PARAGON
ENVIRONMENTAL DESIGN
Civil Engineering Surveying Landscape Architecture

November 13, 2024

Juri Nasonovs - City of La Crosse Engineering Dept

Regarding: DRC Process PRELIMINARY submittal for Haven On Main Development

Dear Juri:

As part of the City's Design Review Committee process, we are submitting for your review the preliminary erosion control and stormwater management design aspects of the Haven On Main project at 915-927 Main St. The project will occur on 6 parcels, 5 of which are vacant, and a partially-vacated city alley. All 6 parcels are owned by Gerrard Development LLC. The project includes demolition of an existing 24-unit apartment building at 915 Main St. and construction of a new 4-story, 74 unit combination assisted living facility and regular apartment units with interior parking and a commercial office space. A summary of the project site is as follows:

Parcel	Address	Acres	Current Use	Notes
17-20204-010	928 State St.	0.109	vacant	
17-20204-020	119 N. 10th St.	0.070	vacant	
17-20204-030	922 State St.	0.297	vacant	
17-20204-100	915 Main St.	0.430	24-unit apts	
17-20204-110	117 N. 10th St.	0.177	vacant	
17-20204-120	927 Main St.	0.183	vacant	
city alley	NA	0.102	concrete	vacate E. part between 9th & 10th
		1.368		

The process to vacate the alley is expected to occur in early 2025 while the certified survey map to combine all the project parcels is expected shortly thereafter. Once the CSM is complete and a new parcel number has been assigned to the combined parcels, the long term maintenance agreement for the stormwater management structures will be updated to reflect that new information.

The following items, all preliminary, are included with this submittal package:

1. Project plan sheets C050 Demolition, C100 Site, C200 Grading, C300 Erosion Control, C400 Utility and C501Details. Also included is a marked-up version of C200 showing flow directions.
2. Stormwater Management Plan, which includes the following appendices:
   A. Aerial photo of project site
   B. WinSLAMM and HydroCAD modeling results
   C. Operations & Maintenance Plan
   D. Long Term Maintenance Agreement draft

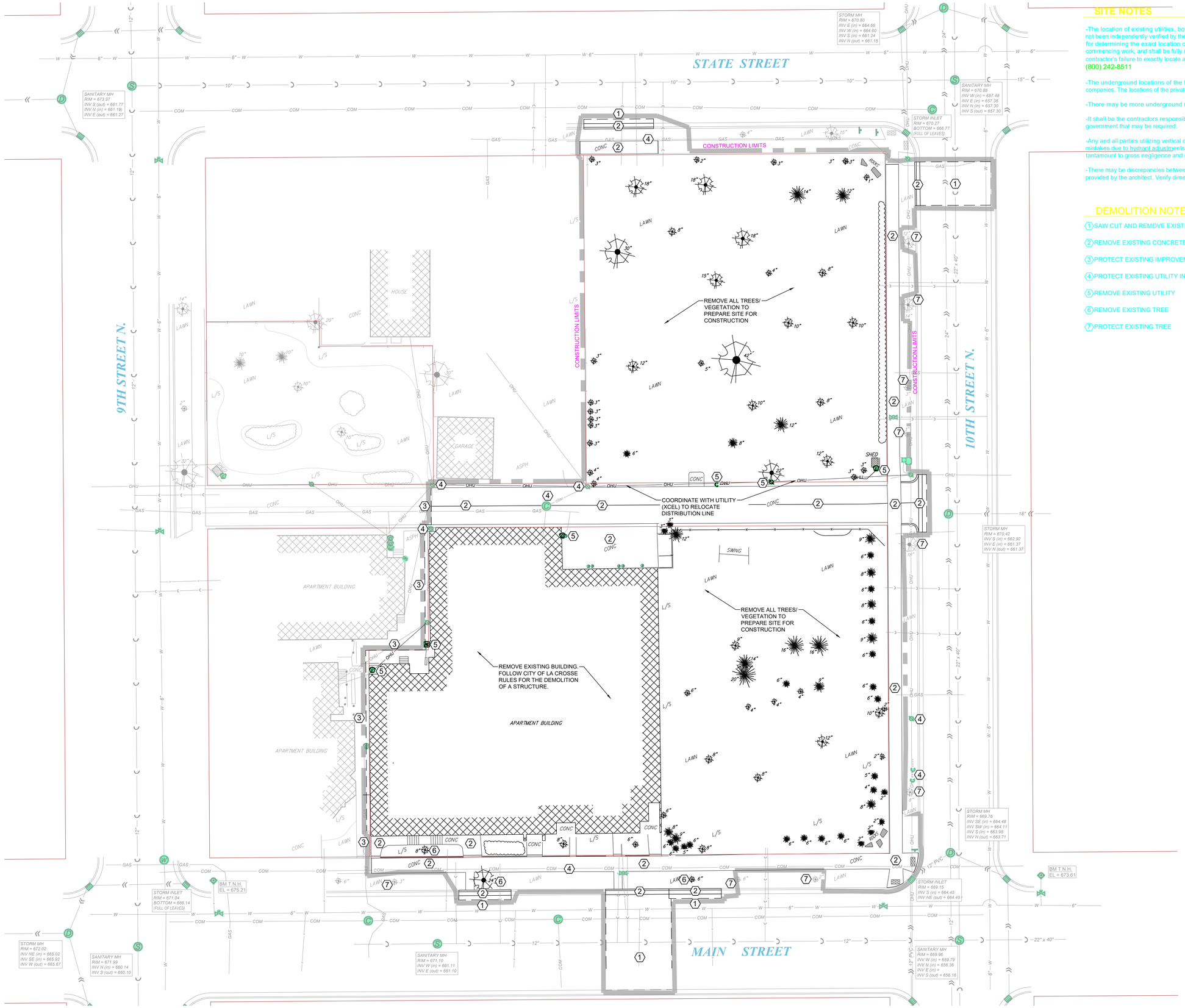
3. Stormwater Permit Application.

The WinSLAMM modeling shows the ADS Stormtech isolator row system achieves a TSS reduction of 45% compared to no BMP controls. The HydroCAD modeling shows post-development peak flows are reduced by the isolator row system for the 2 & 10-year storms, and that a 100-year storm will not overflow the isolator row system.

Construction is expected to start in May 2025 and conclude in June 2026, while demolition may begin in January 2025. Thank you for your assistance. If you have questions, please contact me at (608) 781-3110.

Sincerely,

Robert A. Haines, P.E.



SITE NOTES

-The location of existing utilities, both underground and overhead are approximate only and have not been independently verified by the owner or its representatives. The contractor shall be responsible for determining the exact location of all existing utilities, whether shown on these plans or not, before commencing work, and shall be fully responsible for any and all damages which might be caused by the contractor's failure to exactly locate and preserve any and all utilities. CALL DIGGERS HOTLINE (800) 242-8511

-The underground locations of the Public Utilities were marked by representatives of those companies. The locations of the privately owned underground utilities were not marked.

-There may be more underground utility installations within the project area that are not shown.

-It shall be the contractors responsibility to arrange for any necessary inspections by local government that may be required.

-Any and all parties utilizing vertical datum shall always check into at least two (2) benchmarks to avoid mistakes due to hydrant adjustments or transpositional errors. failure to do so will be considered tantamount to gross negligence and subject the offending party to any damages resulting therefrom.

-There may be discrepancies between the building exterior as located on the survey and what was provided by the architect. Verify dimensions prior to construction.

DEMOLITION NOTES

1. SAW CUT AND REMOVE EXISTING PAVEMENT
2. REMOVE EXISTING CONCRETE CURB OR PAVEMENT TO NEAREST JOINT
3. PROTECT EXISTING IMPROVEMENT IN PLACE
4. PROTECT EXISTING UTILITY IN PLACE
5. REMOVE EXISTING UTILITY
6. REMOVE EXISTING TREE
7. PROTECT EXISTING TREE

REVISIONS	BY

PARAGON ASSOCIATES
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CIVIL ENGINEERING . LANDSCAPE ARCHITECTURE . SURVEYING
632 COPELAND AVENUE . LA CROSSE, WI 54603
Tel.608.781.3110 Fax.608.781.3197 Paragon-Assoc.biz

PREPARED FOR:
GERRARD CORP.

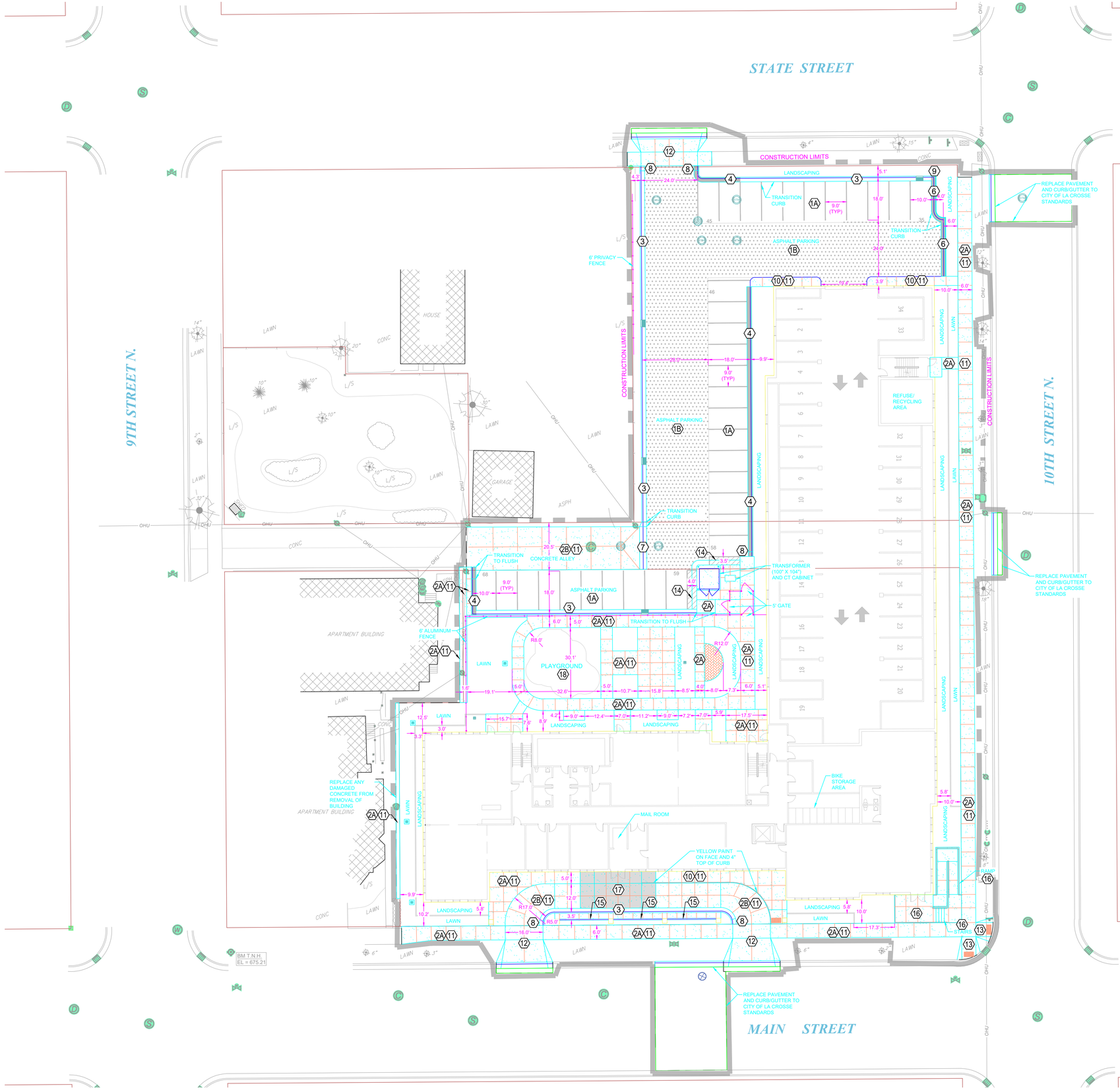
HAVEN ON MAIN
915-927 MAIN STREET
LA CROSSE, WISCONSIN
DEMOLITION PLAN

DRAWN	C.G.
PROJECT No	23-109
DATE	11/07/2024
SCALE	1"=20'
CAD FILE	23-109 Gerrard HOM 11.DWG
SHEET	C050

N

10 0 10 20

PLAN SCALE: 1"=20'



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-There may be discrepancies between the building exterior as located on the survey and what was provided by the architect. Verify dimensions prior to construction.

SITE NOTES

1A SEE DETAIL A/C100 FOR ASPHALT PAVEMENT - TYPE 1

1B SEE DETAIL A/C100 FOR ASPHALT PAVEMENT - TYPE 2

2A SEE DETAIL B/C100 FOR CONCRETE PAVEMENT - TYPE 1

2B SEE DETAIL B/C100 FOR CONCRETE PAVEMENT - TYPE 2

3 SEE DETAIL C/C100 FOR TYPICAL 24" CURB AND GUTTER SECTION

4 SEE DETAIL D/C100 FOR 24" CURB AND GUTTER SECTION - REVERSE SLOPE

5 SEE DETAIL E/C100 FOR TYPICAL 24" MOUNTABLE CURB & GUTTER

6 SEE DETAIL F/C100 FOR TYPICAL 24" MOUNTABLE CURB & GUTTER - REVERSE SLOPE

7 SEE DETAIL G/C100 FOR TYPICAL 36" VALLEY GUTTER

8 SEE DETAIL H/C100 FOR END SECTION CURB AND GUTTER

9 SEE DETAIL I/C100 FOR END SECTION CORNER MOUNTABLE CURB

10 SEE DETAIL J/C100 FOR INTEGRAL CURB/SIDEWALK

11 SEE DETAIL K/C100 FOR CONCRETE PAVING AND JOINTING

12 SEE DETAIL L/C100 FOR STANDARD CONCRETE APRON

13 SEE DETAIL M/C100 FOR SIDEWALK RAMP

14 SEE DETAIL N/C100 FOR 2' CONCRETE APRON

15 SEE DETAIL O/C100 FOR CONCRETE WALL AND RAILING

16 SEE ARCHITECTURAL FOR STAIRS AND RAMP

17 COLORED CONCRETE

18 PLAYGROUND BASE, TURF AND EQUIPMENT BY OTHERS. CONTRACTOR TO COORDINATE WORK

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PREPARED FOR:
GERRARD CORP.

HAVEN ON MAIN
915-927 MAIN STREET
LA CROSSE, WISCONSIN
SITE PLAN

DRAWN	C.G.
PROJECT No	23-109
DATE	11/07/2024
SCALE	1"=20'
CAD FILE	23-109 Gerrard HOM 11.DWG
SHEET	C100

10 0 10 20
PLAN SCALE: 1"=20'

GRADING NOTES

-CONTOURS SHOWN ARE FOR FINISHED SURFACES, ANY ADJUSTMENT TO SUBGRADE IS THE CONTRACTOR'S RESPONSIBILITY.

-ALL DISTURBED AREAS THAT ARE UNPAVED ARE TO BE LANDSCAPED OR HAVE LAWN ESTABLISHED AS INDICATED ON THE EROSION CONTROL AND LANDSCAPE PLANS.

-ALL LANDSCAPED OR LAWN AREAS SHALL HAVE A MINIMUM OF 6" OF TOPSOIL.

-SPOT ELEVATIONS SHALL TAKE PRECEDENCE OVER CONTOURS AND SLOPES SHOWN. HOWEVER, THE CONTRACTOR SHALL NOTIFY THE ENGINEER IF SPOT ELEVATIONS DO NOT APPEAR TO AGREE WITH THE CONTOURS AND SLOPES LABELED. SPOT ELEVATIONS AND SPECIFIC PROFILE INFORMATION SHALL BE USED FOR ESTABLISHING THE ELEVATION OF CURBS, DRIVEWAYS, AND OTHER UTILITIES.

-ALL FINISHED GRADING SHALL PROVIDE FOR A SMOOTH TRANSITION TO UNGRADED AREAS.

-ALL PVC STORM SEWER PIPING SHALL BE MINIMUM SDR 35

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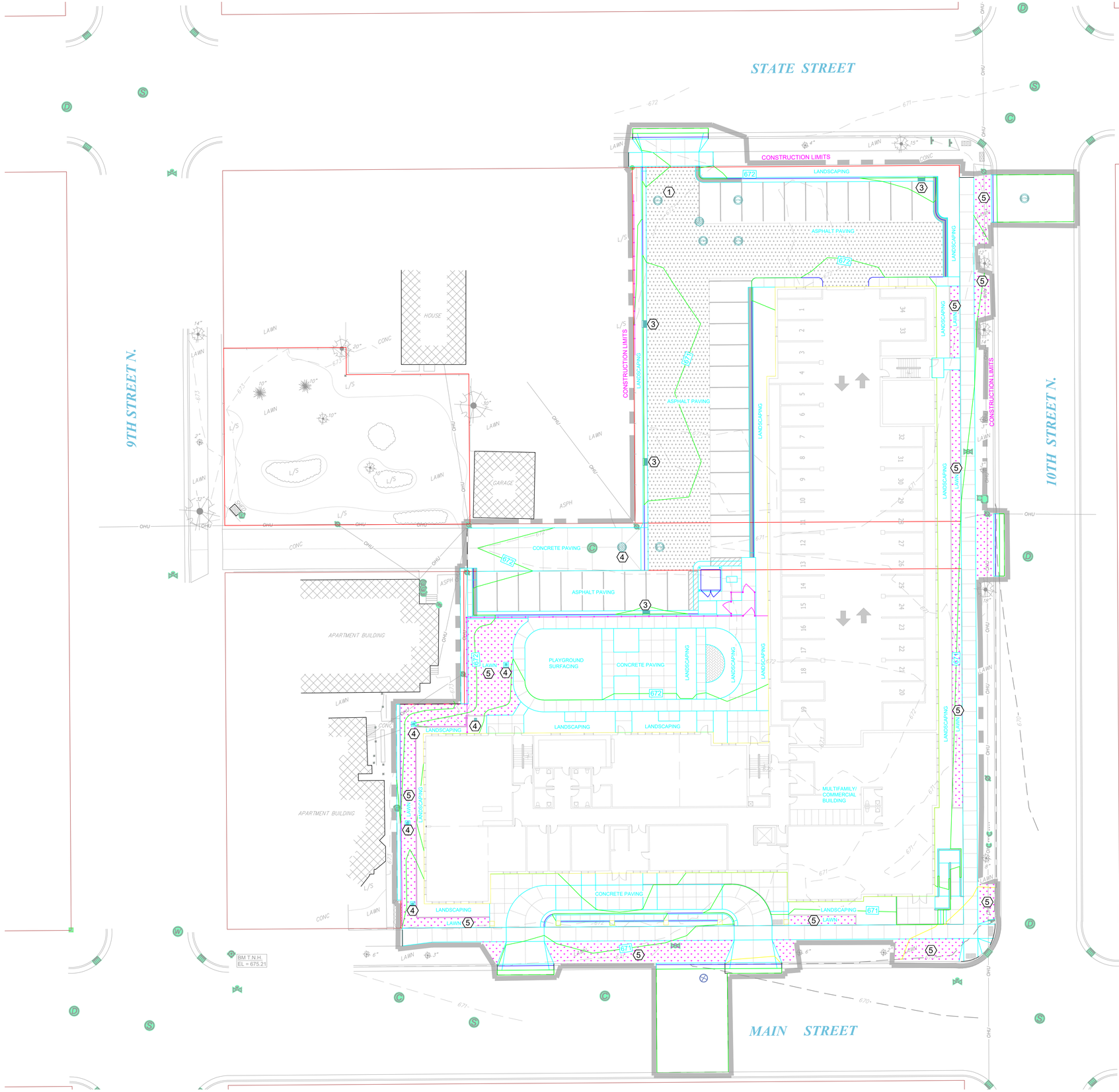
LA CROSSE, WISCONSIN
GRADING PLAN

DRAWN	CG
PROJECT No	23-109
DATE	11/07/2024
SCALE	1"=20'
CAD FILE	23-109 Gerrard HOM 11.DWG
SHEET	C200

PLAN SCALE: 1"=20'



STORM WATER CONSTRUCTION POLLUTION PREVENTION NOTES

SITE CLEARING SHALL APPLY TO ALL AREAS INSIDE LIMITS AS SHOWN ON THE PLANS. REMOVE ALL TREES COMPLETELY AS DIRECTED BY THE OWNER. ANY STRIPPED TOPSOIL SHALL BE STOCKPILED INSIDE THE LIMITS OR PLACED IMMEDIATELY ON SLOPES BEING RESTORED.

SEDIMENT CONTROL STRUCTURES BELOW SEEDED AREAS MUST REMAIN IN PLACE UNTIL THE ENTIRE AREA HAS ESTABLISHED A MATURE COVERING OF HEALTHY VEGETATION.

ALL DISTURBED AREAS SCHEDULED FOR PERMANENT COVER SHALL HAVE TOPSOIL APPLIED, AND BE SEEDED AND MULCHED AS SPECIFIED WITHIN 7 DAYS OF FINAL DISTURBANCE.

MAINTENANCE OF ALL INSTALLED EROSION AND SEDIMENT CONTROL DEVICES SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR AND REMOVED WHEN NO LONGER NECESSARY.

MINIMUM MAINTENANCE SHALL CONSIST OF, BUT NOT LIMITED TO:

- INSPECTING ALL EROSION AND SEDIMENT CONTROL DEVICES AFTER EACH RAINFALL.
- FINISHED AREAS THAT HAVE BEEN DAMAGED OR ERODED SHALL BE RESTORED WITHIN THREE DAYS OF THE DAMAGE.
- UNFINISHED AREAS THAT HAVE BEEN DAMAGED OR ERODED SHALL HAVE THE PREVIOUS MEASURE REAPPLIED WITHIN SEVEN DAYS.
- VEHICLE TRACKING CONTROL APRON SHALL BE REMOVED AND REPLACED WHEN VOIDS BECOME FILLED WITH SEDIMENT OR IF SURFACE OPENINGS BECOME PLUGGED SO THAT THE APRON DOES NOT FUNCTION.
- SILT FENCES SHALL BE MAINTAINED IN A FUNCTIONING MANNER. FENCES SHALL NOT BE ALLOWED TO SAG, FALL DOWN, OR BECOME FILLED WITH SILT ON THE BACK SIDE. IF SILT BUILDS UP BEHIND A SILT FENCE, IT SHALL BE REMOVED IMMEDIATELY. UNDER NO CIRCUMSTANCES SHALL SILT DEPOSITS BE ALLOWED TO REACH MORE THAN $\frac{1}{3}$ THE HEIGHT OF THE FENCE.

SILT FENCE SHALL BE PLACED DOWN SLOPE OF ALL SOIL STOCK PILES DURING CONSTRUCTION IF LEFT MORE THAN SEVEN DAYS. STOCK PILES SHALL BE SEEDED AND MULCHED IF LEFT FOR MORE THAN 14 DAYS.

ADDITIONAL EROSION CONTROL FACILITIES MAY BE REQUIRED DUE TO UNFORESEEN SITE CIRCUMSTANCES OR SITE OPERATIONS.

SEDIMENT CONTROL STRUCTURES BELOW LAWN AREAS MAY BE REMOVED ONCE LAWN AND FINAL LANDSCAPING IS IN PLACE. SEDIMENT CONTROL STRUCTURES BELOW SEEDED AREAS MUST REMAIN IN PLACE UNTIL THE ENTIRE AREA HAS ESTABLISHED A MATURE COVERING OF HEALTHY VEGETATION. SEDIMENT CONTROL STRUCTURES IN PAVED AREAS SHALL REMAIN IN PLACE UNTIL PAVING IS COMPLETE.

SEDIMENT DEPOSITED IN ROADS OR RIGHT OF WAY DITCHES ADJACENT TO THIS SITE AS A RESULT OF THIS WORK SHALL BE REMOVED. VEGETATION SHALL BE ESTABLISHED WHEN SEDIMENT REMOVAL DESTROYS THE EXISTING VEGETATION. THE ESTABLISHMENT OF VEGETATION SHALL BE IN THE SAME MANNER AS SPECIFIED FOR SEEDING SPECIFIED ELSEWHERE ON THIS PLAN.

NOTES

1. PROVIDE VEHICLE TRACKING CONTROL APRON AT LOCATION WHERE ENTERING AND EXITING THE SITE. SEE DETAIL A/C301
2. SEE DETAIL B/C301 FOR SILT FENCE INSTALLATION
3. SEE DETAIL C/C301 FOR INLET PROTECTION (WITH CURB BOX)
4. SEE DETAIL D/C301 FOR INLET PROTECTION (WITHOUT CURB BOX)
5. ALL DISTURBED LAWN AREAS SHALL BE SODDED.
6. PROVIDE CONCRETE WASHOUT AREA PER DETAIL D/C301. UNDER NO CIRCUMSTANCES SHALL CONCRETE WASHOUT BE ALLOWED IN ANY OTHER LOCATION ON THE SITE.

REVISIONS	BY

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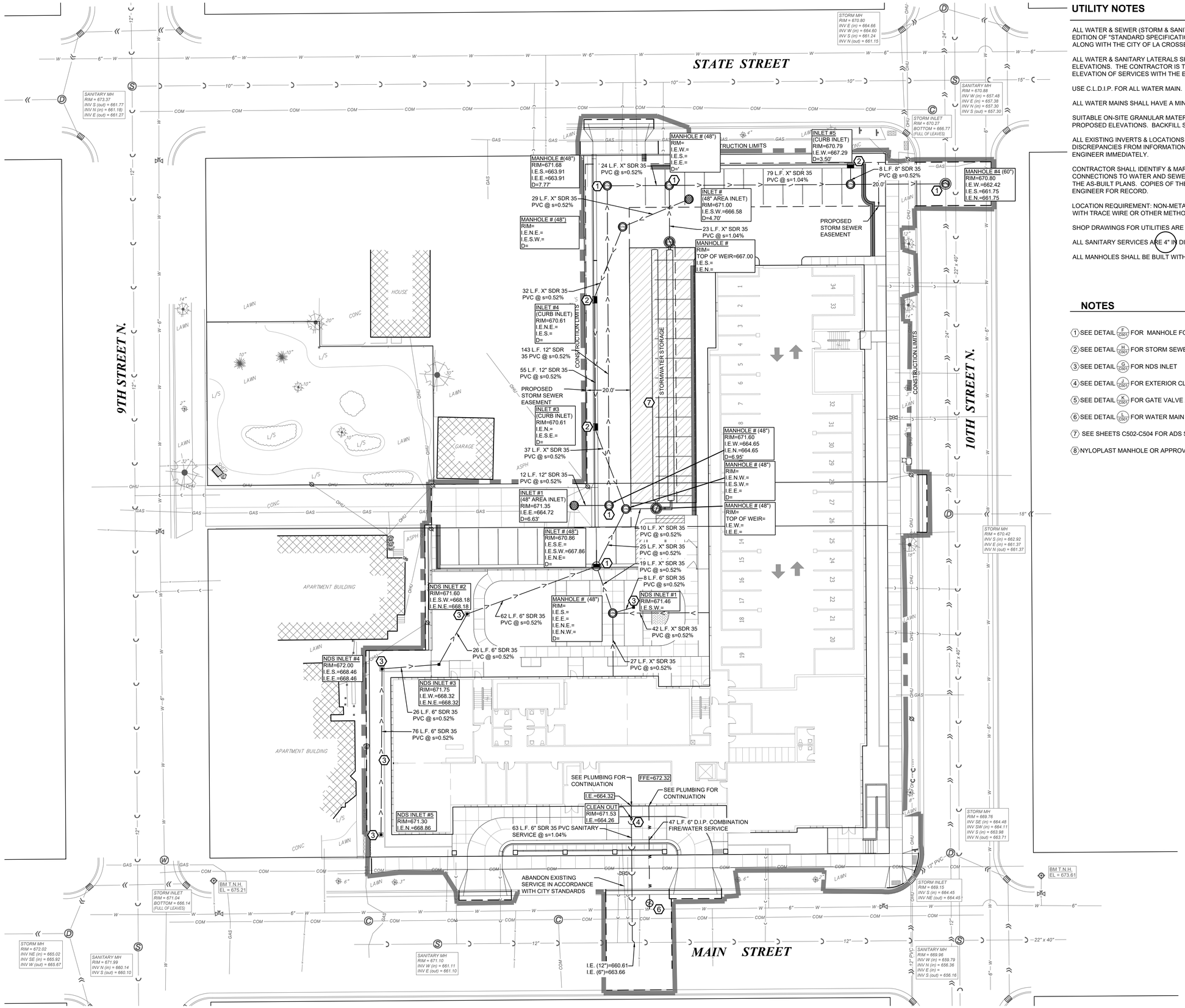
EROSION CONTROL PLAN

DRAWN	C.G.
PROJECT No	23-109
DATE	11/07/2024
SCALE	1"=20'
CAD FILE	23-109 Gerrard HOM 11.DWG
SHEET	C300

10 0 10 20
PLAN SCALE: 1"=20'



UTILITY NOTES

ALL WATER & SEWER (STORM & SANITARY) CONSTRUCTION SHALL COMPLY WITH THE LATEST EDITION OF "STANDARD SPECIFICATIONS FOR SEWER & WATER IN THE STATE OF WISCONSIN," ALONG WITH THE CITY OF LA CROSSE STANDARD SPECIFICATIONS, AS APPROPRIATE.

ALL WATER & SANITARY LATERALS SHALL HAVE A MINIMUM DEPTH 6' BELOW FINISHED FLOOR ELEVATIONS. THE CONTRACTOR IS TO COORDINATE ACTIVITIES & CONFIRM LOCATION & ELEVATION OF SERVICES WITH THE ENGINEER.

USE C.L.D.I.P. FOR ALL WATER MAIN.

ALL WATER MAINS SHALL HAVE A MINIMUM OF 7.5' OF COVER.

SUITABLE ON-SITE GRANULAR MATERIAL SHALL BE USED FOR TRENCH BACKFILL TO PROPOSED ELEVATIONS. BACKFILL SHALL BE COMPACTED AS SPECIFIED.

ALL EXISTING INVERTS & LOCATIONS SHALL BE VERIFIED PRIOR TO CONSTRUCTION. ALL DISCREPANCIES FROM INFORMATION SHOWN ON THE PLANS SHALL BE REPORTED TO THE ENGINEER IMMEDIATELY.

CONTRACTOR SHALL IDENTIFY & MARK THE EXACT LOCATIONS OF ALL UNDERGROUND CONNECTIONS TO WATER AND SEWER MAINS, BENDS, CURB BOXES, CLEAN OUTS, ETC. ON THE AS-BUILT PLANS. COPIES OF THESE DOCUMENTS SHALL BE DELIVERED TO THE ENGINEER FOR RECORD.

