NOTICE OF PUBLIC MEETING

Governmental Body: Van Meter Planning and Zoning Commission Meeting
Date of Meeting: Wednesday, January 8, 2025
Time/Location of Meeting: 5:30pm – 310 Mill Street (City Hall)

Agenda:

1. Call to Order/Roll Call
2. Approval of Agenda
3. Approval of Minutes – 12/02/2024
4. Discussion and Possible Action: Van Meter Community School District – Site Plan #3
5. Discussion and Possible Action: Van Meter Urban Renewal Area Plan Amendment January 2025
6. Discussion and Possible Action: Arlington Avenue Street Name
7. Adjournment

Posted: January 7, 2025

Agenda Item #1

Call to Order

Roll Call:

Wahlert _____

Feldman _____

Hulse _____

Miller _____

DeVore _____

Cook _____

Coyle _____

Staff:

Guests:

Agenda Item #2

Approval of the Agenda

Chairperson*: Do I hear a motion to approve the agenda?*

Commissioner _____*: So moved.*

Commissioner _____*: Second.*

Chairperson: All in favor? _____ Not in favor? _____

Agenda Item #3

Approval of Minutes

Chairperson*: Any discussion needed on the minutes from the 12/02/24 meeting?*

Do I hear a motion to approve the minutes from the P&Z meeting on 12/02/24?

Commissioner _____*:* *So moved.*

Commissioner _____*:* *Second.*

Chairperson: All in favor? _____ Not in favor? _____

City of Van Meter, Iowa

Planning & Zoning Commission Meeting, Monday, December 2, 2024

1) The Van Meter Planning & Zoning Commission met on Monday, December 2, 2024 for a regularly scheduled meeting. Chairperson Wahlert called the meeting to order at 5:31pm.
   Commissioners Wahlert, Feldman, Hulse, Cook & Coyle were present. Commissioner DeVore arrived at 5:37pm. Commissioner Miller was absent. City Clerk Drake was in attendance. The public audience included Joe Herman, Al Suckow, Cody Eveson and Katie Farrell.
2) Hulse moved, supported by Feldman, to approve the agenda. Motion passed unanimously.
3) Hulse moved, supported by Cook, to approve the minutes from the Planning & Zoning Meeting held on October 30, 2024. Motion passed unanimously.
4) The Commission discussed the Plat of Survey pertaining to Parcels 24-108, 24-109 and 24-123. Staff and the City Engineer reviewed the plat which creates 2 buildable parcels in addition to the parcel specific to the City's Right of Way Easement Area. Due to the nature and location of the plat, the City Engineer recommended approval of the plat and waiving the requirement to comply with the City's Sub-Division Ordinance. Cook moved, supported by Wahlert, to recommend approval the Plat of Survey relating to Parcels 24-108, 24-109 and 24-123 & waiver of compliance with the City's Sub-Division Ordinance to Council. On roll call, the votes were as follows: Wahlert – YES; Feldman – YES; Hulse – YES; DeVore – YES; Cook – YES; Coyle - YES. **YES (6) NO (0) ABSTAIN (0) ABSENT (1)**
5) The Commission discussed the Application for Re-Zoning Received for 325 Grand. The request was to rezone from "C-1 Downtown Commercial" to "I-1 Light Industrial" as I-1 is the only current zoning district that allows for auto sales, the proposed use of the building. Al Suckow expressed his opinion regarding the request, the state of other non-conforming uses in the C-1 district and wanted to know how tax payers can be protected as it relates to code enforcement. The Commission discussed the idea of a Planned Unit District in the C-1 district to enable certain commercial activities and a Conditional Use Permit application. City Clerk Drake explained the timelines as they relate to a rezoning to a PUD and a CUP application. Cook moved, supported by Coyle, to deny the re-zoning application to I-1 stating that a favorable option would be a PUD and/or a Conditional Use Permit Application. On roll call, the votes were as follows: Wahlert – YES; Feldman – YES; Hulse – YES; DeVore – YES; Cook – YES; Coyle - YES. **YES (6) NO (0) ABSTAIN (0) ABSENT (1)**
6) City Clerk Drake reviewed the proposed amendment to the City's building code as provided by the City's Building Inspectors, Veenstra & Kimm. Cook moved, supported by Feldman, to recommended the proposed amendment to adopt the 2021 International Building Code as amended and recommended by Veenstra & Kimm to Council for consideration. . On roll call, the votes were as follows: Wahlert – YES; Feldman – YES; Hulse – YES; DeVore – YES; Cook – YES; Coyle - YES. **YES (6) NO (0) ABSTAIN (0) ABSENT (1)**
7) Coyle moved, supported by Cook, to adjourn the meeting. Motion passed unanimously. The meeting adjourned at 6:28pm.

Agenda Item #4

Discussion and Possible Action:
Van Meter Community School District - Site Plan #3

Submitted for: **Discussion and Possible Action**

Site Plan #3 was submitted on December 11, 2024. Documents included: Application, Existing Conditions HydroCAD report, Proposed Conditions HydroCAD report, Elevations, Civil Set, Stormwater Report, and North Parking Lot Photometrics.

V&K reviewed the documentation. A written recommendation will be provided to the Commission upon receipt from V&K.

***Chairperson*:** Do I hear a motion?

Motion:

Commissioner _____: *So moved.*

Commissioner _____: *Second.*

Chairperson: *Roll Call Please.*

Wahlert_____ Feldman _____Hulse _____ Miller_____ DeVore_____Cook_____ Coyle_____

VEENSTRA & KIMM INC.
3000 Westown Parkway
West Des Moines, Iowa 50266

515.225.8000 // 800.241.8000
www.v-k.net

January 7, 2025

Liz Faust
City Administrator
City of Van Meter
310 Mill Street
P.O. Box 160
Van Meter, Iowa 50261-0160

VAN METER, IOWA
VAN METER SCHOOL ADDITION
SITE PLAN REVIEW

Veenstra & Kimm, Inc. has reviewed the site plan application, dated December 11, 2024, for Van Meter School Addition and offer the following comments. The review is based on items as outlined in the Van Meter Site Plan Application Form. The comments in this review refer only to those items of Chapter 167 that are not fully addressed on the drawings for the school site.

Cover Sheet

1. It is suggested that the total property of the school site be shown on a separate sheet and the new and existing school improvements be indicated on the plan in relation to total site. The proposed property boundary should be shown with a heavy line. It is noted that the site plan applies to all the school property within limits as shown on the Vicinity Map.

2. Provide north arrow for the Vicinity Map.

Required Illustrations

1. Property boundary should be shown with a heavy line on the enlarged drawing of the school site as noted above.

2. Existing and proposed contour lines should be shown for the whole school site and 50 feet beyond the proposed development.

3. The size of all existing public utilities and easements, (i.e. the supply wells and water main), should be shown on the site plan. For clarity it is suggested that the utilities be color coded for ease of understanding site.

4. Regarding the proposed water main serving the school building, previous review letters by Veenstra & Kimm, Inc. to the City have provided suggestions how to improve the water service for the school now and in the future. The new addition will have an 8" water service connected to the existing 12" water main on Richland Road. This option requires the 12" valve near the curve of Richland Road and Elm Street closed to separate the high and low pressure zones.

5. Identify and label the property owned by the City of Van Meter located in the north part of the school site and the property located south of the school site. (i.e. well location)

6. The proposed use of exterior materials, for the buildings or structures should meet the intent of Chapter 171 of the City Code. The drawing elevations of the new school addition have been provided with the application. It is suggested that rendered color drawings of the elevations be provided that clearly show the additions and the existing school. Also elevations of the concession, restroom and weight room buildings should be provided for review by City.

7. Show rights of way of public streets and sidewalks.

8. The type of light fixtures for parking and other outdoor lights should be provided for City's review.

9. A separate drawing should be included in the site plans for the complete school site that shows the proposed storm sewers and drainage swales from the subareas to the combined outlet as outlined in the Storm Water Management Plan report. The drawing should show the contours, size and capacity of storm sewers, drainage swales and the detention basin. Details including outlet storm sewers with inverts, 100 year storm elevations, top of berms and overflows should be indicated.

10. Show the building setback lines for the school site.

If you have any questions about our comments, please contact us at 515-225-8000.

VEENSTRA & KIMM, INC.

Randy M. Johnson

RMJ:mmc
193102
Cc: Jessica Drake

From:	Randy Johnson
To:	Jess Drake; Elizabeth (Liz) Faust
Cc:	Drew McCombs
Subject:	RE: City of Van Meter - School Addition Site Plan Review
Date:	Tuesday, January 7, 2025 4:35:33 PM
Attachments:	image002.png P BEA_VIPERSPEC.pdf

Hi Jess,

I just tried calling to discuss as I am sure the P&Z Board has been presented and reviewed the overall school project in the past. V&K's letter is more in line of having an overall plan drawing to indicate how the new project ties to the existing site to show the P&Z Board. I spoke to Gage, and he was going to put together an overall drawing, color rendered elevation drawing, and overall drainage plan for the board meeting.

Our recommendation would be to approve the site plan but provide the City the opportunity to review:

- Overall site plan of the property indicating the new improvement compared to existing site. The site plan can include existing public utilities and easements as well as existing City owned property.
- Elevations with colors to ensure the new and existing are what the City is expecting the building to appear.
- Light Fixture type for light pole for City's review. Gage just provided the attached cut sheet. This would be acceptable to V&K but wanted to confirm the profile is acceptable to City.
- Overall drainage plan of the property showing how each subarea drains to offsite areas.

Please call with questions. I will plan on attending the P&Z meeting to address any comments.
Sincerely
Randy

Randy M. Johnson, P.E.
Civil Engineer
VEENSTRA & KIMM INC.
3000 Westown Parkway
West Des Moines, Iowa 50266
515-225-8000 (o)
515-249-5741 (c)

From: Jess Drake <jdrake@vanmeteria.gov>
Sent: Tuesday, January 7, 2025 4:00 PM
To: Randy Johnson <rjohnson@v-k.net>; Elizabeth (Liz) Faust <lfaust@vanmeteria.gov>
Cc: Drew McCombs <dmccombs@vanmeteria.gov>
Subject: [EXTERNAL] RE: City of Van Meter - School Addition Site Plan Review

What is your recommendation? Should P&Z require all of the things listed and then they will reconsider the site plan? Or should they recommend acceptance by Council? Or something totally different?

Jess Drake
City of Van Meter | City Clerk
515-996-2644 (o) | 515-478-5047 (c)
jdrake@vanmeteria.gov

From: Randy Johnson <rjohnson@v-k.net>
Sent: Tuesday, January 7, 2025 3:56 PM
To: Elizabeth (Liz) Faust <lfaust@vanmeteria.gov>; Jess Drake <jdrake@vanmeteria.gov>
Cc: Gage DeCook <gdecook@larsonengr.com>; Drew McCombs <dmccombs@vanmeteria.gov>
Subject: City of Van Meter - School Addition Site Plan Review

Hi Liz/Jess

Attached is Veenstra & Kimm Inc. review comments for the School Addition Site Plan Review.

Please let us know if you have any questions
Sincerely
Randy

Randy M. Johnson, P.E.
Civil Engineer
VEENSTRA & KIMM INC.
3000 Westown Parkway
West Des Moines, Iowa 50266
515-225-8000 (o)
515-249-5741 (c)

BEACON
design . performance . technology

DATE: LOCATION:

TYPE: PROJECT:

CATALOG #:

VIPER Area/Site

VIPER LUMINAIRE

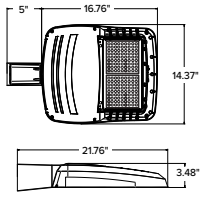
MICRO STRIKE | OPTICS STRIKE

FEATURES

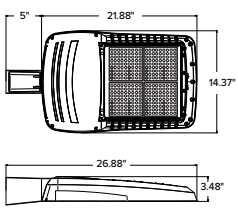
- Low profile LED area/site luminaire with a variety of IES distributions for lighting applications such as auto dealership, retail, commercial, and campus parking lots
- Featuring two different optical technologies, Strike and Micro Strike Optics, which provide the best distribution patterns for retrofit or new construction
- Rated for high vibration applications including bridges and overpasses. All sizes are rated for 1.5G
- Control options including photo control, occupancy sensing, NX Lighting Controls™, LightGRID+ and 7-Pin with networked controls
- New customizable lumen output feature allows for the wattage and lumen output to be customized in the factory to meet whatever specification requirements may entail
- Field interchangeable mounting provides additional flexibility after the fixture has shipped

c UL us IP65 DLC LISTED DLC LISTED PREMIUM ida DARK SKY APPROVED 2016 BAA TAA

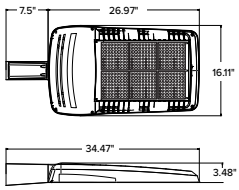
SIZE 1



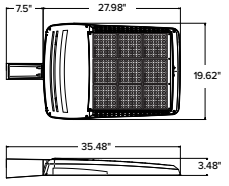
SIZE 2



SIZE 3



SIZE 4



CONTROL TECHNOLOGY

NX CONNECT NX WIRED NX WIRELESS LIGHTGRID

SERVICE PROGRAMS

STOCK QS10

SPECIFICATIONS

CONSTRUCTION

- Die-cast housing with hidden vertical heat fins are optimal for heat dissipation while keeping a clean smooth outer surface
- Corrosion resistant, die-cast aluminum housing with 1000 hour powder coat paint finish
- External hardware is corrosion resistant

OPTICS

- Micro Strike Optics (160, 320, 480, or 720 LED counts) maximize uniformity in applications and come standard with mid-power LEDs which evenly illuminate the entire luminous surface area to provide a low glare appearance. Catalog logic found on page 2
- Strike Optics (36, 72, 108, or 162 LED counts) provide best in class distributions and maximum pole spacing in new applications with high powered LEDs. Strike optics are held in place with a polycarbonate bezel to mimic the appearance of the Micro Strike Optics so both solutions can be combined on the same application. Catalog logic found on page 3
- Both optics maximize target zone illumination with minimal losses at the house-side, reducing light trespass issues. Additional backlight control shields and house side shields can be added for further reduction of illumination behind the pole
- One-piece silicone gasket ensures a weatherproof seal
- Zero up-light at 0 degrees of tilt
- Field rotatable optics

INSTALLATION

- Mounting patterns for each arm can be found on page 11
- Optional universal mounting block for ease of installation during retrofit applications. Available as an option (ASQU) or accessory for square and round poles
- All mounting hardware included
- Knuckle arm fitter option available for 2-3/8" OD tenon
- For products with EPA less than 1 mounted to a pole greater that 20ft, a vibration damper is recommended

ELECTRICAL

- Universal 120-277 VAC or 347-480 VAC input voltage, 50/60 Hz
- Ambient operating temperature -40˚C to 40˚C
- Drivers have greater than 90% power factor and less than 20% THD
- LED drivers have output power over-voltage, over-current protection and short circuit protection with auto recovery
- Field replaceable surge protection device provides 20kA protection meeting ANSI/ IEEE C62.41.2 Category C High and Surge Location Category C3; Automatically takes fixture off-line for protection when device is compromised
- Dual Driver option provides 2 drivers within luminaire but only one set of leads exiting the luminaire, where Dual Power Feed provides two drivers which can be wired independently as two sets of leads are extended from the luminaire. Both options cannot be combined

CONTROLS

- Photo control, occupancy sensor programmable controls, and Zigbee wireless controls available for complete on/off and dimming control
- Please consult brand or sales representative when combining control and electrical options as some combinations may not operate as anticipated depending on your application
- 7-pin ANSI C136.41-2013 photocontrol receptacle option available for twist lock photocontrols or wireless control modules (control accessories sold separately)

CONTROLS (CONTINUED)

- 0- 10V Dimming Drivers are standard and dimming leads are extended out of the luminaire unless control options require connection to the dimming leads. Must specify if wiring leads are to be greater than the 6" standard
- NX Lighting Controls™ available with in fixture wireless control module, features dimming and occupancy sensor
- LightGRID+ available with in fixture wireless control module, features dimming and occupancy sensor. Also available in 7-pin configuration

	EPA				
	VP1 (Size 1)	VP2 (Size 2)	VP3 (Size 3)	VP4 (Size 4)	Config.
Single Fixture	0.454	0.555	0.655	0.698	
Two at 180	0.908	1.110	1.310	1.396	
Two at 90	0.583	0.711	0.857	0.948	
Three at 90	1.037	1.266	1.512	1.646	
Three at 120	0.943	1.155	1.392	1.680	
Four at 90	1.166	1.422	1.714	1.896	

CERTIFICATIONS

- DLC® (DesignLights Consortium Qualified), with some Premium Qualified configurations. Not all product variations listed in this document are DLC® qualified. Refer to http://www.designlights.org for the most up-to-date list.
- Listed to UL1598 and CSA C22.2#250.0-24 for wet locations and 40˚C ambient temperatures
- 1.5 G rated for ANSI C136.31 high vibration applications
- Fixture is IP65 rated
- Meets IDA recommendations using 3K CCT configuration at 0 degrees of tilt
- This product meets federal procurement law requirements under the Buy American Act (FAR 52.225-9) and Trade Agreements Act (FAR 52.225-11). See Buy America(n) Solutions (link to https://www.currentlighting.com/resources/america-solutions).

WARRANTY

- 5 year warranty

BEACON
design . performance . technology

DATE: | LOCATION:

TYPE: | PROJECT:

CATALOG #:

VIPER Area/Site

VIPER LUMINAIRE

MICROSTRIKE OPTICS – ORDERING GUIDE

Gray Shading = Service Program Limit of 15 luminaires

QS10

Example: VP–2–320L-145–3K7–2–R–UNV–A3–BLT

CATALOG #

VP –

Series	
VP	Viper

Optic Platform	
Micro Strike	

Size	
1	Size 1
2	Size 2
3	Size 3
4	Size 4

Light Engine	
160L-35 [6]	5500 lumens
160L-50 [6]	7500 lumens
160L-75	10000 lumens
160L-100	12500 lumens
160L-115	15000 lumens
160L-135	18000 lumens
160L-160	21000 lumens
320L-145	21000 lumens
320L-170	24000 lumens
320L-185	27000 lumens
320L-210	30000 lumens
320L-235	33000 lumens
320L-255	36000 lumens
320L-315 [6]	40000 lumens
480L-285	40000 lumens
480L-320	44000 lumens
480L-340	48000 lumens
480L-390	52000 lumens
480L-425	55000 lumens
480L-470	60000 lumens
720L-435	60000 lumens
720L-475	65000 lumens
720L-515	70000 lumens
720L-565 [6]	75000 lumens
720L-600 [6]	80000 lumens
CLO	Custom Lumen Output [1]

CCT/CRI	
AP	AP-Amber Phosphor Converted
27K8	2700K, 80 CRI
3K7	3000K, 70 CRI
3K8	3000K, 80 CRI
35K8	3500K, 80 CRI
3K9	3000K, 90 CRI
4K7	4000K, 70 CRI
4K8	4000K, 80 CRI
4K9	4000K, 90 CRI
5K7	5000K, 70 CRI
5K8	5000K, 80 CRI

Distribution	
2	Type 2
3	Type 3
4F	Type 4 Forward
4W	Type 4 Wide
5QW	Type 5 Square Wide

Optic Rotation	
BLANK	No Rotation
L	Optic rotation left
R	Optic rotation right

Voltage	
UNV	120-277V
120	120V
208	208V
240	240V
277	277V
347	347V
480	480V

Mounting	
A	Arm mount for square pole/flat surface (B3 Drill Pattern) (Does not include round pole adapter)
A_	Arm mount for round pole [2]
ASQU	Universal arm mount for square pole. Can be used with B3 or S2 Drill Pattern
A_U	Universal arm mount for round pole [2]
AAU	Adjustable arm for pole mounting (universal drill pattern)
AA_U	Adjustable arm mount for round pole [2]
ADU	Decorative upswept Arm (universal drill pattern)
AD_U	Decorative upswept arm mount for round pole [2]
MAF	Mast arm fitter for 2-3/8" OD horizontal arm
K	Knuckle
T	Trunnion
WB	Wall Bracket, horizontal tenon with MAF
WM	Wall mount bracket with decorative upswept arm
WA	Wall mount bracket with adjustable arm

Color	
BLT	Black Matte Textured
BLS	Black Gloss Smooth
DBT	Dark Bronze Matte Textured
DBS	Dark Bronze Gloss Smooth
GTT	Graphite Matte Textured
LGS	Light Grey Gloss Smooth
LGT	Light Grey Gloss Textured
PSS	Platinum Silver Smooth
WHT	White Matte Textured
WHS	White Gloss Smooth
VGT	Verde Green Textured

Color Option	
CC	Custom Color

Options	
F	Fusing
2PF	Dual Power Feed
2DR	Dual Driver
TE	Tooless Entry
BC	Backlight Control [8]
TB	Terminal Block

Network Control Options	
NXWS16F	NX Networked Wireless Enabled Integral NXSMP2-LMO PIR Occupancy Sensor with Automatic Dimming Photocell and Bluetooth Programming [1,3,4]
NXWS40F	NX Networked Wireless Enabled Integral NXSMP2-HMO PIR Occupancy Sensor with Automatic Dimming Photocell and Bluetooth Programming [1,3,4]
NXW	NX Networked Wireless Radio Module NXRM2 and Bluetooth Programming, without Sensor [3,4]
WIR	LightGRID+ In-Fixture Module [3,4]
WIRSC	LightGRID+ Module and Occupancy Sensor [3,4]
Stand Alone Sensors	
BTS-14F	Bluetooth® Programmable, BTSMP-LMO PIR Occupancy Sensor with Automatic Dimming Photocell and 360° Lens
BTS-40F	Bluetooth® Programmable, BTSMP-HMO PIR Occupancy Sensor with Automatic Dimming Photocell and 360° Lens
BTSO-12F	Bluetooth® Programmable, BTSMP-OMNI-O PIR Occupancy Sensor with Automatic Dimming Photocell and 360° Lens
7PR	7-Pin Receptacle [4]
7PR-SC	7-Pin Receptacle with shorting cap [4]
3PR	3-Pin twist lock [4]
3PR-SC	3-Pin receptacle with shorting cap [4]
3PR-TL	3-Pin PCR with photocontrol [4]
Programmed Controls	
SCP-_F	Sensor Control Programmable, 8F or 40F [9]
ADD	AutoDim Timer Based Dimming [4]
ADT	AutoDim Time of Day Dimming [4]
Photocontrols	
PC	Button Photocontrol [4,7]

1 – Items with a grey background can be done as a custom order. Contact brand representative for more information
2 – Replace "_" with "3" for 3.5"-4.13" OD pole, "4" for 4.18"-5.25" OD pole, "5" for 5.5"-6.5" OD pole
3 – Networked Controls cannot be combined with other control options
4 – Not available with 2PF option
5 – Not available with Dual Driver option
6 – Some voltage restrictions may apply when combined with controls
7 – Not available with 480V
8 – BC not available on 4F and type 5 distributions
9 – At least one SCPREMOTE required to program SCP motion sensor. Must select 8ft or 40ft.

BEACON
design . performance . technology

DATE: LOCATION:

TYPE: PROJECT:

CATALOG #:

VIPER Area/Site

VIPER LUMINAIRE

STRIKE OPTIC – ORDERING GUIDE

Example: VP–ST–1–36L-39–3K7–2–UNV–A–BLT

CATALOG #

VP –

Series	
VP	Viper

– | Optic Platform | |
|---|---|
| ST | Strike |

– | Size | |
|---|---|
| 1 | Size 1 |
| 2 | Size 2 |
| 3 | Size 3 |
| 4 | Size 4 |

– | Light Engine | |
|---|---|
| 36L-39 [8] | 5500 lumens |
| 36L-55 [8] | 7500 lumens |
| 36L-85 | 10000 lumens |
| 36L-105 | 12500 lumens |
| 36L-120 | 14000 lumens |
| 72L-115 | 15000 lumens |
| 72L-145 | 18000 lumens |
| 72L-180 | 21000 lumens |
| 72L-210 | 24000 lumens |
| 72L-240 | 27000 lumens |
| 108L-215 [8] | 27000 lumens |
| 108L-250 | 30000 lumens |
| 108L-280 | 33000 lumens |
| 108L-325 | 36000 lumens |
| 108L-365 | 40000 lumens |
| 162L-320 | 40000 lumens |
| 162L-365 [10] | 44000 lumens |
| 162L-405 | 48000 lumens |
| 162L-445 | 52000 lumens |
| 162L-485 | 55000 lumens |
| 162L-545 [8] | 60000 lumens |
| CLO | Custom Lumen Output [1] |

– | CCT/CRI | |
|---|---|
| AM | monochromatic amber, 595nm |
| 27K8 | 2700K, 80 CRI |
| 3K7 | 3000K, 70 CRI |
| 3K8 | 3000K, 80 CRI |
| 3K9 | 3000K, 90 CRI |
| 35K8 | 3500K, 80 CRI |
| 4K7 | 4000K, 70 CRI |
| 4K8 | 4000K, 80 CRI |
| 4K9 | 4000K, 90 CRI |
| 5K7 | 5000K, 70 CRI |
| 5K8 | 5000K, 80 CRI |

– | Distribution | |
|---|---|
| FR | Auto Front Row |
| 2 | Type 2 |
| 3 | Type 3 |
| 4F | Type 4 Forward |
| 4W | Type 4 Wide |
| 5QN | Type 5 Square Narrow |
| 5QW | Type 5 Square Wide |
| 5QM | Type 5 Square Medium |
| 5W | Type 5 Wide (Round) |
| 5RW | Type 5 Rectangular |
| C | Corner Optic |
| TC | Tennis Court Optic |

– | Optic Rotation | |
|---|---|
| BLANK | No Rotation |
| L | Optic rotation left |
| R | Optic rotation right |

– | Voltage | |
|---|---|
| UNV | 120-277V |
| 120 | 120V |
| 208 | 208V |
| 240 | 240V |
| 277 | 277V |
| 347 | 347V |
| 480 | 480V |

–

Mounting	
A	Arm mount for square pole/flat surface
A_	Arm mount for round pole [3]
ASQU	Universal arm mount for square pole
A_U	Universal arm mount for round pole [3]
AAU	Adjustable arm for pole mounting (universal drill pattern)
AA_U	Adjustable arm mount for round pole [3]
ADU	Decorative upswept Arm (universal drill pattern)
AD_U	Decorative upswept arm mount for round pole [3]
MAF	Mast arm fitter for 2-3/8" OD horizontal arm
K	Knuckle
T	Trunnion
WB	Wall Bracket, horizontal tenon with MAF
WM	Wall mount bracket with decorative upswept arm
WA	Wall mount bracket with adjustable arm

– | Color | |
|---|---|
| BLT | Black Matte Textured |
| BLS | Black Gloss Smooth |
| DBT | Dark Bronze Matte Textured |
| DBS | Dark Bronze Gloss Smooth |
| GTT | Graphite Matte Textured |
| LGS | Light Grey Gloss Smooth |
| LGT | Light Grey Gloss Textured |
| PSS | Platinum Silver Smooth |
| WHT | White Matte Textured |
| WHS | White Gloss Smooth |
| VGT | Verde Green Textured |

Color Option	
CC	Custom Color

– | Options | |
|---|---|
| F | Fusing |
| E | Battery Backup [1,2,7,8,9] |
| 2PF | Dual Power Feed |
| 2DR | Dual Driver |
| TE | Tooless Entry |
| BC | Backlight Control |
| TB | Terminal Block |

Network Control Options	
NXWS16F	NX Networked Wireless Enabled Integral NXSMP2-LMO PIR Occupancy Sensor with Automatic Dimming Photocell and Bluetooth Programming [1,4,5]
NXWS40F	NX Networked Wireless Enabled Integral NXSMP2-HMO PIR Occupancy Sensor with Automatic Dimming Photocell and Bluetooth Programming [1,4,5]
NXW	NX Networked Wireless Radio Module NXRM2 and Bluetooth Programming, without Sensor [4,5]
WIR	LightGRID+ In-Fixture Module [4,5]
WIRSC	LightGRID+ Module and Occupancy Sensor [4,5]

Stand Alone Sensors	
BTS-14F	Bluetooth® Programmable, BTSMP-LMO PIR Occupancy Sensor with Automatic Dimming Photocell and 360° Lens
BTS-40F	Bluetooth® Programmable, BTSMP-HMO PIR Occupancy Sensor with Automatic Dimming® Photocell and 360° Lens
BTSO-12F	Bluetooth® Programmable, BTSMP-OMNI-O PIR Occupancy Sensor with Automatic Dimming Photocell and 360° Lens
7PR	7-Pin Receptacle [4]
7PR-SC	7-Pin Receptacle with shorting cap [4]
3PR	3-Pin twist lock [4]
3PR-SC	3-Pin receptacle with shorting cap [4]
3PR-TL	3-Pin PCR with photocontrol [4]

Programmed Controls	
SCP-_F	Sensor Control Programmable, 8F or 40F [11]
ADD	AutoDim Timer Based Dimming [4]
ADT	AutoDim Time of Day Dimming [4]

Photocontrols	
PC	Button Photocontrol [4,7]

1 – Items with a grey background can be done as a custom order. Contact brand representative for more information
2 – Battery temperature rating -20C to 55C
3 – Replace "_" with "3" for 3.5"-4.13" OD pole, "4" for 4.18"-5.25" OD pole, "5" for 5.5"-6.5" OD pole
4 – Networked Controls cannot be combined with other control options
5 – Not available with 2PF option
6 – Not available with 480V
7 – Not available with 347 or 480V
8 – Not available with Dual Driver option
9 – Only available in Size 1 housing, up to 105 Watts
10 – Some voltage restrictions may apply when combined with controls
11 – At least one SCPREMOTE required to program SCP motion sensor. Must select 8ft or 40ft.

VIPER Area/Site

VIPER LUMINAIRE

DATE: LOCATION:

TYPE: PROJECT:

CATALOG #:

ORDERING GUIDE (CONT'D)

CATALOG #

Accessory Type		Size		Option		Color	
SHD	Shield	**1**	Size 1	**HSS-90-B**	House Side Shield 90° Back	**BLS**	Black Gloss Smooth
		2	Size 2	**HSS-90-F**	House Side Shield 90° Front	**BLT**	Black Matte Textured
		3	Size 3	**HSS-90-S**	House Side Shield 90° Side	**DBS**	Dark Bronze Gloss Smooth
		4	Size 4	**HSS-270-BSS**	House Side Shield 270° Back/Side/Side	**DBT**	Dark Bronze Matte Textured
				HSS-270-FSS	House Side Shield 270° Front/Side/Side	**GTT**	Graphite Matte Textured
				HSS-270-FSB	House Side Shield 270° Front/Side/Back	**LGS**	Light Gray Gloss Smooth
				HSS-360	House Side Shield 360°	**PSS**	Platinum Silver Smooth
				BC	Back Light Control	**WHS**	White Gloss Smooth
MTG	Mounting			**A**	Arm Mount for square pole/flat surface	**WHT**	White Matte Textured
				ASQU	Universal Arm Mount for square pole	**VGT**	Green Landscape Decorative
				AAU	Adjustable Arm for pole mounting	**LEG**	Legacy Colors
				ADU	Decorative upswept Arm	**Color Option**	
				RPA	Round Pole Adapter	**CC**	Custom Color
				MAF	Mast Arm Fitter for 2-3/8" OD horizontal arm		
				K	Knuckle		
				T	Trunnion		
				WB	Wall Bracket (compatible with universal arm mounts)		

Accessory Type		Option	
MSC	Miscellaneous	**BIRD SPK**	Bird Spike

Current Control Solutions — Accessories (Sold Separately)

NX Lighting Controls

☐ **NXOFM-1R1D-UNV** — On-fixture Module (7-pin), On / Off / Dim, Daylight Sensor with NX Radio and Bluetooth® Radio, 120–480VAC

LightGRID+ Lighting Control

☐ **WIR-RME-L** — On-fixture Module (7-pin or 5-pin), On / Off / Dim, Daylight Sensor with LightGRID+ Radio, 110–480VAC

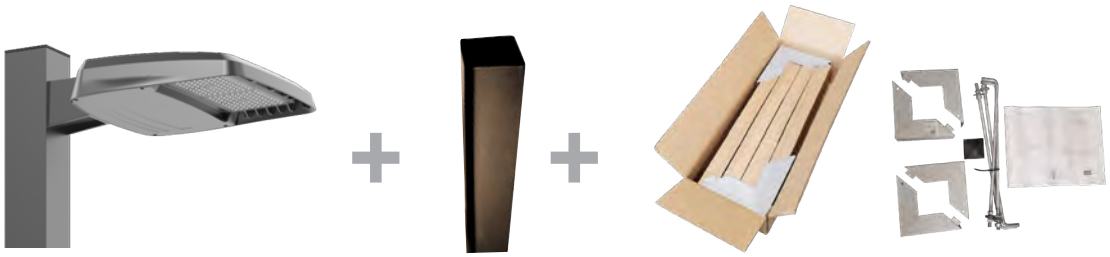
☐ **SCP-REMOTE** — Remote Control for SCP/_F option. Order at least one per project to program and control the occupancy sensor

For additional information related to these accessories please visit currentlighting.com/beacon. Options provided for use with integrated sensor, please view specification sheet ordering information table for details.

VIPER Area/Site

VIPER LUMINAIRE

VIPER POLE EXPRESS COMBO – ORDERING GUIDE



Catalog Number	Pole	Single or Double Head	Fixture	Lumens*	Wattage	Distribution	CCT/CRI	Mounting	Finish
VP-1-160-4K-3-LS-S20	**20' Square Straight Steel**	Single	**VP-1-160-4K-3-LS**	19584	158W	Type 3	4000K/70CRI	Universal Arm	Dark Bronze Textured
VP-1-160-4K-3-LS-S20-2X	**20' Square Straight Steel**	Double	**VP-1-160-4K-3-LS**	19584	158W	Type 3	4000K/70CRI	Universal Arm	Dark Bronze Textured
VP-1-160-4K-4F-LS-S20	**20' Square Straight Steel**	Single	**VP-1-160-4K-4F-LS**	19426	158W	Type 4F	4000K/70CRI	Universal Arm	Dark Bronze Textured
VP-1-160-4K-4F-LS-S20-2X	**20' Square Straight Steel**	Double	**VP-1-160-4K-4F-LS**	19426	158W	Type 4F	4000K/70CRI	Universal Arm	Dark Bronze Textured
VP-1-160-4K-3-LS-S25	**25' Square Straight Steel**	Single	**VP-1-160-4K-3-LS**	19584	158W	Type 3	4000K/70CRI	Universal Arm	Dark Bronze Textured
VP-1-160-4K-3-LS-S25-2X	**25' Square Straight Steel**	Double	**VP-1-160-4K-3-LS**	19584	158W	Type 3	4000K/70CRI	Universal Arm	Dark Bronze Textured
VP-1-160-4K-4F-LS-S25	**25' Square Straight Steel**	Single	**VP-1-160-4K-4F-LS**	19426	158W	Type 4F	4000K/70CRI	Universal Arm	Dark Bronze Textured
VP-1-160-4K-4F-LS-S25-2X	**25' Square Straight Steel**	Double	**VP-1-160-4K-4F-LS**	19426	158W	Type 4F	4000K/70CRI	Universal Arm	Dark Bronze Textured
VP-1-160-5K-3-LS-S20	**20' Square Straight Steel**	Single	**VP-1-160-5K-3-LS**	19499	158W	Type 3	5000K/70CRI	Universal Arm	Dark Bronze Textured
VP-1-160-5K-3-LS-S20-2X	**20' Square Straight Steel**	Double	**VP-1-160-5K-3-LS**	19499	158W	Type 3	5000K/70CRI	Universal Arm	Dark Bronze Textured
VP-1-160-5K-4F-LS-S20	**20' Square Straight Steel**	Single	**VP-1-160-5K-4F-LS**	19186	158W	Type 4F	5000K/70CRI	Universal Arm	Dark Bronze Textured
VP-1-160-5K-4F-LS-S20-2X	**20' Square Straight Steel**	Double	**VP-1-160-5K-4F-LS**	19186	158W	Type 4F	5000K/70CRI	Universal Arm	Dark Bronze Textured
VP-1-160-5K-3-LS-S25	**25' Square Straight Steel**	Single	**VP-1-160-5K-3-LS**	19499	158W	Type 3	5000K/70CRI	Universal Arm	Dark Bronze Textured
VP-1-160-5K-3-LS-S25-2X	**25' Square Straight Steel**	Double	**VP-1-160-5K-3-LS**	19499	158W	Type 3	5000K/70CRI	Universal Arm	Dark Bronze Textured
VP-1-160-5K-4F-LS-S25	**25' Square Straight Steel**	Single	**VP-1-160-5K-4F-LS**	19186	158W	Type 4F	5000K/70CRI	Universal Arm	Dark Bronze Textured
VP-1-160-5K-4F-LS-S25-2X	**25' Square Straight Steel**	Double	**VP-1-160-5K-4F-LS**	19186	158W	Type 4F	5000K/70CRI	Universal Arm	Dark Bronze Textured

VIPER POLE EXPRESS COMBO – STOCK LUMINAIRE SKUS

Catalog Number	Lumens	LPW	Distribution	Wattage	CCT/CRI	Voltage	Mounting	Finish
VP-1-160-4K-3-LS	19584	123.9	3	158W	4000K/70CRI	120-277V	Universal Arm with RPA (A3U)	Dark Bronze Textured
VP-1-160-4K-4F-LS	19426	122.9	4F	158W	4000K/70CRI	120-277V	Universal Arm with RPA (A3U)	Dark Bronze Textured
VP-1-160-5K-3-LS	19499	123.4	3	158W	5000K/70CRI	120-277V	Universal Arm with RPA (A3U)	Dark Bronze Textured
VP-1-160-5K-4F-LS	19186	121.4	4F	158W	5000K/70CRI	120-277V	Universal Arm with RPA (A3U)	Dark Bronze Textured

VIPER POLE EXPRESS COMBO – ACCESSORIES

Catalog Number	Description
VM14DB	Vibration Dampener, mounts to top of pole for reduced vibration

VM14DB

BEACON
design . performance . technology

DATE: LOCATION:

TYPE: PROJECT:

CATALOG #:

VIPER Area/Site

VIPER LUMINAIRE

OUTDOOR LIGHTING CONTROLS OPTIONS

CONTROLS FUNCTIONALITY

LIGHTGRID+ NX LIGHTING CONTROLS MOBILE APP

	Control Option Ordering Logic & Description		Control Option Functionality									Control Option Components	
			Networkable	Grouping	Scheduling	Occupancy/ Motion	Daylight Harvesting	0-10V Dimming	On/Off Control	Bluetooth App Programming	Sensor Height		
NX Wireless	NXOFM1R1D-UNV	NX 7-Pin Twist-Lock® with NX Networked Wireless Radio, Integral Automatic Dimming Photocell, Integral Single Pole Relay with Dimming, and Bluetooth Programming	✓	✓	✓	Paired with external control	✓	✓	✓	✓	–		NXOFM-1R1D-UV
	NXW	NX Networked Wireless Radio Module NXRM2 and Bluetooth Programming, without Sensor	✓	✓	✓	–	–	✓	✓	✓	–		NXRM2-H
	NXWS12F	NX Networked Wireless Enabled Integral NXSMP2-OMNI-O PIR Occupancy Sensor with Automatic Dimming Photocell and Bluetooth Programming	✓	✓	✓	✓	✓	✓	✓	✓	12ft		NXSMP2-OMNI-O
	NXWS16F	NX Networked Wireless Enabled Integral NXSMP2-LMO PIR Occupancy Sensor with Automatic Dimming Photocell and Bluetooth Programming	✓	✓	✓	✓	✓	✓	✓	✓	16ft		NXSMP2-LMO
	NXWS40F	NX Networked Wireless Enabled Integral NXSMP2-HMO PIR Occupancy Sensor with Automatic Dimming Photocell and Bluetooth Programming	✓	✓	✓	✓	✓	✓	✓	✓	40ft		NXSMP2-HMO
LightGRID+	WIR	LightGRID+ In-Fixture Module	✓	–	✓	–	–	✓	✓	Gateway	–		WIR
	WIR-RME-L	LightGRID+ On Fixture Module	✓	–	✓	–	–	✓	✓	Gateway	–		WIR-RME-L
	WIRSC	LightGRID+ Module and Occupancy Sensor	✓	✓	✓	✓	✓	✓	✓	Gateway	14ft - 40ft		BTMSP
Independent	BTSO-12F	Bluetooth® Programmable, BTSMP-OMNI-O PIR Occupancy Sensor with Automatic Dimming Photocell and 360° Lens	–	–	–	✓	✓	✓	✓	✓	12ft		BTSMP-OMNI-O
	BTS-14F	Bluetooth® Programmable, BTSMP-LMO PIR Occupancy Sensor with Automatic Dimming Photocell and 360° Lens	–	–	–	✓	✓	✓	✓	✓	14ft		BTSMP-LMO
	BTS-40F	Bluetooth® Programmable, BTSMP-HMO PIR Occupancy Sensor with Automatic Dimming Photocell and 360° Lens	–	–	–	✓	✓	✓	✓	✓	40ft		BTSMP-HMO

DEFAULT SETTINGS

NX Wireless

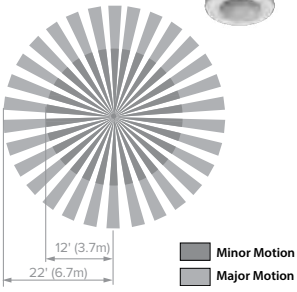
Occupancy Sensor	Enabled
Occupancy Sensor Sensitivity	7
Occupancy Sensor Timeout	15 Minutes
Occupied Dim Level	100%
Unoccupied Dim Level	0%
Daylight Sensor	Disabled
Bluetooth	Enabled
2.4GHz Wireless Mesh	On
"Passcode Factory Passcode: HubbN3T!"	Enabled

Stand Alone

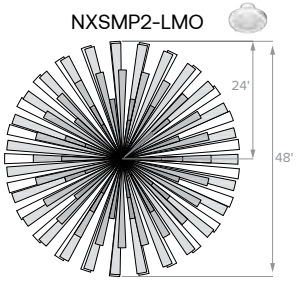
Occupancy Sensor	Enabled
Occupancy Sensor Sensitivity	7
Occupancy Sensor Timeout	8 Minutes
Occupied Dim Level	100%
Unoccupied Dim Level	50%
Daylight Sensor	Disabled

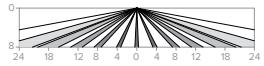
NX WIRELESS COVERAGE PATTERNS

NXSMP2-OMNI



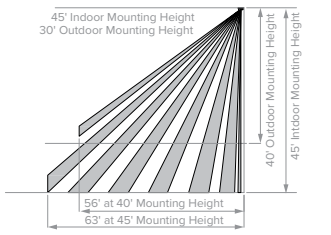
NXSMP2-LMO





Sensor Lens Coverage and Detection Patterns When Mounted at 8ft with Low Mount Lens

NXSMP2-HMO



Sensor Lens Coverage and Detection Patterns When Mounted at 40ft and 45ft with Standard Lens

BEACON
design . performance . technology

VIPER Area/Site

VIPER LUMINAIRE

DATE: | LOCATION:

TYPE: | PROJECT:

CATALOG #:

NX LIGHTING CONTROLS FREE APP

The NX Lighting Controls App is free to use mobile application for programming both NX Lighting Controls System or Standalone Bluetooth Sensors. The mobile app allows you to configure devices, discover and setup wireless enable luminiares and program NX system settings.

Apple App: https://apps.apple.com/us/app/nx-lighting-controls/id962112904

Google Play: https://play.google.com/store/apps/details?id=io.cordova.NXBTR&hl=en_US&gl=US

Apple App

Google Play

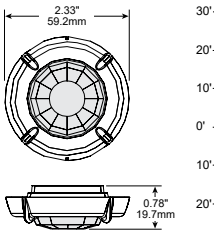
CONTROLS TECH SUPPORT 800-888-8006 (7:00 AM - 7:00 PM)

OUTDOOR LIGHTING CONTROLS OPTIONS

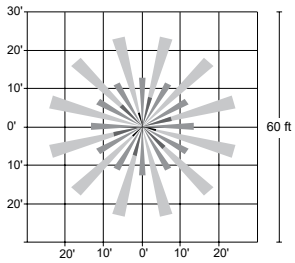
CONTROLS FUNCTIONALITY

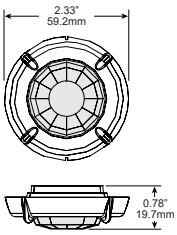
	Control Option Ordering Logic & Description		Control Option Functionality									Control Option Components
			Networkable	Grouping	Scheduling	Occupancy/ Motion	Daylight Harvesting	0-10V Dimming	On/Off Control	Bluetooth App Programming	Sensor Height	
Independent	SCP_F	Sensor Control Programmable, 8F or 40F	–	–	–	✓	✓	✓	✓	–	8ft or 40ft	SCP_F
	ADD	AutoDIM Timer Based Dimming	–	–	✓	–	–	–	✓	–	–	ADD
	ADT	AutoDIM Time of Day Dimming	–	–	✓	–	–	–	✓	–	–	ADT
	7PR	7-Pin Receptacle	–	–	Paired with external control	–	Paired with external control	–	Paired with external control	–	–	7PR
	7PR-SC	7-Pin Receptacle with shorting cap	–	–	–	–	–	–	–	–	–	7PR-SC
	3PR	3-Pin twist lock	–	–	–	–	–	–	Paired with external control	–	–	3PR
	3PR-SC	3-Pin Receptacle with shorting cap	–	–	–	–	–	–	–	–	–	3PR-SC
	3PR-TL	3-Pin with photocontrol	–	–	–	–	✓	–	✓	–	–	3PR-TL

COVERAGE PATTERNS FOR SCP_F

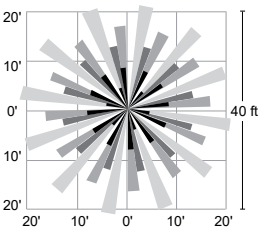


Coverage Top View @ 12ft.

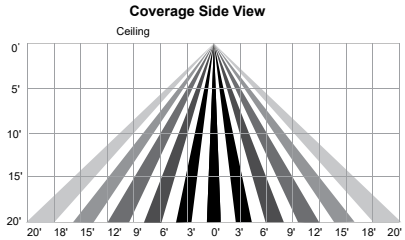




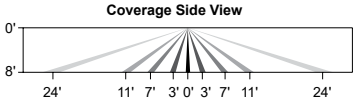
Coverage Top View @ 20 ft.

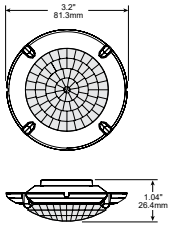


Coverage Side View

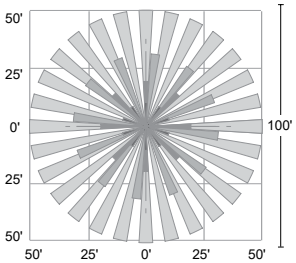


Coverage Side View

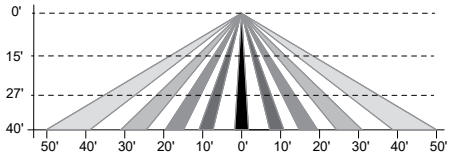




Coverage Top View @40ft



Coverage Side View



VIPER Area/Site

VIPER LUMINAIRE

PROGRAMMED CONTROLS

ADD-AutoDim Timer Based Options

- Light delay options from 1-9 hours after the light is turned on to dim the light by 10-100%. To return the luminaire to its original light level there are dim return options from 1-9 hours after the light has been dimmed previously.

EX: ADD-6-5-R6

ADD Control Options	Configurations Choices	Example Choice Picked
Auto-Dim Options	1-9 Hours	6 - Delay 6 hours
Auto-Dim Brightness	10-100% Brightness	5 - Dim to 50% brightness
Auto-Dim Return	Delay 0-9 Hours	R6 - Return to full output after 6 hours

ADT-AutoDim Time of Day Based Option

- Light delay options from 1AM-9PM after the light is turned on to dim the light by 10-100%. To return the luminaire to its original light level there are dim return options from 1AM-9PM after the light has been dimmed previously.

EX: ADT-6-5-R6

ADD Control Options	Configurations Choices	Example Choice Picked
Auto-Dim Options	12-3 AM and 6-11 PM	6 - Dim at 6PM
Auto-Dim Brightness	10-100% Brightness	5 - Dim to 50%
Auto-Dim Return	12-6 AM and 9-11P	R6 - Return to full output at 6AM

DELIVERED LUMENS

For delivered lumens, please see Lumens Data PDF on www.Currentlighting.com

PROJECTED LUMEN MAINTENANCE

Ambient Temp.	0	25,000	*TM-21-11 36,000	50,000	100,000	Calculated L_{70} (Hours)
25°C / 77°F	1.00	0.97	0.96	0.95	0.91	408,000
40°C / 104°F	0.99	0.96	0.95	0.94	0.89	356,000

LUMINAIRE AMBIENT TEMPERATURE FACTOR (LATF)

Ambient Temperature		Lumen Multiplier
0°C	32°F	1.03
10°C	50°F	1.01
20°C	68°F	1.00
25°C	77°F	1.00
30°C	86°F	0.99
40°C	104°F	0.98

Micro Strike Lumen Multiplier			
CCT	70 CRI	80 CRI	90 CRI
2700K	–	0.841	–
3000K	0.977	0.861	0.647
3500K	–	0.900	–
4000K	1	0.926	0.699
5000K	1	0.937	0.791
AP-Amber Phosphor Converted Multiplier			
Amber	0.710		

Strike Lumen Multiplier			
CCT	70 CRI	80 CRI	90 CRI
2700K	0.9	0.81	0.62
3000K	0.933	0.853	0.659
3500K	0.959	0.894	0.711
4000K	1	0.9	0.732
5000K	1	0.9	0.732
Monochromatic Amber Multiplier			
Amber	See Amber Spec Sheet		

DATE: | LOCATION:

TYPE: | PROJECT:

CATALOG #:

VIPER Area/Site

VIPER LUMINAIRE

ELECTRICAL DATA: MICRO STRIKE

# OF LEDS	160						
NOMINAL WATTAGE	35	50	75	100	115	135	160
SYSTEM POWER (W)	34.9	50.5	72.1	97.2	111.9	132.2	157.8
INPUT VOLTAGE (V)	CURRENT (Amps)						
120	0.29	0.42	0.63	0.83	0.96	1.13	1.33
208	0.17	0.24	0.36	0.48	0.55	0.65	0.77
240	0.15	0.21	0.31	0.42	0.48	0.56	0.67
277	0.13	0.18	0.27	0.36	0.42	0.49	0.58
347	0.10	0.14	0.22	0.29	0.33	0.39	0.46
480	0.07	0.10	0.16	0.21	0.24	0.28	0.33

# OF LEDS	320						
NOMINAL WATTAGE	145	170	185	210	235	255	315
SYSTEM POWER (W)	150	166.8	185.7	216.2	240.9	261.5	312
INPUT VOLTAGE (V)	CURRENT (Amps)						
120	1.21	1.42	1.54	1.75	1.96	2.13	2.63
208	0.70	0.82	0.89	1.01	1.13	1.23	1.51
240	0.60	0.71	0.77	0.88	0.98	1.06	1.31
277	0.52	0.61	0.67	0.76	0.85	0.92	1.14
347	0.42	0.49	0.53	0.61	0.68	0.73	0.91
480	0.30	0.35	0.39	0.44	0.49	0.53	0.66

# OF LEDS	480					
NOMINAL WATTAGE	285	320	340	390	425	470
SYSTEM POWER (W)	286.2	316.7	338.4	392.2	423.2	468
INPUT VOLTAGE (V)	CURRENT (Amps)					
120	2.38	2.67	2.83	3.25	3.54	3.92
208	1.37	1.54	1.63	1.88	2.04	2.26
240	1.19	1.33	1.42	1.63	1.77	1.96
277	1.03	1.16	1.23	1.41	1.53	1.70
347	0.82	0.92	0.98	1.12	1.22	1.35
480	0.59	0.67	0.71	0.81	0.89	0.98

# OF LEDS	720				
NOMINAL WATTAGE	435	475	515	565	600
SYSTEM POWER (W)	429.3	475	519.1	565.2	599.9
INPUT VOLTAGE (V)	CURRENT (Amps)				
120	3.63	3.96	4.29	4.71	5.00
208	2.09	2.28	2.48	2.72	2.88
240	1.81	1.98	2.15	2.35	2.50
277	1.57	1.71	1.86	2.04	2.17
347	1.25	1.37	1.48	1.63	1.73
480	0.91	0.99	1.07	1.18	1.25

DATE: LOCATION:

TYPE: PROJECT:

CATALOG #:

VIPER Area/Site

VIPER LUMINAIRE

ELECTRICAL DATA: STRIKE

# OF LEDS	36				
NOMINAL WATTAGE	39	55	85	105	120
SYSTEM POWER (W)	39.6	56.8	83.6	108.2	120.9
INPUT VOLTAGE (V)	CURRENT (Amps)				
120	0.33	0.46	0.71	0.88	0.96
208	0.19	0.26	0.41	0.50	0.55
240	0.16	0.23	0.35	0.44	0.48
277	0.14	0.20	0.31	0.38	0.42
347	0.11	0.16	0.24	0.30	0.33
480	0.08	0.11	0.18	0.22	0.24

# OF LEDS	72				
NOMINAL WATTAGE	115	145	180	210	240
SYSTEM POWER (W)	113.7	143.2	179.4	210.2	241.7
INPUT VOLTAGE (V)	CURRENT (Amps)				
120	1.00	1.21	1.50	1.75	1.79
208	0.58	0.70	0.87	1.01	1.03
240	0.50	0.60	0.75	0.88	0.90
277	0.43	0.52	0.65	0.76	0.78
347	0.35	0.42	0.52	0.61	0.62
480	0.25	0.30	0.38	0.44	0.45

# OF LEDS	108				
NOMINAL WATTAGE	215	250	280	325	365
SYSTEM POWER (W)	214.8	250.8	278.3	324.7	362.6
INPUT VOLTAGE (V)	CURRENT (Amps)				
120	2.00	2.08	2.33	3.04	2.67
208	1.15	1.20	1.35	1.75	1.54
240	1.00	1.04	1.17	1.52	1.33
277	0.87	0.90	1.01	1.32	1.16
347	0.69	0.72	0.81	1.05	0.92
480	0.50	0.52	0.58	0.76	0.67

# OF LEDS		162				
NOMINAL WATTAGE	320	365	405	445	485	545
SYSTEM POWER (W)	322.1	362.6	403.6	445.1	487.1	543.9
INPUT VOLTAGE (V)		CURRENT (Amps)				
120	2.71	2.67	3.38	3.71	4.04	4.54
208	1.56	1.54	1.95	2.14	2.33	2.62
240	1.35	1.33	1.69	1.85	2.02	2.27
277	1.17	1.16	1.46	1.61	1.75	1.97
347	0.94	0.92	1.17	1.28	1.40	1.57
480	0.68	0.67	0.84	0.93	1.01	1.14

VIPER Area/Site

VIPER LUMINAIRE

DATE: LOCATION:

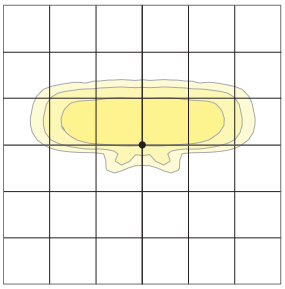
TYPE: PROJECT:

CATALOG #:

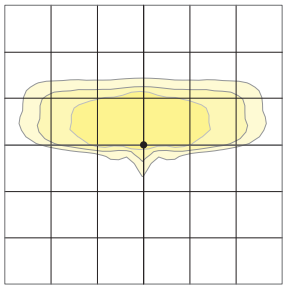
MICRO STRIKE PHOTOMETRY

The following diagrams represent the general distribution options offered for this product. For detailed information on specific product configurations, see website photometric test reports.

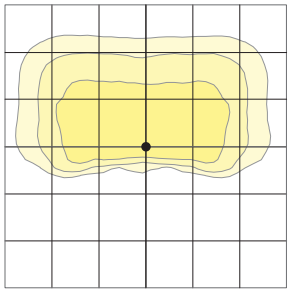
Type 2



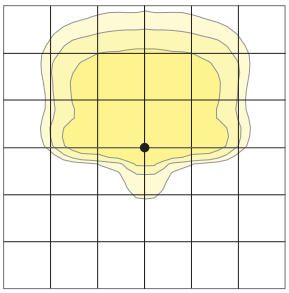
Type 3



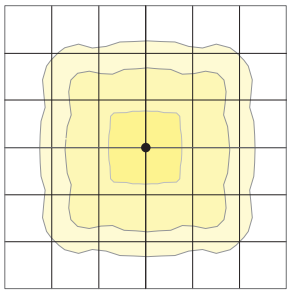
Type 4 Wide



Type 4F



Type 5QW



DATE: LOCATION:

TYPE: PROJECT:

CATALOG #:

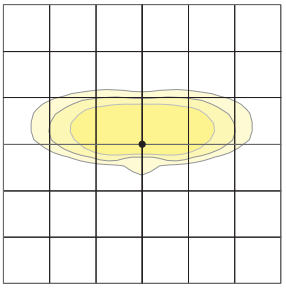
VIPER Area/Site

VIPER LUMINAIRE

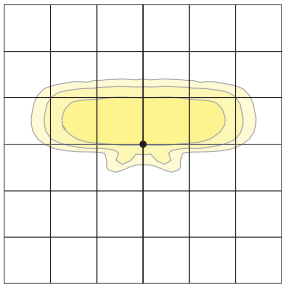
OPTIC STRIKE PHOTOMETRY

The following diagrams represent the general distribution options offered for this product. For detailed information on specific product configurations, see website photometric test reports.

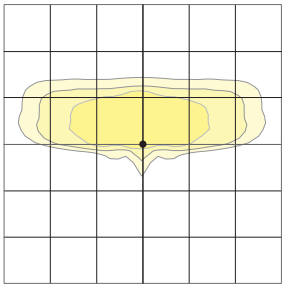
Type FR – Front Row/Auto Optic



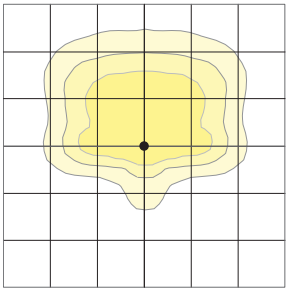
Type 2



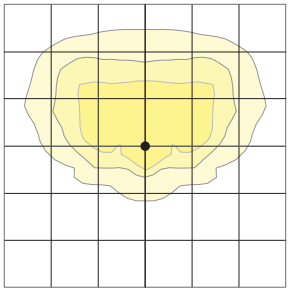
Type 3



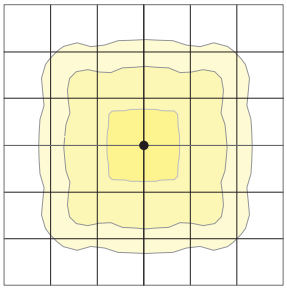
Type 4 Forward



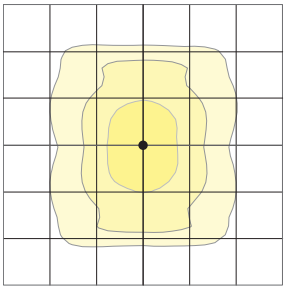
Type 4 Wide



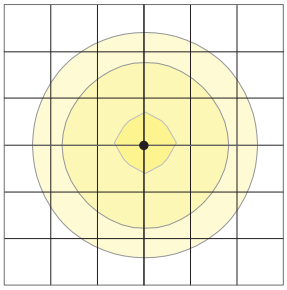
Type 5QM



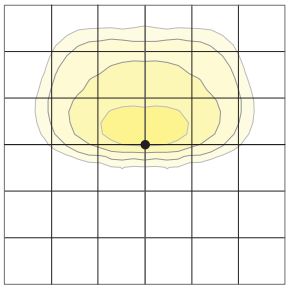
Type 5RW (rectangular)



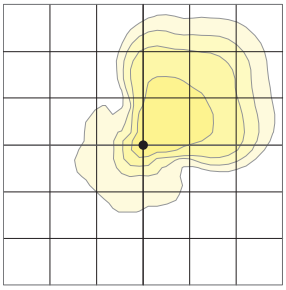
Type 5W (round wide)



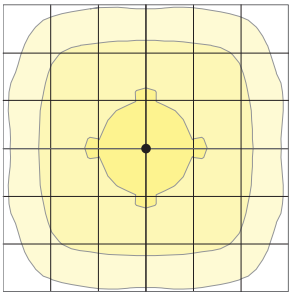
Type TC



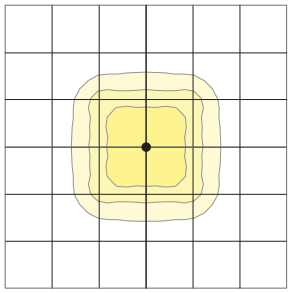
Type Corner



Type 5QW



Type 5QN



BEACON
design . performance . technology

DATE: LOCATION:

TYPE: PROJECT:

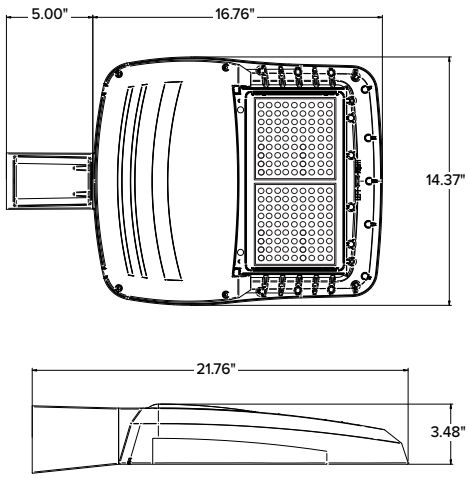
CATALOG #:

VIPER Area/Site

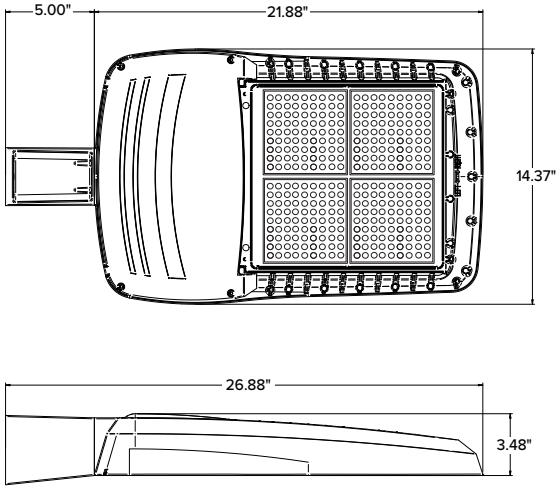
VIPER LUMINAIRE

DIMENSIONS

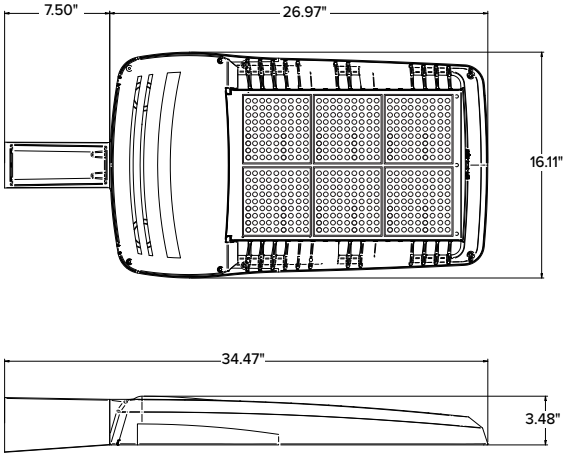
SIZE 1



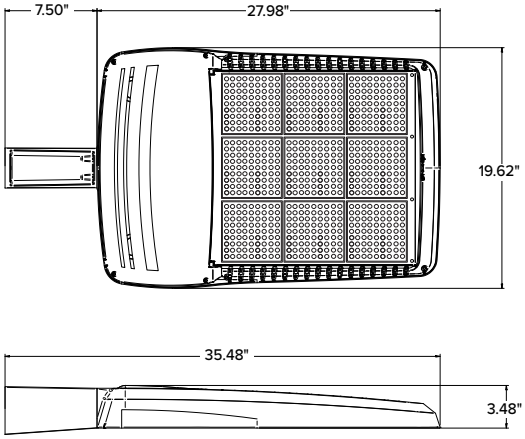
SIZE 2



SIZE 3



SIZE 4



	EPA				
	VP1 (Size 1)	VP2 (Size 2)	VP3 (Size 3)	VP4 (Size 4)	Config.
Single Fixture	0.454	0.555	0.655	0.698	
Two at 180	0.908	1.110	1.310	1.396	
Two at 90	0.583	0.711	0.857	0.948	
Three at 90	1.037	1.266	1.512	1.646	
Three at 120	0.943	1.155	1.392	1.680	
Four at 90	1.166	1.422	1.714	1.896	

	Weight	
	lbs	kgs
VP1 (Size 1)	13.7	6.2
VP2 (Size 2)	16.0	7.26
VP3 (Size 3)	25.9	11.7
VP4 (Size 4)	30.8	13.9

VIPER Area/Site

VIPER LUMINAIRE

DATE: LOCATION:

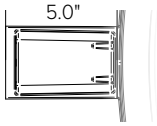
TYPE: PROJECT:

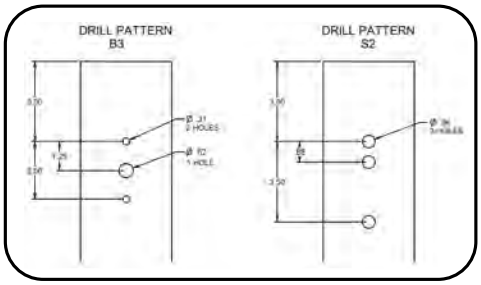
CATALOG #:

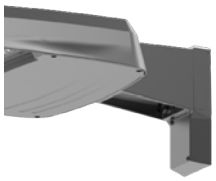
MOUNTING

A–STRAIGHT ARM MOUNT

Fixture ships with integral arm for ease of installation. Compatible with Current Outdoor B3 drill pattern for ease of installation on square poles. For round poles add applicable suffix (2/3/4/5)

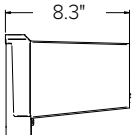


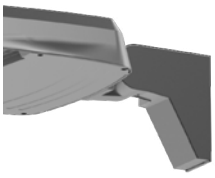




ASQU–UNIVERSAL ARM MOUNT

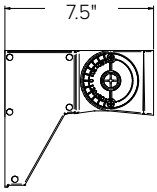
Universal mounting block for ease of installation. Compatible with drill patterns from 1.5" to 5.25" and Current drill pattern S2. For round poles add applicable suffix (2/3/4/5)

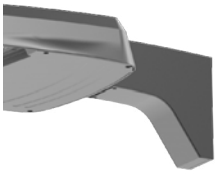




AAU–ADJUSTABLE ARM FOR POLE MOUNTING

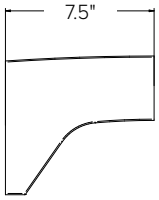
Rotatable arm mounts directly to pole. Compatible with drill patterns from 1.5" to 5.25" and Current drill pattern S2 and B3. For round poles add applicable suffix (2/3/4/5). Rotatable in 15˚ aiming angle increments. Micro Strike configurations have a 45° aiming limitation.
Strike configurations have a 30° aiming limitation.

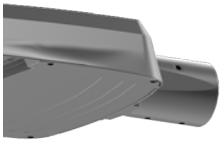




ADU–DECORATIVE UPSWEPT ARM

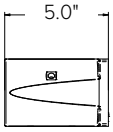
Upswept Arm compatible with drill patterns from 1.5" to 5.25" and Current drill pattern S2. For round poles add applicable suffix (2/3/4/5).

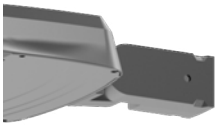




MAF–MAST ARM FITTER

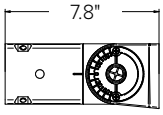
Fits 2-3/8" OD horizontal tenons.

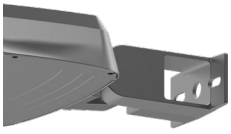




K–KNUCKLE

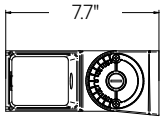
Knuckle mount 15˚ aiming angle increments for precise aiming and control, fits 2-3/8" tenons or pipes. Micro Strike configurations have a 45° aiming limitation. Strike configurations have a 30° aiming limitation.





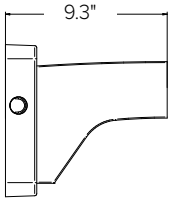
T–TRUNNION

Trunnion for surface and crossarm mounting using (1) 3/4" or (2) 1/2" size through bolts. Micro Strike configurations have a 45° aiming limitation. Strike configurations have a 30° aiming limitation.



WM–WALL MOUNT

Compatible with universal arm mount, adjustable arm mount, and decorative arm mount. The WA option uses the same wall bracket but replaces the decorative arm with an adjustable arm.



VIPER Area/Site

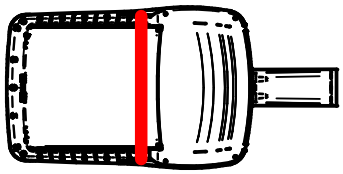
VIPER LUMINAIRE

ADDITIONAL INFORMATION (CONTINUED)

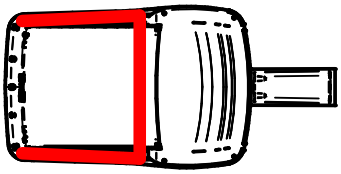
HOUSE SIDE SHIELD FIELD INSTALL ACCESSORIES

HSS has a depth of 5" for all Viper sizes
Not to be used with Occupancy Sensors as the shield may block the light to the sensor.

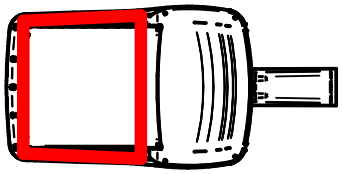
VPR2x HSS-90-B-xx



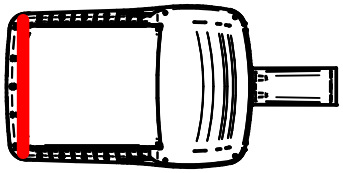
VPR2x HSS-270-BSS-xx



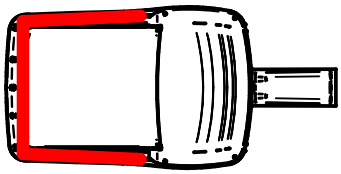
VPR2x HSS-360-xx



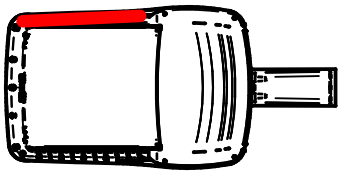
VPR2x HSS-90-F-xx



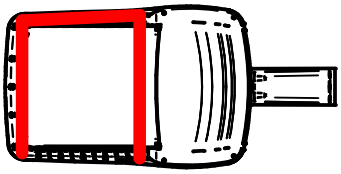
VPR2x HSS-270-FSS-xx



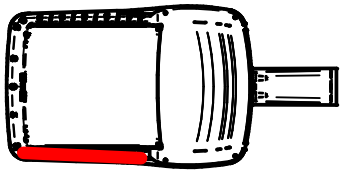
VPR2x HSS-90-S-xx



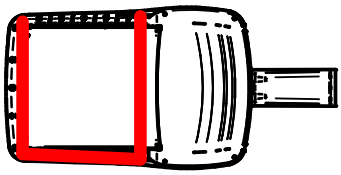
VPR2x HSS-270-FSB-xx



VPR2x HSS-90-S-xx



VPR2x HSS-270-FSB-xx



Van Meter
tradition with a vision

Site Plan Application Form

Property Location for Site Plan (street address and/or boundary description):

520 1st Avenue, Van Meter, IA 50261

Subdivision Name: Van Meter School Additions and Renovations
Gross acreage of subdivision: 37.12 acres Total number of proposed lots: NA
Current property zoning: R-1, R-2, A
Is subdivision within Van Meter's corporate limits ☑ yes ☐ no
Is subject property within a 100-year floodplain ☑ yes ☐ no *NOTE: Only the north drainageway

Applicant/Contact Person: Zach Detterman
Full Name: Zach Detterman Company: Invision Architecture
Address: 900 Mulberry Street
City, State, Zip: Des Moines, IA 50309
Office Phone: 515-633-2941 Cell Phone:
E-mail: zachd@invisionarch.com

Property Owner: Van Meter CSD
Full Name: Deron Durflinger Company: Van Meter CSD
Address: 520 1st Avenue
City, State, Zip: Van Meter, IA 50261
Office Phone: 515-996-2221 Cell Phone:
E-mail: deron.durflinger@vmbulldogs.com

Attorney
Full Name: Firm Name:
Address:
City, State, Zip:
Office Phone: Cell Phone:
E-mail:

Land Surveyor/Engineer: Gage L. DeCook, P.E.
Address: 1001 Office Park Road, Suite 120
City, State, Zip: West Des Moines
Office Phone: 515-225-4377 Cell Phone: 515-494-0256
E-mail: gdecook@larsonengr.com

I (We) certify that I (we) am (are) familiar with applicable state and local codes and ordinances, the procedural requirements of the City of Van Meter, and have submitted all the required information.

Signed by: _____ Date: 12/11/2024
(Applicant/Contact Person)
Note: No other signature may be substituted for the Property Owner's Signature

and: _____ Date: 12/11/24
(Property Owner)

Additional Information - continued

Where required as part of a Site Plan approval, utilities, streets, and sidewalks shall be constructed in accord with the City's construction standards for those portions within the public right-of-way and to be dedicated to the City. Utilities, streets, and sidewalks may also be required to be constructed to the same specifications for those undedicated portions where such utilities and improvements may have a direct affect on the future safety, proper functioning and maintenance of those portions to be dedicated.

No application can be accepted for filing unless all required information is submitted

Application Fee: $250.00 to be submitted at the time of application plus reimbursement for all actual professional fees incurred by the City of Van Meter pertaining to the review. Applicant will be invoiced for professional fees upon completion of the review.

Applications shall be submitted to the City Clerk of Van Meter, City Hall, 310 Mill Street - PO BOX 160, Van Meter, IA 50261. Electronic submission shall be sent to pandz@vanmeteria.gov.

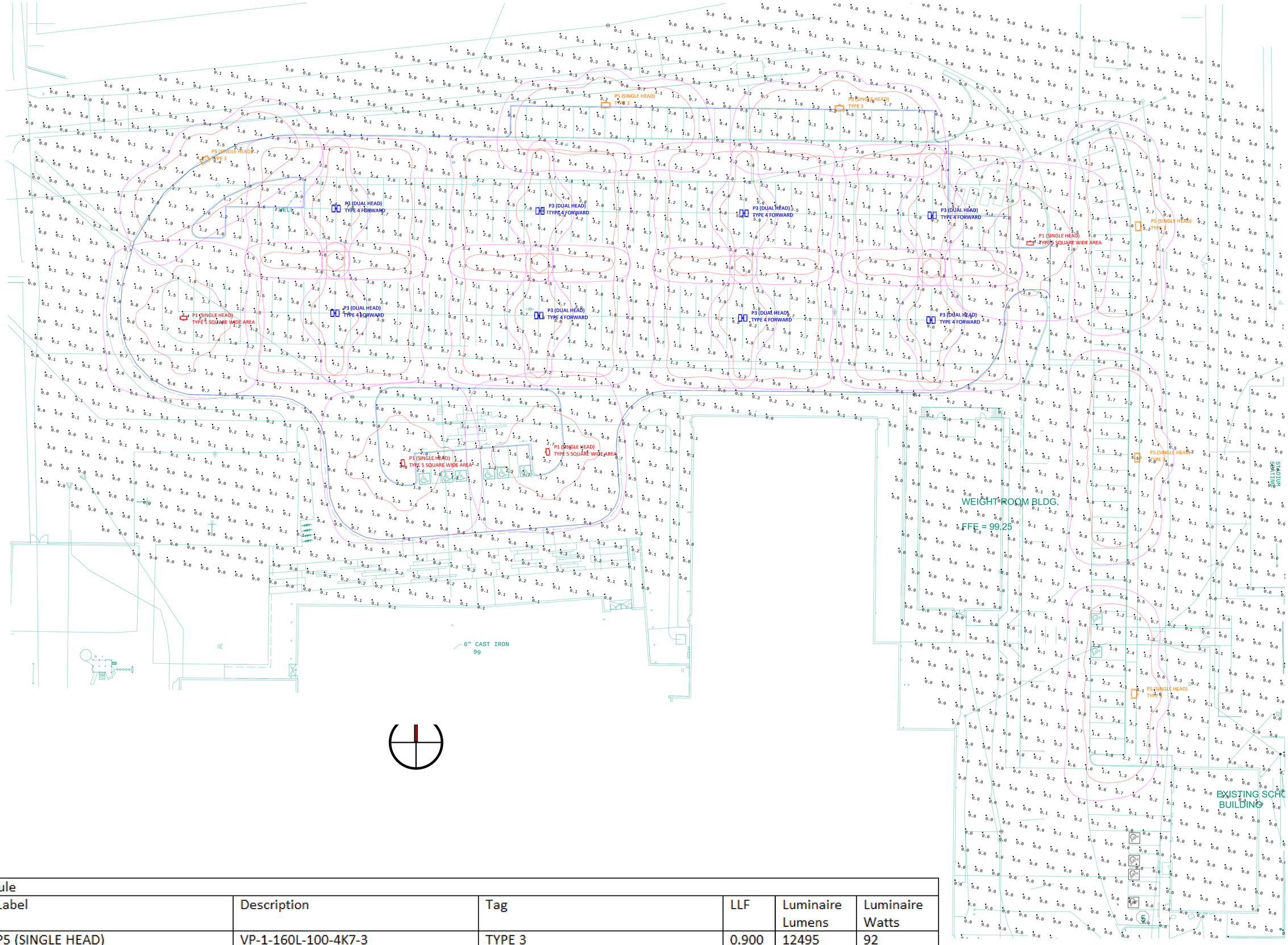
For Staff Use:

Received by: Jessica Drake Date: 12/19/24

Fee Receipt Date: 12/19/24

Planning & Zoning Meeting Date: 1/08/25

City Council Meeting Date: 1/13/25



Luminaire Schedule						
Symbol	Label	Description	Tag	LLF	Luminaire Lumens	Luminaire Watts
	P5 (SINGLE HEAD)	VP-1-160L-100-4K7-3	TYPE 3	0.900	12495	92
	P1 (SINGLE HEAD)	VP-1-160L-100-4K7-5QW	TYPE 5 SQUARE WIDE AREA	0.900	12179	92
	P3 (DUAL HEAD)	VP-1-160L-100-4K7-4F	TYPE 4 FORWARD	0.900	11618	92

Larson Engineering, Inc.
1001 Office Park Road, Suite 120
West Des Moines, IA 50265-2509
515.225.4377
www.larsonengr.com

Larson

Van Meter School Additions and Improvements
Van Meter CSD

520 1st Avenue
Van Meter, IA 50261

Stormwater Management Plan

Date: December 03, 2024

I HEREBY CERTIFY THAT THIS ENGINEERING DOCUMENT WAS PREPARED BY ME OR UNDER MY DIRECT PERSONAL SUPERVISION. I AM A DULY REGISTERED ENGINEER UNDER THE LAWS OF THE STATE OF IOWA

12.03.24
SIGNATURE & DATE

PRINTED OR TYPED NAME	MICHAEL A. MURPHY
LICENSE NUMBER	17096
MY LICENSE RENEWAL DATE IS DECEMBER 31,	2025
PAGES OR SHEETS COVERED BY THIS SEAL:	ALL

Larson Engineering, Inc.
West Des Moines, IA 50265
Engineer of Record: Michael A. Murphy, P.E., LEED AP
515.225.4377
Project Number: 92230021.000

Larson Engineering, Inc.
1001 Office Park Road, Suite 120
West Des Moines, IA 50265-2509
515.225.4377
www.larsonengr.com

Larson

Contents

Appendices

Supporting Calculations

- EX–01 Existing Conditions Drainage Map
- EX-02 Proposed ConditionsDrainage Map
- Routing Diagram for Existing Conditions
  - 5-yr, 24-hr HydroCAD Model
  - 100-yr, 24-hr HydroCAD Model
- Routing Diagram for Proposed Conditions
  - 5-yr, 24-hr HydroCAD Model
  - 100-yr, 24-hr HydroCAD Model
- Intake Design Spreadsheet
- Trench Drain Capacity

Larson Engineering, Inc.
1001 Office Park Road, Suite 120
West Des Moines, IA 50265-2509
515.225.4377
www.larsonengr.com

Larson

1 – Project Description:

The proposed development will consist of building additions and parking lot improvements at the existing Van Meter School, located at 520 1st Avenue in Van Meter, Iowa. The project will include a new north addition (~32,000 SF), a new weight room building (5,300 SF), a new concession stand (1,200 SF), a new restroom building (1,200 SF), and a new east entry addition (1,200 SF). The parking improvements portion of the project includes 145 additional parking stalls with the potential for 38 additional parking stalls that are proposed as bid alternates, as well as driveway replacement due to utility installation. An earlier phase of the overall project included a 264-stall parking lot that was constructed east of the existing school building at a previously partially paved, grassed, and gravel parking lot and included a stormwater report that was submitted separately.

The existing parking lot currently consists of a mix of concrete and gravel parking for both students and buses. The parking lot is proposed to be reconstructed with concrete pavement, sidewalks, and underground stormwater detention.

2 – Existing Conditions:

The existing site, prior to the east parking lot construction, consisted of approximately ~130 parking stalls and bus parking at the east side of the site and approximately 113 parking stalls at the north portion of the site.

The site generally drains from south to north and a drainage ditch is present at the north portion of the site that ultimately drains to the Raccoon River. The existing school site includes a detention basin at the north side of the site with an 18” concrete outlet pipe that receives roof drainage and parking lot runoff. The southeast parking lot, prior to the recent improvements, drained via overland flow from south to north. Storm sewer is present on the south side of the existing school building to drain runoff generated from the hillside and is routed both east and west.

Several constraints exist across the site that limit the ability to detain stormwater on the site, including:

- The existing site was initially built in 1927, with school additions in 1968, 1980, 1990, 2001, 2007, and 2016 with much of the facility constructed prior to modern stormwater standards implementation.
- Areas generating much of the stormwater runoff are present along the low point of the site where detention depth is limited.
- Two (x2) water supply wells are currently present at the northwest and north portions of the site. It is understood the Iowa Department of Natural Resources greatly limits underground liquid storage and conveyance within 200’ of public supply wells.
- Public water supply mains currently run through the site and are unable to be modified without substantial impact to the city water supply.

Larson Engineering, Inc.
1001 Office Park Road, Suite 120
West Des Moines, IA 50265-2509
515.225.4377
www.larsonengr.com

Larson

Per the City of Van Meter, the allowable developed site runoff rate for the 100-year storm is associated with a 5-year storm return frequency. However, due to the above listed constraints, the proposed stormwater design intent is to not increase the rate of runoff for the 5-year and 100-year 24-hour storms when compared to the existing conditions.

The existing conditions were developed to mimic the conditions as they currently exist on-site for the area that is proposed to be improved. The curve numbers for the site were modeled as 74 for pervious areas (>75% grass cover, in good condition, soil classification type C OR pasture/grassland/range, good condition, type C) and 98 for impervious surfaces (paved parking). The time of concentration for the existing conditions was modeled within HydroCAD and generally included a combination of sheet flow and shallow concentrated flow. Stormwater calculations described in this report were completed with the use of HydroCAD 10.00-15. Rainfall data was taken from Table 2B-2.06 of Chapter 2 of the Statewide Urban Design and Specifications manual (SUDAS) for Section 5 - Central Iowa (Dallas County). The existing conditions for the approximately 11.09-acre site were modeled (including the existing detention basin) for the 5-year and 100-year 24-hour storms the associated runoff rates were calculated to be 32.87 cfs and 85.07 cfs, respectively. Note that areas of the site that are not capturable and/or not disturbed have been omitted from the calculations.

3 – Proposed Conditions:

The proposed project site will continue to convey stormwater north to the existing drainageway and ultimately to the Raccoon River. Due to the constraints listed above, stormwater detention is proposed at several locations across the site. The site can be considered in the following general drainage areas:

- The east parking lot (Please see previously submitted Stormwater Report for in-depth details of improvements)
- The east drive
- The north building addition
- The north parking lot

At the east parking lot, the proposed concession/restroom buildings and paved concourse will convey runoff to the existing 8’ diameter underground detention system (previously referred to as UG #1). Routing of the additional runoff to the underground system requires the orifice plate be upsized to not inundate the system.

At the east drive, stormwater will continue to be conveyed overland via curb cuts and the existing swale between the drive and the track. A berm has been proposed at the north end of the existing swale to assist in the reduction in runoff rate for the 5-year storm. The proposed weight room building will discharge stormwater via downspouts and will utilize the existing 18” culvert to the bermed swale.

For the new north building addition, 320 linear feet of 5’ diameter CMP system with an outlet structure was proposed to reduce the runoff rate from the building. The depth of the system was limited due to the sanitary sewer and water supply well lines that currently reside on the site.

Larson Engineering, Inc.
1001 Office Park Road, Suite 120
West Des Moines, IA 50265-2509
515.225.4377
www.larsonengr.com

Larson

The north parking lot improvements include 175 linear feet of 6' diameter CMP that is placed outside of the 200' well setbacks and outside of the existing water supply lines. The existing well lines and well setbacks limit the available underground detention that is available for the north parking lot.

The combination of the above-mentioned detention facilities were then modeled using the same storms and overall area as the existing conditions, and were calculated, using HydroCAD, to be as follows:

	Overall Site Runoff (cfs)	
Storm Event (24-Hour)	5-Year	100-year
Existing Conditions	32.87	85.07
Proposed Conditions	32.48	67.27

4 – Storm System Sizing and Design:

Pipe sizes for the on-site stormwater design were then modeled within HydroCAD to convey stormwater runoff for the site. The HydroCAD model was also utilized to check inlet capacities of each intake with the 100-year, 24-hour event and to verify high-water level (HWL) for each structure as shown in the *Intake Design Worksheet.* The *Intake Design Worksheet* has been included in the appendix to summarize each structure and notes associated surface HWLs due to inlet capacity.

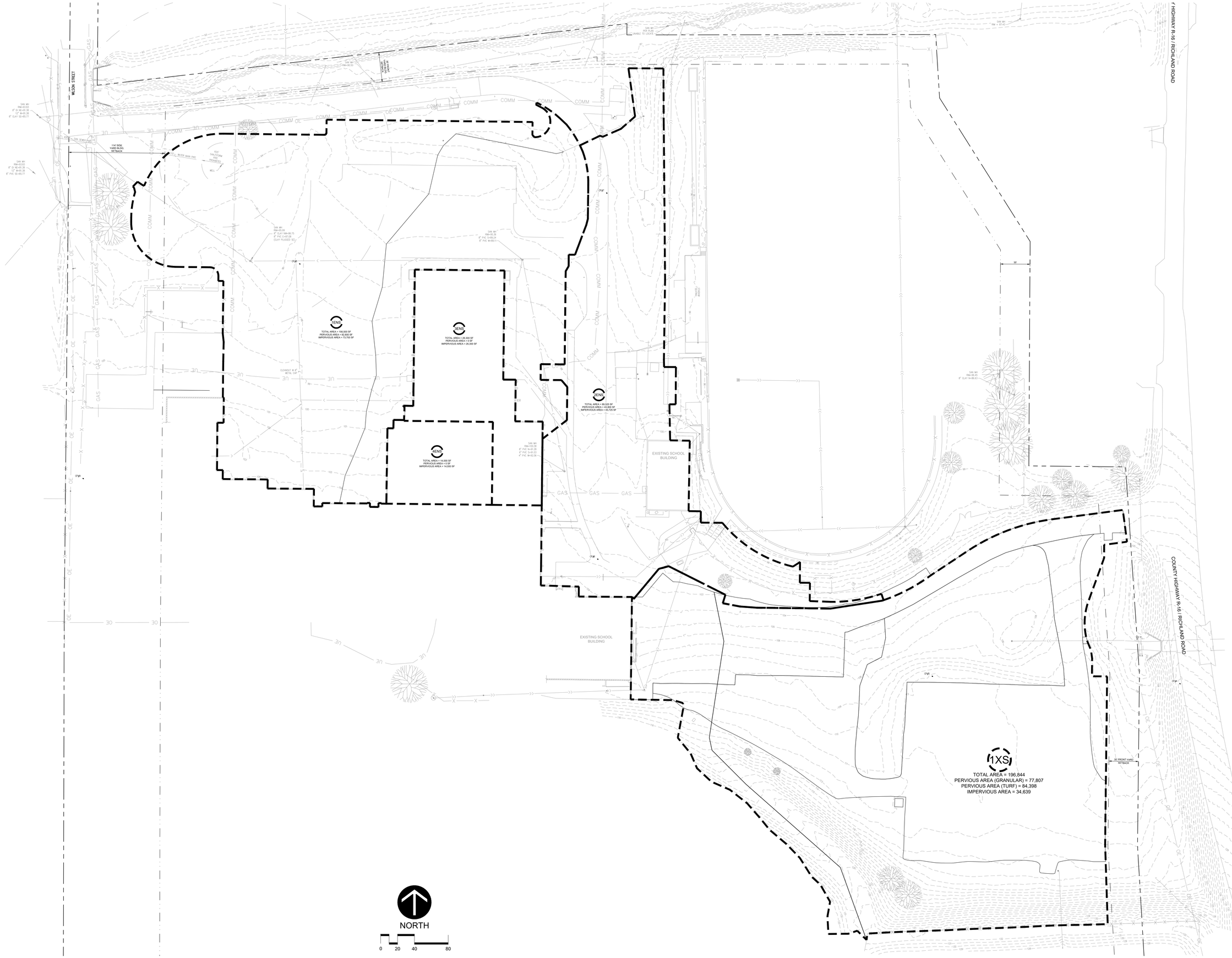
5 – Summary:

The proposed Van Meter School Additions and Improvements project has been designed to produce a peak runoff rate in the developed condition to be no greater than the peak runoff rate in the current condition for comparable storms.

Additionally, storm sewer and intake calculations have been described above and supporting calculations included within the appendix.

Sincerely,
Larson Engineering, Inc.

Michael A. Murphy, P.E., LEED AP
Regional Manager



INVISION
PLANNING | ARCHITECTURE | INTERIORS

900 MULBERRY STREET
Des Moines, Iowa 50309
515.633.2941
www.invisionarch.com

CONSULTANT:
CIVIL
LARSON ENGINEERING, INC.
LANDSCAPE
BOLTON & MENK
STRUCTURAL
RAKER RHODES ENGINEERING
MEP
KCL ENGINEERING

REVISIONS:

Description	Date	No.

OWNER SIGN-OFF:

DATE	NAME

VAN METER COMMUNITY SCHOOL DISTRICT

VAN METER SCHOOL ADDITION - BID ISSUANCE #3

520 1ST AVE, VAN METER, IA 50261

PROJECT NO: 23086

DATE: 11/11/2024

SHEET SET: BID DOCUMENTS

SHEET NAME: EXISTING CONDITIONS DRAINAGE MAP

SHEET: EX-01

INVISION
900 MULBERRY STREET
Des Moines, Iowa 50309
515.453.2704
www.invisionarch.com

CONSULTANT:
CIVIL
LARSON ENGINEERING, INC.
LANDSCAPE
BOLTON & MENK
STRUCTURAL
RAKER RHODES ENGINEERING
MEP
KCL ENGINEERING

REVISIONS:

Description	Date	No.
ADDENDUM 03	12/04/24	1

OWNER SIGN-OFF:
DATE NAME

VAN METER COMMUNITY SCHOOL DISTRICT

VAN METER SCHOOL ADDITION - BID ISSUANCE #3

520 1ST AVE, VAN METER, IA 50261

PROJECT NO: 23086
DATE: 11/11/2024
SHEET SET: BID DOCUMENTS
SHEET NAME: PROPOSED CONDITIONS DRAINAGE MAP
SHEET: EX-02

COUNTY HIGHWAY R-16 / RICHLAND ROAD

WILSON STREET

EXISTING SCHOOL BUILDING

CONCESSION BLDG. FFE = 100.56

WEIGHT ROOM BLDG. FFE = 101.25

PROPOSED ADDITION FFE = 101.20

PROPOSED FFE = 101.20 TUNNEL

INSTALL SALVAGED HYDRANT

NORTH
0 20 40 80

Larson

Project Van Meter School Addition
Client Invision
Project # 92230021
Date 12.03.24
Engineer GLD
Rainfall 100-Year

Intake Design Worksheet

	ft						sf	ft/s^2	cfs		%	cfs			
structure	Rim	Max Elevation*	d - ponding depth	Structure HWL	Inlet Type	P - grate perimeter	Ag - opening area	g (ft/s^2)	Q (weir)	Q (orifice)	Clogging Factor**	Q, structure	Q, Structure w/ Clogging Factor (cfs)	Q, actual (from HydroCAD)	Notes:
Exist CB (CB 01)	93.00	93.50	0.50	93.47	SW511 - SW604 Type 6 Grate	10.54	2.91	32.16	11.18	11.06	25%	11.06	8.29	7.54	See Note below***
CB 02A	92.50	93.04	0.54	93.04	SW505 - w/ x2 SW604 Type 6 Grates	16.00	5.82	32.16	19.05	22.98	50%	19.05	9.52	9.36	
CB 03	92.00	92.45	0.45	92.44	SW501 - Curb Inlet w/ Vane Grate	5.86	1.95	32.16	5.31	7.03	20%	5.31	4.25	4.02	

*Max elevation based on local emergency overflow elevation. Does not indicate actual high-water level.

**Clogging Factor per SUDAS Chapter 2 Table 2C-3.01.

***Actual flow includes pass-bye flow from CB 01

***For the 100-yr storm, inflow to CB 08 and CB 07 is 16.65 cfs per HydroCAD report. CBs 07 and 08 are designed to provide intake capacity (17.35 cfs total) without overtopping local curb.

