STORMWATER MANAGEMENT REPORT & EROSION CONTROL PLAN

Old Sauk Road Apartments

April 8, 2024

Prepared For: Stone House Development, Inc.

Wyser Engineering Project No.: 23-1085

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APPENDICIES

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1.0 Introduction

A multi-family residential apartment building is being proposed at 6610 Old Sauk Road in the City of Madison. In the existing conditions, the site consists of two parcels. Parcel I consists of Parcel A and Parcel B. Parcel A consists of a single family residence and Parcel B consists of a duplex residence. Parcel II consists of an old farmstead with a single family residence and barn. A CSM is being completed in conjunction with the stormwater management plan to create a single lot for the proposed development. The proposed development includes a multi-family residential building with underground parking, a driveway with parking stalls around the east and north side of the building, and a patio area. The site is required to meet the City of Madison new development standards.

Two underground infiltration facilities, two Up-Flo Filters, green roof over below ground parking, and an infiltration basin are proposed to meet applicable new development stormwater requirements. These stormwater devices will capture runoff from most of the proposed improvement area. The proposed stormwater improvements on the site incorporate site specific stormwater management for water quality, runoff rate control, and runoff volume to meet applicable requirements. The stormwater devices discharge on the west side of the property, matching the existing condition.

2.0 Existing Conditions

The site is bordered by Old Sauk Road to the south, a multi-family residential housing to the east, and single-family residential properties to the north and west. The existing site consists of residential houses, a barn, temporary structures, wooded area, and grass area. Redevelopment standards cannot be considered for the existing suburban residential development, so the site must meet new development standards.

The existing site has three drainage directions: the southeast to Old Sauk Road, the north towards Harvest Hill Road, and the west towards E Spyglass Ct. Most of the site drains west toward E Spyglass Ct. A driveway on the western side of the property creates a small kettle to the east, which holds runoff during small storm events. A low spot along Old Sauk Road occurs on the southwest side of the site. During flooding events, Old Sauk Road fills up and overtops to the north across the site. The site is part of the Stricker's/Mendota Watershed Study Report. The report shows that the site provides unintended storage during the 100-year storm event. Please refer to **Appendix A** for graphical representation of the site.

The native onsite soils are classified as Batavia silt loam (BbB) and Dresden silt loam (DsC2). BbB and DsC2 soils have a Hydrologic Soil Group (HSG) classification 'B'. HSG B soils have been assumed for predevelopment conditions and HSG C soils have been assumed for post-development conditions. Test pits were completed by CGC on March 21, 2024. The test pits generally show silty loam and silty clay loam over one or a mix of the following: sand, fine sand, and gravelly sand. A few test pits indicated lower layers with silt loam seams, which can be broken up with excavating/turning over the seams to improve the infiltration rate. Some test pits encountered redox, which is assumed to be the result of periodically infiltrating surface water and the restrictive permeability of the soils. No groundwater or bedrock was encountered in these test pits. Please refer to **Appendix B** for additional soils information.

NORTH

UP-FLO FILTER #1

UNDERGROUND INFILTRATION #1

UP-FLO FILTER #2

UNDERGROUND INFILTRATION #2

INFILTRATION BASIN

GREEN ROOF

GREEN ROOF

OLD SAUK ROAD

3.0 Design Criteria

Wisconsin Administrative Code
Department of Natural Resources (WDNR)
Chapter NR 151 & NR 216

Madison, WI – City Code of Ordinances
Chapter 37

4.0 Stormwater Management Analysis / Design

The proposed development includes the building with underground parking and sections of green roof, patio areas, a driveway with parking stalls, and sidewalk around the site. Please refer to **Appendix C** for the proposed plan set. The development proposes approximately 97,323 square feet of impervious area including green roof areas. The site is required to meet the City of Madison standards for new development. The following stormwater features are proposed:

Extensive Green roof areas are proposed on the south side of the building over the underground parking structure. Extensive green roofs have a curve number (CN) of 76. Green roofs provide sediment control and volume control. Drains in the green roof area will convey the runoff for up to the 10-year storm event to the underground infiltration facilities. Runoff beyond the 10-year storm event will flow south into Old Sauk Road.

Up-Flo Filter #1 is proposed to capture runoff from the driveway, parking stalls, and patio areas on the east side of the site. The Up-Flo Filter provides water quality treatment before discharging into Underground Infiltration Facility #1.

Underground Infiltration Facility #1 is proposed to capture the discharge from the eastern rooftop, the eastern green roof, and Up-Flo Filter #1. The Underground Infiltration Facility provides water quality treatment, runoff rate control, and volume control. A design infiltration rate of 0.5 in/hr has been used for the facility. The underground infiltration facility discharges into a private storm sewer system.

Up-Flo Filter #2 is proposed to capture runoff from the western driveway and northwest roof section. The Up-Flo Filter provides water quality treatment before discharging into Underground Infiltration Facility 2.

Underground Infiltration Facility #2 is proposed to capture the discharge from the southwestern rooftop area, a patio area, the western green roof, and Up-Flo Filter #2. The Underground Infiltration Facility provides water quality treatment, runoff rate control, and volume control. A design infiltration rate of 1.63 in/hr has been used for the facility. The underground infiltration facility discharges into a private storm sewer system.

An Infiltration Basin is proposed on the western side of the site and captures runoff from the patios on the western side of the building, the grass area, and overflow from Old Sauk Road. The infiltration basin provides water quality treatment, runoff rate control, and volume control. A design infiltration rate of 0.5 in/hr has been used for the facility. The infiltration basin discharges into a private storm sewer system.

The discharge for the private storm sewer system is on the western side of the site.

The maintenance agreement for the site stormwater management features can be found within **Appendix G**. Specifically, please note the following:

Management Report Required: Madison, WI – City Code of Ordinances, Chapter 37 – 37.09(1)

4.1 Water Quality

Sediment Control: Madison, WI – City Code of Ordinances, Chapter 37 – 37.09(3)(a)(1)

WinSLAMM (Version 10.4.1) has been used to analyze the water quality for this site. WinSLAMM is an approved model to run a continuous average annual rainfall for Madison (MSN 1981) using the NURP partial distribution. Two WinSLAMM models were created for the site.

The first model includes only the green roof area watersheds. The green roof areas are modeled as rooftops. This model is used to determine the TSS load from the watershed prior to the green roof control, which provides a reduction to the TSS load.

The second model includes the proposed site with the stormwater management practices. The green roofs have been modeled as "Large Landscape Areas". The bottom infiltration area of the infiltration basin has been modeled as a land use of "Water Body Areas" to not double count the infiltration provided by the basin. The required total suspended solids treatment is based on providing 80% reduction of the new development area. The models predicted the proposed development would produce 859.2 pounds of particulate. The site is required to provide an 80% reduction for a total suspended solids treatment of 687.3 pounds.

With the proposed treatment facilities, the model predicts that the site will provide a total site reduction in total suspended solids of 772.7 pounds. The infiltration basins are required to have pretreatment of 80% reduction of TSS from the pavement areas. The pretreatment is provided by Up-Flo Filter #1 and #2, which provide an 80.9% and 83.1% reduction respectively. Please refer to **Appendix F** for WinSLAMM modeling output and summary.

Oil and Grease Control: Madison, WI – City Code of Ordinances, Chapter 37 – 37.09(3)(b)

The oil and grease control for is designed to be provided by the Up-Flo Filter.

Thermal Control: Madison, WI – City Code of Ordinances, Chapter 37 – 37.09(3)(f)

The proposed development is not located in a thermally sensitive area.

Protective Areas: Madison, WI – City Code of Ordinances, Chapter 37 – 37.09(3)(g)

The proposed development is not located near any water resources covered under this section.

4.2 Storm Water Discharge Quantity

Runoff Rate Control: Madison, WI – City Code of Ordinances, Chapter 37 – 37.09(3)(c)(2)(a-g)

HydroCAD (version 10.20-2g) was used to model the stormwater system. HydroCAD uses the TR-55 method to calculate the runoff rate for the site, including the stormwater treatment system. The program has been setup so the CN are calculated separately rather than using a composite CN for each watershed so that the impervious and pervious areas are not averaged together.

The site is required to maintain predevelopment peak runoff rates for the 1-, 2-, 5-, 10-, 100-, and 200-year, 24-hour storm event. The predevelopment condition includes the small kettle created by the existing driveway on the wester side of the site. The post development condition includes the site with the proposed stormwater management facilities. The infiltration basin model has been modeled without underground storage or infiltration. Because the basin has been modeled without infiltration, the bottom infiltration area has been set to grass land use with a curve number of 74. Table 1 presents the predevelopment verses post development peak runoff rates for the three drainage directions and the overall site. The site is required to safely pass the 500-year, 24-hour storm event. In a 500-year storm event, the infiltration basin will continue to overflow west, similar to existing conditions. The inlet on the southeast corner of the site will overflow into Old Sauk Road. The inlets along the northern pavement edge will overflow north between houses to St Andrews Circle. The trench drain will overflow to the underground parking area. Please refer to **Appendix D and Appendix E** for predevelopment and post development HydroCAD output and watershed maps.

Table 1: Predevelopment and post development peak runoff rates.

Rainfall for each 24-hour storm event (inches)		Old Sauk Rd (southeast)		Harvest Hill Rd		E Spyglass Ct		Entire Site	
		Pre	Post	Pre	Post	Pre	Post	Pre	Post
1-year	2.49	0.31	0.14	0.34	0.13	0.07	0.07	0.66	0.59
2-year	2.84	0.37	0.17	0.43	0.19	0.12	0.10	0.79	0.78
5-year	3.45	0.47	0.22	0.69	0.31	0.31	0.16	1.20	1.14
10-year	4.09	0.58	0.28	1.04	0.44	0.61	0.23	1.87	1.55
100-year	6.66	1.07	0.54	2.78	1.04	2.33	1.70	5.53	4.33
200-year	7.53	1.24	0.63	3.45	1.26	3.03	2.90	6.97	5.49

Runoff Rate Control: Madison, WI – City Code of Ordinances, Chapter 37 – 37.09(3)(c)(2)(h)

The site is required to provide the pre-existing detention volumes for the 100-year storm event in addition to the volume required to meet the pre- to post-rate controls. The Stricker's/Mendota Watershed Study used SWMM modeling to determine max water surface elevations for the 100-year storm event. The max water surface elevations were compared to the Dane County 1-ft contours to calculate the volume of storage the site provides during the 100-year storm event. The existing site provides approximately 30,327 cubic feet of storage. The existing storage calculated includes the storage provided within the kettle. The storage provided in the kettle was

also included in the site pre-development HydroCAD model. Including the kettle storage volume in both calculations, slightly overestimates storage volume requirements for the site.

The proposed site has storage capacity from the two underground infiltration basins and the infiltration basin on the west side of the site. Only the infiltration basin has been included in the storage calculations because the underground storage is not accessible to the offsite runon. The infiltration basin provides storage volume for the onsite area that drains to the basin. The volume stored for the 100-year storm event for the onsite area has been removed from the total storage of volume of the basin to calculate the additional storage available for the 100-year storm event. Table 2 shows the storage within the infiltration basin.

Table 2: Proposed infiltration basin storage.

Pre-Existing Detention for 100-Yr Storm Event (cf)			30,327
	Total Storage (cf)	Storage Used for 100-Yr Storm Event (cf)	Storage Available for 100-Yr Storm Event (cf)
Infiltration Basin	33,500	3,097	30,403

Runoff Rate Control: Madison, WI – City Code of Ordinances, Chapter 37 – 37.09(3)(c)(5)

The development is proposing to continue existing drainage patterns and discharge stormwater west. The downstream property is not under the applicant's control nor is the property under the control of the City of Madison. The site is required to match the existing volumetric discharges from the site area to the adjacent property in the 1-, 2-, 5-, and 10-year storm events.

The HydroCAD models were used to calculate the pre- and post-development runoff volume to the western discharge location. The pre-development runoff volume includes the runoff from the western watershed and the kettle. The post-development runoff volume includes the runoff from stormwater facilities and the western edge of the property, which does not receive treatment. Table 3 presents the pre- and post-development runoff volumes.

Table 3: Pre- and post-development runoff volumes.

		HydroCAD Pre-Development Runoff Volume (cf)	HydroCAD Post Development Runoff Volume (cf)
1-year	2.49	618	326
2-year	2.84	953	782
5-year	3.45	1707	1662
10-year	4.09	2695	2674

Outlets: Madison, WI – City Code of Ordinances, Chapter 37 – 37.09(3)(d)

A level spreader is proposed at the discharge location for the private site storm sewer on the western side of the property.

Infiltration: Madison, WI – City Code of Ordinances, Chapter 37 – 37.09(3)(e)

WinSLAMM (Version 10.4.1) has been used to analyze the water quantity for this site. The same models as described and used in the total suspended solids calculations were also used for the infiltration calculations. The site is required to provide 90% of the pre-development infiltration volume, based on an average annual rainfall.

The pre-development runoff volume tool was used to calculate the pre-development runoff volume. The CN was set to the predevelopment soils CN of 61 and 55 for the Grass and Woods areas respectively. The model predicted 2,859 cubic feet of runoff from the pre-development area. This amount of runoff is equivalent to 383,735 cubic feet of stay-on. The site is required to provide 90% of this existing stay-on or 345,362 cubic feet.

The first model includes only the green roof area watersheds. The green roof areas are modeled as rooftops. This model is used to determine the runoff volume from the watershed prior to the green roof control, which provides a reduction to the runoff volume.

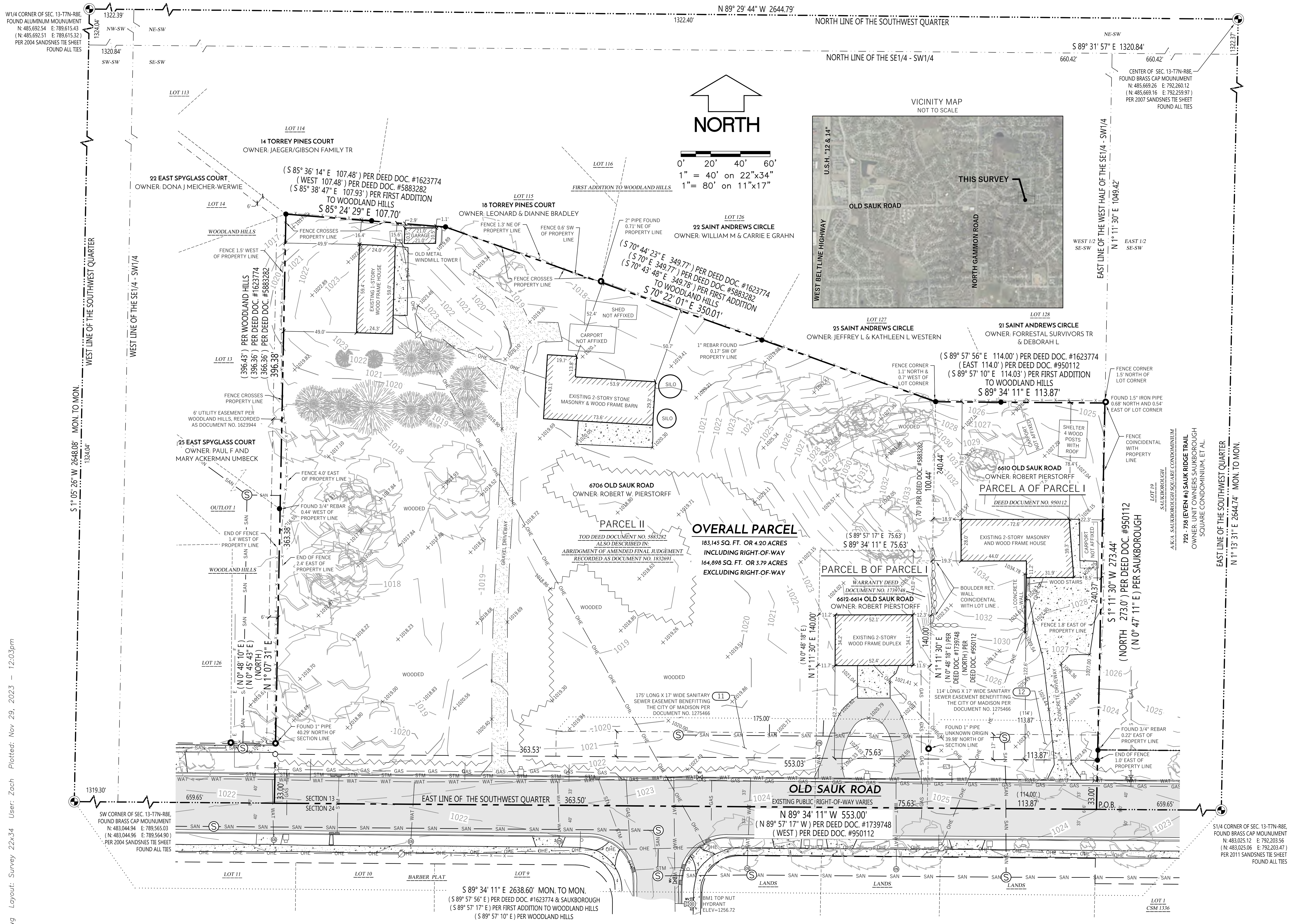
The second model includes the proposed site with the stormwater management practices. The green roofs have been modeled as landscape areas. The model with the treatment facilities predicted the runoff from the entire site would be 10,110 cubic feet and 376,484 cubic feet of stay-on. Please refer to **Appendix F** for WinSLAMM modeling output and summary.

5.0 Conclusion

Post Development BMP's for stormwater management have been designed in accordance with applicable requirements of the City of Madison City Code of Ordinance and Wisconsin Administrative Code. Stormwater runoff generated by the proposed development area will be collected within green roofs, Up-Flo Filters, underground infiltration facilities, and an infiltration basin to provide water quality treatment, runoff rate control, and volume control for the site per applicable new development requirements.

APPENDIX A

Existing Conditions



LEGEND

- FOUND PLSS MONUMENT TYPE NOTED
- FOUND 1" IRON PIPE, UNLESS NOTED OTHERWISE
- FOUND 3/4" REBAR, UNLESS NOTED OTHERWISE
- 3/4" REBAR SET 1.50 LB/FT
- SIGN
- MAILBOX
- SANITARY MANHOLE
- GAS VALVE
- CURB STOP
- FIRE HYDRANT
- WATER VALVE
- INLETS
- UTILITY POLE
- ELECTRICAL METER
- LIGHT POLE
- CONIFEROUS TREE
- DECIDUOUS TREE
- PROPERTY LINE
- PLATTED LINE
- RIGHT-OF-WAY LINE
- CENTERLINE
- SECTION LINE
- QUARTER-QUARTER LINE
- EASEMENT LINE
- BUILDING FOOTPRINT
- EDGE OF CONCRETE
- EDGE OF ASPHALT
- STONE WALL
- EDGE OF WOODS
- SAN — SAN SANITARY SEWER
- WAT — WAT WATER MAIN
- STM — STM STORM SEWER
- GAS — GAS NATURAL GAS LINE
- COMM — COMM COMMUNICATION LINE
- E — E ELECTRIC LINE
- OHE — OHE OVERHEAD ELECTRIC LINE
- GRAVEL
- ASPHALT PAVEMENT
- CONCRETE PAVEMENT
- 1025 CONTOUR MAJOR
- 1026 CONTOUR MINOR

GENERAL NOTES

1. FIELD WORK PERFORMED BY WYSER ENGINEERING, LLC. THE WEEKS OF JUNE 26, JULY 3RD, 10TH, & 24TH, 2023.
2. NORTH REFERENCE FOR THIS EXISTING CONDITIONS SURVEY AND MAP ARE BASED ON THE WISCONSIN COORDINATE REFERENCE SYSTEM, NAD 83 (2011) WISCRS DANE, GRID NORTH. THE SOUTH LINE OF THE SOUTHWEST QUARTER OF SECTION 13-T7N-R8E BEAR N 89°34' 11" W
3. ELEVATIONS ARE BASED ON THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88)(12(B) ADJ).
4. SUBSURFACE UTILITIES AND FIXTURES SHOWN ON THIS MAP HAVE BEEN APPROXIMATED BY LOCATING SURFACE FEATURES AND ACCESSORIES, DIGGERS HOTLINE FIELD MARKINGS AND EXISTING MAPS AND RECORDS.
5. BEFORE EXCAVATION, APPROPRIATE UTILITY COMPANIES SHOULD BE CONTACTED. FOR EXACT LOCATION OF UNDERGROUND UTILITIES, CONTACT DIGGERS HOTLINE, AT 1.800.242.8511 OR 811
6. THIS PARCEL IS SUBJECT TO ALL EASEMENTS AND AGREEMENTS, BOTH RECORDED AND UNRECORDED.
7. FEATURES HAVE BEEN LOCATED BY SURVEYOR IN FIELD THAT MAY HAVE ADVERSE TITLE ELEMENTS. AS TO WHICH ELEMENT- ENCROACHMENT, CLAIM OF UNRECORDED EASEMENT, PRESCRIPTIVE EASEMENT, AND SO FORTH CAN NOT BE DETERMINED BY SURVEYOR.

NOTES REGARDING ALTA TABLE A REQUIREMENTS

ITEM 3: ALL OF THE SUBJECT PARCEL LIES IN "ZONE X" AREAS DETERMINED TO BE BELOW THE 0.2% ANNUAL CHANCE FLOODPLAIN PER NATIONAL FLOOD INSURANCE PROGRAM, FLOOD INSURANCE RATE MAP NO. 55025C0403G DATED JANUARY 1, 2009.

ITEM 9: NO DESIGNATED PARKING STALLS WERE OBSERVED ON THE SUBJECT PARCEL AT THE TIME OF THIS SURVEY.

ITEM 11(a): NO PLANS OR REPORTS WERE PROVIDED BY THE CLIENT. DIGGER'S HOTLINE WAS CALLED TO MARK UTILITIES.

ITEM 16: THERE WAS NO EVIDENCE OF EARTHWORK OR BUILDING CONSTRUCTION AT THE TIME OF THIS SURVEY.

NOTES REGARDING SCHEDULE B - PART II

PER TITLE COMMITMENT FILE NO. NCS-1179641-MAD DATED: MAY 16, 2023 AT 7:30 A.M.

(1) ANY FACTS, RIGHTS, INTERESTS, OR CLAIMS THAT ARE NOT SHOWN BY THE PUBLIC RECORDS BUT THAT COULD BE ASCERTAINED BY AN INSPECTION OF THE LAND OR BY MAKING INQUIRE OF PERSONS IN POSSESSION OF THE LAND.

(2) EASEMENTS, CLAIMS OF EASEMENTS OR ENCUMBRANCES THAT ARE NOT SHOWN BY THE PUBLIC RECORDS.

(3) ANY ENCROACHMENT, ENCUMBRANCE, VIOLATION, VARIATION, OR ADVERSE CIRCUMSTANCE AFFECTING THE TITLE INCLUDING DISCREPANCIES, CONFLICT IN BOUNDARY LINES, SHORTAGES IN AREA, OR ANY OTHER FACTS THAT WOULD BE DISCLOSED BY AN ACCURATE AND COMPLETE LAND SURVEY OF THE LAND, AND THAT ARE NOT SHOWN BY THE PUBLIC RECORDS.

ONE OF THESE ITEMS 1-3 MAY AFFECT THE SUBJECT PROPERTY AND IS PLOTTED HEREON. AS TO WHICH ADVERSE TITLE ELEMENT, CLAIM OF EASEMENT, ENCROACHMENT OR ETC. CANNOT BE DETERMINED BY SURVEYOR.

(11) SEWER EASEMENT TO THE CITY OF MADISON, A MUNICIPAL CORPORATION, DATED SEPTEMBER 17, 1970, RECORDED/FILED OCTOBER 16, 1970 IN VOLUME 207 OF RECORDS, PAGE 201 AS DOCUMENT NO. 1275466.

THIS ITEM DOES AFFECT THE SUBJECT PARCEL AND IS PLOTTED HEREON

(12) SEWER EASEMENT TO THE CITY OF MADISON, A MUNICIPAL CORPORATION, DATED SEPTEMBER 17, 1970, RECORDED/FILED OCTOBER 16, 1970 IN VOLUME 207 OF RECORDS, PAGE 204 AS DOCUMENT NO. 1275467.

THIS ITEM DOES AFFECT THE SUBJECT PARCEL AND IS PLOTTED HEREON

LEGAL DESCRIPTION AS FURNISHED

PER TITLE COMMITMENT FILE NO. NCS-1181649-MAD DATED: JUNE 05, 2023 AT 7:30 A.M.

PARCEL I:

PARCEL A: PART OF THE WEST 1/2 OF THE SOUTHEAST 1/4 OF THE SOUTHWEST 1/4, SECTION 13, TOWNSHIP 7 NORTH, RANGE 8 EAST, CITY OF MADISON, DANE COUNTY, WISCONSIN, MORE PARTICULARLY DESCRIBED AS FOLLOWS: BEGINNING AT THE SOUTHEAST CORNER OF SAID WEST 1/2 OF THE SOUTHEAST 1/4 OF THE SOUTHWEST 1/4; THENCE NORTH ALONG THE EAST LINE OF SAID WEST 1/2 273.0 FEET TO AN IRON STAKE; THENCE WEST PARALLEL TO THE SOUTH LINE OF SAID SECTION 114.0 FEET; THENCE SOUTH PARALLEL TO THE EAST LINE OF SAID WEST 1/2 273.0 FEET TO THE SOUTH LINE OF SAID SECTION; THENCE EAST ALONG SOUTH LINE 114.0 FEET TO THE POINT OF BEGINNING, EXCEPT THE SOUTH 33 FEET FOR OLD SAUK ROAD.

PARCEL B: PART OF THE SOUTHEAST 1/4 OF THE SOUTHWEST 1/4 OF SECTION 13, TOWNSHIP 7 NORTH, RANGE 8 EAST, IN THE CITY OF MADISON, DANE COUNTY, WISCONSIN, MORE PARTICULARLY DESCRIBED AS FOLLOWS: COMMENCING AT THE SOUTHWEST CORNER OF SAID SECTION 13; THENCE SOUTH 89° 57' 17" EAST ALONG THE SOUTH LINE OF SAID SECTION, 1865.08 FEET TO THE POINT OF BEGINNING OF THIS DESCRIPTION; THENCE NORTH 0° 48' 18" EAST, 173.00 FEET; THENCE NORTH 89° 57' 17" WEST, 75.63 FEET; THENCE SOUTH 0° 48' 18" WEST, 173.00 FEET TO THE SOUTH LINE OF SAID SECTION; THENCE SOUTH 89° 57' 17" EAST, 75.63 FEET TO THE POINT OF BEGINNING, EXCEPT THE SOUTH 33 FEET FOR OLD SAUK ROAD.

FOR INFORMATIONAL PURPOSES ONLY:
PROPERTY ADDRESS: 6610, 6612, 6614 OLD SAUK ROAD, MADISON, WI 53705
TAX PARCEL NO. 251/0708-133-1501-1

PARCEL II:

PART OF THE SOUTHWEST 1/4 OF THE SECTION 13, TOWNSHIP 7 NORTH, RANGE 8 EAST, IN THE CITY OF MADISON, MORE PARTICULARLY DESCRIBED AS FOLLOWS: BEGINNING 849.63 FEET WEST OF THE SOUTH 1/4 CORNER; THENCE NORTH 00° 48' 18" EAST, 173 FEET; THENCE SOUTH 89° 57' 17" EAST, 75.63 FEET; THENCE NORTH 00° 48' 18" EAST, 70 FEET; THENCE NORTH 70° WEST, 349.77 FEET; THENCE WEST 107.48 FEET; THENCE SOUTH 366.36 FEET; THENCE EAST 356.37 FEET TO THE POINT OF BEGINNING, EXCEPT THE SOUTH 33 FEET FOR OLD SAUK ROAD.

FOR INFORMATIONAL PURPOSES ONLY:
PROPERTY ADDRESS: 6706 OLD SAUK ROAD, MADISON, WI 53705 TAX PARCEL NO. 251/0708-133-1502-9

LEGAL DESCRIPTION AS SURVEYED

OVERALL PARCEL:

A PARCEL OF LAND, BEING LOCATED IN THE WEST HALF OF THE SOUTHEAST QUARTER OF THE SOUTHWEST QUARTER OF SECTION 13, TOWNSHIP 7 NORTH, RANGE 8 EAST, ALL IN THE CITY OF MADISON, DANE COUNTY, WISCONSIN, MORE PARTICULARLY DESCRIBED AS FOLLOWS:

COMMENCING AT THE SOUTH QUARTER CORNER OF AFORESAID SECTION 13, THENCE ALONG THE SOUTH LINE OF THE SOUTHWEST QUARTER OF SAID SECTION 13, NORTH 89 DEGREES 34 MINUTES 11 SECONDS WEST, 659.65 FEET TO THE SOUTHEAST CORNER OF THE WEST HALF OF THE THE SOUTHEAST QUARTER OF THE SOUTHWEST QUARTER OF SAID SECTION 13, ALSO BEING THE POINT OF BEGINNING;

THENCE CONTINUING ALONG THE SOUTH LINE OF SAID SOUTHWEST QUARTER OF SECTION 13, NORTH 89 DEGREES 34 MINUTES 11 SECONDS WEST, 553.00 FEET TO A SOUTHERLY EXTENSION OF THE EAST LINE OF WOODLAND HILLS, RECORDED IN VOLUME 51 OF PLATS ON PAGES 21-22 AS DOCUMENT NO. 1623944; THENCE ALONG THE EXTENSION OF AND THEN THE EAST LINE OF SAID WOODLAND HILLS, NORTH 01 DEGREES 07 MINUTES 31 SECONDS EAST, 396.38 FEET TO THE NORTHEAST CORNER OF LOT 13 OF SAID WOODLAND HILLS, ALSO BEING A POINT ON THE SOUTHERLY LINE OF FIRST ADDITION TO WOODLAND HILLS, RECORDED IN VOLUME 54 OF PLATS ON PAGE 44 AS DOCUMENT NO. 1835505; THENCE ALONG SAID SOUTHERLY LINE OF FIRST ADDITION TO WOODLAND HILLS, SOUTH 85 DEGREES 24 MINUTES 29 SECONDS EAST, 107.70 FEET; THENCE CONTINUING ALONG SAID SOUTHERLY LINE, SOUTH 70 DEGREES 22 MINUTES 01 SECONDS EAST, 350.00 FEET TO THE NORTHWEST CORNER OF LANDS DESCRIBED IN A DEED RECORDED IN VOLUME 672 ON PAGE 413 AS DOCUMENT NO. 950112; THENCE, CONTINUING ALONG SAID SOUTHERLY LINE OF FIRST ADDITION TO WOODLAND HILLS, AND ALONG THE NORTH LINE OF SAID LANDS DESCRIBED IN DOCUMENT NO. 950112, SOUTH 89 DEGREES 34 MINUTES 11 SECONDS EAST, 113.87 FEET TO A POINT ON THE AFORESAID EAST LINE OF THE WEST HALF OF THE THE SOUTHEAST QUARTER OF THE SOUTHWEST QUARTER OF SECTION 13, ALSO BEING THE SOUTHEAST CORNER OF SAID FIRST ADDITION TO WOODLAND HILLS, ALSO BEING THE NORTHEAST CORNER OF SAID LANDS DESCRIBED IN DOCUMENT NO. 950112, AND ALSO BEING A POINT ON THE WEST LINE OF SAUKBOROUGH, RECORDED IN VOLUME 54 OF PLATS ON PAGE 42 AS DOCUMENT NO. 1832941; THENCE ALONG THE EAST LINE OF SAID LANDS DESCRIBED IN DOCUMENT NO. 950112, SAID WEST LINE OF SAUKBOROUGH, AND THE EAST LINE OF SAID WEST HALF, SOUTH 01 DEGREES 11 MINUTES 30 SECONDS WEST, 273.44 FEET BACK TO THE POINT OF BEGINNING

SAID PARCEL CONTAINS 183,145 SQUARE FEET OR 4.20 ACRES INCLUDING OLD SAUK ROAD RIGHT-OF-WAY.
SAID PARCEL CONTAINS 164,896 SQUARE FEET OR 3.79 ACRES EXCLUDING OLD SAUK ROAD RIGHT-OF-WAY.

BENCHMARK TABLE

BM - #	ELEVATION	DESCRIPTION
BM - 1	1026.72	TOP NUT OF HYDRANT AT SW QUADRANT OF OLD SAUK ROAD AND SAN JUAN TRAIL
BM - 2	1026.56	TOP NUT OF HYDRANT 350' WEST OF SITE AT SW QUADRANT OF OLD SAUK ROAD AND EVERGLADE DRIVE
BM - 3	1026.21	TOP NUT OF HYDRANT 250' EAST OF SITE AT SW QUADRANT OF OLD SAUK ROAD AND YOSEMITE PLACE

SURVEYORS CERTIFICATE

TO: WILLIAM BUTCHER, ERIC WELCH, MICAH NICHOLES, LOU ELSON, ROBERT PIERSTORFF, AND FIRST AMERICAN TITLE INSURANCE COMPANY

THIS IS TO CERTIFY THAT THIS MAP OR PLAT AND THE SURVEY ON WHICH IT IS BASED WERE MADE IN ACCORDANCE WITH THE 2021 MINIMUM STANDARD DETAIL REQUIREMENTS FOR ALTA/NSPS LAND TITLE SURVEYS, JOINTLY ESTABLISHED AND ADOPTED BY ALTA AND NSPS, AND INCLUDES ITEMS 1, 2, 3, 4, 7(a), 7(b)(1), 7(b)(2), 8, 9, 11(a), 13, 14, 16, AND 19 OF TABLE A THEREOF.

THE FIELD WORK WAS COMPLETED BETWEEN JUNE 26 - JULY 26, 2023
DATE OF PLAT OR MAP: JULY, 14, 2023.

IN ACCORDANCE WITH SECTION 3.B OF THE 2021 MINIMUM STANDARD DETAIL REQUIREMENTS FOR ALTA/NSPS LAND TITLE SURVEYS, ADDITIONAL CERTIFICATION BELOW TO FULFILL WISCONSIN ADMINISTRATIVE CODE, A-E 7 - MINIMUM STANDARDS FOR PROPERTY SURVEYS IN WISCONSIN. ITEM A-E 7.05(8) I, ZACHARY M. REYNOLDS, WISCONSIN PROFESSIONAL LAND SURVEYOR S-3223, DO HEREBY CERTIFY THAT THIS SURVEY AND MAP IS CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF WITH THE INFORMATION PROVIDED, BY THE ORDER OF THOSE LISTED HEREON, AND THAT THIS SURVEY COMPLIES WITH A-E 7 OF THE WISCONSIN ADMINISTRATIVE CODE.

