

CITY OF ROCKVILLE

P.O. BOX 93

ROCKVILLE, MN 56369

Planning/Zoning Commission Meeting Tuesday, July 7, 2020 - 6:00 p.m. City Hall - 229 Broadway Street East

AGENDA

- 1. Roll Call**
- 2. Additions/Approval of Agenda**
- 3. Approval of June 2, 2020 Planning Commission Minutes**
- 4. Public Hearing – Preliminary Plat of Rockville Crossing**
 - Creative Capital Holdings LP dba Eichi Inc.
- 5. Public Hearing – Ordinance 2020-109 Rezone A-40 to B-2**
 - Creative Capital Holdings LP dba Eichi Inc.
- 6. Public Hearing – CUP**
 - Creative Capital Holdings LP dba Eichi Inc.
- 7. Building Permits – June 2020**
- 8. Other Business**

Next Planning Commission Meeting Tuesday, August 4, 2020
- 9. Adjourn**

* This agenda has been prepared to provide information regarding an upcoming meeting of the Rockville City Planning Commission. This document does not claim to be complete and is subject to change.

MINUTES OF THE CITY OF ROCKVILLE PLANNING AND ZONING COMMISSION
Tuesday, June 2, 2020, 6:00 p.m. – Rockville City Hall

Item 1) Roll Call

The meeting was called to order by Chair Bill Becker at 6:01 p.m. Roll call was taken and the following members were present: Bill Becker, Chad Schmitt, and Luke Greiner. Brian Herberg arrived at 6:18 p.m. Absent: Cory Schreifels.

Staff present: City Administrator, Martin Bode.

Others present: Don and Marlys Eikmeier.

Item 2) Approval of Agenda

Motion by Schmitt, second by Greiner, to approve the agenda as presented. Motion carried unanimously.

Item 3) Approval of May 5, 2020 Meeting Minutes

Motion by Becker, second by Schmitt, to approve the May 5, 2020 meeting minutes as presented. Motion carried unanimously.

Item 4) Public Hearing – Setback Variance Northern Natural Gas Company/Eikmeier

Chairman Becker introduced and reviewed the following setback variance application for Northern Natural Gas Company/Eikmeier with Planning Commission and the public.

Staff Report

Re: Variance Request

Applicant: Northern Natural Gas Company (NNG)

Owner: Donald and Marlys Eikmeier

PIN: 76.41611.0000

Property Address: 24992 Halfman Road, Rockville MN

Property Location: SW side of Glacier Rd near the intersection of Halfman and Glacier

Variance Requested:

1. Install a new 50' x 100' safety/security chain link fence approximately 52 feet from Glacier Road centerline - (Section 9 General, Subd 27.D.1A, 100 feet Major Collector or City Road 63 feet).
- (Section 10 Fence, Subd 3)

Relevant Information:

1. Property is zoned A-40.
2. Property contains approximately 124.93 +/- acres.
3. Safety/security fence to secure NNG "pig receiver" maintenance facility.
4. Will help reduce negative impact on tillable acres.
5. 11 Public Hearing notices were mailed out.
6. Rockville City Engineer ok with application.
7. Rockville Public Works Director ok with application.

Action:

1. Findings of Fact

Recommendation:

1. Consider Approval

--

Chairman Becker opened the public hearing at 6:06 p.m. for public comment.

Don Eikmeier inquired as to which plan Northern Natural Gas was planning to use. Mr. Eikmeier was informed that this public hearing wasn't about any one plan or site plan other than NNG is seeking a variance to possibly put the security fence up to 52 feet from the center of Glacier Road.

There being no further comments offered from the public, motion was made by Becker, second by Schmitt, to close the Public Hearing at 6:09 p.m. Motion carried.

The Planning Commission determined that the applicant for the variance has established that there are practical difficulties in complying with the zoning ordinance and that the Planning Commission has considered the following criteria as defined in Minnesota Statutes Section 462 and Minnesota Statutes Section 394.27 and makes the following Findings of Fact:

1. The variance is in *harmony* with the purposes and intent of the *ordinance*.
2. The variance is *consistent* with the *comprehensive plan*.
3. The proposal does put property to use in a *reasonable manner*.
4. There are *unique circumstances* to the property not created by the landowner.
5. The variance will continue to maintain the *essential character* of the locality.

Motion by Becker, second by Greiner, to approve the Findings of Fact for the NNG Setback Variance. Motion passed unanimously.

Motion by Becker, second by Schmitt, to approve the application for the NNG Setback Variance with the stipulation that if there should be future road construction/improvements that would require temporary relocation of chain link fence that is in the road ROW, it is Northern Natural Gas Company financial responsibility to temporary relocate said fence due to their occupation within the road ROW. Motion passed unanimously.

Item 5) Building Permits - May 2020

The May 2020 building permit report was reviewed by the Planning Commission members.

Item 6) Other Business

- a. Next meeting scheduled for Tuesday, July 7, 2020 at 6:00 p.m.

Item 7) Adjournment

Motion by Herberg, second by Becker, to adjourn the meeting. Motion carried unanimously. Meeting adjourned at 6:19 p.m.

Respectfully submitted,

Martin M. Bode
Zoning Administrator

**CREATIVE CAPITAL HOLDINGS LP dba EICHI INC. STAFF REPORT
JULY 7, 2020**

RE: PROPERTY SUBDIVISION/PRELIMINARY PLAT, REZONE and CUP
Parcel I.D.No. 76.41720.0452 - Section 35, Township 123, Range 029

Owner: Creative Capital Holdings LP
Property Address: Intersection of State Hwy 23 and Int 94
Plat know as: Rockville Crossing

REQUEST

1. Preliminary Plat application to sub-divide 130.3 +/- acres
2. Rezone Parcel A of Block 1 Lot 1 from Ag-40 to B-2 and amend City Comprehensive Plan
3. Conditional Use Permit to operate a travel plaza/gasoline service station in a B-2 Business District

RELEVANT INFORMATION

1. Property is zoned Ag-40.
2. Total Plat area is 130.3 +/- acres
3. Purpose is commercial development.
4. City Utility (water/sewer) extension to service development to be completed late 2020
5. Property was annexed into the City of Rockville on June 15, 2018
6. 12 Public Hearing notices were mailed out
7. Developers Agreement will be drafted prior to Final Plat

RECOMMENDATION

Consider Approval of:

1. Preliminary Plat
2. Rezone lot from A-40 to B-2
3. Conditional Use Permit to operate a travel plaza

Submitted by:
Martin M. Bode
Zoning Administrator

**CITY OF ROCKVILLE
APPLICATION FOR PRELIMINARY PLAT**

PLATTING FEE: 1-3 Lots \$300 ~~4-10 Lots \$500~~
11-40 Lots \$1500 Over 40 Lots \$5000

PLEASE NOTE: ANY COSTS (i.e. LEGAL, ENGINEERING, ADMINISTRATIVE, ETC) INCURRED OVER AND ABOVE THE APPLICATION FEE ARE THE RESPONSIBILITY OF THE PETITIONER

Date of Pre-Application Meeting: May 13, 2020
 Date Application Submitted: JUNE 10, 2020 Parcel # 76.41720.0452
 Name of Plat ROCKVILLE CROSSING Plat File # _____
 Plat Location: Section 35 Township 124 Range 29
 Legal Description ATTACHED

Land is presently zoned _____ Zone Requested _____ Total Amount of land involved: Acres _____

Owners Name BECHI INC. Phone 651 636 9991
First Name Middle Initial Last Name

Address 2195 SILVER LAKE RD Email: 651 636 9991

Developers Name CREATIVE CAPITAL HOLDINGS Phone _____

Address 2195 SILVER LAKE RD, NEW BRIGHTON, MN, 55112

Surveyors Name PETER GOERS Phone 612 767 9343 Fax _____

Address 733 MARQUETTE AVE, MPLS Email: pgoers@alliant-inc.com

The following must be submitted with the preliminary plat:

- Septic System Site Evaluations
- Wetland Delineation & Report
- Grading plan for streets located within the plat boundary
- Proof of ownership (copy of tax statement or deed)
- Required fee as noted above

Required Information

Five (5) 24"x 36" and (15) 11"x 17" copies of the preliminary plat, plus any additional copies deemed necessary.

[Signature] Date 6/10/2020
 Signature of person submitting plat

Complete Application date _____

R# _____ Preliminary Plat Fee Check # 10042 Date 6/10/20 101.41000.34103 \$ 500.00 Permit # 20-01PP

Preliminary Plat Application.forms.vwp

A.M.H.

JUN 22 2020

CITY OF ROCKVILLE

REQUEST TO CHANGE ZONING DISTRICT

The information on this form must be typed or printed legibly. State law requires that a public hearing must be held to rezone property. The applicant **must** attend the public hearing to discuss the request, which will be held before the Planning Commission. The Planning Commission shall make a report to the City Council upon any application for rezoning and shall recommend to the City Council ($\frac{3}{4}$ vote required) whatever action it deems advisable. The Planning Commission meeting is held the 1st Tuesday of each month at 6:00 p.m. The City Council meetings at which zoning issues will be considered are held on the 2nd Wednesday of each month at 6:00 p.m.

Owner's Name: CREATIVE CAPITAL HOLDINGS LP dba EICHI INC.

Applicant's Name: MARTIN N. HARSTAD

Property Address: _____

Phone: 651-636-9991 612-723-7770

Presently Zoned: A-40 Requested Zoning: B-2

The Applicant must provide a legal description (from abstract/deed) for the property. The City will **not** be responsible for utilizing an incorrect legal description. This information is required to make sure that maps are properly updated, and that the project that follows the rezoning conforms to the Zoning Ordinance. Please write the legal description here; if it is lengthy, you may attach on a separate sheet (in this case write "see attached sheet").

SEE ATTACHED

Signature of Applicant:  Date: 6/18/2020

PAID

JUN 22 2020

10050

R220-03

The property Parcel No. 76.41720.0452, NE4 LESS E 33' OF S 33' & LESS 48.27 ACRES FOR HIGHWAY & INC P/O S2NW4 COM S4 COR-NE ALG N/S QTR LN 2697.25' TO SE COR S2NW4 & POB-CONT NE ALG N/S QTR LN 870.90' TO S LN STATE HWY ROW PLAT# 73-14-S64D W ALG S LN 1341.38' TO ELY COR P, Section-Township-Range 35-124-029, Stearns County, Rockville, Minnesota.

CITY OF ROCKVILLE

JUN 22 2020

APPLICATION FOR CONDITIONAL USE PERMIT

C.U.P. Fee: \$200.00 and RECORDING Fee: \$46.00 (per document)

Separate checks: 1 for Conditional Use Permit fee & 1 for Recording Fee(s)

Need a Copy of Deed

PLEASE NOTE: ANY COSTS (i.e. LEGAL, ENGINEERING, ADMINISTRATIVE, STEARNS COUNTY FEES, ETC) INCURRED OVER AND ABOVE THE APPLICATION FEE ARE THE RESPONSIBILITY OF THE PETITIONER)

PROPERTY LOCATION/ADDRESS: _____

LEGAL DESCRIPTION: SEE ATTACHED PARCEL #: _____ ZONING: _____

EXPLANATION OF REQUEST: OPERATE A TRAVEL PLAZA IN B-2

If replacing an existing structure, what will be done with the old structure? _____

Has a variance request been made previously on this property? NO If yes, when? _____

- Provide Individual property owner names/addresses within 350 feet or nearest 10 property owners, whichever is greatest.
- Applicant provides an aerial photo (The photo would depict vegetative cover on property and how it links with adjacent property).
- Applicant provides the distance to the nearest existing driveway.

PROPERTY OWNER:

Name (Print): CREATIVE CAPITAL HOLDINGS LP. Phone: 651-636-9991
First Name Middle Initial Last Name
 Address: 2195 SILVER LAKE ROAD
 Signature (required): [Signature] Date: 6/18/2020
 *Signature of property owner shall serve as acknowledgement and authorization of this request.

APPLICANT:

Name (Print): EICHI INC. Phone: 651-636-9991
 Address: 2195 SILVER LAKE ROAD
 Signature (required): [Signature] Date: 6/18/2020
 I hereby certify that I have read the above information and I agree with the terms.

OFFICE USE ONLY:

Permit # 20-01CUP
 R # _____ Conditional Use Permit Fee Check# 10048 Date 6-22-20 101.41000.34103 \$200.00
 R # _____ Reimb. for Invoice Check# 10049 Date 6-22-20 101.41000.34102 \$46.00

PAID JUN 22 2020

Conditional Use Permit has been issued, of the time and place at which the Council will consider the revocation. The property owner shall have an opportunity to be heard after which time the Council may take all appropriate actions including the revocation and termination of the Conditional Use Permit.

3. **Costs of Enforcement.** It shall be a term of any Conditional Use Permit issued by the City, whether or not specifically stated, that the property owner(s) shall pay all staff and reasonable attorney's fees associated with enforcement of the terms of the Conditional Use Permit.

THE STEPS:

1. Provide a complete application by the 1st Tuesday of the month to be on the *following* month's Planning Commission Agenda.
2. **Planning Commission** – (meets the 1st Tuesday of the month) The Planning Commission may schedule a site visit; they will hold the public hearing at their meeting, and make a recommendation to the Council to be presented at the next City Council meeting.
3. **Council** - (meets 2nd Wednesday of the month) Makes the final decision– Council grants the Conditional Use Permit.
4. **Applicant** -
 - If applicant waits for Council approval before providing the plans the next step is to fill out the Building Permit Application & provide 2 full sets of plans to City Hall.
 - If Applicant provided the Building Permit Application & 2 full sets of plans with the Conditional Use process. The applicant will need to notify City Hall that the plans that are on file are correct. This process will not be forwarded to the Building Official until applicant contacts City Hall.
5. **Building Official** - Reviews the plans (allow 4-6 days). Once City Hall receives the plans back, Staff will notify the Applicant with the cost of the building permit.



Applicant Signature



Date

I hereby certify that I have read the above information and I agree with the terms.

The property Parcel No. 76.41720.0452, NE4 LESS E 33' OF S 33' & LESS 48.27 ACRES FOR HIGHWAY & INC P/O S2NW4 COM S4 COR-NE ALG N/S QTR LN 2697.25' TO SE COR S2NW4 & POB-CONT NE ALG N/S QTR LN 870.90' TO S LN STATE HWY ROW PLAT# 73-14-S64D W ALG S LN 1341.38' TO ELY COR P, Section-Township-Range 35-124-029, Stearns County, Rockville, Minnesota.



CITY OF ROCKVILLE

229 Broadway Street East

P.O. Box 93

Rockville MN 56369

Phone 320-251-5836

Fax 320-240-9620

NOTICE OF PUBLIC HEARING CITY OF ROCKVILLE

Notice is hereby given that the Rockville Planning Commission will hold a public hearing on **Tuesday, July 7, 2020 at approximately 6:00 p.m. at Rockville City Hall – 229 Broadway Street East** to consider the request of Creative Capital Holdings dba Eichi Inc. to subdivide their property. The property legal parcel no. 76.41720.0452 NE4 LESS E 33' OF S 33' & LESS 48.27 ACRES FOR HIGHWAY & INC P/O S2NW4 COM S4 COR-NE ALG N/S QTR LN 2697.25' TO SE COR S2NW4 & POB-CONT NE ALG N/S QTR LN 870.90' TO S LN STATE HWY ROW PLAT# 73-14-S64D W ALG S LN 1341.38' TO ELY COR P, Section-Township-Range 35-124-029, Stearns County, Rockville, Minnesota.

All persons attending the hearing and wishing to address the Planning Commission will have an opportunity to do so. Those not able to be present at this meeting should submit their opinions in writing to the Rockville City Administrator/Clerk, P.O. Box 93, Rockville MN 56369 prior to the hearing, or be present at the public hearing.

Martin M. Bode
Administrator/Clerk

Publish June 23, 2020
Cold Spring Record

In accordance with federal law and U.S. Department of Agriculture policy, this institution is prohibited from discriminating on the basis of race, color, national origin, sex, age, or disability. (Not all prohibited bases apply to all programs.) To file a complaint of discrimination, write USDA, Director, Office of Civil Rights, room 326-w, Whitten Building, 1400 Independence Ave, SW, Washington, D.C. 20250-9410 or call (202) 720-5964 (voice & tdd). USDA is an equal opportunity provider and employer.

Rockville City is an equal opportunity provider and employer



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Notice is hereby given that the Rockville Planning Commission will hold a public hearing on **Tuesday, July 7, 2020 at approximately 6:00 p.m. at Rockville City Hall – 229 Broadway Street East** to consider Ordinance 2020-109 regarding a request from Creative Capital Holdings dba Eichi Inc. to rezone a portion of their property from A-40 to B-2 General Business District. The property Parcel No. 76.41720.0452, NE4 LESS E 33' OF S 33' & LESS 48.27 ACRES FOR HIGHWAY & INC P/O S2NW4 COM S4 COR-NE ALG N/S QTR LN 2697.25' TO SE COR S2NW4 & POB-CONT NE ALG N/S QTR LN 870.90' TO S LN STATE HWY ROW PLAT# 73-14-S64D W ALG S LN 1341.38' TO ELY COR P, Section-Township-Range 35-124-029, Stearns County, Rockville, Minnesota.

The request is to rezone a portion of this parcel from A-40 to a B-2 General Business District.

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Notice is hereby given that the Rockville Planning Commission will hold a public hearing on **Tuesday, July 7, 2020 at approximately 6:00 p.m. at Rockville City Hall – 229 Broadway Street East** to consider a Conditional Use Permit (CUP) application from Creative Capital Holdings dba Eichi Inc. to operate a travel plaza/gasoline service station in a B-2 General Business District. The property parcel no. 76.41720.0452, NE4 LESS E 33' OF S 33' & LESS 48.27 ACRES FOR HIGHWAY & INC P/O S2NW4 COM S4 COR-NE ALG N/S QTR LN 2697.25' TO SE COR S2NW4 & POB-CONT NE ALG N/S QTR LN 870.90' TO S LN STATE HWY ROW PLAT# 73-14-S64D W ALG S LN 1341.38' TO ELY COR P, Section-Township-Range 35-124-029, Stearns County, Rockville, Minnesota.

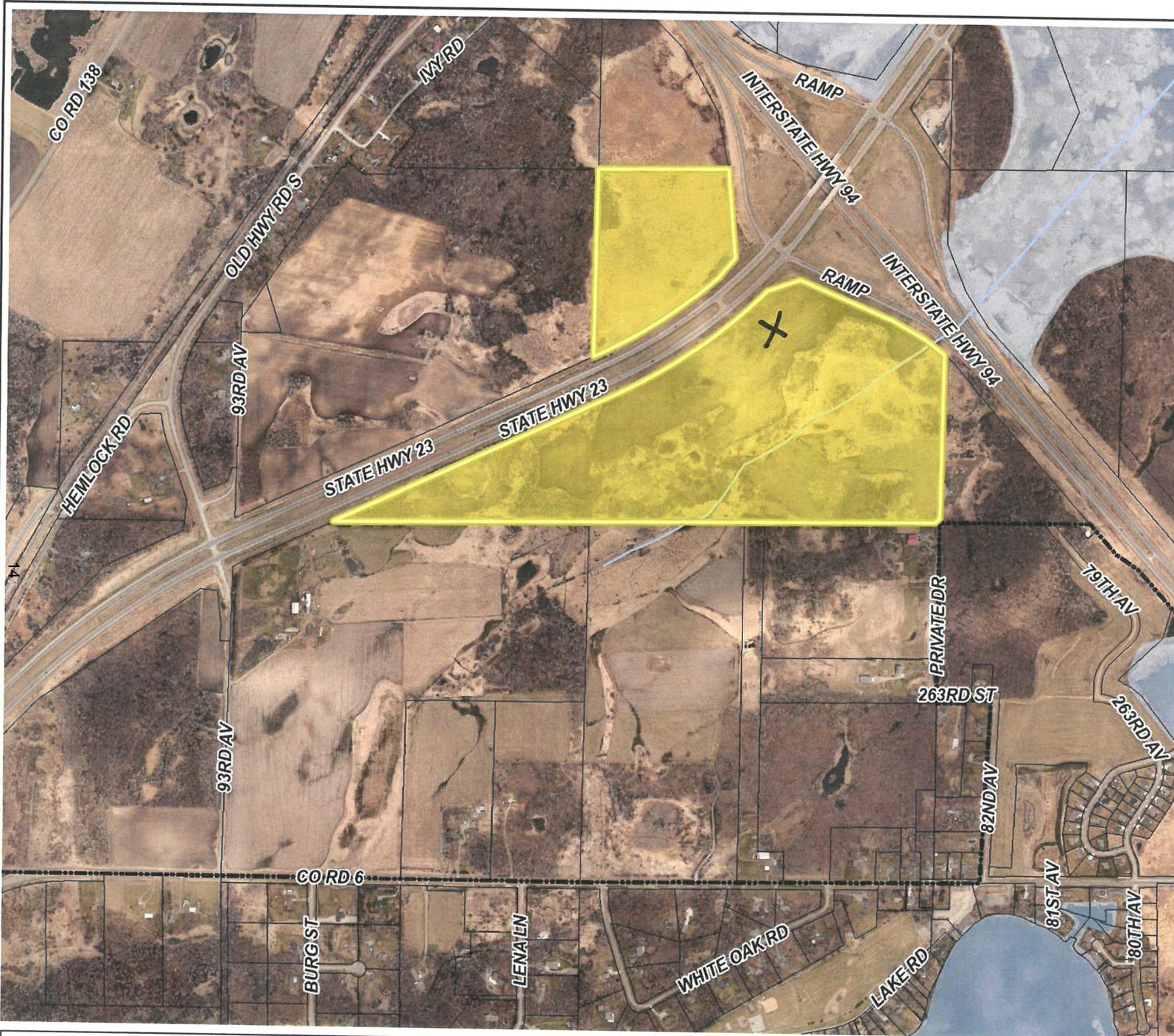
The request is a Conditional Use Permit to Operate a Travel Plaza in a B-2 General Business District.

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City of Rockville,
Minnesota
Granite - Heart of the City

Legend

-  City Limits
-  Parcels - 1/7/2020
-  PWI Watercourse
-  PWI Basin

**Creative Capital
Holdings**



Disclaimer:

This drawing is neither a legally recorded map nor a survey and is not intended to be used as one. This drawing is a compilation of records, information, and data located in various city, county, and state offices, and other sources affecting the area shown, and is to be used for reference purposes only. The City of Rockville is not responsible for any inaccuracies herein contained.

0 1,053 Feet

© Bolton & Menk, Inc - Web GIS 6/24/2020 2:53 PM



BOLTON & MENK
Real People. Real Solutions.

STATE OF MINNESOTA)
)ss.
COUNTY OF STEARNS)

AFFIDAVIT OF SERVICE

Debbie R. VanHeel, being duly sworn, on oath says that at the City of Rockville in said County and State, on the 24th day of June, 2020, he/she served the annexed Notice on see attachment, the person therein named, personally, by then and there handing to and leaving with him/her a true and correct copy of said Notice.



Signature

Subscribed and sworn to before me this 24 day of June, 2020.



Notary Public Signature



Notary Public Stamp

Name	Address	City
ANDERSON GRANDCHILDREN LP	PO BOX 1377	ST CLOUD MN 56302
CITY OF ROCKVILLE	PO BOX 93	ROCKVILLE MN 56369-0093
CREATIVE CAPITAL HOLDINGS LP	2195 SILVER LAKE RD	NEW BRIGHTON MN 55112-5370
MARK A YANTA	8306 263RD ST	ST CLOUD MN 56301
MARK L HOFFMANN	26274 93RD AVE	SAINT CLOUD MN 56301
NOABSO LLC	102 13TH AVE SE	SAINT JOSEPH MN 56374
PATRICK M & DIANE J WIMMER	8300 263RD ST	ST CLOUD MN 56301-9402
R DOUG & SUE FREDRICKSON	26545 JADE RD	ST CLOUD MN 56301-9804
RANDY & SUE GILLITZER	8945 IVY RD	ST CLOUD MN 56301-9494
RICHARD RETKA	8518 COUNTY ROAD 6	ST CLOUD MN 56301-9405
RONALD V & NANCY ROSSMAN	9135 OLD HIGHWAY RD S	ST CLOUD MN 56301-9429
STATE OF MINNESOTA	395 JOHN IRELAND BLVD	ST PAUL MN 55155-1899

12 Notices



ALLIANT
 733 Marquette Avenue
 Suite 700
 Minneapolis, MN 55402
 612.758.3080
 www.alliant-inc.com

ROCKVILLE CROSSING

ROCKVILLE, MN

PRELIMINARY PLAT (2 OF 4)

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed PROFESSIONAL ENGINEER under the laws of the State of MINNESOTA

CLARK WICKLUND, PE
 Date License No.

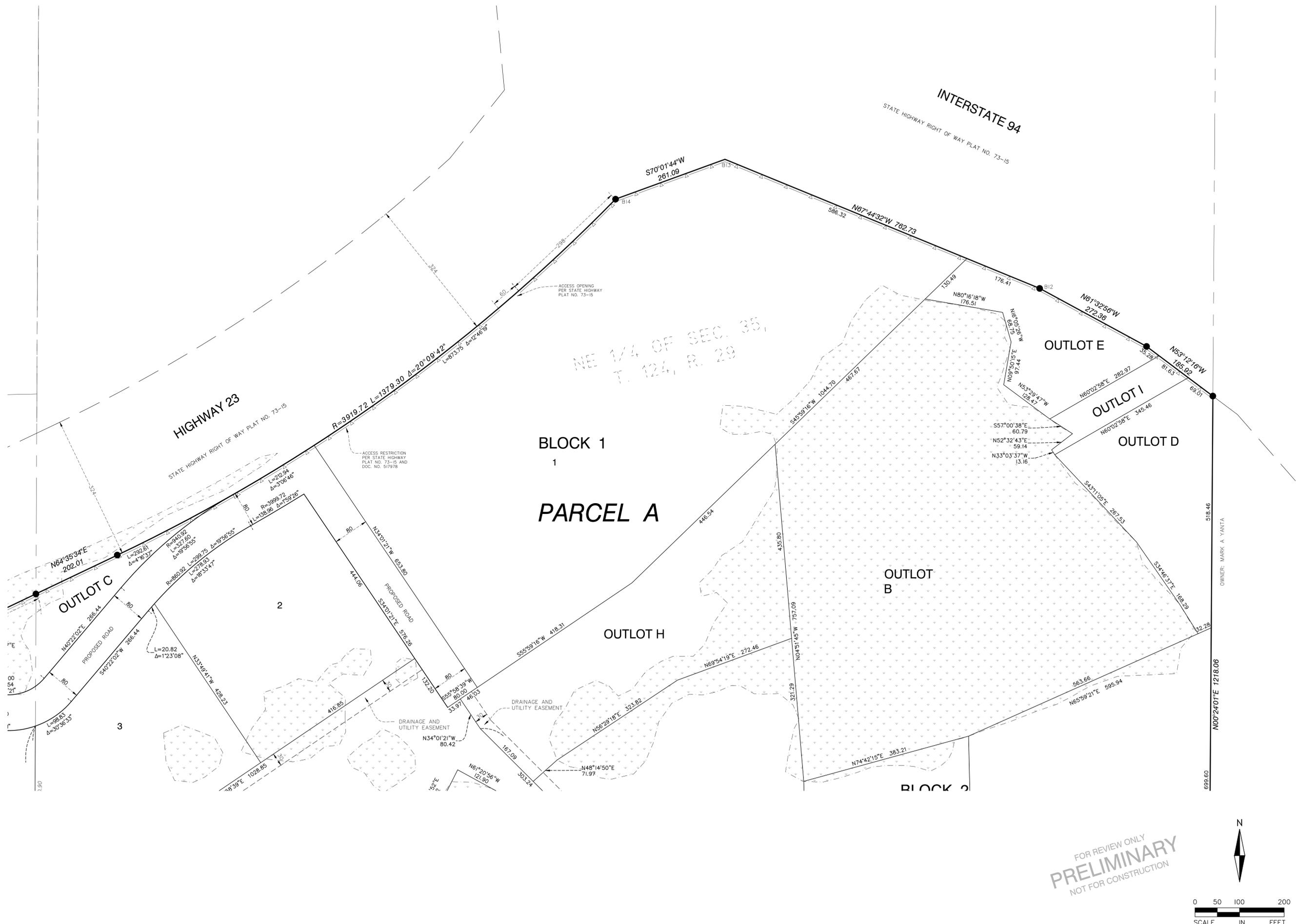
QUALITY ASSURANCE/CONTROL

BY	DATE
DATE	ISSUE
6-10-20	PRE-PLAT SUBMITTAL
6-18-20	PRE-PLAT REVISED

PROJECT TEAM DATA
 DESIGNED: CW
 DRAWN: SMT
 PROJECT NO: 219-0188

P2

Drawing name: C:\paw_working\projectwise\alliant\00138057\190188\preplat.dwg Jun 18, 2020 11:51am



FOR REVIEW ONLY
PRELIMINARY
 NOT FOR CONSTRUCTION

Drawing name: C:\pwworking\projectwise\alliant\40138046\190188-pul-cr.dwg Jun 18, 2020 11:51am



ALLIANT

733 Marquette Avenue
Suite 700
Minneapolis, MN 55402
612.758.3080
www.alliant-inc.com

ROCKVILLE CROSSING

ROCKVILLE, MN

EXISTING CONDITIONS

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed PROFESSIONAL ENGINEER under the laws of the State of MINNESOTA

CLARK WICKLUND, PE

Date License No.

