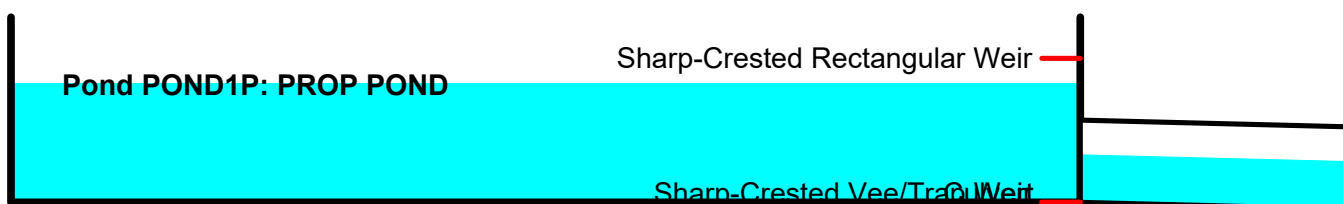
Volume	Invert	Avail.Storage	Storage Description
#1	676.25'	386,863 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
676.25	505	0	0
676.50	14,826	1,916	1,916
677.00	24,194	9,755	11,671
678.00	31,409	27,802	39,473
679.00	39,965	35,687	75,160
680.00	56,082	48,024	123,183
681.00	77,468	66,775	189,958
682.00	98,642	88,055	278,013
683.00	119,057	108,850	386,863

Device	Routing	Invert	Outlet Devices
#1	Primary	676.25'	36.0" Round Culvert L= 50.0' Ke= 0.600 Inlet / Outlet Invert= 676.25' / 676.00' S= 0.0050 '/' Cc= 0.900 n= 0.011, Flow Area= 7.07 sf
#2	Device 1	676.25'	20.0 deg x 0.4' long Sharp-Crested Vee/Trap Weir Cv= 2.69 (C= 3.36)
#3	Device 1	681.50'	16.0' long Sharp-Crested Rectangular Weir 2 End Contraction(s)

Primary OutFlow Max=30.24 cfs @ 13.13 hrs HW=680.58' TW=677.36' (Dynamic Tailwater)

1=Culvert (Passes 30.24 cfs of 52.30 cfs potential flow)
 2=Sharp-Crested Vee/Trap Weir (Weir Controls 30.24 cfs @ 6.00 fps)
 3=Sharp-Crested Rectangular Weir (Controls 0.00 cfs)



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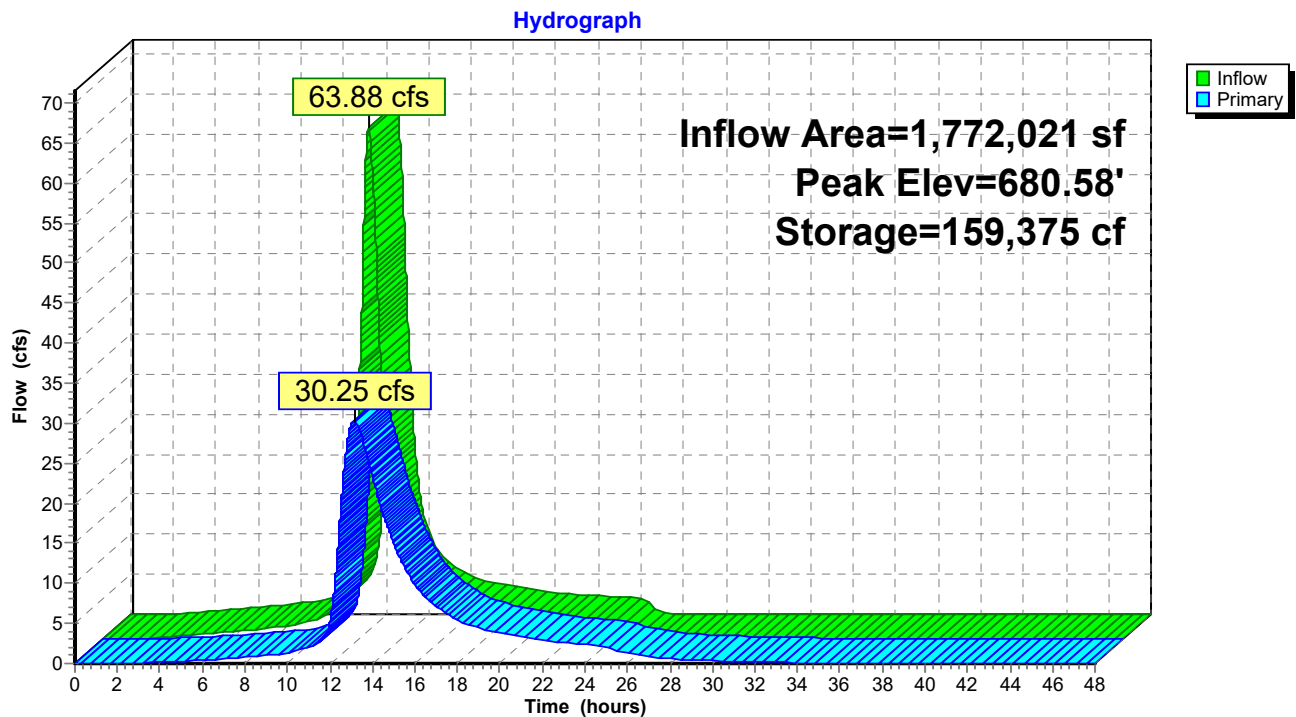
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Mt Pleasant 24-hr S1 10-yr Rainfall=5.42"

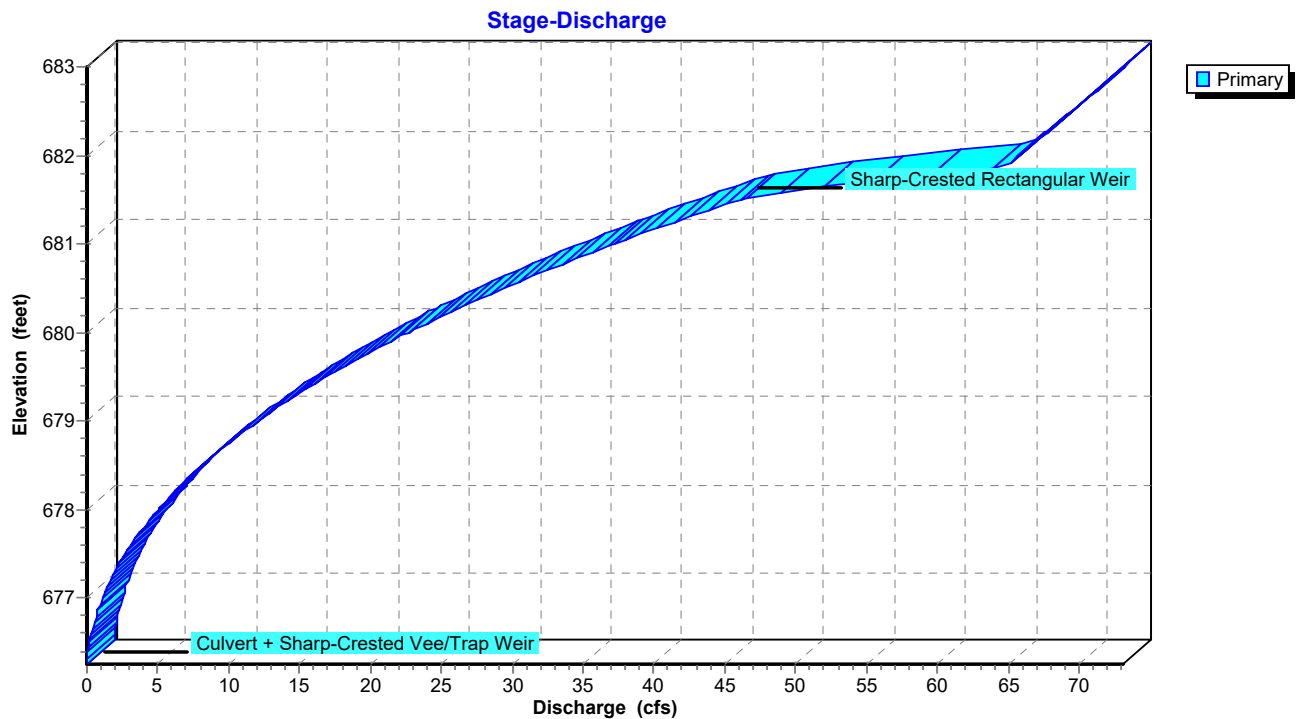
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Pond POND1P: PROP POND



Pond POND1P: PROP POND



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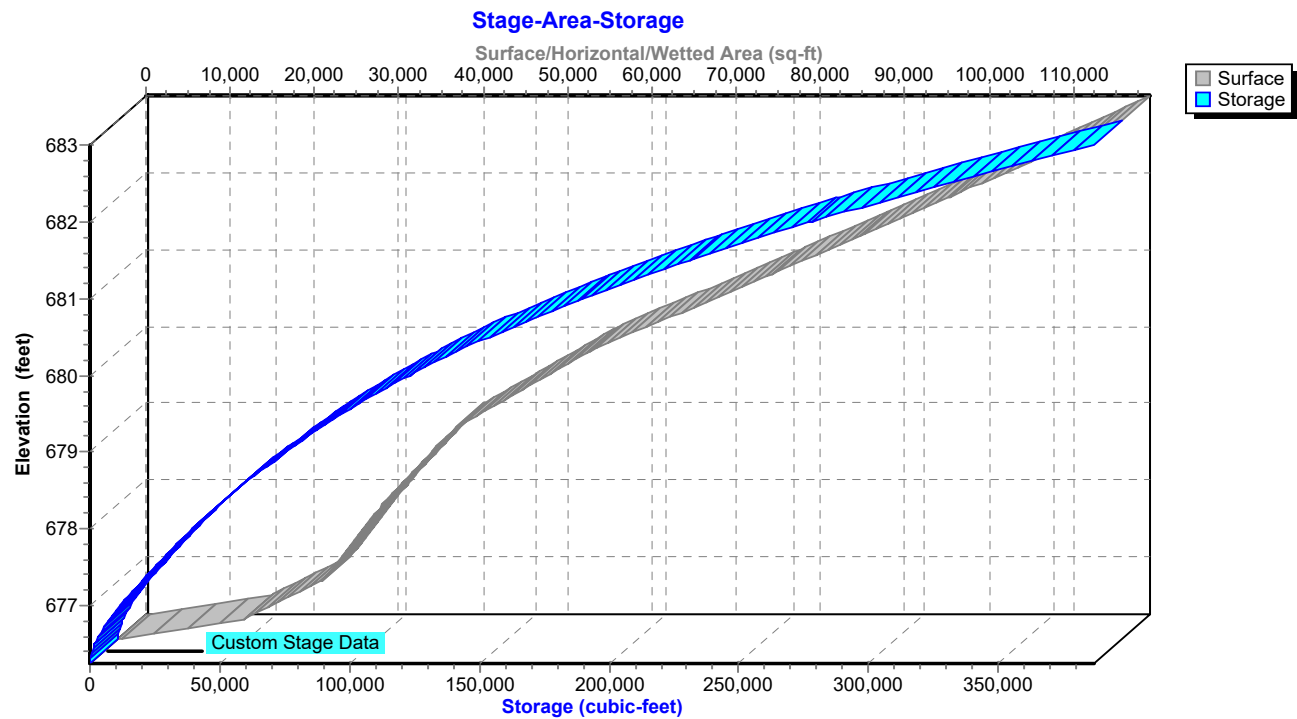
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Mt Pleasant 24-hr S1 10-yr Rainfall=5.42"

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Pond POND1P: PROP POND



TrueRail 040226*Mt Pleasant 24-hr S1 25-yr Rainfall=6.34"*

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Time span=0.00-48.00 hrs, dt=0.01 hrs, 4801 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

Subcatchment DA 1: BASIN 1 PRE Runoff Area=143.000 ac 1.75% Impervious Runoff Depth=3.57"
 Flow Length=5,750' Tc=143.0 min CN=75 Runoff=141.35 cfs 1,855,048 cf

Subcatchment DA 2: BASIN 2 PRE Runoff Area=34.900 ac 0.00% Impervious Runoff Depth=2.33"
 Flow Length=2,150' Slope=0.0150 '/' Tc=62.3 min CN=62 Runoff=38.11 cfs 294,710 cf

Subcatchment DA 3: BASIN 3 PRE Runoff Area=9.380 ac 0.00% Impervious Runoff Depth=3.37"
 Flow Length=838' Slope=0.0200 '/' Tc=25.9 min CN=73 Runoff=23.74 cfs 114,841 cf

Subcatchment DA 4: BASIN 4 PRE Runoff Area=41.500 ac 0.00% Impervious Runoff Depth=3.08"
 Flow Length=2,468' Tc=68.1 min CN=70 Runoff=58.56 cfs 463,594 cf

Subcatchment DA1P: BASIN 1 PROPOSED Runoff Area=143.000 ac 1.75% Impervious Runoff Depth=3.57"
 Flow Length=5,750' Tc=143.0 min CN=75 Runoff=141.35 cfs 1,855,048 cf

Subcatchment DA2P: BASIN 2 PROPOSED Runoff Area=34.900 ac 0.00% Impervious Runoff Depth=2.33"
 Flow Length=2,150' Slope=0.0150 '/' Tc=62.3 min CN=62 Runoff=38.11 cfs 294,710 cf

Subcatchment DA3P: BASIN 3 PRE Runoff Area=4.760 ac 0.00% Impervious Runoff Depth=3.98"
 Tc=5.0 min CN=79 Runoff=26.19 cfs 68,851 cf

Subcatchment DA4A: BASIN 4A PROPOSED Runoff Area=5.530 ac 0.00% Impervious Runoff Depth=2.88"
 Flow Length=945' Tc=40.9 min CN=68 Runoff=9.57 cfs 57,904 cf

Subcatchment DA4B: BASIN 4B Runoff Area=12.330 ac 24.33% Impervious Runoff Depth=5.87"
 Flow Length=996' Tc=33.8 min CN=96 Runoff=44.12 cfs 262,551 cf

Subcatchment DA4C: BASIN 4C PROPOSED Runoff Area=0.680 ac 0.00% Impervious Runoff Depth=5.87"
 Tc=5.0 min CN=96 Runoff=5.00 cfs 14,480 cf

Subcatchment DA4D: BASIN 4D PROPOSED Runoff Area=1.230 ac 0.00% Impervious Runoff Depth=5.87"
 Tc=5.0 min CN=96 Runoff=9.04 cfs 26,191 cf

Subcatchment DA4E1: BASIN 4E1 Runoff Area=7.260 ac 13.77% Impervious Runoff Depth=2.51"
 Flow Length=640' Tc=31.5 min CN=64 Runoff=12.20 cfs 66,118 cf

Subcatchment DA4E2: BASIN 4E2 Runoff Area=19.180 ac 0.00% Impervious Runoff Depth=2.98"
 Flow Length=1,313' Tc=46.8 min CN=69 Runoff=32.23 cfs 207,516 cf

Reach D4C: Ditch 4C Avg. Flow Depth=0.66' Max Vel=2.55 fps Inflow=5.00 cfs 14,480 cf
 n=0.033 L=313.0' S=0.0104 '/' Capacity=27.19 cfs Outflow=4.71 cfs 14,480 cf

Reach D4D: Ditch 4D Avg. Flow Depth=0.81' Max Vel=3.43 fps Inflow=9.04 cfs 26,191 cf
 n=0.033 L=337.0' S=0.0148 '/' Capacity=32.50 cfs Outflow=8.67 cfs 26,191 cf

Reach D4E1: Ditch 4E1 Avg. Flow Depth=0.86' Max Vel=1.78 fps Inflow=12.20 cfs 66,118 cf
 n=0.033 L=1,788.0' S=0.0031 '/' Capacity=197.27 cfs Outflow=10.11 cfs 66,118 cf

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Reach OF4: Primary Stream for Avg. Flow Depth=2.84' Max Vel=4.48 fps Inflow=191.93 cfs 2,728,193 cf
 n=0.035 L=1,000.0' S=0.0050 '/' Capacity=640.46 cfs Outflow=191.64 cfs 2,728,193 cf

Reach OF4P: Primary Stream for Avg. Flow Depth=2.84' Max Vel=4.48 fps Inflow=192.43 cfs 2,853,359 cf
 n=0.035 L=1,000.0' S=0.0050 '/' Capacity=640.46 cfs Outflow=192.23 cfs 2,853,357 cf

Pond CD2: Cross Drain Peak Elev=683.44' Inflow=38.11 cfs 294,710 cf
 36.0" Round Culvert n=0.011 L=50.0' S=0.0050 '/' Outflow=38.11 cfs 294,710 cf

Pond CD4C: Cross Drain 4C Peak Elev=684.81' Inflow=4.71 cfs 14,480 cf
 18.0" Round Culvert n=0.011 L=60.0' S=0.0792 '/' Outflow=4.71 cfs 14,480 cf

Pond CD4DCE: Cross Drain 4DCE Peak Elev=681.80' Inflow=41.96 cfs 314,301 cf
 48.0" Round Culvert n=0.011 L=360.0' S=0.0052 '/' Outflow=41.96 cfs 314,301 cf

Pond CD4E: Cross Drain 4E Peak Elev=682.66' Storage=7,049 cf Inflow=42.33 cfs 273,634 cf
 48.0" Round Culvert n=0.011 L=200.0' S=0.0052 '/' Outflow=40.67 cfs 273,631 cf

Pond POND1P: PROP POND Peak Elev=681.13' Storage=200,001 cf Inflow=80.52 cfs 576,852 cf
 Outflow=38.67 cfs 576,845 cf

Total Runoff Area = 19,935,234 sf Runoff Volume = 5,581,562 cf Average Runoff Depth = 3.36"
98.03% Pervious = 19,543,194 sf 1.97% Impervious = 392,040 sf

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Mt Pleasant 24-hr S1 25-yr Rainfall=6.34"

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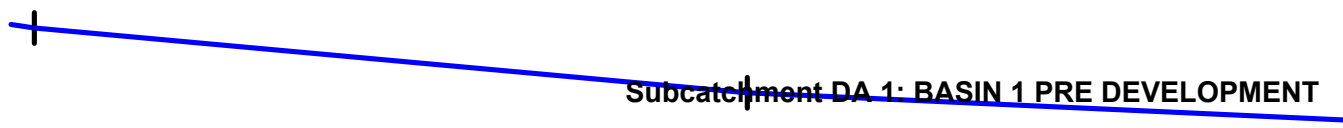
Summary for Subcatchment DA 1: BASIN 1 PRE DEVELOPMENT

Runoff = 141.35 cfs @ 13.83 hrs, Volume= 1,855,048 cf, Depth= 3.57"
Routed to Reach OF4 : Primary Stream for Outfalls

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Mt Pleasant 24-hr S1 25-yr Rainfall=6.34"

Area (ac)	CN	Description
69.500	74	>75% Grass cover, Good, HSG C
71.000	76	Woods/grass comb., Fair, HSG C
2.500	98	Paved parking, HSG C
143.000	75	Weighted Average
140.500		98.25% Pervious Area
2.500		1.75% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
35.4	100	0.0200	0.05		Sheet Flow, Woods: Dense underbrush n= 0.800 P2= 3.57"
92.8	3,050	0.0120	0.55		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
14.8	2,600	0.0060	2.93	11.71	Channel Flow, Area= 4.0 sf Perim= 6.0' r= 0.67' n= 0.030
143.0	5,750	Total			



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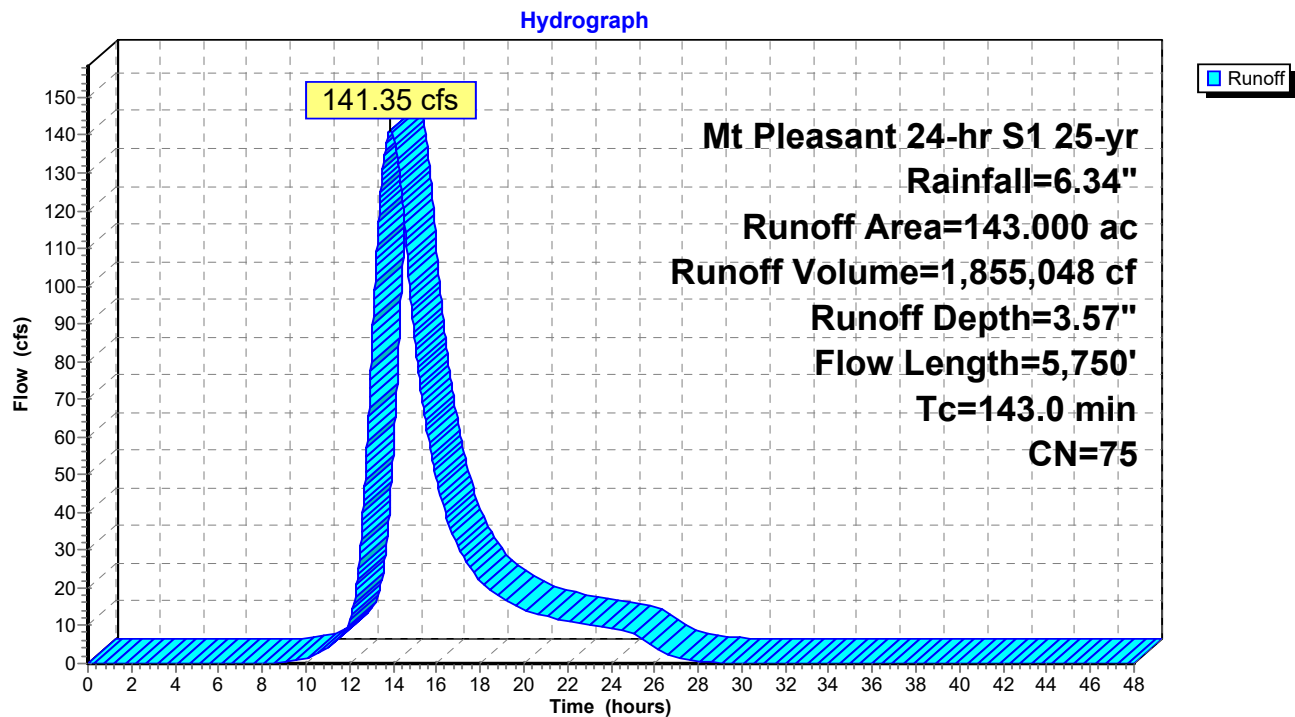
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Mt Pleasant 24-hr S1 25-yr Rainfall=6.34"

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Subcatchment DA 1: BASIN 1 PRE DEVELOPMENT



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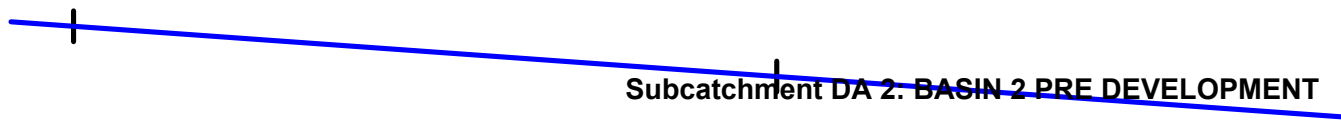
Summary for Subcatchment DA 2: BASIN 2 PRE DEVELOPMENT

Runoff = 38.11 cfs @ 12.88 hrs, Volume= 294,710 cf, Depth= 2.33"
Routed to Reach OF4 : Primary Stream for Outfalls

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Mt Pleasant 24-hr S1 25-yr Rainfall=6.34"

Area (ac)	CN	Description
17.450	58	Meadow, non-grazed, HSG B
14.450	60	Woods, Fair, HSG B
3.000	96	Gravel surface, HSG C
34.900	62	Weighted Average
34.900		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.2	100	0.0150	0.11		Sheet Flow, Grass: Dense n= 0.240 P2= 3.57"
21.9	1,125	0.0150	0.86		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
25.2	925	0.0150	0.61		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
62.3	2,150	Total			



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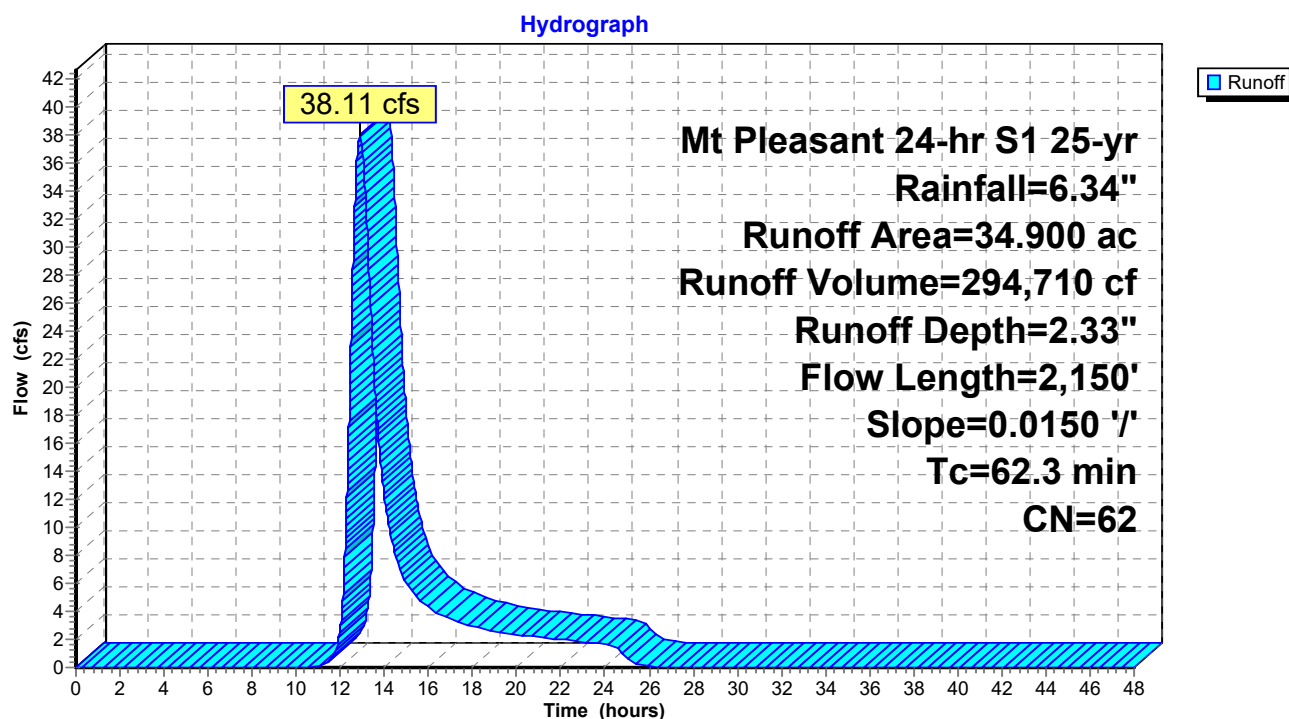
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Mt Pleasant 24-hr S1 25-yr Rainfall=6.34"

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Subcatchment DA 2: BASIN 2 PRE DEVELOPMENT



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Mt Pleasant 24-hr S1 25-yr Rainfall=6.34"

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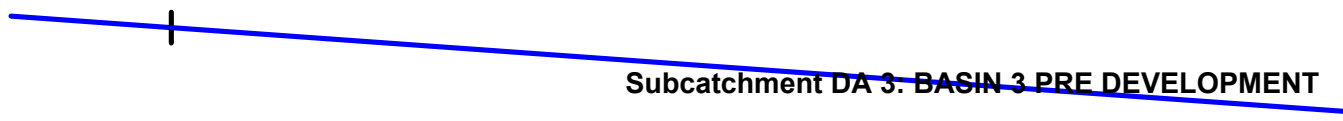
Summary for Subcatchment DA 3: BASIN 3 PRE DEVELOPMENT

Runoff = 23.74 cfs @ 12.33 hrs, Volume= 114,841 cf, Depth= 3.37"
Routed to Reach OF4 : Primary Stream for Outfalls

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Mt Pleasant 24-hr S1 25-yr Rainfall=6.34"

Area (ac)	CN	Description
3.300	78	Meadow, non-grazed, HSG D
3.300	79	Woods, Fair, HSG D
2.250	58	Meadow, non-grazed, HSG B
0.530	60	Woods, Fair, HSG B
9.380	73	Weighted Average
9.380		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.5	100	0.0200	0.12		Sheet Flow, Grass: Dense n= 0.240 P2= 3.57"
12.4	738	0.0200	0.99		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
25.9	838	Total			



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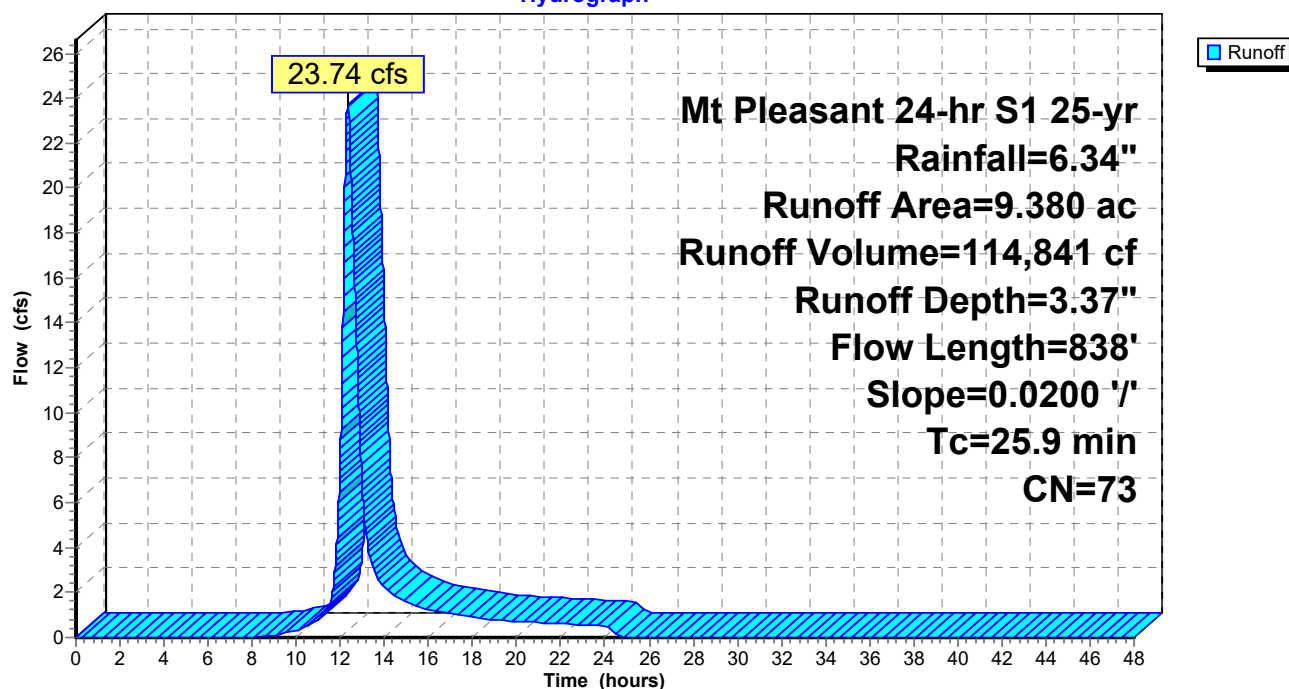
Mt Pleasant 24-hr S1 25-yr Rainfall=6.34"

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Subcatchment DA 3: BASIN 3 PRE DEVELOPMENT

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Summary for Subcatchment DA 4: BASIN 4 PRE DEVELOPMENT

Runoff = 58.56 cfs @ 12.94 hrs, Volume= 463,594 cf, Depth= 3.08"
Routed to Reach OF4 : Primary Stream for Outfalls

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Mt Pleasant 24-hr S1 25-yr Rainfall=6.34"

Area (ac)	CN	Description
7.300	78	Meadow, non-grazed, HSG D
1.830	79	Woods, Fair, HSG D
7.640	58	Meadow, non-grazed, HSG B
1.910	60	Woods, Fair, HSG B
4.150	73	Woods, Fair, HSG C
9.960	71	Meadow, non-grazed, HSG C
2.490	73	Woods, Fair, HSG C
4.970	71	Meadow, non-grazed, HSG C
1.250	73	Woods, Fair, HSG C
41.500	70	Weighted Average
41.500		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
24.5	100	0.0500	0.07		Sheet Flow, Woods: Dense underbrush n= 0.800 P2= 3.57"
43.6	2,368	0.0167	0.90		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
68.1	2,468	Total			

Subcatchment DA 4: BASIN 4 PRE DEVELOPMENT

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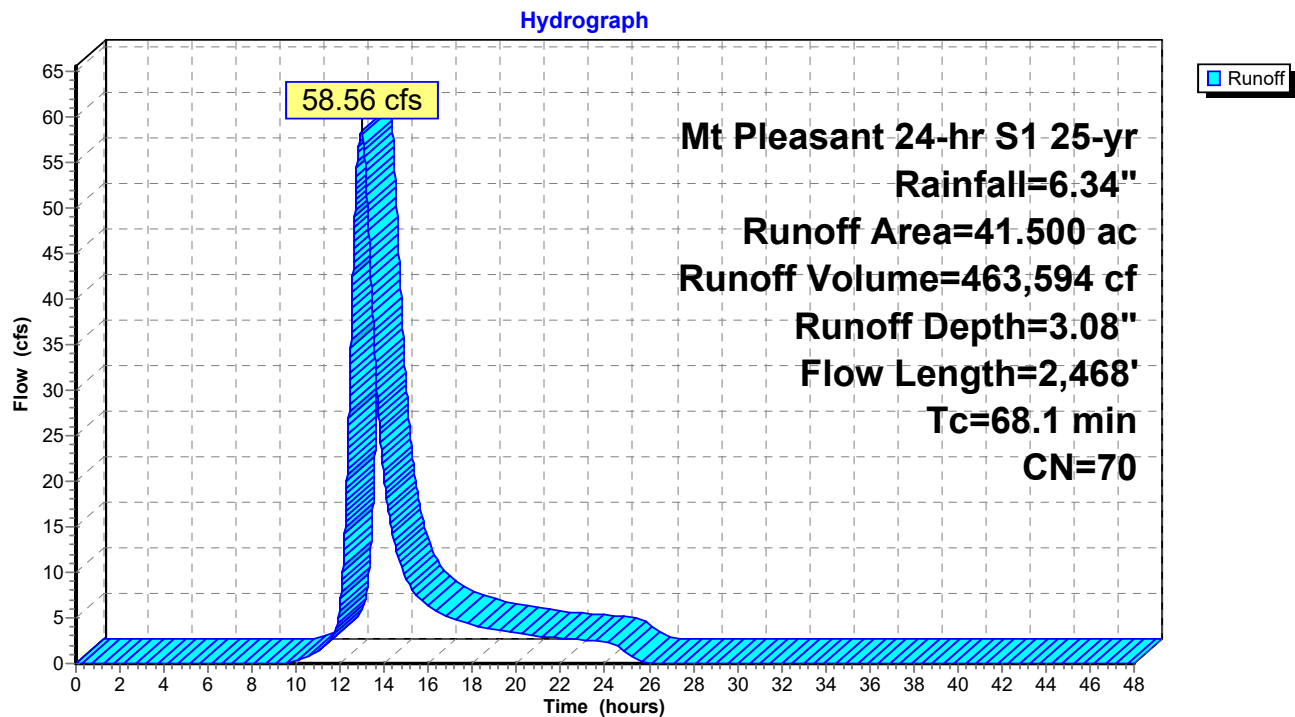
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Subcatchment DA 4: BASIN 4 PRE DEVELOPMENT



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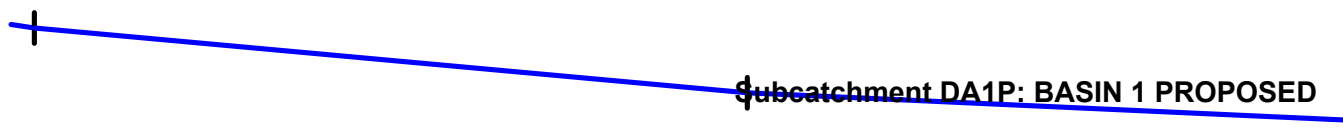
Summary for Subcatchment DA1P: BASIN 1 PROPOSED

Runoff = 141.35 cfs @ 13.83 hrs, Volume= 1,855,048 cf, Depth= 3.57"
Routed to Reach OF4P : Primary Stream for Outfalls

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Mt Pleasant 24-hr S1 25-yr Rainfall=6.34"

Area (ac)	CN	Description
69.500	74	>75% Grass cover, Good, HSG C
71.000	76	Woods/grass comb., Fair, HSG C
2.500	98	Paved parking, HSG C
143.000	75	Weighted Average
140.500		98.25% Pervious Area
2.500		1.75% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
35.4	100	0.0200	0.05		Sheet Flow, Woods: Dense underbrush n= 0.800 P2= 3.57"
92.8	3,050	0.0120	0.55		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
14.8	2,600	0.0060	2.93	11.71	Channel Flow, Area= 4.0 sf Perim= 6.0' r= 0.67' n= 0.030
143.0	5,750	Total			



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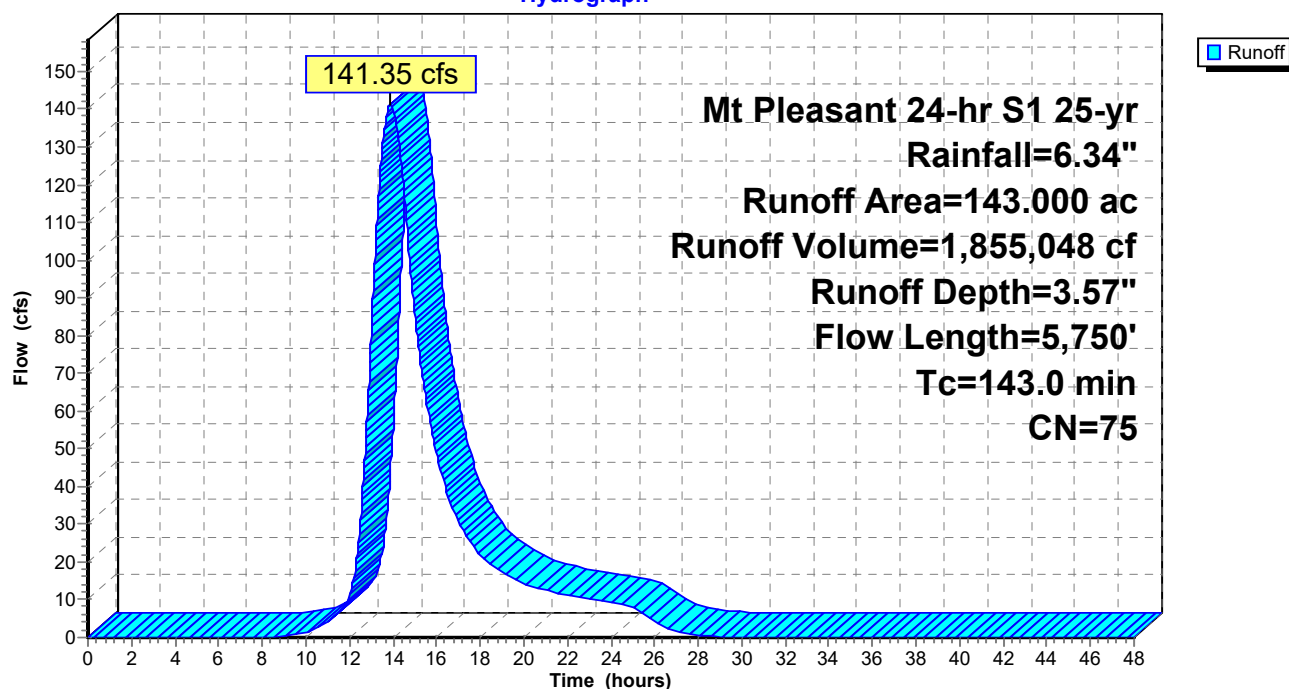
Mt Pleasant 24-hr S1 25-yr Rainfall=6.34"

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Subcatchment DA1P: BASIN 1 PROPOSED

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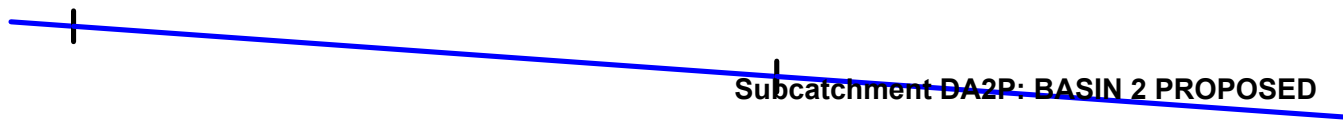
Summary for Subcatchment DA2P: BASIN 2 PROPOSED

Runoff = 38.11 cfs @ 12.88 hrs, Volume= 294,710 cf, Depth= 2.33"
Routed to Pond CD2 : Cross Drain

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Mt Pleasant 24-hr S1 25-yr Rainfall=6.34"

Area (ac)	CN	Description
17.450	58	Meadow, non-grazed, HSG B
14.450	60	Woods, Fair, HSG B
3.000	96	Gravel surface, HSG C
34.900	62	Weighted Average
34.900		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.2	100	0.0150	0.11		Sheet Flow, Grass: Dense n= 0.240 P2= 3.57"
21.9	1,125	0.0150	0.86		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
25.2	925	0.0150	0.61		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
62.3	2,150	Total			



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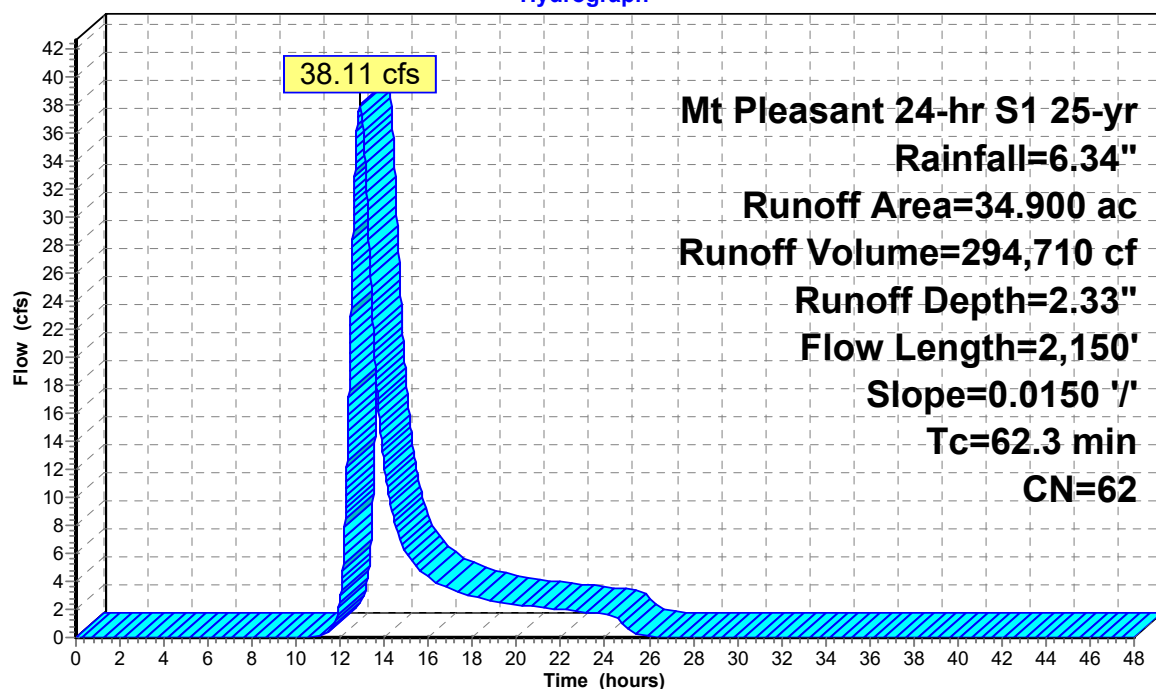
Mt Pleasant 24-hr S1 25-yr Rainfall=6.34"

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Subcatchment DA2P: BASIN 2 PROPOSED

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Summary for Subcatchment DA3P: BASIN 3 PRE DEVELOPMENT

Runoff = 26.19 cfs @ 12.03 hrs, Volume= 68,851 cf, Depth= 3.98"
 Routed to Reach OF4P : Primary Stream for Outfalls

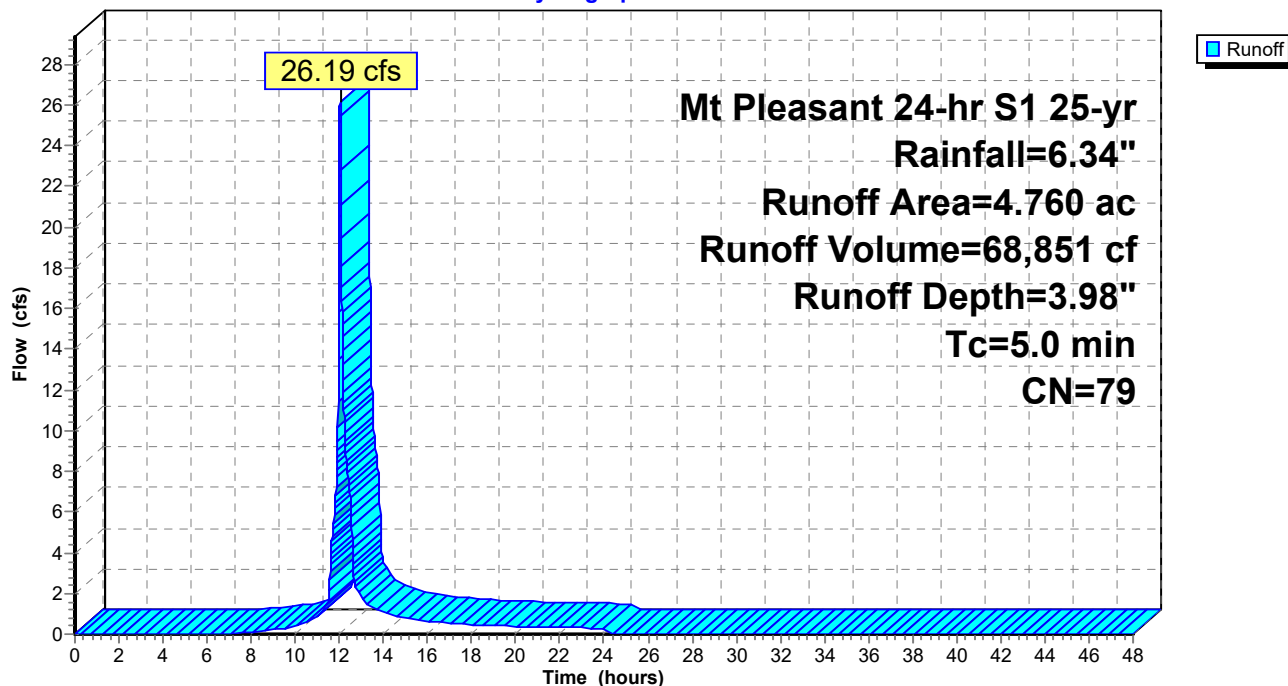
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
 Mt Pleasant 24-hr S1 25-yr Rainfall=6.34"

Area (ac)	CN	Description
4.760	79	Woods, Fair, HSG D
4.760		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					Direct Entry,

Subcatchment DA3P: BASIN 3 PRE DEVELOPMENT

Hydrograph



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Mt Pleasant 24-hr S1 25-yr Rainfall=6.34"

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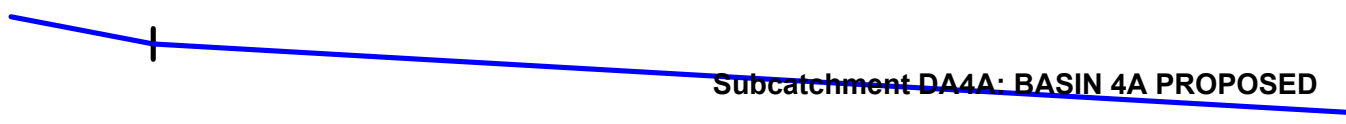
Summary for Subcatchment DA4A: BASIN 4A PROPOSED

Runoff = 9.57 cfs @ 12.58 hrs, Volume= 57,904 cf, Depth= 2.88"
 Routed to Reach OF4P : Primary Stream for Outfalls

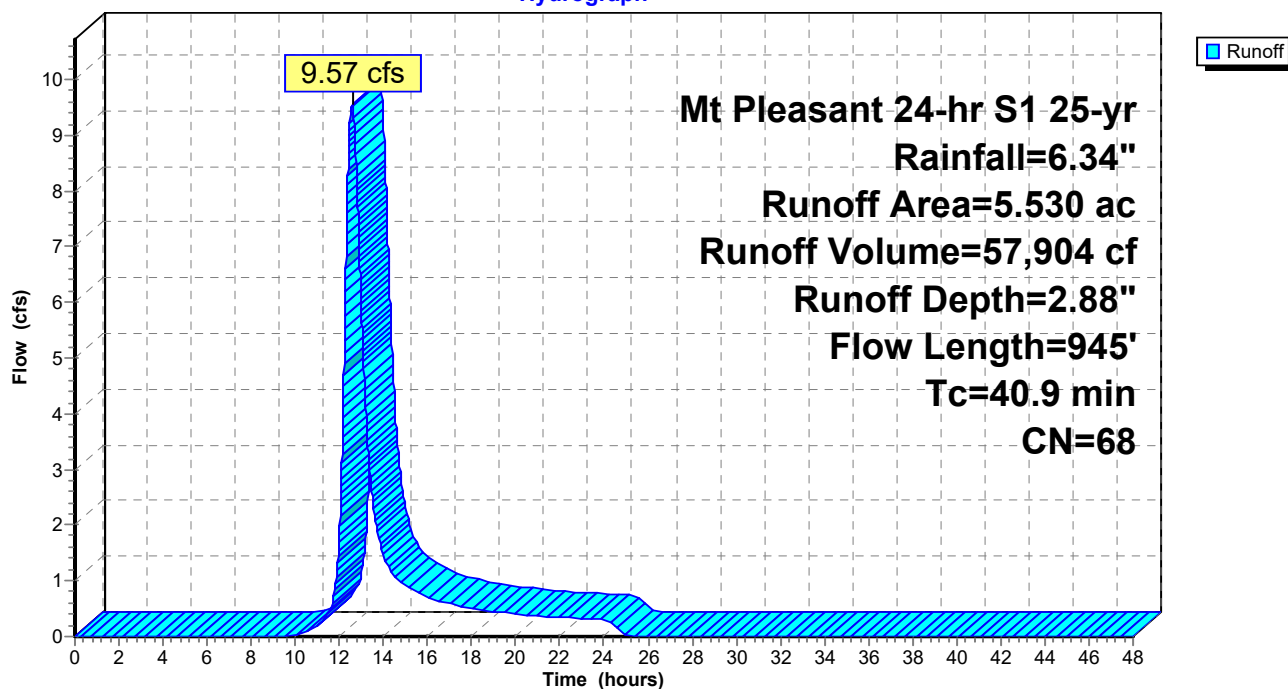
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
 Mt Pleasant 24-hr S1 25-yr Rainfall=6.34"

Area (ac)	CN	Description
2.200	60	Woods, Fair, HSG B
3.330	73	Woods, Fair, HSG C
5.530	68	Weighted Average
5.530		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
24.5	100	0.0500	0.07		Sheet Flow, Woods: Dense underbrush n= 0.800 P2= 3.57"
16.4	845	0.0150	0.86		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
40.9	945	Total			

**Subcatchment DA4A: BASIN 4A PROPOSED**

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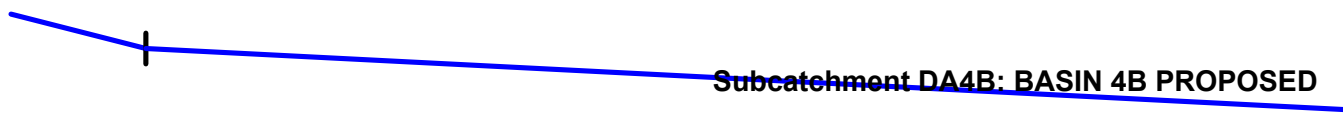
Summary for Subcatchment DA4B: BASIN 4B PROPOSED

Runoff = 44.12 cfs @ 12.40 hrs, Volume= 262,551 cf, Depth= 5.87"
Routed to Pond POND1P : PROP POND

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Mt Pleasant 24-hr S1 25-yr Rainfall=6.34"

Area (ac)	CN	Description
9.330	96	Gravel surface, HSG C
1.000	98	Paved parking, HSG D
2.000	98	Roofs, HSG D
12.330	96	Weighted Average
9.330		75.67% Pervious Area
3.000		24.33% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
24.5	100	0.0500	0.07		Sheet Flow, n= 0.800 P2= 3.57"
9.3	896	0.0100	1.61		Shallow Concentrated Flow, Unpaved Kv= 16.1 fps
33.8	996	Total			



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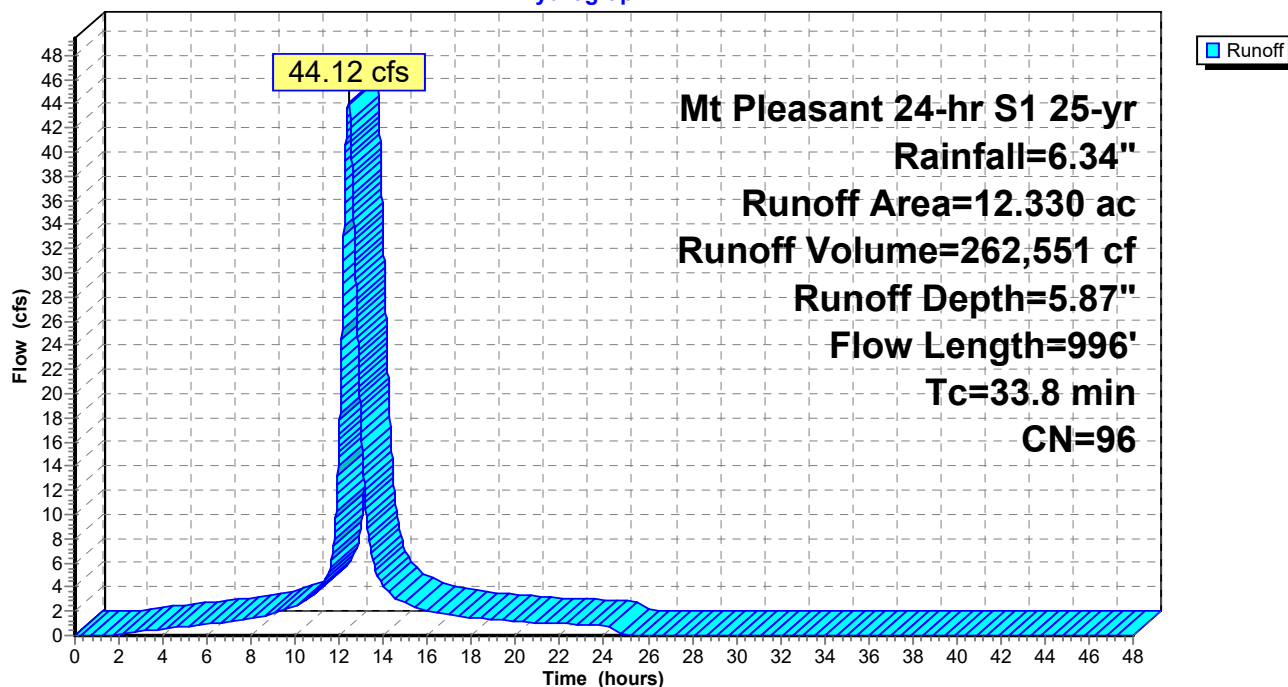
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Subcatchment DA4B: BASIN 4B PROPOSED

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Summary for Subcatchment DA4C: BASIN 4C PROPOSED

Runoff = 5.00 cfs @ 12.03 hrs, Volume= 14,480 cf, Depth= 5.87"
Routed to Reach D4C : Ditch 4C

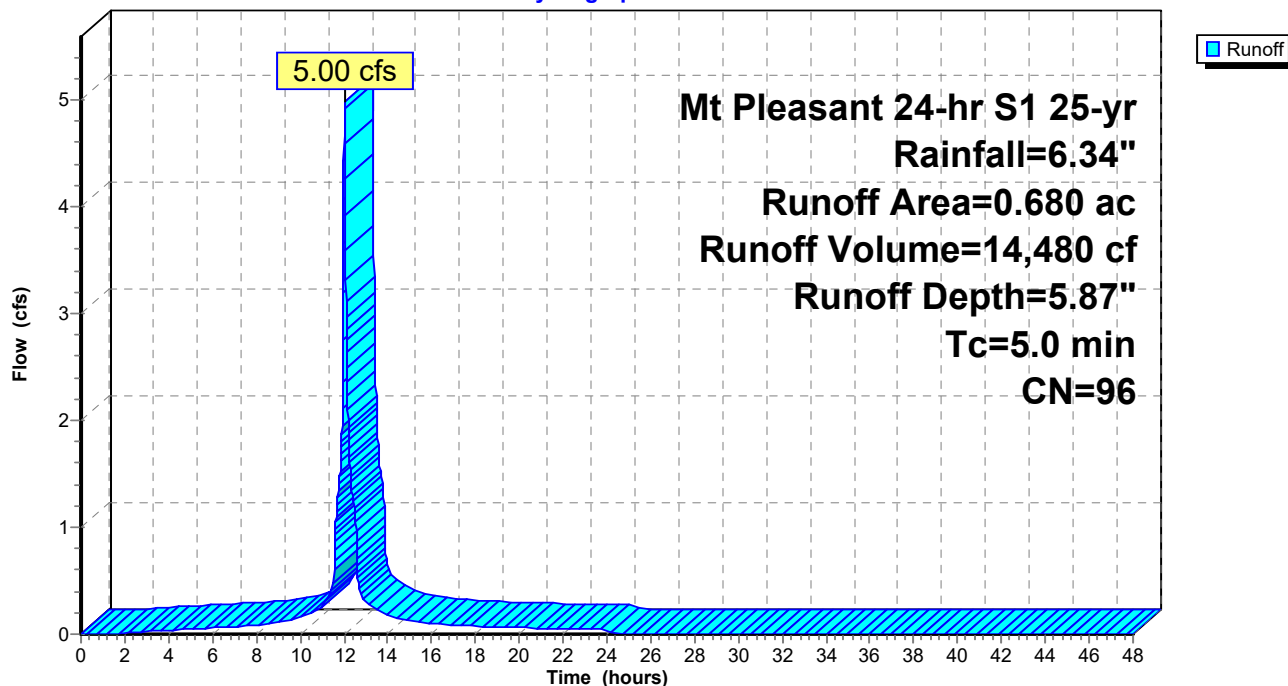
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Mt Pleasant 24-hr S1 25-yr Rainfall=6.34"

Area (ac)	CN	Description
0.680	96	Gravel surface, HSG C
0.680		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					Direct Entry,

Subcatchment DA4C: BASIN 4C PROPOSED

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Summary for Subcatchment DA4D: BASIN 4D PROPOSED

Runoff = 9.04 cfs @ 12.03 hrs, Volume= 26,191 cf, Depth= 5.87"
Routed to Reach D4D : Ditch 4D

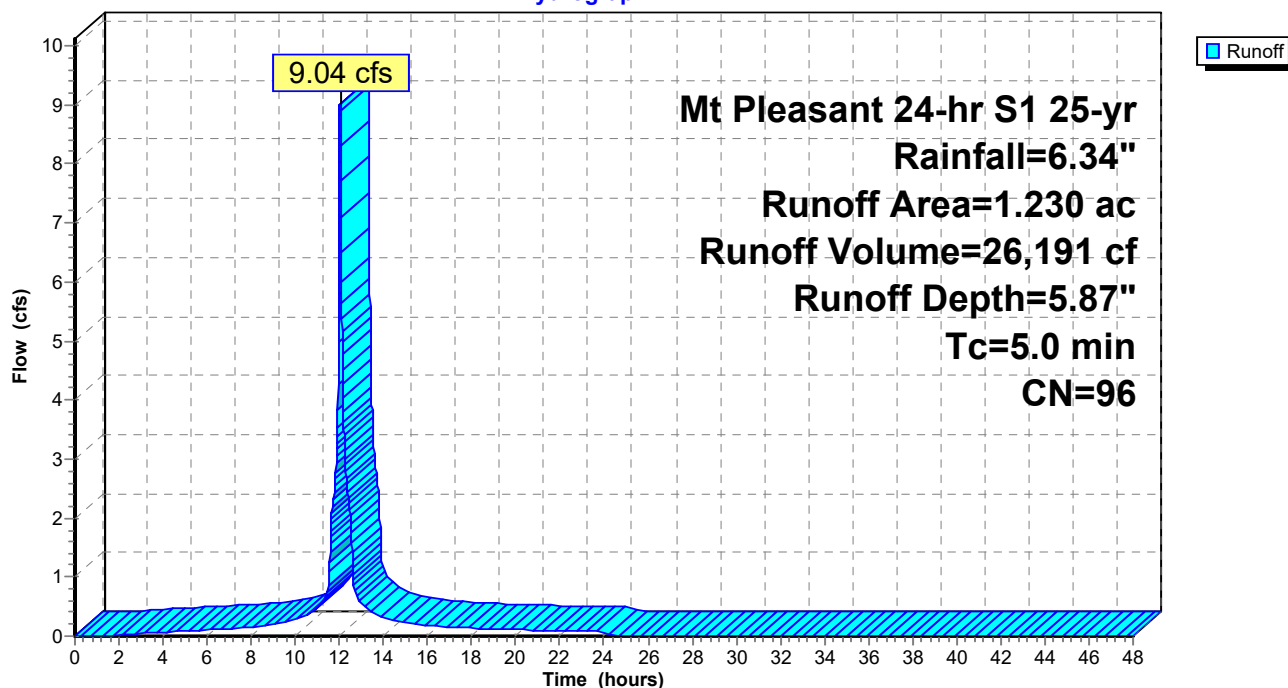
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Mt Pleasant 24-hr S1 25-yr Rainfall=6.34"

Area (ac)	CN	Description
1.230	96	Gravel surface, HSG C
1.230		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					Direct Entry,

Subcatchment DA4D: BASIN 4D PROPOSED

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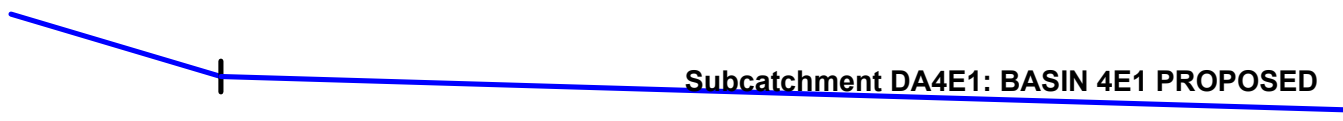
Summary for Subcatchment DA4E1: BASIN 4E1 PROPOSED

Runoff = 12.20 cfs @ 12.43 hrs, Volume= 66,118 cf, Depth= 2.51"
Routed to Reach D4E1 : Ditch 4E1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Mt Pleasant 24-hr S1 25-yr Rainfall=6.34"

Area (ac)	CN	Description
3.130	58	Meadow, non-grazed, HSG B
3.130	60	Woods, Fair, HSG B
1.000	98	Paved roads w/curbs & sewers, HSG B
7.260	64	Weighted Average
6.260		86.23% Pervious Area
1.000		13.77% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
18.6	100	0.1000	0.09		Sheet Flow, Woods: Dense underbrush n= 0.800 P2= 3.57"
12.9	540	0.0100	0.70		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
31.5	640	Total			



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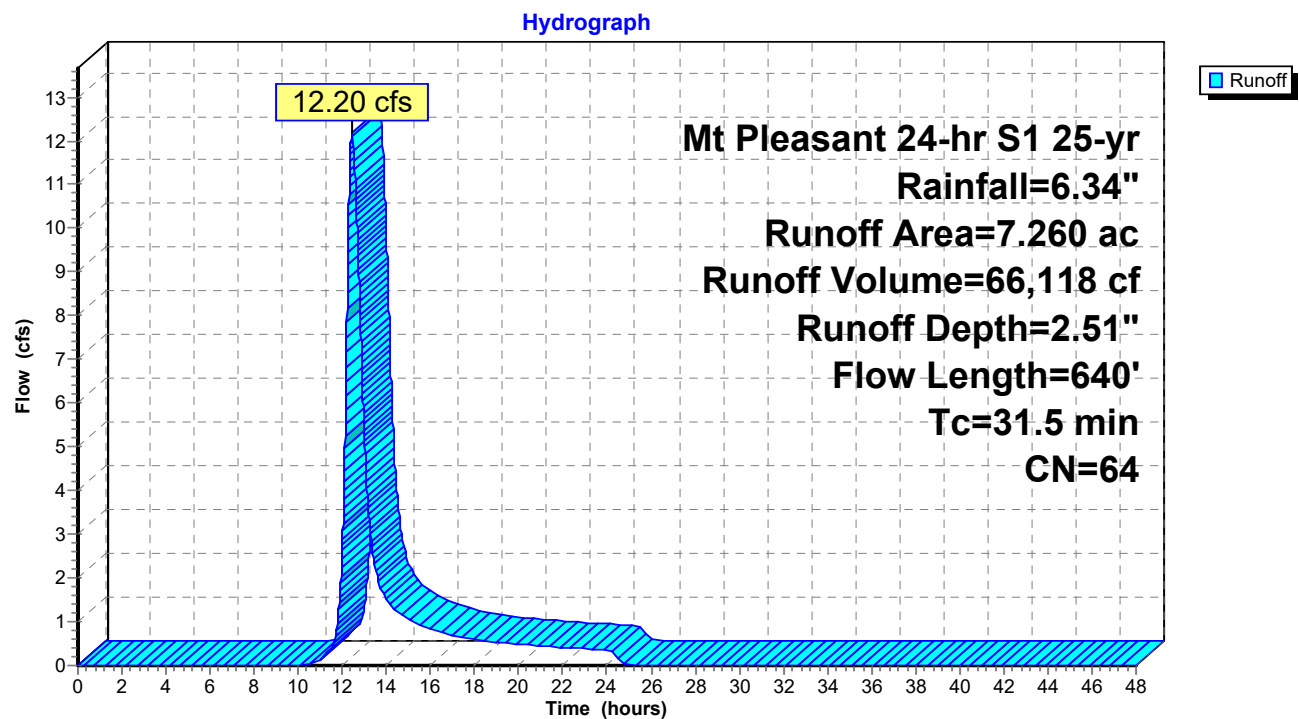
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Subcatchment DA4E1: BASIN 4E1 PROPOSED



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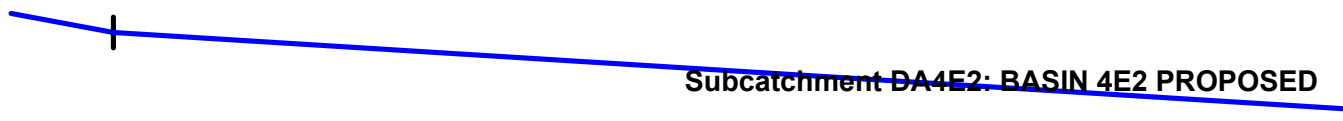
Summary for Subcatchment DA4E2: BASIN 4E2 PROPOSED

Runoff = 32.23 cfs @ 12.64 hrs, Volume= 207,516 cf, Depth= 2.98"
Routed to Pond CD4E : Cross Drain 4E

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Mt Pleasant 24-hr S1 25-yr Rainfall=6.34"

Area (ac)	CN	Description
9.300	79	Woods, Fair, HSG D
4.940	58	Meadow, non-grazed, HSG B
4.940	60	Woods, Fair, HSG B
19.180	69	Weighted Average
19.180		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
24.5	100	0.0500	0.07		Sheet Flow, Woods: Dense underbrush n= 0.800 P2= 3.57"
22.3	1,213	0.0167	0.90		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
46.8	1,313	Total			



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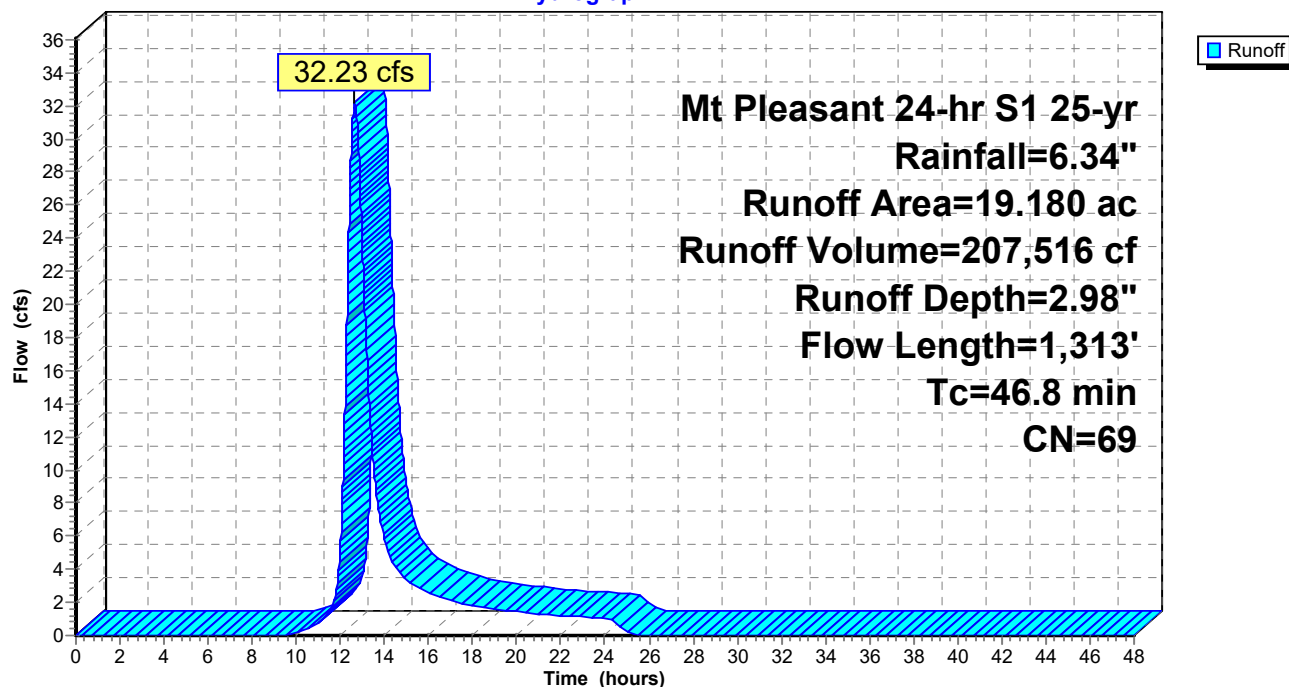
Mt Pleasant 24-hr S1 25-yr Rainfall=6.34"

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Subcatchment DA4E2: BASIN 4E2 PROPOSED

Hydrograph



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Mt Pleasant 24-hr S1 25-yr Rainfall=6.34"

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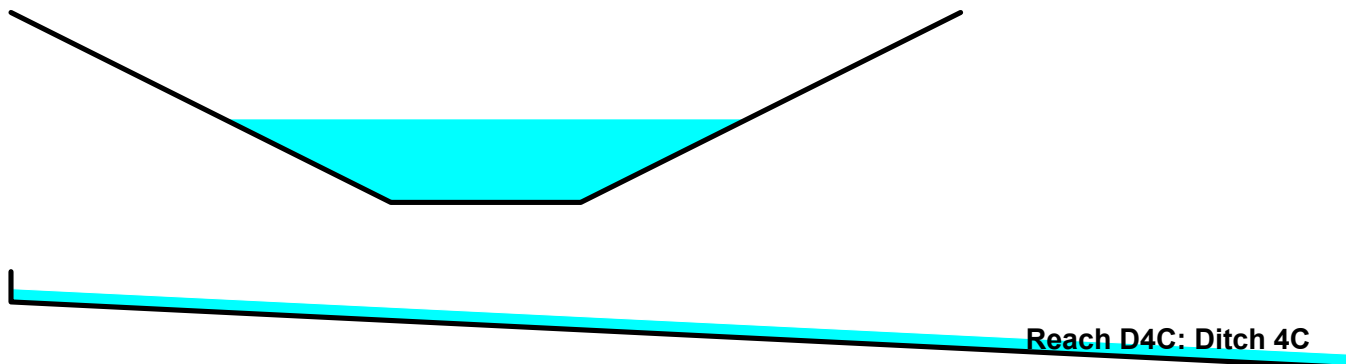
Summary for Reach D4C: Ditch 4C

Inflow Area = 29,621 sf, 0.00% Impervious, Inflow Depth = 5.87" for 25-yr event
 Inflow = 5.00 cfs @ 12.03 hrs, Volume= 14,480 cf
 Outflow = 4.71 cfs @ 12.05 hrs, Volume= 14,480 cf, Atten= 6%, Lag= 1.2 min
 Routed to Pond CD4C : Cross Drain 4C

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
 Max. Velocity= 2.55 fps, Min. Travel Time= 2.0 min
 Avg. Velocity = 0.73 fps, Avg. Travel Time= 7.2 min

Peak Storage= 576 cf @ 12.05 hrs
 Average Depth at Peak Storage= 0.66' , Surface Width= 4.12'
 Bank-Full Depth= 1.50' Flow Area= 6.8 sf, Capacity= 27.19 cfs

1.50' x 1.50' deep channel, n= 0.033 Riprap, 1-inch
 Side Slope Z-value= 2.0 '/' Top Width= 7.50'
 Length= 313.0' Slope= 0.0104 '/'
 Inlet Invert= 687.00', Outlet Invert= 683.75'



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Mt Pleasant 24-hr S1 25-yr Rainfall=6.34"

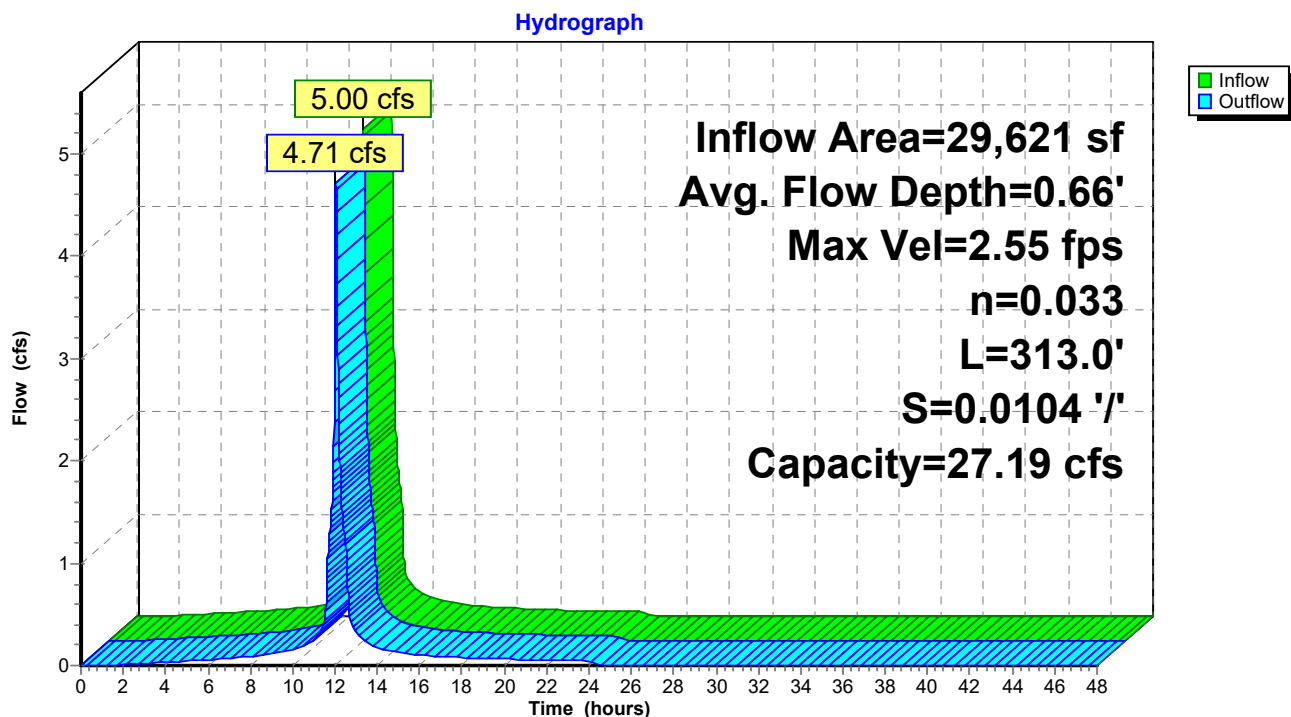
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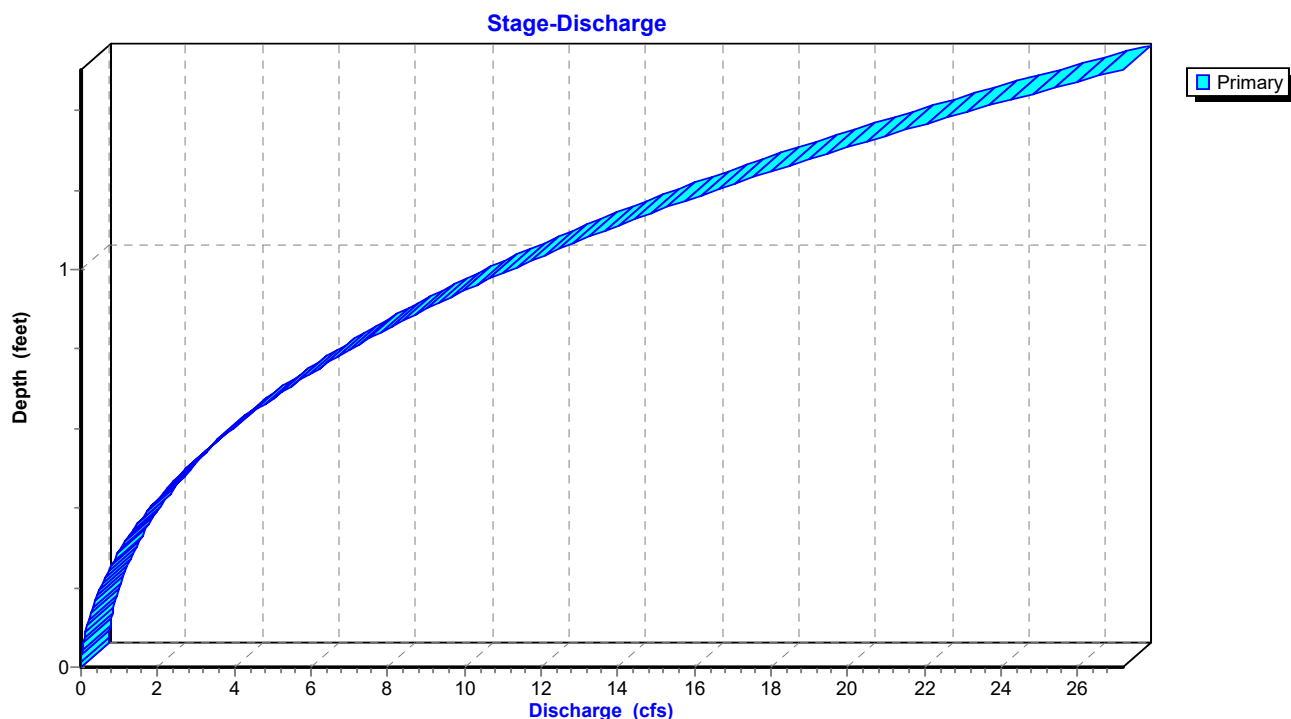
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Reach D4C: Ditch 4C



Reach D4C: Ditch 4C



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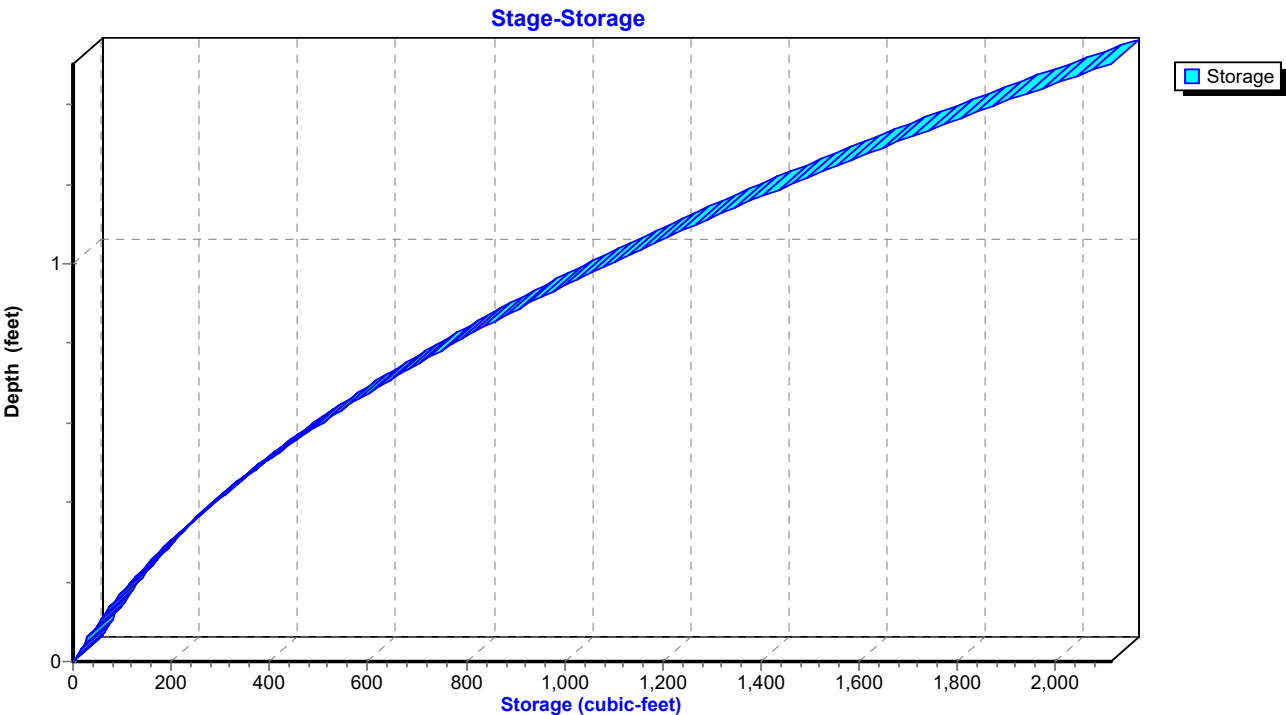
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Reach D4C: Ditch 4C



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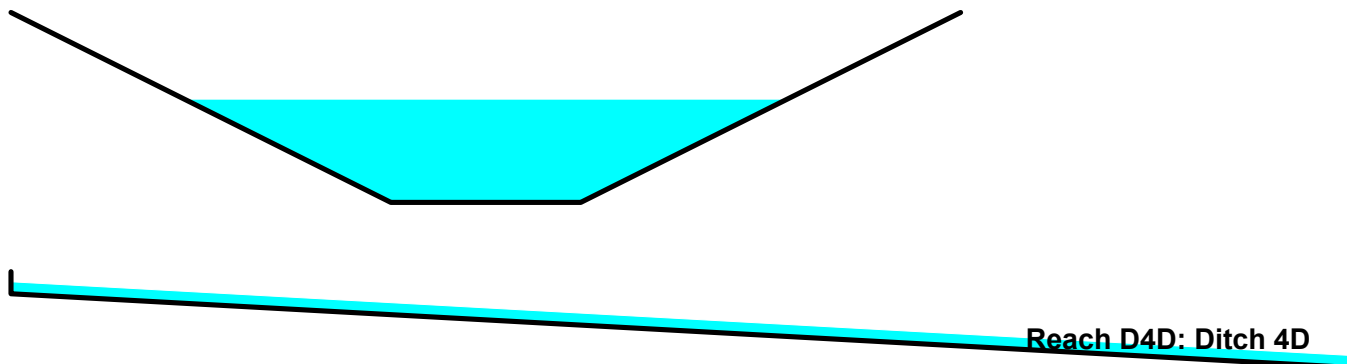
Summary for Reach D4D: Ditch 4D

Inflow Area = 53,579 sf, 0.00% Impervious, Inflow Depth = 5.87" for 25-yr event
 Inflow = 9.04 cfs @ 12.03 hrs, Volume= 26,191 cf
 Outflow = 8.67 cfs @ 12.04 hrs, Volume= 26,191 cf, Atten= 4%, Lag= 1.0 min
 Routed to Pond CD4DCE : Cross Drain 4DCE

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
 Max. Velocity= 3.43 fps, Min. Travel Time= 1.6 min
 Avg. Velocity = 1.00 fps, Avg. Travel Time= 5.6 min

Peak Storage= 853 cf @ 12.04 hrs
 Average Depth at Peak Storage= 0.81' , Surface Width= 4.74'
 Bank-Full Depth= 1.50' Flow Area= 6.8 sf, Capacity= 32.50 cfs

1.50' x 1.50' deep channel, n= 0.033 Riprap, 1-inch
 Side Slope Z-value= 2.0 ' / ' Top Width= 7.50'
 Length= 337.0' Slope= 0.0148 ' / '
 Inlet Invert= 688.00', Outlet Invert= 683.00'



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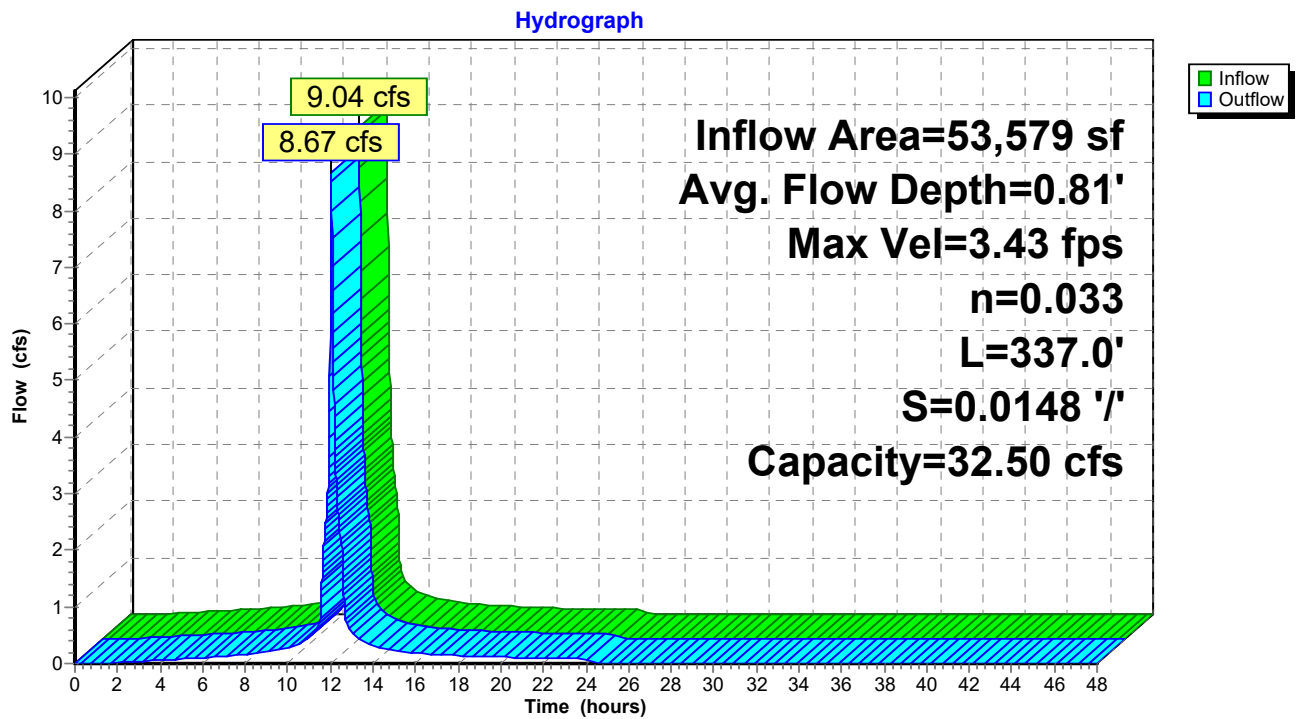
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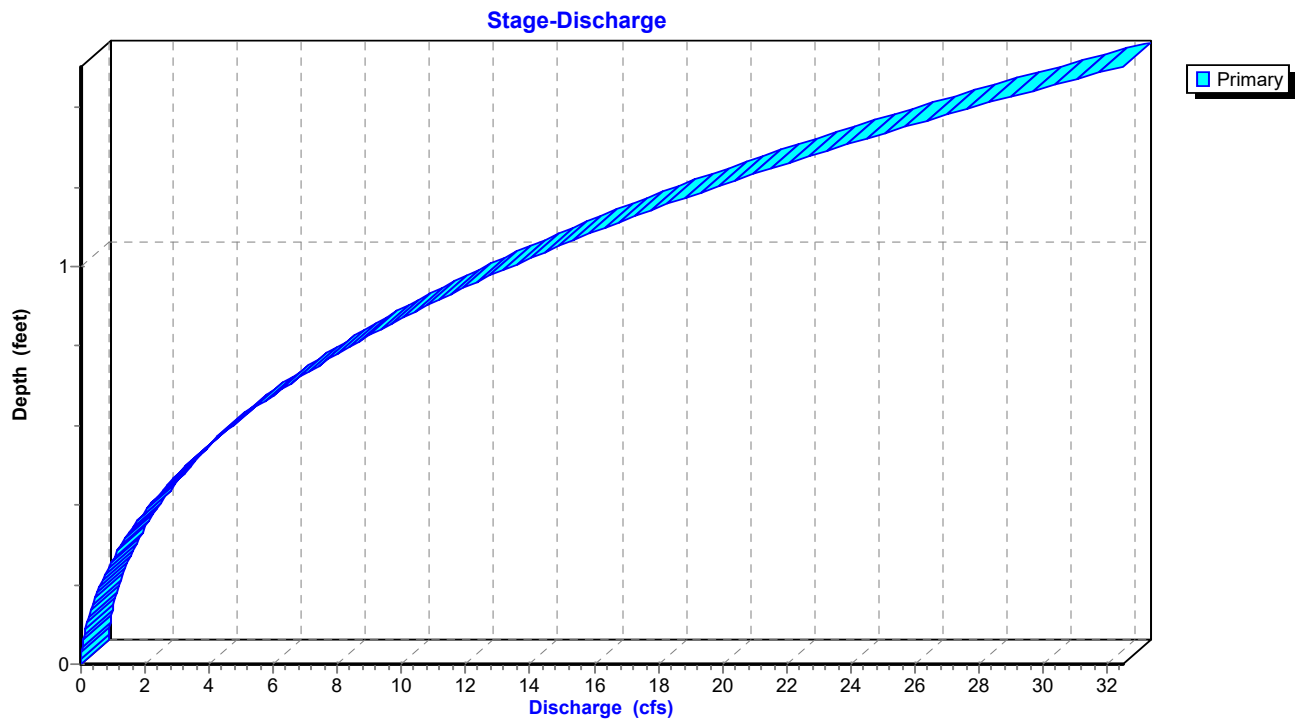
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Reach D4D: Ditch 4D



Reach D4D: Ditch 4D



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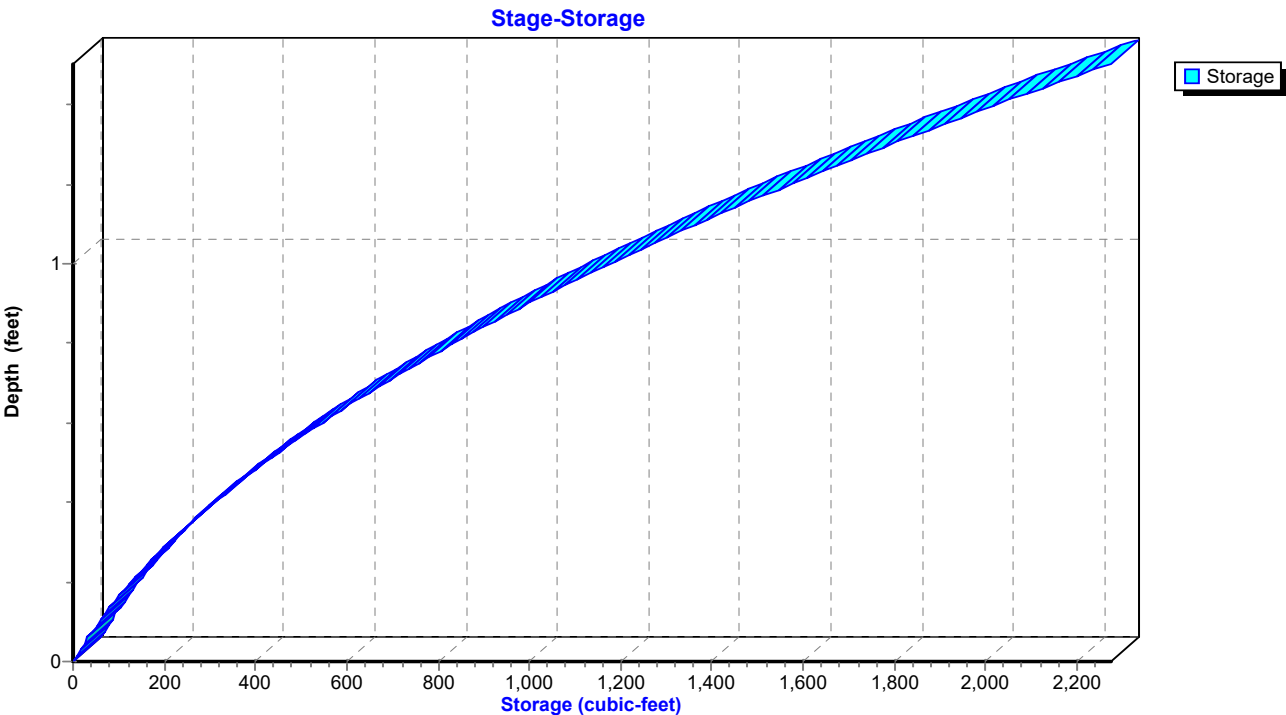
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Mt Pleasant 24-hr S1 25-yr Rainfall=6.34"

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Reach D4D: Ditch 4D



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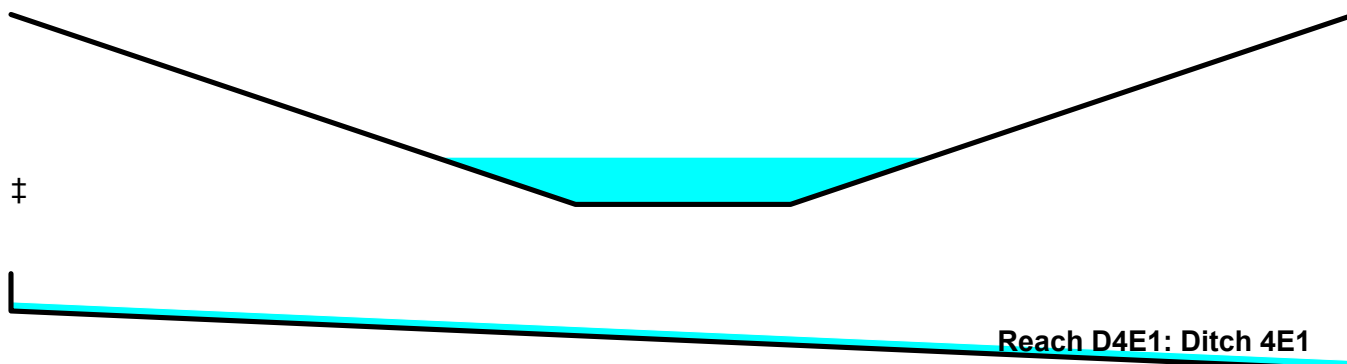
Summary for Reach D4E1: Ditch 4E1

Inflow Area = 316,246 sf, 13.77% Impervious, Inflow Depth = 2.51" for 25-yr event
 Inflow = 12.20 cfs @ 12.43 hrs, Volume= 66,118 cf
 Outflow = 10.11 cfs @ 12.65 hrs, Volume= 66,118 cf, Atten= 17%, Lag= 13.4 min
 Routed to Pond CD4E : Cross Drain 4E

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
 Max. Velocity= 1.78 fps, Min. Travel Time= 16.8 min
 Avg. Velocity= 0.52 fps, Avg. Travel Time= 56.8 min

Peak Storage= 10,160 cf @ 12.65 hrs
 Average Depth at Peak Storage= 0.86' , Surface Width= 9.17'
 Bank-Full Depth= 3.50' Flow Area= 50.8 sf, Capacity= 197.27 cfs

4.00' x 3.50' deep channel, n= 0.033 Riprap, 1-inch
 Side Slope Z-value= 3.0 '/' Top Width= 25.00'
 Length= 1,788.0' Slope= 0.0031 '/'
 Inlet Invert= 685.00', Outlet Invert= 679.50'



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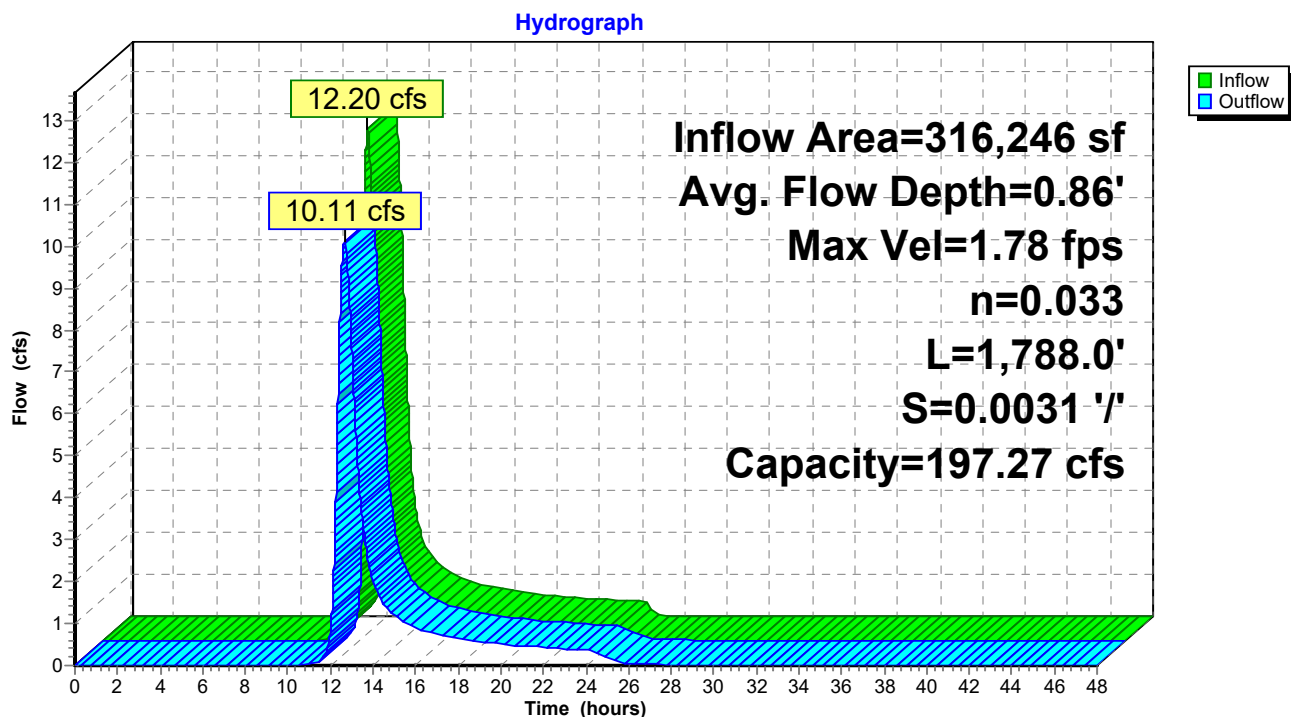
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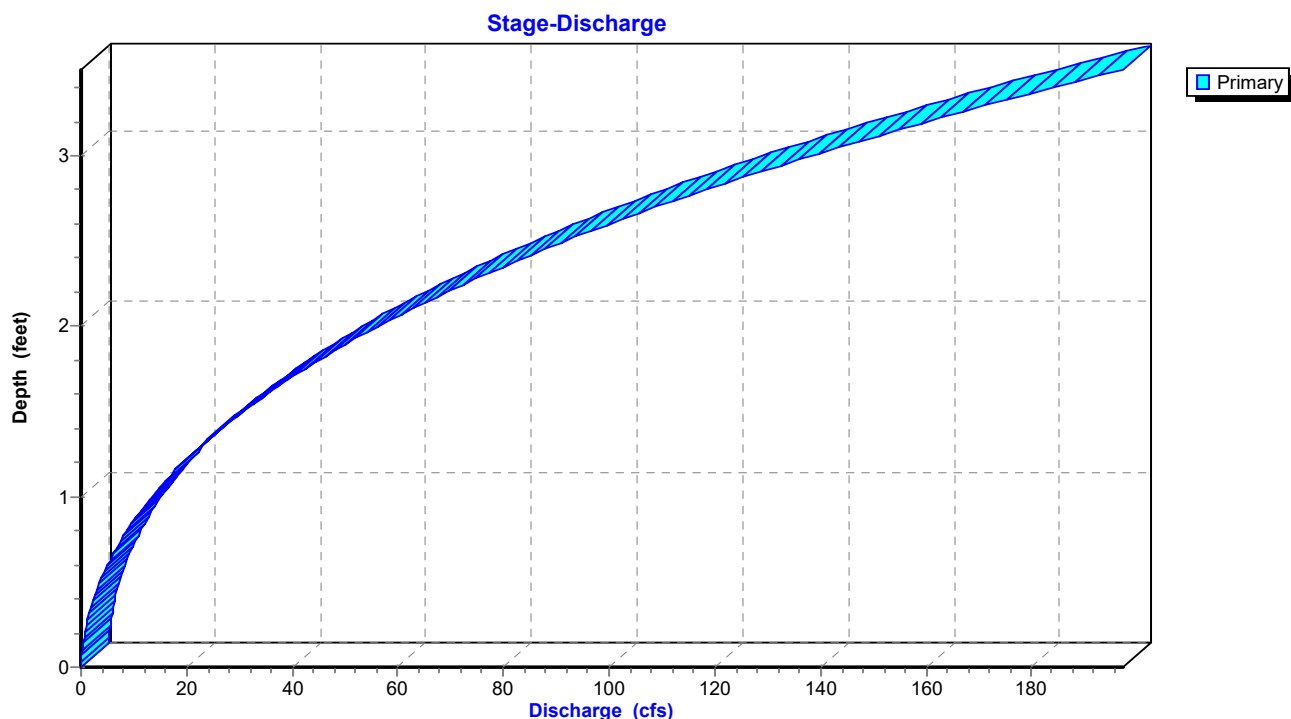
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Reach D4E1: Ditch 4E1



Reach D4E1: Ditch 4E1



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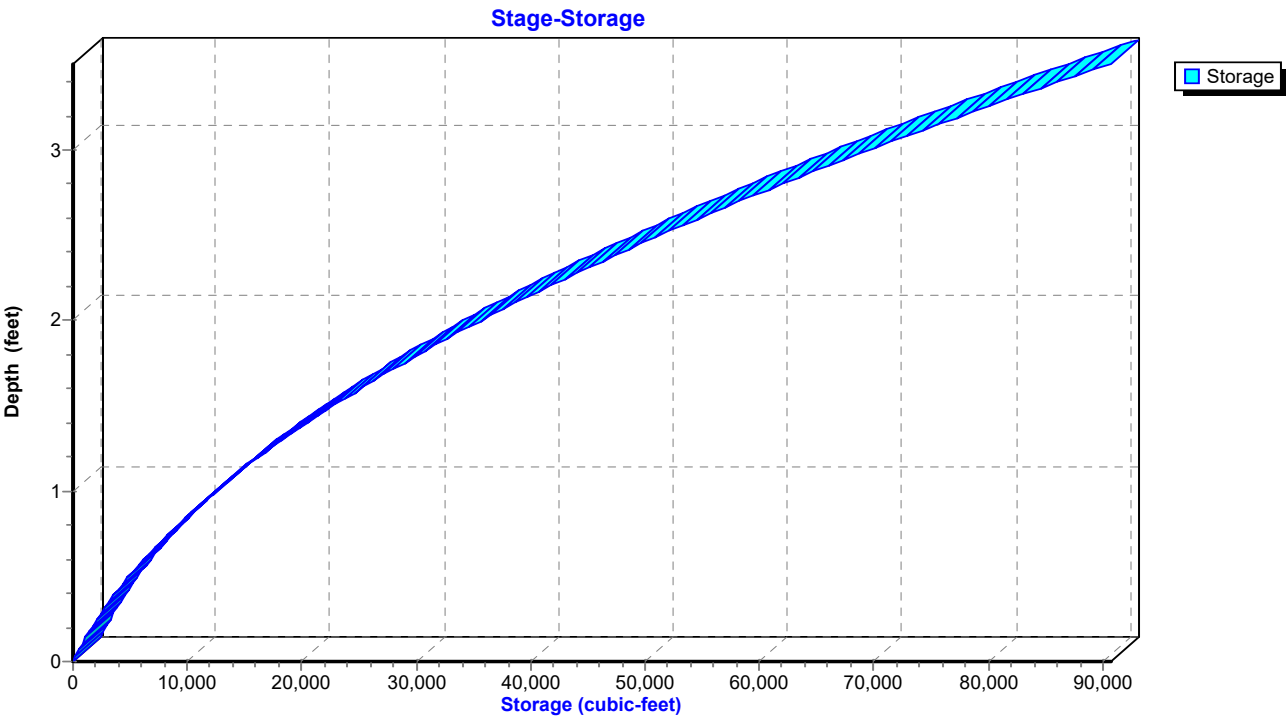
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Reach D4E1: Ditch 4E1



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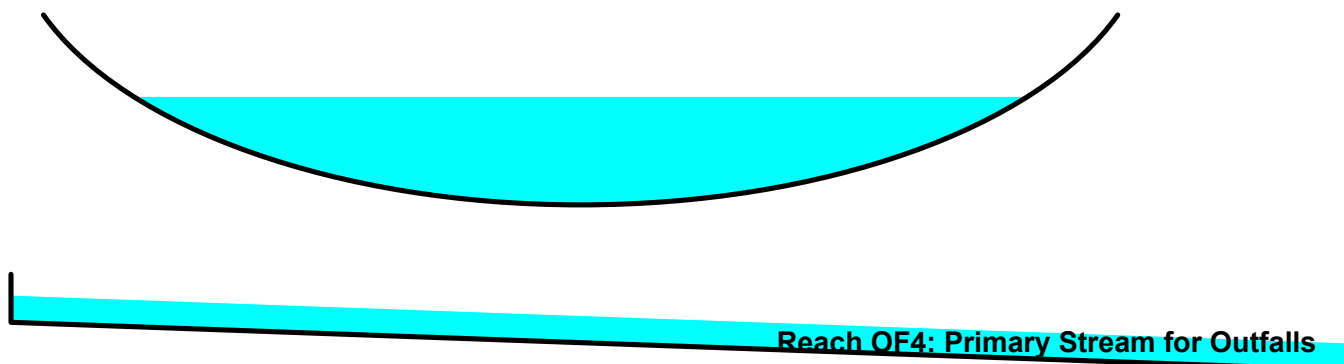
Summary for Reach OF4: Primary Stream for Outfalls

Inflow Area = 9,965,657 sf, 1.09% Impervious, Inflow Depth = 3.29" for 25-yr event
 Inflow = 191.93 cfs @ 13.35 hrs, Volume= 2,728,193 cf
 Outflow = 191.64 cfs @ 13.38 hrs, Volume= 2,728,193 cf, Atten= 0%, Lag= 1.8 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
 Max. Velocity= 4.48 fps, Min. Travel Time= 3.7 min
 Avg. Velocity = 1.63 fps, Avg. Travel Time= 10.2 min

Peak Storage= 42,824 cf @ 13.38 hrs
 Average Depth at Peak Storage= 2.84' , Surface Width= 22.61'
 Bank-Full Depth= 5.00' Flow Area= 100.0 sf, Capacity= 640.46 cfs

30.00' x 5.00' deep Parabolic Channel, n= 0.035
 Length= 1,000.0' Slope= 0.0050 '/'
 Inlet Invert= 675.00', Outlet Invert= 670.00'



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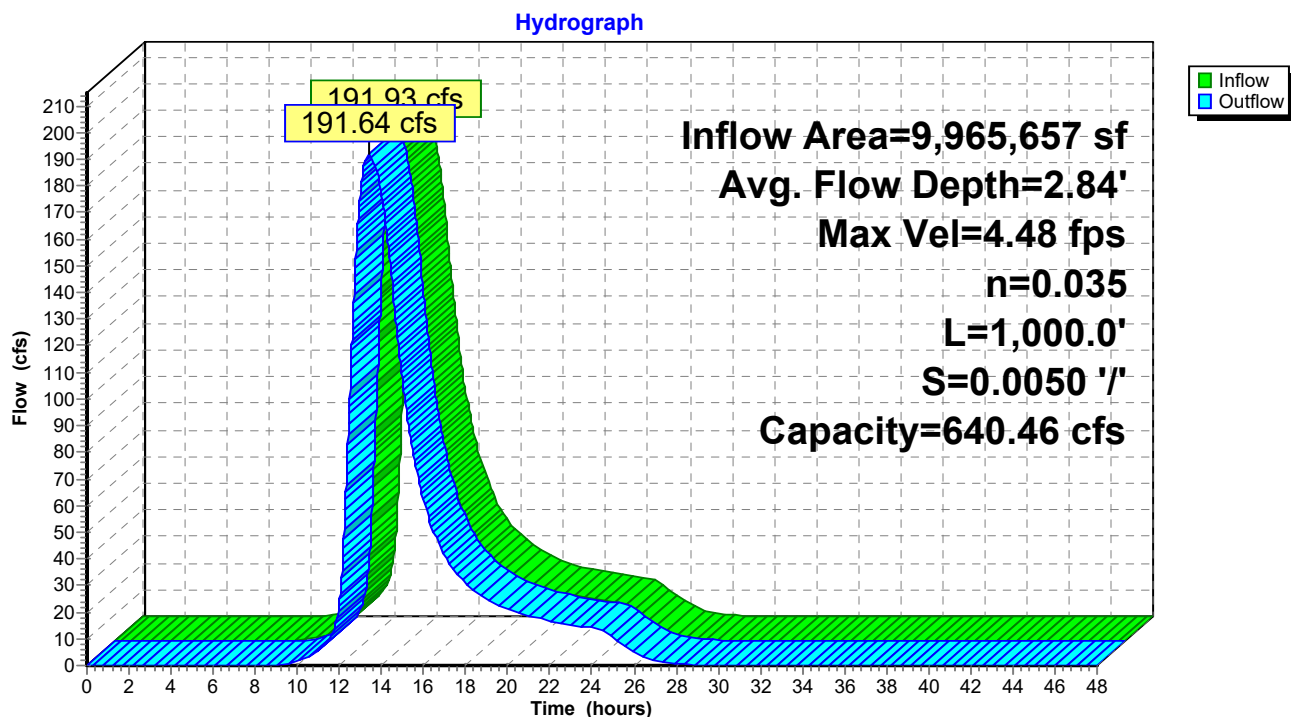
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Mt Pleasant 24-hr S1 25-yr Rainfall=6.34"

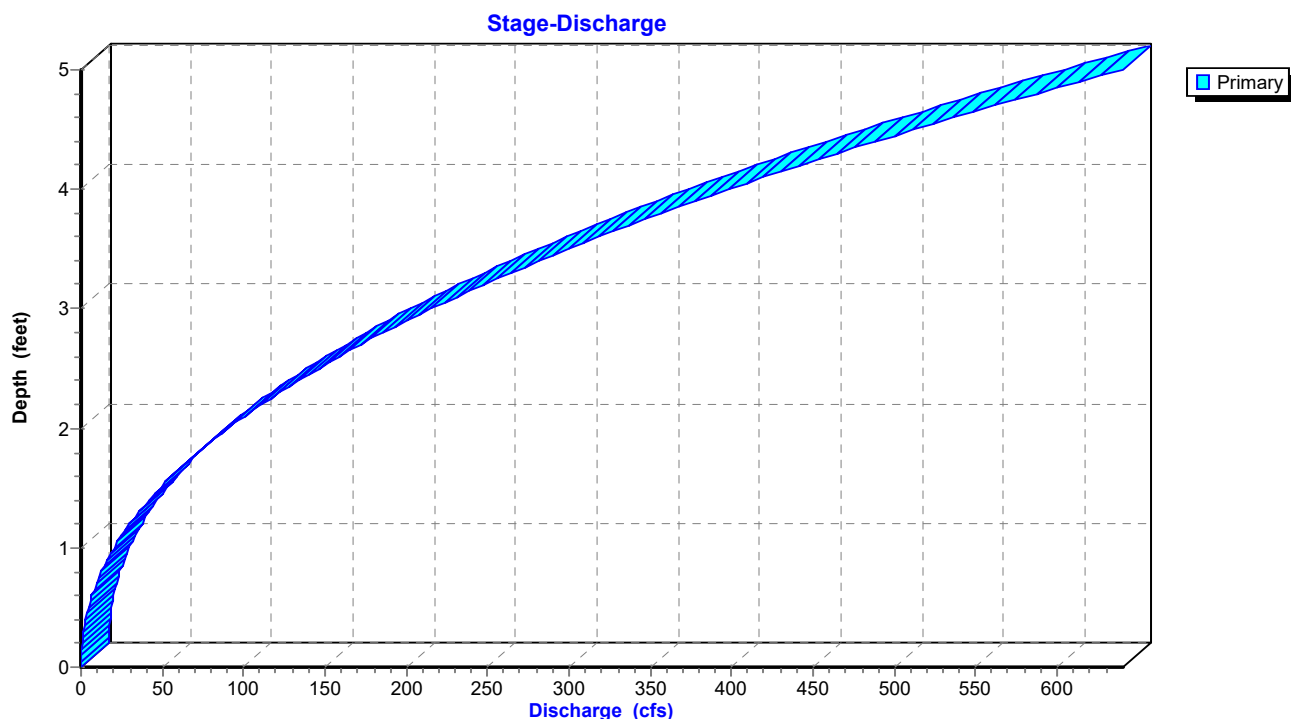
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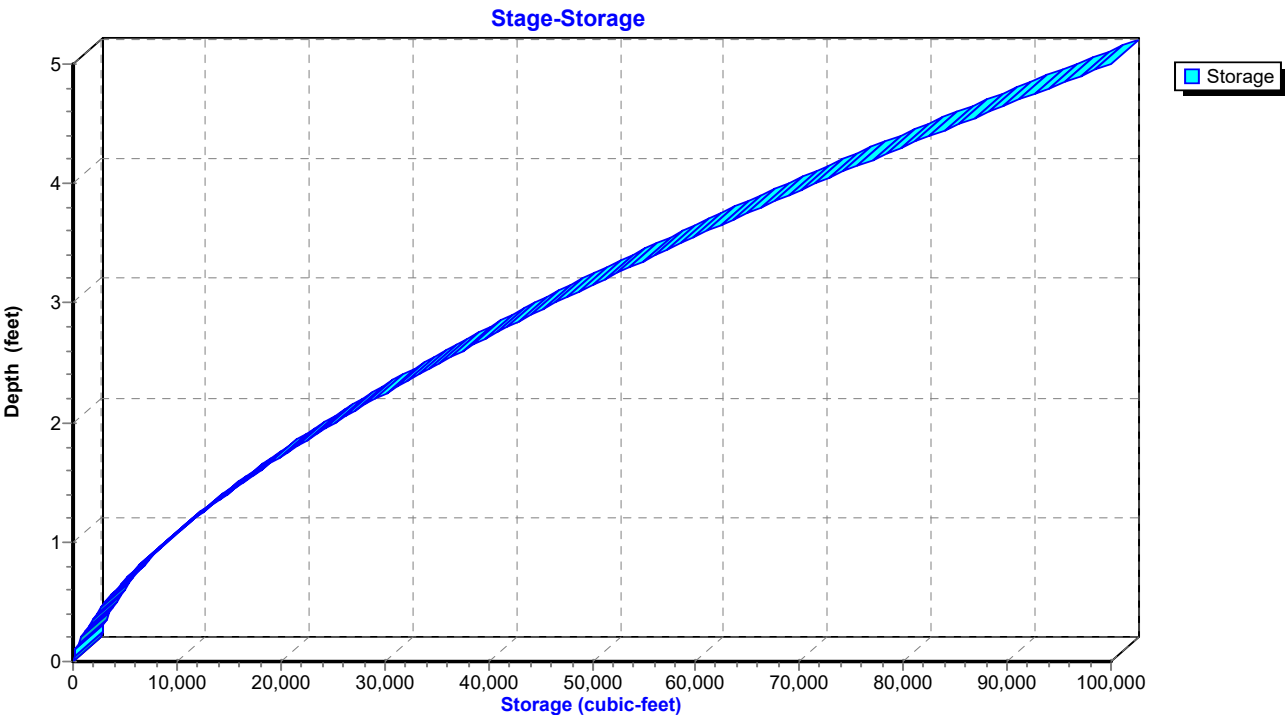
Reach OF4: Primary Stream for Outfalls



Reach OF4: Primary Stream for Outfalls



Reach OF4: Primary Stream for Outfalls



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Mt Pleasant 24-hr S1 25-yr Rainfall=6.34"

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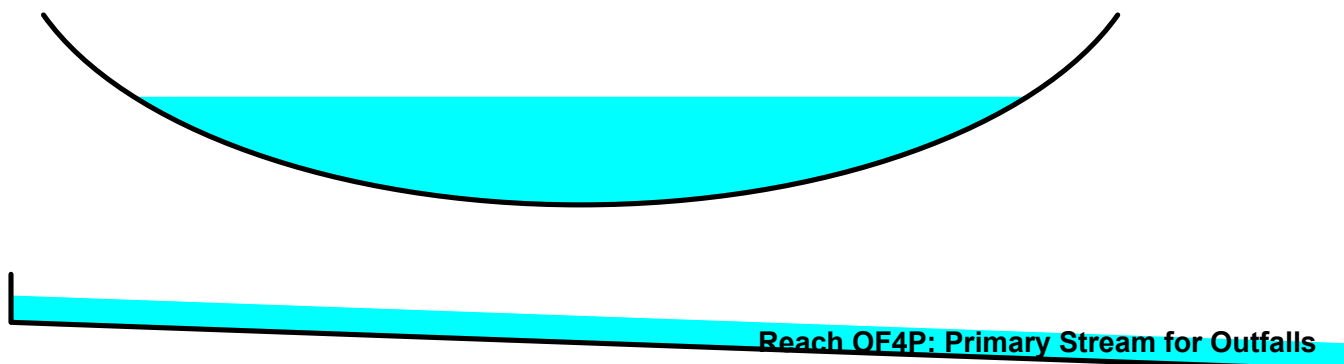
Summary for Reach OF4P: Primary Stream for Outfalls

Inflow Area = 9,969,577 sf, 2.84% Impervious, Inflow Depth = 3.43" for 25-yr event
 Inflow = 192.43 cfs @ 13.66 hrs, Volume= 2,853,359 cf
 Outflow = 192.23 cfs @ 13.68 hrs, Volume= 2,853,357 cf, Atten= 0%, Lag= 1.3 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
 Max. Velocity= 4.48 fps, Min. Travel Time= 3.7 min
 Avg. Velocity = 1.29 fps, Avg. Travel Time= 13.0 min

Peak Storage= 42,915 cf @ 13.68 hrs
 Average Depth at Peak Storage= 2.84' , Surface Width= 22.63'
 Bank-Full Depth= 5.00' Flow Area= 100.0 sf, Capacity= 640.46 cfs

30.00' x 5.00' deep Parabolic Channel, n= 0.035
 Length= 1,000.0' Slope= 0.0050 '/'
 Inlet Invert= 675.00', Outlet Invert= 670.00'



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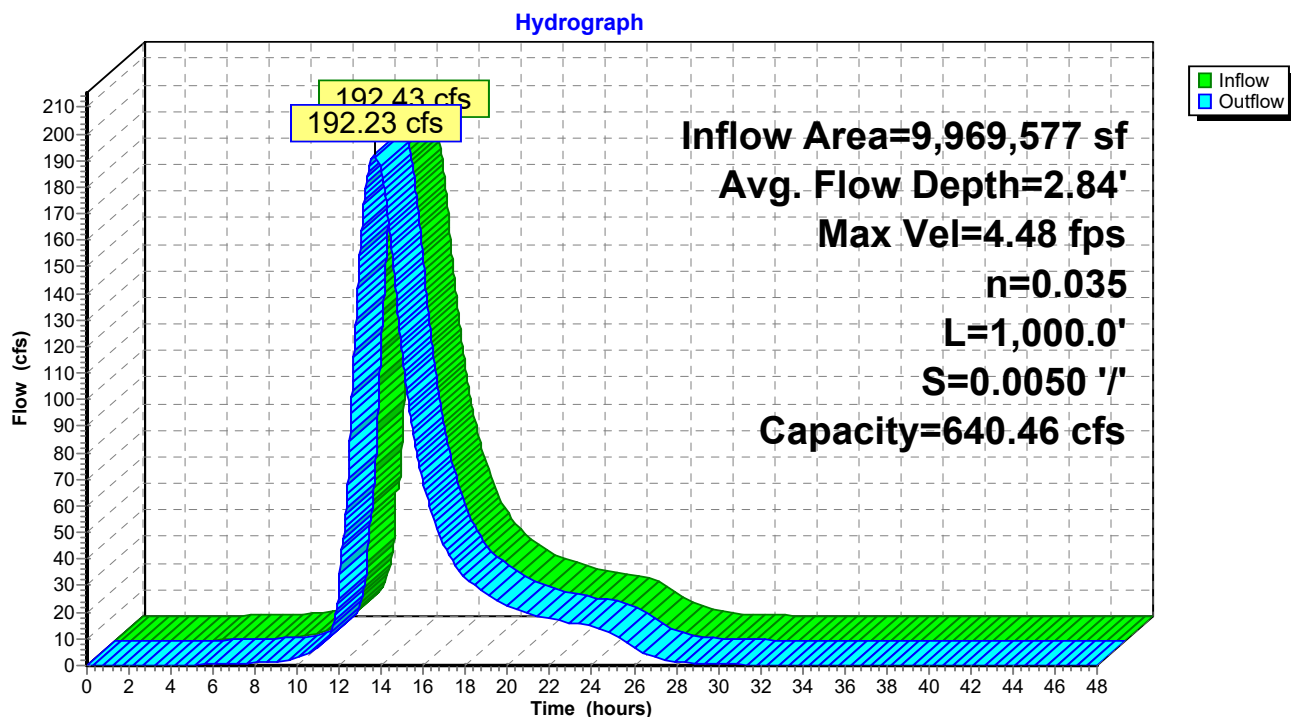
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Mt Pleasant 24-hr S1 25-yr Rainfall=6.34"

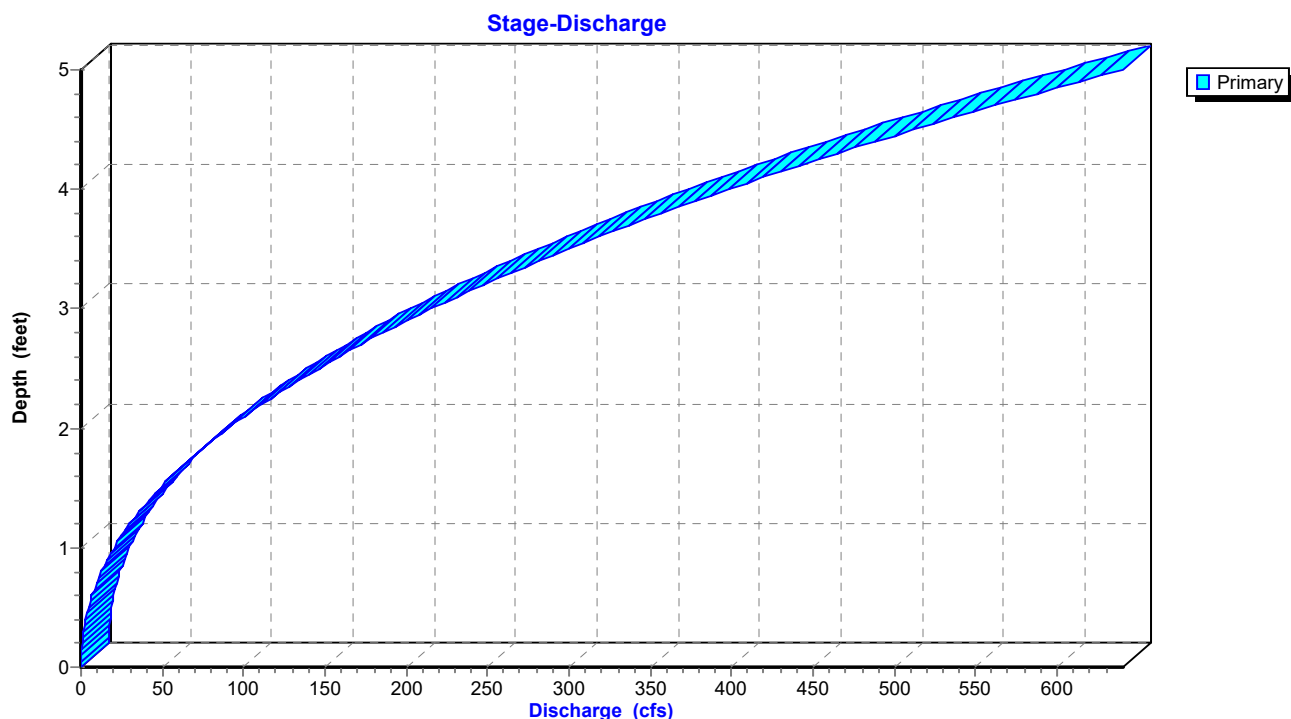
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Reach OF4P: Primary Stream for Outfalls



Reach OF4P: Primary Stream for Outfalls



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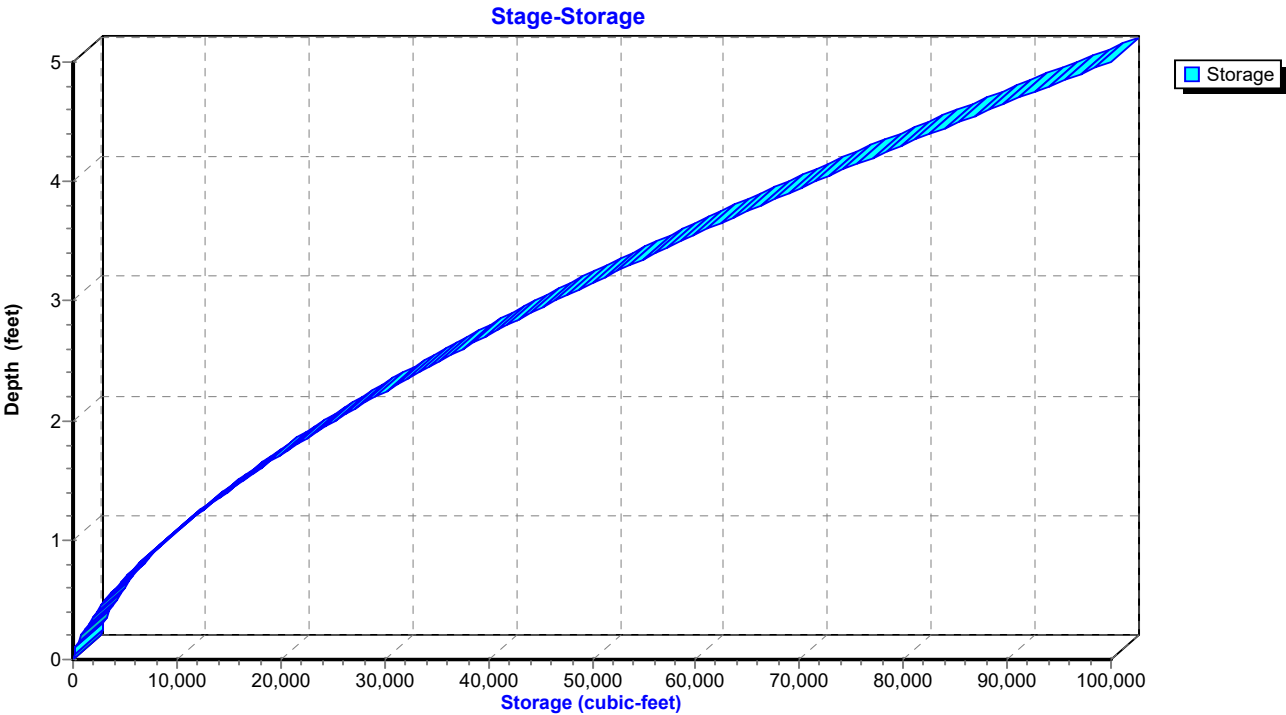
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Mt Pleasant 24-hr S1 25-yr Rainfall=6.34"