Larson

Project Van Meter School Addition
Client Invision
Project # 92230021
Date 12.03.24
Engineer GLD
Rainfall **100-Year**

Intake Design Worksheet

Grate - On-Grade Intake Calcs

			ft		ft/ft	ft		fps	ft/ft	fps		ft		cfs			cfs	
structure	**Inlet Type**	**E0**	**Width of Grate**	**Spread**	**Sx**	**Depth**	**Rf**	**V**	**Sl**	**Vo***	**Rs**	**Length of Grate**	**E**	**Qt (From HydroCAD)**	**Qt, From Upstream Pass-By**	**Structure Generating Pass-By Flow**	**Q, Captured**	**Q Pass-By**
CB 01	SW505 - Curb Inlet w/ Vane Grate	0.244	1.500	15.103	0.020	0.302	1.000	3.111	0.010	11.4	0.499	5.83	0.621	9.460	0.000	NA	5.878	3.582

*7.4 for single grate, 11.4 for double grate per SUDAS Table 2C-3.02

Channel Report

Hydraflow Express Extension for Autodesk® Civil 3D® by Autodesk, Inc. Monday, Dec 2 2024

North Trench Drain

10.65 cfs in the 100-year storm, per HydroCAD

Rectangular

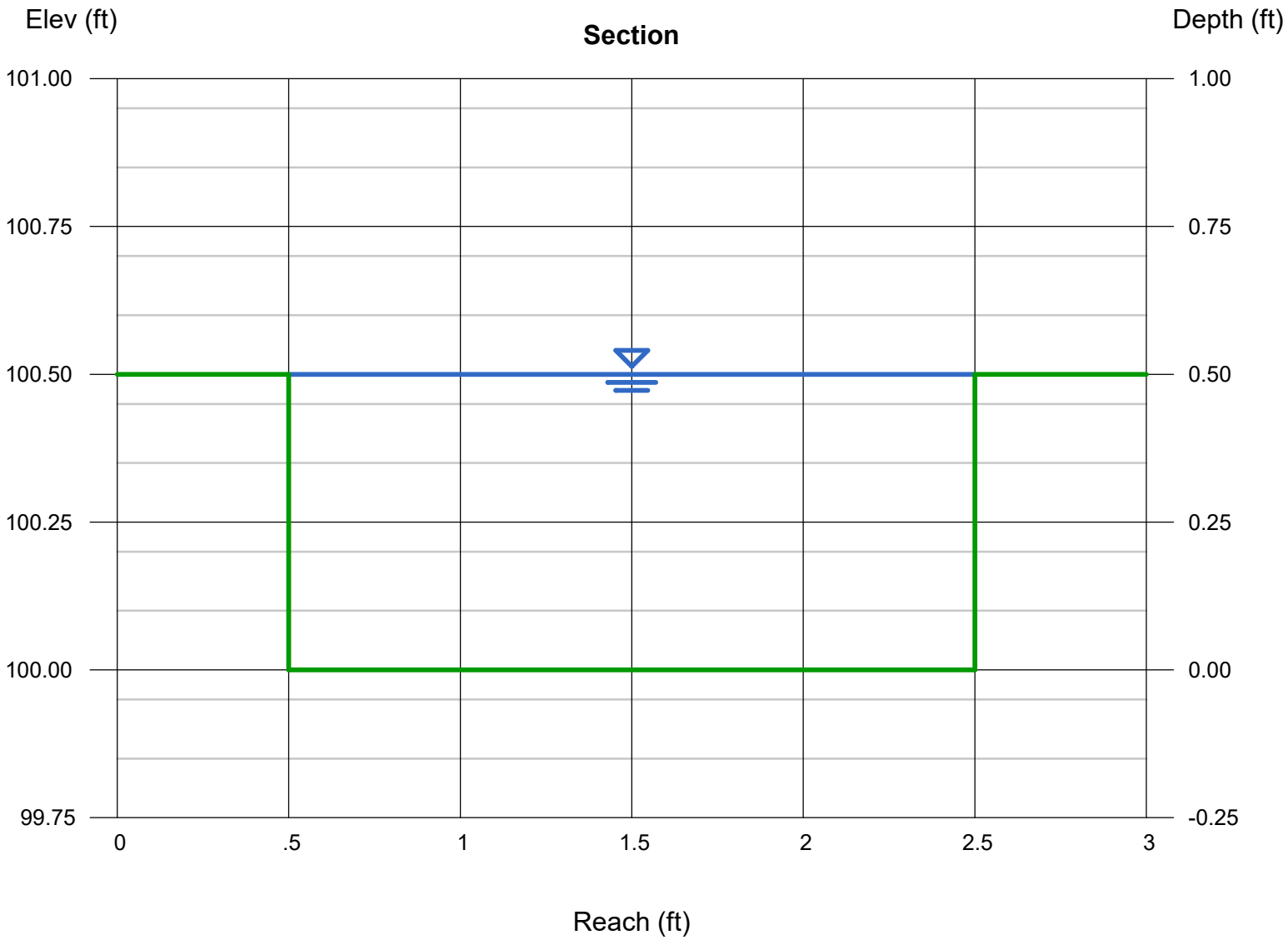
Bottom Width (ft)	= 2.00
Total Depth (ft)	= 0.50
Invert Elev (ft)	= 100.00
Slope (%)	= 4.00
N-Value	= 0.013

Calculations

Compute by:	Q vs Depth
No. Increments	= 10

Highlighted

Depth (ft)	= 0.50
Q (cfs)	= 10.99
Area (sqft)	= 1.00
Velocity (ft/s)	= 10.99
Wetted Perim (ft)	= 3.00
Crit Depth, Yc (ft)	= 0.50
Top Width (ft)	= 2.00
EGL (ft)	= 2.38



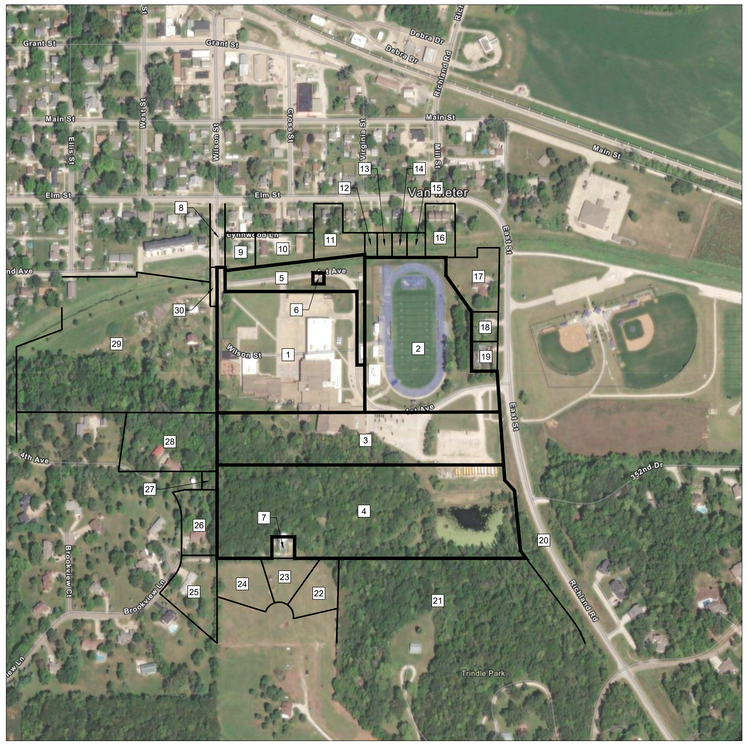
PROJECT:

VAN METER COMMUNITY SCHOOL DISTRICT

VAN METER SCHOOL ADDITION - BID ISSUANCE #3

520 1ST AVE, VAN METER, IA 50261

VICINITY MAP



NO.	PARCEL ID	OWNER	OWNER ADDRESS	ZONING
1	1527106003	VAN METER CONSOLIDATED SCHOOL DISTRICT	520 1ST AVE, VAN METER, IA 50261	R-2
2	1527106004	VAN METER COMMUNITY SCHOOL	520 1ST AVE, VAN METER, IA 50261	R-1
3	1527151001	VAN METER COMMUNITY SCHOOLS	520 1ST AVE, VAN METER, IA 50261	A/R-1
4	1527151002	VAN METER COMMUNITY SCHOOL	520 1ST AVE, VAN METER, IA 50261	A
5	1527106001	VAN METER COMMUNITY SCHOOL	520 1ST AVE, VAN METER, IA 50261	R-2
6	1527106002	CITY OF VAN METER	505 GRANT ST, PO BOX 160, VAN METER, IA 50261	R-2
7	1527151003	CITY OF VAN METER	505 GRANT ST, PO BOX 160, VAN METER, IA 50261	A
8		WILSON ST.		NA
9	1527105017	HUDNUT, JERI L & RICHARD P JTRS	213 WILSON ST, PO BOX 34, VAN METER, IA 50261	R-3
10	1527107000	LYNWOOD CONDOS		R-3
11	1527105006	YOUNG, DAVID E	616 ELM ST, PO BOX 123, VAN METER, IA 50261	R-3
12	1527105019	PARKER, BRIAN	702 ELM ST, VAN METER, IA 50261	R-3
13	1527105020	EDWARDS, DAVID E	726 ELM ST, VAN METER, IA 50261	R-3
14	1527105021	HANSON, MICHAEL	728 ELM ST, VAN METER, IA 50261	R-3
15	1527105022	NELSON, DANIEL S & KIMBERLY E JTRS	730 ELM ST, VAN METER, IA 50261	R-3
16	1527105026	SUNCOAST INVESTMENTS, LLC	763 PLANTERS MANOR WAY, BRADENTON, FL 34212	R-3
17	1527106005	STACKER, GARY G & KIMBERLY A JTRS	120 EAST ST, VAN METER, IA 50261	R-1
18	1527106006	SILSBY, JEFFREY B & ANDREA JTRS	116 EAST ST, VAN METER, IA 50261	R-1
19	1527106007	SUCKOW, ALAN J & MARGO L JTRS	PO BOX 256, VAN METER, IA 50261	R-1
20		CH R16 RICHLAND RD.		NA
21	1527151004	DALLAS COUNTY CONSERVATION BOARD	14581 K AVE, PERRY, IA 50220	A
22	1527301003	WILLIE, ALAN J & JENNIFER R JTRS	621 RICHLAND CT, VAN METER, IA 50261	R-1
23	1527301002	GALDI, ERIC M & AMY F JTRS	603 RICHLAND CT, VAN METER, IA 50261	R-1
24	1527301001	GROVE, NATHAN R & JESSICA D JTRS	6460 GALLERIA DR UNIT 1101, WEST DES MOINES, IA 50266	R-1
25	1528277008	HASSEBROCK, AUSTEN & SARAH JTRS	2680 BROOKVIEW LN, VAN METER, IA 50261	NA
26	1528277007	COSTLOW, TIMOTHY D & CHERYL W JTRS	2684 BROOKVIEW LN, VAN METER, IA 50261	NA
27	1528277012	WESTFALL, EDITH ANN	425 4TH AVE, VAN METER, IA 50261	R-1
28	1528277011	WESTFALL, EDITH ANN	425 4TH AVE, VAN METER, IA 50261	R-1
29	1528234012	CARTER, DENNIS O	PO BOX 128, VAN METER, IA 50261	A
30	1528232015	CITY OF VAN METER	505 GRANT ST, PO BOX 160, VAN METER, IA 50261	NA

PROJECT LOCATION

PROPERTY INFORMATION

LEGAL DESCRIPTION:

THE NORTH 657.5 FEET OF THE SW ¼ OF THE NW ¼, EXCEPT HIGHWAY R16 (RICHLAND ROAD) RIGHT-OF-WAY, AND EXCEPT THE EAST 100' OF THE WEST 350 FEET OF THE SOUTH 100 FEET OF SAID NORTH 657.5 FEET OF THE SW ¼ OF THE NW ¼ OF SECTION 27; AND,

THE NORTH 14 RODS OF THE SW ¼ OF THE NW ¼; AND,

THAT PART OF LOT 12 OF THE AUDITOR'S PLAT OF THE NW ¼ OF THE NW ¼ DESCRIBED IN BOOK 510, PAGE 14 OF THE DALLAS COUNT RECORDER; AND,

LOT 13 AND PART OF LOTS 9 AND 10 OF THE AUDITOR'S PLAT OF THE NW ¼ OF THE NW ¼,

AND THAT PART OF THE ORIGINAL WILSON STREET RIGHT-OF-WAY DESCRIBED IN BOOK 338, PAGE 515 OF THE DALLAS COUNTY RECORDER,

ALL IN SECTION 27, TOWNSHIP 78N, RANGE 27 WEST.

SURVEY INFORMATION

1. BUILDING OUTLINE IS BASED ON FACE OF BUILDING AT GROUND LEVEL.
2. DATE OF FIELD SURVEY: MARCH 5, 2024
3. BASIS OF BEARING FOR SURVEY IS THE IOWA RTN, IOWA STATE PLANE SOUTH ZONE.
4. VERTICAL DATUM HAS BEEN ADJUSTED TO BEST-FIT FINISH FLOOR ELEVATIONS AS SHOWN IN THE SITE SURVEY FOR VAN METER SCHOOLS 2015 BUILDING RENOVATION AND ADDITION PLANS.

CONTROL POINT INFORMATION:

CONTROL POINT "CP1" - 1/2" REBAR SE OF BASEBALL FIELD
N: 557313.40
E: 1518107.91
ELEV: 87.92

CONTROL POINT "CP2" - 1/2" REBAR NE OF BASEBALL FIELD
N: 557805.77
E: 1518109.34
ELEV: 84.41

CONTROL POINT "CP3" - CUT X IN PCC ENTRANCE TO BASEBALL FACILITY AT RICHLAND ROAD FOOTBALL FIELD.
N: 557762.14
E: 1517485.59
ELEV: 87.92

CONTROL POINT "CP4" - 1/2" REBAR IN WEST SHOULDER OF RICHLAND ROAD NEAR NORTH END OF GUARDRAIL AT BOX CULVERT UNDERPASS
N: 557146.21
E: 1517257.73
ELEV: 118.56

CONTROL POINT "CP5" - 1/2" REBAR NE OF AREA INTAKE AND SOUTH OF GRANULAR PARKING LOT
N: 557155.01
E: 1516964.34
ELEV: 113.32

CONTROL POINT "CP6" - CUT X IN PCC PAVING EAST OF VAN METER SCHOOLS SIGN
N: 557293.84
E: 1516568.02
ELEV: 102.76

CONTROL POINT "CP7" - CUT X IN SCHOOL ACCESS DRIVE EAST OF BASIN AND TRASH ENCLOSURE
N: 557727.75
E: 1516578.66
ELEV: 94.22

CONTROL POINT "CP8" - CUT X IN DEAD-END SIDEWALK ON WEST SIDE OF PARKING LOT DRIVE AND ACROSS FROM STAIR ENTRANCE TO GYM
N: 557643.78
E: 1516214.94
ELEV: 97.18

CIVIL / LANDSCAPE PROJECT CONTACTS

OWNER / APPLICANT:

REPRESENTATIVE: DERON DURFLINGER, SUPERINTENDENT
VAN METER COMMUNITY SCHOOL DISTRICT
520 1ST AVE
VAN METER, IA 50261
DERON.DURFLINGER@VMBULLDOGS.COM
515-996-2221

CIVIL ENGINEER:

MICHAEL A. MURPHY, P.E., LEED AP
LARSON ENGINEERING, INC.
1001 OFFICE PARK RD. SUITE 120
WEST DES MOINES, IA 50265-2509
MMURPHY@LARSONENGR.COM
515-225-4377

DESIGN ENGINEER / CONSTRUCTION ADMINISTRATION:

GAGE L. DECOOK, P.E.
LARSON ENGINEERING, INC.
1001 OFFICE PARK ROAD, SUITE 120
WEST DES MOINES, IA 50265
GDECOOK@LARSONENGR.COM
515-225-4377

PREPARER OF SITE PLAN:

LARSON ENGINEERING, INC.
1001 OFFICE PARK ROAD, SUITE 120
WEST DES MOINES, IA 50265
515-225-4377

LANDSCAPE ARCHITECT:
NATE WEITL, PLA, ASLA
BOLTON & MENK, INC.
430 EAST GRAND AVENUE, SUITE 101
DES MOINES, IA 50309
515-259-9190

INDEX OF DRAWINGS

BULK REGULATIONS

TOTAL SITE AREA:
37.12 ACRES (1,616,761 SF)
1.32 ACRES (57,562 SF - FORMER DISTRICT OFFICE PN 48860000317)

CONSTRUCTION SITE AREA:
5.5 ACRES (APPROXIMATE)

ZONING:
R-1, R-2, A

SETBACKS:
FRONT = 35'
SIDE = 114' (10% OF OVERALL LOT WIDTH FOR EACH SIDE, 8' MINIMUM.)
REAR = 45'

PARKING CALCULATIONS:
EXISTING = 113 STALLS (2 ADA) - NORTH BUILDING
+ 261 STALLS (8 ADA) - EAST AND SOUTHEAST OF BUILDING
+ 56 STALLS (2 ADA) - BASEBALL AND SOFTBALL FIELDS
430 TOTAL (12 ADA)

REQUIRED = 440 PARKING STALLS
(2,200 OCCUPANTS X 0.20) - ASSEMBLY SPACE

ADA PARKING STALLS REQUIRED = 9 ADA STALLS (2 VAN, MINIMUM)

PROPOSED PARKING STALLS = 264 STALLS (8 ADA) NEW EAST PARKING LOT
+ 220 STALLS (8 ADA) PROPOSED NORTH PARKING
+ 27 STALLS ALTERNATE 01A
+ 11 STALLS ALTERNATE 01B
+ 56 STALLS (2 ADA) BASEBALL AND SOFTBALL FIELDS
578 STALLS (18 ADA)

LICENSED PROFESSIONAL ENGINEER
MICHAEL A. MURPHY
17096
IOWA

I HEREBY CERTIFY THAT THIS ENGINEERING DOCUMENT WAS PREPARED BY ME OR UNDER MY DIRECT PERSONAL SUPERVISION, I AM A DULY REGISTERED ENGINEER UNDER THE LAWS OF THE STATE OF IOWA.

SIGNATURE & DATE 11/11/2024

PRINTED OR TYPED NAME MICHAEL A. MURPHY
LICENSE NUMBER 17096
MY LICENSE RENEWAL DATE IS DECEMBER 31, 2025
PAGES OR SHEETS COVERED BY THIS SEAL: "C" Sheets

PROFESSIONAL LANDSCAPE ARCHITECT
NATHAN M. WEITL, 00677
IOWA

I HEREBY CERTIFY THAT THE PORTION OF THIS TECHNICAL SUBMISSION DESCRIBED BELOW WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND RESPONSIBLE CHARGE. I AM A DULY LICENSED PROFESSIONAL LANDSCAPE ARCHITECT UNDER THE LAWS OF THE STATE OF IOWA.

Nathan M. Weitl, PLA

LICENSE NUMBER: 00677 DATE: 11/07/2024

MY LICENSE RENEWAL DATE IS JUNE 30, 2025

PAGES OR SHEETS COVERED BY THIS SEAL:
L1.00, L1.01, L2.00

NOTE: ALL WORK PERFORMED SHALL MEET THE STANDARDS OUTLINED IN THE ENCLOSED PLANS AND SPECIFICATIONS, AS WELL AS THE STATEWIDE URBAN DESIGN AND SPECIFICATIONS (SUDAS) STANDARD SPECIFICATIONS, LATEST EDITION, UNLESS NOTED OTHERWISE.

CALL BEFORE YOU DIG!
Iowa One Call
www.call811.com www.iowaonecall.com
TOLL FREE: 1-800-292-8989

INVISION
PLANNING | ARCHITECTURE | INTERIORS
900 MULBERRY STREET
Des Moines, Iowa 50309
515.633.2941
www.invisionarch.com

CONSULTANT:
CIVIL
LARSON ENGINEERING, INC.
LANDSCAPE
BOLTON & MENK
STRUCTURAL
RAKER RHODES ENGINEERING
MEP
KCL ENGINEERING

REVISIONS:

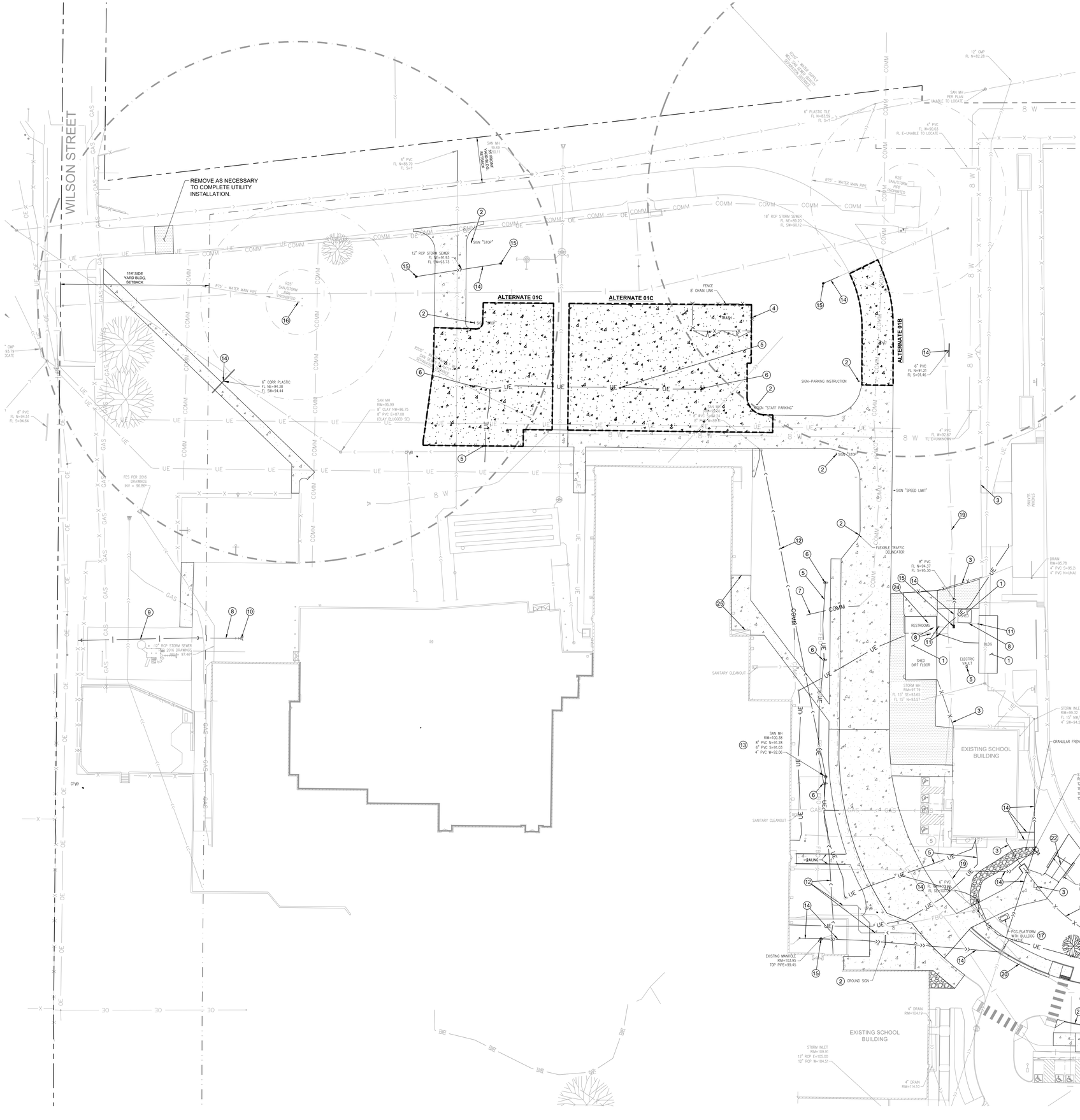
Description	Date	No.

OWNER SIGN-OFF:

DATE	NAME

VAN METER COMMUNITY SCHOOL DISTRICT
VAN METER SCHOOL ADDITION - BID ISSUANCE #3
520 1ST AVE, VAN METER, IA 50261

PROJECT NO: 23086
DATE: 11/11/2024
SHEET SET: BID DOCUMENTS
SHEET NAME: CIVIL TITLE SHEET
SHEET: C0.00



SYMBOL LEGEND

- REMOVE AND DISPOSE OF EXISTING BITUMINOUS PAVEMENT SECTION
- REMOVE AND DISPOSE OF EXISTING CONCRETE PAVEMENT SECTION
- REMOVE AND DISPOSE OF EXISTING GRAVEL PAVEMENT / EROSION STONE

DEMOLITION NOTES

1. Verify all existing utility locations.
2. It is the responsibility of the Contractor to perform or coordinate all necessary utility demolitions and relocations from existing utility locations to all onsite amenities and buildings. These connections include, but are not limited to, water, sanitary sewer, cable TV, telephone, gas, electric, site lighting, etc.
3. Prior to beginning work, contact Iowa One Call (800-292-8989) to locate utilities throughout the area under construction. The Contractor shall retain the services of a private utility locator to locate the private utilities.
4. Sawcut along edges of pavements, sidewalks, and curbs to remain.
5. All construction shall be performed in accordance with state and local standard specifications for construction.
6. All construction materials, dumpsters, detached trailers, or similar items are prohibited on public streets or within the public right-of-way.
7. Alternate #01C on this sheet only pertains to the removal of existing pavement. Keynotes not fully encompassed in the Alternate #01C boundary are to be included in the base bid.

KEY NOTES

1. REMOVE AND DISPOSE OF EXISTING BUILDING.
2. REMOVE AND DISPOSE OF EXISTING SIGN.
3. REMOVE AND DISPOSE OF EXISTING CHAIN LINK FENCING AND GATE(S).
4. REMOVE AND DISPOSE OF EXISTING TRASH ENCLOSURE FENCE AND GATES. PRIVACY SLATS TO BE SALVED FOR RELOCATED TRASH ENCLOSURE.
5. SEE ELECTRICAL PLANS FOR ELECTRICAL SERVICE REMOVALS AND RELOCATIONS.
6. SEE ELECTRICAL FOR SITE LIGHTING REMOVALS AND RELOCATIONS.
7. REROUTE EXISTING COMMUNICATION LINE AS NECESSARY TO COMPLETE SCOPE OF WORK. CONTRACTOR TO COORDINATE W/ UTILITY PROVIDER.
8. REMOVE AND DISPOSE OF EXISTING WATER LINE.
9. ABANDON EXISTING WATER LINE IN PLACE. PIPE TO BE FILLED W/ FLOWABLE FILL.
10. REMOVE AND DISPOSE OF EXISTING FIRE HYDRANT.
11. REMOVE EXISTING WATER SERVICE TO EXISTING WATER VALVE AND CAP SERVICE LINE. ADJUST VALVE TO PROPOSED SURFACE AND PROVIDE TRAFFIC RATED COVER/LID.
12. REMOVE AND DISPOSE OF EXISTING SANITARY SEWER LINE.
13. REMOVE AND DISPOSE OF EXISTING SANITARY SEWER STRUCTURE.
14. REMOVE AND DISPOSE OF EXISTING STORM SEWER LINE.
15. REMOVE AND DISPOSE OF EXISTING STORM SEWER STRUCTURE.
16. PROTECT EXISTING PUBLIC SUPPLY WELL.
17. RELOCATE EXISTING BULLDOG STATUE. FINAL STATUE LOCATION TO BE DETERMINED BY THE OWNER.
18. REMOVE AND DISPOSE OF EXISTING TREE.
19. EXISTING WELL WATER SUPPLY LINE TO BE PROTECTED. NOTE - PER THE CITY OF VAN METER, LINE IS UNABLE TO BE SHUT DOWN.
20. REMOVE AND DISPOSE OF EXISTING CURB AND GUTTER TO GUTTER JOINT.
21. GRIND EXISTING CURB AS NECESSARY TO COMPLETE SIDEWALK INSTALLATION. - SEE PAVING PLAN FOR EXTENTS OF RAMPS/SIDEWALKS.
22. REMOVE AND DISPOSE OF EXISTING SITE WALL, HANDRAILS, AND STAIRS.
23. REMOVE AND DISPOSE OF EXISTING 6" STORM SEWER AS NECESSARY SHOULD PIPE CONFLICT WITH PROPOSED STORM SEWER. PIPE BENEATH DRIVE TO BE CAPPED AND FILLED WITH FLOWABLE FILL. CONTRACTOR TO V.I.F. LOCATION AND ELEVATION OF EXISTING STORM SEWER PIPE PRIOR TO REMOVALS.
24. REMOVE AND SALVAGE EXISTING IRRIGATION CONTROLLER, BACKFLOW DEVICE, METER, AND PUMP LOCATED WITHIN BLDG TO BE REMOVED.
25. REMOVE AND DISPOSE OF EXISTING PAVEMENT TO NEAREST CONCRETE JOINT TO COMPLETE UTILITY/FOOTING INSTALLATION. EXISTING STOOP TO REMAIN, WHERE APPLICABLE.

INVISION
ARCHITECTURE | INTERIORS
900 MULBERRY STREET
Des Moines, Iowa 50309
515.633.2941
www.invisionarch.com

CONSULTANT:
CIVIL
LARSON ENGINEERING, INC.
LANDSCAPE
BOLTON & MENK
STRUCTURAL
RAKER RHODES ENGINEERING
MEP
KCL ENGINEERING

REVISIONS:

Description	Date	No.
ADDENDUM 03	12/04/24	1
ADDENDUM 04	12/10/24	2

OWNER SIGN-OFF:

DATE NAME

VAN METER COMMUNITY SCHOOL DISTRICT

VAN METER SCHOOL ADDITION - BID ISSUANCE #3

520 1ST AVE. VAN METER, IA 50261

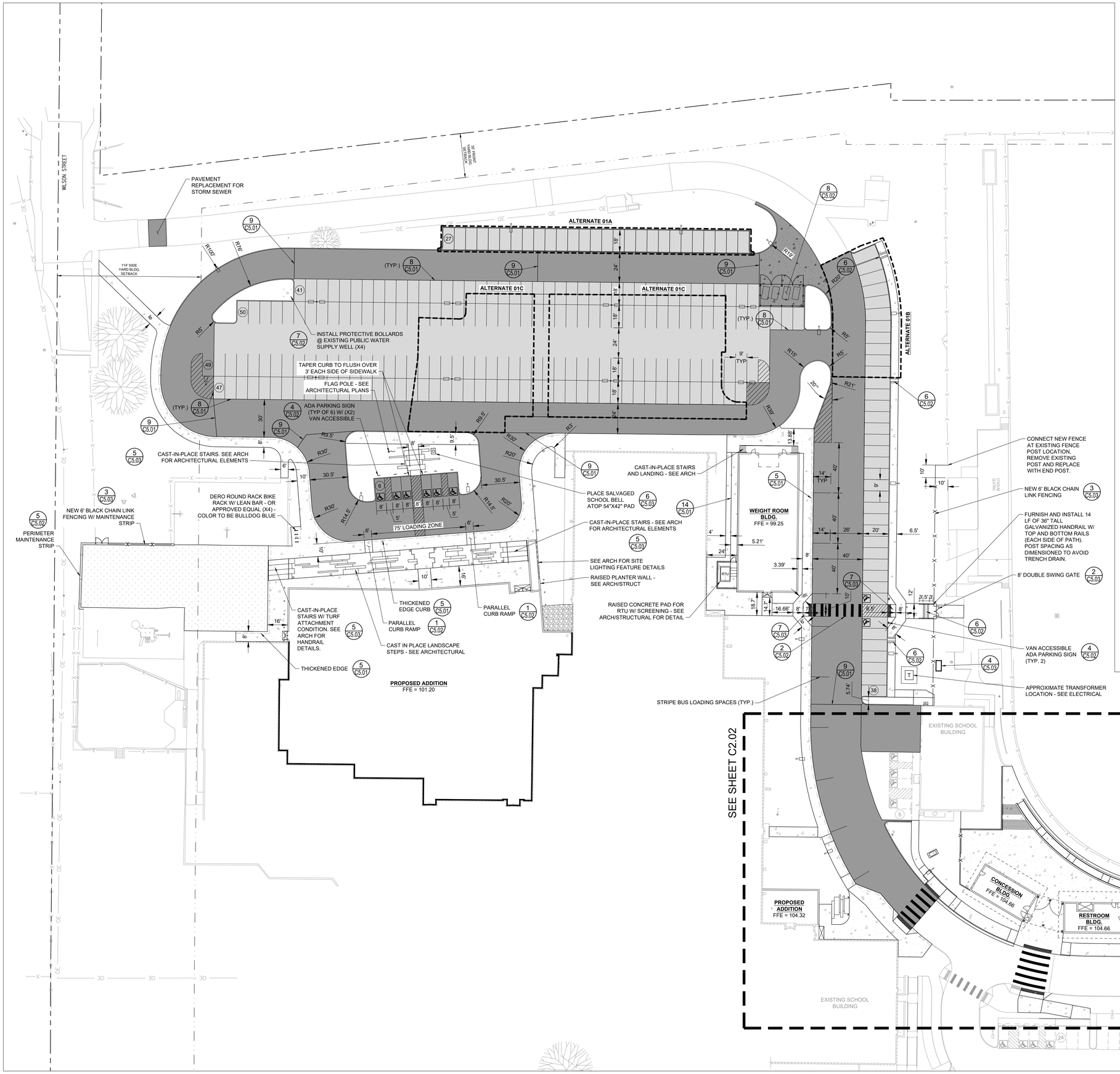
PROJECT NO: 23086

DATE: 11/11/2024

SHEET SET: BID DOCUMENTS

SHEET NAME: EXISTING CONDITIONS AND DEMOLITION PLAN

SHEET: C1.01



SYMBOL LEGEND

- NEW 8" REINFORCED CONCRETE OVER 6" BASE AGGREGATE. SEE DETAIL 1/C5.01.
- NEW 7" PORTLAND CEMENT CONCRETE OVER 6" BASE AGGREGATE. SEE DETAIL 2/C5.01
- NEW 6" PORTLAND CEMENT CONCRETE OVER 6" BASE AGGREGATE. SEE DETAIL 3/C5.01
- NEW 5" PORTLAND CEMENT CONCRETE OVER 6" BASE AGGREGATE. SEE DETAIL 4/C5.01
- NEW SYNTHETIC TURF. SEE DETAIL 3/C5.02
- NEW LANDSCAPE ROCK - SEE LANDSCAPE PLANS.
- INTEGRAL CURB AND SIDEWALK. SEE DETAIL 5/C5.01

WHERE APPLICABLE, DIMENSIONS ARE FROM FACE OF CURB TO FACE OF CURB OR FACE OF CURB TO END OF STALL LINE.

INVISION
ARCHITECTURE | INTERIORS
900 MULBERRY STREET
Des Moines, Iowa 50309
515.633.2941
www.invisionarch.com

CONSULTANT:
CIVIL
LARSON ENGINEERING, INC.
LANDSCAPE
BOLTON & MENK
STRUCTURAL
RAKER RHODES ENGINEERING
MEP
KCL ENGINEERING

REVISIONS:

Description	Date	No.
ADDENDUM 03	12/04/24	1
ADDENDUM 04	12/10/24	2

OWNER SIGN-OFF:
DATE NAME

VAN METER COMMUNITY SCHOOL DISTRICT

VAN METER SCHOOL ADDITION - BID ISSUANCE #3

520 1ST AVE. VAN METER, IA 50261

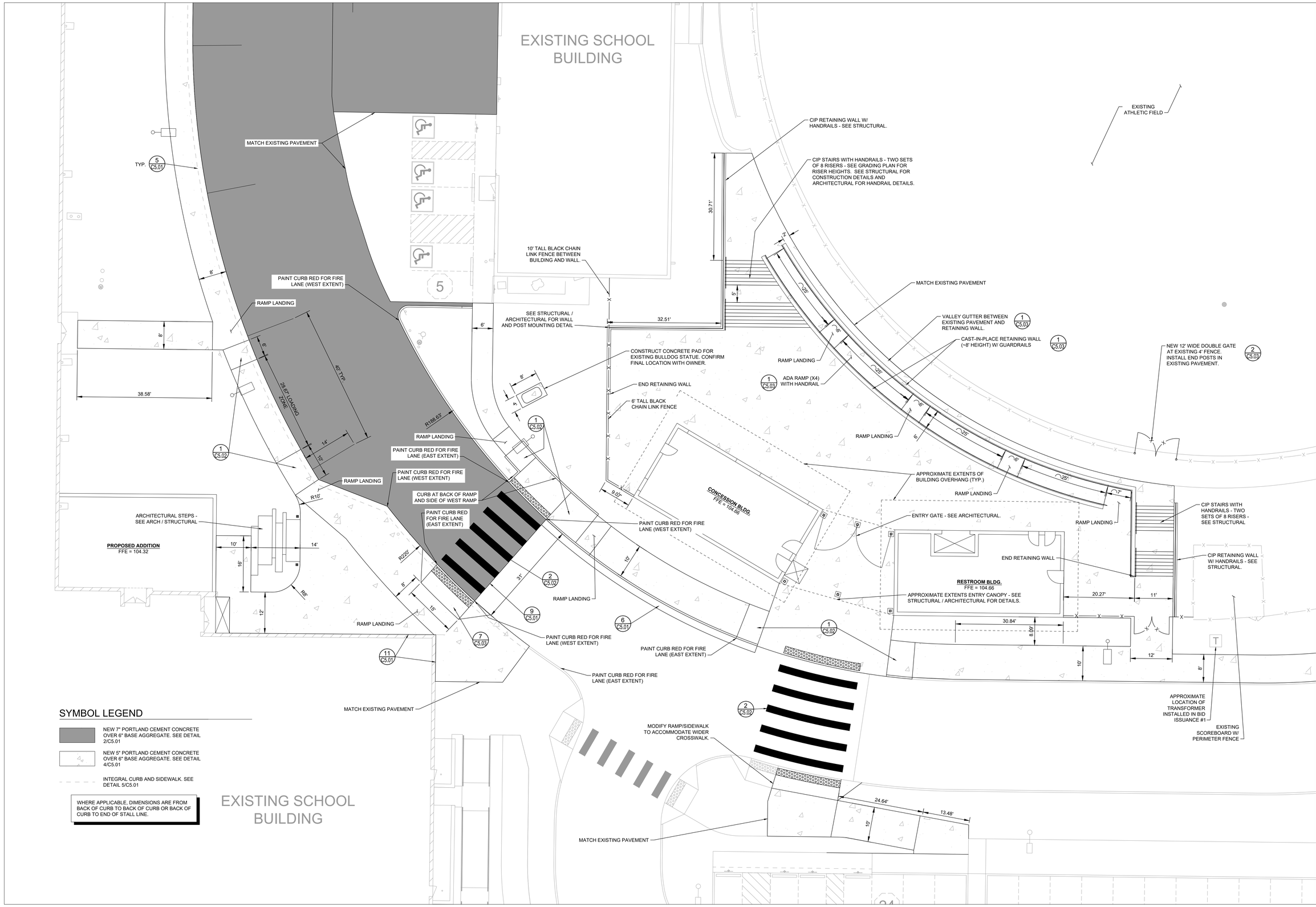
PROJECT NO: 23086

DATE: 11/11/2024

SHEET SET: BID DOCUMENTS

SHEET NAME: PAVING AND DIMENSION PLAN - NORTH

SHEET: C2.01



INVISION
PLANNING | ARCHITECTURE | INTERIORS

900 MULBERRY STREET
Des Moines, Iowa 50309
515.633.2941
www.invisionarch.com

CONSULTANT:
CIVIL
LARSON ENGINEERING, INC.
LANDSCAPE
BOLTON & MENK
STRUCTURAL
RAKER RHODES ENGINEERING
MEP
KCL ENGINEERING

REVISIONS:

Description	Date	No.
ADDENDUM 03	12/04/24	1
ADDENDUM 04	12/10/24	2

OWNER SIGN-OFF:
DATE NAME

VAN METER COMMUNITY SCHOOL DISTRICT

VAN METER SCHOOL ADDITION - BID ISSUANCE #3

520 1ST AVE, VAN METER, IA 50261

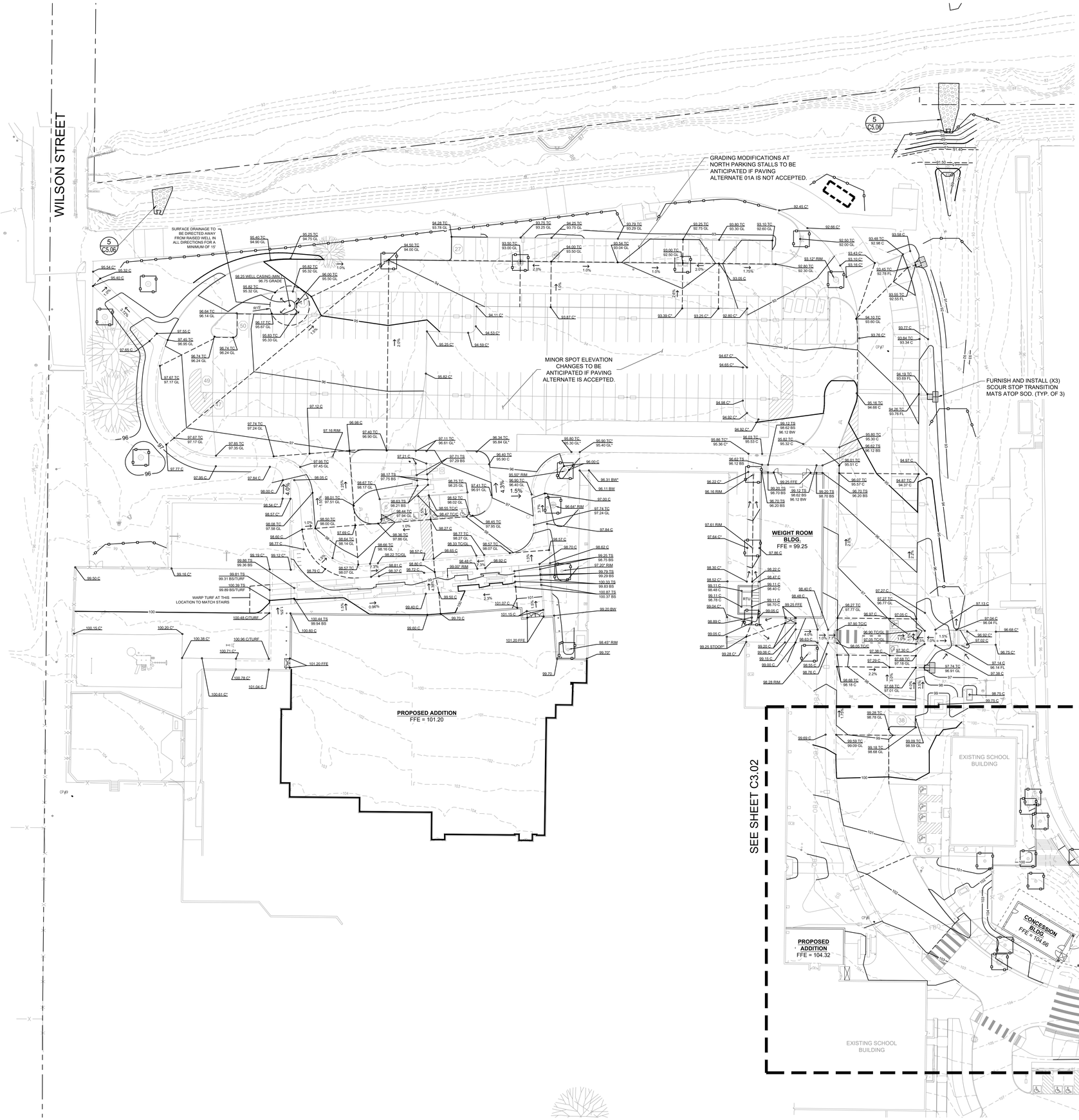
PROJECT NO: 23086

DATE: 11/11/2024

SHEET SET: BID DOCUMENTS

SHEET NAME: PAVING AND DIMENSION PLAN - SOUTH

SHEET: C2.02



LEGEND

- 950 — EXISTING CONTOURS
- 950 — PROPOSED CONTOURS - MAJOR INTERVAL
- 949 — PROPOSED CONTOURS - MINOR INTERVAL
- GRADE BREAK LINE
- 2.0% — GRADE SLOPE
- SILT FENCE - SEE DETAIL 2/C5.06
- RIP-RAP (5/C5.06) / ROCK CONST. ENTRANCE 1/C5.06)
- INLET PROTECTION - SEE DETAIL 3/C5.06
- CONCRETE WASHOUT STATION
- 950.00 TC / 949.50 GL

SPOT ABBREVIATIONS:

TC - TOP OF CURB
GL - GUTTER LINE
B - BITUMUNOUS
C - CONCRETE
EOF - EMERGENCY OVERFLOW
TW - TOP OF WALL
BW - BOTTOM OF WALL (F/G)
(*) - EXISTING TO BE VERIFIED

GRADING NOTES

1. Tree protection consisting of snow fence or safety fence installed at the drip line shall be in place prior to beginning any grading or demolition work at the site.
2. All elevations with an asterisk (*) shall be field verified. If elevations vary significantly, notify the Engineer for further instructions.
3. Grades shown in paved areas represent finish elevation.
4. Restore all disturbed areas with 4" of good quality topsoil and seed,
5. All construction shall be performed in accordance with state and local standard specifications for construction.

INVISION
PLANNING | ARCHITECTURE | INTERIORS
900 MULBERRY STREET
Des Moines, Iowa 50309
515.633.2941
www.invisionarch.com

CONSULTANT:
CIVIL
LARSON ENGINEERING, INC.
LANDSCAPE
BOLTON & MENK
STRUCTURAL
RAKER RHODES ENGINEERING
MEP
KCL ENGINEERING

REVISIONS:

Description	Date	No.
ADDENDUM 03	12/04/24	1
ADDENDUM 04	12/10/24	2

OWNER SIGN-OFF:

DATE NAME

VAN METER COMMUNITY SCHOOL DISTRICT

VAN METER SCHOOL ADDITION - BID ISSUANCE #3

520 1ST AVE, VAN METER, IA 50261

PROJECT NO: 23086

DATE: 11/11/2024

SHEET SET: BID DOCUMENTS

SHEET NAME: GRADING AND EROSION CONTROL PLAN - NORTH

SHEET: C3.01

EXISTING SCHOOL BUILDING

EXISTING SCHOOL BUILDING

MATCH EXISTING PAVEMENT ELEVATIONS

RAMP LANDING - SLOPE NOT TO EXCEED 1:48 IN ANY DIRECTION

RAMP LANDING - SLOPE NOT TO EXCEED 1:48 IN ANY DIRECTION

VALLEY GUTTER TO SLOPE TO NEAREST CATCH BASIN (TYP.)

PROPOSED ADDITION
FFE = 104.32

CONCESSION BLDG.
FFE = 104.66

RESTROOM BLDG.
FFE = 104.66

LEGEND

- EXISTING CONTOURS
- PROPOSED CONTOURS - MAJOR INTERVAL
- PROPOSED CONTOURS - MINOR INTERVAL
- GRADE BREAK LINE
- GRADE SLOPE
- SILT FENCE
- RIP-RAP / ROCK CONST. ENTRANCE
- INLET PROTECTION
- CONCRETE WASHOUT STATION

950.00 TC
949.50 GL

SPOT ABBREVIATIONS:
TC - TOP OF CURB
GL - GUTTER LINE
B - BITUMUNOUS
C - CONCRETE
EO - EMERGENCY OVERFLOW
TW - TOP OF WALL
BW - BOTTOM OF WALL (F/G)
(*) - EXISTING TO BE VERIFIED

GRADING NOTES

1. See notes on Sheet C3.01.

NORTH
0 5 10 20

INVISION
PLANNING | ARCHITECTURE | INTERIORS

900 MULBERRY STREET
Des Moines, Iowa 50309
515.633.2941
www.invisionarch.com

CONSULTANT:
CIVIL
LARSON ENGINEERING, INC.
LANDSCAPE
BOLTON & MENK
STRUCTURAL
RAKER RHODES ENGINEERING
MEP
KCL ENGINEERING

REVISIONS:

Description	Date	No.
ADDENDUM 03	12/04/24	1
ADDENDUM 04	12/10/24	2

OWNER SIGN-OFF:
DATE NAME

VAN METER COMMUNITY SCHOOL DISTRICT

VAN METER SCHOOL ADDITION - BID ISSUANCE #3

520 1ST AVE, VAN METER, IA 50261

PROJECT NO: 23086

DATE: 11/11/2024

SHEET SET: BID DOCUMENTS

SHEET NAME: GRADING AND EROSION CONTROL PLAN - SOUTH

SHEET: C3.02

STORMWATER POLLUTION PREVENTION PLAN (SWPPP)

SECTION 1: GENERAL NOTES

1.1. THE SWPPP IS COMPRISED OF THE ENCLOSED PLANS, THE CORRESPONDING SPECIFICATIONS, AND THE SWPPP KEPT ONSITE.

1.2. OWNER AND CONTRACTOR SHALL OBTAIN IOWA DNR-NPDES PERMIT. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL FEES PERTAINING TO THIS PERMIT. THE SWPPP SHALL BE KEPT ONSITE AT ALL TIMES.

1.3. INSTALL TEMPORARY EROSION CONTROL MEASURES (INLET PROTECTION, SILT FENCE, AND ROCK CONSTRUCTION ENTRANCES) PRIOR TO BEGINNING ANY EXCAVATION OR DEMOLITION WORK AT THE SITE.

1.4. EROSION CONTROL MEASURES SHOWN ON THE EROSION CONTROL PLAN ARE THE ABSOLUTE MINIMUM. THE CONTRACTOR SHALL INSTALL TEMPORARY EARTH DIKES, SEDIMENT TRAPS OR BASINS, ADDITIONAL SILTATION FENCING, AND/OR DISK THE SOIL PARALLEL TO THE CONTOURS AS DEEMED NECESSARY TO FURTHER CONTROL EROSION. ALL CHANGES SHALL BE RECORDED IN THE SWPPP.

1.5. ALL CONSTRUCTION SITE ENTRANCES SHALL BE SURFACED WITH CRUSHED ROCK ACROSS THE ENTIRE WIDTH OF THE ENTRANCE AND FROM THE ENTRANCE TO A POINT 50' INTO THE CONSTRUCTION ZONE.

1.6. THE TOE OF THE SILT FENCE SHALL BE TRENCHED IN A MINIMUM OF 6". THE TRENCH BACKFILL SHALL BE COMPACTED WITH A VIBRATORY PLATE COMPACTOR.

1.7. ALL GRADING OPERATIONS SHALL BE CONDUCTED IN A MANNER TO MINIMIZE THE POTENTIAL FOR SITE EROSION. SEDIMENT CONTROL PRACTICES MUST BE ESTABLISHED ON ALL DOWN GRADIENT PERIMETERS BEFORE ANY UP GRADIENT LAND DISTURBING ACTIVITIES BEGIN.

1.8. ALL EXPOSED SOIL AREAS MUST BE STABILIZED AS SOON AS POSSIBLE TO LIMIT SOIL EROSION BUT IN NO CASE LATER THAN 14 DAYS AFTER THE CONSTRUCTION ACTIVITY IN THAT PORTION OF THE SITE HAS TEMPORARILY OR PERMANENTLY CEASED. TEMPORARY STOCKPILES WITHOUT SIGNIFICANT SILT, CLAY OR ORGANIC COMPONENTS (E.G. CLEAN AGGREGATE STOCKPILES, DEMOLITION CONCRETE STOCKPILES, SAND STOCKPILES) AND THE CONSTRUCTED BASE COMPONENTS OF ROADS, PARKING LOTS AND SIMILAR SURFACES ARE EXEMPT FROM THIS REQUIREMENT.

1.9. THE NORMAL WETTED PERIMETER OF ANY TEMPORARY OR PERMANENT DRAINAGE DITCH OR SWALE THAT DRAINS WATER FROM ANY PORTION OF THE CONSTRUCTION SITE, OR DIVERTS WATER AROUND THE SITE, MUST BE STABILIZED WITHIN 200 LINEAL FEET FROM THE PROPERTY EDGE, OR FROM THE POINT OF DISCHARGE INTO ANY SURFACE WATER. STABILIZATION OF THE LAST 200 LINEAL FEET MUST BE COMPLETED WITHIN 24 HOURS AFTER CONNECTING TO A SURFACE WATER. STABILIZATION OF THE REMAINING PORTIONS OF ANY TEMPORARY OR PERMANENT DITCHES OR SWALES MUST BE COMPLETE WITHIN 14 DAYS AFTER CONNECTING TO A SURFACE WATER AND CONSTRUCTION IN THAT PORTION OF THE DITCH HAS TEMPORARILY OR PERMANENTLY CEASED.

1.10. PIPE OUTLETS MUST BE PROVIDED WITH ENERGY DISSIPATION WITHIN 24 HOURS OF CONNECTION TO SURFACE WATER.

1.11. ALL RIPRAP SHALL BE INSTALLED WITH A FILTER MATERIAL OR SOIL SEPARATION FABRIC AND COMPLY WITH THE IOWA DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS.

1.12. ALL STORM SEWER CATCH BASINS NOT NEEDED FOR SITE DRAINAGE DURING CONSTRUCTION SHALL BE COVERED TO PREVENT RUNOFF FROM ENTERING THE STORM SEWER SYSTEM. CATCH BASINS NECESSARY FOR SITE DRAINAGE DURING CONSTRUCTION SHALL BE PROVIDED WITH INLET PROTECTION.

1.13. IN AREAS WHERE CONCENTRATED FLOWS OCCUR (SUCH AS SWALES AND AREAS IN FRONT OF STORM CATCH BASINS AND INTAKES) THE EROSION CONTROL FACILITIES SHALL BE BACKED BY STABILIZATION STRUCTURE TO PROTECT THOSE FACILITIES FROM THE CONCENTRATED FLOWS.

1.14. INSPECT THE CONSTRUCTION SITE ONCE EVERY SEVEN DAYS DURING ACTIVE CONSTRUCTION AND WITHIN 24 HOURS AFTER A RAINFALL EVENT GREATER THAN 0.5 INCHES IN 24 HOURS. ALL INSPECTIONS SHALL BE RECORDED IN THE SWPPP.

1.15. ALL SILT FENCES MUST BE REPAIRED, REPLACED, OR SUPPLEMENTED WHEN THEY BECOME NONFUNCTIONAL OR THE SEDIMENT REACHES 1/3 OF THE HEIGHT OF THE FENCE. THESE REPAIRS MUST BE MADE WITHIN 24 HOURS OF DISCOVERY, OR AS SOON AS FIELD CONDITIONS ALLOW ACCESS. ALL REPAIRS SHALL BE RECORDED IN THE SWPPP.

1.16. IF SEDIMENT ESCAPES THE CONSTRUCTION SITE, OFF-SITE ACCUMULATIONS OF SEDIMENT MUST BE REMOVED IN A MANNER AND AT A FREQUENCY SUFFICIENT TO MINIMIZE OFF-SITE IMPACTS.

1.17. ALL SOILS TRACKED ONTO PAVEMENT SHALL BE REMOVED DAILY.

1.18. TEMPORARY SOIL STOCKPILES MUST HAVE SILT FENCE OR OTHER EFFECTIVE SEDIMENT CONTROLS, AND CANNOT BE PLACED IN SURFACE WATERS, INCLUDING STORMWATER CONVEYANCES SUCH AS CURB AND GUTTER SYSTEMS, OR CONDUITS AND DITCHES UNLESS THERE IS A BYPASS IN PLACE FOR THE STORMWATER.

1.19. COLLECTED SEDIMENT, ASPHALT AND CONCRETE MILLINGS, FLOATING DEBRIS, PAPER, PLASTIC, FABRIC, CONSTRUCTION AND DEMOLITION DEBRIS AND OTHER WASTES MUST BE DISPOSED OF PROPERLY AND MUST COMPLY WITH IOWA DNR DISPOSAL REQUIREMENTS.

1.20. OIL, GASOLINE, PAINT AND ANY HAZARDOUS SUBSTANCES MUST BE PROPERLY STORED, INCLUDING SECONDARY CONTAINMENT, TO PREVENT SPILLS, LEAKS OR OTHER DISCHARGE. RESTRICTED ACCESS TO STORAGE AREAS MUST BE PROVIDED TO PREVENT VANDALISM. STORAGE AND DISPOSAL OF HAZARDOUS WASTE MUST BE IN COMPLIANCE WITH IOWA DNR REGULATIONS.

1.21. EXTERNAL WASHING OF TRUCKS AND OTHER CONSTRUCTION VEHICLES MUST BE LIMITED TO A DEFINED AREA OF THE SITE. RUNOFF MUST BE CONTAINED AND WASTE PROPERLY DISPOSED OF. NO ENGINE DEGREASING IS ALLOWED ONSITE.

1.22. ALL LIQUID AND SOLID WASTES GENERATED BY CONCRETE WASHOUT OPERATIONS MUST BE CONTAINED IN A LEAK-PROOF CONTAINMENT FACILITY OR IMPERMEABLE LINER. THE LIQUID AND SOLID WASTES MUST NOT CONTACT THE GROUND, AND THERE MUST NOT BE RUNOFF FROM THE CONCRETE WASHOUT OPERATIONS OR AREAS. LIQUID AND SOLID WASTES MUST BE DISPOSED OF PROPERLY AND IN COMPLIANCE WITH IOWA DNR REGULATIONS. A SIGN MUST BE INSTALLED ADJACENT TO EACH WASHOUT FACILITY TO INFORM CONCRETE EQUIPMENT OPERATORS TO UTILIZE THE PROPER FACILITIES.

1.23. UPON COMPLETION OF THE PROJECT AND STABILIZATION OF ALL GRADED AREAS, ALL TEMPORARY EROSION CONTROL FACILITIES (SILT FENCES, HAY BALES, ETC.) SHALL BE REMOVED FROM THE SITE.

1.24. SLOPES GREATER THAN OR EQUAL TO 4:1 SHALL BE STABILIZED WITH EROSION CONTROL FABRIC.

1.25. ALL PERMANENT SEDIMENTATION BASINS MUST BE RESTORED TO THEIR DESIGN CONDITION IMMEDIATELY FOLLOWING STABILIZATION OF THE SITE.

SECTION 2: SITE EVALUATION, ASSESSMENT, AND PLANNING

2.1. PROJECT / SITE INFORMATION

PROJECT / SITE NAME: VAN METER SCHOOL - SCHOOL ADDITION

PROJECT STREET/LOCATION: 520 1ST AVE, VAN METER, IA 50261

COUNTY: DALLAS

LATITUDE: 41° 31' 44" N

LONGITUDE: 93 57' 11" W

METHOD FOR DETERMINING LATITUDE / LONGITUDE: GOOGLE EARTH PRO

2.2. CONTACT INFORMATION / RESPONSIBLE PARTIES

SWPPP PREPARER:

LARSON ENGINEERING, INC.
JEREMIAH CURLEY, P.E.
1001 OFFICE PARK ROAD, SUITE 120
WEST DES MOINES, IA 50265
(515) 225-4377
jcurley@larsonengr.com

2.3. NATURE AND SEQUENCE OF CONSTRUCTION ACTIVITY

THIS PROJECT CONSISTS OF CONSTRUCTING A NEW BUILDING ADDITION AND DROP-OFF NORTH OF THE EXISTING SCHOOL BUILDING, AND EXPANDING THE PARKING LOT NORTH OF THE EXISTING BUILDING. CONSTRUCTION OF A NEW WEIGHT ROOM BUILDING, CONCESSION BUILDING, AND RESTROOM BUILDING ARE ALSO INCLUDED IN THIS PROJECT, AS WELL AS REPAVING THE DRIVE BETWEEN THE EAST AND NORTH PARKING LOTS, WITH ADDITIONAL PARKING STALLS AND BUS LOADING SPACES ALONG THE DRIVE.

SEQUENCE OF CONSTRUCTION ACTIVITIES AND STABILIZATION PRACTICE:

2.3.1. PRIOR TO ANY WORK ON SITE

PERIMETER SILT FENCE IS TO BE INSTALLED BEFORE ANY WORK ON SITE IS STARTED. DO NOT DISTURB AN AREA UNTIL IT IS NECESSARY FOR CONSTRUCTION TO PROCEED. A CONSTRUCTION STAGING AREA IS TO BE CONSTRUCTED ON SITE IN A LOCATION THAT IS MINIMALLY AFFECTED BY STORMWATER RUNOFF. ALL CONSTRUCTION MATERIALS SHALL BE STORED AT THIS LOCATION. THE CONTRACTOR IS TO INSTALL A TEMPORARY GRAVEL ENTRANCE/EXIT DRIVE TO MINIMIZE THE AMOUNT OF DIRT TRACKING OFF SITE. TIME CONSTRUCTION ACTIVITIES TO LIMIT IMPACT FROM WEATHER/SEASONAL CHANGES.

2.3.2. PRE-CONSTRUCTION INSPECTION

CONTACT THE CITY ENGINEER FOR A PRE-CONSTRUCTION INSPECTION.

2.3.3. CLEARING & GRUBBING

VERIFY ALL SILT FENCING IS IN PLACE AND IN GOOD WORKING ORDER. CLEAR ALL AREAS THAT WILL BE AFFECTED BY CONSTRUCTION ACTIVITY. NO MATERIALS ARE TO BE BURIED ON SITE. ALL WASTE MATERIALS ARE TO BE DISPOSED OF PROPERLY AND MUST COMPLY WITH IOWA DNR DISPOSAL REQUIREMENTS. COVER OR STABILIZED DISTURBED AREAS IMMEDIATELY IF AN AREA WILL NOT BE ACTIVE FOR 14 DAYS OR MORE.

2.3.4. ROUGH GRADING

VERIFY ALL PERIMETER SILT FENCE IS IN PLACE AND IN GOOD WORKING ORDER FOLLOWING CLEARING AND GRUBBING. CONSTRUCTION OF ANY DIVERSION DIKES AND/OR SILT BASINS ARE TO BE CONSTRUCTED FIRST TO PREVENT ANY EROSION FROM LEAVING THE SITE. AFTER COMPLETION OF ROUGH GRADING, ALL INTERIOR SILT FENCE OR OTHER EROSION CONTROL MEASURES ARE TO BE INSTALLED.

2.3.5. SITE UTILITY CONSTRUCTION

VERIFY ALL SILT FENCING AND OTHER EROSION CONTROL MEASURES ARE IN PLACE AND IN GOOD WORKING ORDER FOLLOWING ROUGH GRADING. INSTALL SITE UTILITIES AND PLACE PERMANENT SEEDING ON ANY AREAS THAT ARE NOT TO BE DISTURBED BY FUTURE CONSTRUCTION ACTIVITY. STORM OUTLETS SHALL BE PROTECTED USING RIP-RAP AND ENGINEERING FABRIC. PROTECT ALL STORM SEWER INLETS FROM ANY EROSION INFILTRATION INTO THE STORM SEWER WITH AN APPROVED METHOD.

2.3.6. PAVING CONSTRUCTION

VERIFY ALL SILT FENCING AND OTHER EROSION CONTROL MEASURES ARE IN PLACE AND IN GOOD WORKING ORDER FOLLOWING UTILITY CONSTRUCTION. CONSTRUCT ALL CURB AND GUTTER, SIDEWALK, INTAKES, AND MANHOLES IN PREPARATION FOR FINAL CURB/SIDEWALK BACKFILL. PROTECT ALL STORM SEWER INTAKES WITH AN APPROVED EROSION CONTROL METHOD, WHICH ARE TO BE LEFT IN PLACE UNTIL FINAL STABILIZATION IS REACHED.

2.3.7. BUILDING CONSTRUCTION

VERIFY ALL SILT FENCING AND OTHER EROSION CONTROL MEASURES ARE IN PLACE AND IN GOOD WORKING ORDER FOLLOWING PAVING CONSTRUCTION. CONSTRUCT BUILDING BEING CAREFUL TO MINIMIZE DIRT BEING TRACKED ONTO PAVEMENT. DUMPSTERS SHALL BE COVERED TO PREVENT STORM WATER CONTAMINATION. ALL MATERIALS HAULED OFF SITE SHALL BE SECURED TO PREVENT LITTERING. ANY MATERIALS TRACKED ONTO STREETS SHALL BE REMOVED BY THE END OF THE WORK DAY.

2.3.8. FINAL GRADING

VERIFY ALL SILT FENCING AND OTHER EROSION CONTROL MEASURES ARE IN PLACE AND IN GOOD WORKING ORDER. REMOVE ALL INTERIOR EROSION CONTROL MEASURES LONG ENOUGH TO COMPLETE FINAL GRADING, BEING SURE TO REINSTALL ALL MEASURES UNTIL FINAL STABILIZATION IS MET. ONCE SEEDING HAS BEEN COMPLETED, ANY TEMPORARY SILT BASINS CAN BE CLEANED AND REMOVED. DO NOT REMOVE PERIMETER CONTROLS UNTIL UPSTREAM AREAS ARE STABILIZED. INSTALL INFILTRATION CONTROLS AFTER UPSTREAM AREAS ARE STABILIZED.

2.3.9. POST-CONSTRUCTION

CONTACT THE CITY ENGINEER FOR A POST-CONSTRUCTION INSPECTION. REMOVE TEMPORARY CONTROLS WHEN 70% STABILIZATION IS REACHED. FILE NOTICE OF DISCONTINUATION (NOD) WITHIN 30 DAYS OF REMOVAL. PROVIDE THE CITY ENGINEER A COPY OF THE NOD.

SECTION 2: SITE EVALUATION, ASSESSMENT, AND PLANNING (CONTINUED)

SEASONAL CONSIDERATIONS:

COLD CLIMATE CONSIDERATIONS - THE CONTRACTOR SHALL PLAN AHEAD AT THE START OF THE PROJECT, AND DEVELOP A SEQUENCED CONSTRUCTION SCHEDULE TO ENSURE THAT ALL EXPOSED AREAS HAVE COVER BEFORE THE FIRST FREEZE. PREPARATION OF VEGETATIVE COVER SHOULD BEGIN IN THE FALL. SEEDS MUST BE STARTED EARLY ENOUGH FOR THEM TO GERMINATE, ESTABLISH ROOTS AND PROVIDE COVER BEFORE THE WINTER BEGINS. REFERENCE THE IDOT STANDARD SPECIFICATIONS FOR THE LAST SEEDING DATE.

NOTE THAT SITE MUST REMAIN IN COMPLIANCE WITH THE NPDES PERMIT THROUGHOUT THE WINTER, EVEN IF NO CONSTRUCTION IS OCCURRING. FOR THIS REASON, ENSURE THE SITE IS COMPLIANT WITH THE PERMIT REQUIREMENTS PRIOR TO CEASING CONSTRUCTION DUE TO FROZEN CONDITIONS. THE SITE MUST BE INSPECTED AND MAINTAINED ON A REGULAR BASIS DURING THE WINTER MONTHS.

CONSTRUCTION ACTIVITY FUNCTION: SCHOOL

ESTIMATED PROJECT START DATE: SPRING 2025

ESTIMATED PROJECT COMPLETION DATE: SUMMER 2026

2.4. SOILS, SLOPES, VEGETATION, AND CURRENT DRAINAGE PATTERNS

SOIL TYPE(S): SILTY CLAY LOAM

GRADES IN PAVED AREAS NORTH OF THE EXISTING SCHOOL BUILDING GENERALLY RANGE FROM 1% TO 5%. SLOPES UP TO 3:1 ARE ENCOUNTERED ON THE SIDES OF THE DRAINAGE SWALE RUNNING NORTH BETWEEN THE EXISTING PARKING LOT AND THE TRACK AND FIELD, AND IN THE DRAINAGE CHANNEL RUNNING EAST, ALONG THE SCHOOL'S NORTH PROPERTY LINE. OTHER GREENSPACE INCLUDING THE BASIN NORTHEAST OF THE PARKING LOT CONSISTS OF SLOPES UP TO 6:1, AND GRADES AS LOW AS 1.5%. NO MAJOR CHANGES TO THE EXISTING SLOPES ARE PROPOSED.

RUNOFF CURRENTLY DRAINS OVERLAND TO THE DRAINAGE CHANNEL NORTH OF THE SCHOOL. ROOF DRAINAGE IS ROUTED TO THE BASIN NORTHEAST OF THE PARKING LOT, THEN TO THE DRAINAGE SWALE RUNNING NORTH, BETWEEN THE PARKING LOT AND TRACK AND FIELD, THROUGH UNDERGROUND STORM PIPE. PROPOSED DRAINAGE PATTERNS ULTIMATELY ROUTE RUNOFF TO THE SAME DRAINAGE CHANNEL, BUT CAPTURE, DETAIN AND CONTROL THE RATE OF RUNOFF THROUGH UNDERGROUND STORM SEWER DESCRIBED IN SECTION 2.7.

THE EXISTING VEGETATION IS PRIMARILY MEADOW AND GRASS WITH TREES SCATTERED AROUND THE SITE.

2.5. CONSTRUCTION SITE ESTIMATES

TOTAL PROJECT AREA: 6.3 AC

CONSTRUCTION SITE AREA TO BE DISTURBED: 6.3 AC

PERCENTAGE IMPERVIOUS AREA BEFORE CONSTRUCTION: 40%

RUNOFF COEFFICIENT BEFORE CONSTRUCTION: 0.48

PERCENTAGE IMPERVIOUS AREA AFTER CONSTRUCTION: 75%

RUNOFF COEFFICIENT AFTER CONSTRUCTION: 0.73

2.7. RECEIVING WATERS

ALL STORMWATER RUNNOFF FROM THIS SITE IS ULTIMATELY CONVEYED TO THE MISSISSIPPI RIVER THROUGH AN UNNAMED TRIBUTARY, THE RACCOON RIVER, AND THE DES MOINES RIVER.

THE PROPOSED CONDITIONS WILL CONTINUE TO DRAIN FROM SOUTH TO NORTH. STORMWATER RATE CONTROL WILL GENERALLY BE CONSIDERED AT TWO LOCATIONS - THE DROPOFF AND THE GREENSPACE NORTH OF THE PARKING LOT. EACH UNDERGROUND STORAGE LOCATION WILL UTILIZE CORRUGATED METAL PIPE (CMP) FOR DETENTION. THE UNDERGROUND STORAGE IN THE DROPOFF WILL BE FOLLOWED BY AN OUTLET CONTROL STRUCTURE WITH TWO ORIFICE PLATES TO PROVIDE RATE CONTROL--ONE ATTACHED TO A WEIR WALL AND ANOTHER ATTACHED TO THE OUTLET PIPE.

2.8. POTENTIAL SOURCES OF POLLUTION

SITE GRADING IS THE LARGEST POTENTIAL SOURCE OF SEDIMENT RUNOFF ON SITE.

POTENTIAL POLLUTANTS AND SOURCES, OTHER THAN SEDIMENT, TO STORMWATER RUNOFF: DURING CONSTRUCTION, STORAGE OF MATERIALS AND VEHICLES CAN BE DEEMED AS POTENTIAL POLLUTANT SOURCES. OIL, FUEL, AND ANY HAZARDOUS MATERIAL MUST BE PROPERLY STORED TO PREVENT SPILLAGE, LEAKAGE, AND DISCHARGE. ADDITIONALLY, A LOCATION FOR WASHING OF VEHICLES AND/OR EQUIPMENT HAS BEEN DESIGNATED ON SHEET C3.01, GRADING PLAN AND EROSION CONTROL PLAN - SOUTH. UPON THE COMPLETION OF CONSTRUCTION, PARKING LOTS POSE AS POTENTIAL POLLUTANT SOURCES DUE TO VEHICULAR TRAFFIC.

2.9. ENDANGERED SPECIES CERTIFICATION

THERE ARE NO DELINEATED AREAS OF ENDANGERED SPECIES ON THE U.S. FISH AND WILDLIFE SERVICE'S CRITICAL HABITAT FOR THREATENED AND ENDANGERED SPECIES MAP.

2.10. HISTORIC PRESERVATION

ACCORDING TO THE IOWA DEPARTMENT OF CULTURAL AFFAIRS' MAP, THE NEAREST HISTORIC SITE IS APPROXIMATELY ONE MILE FROM THE CONSTRUCTION SITE.

SECTION 3: EROSION AND SEDIMENT CONTROL BMPS

THE FOLLOWING BMPS ARE LISTED AS GENERAL BMPS THAT ARE TO BE USED ON THE PROJECT SITE. SHOULD THE CONTRACTOR CHOOSE TO INCLUDE ADDITIONAL BMPS, THE SWPPP SHOULD BE UPDATED ACCORDINGLY. INSTALLATION AND MAINTENANCE PROCEDURES SHOULD FOLLOW THAT LISTED IN THE PROJECT SPECIFICATIONS, AS WELL AS APPLICABLE CITY, STATE, AND FEDERAL RULES AND REGULATIONS, INCLUDING THE MOST RECENT IOWA STATEWIDE URBAN DESIGN AND SPECIFICATIONS (SUDAS) AND IOWA STORM WATER MANUAL (ISWMM). LOCATION OF PROPOSED BMPS AND DETAILS CAN BE FOUND IN THE PROJECT PLANS.

3.1. MINIMIZE DISTURBED AREA AND PROTECT NATURAL FEATURES AND SOIL

STABILIZATION PRACTICES:

3.1.1. STORMWATER MANAGEMENT

STORM WATER RUNOFF WILL BE MANAGED BY STORM SEWER AND DRAINAGE SWALES. THE AREAS THAT ARE NOT DEVELOPED WILL BE GRADED AT THE SLOPES AS SHOWN ON THE GRADING PLAN, AND SHALL HAVE PERMANENT SEEDING OR LANDSCAPING UPON FINAL GRADING. ALL PIPE OUTLETS WILL BE STABILIZED WITH RIP-RAP AND ENGINEERING FABRIC TO REDUCE EROSION AT THE PIPE OUTLETS.

3.1.2. PERMANENT STABILIZATION PRACTICES

PERMANENT SEEDING AND PLANTING OF ALL DISTURBED AREAS BY SEEDING, FERTILIZING, AND MULCHING SHALL BE COMPLETED AFTER FINAL GRADING IS FINISHED. THIS SHALL OCCUR IN A TIME OF YEAR THAT IS APPROPRIATE FOR SEED GERMINATION. ALL VEGETATION IN AREAS NOT DISTURBED DURING CONSTRUCTION IS TO BE MAINTAINED.

3.1.3. PERMANENT STRUCTURAL PRACTICES

INLET PROTECTION SHALL BE PLACED AT EACH CATCH BASIN UNTIL VEGETATION IS FULLY ESTABLISHED.

3.1.4. TEMPORARY STABILIZATION PRACTICES

IF CONSTRUCTION ACTIVITY CEASES AFTER STRIPPING AND STOCKPILING FOR MORE THAN 21 SAYS, TEMPORARY SEED AND MULCHING SHALL BE PLACED NO MORE THAN 14 DAYS AFTER CONSTRUCTION CEASES. SILT FENCE MAY BE USED TO TEMPORARILY CHECK FLOWS ON SITE AND HELP PROTECT INTAKES AND MANHOLES ON SITE. ANY AREA WHERE RUNOFF FLOWS OFF SITE, SILT FENCE SHALL BE PLACED ALONG THE PERIMETER OF THE SITE PRIOR TO ANY GRADING. FREQUENT WATERING OF THE GRADE ON SITE SHALL ALSO BE PRACTICED TO MINIMIZE DUST POLLUTION ON SITE.

3.1.5. TEMPORARY STRUCTURAL PRACTICES

TEMPORARY SEDIMENT TRAPS MAY BE USED AND PLACED NEAR OUTLETS FROM THE POND TO COLLECT SEDIMENT PRIOR TO ENTERING THE EXISTING POND. A COMBINATION OF SILT FENCES, SEDIMENT TRAPS, AND INLET PROTECTION MEASURES MAY BE USED TO REDUCE EROSION.

3.1.6. OTHER CONTROLS

ALL DISPOSAL OF CONSTRUCTION MATERIALS AND WASTE SHALL FOLLOW ALL LOCAL, STATE, AND FEDERAL REGULATIONS FOR DISPOSAL OF SUCH MATERIALS. THE CONTRACTOR IS ALSO RESPONSIBLE FOR THE CONSTRUCTION AND MAINTENANCE OF A TEMPORARY GRAVEL ENTRANCE INTO THE PROJECT TO MINIMIZE THE AMOUNT OF TRACKING FROM THE SITE. THE BORDERING STREETS SHALL BE INSPECTED DAILY, AND ANY TRACKING SHALL BE CLEANED IMMEDIATELY.

3.2. CONTROL STORMWATER FLOWING ONTO AND THROUGH THE PROJECT

BMP DESCRIPTION: SILT FENCE

INSTALLATION SCHEDULE: FOLLOWING STORM SEWER INSTALLATION

MAINTENANCE AND INSPECTION: ONCE EVERY 7 DAYS OR WITHIN 24 HOURS OF A 1/2" RAIN EVENT OR GREATER

RESPONSIBLE STAFF: CONTRACTOR

3.3. STABILIZE SOILS

BMP DESCRIPTION: ESTABLISH PERENNIAL VEGETATION

PERMANENT/TEMPORARY: PERMANENT

INSTALLATION SCHEDULE: FINAL STABILIZATION

MAINTENANCE AND INSPECTION: WATER AND/OR FERTILIZE UNTIL TURF HAS ESTABLISHED.

RESPONSIBLE STAFF: CONTRACTOR

3.4. PROTECT SLOPES

THE PROPOSED FINAL GRADING OF THE DISTURBED AREA WILL NOT CONTAIN ANY SLOPES GREATER THAN 3:1.

3.5. PROTECT STORM DRAIN INLETS

BMP DESCRIPTION: AREA INLET SEDIMENT BARRIER - SILT FENCE

INSTALLATION SCHEDULE: FOLLOWING STORM SEWER INSTALLATION

MAINTENANCE AND INSPECTION: ONCE EVERY 7 DAYS OR WITHIN 24 HOURS OF 1/2" RAIN EVENT OR GREATER.

RESPONSIBLE STAFF: CONTRACTOR

SECTION 3: EROSION AND SEDIMENT CONTROL BMPS (CONTINUED)

3.6. ESTABLISH PERIMETER CONTROLS AND SEDIMENT BARRIERS

3.6.1. BMP DESCRIPTION: PERIMETER SILT FENCE

INSTALLATION SCHEDULE: PRIOR TO LAND DISTURBANCE

MAINTENANCE AND INSPECTION: ONCE EVRY 7 DAYS OR WITHIN 24 HOURS OF 1/2" RAIN EVENT OR GREATER.

RESPONSIBLE STAFF: CONTRACTOR

3.6.2. BMP DESCRIPTION: CONSTRUCTION FENCING

INSTALLATION SCHEDULE: PRIOR TO LAND DISTURBANCE

MAINTENANCE AND INSPECTION: INSPECT AT MINIMUM ONCE EVERY 7 DAYS. NECESSARY REPAIRS SHALL BE MADE WITHIN 24 HOURS.

RESPONSIBLE STAFF: CONTRACTOR

3.7. RETAIN SEDIMENT ON-SITE

BMP DESCRIPTION: ROCK CONSTRUCTION ENTRANCE

INSTALLATION SCHEDULE: PRIOR TO LAND DISTURBANCE

MAINTENANCE AND INSPECTION: MAINTAIN 6" MINIMUM DEPTH. RESHAPE ENTRANCE AS NEEDED TO MAINTAIN FUNCTION AND INTEGRITY OF INSTALLATION. TOP DRESS WITH CLEAN AGGREGATE AS NEEDED.

RESPONSIBLE STAFF: CONTRACTOR

3.8. ESTABLISH STABILIZED CONSTRUCTION EXITS

BMP DESCRIPTION: ROCK CONSTRUCTION ENTRANCE

INSTALLATION SCHEDULE: PRIOR TO LAND DISTURBANCE

MAINTENANCE AND INSPECTION: MAINTAIN 6" MINIMUM DEPTH. RESHAPE ENTRANCE AS NEEDED TO MAINTAIN FUNCTION AND INTEGRITY OF INSTALLATION. TOP DRESS WITH CLEAN AGGREGATE AS NEEDED.

RESPONSIBLE STAFF: CONTRACTOR

SECTION 4: GOOD HOUSEKEEPING BMPS

4.1. MATERIAL HANDLING AND WASTE MANAGEMENT

4.4.1. BMP DESCRIPTION: TRASH DUMPSTERS

INSTALLATION SCHEDULE: DUMPSTERS WILL BE INSTALLED ONCE THE MATERIALS STORAGE AREA HAS BEEN ESTABLISHED.

MAINTENANCE AND INSPECTION: DUMPSTERS TO BE INSPECTED WEEKLY AND IMMEDIATELY AFTER STORM EVENTS. IF TRASH AND CONSTRUCTION DEBRIS ARE EXCEEDING THE DUMPSTERS' CAPACITY, THE DUMPSTERS WILL BE EMPTIED MORE FREQUENTLY.

RESPONSIBLE STAFF: CONTRACTOR

4.4.2. BMP DESCRIPTION: PORTABLE SANITARY FACILITIES (PORTABLE TOILETS)

INSTALLATION SCHEDULE: PORTABLE TOILETS WILL BE BROUGHT TO THE SITE ONCE THE STAGING AREA HAS BEEN ESTABLISHED.

MAINTENANCE AND INSPECTION: INSPECT WEEKLY FOR EVIDENCE OF LEAKAGE IN HOLDING TANKS. CONTRACTOR TO SCHEDULE SANITARY WASTE COLLECTION AS NECESSARY.

RESPONSIBLE STAFF: CONTRACTOR

4.5. ESTABLISH PROPER BUILDING MATERIAL STAGING AREAS

BMP DESCRIPTION: MATERIALS STAGING AREA

INSTALLATION SCHEDULE: STAGING AREA TO BE ESTABLISHED PRIOR TO ANY INFRASTRUCTURE INSTALLATION.

MAINTENANCE AND INSPECTION: INSPECT WEEKLY AND AFTER STORM EVENTS.

RESPONSIBLE STAFF: CONTRACTOR

4.6. DESIGNATE WASHOUT AREAS

BMP DESCRIPTION: CONCRETE WASHOUT

INSTALLATION SCHEDULE: PRIOR TO THE PLACEMENT OF ANY CONCRETE.

MAINTENANCE AND INSPECTION: INSPECTED DAILY TO ENSURE ALL CONCRETE WASHING IS BEING DISCHARGED INTO THE WASHOUT AREA, NO LEAKS ARE PRESENT, AND TO IDENTIFY WHEN CONCRETE WASTED NEED TO BE REMOVED.

RESPONSIBLE STAFF: CONTRACTOR

4.7. ESTABLISH PROPER EQUIPMENT/VEHICLE FUELING AND MAINTENANCE PRACTICES

BMP DESCRIPTION: VEHICLE/EQUIPMENT FUELING AND MAINTENANCE

INSTALLATION SCHEDULE: START OF THE PROJECT

MAINTENANCE AND INSPECTION: ALL MAJOR EQUIPMENT/VEHICLE FUELING AND MAINTENANCE WILL BE PERFORMED OFF SITE. WHEN VEHICLE FUELING MUST OCCUR ON SITE, THE FUELING ACTIVITY WILL OCCUR IN THE STAGING AREA. INSPECT EQUIPMENT/VEHICLE STORAGE AREAS AND FUEL TANK WEEKLY AND AFTER STORM EVENTS.

RESPONSIBLE STAFF: CONTRACTOR

4.8. CONTROL EQUIPMENT/VEHICLE WASHING

IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO ENSURE THAT ALL EQUIPMENT AND VEHICLE WASHING IS PERFORMED OFF-SITE.

4.9. SPILL PREVENTION AND CONTROL PLAN

VEHICLE MAINTENANCE - VEHICLES AND EQUIPMENT WILL BE MAINTAINED OFF SITE. ALL VEHICLES AND EQUIPMENT INCLUDING SUBCONTRACTOR VEHICLES WILL BE CHECKED FOR LEAKING OIL AND FLUIDS. VEHICLES LEAKING FLUIDS WILL NOT BE ALLOWED ON SITE.

HAZARDOUS MATERIAL STORAGE - HAZARDOUS MATERIALS WILL BE STORED IN ACCORDANCE WITH FEDERAL AND MUNICIPAL REGULATIONS.

SPILLS - ALL SPILLS WILL BE CLEANED IMMEDIATELY UPON DISCOVERY. SPENT ABSORBENT MATERIALS AND RAGS WILL BE HAULED OFF SITE IMMEDIATELY AFTER THE SPILL IS CLEANED.

MATERIAL SAFETY DATA SHEETS, MATERIAL INVENTORY, AND EMERGENCY CONTACT INFORMATION WILL BE MAINTAINED AT THE ON-SITE PROJECT TRAILER.

4.8. ALLOWABLE NON-STORMWATER DISCHARGE MANAGEMENT

ANY CHANGES IN CONSTRUCTION ACTIVITIES THAT PRODUCE OTHER ALLOWABLE NON-STORMWATER DISCHARGES WILL BE IDENTIFIED BY THE CONTRACTOR, THE SWPPP WILL BE AMENDED, AND THE APPROPRIATE EROSION AND SEDIMENT CONTROL WILL BE IMPLEMENTED.

4.9. EMERGENCY CONTACT NUMBERS

EMERGENCY SERVICES (POLICE, AMBULANCE SERVICE): 911

IDNR: (515) 725-8694

CITY OF VAN METER: (515) 996-2644

SECTION 5: SELECTING POST-CONSTRUCTION BMPS

BMP DESCRIPTION: RIP RAP

INSTALLATION SCHEDULE: TO BE INSTALLED WITH STORM SEWER SYSTEM

MAINTENANCE AND INSPECTION: INSPECT WEEKLY AND IMMEDIATELY AFTER STORM EVENTS TO ENSURE RIP RAP IS STABILIZED

RESPONSIBLE STAFF: CONTRACTOR/OWNER

SECTION 6: INSPECTIONS

6.1. INSPECTIONS

INSPECTIONS OF THE SITE WILL BE PERFORMED ONCE EVERY 7 DAYS, AND WITHIN 24 HOURS OF THE END OF A STORM EVENT OF 1/2" OR GREATER. THE INSPECTIONS WILL VERIFY THAT ALL BMPS REQUIRED IN SECTIONS 3 AND 4 ARE IMPLEMENTED, MAINTAINED, EFFECTIVELY MINIMIZING EROSION, AND PREVENTING STORMWATER CONTAMINATION FROM CONSTRUCTION MATERIALS.

SECTION 7: RECORDKEEPING AND TRAINING

7.1. RECORDKEEPING

RECORDS WILL BE RETAINED FOR A MINIMUM PERIOD OF AT LEAST 3 YEARS AFTER THE PERMIT IS TERMINATED.

7.2. LOG OF CHANGES TO THE SWPPP

ALL WORKERS ONSITE SHALL BE MADE AWARE OF CONTROLS AND REGULATIONS. SITE MAP SHALL BE UPDATED AS CONDITIONS AND/OR CONTROL LOCATIONS CHANGE. IF CONTROL LOCATIONS CANNOT BE PRE-DETERMINED, THE SWPPP MANAGER SHALL ADD THEM TO THE SITE MAP AS THEY ARE IMPLEMENTED. OFFICIAL LOG TO BE COMPLETED BY THE CONTRACTOR.

SECTION 8: FINAL STABILIZATION

BMP DESCRIPTION: PERMANENT SEEDING

INSTALLATION SCHEDULE: AFTER FINAL DESIGN GRADES ARE ACHIEVED.

MAINTENANCE AND INSPECTION: ALL SEEDED AREAS WILL BE INSPECTED WEEKLY DURING CONSTRUCTION ACTIVITIES FOR FAILURE, AND AFTER STORM EVENTS UNTIL A DENSE COVER OF VEGETATION HAS BEEN ESTABLISHED.

RESPONSIBLE STAFF: CONTRACTOR/OWNER

INVISION
PLANNING | ARCHITECTURE | INTERIORS

900 MULBERRY STREET
Des Moines, Iowa 50309
515.633.2941
www.invisionarch.com

CONSULTANT:
CIVIL
LARSON ENGINEERING, INC.
LANDSCAPE
BOLTON & MENK
STRUCTURAL
RAKER RHODES ENGINEERING
MEP
KCL ENGINEERING

REVISIONS:

Description	Date	No.
ADDENDUM 03	12/04/24	1
ADDENDUM 04	12/10/24	2

OWNER SIGN-OFF:

DATE	NAME

VAN METER COMMUNITY SCHOOL DISTRICT

VAN METER SCHOOL ADDITION - BID ISSUANCE #3

520 1ST AVE, VAN METER, IA 50261

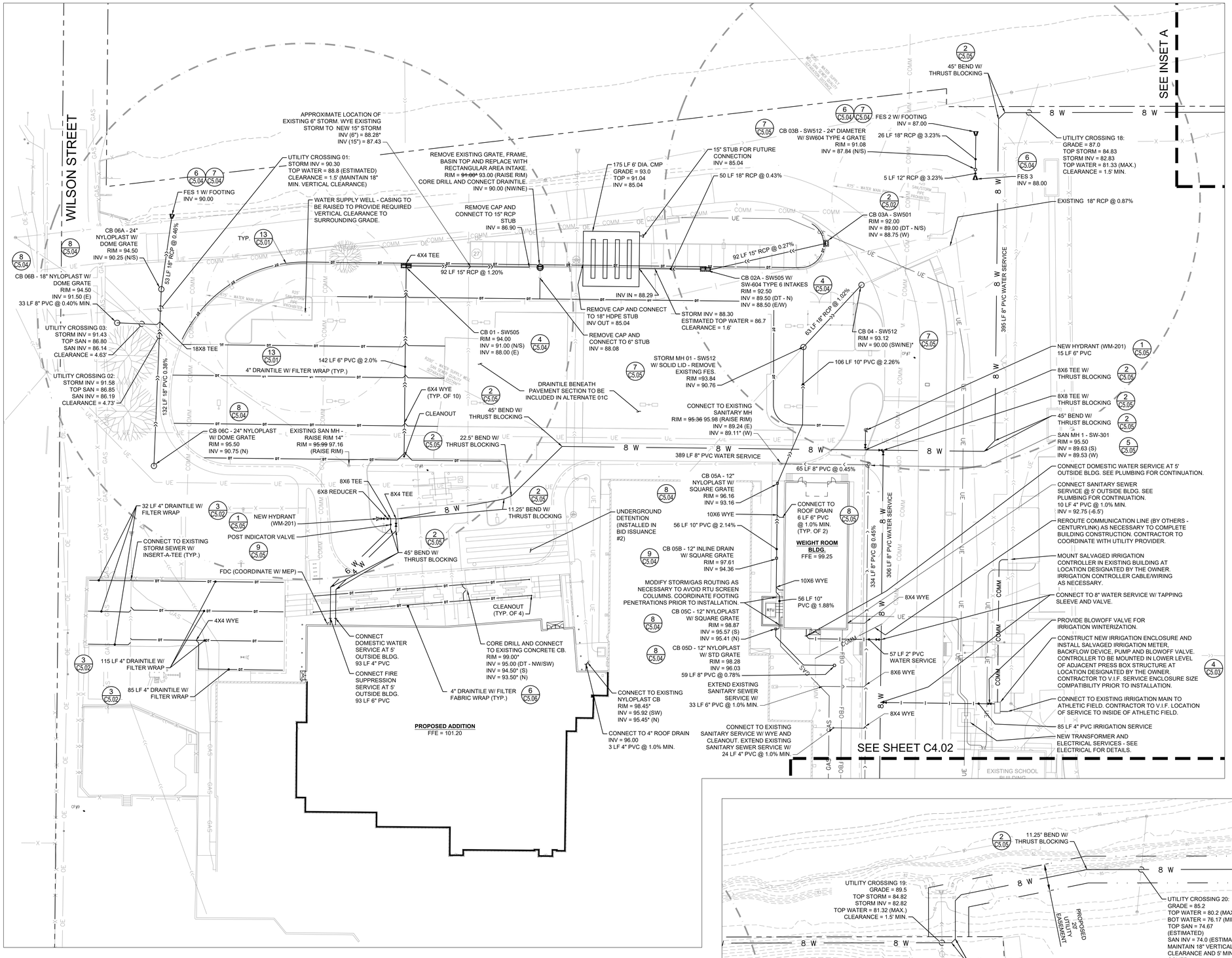
PROJECT NO:
23086

DATE:
11/11/2024

SHEET SET:
BID DOCUMENTS

SHEET NAME:
STORMWATER POLLUTION PREVENTION PLAN

SHEET:
C3.03



INSET A:
SCALE: 1" = 30'

LEGEND

CTV	CABLE UNDERGROUND LINE
OE	ELECTRIC OVERHEAD LINE
UE	ELECTRIC UNDERGROUND LINE
FBO	FIBER OPTIC UNDERGROUND LINE
G	NATURAL GAS UNDERGROUND LINE
>	SANITARY SEWER PIPE
>>	STORM SEWER PIPE
T	TELEPHONE UNDERGROUND LINE
"X"W	WATERMAIN PIPE
T	WATER SERVICE
DT	DRAINTILE PIPE
MANHOLE	LIGHT POLE
CATCH BASIN	HYDRANT
CURB INLET	GATE VALVE & BOX
OUTLET CONTROL STRUCTURE	WATER SHUTOFF
FLARED END	POST INDICATOR VALVE
CLEANOUT	FIRE DEPARTMENT CONNECTION (FDC)

UTILITY NOTES

1. It is the responsibility of the contractor to perform or coordinate all necessary utility connections and relocations from existing utility locations to the proposed building, as well as to all onsite amenities. These connections include but are not limited to water, sanitary sewer, cable TV, telephone, gas, electric, site lighting, etc.
2. All service connections shall be performed in accordance with state and local standard specifications for construction. Utility connections (sanitary sewer, watermain, and storm sewer) may require a permit from the City.
3. The contractor shall verify the elevations at proposed connections to existing utilities prior to any demolition or excavation.
4. The contractor shall notify all appropriate engineering departments and utility companies 72 hours prior to construction. All necessary precautions shall be made to avoid damage to existing utilities.
5. Maintain a minimum of 5' of cover over all water lines and sanitary sewer lines. Install water lines 18" above sanitary sewers, where the sanitary sewer crosses over the water line, install sewer piping of materials equal to watermain standards for 10 feet on both sides and maintain 18" of separation.
6. Where 5' of cover is not provided over sanitary sewer and water lines, install 2" rigid polystyrene insulation with a thermal resistance of at least 5 and a compressive strength of at least 25 psi. Insulation shall be 8' wide, centered over pipe with 6" sand cushion between pipe and insulation.
7. All watermain piping shall be PVC AWWA C900 unless noted otherwise.
8. See Project Specifications for bedding requirements.
9. Pressure test (AWWA C600 for DIP, AWWA C605 for PVC) and disinfect (AWWA C651, including collection of two consecutive sets of acceptable bacteria samples 24 hours apart per SUDAS Section 5030) all new watermains in accordance with state and local requirements.
10. Sanitary sewer piping shall be PVC SDR-26 for depths up to 26'.
11. All watermain piping shall include tracer wire with connection ports. All DIP watermain piping shall be poly-wrapped.
12. All private underground utility lines and pipes shall include a tracer line to facilitate above-ground locating.
13. Steel casing pipe to be furnished and installed in conformance with SUDAS Section 3020. Casing pipe to have a wall thickness of 3/8" minimum, unless otherwise recommended by the manufacturer. Casing pipe to be coated as recommended by the manufacturer based on on-site material. Carrier pipe shall be installed with casing spacers as defines in SUDAS Section 3020.2.03 and shall include a water tight casing end seal. Annular space between casing pipe and carrier pipe is to remain unfilled. Water service carrier pipe to meet materials specified in SUDAS Section 2553.02.A.1.d.
14. Modifications to the on-site public water supply well will require a permit from the Iowa Department of Natural Resources. Well modifications to result in the well casing being a MINIMUM of 18" above the finish grade surface. Drainage is to be provided away from the well for a minimum of 15'.

INVISION
ARCHITECTURE | INTERIORS
900 MULBERRY STREET
Des Moines, Iowa 50309
515.633.2941
www.invisionarch.com

CONSULTANT:
CIVIL
LARSON ENGINEERING, INC.
LANDSCAPE
BOLTON & MENK
STRUCTURAL
RAKER RHODES ENGINEERING
MEP
KCL ENGINEERING

REVISIONS:

Description	Date	No.
ADDENDUM 03	12/04/24	1
ADDENDUM 04	12/10/24	2

OWNER SIGN-OFF:

DATE	NAME

VAN METER COMMUNITY SCHOOL DISTRICT

VAN METER SCHOOL ADDITION - BID ISSUANCE #3

520 1ST AVE. VAN METER, IA 50261

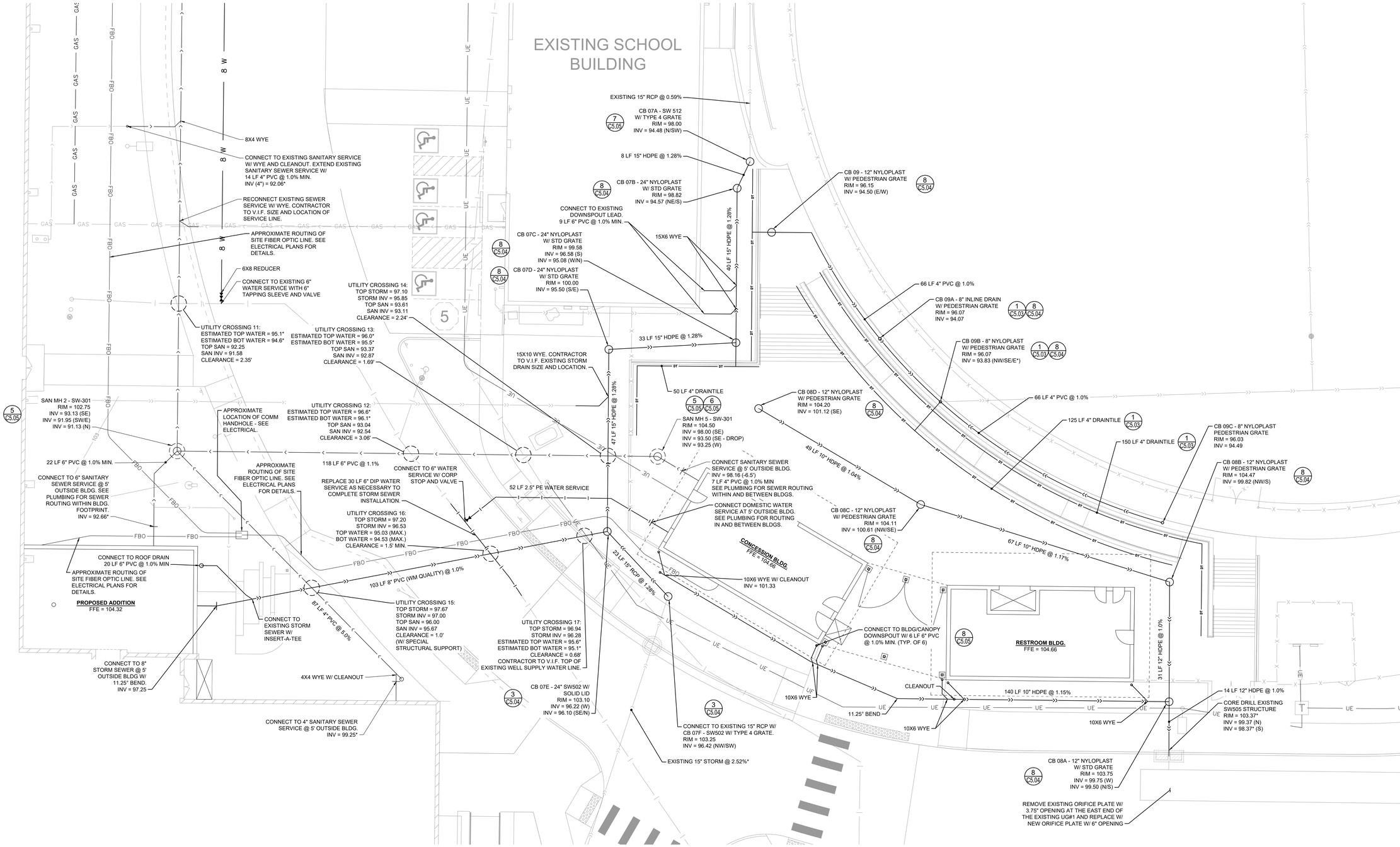
PROJECT NO: 23086

DATE: 11/11/2024

SHEET SET: BID DOCUMENTS

SHEET NAME: UTILITY PLAN - NORTH

SHEET: C4.01



LEGEND

STORM MANHOLE	CABLE UNDERGROUND LINE
CATCH BASIN	ELECTRIC OVERHEAD LINE
CURB INLET	ELECTRIC UNDERGROUND LINE
FLARED END	FIBER OPTIC UNDERGROUND LINE
SANITARY MANHOLE	NATURAL GAS UNDERGROUND LINE
HYDRANT	SANITARY SEWER PIPE
GATE VALVE & BOX	STORM SEWER PIPE
WATER SHUTOFF	TELEPHONE UNDERGROUND LINE
LIGHT POLE	WATERMAIN PIPE
	DRAINTILE PIPE

UTILITY NOTES

1. See notes on Sheet C4.01 - Utility Plan - North.

INVISION
ARCHITECTURE | INTERIORS
900 MULBERRY STREET
Des Moines, Iowa 50309
515.633.2941
www.invisionarch.com

CONSULTANT:
CIVIL
LARSON ENGINEERING, INC.
LANDSCAPE
BOLTON & MENK
STRUCTURAL
RAKER RHODES ENGINEERING
MEP
KCL ENGINEERING

REVISIONS:

Description	Date	No.
ADDENDUM 03	12/04/24	1
ADDENDUM 04	12/10/24	2

OWNER SIGN-OFF:

DATE	NAME

VAN METER COMMUNITY SCHOOL DISTRICT

VAN METER SCHOOL ADDITION - BID ISSUANCE #3

520 1ST AVE. VAN METER, IA 50261

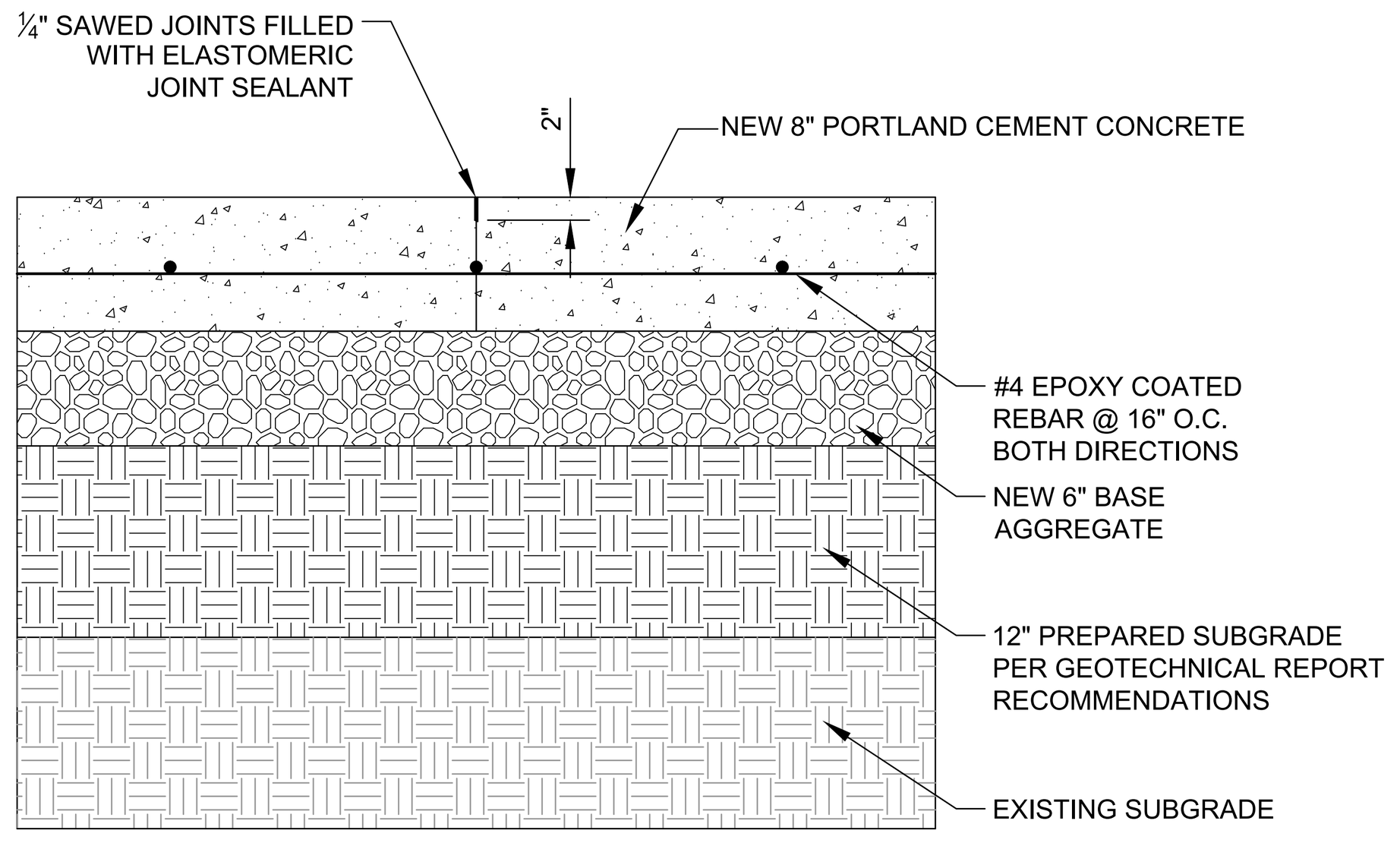
PROJECT NO: 23086

DATE: 11/11/2024

SHEET SET: BID DOCUMENTS

SHEET NAME: UTILITY PLAN - SOUTH

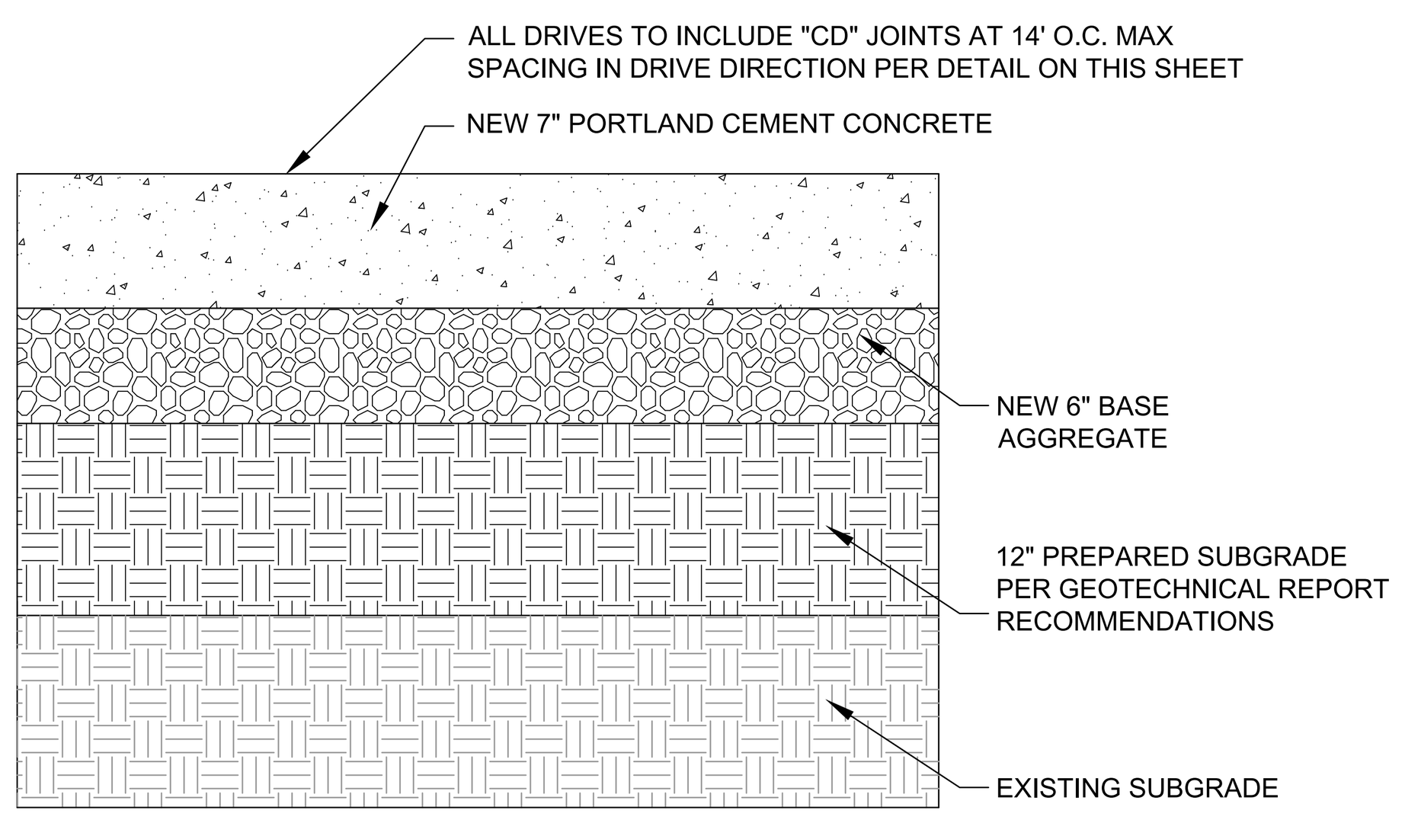
SHEET: C4.02



NOTE: SUBGRADE PREPARATION TO EXTEND TO 2' BEYOND THE EDGE OF THE PAVEMENTS.