ZACHARY M. REYNOLDS, S-3223
WISCONSIN PROFESSIONAL LAND SURVEYOR

WISCONSIN PROFESSIONAL LAND SURVEYOR — ZACHARY M. REYNOLDS S-3223 MOUNT HOREB WISCONSIN

WYSER ENGINEERING

PREPARED BY: 300 EAST FRONT STREET MOUNT HOREB, WI 53572 www.wyserengineering.com

PREPARED FOR: MR. WILLIAM BUTCHER 827 E. WASHINGTON AVE. MADISON, WI 53703

SURVEYED BY: MAL-DZ
DRAWN BY: ZMR
APPROVED BY: WPW

6610 OLD SAUK ROAD
MADISON, WI 53705

UPLATTED LANDS LOCATED IN PART OF THE WEST HALF OF THE SE1/4 - SW1/4 OF SECTION 13 - T7N - R8E CITY OF MADISON, DANE COUNTY, WI

Sheet Title: **ALTA/NSPS LAND TITLE SURVEY**

Revisions:

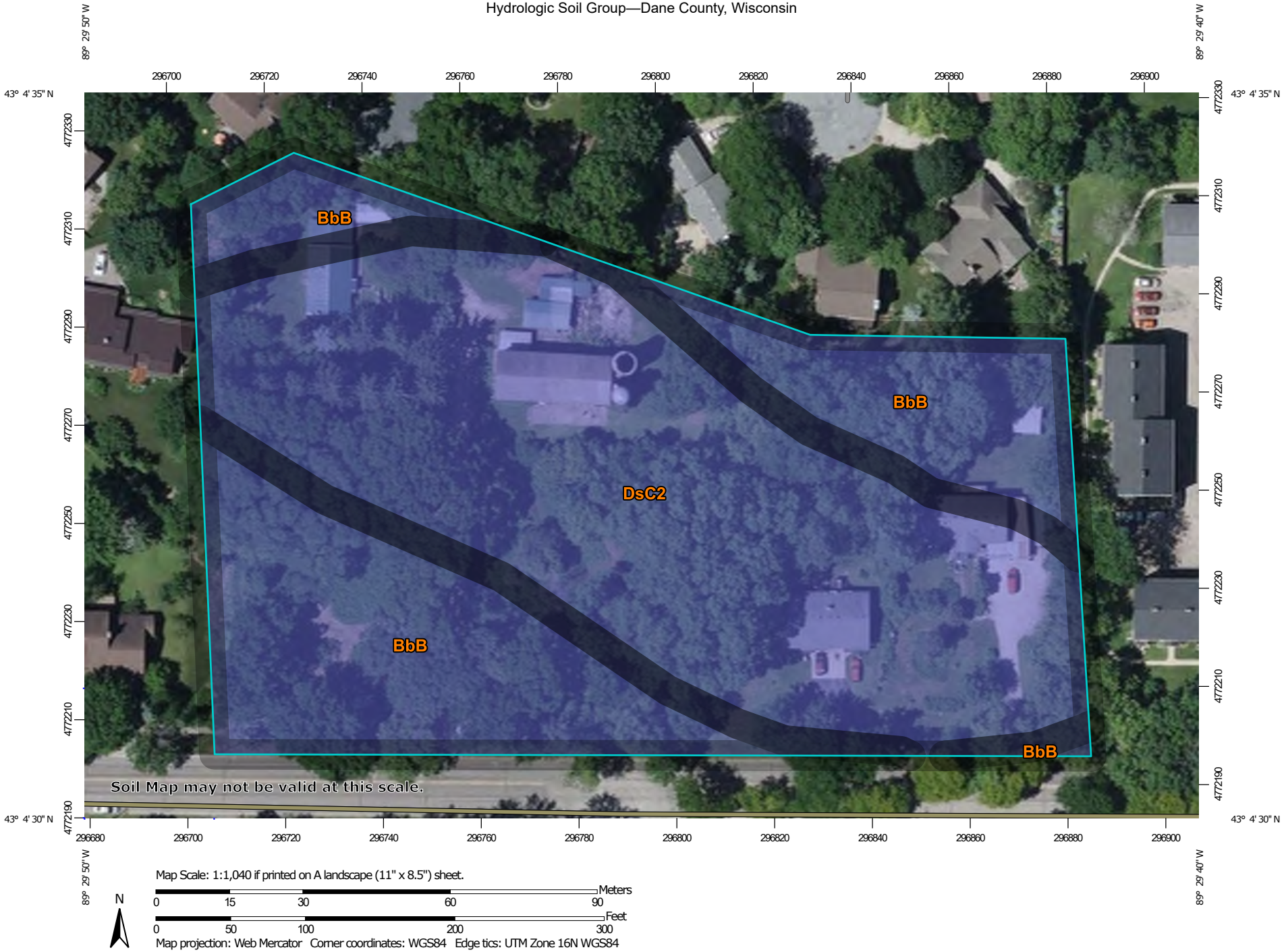
No.	Date:	Description:

Graphic Scale	0' 10' 20' 40' 60'
Wyser Number	23-1085
Set Type	SURVEY
Date Issued	07/28/2023
Sheet Number	V-001

File: W:\2023\231085_Butcher - 6706-6614 Old Sauk Road\dwg\231085_ExCon.dwg Layout: Survey 22x34 User: Zach Plotted: Nov 29, 2023 - 12:03pm

APPENDIX B

Soils Information


89° 29' 50" W
89° 29' 40" W
43° 4' 35" N
43° 4' 30" N
296700
296720
296740
296760
296780
296800
296820
296840
296860
296880
296900
296680
4772330
4772310
4772290
4772270
4772250
4772230
4772210
4772190
BbB
DsC2
Soil Map may not be valid at this scale.
Map Scale: 1:1,040 if printed on A landscape (11" x 8.5") sheet.
N
Meters
0 15 30 60 90
Feet
0 50 100 200 300
Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 16N WGS84

MAP LEGEND

Area of Interest (AOI)

Area of Interest (AOI)

Soils

Soil Rating Polygons

A

A/D

B

B/D

C

C/D

D

Not rated or not available

Soil Rating Lines

A

A/D

B

B/D

C

C/D

D

Not rated or not available

Soil Rating Points

A

A/D

B

B/D

C

C/D

D

Not rated or not available

Water Features

Streams and Canals

Transportation

Rails

Interstate Highways

US Routes

Major Roads

Local Roads

Background

Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:15,800.

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

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

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

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

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

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

Soil Survey Area: Dane County, Wisconsin
Survey Area Data: Version 22, Sep 8, 2023

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

Date(s) aerial images were photographed: Jun 13, 2020—Jul 31, 2020

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

Hydrologic Soil Group

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
BbB	Batavia silt loam, gravelly substratum, 2 to 6 percent slopes	B	1.8	39.7%
DsC2	Dresden silt loam, 6 to 12 percent slopes, eroded	B	2.7	60.3%
Totals for Area of Interest			**4.4**	**100.0%**

Description

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The soils in the United States are assigned to four groups (A, B, C, and D) and three dual classes (A/D, B/D, and C/D). The groups are defined as follows:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

If a soil is assigned to a dual hydrologic group (A/D, B/D, or C/D), the first letter is for drained areas and the second is for undrained areas. Only the soils that in their natural condition are in group D are assigned to dual classes.

Rating Options

Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

Tie-break Rule: Higher

NORTH

TP: 1
N:483119.38
E:791036.99
EL: 1018.60

TP: 2
N:483170.55
E:791038.75
EL: 1018.08

TP: 3
N:483245.24
E:791043.04
EL: 1017.56

TP: 4
N:483355.71
E:791022.56
EL: 1022.80

TP: 5
N:483388.58
E:791090.50
EL: 1021.61

TP: 6
N:483325.96
E:791164.13
EL: 1020.05

TP: 7
N:483261.61
E:791192.90
EL: 1019.20

TP: 8
N:483329.80
E:791263.33
EL: 1019.15

TP: 9
N:483290.80
E:791331.40
EL: 1025.21

TP: 10
N:483281.05
E:791406.41
EL: 1029.98

TP: 11
N:483257.88
E:791525.10
EL: 1027.13

TP: 12
N:483106.40
E:791526.31
EL: 1024.79

SB: 20
N:483092.06
E:791077.37
EL: 1019.46

SB: 21
N:483093.73
E:791224.58
EL: 1019.63

SB: 22
N:483089.70
E:791337.72
EL: 1020.37

SB: 23
N:483089.28
E:791468.43
EL: 1023.57

SB: 24
N:483183.50
E:791461.67
EL: 1033.85

SB: 25
N:483182.50
E:791362.82
EL: 1023.65

SB: 26
N:483188.54
E:791220.73
EL: 1018.75

SB: 27
N:483274.95
E:791305.36
EL: 1024.11

SB: 28
N:483300.92
E:791139.48
EL: 1019.87

SB: 29
N:483334.24
E:791067.43
EL: 1022.59

SB: 30
N:483192.67
E:791080.63
EL: 1017.94

OLD SAUK ROAD

WYSER ENGINEERING

6610 OLD SAUK ROAD
MADISON, WI 53705

OLD SAUK ROAD APARTMENTS

CITY OF MADISON, DANE COUNTY, WI

Sheet Title:
SOIL BORING AND TEST PIT GRAPHIC – EXISTING BACKGROUND

Revisions:

No.	Date:	Description:

Graphic Scale	0' 5' 10' 20' 30'
Wyser Number	23-1085
Set Type	SCHEMATIC
Date Issued	03/15/2024
Sheet Number	EXHIBIT

File: \\WYSERSERVER2\Wyser Engineering\2023\231085_Butcher - 6706-6614 Old Sauk Road\dwg\231085_SWMP_no offsite pipe use.dwg Layout: EX (2) User: Kate Plotted: Mar 18, 2024 - 7:07am

Division of Industry Services
P.O. Box 2658
Madison, Wisconsin 53701

Attachment 2:

SOIL AND SITE EVALUATION - STORM

In accordance with SPS 382.365, 385, Wis. Adm. Code, and WDNR Standard 1002

Attach a complete site plan on paper not less than 8 ½ x 11 inches in size. Plan must include, but not limited to: vertical and horizontal reference point (BM), direction and percent of slope, scale or dimensions, north arrow, and BM referenced to nearest road ***Please print all information*** Personal information you provide may be used for secondary purposes [Privacy Law, s. 15.04(1)(m)]	County Dane Parcel I.D. 251/0708-133-1502-9 Reviewed by: Date:

Property Owner [current owner]		Property Location Govt. Lot SE ¼ SW ¼ S 13 T 7 N R 8 E	
Property Owner's Mail Address 6610 Old Sauk Rd		Lot #	Block# / Subd. Name or CSM #
City / State / Zip Code / Phone Number Madison WI 53705		[X] City [ ] Village [ ] Town Madison	Nearest Road 6706 Old Sauk Rd
Drainage area _____ [ ] sq ft [ ] acres Test site suitable for (check all that apply): [ ] Site not suitable; [ ] Bioretention; [ ] Subsurface Disperal System; [ ] Reuse; [ ] Irrigation; [ ] Other _____		Hydraulic Application Test Method [X] Morphological Evaluation [ ] Double Ring Infiltrometer [ ] Other: (specify) _____	Soil Moisture Date of soil borings: _____ USDA-NRCS WETS Value: [ ] Dry = 1; [ ] Normal = 2; [ ] Wet = 3.

TP-1 #OBS. [X] Pit [ ] Boring Ground surface elevation 1018.6 ft. Elevation of limiting factor <1003.6 ft.

Horizon	Approx. Depth in.	Dominant Color Munsell	Redox Description Qu. Sz. Cont. Color	Texture	Structure Gr. Sz. Sh.	Consistence	Boundary	% Rock Frags.	% Fines (P200)	Hydraulic App Rate Inches/Hr
1	0-16	10YR 4/1	none	SiL	1msbk	mfr	gs	<5		0.13
2	16-72	10YR 5/4	none	SiCL	2msbk	mfi	gs	<5		0.04
3	72-78	10YR 5/4	c2d 10YR 6/1	SiCL	2msbk	mfi	gs	<5		0.04
4	78-114	10YR 7/1	c2p 10YR 6/8	SiL	2mabk	mfr	gs	<5		0.13
5	114-144	10YR 7/3	none	FS, SiL Seams	0sg	ml	gs	<10		0.13-0.50(1)
6	144-180	10YR 7/3	none	VGRS to XGRS	0sg	ml	n/a	50-70		3.60

Comments: Groundwater was not encountered during or upon the completion of excavating. Redox in Horizons 3 and 4 is assumed to be a result of periodically infiltrating surface water and the restrictive permeability of these soils.

(1) Vertical infiltration rate is expected to be controlled by scattered silt loam seams, but can likely be improved by excavating/turning over the granular deposit to break up the lower-permeability seams; samples should be collected during construction to check that the texture of the blended soil is consistent with the design infiltration rate.

Overall Site Comments: See Comments above and Stormwater Infiltration Potential section in our *Geotechnical Exploration Report* (CGC Project No. C24126; dated….).

Name (Please Print) Tim F. Gassenheimer	Signature		Credential Number SP-011900004
Address 129 Milky Way, Madison, WI 53718		Date Evaluation Conducted March 21, 2024	Telephone Number (608) 288-4100

TP-2 #OBS. [X] Pit [ ] Boring Ground surface elevation 1018.1 ft. Elevation of limiting factor <1003.1 ft.

Horizon	Approx. Depth in.	Dominant Color Munsell	Redox Description Qu. Sz. Cont. Color	Texture	Structure Gr. Sz. Sh.	Consistence	Boundary	% Rock Frags.	% Fines (P200)	Hydraulic App Rate Inches/Hr
1	0-16	10YR 4/2	none	SiL	1msbk	mvfr	gs	<5		0.13
2	16-36	10YR 6/3	none	SiCL	0m	mvfi	gs	<5		0.04
3	36-84	10YR 6/3	c2d 10YR 7/1	SiCL	0m	mvfi	gs	<5		0.04
4	84-120	10YR 7/1	c2p 10YR 5/6	SiL	2cabk	mfr	gs	<5		0.13
5	120-144	10YR 7/3	none	VGRLS	0sg	ml	gw	40-50		1.63
6	144-180	10YR 8/1	none	FS	0sg	ml	n/a	<10		0.50

Comments: Groundwater was not encountered during or upon the completion of excavating. Redox in Horizons 3 and 4 is assumed to be a result of periodically infiltrating surface water and the restrictive permeability of these soils.

TP-3 #OBS. [X] Pit [ ] Boring Ground surface elevation 1017.6 ft. Elevation of limiting factor <1002.6 ft.

Horizon	Approx. Depth in.	Dominant Color Munsell	Redox Description Qu. Sz. Cont. Color	Texture	Structure Gr. Sz. Sh.	Consistence	Boundary	% Rock Frags.	% Fines (P200)	Hydraulic App Rate Inches/Hr
1	0-12	10YR 4/1	none	SiL	2msbk	mfr	gs	<5		0.13
2	12-78	10YR 5/4	none	SiCL	2msbk	mfi	gs	<5		0.04
3	78-108	10YR 7/1	c2d 10YR 6/8	SiL	3mabk	mfr	gs	<5		0.13
4	108-132	10YR 7/3	none	XGRS	0sg	ml	gs	70-80		3.60
5	132-180	10YR 8/2	none	LFS, SiL Seams	0sg	ml	n/a	<5		0.13-0.50(1)

Comments: Groundwater was not encountered during or upon the completion of excavating. Redox in Horizon 3 is assumed to be a result of periodically infiltrating surface water and the restrictive permeability of these soils.

(1) Vertical infiltration rate is expected to be controlled by scattered silt loam seams, but can likely be improved by excavating/turning over the granular deposit to break up the lower-permeability seams; samples should be collected during construction to check that the texture of the blended soil is consistent with the design infiltration rate.

TP-4 #OBS. [X] Pit [ ] Boring Ground surface elevation 1022.8 ft. Elevation of limiting factor <1007.8 ft.

Horizon	Approx. Depth in.	Dominant Color Munsell	Redox Description Qu. Sz. Cont. Color	Texture	Structure Gr. Sz. Sh.	Consistence	Boundary	% Rock Frags.	% Fines (P200)	Hydraulic App Rate Inches/Hr
1	0-12	10YR 2/1	none	L	1msbk	mvfr	gs	<10		0.24
2	12-38	10YR 6/4	none	LFS	0sg	ml	gs	<10		0.50
3	38-90	10YR 7/3	none	XGRS	0sg	ml	gs	70-80		3.60
4	90-180	10YR 8/1	none	FS, SiL Seams	0sg	ml	n/a	<10		0.13-0.50(1)

Comments: Groundwater was not encountered during or upon the completion of excavating.

(1) Vertical infiltration rate is expected to be controlled by scattered silt loam seams, but can likely be improved by excavating/turning over the granular deposit to break up the lower-permeability seams; samples should be collected during construction to check that the texture of the blended soil is consistent with the design infiltration rate.

TP-5 #OBS. [X] Pit [ ] Boring Ground surface elevation 1020 ± ft. Elevation of limiting factor <1005 ft.

Horizon	Approx. Depth in.	Dominant Color Munsell	Redox Description Qu. Sz. Cont. Color	Texture	Structure Gr. Sz. Sh.	Consistence	Boundary	% Rock Frags.	% Fines (P200)	Hydraulic App Rate Inches/Hr
1	0-7	10YR 4/1	none	SL (fill)	0sg	ml	gs	5-15		0.50(1)
2	7-19	10YR 5/3	none	VGRLS (fill)	0sg	ml	gs	40-50		1.63(1)
3	19-38	10YR 5/1	none	GRSL (fill)	1msbk	mvfr	cs	20-30		0.50(1)
4	38-60	10YR 5/3	none	SiL	1msbk	mvfr	gs	<10		0.13
5	60-108	10YR 6/4	none	SiCL	0m	mvfi	gs	<5		0.04
6	108-180	10YR 7/2	none	VGRLS to XGRLS	0sg	ml	n/a	50-70		1.63

Comments: Groundwater was not encountered during or upon the completion of excavating.
(1) Infiltration rate in fill should be considered very approximate due to the potential for seams/layers of dissimilar material or variable composition.

TP-6 #OBS. [X] Pit [ ] Boring Ground surface elevation 1020.1 ft. Elevation of limiting factor <1005.1 ft.

Horizon	Approx. Depth in.	Dominant Color Munsell	Redox Description Qu. Sz. Cont. Color	Texture	Structure Gr. Sz. Sh.	Consistence	Boundary	% Rock Frags.	% Fines (P200)	Hydraulic App Rate Inches/Hr
1	0-6	10YR 4/2	none	VGRSL (fill)	0sg	ml	gs	40-50		0.50(1)
2	6-27	10YR 5/4	none	CL	0m	mfi	gs	<5		0.03
3	27-156	10YR 7/3	none	FS, SiL Seams	0sg	ml	gs	<10		0.13-0.50(2)
4	156-180	10YR 7/3	none	GRS	0sg	ml	n/a	15-25		3.60

Comments: Groundwater was not encountered during or upon the completion of excavating.
(1) Infiltration rate in fill should be considered very approximate due to the potential for seams/layers of dissimilar material or variable composition.
(2) Vertical infiltration rate is expected to be controlled by scattered silt loam seams, but can likely be improved by excavating/turning over the granular deposit to break up the lower-permeability seams; samples should be collected during construction to check that the texture of the blended soil is consistent with the design infiltration rate.

TP-7 #OBS. [X] Pit [ ] Boring Ground surface elevation 1019.2 ft. Elevation of limiting factor <1004.2 ft.

Horizon	Approx. Depth in.	Dominant Color Munsell	Redox Description Qu. Sz. Cont. Color	Texture	Structure Gr. Sz. Sh.	Consistence	Boundary	% Rock Frags.	% Fines (P200)	Hydraulic App Rate Inches/Hr
1	0-4	10YR 3/1	none	SL (fill)	0sg	ml	gs	<10		0.50(1)
2	4-18	10YR 5/3	none	VGRSL (fill)	0sg	ml	gs	40-50		0.50(1)
3	18-48	10YR 6/3	c2p 7.5YR 4/6	SiCL	2msbk	mfi	gs	<5		0.04
4	48-102	10YR 6/3	c2d 10YR 6/1	SiCL	2msbk	mfi	gs	<5		0.04
5	102-138	10YR 7/3	none	VGRLS	0sg	ml	gs	40-50		1.63
6	138-180	10YR 7/2	none	S	0sg	ml	n/a	<10		3.60

Comments: Groundwater was not encountered during or upon the completion of excavating. Redox in Horizons 3 and 4 is assumed to be a result of periodically infiltrating surface water and the restrictive permeability of these soils.
(1) Infiltration rate in fill should be considered very approximate due to the potential for seams/layers of dissimilar material or variable composition.

TP-8 #OBS. [X] Pit [ ] Boring Ground surface elevation 1019.2 ft. Elevation of limiting factor <1004.2 ft.

Horizon	Approx. Depth in.	Dominant Color Munsell	Redox Description Qu. Sz. Cont. Color	Texture	Structure Gr. Sz. Sh.	Consistence	Boundary	% Rock Frags.	% Fines (P200)	Hydraulic App Rate Inches/Hr
1	0-2	10YR 2/1	none	SL (fill)	0sg	ml	gs	<10		0.50(1)
2	2-16	10YR 8/1 to 6/3	none	S to VGRS (fill)	0sg	ml	gs	10-50		3.60(1)
3	16-24	10YR 4/2	c2d 10YR 5/1	SiL	1fsbk	mvfr	gs	<10		0.13
4	24-72	10YR 7/2	c2f 10YR 6/1	SiCL	2msbk	mfi	gs	<5		0.04
5	72-114	10YR 8/2	none	VGRS	0sg	ml	gs	40-50		3.60
6	114-180	10YR 6/3	none	GRLFS, SiL Seams	0sg	ml	n/a	20-30		0.13-0.50(2)

Comments: Groundwater was not encountered during or upon the completion of excavating. Redox in Horizons 3 and 4 is assumed to be a result of periodically infiltrating surface water and the restrictive permeability of these soils.

(1) Infiltration rate in fill should be considered very approximate due to the potential for seams/layers of dissimilar material or variable composition.

(2) Vertical infiltration rate is expected to be controlled by scattered silt loam seams, but can likely be improved by excavating/turning over the granular deposit to break up the lower-permeability seams; samples should be collected during construction to check that the texture of the blended soil is consistent with the design infiltration rate.

TP-9 #OBS. [X] Pit [ ] Boring Ground surface elevation 1025.2 ft. Elevation of limiting factor <1018.2 ft.

Horizon	Approx. Depth in.	Dominant Color Munsell	Redox Description Qu. Sz. Cont. Color	Texture	Structure Gr. Sz. Sh.	Consistence	Boundary	% Rock Frags.	% Fines (P200)	Hydraulic App Rate Inches/Hr
1	0-10	10YR 3/2	none	SL	0sg	ml	gs	<10		0.50
2	10-84	10YR 8/2	none	FS	0sg	ml	n/a	<10		0.50

Comments: Groundwater was not encountered during or upon the completion of excavating.
Test pit terminated at 7 ft below ground surface due to excessive sidewall sloughing/cave-in and resulting lack of excavation progress.

TP-10 #OBS. [X] Pit [ ] Boring Ground surface elevation 1030.0 ft. Elevation of limiting factor <1020.0 ft.

Horizon	Approx. Depth in.	Dominant Color Munsell	Redox Description Qu. Sz. Cont. Color	Texture	Structure Gr. Sz. Sh.	Consistence	Boundary	% Rock Frags.	% Fines (P200)	Hydraulic App Rate Inches/Hr
1	0-7	10YR 4/3	none	SL	0sg	ml	gs	<10		0.50
2	7-28	10YR 5/6	none	LFS	0sg	ml	gs	<10		0.50
3	28-37	10YR 6/4	none	SiL	1msbk	mvfr	gs	<5		0.13
4	37-84	10YR 8/1	none	XGRS	0sg	ml	gs	70-80		3.60
5	84-120	10YR 8/1	none	S	0sg	ml	n/a	<1	1	3.60

Comments: Groundwater was not encountered during or upon the completion of excavating.
Test pit terminated at 10 ft below ground surface due to excessive sidewall sloughing/cave-in and resulting lack of excavation progress.

Division of Industry Services
P.O. Box 2658
Madison, Wisconsin 53701

Attachment 2:

SOIL AND SITE EVALUATION - STORM

In accordance with SPS 382.365, 385, Wis. Adm. Code, and WDNR Standard 1002

Attach a complete site plan on paper not less than 8 ½ x 11 inches in size. Plan must include, but not limited to: vertical and horizontal reference point (BM), direction and percent of slope, scale or dimensions, north arrow, and BM referenced to nearest road ***Please print all information*** Personal information you provide may be used for secondary purposes [Privacy Law, s. 15.04(1)(m)]	County: Dane Parcel I.D.: 251/0708-133-1501-1 Reviewed by: Date:

Property Owner: Robert Pierstorff		Property Location: Govt. Lot SE ¼ SW ¼ S 13 T 7 N R 8 E	
Property Owner's Mail Address: 6610 Old Sauk Rd		Lot #:	Block#: / Subd. Name or CSM #:
City: Madison	State: WI / Zip Code: 53705 / Phone Number:	[X] City [ ] Village [ ] Town: Madison	Nearest Road: 6610 Old Sauk Rd
Drainage area: _____ [ ] sq ft [ ] acres Test site suitable for (check all that apply): [ ] Site not suitable; [ ] Bioretention; [ ] Subsurface Disperal System; [ ] Reuse; [ ] Irrigation; [ ] Other _____		Hydraulic Application Test Method [X] Morphological Evaluation [ ] Double Ring Infiltrometer [ ] Other: (specify) _____	Soil Moisture Date of soil borings: _____ USDA-NRCS WETS Value: [ ] Dry = 1; [ ] Normal = 2; [ ] Wet = 3.

TP-11 #OBS. [X] Pit [ ] Boring Ground surface elevation 1027.1 ft. Elevation of limiting factor <1018.1 ft.

Horizon	Approx. Depth in.	Dominant Color Munsell	Redox Description Qu. Sz. Cont. Color	Texture	Structure Gr. Sz. Sh.	Consistence	Boundary	% Rock Frags.	% Fines (P200)	Hydraulic App Rate Inches/Hr
1	0-3	10YR 4/2	none	L	1fsbk	mvfr	gs	<10		0.24
2	3-25	10YR 5/4	none	L	2mabk	mfr	gs	<10		0.24
3	25-108	10YR 7/3	none	VGRS to XGRS	0sg	ml	n/a	50-70		3.60

Comments: Groundwater was not encountered during or upon the completion of excavating.
Test pit terminated at 9 ft below ground surface due to excessive sidewall sloughing/cave-in and resulting lack of excavation progress.

TP-12 #OBS. [X] Pit [ ] Boring Ground surface elevation 1024.8 ft. Elevation of limiting factor <1013.8 ft.

Horizon	Approx. Depth in.	Dominant Color Munsell	Redox Description Qu. Sz. Cont. Color	Texture	Structure Gr. Sz. Sh.	Consistence	Boundary	% Rock Frags.	% Fines (P200)	Hydraulic App Rate Inches/Hr
1	0-11	10YR 4/2	none	GRSL (fill)	0sg	ml	gs	25-35		0.50(1)
2	11-66	10YR 4/4	none	L	1msbk	mvfr	gs	<10		0.24
3	66-96	10YR 7/3	none	GRS to VGRS	0sg	ml	gs	30-50		3.60
4	96-132	10YR 6/4	none	GRSL	0sg	ml	n/a	20-30		0.50

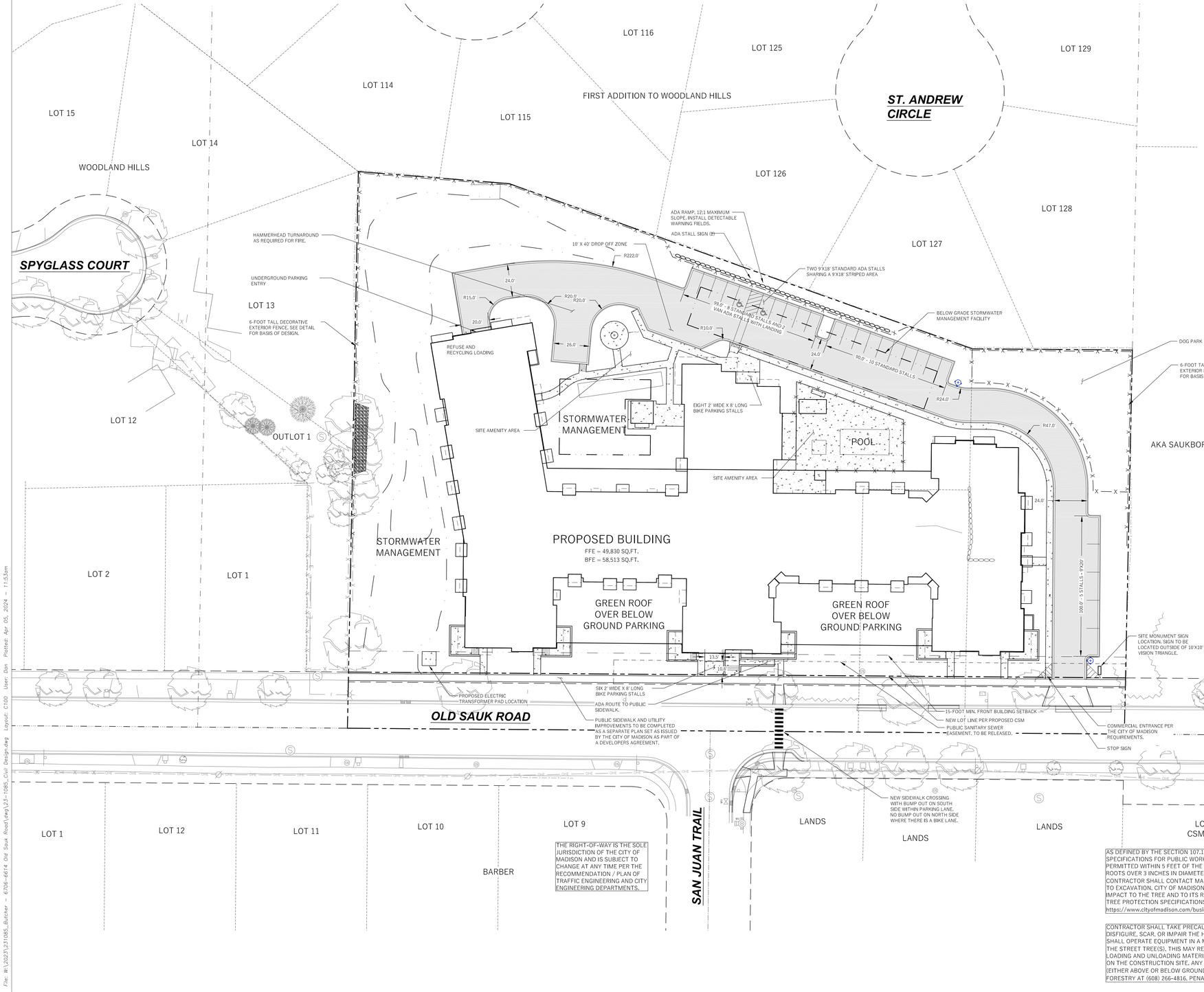
Comments: Groundwater was not encountered during or upon the completion of excavating.
(1) Infiltration rate in fill should be considered very approximate due to the potential for seams/layers of dissimilar material or variable composition.
Test pit terminated at 11 ft below ground surface due to excessive sidewall sloughing/cave-in and resulting lack of excavation progress.

Overall Site Comments: See Comments above and Stormwater Infiltration Potential section in our *Geotechnical Exploration Report* (CGC Project No. C24126; dated….).

Name (Please Print): Tim F. Gassenheimer	Signature		Credential Number: SP-011900004
Address: 129 Milky Way, Madison, WI 53718		Date Evaluation Conducted: March 21, 2024	Telephone Number: (608) 288-4100

APPENDIX C

Proposed Construction Plans



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CONTRACTOR SHALL TAKE PRECAUTIONS DURING CONSTRUCTION TO NOT DISFIGURE, SCAR, OR IMPAIR THE HEALTH OF ANY STREET TREE. CONTRACTOR SHALL OPERATE EQUIPMENT IN A MANNER AS TO NOT DAMAGE THE BRANCHES OF THE STREET TREE(S). THIS MAY REQUIRE USING SMALLER EQUIPMENT AND LOADING AND UNLOADING MATERIALS IN A DESIGNATED SPACE AWAY FROM TREES ON THE CONSTRUCTION SITE. ANY DAMAGE OR INJURY TO EXISTING STREET TREES (EITHER ABOVE OR BELOW GROUND) SHALL BE REPORTED IMMEDIATELY TO CITY FORESTRY AT (608) 266-4816. PENALTIES AND REMEDIATION SHALL BE REQUIRED.

LEGEND (PROPOSED)

- PROPOSED PROPERTY BOUNDARY
- EASEMENT
- BUILDING FOOTPRINT
- 18" CURB AND GUTTER
- ASPHALT PAVEMENT
- CONCRETE PAVEMENT
- STORMWATER TREATMENT FACILITY

NORTH

0' 15' 30' 45'

1"=30' ON 30"X42"
NTS ON 11"X17"

GENERAL NOTES

1. UNDERLYING SITE CONTOURS AND INFORMATION BASED ON TOPOGRAPHIC & UTILITY DATA AS SURVEYED BY WYSER ENGINEERING ON THE WEEK OF JUNE 27, 2023. WYSER ENGINEERING SHALL NOT BE HELD RESPONSIBLE FOR ANY ERRORS OR OMISSIONS THAT MAY ARISE AS A RESULT OF ERRONEOUS OR INCOMPLETE INFORMATION PROVIDED BY OTHERS. CONTRACTOR TO CONFIRM ALL ELEVATIONS, GENERAL DRAINAGE AND EARTHWORK REQUIREMENTS PRIOR TO CONSTRUCTION.
2. THE BENCHMARK LOCATIONS ARE SHOWN FOR REFERENCE ONLY ON THIS PLAN. THE BENCHMARKS SHALL BE VALIDATED BY LICENSED LAND SURVEYOR PRIOR TO CONSTRUCTION. CONTRACTOR ASSUMES RISK ASSOCIATED WITH BENCHMARK ELEVATIONS UNTIL CONFIRMED.
3. CONTRACTOR TO OBTAIN APPROPRIATE PERMITS FOR STREET OPENINGS & TO WORK WITHIN THE CITY'S LAND IF REQUIRED.
4. WYSER ENGINEERING SHALL BE HELD HARMLESS AND DOES NOT WARRANT ANY DEVIATIONS BY THE OWNER OR CONTRACTOR FROM THE APPROVED CONSTRUCTION PLANS THAT MAY RESULT IN DISCIPLINARY ACTIONS BY REGULATORY AGENCIES.
5. IF ANY ERRORS, DISCREPANCIES, OR OMISSIONS WITHIN THE PLAN BECOME APPARENT, IT SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER PRIOR TO CONSTRUCTION SO THAT CLARIFICATION OR REDESIGN MAY OCCUR.
6. ALL MUNICIPAL UTILITY CONNECTIONS, WORK IN ROW, PUBLIC OUTLOTS AND PUBLIC EASEMENTS SHALL BE IN ACCORDANCE WITH CITY OF MADISON STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION.