LOCATION REQUIREMENT: NON-METALLIC SEWER/MAINS AND SERVICES MUST BE PROVIDED WITH TRACE WIRE OR OTHER METHODS IN ORDER TO BE LOCATED.

SHOP DRAWINGS FOR UTILITIES ARE REQUIRED.

ALL SANITARY SERVICES ARE 4" IN DIAMETER.

ALL MANHOLES SHALL BE BUILT WITH ECCENTRIC CONES.

NOTES

1. SEE DETAIL (F C501) FOR MANHOLE FOR STORM SEWER
2. SEE DETAIL (H C501) FOR STORM SEWER INLET 3' X 2'
3. SEE DETAIL (G C501) FOR NDS INLET
4. SEE DETAIL (J C501) FOR EXTERIOR CLEAN OUT
5. SEE DETAIL (K C501) FOR GATE VALVE AND BOX INSTALLATION
6. SEE DETAIL (L C501) FOR WATER MAIN WET TAP
7. SEE SHEETS C502-C504 FOR ADS StormTech SYSTEM
8. NYLOPLAST MANHOLE OR APPROVED EQUAL. SEE MANUFACTURER'S DRAWINGS FOR DETAILS

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PREPARED FOR:
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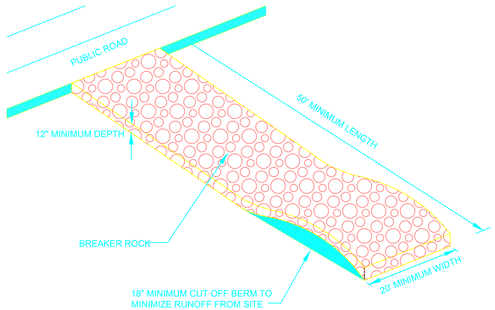
HAVEN ON MAIN
915-927 MAIN STREET
LA CROSSE, WISCONSIN
UTILITY PLAN

DRAWN	C.G.
PROJECT No	23-109
DATE	11/07/2024
SCALE	1"=20'
CAD FILE	23-109 Gerrard HOM 12.DWG
SHEET	C400

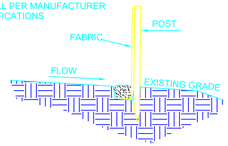
PLAN SCALE: 1"=20'



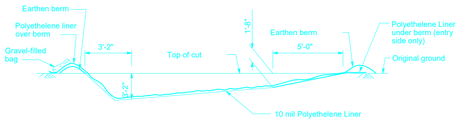
NOTES:
1. PLACE FILTER FABRIC (PROPEX 2002 OR EQUAL) UNDER BREAKER ROCK TO PREVENT MUD MIGRATION THROUGH ROCK.
2. ENTRANCE MUST BE MAINTAINED REGULARLY TO PREVENT SEDIMENTATION ON PUBLIC ROADWAYS. FUGITIVE ROCK WILL BE REMOVED FROM ADJACENT ROADWAYS DAILY OR MORE FREQUENTLY AS NECESSARY.

A C300 VEHICLE TRACKING CONTROL
NO SCALE

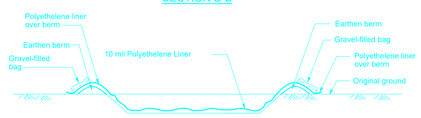
NOTE:
-REFER TO:
WISCONSIN DEPARTMENT OF NATURAL RESOURCES CONSTRUCTION SITE EROSION & SEDIMENT CONTROL STANDARD SILT FENCE (1056)
-INSTALL PER MANUFACTURER SPECIFICATIONS



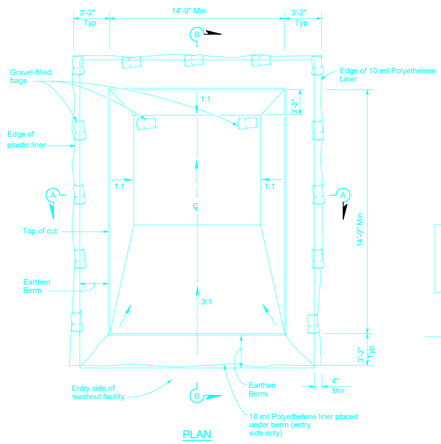
B C300 TYPICAL SILT FENCE INSTALLATION
NO SCALE



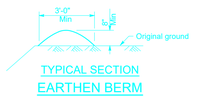
SECTION B-B



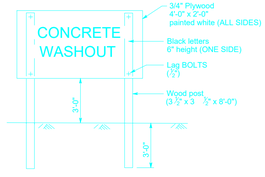
SECTION A-A



PLAN

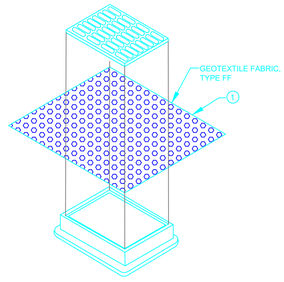


TYPICAL SECTION
EARTHEN BERM



CONCRETE WASHOUT
SIGN DETAIL

C C300 TEMPORARY CONCRETE WASHOUT FACILITY
NO SCALE



GENERAL NOTES

INLET PROTECTION DEVICES SHALL BE MAINTAINED OR REPLACED AT THE DIRECTION OF THE ENGINEER.

MANUFACTURED ALTERNATIVES APPROVED AND LISTED ON THE WIS. D.O.T.'S EROSION CONTROL PRODUCT ACCEPTABILITY LIST MAY BE SUBSTITUTED.

WHEN REMOVING OR MAINTAINING INLET PROTECTION, CARE SHALL BE TAKEN SO THAT THE SEDIMENT TRAPPED ON THE GEOTEXTILE FABRIC DOES NOT FALL INTO THE INLET. ANY MATERIAL FALLING INTO THE INLET SHALL BE REMOVED IMMEDIATELY.

1. FINISHED SIZE, INCLUDING FLAP POCKETS WHERE REQUIRED SHALL EXTEND A MINIMUM OF 10" AROUND THE PERIMETER TO FACILITATE MAINTENANCE OR REMOVAL.

D C300 INLET PROTECTION, TYPE B (WITHOUT CURB BOX)
NO SCALE

GENERAL NOTES

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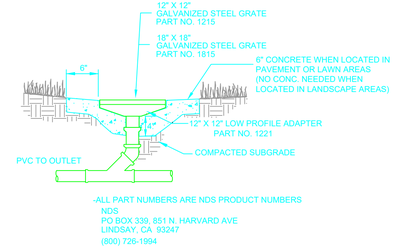
1. FINISHED SIZE, INCLUDING FLAP POCKETS WHERE REQUIRED SHALL EXTEND A MINIMUM OF 10" AROUND THE PERIMETER TO FACILITATE MAINTENANCE OR REMOVAL.
2. FOR INLET PROTECTION, TYPE C (WITH CURB BOX). AN ADDITIONAL 18" OF FABRIC IS WRAPPED AROUND THE WOOD AND SECURED WITH STAPLES. THE WOOD SHALL NOT BLOCK THE ENTIRE HEIGHT OF THE CURB BOX OPENING.
3. FLAP POCKETS SHALL BE LARGE ENOUGH TO ACCEPT WOOD 2X4.

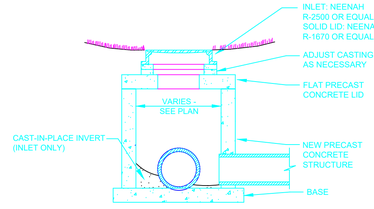
E C300 INLET PROTECTION, TYPE C (WITH CURB BOX)
NO SCALE



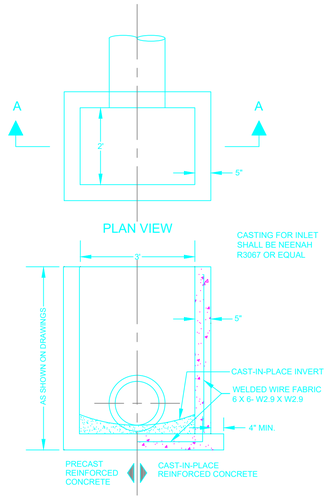
-ALL PART NUMBERS ARE NDS PRODUCT NUMBERS

NDS
PO BOX 339, 851 N. HARVARD AVE
LINDSAY, CA 93247
(800) 726-1994

F C400 NDS INLET
NO SCALE

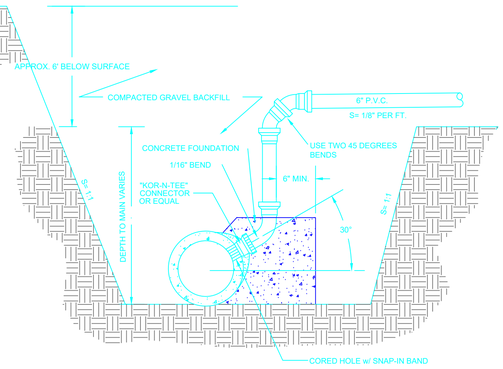


G C400 MANHOLE/INLET FOR STORM SEWER 48"
NO SCALE

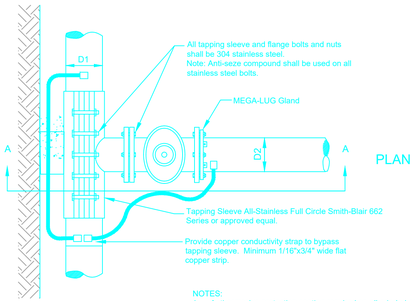


SECTION A-A

M C400 STORM SEWER INLET 3' X 2'
NO SCALE

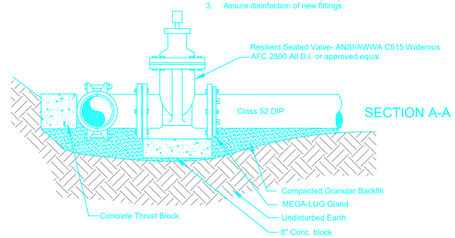


I C400 RISER FOR SEWER LATERAL CONNECTION TO MAIN (12" OR LARGER)
NO SCALE



PLAN

NOTES:
1. Anti-corrosive protection coating required on all grinded and welded areas.
2. 7.0' cover required over top of water main. Any thing <7.0' or >8.0' shall require approval of City Engineer.
3. Assure disinfection of new fittings.



SECTION A-A

I C400 WATER MAIN WET TAP DETAIL
NO SCALE

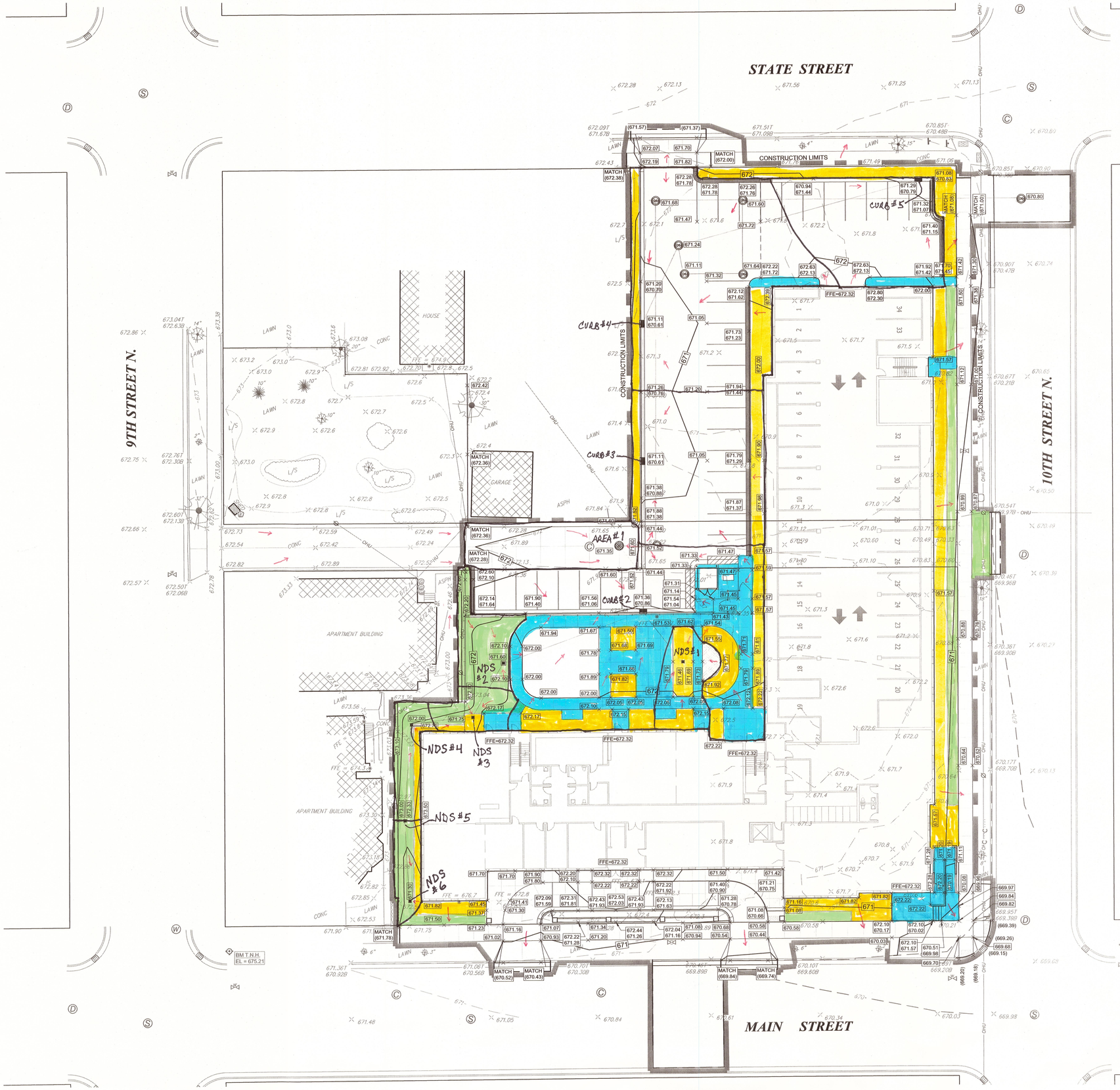
REVISIONS | BY

PARAGON ASSOCIATES
Environmental Design & Consulting
CIVIL ENGINEERING . LANDSCAPE ARCHITECTURE . SURVEYING
632 COPELAND AVENUE . LA CROSSE, WI 54603
Tel.608.781.3110 Fax.608.781.3197 Paragon-Assoc.biz

PREPARED FOR:
GERRARD CORP.

HAVEN ON MAIN
915-927 MAIN STREET
LA CROSSE, WISCONSIN
DETAILS

DRAWN: C.G.
PROJECT No: 23-109
DATE: 11/07/2024
SCALE: VARIES
CAD FILE: 23-109 Gerrard HOM 11.DWG
SHEET: **C501**



GRADING NOTES

-CONTOURS SHOWN ARE FOR FINISHED SURFACES, ANY ADJUSTMENT TO SUBGRADE IS THE CONTRACTOR'S RESPONSIBILITY.

-ALL DISTURBED AREAS THAT ARE UNPAVED ARE TO BE LANDSCAPED OR HAVE LAWN ESTABLISHED AS INDICATED ON THE LANDSCAPE PLAN.

-ALL LANDSCAPED OR LAWN AREAS SHALL HAVE A MINIMUM OF 6" OF TOPSOIL.

-SPOT ELEVATIONS SHALL TAKE PRECEDENCE OVER CONTOURS AND SLOPES SHOWN. HOWEVER, THE CONTRACTOR SHALL NOTIFY THE ENGINEER IF SPOT ELEVATIONS DO NOT APPEAR TO AGREE WITH THE CONTOURS AND SLOPES LABELED. SPOT ELEVATIONS AND SPECIFIC PROFILE INFORMATION SHALL BE USED FOR ESTABLISHING THE ELEVATION OF CURBS, DRIVEWAYS, AND OTHER UTILITIES.

-ALL FINISHED GRADING SHALL PROVIDE FOR A SMOOTH TRANSITION TO UNGRADED AREAS.

-ALL PVC STORM SEWER PIPING SHALL BE MINIMUM SDR 35

REVISIONS	BY

PARAGON ASSOCIATES
Environmental Design & Consulting
CIVIL ENGINEERING LANDSCAPE ARCHITECTURE SURVEYING
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Tel.608.781.3110 Fax.608.781.3197 Paragon-Assoc.biz

PREPARED FOR:
XXXX

HAVEN ON MAIN
915-927 MAIN STREET
LA CROSSE, WISCONSIN
GRADING PLAN

DRAWN	C.G.
PROJECT No	23-109
DATE	10/31/2024 11-5
SCALE	1"=20'
CAD FILE	23-109 Gerrard HOM 09.DWG
SHEET	C200

STORM WATER MANAGEMENT PLAN
Haven On Main Project
915-927 Main Street
La Crosse, WI 54601

Gerrard Development LLC
W5947 Woodland Drive
La Crosse, WI 54601

November 14, 2024

PARAGON ASSOCIATES
Environmental Design & Consulting
CIVIL ENGINEERING . LANDSCAPE ARCHITECTURE . SURVEYING
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APPENDICES

***Existing Site Description**:*

This project is proposed to occur on 6 adjacent parcels, all owned by Gerrard Development LLC, and on part of a city-owned alley that is proposed to be partially vacated and ownership transferred to Gerrard Development LLC. 5 of the parcels are currently vacant but have been landscaped and are believed to have contained residential homes in the past. The 6th parcel contains a 24-unit apartment building. The project site is bounded by Main St., State St., 10th St. and is east of 9th St. with a concrete alley running east-west approximately through the middle of the site. The vacation of the eastern part of the alley is expected to occur in spring of 2025 followed shortly thereafter by a certified survey map that combines all of the project parcels. Several utility easements between the developers and the City will also be part of that CSM. All of the areas within the limits of construction are developed and therefore the Project is considered to be redevelopment.

***Project Description**:*

The project proposes to demolish the existing 24-unit apartment building and part of the concrete alley, and construct a new 4-story, 74-unit combined assisted living facility and regular apartments with interior parking. The project's general development plan has received conceptual approval from the City of La Crosse Common Council in January 2024. The 6 Gerrard Development LLC parcels have a combined area of 1.266 acres while the vacated alley area is 0.102 acres. Some additional public street right-of-way areas will also be disturbed for new driveways and utility connections. An aerial photo has been included in **Appendix A** showing the site and surrounding areas.

Grading, installation of permanent BMP's, utility installation, new building construction, and landscaping will constitute most of the new exterior construction. Topsoil stripping, back filling, grading, subbase preparation, paving, and landscaping will constitute a majority of the ground disturbing activities.

Estimate of construction site area: The total area of ground disturbing activity, including city rights-of-way, is about 1.50 acres.

Summary of Controls: Total suspended solids removal requirements are met through the application of an underground chamber storage system (isolator row system) for TSS removal. A single 2-chamber underground storage system is proposed to treat runoff for TSS and peak discharge from a portion of the site. Other parts of the site will either surface drain to adjacent city streets or will drain to an on-site storm sewer system that will directly connect to a city storm sewer main without any type of treatment. The proposed underground chamber storage system is an ADS Stormtech SC310 system.

Performance Standards

Total Suspended Solids: A single 2-chamber underground storage system will be utilized to achieve TSS removal and control runoff volume. Because this project is considered redevelopment under City regulations, a TSS reduction of 40% is required from parking and drives per City Municipal Code Section 105-61.

WinSLAMM V10.5.0 was used to model the site and determine the amount of TSS carried in runoff from the site. The modeled TSS removal incorporates all areas that drain to the underground chamber system, including those areas where TSS reduction is not required. The results are as follows:

Baseline Model (Developed site without controls)

Total TSS without controls = 461 lbs.

Modeled TSS Removal

TSS Removed with Controls = 207 lbs. (461 lbs. – 254 lbs.)

The TSS removal is 45%, above the redevelopment requirement of 40%. Model input and output file information are included in **Appendix B**.

Peak Storm Water Discharge: Municipal Code Section 105-61 requires no increase in the developed site runoff as compared to the existing site for the 2 and 10-year storms. This requirement will be met by the 2-chamber underground storage system. HydroCAD V10.00-26 models of the existing and proposed site were developed. The results are summarized in the table below:

Return Period, Years	Existing Site, cfs	Proposed Site, cfs
2	0.93	0.61
10	1.43	1.10
100	2.72	2.79

The proposed BMP adequately controls the runoff from the 2- and 10-year events, and the 100-year runoff does not overflow from the underground storage chambers, although it is slightly increased from the pre-development runoff. Because the 100-year runoff volume is contained within the underground storage chamber and is slowly released to the City's storm sewer system, it is considered to be a safe

outlet for that slightly increased runoff volume. Model input and output file information is included in **Appendix B**.

Infiltration: As a moderately-impervious multi-family residential site, post-construction infiltration is required per Municipal Code Section 105-61 to be at least 75% of pre-development infiltration volume. However, no more than 2% of the disturbed site is required to be dedicated as an effective infiltration area. The underground chamber storage system will be underlain by an impervious liner so no infiltration will occur within that system. Infiltration will occur primarily via the landscaped (non-turf) areas and the western play area (assumed wood mulch), which comprise 7331sf of the proposed site and therefore greatly exceeds the 2% maximum area cap.

BMP Maintenance: An O & M Plan has been included in **Appendix C**.

Post Construction Maintenance Agreement: A draft Long Term Maintenance Agreement has been included in **Appendix D,** with a final agreement pending final design.

Haven On Main Project

Storm Water Management Plan

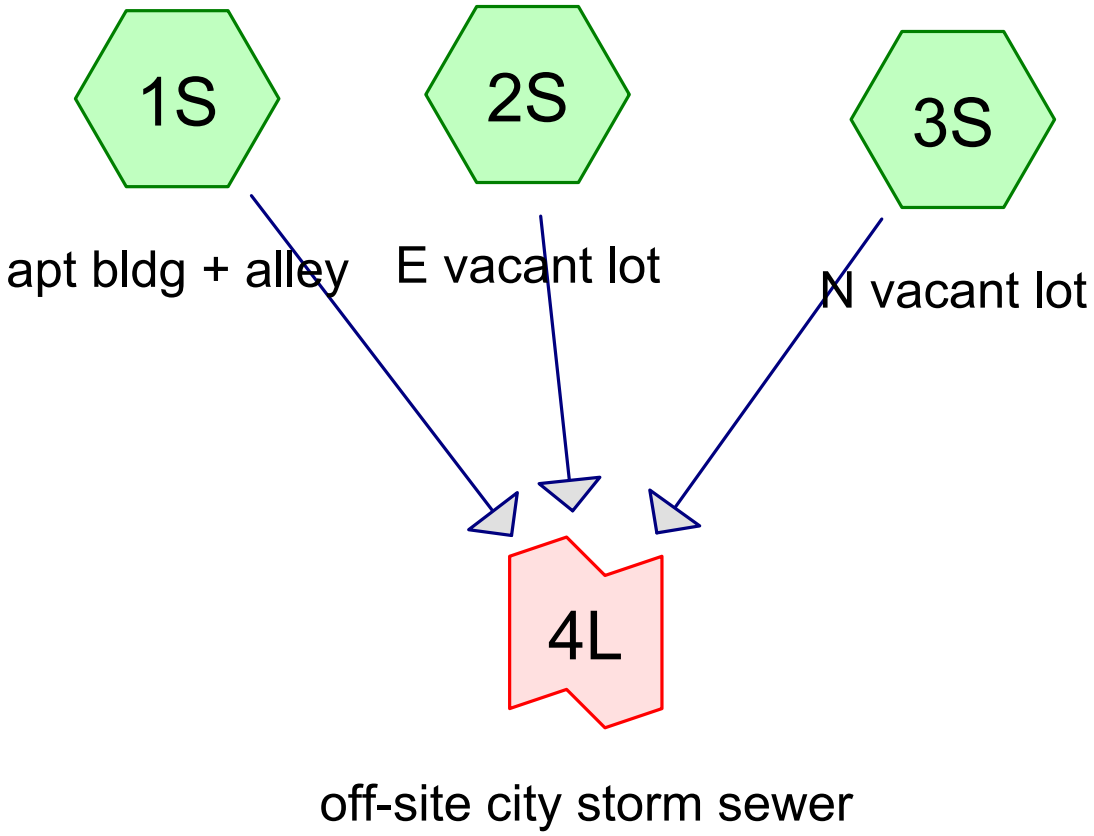
APPENDIX A – Aerial Photo of Project Site

City of La Crosse, La Crosse County, City of La Crosse, La Crosse County

Haven On Main Project

Storm Water Management Plan

APPENDIX B – Stormwater Modeling Results



Subcat Reach Pond Link

Routing Diagram for existing
Prepared by Paragon Associates, Printed 11/12/2024

Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
0.020	39	>75% Grass cover, Good, HSG A (1S)
0.087	98	alley (1S)
0.366	98	apt bldg roof (1S)
0.001	98	conc apron + shed (3S)
0.044	98	conc patios + slab (1S)
0.831	39	vacant lot, landscaped (2S, 3S)
1.349	**61**	**TOTAL AREA**

Soil Listing (all nodes)

Area (acres)	Soil Group	Subcatchment Numbers
0.020	HSG A	1S
0.000	HSG B	
0.000	HSG C	
0.000	HSG D	
1.329	Other	1S, 2S, 3S
1.349		**TOTAL AREA**

Ground Covers (all nodes)

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchment Numbers
0.020	0.000	0.000	0.000	0.000	0.020	>75% Grass cover, Good	1S
0.000	0.000	0.000	0.000	0.087	0.087	alley	1S
0.000	0.000	0.000	0.000	0.366	0.366	apt bldg roof	1S
0.000	0.000	0.000	0.000	0.001	0.001	conc apron + shed	3S
0.000	0.000	0.000	0.000	0.044	0.044	conc patios + slab	1S
0.000	0.000	0.000	0.000	0.831	0.831	vacant lot, landscaped	2S, 3S
0.020	**0.000**	**0.000**	**0.000**	**1.329**	**1.349**	**TOTAL AREA**	

Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment1S: apt bldg + alley Runoff Area=0.517 ac 96.13% Impervious Runoff Depth>3.68"
Tc=32.0 min CN=96 Runoff=1.43 cfs 0.158 af

Subcatchment2S: E vacant lot Runoff Area=0.358 ac 0.00% Impervious Runoff Depth>0.06"
Tc=45.0 min CN=39 Runoff=0.00 cfs 0.002 af

Subcatchment3S: N vacant lot Runoff Area=0.474 ac 0.21% Impervious Runoff Depth>0.06"
Tc=45.0 min CN=39 Runoff=0.01 cfs 0.002 af

Link 4L: off-site city storm sewer Inflow=1.43 cfs 0.163 af
Primary=1.43 cfs 0.163 af

Total Runoff Area = 1.349 ac Runoff Volume = 0.163 af Average Runoff Depth = 1.45"
63.08% Pervious = 0.851 ac 36.92% Impervious = 0.498 ac

Summary for Subcatchment 1S: apt bldg + alley

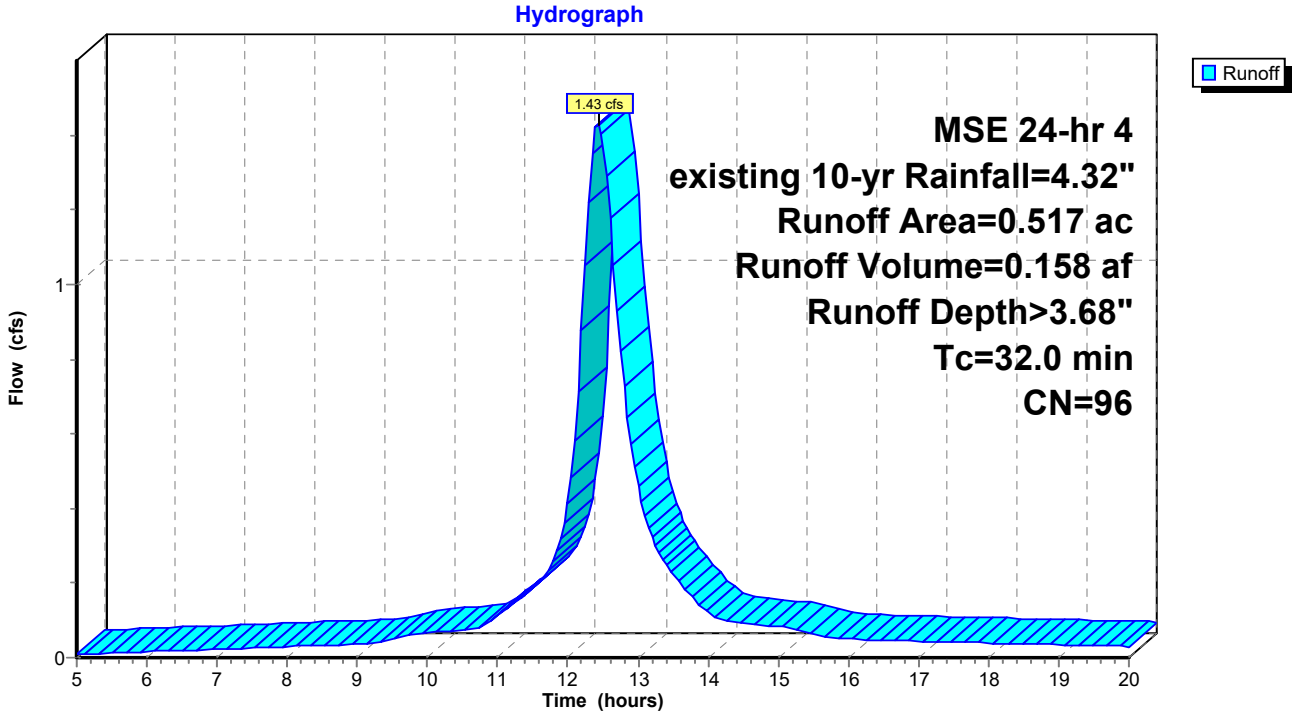
Runoff = 1.43 cfs @ 12.43 hrs, Volume= 0.158 af, Depth> 3.68"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
MSE 24-hr 4 existing 10-yr Rainfall=4.32"

	Area (ac)	CN	Description
*	0.366	98	apt bldg roof
*	0.044	98	conc patios + slab
	0.020	39	>75% Grass cover, Good, HSG A
*	0.087	98	alley
	0.517	96	Weighted Average
	0.020		3.87% Pervious Area
	0.497		96.13% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry, apt bldg roof**
5.0					**Direct Entry, patios + slab**
15.0					**Direct Entry, landscaping**
7.0					**Direct Entry, alley**
32.0	0	Total			