QUALITY ASSURANCE/CONTROL

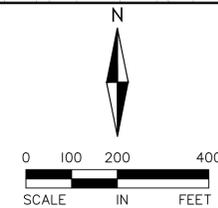
BY	DATE
DATE	ISSUE
6-10-20	PRE-PLAT SUBMITTAL
6-18-20	PRE-PLAT REVISED

PROJECT TEAM DATA

DESIGNED: CW
DRAWN: SMT
PROJECT NO: 219-0188

C1

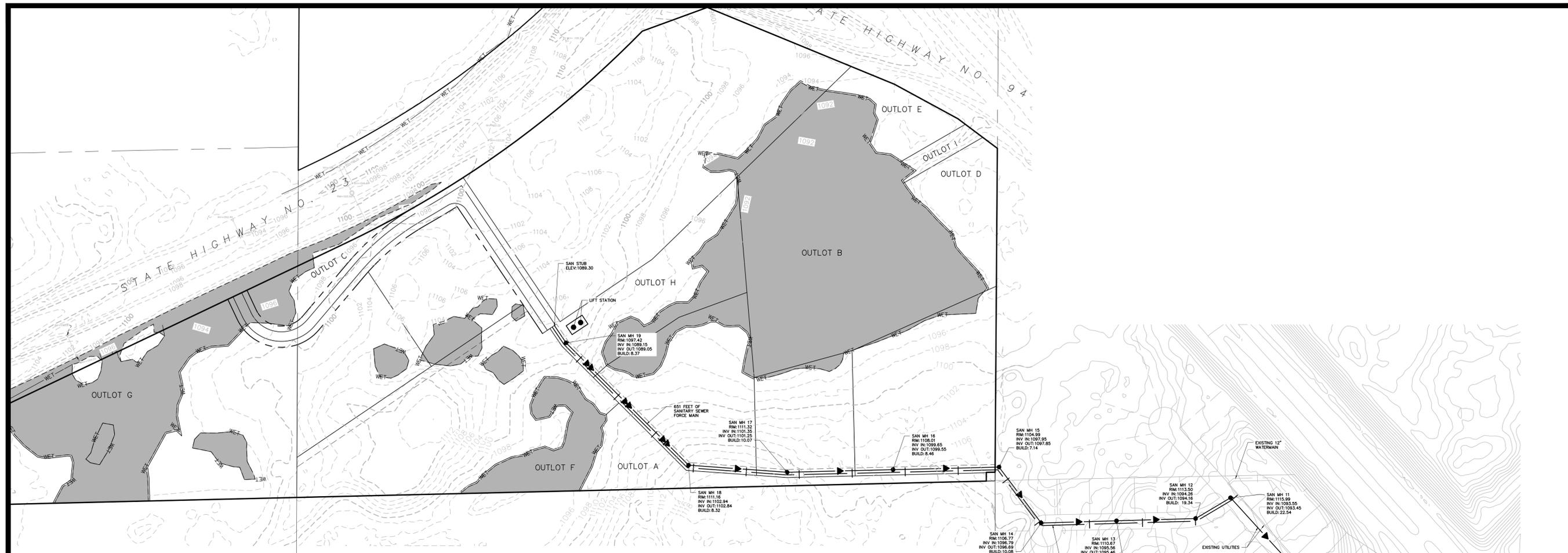
FOR REVIEW ONLY
PRELIMINARY
NOT FOR CONSTRUCTION



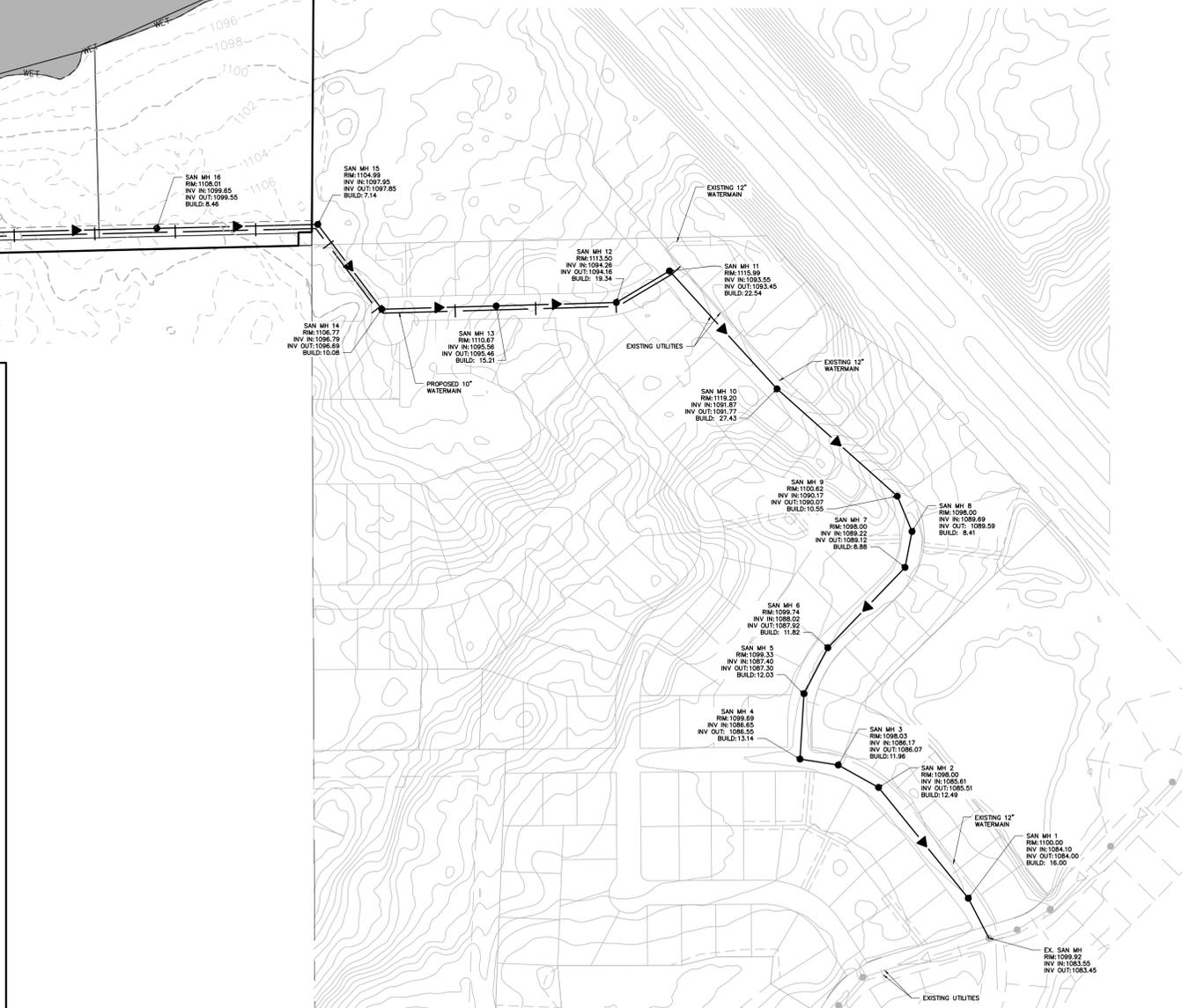


ALLIANT

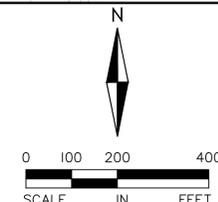
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MH		PIPE O.D. [IN]	PIPE SLOPE [FT/FT]	PIPE LENGTH [FT]	INVERT FROM	INVERT TO	RIM ELEV	STRUCTURE SIZE [IN]	MANHOLE BUILD [FT]
FROM	TO								
MH 19	MH 18	8	-0.021	652.3	1089.05	1102.94	1097.42	48	8.37
MH 18	MH 17	8	0.004	372.6	1102.84	1101.35	1111.16	48	8.32
MH 17	MH 16	8	0.004	400.0	1101.25	1099.65	1111.32	48	10.07
MH 16	MH 15	8	0.004	400.0	1099.55	1097.95	1108.01	48	8.46
MH 15	MH 14	8	0.004	263.5	1097.85	1096.79	1104.99	48	7.14
MH 14	MH 13	8	0.004	284.2	1096.69	1095.56	1106.77	48	10.08
MH 13	MH 12	8	0.004	298.6	1095.46	1094.26	1110.67	48	15.21
MH 12	MH 11	8	0.004	153.3	1094.16	1093.55	1113.50	48	19.34
MH 11	MH 10	8	0.004	396.0	1093.45	1091.87	1115.99	48	22.54
MH 10	MH 9	8	0.004	400.0	1091.77	1090.17	1119.20	48	27.43
MH 9	MH 8	8	0.004	94.9	1090.07	1089.69	1100.62	48	10.55
MH 8	MH 7	8	0.004	90.7	1089.59	1089.22	1098.00	48	8.41
MH 7	MH 6	8	0.004	276.6	1089.12	1088.02	1098.00	48	8.88
MH 6	MH 5	8	0.004	128.2	1087.92	1087.40	1099.74	48	11.82
MH 5	MH 4	8	0.004	162.6	1087.30	1086.65	1099.33	48	12.03
MH 4	MH 3	8	0.004	96.1	1086.55	1086.17	1099.69	48	13.14
MH 3	MH 2	8	0.004	114.5	1086.07	1085.61	1098.03	48	11.96
MH 2	MH 1	8	0.004	353.8	1085.51	1084.10	1098.00	48	12.49
MH 1	EX MH	8	0.004	111.4	1084.00	1083.55	1100.00	48	16.00



FOR REVIEW ONLY
PRELIMINARY
NOT FOR CONSTRUCTION



ROCKVILLE CROSSING

PRELIMINARY PLAT SUBMITTAL

PROPOSED UTILITY LAYOUT

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed PROFESSIONAL ENGINEER under the laws of the State of MINNESOTA

CLARK WICKLUND, PE

Date License No.

QUALITY ASSURANCE/CONTROL

BY DATE

DATE ISSUE

6-10-20 PRE-PLAT SUBMITTAL

6-18-20 PRE-PLAT REVISED

PROJECT TEAM DATA

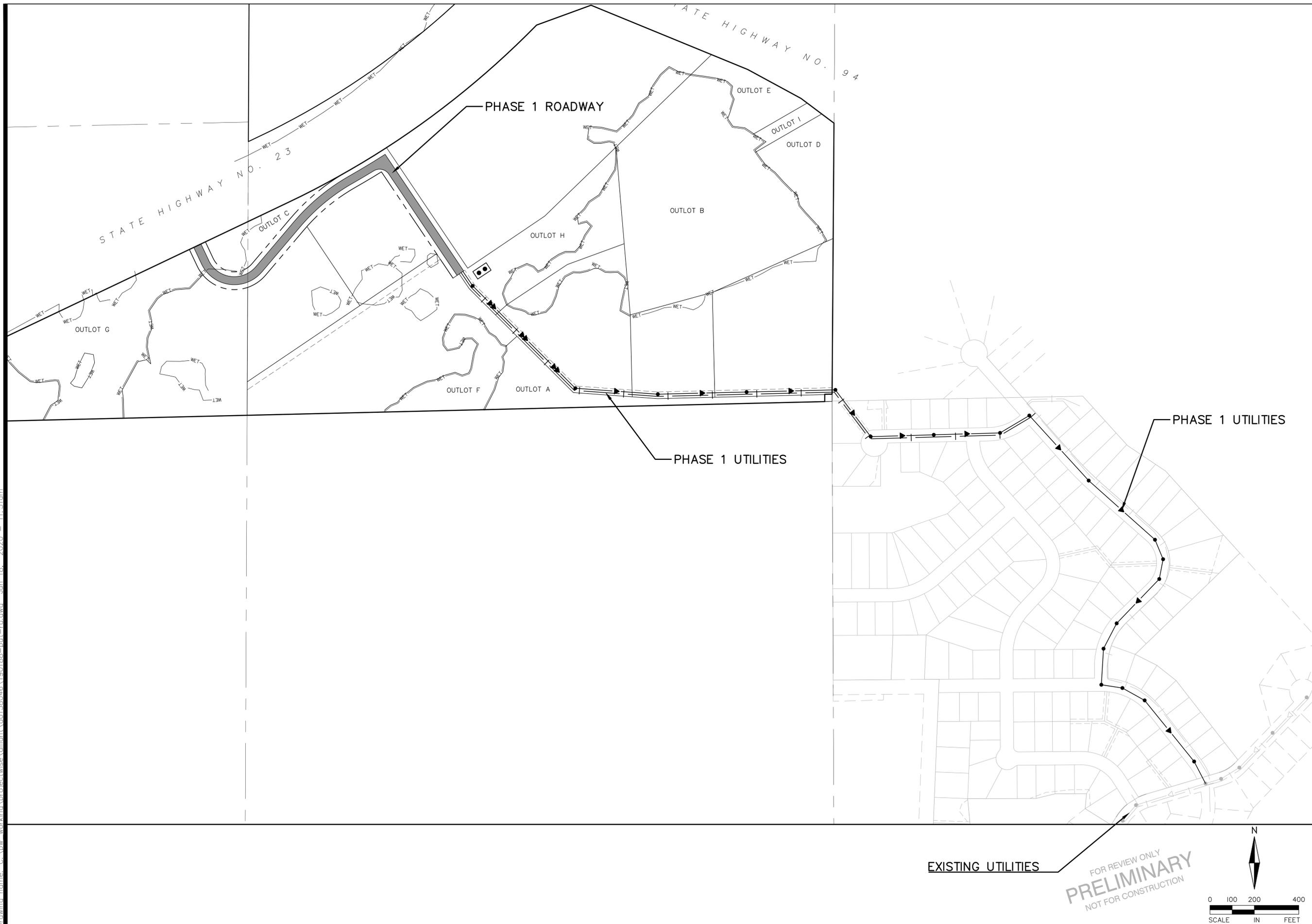
DESIGNED: SMT

DRAWN: SMT

PROJECT NO: 190188

C2

Drawing name: C:\pwworking\projectwise\alliant\40138046\190188-put-rod.dwg Jun 18, 2020 11:51am



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Minneapolis, MN 55402
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ROCKVILLE CROSSING

ROCKVILLE, MN

PHASE 1 IMPROVEMENTS

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BY	DATE
DATE	ISSUE
6-10-20	PRE-PLAT SUBMITTAL
6-18-20	PRE-PLAT REVISED

PROJECT TEAM DATA

DESIGNED: CW
DRAWN: SMT
PROJECT NO: 219-0188

C3

Drawing name: C:\pwworking\projectwise\alliant\40139014\190188\road.dwg Jun 18, 2020 11:51am



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ROCKVILLE CROSSING
PRELIMINARY PLAT SUBMITTAL
PROPOSED GRADING PLAN

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BY	DATE
DATE	ISSUE
6-10-20	PRE-PLAT SUBMITTAL
6-18-20	PRE-PLAT REVISED

PROJECT TEAM DATA
DESIGNED: SMT
DRAWN: SMT
PROJECT NO: 190188

C4



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ROCKVILLE CROSSING

PRELIMINARY PLAT SUBMITTAL

PROPOSED ROAD PROFILE

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BY DATE

DATE ISSUE

6-10-20 PRE-PLAT SUBMITTAL

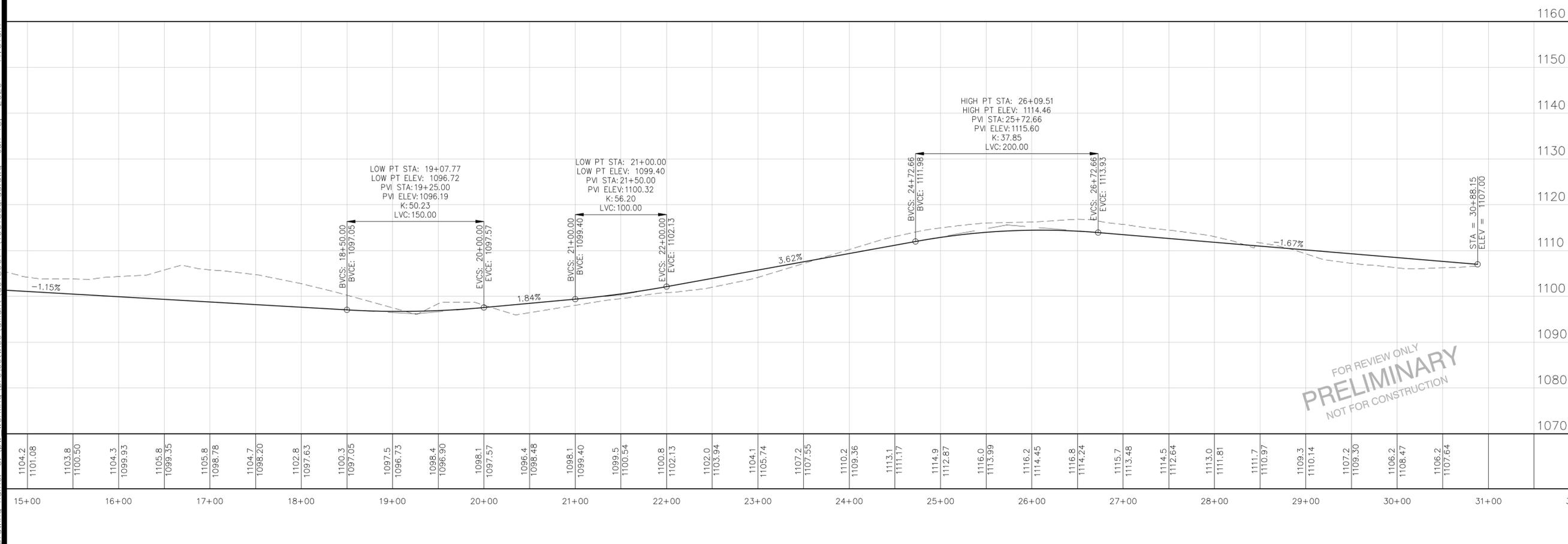
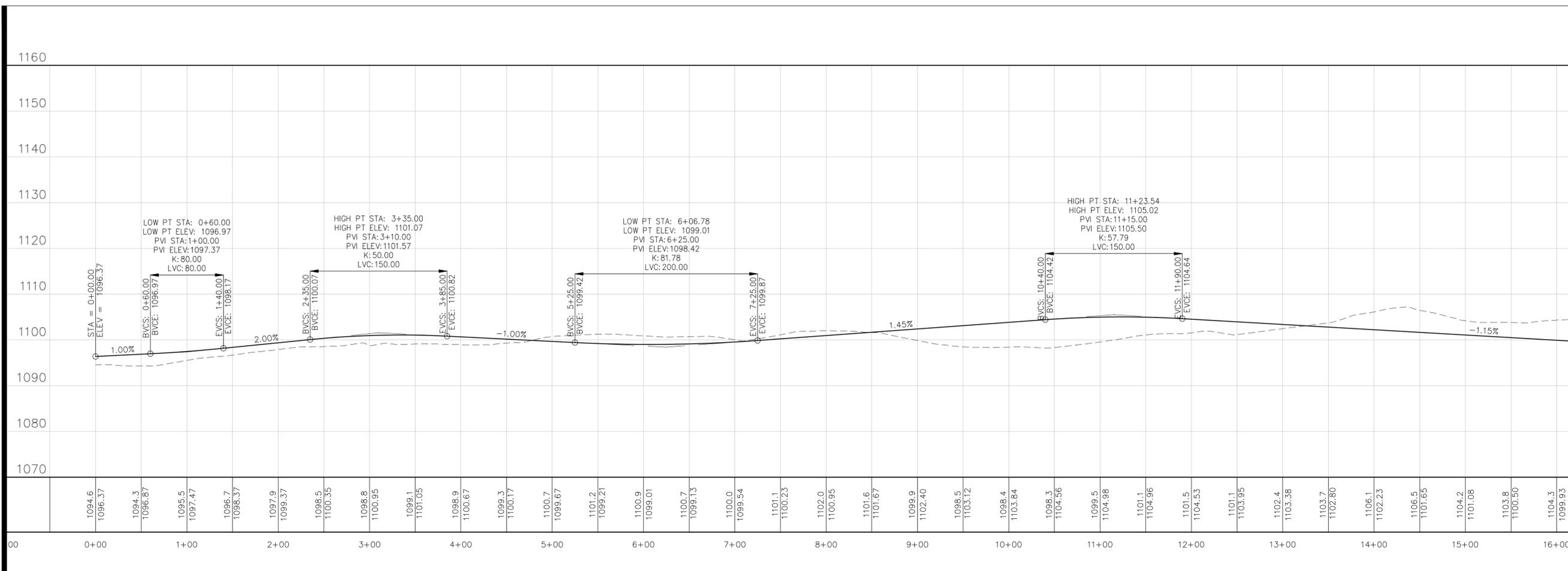
6-18-20 PRE-PLAT REVISED

PROJECT TEAM DATA

DESIGNED: SMT
DRAWN: SMT
PROJECT NO: 190188

C5

Drawing name: C:\pwworking\projectwise\alliant\190188\road.dwg Jun 18, 2020 11:51am



FOR REVIEW ONLY
PRELIMINARY
NOT FOR CONSTRUCTION

Stormwater Management Hydrologic and Hydraulic Study

Rockville Crossing Rockville, MN

Preliminary Plat Review – June 23, 2020



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Introduction

Included in this report are the materials necessary to review the stormwater management plan for the proposed Rockville Crossing plat in Rockville, Minnesota. The project is located south of the interchange of State Highway 23 and Interstate 94. The following information is included:

- Study Narrative
- Drainage Area Maps
- HydroCAD Rate Control Calculations
- HydroCAD Water Quality Calculations

Background

The 104.45 acre property is being subdivided into several lots/outlots to serve future development in the area. The proposed plat includes an 80' right-of-way for a future street to serve the lots. Proposed construction includes roughly 1,750 centerline feet of roadway and associated stormwater best management practices (BMPs).

The project is located in the Sauk River Watershed District (SRWD). This study was conducted to analyze stormwater treatment requirements for the proposed roadway, which will serve the subdivision. The study will show that the proposed stormwater management facilities will mitigate the effects of roadway construction and meet City of Rockville, MPCA/NPDES, and SRWD stormwater requirements. The following two scenarios are considered in this study:

- Existing conditions – 104.45 acre site, as well as 5.32 acres of offsite drainage from the north, 1.30 acres of offsite drainage from the south, and 4.82 acres of offsite drainage from the southeast. The total area modeled is 115.89 acres.
- Proposed conditions – Roughly 1750 centerline feet of roadway at 36' wide (63,227 sf) of impervious area. Plus, outlots for stormwater basins as well as offsite catchments to the north, south, and southeast for a total of 115.89 acres- similar to the existing conditions model.

Per guidelines as required by the City of Rockville, the NPDES Construction Stormwater General Permit, and the SRWD, the following criteria was used in designing the stormwater BMPs:

- Post-development peak runoff rates from the site for the 2, 10, and 100-year Type II 24-hour storm events (with Atlas-14 precipitation data) must not be greater than the existing condition runoff rates.
- Per the NPDES Construction Stormwater General Permit, one (1) inch of runoff from the new impervious surface must be retained onsite using volume reduction practices such as infiltration. When volume reduction is prohibited and can't be achieved onsite, the one (1) inch of volume from the new impervious surfaces created by the project must be treated by other means such as filtration or wet sedimentation basins as required in the permit.
- Emergency overflow routing must be provided.
- Achieve 80% total suspended solids (TSS) and 50% total phosphorus (TP) removal for all sites that disturb an acre or more.

Runoff Rate Control

All rate control calculations have been performed using the SCS method via HydroCAD software. Three events were modeled including: 2-year, 10-year, and 100-year Type II 24-hr storm events with Atlas-14 precipitation amounts of 2.67”, 3.95”, 6.46” used, respectively. All existing and proposed curve numbers are based on soil type ‘D’ as determined by site inspection and preliminary geotechnical analysis which found onsite surface layer soils to be predominately clays. In addition, the presence of saturated wetlands led us to infer that the site does not have adequate separation to groundwater for infiltration/filtration. Times of concentration were calculated using the lag method for both the existing and proposed condition models. The proposed conditions analysis/watershed area exactly matches that of the existing conditions area scenario.

Existing Conditions

The existing site consists mainly of agricultural land, with several wetlands present. Runoff leaving the site drains to three major discharge points: a culvert in the NW portion of the site that drains to the north under Hwy 23; a culvert in the NE portion of the site that drains underneath I-94; and a wetland/depression in the south central portion of the site. Generally, the site drains from west to east toward one of the culverts mentioned above. There are offsite contributions that drain onto the property from the north and south, totaling 11.44 acres. Please refer to the existing conditions drainage map and HydroCAD report for additional information and detailed calculations.

Proposed Conditions

The proposed conditions include construction of a new road and access off Hwy 23 in addition to two separate stormwater BMPs. Stormwater will be conveyed to the BMPs (wet sedimentation basins) by ditches and culverts along the new roadway. Pond 1 outlets via a 12” culvert to the existing ditch along Hwy 23 and ultimately drains to the north. Pond 2 outlets via a 12” culvert and into a large wetland complex that ultimately drains northeast toward an offsite culvert underneath I-94. Runoff from a large majority of the new road will be captured and routed to the BMPs for rate control and water quality treatment. Due to the nature of the existing grades and wetlands, there is a small amount of new roadway near the access off Hwy 23 that will drain directly into the ditch/wetland in the Hwy 23 right of way. Offsite runoff that drains onto the site from the south continues toward the site’s internal wetlands- this is unchanged compared to existing conditions.

The proposed BMPs were designed and sized to reduce discharge rates compared to the existing conditions. Pond 2, however, has been oversized to have the capacity to store runoff from an additional 9.48 acres of impervious surfacing should one of the Block 3 lots be developed in the future. Additional BMP details will be described in the Water Quality section of this study. Please refer to the proposed conditions drainage map and HydroCAD report for additional information and detailed calculations. Below is a summary and comparison table of peak discharge rates for the existing and proposed conditions:

Table 1: Summary of Peak Runoff Rates as calculated by HydroCAD:

Event	Discharge Point							
	NE Culvert (under I-94)		NW Culvert (under Hwy 23)		Internal Wetland		Offsite to South	
	Existing	Proposed	Existing	Proposed	Existing	Proposed	Existing	Proposed
[yr]	[cfs]	[cfs]	[cfs]	[cfs]	[cfs]	[cfs]	[cfs]	[cfs]
2	40.30	37.40	13.97	8.69	7.82	7.82	12.62	11.47
10	82.87	77.42	28.85	18.54	15.96	15.96	25.89	23.52
100	175	164.23	61.09	38.40	33.46	33.46	54.46	49.47

Modeling has shown that peak discharge rates will be reduced for all storm events due to the detention provided by the proposed BMPs.

Stormwater Water Quality

Initial water quality treatment design for the site included infiltration basins. However, follow up discussions brought up concerns over separation to groundwater with the heavy presence of wetlands on site. After utilizing the Web Soil Survey from the USDA, the results showed that the soils in the area were generally clays/loams designated as “D” type soils and not suitable for infiltration/filtration.

In summary, given: (1) the presence of several wetlands on a relatively flat site; and (2) the lack of clarity on separation provided between the bottom of the proposed basins and the seasonally high water table – the infiltration basins have been replaced by wet sedimentation ponds.