SITE INFORMATION BLOCK:

SITE ADDRESS: 6610 OLD SAUK ROAD
SITE LEGAL DESCRIPTION: LOT 1, CSM _____
SITE ACREAGE (FINAL CSM LOT): 161,024 SQ.FT. (3.70 AC)
USE OF PROPERTY: MULTI-FAMILY RESIDENTIAL
ZONING:
- EXISTING: SR-C1 (MAJORITY)
  SR-C3 (EAST)
- PROPOSED: TRADITIONAL URBAN 2 (TR-U2)

SETBACKS (TR-U2):
- FRONT YARD:
  - MINIMUM: 15-FEET
  - MAXIMUM: 30-FEET
- REAR YARD: 20-FEET
- SIDE YARD: 10-FEET

NUMBER OF UNITS: 138
NUMBER OF BEDROOMS: 189

TOTAL NUMBER OF PARKING STALLS: 168
- UNDERGROUND: 143
  - STANDARD: 138
  - ADA: 5
- SURFACE: 25
  - STANDARD: 23
  - ADA: 2

TOTAL NUMBER OF BIKE STALLS: 154
- UNDERGROUND: 140
- SURFACE: 14

EXISTING IMPERVIOUS SURFACE AREA: 21,439 SQ.FT.
- ROOFTOP: 9,789 SQ.FT.
- PAVED: 11,650 SQ.FT.

MAXIMUM IMPERVIOUS SURFACE: 80% (128,819 SQ.FT.)
NEW IMPERVIOUS SURFACE AREA: 97,828 SQ.FT. (90,328 SQ.FT. WITHOUT GREEN ROOF)
- ROOFTOP: 63,168 SQ.FT.
  - FOUNDATION: 58,513 SQ.FT.
  - FIRST FLOOR NOT OVER FOUNDATION: 4,655 SQ.FT.
- GREEN ROOF: 7,500 SQ.FT.
- TRADITIONAL: 55,668 SQ.FT.
- PAVED: 34,210 SQ.FT.
  - PARKING: 22,155 SQ.FT.
  - SIDEWALK/DECK: 12,505 SQ.FT.

DISTURBANCE LIMITS: 120,000 SQ. FT.

PRELIMINARY
NOT FOR CONSTRUCTION

Old Sauk Road Apartments
6610 Old Sauk Road
Madison, WI

2023.30.00

Date	Issuance/Revisions	Symbol
04/05/2024	LAND USE APPLICATION	

SITE PLAN

C100

DIGGERS HOTLINE
Toll Free (800) 242-8511 -or- 811
Hearing Impaired TDD (800) 542-2289
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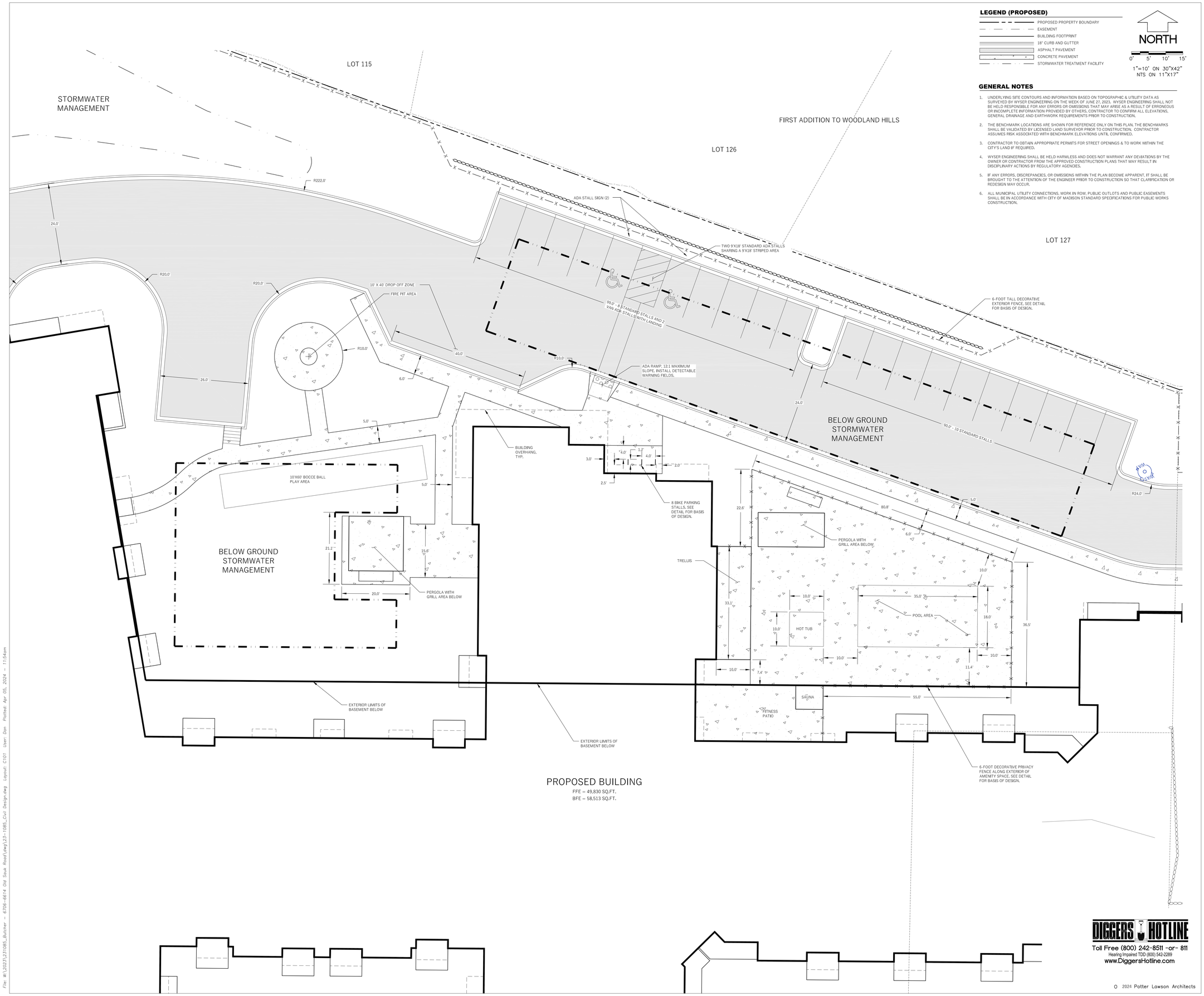
WYSER ENGINEERING



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SITE PLAN DETAIL

C101

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File: W:\2023\23085_Butcher - 6706-6614 Old Sauk Road\dwg\23-1085_Civil Design.dwg Layout: C101 User: Don Plotted: Apr 05, 2024 - 11:54am

LOT 114

LOT 115

FIRST ADDITION TO WOODLAND HILLS

LOT 14

LOT 13

LOT 1

OUTLOT 1

WOODLAND HILLS

LOT 126

LOT 127

LOT 128

ST. ANDREW CIRCLE

NOTE:
- ALL TREES ON THE SITE AND IN THE ADJACENT RIGHT-OF-WAY TO BE REMOVED UNLESS SPECIFICALLY CALLED OUT TO BE SAVED AND PROTECTED.
- ALL STRUCTURES ON THE LOT TO BE REMOVED.
- THE WORK IN THE RIGHT-OF-WAY IS SHOWN FOR GENERAL REFERENCE ONLY ON THIS PLAN AND SUBJECT TO CHANGE. REFER TO PLANS BY THE CITY OF MADISON FOR CONSTRUCTION DOCUMENTS.

LEGEND (PROPOSED)

- SUBJECT PARCEL PROPERTY LINE
- CONSTRUCTION LIMIT LINE
- NEW BUILDING (FOR REFERENCE)
- SAWCUT LIMITS
- ASPHALT REMOVAL AREA
- GRAVEL REMOVAL AREA
- CONCRETE REMOVAL AREA
- CURB AND GUTTER REMOVAL

NORTH

0' 10' 20' 30'

1"=20' ON 30"X42"
NTS ON 11"X17"

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21.0' GARAGE 21.0'

EXISTING 1-STORY WOOD FRAME HOUSE

POWER POLE AND ASSOCIATED OVERHEAD SERVICE LINES TO BE REMOVED

EXISTING FENCING ALONG PROPERTY LINE TO REMAIN.

EXISTING 2-STORY STONE MASONRY & WOOD FRAME BARN

FENCE CORNER 1.1' NORTH & 0.7' WEST OF LOT CORNER

FENCE CORNER 1.5' NORTH OF LOT CORNER

CARPORT TO BE REMOVED

CARPORT NOT AFFIXED

OPEN SIDED SHED WITH CONCRETE FLOOR TO BE REMOVED

EXISTING FENCING ALONG PROPERTY LINE TO REMAIN.

CARPORT TO BE REMOVED

WOODED

RETAINING WALL TO BE REMOVED

RETAINING WALL TO BE REMOVED

PROPOSED BUILDING AT BASEMENT FOUNDATION
FOR REFERENCE

WOODED

WOODED

WOODED

REMOVE AND REPLACE SPLIT RAIL WOODEN FENCE AS NEEDED FOR SANITARY SEWER CONSTRUCTION.

REMOVE EXISTING PUBLIC SANITARY SEWER ACCESS STRUCTURE, REMOVE / ABANDON IN PLACE PUBLIC PIPE AS REQUIRED.

PLUG ALL WATER AND SEWER SERVICES EXTENDING INTO THE SITE, ROUTING FROM THE STUB INTO THE EXISTING FACILITIES IS UNKNOWN. REMOVE / ABANDON IN PLACE AS REQUIRED.

REMOVE EXISTING PUBLIC SANITARY SEWER ACCESS STRUCTURE, REMOVE / ABANDON IN PLACE PUBLIC PIPE AS REQUIRED.

PLUG

PLUG

PLUG

PLUG

PROJECT LIMITS. SAWCUT SIDEWALK AT THE NEAREST JOINT.

LIGHT POLE WITH "30 MPH" SIGN TO REMAIN.

"NO PARKING THIS SIDE OF STREET"

BIKE LANE

"NO PARKING THIS SIDE OF STREET"

21-INCH HACKBERRY (CELTIS OCCIDENTALIS) TO BE SAVED AND PROTECTED. EXISTING GROUND AT TREE = 1021.0 PROPOSED GROUND AT TREE = 1021.9

ALL MAIL BOXES TO BE REMOVED.

ALL STREET SIGNAGE TO BE REMOVED AND REPLACED.

OVERHEAD SERVICE LINES TO BE REMOVED

CURB AND GUTTER AND ASSOCIATED STREET SECTION TO BE REMOVED FOR DRIVEWAY REMOVAL AND UTILITY CONNECTION CONSTRUCTION. OLD SAUK HAS A PAVEMENT RATING OF 8 AND CURB RATING OF 8.

OLD SAUK ROAD

20-INCH HONEY LOCUST (GLEDITSIA TRIACANTHOS) TO BE SAVED AND PROTECTED. EXISTING GROUND AT TREE = 1024.3 PROPOSED GROUND AT TREE = 1024.4

CURB AND GUTTER AND ASSOCIATED STREET SECTION TO BE REMOVED FOR DRIVEWAY REMOVAL AND UTILITY CONNECTION CONSTRUCTION. OLD SAUK HAS A PAVEMENT RATING OF 8 AND CURB RATING OF 8.

10-INCH AMERICAN ELM (ULMUS AMERICANA) TO BE SAVED AND PROTECTED. EXISTING GROUND AT TREE = 1024.0 PROPOSED GROUND AT TREE = 1024.9

POWER POLE AND ASSOCIATED OVERHEAD SERVICE LINES TO BE REMOVED

LIGHT POLE WITH TO REMAIN.

CURB AND GUTTER AND ASSOCIATED STREET SECTION TO BE REMOVED FOR DRIVEWAY REMOVAL AND UTILITY CONNECTION CONSTRUCTION. OLD SAUK HAS A PAVEMENT RATING OF 8 AND CURB RATING OF 8.

PROJECT LIMITS. SAWCUT EXISTING ASPHALT TO CREATE A CLEAN AND STRAIGHT EDGE TO POUR NEW ASPHALT TO.

SAN JUAN TRAIL

SIDEWALK, RAMPS, TREE, STORM SEWER, AND CURB AND GUTTER TO BE REMOVED IN THIS AREA. POWER POLE TO REMAIN IN PLACE.

SAUKBOROUGH
LOT 19
AKA SAUKBOROUGH SQUARE CONDOMINIUM

DEMOLITION NOTES

1. THIS PLAN INDICATES ITEMS ON THE SITE, NOT INCLUDING INTERNAL BUILDING DEMOLITION, INTENDED FOR DEMOLITION BASED ON THE CURRENT SITE DESIGN THAT HAVE BEEN IDENTIFIED BY A REASONABLE OBSERVATION OF THE EXISTING CONDITIONS THROUGH FIELD SURVEY RECONNAISSANCE (BY OTHERS), "DIGGER'S HOTLINE" LOCATION, AND GENERAL "STANDARD OF CARE". THERE MAY BE ADDITIONAL ITEMS THAT CAN NOT BE IDENTIFIED BY A REASONABLE ABOVE GROUND OBSERVATION, WHERE NOT INCLUDED WITHIN THE FIELD SURVEY, OF WHICH THE ENGINEER WOULD HAVE NO KNOWLEDGE OR MAY BE A PART OF ANOTHER DESIGN DISCIPLINE, IT IS THE CONTRACTOR'S / BIDDER'S RESPONSIBILITY TO REVIEW THE PLANS, INSPECT THE SITE AND PROVIDE HIS OWN DUE DILIGENCE TO INCLUDE IN HIS BID WHAT ADDITIONAL ITEMS, IN HIS OPINION, MAY BE NECESSARY FOR DEMOLITION. ANY ADDITIONAL ITEMS IDENTIFIED BY THE CONTRACTOR / BIDDER SHALL BE IDENTIFIED IN THE BID AND REPORTED TO THE OWNER AND ENGINEER OF RECORD. WYSER ENGINEERING TAKES NO RESPONSIBILITY FOR ITEMS ON THE PROPERTY THAT COULD NOT BE LOCATED BY A REASONABLE OBSERVATION OF THE PROPERTY OR OF WHICH THEY WOULD HAVE NO KNOWLEDGE.
2. PRIOR TO CONSTRUCTION, THE CONTRACTOR IS RESPONSIBLE FOR:
   - 2.1. EXAMINING ALL SITE CONDITIONS RELATIVE TO THE CONDITIONS INDICATED ON THE ENGINEERING DRAWINGS. ANY DISCREPANCIES ARE TO BE REPORTED TO THE OWNER AND ENGINEER AND RESOLVED PRIOR TO THE START OF CONSTRUCTION.
   - 2.2. VERIFYING UTILITY ELEVATIONS AND NOTIFYING OWNER AND ENGINEER OR ANY DISCREPANCIES. NO WORK SHALL BE PERFORMED UNTIL THE DISCREPANCIES ARE RESOLVED.
   - 2.3. NOTIFYING ALL UTILITIES PRIOR TO THE REMOVAL OF ANY UNDERGROUND UTILITIES.
   - 2.4. NOTIFYING THE OWNER, DESIGN ENGINEER AND LOCAL CONTROLLING MUNICIPALITY 48 HOURS PRIOR TO THE START OF CONSTRUCTION TO ARRANGE FOR APPROPRIATE CONSTRUCTION INSPECTION.
3. CONTRACTOR IS SOLELY RESPONSIBLE FOR SITE SAFETY DURING THE CONSTRUCTION OF THESE IMPROVEMENTS.
4. CONTRACTOR SHALL KEEP ALL STREETS AND ADJOINING SHARED ACCESS ROADWAYS FREE AND CLEAR OF ALL CONSTRUCTION RELATED DIRT, DUST AND DEBRIS.
5. ALL TREES WITHIN THE CONSTRUCTION LIMITS SHALL BE REMOVED UNLESS SPECIFICALLY CALLED OUT FOR PROTECTION. ALL TREES TO BE REMOVED SHALL BE REMOVED IN THEIR ENTIRETY, STUMPS SHALL BE GROUND TO PROPOSED SUBGRADE.
6. PERFORM TREE PRUNING IN ALL LOCATIONS WHERE PROPOSED PAVEMENT AND / OR UTILITY INSTALLATION ENCROACH WITHIN THE EXISTING DRIP LINE OF THE TREES TO REMAIN. ALL TRENCHING WITHIN THE EXISTING DRIP LINE OF THE TREES TO REMAIN SHALL BE DONE RADIALLY AWAY FROM THE TRUNK IF ROOTS IN EXCESS OF 1" DIAMETER ARE EXPOSED. ROOTS MUST BE CUT BY REPUTABLE TREE PRUNING SERVICE PRIOR TO ANY TRANSVERSE TRENCHING.
7. ALL LIGHT POLES TO BE REMOVED SHALL BE REMOVED IN THEIR ENTIRETY, INCLUDING BASE AND ALL APPURTENANCES. SALVAGE FOR RELOCATION. COORDINATE RELOCATION AND / OR ABANDONMENT OF ALL ELECTRIC LINES WITH ELECTRICAL ENGINEER AND OWNER PRIOR TO DEMOLITION.
8. CONTRACTOR SHALL COORDINATE PRIVATE UTILITY REMOVAL / ABANDONMENT AND NECESSARY RELOCATIONS WITH RESPECTIVE UTILITY COMPANY. COORDINATION REQUIRED PRIOR TO CONSTRUCTION.
9. ABANDONED / REMOVED ITEMS SHALL BE DISPOSED OF OFF SITE UNLESS OTHERWISE NOTED.
10. THE CONTRACTOR SHALL INSTALL A PEDESTRIAN FENCE AROUND ALL EXCAVATIONS TO BE LEFT OPEN OVERNIGHT AS REQUIRED.
11. CONTRACTOR TO REMOVE EXISTING UTILITY PIPE AND BACKFILL WITH SELECT FILL OR REMOVED PIPE BACK-FILLING WITHIN BUILDING FOOTPRINT USING "LOW DENSITY CONCRETE / FLOWABLE FILL".
12. GRANULAR BACKFILL MATERIALS ARE REQUIRED FOR FILL UNDER PROPOSED PAVED AREAS.
13. RESTORATION OF THE EXISTING RIGHT-OF-WAYS AS NEEDED ARE CONSIDERED INCIDENTAL AND SHOULD BE PART OF THE COST OF THE UNDERGROUND IMPROVEMENTS, DEMOLITION AND REMOVAL. THIS INCLUDES, BUT IS NOT LIMITED TO, CURB & GUTTER, SIDEWALK, TOPSOIL, SEEDING AND MULCHING.
14. ANY SANITARY SEWER, SANITARY SEWER SERVICES, WATER MAIN, WATER SERVICES, STORM SEWER, OR OTHER UTILITIES, WHICH ARE DAMAGED BY THE CONTRACTORS, SHALL BE REPAIRED TO THE OWNER'S SATISFACTION AT THE CONTRACTOR'S EXPENSE.

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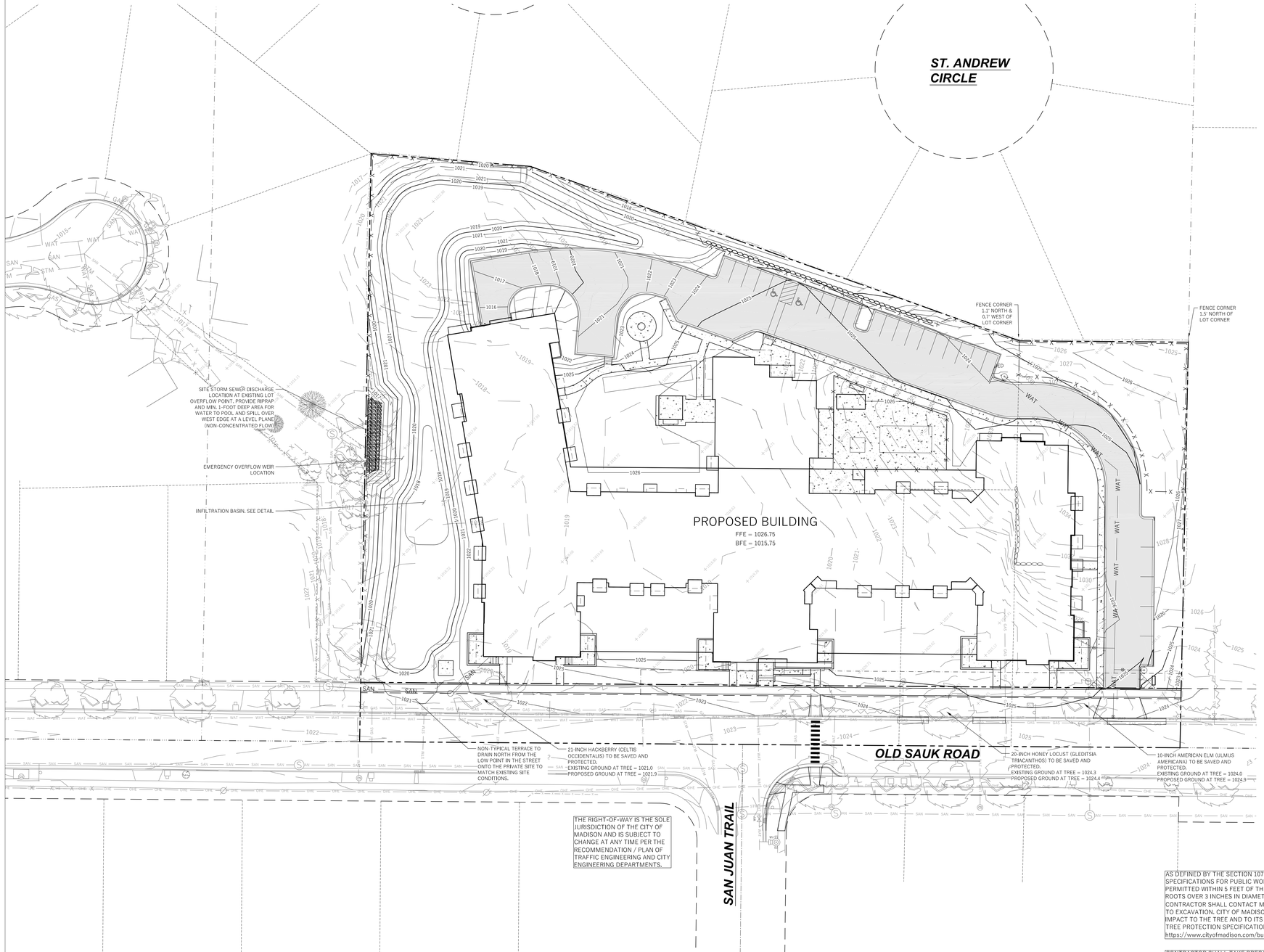
DEMOLITION PLAN

C102



BENCHMARK TABLE		
BM - #	ELEVATION	DESCRIPTION
BM - 1	1026.72	TOP NUT OF HYDRANT AT SW QUADRANT OF OLD SAUK ROAD AND SAN JUAN TRAIL
BM - 2	1026.56	TOP NUT OF HYDRANT 350' WEST OF SITE AT SW QUADRANT OF OLD SAUK ROAD AND EVERGLADE DRIVE
BM - 3	1026.21	TOP NUT OF HYDRANT 250' EAST OF SITE AT SW QUADRANT OF OLD SAUK ROAD AND YOSEMITE PLACE

LEGEND (PROPOSED)

- PROPERTY BOUNDARY
- EASEMENT
- BUILDING FOOTPRINT
- 18" CURB AND GUTTER
- ASPHALT PAVEMENT
- CONCRETE PAVEMENT
- 1180 — PROPOSED MAJOR CONTOUR
- 1181 — PROPOSED MINOR CONTOUR
- STM — PROPOSED STORM SEWER
- SILT FENCE
- INLET PROTECTION
- DITCH CHECK
- 1181.25 EP — SPOT GRADE
- DRAINAGE GRADE BREAK
- 1.0% — DRAINAGE ARROW

NORTH

0' 15' 30' 45'

1"=30' ON 30"X42"
NTS ON 11"X17"

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CONSTRUCTION SITE EROSION CONTROL REQUIREMENTS

1. POST WDNR CERTIFICATE OF PERMIT COVERAGE AND MUNICIPAL EROSION CONTROL PERMITS ON SITE AND MAINTAIN UNTIL CONSTRUCTION ACTIVITIES HAVE CEASED, THE SITE IS STABILIZED, AND A NOTICE OF TERMINATION IS FILED WITH WDNR.
2. KEEP A COPY OF THE CURRENT EROSION CONTROL PLAN ON SITE THROUGHOUT THE DURATION OF THE PROJECT.
3. ENGINEER / CITY OF MADISON / WDNR HAS THE RIGHT TO REQUIRE CONTRACTOR TO IMPLEMENT ADDITIONAL EROSION CONTROL MEASURES AS NECESSARY.CONTRACTOR MUST NOTIFY THE CITY OF MADISON BUILDING INSPECTOR TO SCHEDULE A SITE VISIT AT LEAST TWO (2) WORKING DAYS IN ADVANCE OF ANY SOIL DISTURBANCE ACTIVITIES.
4. SUBMIT PLAN REVISIONS OR AMENDMENTS TO THE WDNR AT LEAST 5 DAYS PRIOR TO FIELD IMPLEMENTATION.
5. THE SITE CONTRACTOR IS RESPONSIBLE FOR ROUTINE SITE INSPECTIONS AT LEAST ONCE EVERY 7 DAYS AND WITHIN 24 HOURS AFTER A RAINFALL EVENT OF 0.5 INCHES OR GREATER. KEEP INSPECTION REPORTS ON-SITE AND MAKE THEM AVAILABLE UPON REQUEST.
6. INSPECT AND MAINTAIN ALL INSTALLED EROSION CONTROL PRACTICES UNTIL THE CONTRIBUTING DRAINAGE AREA HAS BEEN STABILIZED.
7. WHEN POSSIBLE: PRESERVE EXISTING VEGETATION (ESPECIALLY ADJACENT TO SURFACE WATERS), MINIMIZE LAND-DISTURBING CONSTRUCTION ACTIVITY ON SLOPES OF 20% OR MORE, MINIMIZE SOIL COMPACTION, AND PRESERVE TOPSOIL.
8. REFER TO THE WDNR STORMWATER CONSTRUCTION TECHNICAL STANDARDS AT http://dnr.wi.gov/topic/stormwater/standards/const_standards.html.
9. INSTALL PERIMETER EROSION CONTROLS AND ROCK TRACKING PAD CONSTRUCTION ENTRANCE(S) PRIOR TO ANY LAND-DISTURBING ACTIVITIES. INCLUDING CLEARING AND GRUBBING. USE WDNR TECHNICAL STANDARD STONE TRACKING PAD AND TIRE WASHING #1057 FOR ROCK CONSTRUCTION ENTRANCE(S).
10. INSTALL INLET PROTECTION PRIOR TO LAND-DISTURBING ACTIVITIES IN THE CONTRIBUTING DRAINAGE AREA AND/OR IMMEDIATELY UPON INLET INSTALLATION. COMPLY WITH WDNR TECHNICAL STANDARD STORM DRAIN INLET PROTECTION FOR CONSTRUCTION SITES #1060 AND DANE COUNTY REQUIREMENTS FOR FRAMED INLET PROTECTION.
11. CONTRACTOR TO PROVIDE SOLID LID OR METAL PLATE ON ALL OPEN MANHOLES DURING CONSTRUCTION TO MINIMIZE SEDIMENT FROM ENTERING THE STORM SEWER SYSTEM.
12. STAGE CONSTRUCTION GRADING ACTIVITIES TO MINIMIZE THE CUMULATIVE EXPOSED AREA. CONDUCT TEMPORARY GRADING FOR EROSION CONTROL PER WDNR TECHNICAL STANDARD TEMPORARY GRADING PRACTICES FOR EROSION CONTROL #1067.
13. PERMITTING OF GROUNDWATER DEWATERING IS THE RESPONSIBILITY OF THE CONTRACTOR. GROUNDWATER DEWATERING IS SUBJECT TO A DNR WASTEWATER DISCHARGE PERMIT AND A DNR HIGH CAPACITY WELL APPROVAL IF CUMULATIVE PUMP CAPACITY IS 70 GPM OR MORE.
14. PROVIDE ANTI-SCOUR PROTECTION AND MAINTAIN NON-EROSIVE FLOW DURING DEWATERING. PERFORM DEWATERING OF ACCUMULATED SURFACE RUNOFF IN ACCORDANCE WITH WDNR TECHNICAL STANDARD DE-WATERING #1061.
15. COMPLETE AND STABILIZE SEDIMENT BASINS/TRAPS OR WET PONDS PRIOR TO MASS LAND DISTURBANCE TO CONTROL RUNOFF DURING CONSTRUCTION. REMOVE SEDIMENT AS NEEDED TO MAINTAIN 3 FEET OF DEPTH TO THE OUTLET, AND PROPERLY DISPOSE OF SEDIMENT REMOVED DURING MAINTENANCE (REFER TO NR 528). CONSTRUCT AND MAINTAIN THE SEDIMENT BASIN PER WDNR TECHNICAL STANDARD SEDIMENT BASIN #1064 AND SEDIMENT TRAP # 1063.
16. INSTALL AND MAINTAIN SILT FENCING PER WDNR TECHNICAL STANDARD SILT FENCE #1056. REMOVE SEDIMENT FROM BEHIND SILT FENCES AND SEDIMENT BARRIERS BEFORE SEDIMENT REACHES A DEPTH THAT IS EQUAL TO ONE-HALF OF THE FENCE AND/OR BARRIER HEIGHT.
17. REPAIR BREAKS AND GAPS IN SILT FENCES AND BARRIERS IMMEDIATELY. REPLACE DECOMPOSING STRAW BALES (TYPICAL BALE LIFE IS 3 MONTHS). LOCATE, INSTALL, AND MAINTAIN STRAW BALES PER WDNR TECHNICAL STANDARD DITCH CHECKS #1062.
18. INSTALL AND MAINTAIN FILTER SOCKS IN ACCORDANCE WITH WDNR TECHNICAL STANDARD INTERIM MANUFACTURED PERIMETER CONTROL AND SLOPE INTERRUPTION PRODUCTS # 1071.
19. IMMEDIATELY STABILIZE STOCKPILES AND SURROUND STOCKPILES AS NEEDED WITH SILT FENCE OR OTHER PERIMETER CONTROL. IF STOCKPILES WILL REMAIN INACTIVE FOR 7 DAYS OR LONGER.
20. IMMEDIATELY STABILIZE ALL DISTURBED AREAS THAT WILL REMAIN INACTIVE FOR 14 DAYS OR LONGER, BETWEEN SEPTEMBER 15 AND OCTOBER 15: STABILIZE WITH MULCH, TACKIFIER; AND A PERENNIAL SEED MIXED WITH WINTER WHEAT, ANNUAL OATS, OR ANNUAL RYE, AS APPROPRIATE FOR REGION AND SOIL TYPE.OCTOBER 15 THROUGH COLD WEATHER: STABILIZE WITH A POLYMER AND DORMANT SEED MIX, AS APPROPRIATE FOR REGION AND SOIL TYPE.
21. STABILIZE AREAS OF FINAL GRADING WITHIN 7 DAYS OF REACHING FINAL GRADE.
22. SWEEP/CLEAN UP ALL SEDIMENT/TRASH THAT MOVES OFF-SITE DUE TO CONSTRUCTION ACTIVITY OR STORM EVENTS BEFORE THE END OF THE SAME WORKDAY OR AS DIRECTED BY THE AUTHORITIES WITH JURISDICTION. SEPARATE SWEPT MATERIALS (SOILS AND TRASH) AND DISPOSE OF APPROPRIATELY.
23. THE CONTRACTOR IS RESPONSIBLE FOR CONTROLLING DUST PER WDNR TECHNICAL STANDARD DUST CONTROL ON CONSTRUCTION SITES # 1068.
24. PROPERLY DISPOSE OF ALL WASTE AND UNUSED BUILDING MATERIALS (INCLUDING GARBAGE, DEBRIS, CLEANING WASTES, OR OTHER CONSTRUCTION MATERIALS) AND DO NOT ALLOW THESE MATERIALS TO BE CARRIED BY RUNOFF INTO THE RECEIVING CHANNEL.
25. COORDINATE WITH THE AUTHORITIES WITH JURISDICTION TO UPDATE THE LAND DISTURBANCE PERMIT TO INDICATE THE ANTICIPATED OR LIKELY DISPOSAL LOCATIONS FOR ANY EXCAVATED SOILS OR CONSTRUCTION DEBRIS THAT WILL BE HAULED OFF-SITE FOR DISPOSAL. THE DEPOSITED OR STOCKPILED MATERIAL NEEDS TO INCLUDE PERIMETER SEDIMENT CONTROL MEASURES (SUCH AS SILT FENCE, HAY BALES, FILTER SOCKS, OR COMPACTED EARTHEN BERMS).
26. FOR NON-CHANNELIZED FLOW ON DISTURBED OR CONSTRUCTED SLOPES, PROVIDE CLASS CLASS I TYPE B EROSION CONTROL MATTING. INSTALL AND MAINTAIN PER WDNR TECHNICAL STANDARD NON-CHANNEL EROSION MAT #1052.
27. FOR CHANNELIZED FLOW ON DISTURBED OR CONSTRUCTED AREAS, PROVIDE CLASS II TYPE B EROSION CONTROL MATTING UNLESS OTHERWISE SPECIFIED ON THE PLAN. INSTALL AND MAINTAIN PER WDNR TECHNICAL STANDARD CHANNEL EROSION MAT #1053.
28. MAKE PROVISIONS FOR WATERING DURING THE FIRST 8 WEEKS FOLLOWING SEEDING OR PLANTING OF DISTURBED AREAS WHENEVER MORE THAN 7 CONSECUTIVE DAYS OF DRY WEATHER OCCUR.
29. THE CONTRACTOR IS RESPONSIBLE FOR COMPLYING WITH ALL APPLICABLE WDNR REMEDIATION AND WASTE MANAGEMENT REQUIRENTS FOR HANDLING AND DISPOSING OF CONTAMINATED MATERIALS. SITE-SPECIFIC INFORMATION FOR AREAS WITH KNOWN OR SUSPECTED SOIL AND/OR GROUNDWATER CONTAMINATION CAN BE FOUND ON WDNR'S BUREAU OF REMEDIATION AND REDEVELOPMENT RACKING SYSTEM (BRRTS) PUBLIC DATABASE AT: https://dnr.wi.gov/botw/
30. INSTALL AND MAINTAIN A CONCRETE WASHOUT BASIN PER EPA 833-F-11-006: https://www3.epa.gov/npdes/pubs/concretewashout.pdf. REQUIRE USE BY ALL CONCRETE CONTRACTORS. LIQUID MAY BE RECISED IN CONCRETE MIXING, EVAPORATED, OR DISPOSED OF AS WASTEWATER.