Subcatchment 1S: apt bldg + alley



Summary for Subcatchment 2S: E vacant lot

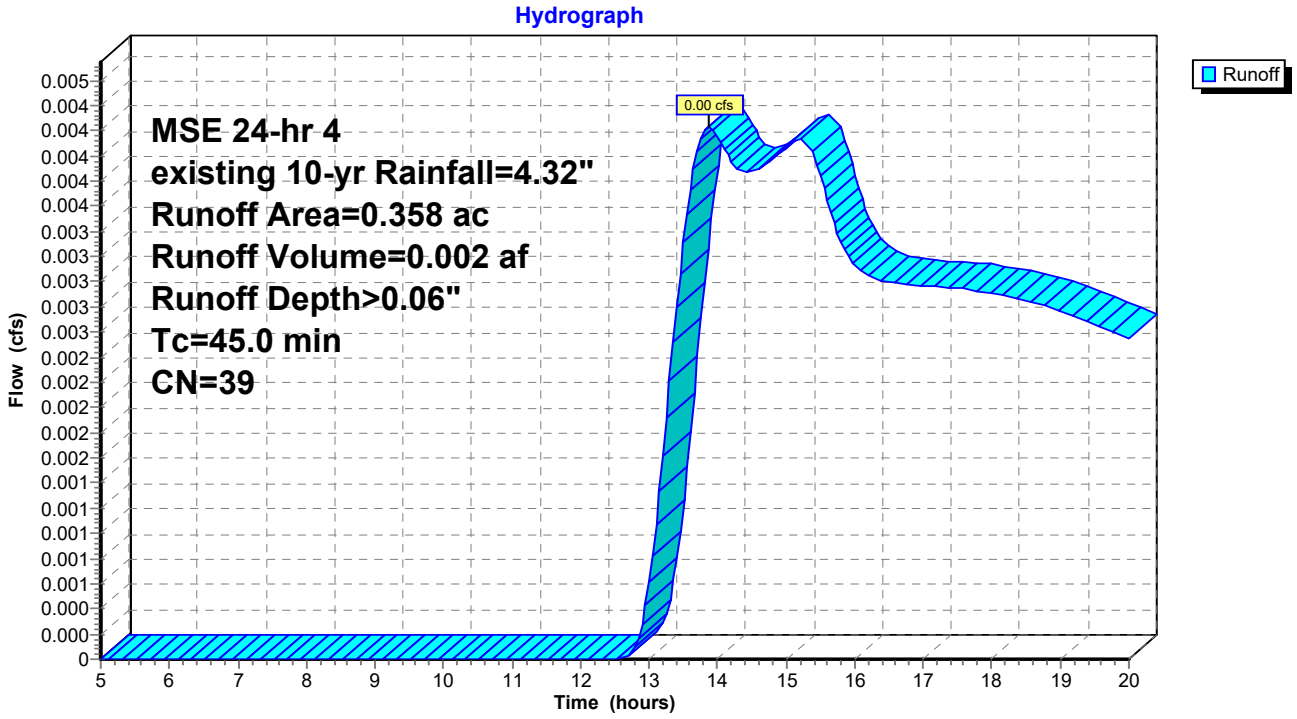
Runoff = 0.00 cfs @ 13.87 hrs, Volume= 0.002 af, Depth> 0.06"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
MSE 24-hr 4 existing 10-yr Rainfall=4.32"

	Area (ac)	CN	Description
*	0.358	39	vacant lot, landscaped
	0.358		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
45.0					**Direct Entry, vacant lot, grass, flat**

Subcatchment 2S: E vacant lot



Summary for Subcatchment 3S: N vacant lot

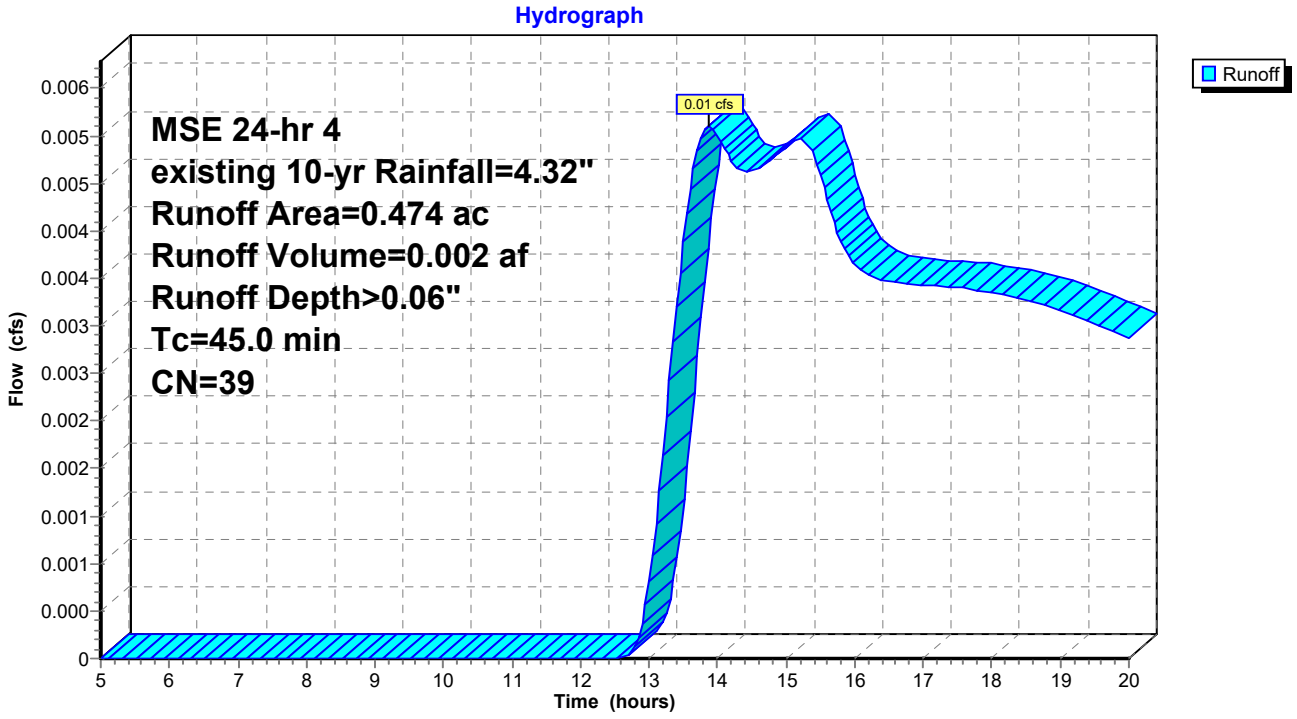
Runoff = 0.01 cfs @ 13.87 hrs, Volume= 0.002 af, Depth> 0.06"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
MSE 24-hr 4 existing 10-yr Rainfall=4.32"

	Area (ac)	CN	Description
*	0.001	98	conc apron + shed
*	0.473	39	vacant lot, landscaped
	0.474	39	Weighted Average
	0.473		99.79% Pervious Area
	0.001		0.21% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
45.0					**Direct Entry, vacant lot, grass, flat**

Subcatchment 3S: N vacant lot

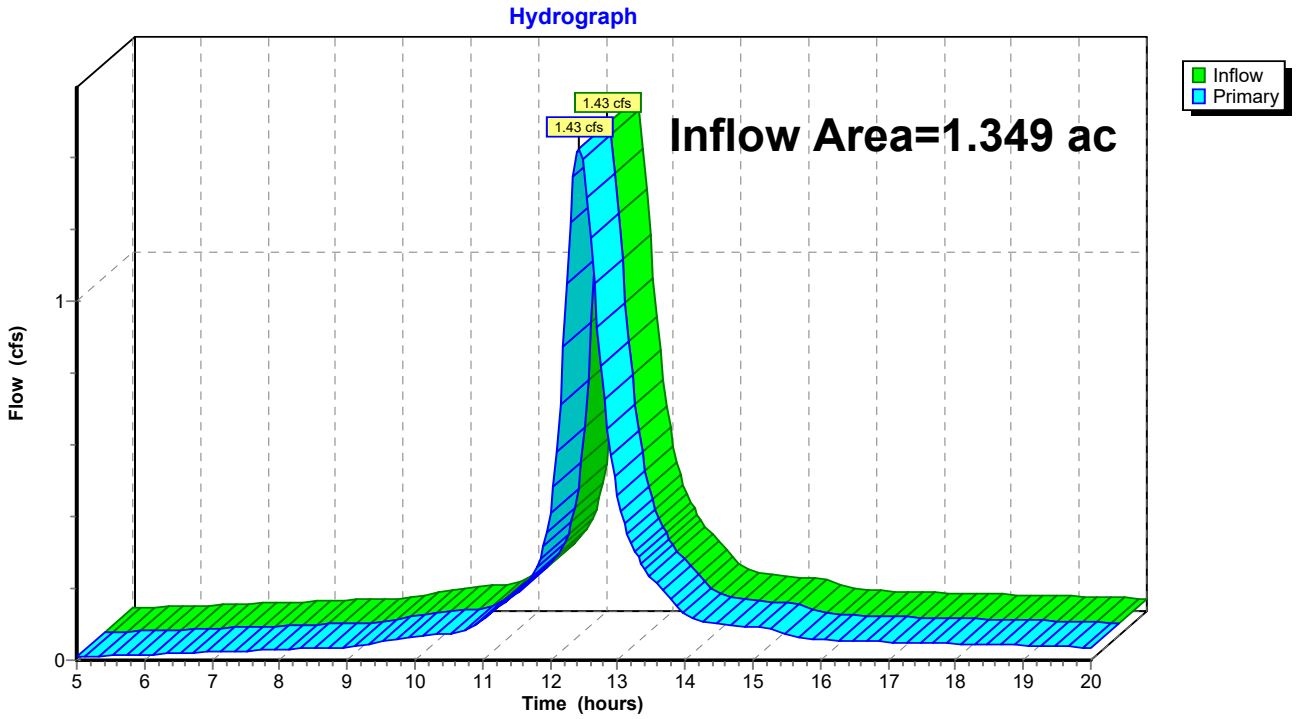


Summary for Link 4L: off-site city storm sewer

Inflow Area = 1.349 ac, 36.92% Impervious, Inflow Depth > 1.45" for existing 10-yr event
Inflow = 1.43 cfs @ 12.43 hrs, Volume= 0.163 af
Primary = 1.43 cfs @ 12.43 hrs, Volume= 0.163 af, Atten= 0%, Lag= 0.0 min

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

Link 4L: off-site city storm sewer



Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment1S: apt bldg + alley Runoff Area=0.517 ac 96.13% Impervious Runoff Depth>2.34"
Tc=32.0 min CN=96 Runoff=0.93 cfs 0.101 af

Subcatchment2S: E vacant lot Runoff Area=0.358 ac 0.00% Impervious Runoff Depth=0.00"
Tc=45.0 min CN=39 Runoff=0.00 cfs 0.000 af

Subcatchment3S: N vacant lot Runoff Area=0.474 ac 0.21% Impervious Runoff Depth=0.00"
Tc=45.0 min CN=39 Runoff=0.00 cfs 0.000 af

Link 4L: off-site city storm sewer Inflow=0.93 cfs 0.101 af
Primary=0.93 cfs 0.101 af

Total Runoff Area = 1.349 ac Runoff Volume = 0.101 af Average Runoff Depth = 0.90"
63.08% Pervious = 0.851 ac 36.92% Impervious = 0.498 ac

Summary for Subcatchment 1S: apt bldg + alley

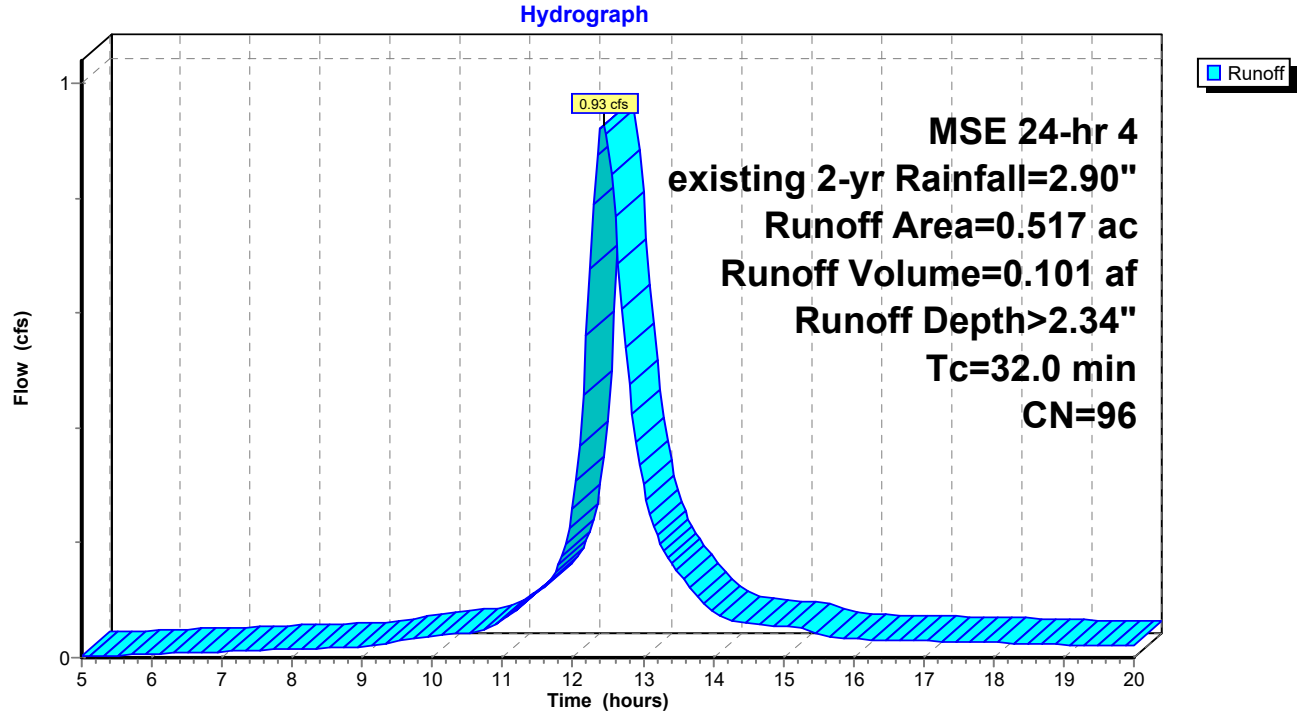
Runoff = 0.93 cfs @ 12.43 hrs, Volume= 0.101 af, Depth> 2.34"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
MSE 24-hr 4 existing 2-yr Rainfall=2.90"

	Area (ac)	CN	Description
*	0.366	98	apt bldg roof
*	0.044	98	conc patios + slab
	0.020	39	>75% Grass cover, Good, HSG A
*	0.087	98	alley
	0.517	96	Weighted Average
	0.020		3.87% Pervious Area
	0.497		96.13% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry, apt bldg roof**
5.0					**Direct Entry, patios + slab**
15.0					**Direct Entry, landscaping**
7.0					**Direct Entry, alley**
32.0	0	Total			

Subcatchment 1S: apt bldg + alley



Summary for Subcatchment 2S: E vacant lot

[45] Hint: Runoff=Zero

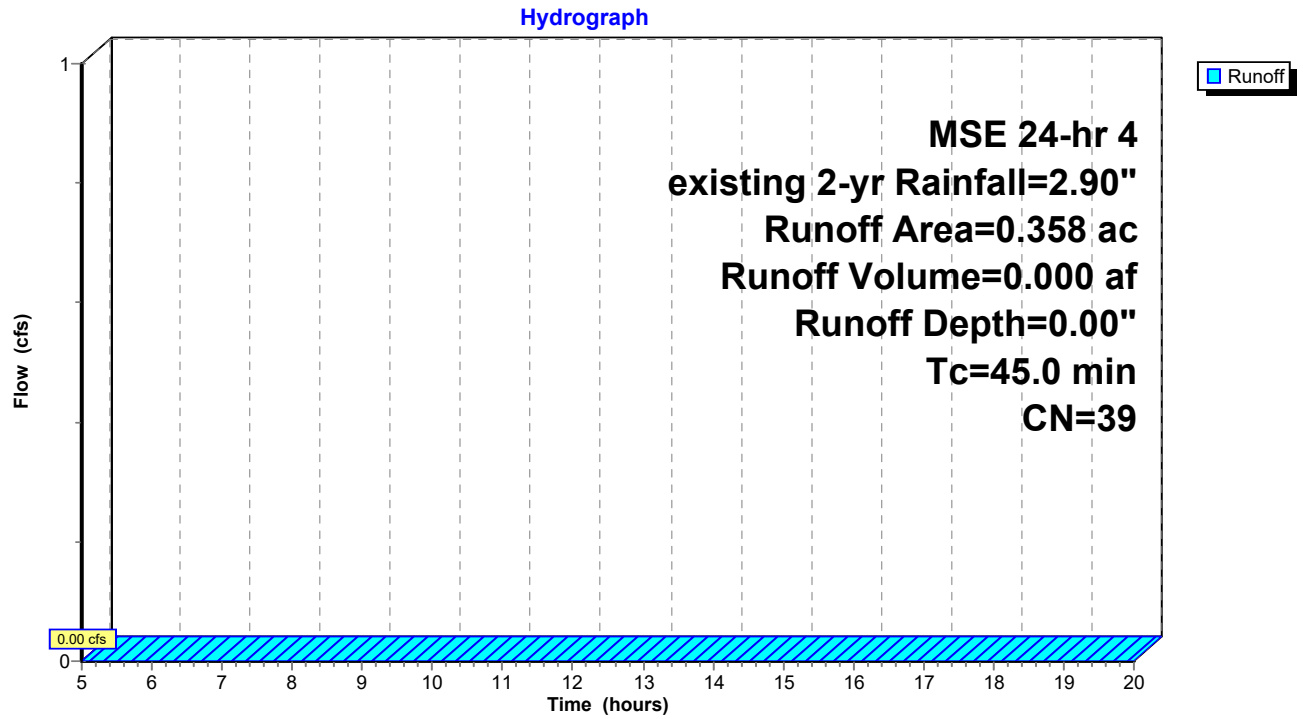
Runoff = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
MSE 24-hr 4 existing 2-yr Rainfall=2.90"

	Area (ac)	CN	Description
*	0.358	39	vacant lot, landscaped
	0.358		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
45.0					**Direct Entry, vacant lot, grass, flat**

Subcatchment 2S: E vacant lot



Summary for Subcatchment 3S: N vacant lot

[45] Hint: Runoff=Zero

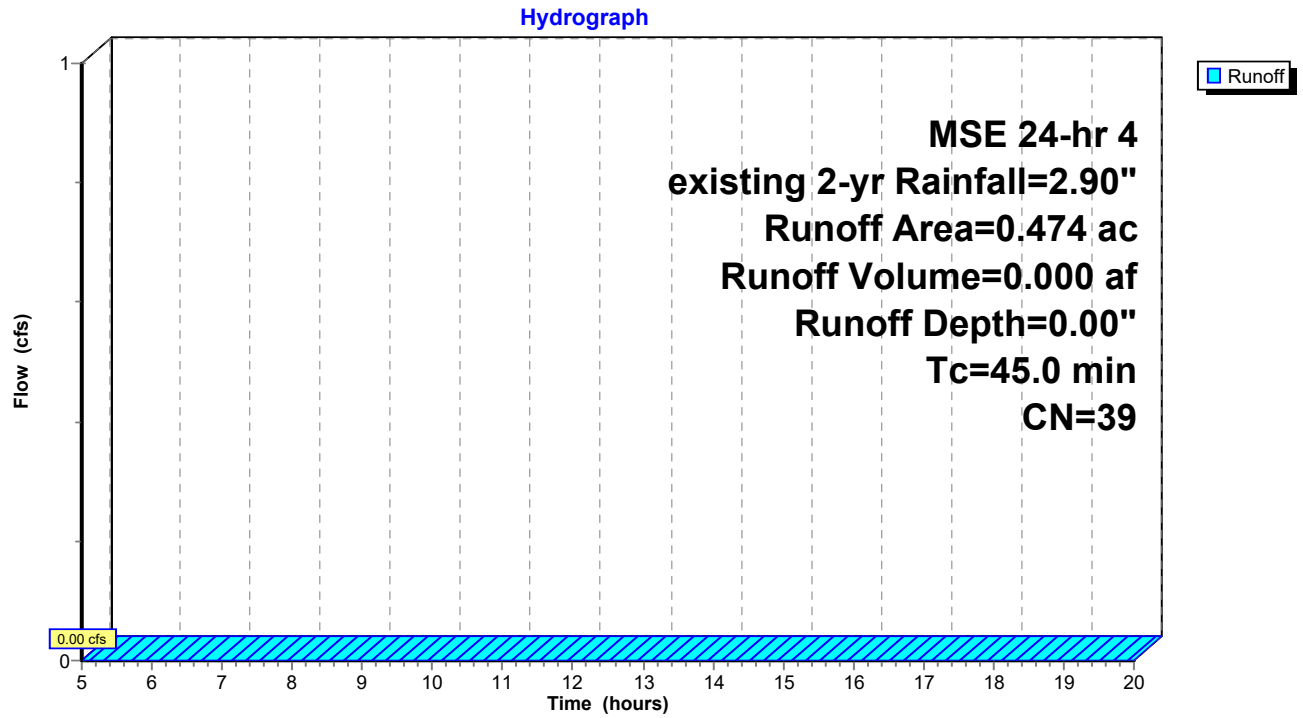
Runoff = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
MSE 24-hr 4 existing 2-yr Rainfall=2.90"

	Area (ac)	CN	Description
*	0.001	98	conc apron + shed
*	0.473	39	vacant lot, landscaped
	0.474	39	Weighted Average
	0.473		99.79% Pervious Area
	0.001		0.21% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
45.0					**Direct Entry, vacant lot, grass, flat**

Subcatchment 3S: N vacant lot

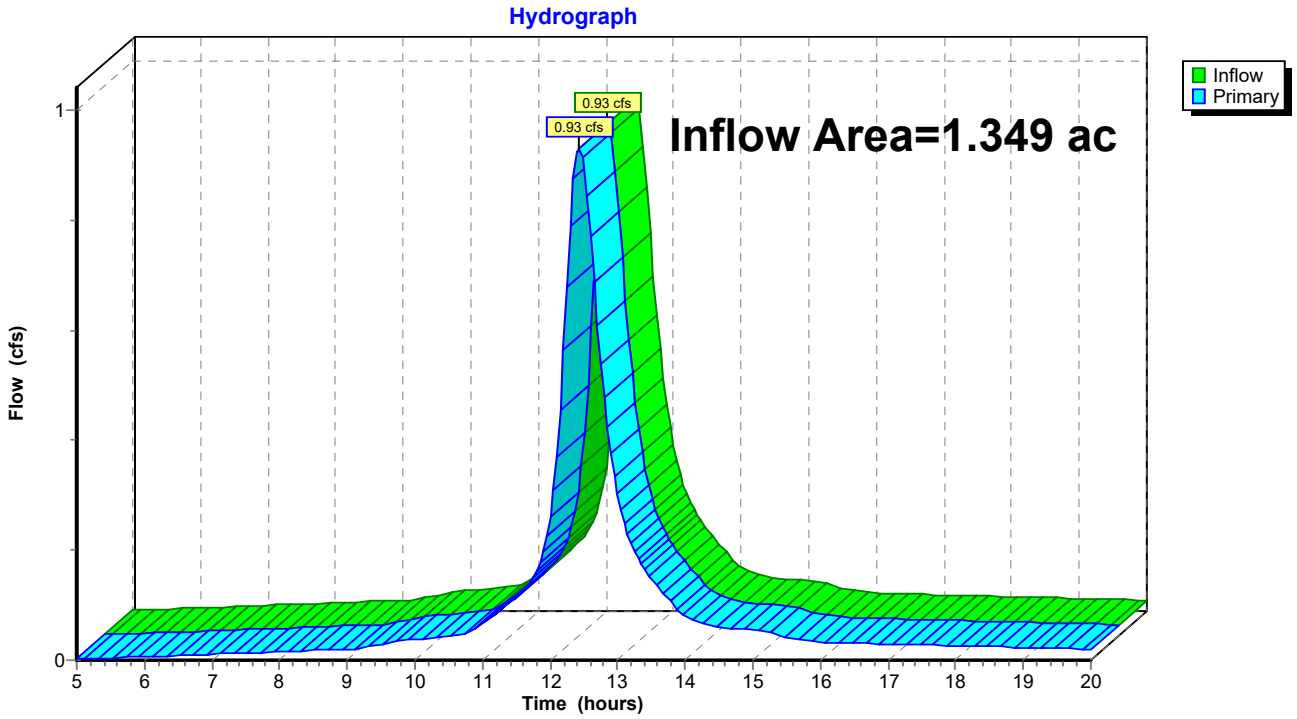


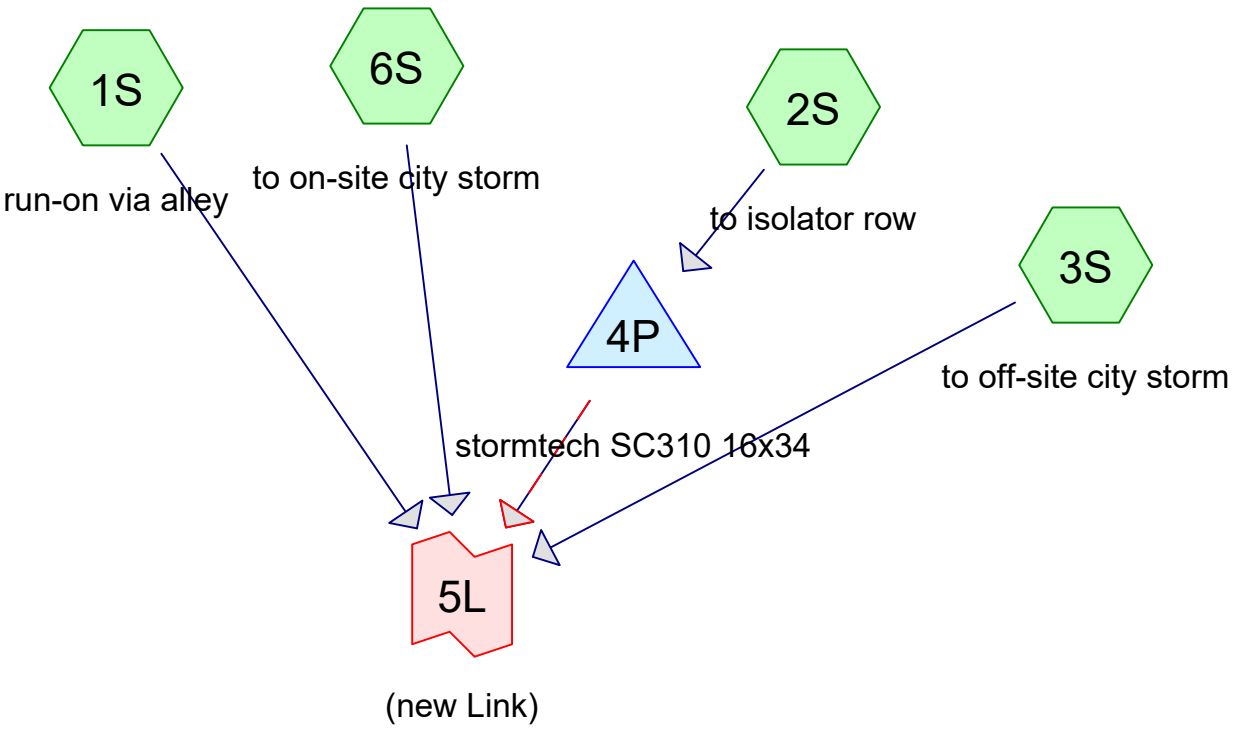
Summary for Link 4L: off-site city storm sewer

Inflow Area = 1.349 ac, 36.92% Impervious, Inflow Depth > 0.90" for existing 2-yr event
Inflow = 0.93 cfs @ 12.43 hrs, Volume= 0.101 af
Primary = 0.93 cfs @ 12.43 hrs, Volume= 0.101 af, Atten= 0%, Lag= 0.0 min

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

Link 4L: off-site city storm sewer





Subcat Reach Pond Link

Routing Diagram for proposed SC310 system 16x34 2+10+100 yr
Prepared by Paragon Associates, Printed 11/13/2024

Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
0.308	98	4 AC areas - curb 5 (2S)
0.034	39	>75% Grass cover, Good, HSG A (3S)
0.054	98	AC pave from curb 5 (6S)
0.048	98	alley @ W (1S)
0.072	98	conc SW's & patios (2S)
0.025	98	conc SW's, ramp, drive aprons (3S)
0.034	98	conc alley (6S)
0.022	98	half 3-plex roof (1S)
0.008	98	half garage roof (1S)
0.068	39	landscape areas (2S)
0.071	70	landscaped areas (3S)
0.021	20	mulch play area (2S)
0.002	90	paved play area (2S)
0.644	98	roofs + canopy (2S)
1.411	**91**	**TOTAL AREA**

Soil Listing (all nodes)

Area (acres)	Soil Group	Subcatchment Numbers
0.034	HSG A	3S
0.000	HSG B	
0.000	HSG C	
0.000	HSG D	
1.377	Other	1S, 2S, 3S, 6S
1.411		**TOTAL AREA**

Ground Covers (all nodes)

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchment Numbers
0.000	0.000	0.000	0.000	0.308	0.308	4 AC areas - curb 5	2S
0.034	0.000	0.000	0.000	0.000	0.034	>75% Grass cover, Good	3S
0.000	0.000	0.000	0.000	0.054	0.054	AC pave from curb 5	6S
0.000	0.000	0.000	0.000	0.048	0.048	alley @ W	1S
0.000	0.000	0.000	0.000	0.072	0.072	conc SW's & patios	2S
0.000	0.000	0.000	0.000	0.025	0.025	conc SW's, ramp, drive aprons	3S
0.000	0.000	0.000	0.000	0.034	0.034	conc alley	6S
0.000	0.000	0.000	0.000	0.022	0.022	half 3-plex roof	1S
0.000	0.000	0.000	0.000	0.008	0.008	half garage roof	1S
0.000	0.000	0.000	0.000	0.068	0.068	landscape areas	2S
0.000	0.000	0.000	0.000	0.071	0.071	landscaped areas	3S
0.000	0.000	0.000	0.000	0.021	0.021	mulch play area	2S
0.000	0.000	0.000	0.000	0.002	0.002	paved play area	2S
0.000	0.000	0.000	0.000	0.644	0.644	roofs + canopy	2S
0.034	**0.000**	**0.000**	**0.000**	**1.377**	**1.411**	**TOTAL AREA**	

Time span=5.00-20.00 hrs, dt=0.02 hrs, 751 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment1S: run-on via alley Runoff Area=0.078 ac 100.00% Impervious Runoff Depth>2.54"
Tc=21.0 min CN=98 Runoff=0.18 cfs 0.017 af

Subcatchment2S: to isolator row Runoff Area=1.115 ac 91.84% Impervious Runoff Depth>2.01"
Tc=101.0 min CN=93 Runoff=0.89 cfs 0.187 af