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Reach OF4P: Primary Stream for Outfalls



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Mt Pleasant 24-hr S1 25-yr Rainfall=6.34"

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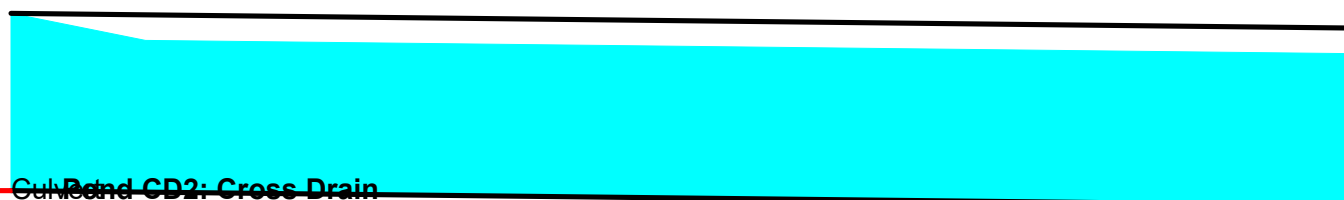
Summary for Pond CD2: Cross Drain

Inflow Area = 1,520,244 sf, 0.00% Impervious, Inflow Depth = 2.33" for 25-yr event
 Inflow = 38.11 cfs @ 12.88 hrs, Volume= 294,710 cf
 Outflow = 38.11 cfs @ 12.88 hrs, Volume= 294,710 cf, Atten= 0%, Lag= 0.0 min
 Primary = 38.11 cfs @ 12.88 hrs, Volume= 294,710 cf
 Routed to Reach OF4P : Primary Stream for Outfalls

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
 Peak Elev= 683.44' @ 12.88 hrs

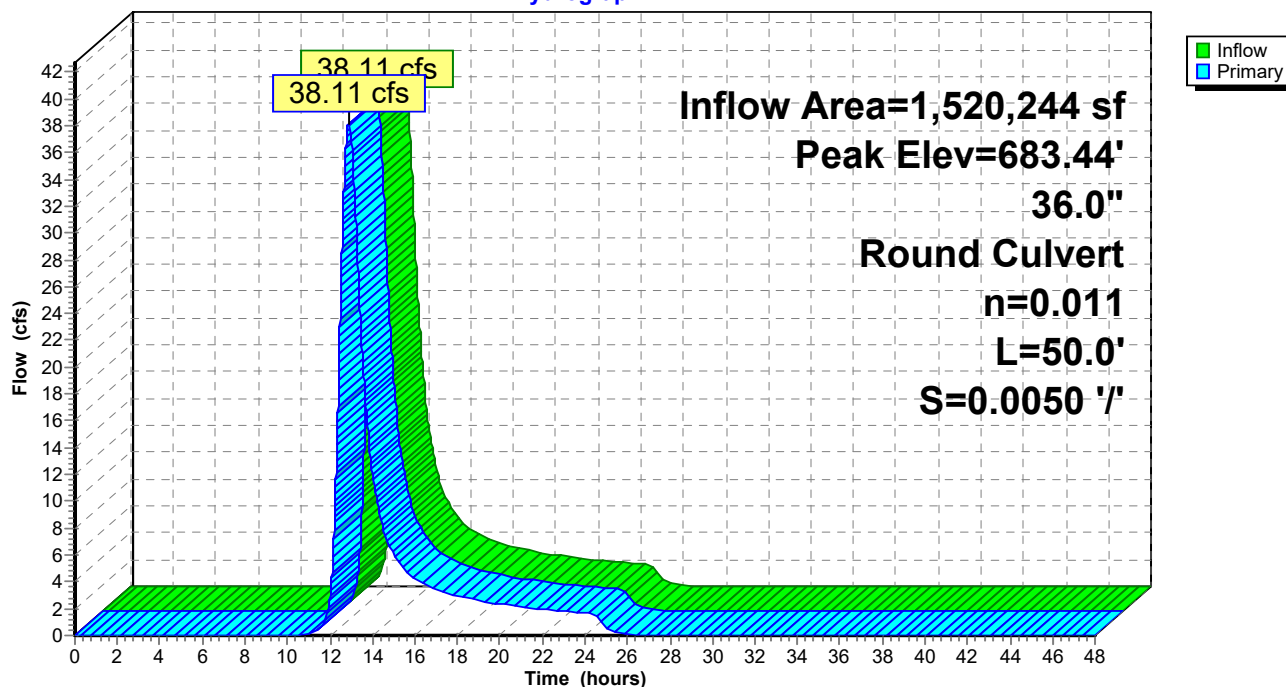
Device	Routing	Invert	Outlet Devices
#1	Primary	680.25'	36.0" Round Culvert L= 50.0' Ke= 0.500 Inlet / Outlet Invert= 680.25' / 680.00' S= 0.0050 '/' Cc= 0.900 n= 0.011 Concrete pipe, straight & clean, Flow Area= 7.07 sf

Primary OutFlow Max=38.11 cfs @ 12.88 hrs HW=683.44' TW=677.49' (Dynamic Tailwater)
 1=Culvert (Barrel Controls 38.11 cfs @ 6.30 fps)



Pond CD2: Cross Drain

Hydrograph



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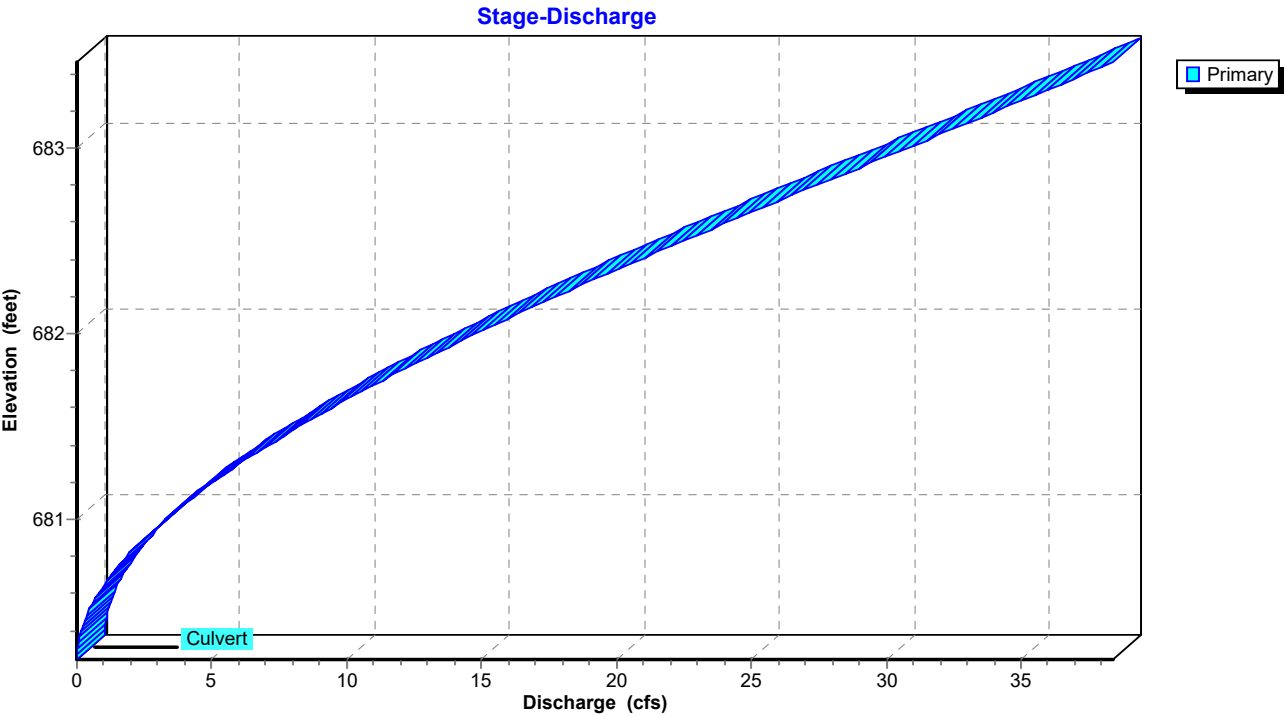
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Mt Pleasant 24-hr S1 25-yr Rainfall=6.34"

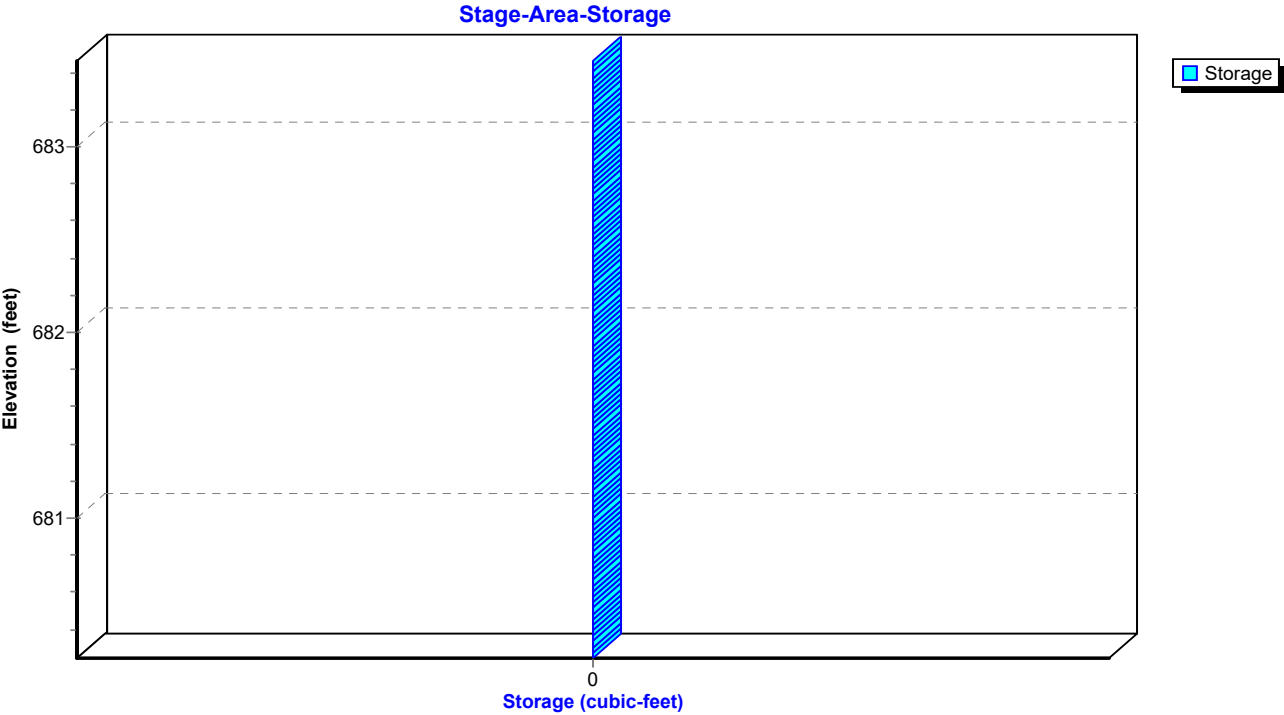
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Pond CD2: Cross Drain



Pond CD2: Cross Drain



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Mt Pleasant 24-hr S1 25-yr Rainfall=6.34"

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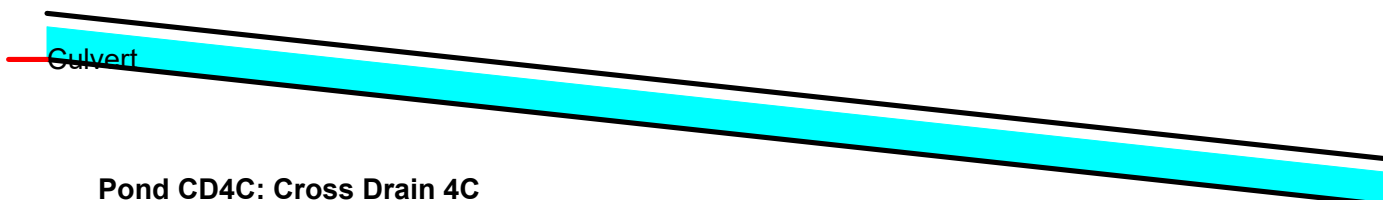
Summary for Pond CD4C: Cross Drain 4C

Inflow Area = 29,621 sf, 0.00% Impervious, Inflow Depth = 5.87" for 25-yr event
 Inflow = 4.71 cfs @ 12.05 hrs, Volume= 14,480 cf
 Outflow = 4.71 cfs @ 12.05 hrs, Volume= 14,480 cf, Atten= 0%, Lag= 0.0 min
 Primary = 4.71 cfs @ 12.05 hrs, Volume= 14,480 cf
 Routed to Pond CD4DCE : Cross Drain 4DCE

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
 Peak Elev= 684.81' @ 12.05 hrs

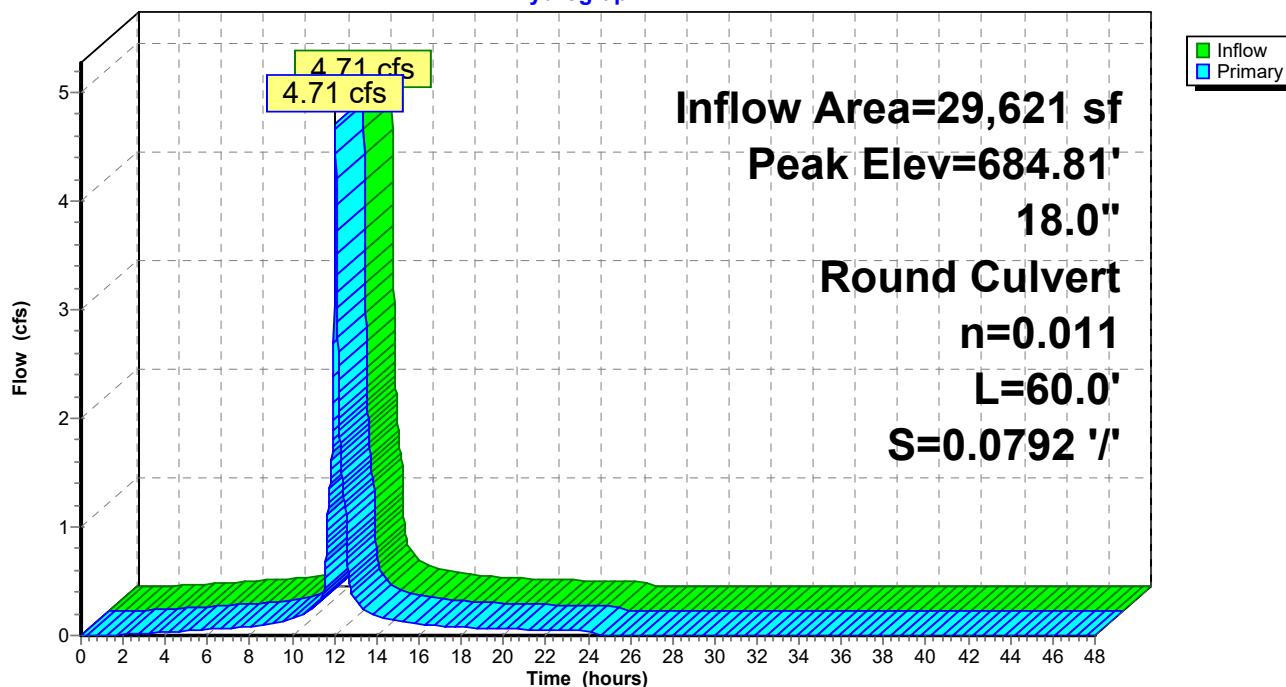
Device	Routing	Invert	Outlet Devices
#1	Primary	683.75'	18.0" Round Culvert L= 60.0' Square-edged headwall, Ke= 0.500 Inlet / Outlet Invert= 683.75' / 679.00' S= 0.0792 '/' Cc= 0.900 n= 0.011 Concrete pipe, straight & clean, Flow Area= 1.77 sf

Primary OutFlow Max=4.69 cfs @ 12.05 hrs HW=684.81' TW=680.13' (Dynamic Tailwater)
 1=Culvert (Inlet Controls 4.69 cfs @ 3.51 fps)



Pond CD4C: Cross Drain 4C

Hydrograph



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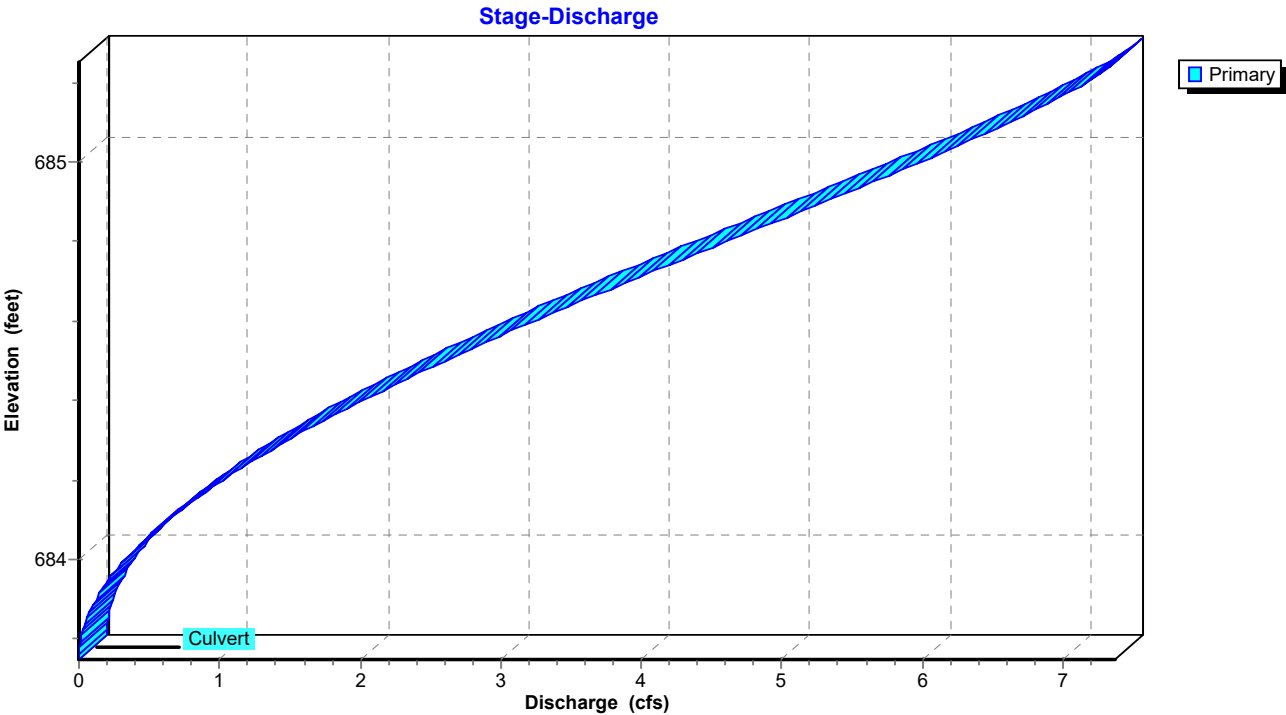
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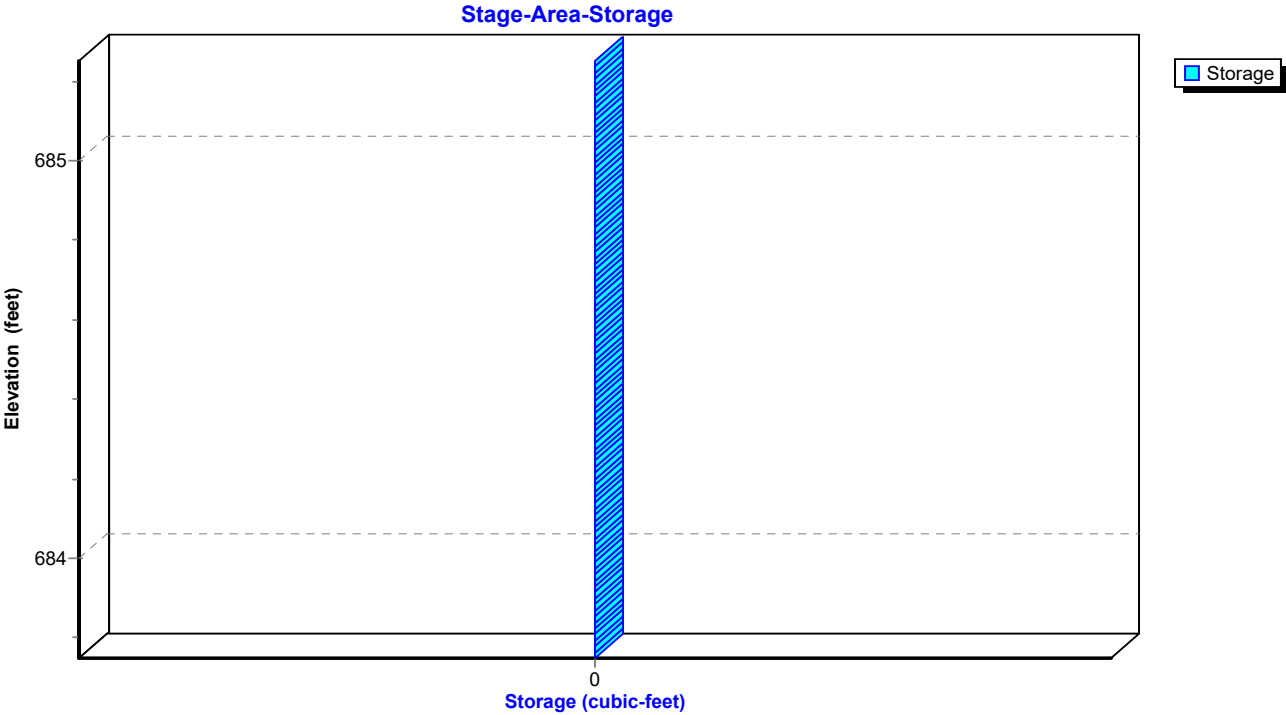
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Pond CD4C: Cross Drain 4C



Pond CD4C: Cross Drain 4C



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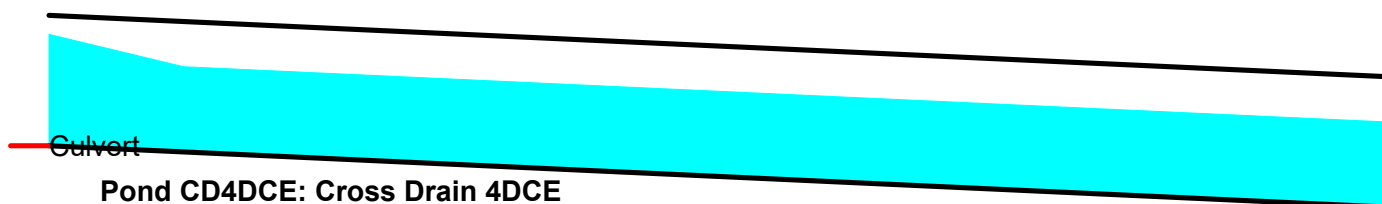
Summary for Pond CD4DCE: Cross Drain 4DCE

Inflow Area = 1,234,926 sf, 3.53% Impervious, Inflow Depth = 3.05" for 25-yr event
 Inflow = 41.96 cfs @ 12.69 hrs, Volume= 314,301 cf
 Outflow = 41.96 cfs @ 12.69 hrs, Volume= 314,301 cf, Atten= 0%, Lag= 0.0 min
 Primary = 41.96 cfs @ 12.69 hrs, Volume= 314,301 cf
 Routed to Pond POND1P : PROP POND

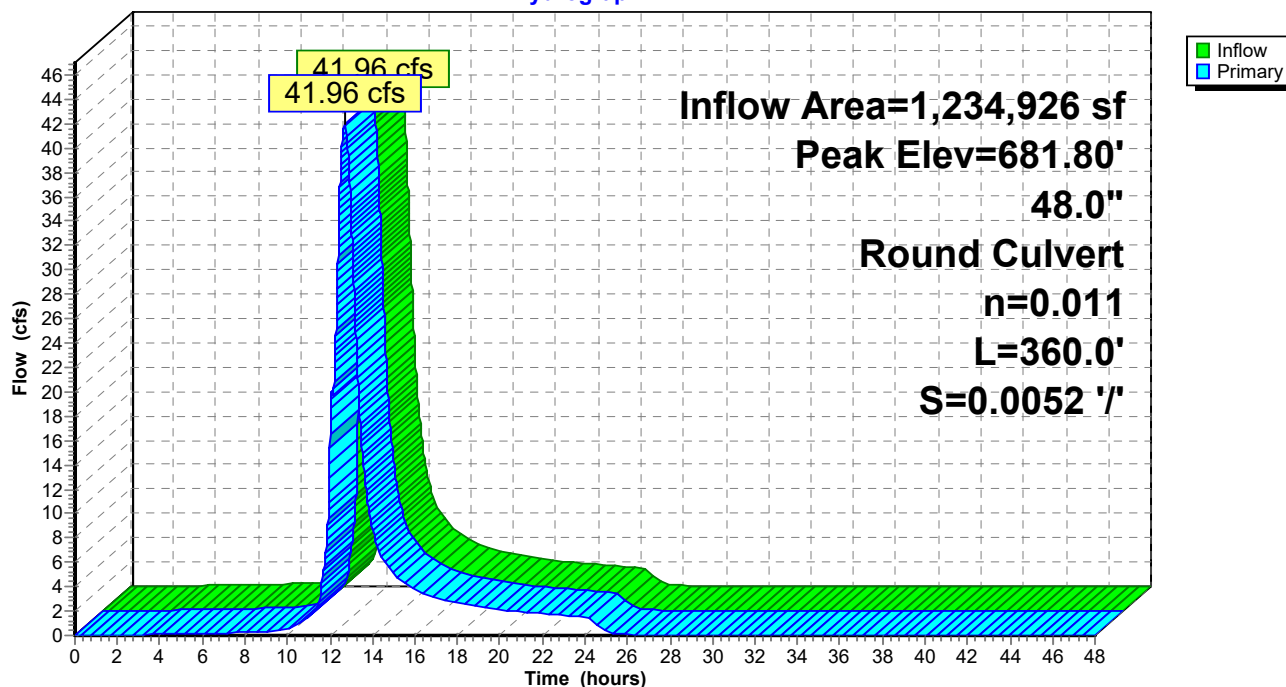
Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
 Peak Elev= 681.80' @ 12.86 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	678.39'	48.0" Round Culvert L= 360.0' Ke= 0.500 Inlet / Outlet Invert= 678.39' / 676.50' S= 0.0052 '/' Cc= 0.900 n= 0.011 Concrete pipe, straight & clean, Flow Area= 12.57 sf

Primary OutFlow Max=41.52 cfs @ 12.69 hrs HW=681.70' TW=680.68' (Dynamic Tailwater)
 ↑ **1=Culvert** (Outlet Controls 41.52 cfs @ 5.06 fps)

**Pond CD4DCE: Cross Drain 4DCE**

Hydrograph



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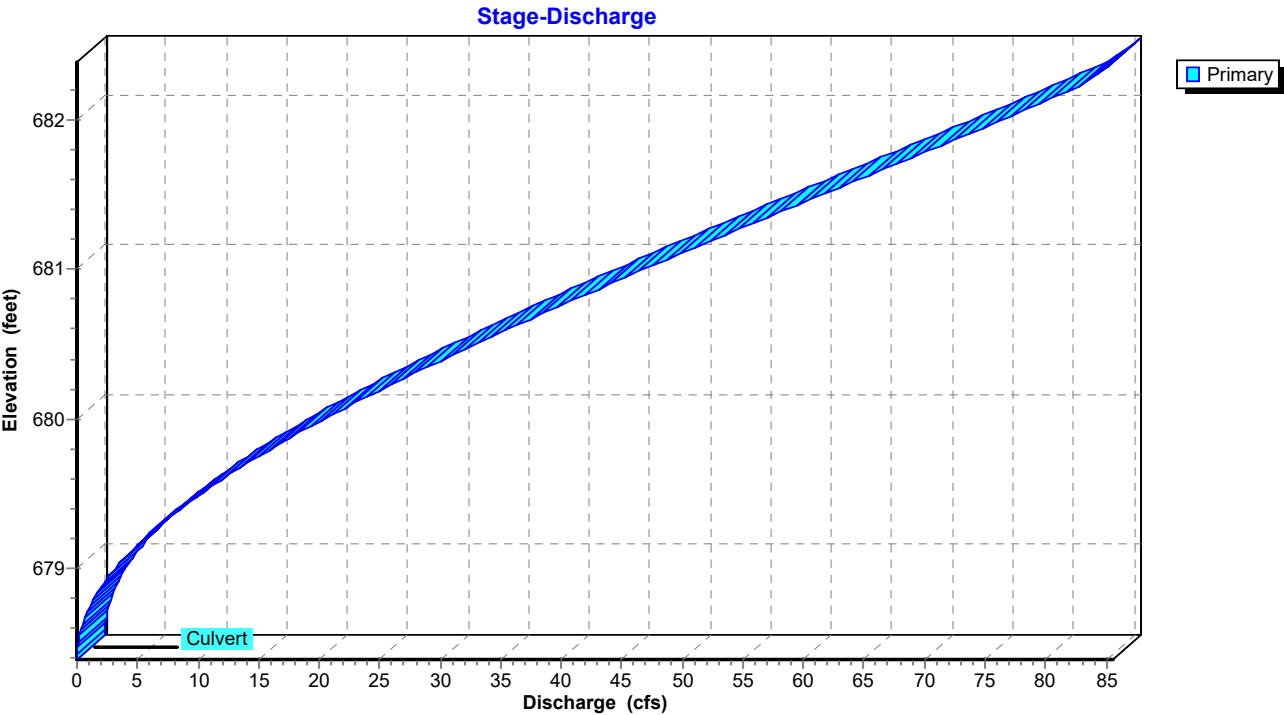
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Mt Pleasant 24-hr S1 25-yr Rainfall=6.34"

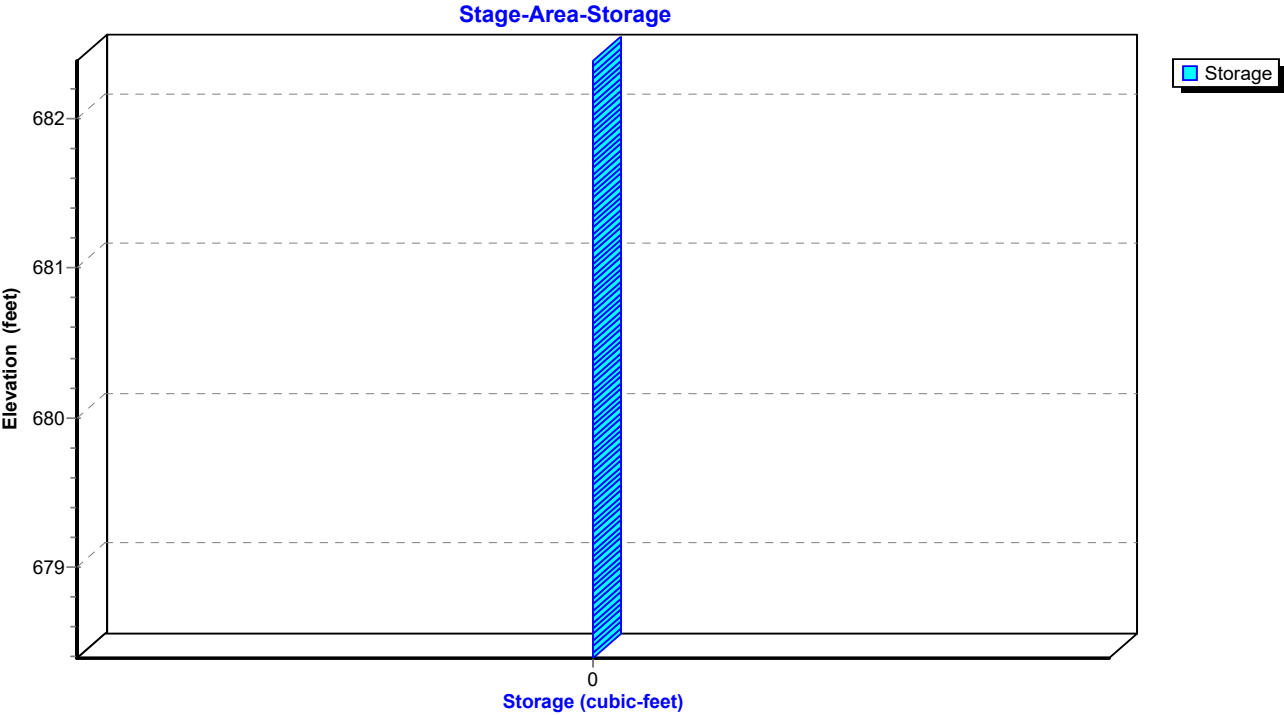
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Pond CD4DCE: Cross Drain 4DCE



Pond CD4DCE: Cross Drain 4DCE



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Mt Pleasant 24-hr S1 25-yr Rainfall=6.34"

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Summary for Pond CD4E: Cross Drain 4E

Inflow Area = 1,151,726 sf, 3.78% Impervious, Inflow Depth = 2.85" for 25-yr event
 Inflow = 42.33 cfs @ 12.64 hrs, Volume= 273,634 cf
 Outflow = 40.67 cfs @ 12.71 hrs, Volume= 273,631 cf, Atten= 4%, Lag= 4.3 min
 Primary = 40.67 cfs @ 12.71 hrs, Volume= 273,631 cf
 Routed to Pond CD4DCE : Cross Drain 4DCE

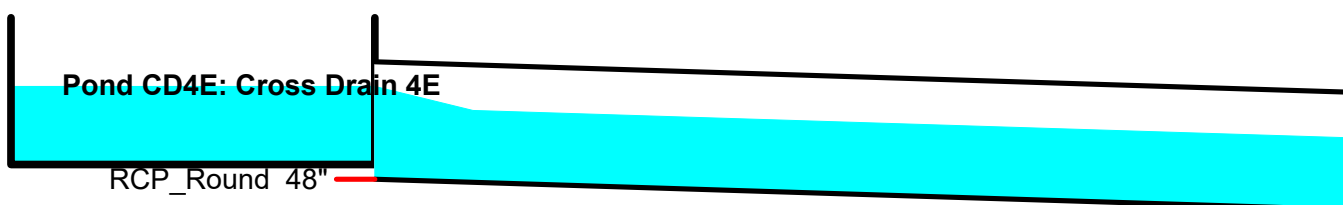
Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
 Peak Elev= 682.66' @ 12.78 hrs Surf.Area= 6,207 sf Storage= 7,049 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
 Center-of-Mass det. time= 1.7 min (884.1 - 882.4)

Volume	Invert	Avail.Storage	Storage Description
#1	680.00'	33,779 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
680.00	274	0	0
681.00	1,562	918	918
682.00	3,975	2,769	3,687
683.00	7,355	5,665	9,352
684.00	12,090	9,723	19,074
685.00	17,320	14,705	33,779

Device	Routing	Invert	Outlet Devices
#1	Primary	679.50'	48.0" Round RCP_Round 48" L= 200.0' Ke= 0.500 Inlet / Outlet Invert= 679.50' / 678.46' S= 0.0052 ' / Cc= 0.900 n= 0.011 Concrete pipe, straight & clean, Flow Area= 12.57 sf

Primary OutFlow Max=40.42 cfs @ 12.71 hrs HW=682.64' TW=681.73' (Dynamic Tailwater)
 ↑1=RCP_Round 48" (Outlet Controls 40.42 cfs @ 5.26 fps)



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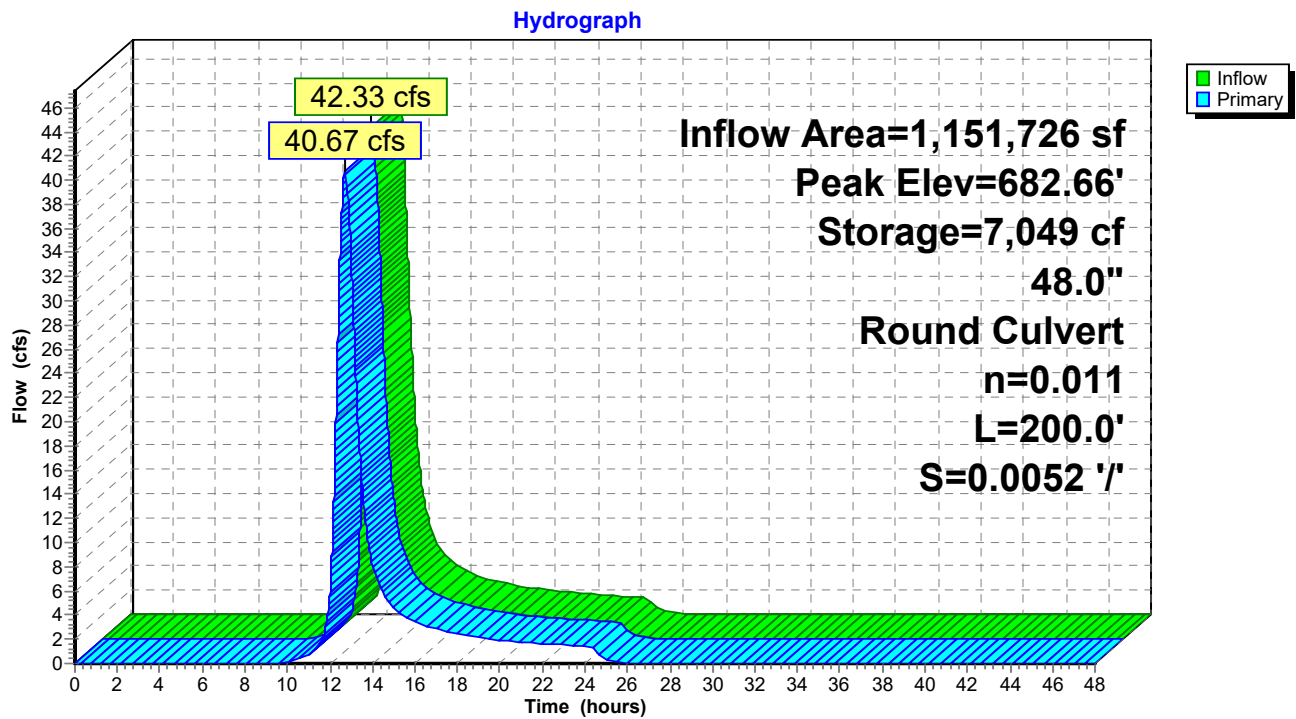
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Mt Pleasant 24-hr S1 25-yr Rainfall=6.34"

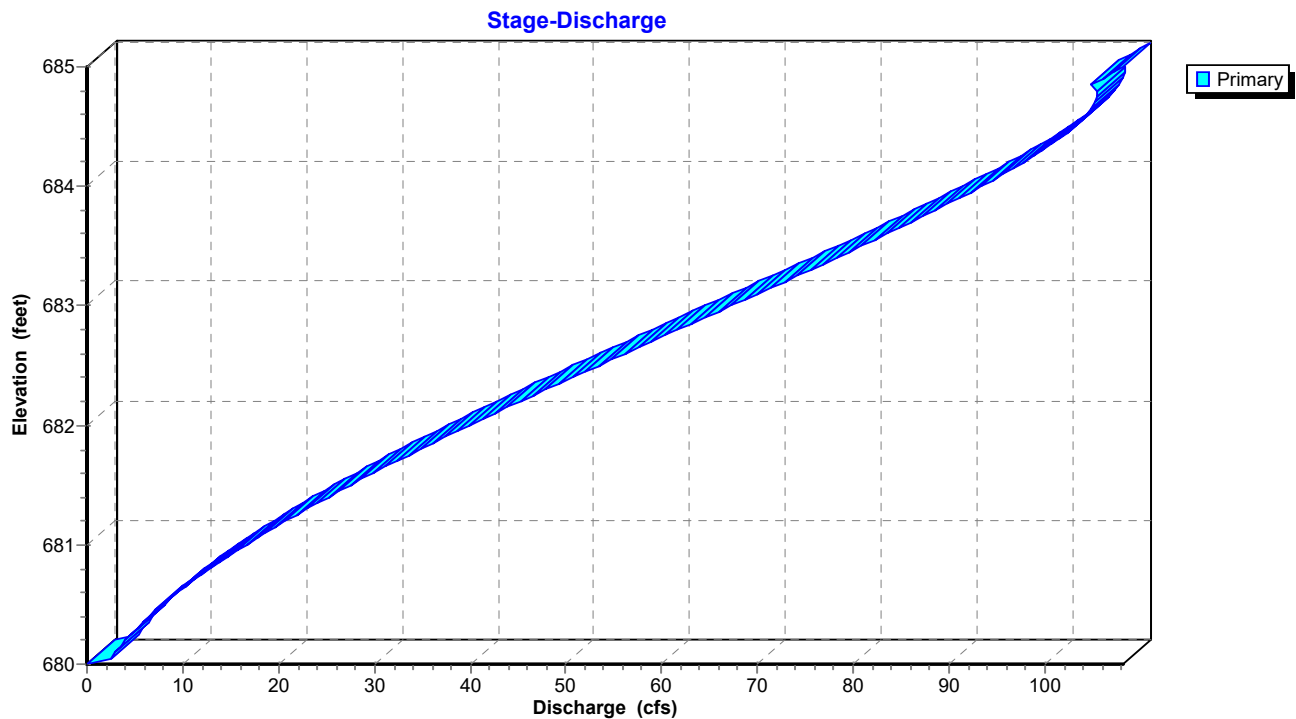
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Pond CD4E: Cross Drain 4E



Pond CD4E: Cross Drain 4E



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Mt Pleasant 24-hr S1 25-yr Rainfall=6.34"

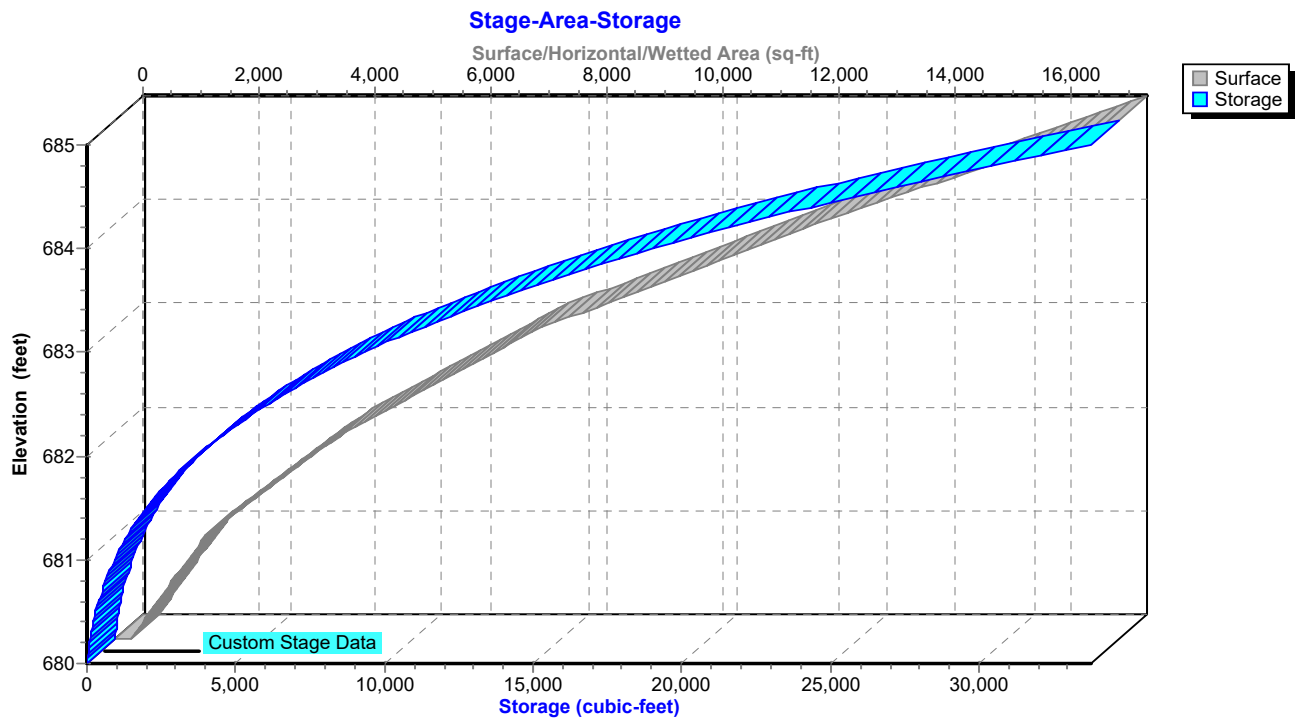
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Pond CD4E: Cross Drain 4E



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Summary for Pond POND1P: PROP POND

Inflow Area = 1,772,021 sf, 9.83% Impervious, Inflow Depth = 3.91" for 25-yr event
 Inflow = 80.52 cfs @ 12.51 hrs, Volume= 576,852 cf
 Outflow = 38.67 cfs @ 13.14 hrs, Volume= 576,845 cf, Atten= 52%, Lag= 37.8 min
 Primary = 38.67 cfs @ 13.14 hrs, Volume= 576,845 cf
 Routed to Reach OF4P : Primary Stream for Outfalls

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
 Peak Elev= 681.13' @ 13.16 hrs Surf.Area= 80,166 sf Storage= 200,001 cf

Plug-Flow detention time= 109.1 min calculated for 576,845 cf (100% of inflow)
 Center-of-Mass det. time= 109.1 min (938.3 - 829.2)

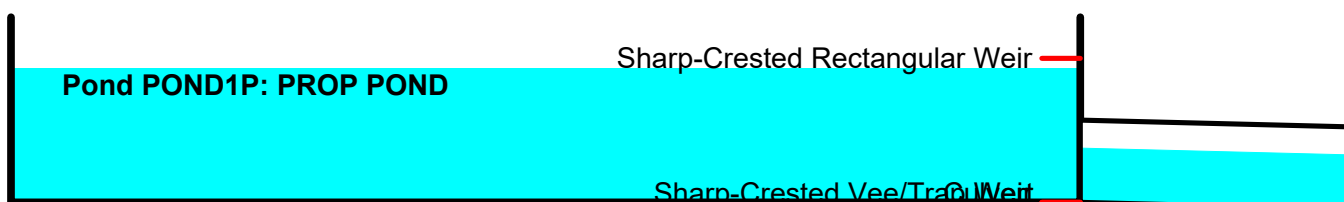
Volume	Invert	Avail.Storage	Storage Description
#1	676.25'	386,863 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
676.25	505	0	0
676.50	14,826	1,916	1,916
677.00	24,194	9,755	11,671
678.00	31,409	27,802	39,473
679.00	39,965	35,687	75,160
680.00	56,082	48,024	123,183
681.00	77,468	66,775	189,958
682.00	98,642	88,055	278,013
683.00	119,057	108,850	386,863

Device	Routing	Invert	Outlet Devices
#1	Primary	676.25'	36.0" Round Culvert L= 50.0' Ke= 0.600 Inlet / Outlet Invert= 676.25' / 676.00' S= 0.0050 '/' Cc= 0.900 n= 0.011, Flow Area= 7.07 sf
#2	Device 1	676.25'	20.0 deg x 0.4' long Sharp-Crested Vee/Trap Weir Cv= 2.69 (C= 3.36)
#3	Device 1	681.50'	16.0' long Sharp-Crested Rectangular Weir 2 End Contraction(s)

Primary OutFlow Max=38.66 cfs @ 13.14 hrs HW=681.13' TW=677.70' (Dynamic Tailwater)

1=Culvert (Passes 38.66 cfs of 58.64 cfs potential flow)
 2=Sharp-Crested Vee/Trap Weir (Weir Controls 38.66 cfs @ 6.29 fps)
 3=Sharp-Crested Rectangular Weir (Controls 0.00 cfs)



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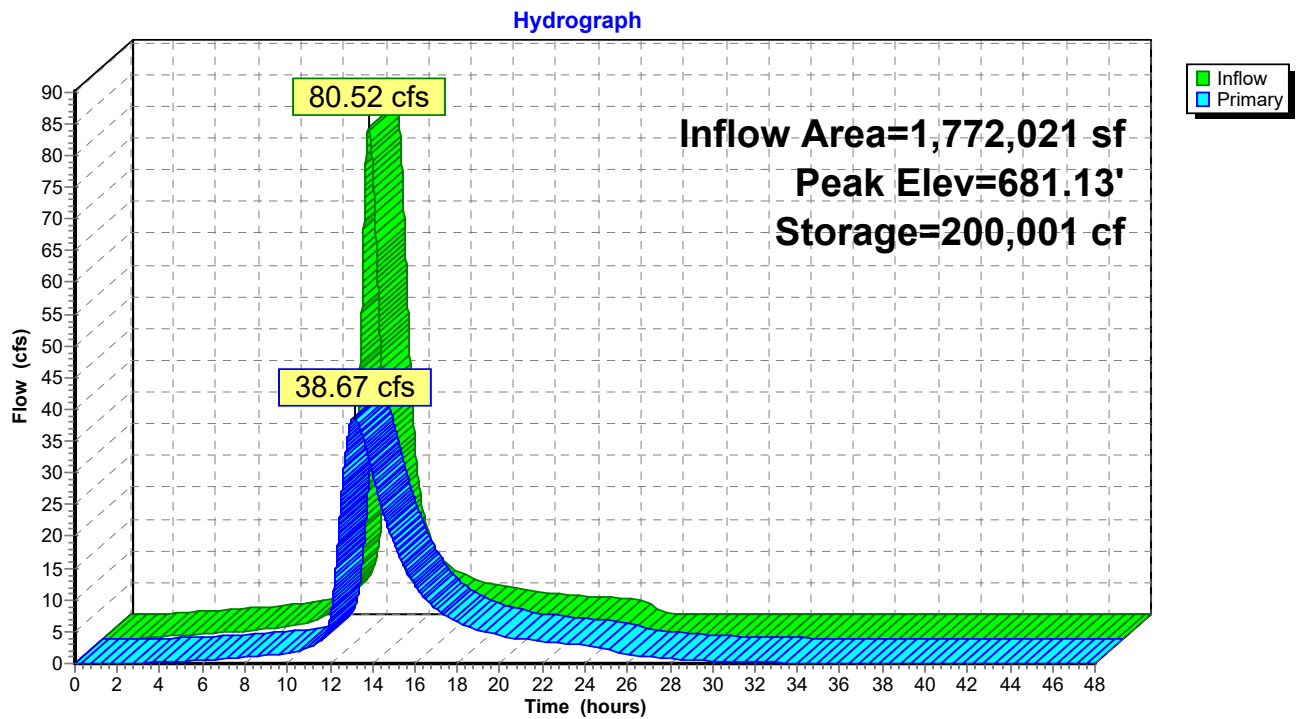
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Mt Pleasant 24-hr S1 25-yr Rainfall=6.34"

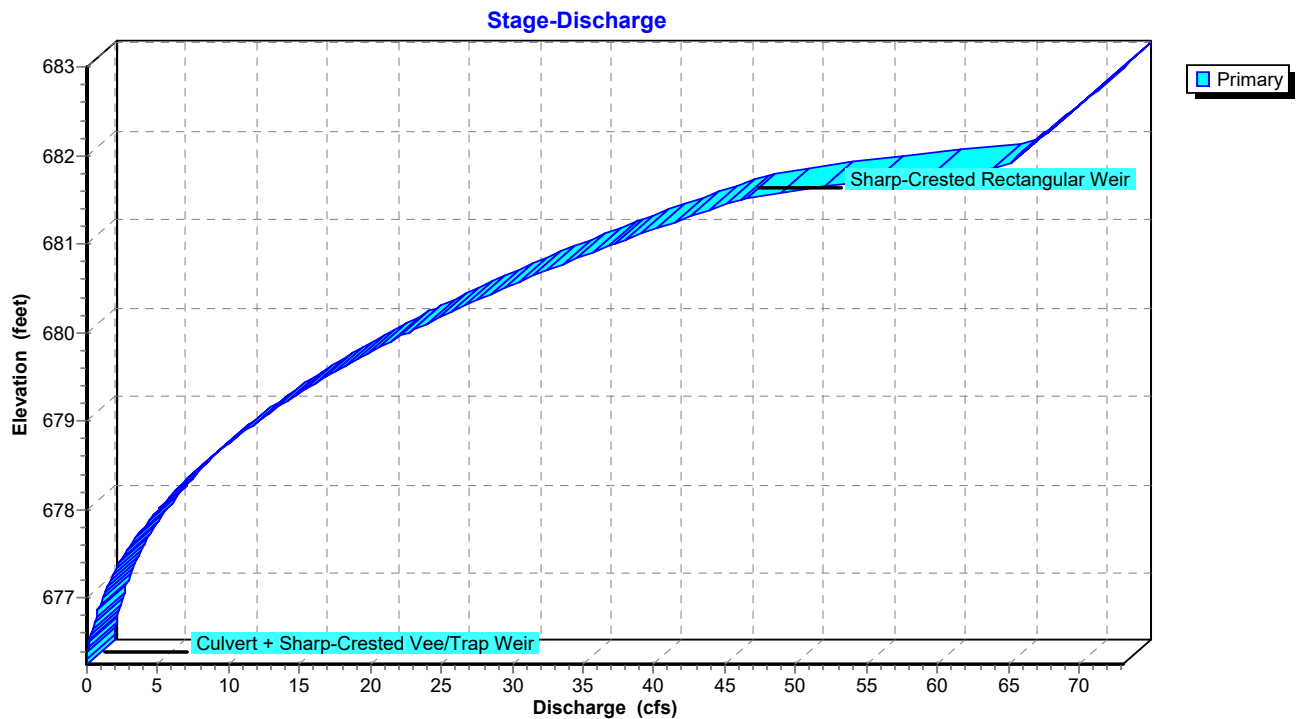
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Pond POND1P: PROP POND



Pond POND1P: PROP POND



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Mt Pleasant 24-hr S1 25-yr Rainfall=6.34"

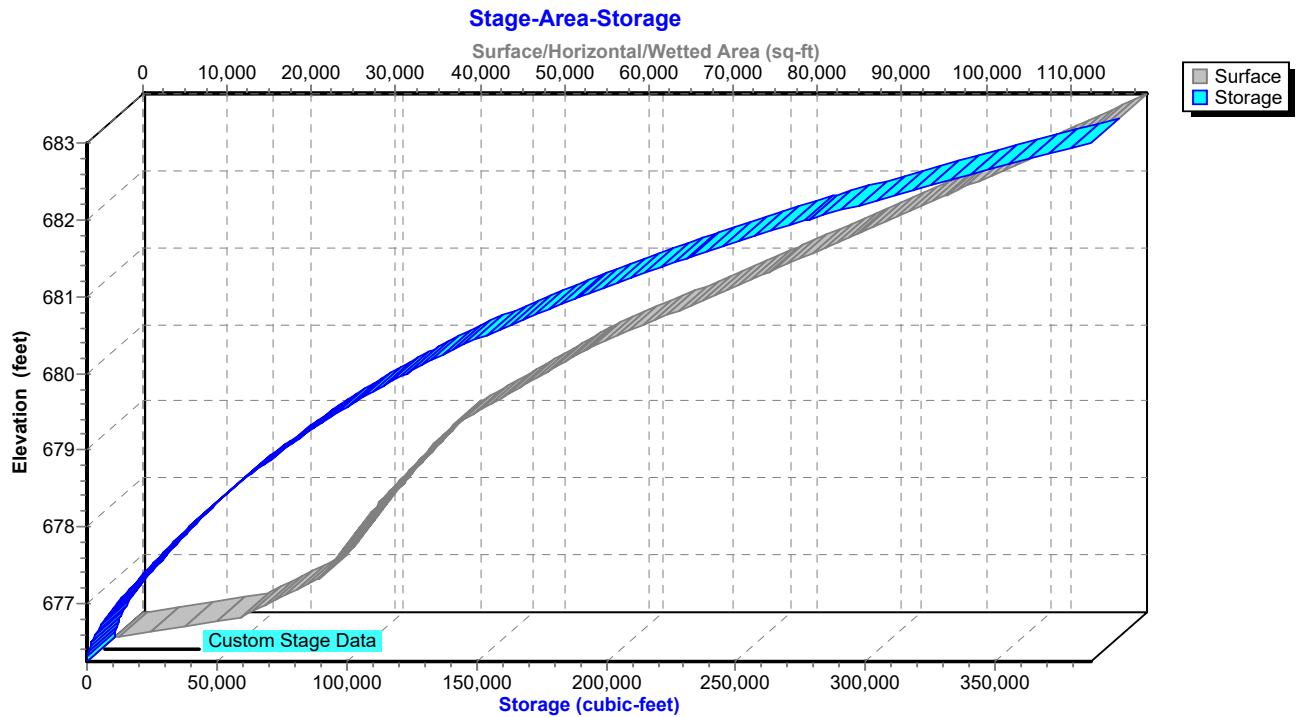
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Pond POND1P: PROP POND



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Time span=0.00-48.00 hrs, dt=0.01 hrs, 4801 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

Subcatchment DA 1: BASIN 1 PRE Runoff Area=143.000 ac 1.75% Impervious Runoff Depth=4.22"
 Flow Length=5,750' Tc=143.0 min CN=75 Runoff=169.27 cfs 2,190,555 cf

Subcatchment DA 2: BASIN 2 PRE Runoff Area=34.900 ac 0.00% Impervious Runoff Depth=2.86"
 Flow Length=2,150' Slope=0.0150 '/' Tc=62.3 min CN=62 Runoff=48.09 cfs 362,320 cf

Subcatchment DA 3: BASIN 3 PRE Runoff Area=9.380 ac 0.00% Impervious Runoff Depth=4.00"
 Flow Length=838' Slope=0.0200 '/' Tc=25.9 min CN=73 Runoff=28.36 cfs 136,345 cf

Subcatchment DA 4: BASIN 4 PRE Runoff Area=41.500 ac 0.00% Impervious Runoff Depth=3.68"
 Flow Length=2,468' Tc=68.1 min CN=70 Runoff=71.28 cfs 555,125 cf

Subcatchment DA1P: BASIN 1 PROPOSED Runoff Area=143.000 ac 1.75% Impervious Runoff Depth=4.22"
 Flow Length=5,750' Tc=143.0 min CN=75 Runoff=169.27 cfs 2,190,555 cf

Subcatchment DA2P: BASIN 2 PROPOSED Runoff Area=34.900 ac 0.00% Impervious Runoff Depth=2.86"
 Flow Length=2,150' Slope=0.0150 '/' Tc=62.3 min CN=62 Runoff=48.09 cfs 362,320 cf

Subcatchment DA3P: BASIN 3 PRE Runoff Area=4.760 ac 0.00% Impervious Runoff Depth=4.66"
 Tc=5.0 min CN=79 Runoff=30.15 cfs 80,478 cf

Subcatchment DA4A: BASIN 4A PROPOSED Runoff Area=5.530 ac 0.00% Impervious Runoff Depth=3.47"
 Flow Length=945' Tc=40.9 min CN=68 Runoff=11.70 cfs 69,756 cf

Subcatchment DA4B: BASIN 4B Runoff Area=12.330 ac 24.33% Impervious Runoff Depth=6.60"
 Flow Length=996' Tc=33.8 min CN=96 Runoff=49.75 cfs 295,555 cf

Subcatchment DA4C: BASIN 4C PROPOSED Runoff Area=0.680 ac 0.00% Impervious Runoff Depth=6.60"
 Tc=5.0 min CN=96 Runoff=5.52 cfs 16,300 cf

Subcatchment DA4D: BASIN 4D PROPOSED Runoff Area=1.230 ac 0.00% Impervious Runoff Depth=6.60"
 Tc=5.0 min CN=96 Runoff=9.99 cfs 29,484 cf

Subcatchment DA4E1: BASIN 4E1 Runoff Area=7.260 ac 13.77% Impervious Runoff Depth=3.06"
 Flow Length=640' Tc=31.5 min CN=64 Runoff=15.16 cfs 80,705 cf

Subcatchment DA4E2: BASIN 4E2 Runoff Area=19.180 ac 0.00% Impervious Runoff Depth=3.58"
 Flow Length=1,313' Tc=46.8 min CN=69 Runoff=39.30 cfs 249,230 cf

Reach D4C: Ditch 4C Avg. Flow Depth=0.69' Max Vel=2.63 fps Inflow=5.52 cfs 16,300 cf
 n=0.033 L=313.0' S=0.0104 '/' Capacity=27.19 cfs Outflow=5.23 cfs 16,300 cf

Reach D4D: Ditch 4D Avg. Flow Depth=0.85' Max Vel=3.52 fps Inflow=9.99 cfs 29,484 cf
 n=0.033 L=337.0' S=0.0148 '/' Capacity=32.50 cfs Outflow=9.62 cfs 29,484 cf

Reach D4E1: Ditch 4E1 Avg. Flow Depth=0.97' Max Vel=1.90 fps Inflow=15.16 cfs 80,705 cf
 n=0.033 L=1,788.0' S=0.0031 '/' Capacity=197.27 cfs Outflow=12.81 cfs 80,705 cf

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Reach OF4: Primary Stream for Avg. Flow Depth=3.11' Max Vel=4.74 fps Inflow=232.20 cfs 3,244,345 cf
 n=0.035 L=1,000.0' S=0.0050 '/' Capacity=640.46 cfs Outflow=232.00 cfs 3,244,345 cf

Reach OF4P: Primary Stream for Avg. Flow Depth=3.10' Max Vel=4.73 fps Inflow=230.65 cfs 3,374,372 cf
 n=0.035 L=1,000.0' S=0.0050 '/' Capacity=640.46 cfs Outflow=230.51 cfs 3,374,370 cf

Pond CD2: Cross Drain Peak Elev=684.27' Inflow=48.09 cfs 362,320 cf
 36.0" Round Culvert n=0.011 L=50.0' S=0.0050 '/' Outflow=48.09 cfs 362,320 cf

Pond CD4C: Cross Drain 4C Peak Elev=684.89' Inflow=5.23 cfs 16,300 cf
 18.0" Round Culvert n=0.011 L=60.0' S=0.0792 '/' Outflow=5.23 cfs 16,300 cf

Pond CD4DCE: Cross Drain 4DCE Peak Elev=682.27' Inflow=50.83 cfs 375,714 cf
 48.0" Round Culvert n=0.011 L=360.0' S=0.0052 '/' Outflow=50.83 cfs 375,714 cf

Pond CD4E: Cross Drain 4E Peak Elev=683.15' Storage=10,490 cf Inflow=52.11 cfs 329,935 cf
 48.0" Round Culvert n=0.011 L=200.0' S=0.0052 '/' Outflow=49.42 cfs 329,930 cf

Pond POND1P: PROP POND Peak Elev=681.53' Storage=234,094 cf Inflow=94.09 cfs 671,269 cf
 Outflow=45.92 cfs 671,262 cf

Total Runoff Area = 19,935,234 sf Runoff Volume = 6,618,728 cf Average Runoff Depth = 3.98"
98.03% Pervious = 19,543,194 sf 1.97% Impervious = 392,040 sf

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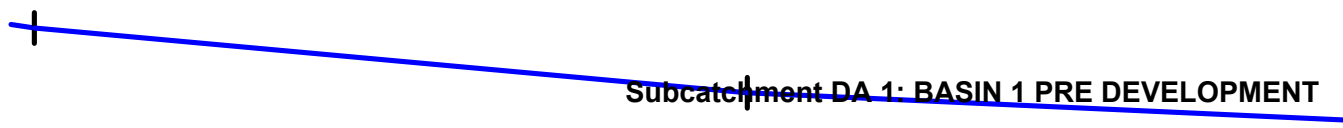
Summary for Subcatchment DA 1: BASIN 1 PRE DEVELOPMENT

Runoff = 169.27 cfs @ 13.83 hrs, Volume= 2,190,555 cf, Depth= 4.22"
Routed to Reach OF4 : Primary Stream for Outfalls

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Mt Pleasant 24-hr S1 50-yr Rainfall=7.08"

Area (ac)	CN	Description
69.500	74	>75% Grass cover, Good, HSG C
71.000	76	Woods/grass comb., Fair, HSG C
2.500	98	Paved parking, HSG C
143.000	75	Weighted Average
140.500		98.25% Pervious Area
2.500		1.75% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
35.4	100	0.0200	0.05		Sheet Flow, Woods: Dense underbrush n= 0.800 P2= 3.57"
92.8	3,050	0.0120	0.55		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
14.8	2,600	0.0060	2.93	11.71	Channel Flow, Area= 4.0 sf Perim= 6.0' r= 0.67' n= 0.030
143.0	5,750	Total			



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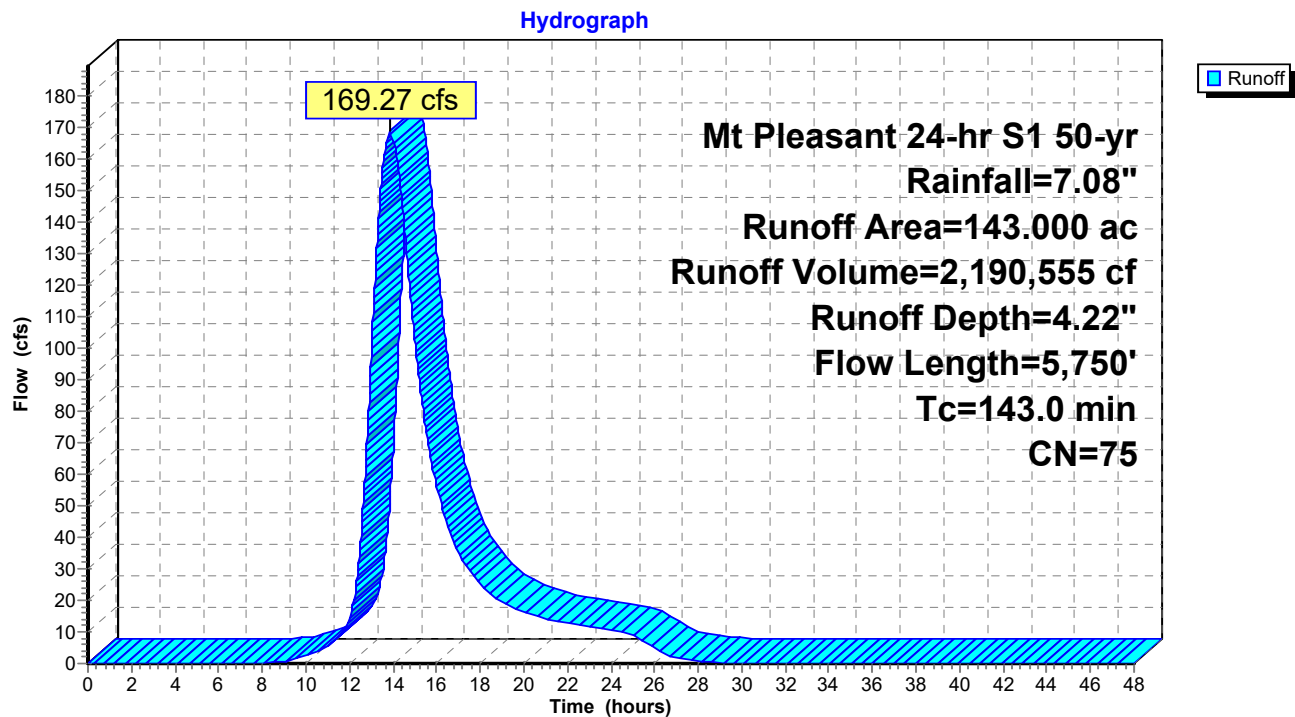
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Subcatchment DA 1: BASIN 1 PRE DEVELOPMENT



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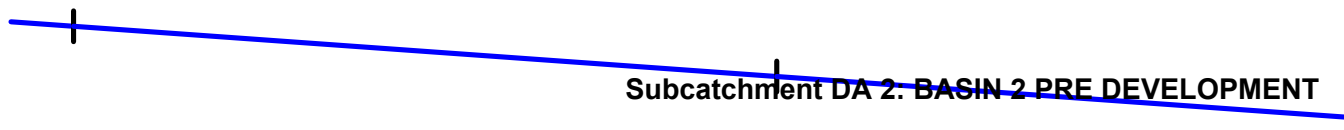
Summary for Subcatchment DA 2: BASIN 2 PRE DEVELOPMENT

Runoff = 48.09 cfs @ 12.88 hrs, Volume= 362,320 cf, Depth= 2.86"
Routed to Reach OF4 : Primary Stream for Outfalls

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Mt Pleasant 24-hr S1 50-yr Rainfall=7.08"

Area (ac)	CN	Description
17.450	58	Meadow, non-grazed, HSG B
14.450	60	Woods, Fair, HSG B
3.000	96	Gravel surface, HSG C
34.900	62	Weighted Average
34.900		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.2	100	0.0150	0.11		Sheet Flow, Grass: Dense n= 0.240 P2= 3.57"
21.9	1,125	0.0150	0.86		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
25.2	925	0.0150	0.61		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
62.3	2,150	Total			



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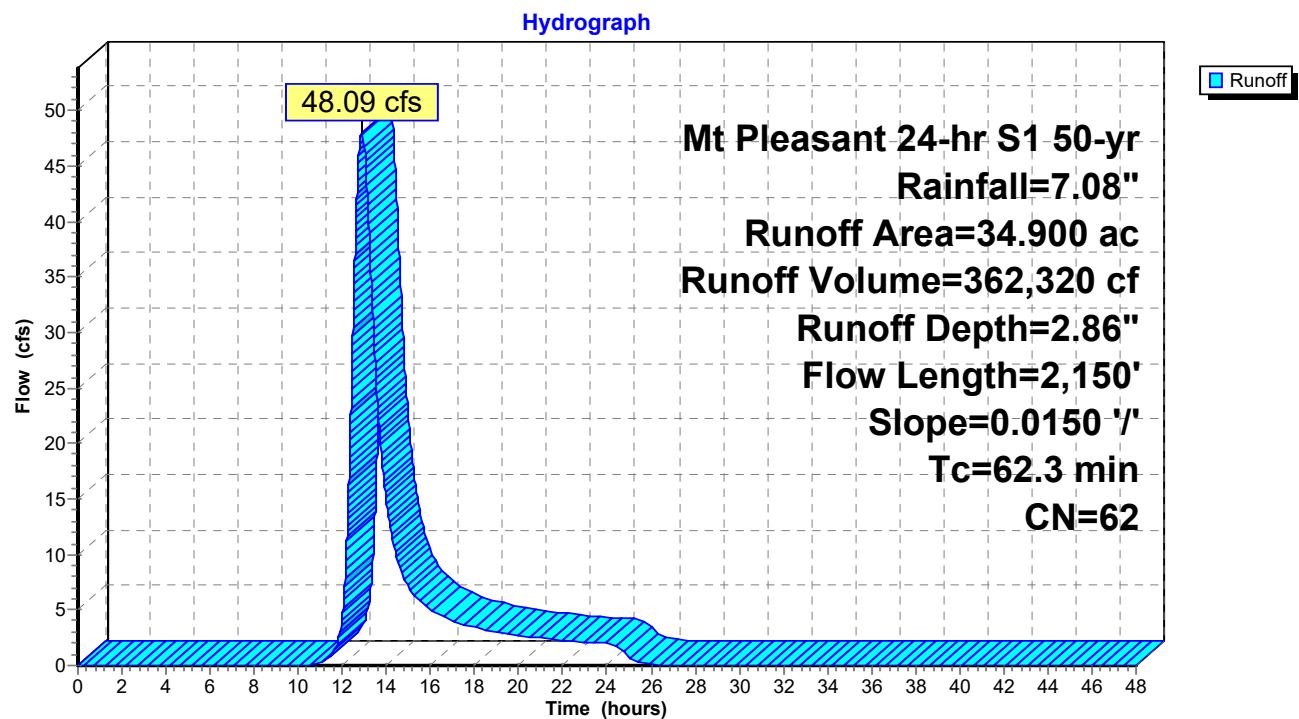
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Subcatchment DA 2: BASIN 2 PRE DEVELOPMENT



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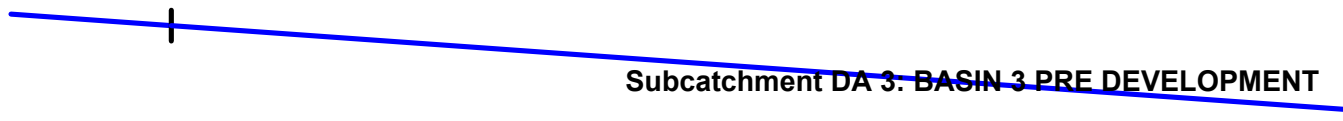
Summary for Subcatchment DA 3: BASIN 3 PRE DEVELOPMENT

Runoff = 28.36 cfs @ 12.32 hrs, Volume= 136,345 cf, Depth= 4.00"
Routed to Reach OF4 : Primary Stream for Outfalls

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Mt Pleasant 24-hr S1 50-yr Rainfall=7.08"

Area (ac)	CN	Description
3.300	78	Meadow, non-grazed, HSG D
3.300	79	Woods, Fair, HSG D
2.250	58	Meadow, non-grazed, HSG B
0.530	60	Woods, Fair, HSG B
9.380	73	Weighted Average
9.380		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.5	100	0.0200	0.12		Sheet Flow, Grass: Dense n= 0.240 P2= 3.57"
12.4	738	0.0200	0.99		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
25.9	838	Total			



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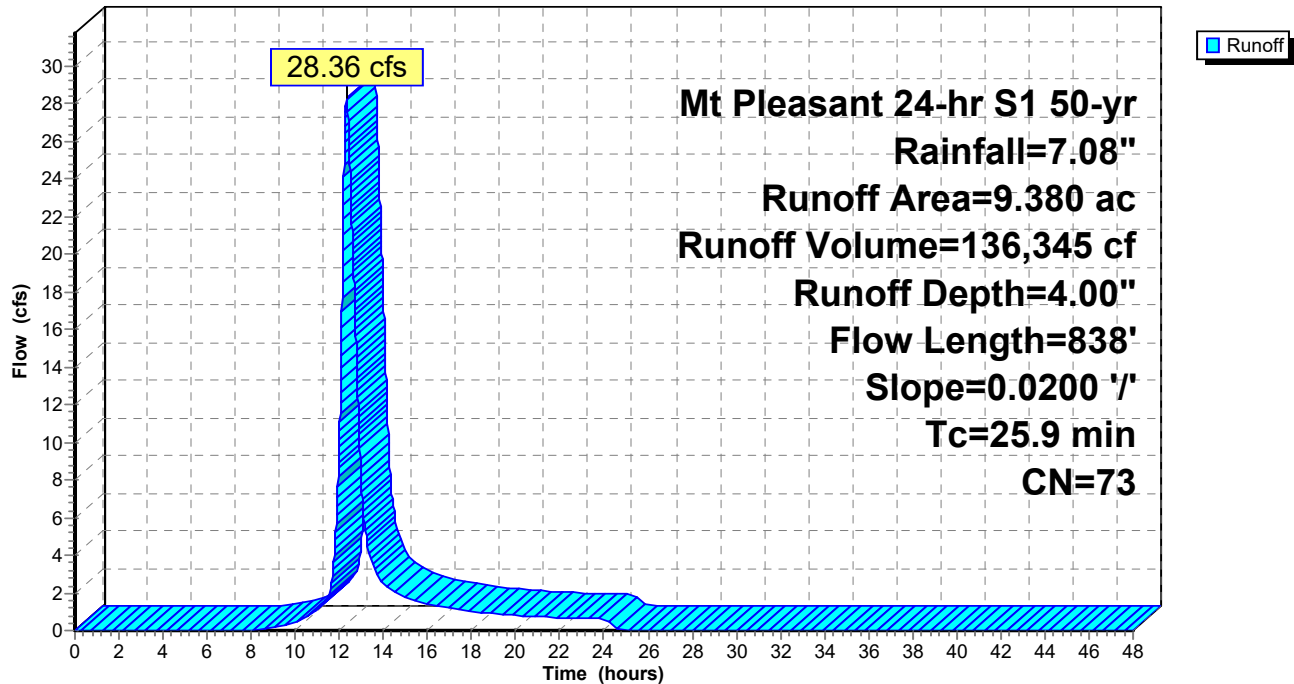
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Subcatchment DA 3: BASIN 3 PRE DEVELOPMENT

Hydrograph



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Summary for Subcatchment DA 4: BASIN 4 PRE DEVELOPMENT

Runoff = 71.28 cfs @ 12.94 hrs, Volume= 555,125 cf, Depth= 3.68"
Routed to Reach OF4 : Primary Stream for Outfalls

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Mt Pleasant 24-hr S1 50-yr Rainfall=7.08"

Area (ac)	CN	Description
7.300	78	Meadow, non-grazed, HSG D
1.830	79	Woods, Fair, HSG D
7.640	58	Meadow, non-grazed, HSG B
1.910	60	Woods, Fair, HSG B
4.150	73	Woods, Fair, HSG C
9.960	71	Meadow, non-grazed, HSG C
2.490	73	Woods, Fair, HSG C
4.970	71	Meadow, non-grazed, HSG C
1.250	73	Woods, Fair, HSG C
41.500	70	Weighted Average
41.500		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
24.5	100	0.0500	0.07		Sheet Flow, Woods: Dense underbrush n= 0.800 P2= 3.57"
43.6	2,368	0.0167	0.90		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
68.1	2,468	Total			

Subcatchment DA 4: BASIN 4 PRE DEVELOPMENT

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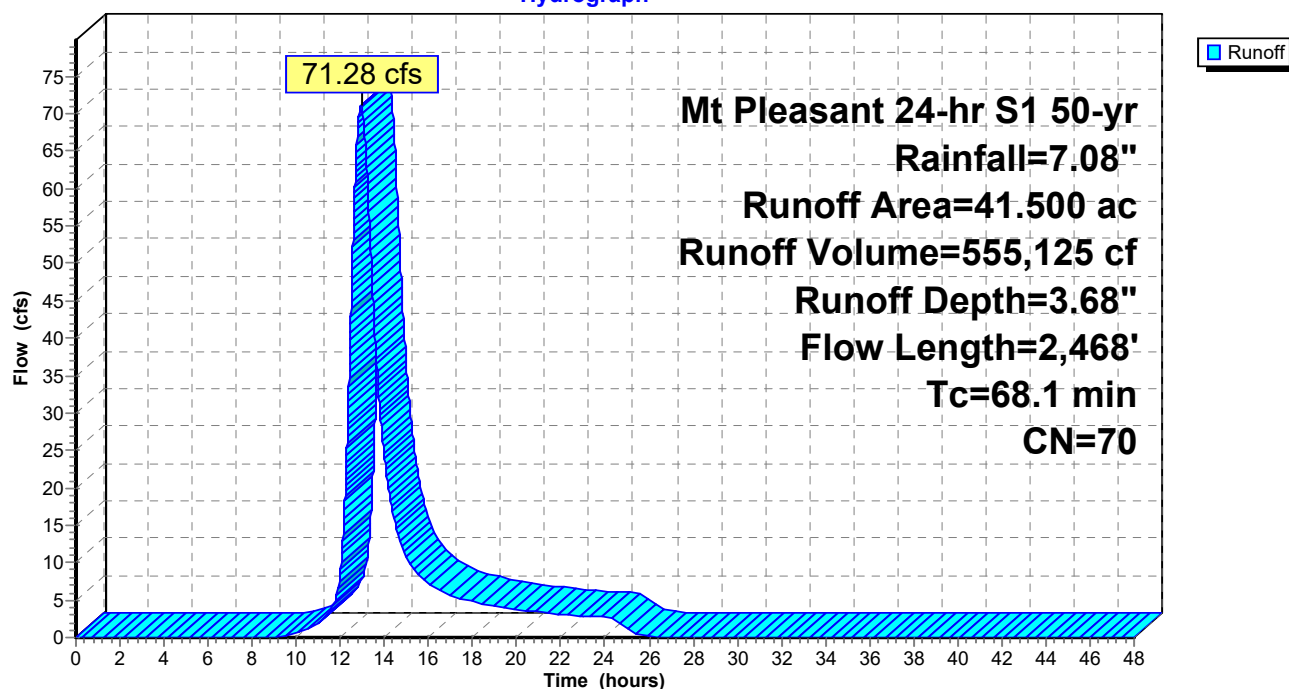
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Subcatchment DA 4: BASIN 4 PRE DEVELOPMENT

Hydrograph



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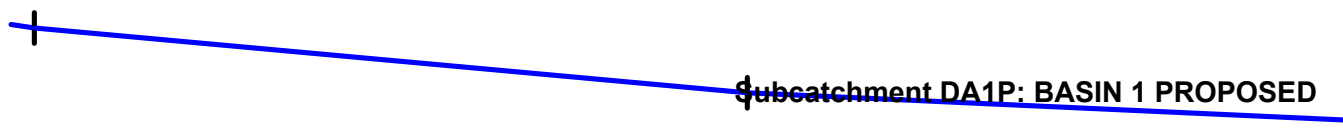
Summary for Subcatchment DA1P: BASIN 1 PROPOSED

Runoff = 169.27 cfs @ 13.83 hrs, Volume= 2,190,555 cf, Depth= 4.22"
Routed to Reach OF4P : Primary Stream for Outfalls

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Mt Pleasant 24-hr S1 50-yr Rainfall=7.08"

Area (ac)	CN	Description
69.500	74	>75% Grass cover, Good, HSG C
71.000	76	Woods/grass comb., Fair, HSG C
2.500	98	Paved parking, HSG C
143.000	75	Weighted Average
140.500		98.25% Pervious Area
2.500		1.75% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
35.4	100	0.0200	0.05		Sheet Flow, Woods: Dense underbrush n= 0.800 P2= 3.57"
92.8	3,050	0.0120	0.55		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
14.8	2,600	0.0060	2.93	11.71	Channel Flow, Area= 4.0 sf Perim= 6.0' r= 0.67' n= 0.030
143.0	5,750	Total			



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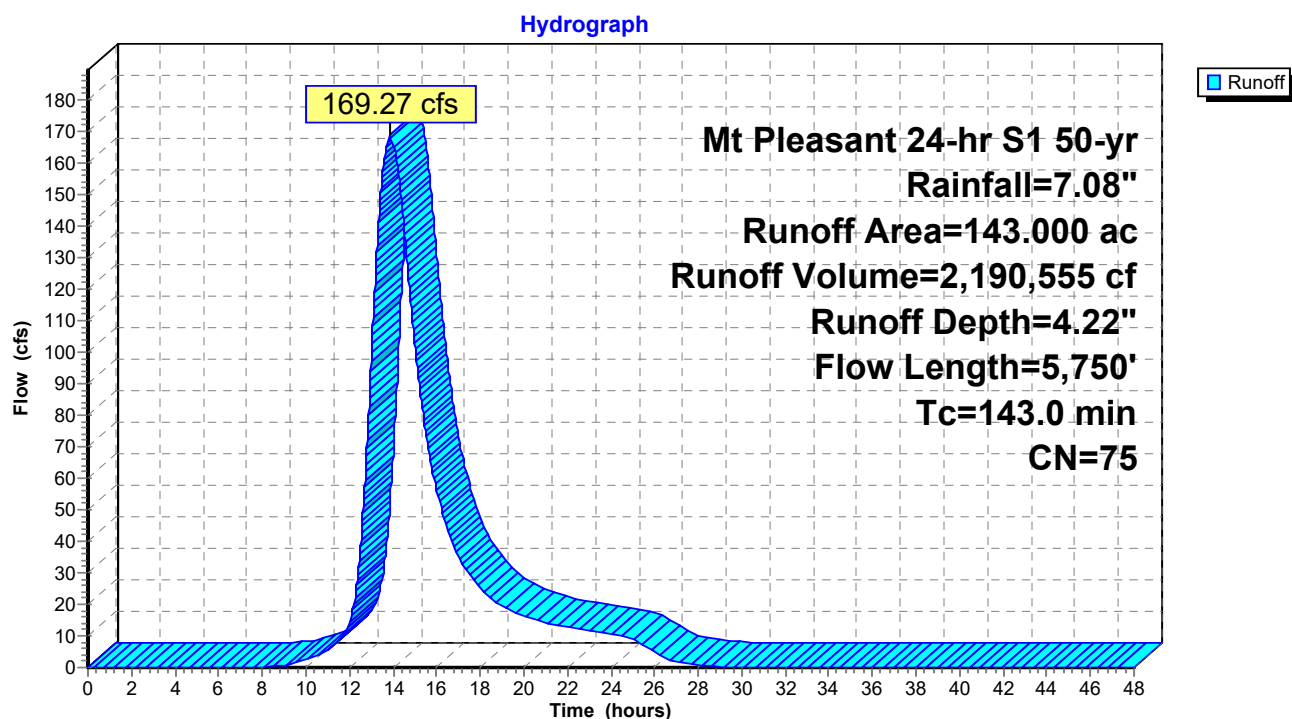
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Subcatchment DA1P: BASIN 1 PROPOSED



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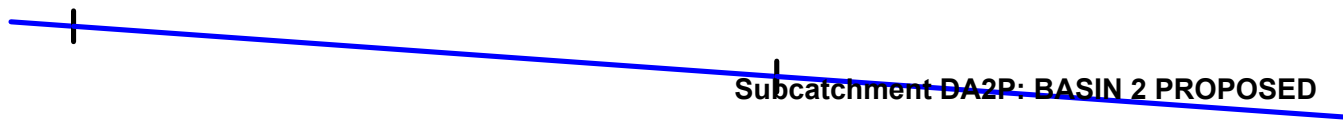
Summary for Subcatchment DA2P: BASIN 2 PROPOSED

Runoff = 48.09 cfs @ 12.88 hrs, Volume= 362,320 cf, Depth= 2.86"
Routed to Pond CD2 : Cross Drain

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Mt Pleasant 24-hr S1 50-yr Rainfall=7.08"

Area (ac)	CN	Description
17.450	58	Meadow, non-grazed, HSG B
14.450	60	Woods, Fair, HSG B
3.000	96	Gravel surface, HSG C
34.900	62	Weighted Average
34.900		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.2	100	0.0150	0.11		Sheet Flow, Grass: Dense n= 0.240 P2= 3.57"
21.9	1,125	0.0150	0.86		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
25.2	925	0.0150	0.61		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
62.3	2,150	Total			



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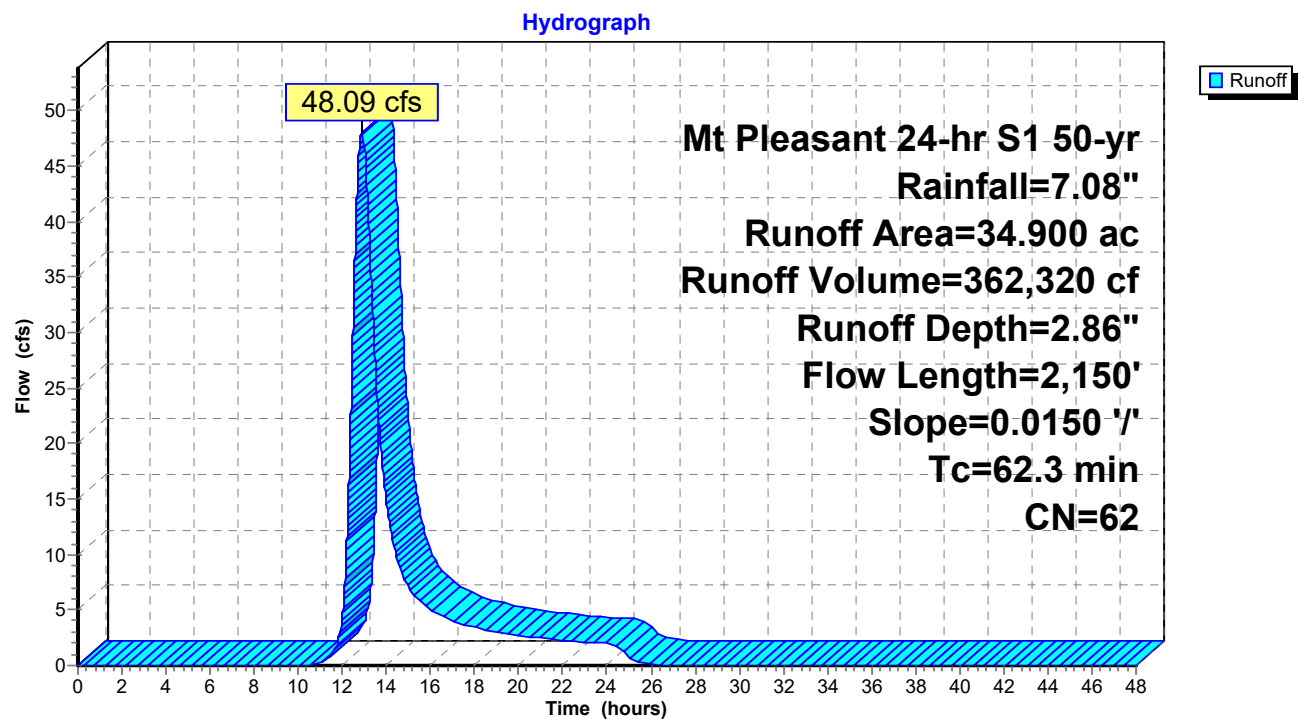
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Subcatchment DA2P: BASIN 2 PROPOSED



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Summary for Subcatchment DA3P: BASIN 3 PRE DEVELOPMENT

Runoff = 30.15 cfs @ 12.03 hrs, Volume= 80,478 cf, Depth= 4.66"
 Routed to Reach OF4P : Primary Stream for Outfalls

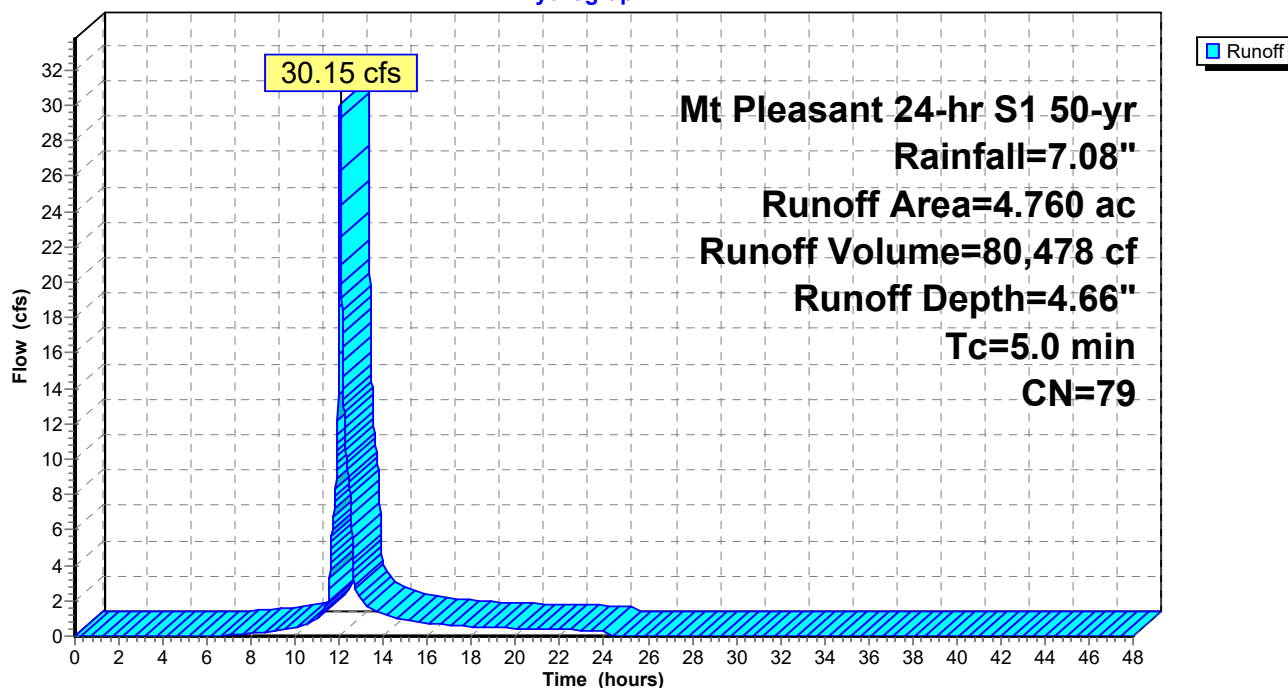
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
 Mt Pleasant 24-hr S1 50-yr Rainfall=7.08"

Area (ac)	CN	Description
4.760	79	Woods, Fair, HSG D
4.760		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					Direct Entry,

Subcatchment DA3P: BASIN 3 PRE DEVELOPMENT

Hydrograph



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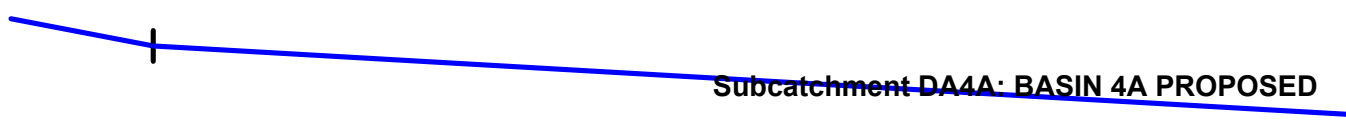
Summary for Subcatchment DA4A: BASIN 4A PROPOSED

Runoff = 11.70 cfs @ 12.58 hrs, Volume= 69,756 cf, Depth= 3.47"
 Routed to Reach OF4P : Primary Stream for Outfalls

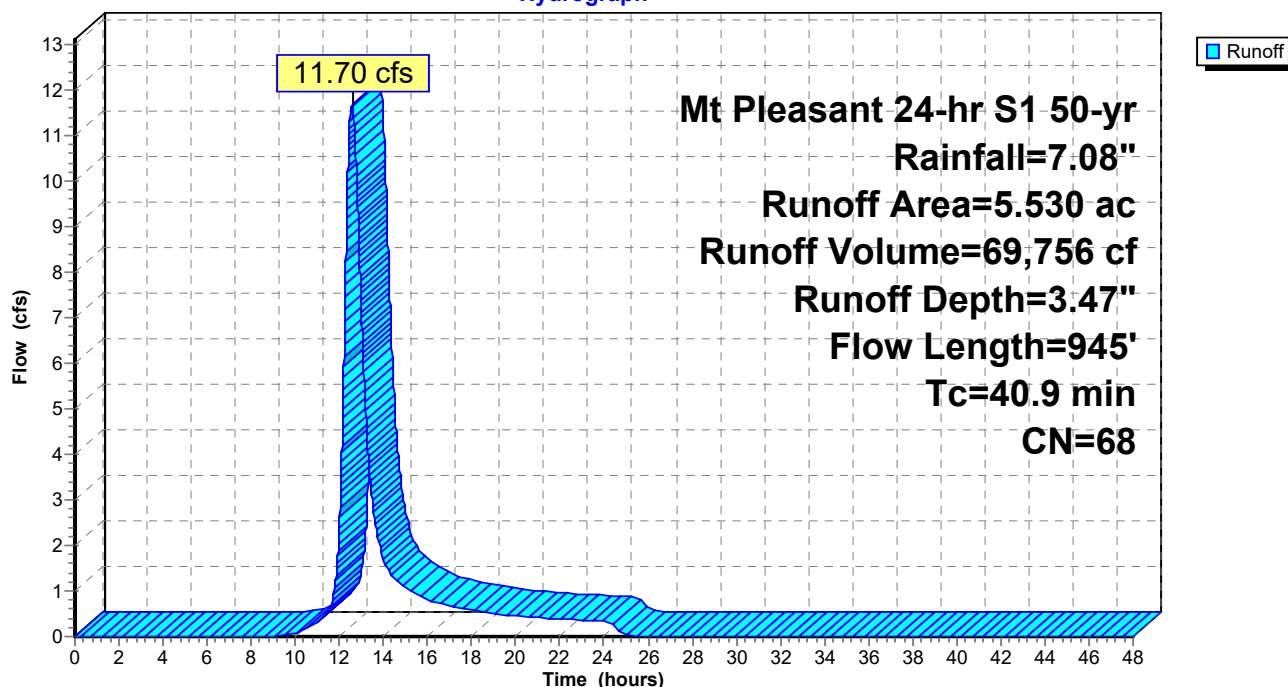
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
 Mt Pleasant 24-hr S1 50-yr Rainfall=7.08"

Area (ac)	CN	Description
2.200	60	Woods, Fair, HSG B
3.330	73	Woods, Fair, HSG C
5.530	68	Weighted Average
5.530		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
24.5	100	0.0500	0.07		Sheet Flow, Woods: Dense underbrush n= 0.800 P2= 3.57"
16.4	845	0.0150	0.86		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
40.9	945	Total			

**Subcatchment DA4A: BASIN 4A PROPOSED**

Hydrograph



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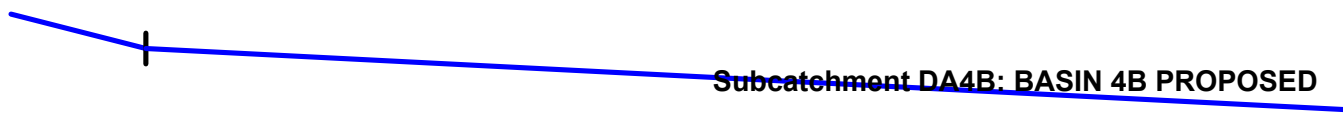
Summary for Subcatchment DA4B: BASIN 4B PROPOSED

Runoff = 49.75 cfs @ 12.40 hrs, Volume= 295,555 cf, Depth= 6.60"
Routed to Pond POND1P : PROP POND

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Mt Pleasant 24-hr S1 50-yr Rainfall=7.08"

Area (ac)	CN	Description
9.330	96	Gravel surface, HSG C
1.000	98	Paved parking, HSG D
2.000	98	Roofs, HSG D
12.330	96	Weighted Average
9.330		75.67% Pervious Area
3.000		24.33% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
24.5	100	0.0500	0.07		Sheet Flow, n= 0.800 P2= 3.57"
9.3	896	0.0100	1.61		Shallow Concentrated Flow, Unpaved Kv= 16.1 fps
33.8	996	Total			



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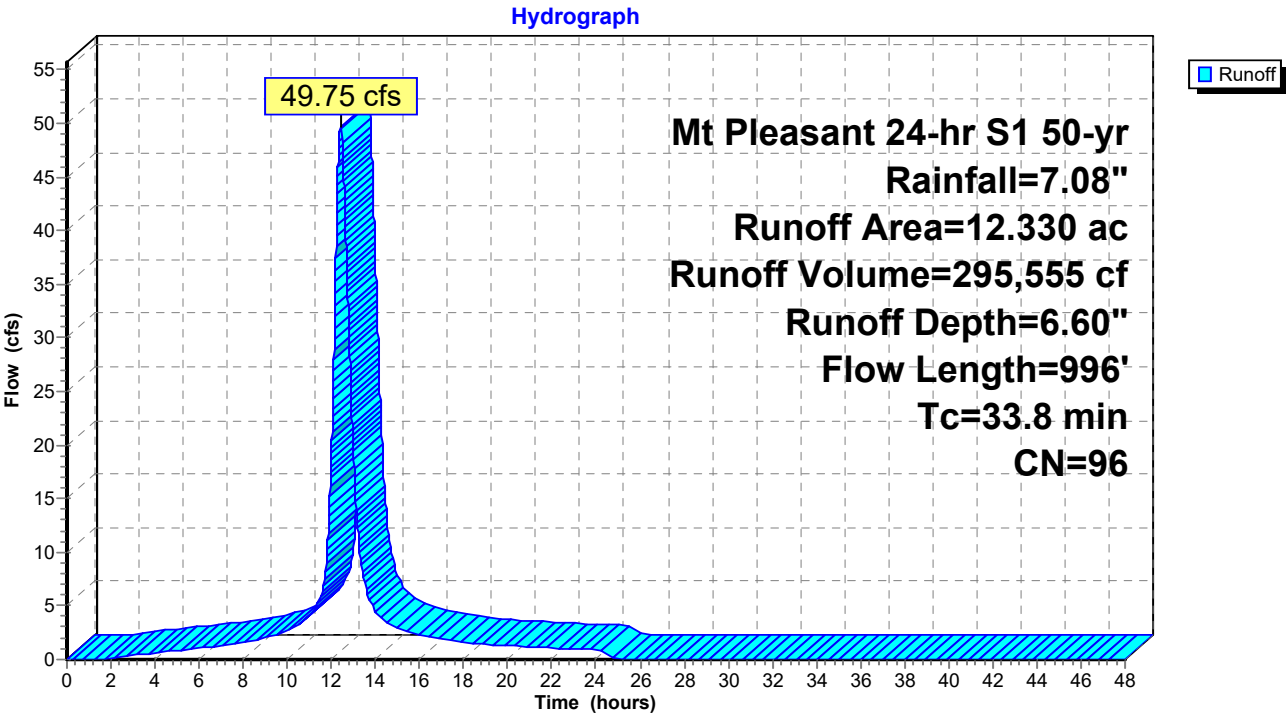
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Subcatchment DA4B: BASIN 4B PROPOSED



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Summary for Subcatchment DA4C: BASIN 4C PROPOSED

Runoff = 5.52 cfs @ 12.03 hrs, Volume= 16,300 cf, Depth= 6.60"
Routed to Reach D4C : Ditch 4C

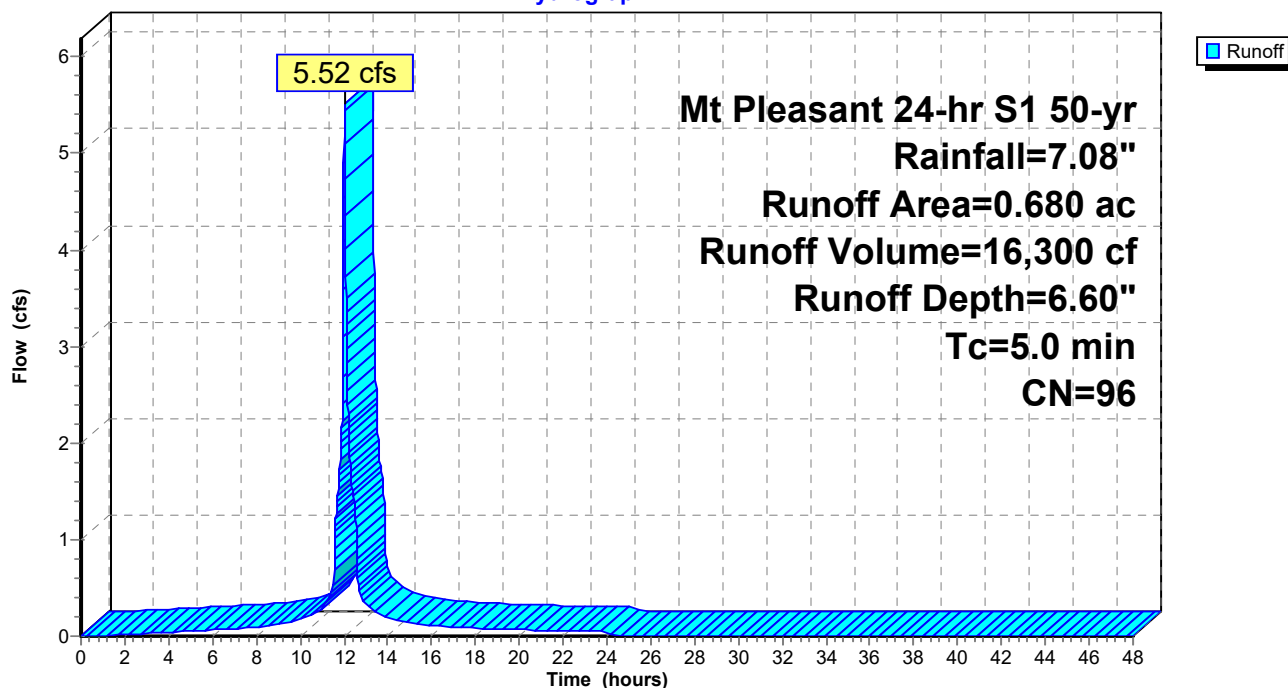
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Mt Pleasant 24-hr S1 50-yr Rainfall=7.08"

Area (ac)	CN	Description
0.680	96	Gravel surface, HSG C
0.680		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					Direct Entry,

Subcatchment DA4C: BASIN 4C PROPOSED

Hydrograph



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Mt Pleasant 24-hr S1 50-yr Rainfall=7.08"

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Summary for Subcatchment DA4D: BASIN 4D PROPOSED

Runoff = 9.99 cfs @ 12.03 hrs, Volume= 29,484 cf, Depth= 6.60"
Routed to Reach D4D : Ditch 4D

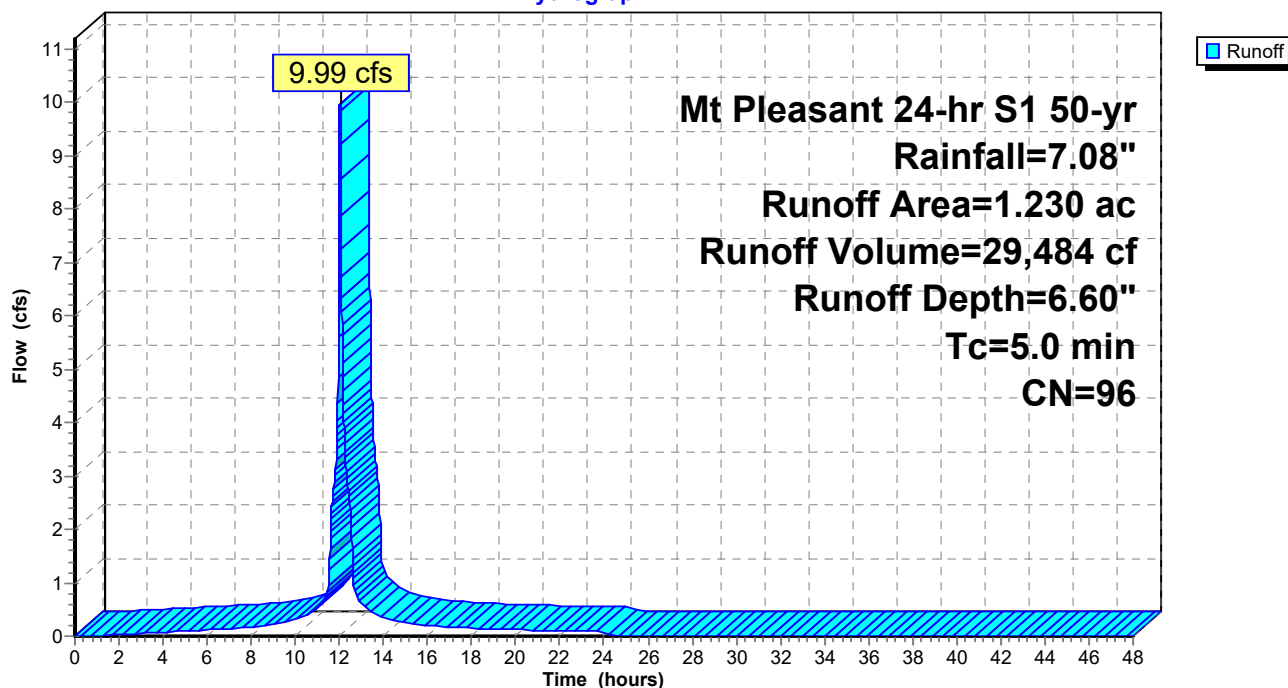
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Mt Pleasant 24-hr S1 50-yr Rainfall=7.08"

Area (ac)	CN	Description
1.230	96	Gravel surface, HSG C
1.230		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					Direct Entry,

Subcatchment DA4D: BASIN 4D PROPOSED

Hydrograph



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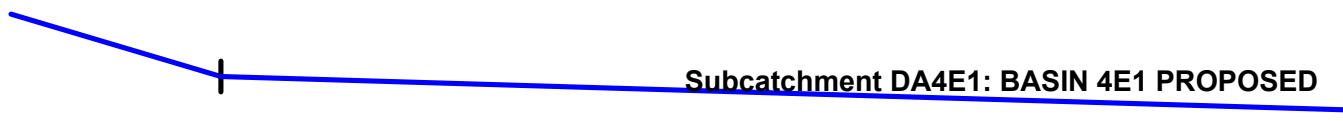
Summary for Subcatchment DA4E1: BASIN 4E1 PROPOSED

Runoff = 15.16 cfs @ 12.43 hrs, Volume= 80,705 cf, Depth= 3.06"
Routed to Reach D4E1 : Ditch 4E1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Mt Pleasant 24-hr S1 50-yr Rainfall=7.08"

Area (ac)	CN	Description
3.130	58	Meadow, non-grazed, HSG B
3.130	60	Woods, Fair, HSG B
1.000	98	Paved roads w/curbs & sewers, HSG B
7.260	64	Weighted Average
6.260		86.23% Pervious Area
1.000		13.77% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
18.6	100	0.1000	0.09		Sheet Flow, Woods: Dense underbrush n= 0.800 P2= 3.57"
12.9	540	0.0100	0.70		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
31.5	640	Total			



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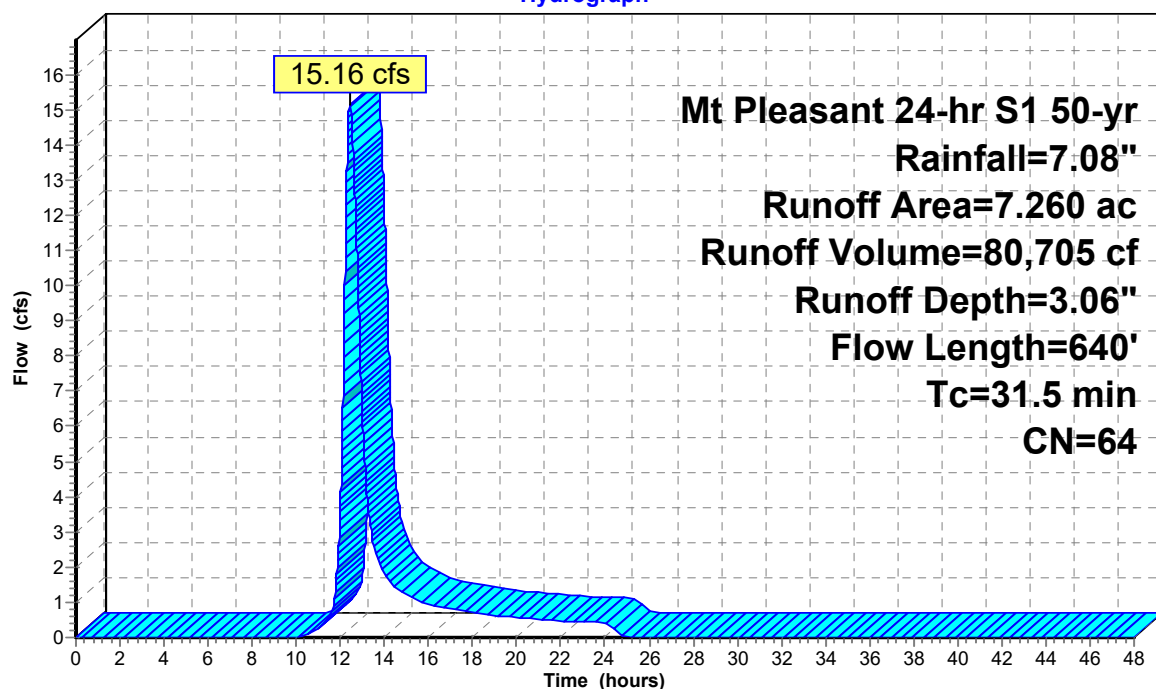
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Subcatchment DA4E1: BASIN 4E1 PROPOSED

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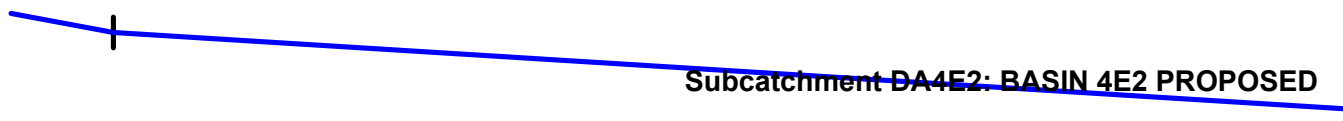
Summary for Subcatchment DA4E2: BASIN 4E2 PROPOSED

Runoff = 39.30 cfs @ 12.64 hrs, Volume= 249,230 cf, Depth= 3.58"
Routed to Pond CD4E : Cross Drain 4E

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Mt Pleasant 24-hr S1 50-yr Rainfall=7.08"

Area (ac)	CN	Description
9.300	79	Woods, Fair, HSG D
4.940	58	Meadow, non-grazed, HSG B
4.940	60	Woods, Fair, HSG B
19.180	69	Weighted Average
19.180		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
24.5	100	0.0500	0.07		Sheet Flow, Woods: Dense underbrush n= 0.800 P2= 3.57"
22.3	1,213	0.0167	0.90		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
46.8	1,313	Total			



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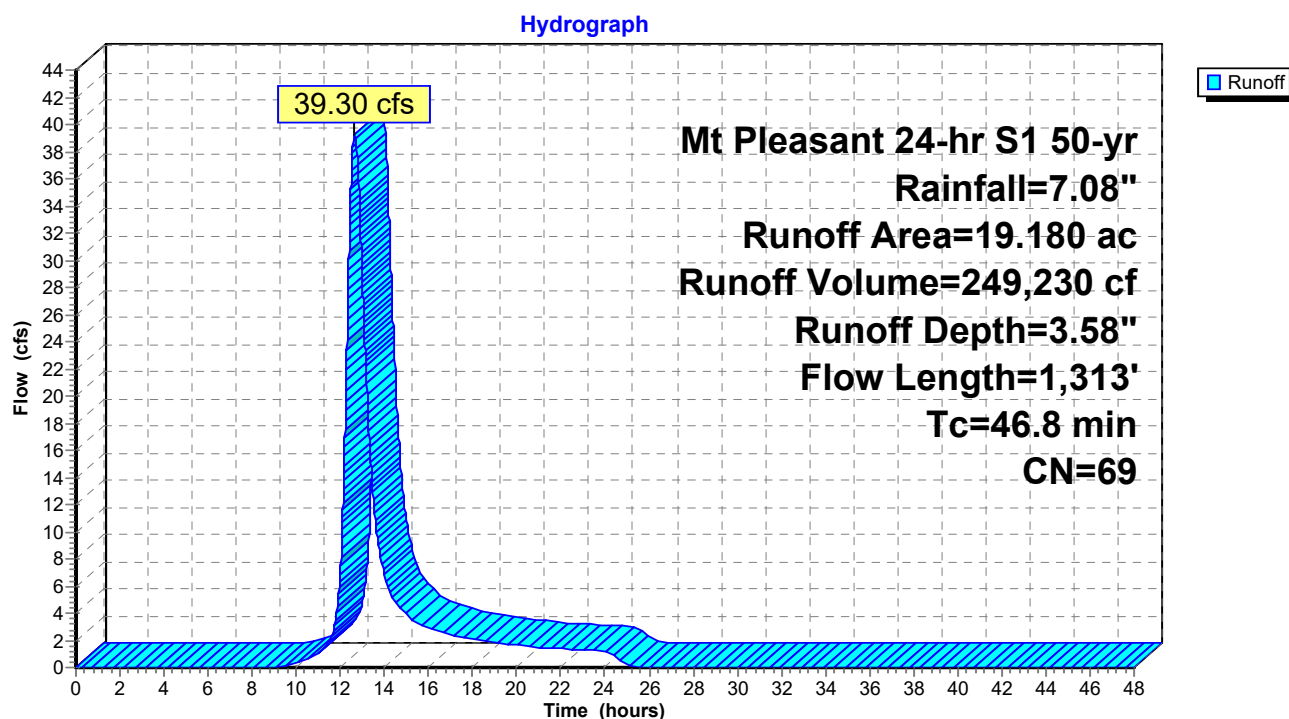
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Subcatchment DA4E2: BASIN 4E2 PROPOSED



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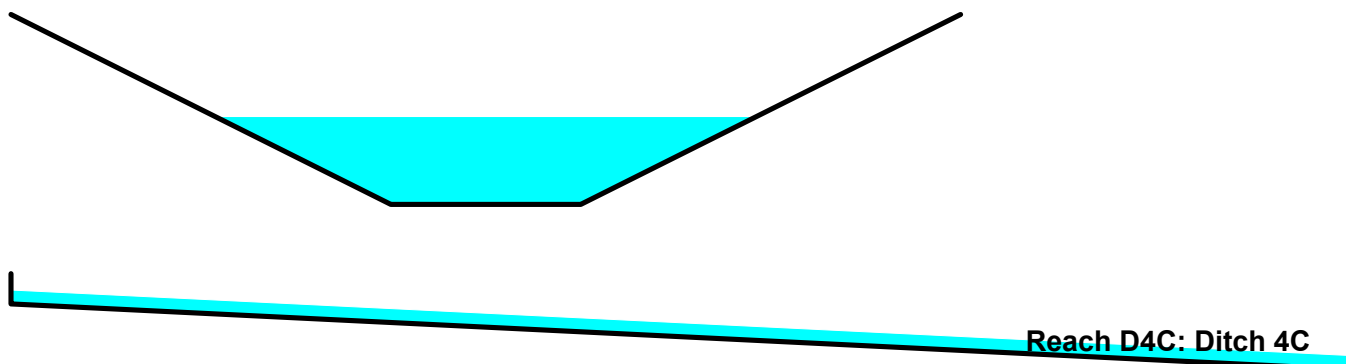
Summary for Reach D4C: Ditch 4C

Inflow Area = 29,621 sf, 0.00% Impervious, Inflow Depth = 6.60" for 50-yr event
 Inflow = 5.52 cfs @ 12.03 hrs, Volume= 16,300 cf
 Outflow = 5.23 cfs @ 12.05 hrs, Volume= 16,300 cf, Atten= 5%, Lag= 1.2 min
 Routed to Pond CD4C : Cross Drain 4C

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
 Max. Velocity= 2.63 fps, Min. Travel Time= 2.0 min
 Avg. Velocity = 0.75 fps, Avg. Travel Time= 6.9 min

Peak Storage= 622 cf @ 12.05 hrs
 Average Depth at Peak Storage= 0.69' , Surface Width= 4.26'
 Bank-Full Depth= 1.50' Flow Area= 6.8 sf, Capacity= 27.19 cfs

1.50' x 1.50' deep channel, n= 0.033 Riprap, 1-inch
 Side Slope Z-value= 2.0 '/' Top Width= 7.50'
 Length= 313.0' Slope= 0.0104 '/'
 Inlet Invert= 687.00', Outlet Invert= 683.75'



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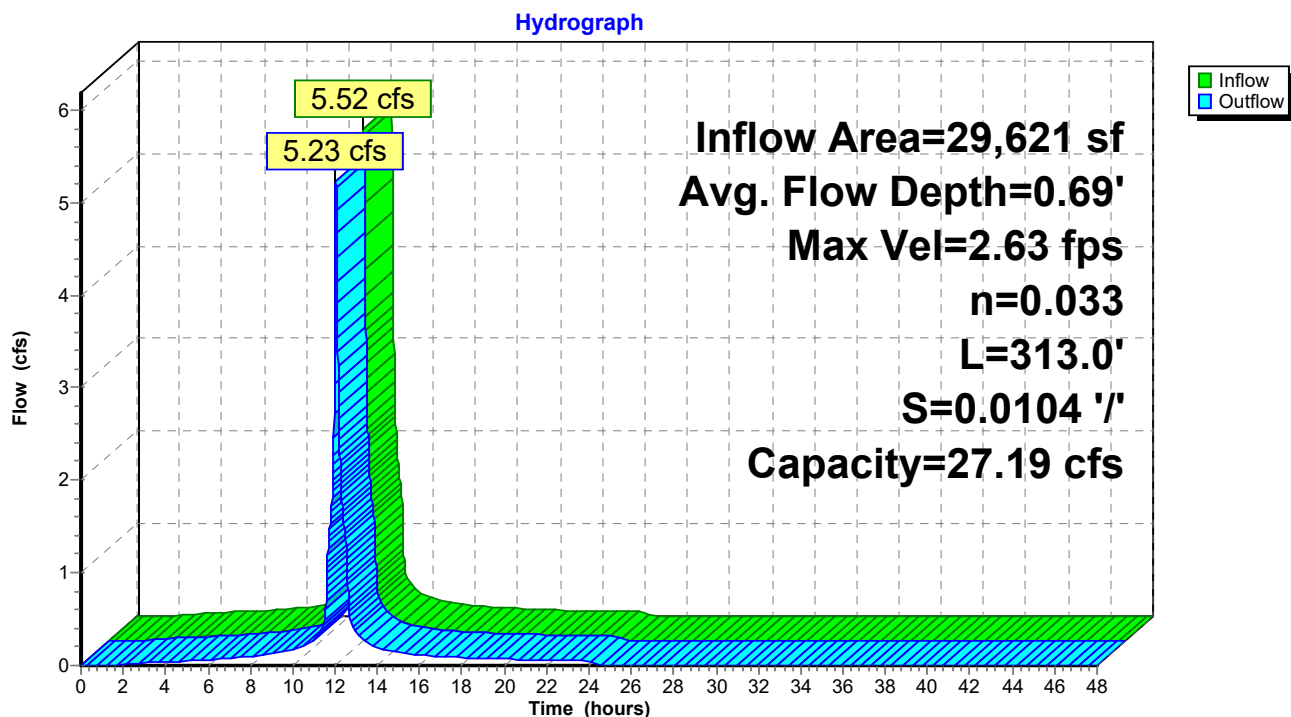
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Mt Pleasant 24-hr S1 50-yr Rainfall=7.08"

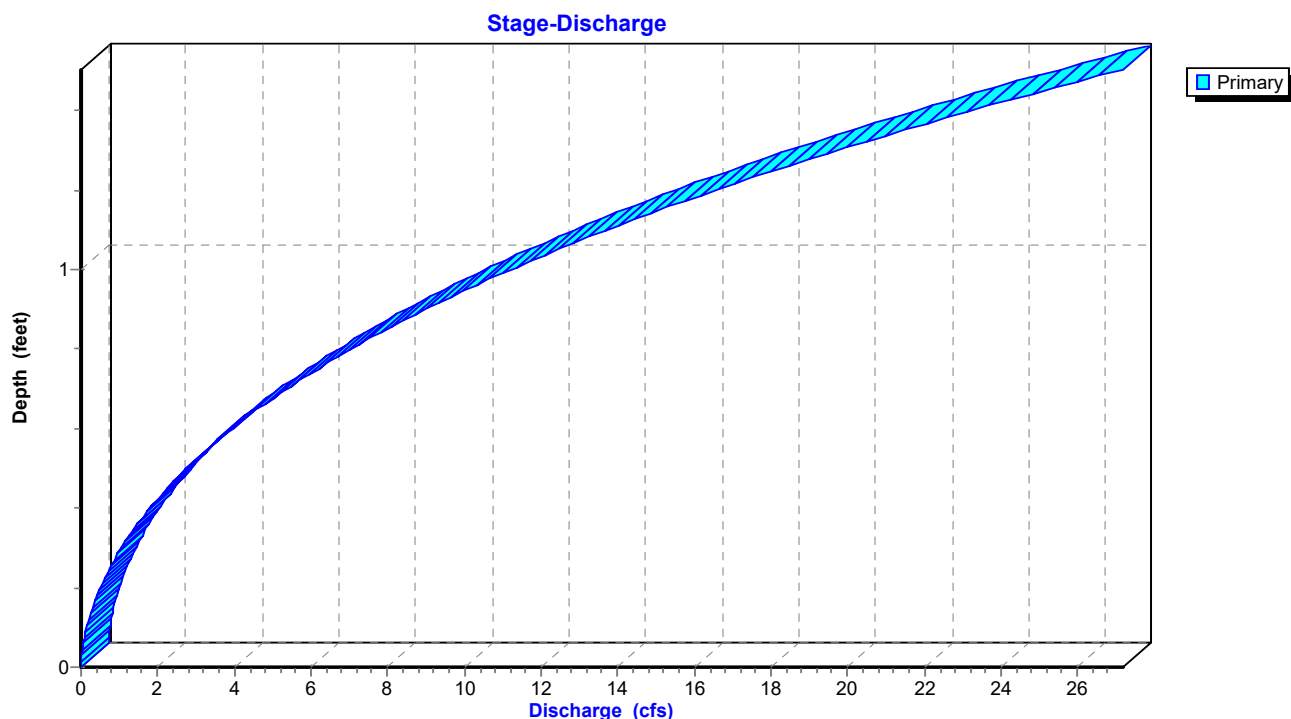
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Reach D4C: Ditch 4C



Reach D4C: Ditch 4C



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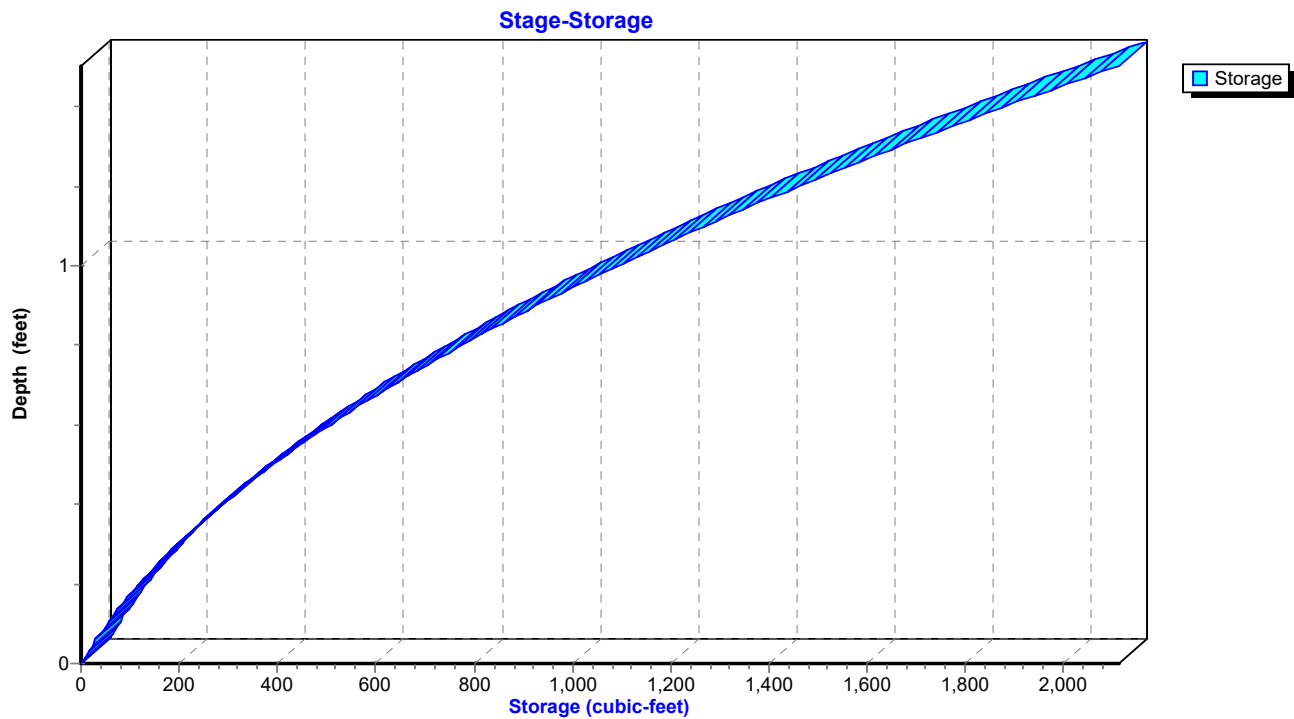
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Reach D4C: Ditch 4C