GRADING, SEEDING & RESTORATION NOTES

1. ALL GRADES SHOWN ARE FINAL FINISHED SURFACE GRADES.
2. AREAS TO BE SEEDED SHALL HAVE A MINIMUM 6 INCHES TOPSOIL UNLESS OTHERWISE NOTED.
3. AREAS NOT RESTORED WITH EROSION MATTING OR OTHER STABILIZATION MEASURES SHALL BE STABILIZED WITH MULCH.
4. APPLY ANIONIC POLYMER TO DISTURBED AREAS IF EROSION BECOMES PROBLEMATIC.
5. MULCH SHALL BE WEED-FREE STRAW AND SHALL BE INSTALLED AT THE RATE OF 2 TONS PER ACRE PER SECTION 627 OF "STANDARD SPECIFICATIONS FOR HIGHWAY AND STRUCTURE CONSTRUCTION" (WISDOT 2014)
6. PERMANENT SEEDING SHALL NOT OCCUR BETWEEN SEPTEMBER 15TH AND APRIL 15TH. ALTERNATE SEEDING/PLANTING METHODS AND/OR EROSION PROTECTION MAY BE NECESSARY FOR SEEDING/PLANTING THAT OCCURS DURING THAT TIME. COORDINATE WITH THE OWNER AS NECESSARY.
7. TEMPORARY STABILIZATION SHALL CONSIST OF ONE OR MORE OF THE FOLLOWING OPTIONS:
   a. TEMPORARY SEEDING CONSISTING OF ANNUAL RYE GRASS APPLIED AT A RATE OF 1.5 LBS PER 1000 SQUARE FEET.
   b. WISDOT P&L CLASS I TYPE B URBAN EROSION CONTROL MAT.

AS DEFINED BY THE SECTION 107.13 OF CITY OF MADISON STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION: NO EXCAVATION IS PERMITTED WITHIN 5 FEET OF THE TRUNK OF THE STREET TREE OR WHEN CUTTING ROOTS OVER 3 INCHES IN DIAMETER. IF EXCAVATION IS NECESSARY, THE CONTRACTOR SHALL CONTACT MADISON CITY FORESTRY AT (608) 266-4816 PRIOR TO EXCAVATION. CITY OF MADISON FORESTRY PERSONNEL SHALL ASSESS THE IMPACT TO THE TREE AND TO ITS ROOT SYSTEM PRIOR TO WORK COMMENCING. TREE PROTECTION SPECIFICATIONS CAN BE FOUND ON THE FOLLOWING WEBSITE: https://www.cityofmadison.com/business/pw/specs.cfm

CONTRACTOR SHALL TAKE PRECAUTIONS DURING CONSTRUCTION TO NOT DISFIGURE, SCAR, OR IMPAIR THE HEALTH OF ANY STREET TREE. CONTRACTOR SHALL OPERATE EQUIPMENT IN A MANNER AS TO NOT DAMAGE THE BRANCHES OF THE STREET TREE(S). THIS MAY REQUIRE USING SMALLER EQUIPMENT AND LOADING AND UNLOADING MATERIALS IN A DESIGNATED SPACE AWAY FROM TREES ON THE CONSTRUCTION SITE. ANY DAMAGE OR INJURY TO EXISTING STREET TREES (EITHER ABOVE OR BELOW GROUND) SHALL BE REPORTED IMMEDIATELY TO CITY FORESTRY AT (608) 266-4816. PENALTIES AND REMEDIATION SHALL BE REQUIRED.

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GRADING & EROSION CONTROL PLAN

C200

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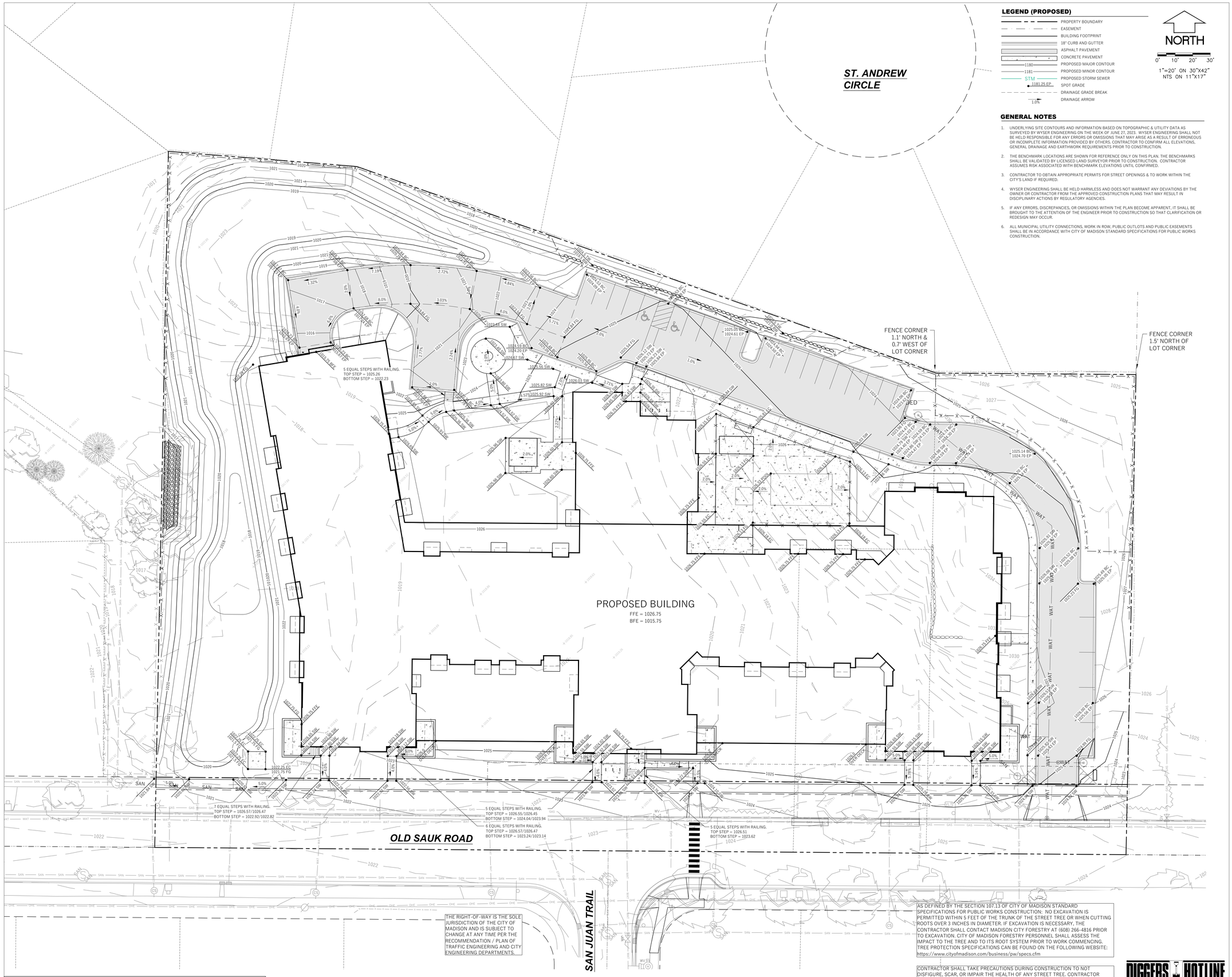

LEGEND (PROPOSED)

- PROPERTY BOUNDARY
- EASEMENT
- BUILDING FOOTPRINT
- 18" CURB AND GUTTER
- ASPHALT PAVEMENT
- CONCRETE PAVEMENT
- 1180 — PROPOSED MAJOR CONTOUR
- 1181 — PROPOSED MINOR CONTOUR
- STM — PROPOSED STORM SEWER
- 1181.25 EP — SPOT GRADE
- DRAINAGE GRADE BREAK
- 1.0% — DRAINAGE ARROW

GENERAL NOTES

1. UNDERLYING SITE CONTOURS AND INFORMATION BASED ON TOPOGRAPHIC & UTILITY DATA AS SURVEYED BY WYSER ENGINEERING ON THE WEEK OF JUNE 27, 2023. WYSER ENGINEERING SHALL NOT BE HELD RESPONSIBLE FOR ANY ERRORS OR OMISSIONS THAT MAY ARISE AS A RESULT OF ERRONEOUS OR INCOMPLETE INFORMATION PROVIDED BY OTHERS. CONTRACTOR TO CONFIRM ALL ELEVATIONS, GENERAL DRAINAGE AND EARTHWORK REQUIREMENTS PRIOR TO CONSTRUCTION.
2. THE BENCHMARK LOCATIONS ARE SHOWN FOR REFERENCE ONLY ON THIS PLAN. THE BENCHMARKS SHALL BE VALIDATED BY LICENSED LAND SURVEYOR PRIOR TO CONSTRUCTION. CONTRACTOR ASSUMES RISK ASSOCIATED WITH BENCHMARK ELEVATIONS UNTIL CONFIRMED.
3. CONTRACTOR TO OBTAIN APPROPRIATE PERMITS FOR STREET OPENINGS & TO WORK WITHIN THE CITY'S LAND IF REQUIRED.
4. WYSER ENGINEERING SHALL BE HELD HARMLESS AND DOES NOT WARRANT ANY DEVIATIONS BY THE OWNER OR CONTRACTOR FROM THE APPROVED CONSTRUCTION PLANS THAT MAY RESULT IN DISCIPLINARY ACTIONS BY REGULATORY AGENCIES.
5. IF ANY ERRORS, DISCREPANCIES, OR OMISSIONS WITHIN THE PLAN BECOME APPARENT, IT SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER PRIOR TO CONSTRUCTION SO THAT CLARIFICATION OR REDESIGN MAY OCCUR.
6. ALL MUNICIPAL UTILITY CONNECTIONS, WORK IN ROW, PUBLIC OUTLOTS AND PUBLIC EASEMENTS SHALL BE IN ACCORDANCE WITH CITY OF MADISON STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION.

BENCHMARK TABLE		
BM - #	ELEVATION	DESCRIPTION
BM - 1	1026.72	TOP NUT OF HYDRANT AT SW QUADRANT OF OLD SAUK ROAD AND SAN JUAN TRAIL
BM - 2	1026.56	TOP NUT OF HYDRANT 350' WEST OF SITE AT SW QUADRANT OF OLD SAUK ROAD AND EVERGLADE DRIVE
BM - 3	1026.21	TOP NUT OF HYDRANT 250' EAST OF SITE AT SW QUADRANT OF OLD SAUK ROAD AND YOSEMITE PLACE

THE RIGHT-OF-WAY IS THE SOLE JURISDICTION OF THE CITY OF MADISON AND IS SUBJECT TO CHANGE AT ANY TIME PER THE RECOMMENDATION / PLAN OF TRAFFIC ENGINEERING AND CITY ENGINEERING DEPARTMENTS.

AS DEFINED BY THE SECTION 107.13 OF CITY OF MADISON STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION: NO EXCAVATION IS PERMITTED WITHIN 5 FEET OF THE TRUNK OF THE STREET TREE OR WHEN CUTTING ROOTS OVER 3 INCHES IN DIAMETER. IF EXCAVATION IS NECESSARY, THE CONTRACTOR SHALL CONTACT MADISON CITY FORESTRY AT (608) 266-4816 PRIOR TO EXCAVATION. CITY OF MADISON FORESTRY PERSONNEL SHALL ASSESS THE IMPACT TO THE TREE AND TO ITS ROOT SYSTEM PRIOR TO WORK COMMENCING. TREE PROTECTION SPECIFICATIONS CAN BE FOUND ON THE FOLLOWING WEBSITE: https://www.cityofmadison.com/business/pw/specs.cfm

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DETAILED GRADING PLAN

C201

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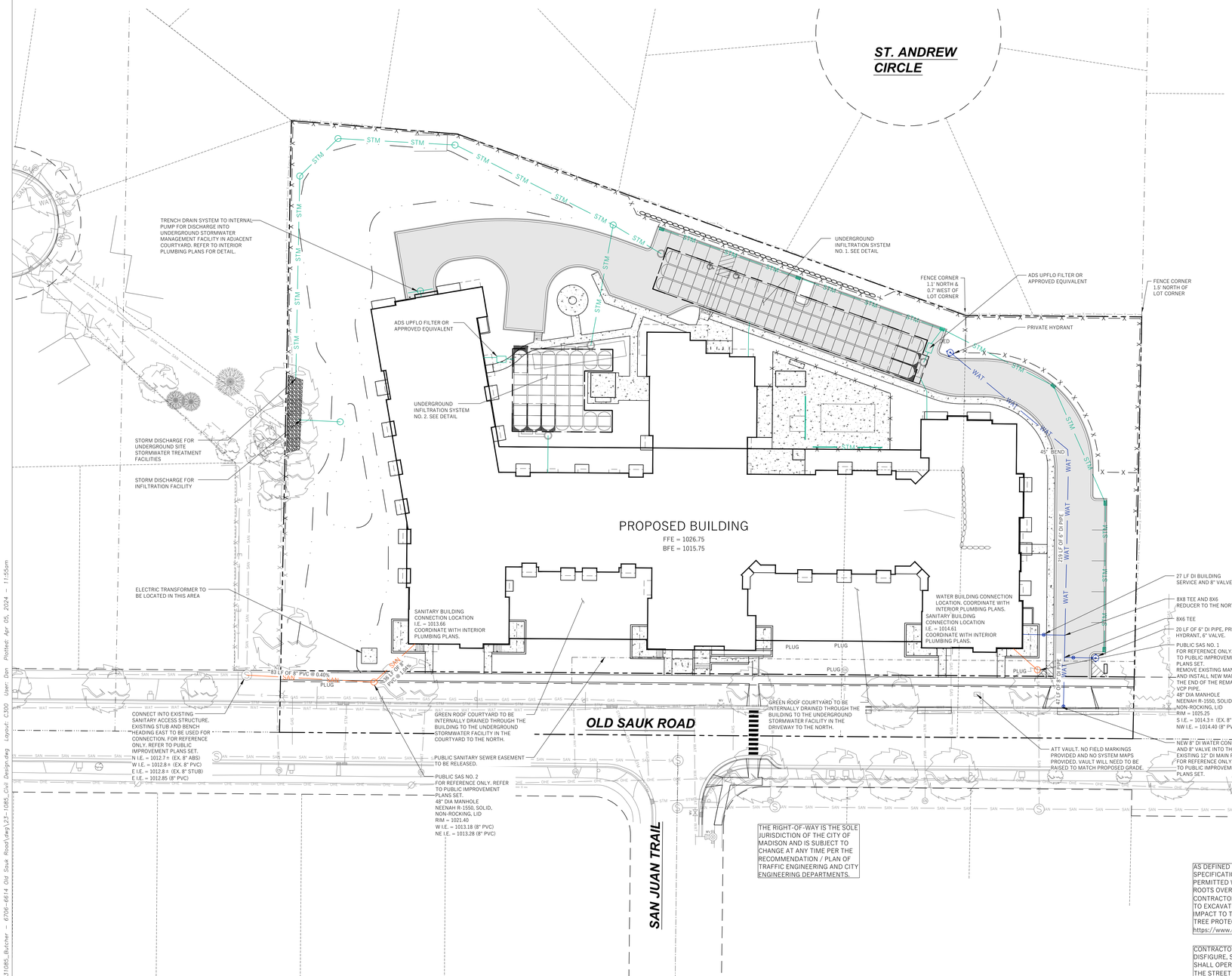

LEGEND (PROPOSED)

- PROPOSED PROPERTY BOUNDARY
- EASEMENT
- BUILDING FOOTPRINT
- 18" CURB AND GUTTER
- ASPHALT PAVEMENT
- CONCRETE PAVEMENT
- WAT — PROPOSED WATER MAIN
- SAN — PROPOSED SANITARY SEWER
- STM — PROPOSED STORM SEWER
- GAS — PROPOSED GAS SERVICE (DESIGN BY OTHERS)
- E — PROPOSED ELECTRIC SERVICE (DESIGN BY OTHERS)
- STORMWATER TREATMENT FACILITY
- DRAINAGE GRADE BREAK
- 1.0% DRAINAGE ARROW

NORTH

0" 15" 30" 45"

1"=30' ON 30"X42"
NTS ON 11"X17"

GENERAL NOTES

1. UNDERLYING SITE CONTOURS AND INFORMATION BASED ON TOPOGRAPHIC & UTILITY DATA AS SURVEYED BY WYSER ENGINEERING ON THE WEEK OF JUNE 27, 2023. WYSER ENGINEERING SHALL NOT BE HELD RESPONSIBLE FOR ANY ERRORS OR OMISSIONS THAT MAY ARISE AS A RESULT OF ERRONEOUS OR INCOMPLETE INFORMATION PROVIDED BY OTHERS. CONTRACTOR TO CONFIRM ALL ELEVATIONS, GENERAL DRAINAGE AND EARTHWORK REQUIREMENTS PRIOR TO CONSTRUCTION.
2. THE BENCHMARK LOCATIONS ARE SHOWN FOR REFERENCE ONLY ON THIS PLAN. THE BENCHMARKS SHALL BE VALIDATED BY LICENSED LAND SURVEYOR PRIOR TO CONSTRUCTION. CONTRACTOR ASSUMES RISK ASSOCIATED WITH BENCHMARK ELEVATIONS UNTIL CONFIRMED.
3. CONTRACTOR TO OBTAIN APPROPRIATE PERMITS FOR STREET OPENINGS & TO WORK WITHIN THE CITY'S LAND IF REQUIRED.
4. WYSER ENGINEERING SHALL BE HELD HARMLESS AND DOES NOT WARRANT ANY DEVIATIONS BY THE OWNER OR CONTRACTOR FROM THE APPROVED CONSTRUCTION PLANS THAT MAY RESULT IN DISCIPLINARY ACTIONS BY REGULATORY AGENCIES.
5. IF ANY ERRORS, DISCREPANCIES, OR OMISSIONS WITHIN THE PLAN BECOME APPARENT, IT SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER PRIOR TO CONSTRUCTION SO THAT CLARIFICATION OR REDESIGN MAY OCCUR.
6. ALL MUNICIPAL UTILITY CONNECTIONS, WORK IN ROW, PUBLIC OUTLOTS AND PUBLIC EASEMENTS SHALL BE IN ACCORDANCE WITH CITY OF MADISON STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION.

UTILITY NOTES

1. DIMENSIONS TAKE PRECEDENCE OVER SCALE. CONTRACTOR TO VERIFY ALL DIMENSIONS IN FIELD.
2. LENGTHS OF ALL UTILITIES ARE TO CENTER OF STRUCTURES OR FITTINGS AND MAY VARY SLIGHTLY FROM PLAN. LENGTHS SHALL BE VERIFIED IN THE FIELD DURING CONSTRUCTION.
3. CONTRACTOR SHALL VERIFY ALL ELEVATIONS, LOCATIONS, AND SIZES OF SANITARY, WATER AND STORM LATERALS AND CHECK ALL UTILITY CROSSINGS FOR CONFLICTS.
4. THE PROPOSED IMPROVEMENTS MUST BE CONSTRUCTED IN ACCORDANCE WITH ENGINEERING PLANS DESIGNED TO MEET ORDINANCES AND REQUIREMENTS OF THE MUNICIPALITY AND WISDOT, WISDSPS, AND WDNR.
5. PRIOR TO CONSTRUCTION, THE CONTRACTOR IS RESPONSIBLE FOR:
   - EXAMINING ALL SITES CONDITIONS RELATIVE TO THE CONDITIONS INDICATED ON THE ENGINEERING DRAWINGS. ANY DISCREPANCIES ARE TO BE REPORTED TO THE ENGINEER AND RESOLVED PRIOR TO THE START OF CONSTRUCTION.
   - OBTAINING ALL PERMITS INCLUDING PERMIT COSTS, TAP FEES, METER DEPOSITS, BONDS, AND ALL OTHER FEES REQUIRED FOR PROPOSED WORK TO OBTAIN OCCUPANCY.
   - VERIFYING UTILITY ELEVATIONS AND NOTIFYING ENGINEER OF ANY DISCREPANCY. NO WORK SHALL BE PERFORMED UNTIL THE DISCREPANCY IS RESOLVED.
   - NOTIFYING ALL UTILITIES PRIOR TO THE INSTALLATION OF ANY UNDERGROUND IMPROVEMENTS.
   - NOTIFYING THE DESIGN ENGINEER AND MUNICIPALITY 48 HOURS PRIOR TO THE START OF CONSTRUCTION TO ARRANGE FOR APPROPRIATE CONSTRUCTION OBSERVATION.
9. THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING THE ENGINEER WITH AS-BUILT CONDITIONS OF THE DESIGNATED IMPROVEMENTS IN ORDER THAT THE APPROPRIATE DRAWINGS CAN BE PREPARED, IF REQUIRED. ANY CHANGES TO THE DRAWINGS OR ADDITIONAL ITEMS MUST BE REPORTED TO THE ENGINEER AS WORK PROGRESSES.
10. ANY SANITARY SEWER, SANITARY SEWER SERVICES, WATER MAIN, WATER SERVICES, STORM SEWER, OR OTHER UTILITIES, WHICH ARE DAMAGED BY THE CONTRACTORS, SHALL BE REPAIRED TO THE OWNER'S SATISFACTION AT THE CONTRACTOR'S EXPENSE. NO BLASTING IS ALLOWED WITHIN 30 FEET OF EXISTING UTILITIES.
11. ALL PRIVATE INTERCEPTOR WATER MAIN AND WATER SERVICES SHALL BE INSTALLED WITH A 6' MINIMUM BURY. PROVIDE INSULATION ABOVE PIPES WITH LESS THAN 5' OF GROUND COVER.
12. GRANULAR BACKFILL MATERIALS ARE REQUIRED IN ALL UTILITY TRENCHES UNDER SIDEWALKS AND PROPOSED PAVED AREAS (UNLESS OTHERWISE SPECIFIED BY A GEOTECHNICAL ENGINEER). ALL UTILITY TRENCH BACKFILL SHALL BE COMPACTED PER SPECIFICATIONS. ALL PAVEMENT PATCHING SHALL COMPLY WITH THE CITY OF MADISON STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION. ADDITIONAL PAVEMENT MILLING AND OVERLAY MAY BE REQUIRED BY PERMIT.
13. CONTRACTOR SHALL NOTIFY THE MUNICIPAL PUBLIC WORKS DEPARTMENT A MINIMUM OF 48 HOURS BEFORE CONNECTING TO PUBLIC UTILITIES.
14. ALL NON-METALLIC BUILDING SEWER AND WATER SERVICES MUST BE ACCOMPANIED BY MEANS OF LOCATING UNDERGROUND PIPE. TRACER WIRE VALVE BOXES SHALL BE INSTALLED ON ALL LATERALS AND AS INDICATED ON THESE PLANS.
15. ALL EXTERIOR CLEANOUTS SHALL BE PROVIDED WITH A FROST SLEEVE IN ACCORDANCE WITH SPS 382.34(5)(a)b AND SPS 384.30(2)(c).
16. ALL PRIVATE PLUMBING MATERIALS SHALL CONFORM TO SPS 384.30.
17. ALL PRIVATE PIPE JOINTS SHALL BE INSTALLED PER SPS 384.40.
18. ALL PRIVATE WATER PIPE, INCLUDING DEPTH AND SERRATION REQUIREMENTS, SHALL BE IN ACCORDANCE WITH SPS 382.40(8).
19. THE CONTRACTOR SHALL ALLOW 10 WORKING DAYS FOR THE CONSTRUCTION OF GAS MAINS WHEN SCHEDULING THE WORK AND SHALL NOT RESTRICT ACCESS TO THE GAS MAIN CONTRACTOR OR OTHER UTILITY COMPANIES.
20. INLET CASTINGS SHALL BE SET TO GRADE PRIOR TO AND SEPARATE FROM THE POURING OF THE CONCRETE CURB AND GUTTER. IS IS REQUIRED THAT THREE FEET OF CONCRETE CURB AND GUTTER ON EACH SIDE OF THE INLET SHALL BE POURED BY HAND, NOT THROUGH THE USE OF A CURB MACHINE. THE INLET CASTING SHALL BE SET TO GRADE ON A BED OF MORTAR WHICH SHALL BE A MINIMUM OF TWO INCHES THICK. THE INLET SHALL BE PLACED ON THE MORTAR BED AND SHALL BE ADJUSTED TO GRADE BY APPLYING DIRECT PRESSURE TO THE CASTING. ONCE THE CASTING ADJUSTMENT IS COMPLETE, THREE FEET OF CURB AND GUTTER ON EACH SIDE OF THE CASTING SHALL BE POURED BY HAND.
21. CONTRACTOR SHALL VERIFY AND COORDINATE ALL UTILITY CONNECTIONS WITH THE BUILDING PRIOR TO CONSTRUCTION.
22. THE CONTRACTOR SHALL CONDUCT HIS OPERATIONS SO AS TO BE IN CONFORMANCE WITH THE CITY EROSION CONTROL AND STORMWATER ORDINANCE, AND DNR ADMINISTRATIVE RULE NR 216 AT ALL TIMES.

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UTILITY PLAN

C300

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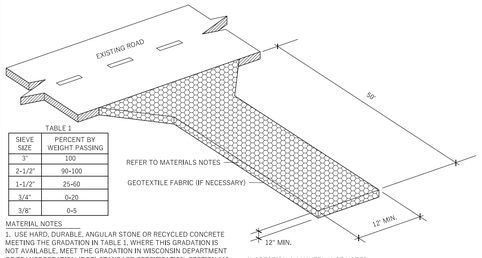


TABLE 1

SIEVE SIZE	PERCENT BY WEIGHT PASSING
3"	100
2-1/2"	90-100
1-1/2"	25-60
3/4"	0-20
3/8"	0-5

MATERIAL NOTES

1. USE HARD, DURABLE, ANGULAR STONE OR RECYCLED CONCRETE MEETING THE GRADATION IN TABLE 1, WHERE THIS GRADATION IS NOT AVAILABLE, MEET THE GRADATION IN WISCONSIN DEPARTMENT OF TRANSPORTATION (DOT) STANDARD SPECIFICATION, SECTION 312 SELECT CRUSHED MATERIAL. USE MATERIAL SUBSTANTIALLY FREE FROM DIRT, DEBRIS, STEEL, VEGETABLE MATTER, AND OTHER DELETERIOUS MATERIAL. PLACE THE AGGREGATE IN A LAYER AT LEAST 12 INCHES THICK.

2. THE TRACKING PAD SHALL BE UNDERLAIN WITH A WDOT TYPE R GEOTEXTILE FABRIC WHERE WARRANTED BASED ON SOIL TYPE OR HIGH GROUNDWATER.

INSTALLATION NOTES

1. INSTALLATION SHALL CONFORM WITH THE REQUIREMENTS OF WDNR CONSERVATION PRACTICE STANDARD 1057.

2. INSTALL THE TRACKING PAD ACROSS THE FULL WIDTH OF THE ACCESS POINT, OR RESTRICT EXITING TRAFFIC TO A DEDICATED EGRESS LANE WITH A DRIVING SURFACE AT LEAST 12 FEET WIDE.

3. DIMENSIONS OF THE TRACKING PAD SHALL BE MINIMUM AS NOTED ON THE FIGURE ABOVE.

4. DIVERT SURFACE FLOWS AWAY FROM TRACKING PADS OR CONVEY FLOW UNDER AND/OR AROUND USING CULVERTS AND SWALES. DIRECT RUNOFF FROM TRACKING PADS TO SEDIMENT CONTROL PRACTICES.

5. DO NOT COMPACT AGGREGATE PRIOR TO USE. COMPACTION, GROUTING, OR OTHER MEANS OF CREATING A SMOOTH SURFACE COMPROMISE THE EFFECTIVENESS OF THE TRACKING PAD.

6. TRACKING PAD SHALL BE REMOVED OR INCORPORATED INTO GRAVEL DRIVEWAY ONLY AFTER CONSTRUCTION IS COMPLETE AND THE SITE HAS BEEN STABILIZED.

INSPECTION & MAINTENANCE NOTES

1. STONE TRACKING PADS SHALL BE INSPECTED WEEKLY AND WITHIN 24 HOURS AFTER EVERY PRECIPITATION EVENT THAT PRODUCES 0.5 INCHES OF RAIN OR MORE DURING A 24 HOUR PERIOD.

2. MONITOR AND MAINTAIN DEVICES TO MINIMIZE SHIFTING, RUTTING OF ADJACENT SURFACES, AND STRUCTURAL FAILURE. MAINTAIN A LOOSENED, ROUGH SURFACE BY SCRAPING, LOOSENING, OR TOP-DRESSING WITH ADDITIONAL AGGREGATE.

2. ADDITIONAL AGGREGATE SHALL BE PLACED IF THE TRACKING PAD BECOMES BURIED OR IF SEDIMENT IS NOT BEING REMOVED EFFECTIVELY FROM THE VEHICLE TIRES.

3. A MINIMUM 30-FEET WIDE BY 50-FEET LONG BY 12-INCH THICK PAD SHALL BE MAINTAINED AT ALL TIMES. ADD STONE AS NEEDED TO MAINTAIN THE MINIMUM PAD THICKNESS.

4. THE TRACKING PAD PERFORMANCE SHALL BE MAINTAINED BY SCRAPING OR TOP-DRESSING WITH ADDITIONAL AGGREGATE.

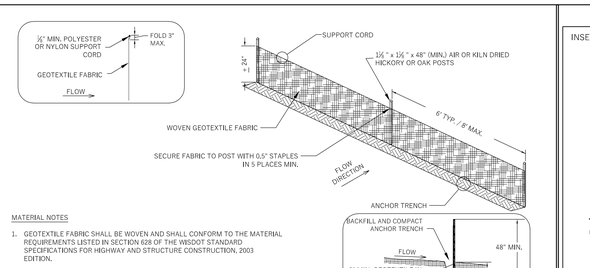
5. ANY SEDIMENT TRACKED ONTO A PUBLIC OR PRIVATE ROAD SHOULD BE REMOVED BY STREET CLEANING AT THE END OF EACH WORKING DAY.

6. REMOVE STONES LODGED BETWEEN THE TIRES OF DUAL WHEEL VEHICLES PRIOR TO LEAVING THE CONSTRUCTION SITE.

7. MAINTENANCE SHALL BE COMPLETED AS SOON AS POSSIBLE WITH CONSIDERATION OF SITE CONDITIONS.

8. REPLACE DAMAGED OR CRUSHED CULVERTS UNDER TRACKING PAD.

CONSTRUCTION ENTRANCE (STONE TRACKING PAD)



MATERIAL NOTES

1. GEOTEXTILE FABRIC SHALL BE WOVEN AND SHALL CONFORM TO THE MATERIAL REQUIREMENTS LISTED IN SECTION 628 OF THE WISDOT STANDARD SPECIFICATIONS FOR HIGHWAY AND STRUCTURE CONSTRUCTION, 2003 EDITION.

INSTALLATION NOTES

1. INSTALLATION SHALL CONFORM WITH THE REQUIREMENTS OF WDNR CONSERVATION PRACTICE STANDARD 1056.

2. CONSTRUCT THE SILT FENCE IN AN ARC WITH THE ENDS POINTING UPSLOPE TO AVOID EROSION AROUND THE ENDS OF THE FENCE.

3. FAILURE TO PROPERLY ANCHOR SILT FENCE COULD RESULT IN WATER AND SEDIMENT RELEASE BENEATH THE SILT FENCE. PROPERLY SECURE THE SILT FENCE INTO THE ANCHOR TRENCH.

4. CONSTRUCT THE FENCE FROM A CONTINUOUS ROLL OF GEOTEXTILE TO AVOID JOINTS. WHERE JOINTS ARE NECESSARY, OVERLAP TO THE NEXT POST OR WRAP ADJOINING FABRICS TOGETHER AROUND THE JOINT POST AND TIGHTLY FASTEN.

5. SILT FENCE SHALL NOT BE USED IN AREAS OF CONCENTRATED FLOW.

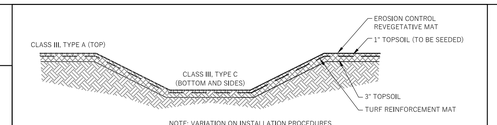
INSPECTION & MAINTENANCE NOTES

1. AT A MINIMUM, PERFORM INSPECTIONS WEEKLY AND WITHIN 24 HOURS OF PRECIPITATION EVENTS PRODUCING 0.5 INCHES OR MORE OF RAINFALL.

2. INSPECT FENCES FOR DAMAGE TO STAKES AND FABRIC, UNDERCUTTING, EXCESSIVE SEDIMENT ACCUMULATION (GREATER THAN ½ OF THE FENCE HEIGHT), AND INDICATIONS OF SCOUR AROUND THE EDGES.

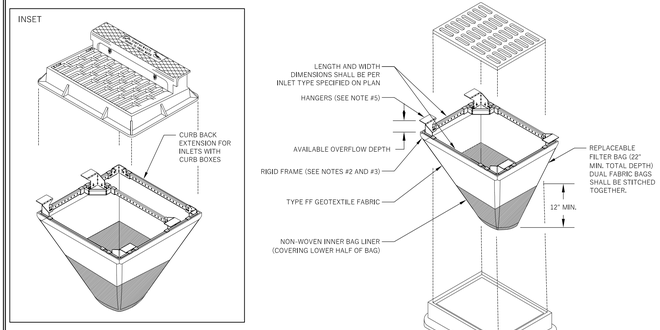
3. REPAIR OR REPLACE SILT FENCE WITHIN 24 HOURS OF IDENTIFYING AND DEFICIENCIES.

SILT FENCE



NOTE: VARIATION ON INSTALLATION PROCEDURES MAY OCCUR. REFER TO MANUFACTURER'S RECOMMENDED INSTALLATION GUIDELINES.