HEAVY-DUTY CONCRETE CONSTRUCTION DETAIL

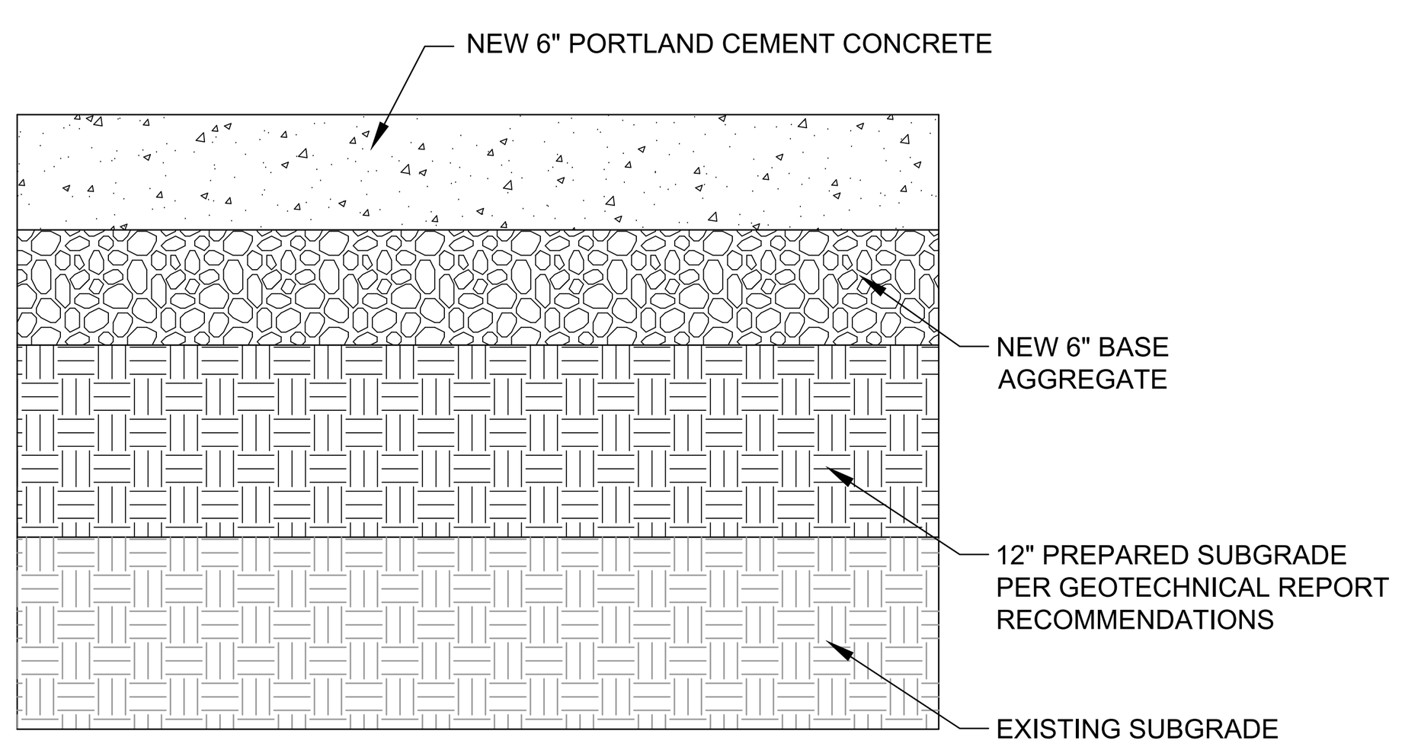
1 / C5.01 — NOT TO SCALE



NOTE: SUBGRADE PREPARATION TO EXTEND TO 2' BEYOND THE EDGE OF THE PAVEMENTS.

HEAVY-DUTY CONCRETE CONSTRUCTION DETAIL

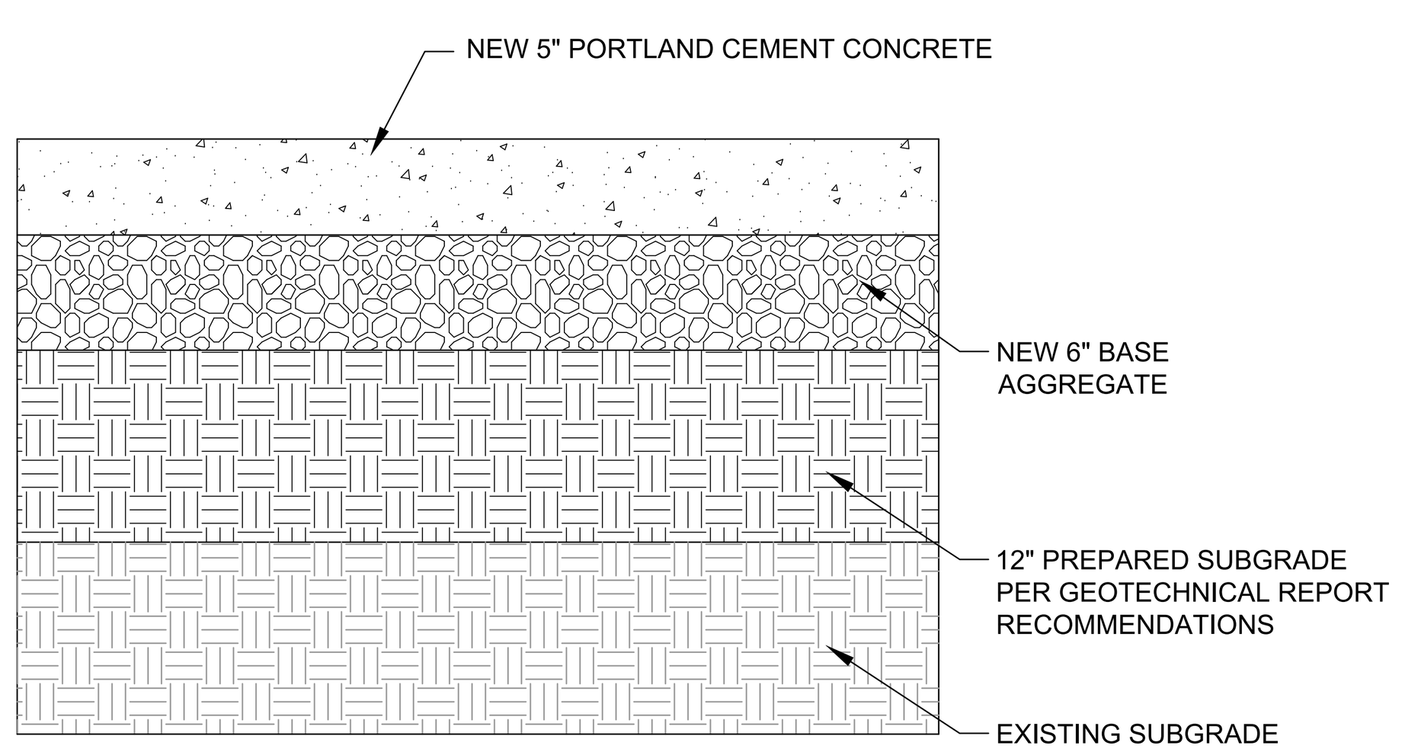
2 / C5.01 — NOT TO SCALE



NOTE: SUBGRADE PREPARATION TO EXTEND TO 2' BEYOND THE EDGE OF THE PAVEMENTS.

MEDIUM-DUTY CONCRETE CONSTRUCTION DETAIL

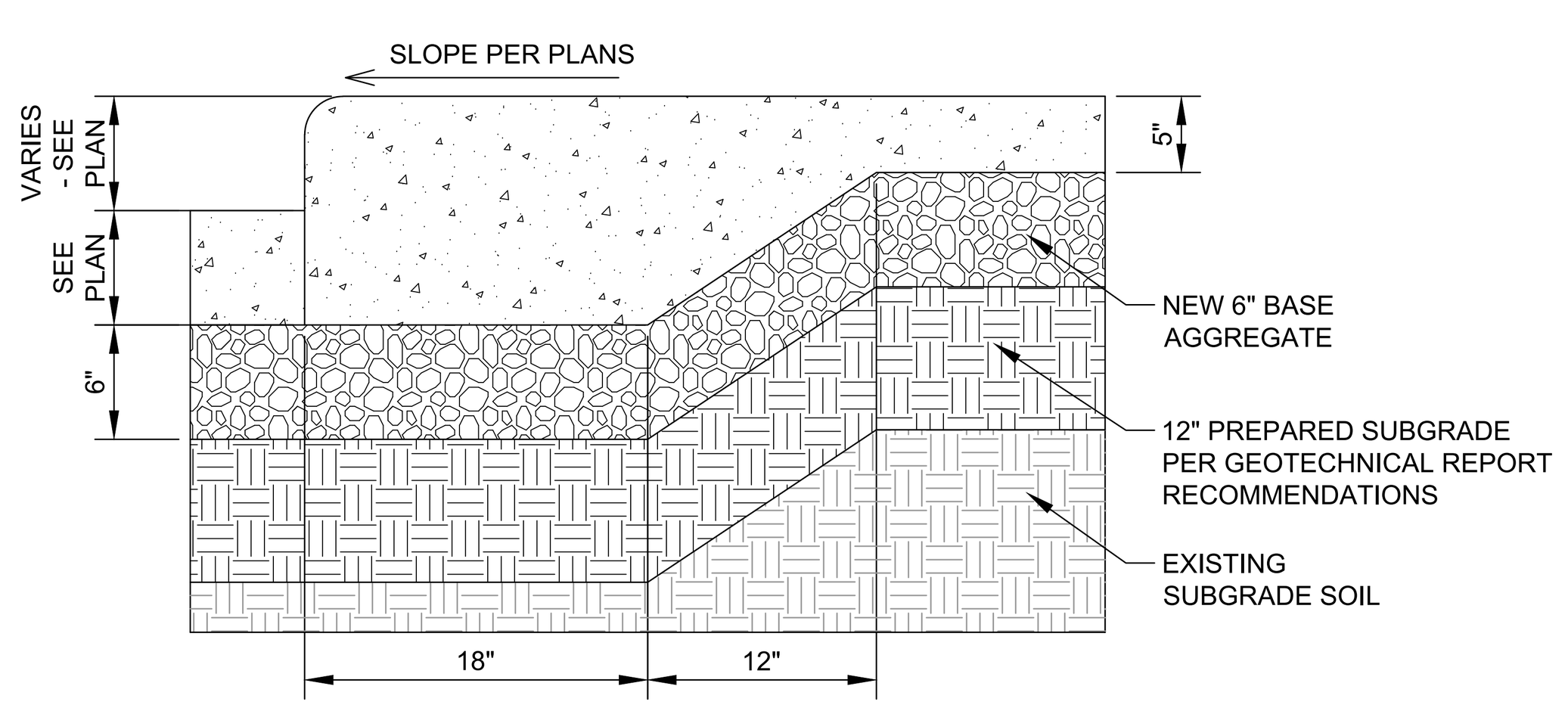
3 / C5.01 — NOT TO SCALE



NOTE: SUBGRADE PREPARATION TO EXTEND TO 2' BEYOND THE EDGE OF THE PAVEMENTS.

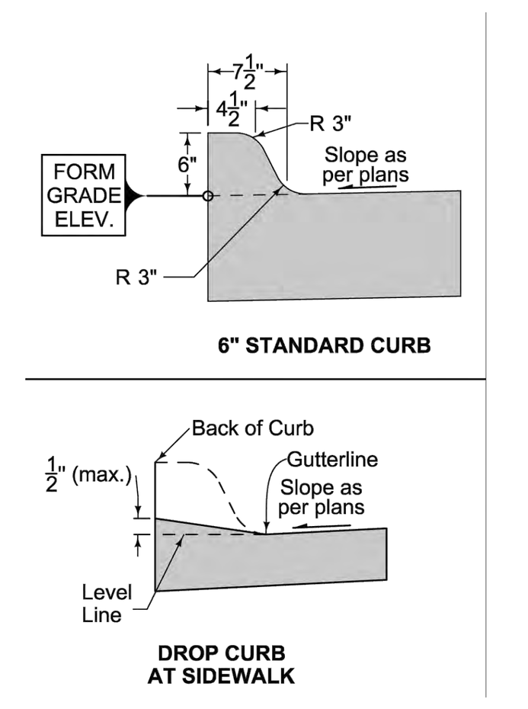
LIGHT-DUTY CONCRETE CONSTRUCTION DETAIL

4 / C5.01 — NOT TO SCALE



INTEGRAL CURB & SIDEWALK DETAIL

5 / C5.01 — NOT TO SCALE



For joint details, see PV-101.

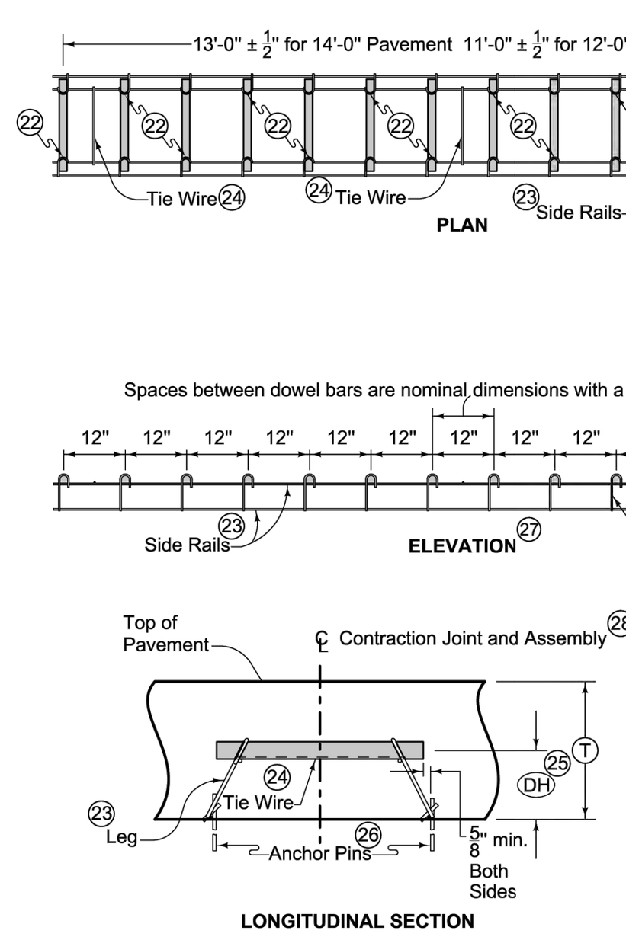
1. 6" Standard Curb, 6" Sloped Curb, or 4" Sloped Curb as specified.
2. ⅛" if Proposed Pavement is HMA. No elevation difference if Proposed Pavement is PCC.
3. 'BT' , 'KT', or 'L' joint if Proposed Pavement is PCC. 'B' joint if Proposed Pavement is HMA.

*NOTE: SUBGRADE PREPARATION AND BASE AGGREGATE TO EXTEND 12" BEYOND BACK OF CURB

PV-102 PCC CURB DETAILS

6 / C5.01 — NOT TO SCALE

CONTRACTION JOINTS



DOWEL ASSEMBLIES (19)(20)(21)

(19) Use 18 inch long dowel bars with a tolerance of ± 1/8 inch. Ensure the centerlines of individual dowels are parallel to the other dowels in the assembly within ± 1/8 inch.

(20) Use wires with a minimum tensile strength of 50 ksi.

(21) Details apply to both transverse contraction and expansion joints.

(22) Weld alternately throughout.

(23) 0.306 inch diameter wire. Wire sizes shown are the minimum required.

(24) Maximum 0.177 inch diameter wire, welded or friction fit to upper side rail, both sides.

(25) Measured from the centerline of dowel bar to bottom of lower side rail + 1/4 inch.

(26) Per lane width, install a minimum of 8 anchor pins evenly spaced (4 per side), to prevent movement of assembly during construction. Anchor assemblies placed on pavement or PCC base with devices approved by the Engineer.

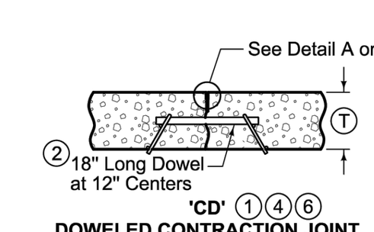
(27) If dowel basket assemblies are required for curbed pavements, the assembly length is based on the jointing layout. See PV-101, sheet 8.

(28) Ensure dowel basket assembly centerline is within 2 inches of the intended joint location longitudinally and has no more than 1/4 inch horizontal skew from end of basket to end of basket.

DOWEL HEIGHT AND DIAMETER FOR DOWELED CONTRACTION JOINTS

(T)	(DH)(25)	Diameter (Solid)	Diameter (Tubular)
7" to 7½"	3½"	¾"	⅞"
8" to 9½"	4¼"	1¼"	1⅜"
10" to 11½"	5¼"	1½"	1⅝"
12" to 13"	6¼"	1½"	1⅝"

Tubular Dowel Bars will not be allowed for RD joints.

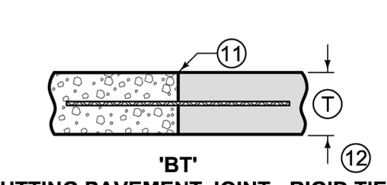


'CD' (1)(4)(6)
DOWELED CONTRACTION JOINT

1. See dowel assemblies for fabrication details.
2. See Bar Size Table for Contraction Joints on Sheet 2.
3. ~~Locate 'DW' joint at a mid-panel location between future 'C' or 'CD' joints. Place no closer than 5 feet to a 'C' or 'CD' joint.~~
4. Place bars within the limits shown under dowel assemblies.
5. ~~Edge with 1/8 inch tool for length of joint. For HT joint, remove header block and board when second slab is placed.~~
6. Unless specified otherwise, use 'CD' transverse contraction joints in mainline pavement when (T) is greater or equal to 8 inches. Use 'C' joints when (T) is less than 8 inches.

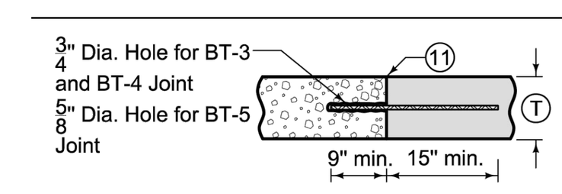
SUDAS PV-101 - CD JOINTS FOR HEAVY DUTY PAVEMENTS

7 / C5.01 — NOT TO SCALE



'BT'
ABUTTING PAVEMENT JOINT - RIGID TIE

(T)	Joint	Bars	Bar Length and Spacing
< 8"	'BT-1'	#4	36" Long at 30" Centers
		#5	30" Long at 30" Centers
≥ 8"	'BT-2'	#5	36" Long at 30" Centers

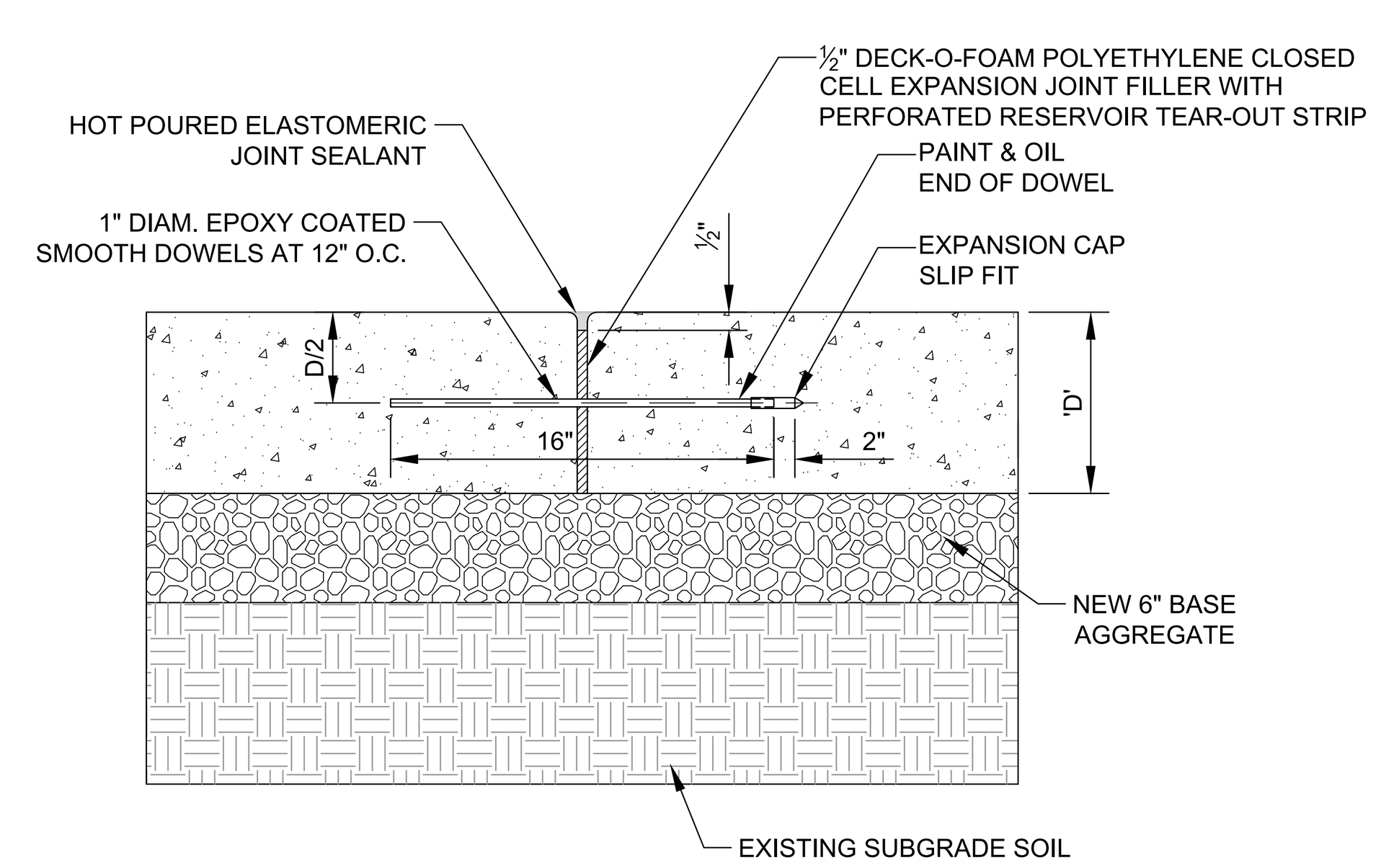


'BT'
ABUTTING PAVEMENT JOINT - RIGID TIE (Drilled)

(T)	Joint	Bars	Bar Length and Spacing
< 8"	'BT-5'	#4	24" Long at 30" Centers
≥ 8"	'BT-3'	#5	24" Long at 30" Centers
	'BT-4'		24" Long at 15" Centers

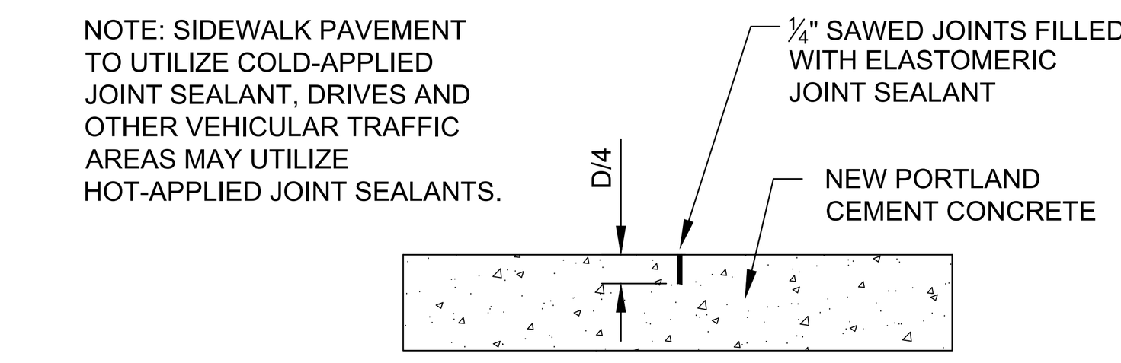
SUDAS PV-101 - BT JOINTS FOR CONCRETE PAVEMENTS

8 / C5.01 — NOT TO SCALE



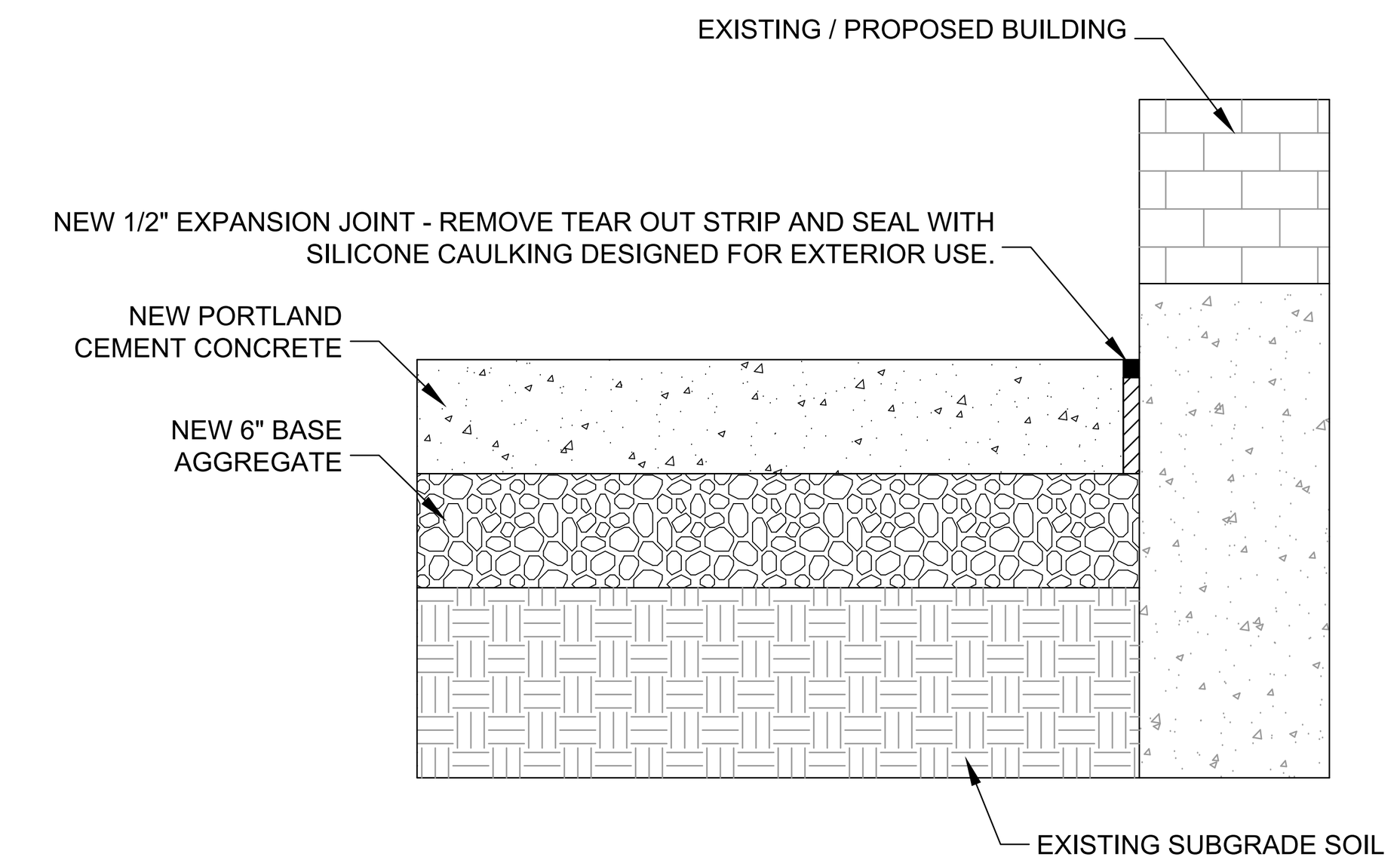
DOWELED EXPANSION JOINT

9 / C5.01 — NOT TO SCALE



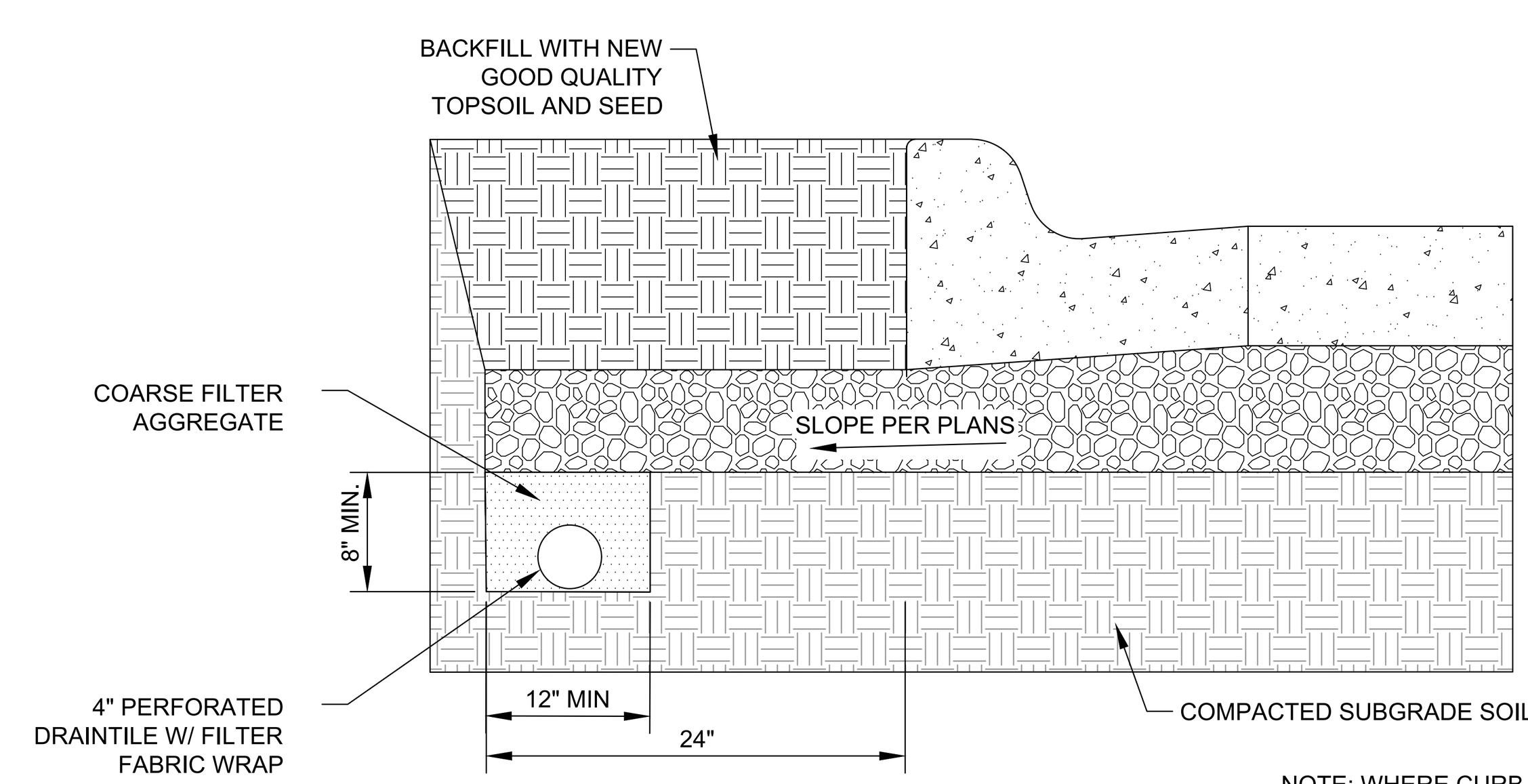
CONTROL JOINT DETAIL

10 / C5.01 — NOT TO SCALE



BUILDING - SIDEWALK EXPANSION JOINT DETAIL

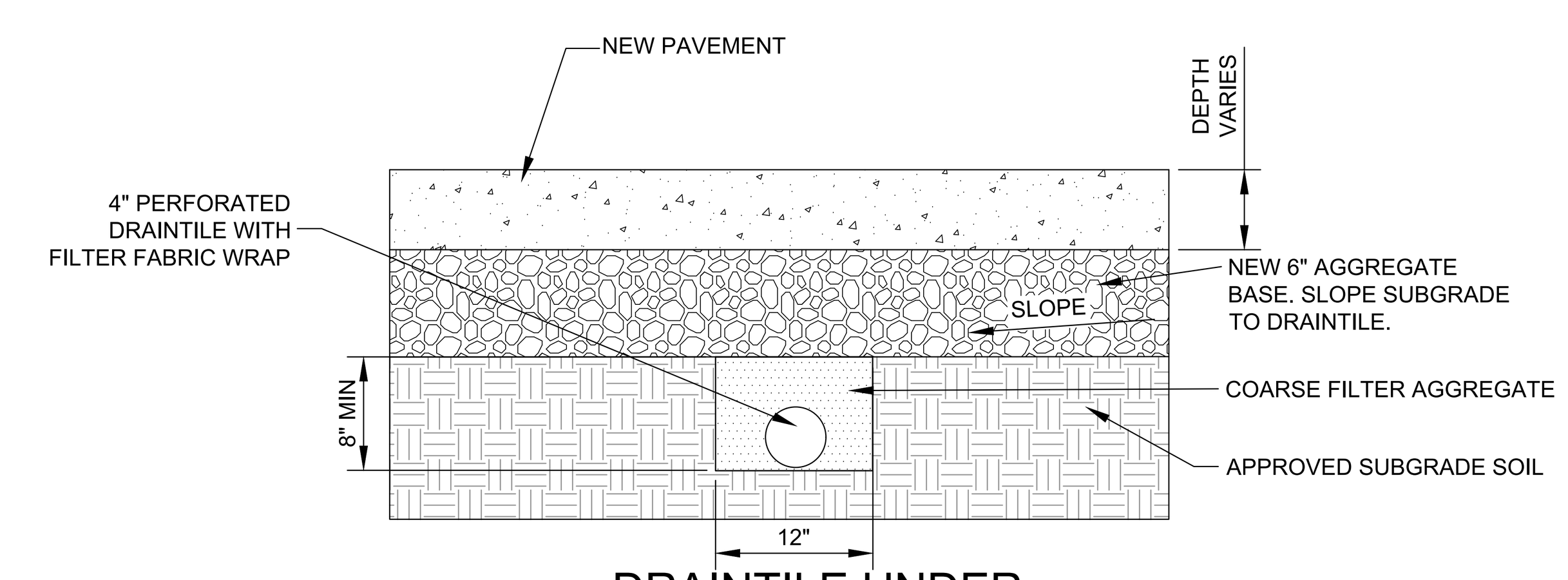
11 / C5.01 — NOT TO SCALE



NOTE: WHERE CURB AND GUTTER ARE POURED SEPARATELY FROM SURROUNDING PAVEMENT (I.E. NOT MONOLITHICALLY), GUTTER PAN SHALL BE TIED TO SURROUNDING PAVEMENT SECTION W/ "BT" JOINTS AS SHOWN ON DETAIL 8/C5.01.

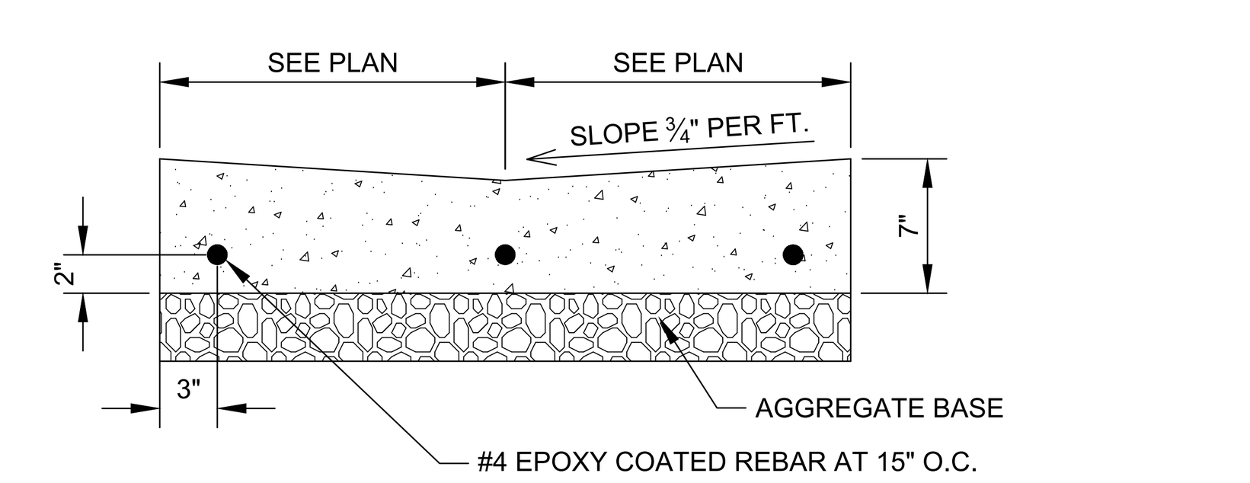
BACK OF CURB SUBDRAIN DETAIL

12 / C5.01 — NOT TO SCALE



DRAINTILE UNDER PAVEMENT SECTION

13 / C5.01 — NOT TO SCALE



VALLEY GUTTER DETAIL

14 / C5.01 — NOT TO SCALE

INVISION
PLANNING | ARCHITECTURE | INTERIORS

900 MULBERRY STREET
Des Moines, Iowa 50309
515.633.2941
www.invisionarch.com

CONSULTANT:
CIVIL
LARSON ENGINEERING, INC.
LANDSCAPE
BOLTON & MENK
STRUCTURAL
RAKER RHODES ENGINEERING
MEP
KCL ENGINEERING

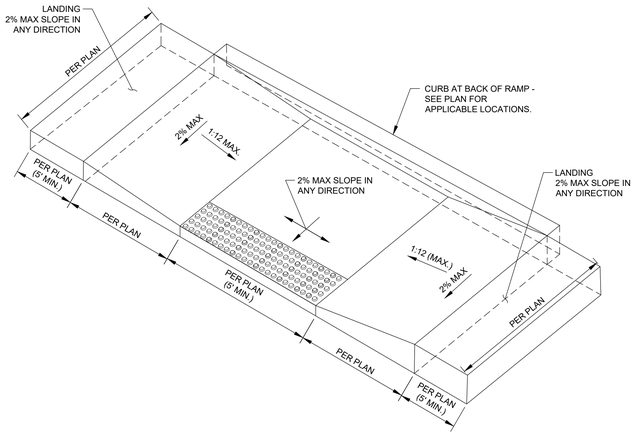
REVISIONS:

Description	Date	No.
ADDENDUM 03	12/04/24	1
ADDENDUM 04	12/10/24	2

OWNER SIGN-OFF:
DATE NAME

VAN METER COMMUNITY SCHOOL DISTRICT
VAN METER SCHOOL ADDITION - BID ISSUANCE #3
520 1ST AVE, VAN METER, IA 50261

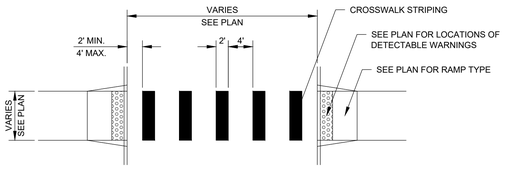
PROJECT NO: 23086
DATE: 11/11/2024
SHEET SET: BID DOCUMENTS
SHEET NAME: CIVIL DETAILS
SHEET: C5.01



PARALLEL CURB RAMP / LOADING ZONE RAMP DETAIL

1 C5.02

NOT TO SCALE

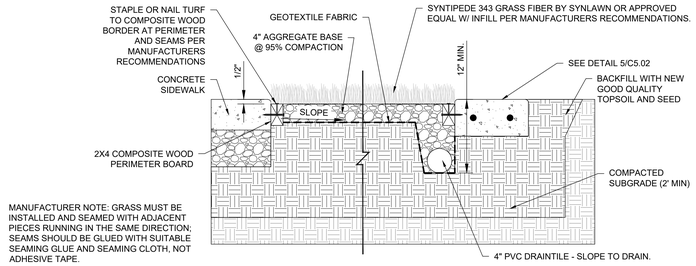


NOTE: QUANTITY OF STRIPES VARIES W/ DRIVE WIDTH. MAINTAIN 2' TO 4' BETWEEN FACE OF CURB AND EDGE OF NEAREST CROSSWALK STRIPE. CENTER CROSSWALK STRIPING IN DRIVE.

CROSSWALK STRIPING DETAIL

2 C5.02

NOT TO SCALE

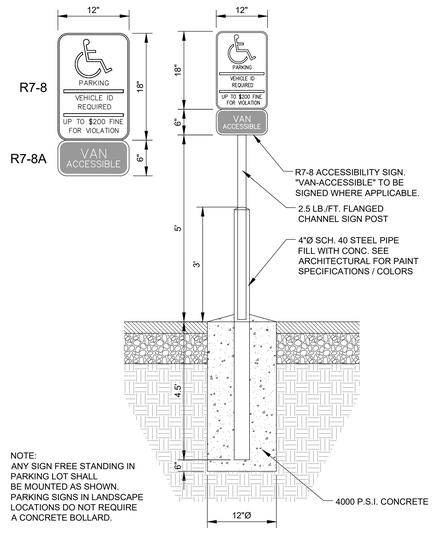


MANUFACTURER NOTE: GRASS MUST BE INSTALLED AND SEAMED WITH ADJACENT PIECES RUNNING IN THE SAME DIRECTION; SEAMS SHOULD BE GLUED WITH SUITABLE SEAMING GLUE AND SEAMING CLOTH, NOT ADHESIVE TAPE.

SYNTHETIC TURF DETAIL

3 C5.02

NOT TO SCALE

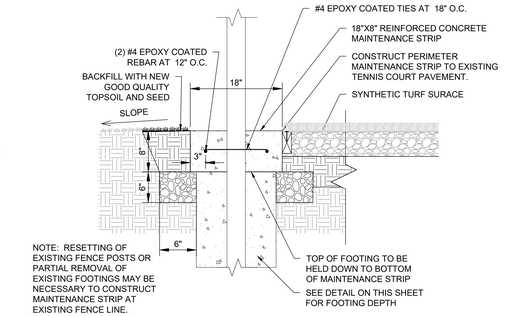


NOTE:
ANY SIGN FREE STANDING IN PARKING LOT SHALL BE MOUNTED AS SHOWN. PARKING SIGNS IN LANDSCAPE LOCATIONS DO NOT REQUIRE A CONCRETE BOLLARD.

ACCESSIBLE PARKING SIGN AND POST DETAIL

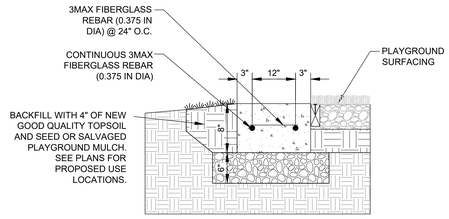
4 C9.02

NOT TO SCALE



NOTE: RESETTING OF EXISTING FENCE POSTS OR PARTIAL REMOVAL OF EXISTING FOOTINGS MAY BE NECESSARY TO CONSTRUCT MAINTENANCE STRIP AT EXISTING FENCE LINE.

MAINTENANCE STRIP AT FENCE POST



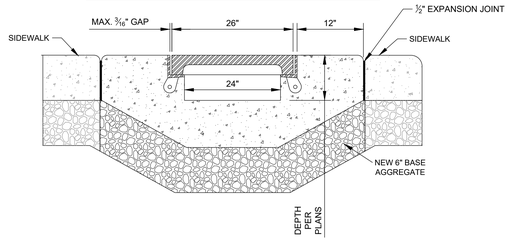
MAINTENANCE STRIP

PLAYGROUND SURFACING MAINTENANCE STRIP DETAIL

5 C5.02

NOT TO SCALE

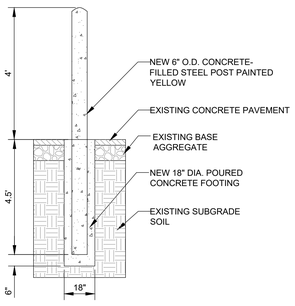
	TRENCH SCHEDULE				
	NEENAH MODEL	COVER STYLE	PERMAGRIP	END PIECES	LENGTH
1	R-4990-HX	SOLID	YES	NO	PER PLAN



TRENCH DRAIN DETAIL

6 C5.02

NOT TO SCALE

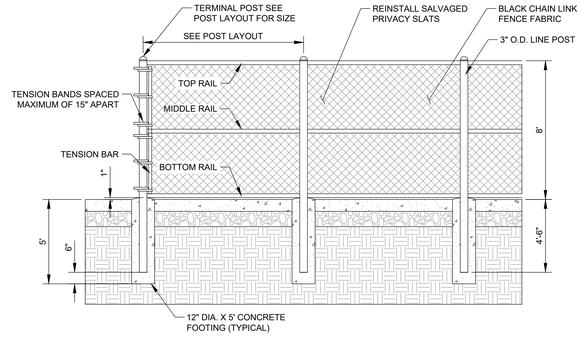


BOLLARD DETAIL

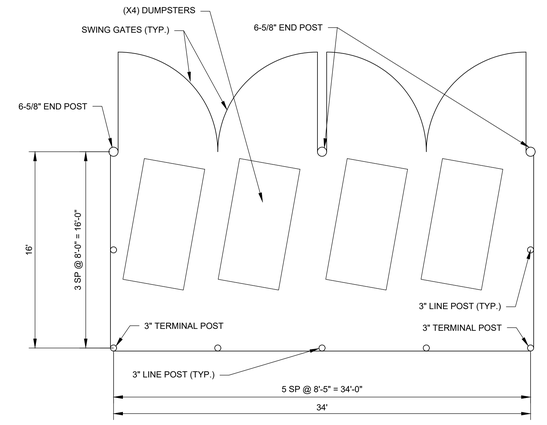
7 C5.02

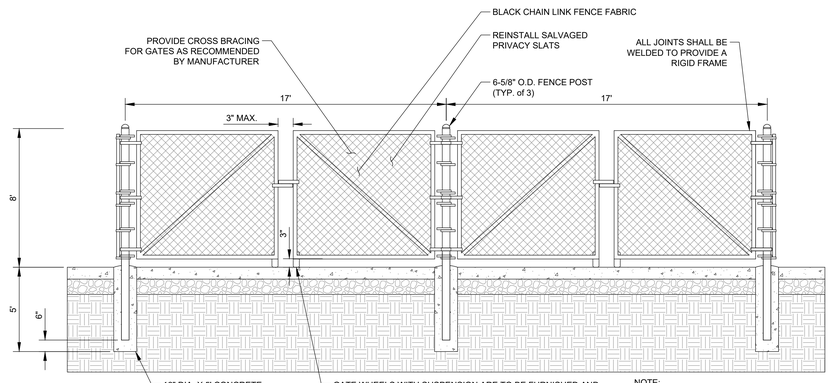
NOT TO SCALE

ELEVATION



POST LAYOUT





TRASH ENCLOSURE FENCE AND GATE DETAIL

8 C5.02

NOT TO SCALE

INVISION
PLANNING | ARCHITECTURE | INTERIORS
900 MULBERRY STREET
Des Moines, Iowa 50309
515.633.2941
www.invisionarch.com

CONSULTANT:
CIVIL
LARSON ENGINEERING, INC.
LANDSCAPE
BOLTON & MENK
STRUCTURAL
RAKER RHODES ENGINEERING
MEP
KCL ENGINEERING

REVISIONS:

Description	Date	No.
ADDENDUM 03	12/04/24	1
ADDENDUM 04	12/10/24	2

OWNER SIGN-OFF:
DATE NAME

VAN METER COMMUNITY SCHOOL DISTRICT

VAN METER SCHOOL ADDITION - BID ISSUANCE #3

520 1ST AVE, VAN METER, IA 50261

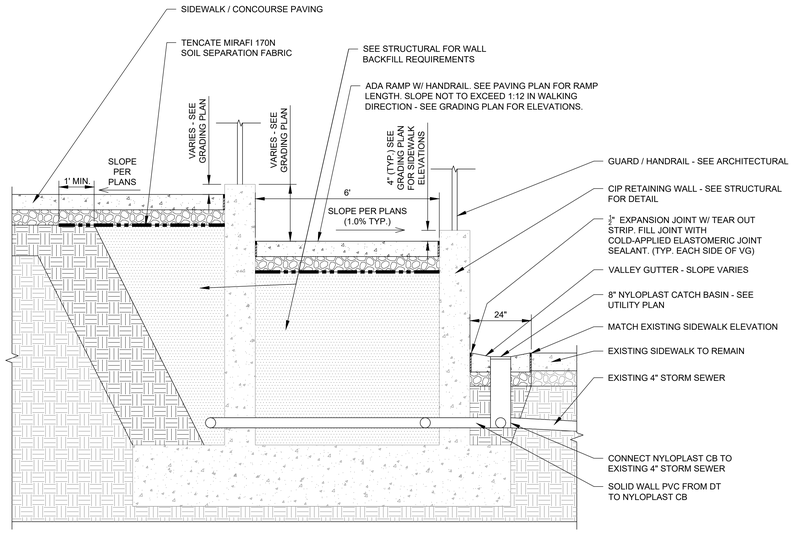
PROJECT NO: 23086

DATE: 11/11/2024

SHEET SET: BID DOCUMENTS

SHEET NAME: CIVIL DETAILS

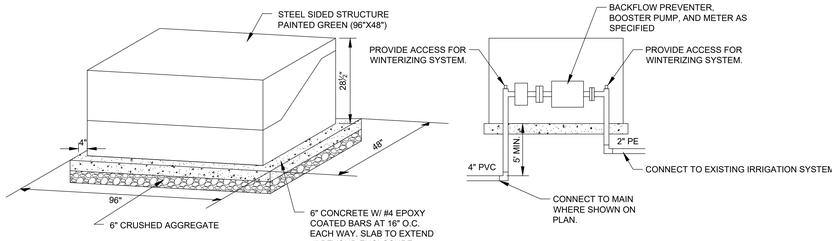
SHEET: C5.02



FOUNDATION DRAIN / SITE PAVING AT CIP RETAINING WALL DETAIL

1 / C5.03

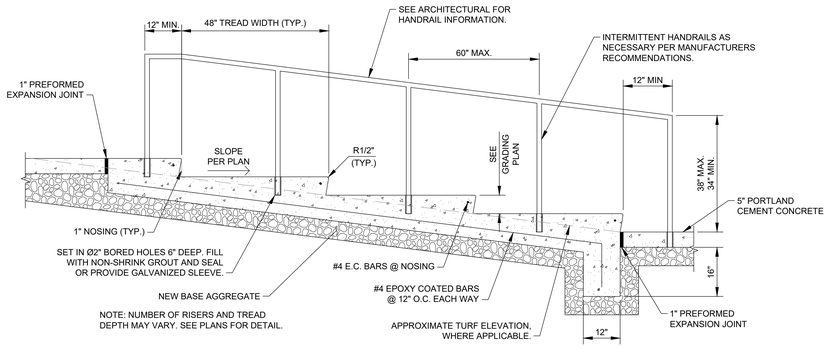
NOT TO SCALE



IRRIGATION ENCLOSURE

4 / C5.03

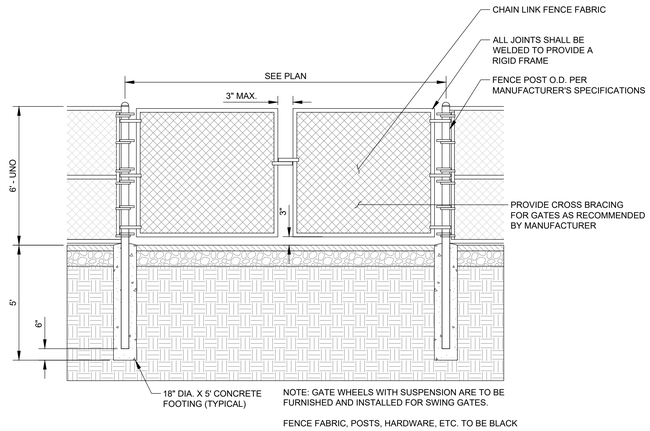
NOT TO SCALE



CONCRETE STAIR SECTION DETAIL

5 / C5.03

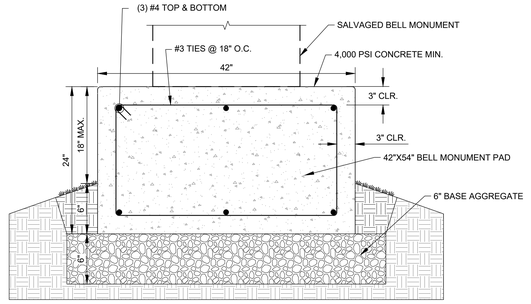
NOT TO SCALE



DOUBLE SWING GATE DETAIL

2 / C5.03

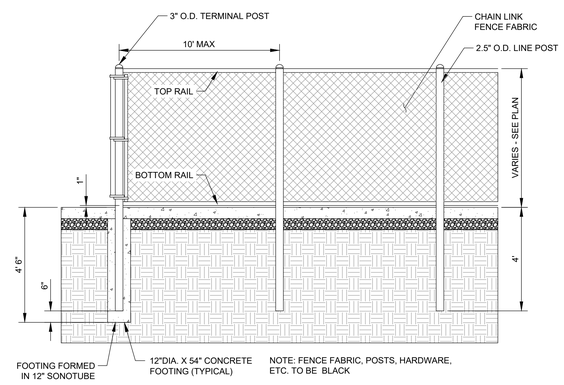
NOT TO SCALE



BELL MONUMENT PAD DETAIL

6 / C5.03

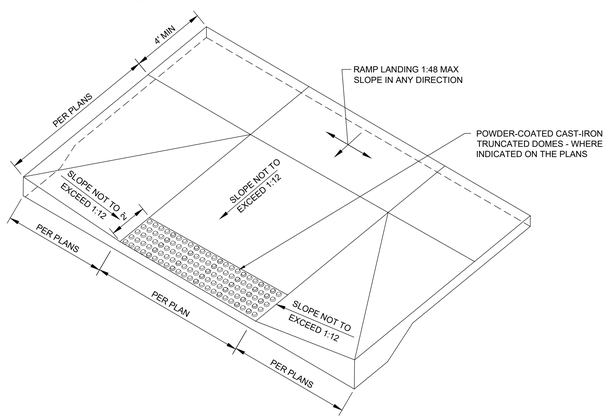
NOT TO SCALE



FENCE DETAIL

3 / C5.03

NOT TO SCALE



PERPENDICULAR CURB RAMP DETAIL

7 / C5.03

NOT TO SCALE

INVISION
PLANNING | ARCHITECTURE | INTERIORS

900 MULBERRY STREET
Des Moines, Iowa 50309
515.633.2941
www.invisionarch.com

CONSULTANT:
CIVIL
LARSON ENGINEERING, INC.
LANDSCAPE
BOLTON & MENK
STRUCTURAL
RAKER RHODES ENGINEERING
MEP
KCL ENGINEERING

REVISIONS:

Description	Date	No.
ADDENDUM 03	12/04/24	1
ADDENDUM 04	12/10/24	2

OWNER SIGN-OFF:

DATE NAME

VAN METER COMMUNITY SCHOOL DISTRICT

VAN METER SCHOOL ADDITION - BID ISSUANCE #3

520 1ST AVE, VAN METER, IA 50261

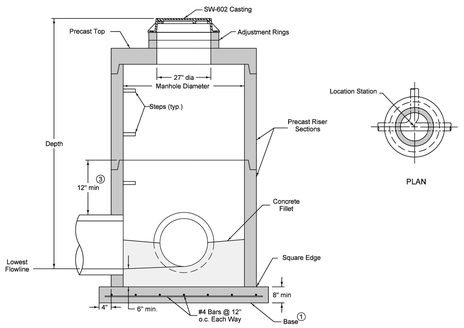
PROJECT NO: 23086

DATE: 11/11/2024

SHEET SET: BID DOCUMENTS

SHEET NAME: CIVIL DETAILS

SHEET: C5.03



TYPICAL SECTION

Manhole Diameter (inches)	Maximum Pipe Diameter (2) (inches) for 2 Pipes At 180° Separation	At 90° Separation
48	24	18
60	36	24
72	42	30
84	48	36
96	60	42

(1) Cast-in-place base shown. If base is precast integral with bottom riser, the footprint of the base is not required to extend beyond the outer edge of the riser.

(2) For additional configurations, maintain a minimum of 12 inches of concrete between vertical edges of pipe openings.

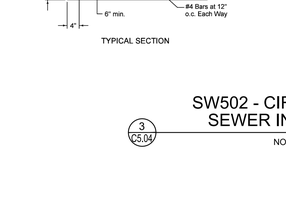
(3) 12 inch minimum riser height above all pipe openings.

NOTE:
WATER TIGHT PIPE CONNECTIONS TO BE PROVIDED.

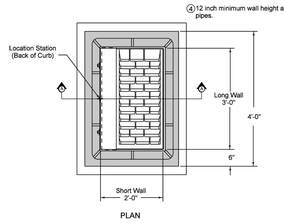
SW401 - CIRCULAR STORM SEWER MANHOLE DETAIL

1 / C5.04

NOT TO SCALE



SECTION A-A



PLAN

REINFORCING BAR LIST						
Mark	Size	Location	Shape	Length	Count	Spacing
4w1	4	Walls	——	Wall Height minus 4"	14	12"
4w2	4	Long Walls	——	3'-8"	Varies	12"
4w3	4	Short Walls	——	2'-8"	Varies	12"
4b1	4	Base	——	4'-2"	4	10"
4b2	4	Base	——	3'-2"	5	10"

MAXIMUM PIPE DIAMETERS		
Pipe Location	Precast Structure	Cast-in-place Structure
Short Wall	15"	18"
Long Wall	24"	30"

Refer to SW-514 for boxout details.

(1) Install four #4 diagonal bars at all pipe openings.

(2) SW-603 Type R unless Type Q is specified in the contract documents.

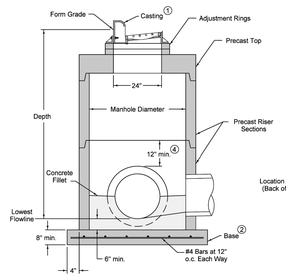
(3) Cast-in-place base shown. If base is precast integral with walls, the footprint of the base is not required to extend beyond the outer edge of the walls.

(4) 12 inch minimum wall height above all pipes.

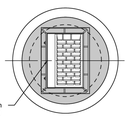
SW501 - RECTANGULAR STORM SEWER STRUCTURE DETAIL

2 / C5.04

NOT TO SCALE



TYPICAL SECTION



PLAN

Manhole Diameter (inches)	Maximum Pipe Diameter (3) (inches) for 2 Pipes at 180° Separation	at 90° Separation
48	24	18
60	36	24
72	42	30
84	48	36
96	60	42

Refer to SW-514 for boxout details.

(1) SW-603 Type R unless Type Q is specified in the contract documents.

(2) Cast-in-place base shown. Base may be square. If base is precast integral with walls, the footprint of the base is not required to extend beyond the outer edge of the walls.

(3) For additional configurations, maintain a minimum of 12 inches of concrete between vertical edges of pipe openings.

(4) 12 inch minimum riser height above all pipes.

SW502 - CIRCULAR STORM SEWER INTAKE DETAIL

3 / C5.04

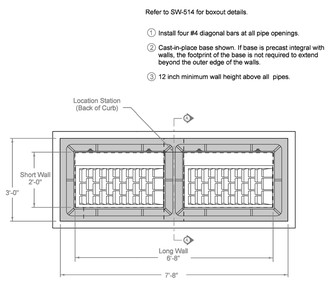
NOT TO SCALE

Refer to SW-514 for boxout details.

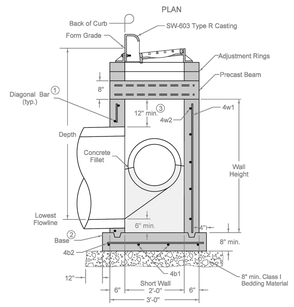
(1) Install four #4 diagonal bars at all pipe openings.

(2) Cast-in-place base shown. If base is precast integral with walls, the footprint of the base is not required to extend beyond the outer edge of the walls.

(3) 12 inch minimum wall height above all pipes.



PLAN

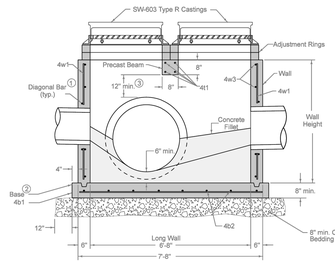


SECTION A-A

SW505 - DOUBLE GRATE INTAKE DETAIL

4 / C5.04

NOT TO SCALE



TYPICAL SECTION

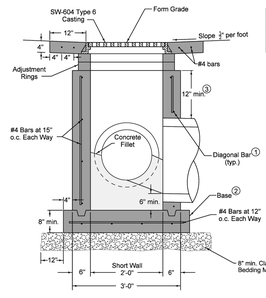
REINFORCING BAR LIST						
Mark	Size	Location	Shape	Count	Length	Spacing
4t1	4	Beam	——	4	2'-8"	4"
4b1	4	Base	——	4	7'-10"	10"
4b2	4	Base	——	8	3'-2"	12"
4w1	4	Walls	——	20	Wall Height minus 4"	12"
4w2	4	Long Walls	——	Varies	7'-4"	12"
4w3	4	Short Walls	——	Varies	2'-8"	12"

MAXIMUM PIPE DIAMETERS		
Pipe Location	Precast Structure	Cast-in-place Structure
Short Wall	15"	18"
Long Wall	60"	66"

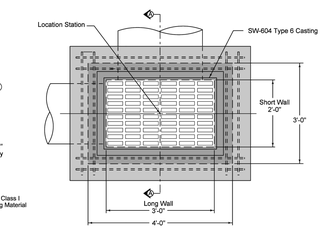
(1) Install four #4 diagonal bars at all pipe openings.

(2) Cast-in-place base shown. If base is precast integral with walls, the footprint of the base is not required to extend beyond the outer edge of the walls.

(3) 12 inch minimum wall height above all pipes.



SECTION A-A



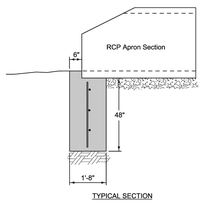
PLAN

MAXIMUM PIPE DIAMETERS		
Pipe Location	Precast Structure	Cast-in-place Structure
Short Wall	15"	18"
Long Wall	24"	30"

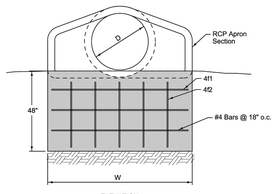
SW511 - RECTANGULAR AREA INTAKE DETAIL

5 / C5.04

NOT TO SCALE



TYPICAL SECTION



ELEVATION

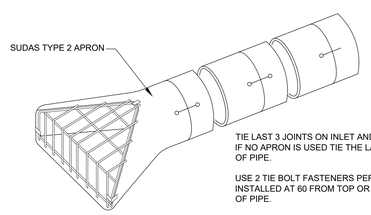
REINFORCING BAR LIST

D	W	Mark	Size	Length	Count
12"	2'-4"	4t1	4	2'-0"	3
		4t2	4	3'-8"	2
15"	2'-10 ½"	4t1	4	2'-6 ½"	3
		4t2	4	3'-8"	2
18"	3'-5"	4t1	4	3'-1"	3
		4t2	4	3'-8"	3
24"	4'-6"	4t1	4	4'-2"	3
		4t2	4	3'-8"	3
30"	5'-7"	4t1	4	5'-3"	3
		4t2	4	3'-8"	4
36"	6'-8"	4t1	4	6'-4"	3
		4t2	4	3'-8"	5
42"	7'-3"	4t1	4	6'-11"	3
		4t2	4	3'-8"	5
48"	7'-10"	4t1	4	7'-6"	3
		4t2	4	3'-8"	6
54"	8'-5"	4t1	4	8'-1"	3
		4t2	4	3'-8"	6
60"	8'-11"	4t1	4	8'-7"	3
		4t2	4	3'-8"	6
66"	8'-11"	4t1	4	8'-7"	3
		4t2	4	3'-8"	6
72"	10'-0"	4t1	4	9'-8"	3
		4t2	4	3'-8"	7
78"	10'-7"	4t1	4	10'-3"	3
		4t2	4	3'-8"	7
84"	11'-1"	4t1	4	10'-9"	3
		4t2	4	3'-8"	8

RCP FLARED END SECTION FOOTING DETAIL

6 / C5.04

NOT TO SCALE



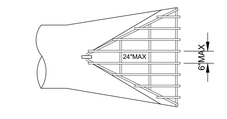
TIE LAST 3 JOINTS ON INLET AND OUTLET.
IF NO APRON IS USED TIE THE LAST 3 SECTIONS OF PIPE.

USE 2 TIE BOLT FASTENERS PER JOINT INSTALLED AT 60 FROM TOP OR BOTTOM OF PIPE.

USE 5/8" TIE FOR PIPE SIZES 12" TO 27".
USE 3/4" TIE FOR PIPE SIZES 30" TO 66".
USE 1" TIE FOR PIPE SIZES OVER 72".

NUTS AND WASHERS ARE NOT REQUIRED ON PIPE SIZE LESS THAN 21".

TRASH GUARDS WILL BE REQUIRED ON 18" OR LARGER PIPE.



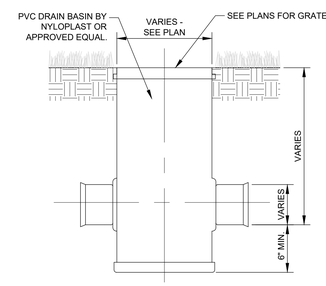
SIZE OF PIPE	BARS	BOLTS	"O"
12" TO 18"	3/4"	5/8"	4"
21" TO 42"	1"	3/4"	6"
48" TO 72"	1-1/4"	1"	12"

PROVIDE 3 CLIPS TO FASTEN TRASH GUARD TO F.E.S.
HOT DIP GALVANIZE AFTER FABRICATION.

FLARED END SECTION DETAIL

7 / C5.04

NOT TO SCALE

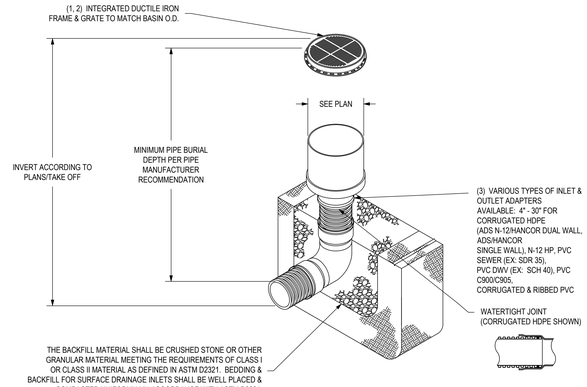


NOTE: WHERE APPLICABLE, MANHOLES ARE TO HAVE A STANDARD 24" H-20 SOLID LID

DRAIN BASIN DETAIL

8 / C5.04

NOT TO SCALE



INLINE DRAIN DETAIL

9 / C5.04

NOT TO SCALE

INVISION
PLANNING | ARCHITECTURE | INTERIORS

900 MULBERRY STREET
Des Moines, Iowa 50309
515.633.2941
www.invisionarch.com

CONSULTANT:
CIVIL
LARSON ENGINEERING, INC.
LANDSCAPE
BOLTON & MENK
STRUCTURAL
RAKER RHODES ENGINEERING
MEP
KCL ENGINEERING

REVISIONS:

Description	Date	No.
ADDENDUM 03	12/04/24	1
ADDENDUM 04	12/10/24	2

OWNER SIGN-OFF:

DATE	NAME

VAN METER COMMUNITY SCHOOL DISTRICT

VAN METER SCHOOL ADDITION - BID ISSUANCE #3

520 1ST AVE, VAN METER, IA 50261

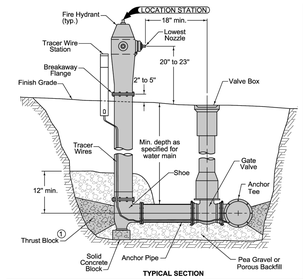
PROJECT NO: 23086

DATE: 11/11/2024

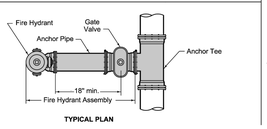
SHEET SET: BID DOCUMENTS

SHEET NAME: CIVIL DETAILS

SHEET: C5.04



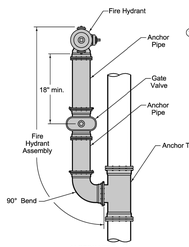
TYPICAL SECTION



TYPICAL PLAN

Use ductile iron pipe with restrained mechanical joints for fire hydrant assembly and anchor tee.

① Do not cover drain holes or tracer wire.



ALTERNATE PLAN

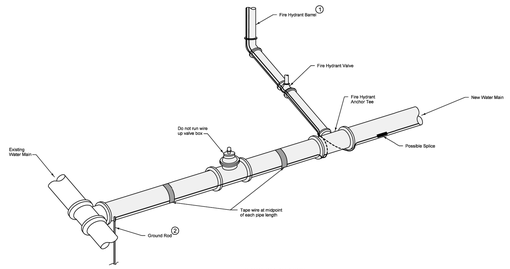
WM-201 - FIRE HYDRANT ASSEMBLY

1 C5.05

NOT TO SCALE

① Extend tracer wire up fire hydrant barrel to internal terminals of tracer wire station and back down. Refer to WM-201 for details of fire hydrant assembly.

② Clamp tracer wire to ground rod at system termination points.



TYPICAL INSTALLATION

WM-102 TRACER SYSTEM

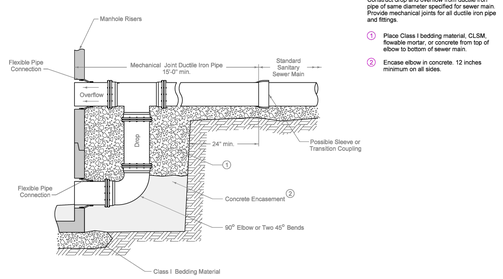
3 C5.05

NOT TO SCALE

Construct drop and overflow from ductile iron pipe of same diameter specified for sewer main. Provide mechanical joints for all ductile iron pipe and fittings.

① Place Class I bedding material, CLSM, flowable mortar, or concrete from top of elbow to bottom of sewer main.

② Encase elbow in concrete. 12 inches minimum on all sides.



SW-307 - EXTERNAL DROP CONNECTION FOR SANITARY SEWER MANHOLE

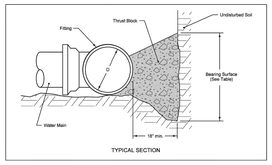
6 C5.05

NOT TO SCALE

Extend thrust blocks to undisturbed soil. Excavation into trench wall may be necessary.

Form vertical surfaces of poured concrete thrust blocks except on bearing surface.

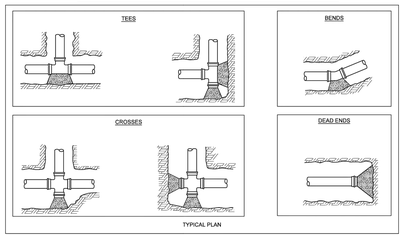
Encase all fittings in polyethylene wrap. Do not allow concrete to directly contact joints or fitting bolts.



TYPICAL SECTION

Diameter of Pipe, D (inches)	MINIMUM BEARING SURFACE (sf)				
	Bends				Tees and Dead Ends
	11½°	22½°	45°	90°	
4	1	1	2	4	3
6	1	2	4	8	6
8	2	4	7	14	10
10	3	6	11	21	15
12	4	8	16	29	21
14	5	11	21	38	28
16	7	14	27	50	36
18	9	17	34	63	45
20	11	21	43	78	55
24	15	31	60	111	78
30	24	47	92	171	120
36	34	67	132	244	173

Minimum surface area based on water pressure of 150 psi and allowable soil pressure of 1,000 psf.



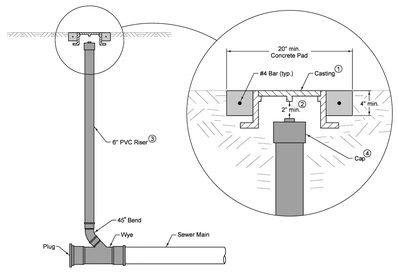
TYPICAL PLAN

① Standard duty casting complying with AASHTO M 306. Mark lid with "Sanitary" or "Sanitary C.O."

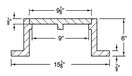
② Do not allow casting to bear on top of riser pipe.

③ 6 inch PVC Service Pipe

④ Threaded PVC cap or iron body ferrule with brass screw plug



CLEANOUT



CASTING ①

(Dimensions are nominal)

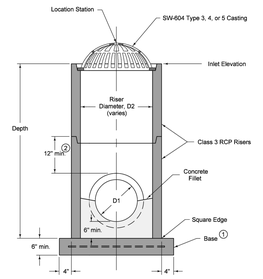
SW-203 SANITARY SEWER CLEANOUT

4 C5.05

NOT TO SCALE

① Precast (shown) or cast-in-place base:
- Precast: 6 inch thick concrete with #6 welded wire mesh on 4 inch centers (WWF 4" x 4"). Center mesh vertically within base.
- Cast-in-place: 8 inch thick non-reinforced concrete.

② 12 inch minimum riser height above all pipes.



TYPICAL SECTION

CASE 1

INTAKE SIZE - CASE 1	
Outlet Pipe Diameter, D1	Minimum Riser Diameter, D2
12"	18"
15"	24"
18"	24"
21"	30"
24"	30"
27"	36"

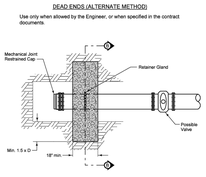
SW-512 -CIRCULAR AREA INTAKE

7 C5.05

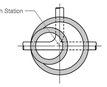
NOT TO SCALE

① For additional configurations, maintain a minimum of 12 inches of concrete between vertical edges of pipe openings.

② 12 inch minimum riser height above all pipe openings.



TYPICAL SECTION



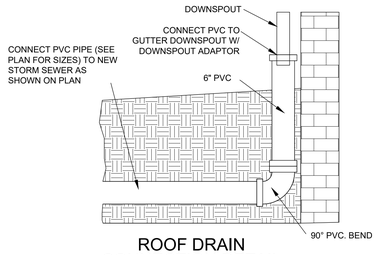
PLAN

Manhole Diameter (inches)	Maximum Pipe Diameter (inches) for 2 Pipes ①	
	At 180° Separation	At 90° Separation
48	24	18
60	36	24
72	42	30
84	48	36
96	60	42

SW-301 - CIRCULAR SANITARY SEWER MANHOLE

5 C5.05

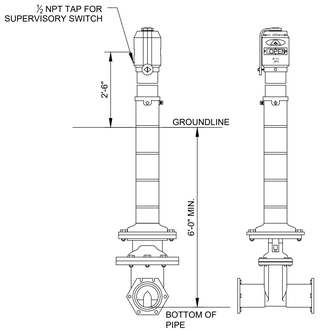
NOT TO SCALE



ROOF DRAIN CONNECTION DETAIL

8 C5.05

NOT TO SCALE

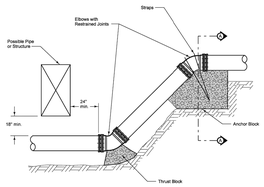


POST INDICATOR VALVE

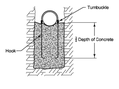
9 C5.05

NOT TO SCALE

CHANGES IN PIPE DEPTH



ELEVATION

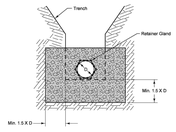


SECTION A-A

DEAD ENDS (ALTERNATE METHOD)

Use only when allowed by the Engineer, or when specified in the contract documents.

PLAN



SECTION B-B

WM-101 THRUST BLOCKS

2 C5.05

NOT TO SCALE

INVISION
ARCHITECTURE | INTERIORS

900 MULBERRY STREET
Des Moines, Iowa 50309
515.633.2941
www.invisionarch.com

CONSULTANT:
CIVIL
LARSON ENGINEERING, INC.
LANDSCAPE
BOLTON & MENK
STRUCTURAL
RAKER RHODES ENGINEERING
MEP
KCL ENGINEERING

REVISIONS:

Description	Date	No.
ADDENDUM 03	12/04/24	1
ADDENDUM 04	12/10/24	2

OWNER SIGN-OFF:

DATE NAME

VAN METER COMMUNITY SCHOOL DISTRICT

VAN METER SCHOOL ADDITION - BID ISSUANCE #3

520 1ST AVE, VAN METER, IA 50261

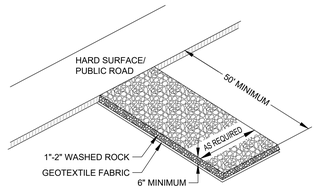
PROJECT NO: 23086

DATE: 11/11/2024

SHEET SET: BID DOCUMENTS

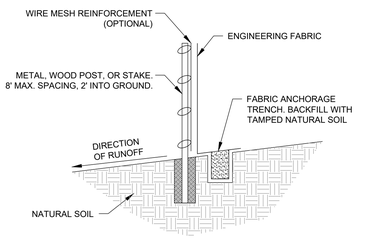
SHEET NAME: CIVIL DETAILS

SHEET: C5.05



1 C5.06 ROCK CONSTRUCTION ENTRANCE

NOT TO SCALE

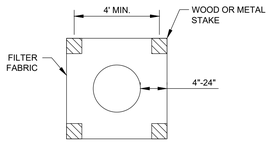


NOTE: DEPENDING UPON CONFIGURATION, ATTACH FABRIC TO WIRE MESH WITH HOG RINGS, STEEL POSTS WITH WIRES, OR WOOD POSTS WITH STAPLES.

2 C5.06 SILT FENCE INSTALLATION DETAIL

NOT TO SCALE

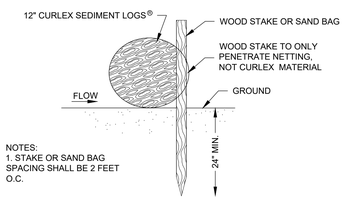
NOTE: FOR EXISTING CATCH BASINS IN PAVEMENT AREAS, SAND BAGS, AGGREGATE WRAPPED IN FILTER FABRIC, OR SEDIMENT TRAPS SHOULD BE USED.



MAXIMUM DISTANCE BETWEEN POSTS IS 2'. BOTTOM OF FENCE IS BURIED IN TRENCH, SIMILAR TO NORMAL SILT FENCE INSTALLATION.

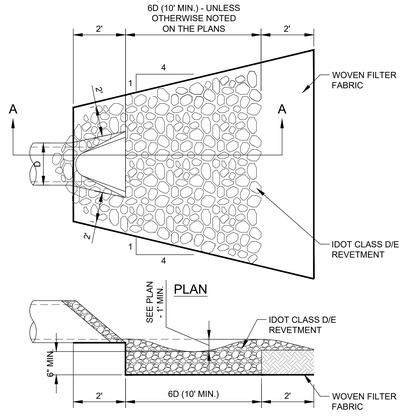
3 C5.06 SILT FENCE INLET SEDIMENT FILTER

NOT TO SCALE



4 C5.06 SEDIMENT LOG DETAIL

NOT TO SCALE

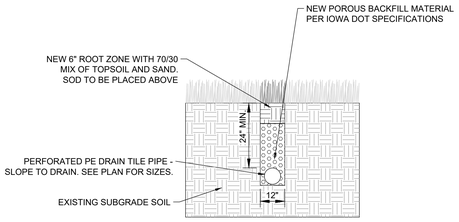


SECTION A-A

NOTE:
500X MIRAFI FABRIC OR EQUAL

5 C5.06 RIP-RAP AT OUTLETS

NOT TO SCALE



6 C5.06 DRAIN TILE DETAIL

NOT TO SCALE

INVISION
PLANNING | ARCHITECTURE | INTERIORS

900 MULBERRY STREET
Des Moines, Iowa 50309
515.633.2941
www.invisionarch.com

CONSULTANT:
CIVIL
LARSON ENGINEERING, INC.
LANDSCAPE
BOLTON & MENK
STRUCTURAL
RAKER RHODES ENGINEERING
MEP
KCL ENGINEERING

REVISIONS:

Description	Date	No.
ADDENDUM 03	12/04/24	1
ADDENDUM 04	12/10/24	2

OWNER SIGN-OFF:

DATE NAME

VAN METER COMMUNITY SCHOOL DISTRICT

VAN METER SCHOOL ADDITION - BID ISSUANCE #3

520 1ST AVE. VAN METER, IA 50261

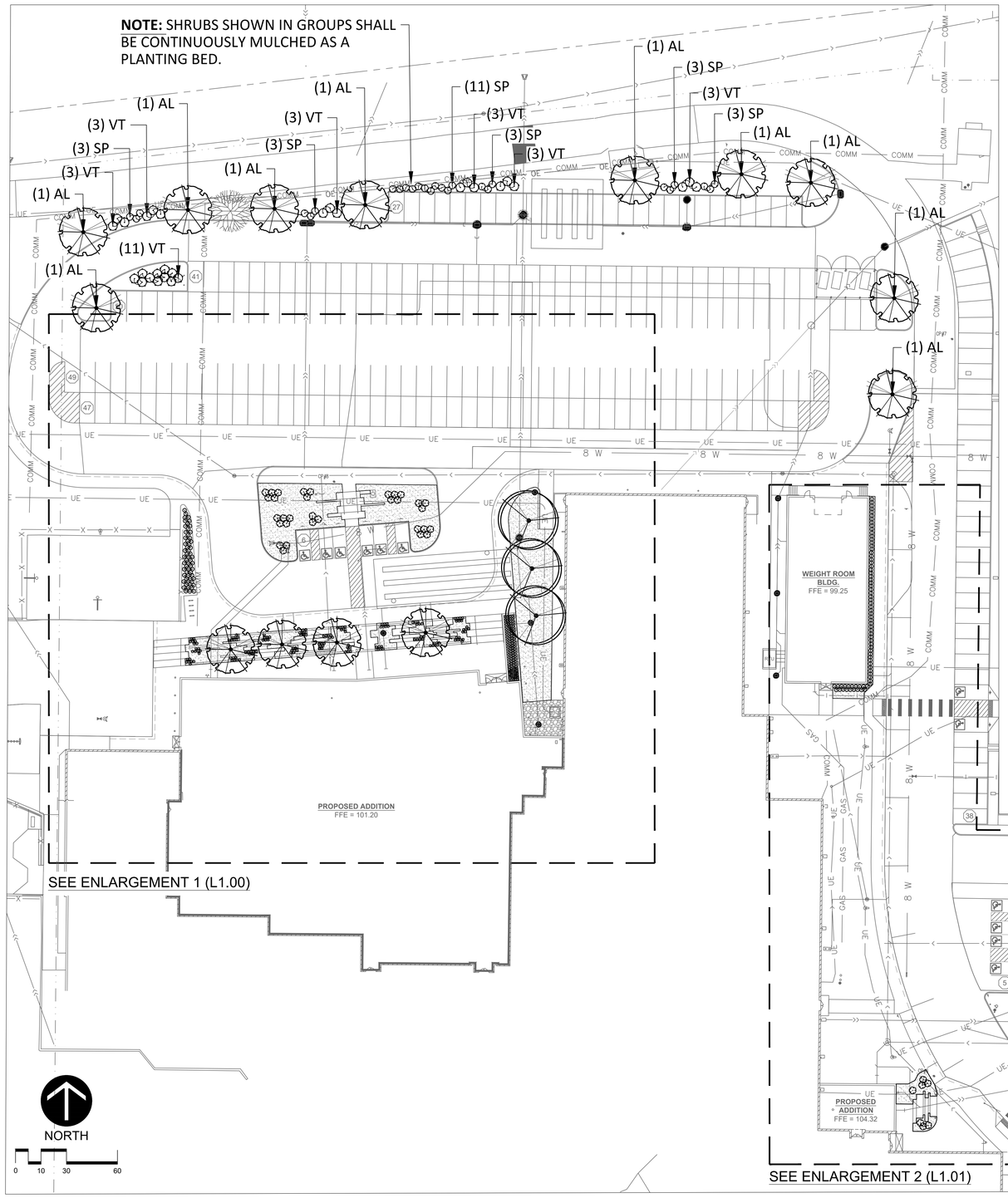
PROJECT NO: 23086

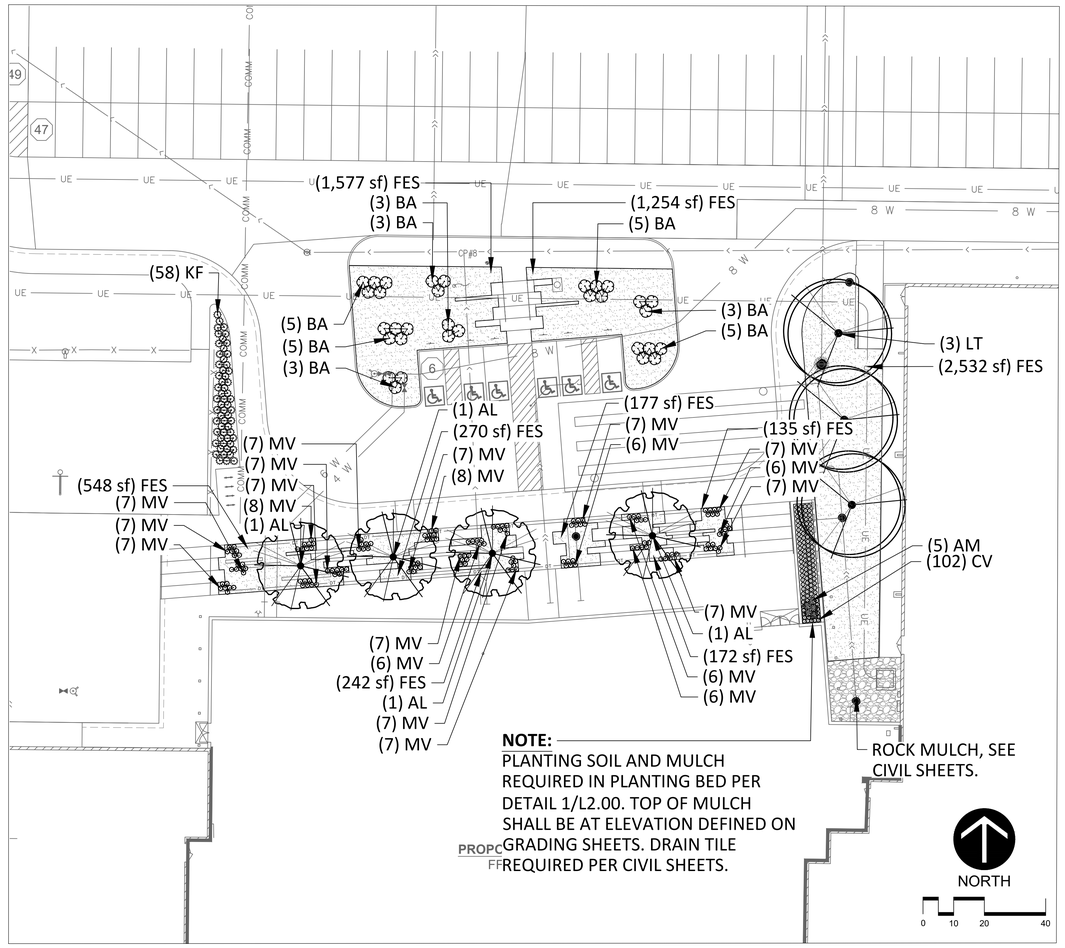
DATE: 11/11/2024

SHEET SET: BID DOCUMENTS

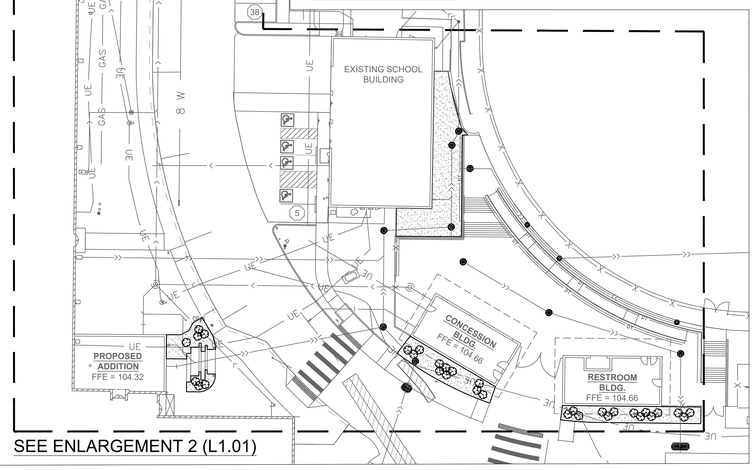
SHEET NAME: CIVIL DETAILS

SHEET: C5.06





ENLARGEMENT 1



CODE COMPLIANCE SUMMARY

ZONING FOR PROJECT PROPERTY: R-1 & R2

NO OVERLAY DISTRICTS APPLY

CHAPTER 167: SITE PLAN REGULATIONS

167.03.3) THE PROPOSED IMPROVEMENTS SHALL BE DESIGNED AND LOCATED WITHIN THE PROPERTY IN SUCH MANNER AS NOT TO UNDULY DIMINISH OR IMPAIR THE USE AND ENJOYMENT OF ADJOINING PROPERTY, AND TO THIS END SHALL MINIMIZE THE ADVERSE EFFECTS ON SUCH ADJOINING PROPERTY FROM AUTOMOBILE HEADLIGHTS, ILLUMINATION OF REQUIRED PERIMETER YARDS, REFUSE CONTAINERS, AND IMPAIRMENT OF LIGHT AND AIR. LIGHTING, AND ITS IMPACT ON ADJACENT PROPERTY, SHALL BE SHOWN ON THE SITE PLAN. FOR THE PURPOSE OF THIS SECTION, THE TERM "USE AND ENJOYMENT OF ADJOINING PROPERTY" MEANS THOSE USES PERMITTED UNDER THE ZONING DISTRICTS IN WHICH SUCH ADJOINING PROPERTY IS LOCATED.

167.03.5) THE PROPOSED DEVELOPMENT SHALL HAVE SUCH BUFFERS, SCREEN FENCES AND LANDSCAPING AND SHALL BE DESIGNED, AND THE BUILDINGS AND IMPROVEMENTS LOCATED IN SUCH A MANNER AS TO NOT UNDULY DIMINISH OR IMPAIR THE USE AND ENJOYMENT OF ADJOINING OR SURROUNDING PROPERTY.

167.05.2.Q) LOCATION AND TYPE OF ALL PLANTS, TREES, GROUND COVER TO BE USED IN THE LANDSCAPE. LANDSCAPING TO BE USED FOR SCREENING PURPOSES SHALL BE ILLUSTRATED WITH THE SIZE AND EXACT NAMES OF PLANTS, SHRUBS, OR TREES TO BE PLANTED CLEARLY INDICATED. THE PLANTING LOCATION SHALL NOT ADVERSELY AFFECT UTILITY EASEMENTS OR SERVICE LINES.

PLANTING SCHEDULE NOTE:
SEE SHEET L1.01 FOR PLANTING SCHEDULES

INVISION
ARCHITECTURE | INTERIORS
900 MULBERRY STREET
Des Moines, Iowa 50309
515.633.2941
www.invisionarch.com

CONSULTANT:
CIVIL
LARSON ENGINEERING, INC
LANDSCAPE
BOLTON & MENK
MEP
KCL ENGINEERING

REVISIONS:

Description	Date	No.

OWNER SIGN-OFF:

DATE	NAME

VAN METER COMMUNITY SCHOOL DISTRICT

VAN METER SCHOOL ADDITION - BID ISSUANCE # 3

520 1ST AVE, VAN METER, IA 50261

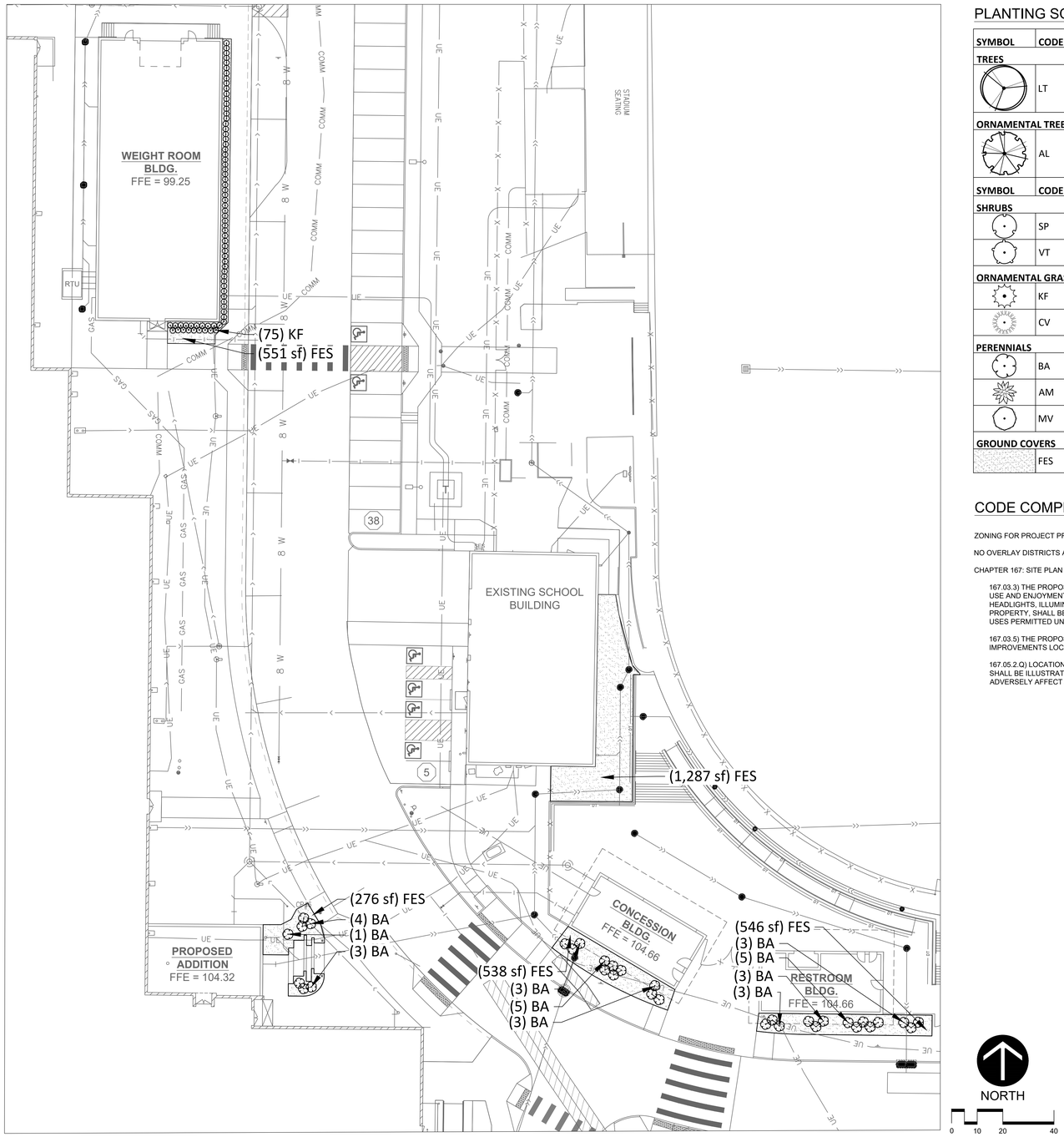
PROJECT NO: 23086

DATE: 11/11/24

SHEET SET: 100% BID DOCUMENTS

SHEET NAME: LANDSCAPE PLAN

SHEET: L1.00



ENLARGEMENT 2

PLANTING SCHEDULE:

SYMBOL	CODE	QTY	BOTANICAL NAME	COMMON NAME	CALIPER	CONTAINER
TREES						
	LT	3	LIRIODENDRON TULIPIFERA	TULIP POPLAR	2.5" CAL.	B&B
ORNAMENTAL TREES						
	AL	14	AMELANCHIER LAEVIS	ALLEGHENY SERVICEBERRY (SINGLE STEM)	1.5" CAL.	B&B
SYMBOL	**CODE**	**QTY**	**BOTANICAL NAME**	**COMMON NAME**	**SPREAD**	**CONTAINER**
SHRUBS						
	SP	26	SPIRAEA SORBIFOLIA 'SEM'	SEM FALSE SPIREA	---	#3 CONT.
	VT	29	VIBURNUM TRILOBUM `BAILEY COMPACT`	BAILEY`S COMPACT CRANBERRYBUSH	---	#3 CONT.
ORNAMENTAL GRASSES						
	KF	133	CALAMAGROSTIS X ACUTIFLORA 'KARL FOERSTER'	KARL FOERSTER FEATHER REED GRASS	---	#1 CONT.
	CV	83	CAREX VULPINOIDEA	FOX SEDGE	---	
PERENNIALS						
	BA	64	BAPTISIA AUSTRALIS	BLUE WILD INDIGO	---	#3 CONT.
	AM	5	HOSTA X 'AUGUST MOON'	AUGUST MOON HOSTA	---	#1 CONT.
	MV	144	MERTENSIA VIRGINICA	VIRGINIA BLUEBELLS	---	#1 CONT.
GROUND COVERS						
	FES	10,199 SF	SUPER SHADE FINE FESCUE SEED MIX	FINE FESCUE MIX BY UNITED SEED	---	

CODE COMPLIANCE SUMMARY

ZONING FOR PROJECT PROPERTY: R-1 & R2

NO OVERLAY DISTRICTS APPLY

CHAPTER 167: SITE PLAN REGULATIONS

167.03.3) THE PROPOSED IMPROVEMENTS SHALL BE DESIGNED AND LOCATED WITHIN THE PROPERTY IN SUCH MANNER AS NOT TO UNDULY DIMINISH OR IMPAIR THE USE AND ENJOYMENT OF ADJOINING PROPERTY, AND TO THIS END SHALL MINIMIZE THE ADVERSE EFFECTS ON SUCH ADJOINING PROPERTY FROM AUTOMOBILE HEADLIGHTS, ILLUMINATION OF REQUIRED PERIMETER YARDS, REFUSE CONTAINERS, AND IMPAIRMENT OF LIGHT AND AIR. LIGHTING, AND ITS IMPACT ON ADJACENT PROPERTY, SHALL BE SHOWN ON THE SITE PLAN. FOR THE PURPOSE OF THIS SECTION, THE TERM "USE AND ENJOYMENT OF ADJOINING PROPERTY" MEANS THOSE USES PERMITTED UNDER THE ZONING DISTRICTS IN WHICH SUCH ADJOINING PROPERTY IS LOCATED.