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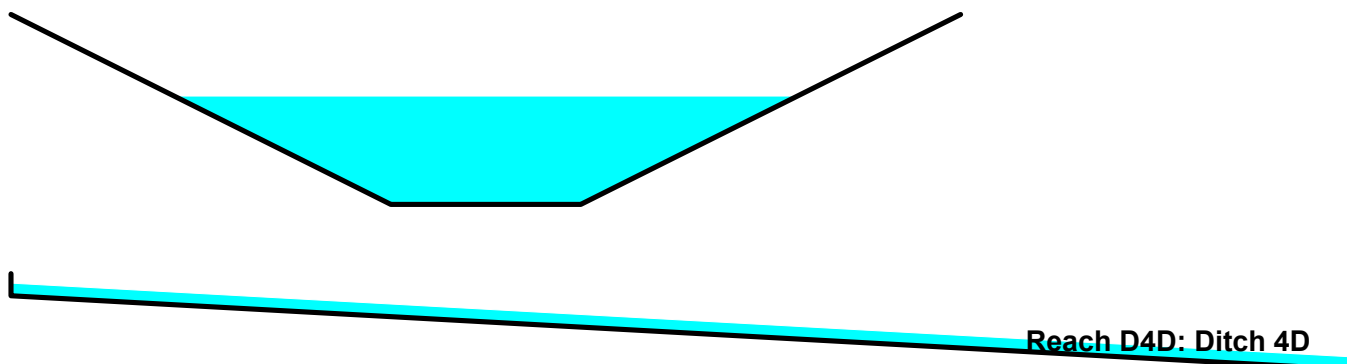
Summary for Reach D4D: Ditch 4D

Inflow Area = 53,579 sf, 0.00% Impervious, Inflow Depth = 6.60" for 50-yr event
 Inflow = 9.99 cfs @ 12.03 hrs, Volume= 29,484 cf
 Outflow = 9.62 cfs @ 12.04 hrs, Volume= 29,484 cf, Atten= 4%, Lag= 1.0 min
 Routed to Pond CD4DCE : Cross Drain 4DCE

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
 Max. Velocity= 3.52 fps, Min. Travel Time= 1.6 min
 Avg. Velocity = 1.04 fps, Avg. Travel Time= 5.4 min

Peak Storage= 920 cf @ 12.04 hrs
 Average Depth at Peak Storage= 0.85' , Surface Width= 4.91'
 Bank-Full Depth= 1.50' Flow Area= 6.8 sf, Capacity= 32.50 cfs

1.50' x 1.50' deep channel, n= 0.033 Riprap, 1-inch
 Side Slope Z-value= 2.0 '/' Top Width= 7.50'
 Length= 337.0' Slope= 0.0148 '/'
 Inlet Invert= 688.00', Outlet Invert= 683.00'



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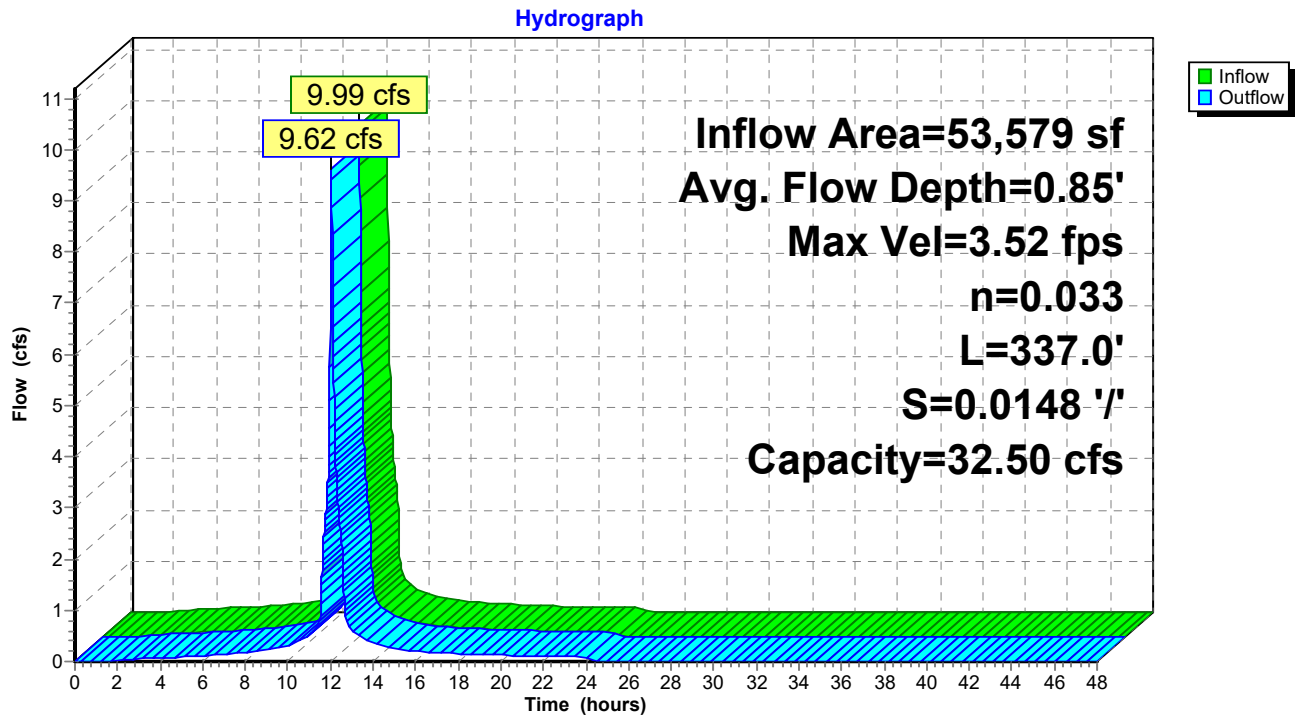
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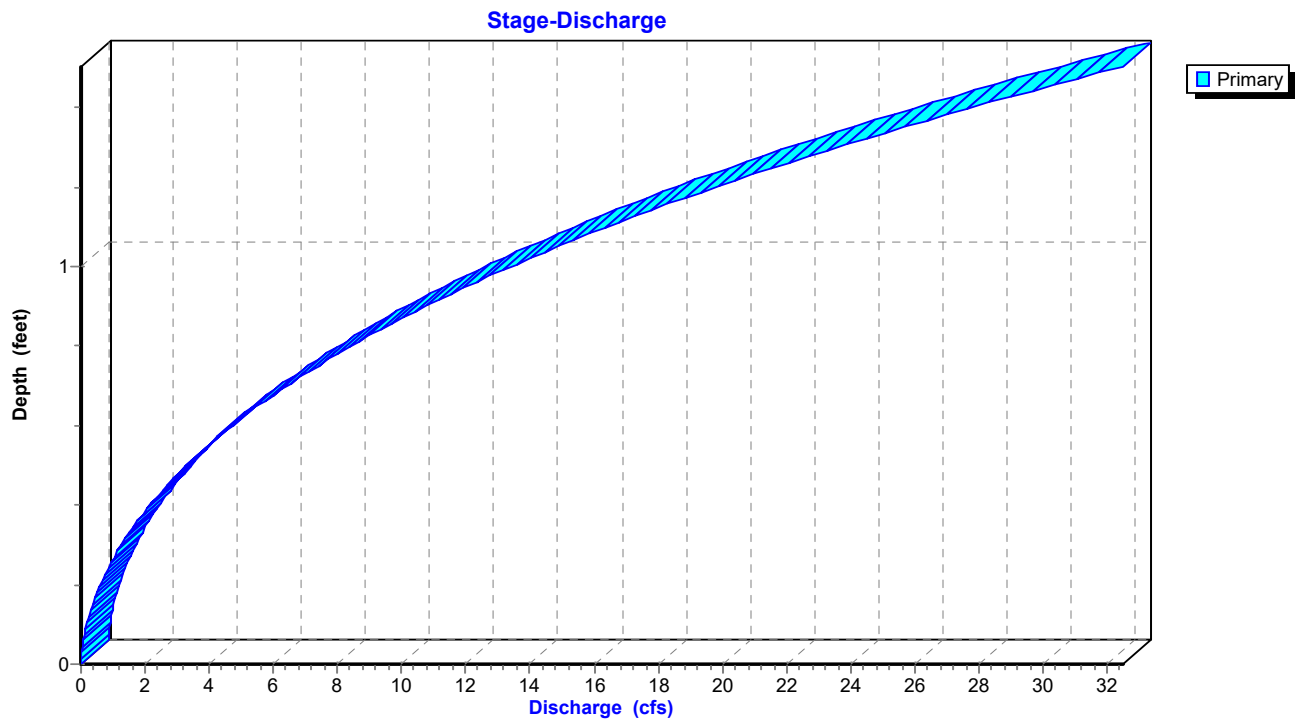
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Reach D4D: Ditch 4D



Reach D4D: Ditch 4D



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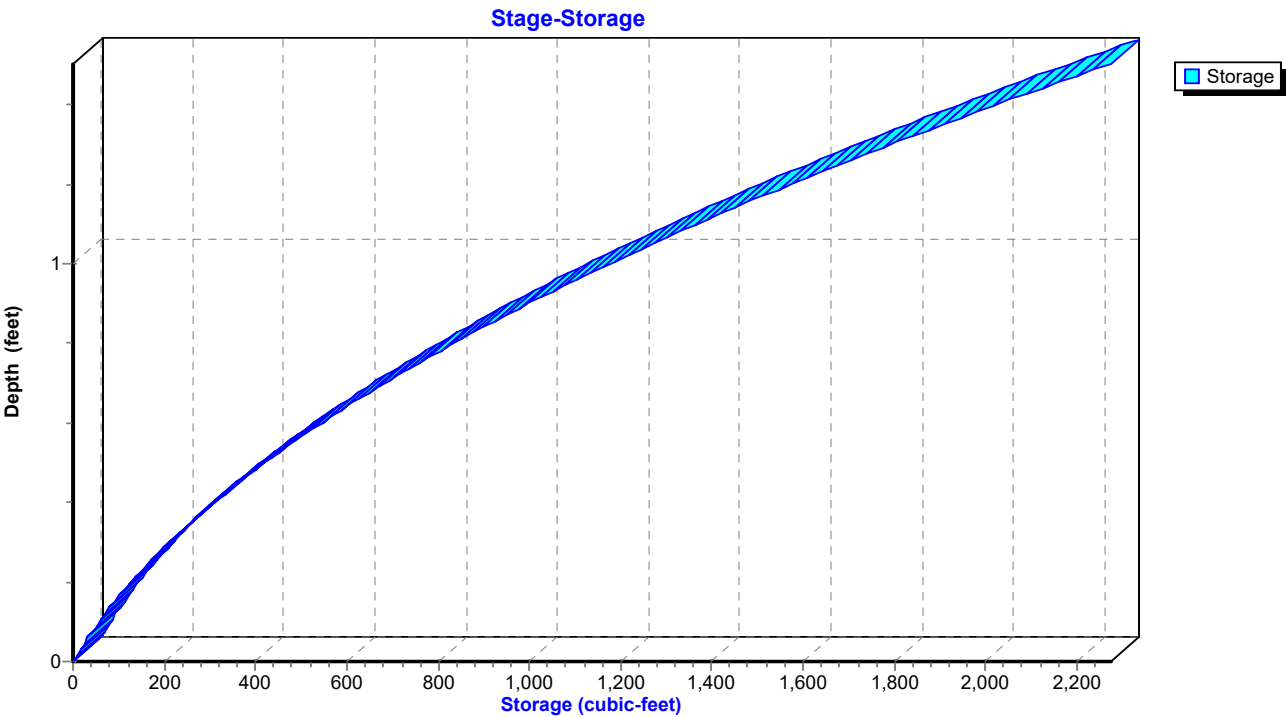
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Reach D4D: Ditch 4D



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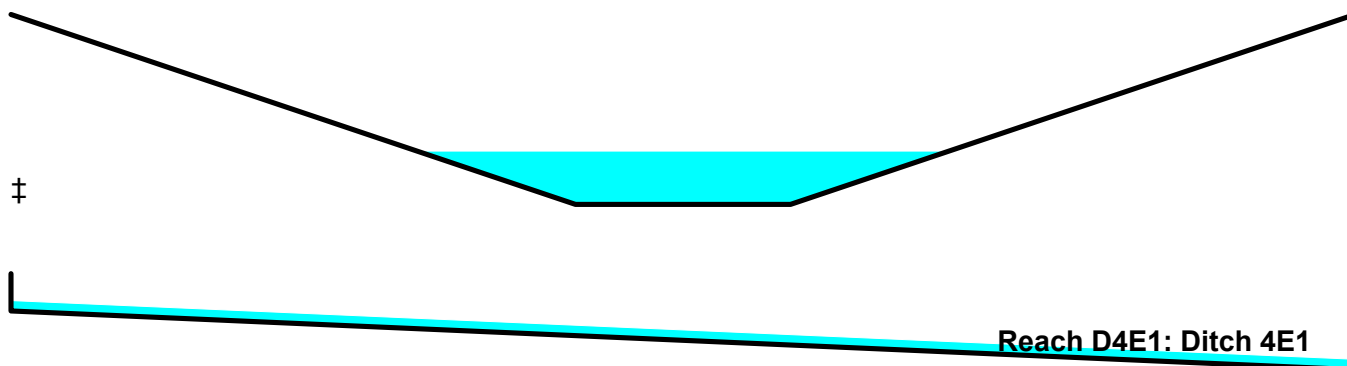
Summary for Reach D4E1: Ditch 4E1

Inflow Area = 316,246 sf, 13.77% Impervious, Inflow Depth = 3.06" for 50-yr event
 Inflow = 15.16 cfs @ 12.43 hrs, Volume= 80,705 cf
 Outflow = 12.81 cfs @ 12.64 hrs, Volume= 80,705 cf, Atten= 15%, Lag= 12.5 min
 Routed to Pond CD4E : Cross Drain 4E

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
 Max. Velocity= 1.90 fps, Min. Travel Time= 15.7 min
 Avg. Velocity= 0.55 fps, Avg. Travel Time= 54.7 min

Peak Storage= 12,053 cf @ 12.64 hrs
 Average Depth at Peak Storage= 0.97' , Surface Width= 9.84'
 Bank-Full Depth= 3.50' Flow Area= 50.8 sf, Capacity= 197.27 cfs

4.00' x 3.50' deep channel, n= 0.033 Riprap, 1-inch
 Side Slope Z-value= 3.0 '/' Top Width= 25.00'
 Length= 1,788.0' Slope= 0.0031 '/'
 Inlet Invert= 685.00', Outlet Invert= 679.50'



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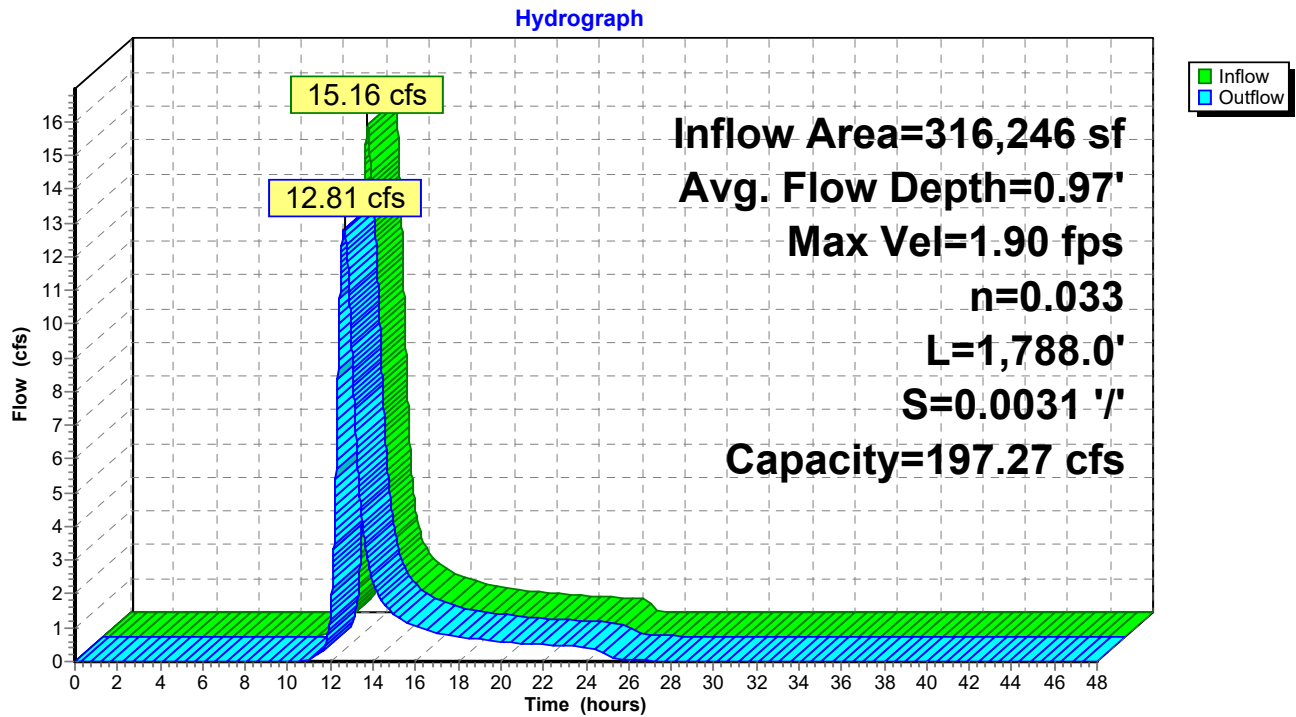
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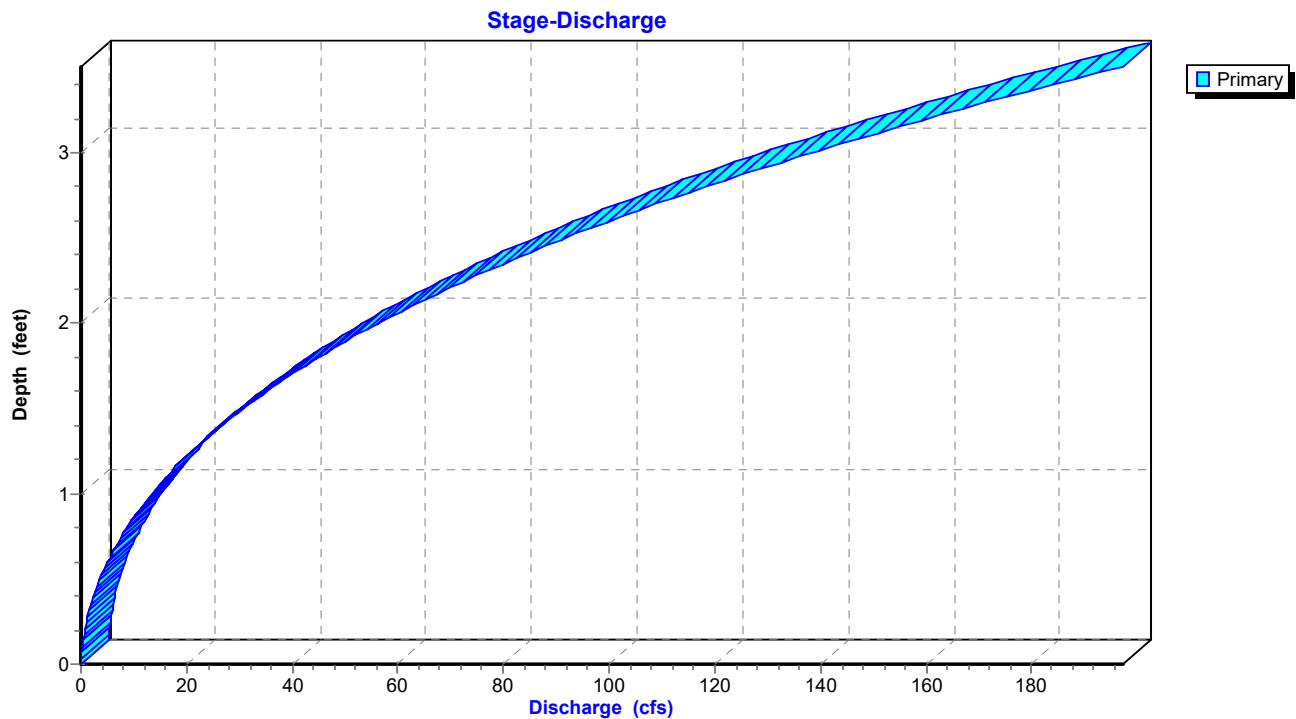
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Reach D4E1: Ditch 4E1



Reach D4E1: Ditch 4E1

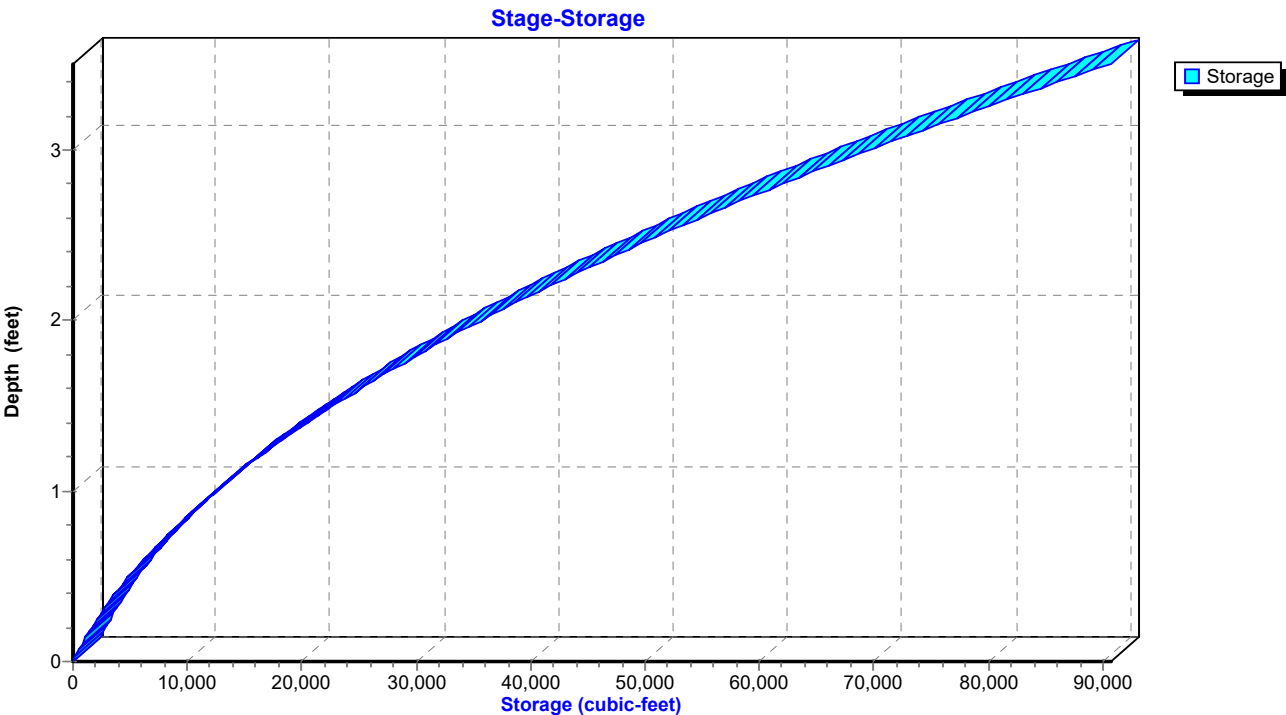


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Reach D4E1: Ditch 4E1



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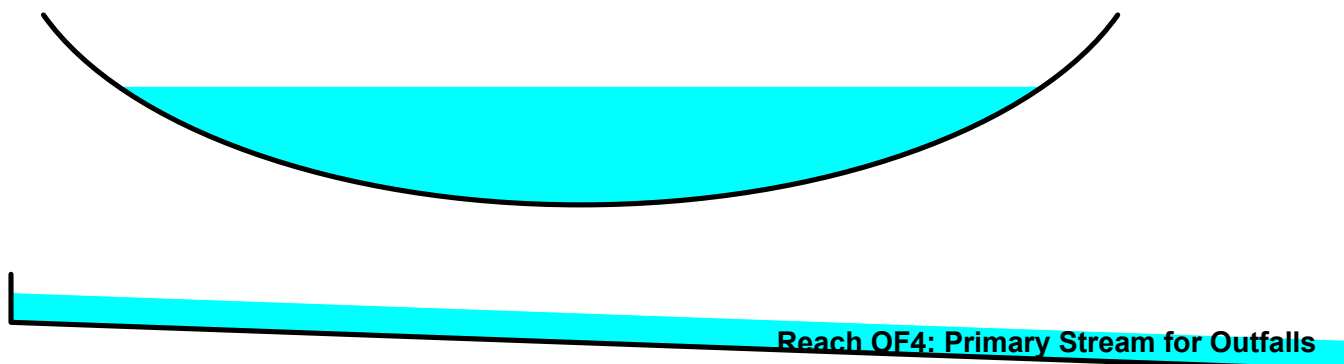
Summary for Reach OF4: Primary Stream for Outfalls

Inflow Area = 9,965,657 sf, 1.09% Impervious, Inflow Depth = 3.91" for 50-yr event
 Inflow = 232.20 cfs @ 13.34 hrs, Volume= 3,244,345 cf
 Outflow = 232.00 cfs @ 13.36 hrs, Volume= 3,244,345 cf, Atten= 0%, Lag= 1.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
 Max. Velocity= 4.74 fps, Min. Travel Time= 3.5 min
 Avg. Velocity = 1.70 fps, Avg. Travel Time= 9.8 min

Peak Storage= 48,961 cf @ 13.36 hrs
 Average Depth at Peak Storage= 3.11' , Surface Width= 23.64'
 Bank-Full Depth= 5.00' Flow Area= 100.0 sf, Capacity= 640.46 cfs

30.00' x 5.00' deep Parabolic Channel, n= 0.035
 Length= 1,000.0' Slope= 0.0050 '/'
 Inlet Invert= 675.00', Outlet Invert= 670.00'



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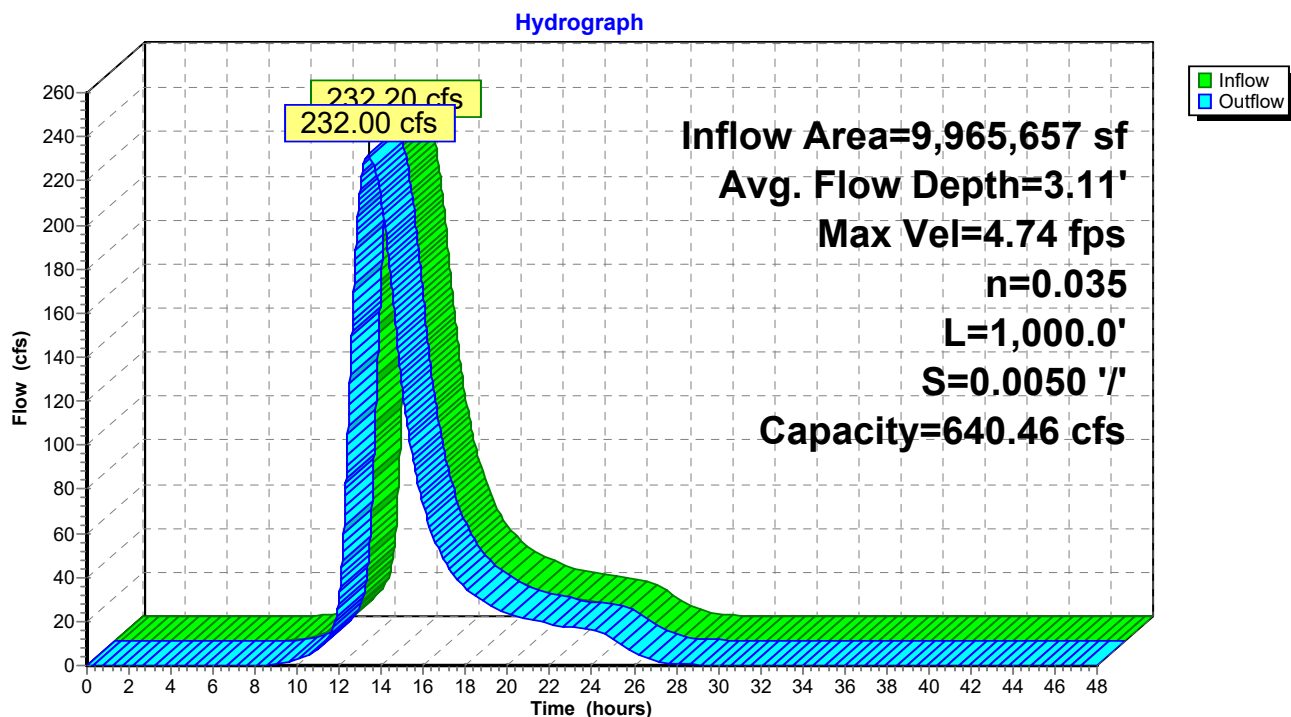
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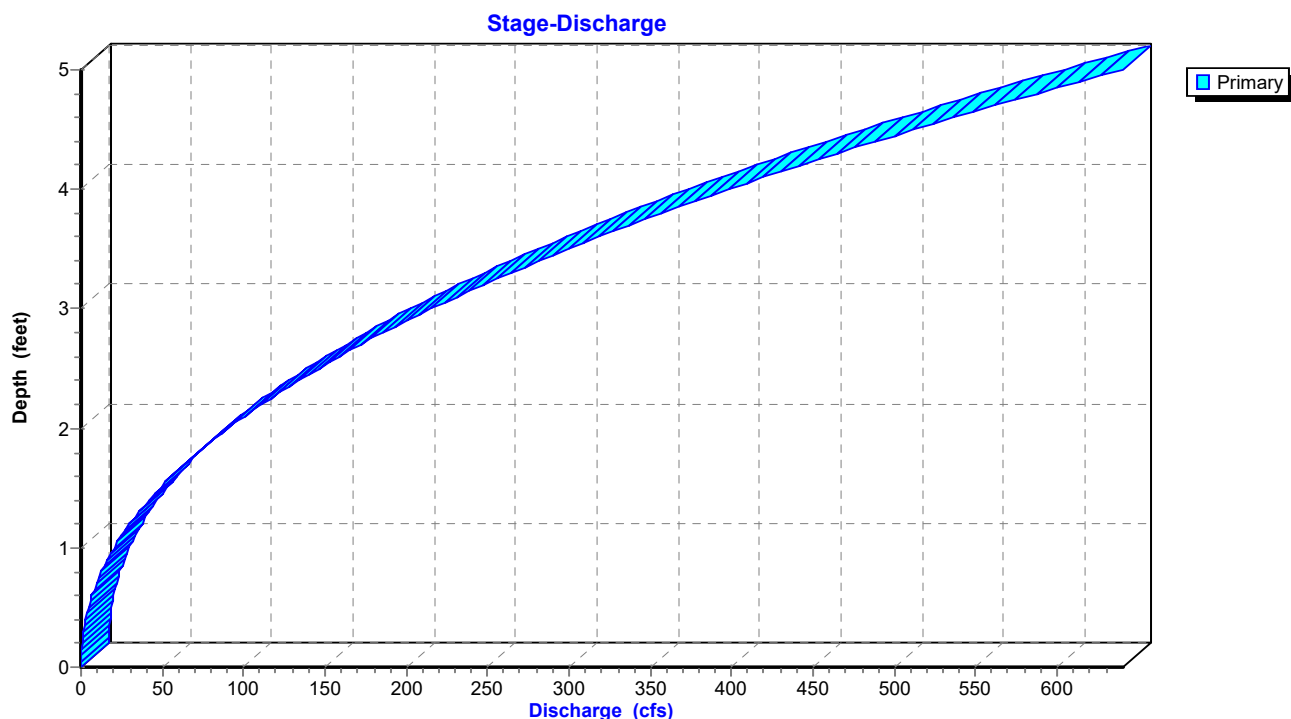
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Reach OF4: Primary Stream for Outfalls



Reach OF4: Primary Stream for Outfalls



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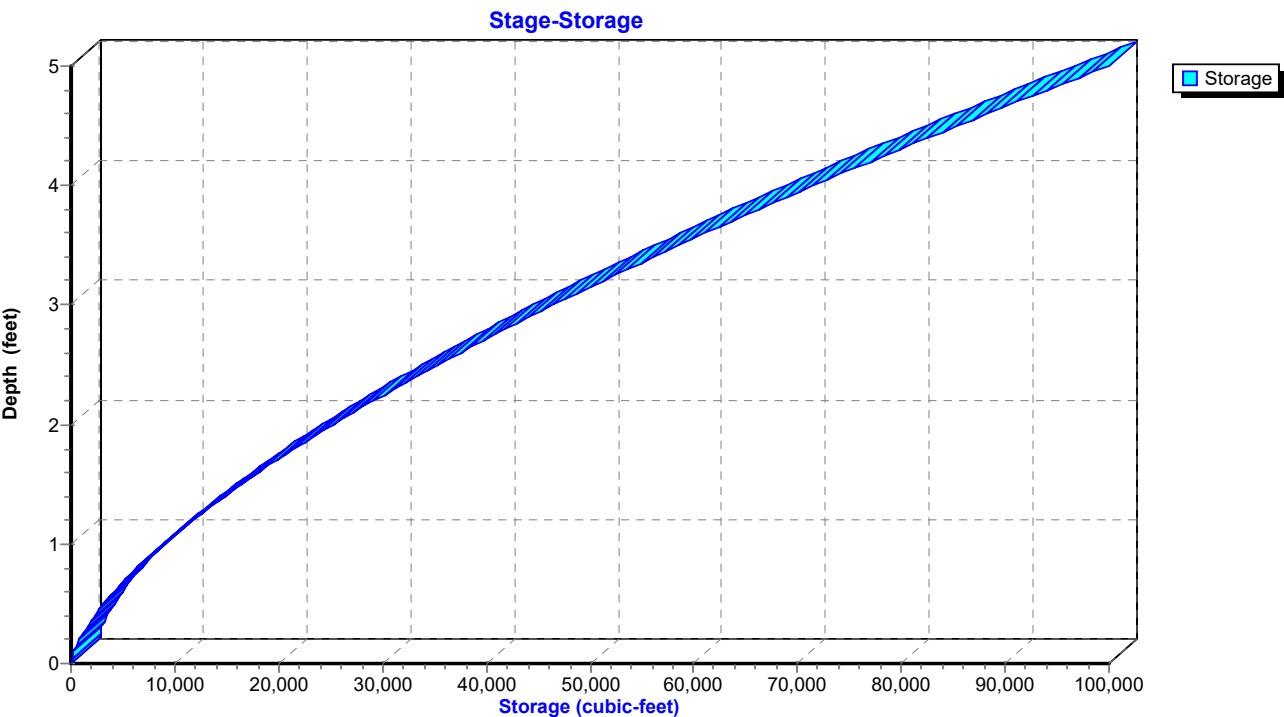
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Reach OF4: Primary Stream for Outfalls



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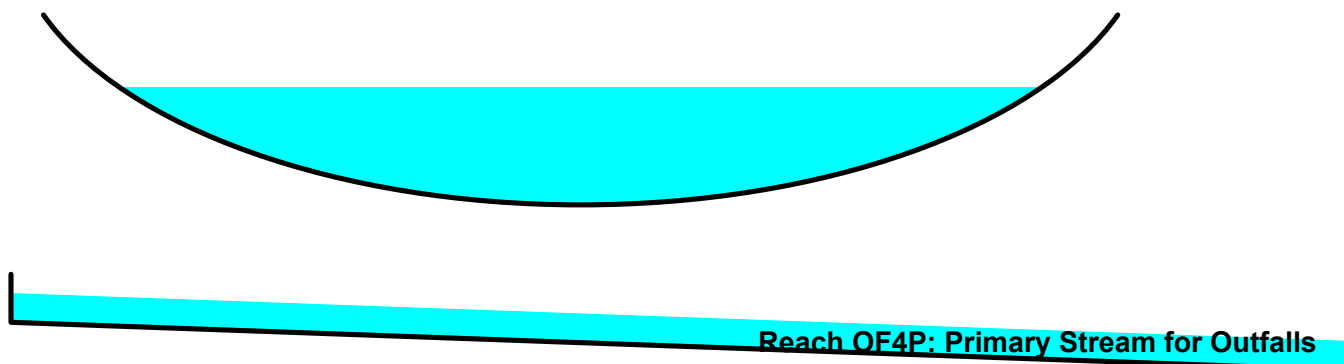
Summary for Reach OF4P: Primary Stream for Outfalls

Inflow Area = 9,969,577 sf, 2.84% Impervious, Inflow Depth = 4.06" for 50-yr event
 Inflow = 230.65 cfs @ 13.66 hrs, Volume= 3,374,372 cf
 Outflow = 230.51 cfs @ 13.67 hrs, Volume= 3,374,370 cf, Atten= 0%, Lag= 0.9 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
 Max. Velocity= 4.73 fps, Min. Travel Time= 3.5 min
 Avg. Velocity = 1.34 fps, Avg. Travel Time= 12.4 min

Peak Storage= 48,740 cf @ 13.67 hrs
 Average Depth at Peak Storage= 3.10' , Surface Width= 23.61'
 Bank-Full Depth= 5.00' Flow Area= 100.0 sf, Capacity= 640.46 cfs

30.00' x 5.00' deep Parabolic Channel, n= 0.035
 Length= 1,000.0' Slope= 0.0050 '/'
 Inlet Invert= 675.00', Outlet Invert= 670.00'



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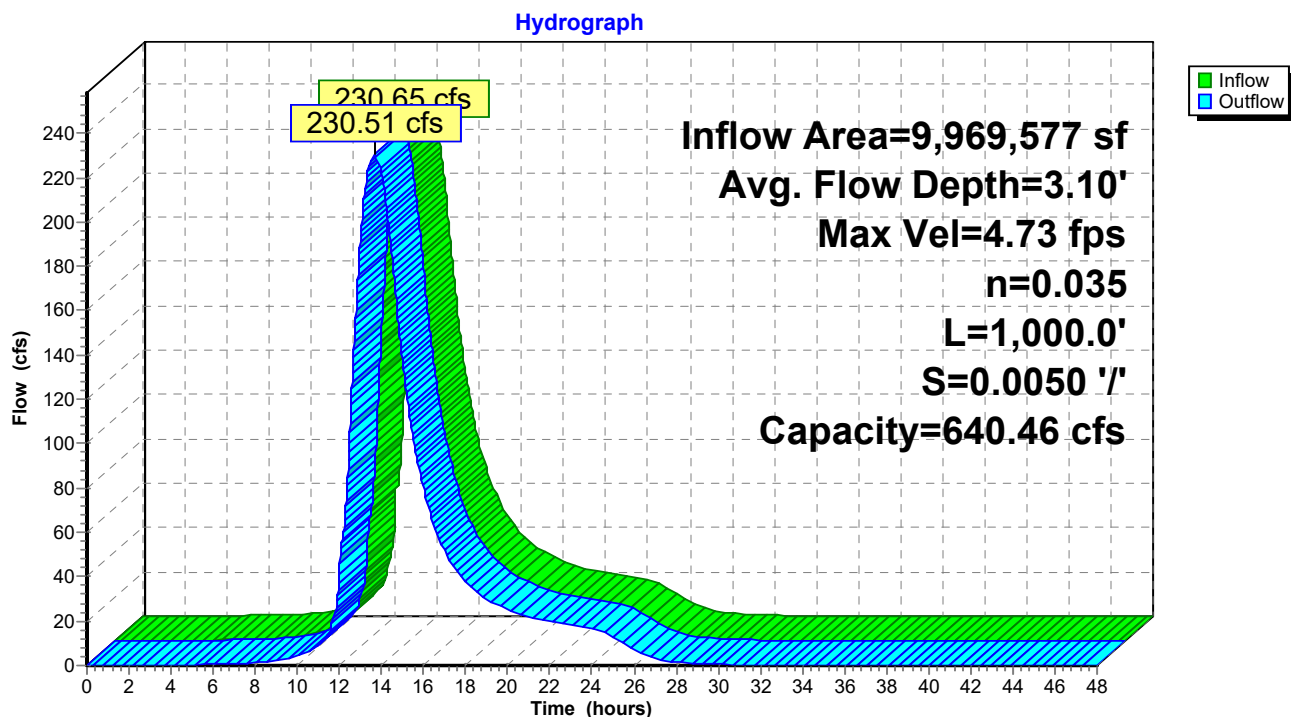
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Mt Pleasant 24-hr S1 50-yr Rainfall=7.08"

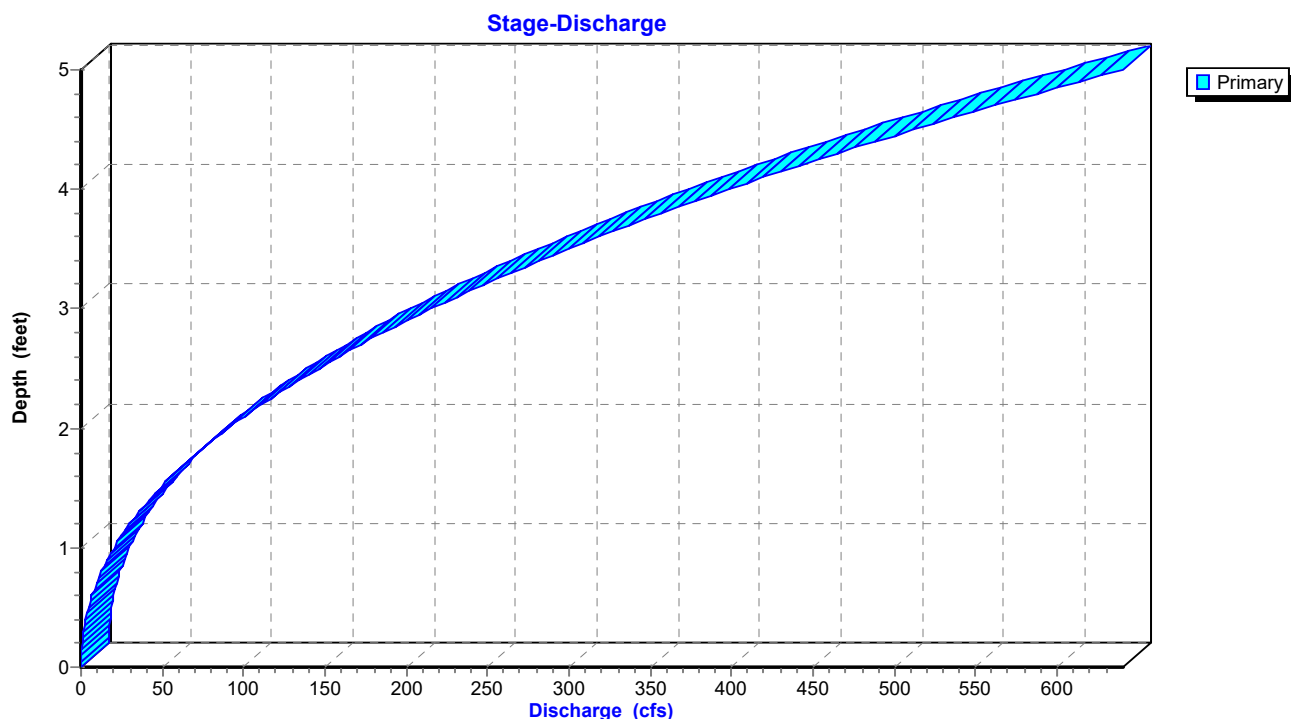
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Reach OF4P: Primary Stream for Outfalls



Reach OF4P: Primary Stream for Outfalls



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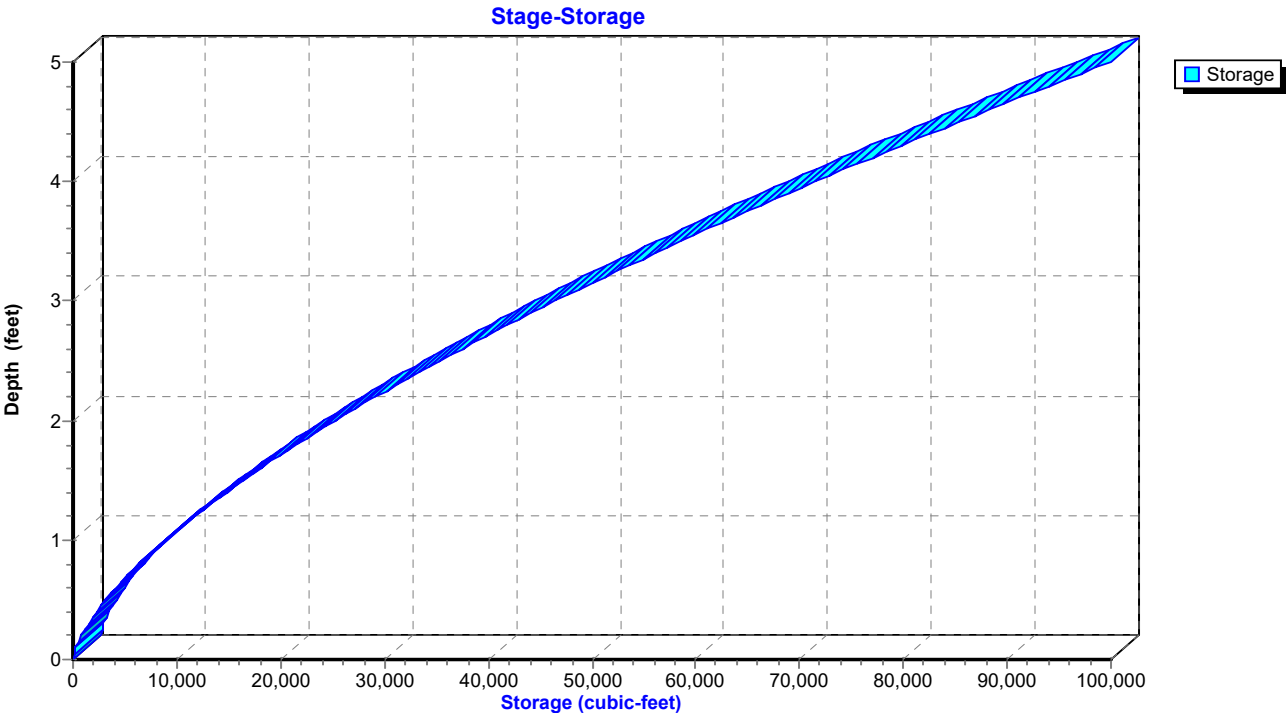
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Mt Pleasant 24-hr S1 50-yr Rainfall=7.08"

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Reach OF4P: Primary Stream for Outfalls



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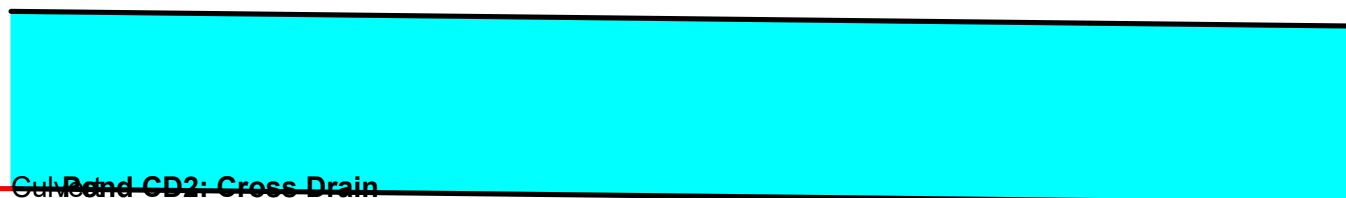
Summary for Pond CD2: Cross Drain

Inflow Area = 1,520,244 sf, 0.00% Impervious, Inflow Depth = 2.86" for 50-yr event
 Inflow = 48.09 cfs @ 12.88 hrs, Volume= 362,320 cf
 Outflow = 48.09 cfs @ 12.88 hrs, Volume= 362,320 cf, Atten= 0%, Lag= 0.0 min
 Primary = 48.09 cfs @ 12.88 hrs, Volume= 362,320 cf
 Routed to Reach OF4P : Primary Stream for Outfalls

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
 Peak Elev= 684.27' @ 12.88 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	680.25'	36.0" Round Culvert L= 50.0' Ke= 0.500 Inlet / Outlet Invert= 680.25' / 680.00' S= 0.0050 '/' Cc= 0.900 n= 0.011 Concrete pipe, straight & clean, Flow Area= 7.07 sf

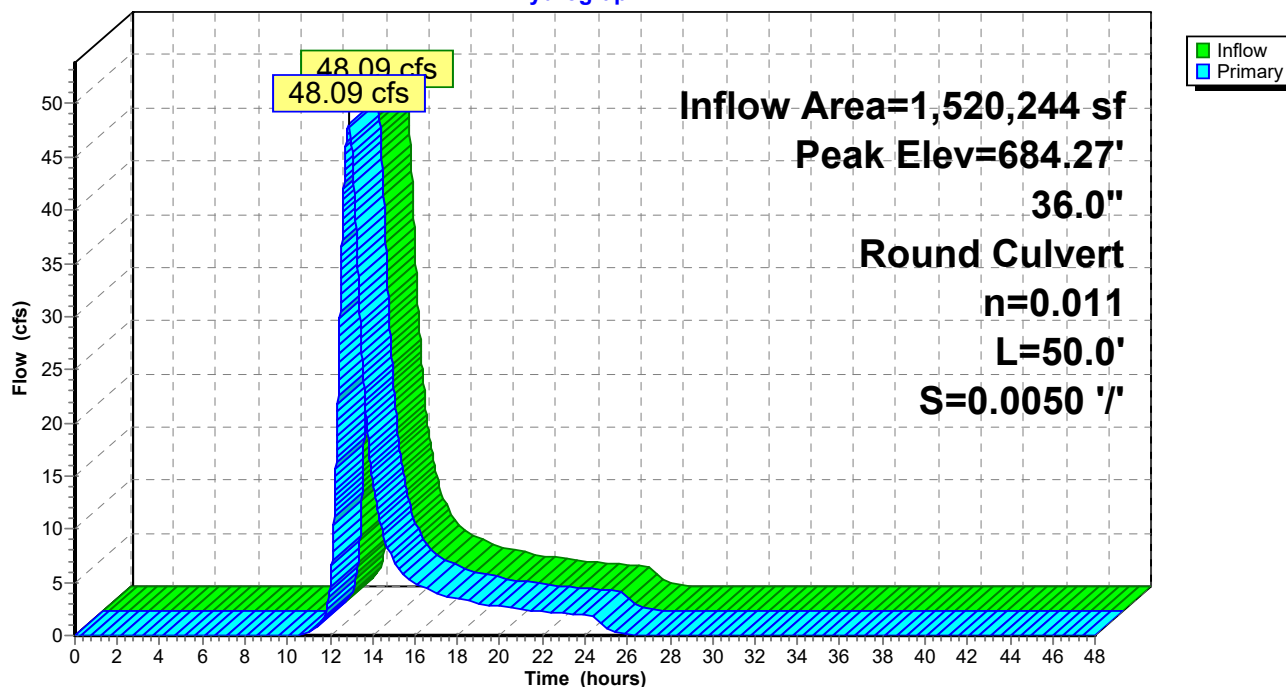
Primary OutFlow Max=48.09 cfs @ 12.88 hrs HW=684.26' TW=677.73' (Dynamic Tailwater)
 1=Culvert (Barrel Controls 48.09 cfs @ 6.80 fps)



Pond CD2: Cross Drain

Pond CD2: Cross Drain

Hydrograph



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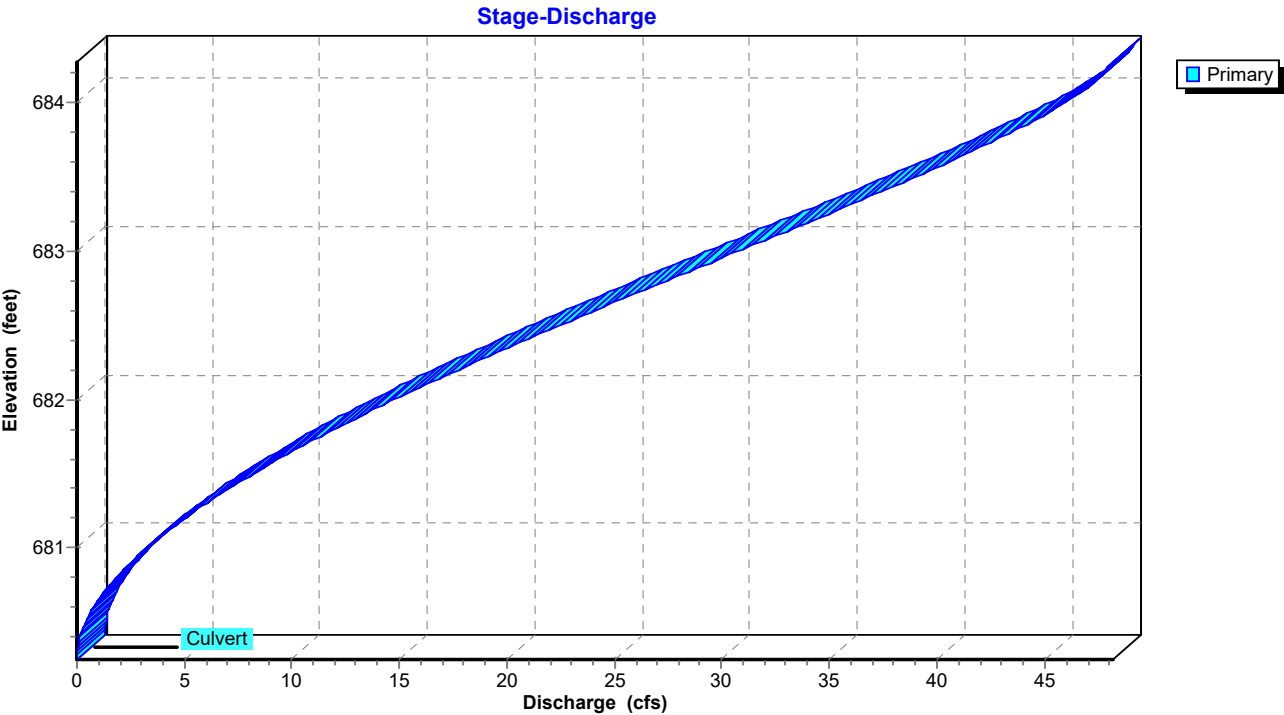
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Mt Pleasant 24-hr S1 50-yr Rainfall=7.08"

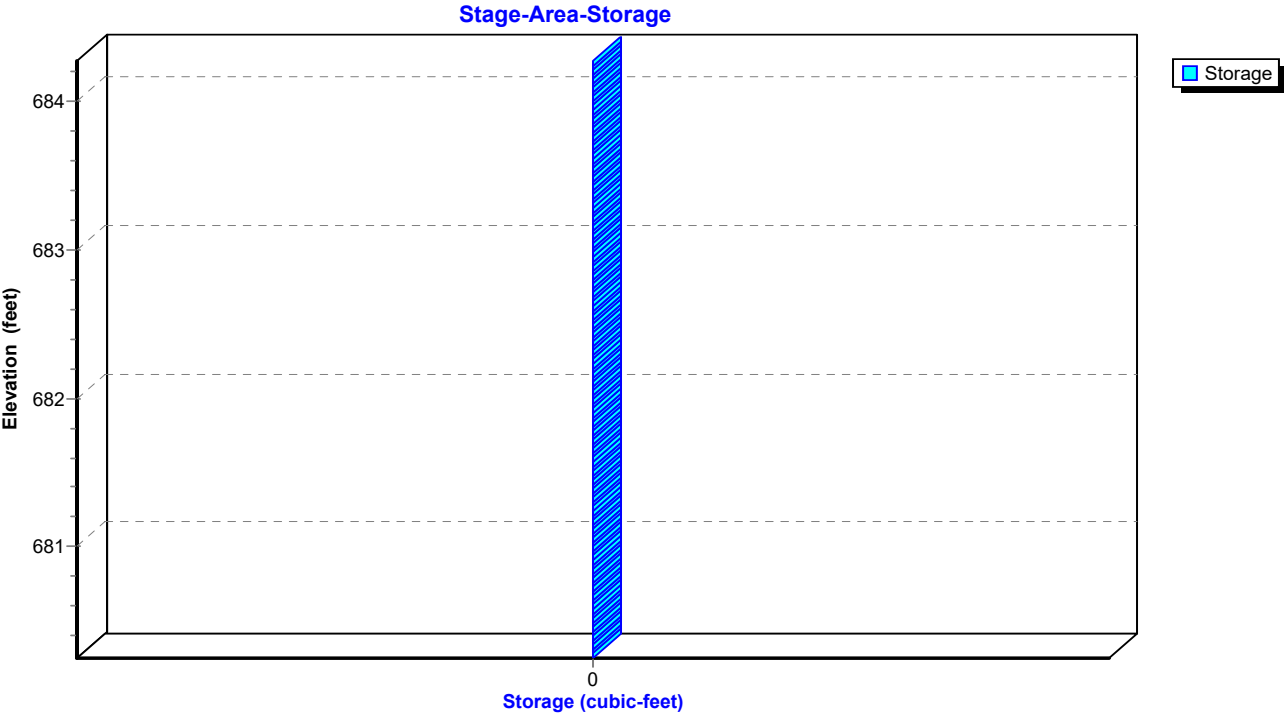
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Pond CD2: Cross Drain



Pond CD2: Cross Drain



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Mt Pleasant 24-hr S1 50-yr Rainfall=7.08"

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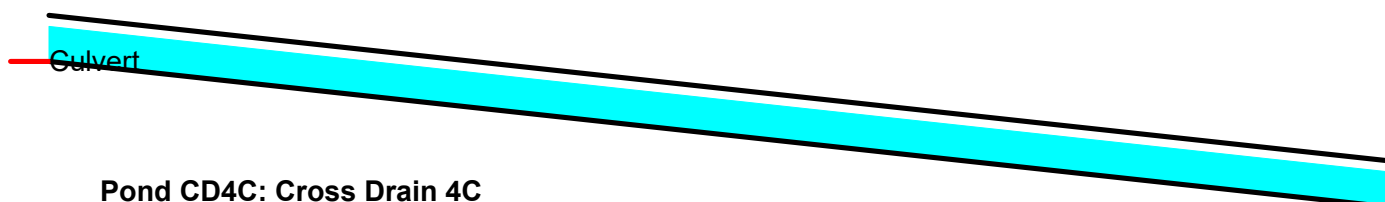
Summary for Pond CD4C: Cross Drain 4C

Inflow Area = 29,621 sf, 0.00% Impervious, Inflow Depth = 6.60" for 50-yr event
 Inflow = 5.23 cfs @ 12.05 hrs, Volume= 16,300 cf
 Outflow = 5.23 cfs @ 12.05 hrs, Volume= 16,300 cf, Atten= 0%, Lag= 0.0 min
 Primary = 5.23 cfs @ 12.05 hrs, Volume= 16,300 cf
 Routed to Pond CD4DCE : Cross Drain 4DCE

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
 Peak Elev= 684.89' @ 12.05 hrs

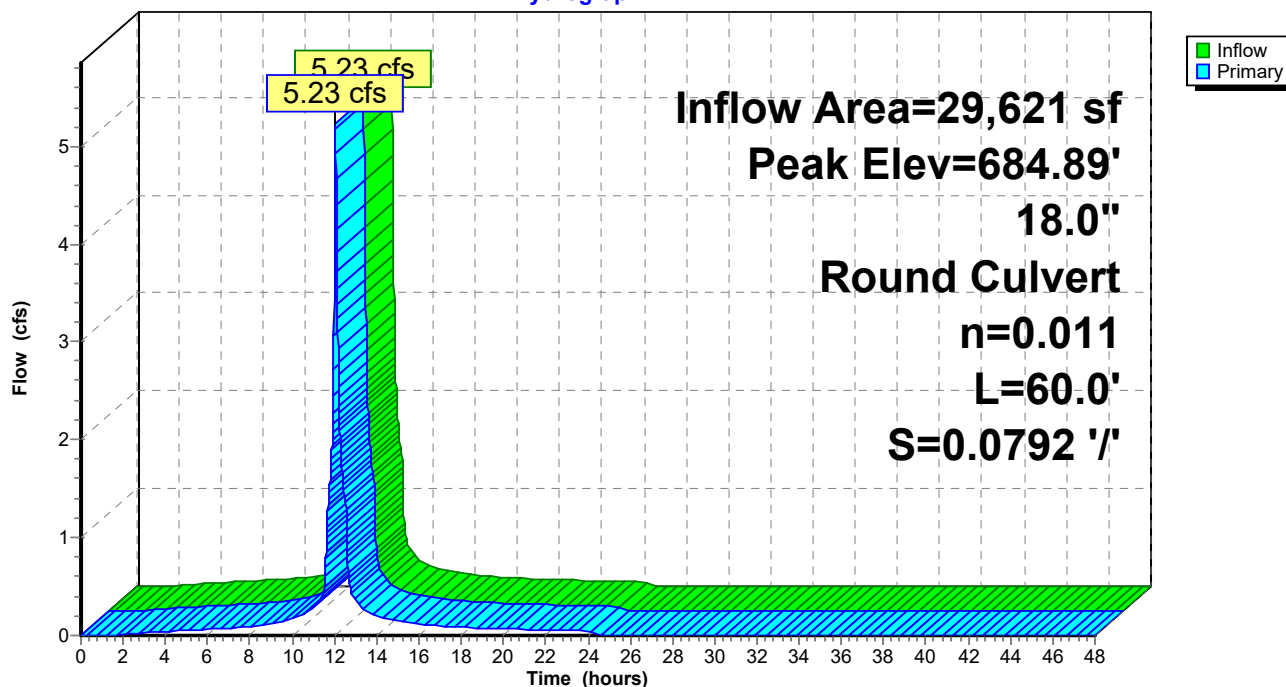
Device	Routing	Invert	Outlet Devices
#1	Primary	683.75'	18.0" Round Culvert L= 60.0' Square-edged headwall, Ke= 0.500 Inlet / Outlet Invert= 683.75' / 679.00' S= 0.0792 '/' Cc= 0.900 n= 0.011 Concrete pipe, straight & clean, Flow Area= 1.77 sf

Primary OutFlow Max=5.21 cfs @ 12.05 hrs HW=684.89' TW=680.33' (Dynamic Tailwater)
 ↑ **1=Culvert** (Inlet Controls 5.21 cfs @ 3.63 fps)



Pond CD4C: Cross Drain 4C

Hydrograph



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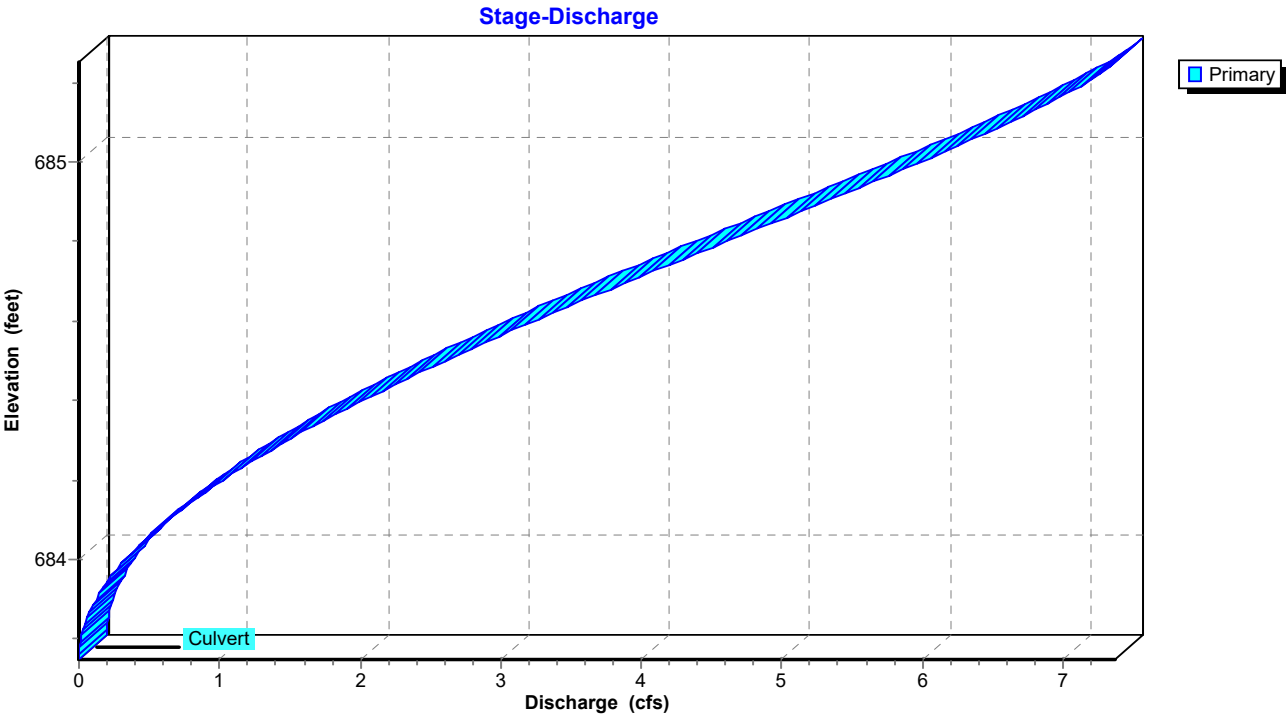
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Mt Pleasant 24-hr S1 50-yr Rainfall=7.08"

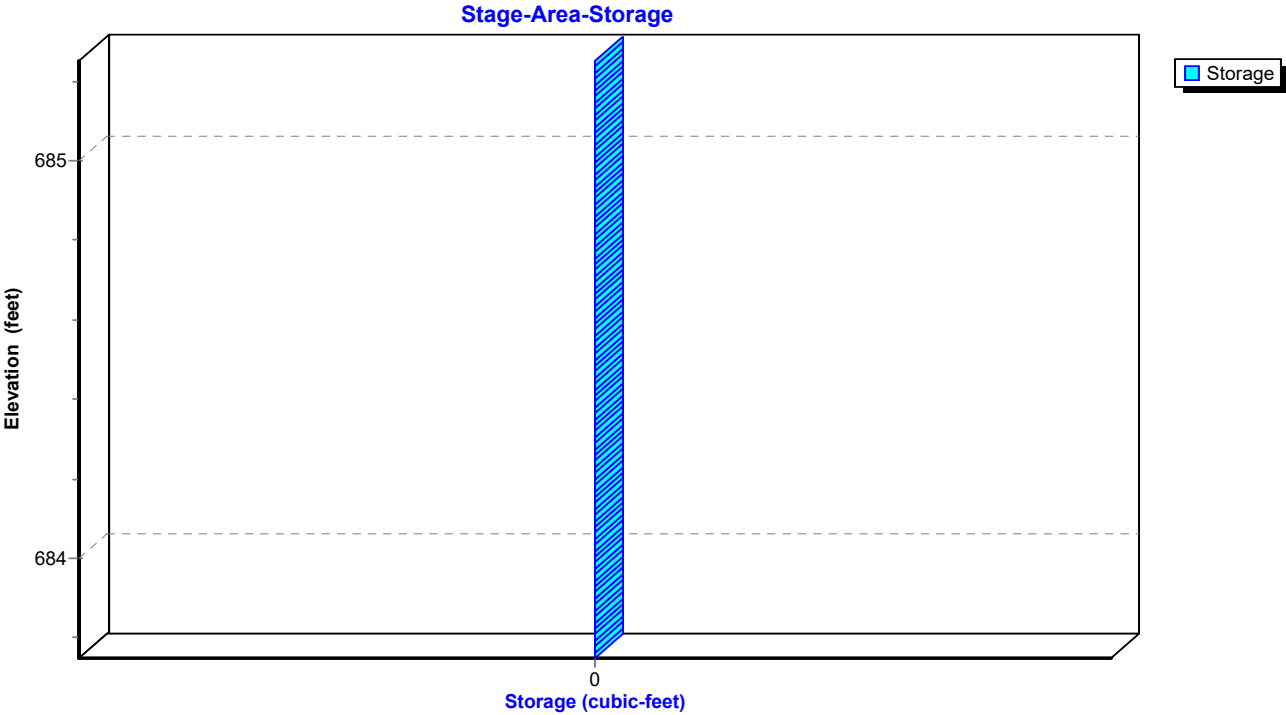
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Pond CD4C: Cross Drain 4C



Pond CD4C: Cross Drain 4C



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Mt Pleasant 24-hr S1 50-yr Rainfall=7.08"

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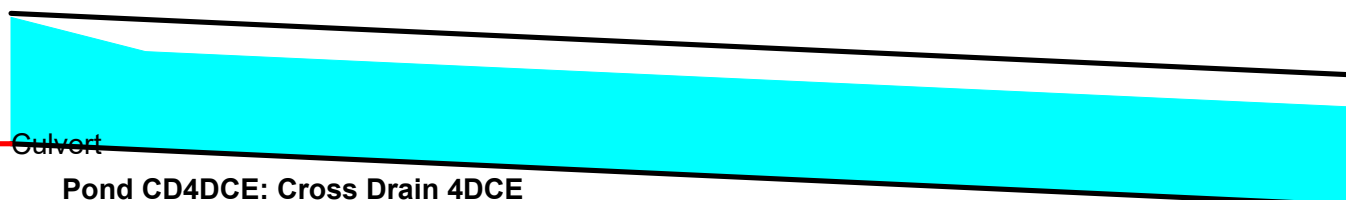
Summary for Pond CD4DCE: Cross Drain 4DCE

Inflow Area = 1,234,926 sf, 3.53% Impervious, Inflow Depth = 3.65" for 50-yr event
 Inflow = 50.83 cfs @ 12.70 hrs, Volume= 375,714 cf
 Outflow = 50.83 cfs @ 12.70 hrs, Volume= 375,714 cf, Atten= 0%, Lag= 0.0 min
 Primary = 50.83 cfs @ 12.70 hrs, Volume= 375,714 cf
 Routed to Pond POND1P : PROP POND

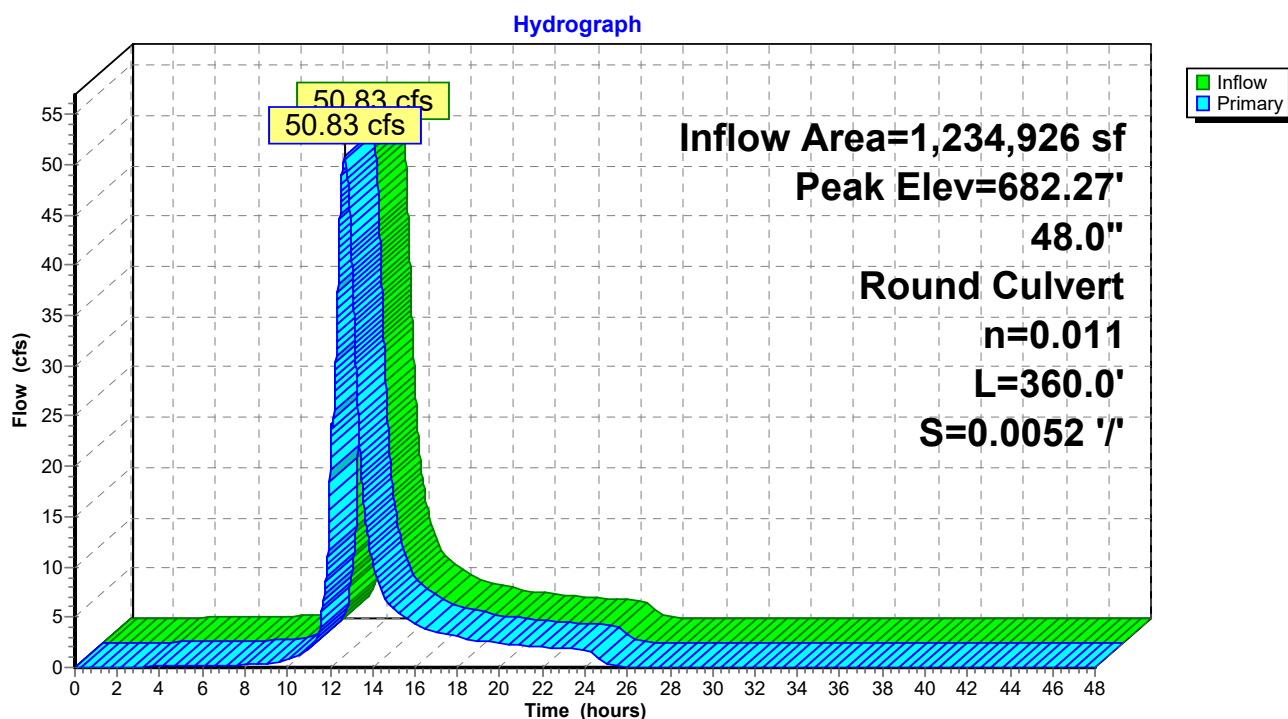
Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
 Peak Elev= 682.27' @ 12.87 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	678.39'	48.0" Round Culvert L= 360.0' Ke= 0.500 Inlet / Outlet Invert= 678.39' / 676.50' S= 0.0052 '/' Cc= 0.900 n= 0.011 Concrete pipe, straight & clean, Flow Area= 12.57 sf

Primary OutFlow Max=50.31 cfs @ 12.70 hrs HW=682.15' TW=681.05' (Dynamic Tailwater)
 1=Culvert (Outlet Controls 50.31 cfs @ 5.31 fps)



Pond CD4DCE: Cross Drain 4DCE

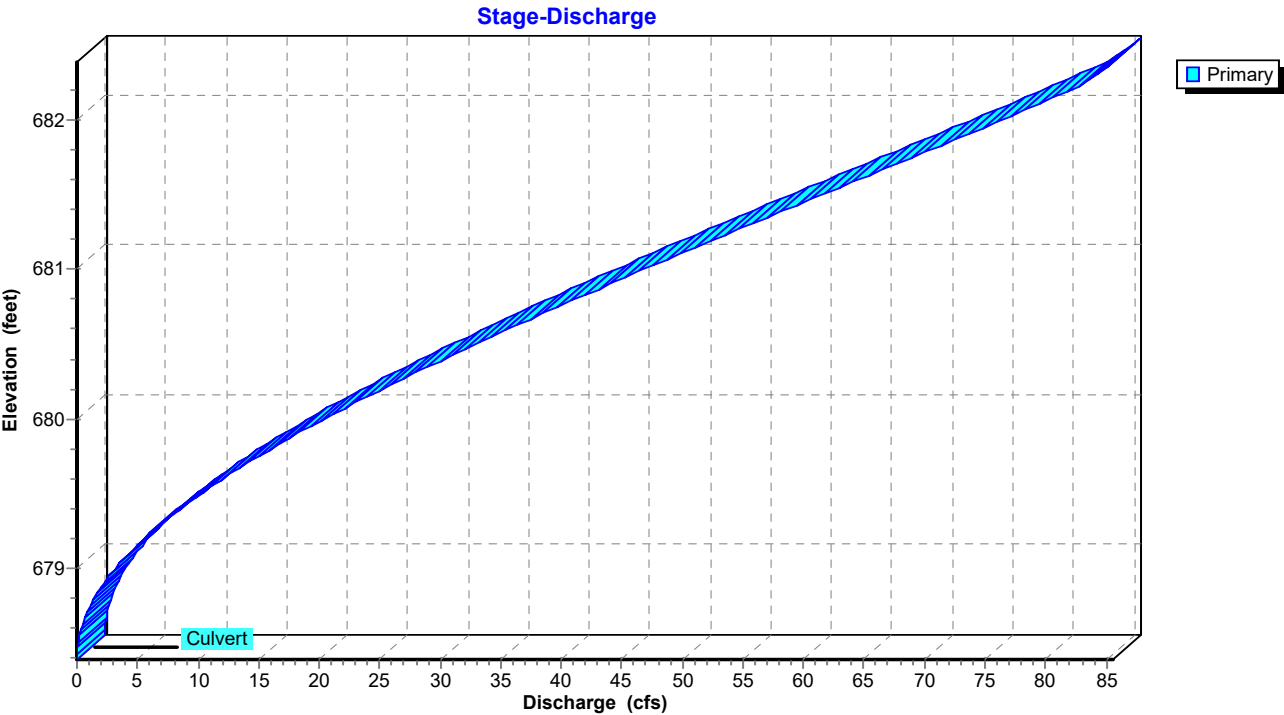


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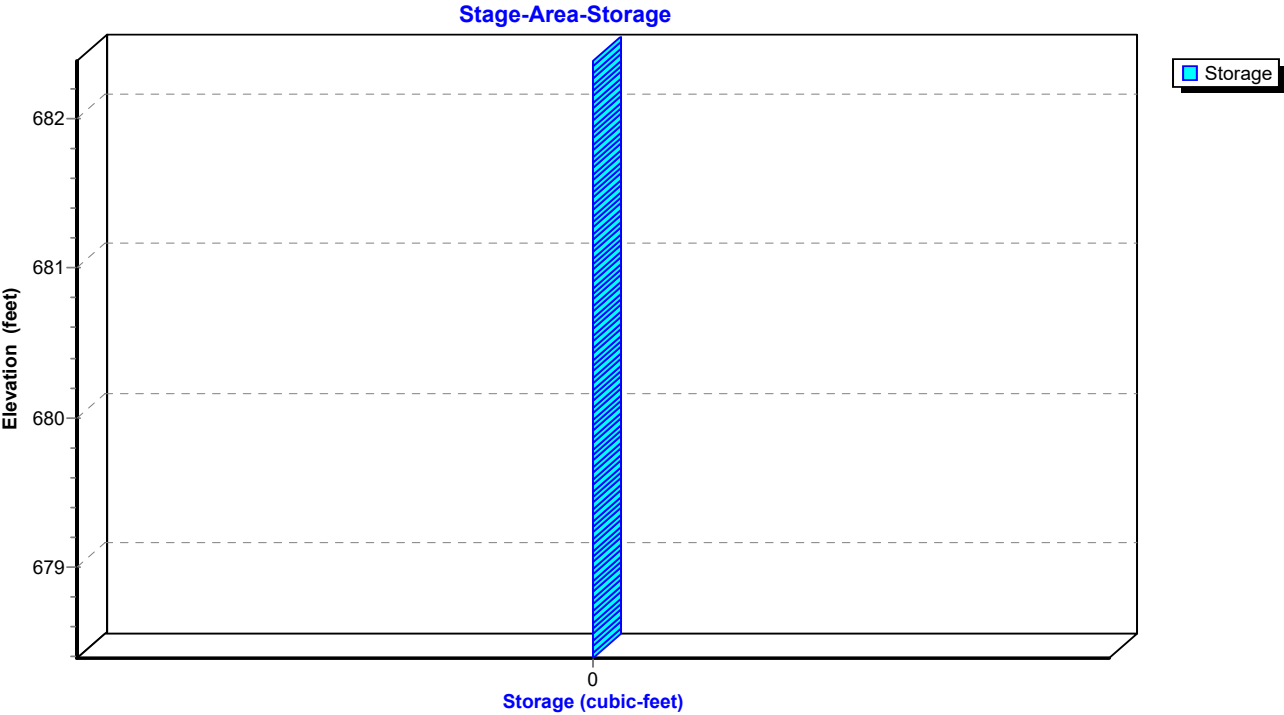
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Pond CD4DCE: Cross Drain 4DCE



Pond CD4DCE: Cross Drain 4DCE



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Summary for Pond CD4E: Cross Drain 4E

Inflow Area = 1,151,726 sf, 3.78% Impervious, Inflow Depth = 3.44" for 50-yr event
 Inflow = 52.11 cfs @ 12.64 hrs, Volume= 329,935 cf
 Outflow = 49.42 cfs @ 12.72 hrs, Volume= 329,930 cf, Atten= 5%, Lag= 4.8 min
 Primary = 49.42 cfs @ 12.72 hrs, Volume= 329,930 cf
 Routed to Pond CD4DCE : Cross Drain 4DCE

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
 Peak Elev= 683.15' @ 12.79 hrs Surf.Area= 8,055 sf Storage= 10,490 cf

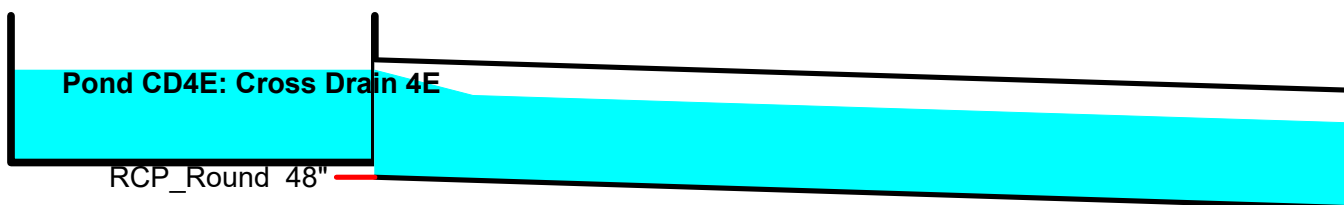
Plug-Flow detention time= (not calculated: outflow precedes inflow)
 Center-of-Mass det. time= 2.1 min (877.2 - 875.1)

Volume	Invert	Avail.Storage	Storage Description
#1	680.00'	33,779 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
680.00	274	0	0
681.00	1,562	918	918
682.00	3,975	2,769	3,687
683.00	7,355	5,665	9,352
684.00	12,090	9,723	19,074
685.00	17,320	14,705	33,779

Device	Routing	Invert	Outlet Devices
#1	Primary	679.50'	48.0" Round RCP_Round 48" L= 200.0' Ke= 0.500 Inlet / Outlet Invert= 679.50' / 678.46' S= 0.0052 ' S= 0.0052 ' Cc= 0.900 n= 0.011 Concrete pipe, straight & clean, Flow Area= 12.57 sf

Primary OutFlow Max=49.09 cfs @ 12.72 hrs HW=683.12' TW=682.17' (Dynamic Tailwater)
 ↑1=RCP_Round 48" (Outlet Controls 49.09 cfs @ 5.41 fps)



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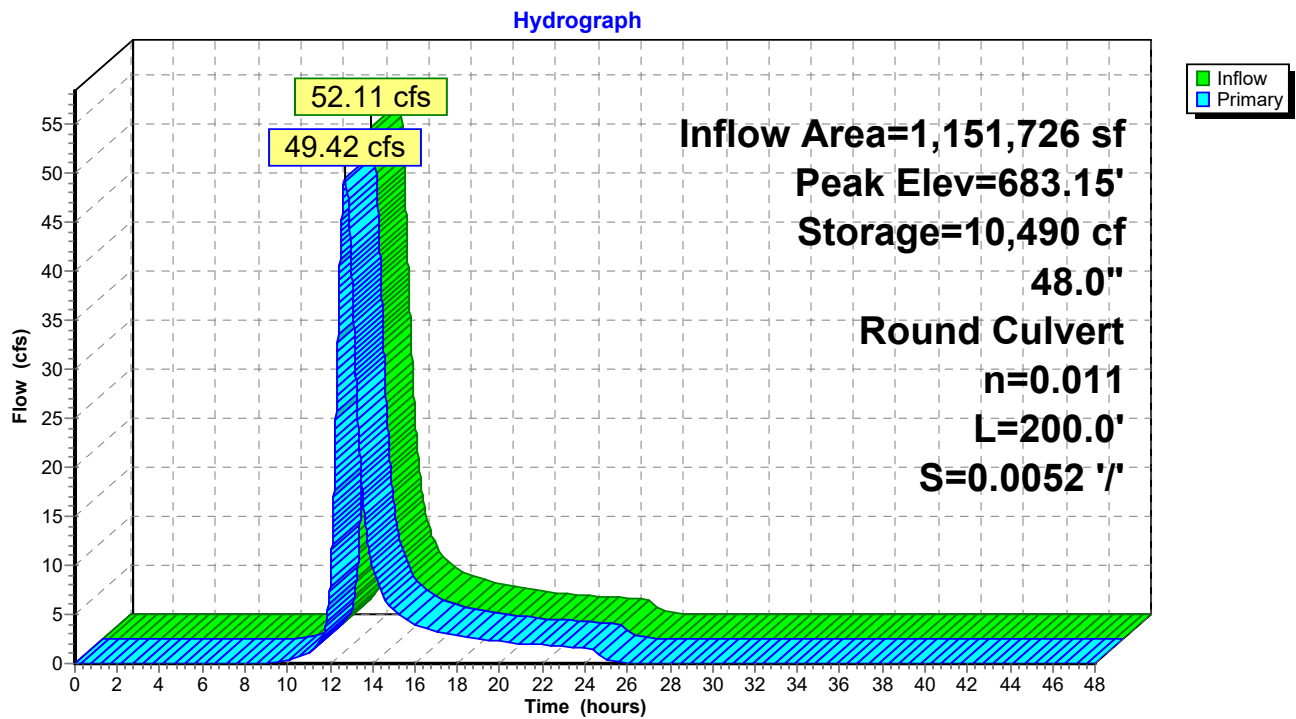
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Mt Pleasant 24-hr S1 50-yr Rainfall=7.08"

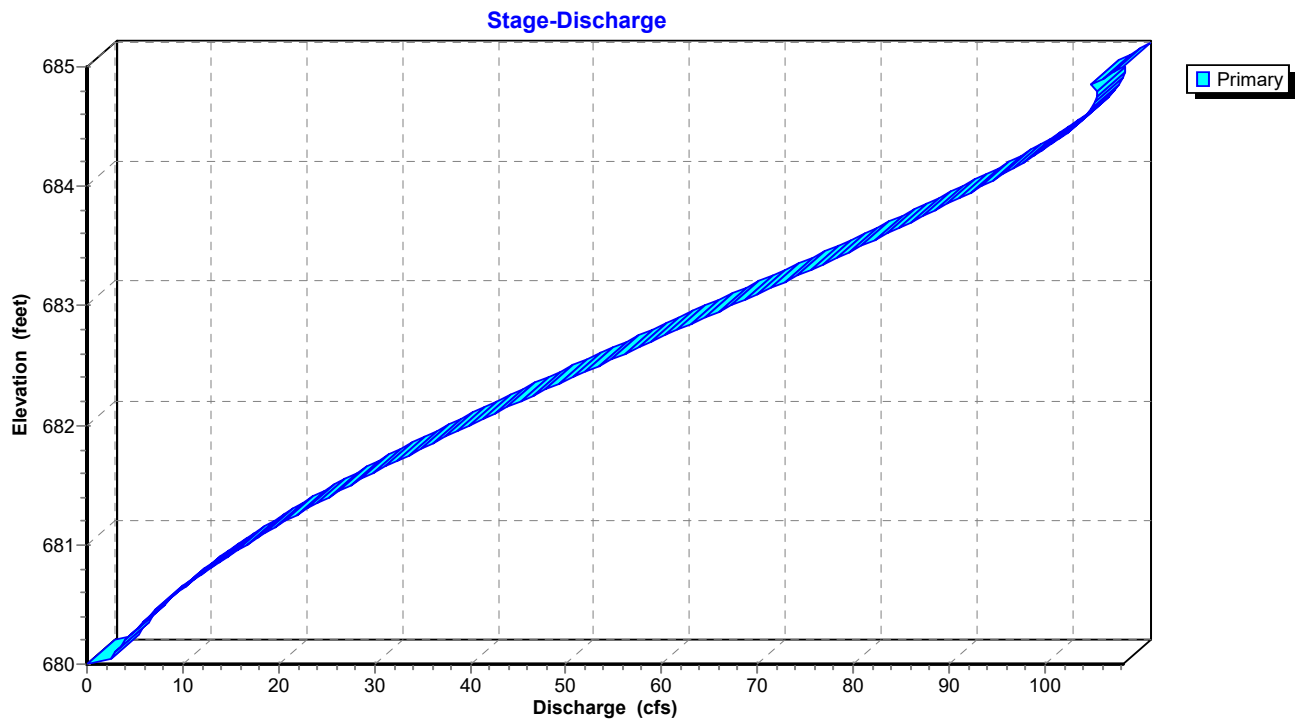
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Pond CD4E: Cross Drain 4E



Pond CD4E: Cross Drain 4E



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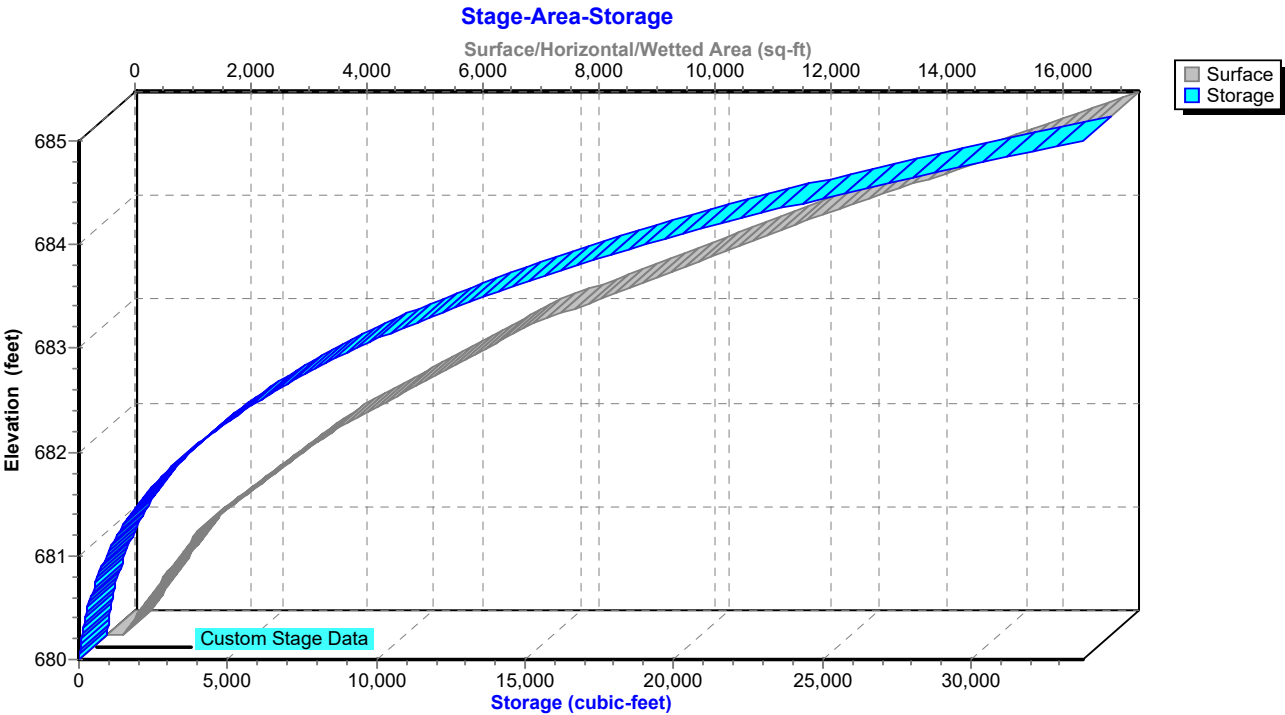
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Mt Pleasant 24-hr S1 50-yr Rainfall=7.08"

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Pond CD4E: Cross Drain 4E



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Summary for Pond POND1P: PROP POND

Inflow Area = 1,772,021 sf, 9.83% Impervious, Inflow Depth = 4.55" for 50-yr event
 Inflow = 94.09 cfs @ 12.52 hrs, Volume= 671,269 cf
 Outflow = 45.92 cfs @ 13.15 hrs, Volume= 671,262 cf, Atten= 51%, Lag= 38.1 min
 Primary = 45.92 cfs @ 13.15 hrs, Volume= 671,262 cf
 Routed to Reach OF4P : Primary Stream for Outfalls

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
 Peak Elev= 681.53' @ 13.16 hrs Surf.Area= 88,715 sf Storage= 234,094 cf

Plug-Flow detention time= 106.2 min calculated for 671,262 cf (100% of inflow)
 Center-of-Mass det. time= 106.2 min (932.4 - 826.3)

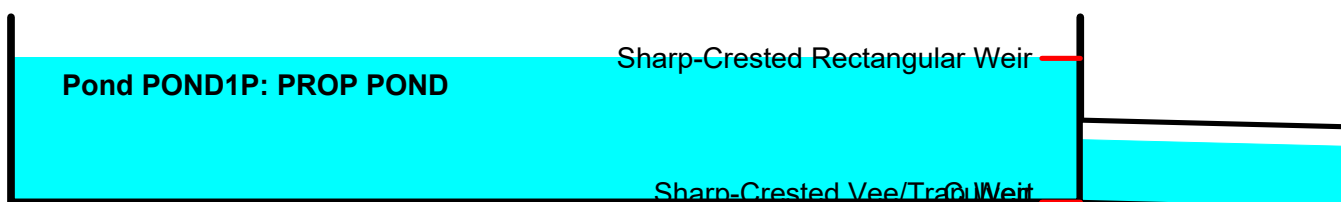
Volume	Invert	Avail.Storage	Storage Description
#1	676.25'	386,863 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
676.25	505	0	0
676.50	14,826	1,916	1,916
677.00	24,194	9,755	11,671
678.00	31,409	27,802	39,473
679.00	39,965	35,687	75,160
680.00	56,082	48,024	123,183
681.00	77,468	66,775	189,958
682.00	98,642	88,055	278,013
683.00	119,057	108,850	386,863

Device	Routing	Invert	Outlet Devices
#1	Primary	676.25'	36.0" Round Culvert L= 50.0' Ke= 0.600 Inlet / Outlet Invert= 676.25' / 676.00' S= 0.0050 '/' Cc= 0.900 n= 0.011, Flow Area= 7.07 sf
#2	Device 1	676.25'	20.0 deg x 0.4' long Sharp-Crested Vee/Trap Weir Cv= 2.69 (C= 3.36)
#3	Device 1	681.50'	16.0' long Sharp-Crested Rectangular Weir 2 End Contraction(s)

Primary OutFlow Max=45.91 cfs @ 13.15 hrs HW=681.53' TW=677.96' (Dynamic Tailwater)

- 1=Culvert (Passes 45.91 cfs of 60.28 cfs potential flow)
- 2=Sharp-Crested Vee/Trap Weir (Weir Controls 45.62 cfs @ 6.49 fps)
- 3=Sharp-Crested Rectangular Weir (Weir Controls 0.29 cfs @ 0.58 fps)



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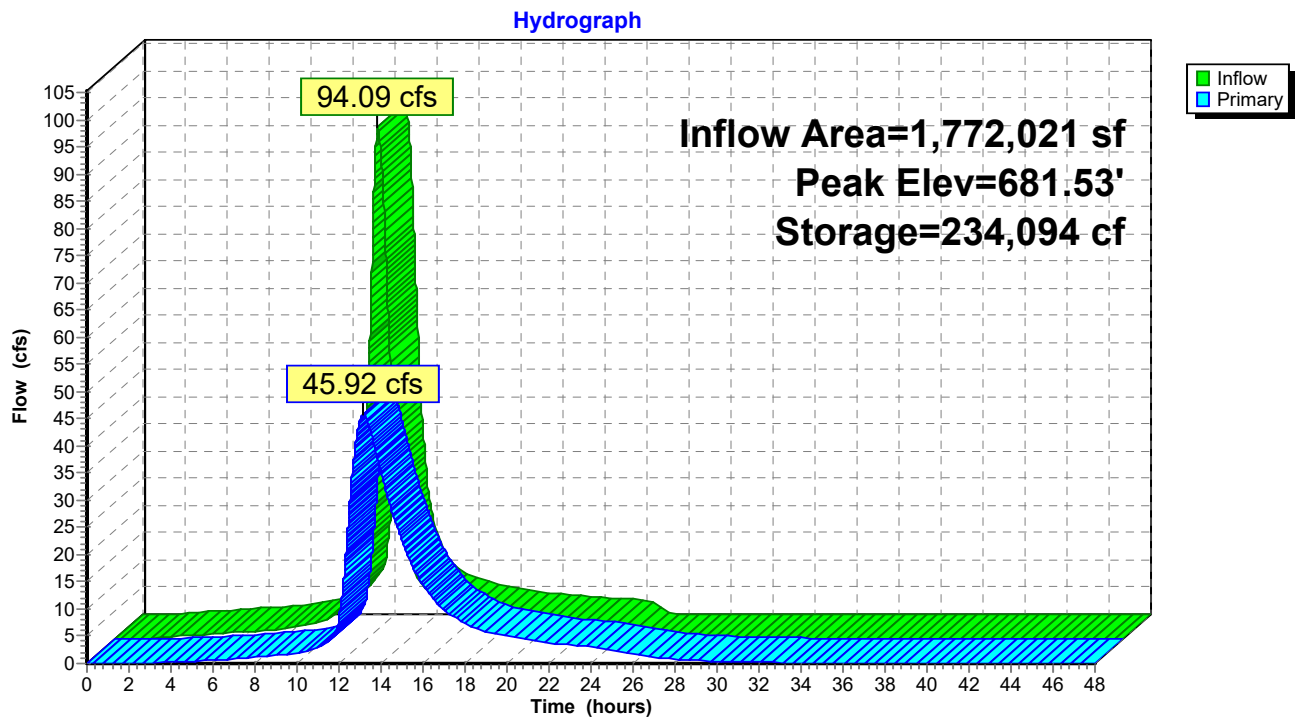
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Mt Pleasant 24-hr S1 50-yr Rainfall=7.08"

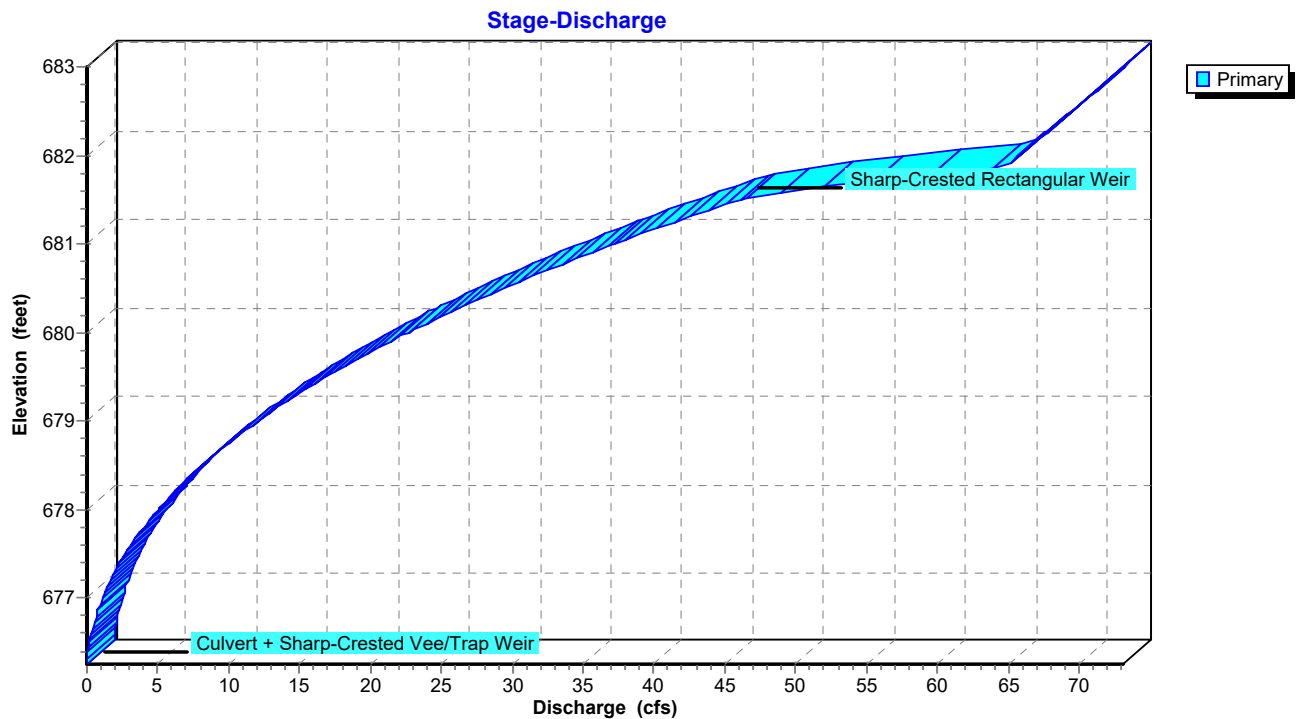
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Pond POND1P: PROP POND



Pond POND1P: PROP POND



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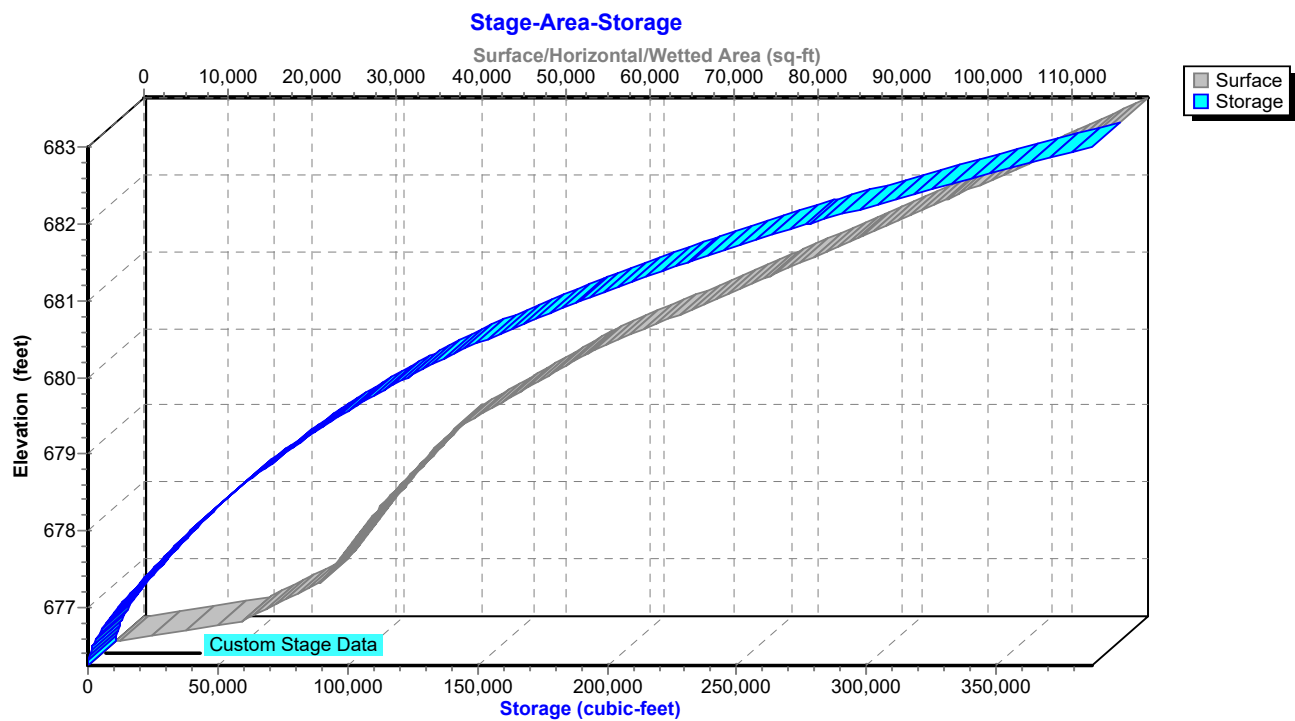
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Mt Pleasant 24-hr S1 50-yr Rainfall=7.08"

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Pond POND1P: PROP POND



TrueRail 040226*Mt Pleasant 24-hr S1 100-yr Rainfall=7.83"*

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Time span=0.00-48.00 hrs, dt=0.01 hrs, 4801 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

Subcatchment DA 1: BASIN 1 PRE Runoff Area=143.000 ac 1.75% Impervious Runoff Depth=4.89"
 Flow Length=5,750' Tc=143.0 min CN=75 Runoff=198.72 cfs 2,537,591 cf

Subcatchment DA 2: BASIN 2 PRE Runoff Area=34.900 ac 0.00% Impervious Runoff Depth=3.43"
 Flow Length=2,150' Slope=0.0150 ' Tc=62.3 min CN=62 Runoff=58.90 cfs 433,944 cf

Subcatchment DA 3: BASIN 3 PRE Runoff Area=9.380 ac 0.00% Impervious Runoff Depth=4.66"
 Flow Length=838' Slope=0.0200 ' Tc=25.9 min CN=73 Runoff=33.23 cfs 158,657 cf

Subcatchment DA 4: BASIN 4 PRE Runoff Area=41.500 ac 0.00% Impervious Runoff Depth=4.32"
 Flow Length=2,468' Tc=68.1 min CN=70 Runoff=84.83 cfs 650,568 cf

Subcatchment DA1P: BASIN 1 PROPOSED Runoff Area=143.000 ac 1.75% Impervious Runoff Depth=4.89"
 Flow Length=5,750' Tc=143.0 min CN=75 Runoff=198.72 cfs 2,537,591 cf

Subcatchment DA2P: BASIN 2 PROPOSED Runoff Area=34.900 ac 0.00% Impervious Runoff Depth=3.43"
 Flow Length=2,150' Slope=0.0150 ' Tc=62.3 min CN=62 Runoff=58.90 cfs 433,944 cf

Subcatchment DA3P: BASIN 3 PRE Runoff Area=4.760 ac 0.00% Impervious Runoff Depth=5.35"
 Tc=5.0 min CN=79 Runoff=34.23 cfs 92,439 cf

Subcatchment DA4A: BASIN 4A PROPOSED Runoff Area=5.530 ac 0.00% Impervious Runoff Depth=4.09"
 Flow Length=945' Tc=40.9 min CN=68 Runoff=13.98 cfs 82,160 cf

Subcatchment DA4B: BASIN 4B Runoff Area=12.330 ac 24.33% Impervious Runoff Depth=7.35"
 Flow Length=996' Tc=33.8 min CN=96 Runoff=55.64 cfs 329,027 cf

Subcatchment DA4C: BASIN 4C PROPOSED Runoff Area=0.680 ac 0.00% Impervious Runoff Depth=7.35"
 Tc=5.0 min CN=96 Runoff=6.07 cfs 18,146 cf

Subcatchment DA4D: BASIN 4D PROPOSED Runoff Area=1.230 ac 0.00% Impervious Runoff Depth=7.35"
 Tc=5.0 min CN=96 Runoff=10.99 cfs 32,823 cf

Subcatchment DA4E1: BASIN 4E1 Runoff Area=7.260 ac 13.77% Impervious Runoff Depth=3.65"
 Flow Length=640' Tc=31.5 min CN=64 Runoff=18.33 cfs 96,090 cf

Subcatchment DA4E2: BASIN 4E2 Runoff Area=19.180 ac 0.00% Impervious Runoff Depth=4.21"
 Flow Length=1,313' Tc=46.8 min CN=69 Runoff=46.83 cfs 292,804 cf

Reach D4C: Ditch 4C Avg. Flow Depth=0.72' Max Vel=2.70 fps Inflow=6.07 cfs 18,146 cf
 n=0.033 L=313.0' S=0.0104 ' Capacity=27.19 cfs Outflow=5.77 cfs 18,146 cf

Reach D4D: Ditch 4D Avg. Flow Depth=0.89' Max Vel=3.61 fps Inflow=10.99 cfs 32,823 cf
 n=0.033 L=337.0' S=0.0148 ' Capacity=32.50 cfs Outflow=10.60 cfs 32,823 cf

Reach D4E1: Ditch 4E1 Avg. Flow Depth=1.08' Max Vel=2.01 fps Inflow=18.33 cfs 96,090 cf
 n=0.033 L=1,788.0' S=0.0031 ' Capacity=197.27 cfs Outflow=15.73 cfs 96,090 cf

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Reach OF4: Primary Stream for Avg. Flow Depth=3.36' Max Vel=4.98 fps Inflow=274.93 cfs 3,780,759 cf
 n=0.035 L=1,000.0' S=0.0050 '/' Capacity=640.46 cfs Outflow=274.79 cfs 3,780,759 cf

Reach OF4P: Primary Stream for Avg. Flow Depth=3.34' Max Vel=4.96 fps Inflow=270.89 cfs 3,915,011 cf
 n=0.035 L=1,000.0' S=0.0050 '/' Capacity=640.46 cfs Outflow=270.52 cfs 3,915,010 cf

Pond CD2: Cross Drain Peak Elev=684.90' Inflow=58.90 cfs 433,944 cf
 36.0" Round Culvert n=0.011 L=50.0' S=0.0050 '/' Outflow=58.90 cfs 433,944 cf

Pond CD4C: Cross Drain 4C Peak Elev=684.97' Inflow=5.77 cfs 18,146 cf
 18.0" Round Culvert n=0.011 L=60.0' S=0.0792 '/' Outflow=5.77 cfs 18,146 cf

Pond CD4DCE: Cross Drain 4DCE Peak Elev=682.73' Inflow=59.73 cfs 439,858 cf
 48.0" Round Culvert n=0.011 L=360.0' S=0.0052 '/' Outflow=59.73 cfs 439,858 cf

Pond CD4E: Cross Drain 4E Peak Elev=683.65' Storage=15,164 cf Inflow=62.56 cfs 388,894 cf
 48.0" Round Culvert n=0.011 L=200.0' S=0.0052 '/' Outflow=58.22 cfs 388,890 cf

Pond POND1P: PROP POND Peak Elev=681.84' Storage=262,115 cf Inflow=108.15 cfs 768,885 cf
 Outflow=61.01 cfs 768,878 cf

Total Runoff Area = 19,935,234 sf Runoff Volume = 7,695,782 cf Average Runoff Depth = 4.63"
98.03% Pervious = 19,543,194 sf 1.97% Impervious = 392,040 sf

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Mt Pleasant 24-hr S1 100-yr Rainfall=7.83"

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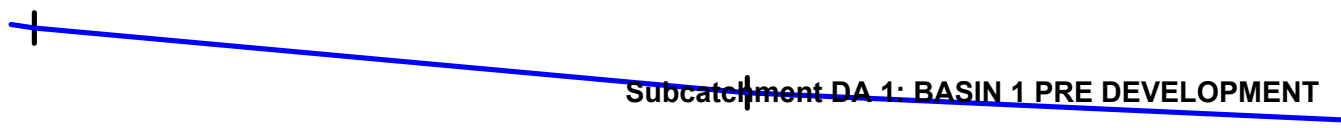
Summary for Subcatchment DA 1: BASIN 1 PRE DEVELOPMENT

Runoff = 198.72 cfs @ 13.82 hrs, Volume= 2,537,591 cf, Depth= 4.89"
Routed to Reach OF4 : Primary Stream for Outfalls

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Mt Pleasant 24-hr S1 100-yr Rainfall=7.83"

Area (ac)	CN	Description
69.500	74	>75% Grass cover, Good, HSG C
71.000	76	Woods/grass comb., Fair, HSG C
2.500	98	Paved parking, HSG C
143.000	75	Weighted Average
140.500		98.25% Pervious Area
2.500		1.75% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
35.4	100	0.0200	0.05		Sheet Flow, Woods: Dense underbrush n= 0.800 P2= 3.57"
92.8	3,050	0.0120	0.55		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
14.8	2,600	0.0060	2.93	11.71	Channel Flow, Area= 4.0 sf Perim= 6.0' r= 0.67' n= 0.030
143.0	5,750	Total			



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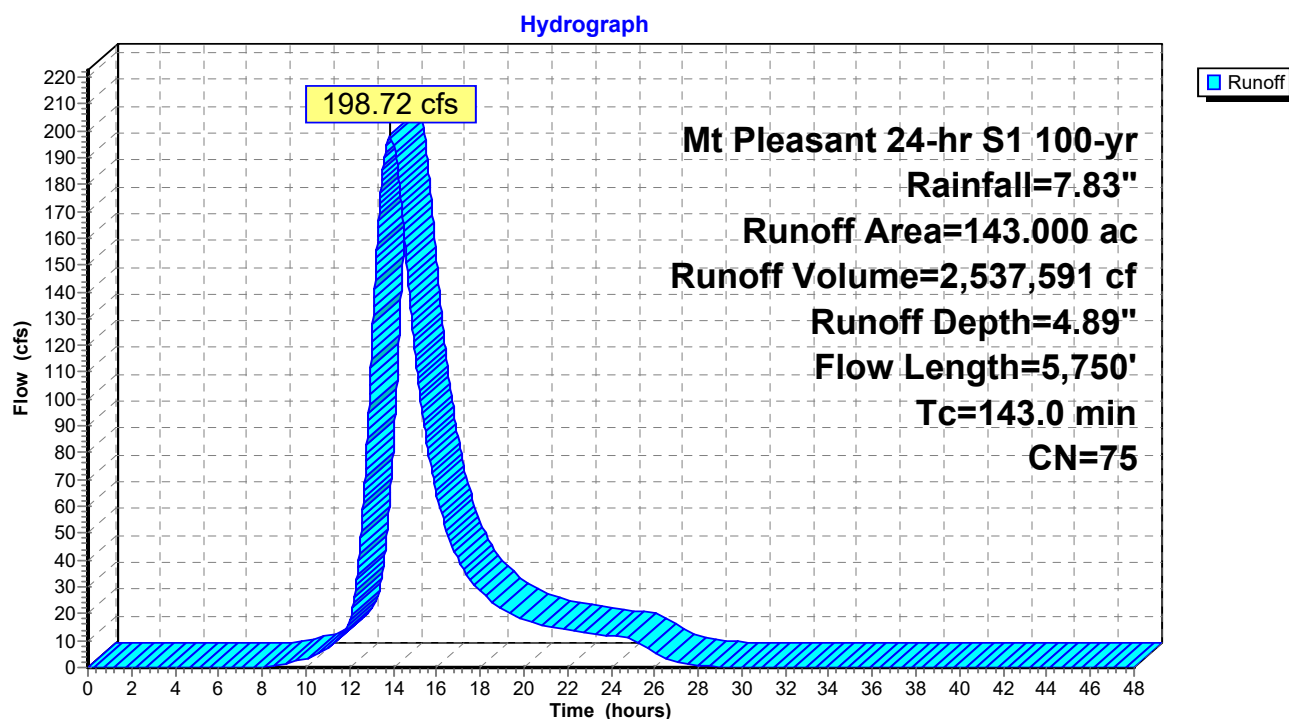
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Mt Pleasant 24-hr S1 100-yr Rainfall=7.83"

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Subcatchment DA 1: BASIN 1 PRE DEVELOPMENT



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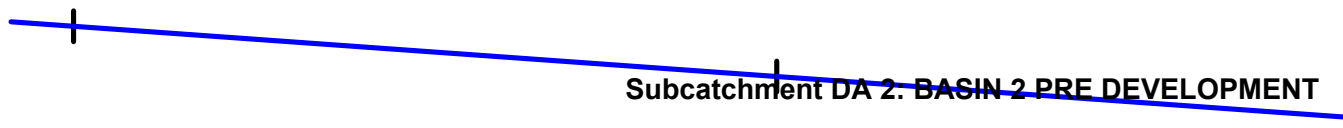
Summary for Subcatchment DA 2: BASIN 2 PRE DEVELOPMENT

Runoff = 58.90 cfs @ 12.88 hrs, Volume= 433,944 cf, Depth= 3.43"
Routed to Reach OF4 : Primary Stream for Outfalls

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Mt Pleasant 24-hr S1 100-yr Rainfall=7.83"

Area (ac)	CN	Description
17.450	58	Meadow, non-grazed, HSG B
14.450	60	Woods, Fair, HSG B
3.000	96	Gravel surface, HSG C
34.900	62	Weighted Average
34.900		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.2	100	0.0150	0.11		Sheet Flow, Grass: Dense n= 0.240 P2= 3.57"
21.9	1,125	0.0150	0.86		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
25.2	925	0.0150	0.61		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
62.3	2,150	Total			



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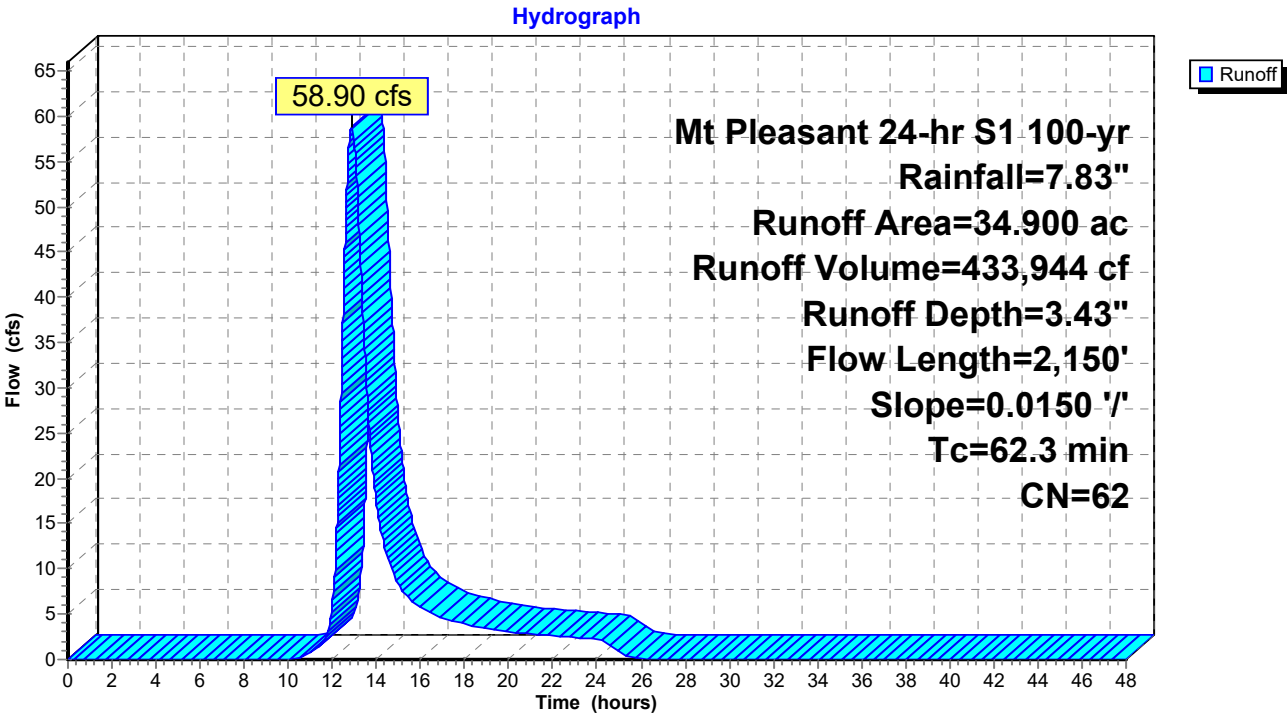
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Subcatchment DA 2: BASIN 2 PRE DEVELOPMENT



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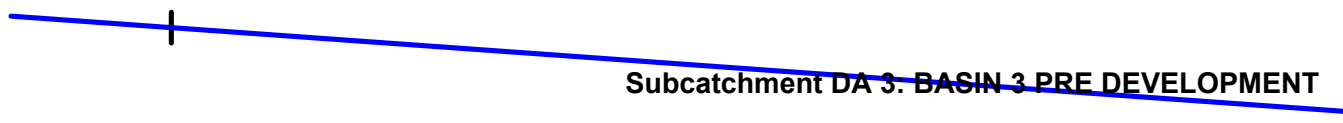
Summary for Subcatchment DA 3: BASIN 3 PRE DEVELOPMENT

Runoff = 33.23 cfs @ 12.32 hrs, Volume= 158,657 cf, Depth= 4.66"
Routed to Reach OF4 : Primary Stream for Outfalls

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Mt Pleasant 24-hr S1 100-yr Rainfall=7.83"

Area (ac)	CN	Description
3.300	78	Meadow, non-grazed, HSG D
3.300	79	Woods, Fair, HSG D
2.250	58	Meadow, non-grazed, HSG B
0.530	60	Woods, Fair, HSG B
9.380	73	Weighted Average
9.380		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.5	100	0.0200	0.12		Sheet Flow, Grass: Dense n= 0.240 P2= 3.57"
12.4	738	0.0200	0.99		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
25.9	838	Total			



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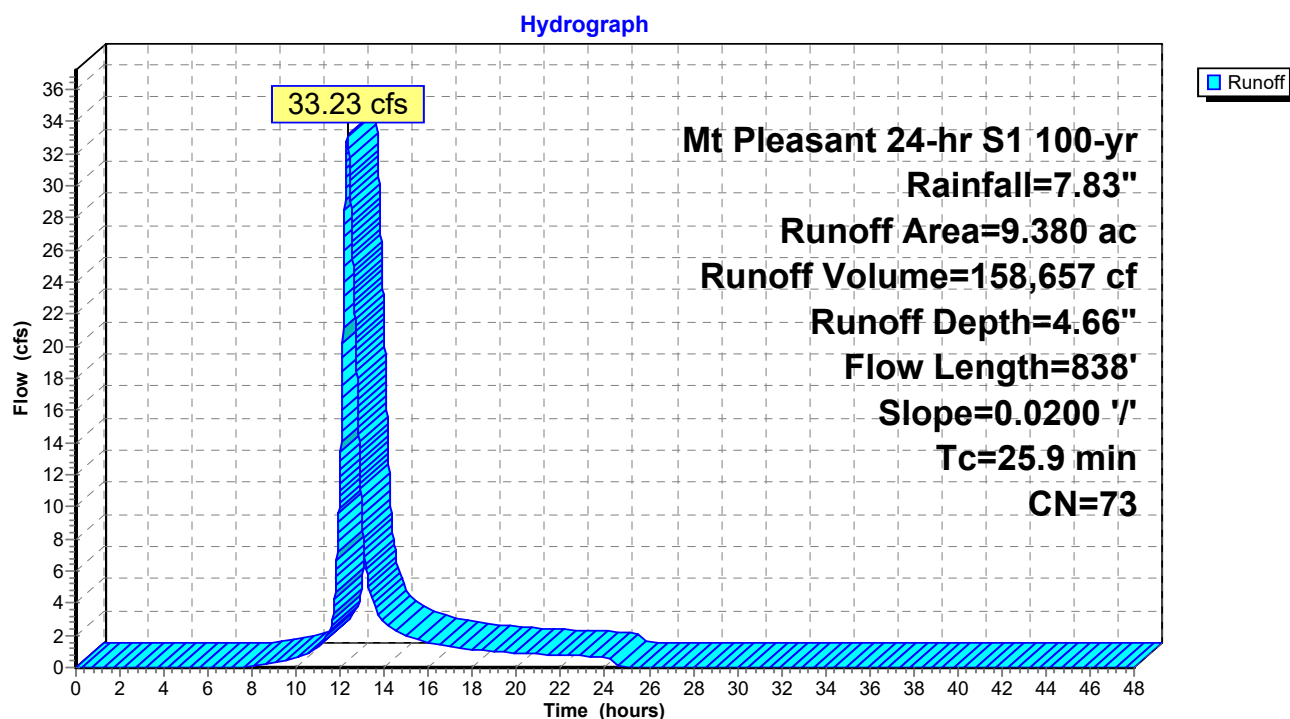
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Subcatchment DA 3: BASIN 3 PRE DEVELOPMENT



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Summary for Subcatchment DA 4: BASIN 4 PRE DEVELOPMENT

Runoff = 84.83 cfs @ 12.94 hrs, Volume= 650,568 cf, Depth= 4.32"
Routed to Reach OF4 : Primary Stream for Outfalls

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Mt Pleasant 24-hr S1 100-yr Rainfall=7.83"

Area (ac)	CN	Description
7.300	78	Meadow, non-grazed, HSG D
1.830	79	Woods, Fair, HSG D
7.640	58	Meadow, non-grazed, HSG B
1.910	60	Woods, Fair, HSG B
4.150	73	Woods, Fair, HSG C
9.960	71	Meadow, non-grazed, HSG C
2.490	73	Woods, Fair, HSG C
4.970	71	Meadow, non-grazed, HSG C
1.250	73	Woods, Fair, HSG C
41.500	70	Weighted Average
41.500		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
24.5	100	0.0500	0.07		Sheet Flow, Woods: Dense underbrush n= 0.800 P2= 3.57"
43.6	2,368	0.0167	0.90		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
68.1	2,468	Total			

Subcatchment DA 4: BASIN 4 PRE DEVELOPMENT

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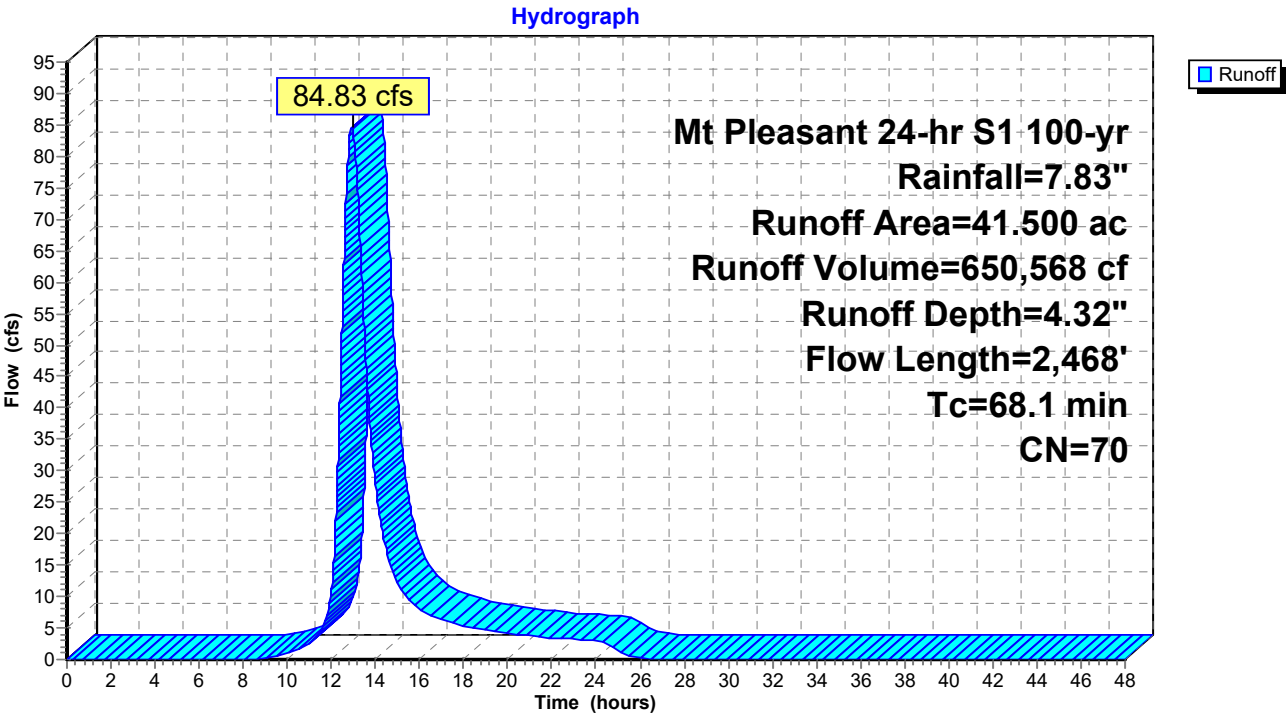
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Subcatchment DA 4: BASIN 4 PRE DEVELOPMENT



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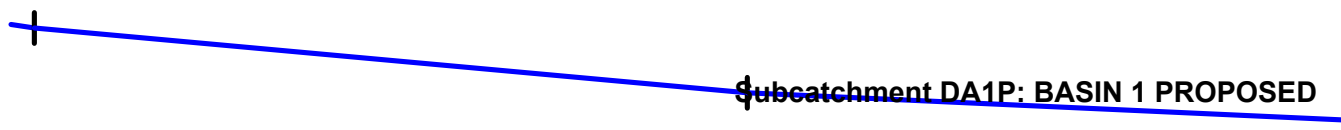
Summary for Subcatchment DA1P: BASIN 1 PROPOSED

Runoff = 198.72 cfs @ 13.82 hrs, Volume= 2,537,591 cf, Depth= 4.89"
 Routed to Reach OF4P : Primary Stream for Outfalls

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
 Mt Pleasant 24-hr S1 100-yr Rainfall=7.83"

Area (ac)	CN	Description
69.500	74	>75% Grass cover, Good, HSG C
71.000	76	Woods/grass comb., Fair, HSG C
2.500	98	Paved parking, HSG C
143.000	75	Weighted Average
140.500		98.25% Pervious Area
2.500		1.75% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
35.4	100	0.0200	0.05		Sheet Flow, Woods: Dense underbrush n= 0.800 P2= 3.57"
92.8	3,050	0.0120	0.55		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
14.8	2,600	0.0060	2.93	11.71	Channel Flow, Area= 4.0 sf Perim= 6.0' r= 0.67' n= 0.030
143.0	5,750	Total			