As such, NPDES and MPCA general guidelines were used in the design of the wet ponds. Specifically, Design Level 2 (TSS=84%, DP=8%, PP=84%, TP=50% reduction) was chosen in order to meet the SRWD requirements of 80% TSS and 50% TP removal. The major criteria for Design Level 2 is as follows:

- Dead (or permanent) storage of at least 1800 cf per acre that drains to the pond
- Minimum depth of 3ft and maximum depth of 10ft
- The pond must be configured such that scour or resuspension of solids is minimized
- Water quality volume (flood pool volume) >=1 inch of impervious area
- Discharge rate of water quality volume does not exceed 5.66 cubic feet per second per acre of surface area of the pond.
- Flow path length to pond width ratio = 1:1 to 3:1. A ratio of 3:1 is recommended.

Provided below is the necessary information to demonstrate compliance with Design Level 2 criteria.

Table 2: Require Dead/Permanent Storage

Dead/Permanent Storage for Design Level 2	Area Draining to Pond 1	Required Dead/Permanent Storage
[cf/acre draining to the pond]	[ac]	[cf]
1,800	5.15	9,270

Dead/Permanent Storage for Design Level 2	Area Draining to Pond 2	Required Dead/Permanent Storage
[cf/acre draining to the pond]	[ac]	[cf]
1,800	10.62	19,116

Table 3: Provided Dead/Permanent Storage

Pond 1 Bottom Elevation	NWL	Pond Depth	Dead/Permanent Volume Provided	100-YR HWL	Flood Pool Storage
[ft]	[ft]	[ft]	[cf]	[ft]	[cf]

1088	1095	7	55,671	1096.85	38,511
------	------	---	---------------	---------	--------

Pond 2 Bottom Elevation	NWL	Pond Depth	Dead/Permanent Volume Provided	100-YR HWL	Flood Pool Storage
[ft]	[ft]	[ft]	[cf]	[ft]	[cf]
1088	1093	5	155,117	1094.68	90,228

The dead volume provided by the ponds greatly exceed what is required for the Design Level 2 criteria. In addition, the large flood pool storage volume provided by Pond 2 has the capacity for an additional 9.48 acres of impervious surface that can be routed to this basin. If Block 3 Lots 1, 2 or 3 are developed in the future, they will benefit from the oversized storage volume and are essentially ‘stormwater ready’.

Table 4: Required Treatment Volume

Required Treatment Volume				
Drainage Area	Impervious Area	Treatment Depth	Conversion Factor	Required Treatment Volume
	[sf]	[in]	[ft/in]	[cf]
To Pond 1	27,290	1	1/12	2,274
To Pond 2	19,815	1	1/12	1,651
To Offsite	16,122	1	1/12	1,344
Total	63,227	1	1/12	5,269

The required water quality volume was determined to be **5,269** cf (or **0.121 ac-ft**). Next, HydroCAD was used to create a rainfall event that generated 0.121 ac-ft of inflow volume from the onsite catchments contributing drainage to each pond. To meet Design Level 2, this volume was to be released at 5.66 cfs per acre of surface area of the ponds. The allowable discharge rates were determined as follows:

Table 5: Allowable Discharge Rate

Discharge Rate for Design Level 2	Pond 1 NWL Surface Area	Allowable Discharge Rate
[cfs/acre of surface area]	[ac]	[cfs]
5.66	0.44	2.46

Discharge Rate for Design Level 2	Pond 2 NWL Surface Area	Allowable Discharge Rate
[cfs/acre of surface area]	[ac]	[cfs]
5.66	1.17	6.60

HydroCAD modeling has shown that the discharge from Pond 1 is **0.11 cfs** for the rainfall event that generated 0.121 ac-ft of runoff volume to the basin. This is well under the allowable rate. The distance from the main inlet to the outlet is roughly 98 feet. The average width of the pond is 60ft. This results in a ratio of 1.5:1, which is also within the threshold for Design Level 2. The water quality calculations showing the 0.11 cfs rate for Pond 1 are attached.

HydroCAD modeling has shown that the discharge from Pond 2 is **0.04 cfs** for the rainfall event that generated 0.121 ac-ft of runoff volume to the basin. This is well under the allowable rate. The distance from the main inlet to the outlet is roughly 320 feet. The average width of the pond is 90 feet. This results in a ratio of nearly 3:1, which is also within the threshold for Design Level 2. The water quality calculations showing the 0.04 cfs rate for Pond 2 are also attached.

As a result of meeting each Design Level 2 criterion, the proposed BMPs also meet the SRWD requirements for 80% TSS and 50% TP removal.

Wetland Impacts

There are several wetlands with varying topography throughout the site. For the road to be constructed as proposed, approximately 0.40 acres of wetland will be impacted near the proposed access off Hwy 23. It is understood that Kjolhaug Environmental Services is filing a wetland mitigation plan (under separate cover) to the US Army Corps of Engineers for this impact. We will be closely monitoring the status of that application should any changes to the proposed site or drainage plan be necessary.

Erosion and Sediment Control Plan

To mitigate the potential for erosion and sediment transport during and after construction, the following temporary and permanent erosion control BMPs are proposed for the project.

Temporary erosion control devices to be shown on future grading plans include:

- Silt fence
- Rock construction entrance

Permanent erosion control devices include:

- Turf establishment including seeding, sodding, reinforcement mats, etc.
- Riprap or other permanent energy dissipation techniques at basin outlets

Conclusion

Alliant Engineering believes that the proposed BMP design is acceptable for all parties involved. All proposed peak discharge rates for the 2, 10, and 100-yr storm events will be reduced compared to the existing conditions. The proposed wet sedimentation BMPs will mitigate the effects on water quality associated with the new impervious cover created. The BMPs exceed the storage and detention capabilities as required by the City and the SRWD, adding further value to the receiving downstream waterbodies.

Please call me at 612-383-2228 with any questions or comments regarding stormwater for this project.

Sincerely,
Spencer Tolliver
Alliant Engineering, Inc.

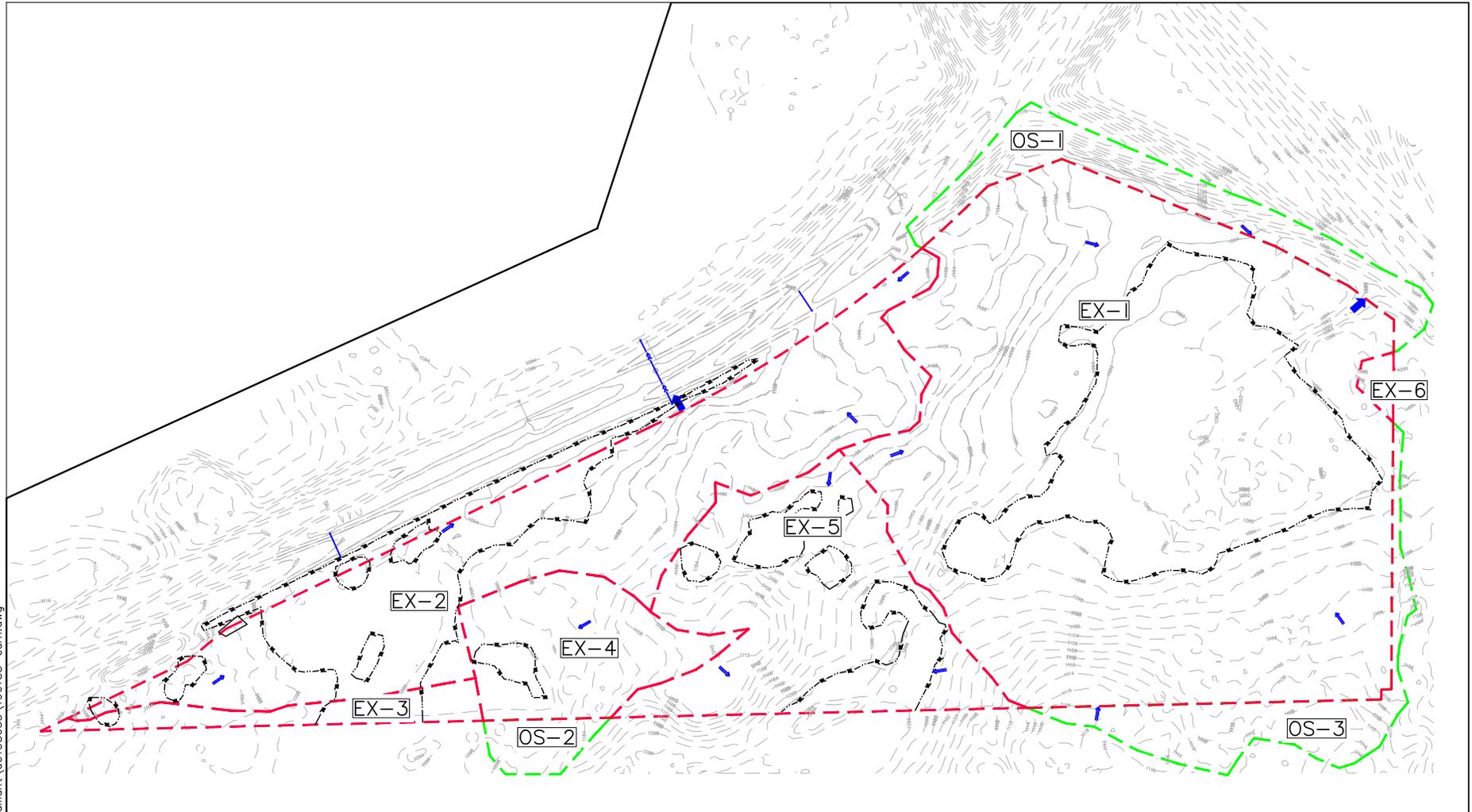
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LIST OF APPENDICES

- Existing Conditions Drainage Map and HydroCAD Calculations
- Proposed Conditions Drainage Map and HydroCAD Calculations
- HydroCAD Water Quality Calculations (Pond 1 and Pond 2)

**Existing Conditions Drainage Map
and HydroCAD Calculations**

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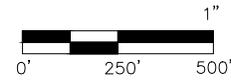


- ONSITE DRAINAGE DELINEATION
- OFFSITE DRAINAGE DELINEATION
- EXISTING STORM SEWER
- DRAINAGE DIRECTION
- ➡ MAJOR DISCHARGE POINT
- WETLAND

ROCKVILLE CROSSING

ROCKVILLE, MN

EXISTING CONDITIONS DRAINAGE MAP

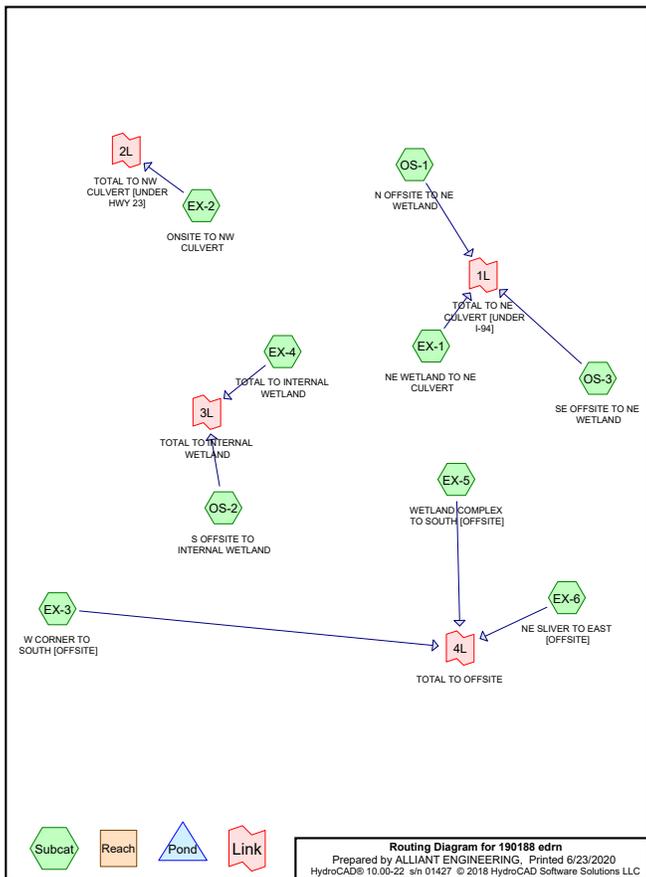


DATE: 06-22-20
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Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
115.890	80	Pasture/grassland/range, Good, HSG D (EX-1, EX-2, EX-3, EX-4, EX-5, EX-6, OS-1, OS-2, OS-3)
115.890	80	TOTAL AREA



Soil Listing (all nodes)

Area (acres)	Soil Group	Subcatchment Numbers
0.000	HSG A	
0.000	HSG B	
0.000	HSG C	
115.890	HSG D	EX-1, EX-2, EX-3, EX-4, EX-5, EX-6, OS-1, OS-2, OS-3
0.000	Other	
115.890	TOTAL AREA	

Summary for Subcatchment EX-1: NE WETLAND TO NE CULVERT

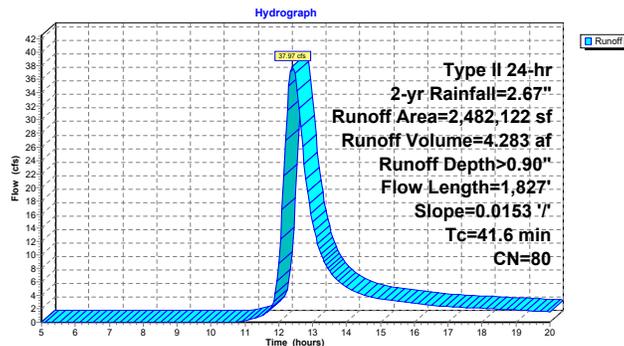
Runoff = 37.97 cfs @ 12.41 hrs, Volume= 4.283 af, Depth> 0.90"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Type II 24-hr 2-yr Rainfall=2.67"

Area (sf)	CN	Description
2,482,122	80	Pasture/grassland/range, Good, HSG D
2,482,122		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
41.6	1,827	0.0153	0.73		Lag/CN Method,

Subcatchment EX-1: NE WETLAND TO NE CULVERT



Summary for Subcatchment EX-2: ONSITE TO NW CULVERT

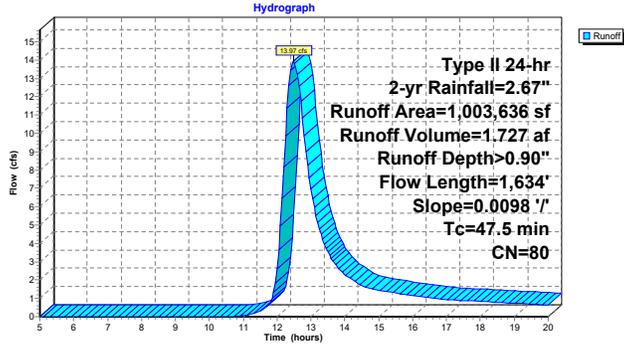
Runoff = 13.97 cfs @ 12.49 hrs, Volume= 1.727 af, Depth> 0.90"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Type II 24-hr 2-yr Rainfall=2.67"

Area (sf)	CN	Description
1,003,636	80	Pasture/grassland/range, Good, HSG D
1,003,636		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
47.5	1,634	0.0098	0.57		Lag/CN Method,

Subcatchment EX-2: ONSITE TO NW CULVERT



Summary for Subcatchment EX-3: W CORNER TO SOUTH [OFFSITE]

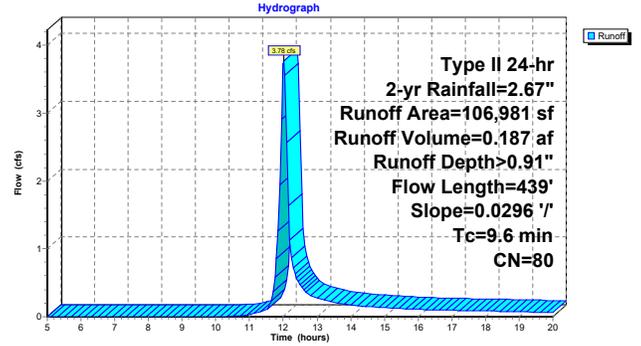
Runoff = 3.78 cfs @ 12.02 hrs, Volume= 0.187 af, Depth> 0.91"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Type II 24-hr 2-yr Rainfall=2.67"

Area (sf)	CN	Description
106,981	80	Pasture/grassland/range, Good, HSG D
106,981		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.6	439	0.0296	0.77		Lag/CN Method,

Subcatchment EX-3: W CORNER TO SOUTH [OFFSITE]



Summary for Subcatchment EX-4: TOTAL TO INTERNAL WETLAND

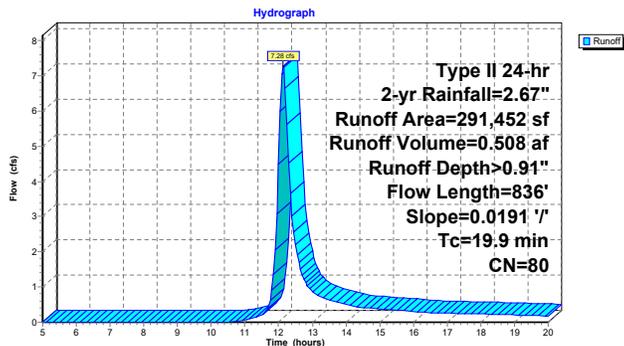
Runoff = 7.28 cfs @ 12.14 hrs, Volume= 0.508 af, Depth> 0.91"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Type II 24-hr 2-yr Rainfall=2.67"

Area (sf)	CN	Description
291,452	80	Pasture/grassland/range, Good, HSG D
291,452		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
19.9	836	0.0191	0.70		Lag/CN Method,

Subcatchment EX-4: TOTAL TO INTERNAL WETLAND



Summary for Subcatchment EX-5: WETLAND COMPLEX TO SOUTH [OFFSITE]

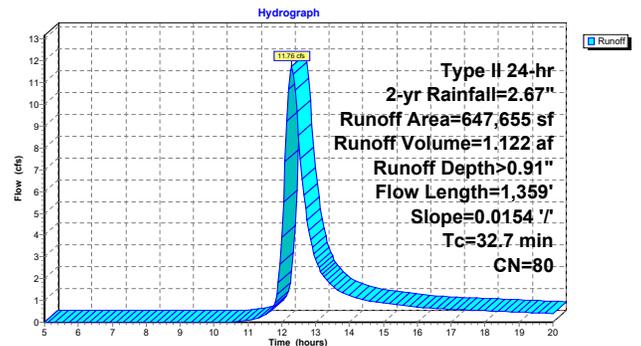
Runoff = 11.76 cfs @ 12.29 hrs, Volume= 1.122 af, Depth> 0.91"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Type II 24-hr 2-yr Rainfall=2.67"

Area (sf)	CN	Description
647,655	80	Pasture/grassland/range, Good, HSG D
647,655		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
32.7	1,359	0.0154	0.69		Lag/CN Method,

Subcatchment EX-5: WETLAND COMPLEX TO SOUTH [OFFSITE]



Summary for Subcatchment EX-6: NE SLIVER TO EAST [OFFSITE]

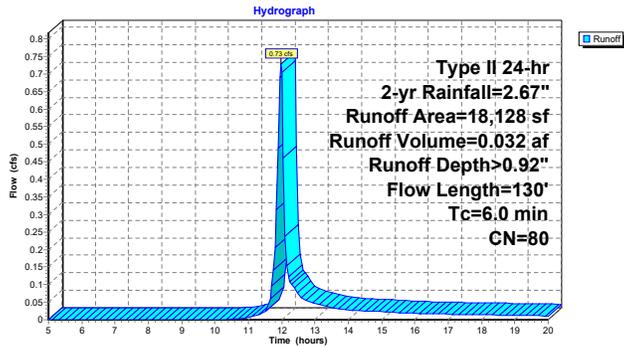
Runoff = 0.73 cfs @ 11.98 hrs, Volume= 0.032 af, Depth> 0.92"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Type II 24-hr 2-yr Rainfall=2.67"

Area (sf)	CN	Description
18,128	80	Pasture/grassland/range, Good, HSG D
18,128		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0	130		0.36		Direct Entry,

Subcatchment EX-6: NE SLIVER TO EAST [OFFSITE]



Summary for Subcatchment OS-1: N OFFSITE TO NE WETLAND

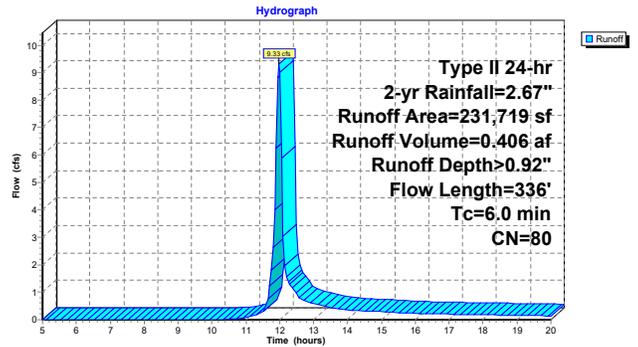
Runoff = 9.33 cfs @ 11.98 hrs, Volume= 0.406 af, Depth> 0.92"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Type II 24-hr 2-yr Rainfall=2.67"

Area (sf)	CN	Description
231,719	80	Pasture/grassland/range, Good, HSG D
231,719		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0	336		0.93		Direct Entry,

Subcatchment OS-1: N OFFSITE TO NE WETLAND



Summary for Subcatchment OS-2: S OFFSITE TO INTERNAL WETLAND

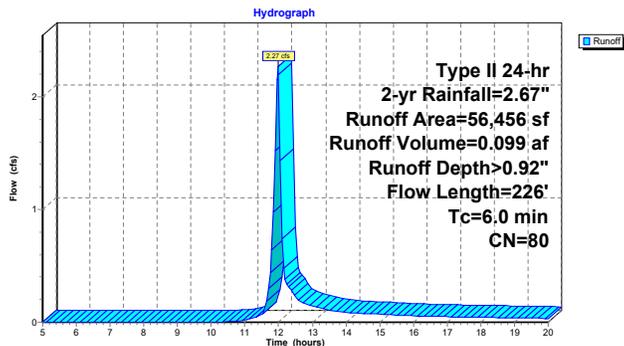
Runoff = 2.27 cfs @ 11.98 hrs, Volume= 0.099 af, Depth> 0.92"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Type II 24-hr 2-yr Rainfall=2.67"

Area (sf)	CN	Description
56,456	80	Pasture/grassland/range, Good, HSG D
56,456		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0	226		0.63		Direct Entry,

Subcatchment OS-2: S OFFSITE TO INTERNAL WETLAND



Summary for Subcatchment OS-3: SE OFFSITE TO NE WETLAND

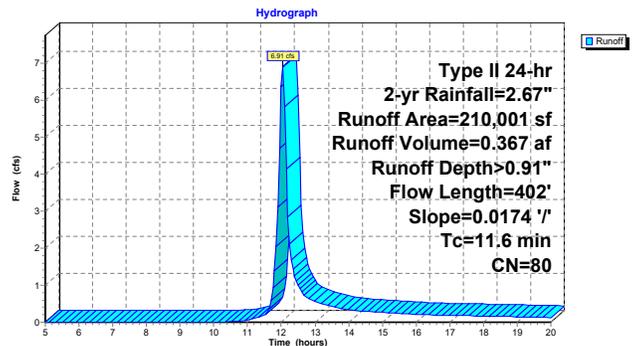
Runoff = 6.91 cfs @ 12.04 hrs, Volume= 0.367 af, Depth> 0.91"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Type II 24-hr 2-yr Rainfall=2.67"

Area (sf)	CN	Description
210,001	80	Pasture/grassland/range, Good, HSG D
210,001		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.6	402	0.0174	0.58		Lag/CN Method,

Subcatchment OS-3: SE OFFSITE TO NE WETLAND

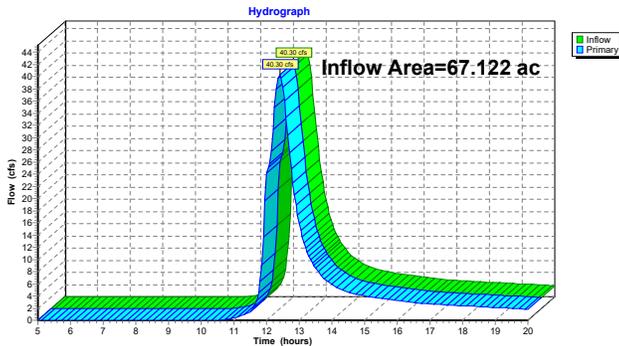


Summary for Link 1L: TOTAL TO NE CULVERT [UNDER I-94]

Inflow Area = 67.122 ac, 0.00% Impervious, Inflow Depth > 0.90" for 2-yr event
Inflow = 40.30 cfs @ 12.40 hrs, Volume= 5.056 af
Primary = 40.30 cfs @ 12.40 hrs, Volume= 5.056 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Link 1L: TOTAL TO NE CULVERT [UNDER I-94]

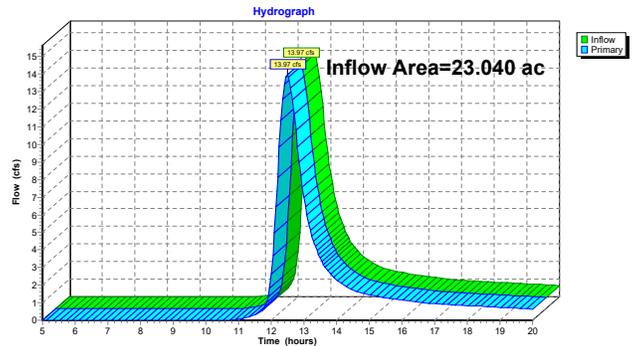


Summary for Link 2L: TOTAL TO NW CULVERT [UNDER HWY 23]

Inflow Area = 23.040 ac, 0.00% Impervious, Inflow Depth > 0.90" for 2-yr event
Inflow = 13.97 cfs @ 12.49 hrs, Volume= 1.727 af
Primary = 13.97 cfs @ 12.49 hrs, Volume= 1.727 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Link 2L: TOTAL TO NW CULVERT [UNDER HWY 23]

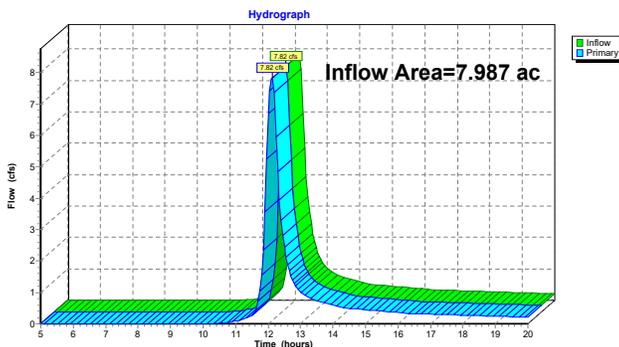


Summary for Link 3L: TOTAL TO INTERNAL WETLAND

Inflow Area = 7.987 ac, 0.00% Impervious, Inflow Depth > 0.91" for 2-yr event
Inflow = 7.82 cfs @ 12.12 hrs, Volume= 0.607 af
Primary = 7.82 cfs @ 12.12 hrs, Volume= 0.607 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Link 3L: TOTAL TO INTERNAL WETLAND

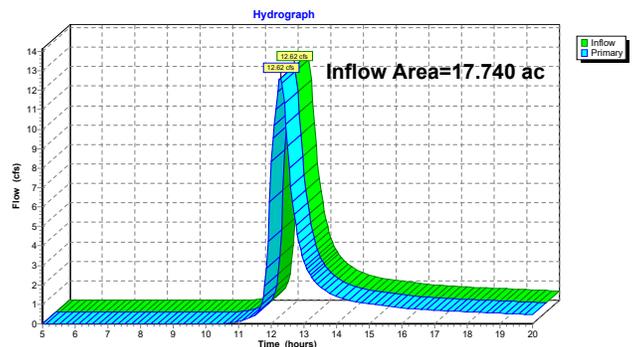


Summary for Link 4L: TOTAL TO OFFSITE

Inflow Area = 17.740 ac, 0.00% Impervious, Inflow Depth > 0.91" for 2-yr event
Inflow = 12.62 cfs @ 12.28 hrs, Volume= 1.341 af
Primary = 12.62 cfs @ 12.28 hrs, Volume= 1.341 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Link 4L: TOTAL TO OFFSITE