TURF REINFORCEMENT INSTALLATION DETAIL



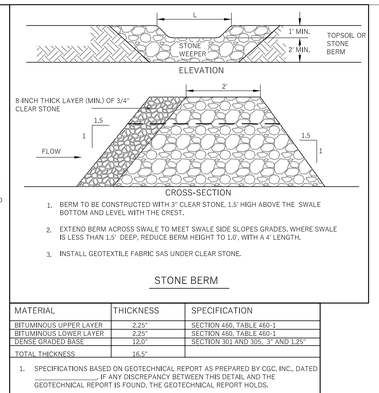
NOTES:

1. DETAIL BASED ON WDNR TECHNICAL STANDARD 1060. ANY VARIATIONS FROM THAT STANDARD IS UNINTENDED AND SHOULD NOT BE USED.
2. TAPER BOTTOM OF BAG TO MAINTAIN 8" OF CLEARANCE BETWEEN THE BAG AND THE STRUCTURE, MEASURED FROM THE BOTTOM OF THE OVERFLOW OPENINGS TO THE STRUCTURE WALL.
3. THE RIGID FRAME SHALL BE CONSTRUCTED OF GALVANIZED STEEL AND HAVE ADEQUATE STRENGTH TO SUPPORT THE WEIGHT OF THE SEDIMENT BAG WHEN COMPLETELY FULL.
4. THE RIGID FRAME SHALL NOT INTERFERE WITH OR ELEVATE THE GRATE MORE THAN 1/8".
5. DROP THE INLET FILTER THOUGH THE CLEAR OPENING SUCH THAT THE HANGERS REST FIRMLY ON THE LIP OF THE STRUCTURE.

MAINTENANCE NOTES:

1. WHEN REMOVING OR MAINTAINING INLET PROTECTION, CARS SHALL BE TAKEN SO THAT THE SEDIMENT TRAPPED IN THE FABRIC DOES NOT FALL INTO THE STRUCTURE. MATERIAL THAT HAS FALLEN INTO THE STRUCTURE SHALL BE IMMEDIATELY REMOVED.

TYPE D-RF INLET PROTECTION



1. BERM TO BE CONSTRUCTED WITH 3" CLEAR STONE, 1.5' HIGH ABOVE THE SWALE BOTTOM AND LEVEL WITH THE CREST.
2. EXTEND BERM ACROSS SWALE TO MEET SWALE SIDE SLOPES GRADES. WHERE SWALE IS LESS THAN 1.5' DEEP, REDUCE BERM HEIGHT TO 1.0', WITH A 4' LENGTH.
3. INSTALL GEOTEXTILE FABRIC SAS UNDER CLEAR STONE.

STONE BERM

MATERIAL	THICKNESS	SPECIFICATION
BITUMINOUS UPPER LAYER	2.25"	SECTION 460, TABLE 460-1
BITUMINOUS LOWER LAYER	2.25"	SECTION 460, TABLE 460-1
DENSE GRADED BASE	12.0"	SECTION 301 AND 305, 3" AND 1.25"
TOTAL THICKNESS	16.5"	

1. SPECIFICATIONS BASED ON GEOTECHNICAL REPORT AS PREPARED BY CGC, INC., DATED _____. IF ANY DISCREPANCY BETWEEN THIS DETAIL AND THE GEOTECHNICAL REPORT IS FOUND, THE GEOTECHNICAL REPORT HOLDS.
2. UNDERCUTTING IS LIKELY BASED ON UNDERLYING CLAY SOILS. ASSUME 30% OF SITE WILL REQUIRE UNDERCUTTING, UNDERCUT SECTION ASSUMED TO BE 12" OF 3" DGB OVER BIAXIAL GEOGRID (TENSAR BX TYPE 1 OR EQUAL). FINAL DETERMINATION BASED ON FIELD PROOF-ROLL.
3. COMPACTION REQUIREMENTS
   3.1. BITUMINOUS CONCRETE: REFER TO SECTION 460-3.
   3.2. BASE COURSE: REFER TO SECTION 301.3.4.2, STANDARD COMPACTION
4. MIXTURE TYPE LT BITUMINOUS PAVEMENT IS RECOMMENDED FOR THE PARKING AREA, REFER TO SECTION 460, TABLE 460-2 OF THE STANDARD SPECIFICATIONS.
5. THE UPPER 4" OF DGB SHALL BE 1.25"; THE BOTTOM PART OF THE LAYER CAN BE 3" DGB.

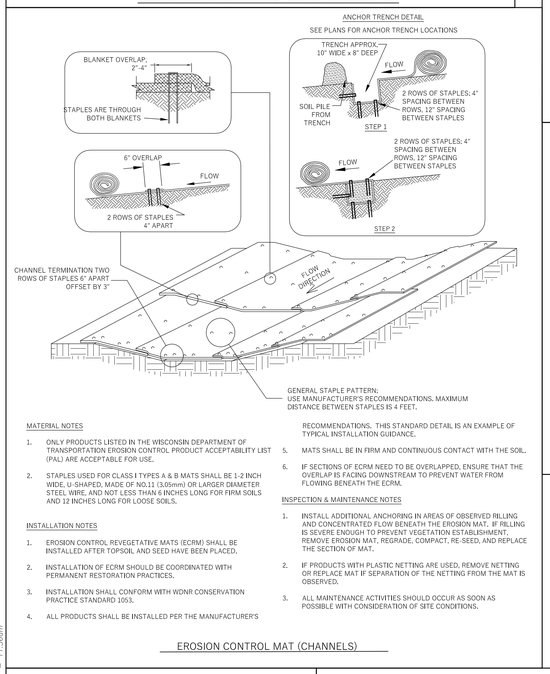
MATERIAL	THICKNESS	SPECIFICATION
CONCRETE SLAB LAYER	6.0"*	SECTION 501, GRADE A, CLASS I
DENSE GRADED BASE	8.0"**	SECTION 301 AND 305, 31.5 MM
TOTAL THICKNESS	14.0"	

NOTE: CONCRETE SIDEWALK TO BE 5" CONCRETE OVER 4" DENSE GRADED BASE.
* REINFORCEMENT TO INCLUDE #4 REBAR 12" O.C. BOTH WAYS OR EQUIVALENT
** SITE PROOF ROLLS TO BE COMPLETED WITH ADDITIONAL THICKNESS ADDED PER GEOTECHNICAL RECOMMENDATION, BASED ON CURRENT GEOTECHNICAL RECOMMENDATIONS, 12" DGB TO BE ADDED BELOW 6" LAYER WITH ADDITIONAL BIAXIAL GEOGRID (TENSAR BX TYPE I OR EQUIVALENT)

PAVEMENT SECTIONS

BASIS OF DESIGN: TREX COMPOSITE FENCE

DECORATIVE FENCE



MATERIAL NOTES

1. ONLY PRODUCTS LISTED IN THE WISCONSIN DEPARTMENT OF TRANSPORTATION EROSION CONTROL PRODUCT ACCEPTABILITY LIST (PAL) ARE ACCEPTABLE FOR USE.
2. STAPLES USED FOR CLASS I TYPES A & B MATS SHALL BE 1-2 INCH WIDE, U-SHAPED, MADE OF NO.11 (3.05mm) OR LARGER DIAMETER STEEL WIRE AND NOT LESS THAN 6 INCHES LONG FOR FIRM SOILS AND 12 INCHES LONG FOR LOOSE SOILS.

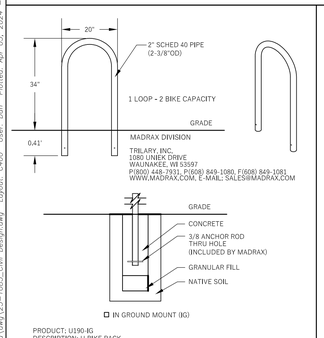
INSTALLATION NOTES

1. EROSION CONTROL REVEGETATIVE MATS (ECRM) SHALL BE INSTALLED AFTER TOPSOIL AND SEED HAVE BEEN PLACED.
2. INSTALLATION OF ECRM SHOULD BE COORDINATED WITH PERMANENT RESTORATION PRACTICES.
3. INSTALLATION SHALL CONFORM WITH WDNR CONSERVATION PRACTICE STANDARD 1053.
4. ALL PRODUCTS SHALL BE INSTALLED PER THE MANUFACTURER'S RECOMMENDATIONS. THIS STANDARD DETAIL IS AN EXAMPLE OF TYPICAL INSTALLATION GUIDANCE.
5. MATS SHALL BE IN FIRM AND CONTINUOUS CONTACT WITH THE SOIL.
6. IF SECTIONS OF ECRM NEED TO BE OVERLAPPED, ENSURE THAT THE OVERLAP IS FACING DOWNSTREAM TO PREVENT WATER FROM FLOWING BENEATH THE ECRM.

INSPECTION & MAINTENANCE NOTES

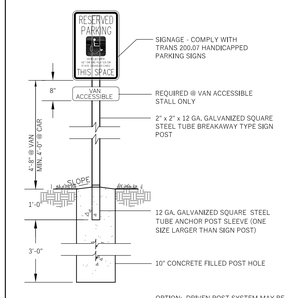
1. INSTALL ADDITIONAL ANCHORING IN AREAS OF OBSERVED RILLING AND CONCENTRATED FLOW BENEATH THE EROSION MAT. IF RILLING IS SEVERE ENOUGH TO PREVENT VEGETATION ESTABLISHMENT, REMOVE EROSION MAT, REGRADE, COMPACT, RE-SEED, AND REPLACE THE SECTION OF MAT.
2. IF PRODUCTS WITH PLASTIC NETTING ARE USED, REMOVE NETTING OR REPLACE MAT IF SEPARATION OF THE NETTING FROM THE MAT IS OBSERVED.
3. ALL MAINTENANCE ACTIVITIES SHOULD OCCUR AS SOON AS POSSIBLE WITH CONSIDERATION OF SITE CONDITIONS.

EROSION CONTROL MAT (CHANNELS)



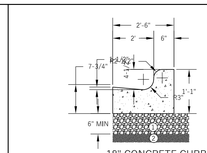
PRODUCT: U190-IG
DESCRIPTION: U BIKE RACK
IN-GROUND MOUNT, BLACK POWDER COAT

BIKE RACK

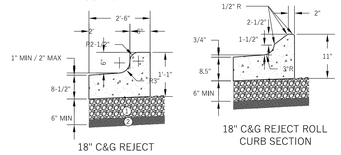


OPTION: DRIVEN POST SYSTEM MAY BE UTILIZED IN LIEU OF CONCRETE BASE. PROVIDE MIN. 3'-0" LONG ANCHOR POST SLEEVE.

ADA VAN ACCESSIBLE SIGN



18" CONCRETE CURB & GUTTER

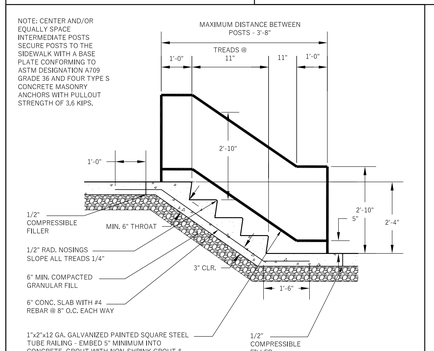


18" C&G REJECT SECTION

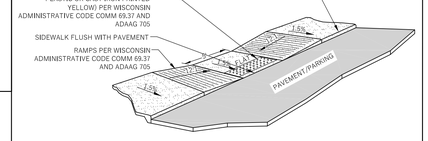
18" C&G REJECT ROLL CURB SECTION

① DENSE GRADED BASE 1-1/4" (TYP.), SHALL BE PROVIDED 18" BEYOND THE BACK OF CURB
② COMPACTED SUB BASE

CURB AND GUTTER



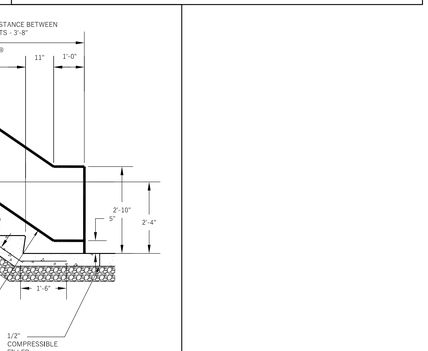
STAIRWAY DETAIL



WASHOUT NOTES

1. ALTERNATIVE CONCRETE WASHOUTS ALLOWABLE AS APPROVED BY ENGINEER, INCLUDING DISPOSABLE WASHOUTS, ETC.
2. NO WASHING OUT OF CONCRETE TRUCKS OR WASHING OF SWEEPINGS FROM EXPOSED AGGREGATE CONCRETE INTO STORM DRAINS, OPEN DITCHES, STREETS, OR STREAMS IS ALLOWED.
3. EXCESS CONCRETE IS NOT ALLOWED TO BE DUMPED ON-SITE, EXCEPT IN DESIGNATED TEMPORARY CONCRETE WASHOUT PIT AREAS.
4. ON-SITE TEMPORARY CONCRETE WASHOUT AREAS WILL BE LOCATED AT LEAST 50 FEET FROM STORM DRAINS, OPEN DITCHES, OR WATER BODIES AS DETERMINED IN THE FIELD.
5. TEMPORARY CONCRETE WASHOUT FACILITIES WILL BE CONSTRUCTED AND MAINTAINED IN SUFFICIENT QUANTITY AND SIZE TO CONTAIN ALL LIQUID AND CONCRETE WASTE GENERATED BY WASHOUT OPERATIONS.
6. WASHOUT FACILITIES WILL BE CLEANED OUT OR REPLACED ONCE THE WASHOUT IS 75% FULL.
7. PLASTIC LINING MATERIAL WILL BE MINIMUM OF 10 MIL POLYETHYLENE SHEETING AND WILL BE FREE OF HOLES, TEARS, OR OTHER DEFECTS.
8. WHEN WASHOUT FACILITIES ARE NO LONGER REQUIRED FOR WORK, THE HARDENED CONCRETE WILL BE REMOVED AND DISPOSED OF OFFSITE. MATERIALS USED TO CONSTRUCT TEMPORARY CONCRETE WASHOUT FACILITIES WILL BE REMOVED FROM THE SITE AND DISPOSED OF.

CONCRETE WASHOUT



ADA RAMP

PRELIMINARY
NOT FOR CONSTRUCTION

Old Sauk Road Apartments
6610 Old Sauk Road
Madison, WI

2023.30.00

Date	Issuance/Revisions	Symbol
04/05/2024	LAND USE APPLICATION	

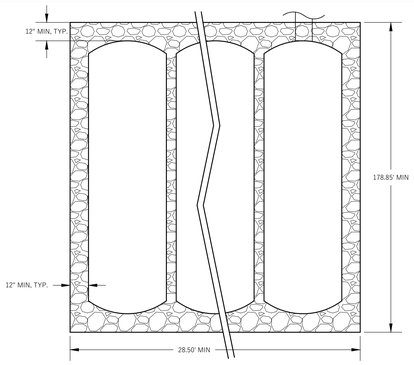
DETAILS

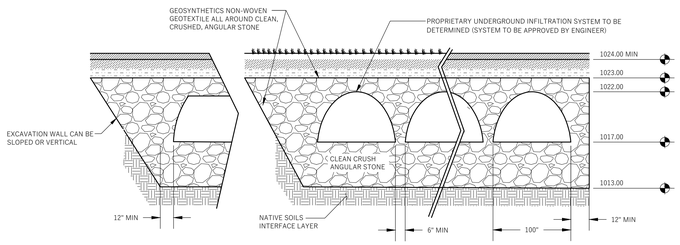
C400

UNDERGROUND INFILTRATION SYSTEM #1

GENERAL NOTES:

1. CLEAN, CRUSHED, ANGULAR STONE TO BE COMPACTED IN 6" (MAX) LIFTS USING TWO FULL COVERAVGES WITH A VIBRATORY COMPACTOR.
2. WHERE INFILTRATION SURFACES MY BE COMPROMISED BY COMPACTION, FOR STANDARD DESIGN LOAD CONDITIONS, A FLAT SURFACE MAY BE ACHIEVED BY RAKING OR DRAGGING WITHOUT COMPACTION EQUIPMENT.
3. SAND/NATIVE SOIL INTERFACE LAYER SHALL BE FORMED BY A LAYER OF SAND 3 INCHES DEEP, WHICH IS VERTICALLY MIXED WITH THE NATIVE SOIL TO A DEPTH OF 2-4 INCHES. A CONSTRUCTION REPRESENTATIVE MUST BE ON SITE DURING OVER EXCAVATION TO APPROVE OF THE DEPTH AND SOIL TYPES.
4. GEOSYNTHETICS NON-WOVEN GEOTEXTILE SHALL BE PLACED ALL AROUND THE CLEAN, CRUSHED, ANGULAR STONE.
5. RUNOFF MUST INFILTRATE WITHIN 72-HOURS. SYSTEMS UNABLE TO MAINTAIN THESE RATES MUST BE REPLACED AND RESTORED TO ORIGINAL APPROVED PLAN.
6. ALL WORK TO BE CONDUCTED IN CONFORMANCE WITH APPLICABLE LOCAL, REGIONAL, AND STATE STORMWATER STANDARDS FOR THE PROJECT SITE AS APPROVED BY THE REGULATORY ENGINEER.





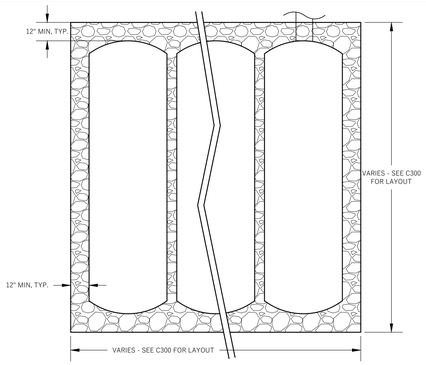
	REFERENCE	SOIL DEPTH	SOIL TYPE	INFILTRATION RATE	LIMITING LAYER
UNDERGROUND INFILTRATION 1	TP-8	1013.2-1009.7	VGRS	3.6	1009.7 - GRLFS - 0.5 IN/HR*

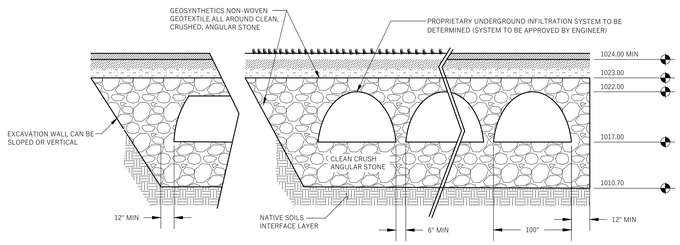
*INFILTRATION RATE LIMITED BY LOWER LAYER. LOWER LAYER CONSISTS OF GRLFS AND SILT LOAM SEAMS. SOIL INFILTRATION RATE CAN BE IMPROVED BY EXCAVATING/TURNING OVER THE GRANULAR DEPOSIT TO BREAK UP THE LOWER-PERMEABILITY SEAMS. GEOTECHNICAL ENGINEER TO CONFIRM INFILTRATION RATE TO BE IMPROVED TO A MINIMUM OF 0.5 IN/HR FOR A MINIMUM OF 5 FEET BELOW THE BOTTOM OF THE STONE STORAGE LAYER.

UNDERGROUND INFILTRATION SYSTEM #2

GENERAL NOTES:

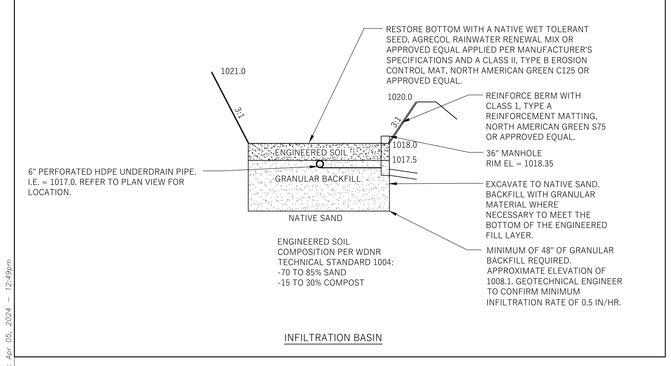
1. CLEAN, CRUSHED, ANGULAR STONE TO BE COMPACTED IN 6" (MAX) LIFTS USING TWO FULL COVERAVGES WITH A VIBRATORY COMPACTOR.
2. WHERE INFILTRATION SURFACES MY BE COMPROMISED BY COMPACTION, FOR STANDARD DESIGN LOAD CONDITIONS, A FLAT SURFACE MAY BE ACHIEVED BY RAKING OR DRAGGING WITHOUT COMPACTION EQUIPMENT.
3. SAND/NATIVE SOIL INTERFACE LAYER SHALL BE FORMED BY A LAYER OF SAND 3 INCHES DEEP, WHICH IS VERTICALLY MIXED WITH THE NATIVE SOIL TO A DEPTH OF 2-4 INCHES. A CONSTRUCTION REPRESENTATIVE MUST BE ON SITE DURING OVER EXCAVATION TO APPROVE OF THE DEPTH AND SOIL TYPES.
4. GEOSYNTHETICS NON-WOVEN GEOTEXTILE SHALL BE PLACED ALL AROUND THE CLEAN, CRUSHED, ANGULAR STONE.
5. RUNOFF MUST INFILTRATE WITHIN 72-HOURS. SYSTEMS UNABLE TO MAINTAIN THESE RATES MUST BE REPLACED AND RESTORED TO ORIGINAL APPROVED PLAN.
6. ALL WORK TO BE CONDUCTED IN CONFORMANCE WITH APPLICABLE LOCAL, REGIONAL, AND STATE STORMWATER STANDARDS FOR THE PROJECT SITE AS APPROVED BY THE REGULATORY ENGINEER.





	REFERENCE	SOIL DEPTH	SOIL TYPE	INFILTRATION RATE	LIMITING LAYER
UNDERGROUND INFILTRATION #2	TP-7	1010.7-1007.7	VGRLS	1.63*	NONE

*GEOTECHNICAL ENGINEER TO CONFIRM MINIMUM INFILTRATION RATE OF 1.63 IN/HR.



INFILTRATION BASIN

Potter Lawson
Success by Design

WYSER ENGINEERING

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6610 Old Sauk Road
Madison, WI

2023.30.00

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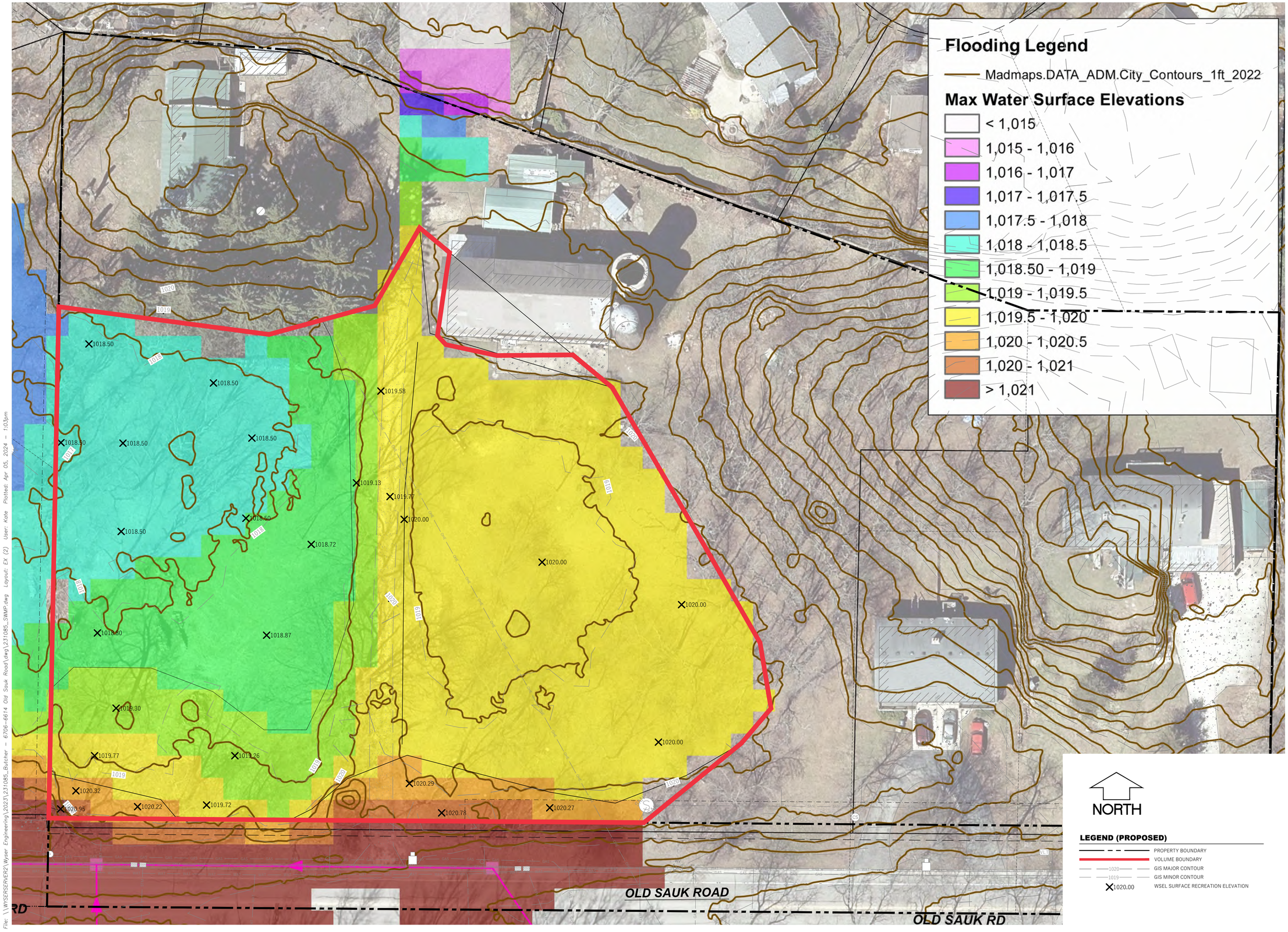
APPENDIX D

Predevelopment Hydrologic Modeling



File: \\WYSERSERVER2\Wyser Engineering\2023\23108S_Butcher - 6706-6614 Old Sauk Road\dwg\23108S_SWMP.dwg Layout: EX (2) User: Kate Plotted: Apr 05, 2024 - 1:03pm

WYSER ENGINEERING

6610 OLD SAUK ROAD
MADISON, WI 53705

OLD SAUK ROAD APARTMENTS

CITY OF MADISON, DANE COUNTY, WI

Sheet Title:
PRE-DEVELOPMENT DETENTION VOLUME

Revisions:

No.	Date:	Description:

Graphic Scale	0' 5' 10' 20' 30'
Wyser Number	23-1085
Set Type	REVIEW
Date Issued	04/08/2024
Sheet Number	EX D.1

LEGEND (PROPOSED)

- PROPERTY BOUNDARY
- EXISTING WATERSHED BOUNDARY
- VOLUME CONTROL BOUNDARY
- EXISTING TIME OF CONCENTRATION FLOW PATH

NORTH

NORTHEAST
- HARVEST HILL RD

WEST
- E SPYGLASS CT

KETTLE

SOUTHEAST
-OLD SAUK ROAD

OLD SAUK ROAD

WYSER ENGINEERING

6610 OLD SAUK ROAD
MADISON, WI 53705

OLD SAUK ROAD APARTMENTS

CITY OF MADISON, DANE COUNTY, WI

Sheet Title: EXISTING WATERSHED MAP

Revisions:

No.	Date:	Description:

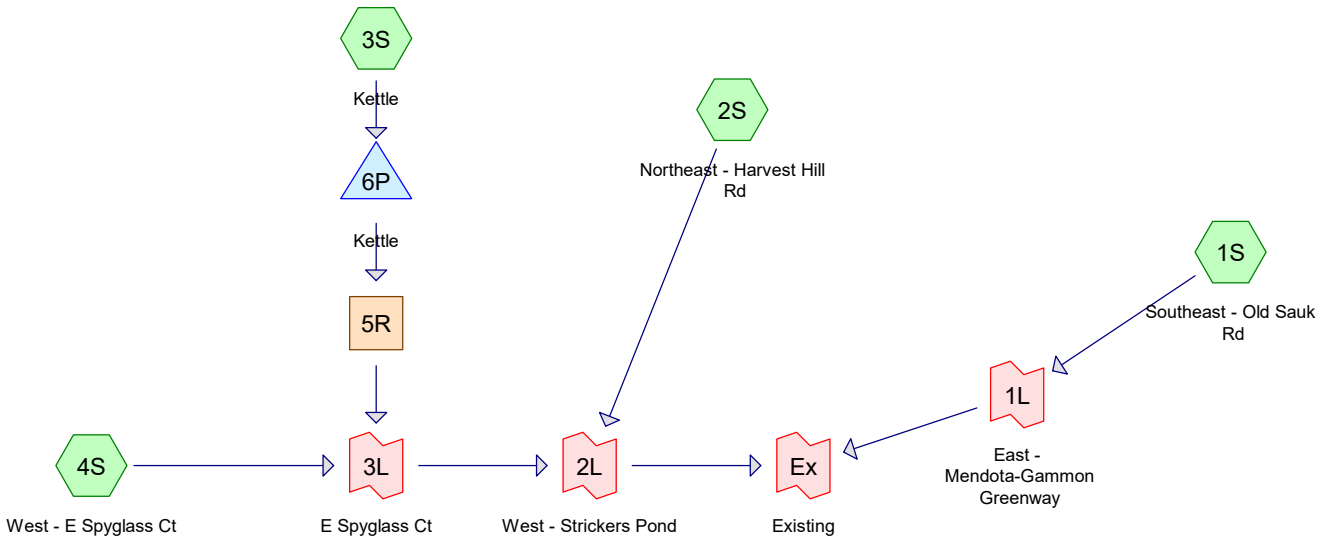
Graphic Scale: 0' 5' 10' 20' 30'

Wyser Number: 23-1085

Set Type: REVIEW

Date Issued: 04/08/2024

Sheet Number: EX D.2



Subcat Reach Pond Link

Routing Diagram for 231085_6706-6614 Old Sauk Road_Predevelopment

Prepared by Wyser Engineering, Printed 4/5/2024

Area Listing (selected nodes)

Area (sq-ft)	CN	Description (subcatchment-numbers)
51,856	61	>75% Grass cover, Good, HSG B (1S, 2S, 3S, 4S)
19,869	98	Impervious Areas (1S, 2S, 3S, 4S)
89,300	55	Woods, Good, HSG B (2S, 3S, 4S)
161,025	**62**	**TOTAL AREA**

Soil Listing (selected nodes)

Area (sq-ft)	Soil Group	Subcatchment Numbers
0	HSG A	
141,156	HSG B	1S, 2S, 3S, 4S
0	HSG C	
0	HSG D	
19,869	Other	1S, 2S, 3S, 4S
161,025		**TOTAL AREA**

Ground Covers (selected nodes)

HSG-A (sq-ft)	HSG-B (sq-ft)	HSG-C (sq-ft)	HSG-D (sq-ft)	Other (sq-ft)	Total (sq-ft)	Ground Cover	Su Nu
0	51,856	0	0	0	51,856	>75% Grass cover, Good	
0	0	0	0	19,869	19,869	Impervious Areas	
0	89,300	0	0	0	89,300	Woods, Good	
0	**141,156**	**0**	**0**	**19,869**	**161,025**	**TOTAL AREA**	

Time span=0.00-60.00 hrs, dt=0.01 hrs, 6001 points
Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv.
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 1S: Southeast - Old Sauk Rd Runoff Area=6,730 sf 61.93% Impervious Runoff Depth=1.47"
Tc=6.0 min CN=61/98 Runoff=0.31 cfs 826 cf

Subcatchment 2S: Northeast - Harvest Hill Runoff Area=36,725 sf 15.71% Impervious Runoff Depth=0.47"
Flow Length=135' Slope=0.1000 '/' Tc=12.4 min CN=58/98 Runoff=0.34 cfs 1,425 cf

Subcatchment 3S: Kettle Runoff Area=72,145 sf 11.81% Impervious Runoff Depth=0.38"
Flow Length=200' Tc=13.7 min CN=58/98 Runoff=0.49 cfs 2,300 cf

Subcatchment 4S: West - E Spyglass Ct Runoff Area=45,425 sf 3.10% Impervious Runoff Depth=0.16"
Flow Length=165' Tc=15.8 min CN=56/98 Runoff=0.07 cfs 618 cf

Reach 5R: Avg. Flow Depth=0.00' Max Vel=0.00 fps Inflow=0.00 cfs 0 cf
n=0.030 L=150.0' S=0.0183 '/' Capacity=204.62 cfs Outflow=0.00 cfs 0 cf

Pond 6P: Kettle Peak Elev=1,019.04' Storage=2,300 cf Inflow=0.49 cfs 2,300 cf
Outflow=0.00 cfs 0 cf

Link 1L: East - Mendota-Gammon Greenway Inflow=0.31 cfs 826 cf
Primary=0.31 cfs 826 cf

Link 2L: West - Strickers Pond Inflow=0.41 cfs 2,043 cf
Primary=0.41 cfs 2,043 cf

Link 3L: E Spyglass Ct Inflow=0.07 cfs 618 cf
Primary=0.07 cfs 618 cf

Link Ex: Existing Inflow=0.66 cfs 2,870 cf
Primary=0.66 cfs 2,870 cf

Total Runoff Area = 161,025 sf Runoff Volume = 5,170 cf Average Runoff Depth = 0.39"
87.66% Pervious = 141,156 sf 12.34% Impervious = 19,869 sf

Summary for Subcatchment 1S: Southeast - Old Sauk Rd

Runoff = 0.31 cfs @ 12.13 hrs, Volume= 826 cf, Depth= 1.47"
Routed to Link 1L : East - Mendota-Gammon Greenway

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
MSE 24-hr 4 1-year NRCS Rainfall=2.49"

	Area (sf)	CN	Description
*	4,168	98	Impervious Areas
	0	55	Woods, Good, HSG B
	2,562	61	>75% Grass cover, Good, HSG B
	6,730	84	Weighted Average
	2,562	61	38.07% Pervious Area
	4,168	98	61.93% Impervious Area

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

Summary for Subcatchment 2S: Northeast - Harvest Hill Rd

Runoff = 0.34 cfs @ 12.20 hrs, Volume= 1,425 cf, Depth= 0.47"
Routed to Link 2L : West - Strickers Pond

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
MSE 24-hr 4 1-year NRCS Rainfall=2.49"

	Area (sf)	CN	Description
*	5,771	98	Impervious Areas
	15,950	55	Woods, Good, HSG B
	15,004	61	>75% Grass cover, Good, HSG B
	36,725	64	Weighted Average
	30,954	58	84.29% Pervious Area
	5,771	98	15.71% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.0	100	0.1000	0.14		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 2.84"
0.4	35	0.1000	1.58		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
12.4	135	Total			

Summary for Subcatchment 3S: Kettle

Runoff = 0.49 cfs @ 12.22 hrs, Volume= 2,300 cf, Depth= 0.38"
Routed to Pond 6P : Kettle

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
MSE 24-hr 4 1-year NRCS Rainfall=2.49"

	Area (sf)	CN	Description
*	8,522	98	Impervious Areas
	34,440	55	Woods, Good, HSG B
	29,183	61	>75% Grass cover, Good, HSG B
	72,145	63	Weighted Average
	63,623	58	88.19% Pervious Area
	8,522	98	11.81% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.0	100	0.1000	0.14		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 2.84"
1.7	100	0.0400	1.00		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
13.7	200	Total			