167.03.5) THE PROPOSED DEVELOPMENT SHALL HAVE SUCH BUFFERS, SCREEN FENCES AND LANDSCAPING AND SHALL BE DESIGNED, AND THE BUILDINGS AND IMPROVEMENTS LOCATED IN SUCH A MANNER AS TO NOT UNDULY DIMINISH OR IMPAIR THE USE AND ENJOYMENT OF ADJOINING OR SURROUNDING PROPERTY.

167.05.2.Q) LOCATION AND TYPE OF ALL PLANTS, TREES, GROUND COVER TO BE USED IN THE LANDSCAPE. LANDSCAPING TO BE USED FOR SCREENING PURPOSES SHALL BE ILLUSTRATED WITH THE SIZE AND EXACT NAMES OF PLANTS, SHRUBS, OR TREES TO BE PLANTED CLEARLY INDICATED. THE PLANTING LOCATION SHALL NOT ADVERSELY AFFECT UTILITY EASEMENTS OR SERVICE LINES.

INVISION
PLANNING | ARCHITECTURE | INTERIORS

900 MULBERRY STREET
Des Moines, Iowa 50309
515.633.2941
www.invisionarch.com

CONSULTANT:
CIVIL
LARSON
ENGINEERING, INC
LANDSCAPE
BOLTON & MENK
MEP
KCL ENGINEERING

REVISIONS:

OWNER SIGN-OFF:
DATE NAME

VAN METER COMMUNITY SCHOOL DISTRICT

VAN METER SCHOOL ADDITION - BID ISSUANCE # 3

520 1ST AVE, VAN METER, IA 50261

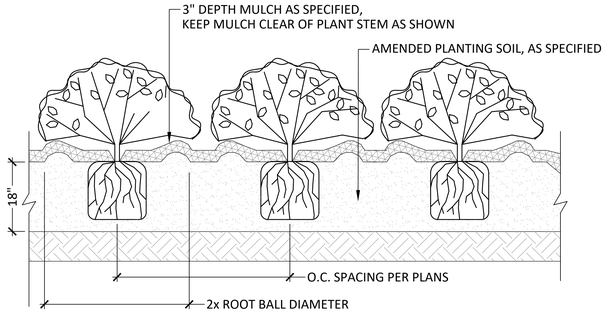
PROJECT NO:
23086

DATE:
11/11/24

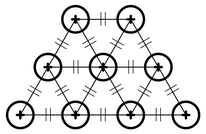
SHEET SET:
100% BID DOCUMENTS

SHEET NAME:
LANDSCAPE PLAN

SHEET:
L1.01

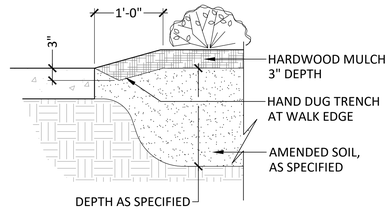


1. PERENNIAL / SHRUB PLANTING
SCALE: N.T.S.

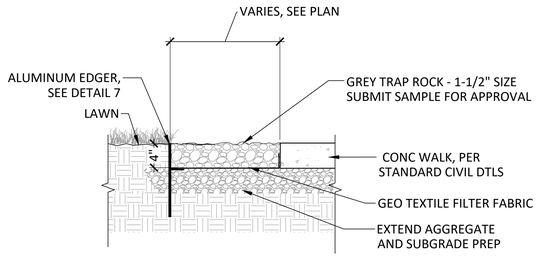


NOTES:
1. O.C. TRIANGULAR PLANT SPACING PER PLANS
2. AREAS IDENTIFIED ON PLANTING PLAN AS O.C. SHALL BE TRIANGULAR SPACED
3. SEE PLANTING PLAN/SCHEDULE FOR SPECIES

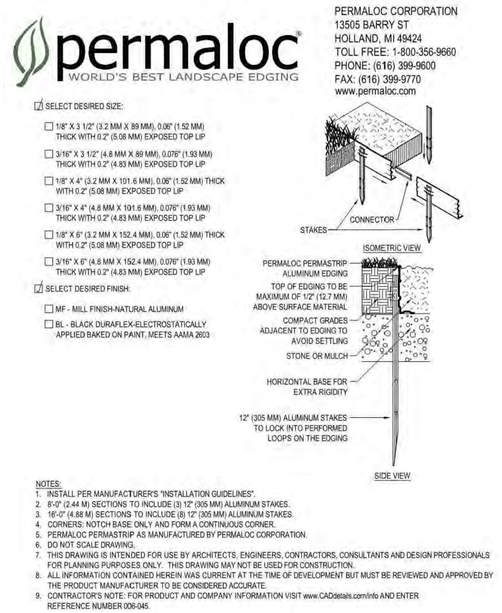
2. PERENNIAL PLANT SPACING
SCALE: N.T.S.



3 PLANTING EDGE AT HARDSCAPE SURFACE
SCALE: N.T.S.



4 ROCK MULCH
SCALE: N.T.S.



NOTES:
1. INSTALL PER MANUFACTURER'S "INSTALLATION GUIDELINES".
2. 8'-0" (2.44 M) SECTIONS TO INCLUDE (3) 12" (305 MM) ALUMINUM STAKES.
3. 16'-0" (4.88 M) SECTIONS TO INCLUDE (5) 12" (305 MM) ALUMINUM STAKES.
4. CORNERS: NOTCH BASE ONLY AND FORM A CONTINUOUS CORNER.
5. PERMALOC PERMASTRIP AS MANUFACTURED BY PERMALOC CORPORATION.
6. DO NOT SCALE DRAWING.
7. THIS DRAWING IS INTENDED FOR USE BY ARCHITECTS, ENGINEERS, CONTRACTORS, CONSULTANTS AND DESIGN PROFESSIONALS FOR PLANNING PURPOSES ONLY. THIS DRAWING MAY NOT BE USED FOR CONSTRUCTION.
8. ALL INFORMATION CONTAINED HEREIN WAS CURRENT AT THE TIME OF DEVELOPMENT BUT MUST BE REVIEWED AND APPROVED BY THE PRODUCT MANUFACTURER TO BE CONSIDERED ACCURATE.
9. CONTRACTOR'S NOTE: FOR PRODUCT AND COMPANY INFORMATION VISIT www.CADdetails.com/info AND ENTER REFERENCE NUMBER 006-045.

5 ALUMINUM EDGER
SCALE: N.T.S.

INVISION
PLANNING | ARCHITECTURE | INTERIORS

900 MULBERRY STREET
Des Moines, Iowa 50309
515.633.2941
www.invisionarch.com

CONSULTANT:
CIVIL
LARSON ENGINEERING, INC
LANDSCAPE
BOLTON & MENK
MEP
KCL ENGINEERING

REVISIONS:

Description	Date

OWNER SIGN-OFF:
DATE

VAN METER COMMUNITY SCHOOL DISTRICT
VAN METER SCHOOL ADDITION - BID ISSUANCE # 3
520 1ST AVE, VAN METER, IA 50261

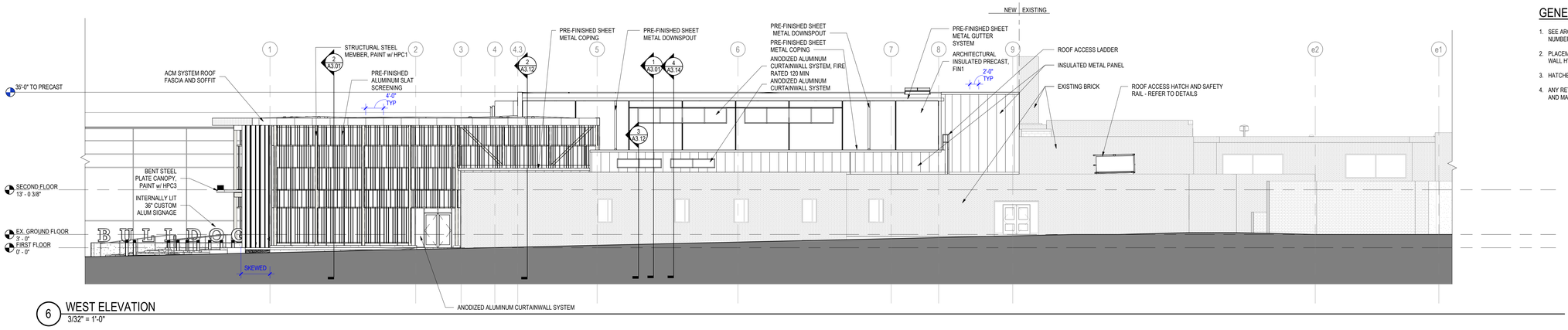
PROJECT NO:
23086

DATE:
11/11/24

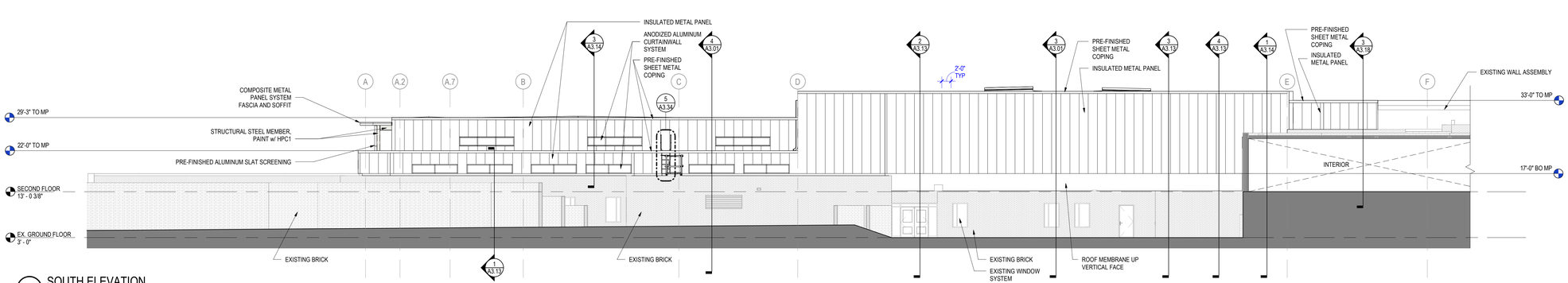
SHEET SET:
100% BID DOCUMENTS

SHEET NAME:
LANDSCAPE DETAILS

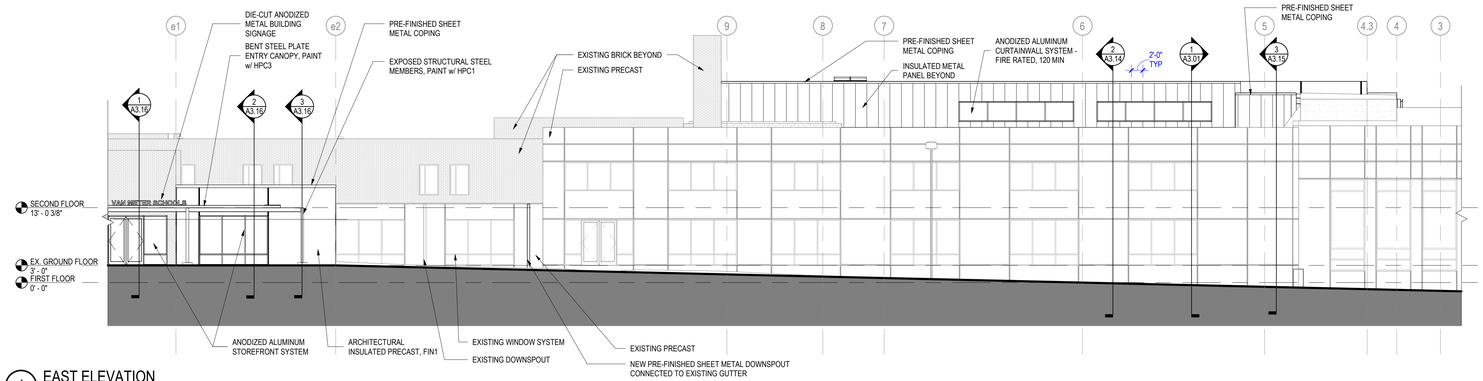
SHEET:
L2.00



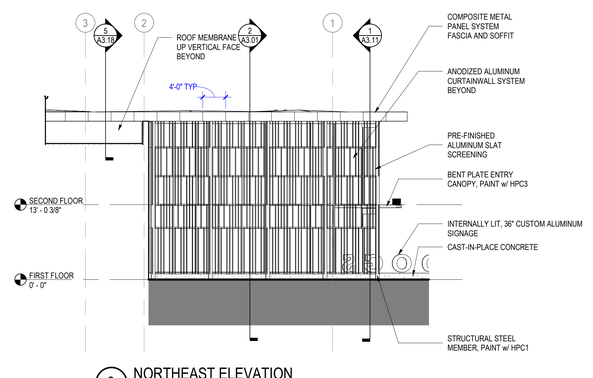
6 WEST ELEVATION
3/32" = 1'-0"



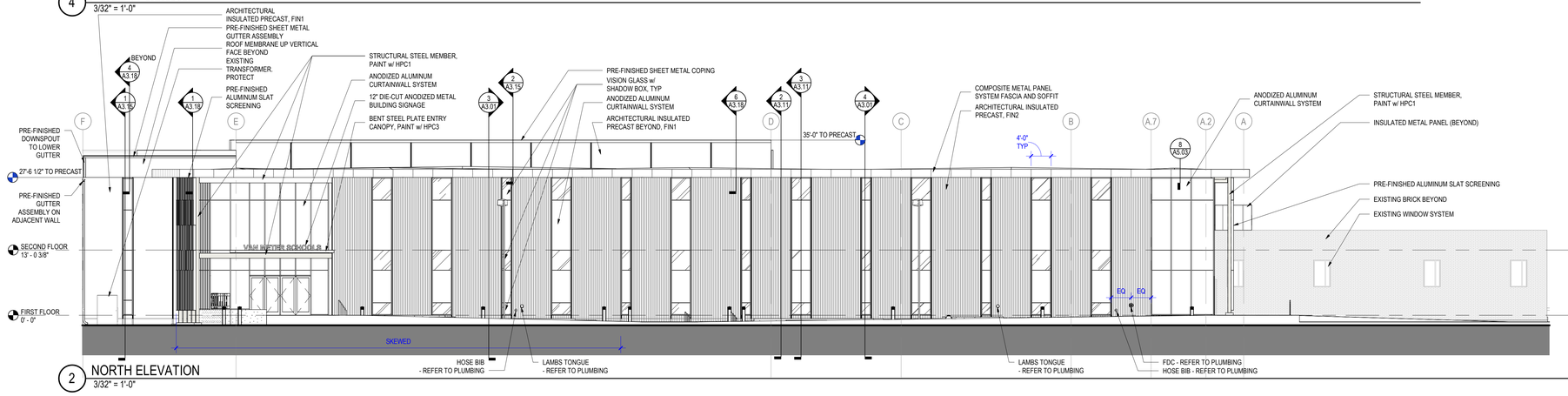
5 SOUTH ELEVATION
3/32" = 1'-0"



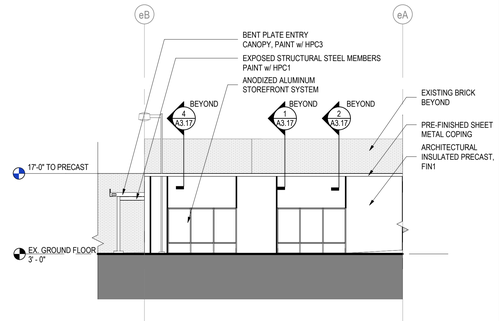
4 EAST ELEVATION
3/32" = 1'-0"



3 NORTHEAST ELEVATION
3/32" = 1'-0"



2 NORTH ELEVATION
3/32" = 1'-0"



1 SE ADDITION - NORTH ELEVATION
3/32" = 1'-0"

GENERAL ELEVATION NOTES:

1. SEE ARCHITECTURAL FLOOR PLANS FOR WALL TYPES, WINDOW NUMBERS, DOOR NUMBERS, AND DIMENSIONS.
2. PLACEMENT OF WALL MOUNTED ITEMS (FIRE STROBE, DOOR OPERATOR BUTTON, WALL HYDRANTS, ETC) ARE DIMENSIONED TO CENTERLINE OF ITEM.
3. HATCHED AREA IS FOR REFERENCE ONLY.
4. ANY RETURNS OR BLIND ELEVATIONS NOT SHOWN SHALL BE SIMILAR IN MATERIAL AND MAKEUP TO ADJACENT CONDITIONS OR OTHER SIMILAR CONDITIONS.

THIS SHEET MUST BE PRINTED IN COLOR TO VIEW CONTENT PROPERLY

INVISION
PLANNING | ARCHITECTURE | INTERIORS
900 MULBERRY STREET
Des Moines, Iowa 50309
515.633.2941
www.invisionarch.com

CONSULTANT:
CIVIL
LARSON ENGINEERING, INC.
LANDSCAPE
BOLTON & MENK
STRUCTURAL
RAKER RHODES ENGINEERING
MEP
KCL ENGINEERING

REVISIONS:

Description	Date	No.
ADD #2	11/26/2024	

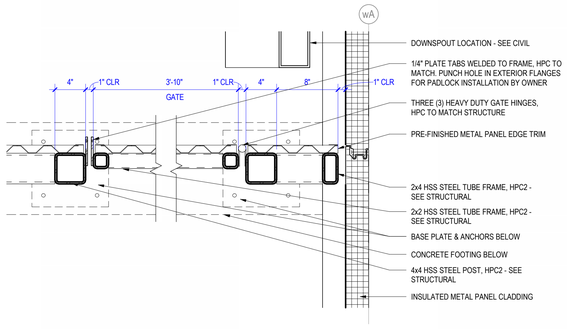
OWNER SIGN-OFF:
DATE NAME

VAN METER COMMUNITY SCHOOL DISTRICT

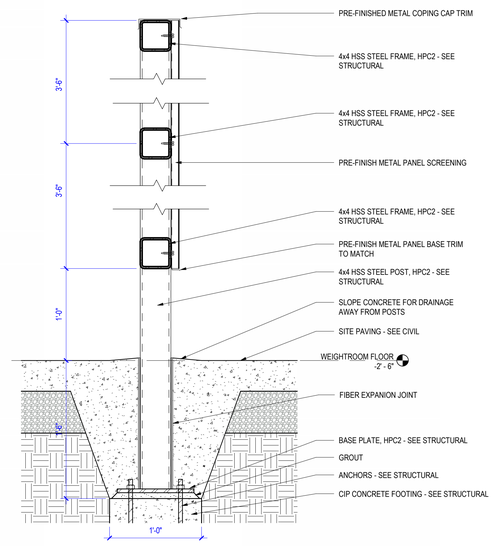
VAN METER SCHOOL ADDITION - BID ISSUANCE #3

520 1ST AVE, VAN METER, IA 50261

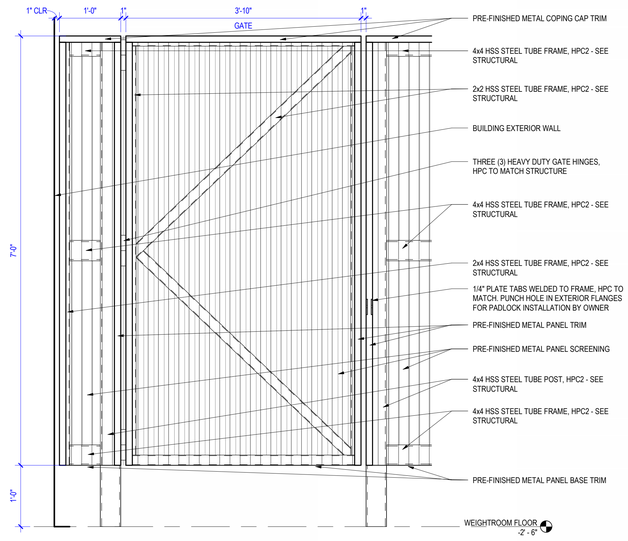
PROJECT NO: 23086
DATE: 11/11/2024
SHEET SET: BID DOCUMENTS
SHEET NAME: EXTERIOR ELEVATIONS
SHEET: A2.01



9 PLAN DETAIL - MECHANICAL SCREEN GATE
1 1/2" = 1'-0"



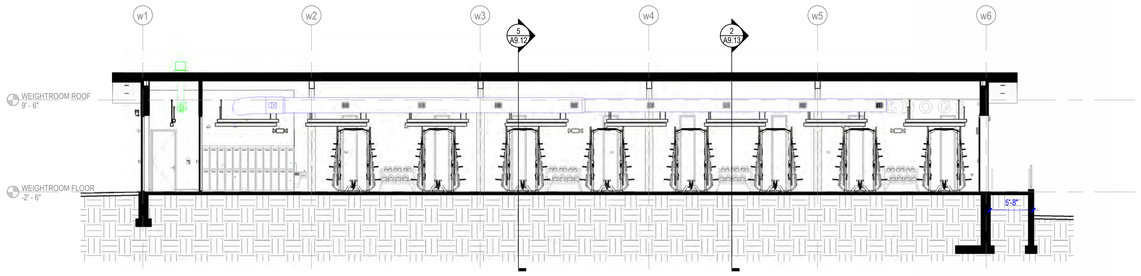
8 SECTION DETAIL - MECHANICAL SCREEN
1 1/2" = 1'-0"



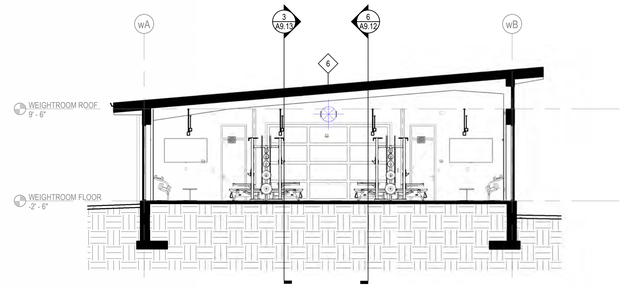
7 ELARGED ELEVATION - MECHANICAL SCREEN GATE
1" = 1'-0"

GENERAL ELEVATION NOTES:

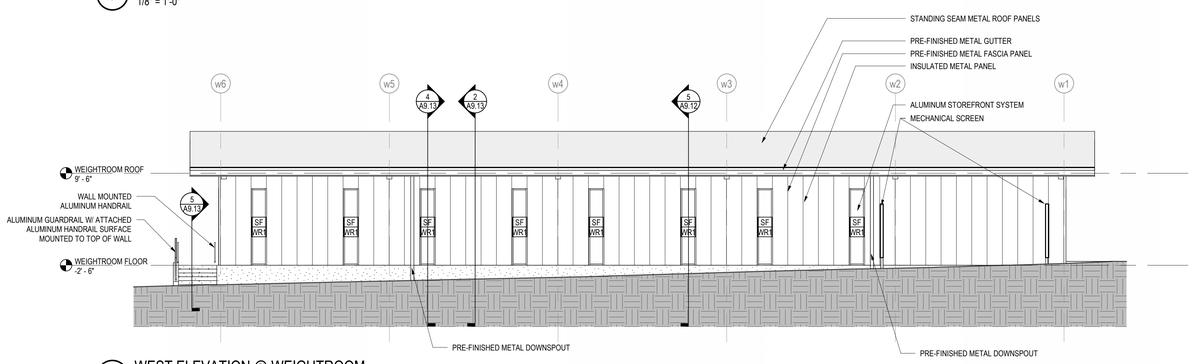
1. SEE ARCHITECTURAL FLOOR PLANS FOR WALL TYPES, WINDOW NUMBERS, DOOR NUMBERS, AND DIMENSIONS.
2. PLACEMENT OF WALL MOUNTED ITEMS (FIRE STROBE, DOOR OPERATOR BUTTON, WALL HYDRANTS, ETC) ARE DIMENSIONED TO CENTERLINE OF ITEM.
3. HATCHED AREA IS FOR REFERENCE ONLY.
4. ANY RETURNS OR BLIND ELEVATIONS NOT SHOWN SHALL BE SIMILAR IN MATERIAL AND MAKEUP TO ADJACENT CONDITIONS OR OTHER SIMILAR CONDITIONS.



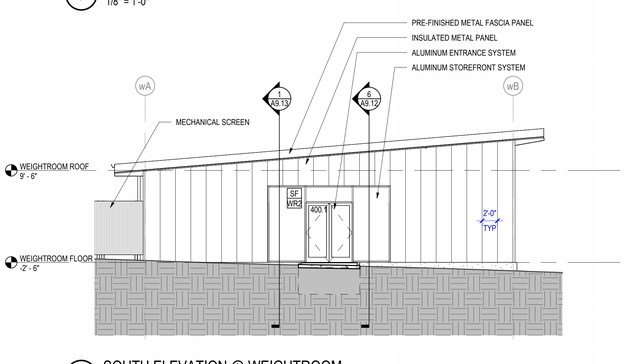
6 BUILDING SECTION N - S @ WEIGHTROOM
1/8" = 1'-0"



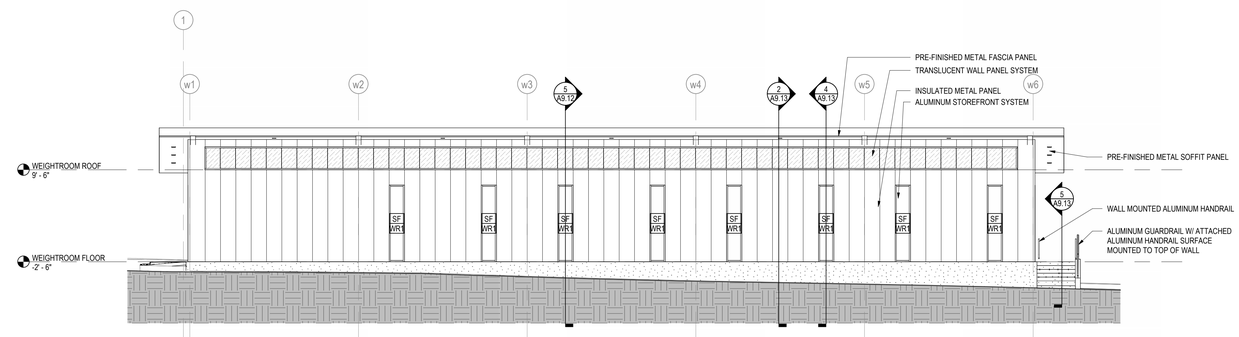
5 BUILDING SECTION E - W @ WEIGHTROOM
1/8" = 1'-0"



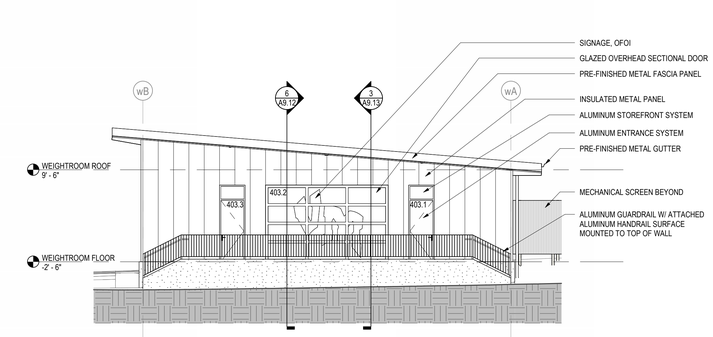
4 WEST ELEVATION @ WEIGHTROOM
1/8" = 1'-0"



3 SOUTH ELEVATION @ WEIGHTROOM
1/8" = 1'-0"



2 EAST ELEVATION @ WEIGHTROOM
1/8" = 1'-0"



1 NORTH ELEVATION @ WEIGHTROOM
1/8" = 1'-0"

THIS SHEET MUST BE PRINTED IN COLOR TO VIEW CONTENT PROPERLY

INVISION
PLANNING | ARCHITECTURE | INTERIORS
900 MULBERRY STREET
Des Moines, Iowa 50309
515.633.2941
www.invisionarch.com

CONSULTANT:
CIVIL
LARSON ENGINEERING, INC.
LANDSCAPE
BOLTON & MENK
STRUCTURAL
RAKER RHODES ENGINEERING
MEP
KCL ENGINEERING

REVISIONS:

Description	Date	No.
ADD #3	12/05/2024	
ADD #4	12/10/2024	

OWNER SIGN-OFF:
DATE NAME

VAN METER COMMUNITY SCHOOL DISTRICT
VAN METER SCHOOL ADDITION - BID ISSUANCE #3
520 1ST AVE, VAN METER, IA 50261

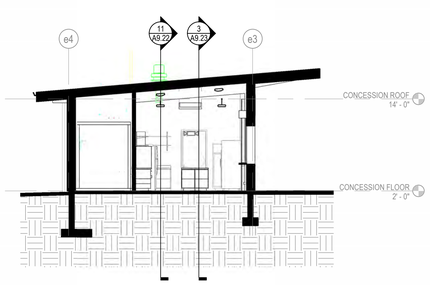
PROJECT NO:
23086

DATE:
11/11/2024

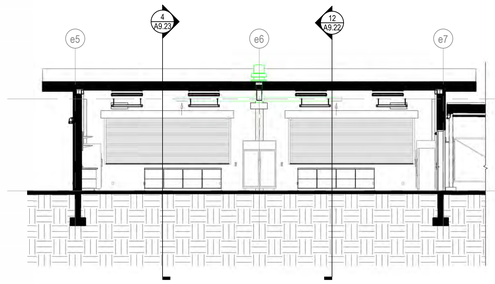
SHEET SET:
BID DOCUMENTS

SHEET NAME:
WEIGHTROOM - BUILDING SECTIONS & ELEVATIONS

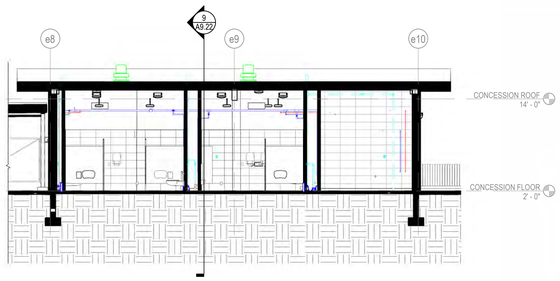
SHEET:
A9.12



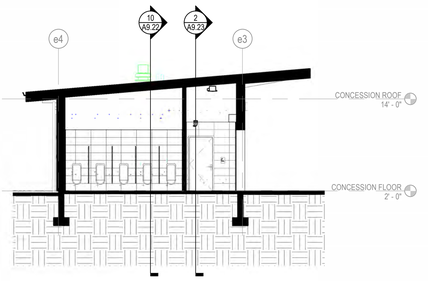
12 BUILDING SECTION NE - SW - CONCESSION
1/8" = 1'-0"



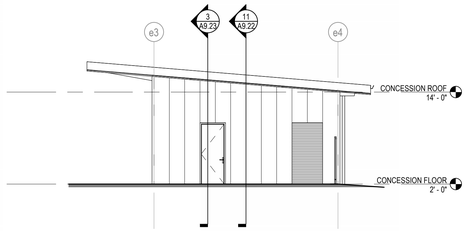
11 BUILDING SECTION NW - SE - CONCESSION
1/8" = 1'-0"



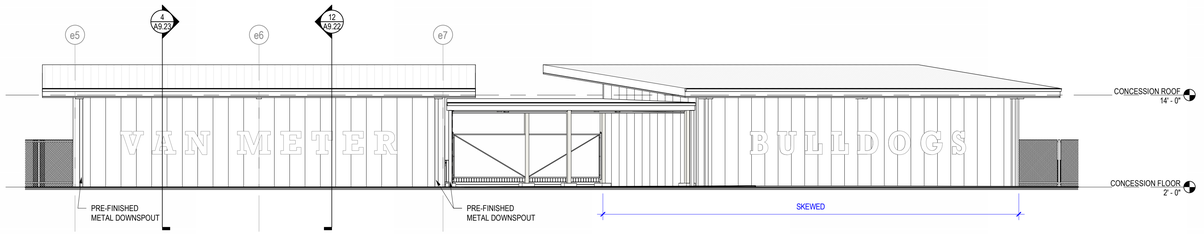
10 BUILDING SECTION E - W - RESTROOMS
1/8" = 1'-0"



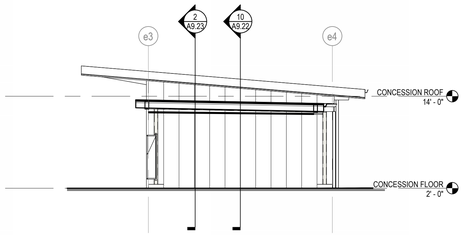
9 BUILDING SECTION N - S - RESTROOMS
1/8" = 1'-0"



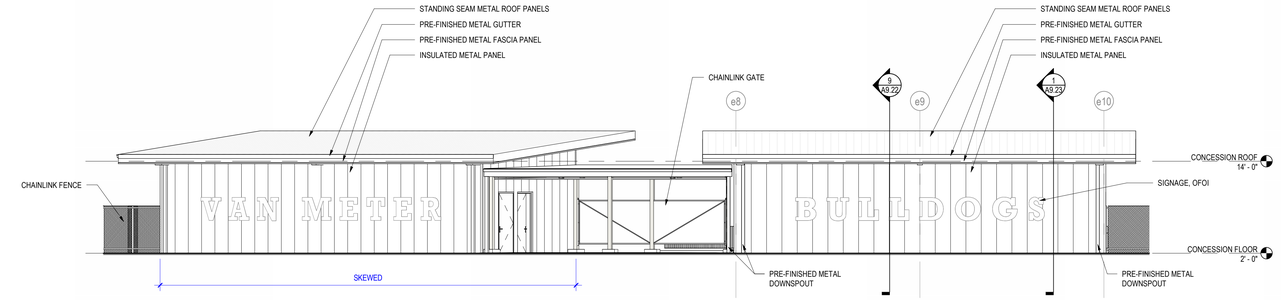
8 NORTHWEST ELEVATION - CONCESSION / RESTROOM
1/8" = 1'-0"



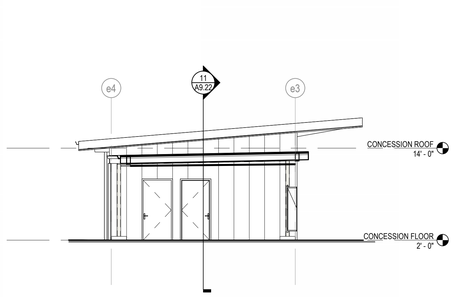
7 SOUTHWEST ELEVATION - CONCESSION / RESTROOM
1/8" = 1'-0"



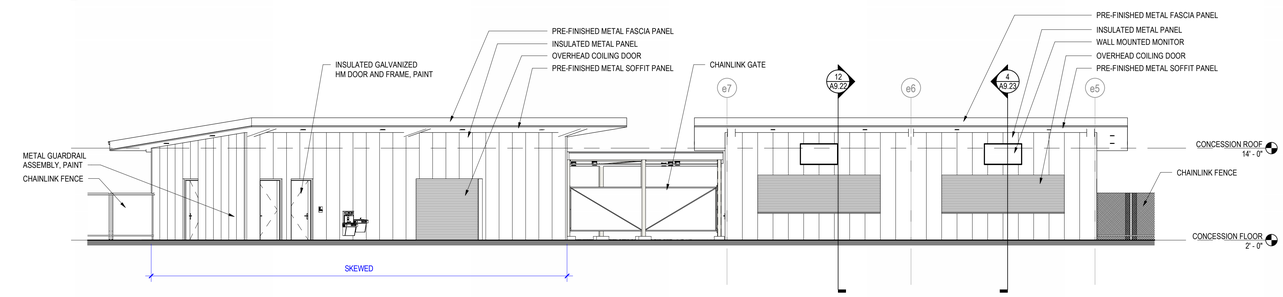
6 WEST ELEVATION - CONCESSION / RESTROOM
1/8" = 1'-0"



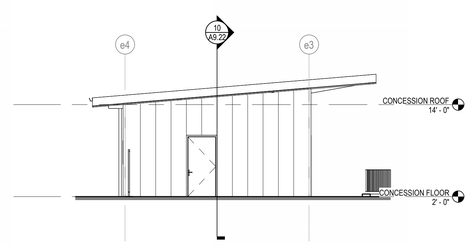
5 SOUTH ELEVATION - CONCESSION / RESTROOM
1/8" = 1'-0"



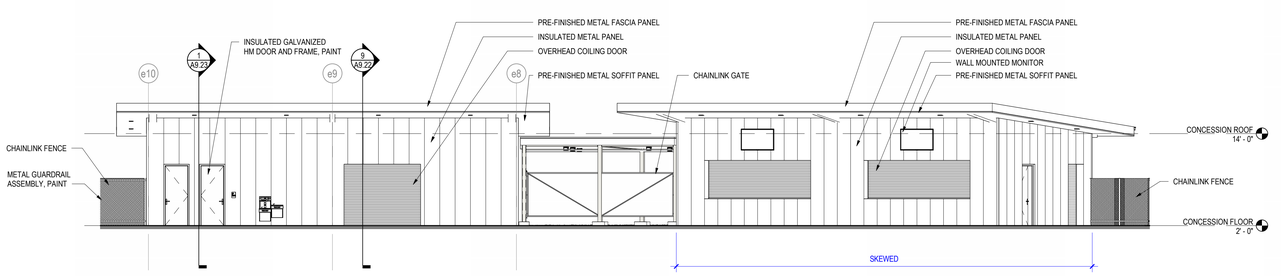
4 SOUTHEAST ELEVATION - CONCESSION / RESTROOM
1/8" = 1'-0"



3 NORTHEAST ELEVATION - CONCESSION / RESTROOM
1/8" = 1'-0"



2 EAST ELEVATION - CONCESSION / RESTROOM
1/8" = 1'-0"



1 NORTH ELEVATION - CONCESSION / RESTROOM
1/8" = 1'-0"

GENERAL ELEVATION NOTES:

1. SEE ARCHITECTURAL FLOOR PLANS FOR WALL TYPES, WINDOW NUMBERS, DOOR NUMBERS, AND DIMENSIONS.
2. PLACEMENT OF WALL MOUNTED ITEMS (FIRE STROBE, DOOR OPERATOR BUTTON, WALL HYDRANTS, ETC) ARE DIMENSIONED TO CENTERLINE OF ITEM.
3. HATCHED AREA IS FOR REFERENCE ONLY.
4. ANY RETURNS OR BLIND ELEVATIONS NOT SHOWN SHALL BE SIMILAR IN MATERIAL AND MAKEUP TO ADJACENT CONDITIONS OR OTHER SIMILAR CONDITIONS.

INVISION
PLANNING | ARCHITECTURE | INTERIORS
900 MULBERRY STREET
Des Moines, Iowa 50309
515.633.2941
www.invisionarch.com

CONSULTANT:
CIVIL
LARSON ENGINEERING, INC.
LANDSCAPE
BOLTON & MENK
STRUCTURAL
RAKER RHODES ENGINEERING
MEP
KCL ENGINEERING

REVISIONS:

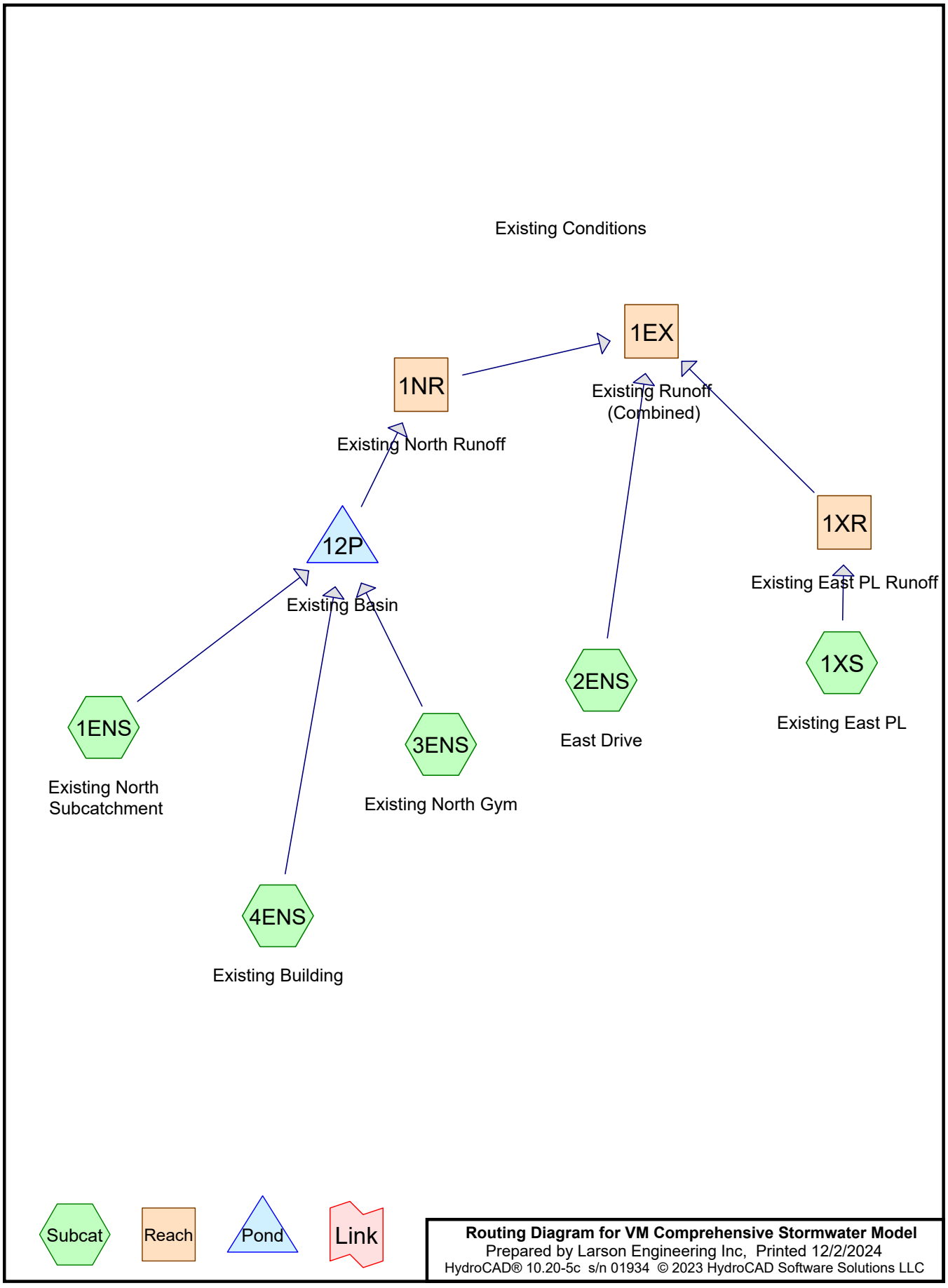
Description	Date	No.
ADD #3	12/05/2024	

OWNER SIGN-OFF:
DATE NAME

VAN METER COMMUNITY SCHOOL DISTRICT
VAN METER SCHOOL ADDITION - BID ISSUANCE #3
520 1ST AVE, VAN METER, IA 50261

PROJECT NO: 23086
DATE: 11/11/2024
SHEET SET: BID DOCUMENTS
SHEET NAME: CONCESSION / RESTROOM - BUILDING SECTIONS & ELEVATIONS
SHEET: A9.22

THIS SHEET MUST BE PRINTED IN COLOR TO VIEW CONTENT PROPERLY



Routing Diagram for VM Comprehensive Stormwater Model
Prepared by Larson Engineering Inc, Printed 12/2/2024

Rainfall Events Listing (selected events)

Event#	Event Name	Storm Type	Curve	Mode	Duration (hours)	B/B	Depth (inches)	AMC
1	5-yr, 24-hour	Type II 24-hr		Default	24.00	1	3.81	2
2	100-yr, 24-hour	Type II 24-hr		Default	24.00	1	7.12	2

Soil Listing (selected nodes)

Area (acres)	Soil Group	Subcatchment Numbers
0.000	HSG A	
0.000	HSG B	
11.092	HSG C	1ENS, 1XS, 2ENS, 3ENS, 4ENS
0.000	HSG D	
0.000	Other	
11.092		**TOTAL AREA**

Ground Covers (selected nodes)

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchment Numbers
0.000	0.000	1.901	0.000	0.000	1.901	>75% Grass cover, Good	1ENS
0.000	0.000	1.786	0.000	0.000	1.786	Gravel roads	1XS
0.000	0.000	2.943	0.000	0.000	2.943	Pasture/grassland/range, Good	1XS, 2ENS
0.000	0.000	4.462	0.000	0.000	4.462	Paved parking	1ENS, 1XS, 2ENS, 3ENS, 4ENS
0.000	**0.000**	**11.092**	**0.000**	**0.000**	**11.092**	**TOTAL AREA**	

Summary for Subcatchment 1ENS: Existing North Subcatchment

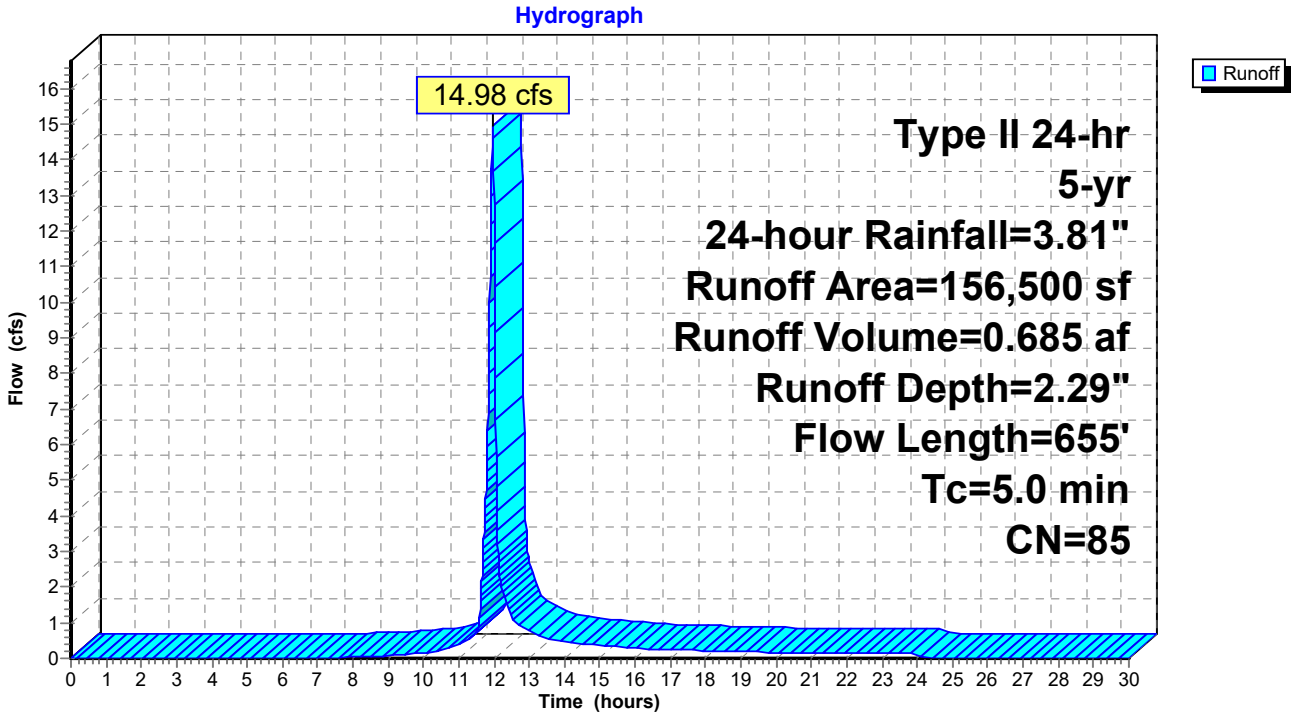
Runoff = 14.98 cfs @ 11.96 hrs, Volume= 0.685 af, Depth= 2.29"
Routed to Pond 12P : Existing Basin

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type II 24-hr 5-yr, 24-hour Rainfall=3.81"

Area (sf)	CN	Description
82,800	74	>75% Grass cover, Good, HSG C
73,700	98	Paved parking, HSG C
156,500	85	Weighted Average
82,800		52.91% Pervious Area
73,700		47.09% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.0	50	0.0150	0.86		**Shallow Concentrated Flow, grass basin** Short Grass Pasture Kv= 7.0 fps
0.1	5	0.0150	0.67		**Sheet Flow, Sidewalk** Smooth surfaces n= 0.011 P2= 3.20"
1.2	150	0.0500	2.15		**Sheet Flow, Parking and Drive** Smooth surfaces n= 0.011 P2= 3.20"
1.5	280	0.0250	3.21		**Shallow Concentrated Flow, Parking and Drive** Paved Kv= 20.3 fps
1.2	170	0.0200	2.28		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
5.0	655	Total			

Subcatchment 1ENS: Existing North Subcatchment



Summary for Subcatchment 1XS: Existing East PL

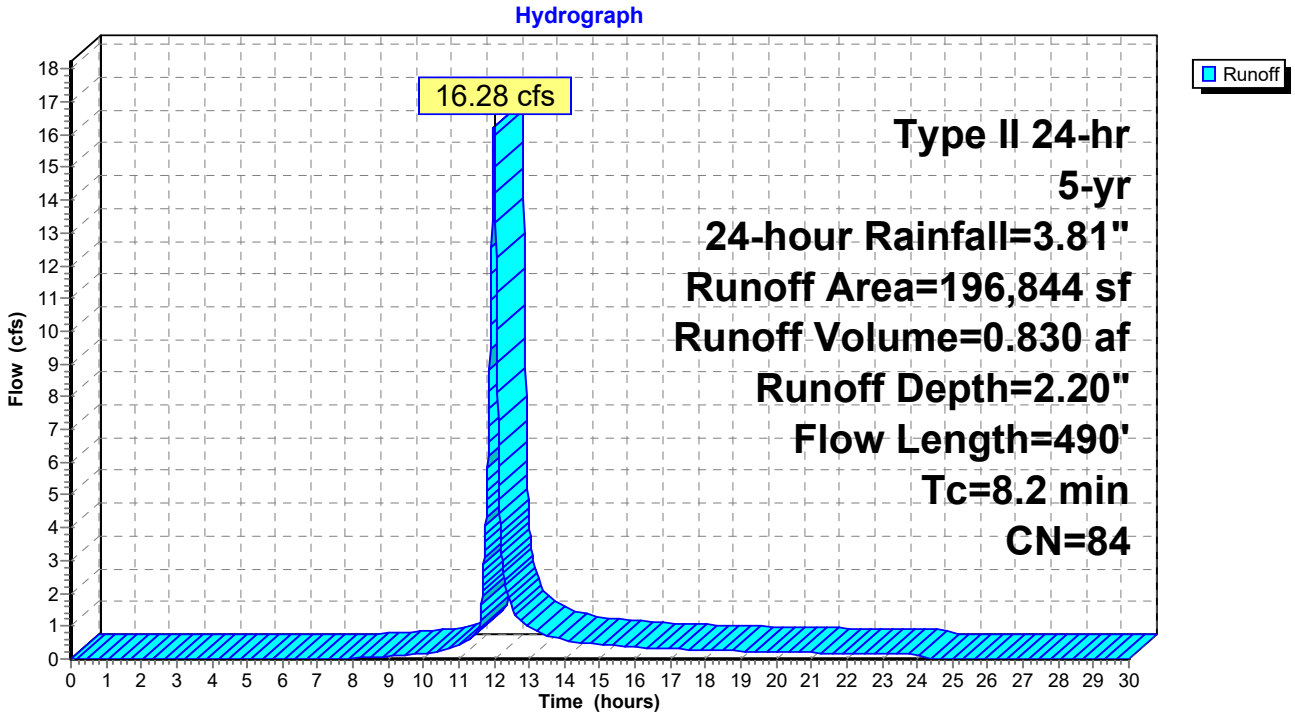
Runoff = 16.28 cfs @ 12.00 hrs, Volume= 0.830 af, Depth= 2.20"
Routed to Reach 1XR : Existing East PL Runoff

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type II 24-hr 5-yr, 24-hour Rainfall=3.81"

Area (sf)	CN	Description
77,807	89	Gravel roads, HSG C
84,398	74	Pasture/grassland/range, Good, HSG C
34,639	98	Paved parking, HSG C
196,844	84	Weighted Average
162,205		82.40% Pervious Area
34,639		17.60% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.6	100	0.0600	0.30		**Sheet Flow,** Range n= 0.130 P2= 3.20"
2.1	230	0.0700	1.85		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.5	160	0.0600	4.97		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
8.2	490	Total			

Subcatchment 1XS: Existing East PL



Summary for Subcatchment 2ENS: East Drive

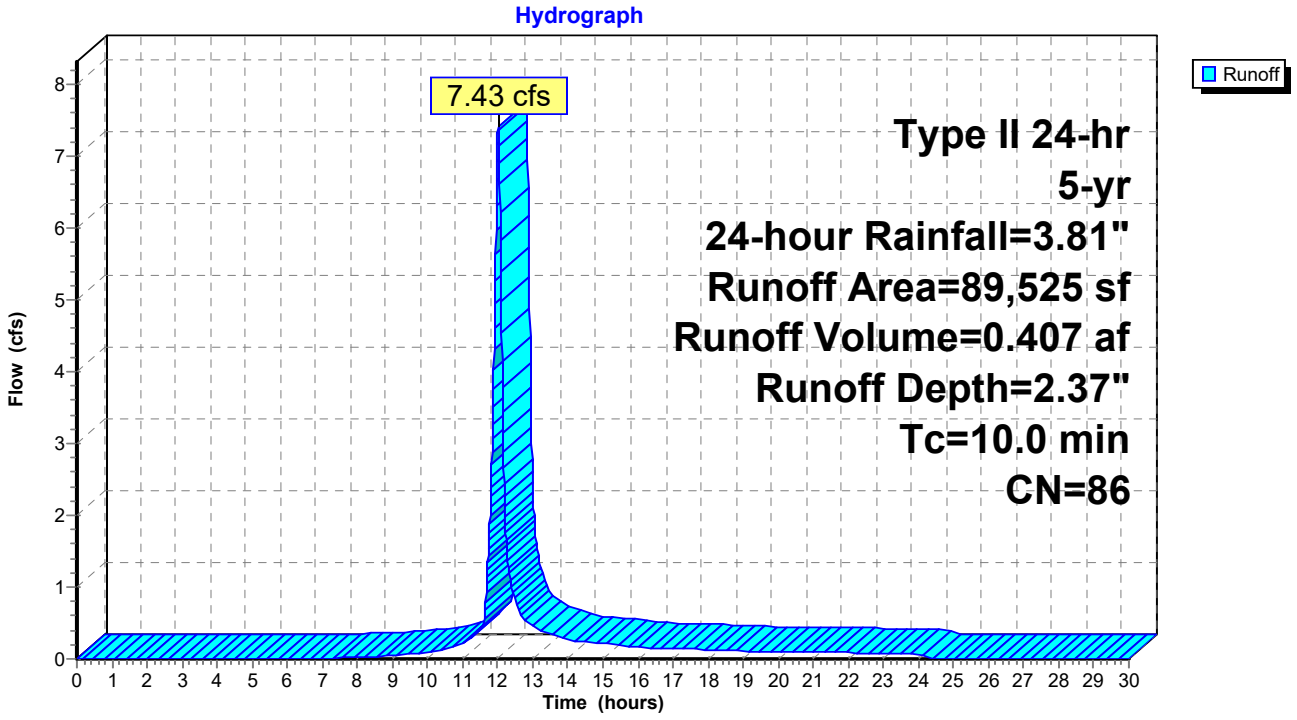
Runoff = 7.43 cfs @ 12.01 hrs, Volume= 0.407 af, Depth= 2.37"
Routed to Reach 1EX : Existing Runoff (Combined)

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type II 24-hr 5-yr, 24-hour Rainfall=3.81"

Area (sf)	CN	Description
43,800	74	Pasture/grassland/range, Good, HSG C
45,725	98	Paved parking, HSG C
89,525	86	Weighted Average
43,800		48.92% Pervious Area
45,725		51.08% Impervious Area

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

Subcatchment 2ENS: East Drive



Summary for Subcatchment 3ENS: Existing North Gym

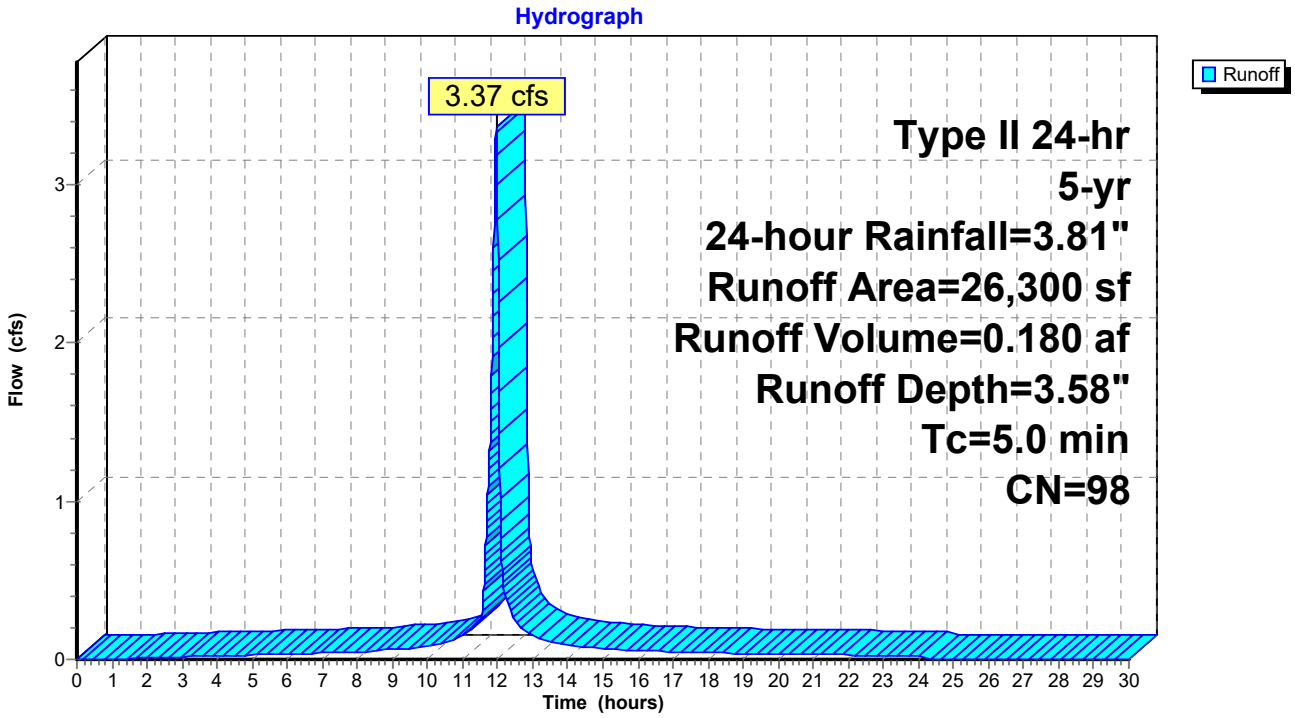
Runoff = 3.37 cfs @ 11.96 hrs, Volume= 0.180 af, Depth= 3.58"
Routed to Pond 12P : Existing Basin

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type II 24-hr 5-yr, 24-hour Rainfall=3.81"

Area (sf)	CN	Description
0	74	>75% Grass cover, Good, HSG C
26,300	98	Paved parking, HSG C
26,300	98	Weighted Average
26,300		100.00% Impervious Area

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

Subcatchment 3ENS: Existing North Gym



Summary for Subcatchment 4ENS: Existing Building

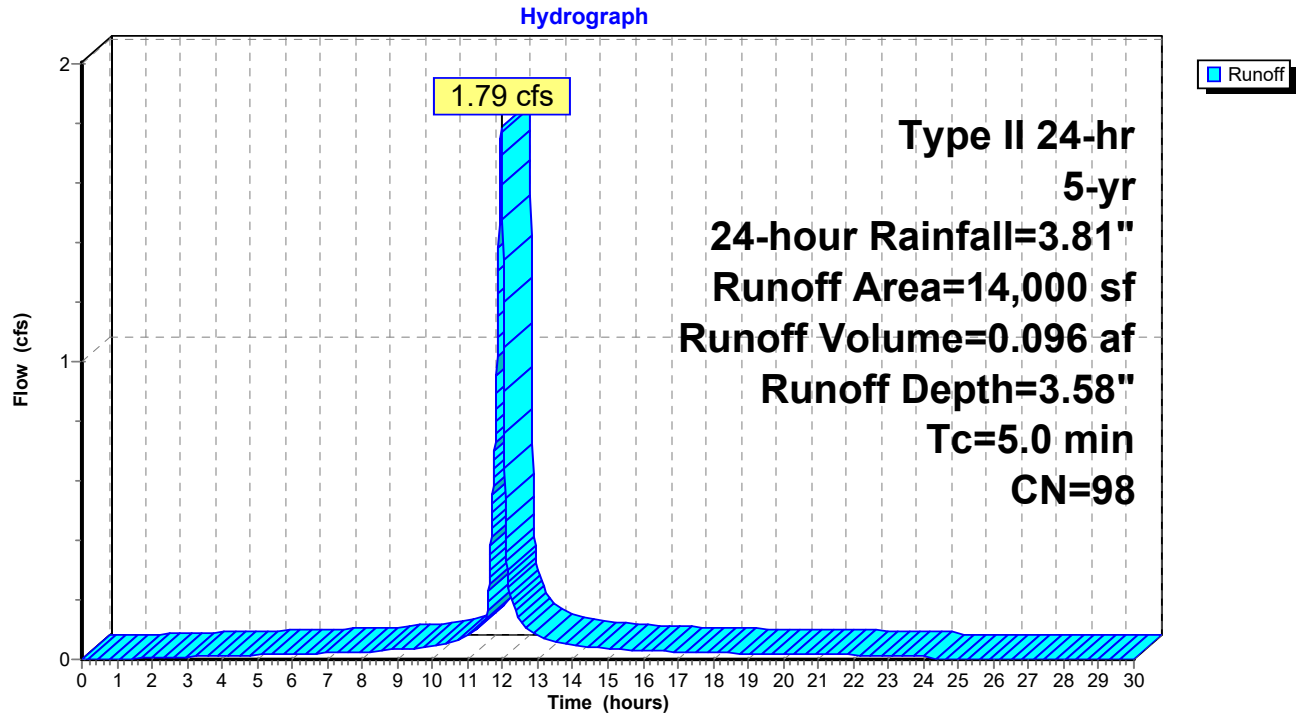
Runoff = 1.79 cfs @ 11.96 hrs, Volume= 0.096 af, Depth= 3.58"
Routed to Pond 12P : Existing Basin

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type II 24-hr 5-yr, 24-hour Rainfall=3.81"

Area (sf)	CN	Description
0	74	>75% Grass cover, Good, HSG C
14,000	98	Paved parking, HSG C
14,000	98	Weighted Average
14,000		100.00% Impervious Area

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

Subcatchment 4ENS: Existing Building

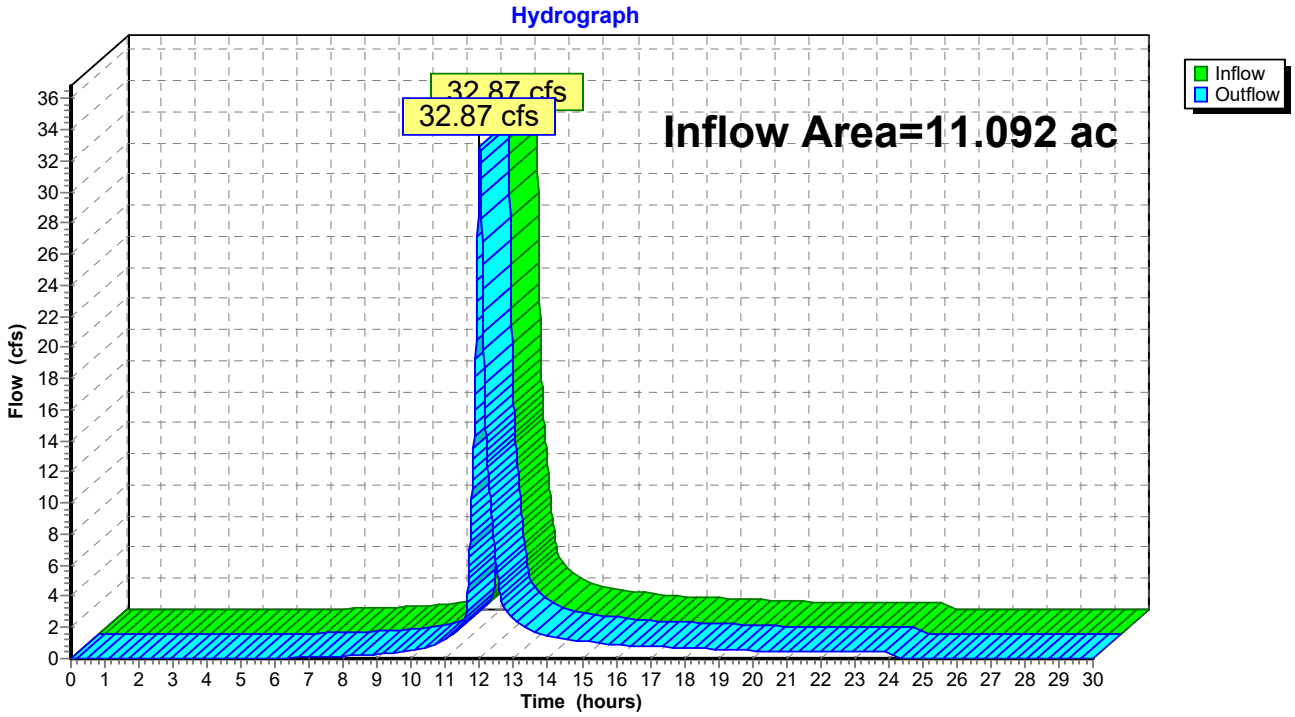


Summary for Reach 1EX: Existing Runoff (Combined)

Inflow Area = 11.092 ac, 40.23% Impervious, Inflow Depth = 2.38" for 5-yr, 24-hour event
Inflow = 32.87 cfs @ 12.00 hrs, Volume= 2.198 af
Outflow = 32.87 cfs @ 12.00 hrs, Volume= 2.198 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs / 3

Reach 1EX: Existing Runoff (Combined)

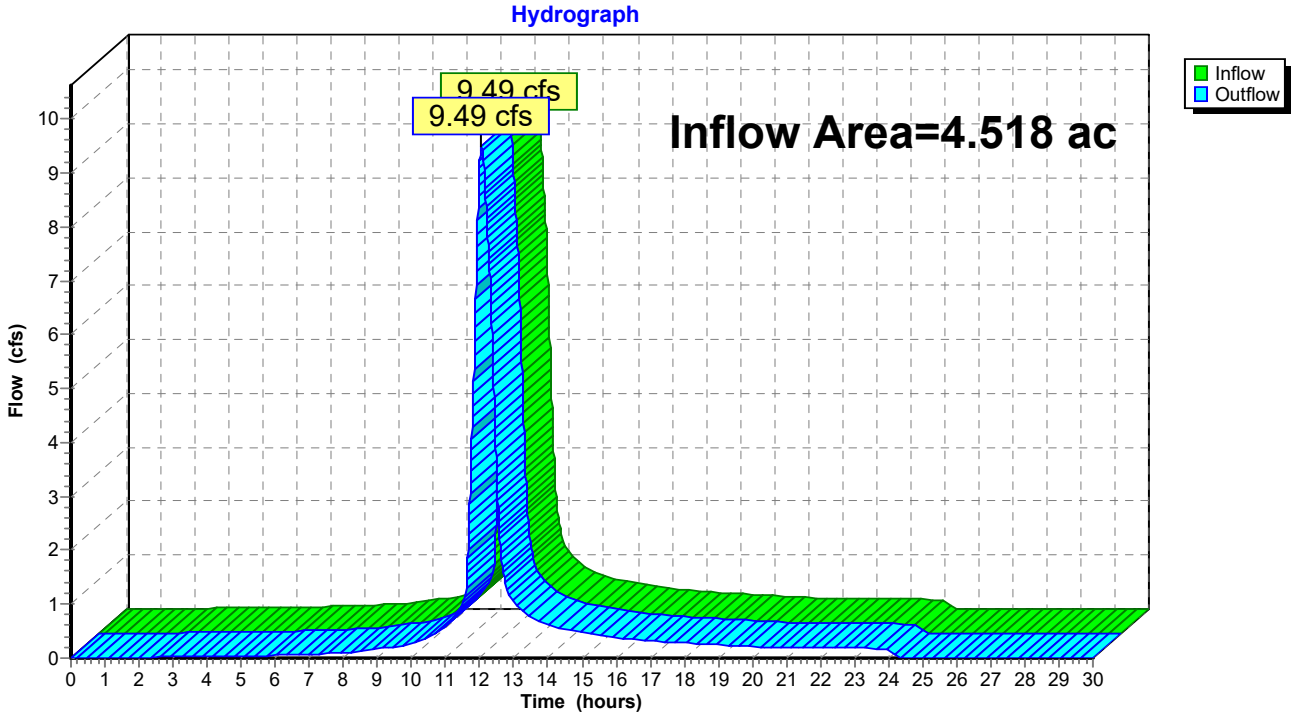


Summary for Reach 1NR: Existing North Runoff

Inflow Area = 4.518 ac, 57.93% Impervious, Inflow Depth = 2.55" for 5-yr, 24-hour event
Inflow = 9.49 cfs @ 12.05 hrs, Volume= 0.961 af
Outflow = 9.49 cfs @ 12.05 hrs, Volume= 0.961 af, Atten= 0%, Lag= 0.0 min
Routed to Reach 1EX : Existing Runoff (Combined)

Routing by Dyn-Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs / 3

Reach 1NR: Existing North Runoff

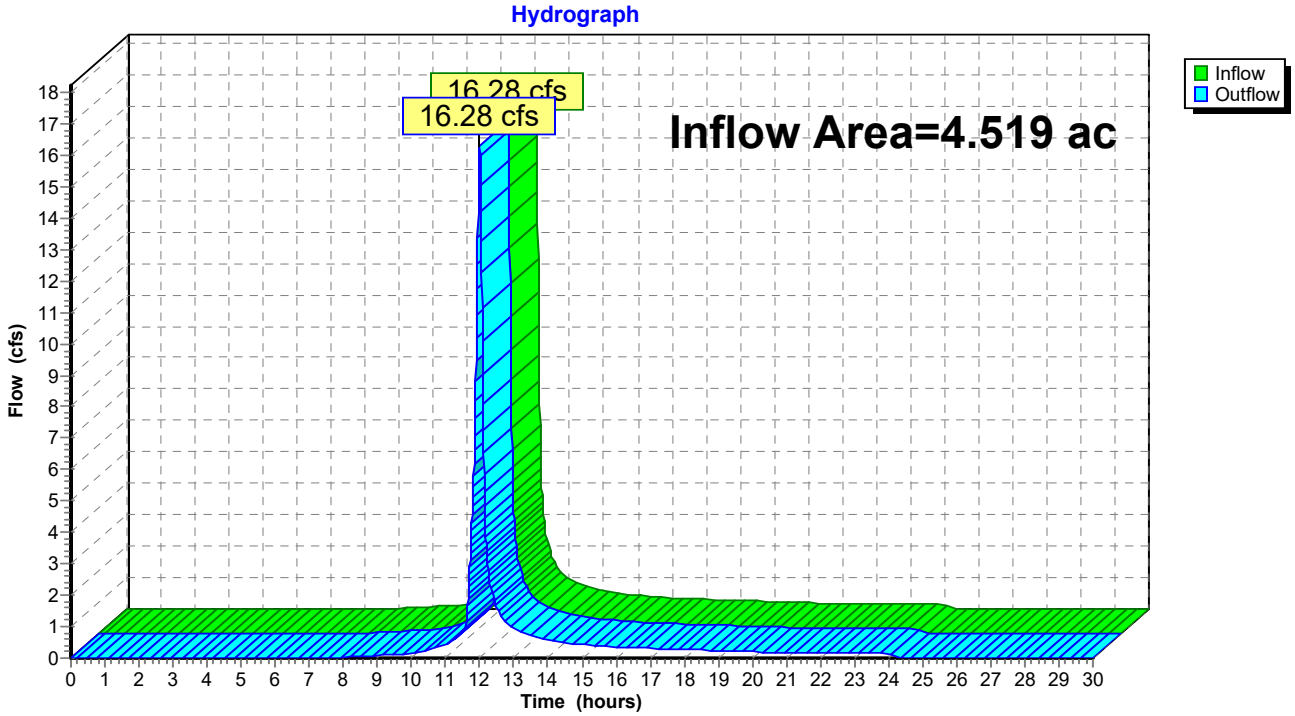


Summary for Reach 1XR: Existing East PL Runoff

Inflow Area = 4.519 ac, 17.60% Impervious, Inflow Depth = 2.20" for 5-yr, 24-hour event
Inflow = 16.28 cfs @ 12.00 hrs, Volume= 0.830 af
Outflow = 16.28 cfs @ 12.00 hrs, Volume= 0.830 af, Atten= 0%, Lag= 0.0 min
Routed to Reach 1EX : Existing Runoff (Combined)

Routing by Dyn-Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs / 3

Reach 1XR: Existing East PL Runoff



Summary for Pond 12P: Existing Basin

Inflow Area = 4.518 ac, 57.93% Impervious, Inflow Depth = 2.55" for 5-yr, 24-hour event
Inflow = 20.13 cfs @ 11.96 hrs, Volume= 0.961 af
Outflow = 9.49 cfs @ 12.05 hrs, Volume= 0.961 af, Atten= 53%, Lag= 5.2 min
Primary = 9.49 cfs @ 12.05 hrs, Volume= 0.961 af
Routed to Reach 1NR : Existing North Runoff

Routing by Dyn-Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 92.11' @ 12.05 hrs Surf.Area= 10,202 sf Storage= 8,070 cf

Plug-Flow detention time= 7.2 min calculated for 0.961 af (100% of inflow)
Center-of-Mass det. time= 7.2 min (802.7 - 795.4)

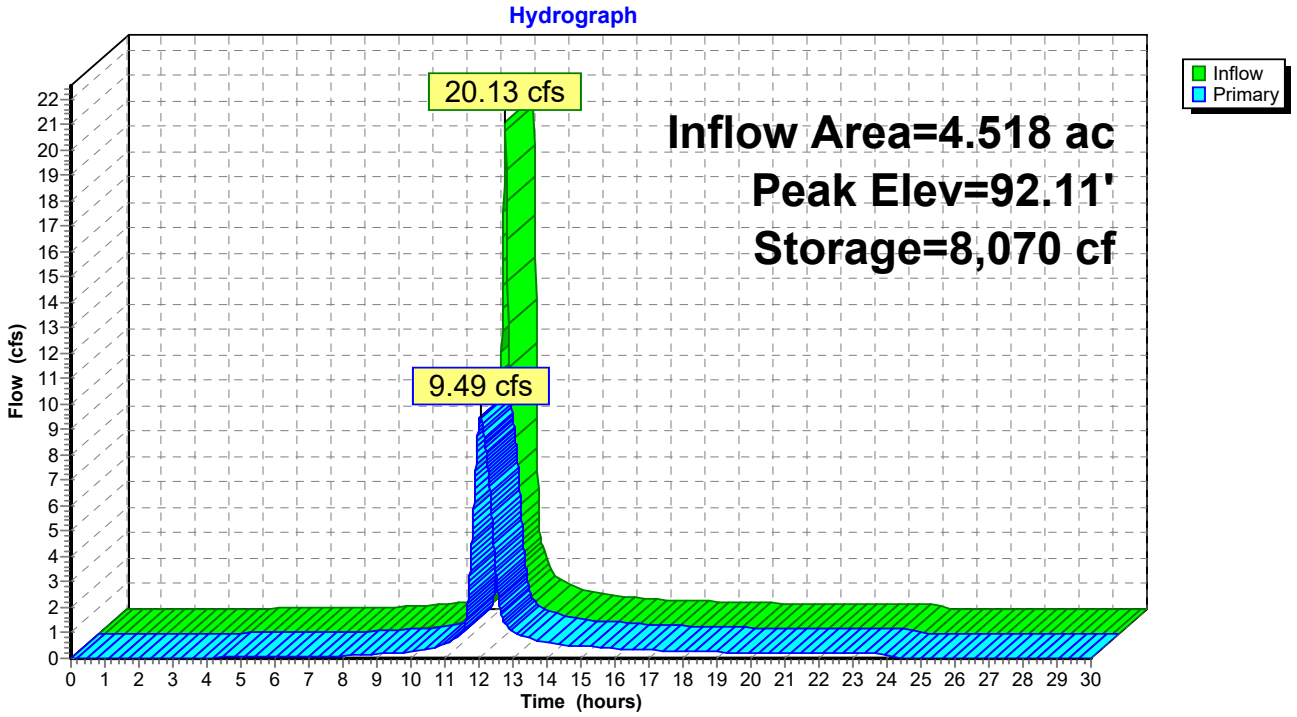
Volume	Invert	Avail.Storage	Storage Description
#1	90.12'	33,977 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
90.12	3	0	0
91.00	2,628	1,158	1,158
92.00	9,007	5,818	6,975
92.40	13,200	4,441	11,417
94.00	15,000	22,560	33,977

Device	Routing	Invert	Outlet Devices
#1	Primary	90.12'	**18.0" Round Culvert** L= 106.0' RCP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 90.12' / 89.20' S= 0.0087 '/' Cc= 0.900 n= 0.011 Concrete pipe, straight & clean, Flow Area= 1.77 sf
#2	Primary	92.36'	**20.0' long x 30.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=9.49 cfs @ 12.05 hrs HW=92.11' TW=0.00' (Dynamic Tailwater)
1=Culvert (Inlet Controls 9.49 cfs @ 5.37 fps)
2=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Pond 12P: Existing Basin



Summary for Subcatchment 1ENS: Existing North Subcatchment

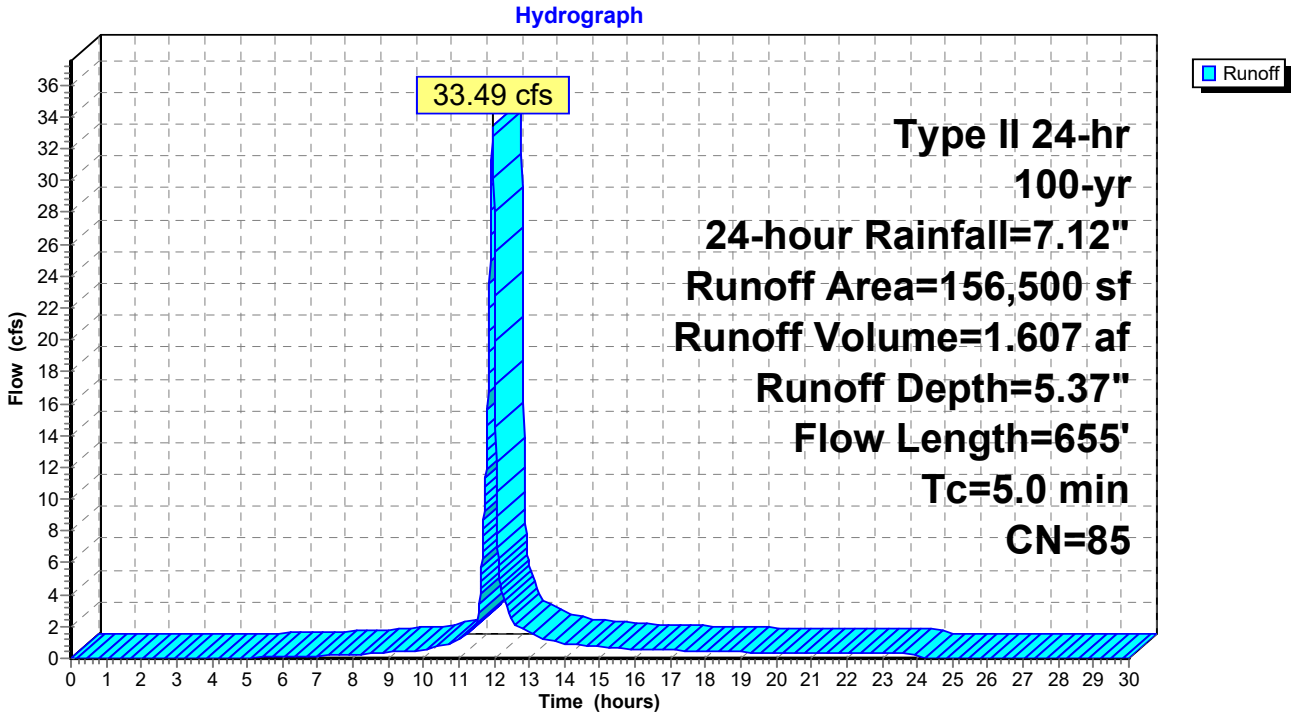
Runoff = 33.49 cfs @ 11.96 hrs, Volume= 1.607 af, Depth= 5.37"
Routed to Pond 12P : Existing Basin

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type II 24-hr 100-yr, 24-hour Rainfall=7.12"

Area (sf)	CN	Description
82,800	74	>75% Grass cover, Good, HSG C
73,700	98	Paved parking, HSG C
156,500	85	Weighted Average
82,800		52.91% Pervious Area
73,700		47.09% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.0	50	0.0150	0.86		**Shallow Concentrated Flow, grass basin** Short Grass Pasture Kv= 7.0 fps
0.1	5	0.0150	0.67		**Sheet Flow, Sidewalk** Smooth surfaces n= 0.011 P2= 3.20"
1.2	150	0.0500	2.15		**Sheet Flow, Parking and Drive** Smooth surfaces n= 0.011 P2= 3.20"
1.5	280	0.0250	3.21		**Shallow Concentrated Flow, Parking and Drive** Paved Kv= 20.3 fps
1.2	170	0.0200	2.28		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
5.0	655	Total			

Subcatchment 1ENS: Existing North Subcatchment



Summary for Subcatchment 1XS: Existing East PL

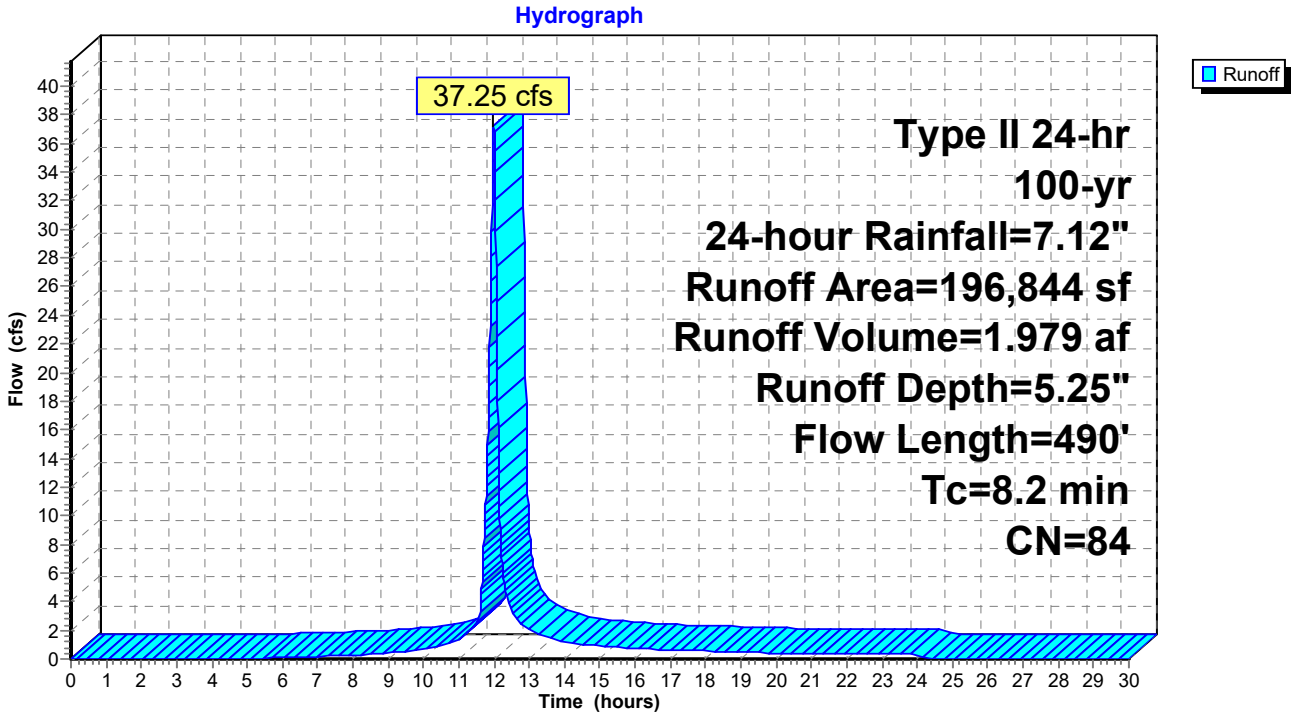
Runoff = 37.25 cfs @ 11.99 hrs, Volume= 1.979 af, Depth= 5.25"
Routed to Reach 1XR : Existing East PL Runoff

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type II 24-hr 100-yr, 24-hour Rainfall=7.12"

Area (sf)	CN	Description
77,807	89	Gravel roads, HSG C
84,398	74	Pasture/grassland/range, Good, HSG C
34,639	98	Paved parking, HSG C
196,844	84	Weighted Average
162,205		82.40% Pervious Area
34,639		17.60% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.6	100	0.0600	0.30		**Sheet Flow,** Range n= 0.130 P2= 3.20"
2.1	230	0.0700	1.85		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.5	160	0.0600	4.97		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
8.2	490	Total			

Subcatchment 1XS: Existing East PL



Summary for Subcatchment 2ENS: East Drive

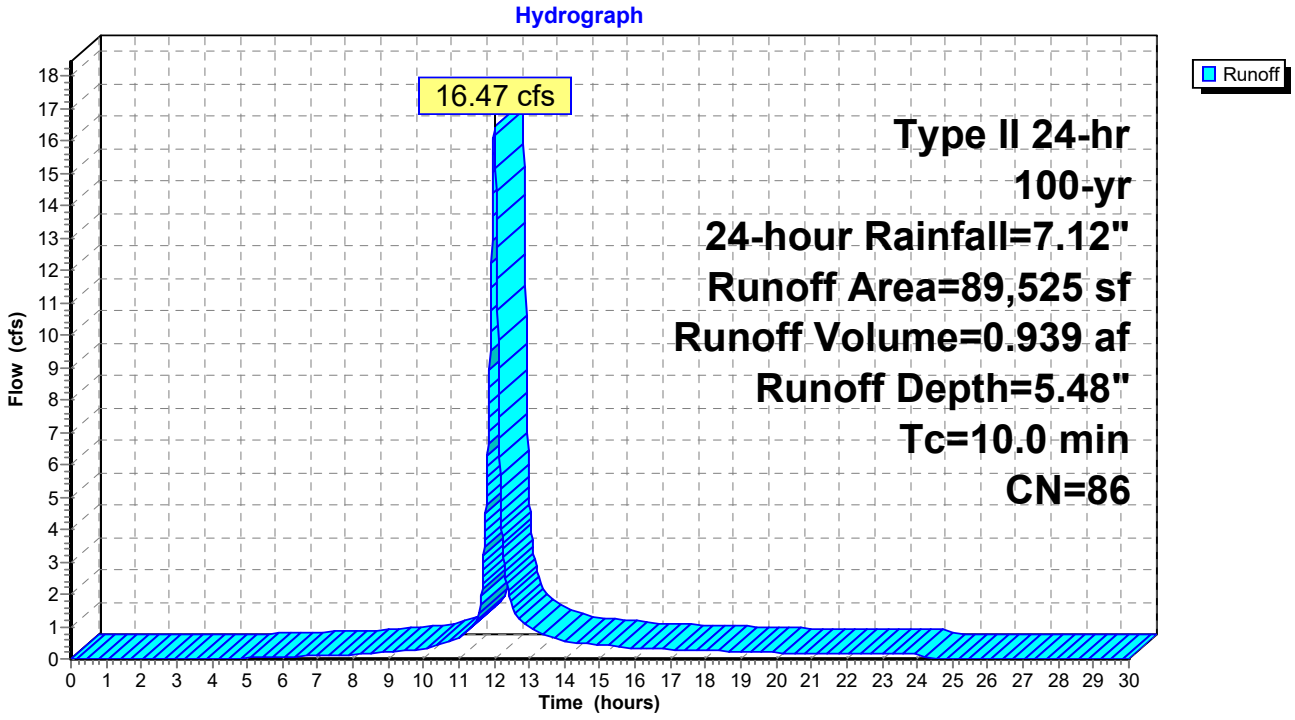
Runoff = 16.47 cfs @ 12.01 hrs, Volume= 0.939 af, Depth= 5.48"
Routed to Reach 1EX : Existing Runoff (Combined)

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type II 24-hr 100-yr, 24-hour Rainfall=7.12"

Area (sf)	CN	Description
43,800	74	Pasture/grassland/range, Good, HSG C
45,725	98	Paved parking, HSG C
89,525	86	Weighted Average
43,800		48.92% Pervious Area
45,725		51.08% Impervious Area

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

Subcatchment 2ENS: East Drive



Summary for Subcatchment 3ENS: Existing North Gym

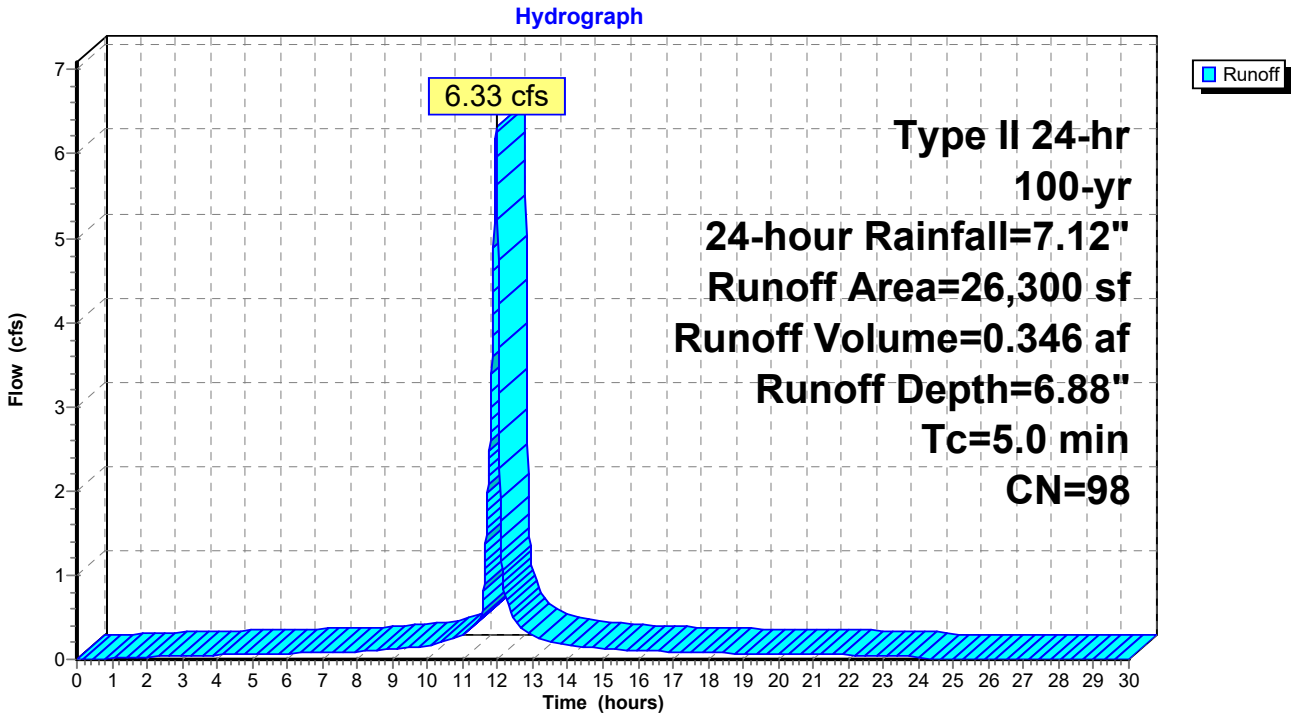
Runoff = 6.33 cfs @ 11.96 hrs, Volume= 0.346 af, Depth= 6.88"
Routed to Pond 12P : Existing Basin

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type II 24-hr 100-yr, 24-hour Rainfall=7.12"

Area (sf)	CN	Description
0	74	>75% Grass cover, Good, HSG C
26,300	98	Paved parking, HSG C
26,300	98	Weighted Average
26,300		100.00% Impervious Area

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

Subcatchment 3ENS: Existing North Gym



Summary for Subcatchment 4ENS: Existing Building

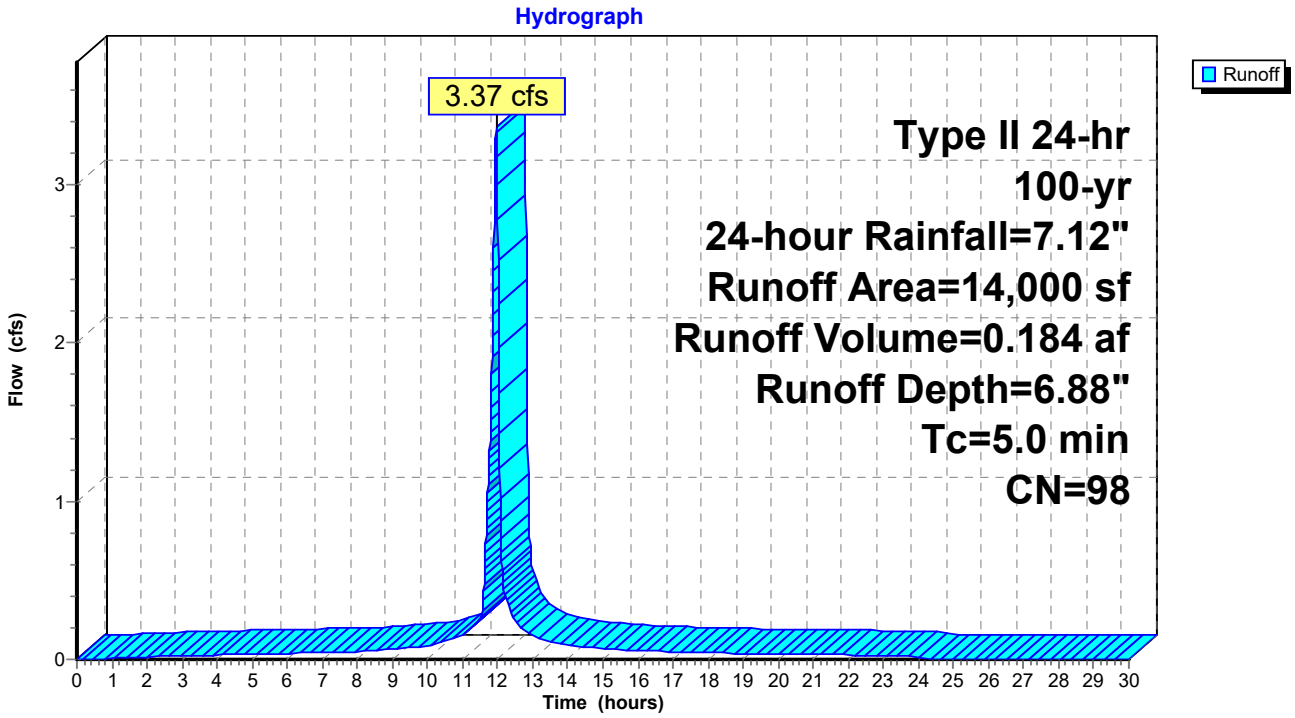
Runoff = 3.37 cfs @ 11.96 hrs, Volume= 0.184 af, Depth= 6.88"
Routed to Pond 12P : Existing Basin

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type II 24-hr 100-yr, 24-hour Rainfall=7.12"

Area (sf)	CN	Description
0	74	>75% Grass cover, Good, HSG C
14,000	98	Paved parking, HSG C
14,000	98	Weighted Average
14,000		100.00% Impervious Area

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

Subcatchment 4ENS: Existing Building

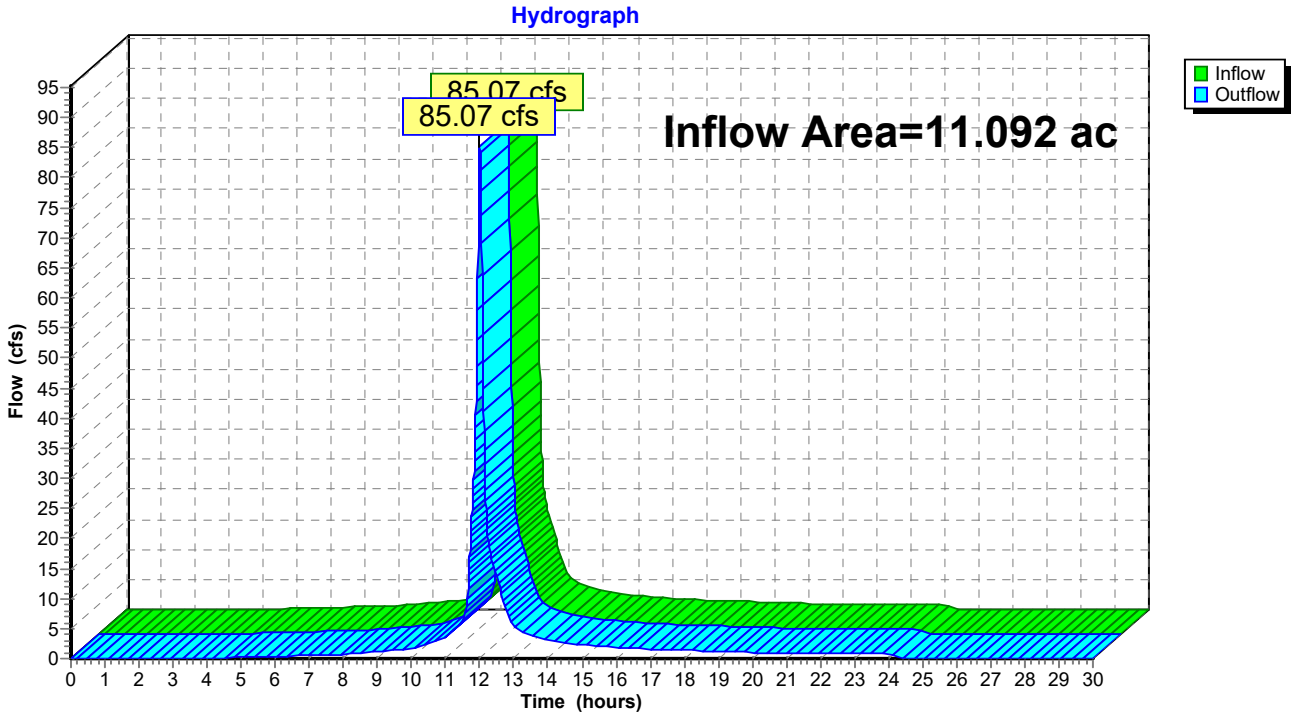


Summary for Reach 1EX: Existing Runoff (Combined)