Summary for Subcatchment EX-1: NE WETLAND TO NE CULVERT

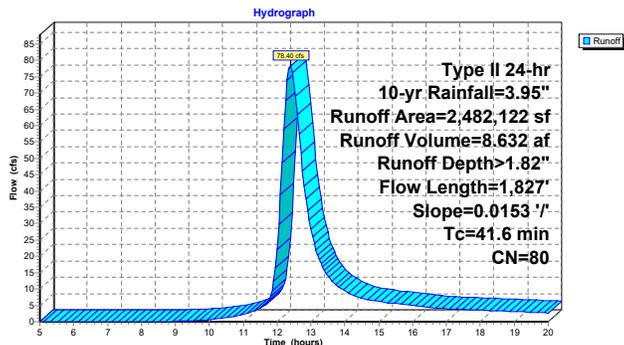
Runoff = 78.40 cfs @ 12.39 hrs, Volume= 8.632 af, Depth> 1.82"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Type II 24-hr 10-yr Rainfall=3.95"

Area (sf)	CN	Description
2,482,122	80	Pasture/grassland/range, Good, HSG D
2,482,122	100.00%	Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
41.6	1,827	0.0153	0.73		Lag/CN Method,

Subcatchment EX-1: NE WETLAND TO NE CULVERT



Summary for Subcatchment EX-2: ONSITE TO NW CULVERT

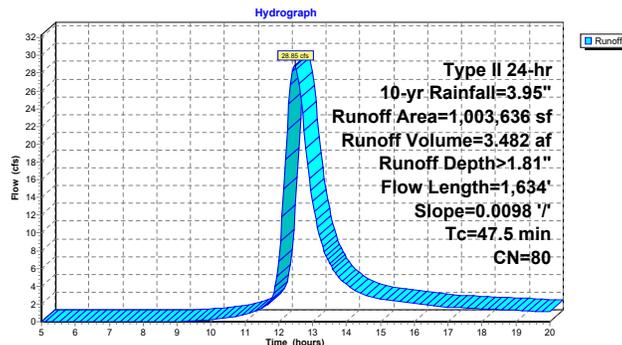
Runoff = 28.85 cfs @ 12.47 hrs, Volume= 3.482 af, Depth> 1.81"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Type II 24-hr 10-yr Rainfall=3.95"

Area (sf)	CN	Description
1,003,636	80	Pasture/grassland/range, Good, HSG D
1,003,636	100.00%	Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
47.5	1,634	0.0098	0.57		Lag/CN Method,

Subcatchment EX-2: ONSITE TO NW CULVERT



Summary for Subcatchment EX-3: W CORNER TO SOUTH [OFFSITE]

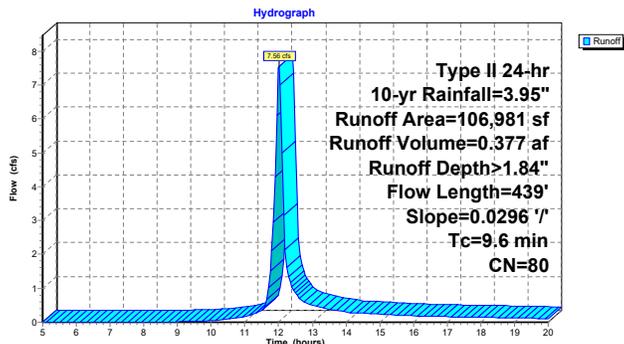
Runoff = 7.56 cfs @ 12.01 hrs, Volume= 0.377 af, Depth> 1.84"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Type II 24-hr 10-yr Rainfall=3.95"

Area (sf)	CN	Description
106,981	80	Pasture/grassland/range, Good, HSG D
106,981	100.00%	Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.6	439	0.0296	0.77		Lag/CN Method,

Subcatchment EX-3: W CORNER TO SOUTH [OFFSITE]



Summary for Subcatchment EX-4: TOTAL TO INTERNAL WETLAND

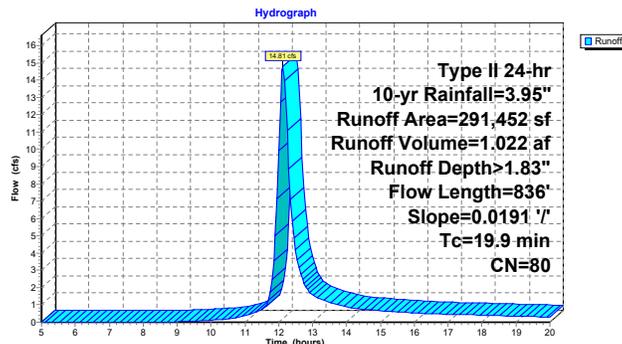
Runoff = 14.81 cfs @ 12.13 hrs, Volume= 1.022 af, Depth> 1.83"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Type II 24-hr 10-yr Rainfall=3.95"

Area (sf)	CN	Description
291,452	80	Pasture/grassland/range, Good, HSG D
291,452	100.00%	Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
19.9	836	0.0191	0.70		Lag/CN Method,

Subcatchment EX-4: TOTAL TO INTERNAL WETLAND



Summary for Subcatchment EX-5: WETLAND COMPLEX TO SOUTH [OFFSITE]

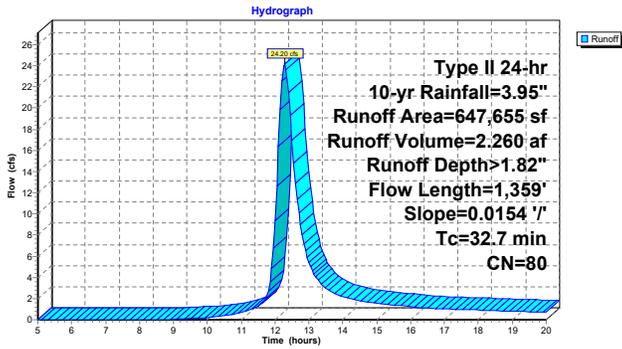
Runoff = 24.20 cfs @ 12.28 hrs, Volume= 2.260 af, Depth> 1.82"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Type II 24-hr 10-yr Rainfall=3.95"

Area (sf)	CN	Description
647,655	80	Pasture/grassland/range, Good, HSG D
647,655	100.00%	Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
32.7	1,359	0.0154	0.69		Lag/CN Method,

Subcatchment EX-5: WETLAND COMPLEX TO SOUTH [OFFSITE]



Summary for Subcatchment EX-6: NE SLIVER TO EAST [OFFSITE]

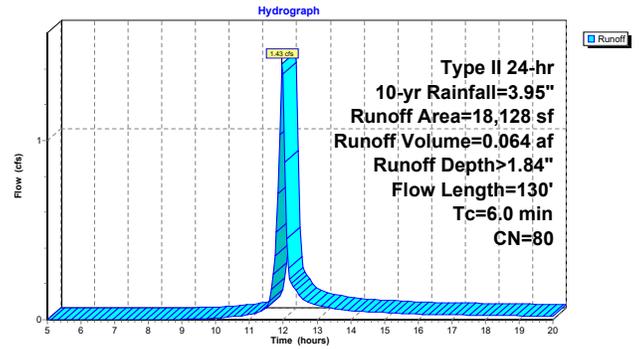
Runoff = 1.43 cfs @ 11.97 hrs, Volume= 0.064 af, Depth> 1.84"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Type II 24-hr 10-yr Rainfall=3.95"

Area (sf)	CN	Description
18,128	80	Pasture/grassland/range, Good, HSG D
18,128	100.00%	Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0	130		0.36		Direct Entry,

Subcatchment EX-6: NE SLIVER TO EAST [OFFSITE]



Summary for Subcatchment OS-1: N OFFSITE TO NE WETLAND

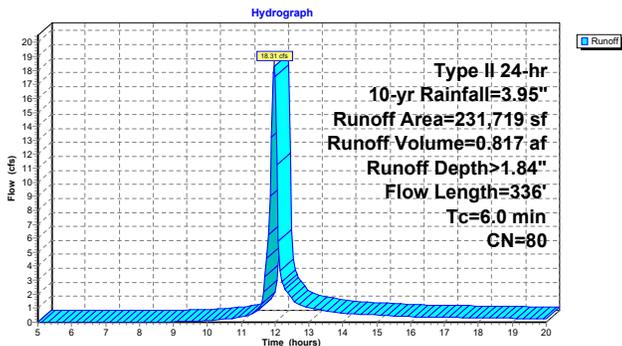
Runoff = 18.31 cfs @ 11.97 hrs, Volume= 0.817 af, Depth> 1.84"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Type II 24-hr 10-yr Rainfall=3.95"

Area (sf)	CN	Description
231,719	80	Pasture/grassland/range, Good, HSG D
231,719	100.00%	Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0	336		0.93		Direct Entry,

Subcatchment OS-1: N OFFSITE TO NE WETLAND



Summary for Subcatchment OS-2: S OFFSITE TO INTERNAL WETLAND

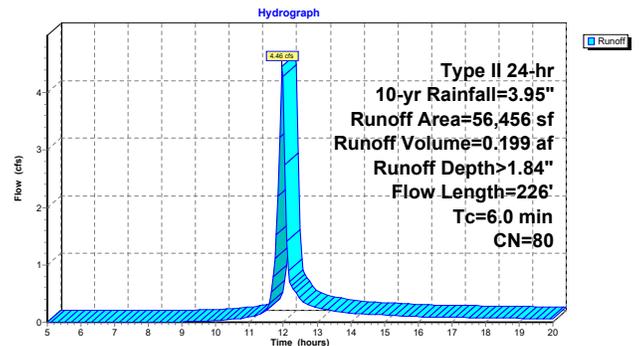
Runoff = 4.46 cfs @ 11.97 hrs, Volume= 0.199 af, Depth> 1.84"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Type II 24-hr 10-yr Rainfall=3.95"

Area (sf)	CN	Description
56,456	80	Pasture/grassland/range, Good, HSG D
56,456	100.00%	Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0	226		0.63		Direct Entry,

Subcatchment OS-2: S OFFSITE TO INTERNAL WETLAND



Summary for Subcatchment OS-3: SE OFFSITE TO NE WETLAND

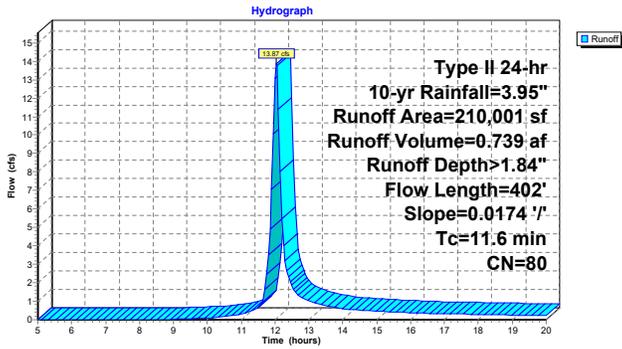
Runoff = 13.87 cfs @ 12.04 hrs, Volume= 0.739 af, Depth > 1.84"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Type II 24-hr 10-yr Rainfall=3.95"

Area (sf)	CN	Description
210,001	80	Pasture/grassland/range, Good, HSG D
210,001		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.6	402	0.0174	0.58		Lag/CN Method,

Subcatchment OS-3: SE OFFSITE TO NE WETLAND

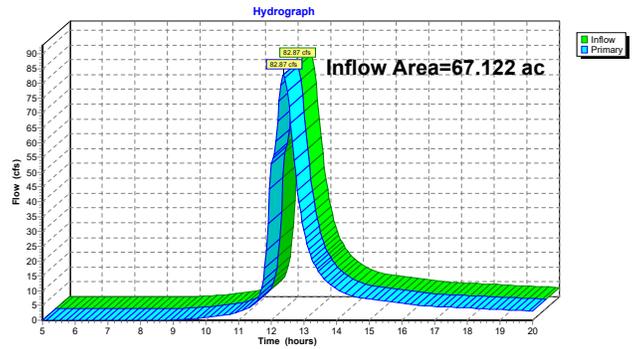


Summary for Link 1L: TOTAL TO NE CULVERT [UNDER I-94]

Inflow Area = 67.122 ac, 0.00% Impervious, Inflow Depth > 1.82" for 10-yr event
 Inflow = 82.87 cfs @ 12.38 hrs, Volume= 10.187 af
 Primary = 82.87 cfs @ 12.38 hrs, Volume= 10.187 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Link 1L: TOTAL TO NE CULVERT [UNDER I-94]

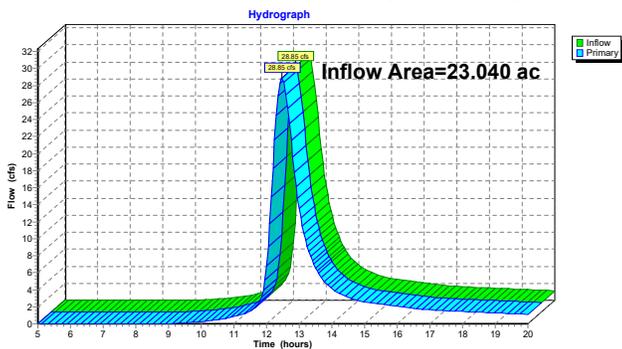


Summary for Link 2L: TOTAL TO NW CULVERT [UNDER HWY 23]

Inflow Area = 23.040 ac, 0.00% Impervious, Inflow Depth > 1.81" for 10-yr event
 Inflow = 28.85 cfs @ 12.47 hrs, Volume= 3.482 af
 Primary = 28.85 cfs @ 12.47 hrs, Volume= 3.482 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Link 2L: TOTAL TO NW CULVERT [UNDER HWY 23]

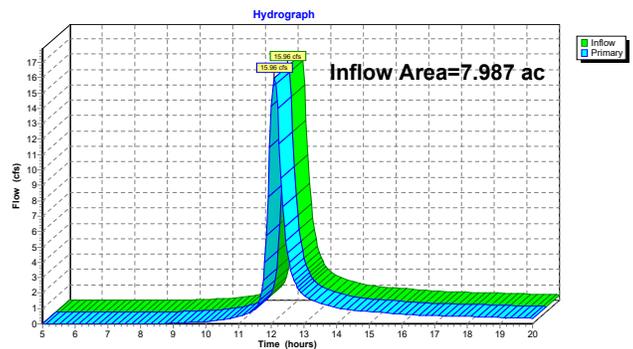


Summary for Link 3L: TOTAL TO INTERNAL WETLAND

Inflow Area = 7.987 ac, 0.00% Impervious, Inflow Depth > 1.83" for 10-yr event
 Inflow = 15.96 cfs @ 12.10 hrs, Volume= 1.221 af
 Primary = 15.96 cfs @ 12.10 hrs, Volume= 1.221 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Link 3L: TOTAL TO INTERNAL WETLAND

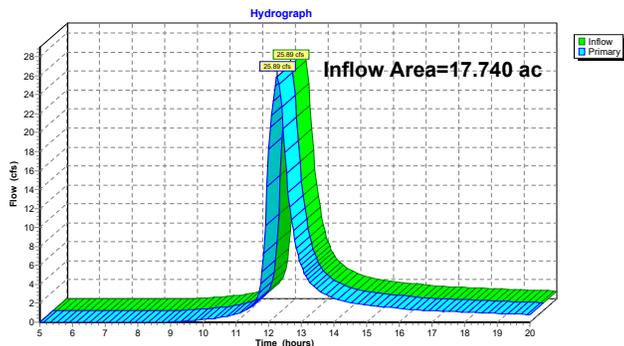


Summary for Link 4L: TOTAL TO OFFSITE

Inflow Area = 17.740 ac, 0.00% Impervious, Inflow Depth > 1.83" for 10-yr event
 Inflow = 25.89 cfs @ 12.27 hrs, Volume= 2.701 af
 Primary = 25.89 cfs @ 12.27 hrs, Volume= 2.701 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Link 4L: TOTAL TO OFFSITE



Summary for Subcatchment EX-1: NE WETLAND TO NE CULVERT

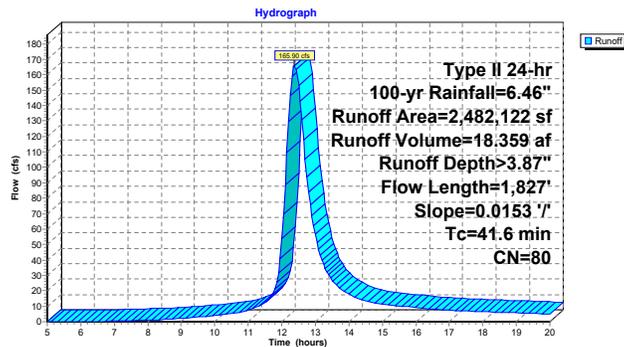
Runoff = 165.90 cfs @ 12.38 hrs, Volume= 18.359 af, Depth> 3.87"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Type II 24-hr 100-yr Rainfall=6.46"

Area (sf)	CN	Description
2,482,122	80	Pasture/grassland/range, Good, HSG D
2,482,122		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
41.6	1,827	0.0153	0.73		Lag/CN Method,

Subcatchment EX-1: NE WETLAND TO NE CULVERT



Summary for Subcatchment EX-2: ONSITE TO NW CULVERT

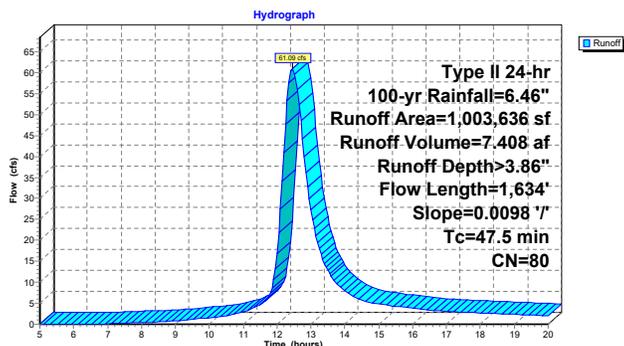
Runoff = 61.09 cfs @ 12.46 hrs, Volume= 7.408 af, Depth> 3.86"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Type II 24-hr 100-yr Rainfall=6.46"

Area (sf)	CN	Description
1,003,636	80	Pasture/grassland/range, Good, HSG D
1,003,636		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
47.5	1,634	0.0098	0.57		Lag/CN Method,

Subcatchment EX-2: ONSITE TO NW CULVERT



Summary for Subcatchment EX-3: W CORNER TO SOUTH [OFFSITE]

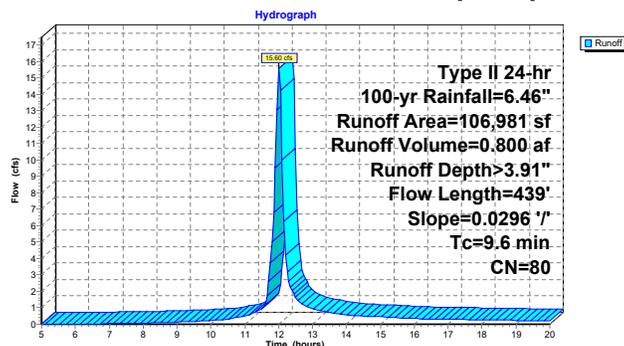
Runoff = 15.60 cfs @ 12.01 hrs, Volume= 0.800 af, Depth> 3.91"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Type II 24-hr 100-yr Rainfall=6.46"

Area (sf)	CN	Description
106,981	80	Pasture/grassland/range, Good, HSG D
106,981		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.6	439	0.0296	0.77		Lag/CN Method,

Subcatchment EX-3: W CORNER TO SOUTH [OFFSITE]



Summary for Subcatchment EX-4: TOTAL TO INTERNAL WETLAND

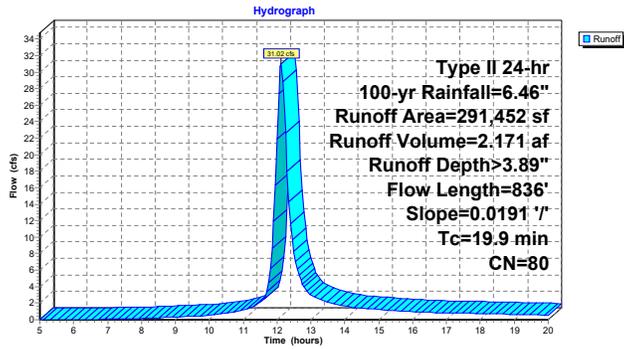
Runoff = 31.02 cfs @ 12.12 hrs, Volume= 2.171 af, Depth> 3.89"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Type II 24-hr 100-yr Rainfall=6.46"

Area (sf)	CN	Description
291,452	80	Pasture/grassland/range, Good, HSG D
291,452	100.00%	Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
19.9	836	0.0191	0.70		Lag/CN Method,

Subcatchment EX-4: TOTAL TO INTERNAL WETLAND



Summary for Subcatchment EX-5: WETLAND COMPLEX TO SOUTH [OFFSITE]

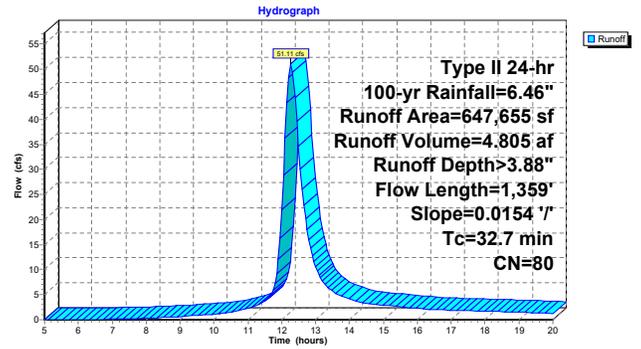
Runoff = 51.11 cfs @ 12.27 hrs, Volume= 4.805 af, Depth> 3.88"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Type II 24-hr 100-yr Rainfall=6.46"

Area (sf)	CN	Description
647,655	80	Pasture/grassland/range, Good, HSG D
647,655	100.00%	Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
32.7	1,359	0.0154	0.69		Lag/CN Method,

Subcatchment EX-5: WETLAND COMPLEX TO SOUTH [OFFSITE]



Summary for Subcatchment EX-6: NE SLIVER TO EAST [OFFSITE]

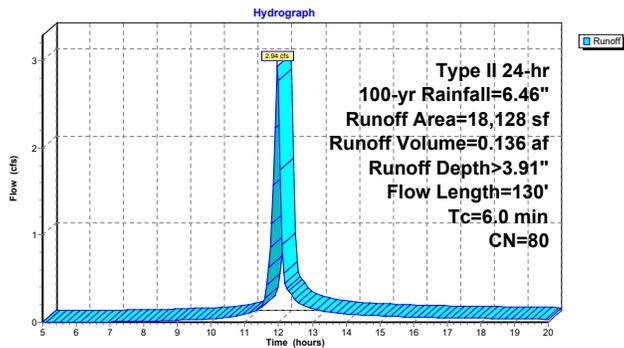
Runoff = 2.94 cfs @ 11.97 hrs, Volume= 0.136 af, Depth> 3.91"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Type II 24-hr 100-yr Rainfall=6.46"

Area (sf)	CN	Description
18,128	80	Pasture/grassland/range, Good, HSG D
18,128	100.00%	Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0	130		0.36		Direct Entry,

Subcatchment EX-6: NE SLIVER TO EAST [OFFSITE]



Summary for Subcatchment OS-1: N OFFSITE TO NE WETLAND

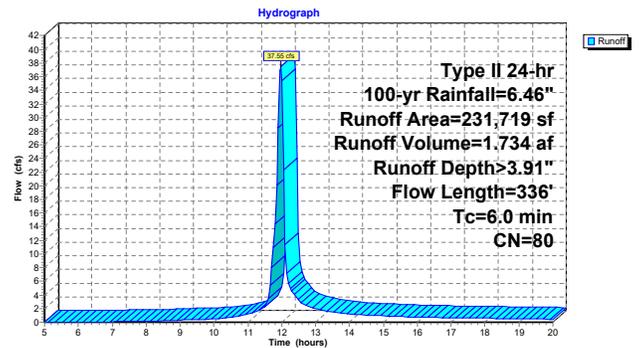
Runoff = 37.55 cfs @ 11.97 hrs, Volume= 1.734 af, Depth> 3.91"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Type II 24-hr 100-yr Rainfall=6.46"

Area (sf)	CN	Description
231,719	80	Pasture/grassland/range, Good, HSG D
231,719	100.00%	Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0	336		0.93		Direct Entry,

Subcatchment OS-1: N OFFSITE TO NE WETLAND



Summary for Subcatchment OS-2: S OFFSITE TO INTERNAL WETLAND

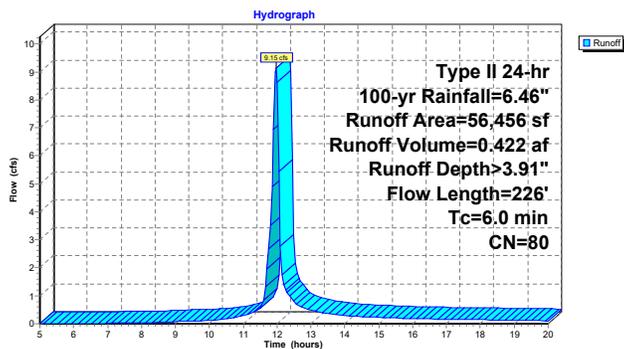
Runoff = 9.15 cfs @ 11.97 hrs, Volume= 0.422 af, Depth> 3.91"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Type II 24-hr 100-yr Rainfall=6.46"

Area (sf)	CN	Description
56,456	80	Pasture/grassland/range, Good, HSG D
56,456		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0	226		0.63		Direct Entry,

Subcatchment OS-2: S OFFSITE TO INTERNAL WETLAND



Summary for Subcatchment OS-3: SE OFFSITE TO NE WETLAND

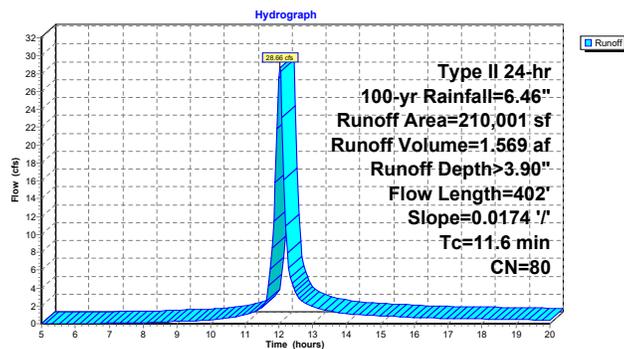
Runoff = 28.66 cfs @ 12.03 hrs, Volume= 1.569 af, Depth> 3.90"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Type II 24-hr 100-yr Rainfall=6.46"

Area (sf)	CN	Description
210,001	80	Pasture/grassland/range, Good, HSG D
210,001		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.6	402	0.0174	0.58		Lag/CN Method,

Subcatchment OS-3: SE OFFSITE TO NE WETLAND

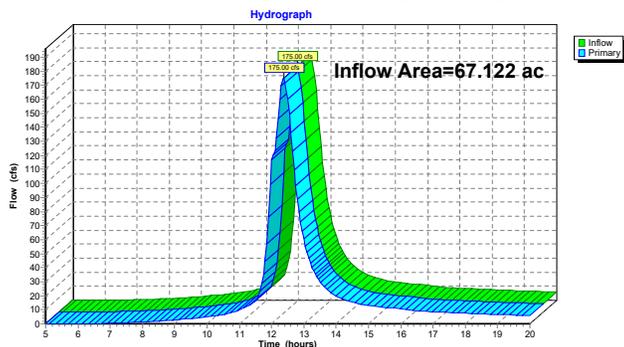


Summary for Link 1L: TOTAL TO NE CULVERT [UNDER I-94]

Inflow Area = 67.122 ac, 0.00% Impervious, Inflow Depth > 3.87" for 100-yr event
 Inflow = 175.00 cfs @ 12.37 hrs, Volume= 21.662 af
 Primary = 175.00 cfs @ 12.37 hrs, Volume= 21.662 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Link 1L: TOTAL TO NE CULVERT [UNDER I-94]

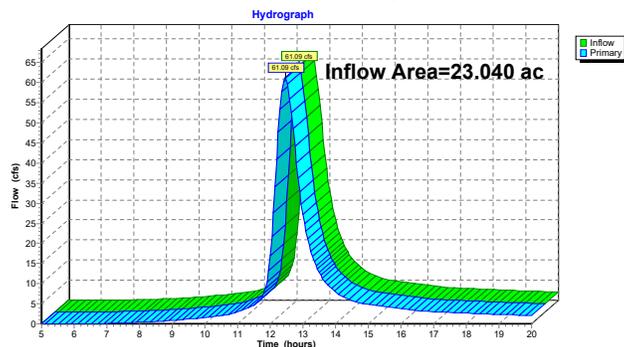


Summary for Link 2L: TOTAL TO NW CULVERT [UNDER HWY 23]