Summary for Subcatchment 4S: West - E Spyglass Ct

Runoff = 0.07 cfs @ 12.24 hrs, Volume= 618 cf, Depth= 0.16"
Routed to Link 3L : E Spyglass Ct

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
MSE 24-hr 4 1-year NRCS Rainfall=2.49"

	Area (sf)	CN	Description
*	1,408	98	Impervious Areas
	38,910	55	Woods, Good, HSG B
	5,107	61	>75% Grass cover, Good, HSG B
	45,425	57	Weighted Average
	44,017	56	96.90% Pervious Area
	1,408	98	3.10% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.7	100	0.0600	0.11		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 2.84"
1.1	65	0.0183	0.95		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
15.8	165	Total			

Summary for Reach 5R:

Inflow Area = 72,145 sf, 11.81% Impervious, Inflow Depth = 0.00" for 1-year NRCS event
Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0 cf, Atten= 0%, Lag= 0.0 min
Routed to Link 3L : E Spyglass Ct

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Max. Velocity= 0.00 fps, Min. Travel Time= 0.0 min
Avg. Velocity = 0.00 fps, Avg. Travel Time= 0.0 min

Peak Storage= 0 cf @ 0.00 hrs
Average Depth at Peak Storage= 0.00'
Bank-Full Depth= 1.00' Flow Area= 40.0 sf, Capacity= 204.62 cfs

20.00' x 1.00' deep channel, n= 0.030 Earth, grassed & winding
Side Slope Z-value= 20.0 '/' Top Width= 60.00'
Length= 150.0' Slope= 0.0183 '/'
Inlet Invert= 1,019.50', Outlet Invert= 1,016.75'

‡

Summary for Pond 6P: Kettle

Inflow Area = 72,145 sf, 11.81% Impervious, Inflow Depth = 0.38" for 1-year NRCS event
Inflow = 0.49 cfs @ 12.22 hrs, Volume= 2,300 cf
Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0 cf, Atten= 100%, Lag= 0.0 min
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Routed to Reach 5R :

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Peak Elev= 1,019.04' @ 24.79 hrs Surf.Area= 9,224 sf Storage= 2,300 cf

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
Center-of-Mass det. time= (not calculated: no outflow)

Volume	Invert	Avail.Storage	Storage Description
#1	1,018.50'	20,653 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
1,018.50	200	0	0
1,018.75	3,425	453	453
1,019.00	8,446	1,484	1,937
1,019.25	13,180	2,703	4,640
1,019.50	18,600	3,973	8,613
1,019.75	24,515	5,389	14,002
1,020.00	28,690	6,651	20,653

Device	Routing	Invert	Outlet Devices
#1	Primary	1,019.50'	**30.0' long + 50.0 '/' SideZ x 1.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 Coef. (English) 2.69 2.72 2.75 2.85 2.98 3.08 3.20 3.28 3.31 3.30 3.31 3.32

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=1,018.50' TW=1,019.50' (Dynamic Tailwater)
1=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Summary for Link 1L: East - Mendota-Gammon Greenway

Inflow Area = 6,730 sf, 61.93% Impervious, Inflow Depth = 1.47" for 1-year NRCS event
Inflow = 0.31 cfs @ 12.13 hrs, Volume= 826 cf
Primary = 0.31 cfs @ 12.13 hrs, Volume= 826 cf, Atten= 0%, Lag= 0.0 min
Routed to Link Ex : Existing

Primary outflow = Inflow, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs

Summary for Link 2L: West - Strickers Pond

Inflow Area = 154,295 sf, 10.18% Impervious, Inflow Depth = 0.16" for 1-year NRCS event
Inflow = 0.41 cfs @ 12.20 hrs, Volume= 2,043 cf
Primary = 0.41 cfs @ 12.20 hrs, Volume= 2,043 cf, Atten= 0%, Lag= 0.0 min
Routed to Link Ex : Existing

Primary outflow = Inflow, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs

Summary for Link 3L: E Spyglass Ct

Inflow Area = 117,570 sf, 8.45% Impervious, Inflow Depth = 0.06" for 1-year NRCS event
Inflow = 0.07 cfs @ 12.24 hrs, Volume= 618 cf
Primary = 0.07 cfs @ 12.24 hrs, Volume= 618 cf, Atten= 0%, Lag= 0.0 min
Routed to Link 2L : West - Strickers Pond

Primary outflow = Inflow, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs

Summary for Link Ex: Existing

Inflow Area = 161,025 sf, 12.34% Impervious, Inflow Depth = 0.21" for 1-year NRCS event
Inflow = 0.66 cfs @ 12.15 hrs, Volume= 2,870 cf
Primary = 0.66 cfs @ 12.15 hrs, Volume= 2,870 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs

Time span=0.00-60.00 hrs, dt=0.01 hrs, 6001 points
Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv.
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 1S: Southeast - Old Sauk Rd Runoff Area=6,730 sf 61.93% Impervious Runoff Depth=1.73"
Tc=6.0 min CN=61/98 Runoff=0.37 cfs 972 cf

Subcatchment 2S: Northeast - Harvest Hill Runoff Area=36,725 sf 15.71% Impervious Runoff Depth=0.60"
Flow Length=135' Slope=0.1000 '/' Tc=12.4 min CN=58/98 Runoff=0.43 cfs 1,833 cf

Subcatchment 3S: Kettle Runoff Area=72,145 sf 11.81% Impervious Runoff Depth=0.51"
Flow Length=200' Tc=13.7 min CN=58/98 Runoff=0.64 cfs 3,042 cf

Subcatchment 4S: West - E Spyglass Ct Runoff Area=45,425 sf 3.10% Impervious Runoff Depth=0.25"
Flow Length=165' Tc=15.8 min CN=56/98 Runoff=0.12 cfs 953 cf

Reach 5R: Avg. Flow Depth=0.00' Max Vel=0.00 fps Inflow=0.00 cfs 0 cf
n=0.030 L=150.0' S=0.0183 '/' Capacity=204.62 cfs Outflow=0.00 cfs 0 cf

Pond 6P: Kettle Peak Elev=1,019.12' Storage=3,042 cf Inflow=0.64 cfs 3,042 cf
Outflow=0.00 cfs 0 cf

Link 1L: East - Mendota-Gammon Greenway Inflow=0.37 cfs 972 cf
Primary=0.37 cfs 972 cf

Link 2L: West - Strickers Pond Inflow=0.53 cfs 2,786 cf
Primary=0.53 cfs 2,786 cf

Link 3L: E Spyglass Ct Inflow=0.12 cfs 953 cf
Primary=0.12 cfs 953 cf

Link Ex: Existing Inflow=0.79 cfs 3,758 cf
Primary=0.79 cfs 3,758 cf

Total Runoff Area = 161,025 sf Runoff Volume = 6,800 cf Average Runoff Depth = 0.51"
87.66% Pervious = 141,156 sf 12.34% Impervious = 19,869 sf

Summary for Subcatchment 1S: Southeast - Old Sauk Rd

Runoff = 0.37 cfs @ 12.13 hrs, Volume= 972 cf, Depth= 1.73"
Routed to Link 1L : East - Mendota-Gammon Greenway

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
MSE 24-hr 4 2-year NRCS Rainfall=2.84"

	Area (sf)	CN	Description
*	4,168	98	Impervious Areas
	0	55	Woods, Good, HSG B
	2,562	61	>75% Grass cover, Good, HSG B
	6,730	84	Weighted Average
	2,562	61	38.07% Pervious Area
	4,168	98	61.93% Impervious Area

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

Summary for Subcatchment 2S: Northeast - Harvest Hill Rd

Runoff = 0.43 cfs @ 12.21 hrs, Volume= 1,833 cf, Depth= 0.60"
Routed to Link 2L : West - Strickers Pond

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
MSE 24-hr 4 2-year NRCS Rainfall=2.84"

	Area (sf)	CN	Description
*	5,771	98	Impervious Areas
	15,950	55	Woods, Good, HSG B
	15,004	61	>75% Grass cover, Good, HSG B
	36,725	64	Weighted Average
	30,954	58	84.29% Pervious Area
	5,771	98	15.71% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.0	100	0.1000	0.14		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 2.84"
0.4	35	0.1000	1.58		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
12.4	135	Total			

Summary for Subcatchment 3S: Kettle

Runoff = 0.64 cfs @ 12.23 hrs, Volume= 3,042 cf, Depth= 0.51"
Routed to Pond 6P : Kettle

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
MSE 24-hr 4 2-year NRCS Rainfall=2.84"

	Area (sf)	CN	Description
*	8,522	98	Impervious Areas
	34,440	55	Woods, Good, HSG B
	29,183	61	>75% Grass cover, Good, HSG B
	72,145	63	Weighted Average
	63,623	58	88.19% Pervious Area
	8,522	98	11.81% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.0	100	0.1000	0.14		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 2.84"
1.7	100	0.0400	1.00		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
13.7	200	Total			

Summary for Subcatchment 4S: West - E Spyglass Ct

Runoff = 0.12 cfs @ 12.31 hrs, Volume= 953 cf, Depth= 0.25"
Routed to Link 3L : E Spyglass Ct

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
MSE 24-hr 4 2-year NRCS Rainfall=2.84"

	Area (sf)	CN	Description
*	1,408	98	Impervious Areas
	38,910	55	Woods, Good, HSG B
	5,107	61	>75% Grass cover, Good, HSG B
	45,425	57	Weighted Average
	44,017	56	96.90% Pervious Area
	1,408	98	3.10% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.7	100	0.0600	0.11		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 2.84"
1.1	65	0.0183	0.95		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
15.8	165	Total			

Summary for Reach 5R:

Inflow Area = 72,145 sf, 11.81% Impervious, Inflow Depth = 0.00" for 2-year NRCS event
Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0 cf, Atten= 0%, Lag= 0.0 min
Routed to Link 3L : E Spyglass Ct

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Max. Velocity= 0.00 fps, Min. Travel Time= 0.0 min
Avg. Velocity = 0.00 fps, Avg. Travel Time= 0.0 min

Peak Storage= 0 cf @ 0.00 hrs
Average Depth at Peak Storage= 0.00'
Bank-Full Depth= 1.00' Flow Area= 40.0 sf, Capacity= 204.62 cfs

20.00' x 1.00' deep channel, n= 0.030 Earth, grassed & winding
Side Slope Z-value= 20.0 '/' Top Width= 60.00'
Length= 150.0' Slope= 0.0183 '/'
Inlet Invert= 1,019.50', Outlet Invert= 1,016.75'

‡

Summary for Pond 6P: Kettle

Inflow Area = 72,145 sf, 11.81% Impervious, Inflow Depth = 0.51" for 2-year NRCS event
Inflow = 0.64 cfs @ 12.23 hrs, Volume= 3,042 cf
Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0 cf, Atten= 100%, Lag= 0.0 min
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Routed to Reach 5R :

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Peak Elev= 1,019.12' @ 24.79 hrs Surf.Area= 10,639 sf Storage= 3,042 cf

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
Center-of-Mass det. time= (not calculated: no outflow)

Volume	Invert	Avail.Storage	Storage Description
#1	1,018.50'	20,653 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
1,018.50	200	0	0
1,018.75	3,425	453	453
1,019.00	8,446	1,484	1,937
1,019.25	13,180	2,703	4,640
1,019.50	18,600	3,973	8,613
1,019.75	24,515	5,389	14,002
1,020.00	28,690	6,651	20,653

Device	Routing	Invert	Outlet Devices
#1	Primary	1,019.50'	**30.0' long + 50.0 '/' SideZ x 1.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 Coef. (English) 2.69 2.72 2.75 2.85 2.98 3.08 3.20 3.28 3.31 3.30 3.31 3.32

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=1,018.50' TW=1,019.50' (Dynamic Tailwater)
1=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Summary for Link 1L: East - Mendota-Gammon Greenway

Inflow Area = 6,730 sf, 61.93% Impervious, Inflow Depth = 1.73" for 2-year NRCS event
Inflow = 0.37 cfs @ 12.13 hrs, Volume= 972 cf
Primary = 0.37 cfs @ 12.13 hrs, Volume= 972 cf, Atten= 0%, Lag= 0.0 min
Routed to Link Ex : Existing

Primary outflow = Inflow, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs

Summary for Link 2L: West - Strickers Pond

Inflow Area = 154,295 sf, 10.18% Impervious, Inflow Depth = 0.22" for 2-year NRCS event
Inflow = 0.53 cfs @ 12.22 hrs, Volume= 2,786 cf
Primary = 0.53 cfs @ 12.22 hrs, Volume= 2,786 cf, Atten= 0%, Lag= 0.0 min
Routed to Link Ex : Existing

Primary outflow = Inflow, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs

Summary for Link 3L: E Spyglass Ct

Inflow Area = 117,570 sf, 8.45% Impervious, Inflow Depth = 0.10" for 2-year NRCS event
Inflow = 0.12 cfs @ 12.31 hrs, Volume= 953 cf
Primary = 0.12 cfs @ 12.31 hrs, Volume= 953 cf, Atten= 0%, Lag= 0.0 min
Routed to Link 2L : West - Strickers Pond

Primary outflow = Inflow, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs

Summary for Link Ex: Existing

Inflow Area = 161,025 sf, 12.34% Impervious, Inflow Depth = 0.28" for 2-year NRCS event
Inflow = 0.79 cfs @ 12.16 hrs, Volume= 3,758 cf
Primary = 0.79 cfs @ 12.16 hrs, Volume= 3,758 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs

Time span=0.00-60.00 hrs, dt=0.01 hrs, 6001 points
Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv.
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 1S: Southeast - Old Sauk Rd Runoff Area=6,730 sf 61.93% Impervious Runoff Depth=2.20"
Tc=6.0 min CN=61/98 Runoff=0.47 cfs 1,235 cf

Subcatchment 2S: Northeast - Harvest Hill Runoff Area=36,725 sf 15.71% Impervious Runoff Depth=0.87"
Flow Length=135' Slope=0.1000 '/' Tc=12.4 min CN=58/98 Runoff=0.69 cfs 2,665 cf

Subcatchment 3S: Kettle Runoff Area=72,145 sf 11.81% Impervious Runoff Depth=0.76"
Flow Length=200' Tc=13.7 min CN=58/98 Runoff=1.10 cfs 4,583 cf

Subcatchment 4S: West - E Spyglass Ct Runoff Area=45,425 sf 3.10% Impervious Runoff Depth=0.45"
Flow Length=165' Tc=15.8 min CN=56/98 Runoff=0.31 cfs 1,707 cf

Reach 5R: Avg. Flow Depth=0.00' Max Vel=0.00 fps Inflow=0.00 cfs 0 cf
n=0.030 L=150.0' S=0.0183 '/' Capacity=204.62 cfs Outflow=0.00 cfs 0 cf

Pond 6P: Kettle Peak Elev=1,019.25' Storage=4,583 cf Inflow=1.10 cfs 4,583 cf
Outflow=0.00 cfs 0 cf

Link 1L: East - Mendota-Gammon Greenway Inflow=0.47 cfs 1,235 cf
Primary=0.47 cfs 1,235 cf

Link 2L: West - Strickers Pond Inflow=0.95 cfs 4,372 cf
Primary=0.95 cfs 4,372 cf

Link 3L: E Spyglass Ct Inflow=0.31 cfs 1,707 cf
Primary=0.31 cfs 1,707 cf

Link Ex: Existing Inflow=1.20 cfs 5,607 cf
Primary=1.20 cfs 5,607 cf

Total Runoff Area = 161,025 sf Runoff Volume = 10,190 cf Average Runoff Depth = 0.76"
87.66% Pervious = 141,156 sf 12.34% Impervious = 19,869 sf

Summary for Subcatchment 1S: Southeast - Old Sauk Rd

Runoff = 0.47 cfs @ 12.13 hrs, Volume= 1,235 cf, Depth= 2.20"
Routed to Link 1L : East - Mendota-Gammon Greenway

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
MSE 24-hr 4 5-year NRCS Rainfall=3.45"

	Area (sf)	CN	Description
*	4,168	98	Impervious Areas
	0	55	Woods, Good, HSG B
	2,562	61	>75% Grass cover, Good, HSG B
	6,730	84	Weighted Average
	2,562	61	38.07% Pervious Area
	4,168	98	61.93% Impervious Area

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

Summary for Subcatchment 2S: Northeast - Harvest Hill Rd

Runoff = 0.69 cfs @ 12.22 hrs, Volume= 2,665 cf, Depth= 0.87"
Routed to Link 2L : West - Strickers Pond

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
MSE 24-hr 4 5-year NRCS Rainfall=3.45"

	Area (sf)	CN	Description
*	5,771	98	Impervious Areas
	15,950	55	Woods, Good, HSG B
	15,004	61	>75% Grass cover, Good, HSG B
	36,725	64	Weighted Average
	30,954	58	84.29% Pervious Area
	5,771	98	15.71% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.0	100	0.1000	0.14		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 2.84"
0.4	35	0.1000	1.58		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
12.4	135	Total			

Summary for Subcatchment 3S: Kettle

Runoff = 1.10 cfs @ 12.24 hrs, Volume= 4,583 cf, Depth= 0.76"
Routed to Pond 6P : Kettle

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
MSE 24-hr 4 5-year NRCS Rainfall=3.45"

	Area (sf)	CN	Description
*	8,522	98	Impervious Areas
	34,440	55	Woods, Good, HSG B
	29,183	61	>75% Grass cover, Good, HSG B
	72,145	63	Weighted Average
	63,623	58	88.19% Pervious Area
	8,522	98	11.81% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.0	100	0.1000	0.14		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 2.84"
1.7	100	0.0400	1.00		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
13.7	200	Total			

Summary for Subcatchment 4S: West - E Spyglass Ct

Runoff = 0.31 cfs @ 12.31 hrs, Volume= 1,707 cf, Depth= 0.45"
Routed to Link 3L : E Spyglass Ct

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
MSE 24-hr 4 5-year NRCS Rainfall=3.45"

	Area (sf)	CN	Description
*	1,408	98	Impervious Areas
	38,910	55	Woods, Good, HSG B
	5,107	61	>75% Grass cover, Good, HSG B
	45,425	57	Weighted Average
	44,017	56	96.90% Pervious Area
	1,408	98	3.10% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.7	100	0.0600	0.11		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 2.84"
1.1	65	0.0183	0.95		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
15.8	165	Total			

Summary for Reach 5R:

Inflow Area = 72,145 sf, 11.81% Impervious, Inflow Depth = 0.00" for 5-year NRCS event
Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0 cf, Atten= 0%, Lag= 0.0 min
Routed to Link 3L : E Spyglass Ct

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Max. Velocity= 0.00 fps, Min. Travel Time= 0.0 min
Avg. Velocity = 0.00 fps, Avg. Travel Time= 0.0 min

Peak Storage= 0 cf @ 0.00 hrs
Average Depth at Peak Storage= 0.00'
Bank-Full Depth= 1.00' Flow Area= 40.0 sf, Capacity= 204.62 cfs

20.00' x 1.00' deep channel, n= 0.030 Earth, grassed & winding
Side Slope Z-value= 20.0 '/' Top Width= 60.00'
Length= 150.0' Slope= 0.0183 '/'
Inlet Invert= 1,019.50', Outlet Invert= 1,016.75'

‡

Summary for Pond 6P: Kettle

Inflow Area = 72,145 sf, 11.81% Impervious, Inflow Depth = 0.76" for 5-year NRCS event
Inflow = 1.10 cfs @ 12.24 hrs, Volume= 4,583 cf
Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0 cf, Atten= 100%, Lag= 0.0 min
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Routed to Reach 5R :

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Peak Elev= 1,019.25' @ 24.79 hrs Surf.Area= 13,097 sf Storage= 4,583 cf

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
Center-of-Mass det. time= (not calculated: no outflow)

Volume	Invert	Avail.Storage	Storage Description
#1	1,018.50'	20,653 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
1,018.50	200	0	0
1,018.75	3,425	453	453
1,019.00	8,446	1,484	1,937
1,019.25	13,180	2,703	4,640
1,019.50	18,600	3,973	8,613
1,019.75	24,515	5,389	14,002
1,020.00	28,690	6,651	20,653

Device	Routing	Invert	Outlet Devices
#1	Primary	1,019.50'	**30.0' long + 50.0 '/' SideZ x 1.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 Coef. (English) 2.69 2.72 2.75 2.85 2.98 3.08 3.20 3.28 3.31 3.30 3.31 3.32

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=1,018.50' TW=1,019.50' (Dynamic Tailwater)
↑—**1=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Link 1L: East - Mendota-Gammon Greenway

Inflow Area = 6,730 sf, 61.93% Impervious, Inflow Depth = 2.20" for 5-year NRCS event
Inflow = 0.47 cfs @ 12.13 hrs, Volume= 1,235 cf
Primary = 0.47 cfs @ 12.13 hrs, Volume= 1,235 cf, Atten= 0%, Lag= 0.0 min
Routed to Link Ex : Existing

Primary outflow = Inflow, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs

Summary for Link 2L: West - Strickers Pond

Inflow Area = 154,295 sf, 10.18% Impervious, Inflow Depth = 0.34" for 5-year NRCS event
Inflow = 0.95 cfs @ 12.24 hrs, Volume= 4,372 cf
Primary = 0.95 cfs @ 12.24 hrs, Volume= 4,372 cf, Atten= 0%, Lag= 0.0 min
Routed to Link Ex : Existing

Primary outflow = Inflow, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs

Summary for Link 3L: E Spyglass Ct

Inflow Area = 117,570 sf, 8.45% Impervious, Inflow Depth = 0.17" for 5-year NRCS event
Inflow = 0.31 cfs @ 12.31 hrs, Volume= 1,707 cf
Primary = 0.31 cfs @ 12.31 hrs, Volume= 1,707 cf, Atten= 0%, Lag= 0.0 min
Routed to Link 2L : West - Strickers Pond

Primary outflow = Inflow, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs

Summary for Link Ex: Existing

Inflow Area = 161,025 sf, 12.34% Impervious, Inflow Depth = 0.42" for 5-year NRCS event
Inflow = 1.20 cfs @ 12.19 hrs, Volume= 5,607 cf
Primary = 1.20 cfs @ 12.19 hrs, Volume= 5,607 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs

Time span=0.00-60.00 hrs, dt=0.01 hrs, 6001 points
Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv.
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 1S: Southeast - Old Sauk Rd Runoff Area=6,730 sf 61.93% Impervious Runoff Depth=2.71"
Tc=6.0 min CN=61/98 Runoff=0.58 cfs 1,522 cf

Subcatchment 2S: Northeast - Harvest Hill Runoff Area=36,725 sf 15.71% Impervious Runoff Depth=1.20"
Flow Length=135' Slope=0.1000 '/' Tc=12.4 min CN=58/98 Runoff=1.04 cfs 3,675 cf

Subcatchment 3S: Kettle Runoff Area=72,145 sf 11.81% Impervious Runoff Depth=1.08"
Flow Length=200' Tc=13.7 min CN=58/98 Runoff=1.73 cfs 6,481 cf

Subcatchment 4S: West - E Spyglass Ct Runoff Area=45,425 sf 3.10% Impervious Runoff Depth=0.71"
Flow Length=165' Tc=15.8 min CN=56/98 Runoff=0.61 cfs 2,695 cf

Reach 5R: Avg. Flow Depth=0.00' Max Vel=0.00 fps Inflow=0.00 cfs 0 cf
n=0.030 L=150.0' S=0.0183 '/' Capacity=204.62 cfs Outflow=0.00 cfs 0 cf

Pond 6P: Kettle Peak Elev=1,019.38' Storage=6,481 cf Inflow=1.73 cfs 6,481 cf
Outflow=0.00 cfs 0 cf

Link 1L: East - Mendota-Gammon Greenway Inflow=0.58 cfs 1,522 cf
Primary=0.58 cfs 1,522 cf

Link 2L: West - Strickers Pond Inflow=1.58 cfs 6,370 cf
Primary=1.58 cfs 6,370 cf

Link 3L: E Spyglass Ct Inflow=0.61 cfs 2,695 cf
Primary=0.61 cfs 2,695 cf

Link Ex: Existing Inflow=1.87 cfs 7,892 cf
Primary=1.87 cfs 7,892 cf

Total Runoff Area = 161,025 sf Runoff Volume = 14,374 cf Average Runoff Depth = 1.07"
87.66% Pervious = 141,156 sf 12.34% Impervious = 19,869 sf

Summary for Subcatchment 1S: Southeast - Old Sauk Rd

Runoff = 0.58 cfs @ 12.13 hrs, Volume= 1,522 cf, Depth= 2.71"
Routed to Link 1L : East - Mendota-Gammon Greenway

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
MSE 24-hr 4 10-year NRCS Rainfall=4.09"

	Area (sf)	CN	Description
*	4,168	98	Impervious Areas
	0	55	Woods, Good, HSG B
	2,562	61	>75% Grass cover, Good, HSG B
	6,730	84	Weighted Average
	2,562	61	38.07% Pervious Area
	4,168	98	61.93% Impervious Area

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

Summary for Subcatchment 2S: Northeast - Harvest Hill Rd

Runoff = 1.04 cfs @ 12.21 hrs, Volume= 3,675 cf, Depth= 1.20"
Routed to Link 2L : West - Strickers Pond

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
MSE 24-hr 4 10-year NRCS Rainfall=4.09"

	Area (sf)	CN	Description
*	5,771	98	Impervious Areas
	15,950	55	Woods, Good, HSG B
	15,004	61	>75% Grass cover, Good, HSG B
	36,725	64	Weighted Average
	30,954	58	84.29% Pervious Area
	5,771	98	15.71% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.0	100	0.1000	0.14		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 2.84"
0.4	35	0.1000	1.58		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
12.4	135	Total			

Summary for Subcatchment 3S: Kettle

Runoff = 1.73 cfs @ 12.23 hrs, Volume= 6,481 cf, Depth= 1.08"
Routed to Pond 6P : Kettle

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
MSE 24-hr 4 10-year NRCS Rainfall=4.09"

	Area (sf)	CN	Description
*	8,522	98	Impervious Areas
	34,440	55	Woods, Good, HSG B
	29,183	61	>75% Grass cover, Good, HSG B
	72,145	63	Weighted Average
	63,623	58	88.19% Pervious Area
	8,522	98	11.81% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.0	100	0.1000	0.14		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 2.84"
1.7	100	0.0400	1.00		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
13.7	200	Total			

Summary for Subcatchment 4S: West - E Spyglass Ct

Runoff = 0.61 cfs @ 12.28 hrs, Volume= 2,695 cf, Depth= 0.71"
Routed to Link 3L : E Spyglass Ct

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
MSE 24-hr 4 10-year NRCS Rainfall=4.09"

	Area (sf)	CN	Description
*	1,408	98	Impervious Areas
	38,910	55	Woods, Good, HSG B
	5,107	61	>75% Grass cover, Good, HSG B
	45,425	57	Weighted Average
	44,017	56	96.90% Pervious Area
	1,408	98	3.10% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.7	100	0.0600	0.11		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 2.84"
1.1	65	0.0183	0.95		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
15.8	165	Total			

Summary for Reach 5R:

Inflow Area = 72,145 sf, 11.81% Impervious, Inflow Depth = 0.00" for 10-year NRCS event
Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0 cf, Atten= 0%, Lag= 0.0 min
Routed to Link 3L : E Spyglass Ct

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Max. Velocity= 0.00 fps, Min. Travel Time= 0.0 min
Avg. Velocity = 0.00 fps, Avg. Travel Time= 0.0 min

Peak Storage= 0 cf @ 0.00 hrs
Average Depth at Peak Storage= 0.00'
Bank-Full Depth= 1.00' Flow Area= 40.0 sf, Capacity= 204.62 cfs

20.00' x 1.00' deep channel, n= 0.030 Earth, grassed & winding
Side Slope Z-value= 20.0 '/' Top Width= 60.00'
Length= 150.0' Slope= 0.0183 '/'
Inlet Invert= 1,019.50', Outlet Invert= 1,016.75'

‡

Summary for Pond 6P: Kettle

Inflow Area = 72,145 sf, 11.81% Impervious, Inflow Depth = 1.08" for 10-year NRCS event
Inflow = 1.73 cfs @ 12.23 hrs, Volume= 6,481 cf
Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0 cf, Atten= 100%, Lag= 0.0 min
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Routed to Reach 5R :

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Peak Elev= 1,019.38' @ 24.79 hrs Surf.Area= 15,923 sf Storage= 6,481 cf

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
Center-of-Mass det. time= (not calculated: no outflow)

Volume	Invert	Avail.Storage	Storage Description
#1	1,018.50'	20,653 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
1,018.50	200	0	0
1,018.75	3,425	453	453
1,019.00	8,446	1,484	1,937
1,019.25	13,180	2,703	4,640
1,019.50	18,600	3,973	8,613
1,019.75	24,515	5,389	14,002
1,020.00	28,690	6,651	20,653

Device	Routing	Invert	Outlet Devices
#1	Primary	1,019.50'	**30.0' long + 50.0 '/' SideZ x 1.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 Coef. (English) 2.69 2.72 2.75 2.85 2.98 3.08 3.20 3.28 3.31 3.30 3.31 3.32

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=1,018.50' TW=1,019.50' (Dynamic Tailwater)
1=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Summary for Link 1L: East - Mendota-Gammon Greenway

Inflow Area = 6,730 sf, 61.93% Impervious, Inflow Depth = 2.71" for 10-year NRCS event
Inflow = 0.58 cfs @ 12.13 hrs, Volume= 1,522 cf
Primary = 0.58 cfs @ 12.13 hrs, Volume= 1,522 cf, Atten= 0%, Lag= 0.0 min
Routed to Link Ex : Existing

Primary outflow = Inflow, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs

Summary for Link 2L: West - Strickers Pond

Inflow Area = 154,295 sf, 10.18% Impervious, Inflow Depth = 0.50" for 10-year NRCS event
Inflow = 1.58 cfs @ 12.24 hrs, Volume= 6,370 cf
Primary = 1.58 cfs @ 12.24 hrs, Volume= 6,370 cf, Atten= 0%, Lag= 0.0 min
Routed to Link Ex : Existing

Primary outflow = Inflow, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs

Summary for Link 3L: E Spyglass Ct

Inflow Area = 117,570 sf, 8.45% Impervious, Inflow Depth = 0.28" for 10-year NRCS event
Inflow = 0.61 cfs @ 12.28 hrs, Volume= 2,695 cf
Primary = 0.61 cfs @ 12.28 hrs, Volume= 2,695 cf, Atten= 0%, Lag= 0.0 min
Routed to Link 2L : West - Strickers Pond

Primary outflow = Inflow, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs

Summary for Link Ex: Existing

Inflow Area = 161,025 sf, 12.34% Impervious, Inflow Depth = 0.59" for 10-year NRCS event
Inflow = 1.87 cfs @ 12.21 hrs, Volume= 7,892 cf
Primary = 1.87 cfs @ 12.21 hrs, Volume= 7,892 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs

Time span=0.00-60.00 hrs, dt=0.01 hrs, 6001 points
Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv.
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 1S: Southeast - Old Sauk Rd Runoff Area=6,730 sf 61.93% Impervious Runoff Depth=4.91"
Tc=6.0 min CN=61/98 Runoff=1.07 cfs 2,755 cf

Subcatchment 2S: Northeast - Harvest Hill Runoff Area=36,725 sf 15.71% Impervious Runoff Depth=2.85"
Flow Length=135' Slope=0.1000 '/' Tc=12.4 min CN=58/98 Runoff=2.78 cfs 8,714 cf

Subcatchment 3S: Kettle Runoff Area=72,145 sf 11.81% Impervious Runoff Depth=2.68"
Flow Length=200' Tc=13.7 min CN=58/98 Runoff=4.94 cfs 16,124 cf

Subcatchment 4S: West - E Spyglass Ct Runoff Area=45,425 sf 3.10% Impervious Runoff Depth=2.14"
Flow Length=165' Tc=15.8 min CN=56/98 Runoff=2.33 cfs 8,090 cf

Reach 5R: Avg. Flow Depth=0.04' Max Vel=0.75 fps Inflow=0.60 cfs 7,511 cf
n=0.030 L=150.0' S=0.0183 '/' Capacity=204.62 cfs Outflow=0.59 cfs 7,511 cf

Pond 6P: Kettle Peak Elev=1,019.55' Storage=9,548 cf Inflow=4.94 cfs 16,124 cf
Outflow=0.60 cfs 7,511 cf

Link 1L: East - Mendota-Gammon Greenway Inflow=1.07 cfs 2,755 cf
Primary=1.07 cfs 2,755 cf

Link 2L: West - Strickers Pond Inflow=5.00 cfs 24,316 cf
Primary=5.00 cfs 24,316 cf

Link 3L: E Spyglass Ct Inflow=2.33 cfs 15,602 cf
Primary=2.33 cfs 15,602 cf

Link Ex: Existing Inflow=5.53 cfs 27,071 cf
Primary=5.53 cfs 27,071 cf

Total Runoff Area = 161,025 sf Runoff Volume = 35,684 cf Average Runoff Depth = 2.66"
87.66% Pervious = 141,156 sf 12.34% Impervious = 19,869 sf

Summary for Subcatchment 1S: Southeast - Old Sauk Rd

Runoff = 1.07 cfs @ 12.13 hrs, Volume= 2,755 cf, Depth= 4.91"
Routed to Link 1L : East - Mendota-Gammon Greenway

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
MSE 24-hr 4 100-year NRCS Rainfall=6.66"

	Area (sf)	CN	Description
*	4,168	98	Impervious Areas
	0	55	Woods, Good, HSG B
	2,562	61	>75% Grass cover, Good, HSG B
	6,730	84	Weighted Average
	2,562	61	38.07% Pervious Area
	4,168	98	61.93% Impervious Area

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

Summary for Subcatchment 2S: Northeast - Harvest Hill Rd

Runoff = 2.78 cfs @ 12.21 hrs, Volume= 8,714 cf, Depth= 2.85"
Routed to Link 2L : West - Strickers Pond

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
MSE 24-hr 4 100-year NRCS Rainfall=6.66"

	Area (sf)	CN	Description
*	5,771	98	Impervious Areas
	15,950	55	Woods, Good, HSG B
	15,004	61	>75% Grass cover, Good, HSG B
	36,725	64	Weighted Average
	30,954	58	84.29% Pervious Area
	5,771	98	15.71% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.0	100	0.1000	0.14		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 2.84"
0.4	35	0.1000	1.58		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
12.4	135	Total			

Summary for Subcatchment 3S: Kettle

Runoff = 4.94 cfs @ 12.22 hrs, Volume= 16,124 cf, Depth= 2.68"
Routed to Pond 6P : Kettle

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
MSE 24-hr 4 100-year NRCS Rainfall=6.66"

	Area (sf)	CN	Description
*	8,522	98	Impervious Areas
	34,440	55	Woods, Good, HSG B
	29,183	61	>75% Grass cover, Good, HSG B
	72,145	63	Weighted Average
	63,623	58	88.19% Pervious Area
	8,522	98	11.81% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.0	100	0.1000	0.14		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 2.84"
1.7	100	0.0400	1.00		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
13.7	200	Total			