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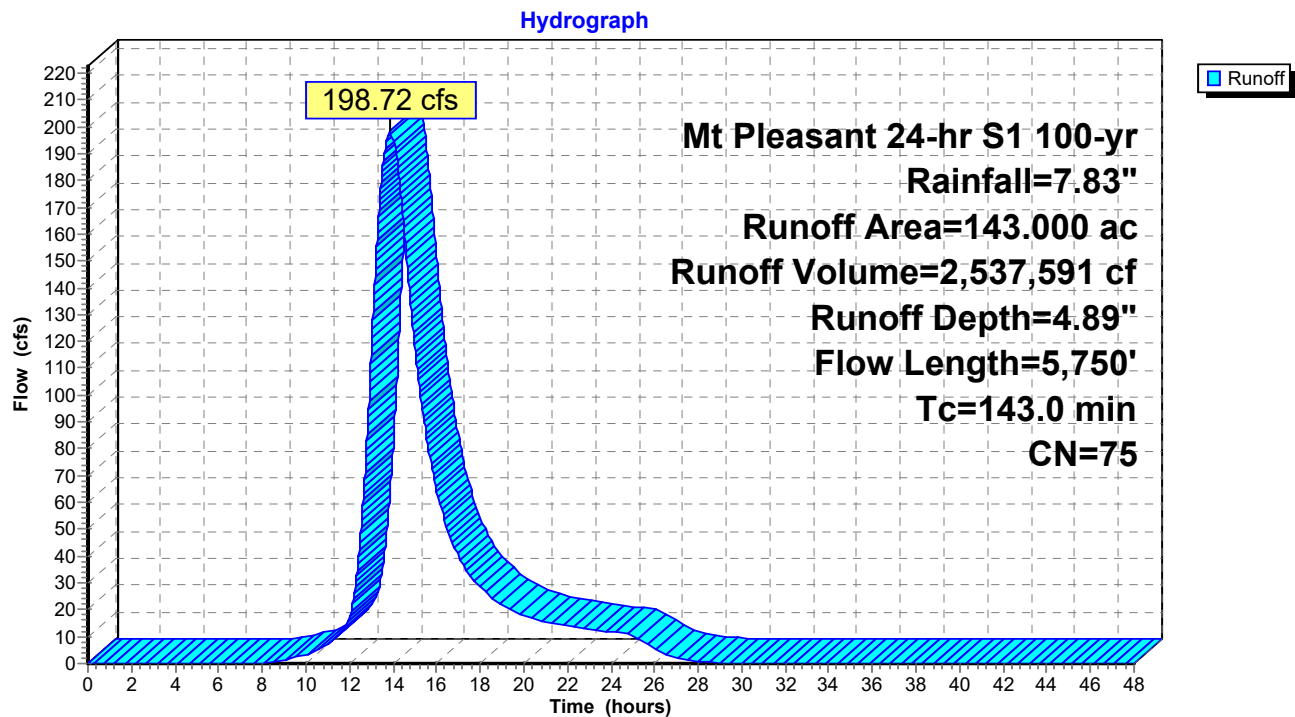
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Subcatchment DA1P: BASIN 1 PROPOSED



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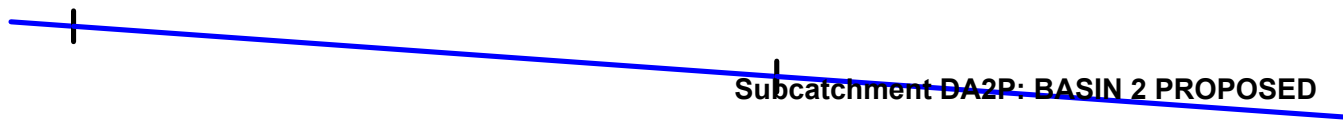
Summary for Subcatchment DA2P: BASIN 2 PROPOSED

Runoff = 58.90 cfs @ 12.88 hrs, Volume= 433,944 cf, Depth= 3.43"
Routed to Pond CD2 : Cross Drain

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Mt Pleasant 24-hr S1 100-yr Rainfall=7.83"

Area (ac)	CN	Description
17.450	58	Meadow, non-grazed, HSG B
14.450	60	Woods, Fair, HSG B
3.000	96	Gravel surface, HSG C
34.900	62	Weighted Average
34.900		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.2	100	0.0150	0.11		Sheet Flow, Grass: Dense n= 0.240 P2= 3.57"
21.9	1,125	0.0150	0.86		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
25.2	925	0.0150	0.61		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
62.3	2,150	Total			



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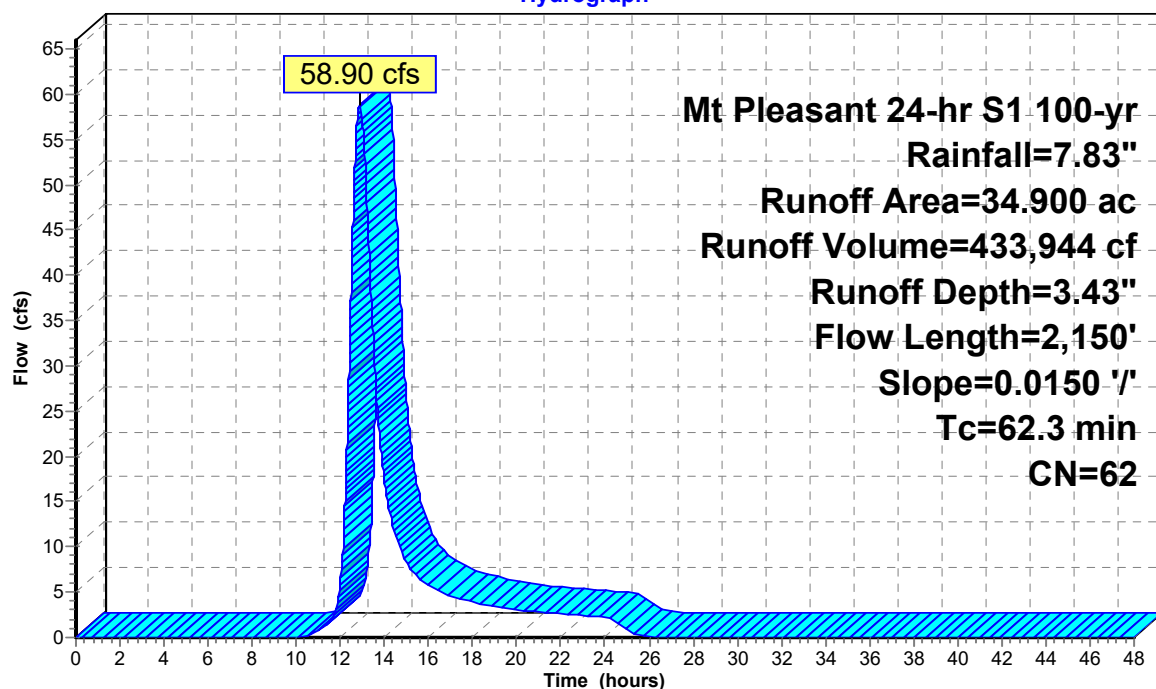
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Subcatchment DA2P: BASIN 2 PROPOSED

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Summary for Subcatchment DA3P: BASIN 3 PRE DEVELOPMENT

Runoff = 34.23 cfs @ 12.03 hrs, Volume= 92,439 cf, Depth= 5.35"
Routed to Reach OF4P : Primary Stream for Outfalls

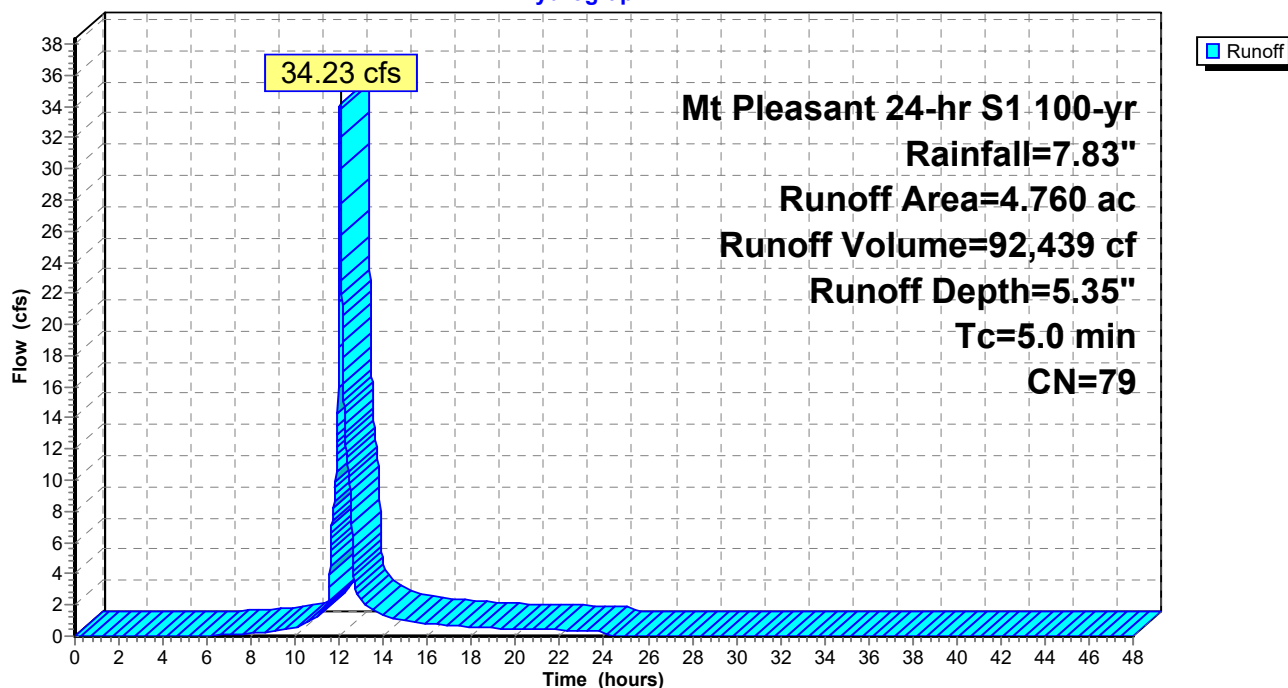
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Mt Pleasant 24-hr S1 100-yr Rainfall=7.83"

Area (ac)	CN	Description
4.760	79	Woods, Fair, HSG D
4.760		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					Direct Entry,

Subcatchment DA3P: BASIN 3 PRE DEVELOPMENT

Hydrograph



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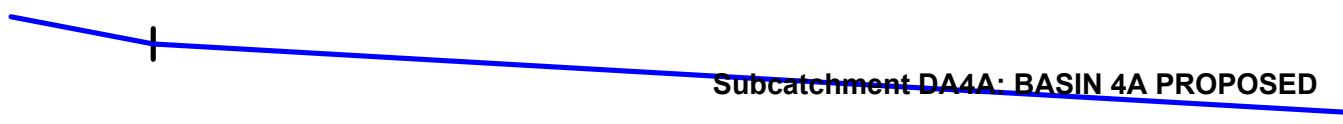
Summary for Subcatchment DA4A: BASIN 4A PROPOSED

Runoff = 13.98 cfs @ 12.55 hrs, Volume= 82,160 cf, Depth= 4.09"
Routed to Reach OF4P : Primary Stream for Outfalls

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Mt Pleasant 24-hr S1 100-yr Rainfall=7.83"

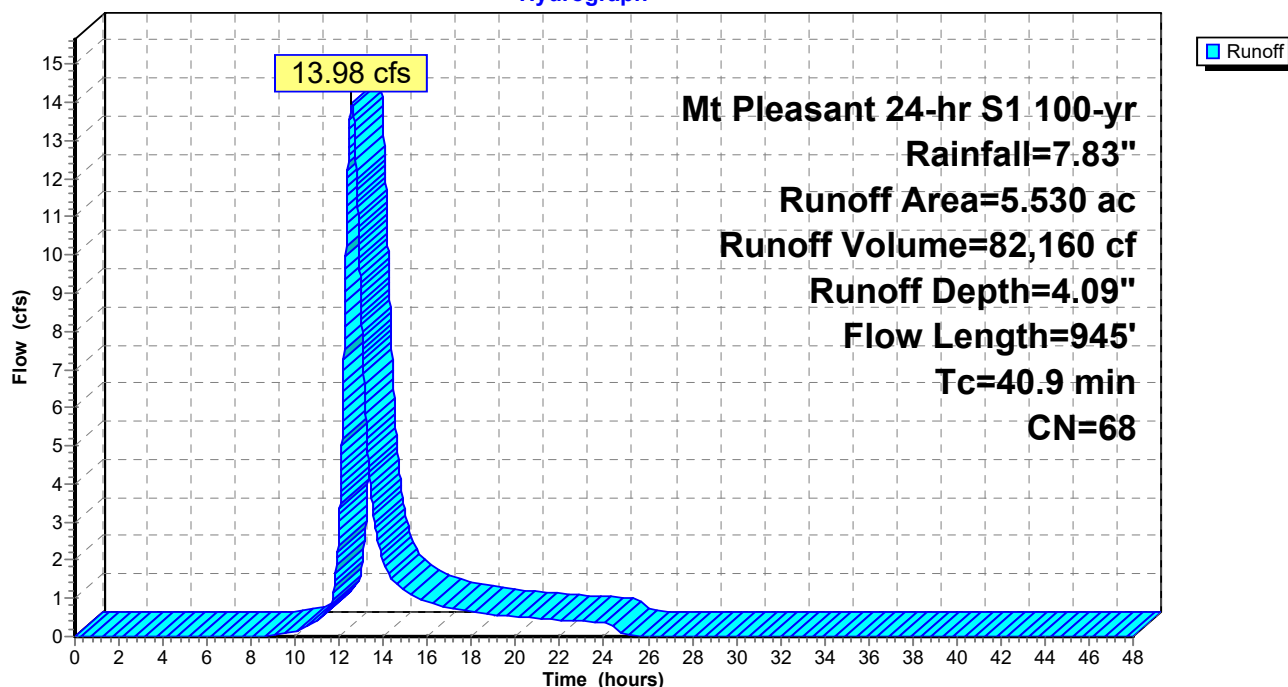
Area (ac)	CN	Description
2.200	60	Woods, Fair, HSG B
3.330	73	Woods, Fair, HSG C
5.530	68	Weighted Average
5.530		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
24.5	100	0.0500	0.07		Sheet Flow, Woods: Dense underbrush n= 0.800 P2= 3.57"
16.4	845	0.0150	0.86		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
40.9	945	Total			



Subcatchment DA4A: BASIN 4A PROPOSED

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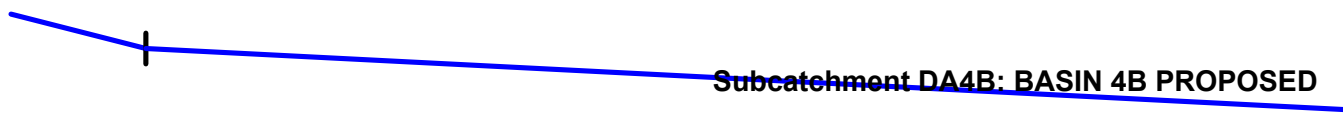
Summary for Subcatchment DA4B: BASIN 4B PROPOSED

Runoff = 55.64 cfs @ 12.42 hrs, Volume= 329,027 cf, Depth= 7.35"
Routed to Pond POND1P : PROP POND

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Mt Pleasant 24-hr S1 100-yr Rainfall=7.83"

Area (ac)	CN	Description
9.330	96	Gravel surface, HSG C
1.000	98	Paved parking, HSG D
2.000	98	Roofs, HSG D
12.330	96	Weighted Average
9.330		75.67% Pervious Area
3.000		24.33% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
24.5	100	0.0500	0.07		Sheet Flow, n= 0.800 P2= 3.57"
9.3	896	0.0100	1.61		Shallow Concentrated Flow, Unpaved Kv= 16.1 fps
33.8	996	Total			



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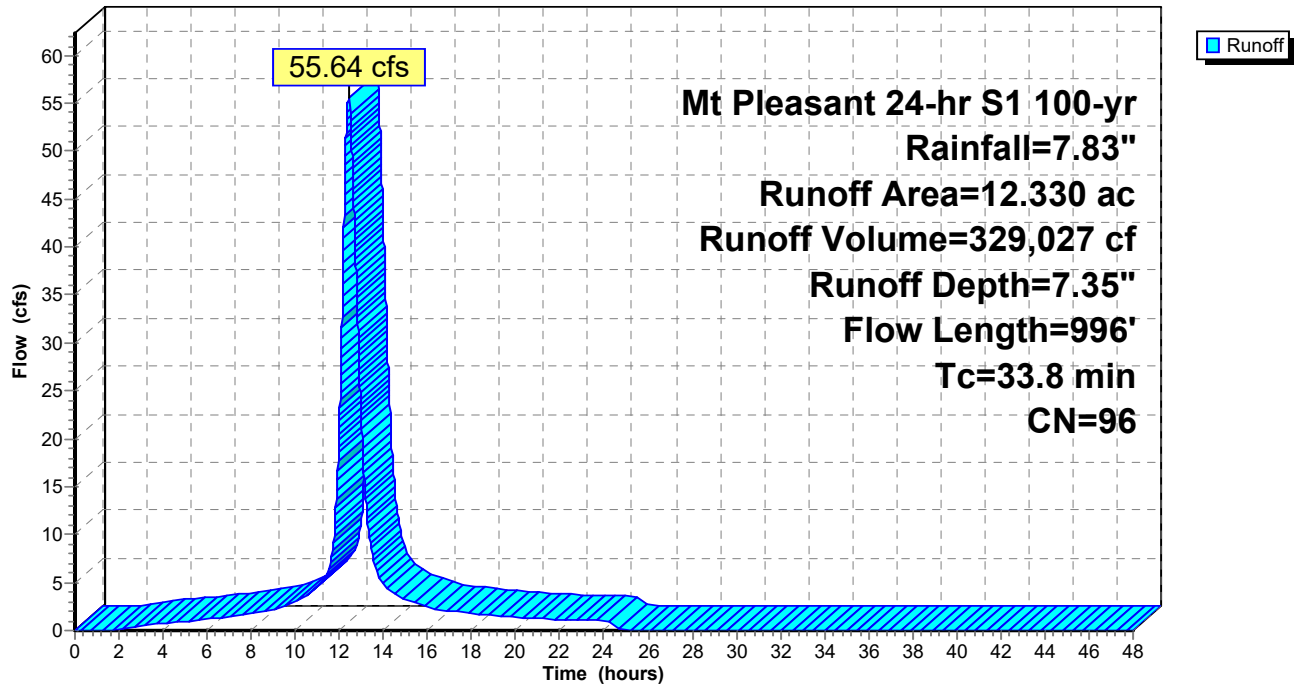
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Subcatchment DA4B: BASIN 4B PROPOSED

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Summary for Subcatchment DA4C: BASIN 4C PROPOSED

Runoff = 6.07 cfs @ 12.03 hrs, Volume= 18,146 cf, Depth= 7.35"
Routed to Reach D4C : Ditch 4C

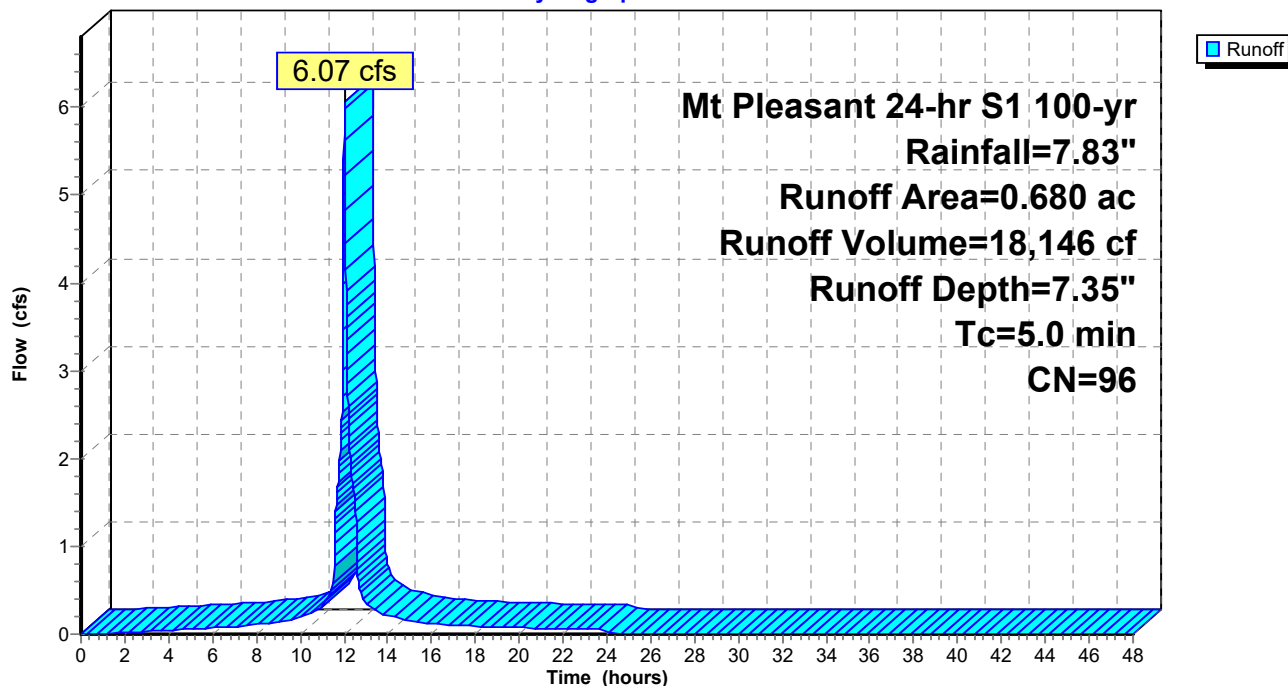
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Mt Pleasant 24-hr S1 100-yr Rainfall=7.83"

Area (ac)	CN	Description
0.680	96	Gravel surface, HSG C
0.680		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					Direct Entry,

Subcatchment DA4C: BASIN 4C PROPOSED

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Summary for Subcatchment DA4D: BASIN 4D PROPOSED

Runoff = 10.99 cfs @ 12.03 hrs, Volume= 32,823 cf, Depth= 7.35"
Routed to Reach D4D : Ditch 4D

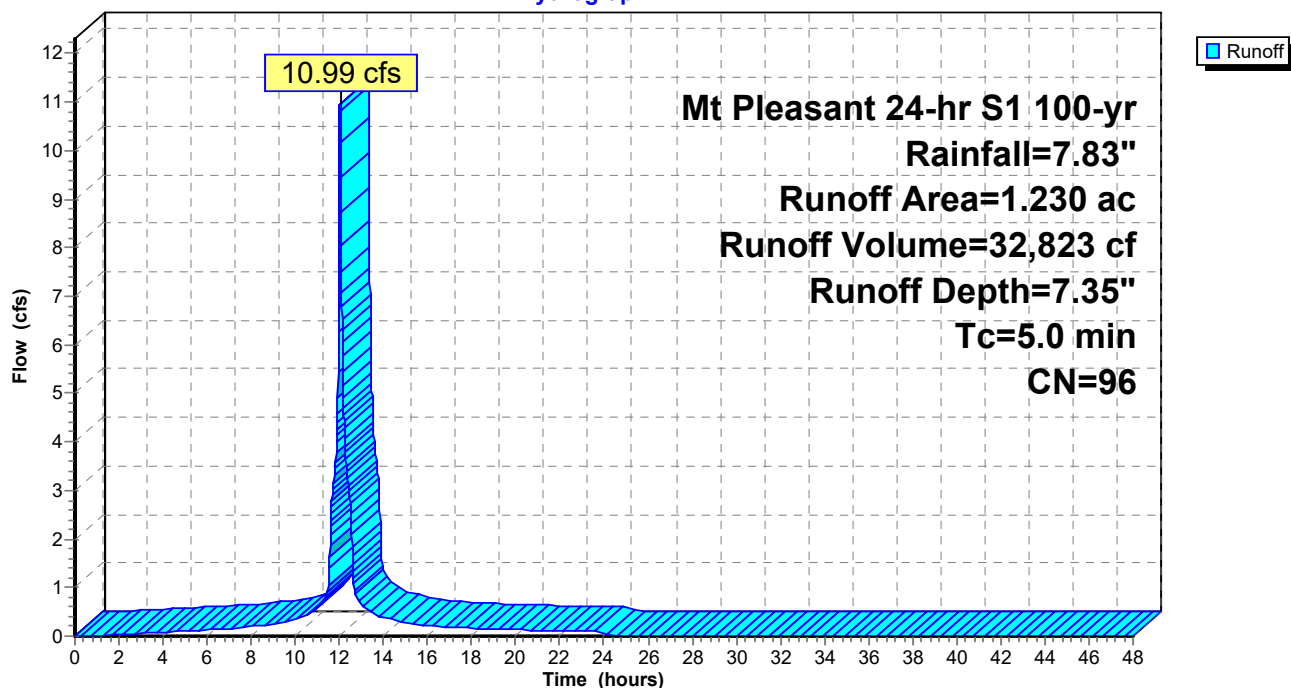
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Mt Pleasant 24-hr S1 100-yr Rainfall=7.83"

Area (ac)	CN	Description
1.230	96	Gravel surface, HSG C
1.230		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					Direct Entry,

Subcatchment DA4D: BASIN 4D PROPOSED

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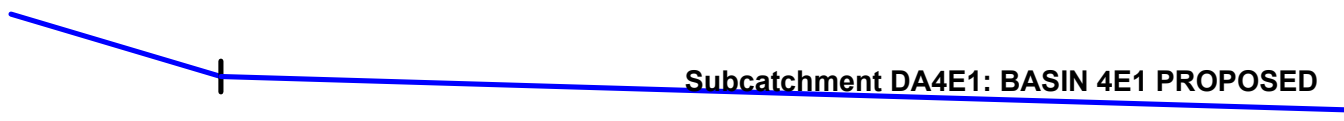
Summary for Subcatchment DA4E1: BASIN 4E1 PROPOSED

Runoff = 18.33 cfs @ 12.43 hrs, Volume= 96,090 cf, Depth= 3.65"
Routed to Reach D4E1 : Ditch 4E1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Mt Pleasant 24-hr S1 100-yr Rainfall=7.83"

Area (ac)	CN	Description
3.130	58	Meadow, non-grazed, HSG B
3.130	60	Woods, Fair, HSG B
1.000	98	Paved roads w/curbs & sewers, HSG B
7.260	64	Weighted Average
6.260		86.23% Pervious Area
1.000		13.77% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
18.6	100	0.1000	0.09		Sheet Flow, Woods: Dense underbrush n= 0.800 P2= 3.57"
12.9	540	0.0100	0.70		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
31.5	640	Total			



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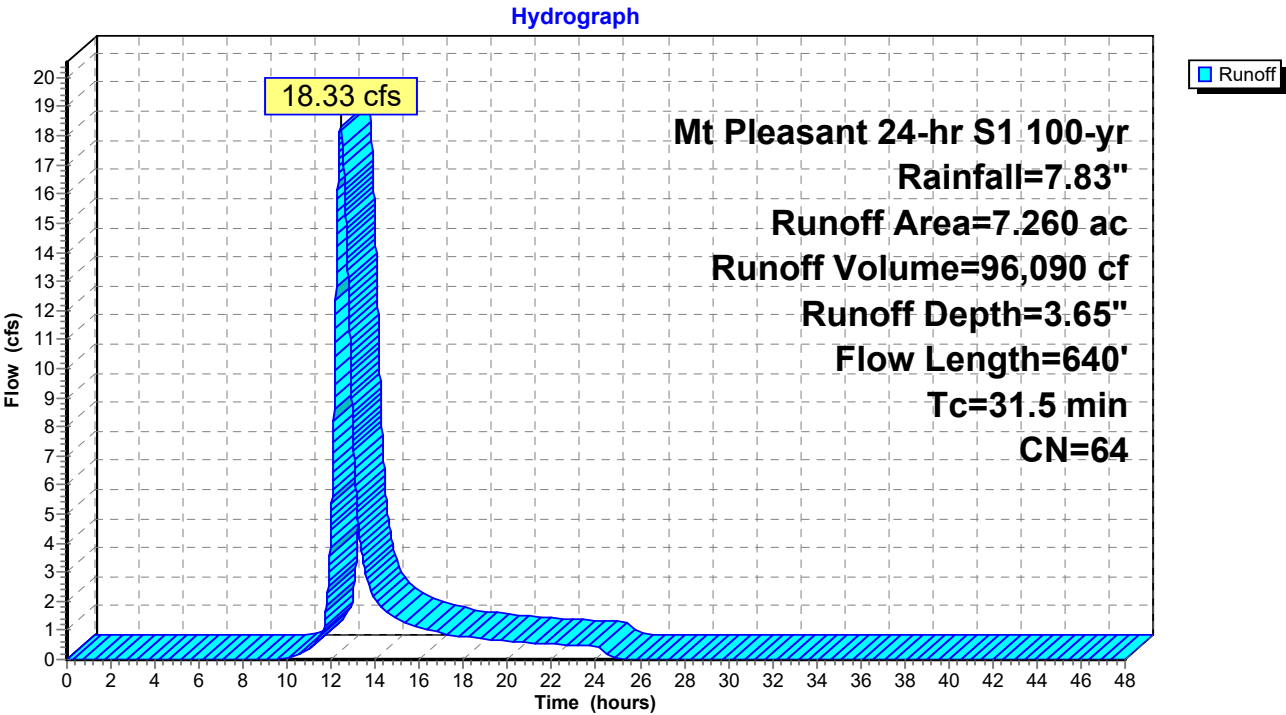
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Subcatchment DA4E1: BASIN 4E1 PROPOSED



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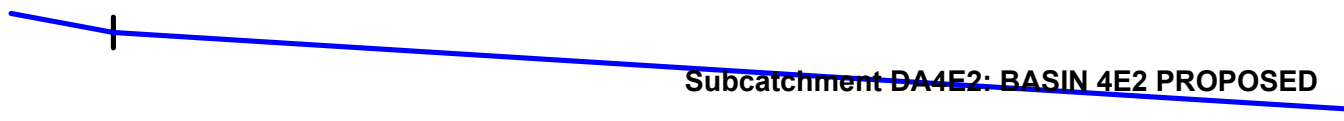
Summary for Subcatchment DA4E2: BASIN 4E2 PROPOSED

Runoff = 46.83 cfs @ 12.64 hrs, Volume= 292,804 cf, Depth= 4.21"
Routed to Pond CD4E : Cross Drain 4E

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Mt Pleasant 24-hr S1 100-yr Rainfall=7.83"

Area (ac)	CN	Description
9.300	79	Woods, Fair, HSG D
4.940	58	Meadow, non-grazed, HSG B
4.940	60	Woods, Fair, HSG B
19.180	69	Weighted Average
19.180		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
24.5	100	0.0500	0.07		Sheet Flow, Woods: Dense underbrush n= 0.800 P2= 3.57"
22.3	1,213	0.0167	0.90		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
46.8	1,313	Total			



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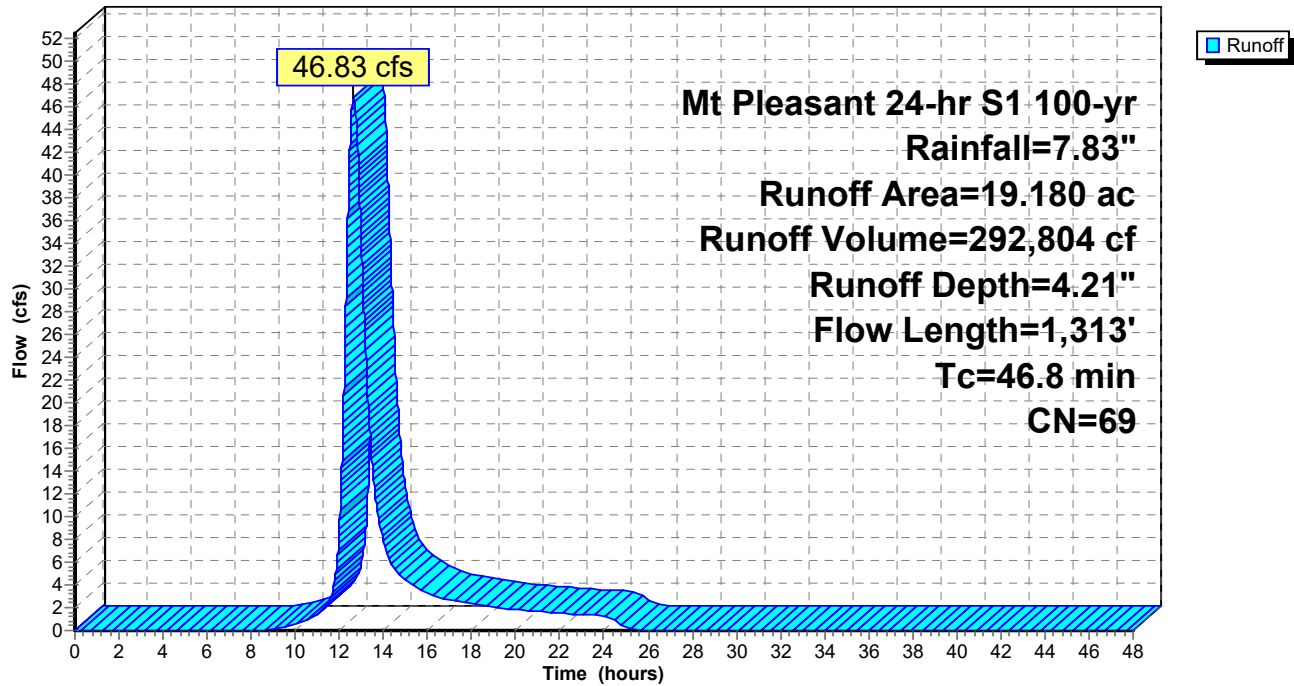
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Subcatchment DA4E2: BASIN 4E2 PROPOSED

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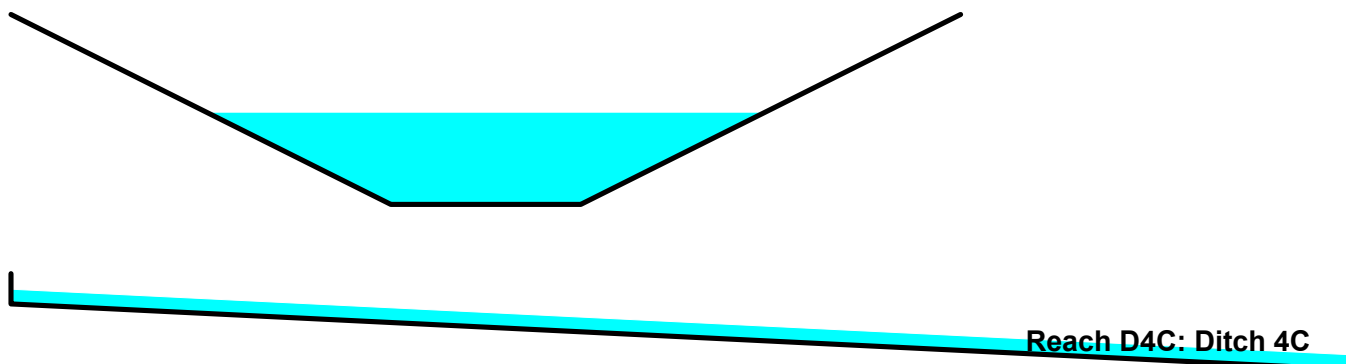
Summary for Reach D4C: Ditch 4C

Inflow Area = 29,621 sf, 0.00% Impervious, Inflow Depth = 7.35" for 100-yr event
 Inflow = 6.07 cfs @ 12.03 hrs, Volume= 18,146 cf
 Outflow = 5.77 cfs @ 12.05 hrs, Volume= 18,146 cf, Atten= 5%, Lag= 1.2 min
 Routed to Pond CD4C : Cross Drain 4C

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
 Max. Velocity= 2.70 fps, Min. Travel Time= 1.9 min
 Avg. Velocity = 0.78 fps, Avg. Travel Time= 6.7 min

Peak Storage= 669 cf @ 12.05 hrs
 Average Depth at Peak Storage= 0.72' , Surface Width= 4.40'
 Bank-Full Depth= 1.50' Flow Area= 6.8 sf, Capacity= 27.19 cfs

1.50' x 1.50' deep channel, n= 0.033 Riprap, 1-inch
 Side Slope Z-value= 2.0 '/' Top Width= 7.50'
 Length= 313.0' Slope= 0.0104 '/'
 Inlet Invert= 687.00', Outlet Invert= 683.75'



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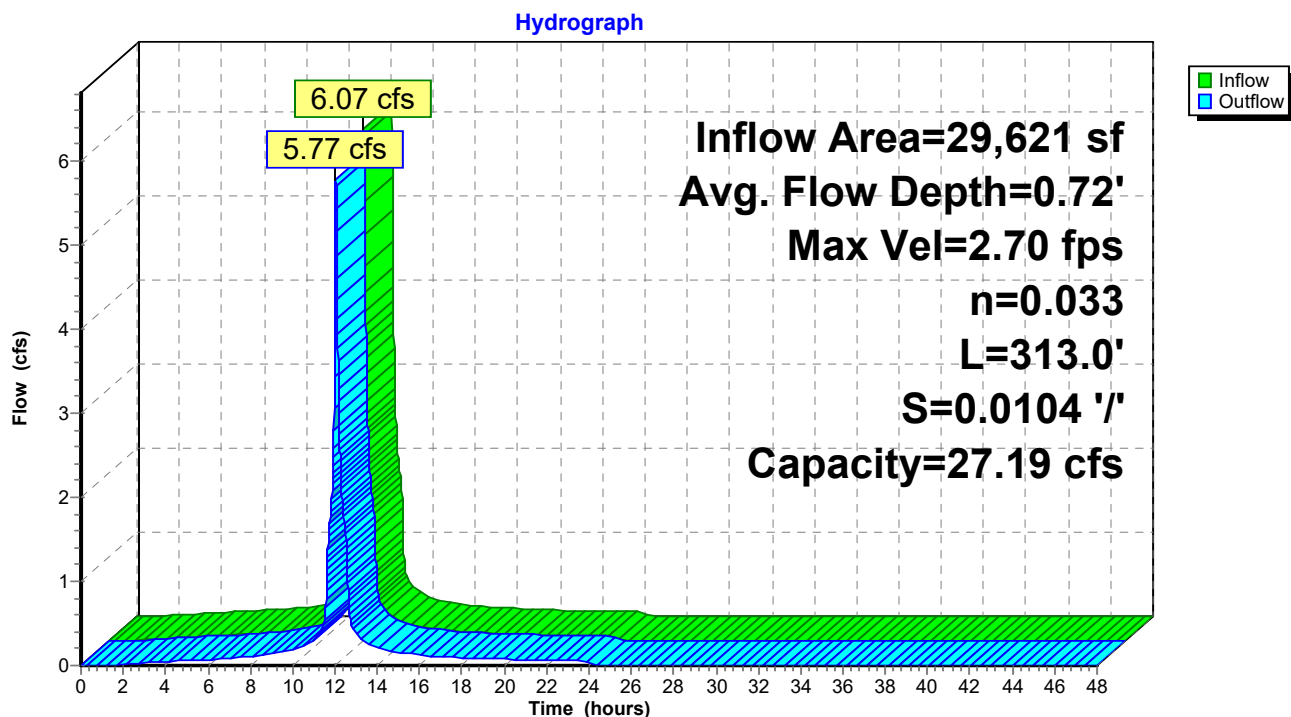
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Mt Pleasant 24-hr S1 100-yr Rainfall=7.83"

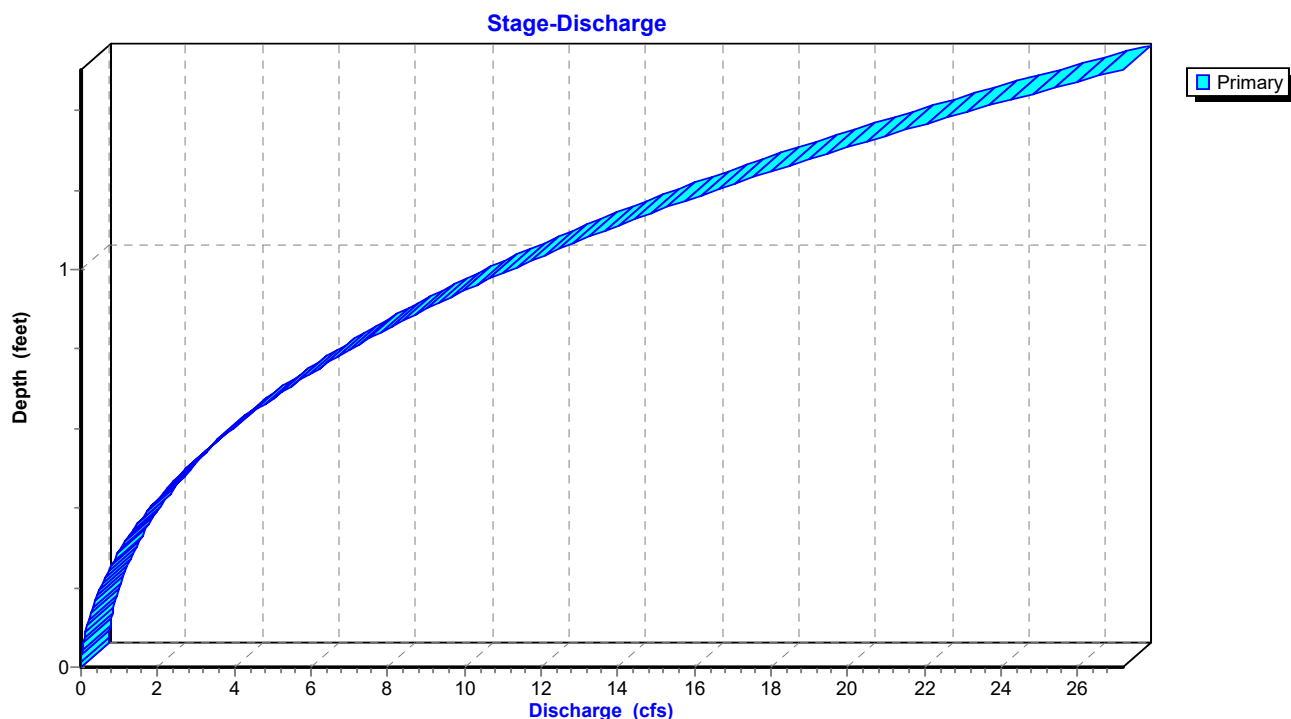
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Reach D4C: Ditch 4C



Reach D4C: Ditch 4C



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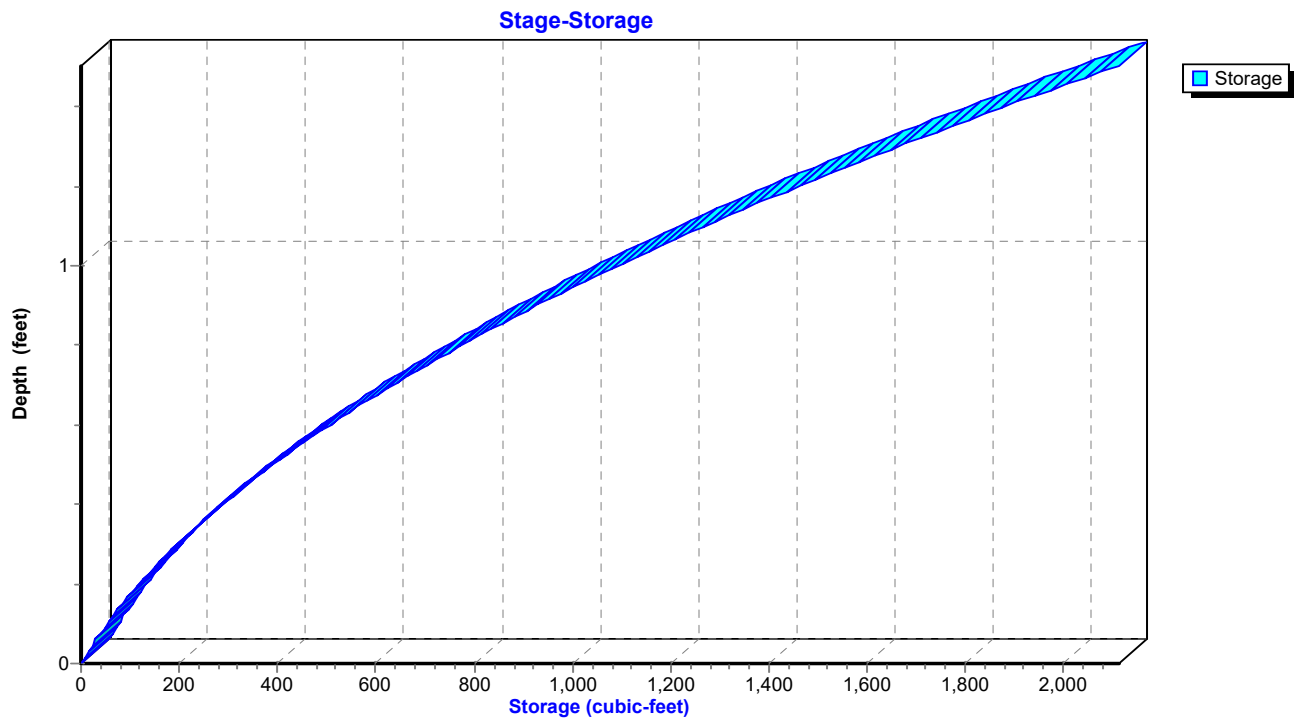
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Reach D4C: Ditch 4C



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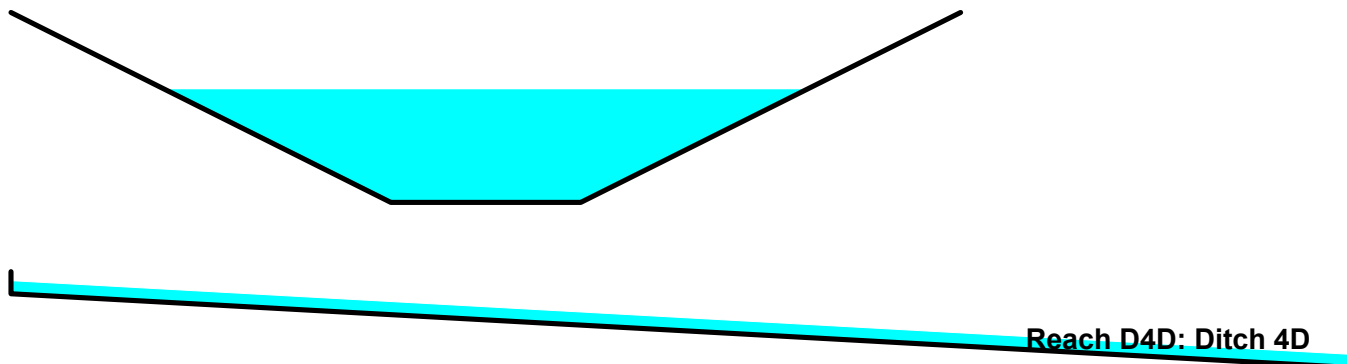
Summary for Reach D4D: Ditch 4D

Inflow Area = 53,579 sf, 0.00% Impervious, Inflow Depth = 7.35" for 100-yr event
 Inflow = 10.99 cfs @ 12.03 hrs, Volume= 32,823 cf
 Outflow = 10.60 cfs @ 12.04 hrs, Volume= 32,823 cf, Atten= 4%, Lag= 1.0 min
 Routed to Pond CD4DCE : Cross Drain 4DCE

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
 Max. Velocity= 3.61 fps, Min. Travel Time= 1.6 min
 Avg. Velocity = 1.07 fps, Avg. Travel Time= 5.2 min

Peak Storage= 989 cf @ 12.04 hrs
 Average Depth at Peak Storage= 0.89' , Surface Width= 5.07'
 Bank-Full Depth= 1.50' Flow Area= 6.8 sf, Capacity= 32.50 cfs

1.50' x 1.50' deep channel, n= 0.033 Riprap, 1-inch
 Side Slope Z-value= 2.0 '/' Top Width= 7.50'
 Length= 337.0' Slope= 0.0148 '/'
 Inlet Invert= 688.00', Outlet Invert= 683.00'



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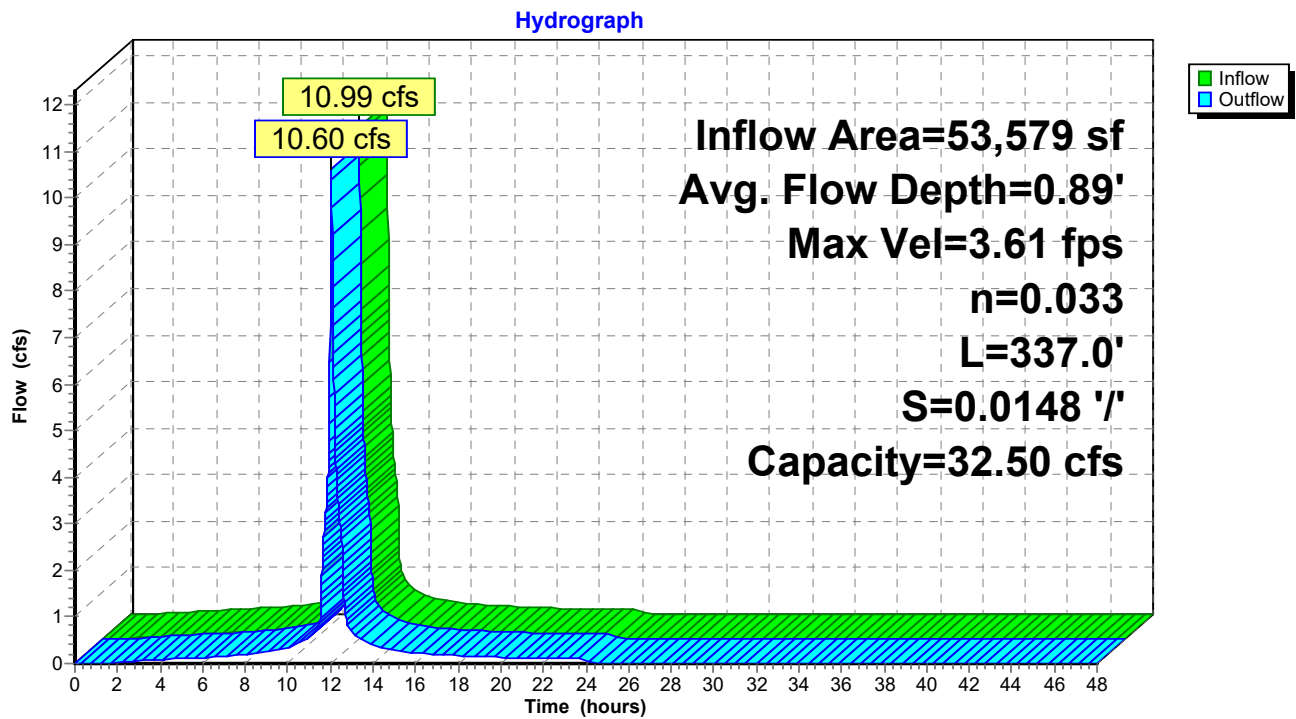
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Mt Pleasant 24-hr S1 100-yr Rainfall=7.83"

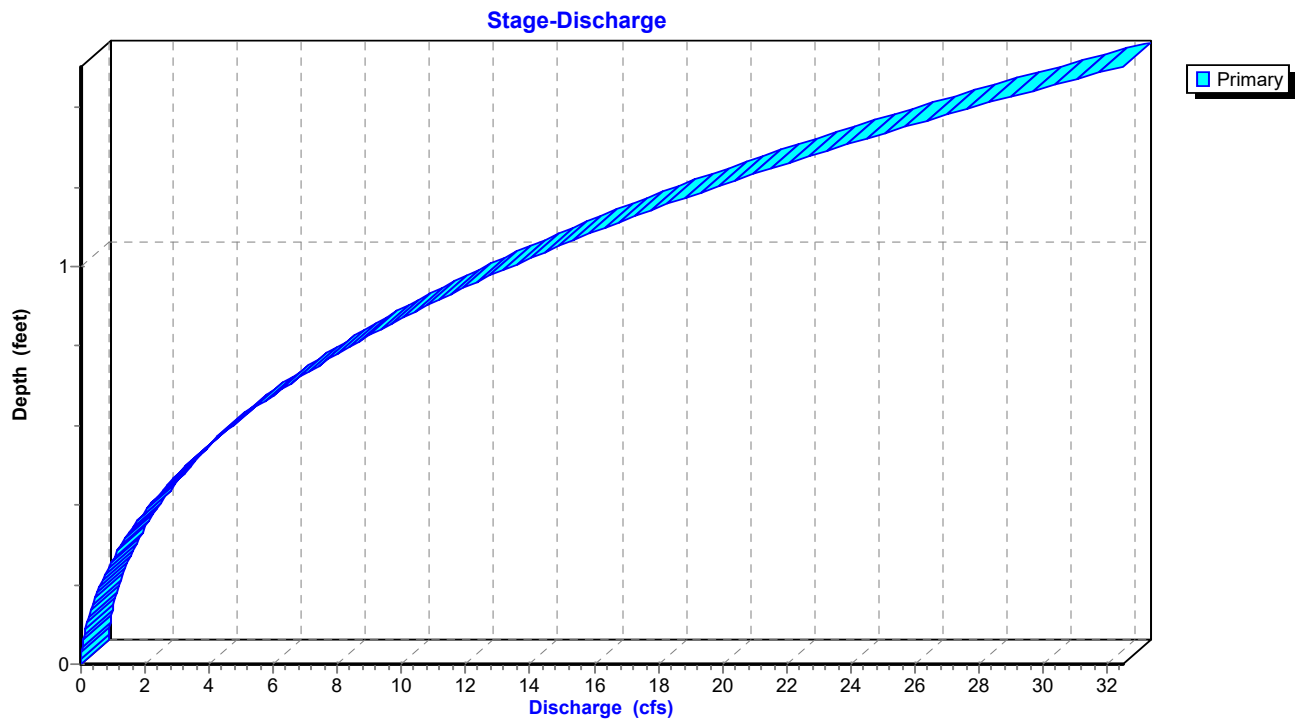
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Reach D4D: Ditch 4D



Reach D4D: Ditch 4D



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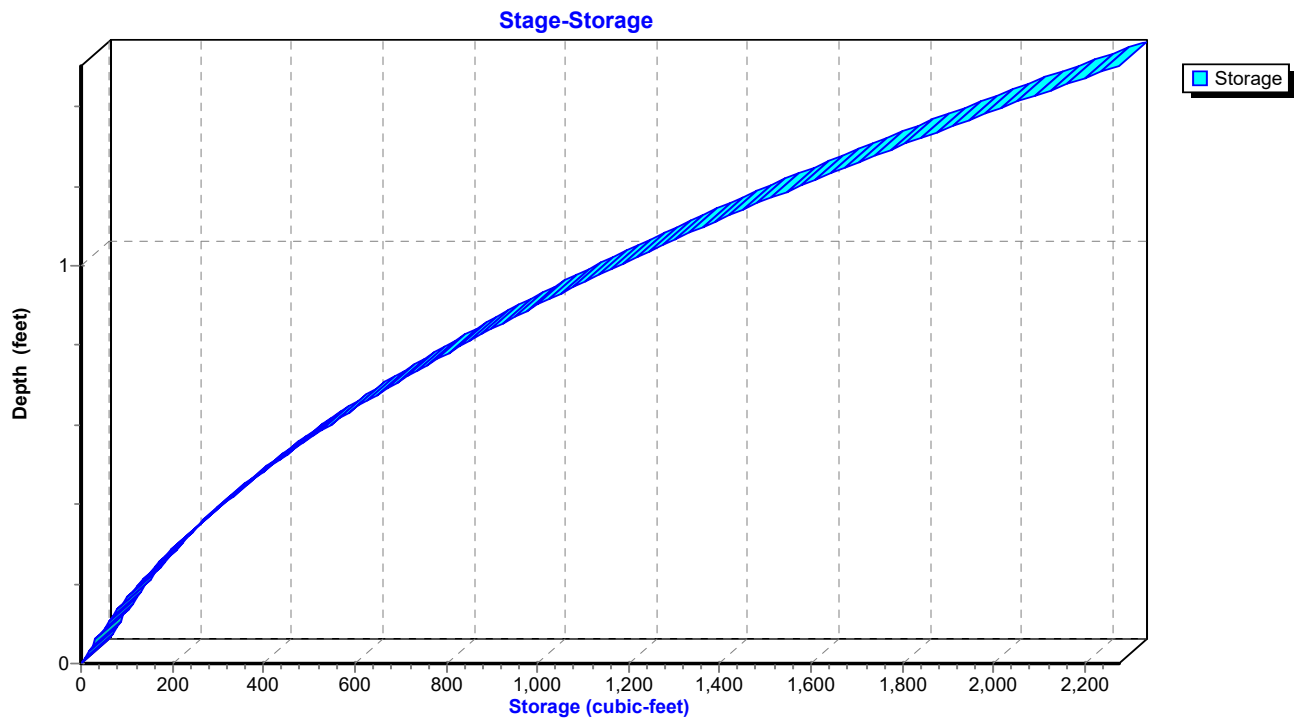
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Reach D4D: Ditch 4D



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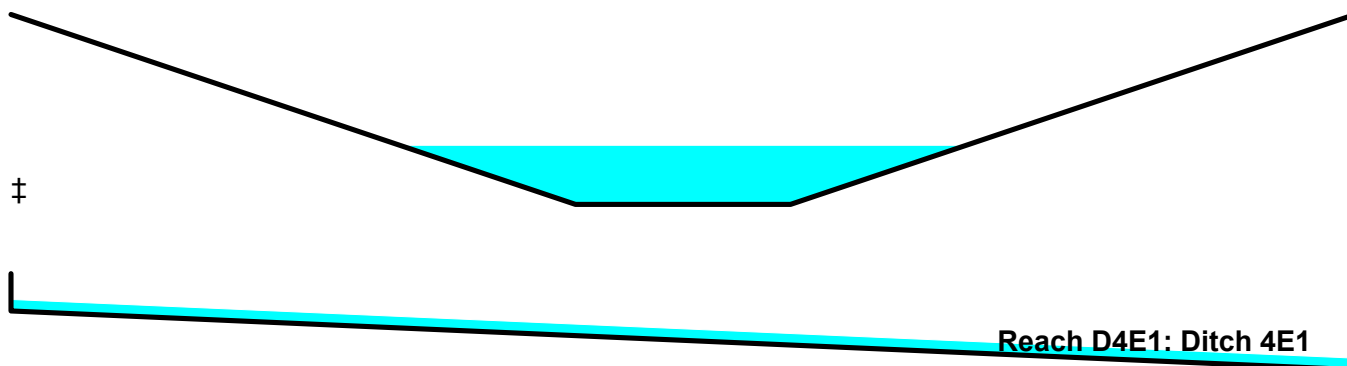
Summary for Reach D4E1: Ditch 4E1

Inflow Area = 316,246 sf, 13.77% Impervious, Inflow Depth = 3.65" for 100-yr event
 Inflow = 18.33 cfs @ 12.43 hrs, Volume= 96,090 cf
 Outflow = 15.73 cfs @ 12.62 hrs, Volume= 96,090 cf, Atten= 14%, Lag= 11.8 min
 Routed to Pond CD4E : Cross Drain 4E

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
 Max. Velocity= 2.01 fps, Min. Travel Time= 14.8 min
 Avg. Velocity= 0.56 fps, Avg. Travel Time= 52.9 min

Peak Storage= 13,992 cf @ 12.62 hrs
 Average Depth at Peak Storage= 1.08' , Surface Width= 10.48'
 Bank-Full Depth= 3.50' Flow Area= 50.8 sf, Capacity= 197.27 cfs

4.00' x 3.50' deep channel, n= 0.033 Riprap, 1-inch
 Side Slope Z-value= 3.0 '/' Top Width= 25.00'
 Length= 1,788.0' Slope= 0.0031 '/'
 Inlet Invert= 685.00', Outlet Invert= 679.50'



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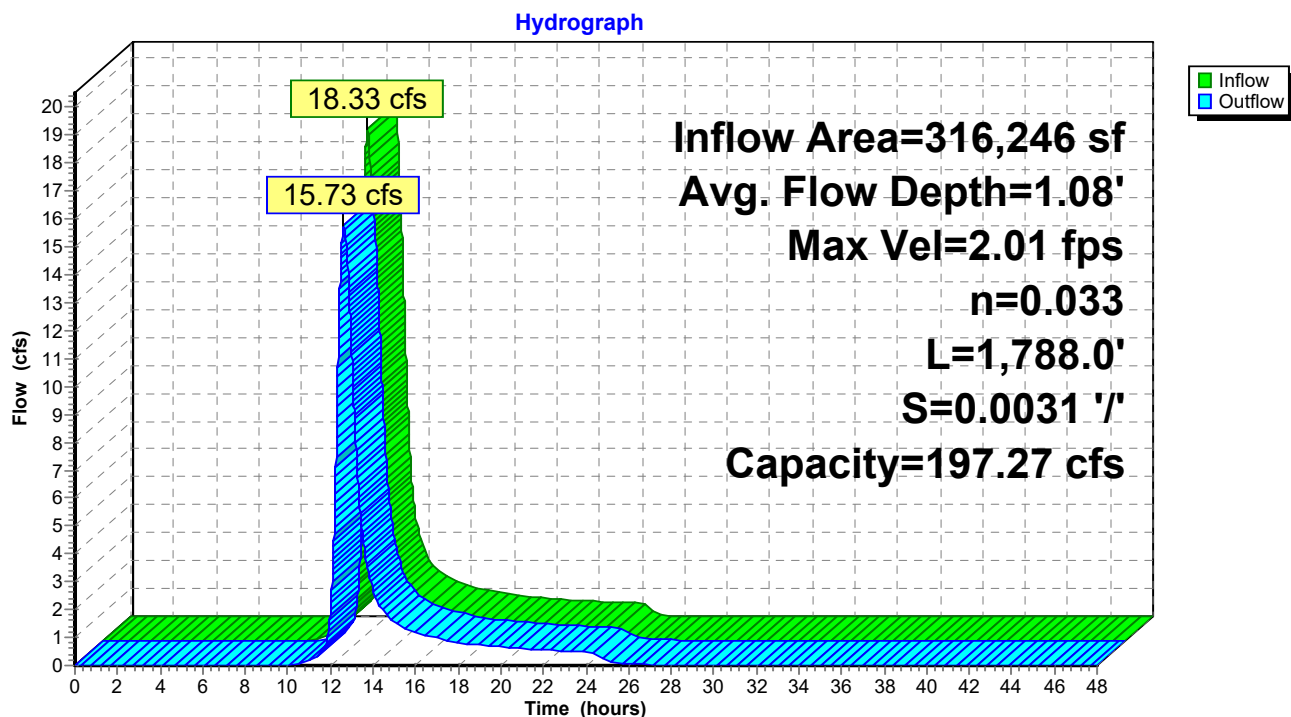
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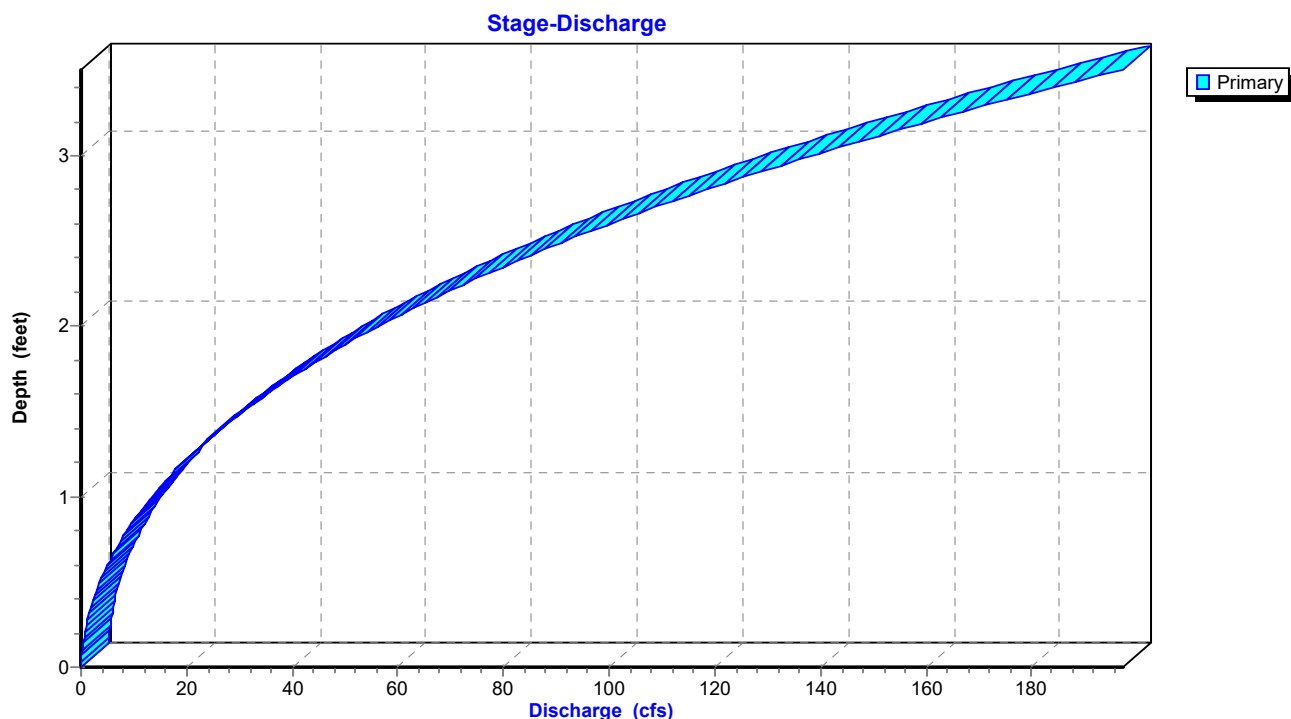
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Reach D4E1: Ditch 4E1



Reach D4E1: Ditch 4E1



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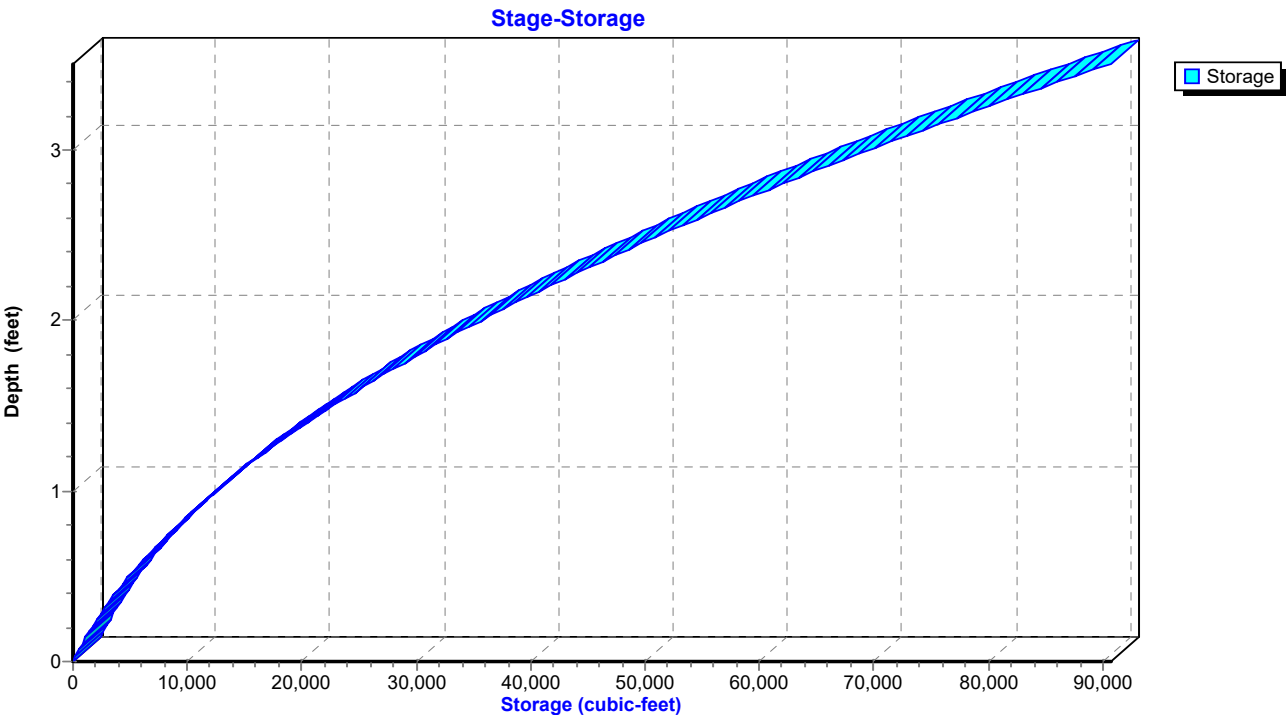
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Reach D4E1: Ditch 4E1



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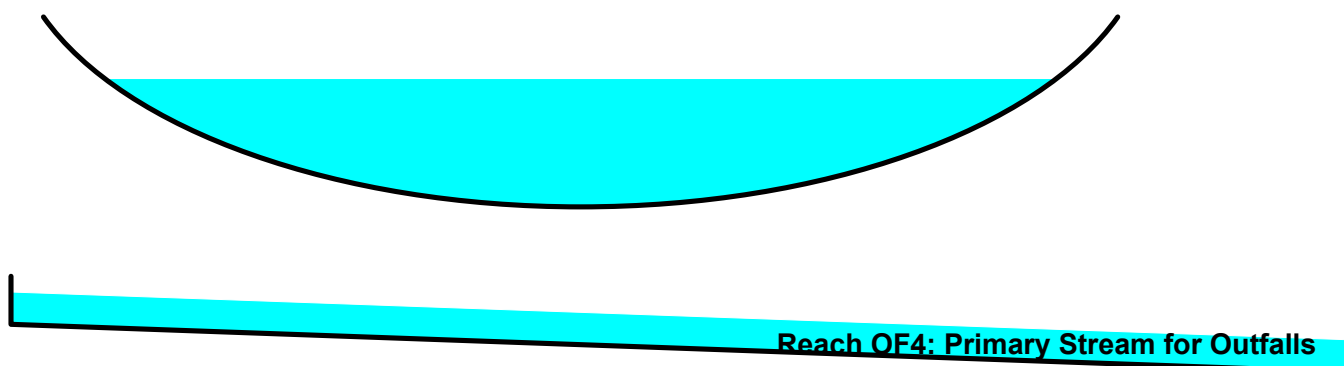
Summary for Reach OF4: Primary Stream for Outfalls

Inflow Area = 9,965,657 sf, 1.09% Impervious, Inflow Depth = 4.55" for 100-yr event
 Inflow = 274.93 cfs @ 13.24 hrs, Volume= 3,780,759 cf
 Outflow = 274.79 cfs @ 13.35 hrs, Volume= 3,780,759 cf, Atten= 0%, Lag= 6.3 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
 Max. Velocity= 4.98 fps, Min. Travel Time= 3.3 min
 Avg. Velocity = 1.76 fps, Avg. Travel Time= 9.5 min

Peak Storage= 55,132 cf @ 13.35 hrs
 Average Depth at Peak Storage= 3.36' , Surface Width= 24.60'
 Bank-Full Depth= 5.00' Flow Area= 100.0 sf, Capacity= 640.46 cfs

30.00' x 5.00' deep Parabolic Channel, n= 0.035
 Length= 1,000.0' Slope= 0.0050 '/'
 Inlet Invert= 675.00', Outlet Invert= 670.00'



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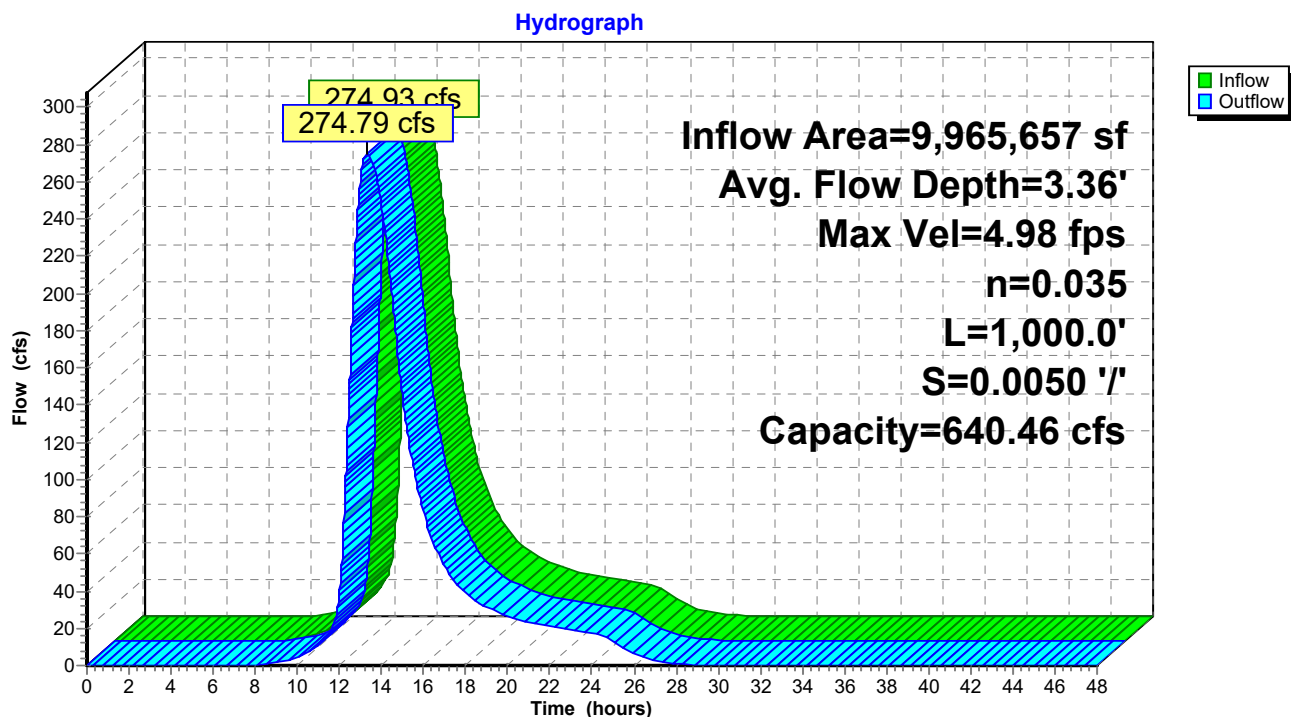
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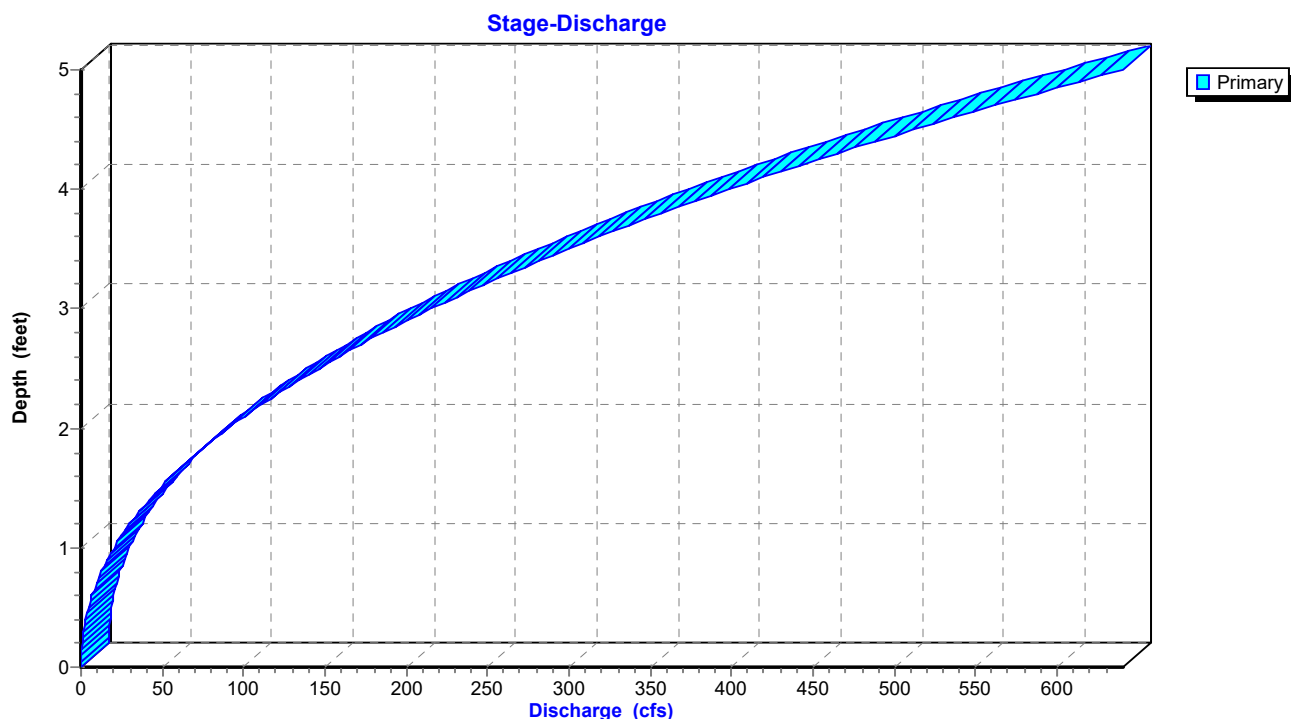
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Reach OF4: Primary Stream for Outfalls



Reach OF4: Primary Stream for Outfalls



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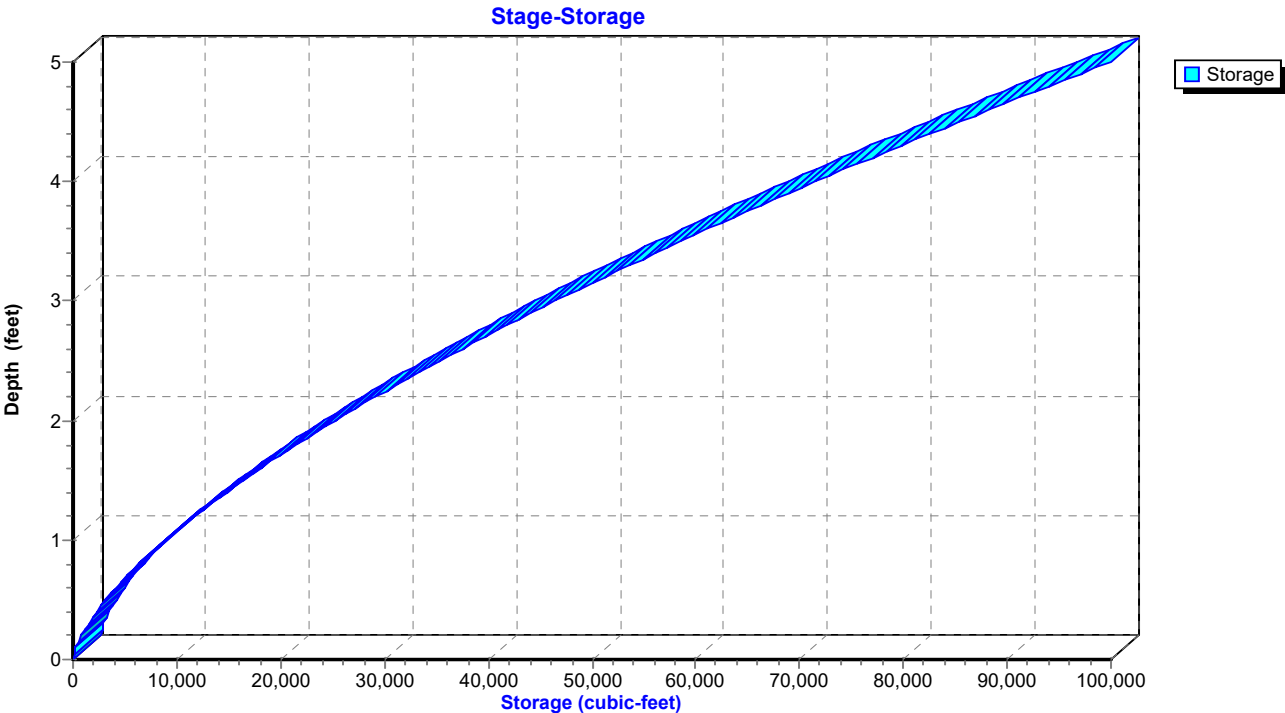
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Reach OF4: Primary Stream for Outfalls



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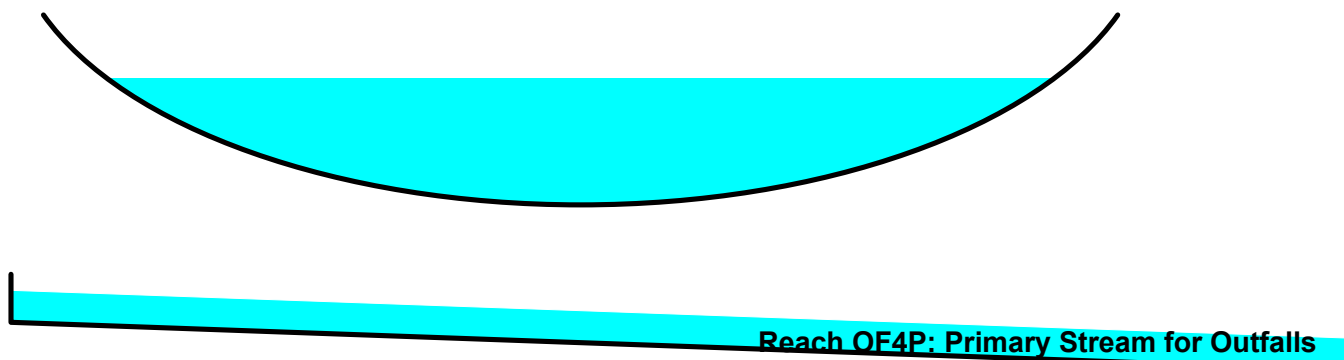
Summary for Reach OF4P: Primary Stream for Outfalls

Inflow Area = 9,969,577 sf, 2.84% Impervious, Inflow Depth = 4.71" for 100-yr event
 Inflow = 270.89 cfs @ 13.50 hrs, Volume= 3,915,011 cf
 Outflow = 270.52 cfs @ 13.52 hrs, Volume= 3,915,010 cf, Atten= 0%, Lag= 1.2 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
 Max. Velocity= 4.96 fps, Min. Travel Time= 3.4 min
 Avg. Velocity = 1.39 fps, Avg. Travel Time= 12.0 min

Peak Storage= 54,530 cf @ 13.52 hrs
 Average Depth at Peak Storage= 3.34' , Surface Width= 24.51'
 Bank-Full Depth= 5.00' Flow Area= 100.0 sf, Capacity= 640.46 cfs

30.00' x 5.00' deep Parabolic Channel, n= 0.035
 Length= 1,000.0' Slope= 0.0050 '/'
 Inlet Invert= 675.00', Outlet Invert= 670.00'



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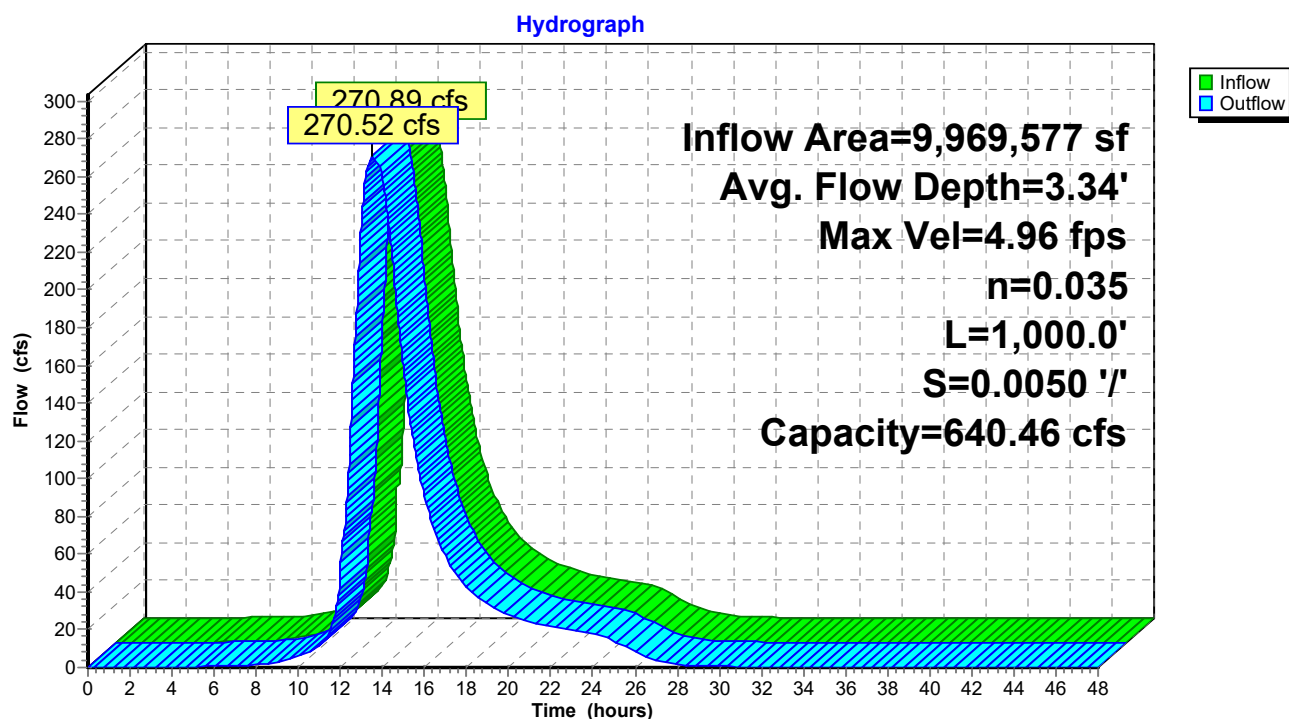
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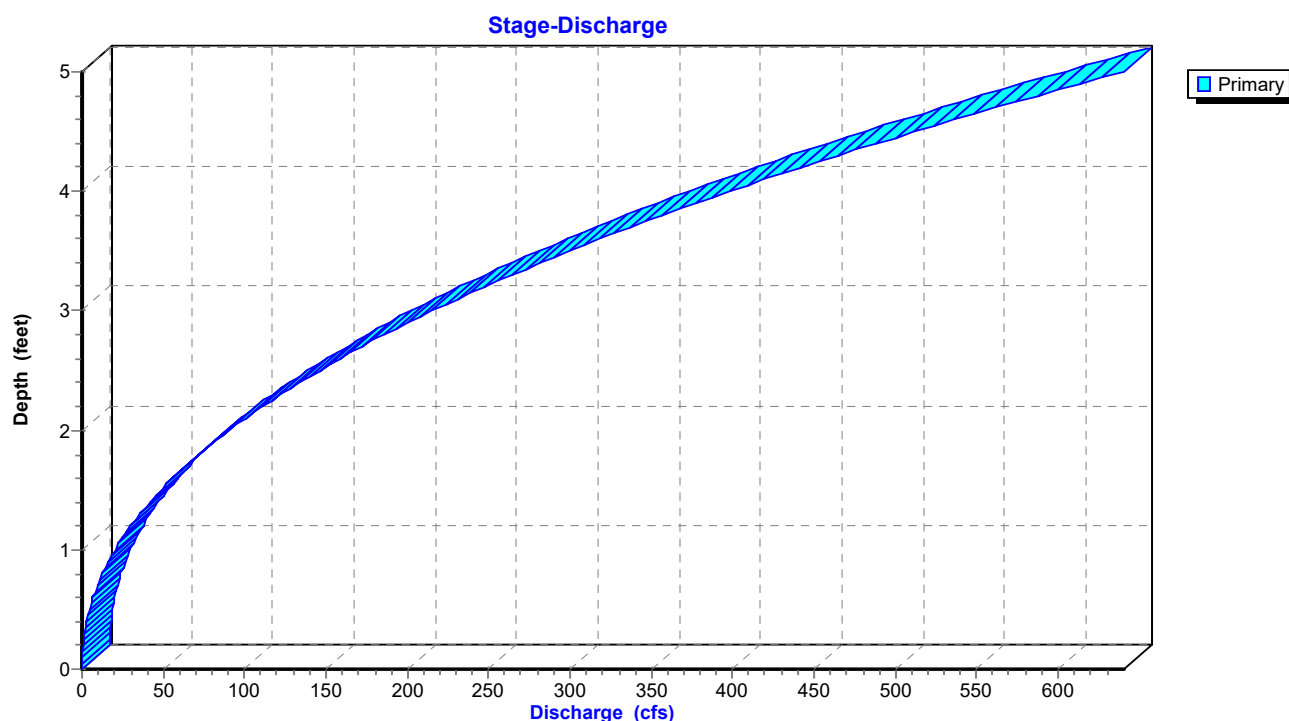
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Reach OF4P: Primary Stream for Outfalls



Reach OF4P: Primary Stream for Outfalls



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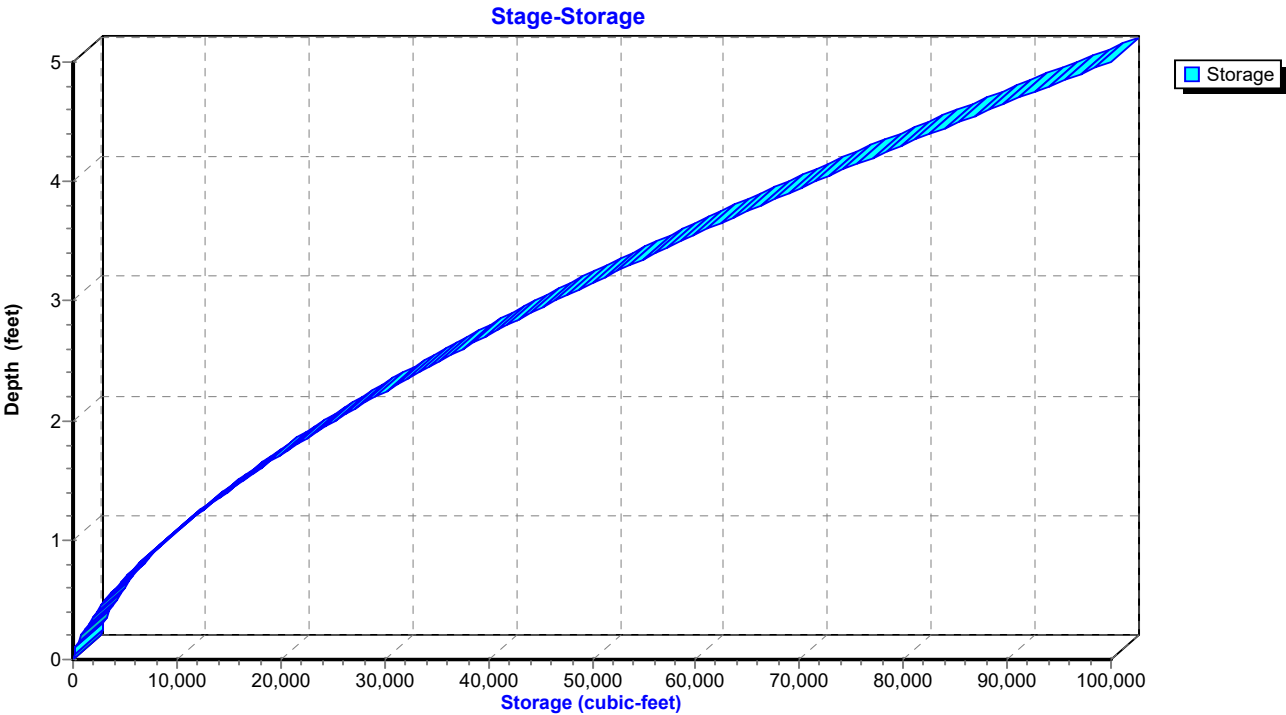
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Reach OF4P: Primary Stream for Outfalls



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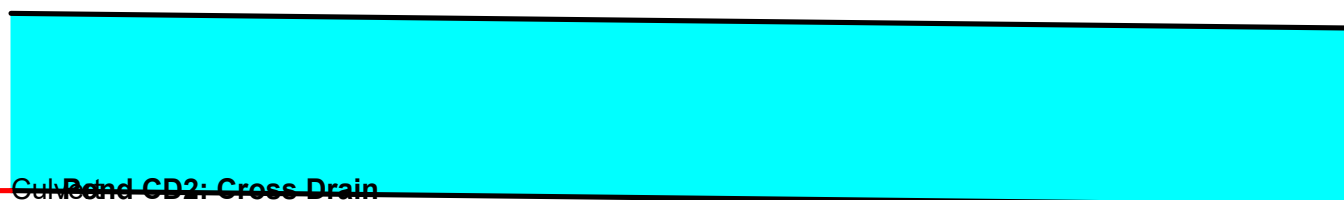
Summary for Pond CD2: Cross Drain

Inflow Area = 1,520,244 sf, 0.00% Impervious, Inflow Depth = 3.43" for 100-yr event
 Inflow = 58.90 cfs @ 12.88 hrs, Volume= 433,944 cf
 Outflow = 58.90 cfs @ 12.88 hrs, Volume= 433,944 cf, Atten= 0%, Lag= 0.0 min
 Primary = 58.90 cfs @ 12.88 hrs, Volume= 433,944 cf
 Routed to Reach OF4P : Primary Stream for Outfalls

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
 Peak Elev= 684.90' @ 12.88 hrs

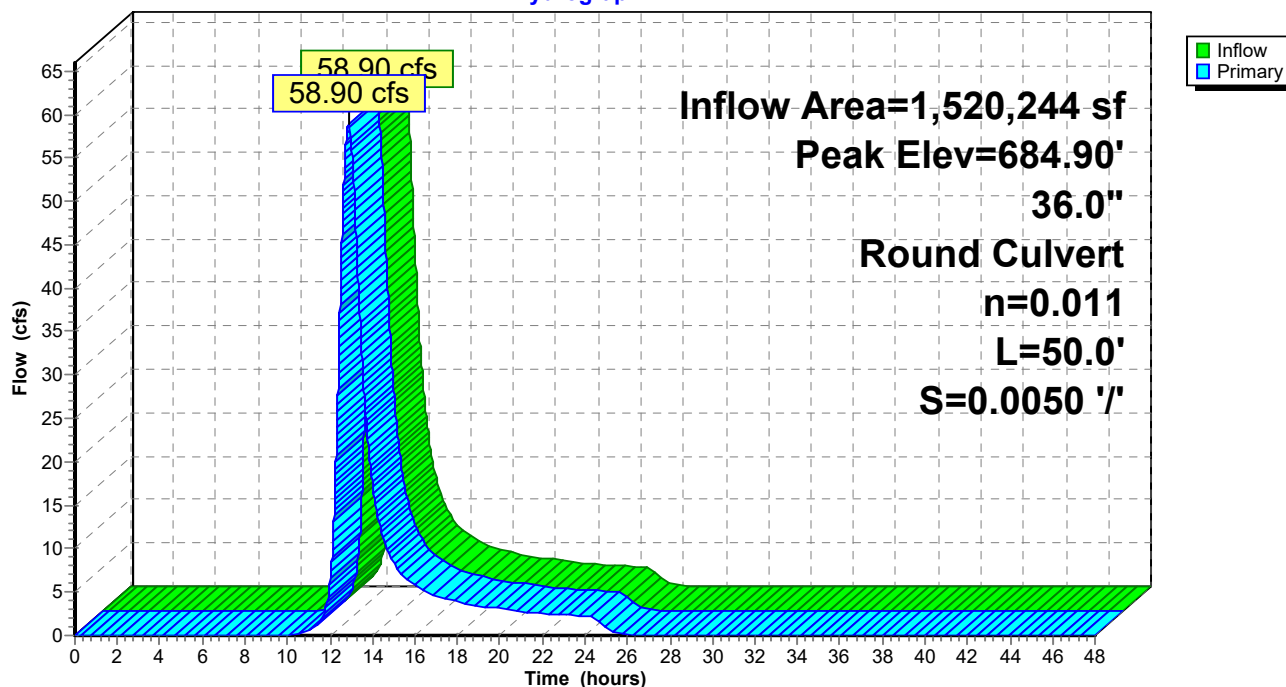
Device	Routing	Invert	Outlet Devices
#1	Primary	680.25'	36.0" Round Culvert L= 50.0' Ke= 0.500 Inlet / Outlet Invert= 680.25' / 680.00' S= 0.0050 '/' Cc= 0.900 n= 0.011 Concrete pipe, straight & clean, Flow Area= 7.07 sf

Primary OutFlow Max=58.89 cfs @ 12.88 hrs HW=684.90' TW=677.98' (Dynamic Tailwater)
 1=Culvert (Barrel Controls 58.89 cfs @ 8.33 fps)



Pond CD2: Cross Drain

Hydrograph



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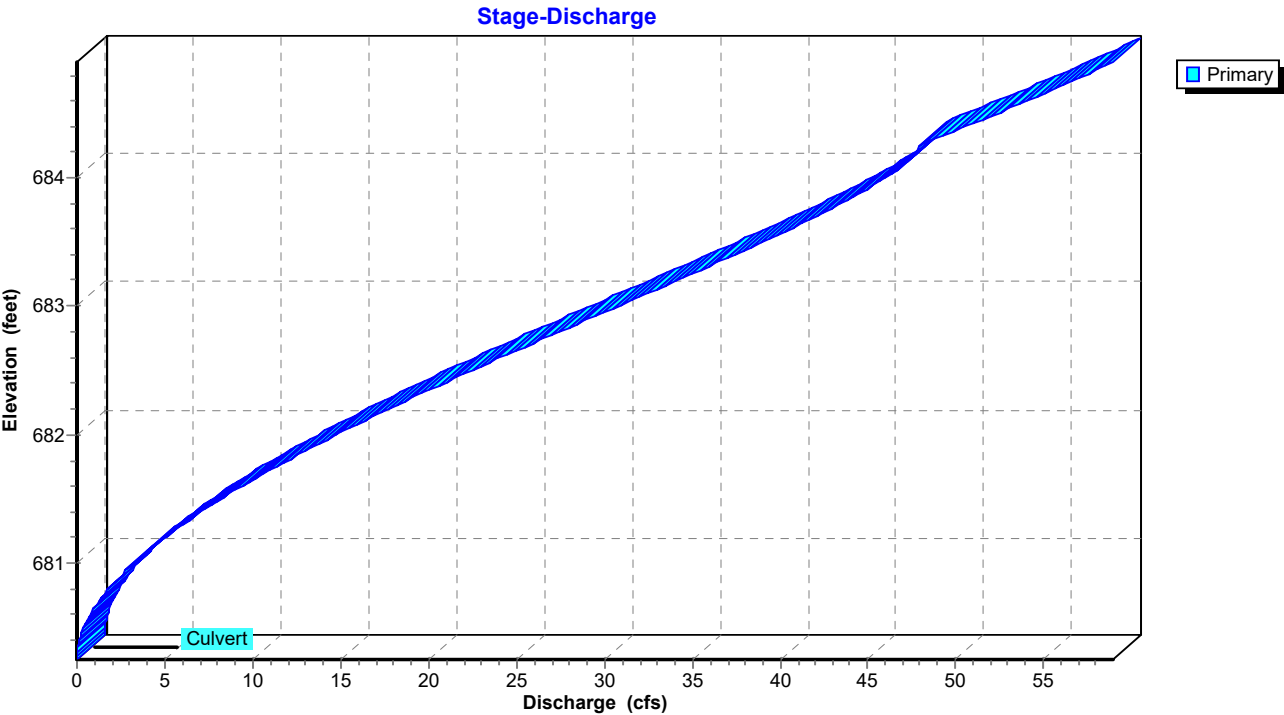
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Mt Pleasant 24-hr S1 100-yr Rainfall=7.83"

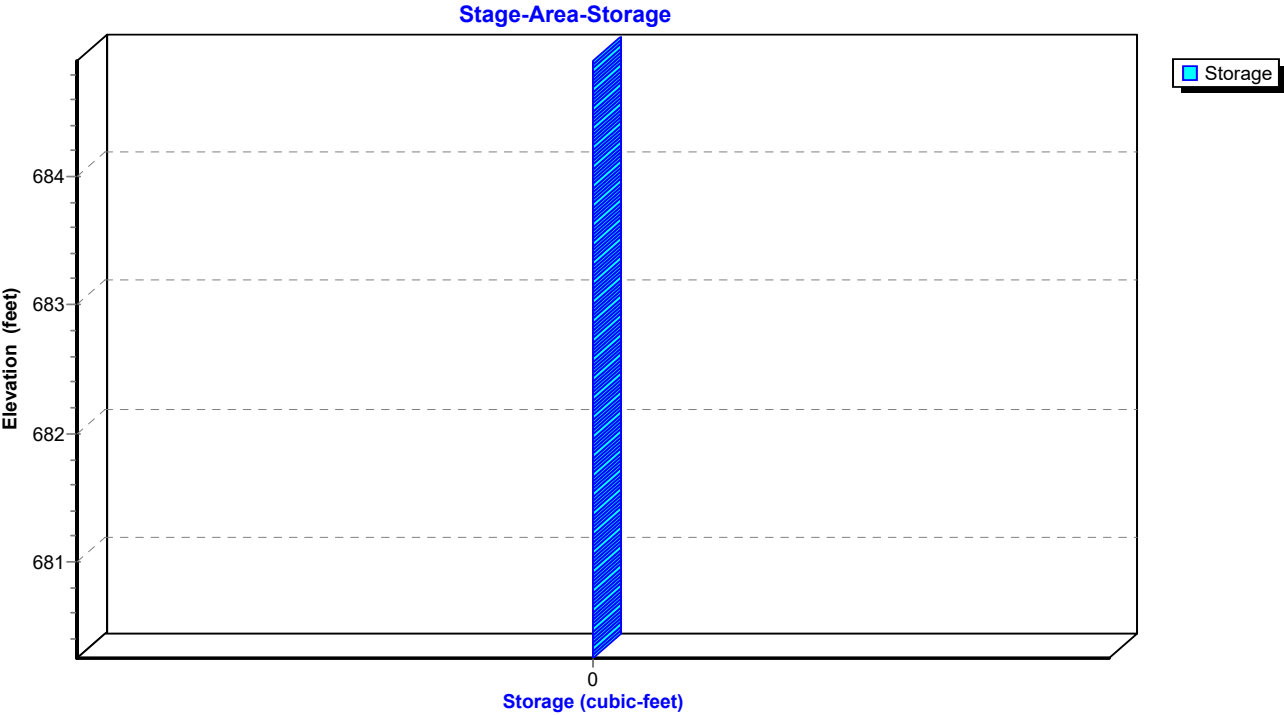
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Pond CD2: Cross Drain



Pond CD2: Cross Drain



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Mt Pleasant 24-hr S1 100-yr Rainfall=7.83"

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Summary for Pond CD4C: Cross Drain 4C

Inflow Area = 29,621 sf, 0.00% Impervious, Inflow Depth = 7.35" for 100-yr event
 Inflow = 5.77 cfs @ 12.05 hrs, Volume= 18,146 cf
 Outflow = 5.77 cfs @ 12.05 hrs, Volume= 18,146 cf, Atten= 0%, Lag= 0.0 min
 Primary = 5.77 cfs @ 12.05 hrs, Volume= 18,146 cf
 Routed to Pond CD4DCE : Cross Drain 4DCE

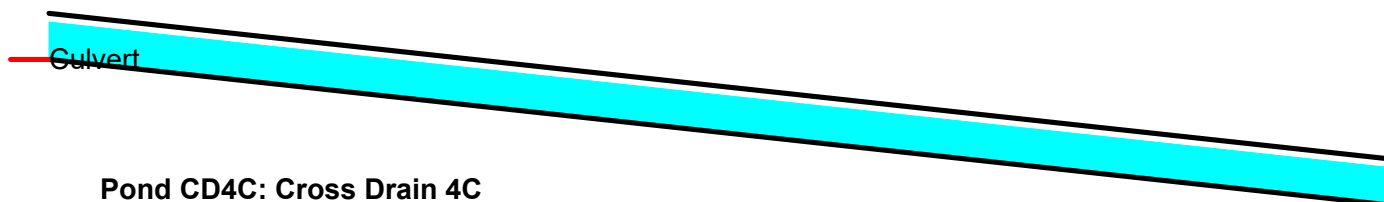
Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Peak Elev= 684.97' @ 12.05 hrs

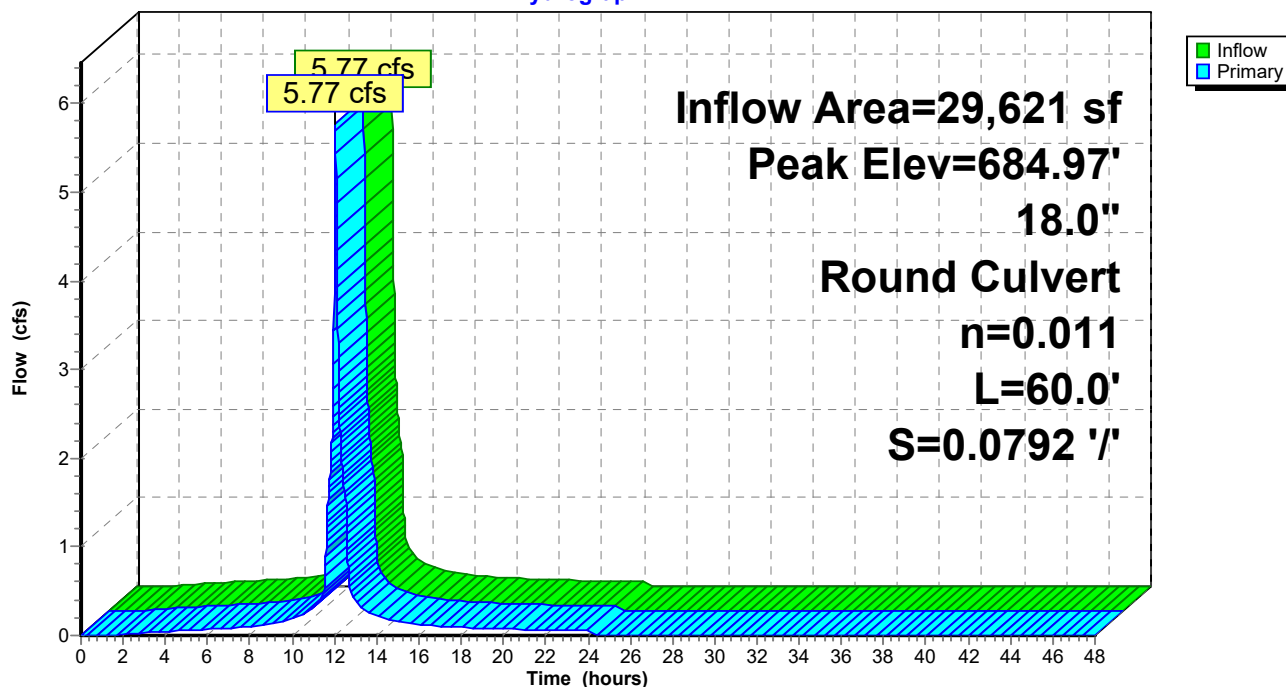
Device	Routing	Invert	Outlet Devices
#1	Primary	683.75'	18.0" Round Culvert L= 60.0' Square-edged headwall, Ke= 0.500 Inlet / Outlet Invert= 683.75' / 679.00' S= 0.0792 '/' Cc= 0.900 n= 0.011 Concrete pipe, straight & clean, Flow Area= 1.77 sf

Primary OutFlow Max=5.75 cfs @ 12.05 hrs HW=684.96' TW=680.53' (Dynamic Tailwater)

1=Culvert (Inlet Controls 5.75 cfs @ 3.75 fps)

**Pond CD4C: Cross Drain 4C****Pond CD4C: Cross Drain 4C**

Hydrograph

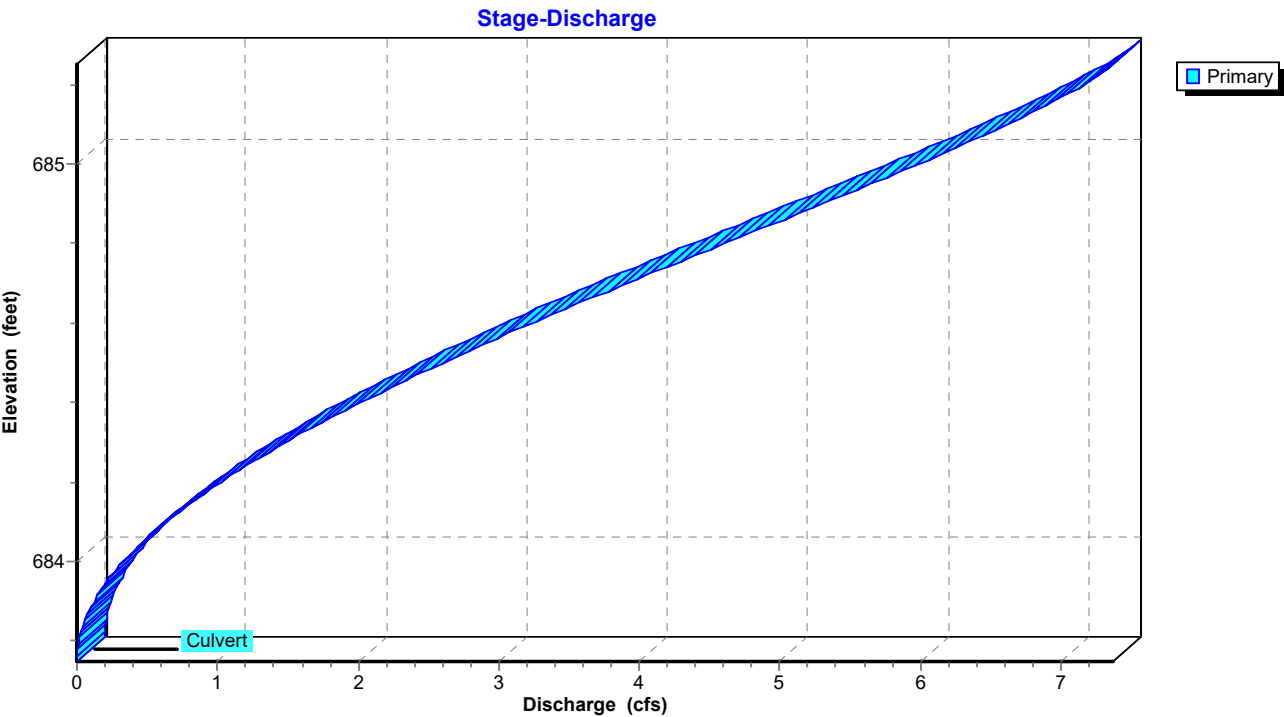


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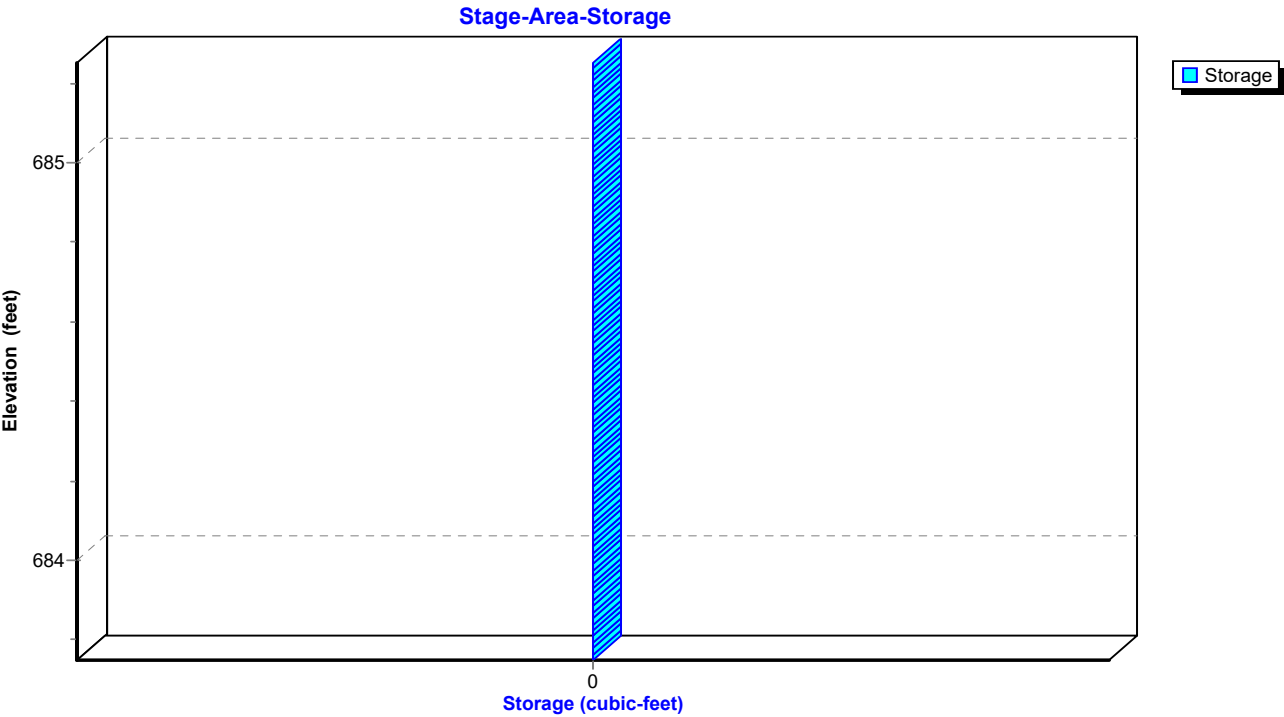
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Pond CD4C: Cross Drain 4C



Pond CD4C: Cross Drain 4C



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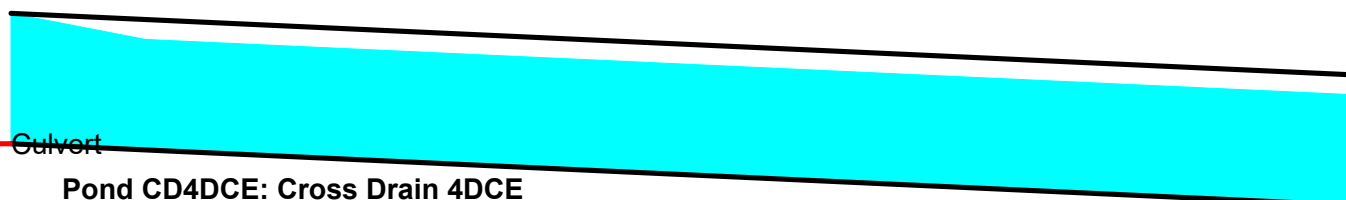
Summary for Pond CD4DCE: Cross Drain 4DCE

Inflow Area = 1,234,926 sf, 3.53% Impervious, Inflow Depth = 4.27" for 100-yr event
 Inflow = 59.73 cfs @ 12.71 hrs, Volume= 439,858 cf
 Outflow = 59.73 cfs @ 12.71 hrs, Volume= 439,858 cf, Atten= 0%, Lag= 0.0 min
 Primary = 59.73 cfs @ 12.71 hrs, Volume= 439,858 cf
 Routed to Pond POND1P : PROP POND

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
 Peak Elev= 682.73' @ 12.87 hrs

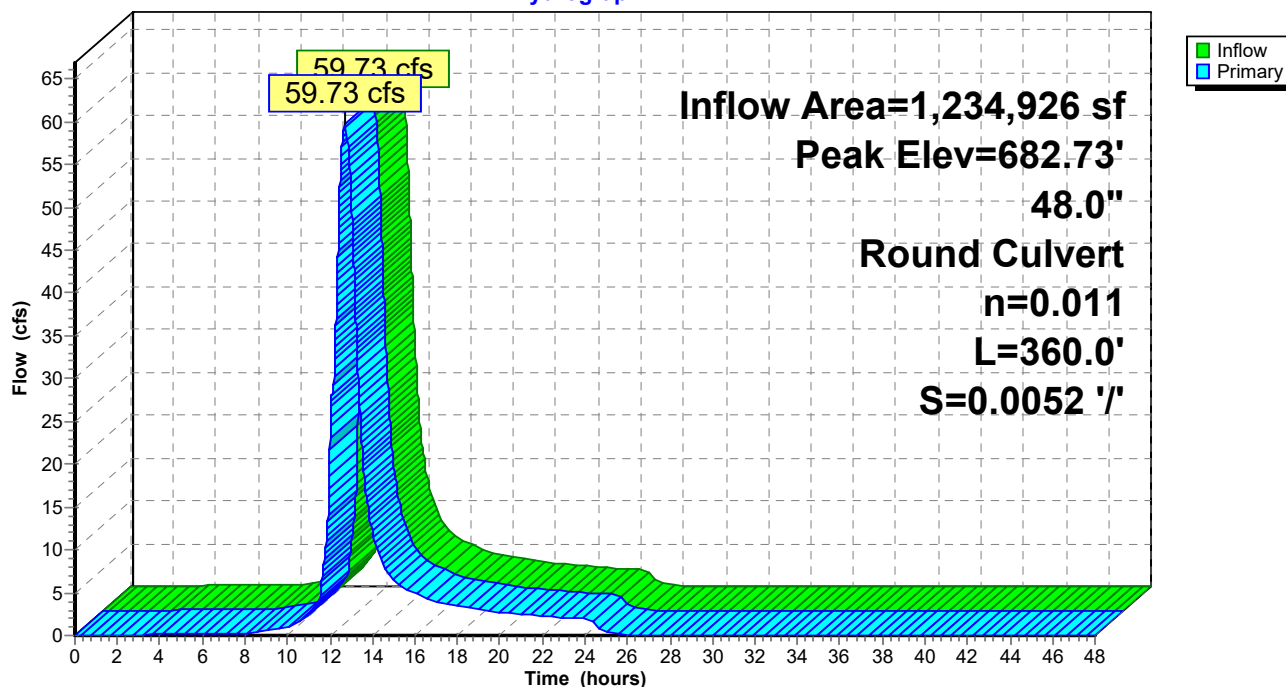
Device	Routing	Invert	Outlet Devices
#1	Primary	678.39'	48.0" Round Culvert L= 360.0' Ke= 0.500 Inlet / Outlet Invert= 678.39' / 676.50' S= 0.0052 '/' Cc= 0.900 n= 0.011 Concrete pipe, straight & clean, Flow Area= 12.57 sf

Primary OutFlow Max=59.14 cfs @ 12.71 hrs HW=682.60' TW=681.41' (Dynamic Tailwater)
 ↑ **1=Culvert** (Outlet Controls 59.14 cfs @ 5.55 fps)



Pond CD4DCE: Cross Drain 4DCE

Hydrograph



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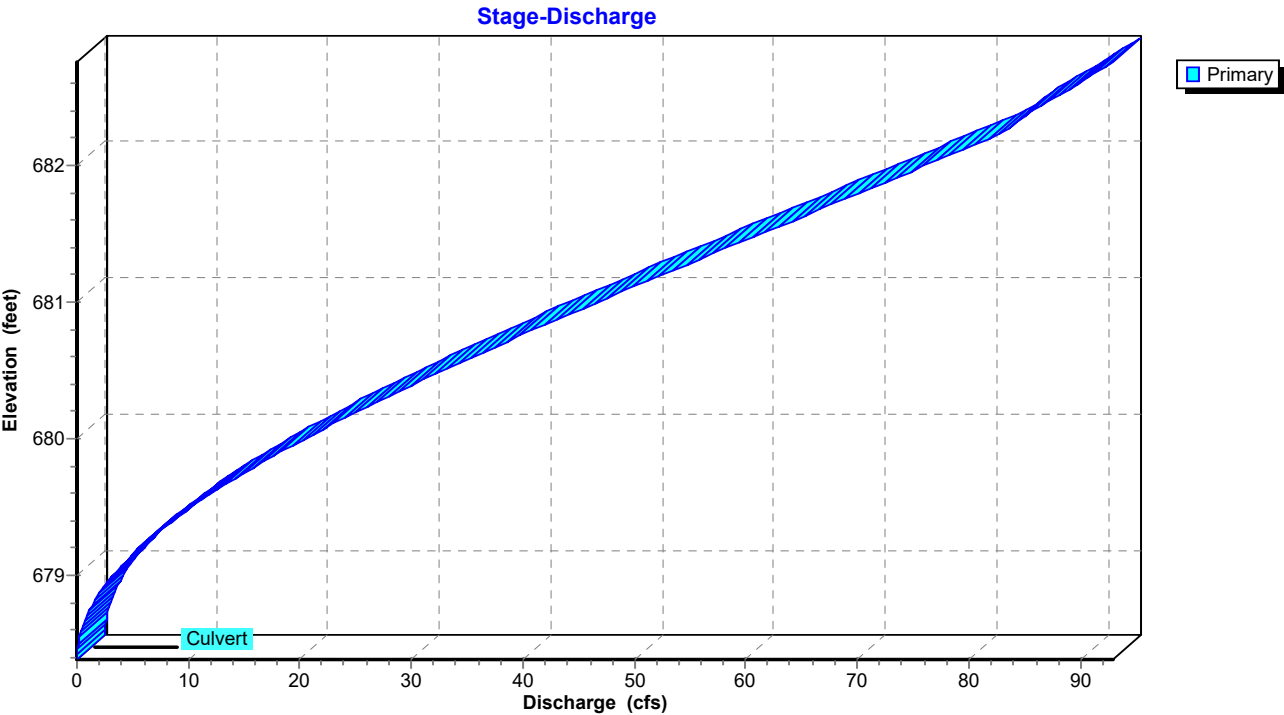
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Mt Pleasant 24-hr S1 100-yr Rainfall=7.83"

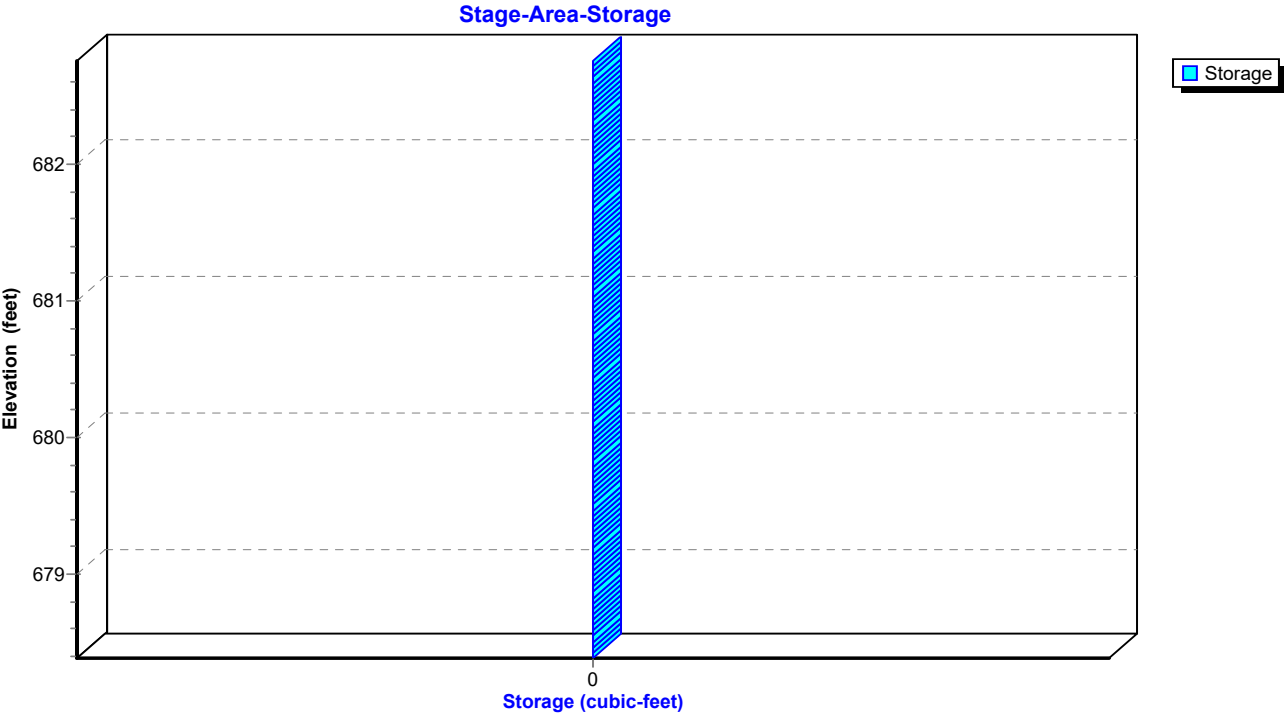
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Pond CD4DCE: Cross Drain 4DCE



Pond CD4DCE: Cross Drain 4DCE



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Summary for Pond CD4E: Cross Drain 4E

Inflow Area = 1,151,726 sf, 3.78% Impervious, Inflow Depth = 4.05" for 100-yr event
 Inflow = 62.56 cfs @ 12.64 hrs, Volume= 388,894 cf
 Outflow = 58.22 cfs @ 12.73 hrs, Volume= 388,890 cf, Atten= 7%, Lag= 5.5 min
 Primary = 58.22 cfs @ 12.73 hrs, Volume= 388,890 cf
 Routed to Pond CD4DCE : Cross Drain 4DCE

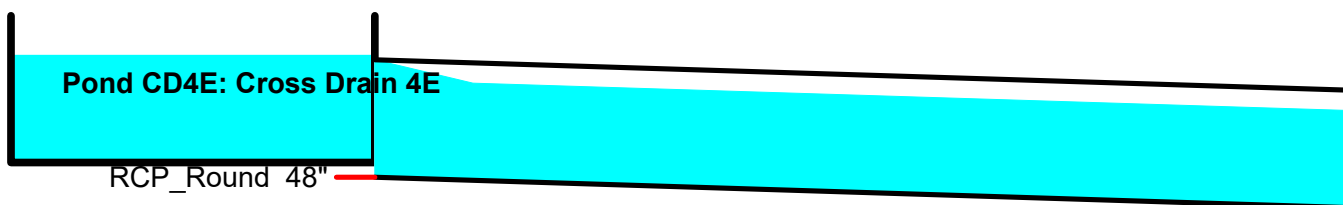
Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
 Peak Elev= 683.65' @ 12.81 hrs Surf.Area= 10,447 sf Storage= 15,164 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
 Center-of-Mass det. time= 2.6 min (871.1 - 868.6)

Volume	Invert	Avail.Storage	Storage Description
#1	680.00'	33,779 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
680.00	274	0	0
681.00	1,562	918	918
682.00	3,975	2,769	3,687
683.00	7,355	5,665	9,352
684.00	12,090	9,723	19,074
685.00	17,320	14,705	33,779

Device	Routing	Invert	Outlet Devices
#1	Primary	679.50'	48.0" Round RCP_Round 48" L= 200.0' Ke= 0.500 Inlet / Outlet Invert= 679.50' / 678.46' S= 0.0052 ' / Cc= 0.900 n= 0.011 Concrete pipe, straight & clean, Flow Area= 12.57 sf

Primary OutFlow Max=57.80 cfs @ 12.73 hrs HW=683.61' TW=682.63' (Dynamic Tailwater)
 ↑1=RCP_Round 48" (Outlet Controls 57.80 cfs @ 5.56 fps)