Inflow Area = 23.040 ac, 0.00% Impervious, Inflow Depth > 3.86" for 100-yr event
 Inflow = 61.09 cfs @ 12.46 hrs, Volume= 7.408 af
 Primary = 61.09 cfs @ 12.46 hrs, Volume= 7.408 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Link 2L: TOTAL TO NW CULVERT [UNDER HWY 23]

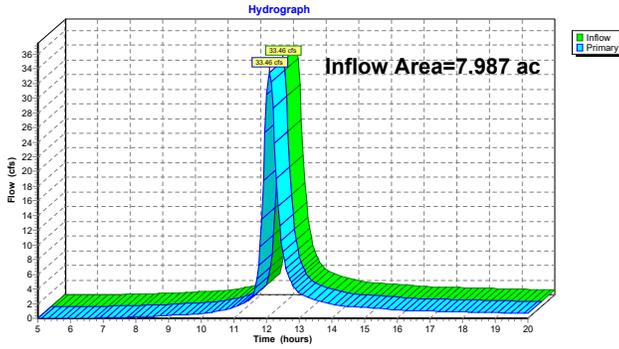


Summary for Link 3L: TOTAL TO INTERNAL WETLAND

Inflow Area = 7.987 ac, 0.00% Impervious, Inflow Depth > 3.90" for 100-yr event
Inflow = 33.46 cfs @ 12.09 hrs, Volume= 2.594 af
Primary = 33.46 cfs @ 12.09 hrs, Volume= 2.594 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Link 3L: TOTAL TO INTERNAL WETLAND

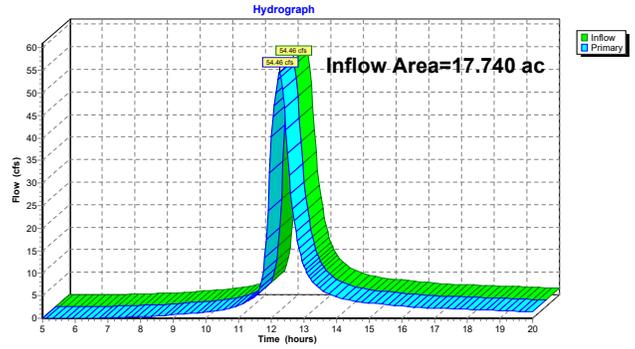


Summary for Link 4L: TOTAL TO OFFSITE

Inflow Area = 17.740 ac, 0.00% Impervious, Inflow Depth > 3.88" for 100-yr event
Inflow = 54.46 cfs @ 12.26 hrs, Volume= 5.740 af
Primary = 54.46 cfs @ 12.26 hrs, Volume= 5.740 af, Atten= 0%, Lag= 0.0 min

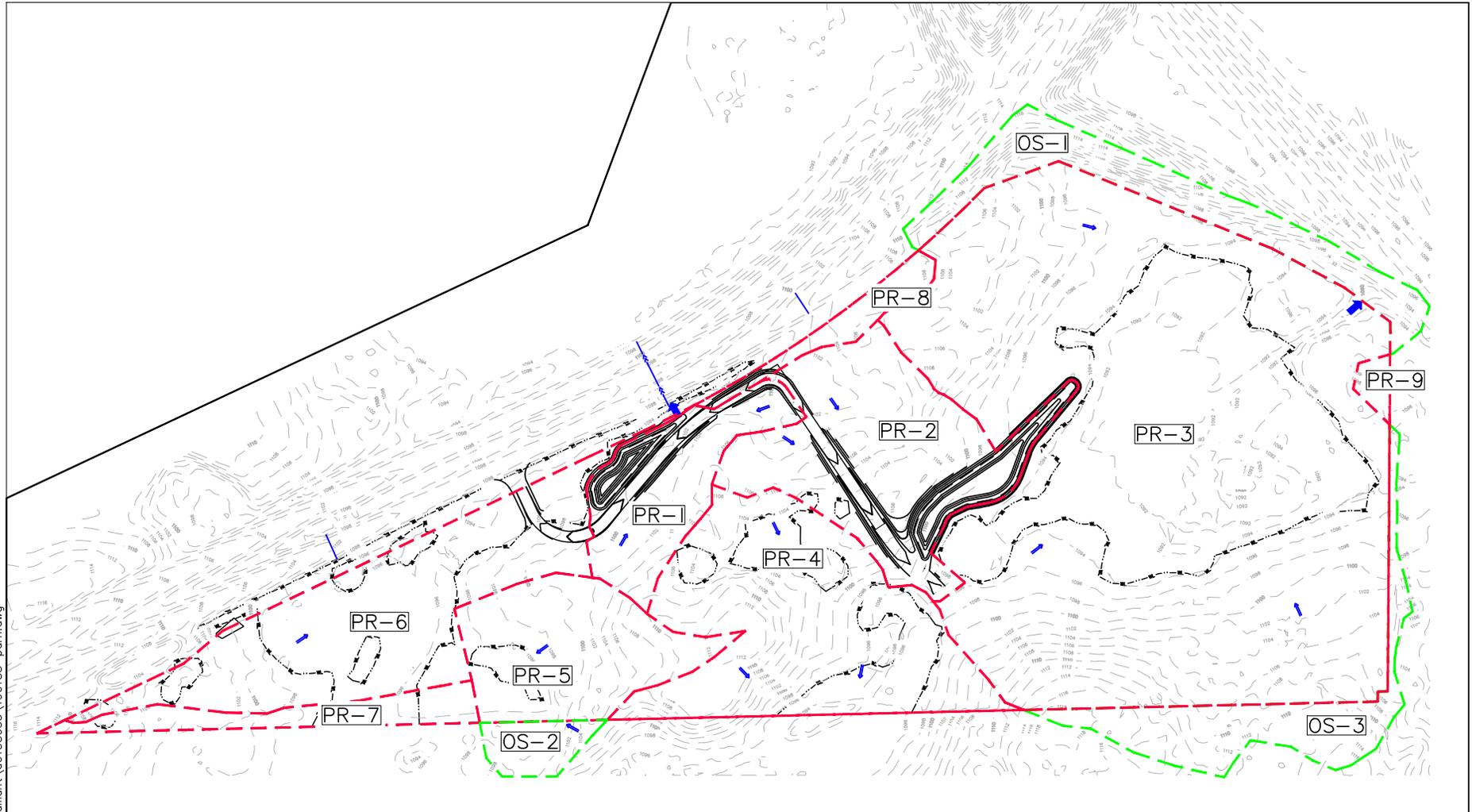
Primary outflow = Inflow, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Link 4L: TOTAL TO OFFSITE



**Proposed Conditions Drainage Map
and HydroCAD Calculations**

c:\pw_working\projectwise\alliant\d01380333\190188-pdrn.dwg

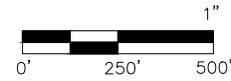


- ONSITE DRAINAGE DELINEATION
- OFFSITE DRAINAGE DELINEATION
- EXISTING STORM SEWER
- DRAINAGE DIRECTION
- MAJOR DISCHARGE POINT
- WL --- WETLAND

ROCKVILLE CROSSING

ROCKVILLE, MN

PROPOSED CONDITIONS DRAINAGE MAP

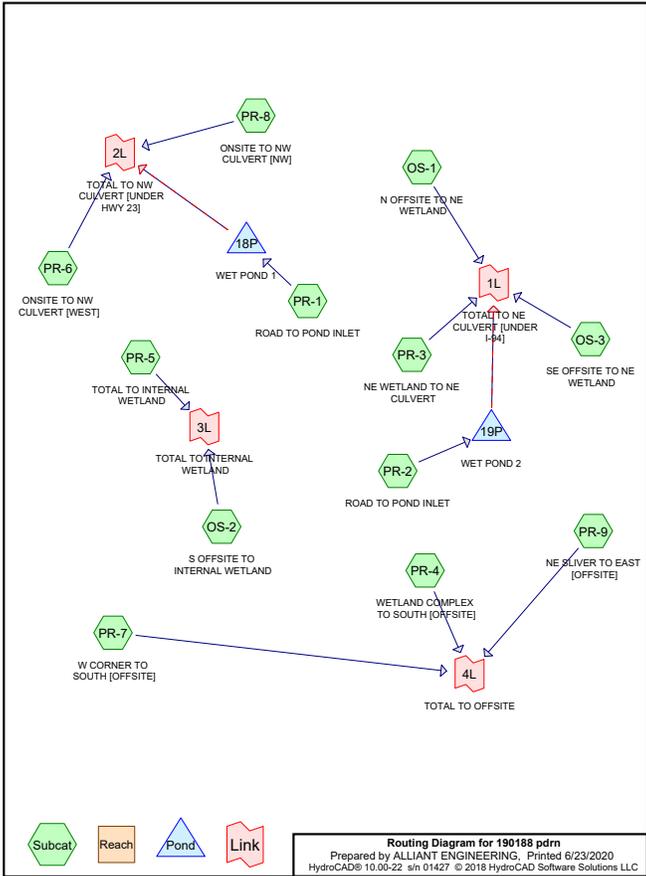


DATE: 06-22-20
 DRAWN BY: SMT



Area Listing (selected nodes)

Area (acres)	CN	Description (subcatchment-numbers)
114.441	80	Pasture/grassland/range, Good, HSG D (OS-1, OS-2, OS-3, PR-1, PR-2, PR-3, PR-4, PR-5, PR-6, PR-7, PR-8, PR-9)
1.451	98	Paved parking, HSG D (PR-1, PR-2, PR-6, PR-8)
115.892	80	TOTAL AREA



Soil Listing (selected nodes)

Area (acres)	Soil Group	Subcatchment Numbers
0.000	HSG A	
0.000	HSG B	
0.000	HSG C	
115.892	HSG D	OS-1, OS-2, OS-3, PR-1, PR-2, PR-3, PR-4, PR-5, PR-6, PR-7, PR-8, PR-9
0.000	Other	
115.892	TOTAL AREA	

Summary for Subcatchment OS-1: N OFFSITE TO NE WETLAND

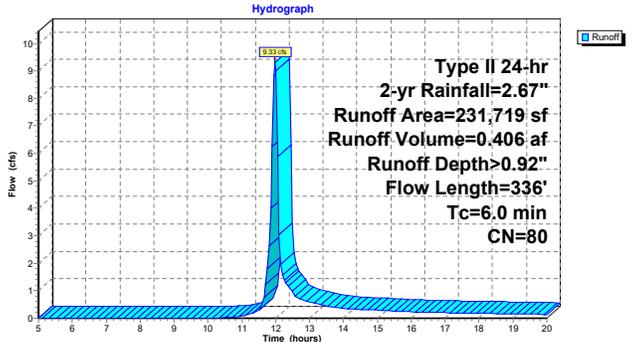
Runoff = 9.33 cfs @ 11.98 hrs, Volume= 0.406 af, Depth> 0.92"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Type II 24-hr 2-yr Rainfall=2.67"

Area (sf)	CN	Description
231,719	80	Pasture/grassland/range, Good, HSG D
231,719		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0	336		0.93		Direct Entry,

Subcatchment OS-1: N OFFSITE TO NE WETLAND



Summary for Subcatchment OS-2: S OFFSITE TO INTERNAL WETLAND

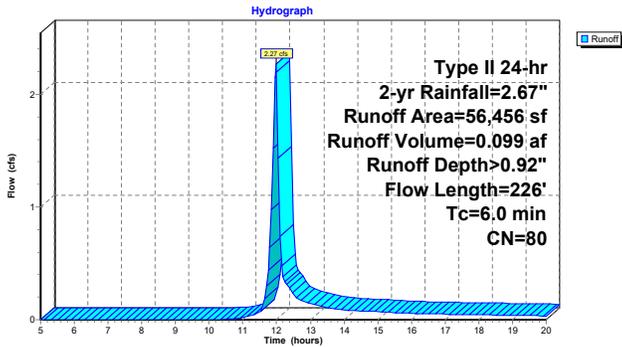
Runoff = 2.27 cfs @ 11.98 hrs, Volume= 0.099 af, Depth> 0.92"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 2-yr Rainfall=2.67"

Area (sf)	CN	Description
56,456	80	Pasture/grassland/range, Good, HSG D
56,456		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0	226		0.63		Direct Entry,

Subcatchment OS-2: S OFFSITE TO INTERNAL WETLAND



Summary for Subcatchment OS-3: SE OFFSITE TO NE WETLAND

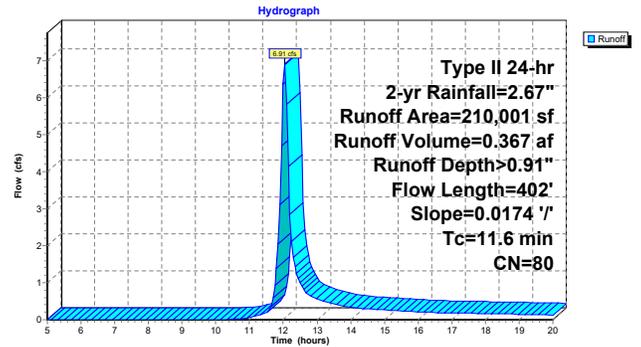
Runoff = 6.91 cfs @ 12.04 hrs, Volume= 0.367 af, Depth> 0.91"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 2-yr Rainfall=2.67"

Area (sf)	CN	Description
210,001	80	Pasture/grassland/range, Good, HSG D
210,001		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.6	402	0.0174	0.58		Lag/CN Method,

Subcatchment OS-3: SE OFFSITE TO NE WETLAND



Summary for Subcatchment PR-1: ROAD TO POND INLET

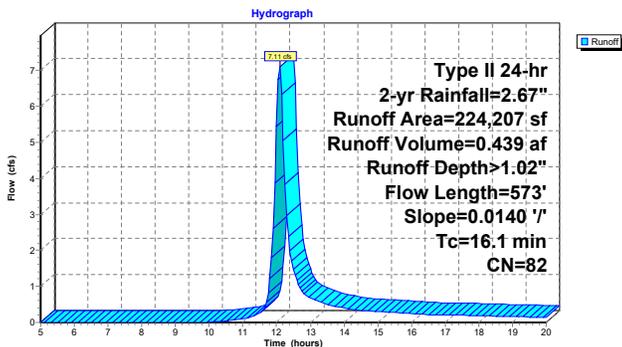
Runoff = 7.11 cfs @ 12.09 hrs, Volume= 0.439 af, Depth> 1.02"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 2-yr Rainfall=2.67"

Area (sf)	CN	Description
196,917	80	Pasture/grassland/range, Good, HSG D
27,290	98	Paved parking, HSG D
224,207	82	Weighted Average
196,917		87.83% Pervious Area
27,290		12.17% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
16.1	573	0.0140	0.59		Lag/CN Method,

Subcatchment PR-1: ROAD TO POND INLET



Summary for Subcatchment PR-2: ROAD TO POND INLET

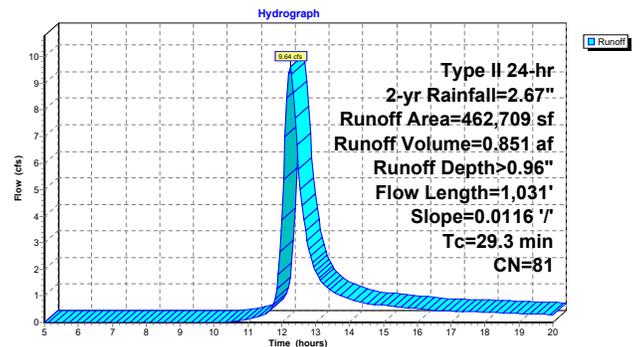
Runoff = 9.64 cfs @ 12.25 hrs, Volume= 0.851 af, Depth> 0.96"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 2-yr Rainfall=2.67"

Area (sf)	CN	Description
442,894	80	Pasture/grassland/range, Good, HSG D
19,815	98	Paved parking, HSG D
462,709	81	Weighted Average
442,894		95.72% Pervious Area
19,815		4.28% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
29.3	1,031	0.0116	0.59		Lag/CN Method,

Subcatchment PR-2: ROAD TO POND INLET



Summary for Subcatchment PR-3: NE WETLAND TO NE CULVERT

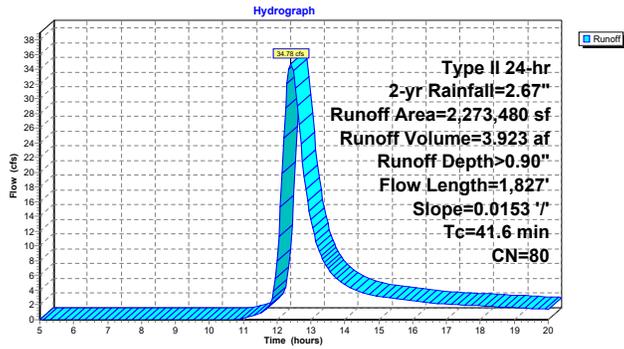
Runoff = 34.78 cfs @ 12.41 hrs, Volume= 3.923 af, Depth> 0.90"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Type II 24-hr 2-yr Rainfall=2.67"

Area (sf)	CN	Description
2,273,480	80	Pasture/grassland/range, Good, HSG D
2,273,480	100.00%	Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
41.6	1,827	0.0153	0.73		Lag/CN Method,

Subcatchment PR-3: NE WETLAND TO NE CULVERT



Summary for Subcatchment PR-4: WETLAND COMPLEX TO SOUTH [OFFSITE]

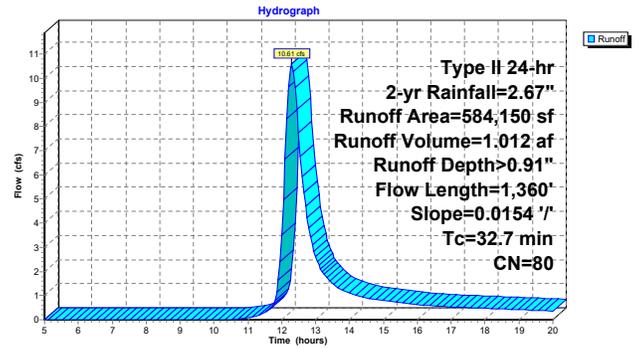
Runoff = 10.61 cfs @ 12.29 hrs, Volume= 1.012 af, Depth> 0.91"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Type II 24-hr 2-yr Rainfall=2.67"

Area (sf)	CN	Description
584,150	80	Pasture/grassland/range, Good, HSG D
584,150	100.00%	Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
32.7	1,360	0.0154	0.69		Lag/CN Method,

Subcatchment PR-4: WETLAND COMPLEX TO SOUTH [OFFSITE]



Summary for Subcatchment PR-5: TOTAL TO INTERNAL WETLAND

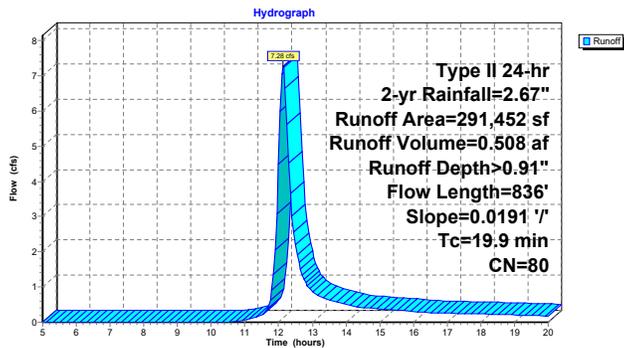
Runoff = 7.28 cfs @ 12.14 hrs, Volume= 0.508 af, Depth> 0.91"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Type II 24-hr 2-yr Rainfall=2.67"

Area (sf)	CN	Description
291,452	80	Pasture/grassland/range, Good, HSG D
291,452	100.00%	Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
19.9	836	0.0191	0.70		Lag/CN Method,

Subcatchment PR-5: TOTAL TO INTERNAL WETLAND



Summary for Subcatchment PR-6: ONSITE TO NW CULVERT [WEST]

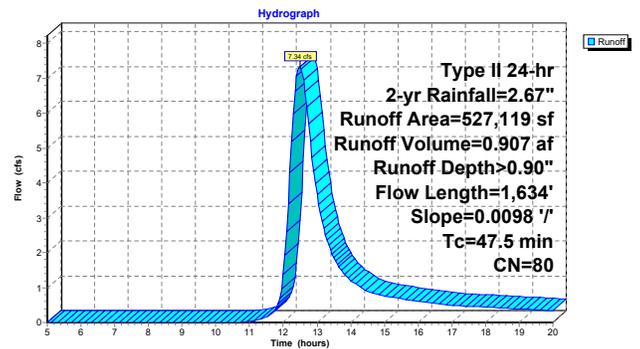
Runoff = 7.34 cfs @ 12.49 hrs, Volume= 0.907 af, Depth> 0.90"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Type II 24-hr 2-yr Rainfall=2.67"

Area (sf)	CN	Description
515,738	80	Pasture/grassland/range, Good, HSG D
11,381	98	Paved parking, HSG D
527,119	80	Weighted Average
515,738	97.84%	Pervious Area
11,381	2.16%	Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
47.5	1,634	0.0098	0.57		Lag/CN Method,

Subcatchment PR-6: ONSITE TO NW CULVERT [WEST]



Summary for Subcatchment PR-7: W CORNER TO SOUTH [OFFSITE]

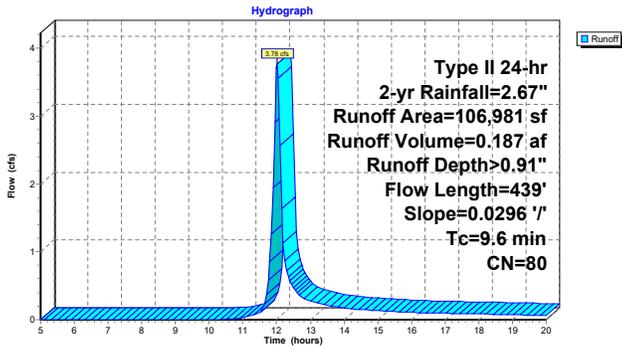
Runoff = 3.78 cfs @ 12.02 hrs, Volume= 0.187 af, Depth> 0.91"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Type II 24-hr 2-yr Rainfall=2.67"

Area (sf)	CN	Description
106,981	80	Pasture/grassland/range, Good, HSG D
106,981	100.00%	Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.6	439	0.0296	0.77		Lag/CN Method,

Subcatchment PR-7: W CORNER TO SOUTH [OFFSITE]



Summary for Subcatchment PR-8: ONSITE TO NW CULVERT [NW]

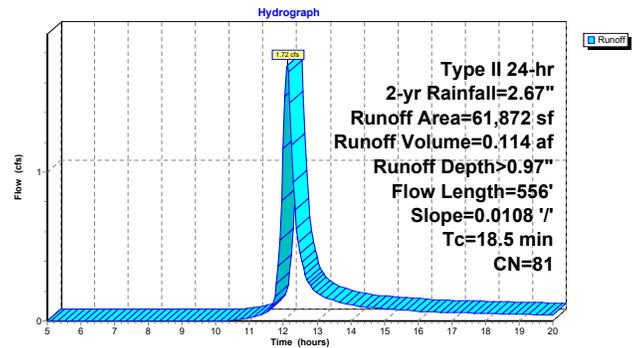
Runoff = 1.72 cfs @ 12.12 hrs, Volume= 0.114 af, Depth> 0.97"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Type II 24-hr 2-yr Rainfall=2.67"

Area (sf)	CN	Description
57,131	80	Pasture/grassland/range, Good, HSG D
4,741	98	Paved parking, HSG D
61,872	81	Weighted Average
57,131		92.34% Pervious Area
4,741		7.66% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
18.5	556	0.0108	0.50		Lag/CN Method,

Subcatchment PR-8: ONSITE TO NW CULVERT [NW]



Summary for Subcatchment PR-9: NE SLIVER TO EAST [OFFSITE]

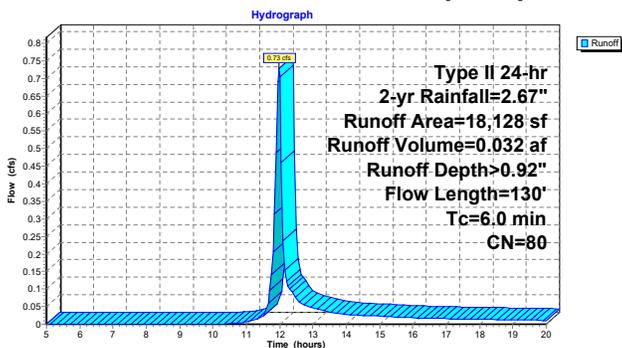
Runoff = 0.73 cfs @ 11.98 hrs, Volume= 0.032 af, Depth> 0.92"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Type II 24-hr 2-yr Rainfall=2.67"

Area (sf)	CN	Description
18,128	80	Pasture/grassland/range, Good, HSG D
18,128	100.00%	Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0	130		0.36		Direct Entry,

Subcatchment PR-9: NE SLIVER TO EAST [OFFSITE]



Summary for Pond 18P: WET POND 1

Inflow Area = 5.147 ac, 12.17% Impervious, Inflow Depth > 1.02' for 2-yr event
 Inflow = 7.11 cfs @ 12.09 hrs, Volume= 0.439 af
 Outflow = 0.92 cfs @ 12.72 hrs, Volume= 0.336 af, Atten= 87%, Lag= 37.7 min
 Primary = 0.92 cfs @ 12.72 hrs, Volume= 0.336 af
 Secondary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Starting Elev= 1,095.00' Surf.Area= 18,969 sf Storage= 55,671 cf
 Peak Elev= 1,095.49' @ 12.72 hrs Surf.Area= 20,272 sf Storage= 65,326 cf (9,655 cf above start)

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
 Center-of-Mass det. time= 102.0 min (906.4 - 804.5)

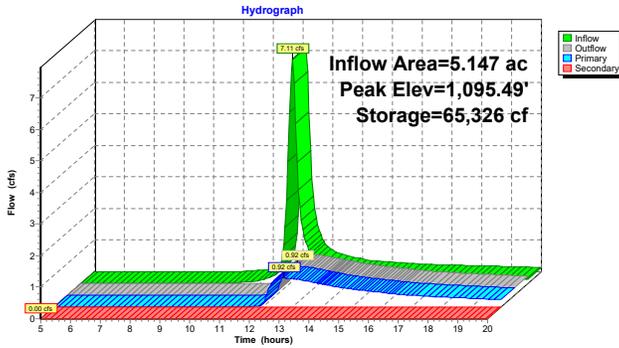
Volume	Invert	Avail.Storage	Storage	Description
#1	1,088.00'	124,982 cf		Custom Stage Data (Prismatic), Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	
1,088.00	2,287	0	0	
1,090.00	4,953	7,240	7,240	
1,092.00	8,136	13,089	20,329	
1,094.00	11,814	19,950	40,279	
1,095.00	18,969	15,392	55,671	
1,096.00	21,616	20,293	75,963	
1,098.00	27,403	49,019	124,982	

Device	Routing	Invert	Outlet Devices
#1	Primary	1,095.00'	12.0" Round RCP, Round 12" L= 55.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 1,095.00' / 1,094.00' S= 0.0182' /' Cc= 0.900 n= 0.012 Concrete pipe, finished, Flow Area= 0.79 sf
#2	Secondary	1,097.00'	5.0' long x 5.0' 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 4.00 4.50 5.00 5.50 Coef. (English) 2.34 2.50 2.70 2.68 2.68 2.66 2.65 2.65 2.65 2.65 2.67 2.66 2.68 2.70 2.74 2.79 2.88

Primary OutFlow Max=0.92 cfs @ 12.72 hrs HW=1,095.49' (Free Discharge)
 1=RCP_Round 12" (Inlet Controls 0.92 cfs @ 2.39 fps)

Secondary OutFlow Max=0.00 cfs @ 5.00 hrs HW=1,095.00' (Free Discharge)
 2=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Pond 18P: WET POND 1



Summary for Pond 19P: WET POND 2

Inflow Area = 10.622 ac, 4.28% Impervious, Inflow Depth > 0.96" for 2-yr event
 Inflow = 9.64 cfs @ 12.25 hrs, Volume= 0.851 af
 Outflow = 0.73 cfs @ 14.44 hrs, Volume= 0.408 af, Atten= 92%, Lag= 131.5 min
 Primary = 0.73 cfs @ 14.44 hrs, Volume= 0.408 af
 Secondary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Starting Elev= 1,093.00' Surf.Area= 52,465 sf Storage= 155,117 cf
 Peak Elev= 1,093.43' @ 14.44 hrs Surf.Area= 54,592 sf Storage= 178,263 cf (23,147 cf above start)