Summary for Subcatchment 4S: West - E Spyglass Ct

Runoff = 2.33 cfs @ 12.26 hrs, Volume= 8,090 cf, Depth= 2.14"
Routed to Link 3L : E Spyglass Ct

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
MSE 24-hr 4 100-year NRCS Rainfall=6.66"

	Area (sf)	CN	Description
*	1,408	98	Impervious Areas
	38,910	55	Woods, Good, HSG B
	5,107	61	>75% Grass cover, Good, HSG B
	45,425	57	Weighted Average
	44,017	56	96.90% Pervious Area
	1,408	98	3.10% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.7	100	0.0600	0.11		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 2.84"
1.1	65	0.0183	0.95		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
15.8	165	Total			

Summary for Reach 5R:

Inflow Area = 72,145 sf, 11.81% Impervious, Inflow Depth = 1.25" for 100-year NRCS event
Inflow = 0.60 cfs @ 13.24 hrs, Volume= 7,511 cf
Outflow = 0.59 cfs @ 13.32 hrs, Volume= 7,511 cf, Atten= 1%, Lag= 4.8 min
Routed to Link 3L : E Spyglass Ct

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Max. Velocity= 0.75 fps, Min. Travel Time= 3.3 min
Avg. Velocity = 0.36 fps, Avg. Travel Time= 6.9 min

Peak Storage= 119 cf @ 13.32 hrs
Average Depth at Peak Storage= 0.04' , Surface Width= 21.53'
Bank-Full Depth= 1.00' Flow Area= 40.0 sf, Capacity= 204.62 cfs

20.00' x 1.00' deep channel, n= 0.030 Earth, grassed & winding
Side Slope Z-value= 20.0 '/' Top Width= 60.00'
Length= 150.0' Slope= 0.0183 '/'
Inlet Invert= 1,019.50', Outlet Invert= 1,016.75'

‡

Summary for Pond 6P: Kettle

Inflow Area = 72,145 sf, 11.81% Impervious, Inflow Depth = 2.68" for 100-year NRCS event
Inflow = 4.94 cfs @ 12.22 hrs, Volume= 16,124 cf
Outflow = 0.60 cfs @ 13.24 hrs, Volume= 7,511 cf, Atten= 88%, Lag= 61.3 min
Primary = 0.60 cfs @ 13.24 hrs, Volume= 7,511 cf
Routed to Reach 5R :

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Peak Elev= 1,019.55' @ 13.31 hrs Surf.Area= 19,753 sf Storage= 9,548 cf

Plug-Flow detention time= 284.5 min calculated for 7,511 cf (47% of inflow)
Center-of-Mass det. time= 167.2 min (988.6 - 821.4)

Volume	Invert	Avail.Storage	Storage Description
#1	1,018.50'	20,653 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
1,018.50	200	0	0
1,018.75	3,425	453	453
1,019.00	8,446	1,484	1,937
1,019.25	13,180	2,703	4,640
1,019.50	18,600	3,973	8,613
1,019.75	24,515	5,389	14,002
1,020.00	28,690	6,651	20,653

Device	Routing	Invert	Outlet Devices
#1	Primary	1,019.50'	**30.0' long + 50.0 '/' SideZ x 1.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 Coef. (English) 2.69 2.72 2.75 2.85 2.98 3.08 3.20 3.28 3.31 3.30 3.31 3.32

Primary OutFlow Max=0.59 cfs @ 13.24 hrs HW=1,019.55' TW=1,019.54' (Dynamic Tailwater)
↑—**1=Broad-Crested Rectangular Weir** (Weir Controls 0.59 cfs @ 0.38 fps)

Summary for Link 1L: East - Mendota-Gammon Greenway

Inflow Area = 6,730 sf, 61.93% Impervious, Inflow Depth = 4.91" for 100-year NRCS event
Inflow = 1.07 cfs @ 12.13 hrs, Volume= 2,755 cf
Primary = 1.07 cfs @ 12.13 hrs, Volume= 2,755 cf, Atten= 0%, Lag= 0.0 min
Routed to Link Ex : Existing

Primary outflow = Inflow, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs

Summary for Link 2L: West - Strickers Pond

Inflow Area = 154,295 sf, 10.18% Impervious, Inflow Depth = 1.89" for 100-year NRCS event
Inflow = 5.00 cfs @ 12.22 hrs, Volume= 24,316 cf
Primary = 5.00 cfs @ 12.22 hrs, Volume= 24,316 cf, Atten= 0%, Lag= 0.0 min
Routed to Link Ex : Existing

Primary outflow = Inflow, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs

Summary for Link 3L: E Spyglass Ct

Inflow Area = 117,570 sf, 8.45% Impervious, Inflow Depth = 1.59" for 100-year NRCS event
Inflow = 2.33 cfs @ 12.26 hrs, Volume= 15,602 cf
Primary = 2.33 cfs @ 12.26 hrs, Volume= 15,602 cf, Atten= 0%, Lag= 0.0 min
Routed to Link 2L : West - Strickers Pond

Primary outflow = Inflow, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs

Summary for Link Ex: Existing

Inflow Area = 161,025 sf, 12.34% Impervious, Inflow Depth = 2.02" for 100-year NRCS event
Inflow = 5.53 cfs @ 12.21 hrs, Volume= 27,071 cf
Primary = 5.53 cfs @ 12.21 hrs, Volume= 27,071 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs

Time span=0.00-60.00 hrs, dt=0.01 hrs, 6001 points
Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv.
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 1S: Southeast - Old Sauk Rd Runoff Area=6,730 sf 61.93% Impervious Runoff Depth=5.69"
Tc=6.0 min CN=61/98 Runoff=1.24 cfs 3,192 cf

Subcatchment 2S: Northeast - Harvest Hill Runoff Area=36,725 sf 15.71% Impervious Runoff Depth=3.49"
Flow Length=135' Slope=0.1000 '/' Tc=12.4 min CN=58/98 Runoff=3.45 cfs 10,667 cf

Subcatchment 3S: Kettle Runoff Area=72,145 sf 11.81% Impervious Runoff Depth=3.31"
Flow Length=200' Tc=13.7 min CN=58/98 Runoff=6.19 cfs 19,897 cf

Subcatchment 4S: West - E Spyglass Ct Runoff Area=45,425 sf 3.10% Impervious Runoff Depth=2.72"
Flow Length=165' Tc=15.8 min CN=56/98 Runoff=3.03 cfs 10,282 cf

Reach 5R: Avg. Flow Depth=0.06' Max Vel=1.01 fps Inflow=1.31 cfs 11,284 cf
n=0.030 L=150.0' S=0.0183 '/' Capacity=204.62 cfs Outflow=1.31 cfs 11,284 cf

Pond 6P: Kettle Peak Elev=1,019.58' Storage=10,162 cf Inflow=6.19 cfs 19,897 cf
Outflow=1.31 cfs 11,284 cf

Link 1L: East - Mendota-Gammon Greenway Inflow=1.24 cfs 3,192 cf
Primary=1.24 cfs 3,192 cf

Link 2L: West - Strickers Pond Inflow=6.34 cfs 32,233 cf
Primary=6.34 cfs 32,233 cf

Link 3L: E Spyglass Ct Inflow=3.03 cfs 21,566 cf
Primary=3.03 cfs 21,566 cf

Link Ex: Existing Inflow=6.97 cfs 35,425 cf
Primary=6.97 cfs 35,425 cf

Total Runoff Area = 161,025 sf Runoff Volume = 44,038 cf Average Runoff Depth = 3.28"
87.66% Pervious = 141,156 sf 12.34% Impervious = 19,869 sf

Summary for Subcatchment 1S: Southeast - Old Sauk Rd

Runoff = 1.24 cfs @ 12.13 hrs, Volume= 3,192 cf, Depth= 5.69"
Routed to Link 1L : East - Mendota-Gammon Greenway

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
MSE 24-hr 4 200-year NRCS Rainfall=7.53"

	Area (sf)	CN	Description
*	4,168	98	Impervious Areas
	0	55	Woods, Good, HSG B
	2,562	61	>75% Grass cover, Good, HSG B
	6,730	84	Weighted Average
	2,562	61	38.07% Pervious Area
	4,168	98	61.93% Impervious Area

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

Summary for Subcatchment 2S: Northeast - Harvest Hill Rd

Runoff = 3.45 cfs @ 12.20 hrs, Volume= 10,667 cf, Depth= 3.49"
Routed to Link 2L : West - Strickers Pond

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
MSE 24-hr 4 200-year NRCS Rainfall=7.53"

	Area (sf)	CN	Description
*	5,771	98	Impervious Areas
	15,950	55	Woods, Good, HSG B
	15,004	61	>75% Grass cover, Good, HSG B
	36,725	64	Weighted Average
	30,954	58	84.29% Pervious Area
	5,771	98	15.71% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.0	100	0.1000	0.14		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 2.84"
0.4	35	0.1000	1.58		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
12.4	135	Total			

Summary for Subcatchment 3S: Kettle

Runoff = 6.19 cfs @ 12.22 hrs, Volume= 19,897 cf, Depth= 3.31"
Routed to Pond 6P : Kettle

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
MSE 24-hr 4 200-year NRCS Rainfall=7.53"

	Area (sf)	CN	Description
*	8,522	98	Impervious Areas
	34,440	55	Woods, Good, HSG B
	29,183	61	>75% Grass cover, Good, HSG B
	72,145	63	Weighted Average
	63,623	58	88.19% Pervious Area
	8,522	98	11.81% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.0	100	0.1000	0.14		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 2.84"
1.7	100	0.0400	1.00		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
13.7	200	Total			

Summary for Subcatchment 4S: West - E Spyglass Ct

Runoff = 3.03 cfs @ 12.25 hrs, Volume= 10,282 cf, Depth= 2.72"
Routed to Link 3L : E Spyglass Ct

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
MSE 24-hr 4 200-year NRCS Rainfall=7.53"

	Area (sf)	CN	Description
*	1,408	98	Impervious Areas
	38,910	55	Woods, Good, HSG B
	5,107	61	>75% Grass cover, Good, HSG B
	45,425	57	Weighted Average
	44,017	56	96.90% Pervious Area
	1,408	98	3.10% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.7	100	0.0600	0.11		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 2.84"
1.1	65	0.0183	0.95		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
15.8	165	Total			

Summary for Reach 5R:

Inflow Area = 72,145 sf, 11.81% Impervious, Inflow Depth = 1.88" for 200-year NRCS event
Inflow = 1.31 cfs @ 12.69 hrs, Volume= 11,284 cf
Outflow = 1.31 cfs @ 12.71 hrs, Volume= 11,284 cf, Atten= 0%, Lag= 1.7 min
Routed to Link 3L : E Spyglass Ct

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Max. Velocity= 1.01 fps, Min. Travel Time= 2.5 min
Avg. Velocity = 0.39 fps, Avg. Travel Time= 6.5 min

Peak Storage= 195 cf @ 12.71 hrs
Average Depth at Peak Storage= 0.06' , Surface Width= 22.45'
Bank-Full Depth= 1.00' Flow Area= 40.0 sf, Capacity= 204.62 cfs

20.00' x 1.00' deep channel, n= 0.030 Earth, grassed & winding
Side Slope Z-value= 20.0 '/' Top Width= 60.00'
Length= 150.0' Slope= 0.0183 '/'
Inlet Invert= 1,019.50', Outlet Invert= 1,016.75'

‡

Summary for Pond 6P: Kettle

Inflow Area = 72,145 sf, 11.81% Impervious, Inflow Depth = 3.31" for 200-year NRCS event
Inflow = 6.19 cfs @ 12.22 hrs, Volume= 19,897 cf
Outflow = 1.31 cfs @ 12.69 hrs, Volume= 11,284 cf, Atten= 79%, Lag= 27.8 min
Primary = 1.31 cfs @ 12.69 hrs, Volume= 11,284 cf
Routed to Reach 5R :

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Peak Elev= 1,019.58' @ 12.70 hrs Surf.Area= 20,477 sf Storage= 10,162 cf

Plug-Flow detention time= 228.6 min calculated for 11,284 cf (57% of inflow)
Center-of-Mass det. time= 122.9 min (941.5 - 818.6)

Volume	Invert	Avail.Storage	Storage Description
#1	1,018.50'	20,653 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
1,018.50	200	0	0
1,018.75	3,425	453	453
1,019.00	8,446	1,484	1,937
1,019.25	13,180	2,703	4,640
1,019.50	18,600	3,973	8,613
1,019.75	24,515	5,389	14,002
1,020.00	28,690	6,651	20,653

Device	Routing	Invert	Outlet Devices
#1	Primary	1,019.50'	**30.0' long + 50.0 '/' SideZ x 1.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 Coef. (English) 2.69 2.72 2.75 2.85 2.98 3.08 3.20 3.28 3.31 3.30 3.31 3.32

Primary OutFlow Max=1.31 cfs @ 12.69 hrs HW=1,019.58' TW=1,019.56' (Dynamic Tailwater)
↑—**1=Broad-Crested Rectangular Weir** (Weir Controls 1.31 cfs @ 0.49 fps)

Summary for Link 1L: East - Mendota-Gammon Greenway

Inflow Area = 6,730 sf, 61.93% Impervious, Inflow Depth = 5.69" for 200-year NRCS event
Inflow = 1.24 cfs @ 12.13 hrs, Volume= 3,192 cf
Primary = 1.24 cfs @ 12.13 hrs, Volume= 3,192 cf, Atten= 0%, Lag= 0.0 min
Routed to Link Ex : Existing

Primary outflow = Inflow, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs

Summary for Link 2L: West - Strickers Pond

Inflow Area = 154,295 sf, 10.18% Impervious, Inflow Depth = 2.51" for 200-year NRCS event
Inflow = 6.34 cfs @ 12.22 hrs, Volume= 32,233 cf
Primary = 6.34 cfs @ 12.22 hrs, Volume= 32,233 cf, Atten= 0%, Lag= 0.0 min
Routed to Link Ex : Existing

Primary outflow = Inflow, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs

Summary for Link 3L: E Spyglass Ct

Inflow Area = 117,570 sf, 8.45% Impervious, Inflow Depth = 2.20" for 200-year NRCS event
Inflow = 3.03 cfs @ 12.25 hrs, Volume= 21,566 cf
Primary = 3.03 cfs @ 12.25 hrs, Volume= 21,566 cf, Atten= 0%, Lag= 0.0 min
Routed to Link 2L : West - Strickers Pond

Primary outflow = Inflow, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs

Summary for Link Ex: Existing

Inflow Area = 161,025 sf, 12.34% Impervious, Inflow Depth = 2.64" for 200-year NRCS event
Inflow = 6.97 cfs @ 12.21 hrs, Volume= 35,425 cf
Primary = 6.97 cfs @ 12.21 hrs, Volume= 35,425 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs

TABLE OF CONTENTS

10-year NRCS Event

100-year NRCS Event

200-year NRCS Event

APPENDIX E

Post Development Hydrologic Modeling

LEGEND (PROPOSED)

- PROPERTY BOUNDARY
- PROPOSED WATERSHED BOUNDARY
- VOLUME CONTROL BOUNDARY

NORTH

WATERSHED E2

WATERSHED C

WATERSHED B2

WATERSHED E2

WATERSHED A2

WATERSHED E3

WATERSHED B

WATERSHED A

WATERSHED B1

WATERSHED A1

WATERSHED E4

WATERSHED E1

OLD SAUK ROAD

WYSER ENGINEERING

6610 OLD SAUK ROAD
MADISON, WI 53705

OLD SAUK ROAD APARTMENTS

CITY OF MADISON, DANE COUNTY, WI

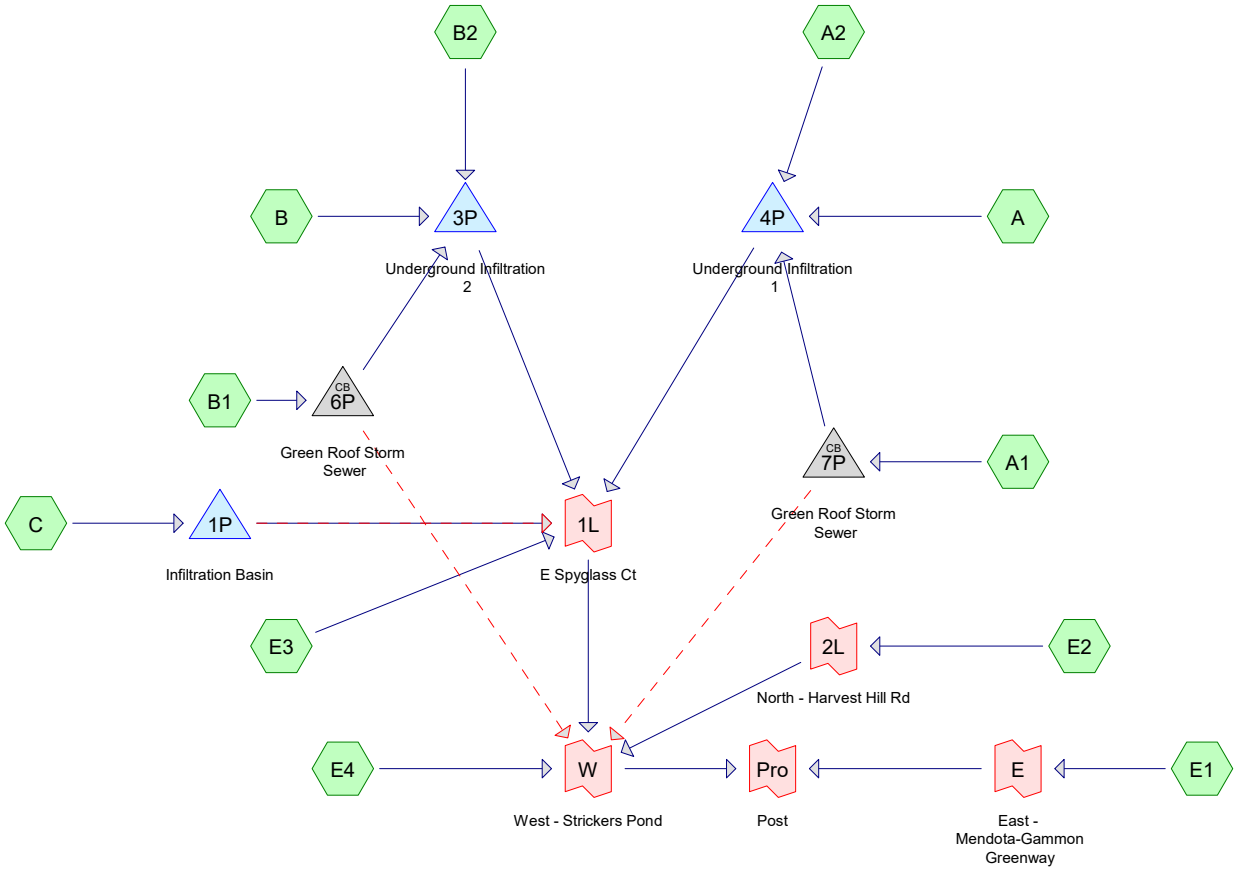
Sheet Title: PROPOSED WATERSHED MAP

Revisions:

No.	Date:	Description:

Graphic Scale	0' 5' 10' 20' 30'
Wyser Number	23-1085
Set Type	REVIEW
Date Issued	04/08/2024
Sheet Number	EX E

File: \\WYSERSERVER2\Wyser Engineering\2023\231085_Butcher - 6706-6614 Old Sauk Road\dwg\231085_SWMP.dwg Layout: PRO User: Kate Plotted: Apr 05, 2024 - 1:04pm



Subcat Reach Pond Link

Routing Diagram for 231085_6706-6614 Old Sauk Road-Post Development

Prepared by Wyser Engineering, Printed 4/5/2024

Area Listing (selected nodes)

Area (sq-ft)	CN	Description (subcatchment-numbers)
41,868	71	>75% Grass cover, Good, HSG C (A2, B2, E1, E2, E3, E4)
21,834	74	>75% Grass cover, Good, HSG C (C)
8,033	76	Extensive Green Roof (A1, B1)
22,110	98	Paved parking, HSG C (A2, B2, E1)
49,830	98	Roofs, HSG C (A, B, B2)
17,350	98	Sidewalk, HSG C (A1, A2, B1, B2, C, E1, E4)
161,025	**87**	**TOTAL AREA**

Soil Listing (selected nodes)

Area (sq-ft)	Soil Group	Subcatchment Numbers
0	HSG A	
0	HSG B	
152,992	HSG C	A, A1, A2, B, B1, B2, C, E1, E2, E3, E4
0	HSG D	
8,033	Other	A1, B1
161,025		**TOTAL AREA**

Ground Covers (selected nodes)

HSG-A (sq-ft)	HSG-B (sq-ft)	HSG-C (sq-ft)	HSG-D (sq-ft)	Other (sq-ft)	Total (sq-ft)	Ground Cover	Su Nu
0	0	63,702	0	0	63,702	>75% Grass cover, Good	
0	0	0	0	8,033	8,033	Extensive Green Roof	
0	0	22,110	0	0	22,110	Paved parking	
0	0	49,830	0	0	49,830	Roofs	
0	0	17,350	0	0	17,350	Sidewalk	
0	**0**	**152,992**	**0**	**8,033**	**161,025**	**TOTAL AREA**	

Time span=0.00-60.00 hrs, dt=0.01 hrs, 6001 points
Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv.
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment A: Runoff Area=29,200 sf 100.00% Impervious Runoff Depth=2.26"
Tc=6.0 min CN=0/98 Runoff=2.15 cfs 5,501 cf

Subcatchment A1: Runoff Area=4,952 sf 10.80% Impervious Runoff Depth=0.86"
Tc=6.0 min CN=76/98 Runoff=0.15 cfs 354 cf

Subcatchment A2: Runoff Area=34,352 sf 66.98% Impervious Runoff Depth=1.67"
Tc=6.0 min CN=71/98 Runoff=1.87 cfs 4,795 cf

Subcatchment B: Runoff Area=12,690 sf 100.00% Impervious Runoff Depth=2.26"
Tc=6.0 min CN=0/98 Runoff=0.93 cfs 2,391 cf

Subcatchment B1: Runoff Area=3,966 sf 8.83% Impervious Runoff Depth=0.83"
Tc=6.0 min CN=76/98 Runoff=0.11 cfs 273 cf

Subcatchment B2: Runoff Area=29,498 sf 65.16% Impervious Runoff Depth=1.64"
Tc=6.0 min CN=71/98 Runoff=1.57 cfs 4,037 cf

Subcatchment C: Runoff Area=22,384 sf 2.46% Impervious Runoff Depth=0.64"
Tc=6.0 min CN=74/98 Runoff=0.50 cfs 1,200 cf

Subcatchment E1: Runoff Area=3,400 sf 42.06% Impervious Runoff Depth=1.23"
Tc=6.0 min CN=71/98 Runoff=0.14 cfs 349 cf

Subcatchment E2: Runoff Area=8,146 sf 0.00% Impervious Runoff Depth=0.49"
Tc=6.0 min CN=71/0 Runoff=0.13 cfs 330 cf

Subcatchment E3: Runoff Area=4,305 sf 0.00% Impervious Runoff Depth=0.49"
Tc=6.0 min CN=71/0 Runoff=0.07 cfs 174 cf

Subcatchment E4: Runoff Area=8,132 sf 28.34% Impervious Runoff Depth=0.99"
Tc=6.0 min CN=71/98 Runoff=0.26 cfs 670 cf

Pond 1P: Infiltration Basin Peak Elev=1,018.37' Storage=1,141 cf Inflow=0.50 cfs 1,200 cf
Primary=0.00 cfs 152 cf Secondary=0.00 cfs 0 cf Outflow=0.00 cfs 152 cf

Pond 3P: Underground Infiltration 2 Peak Elev=1,016.34' Storage=3,324 cf Inflow=2.62 cfs 6,702 cf
Discarded=0.11 cfs 6,703 cf Primary=0.00 cfs 0 cf Outflow=0.11 cfs 6,703 cf

Pond 4P: Underground Infiltration 1 Peak Elev=1,017.12' Storage=7,324 cf Inflow=4.16 cfs 10,650 cf
Discarded=0.06 cfs 10,651 cf Primary=0.00 cfs 0 cf Outflow=0.06 cfs 10,651 cf

Pond 6P: Green Roof Storm Sewer Peak Elev=1,026.23' Inflow=0.11 cfs 273 cf
Primary=0.11 cfs 273 cf Secondary=0.00 cfs 0 cf Outflow=0.11 cfs 273 cf

Pond 7P: Green Roof Storm Sewer Peak Elev=1,026.27' Inflow=0.15 cfs 354 cf
Primary=0.15 cfs 354 cf Secondary=0.00 cfs 0 cf Outflow=0.15 cfs 354 cf

Link 1L: E Spyglass Ct Inflow=0.07 cfs 326 cf
Primary=0.07 cfs 326 cf

Link 2L: North - Harvest Hill Rd Inflow=0.13 cfs 330 cf
Primary=0.13 cfs 330 cf

Link E: East - Mendota-Gammon Greenway Inflow=0.14 cfs 349 cf
Primary=0.14 cfs 349 cf

Link Pro: Post Inflow=0.59 cfs 1,676 cf
Primary=0.59 cfs 1,676 cf

Link W: West - Strickers Pond Inflow=0.46 cfs 1,327 cf
Primary=0.46 cfs 1,327 cf

Total Runoff Area = 161,025 sf Runoff Volume = 20,076 cf Average Runoff Depth = 1.50"
44.55% Pervious = 71,735 sf 55.45% Impervious = 89,290 sf

Summary for Subcatchment A:

Runoff = 2.15 cfs @ 12.13 hrs, Volume= 5,501 cf, Depth= 2.26"
Routed to Pond 4P : Underground Infiltration 1

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
MSE 24-hr 4 1-year NRCS Rainfall=2.49"

	Area (sf)	CN	Description
	29,200	98	Roofs, HSG C
*	0	68	Intensive Green Roof
*	0	76	Extensive Green Roof
	0	98	Paved parking, HSG C
*	0	98	Sidewalk, HSG C
*	0	71	>75% Grass cover, Good, HSG C
	29,200	98	Weighted Average
	29,200	98	100.00% Impervious Area

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

Summary for Subcatchment A1:

Runoff = 0.15 cfs @ 12.14 hrs, Volume= 354 cf, Depth= 0.86"
Routed to Pond 7P : Green Roof Storm Sewer

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
MSE 24-hr 4 1-year NRCS Rainfall=2.49"

	Area (sf)	CN	Description
	0	98	Roofs, HSG C
*	0	68	Intensive Green Roof
*	4,417	76	Extensive Green Roof
	0	98	Paved parking, HSG C
*	535	98	Sidewalk, HSG C
*	0	71	>75% Grass cover, Good, HSG C
	4,952	78	Weighted Average
	4,417	76	89.20% Pervious Area
	535	98	10.80% Impervious Area

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

Summary for Subcatchment A2:

Runoff = 1.87 cfs @ 12.13 hrs, Volume= 4,795 cf, Depth= 1.67"
Routed to Pond 4P : Underground Infiltration 1

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
MSE 24-hr 4 1-year NRCS Rainfall=2.49"

	Area (sf)	CN	Description
	0	98	Roofs, HSG C
*	0	68	Intensive Green Roof
*	0	76	Extensive Green Roof
	14,440	98	Paved parking, HSG C
*	8,570	98	Sidewalk, HSG C
*	11,342	71	>75% Grass cover, Good, HSG C
	34,352	89	Weighted Average
	11,342	71	33.02% Pervious Area
	23,010	98	66.98% Impervious Area

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

Summary for Subcatchment B:

Runoff = 0.93 cfs @ 12.13 hrs, Volume= 2,391 cf, Depth= 2.26"
Routed to Pond 3P : Underground Infiltration 2

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
MSE 24-hr 4 1-year NRCS Rainfall=2.49"

	Area (sf)	CN	Description
	12,690	98	Roofs, HSG C
*	0	68	Intensive Green Roof
*	0	76	Extensive Green Roof
	0	98	Paved parking, HSG C
*	0	98	Sidewalk, HSG C
*	0	71	>75% Grass cover, Good, HSG C
	12,690	98	Weighted Average
	12,690	98	100.00% Impervious Area

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

Summary for Subcatchment B1:

Runoff = 0.11 cfs @ 12.14 hrs, Volume= 273 cf, Depth= 0.83"
Routed to Pond 6P : Green Roof Storm Sewer

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
MSE 24-hr 4 1-year NRCS Rainfall=2.49"

	Area (sf)	CN	Description
	0	98	Roofs, HSG C
*	0	68	Intensive Green Roof
*	3,616	76	Extensive Green Roof
	0	98	Paved parking, HSG C
*	350	98	Sidewalk, HSG C
*	0	71	>75% Grass cover, Good, HSG C
	3,966	78	Weighted Average
	3,616	76	91.17% Pervious Area
	350	98	8.83% Impervious Area

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

Summary for Subcatchment B2:

Runoff = 1.57 cfs @ 12.13 hrs, Volume= 4,037 cf, Depth= 1.64"
Routed to Pond 3P : Underground Infiltration 2

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
MSE 24-hr 4 1-year NRCS Rainfall=2.49"

	Area (sf)	CN	Description
	7,940	98	Roofs, HSG C
*	0	68	Intensive Green Roof
*	0	76	Extensive Green Roof
	6,915	98	Paved parking, HSG C
*	4,365	98	Sidewalk, HSG C
*	10,278	71	>75% Grass cover, Good, HSG C
	29,498	89	Weighted Average
	10,278	71	34.84% Pervious Area
	19,220	98	65.16% Impervious Area

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

Summary for Subcatchment C:

Runoff = 0.50 cfs @ 12.14 hrs, Volume= 1,200 cf, Depth= 0.64"
Routed to Pond 1P : Infiltration Basin

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
MSE 24-hr 4 1-year NRCS Rainfall=2.49"

	Area (sf)	CN	Description
	0	98	Roofs, HSG C
*	0	68	Intensive Green Roof
*	0	76	Extensive Green Roof
	0	98	Paved parking, HSG C
*	550	98	Sidewalk, HSG C
	21,834	74	>75% Grass cover, Good, HSG C
	22,384	75	Weighted Average
	21,834	74	97.54% Pervious Area
	550	98	2.46% Impervious Area

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

Summary for Subcatchment E1:

Runoff = 0.14 cfs @ 12.13 hrs, Volume= 349 cf, Depth= 1.23"
Routed to Link E : East - Mendota-Gammon Greenway

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
MSE 24-hr 4 1-year NRCS Rainfall=2.49"

	Area (sf)	CN	Description
	0	98	Roofs, HSG C
*	0	68	Intensive Green Roof
*	0	76	Extensive Green Roof
	755	98	Paved parking, HSG C
*	675	98	Sidewalk, HSG C
*	1,970	71	>75% Grass cover, Good, HSG C
	3,400	82	Weighted Average
	1,970	71	57.94% Pervious Area
	1,430	98	42.06% Impervious Area

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

Summary for Subcatchment E2:

Runoff = 0.13 cfs @ 12.14 hrs, Volume= 330 cf, Depth= 0.49"
Routed to Link 2L : North - Harvest Hill Rd

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
MSE 24-hr 4 1-year NRCS Rainfall=2.49"

	Area (sf)	CN	Description
	0	98	Roofs, HSG C
*	0	68	Intensive Green Roof
*	0	76	Extensive Green Roof
	0	98	Paved parking, HSG C
*	0	98	Sidewalk, HSG C
*	8,146	71	>75% Grass cover, Good, HSG C
	8,146	71	Weighted Average
	8,146	71	100.00% Pervious Area

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

Summary for Subcatchment E3:

Runoff = 0.07 cfs @ 12.14 hrs, Volume= 174 cf, Depth= 0.49"
Routed to Link 1L : E Spyglass Ct

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
MSE 24-hr 4 1-year NRCS Rainfall=2.49"

	Area (sf)	CN	Description
	0	98	Roofs, HSG C
*	0	68	Intensive Green Roof
*	0	76	Extensive Green Roof
	0	98	Paved parking, HSG C
*	0	98	Sidewalk, HSG C
*	4,305	71	>75% Grass cover, Good, HSG C
	4,305	71	Weighted Average
	4,305	71	100.00% Pervious Area

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

Summary for Subcatchment E4:

Runoff = 0.26 cfs @ 12.14 hrs, Volume= 670 cf, Depth= 0.99"
Routed to Link W : West - Strickers Pond

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
MSE 24-hr 4 1-year NRCS Rainfall=2.49"

	Area (sf)	CN	Description
	0	98	Roofs, HSG C
*	0	68	Intensive Green Roof
*	0	76	Extensive Green Roof
	0	98	Paved parking, HSG C
*	2,305	98	Sidewalk, HSG C
*	5,827	71	>75% Grass cover, Good, HSG C
	8,132	79	Weighted Average
	5,827	71	71.66% Pervious Area
	2,305	98	28.34% Impervious Area

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

Summary for Pond 1P: Infiltration Basin

Inflow Area = 22,384 sf, 2.46% Impervious, Inflow Depth = 0.64" for 1-year NRCS event
Inflow = 0.50 cfs @ 12.14 hrs, Volume= 1,200 cf
Outflow = 0.00 cfs @ 23.10 hrs, Volume= 152 cf, Atten= 99%, Lag= 657.5 min
Primary = 0.00 cfs @ 23.10 hrs, Volume= 152 cf
Routed to Link 1L : E Spyglass Ct
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Routed to Link 1L : E Spyglass Ct

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Peak Elev= 1,018.37' @ 23.10 hrs Surf.Area= 4,811 sf Storage= 1,141 cf

Plug-Flow detention time= 991.2 min calculated for 152 cf (13% of inflow)
Center-of-Mass det. time= 839.9 min (1,689.6 - 849.7)

Volume	Invert	Avail.Storage	Storage Description
#1	1,018.00'	33,500 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
1,018.00	1,300	0	0
1,019.00	10,700	6,000	6,000
1,020.00	13,600	12,150	18,150
1,021.00	17,100	15,350	33,500

Device	Routing	Invert	Outlet Devices
#1	Primary	1,017.00'	**8.0" Round Culvert** L= 10.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 1,017.00' / 1,016.90' S= 0.0100 '/' Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 0.35 sf
#2	Device 1	1,018.35'	**36.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#3	Secondary	1,020.00'	**20.0' long x 6.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.37 2.51 2.70 2.68 2.68 2.67 2.65 2.65 2.65 2.65 2.66 2.66 2.67 2.69 2.72 2.76 2.83

Primary OutFlow Max=0.00 cfs @ 23.10 hrs HW=1,018.37' TW=0.00' (Dynamic Tailwater)
└**1=Culvert** (Passes 0.00 cfs of 1.35 cfs potential flow)
└**2=Orifice/Grate** (Orifice Controls 0.00 cfs @ 0.52 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=1,018.00' TW=0.00' (Dynamic Tailwater)
└**3=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond 3P: Underground Infiltration 2