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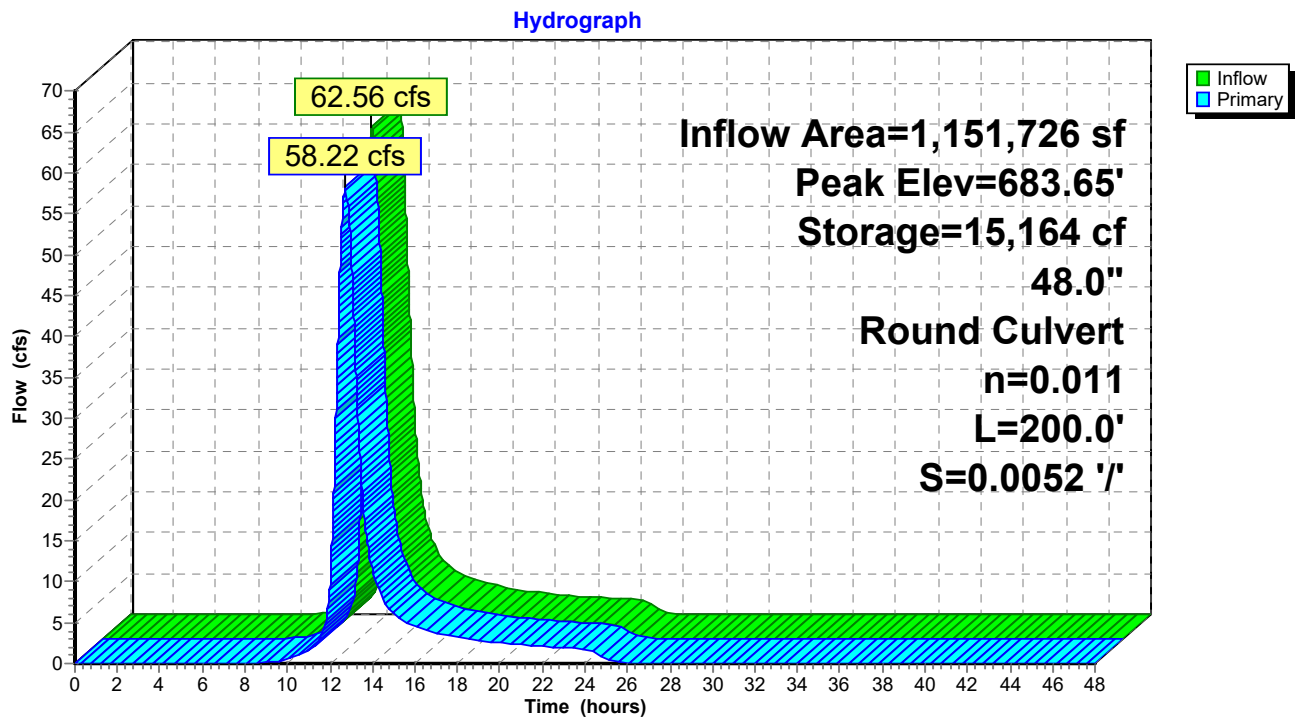
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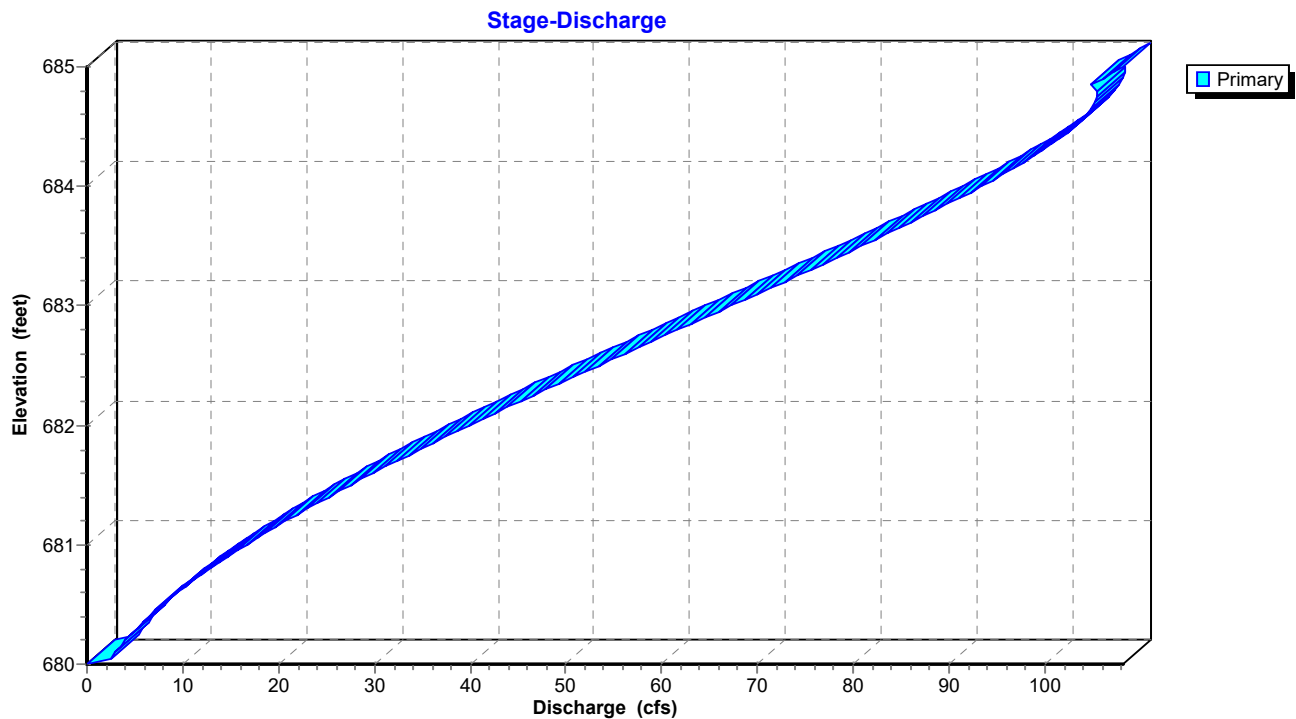
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Pond CD4E: Cross Drain 4E



Pond CD4E: Cross Drain 4E



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Mt Pleasant 24-hr S1 100-yr Rainfall=7.83"

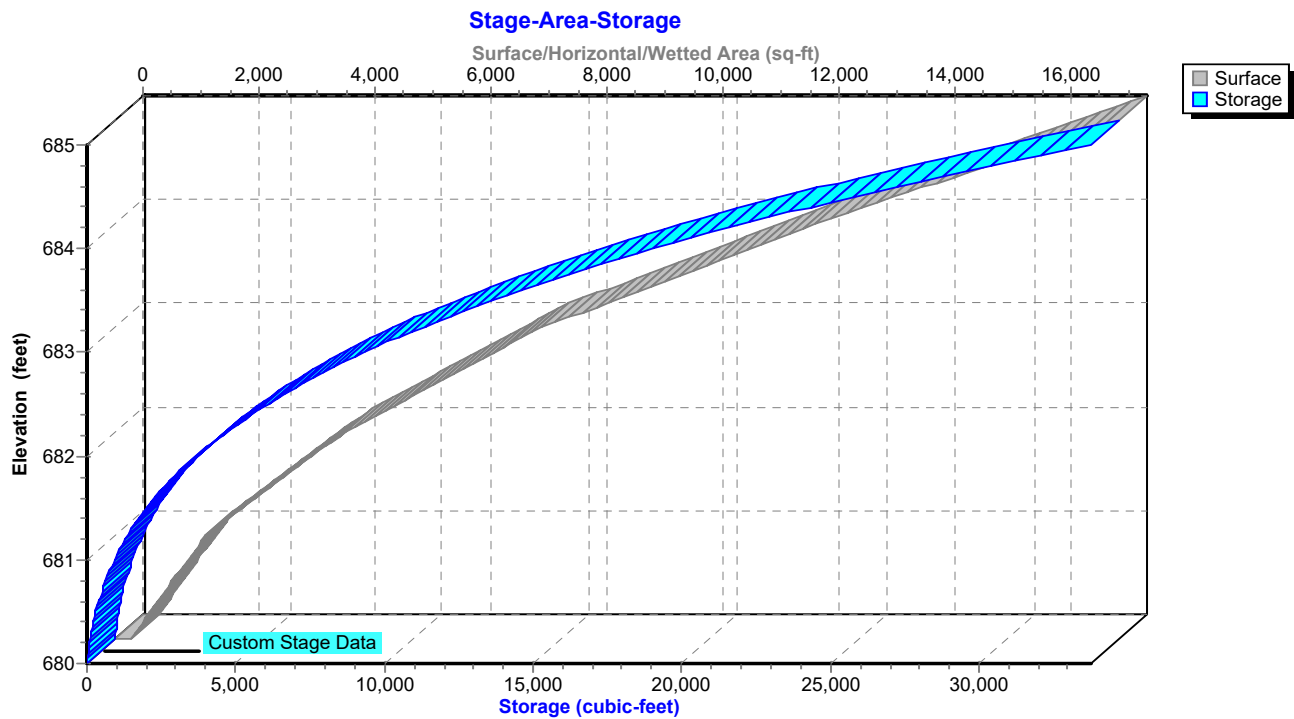
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Pond CD4E: Cross Drain 4E



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Summary for Pond POND1P: PROP POND

Inflow Area = 1,772,021 sf, 9.83% Impervious, Inflow Depth = 5.21" for 100-yr event
 Inflow = 108.15 cfs @ 12.53 hrs, Volume= 768,885 cf
 Outflow = 61.01 cfs @ 13.05 hrs, Volume= 768,878 cf, Atten= 44%, Lag= 31.6 min
 Primary = 61.01 cfs @ 13.05 hrs, Volume= 768,878 cf
 Routed to Reach OF4P : Primary Stream for Outfalls

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
 Peak Elev= 681.84' @ 13.11 hrs Surf.Area= 95,168 sf Storage= 262,115 cf

Plug-Flow detention time= 101.9 min calculated for 768,718 cf (100% of inflow)
 Center-of-Mass det. time= 102.0 min (925.5 - 823.5)

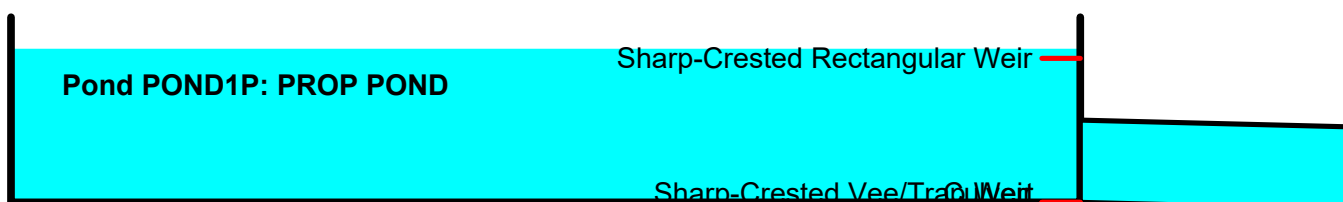
Volume	Invert	Avail.Storage	Storage Description
#1	676.25'	386,863 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
676.25	505	0	0
676.50	14,826	1,916	1,916
677.00	24,194	9,755	11,671
678.00	31,409	27,802	39,473
679.00	39,965	35,687	75,160
680.00	56,082	48,024	123,183
681.00	77,468	66,775	189,958
682.00	98,642	88,055	278,013
683.00	119,057	108,850	386,863

Device	Routing	Invert	Outlet Devices
#1	Primary	676.25'	36.0" Round Culvert L= 50.0' Ke= 0.600 Inlet / Outlet Invert= 676.25' / 676.00' S= 0.0050 '/' Cc= 0.900 n= 0.011, Flow Area= 7.07 sf
#2	Device 1	676.25'	20.0 deg x 0.4' long Sharp-Crested Vee/Trap Weir Cv= 2.69 (C= 3.36)
#3	Device 1	681.50'	16.0' long Sharp-Crested Rectangular Weir 2 End Contraction(s)

Primary OutFlow Max=60.92 cfs @ 13.05 hrs HW=681.83' TW=678.18' (Dynamic Tailwater)

1=Culvert (Inlet Controls 60.92 cfs @ 8.62 fps)
 2=Sharp-Crested Vee/Trap Weir (Passes < 51.15 cfs potential flow)
 3=Sharp-Crested Rectangular Weir (Passes < 9.88 cfs potential flow)



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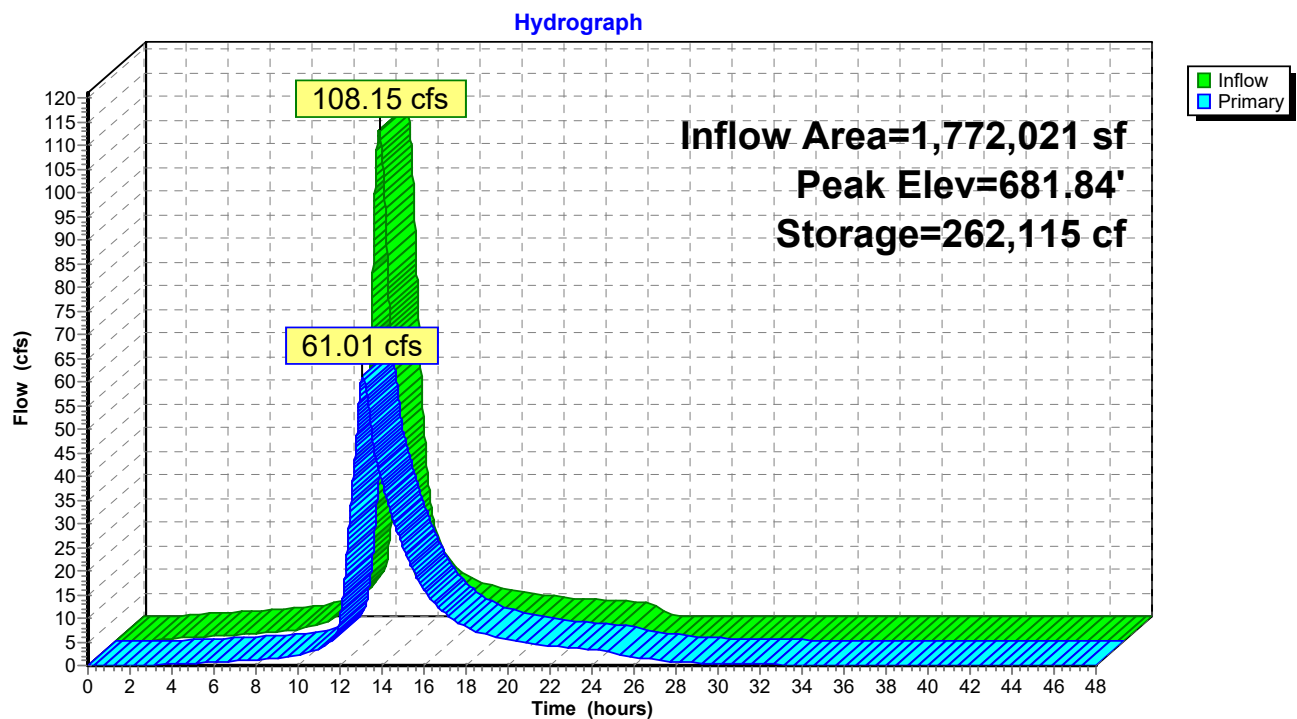
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Mt Pleasant 24-hr S1 100-yr Rainfall=7.83"

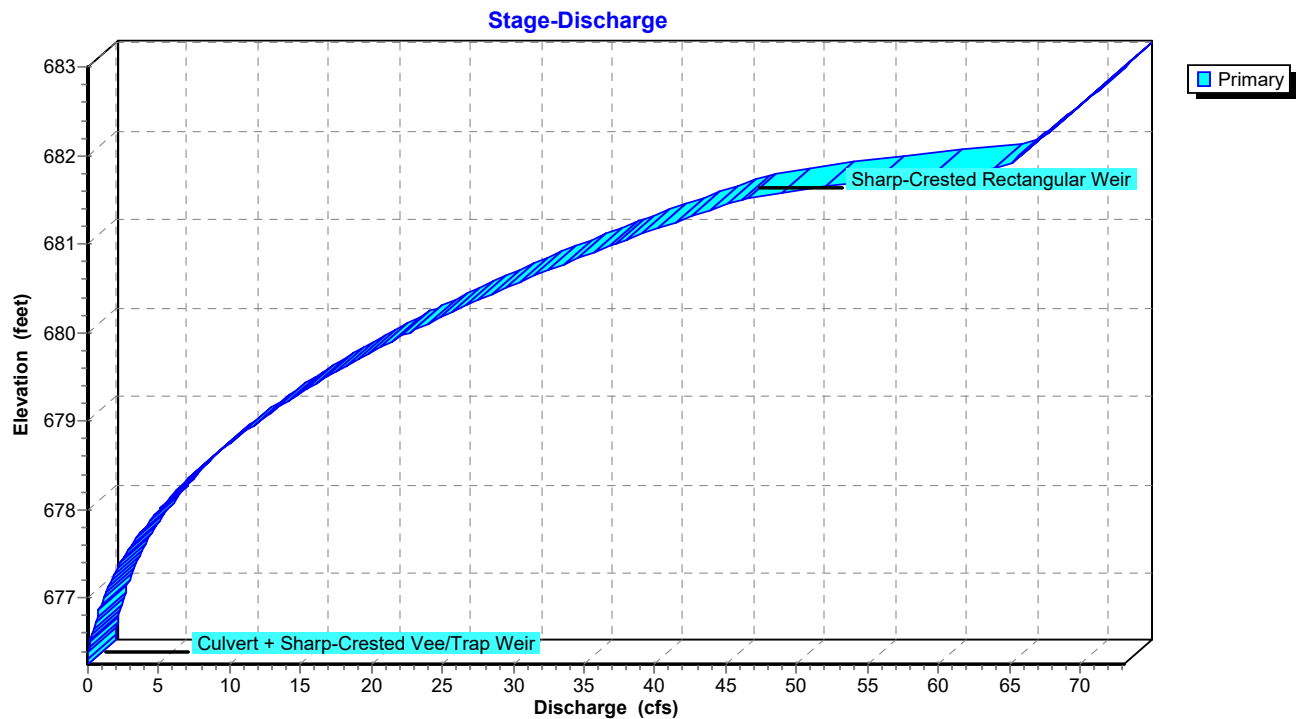
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Pond POND1P: PROP POND



Pond POND1P: PROP POND



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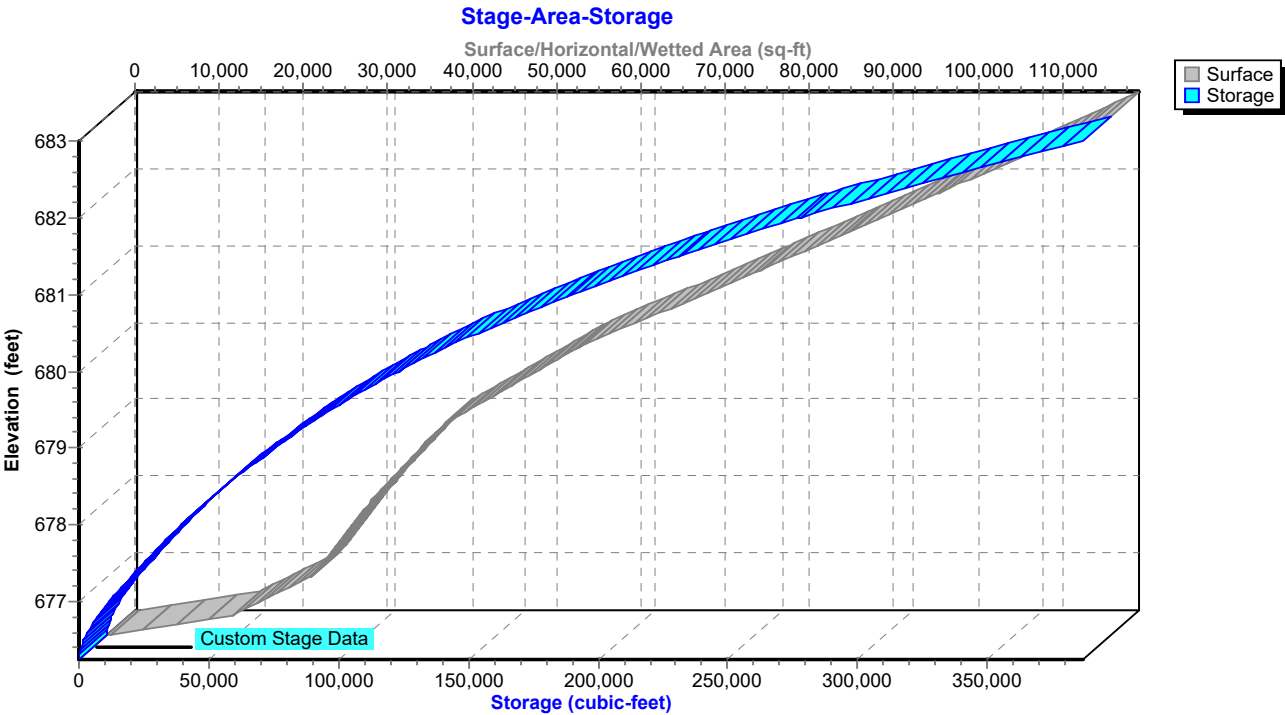
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Mt Pleasant 24-hr S1 100-yr Rainfall=7.83"

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Pond POND1P: PROP POND



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260	Pond POND1P: PROP POND

100-yr Event

263	Node Listing
265	Subcat DA 1: BASIN 1 PRE DEVELOPMENT

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City of Mount Pleasant

"Experience Our History...Explore Our Possibilities"

Department of Planning and Zoning



Section 7, Item B.

MPMPC File # _____

Date of Application: 3/5/26

Short explanation of reason for request: The requested zoning amendment is to rezone the entire parcel from R-1 to Commercial Highway (CH) to allow commercial use along the North Main Street corridor in a manner consistent with surrounding development and the City of Mount Pleasant's long-term growth plans.

☒ RE-ZONE (Zoning change)

☐ ANNEXATION

☐ ZONING TEXT AMENDMENT

Is the entire property to be re-zoned?

☒ YES ☐ NO If No – amount proposed is _____

Current Zoning is: R-1

Proposed Zoning: CH

NOTE: If the re-zone is less than the entire parcel, a Final Plat will be required with this application to define the areas of each proposed zoning district. The Final Plat will be required to be approved and recorded, after the approval of re-zoning, and prior to being able to use the property under the approved new zoning districts. Since Zoning Amendments are a multiple step process the applicant should also be aware of the deadlines and time frames required to process this application.

APPLICANT/DEVELOPER:

Company Name:	
Name of person Joseph N Bone	
Phone Number: (931)	Email: Nolan

PROPERTY OWNER(S): (attach additional Sheets if more than two owners)

Name: Joseph Nolan Bone	
Address: 1010 Rolling Fields Circle, Columbia TN, 38401	
Phone Number: (931) 374-2908	Email: Nolan
Name: Mary E. Bone	
Address: 1010 Rolling Fields Circle, Columbia TN, 38401	
Phone Number: (931)	Email: mary



City of Mount Pleasant

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Department of Planning and Zoning



Section 7, Item B.

PROPERTY INFORMATION:

Property is located near:			
Property Address: 1681 N Main Street Columbia , Tn 38401			
Tax Map 126	Parcel Number 016.00	Deed Book B3109	Page Number P 32-34
Plat Book	Plat Book Page	Date Recorded	Acreage 2.58

Application Fee(s):

Refer to the latest Application Fee Schedule. Coordinate with the Planning, Zoning, & Codes Office regarding the amount due in advance of submitting the application. (Make check payable to the City of Mt. Pleasant.)

FEES MUST BE SUBMITTED WITH THE APPLICATION – OR IT WILL NOT BE ACCEPTED FOR CONSIDERATION

Submittal Requirements and Deadlines:

The submittal requirements, number of copies, guidance checklists and certification requirements are listed in the latest revision of the Zoning Ordinance.

Your application may be deemed incomplete due to lack of the required documents not being submitted at the time this application is submitted. This may result in this application not being reviewed and/or advanced to the Planning Commission until the required documents are submitted. The applicant and all parties involved with this application are responsible for reading and complying with the requirements related to this application and must comply with all City deadlines.

Property Owner Authorization:

By signing this application below, I am acknowledging and granting the submission of this application and stating the agents listed herein are authorized to act as my representative(s). If other agents are utilized to represent me, I will provide a letter acknowledging and stating the agents that are authorized to act as my representative(s). Authorization is also granted to Mount Pleasant and its representatives to enter upon the property for examinations & evaluations.

Property Owner Signature: _____

Date: 3/5/26

Applicant/Developer Signature: _____

Date: _____

Zoning Amendment- 1681 N Main St

July 14, 2026

The applicant is requesting approval of a zoning amendment for 1681 N Main St. The property is 2.58 acres and is currently zoned R-1 (Low-density residential) and the request is to rezone it to CH (Commercial Highway). The applicant wants to rezone to allow for commercial use along the North Main Street corridor. The surrounding area is mainly zoned R-1 (Low-density residential) with a few CH (Commercial Highway) zoned properties along N Main Street.

The proposed use is for ECO Erosion, LLC, which will mainly be used as a contractor headquarters. The applicant eventually wishes to construct an enclosed shop and a screened outdoor staging area for company vehicles, trailers, and small equipment. This will be a lower intensity commercial use, aligning more with the surrounding area.

The Maury County Comprehensive Plan calls for this area to be developed under the Suburban Corridor character area, which is characterized by residential and low-intensity commercial development along major transportation corridors.

Items you may want to require as a condition of approval are:

- The property is developed in a manner that is consistent with the Maury County Comprehensive Plan's Suburban Corridor future land use designation, including the intent and standards of that designation.

The Planning Commission may approve or deny the request based on your deliberation.

Nolan Bone
1010 Rolling Fields Circle
Columbia, TN 38401
Bone.nolan@yahoo.com
(931) 374-2908
February 15, 2026

Planning Commission / City Commission
100 Public Square
Mount Pleasant, TN 38474

Subject: Request for Rezoning of Property at 1681 N Main Street

Dear Commissioners,

I am the owner of the property located at 1681 N Main Street, Columbia, Tennessee, which is currently zoned R-1 (Single-Family Residential). I am writing to formally request that the zoning designation be changed to Commercial Highway.

The purpose of this request is to allow for low-impact, service-oriented commercial use of the property that is compatible with the established pattern of development along the North Main Street corridor. The intended use would be for a service-based business that does not rely on customer or retail traffic at the site and would generate minimal traffic and activity. The requested zoning would better align the property with surrounding commercial uses already present along the corridor, while maintaining compliance with all applicable ordinances, codes, and operational standards.

I believe this rezoning request is consistent with the City's long-term planning objectives and reflects the existing character and development trends along this corridor. Any future use or development of the property will comply with all applicable regulations and requirements of the City.

Thank you for your time and consideration of this request. I respectfully ask that this matter be placed on the agenda for the next available public hearing. I have enclosed the supporting documents for your review.

Sincerely,

Nolan Bone
Owner

A RESOLUTION OF RECOMMENDATION TO AMENDING TITLE 14, ZONING AND LAND USE CONTROL, CHAPTER 2, ZONING ORDINANCE, OF THE MOUNT PLEASANT MUNICIPAL CODE, THE SAME BEING THE ZONING ORDINANCE FOR THE CITY OF MOUNT PLEASANT, TENNESSEE, INCLUDING THE MUNICIPAL ZONING MAP INCORPORATED THEREIN BY REZONING A PROPERTY FROM **LOW DENSITY RESIDENTIAL (R-1) to HIGHWAY COMMERCIAL (CH)**

WHEREAS, Title 14, Zoning and Land Use Control, Chapter 2, Zoning Ordinance, of the Mt. Pleasant Municipal Code (hereinafter referred to as the “Zoning Ordinance”) constitutes the comprehensive zoning ordinance for the City of Mount Pleasant, Tennessee, and incorporated therein is the Municipal Zoning Map; and

WHEREAS, The City Commission of Mount Pleasant, Tennessee has broad discretion to change or amend the Zoning Ordinance for the purpose of promoting the health, safety, prosperity, morals, and general welfare of the City; and

WHEREAS, Joseph N. Bone, submitted an application to the Mount Pleasant Planning Commission staff requesting that said Zoning Ordinance be amended by rezoning **approximately 2.58 acres of property located at 1681 North Main Street. Identified as Tax Map 126, Parcel 016.00**, more fully described below and shown on Exhibit A attached hereto from **Low Density Residential (R-1) to Highway Commercial (CH)**.

WHEREAS, the property is currently zoned Low Density Residential (R-1). The properties to the northeast are zoned Highway Commercial (CH) and the properties to the northeast across N Main Street are zoned Highway Commercial (CH). The rest of the surrounding properties to the west and south are zoned Low Density Residential (R-1).

WHEREAS, Mount Pleasant Planning Department staff comments are attached hereto and incorporated herein as **Exhibit A**; and,

WHEREAS, the Mount Pleasant Planning Commission adopts the considerations and Findings of Fact set forth in the Zoning Amendment Worksheet attached hereto as **Exhibit B**; and,

WHEREAS, upon consideration of the foregoing the Mount Pleasant Planning Commission **RECOMMENDS** **DOES NOT RECOMMEND** **the requested rezoning of the property.**

NOW, THEREFORE, BE IT ORDAINED BY THE CITY OF MOUNT PLEASANT, TENNESSEE, AS FOLLOWS:

A RESOLUTION OF RECOMMENDATION TO AMENDING TITLE 14, ZONING AND LAND USE CONTROL, CHAPTER 2, ZONING ORDINANCE, OF THE MOUNT PLEASANT MUNICIPAL CODE, THE SAME BEING THE ZONING ORDINANCE FOR THE CITY OF MOUNT PLEASANT, TENNESSEE, INCLUDING THE MUNICIPAL ZONING MAP INCORPORATED THEREIN BY REZONING A PROPERTY FROM **LOW DENSITY RESIDENTIAL (R-1) to HIGHWAY COMMERCIAL (CH)**

1. City of Mount Pleasant Municipal Planning Commission _____ **RECOMMENDS** _____ **DOES NOT RECOMMEND** that the City of Mount Pleasant re-zone the property to Highway Commercial (CH) as described in the body of this resolution.

2. Pursuant to Mount Pleasant Zoning Ordinance 4.7(C)(1), the planning commission in its review and recommendation make the specific findings set forth in **Exhibit B** as grounds for the amendment

Approved and adopted this 14th day of July 2026.

JOHN HUNTER, CHAIRMAN

ATTEST:

PAM JOHNTSON, SECRETARY

LEGAL FORM APPROVED:

KORI BLEDSOE JONES, ATTORNEY

Being a survey of PARCEL 16.00 (2.58 Acres) of the property of Barbara D. Brown at 1681 and 1683 North Main Street, Mt. Pleasant, TN 38474. Recorded in Deed Book 359, Page 419 in the Register's Office of Maury County, Tennessee. Being Parcel 16.00 on Tax Map 126. Located on the North side of North Main Street and in the Eighth (8th) Civil District of Maury County, Tennessee. Being more accurately described as follows:

Beginning at a CRB found on the North right of way margin of North Main Street (lying approximately 470 feet Northeast of Redwood Circle, marking the Southeast corner of McGee Properties Family Partnership per Deed Book R1464, Page 135 (R.O.M.C.T.) and also marking the Southwest corner and POINT OF BEGINNING for survey of PARCEL 16.00 (2.58 Acres); thence leaving said right of way margin run North 25 degrees 50 minutes 37 seconds West 298.66 feet, along the East line of McGee Properties Family Partnership, to a CRB found; thence continue North 25 degrees 50 minutes 37 seconds West 264.68 feet, along the East line of McGee Properties Family Partnership, to a CRB (Alexander) set, marking the Northeast corner of McGee Properties Family Partnership (Parcel 15.01) and also marking the Northwest corner of this PARCEL 16.00 (2.58 Acres); thence run North 71 degrees 33 minutes 22 seconds East 195.15 feet, along the South line of McGee Properties Family Partnership (Parcel 33.00 on Tax Map 111) per Deed Book R2144, Page 1100 (R.O.M.C.T.), to a CRB (Alexander) set, marking the Northeast corner of this PARCEL 16.00 (2.58 Acres); thence run South 28 degrees 42 minutes 12 seconds East 530.04 feet, along the West line of McGee Properties Family Partnership (Parcel 33.00), to a CRB (Alexander) set on the North right of way margin of North Main Street, marking the Southwest corner of McGee Properties Family Partnership and also marking the Southeast corner of this PARCEL 16.00 (2.58 Acres); thence run South 63 degrees 36 minutes 23 seconds West 75.00 feet, along the North right of way margin of North Main Street, to a point; thence run South 60 degrees 57 minutes 23 seconds West 145.20 feet, along the North right of way margin of North Main Street, back to the POINT OF BEGINNING. Containing 2.58 acres per survey by Glen W. Alexander, RLS TN# 2035, 2481 Mooresville Pike, Culleoka, TN 38451, (931-698-2338), glenwood@bellsouth.net July 8, 2025.

Zoning Amendment – 1681 N. Main Street

Staff Comments

Our review identified the following questions and needs for the submitted zoning amendment.

- The Maury County Comprehensive Plan calls for this area to be developed under the Suburban Corridor character area which is characterized by residential and low-intensity commercial development along major transportation corridors.
- Commercial Highway (CH) zoning is the city's most intense commercial zoning and may not align with the recommended character area.
- There is CH zoned property closer to the intersection of N. Main Street and Zion Road. The applicant may want to prepare statements that support the location of the current request versus closer to the intersection.
- Is there a proposed plan for this site?

Please remember the Planning Commission will consider the following findings of fact as they deliberate this request and shall make specific findings with regard to the following grounds for an amendment:

1. The amendment is in agreement with the land use plan for the area.
2. There will be no adverse effect upon adjoining property owners, unless such effect can be justified by the overwhelming public good or welfare.
3. No property owner or small group of property owners will benefit materially from the change to the detriment of the general public.
4. Conditions affecting the area have changed to a sufficient extent to warrant an amendment to the area's land use plan and subsequently, the zoning map.

ZONING AMENDMENT WORKSHEET

The regulations imposed and the districts created by the Zoning Ordinance may be amended from time to time. This process for amending the Zoning Ordinance Text or the Zoning Map is intended to permit modifications in response to changed conditions or changes in City policy. Amendments are not intended to relieve particular hardships or confer special privileges or rights upon any person or party.

CONSIDERATIONS:

The zoning amendment for property located on **1681 North Main Street** consisting of **2.58 acres**, further identified by Tax Map **126** Parcel **016.00** and legally recorded in Plat Book **R3109** Page **32-34** on file at Register of Deeds Office of Maury County is presented to the Planning Commission for review. Request from applicant/owner Joseph N Bone is for consideration to change the current zoning designation of **(R-1) Low Density Residential** to that of **(CH) Highway Commercial**.

This zoning amendment request should be considered based on evidence presented at the public hearing, and viewed as a singular stand-alone request. Consideration should not be given to prior rulings when making a decision.

The Planning Commission shall forward their recommendation to the Mount Pleasant City Commission along with their findings of fact listed below.

FINDINGS OF FACT FOR ZONING AMENDMENT:

1. The amendment **IS** ____/**IS NOT** ____ in agreement with the Land Use plan for the area because:
2. There **WILL** ____/**WILL NOT** ____ be an adverse effect upon adjoining property owners because:
If there is an adverse effect on adjoining property owners, such effect **CAN** ____/**CANNOT** ____ be justified by the overwhelming public good or welfare because:
3. There **IS** ____/**IS NOT** ____ a property owner or small group of property owners that will benefit materially from the change to the detriment of the general public. Reasons:
4. The following conditions affecting the area **HAVE** ____/**HAVE NOT** ____ changed to a sufficient extent to warrant an amendment to the area's Land Use plan and subsequently, the zoning map:

The Planning Commission recommends that the zoning amendment be:

APPROVED ____ **DISAPPROVED** ____ **Commission Member:** _____

Date: _____



Section 7, Item B.

782

Section 7, Item B.

CH Highway
Commercial



MP_Zoning:

(1 of 2)



R-1 Low Density
Residential

783

REQUESTED REZONING Commercial Highway (CH)

1681 N Main Street | 2.58 acres

To: Chris Brooks, Planning & Building Codes Director
City of Mount Pleasant

Thank you for the staff comments. The applicant respectfully maintains the request to rezone 1681 N Main Street to Commercial Highway (CH). The responses below address each staff question directly.

1 How does CH fit the Suburban Corridor?

The property fronts North Main Street, a major transportation corridor, and Exhibit A shows an existing commercial pattern around the site. The proposed development is a low-customer-traffic contractor headquarters. CH provides the operational flexibility needed for an enclosed shop, equipment parking, and screened staging, while the actual use remains consistent with the low-intensity commercial character anticipated along the corridor.

2 Why is this location appropriate rather than a site nearer Zion Road?

Commercial areas nearer Zion Road are better positioned for intersection-oriented and higher-volume activity. This 2.58-acre property has direct North Main Street frontage, depth for a screened shop and staging area, and commercial zoning adjoining the property and nearby along the corridor. It is a logical transition site for a contractor headquarters, not an isolated commercial request within a residential neighborhood.

3 Is there a proposed plan for the site?

No formal site plan has been submitted. The current concept is for Eco Erosion, LLC to develop the site in phases with a small office, future enclosed shop, employee and equipment parking, and screened outdoor staging for company vehicles, trailers, and small equipment. Access would be from North Main Street. If rezoning is approved, the appropriate steps will be taken to develop a final plan and obtain all required approvals before development proceeds.

Required Findings

1. Agreement with the land use plan

The corridor frontage, existing commercial context, and low-intensity contractor use support the commercial component of the Suburban Corridor.

2. No adverse effect on adjoining owners

Screening, landscaped buffers, controlled lighting, and an on-site operational layout will limit impacts on nearby residences.

3. No special benefit to the public's detriment

The amendment supports orderly use of a major-corridor property and a local employer without creating an incompatible use pattern.

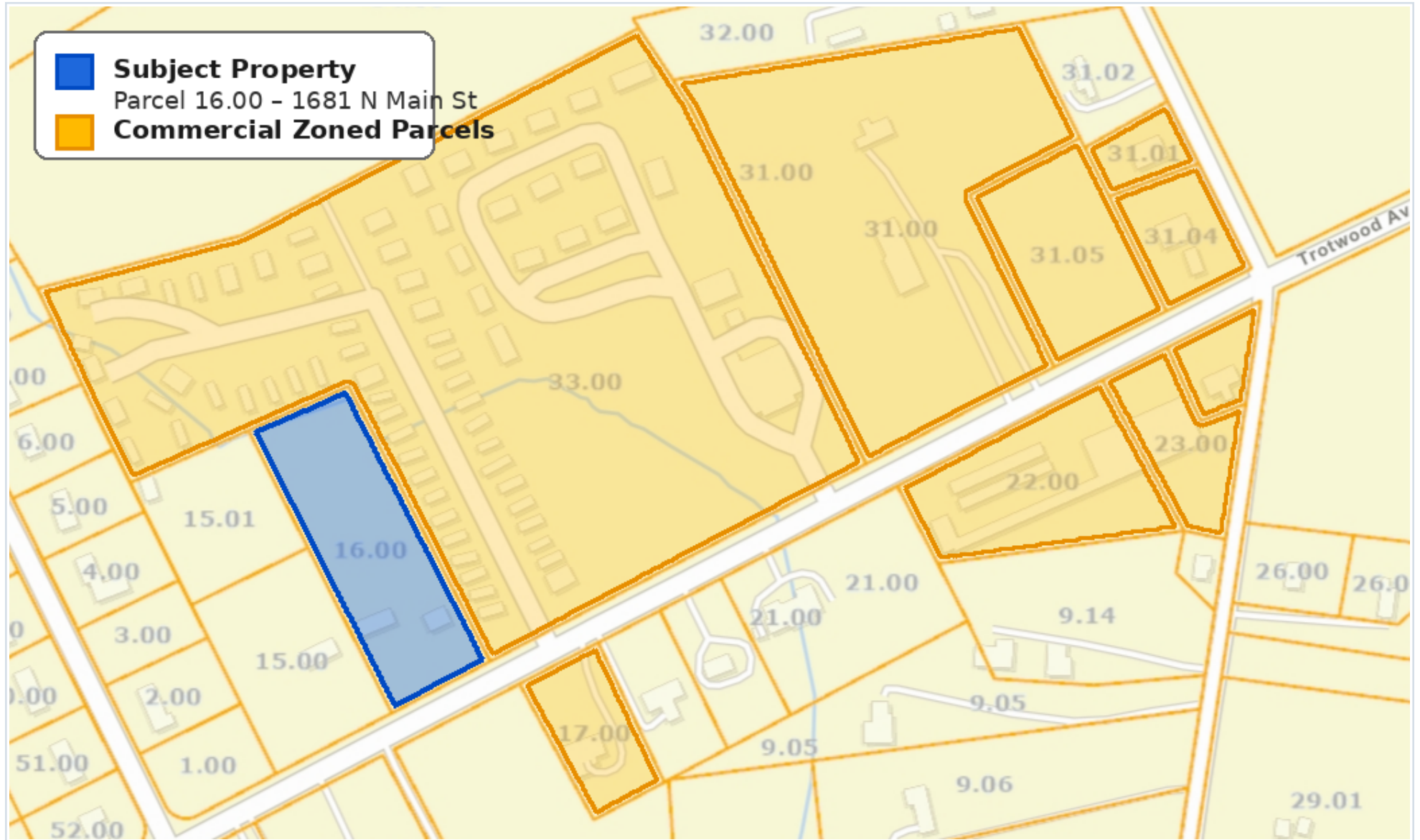
4. Changed conditions

Commercial zoning and development along this segment of North Main Street have made the site a logical commercial transition location.

For these reasons, the applicant respectfully requests approval of the Commercial Highway (CH) amendment.

Nolan Bone

Applicant / Owner



Section 7, Item B.



786

Govt Public Notices

Section 7, Item B.

06/10/2026

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Print



PUBLIC NOTICE

The City of Mount Pleasant will hold a public meeting. in the Tom Harden Room, City Hall on July 14, 2026 at 6:00 PM to consider a request to rezone 1681 N. Main Street, Columbia, TN (Tax Map 126, Parcel 016.00; approx. 2.58 acres) from R 1 (Low Density Residential) to C H (Highway Commercial)



City of Mount Pleasant

"Experience Our History...Explore Our Possibilities"

Department of Planning and Zoning Application for Review

209 Bond Street, Mt. Pleasant TN 38474



MPMPC FILE # _____ Date: 5/12/26
 Application Submitted for _____
 Title of Project: Lineage Metals
 Street Location: Joe Frank Porter Road
 Tax Map: _____ Group: _____ Parcel: _____
 Total Acreage: 6.85 Number of Lots: 1

Applicant:

Name: Billy Hill
 Company/Partnership: Hill Construction, LLC
 Address: 1117 North Locust Avenue
 City: Lawrenceburg State: TN Zip: 38464
 Telephone: _____ Mobile: (256)7 Email: hilli

Owner (if applicant is not owner):

Name: Conor Lowery
 Company/Partnership: Lineage Metals
 Address: 2737 Couchville Pike, Suite 300
 City: Nashville State: TN Zip: 37217
 Telephone: _____ Mobile: (925) Email: conor

Surveyor/Engineer:

Name: Andy Somers
 Company/Partnership: Somers Consulting Services, LLC
 Address: 2206 Shades Crest Rd
 City: Huntsville State: AL Zip: 35801
 Telephone: _____ Mobile: (256) Email: some



City of Mount Pleasant
"Experience Our History....Explore Our Possibilities"
Department of Planning and Zoning
Application for Review



This application shall be accompanied by maps, drawings, or other supportive information necessary to explain the request. It is recommended that the applicant or a representative be present at the Planning Commission.

TCA 134-304(a) states, in part. "The Commission shall approve or disapprove a plat within thirty (30) Days after submission of such plat...." By signing this application, the applicant (and owners, as applicable) acknowledges that items for consideration by the Planning Commission shall be considered submitted when all required information, a completed submittal application, and fee have been received by the City of Mount Pleasant.

Failure by the applicant to address all the requirements of the City of Mount Pleasant Zoning Ordinance and/or Subdivision Regulations may result in a deferral or denial of the proposed development by the Mount Pleasant Planning Commission.

As the applicant or the applicant's agent, I understand that it is my sole responsibility to notify my client of the time, date, and location of the Planning Commission and subsequent Mount Pleasant City Commission meetings at which this application will be heard and to ensure that someone representing this item is in attendance at each of these meetings.

I hereby attest that I have provided a complete application and included all of the necessary attachments as required. I understand that if information is incomplete and/or otherwise not provided, this application may be deferred until such time as the necessary information is provided.

Owner/Agent submitting this application _____ Date _____

STAFF USE ONLY – DO NOT WRITE BELOW THIS LINE

Recording Fee\$ _____ Review Fee.....\$ _____ Appeal Fee.....\$ _____

Check # _____ Cash_____ Debit or Charge _____ Amount Paid \$ _____

Receipt # _____ Date Paid _____

Date of Review: _____ Approved Denied ____ Withdrawn ____

JOE FRANK PORTER ROAD
CHERRY GLEN INDUSTRIAL PARK
MOUNT PLEASANT/MAURY COUNTY, TENNESSEE

CERTIFICATE OF APPROVAL BY PLANNING DIRECTOR

THE UNDERSIGNED, AS DIRECTOR OF PLANNING FOR THE CITY OF MOUNT PLEASANT, TENNESSEE HEREBY CERTIFIES THAT THE PROPERTY AND SITE PLAN HAS BEEN INSPECTED, REVIEWED, AND FOUND TO BE COMPLIANT WITH ZONING ORDINANCE AND SUBDIVISION REGULATIONS

THIS THE _____ DAY OF _____, 20____

DIRECTOR, PLANNING

CERTIFICATE OF APPROVAL BY THE FIRE DEPARTMENT

THE UNDERSIGNED, AS DULY AUTHORIZED REPRESENTATIVE OF THE MT.PLEASANT FIRE DEPARTMENT, CITY OF MOUNT PLEASANT, TENNESSEE CERTIFIES THE WITHIN SITE PLAN HAS BEEN REVIEWED AND APPROVED

THIS THE _____ DAY OF _____, 20____

MT PLEASANT FIRE DEPARTMENT
CITY OF MOUNT PLEASANT

CERTIFICATE OF APPROVAL BY CHERRY GLEN DESIGN REVIEW BOARD

THE UNDERSIGNED, AS DULY AUTHORIZED REPRESENTATIVE OF THE CHERRY GLEN INDUSTRIAL PARK DESIGN REVIEW BOARD, CITY OF MOUNT PLEASANT, TENNESSEE CERTIFIES THE WITHIN SITE PLAN HAS BEEN REVIEWED AND APPROVED

THIS THE _____ DAY OF _____, 20____

CHERRY GLEN INDUSTRIAL PARK DESIGN REVIEW BOARD
CITY OF MOUNT PLEASANT

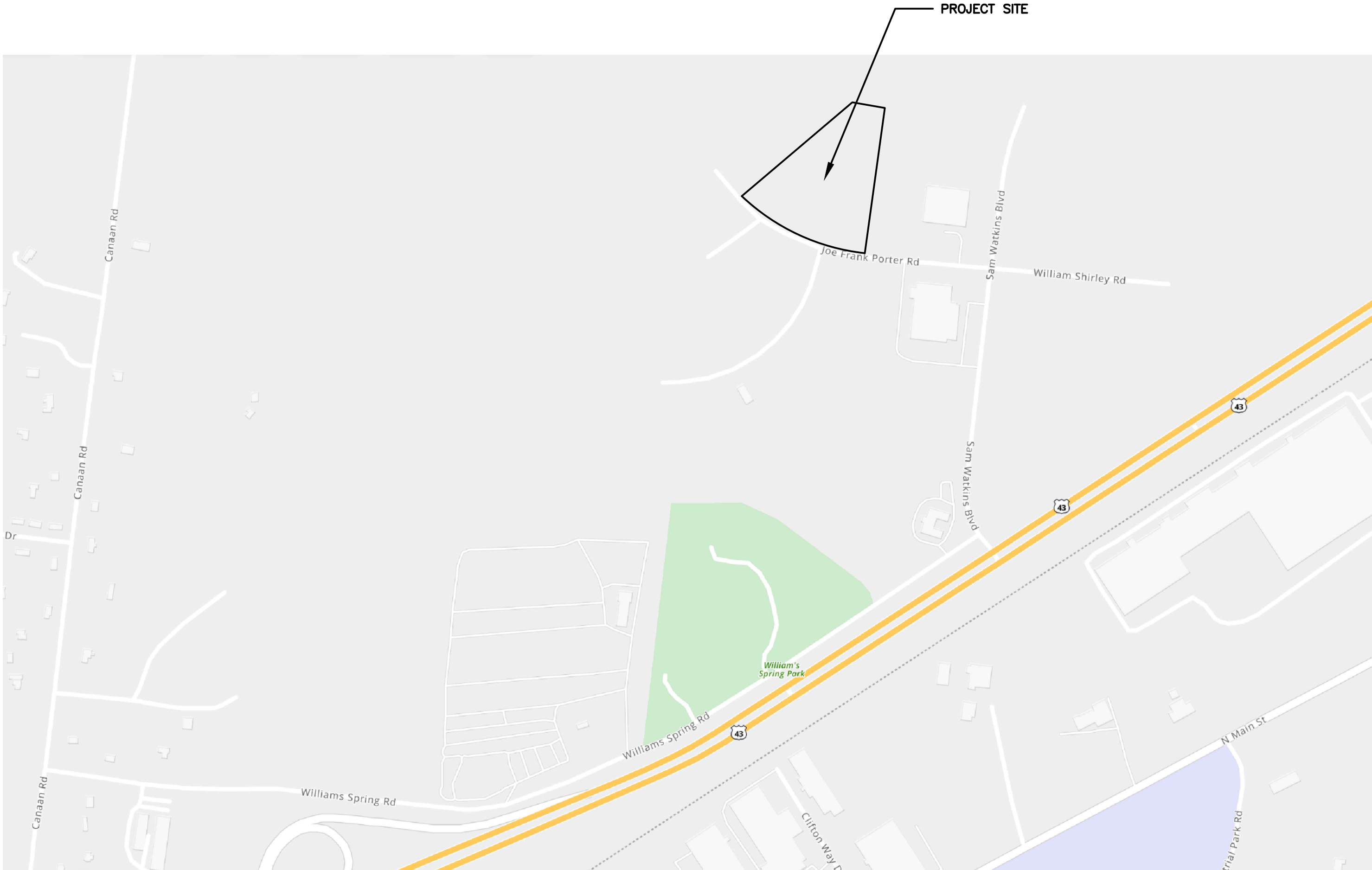
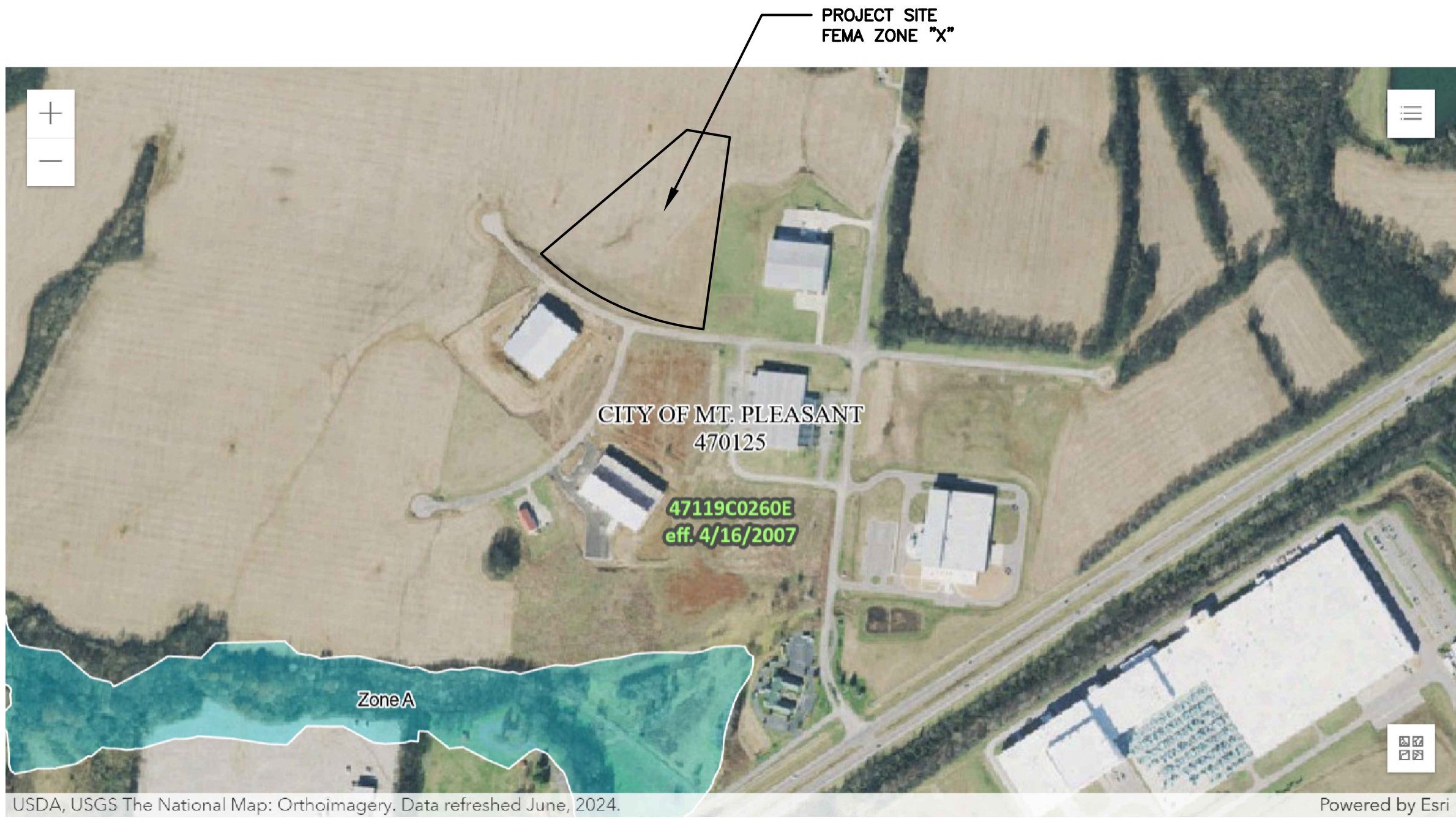
ZONING: LIGHT INDUSTRIAL (IL)
TOTAL PARCEL AREA: 6.85 AC
TOTAL DISTURBED AREA: 2.69 AC
BUILDING COVERAGE: 25,000 SF (8.4% OF LOT)
TOTAL IMPERVIOUS COVERAGE: 1.02 AC (15% OF LOT)

INDEX OF SHEETS

NO.	SHEET TITLE
1	COVER SHEET
2	SURVEY
3	DEMOLITION & EROSION CONTROL
4	GENERAL NOTES
5-6	SITE AND LAYOUT PLAN
7-8	GRADING AND DRAINAGE PLAN
9	UTILITY PLAN
10	PHOTOMETRIC AND LIGHTING PLAN
11	LANDSCAPING PLAN
12	ADDITIONAL DETAILS

LINEAGE METALS -
CHERRY GLEN INDUSTRIAL PARK
JOE FRANK PORTER ROAD
MT. PLEASANT, TN 38474

JUNE 9, 2026



VICINITY MAP
APPROX. SCALE: 1"=500'

REVISIONS		
NO.	DESCRIPTION	DATE

SOMERS CONSULTING
SERVICES, LLC.
ANDY SOMERS, P.E.
(256) 603-4888
2206 SHADES CREST RD
HUNTSVILLE, AL 35801

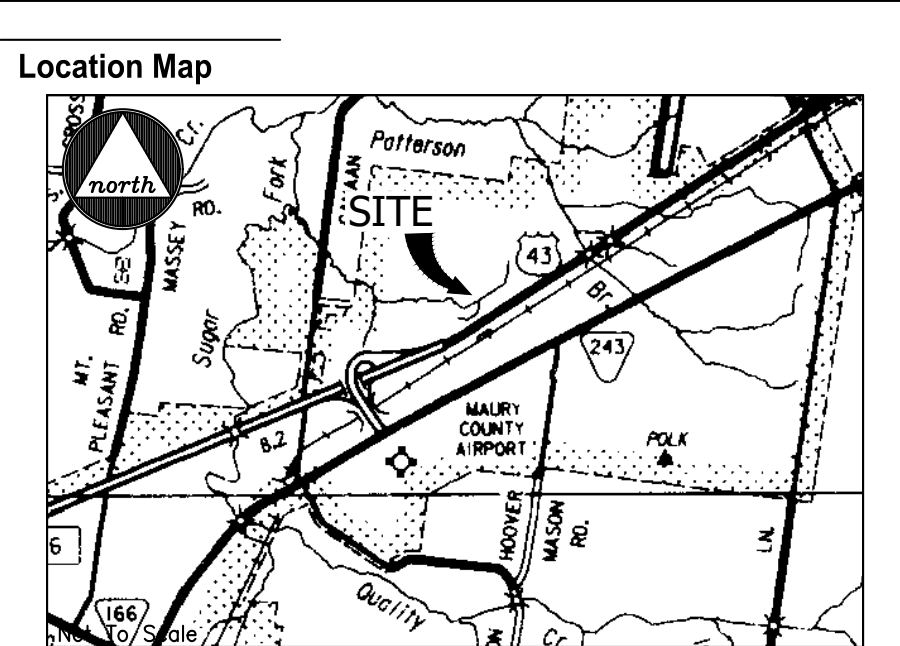
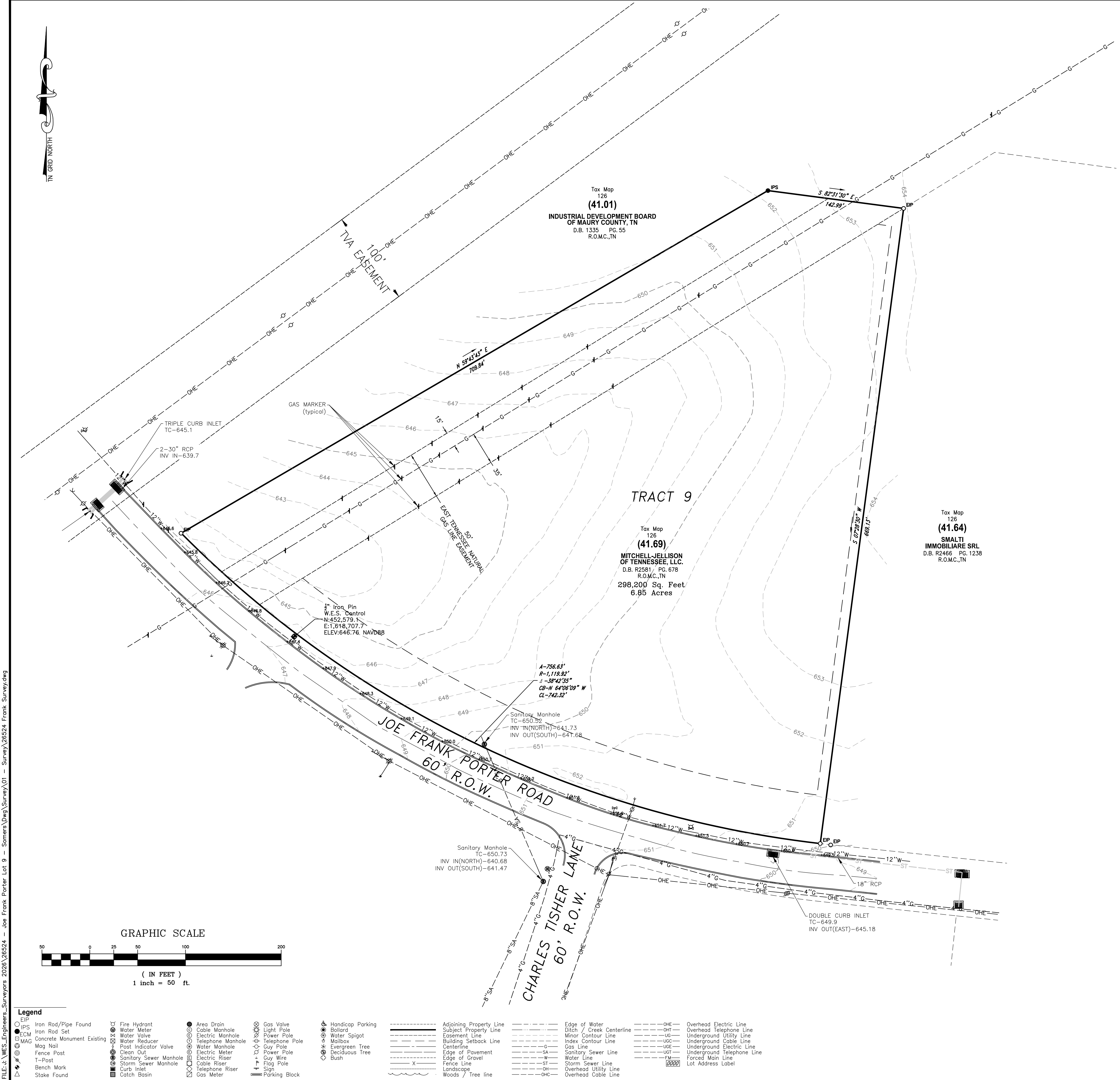
LINEAGE METALS
(925) 330-6747
2737 COUCHVILLE PIKE, SUITE 300
NASHVILLE, TN 37217

DRAWN: AS
CHECKED: AS

SHEET NAME:
COVER

SCALE: NO SCALE
SHEET NO: 1 OF 12

FILE:J:\WES_Engineers_Surveyors 2026\26524 - Joe Frank Porter Lot 9 - Somers\Draw\Survey\01 - Survey\26524 Frank Survey.dwg



- Surveyor's Notes**
- All distances measured with E.D.M. equipment and have been adjusted for temperature and pressure, this survey was completed using a dual frequency BRX7, base and rover.
 - The property (Boundary) Line Survey exceeds the minimum requirements of an Urban Land Survey Category IV as per Standards of Practice adopted by the State Board of Examiners for Land Surveyors for the State of Tennessee.
 - Information concerning site utility services and appurtenances shown hereon is based on visible evidence noted during the survey, information provided by utility representatives or information shown on original construction plans by other. Information and location of service lines on site should be considered approximate and there may be underground utility lines that are not shown on the survey. Owner(s) and contractor(s) should assume responsibility of locating all underground utility service lines prior to any construction, excavation or any disturbance of the existing ground elevation to avoid hazard of unnecessary expense.
 - Information concerning major utilities or appurtenances shown hereon are based on visible evidence noted during the survey or information provided by utility representatives. Verification of existence, size, location, depth and availability of service should be confirmed by local utility agencies.
 - The property shown hereon is located within the City of Columbia, Maury County, TN. All matters pertaining to construction, use location of improvements, signage, parking, noise, vibration, emissions, fire hazards, radiation, illumination, setback provisions, etc., are subject to the City of Columbia's Zoning Regulation as interpreted and regulated by the Department of Planning and Codes.
 - The area of the parcels as shown hereon.
 - This property currently identified as Tax Map No. 126, Parcel No. 041.69, Maury County, TN. For designation shown thus () indicates Parcel Numbers for said map.
 - Plot reference: N/A
 - Deed reference: Book R2581, Page 678
 - Bearings based on: Tennessee State Plane, NAD 83.
 - This drawing was prepared in accordance with our field survey notes. It shows improvements as they exist to the best of our knowledge, but is not guaranteed to be correct in each and every detail.
 - This survey was prepared from current deeds of record and does not represent a title search or a guarantee of title, and is subject to any state of facts a current and accurate search may reveal.
 - This survey was prepared for the exclusive use of the person, persons, or entity, if any, named on the certification hereon. Said certificate does not extend to any unnamed person without an express re-certification by the surveyor naming said person.
 - The certification as provided on this survey, is purely a statement of professional opinion based on knowledge, information and belief, based on existing field evidence and documentary evidence provided by others.
 - The certification is not an expressed or implied warranty or guarantee.
 - This property is not located in a Special Flood Hazard Area as shown on F.E.M.A. Flood Insurance Rate Map, Community Panel No. 47119C0260E, dated April 16, 2007, and shown hereon graphically.
 - All property corners are 1/2" rebar with cap reading "WES 1987" unless otherwise noted.

Surveyor's Certification (Tennessee)

I hereby certify that this is a Category "IV" survey, meets or exceeds the Minimum Technical Standards for Land Surveyors and was done in compliance with the current Minimum Technical Standards.

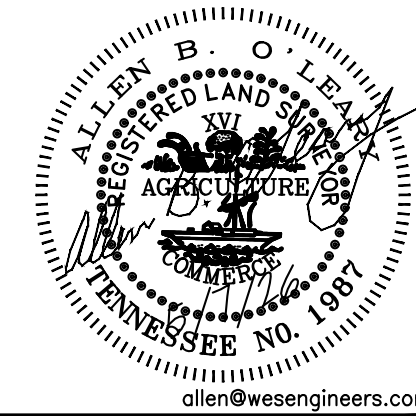
Allen B. O'Leary
Allen B. O'Leary, TN RLS #1987

5/7/26
Date

I hereby certify this is a true and accurate survey and meets or exceeds the current Minimum Standards and Applications of a Category IV (Remote Sensing) survey as defined in T.C.A. 0820-03-07C(5).

Equipment: TDOT C.O.R.S.
Reference Frame: NAD83(2011), Epoch 2010.00
Positional Accuracy: HRMS=0.04 SD=0.008, VRMS=0.075 SD=0.013
Scale: NGS2018
Date: xx/xx/20xx
Combined Scale Factor: 0.99993

Carlson BRX7, Dual Frequency Base and Rover
Reference Frame: NAD83(2011), Epoch 2010.00
Positional Accuracy: HRMS=0.04 SD=0.008, VRMS=0.075 SD=0.013
Scale: NGS2018
Date: xx/xx/20xx
Combined Scale Factor: 0.99993



WES ENGINEERS & SURVEYORS
CIVIL ENGINEERS & LAND SURVEYORS
2486 NASHVILLE HIGHWAY
COLUMBIA, TN 38401
PHONE: (931) 388-2329
www.wesengineers.com

Client
ANDY SOMERS

CHERRY GLEN - LOT 9
JOE FRANK PORTER ROAD
MT. PLEASANT, TN 38474

DATE

REVISIONS

Drawn: AD	Checked: AD	Approved:	Date: 05-07-2026

Job no. 26524

Scale: Vertical: 1" = 50'

Horizontal:

1 of 1

791



**LINEAGE METALS -
CHERRY GLEN INDUSTRIAL PARK**
JOE FRANK PORTER ROAD
MT. PLEASANT, TN 38474

JUNE 9, 2026

**SOMERS CONSULTING
SERVICES, LLC.**
ANDY SOMERS, P.E.
(256) 603-4888
2206 SHADES CREST RD
HUNTSVILLE, AL 35801

LINEAGE METALS
(925) 330-6747
2737 COUCHVILLE PIKE, SUITE 300
NASHVILLE, TN 37217

DRAWN:	CHECKED:
AS	AS

SHEET NAME:
DEMOLITION AND EROSION
CONTROL PLAN

SCALE:	SHEET NO:
1"=30'	3 OF 12



NOTES:

1. THE ENTIRETY OF THE PROPERTY AND PROJECT IS ZONED AS LIGHT INDUSTRIAL (IL) PER THE MOUNT PLEASANT ZONING MAP.
2. THE INTENT OF THE DRAWINGS IS THAT THE CONTRACTOR SHALL FURNISH ALL LABOR, MATERIALS, TOOLS, EQUIPMENT, TRANSPORTATION, AND OTHER ITEMS OR MEANS NECESSARY FOR THE PROPER EXECUTION OF THE WORK IN ACCORDANCE WITH THE CONTRACT DOCUMENTS AND ALL INCIDENTAL WORK NECESSARY TO COMPLETE THE PROJECT IN AN ACCEPTABLE MANNER, READY FOR USE, OCCUPANCY, OR OPERATION BY THE OWNER.
3. THE CONTRACTOR SHALL HAVE, AT ALL TIMES, A COPY OF ALL CONSTRUCTION DOCUMENTS APPLICABLE TO THE WORK, INCLUDING, BUT NOT LIMITED TO: PLANS, SPECIFICATIONS, CONTRACT DOCUMENTS, CONFORMED DOCUMENTS, SPECIAL CONDITIONS, AND PERMITS.
4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COMPLETING THE WORK IN ACCORDANCE WITH ALL APPLICABLE CONSTRUCTION DOCUMENTS. ANY OMISSIONS, DELETIONS, OR CONFLICTS ARISING AS A RESULT OF FAILURE TO INCORPORATE/COORDINATE ALL CONSTRUCTION REQUIREMENTS THAT APPLY SHALL BE CORRECTED BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER AND/OR ENGINEER.
5. THE CONTRACTOR SHALL GIVE ALL NECESSARY NOTICES, OBTAIN ALL PERMITS, AND PAY ALL LEGAL FEES ASSOCIATED WITH THE EXECUTION OF THIS PROJECT. THE CONTRACTOR SHALL ALSO COMPLY WITH ALL STATE, COUNTY, AND LOCAL ORDINANCES AND REGULATIONS RELATED AND APPLICABLE TO THE CONSTRUCTION OF THIS PROJECT.
6. THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING ALL UNDERGROUND UTILITIES, INCLUDING, BUT NOT LIMITED TO: POTABLE WATER, SANITARY SEWER, ELECTRIC, TELEPHONE, NATURAL GAS, CABLE TELEVISION, AND FIBER OPTIC CABLES. THE CONTRACTOR SHALL COORDINATE WITH THE OWNERS OF ALL UNDERGROUND UTILITIES TO LOCATE AND CLEARLY MARK ALL UTILITIES ON THE GROUND PRIOR TO BEGINNING CONSTRUCTION ACTIVITY. ADDITIONALLY, THE CONTRACTOR SHALL ENSURE THAT ALL UTILITY LOCATES ARE MAINTAINED AND UPDATED THROUGHOUT ALL PHASES OF CONSTRUCTION ACTIVITY.
7. EFFORTS HAVE BEEN MADE TO INDICATE LOCATIONS OF EXISTING STRUCTURES, PIPING, UTILITIES, AND TOPOGRAPHY AS PROVIDED BY OWNER'S SURVEYOR. HOWEVER, THE CONTRACTOR SHALL FIELD VERIFY EXACT MEASUREMENTS AND LOCATIONS OF ALL EXISTING ITEMS BEFORE INITIATING ANY CONSTRUCTION ACTIVITIES. ANY EXISTING STRUCTURE, PIPING, OR UTILITY DISTURBED OR DAMAGED BY THE CONTRACTOR DURING CONSTRUCTION ACTIVITIES SHALL BE REPLACED BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER. THE CONTRACTOR SHALL PROVIDE SUFFICIENT ADVANCE COORDINATION OF DISRUPTION WITH THE OWNER OF ANY FACILITY AS A RESULT OF CONSTRUCTION ACTIVITY.
8. THE LIMITS OF CONSTRUCTION SHALL BE THE PROPERTY LINES, EASEMENT LINES, AND/OR RIGHT(S)–OF–WAY AS SHOWN OR NOTED ON THE PLANS. THE CONTRACTOR SHALL ACQUIRE ANY ADDITIONAL EASEMENTS REQUIRED FOR CONSTRUCTION AT NO ADDITIONAL EXPENSE TO THE OWNER.
9. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONTROLLING TRAFFIC AT THE WORK SITE. THE CONTRACTOR SHALL PROVIDE AND EMPLOY TRAFFIC CONTROL AS REQUIRED ON THE PLANS AND ACCORDING TO THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, FOR STREETS AND HIGHWAYS, TEMPORARY TRAFFIC CONTROL, LATEST EDITION. AT NO TIME DURING THE CONSTRUCTION SHALL THE CONTRACTOR CLOSE ROADS TO VEHICLE TRAFFIC WITHOUT THE CONSENT AND APPROVAL OF THE OWNER. THIS WORK SHALL NOT BE PAID FOR DIRECTLY BUT CONSIDERED INCIDENTAL TO THE VARIOUS BID ITEMS.
10. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONTROLLING EROSION AND SEDIMENTATION AT THE WORK SITE. THE CONTRACTOR SHALL INSTALL AND MAINTAIN EROSION AND SEDIMENTATION CONTROL DEVICES AND STRUCTURES AT THE WORK SITE AS SHOWN ON THE PLANS AND ACCORDING TO THE TENNESSEE EROSION AND SEDIMENT CONTROL HANDBOOK, LATEST EDITION.
11. THE CONTRACTOR SHALL DISPOSE OF ALL EXCAVATED AND WASTE MATERIAL AT AN APPROVED OFF–SITE LOCATION.
12. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL DAMAGE OUTSIDE THE CONSTRUCTION LIMITS DUE TO CONSTRUCTION ACTIVITIES BY THE CONTRACTOR OR SUBCONTRACTOR.
13. UNLESS NOTED OTHERWISE, ALL BORROW MATERIAL INSTALLED SHALL BE COMPACTED TO 95% STANDARD PROCTOR (MIN.).
14. DEWATERING SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
15. EXISTING GRADING AND DRAINAGE ELEVATIONS OUTSIDE THE LIMITS OF CONSTRUCTION SHALL BE MAINTAINED AFTER CONSTRUCTION UNLESS OTHERWISE SHOWN ON PLANS.
16. ALL PROPOSED GRADING SHOWN ON THE PLANS SHALL BE CONSIDERED UNCLASSIFIED.
17. THE CONTRACTOR SHALL REMOVE ALL ROCK ENCOUNTERED TO A DEPTH OF ONE FOOT BELOW DESIGN SUBGRADE ELEVATIONS INDICATED ON THE PLANS. ROCK REMOVAL METHODS SHALL BE APPROVED BY THE OWNER OR ENGINEER PRIOR TO COMMENCING.
18. THE CONTRACTOR SHALL BE RESPONSIBLE FOR FOLLOWING ALL APPLICABLE OSHA REGULATIONS.
19. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR WORK ZONE SAFETY AND SECURITY.
20. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING A CLEAN JOBSITE FREE FROM LITTER AND REFUSE.
21. ALL DISTURBED CONCRETE AND ASPHALT SURFACES SHALL BE SAWCUT AND REPAIRED IN AS GOOD OR BETTER CONDITION AS PRIOR TO BEGINNING CONSTRUCTION ACTIVITY.
22. THE CONTRACTOR SHALL VERIFY THE LOCATION(S) AND ELEVATION(S) OF ALL TEMPORARY BENCHMARKS WITH THE OWNER AND/OR ENGINEER PRIOR TO BEGINNING THE WORK.
23. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE DAMAGE OR LOSS OF ANY REFERENCE POINTS, MONUMENTS, HUBS, BENCHMARKS, OR PROPERTY PINS DURING THE CONSTRUCTION OF THE WORK AND SHALL BEAR THE COST OF REINSTALLATION IF DAMAGED OR DESTROYED.
24. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DOCUMENTING AND MAINTAINING RECORD DRAWING INFORMATION. RECORD DRAWING DATA SHALL, UNLESS OTHERWISE INDICATED AND AT A MINIMUM, BE CLEARLY MARKED IN BLUE OR RED INK ON THE PLANS. UPON THE COMPLETION OF CONSTRUCTION ACTIVITY, THE CONTRACTOR SHALL SUBMIT A COPY OF THE RECORD DRAWINGS TO THE OWNER OR ENGINEER.
25. NO CHANGES SHALL BE MADE TO ANY CONSTRUCTION DOCUMENTS APPLICABLE TO THE WORK WITHOUT NOTIFICATION TO AND CONSENT FROM THE ENGINEER.
26. ALL PREVIOUS SETS, ISSUED PLANS, REVISIONS, OR OTHER VERSIONS OF THESE PLANS ARE VOID AND SHALL NOT BE USED FOR CONSTRUCTION. ANY PLAN SETS OR SHEETS NOT STAMPED, SIGNED, AND DATED BY A LICENSED PROFESSIONAL SHALL BE CONSIDERED PRELIMINARY, FOR REFERENCE ONLY, AND SHALL NOT BE USED FOR CONSTRUCTION.
27. THE CONTRACTOR SHALL REFERENCE ALL ARCHITECTURAL, MECHANICAL, ELECTRICAL, PLUMBING, STRUCTURAL OR OTHER DRAWINGS APPLICABLE TO THE PROJECT. THESE PLANS ARE INTENDED TO BE A PORTION OF THE COMPREHENSIVE CONSTRUCTION DOCUMENTS FOR THE PROJECT. IT IS THE CONTRACTOR'S RESPONSIBILITY TO COORDINATE ALL CONSTRUCTION ACTIVITY WITH ALL APPLICABLE CONSTRUCTION DOCUMENTS. THE CONTRACTOR SHALL NOTIFY THE ENGINEER IMMEDIATELY UPON DISCOVERY OF ANY CONFLICT WITHIN OR BETWEEN ANY ISSUED CONSTRUCTION DOCUMENTS.
28. THE CONTRACTOR SHALL ENSURE ALL CONSTRUCTION ACTIVITY IS CONSISTENT WITH THE RECOMMENDATIONS OF THE GEOTECHNICAL REPORT (BY OTHERS). THE CONTRACTOR SHALL NOTIFY THE ENGINEER IMMEDIATELY UPON DISCOVERY OF ANY DISPARITY OR CONFLICT ENCOUNTERED.
29. NO USE SHALL PRODUCE SMOKE, DUST, NOISE, ODOR OR VIBRATION NOT IN COMPLIANCE WITH MINIMUM PERFORMANCE STANDARDS.
30. ALL RAW MATERIALS AND EQUIPMENT SHALL BE STORED IN COMPLETELY ENCLOSED BUILDINGS OR SHALL OTHERWISE BE SCREENED BY SUCH WALLS, FENCES AND LANDSCAPING TO ATTRACTIVELY CONCEAL AREAS VISIBLE FROM OUTSIDE OF THE LOT BOUNDARIES
31. THERE SHALL BE NO ANIMATED, CHANGEABLE COPY, OR ELECTRONIC MESSAGE SIGNS AS DEFINED BY THE CITY OF MOUNT PLEASANT ERECTED ON SITE.

REVISIONS		
NO.	DESCRIPTION	DATE



LINEAGE METALS -

CHERRY GLEN INDUSTRIAL PARK

JOE FRANK PORTER ROAD

MT. PLEASANT, TN 38474

JUNE 9, 2026

SOMERS CONSULTING SERVICES, LLC.
ANDY SOMERS, P.E.
(256) 603-4888
2206 SHADES CREST RD
HUNTSVILLE, AL 35801

LINEAGE METALS
(925) 330-6747
2737 COUCHVILLE PIKE, SUITE 300
NASHVILLE, TN 37217

DRAWN:
AS

CHECKED:
AS

SHEET NAME:
GENERAL NOTES

SCALE:
AS NOTED

SHEET NO:
4 OF 12

SCS

SOMERS CONSULTING SERVICES, LLC

LINEAGE METALS -
CHERRY GLEN INDUSTRIAL PARK
JOE FRANK PORTER ROAD
MT. PLEASANT, TN 38474

JUNE 9, 2026

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DRAWN:
AS

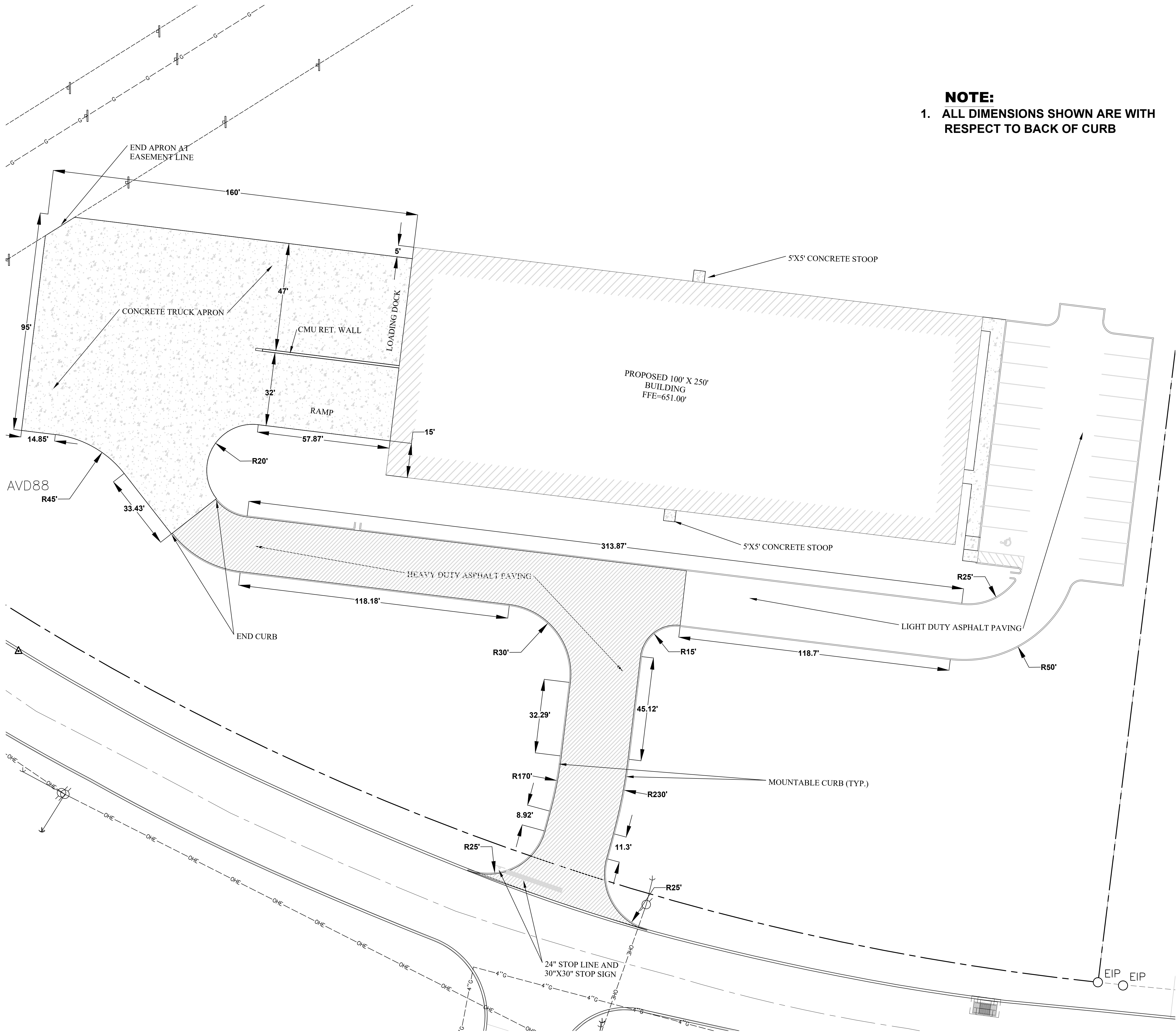
CHECKED:
AS

SHEET NAME:
SITE LAYOUT (OVERALL)

SCALE:
1"=20'

SHEET NO:
5 OF 12

NOTE:
1. ALL DIMENSIONS SHOWN ARE WITH
RESPECT TO BACK OF CURB



SCS

SOMERS CONSULTING SERVICES, LLC

LINEAGE METALS -
CHERRY GLEN INDUSTRIAL PARK

JOE FRANK PORTER ROAD
MT. PLEASANT, TN 38474

JUNE 9, 2026

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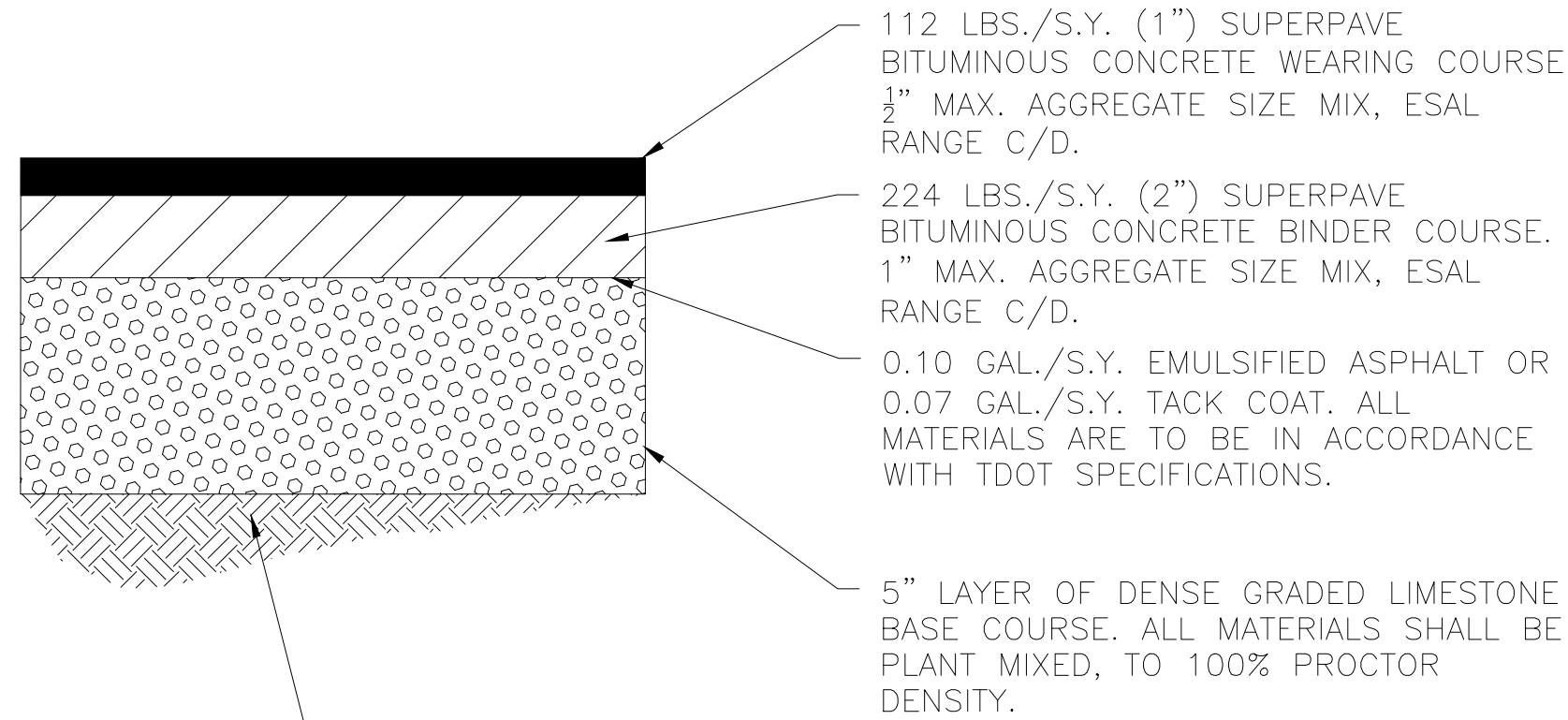
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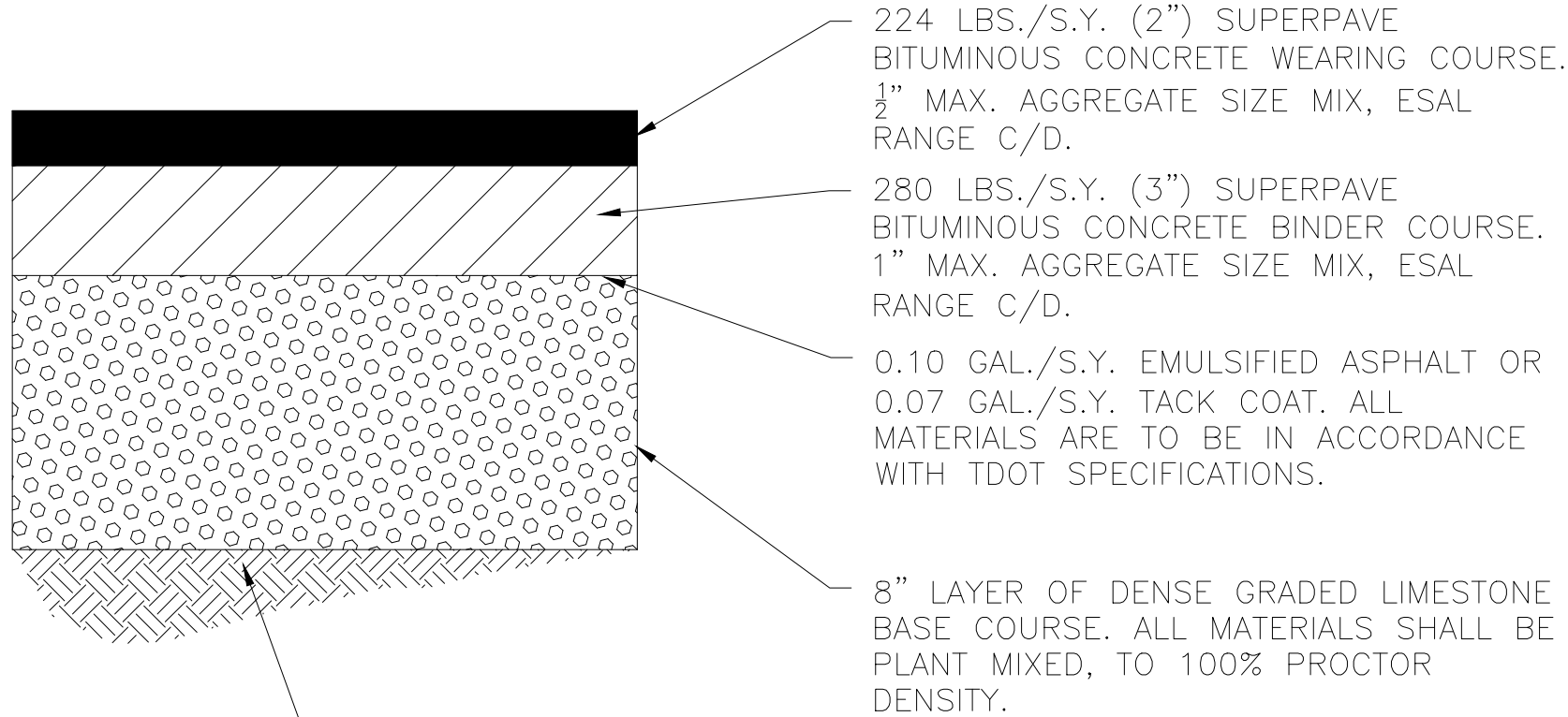
SHEET NAME:
SITE LAYOUT (DETAIL)

SCALE:
1"=10'

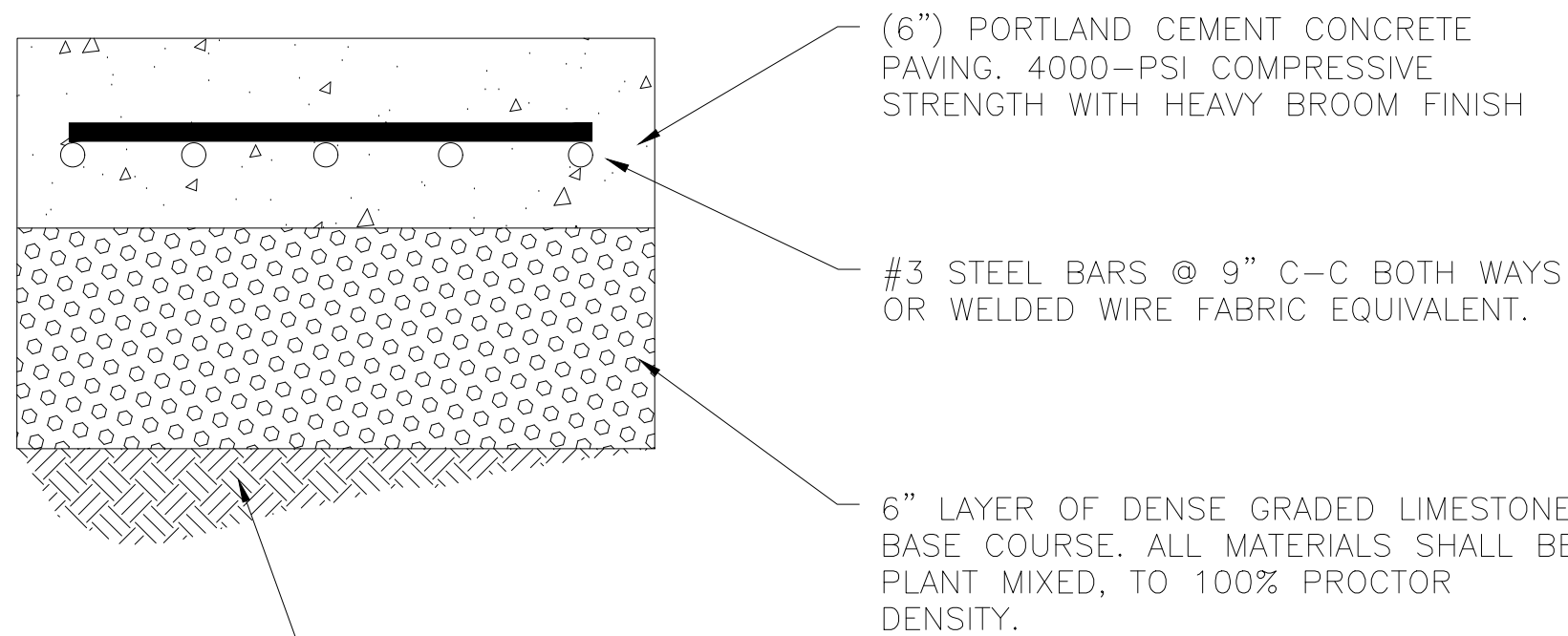
SHEET NO:
6 OF 12



TOP 6" OF SUBGRADE IS TO BE COMPACTED TO 100% PROCTOR DENSITY, BELOW 6" IS TO BE COMPACTED TO 95% PROCTOR DENSITY AS DETERMINED BY AASHTO T-99 COMPACTION TEST.



TOP 6" OF SUBGRADE IS TO BE COMPACTED TO 100% PROCTOR DENSITY, BELOW 6" IS TO BE COMPACTED TO 95% PROCTOR DENSITY AS DETERMINED BY AASHTO T-99 COMPACTION TEST.

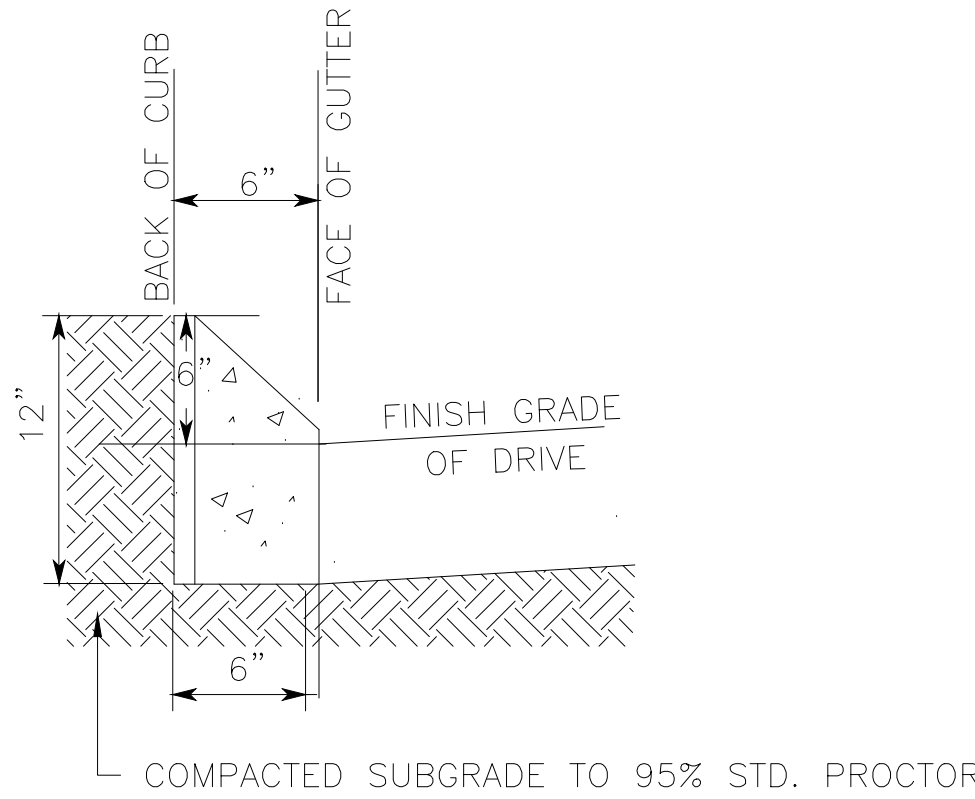
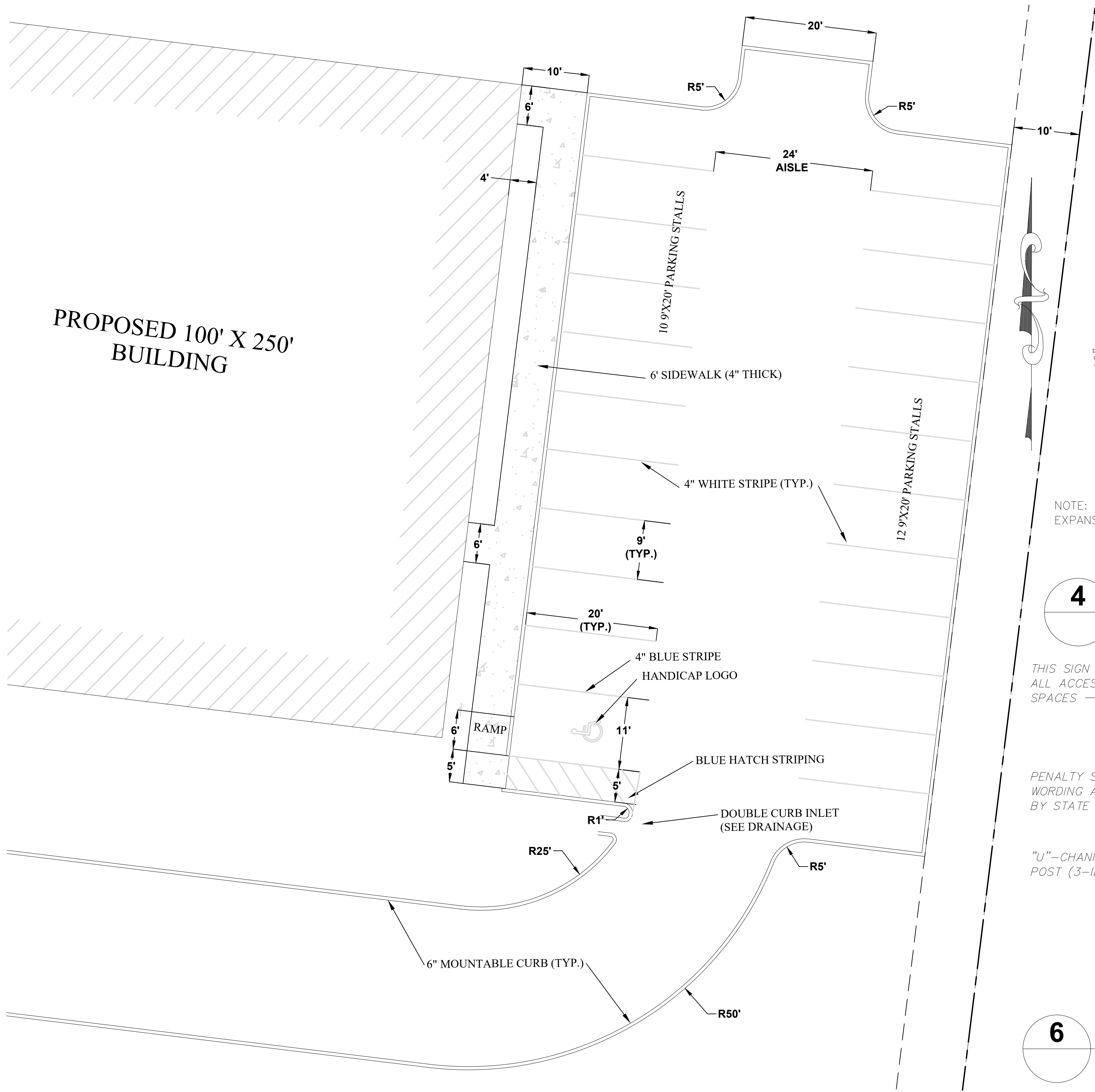


TOP 6" OF SUBGRADE IS TO BE COMPACTED TO 100% PROCTOR DENSITY, BELOW 6" IS TO BE COMPACTED TO 95% PROCTOR DENSITY AS DETERMINED BY AASHTO T-99 COMPACTION TEST.

1 STANDARD ASPHALT PAVING SECTION
N.T.S.

2 HEAVY DUTY ASPHALT PAVING SECTION
N.T.S.

3 CONCRETE APRON PAVING SECTION
N.T.S.



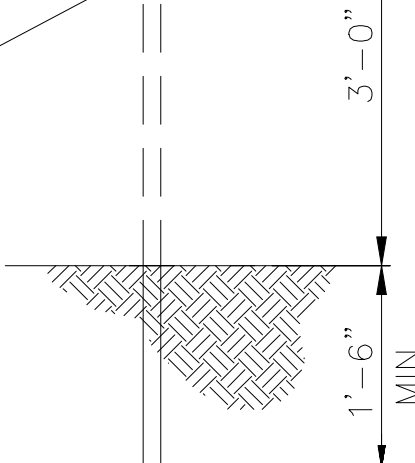
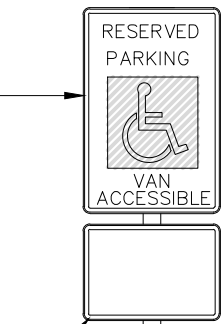
NOTE:
EXPANSION JOINTS EVERY 50', CONSTRUCTION JOINTS EVERY 10'

4 6" MOUNTABLE CURB
N.T.S.

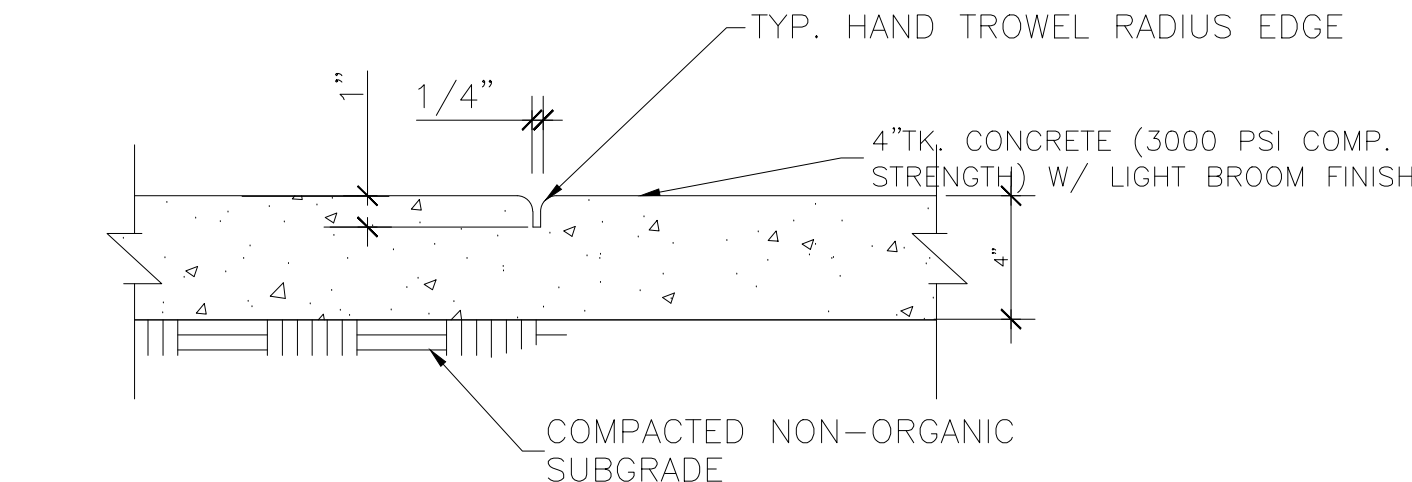
THIS SIGN TYPICAL AT
ALL ACCESSIBLE PARKING
SPACES

PENALTY SIGN WITH
WORDING AS REQUIRED
BY STATE OR LOCAL LAW

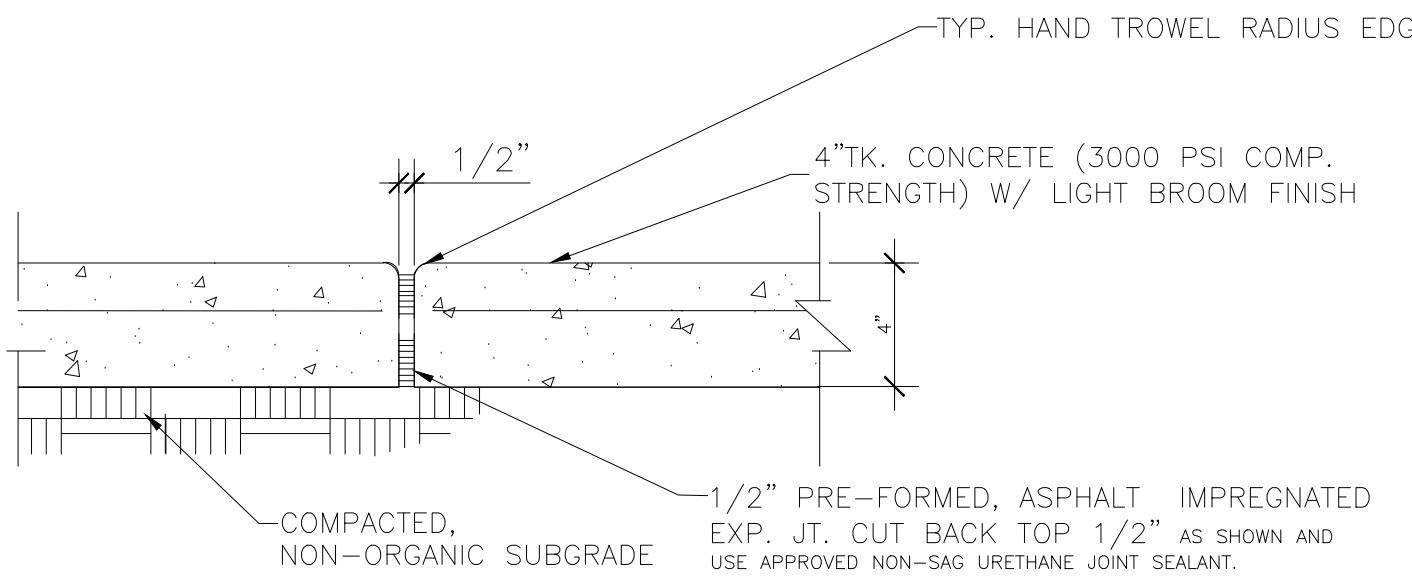
"U"-CHANNEL
POST (3-lbs./ft.)



6 ADA PARKING SIGN
N.T.S.

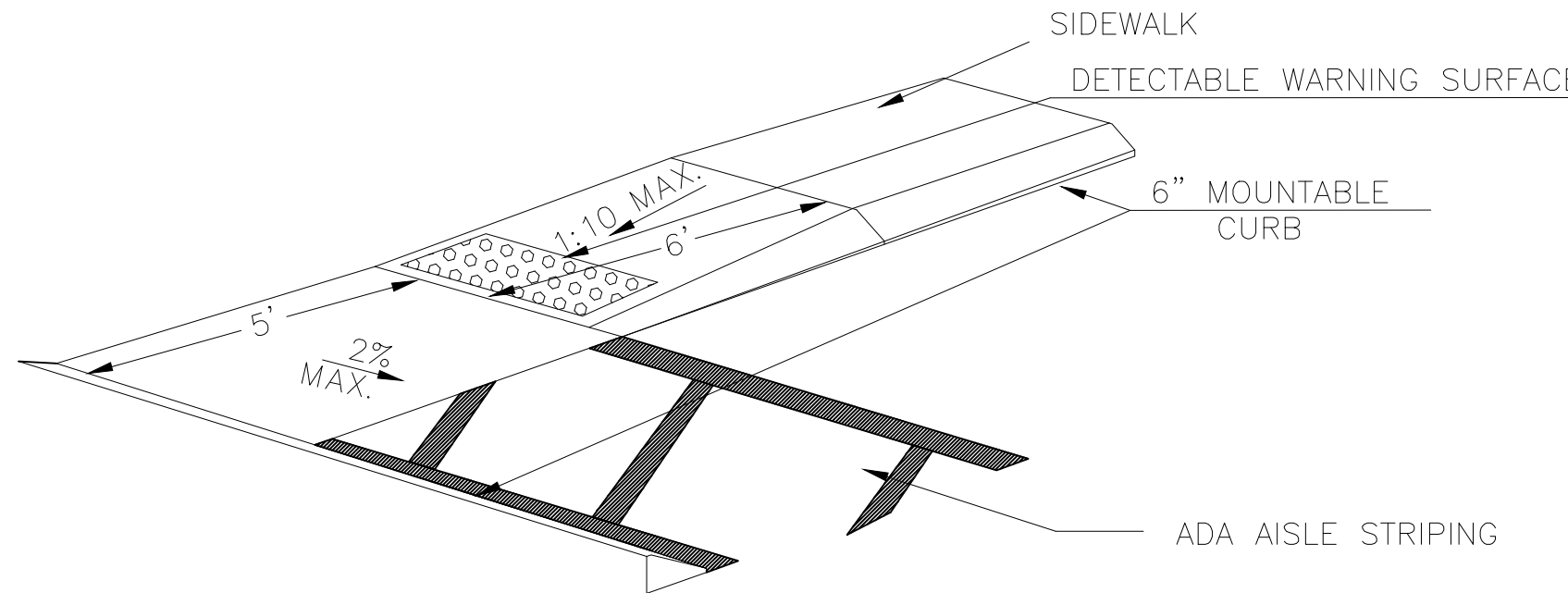


SECTION AT CONTROL JOINT



SECTION AT EXPANSION JOINT

5 SIDEWALK
N.T.S.



NOTE: SEE ALSO GRADING PLAN

7 ADA SIDEWALK RAMP
N.T.S.

JUNE 9, 2026

SHEET NO:
7 OF 12



JUNE 9, 2026

SHEET NO:
8 OF 12

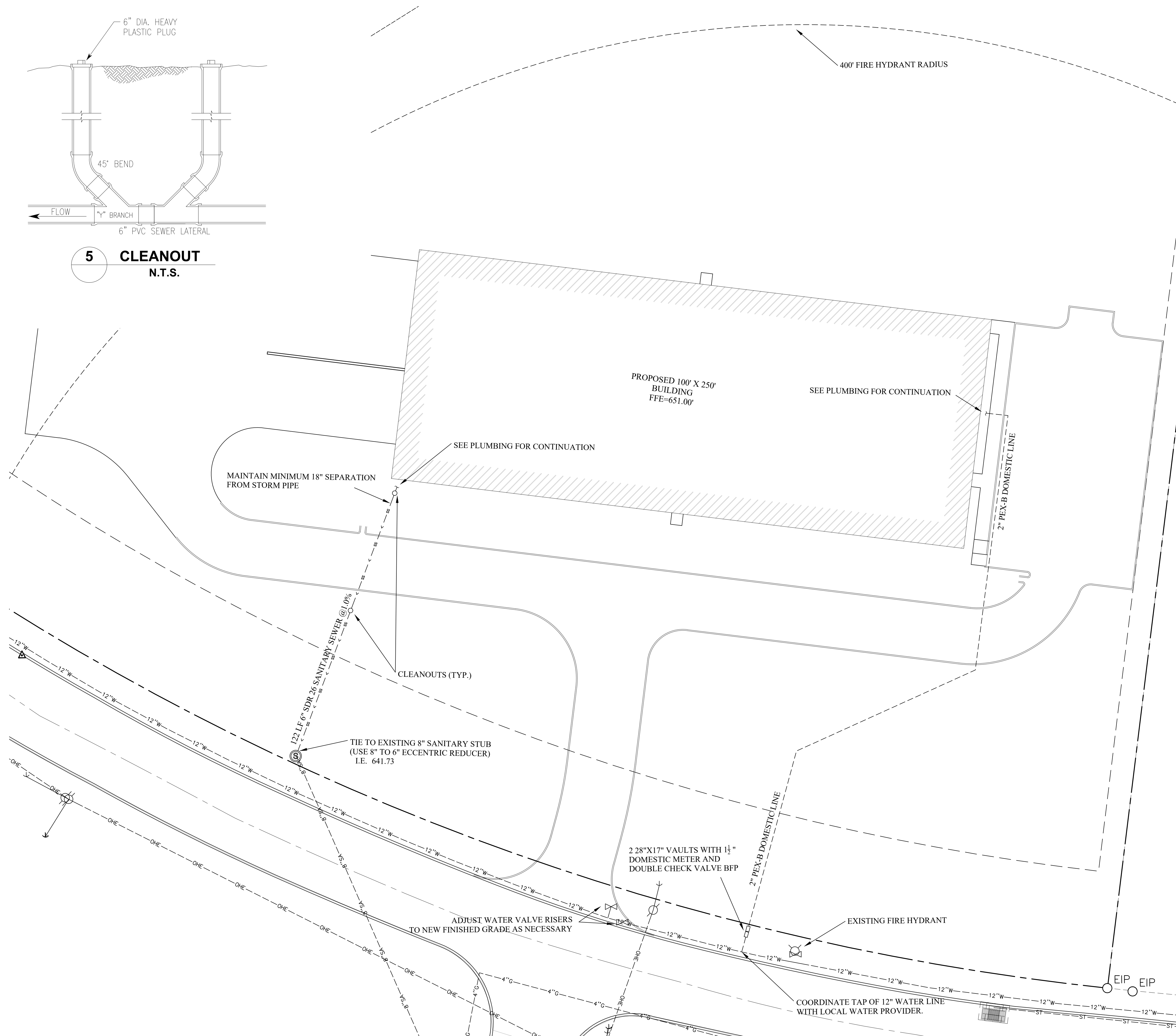


JUNE 9, 2026

LINEAGE METALS
(925) 330-6747
2737 COUCHVILLE PIKE, SUITE 300
NASHVILLE, TN 37217

SHEET NAME:
UTILITY PLAN

798



SCS

SOMERS CONSULTING SERVICES, LLC

LINEAGE METALS - CHERRY GLEN INDUSTRIAL PARK

JOE FRANK PORTER ROAD
MT. PLEASANT, TN 38474

JUNE 9, 2026

NOTES:

- ALL POLE HEIGHTS ARE 10 FEET UNLESS OTHERWISE NOTED.
- CONTRACTOR TO PROVIDE ALL CONDUIT, WIRING, CIRCUITRY, AND OTHER APPURTENANCES AS NECESSARY TO PROVIDE A COMPLETE AND FUNCTIONING SYSTEM AS PART OF BASE BID PRICE WITH NO ADDITIONAL COMPENSATION FOR SAID WORK.



LIGHTING PLAN
SCALE: 1" = 20'

PROPOSED 100' X 250'
BUILDING
FFE=651.00'

LUMINAIRE SCHEDULE								
GALLERY	SYMBOL	LAMP	DESCRIPTION	ELECTRONIC	MOUNTING	HOUSING	FOOT C	NOTES
06		(1) 34W Integrated LED luminaire fixture, 4000K CCT, 4' x 6' x 10' (10' x 10' x 10')	D-Series Size 0 Area Luminaire, P1 Performance Package, 4000K CCT, 4' x 6' x 10' (10' x 10' x 10')	ELECTRONIC	POLE	Luminaire Lighting, DDBX LED P1 40K, 4000K	120V 1P 2W	1/10/2025 SCALE: PHOTOMETRY TYPE IV, SHORT, BUS RATING: 80 - 100 FOOT C: 114.0 2007/10/16-17/16-4228-5228-52/70/10/16/20/25/30/35/40/45/50/55/60/65/70/75/80/85/90/95/100/105/110/115/120/125/130/135/140/145/150/155/160/165/170/175/180/185/190/195/200/205/210/215/220/225/230/235/240/245/250/255/260/265/270/275/280/285/290/295/300/305/310/315/320/325/330/335/340/345/350/355/360/365/370/375/380/385/390/395/400/405/410/415/420/425/430/435/440/445/450/455/460/465/470/475/480/485/490/495/500/505/510/515/520/525/530/535/540/545/550/555/560/565/570/575/580/585/590/595/600/605/610/615/620/625/630/635/640/645/650/655/660/665/670/675/680/685/690/695/700/705/710/715/720/725/730/735/740/745/750/755/760/765/770/775/780/785/790/795/800/805/810/815/820/825/830/835/840/845/850/855/860/865/870/875/880/885/890/895/900/905/910/915/920/925/930/935/940/945/950/955/960/965/970/975/980/985/990/995/1000/1005/1010/1015/1020/1025/1030/1035/1040/1045/1050/1055/1060/1065/1070/1075/1080/1085/1090/1095/1100/1105/1110/1115/1120/1125/1130/1135/1140/1145/1150/1155/1160/1165/1170/1175/1180/1185/1190/1195/1200/1205/1210/1215/1220/1225/1230/1235/1240/1245/1250/1255/1260/1265/1270/1275/1280/1285/1290/1295/1300/1305/1310/1315/1320/1325/1330/1335/1340/1345/1350/1355/1360/1365/1370/1375/1380/1385/1390/1395/1400/1405/1410/1415/1420/1425/1430/1435/1440/1445/1450/1455/1460/1465/1470/1475/1480/1485/1490/1495/1500/1505/1510/1515/1520/1525/1530/1535/1540/1545/1550/1555/1560/1565/1570/1575/1580/1585/1590/1595/1600/1605/1610/1615/1620/1625/1630/1635/1640/1645/1650/1655/1660/1665/1670/1675/1680/1685/1690/1695/1700/1705/1710/1715/1720/1725/1730/1735/1740/1745/1750/1755/1760/1765/1770/1775/1780/1785/1790/1795/1800/1805/1810/1815/1820/1825/1830/1835/1840/1845/1850/1855/1860/1865/1870/1875/1880/1885/1890/1895/1900/1905/1910/1915/1920/1925/1930/1935/1940/1945/1950/1955/1960/1965/1970/1975/1980/1985/1990/1995/2000/2005/2010/2015/2020/2025/2030/2035/2040/2045/2050/2055/2060/2065/2070/2075/2080/2085/2090/2095/2100/2105/2110/2115/2120/2125/2130/2135/2140/2145/2150/2155/2160/2165/2170/2175/2180/2185/2190/2195/2200/2205/2210/2215/2220/2225/2230/2235/2240/2245/2250/2255/2260/2265/2270/2275/2280/2285/2290/2295/2300/2305/2310/2315/2320/2325/2330/2335/2340/2345/2350/2355/2360/2365/2370/2375/2380/2385/2390/2395/2400/2405/2410/2415/2420/2425/2430/2435/2440/2445/2450/2455/2460/2465/2470/2475/2480/2485/2490/2495/2500/2505/2510/2515/2520/2525/2530/2535/2540/2545/2550/2555/2560/2565/2570/2575/2580/2585/2590/2595/2600/2605/2610/2615/2620/2625/2630/2635/2640/2645/2650/2655/2660/2665/2670/2675/2680/2685/2690/2695/2700/2705/2710/2715/2720/2725/2730/2735/2740/2745/2750/2755/2760/2765/2770/2775/2780/2785/2790/2795/2800/2805/2810/2815/2820/2825/2830/2835/2840/2845/2850/2855/2860/2865/2870/2875/2880/2885/2890/2895/2900/2905/2910/2915/2920/2925/2930/2935/2940/2945/2950/2955/2960/2965/2970/2975/2980/2985/2990/2995/3000/3005/3010/3015/3020/3025/3030/3035/3040/3045/3050/3055/3060/3065/3070/3075/3080/3085/3090/3095/3100/3105/3110/3115/3120/3125/3130/3135/3140/3145/3150/3155/3160/3165/3170/3175/3180/3185/3190/3195/3200/3205/3210/3215/3220/3225/3230/3235/3240/3245/3250/3255/3260/3265/3270/3275/3280/3285/3290/3295/3300/3305/3310/3315/3320/3325/3330/3335/3340/3345/3350/3355/3360/3365/3370/3375/3380/3385/3390/3395/3400/3405/3410/3415/3420/3425/3430/3435/3440/3445/3450/3455/3460/3465/3470/3475/3480/3485/3490/3495/3500/3505/3510/3515/3520/3525/3530/3535/3540/3545/3550/3555/3560/3565/3570/3575/3580/3585/3590/3595/3600/3605/3610/3615/3620/3625/3630/3635/3640/3645/3650/3655/3660/3665/3670/3675/3680/3685/3690/3695/3700/3705/3710/3715/3720/3725/3730/3735/3740/3745/3750/3755/3760/3765/3770/3775/3780/3785/3790/3795/3800/3805/3810/3815/3820/3825/3830/3835/3840/3845/3850/3855/3860/3865/3870/3875/3880/3885/3890/3895/3900/3905/3910/3915/3920/3925/3930/3935/3940/3945/3950/3955/3960/3965/3970/3975/3980/3985/3990/3995/4000/4005/4010/4015/4020/4025/4030/4035/4040/4045/4050/4055/4060/4065/4070/4075/4080/4085/4090/4095/4100/4105/4110/4115/4120/4125/4130/4135/4140/4145/4150/4155/4160/4165/4170/4175/4180/4185/4190/4195/4200/4205/4210/4215/4220/4225/4230/4235/4240/4245/4250/4255/4260/4265/4270/4275/4280/4285/4290/4295/4300/4305/4310/4315/4320/4325/4330/4335/4340/4345/4350/4355/4360/4365/4370/4375/4380/4385/4390/4395/4400/4405/4410/4415/4420/4425/4430/4435/4440/4445/4450/4455/4460/4465/4470/4475/4480/4485/4490/4495/4500/4505/4510/4515/4520/4525/4530/4535/4540/4545/4550/4555/4560/4565/4570/4575/4580/4585/4590/4595/4600/4605/4610/4615/4620/4625/4630/4635/4640/4645/4650/4655/4660/4665/4670/4675/4680/4685/4690/4695/4700/4705/4710/4715/4720/4725/4730/4735/4740/4745/4750/4755/4760/4765/4770/4775/4780/4785/4790/4795/4800/4805/4810/4815/4820/4825/4830/4835/4840/4845/4850/4855/4860/4865/4870/4875/4880/4885/4890/4895/4900/4905/4910/4915/4920/4925/4930/4935/4940/4945/4950/4955/4960/4965/4970/4975/4980/4985/4990/4995/5000/5005/5010/5015/5020/5025/5030/5035/5040/5045/5050/5055/5060/5065/5070/5075/5080/5085/5090/5095/5100/5105/5110/5115/5120/5125/5130/5135/5140/5145/5150/5155/5160/5165/5170/5175/5180/5185/519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SCS

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CHERRY GLEN INDUSTRIAL PARK

JOE FRANK PORTER ROAD
MT. PLEASANT, TN 38474

JUNE 9, 2026

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ANDY SOMERS, P.E.
(256) 603-4888
2206 SHADES CREST RD
HUNTSVILLE, AL 35801

LINEAGE METALS
(925) 330-6747
2737 COUCHVILLE PIKE, SUITE 300
NASHVILLE, TN 37217

DRAWN:
AS

CHECKED:
AS

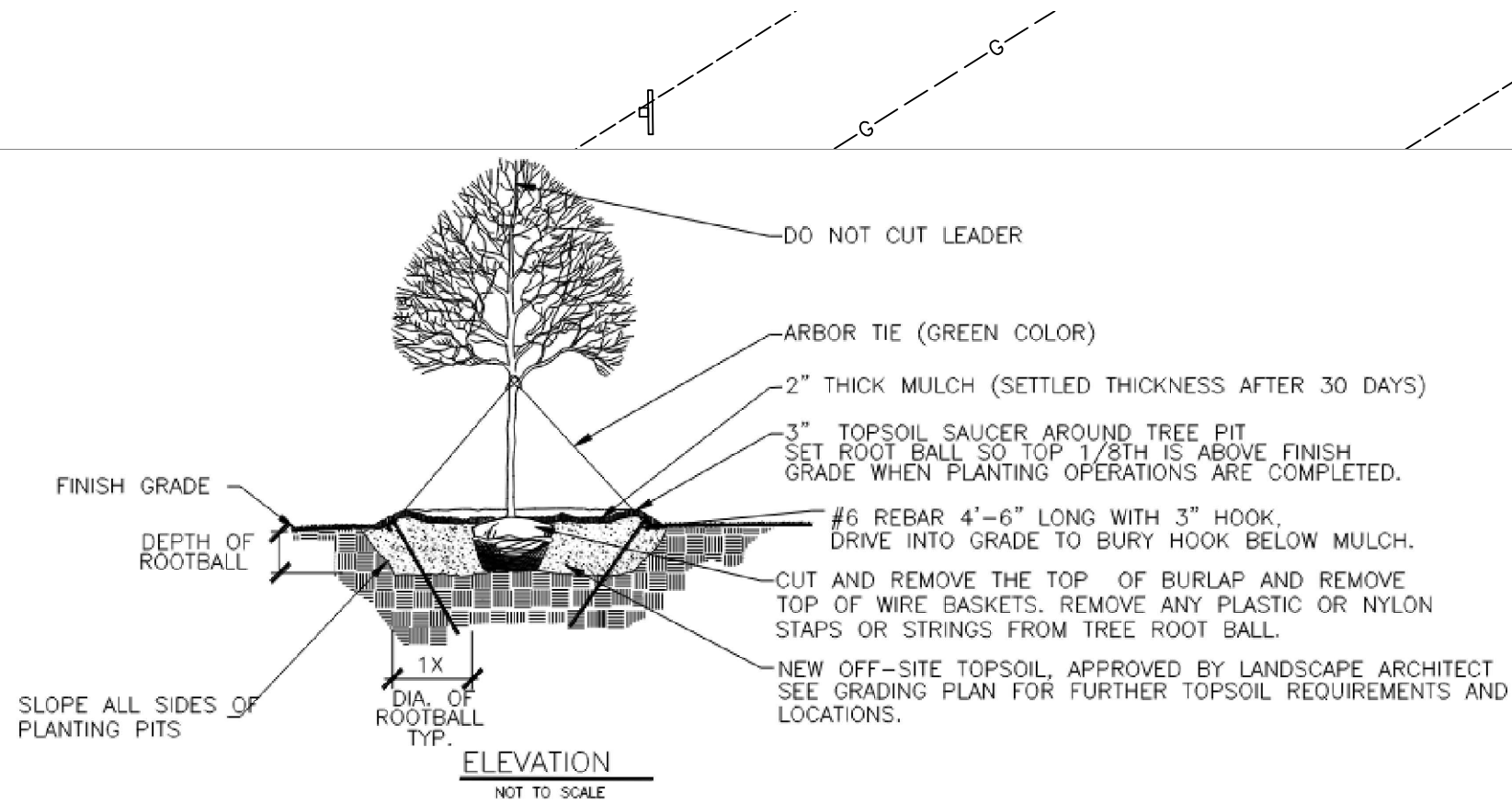
SHEET NAME:
LANDSCAPE PLAN

SCALE:
1"=20'

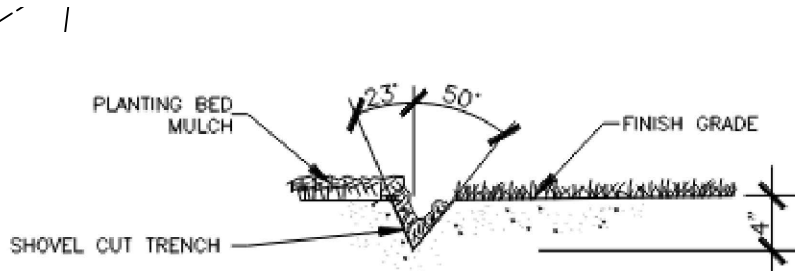
SHEET NO:
11 OF 12

PLANTING SCHEDULE

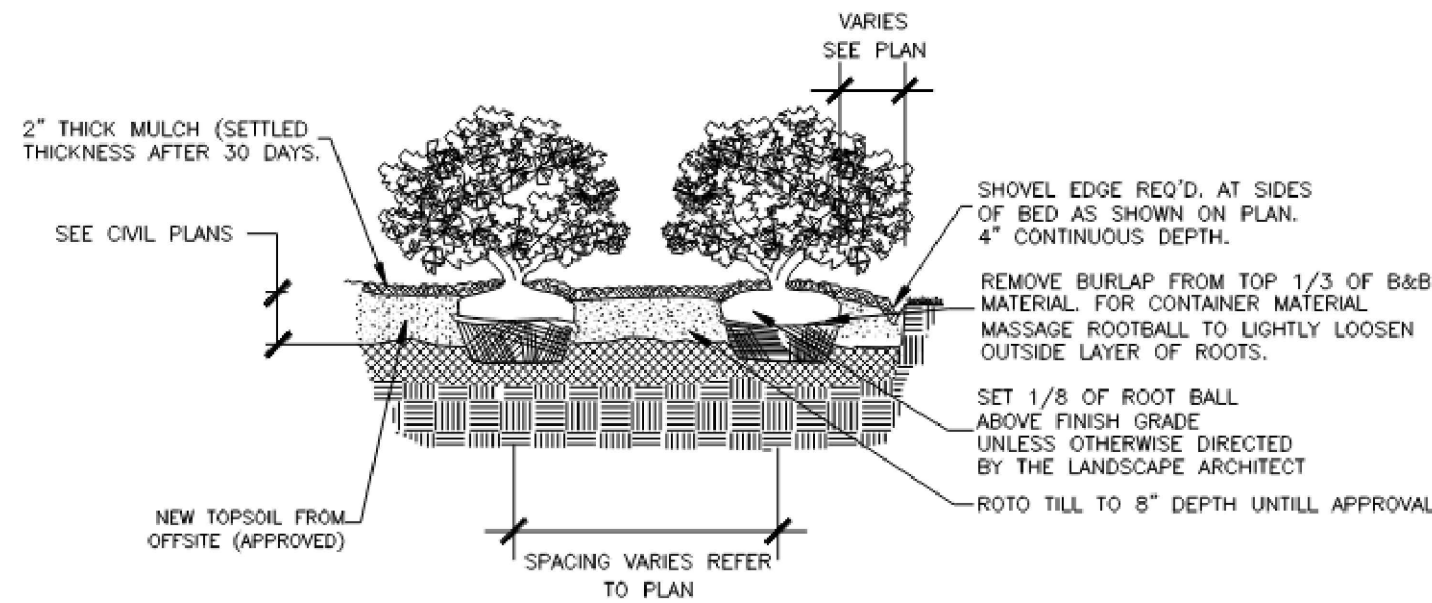
COMMON NAME	SCIENTIFIC NAME	SIZE	COND.	NOTES
SIOUX CREPE MYRTLE	LAGERSTROEMIA "SIOUX"	7'-8' HEIGHT, MULTISTEM	B&B/WB	FULL & MATCHED
NUTTALL OAK	QUERCUS NUTTALLII	2½" CALIBER	B&B/WB	FULL SYMETRICAL HEAD, MATCHING IN HEIGHT AND SPREAD
CARISSA HOLLY	ILEX CRENATA "CARISSA"	MIN. 18" SPREAD, 9" HEIGHT	MIN. 3 GAL.	FULL & MATCHED
SWITCHGRASS	PANICUM VIRGATUM	MIN. 4" HEIGHT	MIN. 1 QT.	STAGGERED PLANTINGS, MINIMUM 1' FROM ANY CONCRETE EDGE



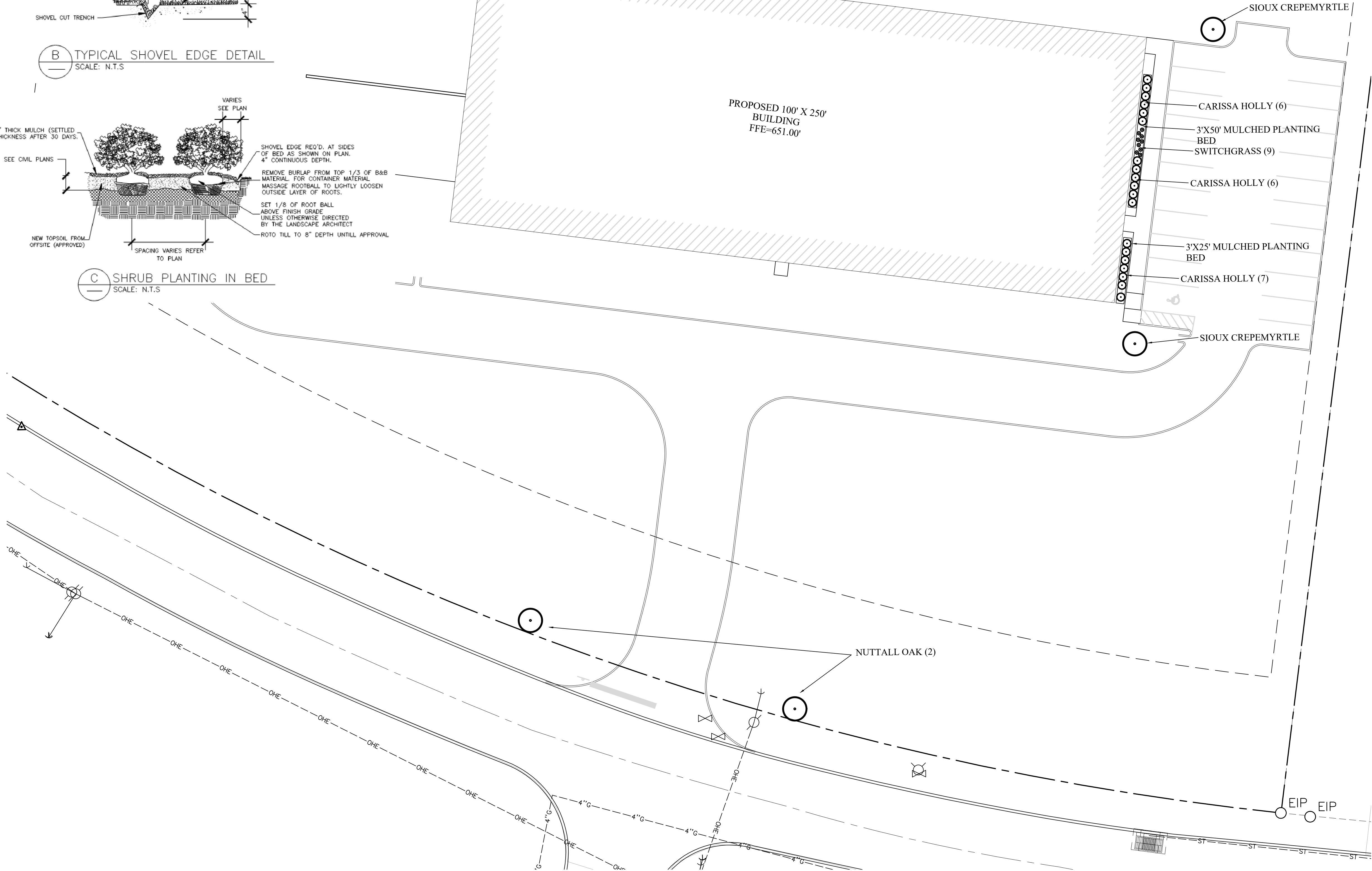
A TREE PLANTING DETAILS (INCLUDING MULTI STEM)
SCALE: N.T.S.