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
 Center-of-Mass det. time= 148.2 min (965.2 - 817.0)

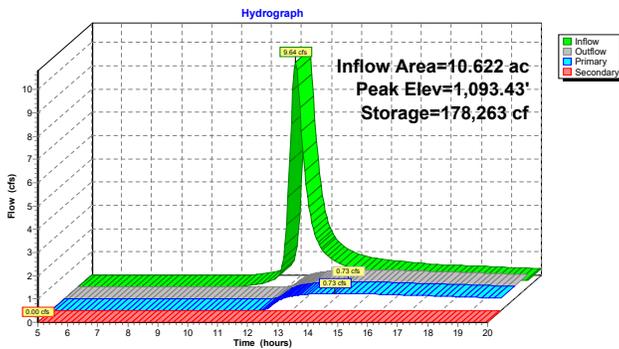
Volume	Invert	Avail.Storage	Storage Description
#1	1,088.00'	334,504 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
1,088.00	20,128	0	0
1,090.00	27,279	47,407	47,407
1,092.00	36,132	63,411	110,818
1,093.00	52,465	44,299	155,117
1,094.00	57,385	54,925	210,042
1,096.00	67,077	124,462	334,504

Device	Routing	Invert	Outlet Devices
#1	Primary	1,093.00'	12.0" Round RCP Round 12" L= 90.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 1,093.00' / 1,092.00' S= 0.0111' /' Cc= 0.900 n= 0.012 Concrete pipe, finished, Flow Area= 0.79 sf
#2	Secondary	1,095.50'	5.0' long x 5.0' 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 4.00 4.50 5.00 5.50 Coef. (English) 2.34 2.50 2.70 2.68 2.68 2.66 2.65 2.65 2.65 2.65 2.65 2.67 2.66 2.68 2.70 2.74 2.79 2.88

Primary OutFlow Max=0.73 cfs @ 14.44 hrs HW=1,093.43' (Free Discharge)
 1=RCP_Round 12" (Inlet Controls 0.73 cfs @ 2.24 fps)

Secondary OutFlow Max=0.00 cfs @ 5.00 hrs HW=1,093.00' (Free Discharge)
 2=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Pond 19P: WET POND 2

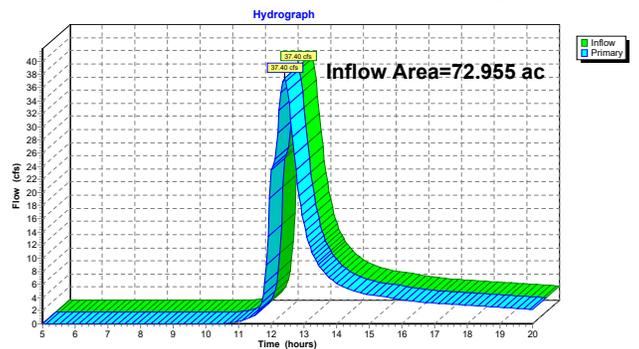


Summary for Link 1L: TOTAL TO NE CULVERT [UNDER I-94]

Inflow Area = 72.955 ac, 0.62% Impervious, Inflow Depth > 0.84" for 2-yr event
 Inflow = 37.40 cfs @ 12.40 hrs, Volume= 5.104 af
 Primary = 37.40 cfs @ 12.40 hrs, Volume= 5.104 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Link 1L: TOTAL TO NE CULVERT [UNDER I-94]

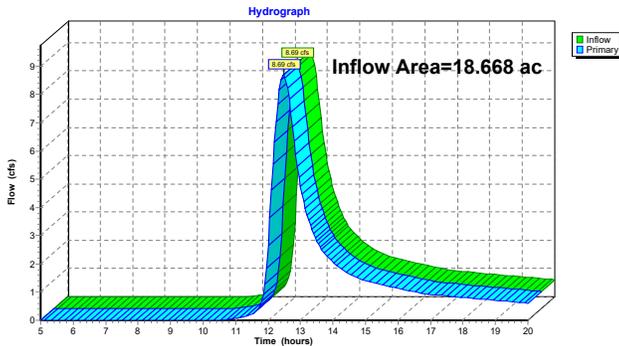


Summary for Link 2L: TOTAL TO NW CULVERT [UNDER HWY 23]

Inflow Area = 18.668 ac, 5.34% Impervious, Inflow Depth > 0.87" for 2-yr event
 Inflow = 8.69 cfs @ 12.48 hrs, Volume= 1.357 af
 Primary = 8.69 cfs @ 12.48 hrs, Volume= 1.357 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Link 2L: TOTAL TO NW CULVERT [UNDER HWY 23]

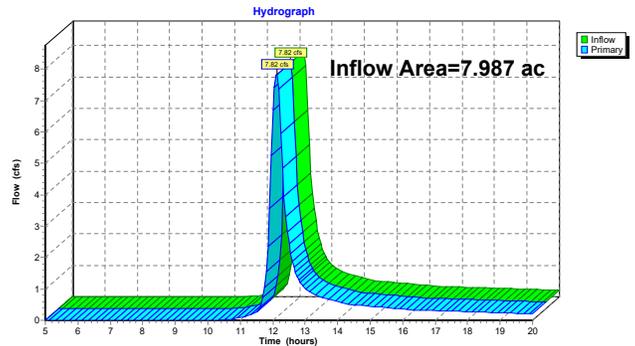


Summary for Link 3L: TOTAL TO INTERNAL WETLAND

Inflow Area = 7.987 ac, 0.00% Impervious, Inflow Depth > 0.91" for 2-yr event
 Inflow = 7.82 cfs @ 12.12 hrs, Volume= 0.607 af
 Primary = 7.82 cfs @ 12.12 hrs, Volume= 0.607 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Link 3L: TOTAL TO INTERNAL WETLAND

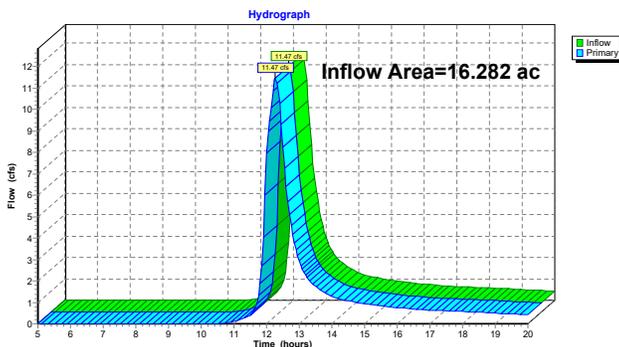


Summary for Link 4L: TOTAL TO OFFSITE

Inflow Area = 16.282 ac, 0.00% Impervious, Inflow Depth > 0.91" for 2-yr event
 Inflow = 11.47 cfs @ 12.28 hrs, Volume= 1.231 af
 Primary = 11.47 cfs @ 12.28 hrs, Volume= 1.231 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Link 4L: TOTAL TO OFFSITE



Summary for Subcatchment OS-1: N OFFSITE TO NE WETLAND

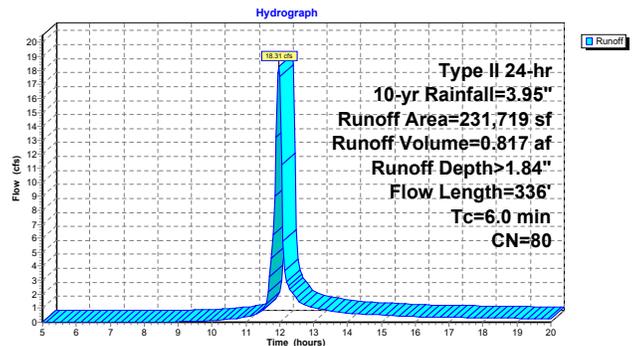
Runoff = 18.31 cfs @ 11.97 hrs, Volume= 0.817 af, Depth> 1.84"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Type II 24-hr 10-yr Rainfall=3.95"

Area (sf)	CN	Description
231,719	80	Pasture/grassland/range, Good, HSG D
231,719		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0	336		0.93		Direct Entry,

Subcatchment OS-1: N OFFSITE TO NE WETLAND



Summary for Subcatchment OS-2: S OFFSITE TO INTERNAL WETLAND

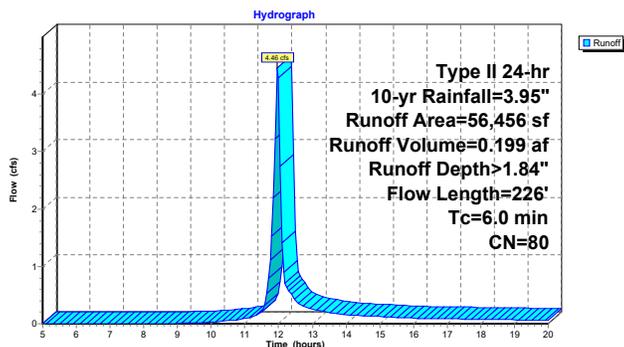
Runoff = 4.46 cfs @ 11.97 hrs, Volume= 0.199 af, Depth> 1.84"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Type II 24-hr 10-yr Rainfall=3.95"

Area (sf)	CN	Description
56,456	80	Pasture/grassland/range, Good, HSG D
56,456		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0	226		0.63		Direct Entry,

Subcatchment OS-2: S OFFSITE TO INTERNAL WETLAND



Summary for Subcatchment OS-3: SE OFFSITE TO NE WETLAND

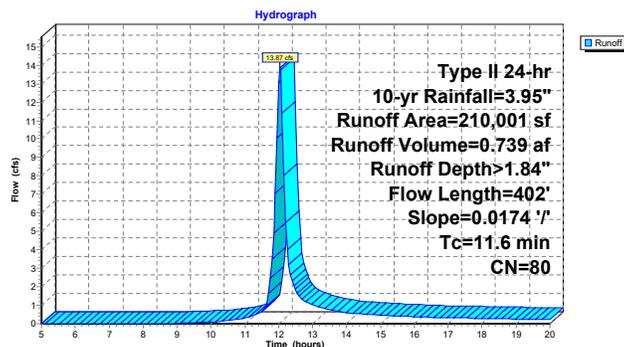
Runoff = 13.87 cfs @ 12.04 hrs, Volume= 0.739 af, Depth> 1.84"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Type II 24-hr 10-yr Rainfall=3.95"

Area (sf)	CN	Description
210,001	80	Pasture/grassland/range, Good, HSG D
210,001		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.6	402	0.0174	0.58		Lag/CN Method,

Subcatchment OS-3: SE OFFSITE TO NE WETLAND



Summary for Subcatchment PR-1: ROAD TO POND INLET

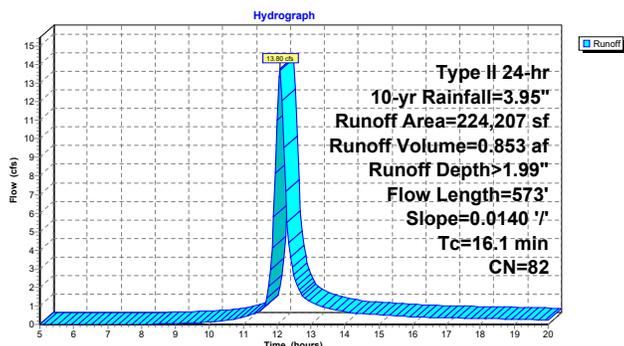
Runoff = 13.80 cfs @ 12.08 hrs, Volume= 0.853 af, Depth> 1.99"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Type II 24-hr 10-yr Rainfall=3.95"

Area (sf)	CN	Description
196,917	80	Pasture/grassland/range, Good, HSG D
27,290	98	Paved parking, HSG D
224,207	82	Weighted Average
196,917		87.83% Pervious Area
27,290		12.17% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
16.1	573	0.0140	0.59		Lag/CN Method,

Subcatchment PR-1: ROAD TO POND INLET



Summary for Subcatchment PR-2: ROAD TO POND INLET

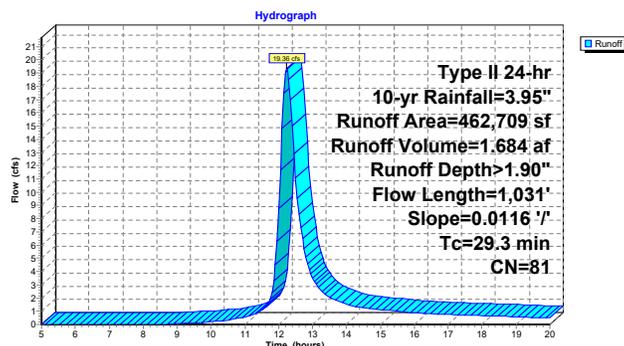
Runoff = 19.36 cfs @ 12.24 hrs, Volume= 1.684 af, Depth> 1.90"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Type II 24-hr 10-yr Rainfall=3.95"

Area (sf)	CN	Description
442,894	80	Pasture/grassland/range, Good, HSG D
19,815	98	Paved parking, HSG D
462,709	81	Weighted Average
442,894		95.72% Pervious Area
19,815		4.28% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
29.3	1,031	0.0116	0.59		Lag/CN Method,

Subcatchment PR-2: ROAD TO POND INLET



Summary for Subcatchment PR-3: NE WETLAND TO NE CULVERT

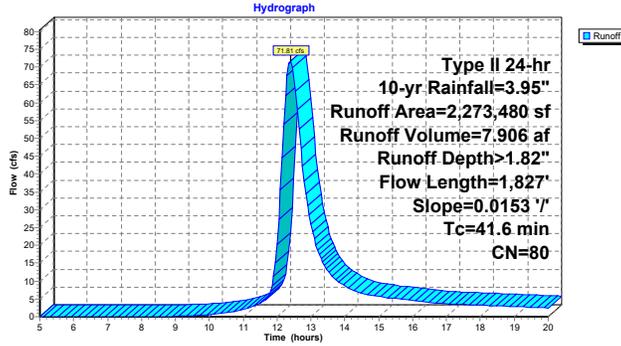
Runoff = 71.81 cfs @ 12.39 hrs, Volume= 7.906 af, Depth> 1.82"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Type II 24-hr 10-yr Rainfall=3.95"

Area (sf)	CN	Description
2,273,480	80	Pasture/grassland/range, Good, HSG D
2,273,480	100.00%	Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
41.6	1,827	0.0153	0.73		Lag/CN Method,

Subcatchment PR-3: NE WETLAND TO NE CULVERT



Summary for Subcatchment PR-4: WETLAND COMPLEX TO SOUTH [OFFSITE]

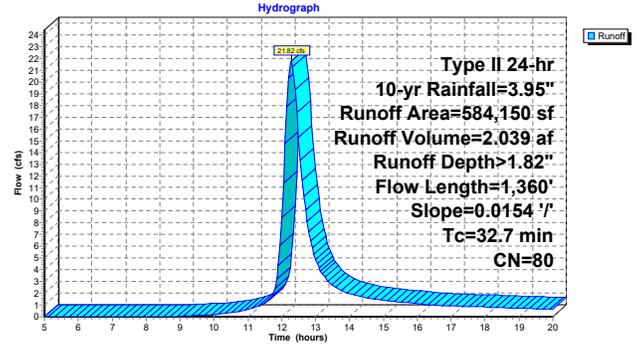
Runoff = 21.82 cfs @ 12.28 hrs, Volume= 2.039 af, Depth> 1.82"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Type II 24-hr 10-yr Rainfall=3.95"

Area (sf)	CN	Description
584,150	80	Pasture/grassland/range, Good, HSG D
584,150	100.00%	Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
32.7	1,360	0.0154	0.69		Lag/CN Method,

Subcatchment PR-4: WETLAND COMPLEX TO SOUTH [OFFSITE]



Summary for Subcatchment PR-5: TOTAL TO INTERNAL WETLAND

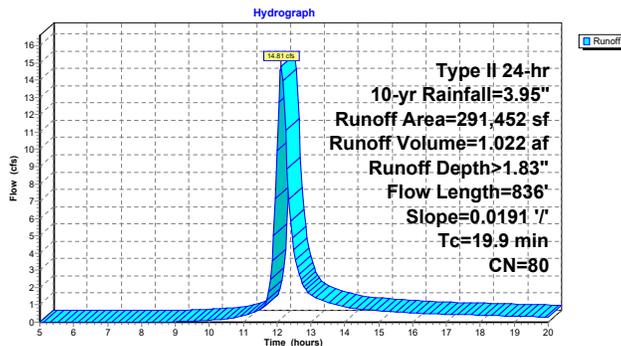
Runoff = 14.81 cfs @ 12.13 hrs, Volume= 1.022 af, Depth> 1.83"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Type II 24-hr 10-yr Rainfall=3.95"

Area (sf)	CN	Description
291,452	80	Pasture/grassland/range, Good, HSG D
291,452	100.00%	Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
19.9	836	0.0191	0.70		Lag/CN Method,

Subcatchment PR-5: TOTAL TO INTERNAL WETLAND



Summary for Subcatchment PR-6: ONSITE TO NW CULVERT [WEST]

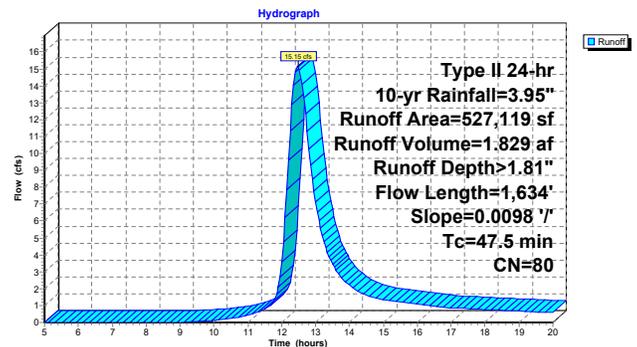
Runoff = 15.15 cfs @ 12.47 hrs, Volume= 1.829 af, Depth> 1.81"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Type II 24-hr 10-yr Rainfall=3.95"

Area (sf)	CN	Description
515,738	80	Pasture/grassland/range, Good, HSG D
11,381	98	Paved parking, HSG D
527,119	80	Weighted Average
515,738	97.84%	Pervious Area
11,381	2.16%	Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
47.5	1,634	0.0098	0.57		Lag/CN Method,

Subcatchment PR-6: ONSITE TO NW CULVERT [WEST]



Summary for Subcatchment PR-7: W CORNER TO SOUTH [OFFSITE]

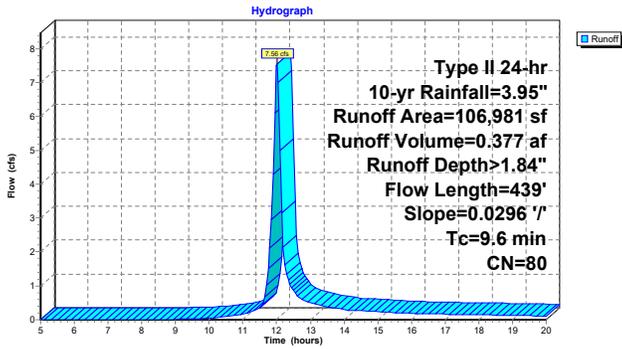
Runoff = 7.56 cfs @ 12.01 hrs, Volume= 0.377 af, Depth> 1.84"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Type II 24-hr 10-yr Rainfall=3.95"

Area (sf)	CN	Description
106,981	80	Pasture/grassland/range, Good, HSG D
106,981		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.6	439	0.0296	0.77		Lag/CN Method,

Subcatchment PR-7: W CORNER TO SOUTH [OFFSITE]



Summary for Subcatchment PR-8: ONSITE TO NW CULVERT [NW]

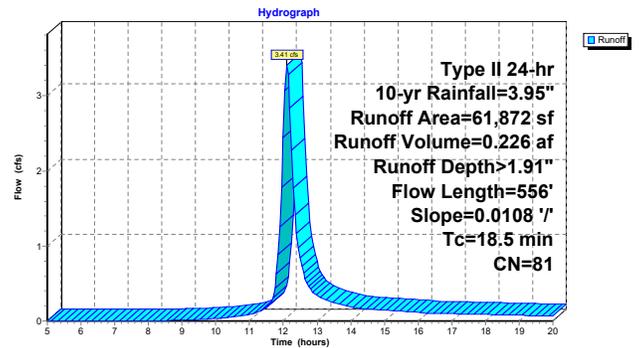
Runoff = 3.41 cfs @ 12.11 hrs, Volume= 0.226 af, Depth> 1.91"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Type II 24-hr 10-yr Rainfall=3.95"

Area (sf)	CN	Description
57,131	80	Pasture/grassland/range, Good, HSG D
4,741	98	Paved parking, HSG D
61,872	81	Weighted Average
57,131		92.34% Pervious Area
4,741		7.66% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
18.5	556	0.0108	0.50		Lag/CN Method,

Subcatchment PR-8: ONSITE TO NW CULVERT [NW]



Summary for Subcatchment PR-9: NE SLIVER TO EAST [OFFSITE]

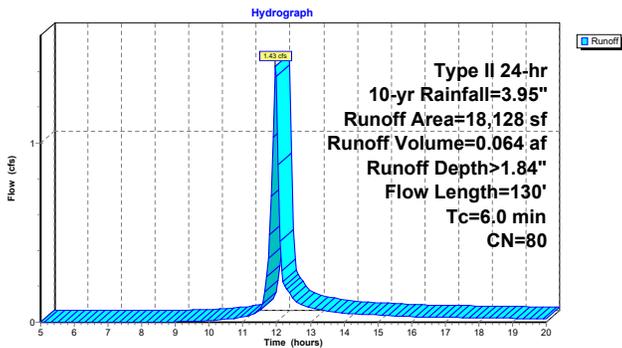
Runoff = 1.43 cfs @ 11.97 hrs, Volume= 0.064 af, Depth> 1.84"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Type II 24-hr 10-yr Rainfall=3.95"

Area (sf)	CN	Description
18,128	80	Pasture/grassland/range, Good, HSG D
18,128		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0	130		0.36		Direct Entry,

Subcatchment PR-9: NE SLIVER TO EAST [OFFSITE]



Summary for Pond 18P: WET POND 1

Inflow Area = 5.147 ac, 12.17% Impervious, Inflow Depth > 1.99" for 10-yr event
 Inflow = 13.80 cfs @ 12.08 hrs, Volume= 0.853 af
 Outflow = 2.46 cfs @ 12.53 hrs, Volume= 0.721 af, Atten= 82%, Lag= 27.0 min
 Primary = 2.46 cfs @ 12.53 hrs, Volume= 0.721 af
 Secondary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Starting Elev= 1,095.00' Surf.Area= 18,969 sf Storage= 55,671 cf
 Peak Elev= 1,095.92' @ 12.53 hrs Surf.Area= 21,401 sf Storage= 74,217 cf (18,547 cf above start)

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
 Center-of-Mass det. time= 89.3 min (879.8 - 790.5)

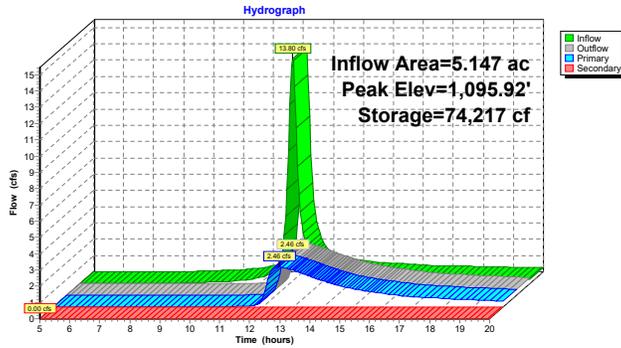
Volume	Invert	Avail.Storage	Storage Description
#1	1,088.00'	124,982 cf	Custom Stage Data (Prismatic), Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
1,088.00	2,287	0	0
1,090.00	4,953	7,240	7,240
1,092.00	8,136	13,089	20,329
1,094.00	11,814	19,950	40,279
1,095.00	18,969	15,392	55,671
1,096.00	21,616	20,293	75,963
1,098.00	27,403	49,019	124,982

Device	Routing	Invert	Outlet Devices
#1	Primary	1,095.00'	12.0" Round RCP, Round 12" L= 55.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 1,095.00' / 1,094.00' S= 0.0182' /' Cc= 0.900 n= 0.012 Concrete pipe, finished, Flow Area= 0.79 sf
#2	Secondary	1,097.00'	5.0' long x 5.0' 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 4.00 4.50 5.00 5.50 Coef. (English) 2.34 2.50 2.70 2.68 2.68 2.66 2.65 2.65 2.65 2.65 2.67 2.66 2.68 2.70 2.74 2.79 2.88

Primary OutFlow Max=2.46 cfs @ 12.53 hrs HW=1,095.92' (Free Discharge)
 1=RCP, Round 12" (Inlet Controls 2.46 cfs @ 3.26 fps)

Secondary OutFlow Max=0.00 cfs @ 5.00 hrs HW=1,095.00' (Free Discharge)
 2=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Pond 18P: WET POND 1



Summary for Pond 19P: WET POND 2

Inflow Area = 10.622 ac, 4.28% Impervious, Inflow Depth > 1.90" for 10-yr event
 Inflow = 19.36 cfs @ 12.24 hrs, Volume= 1.684 af
 Outflow = 2.08 cfs @ 13.48 hrs, Volume= 1.032 af, Atten= 89%, Lag= 74.7 min
 Primary = 2.08 cfs @ 13.48 hrs, Volume= 1.032 af
 Secondary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Starting Elev= 1,093.00' Surf.Area= 52,465 sf Storage= 155,117 cf
 Peak Elev= 1,093.81' @ 13.48 hrs Surf.Area= 56,437 sf Storage= 199,075 cf (43,959 cf above start)

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
 Center-of-Mass det. time= 140.5 min (943.5 - 803.0)

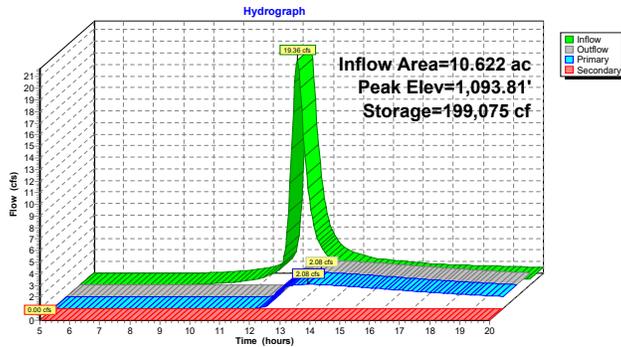
Volume	Invert	Avail.Storage	Storage Description
#1	1,088.00'	334,504 cf	Custom Stage Data (Prismatic>Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
1,088.00	20,128	0	0
1,090.00	27,279	47,407	47,407
1,092.00	36,132	63,411	110,818
1,093.00	52,465	44,299	155,117
1,094.00	57,385	54,925	210,042
1,096.00	67,077	124,462	334,504

Device	Routing	Invert	Outlet Devices
#1	Primary	1,093.00'	12.0" Round RCP_Round 12" L= 90.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 1,093.00' / 1,092.00' S= 0.01111' Cc= 0.900 n= 0.012 Concrete pipe, finished, Flow Area= 0.79 sf
#2	Secondary	1,095.50'	5.0' long x 5.0' 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 4.00 4.50 5.00 5.50 Coef. (English) 2.34 2.50 2.70 2.68 2.68 2.66 2.65 2.65 2.65 2.65 2.67 2.66 2.68 2.70 2.74 2.79 2.88

Primary OutFlow Max=2.08 cfs @ 13.48 hrs HW=1,093.81' (Free Discharge)
 1=RCP_Round 12" (Inlet Controls 2.08 cfs @ 3.06 fps)

Secondary OutFlow Max=0.00 cfs @ 5.00 hrs HW=1,093.00' (Free Discharge)
 2=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Pond 19P: WET POND 2