Subcatchment3S: to off-site city storm Runoff Area=0.130 ac 19.23% Impervious Runoff Depth>0.49"
Tc=0.0 min CN=67 Runoff=0.13 cfs 0.005 af

Subcatchment6S: to on-site city storm Runoff Area=0.088 ac 100.00% Impervious Runoff Depth>2.55"
Tc=5.0 min CN=98 Runoff=0.34 cfs 0.019 af

Pond 4P: stormtech SC310 16x34 Peak Elev=1.88' Storage=0.069 af Inflow=0.89 cfs 0.187 af
Primary=0.13 cfs 0.013 af Secondary=0.32 cfs 0.168 af Outflow=0.45 cfs 0.182 af

Link 5L: (new Link) Inflow=0.61 cfs 0.222 af
Primary=0.61 cfs 0.222 af

Total Runoff Area = 1.411 ac Runoff Volume = 0.227 af Average Runoff Depth = 1.93"
13.89% Pervious = 0.196 ac 86.11% Impervious = 1.215 ac

Summary for Subcatchment 1S: run-on via alley

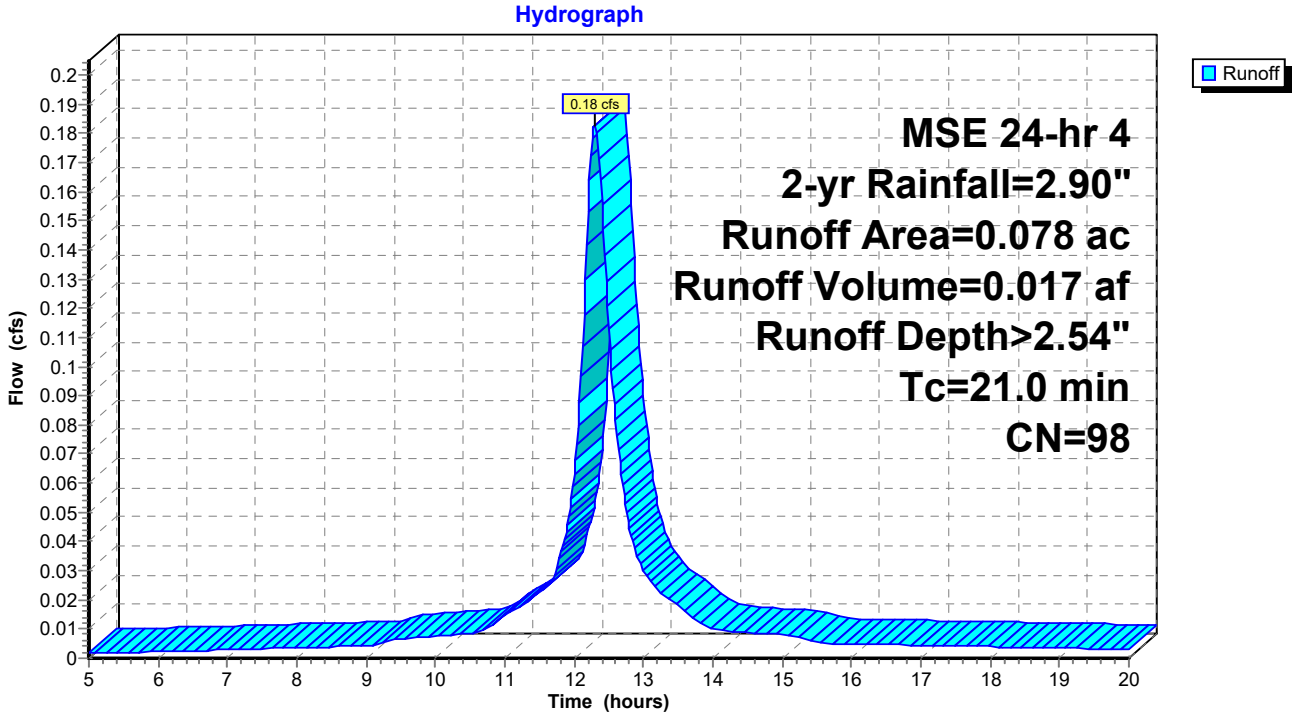
Runoff = 0.18 cfs @ 12.30 hrs, Volume= 0.017 af, Depth> 2.54"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.02 hrs
MSE 24-hr 4 2-yr Rainfall=2.90"

	Area (ac)	CN	Description
*	0.048	98	alley @ W
*	0.008	98	half garage roof
*	0.022	98	half 3-plex roof
	0.078	98	Weighted Average
	0.078		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.0					**Direct Entry, alley**
7.0					**Direct Entry, garage roof**
7.0					**Direct Entry, 3-plex roof**
21.0	0	Total			

Subcatchment 1S: run-on via alley



Summary for Subcatchment 2S: to isolator row

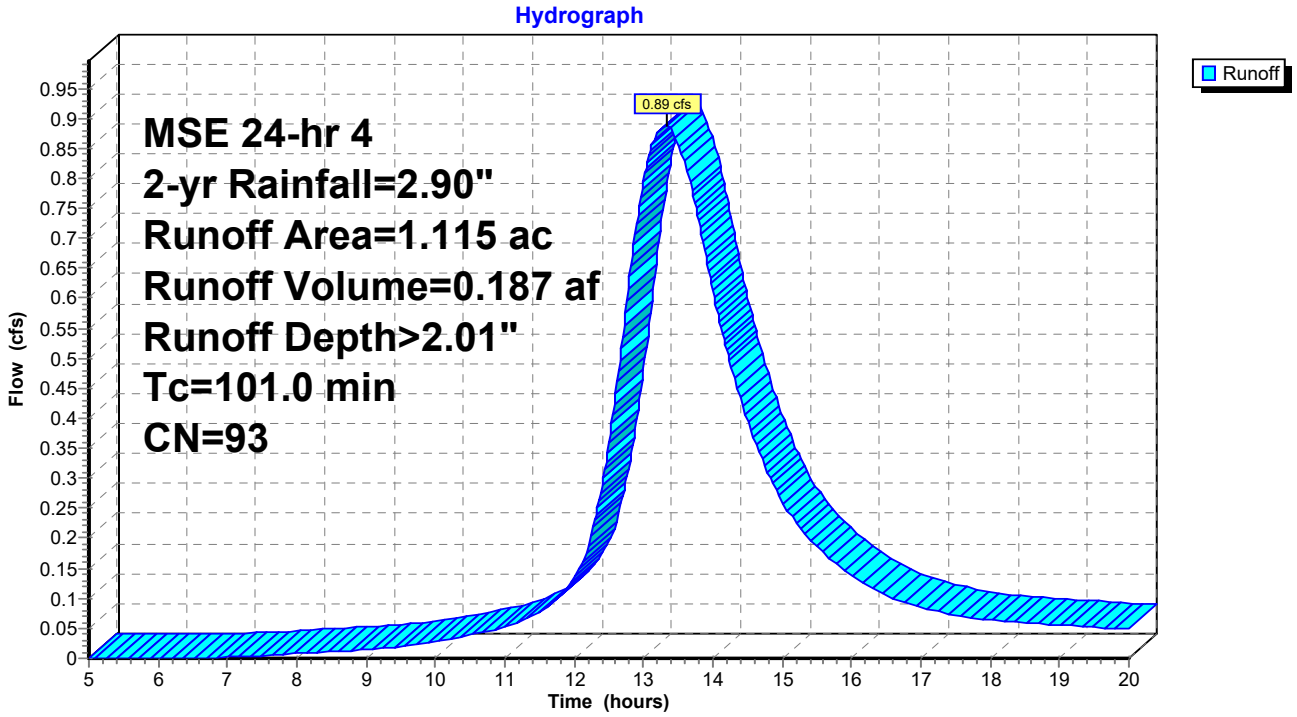
Runoff = 0.89 cfs @ 13.34 hrs, Volume= 0.187 af, Depth> 2.01"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.02 hrs
MSE 24-hr 4 2-yr Rainfall=2.90"

	Area (ac)	CN	Description
*	0.644	98	roofs + canopy
*	0.308	98	4 AC areas - curb 5
*	0.072	98	conc SW's & patios
*	0.068	39	landscape areas
*	0.002	90	paved play area
*	0.021	20	mulch play area
	1.115	93	Weighted Average
	0.091		8.16% Pervious Area
	1.024		91.84% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.0					**Direct Entry, roofs+canopy**
7.0					**Direct Entry, conc SW's + patios**
7.0					**Direct Entry, AC parking areas**
15.0					**Direct Entry, landcaped areas**
20.0					**Direct Entry, paved play area**
45.0					**Direct Entry, mulch play area**
101.0	0	Total			

Subcatchment 2S: to isolator row



Summary for Subcatchment 3S: to off-site city storm

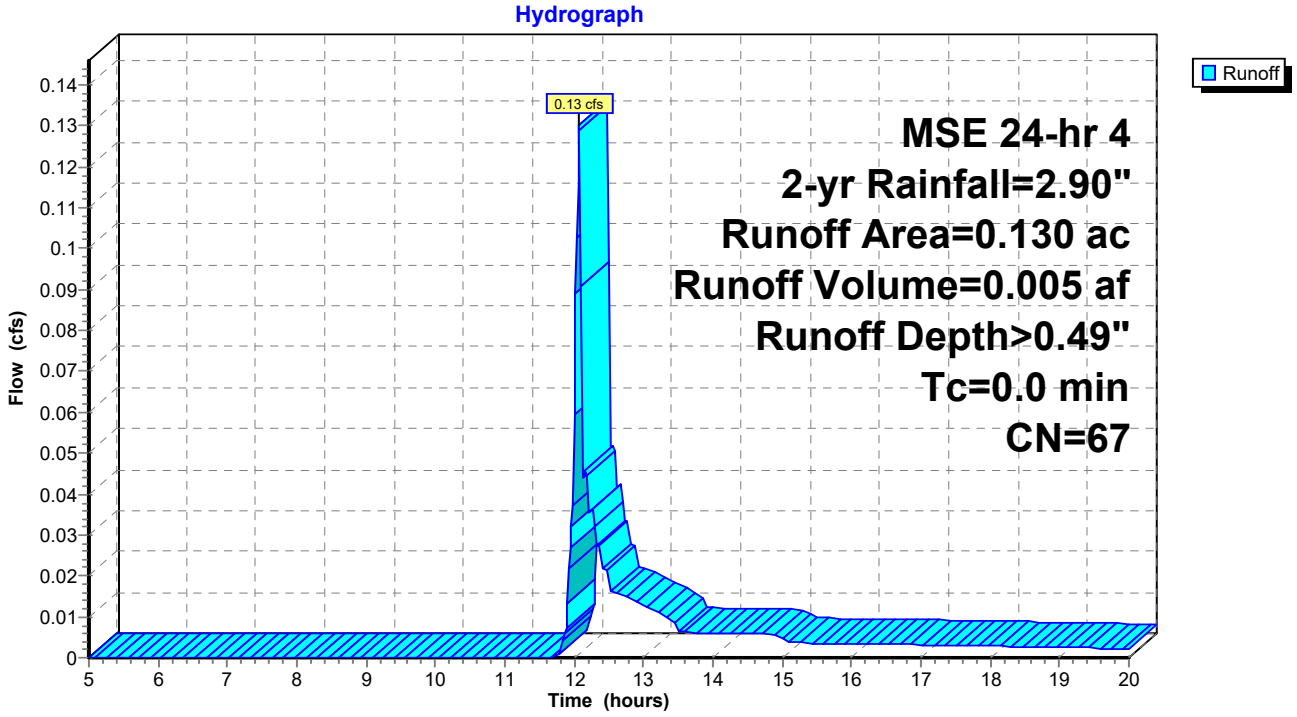
[46] Hint: Tc=0 (Instant runoff peak depends on dt)

Runoff = 0.13 cfs @ 12.07 hrs, Volume= 0.005 af, Depth> 0.49"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.02 hrs
MSE 24-hr 4 2-yr Rainfall=2.90"

	Area (ac)	CN	Description
*	0.025	98	conc SW's, ramp, drive aprons
*	0.071	70	landscaped areas
	0.034	39	>75% Grass cover, Good, HSG A
	0.130	67	Weighted Average
	0.105		80.77% Pervious Area
	0.025		19.23% Impervious Area

Subcatchment 3S: to off-site city storm



Summary for Subcatchment 6S: to on-site city storm

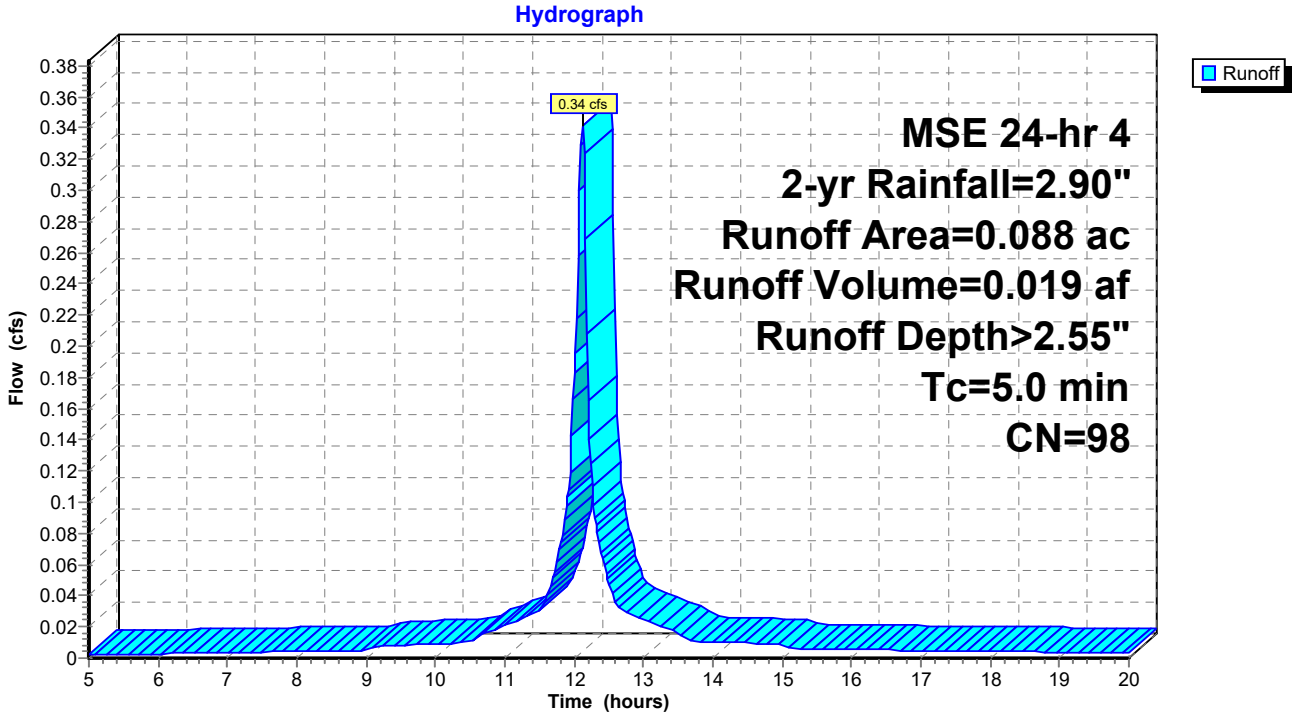
Runoff = 0.34 cfs @ 12.12 hrs, Volume= 0.019 af, Depth> 2.55"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.02 hrs
MSE 24-hr 4 2-yr Rainfall=2.90"

	Area (ac)	CN	Description
*	0.034	98	conc alley
*	0.054	98	AC pave from curb 5
	0.088	98	Weighted Average
	0.088		100.00% Impervious Area

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

Subcatchment 6S: to on-site city storm



Summary for Pond 4P: stormtech SC310 16x34

Inflow Area = 1.115 ac, 91.84% Impervious, Inflow Depth > 2.01" for 2-yr event
Inflow = 0.89 cfs @ 13.34 hrs, Volume= 0.187 af
Outflow = 0.45 cfs @ 14.34 hrs, Volume= 0.182 af, Atten= 49%, Lag= 60.0 min
Primary = 0.13 cfs @ 14.34 hrs, Volume= 0.013 af
Secondary = 0.32 cfs @ 14.34 hrs, Volume= 0.168 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.02 hrs
Peak Elev= 1.88' @ 14.34 hrs Surf.Area= 0.086 ac Storage= 0.069 af

Plug-Flow detention time= 96.3 min calculated for 0.182 af (97% of inflow)
Center-of-Mass det. time= 87.5 min (928.8 - 841.2)

Volume	Invert	Avail.Storage	Storage Description
#1A	0.00'	0.101 af	**29.67'W x 117.12'L x 3.08'H Field A Z=0.5** 0.262 af Overall - 0.011 af Embedded = 0.251 af x 40.0% Voids
#2A	0.75'	0.011 af	**ADS_StormTech RC-310 +Cap** x 32 Inside #1 Effective Size= 28.9"W x 16.0"H => 2.07 sf x 7.12'L = 14.7 cf Overall Size= 34.0"W x 16.0"H x 7.56'L with 0.44' Overlap 32 Chambers in 2 Rows
		0.111 af	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	1.50'	**Custom Weir/Orifice, Cv= 2.62 (C= 3.28)** Head (feet) 0.75 0.75 2.10 2.10 3.00 Width (feet) 0.00 0.17 0.17 4.00 4.00
#2	Secondary	0.00'	**Tube/Siphon/Float Valve** 4.000" Diameter, C= 0.600 136.0' Long Tube, Hazen-Williams C= 130 Inlet / Outlet Elev. = 0.00' / -0.70'

Primary OutFlow Max=0.13 cfs @ 14.34 hrs HW=1.88' (Free Discharge)
└**1=Custom Weir/Orifice** (Weir Controls 0.13 cfs @ 2.03 fps)

Secondary OutFlow Max=0.32 cfs @ 14.34 hrs HW=1.88' (Free Discharge)
└**2=Tube/Siphon/Float Valve** (Tube Controls 0.32 cfs @ 3.67 fps)

Pond 4P: stormtech SC310 16x34 - Chamber Wizard Field A

Chamber Model = ADS_StormTechRC-310 +Cap (ADS StormTech® RC-310 with cap length)
Effective Size= 28.9"W x 16.0"H => 2.07 sf x 7.12'L = 14.7 cf
Overall Size= 34.0"W x 16.0"H x 7.56'L with 0.44' Overlap

34.0" Wide + 48.0" Spacing = 82.0" C-C Row Spacing

16 Chambers/Row x 7.12' Long +0.60' Cap Length x 2 = 115.12' Row Length +12.0" End Stone x 2 = 117.12' Base Length
2 Rows x 34.0" Wide + 48.0" Spacing x 1 + 120.0" Side Stone x 2 = 29.67' Base Width
9.0" Base + 16.0" Chamber Height + 12.0" Cover = 3.08' Field Height

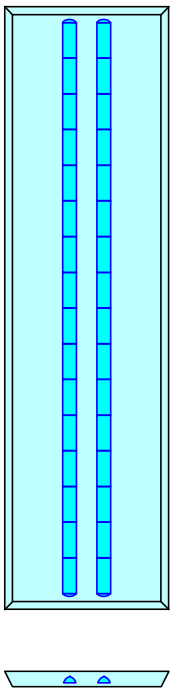
0.5 '/' Side-Z x Height = 18.5" Flare/Side
Base Length + Flare x 2 = 120.20' Top Length
Base Width + Flare x 2 = 32.75' Top Width

32 Chambers x 14.7 cf = 471.7 cf Chamber Storage

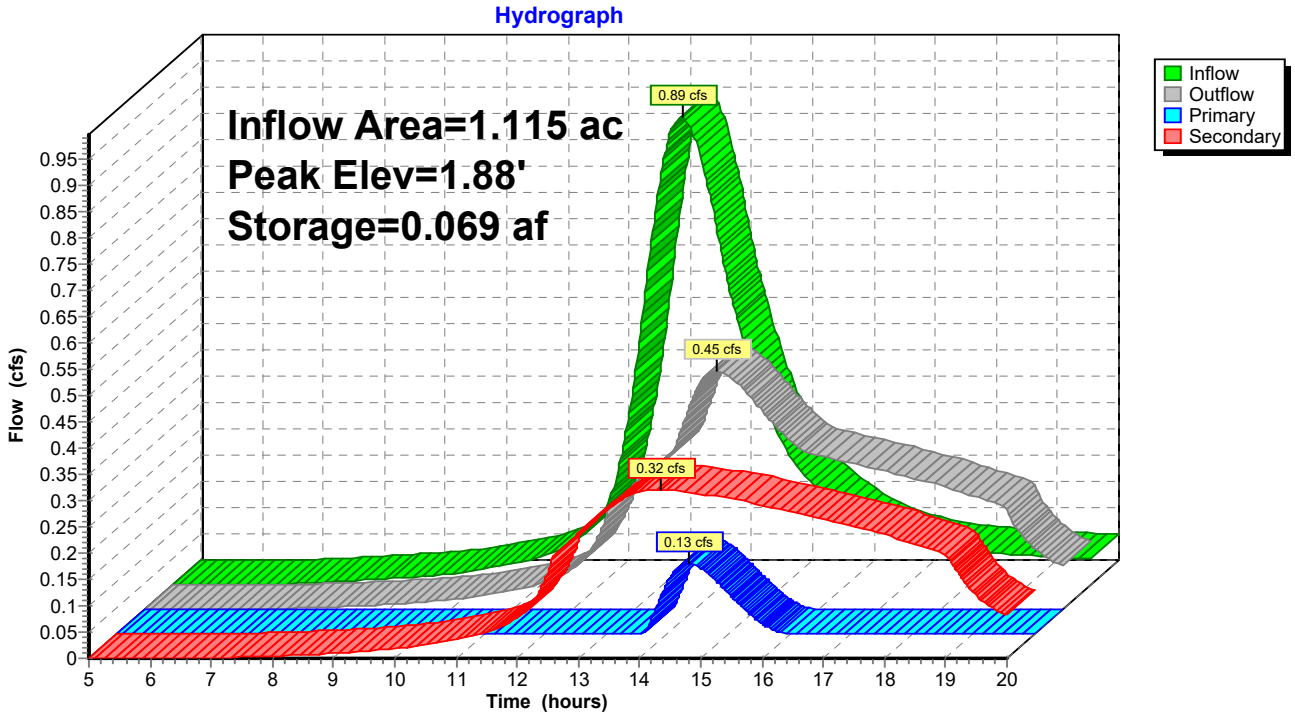
11,420.7 cf Field - 471.7 cf Chambers = 10,949.0 cf Stone x 40.0% Voids = 4,379.6 cf Stone Storage

Chamber Storage + Stone Storage = 4,851.3 cf = 0.111 af
Overall Storage Efficiency = 42.5%
Overall System Size = 117.12' x 29.67' x 3.08'

32 Chambers
423.0 cy Field
405.5 cy Stone



Pond 4P: stormtech SC310 16x34

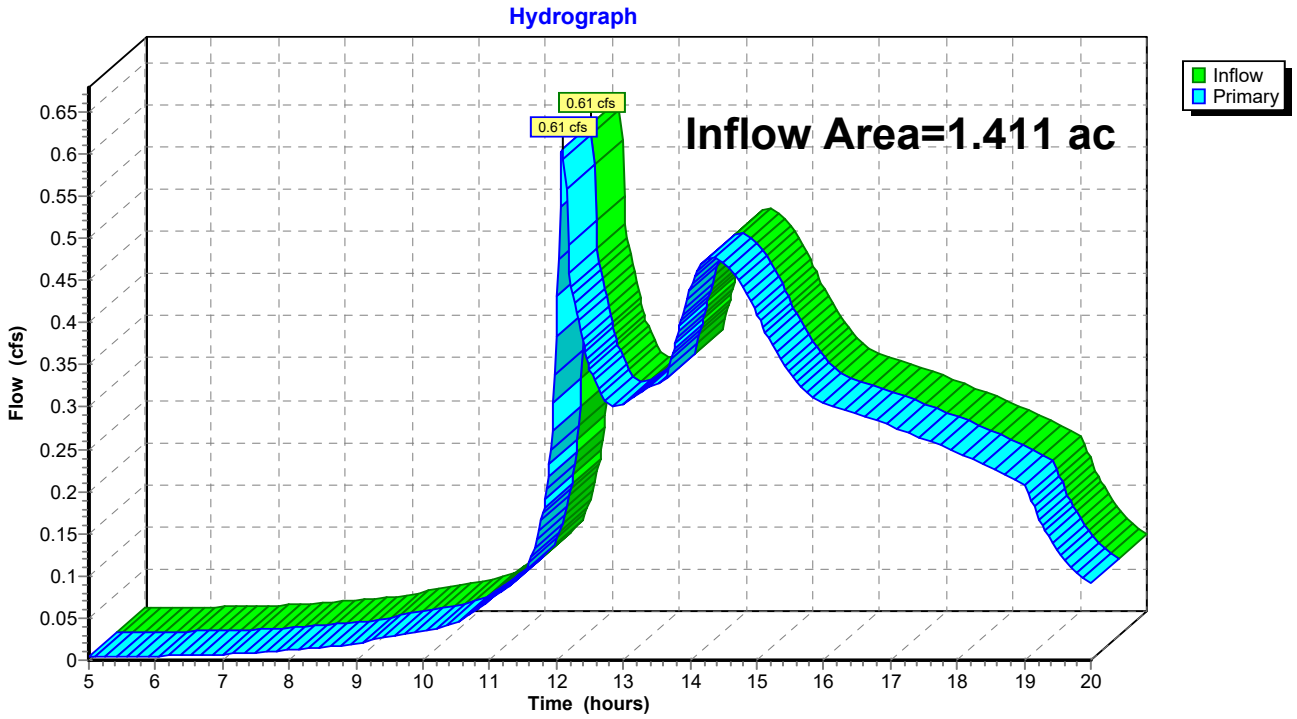


Summary for Link 5L: (new Link)

Inflow Area = 1.411 ac, 86.11% Impervious, Inflow Depth > 1.89" for 2-yr event
Inflow = 0.61 cfs @ 12.09 hrs, Volume= 0.222 af
Primary = 0.61 cfs @ 12.09 hrs, Volume= 0.222 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-20.00 hrs, dt= 0.02 hrs

Link 5L: (new Link)



Time span=5.00-20.00 hrs, dt=0.02 hrs, 751 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment1S: run-on via alley Runoff Area=0.078 ac 100.00% Impervious Runoff Depth>3.87"
Tc=21.0 min CN=98 Runoff=0.27 cfs 0.025 af

Subcatchment2S: to isolator row Runoff Area=1.115 ac 91.84% Impervious Runoff Depth>3.30"
Tc=101.0 min CN=93 Runoff=1.43 cfs 0.307 af

Subcatchment3S: to off-site city storm Runoff Area=0.130 ac 19.23% Impervious Runoff Depth>1.26"
Tc=0.0 min CN=67 Runoff=0.35 cfs 0.014 af

Subcatchment6S: to on-site city storm Runoff Area=0.088 ac 100.00% Impervious Runoff Depth>3.88"
Tc=5.0 min CN=98 Runoff=0.51 cfs 0.028 af

Pond 4P: stormtech SC310 16x34 Peak Elev=2.62' Storage=0.095 af Inflow=1.43 cfs 0.307 af
Primary=0.66 cfs 0.086 af Secondary=0.37 cfs 0.209 af Outflow=1.02 cfs 0.294 af

Link 5L: (new Link) Inflow=1.10 cfs 0.361 af
Primary=1.10 cfs 0.361 af

Total Runoff Area = 1.411 ac Runoff Volume = 0.374 af Average Runoff Depth = 3.18"
13.89% Pervious = 0.196 ac 86.11% Impervious = 1.215 ac

Summary for Subcatchment 1S: run-on via alley

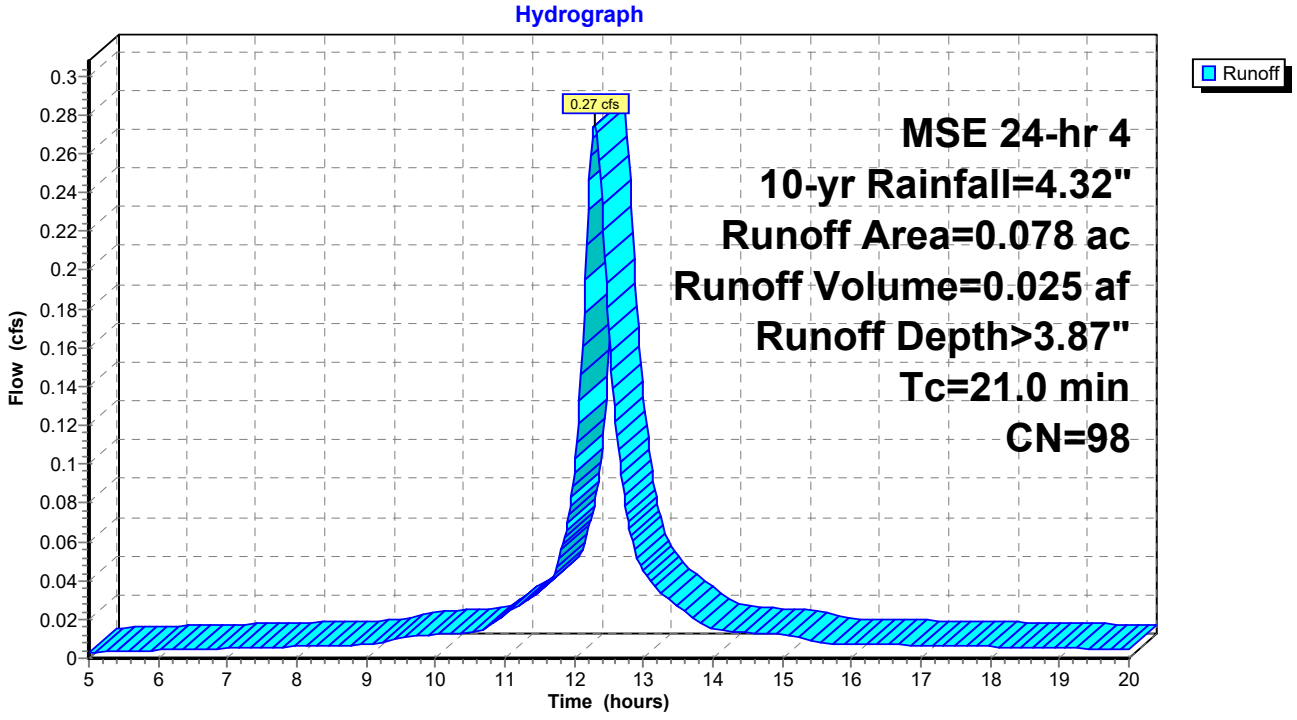
Runoff = 0.27 cfs @ 12.30 hrs, Volume= 0.025 af, Depth> 3.87"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.02 hrs
MSE 24-hr 4 10-yr Rainfall=4.32"