B TYPICAL SHOVEL EDGE DETAIL
SCALE: N.T.S.



C SHRUB PLANTING IN BED
SCALE: N.T.S.



SCS

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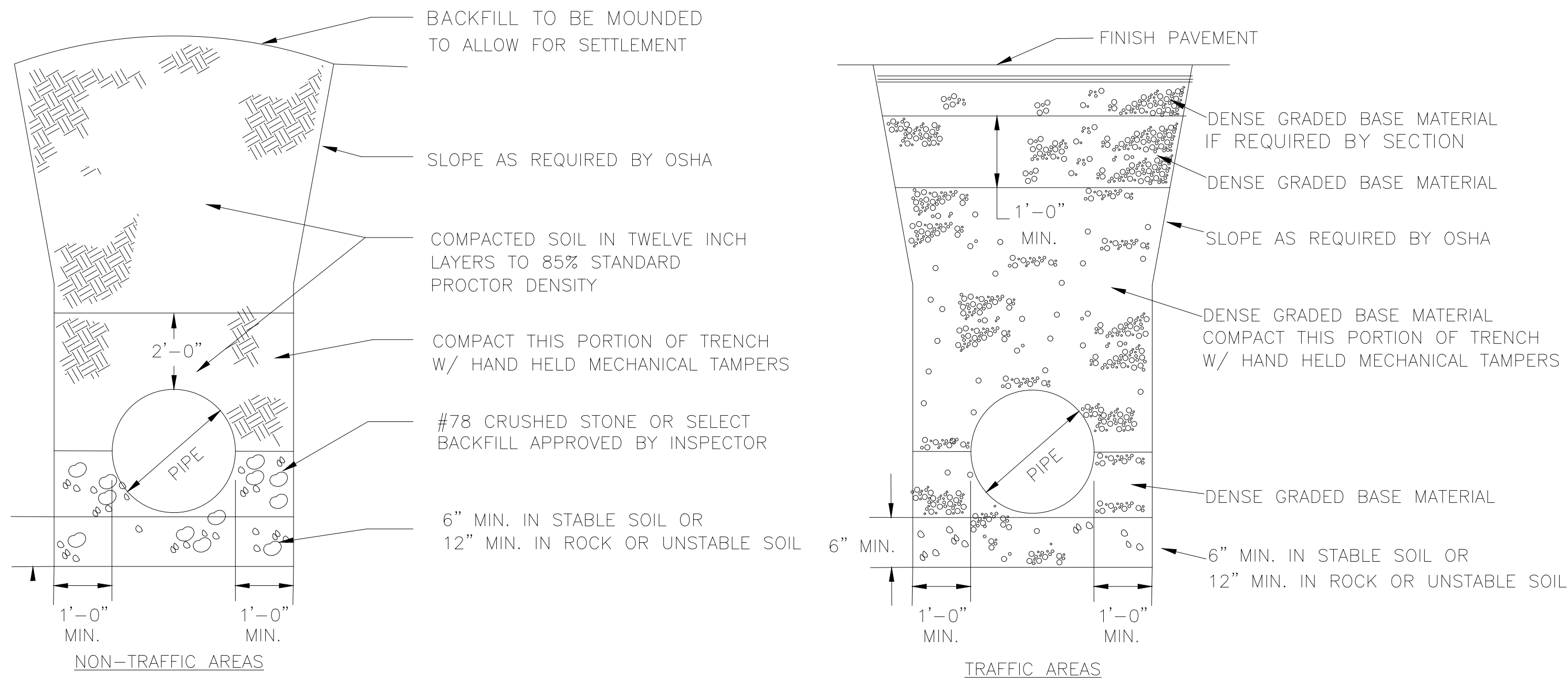
SHEET NAME:
ADDITIONAL DETAILS

SCALE:
NONE

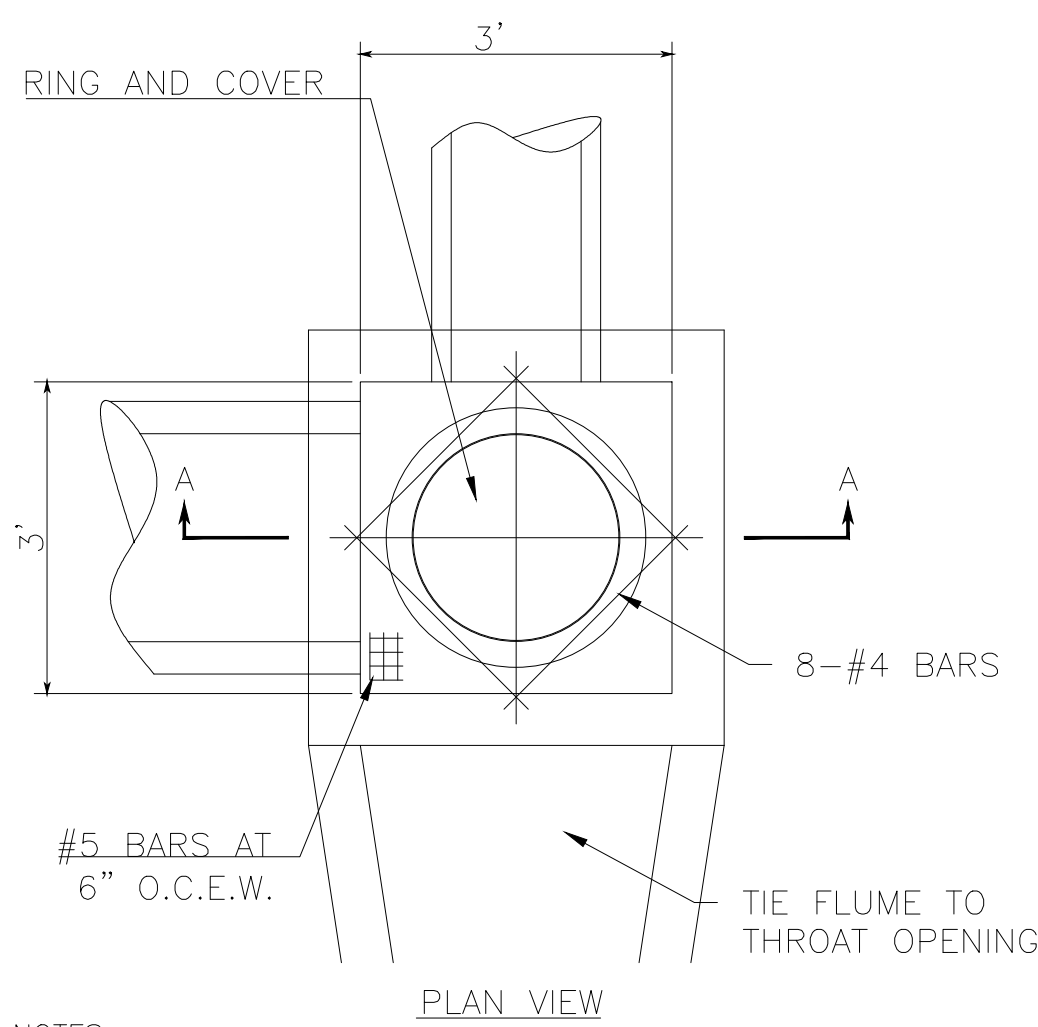
SHEET NO:
12 OF 12

REVISIONS

NO.	DESCRIPTION	DATE



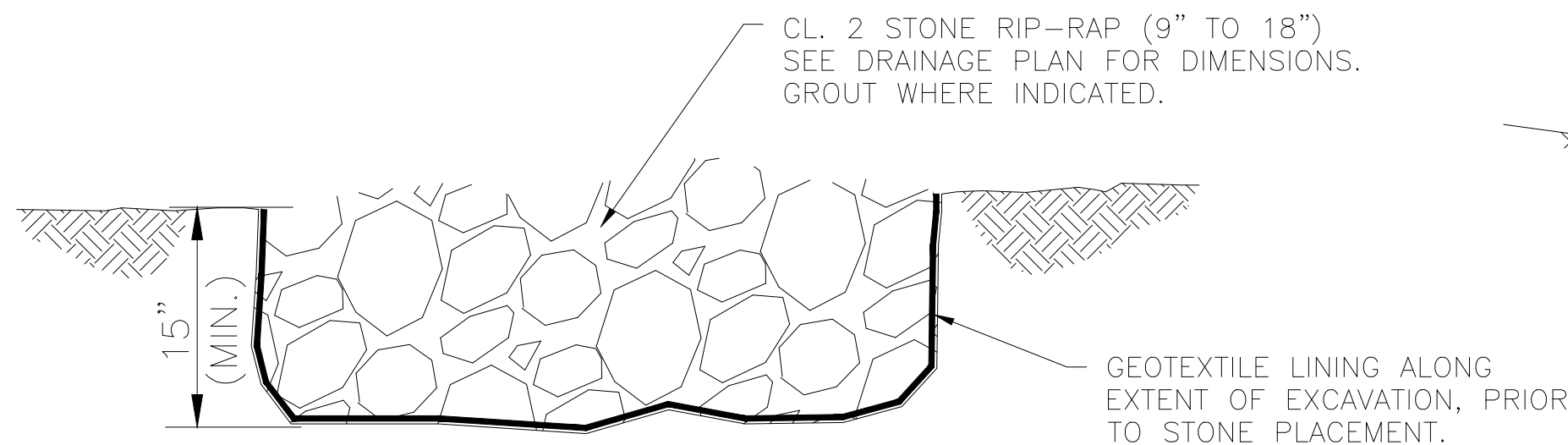
1 STORM SEWER PIPE BEDDING
N.T.S.



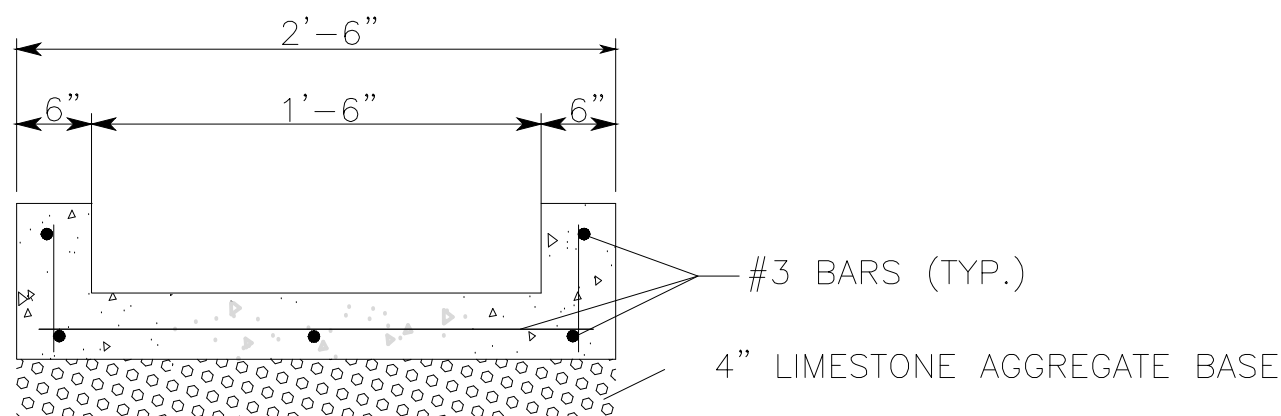
2 TYPE 'A' SILT FENCE
N.T.S.

- NOTES:
- DIMENSION "A" IS DETERMINED BY THE LARGEST DIAMETER PIPE ENTERING THE OPEN THROAT INLET.
 - STEPS ARE REQUIRED ON ALL INLETS WHEN DIMENSION FROM BOTTOM SLAB FLOW LINE TO TOP OF TOP SLAB IS GRATER THAN 4'-0".
 - ALL CONCRETE SHALL BE CALSS "A" AND SHALL DEVELOP A MINIMUM COMPRESSIVE STRENGTH OF 3000 PSI IN 28 DAYS.
 - REINFORCING SHALL BE INTERMEDIATE GRADE DEFORMED BARS AND SHALL CONFORM TO THE REQUIREMENTS OF THE STANDARD SPECIFICATIONS FOR BILLET STEEL CONCRETE REINFORCEMENT BARS, ASTM A-15 AND DEFORMATIONS CONFORMING TO ASTM A-305.
 - PROVIDE CONCRETE APRON AT THROAT OPENINGS.

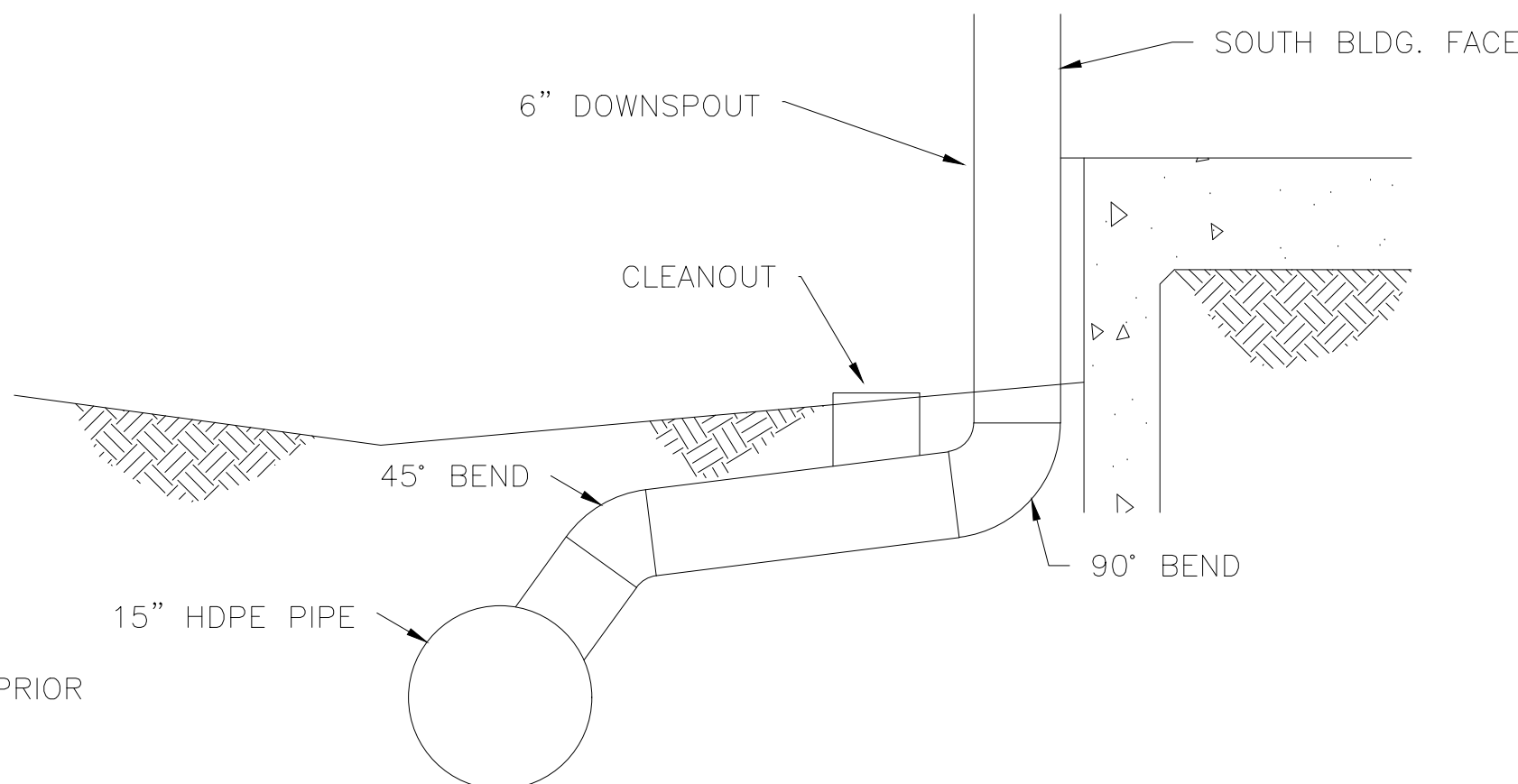
3 THROAT INLET
N.T.S.



4 CONCRETE FLUME
N.T.S.

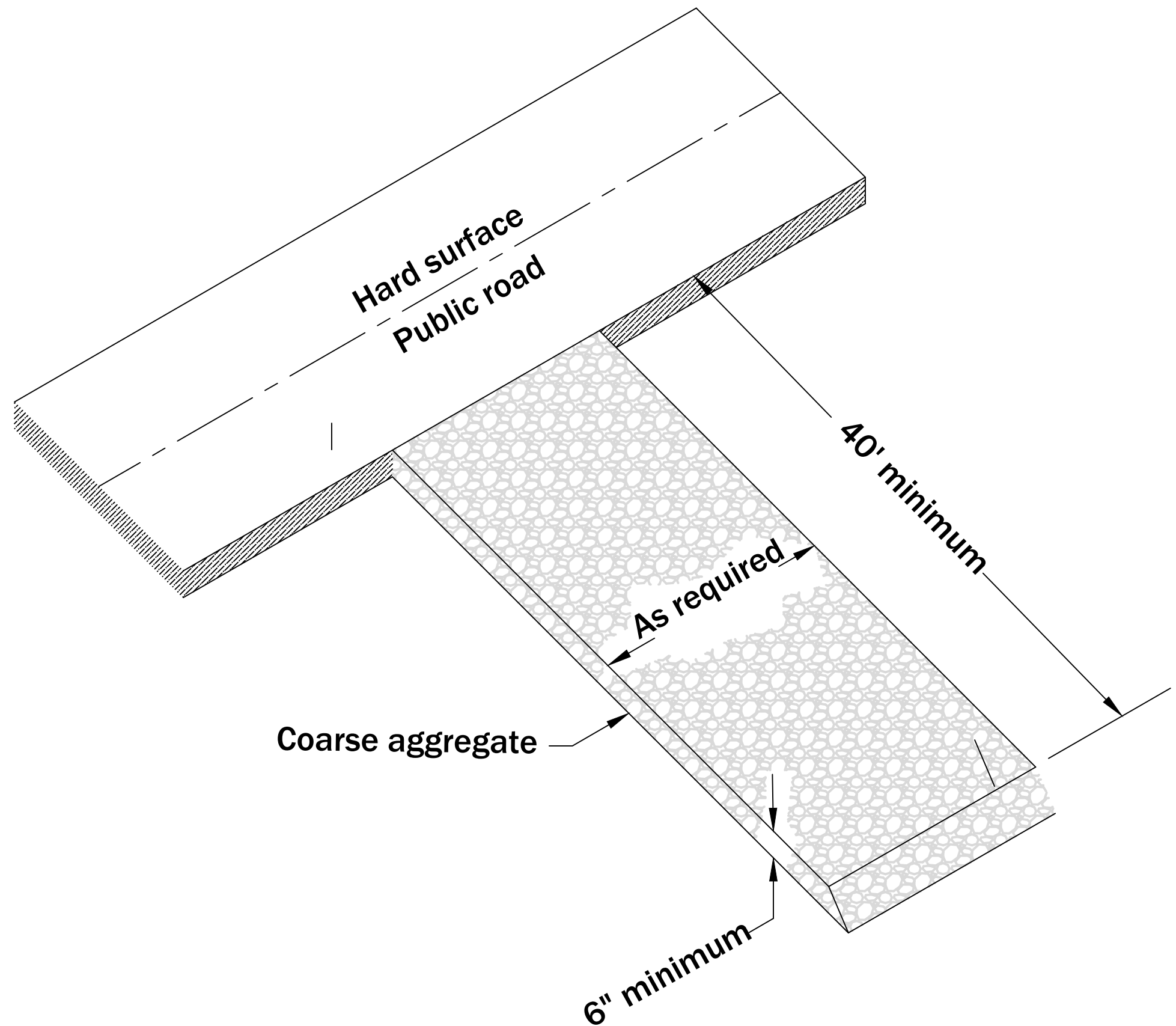


5 STONE RIP-RAP DISSIPATOR
N.T.S.



6 DOWNSPOUT CONNECTIONS
N.T.S.

7 CONSTRUCTION ENTRANCE
N.T.S.



MAINTENANCE
SEDIMENT SHALL BE REMOVED ONCE IT HAS ACCUMULATED TO ONE-HALF THE ORIGINAL HEIGHT OF THE BARRIER. FILTER FABRIC SHALL BE REPLACED WHENEVER IT HAS DETERIORATED TO SUCH AN EXTENT THAT THE EFFECTIVENESS OF THE FABRIC IS REDUCED (APPROXIMATELY SIX MONTHS). TEMPORARY SEDIMENT BARRIERS SHALL REMAIN IN PLACE UNTIL DISTURBED AREAS HAVE BEEN PERMANENTLY STABILIZED. ALL SEDIMENT ACCUMULATED AT THE BARRIER SHALL BE REMOVED AND PROPERLY DISPOSED OF BEFORE THE BARRIER IS REMOVED.

SILT FENCE
THE MANUFACTURER SHALL HAVE EITHER AN APPROVED COLOR MARK YARN IN THE FABRIC OR LABEL THE FABRICATED SILT FENCE WITH BOTH THE MANUFACTURER AND FABRIC NAME EVERY 100 FEET.

THE TEMPORARY SILT FENCE SHALL BE INSTALLED ACCORDING TO THIS SPECIFICATION, AS SHOWN ON THE PLANS OR AS DIRECTED BY THE ENGINEER. FOR INSTALLATION OF THE FABRIC, SEE DETAIL.

USE THREE PLASTIC TIES PER POST (50 LB. TEST STRENGTH), LOCATED IN THE TOP 8" OF THE FABRIC, WITH EACH TIE HUNG ON A POST NIPPLE, PLACED DIAGONALLY TO ATTACH AS MANY VERTICAL AND HORIZONTAL THREADS OF THE GEOTEXTILE FABRIC AND WOVEN WIRE FENCE BACKING AS POSSIBLE. THE FABRIC SHALL ALSO BE FASTENED SECURELY TO THE WIRE BACKING WITH PLASTIC TIES SPACED EVERY 24 INCHES ALONG THE TOP.

POST INSTALLATION SHALL START AT THE CENTER OF THE LOW POINT (IF APPLICABLE) WITH THE REMAINING POSTS SPACED MINIMUM 4 FEET, MAXIMUM 10 FEET APART FOR TYPE "A" SILT FENCE. ONLY STEEL POSTS SHALL BE USED WITH TYPE "A" SILT FENCE. POSTS SHALL BE 4' IN LENGTH, 1.3 LBS/FT.

Site Plan- Lineage Metals, Joe Frank Porter Road

July 14, 2026

The applicant is requesting approval of a site plan for Lineage Metals located on the west end of Joe Frank Porter Road in the Cherry Glen Industrial Park. The property is 6.85 acres and zoned IL (Light Industrial). The site plan has the elevations of the proposed 25,000 square foot building all as one color, we recommend discussing this and seeing if the proposed elevations align with the Cherry Glen Industrial Park.

The landscape plan needs to include the size of all proposed plant materials according to Section 14-1104- *Landscaping, screening, and tree preservation* in the Zoning Ordinance.

This item was brought to the Planning Commission on 6/9/2026, where it was deferred due to outstanding stormwater comments.

Items you may want to require as a condition of approval are:

- Including a landscape plan meets the requirements listed above from the Zoning Ordinance.
- Correct references to “City of Mount Pleasant” on the “Plat of Survey” sheet.

The Planning Commission may approve or deny the request based on your deliberation.



July 7, 2026

Mr. Chris Brooks
Planning & Building Codes Director
City of Mount Pleasant
209 Bond Street
Mount Pleasant, TN 38474

Dear Mr. Brooks,

Thank you for your notification of the updated site plans submitted to the City of Mount Pleasant for the Lineage Metals Building in Cherry Glen Industrial Park. The Maury County Industrial Review Committee is required to provide written response regarding its approval or disapproval within 45 days of receipt of submitted plans.

The site plans for Lineage Metals were distributed to the Maury County Industrial Review Committee and an approval vote by the members was conducted via email. This letter serves as written approval of the submitted plans. Please note that this approval is given with the understanding that the building owner and occupant will comply with the following requirements as required within the Cherry Glen Business Park Restrictions:

Requirements:

- 1) No use shall produce smoke, dust, noise, odor or vibration not in compliance with minimum performance standards.
- 2) All raw materials and equipment shall be stored in completely enclosed buildings or shall otherwise be screened by such walls, fences and landscaping to attractively conceal areas visible from outside of the lot boundaries.
- 3) Landscaped parking and storage areas shall be properly maintained in a slightly and well-kept condition.
- 4) All landscaping required shall be completed within 90 days after the substantial completion of construction of any building.



- 5) All unused and non-landscaped area that is planned for future development shall be seeded, if necessary, and kept free of weeds, other unsightly plant growth, stored material, rubbish and debris.
- 6) All dumpster areas shall be appropriately screened and landscaped.
- 7) These types of signs shall be prohibited within Cherry Glen Industrial Park:
 - a. Animated Signs
 - b. Changeable Copy Signs
 - c. Electronic Message Display Signs

We ask that you please share this approval letter and a copy of the Cherry Glen Business Park Restrictions with the applicant of the site plans for their records.

Thank you again for the notification of site plan submittal and for your teamwork and cooperation. Please let us know if there are any questions or concerns.

Sincerely,

Rupa DeLoach

Rupa DeLoach
Director, Economic Development
Maury County Chamber & Economic Alliance



LINEAGE METALS - CHERRY GLEN INDUSTRIAL PARK

MAURY COUNTY, TN
MT. PLEASANT
STORM WATER POLLUTION PREVENTION PLAN
(SWPPP)

SWPPP PREPARED ON 05/01/26

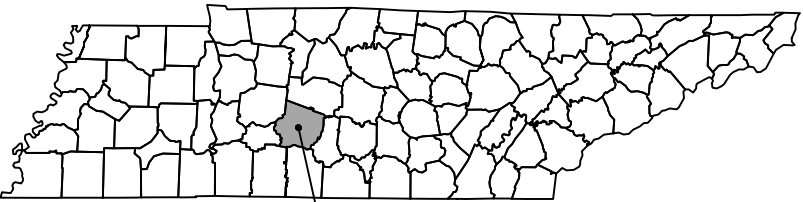
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NOTE: CITATIONS IN PARENTHESIS INDICATE SECTIONS OF THE CURRENT CGP.



LOCATION MAP
1" = 1000'



THIS SITE IS LOCATED WITHIN PRIORITY WATERSHED IN THE LOWER DUCK RIVER WATERSHED.

RUNOFF FROM THIS SITE DISCHARGES INTO SUGAR FORK.

TOTAL PARCEL AREA = 6.85 AC
DISTURBED AREA = 2.84 AC



REVISIONS		
NO.	DESCRIPTION	DATE

LINEAGE METALS - CHERRY GLEN
INDUSTRIAL PARK
JOE FRANK PORTER ROAD
MT. PLEASANT, TN 38474

MAY 29, 2026

SOMERS CONSULTING SERVICES, LLC.
ANDY SOMERS, P.E.
(256) 603-4888
2206 SHADES CREST RD
HUNTSVILLE, AL 35801

HILL CONSTRUCTION, LLC
(256) 710-7333
1117 NORTH LOCUST AVENUE
LAWRENCEBURG, TN 38464

DRAWN:
AG

CHECKED:
AS

SHEET NAME:
COVER

SCALE:
NO SCALE

SHEET NO:
1 OF 12



1. SWPPP REQUIREMENTS (5.0.)

1.1. HAS THE SWPPP TEMPLATE BEEN PREPARED BY AN INDIVIDUAL THAT HAS THE FOLLOWING LICENSING AND/OR CERTIFICATIONS (5.2)?

☒ YES (CHECK ALL THAT APPLY BELOW) OR ☐ NO

☐ CERTIFIED PROFESSIONAL IN EROSION AND SEDIMENT CONTROL (CPESC)

☒ A TN LICENSED PROFESSIONAL ENGINEER OR LANDSCAPE ARCHITECT

☐ HAS SUCCESSFULLY COMPLETED TDEC LEVEL II COURSE

1.2. DO THE EPSC PLANS INVOLVE STRUCTURAL DESIGN, HYDRAULIC, HYDROLOGIC OR OTHER ENGINEERING CALCULATIONS FOR EPSC STRUCTURAL MEASURES (E.G. SEDIMENT BASINS) (5.2.)? YES ☐ NO ☒

IF YES, HAVE THE EPSC PLANS BEEN PREPARED, STAMPED AND CERTIFIED BY A TN LICENSED PROFESSIONAL ENGINEER OR LANDSCAPE ARCHITECT? ☐ YES ☐ NO

1.3. DO THE PROJECT STORMWATER OUTFALLS DISCHARGE INTO THE FOLLOWING (6.4.1.)? ☐ YES (CHECK ALL THAT APPLY BELOW) ☒ NO

☐ WATERS WITH UNAVAILABLE PARAMETERS (303d FOR SILTATION)

☐ EXCEPTIONAL TENNESSEE WATERS (ETW)

2. SITE DESCRIPTION (5.5.1.)

2.1. PROJECT LIMITS (5.5.1.f): REFER TO TITLE SHEET

2.2. TOTAL PROJECT AREA (5.5.1.b): 6.85 ACRES

2.3. TOTAL AREA TO BE DISTURBED (5.5.1.b): 2.84 ACRES

2.4. PROJECT DESCRIPTION (5.5.1.a): COMMERCIAL SITE

TITLE: LINEAGE METALS - CHERRY GLEN INDUSTRIAL PARK
COUNTY: MAURY

2.5. SITE MAP(S) (3.2.2.): REFER TO TITLE SHEET

2.6. DESCRIPTION OF EXISTING SITE TOPOGRAPHY (5.5.1.c): REFER TO EXISTING CONTOURS SHEET(S) C-100 , SITE LOCATION MAP, AND THE OUTFALL TABLE IN SECTION 4.2.

2.7. IF THE PROJECT WILL EXCEED 50 ACRES OF DISTURBANCE AT ANY POINT DURING THE LIFESPAN OF THE PROJECT THE FOLLOWING CONDITIONS MUST BE MET (5.5.3.3)

2.7.1. TDEC SHALL BE NOTIFIED. (5.5.3.3.a)

2.7.2. A GEOSPATIAL FILE IDENTIFYING THE PROJECT AREAS BOUNDARIES SHALL BE SUBMITTED TO TDEC. (5.5.3.3.e)

2.7.3. A MONITORING PLAN SHALL BE PREPARED FOR OUTFALLS DRAINING 10 OR MORE ACRES, OR 5 ACRES IF DRAINING TO WATERS WITH UNAVAILABLE PARAMETERS (303d SILTATION) OR AN ETW. (5.5.3.3.f)

2.7.4. SITE ASSESSMENTS SHALL BE CONDUCTED ON A QUARTERLY BASIS (5.5.3.3.b AND 5.5.3.8).

2.7.5. INSPECTIONS SHALL BE CONDUCTED TWICE PER WEEK AND FOLLOWING ANY RAINFALL EVENT OF MORE THAN 0.5 INCHES IN 24 HOURS (5.5.3.3.c AND 5.5.3.9).

2.8. MAJOR SOIL DISTURBING ACTIVITIES (5.5.1.a) (CHECK ALL THAT APPLY):

☒ CLEARING AND GRUBBING

☒ EXCAVATION

☒ CUTTING AND FILLING

☒ FINAL GRADING AND SHAPING

☐ UTILITIES

☐ OTHER (DESCRIBE): _____

2.9. ARE THERE ANY SEASONAL LIMITATIONS ON WORK? ☐ YES ☒ NO

IF YES, LIST THE CORRESPONDING PLAN SHEET: _____

2.10. SOIL PROPERTIES (5.5.1.d, 5.5.3.3.d, 5.5.3.6.b).

SOIL PROPERTIES FOR THE PRIMARY SOILS ARE LISTED IN THE TABLE BELOW.

SOIL PROPERTIES			
PRIMARY SOIL NAME	HSG	% OF SITE	ERODIBILITY (K VALUE)
ARMOUR SILT LOAM, ERODED GENTLY SLOPING PHASE	B	46.5%	0.37
GODWIN SILT LOAM	C/D	1.1%	0.32
MAURY SILT LOAM, ERODED GENTLY SLOPING PHASE	A	22.7%	0.32
MAURY SILTY CLAY LOAM, ERODED SLOPING PHASE	A	28.7%	0.28

2.11. PROJECT RUNOFF COEFFICIENTS AND AREA PERCENTAGES (5.5.3.6.a).

RUNOFF COEFFICIENTS FOR EXISTING CONDITIONS				
AREA TYPE	AREA (AC)	PERCENTAGE OF TOTAL AREA (%)	RUNOFF CN	C FACTOR
IMPERVIOUS	0	0	N/A	N/A
PERVIOUS	10.563	100%	61	N/A
WEIGHTED CURVE NUMBER OR C-FACTOR =			61	

RUNOFF COEFFICIENTS FOR POST-CONSTRUCTION CONDITIONS				
AREA TYPE	AREA (AC)	PERCENTAGE OF TOTAL AREA (%)	RUNOFF CN	C FACTOR
IMPERVIOUS	1.416	6.71%	95	N/A
PERVIOUS	19.677	93.29%	61	N/A
WEIGHTED CURVE NUMBER OR C-FACTOR =			63	

3. ORDER OF CONSTRUCTION ACTIVITIES (5.5.1.a)

CONSTRUCTION SHALL BE SEQUENCED AND STAGED TO: MINIMIZE THE EXPOSURE TIME OF GRADED OR DENUDED SOIL AREAS, PRESERVE TOPSOIL, AND MINIMIZE SOIL COMPACTION. NO WORK SHALL BE STARTED UNTIL THE CONTRACTOR'S PLAN FOR THE STAGING OF THEIR OPERATIONS, INCLUDING THE PLAN FOR STAGING OF TEMPORARY AND PERMANENT EPSC MEASURES, HAS BEEN ACCEPTED BY THE ENGINEER. THE CONTRACTOR'S EPSC PLAN SHALL INCORPORATE AND SUPPLEMENT, AS ACCEPTABLE, THE ORDER OF CONSTRUCTION ACTIVITIES AND THE BASIC EPSC DEVICES DEPICTED ON THE EPSC PLAN CONTAINED WITHIN THE APPROVED SWPPP.

3.1. SPECIAL SEQUENCING REQUIREMENTS (SEE SHEETS C-100- C-102)

3.2. INSTALL STABILIZED CONSTRUCTION EXITS.

3.3. INSTALL PERIMETER PROTECTION WHERE RUNOFF SHEET FLOWS FROM THE SITE.

3.4. INSTALL INITIAL EPSC MEASURES BEFORE CLEARING, GRUBBING, EXCAVATION, GRADING, CULVERT OR BRIDGE CONSTRUCTION, CUTTING, FILLING, OR ANY OTHER EARTHWORK OCCURS, EXCEPT AS SUCH WORK MAY BE NECESSARY TO INSTALL EPSC MEASURES.

3.5. PERFORM CLEARING AND GRUBBING (NOT MORE THAN TWO WEEKS PRIOR TO GRADING OR EARTH-MOVING. REFER TO THE STABILIZATION PRACTICES BELOW.).

3.6. REMOVE AND STORE TOPSOIL.

3.7. STABILIZE DISTURBED AREAS WITHIN 2 WEEKS OF COMPLETING ANY STAGE AND/OR PHASE OF ACTIVITY (STEEP SLOPES SHALL BE STABILIZED WITHIN 1 WEEK AFTER CONSTRUCTION ACTIVITY HAS TEMPORARY OR PERMANENTLY CEASED).

3.8. INSTALL UTILITIES, SEWERS, CULVERTS AND BRIDGE STORM STRUCTURES.

3.9. INSTALL INLET AND CULVERT PROTECTION ONCE STRUCTURES ARE IN PLACE AND CAPABLE OF INTERCEPTING FLOW.

3.10. PERFORM FINAL GRADING AND INSTALL BASE STONE.

3.11. COMPLETE FINAL PAVING AND SEALING OF CONCRETE.

3.12. INSTALL TRAFFIC CONTROL AND PROTECTION DEVICES.

3.13. COMPLETE FINAL STABILIZATION (TOPSOIL, SEEDING, MULCH, EROSION CONTROL BLANKET, SOD, ETC.)

3.14. REMOVE TEMPORARY EROSION CONTROLS AND ACCUMULATED SEDIMENT FROM AREAS THAT HAVE ESTABLISHED AT LEAST 70 PERCENT UNIFORM PERMANENT VEGETATIVE COVER.

3.15. RE-STABILIZE AREAS DISTURBED BY REMOVAL ACTIVITIES.

4. STREAM, OUTFALL, WETLAND, TMDL AND ECOLOGY INFORMATION

4.1. STREAM INFORMATION (5.5.1.h, 5.5.1.i)

4.1.1. WILL CONSTRUCTION AND/OR EROSION PREVENTION AND SEDIMENT CONTROLS IMPACT ANY STREAMS WITHIN THE PROJECT LIMITS? ☐ YES ☒ NO

IF YES, THE IMPACT(S) HAVE BEEN INCLUDED IN THE TOTAL PROJECT IMPACTS AND HAVE BEEN INCLUDED IN THE WATER QUALITY PERMITS.

4.1.2. HAVE ANY OF THE RECEIVING STATE WATERS LESS THAN OR EQUAL TO 1 FLOW MILE DOWN GRADIENT OF THE PROJECT LIMITS BEEN CLASSIFIED BY TDEC AS FOLLOWS (CHECK ALL THAT APPLY):

☐ 303d WITH UNAVAILABLE PARAMETERS FOR SILTATION

☐ EXCEPTIONAL TENNESSEE WATERS (ETW)

4.1.3. RECEIVING WATERS OF THE STATE (5.5.1.h, 5.5.1.j, 5.5.1.k).

RECEIVING WATERS OF THE STATE INFORMATION					
STATE WATER LABEL	NAME OF RECIEVING STATE WATER	303D WITH UNAVAILABLE PARAMETERS FOR SILTATION (YES OR NO)	ETW (YES OR NO)	LOCATED WITHIN PROJECT LIMITS (YES OR NO)	LOCATED WITHIN ≤ 1 FLOW MILE DOWN GRADIENT OF PROJECT LIMITS (YES OR NO)
TN06040003023_1000	SUGAR FORK	NO	NO	NO	NO

SCS SOMERS CONSULTING SERVICES, LLC		LINEAGE METALS - CHERRY GLEN INDUSTRIAL PARK MAURY COUNTY, TENNESSEE	
		STORM WATER POLLUTION PREVENTION PLAN	
ANDY SOMERS, P.E. (256) 603-4888	2206 SHADES CREST RD HUNTSVILLE, AL 35801	SHEET NO.: 2 OF 12	

4.1.4. RECEIVING WATERS OF THE US (NON STATE WATERS) (4.1.2). LIST ANY FEATURE THAT IS IDENTIFIED AS A WET WEATHER CONVEYANCE (TDEC) AND IDENTIFIED AS WATERS OF THE US BY THE ARMY CORPS OF ENGINEERS.

WET WEATHER CONVEYANCES THAT ARE WATERS OF THE US			
WOTUS LABEL	NAME OF RECIEVING STATE WATER	LOCATED WITHIN PROJECT LIMITS (YES OR NO)	LOCATED WITHIN 15-FT OF THE PROJECT LIMITS (YES OR NO)

- 4.1.5. ARE THERE ANY WATER QUALITY RIPARIAN BUFFER ZONES REQUIRED FOR WATERS OF THE STATE? (5.5.1.i, 6.4.2.)
☐ YES ☒ NO
IF YES, THEY HAVE BEEN INCLUDED ON PLAN SHEET(S) _____.
IF YES, CHECK THE APPROPRIATE BOX BELOW FOR SIZE OF BUFFER.
- ☐ 60-FEET FOR WATERS WITH UNAVAILABLE PARAMETERS AND EXCEPTIONAL TENNESSEE WATERS (ETW) (AVERAGE WIDTH PER SIDE WITH A MINIMUM OF 30-FEET).
- A 60 FOOT NATURAL WATER QUALITY RIPARIAN BUFFER ZONE ADJACENT TO AND ON BOTH SIDES OF THE RECEIVING STATE STREAM WITH THIS DESIGNATION SHALL BE PRESERVED TO THE MAXIMUM EXTENT PRACTICABLE DURING CONSTRUCTION ACTIVITIES AT THE SITE. THE 60 FOOT CRITERION FOR THE WIDTH OF THE BUFFER ZONE CAN BE ESTABLISHED ON AN AVERAGE WIDTH BASIS AT A PROJECT, AS LONG AS THE MINIMUM WIDTH OF THE BUFFER ZONE IS MORE THAN 30 FEET AT ANY MEASURED LOCATION. IF THE CONSTRUCTION SITE ENCOMPASSES BOTH SIDES OF A STREAM, BUFFER AVERAGING CAN BE APPLIED TO BOTH SIDES, BUT MUST BE APPLIED INDEPENDENTLY.
- ☐ 30-FEET FOR ALL OTHER STREAMS (AVERAGE WIDTH PER SIDE WITH A MINIMUM OF 15-FEET).
- A 30 FOOT NATURAL WATER QUALITY RIPARIAN BUFFER ZONE ADJACENT TO AND ON BOTH SIDES OF THE RECEIVING STATE STREAM SHALL BE PRESERVED TO THE MAXIMUM EXTENT PRACTICABLE DURING CONSTRUCTION ACTIVITIES AT THE SITE. THE 30 FOOT CRITERION FOR THE WIDTH OF THE BUFFER ZONE CAN BE ESTABLISHED ON AN AVERAGE WIDTH BASIS AT A PROJECT, AS LONG AS THE MINIMUM WIDTH OF THE BUFFER ZONE IS MORE THAN 15 FEET AT ANY MEASURED LOCATION. IF THE CONSTRUCTION SITE ENCOMPASSES BOTH SIDES OF A STREAM, BUFFER AVERAGING CAN BE APPLIED TO BOTH SIDES, BUT MUST BE APPLIED INDEPENDENTLY.
- ☐ 15-FEET FOR ANY WET WEATHER CONVEYANCES IDENTIFIED AS WATERS OF THE US BY THE US ARMY CORPS OF ENGINEERS.
- 4.1.6. ARE THERE ANY WATER QUALITY RIPARIAN BUFFER ZONES NOT REQUIRED FOR STATE WATERS DUE TO A TDEC ARAP? (1.5.2.)
☐ YES ☒ NO
- 4.1.7. ARE THERE WATER QUALITY RIPARIAN BUFFER ZONE EXEMPTIONS? (4.1.2.1.) ☐ YES ☒ NO
IF YES, EXISTING CONDITIONS DESCRIPTION: _____
- 4.1.8. EVERY ATTEMPT SHOULD BE MADE FOR CONSTRUCTION ACTIVITIES TO NOT TAKE PLACE WITHIN THE WATER QUALITY RIPARIAN BUFFER ZONE AND FOR EXISTING FORESTED AREAS TO BE PRESERVED. (4.1.2., 6.4.2.)
- 4.1.9. BECAUSE OF HEAVY SEDIMENT LOAD ASSOCIATED WITH CONSTRUCTION SITE RUNOFF, WATER QUALITY RIPARIAN BUFFER ZONES ARE NOT SEDIMENT CONTROL MEASURES AND

SHOULD NOT BE RELIED UPON AS PRIMARY SEDIMENT CONTROL MEASURES. THE WATER QUALITY RIPARIAN BUFFER ZONE SHALL BE ESTABLISHED BETWEEN THE TOP OF THE STREAM BANK AND THE DISTURBED CONSTRUCTION AREA.

4.1.10. WHERE IT IS NOT PRACTICABLE TO MAINTAIN A FULL WATER QUALITY RIPARIAN BUFFER, BEST MANAGEMENT PRACTICES (BMPs) PROVIDING EQUIVALENT PROTECTION AS THE NATURAL RIPARIAN ZONE MUST BE USED. A JUSTIFICATION FOR USE AND DESIGN EQUIVALENCY SHALL BE DOCUMENTED WITHIN THE SWPPP. THE ENVIRONMENTAL AND ROADWAY DESIGN DIVISIONS SHALL REVIEW AND APPROVE THIS REVISION OF THE SWPPP BEFORE DISTURBANCE OF THE SITE PROCEEDS, UNLESS PREVIOUSLY EXEMPT IN THE NPDES CGP. WHERE ISSUED, ARAP/401 REQUIREMENTS WILL PREVAIL IF IN CONFLICT WITH THESE BUFFER ZONE REQUIREMENTS.

- 4.2. OUTFALL INFORMATION
- 4.2.1. OUTFALL TABLE (5.5.1.c). SEE SWPPP SHEET S-8 FOR OUTFALL INFORMATION.
- 4.2.2. HAVE ALL OUTFALLS BEEN LABELED ON THE EPSC PLAN SHEETS (5.5.1.f)? ☒ YES ☐ NO
- 4.2.3. HAVE ALL OUTFALLS BEEN LABELED ON A USGS TOPOGRAPHIC MAP INCLUDED IN THE "DOCUMENTATION AND PERMITS" BINDER (3.2.2.)? ☒ YES ☐ NO
- 4.2.4. WHERE POSSIBLE, HAS NON-PROJECT RUN-ON BEEN DIVERTED AROUND OR THROUGH THE PROJECT TO ELIMINATE CONTACT WITH DISTURBED AREAS OF THE PROJECT AND SEPARATE IT FROM PROJECT RUN-OFF THEREBY REDUCING THE DRAINAGE AREA OF TO THE OUTFALLS IN THIS AREA?
☒ YES ☐ NO ☐ N/A
- 4.2.5. ARE EQUIVALENT MEASURES BEING SUBSTITUTED FOR A SEDIMENT BASIN(S) OR SEDIMENT TRAP(S)? (5.5.3.5.)
☐ YES ☐ NO ☒ N/A
- 4.2.6. A SEDIMENT BASIN, OR EQUIVALENT MEASURE(S) WILL BE PROVIDED FOR ANY OUTFALL IN A DRAINAGE AREA:
- OF TEN ACRES OR MORE FOR AN OUTFALL(S) THAT DOES NOT DISCHARGE TO A STATE STREAM WITH UNAVAILABLE PARAMETERS OR EXCEPTIONAL TENNESSEE WATERS. A TEMPORARY (OR PERMANENT) SEDIMENT BASIN OR EQUIVALENT CONTROL MEASURES THAT PROVIDES STORAGE FOR A CALCULATED VOLUME OF RUNOFF FROM A MINIMUM 2-YEAR/ 24-HOUR STORM EVENT, SHALL BE PROVIDED UNTIL FINAL STABILIZATION OF THE SITE. (5.5.3.5)
- OR
- OF FIVE ACRES OR MORE FOR AN OUTFALL(S) THAT DISCHARGES TO A STATE STREAM WITH UNAVAILABLE PARAMETERS DUE TO SILTATION OR EXCEPTIONAL TENNESSEE WATERS (ETW). A TEMPORARY (OR PERMANENT) SEDIMENT BASIN THAT PROVIDES STORAGE FOR A CALCULATED VOLUME OF RUNOFF FROM A 5-YEAR/ 24-HOUR STORM EVENT AND RUNOFF FROM EACH ACRE DRAINED, OR EQUIVALENT CONTROL MEASURES, SHALL BE PROVIDED UNTIL FINAL STABILIZATION OF THE SITE. (6.4.1.e).
- 4.2.7. A SEDIMENT TRAP, OR EQUIVALENT MEASURE(S) WILL BE PROVIDED FOR ANY OUTFALL IN A DRAINAGE AREA:
- OF 3.5 - 4.9 ACRES FOR AN OUTFALL(S) THAT DISCHARGES TO A STATE STREAM WITH UNAVAILABLE PARAMETERS (303d SILTATION) OR EXCEPTIONAL TENNESSEE WATERS (ETW). A SEDIMENT TRAP THAT PROVIDES STORAGE FOR A CALCULATED VOLUME OF RUNOFF FROM A 5-YEAR/24-HOUR STORM EVENT AND RUNOFF FROM EACH ACRE DRAINED, OR EQUIVALENT CONTROL MEASURES, SHALL BE PROVIDED UNTIL FINAL STABILIZATION OF THE SITE. (6.4.1.f).
- IN BOTH INSTANCES, THE ENVIRONMENTAL AND ROADWAY DESIGN DIVISIONS MAY BE CONTACTED TO REVIEW AND CONCUR WITH ANY REVISION OF THE SWPPP BEFORE DISTURBANCE OF THE OUTFALL PROCEEDS.
- 4.2.8. SEDIMENT STRUCTURES TREATING DRAINAGE AREAS IN EXCESS OF 25 ACRES REQUIRE A SITE-SPECIFIC DESIGN THAT ACCURATELY DEFINES THE SITE HYDROLOGY, SITE-SPECIFIC SEDIMENT LOADING, HYDRAULICS OF THE SITE, AND ADHERES TO ALL TENNESSEE EROSION AND SEDIMENT CONTROL HANDBOOK DESIGN RECOMMENDATIONS FOR SEDIMENT BASINS. (5.5.3.5.)

4.3. WETLAND INFORMATION

WILL CONSTRUCTION AND/OR EROSION AND SEDIMENT CONTROLS IMPACT ANY WETLANDS? ☐ YES ☒ NO

IF YES, THE STRUCTURAL EPSC MEASURES HAVE BEEN INCLUDED IN THE TOTAL PROJECT IMPACTS AND IN THE WATER QUALITY PERMITS.

WETLAND INFORMATION		
WETLAND LABEL	TEMPORARY IMPACTS (AC)	PERMANENT IMPACTS (AC)

- 4.4. TOTAL MAXIMUM DAILY LOADS (TMDL) INFORMATION (1.3.j)
- 4.4.1. IS THIS PROJECT LOCATED IN A HUC-8 WATERSHD THAT MAINTAINS AN EPA APPROVED TMDL FOR SILTATION AND HABITAT ALTERATION?
☒ YES ☐ NO
- 4.4.2. IF YES, IS THIS PROJECT LOCATED WITHIN A HUC-12 SUBWATERSHED WITH A WASTE LOAD ALLOCATION (WLA)?
☐ YES ☒ NO
- 4.4.3. IF YES, DOES THE PROJECT HAVE A DIRECT DISCHARGE TO A 303(d) LISTED STREAM FOR SILTATION?
☐ YES ☐ NO
- IF YES, SWPPP INCORPORATES MEASURES OR CONTROLS CONSISTENT WITH THE ASSUMPTIONS AND REQUIREMENTS OF THE TMDL.

5. EROSION PREVENTION AND SEDIMENT CONTROL (EPSC) MEASURES (5.5.3.)
- 5.1. EPSC MEASURES MUST BE DESIGNED, INSTALLED AND MAINTAINED TO CONTROL STORMWATER VOLUME AND VELOCITY WITHIN THE SITE TO MINIMIZE EROSION (4.1.1).
- 5.2. EPSC MEASURES MUST CONTROL STORMWATER DISCHARGES, INCLUDING BOTH PEAK FLOWS AND TOTAL STORMWATER VOLUME, TO MINIMIZE EROSION AT OUTLETS, STREAM CHANNELS, AND STREAM BANKS. (4.1.1)
- 5.3. HAVE THE CONTROL MEASURES BEEN DESIGNED PER THE SIZE AND SLOPE OF THE DISTURBED DRAINAGE AREA (5.5.3.5.)?
☒ YES ☐ NO
- 5.4. THE CONTROL MEASURES HAVE, AT A MINIMUM, BEEN DESIGNED FOR THE 2-YEAR, 24 HOUR STORM EVENT (5.5.3.5., 6.4.1.b).
- 5.5. ARE THE LIMITS OF DISTURBANCE CLEARLY MARKED ON THE EPSC PLANS (5.5.1.f)? ☒ YES ☐ NO
- 5.6. AREAS TO BE UNDISTURBED SHALL BE CLEARLY MARKED IN THE FIELD BEFORE CONSTRUCTION ACTIVITIES BEGIN.
- 5.7. CLEARING, GRUBBING, AND OTHER DISTURBANCE TO RIPARIAN VEGETATION SHALL BE LIMITED TO THE MINIMUM NECESSARY FOR SLOPE CONSTRUCTION AND EQUIPMENT OPERATIONS. EXISTING VEGETATION, INCLUDING STREAM AND WETLAND BUFFERS (UNLESS PERMITTED), SHOULD BE PRESERVED TO THE MAXIMUM EXTENT POSSIBLE. UNNECESSARY VEGETATION REMOVAL IS PROHIBITED.
- 5.8. HAS A THREE STAGED EPSC PLAN BEEN PREPARED FOR THE PROJECT (5.5.2.)?
YES ☒ A THREE STAGED EPSC PLAN HAS BEEN PREPARED.
- NO ☐ A SINGLE STAGED EPSC PLAN HAS BEEN PREPARED SINCE THE PROJECT DISTURBANCE IS LESS THAN 5 ACRES AND THE PROJECT CONSISTS OF A SINGLE-LOT HOME, COMMERCIAL LOT OR LINEAR INFRASTRUCTURE PROJECT.

- 5.9. STEEP SLOPES ARE DEFINED AS A NATURAL OR CREATED SLOPE OF 35% GRADE OR GREATER REGARDLESS OF HEIGHT. HAVE STEEP SLOPES BEEN MINIMALLY DISTURBED AND/OR PROTECTED BY CONVEYING RUNOFF NON-EROSIVELY AROUND OR OVER THE SLOPE (5.5.3.4.) (10. "STEEP SLOPE")? ☒ YES ☐ NO ☐ N/A
- 5.10. THE STRUCTURAL EPSC MEASURES HAVE BEEN INCLUDED IN THE TOTAL PROJECT IMPACTS AND HAVE BEEN INCLUDED IN THE AQUATIC RESOURCE ALTERATION (ARAP) PERMIT OR SECTION 401 CERTIFICATION (5.5.1.h). ALL PERMITS WILL BE MAINTAINED ON SITE WITHIN THE "DOCUMENTATION AND PERMITS" BINDER.
- 5.11. TEMPORARY EPSC MEASURES MAY BE REMOVED AT THE BEGINNING OF THE WORKDAY, BUT MUST BE REINSTALLED AT THE END OF THE WORKDAY OR BEFORE A PRECIPITATION EVENT.
- 5.12. EPSC MEASURES LOCATED IN WOTUS (EPHEMERAL STREAMS) MUST BE CONSIDERED TEMPORARY AND SHALL BE REMOVED AT THE END OF CONSTRUCTION.
- 5.13. THE CONTRACTOR SHALL ESTABLISH AND MAINTAIN A PROACTIVE METHOD TO PREVENT THE OFF-SITE MIGRATION OR DEPOSIT OF SEDIMENT OFF THE PROJECT LIMITS (E.G. R.O.W., EASEMENTS, ETC.), INTO WATERS OF THE STATE/U.S., OR ONTO ROADWAYS USED BY THE PUBLIC. IF SEDIMENT ESCAPES THE CONSTRUCTION SITE, OFF-SITE ACCUMULATIONS OF SEDIMENT THAT HAVE NOT REACHED A STREAM MUST BE REMOVED TO A LEVEL SUFFICIENT TO MINIMIZE OFF-SITE IMPACTS (E.G., FUGITIVE SEDIMENT THAT HAS ESCAPED THE CONSTRUCTION SITE AND HAS COLLECTED IN A STREET MUST BE REMOVED SO THAT IT IS NOT SUBSEQUENTLY WASHED INTO STORM SEWERS AND STREAMS BY THE NEXT RAIN AND/OR SO THAT IT DOES NOT POSE A SAFETY HAZARD TO USERS OF PUBLIC STREETS). ARRANGEMENTS CONCERNING REMOVAL OF SEDIMENT ON ADJOINING PROPERTY MUST BE SETTLED WITH THE ADJOINING PROPERTY OWNER BEFORE REMOVAL OF SEDIMENT. SEDIMENT THAT MIGRATES INTO WATERS OF THE STATE/US SHALL NOT BE REMOVED WITHOUT GUIDANCE AND APPROVAL FROM TDEC.
- 5.14. OFFSITE VEHICLE TRACKING OF SEDIMENTS AND THE GENERATION OF DUST SHALL BE MINIMIZED. A STABILIZED CONSTRUCTION EXIT (A POINT OF ENTRANCE/EXIT TO THE CONSTRUCTION PROJECT) SHALL BE PROVIDED TO REDUCE THE TRACKING OF MUD AND DIRT ONTO PUBLIC ROADS BY CONSTRUCTION VEHICLES.
- 5.15. DISCHARGES FROM DEWATERING ACTIVITIES ARE PROHIBITED UNLESS MANAGED BY APPROPRIATE CONTROLS THAT PROVIDE THE LEVEL OF TREATMENT (FILTRATION) NECESSARY TO COMPLY WITH PERMIT REQUIREMENTS. (4.1.3.).
- 5.16. SETTLING BASINS AND SEDIMENT TRAPS SHALL BE PROPERLY DESIGNED PER THE SIZE OF THE DRAINAGE AREAS OR VOLUME OF WATER TO BE TREATED. TREATED WATER MUST BE DISCHARGED THROUGH A PIPE OR WELL VEGETATED OR LINED CHANNEL, SO THAT THE DISCHARGE DOES NOT CAUSE EROSION OR SEDIMENT TRANSPORT.
- 5.17. DISCHARGES FROM SEDIMENT BASINS AND IMPOUNDMENTS SHALL UTILIZE OUTLET STRUCTURES THAT ONLY WITHDRAW WATER FROM NEAR THE SURFACE OF THE BASIN OR IMPOUNDMENT. TREATED WATER MUST BE DISCHARGED THROUGH A PIPE, WELL- VEGETATED AND/OR LINED CHANNEL, SO THAT THE DISCHARGE DOES NOT CAUSE EROSION OR SEDIMENT TRANSPORT. (5.5.3.5.).
- 5.18. THE DEWATERING OF WORK AREAS, TRENCHES, FOUNDATIONS, EXCAVATIONS, ETC. THAT HAVE COLLECTED STORMWATER, WATER FROM VEHICLE WASH AREAS, OR GROUNDWATER SHALL BE EITHER HELD IN SETTLING BASINS OR TREATED BY FILTRATION AND/OR CHEMICAL TREATMENT PRIOR TO ITS DISCHARGE. ALL CHEMICAL TREATMENTS MUST BE APPLIED PER SECTION 6 FLOCCULANTS.
- 5.19. WATER DISCHARGED FROM DEWATERING ACTIVITIES SHALL NOT CAUSE AN OBJECTIONABLE COLOR CONTRAST WITHIN THE RECEIVING NATURAL RESOURCE. WATER MUST BE HELD WITHIN SETTLING BASINS UNTIL IT IS AT LEAST AS CLEAR AS THE RECEIVING WATERS.
- 5.20. DEWATERING STRUCTURES, SEDIMENT FILTER BAGS, SEDIMENT BASINS AND TRAPS SHALL NOT BE LOCATED CLOSER THAN 30 FEET (60 FEET DESIRABLE VEGETATIVE BUFFER) FOR WATERS WITH UNAVAILABLE PARAMETERS DUE TO SILTATION AND EXCEPTIONAL TENNESSEE WATERS (ETW) AND 15 FEET (30 FEET DESIRABLE VEGETATIVE BUFFER) FOR ALL OTHER FEATURES FROM THE TOP BANK OF A STREAM, WOTUS (EPHEMERAL), WETLAND OR OTHER NATURAL RESOURCE AND SHALL BE PROPERLY DESIGNED PER THE SIZE OF THE DRAINAGE AREAS OR VOLUME OF WATER TO BE TREATED.
- 5.21. STABILIZATION PRACTICES: PRE-CONSTRUCTION VEGETATIVE COVER WILL NOT BE DESTROYED, REMOVED OR DISTURBED MORE THAN 2 WEEKS PRIOR TO GRADING OR EARTH MOVING UNLESS THE AREA WILL BE

SEEDED AND/OR MULCHED OR OTHER TEMPORARY COVER IS INSTALLED (5.5.3.5.f).

- 5.22. STABILIZATION MEASURES WILL BE INITIATED AS SOON AS POSSIBLE WHERE CONSTRUCTION ACTIVITIES HAVE TEMPORARILY OR PERMANENTLY CEASED. TEMPORARY OR PERMANENT STABILIZATION WILL BE COMPLETED WITHIN 2 WEEKS AFTER ACTIVITY HAS TEMPORARILY OR PERMANENTLY CEASED IN THAT AREA. PERMANENT STABILIZATION WILL REPLACE TEMPORARY MEASURES AS SOON AS PRACTICABLE (5.5.3.4.).
- 5.23. PRIORITY SHALL BE GIVEN TO FINISHING OPERATIONS AND PERMANENT EPSC MEASURES OVER TEMPORARY EPSC MEASURES ON ALL PROJECTS. UNPACKED GRAVEL CONTAINING FINES (SILT AND CLAY SIZED PARTICLES) OR CRUSHER-RUN WILL NOT BE CONSIDERED A NON-ERODIBLE SURFACE
- 5.24. DELAYING THE PLANTING OF COVER VEGETATION UNTIL WINTER MONTHS OR DRY MONTHS SHOULD BE AVOIDED, IF POSSIBLE.
- 5.25. STEEP SLOPES SHALL BE TEMPORARILY STABILIZED NOT LATER THAN 1 WEEK AFTER CONSTRUCTION ACTIVITY ON THE SLOPE HAS TEMPORARILY OR PERMANENTLY CEASED. (5.5.3.4.).

6. MAINTENANCE AND INSPECTION

- 6.1. INSPECTION PRACTICES (5.5.3.9.)
- 6.1.1. PROJECT EPSC INSPECTORS RESPONSIBLE FOR THE INSPECTION, IMPLEMENTATION, MAINTENANCE. AND/OR REPAIR OF EPSC MEASURES SHALL MEET ONE OF THE FOLLOWING REQUIREMENTS (5.5.3.10.):
- 6.1.1.1. SUCCESSFULLY COMPLETED THE TDEC "LEVEL I - FUNDAMENTALS OF EROSION PREVENTION AND SEDIMENT CONTROL" AND ANY COURSE RECERTIFICATION COURSES AS REQUIRED.
- 6.1.1.2. BE A CURRENT TN LICENSED PROFESSIONAL ENGINEER OR LANDSCAPE ARCHITECT.
- 6.1.1.3. BE A CURRENT CERTIFIED PROFESSIONAL IN EROSION AND SEDIMENT CONTROL (CPESC).
- 6.1.1.4. SUCCESSFULLY COMPLETED TDEC "LEVEL II – DESIGN PRINCIPLES FOR EROSION PREVENTION AND SEDIMENT CONTROL FOR CONSTRUCTION SITES" COURSE AND ANY RECERTIFICATION COURSE AS REQUIRED.
- 6.1.2. EPSC CONTROLS SHALL BE INSPECTED TO VERIFY MEASURES HAVE BEEN INSTALLED AND MAINTAINED IN ACCORDANCE WITH CONSTRUCTION DRAWINGS, SPECIFICATIONS, AND GOOD ENGINEERING PRACTICES. EPSC INSPECTIONS SHALL BE DOCUMENTED ON THE TDEC CONSTRUCTION STORMWATER INSPECTION CERTIFICATION (TWICE-WEEKLY INSPECTIONS) FORM.
- 6.1.3. OUTFALL POINTS SHALL BE INSPECTED TO ASCERTAIN WHETHER EPSC MEASURES ARE EFFECTIVE IN PREVENTING EROSION AND CONTROLLING SEDIMENT INCLUDING SIGNIFICANT IMPACTS TO SURROUNDING STATE WATERS, WOTUS (EPHEMERAL), WETLANDS, OTHER NATURAL RESOURCES AND ADJACENT PROPERTY OWNERS. WHERE DISCHARGE LOCATIONS ARE INACCESSIBLE, NEARBY DOWN GRADIENT LOCATIONS SHALL BE INSPECTED. LOCATIONS WHERE VEHICLES ENTER AND EXIT THE SITE SHALL BE INSPECTED FOR EVIDENCE OF OFF-SITE ROADWAY SEDIMENT TRACKING.
- 6.1.4. INSPECTIONS WILL BE CONDUCTED AT LEAST TWICE EVERY CALENDAR WEEK AND AT LEAST 72 HOURS APART (5.5.3.11.a).
- 6.1.5. ON PROJECTS WHERE THE PERMITTEE CHOOSES TO DISTURB MORE THAN 50 ACRES AT ONE TIME, INSPECTIONS WILL BE CONDUCTED TWICE PER WEEK AND FOLLOWING ANY RAINFALL EVENT OF MORE THAN 0.5 INCHES IN 24 HOURS. (5.5.3.3.c)
- 6.1.6. THE FREQUENCY OF EPSC INSPECTIONS MAY BE REDUCED TO ONCE A MONTH WHERE SITES OR PORTIONS OF SITES HAVE BEEN TEMPORARILY STABILIZED UNTIL CONSTRUCTION ACTIVITIES RESUME WITH WRITTEN NOTIFICATION TDEC ENVIRONMENTAL FIELD OFFICE AND SUBSEQUENT TDEC APPROVAL. WRITTEN NOTIFICATION MUST INCLUDE THE INTENT TO CHANGE FREQUENCY AND JUSTIFICATION (5.5.3.11.a).
- 6.1.7. ALL DISTURBED AREAS OF THE SITE THAT HAVE NOT BEEN FINALLY STABILIZED, AREAS USED FOR MATERIAL STORAGE THAT ARE EXPOSED TO PRECIPITATION, STRUCTURAL CONTROL MEASURES, AND LOCATIONS WHERE VEHICLES ENTER OR EXIT THE SITE, AND EACH OUTFALL WILL BE INSPECTED (5.5.3.11.b).

- 6.1.8. THE INSPECTOR WILL OVERSEE THE REQUIREMENTS OF OTHER CONSTRUCTION-RELATED WATER QUALITY PERMITS (I.E. TDEC ARAP, USACE SECTION 404, AND TVA SECTION 26a PERMITS) FOR CONSTRUCTION ACTIVITIES AROUND WATERS OF THE STATE (10 "INSPECTOR").
- 6.1.9. THE SWPPP WILL BE REVISED AS NECESSARY BASED ON THE RESULTS OF THE INSPECTION. REVISION(S) WILL BE RECORDED WITHIN 1 WEEK OF THE INSPECTION. REVISION(S) WILL BE IMPLEMENTED WITHIN 2 WEEKS OF THE INSPECTION (5.5.3.11.e AND 5.5.3.11.f).
- 6.1.10. DOCUMENTATION OF INSPECTIONS WILL BE MAINTAINED ON SITE IN THE "DOCUMENTATION AND PERMITS" BINDER.
- 6.1.11. THESE INSPECTION REQUIREMENTS DO NOT APPLY TO DEFINABLE AREAS OF THE SITE THAT HAVE MET FINAL STABILIZATION REQUIREMENTS AND HAVE BEEN NOTED IN THE SWPPP.
- 6.1.12. TRAINED CERTIFIED INSPECTORS SHALL COMPLETE INSPECTION TO THE BEST OF THEIR ABILITY. FALSIFYING INSPECTION RECORDS OR OTHER DOCUMENTATION OR FAILURE TO COMPLETE INSPECTION DOCUMENTATION SHALL RESULT IN A VIOLATION OF THIS PERMIT AND ANY OTHER APPLICABLE ACTS OR RULES (5.5.3.11.h).

6.2. MAINTENANCE PRACTICES (5.1 AND 8.13.)

- 6.2.1. ALL CONTROLS WILL BE MAINTAINED IN GOOD AND EFFECTIVE OPERATING ORDER AND IN ACCORDANCE WITH CONSTRUCTION DRAWINGS AND GOOD ENGINEERING PRACTICES. (5.1. AND 5.5.3.1.b)
- 6.2.2. MAINTENANCE AND REPAIR ACTIVITIES ARE THE RESPONSIBILITY OF THE CONTRACTOR.
- 6.2.3. UPON CONCLUSION OF THE INSPECTIONS, EPSC MEASURES FOUND TO BE INEFFECTIVE SHALL BE REPAIRED, REPLACED, OR MODIFIED BEFORE THE NEXT RAIN EVENT OR WITHIN 7 DAYS (WHICHEVER IS SOONER) AFTER THE INSPECTION OR WHEN THE CONDITION IS IDENTIFIED. (5.5.3.11.e).
- 6.2.4. SEDIMENT SHALL BE REMOVED FROM SEDIMENT CONTROL STRUCTURES (SEDIMENT TRAPS, SILT FENCE, SEDIMENT BASINS, OTHER CONTROLS, ETC.) WHEN THE DESIGN CAPACITY HAS BEEN REDUCED BY FIFTY PERCENT (50%). (5.5.3.1.d).
- 6.2.5. DURING SEDIMENT REMOVAL, THE CONTRACTOR SHALL TAKE STEPS TO ENSURE THAT STRUCTURAL COMPONENTS OF EPSC MEASURES ARE NOT DAMAGED AND THUS MADE INEFFECTIVE. IF DAMAGE DOES OCCUR, THE CONTRACTOR SHALL REPAIR THE EPSC MEASURES AT THE CONTRACTOR'S OWN EXPENSE.
- 6.2.6. CHECK DAMS WILL BE INSPECTED FOR STABILITY. SEDIMENT WILL BE REMOVED WHEN DEPTH REACHES ONE-HALF (½) THE HEIGHT OF THE DAM.
- 6.2.7. SEDIMENT REMOVED FROM SEDIMENT CONTROL STRUCTURES SHALL BE PLACED AND TREATED IN A MANNER SO THAT THE SEDIMENT IS CONTAINED WITHIN THE PROJECT LIMITS, DOES NOT MIGRATE INTO FEATURES REMOVED FROM, AND DOES NOT MIGRATE ONTO ADJACENT PROPERTIES AND/OR INTO WATERS OF THE STATE/U.S.
- 6.2.8. LITTER, CONSTRUCTION DEBRIS, AND CONSTRUCTION CHEMICALS EXPOSED TO STORMWATER WILL BE PICKED UP AND REMOVED FROM STORMWATER EXPOSURE PRIOR TO ANTICIPATED STORM EVENTS OR BEFORE BEING CARRIED OFF THE SITE BY WIND, OR OTHERWISE PREVENTED FROM BECOMING A POLLUTANT SOURCE FOR STORMWATER DISCHARGES. AFTER USE, MATERIALS USED FOR EROSION CONTROL WILL BE REMOVED (5.5.3.7.a).
- 6.2.9. ALL SEEDED AREAS WILL BE CHECKED FOR BARE SPOTS, EROSION WASHOUTS, AND VIGOROUS GROWTH FREE OF SIGNIFICANT WEED INFESTATIONS.

7. SITE ASSESSMENTS (5.5.3.8.)

ARE SITE ASSESSMENTS REQUIRED? ☐ YES ☒ NO

SCS SOMERS CONSULTING SERVICES, LLC		LINEAGE METALS - CHERRY GLEN INDUSTRIAL PARK MAURY COUNTY, TENNESSEE
		STORM WATER POLLUTION PREVENTION PLAN
ANDY SOMERS, P.E. (256) 603-4888	2206 SHADES CREST RD HUNTSVILLE, AL 35801	SHEET NO.: 4 OF 12

8. STORMWATER MANAGEMENT (5.5.3.11.h)

- 8.1. STORMWATER MANAGEMENT WILL BE HANDLED BY TEMPORARY CONTROLS OUTLINED IN THIS SWPPP AND ANY PERMANENT CONTROLS NEEDED TO MEET PERMANENT STORMWATER MANAGEMENT NEEDS IN THE POST CONSTRUCTION PERIOD. PERMANENT CONTROLS WILL BE DEPICTED ON THE PLANS AND NOTED AS PERMANENT.
- 8.2. DESCRIBE ANY SPECIFIC POST-CONSTRUCTION MEASURES THAT WILL CONTROL VELOCITY, POLLUTANTS, AND/OR EROSION (5.5.3.6.c): SEE SHEET C-102
- 8.3. OTHER ITEMS NEEDING CONTROL (5.5.3.7.)

CONSTRUCTION MATERIALS: THE FOLLOWING MATERIALS OR SUBSTANCES ARE EXPECTED TO BE PRESENT ON THE SITE DURING THE CONSTRUCTION PERIOD. (CHECK ALL THAT APPLY).

☐ LUMBER, GUARDRAIL, TRAFFIC CONTROL DEVICES

☐ CONCRETE WASHOUT

☒ PIPE CULVERTS (I.E. CONCRETE, CORRUGATED METAL, HDPE, ETC.)

☒ MINERAL AGGREGATES, ASPHALT

☒ EARTH

☒ LIQUID TRAFFIC STRIPING MATERIALS, PAINT

☒ ROCK

☐ CURING COMPOUND

☐ EXPLOSIVES

☐ OTHER

THESE MATERIALS WILL BE HANDLED AS NOTED IN THIS SWPPP.
- 8.4. WASTE MATERIALS (5.5.3.7.c)

WASTE MATERIAL (EARTH, ROCK, ASPHALT, CONCRETE, ETC.) NOT REQUIRED FOR THE CONSTRUCTION OF THE PROJECT WILL BE DISPOSED OF BY THE CONTRACTOR IN ACCORDANCE WITH FEDERAL AND STATE REGULATIONS. IMPACTS TO WATERS OF THE STATE/U.S. SHALL BE AVOIDED IF POSSIBLE. IF UNAVOIDABLE, THE CONTRACTOR WILL OBTAIN ALL NECESSARY PERMITS INCLUDING, BUT NOT LIMITED TO NPDES, AQUATIC RESOURCES ALTERATION PERMIT(S) CORPS OF ENGINEERS SECTION 404 PERMITS, AND TVA SECTION 26A PERMITS TO DISPOSE OF WASTE MATERIALS.
- 8.5. HAZARDOUS WASTE (5.5.3.7.c) (8.8)

ALL HAZARDOUS WASTE MATERIALS WILL BE DISPOSED OF IN A MANNER WHICH IS COMPLIANT WITH LOCAL OR STATE REGULATIONS. SITE PERSONNEL WILL BE INSTRUCTED IN THESE PRACTICES, AND THE INDIVIDUAL DESIGNATED AS THE CONTRACTOR'S ON-SITE REPRESENTATIVE WILL BE RESPONSIBLE FOR SEEING THAT THESE PRACTICES ARE FOLLOWED. THE CONTRACTOR WILL OBTAIN ALL NECESSARY PERMITS TO DISPOSE OF HAZARDOUS MATERIAL.
- 8.6. SANITARY WASTE (5.5.3.7.b)

PORTABLE SANITARY FACILITIES WILL BE PROVIDED ON ALL CONSTRUCTION SITES. SANITARY WASTE WILL BE COLLECTED FROM THE PORTABLE UNITS IN A TIMELY MANNER BY A LICENSED WASTE MANAGEMENT CONTRACTOR OR AS REQUIRED BY ANY LOCAL REGULATIONS. THE CONTRACTOR WILL OBTAIN ALL NECESSARY PERMITS TO DISPOSE OF SANITARY WASTE.
- 8.7. OTHER MATERIALS

THE FOLLOWING MATERIALS OR SUBSTANCES ARE EXPECTED TO BE PRESENT ON THE SITE DURING THE CONSTRUCTION PERIOD. (CHECK ALL THAT APPLY).

☒ FERTILIZERS AND LIME

☐ PESTICIDES AND/OR HERBICIDES

☒ DIESEL AND GASOLINE

☒ MACHINERY LUBRICANTS (OIL AND GREASE)

THESE MATERIALS WILL BE HANDLED AS NOTED IN THIS SWPPP.
9. NON-STORMWATER DISCHARGES (5.5.3.12.)
- 9.1. THE FOLLOWING NON-STORMWATER DISCHARGES ARE ANTICIPATED DURING THE CONSTRUCTION OF THIS PROJECT (CHECK ALL THAT APPLY):

☐ DEWATERING OF WORK AREAS OF COLLECTED STORMWATER AND GROUND WATER.

☒ WATERS USED TO WASH VEHICLES (OF DUST AND SOIL) WHERE DETERGENTS ARE NOT USED AND DETENTION AND/OR FILTERING IS PROVIDED BEFORE THE WATER LEAVES THE SITE.
- ☒ WATER USED TO CONTROL DUST. (3.5.3.1.n)

☐ POTABLE WATER SOURCES INCLUDING WATERLINE FLUSHING FROM WHICH CHLORINE HAS BEEN REMOVED TO THE MAXIMUM EXTENT PRACTICABLE.

☐ UNCONTAMINATED GROUNDWATER OR SPRING WATER.

☐ FOUNDATION OR FOOTING DRAINS WHERE FLOWS ARE NOT CONTAMINATED WITH POLLUTANTS.

☐ OTHER:
- 9.2. ALL ALLOWABLE NON-STORMWATER DISCHARGES WILL BE DIRECTED TO STABLE DISCHARGE STRUCTURES PRIOR TO LEAVING THE SITE.

9.3. THE DESIGN OF ALL IMPACTED EPSC MEASURES RECEIVING FLOW FROM ALLOWABLE NON-STORMWATER DISCHARGES MUST BE DESIGNED TO HANDLE THE VOLUME OF THE NON-STORMWATER COMPONENT.

9.4. WASH DOWN OR WASTE DISCHARGE OF CONCRETE TRUCKS WILL NOT BE PERMITTED ON-SITE UNLESS PROPER SETTLEMENT AREAS HAVE BEEN PROVIDED IN ACCORDANCE WITH BOTH STATE AND FEDERAL REGULATIONS.

9.5. ARE ANY DISCHARGES ASSOCIATED WITH INDUSTRIAL (NON-CONSTRUCTION STORMWATER) ACTIVITY EXPECTED (5.5.1.g)?

☐ YES

☒ NO

IF YES, SPECIFY THE LOCATION OF THE ACTIVITY AND ITS PERMIT NUMBER:
10. SPILL PREVENTION, MANAGEMENT AND NOTIFICATION (5.5.3.7.c, 6.1)
- 10.1. SPILL PREVENTION (5.5.3.7.c)

10.1.1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PREPARING A SPILL PREVENTION CONTROL AND COUNTERMEASURE (SPCC) PLAN WHEN REQUIRED BY FEDERAL CODE.

10.2. MATERIAL MANAGEMENT

10.2.1. HOUSEKEEPING

ONLY CONSTRUCTION PRODUCTS NEEDED SHALL BE STORED ON-SITE BY THE CONTRACTOR. EXCEPT FOR BULK MATERIALS THE CONTRACTOR WILL STORE ALL MATERIALS UNDER COVER AND IN APPROPRIATE CONTAINERS. PRODUCTS MUST BE STORED IN ORIGINAL CONTAINERS AND LABELED. MATERIAL MIXING WILL BE CONDUCTED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS. WHEN POSSIBLE, ALL PRODUCTS WILL BE USED COMPLETELY BEFORE PROPERLY DISPOSING OF THE CONTAINER OFF SITE. THE MANUFACTURER'S DIRECTIONS FOR DISPOSAL OF MATERIALS AND CONTAINERS WILL BE FOLLOWED. (9-410.06) THE CONTRACTOR'S SITE SUPERINTENDENT WILL INSPECT MATERIALS STORAGE AREAS REGULARLY TO ENSURE PROPER USE AND DISPOSAL. DUST GENERATED WILL BE CONTROLLED IN AN ENVIRONMENTALLY SAFE MANNER. VEGETATION AREAS NOT ESSENTIAL TO THE CONSTRUCTION PROJECT WILL BE PRESERVED AND MAINTAINED AS NOTED ON THE PLANS.

10.2.2. HAZARDOUS MATERIALS

PRODUCTS MUST BE STORED IN ORIGINAL CONTAINERS UNLESS THE CONTAINER IS NOT RE-SEALABLE. ORIGINAL LABELS AND MATERIAL SAFETY DATA SHEETS WILL BE RETAINED IN A SAFE PLACE TO RELAY IMPORTANT PRODUCT INFORMATION. IF SURPLUS PRODUCT MUST BE DISPOSED OF, MANUFACTURER'S LABEL DIRECTIONS FOR DISPOSAL WILL BE FOLLOWED. MAINTENANCE AND REPAIR OF ALL EQUIPMENT AND VEHICLES INVOLVING OIL CHANGES, HYDRAULIC SYSTEM DRAIN DOWN, DE-GREASING OPERATIONS, FUEL TANK DRAIN DOWN AND REMOVAL, AND OTHER ACTIVITIES WHICH MAY RESULT IN THE ACCIDENTAL RELEASE OF CONTAMINANTS WILL BE CONDUCTED ON AN IMPERVIOUS SURFACE AND UNDER COVER DURING WET WEATHER TO PREVENT THE RELEASE OF CONTAMINANTS ONTO THE GROUND. WHEEL WASH WATER WILL BE COLLECTED AND ALLOWED TO SETTLE OUT SUSPENDED SOLIDS PRIOR TO DISCHARGE. WHEEL WASH WATER WILL NOT BE DISCHARGED DIRECTLY INTO ANY STORMWATER SYSTEM OR STORMWATER TREATMENT SYSTEM. POTENTIAL pH-MODIFYING MATERIALS SUCH AS: BULK CEMENT, CEMENT KILN DUST, FLY ASH, NEW CONCRETE WASHINGS AND CURING WATERS, CONCRETE PUMPING, AND MIXER WASHOUT WATERS WILL BE COLLECTED ON SITE AND MANAGED TO PREVENT CONTAMINATION OF STORMWATER RUNOFF.

10.3. PRODUCT SPECIFIC PRACTICES

10.3.1. PETROLEUM PRODUCTS: ALL ON-SITE VEHICLES WILL BE MONITORED FOR LEAKS AND RECEIVE REGULAR PREVENTIVE MAINTENANCE TO REDUCE THE CHANCE OF LEAKAGE. PETROLEUM PRODUCTS WILL BE STORED IN TIGHTLY SEALED CONTAINERS WHICH ARE CLEARLY LABELED.

10.3.2. FERTILIZERS: FERTILIZERS WILL BE APPLIED ONLY IN THE AMOUNTS SPECIFIED BY THE SOIL ANALYSIS. ONCE APPLIED, FERTILIZERS WILL BE WORKED INTO THE SOIL TO LIMIT THE EXPOSURE TO STORMWATER. FERTILIZERS WILL BE STORED IN AN ENCLOSED AREA UNDER COVER. THE CONTENTS OF PARTIALLY USED FERTILIZER BAGS WILL BE TRANSFERRED TO SEALABLE CONTAINERS TO AVOID SPILLS.

10.3.3. PAINTS: ALL CONTAINERS WILL BE TIGHTLY SEALED AND STORED WHEN NOT REQUIRED FOR USE. THE EXCESS WILL BE DISPOSED OF PER THE MANUFACTURER'S INSTRUCTIONS AND APPLICABLE STATE AND LOCAL REGULATIONS.

10.3.4. CONCRETE TRUCKS: CONTRACTORS WILL PROVIDE DESIGNATED TRUCK WASHOUT AREAS ON THE SITE. THESE AREAS MUST BE SELF CONTAINED AND NOT CONNECTED TO ANY STORMWATER OUTLET OF THE SITE, AND PROPERLY SIGNED. UPON COMPLETION OF CONSTRUCTION WASHOUT AREAS WILL BE PROPERLY STABILIZED.

10.4. SPILL MANAGEMENT

IN ADDITION TO THE PREVIOUS HOUSEKEEPING AND MANAGEMENT PRACTICES, THE FOLLOWING PRACTICES WILL BE FOLLOWED FOR SPILL PREVENTION AND CLEANUP IF NECESSARY:

10.4.1. ALL ONSITE VEHICLES SHALL BE MONITORED FOR LEAKS AND RECEIVE REGULAR PREVENTATIVE MAINTENANCE TO REDUCE THE CHANGE OF LEAKAGE AND SPILLS.

10.4.2. FOR ALL HAZARDOUS MATERIALS STORED ON SITE, THE MANUFACTURER'S RECOMMENDED METHODS FOR SPILL CLEAN UP WILL BE CLEARLY POSTED. SITE PERSONNEL WILL BE MADE AWARE OF THE PROCEDURES AND THE LOCATIONS OF THE INFORMATION AND CLEANUP SUPPLIES.

10.4.3. APPROPRIATE CLEANUP MATERIALS AND EQUIPMENT WILL BE MAINTAINED BY THE CONTRACTOR IN THE MATERIALS STORAGE AREA ON-SITE AND UNDER COVER. SPILL RESPONSE EQUIPMENT SHALL BE INSPECTED AND MAINTAINED BY THE CONTRACTOR AS NECESSARY TO REPLACE ANY MATERIALS USED IN SPILL RESPONSE ACTIVITIES.

10.4.4. ALL SPILLS SHALL BE CLEANED IMMEDIATELY AFTER DISCOVERY AND THE MATERIALS DISPOSED OF PROPERLY. THE SPILL AREA WILL BE KEPT WELL VENTILATED AND PERSONNEL WILL WEAR APPROPRIATE PROTECTIVE CLOTHING TO PREVENT INJURY FROM CONTACT WITH A HAZARDOUS SUBSTANCE.

10.4.5. THE CONTRACTOR'S RESPONSIBLE PARTY WILL BE THE SPILL PREVENTION AND CLEANUP COORDINATOR. THE CONTRACTOR IS RESPONSIBLE FOR ENSURING THAT THE SITE SUPERINTENDENT HAS HAD APPROPRIATE TRAINING FOR HAZARDOUS MATERIALS HANDLING, SPILL MANAGEMENT, AND CLEANUP.

10.4.6. IF SPILLS REPRESENT AN IMMINENT THREAT OF ESCAPING THE SITE AND ENTERING RECEIVING WATERS, PERSONNEL WILL RESPOND IMMEDIATELY TO CONTAIN THE RELEASE AND NOTIFY THE PRIMARY PERMITTEE AFTER THE SITUATION HAS BEEN STABILIZED.

10.4.7. IF AN OIL SHEEN IS OBSERVED ON SURFACE WATER (E.G. SETTLING PONDS, DETENTION PONDS, SWALES), ACTION WILL BE TAKEN IMMEDIATELY TO REMOVE THE MATERIAL CAUSING THE SHEEN. THE CONTRACTOR WILL USE APPROPRIATE MATERIALS TO CONTAIN AND ABSORB THE SPILL. THE SOURCE OF THE OIL SHEEN WILL ALSO BE IDENTIFIED AND REMOVED OR REPAIRED AS NECESSARY TO PREVENT FURTHER RELEASES.

10.4.8. IF A SPILL OCCURS THE CONTRACTOR'S RESPONSIBLE PARTY SHALL BE RESPONSIBLE FOR COMPLETING THE SPILL REPORTING FORM. ALL SPILLS MUST BE REPORTED TO THE APPROPRIATE AGENCY, AND MEASURES SHALL BE TAKEN

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IMMEDIATELY TO PREVENT THE POLLUTION OF WATERS OF THE STATE/U.S., INCLUDING GROUNDWATER, SHOULD A SPILL OCCUR.

10.5. SPILL NOTIFICATION (6.1)

WHERE A RELEASE CONTAINING A HAZARDOUS SUBSTANCE IN AN AMOUNT EQUAL TO, OR MORE THAN A REPORTABLE QUANTITY ESTABLISHED UNDER EITHER 40 CFR 117 OR 40 CFR 302 OCCURS DURING A 24 HOUR PERIOD:

10.5.1. THE PRIMARY PERMITTEE OFFICE WILL NOTIFY THE LOCAL TDEC ENVIRONMENTAL FIELD OFFICE AND ANY OTHER APPLICABLE REGULATORY AGENCIES WITHIN 24 HOURS OF THE SPILL.

10.5.2. IN ADDITION TO ANY FOLLOW UP NOTIFICATIONS REQUIRED BY FEDERAL LAW, A WRITTEN DESCRIPTION OF THE RELEASE, DATE OF RELEASE AND CIRCUMSTANCES LEADING TO THE RELEASE, WHAT ACTIONS WERE TAKEN TO MITIGATE EFFECTS OF THE RELEASE, AND STEPS TAKEN TO MINIMIZE THE CHANCE OF FUTURE OCCURRENCES WILL BE SUBMITTED TO THE APPROPRIATE TDEC ENVIRONMENTAL FIELD OFFICE WITHIN 2 WEEKS OF KNOWLEDGE OF THE RELEASE.

10.5.3. THE SWPPP MUST BE MODIFIED WITHIN 2 WEEKS OF KNOWLEDGE OF THE RELEASE PROVIDING A DESCRIPTION OF THE RELEASE, CIRCUMSTANCES LEADING TO THE RELEASE, AND THE DATE OF RELEASE. THE SWPPP WILL BE REVIEWED AND MODIFIED AS NECESSARY TO IDENTIFY MEASURES TO PREVENT THE REOCCURRENCE OF SUCH RELEASES AND TO RESPOND TO SUCH RELEASES.

11. RECORD-KEEPING

11.1. REQUIRED RECORDS

THE PRIMARY PERMITTEE OR THEIR DULY AUTHORIZED REPRESENTATIVE WILL MAINTAIN AT THE SITE THE FOLLOWING RECORDS OF CONSTRUCTION ACTIVITIES (7.2.1.):

11.1.1. THE DATES WHEN MAJOR GRADING ACTIVITIES OCCUR.

11.1.2. THE DATES WHEN CONSTRUCTION ACTIVITIES TEMPORARILY OR PERMANENTLY CEASE ON A PORTION OF THE SITE.

11.1.3. THE DATES WHEN STABILIZATION MEASURES ARE INITIATED.

11.1.4. RECORDS EPSC INSPECTION REPORTS AND CORRECTIVE MEASURES.

11.1.5. RECORDS OF QUALITY ASSURANCE SITE ASSESSMENTS, IF APPLICABLE.

11.1.6. COPY OF SITE EPSC INSPECTOR'S CERTIFICATION AND/OR LICENSING

11.1.7. A COPY OF ANY REGULATORY CORRESPONDENCE REGARDING THE EFFECTIVENESS OF THE SWPPP OR EPSC CONTROLS.

11.2. RAINFALL MONITORING PLAN (7.2.1.):

11.2.1. EQUIPMENT

AT A MINIMUM, THE CONTRACTOR WILL INSTALL A FENCE POST TYPE RAIN GAUGE TO MEASURE RAINFALL. THE STANDARD FENCE POST RAIN GAUGE WILL BE A WEDGE-SHAPED GAUGE THAT MEASURES UP TO 6 INCHES OF RAINFALL. AN ENGLISH SCALE WILL BE PROVIDED ON ONE FACE, WITH A METRIC SCALE ON THE OTHER FACE. GRADUATION WILL BE PERMANENTLY MOLDED IN DURABLE WEATHER-RESISTANT PLASTIC. THE MINIMUM GRADUATION WILL BE 0.01 INCH (OR 0.1MM). AN ALUMINUM BRACKET WITH SCREWS MAY BE USED TO MOUNT THE GAUGE ON A WOODEN SUPPORT. IF A RAIN GAUGE CANNOT BE MAINTAINED ON-SITE A REFERENCE SITE MAY BE USED FOR A RECORD OF DAILY RAINFALL.

11.2.2. LOCATION

THE RAIN GAUGE WILL BE LOCATED AT OR ALONG THE PROJECT SITE, AS DEFINED IN THE NOI OF THE NPDES PERMIT, IN AN OPEN AREA SUCH THAT THE MEASUREMNT WILL NOT BE INFLUENCED BY OUTSIDE FACTORS (I.E. OVERHANGS, GUTTER, TREES, ETC.). AT LEAST ONE RAIN GAUGE PER LINEAR MILE IS REQUIRED ALONG (AS MEASURED ALONG THE CENTERLINE OF THE PRIMARY ALIGNMENT) THE PROJECT WHERE CLEARING, GRUBBING, EXCAVATION, GRADING, CUTTING OR FILLING IS ACTIVELY PERFORMED, OR EXPOSED SOIL HAS NOT YET BEEN PERMANENTLY STABILIZED.

11.2.3. METHODS

RAINFALL MONITORING WILL BE INITIATED PRIOR TO CLEARING, GRUBBING, EXCAVATION, GRADING, CUTTING, OR FILLING, EXCEPT AS SUCH MINIMAL CLEARING MAY BE NECESSARY TO INSTALL A RAIN GAUGE IN AN OPEN AREA. THE RAIN GAUGE WILL BE CHECKED FOR OPERATIONAL SOUNDNESS DAILY (DURING NORMAL BUSINESS HOURS) IN WET TIMES AND WEEKLY IN DRY TIMES. GAUGES WILL BE REPAIRED OR REPLACED ON THE SAME DAY IF FOUND TO BE NON-OPERATIONAL OR MISSING.

11.2.4. EACH RAIN GAUGE WILL BE READ (FOR DETAILED RECORDS OF RAINFALL) AND EMPTIED AFTER EVERY RAINFALL EVENT OCCURRING ON THE PROJECT SITE AT APPROXIMATELY THE SAME TIME OF THE DAY (DURING NORMAL BUSINESS HOURS). DURING PERIODS OF DRY CONDITIONS, IT WILL NOT BE NECESSARY TO READ THE RAIN GAUGE EVERY DAY. IN LIEU OF THIS REQUIREMENT ON WEEKENDS AND ON STATE HOLIDAYS, THE RAIN GAUGES CAN BE EMPTIED THE NEXT BUSINESS DAY AND A REFERENCE SITE USED FOR A RECORD OF DAILY AMOUNT OF PRECIPITATION FOR THOSE DAYS. A REFERENCE SITE IS THE DOCUMENTATION FROM THE CLOSEST GAUGE WITHIN PROXIMITY OF THE PROJECT FROM A RECOGNIZED SOURCE SUCH AS THE NOAA NATIONAL WEATHER SERVICE.

11.2.5. DETAILED RECORDS WILL BE RECORDED OF RAINFALL EVENTS INCLUDE DATES, AMOUNTS OF RAINFALL, AND THE APPROXIMATE DURATION (OR THE STARTING AND ENDING TIMES). THE RAINFALL RECORDS SHALL BE RECORDED ON THE RAINFALL RECORD SHEET AND SHALL BE MAINTAINED IN THE "DOCUMENTATION AND PERMITS" BINDER.

11.2.6. IF THE RAINFALL EVENT IS STILL IN PROGRESS AT THE DAILY RECORDING TIME, THE GAUGE WILL BE EMPTIED AND THE RECORD WILL INDICATE THAT THE STORM EVENT WAS STILL IN PROGRESS.

11.2.7. RAIN GAUGE INFORMATION (DETAILED RECORDS), INCLUDING THE LOCATION OF THE NEAREST OUTFALL, WILL BE RECORDED ON THE EPSC INSPECTION REPORT FORMS AT THE TIME OF MEASUREMENT.

11.3. KEEPING PLANS CURRENT (5.4.)

11.3.1. THE EPSC PLAN IS TO SERVE AS AN INITIAL GUIDE FOR SITE PERSONNEL AS THE CONSTRUCTION PROCESS DEVELOPS. IT MUST BE AMENDED, MODIFIED, AND UPDATED WHENEVER EPSC INSPECTIONS INDICATE, OR WHERE STATE OR FEDERAL REGULATORY OFFICIALS DETERMINE EPSC MEASURES ARE PROVING INEFFECTIVE IN ELIMINATING OR SIGNIFICANTLY MINIMIZING POLLUTANT SOURCES OR ARE OTHERWISE NOT ACHIEVING THE GENERAL OBJECTIVES OF CONTROLLING POLLUTANTS IN STORMWATER DISCHARGES ASSOCIATED WITH THE CONSTRUCTION ACTIVITY.

11.3.2. THE STAGES DEPICTED WITHIN THE EPSC PLANS MAY NOT COINCIDE WITH THE ACTUAL STAGES OF CONSTRUCTION ESTABLISHED BY THE CONTRACTOR DURING CONSTRUCTION, THUS MODIFICATIONS WILL BE REQUIRED TO ENSURE THE EPSC PLAN IS MAINTAINED TO DEPICT CURRENT SITE CONDITIONS. IT SHOULD BE MAINTAINED SUCH THAT IT WILL ALWAYS REFLECT THE MEASURES THAT ARE INSTALLED DURING THE VARIOUS STAGES OF CONSTRUCTION. IT IS IMPRACTICAL TO DETERMINE ALL THE INTERMEDIATE STAGES OF CONSTRUCTION THAT WILL OCCUR, THUS THESE DOCUMENTS MUST BE UPDATED THROUGHOUT THE LIFE OF THE CONSTRUCTION PROJECT.

11.3.3. THE PRIMARY PERMITTEE'S EPSC INSPECTOR OR THEIR DULY AUTHORIZED REPRESENTATIVE WILL MODIFY AND UPDATE THE SWPPP WHEN ANY OF THE FOLLOWING CONDITIONS APPLY:

11.3.3.1. WHENEVER THERE IS A CHANGE IN THE SCOPE OF THE PROJECT THAT WOULD BE EXPECTED TO HAVE A SIGNIFICANT EFFECT ON THE DISCHARGE OF POLLUTANTS TO THE WATERS OF THE STATE AND WHICH HAS NOT OTHERWISE BEEN ADDRESSED IN THE SWPPP;

11.3.3.2. WHENEVER INSPECTIONS OR INVESTIGATIONS BY SITE OPERATORS, LOCAL, STATE, OR FEDERAL OFFICIALS INDICATE THE SWPPP IS PROVING INEFFECTIVE IN ELIMINATING OR SIGNIFICANTLY MINIMIZING POLLUTANTS FROM CONSTRUCTION ACTIVITY SOURCES, OR IS OTHERWISE NOT ACHIEVING THE GENERAL OBJECTIVES OF CONTROLLING POLLUTANTS IN STORMWATER DISCHARGES ASSOCIATED WITH CONSTRUCTION ACTIVITY; WHERE LOCAL, STATE, OR FEDERAL OFFICIALS DETERMINE THAT THE SWPPP IS INEFFECTIVE IN

ELIMINATING OR SIGNIFICANTLY MINIMIZING POLLUTANT SOURCES, A COPY OF ANY CORRESPONDENCE TO THAT EFFECT MUST BE RETAINED IN THE SWPPP;

11.3.3.3. WHEN ANY NEW OPERATOR AND/OR SUB-OPERATOR IS ASSIGNED OR RELIEVED OF THEIR RESPONSIBILITY TO IMPLEMENT A PORTION OF THE SWPPP;

11.3.3.4. TO PREVENT A NEGATIVE IMPACT TO LEGALLY PROTECTED STATE OR FEDERALLY LISTED OR PROPOSED THREATENED OR ENDANGERED AQUATIC FAUNA;

11.3.3.5. WHEN THERE IS A CHANGE IN CHEMICAL TREATMENT METHODS INCLUDING: USE OF DIFFERENT TREATMENT CHEMICALS, DIFFERENT DOSAGE OR APPLICATION RATES OR A DIFFERENT AREA OF APPLICATION NOT SPECIFIED ON THE EPSC PLANS.

11.3.3.6. ALL SWPPP REVISION(S) SHALL BE RECORDED WITHIN 1 WEEK BY THE PROJECT EPSC INSPECTOR.

11.3.3.7. WHEN A TMDL IS DEVELOPED FOR THE RECEIVING WATERS FOR A POLLUTANT OF CONCERN (SILTATION), CONSTRUCTION SHALL NOTIFY THE PERMITS SECTION FOR PROPER COORDINATION.

11.4. MAKING PLANS ACCESSIBLE

11.4.1. THE PRIMARY PERMITTEE WILL RETAIN A COPY OF THIS SWPPP (INCLUDING A COPY OF THE "DOCUMENTATION AND PERMITS" BINDER AT THE CONSTRUCTION SITE (OR OTHER LOCATION ACCESSIBLE TO TDEC AND THE PUBLIC) FROM THE DATE CONSTRUCTION COMMENCES TO THE DATE OF FINAL STABILIZATION. THE PRIMARY PERMITTEE WILL HAVE A COPY OF THE SWPPP AVAILABLE AT THE LOCATION WHERE WORK IS OCCURRING ON-SITE FOR THE USE OF OPERATORS AND THOSE IDENTIFIED AS HAVING RESPONSIBILITIES UNDER THE SWPPP WHENEVER THEY ARE ON THE CONSTRUCTION SITE (7.2.).

11.4.2. PRIOR TO THE INITIATION OF LAND DISTURBING ACTIVITIES AND UNTIL THE SITE HAS MET THE FINAL STABILIZATION CRITERIA, THE PRIMARY PERMITTEE OR THEIR DULY AUTHORIZED REPRESENTATIVE WILL POST A NOTICE NEAR THE MAIN ENTRANCE OF THE CONSTRUCTION SITE WITH THE FOLLOWING INFORMATION (5.3.4.) (7.2.1.):

11.4.2.1. A COPY OF THE NOTICE OF COVERAGE (NOC) WITH THE NPDES PERMIT NUMBER FOR THE PROJECT;

11.4.2.2. THE INDIVIDUAL NAME, COMPANY NAME, E-MAIL ADDRESS (IF APPLICABLE) AND TELEPHONE NUMBER OF THE LOCAL PROJECT SITE OWNER AND OPERATOR CONTACT;

11.4.2.3. A BRIEF DESCRIPTION OF THE PROJECT; AND

11.4.2.4. THE LOCATION OF THE SWPPP.

11.4.3. ALL INFORMATION DESCRIBED IN SECTION 13.4.2 MUST BE MAINTAINED IN LEGIBLE THIS CONDITION. IF POSTING INFORMATION NEAR A MAIN ENTRANCE IS INFEASIBLE DUE TO SAFETY CONCERNS, THE NOTICE SHALL BE POSTED IN A LOCAL BUILDING. THE NOTICE MUST BE PLACED IN A PUBLICLY ACCESSIBLE LOCATION WHERE CONSTRUCTION IS ACTIVELY UNDERWAY AND MOVED AS NECESSARY.

SCS

SOMERS CONSULTING SERVICES, LLC

ANDY SOMERS, P.E.
(256) 603-4888

2206 SHADES CREST RD
HUNTSVILLE, AL 35801

LINEAGE METALS - CHERRY GLEN
INDUSTRIAL PARK
MAURY COUNTY, TENNESSEE

STORM WATER POLLUTION
PREVENTION PLAN

SHEET NO.: 6 OF 12

11.5. NOTICE OF TERMINATION (9.0.)

- 11.5.1. WHEN ALL STORMWATER DISCHARGES FROM CONSTRUCTION ACTIVITIES THAT ARE AUTHORIZED BY THE PERMIT ARE ELIMINATED BY FINAL STABILIZATION, THE PRIMARY PERMITTEE WILL SUBMIT A NOTICE OF TERMINATION (NOT) THAT IS SIGNED IN ACCORDANCE WITH THE PERMIT TO THE TDEC CENTRAL OFFICE IN NASHVILLE, TN.
- 11.5.2. FOR THE PURPOSES OF THE CERTIFICATION REQUIRED BY THE NOT, THE ELIMINATION OF STORMWATER DISCHARGES ASSOCIATED WITH THE CONSTRUCTION ACTIVITY MEANS THE
- 11.5.2.1. ALL EARTH-DISTURBING ACTIVITIES ON THE SITE ARE COMPLETED AND ALL DISTURBED SOILS AT THE PORTION OF THE CONSTRUCTION SITE WHERE THE OPERATOR HAD CONTROL HAVE BEEN FINALLY STABILIZED; AND
- 11.5.2.2. ALL CONSTRUCTION MATERIALS, WASTE AND WASTE HANDLING DEVICES, AND ALL EQUIPMENT, AND VEHICLES THAT WERE USED DURING CONSTRUCTION HAVE BEEN REMOVED AND PROPERLY DISPOSED; AND
- 11.5.2.3. ALL STORMWATER CONTROLS THAT WERE INSTALLED AND MAINTAINED DURING CONSTRUCTION, EXCEPT THOSE THAT ARE INTENDED FOR LONG-TERM USE FOLLOWING TERMINATION OF PERMIT COVERAGE, HAVE BEEN REMOVED; AND
- 11.5.2.4. ALL POTENTIAL POLLUTANTS AND POLLUTANT GENERATING ACTIVITIES WITH ASSOCIATED CONSTRUCTION HAVE BEEN REMOVED; AND
- 11.5.2.5. THE PERMITTEE HAS IDENTIFIED WHO IS RESPONSIBLE FOR ONGOING MAINTENANCE OF ANY STORMWATER CONTROLS LEFT ON THE SITE FOR LONG-TERM USE FOLLOWING TERMINATION OF PERMIT COVERAGE; AND
- 11.5.2.6. TEMPORARY EPSC MEASURES HAVE BEEN OR WILL BE REMOVED AT AN APPROPRIATE TIME TO ENSURE FINAL STABILIZATION IS MAINTAINED; AND
- 11.5.2.7. ALL STORMWATER DISCHARGES ASSOCIATED WITH CONSTRUCTION ACTIVITIES FROM THE IDENTIFIED SITE THAT ARE AUTHORIZED BY A NPDES GENERAL PERMIT HAVE OTHERWISE BEEN ELIMINATED FROM THE PORTION OF THE CONSTRUCTION SITE WHERE THE OPERATOR HAD CONTROL.

11.6. RETENTION OF RECORDS (7.1.)

THE PRIMARY PERMITTEE WILL RETAIN COPIES OF THE SWPPP, ALL REPORTS REQUIRED BY THE PERMIT, AND RECORDS OF ALL DATA USED TO COMPLETE THE NOTICE OF INTENT FOR THE PROJECT FOR A PERIOD OF AT LEAST THREE (3) YEARS FROM THE DATE THE NOT WAS FILED.

12. SITE WIDE/PRIMARY PERMITTEE CERTIFICATION (8.7.5.)

I CERTIFY UNDER PENALTY OF LAW THAT THIS DOCUMENT AND ALL ATTACHMENTS WERE PREPARED BY ME, OR UNDER MY DIRECTION OR SUPERVISION. THE SUBMITTED INFORMATION IS TO THE BEST OF MY KNOWLEDGE AND BELIEF, TRUE, ACCURATE, AND COMPLETE. I AM AWARE THAT THERE ARE SIGNIFICANT PENALTIES FOR SUBMITTING FALSE INFORMATION, INCLUDING THE POSSIBILITY OF FINE AND IMPRISONMENT, AS SPECIFIED IN TENNESSEE CODE ANNOTATED SECTION 39-16-702(a)(4). THIS DECLARATION IS MADE UNDER PENALTY OF PERJURY.

AUTHORIZED PERSONNEL SIGNATURE (5.3.2.)

PRINTED NAME

TITLE

DATE

13. SECONDARY PERMITTEE (OPERATOR) CERTIFICATION (8.7.6.)

I CERTIFY UNDER PENALTY OF LAW THAT I HAVE REVIEWED THIS DOCUMENT, ANY ATTACHMENTS, AND THE SWPPP REFERENCED ABOVE. BASED ON MY INQUIRY OF THE CONSTRUCTION SITE OWNER/DEVELOPER IDENTIFIED ABOVE AND/OR MY INQUIRY OF THE PERSON DIRECTLY RESPONSIBLE FOR ASSEMBLING THIS NOI AND SWPPP, I BELIEVE THE INFORMATION SUBMITTED IS ACCURATE. I AM AWARE THAT THIS NOI, IF APPROVED, MAKES THE ABOVE-DESCRIBED CONSTRUCTION ACTIVITY SUBJECT TO NPDES PERMIT NUMBER TNR100000, AND THAT CERTAIN OF MY ACTIVITIES ONSITE ARE THEREBY REGULATED. I AM AWARE THAT THERE ARE SIGNIFICANT PENALTIES, INCLUDING THE POSSIBILITY OF FINE AND IMPRISONMENT FOR KNOWING VIOLATIONS, AND FOR FAILURE TO COMPLY WITH THESE PERMIT REQUIREMENTS, AS SPECIFIED IN TENNESSEE CODE ANNOTATED SECTION 39-16-702(a)(4). THIS DECLARATION IS MADE UNDER PENALTY OF PERJURY.

AUTHORIZED CONTRACTOR PERSONNEL SIGNATURE (5.3.3.)

PRINTED NAME

TITLE

DATE

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SOMERS CONSULTING SERVICES, LLC

ANDY SOMERS, P.E. 2205 SHADES CREST RD
(256) 603-4888 HUNTSVILLE, AL 35891

LINEAGE METALS - CHERRY GLEN
INDUSTRIAL PARK
MAURY COUNTY, TENNESSEE

STORM WATER POLLUTION
PREVENTION PLAN

SHEET NO.: 7 OF 12

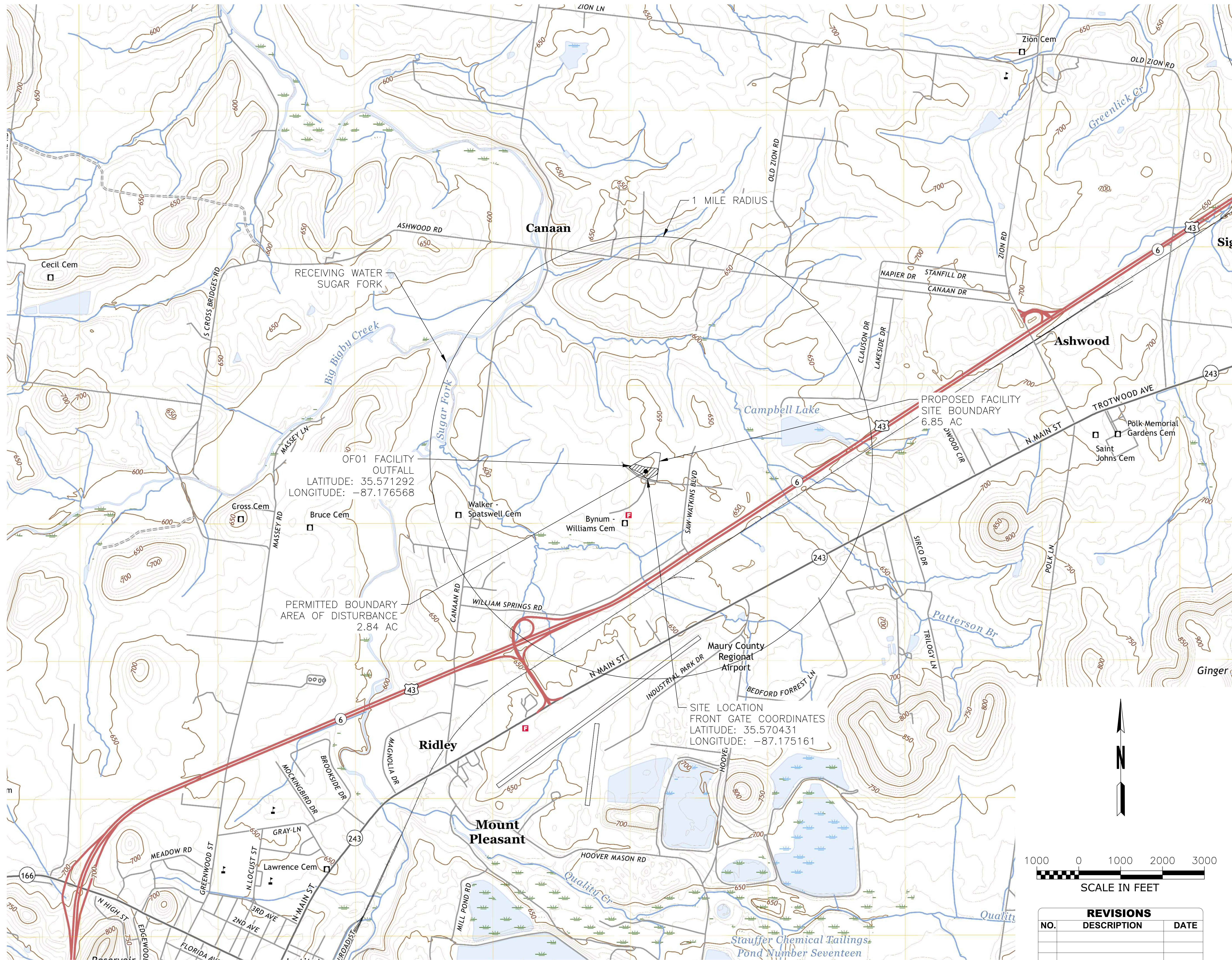
14. OUTFALL TABLE (5.5.1.c, 6.4.1.e, 6.4.1.f)

OUTFALL LABEL	SUB OUTFALL	SLOPE (%)	STAGE 1 DRAINAGE AREA (AC)	STAGE 2 DRAINAGE AREA (AC)	STAGE 3 DRAINAGE AREA (AC)	SEDIMENT BASIN OR EQUIVALENT MEASURE(S) (YES, NO, OR N/A)	SEDIMENT TRAP OR EQUIVALENT MEASURE(S) (YES, NO, OR N/A)	RECEIVING RESOURCE OR OTHER	COMMENTS
OF01	NA	NA	6.85	6.85	6.85	N/A	N/A	SUGAR FORK	LOWEST POINT OF SITE



**LINEAGE METALS - CHERRY GLEN
INDUSTRIAL PARK**
JOE FRANK PORTER ROAD
MT. PLEASANT, TN 38474

MAY 29, 2026



**SOMERS CONSULTING
SERVICES, LLC.**
ANDY SOMERS, P.E.
(256) 603-4888
2206 SHADES CREST RD
HUNTSVILLE, AL 35801

HILL CONSTRUCTION, LLC
(256) 710-7333
1117 NORTH LOCUST AVENUE
LAWRENCEBURG, TN 38464

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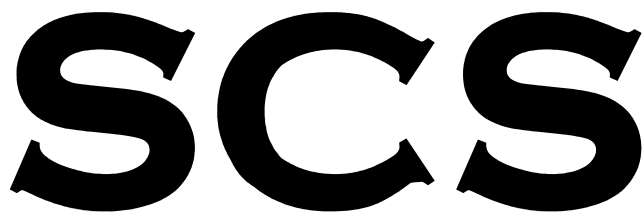
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SHEET NAME:
SITE TOPOGRAPHIC MAP

SCALE:
1" = 1,000'

SHEET NO:
9 OF 12

REVISIONS		
NO.	DESCRIPTION	DATE



SOMERS CONSULTING SERVICES, LLC

LINEAGE METALS - CHERRY GLEN INDUSTRIAL PARK

JOE FRANK PORTER ROAD
MT. PLEASANT, TN 38474

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SOMERS CONSULTING SERVICES, LLC.
ANDY SOMERS, P.E.
(256) 603-4888
2206 SHADES CREST RD
HUNTSVILLE, AL 35801

HILL CONSTRUCTION, LLC
(256) 710-7333
1117 NORTH LOCUST AVENUE
LAWRENCEBURG, TN 38464

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AS

SHEET NAME:
EROSION CONTROL PLAN
STAGE I

SCALE:
1" = 40'

SHEET NO:
10 OF 12

BMP LEGEND

- SF

SILT FENCE
- TS

TEMPORARY SEEDING
- CONSTRUCTION EXIT PAD
- MU

MULCHING
- CHECK DAM
- PS

PERMANENT SEEDING
- INLET PROTECTION
- SO

SODDING
- OUTLET PROTECTION

STAGE I NARRATIVE

CONSTRUCTION SEQUENCING
CONSTRUCTION SHALL BE SEQUENCED AND STAGED TO: MINIMIZE THE EXPOSURE TIME OF GRADED OR DENUDED SOIL AREAS, PRESERVE TOPSOIL, AND MINIMIZE SOIL COMPACTION. NO WORK SHALL BE STARTED UNTIL THE CONTRACTOR'S PLAN FOR THE STAGING OF THEIR OPERATIONS, INCLUDING THE PLAN FOR STAGING OF TEMPORARY AND PERMANENT EPSC MEASURES, HAS BEEN ACCEPTED BY THE ENGINEER.

INITIAL SITE PREPARATION AND EROSION CONTROL
THE INSTALLATION OF INITIAL CONTROLS MARKS THE COMMENCEMENT OF CONSTRUCTION-RELATED ACTIVITIES ON ANY SITE. THIS CRUCIAL PHASE SETS THE FOUNDATION FOR EFFECTIVE EROSION AND SEDIMENT CONTROL THROUGHOUT THE PROJECT.

- INSTALL INITIAL EPSC MEASURES BEFORE CLEARING, GRUBBING, EXCAVATION, GRADING, CULVERT OR BRIDGE CONSTRUCTION, CUTTING, FILLING, OR ANY OTHER EARTHWORK OCCURS, EXCEPT AS SUCH WORK MAY BE NECESSARY TO INSTALL EPSC MEASURES.

PRE-CONSTRUCTION PLANNING
A PRE-CONSTRUCTION CONFERENCE IS ESSENTIAL TO DISCUSS THE INSTALLATION OF INITIAL CONTROLS. DURING THIS MEETING:

- THE CONTRACTOR AND INSPECTOR SHOULD THOROUGHLY REVIEW THE INSPECTION AND MAINTENANCE REQUIREMENTS FOR SPECIFIED BEST MANAGEMENT PRACTICES (BMPs).
- LOCATIONS AND PROPER INSTALLATION PROCEDURES FOR BMPs MUST BE CLEARLY UNDERSTOOD BY ALL PARTIES INVOLVED.

RUNOFF MANAGEMENT
EFFECTIVE MANAGEMENT OF BOTH ON-SITE AND OFF-SITE RUNOFF IS CRITICAL:

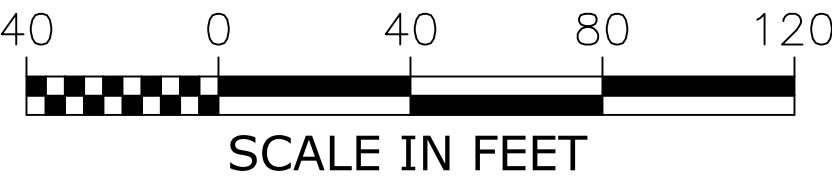
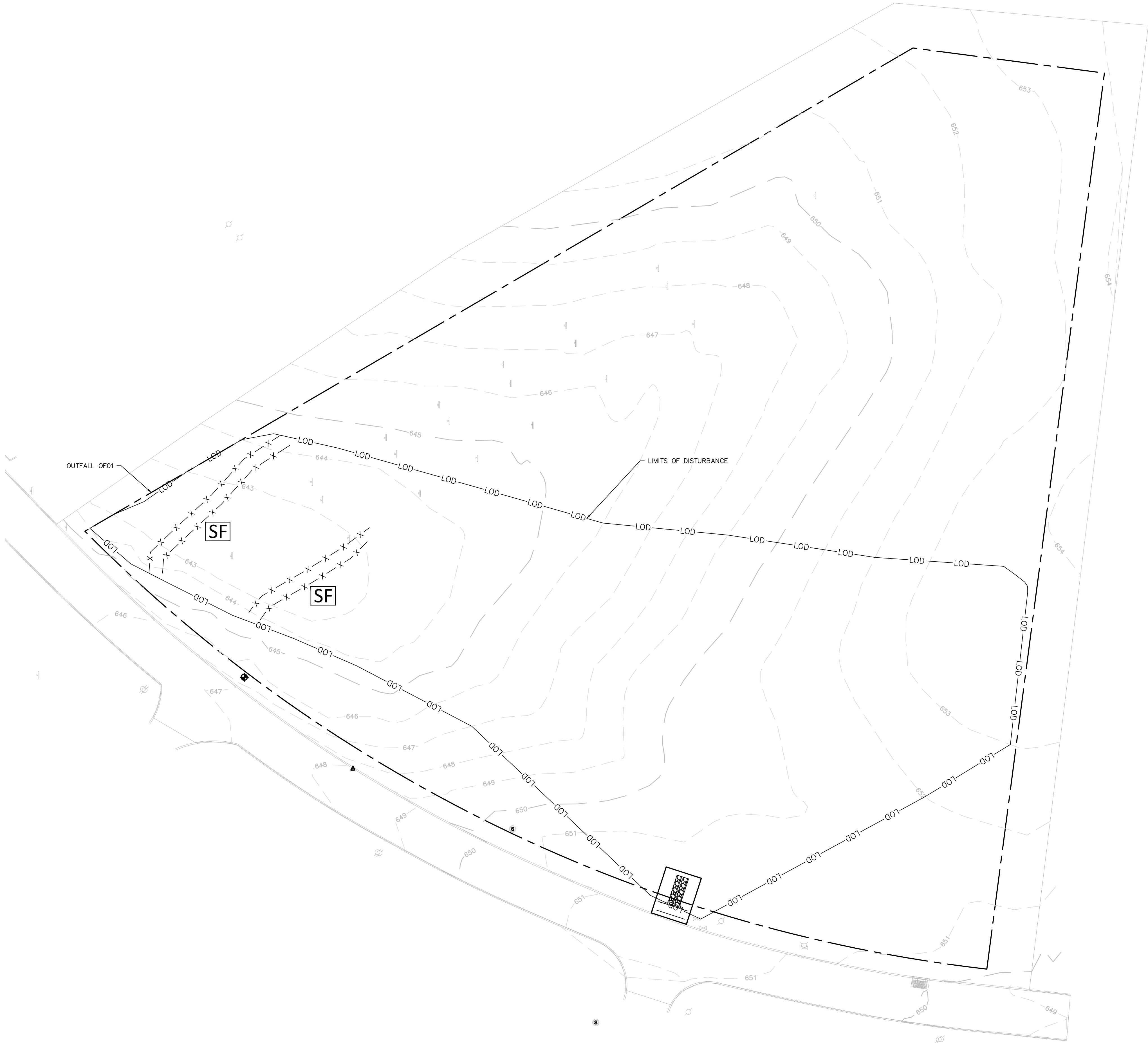
- WHERE POSSIBLE, OFF-SITE RUNOFF SHOULD BE DIVERTED AROUND THE PROJECT USING STABILIZED AREAS, ADEQUATE CONVEYANCE SYSTEMS, AND PROTECTED INLETS.
- SEDIMENT TRAPS AND BASINS SHOULD BE CONSTRUCTED TO ACCOMMODATE ANTICIPATED RUNOFF AND SEDIMENTS.
- FOR EFFICIENCY, CONSIDER PLACING TEMPORARY SEDIMENT BASINS IN LOCATIONS PLANNED FOR PERMANENT STORMWATER FACILITIES.

PERIMETER CONTROL AND EROSION PREVENTION
TO MAINTAIN SITE INTEGRITY AND PREVENT ENVIRONMENTAL IMPACT:

- INSTALL STABILIZED CONSTRUCTION EXITS.
- INSTALL PERIMETER PROTECTION WHERE RUNOFF SHEET FLOWS FROM AND DIVERSIONS TO CONTAIN SEDIMENTS ON-SITE AND DIRECT THEM INTO TRAPS AND BASINS.
- AS CLEARING AND GRADING PROGRESS, IMPLEMENT TEMPORARY SEEDING AND MULCHING IMMEDIATELY FOR AREAS THAT WILL REMAIN UNDISTURBED FOR SEVEN DAYS OR LONGER.

REVIEW THE PROJECT SWPPP FOR DETAILED PRACTICES ON PRE-CONSTRUCTION PREPARATION, CONSTRUCTION SEQUENCING, AND TDEC REGULATIONS.

THIS APPROACH ENSURES COMPREHENSIVE EROSION CONTROL FROM THE OUTSET, SETTING THE STAGE FOR RESPONSIBLE AND EFFECTIVE SITE MANAGEMENT THROUGHOUT THE CONSTRUCTION PROCESS.