Inflow Area = 11.092 ac, 40.23% Impervious, Inflow Depth = 5.47" for 100-yr, 24-hour event
Inflow = 85.07 cfs @ 12.00 hrs, Volume= 5.055 af
Outflow = 85.07 cfs @ 12.00 hrs, Volume= 5.055 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs / 3

Reach 1EX: Existing Runoff (Combined)

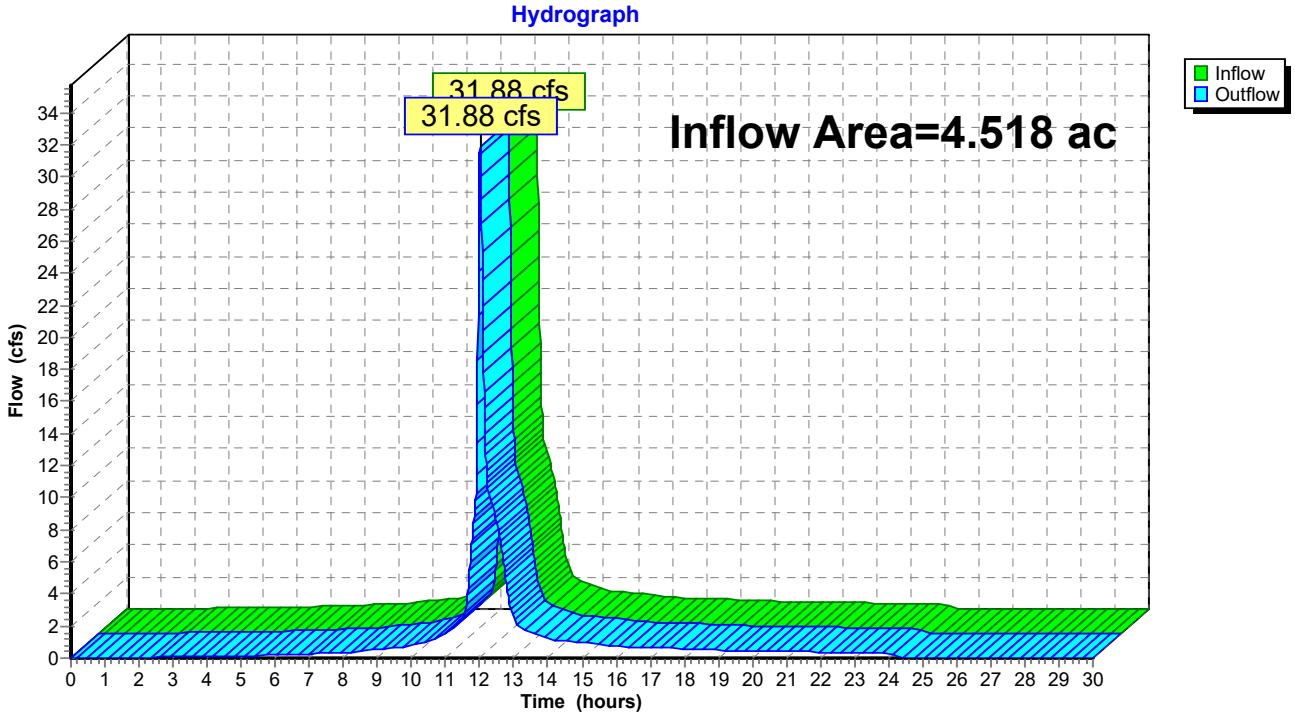


Summary for Reach 1NR: Existing North Runoff

Inflow Area = 4.518 ac, 57.93% Impervious, Inflow Depth = 5.68" for 100-yr, 24-hour event
Inflow = 31.88 cfs @ 12.01 hrs, Volume= 2.137 af
Outflow = 31.88 cfs @ 12.01 hrs, Volume= 2.137 af, Atten= 0%, Lag= 0.0 min
Routed to Reach 1EX : Existing Runoff (Combined)

Routing by Dyn-Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs / 3

Reach 1NR: Existing North Runoff

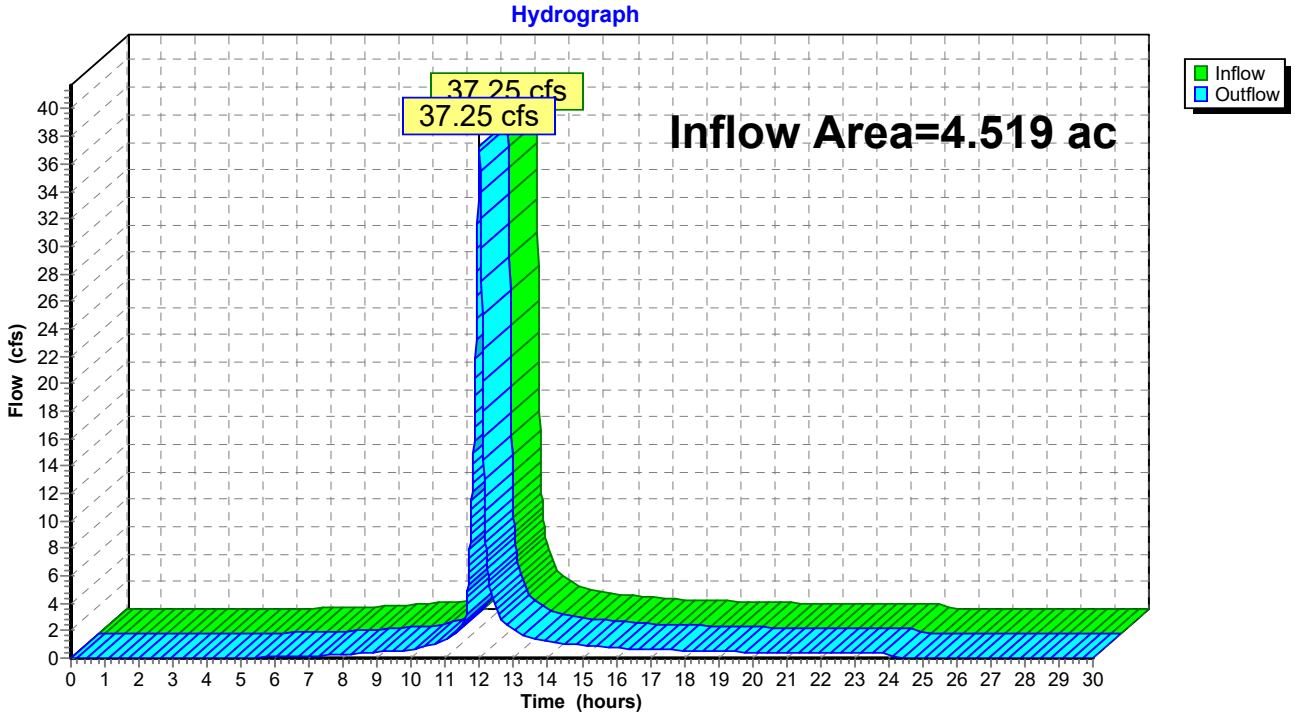


Summary for Reach 1XR: Existing East PL Runoff

Inflow Area = 4.519 ac, 17.60% Impervious, Inflow Depth = 5.25" for 100-yr, 24-hour event
Inflow = 37.25 cfs @ 11.99 hrs, Volume= 1.979 af
Outflow = 37.25 cfs @ 11.99 hrs, Volume= 1.979 af, Atten= 0%, Lag= 0.0 min
Routed to Reach 1EX : Existing Runoff (Combined)

Routing by Dyn-Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs / 3

Reach 1XR: Existing East PL Runoff



Summary for Pond 12P: Existing Basin

Inflow Area = 4.518 ac, 57.93% Impervious, Inflow Depth = 5.68" for 100-yr, 24-hour event
Inflow = 43.18 cfs @ 11.96 hrs, Volume= 2.137 af
Outflow = 31.88 cfs @ 12.01 hrs, Volume= 2.137 af, Atten= 26%, Lag= 3.3 min
Primary = 31.88 cfs @ 12.01 hrs, Volume= 2.137 af
Routed to Reach 1NR : Existing North Runoff

Routing by Dyn-Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 92.87' @ 12.01 hrs Surf.Area= 13,732 sf Storage= 17,785 cf

Plug-Flow detention time= 8.5 min calculated for 2.137 af (100% of inflow)
Center-of-Mass det. time= 8.5 min (785.7 - 777.3)

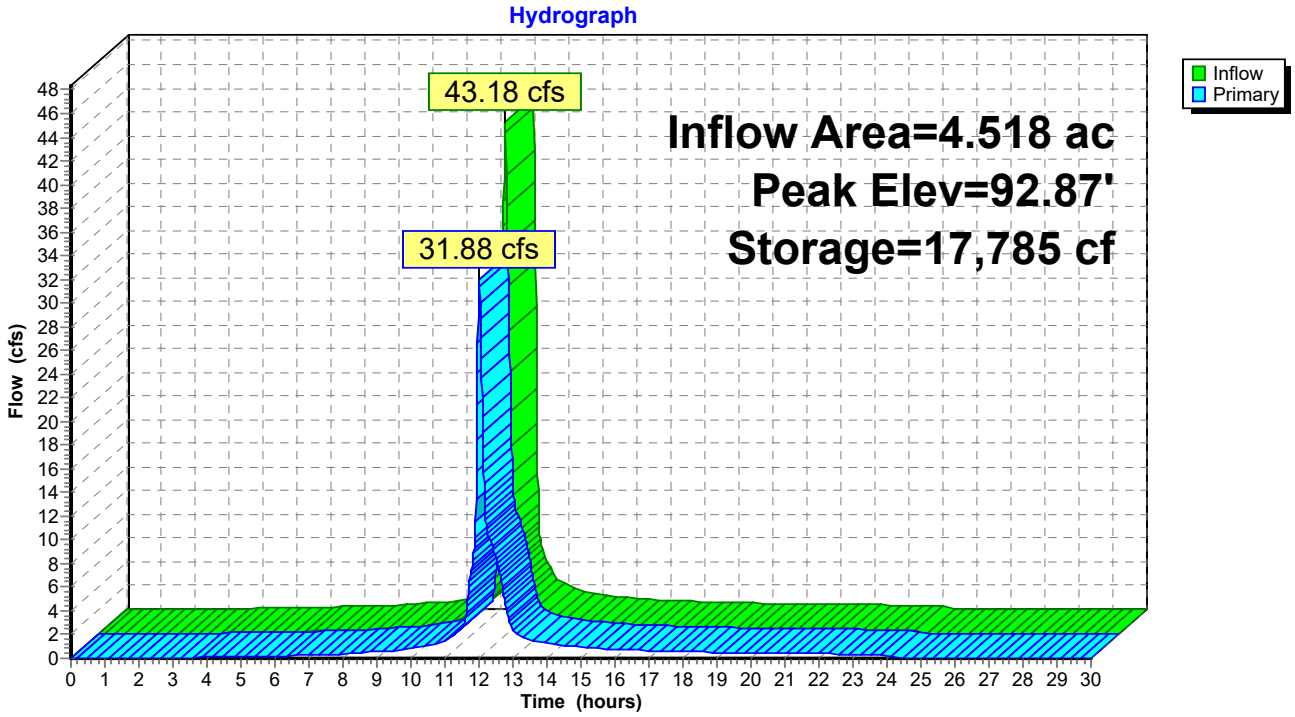
Volume	Invert	Avail.Storage	Storage Description
#1	90.12'	33,977 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

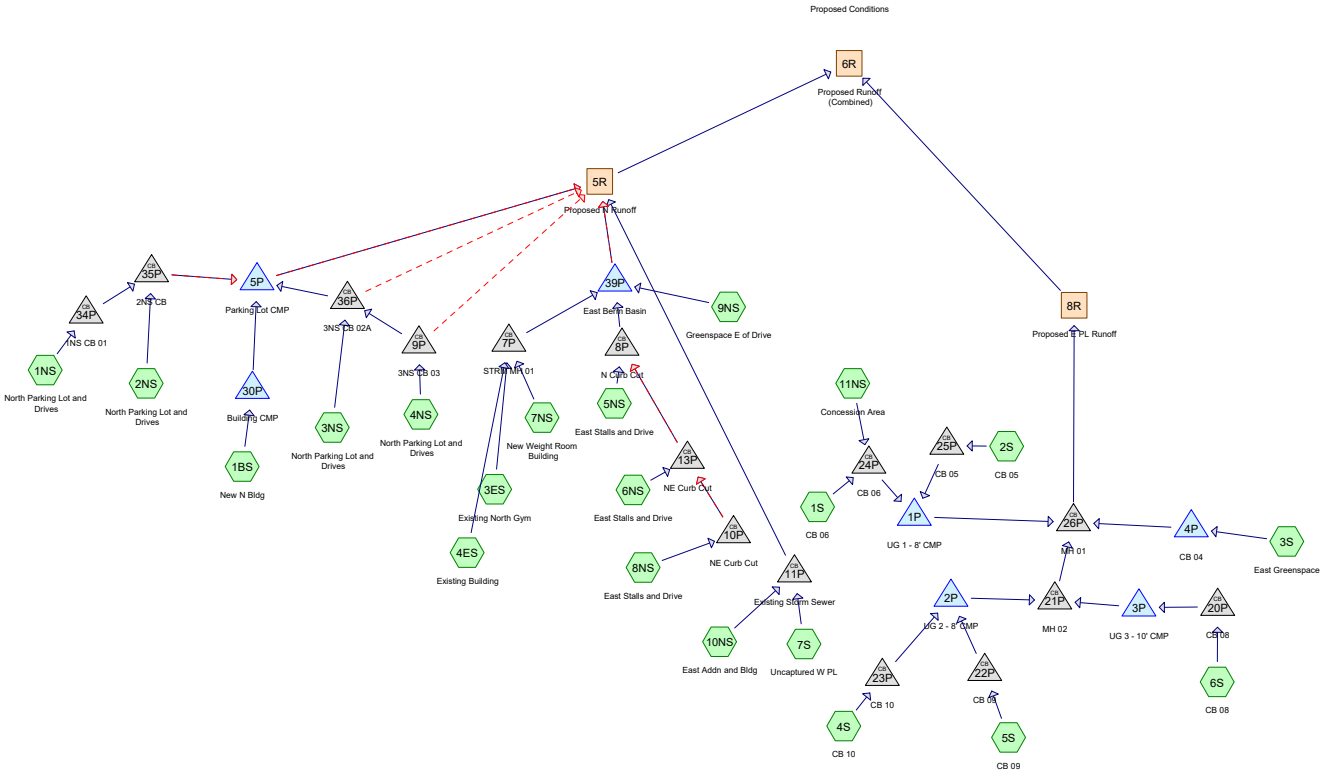
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
90.12	3	0	0
91.00	2,628	1,158	1,158
92.00	9,007	5,818	6,975
92.40	13,200	4,441	11,417
94.00	15,000	22,560	33,977

Device	Routing	Invert	Outlet Devices
#1	Primary	90.12'	**18.0" Round Culvert** L= 106.0' RCP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 90.12' / 89.20' S= 0.0087 '/' Cc= 0.900 n= 0.011 Concrete pipe, straight & clean, Flow Area= 1.77 sf
#2	Primary	92.36'	**20.0' long x 30.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=31.82 cfs @ 12.01 hrs HW=92.87' TW=0.00' (Dynamic Tailwater)
1=Culvert (Inlet Controls 12.04 cfs @ 6.81 fps)
2=Broad-Crested Rectangular Weir (Weir Controls 19.78 cfs @ 1.93 fps)

Pond 12P: Existing Basin





Subcat Reach Pond Link

Routing Diagram for VM Comprehensive Stormwater Model
Prepared by Larson Engineering Inc, Printed 12/2/2024

Rainfall Events Listing (selected events)

Event#	Event Name	Storm Type	Curve	Mode	Duration (hours)	B/B	Depth (inches)	AMC
1	5-yr, 24-hour	Type II 24-hr		Default	24.00	1	3.81	2
2	100-yr, 24-hour	Type II 24-hr		Default	24.00	1	7.12	2

Soil Listing (selected nodes)

Area (acres)	Soil Group	Subcatchment Numbers
0.000	HSG A	
0.000	HSG B	
11.092	HSG C	1BS, 1NS, 1S, 2NS, 2S, 3ES, 3NS, 3S, 4ES, 4NS, 4S, 5NS, 5S, 6NS, 6S, 7NS, 7S, 8NS, 9NS, 10NS, 11NS
0.000	HSG D	
0.000	Other	
11.092		**TOTAL AREA**

Ground Covers (selected nodes)

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchment Numbers
0.000	0.000	0.925	0.000	0.000	0.925	>75% Grass cover, Good	1BS, 1NS, 2NS, 3NS, 4NS, 6NS, 7NS, 8NS, 9NS, 10NS
0.000	0.000	1.596	0.000	0.000	1.596	Pasture/grassland/range, Good	1S, 2S, 3S, 4S, 5S, 6S, 7S
0.000	0.000	8.572	0.000	0.000	8.572	Paved parking	1BS, 1NS, 1S, 2NS, 2S, 3ES, 3NS, 3S, 4ES, 4NS, 4S, 5NS

Ground Covers (selected nodes) (continued)

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchment Numbers
0.000	**0.000**	**11.092**	**0.000**	**0.000**	**11.092**	**TOTAL AREA**	

Summary for Subcatchment 1BS: New N Bldg

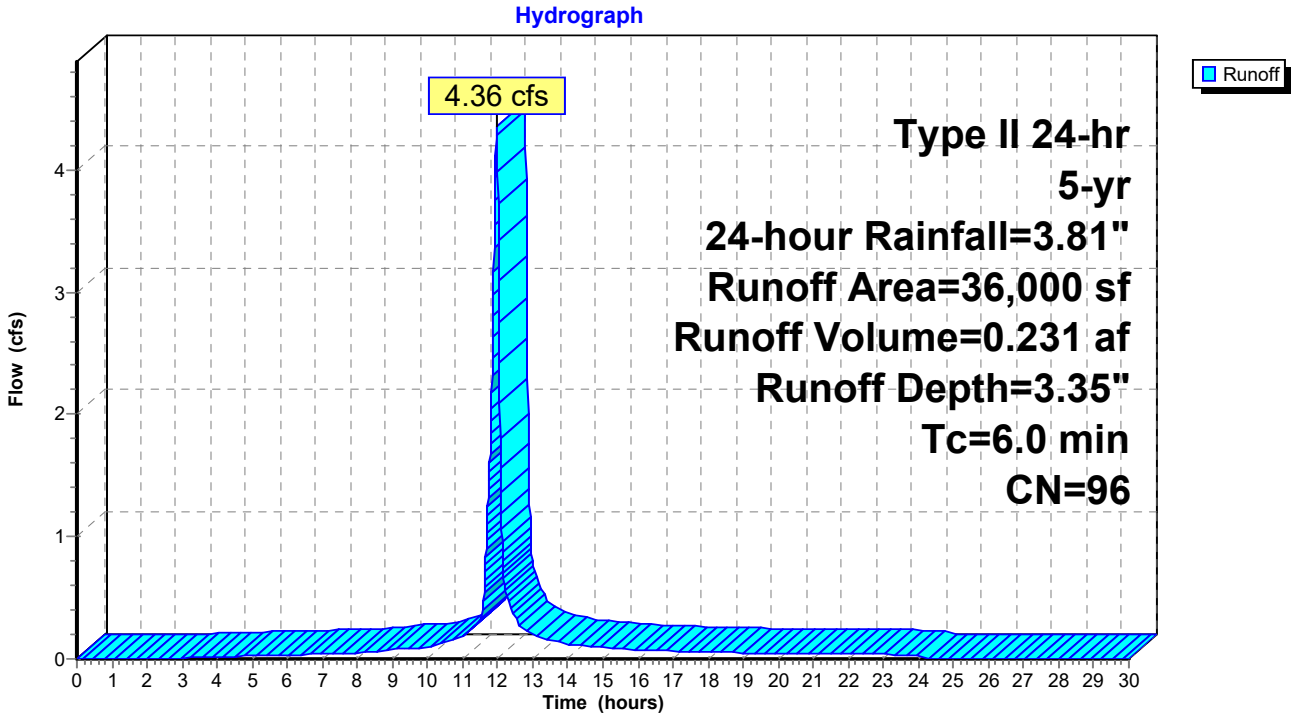
Runoff = 4.36 cfs @ 11.97 hrs, Volume= 0.231 af, Depth= 3.35"
Routed to Pond 30P : Building CMP

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type II 24-hr 5-yr, 24-hour Rainfall=3.81"

Area (sf)	CN	Description
3,000	74	>75% Grass cover, Good, HSG C
33,000	98	Paved parking, HSG C
36,000	96	Weighted Average
3,000		8.33% Pervious Area
33,000		91.67% Impervious Area

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

Subcatchment 1BS: New N Bldg



Summary for Subcatchment 1NS: North Parking Lot and Drives

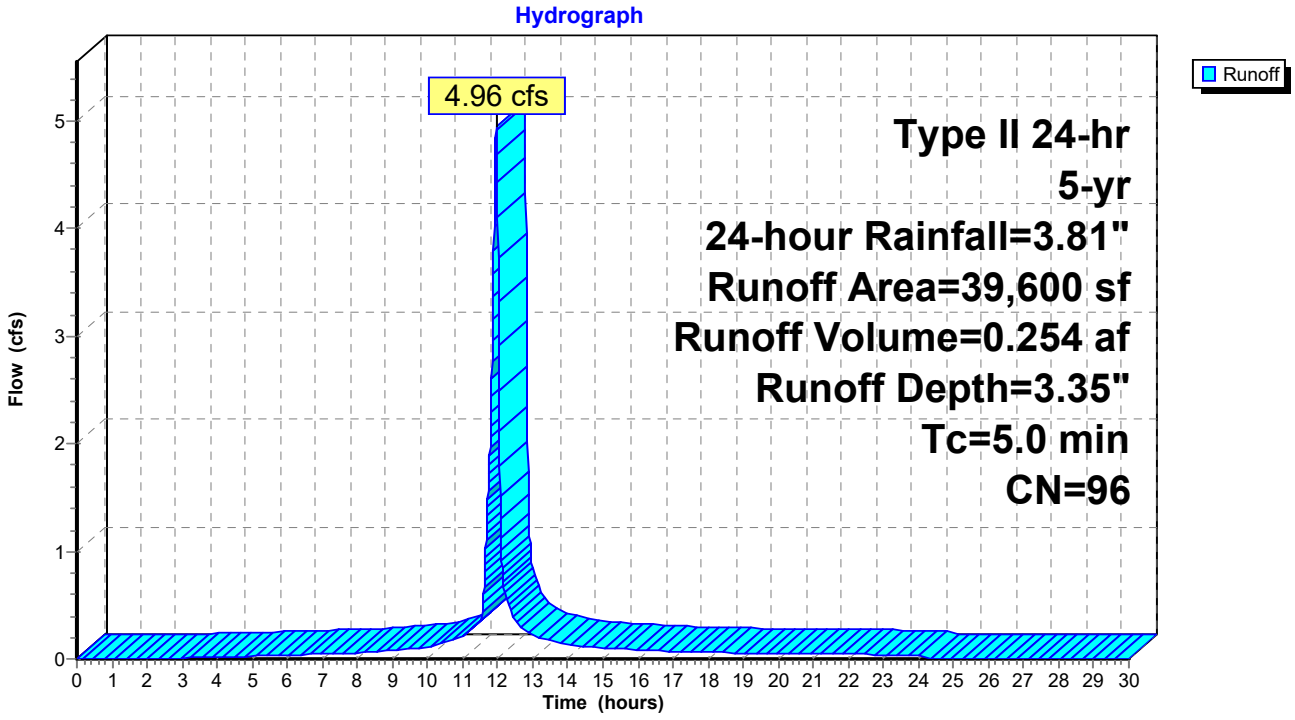
Runoff = 4.96 cfs @ 11.96 hrs, Volume= 0.254 af, Depth= 3.35"
Routed to Pond 34P : 1NS CB 01

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type II 24-hr 5-yr, 24-hour Rainfall=3.81"

Area (sf)	CN	Description
3,600	74	>75% Grass cover, Good, HSG C
36,000	98	Paved parking, HSG C
39,600	96	Weighted Average
3,600		9.09% Pervious Area
36,000		90.91% Impervious Area

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

Subcatchment 1NS: North Parking Lot and Drives



Summary for Subcatchment 1S: CB 06

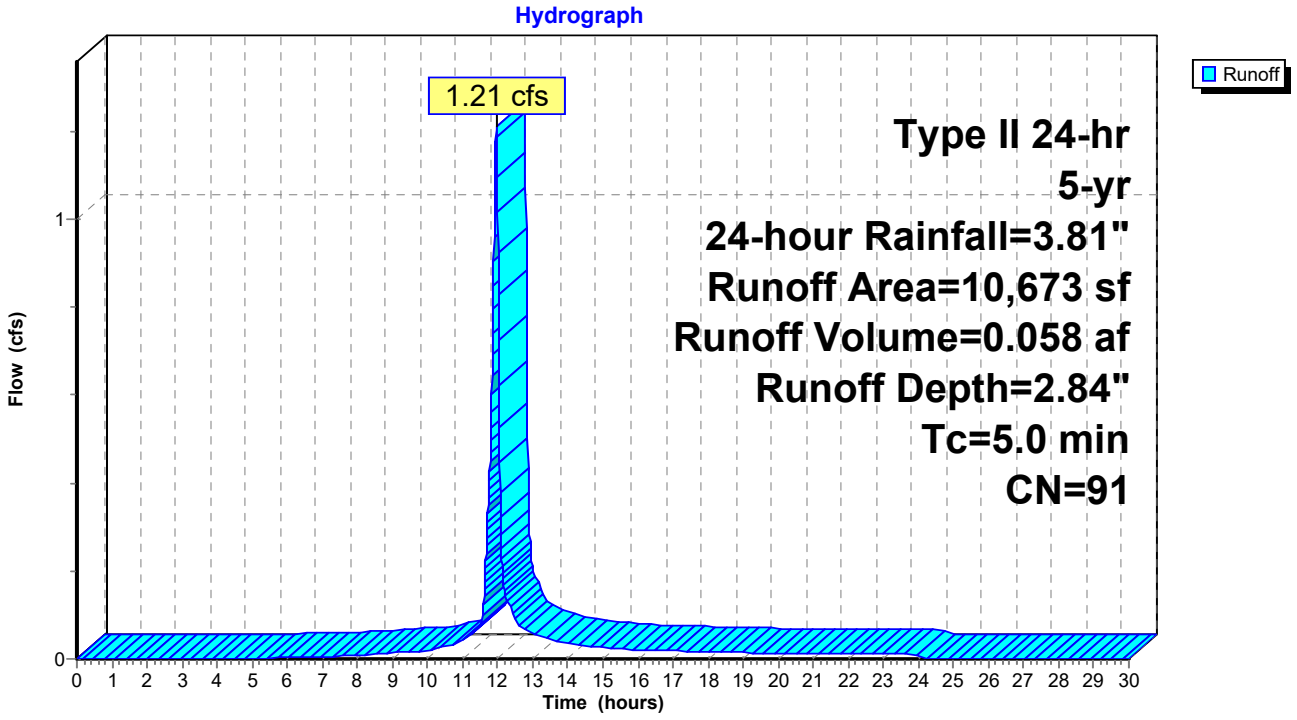
Runoff = 1.21 cfs @ 11.96 hrs, Volume= 0.058 af, Depth= 2.84"
Routed to Pond 24P : CB 06

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type II 24-hr 5-yr, 24-hour Rainfall=3.81"

Area (sf)	CN	Description
2,894	74	Pasture/grassland/range, Good, HSG C
7,779	98	Paved parking, HSG C
10,673	91	Weighted Average
2,894		27.12% Pervious Area
7,779		72.88% Impervious Area

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

Subcatchment 1S: CB 06



Summary for Subcatchment 2NS: North Parking Lot and Drives

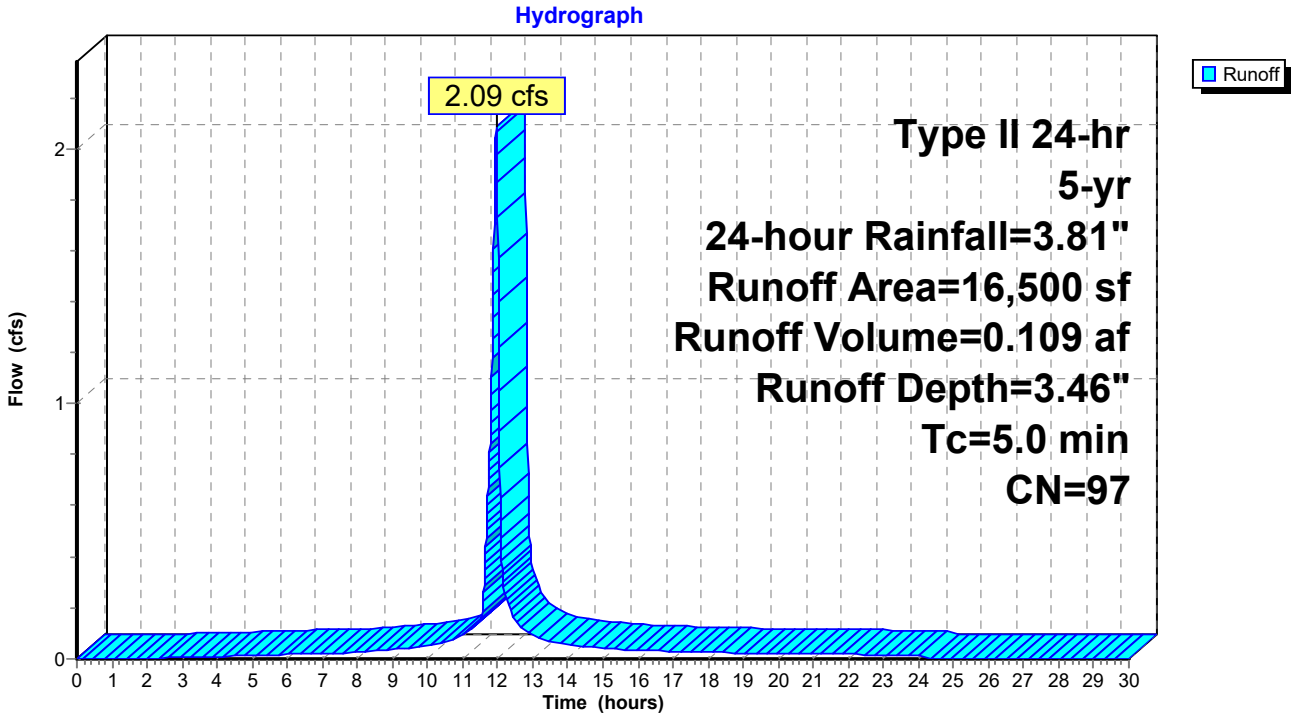
Runoff = 2.09 cfs @ 11.96 hrs, Volume= 0.109 af, Depth= 3.46"
Routed to Pond 35P : 2NS CB

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type II 24-hr 5-yr, 24-hour Rainfall=3.81"

Area (sf)	CN	Description
700	74	>75% Grass cover, Good, HSG C
15,800	98	Paved parking, HSG C
16,500	97	Weighted Average
700		4.24% Pervious Area
15,800		95.76% Impervious Area

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

Subcatchment 2NS: North Parking Lot and Drives



Summary for Subcatchment 2S: CB 05

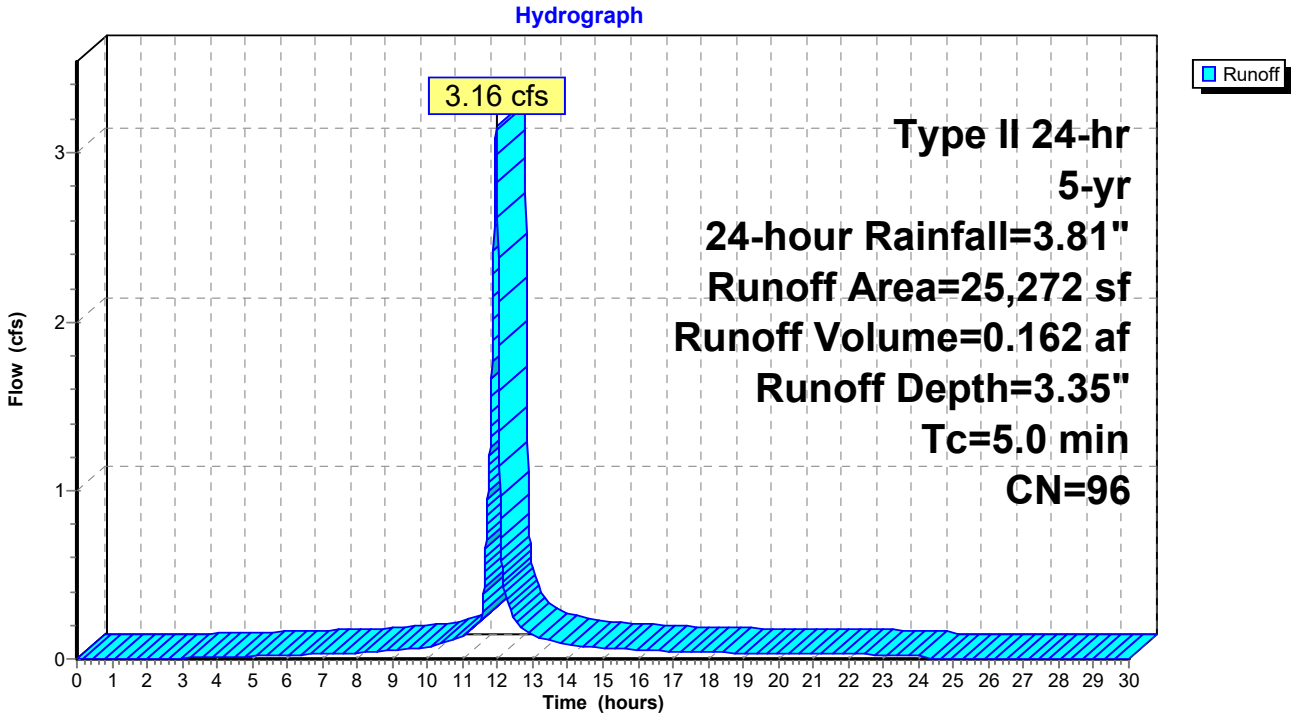
Runoff = 3.16 cfs @ 11.96 hrs, Volume= 0.162 af, Depth= 3.35"
Routed to Pond 25P : CB 05

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type II 24-hr 5-yr, 24-hour Rainfall=3.81"

Area (sf)	CN	Description
1,704	74	Pasture/grassland/range, Good, HSG C
23,568	98	Paved parking, HSG C
25,272	96	Weighted Average
1,704		6.74% Pervious Area
23,568		93.26% Impervious Area

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

Subcatchment 2S: CB 05



Summary for Subcatchment 3ES: Existing North Gym

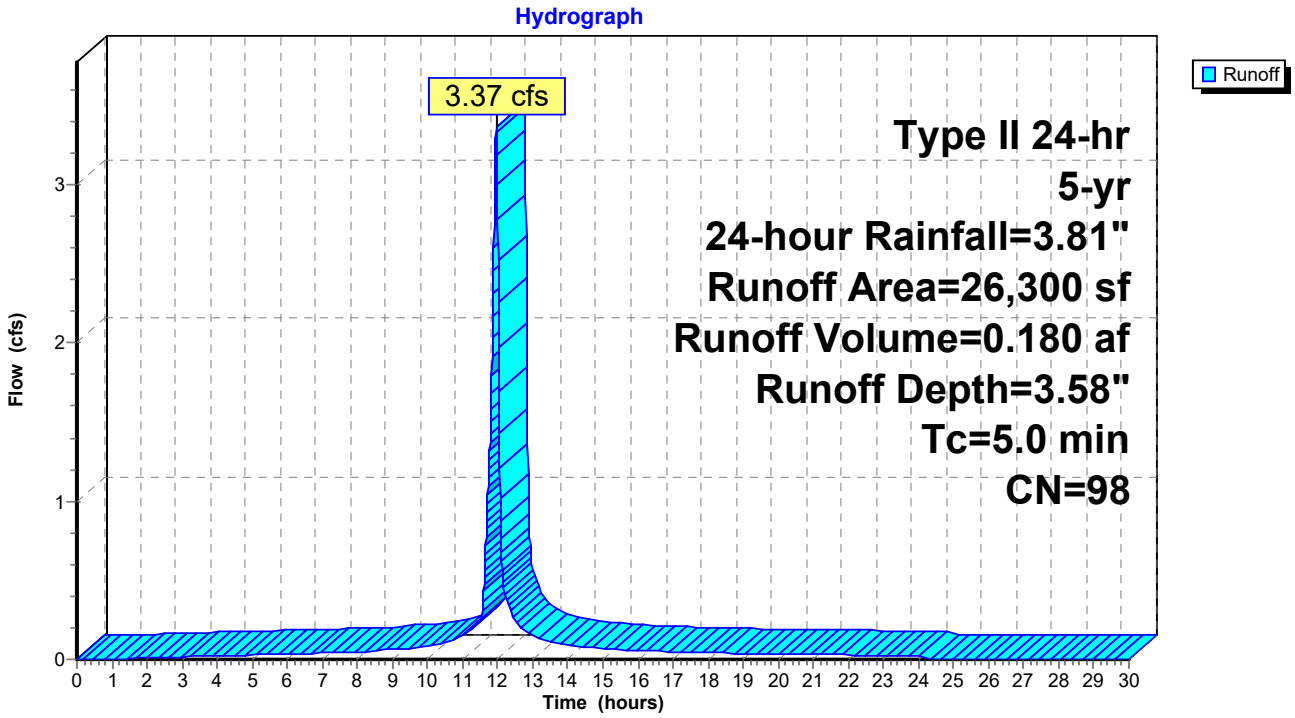
Runoff = 3.37 cfs @ 11.96 hrs, Volume= 0.180 af, Depth= 3.58"
Routed to Pond 7P : STRM MH 01

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type II 24-hr 5-yr, 24-hour Rainfall=3.81"

Area (sf)	CN	Description
0	74	>75% Grass cover, Good, HSG C
26,300	98	Paved parking, HSG C
26,300	98	Weighted Average
26,300		100.00% Impervious Area

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

Subcatchment 3ES: Existing North Gym



Summary for Subcatchment 3NS: North Parking Lot and Drives

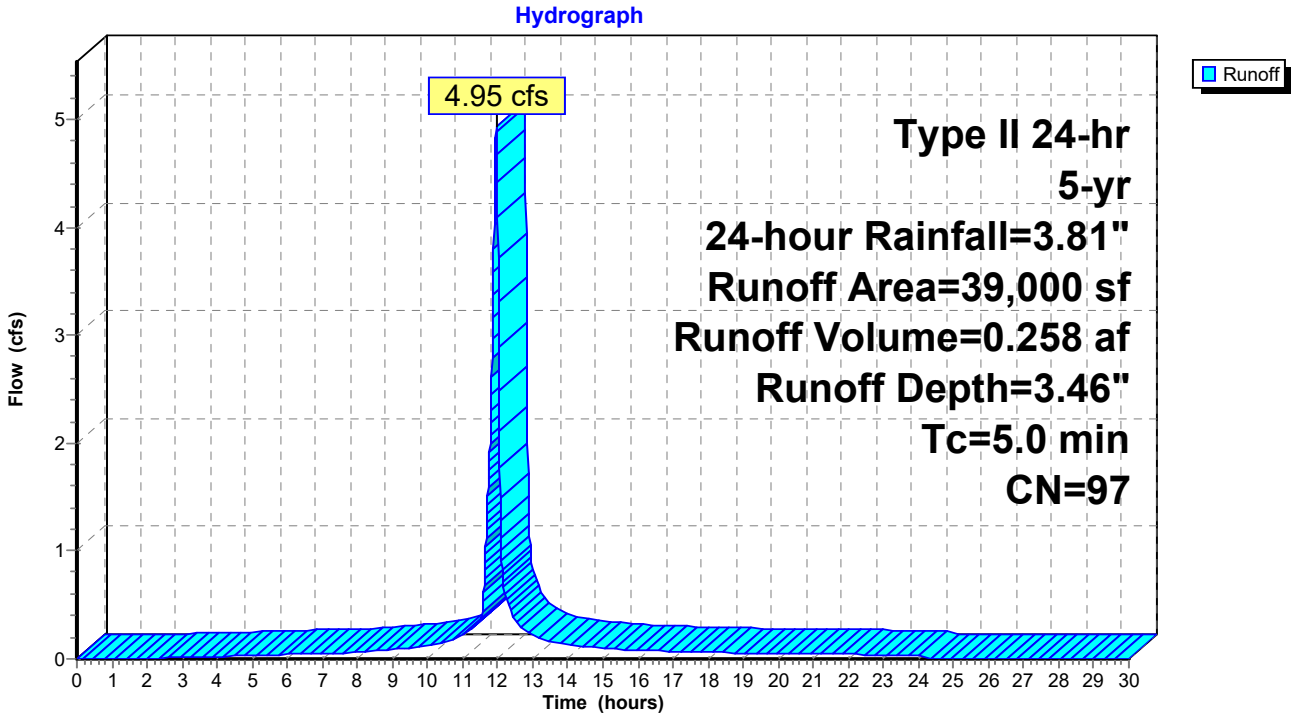
Runoff = 4.95 cfs @ 11.96 hrs, Volume= 0.258 af, Depth= 3.46"
Routed to Pond 36P : 3NS CB 02A

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type II 24-hr 5-yr, 24-hour Rainfall=3.81"

Area (sf)	CN	Description
1,200	74	>75% Grass cover, Good, HSG C
37,800	98	Paved parking, HSG C
39,000	97	Weighted Average
1,200		3.08% Pervious Area
37,800		96.92% Impervious Area

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

Subcatchment 3NS: North Parking Lot and Drives



Summary for Subcatchment 3S: East Greenspace

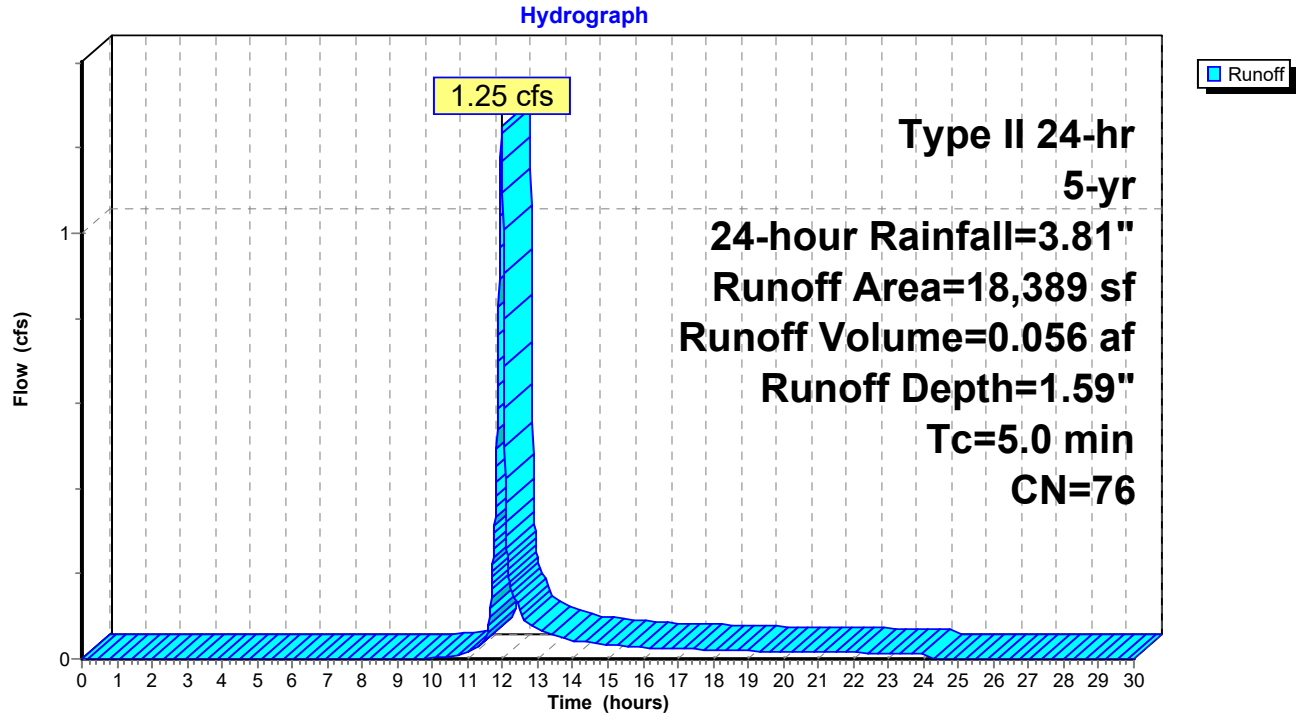
Runoff = 1.25 cfs @ 11.96 hrs, Volume= 0.056 af, Depth= 1.59"
Routed to Pond 4P : CB 04

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type II 24-hr 5-yr, 24-hour Rainfall=3.81"

Area (sf)	CN	Description
16,666	74	Pasture/grassland/range, Good, HSG C
1,723	98	Paved parking, HSG C
18,389	76	Weighted Average
16,666		90.63% Pervious Area
1,723		9.37% Impervious Area

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

Subcatchment 3S: East Greenspace



Summary for Subcatchment 4ES: Existing Building

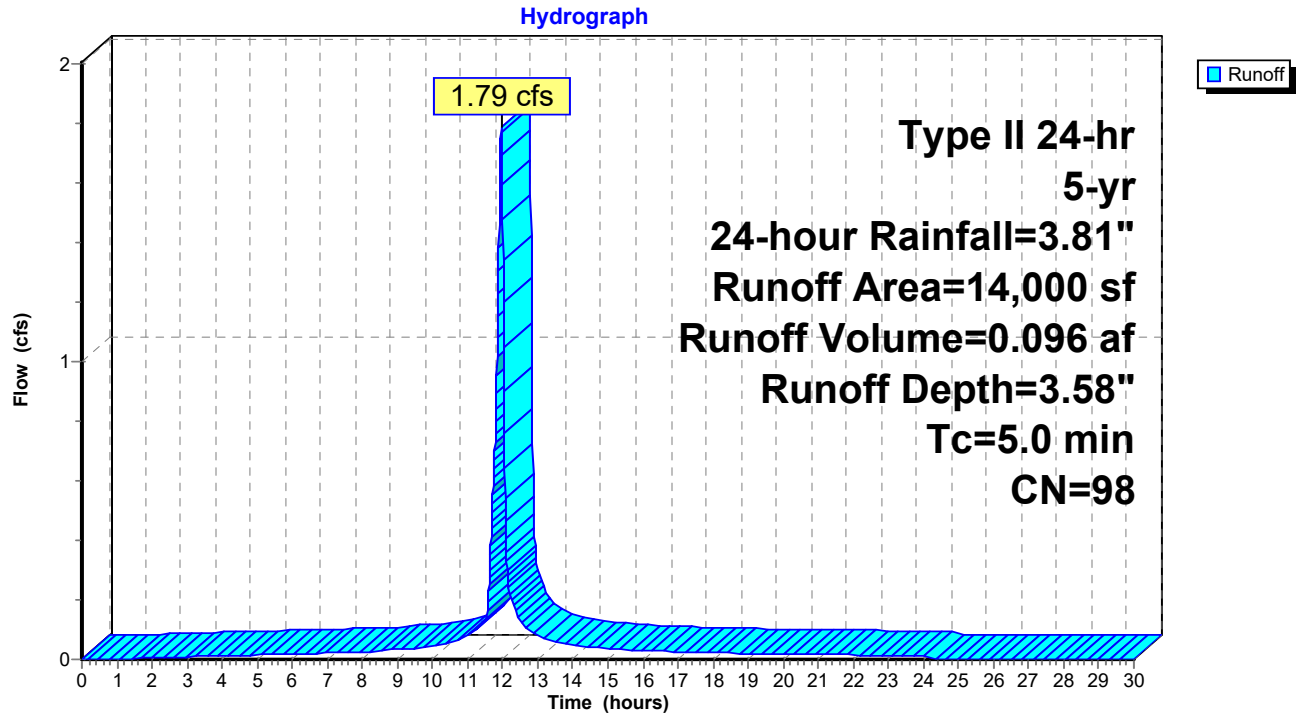
Runoff = 1.79 cfs @ 11.96 hrs, Volume= 0.096 af, Depth= 3.58"
Routed to Pond 7P : STRM MH 01

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type II 24-hr 5-yr, 24-hour Rainfall=3.81"

Area (sf)	CN	Description
0	74	>75% Grass cover, Good, HSG C
14,000	98	Paved parking, HSG C
14,000	98	Weighted Average
14,000		100.00% Impervious Area

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

Subcatchment 4ES: Existing Building



Summary for Subcatchment 4NS: North Parking Lot and Drives

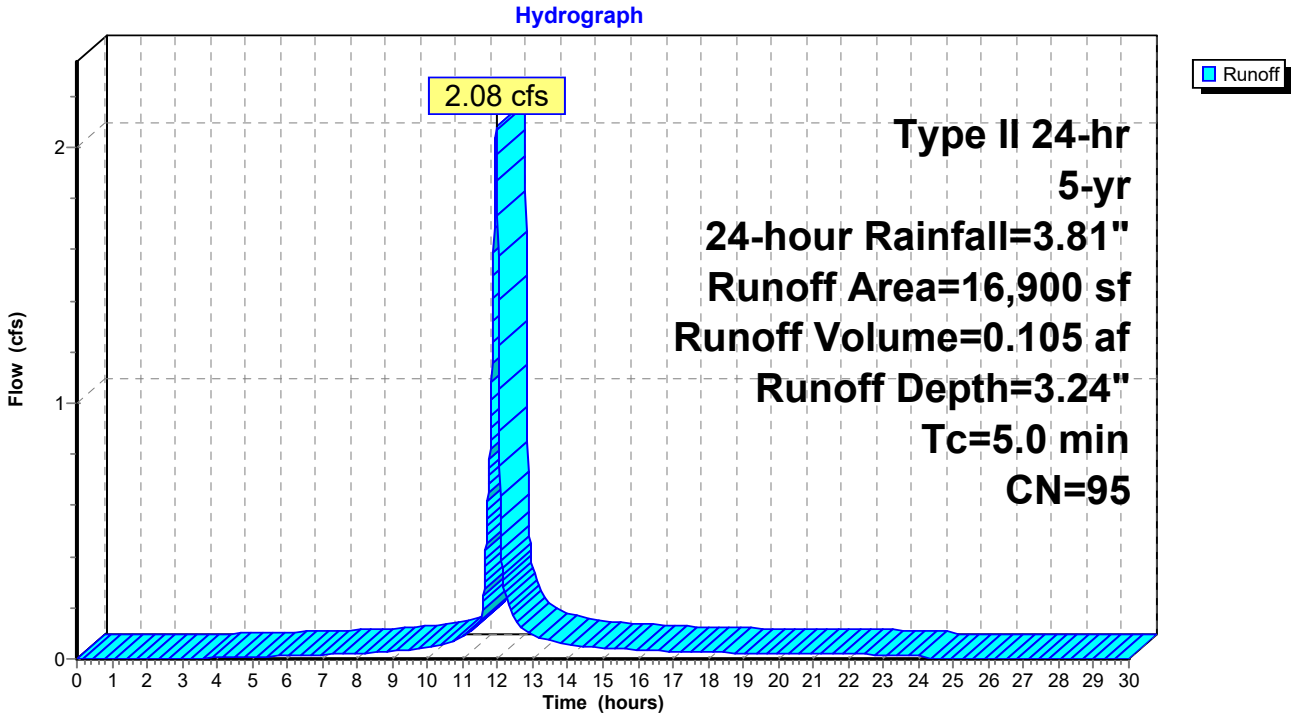
Runoff = 2.08 cfs @ 11.96 hrs, Volume= 0.105 af, Depth= 3.24"
Routed to Pond 9P : 3NS CB 03

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type II 24-hr 5-yr, 24-hour Rainfall=3.81"

Area (sf)	CN	Description
1,800	74	>75% Grass cover, Good, HSG C
15,100	98	Paved parking, HSG C
16,900	95	Weighted Average
1,800		10.65% Pervious Area
15,100		89.35% Impervious Area

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

Subcatchment 4NS: North Parking Lot and Drives



Summary for Subcatchment 4S: CB 10

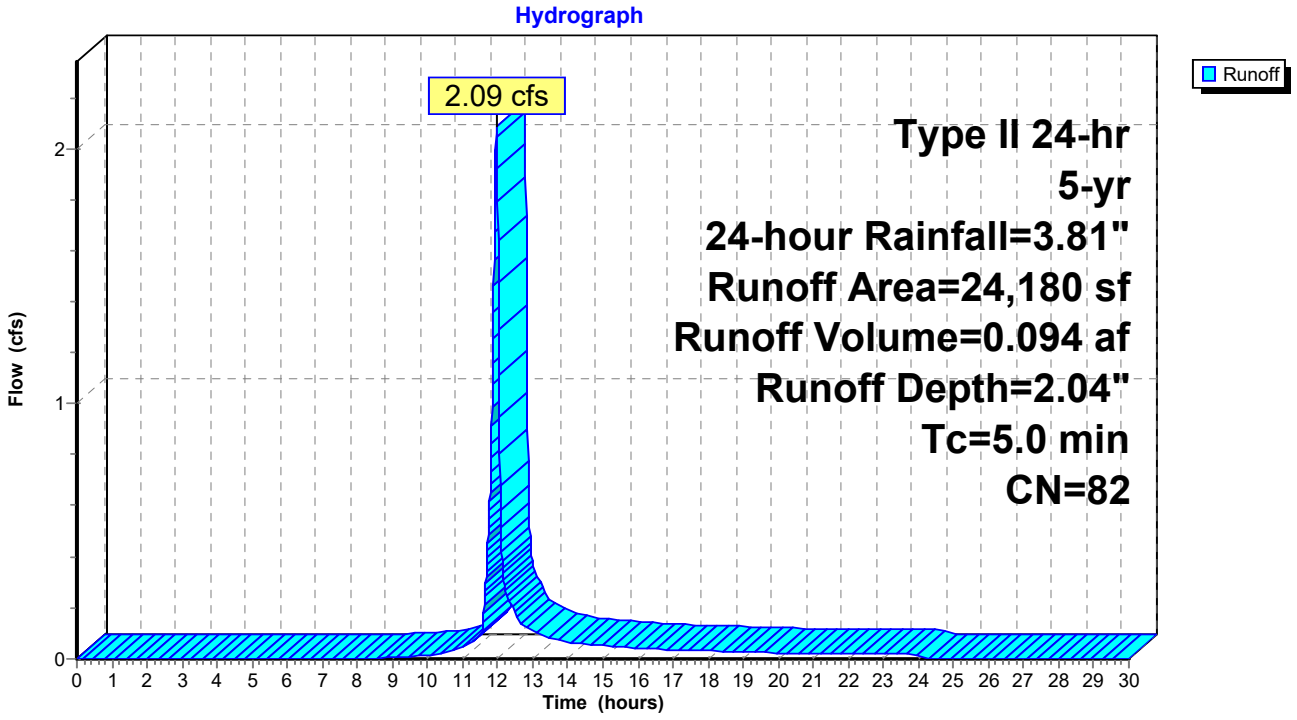
Runoff = 2.09 cfs @ 11.96 hrs, Volume= 0.094 af, Depth= 2.04"
Routed to Pond 23P : CB 10

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type II 24-hr 5-yr, 24-hour Rainfall=3.81"

Area (sf)	CN	Description
16,254	74	Pasture/grassland/range, Good, HSG C
7,926	98	Paved parking, HSG C
24,180	82	Weighted Average
16,254		67.22% Pervious Area
7,926		32.78% Impervious Area

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

Subcatchment 4S: CB 10



Summary for Subcatchment 5NS: East Stalls and Drive

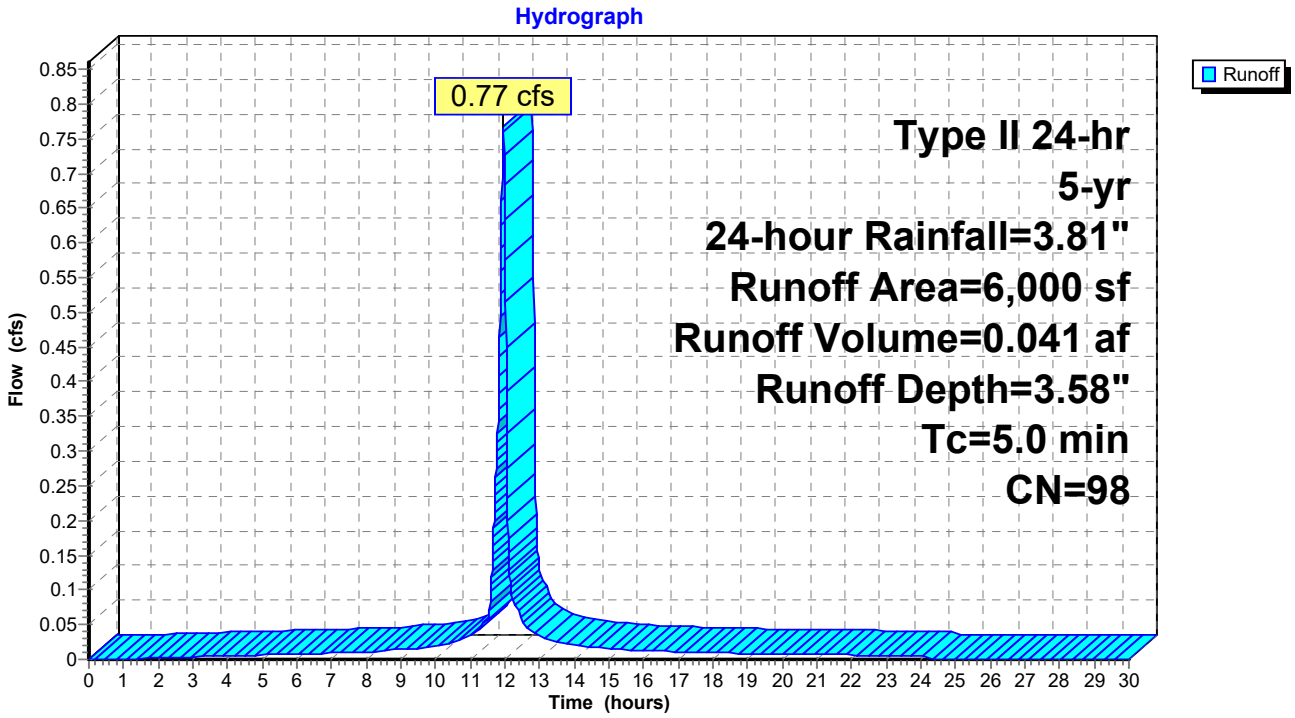
Runoff = 0.77 cfs @ 11.96 hrs, Volume= 0.041 af, Depth= 3.58"
Routed to Pond 8P : N Curb Cut

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type II 24-hr 5-yr, 24-hour Rainfall=3.81"

Area (sf)	CN	Description
0	74	>75% Grass cover, Good, HSG C
6,000	98	Paved parking, HSG C
6,000	98	Weighted Average
6,000		100.00% Impervious Area

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

Subcatchment 5NS: East Stalls and Drive



Summary for Subcatchment 5S: CB 09

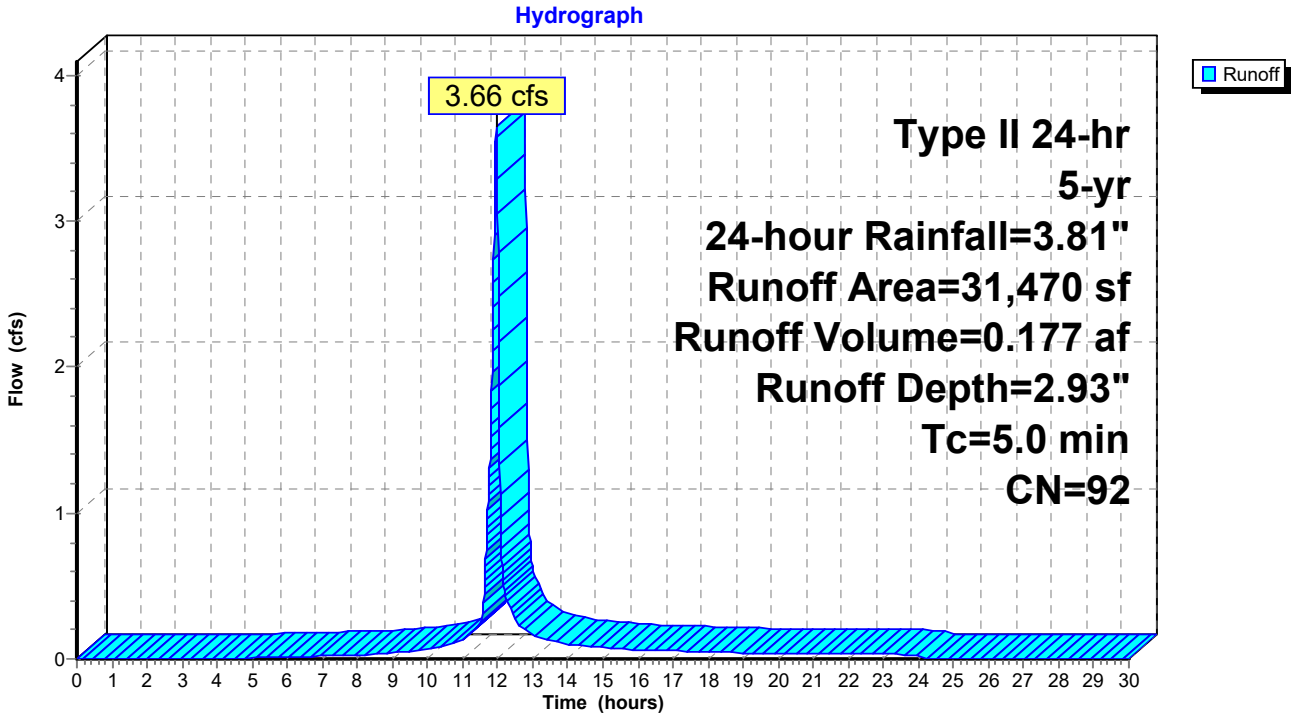
Runoff = 3.66 cfs @ 11.96 hrs, Volume= 0.177 af, Depth= 2.93"
Routed to Pond 22P : CB 09

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type II 24-hr 5-yr, 24-hour Rainfall=3.81"

Area (sf)	CN	Description
8,042	74	Pasture/grassland/range, Good, HSG C
23,428	98	Paved parking, HSG C
31,470	92	Weighted Average
8,042		25.55% Pervious Area
23,428		74.45% Impervious Area

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

Subcatchment 5S: CB 09



Summary for Subcatchment 6NS: East Stalls and Drive

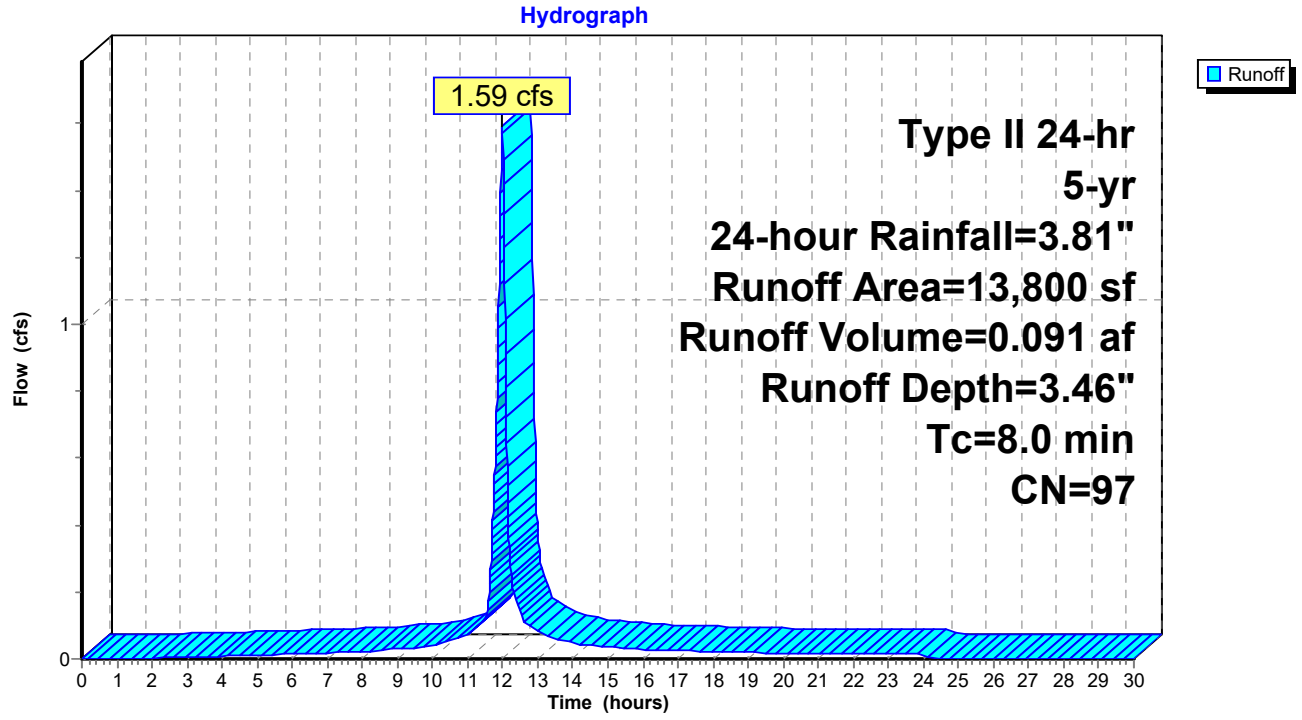
Runoff = 1.59 cfs @ 11.99 hrs, Volume= 0.091 af, Depth= 3.46"
Routed to Pond 13P : NE Curb Cut

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type II 24-hr 5-yr, 24-hour Rainfall=3.81"

Area (sf)	CN	Description
600	74	>75% Grass cover, Good, HSG C
13,200	98	Paved parking, HSG C
13,800	97	Weighted Average
600		4.35% Pervious Area
13,200		95.65% Impervious Area

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

Subcatchment 6NS: East Stalls and Drive



Summary for Subcatchment 6S: CB 08

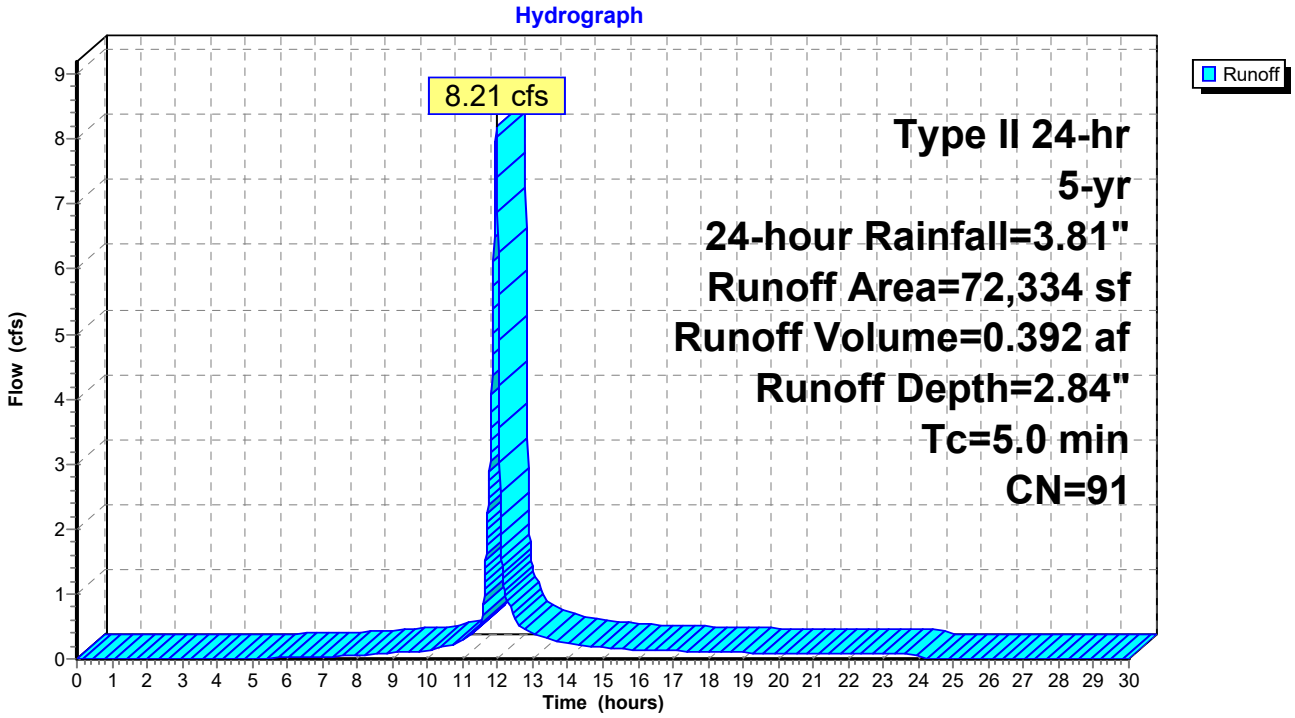
Runoff = 8.21 cfs @ 11.96 hrs, Volume= 0.392 af, Depth= 2.84"
Routed to Pond 20P : CB 08

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type II 24-hr 5-yr, 24-hour Rainfall=3.81"

Area (sf)	CN	Description
22,335	74	Pasture/grassland/range, Good, HSG C
49,999	98	Paved parking, HSG C
72,334	91	Weighted Average
22,335		30.88% Pervious Area
49,999		69.12% Impervious Area

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

Subcatchment 6S: CB 08



Summary for Subcatchment 7NS: New Weight Room Building

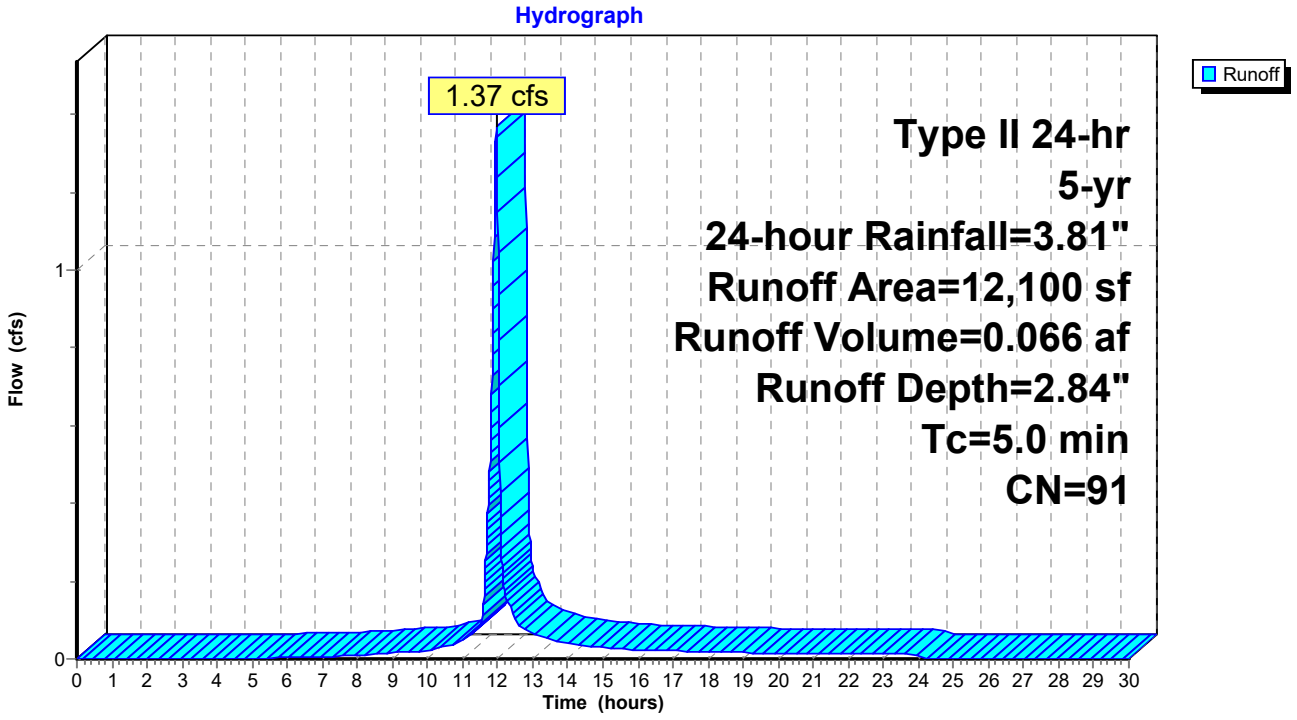
Runoff = 1.37 cfs @ 11.96 hrs, Volume= 0.066 af, Depth= 2.84"
Routed to Pond 7P : STRM MH 01

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type II 24-hr 5-yr, 24-hour Rainfall=3.81"

Area (sf)	CN	Description
3,300	74	>75% Grass cover, Good, HSG C
8,800	98	Paved parking, HSG C
12,100	91	Weighted Average
3,300		27.27% Pervious Area
8,800		72.73% Impervious Area

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

Subcatchment 7NS: New Weight Room Building



Summary for Subcatchment 7S: Uncaptured W PL

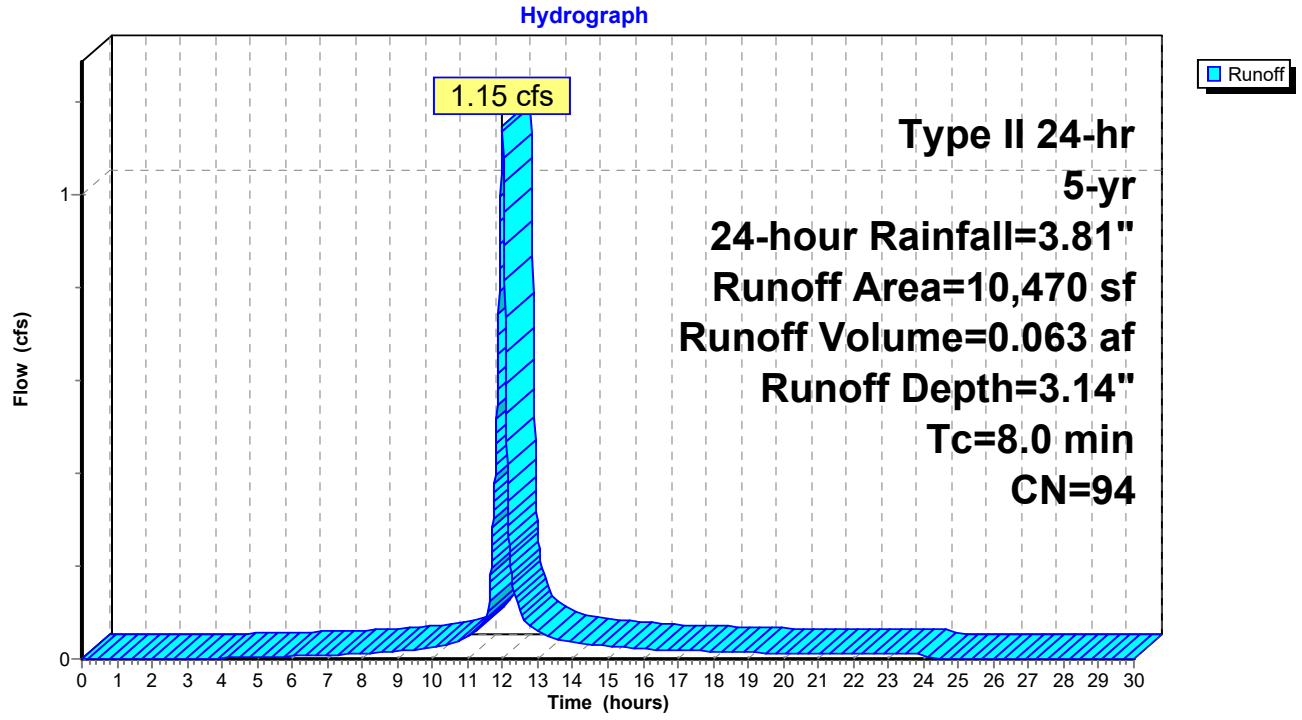
Runoff = 1.15 cfs @ 11.99 hrs, Volume= 0.063 af, Depth= 3.14"
Routed to Pond 11P : Existing Storm Sewer

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type II 24-hr 5-yr, 24-hour Rainfall=3.81"

Area (sf)	CN	Description
1,607	74	Pasture/grassland/range, Good, HSG C
8,863	98	Paved parking, HSG C
10,470	94	Weighted Average
1,607		15.35% Pervious Area
8,863		84.65% Impervious Area

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

Subcatchment 7S: Uncaptured W PL



Summary for Subcatchment 8NS: East Stalls and Drive

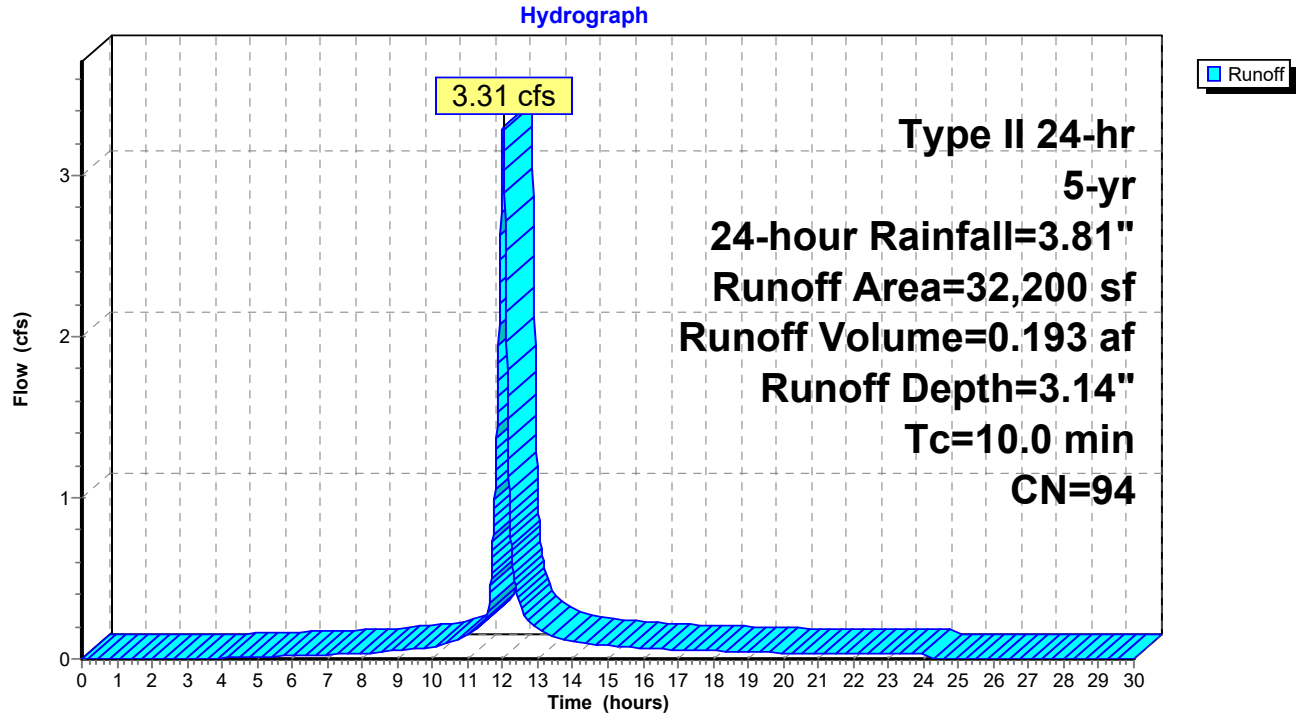
Runoff = 3.31 cfs @ 12.01 hrs, Volume= 0.193 af, Depth= 3.14"
Routed to Pond 10P : NE Curb Cut

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type II 24-hr 5-yr, 24-hour Rainfall=3.81"

Area (sf)	CN	Description
6,000	74	>75% Grass cover, Good, HSG C
26,200	98	Paved parking, HSG C
32,200	94	Weighted Average
6,000		18.63% Pervious Area
26,200		81.37% Impervious Area

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

Subcatchment 8NS: East Stalls and Drive



Summary for Subcatchment 9NS: Greenspace E of Drive

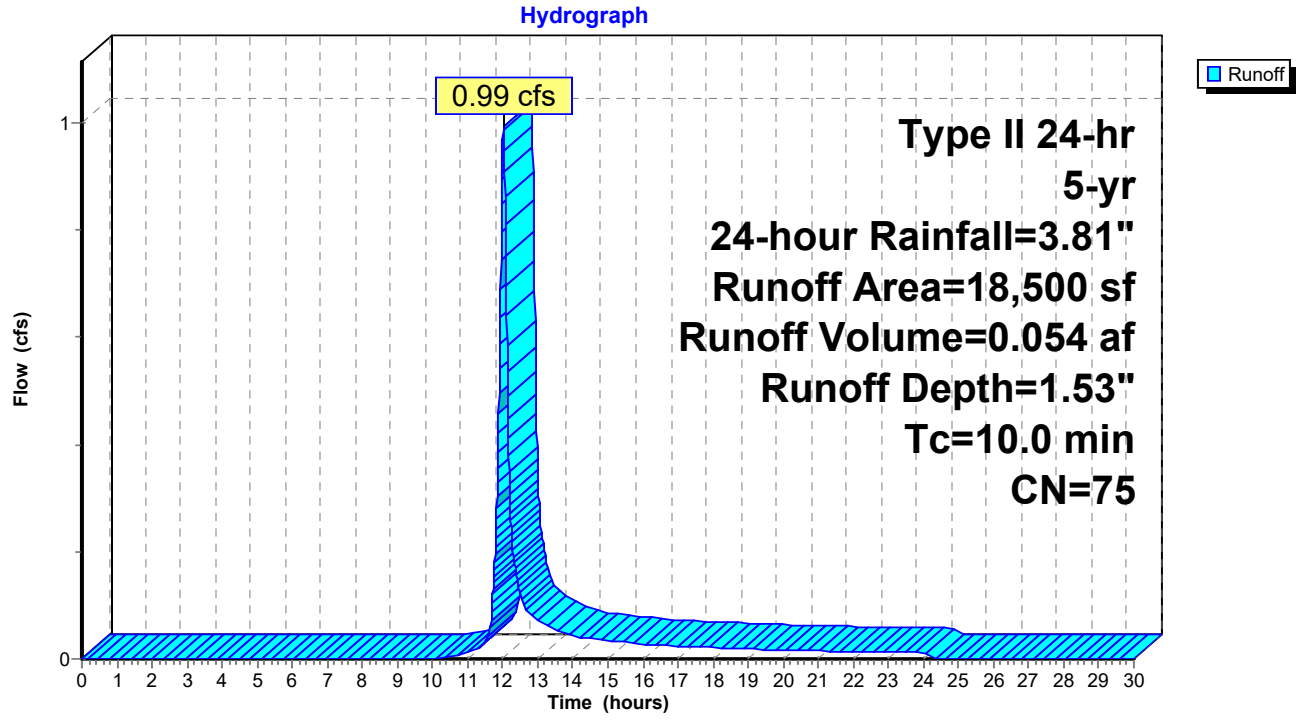
Runoff = 0.99 cfs @ 12.02 hrs, Volume= 0.054 af, Depth= 1.53"
Routed to Pond 39P : East Berm Basin

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type II 24-hr 5-yr, 24-hour Rainfall=3.81"

Area (sf)	CN	Description
17,400	74	>75% Grass cover, Good, HSG C
1,100	98	Paved parking, HSG C
18,500	75	Weighted Average
17,400		94.05% Pervious Area
1,100		5.95% Impervious Area

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

Subcatchment 9NS: Greenspace E of Drive



Summary for Subcatchment 10NS: East Addn and Bldg

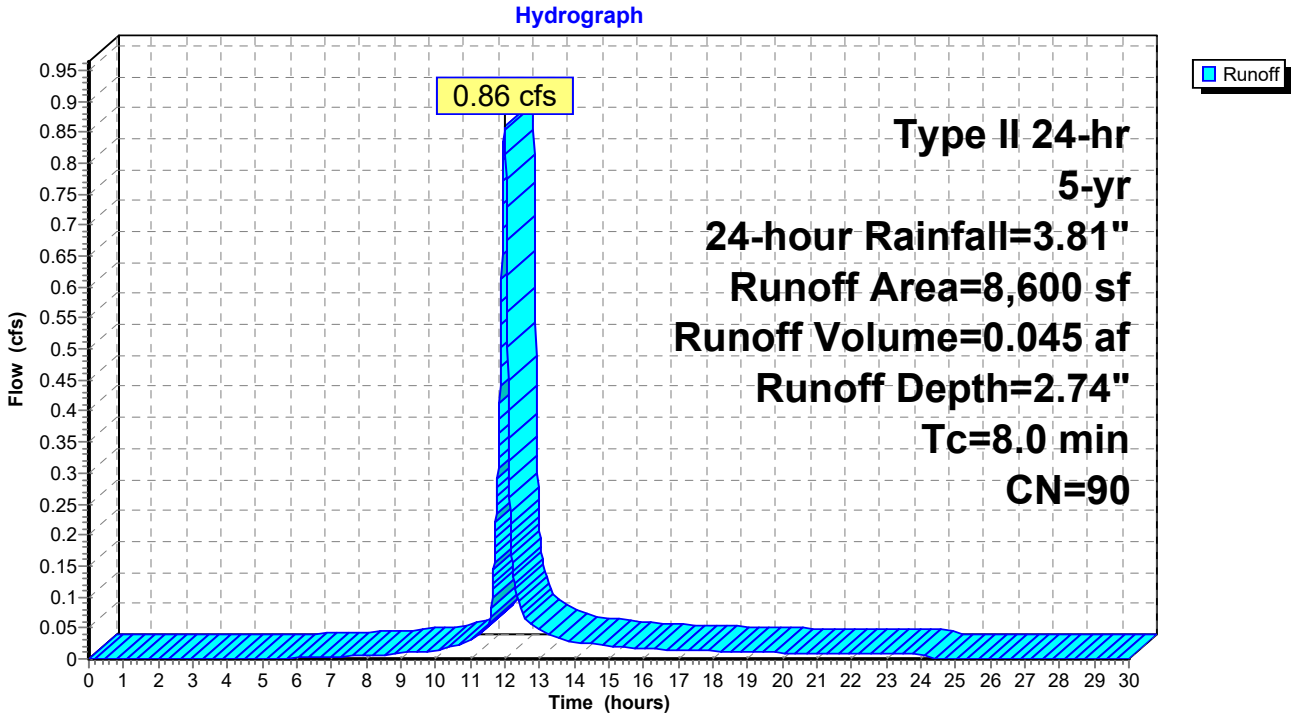
Runoff = 0.86 cfs @ 11.99 hrs, Volume= 0.045 af, Depth= 2.74"
Routed to Pond 11P : Existing Storm Sewer

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type II 24-hr 5-yr, 24-hour Rainfall=3.81"

Area (sf)	CN	Description
2,700	74	>75% Grass cover, Good, HSG C
5,900	98	Paved parking, HSG C
8,600	90	Weighted Average
2,700		31.40% Pervious Area
5,900		68.60% Impervious Area

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

Subcatchment 10NS: East Addn and Bldg



Summary for Subcatchment 11NS: Concession Area

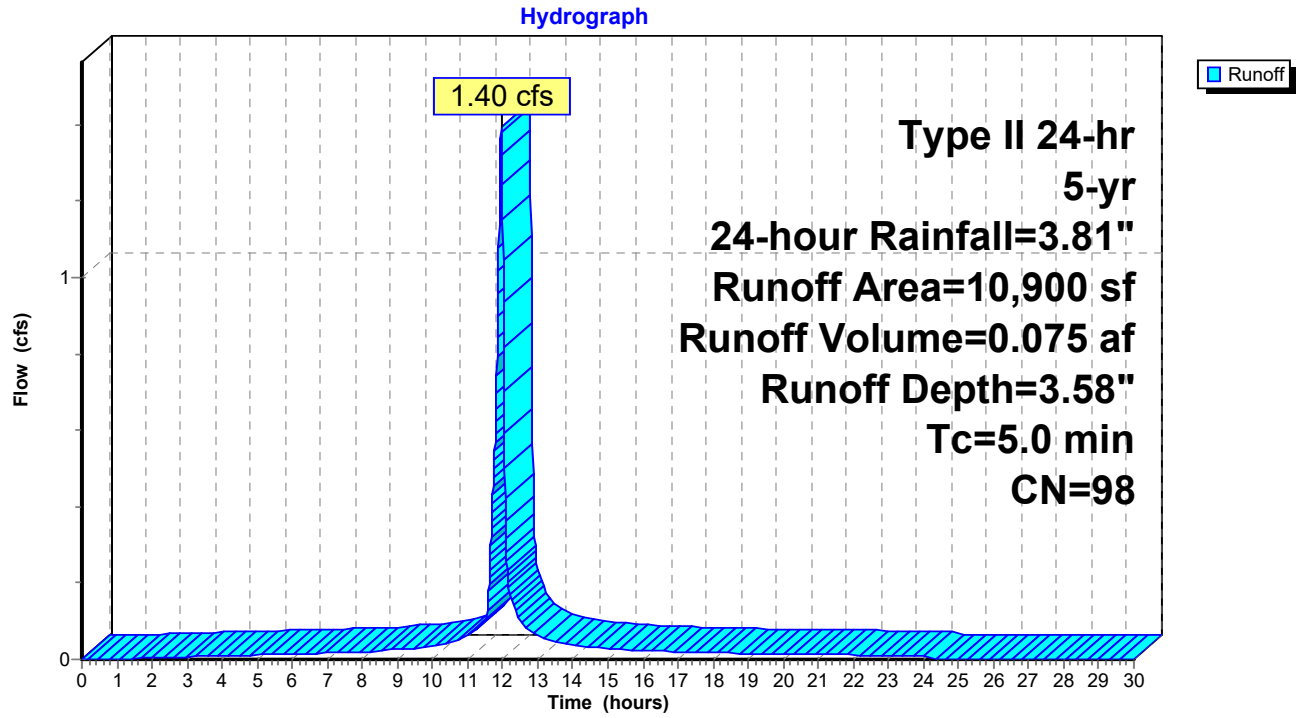
Runoff = 1.40 cfs @ 11.96 hrs, Volume= 0.075 af, Depth= 3.58"
Routed to Pond 24P : CB 06

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type II 24-hr 5-yr, 24-hour Rainfall=3.81"

Area (sf)	CN	Description
0	74	Pasture/grassland/range, Good, HSG C
10,900	98	Paved parking, HSG C
10,900	98	Weighted Average
10,900		100.00% Impervious Area

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

Subcatchment 11NS: Concession Area

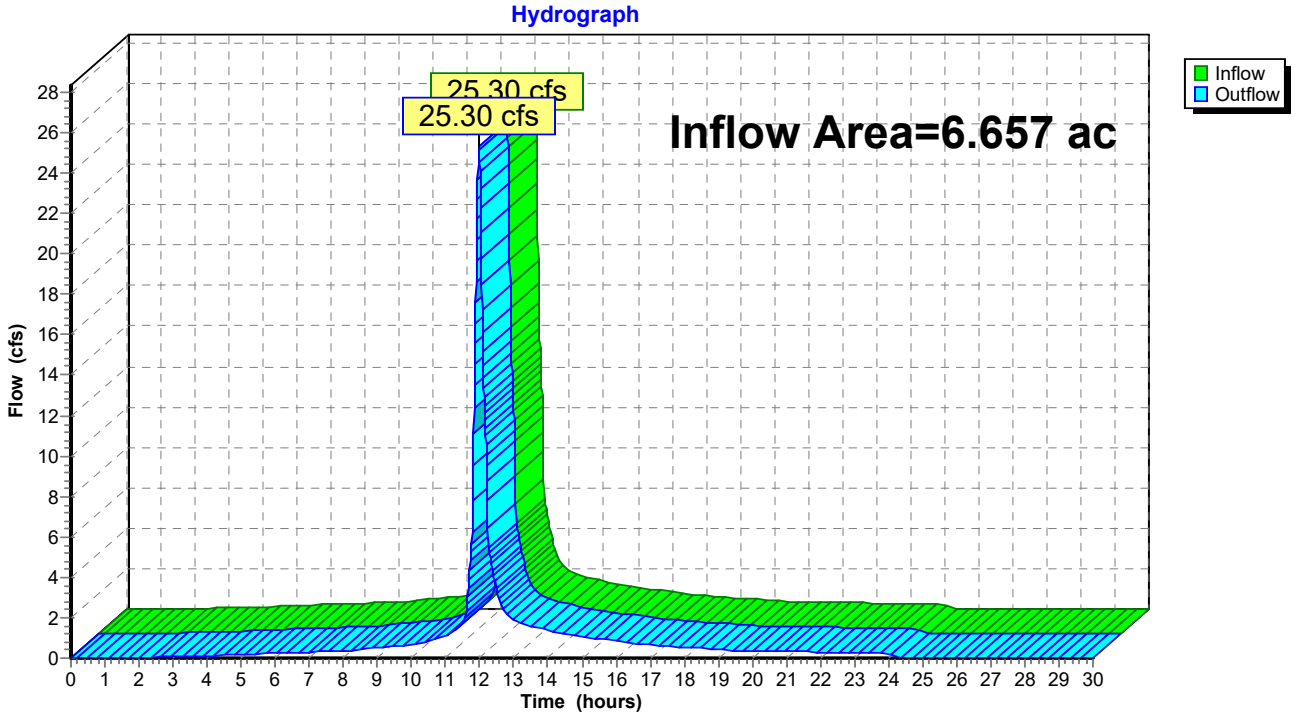


Summary for Reach 5R: Proposed N Runoff

Inflow Area = 6.657 ac, 85.55% Impervious, Inflow Depth = 3.22" for 5-yr, 24-hour event
Inflow = 25.30 cfs @ 11.97 hrs, Volume= 1.786 af
Outflow = 25.30 cfs @ 11.97 hrs, Volume= 1.786 af, Atten= 0%, Lag= 0.0 min
Routed to Reach 6R : Proposed Runoff (Combined)

Routing by Dyn-Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs / 3

Reach 5R: Proposed N Runoff

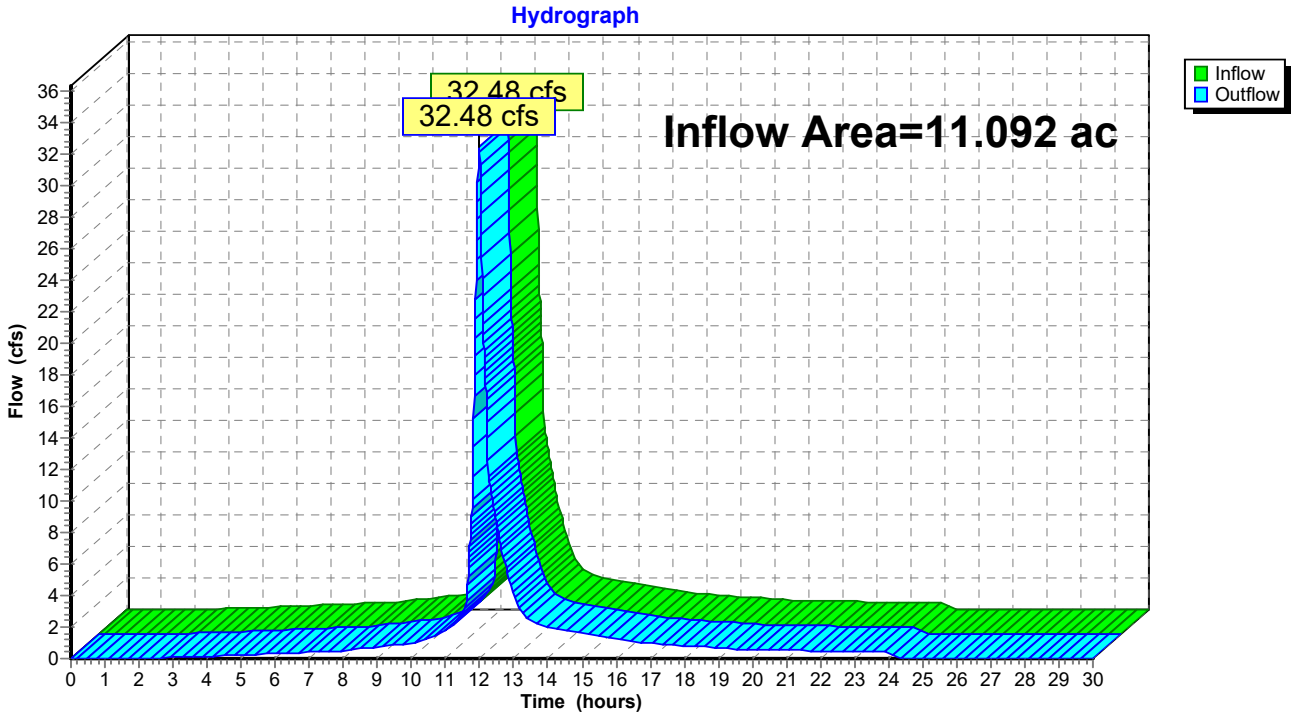


Summary for Reach 6R: Proposed Runoff (Combined)

Inflow Area = 11.092 ac, 77.28% Impervious, Inflow Depth = 3.03" for 5-yr, 24-hour event
Inflow = 32.48 cfs @ 11.98 hrs, Volume= 2.800 af
Outflow = 32.48 cfs @ 11.98 hrs, Volume= 2.800 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs / 3

Reach 6R: Proposed Runoff (Combined)

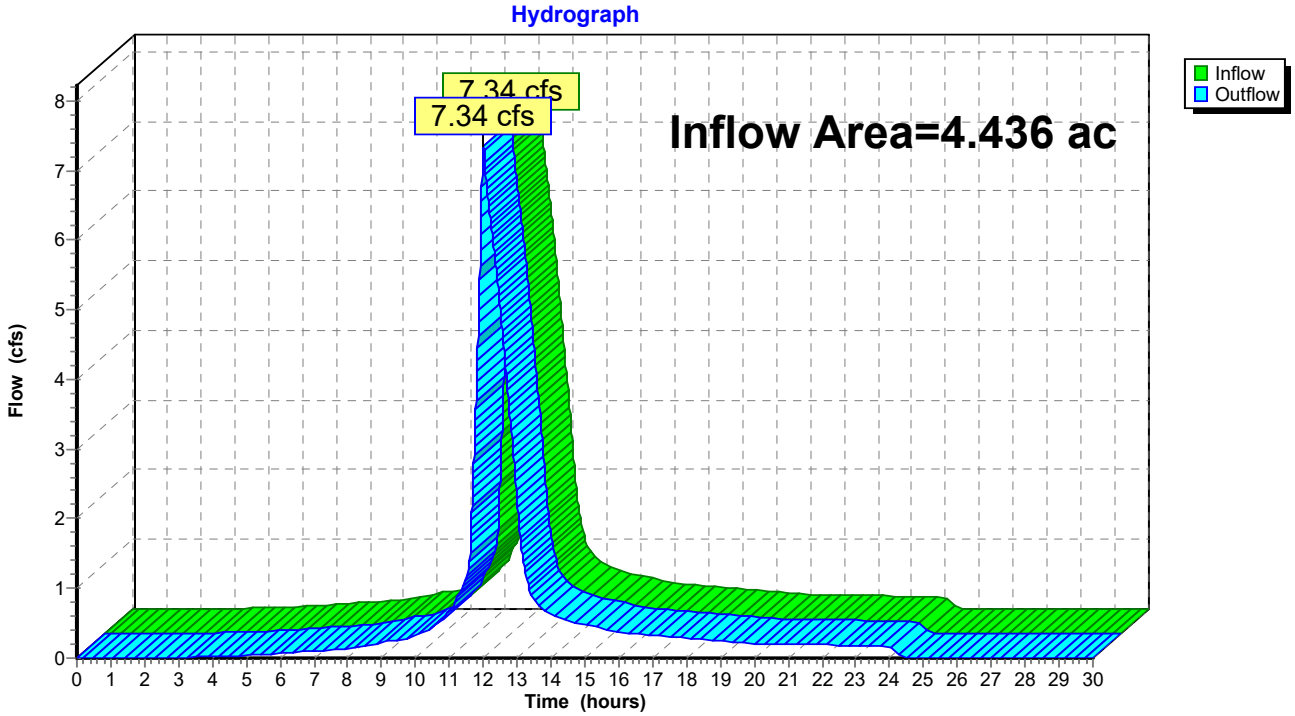


Summary for Reach 8R: Proposed E PL Runoff

Inflow Area = 4.436 ac, 64.86% Impervious, Inflow Depth = 2.74" for 5-yr, 24-hour event
Inflow = 7.34 cfs @ 12.01 hrs, Volume= 1.014 af
Outflow = 7.34 cfs @ 12.01 hrs, Volume= 1.014 af, Atten= 0%, Lag= 0.0 min
Routed to Reach 6R : Proposed Runoff (Combined)