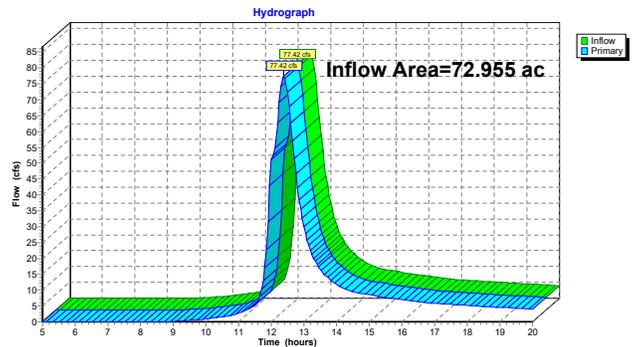


Summary for Link 1L: TOTAL TO NE CULVERT [UNDER I-94]

Inflow Area = 72.955 ac, 0.62% Impervious, Inflow Depth > 1.73" for 10-yr event
 Inflow = 77.42 cfs @ 12.38 hrs, Volume= 10.494 af
 Primary = 77.42 cfs @ 12.38 hrs, Volume= 10.494 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Link 1L: TOTAL TO NE CULVERT [UNDER I-94]

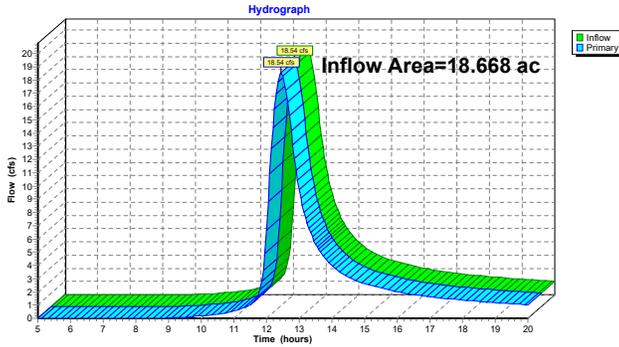


Summary for Link 2L: TOTAL TO NW CULVERT [UNDER HWY 23]

Inflow Area = 18.668 ac, 5.34% Impervious, Inflow Depth > 1.78" for 10-yr event
 Inflow = 18.54 cfs @ 12.45 hrs, Volume= 2.775 af
 Primary = 18.54 cfs @ 12.45 hrs, Volume= 2.775 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Link 2L: TOTAL TO NW CULVERT [UNDER HWY 23]

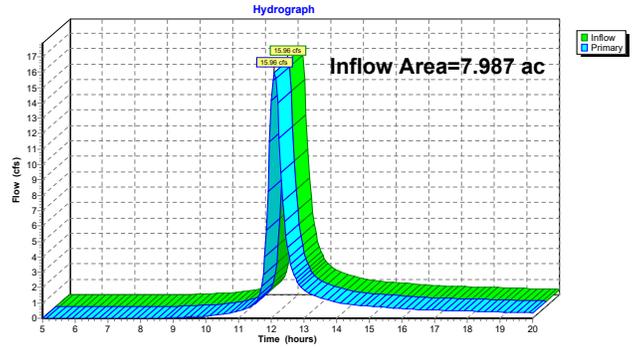


Summary for Link 3L: TOTAL TO INTERNAL WETLAND

Inflow Area = 7.987 ac, 0.00% Impervious, Inflow Depth > 1.83" for 10-yr event
 Inflow = 15.96 cfs @ 12.10 hrs, Volume= 1.221 af
 Primary = 15.96 cfs @ 12.10 hrs, Volume= 1.221 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Link 3L: TOTAL TO INTERNAL WETLAND

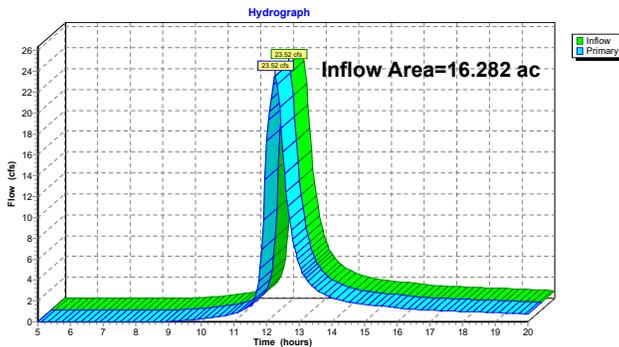


Summary for Link 4L: TOTAL TO OFFSITE

Inflow Area = 16.282 ac, 0.00% Impervious, Inflow Depth > 1.83" for 10-yr event
 Inflow = 23.52 cfs @ 12.27 hrs, Volume= 2.479 af
 Primary = 23.52 cfs @ 12.27 hrs, Volume= 2.479 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Link 4L: TOTAL TO OFFSITE



Summary for Subcatchment OS-1: N OFFSITE TO NE WETLAND

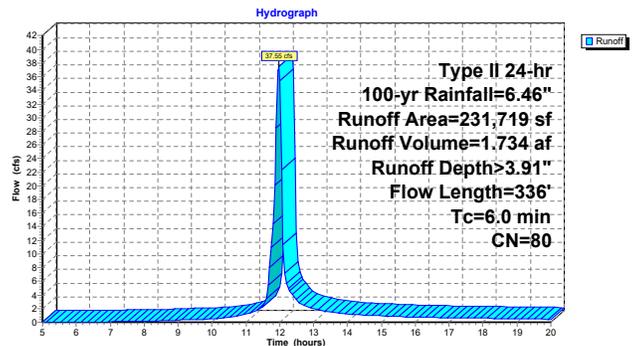
Runoff = 37.55 cfs @ 11.97 hrs, Volume= 1.734 af, Depth> 3.91"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Type II 24-hr 100-yr Rainfall=6.46"

Area (sf)	CN	Description
231,719	80	Pasture/grassland/range, Good, HSG D
231,719		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0	336		0.93		Direct Entry,

Subcatchment OS-1: N OFFSITE TO NE WETLAND



Summary for Subcatchment OS-2: S OFFSITE TO INTERNAL WETLAND

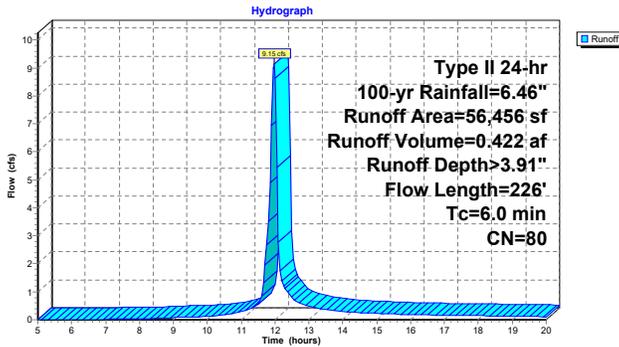
Runoff = 9.15 cfs @ 11.97 hrs, Volume= 0.422 af, Depth> 3.91"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Type II 24-hr 100-yr Rainfall=6.46"

Area (sf)	CN	Description
56,456	80	Pasture/grassland/range, Good, HSG D
56,456		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0	226		0.63		Direct Entry,

Subcatchment OS-2: S OFFSITE TO INTERNAL WETLAND



Summary for Subcatchment OS-3: SE OFFSITE TO NE WETLAND

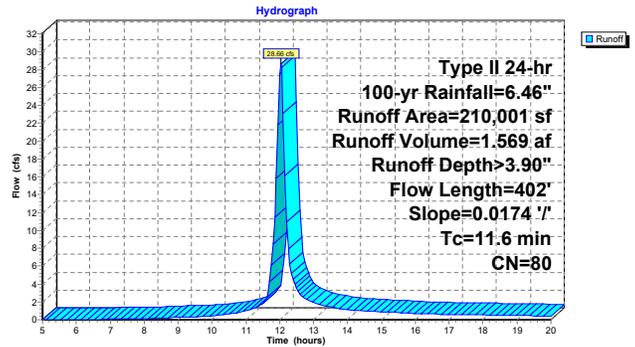
Runoff = 28.66 cfs @ 12.03 hrs, Volume= 1.569 af, Depth> 3.90"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Type II 24-hr 100-yr Rainfall=6.46"

Area (sf)	CN	Description
210,001	80	Pasture/grassland/range, Good, HSG D
210,001		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.6	402	0.0174	0.58		Lag/CN Method,

Subcatchment OS-3: SE OFFSITE TO NE WETLAND



Summary for Subcatchment PR-1: ROAD TO POND INLET

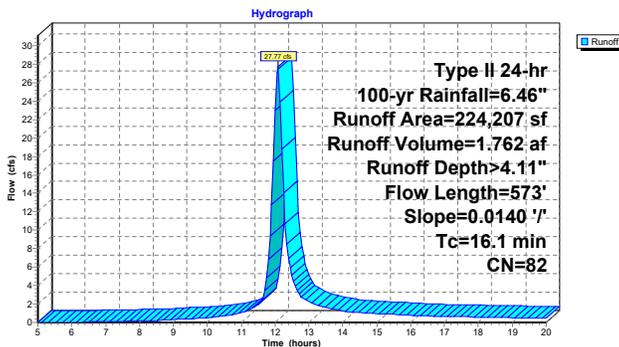
Runoff = 27.77 cfs @ 12.08 hrs, Volume= 1.762 af, Depth> 4.11"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Type II 24-hr 100-yr Rainfall=6.46"

Area (sf)	CN	Description
196,917	80	Pasture/grassland/range, Good, HSG D
27,290	98	Paved parking, HSG D
224,207	82	Weighted Average
196,917		87.83% Pervious Area
27,290		12.17% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
16.1	573	0.0140	0.59		Lag/CN Method,

Subcatchment PR-1: ROAD TO POND INLET



Summary for Subcatchment PR-2: ROAD TO POND INLET

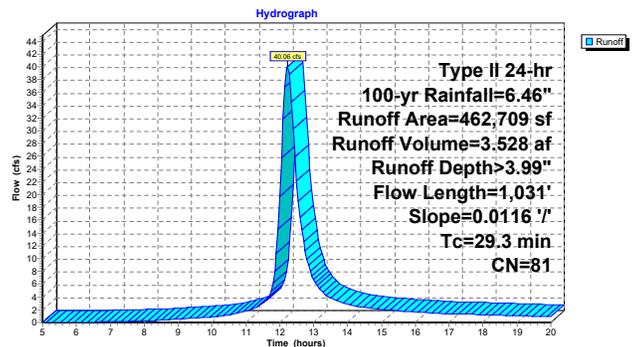
Runoff = 40.06 cfs @ 12.23 hrs, Volume= 3.528 af, Depth> 3.99"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Type II 24-hr 100-yr Rainfall=6.46"

Area (sf)	CN	Description
442,894	80	Pasture/grassland/range, Good, HSG D
19,815	98	Paved parking, HSG D
462,709	81	Weighted Average
442,894		95.72% Pervious Area
19,815		4.28% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
29.3	1,031	0.0116	0.59		Lag/CN Method,

Subcatchment PR-2: ROAD TO POND INLET



Summary for Subcatchment PR-3: NE WETLAND TO NE CULVERT

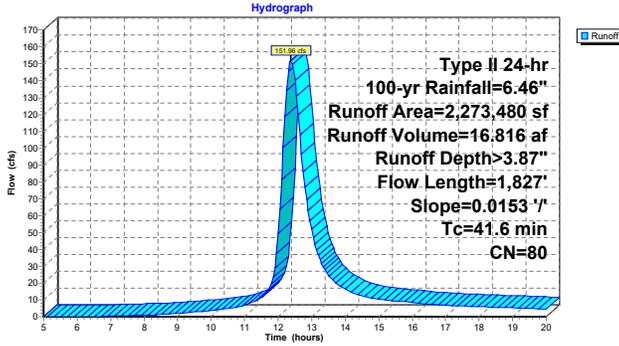
Runoff = 151.96 cfs @ 12.38 hrs, Volume= 16.816 af, Depth> 3.87"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Type II 24-hr 100-yr Rainfall=6.46"

Area (sf)	CN	Description
2,273,480	80	Pasture/grassland/range, Good, HSG D
2,273,480	100.00%	Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
41.6	1,827	0.0153	0.73		Lag/CN Method,

Subcatchment PR-3: NE WETLAND TO NE CULVERT



Summary for Subcatchment PR-4: WETLAND COMPLEX TO SOUTH [OFFSITE]

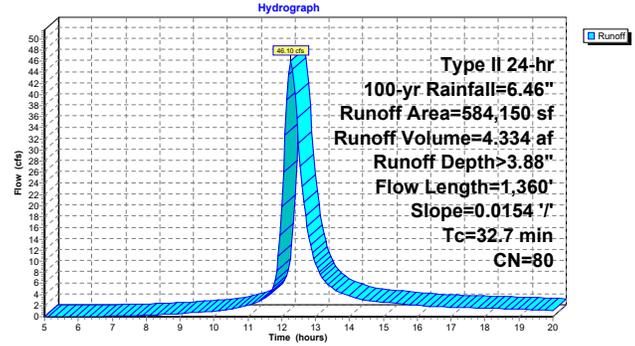
Runoff = 46.10 cfs @ 12.27 hrs, Volume= 4.334 af, Depth> 3.88"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Type II 24-hr 100-yr Rainfall=6.46"

Area (sf)	CN	Description
584,150	80	Pasture/grassland/range, Good, HSG D
584,150	100.00%	Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
32.7	1,360	0.0154	0.69		Lag/CN Method,

Subcatchment PR-4: WETLAND COMPLEX TO SOUTH [OFFSITE]



Summary for Subcatchment PR-5: TOTAL TO INTERNAL WETLAND

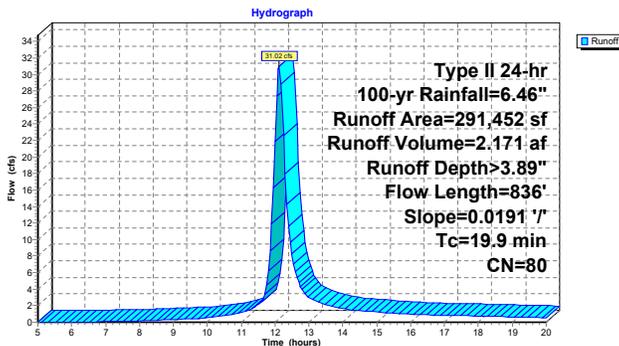
Runoff = 31.02 cfs @ 12.12 hrs, Volume= 2.171 af, Depth> 3.89"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Type II 24-hr 100-yr Rainfall=6.46"

Area (sf)	CN	Description
291,452	80	Pasture/grassland/range, Good, HSG D
291,452	100.00%	Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
19.9	836	0.0191	0.70		Lag/CN Method,

Subcatchment PR-5: TOTAL TO INTERNAL WETLAND



Summary for Subcatchment PR-6: ONSITE TO NW CULVERT [WEST]

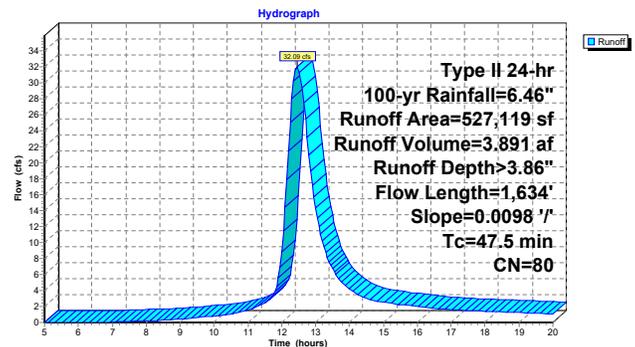
Runoff = 32.09 cfs @ 12.46 hrs, Volume= 3.891 af, Depth> 3.86"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Type II 24-hr 100-yr Rainfall=6.46"

Area (sf)	CN	Description
515,738	80	Pasture/grassland/range, Good, HSG D
11,381	98	Paved parking, HSG D
527,119	80	Weighted Average
515,738	97.84%	Pervious Area
11,381	2.16%	Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
47.5	1,634	0.0098	0.57		Lag/CN Method,

Subcatchment PR-6: ONSITE TO NW CULVERT [WEST]



Summary for Subcatchment PR-7: W CORNER TO SOUTH [OFFSITE]

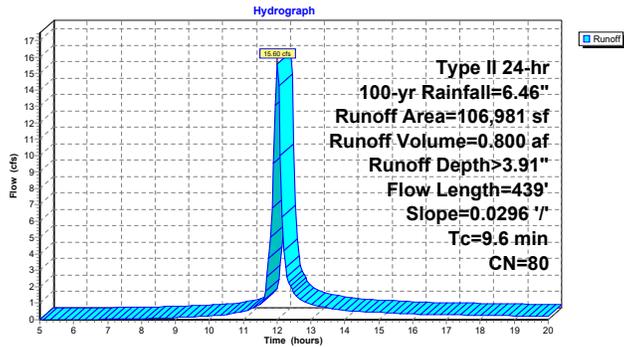
Runoff = 15.60 cfs @ 12.01 hrs, Volume= 0.800 af, Depth> 3.91"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Type II 24-hr 100-yr Rainfall=6.46"

Area (sf)	CN	Description
106,981	80	Pasture/grassland/range, Good, HSG D
106,981		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.6	439	0.0296	0.77		Lag/CN Method,

Subcatchment PR-7: W CORNER TO SOUTH [OFFSITE]



Summary for Subcatchment PR-8: ONSITE TO NW CULVERT [NW]

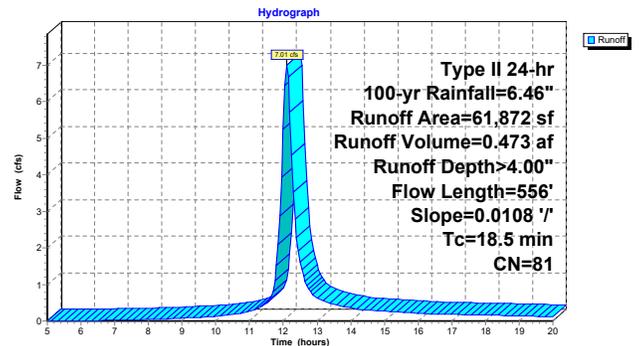
Runoff = 7.01 cfs @ 12.11 hrs, Volume= 0.473 af, Depth> 4.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Type II 24-hr 100-yr Rainfall=6.46"

Area (sf)	CN	Description
57,131	80	Pasture/grassland/range, Good, HSG D
4,741	98	Paved parking, HSG D
61,872	81	Weighted Average
57,131		92.34% Pervious Area
4,741		7.66% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
18.5	556	0.0108	0.50		Lag/CN Method,

Subcatchment PR-8: ONSITE TO NW CULVERT [NW]



Summary for Subcatchment PR-9: NE SLIVER TO EAST [OFFSITE]

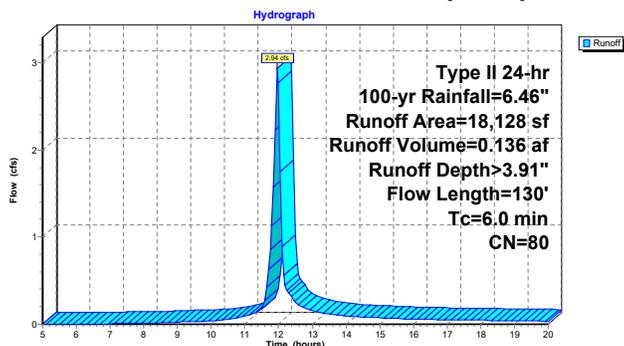
Runoff = 2.94 cfs @ 11.97 hrs, Volume= 0.136 af, Depth> 3.91"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Type II 24-hr 100-yr Rainfall=6.46"

Area (sf)	CN	Description
18,128	80	Pasture/grassland/range, Good, HSG D
18,128		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0	130		0.36		Direct Entry,

Subcatchment PR-9: NE SLIVER TO EAST [OFFSITE]



Summary for Pond 18P: WET POND 1

Inflow Area = 5.147 ac, 12.17% Impervious, Inflow Depth > 4.11" for 100-yr event
 Inflow = 27.77 cfs @ 12.08 hrs, Volume= 1.762 af
 Outflow = 4.39 cfs @ 12.56 hrs, Volume= 1.579 af, Atten= 84%, Lag= 28.6 min
 Primary = 4.39 cfs @ 12.56 hrs, Volume= 1.579 af
 Secondary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Starting Elev= 1,095.00' Surf.Area= 18,969 sf Storage= 55,671 cf
 Peak Elev= 1,096.85' @ 12.56 hrs Surf.Area= 24,065 sf Storage= 95,293 cf (39,623 cf above start)

Plug-Flow detention time= 434.5 min calculated for 0.301 af (17% of inflow)
 Center-of-Mass det. time= 100.1 min (874.4 - 774.3)

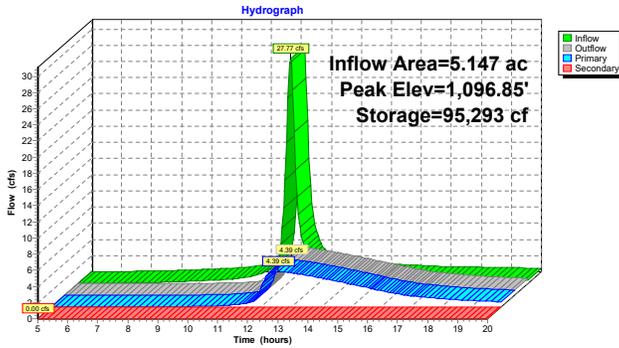
Volume	Invert	Avail.Storage	Storage Description
#1	1,088.00'	124,982 cf	Custom Stage Data (Prismatic), Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
1,088.00	2,287	0	0
1,090.00	4,953	7,240	7,240
1,092.00	8,136	13,089	20,329
1,094.00	11,814	19,950	40,279
1,095.00	18,969	15,392	55,671
1,096.00	21,616	20,293	75,963
1,098.00	27,403	49,019	124,982

Device	Routing	Invert	Outlet Devices
#1	Primary	1,095.00'	12.0" Round RCP, Round 12" L= 55.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 1,095.00' / 1,094.00' S= 0.0182' /' Cc= 0.900 n= 0.012 Concrete pipe, finished, Flow Area= 0.79 sf
#2	Secondary	1,097.00'	5.0' long x 5.0' 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 4.00 4.50 5.00 5.50 Coef. (English) 2.34 2.50 2.70 2.68 2.68 2.66 2.65 2.65 2.65 2.65 2.67 2.66 2.68 2.70 2.74 2.79 2.88

Primary OutFlow Max=4.39 cfs @ 12.56 hrs HW=1,096.85' (Free Discharge)
 1=RCP_Round 12" (Inlet Controls 4.39 cfs @ 5.59 fps)

Secondary OutFlow Max=0.00 cfs @ 5.00 hrs HW=1,095.00' (Free Discharge)
 2=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Pond 18P: WET POND 1



Summary for Pond 19P: WET POND 2

Inflow Area = 10.622 ac, 4.28% Impervious, Inflow Depth > 3.99" for 100-yr event
 Inflow = 40.06 cfs @ 12.23 hrs, Volume= 3,528 af
 Outflow = 4.11 cfs @ 13.42 hrs, Volume= 2,316 af, Atten= 90%, Lag= 71.3 min
 Primary = 4.11 cfs @ 13.42 hrs, Volume= 2,316 af
 Secondary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Starting Elev= 1,093.00' Surf.Area= 52,465 sf Storage= 155,117 cf
 Peak Elev= 1,094.68' @ 13.42 hrs Surf.Area= 60,676 sf Storage= 250,131 cf (95,015 cf above start)

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
 Center-of-Mass det. time= 158.6 min (945.5 - 786.9)

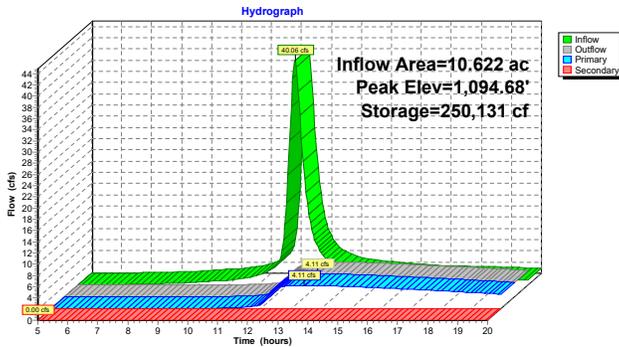
Volume	Invert	Avail.Storage	Storage	Description
#1	1,088.00'	334,504 cf		Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	
1,088.00	20,128	0	0	
1,090.00	27,279	47,407	47,407	
1,092.00	36,132	63,411	110,818	
1,093.00	52,465	44,299	155,117	
1,094.00	57,385	54,925	210,042	
1,096.00	67,077	124,462	334,504	

Device	Routing	Invert	Outlet Devices
#1	Primary	1,093.00'	12.0" Round RCP Round 12" L= 90.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 1,093.00' / 1,092.00' S= 0.0111' /' Cc= 0.900 n= 0.012 Concrete pipe, finished, Flow Area= 0.79 sf
#2	Secondary	1,095.50'	5.0' long x 5.0' 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 4.00 4.50 5.00 5.50 Coef. (English) 2.34 2.50 2.70 2.68 2.68 2.66 2.65 2.65 2.65 2.65 2.67 2.66 2.68 2.70 2.74 2.79 2.88

Primary OutFlow Max=4.11 cfs @ 13.42 hrs HW=1,094.68' (Free Discharge)
 1=RCP Round 12" (Inlet Controls 4.11 cfs @ 5.23 fps)

Secondary OutFlow Max=0.00 cfs @ 5.00 hrs HW=1,093.00' (Free Discharge)
 2=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Pond 19P: WET POND 2

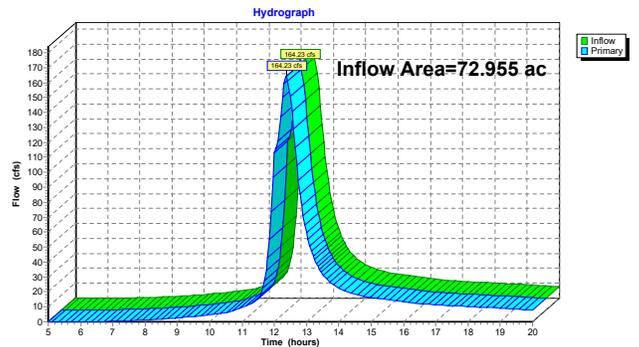


Summary for Link 1L: TOTAL TO NE CULVERT [UNDER I-94]

Inflow Area = 72.955 ac, 0.62% Impervious, Inflow Depth > 3.69" for 100-yr event
 Inflow = 164.23 cfs @ 12.37 hrs, Volume= 22,434 af
 Primary = 164.23 cfs @ 12.37 hrs, Volume= 22,434 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Link 1L: TOTAL TO NE CULVERT [UNDER I-94]

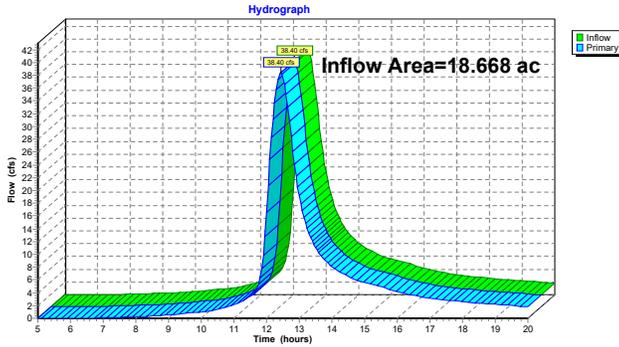


Summary for Link 2L: TOTAL TO NW CULVERT [UNDER HWY 23]

Inflow Area = 18.668 ac, 5.34% Impervious, Inflow Depth > 3.82" for 100-yr event
Inflow = 38.40 cfs @ 12.43 hrs, Volume= 5.944 af
Primary = 38.40 cfs @ 12.43 hrs, Volume= 5.944 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Link 2L: TOTAL TO NW CULVERT [UNDER HWY 23]

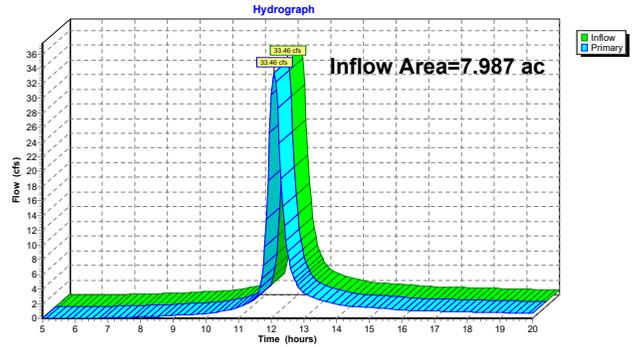


Summary for Link 3L: TOTAL TO INTERNAL WETLAND

Inflow Area = 7.987 ac, 0.00% Impervious, Inflow Depth > 3.90" for 100-yr event
Inflow = 33.46 cfs @ 12.09 hrs, Volume= 2.594 af
Primary = 33.46 cfs @ 12.09 hrs, Volume= 2.594 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Link 3L: TOTAL TO INTERNAL WETLAND