REVISIONS		
NO.	DESCRIPTION	DATE

SCS

SOMERS CONSULTING SERVICES, LLC

LINEAGE METALS - CHERRY GLEN INDUSTRIAL PARK

JOE FRANK PORTER ROAD
MT. PLEASANT, TN 38474

MAY 29, 2026



SOMERS CONSULTING SERVICES, LLC.

ANDY SOMERS, P.E.
(256) 603-4888
2206 SHADES CREST RD
HUNTSVILLE, AL 35801

HILL CONSTRUCTION, LLC

(256) 710-7333
1117 NORTH LOCUST AVENUE
LAWRENCEBURG, TN 38464

DRAWN:
AG

CHECKED:
AS

SHEET NAME:
EROSION CONTROL PLAN
STAGE II

SCALE:
1" = 40'

SHEET NO:
11 OF 12

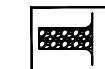
BMP LEGEND



SILT FENCE



TEMPORARY SEEDING



CONSTRUCTION EXIT PAD



MULCHING



CHECK DAM



PERMANENT SEEDING



INLET PROTECTION



SODDING



OUTLET PROTECTION

STAGE II NARRATIVE

CONSTRUCTING PERMANENT STORMWATER MANAGEMENT SYSTEMS DURING THIS CRITICAL PHASE, THE PERMANENT STORMWATER MANAGEMENT SYSTEM IS INSTALLED ALONGSIDE OTHER CONSTRUCTION ACTIVITIES. KEY CONSIDERATIONS INCLUDE:

SYSTEM PREPARATION AND PROTECTION

- THE SYSTEM MUST BE PROPERLY STABILIZED BEFORE RECEIVING RUNOFF.
- PROTECTION FROM SEDIMENTATION IS CRUCIAL UNTIL PROJECT COMPLETION.

LAND DISTURBANCE AND EROSION CONTROL

- LIMIT LAND DISTURBANCE TO AREAS UNDER ACTIVE WORK.
- PERFORM CLEARING AND GRUBBING (NOT MORE THAN TWO WEEKS PRIOR TO GRADING OR EARTH-MOVING).
- STABILIZE DISTURBED AREAS WITHIN 2 WEEKS OF COMPLETING ANY STAGE AND/OR PHASE OF ACTIVITY (STEEP SLOPES SHALL BE STABILIZED WITHIN 1 WEEK AFTER CONSTRUCTION ACTIVITY HAS TEMPORARY OR PERMANENTLY CEASED).
- ANY AND ALL SLOPES GREATER THAN 3:1 TO BE STABILIZED USING SOLID SODDING.

STORMWATER FACILITY MANAGEMENT

- KEEP STORMWATER FACILITIES FREE OF SEDIMENTS THROUGHOUT CONSTRUCTION.
- INSTALL INLET AND CULVERT PROTECTION ONCE STRUCTURES ARE IN PLACE AND CAPABLE OF INTERCEPTING FLOW.
- WHEN USING STORMWATER PONDS AS TEMPORARY SEDIMENT BASINS:
 - ENSURE COMPLETE REMOVAL OF ACCUMULATED SEDIMENTS TO MAINTAIN STORAGE VOLUME AND PREVENT CLOGGING.
 - CONSIDER DESIGNING THE SEDIMENT BASIN BOTTOM 6 TO 12 INCHES (15 TO 30 CM) HIGHER THAN THE FINAL POND BOTTOM.

MAINTENANCE AND INSPECTION

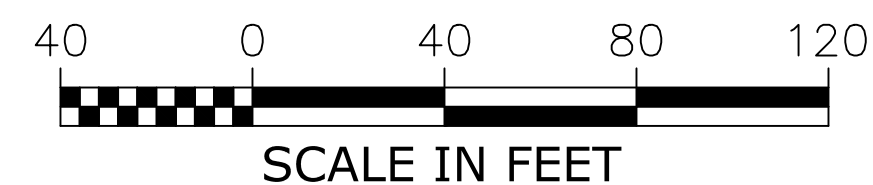
- INSPECTIONS WILL BE CONDUCTED AT LEAST TWICE EVERY CALENDAR WEEK AND AT LEAST 72 HOURS APART.
- THE CONTRACTOR SHOULD INSPECT AND MAINTAIN BMPS WEEKLY AND AFTER SIGNIFICANT RAIN EVENTS.
- ANALYZE ANY FAILURES TO PREVENT RECURRENCE.

PLAN MODIFICATIONS

- SUBSTANTIAL CHANGES TO THE APPROVED PLAN MUST BE:
- MADE OR REVIEWED BY THE DESIGNER.
 - APPROVED BY THE APPROPRIATE REGULATORY AGENCY.

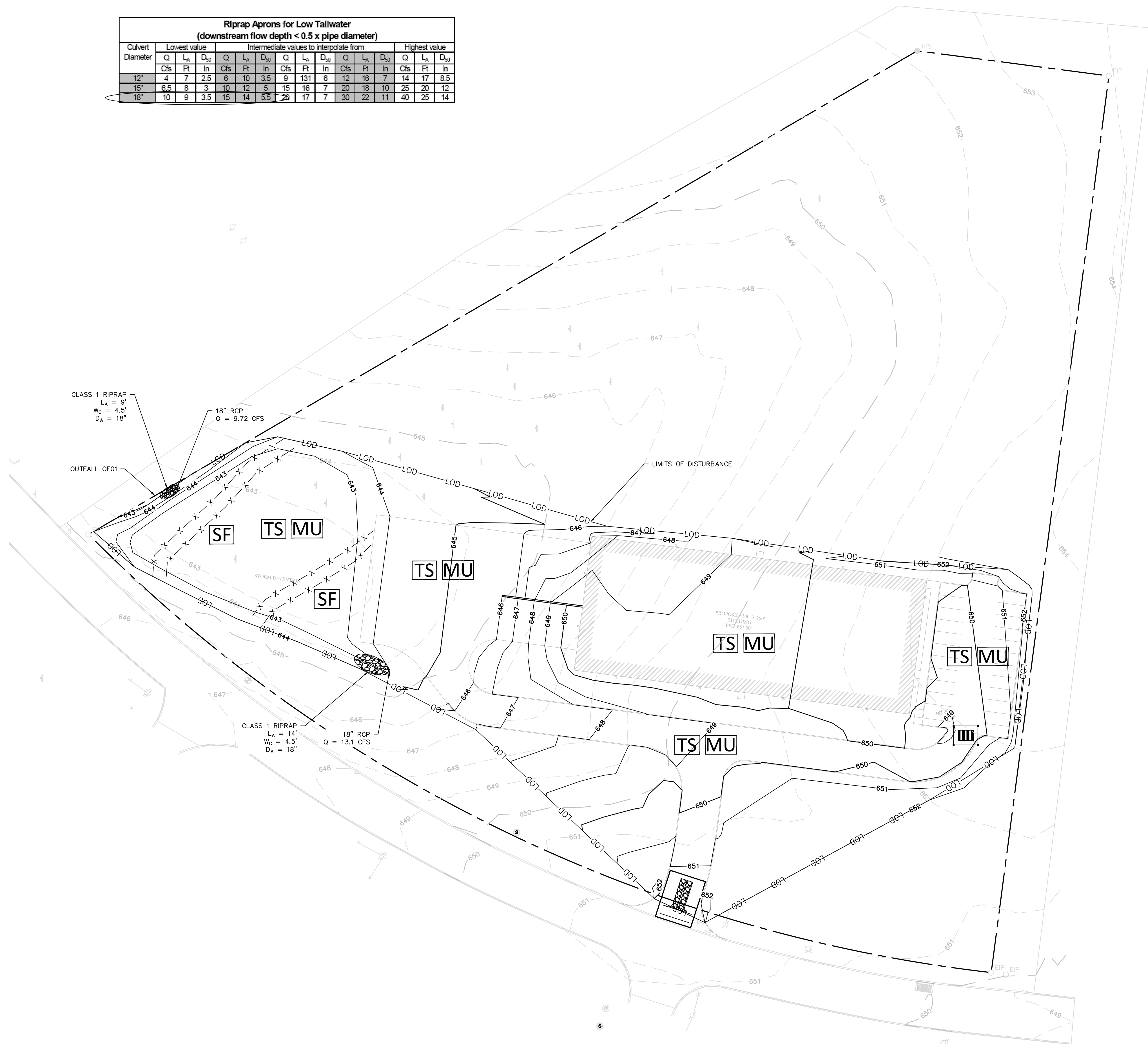
REVIEW THE PROJECT SWPPP FOR DETAILED PRACTICES ON EROSION PREVENTION AND SEDIMENT CONTROL, INSPECTIONS AND RECORD-KEEPING, STORMWATER MANAGEMENT, DEWATERING AND DISCHARGE MANAGEMENT, MATERIAL MANAGEMENT, PLAN MODIFICATIONS, AND TDEC REGULATIONS.

THIS APPROACH ENSURES THE EFFECTIVE CONSTRUCTION AND PROTECTION OF PERMANENT STORMWATER MANAGEMENT SYSTEMS WHILE MAINTAINING OVERALL SITE INTEGRITY AND REGULATORY COMPLIANCE.

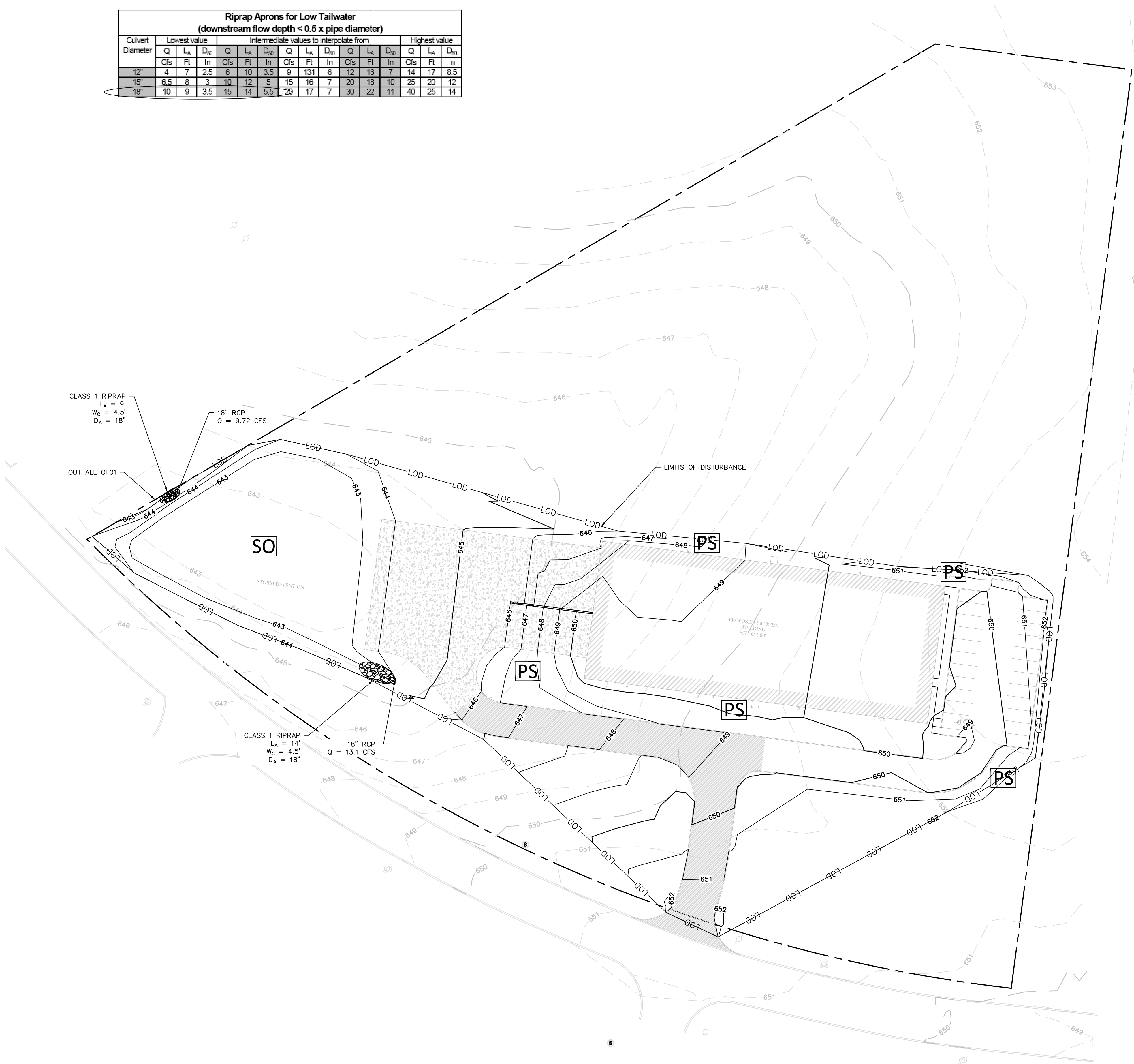


REVISIONS		
NO.	DESCRIPTION	DATE

Riprap Aprons for Low Tailwater (downstream flow depth < 0.5 x pipe diameter)																
Culvert Diameter	Lowest value			Intermediate values to interpolate from										Highest value		
	Q	L _A	D ₅₀	Q	L _A	D ₅₀	Q	L _A	D ₅₀	Q	L _A	D ₅₀	Q	L _A	D ₅₀	
	Cfs	Ft	In	Cfs	Ft	In	Cfs	Ft	In	Cfs	Ft	In	Cfs	Ft	In	
12"	4	7	2.5	6	10	3.5	9	131	6	12	16	7	14	17	8.5	
15"	6.5	8	3	10	12	5	15	16	7	20	18	10	25	20	12	
18"	10	9	3.5	15	14	5.5	20	17	7	30	22	11	40	25	14	



Riprap Aprons for Low Tailwater (downstream flow depth < 0.5 x pipe diameter)															
Culvert Diameter	Lowest value			Intermediate values to interpolate from									Highest value		
	Q Cfs	L _A Ft	D ₅₀ In	Q Cfs	L _A Ft	D ₅₀ In	Q Cfs	L _A Ft	D ₅₀ In	Q Cfs	L _A Ft	D ₅₀ In	Q Cfs	L _A Ft	D ₅₀ In
12"	4	7	2.5	6	10	3.5	9	131	6	12	16	7	14	17	8.5
15"	6.5	8	3	10	12	5	15	16	7	20	18	10	25	20	12
18"	10	9	3.5	15	14	5.5	20	17	7	30	22	11	40	25	14



BMP LEGEND

SF

SILT FENCE

CONSTRUCTION EXIT PAD

CHECK DAM

INLET PROTECTION

OUTLET PROTECTION

TS

TEMPORARY SEEDING

MU

MULCHING

PS

PERMANENT SEEDING

SO

SODDING

STAGE III NARRATIVE

THIS IS THE COMPLETED PROJECT.

EROSION PREVENTION AND STABILIZATION

- COMPLETE FINAL STABILIZATION (TOPSOIL, SEEDING, MULCH, EROSION CONTROL BLANKET, SOD, ETC.)
- REMOVE TEMPORARY EROSION CONTROLS AND ACCUMULATED SEDIMENT FROM AREAS THAT HAVE ESTABLISHED AT LEAST 70 PERCENT UNIFORM PERMANENT VEGETATIVE COVER.
- RE-STABILIZE AREAS DISTURBED BY REMOVAL ACTIVITIES.
- ANY AND ALL SLOPES GREATER THAN 3:1 TO BE STABILIZED USING SOLID SODDING.

CONSTRUCTION ADHERENCE

- THE ENTIRE STORMWATER MANAGEMENT SYSTEM HAS BEEN BUILT IN STRICT ACCORDANCE WITH THE APPROVED PLANS.
- SUBSTANTIAL DEVIATIONS FROM THE APPROVED PLANS ARE NOT PERMITTED.

POTENTIAL CONSEQUENCES OF DEVIATIONS

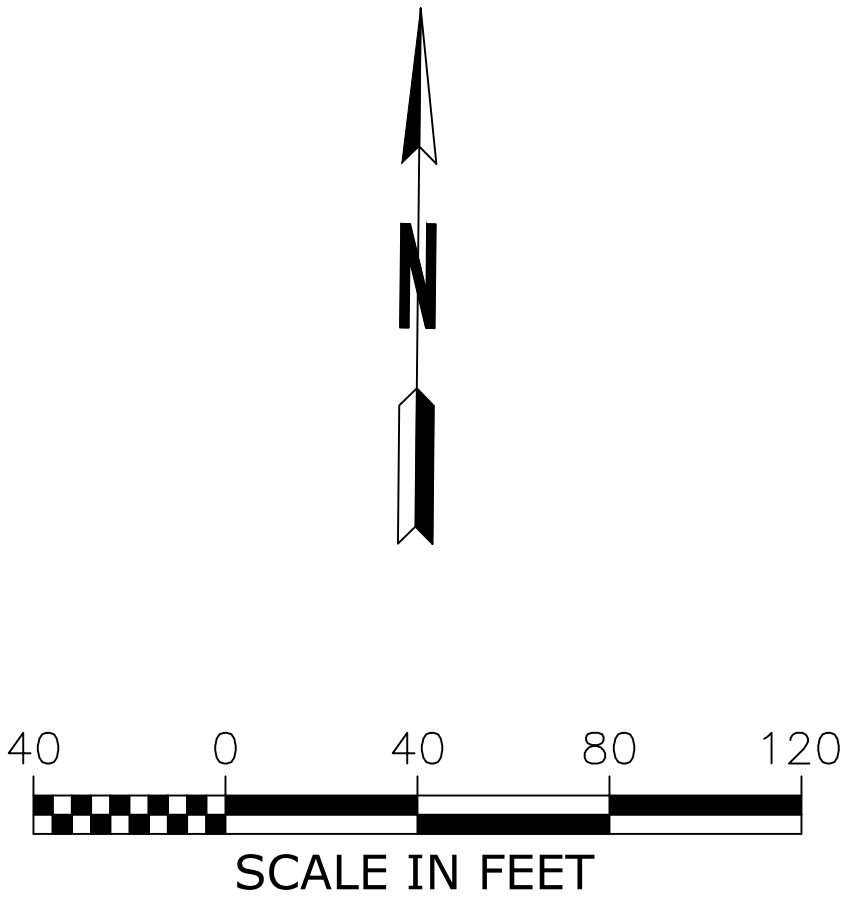
IF SIGNIFICANT DEVIATIONS ARE FOUND, THE FOLLOWING ACTIONS MAY BE REQUIRED:

- REVISIONS BY THE PROFESSIONAL ENGINEER
- RE-APPROVAL BY THE REGULATORY AGENCY INCLUDING TDEC AND/OR TDOT.
- RECONSTRUCTION BY THE CONTRACTOR

SYSTEM FUNCTIONALITY

- THE SYSTEM MUST FUNCTION AS DESIGNED AND COMPLY WITH ALL APPLICABLE REGULATORY CRITERIA.
- ANY UNFORESEEN ACTIVITIES THAT COULD POTENTIALLY COMPROMISE THE FUNCTION OR MAINTAINABILITY OF THE SYSTEM MUST BE ADDRESSED IMMEDIATELY.

IT IS CRUCIAL THAT ALL STAKEHOLDERS ADHERE TO THESE GUIDELINES TO ENSURE THE PROPER FUNCTIONING AND REGULATORY COMPLIANCE OF THE STORMWATER MANAGEMENT SYSTEM.



REVISIONS		
NO.	DESCRIPTION	DATE

SCS

SOMERS CONSULTING SERVICES, LLC

LINEAGE METALS - CHERRY GLEN INDUSTRIAL PARK
JOE FRANK PORTER ROAD
MT. PLEASANT, TN 38474

MAY 29, 2026



SOMERS CONSULTING SERVICES, LLC.
ANDY SOMERS, P.E.
(256) 603-4888
2206 SHADES CREST RD
HUNTSVILLE, AL 35801

HILL CONSTRUCTION, LLC
(256) 710-7333
1117 NORTH LOCUST AVENUE
LAWRENCEBURG, TN 38464

DRAWN:	CHECKED:
AG	AS

SHEET NAME:
EROSION CONTROL PLAN
STAGE III

SCALE:	SHEET NO:
1" = 40'	12 OF 12



Project No. D26017



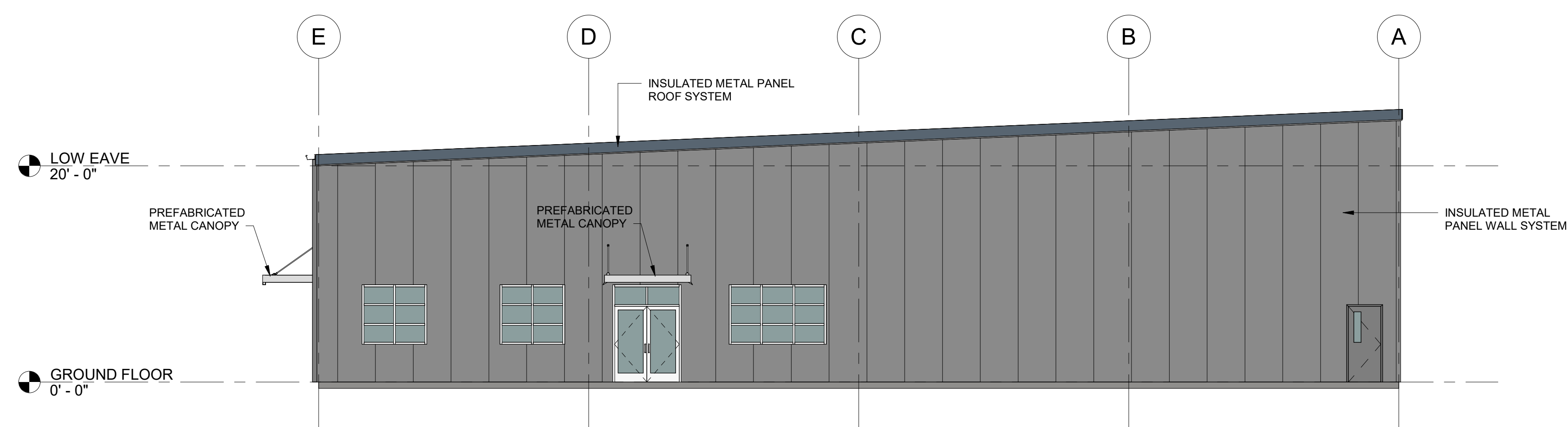
ELEVATIONS & BUILDING SECTIONS

LINEAGE METALS - NEW BUILDING

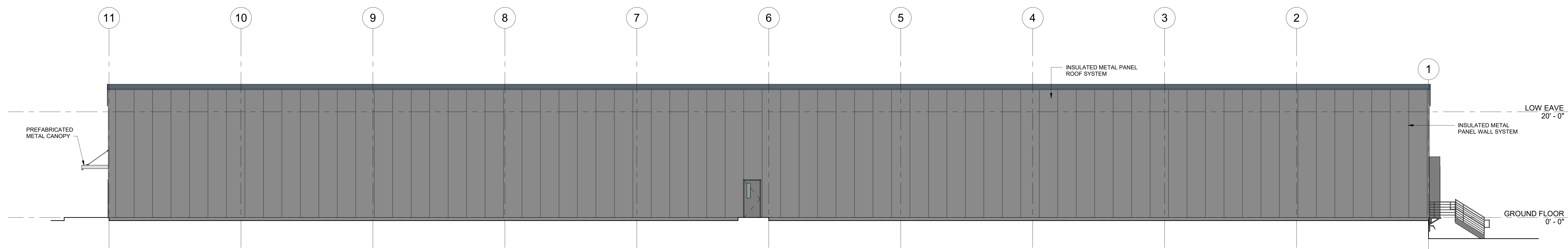
CHERRY GLEN INDUSTRIAL PARK

DWG	CHK	DATE	DESCRIPTION	REV.
		5/29/26	ISSUED FOR PERMIT	

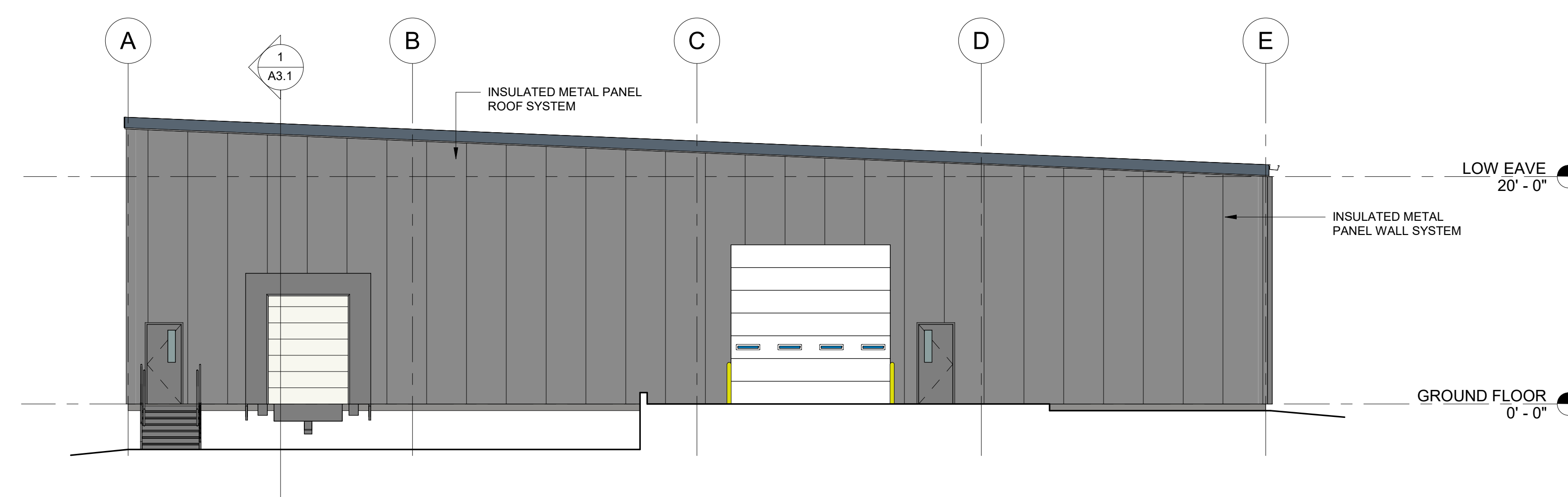
A2.1



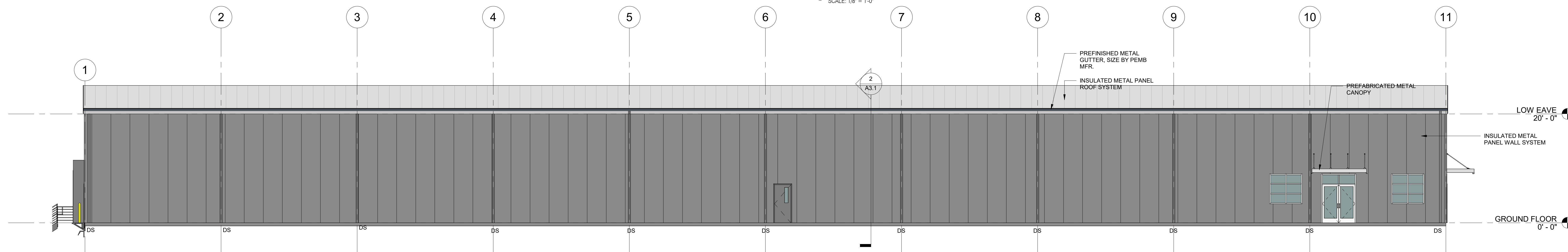
1 EAST ELEVATION
SCALE: 1/8" = 1'-0"



2 NORTH ELEVATION
SCALE: 1/8" = 1'-0"



3 WEST ELEVATION



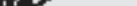
4 SOUTH ELEVATION
SCALE: 1/8" = 1'-0"



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Panel Use	Exterior Wall
Coverage Width	42-inch
Thickness	2, 2.5, 3, 4-inch
Length	8'-0" to 40'-0"
Exterior Gauge	24, 22
Interior Gauge	26
Exterior Substrate	Galvalume®
Interior Substrate	Galvalume®
Exterior Finish	Siliconized Polyester, low-gloss PVDF
Interior Finish	Polyester, Siliconized Polyester
Exterior Texture	Embossed, Smooth
Interior Texture	Embossed, Smooth
Joint	Green-Lock, offset double tongue-and-groove
Core	Continuously poured-in-place polyisocyanurate insulating foam
R-Value	R-8 per inch of thickness (nominal)







Standard Siliconized Polyester Roof and Wall Colors			Standard Polyester Interior Only		
In-stock, Standard Gloss					
Roof					
REGAL WHITE II SR.0.61 E.O.88 SR.73	LIGHT STONE SR.0.50 E.O.86 SR.57	GRAY STONE SR.0.41 E.O.86 SR.45	REGAL WHITE I		
Standard Fluorpon PVDF Wall Colors					
In-stock, Standard Gloss					
REGAL WHITE III SR.0.66 E.O.87 SR.80	ALMOND SR.0.52 E.O.86 SR.60	SANDSTONE SR.0.50 E.O.87 SR.57	ASH GRAY SR.0.33 E.O.87 SR.35	PATINA GREEN SR.0.45 E.O.85 SR.50	
SURREY REDGE SR.0.35 E.O.87 SR.37	ROMAN BLUE SR.0.26 E.O.83 SR.23				
Standard Fluorpon PVDF Roof Colors					
In-stock, Standard Gloss					
REGAL WHITE III SR.0.66 E.O.86 SR.82	ALMOND SR.0.60 E.O.84 SR.70	SANDSTONE SR.0.54 E.O.86 SR.63	ASH GRAY SR.0.39 E.O.84 SR.41	PATINA GREEN SR.0.46 E.O.85 SR.51	
Premium Metallics					
Special Colors, Not in Stock, Additional Costs Will Apply					
TEAS SILVER SR.0.58 E.O.78 SR.66	LEADCOAT SR.0.37 E.O.82 SR.37	WEATHERED CALVALUME SR.0.30 E.O.79 SR.27	CHAMPAGNE SR.0.38 E.O.80 SR.38	COPPER PINKY SR.0.49 E.O.85 SR.55	

Fluoron Premier

0.40 mil clear coat
0.70 mil color coat
0.20 mil primer
substrate

Fluoron Classic
Metallic Sparkle

0.50 mil clear coat
0.50 mil color coat
0.25 mil primer
substrate

Fluoron Classic II
Mica Sparkle

0.75 mil color coat
0.25 mil primer
substrate

Fluorhane IV

0.75 mil color coat
0.80 mil primer
0.80 mil primer
0.80 mil primer
0.80 mil primer
substrate

Fluorhane II

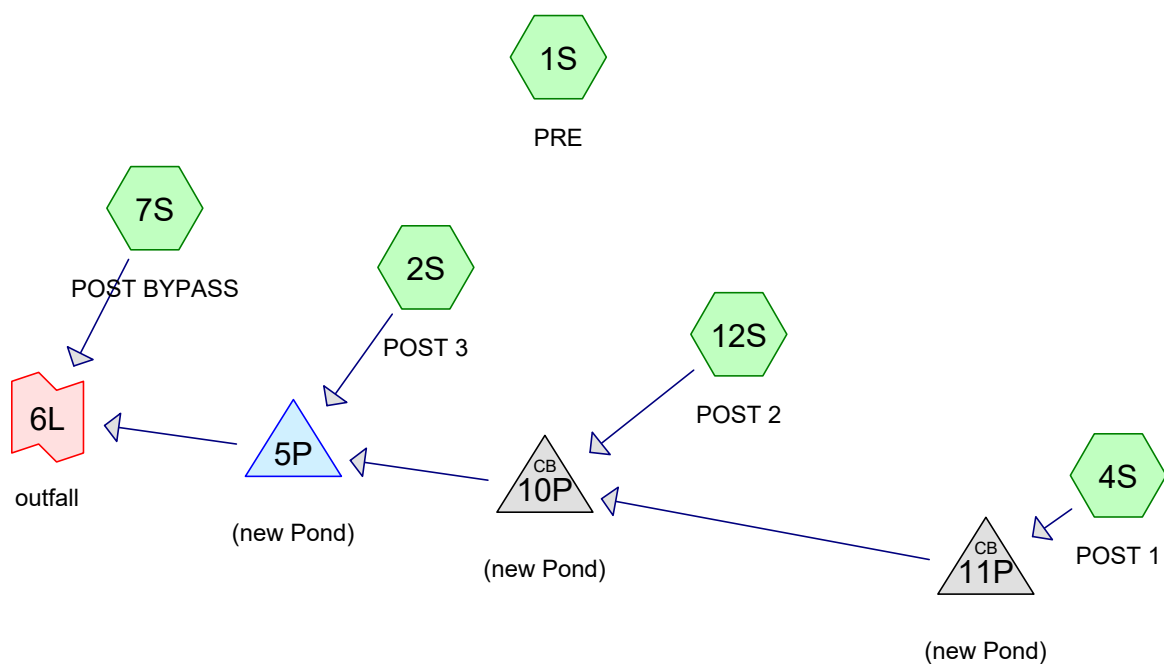
0.75 mil color coat
0.80 mil primer
substrate

Valshield
Thick Film Plastisol

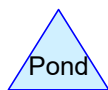
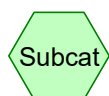
2.0-2.0 mil color coat
0.10 mil primer
substrate

Notes:
Kynar 500® is a registered trademark of Arkema, Inc.
Halar 1000® is a registered trademark of Solvay Solexis.
All colors are produced by the Valupac Corporation.
All colors are Energy Star compliant.
All coatings have a mil/face thickness, average thickness is shown.

HYDROLOGY REPORT
LINEAGE METALS
MT PLEASANT, TN



Handwritten signature and date:
R.A.S.
6/9/26



Routing Diagram for lineage metals
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lineage metals

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Page 2

Rainfall Events Listing

Event#	Event Name	Storm Type	Curve	Mode	Duration (hours)	B/B	Depth (inches)	AMC
1	2-yr	Type II 24-hr		Default	24.00	1	3.89	2
2	10-yr	Type II 24-hr		Default	24.00	1	5.41	2
3	25-yr	Type II 24-hr		Default	24.00	1	6.33	2
4	100-yr	Type II 24-hr		Default	24.00	1	7.82	2

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Page 3

Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
1.416	98	(2S, 4S, 12S)
19.677	61	Pasture/grassland/range, Good, HSG B (1S, 2S, 4S, 7S, 12S)
21.093	63	TOTAL AREA

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Ground Covers (all nodes)

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchment Numbers
0.000	0.000	0.000	0.000	1.416	1.416		2S
							,
							4S
							,
							12
							S
0.000	19.677	0.000	0.000	0.000	19.677	Pasture/grassland/range, Good	1S
							,
							2S
							,
							4S
							,
							7S
							,
							12
							S
0.000	19.677	0.000	0.000	1.416	21.093	TOTAL AREA	

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Page 5

Pipe Listing (all nodes)

Line#	Node Number	In-Invert (feet)	Out-Invert (feet)	Length (feet)	Slope (ft/ft)	n	Width (inches)	Diam/Height (inches)	Inside-Fill (inches)	Node Name
1	5P	642.10	642.07	6.0	0.0050	0.013	0.0	18.0	0.0	
2	10P	643.12	642.50	124.0	0.0050	0.013	0.0	18.0	0.0	
3	11P	646.39	645.00	277.0	0.0050	0.013	0.0	15.0	0.0	

lineage metals*Type II 24-hr 2-yr Rainfall=3.89"*

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Page 6

Time span=0.00-24.00 hrs, dt=0.09 hrs, 268 points
 Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
 Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment1S: PRE Runoff Area=10.563 ac 0.00% Impervious Runoff Depth>0.75"
 Flow Length=1,000' Slope=0.0150 '/' Tc=31.8 min CN=61 Runoff=5.12 cfs 0.659 af

Subcatchment2S: POST 3 Runoff Area=7.989 ac 4.92% Impervious Runoff Depth>0.85"
 Flow Length=850' Slope=0.0150 '/' Tc=24.4 min CN=63 Runoff=5.55 cfs 0.567 af

Subcatchment4S: POST 1 Runoff Area=0.473 ac 48.63% Impervious Runoff Depth>1.87"
 Tc=5.0 min CN=79 Runoff=1.54 cfs 0.074 af

Subcatchment7S: POST BYPASS Runoff Area=0.720 ac 0.00% Impervious Runoff Depth>0.75"
 Flow Length=400' Tc=18.4 min CN=61 Runoff=0.50 cfs 0.045 af

Subcatchment12S: POST 2 Runoff Area=58,719 sf 58.83% Impervious Runoff Depth>2.19"
 Tc=5.0 min CN=83 Runoff=5.09 cfs 0.246 af

Pond 5P: (new Pond) Peak Elev=643.28' Storage=8,934 cf Inflow=7.99 cfs 0.887 af
 Outflow=3.40 cfs 0.883 af

Pond 10P: (new Pond) Peak Elev=644.68' Inflow=6.64 cfs 0.320 af
 18.0" Round Culvert n=0.013 L=124.0' S=0.0050 '/' Outflow=6.64 cfs 0.320 af

Pond 11P: (new Pond) Peak Elev=647.07' Inflow=1.54 cfs 0.074 af
 15.0" Round Culvert n=0.013 L=277.0' S=0.0050 '/' Outflow=1.54 cfs 0.074 af

Link 6L: outfall Inflow=3.59 cfs 0.928 af
 Primary=3.59 cfs 0.928 af

Total Runoff Area = 21.093 ac Runoff Volume = 1.591 af Average Runoff Depth = 0.90"
93.29% Pervious = 19.677 ac 6.71% Impervious = 1.416 ac

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Type II 24-hr 2-yr Rainfall=3.89"

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Summary for Subcatchment 1S: PRE

Runoff = 5.12 cfs @ 12.33 hrs, Volume= 0.659 af, Depth> 0.75"

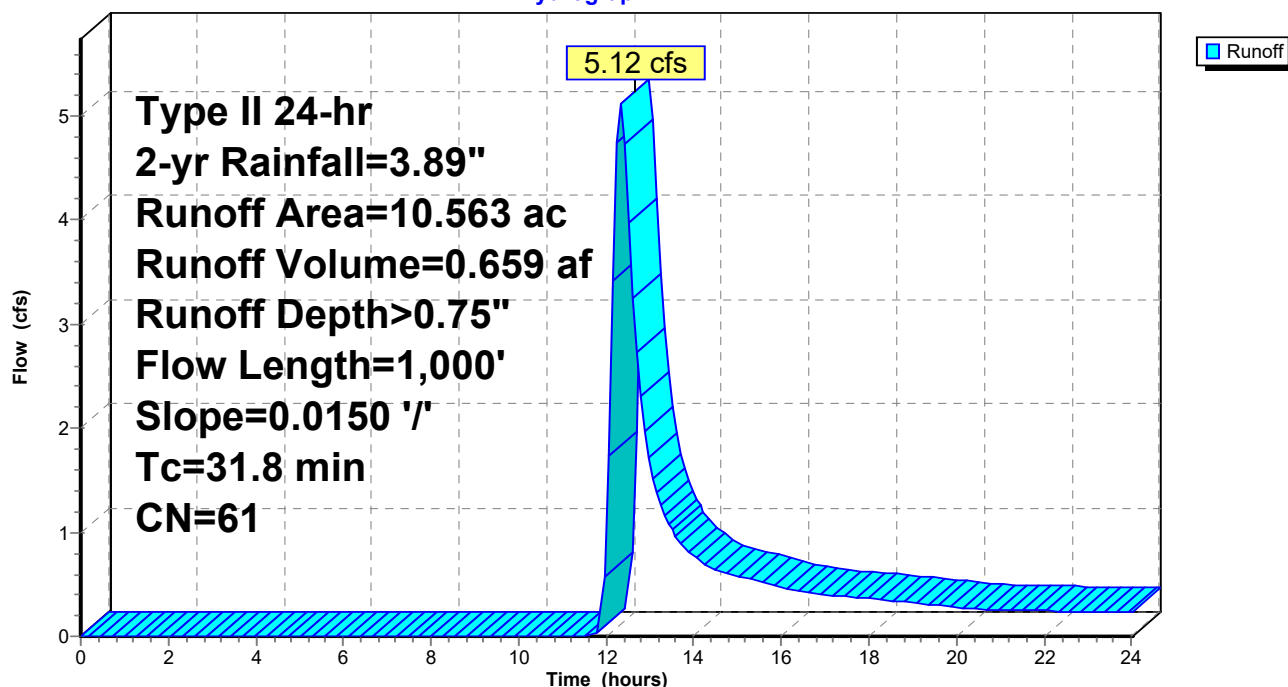
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.03 hrs, dt= 0.09 hrs
Type II 24-hr 2-yr Rainfall=3.89"

Area (ac)	CN	Description
10.563	61	Pasture/grassland/range, Good, HSG B
10.563		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.3	100	0.0150	0.12		Sheet Flow, Sheet flow
					Grass: Dense n= 0.240 P2= 4.00"
17.5	900	0.0150	0.86		Shallow Concentrated Flow, Shallow concentrated
					Short Grass Pasture Kv= 7.0 fps
31.8	1,000	Total			

Subcatchment 1S: PRE

Hydrograph



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Type II 24-hr 2-yr Rainfall=3.89"

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Summary for Subcatchment 2S: POST 3

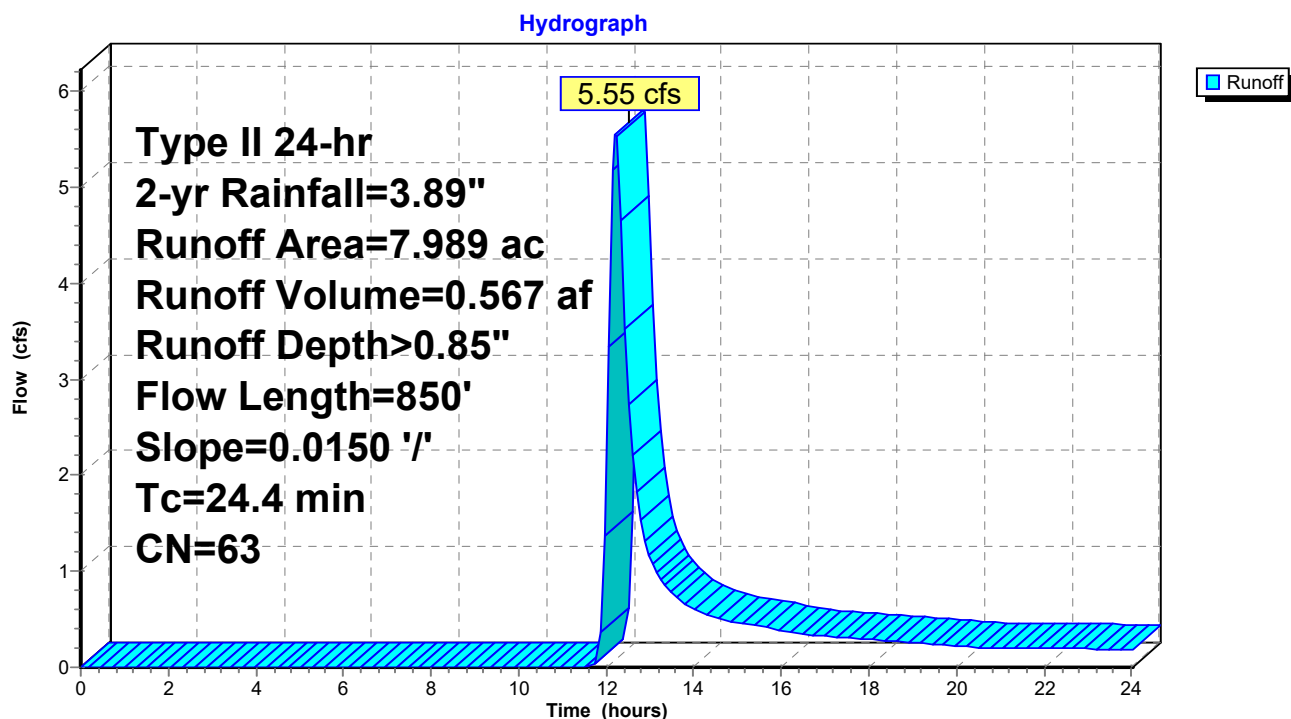
Runoff = 5.55 cfs @ 12.22 hrs, Volume= 0.567 af, Depth> 0.85"
Routed to Pond 5P : (new Pond)

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.03 hrs, dt= 0.09 hrs
Type II 24-hr 2-yr Rainfall=3.89"

Area (ac)	CN	Description
7.596	61	Pasture/grassland/range, Good, HSG B
* 0.393	98	
7.989	63	Weighted Average
7.596		95.08% Pervious Area
0.393		4.92% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.8	100	0.0150	0.17		Sheet Flow, Sheet Flow
					Grass: Short n= 0.150 P2= 4.00"
14.6	750	0.0150	0.86		Shallow Concentrated Flow, Shallow Concentrated
					Short Grass Pasture Kv= 7.0 fps
24.4	850	Total			

Subcatchment 2S: POST 3



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Type II 24-hr 2-yr Rainfall=3.89"

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Summary for Subcatchment 4S: POST 1

[49] Hint: $T_c < 2dt$ may require smaller dt

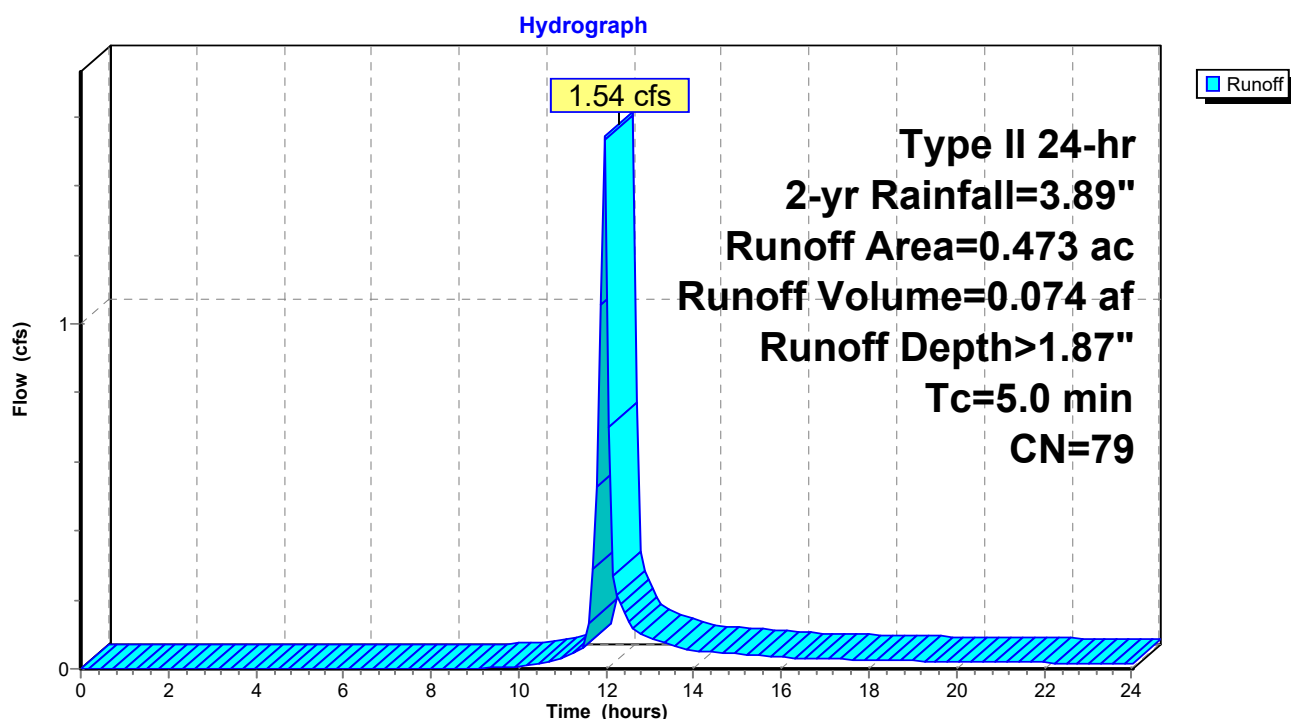
Runoff = 1.54 cfs @ 11.96 hrs, Volume= 0.074 af, Depth> 1.87"
Routed to Pond 11P : (new Pond)

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.03 hrs, $dt=0.09$ hrs
Type II 24-hr 2-yr Rainfall=3.89"

Area (ac)	CN	Description
0.243	61	Pasture/grassland/range, Good, HSG B
* 0.230	98	
0.473	79	Weighted Average
0.243		51.37% Pervious Area
0.230		48.63% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					Direct Entry, Assumed

Subcatchment 4S: POST 1



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Type II 24-hr 2-yr Rainfall=3.89"

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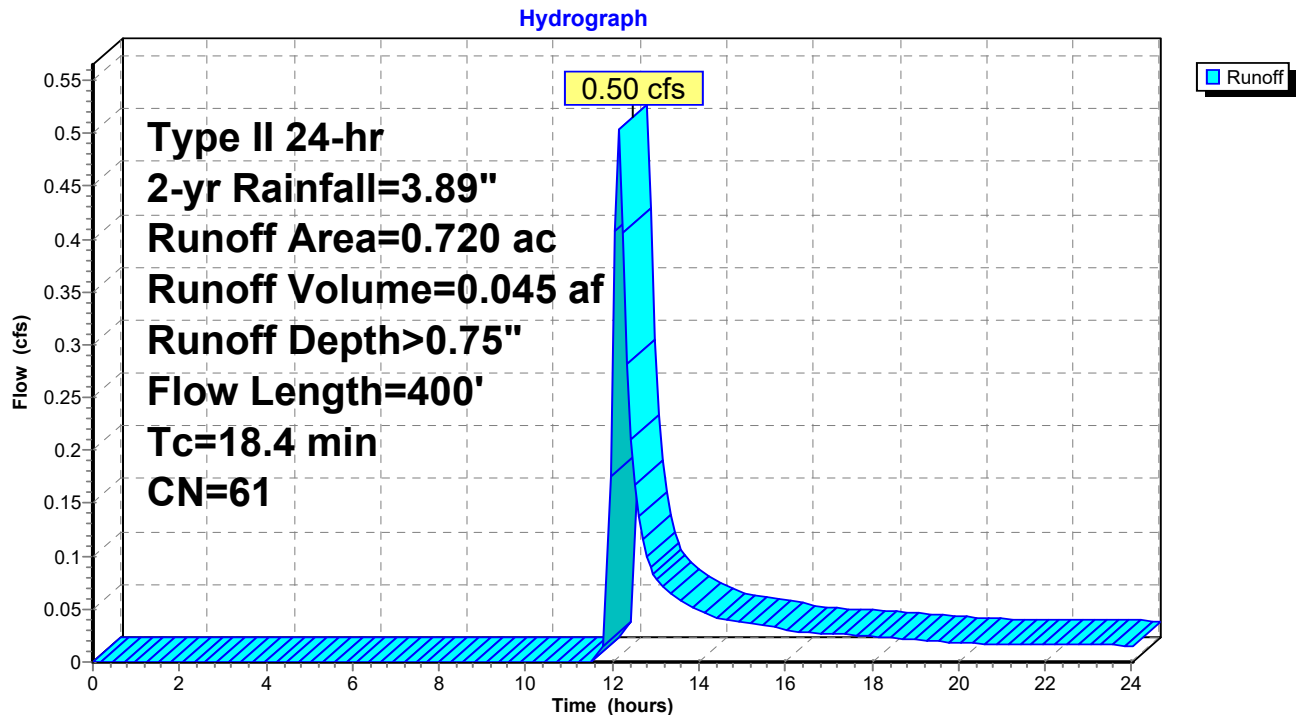
Summary for Subcatchment 7S: POST BYPASS

Runoff = 0.50 cfs @ 12.15 hrs, Volume= 0.045 af, Depth> 0.75"
 Routed to Link 6L : outfall

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.03 hrs, dt= 0.09 hrs
 Type II 24-hr 2-yr Rainfall=3.89"

Area (ac)	CN	Description
0.720	61	Pasture/grassland/range, Good, HSG B
0.720		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.3	100	0.0150	0.12		Sheet Flow, Sheet flow Grass: Dense n= 0.240 P2= 4.00"
4.1	300	0.0300	1.21		Shallow Concentrated Flow, Shallow concentrated Short Grass Pasture Kv= 7.0 fps
18.4	400	Total			

Subcatchment 7S: POST BYPASS

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Type II 24-hr 2-yr Rainfall=3.89"

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Summary for Subcatchment 12S: POST 2

[49] Hint: $T_c < 2dt$ may require smaller dt

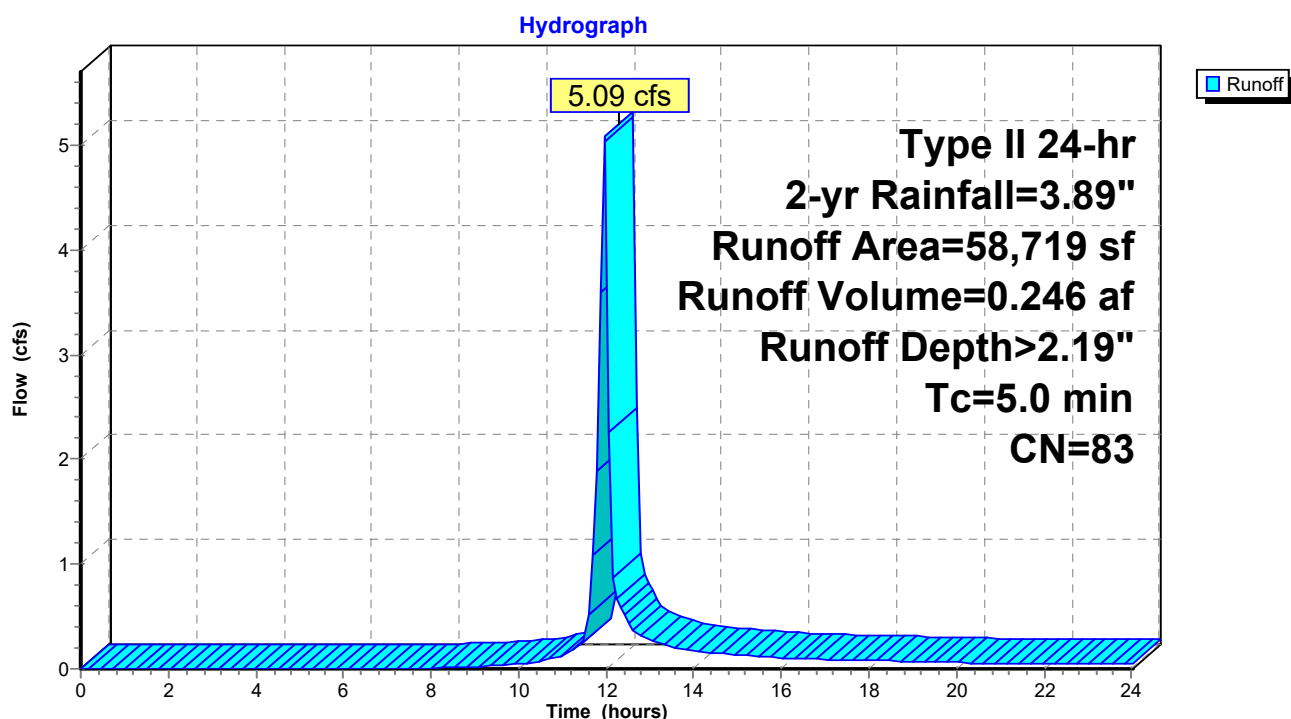
Runoff = 5.09 cfs @ 11.96 hrs, Volume= 0.246 af, Depth> 2.19"
Routed to Pond 10P : (new Pond)

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.03 hrs, $dt=0.09$ hrs
Type II 24-hr 2-yr Rainfall=3.89"

	Area (sf)	CN	Description
	24,176	61	Pasture/grassland/range, Good, HSG B
*	34,543	98	
	58,719	83	Weighted Average
	24,176		41.17% Pervious Area
	34,543		58.83% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					Direct Entry, Assumed

Subcatchment 12S: POST 2



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Type II 24-hr 2-yr Rainfall=3.89"

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Summary for Pond 5P: (new Pond)

[79] Warning: Submerged Pond 10P Primary device # 1 INLET by 0.16'

Inflow Area = 9.810 ac, 14.43% Impervious, Inflow Depth > 1.08" for 2-yr event
 Inflow = 7.99 cfs @ 11.98 hrs, Volume= 0.887 af
 Outflow = 3.40 cfs @ 12.51 hrs, Volume= 0.883 af, Atten= 57%, Lag= 31.5 min
 Primary = 3.40 cfs @ 12.51 hrs, Volume= 0.883 af
 Routed to Link 6L : outfall

Routing by Stor-Ind method, Time Span= 0.00-24.03 hrs, dt= 0.09 hrs / 3
 Peak Elev= 643.28' @ 12.51 hrs Surf.Area= 16,816 sf Storage= 8,934 cf

Plug-Flow detention time= 28.3 min calculated for 0.880 af (99% of inflow)
 Center-of-Mass det. time= 25.8 min (894.8 - 868.9)

Volume	Invert	Avail.Storage	Storage Description		
#1	642.10'	49,077 cf	Custom Stage Data (Irregular) Listed below (Recalc)		
Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
642.10	4	8.0	0	0	4
643.00	14,962	660.0	4,563	4,563	34,664
644.00	22,218	674.0	18,471	23,034	36,293
644.40	27,824	683.0	9,987	33,021	37,302
644.90	36,600	847.0	16,056	49,077	57,273

Device	Routing	Invert	Outlet Devices													
#1	Primary	642.10'	18.0" Round Culvert L= 6.0' Ke= 1.000 Inlet / Outlet Invert= 642.10' / 642.07' S= 0.0050 '/' Cc= 0.900 n= 0.013, Flow Area= 1.77 sf													
#2	Primary	644.40'	10.0' long + 3.0 ' SideZ x 2.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 Coef. (English) 2.54 2.61 2.61 2.60 2.66 2.70 2.77 2.89 2.88 2.85 3.07 3.20 3.32													

Primary OutFlow Max=3.40 cfs @ 12.51 hrs HW=643.28' (Free Discharge)

1=Culvert (Barrel Controls 3.40 cfs @ 3.15 fps)

2=Broad-Crested Rectangular Weir(Controls 0.00 cfs)

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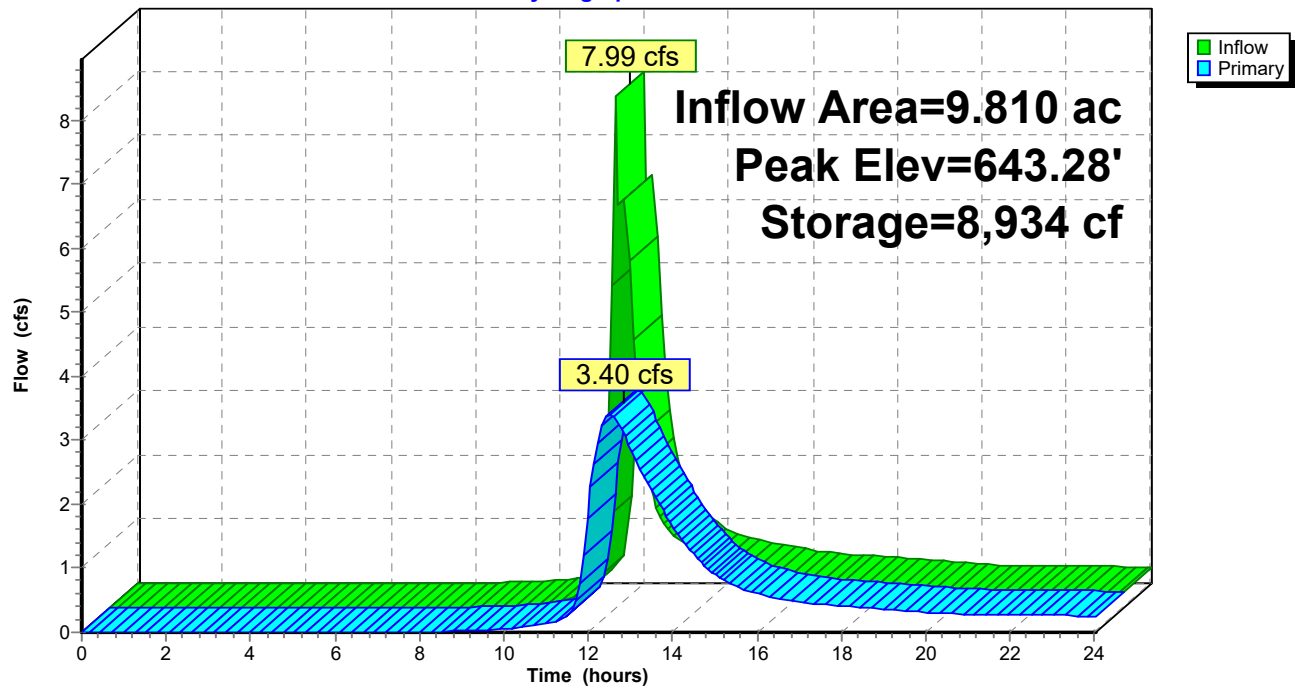
Type II 24-hr 2-yr Rainfall=3.89"

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Pond 5P: (new Pond)

Hydrograph



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Type II 24-hr 2-yr Rainfall=3.89"

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Summary for Pond 10P: (new Pond)

[57] Hint: Peaked at 644.68' (Flood elevation advised)

Inflow Area = 1.821 ac, 56.18% Impervious, Inflow Depth > 2.11" for 2-yr event
 Inflow = 6.64 cfs @ 11.96 hrs, Volume= 0.320 af
 Outflow = 6.64 cfs @ 11.96 hrs, Volume= 0.320 af, Atten= 0%, Lag= 0.0 min
 Primary = 6.64 cfs @ 11.96 hrs, Volume= 0.320 af
 Routed to Pond 5P : (new Pond)

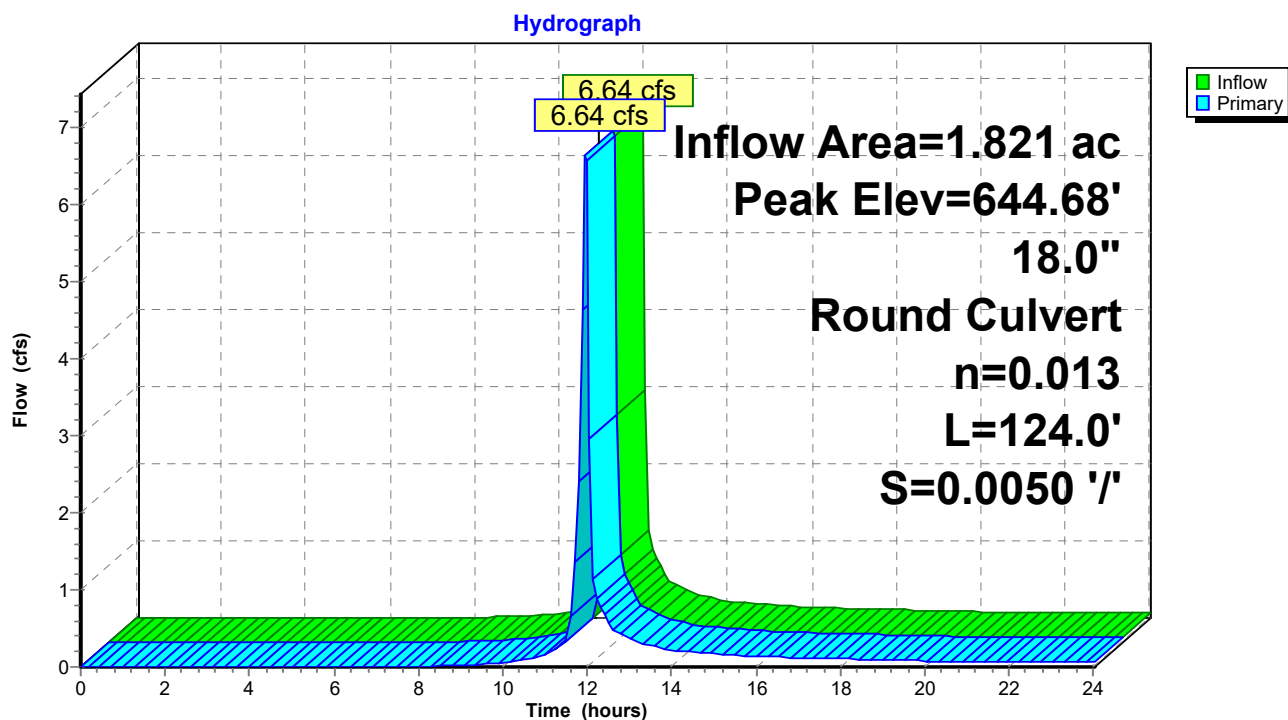
Routing by Stor-Ind method, Time Span= 0.00-24.03 hrs, dt= 0.09 hrs

Peak Elev= 644.68' @ 11.96 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	643.12'	18.0" Round Culvert L= 124.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 643.12' / 642.50' S= 0.0050 '/ Cc= 0.900 n= 0.013, Flow Area= 1.77 sf

Primary OutFlow Max=6.30 cfs @ 11.96 hrs HW=644.62' (Free Discharge)

1=Culvert (Barrel Controls 6.30 cfs @ 4.43 fps)

Pond 10P: (new Pond)

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Type II 24-hr 2-yr Rainfall=3.89"

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Summary for Pond 11P: (new Pond)

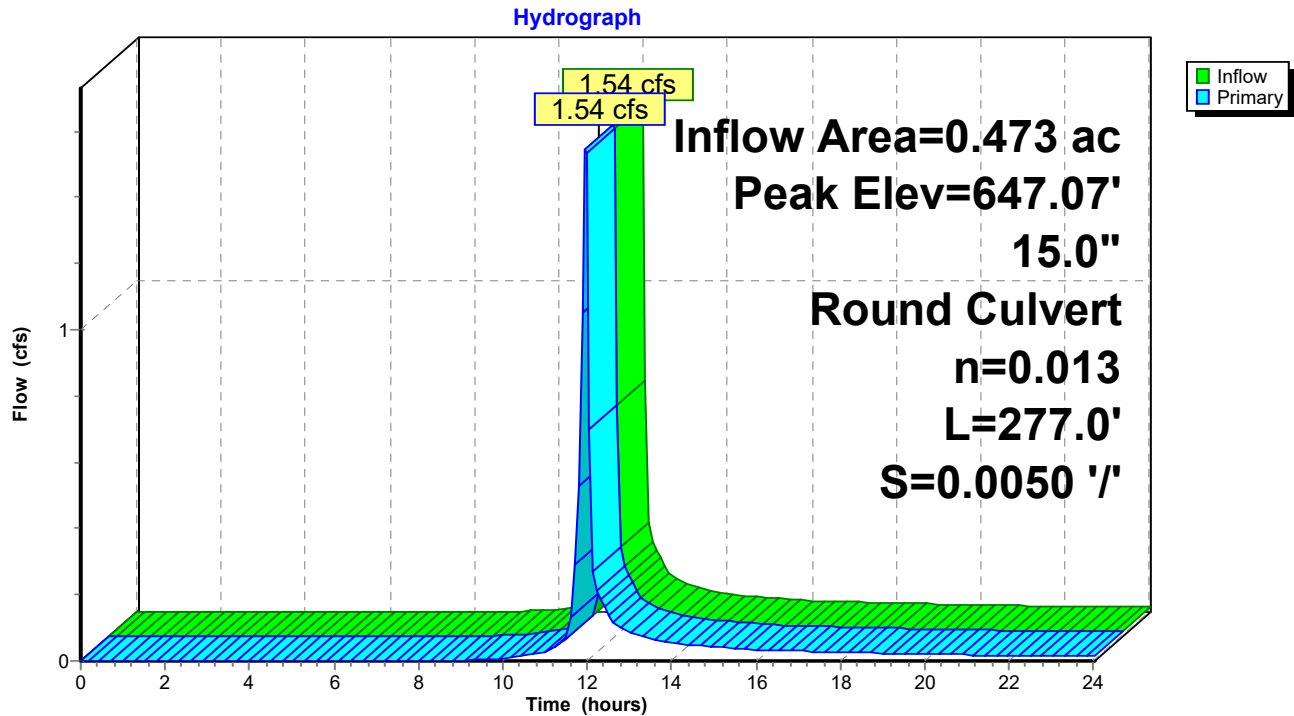
[57] Hint: Peaked at 647.07' (Flood elevation advised)

Inflow Area = 0.473 ac, 48.63% Impervious, Inflow Depth > 1.87" for 2-yr event
 Inflow = 1.54 cfs @ 11.96 hrs, Volume= 0.074 af
 Outflow = 1.54 cfs @ 11.96 hrs, Volume= 0.074 af, Atten= 0%, Lag= 0.0 min
 Primary = 1.54 cfs @ 11.96 hrs, Volume= 0.074 af
 Routed to Pond 10P : (new Pond)

Routing by Stor-Ind method, Time Span= 0.00-24.03 hrs, dt= 0.09 hrs
 Peak Elev= 647.07' @ 11.96 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	646.39'	15.0" Round Culvert L= 277.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 646.39' / 645.00' S= 0.0050 '/ Cc= 0.900 n= 0.013, Flow Area= 1.23 sf

Primary OutFlow Max=1.46 cfs @ 11.96 hrs HW=647.05' (Free Discharge)
 1=Culvert (Barrel Controls 1.46 cfs @ 3.24 fps)

Pond 11P: (new Pond)

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Type II 24-hr 2-yr Rainfall=3.89"

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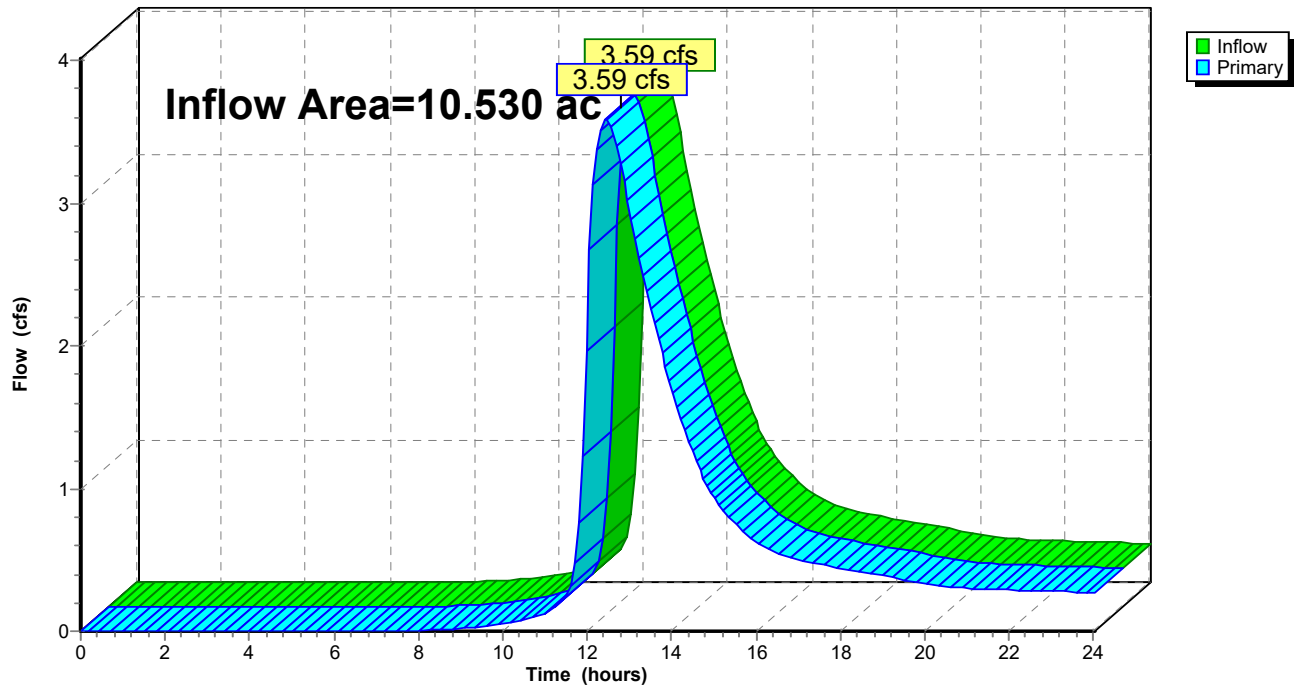
Summary for Link 6L: outfall

Inflow Area = 10.530 ac, 13.45% Impervious, Inflow Depth > 1.06" for 2-yr event
 Inflow = 3.59 cfs @ 12.45 hrs, Volume= 0.928 af
 Primary = 3.59 cfs @ 12.45 hrs, Volume= 0.928 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.03 hrs, dt= 0.09 hrs

Link 6L: outfall

Hydrograph



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Type II 24-hr 10-yr Rainfall=5.41"

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Time span=0.00-24.00 hrs, dt=0.09 hrs, 268 points
 Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
 Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment1S: PRE Runoff Area=10.563 ac 0.00% Impervious Runoff Depth>1.61"
 Flow Length=1,000' Slope=0.0150 '/' Tc=31.8 min CN=61 Runoff=12.87 cfs 1.414 af

Subcatchment2S: POST 3 Runoff Area=7.989 ac 4.92% Impervious Runoff Depth>1.76"
 Flow Length=850' Slope=0.0150 '/' Tc=24.4 min CN=63 Runoff=12.93 cfs 1.173 af

Subcatchment4S: POST 1 Runoff Area=0.473 ac 48.63% Impervious Runoff Depth>3.16"
 Tc=5.0 min CN=79 Runoff=2.57 cfs 0.124 af

Subcatchment7S: POST BYPASS Runoff Area=0.720 ac 0.00% Impervious Runoff Depth>1.61"
 Flow Length=400' Tc=18.4 min CN=61 Runoff=1.24 cfs 0.097 af

Subcatchment12S: POST 2 Runoff Area=58,719 sf 58.83% Impervious Runoff Depth>3.55"
 Tc=5.0 min CN=83 Runoff=8.08 cfs 0.398 af

Pond 5P: (new Pond) Peak Elev=643.90' Storage=20,781 cf Inflow=15.58 cfs 1.696 af
 Outflow=6.43 cfs 1.688 af

Pond 10P: (new Pond) Peak Elev=646.08' Inflow=10.65 cfs 0.523 af
 18.0" Round Culvert n=0.013 L=124.0' S=0.0050 '/' Outflow=10.65 cfs 0.523 af

Pond 11P: (new Pond) Peak Elev=647.30' Inflow=2.57 cfs 0.124 af
 15.0" Round Culvert n=0.013 L=277.0' S=0.0050 '/' Outflow=2.57 cfs 0.124 af

Link 6L: outfall Inflow=6.81 cfs 1.785 af
 Primary=6.81 cfs 1.785 af

Total Runoff Area = 21.093 ac Runoff Volume = 3.207 af Average Runoff Depth = 1.82"
93.29% Pervious = 19.677 ac 6.71% Impervious = 1.416 ac

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Type II 24-hr 10-yr Rainfall=5.41"

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Summary for Subcatchment 1S: PRE

Runoff = 12.87 cfs @ 12.30 hrs, Volume= 1.414 af, Depth> 1.61"

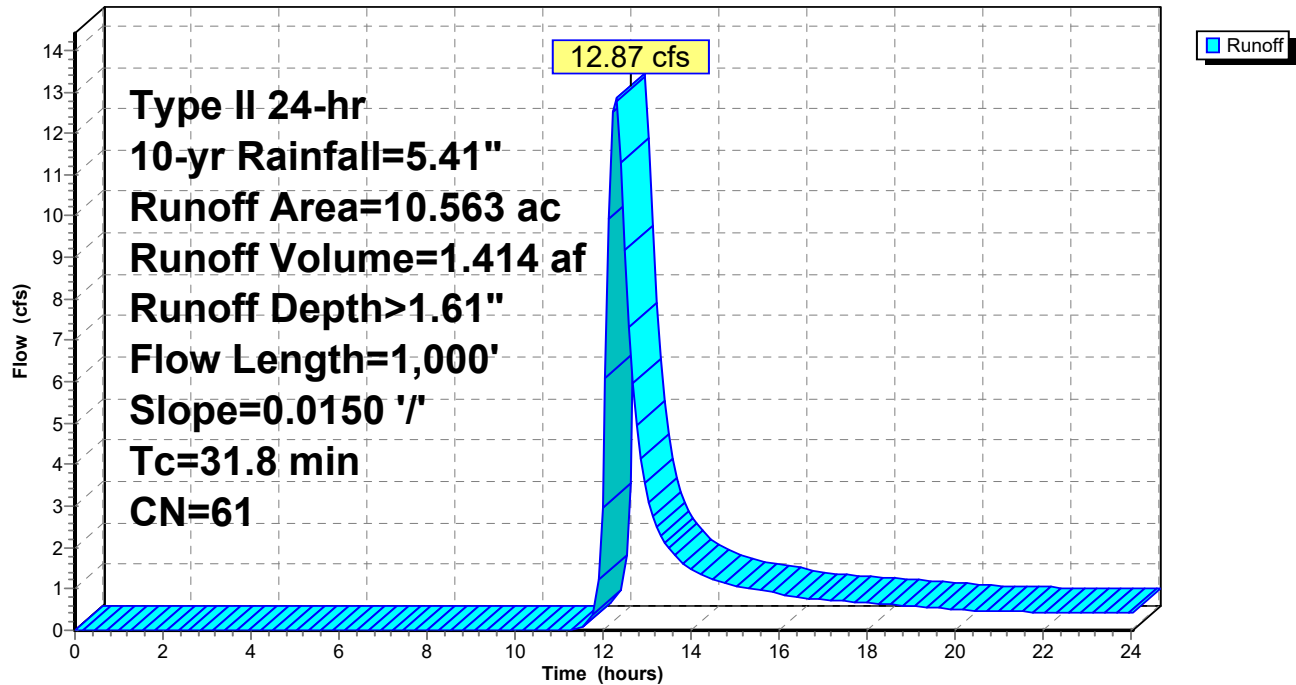
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.03 hrs, dt= 0.09 hrs
Type II 24-hr 10-yr Rainfall=5.41"

Area (ac)	CN	Description
10.563	61	Pasture/grassland/range, Good, HSG B
10.563		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.3	100	0.0150	0.12		Sheet Flow, Sheet flow
					Grass: Dense n= 0.240 P2= 4.00"
17.5	900	0.0150	0.86		Shallow Concentrated Flow, Shallow concentrated
					Short Grass Pasture Kv= 7.0 fps
31.8	1,000	Total			

Subcatchment 1S: PRE

Hydrograph



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Type II 24-hr 10-yr Rainfall=5.41"

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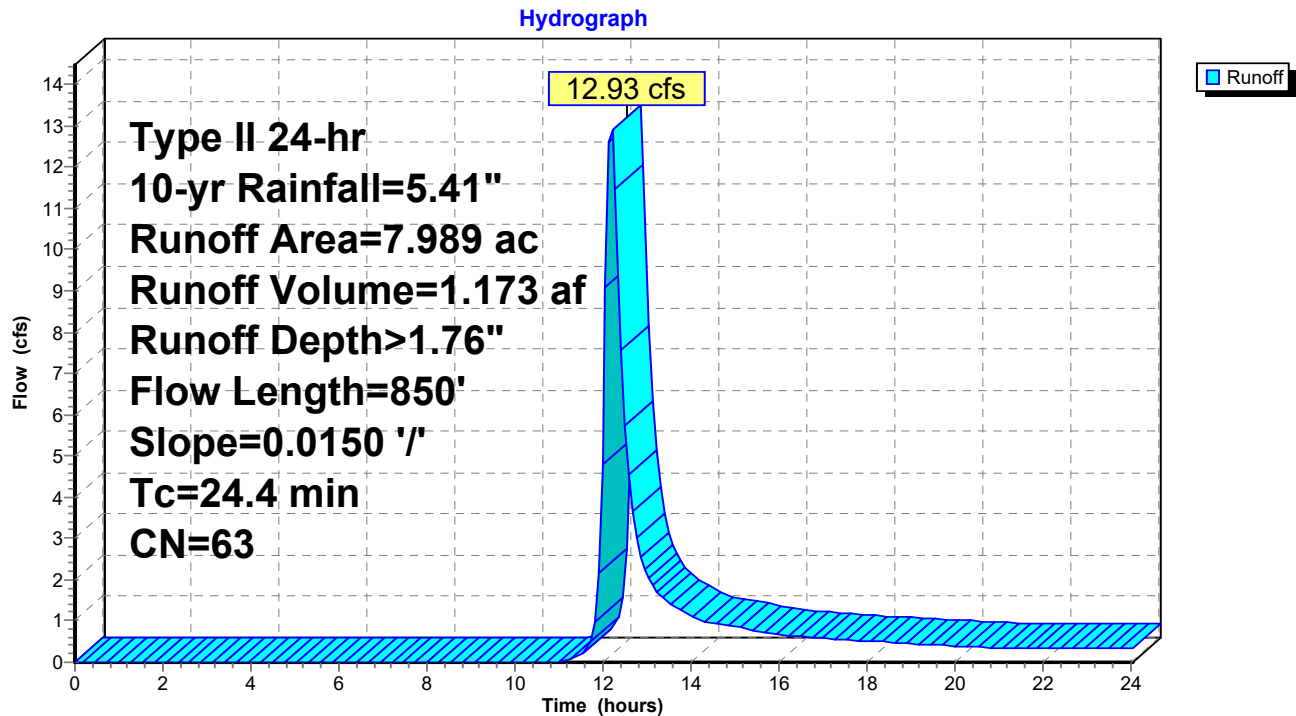
Summary for Subcatchment 2S: POST 3

Runoff = 12.93 cfs @ 12.20 hrs, Volume= 1.173 af, Depth> 1.76"
 Routed to Pond 5P : (new Pond)

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.03 hrs, dt= 0.09 hrs
 Type II 24-hr 10-yr Rainfall=5.41"

Area (ac)	CN	Description
7.596	61	Pasture/grassland/range, Good, HSG B
* 0.393	98	
7.989	63	Weighted Average
7.596		95.08% Pervious Area
0.393		4.92% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.8	100	0.0150	0.17		Sheet Flow, Sheet Flow
					Grass: Short n= 0.150 P2= 4.00"
14.6	750	0.0150	0.86		Shallow Concentrated Flow, Shallow Concentrated
					Short Grass Pasture Kv= 7.0 fps
24.4	850	Total			

Subcatchment 2S: POST 3

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Type II 24-hr 10-yr Rainfall=5.41"

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Summary for Subcatchment 4S: POST 1

[49] Hint: $T_c < 2dt$ may require smaller dt

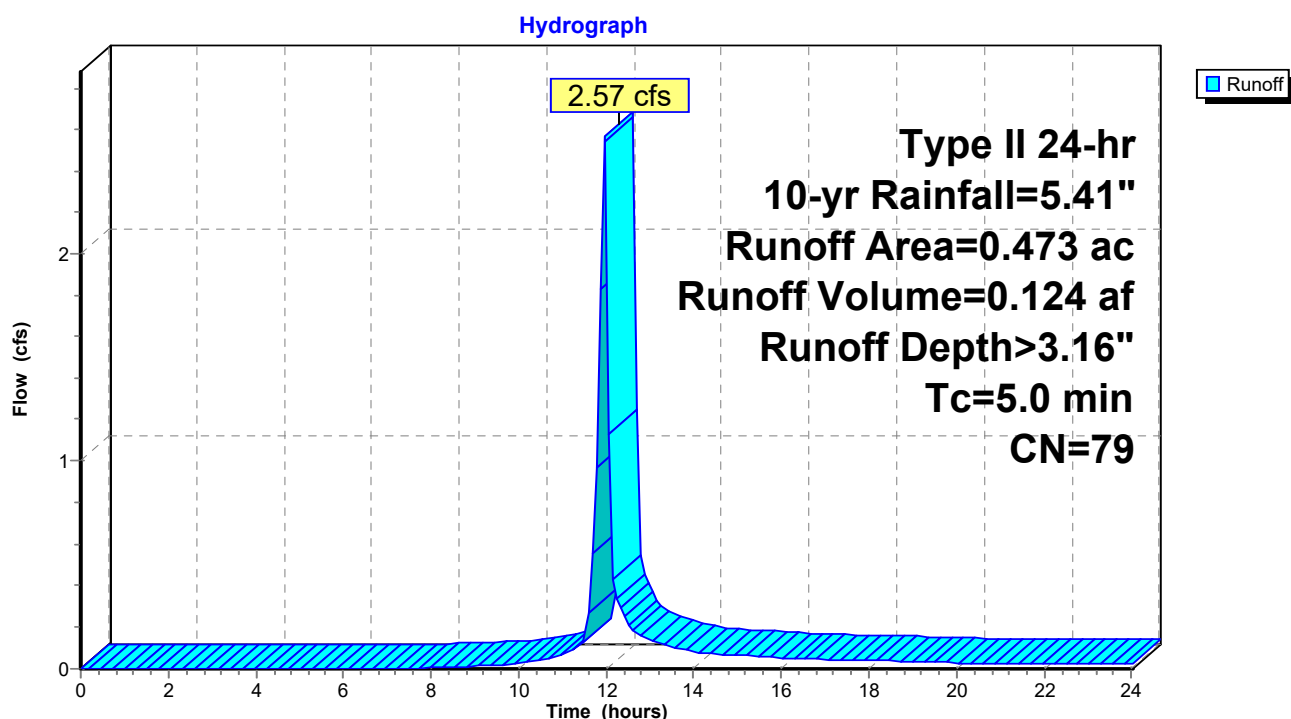
Runoff = 2.57 cfs @ 11.96 hrs, Volume= 0.124 af, Depth> 3.16"
Routed to Pond 11P : (new Pond)

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.03 hrs, $dt=0.09$ hrs
Type II 24-hr 10-yr Rainfall=5.41"

Area (ac)	CN	Description
0.243	61	Pasture/grassland/range, Good, HSG B
* 0.230	98	
0.473	79	Weighted Average
0.243		51.37% Pervious Area
0.230		48.63% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					Direct Entry, Assumed

Subcatchment 4S: POST 1



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Type II 24-hr 10-yr Rainfall=5.41"

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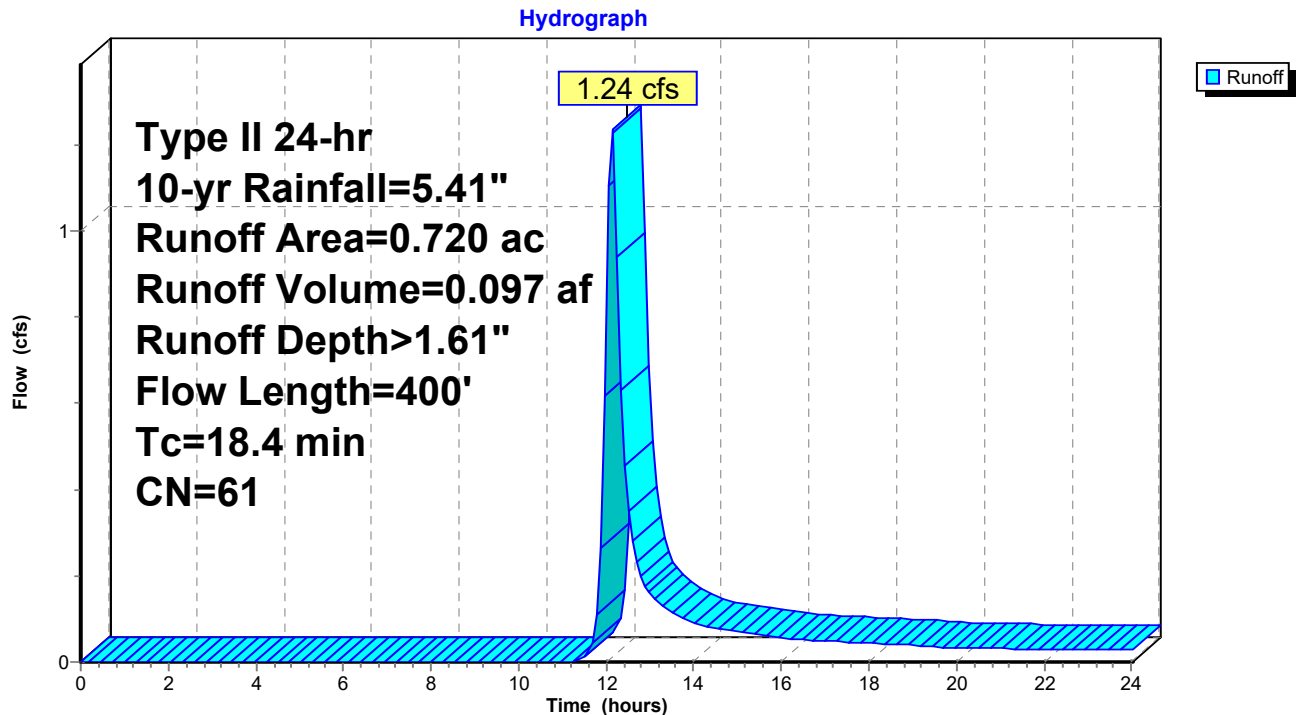
Summary for Subcatchment 7S: POST BYPASS

Runoff = 1.24 cfs @ 12.13 hrs, Volume= 0.097 af, Depth> 1.61"
 Routed to Link 6L : outfall

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.03 hrs, dt= 0.09 hrs
 Type II 24-hr 10-yr Rainfall=5.41"

Area (ac)	CN	Description
0.720	61	Pasture/grassland/range, Good, HSG B
0.720		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.3	100	0.0150	0.12		Sheet Flow, Sheet flow Grass: Dense n= 0.240 P2= 4.00"
4.1	300	0.0300	1.21		Shallow Concentrated Flow, Shallow concentrated Short Grass Pasture Kv= 7.0 fps
18.4	400	Total			

Subcatchment 7S: POST BYPASS

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Type II 24-hr 10-yr Rainfall=5.41"

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Summary for Subcatchment 12S: POST 2

[49] Hint: $T_c < 2dt$ may require smaller dt

Runoff = 8.08 cfs @ 11.95 hrs, Volume= 0.398 af, Depth> 3.55"
Routed to Pond 10P : (new Pond)

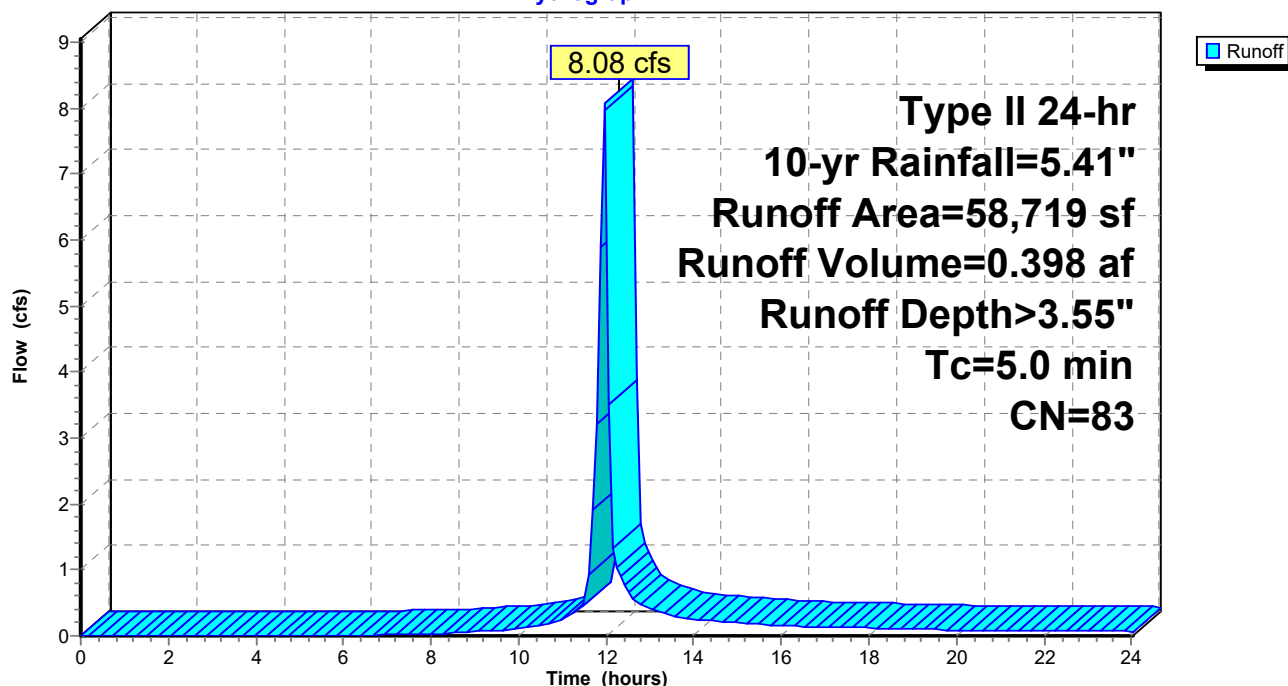
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.03 hrs, $dt=0.09$ hrs
Type II 24-hr 10-yr Rainfall=5.41"

Area (sf)	CN	Description
24,176	61	Pasture/grassland/range, Good, HSG B
* 34,543	98	
58,719	83	Weighted Average
24,176		41.17% Pervious Area
34,543		58.83% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					Direct Entry, Assumed

Subcatchment 12S: POST 2

Hydrograph



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Type II 24-hr 10-yr Rainfall=5.41"

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Summary for Pond 5P: (new Pond)

[81] Warning: Exceeded Pond 10P by 0.33' @ 12.60 hrs

Inflow Area = 9.810 ac, 14.43% Impervious, Inflow Depth > 2.07" for 10-yr event
 Inflow = 15.58 cfs @ 11.99 hrs, Volume= 1.696 af
 Outflow = 6.43 cfs @ 12.53 hrs, Volume= 1.688 af, Atten= 59%, Lag= 32.1 min
 Primary = 6.43 cfs @ 12.53 hrs, Volume= 1.688 af
 Routed to Link 6L : outfall

Routing by Stor-Ind method, Time Span= 0.00-24.03 hrs, dt= 0.09 hrs / 3
 Peak Elev= 643.90' @ 12.53 hrs Surf.Area= 21,402 sf Storage= 20,781 cf

Plug-Flow detention time= 37.4 min calculated for 1.682 af (99% of inflow)
 Center-of-Mass det. time= 34.5 min (886.4 - 851.9)

Volume	Invert	Avail.Storage	Storage Description		
#1	642.10'	49,077 cf	Custom Stage Data (Irregular) Listed below (Recalc)		
Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
642.10	4	8.0	0	0	4
643.00	14,962	660.0	4,563	4,563	34,664
644.00	22,218	674.0	18,471	23,034	36,293
644.40	27,824	683.0	9,987	33,021	37,302
644.90	36,600	847.0	16,056	49,077	57,273

Device	Routing	Invert	Outlet Devices															
#1	Primary	642.10'	18.0" Round Culvert L= 6.0' Ke= 1.000 Inlet / Outlet Invert= 642.10' / 642.07' S= 0.0050 '/' Cc= 0.900 n= 0.013, Flow Area= 1.77 sf															
#2	Primary	644.40'	10.0' long + 3.0 ' SideZ x 2.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 Coef. (English) 2.54 2.61 2.61 2.60 2.66 2.70 2.77 2.89 2.88 2.85 3.07 3.20 3.32															

Primary OutFlow Max=6.42 cfs @ 12.53 hrs HW=643.89' (Free Discharge)

1=Culvert (Barrel Controls 6.42 cfs @ 3.84 fps)

2=Broad-Crested Rectangular Weir(Controls 0.00 cfs)

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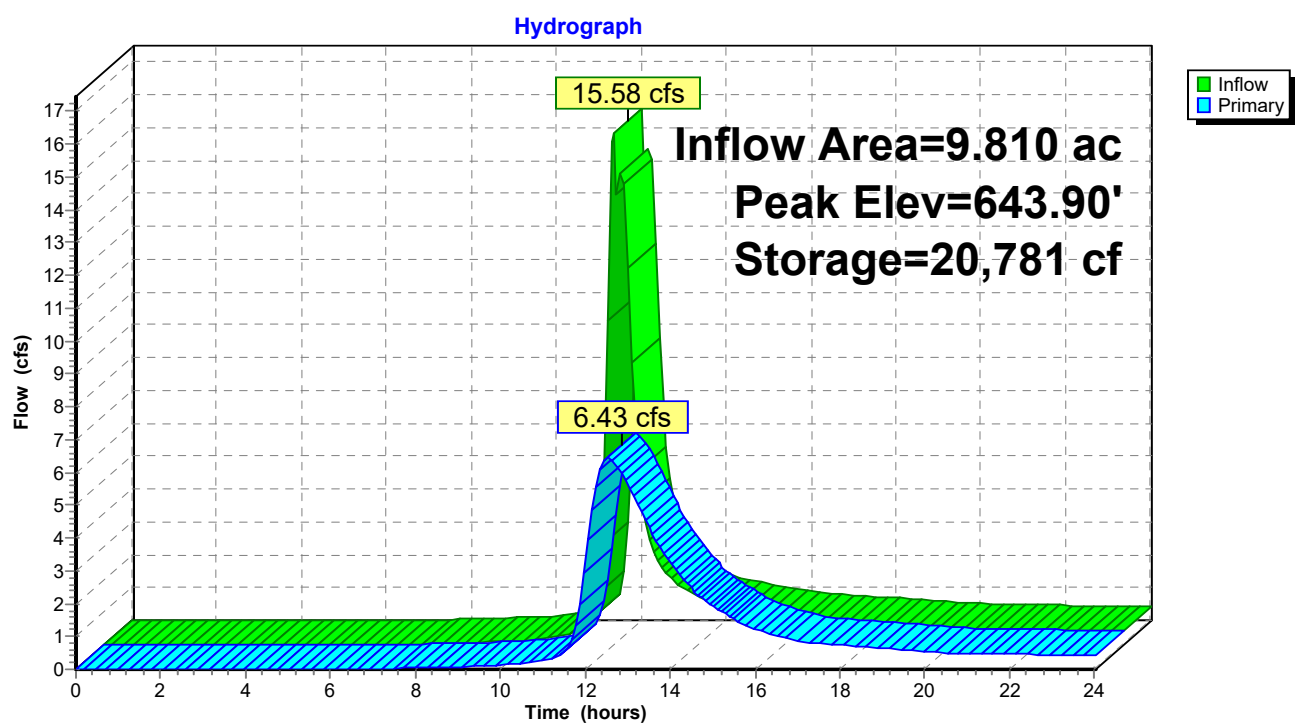
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Type II 24-hr 10-yr Rainfall=5.41"

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Pond 5P: (new Pond)



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Type II 24-hr 10-yr Rainfall=5.41"

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Summary for Pond 10P: (new Pond)

[57] Hint: Peaked at 646.08' (Flood elevation advised)

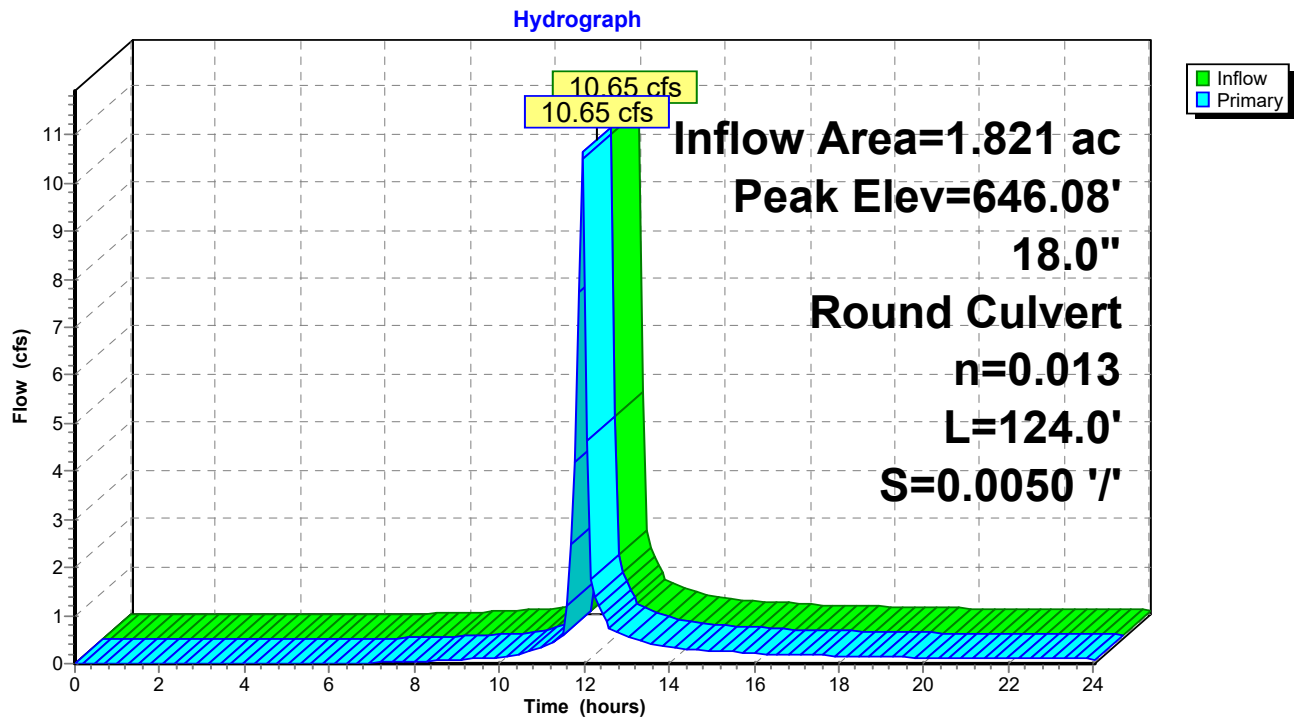
[79] Warning: Submerged Pond 11P Primary device # 1 OUTLET by 1.07'

Inflow Area = 1.821 ac, 56.18% Impervious, Inflow Depth > 3.45" for 10-yr event
 Inflow = 10.65 cfs @ 11.95 hrs, Volume= 0.523 af
 Outflow = 10.65 cfs @ 11.95 hrs, Volume= 0.523 af, Atten= 0%, Lag= 0.0 min
 Primary = 10.65 cfs @ 11.95 hrs, Volume= 0.523 af
 Routed to Pond 5P : (new Pond)

Routing by Stor-Ind method, Time Span= 0.00-24.03 hrs, dt= 0.09 hrs
 Peak Elev= 646.08' @ 11.96 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	643.12'	18.0" Round Culvert L= 124.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 643.12' / 642.50' S= 0.0050 '/' Cc= 0.900 n= 0.013, Flow Area= 1.77 sf

Primary OutFlow Max=9.98 cfs @ 11.95 hrs HW=645.87' (Free Discharge)
 1=Culvert (Barrel Controls 9.98 cfs @ 5.65 fps)

Pond 10P: (new Pond)

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Type II 24-hr 10-yr Rainfall=5.41"

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Summary for Pond 11P: (new Pond)

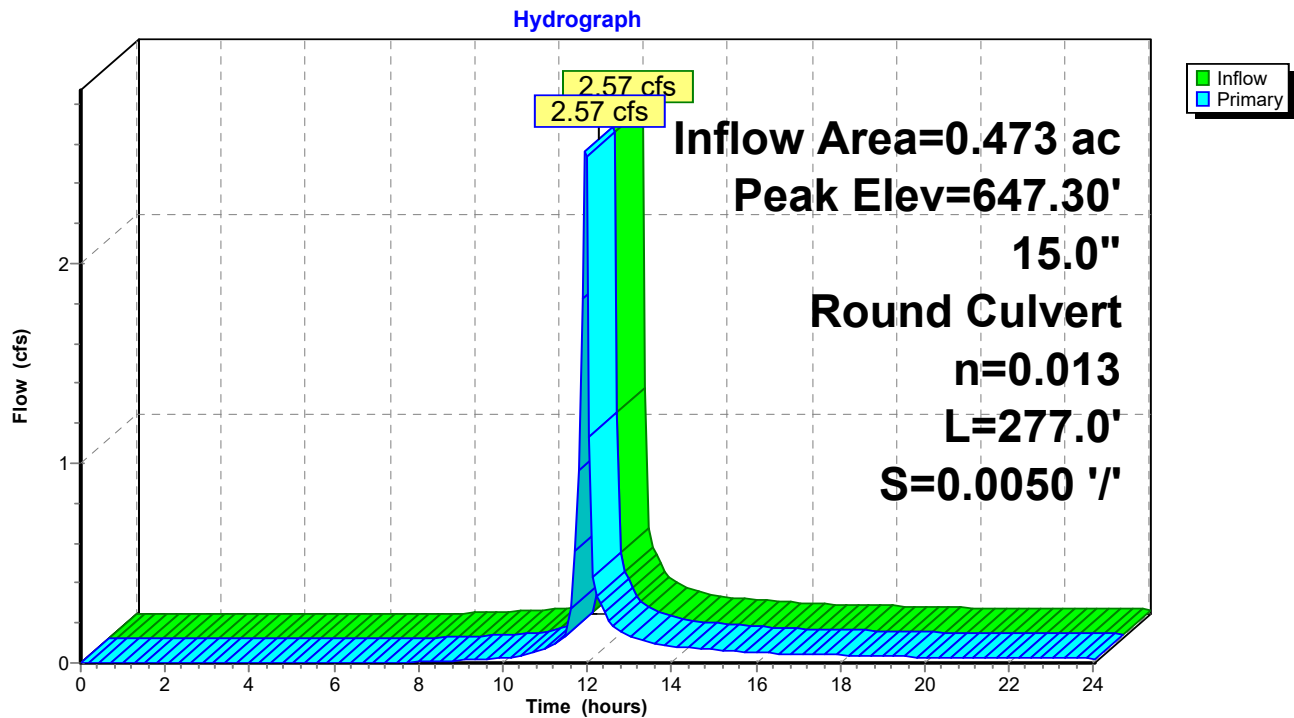
[57] Hint: Peaked at 647.30' (Flood elevation advised)

Inflow Area = 0.473 ac, 48.63% Impervious, Inflow Depth > 3.16" for 10-yr event
 Inflow = 2.57 cfs @ 11.96 hrs, Volume= 0.124 af
 Outflow = 2.57 cfs @ 11.96 hrs, Volume= 0.124 af, Atten= 0%, Lag= 0.0 min
 Primary = 2.57 cfs @ 11.96 hrs, Volume= 0.124 af
 Routed to Pond 10P : (new Pond)

Routing by Stor-Ind method, Time Span= 0.00-24.03 hrs, dt= 0.09 hrs
 Peak Elev= 647.30' @ 11.95 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	646.39'	15.0" Round Culvert L= 277.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 646.39' / 645.00' S= 0.0050 '/ Cc= 0.900 n= 0.013, Flow Area= 1.23 sf

Primary OutFlow Max=2.42 cfs @ 11.96 hrs HW=647.27' (Free Discharge)
 ↑ **1=Culvert** (Barrel Controls 2.42 cfs @ 3.68 fps)

Pond 11P: (new Pond)

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Type II 24-hr 10-yr Rainfall=5.41"

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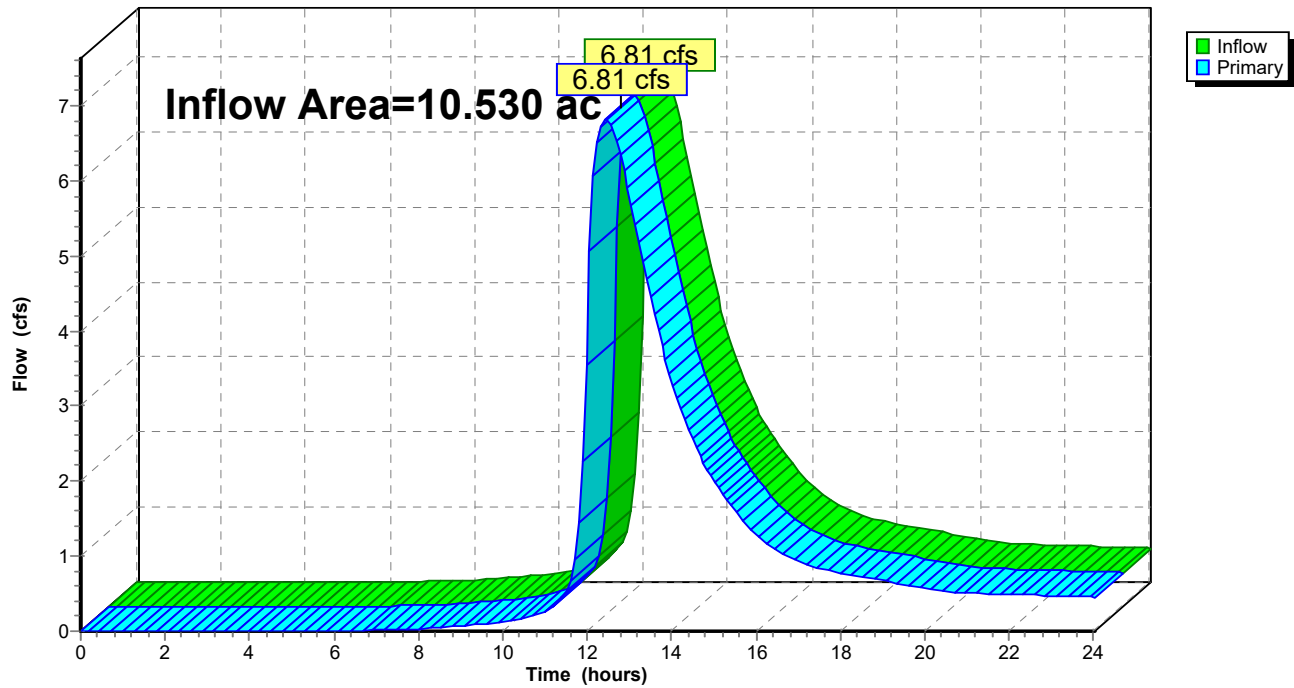
Summary for Link 6L: outfall

Inflow Area = 10.530 ac, 13.45% Impervious, Inflow Depth > 2.03" for 10-yr event
 Inflow = 6.81 cfs @ 12.44 hrs, Volume= 1.785 af
 Primary = 6.81 cfs @ 12.44 hrs, Volume= 1.785 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.03 hrs, dt= 0.09 hrs

Link 6L: outfall

Hydrograph



lineage metals*Type II 24-hr 25-yr Rainfall=6.33"*

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Time span=0.00-24.00 hrs, dt=0.09 hrs, 268 points
 Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
 Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment1S: PRE Runoff Area=10.563 ac 0.00% Impervious Runoff Depth>2.21"
 Flow Length=1,000' Slope=0.0150 '/' Tc=31.8 min CN=61 Runoff=18.38 cfs 1.945 af

Subcatchment2S: POST 3 Runoff Area=7.989 ac 4.92% Impervious Runoff Depth>2.39"
 Flow Length=850' Slope=0.0150 '/' Tc=24.4 min CN=63 Runoff=18.22 cfs 1.594 af

Subcatchment4S: POST 1 Runoff Area=0.473 ac 48.63% Impervious Runoff Depth>3.97"
 Tc=5.0 min CN=79 Runoff=3.20 cfs 0.157 af

Subcatchment7S: POST BYPASS Runoff Area=0.720 ac 0.00% Impervious Runoff Depth>2.22"
 Flow Length=400' Tc=18.4 min CN=61 Runoff=1.75 cfs 0.133 af

Subcatchment12S: POST 2 Runoff Area=58,719 sf 58.83% Impervious Runoff Depth>4.40"
 Tc=5.0 min CN=83 Runoff=9.90 cfs 0.494 af

Pond 5P: (new Pond) Peak Elev=644.29' Storage=29,985 cf Inflow=20.24 cfs 2.245 af
 Outflow=7.65 cfs 2.234 af

Pond 10P: (new Pond) Peak Elev=647.17' Inflow=13.10 cfs 0.651 af
 18.0" Round Culvert n=0.013 L=124.0' S=0.0050 '/' Outflow=13.10 cfs 0.651 af

Pond 11P: (new Pond) Peak Elev=647.44' Inflow=3.20 cfs 0.157 af
 15.0" Round Culvert n=0.013 L=277.0' S=0.0050 '/' Outflow=3.20 cfs 0.157 af

Link 6L: outfall Inflow=8.25 cfs 2.367 af
 Primary=8.25 cfs 2.367 af

Total Runoff Area = 21.093 ac Runoff Volume = 4.323 af Average Runoff Depth = 2.46"
93.29% Pervious = 19.677 ac 6.71% Impervious = 1.416 ac

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Type II 24-hr 25-yr Rainfall=6.33"

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Summary for Subcatchment 1S: PRE

Runoff = 18.38 cfs @ 12.29 hrs, Volume= 1.945 af, Depth> 2.21"

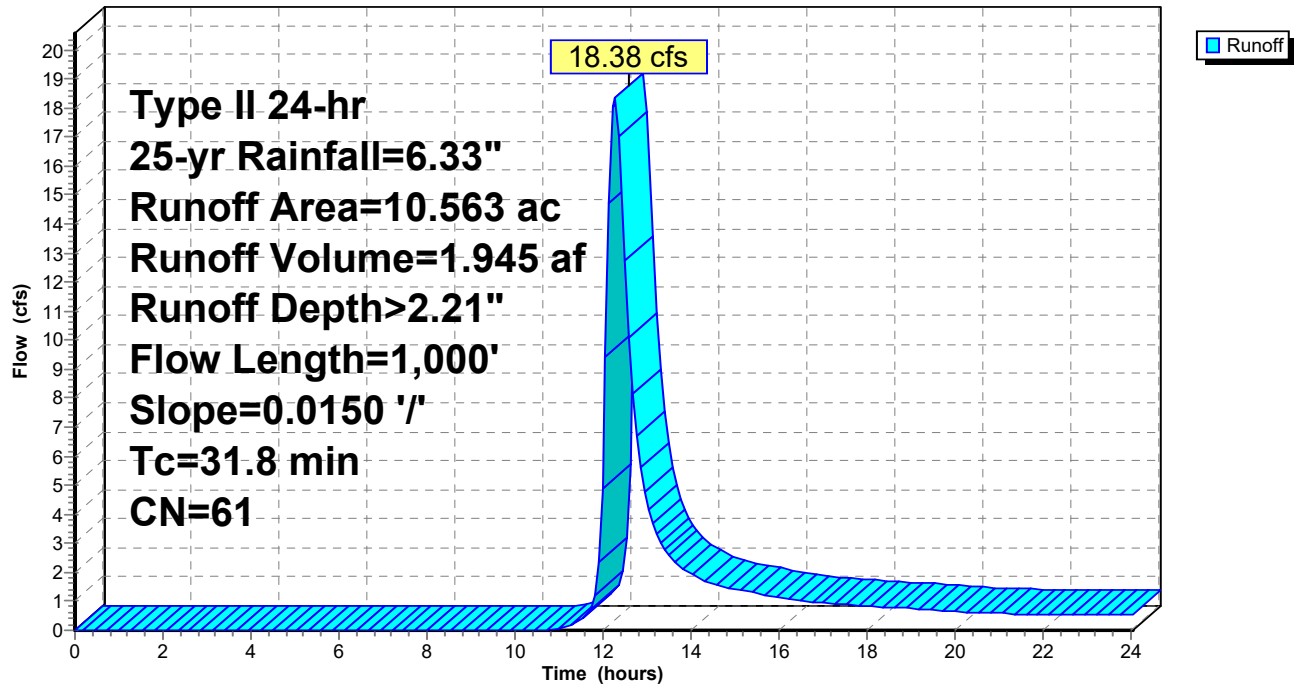
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.03 hrs, dt= 0.09 hrs
Type II 24-hr 25-yr Rainfall=6.33"

Area (ac)	CN	Description
10.563	61	Pasture/grassland/range, Good, HSG B
10.563		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.3	100	0.0150	0.12		Sheet Flow, Sheet flow
					Grass: Dense n= 0.240 P2= 4.00"
17.5	900	0.0150	0.86		Shallow Concentrated Flow, Shallow concentrated
					Short Grass Pasture Kv= 7.0 fps
31.8	1,000	Total			

Subcatchment 1S: PRE

Hydrograph



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Type II 24-hr 25-yr Rainfall=6.33"

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Summary for Subcatchment 2S: POST 3

Runoff = 18.22 cfs @ 12.19 hrs, Volume= 1.594 af, Depth> 2.39"
 Routed to Pond 5P : (new Pond)

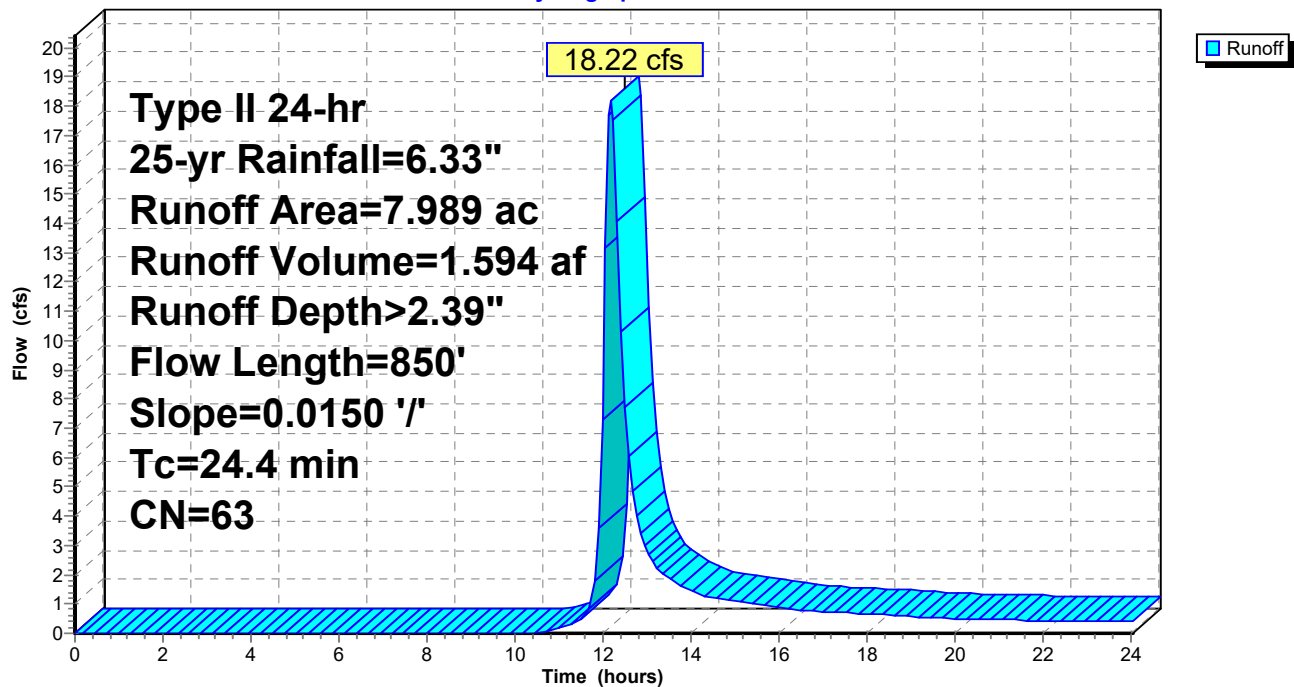
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.03 hrs, dt= 0.09 hrs
 Type II 24-hr 25-yr Rainfall=6.33"

Area (ac)	CN	Description
7.596	61	Pasture/grassland/range, Good, HSG B
* 0.393	98	
7.989	63	Weighted Average
7.596		95.08% Pervious Area
0.393		4.92% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.8	100	0.0150	0.17		Sheet Flow, Sheet Flow
					Grass: Short n= 0.150 P2= 4.00"
14.6	750	0.0150	0.86		Shallow Concentrated Flow, Shallow Concentrated
					Short Grass Pasture Kv= 7.0 fps
24.4	850	Total			

Subcatchment 2S: POST 3

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Type II 24-hr 25-yr Rainfall=6.33"

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Summary for Subcatchment 4S: POST 1

[49] Hint: $T_c < 2dt$ may require smaller dt

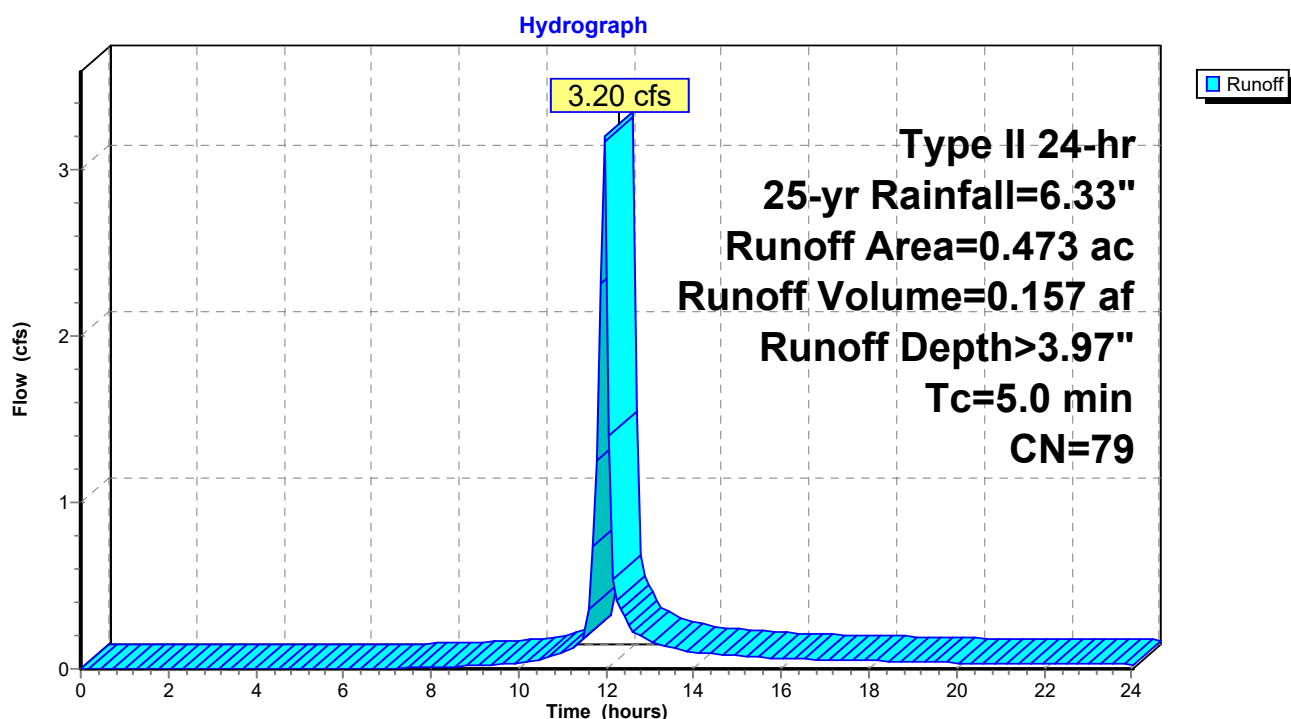
Runoff = 3.20 cfs @ 11.95 hrs, Volume= 0.157 af, Depth> 3.97"
Routed to Pond 11P : (new Pond)

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.03 hrs, $dt=0.09$ hrs
Type II 24-hr 25-yr Rainfall=6.33"

Area (ac)	CN	Description
0.243	61	Pasture/grassland/range, Good, HSG B
* 0.230	98	
0.473	79	Weighted Average
0.243		51.37% Pervious Area
0.230		48.63% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					Direct Entry, Assumed

Subcatchment 4S: POST 1



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Type II 24-hr 25-yr Rainfall=6.33"

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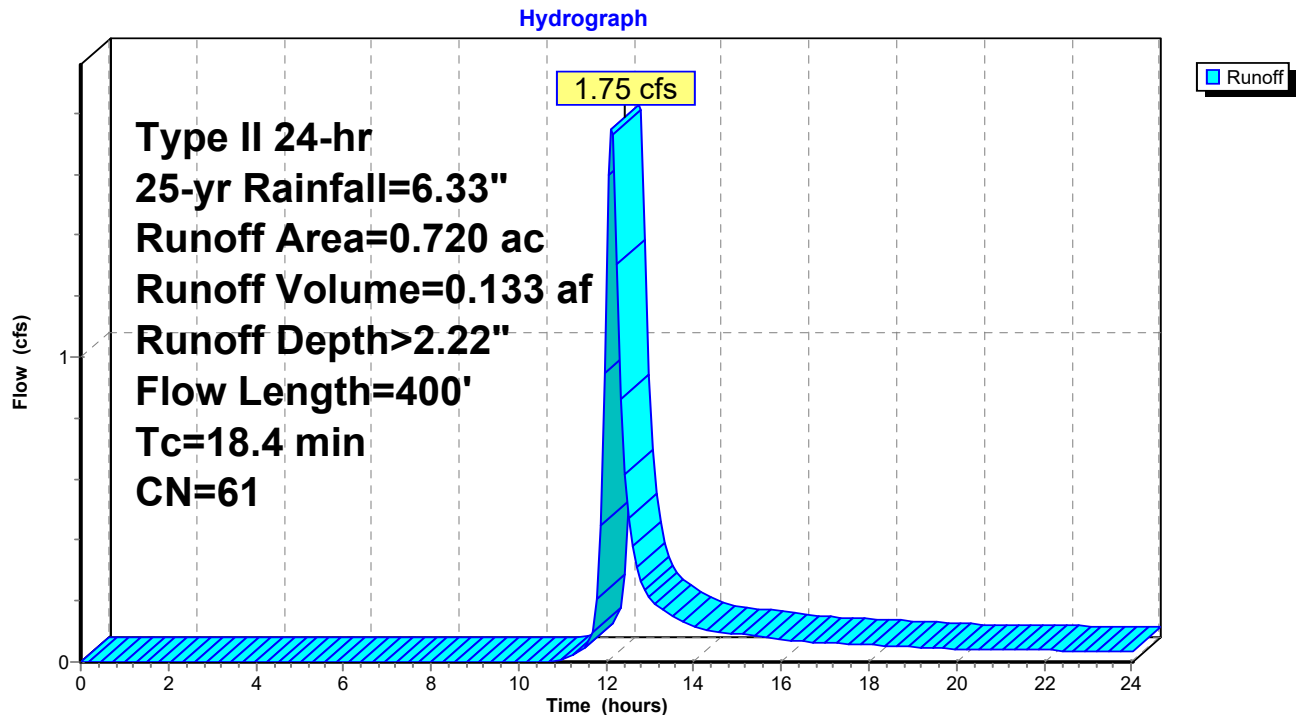
Summary for Subcatchment 7S: POST BYPASS

Runoff = 1.75 cfs @ 12.13 hrs, Volume= 0.133 af, Depth> 2.22"
 Routed to Link 6L : outfall

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.03 hrs, dt= 0.09 hrs
 Type II 24-hr 25-yr Rainfall=6.33"

Area (ac)	CN	Description
0.720	61	Pasture/grassland/range, Good, HSG B
0.720		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.3	100	0.0150	0.12		Sheet Flow, Sheet flow Grass: Dense n= 0.240 P2= 4.00"
4.1	300	0.0300	1.21		Shallow Concentrated Flow, Shallow concentrated Short Grass Pasture Kv= 7.0 fps
18.4	400	Total			

Subcatchment 7S: POST BYPASS

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Type II 24-hr 25-yr Rainfall=6.33"

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Summary for Subcatchment 12S: POST 2

[49] Hint: $T_c < 2dt$ may require smaller dt

Runoff = 9.90 cfs @ 11.95 hrs, Volume= 0.494 af, Depth> 4.40"
Routed to Pond 10P : (new Pond)