Routing by Dyn-Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs / 3

Reach 8R: Proposed E PL Runoff



Summary for Pond 1P: UG 1 - 8' CMP

Inflow Area = 1.075 ac, 90.18% Impervious, Inflow Depth = 3.29" for 5-yr, 24-hour event
Inflow = 5.77 cfs @ 11.96 hrs, Volume= 0.295 af
Outflow = 1.71 cfs @ 12.08 hrs, Volume= 0.295 af, Atten= 70%, Lag= 7.4 min
Primary = 1.71 cfs @ 12.08 hrs, Volume= 0.295 af
Routed to Pond 26P : MH 01

Routing by Dyn-Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 95.55' @ 12.07 hrs Surf.Area= 1,272 sf Storage= 3,453 cf

Plug-Flow detention time= 16.1 min calculated for 0.294 af (100% of inflow)
Center-of-Mass det. time= 16.1 min (781.9 - 765.8)

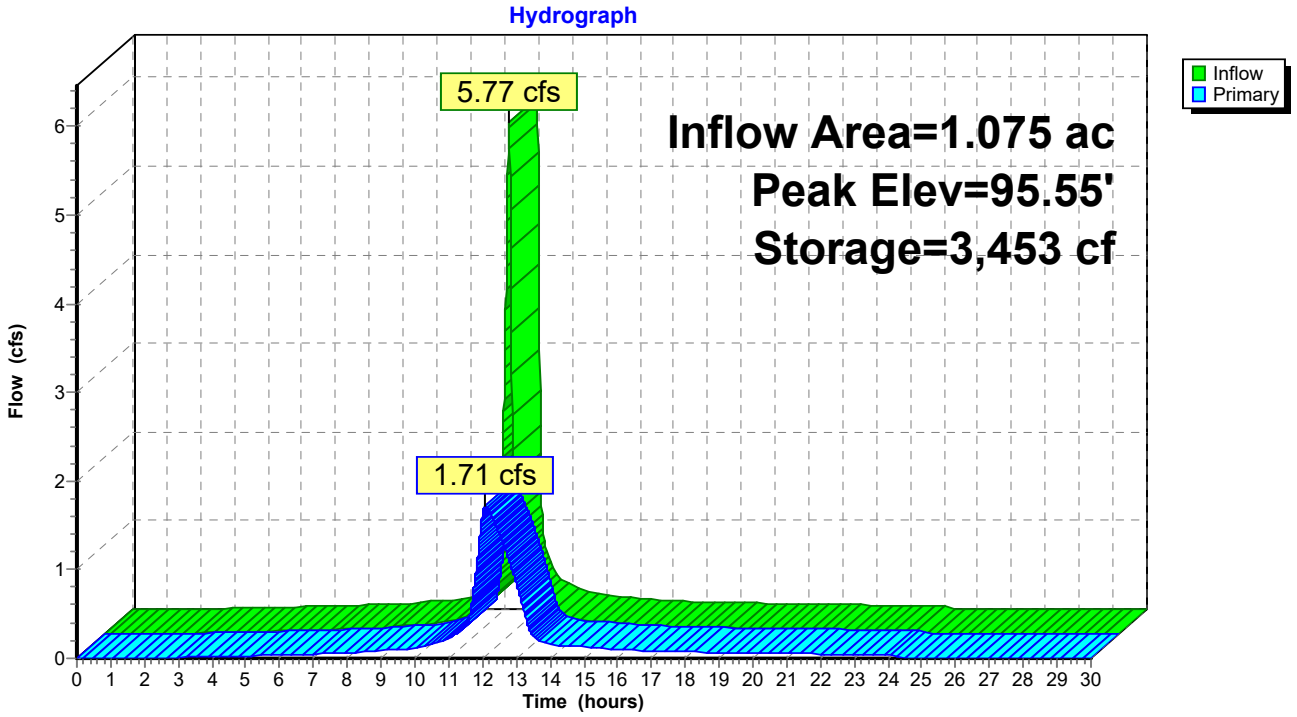
Volume	Invert	Avail.Storage	Storage Description
#1	92.00'	8,042 cf	**96.0" Round Pipe Storage** L= 160.0'
#2	100.00'	5,339 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)
		13,381 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
100.00	3	0	0
103.37	3	10	10
104.06	2,500	864	874
105.00	7,000	4,465	5,339

Device	Routing	Invert	Outlet Devices
#1	Primary	92.00'	**6.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=1.71 cfs @ 12.08 hrs HW=95.55' TW=92.26' (Dynamic Tailwater)
↑—**1=Orifice/Grate** (Orifice Controls 1.71 cfs @ 8.73 fps)

Pond 1P: UG 1 - 8' CMP



Summary for Pond 2P: UG 2 - 8' CMP

Inflow Area = 1.278 ac, 56.34% Impervious, Inflow Depth = 2.55" for 5-yr, 24-hour event
Inflow = 5.74 cfs @ 11.96 hrs, Volume= 0.271 af
Outflow = 1.91 cfs @ 12.07 hrs, Volume= 0.271 af, Atten= 67%, Lag= 6.5 min
Primary = 1.91 cfs @ 12.07 hrs, Volume= 0.271 af
Routed to Pond 21P : MH 02

Routing by Dyn-Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 96.24' @ 12.07 hrs Surf.Area= 1,257 sf Storage= 3,053 cf

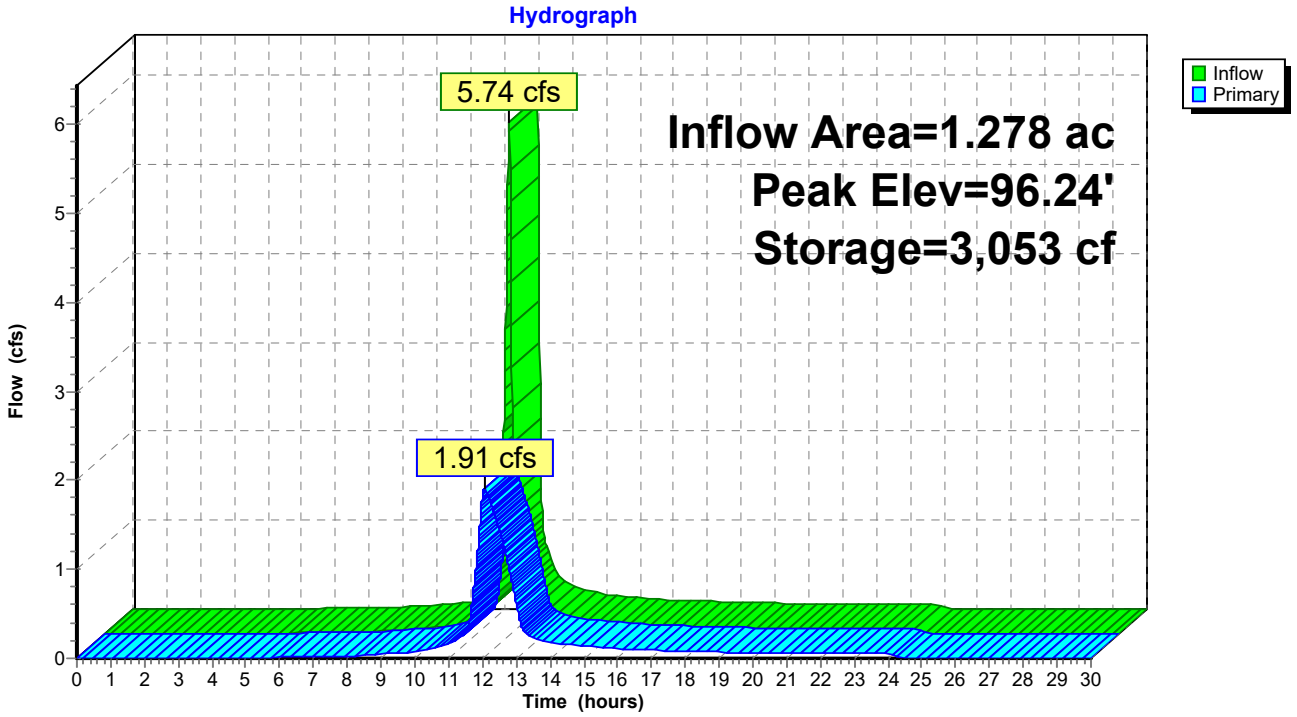
Plug-Flow detention time= 13.5 min calculated for 0.271 af (100% of inflow)
Center-of-Mass det. time= 13.5 min (813.8 - 800.2)

Volume	Invert	Avail.Storage	Storage Description
#1	93.00'	8,042 cf	**96.0" Round Pipe Storage** L= 160.0'

Device	Routing	Invert	Outlet Devices
#1	Primary	93.00'	**12.0" Round Culvert** L= 97.0' RCP, rounded edge headwall, Ke= 0.100 Inlet / Outlet Invert= 93.00' / 92.32' S= 0.0070 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf
#2	Device 1	93.00'	**6.5" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=1.91 cfs @ 12.07 hrs HW=96.24' TW=92.70' (Dynamic Tailwater)
↑**1=Culvert** (Passes 1.91 cfs of 5.29 cfs potential flow)
↑**2=Orifice/Grate** (Orifice Controls 1.91 cfs @ 8.29 fps)

Pond 2P: UG 2 - 8' CMP



Summary for Pond 3P: UG 3 - 10' CMP

Inflow Area = 1.661 ac, 69.12% Impervious, Inflow Depth = 2.84" for 5-yr, 24-hour event
Inflow = 8.21 cfs @ 11.96 hrs, Volume= 0.392 af
Outflow = 2.88 cfs @ 12.06 hrs, Volume= 0.392 af, Atten= 65%, Lag= 6.3 min
Primary = 2.88 cfs @ 12.06 hrs, Volume= 0.392 af
Routed to Pond 21P : MH 02

Routing by Dyn-Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 96.62' @ 12.06 hrs Surf.Area= 1,378 sf Storage= 4,279 cf

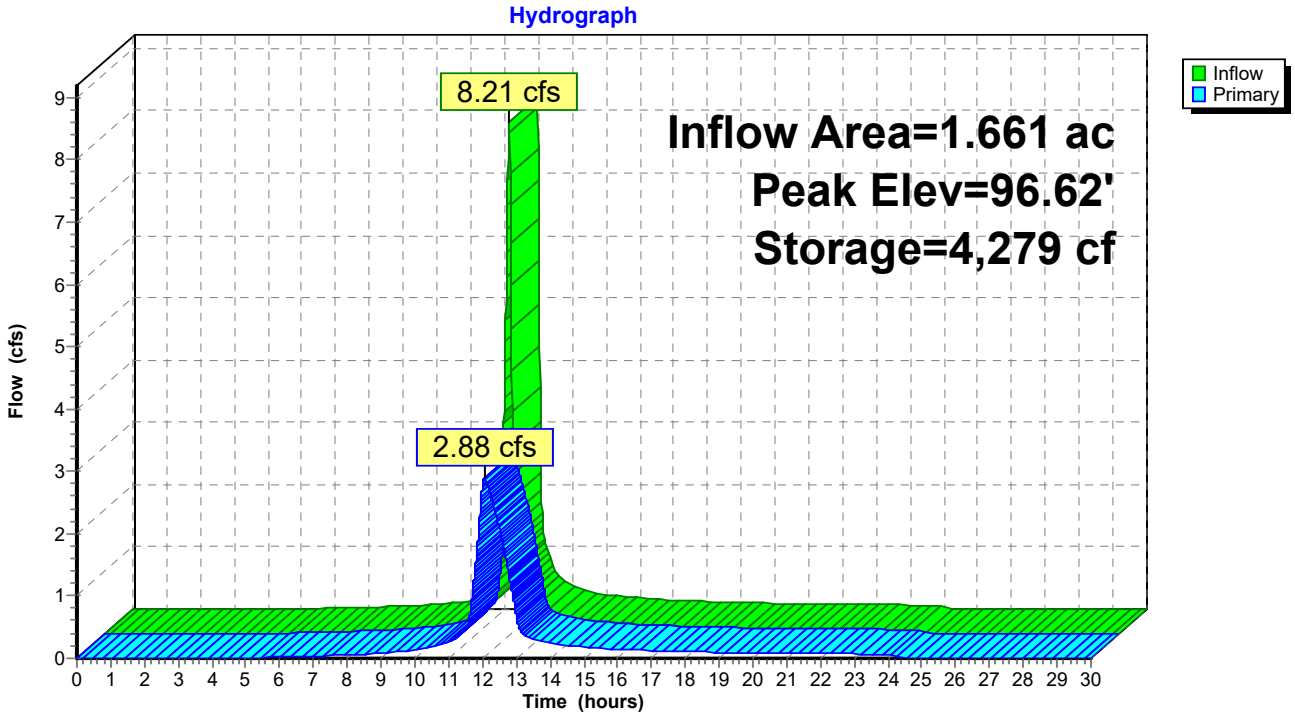
Plug-Flow detention time= 12.2 min calculated for 0.392 af (100% of inflow)
Center-of-Mass det. time= 12.2 min (804.3 - 792.0)

Volume	Invert	Avail.Storage	Storage Description
#1	92.50'	10,996 cf	**120.0" Round Pipe Storage** L= 140.0'

Device	Routing	Invert	Outlet Devices
#1	Primary	92.50'	**12.0" Round Culvert** L= 37.0' RCP, rounded edge headwall, Ke= 0.100 Inlet / Outlet Invert= 92.50' / 92.32' S= 0.0049 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf
#2	Device 1	92.50'	**7.5" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=2.88 cfs @ 12.06 hrs HW=96.62' TW=92.70' (Dynamic Tailwater)
↑**1=Culvert** (Passes 2.88 cfs of 7.62 cfs potential flow)
↑**2=Orifice/Grate** (Orifice Controls 2.88 cfs @ 9.40 fps)

Pond 3P: UG 3 - 10' CMP



Summary for Pond 4P: CB 04

Inflow Area = 0.422 ac, 9.37% Impervious, Inflow Depth = 1.59" for 5-yr, 24-hour event
Inflow = 1.25 cfs @ 11.96 hrs, Volume= 0.056 af
Outflow = 1.25 cfs @ 11.97 hrs, Volume= 0.056 af, Atten= 0%, Lag= 0.3 min
Primary = 1.25 cfs @ 11.97 hrs, Volume= 0.056 af
Routed to Pond 26P : MH 01

Routing by Dyn-Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 99.84' @ 11.97 hrs Surf.Area= 3 sf Storage= 12 cf

Plug-Flow detention time= 0.2 min calculated for 0.056 af (100% of inflow)
Center-of-Mass det. time= 0.1 min (841.8 - 841.6)

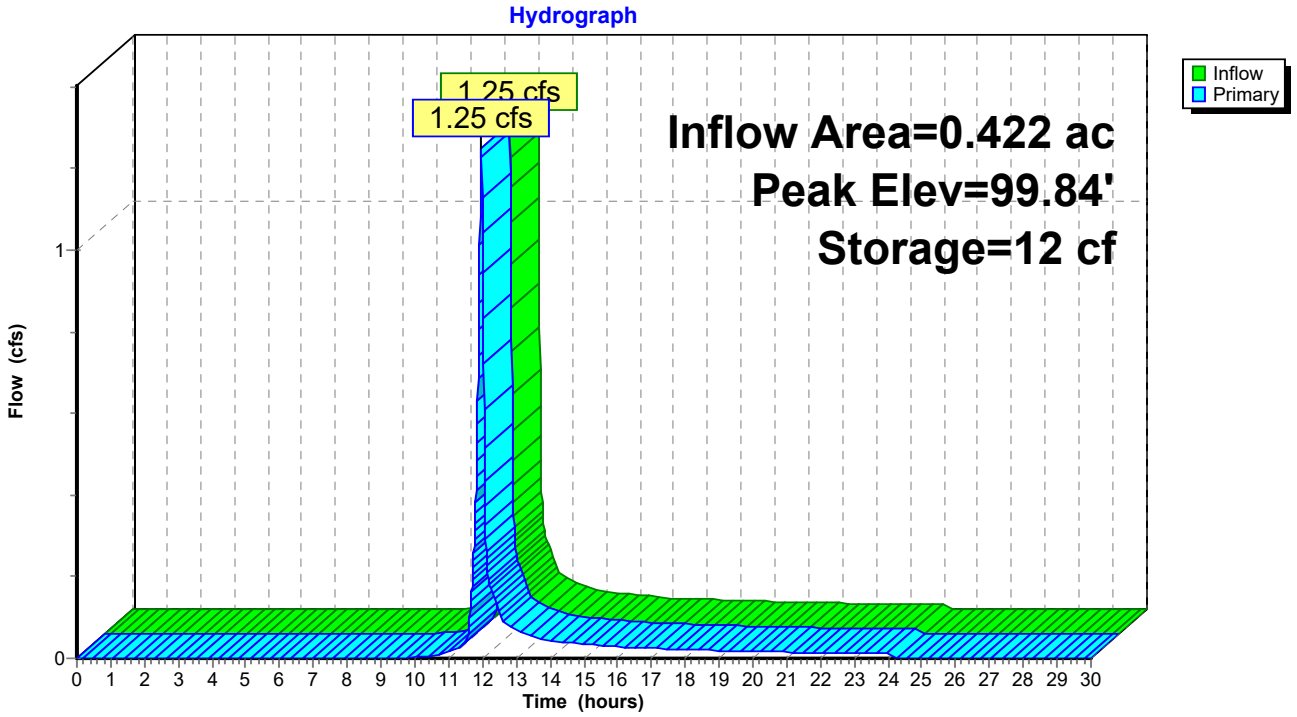
Volume	Invert	Avail.Storage	Storage Description
#1	96.00'	2,200 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
96.00	3	0	0
104.00	3	24	24
104.50	1,850	463	487
105.00	5,000	1,713	2,200

Device	Routing	Invert	Outlet Devices
#1	Primary	96.00'	**8.0" Round Culvert** L= 47.0' RCP, rounded edge headwall, Ke= 0.100 Inlet / Outlet Invert= 96.00' / 93.22' S= 0.0591 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.35 sf
#2	Device 1	96.00'	**5.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=1.25 cfs @ 11.97 hrs HW=99.83' TW=92.28' (Dynamic Tailwater)
↑**1=Culvert** (Passes 1.25 cfs of 3.58 cfs potential flow)
↑**2=Orifice/Grate** (Orifice Controls 1.25 cfs @ 9.17 fps)

Pond 4P: CB 04


Hydrograph
Inflow
Primary
1.25 cfs
1.25 cfs
Inflow Area=0.422 ac
Peak Elev=99.84'
Storage=12 cf
Flow (cfs)
0
1
0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30
Time (hours)

Summary for Pond 5P: Parking Lot CMP

Inflow Area = 3.398 ac, 93.04% Impervious, Inflow Depth = 3.38" for 5-yr, 24-hour event
Inflow = 15.41 cfs @ 11.96 hrs, Volume= 0.957 af
Outflow = 15.29 cfs @ 11.97 hrs, Volume= 0.957 af, Atten= 1%, Lag= 0.5 min
Primary = 15.29 cfs @ 11.97 hrs, Volume= 0.957 af
Routed to Reach 5R : Proposed N Runoff

Routing by Dyn-Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 89.90' @ 11.97 hrs Surf.Area= 815 sf Storage= 4,394 cf

Plug-Flow detention time= 21.2 min calculated for 0.957 af (100% of inflow)
Center-of-Mass det. time= 21.3 min (794.2 - 773.0)

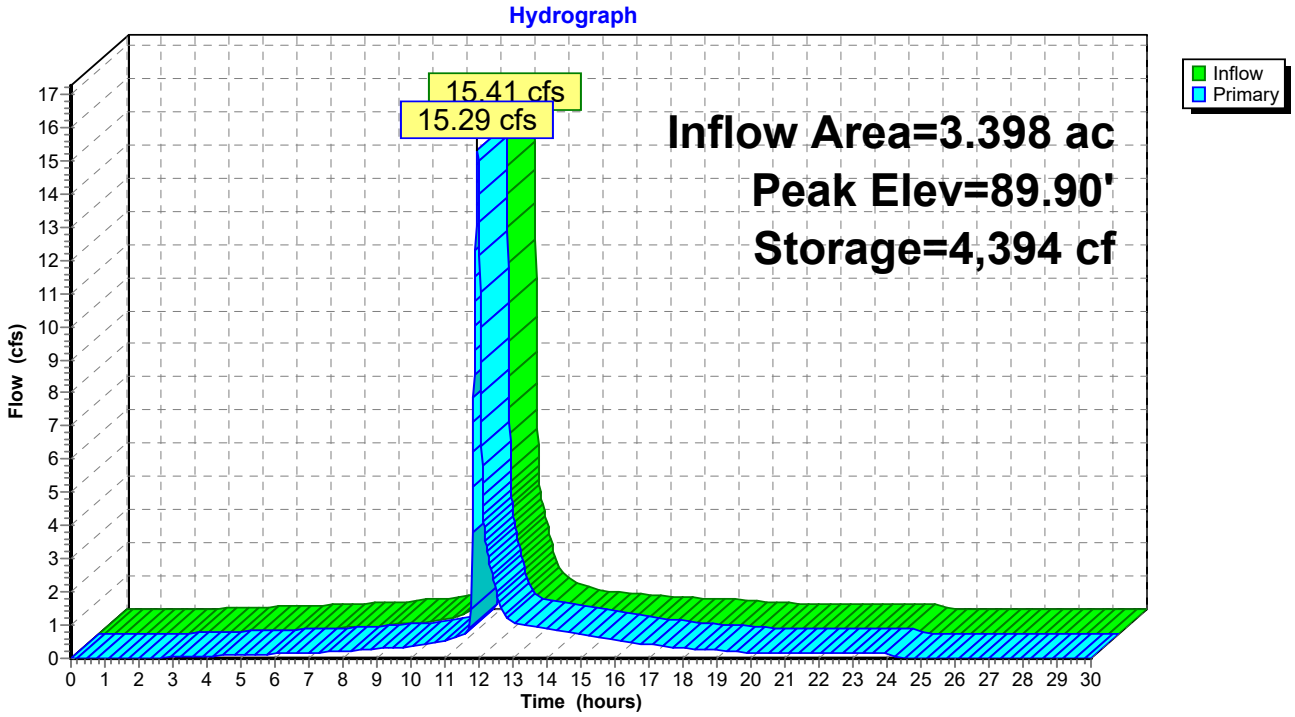
Volume	Invert	Avail.Storage	Storage Description
#1	85.00'	4,948 cf	**72.0" Round Pipe Storage** L= 175.0'
#2	85.00'	1,772 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)
#3	85.00'	53 cf	**18.0" Round Pipe Storage** L= 30.0' S= 0.0500 '/'
		6,773 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
85.00	3	0	0
92.00	3	21	21
92.50	1,000	251	272
93.00	5,000	1,500	1,772

Device	Routing	Invert	Outlet Devices
#1	Primary	85.00'	**24.0" Round Culvert** L= 92.0' RCP, rounded edge headwall, Ke= 0.100 Inlet / Outlet Invert= 85.00' / 84.00' S= 0.0109 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 3.14 sf
#2	Device 1	85.00'	**4.5" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#3	Device 1	89.00'	**5.0' long x 0.5' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32

Primary OutFlow Max=15.27 cfs @ 11.97 hrs HW=89.90' TW=0.00' (Dynamic Tailwater)
↑**1=Culvert** (Passes 15.27 cfs of 33.22 cfs potential flow)
↑**2=Orifice/Grate** (Orifice Controls 1.15 cfs @ 10.45 fps)
3=Broad-Crested Rectangular Weir (Weir Controls 14.12 cfs @ 3.14 fps)

Pond 5P: Parking Lot CMP



Summary for Pond 7P: STRM MH 01

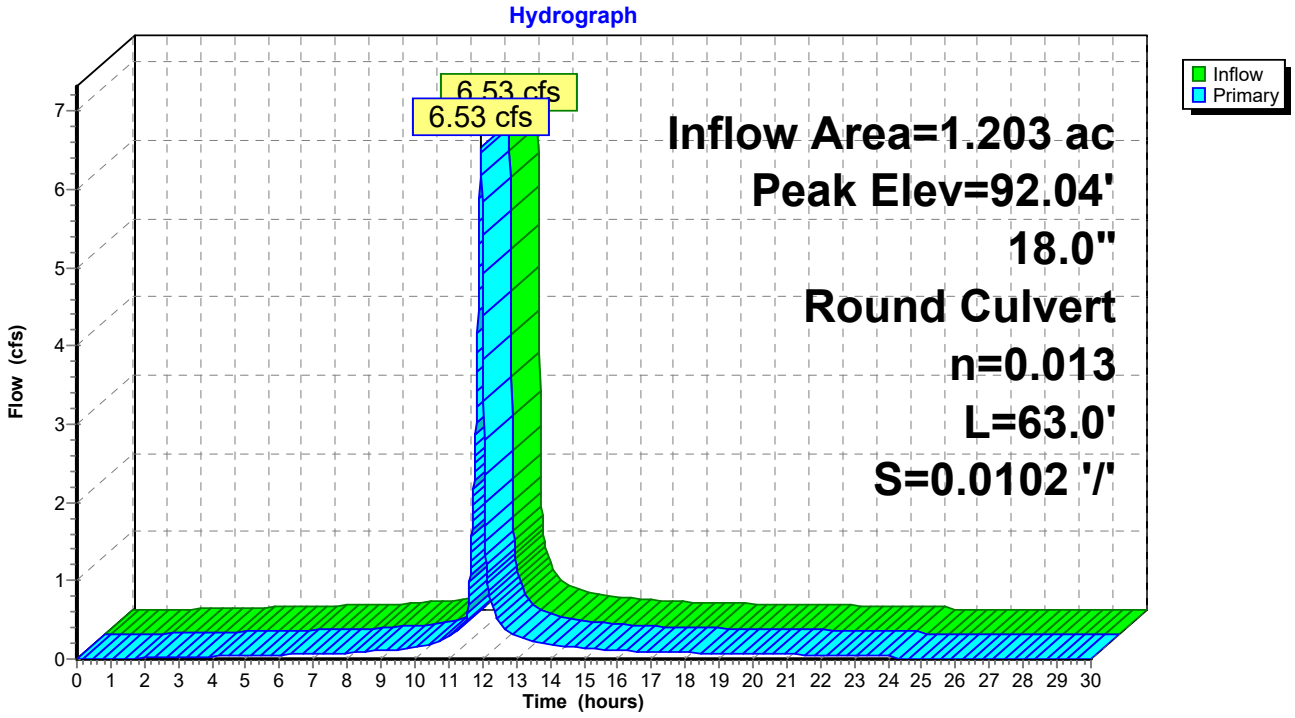
Inflow Area = 1.203 ac, 93.70% Impervious, Inflow Depth = 3.40" for 5-yr, 24-hour event
Inflow = 6.53 cfs @ 11.96 hrs, Volume= 0.341 af
Outflow = 6.53 cfs @ 11.96 hrs, Volume= 0.341 af, Atten= 0%, Lag= 0.0 min
Primary = 6.53 cfs @ 11.96 hrs, Volume= 0.341 af
Routed to Pond 39P : East Berm Basin

Routing by Dyn-Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 92.04' @ 11.96 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	90.76'	**18.0" Round Culvert** L= 63.0' RCP, rounded edge headwall, Ke= 0.100 Inlet / Outlet Invert= 90.76' / 90.12' S= 0.0102 '/' Cc= 0.900 n= 0.013 Concrete pipe, bends & connections, Flow Area= 1.77 sf

Primary OutFlow Max=6.52 cfs @ 11.96 hrs HW=92.04' TW=90.81' (Dynamic Tailwater)
1=Culvert (Barrel Controls 6.52 cfs @ 5.47 fps)

Pond 7P: STRM MH 01



Summary for Pond 8P: N Curb Cut

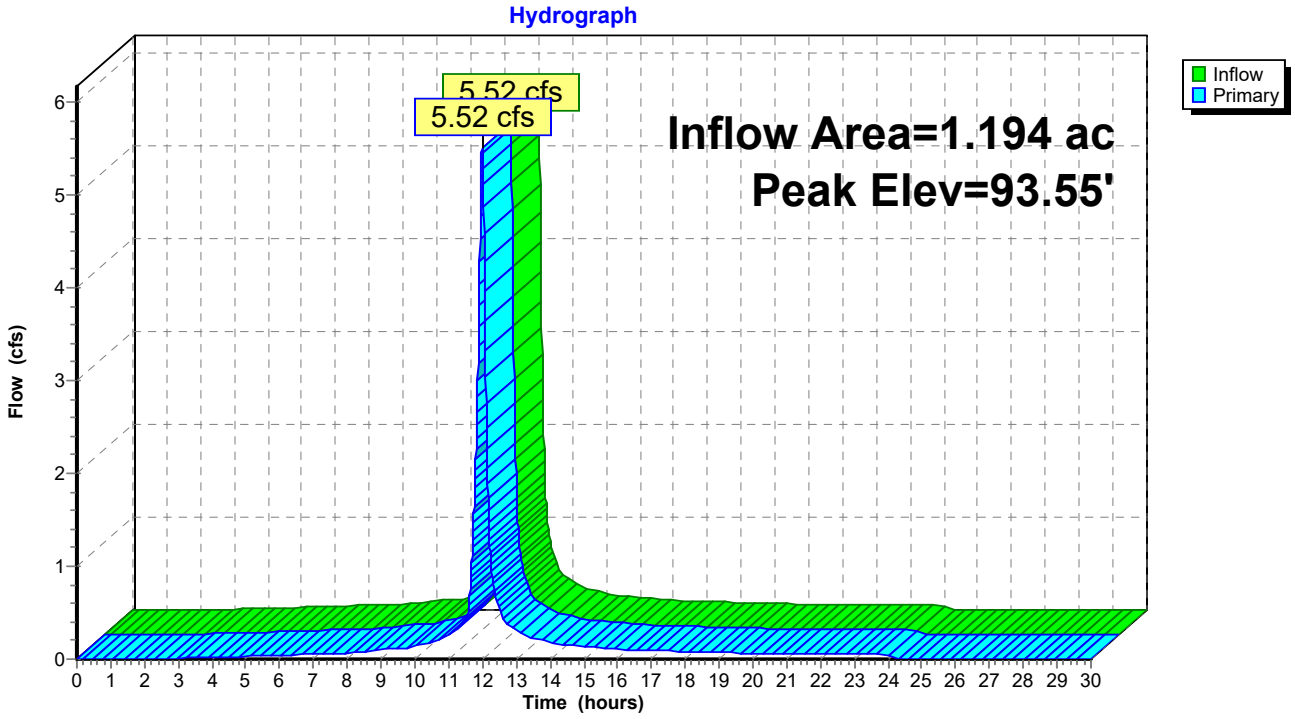
Inflow Area = 1.194 ac, 87.31% Impervious, Inflow Depth = 3.27" for 5-yr, 24-hour event
Inflow = 5.52 cfs @ 11.99 hrs, Volume= 0.326 af
Outflow = 5.52 cfs @ 11.99 hrs, Volume= 0.326 af, Atten= 0%, Lag= 0.0 min
Primary = 5.52 cfs @ 11.99 hrs, Volume= 0.326 af
Routed to Pond 39P : East Berm Basin

Routing by Dyn-Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 93.55' @ 11.99 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	92.78'	**21.0" W x 8.0" H Box Culvert** L= 6.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 92.78' / 92.72' S= 0.0100 '/' Cc= 0.900 n= 0.015 Concrete sewer w/manholes & inlets, Flow Area= 1.17 sf
#2	Primary	93.43'	**20.0' long Broad-Crested Rectangular Weir** Head (feet) 0.49 0.98 1.48 Coef. (English) 2.86 3.17 3.24

Primary OutFlow Max=5.51 cfs @ 11.99 hrs HW=93.55' TW=91.09' (Dynamic Tailwater)
1=Culvert (Barrel Controls 3.16 cfs @ 3.13 fps)
2=Broad-Crested Rectangular Weir (Weir Controls 2.35 cfs @ 0.99 fps)

Pond 8P: N Curb Cut



Summary for Pond 9P: 3NS CB 03

Inflow Area = 0.388 ac, 89.35% Impervious, Inflow Depth = 3.24" for 5-yr, 24-hour event
Inflow = 2.08 cfs @ 11.96 hrs, Volume= 0.105 af
Outflow = 2.08 cfs @ 11.96 hrs, Volume= 0.105 af, Atten= 0%, Lag= 0.0 min
Primary = 2.08 cfs @ 11.96 hrs, Volume= 0.105 af
Routed to Pond 36P : 3NS CB 02A
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Reach 5R : Proposed N Runoff

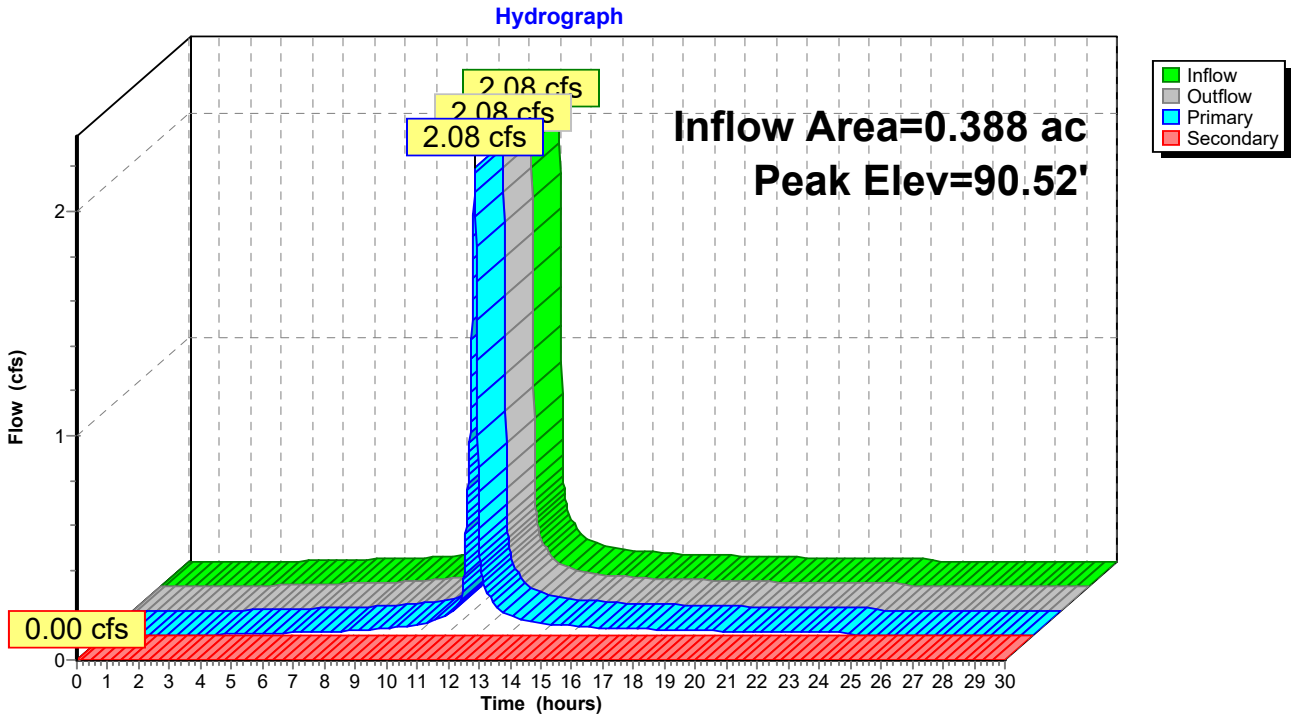
Routing by Dyn-Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 90.52' @ 11.96 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	88.75'	**15.0" Round Culvert** L= 92.0' RCP, rounded edge headwall, Ke= 0.100 Inlet / Outlet Invert= 88.75' / 88.50' S= 0.0027 '/' Cc= 0.900 n= 0.013 Concrete pipe, bends & connections, Flow Area= 1.23 sf
#2	Secondary	92.45'	**10.0' long x 30.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=2.08 cfs @ 11.96 hrs HW=90.51' TW=90.37' (Dynamic Tailwater)
└**1=Culvert** (Outlet Controls 2.08 cfs @ 1.69 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=88.75' TW=0.00' (Dynamic Tailwater)
└**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond 9P: 3NS CB 03



Summary for Pond 10P: NE Curb Cut

Inflow Area = 0.739 ac, 81.37% Impervious, Inflow Depth = 3.14" for 5-yr, 24-hour event
Inflow = 3.31 cfs @ 12.01 hrs, Volume= 0.193 af
Outflow = 3.31 cfs @ 12.01 hrs, Volume= 0.193 af, Atten= 0%, Lag= 0.0 min
Primary = 1.22 cfs @ 12.01 hrs, Volume= 0.148 af
Routed to Pond 13P : NE Curb Cut
Secondary = 2.09 cfs @ 12.01 hrs, Volume= 0.045 af
Routed to Pond 13P : NE Curb Cut

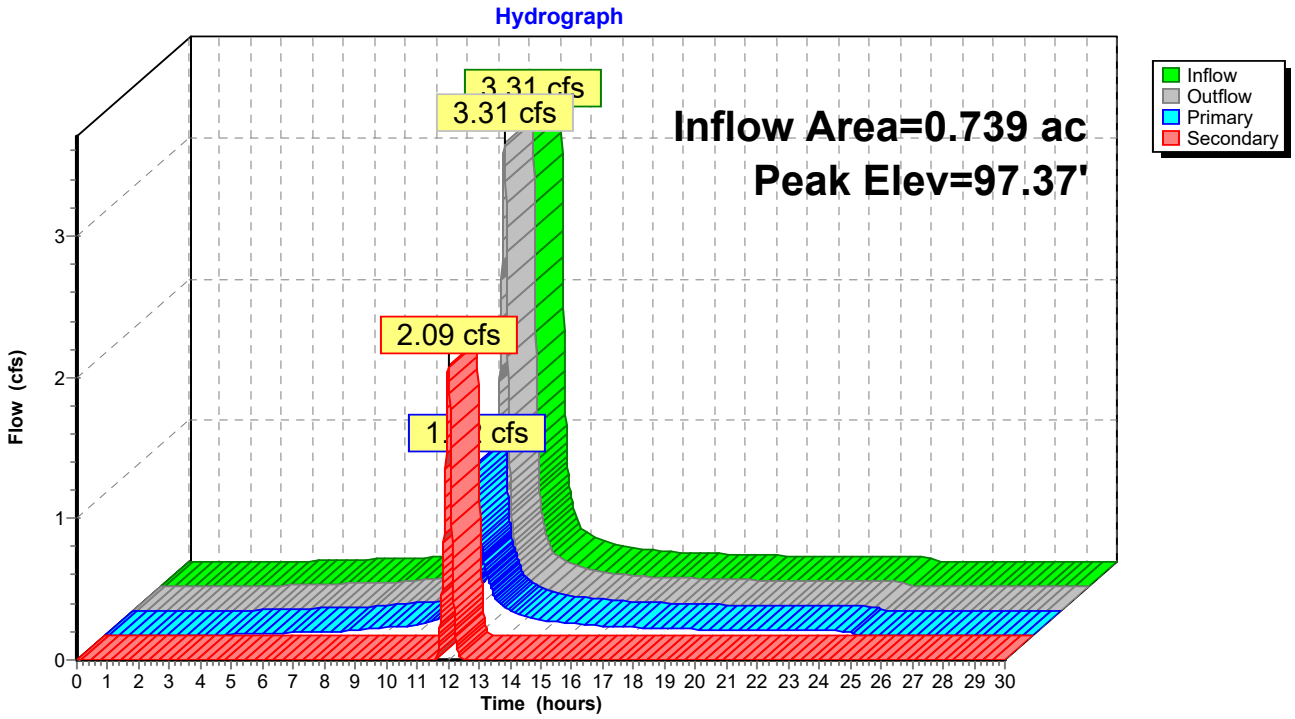
Routing by Dyn-Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 97.37' @ 12.01 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	97.01'	**21.0" W x 8.0" H Box Culvert** L= 6.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 97.01' / 96.91' S= 0.0167 '/' Cc= 0.900 n= 0.015 Concrete sewer w/manholes & inlets, Flow Area= 1.17 sf
#2	Secondary	97.18'	**10.0' long x 10.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Primary OutFlow Max=1.22 cfs @ 12.01 hrs HW=97.37' TW=94.25' (Dynamic Tailwater)
└**1=Culvert** (Inlet Controls 1.22 cfs @ 1.93 fps)

Secondary OutFlow Max=2.09 cfs @ 12.01 hrs HW=97.37' TW=94.25' (Dynamic Tailwater)
└**2=Broad-Crested Rectangular Weir** (Weir Controls 2.09 cfs @ 1.09 fps)

Pond 10P: NE Curb Cut



Summary for Pond 11P: Existing Storm Sewer

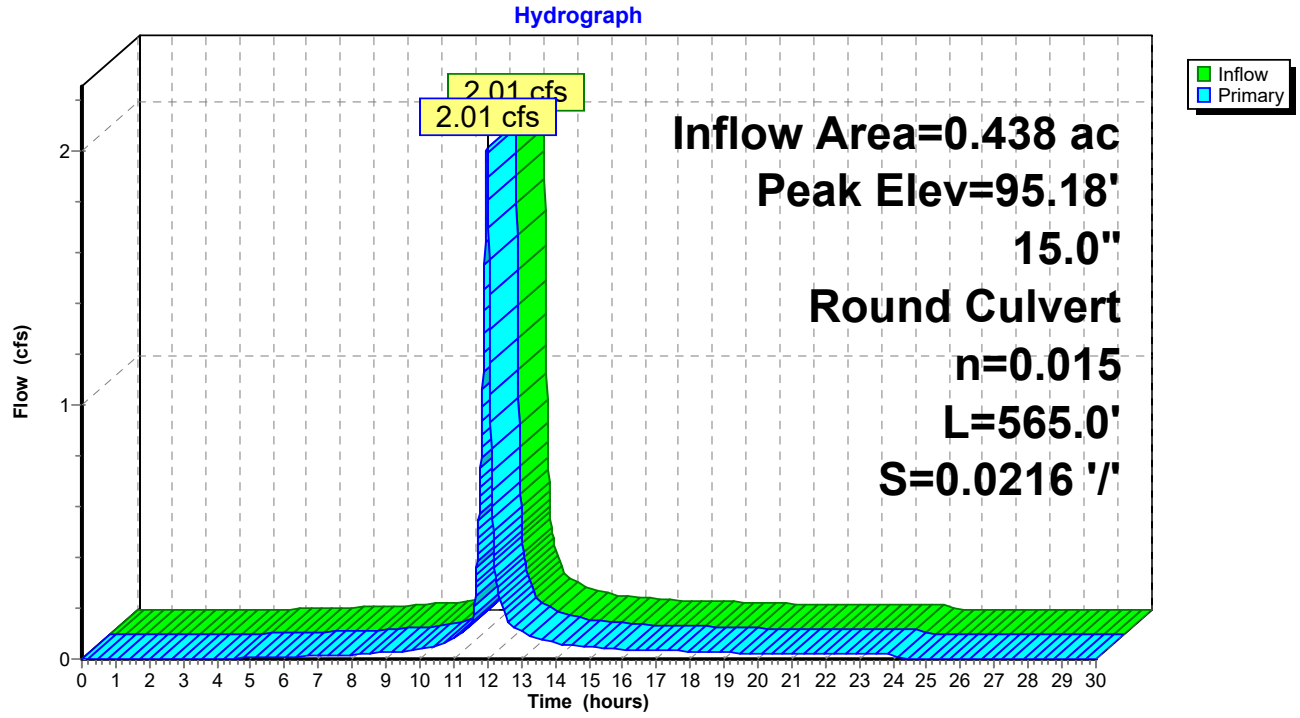
Inflow Area = 0.438 ac, 77.41% Impervious, Inflow Depth = 2.96" for 5-yr, 24-hour event
Inflow = 2.01 cfs @ 11.99 hrs, Volume= 0.108 af
Outflow = 2.01 cfs @ 11.99 hrs, Volume= 0.108 af, Atten= 0%, Lag= 0.0 min
Primary = 2.01 cfs @ 11.99 hrs, Volume= 0.108 af
Routed to Reach 5R : Proposed N Runoff

Routing by Dyn-Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 95.18' @ 11.99 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	94.48'	**15.0" Round Culvert** L= 565.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 94.48' / 82.28' S= 0.0216 '/' Cc= 0.900 n= 0.015 Concrete sewer w/manholes & inlets, Flow Area= 1.23 sf

Primary OutFlow Max=2.01 cfs @ 11.99 hrs HW=95.18' TW=0.00' (Dynamic Tailwater)
1=Culvert (Inlet Controls 2.01 cfs @ 2.85 fps)

Pond 11P: Existing Storm Sewer



Summary for Pond 13P: NE Curb Cut

Inflow Area = 1.056 ac, 85.65% Impervious, Inflow Depth = 3.24" for 5-yr, 24-hour event
Inflow = 4.87 cfs @ 12.00 hrs, Volume= 0.285 af
Outflow = 4.87 cfs @ 12.00 hrs, Volume= 0.285 af, Atten= 0%, Lag= 0.0 min
Primary = 1.72 cfs @ 12.00 hrs, Volume= 0.219 af
Routed to Pond 8P : N Curb Cut
Secondary = 3.15 cfs @ 12.00 hrs, Volume= 0.065 af
Routed to Pond 8P : N Curb Cut

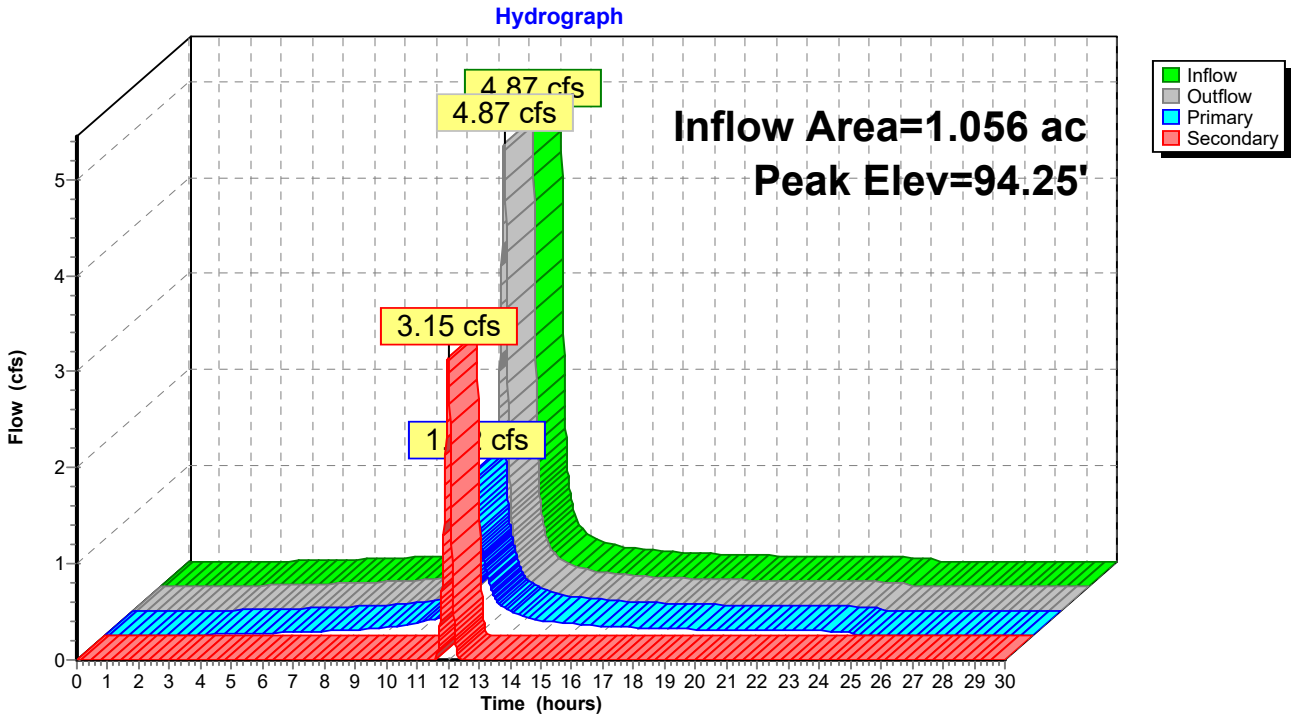
Routing by Dyn-Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 94.25' @ 12.00 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	93.76'	**21.0" W x 8.0" H Box Culvert** L= 6.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 93.76' / 93.69' S= 0.0117 '/' Cc= 0.900 n= 0.015 Concrete sewer w/manholes & inlets, Flow Area= 1.17 sf
#2	Secondary	94.00'	**10.0' long x 10.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Primary OutFlow Max=1.72 cfs @ 12.00 hrs HW=94.25' TW=93.55' (Dynamic Tailwater)
└**1=Culvert** (Barrel Controls 1.72 cfs @ 2.67 fps)

Secondary OutFlow Max=3.14 cfs @ 12.00 hrs HW=94.25' TW=93.55' (Dynamic Tailwater)
└**2=Broad-Crested Rectangular Weir** (Weir Controls 3.14 cfs @ 1.26 fps)

Pond 13P: NE Curb Cut



Summary for Pond 20P: CB 08

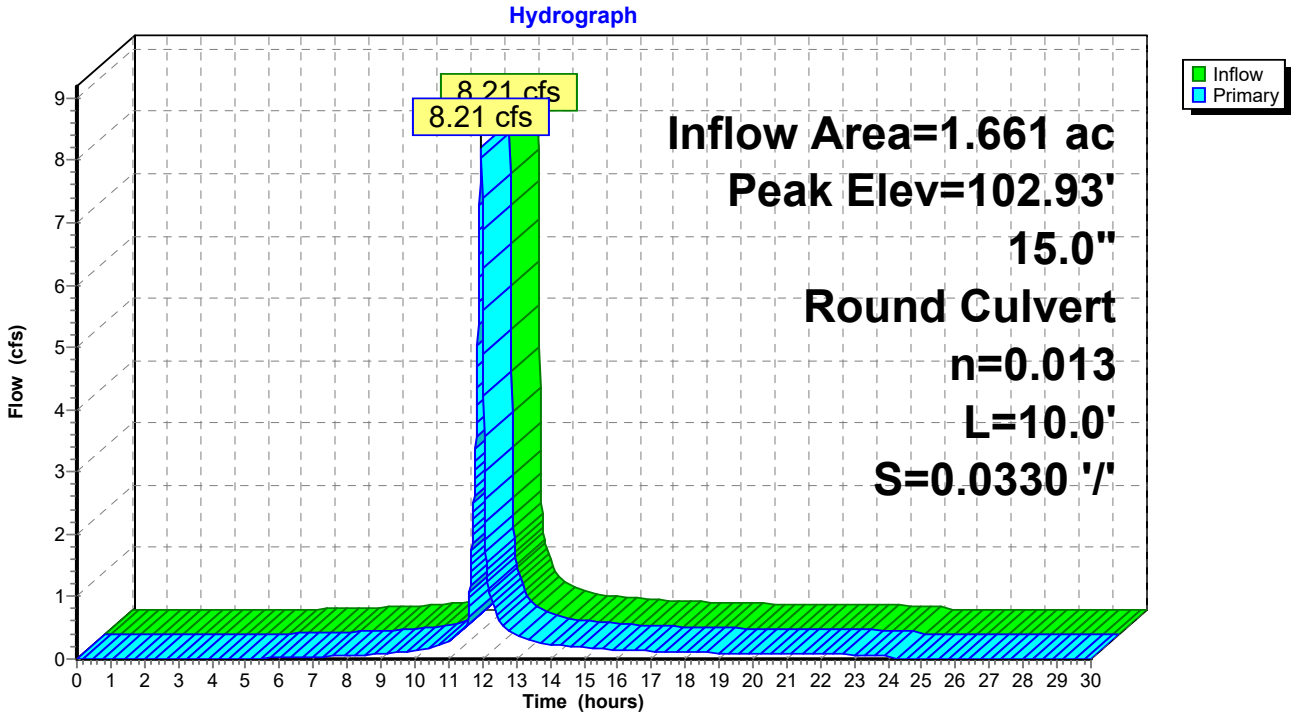
Inflow Area = 1.661 ac, 69.12% Impervious, Inflow Depth = 2.84" for 5-yr, 24-hour event
Inflow = 8.21 cfs @ 11.96 hrs, Volume= 0.392 af
Outflow = 8.21 cfs @ 11.96 hrs, Volume= 0.392 af, Atten= 0%, Lag= 0.0 min
Primary = 8.21 cfs @ 11.96 hrs, Volume= 0.392 af
Routed to Pond 3P : UG 3 - 10' CMP

Routing by Dyn-Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 102.93' @ 11.96 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	101.08'	**15.0" Round Culvert** L= 10.0' RCP, rounded edge headwall, Ke= 0.100 Inlet / Outlet Invert= 101.08' / 100.75' S= 0.0330 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=8.20 cfs @ 11.96 hrs HW=102.92' TW=95.72' (Dynamic Tailwater)
1=Culvert (Barrel Controls 8.20 cfs @ 6.68 fps)

Pond 20P: CB 08



Summary for Pond 21P: MH 02

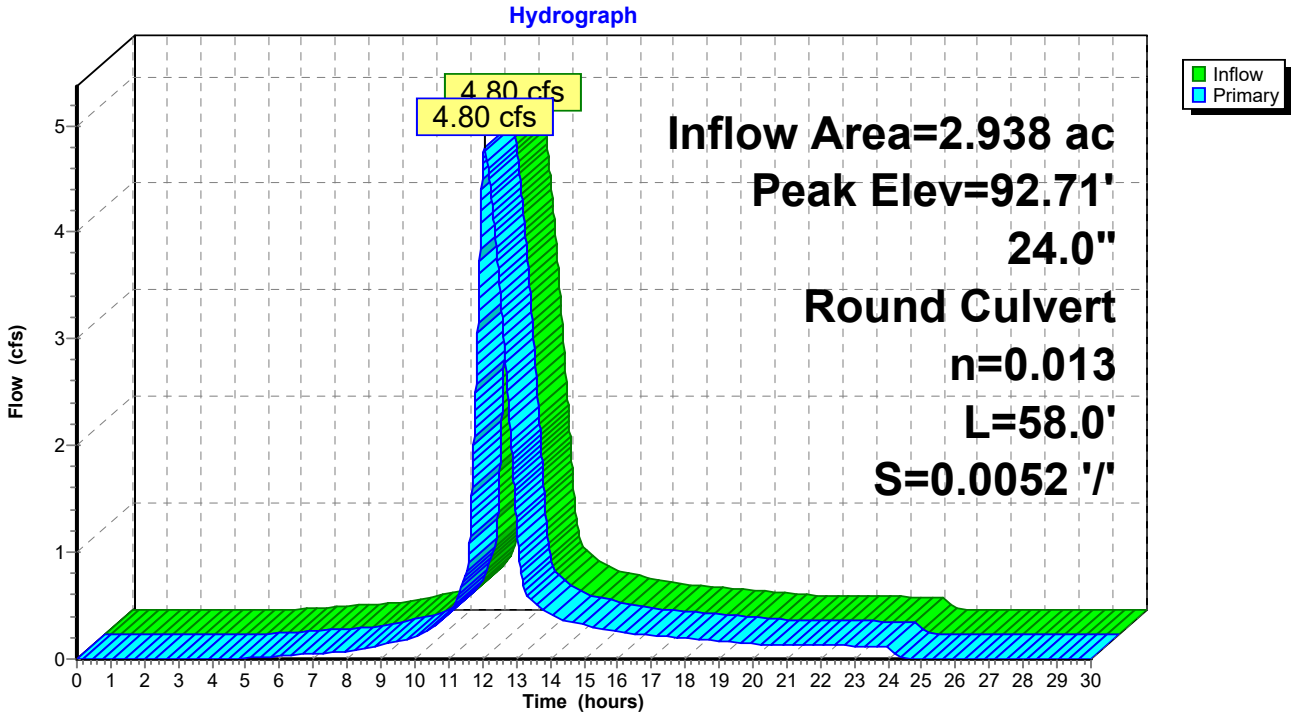
Inflow Area = 2.938 ac, 63.56% Impervious, Inflow Depth = 2.71" for 5-yr, 24-hour event
Inflow = 4.80 cfs @ 12.06 hrs, Volume= 0.664 af
Outflow = 4.80 cfs @ 12.06 hrs, Volume= 0.664 af, Atten= 0%, Lag= 0.0 min
Primary = 4.80 cfs @ 12.06 hrs, Volume= 0.664 af
Routed to Pond 26P : MH 01

Routing by Dyn-Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 92.71' @ 12.03 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	91.57'	**24.0" Round Culvert** L= 58.0' RCP, rounded edge headwall, Ke= 0.100 Inlet / Outlet Invert= 91.57' / 91.27' S= 0.0052 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 3.14 sf

Primary OutFlow Max=4.79 cfs @ 12.06 hrs HW=92.70' TW=92.27' (Dynamic Tailwater)
1=Culvert (Outlet Controls 4.79 cfs @ 3.78 fps)

Pond 21P: MH 02



Summary for Pond 22P: CB 09

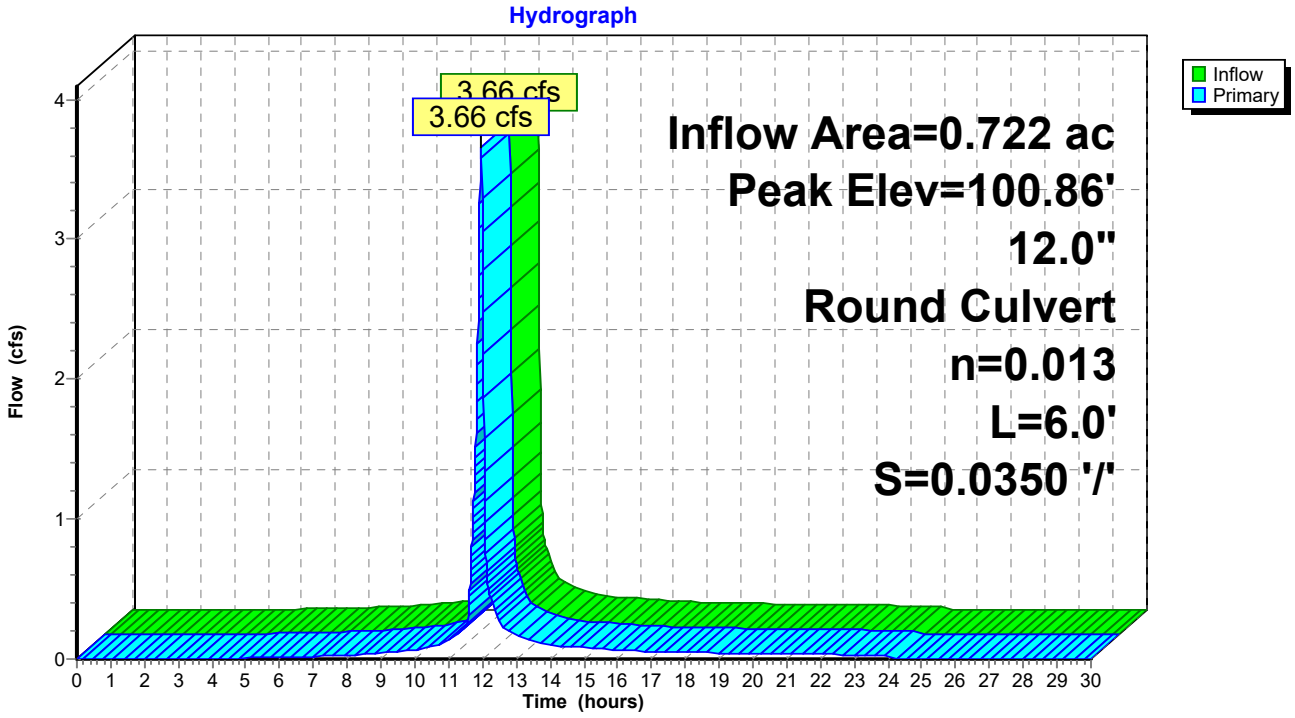
Inflow Area = 0.722 ac, 74.45% Impervious, Inflow Depth = 2.93" for 5-yr, 24-hour event
Inflow = 3.66 cfs @ 11.96 hrs, Volume= 0.177 af
Outflow = 3.66 cfs @ 11.96 hrs, Volume= 0.177 af, Atten= 0%, Lag= 0.0 min
Primary = 3.66 cfs @ 11.96 hrs, Volume= 0.177 af
Routed to Pond 2P : UG 2 - 8' CMP

Routing by Dyn-Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 100.86' @ 11.96 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	99.71'	**12.0" Round Culvert** L= 6.0' RCP, rounded edge headwall, Ke= 0.100 Inlet / Outlet Invert= 99.71' / 99.50' S= 0.0350 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=3.65 cfs @ 11.96 hrs HW=100.86' TW=95.50' (Dynamic Tailwater)
1=Culvert (Barrel Controls 3.65 cfs @ 5.07 fps)

Pond 22P: CB 09



Summary for Pond 23P: CB 10

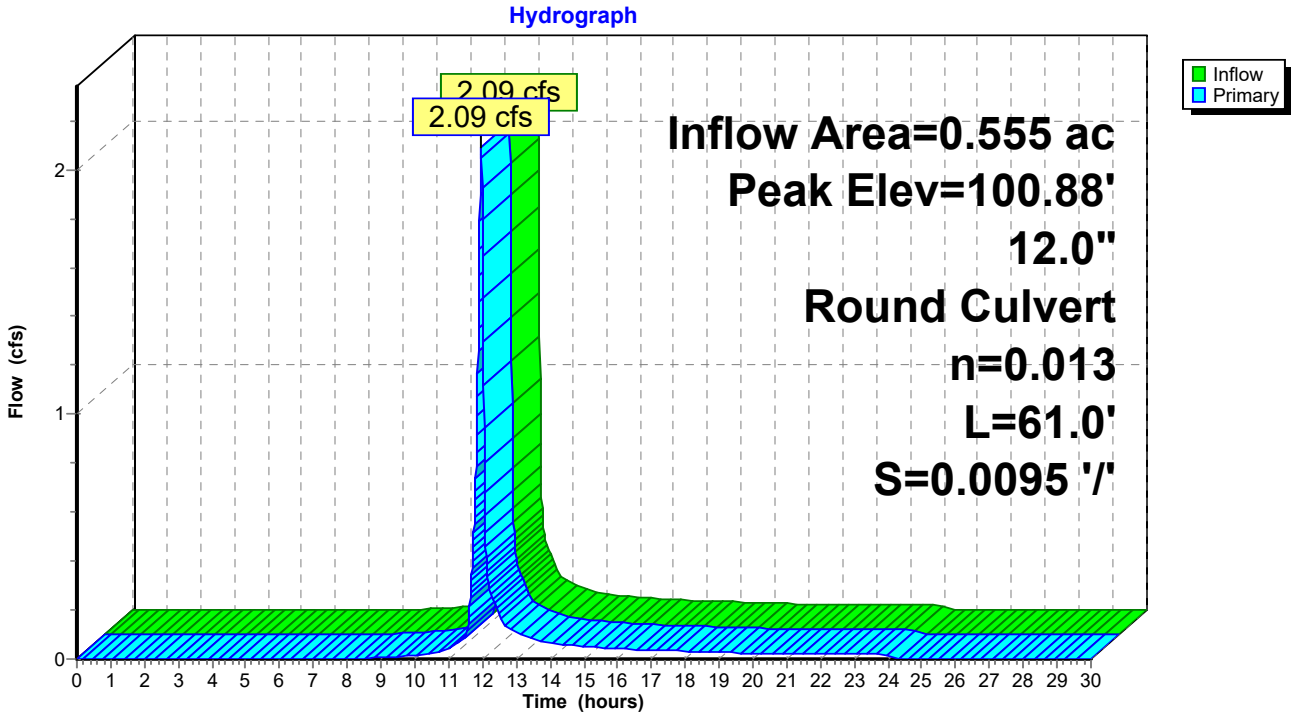
Inflow Area = 0.555 ac, 32.78% Impervious, Inflow Depth = 2.04" for 5-yr, 24-hour event
Inflow = 2.09 cfs @ 11.96 hrs, Volume= 0.094 af
Outflow = 2.09 cfs @ 11.96 hrs, Volume= 0.094 af, Atten= 0%, Lag= 0.0 min
Primary = 2.09 cfs @ 11.96 hrs, Volume= 0.094 af
Routed to Pond 2P : UG 2 - 8' CMP

Routing by Dyn-Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 100.88' @ 11.96 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	100.08'	**12.0" Round Culvert** L= 61.0' RCP, rounded edge headwall, Ke= 0.100 Inlet / Outlet Invert= 100.08' / 99.50' S= 0.0095 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=2.09 cfs @ 11.96 hrs HW=100.88' TW=95.55' (Dynamic Tailwater)
1=Culvert (Barrel Controls 2.09 cfs @ 4.26 fps)

Pond 23P: CB 10



Summary for Pond 24P: CB 06

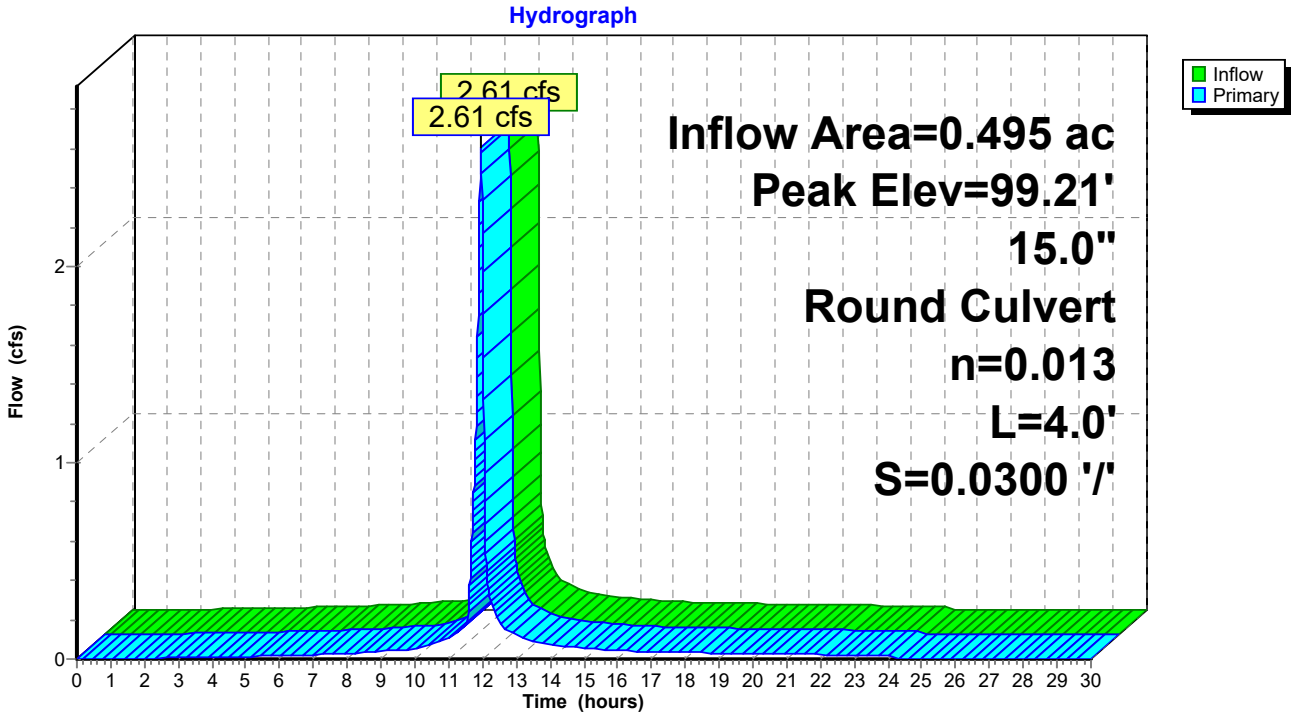
Inflow Area = 0.495 ac, 86.59% Impervious, Inflow Depth = 3.21" for 5-yr, 24-hour event
Inflow = 2.61 cfs @ 11.96 hrs, Volume= 0.132 af
Outflow = 2.61 cfs @ 11.96 hrs, Volume= 0.132 af, Atten= 0%, Lag= 0.0 min
Primary = 2.61 cfs @ 11.96 hrs, Volume= 0.132 af
Routed to Pond 1P : UG 1 - 8' CMP

Routing by Dyn-Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 99.21' @ 11.96 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	98.37'	**15.0" Round Culvert** L= 4.0' RCP, rounded edge headwall, Ke= 0.100 Inlet / Outlet Invert= 98.37' / 98.25' S= 0.0300 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=2.60 cfs @ 11.96 hrs HW=99.21' TW=94.77' (Dynamic Tailwater)
1=Culvert (Barrel Controls 2.60 cfs @ 4.22 fps)

Pond 24P: CB 06



Summary for Pond 25P: CB 05

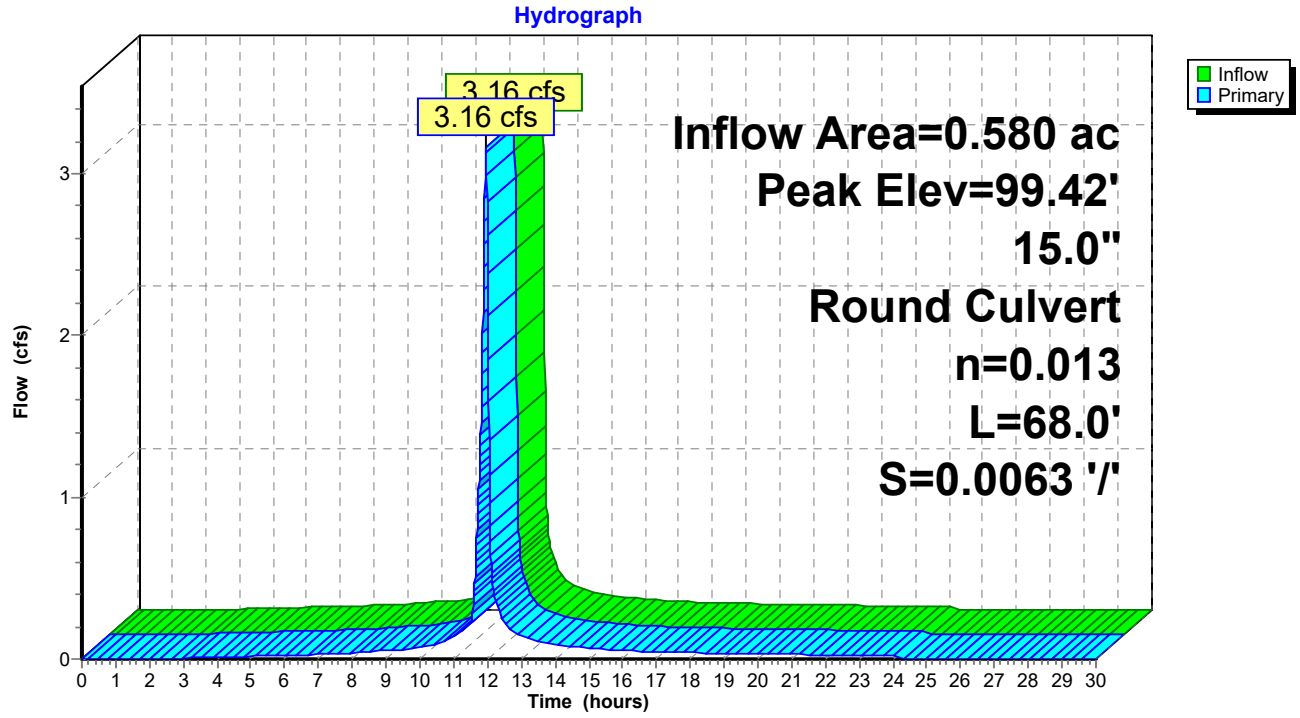
Inflow Area = 0.580 ac, 93.26% Impervious, Inflow Depth = 3.35" for 5-yr, 24-hour event
Inflow = 3.16 cfs @ 11.96 hrs, Volume= 0.162 af
Outflow = 3.16 cfs @ 11.96 hrs, Volume= 0.162 af, Atten= 0%, Lag= 0.0 min
Primary = 3.16 cfs @ 11.96 hrs, Volume= 0.162 af
Routed to Pond 1P : UG 1 - 8' CMP

Routing by Dyn-Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 99.42' @ 11.96 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	98.43'	**15.0" Round Culvert** L= 68.0' RCP, rounded edge headwall, Ke= 0.100 Inlet / Outlet Invert= 98.43' / 98.00' S= 0.0063 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=3.16 cfs @ 11.96 hrs HW=99.42' TW=94.76' (Dynamic Tailwater)
1=Culvert (Barrel Controls 3.16 cfs @ 4.18 fps)

Pond 25P: CB 05



Summary for Pond 26P: MH 01

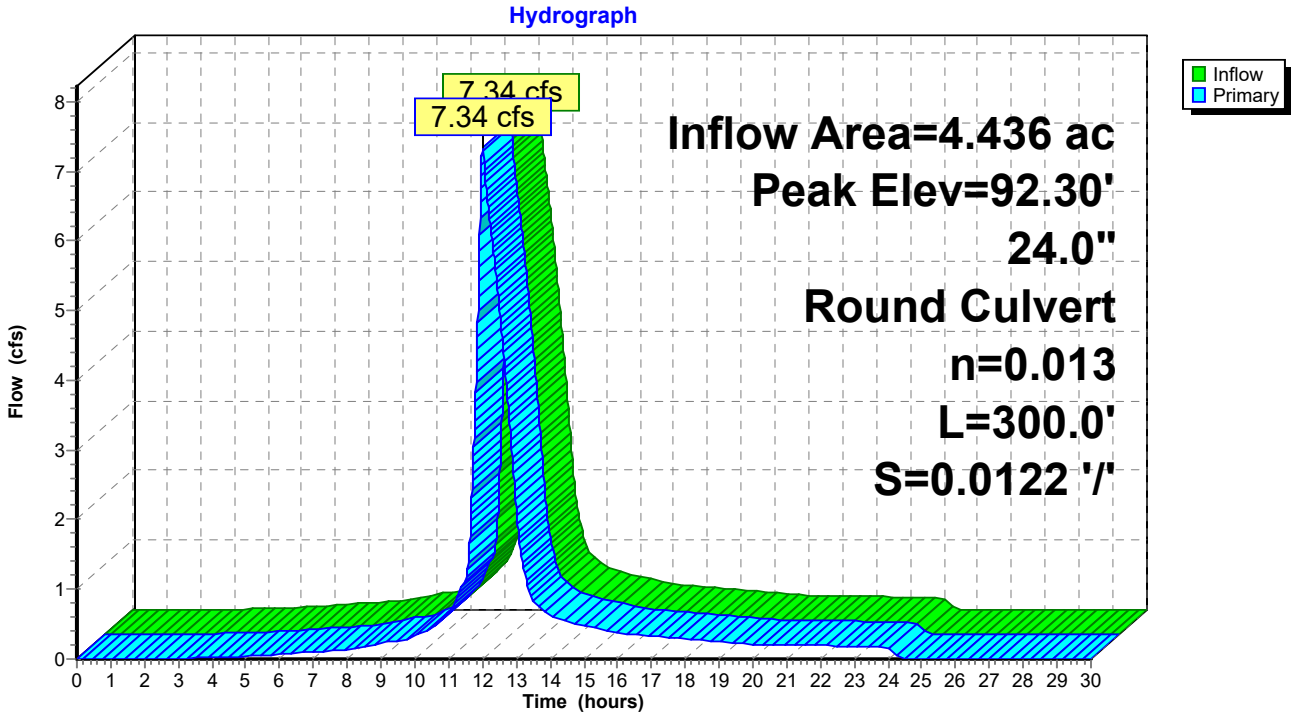
Inflow Area = 4.436 ac, 64.86% Impervious, Inflow Depth = 2.74" for 5-yr, 24-hour event
Inflow = 7.34 cfs @ 12.01 hrs, Volume= 1.014 af
Outflow = 7.34 cfs @ 12.01 hrs, Volume= 1.014 af, Atten= 0%, Lag= 0.0 min
Primary = 7.34 cfs @ 12.01 hrs, Volume= 1.014 af
Routed to Reach 8R : Proposed E PL Runoff

Routing by Dyn-Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 92.30' @ 12.01 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	91.27'	**24.0" Round Culvert** L= 300.0' RCP, rounded edge headwall, Ke= 0.100 Inlet / Outlet Invert= 91.27' / 87.61' S= 0.0122 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 3.14 sf

Primary OutFlow Max=7.34 cfs @ 12.01 hrs HW=92.30' TW=0.00' (Dynamic Tailwater)
1=Culvert (Barrel Controls 7.34 cfs @ 6.56 fps)

Pond 26P: MH 01



Summary for Pond 30P: Building CMP

Inflow Area = 0.826 ac, 91.67% Impervious, Inflow Depth = 3.35" for 5-yr, 24-hour event
Inflow = 4.36 cfs @ 11.97 hrs, Volume= 0.231 af
Outflow = 1.75 cfs @ 12.07 hrs, Volume= 0.231 af, Atten= 60%, Lag= 6.3 min
Primary = 1.75 cfs @ 12.07 hrs, Volume= 0.231 af
Routed to Pond 5P : Parking Lot CMP

Routing by Dyn-Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 92.82' @ 12.07 hrs Surf.Area= 1,599 sf Storage= 3,256 cf

Plug-Flow detention time= 42.6 min calculated for 0.231 af (100% of inflow)
Center-of-Mass det. time= 42.6 min (808.2 - 765.6)

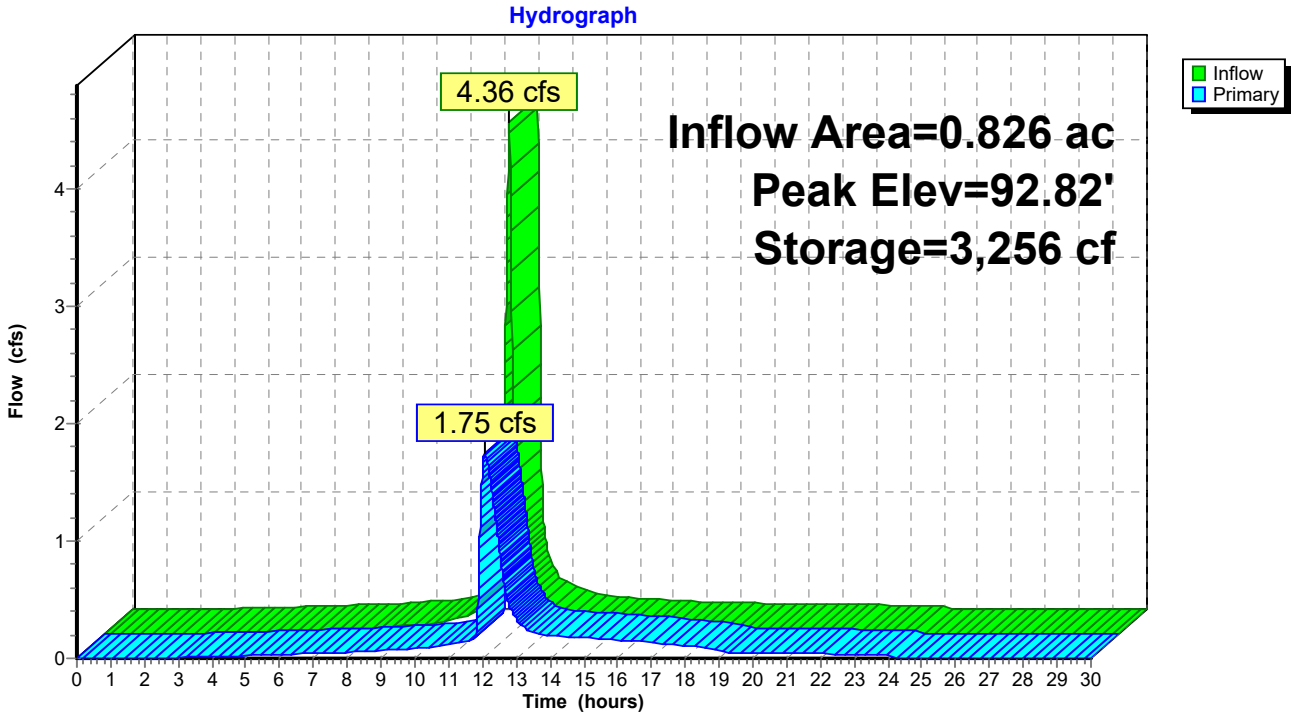
Volume	Invert	Avail.Storage	Storage Description
#1	90.25'	6,283 cf	**60.0" Round Pipe Storage** L= 320.0'
#2	90.00'	8 cf	**12.0" Round Pipe Storage** L= 10.0' S= 0.0250 '/'
#3	95.25'	435 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)
		6,726 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
95.25	3	0	0
96.64	3	4	4
97.50	1,000	431	435

Device	Routing	Invert	Outlet Devices
#1	Primary	90.00'	**12.0" Round Culvert** L= 190.0' RCP, rounded edge headwall, Ke= 0.100 Inlet / Outlet Invert= 90.00' / 89.00' S= 0.0053 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf
#2	Device 1	90.00'	**2.5" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#3	Device 1	91.50'	**7.5" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#4	Device 1	94.50'	**2.0' long x 0.5' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32

Primary OutFlow Max=1.75 cfs @ 12.07 hrs HW=92.82' TW=89.53' (Dynamic Tailwater)
1=Culvert (Passes 1.75 cfs of 3.98 cfs potential flow)
2=Orifice/Grate (Orifice Controls 0.27 cfs @ 7.93 fps)
3=Orifice/Grate (Orifice Controls 1.48 cfs @ 4.82 fps)
4=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Pond 30P: Building CMP



Summary for Pond 34P: 1NS CB 01

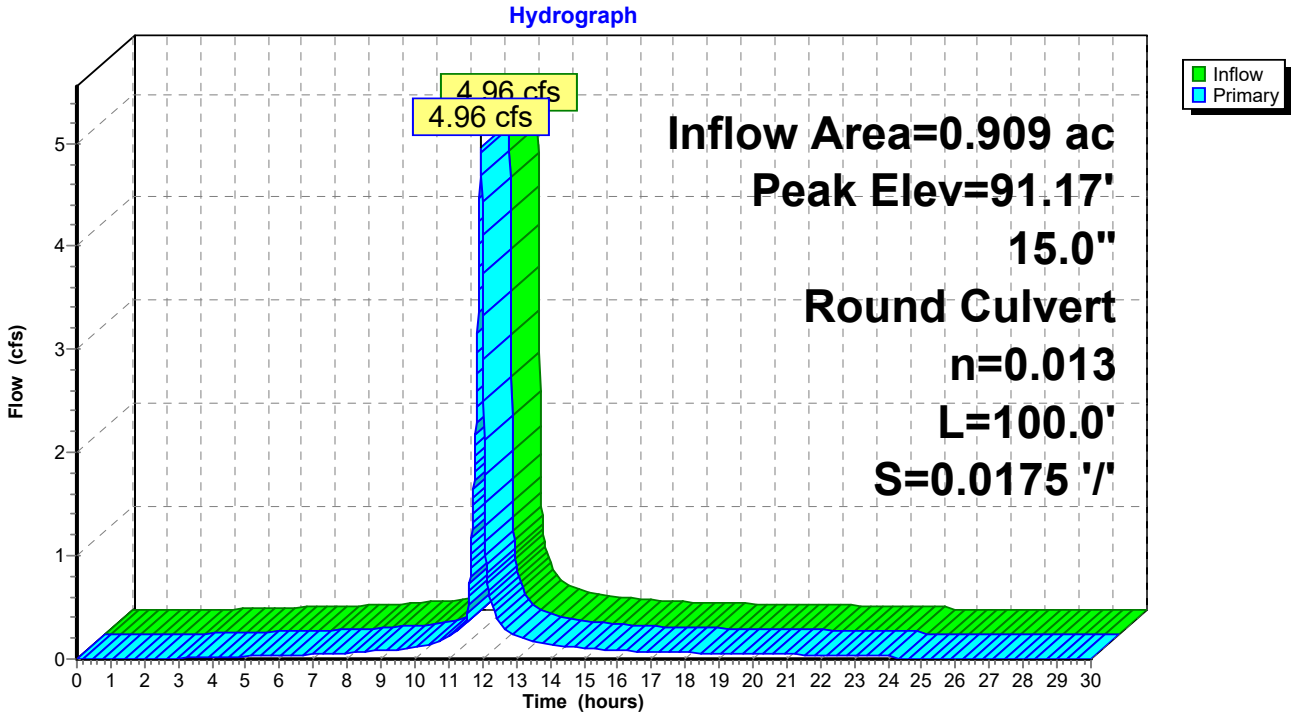
Inflow Area = 0.909 ac, 90.91% Impervious, Inflow Depth = 3.35" for 5-yr, 24-hour event
Inflow = 4.96 cfs @ 11.96 hrs, Volume= 0.254 af
Outflow = 4.96 cfs @ 11.96 hrs, Volume= 0.254 af, Atten= 0%, Lag= 0.0 min
Primary = 4.96 cfs @ 11.96 hrs, Volume= 0.254 af
Routed to Pond 35P : 2NS CB

Routing by Dyn-Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 91.17' @ 11.96 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	88.50'	**15.0" Round Culvert** L= 100.0' RCP, rounded edge headwall, Ke= 0.100 Inlet / Outlet Invert= 88.50' / 86.75' S= 0.0175 '/' Cc= 0.900 n= 0.013 Concrete pipe, bends & connections, Flow Area= 1.23 sf

Primary OutFlow Max=4.95 cfs @ 11.96 hrs HW=91.16' TW=90.30' (Dynamic Tailwater)
1=Culvert (Outlet Controls 4.95 cfs @ 4.03 fps)

Pond 34P: 1NS CB 01



Summary for Pond 35P: 2NS CB

Inflow Area = 1.288 ac, 92.34% Impervious, Inflow Depth = 3.38" for 5-yr, 24-hour event
Inflow = 7.05 cfs @ 11.96 hrs, Volume= 0.363 af
Outflow = 7.05 cfs @ 11.96 hrs, Volume= 0.363 af, Atten= 0%, Lag= 0.0 min
Primary = 7.05 cfs @ 11.96 hrs, Volume= 0.363 af
Routed to Pond 5P : Parking Lot CMP
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Pond 5P : Parking Lot CMP

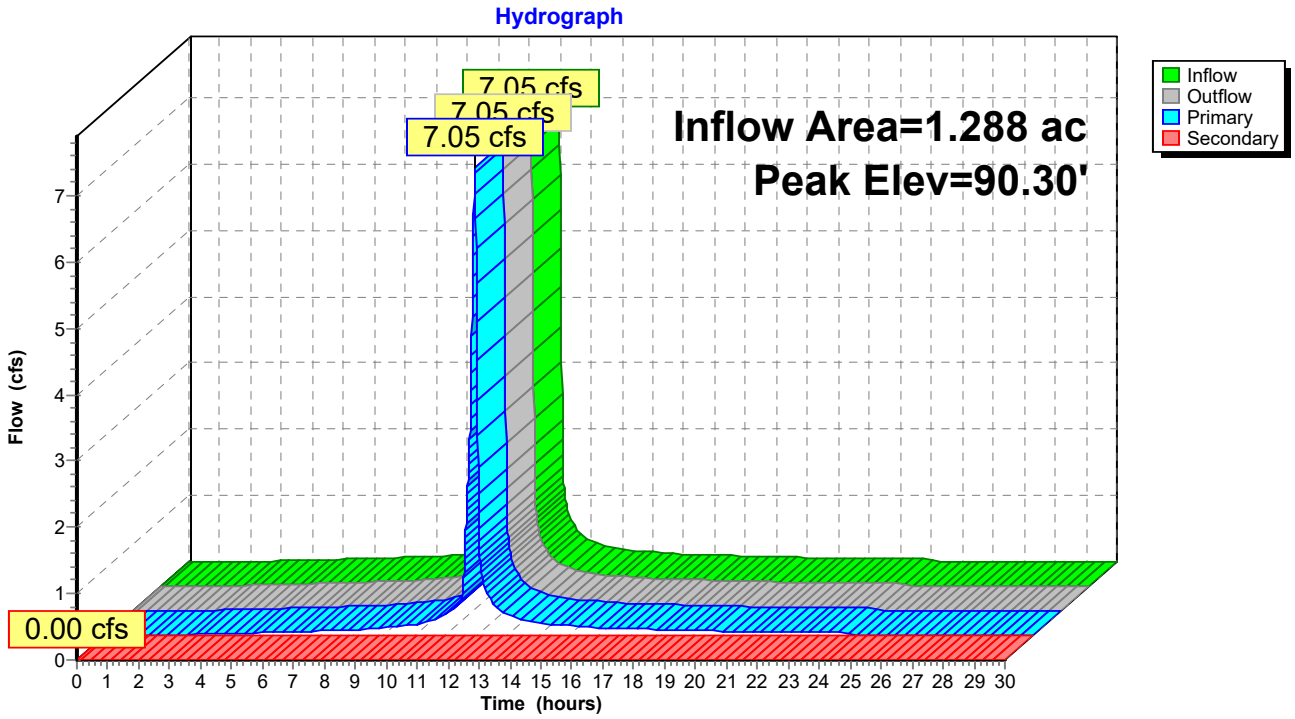
Routing by Dyn-Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 90.30' @ 11.96 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	86.50'	**18.0" Round Culvert** L= 30.0' RCP, rounded edge headwall, Ke= 0.100 Inlet / Outlet Invert= 86.50' / 85.00' S= 0.0500 '/' Cc= 0.900 n= 0.013 Concrete pipe, bends & connections, Flow Area= 1.77 sf
#2	Secondary	93.50'	**10.0' long x 10.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Primary OutFlow Max=7.03 cfs @ 11.96 hrs HW=90.30' TW=89.89' (Dynamic Tailwater)
└**1=Culvert** (Outlet Controls 7.03 cfs @ 3.98 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=86.50' TW=85.00' (Dynamic Tailwater)
└**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond 35P: 2NS CB



Summary for Pond 36P: 3NS CB 02A

Inflow Area = 1.283 ac, 94.63% Impervious, Inflow Depth = 3.40" for 5-yr, 24-hour event
Inflow = 7.03 cfs @ 11.96 hrs, Volume= 0.363 af
Outflow = 7.03 cfs @ 11.96 hrs, Volume= 0.363 af, Atten= 0%, Lag= 0.0 min
Primary = 7.03 cfs @ 11.96 hrs, Volume= 0.363 af
Routed to Pond 5P : Parking Lot CMP
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Reach 5R : Proposed N Runoff

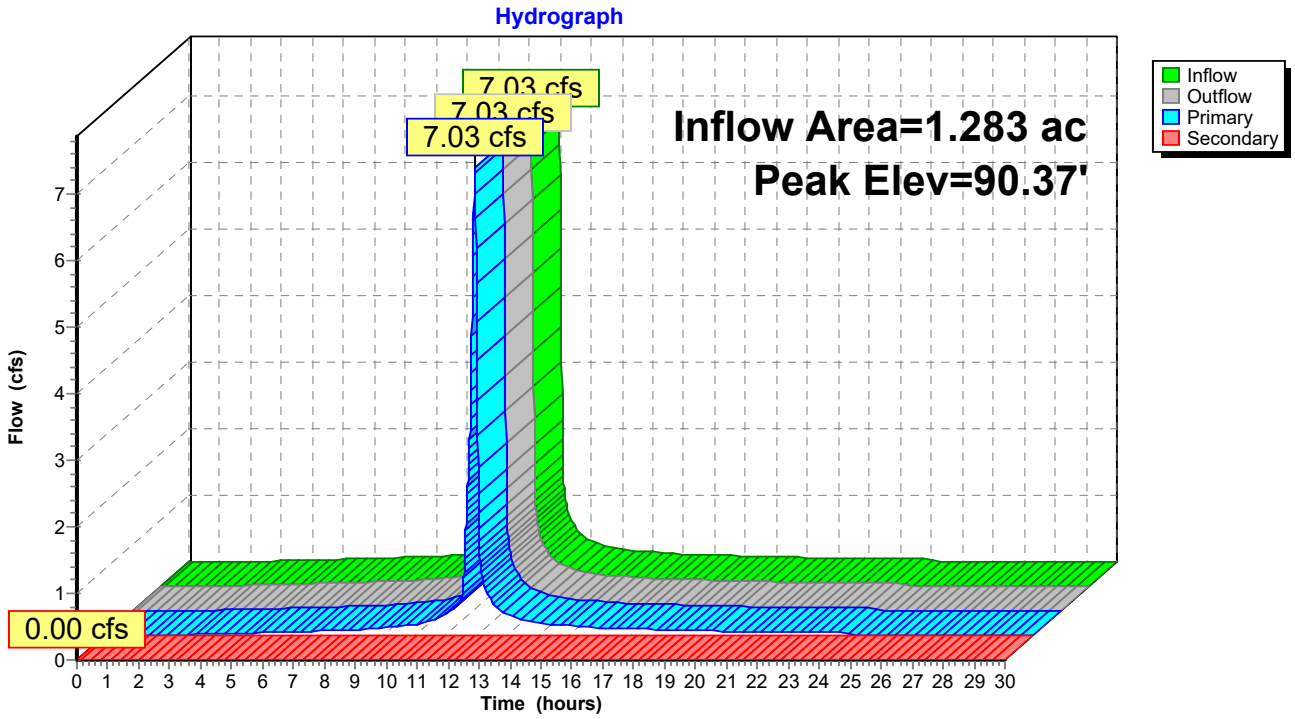
Routing by Dyn-Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 90.37' @ 11.96 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	88.50'	**18.0" Round Culvert** L= 50.0' RCP, rounded edge headwall, Ke= 0.100 Inlet / Outlet Invert= 88.50' / 88.29' S= 0.0042 '/' Cc= 0.900 n= 0.013 Concrete pipe, bends & connections, Flow Area= 1.77 sf
#2	Secondary	93.00'	**10.0' long x 10.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Primary OutFlow Max=7.01 cfs @ 11.96 hrs HW=90.37' TW=89.89' (Dynamic Tailwater)
└**1=Culvert** (Outlet Controls 7.01 cfs @ 4.08 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=88.50' TW=0.00' (Dynamic Tailwater)
└**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond 36P: 3NS CB 02A



Summary for Pond 39P: East Berm Basin

Inflow Area = 2.821 ac, 77.79% Impervious, Inflow Depth = 3.07" for 5-yr, 24-hour event
Inflow = 12.61 cfs @ 11.97 hrs, Volume= 0.721 af
Outflow = 9.43 cfs @ 12.04 hrs, Volume= 0.721 af, Atten= 25%, Lag= 4.0 min
Primary = 9.43 cfs @ 12.04 hrs, Volume= 0.721 af
Routed to Reach 5R : Proposed N Runoff
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Reach 5R : Proposed N Runoff

Routing by Dyn-Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 91.21' @ 12.04 hrs Surf.Area= 2,648 sf Storage= 2,308 cf

Plug-Flow detention time= 1.1 min calculated for 0.721 af (100% of inflow)
Center-of-Mass det. time= 1.1 min (771.3 - 770.2)

Volume	Invert	Avail.Storage	Storage Description
#1	88.00'	7,351 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

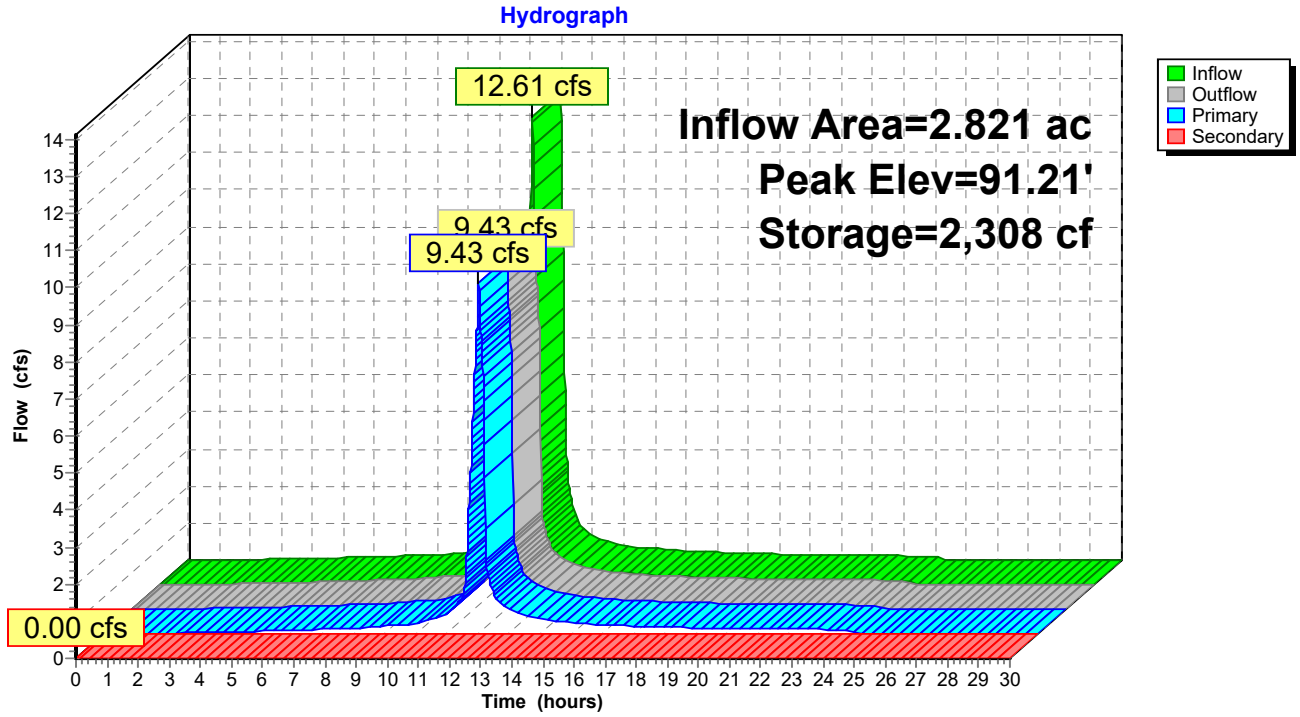
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
88.00	3	0	0
89.20	92	57	57
90.00	690	313	370
91.00	2,181	1,436	1,805
91.50	3,301	1,371	3,176
92.00	4,200	1,875	5,051
92.50	5,000	2,300	7,351

Device	Routing	Invert	Outlet Devices
#1	Primary	87.84'	**18.0" Round Culvert** L= 26.0' RCP, rounded edge headwall, Ke= 0.100 Inlet / Outlet Invert= 87.84' / 87.00' S= 0.0323 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf
#2	Device 1	88.00'	**12.0" Round Culvert** L= 5.0' RCP, rounded edge headwall, Ke= 0.100 Inlet / Outlet Invert= 88.00' / 87.84' S= 0.0320 '/' Cc= 0.900 n= 0.013 Concrete pipe, bends & connections, Flow Area= 0.79 sf
#3	Device 1	91.08'	**24.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#4	Secondary	91.50'	**20.0' long x 10.0' breadth Berm Overflow** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Primary OutFlow Max=9.42 cfs @ 12.04 hrs HW=91.21' TW=0.00' (Dynamic Tailwater)
└**1=Culvert** (Passes 9.42 cfs of 18.59 cfs potential flow)
├**2=Culvert** (Inlet Controls 8.48 cfs @ 10.80 fps)
└**3=Orifice/Grate** (Weir Controls 0.93 cfs @ 1.17 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=88.00' TW=0.00' (Dynamic Tailwater)
└**4=Berm Overflow** (Controls 0.00 cfs)