	Area (ac)	CN	Description
*	0.048	98	alley @ W
*	0.008	98	half garage roof
*	0.022	98	half 3-plex roof
	0.078	98	Weighted Average
	0.078		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.0					**Direct Entry, alley**
7.0					**Direct Entry, garage roof**
7.0					**Direct Entry, 3-plex roof**
21.0	0	Total			

Subcatchment 1S: run-on via alley



Summary for Subcatchment 2S: to isolator row

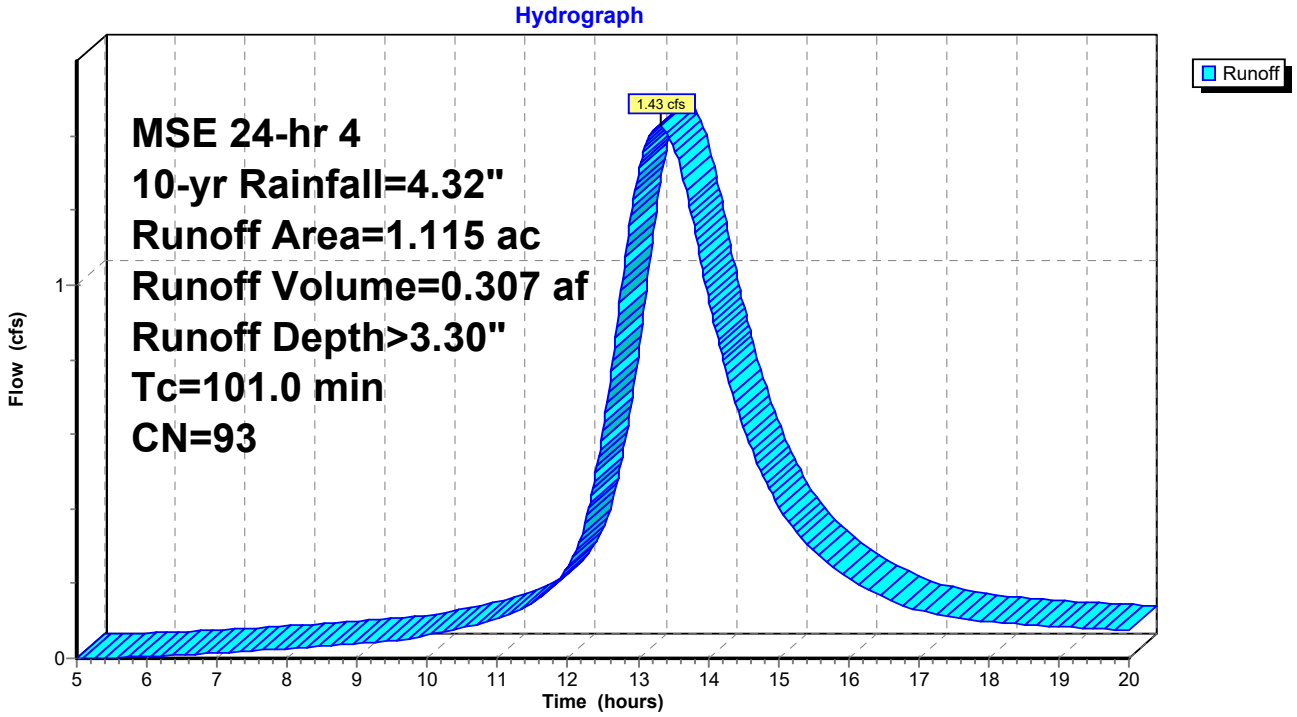
Runoff = 1.43 cfs @ 13.34 hrs, Volume= 0.307 af, Depth> 3.30"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.02 hrs
MSE 24-hr 4 10-yr Rainfall=4.32"

	Area (ac)	CN	Description
*	0.644	98	roofs + canopy
*	0.308	98	4 AC areas - curb 5
*	0.072	98	conc SW's & patios
*	0.068	39	landscape areas
*	0.002	90	paved play area
*	0.021	20	mulch play area
	1.115	93	Weighted Average
	0.091		8.16% Pervious Area
	1.024		91.84% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.0					**Direct Entry, roofs+canopy**
7.0					**Direct Entry, conc SW's + patios**
7.0					**Direct Entry, AC parking areas**
15.0					**Direct Entry, landcaped areas**
20.0					**Direct Entry, paved play area**
45.0					**Direct Entry, mulch play area**
101.0	0	Total			

Subcatchment 2S: to isolator row



Summary for Subcatchment 3S: to off-site city storm

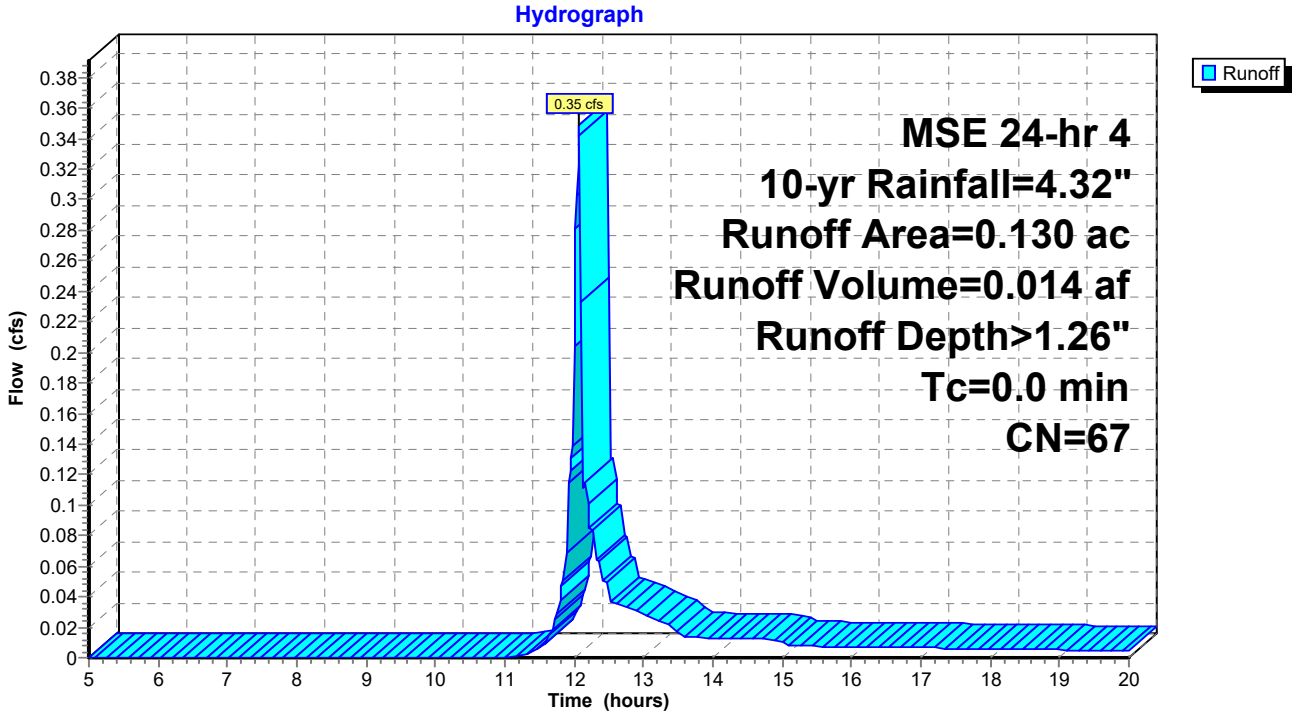
[46] Hint: Tc=0 (Instant runoff peak depends on dt)

Runoff = 0.35 cfs @ 12.07 hrs, Volume= 0.014 af, Depth> 1.26"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.02 hrs
MSE 24-hr 4 10-yr Rainfall=4.32"

	Area (ac)	CN	Description
*	0.025	98	conc SW's, ramp, drive aprons
*	0.071	70	landscaped areas
	0.034	39	>75% Grass cover, Good, HSG A
	0.130	67	Weighted Average
	0.105		80.77% Pervious Area
	0.025		19.23% Impervious Area

Subcatchment 3S: to off-site city storm



Summary for Subcatchment 6S: to on-site city storm

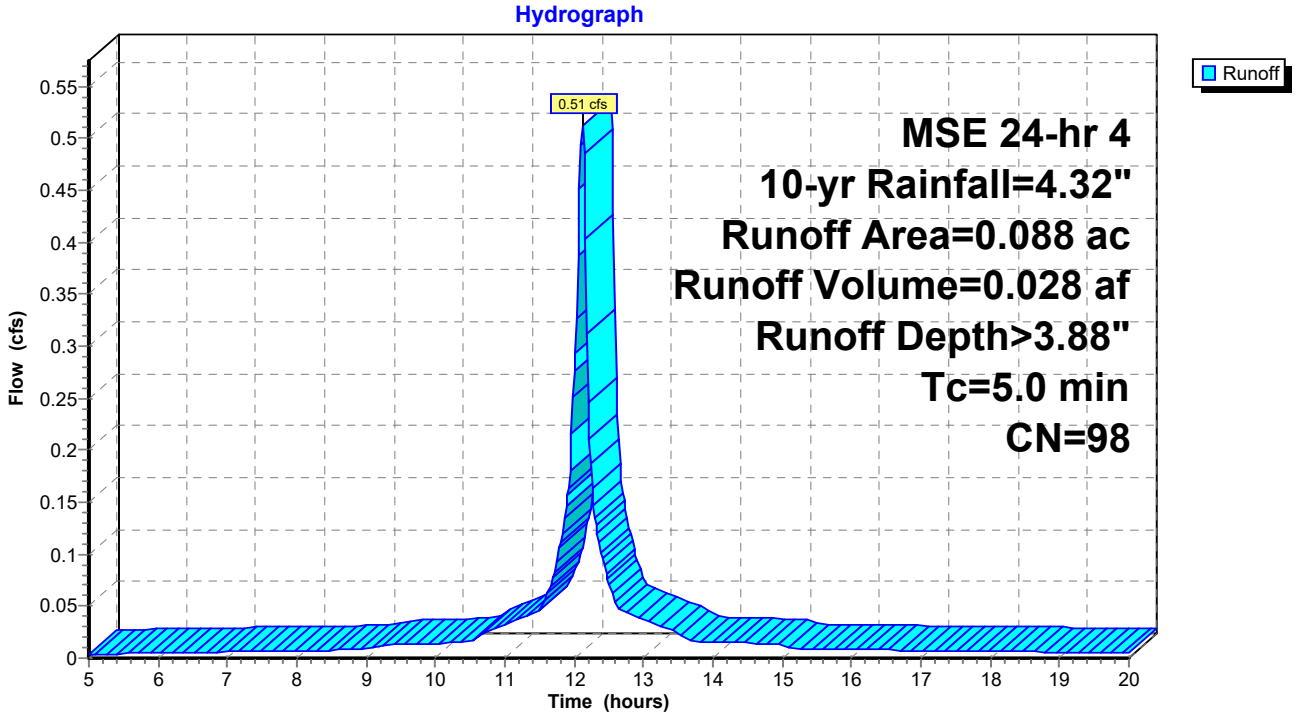
Runoff = 0.51 cfs @ 12.12 hrs, Volume= 0.028 af, Depth> 3.88"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.02 hrs
MSE 24-hr 4 10-yr Rainfall=4.32"

	Area (ac)	CN	Description
*	0.034	98	conc alley
*	0.054	98	AC pave from curb 5
	0.088	98	Weighted Average
	0.088		100.00% Impervious Area

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

Subcatchment 6S: to on-site city storm



Summary for Pond 4P: stormtech SC310 16x34

Inflow Area = 1.115 ac, 91.84% Impervious, Inflow Depth > 3.30" for 10-yr event
Inflow = 1.43 cfs @ 13.34 hrs, Volume= 0.307 af
Outflow = 1.02 cfs @ 13.94 hrs, Volume= 0.294 af, Atten= 28%, Lag= 36.2 min
Primary = 0.66 cfs @ 13.94 hrs, Volume= 0.086 af
Secondary = 0.37 cfs @ 13.94 hrs, Volume= 0.209 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.02 hrs
Peak Elev= 2.62' @ 13.94 hrs Surf.Area= 0.089 ac Storage= 0.095 af

Plug-Flow detention time= 83.8 min calculated for 0.294 af (96% of inflow)
Center-of-Mass det. time= 70.4 min (902.1 - 831.6)

Volume	Invert	Avail.Storage	Storage Description
#1A	0.00'	0.101 af	**29.67'W x 117.12'L x 3.08'H Field A Z=0.5** 0.262 af Overall - 0.011 af Embedded = 0.251 af x 40.0% Voids
#2A	0.75'	0.011 af	**ADS_StormTech RC-310 +Cap** x 32 Inside #1 Effective Size= 28.9"W x 16.0"H => 2.07 sf x 7.12'L = 14.7 cf Overall Size= 34.0"W x 16.0"H x 7.56'L with 0.44' Overlap 32 Chambers in 2 Rows
		0.111 af	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	1.50'	**Custom Weir/Orifice, Cv= 2.62 (C= 3.28)** Head (feet) 0.75 0.75 2.10 2.10 3.00 Width (feet) 0.00 0.17 0.17 4.00 4.00
#2	Secondary	0.00'	**Tube/Siphon/Float Valve** 4.000" Diameter, C= 0.600 136.0' Long Tube, Hazen-Williams C= 130 Inlet / Outlet Elev. = 0.00' / -0.70'

Primary OutFlow Max=0.66 cfs @ 13.94 hrs HW=2.62' (Free Discharge)
↑└**1=Custom Weir/Orifice** (Weir Controls 0.66 cfs @ 3.46 fps)

Secondary OutFlow Max=0.37 cfs @ 13.94 hrs HW=2.62' (Free Discharge)
↑└**2=Tube/Siphon/Float Valve** (Tube Controls 0.37 cfs @ 4.19 fps)

Pond 4P: stormtech SC310 16x34 - Chamber Wizard Field A

Chamber Model = ADS_StormTechRC-310 +Cap (ADS StormTech® RC-310 with cap length)
Effective Size= 28.9"W x 16.0"H => 2.07 sf x 7.12'L = 14.7 cf
Overall Size= 34.0"W x 16.0"H x 7.56'L with 0.44' Overlap

34.0" Wide + 48.0" Spacing = 82.0" C-C Row Spacing

16 Chambers/Row x 7.12' Long +0.60' Cap Length x 2 = 115.12' Row Length +12.0" End Stone x 2 = 117.12' Base Length
2 Rows x 34.0" Wide + 48.0" Spacing x 1 + 120.0" Side Stone x 2 = 29.67' Base Width
9.0" Base + 16.0" Chamber Height + 12.0" Cover = 3.08' Field Height

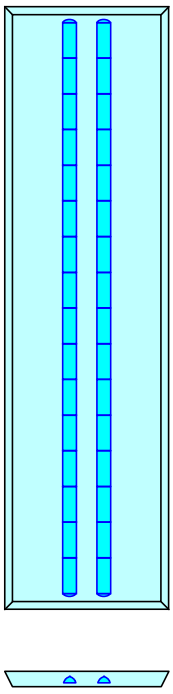
0.5 '/' Side-Z x Height = 18.5" Flare/Side
Base Length + Flare x 2 = 120.20' Top Length
Base Width + Flare x 2 = 32.75' Top Width

32 Chambers x 14.7 cf = 471.7 cf Chamber Storage

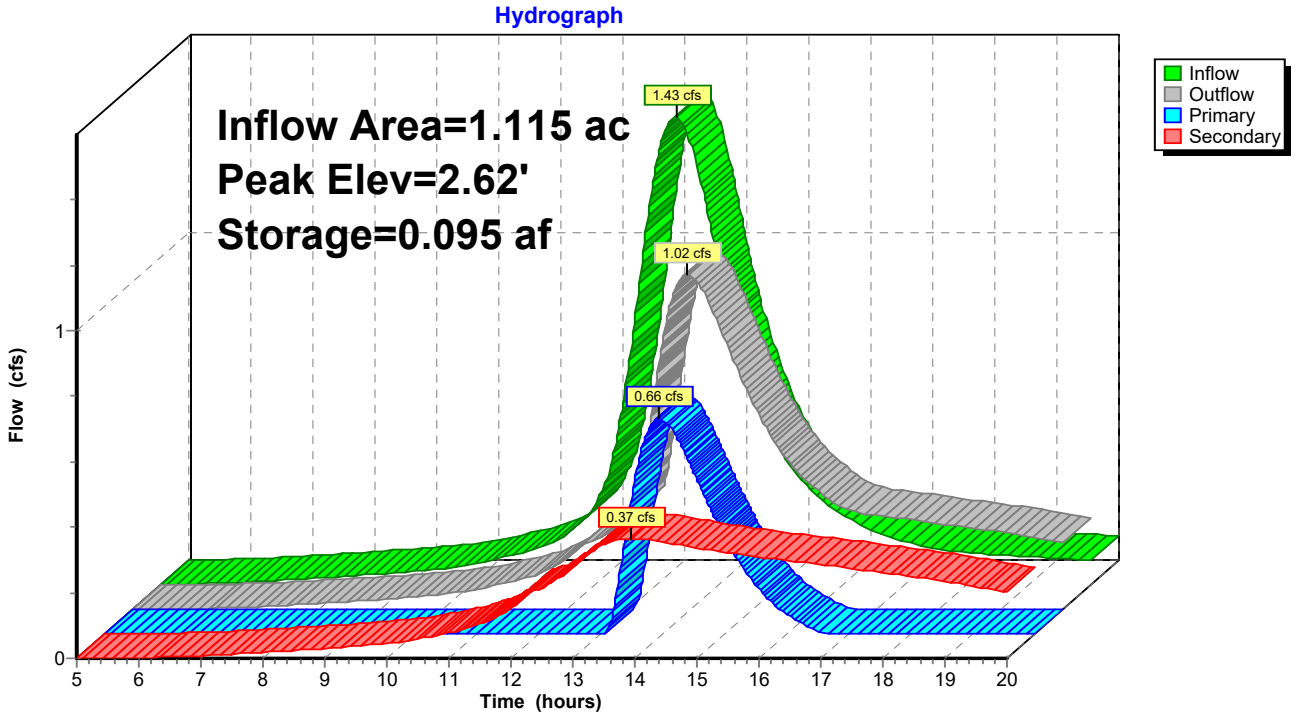
11,420.7 cf Field - 471.7 cf Chambers = 10,949.0 cf Stone x 40.0% Voids = 4,379.6 cf Stone Storage

Chamber Storage + Stone Storage = 4,851.3 cf = 0.111 af
Overall Storage Efficiency = 42.5%
Overall System Size = 117.12' x 29.67' x 3.08'

32 Chambers
423.0 cy Field
405.5 cy Stone



Pond 4P: stormtech SC310 16x34

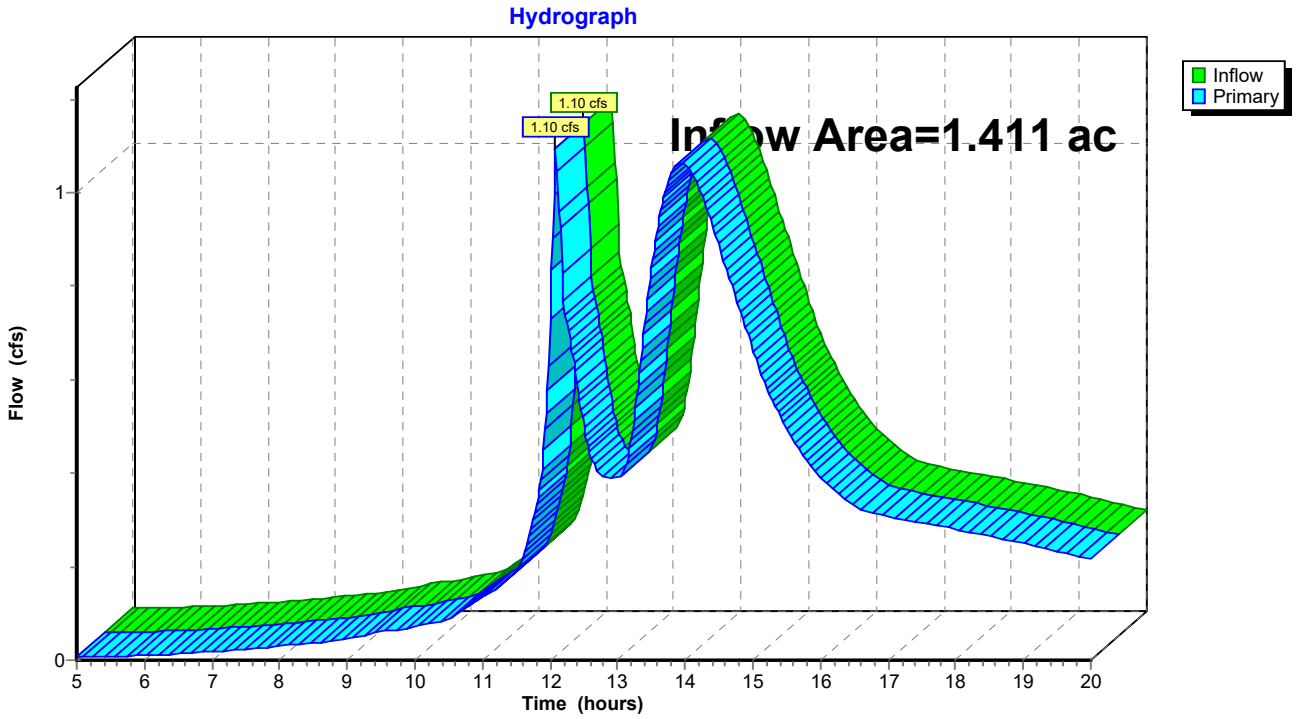


Summary for Link 5L: (new Link)

Inflow Area = 1.411 ac, 86.11% Impervious, Inflow Depth > 3.07" for 10-yr event
Inflow = 1.10 cfs @ 12.08 hrs, Volume= 0.361 af
Primary = 1.10 cfs @ 12.08 hrs, Volume= 0.361 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-20.00 hrs, dt= 0.02 hrs

Link 5L: (new Link)



Time span=5.00-20.00 hrs, dt=0.02 hrs, 751 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment1S: run-on via alley Runoff Area=0.078 ac 100.00% Impervious Runoff Depth>6.88"
Tc=21.0 min CN=98 Runoff=0.48 cfs 0.045 af

Subcatchment2S: to isolator row Runoff Area=1.115 ac 91.84% Impervious Runoff Depth>6.30"
Tc=101.0 min CN=93 Runoff=2.65 cfs 0.585 af

Subcatchment3S: to off-site city storm Runoff Area=0.130 ac 19.23% Impervious Runoff Depth>3.55"
Tc=0.0 min CN=67 Runoff=0.96 cfs 0.038 af

Subcatchment6S: to on-site city storm Runoff Area=0.088 ac 100.00% Impervious Runoff Depth>6.88"
Tc=5.0 min CN=98 Runoff=0.90 cfs 0.050 af

Pond 4P: stormtech SC310 16x34 Peak Elev=3.06' Storage=0.110 af Inflow=2.65 cfs 0.585 af
Primary=2.25 cfs 0.289 af Secondary=0.39 cfs 0.264 af Outflow=2.64 cfs 0.553 af

Link 5L: (new Link) Inflow=2.79 cfs 0.686 af
Primary=2.79 cfs 0.686 af

Total Runoff Area = 1.411 ac Runoff Volume = 0.719 af Average Runoff Depth = 6.12"
13.89% Pervious = 0.196 ac 86.11% Impervious = 1.215 ac

Summary for Subcatchment 1S: run-on via alley

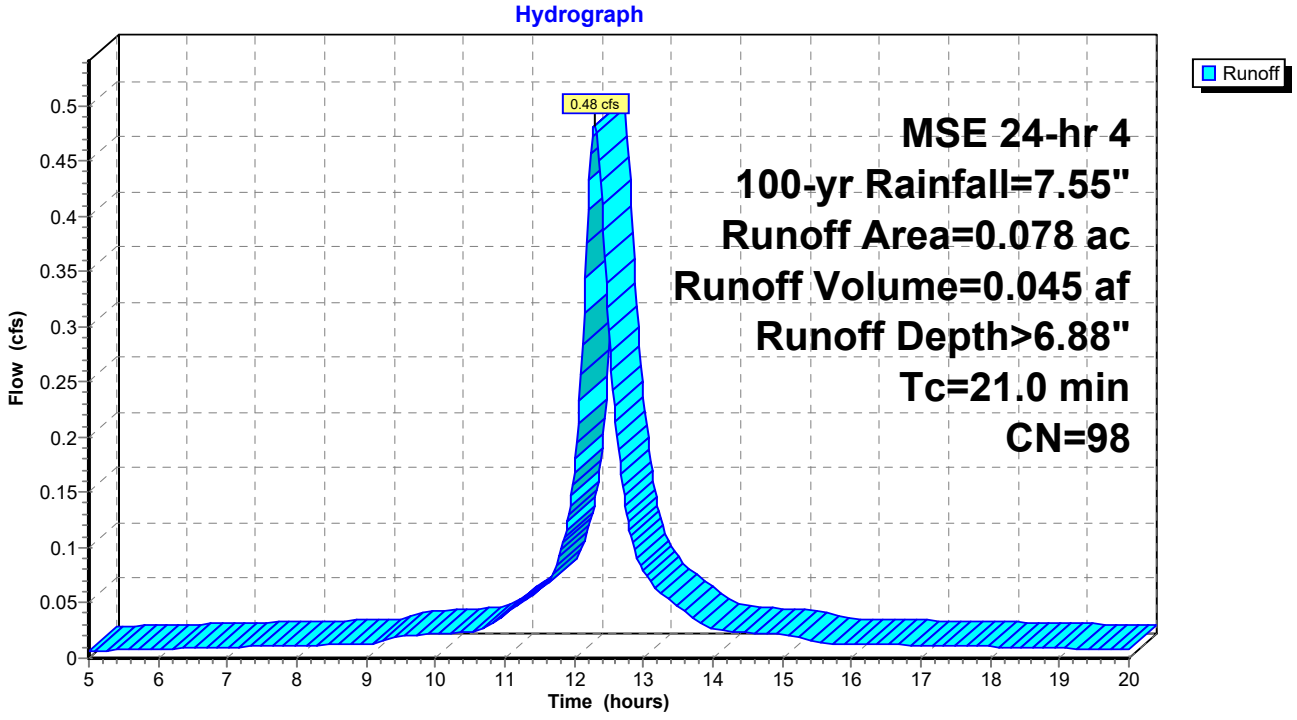
Runoff = 0.48 cfs @ 12.29 hrs, Volume= 0.045 af, Depth> 6.88"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.02 hrs
MSE 24-hr 4 100-yr Rainfall=7.55"

	Area (ac)	CN	Description
*	0.048	98	alley @ W
*	0.008	98	half garage roof
*	0.022	98	half 3-plex roof
	0.078	98	Weighted Average
	0.078		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.0					**Direct Entry, alley**
7.0					**Direct Entry, garage roof**
7.0					**Direct Entry, 3-plex roof**
21.0	0	Total			

Subcatchment 1S: run-on via alley



Summary for Subcatchment 2S: to isolator row

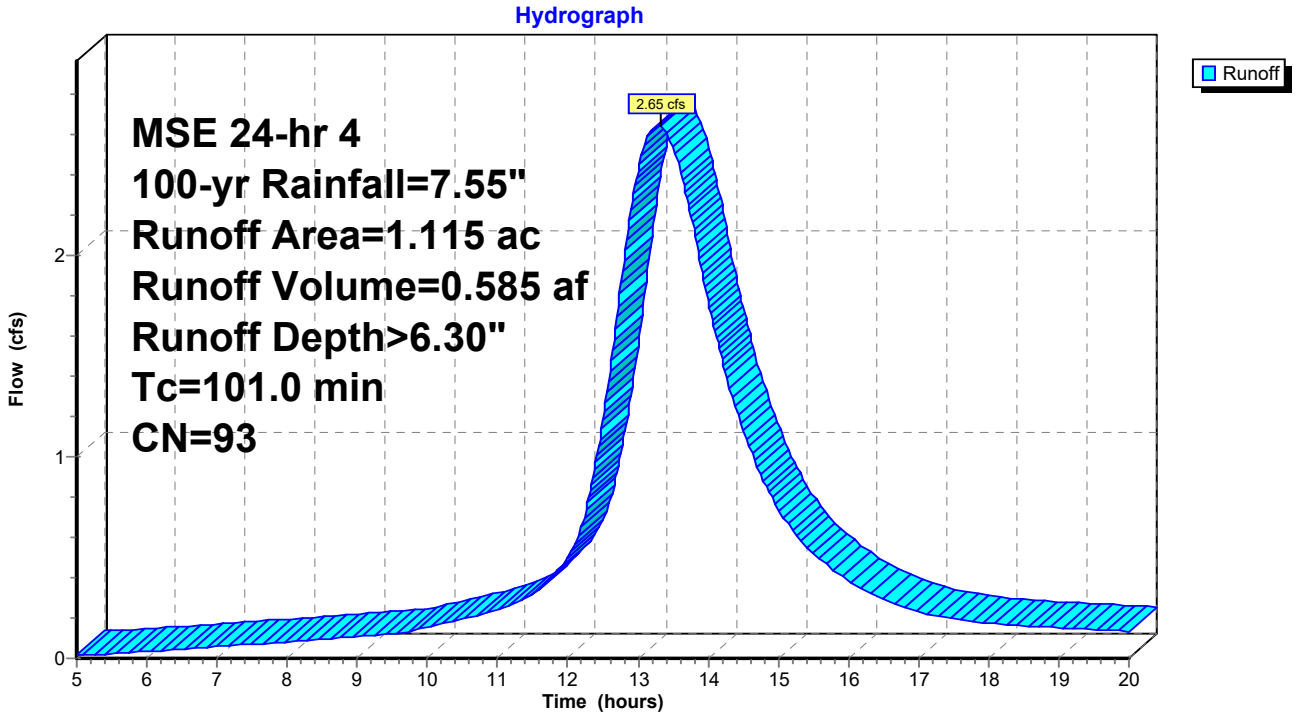
Runoff = 2.65 cfs @ 13.33 hrs, Volume= 0.585 af, Depth> 6.30"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.02 hrs
MSE 24-hr 4 100-yr Rainfall=7.55"

	Area (ac)	CN	Description
*	0.644	98	roofs + canopy
*	0.308	98	4 AC areas - curb 5
*	0.072	98	conc SW's & patios
*	0.068	39	landscape areas
*	0.002	90	paved play area
*	0.021	20	mulch play area
	1.115	93	Weighted Average
	0.091		8.16% Pervious Area
	1.024		91.84% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.0					**Direct Entry, roofs+canopy**
7.0					**Direct Entry, conc SW's + patios**
7.0					**Direct Entry, AC parking areas**
15.0					**Direct Entry, landcaped areas**
20.0					**Direct Entry, paved play area**
45.0					**Direct Entry, mulch play area**
101.0	0	Total			