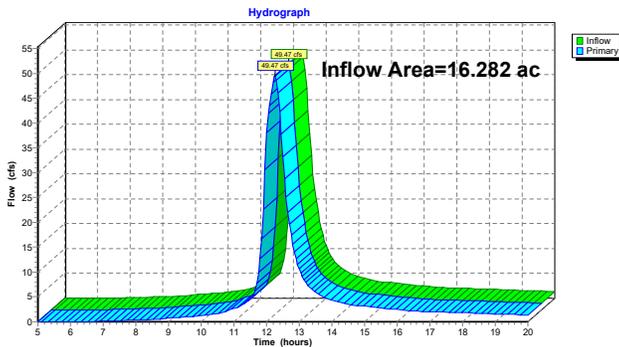


Summary for Link 4L: TOTAL TO OFFSITE

Inflow Area = 16.282 ac, 0.00% Impervious, Inflow Depth > 3.88" for 100-yr event
Inflow = 49.47 cfs @ 12.25 hrs, Volume= 5.269 af
Primary = 49.47 cfs @ 12.25 hrs, Volume= 5.269 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Link 4L: TOTAL TO OFFSITE



HydroCAD Water Quality Summary

190188 Pond 1 WQ Calc

Prepared by ALLIANT ENGINEERING

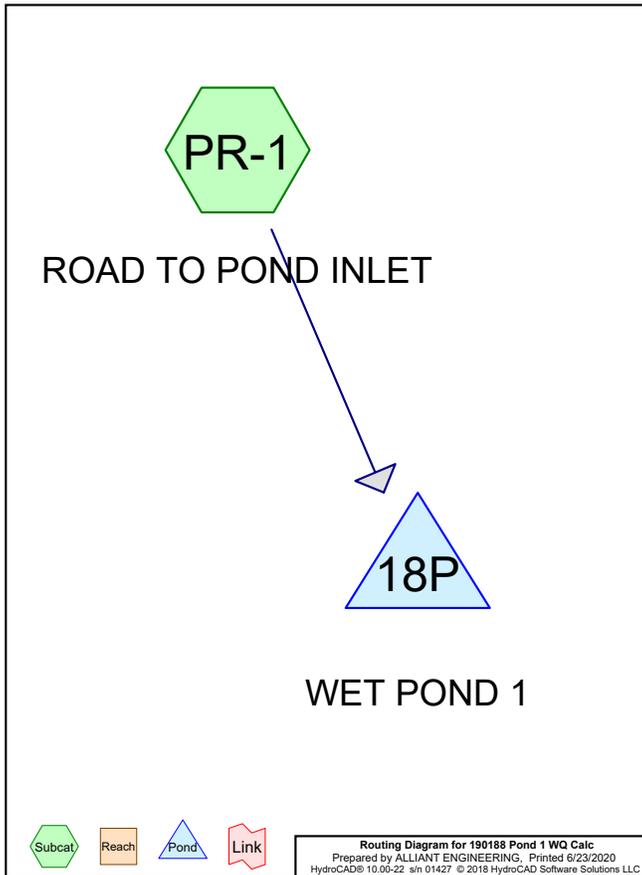
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Area Listing (selected nodes)

Area (acres)	CN	Description (subcatchment-numbers)
4.521	80	Pasture/grassland/range, Good, HSG D (PR-1)
0.626	98	Paved parking, HSG D (PR-1)
5.147	82	TOTAL AREA



190188 Pond 1 WQ Calc

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POND 1 WATER QUALITY CALCULATION
Type II 24-hr WQ CALC Rainfall=1.46"

Summary for Subcatchment PR-1: ROAD TO POND INLET

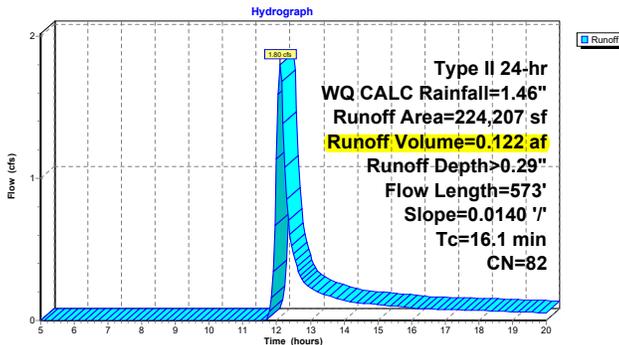
Runoff = 1.80 cfs @ 12.11 hrs, Volume= 0.122 af, Depth> 0.29"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr WQ CALC Rainfall=1.46"

Area (sf)	CN	Description
196,917	80	Pasture/grassland/range, Good, HSG D
27,290	98	Paved parking, HSG D
224,207	82	Weighted Average
196,917		87.83% Pervious Area
27,290		12.17% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
16.1	573	0.0140	0.59		Lag/CN Method,

Subcatchment PR-1: ROAD TO POND INLET



190188 Pond 1 WQ Calc

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POND 1 WATER QUALITY CALCULATION
Type II 24-hr WQ CALC Rainfall=1.46"

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Summary for Pond 18P: WET POND 1

Inflow Area = 5.147 ac, 12.17% Impervious, Inflow Depth > 0.29" for WQ CALC event
Inflow = 1.80 cfs @ 12.11 hrs, Volume= 0.122 af
Outflow = 0.11 cfs @ 14.91 hrs, Volume= 0.064 af, Atten= 94%, Lag= 168.4 min
Primary = 0.11 cfs @ 14.91 hrs, Volume= 0.064 af
Secondary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Starting Elev= 1,095.00' Surf.Area= 18,969 sf Storage= 55,671 cf
Peak Elev= 1,095.15' @ 14.91 hrs Surf.Area= 19,378 sf Storage= 58,631 cf (2,961 cf above start)

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
Center-of-Mass det. time= 133.0 min (965.3 - 832.3)

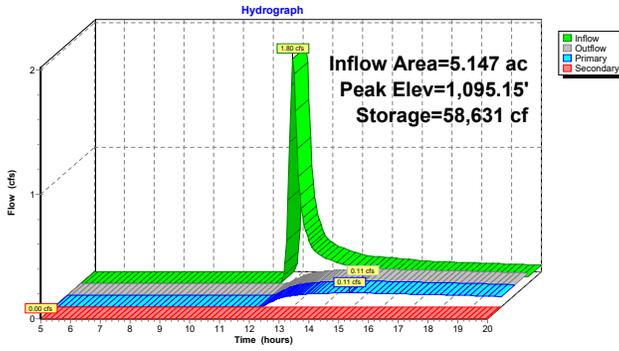
Volume	Invert	Avail.Storage	Storage	Description
#1	1,088.00'	124,982 cf		Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	
1,088.00	2,287	0	0	
1,090.00	4,953	7,240	7,240	
1,092.00	8,136	13,089	20,329	
1,094.00	11,814	19,950	40,279	
1,095.00	18,969	15,392	55,671	
1,096.00	21,616	20,293	75,963	
1,098.00	27,403	49,019	124,982	

Device	Routing	Invert	Outlet Devices
#1	Primary	1,095.00'	12.0" Round RCP Round 12" L= 55.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 1,095.00' / 1,094.00' S= 0.0182 1/8" Cc= 0.900 n= 0.012 Concrete pipe, finished, Flow Area= 0.79 sf
#2	Secondary	1,097.00'	5.0' long x 5.0' 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 4.00 4.50 5.00 5.50 Coef. (English) 2.34 2.50 2.70 2.68 2.68 2.66 2.65 2.65 2.65 2.65 2.67 2.66 2.68 2.70 2.74 2.79 2.88

Primary OutFlow Max=0.10 cfs @ 14.91 hrs HW=1,095.15' (Free Discharge)
↳1=RCP_Round 12" (Inlet Controls 0.10 cfs @ 1.34 fps)

Secondary OutFlow Max=0.00 cfs @ 5.00 hrs HW=1,095.00' (Free Discharge)
↳2=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Pond 18P: WET POND 1



Stage-Area-Storage for Pond 18P: WET POND 1

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)	Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
1,088.00	2,287	0	1,093.10	10,159	30,391
1,088.10	2,420	235	1,093.20	10,343	31,416
1,088.20	2,554	484	1,093.30	10,527	32,460
1,088.30	2,687	746	1,093.40	10,711	33,522
1,088.40	2,820	1,021	1,093.50	10,895	34,602
1,088.50	2,954	1,310	1,093.60	11,078	35,701
1,088.60	3,087	1,612	1,093.70	11,262	36,818
1,088.70	3,220	1,927	1,093.80	11,446	37,953
1,088.80	3,353	2,256	1,093.90	11,630	39,107
1,088.90	3,487	2,598	1,094.00	11,814	40,279
1,089.00	3,620	2,954	1,094.10	12,529	41,496
1,089.10	3,753	3,322	1,094.20	13,245	42,785
1,089.20	3,887	3,704	1,094.30	13,960	44,145
1,089.30	4,020	4,099	1,094.40	14,676	45,577
1,089.40	4,153	4,508	1,094.50	15,392	47,080
1,089.50	4,287	4,930	1,094.60	16,107	48,655
1,089.60	4,420	5,365	1,094.70	16,823	50,302
1,089.70	4,553	5,814	1,094.80	17,538	52,020
1,089.80	4,686	6,276	1,094.90	18,254	53,809
1,089.90	4,820	6,751	1,095.00	18,969	55,671
1,090.00	4,953	7,240	1,095.10	19,234	57,581
1,090.10	5,112	7,743	1,095.20	19,498	59,517
1,090.20	5,271	8,262	1,095.30	19,763	61,480
1,090.30	5,430	8,798	1,095.40	20,028	63,470
1,090.40	5,590	9,349	1,095.50	20,293	65,486
1,090.50	5,749	9,915	1,095.60	20,557	67,528
1,090.60	5,908	10,498	1,095.70	20,822	69,597
1,090.70	6,067	11,097	1,095.80	21,087	71,693
1,090.80	6,226	11,712	1,095.90	21,351	73,815
1,090.90	6,385	12,342	1,096.00	21,616	75,963
1,091.00	6,545	12,989	1,096.10	21,905	78,139
1,091.10	6,704	13,651	1,096.20	22,195	80,344
1,091.20	6,863	14,329	1,096.30	22,484	82,578
1,091.30	7,022	15,024	1,096.40	22,773	84,841
1,091.40	7,181	15,734	1,096.50	23,063	87,133
1,091.50	7,340	16,460	1,096.60	23,352	89,453
1,091.60	7,499	17,202	1,096.70	23,641	91,803
1,091.70	7,659	17,960	1,096.80	23,931	94,182
1,091.80	7,818	18,734	1,096.90	24,220	96,589
1,091.90	7,977	19,523	1,097.00	24,510	99,026
1,092.00	8,136	20,329	1,097.10	24,799	101,491
1,092.10	8,320	21,152	1,097.20	25,088	103,986
1,092.20	8,504	21,993	1,097.30	25,378	106,509
1,092.30	8,688	22,853	1,097.40	25,667	109,061
1,092.40	8,872	23,731	1,097.50	25,956	111,642
1,092.50	9,056	24,627	1,097.60	26,246	114,252
1,092.60	9,239	25,542	1,097.70	26,535	116,891
1,092.70	9,423	26,475	1,097.80	26,824	119,559
1,092.80	9,607	27,426	1,097.90	27,114	122,256
1,092.90	9,791	28,396	1,098.00	27,403	124,982
1,093.00	9,975	29,385			

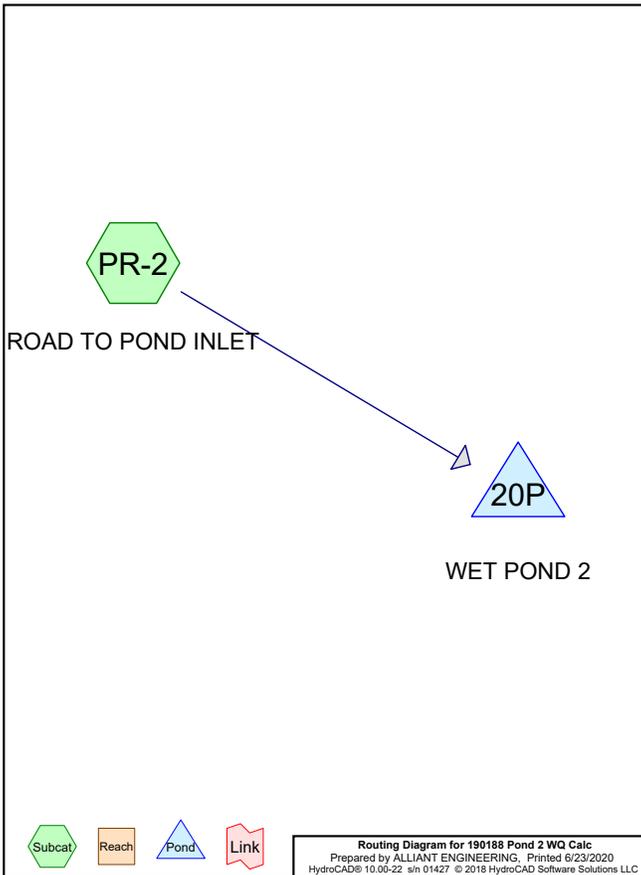
190188 Pond 2 WQ Calc

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Area Listing (selected nodes)

Area (acres)	CN	Description (subcatchment-numbers)
10.167	80	Pasture/grassland/range, Good, HSG D (PR-2)
0.455	98	Paved parking, HSG D (PR-2)
10.622	81	TOTAL AREA



Routing Diagram for 190188 Pond 2 WQ Calc
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POND 2 WATER QUALITY CALCULATION
Type II 24-hr WQ CALC Rainfall=1.17"

190188 Pond 2 WQ Calc
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Summary for Subcatchment PR-2: ROAD TO POND INLET

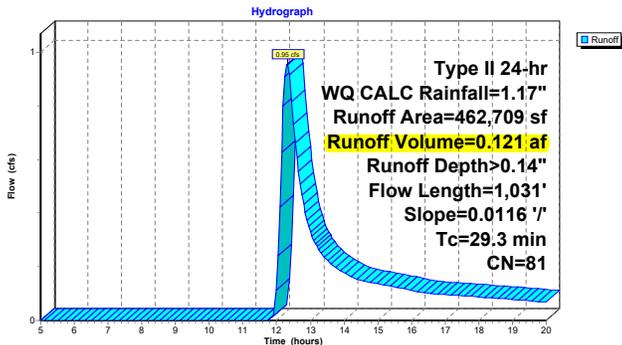
Runoff = 0.95 cfs @ 12.32 hrs, Volume= 0.121 af, Depth> 0.14"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr WQ CALC Rainfall=1.17"

Area (sf)	CN	Description
442,894	80	Pasture/grassland/range, Good, HSG D
19,815	98	Paved parking, HSG D
462,709	81	Weighted Average
442,894		95.72% Pervious Area
19,815		4.28% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
29.3	1,031	0.0116	0.59		Lag/CN Method,

Subcatchment PR-2: ROAD TO POND INLET



POND 2 WATER QUALITY CALCULATION
Type II 24-hr WQ CALC Rainfall=1.17"

190188 Pond 2 WQ Calc
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Summary for Pond 20P: WET POND 2

Inflow Area = 10.622 ac, 4.28% Impervious, Inflow Depth > 0.14" for WQ CALC event
Inflow = 0.95 cfs @ 12.32 hrs, Volume= 0.121 af
Outflow = 0.04 cfs @ 20.00 hrs, Volume= 0.017 af, Atten= 96%, Lag= 461.0 min
Primary = 0.04 cfs @ 20.00 hrs, Volume= 0.017 af
Secondary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Starting Elev= 1,093.00' Surf.Area= 52,465 sf Storage= 155,117 cf
Peak Elev= 1,093.09' @ 20.00 hrs Surf.Area= 52,887 sf Storage= 159,637 cf (4,521 cf above start)

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
Center-of-Mass det. time= 157.8 min (1,021.0 - 863.2)

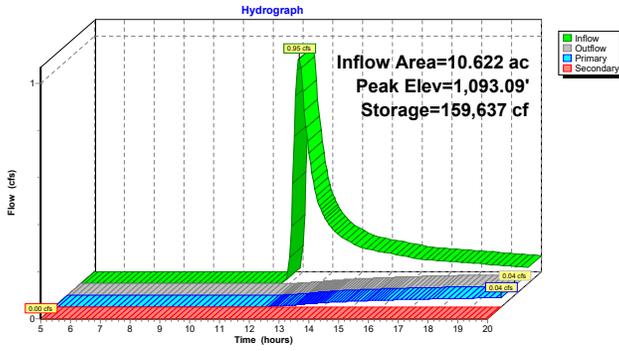
Volume	Invert	Avail.Storage	Storage Description
#1	1,088.00'	334,504 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
1,088.00	20,128	0	0
1,090.00	27,279	47,407	47,407
1,092.00	36,132	63,411	110,818
1,093.00	52,465	44,299	155,117
1,094.00	57,385	54,925	210,042
1,096.00	67,077	124,462	334,504

Device	Routing	Invert	Outlet Devices
#1	Primary	1,093.00'	12.0" Round RCP_Round 12" L= 90.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 1,093.00' / 1,092.00' S= 0.0111 '/' Cc= 0.900 n= 0.012 Concrete pipe, finished, Flow Area= 0.79 sf
#2	Secondary	1,095.50'	5.0' long x 5.0' 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 4.00 4.50 5.00 5.50 Coef. (English) 2.34 2.50 2.70 2.68 2.68 2.66 2.65 2.65 2.65 2.65 2.65 2.67 2.66 2.68 2.70 2.74 2.79 2.88

Primary OutFlow Max=0.03 cfs @ 20.00 hrs HW=1,093.09' (Free Discharge)
1=RCP_Round 12" (Inlet Controls 0.03 cfs @ 1.00 fps)

Secondary OutFlow Max=0.00 cfs @ 5.00 hrs HW=1,093.00' (Free Discharge)
2=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Pond 20P: WET POND 2



Stage-Area-Storage for Pond 20P: WET POND 2

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)	Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
1,088.00	20,128	0	1,093.10	52,957	160,388
1,088.10	20,486	2,031	1,093.20	53,449	165,708
1,088.20	20,843	4,097	1,093.30	53,941	171,077
1,088.30	21,201	6,199	1,093.40	54,433	176,496
1,088.40	21,558	8,337	1,093.50	54,925	181,964
1,088.50	21,916	10,511	1,093.60	55,417	187,481
1,088.60	22,273	12,720	1,093.70	55,909	193,047
1,088.70	22,631	14,966	1,093.80	56,401	198,663
1,088.80	22,988	17,247	1,093.90	56,893	204,328
1,088.90	23,346	19,563	1,094.00	57,385	210,042
1,089.00	23,704	21,916	1,094.10	57,877	215,804
1,089.10	24,061	24,304	1,094.20	58,354	221,615
1,089.20	24,419	26,728	1,094.30	58,839	227,475
1,089.30	24,776	29,188	1,094.40	59,323	233,383
1,089.40	25,134	31,683	1,094.50	59,808	239,340
1,089.50	25,491	34,214	1,094.60	60,293	245,345
1,089.60	25,849	36,781	1,094.70	60,777	251,398
1,089.70	26,206	39,384	1,094.80	61,262	257,500
1,089.80	26,564	42,023	1,094.90	61,746	263,651
1,089.90	26,921	44,697	1,095.00	62,231	269,850
1,090.00	27,279	47,407	1,095.10	62,716	276,097
1,090.10	27,722	50,157	1,095.20	63,200	282,393
1,090.20	28,164	52,951	1,095.30	63,685	288,737
1,090.30	28,607	55,790	1,095.40	64,169	295,130
1,090.40	29,050	58,673	1,095.50	64,654	301,571
1,090.50	29,492	61,600	1,095.60	65,139	308,060
1,090.60	29,935	64,571	1,095.70	65,623	314,598
1,090.70	30,378	67,587	1,095.80	66,108	321,185
1,090.80	30,820	70,647	1,095.90	66,592	327,820
1,090.90	31,263	73,751	1,096.00	67,077	334,504
1,091.00	31,706	76,899			
1,091.10	32,148	80,092			
1,091.20	32,591	83,329			
1,091.30	33,033	86,610			
1,091.40	33,476	89,936			
1,091.50	33,919	93,305			
1,091.60	34,361	96,719			
1,091.70	34,804	100,178			
1,091.80	35,247	103,680			
1,091.90	35,689	107,227			
1,092.00	36,132	110,818			
1,092.10	37,765	114,513			
1,092.20	39,399	118,311			
1,092.30	41,032	122,393			
1,092.40	42,665	126,577			
1,092.50	44,299	130,926			
1,092.60	45,932	135,437			
1,092.70	47,565	140,112			
1,092.80	49,198	144,950			
1,092.90	50,832	149,952			
1,093.00	52,465	155,117			



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Willmar, MN 56201-5818

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MEMORANDUM

Date: June 30, 2020
To: Honorable Mayor Willenbring, Members of the City Council and Members of the Planning Commission – Rockville, Minnesota
From: Justin L. Kannas, P.E.
City Engineer
Subject: Rockville Crossing – Preliminary Plat
Rockville, Minnesota
BMI Project No: W14.118817

I have reviewed the Preliminary Plat and the preliminary plans for the proposed Rockville Crossing subdivision dated June 18, 2020 and have the following comments:

- 1) The Developer shall construct a public roadway that meets City of Rockville minimum requirements. The road shall meet a minimum 30 mph design speed. Horizontal curves shall be adjusted as needed to meet the design speed.
- 2) The proposed public street is shown as a 36-foot wide rural section with no curb and gutter and ditches instead of storm sewer. City standard is curb and gutter for all new streets. However, due to the nature of this development with very large lots, commercial/industrial use, and topography of the site the City Council could consider waiving the requirement for curb and gutter. This would lower future street maintenance costs for the City and would still provide a functional and adequate street and drainage system.
- 3) The public roadway shall be extended to the east plat line in the future at the time of final plat approval and development for Block 2. Provisions should be made for a future roadway connection as development occurs to the east and south of the proposed plat.
- 4) A temporary cul-de-sac shall be constructed on the end of the roadway near the proposed lift station.
- 5) The preliminary plat should be revised to eliminate Lot 1, Block 4. As currently proposed, it does not have a public road access point.
- 6) The preliminary utility plan shall be modified to show future sewer and water main extension locations to service Lots 2, 3 and 4 of Block 3. The Developer is intending to service these lots with a future sewer and watermain along the rear lot lines of these lots within the proposed drainage and utility easement. A paved maintenance access shall be provided to all sanitary manholes at the time these lots are platted and sewer and water is installed.
- 7) The watermain extension from the water tower to the TH 23 shall be 12-inches in diameter.

- 8) Watermain shall be extended to the TH 23 right of way to provide for future connection and looping opportunities.
- 9) Drainage and utility easements shall be 6' in width along side and rear lot lines and 12' in width along front lot lines and around the plat perimeter according to Subd. Ordinance Section 7.4.1.
- 10) The grading plan shall show proposed grading for the entire development.
- 11) The grading plan shall show additional information and details regarding the proposed storm ponds including NWL, EOF, and HWL elevations and locations; outlet and inlet structure details; and skimming device information.
- 12) Storm ponds accepting drainage from the public roadway shall be contained in an Outlot dedicated to the City of Rockville. Drainage easements or Outlots shall be dedicated on the plat from the outlet of each storm pond to the discharge point into the downstream wetland.
- 13) The Developer shall be responsible for all costs associated with extending utilities to the project including the sanitary sewer lift station and forcemain.
- 14) Final plans shall be submitted including but not limited to the following items:
 - a. A Storm Water Pollution Prevention Plan (SWPPP)
 - b. Typical section of the street including the proposed pavement section
 - c. Street and ditch cross sections. All slopes shall be no steeper than 4:1.
 - d. Watermain, sanitary sewer, and storm sewer plan and profile sheets
 - e. Standard details
- 15) Comments regarding the storm water management plan will be sent in a separate memo directly to the Developer's Engineer. All comments regarding the storm water management plan shall be addressed to the satisfaction of the City Engineer.
- 16) Documentation of approval of the wetland delineation by Stearns County shall be provided. The wetland delineation shall be approved prior to Final Plat approval.
- 17) The plat shall be subject to review and comments from the Minnesota Department of Transportation.
- 18) All turn lane improvements on TH 23 required by MnDOT shall be the responsibility of the Developer.
- 19) All improvements shall be constructed in accordance with the City of Rockville requirements.
- 20) The Developer shall be responsible for obtaining all necessary permits including but not limited to MPCA NPDES Construction Stormwater, Sauk River Watershed District, MPCA Sanitary Sewer Extension Permit, MDH Watermain Permit, DNR public waters permit, Corps of Engineer wetland mitigation permit, Wetland Conservation Act Wetland Mitigation Permit, and MnDOT Access permit. Copies of all approved permits shall be sent to the City Engineer prior to construction.

21) A Development Agreement shall be drafted and executed prior to Final Plat approval.

I recommend approval of the Preliminary Plat contingent upon the above the above comments and comments as submitted by other City staff.

JLK/jk

cc: Martin Bode, City Administrator, City of Rockville
Susan Kadlec, City Attorney, City of Rockville
Martin Harstad, Developer

Building Permits: June 2020

Parcel #	REASON	ADDRESS	DATE	PERMIT #	Valuation	Permit \$	Review	SSC	Fees
76.41950.0002	Roofing	560 Othmar Ln	6/8/2020	2020-00046	\$ 10,000.00	\$ 35.00	\$ -	\$ 1.00	\$ 36.00
76.42240.0044	Roofing	216 Broadway St E	6/11/2020	2020-00047	\$ 9,000.00	\$ 35.00	\$ -	\$ 1.00	\$ 36.00
76.41608.0300	Replace Exterior Door	25022 Halfman Rd	6/12/2020	2020-00048	\$ 810.00	\$ 35.00	\$ -	\$ 1.00	\$ 36.00
76.41633.0400	Roofing	540 Caroline Ln	6/15/2020	2020-00049	\$ 14,000.00	\$ 35.00	\$ -	\$ 1.00	\$ 36.00
76.42144.0008	Roofing	8401 White Oak Rd	6/23/2020	2020-00050	\$ 7,000.00	\$ 35.00	\$ -	\$ 1.00	\$ 36.00
76.41604.0100	Furnace Replacement	25746 Lake Rd	6/23/2020	2020-00051	\$ 4,750.00	\$ 50.00	\$ -	\$ 1.00	\$ 51.00
76.41830.0001	Roofing	408 Oak Street	6/23/2020	2020-00052	\$ 4,500.00	\$ 35.00	\$ -	\$ 1.00	\$ 36.00
76.41720.0331	Demo Barn	21986 Co Rd 8	6/29/2020	2020-00053	\$ 30,000.00	\$ 50.00	\$ -	\$ 1.00	\$ 51.00
76.41649.0010	Window Replacement	21833 Agate Beach R	6/29/2020	2020-00054	\$ 1,000.00	\$ 35.00	\$ -	\$ 1.00	\$ 36.00
76.41649.0010	Siding Permit	21833 Agate Beach R	6/29/2020	2020-00055	\$ 3,200.00	\$ 35.00	\$ -	\$ 1.00	\$ 36.00
76.41741.0032	Deck	520 Walnut St	6/16/2020	2020-00061	\$ 4,500.00	\$ 41.50	\$ 26.98	\$ 2.25	\$ 70.73
76.41617.0400	Deck	9770 Co Rd 47	6/16/2020	2020-00062	\$ 10,000.00	\$ 56.50	\$ 36.73	\$ 5.00	\$ 98.23
76.42142.0810	Sign - Permanent	1340 Prairie Dr	6/23/2020	2020-00063	\$ 29,241.00	\$ 160.83	\$ 104.54	\$ 14.62	\$ 279.99
76.42240.0124	Roofing - Industrial	241 Broadway St W	6/30/2020	2020-00076	\$ 175,000.00	\$ 962.50	\$ -	\$ 87.50	\$ 1,050.00
76.42159.0951	Deck/Porch	22252 123rd Ave	6/30/2020	2020-00077	\$ 33,800.00	\$ 185.90	\$ 120.84	\$ 16.90	\$ 323.64