Pond 39P: East Berm Basin



Summary for Subcatchment 1BS: New N Bldg

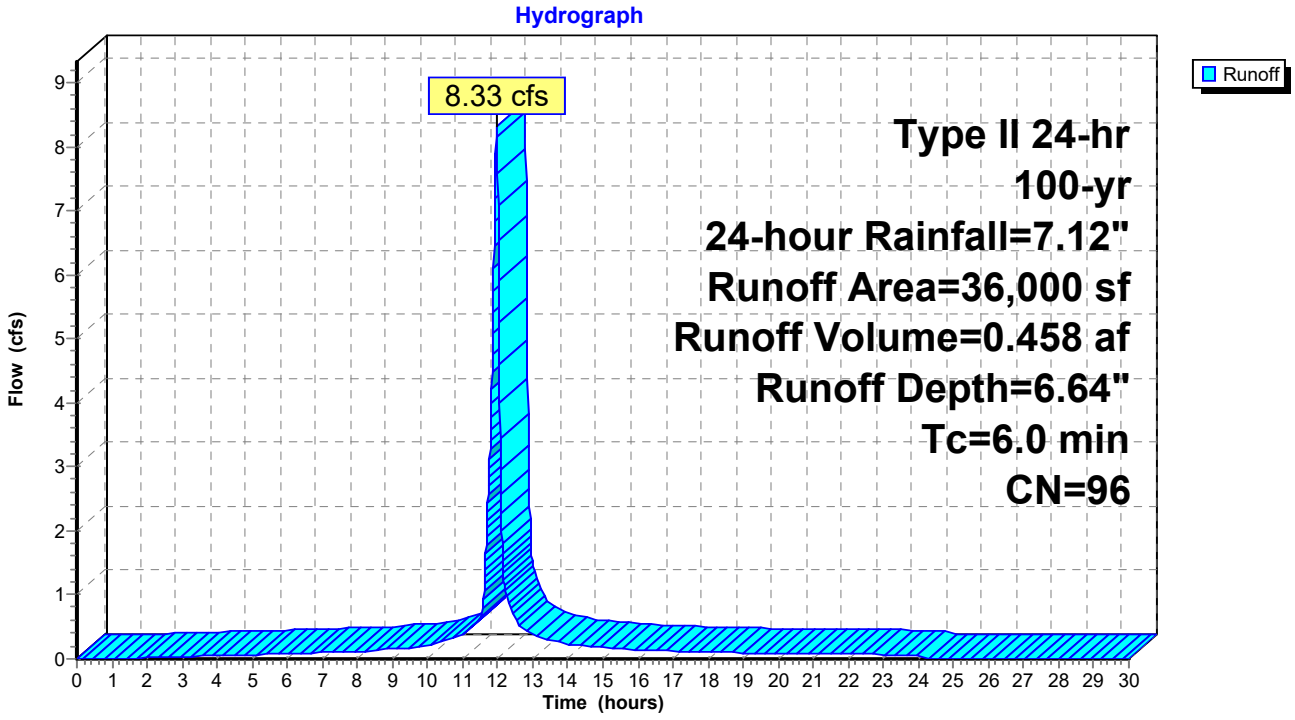
Runoff = 8.33 cfs @ 11.97 hrs, Volume= 0.458 af, Depth= 6.64"
Routed to Pond 30P : Building CMP

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type II 24-hr 100-yr, 24-hour Rainfall=7.12"

Area (sf)	CN	Description
3,000	74	>75% Grass cover, Good, HSG C
33,000	98	Paved parking, HSG C
36,000	96	Weighted Average
3,000		8.33% Pervious Area
33,000		91.67% Impervious Area

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

Subcatchment 1BS: New N Bldg



Summary for Subcatchment 1NS: North Parking Lot and Drives

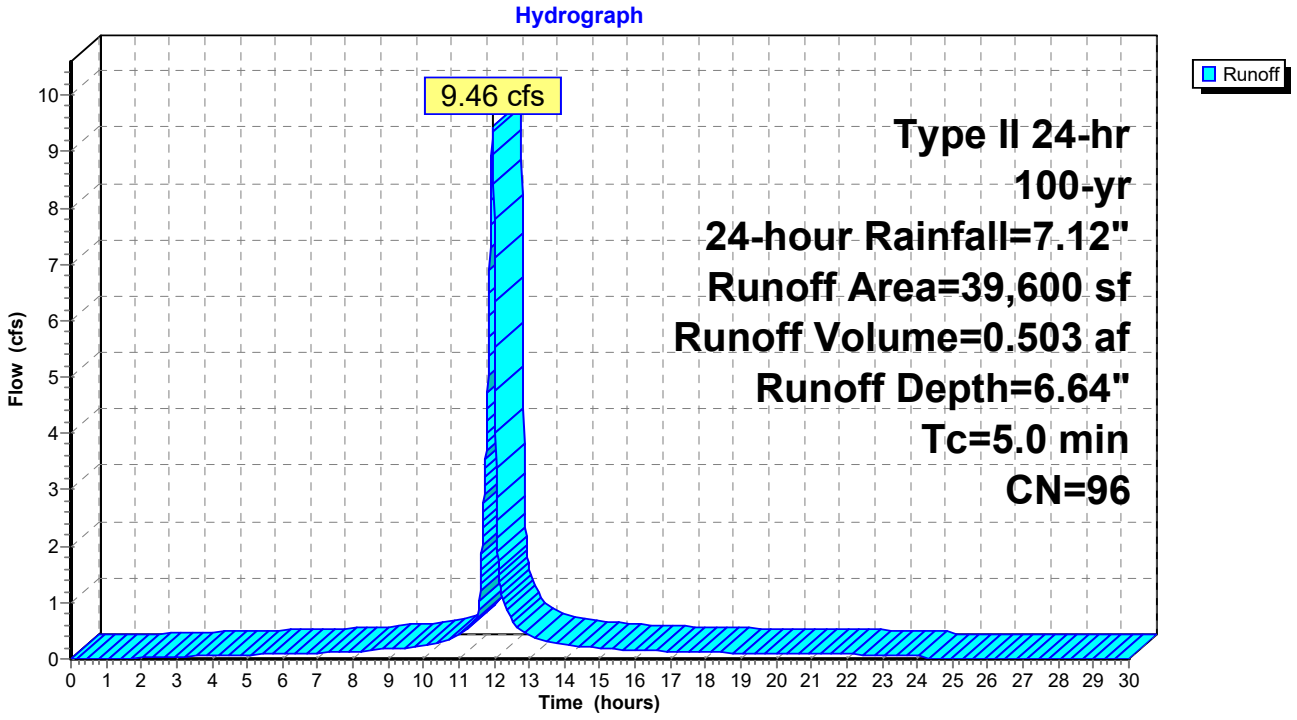
Runoff = 9.46 cfs @ 11.96 hrs, Volume= 0.503 af, Depth= 6.64"
Routed to Pond 34P : 1NS CB 01

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type II 24-hr 100-yr, 24-hour Rainfall=7.12"

Area (sf)	CN	Description
3,600	74	>75% Grass cover, Good, HSG C
36,000	98	Paved parking, HSG C
39,600	96	Weighted Average
3,600		9.09% Pervious Area
36,000		90.91% Impervious Area

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

Subcatchment 1NS: North Parking Lot and Drives



Summary for Subcatchment 1S: CB 06

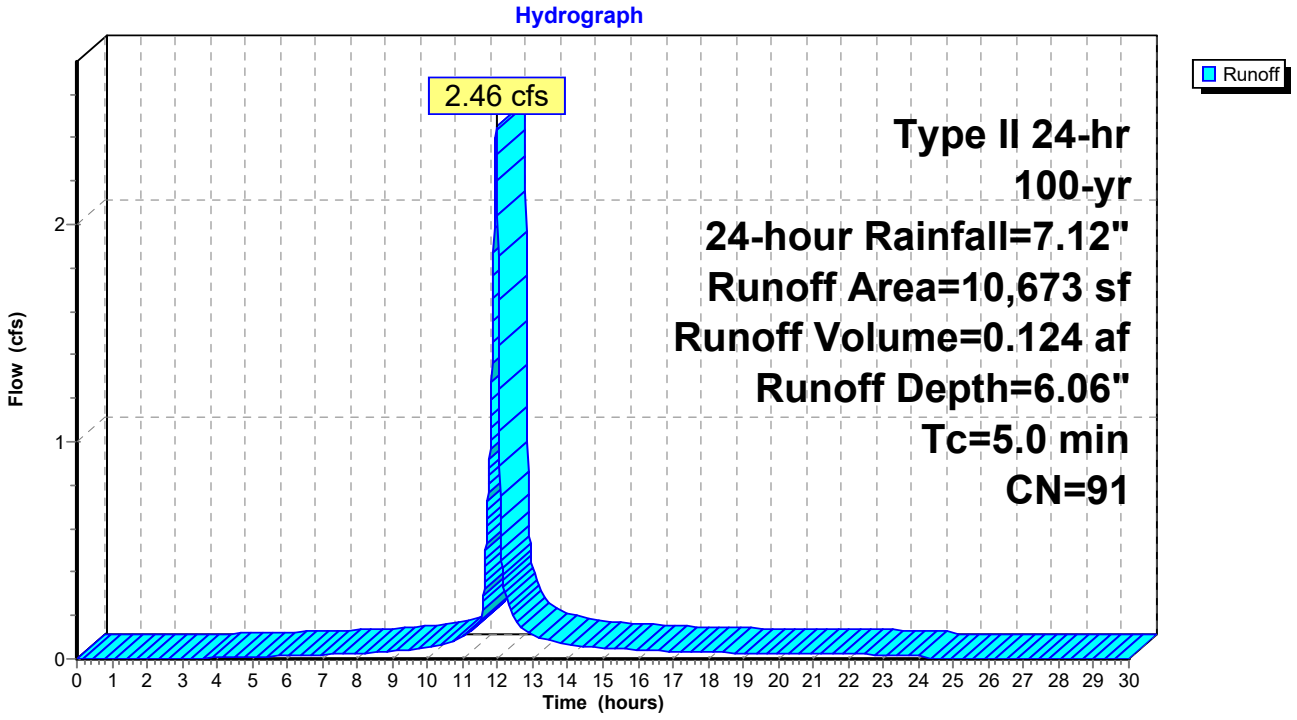
Runoff = 2.46 cfs @ 11.96 hrs, Volume= 0.124 af, Depth= 6.06"
Routed to Pond 24P : CB 06

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type II 24-hr 100-yr, 24-hour Rainfall=7.12"

Area (sf)	CN	Description
2,894	74	Pasture/grassland/range, Good, HSG C
7,779	98	Paved parking, HSG C
10,673	91	Weighted Average
2,894		27.12% Pervious Area
7,779		72.88% Impervious Area

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

Subcatchment 1S: CB 06



Summary for Subcatchment 2NS: North Parking Lot and Drives

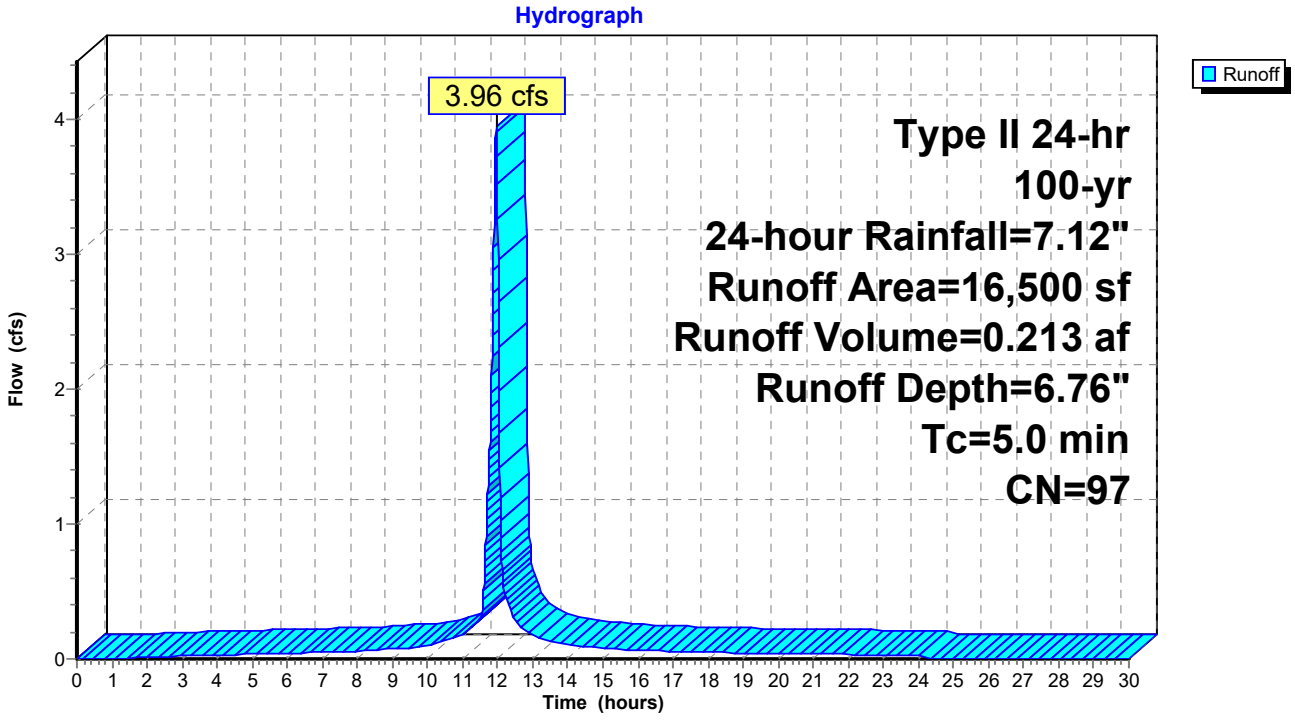
Runoff = 3.96 cfs @ 11.96 hrs, Volume= 0.213 af, Depth= 6.76"
Routed to Pond 35P : 2NS CB

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type II 24-hr 100-yr, 24-hour Rainfall=7.12"

Area (sf)	CN	Description
700	74	>75% Grass cover, Good, HSG C
15,800	98	Paved parking, HSG C
16,500	97	Weighted Average
700		4.24% Pervious Area
15,800		95.76% Impervious Area

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

Subcatchment 2NS: North Parking Lot and Drives



Summary for Subcatchment 2S: CB 05

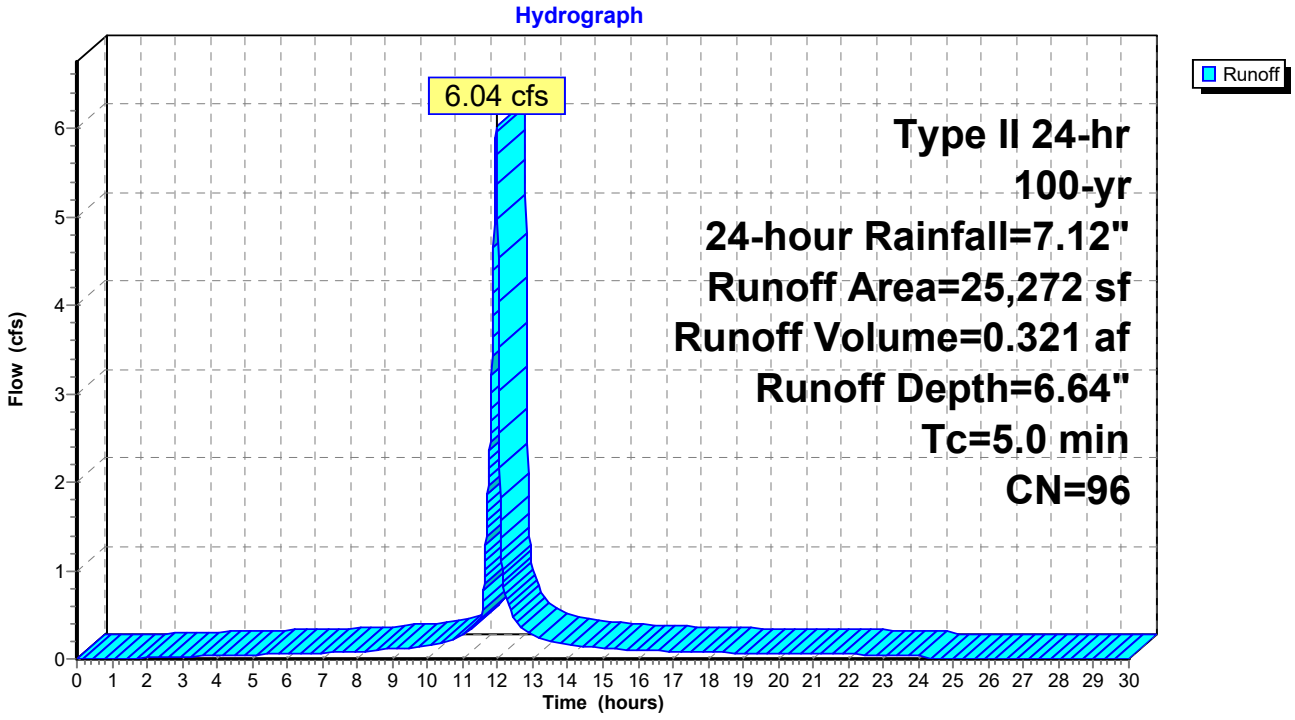
Runoff = 6.04 cfs @ 11.96 hrs, Volume= 0.321 af, Depth= 6.64"
Routed to Pond 25P : CB 05

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type II 24-hr 100-yr, 24-hour Rainfall=7.12"

Area (sf)	CN	Description
1,704	74	Pasture/grassland/range, Good, HSG C
23,568	98	Paved parking, HSG C
25,272	96	Weighted Average
1,704		6.74% Pervious Area
23,568		93.26% Impervious Area

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

Subcatchment 2S: CB 05



Summary for Subcatchment 3ES: Existing North Gym

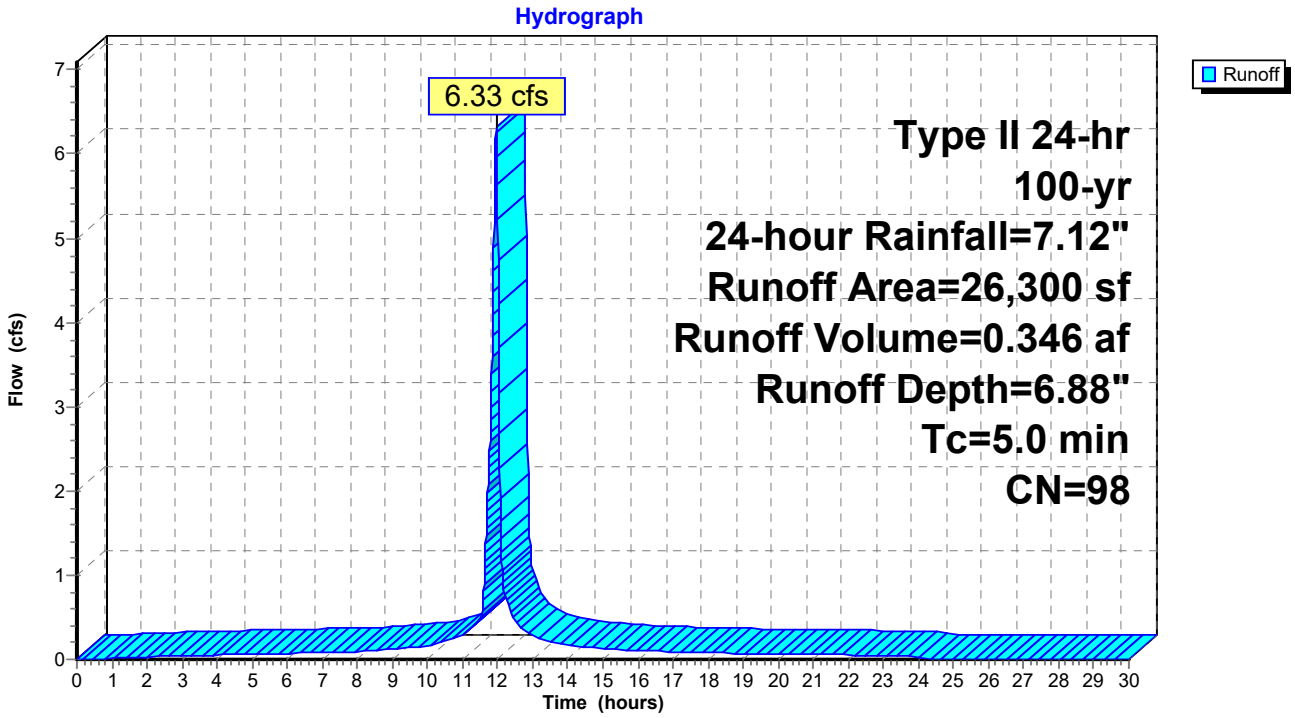
Runoff = 6.33 cfs @ 11.96 hrs, Volume= 0.346 af, Depth= 6.88"
Routed to Pond 7P : STRM MH 01

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type II 24-hr 100-yr, 24-hour Rainfall=7.12"

Area (sf)	CN	Description
0	74	>75% Grass cover, Good, HSG C
26,300	98	Paved parking, HSG C
26,300	98	Weighted Average
26,300		100.00% Impervious Area

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

Subcatchment 3ES: Existing North Gym



Summary for Subcatchment 3NS: North Parking Lot and Drives

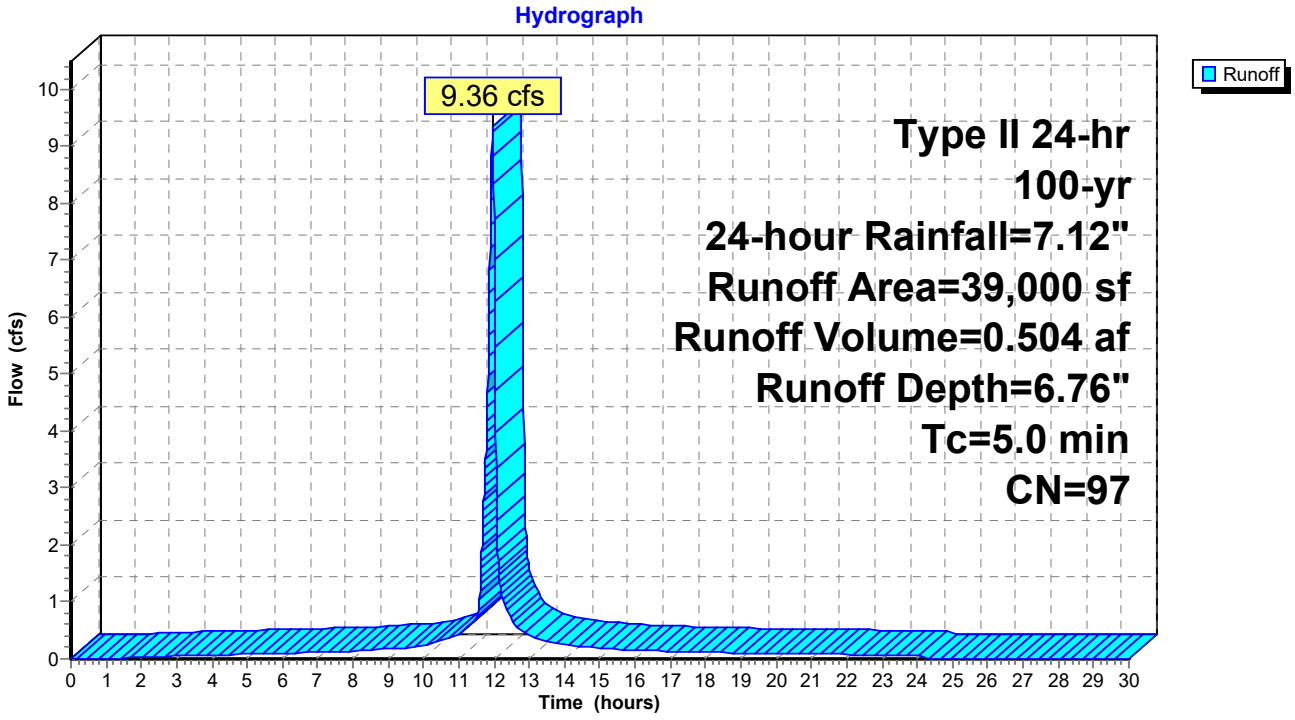
Runoff = 9.36 cfs @ 11.96 hrs, Volume= 0.504 af, Depth= 6.76"
Routed to Pond 36P : 3NS CB 02A

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type II 24-hr 100-yr, 24-hour Rainfall=7.12"

Area (sf)	CN	Description
1,200	74	>75% Grass cover, Good, HSG C
37,800	98	Paved parking, HSG C
39,000	97	Weighted Average
1,200		3.08% Pervious Area
37,800		96.92% Impervious Area

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

Subcatchment 3NS: North Parking Lot and Drives



Summary for Subcatchment 3S: East Greenspace

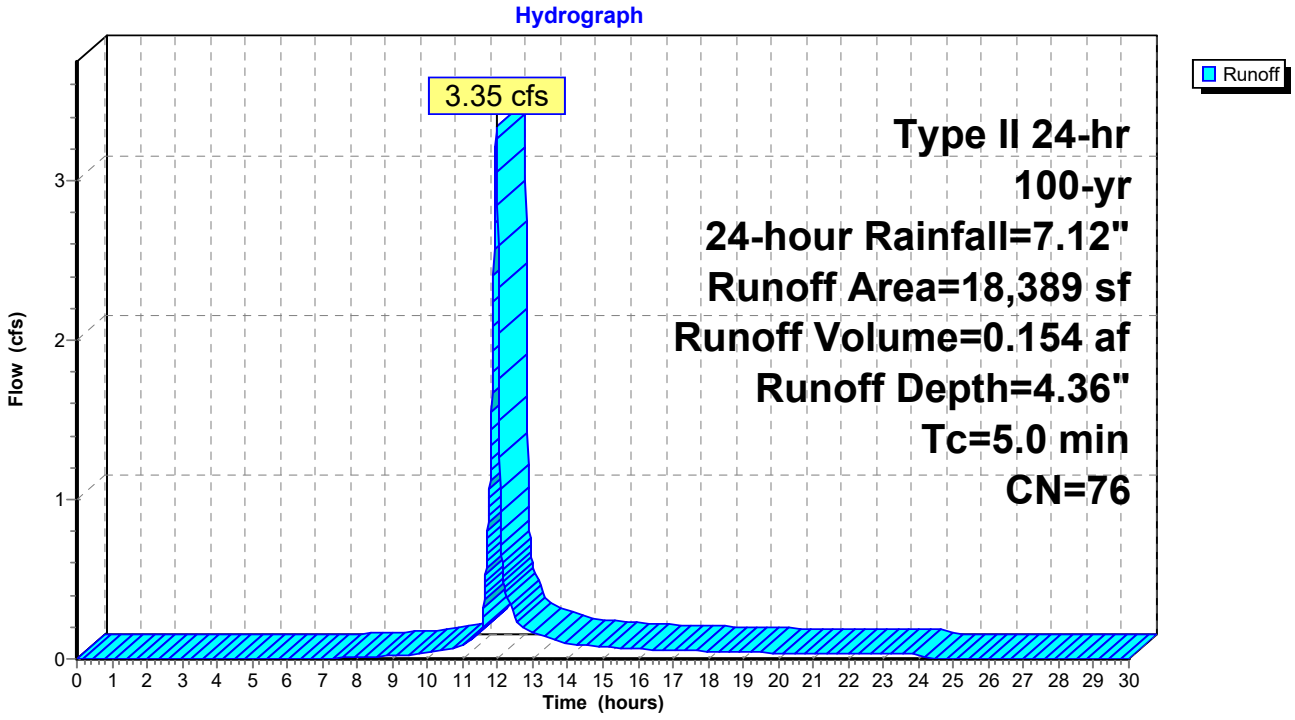
Runoff = 3.35 cfs @ 11.96 hrs, Volume= 0.154 af, Depth= 4.36"
Routed to Pond 4P : CB 04

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type II 24-hr 100-yr, 24-hour Rainfall=7.12"

Area (sf)	CN	Description
16,666	74	Pasture/grassland/range, Good, HSG C
1,723	98	Paved parking, HSG C
18,389	76	Weighted Average
16,666		90.63% Pervious Area
1,723		9.37% Impervious Area

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

Subcatchment 3S: East Greenspace



Summary for Subcatchment 4ES: Existing Building

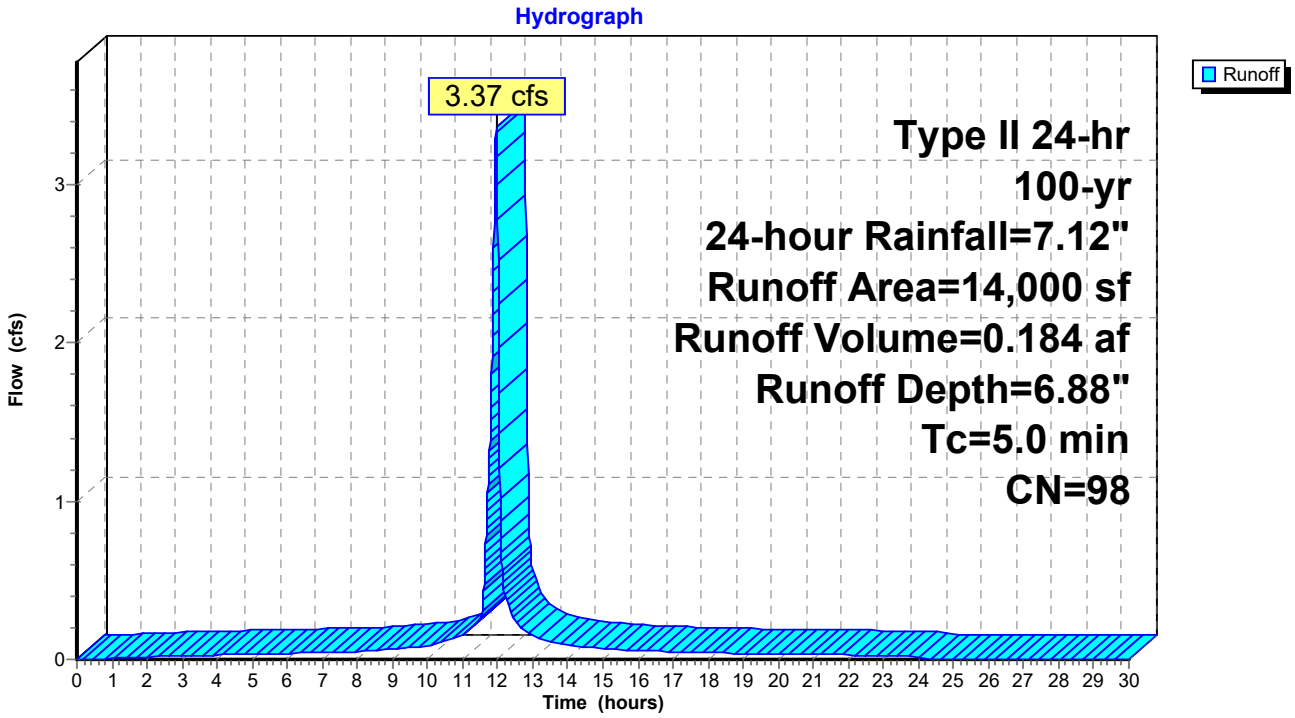
Runoff = 3.37 cfs @ 11.96 hrs, Volume= 0.184 af, Depth= 6.88"
Routed to Pond 7P : STRM MH 01

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type II 24-hr 100-yr, 24-hour Rainfall=7.12"

Area (sf)	CN	Description
0	74	>75% Grass cover, Good, HSG C
14,000	98	Paved parking, HSG C
14,000	98	Weighted Average
14,000		100.00% Impervious Area

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

Subcatchment 4ES: Existing Building



Summary for Subcatchment 4NS: North Parking Lot and Drives

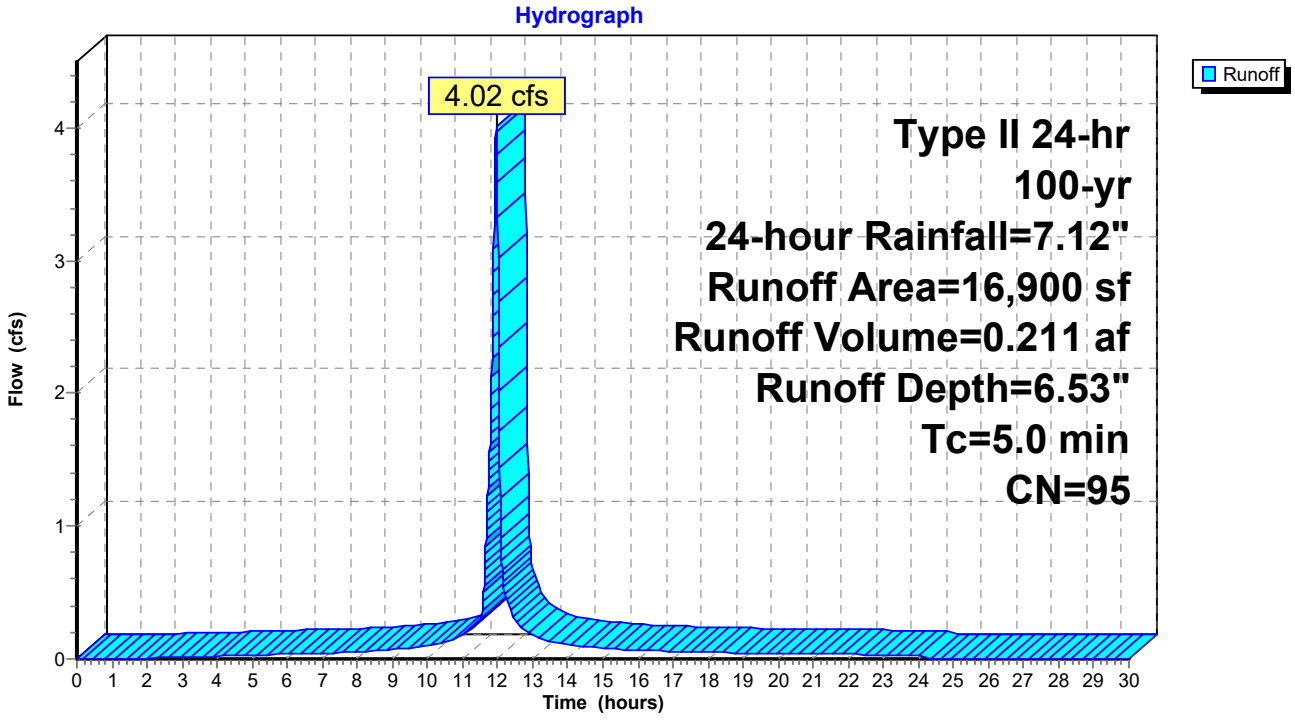
Runoff = 4.02 cfs @ 11.96 hrs, Volume= 0.211 af, Depth= 6.53"
Routed to Pond 9P : 3NS CB 03

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type II 24-hr 100-yr, 24-hour Rainfall=7.12"

Area (sf)	CN	Description
1,800	74	>75% Grass cover, Good, HSG C
15,100	98	Paved parking, HSG C
16,900	95	Weighted Average
1,800		10.65% Pervious Area
15,100		89.35% Impervious Area

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

Subcatchment 4NS: North Parking Lot and Drives



Summary for Subcatchment 4S: CB 10

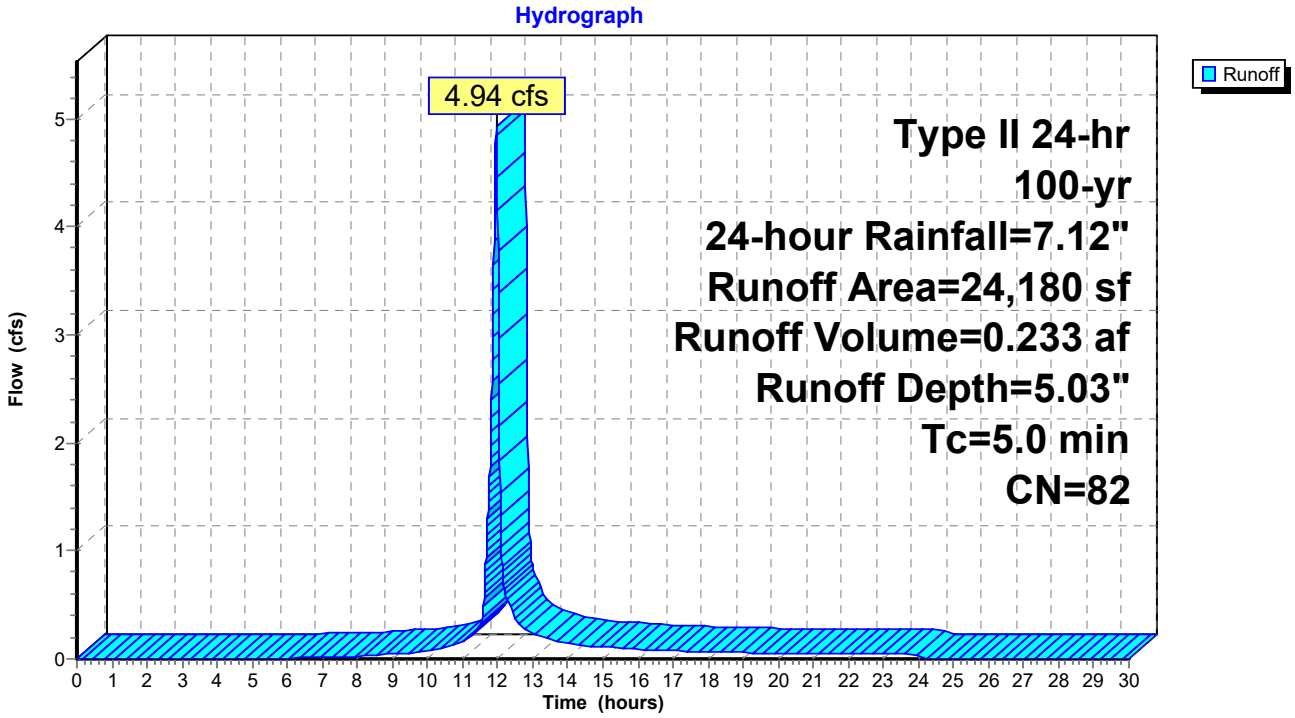
Runoff = 4.94 cfs @ 11.96 hrs, Volume= 0.233 af, Depth= 5.03"
Routed to Pond 23P : CB 10

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type II 24-hr 100-yr, 24-hour Rainfall=7.12"

Area (sf)	CN	Description
16,254	74	Pasture/grassland/range, Good, HSG C
7,926	98	Paved parking, HSG C
24,180	82	Weighted Average
16,254		67.22% Pervious Area
7,926		32.78% Impervious Area

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

Subcatchment 4S: CB 10



Summary for Subcatchment 5NS: East Stalls and Drive

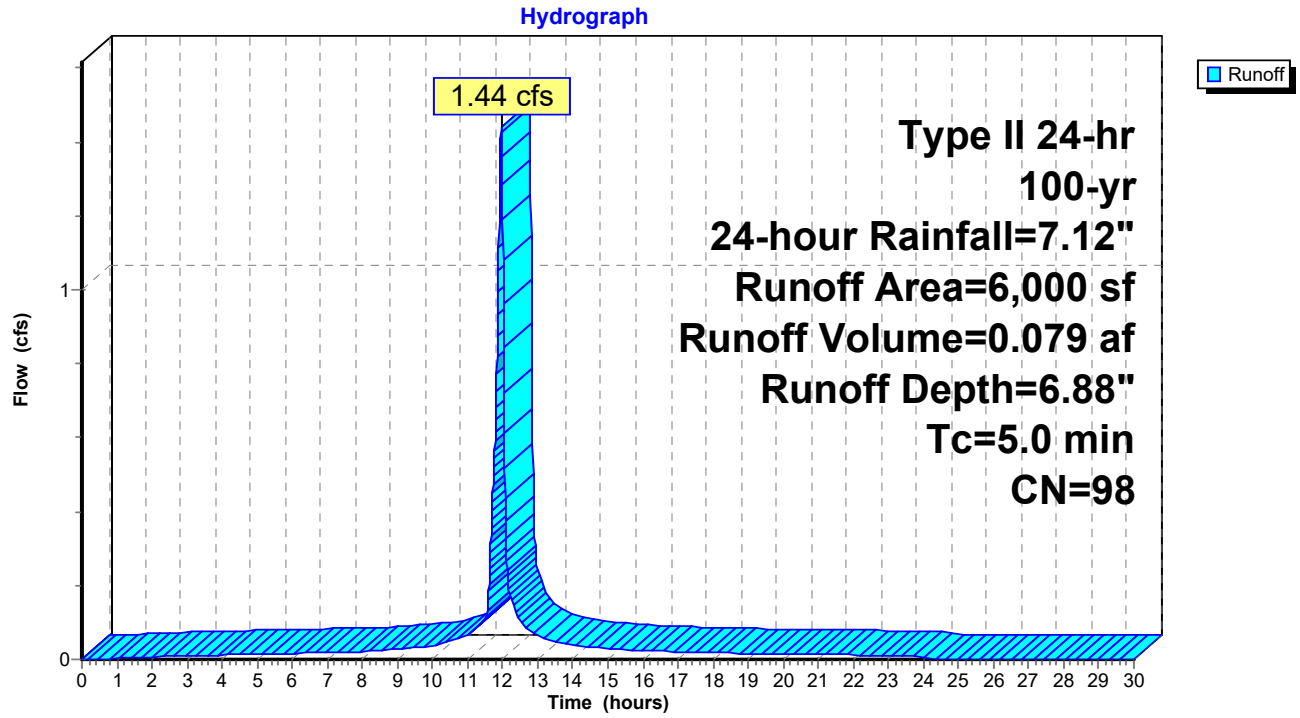
Runoff = 1.44 cfs @ 11.96 hrs, Volume= 0.079 af, Depth= 6.88"
Routed to Pond 8P : N Curb Cut

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type II 24-hr 100-yr, 24-hour Rainfall=7.12"

Area (sf)	CN	Description
0	74	>75% Grass cover, Good, HSG C
6,000	98	Paved parking, HSG C
6,000	98	Weighted Average
6,000		100.00% Impervious Area

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

Subcatchment 5NS: East Stalls and Drive



Summary for Subcatchment 5S: CB 09

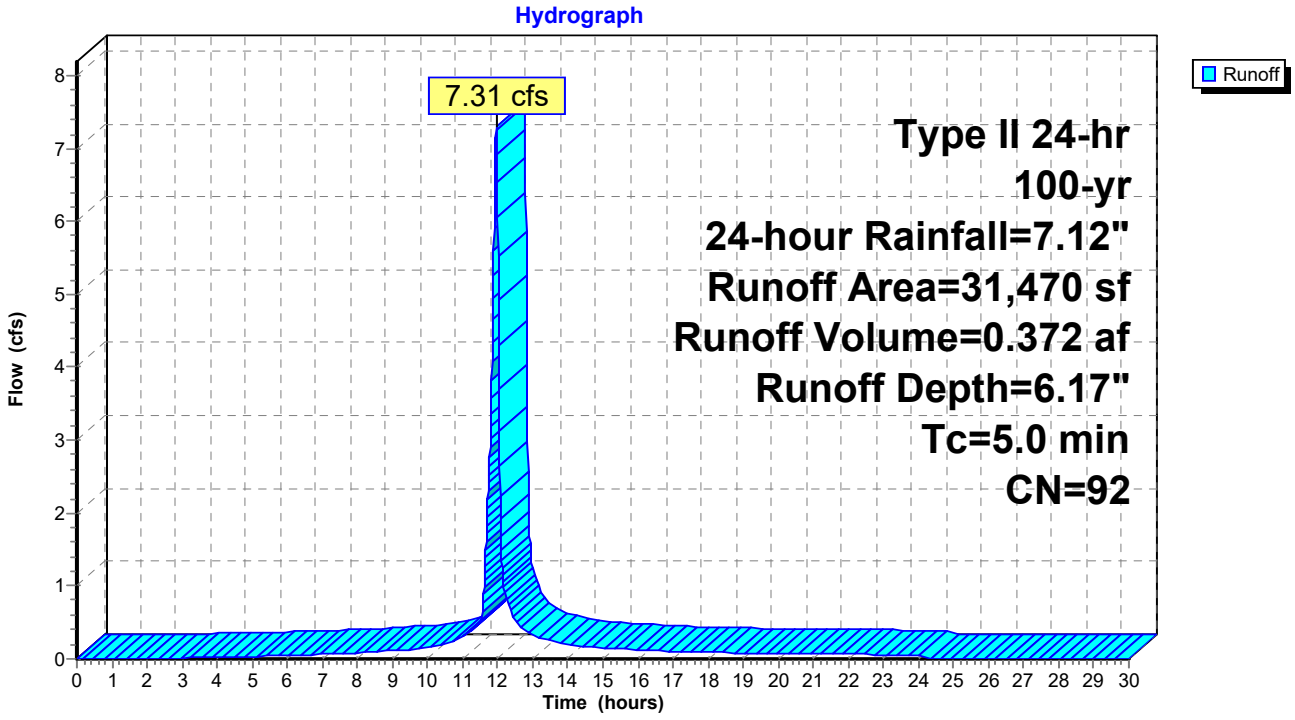
Runoff = 7.31 cfs @ 11.96 hrs, Volume= 0.372 af, Depth= 6.17"
Routed to Pond 22P : CB 09

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type II 24-hr 100-yr, 24-hour Rainfall=7.12"

Area (sf)	CN	Description
8,042	74	Pasture/grassland/range, Good, HSG C
23,428	98	Paved parking, HSG C
31,470	92	Weighted Average
8,042		25.55% Pervious Area
23,428		74.45% Impervious Area

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

Subcatchment 5S: CB 09



Summary for Subcatchment 6NS: East Stalls and Drive

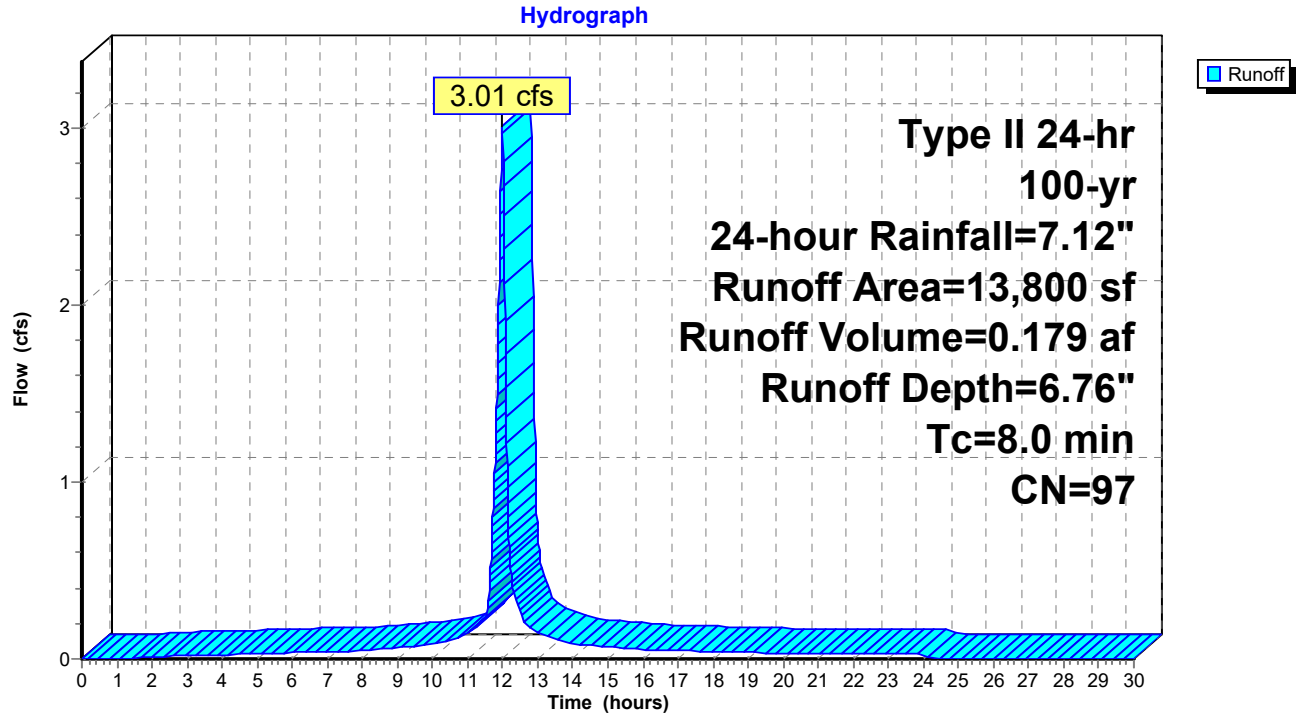
Runoff = 3.01 cfs @ 11.99 hrs, Volume= 0.179 af, Depth= 6.76"
Routed to Pond 13P : NE Curb Cut

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type II 24-hr 100-yr, 24-hour Rainfall=7.12"

Area (sf)	CN	Description
600	74	>75% Grass cover, Good, HSG C
13,200	98	Paved parking, HSG C
13,800	97	Weighted Average
600		4.35% Pervious Area
13,200		95.65% Impervious Area

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

Subcatchment 6NS: East Stalls and Drive



Summary for Subcatchment 6S: CB 08

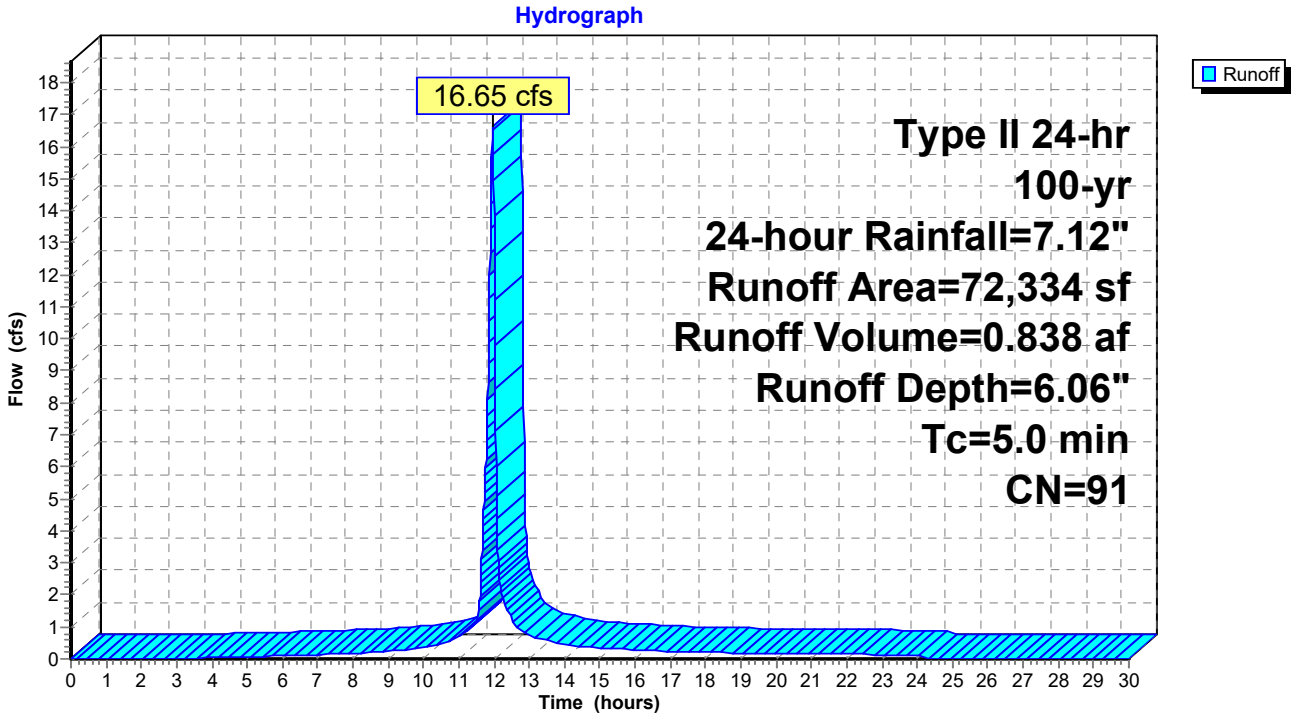
Runoff = 16.65 cfs @ 11.96 hrs, Volume= 0.838 af, Depth= 6.06"
Routed to Pond 20P : CB 08

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type II 24-hr 100-yr, 24-hour Rainfall=7.12"

Area (sf)	CN	Description
22,335	74	Pasture/grassland/range, Good, HSG C
49,999	98	Paved parking, HSG C
72,334	91	Weighted Average
22,335		30.88% Pervious Area
49,999		69.12% Impervious Area

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

Subcatchment 6S: CB 08



Summary for Subcatchment 7NS: New Weight Room Building

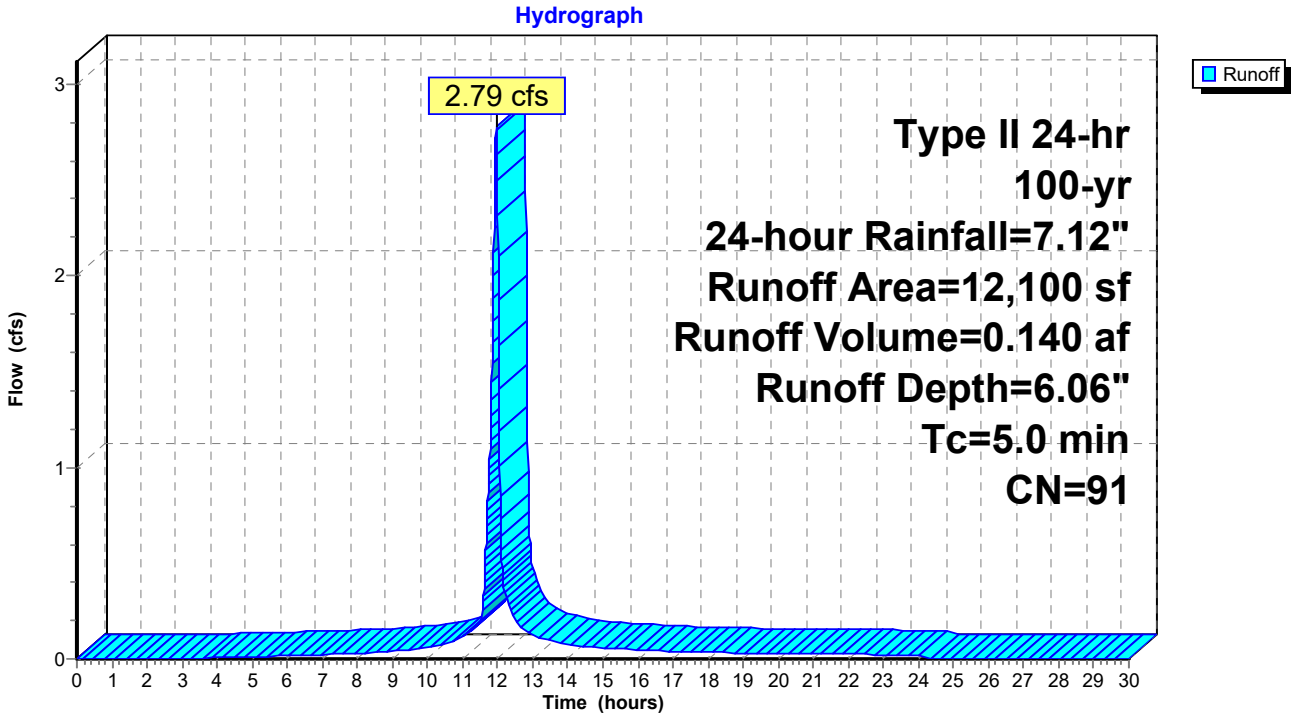
Runoff = 2.79 cfs @ 11.96 hrs, Volume= 0.140 af, Depth= 6.06"
Routed to Pond 7P : STRM MH 01

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type II 24-hr 100-yr, 24-hour Rainfall=7.12"

Area (sf)	CN	Description
3,300	74	>75% Grass cover, Good, HSG C
8,800	98	Paved parking, HSG C
12,100	91	Weighted Average
3,300		27.27% Pervious Area
8,800		72.73% Impervious Area

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

Subcatchment 7NS: New Weight Room Building



Summary for Subcatchment 7S: Uncaptured W PL

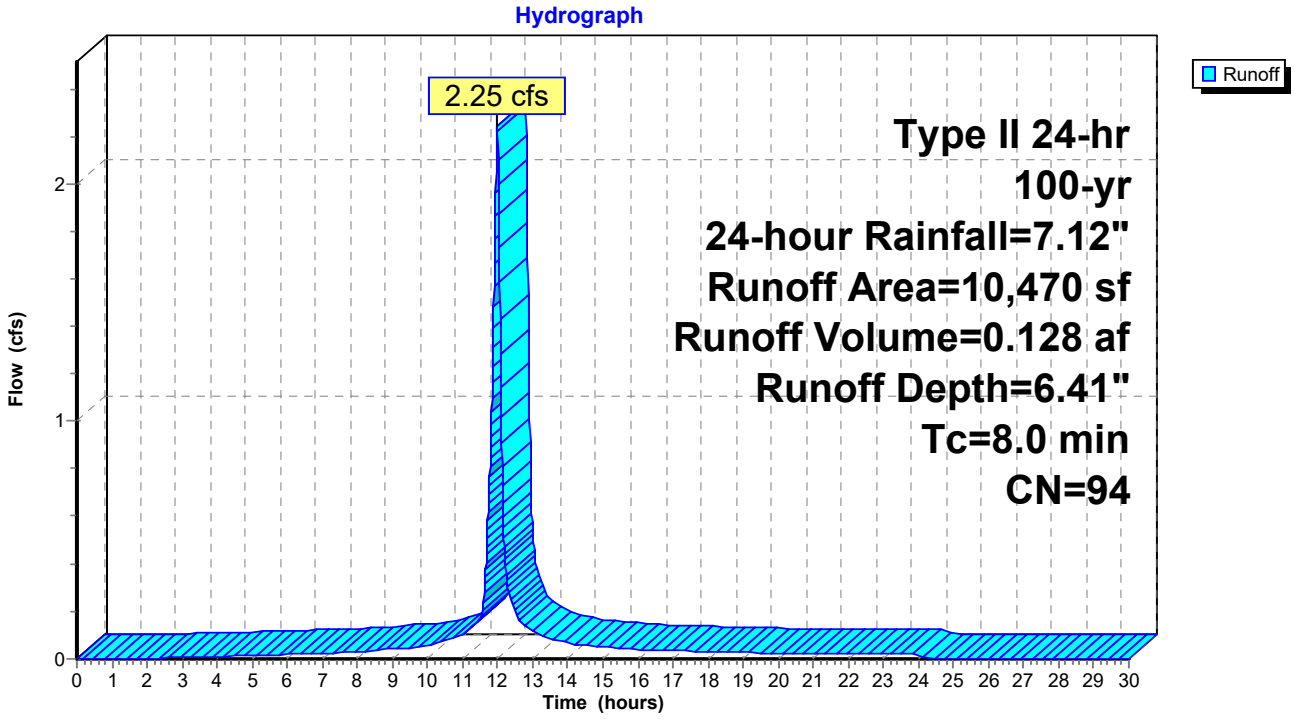
Runoff = 2.25 cfs @ 11.99 hrs, Volume= 0.128 af, Depth= 6.41"
Routed to Pond 11P : Existing Storm Sewer

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type II 24-hr 100-yr, 24-hour Rainfall=7.12"

Area (sf)	CN	Description
1,607	74	Pasture/grassland/range, Good, HSG C
8,863	98	Paved parking, HSG C
10,470	94	Weighted Average
1,607		15.35% Pervious Area
8,863		84.65% Impervious Area

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

Subcatchment 7S: Uncaptured W PL



Summary for Subcatchment 8NS: East Stalls and Drive

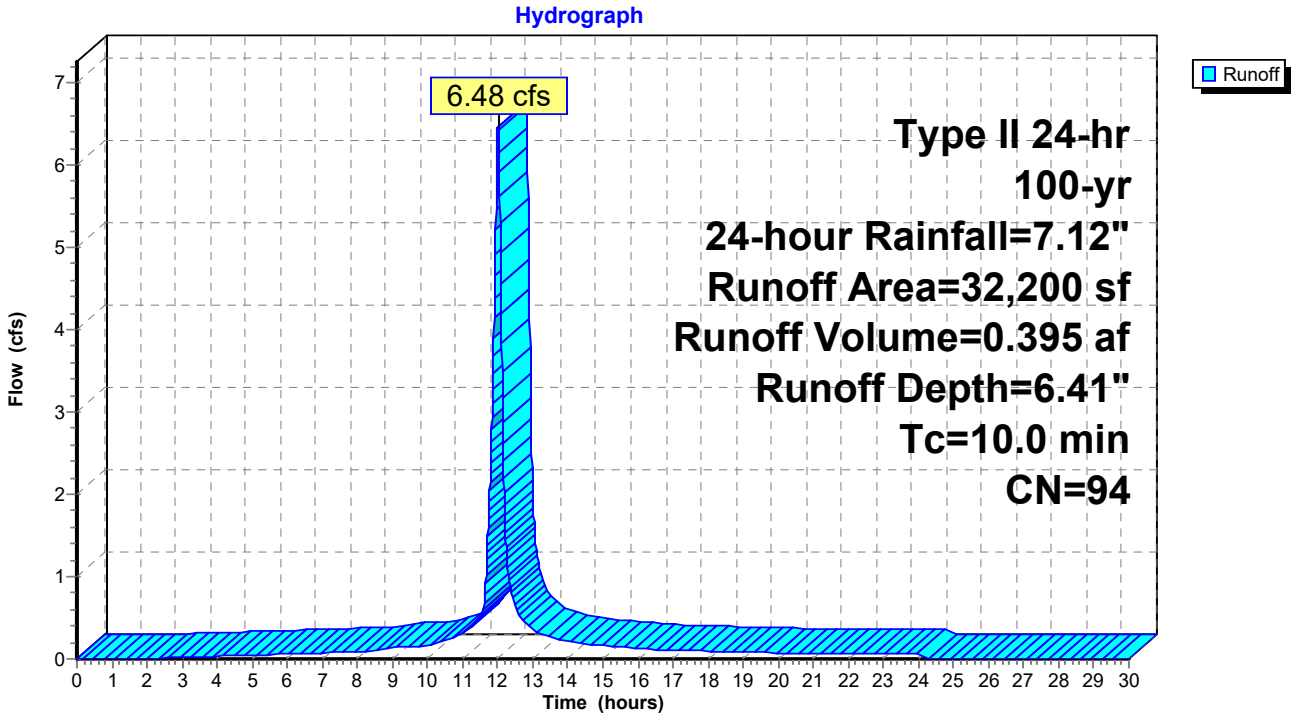
Runoff = 6.48 cfs @ 12.01 hrs, Volume= 0.395 af, Depth= 6.41"
Routed to Pond 10P : NE Curb Cut

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type II 24-hr 100-yr, 24-hour Rainfall=7.12"

Area (sf)	CN	Description
6,000	74	>75% Grass cover, Good, HSG C
26,200	98	Paved parking, HSG C
32,200	94	Weighted Average
6,000		18.63% Pervious Area
26,200		81.37% Impervious Area

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

Subcatchment 8NS: East Stalls and Drive



Summary for Subcatchment 9NS: Greenspace E of Drive

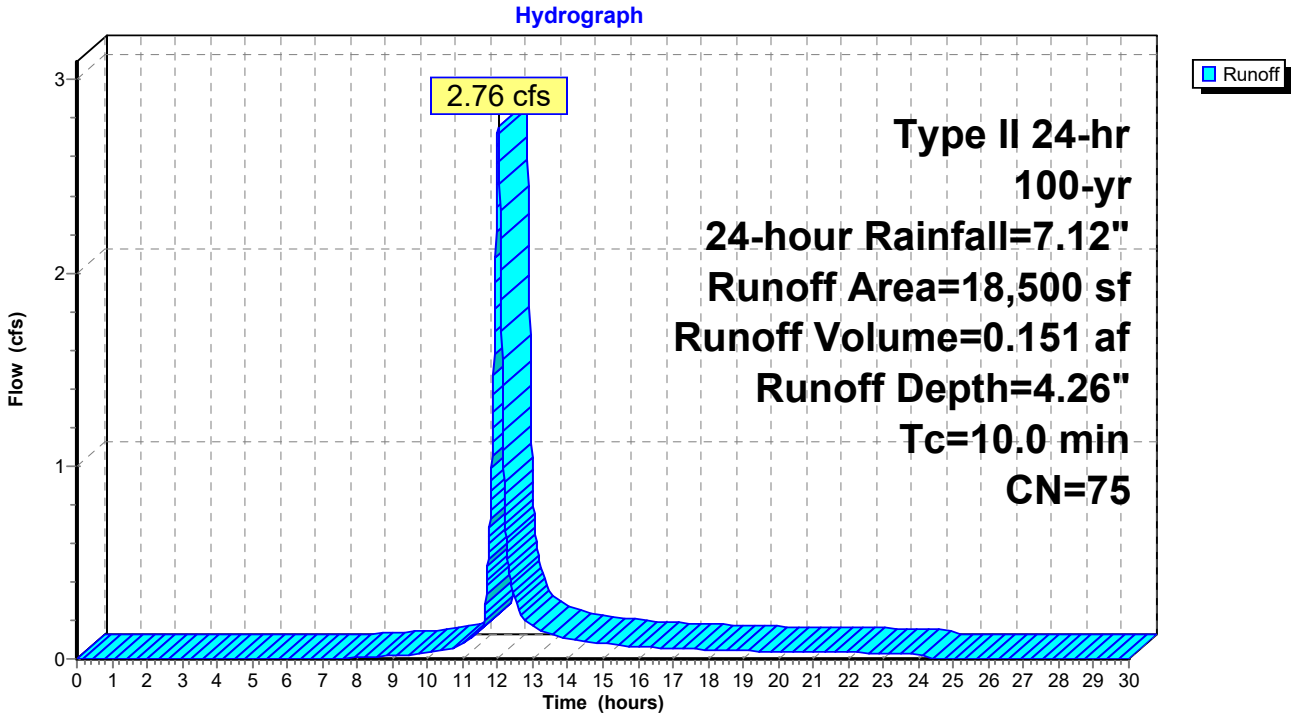
Runoff = 2.76 cfs @ 12.01 hrs, Volume= 0.151 af, Depth= 4.26"
Routed to Pond 39P : East Berm Basin

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type II 24-hr 100-yr, 24-hour Rainfall=7.12"

Area (sf)	CN	Description
17,400	74	>75% Grass cover, Good, HSG C
1,100	98	Paved parking, HSG C
18,500	75	Weighted Average
17,400		94.05% Pervious Area
1,100		5.95% Impervious Area

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

Subcatchment 9NS: Greenspace E of Drive



Summary for Subcatchment 10NS: East Addn and Bldg

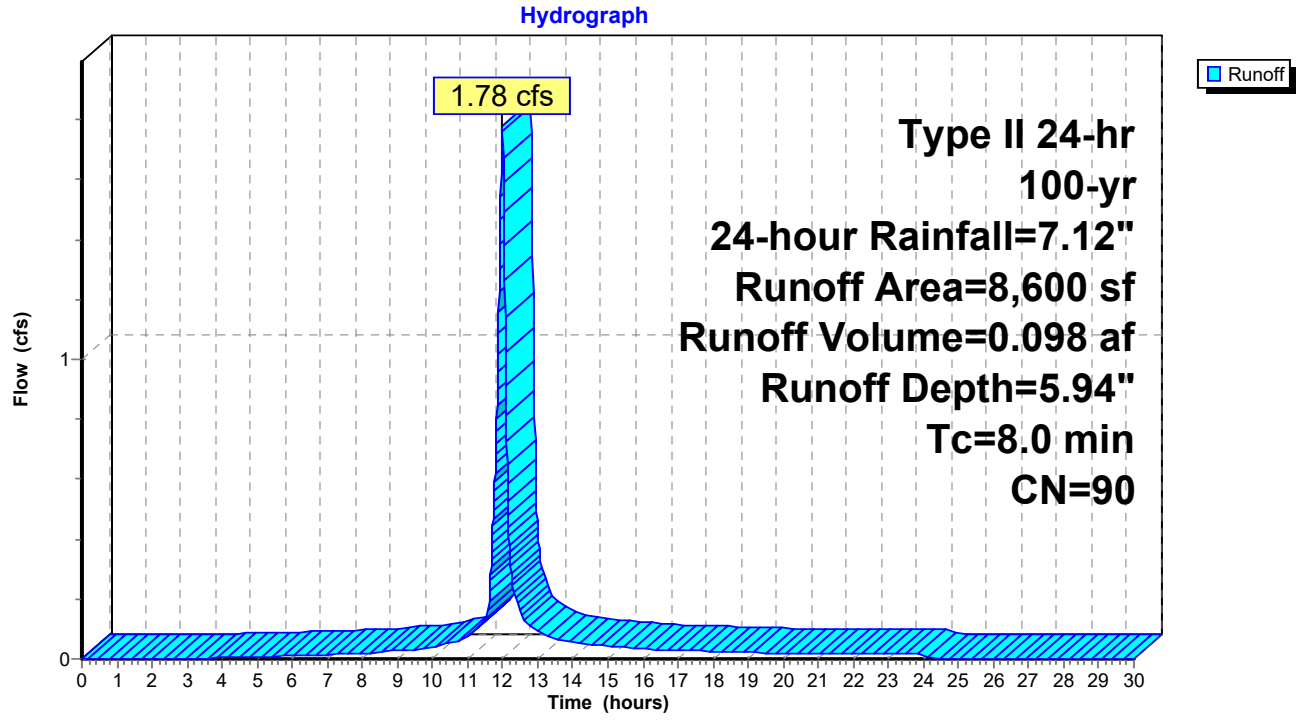
Runoff = 1.78 cfs @ 11.99 hrs, Volume= 0.098 af, Depth= 5.94"
Routed to Pond 11P : Existing Storm Sewer

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type II 24-hr 100-yr, 24-hour Rainfall=7.12"

Area (sf)	CN	Description
2,700	74	>75% Grass cover, Good, HSG C
5,900	98	Paved parking, HSG C
8,600	90	Weighted Average
2,700		31.40% Pervious Area
5,900		68.60% Impervious Area

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

Subcatchment 10NS: East Addn and Bldg



Summary for Subcatchment 11NS: Concession Area

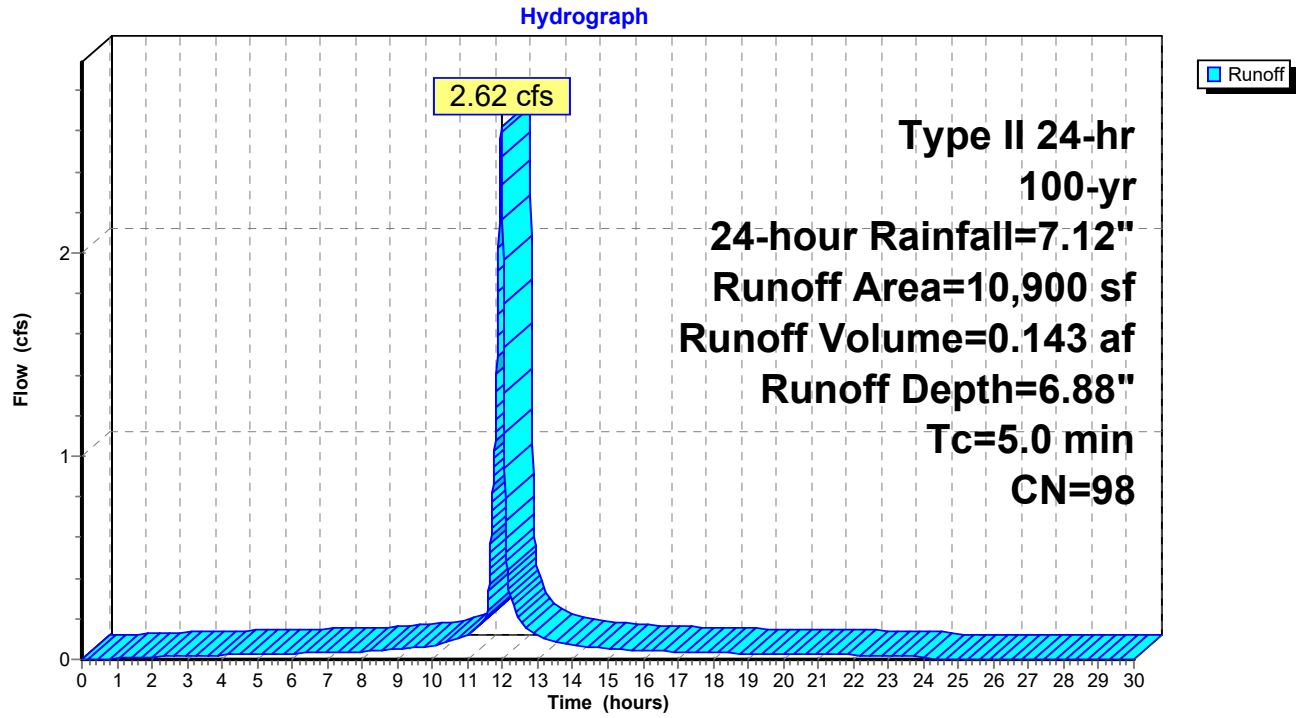
Runoff = 2.62 cfs @ 11.96 hrs, Volume= 0.143 af, Depth= 6.88"
Routed to Pond 24P : CB 06

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type II 24-hr 100-yr, 24-hour Rainfall=7.12"

Area (sf)	CN	Description
0	74	Pasture/grassland/range, Good, HSG C
10,900	98	Paved parking, HSG C
10,900	98	Weighted Average
10,900		100.00% Impervious Area

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

Subcatchment 11NS: Concession Area

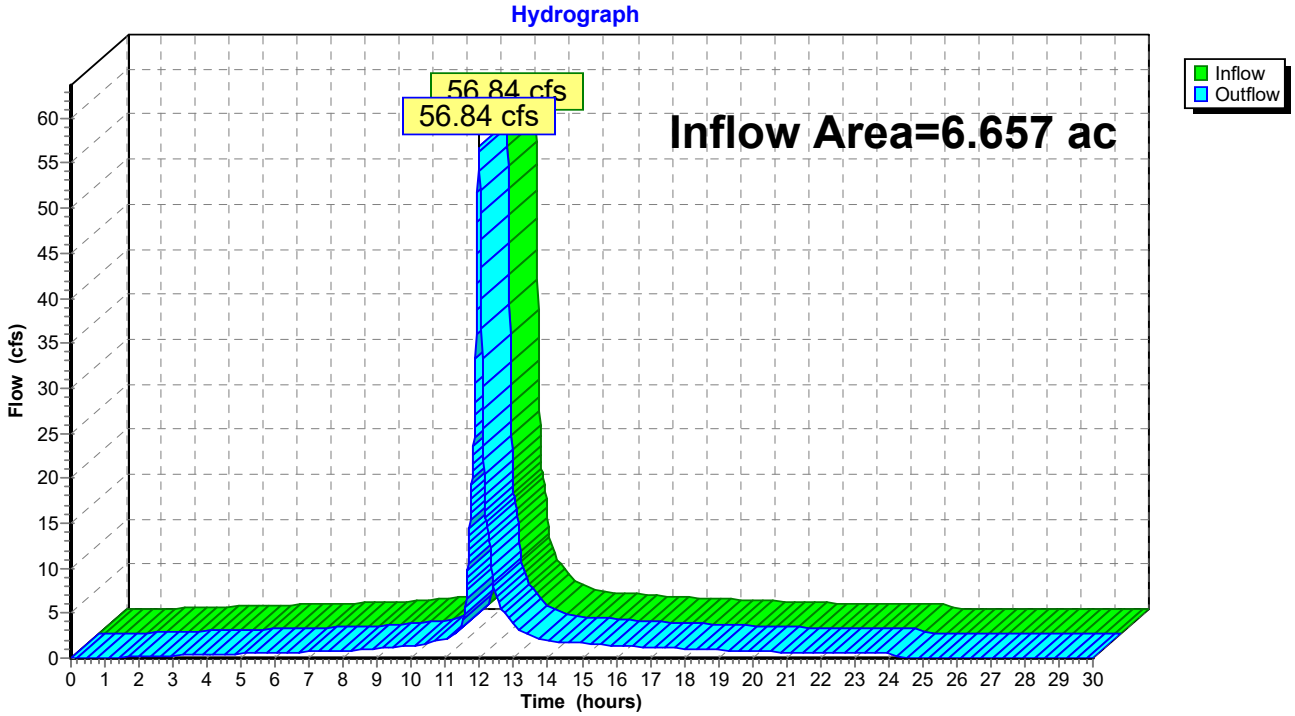


Summary for Reach 5R: Proposed N Runoff

Inflow Area = 6.657 ac, 85.55% Impervious, Inflow Depth = 6.47" for 100-yr, 24-hour event
Inflow = 56.84 cfs @ 11.97 hrs, Volume= 3.589 af
Outflow = 56.84 cfs @ 11.97 hrs, Volume= 3.589 af, Atten= 0%, Lag= 0.0 min
Routed to Reach 6R : Proposed Runoff (Combined)

Routing by Dyn-Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs / 3

Reach 5R: Proposed N Runoff

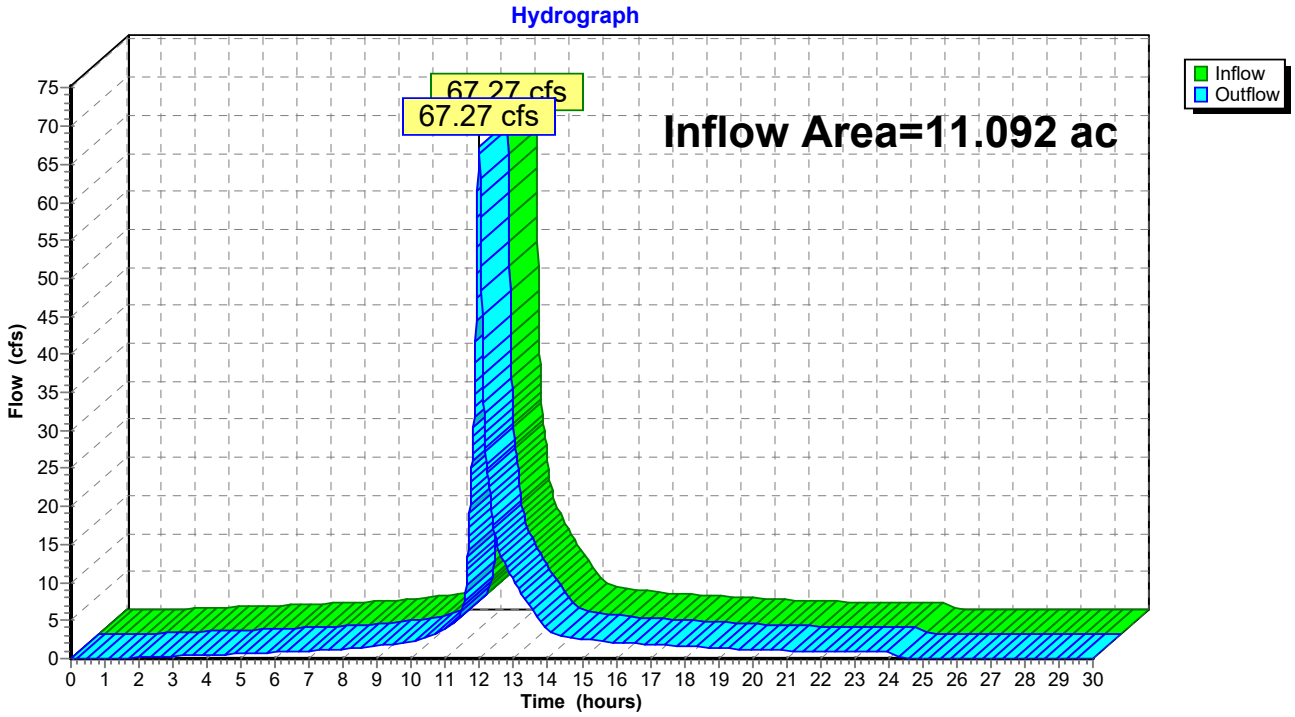


Summary for Reach 6R: Proposed Runoff (Combined)

Inflow Area = 11.092 ac, 77.28% Impervious, Inflow Depth = 6.25" for 100-yr, 24-hour event
Inflow = 67.27 cfs @ 11.98 hrs, Volume= 5.774 af
Outflow = 67.27 cfs @ 11.98 hrs, Volume= 5.774 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs / 3

Reach 6R: Proposed Runoff (Combined)

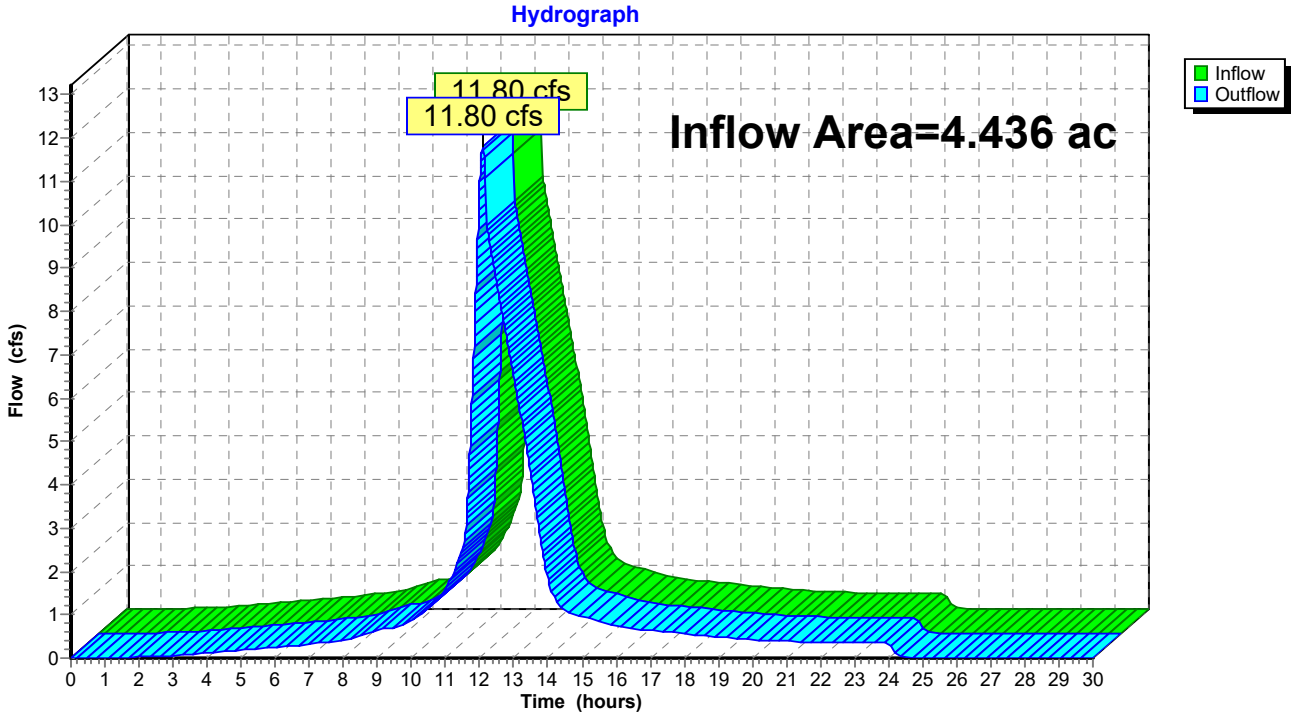


Summary for Reach 8R: Proposed E PL Runoff

Inflow Area = 4.436 ac, 64.86% Impervious, Inflow Depth = 5.91" for 100-yr, 24-hour event
Inflow = 11.80 cfs @ 12.08 hrs, Volume= 2.184 af
Outflow = 11.80 cfs @ 12.08 hrs, Volume= 2.184 af, Atten= 0%, Lag= 0.0 min
Routed to Reach 6R : Proposed Runoff (Combined)

Routing by Dyn-Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs / 3

Reach 8R: Proposed E PL Runoff



Summary for Pond 1P: UG 1 - 8' CMP

Inflow Area = 1.075 ac, 90.18% Impervious, Inflow Depth = 6.56" for 100-yr, 24-hour event
Inflow = 11.12 cfs @ 11.96 hrs, Volume= 0.588 af
Outflow = 2.47 cfs @ 12.09 hrs, Volume= 0.588 af, Atten= 78%, Lag= 8.2 min
Primary = 2.47 cfs @ 12.09 hrs, Volume= 0.588 af
Routed to Pond 26P : MH 01

Routing by Dyn-Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 99.48' @ 12.09 hrs Surf.Area= 632 sf Storage= 7,820 cf

Plug-Flow detention time= 24.3 min calculated for 0.588 af (100% of inflow)
Center-of-Mass det. time= 24.3 min (775.7 - 751.4)

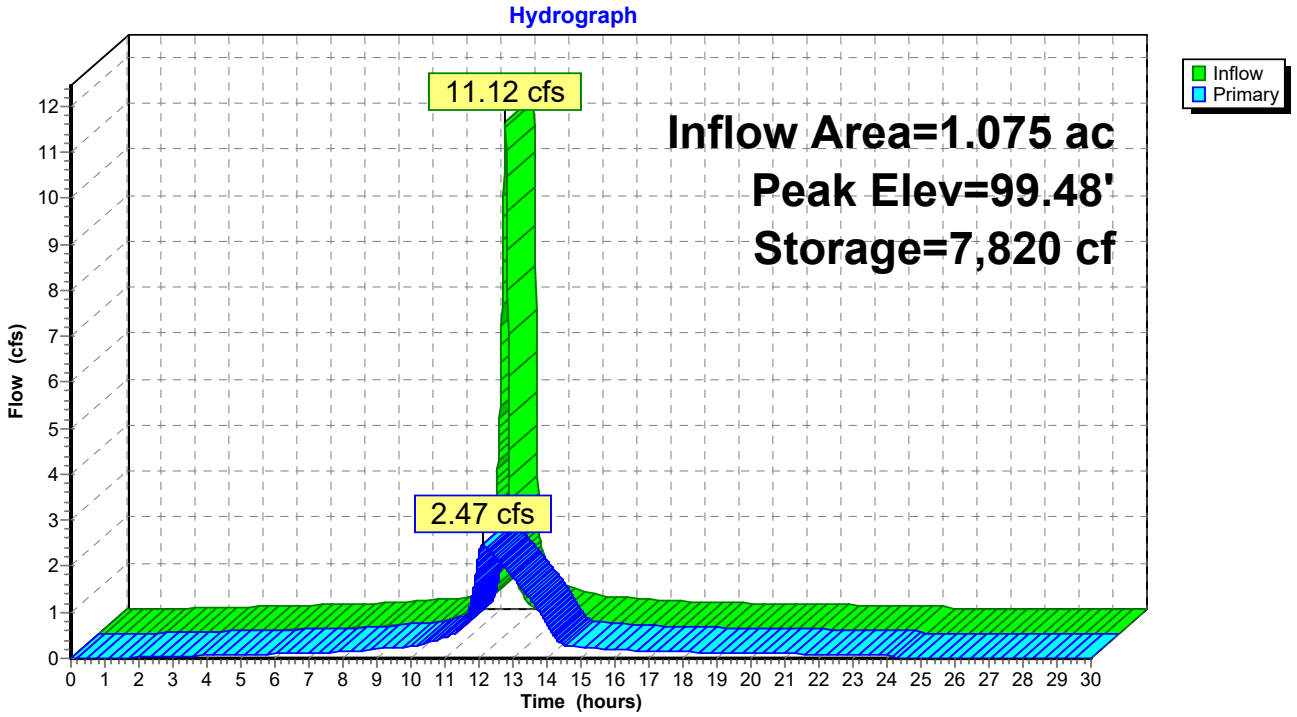
Volume	Invert	Avail.Storage	Storage Description
#1	92.00'	8,042 cf	**96.0" Round Pipe Storage** L= 160.0'
#2	100.00'	5,339 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)
		13,381 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
100.00	3	0	0
103.37	3	10	10
104.06	2,500	864	874
105.00	7,000	4,465	5,339

Device	Routing	Invert	Outlet Devices
#1	Primary	92.00'	**6.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=2.47 cfs @ 12.09 hrs HW=99.48' TW=92.63' (Dynamic Tailwater)
↑**1=Orifice/Grate** (Orifice Controls 2.47 cfs @ 12.60 fps)

Pond 1P: UG 1 - 8' CMP



Summary for Pond 2P: UG 2 - 8' CMP

Inflow Area = 1.278 ac, 56.34% Impervious, Inflow Depth = 5.68" for 100-yr, 24-hour event
Inflow = 12.25 cfs @ 11.96 hrs, Volume= 0.604 af
Outflow = 3.06 cfs @ 12.08 hrs, Volume= 0.604 af, Atten= 75%, Lag= 7.6 min
Primary = 3.06 cfs @ 12.08 hrs, Volume= 0.604 af
Routed to Pond 21P : MH 02

Routing by Dyn-Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 100.89' @ 12.08 hrs Surf.Area= 304 sf Storage= 8,019 cf

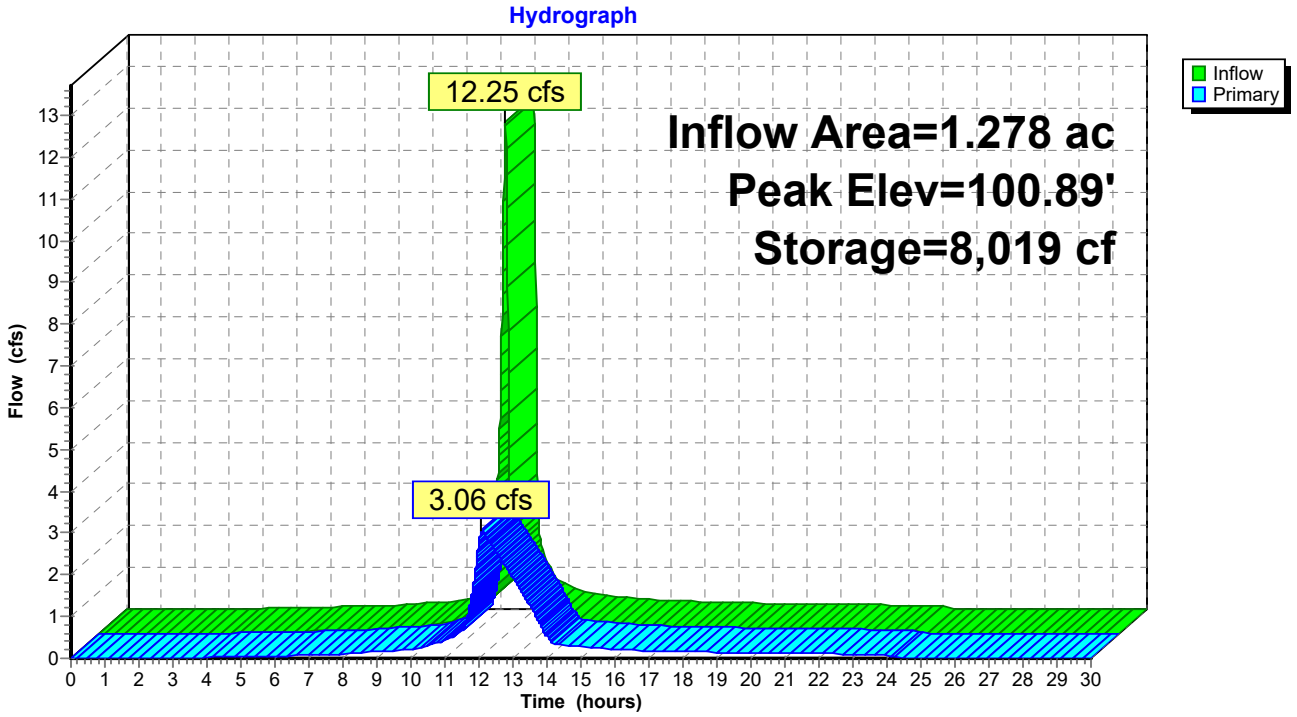
Plug-Flow detention time= 21.4 min calculated for 0.604 af (100% of inflow)
Center-of-Mass det. time= 21.4 min (801.0 - 779.5)

Volume	Invert	Avail.Storage	Storage Description
#1	93.00'	8,042 cf	**96.0" Round Pipe Storage** L= 160.0'

Device	Routing	Invert	Outlet Devices
#1	Primary	93.00'	**12.0" Round Culvert** L= 97.0' RCP, rounded edge headwall, Ke= 0.100 Inlet / Outlet Invert= 93.00' / 92.32' S= 0.0070 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf
#2	Device 1	93.00'	**6.5" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=3.06 cfs @ 12.08 hrs HW=100.88' TW=93.08' (Dynamic Tailwater)
↑**1=Culvert** (Passes 3.06 cfs of 8.51 cfs potential flow)
↑**2=Orifice/Grate** (Orifice Controls 3.06 cfs @ 13.28 fps)

Pond 2P: UG 2 - 8' CMP



Summary for Pond 3P: UG 3 - 10' CMP

Inflow Area = 1.661 ac, 69.12% Impervious, Inflow Depth = 6.06" for 100-yr, 24-hour event
Inflow = 16.65 cfs @ 11.96 hrs, Volume= 0.838 af
Outflow = 4.37 cfs @ 12.08 hrs, Volume= 0.838 af, Atten= 74%, Lag= 7.4 min
Primary = 4.37 cfs @ 12.08 hrs, Volume= 0.838 af
Routed to Pond 21P : MH 02

Routing by Dyn-Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 101.84' @ 12.08 hrs Surf.Area= 694 sf Storage= 10,687 cf

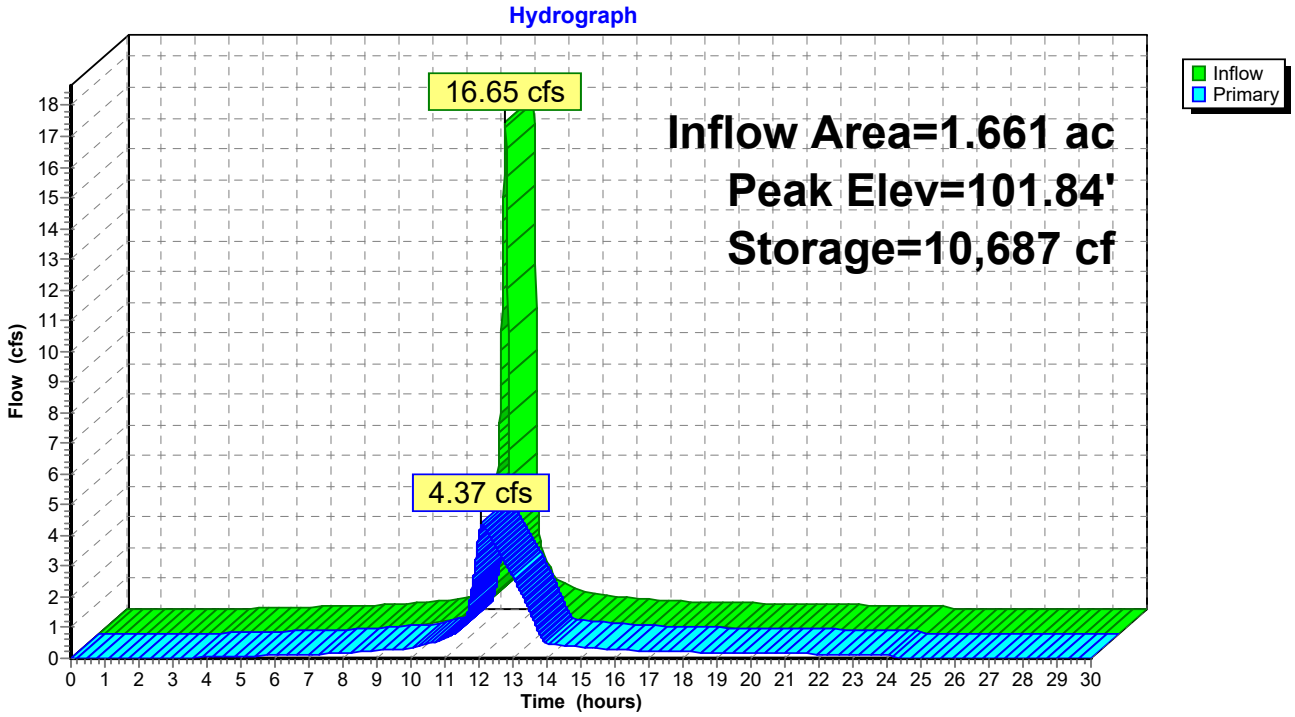
Plug-Flow detention time= 18.9 min calculated for 0.838 af (100% of inflow)
Center-of-Mass det. time= 18.9 min (790.4 - 771.5)

Volume	Invert	Avail.Storage	Storage Description
#1	92.50'	10,996 cf	**120.0" Round Pipe Storage** L= 140.0'

Device	Routing	Invert	Outlet Devices
#1	Primary	92.50'	**12.0" Round Culvert** L= 37.0' RCP, rounded edge headwall, Ke= 0.100 Inlet / Outlet Invert= 92.50' / 92.32' S= 0.0049 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf
#2	Device 1	92.50'	**7.5" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=4.37 cfs @ 12.08 hrs HW=101.84' TW=93.08' (Dynamic Tailwater)
↑**1=Culvert** (Passes 4.37 cfs of 12.23 cfs potential flow)
↑**2=Orifice/Grate** (Orifice Controls 4.37 cfs @ 14.25 fps)

Pond 3P: UG 3 - 10' CMP



Summary for Pond 4P: CB 04

Inflow Area = 0.422 ac, 9.37% Impervious, Inflow Depth = 4.36" for 100-yr, 24-hour event
Inflow = 3.35 cfs @ 11.96 hrs, Volume= 0.154 af
Outflow = 1.90 cfs @ 12.04 hrs, Volume= 0.154 af, Atten= 43%, Lag= 4.5 min
Primary = 1.90 cfs @ 12.04 hrs, Volume= 0.154 af
Routed to Pond 26P : MH 01

Routing by Dyn-Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 104.55' @ 12.04 hrs Surf.Area= 2,146 sf Storage= 581 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 1.0 min (813.7 - 812.7)

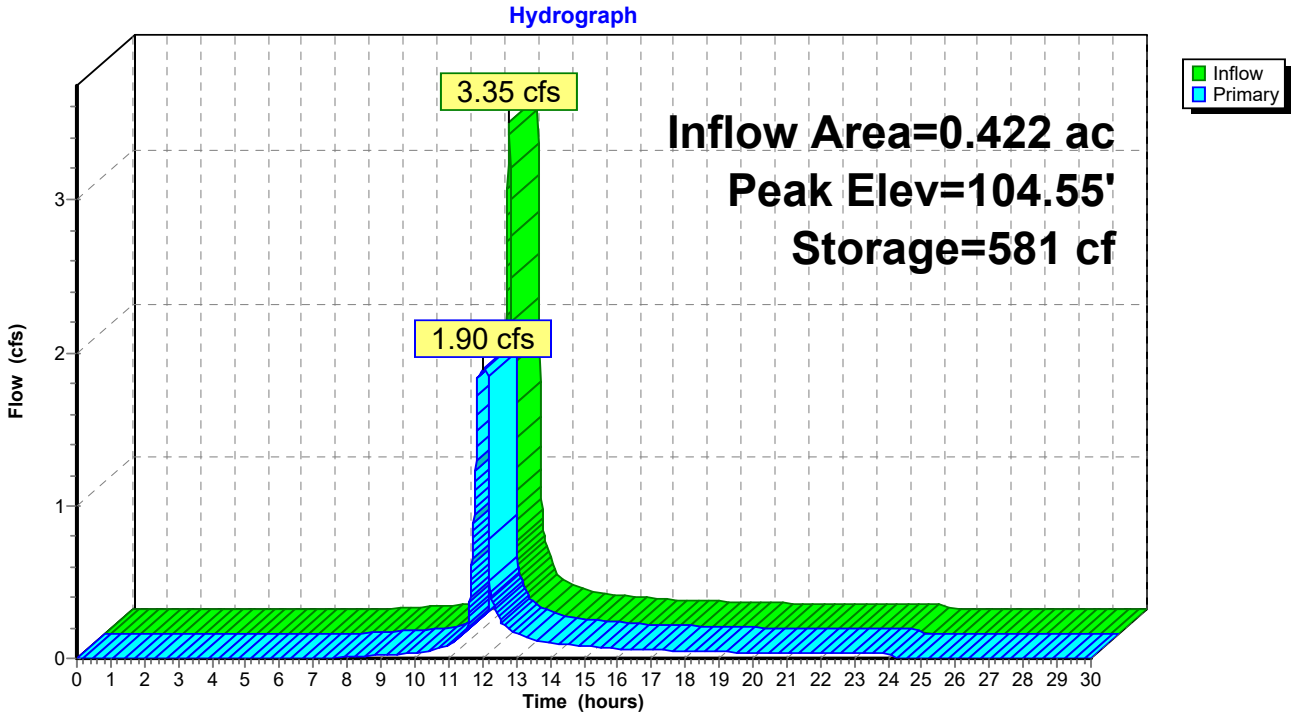
Volume	Invert	Avail.Storage	Storage Description
#1	96.00'	2,200 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
96.00	3	0	0
104.00	3	24	24
104.50	1,850	463	487
105.00	5,000	1,713	2,200