Subcatchment 2S: to isolator row



Summary for Subcatchment 3S: to off-site city storm

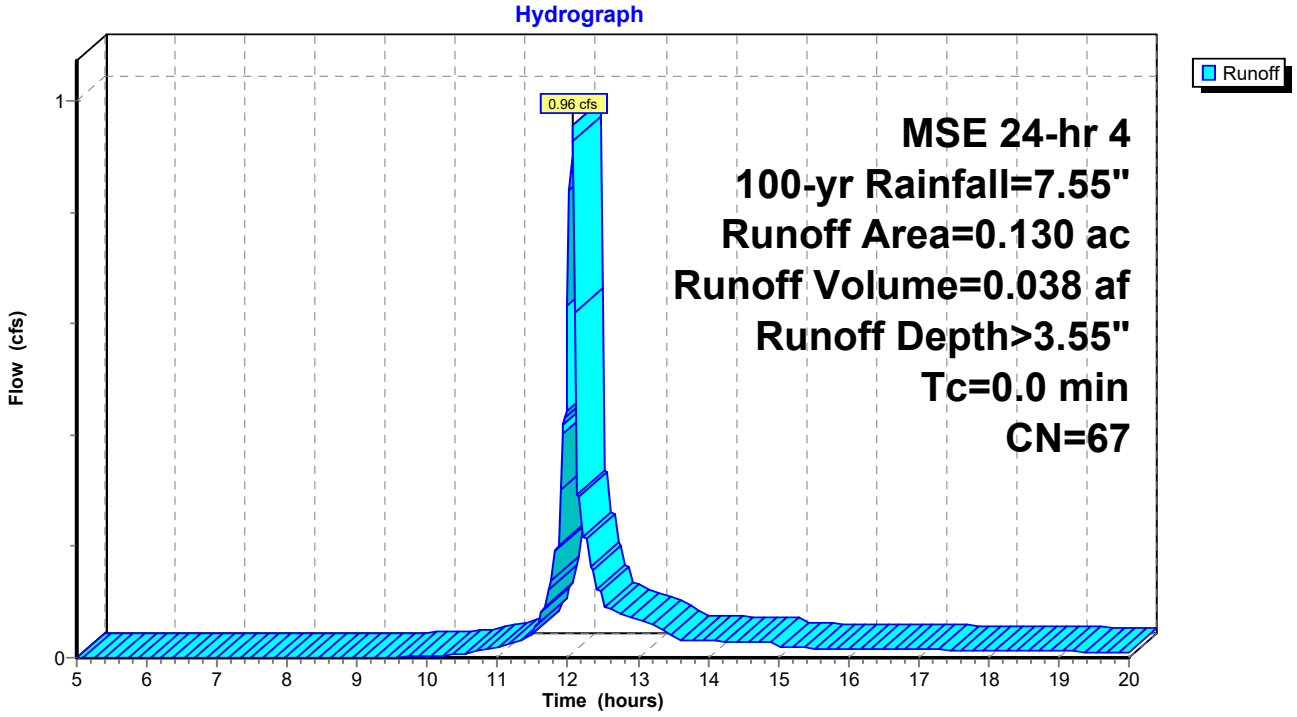
[46] Hint: Tc=0 (Instant runoff peak depends on dt)

Runoff = 0.96 cfs @ 12.07 hrs, Volume= 0.038 af, Depth> 3.55"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.02 hrs
MSE 24-hr 4 100-yr Rainfall=7.55"

	Area (ac)	CN	Description
*	0.025	98	conc SW's, ramp, drive aprons
*	0.071	70	landscaped areas
	0.034	39	>75% Grass cover, Good, HSG A
	0.130	67	Weighted Average
	0.105		80.77% Pervious Area
	0.025		19.23% Impervious Area

Subcatchment 3S: to off-site city storm



Summary for Subcatchment 6S: to on-site city storm

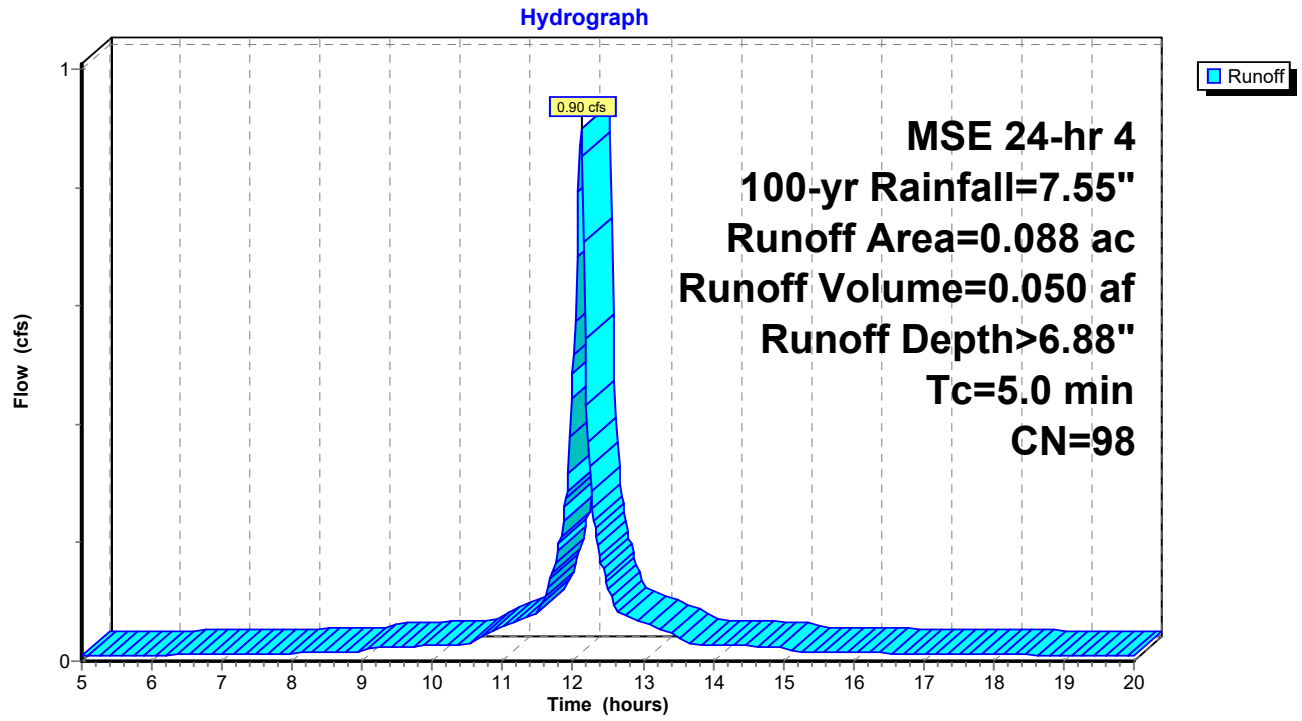
Runoff = 0.90 cfs @ 12.12 hrs, Volume= 0.050 af, Depth> 6.88"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.02 hrs
MSE 24-hr 4 100-yr Rainfall=7.55"

	Area (ac)	CN	Description
*	0.034	98	conc alley
*	0.054	98	AC pave from curb 5
	0.088	98	Weighted Average
	0.088		100.00% Impervious Area

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

Subcatchment 6S: to on-site city storm



Summary for Pond 4P: stormtech SC310 16x34

[82] Warning: Early inflow requires earlier time span

Inflow Area = 1.115 ac, 91.84% Impervious, Inflow Depth > 6.30" for 100-yr event
Inflow = 2.65 cfs @ 13.33 hrs, Volume= 0.585 af
Outflow = 2.64 cfs @ 13.36 hrs, Volume= 0.553 af, Atten= 0%, Lag= 1.7 min
Primary = 2.25 cfs @ 13.36 hrs, Volume= 0.289 af
Secondary = 0.39 cfs @ 13.36 hrs, Volume= 0.264 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.02 hrs
Peak Elev= 3.06' @ 13.36 hrs Surf.Area= 0.090 ac Storage= 0.110 af

Plug-Flow detention time= 59.9 min calculated for 0.553 af (94% of inflow)
Center-of-Mass det. time= 42.0 min (861.9 - 819.9)

Volume	Invert	Avail.Storage	Storage Description
#1A	0.00'	0.101 af	**29.67'W x 117.12'L x 3.08'H Field A Z=0.5** 0.262 af Overall - 0.011 af Embedded = 0.251 af x 40.0% Voids
#2A	0.75'	0.011 af	**ADS_StormTech RC-310 +Cap** x 32 Inside #1 Effective Size= 28.9"W x 16.0"H => 2.07 sf x 7.12'L = 14.7 cf Overall Size= 34.0"W x 16.0"H x 7.56'L with 0.44' Overlap 32 Chambers in 2 Rows
		0.111 af	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	1.50'	**Custom Weir/Orifice, Cv= 2.62 (C= 3.28)** Head (feet) 0.75 0.75 2.10 2.10 3.00 Width (feet) 0.00 0.17 0.17 4.00 4.00
#2	Secondary	0.00'	**Tube/Siphon/Float Valve** 4.000" Diameter, C= 0.600 136.0' Long Tube, Hazen-Williams C= 130 Inlet / Outlet Elev. = 0.00' / -0.70'

Primary OutFlow Max=2.24 cfs @ 13.36 hrs HW=3.06' (Free Discharge)
↑—**1=Custom Weir/Orifice** (Weir Controls 2.24 cfs @ 2.14 fps)

Secondary OutFlow Max=0.39 cfs @ 13.36 hrs HW=3.06' (Free Discharge)
↑—**2=Tube/Siphon/Float Valve** (Tube Controls 0.39 cfs @ 4.48 fps)

Pond 4P: stormtech SC310 16x34 - Chamber Wizard Field A

Chamber Model = ADS_StormTechRC-310 +Cap (ADS StormTech® RC-310 with cap length)
Effective Size= 28.9"W x 16.0"H => 2.07 sf x 7.12'L = 14.7 cf
Overall Size= 34.0"W x 16.0"H x 7.56'L with 0.44' Overlap

34.0" Wide + 48.0" Spacing = 82.0" C-C Row Spacing

16 Chambers/Row x 7.12' Long +0.60' Cap Length x 2 = 115.12' Row Length +12.0" End Stone x 2 = 117.12' Base Length
2 Rows x 34.0" Wide + 48.0" Spacing x 1 + 120.0" Side Stone x 2 = 29.67' Base Width
9.0" Base + 16.0" Chamber Height + 12.0" Cover = 3.08' Field Height

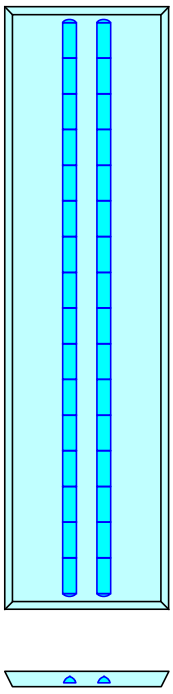
0.5 '/' Side-Z x Height = 18.5" Flare/Side
Base Length + Flare x 2 = 120.20' Top Length
Base Width + Flare x 2 = 32.75' Top Width

32 Chambers x 14.7 cf = 471.7 cf Chamber Storage

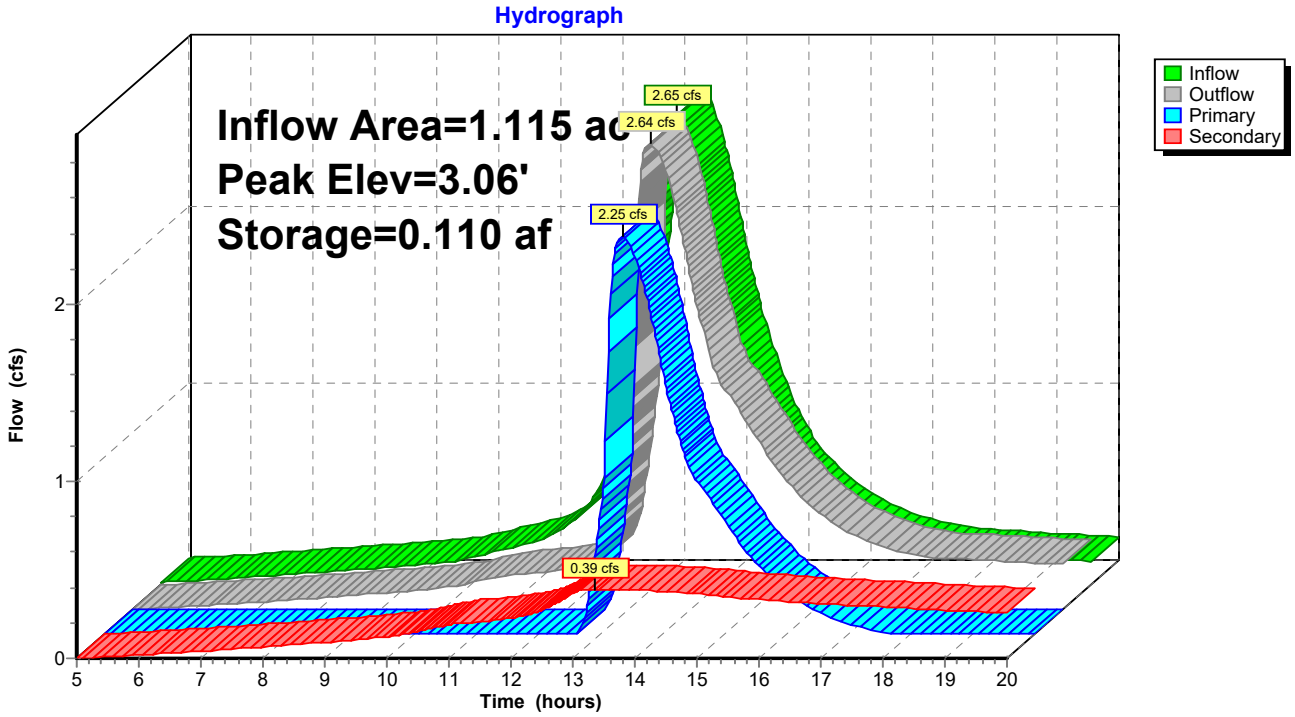
11,420.7 cf Field - 471.7 cf Chambers = 10,949.0 cf Stone x 40.0% Voids = 4,379.6 cf Stone Storage

Chamber Storage + Stone Storage = 4,851.3 cf = 0.111 af
Overall Storage Efficiency = 42.5%
Overall System Size = 117.12' x 29.67' x 3.08'

32 Chambers
423.0 cy Field
405.5 cy Stone



Pond 4P: stormtech SC310 16x34

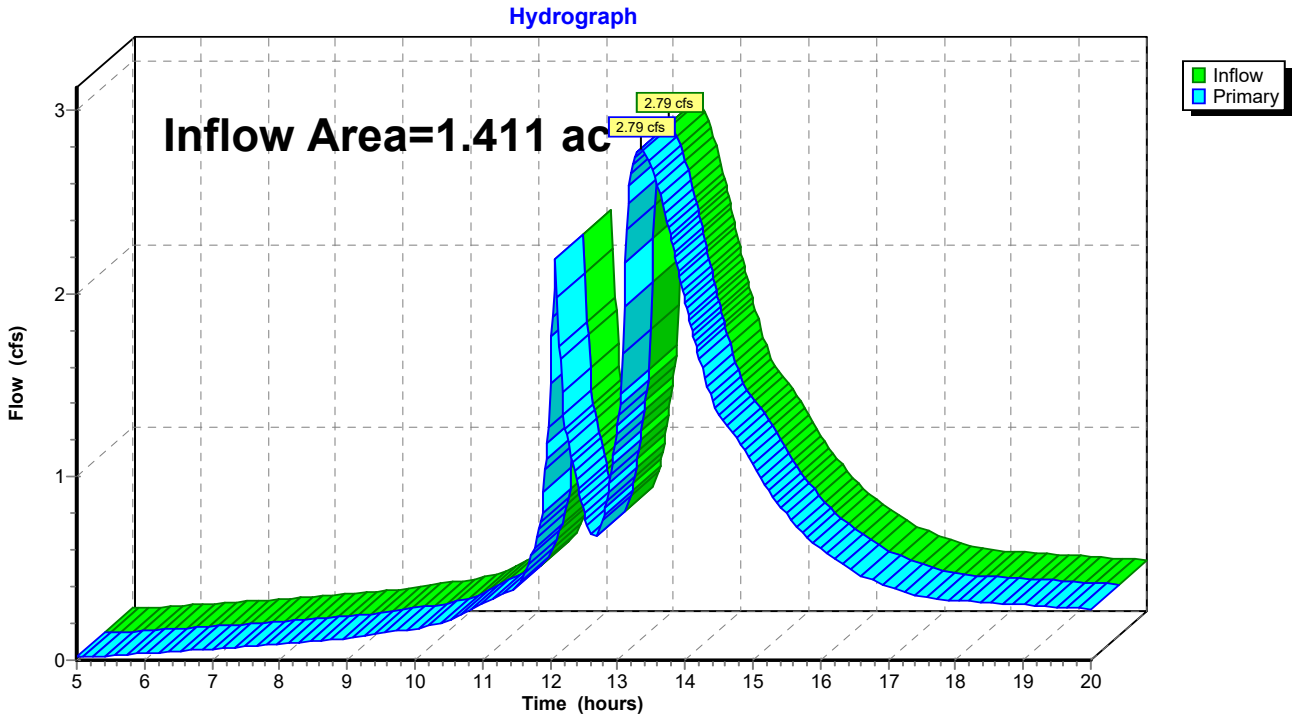


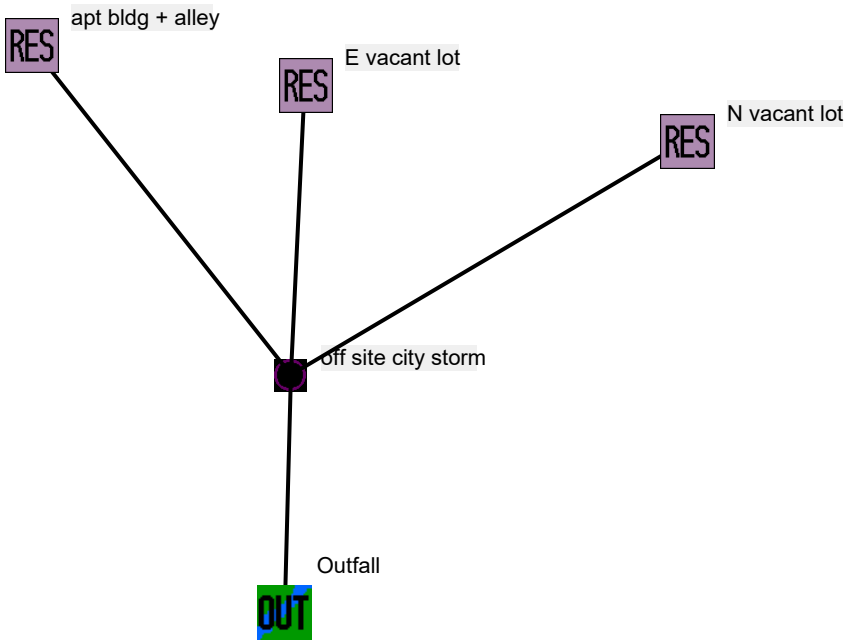
Summary for Link 5L: (new Link)

Inflow Area = 1.411 ac, 86.11% Impervious, Inflow Depth > 5.84" for 100-yr event
Inflow = 2.79 cfs @ 13.35 hrs, Volume= 0.686 af
Primary = 2.79 cfs @ 13.35 hrs, Volume= 0.686 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-20.00 hrs, dt= 0.02 hrs

Link 5L: (new Link)




RES
apt bldg + alley
RES
E vacant lot
RES
N vacant lot
off site city storm
Outfall
OUT

Data file name: F:\Engineering\Engineering Dwg\2023\23-109 Gerrard HOM\Storm\models\SLAMM\existing site.mdb
WinSLAMM Version 10.5.0
Rain file name: C:\WinSLAMM Files\Rain Files\WisReg - Madison WI 1981.RAN
Particulate Solids Concentration file name: C:\WinSLAMM Files\v10.1 WI_AVG01.pscx
Runoff Coefficient file name: C:\WinSLAMM Files\WI_SL06 Dec06.rsvx
Residential Street Delivery file name: C:\WinSLAMM Files\WI_Res and Other Urban Dec06.std
Institutional Street Delivery file name: C:\WinSLAMM Files\WI_Com Inst Indust Dec06.std
Commercial Street Delivery file name: C:\WinSLAMM Files\WI_Com Inst Indust Dec06.std
Industrial Street Delivery file name: C:\WinSLAMM Files\WI_Com Inst Indust Dec06.std
Other Urban Street Delivery file name: C:\WinSLAMM Files\WI_Res and Other Urban Dec06.std
Freeway Street Delivery file name: C:\WinSLAMM Files\Freeway Dec06.std
Apply Street Delivery Files to Adjust the After Event Load Street Dirt Mass Balance: False
Pollutant Relative Concentration file name: C:\WinSLAMM Files\WI_GEO03.ppdx
Source Area PSD and Peak to Average Flow Ratio File: C:\WinSLAMM Files\NURP Source Area PSD Files.csv
Cost Data file name:
Seed for random number generator: -42
Study period starting date: 01/01/81 Study period ending date: 12/31/81
Start of Winter Season: 12/02 End of Winter Season: 03/12
Date: 11-12-2024 Time: 09:38:54
Site information:

LU# 1 - Residential: apt bldg + alley Total area (ac): 0.517
1 - Roofs 1: 0.366 ac. Pitched Connected PSD File: C:\WinSLAMM Files\NURP.cpz Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
13 - Paved Parking 1: 0.022 ac. Connected PSD File: C:\WinSLAMM Files\NURP.cpz Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
25 - Driveways 1: 0.087 ac. Connected PSD File: C:\WinSLAMM Files\NURP.cpz Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
31 - Sidewalks 1: 0.013 ac. Connected PSD File: C:\WinSLAMM Files\NURP.cpz Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
51 - Small Landscaped Areas 1: 0.020 ac. Normal Sandy PSD File: C:\WinSLAMM Files\NURP.cpz Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
63 - Paved Playground 1: 0.009 ac. Connected PSD File: C:\WinSLAMM Files\NURP.cpz Source Area PSD File: C:\WinSLAMM Files\NURP.cpz

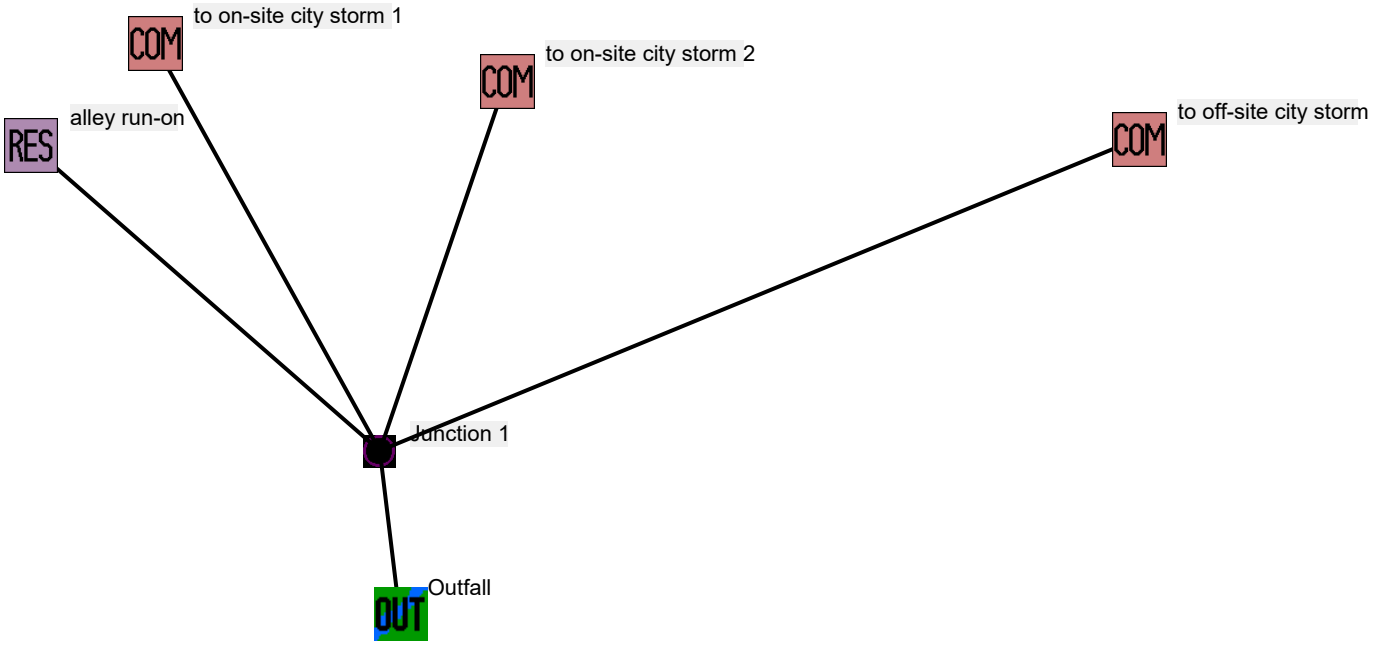
LU# 2 - Residential: E vacant lot Total area (ac): 0.358
45 - Large Landscaped Areas 1: 0.358 ac. Normal Sandy PSD File: C:\WinSLAMM Files\NURP.cpz Source Area PSD File: C:\WinSLAMM Files\NURP.cpz

LU# 3 - Residential: N vacant lot Total area (ac): 0.473
45 - Large Landscaped Areas 1: 0.473 ac. Normal Sandy PSD File: C:\WinSLAMM Files\NURP.cpz Source Area PSD File: C:\WinSLAMM Files\NURP.cpz

SLAMM for Windows Version 10.5.0

Data file name: F:\Engineering\Engineering Dwg\2023\23-109 Gerrard HOM\Storm\models\SLAMM\existing site.mdb
WinSLAMM Version 10.5.0
Rain file name: C:\WinSLAMM Files\Rain Files\WisReg - Madison WI 1981.RAN
Particulate Solids Concentration file name: C:\WinSLAMM Files\v10.1 WI_AVG01.pscx
Runoff Coefficient file name: C:\WinSLAMM Files\WI_SL06 Dec06.rsvx
Pollutant Relative Concentration file name: C:\WinSLAMM Files\WI_GEO03.ppdx
Residential Street Delivery file name: C:\WinSLAMM Files\WI_Res and Other Urban Dec06.std
Institutional Street Delivery file name: C:\WinSLAMM Files\WI_Com Inst Indust Dec06.std
Commercial Street Delivery file name: C:\WinSLAMM Files\WI_Com Inst Indust Dec06.std
Industrial Street Delivery file name: C:\WinSLAMM Files\WI_Com Inst Indust Dec06.std
Other Urban Street Delivery file name: C:\WinSLAMM Files\WI_Res and Other Urban Dec06.std
Freeway Street Delivery file name: C:\WinSLAMM Files\Freeway Dec06.std
Apply Street Delivery Files to Adjust the After Event Load Street Dirt Mass Balance: False
Source Area PSD and Peak to Average Flow Ratio File: C:\WinSLAMM Files\NURP Source Area PSD Files.csv
Cost Data file name:
Seed for random number generator: -42
Study period starting date: 01/01/81 Study period ending date: 12/31/81
Start of Winter Season: 12/02 End of Winter Season: 03/12
Model Run Start Date: 01/01/81 Model Run End Date: 12/31/81
Date of run: 11-12-2024 Time of run: 09:37:04
Total Area Modeled (acres): 1.348
Years in Model Run: 1.00

	Runoff Volume (cu ft)	Percent Runoff Volume Reduction	Particulate Solids Conc. (mg/L)	Particulate Solids Yield (lbs)	Percent Particulate Solids Reduction
Total of all Land Uses without Controls:	45922	-	63.47	182.0	-
Outfall Total with Controls:	45920	0.00%	63.47	182.0	0.00%
Annualized Total After Outfall Controls:	46046			182.5	


COM
to on-site city storm 1
COM
to on-site city storm 2
RES
alley run-on
COM
to off-site city storm
Junction 1
OUT
Outfall

Data file name: F:\Engineering\Engineering Dwg\2023\23-109 Gerrard HOM\Storm\models\SLAMM\proposed site + no controls.mdb
WinSLAMM Version 10.5.0
Rain file name: C:\WinSLAMM Files\Rain Files\WisReg - Madison WI 1981.RAN
Particulate Solids Concentration file name: C:\WinSLAMM Files\v10.1 WI_AVG01.pscx
Runoff Coefficient file name: C:\WinSLAMM Files\WI_SL06 Dec06.rsvx
Residential Street Delivery file name: C:\WinSLAMM Files\WI_Res and Other Urban Dec06.std
Institutional Street Delivery file name: C:\WinSLAMM Files\WI_Com Inst Indust Dec06.std
Commercial Street Delivery file name: C:\WinSLAMM Files\WI_Com Inst Indust Dec06.std
Industrial Street Delivery file name: C:\WinSLAMM Files\WI_Com Inst Indust Dec06.std
Other Urban Street Delivery file name: C:\WinSLAMM Files\WI_Res and Other Urban Dec06.std
Freeway Street Delivery file name: C:\WinSLAMM Files\Freeway Dec06.std
Apply Street Delivery Files to Adjust the After Event Load Street Dirt Mass Balance: False
Pollutant Relative Concentration file name: C:\WinSLAMM Files\WI_GEO03.ppdx
Source Area PSD and Peak to Average Flow Ratio File: C:\WinSLAMM Files\NURP Source Area PSD Files.csv
Cost Data file name:
Seed for random number generator: -42
Study period starting date: 01/01/81 Study period ending date: 12/31/81
Start of Winter Season: 12/02 End of Winter Season: 03/12
Date: 11-12-2024 Time: 09:39:39
Site information:

LU# 1 - Commercial: to on-site city storm 1 Total area (ac): 0.086
25 - Driveways 1: 0.034 ac. Connected PSD File: C:\WinSLAMM Files\NURP.cpz Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
51 - Small Landscaped Areas 1: 0.052 ac. Normal Sandy PSD File: C:\WinSLAMM Files\NURP.cpz Source Area PSD File: C:\WinSLAMM Files\NURP.cpz