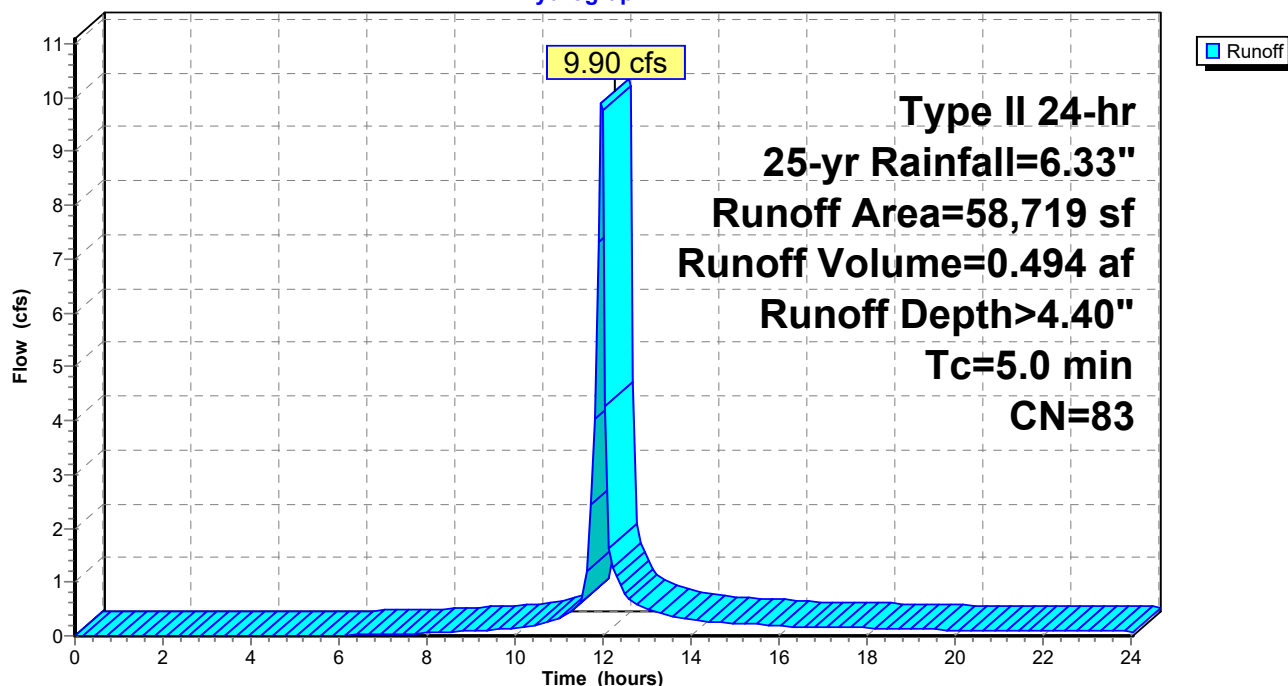
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.03 hrs, $dt=0.09$ hrs
Type II 24-hr 25-yr Rainfall=6.33"

	Area (sf)	CN	Description
	24,176	61	Pasture/grassland/range, Good, HSG B
*	34,543	98	
	58,719	83	Weighted Average
	24,176		41.17% Pervious Area
	34,543		58.83% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					Direct Entry, Assumed

Subcatchment 12S: POST 2

Hydrograph



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Type II 24-hr 25-yr Rainfall=6.33"

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Summary for Pond 5P: (new Pond)

[81] Warning: Exceeded Pond 10P by 0.69' @ 12.69 hrs

Inflow Area = 9.810 ac, 14.43% Impervious, Inflow Depth > 2.75" for 25-yr event
 Inflow = 20.24 cfs @ 11.97 hrs, Volume= 2.245 af
 Outflow = 7.65 cfs @ 12.57 hrs, Volume= 2.234 af, Atten= 62%, Lag= 35.9 min
 Primary = 7.65 cfs @ 12.57 hrs, Volume= 2.234 af
 Routed to Link 6L : outfall

Routing by Stor-Ind method, Time Span= 0.00-24.03 hrs, dt= 0.09 hrs / 3
 Peak Elev= 644.29' @ 12.57 hrs Surf.Area= 26,184 sf Storage= 29,985 cf

Plug-Flow detention time= 43.0 min calculated for 2.234 af (99% of inflow)
 Center-of-Mass det. time= 40.0 min (884.7 - 844.7)

Volume	Invert	Avail.Storage	Storage Description		
#1	642.10'	49,077 cf	Custom Stage Data (Irregular) Listed below (Recalc)		
Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
642.10	4	8.0	0	0	4
643.00	14,962	660.0	4,563	4,563	34,664
644.00	22,218	674.0	18,471	23,034	36,293
644.40	27,824	683.0	9,987	33,021	37,302
644.90	36,600	847.0	16,056	49,077	57,273

Device	Routing	Invert	Outlet Devices													
#1	Primary	642.10'	18.0" Round Culvert L= 6.0' Ke= 1.000 Inlet / Outlet Invert= 642.10' / 642.07' S= 0.0050 '/' Cc= 0.900 n= 0.013, Flow Area= 1.77 sf													
#2	Primary	644.40'	10.0' long + 3.0 ' SideZ x 2.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 Coef. (English) 2.54 2.61 2.61 2.60 2.66 2.70 2.77 2.89 2.88 2.85 3.07 3.20 3.32													

Primary OutFlow Max=7.65 cfs @ 12.57 hrs HW=644.29' (Free Discharge)

1=Culvert (Inlet Controls 7.65 cfs @ 4.33 fps)
 2=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

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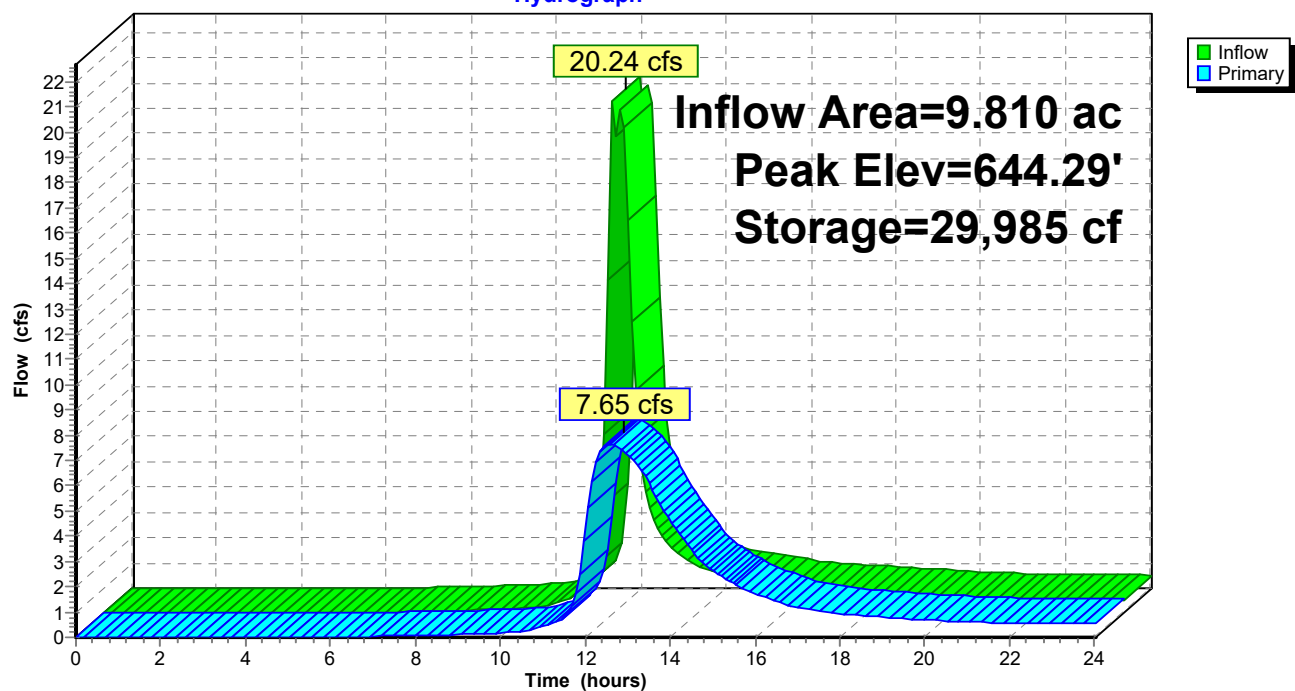
Type II 24-hr 25-yr Rainfall=6.33"

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Pond 5P: (new Pond)

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Type II 24-hr 25-yr Rainfall=6.33"

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Summary for Pond 10P: (new Pond)

[57] Hint: Peaked at 647.17' (Flood elevation advised)

[79] Warning: Submerged Pond 11P Primary device # 1 INLET by 0.74'

Inflow Area = 1.821 ac, 56.18% Impervious, Inflow Depth > 4.29" for 25-yr event
 Inflow = 13.10 cfs @ 11.95 hrs, Volume= 0.651 af
 Outflow = 13.10 cfs @ 11.95 hrs, Volume= 0.651 af, Atten= 0%, Lag= 0.0 min
 Primary = 13.10 cfs @ 11.95 hrs, Volume= 0.651 af
 Routed to Pond 5P : (new Pond)

Routing by Stor-Ind method, Time Span= 0.00-24.03 hrs, dt= 0.09 hrs

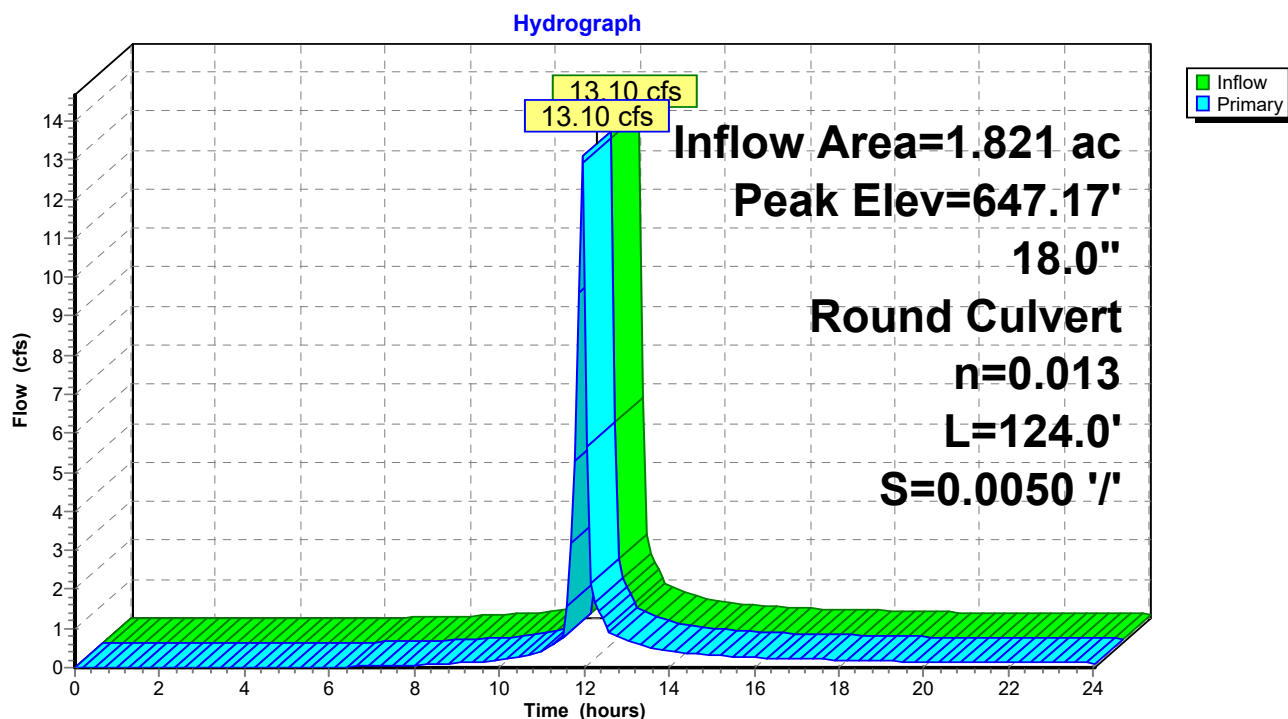
Peak Elev= 647.17' @ 11.96 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	643.12'	18.0" Round Culvert L= 124.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 643.12' / 642.50' S= 0.0050 '/ Cc= 0.900 n= 0.013, Flow Area= 1.77 sf

Primary OutFlow Max=12.36 cfs @ 11.95 hrs HW=646.86' (Free Discharge)

↑1=Culvert (Barrel Controls 12.36 cfs @ 7.00 fps)

Pond 10P: (new Pond)



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Type II 24-hr 25-yr Rainfall=6.33"

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Summary for Pond 11P: (new Pond)

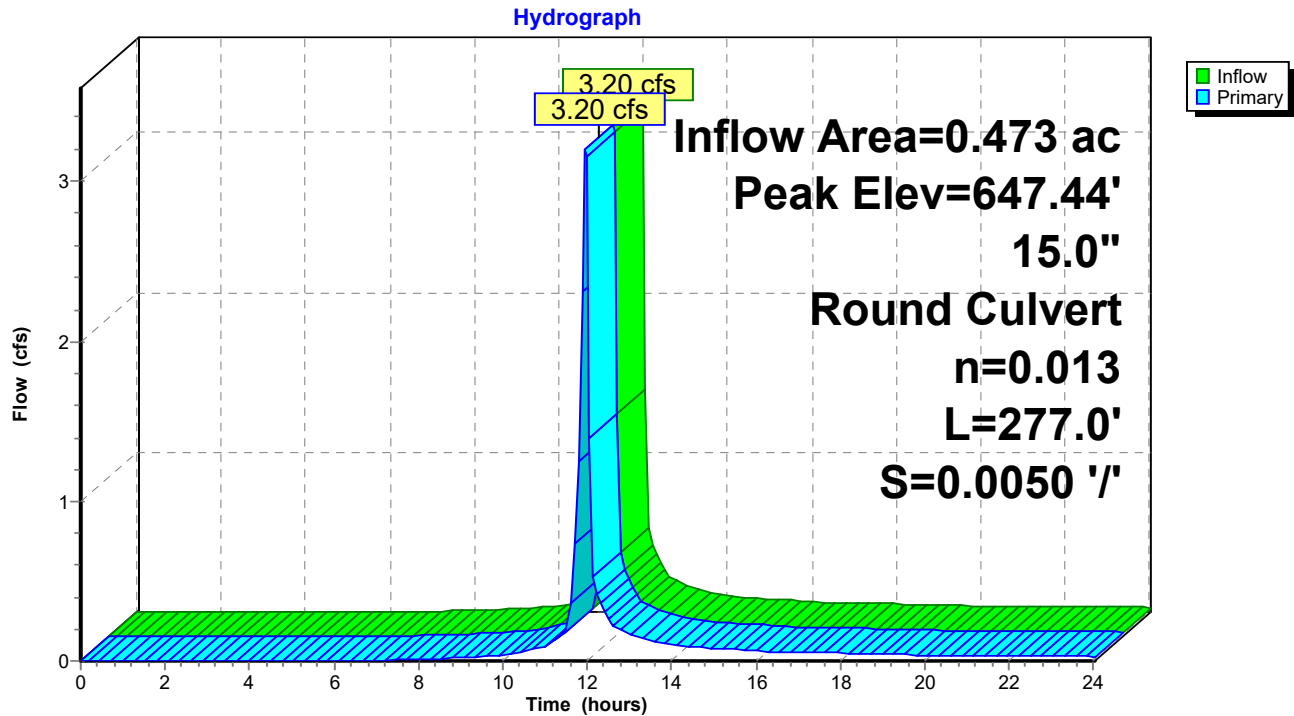
[57] Hint: Peaked at 647.44' (Flood elevation advised)

Inflow Area = 0.473 ac, 48.63% Impervious, Inflow Depth > 3.97" for 25-yr event
 Inflow = 3.20 cfs @ 11.95 hrs, Volume= 0.157 af
 Outflow = 3.20 cfs @ 11.95 hrs, Volume= 0.157 af, Atten= 0%, Lag= 0.0 min
 Primary = 3.20 cfs @ 11.95 hrs, Volume= 0.157 af
 Routed to Pond 10P : (new Pond)

Routing by Stor-Ind method, Time Span= 0.00-24.03 hrs, dt= 0.09 hrs
 Peak Elev= 647.44' @ 11.95 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	646.39'	15.0" Round Culvert L= 277.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 646.39' / 645.00' S= 0.0050 '/ Cc= 0.900 n= 0.013, Flow Area= 1.23 sf

Primary OutFlow Max=3.01 cfs @ 11.95 hrs HW=647.40' (Free Discharge)
 1=Culvert (Barrel Controls 3.01 cfs @ 3.87 fps)

Pond 11P: (new Pond)

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Type II 24-hr 25-yr Rainfall=6.33"

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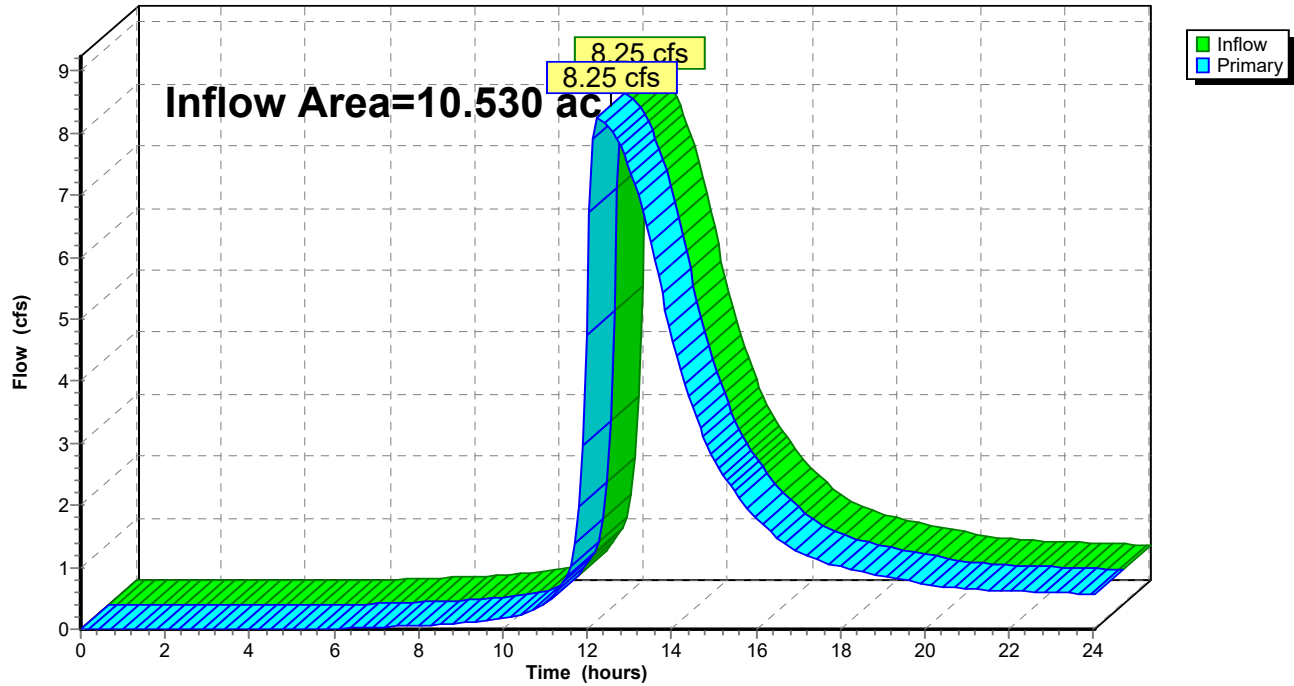
Summary for Link 6L: outfall

Inflow Area = 10.530 ac, 13.45% Impervious, Inflow Depth > 2.70" for 25-yr event
 Inflow = 8.25 cfs @ 12.24 hrs, Volume= 2.367 af
 Primary = 8.25 cfs @ 12.24 hrs, Volume= 2.367 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.03 hrs, dt= 0.09 hrs

Link 6L: outfall

Hydrograph



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Time span=0.00-24.00 hrs, dt=0.09 hrs, 268 points
 Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
 Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment1S: PRE Runoff Area=10.563 ac 0.00% Impervious Runoff Depth>3.28"
 Flow Length=1,000' Slope=0.0150 '/' Tc=31.8 min CN=61 Runoff=28.31 cfs 2.888 af

Subcatchment2S: POST 3 Runoff Area=7.989 ac 4.92% Impervious Runoff Depth>3.51"
 Flow Length=850' Slope=0.0150 '/' Tc=24.4 min CN=63 Runoff=27.25 cfs 2.335 af

Subcatchment4S: POST 1 Runoff Area=0.473 ac 48.63% Impervious Runoff Depth>5.34"
 Tc=5.0 min CN=79 Runoff=4.23 cfs 0.210 af

Subcatchment7S: POST BYPASS Runoff Area=0.720 ac 0.00% Impervious Runoff Depth>3.29"
 Flow Length=400' Tc=18.4 min CN=61 Runoff=2.66 cfs 0.198 af

Subcatchment12S: POST 2 Runoff Area=58,719 sf 58.83% Impervious Runoff Depth>5.80"
 Tc=5.0 min CN=83 Runoff=12.85 cfs 0.652 af

Pond 5P: (new Pond) Peak Elev=644.74' Storage=43,303 cf Inflow=29.46 cfs 3.197 af
 Outflow=14.19 cfs 3.180 af

Pond 10P: (new Pond) Peak Elev=649.39' Inflow=17.09 cfs 0.862 af
 18.0" Round Culvert n=0.013 L=124.0' S=0.0050 '/' Outflow=17.09 cfs 0.862 af

Pond 11P: (new Pond) Peak Elev=647.69' Inflow=4.23 cfs 0.210 af
 15.0" Round Culvert n=0.013 L=277.0' S=0.0050 '/' Outflow=4.23 cfs 0.210 af

Link 6L: outfall Inflow=15.05 cfs 3.378 af
 Primary=15.05 cfs 3.378 af

Total Runoff Area = 21.093 ac Runoff Volume = 6.283 af Average Runoff Depth = 3.57"
93.29% Pervious = 19.677 ac 6.71% Impervious = 1.416 ac

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Type II 24-hr 100-yr Rainfall=7.82"

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Summary for Subcatchment 1S: PRE

Runoff = 28.31 cfs @ 12.28 hrs, Volume= 2.888 af, Depth> 3.28"

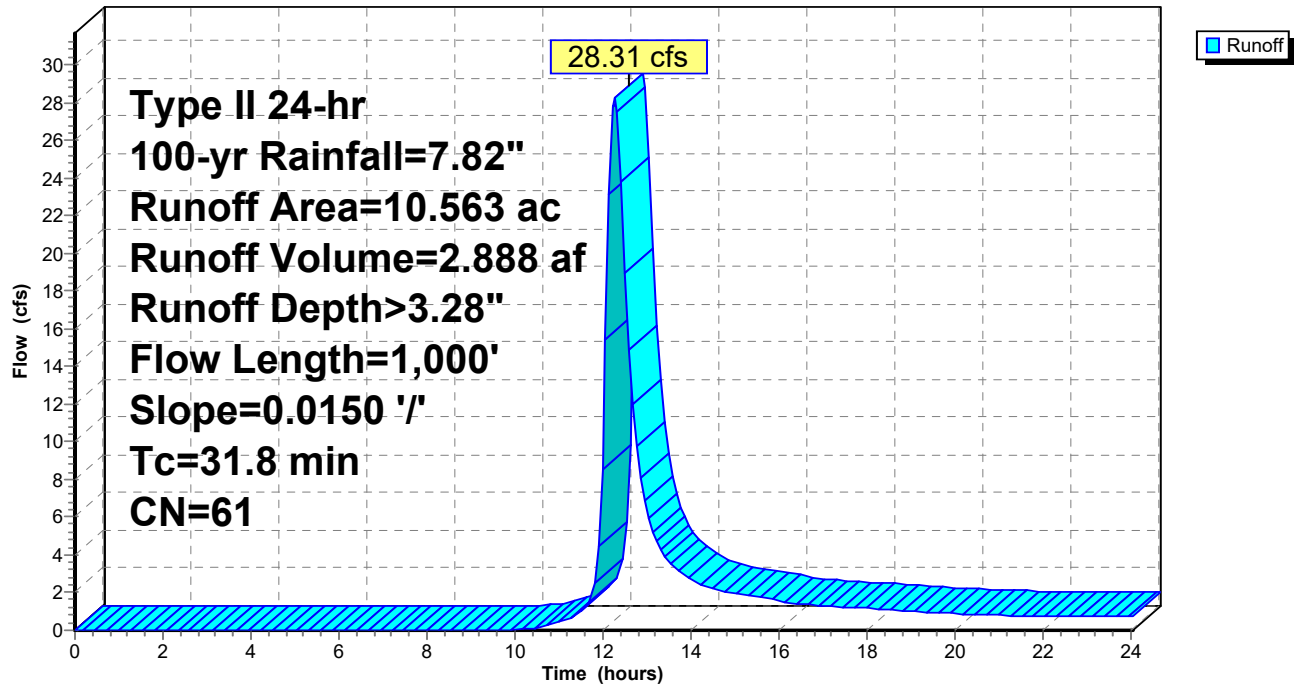
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.03 hrs, dt= 0.09 hrs
Type II 24-hr 100-yr Rainfall=7.82"

Area (ac)	CN	Description
10.563	61	Pasture/grassland/range, Good, HSG B
10.563		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.3	100	0.0150	0.12		Sheet Flow, Sheet flow
					Grass: Dense n= 0.240 P2= 4.00"
17.5	900	0.0150	0.86		Shallow Concentrated Flow, Shallow concentrated
					Short Grass Pasture Kv= 7.0 fps
31.8	1,000	Total			

Subcatchment 1S: PRE

Hydrograph



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Type II 24-hr 100-yr Rainfall=7.82"

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Summary for Subcatchment 2S: POST 3

Runoff = 27.25 cfs @ 12.19 hrs, Volume= 2.335 af, Depth> 3.51"
Routed to Pond 5P : (new Pond)

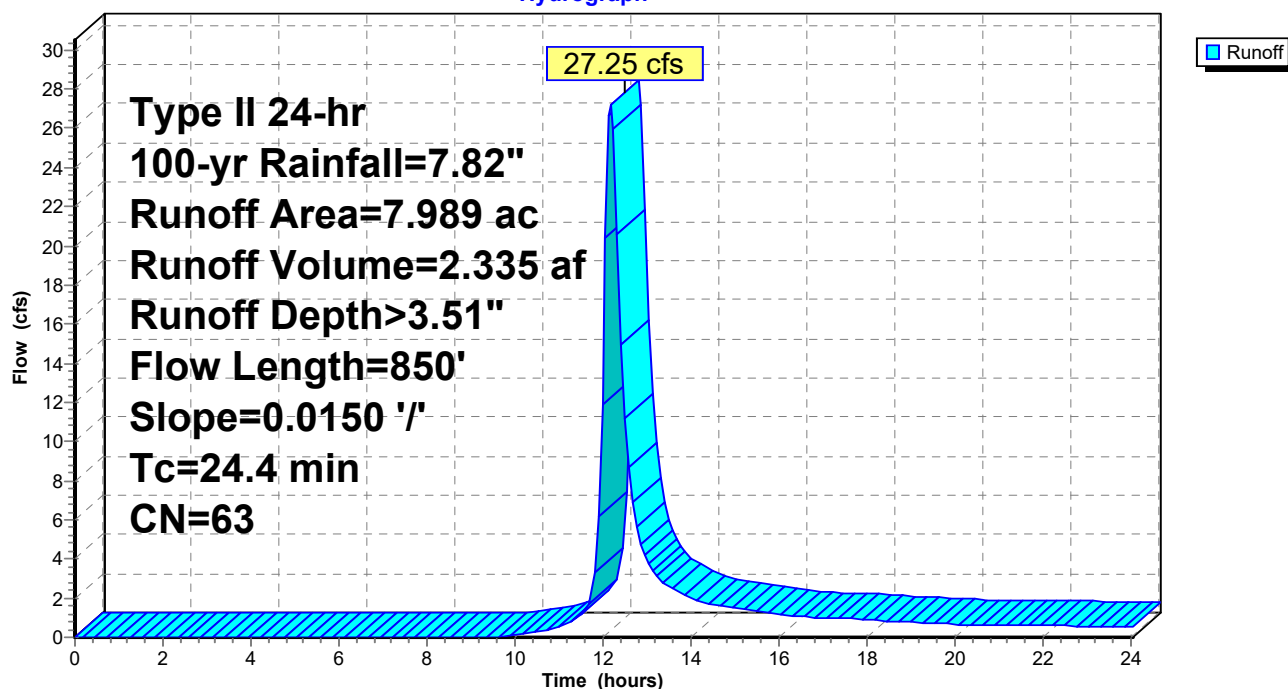
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.03 hrs, dt= 0.09 hrs
Type II 24-hr 100-yr Rainfall=7.82"

Area (ac)	CN	Description
7.596	61	Pasture/grassland/range, Good, HSG B
* 0.393	98	
7.989	63	Weighted Average
7.596		95.08% Pervious Area
0.393		4.92% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.8	100	0.0150	0.17		Sheet Flow, Sheet Flow
					Grass: Short n= 0.150 P2= 4.00"
14.6	750	0.0150	0.86		Shallow Concentrated Flow, Shallow Concentrated
					Short Grass Pasture Kv= 7.0 fps
24.4	850	Total			

Subcatchment 2S: POST 3

Hydrograph



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Type II 24-hr 100-yr Rainfall=7.82"

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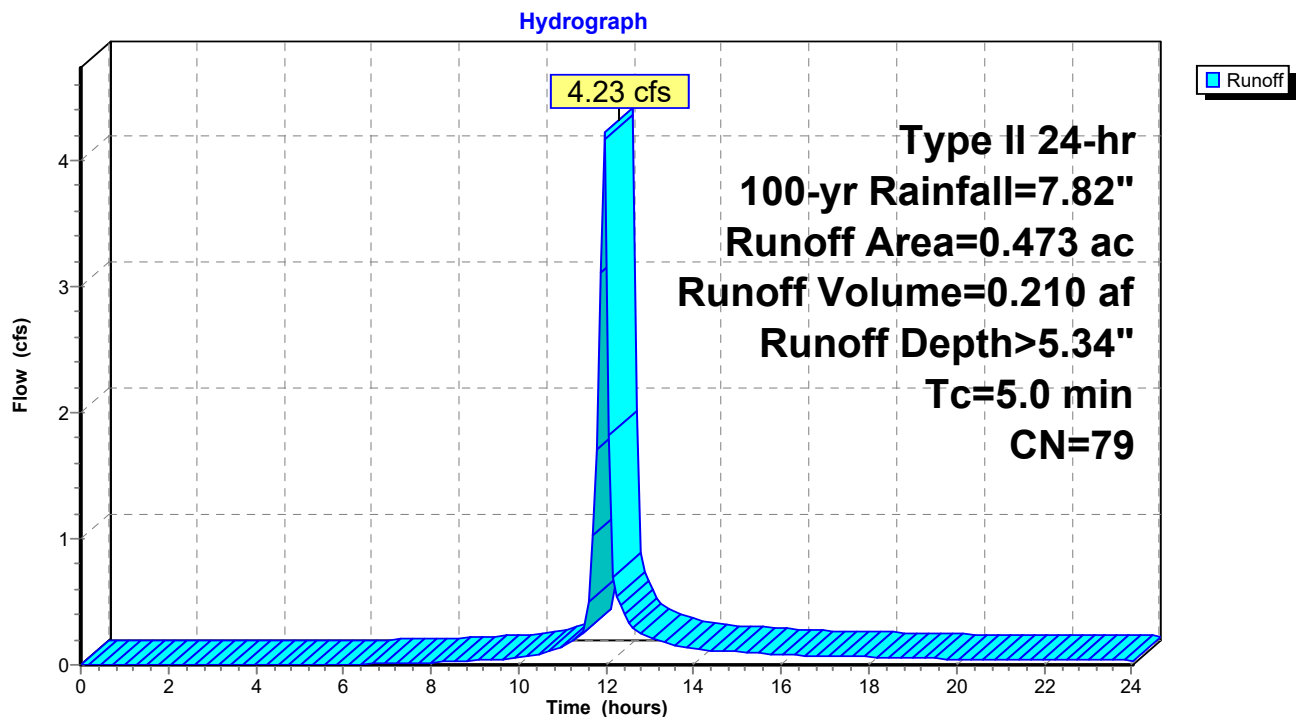
Summary for Subcatchment 4S: POST 1[49] Hint: $T_c < 2dt$ may require smaller dt

Runoff = 4.23 cfs @ 11.95 hrs, Volume= 0.210 af, Depth> 5.34"
 Routed to Pond 11P : (new Pond)

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.03 hrs, $dt=0.09$ hrs
 Type II 24-hr 100-yr Rainfall=7.82"

Area (ac)	CN	Description
0.243	61	Pasture/grassland/range, Good, HSG B
* 0.230	98	
0.473	79	Weighted Average
0.243		51.37% Pervious Area
0.230		48.63% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					Direct Entry, Assumed

Subcatchment 4S: POST 1

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Type II 24-hr 100-yr Rainfall=7.82"

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Summary for Subcatchment 7S: POST BYPASS

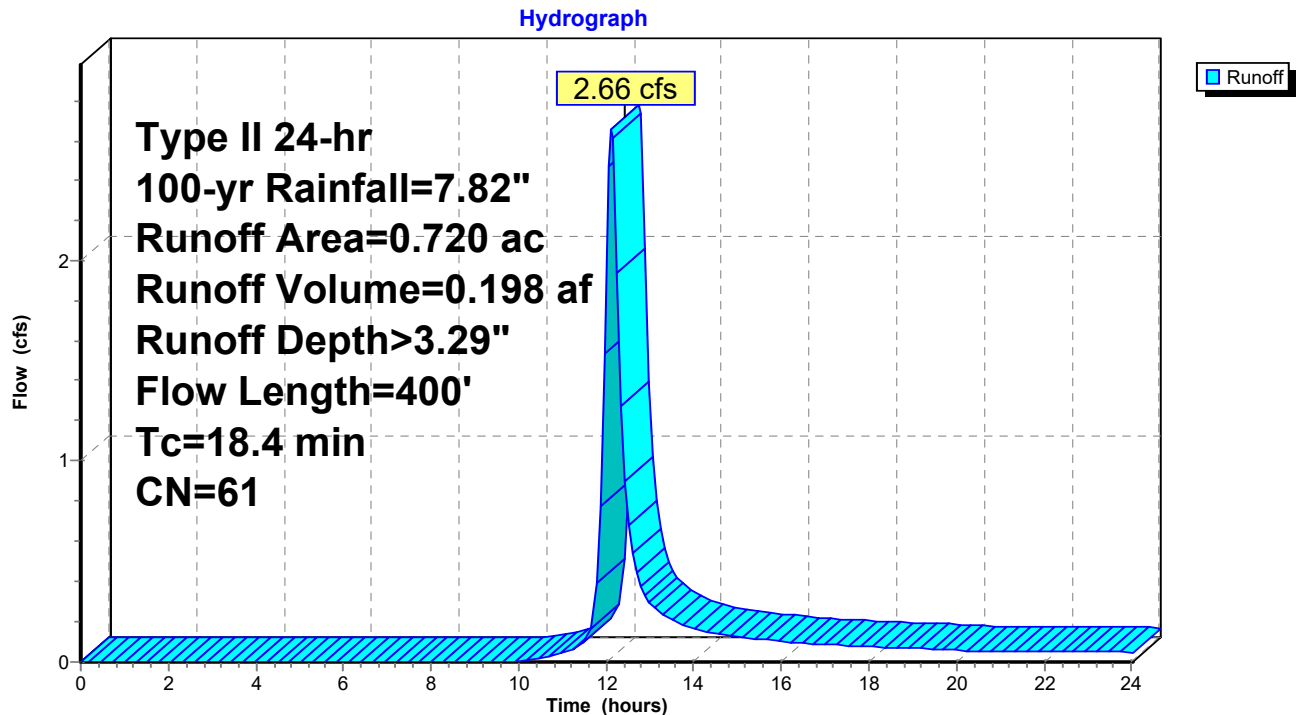
Runoff = 2.66 cfs @ 12.12 hrs, Volume= 0.198 af, Depth> 3.29"
 Routed to Link 6L : outfall

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.03 hrs, dt= 0.09 hrs
 Type II 24-hr 100-yr Rainfall=7.82"

Area (ac)	CN	Description
0.720	61	Pasture/grassland/range, Good, HSG B
0.720		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.3	100	0.0150	0.12		Sheet Flow, Sheet flow Grass: Dense n= 0.240 P2= 4.00"
4.1	300	0.0300	1.21		Shallow Concentrated Flow, Shallow concentrated Short Grass Pasture Kv= 7.0 fps
18.4	400	Total			

Subcatchment 7S: POST BYPASS



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Type II 24-hr 100-yr Rainfall=7.82"

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Summary for Subcatchment 12S: POST 2

[49] Hint: $T_c < 2dt$ may require smaller dt

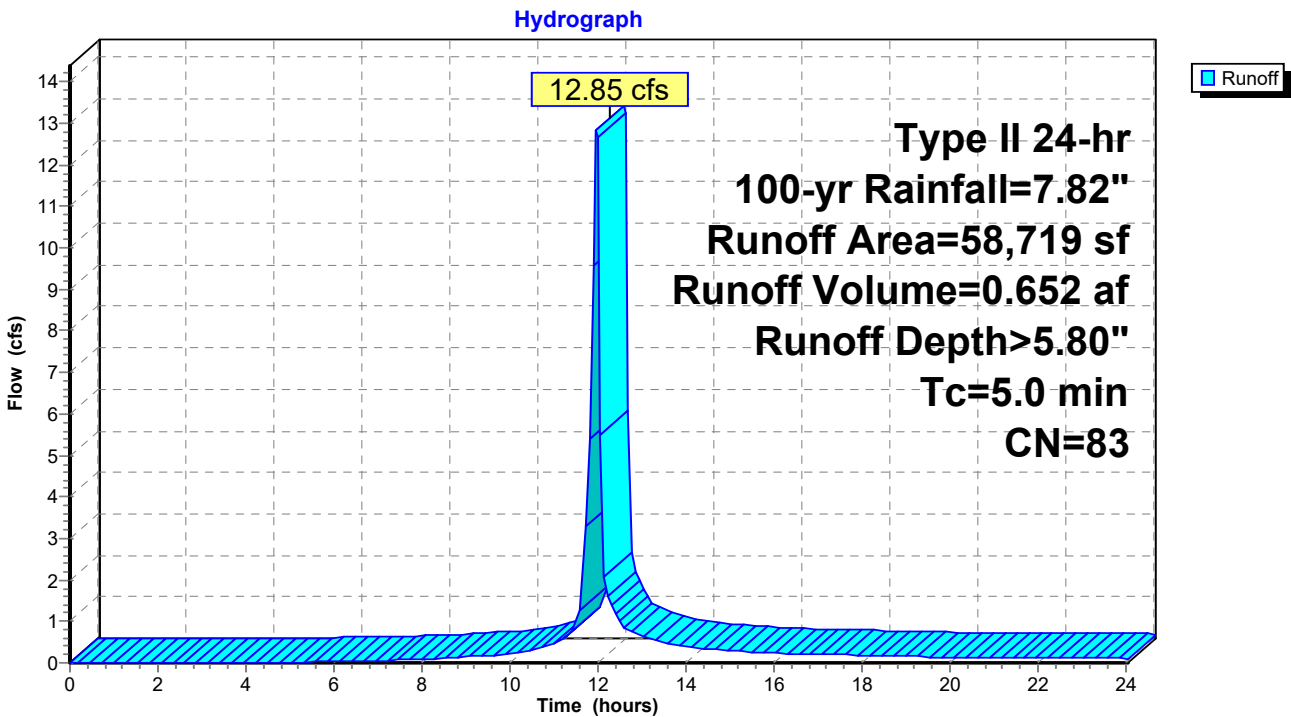
Runoff = 12.85 cfs @ 11.95 hrs, Volume= 0.652 af, Depth> 5.80"
Routed to Pond 10P : (new Pond)

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.03 hrs, $dt=0.09$ hrs
Type II 24-hr 100-yr Rainfall=7.82"

	Area (sf)	CN	Description
	24,176	61	Pasture/grassland/range, Good, HSG B
*	34,543	98	
	58,719	83	Weighted Average
	24,176		41.17% Pervious Area
	34,543		58.83% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					Direct Entry, Assumed

Subcatchment 12S: POST 2



lineage metals

Type II 24-hr 100-yr Rainfall=7.82"

Prepared by Somers Consulting Services LLC

Printed 6/9/2026

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Summary for Pond 5P: (new Pond)

[81] Warning: Exceeded Pond 10P by 1.04' @ 12.60 hrs

Inflow Area = 9.810 ac, 14.43% Impervious, Inflow Depth > 3.91" for 100-yr event
 Inflow = 29.46 cfs @ 12.16 hrs, Volume= 3.197 af
 Outflow = 14.19 cfs @ 12.48 hrs, Volume= 3.180 af, Atten= 52%, Lag= 19.2 min
 Primary = 14.19 cfs @ 12.48 hrs, Volume= 3.180 af
 Routed to Link 6L : outfall

Routing by Stor-Ind method, Time Span= 0.00-24.03 hrs, dt= 0.09 hrs / 3
 Peak Elev= 644.74' @ 12.48 hrs Surf.Area= 33,578 sf Storage= 43,303 cf

Plug-Flow detention time= 46.3 min calculated for 3.180 af (99% of inflow)
 Center-of-Mass det. time= 43.0 min (878.8 - 835.8)

Volume	Invert	Avail.Storage	Storage Description		
#1	642.10'	49,077 cf	Custom Stage Data (Irregular) Listed below (Recalc)		
Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
642.10	4	8.0	0	0	4
643.00	14,962	660.0	4,563	4,563	34,664
644.00	22,218	674.0	18,471	23,034	36,293
644.40	27,824	683.0	9,987	33,021	37,302
644.90	36,600	847.0	16,056	49,077	57,273

Device	Routing	Invert	Outlet Devices
#1	Primary	642.10'	18.0" Round Culvert L= 6.0' Ke= 1.000 Inlet / Outlet Invert= 642.10' / 642.07' S= 0.0050 '/' Cc= 0.900 n= 0.013, Flow Area= 1.77 sf
#2	Primary	644.40'	10.0' long + 3.0 ' SideZ x 2.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 Coef. (English) 2.54 2.61 2.61 2.60 2.66 2.70 2.77 2.89 2.88 2.85 3.07 3.20 3.32

Primary OutFlow Max=14.09 cfs @ 12.48 hrs HW=644.73' (Free Discharge)

1=Culvert (Inlet Controls 8.75 cfs @ 4.95 fps)

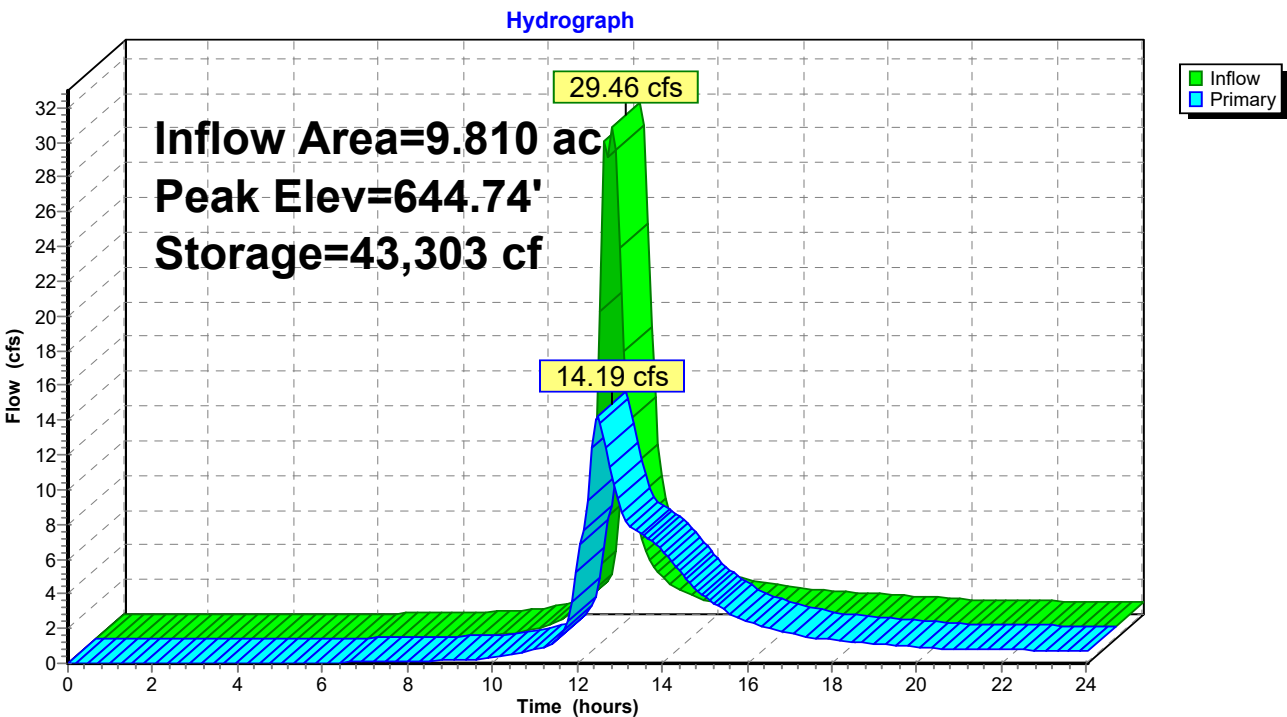
2=Broad-Crested Rectangular Weir (Weir Controls 5.34 cfs @ 1.46 fps)

lineage metals

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Type II 24-hr 100-yr Rainfall=7.82"
Printed 6/9/2026
Page 46

Pond 5P: (new Pond)



lineage metals

Prepared by Somers Consulting Services LLC

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Type II 24-hr 100-yr Rainfall=7.82"

Printed 6/9/2026

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Summary for Pond 10P: (new Pond)

[57] Hint: Peaked at 649.39' (Flood elevation advised)

[81] Warning: Exceeded Pond 11P by 1.63' @ 11.97 hrs

Inflow Area = 1.821 ac, 56.18% Impervious, Inflow Depth > 5.68" for 100-yr event
 Inflow = 17.09 cfs @ 11.95 hrs, Volume= 0.862 af
 Outflow = 17.09 cfs @ 11.95 hrs, Volume= 0.862 af, Atten= 0%, Lag= 0.0 min
 Primary = 17.09 cfs @ 11.95 hrs, Volume= 0.862 af
 Routed to Pond 5P : (new Pond)

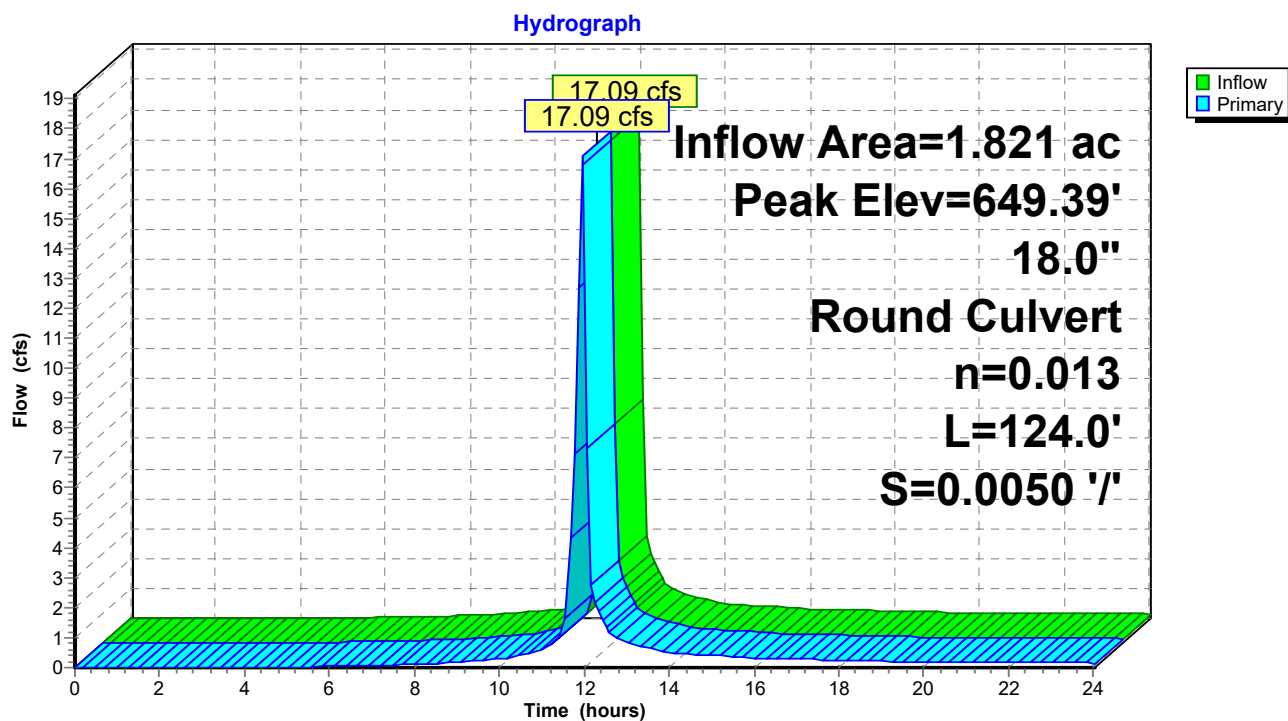
Routing by Stor-Ind method, Time Span= 0.00-24.03 hrs, dt= 0.09 hrs

Peak Elev= 649.39' @ 11.96 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	643.12'	18.0" Round Culvert L= 124.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 643.12' / 642.50' S= 0.0050 '/ Cc= 0.900 n= 0.013, Flow Area= 1.77 sf

Primary OutFlow Max=16.09 cfs @ 11.95 hrs HW=648.85' (Free Discharge)

1=Culvert (Barrel Controls 16.09 cfs @ 9.10 fps)

Pond 10P: (new Pond)

lineage metals

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Type II 24-hr 100-yr Rainfall=7.82"

Printed 6/9/2026

Page 48

Summary for Pond 11P: (new Pond)

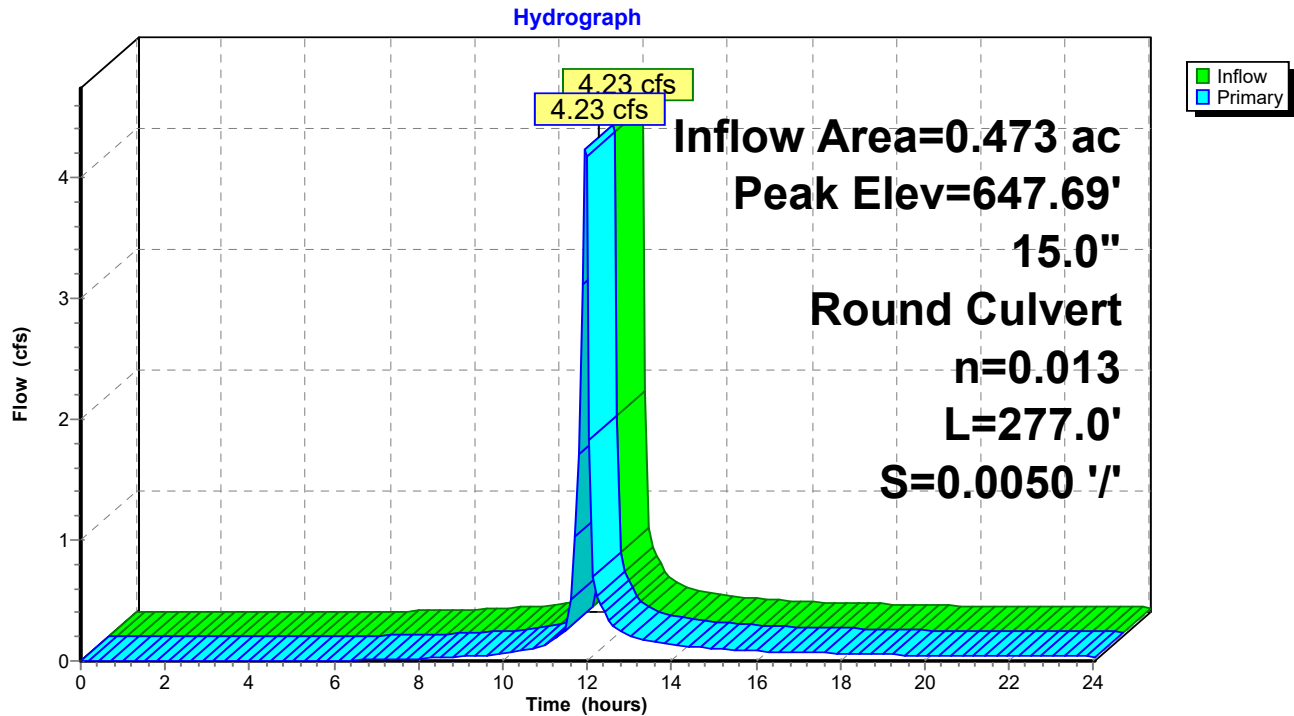
[57] Hint: Peaked at 647.69' (Flood elevation advised)

Inflow Area = 0.473 ac, 48.63% Impervious, Inflow Depth > 5.34" for 100-yr event
 Inflow = 4.23 cfs @ 11.95 hrs, Volume= 0.210 af
 Outflow = 4.23 cfs @ 11.95 hrs, Volume= 0.210 af, Atten= 0%, Lag= 0.0 min
 Primary = 4.23 cfs @ 11.95 hrs, Volume= 0.210 af
 Routed to Pond 10P : (new Pond)

Routing by Stor-Ind method, Time Span= 0.00-24.03 hrs, dt= 0.09 hrs
 Peak Elev= 647.69' @ 11.95 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	646.39'	15.0" Round Culvert L= 277.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 646.39' / 645.00' S= 0.0050 '/ Cc= 0.900 n= 0.013, Flow Area= 1.23 sf

Primary OutFlow Max=3.99 cfs @ 11.95 hrs HW=647.63' (Free Discharge)
 ↑1=Culvert (Barrel Controls 3.99 cfs @ 4.09 fps)

Pond 11P: (new Pond)

lineage metals

Prepared by Somers Consulting Services LLC

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Type II 24-hr 100-yr Rainfall=7.82"

Printed 6/9/2026

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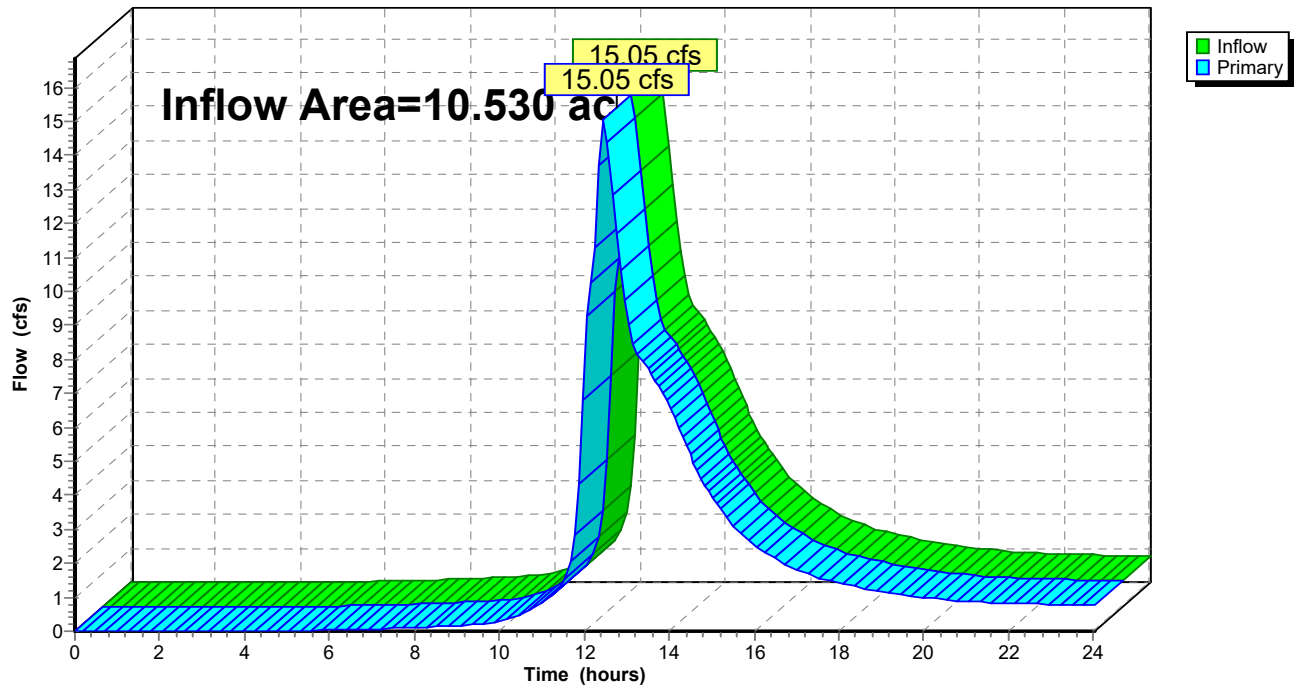
Summary for Link 6L: outfall

Inflow Area = 10.530 ac, 13.45% Impervious, Inflow Depth > 3.85" for 100-yr event
 Inflow = 15.05 cfs @ 12.46 hrs, Volume= 3.378 af
 Primary = 15.05 cfs @ 12.46 hrs, Volume= 3.378 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.03 hrs, dt= 0.09 hrs

Link 6L: outfall

Hydrograph



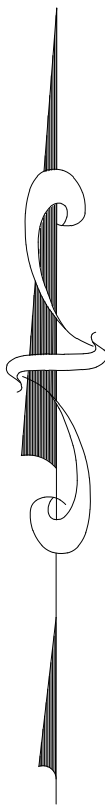
SCS

SOMERS CONSULTING SERVICES, LLC

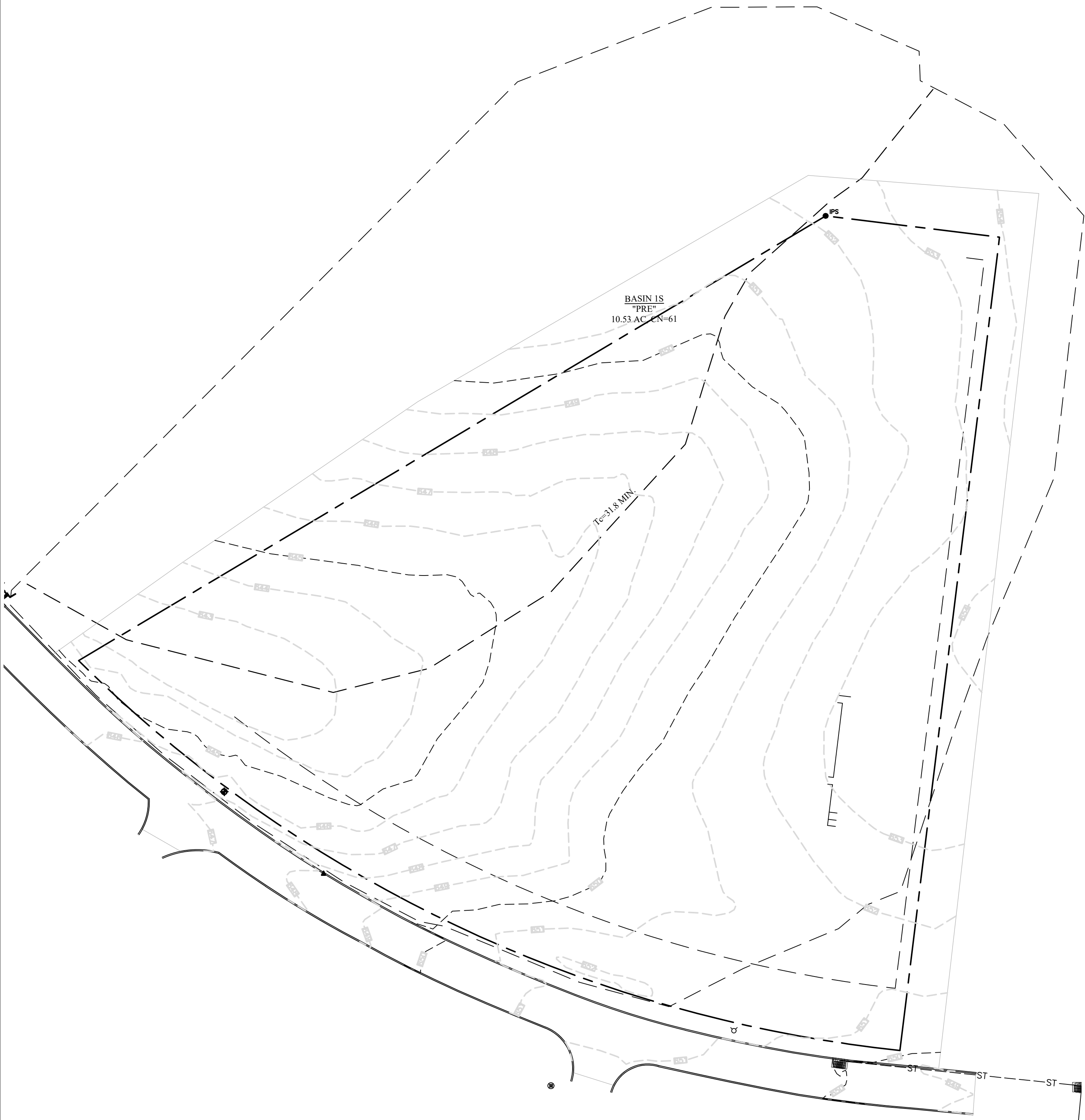
HYDROLOGY SUMMARY

STORM EVENT	RUNOFF		MAX. WATER CREST IN POND
	PRE-DEVELOPMENT	POST-DEVELOPMENT	
2-YEAR	5.12 CFS	3.59 CFS	643.28
10-YEAR	12.87 CFS	6.81 CFS	643.90
25-YEAR	18.38 CFS	8.25 CFS	644.29
100-YEAR	28.31 CFS	15.05 CFS	644.74

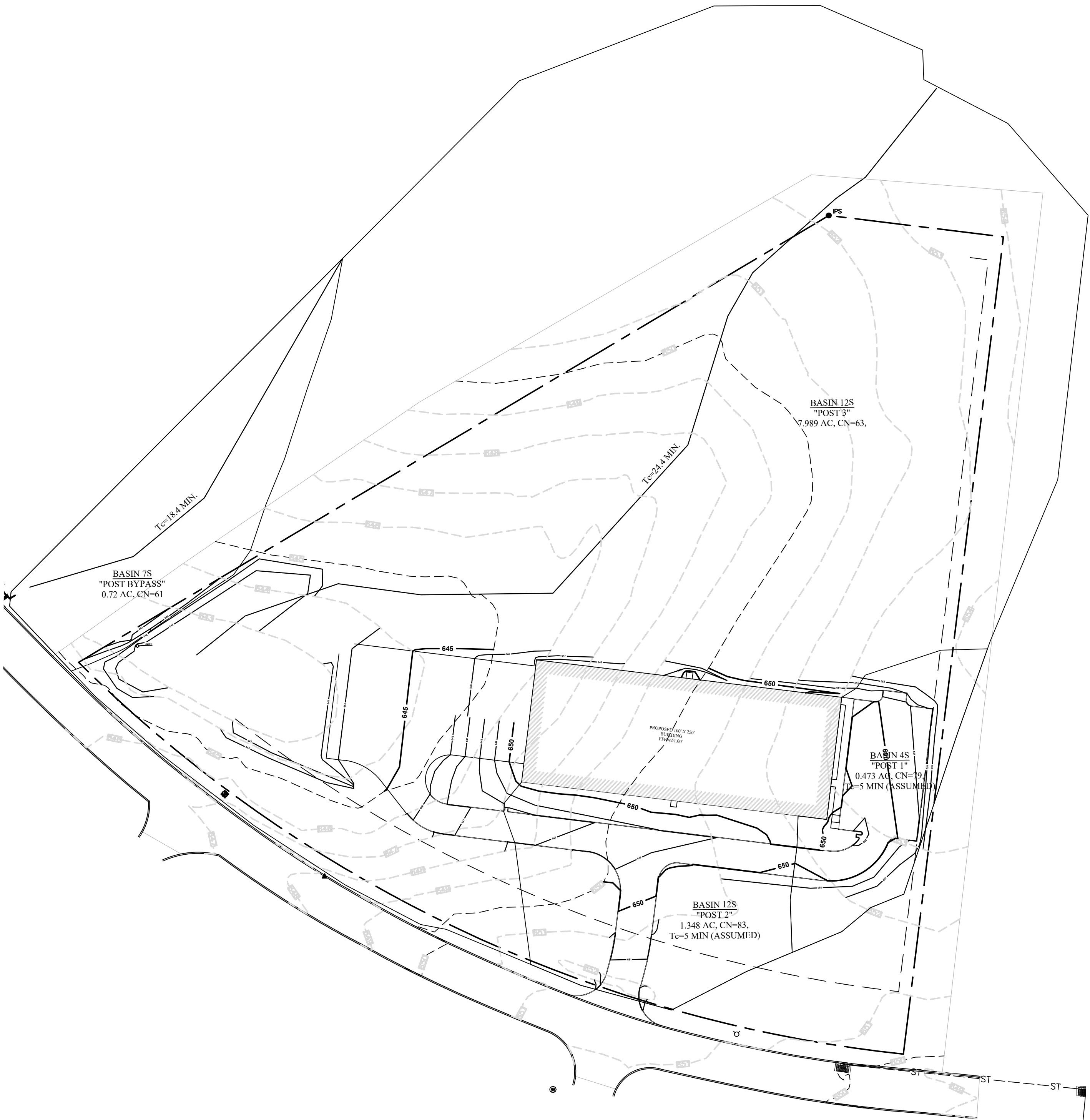
TOTAL VOLUME OF DETENTION POND = 49,077 CUBIC FEET
TOP OF POND AT 644.90' ELEVATION



PRE



POST



LINEAGE METALS -
CHERRY GLEN INDUSTRIAL PARK
JOE FRANK PORTER ROAD
MT. PLEASANT, TN 38474

JUNE 9, 2026



SOMERS CONSULTING
SERVICES, LLC.
ANDY SOMERS, P.E.
(256) 603-4888
2206 SHADES CREST RD
HUNTSVILLE, AL 35801

LINEAGE METALS
(925) 330-6747
2737 COUCHVILLE PIKE, SUITE 300
NASHVILLE, TN 37217

DRAWN:
AS

CHECKED:
AS

SHEET NAME:
HYDROLOGY

SCALE:
1"=60'

SHEET NO:
1 OF 1



City of Mount Pleasant

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Department of Planning and Zoning

Application for Review



MPMPC FILE # 2026459 DATE OF APPLICATION: 6-10-2026

Title of Project: 6681 Polk Lane - Kelly Property

Street Location: 6681 Polk Lane, Columbia, TN 38401

Tax Map: 126 Group: _____ Parcel: 037.01

Total Acreage: 7.11 Number of Lots: 2

Applicant:

Name: Roger Kelly

Company/Partnership: _____

Address: 4141 Trousdale Lane

City: Columbia State: TN Zip: 38401

Telephone: _____ Mobile: 931 Email: rogerk

Owner (if applicant is not owner):

Name: Same as above

Company/Partnership: _____

Address: _____

City: _____ State: _____ Zip: _____

Telephone: _____ Mobile: _____ Email: _____

Surveyor/Engineer:

Name: Allen O'Leary, RLS

Company/Partnership: W.E.S. - Engineers and Surveyors

Address: 2486 Nashville Highway

City: Columbia State: TN Zip: 38401

Telephone: 931 --- Mobile: 931 Email: allen



City of Mount Pleasant

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Department of Planning and Zoning

Application for Review



Provided with Submittal (yes, no, n/a)	Project Title: <u>6681 POLK LANE - KELLY PROPERTY</u>	For office use
yes	Non-refundable application fee (See current fee schedule)	
yes	Completed Preliminary Application	
yes	Ten (10) copies of plat - (1) pdf, (2) 24"x36", (8) 18"x24"	
yes	Location of property with respect to surrounding property and streets	
yes	Names of all adjoining property owners, or names of adjoining developments	
yes	Location and dimensions of all boundary lines of the property to the nearest one hundredth (1/100) of a foot	
yes	The size and location of any water and sewer mains	
yes	Location of existing easements and utilities	
yes	Lots numbered	
yes	Names of new streets	
yes	Locations, dimensions, and areas of all proposed or existing lots with building setbacks	
yes	Location and dimensions of all property proposed to be set aside for park or playground use or other public or private reservation, with designation of the purpose thereof, and conditions, if any, of the dedication or reservation	
yes	Date	
yes	Appropriate true north point	
yes	Data from which the location, bearing, and length of all lines can be determined and reproduced on the ground	
yes	Location and description of all proposed monuments	
n/a	Performance Bond: Water ☐ Sewer ☐ Streets ☐ Misc. ☐	
yes	Plat Certificates: Ownership ___ Accuracy ___ Utilities water ___ sewer ___ Approval by E-911 ___ Approval of Streets ___ Approval of Recording ___	
yes	The location of existing public ways, easements, water bodies, wetlands, streams, and other pertinent features, such as swamps, railroads, buildings, parks, cemeteries, drainage ditches, and bridges, as determined by the planning commission	
yes	the distance and bearing of one of the corners of the boundary of the subdivision to the nearest intersection of an existing public street and to the original corner of the original survey of which it is a part	
n/a	Limits of proposed fill and proposed final grading (existing contours at a minimum of two (2) foot intervals)	



City of Mount Pleasant

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Department of Planning and Zoning

Application for Review



This application shall be accompanied by maps, drawings, or other supportive information necessary to explain the request. It is recommended that the applicant or a representative be present at the Planning Commission.

TCA 134-304(a) states, in part, "The Commission shall approve or disapprove a plat within thirty (30) Days after submission of such plat...." By signing this application, the applicant (and owners, as applicable) acknowledge that items for consideration by the Planning Commission shall be considered submitted when all required information, a completed submittal application, and fee have been received by the City of Mount Pleasant.

Failure by the applicant to address all the requirements of the City of Mount Pleasant Zoning Ordinance and/or Subdivision Regulations may result in a deferral or denial of the proposed development by the Mount Pleasant Planning Commission.

As the applicant or the applicant's agent, I understand that it is my sole responsibility to notify my client of the time, date, and location of the Planning Commission and subsequent Mount Pleasant City Commission meetings at which this application will be heard and to ensure that someone representing this item is in attendance at each of these meetings.

I hereby attest that I have provided a complete application and included all of the necessary attachments as required. I understand that if information is incomplete and/or otherwise not provided, this application may be deferred until such time as the necessary information is provided.

[Signature] Owner/Agent submitting this application 6/15/20 Date

STAFF USE ONLY – DO NOT WRITE BELOW THIS LINE

Recording Fee.....\$ _____ Review Fee.....\$ 350. Appeal Fee.....\$ _____

Check # 6491 Cash _____ Debit or Charge _____ Amount Paid \$ 350.

Receipt # _____ Date Paid 6-10-20

Date of Review: _____ Approved Denied _____ Withdrawn _____



(IN FEET)
1 inch = 50 ft

I hereby certify: (1) that all designated public ways on this final subdivision plat have been installed in an acceptable manner and according to the specifications of the Mount Pleasant Municipal Subdivision Regulations, or (2) that a performance bond or other surety has been posted with the planning commission to guarantee completion of all required improvements in case of default.

CERTIFICATE OF APPROVAL OF WATER SYSTEM

Date _____

I (we) hereby certify that I am (we are) the owner(s) of the property shown and described hereon as evidenced in Book Number R3122, page 900, County Registers Office, and that I (we) hereby adopt this plat of subdivision with my (our) free consent, establish the minimum building restriction lines, and that offers of irrevocable dedication for all public ways, utilities, and other facilities have been filed.

Date _____ Tonya Kelly

Date	Maury County E-911 Columbia, Tennessee
------	---

I hereby certify that the subdivision plat shown hereon has been found to comply with the Mount Pleasant Municipal Subdivision Regulations, with the exception of such variances, if any, as are noted in the Minutes of the Planning Commission, and that it has been approved for recording in the Office of the County Register.

I (we) hereby certify that to the best of my (our) knowledge and belief this is a true and accurate survey of the property shown herein; that this is a category "IV" Land Survey as defined in Title 62, Chapter 18, Tennessee Code Annotated, and was done in compliance with the current Minimum Funding Standards.

Date 6/24/26 Allen B. O'Leary TN RLS #1987
Allen B. O'Leary Number

I hereby certify this is a true and accurate survey and meets or exceeds the current Minimum Standards and Applications of a Category IV (Remote Sensing) survey as defined in T.C.A. 0820-03-07C(5).

Carlson BRX7, Dual Frequency Base and Rover
Reference Frame: NAD83(2011), Epoch 2010.00
HRMS =0.04 SD=0.008, VRMS=0.075 SD=0.013
NGS2018
3/9/2026
0.99993

A map of the area around the proposed site. The map shows Ashwood Rd, Trotwood Ave, New Larmer Pkwy, W Main St, Hoover and Mason, Rock Ln, Trousdale Ln, Sowell Hollow, and Hwy 43. A north arrow is in the top left. A black arrow points to a shaded area labeled 'SITE'.

1. All distances measured with E.D.M. equipment and have been adjusted for temperature and pressure, this survey was completed using a dual frequency BRX7, base and rover.

2. The property (Boundary) Line Survey exceeds the minimum requirements of an Urban Land Survey Category IV as per Standards of Practice adopted by the State Board of Examiners for Land Surveyors for the State of Tennessee.
3. Information concerning site utility services and appurtenances shown hereon is based on the available evidence noted during the survey, information provided by utility representatives or information shown on original construction plans by other. Information and location of service lines on site should be considered approximate and there may be underground utility lines that are not shown on the survey. Owner(s) and contractor(s) should assume responsibility of locating all underground utility service line prior to any construction, excavation or any disturbance of the existing ground elevation to avoid hazard of unnecessary expense.
4. Information concerning major utilities or appurtenances shown hereon are based on the available evidence noted during the survey or information provided by utility representatives. Verification of existence, size, location, depth or availability of service should be confirmed by local utility agencies.
5. The property shown hereon is located within the City of Mt. Pleasant, Maury County, TN and Maury County. All matters pertaining to construction, use location or improvements, signage, parking, noise, environmental restrictions, fire hazards, radiation, illumination, setback provisions etc., are subject to the City of Mt. Pleasant's Zoning Regulation as interpreted and regulated by the Department of Planning and Codes, and Maury County Building and Zoning Office.
6. The area of the parcels as shown on Tax Map No. 126, Parcel No. 037.01 Maury County. For designation shown thus () indicates Parcel Numbers for said map.
6. Plat reference: N/A
7. Deed reference: Book R3122, Page 900
8. Bearings based on: Tennessee State Plane, NAD 83.
11. This drawing was prepared in accordance with our field survey notes. It shows improvements as they exist to the best of our knowledge, but is not guaranteed to be correct in each and every detail.
12. This survey was prepared from current deeds of record and does not represent a title search or a guarantee of title, and is subject to any state of facts a current and accurate survey may reveal.
13. This survey was prepared for the exclusive use of the person, persons, or entity, if any, named on the certification hereon. Said certificate does not constitute a warranty or representation by the surveyor or by the surveyor naming said person.
14. The certification as provided on this survey, is purely a statement of professional opinion based on knowledge, information and belief, based on existing field evidence and documentary evidence provided by others.
15. The certification is not an expressed or implied warranty or guarantee.
16. This property is not located in a Special Flood Hazard Area as shown on F.E.M.A. Flood Insurance Rate Map, Community Panel No. 47119C0270E, dated April 16, 1997, as scaled graphically.
17. All public utility and drainage easements located on proposed lots are to be maintained by the individual property owner for said lot.
18. All property corners are $\frac{1}{2}$ " rebar with cap reading "WES 1987" unless otherwise noted.

OWNER:
ROGER AND TONYA KELLY
15725 N DALLAS PKWY STE 300
ADDISON, TX 75001

PARCEL NUMBER:
TAX MAP 126, PARCEL 037.01

DEED BOOK:
R3122, PG 900

PROPERTY ADDRESS:
6681 POLK LANE
COLUMBIA, TN 38401

SUBJECT PARCEL ZONING:
CITY OF MT. PLEASANT - R-1 - Low Density Residential
MAURY COUNTY - RG

ACREAGE OF SITE:
TOTAL PROPERTY - +300.851 S.F. OR +7.11 ACRES

R.O.W. DEDICATION - 0.00 S.F. OR 0.00 ACRES

R-1 - CITY OF MT. PLEASANT
MINIMUM REQUIRED BUILDING SETBACKS:

30' FRONT
20' REAR
15' SIDE

MINIMUM LOT SIZE -	18,000 S.F.
MINIMUM LOT WIDTH -	90'
MAXIMUM LOT COVERAGE -	30%
MAXIMUM BUILDING HEIGHT -	35'

Register of Deed Recording Stamp

WES ENGINEERS & SURVEYORS
CIVIL ENGINEERS & LAND SURVEYORS
2486 NASHVILLE HIGHWAY
COLUMBIA, TN 38401
PHONE: (931) 388-2329
www.wesengineers.com

Client
ROGER KELLY
4141 TROUSDALE LANE
COLUMBIA, TN 38401

FINAL PLAT
681 POLK LANE - KELLY PROPERTY
MT. PLEASANT, TN - MAURY COUNTY

Job: no. 26510	Drawn: <i>AO</i>	REVISIONS	DATE
	Checked: <i>AO</i>	City Comments	06-24-26
Scale:	As Shown	Approved:	
Vertical:	1" = 50'	Date:	04-06-26
Horizontal:			

1 of 1

June 24, 2026

Chris Brooks, City of Mt. Pleasant- Building and Planning Director
Planning Office
209 Bond Street
Mount Pleasant, Tennessee 38474

RE: 6681 Polk Lane – Subdivision Plat
2 Lots

Dear Chris:

On behalf of the Roger Kelly, the owner of this property, WES Engineers & Surveyors would like to present this document as well as the attached Final Plat to the City of Mount Pleasant for resubmittal of the property at 6681 Polk Lane.

We hope that you find the information included effectively addresses the resubmittal requirements for this resubmittal. Please feel free to contact us with any questions or concerns. Comments are addressed in **RED**:

Staff Comments:

- Please label all of the existing structures and if they are to remain or to be removed.
Structures have been labeled. The house and barn are to remain, while the canopy is going to be removed.
- Please include the dimensions for all structures shown.
Dimensions have been added to the existing structures.
- Will the driveway for Lot 1 still be served from Tract 2? If so, a shared access easement will be needed and a note of this should be on the plat.
Each lot is going to have their own drive and a driveway note has been added to the Final Plat.
- Lot 1 and Tract 2 will need separate electrical service.
Lot 1 and Tract 2 are currently served by separate electrical meters.
- Section 3.2.4 RG (Residential District) of the Maury County Zoning Ordinance Maury County states, "Accessory structures shall be located at least 10 feet behind the principal building on the site." If the barn is allowed to be considered as the principal structure, the accessory canopy structure is not allowed to be in front of the principal structure and the shed accessory structure must be 10' behind the barn as well.
The canopy will to be removed and labeled as such.

- Add all appropriate certificates including the following related to septic tanks.

CERTIFICATE OF APPROVAL PRIVATE
SUBSURFACE SEWAGE DISPOSAL

General approval is hereby granted for lots proposed hereon as being suitable for subsurface sewage disposal with the listed and/or attached restrictions. Before the initiation of construction, the location of the house or other structures and plans for the subsurface sewage disposal system shall be approved by the local health authority.

_____, 19____
Date Local Health Authority

I spoke to Alan Floyd at TDEC about this and the only sign off they can do is on new systems.

We hope that you find the information included effectively addresses the questions and comments provided for this Final Site Plan submittal. After your comprehensive review of the responses provided, please feel free to contact us with any additional questions or concerns.

Sincerely,
WES Engineers & Surveyors



Allen O'Leary, RLS
Principal

Final Plat- 6681 Polk Lane

July 14, 2026

The applicant is requesting approval of a final plat for 6681 Polk Lane. The total property is 6.91 acres and is partially in the Mount Pleasant city limits and partially in Maury County. The purpose of this plat is to split one lot into 2 lots. The portion inside Mount Pleasant city limits is zoned R-1 (Low-density residential) and the portion in Maury County is zoned RG (Residential General). If approved, the property will be split into one lot (Lot 1) that is fully inside the Mount Pleasant city limits. Lot 1 will be 1.8 acres and zoned R-1. The other lot (Tract 2) will be partially inside the Mount Pleasant city limits and partially located in Maury County. Tract 2 will be 5.11 acres and will be zoned R-1 and RG. Lot 1 has an existing house that is to remain and tract 2 has an existing barn and shed that are to remain. There are currently no city utilities serving the property.

The plat shows existing septic on each proposed lot. We recommend the addition of a backup septic location be added to each proposed lot on the plat. The existing septic areas and the proposed backup septic locations may want to be updated to be designated by squares instead of the shown cloud shaped linework that is currently on the plat and labeled as existing and proposed.

The current plat shows one existing driveway that serves the house on Lot 1 and the barn on Tract 2, but Lot 1 is to install a second driveway to access the existing house, according to a note on the plat.

Items you may want to require as a condition of approval are:

- A Certificate of Approval for the Health Department to sign shall be added to the plat for the septic areas.
- The addition of backup septic areas be added to the plat with updated line work, as stated above.

The Planning Commission may approve or deny the request based on your deliberation.



City of Mount Pleasant

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Department of Planning and Zoning

Application for Review

209 Bond Street, Mt. Pleasant TN 38474



MPMPC FILE # 2026440 Date: 4-14-26
 Application Submitted for 4 Town Homes
 Title of Project: Town Homes
 Street Location: 222 Apple Tree St
 Tax Map: 133J Group: F Parcel: 001.00
 Total Acreage: .23 Number of Lots: 4

Applicant:

Name: Derrick Mayberry
 Company/Partnership: DTM Enterprise LLC
 Address: 2308 Forest Lake Dr
 City: Nashville State: TN Zip: 37211
 Telephone: 931 Mobile: _____ Email: SI

Owner (if applicant is not owner):

Name: Same as above
 Company/Partnership: _____
 Address: _____
 City: _____ State: _____ Zip: _____
 Telephone: _____ Mobile: _____ Email: _____

Surveyor/Engineer:

Name: Chet Rhodes
 Company/Partnership: Rhodes Engineering
 Address: 2486 Nashville Hwy
 City: Columbia State: TN Zip: 38401
 Telephone: 931 Mobile: _____ Email: r



City of Mount Pleasant

"Experience Our History.....Explore Our Possibilities"

Department of Planning and Zoning

Application for Review

209 Bond Street, Mt. Pleasant TN 38474



Provided with Submittal (yes, no, n/a)	Project Title: <u>4 Town Homes</u>	For office use
yes	Non-refundable application fee (See current fee schedule)	
yes	Completed Preliminary Application	
yes	Seven (7) copies 24x36 (1) pdf, (for final submittal) Review submittal 2 copies, PDF	
yes	Location of property with respect to surrounding property and streets	
yes	Names of all adjoining property owners, or names of adjoining developments	
yes	Location and dimensions of all boundary lines of the property to the nearest one hundredth (1/100) of a foot	
yes	The size and location of any water and sewer mains	
yes	Location of existing easements and utilities	
	Lots numbered	
NA	Names of new streets, address's approved by Maury County E911	
	Locations, dimensions, and areas of all proposed or existing lots with building setbacks	
	Location and dimensions of all property proposed to be set aside for park or playground use or other public or private reservation, with designation of the purpose thereof, and conditions, if any, of the dedication or reservation	
	Building & Site Design. See the Design Review Guidelines online	
	Appropriate true north point	
	Data from which the location, bearing, and length of all lines can be determined and reproduced on the ground	
	Location and description of all proposed monuments	
	Performance Bond: Water ☐ Sewer ☐ Streets ☐ Misc. ☐	
	Plat Certificates: Ownership ___ Accuracy ___ Utilities water ___ sewer ___ Approval by E-911 ___ Approval of Streets ___ Approval of Recording ___	
	The location of existing public ways, easements, water bodies, wetlands, streams, and other pertinent features, such as swamps, railroads, buildings, parks, cemeteries, drainage ditches, and bridges, as determined by the planning commission	
	the distance and bearing of one of the corners of the boundary of the subdivision to the nearest intersection of an existing public street and to the original corner of the original survey of which it is a part	
	Limits of proposed fill and proposed final grading (existing contours at a minimum of two (2) foot intervals)	



City of Mount Pleasant

"Experience Our History.....Explore Our Possibilities"

Department of Planning and Zoning

Application for Review



This application shall be accompanied by maps, drawings, or other supportive information necessary to explain the request. It is recommended that the applicant or a representative be present at the Planning Commission.

TCA 134-304(a) states, in part, "The Commission shall approve or disapprove a plat within thirty (30) Days after submission of such plat...." By signing this application, the applicant (and owners, as applicable) acknowledges that items for consideration by the Planning Commission shall be considered submitted when all required information, a completed submittal application, and fee have been received by the City of Mount Pleasant.

Failure by the applicant to address all the requirements of the City of Mount Pleasant Zoning Ordinance and/or Subdivision Regulations may result in a deferral or denial of the proposed development by the Mount Pleasant Planning Commission.

As the applicant or the applicant's agent, I understand that it is my sole responsibility to notify my client of the time, date, and location of the Planning Commission and subsequent Mount Pleasant City Commission meetings at which this application will be heard and to ensure that someone representing this item is in attendance at each of these meetings.

I hereby attest that I have provided a complete application and included all of the necessary attachments as required. I understand that if information is incomplete and/or otherwise not provided, this application may be deferred until such time as the necessary information is provided.

[Signature] 4-14-26
Owner/Agent submitting this application Date

STAFF USE ONLY – DO NOT WRITE BELOW THIS LINE

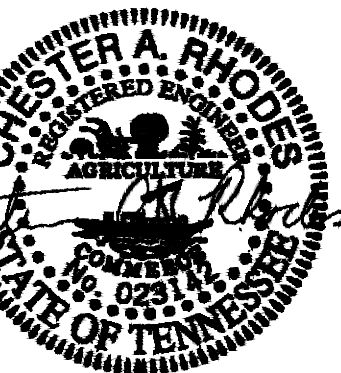
Recording Fee\$ _____ Review Fee.....\$ 500. Appeal Fee.....\$ _____

Check # 01156 Cash _____ Debit or Charge _____ Amount Paid \$ _____

Receipt # _____ Date Paid 4-20-26

Date of Review: _____ Approved Denied _____ Withdrawn _____

DERRICK M
DTM ENTERPRISES LLC
2308 FOREST LAKE DRIVE
NASHVILLE, TN
Ph # 931-286-1009
EMAIL: s1bdm1@gmail.com



1/25/2026



Rhodes Engineering & Environmental Services, LLC.
reserved. This design and these plans or any part thereof must not
be reproduced in any form without the written permission of Rhodes
Engineering & Environmental Services, LLC.

[illegible]

APPROVAL		
IN	Jackson Woodall	6/25/2026
IN	_____	_____
OKED	_____	_____
OVED	_____	_____

DATE: 6/25/2026 4:19:05 PM Jacks

DERRICK WAYBERRY
TOWNHOMES
222 APPLETREE/E COOPER ST,
MT. PLEASANT, TN 38474

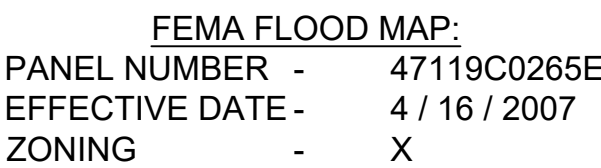
COVER SHEET

COVER SHEET

C-0.0

C-0.0	COVER SHEET
C-1.0	EXISTING SITE LAYOUT
C-2.0	PROPOSED SITE LAYOUT
C-3.0	GRADING PLAN
C-4.0	INITIAL EPSC
C-4.1	INTERMEDIATE & FINAL EPSC
C-4.2	EPSC DETAILS
C-5.0	UTILITY PLAN

02_06_2025_2B



EXISTING CONDITIONS		
TOTAL	9,807 SQ.FT.	100%
IMPERVIOUS	0 SQ. FT.	0%
PERVIOUS	9,807 SQ.FT.	100%
FLOOD PLAIN		
IN FLOOD PLAIN	3,159 SQ.FT.	32%
IMPERVIOUS	0 SQ.FT.	0%
PERVIOUS	3,159 SQ.FT.	32%
OUT OF FLOOD PLAIN	6,648 SQ.FT.	68%
IMPERVIOUS	0 SQ.FT.	0%
PERVIOUS	6,648 SQ.FT.	68%
PROPOSED SITE PLAN		
TOTAL	9,807 SQ.FT.	100%
IMPERVIOUS	5,738 SQ. FT.	59%
PERVIOUS	4,069 SQ.FT.	41%
FLOOD PLAIN		
IN FLOOD PLAIN	3,159 SQ.FT.	32%
IMPERVIOUS	1,483 SQ.FT.	15%
PERVIOUS	1,676 SQ.FT.	17%
OUT OF FLOOD PLAIN	6,648 SQ.FT.	68%
IMPERVIOUS	4,225 SQ.FT.	43%
PERVIOUS	2,393 SQ.FT.	25%



/25/2026

EEER:



MODES ENGINEERING
AND ENVIRONMENTAL
SERVICES, LLC
PHONE: 818 488 7525

PHONE: 615.480.7333
EMAIL: rhodesengineering@gmail.com
NASHVILLE HWY. SOUTH, SUITE #1
COLUMBIA, TN 38401
CIVIL ENVIRONMENTAL
ITE DEVELOPMENT WATER/WASTEWATER

by Rhodes Engineering & Environmental Services, LLC.

reserved. This design and these plans or any part thereof must not be produced in any form without the written permission of Rhodes.

Engineering & Environmental Service, LLC

APPROVAL		
OWN	_____	_____
IGN	_____	_____
CKED	_____	_____
ROVED	_____	_____

ED DATE: 6/25/2026 4:19:05 PM Jacks

--	--

DERRICK MAYBERRY
TOWNHOMES
222 APPLETREE/E COOPER ST,
MT. PLEASANT, TN 38474

EXISTING SITE LAYOUT

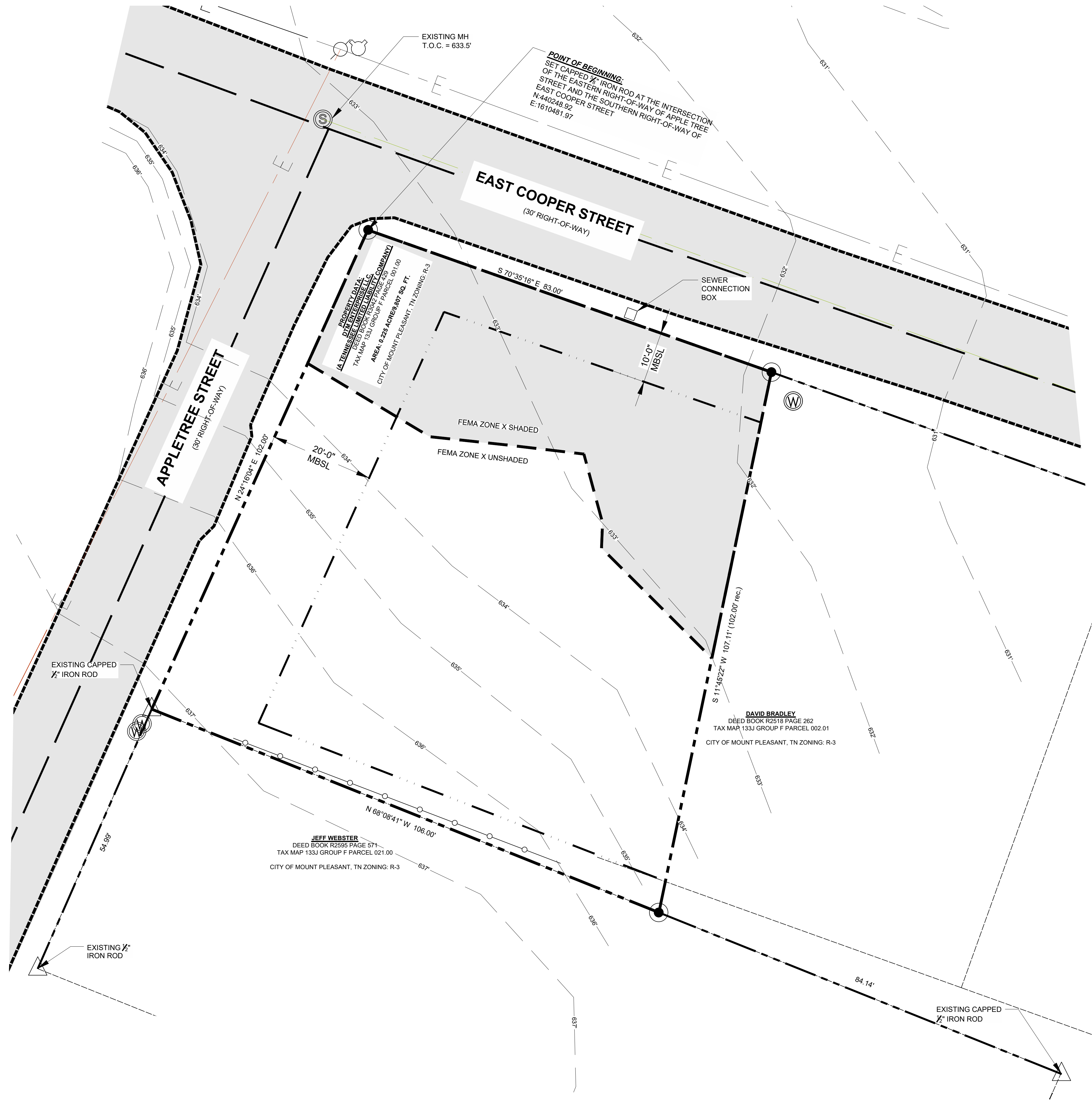
No.

C-1.0

NOTED

10 - 11 - 2023

90



1 DETAIL OR VIEW
SCALE: 1" = 10'-0"

EXISTING SITE LAYOUT

SCALE: 1" = 10'-0"



**RODSES ENGINEERING
AND ENVIRONMENTAL
SERVICES, LLC**

 PHONE: 615.480.7535

 EMAIL: rhodesengineering@gmail.com

 NASHVILLE HWY. SOUTH, SUITE #1

 COLUMBIA, TN 38401

 CIVIL ENVIRONMENTAL

 SITE DEVELOPMENT WATER/WASTEWATER

reserved. This design and these plans or any part thereof must not be reproduced in any form without the written permission of Rhodes.

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APPROVAL		
OWN	_____	_____
IGN	_____	_____
CKED	_____	_____
OVED	_____	_____
D DATE: 6/25/2026 4:19:05 PM Jacks		

TOWNHOMES
222 APPLETREE/E COOPER ST,
MT. PLEASANT, TN 38474

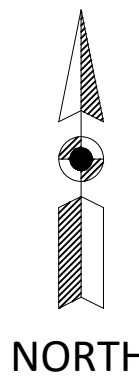
PROPOSED SITE LAYOUT

No.

C-2.0

NOTED

08 - 13 - 2025 881



PROPOSED SITE LAYOUT

SCALE: 1" = 10'-0"



**RHODES ENGINEERING
 AND ENVIRONMENTAL
 SERVICES, LLC**

 PHONE: 615.480.7535

 EMAIL: rhodesengineering@gmail.com

 NASHVILLE HWY. SOUTH, SUITE #1

 COLUMBIA, TN 38401

 CIVIL, ENVIRONMENTAL

 SITE DEVELOPMENT WATER/WASTEWATER

Engineering & Environmental Service, LLC

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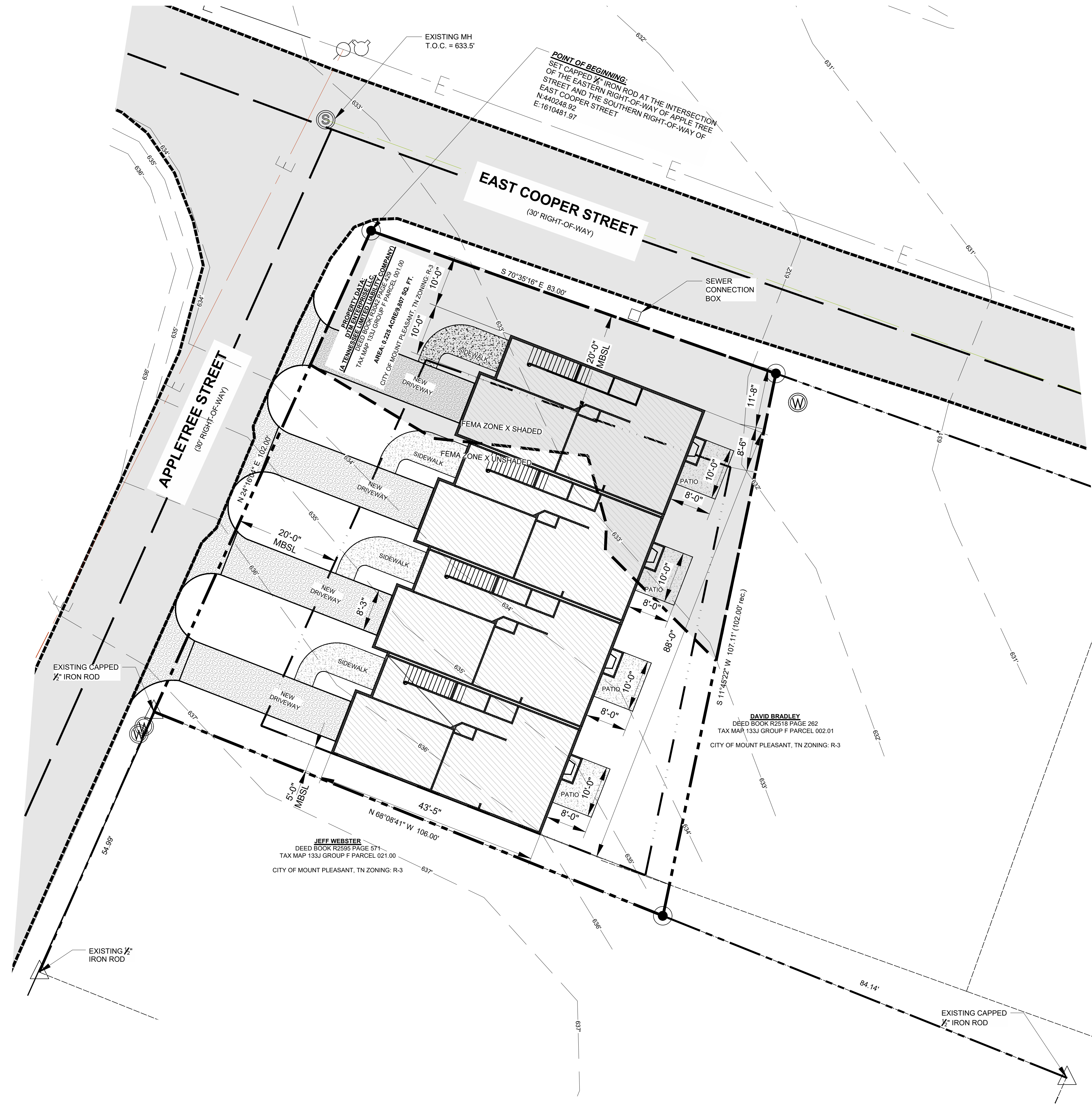
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CKED	_____	_____
ROVED	_____	_____
ED DATE: 6/25/2026 4:19:05 PM		Jacks

No.

NOTED

08 - 13 - 2025

PROPOSED SITE PLAN		
TOTAL	9,807 SQ.FT.	100%
IMPERVIOUS	5,738 SQ. FT.	59%
PERVIOUS	4,069 SQ.FT.	41%
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1 DETAIL OR VIEW
SCALE: 1" = 10'-0"

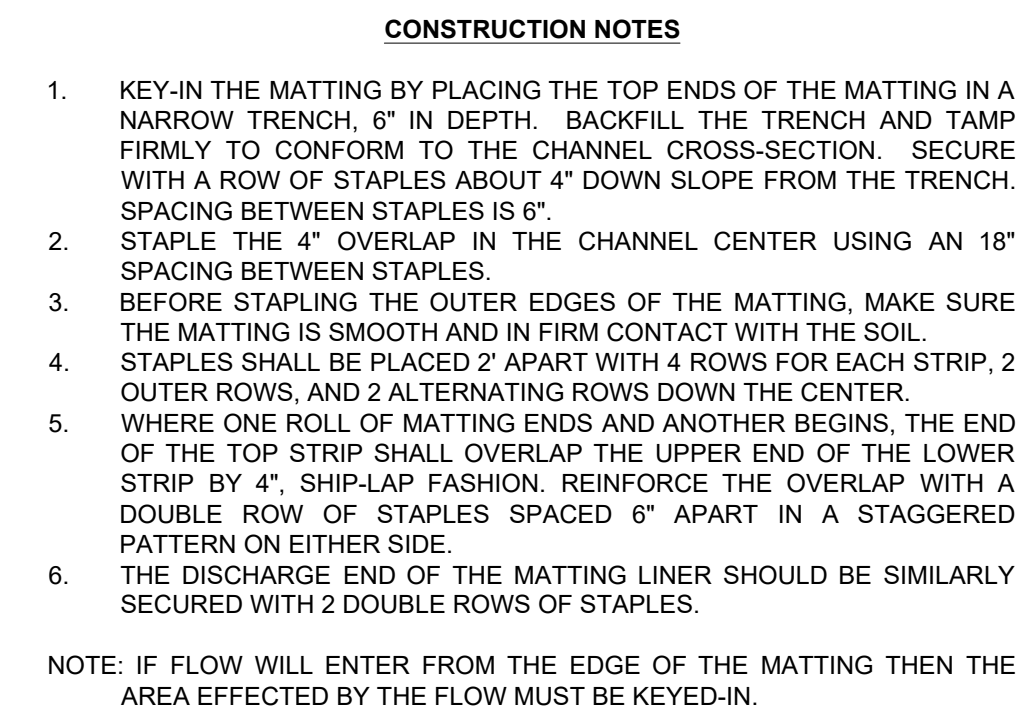




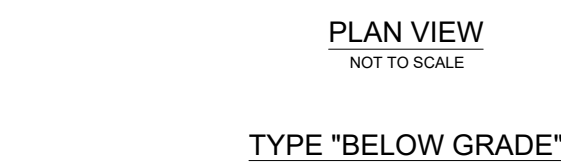
SCALE: N.T.S.



(2) SCALE: N.T.S.



3 SCALE: N.T.S.



4 SCALE: N.T.S.

RE
 CODES ENGINEERING
 AND ENVIRONMENTAL
 SERVICES, LLC
 PHONE: 615.480.7535
 EMAIL: rhodesengineering@gmail.com
 NASHVILLE HWY. SOUTH, SUITE #1
 COLUMBIA, TN 38401
 CIVIL, ENVIRONMENTAL
 SITE DEVELOPMENT, WATER/WASTEWATER

[illegible]

APPROVAL		
OWN	_____	_____
IGN	_____	_____
CKED	_____	_____
OVED	_____	_____
D DATE: 6/25/2026 4:19:05 PM Jacks		

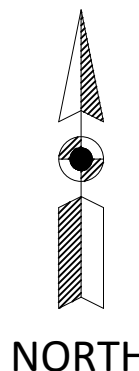
DERRICK MAYBERRY
TOWNHOMES
222 APPLETREE/E COOPER ST,
MT. PLEASANT, TN 38474

UTILITY PLAN

C-5.0

E: 323 Apple Tree Street, Millersburg, TN, 38054, Jack Stephens, 601-321-3026

REV	
-----	--



Site Plan- 222 Appletree Street

July 14, 2026

The applicant is requesting approval of a site plan for 222 Appletree Street. The property is 0.225 acres and is zoned R-3 (High-density residential). The applicant wishes to construct 4 townhomes on the property. The proposed townhomes are all to be 43'5" in length and 22' wide.

The proposed site plan was taken to the Mount Pleasant Board of Zoning Appeals in June for a setback variance. The property at 222 Appletree Street is a corner lot at Appletree Street and East Cooper Street, meaning it has two fronts and must meet the front setback requirements for both streets that the property fronts. The request was for a 10-foot reduction from the 20-foot required front setback where the lot faces East Cooper Street. The proposed site plan had all 4 townhomes each with driveways that front onto Appletree Street. The BZA approved the requested 10-foot setback variance with the condition that the driveways be relocated to the rear of the townhomes and accessed from an alley.

The condition from the BZA stemmed from Section 14-603 *R3 High density residential* of the Zoning Ordinance that states, "alleys are used to provide discreet vehicular access for townhouses and apartment buildings, supporting both functionality and aesthetic appeal." Also, Section 14-1102 *Off-street parking and loading* states, "for single-, two-family, and townhouse dwellings, parking shall be permitted in private driveways, but no such car park may encroach onto the public right-of-way or sidewalk." Moving the drives to the rear of the units aids in compliance with this requirement.

Items you may want to require as a condition of approval are:

- The townhomes are rear-loaded as per the condition of the BZA.

The Planning Commission may approve or deny the request based on your deliberation.



June 17, 2026

Mr. Chris Brooks
City of Mount Pleasant
100 Public Square
Mount Pleasant, TN 38474

Dear Mr. Brooks:

Subject: 222 Appletree Street Townhomes
Second Stormwater Review
CEC Project 325-259

Civil & Environmental Consultants, Inc. (CEC) completed the second review of the proposed plans for 222 Appletree Street Townhomes prepared by Chester Rhodes, P.E. of Rhodes Engineering and Environmental Services, LLC, as requested. The submittal was received by CEC on June 10, 2026, via email and consisted of the following:

- BOZA Public Notice for June 25, 2026 Meeting
- Application
- Design Plans
 - C-0.0 – Coversheet; signed and sealed by Chester Rhodes, P.E., on May 13, 2026
 - C-1.0 – Existing Site Layout; signed and sealed by Chester Rhodes, P.E., on May 13, 2026
 - C-2.0 – Proposed Site Layout; signed and sealed by Chester Rhodes, P.E., on May 13, 2026
 - C-3.0 – Grading Plan; signed and sealed by Chester Rhodes, P.E., on May 13, 2026
 - C-4.0 – Initial EPSC; signed and sealed by Chester Rhodes, P.E., on May 13, 2026
 - C-4.1 – Intermediate & Final EPSC; signed and sealed by Chester Rhodes, P.E., on May 13, 2026
 - C-4.2 – EPSC Details; signed and sealed by Chester Rhodes, P.E., on May 13, 2026
 - C-5.0 – Utility Plan; signed and sealed by Chester Rhodes, P.E., on May 13, 2026

CEC recommends the applicant address the following comments:

1. Provide a response letter stating how the comments were addressed and where they were addressed. Please be specific where the comments were addressed by providing page numbers, note numbers, and/or references to specific locations in the calculations. This will allow the review engineer to evaluate the resubmittal more efficiently.
2. Please note this is a preliminary review as not all necessary documents are provided. When a complete submittal is received, a complete review will be conducted. A complete submittal includes at a minimum the following additional information:
 - a. Stormwater Calculations (signed and sealed by Professional Engineer)
 - i. Existing Conditions Hydrologic Calculations
 1. Drainage Area(s) Calculations & Exhibit
 2. Time of Concentration Calculations & Flow Path Exhibit
 - ii. Existing Conditions Hydraulic Calculations (if any)
 1. Ditches
 2. Pipes/Culverts
 3. Storm sewer system routed
 - iii. Proposed Conditions Hydrologic Calculations
 1. Drainage Area(s) Calculations & Exhibit
 2. Time of Concentration Calculations & Flow Path Exhibit
 - iv. Proposed Conditions Hydraulic Calculations
 1. Ditches
 2. Pipes/Culverts
 3. Storm sewer system routed
 4. Detention Basins
 5. Evaluation of impacts to existing stormwater infrastructure downstream of the site
 - v. Please note that post-construction discharges for each outfall location should be equal to or less than the pre-construction discharges.
 3. Please provide contours on the grading plan.
 4. Details are provided for outlet protection, endwall with dissipator blocks, and a detention pond outlet, yet they are not shown on the plans. Please show items on the plan view or remove details.
 5. EPSC Comments:
 - a. Please expand limits of disturbance to ensure all EPSC measures such as silt fence are contained.
 - b. Phase I sequencing note 3 mentions a sediment basin to be installed in proposed detention area. Where is this located?

- c. Phase II sequencing note 5 mentions placement of erosion control matting in area of embankment. Where is this? Please show erosion control matting on applicable EPSC sheets.

Please contact us at (615) 333-7797 with any questions you may have regarding this review. Thank you for the opportunity to provide engineering review services to the City.

Sincerely,

CIVIL & ENVIRONMENTAL CONSULTANTS, INC.



JJ Thornton, P.E.
Project Manager



Jeffrey B. Shaver, P.E., CFM, CPESC
Vice President

Rhodes Engineering and Environmental Services, LLC

Project : 222 Appletree / E Cooper St – Site Plan
Project Name : Townhomes
Jurisdiction : Mount Pleasant
Parcel ID : 133J F 001.00
Acres : 0.225

June 19, 2026

Comment Response & Change Letter

Applicant Responses dated 06-25-2026 are provided below in Blue

Civil & Environmental Consultants, Inc. (CEC) completed the second review of the proposed plans for 222 Appletree Street Townhomes prepared by Chester Rhodes, P.E. of Rhodes Engineering and Environmental Services, LLC, as requested. The submittal was received by CEC on June 10, 2026, via email and consisted of the following:

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 - C-5.0 – Utility Plan; signed and sealed by Chester Rhodes, P.E., on May 13, 2026

CEC recommends the applicant address the following comments:

Chet Rhodes, PE
Rhodes Engineering and Environmental Services, LLC
Civil * Environmental* Geotechnical * Structural

807 Nashville Hwy Suite #1, Columbia, Tennessee 38401
(615) 480-7535

RhodesEngineering@gmail.com

Rhodes Engineering and Environmental Services, LLC

1. Provide a response letter stating how the comments were addressed and where they were addressed. Please be specific where the comments were addressed by providing page numbers, note numbers, and/or references to specific locations in the calculations. This will allow the review engineer to evaluate the resubmittal more efficiently.
Understood.

2. Please note this is a preliminary review as not all necessary documents are provided. When a complete submittal is received, a complete review will be conducted. A complete submittal includes at a minimum the following additional information:

- a) Stormwater Calculations (signed and sealed by Professional Engineer)

- i. Existing Conditions Hydrologic Calculations

- 1) Drainage Area(s) Calculations & Exhibit

We have drainage arrows and previous and impervious calcs shown on the plans. We will provide the engineered calcs before the meeting.

- 2) Time of Concentration Calculations & Flow Path Exhibit

We have drainage arrows and previous and impervious calcs shown on the plans. We will provide engineered calcs before the meeting.

- ii. Existing Conditions Hydraulic Calculations (if any)

- 1) Ditches

We have drainage arrows and previous and impervious calcs shown on the plans. We will provide engineered calcs before the meeting.

- 2) Pipes/Culverts

We have drainage arrows and previous and impervious calcs shown on the plans. We will provide engineered calcs before the meeting.

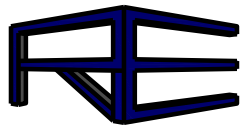
- 3) Storm sewer system routed

We have drainage arrows and previous and impervious calcs shown on the plans. We will provide engineered calcs before the meeting.

Chet Rhodes, PE
Rhodes Engineering and Environmental Services, LLC
Civil * Environmental* Geotechnical * Structural

807 Nashville Hwy Suite #1, Columbia, Tennessee 38401
(615) 480-7535

RhodesEngineering@gmail.com



Rhodes Engineering and Environmental Services, LLC

- iii. Proposed Conditions Hydrologic Calculations
 - 1) Drainage Area(s) Calculations & Exhibit
We have drainage arrows and previous and impervious calcs shown on the plans. We will provide engineered calcs before the meeting.
 - 2) Time of Concentration Calculations & Flow Path Exhibit
We have drainage arrows and previous and impervious calcs shown on the plans. We will provide engineered calcs before the meeting.
 - iv. Proposed Conditions Hydraulic Calculations
 - 1) Ditches
We have drainage arrows and previous and impervious calcs shown on the plans. We will provide engineered calcs before the meeting.
 - 2) Pipes/Culverts
We have drainage arrows and previous and impervious calcs shown on the plans. We will provide engineered calcs before the meeting.
 - 3) Storm sewer system routed
We have drainage arrows and previous and impervious calcs shown on the plans. We will provide engineered calcs before the meeting.
 - 4) Detention Basins
We have drainage arrows and previous and impervious calcs shown on the plans. We will provide engineered calcs before the meeting.
 - 5) Evaluation of impacts to existing stormwater infrastructure downstream of the site
We have drainage arrows and previous and impervious calcs shown on the plans. We will provide engineered calcs before the meeting.
 - v. Please note that post-construction discharges for each outfall location should be equal to or less than the pre-construction discharges.
Understood
3. Please provide contours on the grading plan.
Contours have been added to the plans as requested.

Chet Rhodes, PE
Rhodes Engineering and Environmental Services, LLC
Civil * Environmental* Geotechnical * Structural

807 Nashville Hwy Suite #1, Columbia, Tennessee 38401
(615) 480-7535

RhodesEngineering@gmail.com

Rhodes Engineering and Environmental Services, LLC

4. Details are provided for outlet protection, endwall with dissipator blocks, and a detention pond outlet, yet they are not shown on the plans. Please show items on the plan view or remove details.

These details have been removed from the plans.

5. EPSC Comments:

- a) Please expand limits of disturbance to ensure all EPSC measures such as silt fence are contained.

The Limits of Disturbance have been altered to include the silt fence.

- b) Phase I sequencing note 3 mentions a sediment basin to be installed in proposed detention area. Where is this located?

This note has been removed since we are not making a detention pond on this site.

- c) Phase II sequencing note 5 mentions placement of erosion control matting in area of embankment. Where is this? Please show erosion control matting on applicable EPSC sheets.

At the moment, we are not planning to put erosion control matting on site due to it not being 3 to 1 slope. This note has been removed.

1. Barge

222 Appletree - Plans show a sewer connection box, but no sewer utility plans. No review can be completed until additional utility plans are provided

We will provide before the meeting when the sewer is located.

2. MPPS

Mount Pleasant Power has no comments at this time.

Understood.

1. If the setback variance is approved by the BZA, please include a note of it.

Understood. We will add a note if the BZA approves the setback variance.

2. The existing structure on the property has already been removed, please remove it from the existing site layout sheet and the Initial EPSC sheet.

We have removed the existing building as requested.

3. Please provide the elevations for the townhomes.

Elevations will be provided.

Chet Rhodes, PE

Rhodes Engineering and Environmental Services, LLC

Civil * Environmental* Geotechnical * Structural

807 Nashville Hwy Suite #1, Columbia, Tennessee 38401
(615) 480-7535

RhodesEngineering@gmail.com

Rhodes Engineering and Environmental Services, LLC

4. Is the grading plan sheet showing the wrong sheet? It appears it may be the same as the proposed site layout sheet.

We have added the contours on the grading plan.

5. Please show all utility connection locations.

We will provide before the meeting once existing utilities are located

6. According to Section 14-603 R3 High density residential of the Zoning Ordinance, alleys are used to provide discreet vehicular access for townhouses and apartment buildings, supporting both functionality and aesthetic appeal.

The client has already purchased floor plans from someone else and will not work with what is requested. We will need to make new floor plans and alter the whole site to get it to work. The client doesn't want to make new floor plans nor put in an alleyway for access to the site when we have access on Appletree and E. Cooper St. To my knowledge this has been discussed with the client and Mt. Pleasant, and we don't have to do this major change.

7. For single-, two-family, and townhouse dwellings, parking shall be permitted in private driveways, but no such car park may encroach onto the public right-of-way or sidewalk. Moving the drives to the rear of the units will aid in compliance with this requirement.

The client has already purchased floor plans from someone else and will not work with what is requested. We will need to make new floor plans and alter the whole site to get it to work. The client doesn't want to make new floor plans nor put in an alleyway for access to the site when we have access on Appletree and E. Cooper St. To my knowledge this has been discussed with the client and Mt. Pleasant, and we don't have to do this major change.

8. According to section 14-1102 of the Zoning Ordinance, all townhomes must have 2 off-street parking spaces.

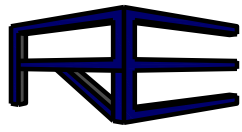
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Please contact us at (615) 333-7797 with any questions you may have regarding this review. Thank you for the opportunity to provide engineering review services to the City.

Chet Rhodes, PE
Rhodes Engineering and Environmental Services, LLC
Civil * Environmental* Geotechnical * Structural

807 Nashville Hwy Suite #1, Columbia, Tennessee 38401
(615) 480-7535

RhodesEngineering@gmail.com



RHODES
ENGINEERING

Rhodes Engineering and Environmental Services, LLC

Section 7, Item E.

Chet Rhodes, PE
Rhodes Engineering and Environmental Services, LLC
Civil * Environmental* Geotechnical * Structural

807 Nashville Hwy Suite #1, Columbia, Tennessee 38401
(615) 480-7535

RhodesEngineering@gmail.com



Memo

Date: October 13, 2025
To: Phillip Grooms, City Manager
From: Ricky Oakley, PE
Copy: Dale Brown, PW Director
Ted Howell, Asst. PW Director
Subject: Application for Water Service – 222 Appletree Street

CEC Project No.: 334-922/T005
Chris Brooks, Planning Director
Peter Chimera, PE, CEC Project Manager

Civil & Environmental Consultants, Inc. (CEC) has completed its review for an availability of water service at 222 Appletree Street. This request was made by Derrick Mayberry on Jan. 28, 2025. Mr. Mayberry plans to build four townhomes. The request was for service from two existing taps and two additional taps.

Examination of the City's Water System GIS indicates a 6-inch water line parallels the southern ROW of Appletree Street and is on the same side as the property for future service.

This request is for a multi-family unit. As such, water availability must consider TDEC minimum requirements for fire hydrant installation¹. Data from the City's GIS data indicates fire hydrant 134 at 208 Appletree Street which is 370 feet from the project site was flow tested in 2022 with the following results:

Static Pressure: 90 psi
Flow: 630 gpm
Residual Pressure: 30 psi

These results comply with TDEC requirements; however, the test is now 3 years old. As such, CEC recommends approval of this request for use of two (2) existing service taps and two (2) new residential service taps contingent on receipt of a new flow test from the developer confirming that 500 gpm fire flow is still available. Approval is valid for six months from the date of this correspondence.

Please call if you have any questions.

End of Memorandum

Enclosures: Customer Water Meter/TAP Installation Request
Excerpt of GIS Map with supplemental notes

¹ A water main must be capable of flowing 500 gpm at 20 psi for installation of a fire hydrant.

City of Mount Pleasant, Tennessee

209 Bond Street

Mount Pleasant, TN 38474

OFFICE: (931) 379 - 7177

FAX: (931) 379 - 0366

APPLICATION FOR WATER SERVICE

This application shall be submitted to the City of Mount Pleasant Public Works office for initial hydraulic review. Supplemental information may be requested to aid in the assessment of your request. The information exchanged between the City of Mount Pleasant and the applicant throughout this application process shall not be interpreted or implied as a guarantee of serviceability. All relevant fees will be identified to the Applicant by the City of Mount Pleasant after initial review of the Application for Water Service. This may include, but is not limited to, letter of availability, fire flow test, hydraulic modeling review, and engineering evaluation for off-site improvements.

Relevant Definitions:

1. Residential Service – Water service provided for domestic or irrigation purposes in a residential area and is not considered a commercial service.

2. Commercial Service – Water service provided to a customer for use in the promotion of a business or business product that is a source of revenue or income to the customer or others using the premises.

3. Subdivision – The division of a tract or parcel of land into two (2) or more lots, sites, or other divisions or any division of five (5) acres or less for the purpose, whether immediate or future, of sale or building development, and includes re-subdivision and when appropriate to the context, relates to the process of re-subdividing or to the land or area subdivided.

Provide the following information:

1. Provide a Preliminary Site Layout in .pdf format that, at a minimum reflects site layout including but not limited to roads, lots, buildings, rights-of-way, utilities, key map, etc. Site Layout shall be provide at a Scale not less than 1"= 100'.

2. Select the type of water service you are requesting:

a. ☒ Residential Service

b. ☐ Commercial Service

3. Are you requesting water service for a residential subdivision (parcel divided into 2 or more lots)?

a. ☒ Yes —> Record # of Lots to be Served 3, Subd. Phase, Total Phases 1.

b. ☐ No, my request is for one (1) residential lot with residential water usage.

c. ☐ No, my request is related to commercial service or a residential multi-unit complex.

NOTE: If you selected "b." for Item No. 3 then skip to Item No. 5 and complete the application from there.

4. If you are requesting commercial service or for residential multi-unit complex then complete the following:

a. Provide Number of Buildings to be Constructed

b. Provide Type of Buildings to be Constructed

c. Provide Use of Buildings to be Constructed

d. Multi-unit Complex (# of Units)

5. Total Water Demand Requirements (Provide all that apply):

a. Commercial

b. Fire Sprinkler

existing tap on lot, 2 additional taps needed)

Town houses

gpd.

gpd.

PAGE 1 of 2

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- c. Irrigation _____ gpd.
d. Residential (assume 200 gpd per metered customer) _____ gpd.

6. Site Information for Proposed Water Service Location: ☒ Primary Contact ☐ Yes ☐ No
- a. Site Owner Name Derrick Myberry
b. Site Address 222 Applefork St
c. Site Owner Telephone No. 931-286-1009
d. Site Owner Email Address SIADM1@gmail.com
e. Geographic Coordinates: _____ "N" _____ "W"
f. Residential Subdivision Name (if applicable) _____
g. Commercial Development Name (if applicable) _____

7. Developer Information (If applicable): ☒ Primary Contact ☐ Yes ☐ No
- a. Company Name DTM Enterprise LLC
b. Representative/Contact Name Derrick Myberry
c. Address 2305 Forest Lake Dr Nashville TN
d. Telephone No. _____
e. Email Address _____

8. Developer's Engineer Information (If applicable): ☐ Primary Contact ☐ Yes ☐ No
- a. Company Name _____
b. Representative/Contact Name _____
c. Address _____
d. Telephone No. _____
e. Email Address _____

9. Application is being submitted by:
- a. ☐ Site Owner
b. ☒ Developer
c. ☐ Developer's Engineer
d. ☐ Other

If you selected "Other", provide the following contact information: ☒ Primary Contact ☐ Yes ☐ No

- a. Name _____
b. Relationship to Site Owner/Applicant _____
c. Address _____
d. Telephone No. _____
e. Email Address _____

Upon receipt of completed application and service fee, the initial hydraulic evaluation process will begin. I further understand that there will be no agreement on the part of the City of Mount Pleasant to provide water service or approval of construction of water line extensions or upgrades until a contract has been approved and executed between the City of Mount Pleasant and the Applicant. Said contract will provide the amounts, schedule of payment of fees and consultant costs for design and permitting of all on-site and off-site improvements, if any. The Contract will be a basis for the condition of services including provisions pertaining to easements and general conditions.

Note: Failure to provide complete and accurate information for the questions listed above can result in delay or rejection of the Application for Water Service.

Applicant or Applicant's Representative:

Print Name Derrick Myberry
Signature [Signature] Date 1-28-25





Board of Zoning Appeals Meeting Minutes

Thursday, June 25, 2026 at 5:00 PM

The Tom Hardin Room – 100 Public Square, Mount Pleasant, TN

1. Call to Order

Chair Jacqueline Johnson calls the meeting to order.

2. Pledge of Allegiance / Invocation

Vice Chair Lisa Cole leads the Pledge of Allegiance and Member Terry Brewer leads the Invocation.

3. Roll Call

A. Jacqueline Johnson – Chair

Lisa Cole – Vice *Chair*

John Hunter - *Member*

Billy Ring - *Member*

Terry Brewer - Member

Present-

Jacqueline Johnson – Chair

Lisa Cole – Vice *Chair*

John Hunter - *Member*

Terry Brewer - Member

Not present-

Billy Ring - *Member*

Billy Ring is no longer on the BZA board.

Kori Jones is on Zoom along with Will Hagar.

4. Approval / Correction of Minutes from Prior Meetings

A. BZA meeting minutes 5-28-26

Chair Jacqueline Johnson stated the minutes were mailed out to the board. She then asked if anyone has any corrections or anything to say about the minutes.

Chair Jacqueline Johnson entertains a motion to approve the minutes from the Board of Zoning Appeals Meeting on May 28, 2026.

Member Terry Brewer makes a motion to approve the minutes as mailed and Vice Chair Lisa Cole seconds the motion.

Voting yea-

Chair Jacqueline Johnson, Vice Chair Lisa Cole, Member John Hunter, Member Terry Brewer

Motion carries.

5. Completion / Review of Unfinished Business from prior meeting

Chris Brooks states there is none at this time.

6. Special reports from other City Departments or Committees if applicable

7. New Business

(Comments from citizens may or may not be included, dependent on the issues.)

- A. Public Hearing, Variance Request:** Applicant, DTM Enterprise LLC is requesting a Front/Side yard setback variance reduction from 20 feet to 10 feet. The property is located at 222 Appletree St. property is further identified on Tax Map 133J Group F Parcel 001.00; and legally recorded at Maury County Register of Deeds office in book R3042 page 429. The purpose for this request will be to construct four Town Homes.

Chris Brooks reads the agenda item as Public Hearing, Variance Request: Applicant, DTM Enterprise LLC is requesting a Front/Side yard setback variance reduction from 20 feet to 10 feet. The property is located at 222 Appletree St. property is further identified on Tax Map 133J Group F Parcel 001.00; and legally recorded at Maury County Register of Deeds office in book R3042 page 429. The purpose for this request will be to construct four Town Homes.

The applicant and engineer is present in the audience per Chris Brooks.

Chris Brooks then asked Will Hagar to speak on it. Will says the applicant does have a desire to build townhouses on the lot. He also says it looks like similar structures on the street are having the same setbacks. The driveways would need to be located in the rear of the townhouse to provide a cleaner street scape.

The engineer comes up to speak on the townhomes. He states the hardship issue is the fact if they do an alley in the back, that leaves an issue with the layout of the front end garages.

The Board of Zoning Appeals discusses the different variances.

Chair Jacqueline Johnson asked who would like to speak in the public hearing on the agenda item.

Jeff Webster comes forward to speak. He states he has the property located beside the property in the agenda item. Mr. Webster wanted to know the heights of the buildings that are being built. He is told they are two story homes and less than 35 feet. He then asked how close the four homes would be to his home. He is told the new homes would be 5 feet from his property line. Mr. Webster confirms and states he does not agree with the homes being so close to his.

Mrs. Nights comes up to speak and states she got a letter in the mail, and she is East of Appletree Street. Mr. Brooks stated he sent the letter to her based off of property viewer and her house was within 200 feet of the property in question.

The BZA discusses the different variances.

Vice Chair Lisa Cole makes a motion to approve the agenda item with a 10-foot variant with the condition of the driveways being in the rear. Member John Hunter seconds the motion.

Voting yea-

Chair Jacqueline Johnson, Vice Chair Lisa Cole, Member John Hunter, Member Terry Brewer
Motion carries.

For more information, please refer to the audio/visual recording attached to the agenda.

8. General comments from citizens (May be limited in time and/or number of comments.)

9. Board / Staff Comments / Adjournment

Member Terry Brewer makes a motion to adjourn. Vice Chair Lisa Cole seconds the motion.

August 28, 2025

Mr. Phillip Grooms
City Manager
City of Mount Pleasant, Tennessee
100 Public Square
Mount Pleasant, TN 38474

RE: 222 Appletree Street
Sewer Capacity

Dear Mr. Grooms:

The City of Mount Pleasant requested Barge Design Solutions complete a capacity evaluation for the proposed tap connection for four townhomes located at 222 Appletree Street. This information was utilized to review the impacts of the projected flow of the development to the wastewater system capacity.

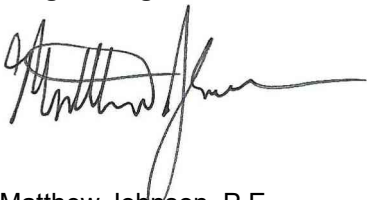
The review indicates there is available collection system capacity for the proposed development. The proposed project adds approximately a 1,200 gallon per day (gpd) load on the existing 12-inch gravity sewer. The new load on the system should not have enough impact to create capacity limitations on the 12-inch gravity sewer or assets connected to it.

It is assumed that the developer will connect to the closest active downstream manhole to the development (MH 562). Furthermore, the developer needs to comply with the current City specifications for this proposed connection. Design of the connection should be submitted for the City to review and approve before installation.

If there are any questions regarding this capacity review, please contact me at (615) 252-4236.

Sincerely,

Barge Design Solutions, Inc.



Matthew Johnson, P.E.
VP, Regional Director of Projects

c: Mr. Dale Brown, Public Works Director, City of Mount Pleasant
Mr. Chris Brooks, Planning & Building Codes Director, City of Mount Pleasant

Barge project # 34808-00

Section 7, Item E.

Cooper St

Appletree

Front

4 Townhomes

905