Device	Routing	Invert	Outlet Devices
#1	Primary	96.00'	**8.0" Round Culvert** L= 47.0' RCP, rounded edge headwall, Ke= 0.100 Inlet / Outlet Invert= 96.00' / 93.22' S= 0.0591 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.35 sf
#2	Device 1	96.00'	**5.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=1.90 cfs @ 12.04 hrs HW=104.55' TW=92.61' (Dynamic Tailwater)
↑**1=Culvert** (Passes 1.90 cfs of 4.80 cfs potential flow)
↑**2=Orifice/Grate** (Orifice Controls 1.90 cfs @ 13.90 fps)

Pond 4P: CB 04


Hydrograph
Inflow
Primary
3.35 cfs
1.90 cfs
Inflow Area=0.422 ac
Peak Elev=104.55'
Storage=581 cf
Flow (cfs)
0
1
2
3
0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30
Time (hours)

Summary for Pond 5P: Parking Lot CMP

Inflow Area = 3.398 ac, 93.04% Impervious, Inflow Depth = 6.67" for 100-yr, 24-hour event
Inflow = 28.77 cfs @ 11.96 hrs, Volume= 1.889 af
Outflow = 28.70 cfs @ 11.96 hrs, Volume= 1.889 af, Atten= 0%, Lag= 0.4 min
Primary = 28.70 cfs @ 11.96 hrs, Volume= 1.889 af
Routed to Reach 5R : Proposed N Runoff

Routing by Dyn-Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 90.40' @ 11.96 hrs Surf.Area= 633 sf Storage= 4,760 cf

Plug-Flow detention time= 19.8 min calculated for 1.888 af (100% of inflow)
Center-of-Mass det. time= 19.8 min (779.0 - 759.2)

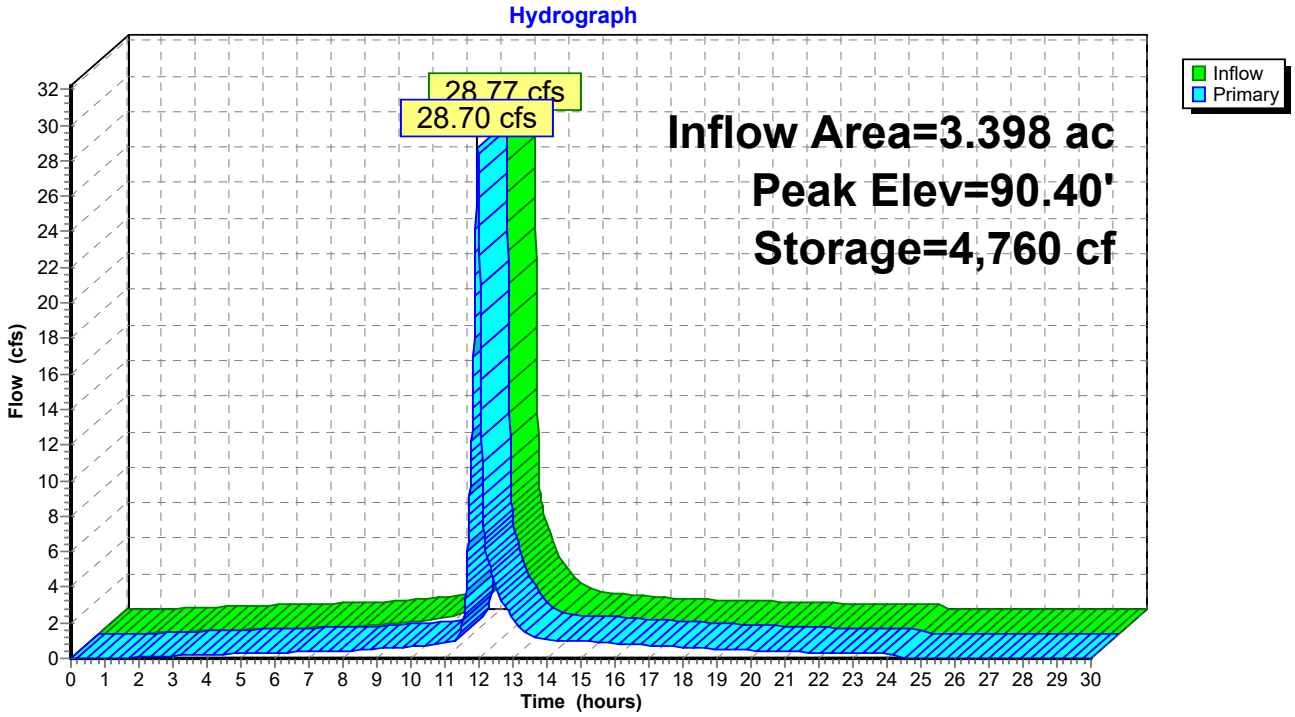
Volume	Invert	Avail.Storage	Storage Description
#1	85.00'	4,948 cf	**72.0" Round Pipe Storage** L= 175.0'
#2	85.00'	1,772 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)
#3	85.00'	53 cf	**18.0" Round Pipe Storage** L= 30.0' S= 0.0500 '/'
		6,773 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
85.00	3	0	0
92.00	3	21	21
92.50	1,000	251	272
93.00	5,000	1,500	1,772

Device	Routing	Invert	Outlet Devices
#1	Primary	85.00'	**24.0" Round Culvert** L= 92.0' RCP, rounded edge headwall, Ke= 0.100 Inlet / Outlet Invert= 85.00' / 84.00' S= 0.0109 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 3.14 sf
#2	Device 1	85.00'	**4.5" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#3	Device 1	89.00'	**5.0' long x 0.5' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32

Primary OutFlow Max=28.66 cfs @ 11.96 hrs HW=90.40' TW=0.00' (Dynamic Tailwater)
1=Culvert (Passes 28.66 cfs of 35.28 cfs potential flow)
2=Orifice/Grate (Orifice Controls 1.21 cfs @ 10.99 fps)
3=Broad-Crested Rectangular Weir (Weir Controls 27.45 cfs @ 3.93 fps)

Pond 5P: Parking Lot CMP



Summary for Pond 7P: STRM MH 01

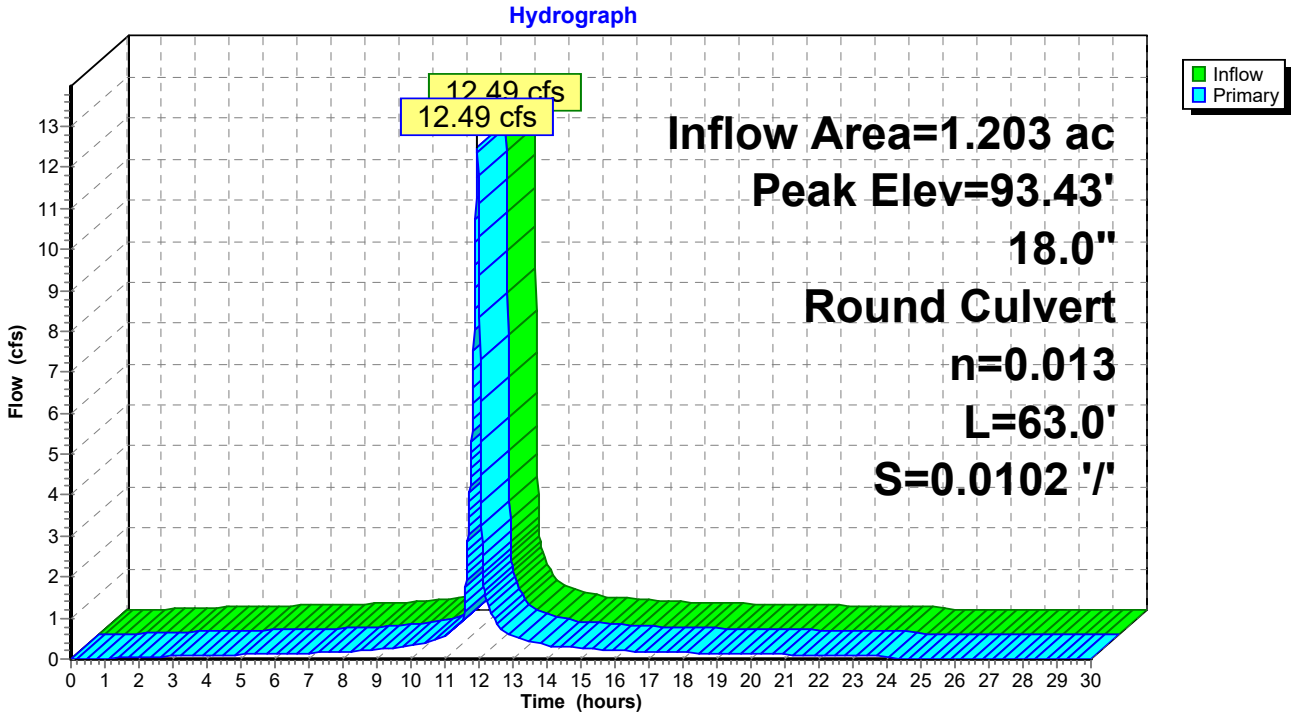
Inflow Area = 1.203 ac, 93.70% Impervious, Inflow Depth = 6.69" for 100-yr, 24-hour event
Inflow = 12.49 cfs @ 11.96 hrs, Volume= 0.671 af
Outflow = 12.49 cfs @ 11.96 hrs, Volume= 0.671 af, Atten= 0%, Lag= 0.0 min
Primary = 12.49 cfs @ 11.96 hrs, Volume= 0.671 af
Routed to Pond 39P : East Berm Basin

Routing by Dyn-Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 93.43' @ 11.96 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	90.76'	**18.0" Round Culvert** L= 63.0' RCP, rounded edge headwall, Ke= 0.100 Inlet / Outlet Invert= 90.76' / 90.12' S= 0.0102 '/' Cc= 0.900 n= 0.013 Concrete pipe, bends & connections, Flow Area= 1.77 sf

Primary OutFlow Max=12.46 cfs @ 11.96 hrs HW=93.42' TW=91.68' (Dynamic Tailwater)
↑**1=Culvert** (Outlet Controls 12.46 cfs @ 7.05 fps)

Pond 7P: STRM MH 01



Summary for Pond 8P: N Curb Cut

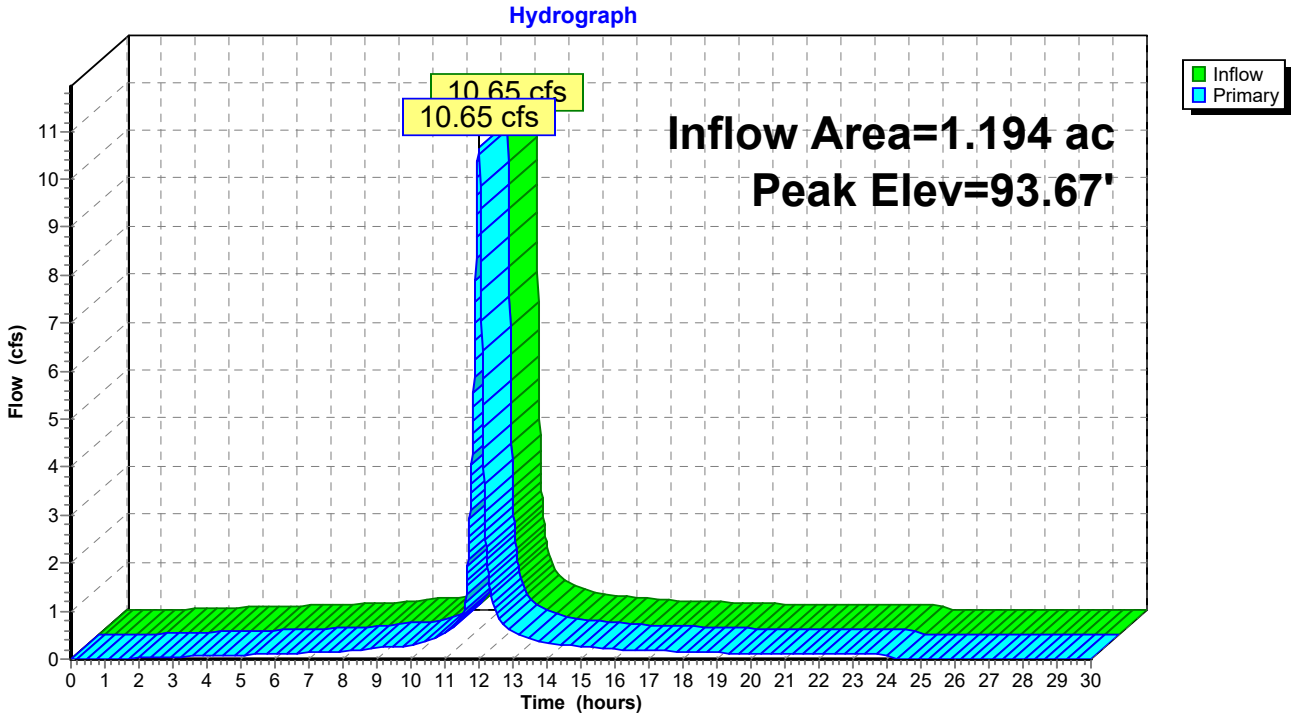
Inflow Area = 1.194 ac, 87.31% Impervious, Inflow Depth = 6.56" for 100-yr, 24-hour event
Inflow = 10.65 cfs @ 11.99 hrs, Volume= 0.652 af
Outflow = 10.65 cfs @ 11.99 hrs, Volume= 0.652 af, Atten= 0%, Lag= 0.0 min
Primary = 10.65 cfs @ 11.99 hrs, Volume= 0.652 af
Routed to Pond 39P : East Berm Basin

Routing by Dyn-Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 93.67' @ 11.99 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	92.78'	**21.0" W x 8.0" H Box Culvert** L= 6.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 92.78' / 92.72' S= 0.0100 '/' Cc= 0.900 n= 0.015 Concrete sewer w/manholes & inlets, Flow Area= 1.17 sf
#2	Primary	93.43'	**20.0' long Broad-Crested Rectangular Weir** Head (feet) 0.49 0.98 1.48 Coef. (English) 2.86 3.17 3.24

Primary OutFlow Max=10.64 cfs @ 11.99 hrs HW=93.67' TW=91.71' (Dynamic Tailwater)
1=Culvert (Barrel Controls 3.78 cfs @ 3.24 fps)
2=Broad-Crested Rectangular Weir (Weir Controls 6.86 cfs @ 1.41 fps)

Pond 8P: N Curb Cut



Summary for Pond 9P: 3NS CB 03

Inflow Area = 0.388 ac, 89.35% Impervious, Inflow Depth = 6.53" for 100-yr, 24-hour event
Inflow = 4.02 cfs @ 11.96 hrs, Volume= 0.211 af
Outflow = 4.02 cfs @ 11.96 hrs, Volume= 0.211 af, Atten= 0%, Lag= 0.0 min
Primary = 3.80 cfs @ 11.93 hrs, Volume= 0.210 af
Routed to Pond 36P : 3NS CB 02A
Secondary = 0.42 cfs @ 11.96 hrs, Volume= 0.001 af
Routed to Reach 5R : Proposed N Runoff

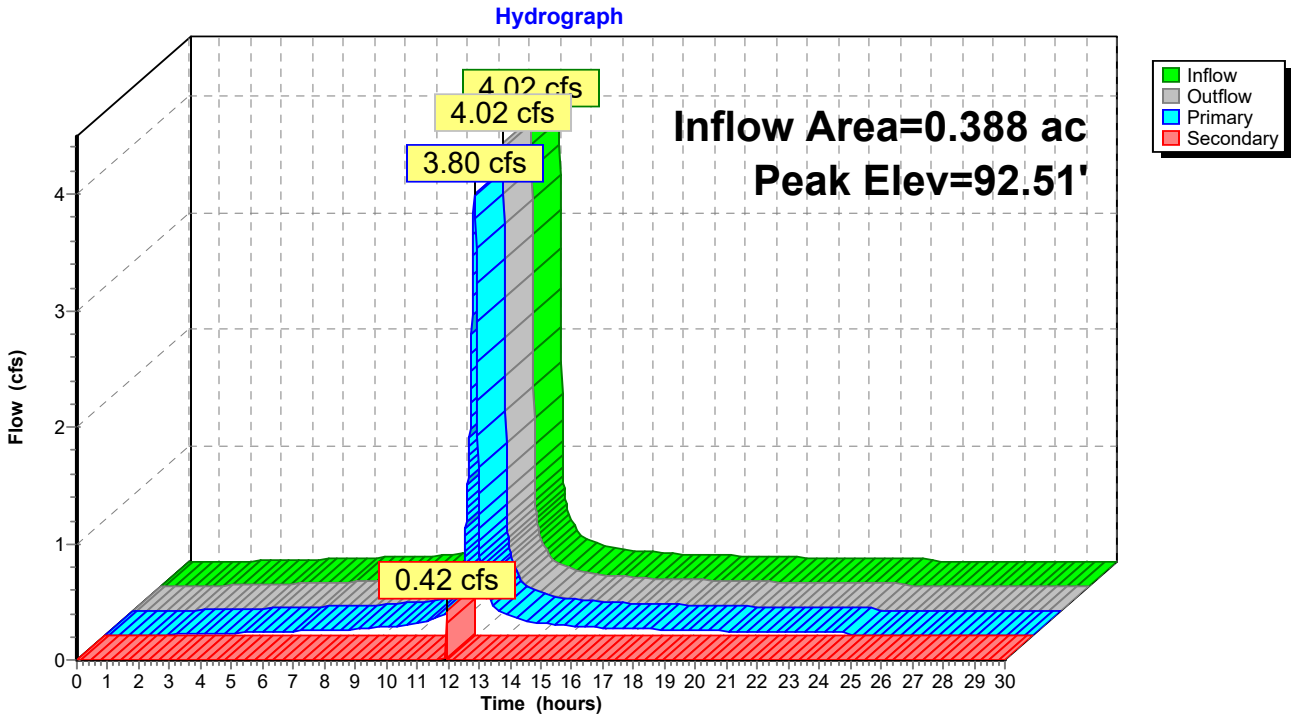
Routing by Dyn-Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 92.51' @ 11.96 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	88.75'	**15.0" Round Culvert** L= 92.0' RCP, rounded edge headwall, Ke= 0.100 Inlet / Outlet Invert= 88.75' / 88.50' S= 0.0027 '/' Cc= 0.900 n= 0.013 Concrete pipe, bends & connections, Flow Area= 1.23 sf
#2	Secondary	92.45'	**10.0' long x 30.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=3.76 cfs @ 11.93 hrs HW=92.43' TW=91.96' (Dynamic Tailwater)
└**1=Culvert** (Outlet Controls 3.76 cfs @ 3.06 fps)

Secondary OutFlow Max=0.41 cfs @ 11.96 hrs HW=92.51' TW=0.00' (Dynamic Tailwater)
└**2=Broad-Crested Rectangular Weir** (Weir Controls 0.41 cfs @ 0.67 fps)

Pond 9P: 3NS CB 03



Summary for Pond 10P: NE Curb Cut

Inflow Area = 0.739 ac, 81.37% Impervious, Inflow Depth = 6.41" for 100-yr, 24-hour event
Inflow = 6.48 cfs @ 12.01 hrs, Volume= 0.395 af
Outflow = 6.48 cfs @ 12.01 hrs, Volume= 0.395 af, Atten= 0%, Lag= 0.0 min
Primary = 1.86 cfs @ 12.01 hrs, Volume= 0.278 af
Routed to Pond 13P : NE Curb Cut
Secondary = 4.63 cfs @ 12.01 hrs, Volume= 0.117 af
Routed to Pond 13P : NE Curb Cut

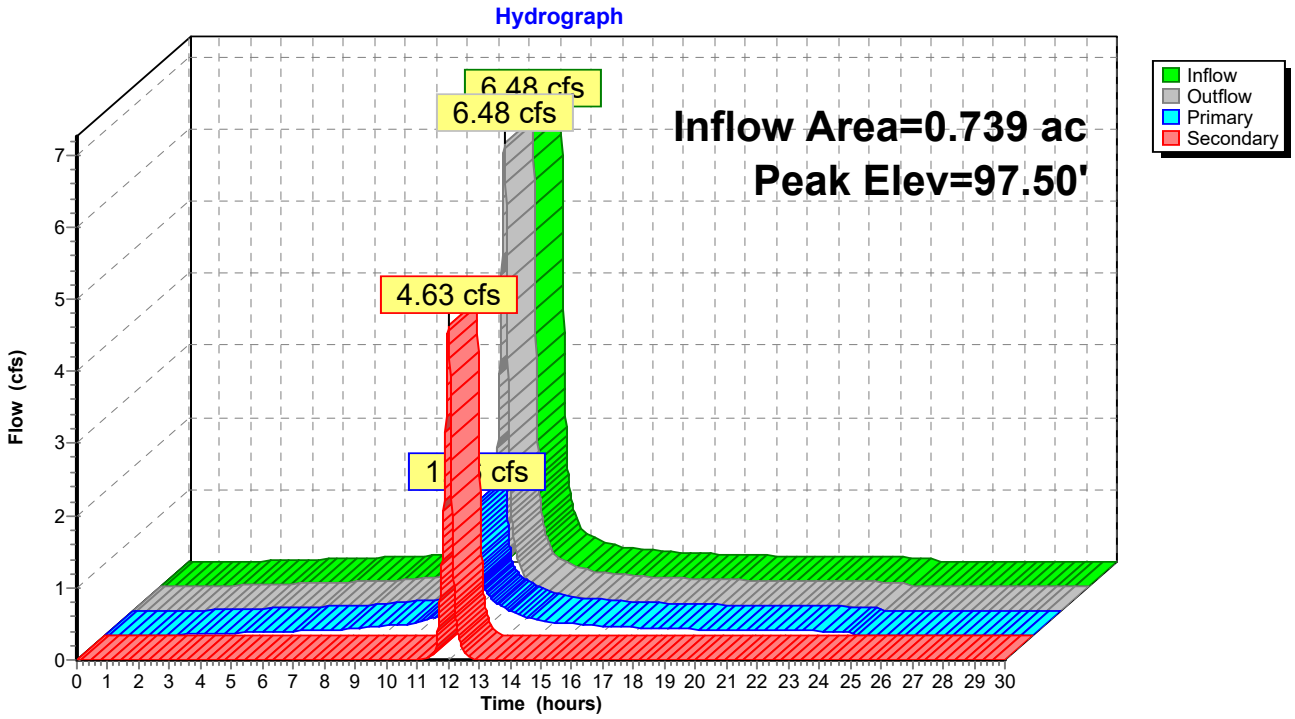
Routing by Dyn-Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 97.50' @ 12.01 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	97.01'	**21.0" W x 8.0" H Box Culvert** L= 6.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 97.01' / 96.91' S= 0.0167 '/' Cc= 0.900 n= 0.015 Concrete sewer w/manholes & inlets, Flow Area= 1.17 sf
#2	Secondary	97.18'	**10.0' long x 10.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Primary OutFlow Max=1.86 cfs @ 12.01 hrs HW=97.50' TW=94.41' (Dynamic Tailwater)
└─**1=Culvert** (Barrel Controls 1.86 cfs @ 2.87 fps)

Secondary OutFlow Max=4.63 cfs @ 12.01 hrs HW=97.50' TW=94.41' (Dynamic Tailwater)
└─**2=Broad-Crested Rectangular Weir** (Weir Controls 4.63 cfs @ 1.44 fps)

Pond 10P: NE Curb Cut



Summary for Pond 11P: Existing Storm Sewer

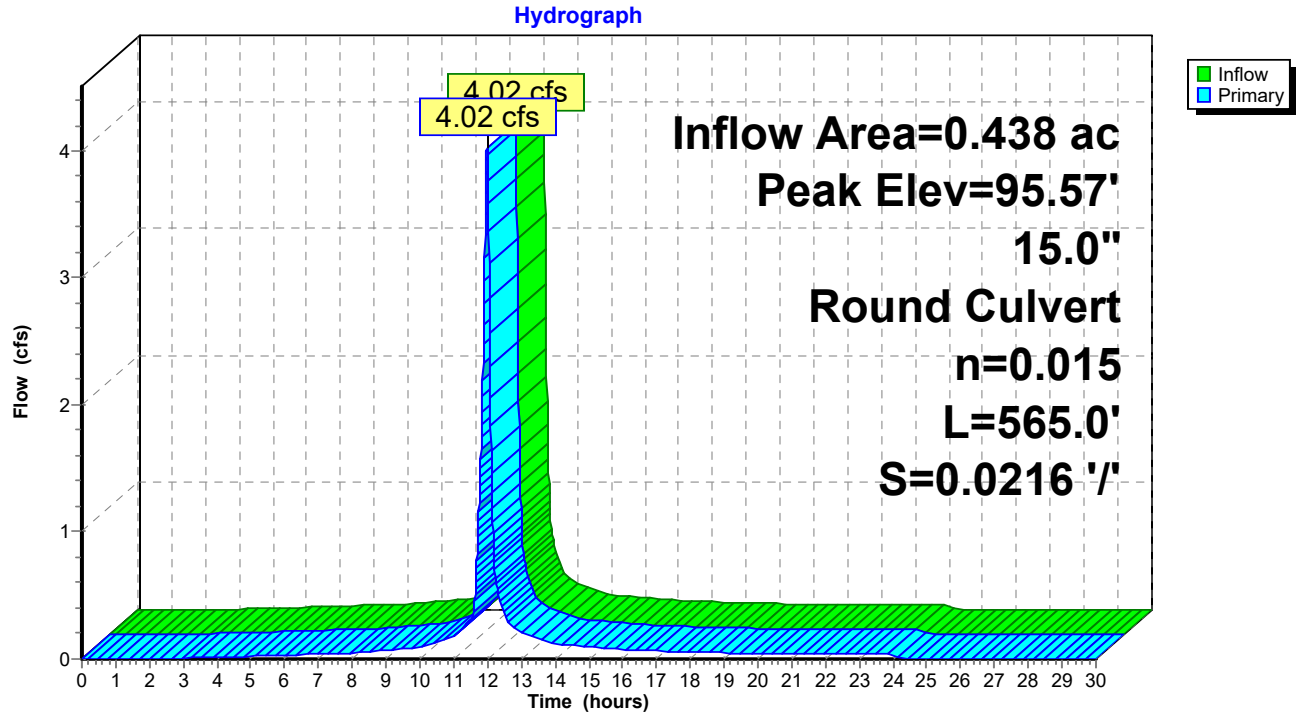
Inflow Area = 0.438 ac, 77.41% Impervious, Inflow Depth = 6.20" for 100-yr, 24-hour event
Inflow = 4.02 cfs @ 11.99 hrs, Volume= 0.226 af
Outflow = 4.02 cfs @ 11.99 hrs, Volume= 0.226 af, Atten= 0%, Lag= 0.0 min
Primary = 4.02 cfs @ 11.99 hrs, Volume= 0.226 af
Routed to Reach 5R : Proposed N Runoff

Routing by Dyn-Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 95.57' @ 11.99 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	94.48'	**15.0" Round Culvert** L= 565.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 94.48' / 82.28' S= 0.0216 '/' Cc= 0.900 n= 0.015 Concrete sewer w/manholes & inlets, Flow Area= 1.23 sf

Primary OutFlow Max=4.02 cfs @ 11.99 hrs HW=95.57' TW=0.00' (Dynamic Tailwater)
1=Culvert (Inlet Controls 4.02 cfs @ 3.55 fps)

Pond 11P: Existing Storm Sewer



Summary for Pond 13P: NE Curb Cut

Inflow Area = 1.056 ac, 85.65% Impervious, Inflow Depth = 6.51" for 100-yr, 24-hour event
Inflow = 9.43 cfs @ 12.00 hrs, Volume= 0.573 af
Outflow = 9.43 cfs @ 12.00 hrs, Volume= 0.573 af, Atten= 0%, Lag= 0.0 min
Primary = 2.57 cfs @ 12.00 hrs, Volume= 0.406 af
Routed to Pond 8P : N Curb Cut
Secondary = 6.86 cfs @ 12.00 hrs, Volume= 0.167 af
Routed to Pond 8P : N Curb Cut

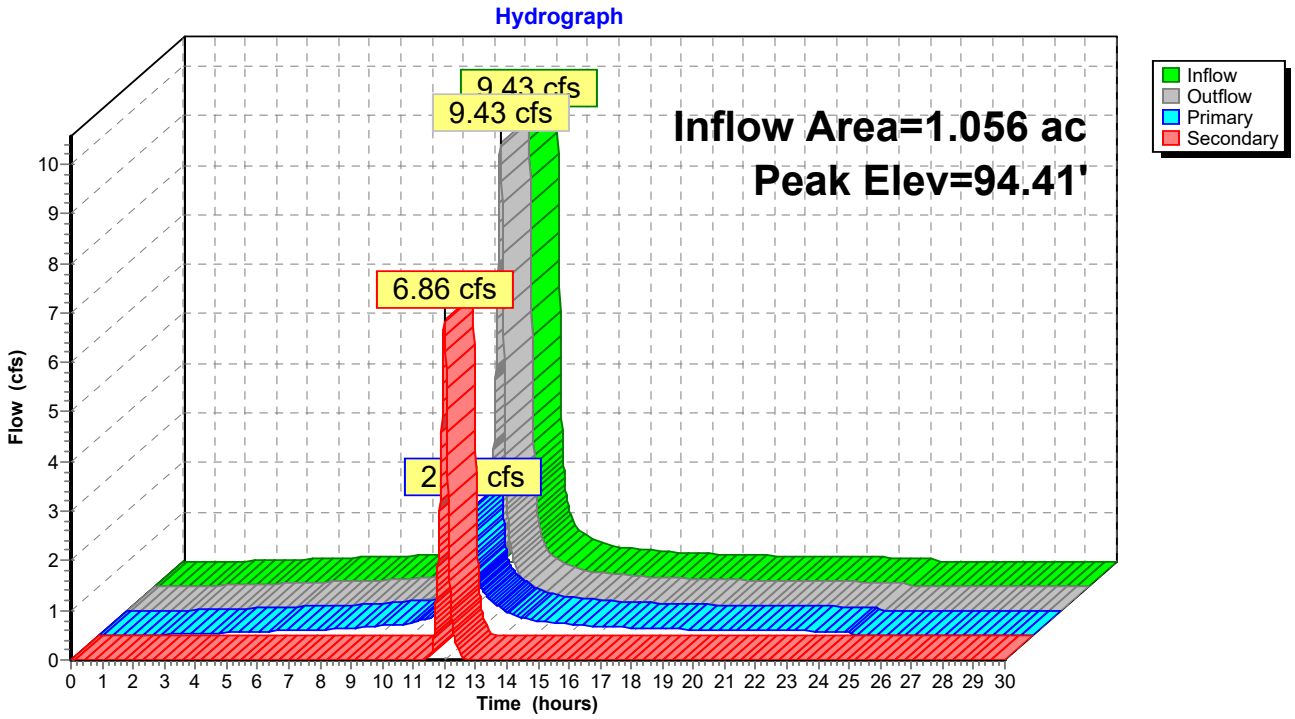
Routing by Dyn-Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 94.41' @ 12.00 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	93.76'	**21.0" W x 8.0" H Box Culvert** L= 6.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 93.76' / 93.69' S= 0.0117 '/' Cc= 0.900 n= 0.015 Concrete sewer w/manholes & inlets, Flow Area= 1.17 sf
#2	Secondary	94.00'	**10.0' long x 10.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Primary OutFlow Max=2.57 cfs @ 12.00 hrs HW=94.41' TW=93.67' (Dynamic Tailwater)
└**1=Culvert** (Barrel Controls 2.57 cfs @ 2.99 fps)

Secondary OutFlow Max=6.85 cfs @ 12.00 hrs HW=94.41' TW=93.67' (Dynamic Tailwater)
└**2=Broad-Crested Rectangular Weir** (Weir Controls 6.85 cfs @ 1.65 fps)

Pond 13P: NE Curb Cut



Summary for Pond 20P: CB 08

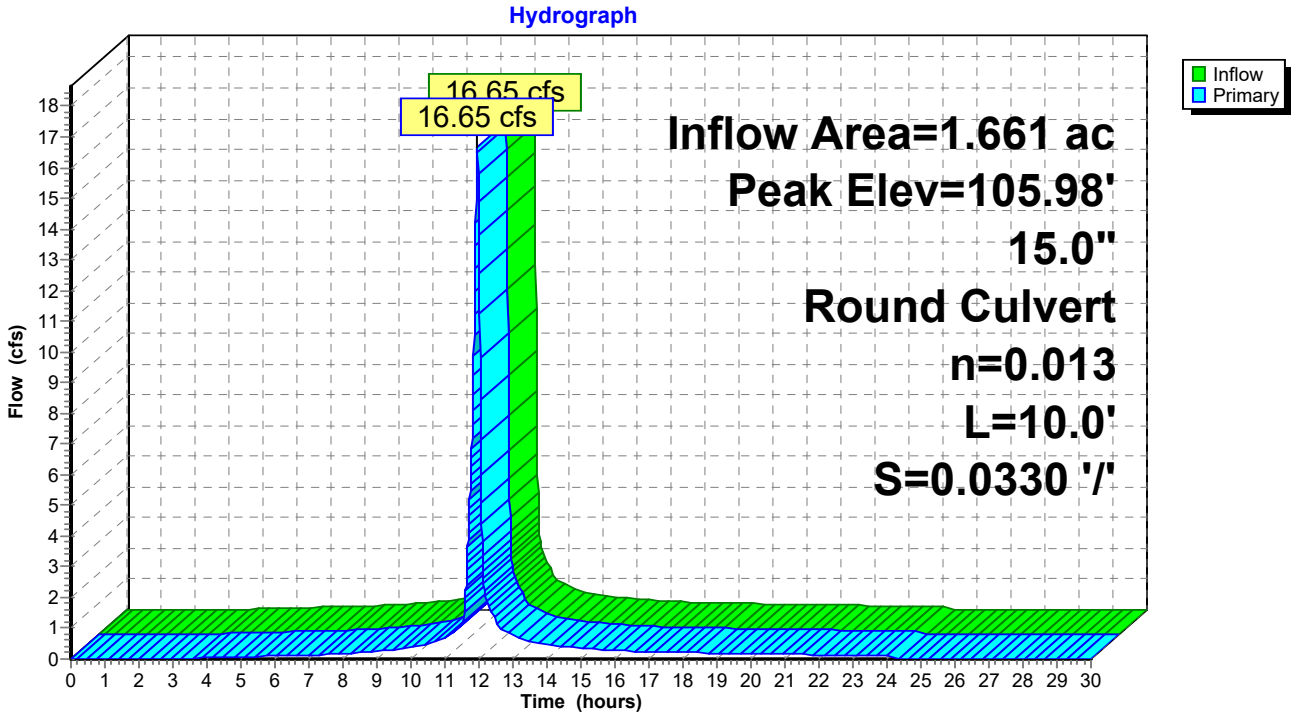
Inflow Area = 1.661 ac, 69.12% Impervious, Inflow Depth = 6.06" for 100-yr, 24-hour event
Inflow = 16.65 cfs @ 11.96 hrs, Volume= 0.838 af
Outflow = 16.65 cfs @ 11.96 hrs, Volume= 0.838 af, Atten= 0%, Lag= 0.0 min
Primary = 16.65 cfs @ 11.96 hrs, Volume= 0.838 af
Routed to Pond 3P : UG 3 - 10' CMP

Routing by Dyn-Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 105.98' @ 11.96 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	101.08'	**15.0" Round Culvert** L= 10.0' RCP, rounded edge headwall, Ke= 0.100 Inlet / Outlet Invert= 101.08' / 100.75' S= 0.0330 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=16.62 cfs @ 11.96 hrs HW=105.96' TW=99.01' (Dynamic Tailwater)
↑—**1=Culvert** (Inlet Controls 16.62 cfs @ 13.54 fps)

Pond 20P: CB 08



Summary for Pond 21P: MH 02

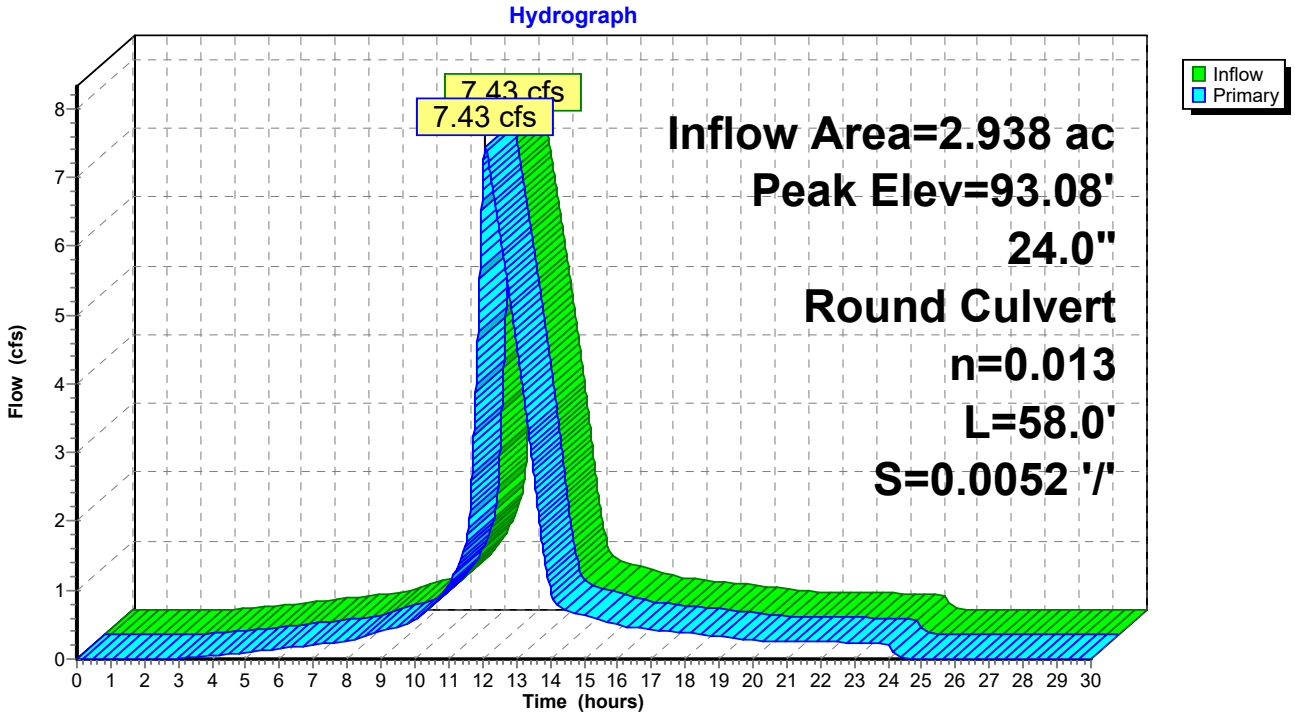
Inflow Area = 2.938 ac, 63.56% Impervious, Inflow Depth = 5.89" for 100-yr, 24-hour event
Inflow = 7.43 cfs @ 12.08 hrs, Volume= 1.442 af
Outflow = 7.43 cfs @ 12.08 hrs, Volume= 1.442 af, Atten= 0%, Lag= 0.0 min
Primary = 7.43 cfs @ 12.08 hrs, Volume= 1.442 af
Routed to Pond 26P : MH 01

Routing by Dyn-Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 93.08' @ 12.08 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	91.57'	**24.0" Round Culvert** L= 58.0' RCP, rounded edge headwall, Ke= 0.100 Inlet / Outlet Invert= 91.57' / 91.27' S= 0.0052 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 3.14 sf

Primary OutFlow Max=7.43 cfs @ 12.08 hrs HW=93.08' TW=92.63' (Dynamic Tailwater)
↳**1=Culvert** (Outlet Controls 7.43 cfs @ 4.06 fps)

Pond 21P: MH 02



Summary for Pond 22P: CB 09

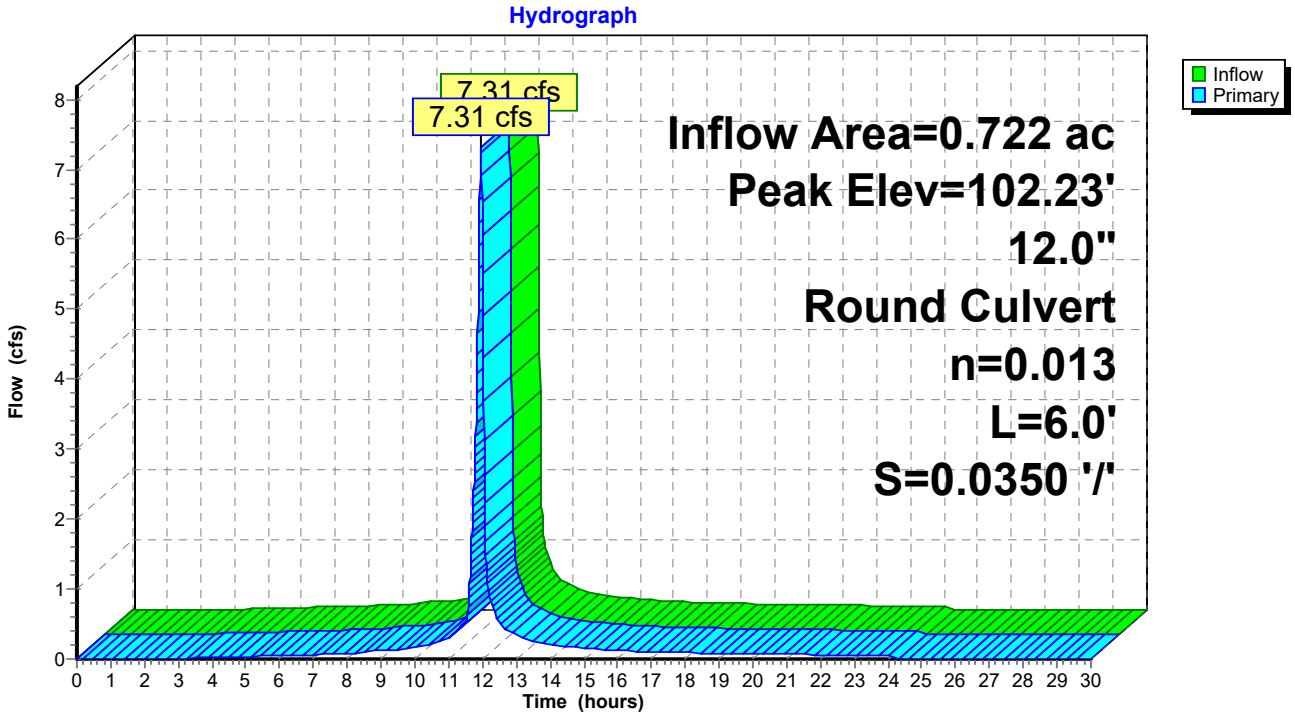
Inflow Area = 0.722 ac, 74.45% Impervious, Inflow Depth = 6.17" for 100-yr, 24-hour event
Inflow = 7.31 cfs @ 11.96 hrs, Volume= 0.372 af
Outflow = 7.31 cfs @ 11.96 hrs, Volume= 0.372 af, Atten= 0%, Lag= 0.0 min
Primary = 7.31 cfs @ 11.96 hrs, Volume= 0.372 af
Routed to Pond 2P : UG 2 - 8' CMP

Routing by Dyn-Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 102.23' @ 11.96 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	99.71'	**12.0" Round Culvert** L= 6.0' RCP, rounded edge headwall, Ke= 0.100 Inlet / Outlet Invert= 99.71' / 99.50' S= 0.0350 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=7.30 cfs @ 11.96 hrs HW=102.23' TW=98.28' (Dynamic Tailwater)
1=Culvert (Barrel Controls 7.30 cfs @ 9.29 fps)

Pond 22P: CB 09



Summary for Pond 23P: CB 10

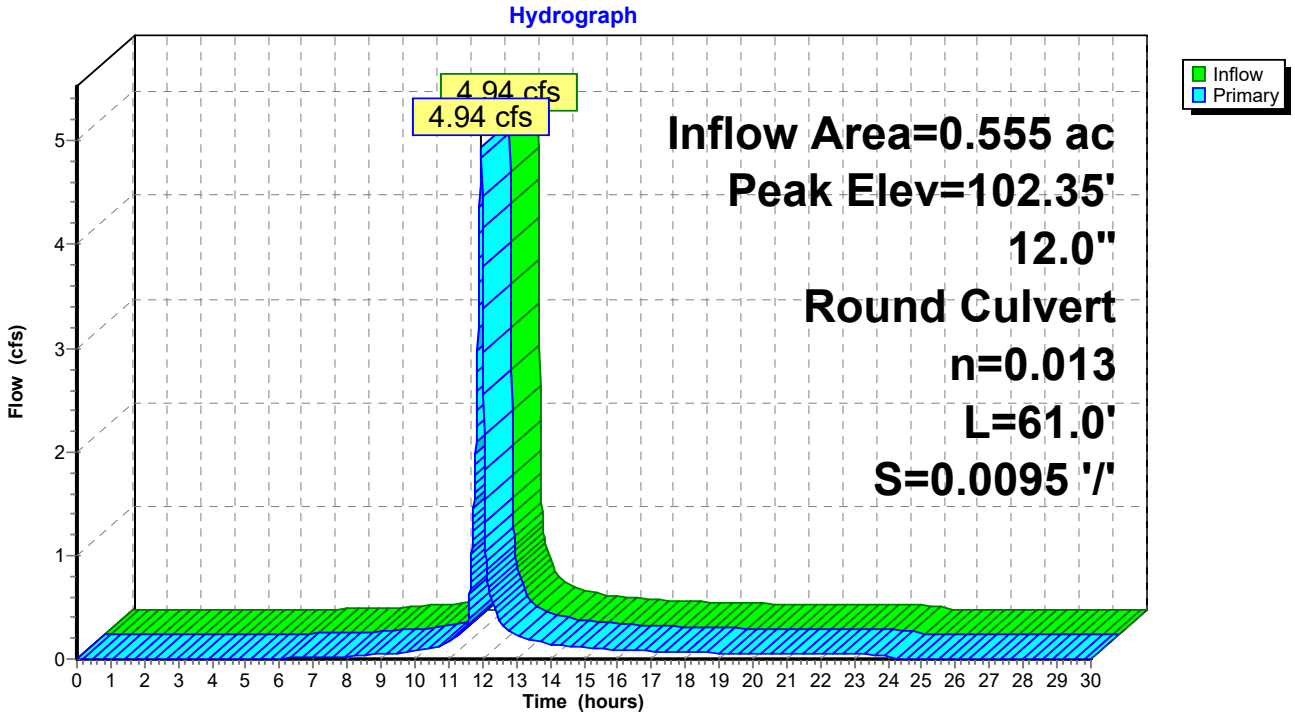
Inflow Area = 0.555 ac, 32.78% Impervious, Inflow Depth = 5.03" for 100-yr, 24-hour event
Inflow = 4.94 cfs @ 11.96 hrs, Volume= 0.233 af
Outflow = 4.94 cfs @ 11.96 hrs, Volume= 0.233 af, Atten= 0%, Lag= 0.0 min
Primary = 4.94 cfs @ 11.96 hrs, Volume= 0.233 af
Routed to Pond 2P : UG 2 - 8' CMP

Routing by Dyn-Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 102.35' @ 11.96 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	100.08'	**12.0" Round Culvert** L= 61.0' RCP, rounded edge headwall, Ke= 0.100 Inlet / Outlet Invert= 100.08' / 99.50' S= 0.0095 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=4.93 cfs @ 11.96 hrs HW=102.34' TW=98.34' (Dynamic Tailwater)
1=Culvert (Barrel Controls 4.93 cfs @ 6.28 fps)

Pond 23P: CB 10



Summary for Pond 24P: CB 06

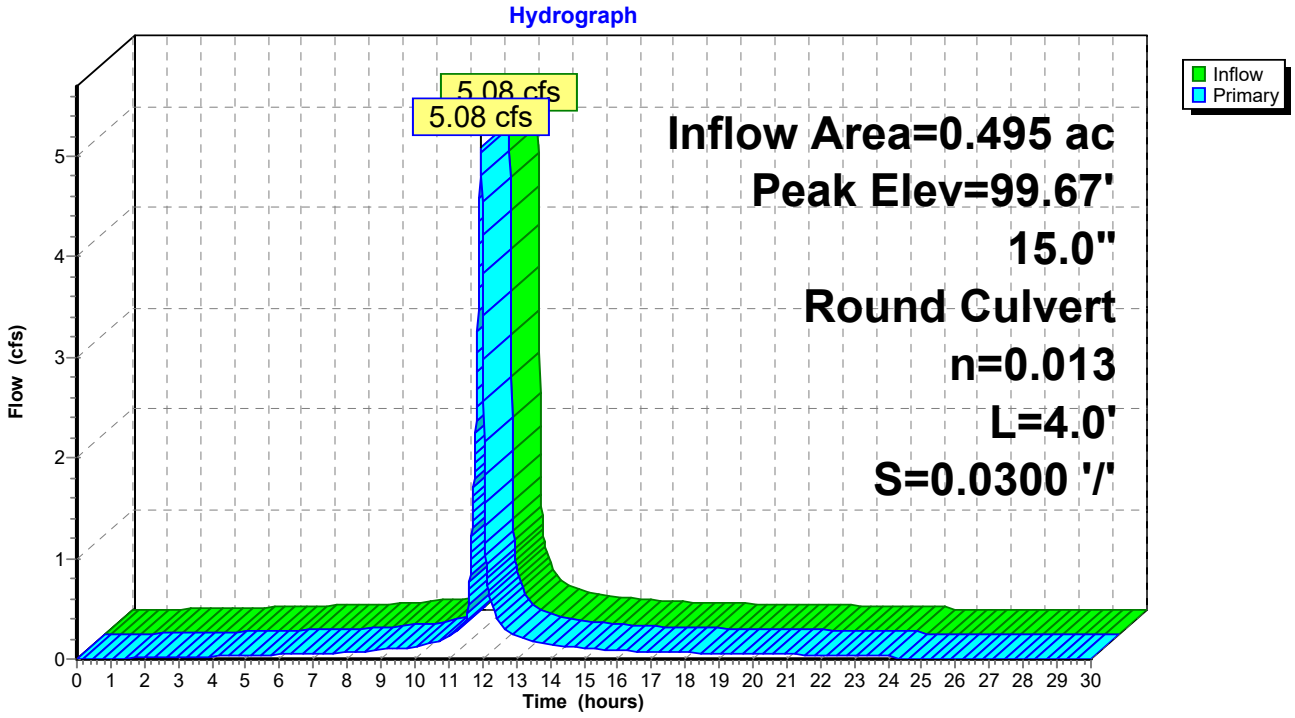
Inflow Area = 0.495 ac, 86.59% Impervious, Inflow Depth = 6.47" for 100-yr, 24-hour event
Inflow = 5.08 cfs @ 11.96 hrs, Volume= 0.267 af
Outflow = 5.08 cfs @ 11.96 hrs, Volume= 0.267 af, Atten= 0%, Lag= 0.0 min
Primary = 5.08 cfs @ 11.96 hrs, Volume= 0.267 af
Routed to Pond 1P : UG 1 - 8' CMP

Routing by Dyn-Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 99.67' @ 11.96 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	98.37'	**15.0" Round Culvert** L= 4.0' RCP, rounded edge headwall, Ke= 0.100 Inlet / Outlet Invert= 98.37' / 98.25' S= 0.0300 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=5.07 cfs @ 11.96 hrs HW=99.67' TW=97.21' (Dynamic Tailwater)
1=Culvert (Barrel Controls 5.07 cfs @ 4.94 fps)

Pond 24P: CB 06



Summary for Pond 25P: CB 05

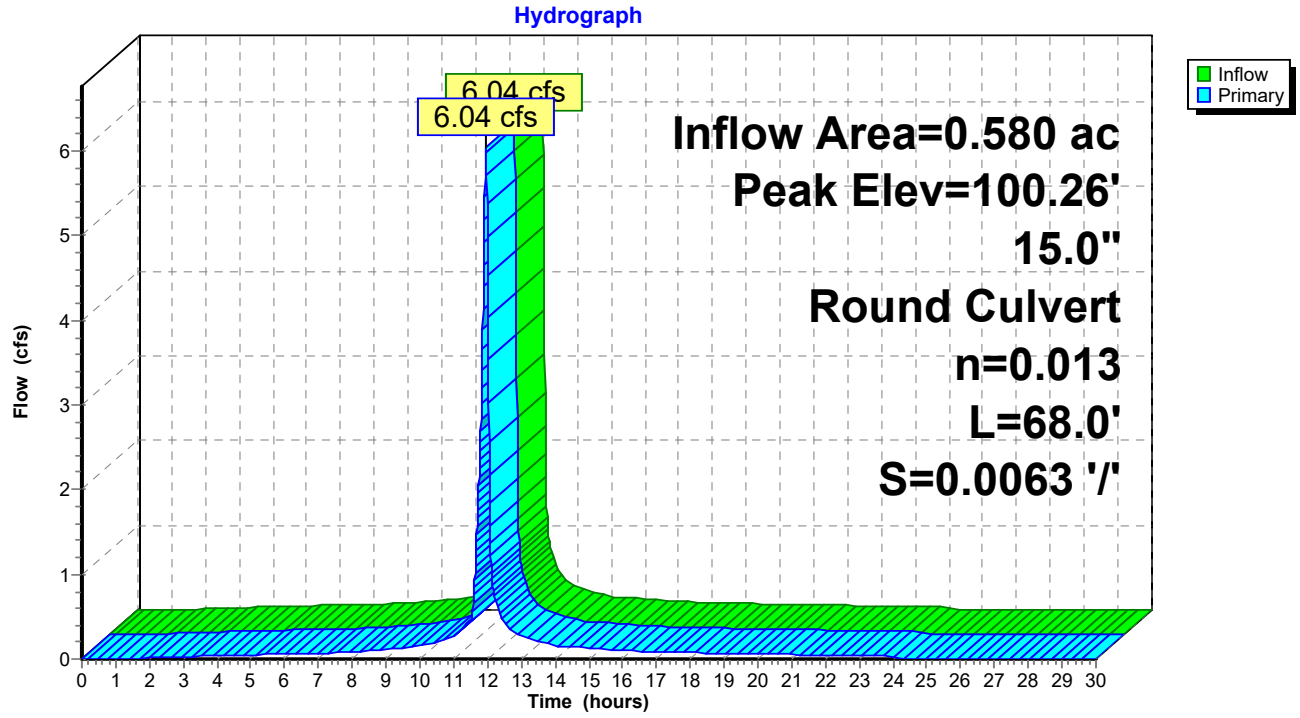
Inflow Area = 0.580 ac, 93.26% Impervious, Inflow Depth = 6.64" for 100-yr, 24-hour event
Inflow = 6.04 cfs @ 11.96 hrs, Volume= 0.321 af
Outflow = 6.04 cfs @ 11.96 hrs, Volume= 0.321 af, Atten= 0%, Lag= 0.0 min
Primary = 6.04 cfs @ 11.96 hrs, Volume= 0.321 af
Routed to Pond 1P : UG 1 - 8' CMP

Routing by Dyn-Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 100.26' @ 11.96 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	98.43'	**15.0" Round Culvert** L= 68.0' RCP, rounded edge headwall, Ke= 0.100 Inlet / Outlet Invert= 98.43' / 98.00' S= 0.0063 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=6.02 cfs @ 11.96 hrs HW=100.25' TW=97.20' (Dynamic Tailwater)
1=Culvert (Barrel Controls 6.02 cfs @ 4.91 fps)

Pond 25P: CB 05



Summary for Pond 26P: MH 01

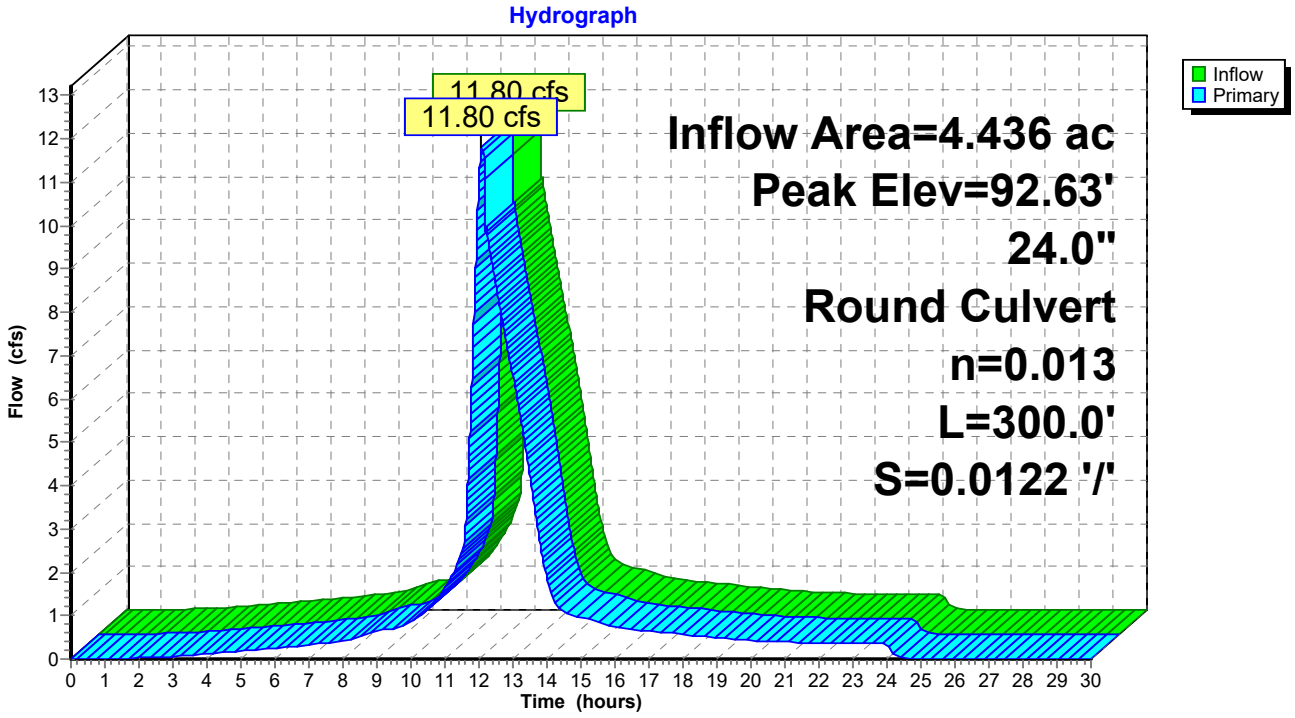
Inflow Area = 4.436 ac, 64.86% Impervious, Inflow Depth = 5.91" for 100-yr, 24-hour event
Inflow = 11.80 cfs @ 12.08 hrs, Volume= 2.184 af
Outflow = 11.80 cfs @ 12.08 hrs, Volume= 2.184 af, Atten= 0%, Lag= 0.0 min
Primary = 11.80 cfs @ 12.08 hrs, Volume= 2.184 af
Routed to Reach 8R : Proposed E PL Runoff

Routing by Dyn-Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 92.63' @ 12.08 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	91.27'	**24.0" Round Culvert** L= 300.0' RCP, rounded edge headwall, Ke= 0.100 Inlet / Outlet Invert= 91.27' / 87.61' S= 0.0122 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 3.14 sf

Primary OutFlow Max=11.80 cfs @ 12.08 hrs HW=92.63' TW=0.00' (Dynamic Tailwater)
↳**1=Culvert** (Barrel Controls 11.80 cfs @ 7.34 fps)

Pond 26P: MH 01



Summary for Pond 30P: Building CMP

Inflow Area = 0.826 ac, 91.67% Impervious, Inflow Depth = 6.64" for 100-yr, 24-hour event
Inflow = 8.33 cfs @ 11.97 hrs, Volume= 0.458 af
Outflow = 4.51 cfs @ 12.05 hrs, Volume= 0.458 af, Atten= 46%, Lag= 5.1 min
Primary = 4.51 cfs @ 12.05 hrs, Volume= 0.458 af
Routed to Pond 5P : Parking Lot CMP

Routing by Dyn-Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 94.91' @ 12.05 hrs Surf.Area= 803 sf Storage= 6,108 cf

Plug-Flow detention time= 44.5 min calculated for 0.457 af (100% of inflow)
Center-of-Mass det. time= 44.5 min (795.2 - 750.7)

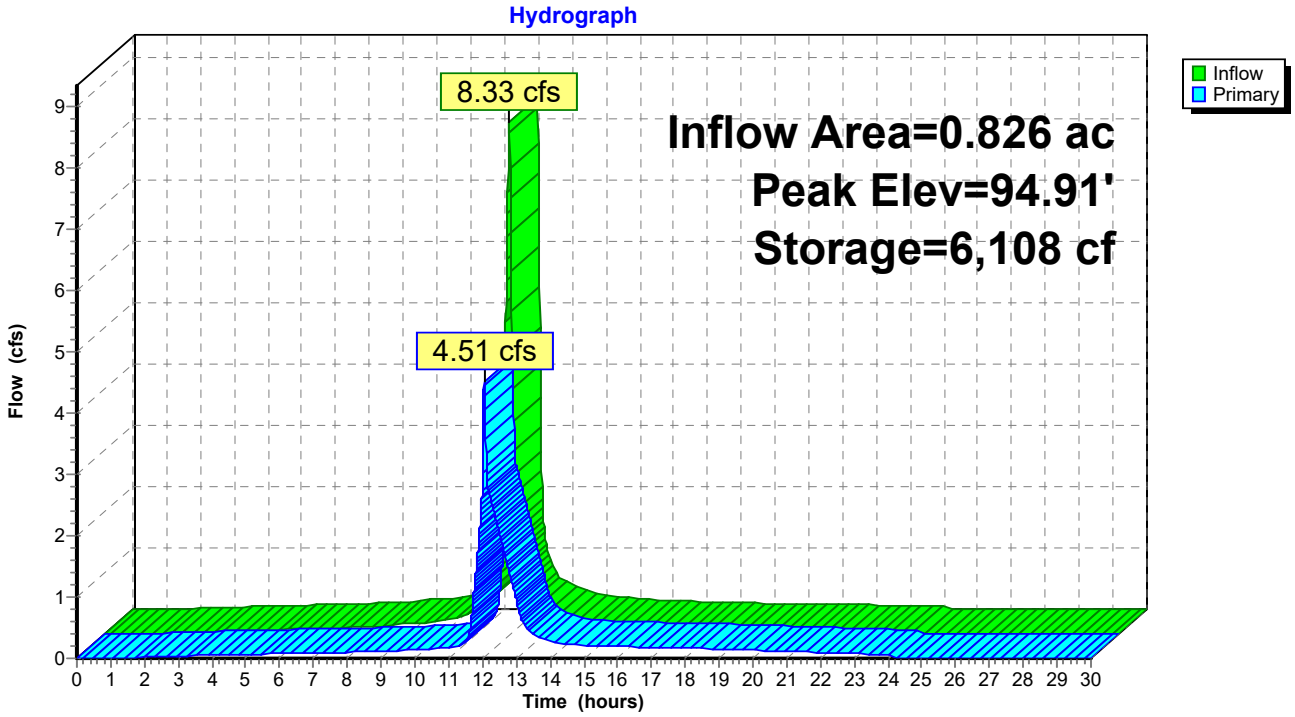
Volume	Invert	Avail.Storage	Storage Description
#1	90.25'	6,283 cf	**60.0" Round Pipe Storage** L= 320.0'
#2	90.00'	8 cf	**12.0" Round Pipe Storage** L= 10.0' S= 0.0250 '/'
#3	95.25'	435 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)
		6,726 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
95.25	3	0	0
96.64	3	4	4
97.50	1,000	431	435

Device	Routing	Invert	Outlet Devices
#1	Primary	90.00'	**12.0" Round Culvert** L= 190.0' RCP, rounded edge headwall, Ke= 0.100 Inlet / Outlet Invert= 90.00' / 89.00' S= 0.0053 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf
#2	Device 1	90.00'	**2.5" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#3	Device 1	91.50'	**7.5" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#4	Device 1	94.50'	**2.0' long x 0.5' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32

Primary OutFlow Max=4.50 cfs @ 12.05 hrs HW=94.91' TW=89.97' (Dynamic Tailwater)
- **1=Culvert** (Passes 4.50 cfs of 5.25 cfs potential flow)
  - **2=Orifice/Grate** (Orifice Controls 0.36 cfs @ 10.56 fps)
  - **3=Orifice/Grate** (Orifice Controls 2.60 cfs @ 8.47 fps)
  - **4=Broad-Crested Rectangular Weir** (Weir Controls 1.54 cfs @ 1.88 fps)

Pond 30P: Building CMP



Summary for Pond 34P: 1NS CB 01

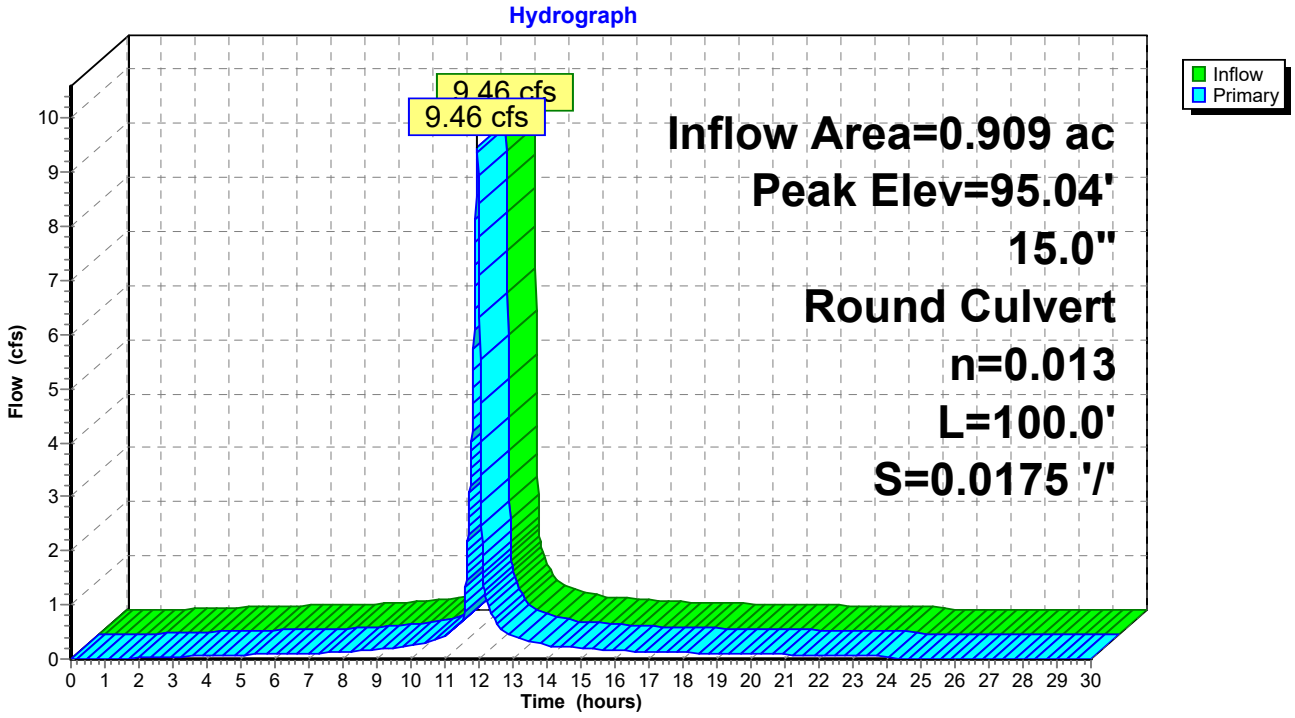
Inflow Area = 0.909 ac, 90.91% Impervious, Inflow Depth = 6.64" for 100-yr, 24-hour event
Inflow = 9.46 cfs @ 11.96 hrs, Volume= 0.503 af
Outflow = 9.46 cfs @ 11.96 hrs, Volume= 0.503 af, Atten= 0%, Lag= 0.0 min
Primary = 9.46 cfs @ 11.96 hrs, Volume= 0.503 af
Routed to Pond 35P : 2NS CB

Routing by Dyn-Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 95.04' @ 11.96 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	88.50'	**15.0" Round Culvert** L= 100.0' RCP, rounded edge headwall, Ke= 0.100 Inlet / Outlet Invert= 88.50' / 86.75' S= 0.0175 '/' Cc= 0.900 n= 0.013 Concrete pipe, bends & connections, Flow Area= 1.23 sf

Primary OutFlow Max=9.44 cfs @ 11.96 hrs HW=95.02' TW=91.86' (Dynamic Tailwater)
↳**1=Culvert** (Outlet Controls 9.44 cfs @ 7.69 fps)

Pond 34P: 1NS CB 01



Summary for Pond 35P: 2NS CB

Inflow Area = 1.288 ac, 92.34% Impervious, Inflow Depth = 6.68" for 100-yr, 24-hour event
Inflow = 13.42 cfs @ 11.96 hrs, Volume= 0.717 af
Outflow = 13.42 cfs @ 11.96 hrs, Volume= 0.717 af, Atten= 0%, Lag= 0.0 min
Primary = 13.42 cfs @ 11.96 hrs, Volume= 0.717 af
Routed to Pond 5P : Parking Lot CMP
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Pond 5P : Parking Lot CMP

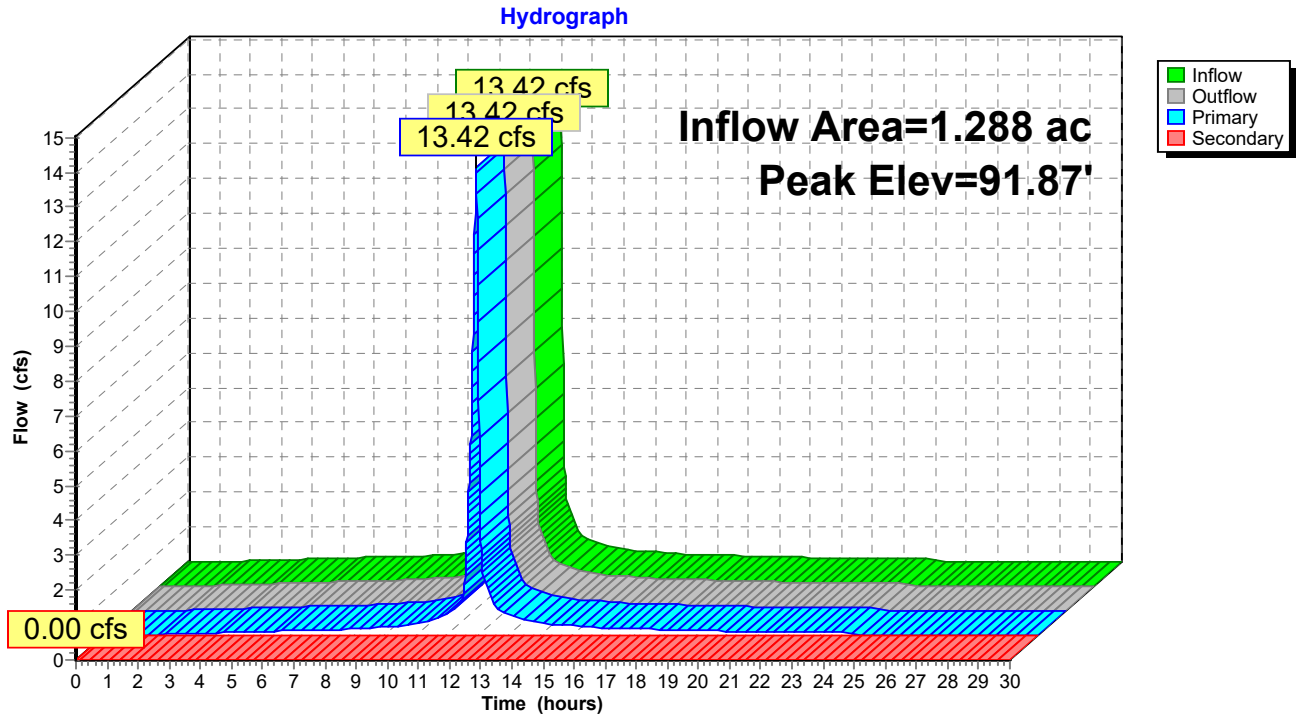
Routing by Dyn-Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 91.87' @ 11.96 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	86.50'	**18.0" Round Culvert** L= 30.0' RCP, rounded edge headwall, Ke= 0.100 Inlet / Outlet Invert= 86.50' / 85.00' S= 0.0500 '/' Cc= 0.900 n= 0.013 Concrete pipe, bends & connections, Flow Area= 1.77 sf
#2	Secondary	93.50'	**10.0' long x 10.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Primary OutFlow Max=13.39 cfs @ 11.96 hrs HW=91.86' TW=90.40' (Dynamic Tailwater)
└**1=Culvert** (Outlet Controls 13.39 cfs @ 7.58 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=86.50' TW=85.00' (Dynamic Tailwater)
└**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond 35P: 2NS CB



Summary for Pond 36P: 3NS CB 02A

Inflow Area = 1.283 ac, 94.63% Impervious, Inflow Depth = 6.68" for 100-yr, 24-hour event
Inflow = 12.96 cfs @ 11.95 hrs, Volume= 0.714 af
Outflow = 12.96 cfs @ 11.95 hrs, Volume= 0.714 af, Atten= 0%, Lag= 0.0 min
Primary = 12.96 cfs @ 11.95 hrs, Volume= 0.714 af
Routed to Pond 5P : Parking Lot CMP
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Reach 5R : Proposed N Runoff

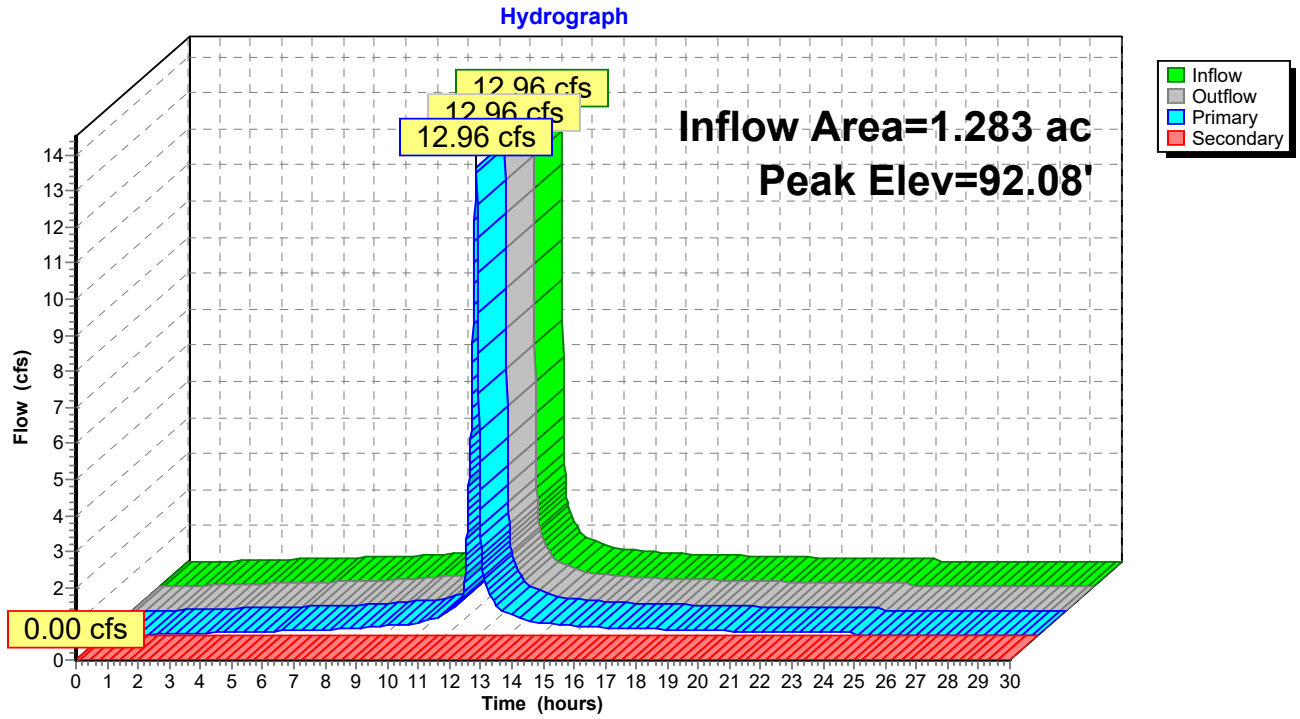
Routing by Dyn-Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 92.08' @ 11.96 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	88.50'	**18.0" Round Culvert** L= 50.0' RCP, rounded edge headwall, Ke= 0.100 Inlet / Outlet Invert= 88.50' / 88.29' S= 0.0042 '/' Cc= 0.900 n= 0.013 Concrete pipe, bends & connections, Flow Area= 1.77 sf
#2	Secondary	93.00'	**10.0' long x 10.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Primary OutFlow Max=12.95 cfs @ 11.95 hrs HW=92.07' TW=90.39' (Dynamic Tailwater)
└**1=Culvert** (Outlet Controls 12.95 cfs @ 7.33 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=88.50' TW=0.00' (Dynamic Tailwater)
└**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond 36P: 3NS CB 02A



Summary for Pond 39P: East Berm Basin

Inflow Area = 2.821 ac, 77.79% Impervious, Inflow Depth = 6.27" for 100-yr, 24-hour event
Inflow = 25.06 cfs @ 11.97 hrs, Volume= 1.473 af
Outflow = 24.54 cfs @ 11.99 hrs, Volume= 1.473 af, Atten= 2%, Lag= 1.1 min
Primary = 19.61 cfs @ 11.99 hrs, Volume= 1.431 af
Routed to Reach 5R : Proposed N Runoff
Secondary = 4.93 cfs @ 11.99 hrs, Volume= 0.042 af
Routed to Reach 5R : Proposed N Runoff

Routing by Dyn-Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 91.71' @ 11.99 hrs Surf.Area= 3,685 sf Storage= 3,922 cf

Plug-Flow detention time= 1.3 min calculated for 1.473 af (100% of inflow)
Center-of-Mass det. time= 1.3 min (758.8 - 757.4)

Volume	Invert	Avail.Storage	Storage Description
#1	88.00'	7,351 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

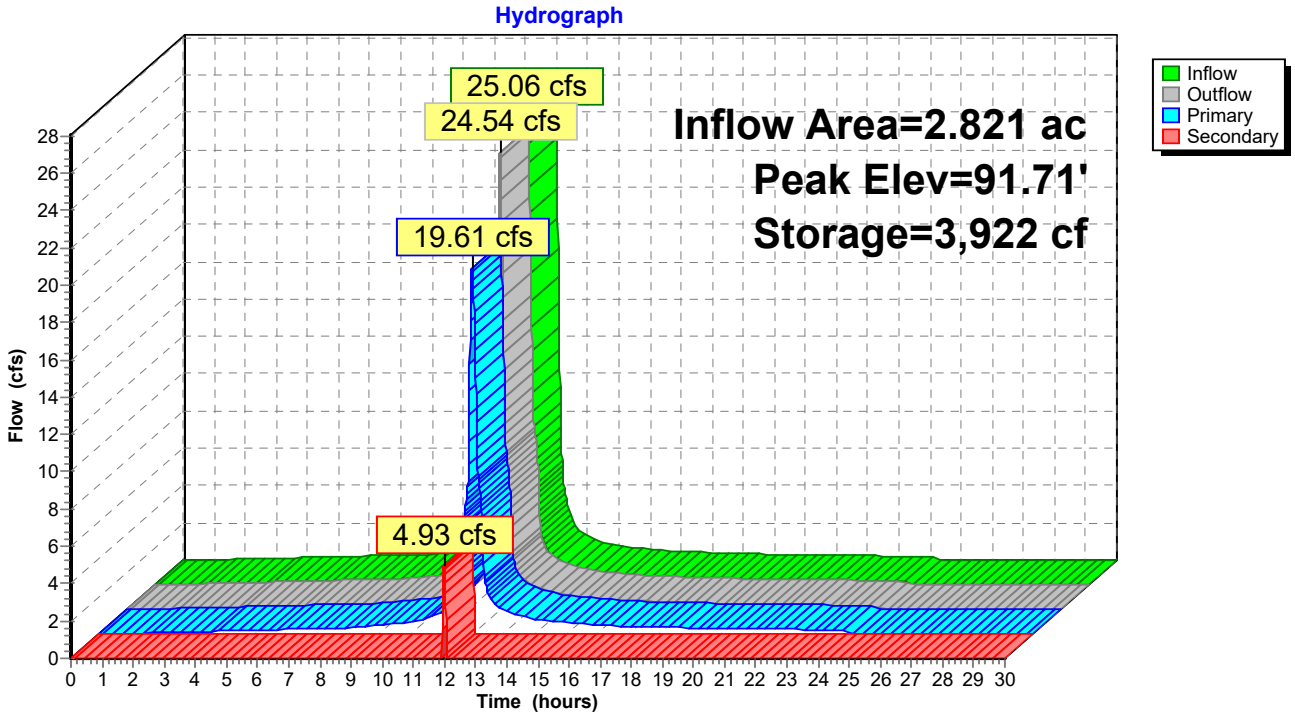
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
88.00	3	0	0
89.20	92	57	57
90.00	690	313	370
91.00	2,181	1,436	1,805
91.50	3,301	1,371	3,176
92.00	4,200	1,875	5,051
92.50	5,000	2,300	7,351

Device	Routing	Invert	Outlet Devices
#1	Primary	87.84'	**18.0" Round Culvert** L= 26.0' RCP, rounded edge headwall, Ke= 0.100 Inlet / Outlet Invert= 87.84' / 87.00' S= 0.0323 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf
#2	Device 1	88.00'	**12.0" Round Culvert** L= 5.0' RCP, rounded edge headwall, Ke= 0.100 Inlet / Outlet Invert= 88.00' / 87.84' S= 0.0320 '/' Cc= 0.900 n= 0.013 Concrete pipe, bends & connections, Flow Area= 0.79 sf
#3	Device 1	91.08'	**24.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#4	Secondary	91.50'	**20.0' long x 10.0' breadth Berm Overflow** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Primary OutFlow Max=19.60 cfs @ 11.99 hrs HW=91.71' TW=0.00' (Dynamic Tailwater)
1=Culvert (Passes 19.60 cfs of 20.25 cfs potential flow)
2=Culvert (Inlet Controls 9.24 cfs @ 11.77 fps)
3=Orifice/Grate (Weir Controls 10.36 cfs @ 2.60 fps)

Secondary OutFlow Max=4.92 cfs @ 11.99 hrs HW=91.71' TW=0.00' (Dynamic Tailwater)
4=Berm Overflow (Weir Controls 4.92 cfs @ 1.15 fps)

Pond 39P: East Berm Basin



Agenda Item #5

Discussion and Possible Action:

Van Meter Urban Renewal Plan Amendment January, 2025

Submitted for: **Discussion and Possible Action**

In order to create new TIF districts and facilitate economic development activities at the City's certified site, known as Vision Park and recently acquired by Microsoft Corporation, the City must amend the Van Meter Urban Renewal Area and Plan by adding in property and the project. In addition, the City recently acquired the property at 601 Main Street for a municipal building project to re-home the Van Meter Police Department, Fire Department and Library. The City desires to have the option of using TIF revenue to fund a portion of the project. To do so requires the addition of the project to the Urban Renewal Plan.

The amendment process requires that the City holds a consultation with the school district and county, has the plan reviewed by Planning & Zoning, publishes notice in the newspaper and since a portion of the property to be added is ag land, the City must also have the property owner (Microsoft) execute an agricultural landowner agreement. The City provided notice of the plan amendment and consultation scheduled for 12/27/24 to the County via certified mail. The consultation was held on 12/27 and no one attended. The City has received no written comments from either entity. The notice of amendment and public hearing was published in the Des Moines Register on December 27, 2024 and posted at City Hall, the Van Meter Public Library, the Van Meter Post Office and the City's website on the same day. The agricultural landowner agreement was provided to Microsoft on December 6, 2024. While we don't have the executed agreement back yet, they have indicated that we will have it prior to the public hearing. The City has received no written comments relating to the public hearing to date.

City Clerk Drake will be available for additional detail and to answer any questions.

***Chairperson*:** Do I hear a motion?

Motion: *Motion to recommend approval of the Van Meter Urban Renewal Plan Amendment, January 2025 to the Van Meter City Council*

Commissioner _____: *So moved.*

Commissioner _____: *Second.*

Chairperson: *Roll Call Please.*

Wahlert_____ Feldman _____Hulse _____ Miller_____ DeVore_____Cook_____ Coyle_____

JCITY OF VAN METER, IOWA

URBAN RENEWAL PLAN AMENDMENT
VAN METER URBAN RENEWAL AREA

January, 2025

The Urban Renewal Plan (the "Plan") for the Van Meter Urban Renewal Area (the "Urban Renewal Area") is being amended for the purposes of adding new property to the Urban Renewal Area and identifying new urban renewal projects to be undertaken within the Urban Renewal Area.

1) Addition of Property. The real property (the "Property") legally described on Exhibit A hereto is, by virtue of this Amendment, being added as the January, 2025 Addition to the Urban Renewal Area. With the adoption of this Amendment, the City will designate the Property as an economic development area. The Property will become subject to the provisions of the Plan for the Urban Renewal Area. The City will adopt an ordinance providing for the division of property tax revenues, as set forth in Section 403.19 of the Code of Iowa, with respect to the Property.

2) Identification of Projects. By virtue of this amendment, the list of authorized urban renewal projects in the Plan is hereby amended to include the following project descriptions:

A.

Name of Project: Regional Data Center Campus Development Project

Date of Council Approval of Project: January 13, 2025

Description of Project and Project Site: Microsoft Corporation ("Microsoft") is undertaking the construction of a new regional data center campus (the "Microsoft Project") on the Property (as defined in Section 1 of this Amendment).

It has been requested that the City provide tax increment financing assistance to Microsoft in support of the efforts to complete the Microsoft Project.

The costs incurred by the City in providing tax increment financing assistance to Microsoft will include legal and administrative fees (the "Admin Fees") in an amount not to exceed $100,000.

Description of Use of TIF for the Project: The City intends to enter into a Development Agreement with Microsoft with respect to the construction and use of the completed Microsoft Project and to provide annual appropriation economic development payments (the "Payments") to Microsoft thereunder. The Payments will be funded with incremental property tax revenues to be derived from the

Microsoft Property. It is anticipated that the City's total commitment of incremental property tax revenues with respect to the Microsoft Project, including the Payments and the Admin Fees, will not exceed $65,000,000.

B.

Name of Project: Van Meter Municipal Building Project

Date of Council Approval of the Project: January 13, 2025

Description of Project and Project Site: The Van Meter Municipal Building Project will consist of the construction of an addition to and the renovation of an existing building situated at 601 Main Street (the "Municipal Building Property") in the Urban Renewal Area for use by the City as a fire station, police station and library.

The completed Van Meter Municipal Building Project will have a direct, positive impact on increased and improved commerce and development in the Urban Renewal Area through the provision of enhanced municipal and recreational facilities.

Description of Use of TIF for the Project: It is anticipated that the City will pay for the Van Meter Municipal Building Project with borrowed funds and/or the proceeds of an internal advance of City funds on-hand. In any case, the City's obligations (the "Obligations") may be repaid with incremental property tax revenues derived from the Urban Renewal Area. It is anticipated that the City's use of incremental property tax revenues for the Van Meter Municipal Building Project will not exceed $6,000,000, plus any interest expense incurred by the City on the Obligations.

Analysis of Use of TIF: In accordance with the requirement of Section 403.5(2)(b)(1) of the Code of Iowa, the City has analyzed its proposed use of incremental property tax revenues for the funding of the Van Meter Municipal Building Project and alternative development and funding options for the Van Meter Municipal Building Project. The results of that analysis are summarized as follows:

1) Alternate Development Options: The City Council has determined that a need exists for expanded library facilities in the Urban Renewal Area. Further, the City Council has determined that the provision of new and improved fire and police facilities in the Urban Renewal Area are essential to the economic development of the City. The City's ability to fulfill its duty of fire protection and police protection services in the Urban Renewal Area is diminished by inadequate, outdated and undersized administrative facilities.

The use of the existing Municipal Building Property as the site for the Van Meter Municipal Building Project will serve to repurpose the existing building

thereon and is the optimal use for such building. Promoting other types of development on the Municipal Building Property to the exclusion of the Van Meter Municipal Building Project will not meet the public need being addressed by the Van Meter Municipal Building Project.

2) Alternate Financing Options:

* Local Option Sales and Services Tax Revenues: To the extent that they are not dedicated to other financing needs of the City, the City may use a portion of its Local Option Sales and Services Tax revenues to pay costs associated with the Van Meter Municipal Building Project.

* General Fund: The City's General Fund reserves are fully committed to maintain the operational integrity of the City. The City cannot access its General Fund reserves to aid in paying the costs of the Van Meter Municipal Building Project without risking unsound fiscal practice.

* Capital Improvements Levy: The City does not have a Capital Improvements Levy available for the Van Meter Municipal Building Project, and the imposition of such additional levy would require a successful referendum, which is not feasible at this time.

* Debt Service Levy: The City intends to issue general obligation bonds or notes (the "Bonds") to pay the costs of the Van Meter Municipal Building Project. The City may use incremental property tax revenues derived from the Urban Renewal Area to pay a portion of the principal of and interest on the Bonds. The use of incremental property tax revenues will lessen the burden on individual taxpayers that will result from a spike in the debt service levy rate and will shift some of that burden onto valuation increases resulting from the City's successful economic development initiatives which are improved by the provision of enhanced municipal and recreational facilities.

* Fundraising/Private Donations: The City will undertake fundraising initiatives to pay for a portion of the Van Meter Municipal Building Project.

* Grants: The City will apply for certain grants to pay for a portion of the costs of construction the Van Meter Municipal Building Project.

3) Required Financial Information. The following information is provided in accordance with the requirements of Section 403.17 of the Code of Iowa:

Constitutional debt limit of the City:	$ 8,649,372
Outstanding general obligation debt of the City:	$
Proposed maximum indebtedness to be incurred in connection with this January, 2025 Amendment*:	$71,100,000

*It is anticipated that some or all of the debt incurred hereunder will be subject to annual appropriation by the City Council.

EXHIBIT A

Legal Description
January, 2025 Addition

Beginning at the north quarter corner of Section 34, Township 78 North, Range 27 West of the 5th Principal Meridian; thence East along the north line of the northeast quarter of said Section 34 to the northeast corner of said Section 34; thence East along the north line of the west one-half of the northwest quarter of Section 35, Township 78 North, Range 27 West of the 5th Principal Meridian to the northeast corner of the west one-half of the northwest quarter of said Section 35; thence South along the east line of the west one-half of the northwest quarter of said Section 35 to the southeast corner of the west one-half of the Northwest of said Section 35; thence East along the north line of the northeast quarter of the southwest quarter of said Section 35 to the northeast corner of the northeast quarter of the southwest quarter of said Section 35; thence South along the east line of the northeast quarter of the southwest quarter of said Section 35 to the southeast corner of the northeast quarter of the southwest quarter of said Section 35; thence West along the south line of the northeast quarter of the southwest quarter of said Section 35 to the southwest corner of the northeast quarter of the southwest quarter of said Section 35; thence South along the east line of the southwest quarter of the southwest quarter of said Section 35 to the southeast corner of the southwest quarter of the southwest quarter of said Section 35; thence West along the south line of the southwest quarter of the southwest quarter of said Section 35 to the southwest corner of said Section 35; thence West along the south line of the southeast quarter of the southeast quarter of Section 34, Township 78 North, Range 27 West of the 5th Principal Meridian to the southwest corner of the southeast quarter of the southeast quarter of said Section 34; thence North along the west line of the southeast quarter of the southeast quarter of said Section 35 to the northwest corner of the southeast quarter of the southeast quarter of said Section 34; thence North along the west line of the northwest quarter of the southeast quarter of said Section 34 to a point located 340 feet south of the northwest corner of the northeast quarter of the southeast quarter of said Section 34; thence East a distance of 100 feet; thence North a distance of 300 feet; thence west a distance of 100 feet to a point on the west line of the northeast quarter of the southeast quarter of said Section 34; thence North along the west line of the northeast quarter of the southeast quarter of said Section 34 a distance of 40 feet to the northwest corner of the northeast quarter of the southeast quarter of said Section 34; thence West along the south line of the northeast quarter of said Section 34 to the Center of said Section 34; thence North along the west line of the northeast quarter of said Section 34 to the Point of Beginning.

Agenda Item #6

Discussion and Possible Action:

Arlington Avenue Street Name

Submitted for: **Discussion and Possible Action**

Please see the enclosed proposed final plat with address assignments as provided by V&K. The final plat is not yet ready for review and recommendation by Planning & Zoning, but upon review, City Staff proposes altering the name of Arlington Avenue on west side of Park Street, west of the cul-de-sac which separates the existing Arlington Avenue from the newly created street. The City proposes changing the name of the newly created street portion to West Arlington Avenue.

Staff has discussed with the engineer of record for the development and they have no issue with the proposed name change.

***Chairperson*:** Do I hear a motion?

Motion: *Motion recommend the alteration of the street name to West Arlington Avenue for the portion of the street to the west of Park Street to the Van Meter City Council*

Commissioner _____: *So moved.*

Commissioner _____: *Second.*

Chairperson: *Roll Call Please.*

Wahlert_____ Feldman _____Hulse _____ Miller_____ DeVore_____Cook_____Coyle_____

VEENSTRA & KIMM INC.
3000 Westown Parkway
West Des Moines, Iowa 50266

515.225.8000 // 800.241.8000
www.v-k.net

September 26, 2024

Jessica Drake
City of Van Meter
310 Mill Street
P.O. Box 160
Van Meter, Iowa 50261-0160

VAN METER, IOWA
HUDSON HEIGHTS PLAT 2
SUGGESTED LOT ADDRESSES

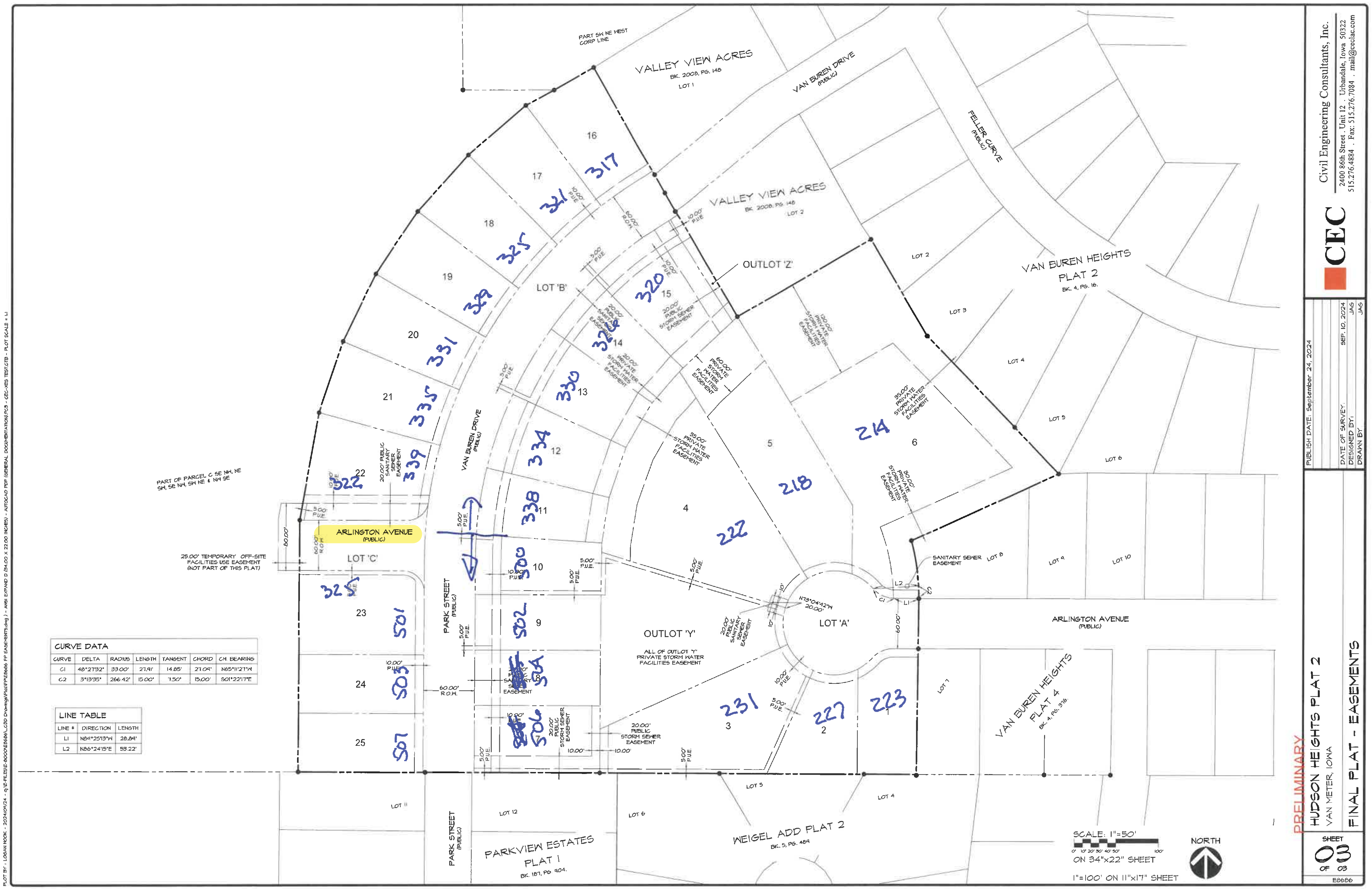
Enclosed is a copy of a drawing showing the writer's suggestions for the lot addresses for Hudson Heights Plat 2. The writer is suggesting the break between Park Street addresses and Van Buren Drive addresses be between Lot 10 and Lot 11 opposite the intersection with Arlington Avenue. For Lot 22 and Lot 23 the writer has shown addresses on both street sides of the lot.

If you have any questions or comments concerning the project, please contact the writer at 515-225-8000, or bveenstra@v-k.net.

VEENSTRA & KIMM, INC.

H. R. Veenstra Jr.

HRVJr:paj
193
Enclosure
Cc: Liz Faust
Paul Clausen, Civil Engineering Consultants



CURVE	DELTA	RADIUS	LENGTH	TANGENT	CHORD	CH BEARING
C1	48°27'32"	33.00'	27.91'	14.85'	27.09'	N65°11'21"W
C2	3°13'35"	266.42'	15.00'	7.50'	15.00'	S01°22'17"E

LINE #	DIRECTION	LENGTH
L1	N84°25'13"W	28.84'
L2	N86°24'15"E	53.22'

Staff proposes designating this portion of Arlington Avenue as West Arlington Avenue

Agenda Item #7

Adjournment

Chairperson: With no further business, do I hear a motion to adjourn?

Commissioner _____: ***So moved.***

Commissioner _____: ***Second.***

Chairperson: All in favor? _____

This meeting is adjourned at _____pm. Thank you.