LU# 2 - Commercial: to on-site city storm 2 Total area (ac): 1.223
1 - Roofs 1: 0.288 ac. Pitched Connected PSD File: C:\WinSLAMM Files\NURP.cpz Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
2 - Roofs 2: 0.289 ac. Pitched Connected PSD File: C:\WinSLAMM Files\NURP.cpz Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
3 - Roofs 3: 0.066 ac. Pitched Connected PSD File: C:\WinSLAMM Files\NURP.cpz Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
13 - Paved Parking 1: 0.059 ac. Connected PSD File: C:\WinSLAMM Files\NURP.cpz Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
14 - Paved Parking 2: 0.054 ac. Connected PSD File: C:\WinSLAMM Files\NURP.cpz Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
15 - Paved Parking 3: 0.191 ac. Connected PSD File: C:\WinSLAMM Files\NURP.cpz Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
16 - Paved Parking 4: 0.058 ac. Connected PSD File: C:\WinSLAMM Files\NURP.cpz Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
31 - Sidewalks 1: 0.010 ac. Connected PSD File: C:\WinSLAMM Files\NURP.cpz Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
32 - Sidewalks 2: 0.063 ac. Connected PSD File: C:\WinSLAMM Files\NURP.cpz Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
51 - Small Landscaped Areas 1: 0.008 ac. Normal Sandy PSD File: C:\WinSLAMM Files\NURP.cpz Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
52 - Small Landscaped Areas 2: 0.013 ac. Normal Sandy PSD File: C:\WinSLAMM Files\NURP.cpz Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
53 - Small Landscaped Areas 3: 0.031 ac. Normal Sandy PSD File: C:\WinSLAMM Files\NURP.cpz Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
54 - Small Landscaped Areas 4: 0.070 ac. Normal Sandy PSD File: C:\WinSLAMM Files\NURP.cpz Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
63 - Paved Playground 1: 0.002 ac. Connected PSD File: C:\WinSLAMM Files\NURP.cpz Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
71 - Other Pervious Areas 1: 0.021 ac. Normal Sandy PSD File: C:\WinSLAMM Files\NURP.cpz Source Area PSD File: C:\WinSLAMM Files\NURP.cpz

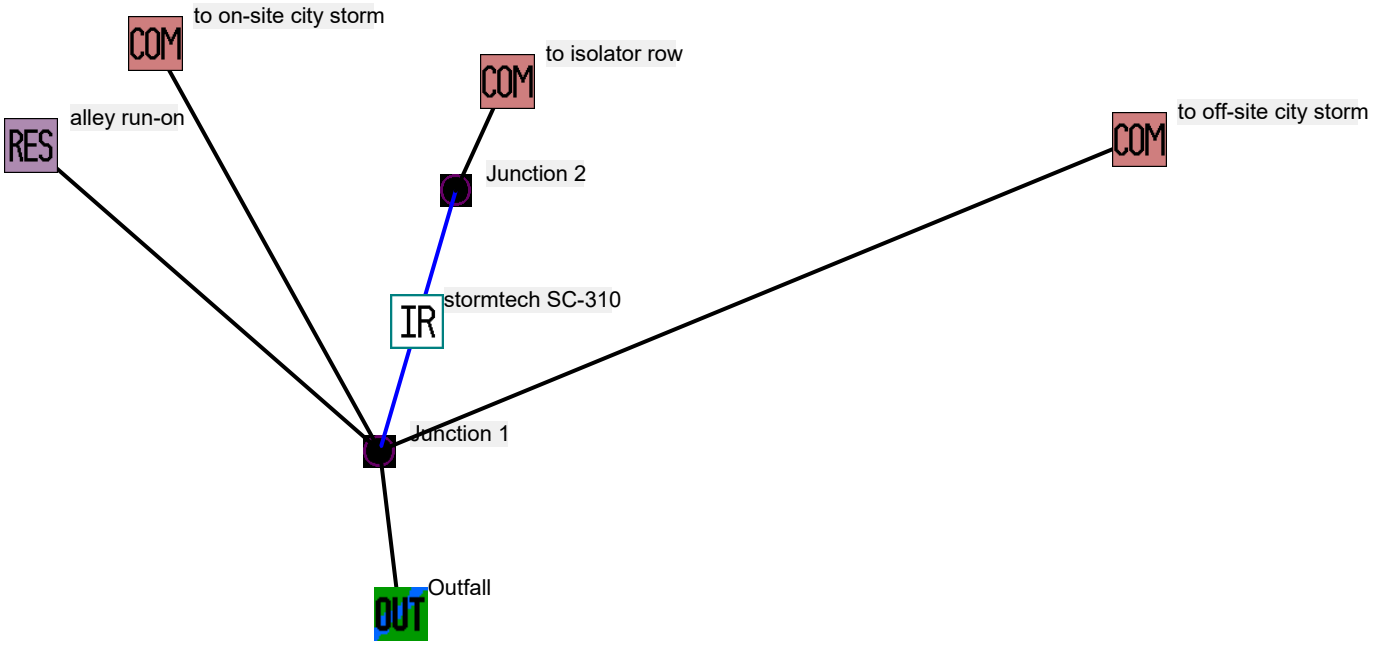
LU# 3 - Commercial: to off-site city storm Total area (ac): 0.129
25 - Driveways 1: 0.003 ac. Connected PSD File: C:\WinSLAMM Files\NURP.cpz Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
26 - Driveways 2: 0.004 ac. Connected PSD File: C:\WinSLAMM Files\NURP.cpz Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
27 - Driveways 3: 0.003 ac. Connected PSD File: C:\WinSLAMM Files\NURP.cpz Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
31 - Sidewalks 1: 0.012 ac. Connected PSD File: C:\WinSLAMM Files\NURP.cpz Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
32 - Sidewalks 2: 0.002 ac. Connected PSD File: C:\WinSLAMM Files\NURP.cpz Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
51 - Small Landscaped Areas 1: 0.071 ac. Normal Sandy PSD File: C:\WinSLAMM Files\NURP.cpz Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
52 - Small Landscaped Areas 2: 0.034 ac. Normal Sandy PSD File: C:\WinSLAMM Files\NURP.cpz Source Area PSD File: C:\WinSLAMM Files\NURP.cpz

LU# 4 - Residential: alley run-on Total area (ac): 0.078
1 - Roofs 1: 0.022 ac. Pitched Connected PSD File: C:\WinSLAMM Files\NURP.cpz Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
2 - Roofs 2: 0.008 ac. Pitched Connected PSD File: C:\WinSLAMM Files\NURP.cpz Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
25 - Driveways 1: 0.048 ac. Connected PSD File: C:\WinSLAMM Files\NURP.cpz Source Area PSD File: C:\WinSLAMM Files\NURP.cpz

SLAMM for Windows Version 10.5.0

Data file name: F:\Engineering\Engineering Dwg\2023\23-109 Gerrard HOM\Storm\models\SLAMM\proposed site + no controls.mdb
WinSLAMM Version 10.5.0
Rain file name: C:\WinSLAMM Files\Rain Files\WisReg - Madison WI 1981.RAN
Particulate Solids Concentration file name: C:\WinSLAMM Files\v10.1 WI_AVG01.pscx
Runoff Coefficient file name: C:\WinSLAMM Files\WI_SL06 Dec06.rsvx
Pollutant Relative Concentration file name: C:\WinSLAMM Files\WI_GEO03.ppdx
Residential Street Delivery file name: C:\WinSLAMM Files\WI_Res and Other Urban Dec06.std
Institutional Street Delivery file name: C:\WinSLAMM Files\WI_Com Inst Indust Dec06.std
Commercial Street Delivery file name: C:\WinSLAMM Files\WI_Com Inst Indust Dec06.std
Industrial Street Delivery file name: C:\WinSLAMM Files\WI_Com Inst Indust Dec06.std
Other Urban Street Delivery file name: C:\WinSLAMM Files\WI_Res and Other Urban Dec06.std
Freeway Street Delivery file name: C:\WinSLAMM Files\Freeway Dec06.std
Apply Street Delivery Files to Adjust the After Event Load Street Dirt Mass Balance: False
Source Area PSD and Peak to Average Flow Ratio File: C:\WinSLAMM Files\NURP Source Area PSD Files.csv
Cost Data file name:
Seed for random number generator: -42
Study period starting date: 01/01/81 Study period ending date: 12/31/81
Start of Winter Season: 12/02 End of Winter Season: 03/12
Model Run Start Date: 01/01/81 Model Run End Date: 12/31/81
Date of run: 11-12-2024 Time of run: 09:36:05
Total Area Modeled (acres): 1.516
Years in Model Run: 1.00

	Runoff Volume (cu ft)	Percent Runoff Volume Reduction	Particulate Solids Conc. (mg/L)	Particulate Solids Yield (lbs)	Percent Particulate Solids Reduction
Total of all Land Uses without Controls:	106043	-	69.58	460.6	-
Outfall Total with Controls:	106044	0.00%	69.58	460.6	0.00%
Annualized Total After Outfall Controls:	106336			461.9	


COM
to on-site city storm
COM
to isolator row
RES
alley run-on
Junction 2
COM
to off-site city storm
IR
stormtech SC-310
Junction 1
OUT
Outfall

Data file name: F:\Engineering\Engineering Dwg\2023\23-109 Gerrard HOM\Storm\models\SLAMM\proposed site + SC310 isolator.mdb
WinSLAMM Version 10.5.0
Rain file name: C:\WinSLAMM Files\Rain Files\WisReg - Madison WI 1981.RAN
Particulate Solids Concentration file name: C:\WinSLAMM Files\v10.1 WI_AVG01.pscx
Runoff Coefficient file name: C:\WinSLAMM Files\WI_SL06 Dec06.rsvx
Residential Street Delivery file name: C:\WinSLAMM Files\WI_Res and Other Urban Dec06.std
Institutional Street Delivery file name: C:\WinSLAMM Files\WI_Com Inst Indust Dec06.std
Commercial Street Delivery file name: C:\WinSLAMM Files\WI_Com Inst Indust Dec06.std
Industrial Street Delivery file name: C:\WinSLAMM Files\WI_Com Inst Indust Dec06.std
Other Urban Street Delivery file name: C:\WinSLAMM Files\WI_Res and Other Urban Dec06.std
Freeway Street Delivery file name: C:\WinSLAMM Files\Freeway Dec06.std
Apply Street Delivery Files to Adjust the After Event Load Street Dirt Mass Balance: False
Pollutant Relative Concentration file name: C:\WinSLAMM Files\WI_GEO03.ppdx
Source Area PSD and Peak to Average Flow Ratio File: C:\WinSLAMM Files\NURP Source Area PSD Files.csv
Cost Data file name:
Seed for random number generator: -42
Study period starting date: 01/01/81 Study period ending date: 12/31/81
Start of Winter Season: 12/02 End of Winter Season: 03/12
Date: 11-13-2024 Time: 11:17:13
Site information:

LU# 1 - Commercial: to on-site city storm Total area (ac): 0.140
13 - Paved Parking 1: 0.054 ac. Connected PSD File: C:\WinSLAMM Files\NURP.cpz Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
25 - Driveways 1: 0.034 ac. Connected PSD File: C:\WinSLAMM Files\NURP.cpz Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
51 - Small Landscaped Areas 1: 0.052 ac. Normal Sandy PSD File: C:\WinSLAMM Files\NURP.cpz Source Area PSD File: C:\WinSLAMM Files\NURP.cpz

LU# 2 - Commercial: to isolator row Total area (ac): 1.169
1 - Roofs 1: 0.288 ac. Pitched Connected PSD File: C:\WinSLAMM Files\NURP.cpz Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
2 - Roofs 2: 0.289 ac. Pitched Connected PSD File: C:\WinSLAMM Files\NURP.cpz Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
3 - Roofs 3: 0.066 ac. Pitched Connected PSD File: C:\WinSLAMM Files\NURP.cpz Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
13 - Paved Parking 1: 0.059 ac. Connected PSD File: C:\WinSLAMM Files\NURP.cpz Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
14 - Paved Parking 2: 0.054 ac. Connected PSD File: C:\WinSLAMM Files\NURP.cpz Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
15 - Paved Parking 3: 0.137 ac. Connected PSD File: C:\WinSLAMM Files\NURP.cpz Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
16 - Paved Parking 4: 0.058 ac. Connected PSD File: C:\WinSLAMM Files\NURP.cpz Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
31 - Sidewalks 1: 0.010 ac. Connected PSD File: C:\WinSLAMM Files\NURP.cpz Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
32 - Sidewalks 2: 0.063 ac. Connected PSD File: C:\WinSLAMM Files\NURP.cpz Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
51 - Small Landscaped Areas 1: 0.008 ac. Normal Sandy PSD File: C:\WinSLAMM Files\NURP.cpz Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
52 - Small Landscaped Areas 2: 0.013 ac. Normal Sandy PSD File: C:\WinSLAMM Files\NURP.cpz Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
53 - Small Landscaped Areas 3: 0.031 ac. Normal Sandy PSD File: C:\WinSLAMM Files\NURP.cpz Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
54 - Small Landscaped Areas 4: 0.070 ac. Normal Sandy PSD File: C:\WinSLAMM Files\NURP.cpz Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
63 - Paved Playground 1: 0.002 ac. Connected PSD File: C:\WinSLAMM Files\NURP.cpz Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
71 - Other Pervious Areas 1: 0.021 ac. Normal Sandy PSD File: C:\WinSLAMM Files\NURP.cpz Source Area PSD File: C:\WinSLAMM Files\NURP.cpz

LU# 3 - Commercial: to off-site city storm Total area (ac): 0.129
25 - Driveways 1: 0.003 ac. Connected PSD File: C:\WinSLAMM Files\NURP.cpz Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
26 - Driveways 2: 0.004 ac. Connected PSD File: C:\WinSLAMM Files\NURP.cpz Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
27 - Driveways 3: 0.003 ac. Connected PSD File: C:\WinSLAMM Files\NURP.cpz Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
31 - Sidewalks 1: 0.012 ac. Connected PSD File: C:\WinSLAMM Files\NURP.cpz Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
32 - Sidewalks 2: 0.002 ac. Connected PSD File: C:\WinSLAMM Files\NURP.cpz Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
51 - Small Landscaped Areas 1: 0.071 ac. Normal Sandy PSD File: C:\WinSLAMM Files\NURP.cpz Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
52 - Small Landscaped Areas 2: 0.034 ac. Normal Sandy PSD File: C:\WinSLAMM Files\NURP.cpz Source Area PSD File: C:\WinSLAMM Files\NURP.cpz

LU# 4 - Residential: alley run-on Total area (ac): 0.078
1 - Roofs 1: 0.022 ac. Pitched Connected PSD File: C:\WinSLAMM Files\NURP.cpz Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
2 - Roofs 2: 0.008 ac. Pitched Connected PSD File: C:\WinSLAMM Files\NURP.cpz Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
25 - Driveways 1: 0.048 ac. Connected PSD File: C:\WinSLAMM Files\NURP.cpz Source Area PSD File: C:\WinSLAMM Files\NURP.cpz

Control Practice 1: Isolator Row CP# 1 (DS) - stormtech SC-310
Total available system length (ft) = 117
Total available system width (ft) = 30
Available height from chamber base to surface (ft) = 4.00
Number of isolator rows = 1
Native soil infiltration rate (in/hr) = 0.00
Assumed stone porosity () = 0.40
Sizing option: Number of rows and row length
Number of rows = 2
Row length (ft) = 117
Selected Chamber Information
Chamber type: SC-310
Chamber height (in): 16.00
Chamber width (in): 34.00
Chamber segment length (in): 85.40
Final storage volume (cf): 1266.4
Number of rows: 2
Row length (ft): 117.0
Total system length (ft): 234.0
Total system width (ft): 5.7
Number of chambers: 32
Overflow weir invert elevation (ft) = 2.10
Orifice 1 invert elevation (ft) = 0.00
Orifice 1 diameter (ft) = 0.00

Drain Tile Present

SLAMM for Windows Version 10.5.0

Data file name: F:\Engineering\Engineering Dwg\2023\23-109 Gerrard HOM\Storm\models\SLAMM\proposed site + SC310 isolator.mdb
WinSLAMM Version 10.5.0
Rain file name: C:\WinSLAMM Files\Rain Files\WisReg - Madison WI 1981.RAN
Particulate Solids Concentration file name: C:\WinSLAMM Files\v10.1 WI_AVG01.pscx
Runoff Coefficient file name: C:\WinSLAMM Files\WI_SL06 Dec06.rsvx
Pollutant Relative Concentration file name: C:\WinSLAMM Files\WI_GEO03.ppdx
Residential Street Delivery file name: C:\WinSLAMM Files\WI_Res and Other Urban Dec06.std
Institutional Street Delivery file name: C:\WinSLAMM Files\WI_Com Inst Indust Dec06.std
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Other Urban Street Delivery file name: C:\WinSLAMM Files\WI_Res and Other Urban Dec06.std
Freeway Street Delivery file name: C:\WinSLAMM Files\Freeway Dec06.std
Apply Street Delivery Files to Adjust the After Event Load Street Dirt Mass Balance: False
Source Area PSD and Peak to Average Flow Ratio File: C:\WinSLAMM Files\NURP Source Area PSD Files.csv
Cost Data file name:
Seed for random number generator: -42
Study period starting date: 01/01/81 Study period ending date: 12/31/81
Start of Winter Season: 12/02 End of Winter Season: 03/12
Model Run Start Date: 01/01/81 Model Run End Date: 12/31/81
Date of run: 11-13-2024 Time of run: 08:49:52
Total Area Modeled (acres): 1.516
Years in Model Run: 1.00

	Runoff Volume (cu ft)	Percent Runoff Volume Reduction	Particulate Solids Conc. (mg/L)	Particulate Solids Yield (lbs)	Percent Particulate Solids Reduction
Total of all Land Uses without Controls:	106043	-	69.58	460.6	-
Outfall Total with Controls:	106062	-0.02%	38.36	254.0	44.85%
Annualized Total After Outfall Controls:	106354			254.7	

Haven On Main Project

Storm Water Management Plan

APPENDIX C – Operation & Maintenance Plan

OPERATION AND MAINTENANCE PLAN

Haven On Main Project
Gerrard Development LLC

The intent of this plan is to set forth maintenance procedures in order to ensure proper operation of storm water facilities on the site. A copy of this plan shall be kept onsite at all times and be available for inspection if requested. Written record of inspection activities and maintenance shall be retained for the life of the facilities discussed in this plan.

UNDERGROUND STORM WATER DETENTION SYSTEM:

1) Accumulated solids or byproduct removal requirements

Attached to this document is the manufacturer's recommended Operations & Maintenance Manual for maintenance of the isolator row of the underground storm water detention system proposed for this project.

2) Identification of safety hazards

Verify the system is operating properly by inspecting after one inch of rain for the first year and then quarterly each succeeding year as clogging may create unsafe ponding areas.

3) Cleaning and inspection schedule

Keep contributing lawn areas in good condition to minimize sediment migration to the system. The attached manufacturer's recommended O & M Manual contains instructions for Inspection procedures and schedule.

4) Inspection and maintenance checklist

a) **Filters** – does not apply to this system
b) **Disinfection units -** does not apply to this system
c) **Sedimentation chambers** – The attached manufacturer's recommended O & M Manual contains instructions for maintenance of the isolator row**.**
d) **Detention devices** – not serviceable.
e) **Infiltration systems** – not serviceable.

5) **Start up and shutdown procedures does not apply to this system**

6) **Vector control requirements – does not apply to this system**

7) **Contingency plan in the event of system failure**

In the event the system no longer appears to intercept and detain runoff, consult engineer to determine best course of action for repairs.

STORM SEWER SYSTEM:

1) **Accumulated solids or byproduct removal requirements**

   Practices shall include removal of excess sediment from within the site's storm water inlets and conveyance piping. Periodic removal of sediment will insure proper operation. Also, remove any litter or debris that may obstruct inflow conditions.

2) **Identification of safety hazards**

   Inspect annually, in the spring, inlet structures to verify they remain installed correctly. This is important for inlets located in pavement areas which may endure heavy traffic and create a hazard if they are not properly seated.

3) **Cleaning and inspection schedule**

   Inspect inlets annually, in the spring. Observe the system components during rain events to verify the system is operating at top capacity. Identify structures and conveyance piping which may need repair or replacement parts. Remove any debris or litter blocking the inlet structures and pipes.

4) **Inspection and maintenance checklist**

   a) **Filters -** does not apply to this site
   b) **Disinfection units -** does not apply to this site
   c) **Sedimentation chambers -** does not apply to this site
   d) **Detention devices -** does not apply to this site
   e) **Infiltration systems –** does not apply to storm sewer

5) Start up and shutdown procedures

Not Applicable.

6) Vector control requirements – does not apply to this system

Isolator® Row Plus
O&M Manual

ADS StormTech™

The Isolator® Row Plus

Introduction

An important component of any Stormwater Pollution Prevention Plan is inspection and maintenance. The StormTech Isolator Row Plus is a technique to inexpensively enhance Total Suspended Solids (TSS), Total Phosphorus (TP), Total Petroluem Hydrocarbons (TPH) and Total Nitrogen (TN) removal with easy access for inspection and maintenance.

The Isolator Row Plus

The Isolator Row Plus is a row of StormTech chambers, either SC-160, SC-310, SC-310-3, SC-740, DC-780, SC-800, MC-3500, MC-4500 or MC-7200 models, are lined with filter fabric and connected to a closely located manhole for easy access. The fabric lined chambers provide for sediment settling and filtration as stormwater rises in the Isolator Row Plus and passes through the filter fabric. The open bottom chambers allow stormwater to flow vertically out of the chambers. Sediments are captured in the Isolator Row Plus protecting the adjacent stone and chambers storage areas from sediment accumulation.

ADS Isolator Row and Plus fabric are placed between the stone and the Isolator Row Plus chambers. The woven geotextile provides a media for stormwater filtration, a durable surface for maintenance, prevents scour of the underlying stone and remains intact during high pressure jetting.

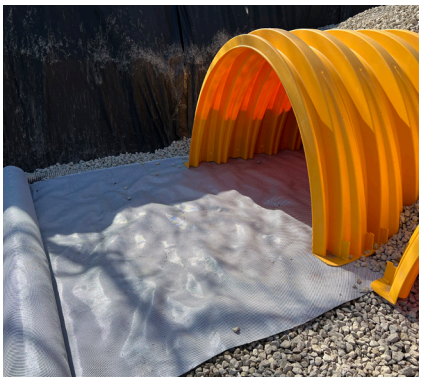
The Isolator Row Plus is designed to capture the “first flush” runoff and offers the versatility to be sized on a volume basis or a flow-rate basis. An upstream manhole provides access to the Isolator Row Plus and includes a high/low concept such that stormwater flow rates or volumes that exceed the capacity of the Isolator Row Plus bypass through a manifold to the other chambers. This is achieved with an elevated bypass manifold or a high-flow weir. This creates a differential between the Isolator Row Plus row of chambers and the manifold to the rest of the system, thus allowing for settlement time in the Isolator Row Plus. After Stormwater flows through the Isolator Row Plus and into the rest of the chamber system it is either exfiltrated into the soils below or passed at a controlled rate through an outlet manifold and outlet control structure.

The Isolator Row Plus Flamp™ is a flared end ramp apparatus attached to the inlet pipe on the inside of the chamber end cap. The FLAMP provides a smooth transition from pipe invert to fabric bottom. It is configured to improve chamber function performance by enhancing outflow of solid debris that would otherwise collect at the chamber's end, or more difficult to remove and require confined space entry into the chamber area. It also serves to improve the fluid and solid flow into the access pipe during maintenance and cleaning and to guide cleaning and inspection equipment back into the inlet pipe when complete.

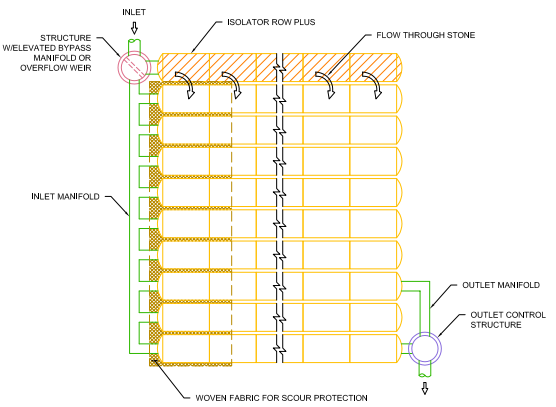
The Isolator Row Plus may be part of a treatment train system. The treatment train design and pretreatment device selection by the design engineer is often driven by regulatory requirements. Whether pretreatment is used or not, StormTech recommend using the Isolator Row Plus to minimize maintenance requirements and maintenance costs.

Note: *See the StormTech Design Manual for detailed information on designing inlets for a StormTech system, including the Isolator Row Plus.*

Looking down the Isolator Row Plus from the manhole opening, ADS Plus Fabric is shown between the chamber and stone base.



StormTech Isolator Row Plus with Overflow Structure (not to scale)



Isolator Row Plus Inspection/Maintenance

Inspection

The frequency of inspection and maintenance varies by location. A routine inspection schedule needs to be established for each individual location based upon site specific variables. The type of land use (i.e. industrial, commercial, residential), anticipated pollutant load, percent imperviousness, climate, etc. all play a critical role in determining the actual frequency of inspection and maintenance practices.

At a minimum, StormTech recommends annual inspections. Initially, the Isolator Row Plus should be inspected every 6 months for the first year of operation. For subsequent years, the inspection should be adjusted based upon previous observation of sediment deposition.

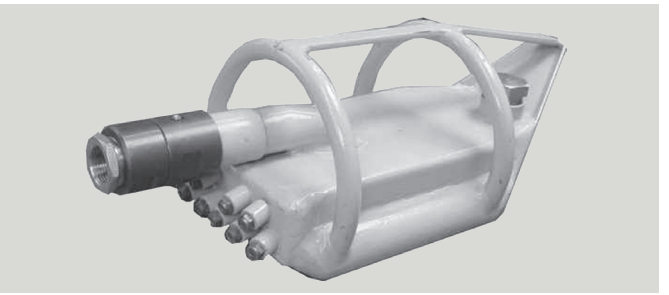
The Isolator Row Plus incorporates a combination of standard manhole(s) and strategically located inspection ports (as needed). The inspection ports allow for easy access to the system from the surface, eliminating the need to perform a confined space entry for inspection purposes.

If upon visual inspection it is found that sediment has accumulated, a stadia rod should be inserted to determine the depth of sediment. When the average depth of sediment exceeds 3" (75 mm) throughout the length of the Isolator Row Plus, clean-out should be performed.

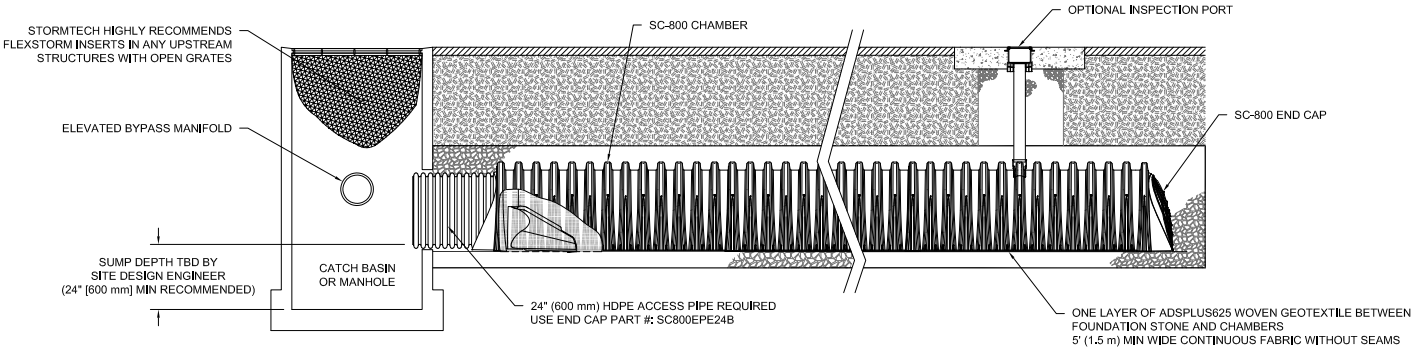
Maintenance

The Isolator Row Plus was designed to reduce the cost of periodic maintenance. By “isolating” sediments to just one row, costs are dramatically reduced by eliminating the need to clean out each row of the entire storage bed. If inspection indicates the potential need for maintenance, access is provided via a manhole(s) located on the end(s) of the row for cleanout. If entry into the manhole is required, please follow local and OSHA rules for a confined space entry.

Maintenance is accomplished with the JetVac process. The JetVac process utilizes a high pressure water nozzle to propel itself down the Isolator Row Plus while scouring and suspending sediments. As the nozzle is retrieved, the captured pollutants are flushed back into the manhole for vacuuming. Most sewer and pipe maintenance companies have vacuum/JetVac combination vehicles. Selection of an appropriate JetVac nozzle will improve maintenance efficiency. Fixed nozzles designed for culverts or large diameter pipe cleaning are preferable. Rear facing jets with an effective spread of at least 45” are best. StormTech recommends a maximum nozzle pressure of 2000 psi be utilized during cleaning. JetVac reels can vary in length. For ease of maintenance, ADS recommends Isolator Row Plus lengths up to 200' (61 m). **The JetVac process shall only be performed on StormTech Isolator Row Plus that have ADS Plus Fabric (as specified by StormTech) over their angular base stone.**



StormTech Isolator Row Plus (*not to scale*)



Isolator Row Plus Step By Step Maintenance Procedures

Step 1

Inspect Isolator Row Plus for sediment.

A) Inspection ports (if present)
   i. Remove lid from floor box frame
   ii. Remove cap from inspection riser
   iii. Using a flashlight and stadia rod,measure depth of sediment and record results on maintenance log.
   iv. If sediment is at or above 3 inch depth, proceed to Step 2. If not, proceed to Step 3.

B) All Isolator Row Plus
   i. Remove cover from manhole at upstream end of Isolator Row Plus
   ii. Using a flashlight, inspect down Isolator Row Plus through outlet pipe
      1. Mirrors on poles or cameras may be used to avoid a confined space entry
      2. Follow OSHA regulations for confined space entry if entering manhole
   iii. If sediment is at or above the lower row of sidewall holes (approximately 3 inches), proceed to Step 2.
   If not, proceed to Step 3.

Step 2

Clean out Isolator Row Plus using the JetVac process.

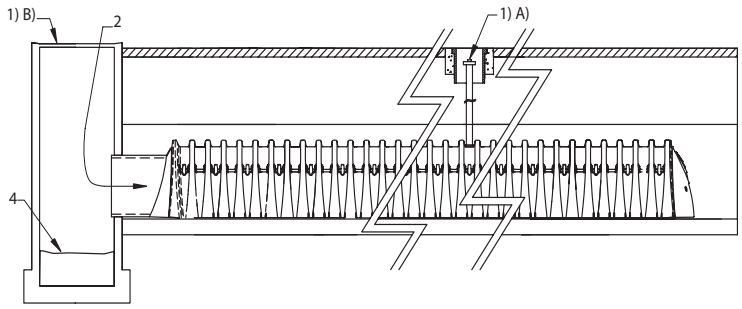
A) A fixed floor cleaning nozzle with rear facing nozzle spread of 45 inches or more is preferable
B) Apply multiple passes of JetVac until backflush water is clean
C) Vacuum manhole sump as required

Step 3

Replace all caps, lids and covers, record observations and actions.

Step 4

Inspect & clean catch basins and manholes upstream of the StormTech system.



Sample Maintenance Log

Date	Stadia Rod Readings		Sediment Depth (1)–(2)	Observations/Actions	Inspector
	Fixed point to chamber bottom (1)	Fixed point to top of sediment (2)			
3/15/11	6.3 ft	none		New installation. Fixed point is CI frame at grade	DJM
9/24/11		6.2	0.1 ft	Some grit felt	SM
6/20/13		5.8	0.5 ft	Mucky feel, debris visible in manhole and in Isolator Row Plus, maintenance due	NV
7/7/13	6.3 ft		0	System jetted and vacuumed	DJM

adspipe.com
800-821-6710

Haven On Main Project

Storm Water Management Plan

APPENDIX D – Long Term Maintenance Agreement

DECLARATION OF CONDITIONS, COVENANTS AND RESTRICTIONS FOR MAINTENANCE OF STORMWATER MANAGEMENT MEASURES

This space is reserved for recording data

Return to:

City of La Crosse
Engineering Department
400 La Crosse Street
La Crosse, Wisconsin 54601

Tax Parcel Nos.: 17-20204-100, -110, -120, -030, -020, -010 and part of alley

RECITALS:

A. Gerrard Development LLC, are the owners of Haven On Main , more particularly described on Exhibit A attached hereto ("Property").

B. Owners desire to construct buildings, parking facilities and stormwater management structures on the Property in accordance with certain plans and specifications approved by the City.

C. The City requires Owners to record this Declaration regarding maintenance of stormwater management measures to be located on the Property. Owners agree to maintain the stormwater management measures and to grant to the City the rights set forth below.

NOW, THEREFORE, in consideration of the declarations herein and other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, the owners agree as follows:

1. Maintenance. Owners and their successors and assigns shall be responsible to repair and maintain the stormwater management measures located on the Property in good condition and in working order and such that the measures comply with the approved plans on file with the City Engineer. Said maintenance shall be at the Owner's sole cost and expense. Owners will conduct such maintenance or repair work in accordance with all applicable laws, codes, regulations, and similar requirements, and pursuant to the Maintenance Provisions attached hereto as Exhibit B.

2. Easement to City. If Owners fail to maintain the stormwater management measures as required in Section 1, then City shall have the right, after providing Owners with written notice of the maintenance issue ("Maintenance Notice") and thirty (30) days to comply with the City's maintenance request, to enter the Property in order to conduct the maintenance specified in the Maintenance Notice. City will conduct such maintenance work in accordance with all applicable laws, codes, regulations, and similar requirements and will not unreasonably interfere with Owner's use of the Property. All costs and expenses incurred by the City in conducting such maintenance may be charged to the owner of the Property by placing the amount on the tax roll for the Property as a special charge in accordance with Section 66.0627, Wis. Stats.

3. Term/Termination. The term of this Agreement shall commence on the date that this Agreement is filed of record with the Register of Deeds Office for La Crosse County, Wisconsin, and except as otherwise herein specifically provided, shall continue in perpetuity. Notwithstanding the foregoing, this Agreement may be terminated by recording with the Register of Deeds Office for La Crosse County, Wisconsin, a written instrument of termination signed by the City and all of the then-owners of the Property.

4. Miscellaneous.

(a) Notices. Any notice, request or demand required or permitted under this Agreement shall be in writing and shall be deemed given when personally served or three (3) days after the same has been deposited with the United States Post Office, registered or certified mail, return receipt requested, postage prepaid and addressed as follows:

If to Owners: Gerrard Development LLC
W5947 Woodland Dr.
La Crosse, WI. 54601

If to City: City of La Crosse
Engineering Department
400 La Crosse Street
La Crosse, WI 54601
Attention: City Engineer

Any party may change its address for the receipt of notice by written notice to the other.

(b) Governing Law. This Agreement shall be governed and construed in accordance with the laws of the State of Wisconsin.

(c) Amendments or Further Agreements to be in Writing. This Agreement may not be modified in whole or in part unless such agreement is in writing and signed by all parties bound hereby.

(d) Covenants Running with the Land. All of the easements, restrictions, covenants and agreements set forth in this Agreement are intended to be and shall be construed as covenants running with the land, binding upon, inuring to the benefit of, and enforceable by the parties hereto and their respective successors and assigns.

(e) Partial Invalidity. If any provisions, or portions thereof, of this Agreement or the application thereof to any person or circumstance shall, to any extent, be invalid or unenforceable, the remainder of this Agreement, or the application of such provision, or portion thereof, to any other persons or circumstances shall not be affected thereby and each provision of this Agreement shall be valid and enforceable to the fullest extent permitted by law.

IN WITNESS WHEREOF, we have hereunto set our hands and seals this _____ day of _____, 20_____.

_____ _____

STATE OF WISCONSIN)
COUNTY OF LA CROSSE) SS

Personally came before me this _____ day of _____, 20_____, the above named _____, to me known to be the person(s) who executed the foregoing instrument and acknowledged the same.

_____
NOTARY PUBLIC

My Commission Expires:_____

Drafted by: City of La Crosse
Engineering Department
400 La Crosse Street
La Crosse, Wisconsin 54601

EXHIBIT A
Legal Description

Haven on Main @ 915-927 Main St.
ABBREVIATED LEGAL DESCRIPTIONS OF EXISTING PARCELS

Parcel 17-20204-010
METZGERS ADDITION LOT 1 EX S 59 FT LOT SZ: 52 x 91

Parcel 17-20204-020
METZGERS ADDITION S 59 FT LOT 1 LOT SZ: 59 x 52

Parcel 17-20204-030
METZGERS ADDITION LOT 2 & E 34 FT LOT 3 LOT SZ: 86 x 150

Parcel 17-20204-100
METZGERS ADDITION E 30.3 FT LOT 8 EX N 56 FT & E 3 FT of N 56 FT LOT 8 & ALL LOTS 9 & 10 LOT SZ: IRR

Parcel 17-20204-110
METZGERS ADDITION N 74 FT LOTS 11 & 12 LOT SZ: 74 x 104

Parcel 17-20204-120
METZGERS ADDITION S 76 FT LOTS 11 & 12 LOT SZ: 104 x 76

Partial alley – no legal description currently exists

EXHIBIT B
Maintenance Provisions

Operation and Maintenance Plan attached
Construction plan sheet C400 attached

OPERATION AND MAINTENANCE PLAN

Haven On Main Project
Gerrard Development LLC

The intent of this plan is to set forth maintenance procedures in order to ensure proper operation of storm water facilities on the site. A copy of this plan shall be kept onsite at all times and be available for inspection if requested. Written record of inspection activities and maintenance shall be retained for the life of the facilities discussed in this plan.

UNDERGROUND STORM WATER DETENTION SYSTEM:

1) Accumulated solids or byproduct removal requirements

Attached to this document is the manufacturer's recommended Operations & Maintenance Manual for maintenance of the isolator row of the underground storm water detention system proposed for this project.

2) Identification of safety hazards

Verify the system is operating properly by inspecting after one inch of rain for the first year and then quarterly each succeeding year as clogging may create unsafe ponding areas.

3) Cleaning and inspection schedule

Keep contributing lawn areas in good condition to minimize sediment migration to the system. The attached manufacturer's recommended O & M Manual contains instructions for Inspection procedures and schedule.

4) Inspection and maintenance checklist

a) **Filters** – does not apply to this system
b) **Disinfection units -** does not apply to this system
c) **Sedimentation chambers** – The attached manufacturer's recommended O & M Manual contains instructions for maintenance of the isolator row**.**
d) **Detention devices** – not serviceable.
e) **Infiltration systems** – not serviceable.

5) **Start up and shutdown procedures does not apply to this system**

6) **Vector control requirements – does not apply to this system**

7) **Contingency plan in the event of system failure**

In the event the system no longer appears to intercept and detain runoff, consult engineer to determine best course of action for repairs.

STORM SEWER SYSTEM:

1) **Accumulated solids or byproduct removal requirements**

   Practices shall include removal of excess sediment from within the site's storm water inlets and conveyance piping. Periodic removal of sediment will insure proper operation. Also, remove any litter or debris that may obstruct inflow conditions.

2) **Identification of safety hazards**

   Inspect annually, in the spring, inlet structures to verify they remain installed correctly. This is important for inlets located in pavement areas which may endure heavy traffic and create a hazard if they are not properly seated.

3) **Cleaning and inspection schedule**

   Inspect inlets annually, in the spring. Observe the system components during rain events to verify the system is operating at top capacity. Identify structures and conveyance piping which may need repair or replacement parts. Remove any debris or litter blocking the inlet structures and pipes.

4) **Inspection and maintenance checklist**

   a) **Filters -** does not apply to this site
   b) **Disinfection units -** does not apply to this site
   c) **Sedimentation chambers -** does not apply to this site
   d) **Detention devices -** does not apply to this site
   e) **Infiltration systems –** does not apply to storm sewer

5) Start up and shutdown procedures

Not Applicable.

6) Vector control requirements – does not apply to this system

Isolator® Row Plus
O&M Manual

ADS StormTech™

The Isolator® Row Plus

Introduction

An important component of any Stormwater Pollution Prevention Plan is inspection and maintenance. The StormTech Isolator Row Plus is a technique to inexpensively enhance Total Suspended Solids (TSS), Total Phosphorus (TP), Total Petroluem Hydrocarbons (TPH) and Total Nitrogen (TN) removal with easy access for inspection and maintenance.

The Isolator Row Plus

The Isolator Row Plus is a row of StormTech chambers, either SC-160, SC-310, SC-310-3, SC-740, DC-780, SC-800, MC-3500, MC-4500 or MC-7200 models, are lined with filter fabric and connected to a closely located manhole for easy access. The fabric lined chambers provide for sediment settling and filtration as stormwater rises in the Isolator Row Plus and passes through the filter fabric. The open bottom chambers allow stormwater to flow vertically out of the chambers. Sediments are captured in the Isolator Row Plus protecting the adjacent stone and chambers storage areas from sediment accumulation.

ADS Isolator Row and Plus fabric are placed between the stone and the Isolator Row Plus chambers. The woven geotextile provides a media for stormwater filtration, a durable surface for maintenance, prevents scour of the underlying stone and remains intact during high pressure jetting.

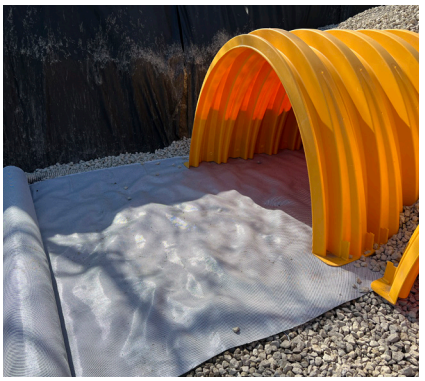
The Isolator Row Plus is designed to capture the “first flush” runoff and offers the versatility to be sized on a volume basis or a flow-rate basis. An upstream manhole provides access to the Isolator Row Plus and includes a high/low concept such that stormwater flow rates or volumes that exceed the capacity of the Isolator Row Plus bypass through a manifold to the other chambers. This is achieved with an elevated bypass manifold or a high-flow weir. This creates a differential between the Isolator Row Plus row of chambers and the manifold to the rest of the system, thus allowing for settlement time in the Isolator Row Plus. After Stormwater flows through the Isolator Row Plus and into the rest of the chamber system it is either exfiltrated into the soils below or passed at a controlled rate through an outlet manifold and outlet control structure.

The Isolator Row Plus Flamp™ is a flared end ramp apparatus attached to the inlet pipe on the inside of the chamber end cap. The FLAMP provides a smooth transition from pipe invert to fabric bottom. It is configured to improve chamber function performance by enhancing outflow of solid debris that would otherwise collect at the chamber's end, or more difficult to remove and require confined space entry into the chamber area. It also serves to improve the fluid and solid flow into the access pipe during maintenance and cleaning and to guide cleaning and inspection equipment back into the inlet pipe when complete.

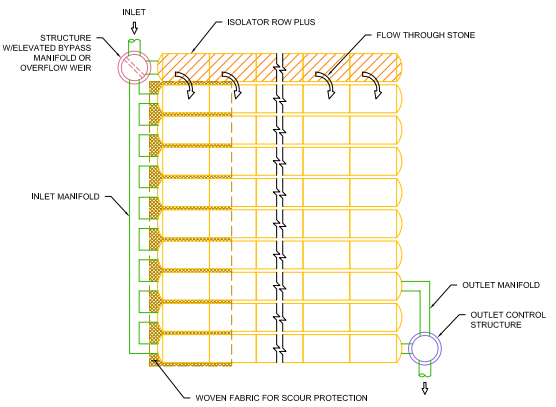
The Isolator Row Plus may be part of a treatment train system. The treatment train design and pretreatment device selection by the design engineer is often driven by regulatory requirements. Whether pretreatment is used or not, StormTech recommend using the Isolator Row Plus to minimize maintenance requirements and maintenance costs.

Note: *See the StormTech Design Manual for detailed information on designing inlets for a StormTech system, including the Isolator Row Plus.*

Looking down the Isolator Row Plus from the manhole opening, ADS Plus Fabric is shown between the chamber and stone base.



StormTech Isolator Row Plus with Overflow Structure (not to scale)



Isolator Row Plus Inspection/Maintenance

Inspection

The frequency of inspection and maintenance varies by location. A routine inspection schedule needs to be established for each individual location based upon site specific variables. The type of land use (i.e. industrial, commercial, residential), anticipated pollutant load, percent imperviousness, climate, etc. all play a critical role in determining the actual frequency of inspection and maintenance practices.

At a minimum, StormTech recommends annual inspections. Initially, the Isolator Row Plus should be inspected every 6 months for the first year of operation. For subsequent years, the inspection should be adjusted based upon previous observation of sediment deposition.

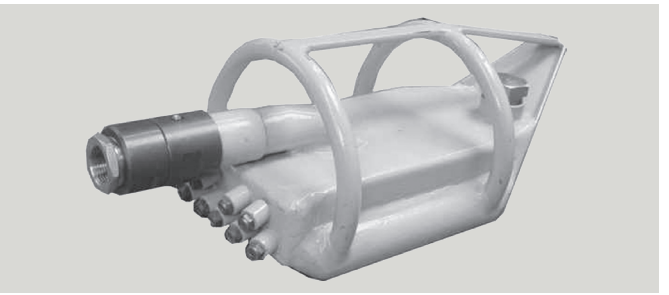
The Isolator Row Plus incorporates a combination of standard manhole(s) and strategically located inspection ports (as needed). The inspection ports allow for easy access to the system from the surface, eliminating the need to perform a confined space entry for inspection purposes.

If upon visual inspection it is found that sediment has accumulated, a stadia rod should be inserted to determine the depth of sediment. When the average depth of sediment exceeds 3" (75 mm) throughout the length of the Isolator Row Plus, clean-out should be performed.

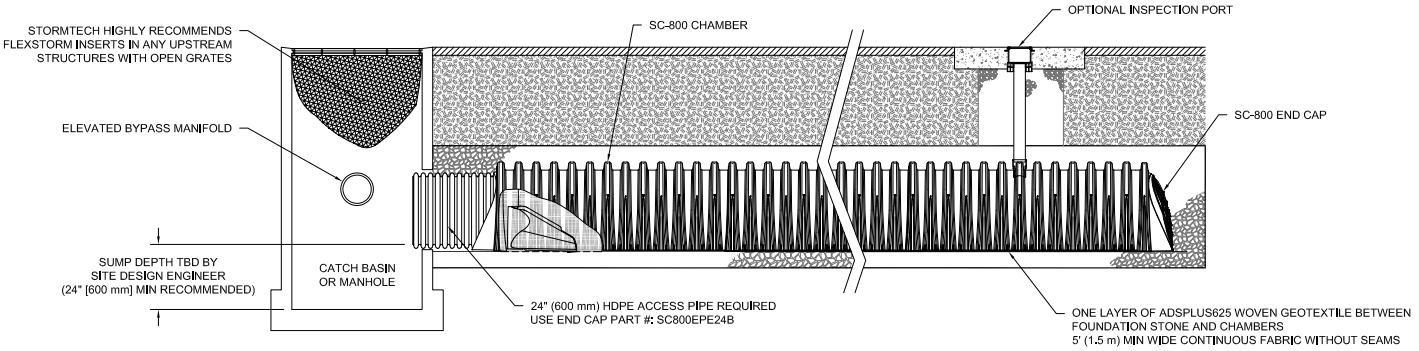
Maintenance

The Isolator Row Plus was designed to reduce the cost of periodic maintenance. By “isolating” sediments to just one row, costs are dramatically reduced by eliminating the need to clean out each row of the entire storage bed. If inspection indicates the potential need for maintenance, access is provided via a manhole(s) located on the end(s) of the row for cleanout. If entry into the manhole is required, please follow local and OSHA rules for a confined space entry.

Maintenance is accomplished with the JetVac process. The JetVac process utilizes a high pressure water nozzle to propel itself down the Isolator Row Plus while scouring and suspending sediments. As the nozzle is retrieved, the captured pollutants are flushed back into the manhole for vacuuming. Most sewer and pipe maintenance companies have vacuum/JetVac combination vehicles. Selection of an appropriate JetVac nozzle will improve maintenance efficiency. Fixed nozzles designed for culverts or large diameter pipe cleaning are preferable. Rear facing jets with an effective spread of at least 45” are best. StormTech recommends a maximum nozzle pressure of 2000 psi be utilized during cleaning. JetVac reels can vary in length. For ease of maintenance, ADS recommends Isolator Row Plus lengths up to 200' (61 m). **The JetVac process shall only be performed on StormTech Isolator Row Plus that have ADS Plus Fabric (as specified by StormTech) over their angular base stone.**



StormTech Isolator Row Plus (*not to scale*)



Isolator Row Plus Step By Step Maintenance Procedures

Step 1

Inspect Isolator Row Plus for sediment.

A) Inspection ports (if present)
   i. Remove lid from floor box frame
   ii. Remove cap from inspection riser
   iii. Using a flashlight and stadia rod,measure depth of sediment and record results on maintenance log.
   iv. If sediment is at or above 3 inch depth, proceed to Step 2. If not, proceed to Step 3.

B) All Isolator Row Plus
   i. Remove cover from manhole at upstream end of Isolator Row Plus
   ii. Using a flashlight, inspect down Isolator Row Plus through outlet pipe
      1. Mirrors on poles or cameras may be used to avoid a confined space entry
      2. Follow OSHA regulations for confined space entry if entering manhole
   iii. If sediment is at or above the lower row of sidewall holes (approximately 3 inches), proceed to Step 2.
   If not, proceed to Step 3.

Step 2

Clean out Isolator Row Plus using the JetVac process.

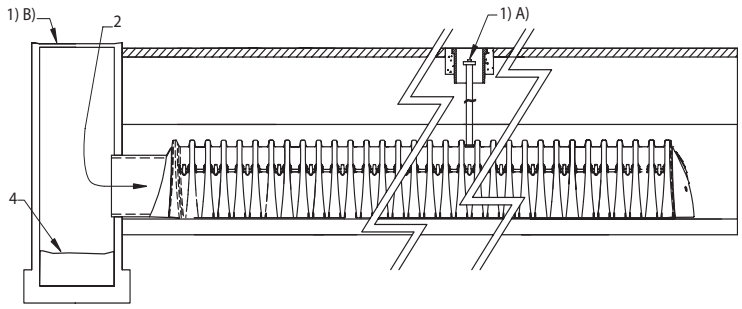
A) A fixed floor cleaning nozzle with rear facing nozzle spread of 45 inches or more is preferable
B) Apply multiple passes of JetVac until backflush water is clean
C) Vacuum manhole sump as required

Step 3

Replace all caps, lids and covers, record observations and actions.

Step 4

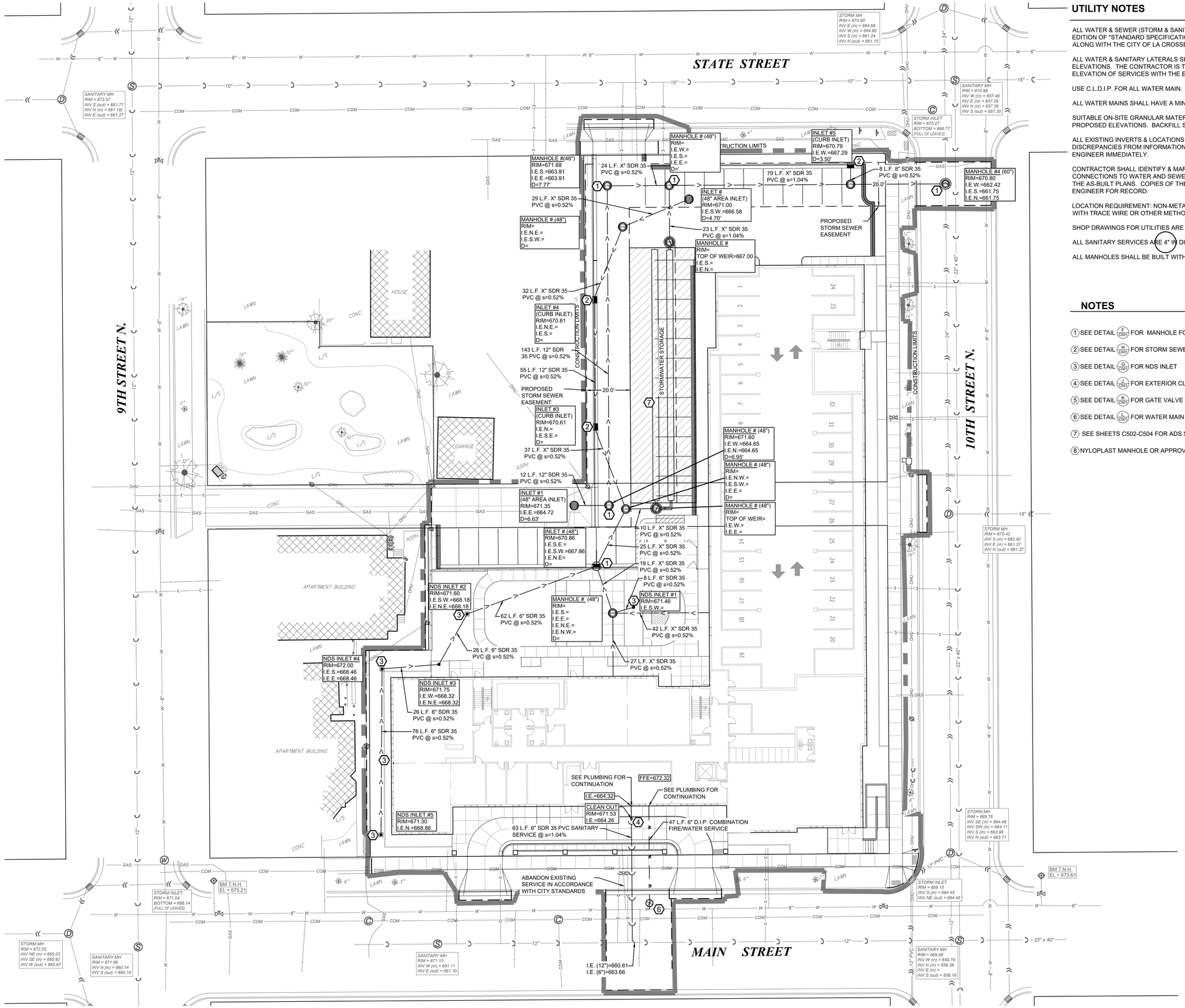
Inspect & clean catch basins and manholes upstream of the StormTech system.



Sample Maintenance Log

Date	Stadia Rod Readings		Sediment Depth (1)–(2)	Observations/Actions	Inspector
	Fixed point to chamber bottom (1)	Fixed point to top of sediment (2)			
3/15/11	6.3 ft	none		New installation. Fixed point is CI frame at grade	DJM
9/24/11		6.2	0.1 ft	Some grit felt	SM
6/20/13		5.8	0.5 ft	Mucky feel, debris visible in manhole and in Isolator Row Plus, maintenance due	NV
7/7/13	6.3 ft		0	System jetted and vacuumed	DJM

adspipe.com
800-821-6710



UTILITY NOTES

ALL WATER & SEWER (STORM & SANITARY) CONSTRUCTION SHALL COMPLY WITH THE LATEST EDITION OF "STANDARD SPECIFICATIONS FOR SEWER & WATER IN THE STATE OF WISCONSIN," ALONG WITH THE CITY OF LA CROSSE STANDARD SPECIFICATIONS, AS APPROPRIATE.

ALL WATER & SANITARY LATERALS SHALL HAVE A MINIMUM DEPTH 6' BELOW FINISHED FLOOR ELEVATIONS. THE CONTRACTOR IS TO COORDINATE ACTIVITIES & CONFIRM LOCATION & ELEVATION OF SERVICES WITH THE ENGINEER.

USE C.L.D.I.P. FOR ALL WATER MAIN.

ALL WATER MAINS SHALL HAVE A MINIMUM OF 7.5' OF COVER.

SUITABLE ON-SITE GRANULAR MATERIAL SHALL BE USED FOR TRENCH BACKFILL TO PROPOSED ELEVATIONS. BACKFILL SHALL BE COMPACTED AS SPECIFIED.

ALL EXISTING INVERTS & LOCATIONS SHALL BE VERIFIED PRIOR TO CONSTRUCTION. ALL DISCREPANCIES FROM INFORMATION SHOWN ON THE PLANS SHALL BE REPORTED TO THE ENGINEER IMMEDIATELY.

CONTRACTOR SHALL IDENTIFY & MARK THE EXACT LOCATIONS OF ALL UNDERGROUND CONNECTIONS TO WATER AND SEWER MAINS, BENDS, CURB BOXES, CLEAN OUTS, ETC. ON THE AS-BUILT PLANS. COPIES OF THESE DOCUMENTS SHALL BE DELIVERED TO THE ENGINEER FOR RECORD.

LOCATION REQUIREMENT: NON-METALLIC SEWER/MAINS AND SERVICES MUST BE PROVIDED WITH TRACE WIRE OR OTHER METHODS IN ORDER TO BE LOCATED.

SHOP DRAWINGS FOR UTILITIES ARE REQUIRED.

ALL SANITARY SERVICES ARE 4" IN DIAMETER.

ALL MANHOLES SHALL BE BUILT WITH ECCENTRIC CONES.

NOTES

1. SEE DETAIL (F C501) FOR MANHOLE FOR STORM SEWER
2. SEE DETAIL (H C501) FOR STORM SEWER INLET 3' X 2'
3. SEE DETAIL (G C501) FOR NDS INLET
4. SEE DETAIL (J C501) FOR EXTERIOR CLEAN OUT
5. SEE DETAIL (K C501) FOR GATE VALVE AND BOX INSTALLATION
6. SEE DETAIL (L C501) FOR WATER MAIN WET TAP
7. SEE SHEETS C502-C504 FOR ADS StormTech SYSTEM
8. NYLOPLAST MANHOLE OR APPROVED EQUAL. SEE MANUFACTURER'S DRAWINGS FOR DETAILS

REVISIONS	BY

PARAGON ASSOCIATES
Environmental Design & Consulting
CIVIL ENGINEERING . LANDSCAPE ARCHITECTURE . SURVEYING
632 COPELAND AVENUE . LA CROSSE, WI 54603
Tel.608.781.3110 Fax.608.781.3197 Paragon-Assoc.biz

PREPARED FOR:
GERRARD CORP.

HAVEN ON MAIN
915-927 MAIN STREET
LA CROSSE, WISCONSIN
UTILITY PLAN

DRAWN	C.G.
PROJECT No	23-109
DATE	11/07/2024
SCALE	1"=20'
CAD FILE	23-109 Gerrard HOM 12.DWG
SHEET	C400

PLAN SCALE: 1"=20'

Stormwater Management Permit Application

City of La Crosse Engineering Department

400 La Crosse Street ◘ Engineering Department ◘ La Crossse, WI 54601

Section 1 ◘ Property Information

Project Name: Haven On Main

Property Address: 915-927 Main St | 1,2, part 3, part 8, 9,10,11 & 12 | 17-20204-100 et. al.

Street | *Lot Number(s)* | *Parcel Number*

La Crosse | WI | 54601

City | *State* | *ZIP Code*

Metzgers Addition

Plat or CSM

Section 2 ◘ Landowner Information

Full Name: Gerrard Development LLC

Last | *First* | *M.I.*

Mailing Address: 100 6th St N. | Suite A

Street | *Apartment/Unit #*

La Crosse | WI | 54601

City | *State* | *ZIP Code*

Contact Phone: 608-782-4488 E-Mail: paul@gerrardcompanies.com

Section 3 ◘ Applicant Information

☑ **Same as Landowner** *(Check if YES, and continue with Section 4)*

Full Name:

Last | *First* | *M.I.*

Mailing Address:

Street | *Apartment/Unit #*

City | *State* | *ZIP Code*

Contact Phone: E-Mail:

Section 4 ◘ Site Information

Total Site Area	59,600	ft^2
Existing Impervious Area *(Before Project)*	21,906	ft^2
New Impervious Area *(Impervious area added outside any existing impervious area)*	24,955	ft^2
Redeveloped Impervious Area *(Impervious area redeveloped inside original impervious area foot print)*	21,906	ft^2
Removed Impervious Area *(From inside original impervious area footprint)*	412	ft^2
Net Impervious Area *(After Project)*	46,449	ft^2

Work to be performed by *(if known)*: ☐ **Same as Applicant** *(Check if YES)* ☐ **Same as Landowner** *(Check if YES)*

Construction Contact: _____

Contact Phone: _____ E-Mail: _____

Stormwater Management Report/Plan to be attached.
Please note application cannot be processed without report/plan*

Section 5 ¤ Fee

Permit Fee $ 0.00

FEES RECEIVED
Office Use Only
Date _____
Amt _____
By _____

Section 6 ¤ Stormwater Management Requirements

☒ TSS Reduction: ☐ New Development (80%) ☒ Redevelopment (40%)
☐ Oil & Grease Removal
☒ Runoff Rate Control/Detention
☐ Infiltration
☐ Groundwater Recharge
☐ Thermal Control
☒ Maintenance Agreement Executed

Construction Start Date January 2025 Estimated Project Completion Date June 2026

Section 7 ¤ Applicant Signature

I have reviewed and understand Chapter 105 of the La Crosse Ordinances regarding erosion control, and I shall implement the control plan for this project as approved by the city.

I further, in accordance with Chapter 105, grant the right-of-entry onto this property, as described above, to the designated personnel of the City of La Crosse for the purpose of inspecting and monitoring for compliance with the aforesaid ordinance.

Applicant Signature _____ Date of Application _____

**Applicant other than landowner requires a notarized statement authorizing the applicant to act as the landowner's agent—must be attached*