Inflow Area = 46,154 sf, 69.90% Impervious, Inflow Depth = 1.74" for 1-year NRCS event
Inflow = 2.62 cfs @ 12.13 hrs, Volume= 6,702 cf
Outflow = 0.11 cfs @ 11.40 hrs, Volume= 6,703 cf, Atten= 96%, Lag= 0.0 min
Discarded = 0.11 cfs @ 11.40 hrs, Volume= 6,703 cf
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Routed to Link 1L : E Spyglass Ct

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Peak Elev= 1,016.34' @ 13.59 hrs Surf.Area= 2,991 sf Storage= 3,324 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 246.7 min (1,015.3 - 768.6)

Volume	Invert	Avail.Storage	Storage Description
#1A	1,013.00'	6,149 cf	**46.67'W x 53.61'L x 10.00'H Field A** 25,017 cf Overall - 6,551 cf Embedded = 18,467 cf x 33.3% Voids
#2A	1,017.00'	6,551 cf	**ADS_StormTech MC-7200 +Cap** x 35 Inside #1 Effective Size= 91.2"W x 60.0"H => 26.68 sf x 6.59'L = 175.9 cf Overall Size= 100.0"W x 60.0"H x 6.95'L with 0.36' Overlap 35 Chambers in 5 Rows Cap Storage= 39.5 cf x 2 x 5 rows = 395.0 cf
#3B	1,013.00'	640 cf	**17.42'W x 14.06'L x 10.00'H Field B** 2,448 cf Overall - 510 cf Embedded = 1,939 cf x 33.0% Voids
#4B	1,017.00'	510 cf	**ADS_StormTech MC-7200 +Cap** x 2 Inside #3 Effective Size= 91.2"W x 60.0"H => 26.68 sf x 6.59'L = 175.9 cf Overall Size= 100.0"W x 60.0"H x 6.95'L with 0.36' Overlap 2 Chambers in 2 Rows Cap Storage= 39.5 cf x 2 x 2 rows = 158.0 cf
#5C	1,013.00'	640 cf	**17.42'W x 14.06'L x 10.00'H Field C** 2,448 cf Overall - 510 cf Embedded = 1,939 cf x 33.0% Voids
#6C	1,017.00'	510 cf	**ADS_StormTech MC-7200 +Cap** x 2 Inside #5 Effective Size= 91.2"W x 60.0"H => 26.68 sf x 6.59'L = 175.9 cf Overall Size= 100.0"W x 60.0"H x 6.95'L with 0.36' Overlap 2 Chambers in 2 Rows Cap Storage= 39.5 cf x 2 x 2 rows = 158.0 cf
		14,999 cf	Total Available Storage

Storage Group A created with Chamber Wizard
Storage Group B created with Chamber Wizard
Storage Group C created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	1,020.00'	**12.0" Round Culvert** L= 20.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 1,020.00' / 1,019.80' S= 0.0100 '/' Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 0.79 sf
#2	Device 1	1,020.00'	**6.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#3	Device 1	1,021.50'	**4.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s)
#4	Discarded	1,013.00'	**1.630 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=0.11 cfs @ 11.40 hrs HW=1,013.10' (Free Discharge)
└**4=Exfiltration** (Exfiltration Controls 0.11 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=1,013.00' TW=0.00' (Dynamic Tailwater)
└**1=Culvert** (Controls 0.00 cfs)
  ├**2=Orifice/Grate** (Controls 0.00 cfs)
  └**3=Sharp-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond 3P: Underground Infiltration 2 - Chamber Wizard Field A

Chamber Model = ADS_StormTech MC-7200 +Cap (ADS StormTech® MC-7200 with cap volume)
Effective Size= 91.2"W x 60.0"H => 26.68 sf x 6.59'L = 175.9 cf
Overall Size= 100.0"W x 60.0"H x 6.95'L with 0.36' Overlap
Cap Storage= 39.5 cf x 2 x 5 rows = 395.0 cf

100.0" Wide + 9.0" Spacing = 109.0" C-C Row Spacing

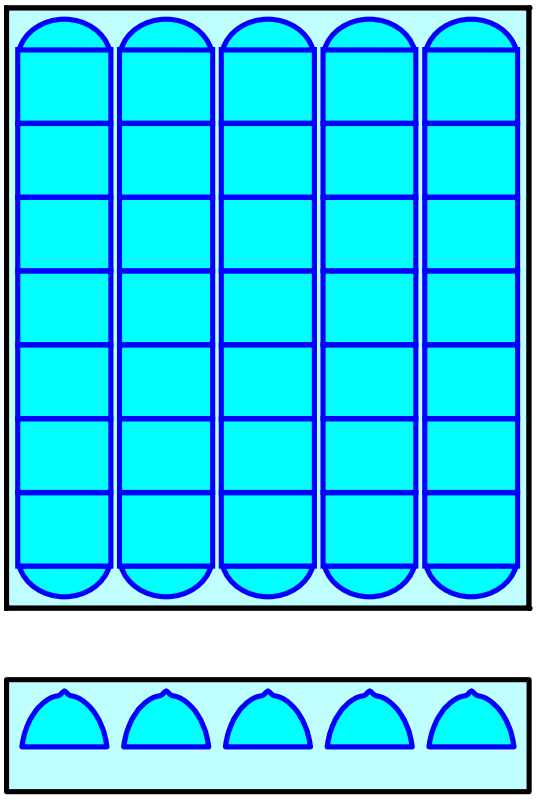
7 Chambers/Row x 6.59' Long +2.73' Cap Length x 2 = 51.61' Row Length +12.0" End Stone x 2 = 53.61' Base Length
5 Rows x 100.0" Wide + 9.0" Spacing x 4 + 12.0" Side Stone x 2 = 46.67' Base Width
48.0" Stone Base + 60.0" Chamber Height + 12.0" Stone Cover = 10.00' Field Height

35 Chambers x 175.9 cf + 39.5 cf Cap Volume x 2 x 5 Rows = 6,550.6 cf Chamber Storage

25,017.2 cf Field - 6,550.6 cf Chambers = 18,466.6 cf Stone x 33.3% Voids = 6,149.4 cf Stone Storage

Chamber Storage + Stone Storage = 12,700.0 cf = 0.292 af
Overall Storage Efficiency = 50.8%
Overall System Size = 53.61' x 46.67' x 10.00'

35 Chambers
926.6 cy Field
683.9 cy Stone



Pond 3P: Underground Infiltration 2 - Chamber Wizard Field B

Chamber Model = ADS_StormTech MC-7200 +Cap (ADS StormTech® MC-7200 with cap volume)
Effective Size= 91.2"W x 60.0"H => 26.68 sf x 6.59'L = 175.9 cf
Overall Size= 100.0"W x 60.0"H x 6.95'L with 0.36' Overlap
Cap Storage= 39.5 cf x 2 x 2 rows = 158.0 cf

100.0" Wide + 9.0" Spacing = 109.0" C-C Row Spacing

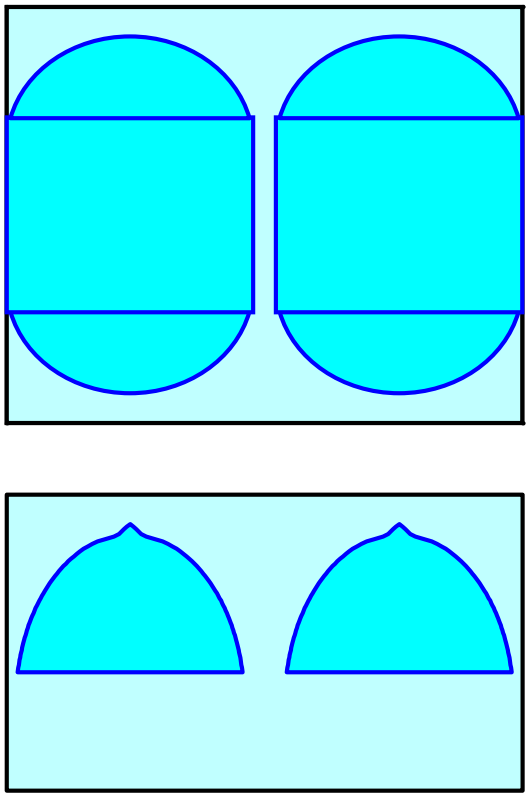
1 Chambers/Row x 6.59' Long +2.73' Cap Length x 2 = 12.06' Row Length +12.0" End Stone x 2 = 14.06' Base Length
2 Rows x 100.0" Wide + 9.0" Spacing x 1 = 17.42' Base Width
48.0" Stone Base + 60.0" Chamber Height + 12.0" Stone Cover = 10.00' Field Height

2 Chambers x 175.9 cf + 39.5 cf Cap Volume x 2 x 2 Rows = 509.8 cf Chamber Storage

2,448.5 cf Field - 509.8 cf Chambers = 1,938.7 cf Stone x 33.0% Voids = 639.8 cf Stone Storage

Chamber Storage + Stone Storage = 1,149.5 cf = 0.026 af
Overall Storage Efficiency = 46.9%
Overall System Size = 14.06' x 17.42' x 10.00'

2 Chambers
90.7 cy Field
71.8 cy Stone



Pond 3P: Underground Infiltration 2 - Chamber Wizard Field C

Chamber Model = ADS_StormTech MC-7200 +Cap (ADS StormTech® MC-7200 with cap volume)
Effective Size= 91.2"W x 60.0"H => 26.68 sf x 6.59'L = 175.9 cf
Overall Size= 100.0"W x 60.0"H x 6.95'L with 0.36' Overlap
Cap Storage= 39.5 cf x 2 x 2 rows = 158.0 cf

100.0" Wide + 9.0" Spacing = 109.0" C-C Row Spacing

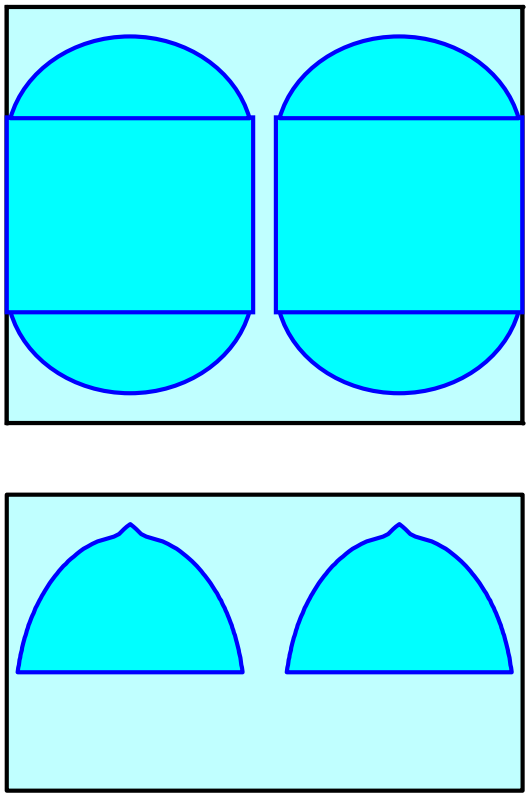
1 Chambers/Row x 6.59' Long +2.73' Cap Length x 2 = 12.06' Row Length +12.0" End Stone x 2 = 14.06' Base Length
2 Rows x 100.0" Wide + 9.0" Spacing x 1 = 17.42' Base Width
48.0" Stone Base + 60.0" Chamber Height + 12.0" Stone Cover = 10.00' Field Height

2 Chambers x 175.9 cf + 39.5 cf Cap Volume x 2 x 2 Rows = 509.8 cf Chamber Storage

2,448.5 cf Field - 509.8 cf Chambers = 1,938.7 cf Stone x 33.0% Voids = 639.8 cf Stone Storage

Chamber Storage + Stone Storage = 1,149.5 cf = 0.026 af
Overall Storage Efficiency = 46.9%
Overall System Size = 14.06' x 17.42' x 10.00'

2 Chambers
90.7 cy Field
71.8 cy Stone



Summary for Pond 4P: Underground Infiltration 1

Inflow Area = 68,504 sf, 77.00% Impervious, Inflow Depth = 1.87" for 1-year NRCS event
Inflow = 4.16 cfs @ 12.13 hrs, Volume= 10,650 cf
Outflow = 0.06 cfs @ 10.33 hrs, Volume= 10,651 cf, Atten= 99%, Lag= 0.0 min
Discarded = 0.06 cfs @ 10.33 hrs, Volume= 10,651 cf
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Routed to Link 1L : E Spyglass Ct

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Peak Elev= 1,017.12' @ 17.91 hrs Surf.Area= 5,097 sf Storage= 7,324 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 1,100.5 min (1,866.3 - 765.8)

Volume	Invert	Avail.Storage	Storage Description
#1A	1,013.00'	12,327 cf	**28.50'W x 178.85'L x 10.00'H Field A** 50,972 cf Overall - 13,955 cf Embedded = 37,017 cf x 33.3% Voids
#2A	1,017.00'	13,955 cf	**ADS_StormTech MC-7200 +Cap** x 78 Inside #1 Effective Size= 91.2"W x 60.0"H => 26.68 sf x 6.59'L = 175.9 cf Overall Size= 100.0"W x 60.0"H x 6.95'L with 0.36' Overlap 78 Chambers in 3 Rows Cap Storage= 39.5 cf x 2 x 3 rows = 237.0 cf
		26,282 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	1,020.00'	**12.0" Round Culvert** L= 20.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 1,020.00' / 1,019.80' S= 0.0100 '/' Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 0.79 sf
#2	Device 1	1,020.00'	**6.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#3	Device 1	1,021.50'	**4.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s)
#4	Discarded	1,013.00'	**0.500 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=0.06 cfs @ 10.33 hrs HW=1,013.10' (Free Discharge)
└**4=Exfiltration** (Exfiltration Controls 0.06 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=1,013.00' TW=0.00' (Dynamic Tailwater)
└**1=Culvert** (Controls 0.00 cfs)
  ├**2=Orifice/Grate** (Controls 0.00 cfs)
  └**3=Sharp-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond 4P: Underground Infiltration 1 - Chamber Wizard Field A

Chamber Model = ADS_StormTech MC-7200 +Cap (ADS StormTech® MC-7200 with cap volume)
Effective Size= 91.2"W x 60.0"H => 26.68 sf x 6.59'L = 175.9 cf
Overall Size= 100.0"W x 60.0"H x 6.95'L with 0.36' Overlap
Cap Storage= 39.5 cf x 2 x 3 rows = 237.0 cf

100.0" Wide + 9.0" Spacing = 109.0" C-C Row Spacing

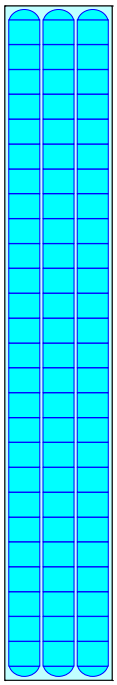
26 Chambers/Row x 6.59' Long +2.73' Cap Length x 2 = 176.85' Row Length +12.0" End Stone x 2 = 178.85' Base Length
3 Rows x 100.0" Wide + 9.0" Spacing x 2 + 12.0" Side Stone x 2 = 28.50' Base Width
48.0" Stone Base + 60.0" Chamber Height + 12.0" Stone Cover = 10.00' Field Height

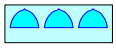
78 Chambers x 175.9 cf + 39.5 cf Cap Volume x 2 x 3 Rows = 13,955.3 cf Chamber Storage

50,972.3 cf Field - 13,955.3 cf Chambers = 37,017.0 cf Stone x 33.3% Voids = 12,326.6 cf Stone Storage

Chamber Storage + Stone Storage = 26,281.9 cf = 0.603 af
Overall Storage Efficiency = 51.6%
Overall System Size = 178.85' x 28.50' x 10.00'

78 Chambers
1,887.9 cy Field
1,371.0 cy Stone





Summary for Pond 6P: Green Roof Storm Sewer

Inflow Area = 3,966 sf, 8.83% Impervious, Inflow Depth = 0.83" for 1-year NRCS event
Inflow = 0.11 cfs @ 12.14 hrs, Volume= 273 cf
Outflow = 0.11 cfs @ 12.14 hrs, Volume= 273 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.11 cfs @ 12.14 hrs, Volume= 273 cf
Routed to Pond 3P : Underground Infiltration 2
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Routed to Link W : West - Strickers Pond

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Peak Elev= 1,026.23' @ 12.14 hrs
Flood Elev= 1,027.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	1,026.00'	**6.0" Round Culvert** L= 10.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 1,026.00' / 1,025.90' S= 0.0100 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.20 sf
#2	Secondary	1,026.50'	**20.0' long x 5.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.34 2.50 2.70 2.68 2.68 2.66 2.65 2.65 2.65 2.65 2.67 2.66 2.68 2.70 2.74 2.79 2.88

Primary OutFlow Max=0.11 cfs @ 12.14 hrs HW=1,026.23' TW=1,014.76' (Dynamic Tailwater)
↑—**1=Culvert** (Inlet Controls 0.11 cfs @ 1.29 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=1,026.00' TW=0.00' (Dynamic Tailwater)
↑—**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond 7P: Green Roof Storm Sewer

Inflow Area = 4,952 sf, 10.80% Impervious, Inflow Depth = 0.86" for 1-year NRCS event
Inflow = 0.15 cfs @ 12.14 hrs, Volume= 354 cf
Outflow = 0.15 cfs @ 12.14 hrs, Volume= 354 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.15 cfs @ 12.14 hrs, Volume= 354 cf
Routed to Pond 4P : Underground Infiltration 1
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Routed to Link W : West - Strickers Pond

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Peak Elev= 1,026.27' @ 12.14 hrs
Flood Elev= 1,027.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	1,026.00'	**6.0" Round Culvert** L= 10.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 1,026.00' / 1,025.90' S= 0.0100 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.20 sf
#2	Secondary	1,026.50'	**20.0' long x 5.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.34 2.50 2.70 2.68 2.68 2.66 2.65 2.65 2.65 2.65 2.67 2.66 2.68 2.70 2.74 2.79 2.88

Primary OutFlow Max=0.15 cfs @ 12.14 hrs HW=1,026.27' TW=1,015.19' (Dynamic Tailwater)
└**1=Culvert** (Inlet Controls 0.15 cfs @ 1.39 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=1,026.00' TW=0.00' (Dynamic Tailwater)
└**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Link 1L: E Spyglass Ct

Inflow Area = 141,347 sf, 60.53% Impervious, Inflow Depth > 0.03" for 1-year NRCS event
Inflow = 0.07 cfs @ 12.14 hrs, Volume= 326 cf
Primary = 0.07 cfs @ 12.14 hrs, Volume= 326 cf, Atten= 0%, Lag= 0.0 min
Routed to Link W : West - Strickers Pond

Primary outflow = Inflow, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs

Summary for Link 2L: North - Harvest Hill Rd

Inflow Area = 8,146 sf, 0.00% Impervious, Inflow Depth = 0.49" for 1-year NRCS event
Inflow = 0.13 cfs @ 12.14 hrs, Volume= 330 cf
Primary = 0.13 cfs @ 12.14 hrs, Volume= 330 cf, Atten= 0%, Lag= 0.0 min
Routed to Link W : West - Strickers Pond

Primary outflow = Inflow, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs

Summary for Link E: East - Mendota-Gammon Greenway

Inflow Area = 3,400 sf, 42.06% Impervious, Inflow Depth = 1.23" for 1-year NRCS event
Inflow = 0.14 cfs @ 12.13 hrs, Volume= 349 cf
Primary = 0.14 cfs @ 12.13 hrs, Volume= 349 cf, Atten= 0%, Lag= 0.0 min
Routed to Link Pro : Post

Primary outflow = Inflow, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs

Summary for Link Pro: Post

Inflow Area = 161,025 sf, 55.45% Impervious, Inflow Depth > 0.12" for 1-year NRCS event
Inflow = 0.59 cfs @ 12.14 hrs, Volume= 1,676 cf
Primary = 0.59 cfs @ 12.14 hrs, Volume= 1,676 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs

Summary for Link W: West - Strickers Pond

Inflow Area = 157,625 sf, 55.74% Impervious, Inflow Depth > 0.10" for 1-year NRCS event
Inflow = 0.46 cfs @ 12.14 hrs, Volume= 1,327 cf
Primary = 0.46 cfs @ 12.14 hrs, Volume= 1,327 cf, Atten= 0%, Lag= 0.0 min
Routed to Link Pro : Post

Primary outflow = Inflow, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs

Time span=0.00-60.00 hrs, dt=0.01 hrs, 6001 points
Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv.
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment A: Runoff Area=29,200 sf 100.00% Impervious Runoff Depth=2.61"
Tc=6.0 min CN=0/98 Runoff=2.46 cfs 6,348 cf

Subcatchment A1: Runoff Area=4,952 sf 10.80% Impervious Runoff Depth=1.09"
Tc=6.0 min CN=76/98 Runoff=0.19 cfs 451 cf

Subcatchment A2: Runoff Area=34,352 sf 66.98% Impervious Runoff Depth=1.97"
Tc=6.0 min CN=71/98 Runoff=2.20 cfs 5,636 cf

Subcatchment B: Runoff Area=12,690 sf 100.00% Impervious Runoff Depth=2.61"
Tc=6.0 min CN=0/98 Runoff=1.07 cfs 2,759 cf

Subcatchment B1: Runoff Area=3,966 sf 8.83% Impervious Runoff Depth=1.06"
Tc=6.0 min CN=76/98 Runoff=0.15 cfs 350 cf

Subcatchment B2: Runoff Area=29,498 sf 65.16% Impervious Runoff Depth=1.93"
Tc=6.0 min CN=71/98 Runoff=1.85 cfs 4,753 cf

Subcatchment C: Runoff Area=22,384 sf 2.46% Impervious Runoff Depth=0.85"
Tc=6.0 min CN=74/98 Runoff=0.68 cfs 1,590 cf

Subcatchment E1: Runoff Area=3,400 sf 42.06% Impervious Runoff Depth=1.49"
Tc=6.0 min CN=71/98 Runoff=0.17 cfs 421 cf

Subcatchment E2: Runoff Area=8,146 sf 0.00% Impervious Runoff Depth=0.67"
Tc=6.0 min CN=71/0 Runoff=0.19 cfs 455 cf

Subcatchment E3: Runoff Area=4,305 sf 0.00% Impervious Runoff Depth=0.67"
Tc=6.0 min CN=71/0 Runoff=0.10 cfs 240 cf

Subcatchment E4: Runoff Area=8,132 sf 28.34% Impervious Runoff Depth=1.22"
Tc=6.0 min CN=71/98 Runoff=0.33 cfs 827 cf

Pond 1P: Infiltration Basin Peak Elev=1,018.39' Storage=1,237 cf Inflow=0.68 cfs 1,590 cf
Primary=0.01 cfs 541 cf Secondary=0.00 cfs 0 cf Outflow=0.01 cfs 541 cf

Pond 3P: Underground Infiltration 2 Peak Elev=1,017.05' Storage=4,090 cf Inflow=3.07 cfs 7,862 cf
Discarded=0.11 cfs 7,862 cf Primary=0.00 cfs 0 cf Outflow=0.11 cfs 7,862 cf

Pond 4P: Underground Infiltration 1 Peak Elev=1,017.48' Storage=8,860 cf Inflow=4.85 cfs 12,435 cf
Discarded=0.06 cfs 11,596 cf Primary=0.00 cfs 0 cf Outflow=0.06 cfs 11,596 cf

Pond 6P: Green Roof Storm Sewer Peak Elev=1,026.27' Inflow=0.15 cfs 350 cf
Primary=0.15 cfs 350 cf Secondary=0.00 cfs 0 cf Outflow=0.15 cfs 350 cf

Pond 7P: Green Roof Storm Sewer Peak Elev=1,026.31' Inflow=0.19 cfs 451 cf
Primary=0.19 cfs 451 cf Secondary=0.00 cfs 0 cf Outflow=0.19 cfs 451 cf

Link 1L: E Spyglass Ct Inflow=0.10 cfs 782 cf
Primary=0.10 cfs 782 cf

Link 2L: North - Harvest Hill Rd Inflow=0.19 cfs 455 cf
Primary=0.19 cfs 455 cf

Link E: East - Mendota-Gammon Greenway Inflow=0.17 cfs 421 cf
Primary=0.17 cfs 421 cf

Link Pro: Post Inflow=0.78 cfs 2,484 cf
Primary=0.78 cfs 2,484 cf

Link W: West - Strickers Pond Inflow=0.62 cfs 2,063 cf
Primary=0.62 cfs 2,063 cf

Total Runoff Area = 161,025 sf Runoff Volume = 23,830 cf Average Runoff Depth = 1.78"
44.55% Pervious = 71,735 sf 55.45% Impervious = 89,290 sf

Summary for Subcatchment A:

Runoff = 2.46 cfs @ 12.13 hrs, Volume= 6,348 cf, Depth= 2.61"
Routed to Pond 4P : Underground Infiltration 1

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
MSE 24-hr 4 2-year NRCS Rainfall=2.84"

	Area (sf)	CN	Description
	29,200	98	Roofs, HSG C
*	0	68	Intensive Green Roof
*	0	76	Extensive Green Roof
	0	98	Paved parking, HSG C
*	0	98	Sidewalk, HSG C
*	0	71	>75% Grass cover, Good, HSG C
	29,200	98	Weighted Average
	29,200	98	100.00% Impervious Area

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

Summary for Subcatchment A1:

Runoff = 0.19 cfs @ 12.14 hrs, Volume= 451 cf, Depth= 1.09"
Routed to Pond 7P : Green Roof Storm Sewer

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
MSE 24-hr 4 2-year NRCS Rainfall=2.84"

	Area (sf)	CN	Description
	0	98	Roofs, HSG C
*	0	68	Intensive Green Roof
*	4,417	76	Extensive Green Roof
	0	98	Paved parking, HSG C
*	535	98	Sidewalk, HSG C
*	0	71	>75% Grass cover, Good, HSG C
	4,952	78	Weighted Average
	4,417	76	89.20% Pervious Area
	535	98	10.80% Impervious Area

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

Summary for Subcatchment A2:

Runoff = 2.20 cfs @ 12.13 hrs, Volume= 5,636 cf, Depth= 1.97"
Routed to Pond 4P : Underground Infiltration 1

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
MSE 24-hr 4 2-year NRCS Rainfall=2.84"

	Area (sf)	CN	Description
	0	98	Roofs, HSG C
*	0	68	Intensive Green Roof
*	0	76	Extensive Green Roof
	14,440	98	Paved parking, HSG C
*	8,570	98	Sidewalk, HSG C
*	11,342	71	>75% Grass cover, Good, HSG C
	34,352	89	Weighted Average
	11,342	71	33.02% Pervious Area
	23,010	98	66.98% Impervious Area

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

Summary for Subcatchment B:

Runoff = 1.07 cfs @ 12.13 hrs, Volume= 2,759 cf, Depth= 2.61"
Routed to Pond 3P : Underground Infiltration 2

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
MSE 24-hr 4 2-year NRCS Rainfall=2.84"

	Area (sf)	CN	Description
	12,690	98	Roofs, HSG C
*	0	68	Intensive Green Roof
*	0	76	Extensive Green Roof
	0	98	Paved parking, HSG C
*	0	98	Sidewalk, HSG C
*	0	71	>75% Grass cover, Good, HSG C
	12,690	98	Weighted Average
	12,690	98	100.00% Impervious Area

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

Summary for Subcatchment B1:

Runoff = 0.15 cfs @ 12.14 hrs, Volume= 350 cf, Depth= 1.06"
Routed to Pond 6P : Green Roof Storm Sewer

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
MSE 24-hr 4 2-year NRCS Rainfall=2.84"

	Area (sf)	CN	Description
	0	98	Roofs, HSG C
*	0	68	Intensive Green Roof
*	3,616	76	Extensive Green Roof
	0	98	Paved parking, HSG C
*	350	98	Sidewalk, HSG C
*	0	71	>75% Grass cover, Good, HSG C
	3,966	78	Weighted Average
	3,616	76	91.17% Pervious Area
	350	98	8.83% Impervious Area

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

Summary for Subcatchment B2:

Runoff = 1.85 cfs @ 12.13 hrs, Volume= 4,753 cf, Depth= 1.93"
Routed to Pond 3P : Underground Infiltration 2

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
MSE 24-hr 4 2-year NRCS Rainfall=2.84"

	Area (sf)	CN	Description
	7,940	98	Roofs, HSG C
*	0	68	Intensive Green Roof
*	0	76	Extensive Green Roof
	6,915	98	Paved parking, HSG C
*	4,365	98	Sidewalk, HSG C
*	10,278	71	>75% Grass cover, Good, HSG C
	29,498	89	Weighted Average
	10,278	71	34.84% Pervious Area
	19,220	98	65.16% Impervious Area

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

Summary for Subcatchment C:

Runoff = 0.68 cfs @ 12.14 hrs, Volume= 1,590 cf, Depth= 0.85"
Routed to Pond 1P : Infiltration Basin

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
MSE 24-hr 4 2-year NRCS Rainfall=2.84"

	Area (sf)	CN	Description
	0	98	Roofs, HSG C
*	0	68	Intensive Green Roof
*	0	76	Extensive Green Roof
	0	98	Paved parking, HSG C
*	550	98	Sidewalk, HSG C
	21,834	74	>75% Grass cover, Good, HSG C
	22,384	75	Weighted Average
	21,834	74	97.54% Pervious Area
	550	98	2.46% Impervious Area

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

Summary for Subcatchment E1:

Runoff = 0.17 cfs @ 12.13 hrs, Volume= 421 cf, Depth= 1.49"
Routed to Link E : East - Mendota-Gammon Greenway

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
MSE 24-hr 4 2-year NRCS Rainfall=2.84"

	Area (sf)	CN	Description
	0	98	Roofs, HSG C
*	0	68	Intensive Green Roof
*	0	76	Extensive Green Roof
	755	98	Paved parking, HSG C
*	675	98	Sidewalk, HSG C
*	1,970	71	>75% Grass cover, Good, HSG C
	3,400	82	Weighted Average
	1,970	71	57.94% Pervious Area
	1,430	98	42.06% Impervious Area

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

Summary for Subcatchment E2:

Runoff = 0.19 cfs @ 12.14 hrs, Volume= 455 cf, Depth= 0.67"
Routed to Link 2L : North - Harvest Hill Rd

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
MSE 24-hr 4 2-year NRCS Rainfall=2.84"

	Area (sf)	CN	Description
	0	98	Roofs, HSG C
*	0	68	Intensive Green Roof
*	0	76	Extensive Green Roof
	0	98	Paved parking, HSG C
*	0	98	Sidewalk, HSG C
*	8,146	71	>75% Grass cover, Good, HSG C
	8,146	71	Weighted Average
	8,146	71	100.00% Pervious Area

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

Summary for Subcatchment E3:

Runoff = 0.10 cfs @ 12.14 hrs, Volume= 240 cf, Depth= 0.67"
Routed to Link 1L : E Spyglass Ct

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
MSE 24-hr 4 2-year NRCS Rainfall=2.84"

	Area (sf)	CN	Description
	0	98	Roofs, HSG C
*	0	68	Intensive Green Roof
*	0	76	Extensive Green Roof
	0	98	Paved parking, HSG C
*	0	98	Sidewalk, HSG C
*	4,305	71	>75% Grass cover, Good, HSG C
	4,305	71	Weighted Average
	4,305	71	100.00% Pervious Area

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

Summary for Subcatchment E4:

Runoff = 0.33 cfs @ 12.13 hrs, Volume= 827 cf, Depth= 1.22"
Routed to Link W : West - Strickers Pond

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
MSE 24-hr 4 2-year NRCS Rainfall=2.84"

	Area (sf)	CN	Description
	0	98	Roofs, HSG C
*	0	68	Intensive Green Roof
*	0	76	Extensive Green Roof
	0	98	Paved parking, HSG C
*	2,305	98	Sidewalk, HSG C
*	5,827	71	>75% Grass cover, Good, HSG C
	8,132	79	Weighted Average
	5,827	71	71.66% Pervious Area
	2,305	98	28.34% Impervious Area

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

Summary for Pond 1P: Infiltration Basin

Inflow Area = 22,384 sf, 2.46% Impervious, Inflow Depth = 0.85" for 2-year NRCS event
Inflow = 0.68 cfs @ 12.14 hrs, Volume= 1,590 cf
Outflow = 0.01 cfs @ 18.17 hrs, Volume= 541 cf, Atten= 98%, Lag= 362.1 min
Primary = 0.01 cfs @ 18.17 hrs, Volume= 541 cf
Routed to Link 1L : E Spyglass Ct
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Routed to Link 1L : E Spyglass Ct

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Peak Elev= 1,018.39' @ 18.17 hrs Surf.Area= 4,994 sf Storage= 1,237 cf

Plug-Flow detention time= 607.4 min calculated for 541 cf (34% of inflow)
Center-of-Mass det. time= 481.8 min (1,324.6 - 842.8)

Volume	Invert	Avail.Storage	Storage Description
#1	1,018.00'	33,500 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
1,018.00	1,300	0	0
1,019.00	10,700	6,000	6,000
1,020.00	13,600	12,150	18,150
1,021.00	17,100	15,350	33,500

Device	Routing	Invert	Outlet Devices
#1	Primary	1,017.00'	**8.0" Round Culvert** L= 10.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 1,017.00' / 1,016.90' S= 0.0100 '/' Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 0.35 sf
#2	Device 1	1,018.35'	**36.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#3	Secondary	1,020.00'	**20.0' long x 6.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.37 2.51 2.70 2.68 2.68 2.67 2.65 2.65 2.65 2.65 2.66 2.66 2.67 2.69 2.72 2.76 2.83

Primary OutFlow Max=0.01 cfs @ 18.17 hrs HW=1,018.39' TW=0.00' (Dynamic Tailwater)
└**1=Culvert** (Passes 0.01 cfs of 1.37 cfs potential flow)
└**2=Orifice/Grate** (Orifice Controls 0.01 cfs @ 0.71 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=1,018.00' TW=0.00' (Dynamic Tailwater)
└**3=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond 3P: Underground Infiltration 2

Inflow Area = 46,154 sf, 69.90% Impervious, Inflow Depth = 2.04" for 2-year NRCS event
Inflow = 3.07 cfs @ 12.13 hrs, Volume= 7,862 cf
Outflow = 0.11 cfs @ 11.24 hrs, Volume= 7,862 cf, Atten= 96%, Lag= 0.0 min
Discarded = 0.11 cfs @ 11.24 hrs, Volume= 7,862 cf
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Routed to Link 1L : E Spyglass Ct

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Peak Elev= 1,017.05' @ 13.65 hrs Surf.Area= 2,991 sf Storage= 4,090 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 311.4 min (1,078.2 - 766.8)

Volume	Invert	Avail.Storage	Storage Description
#1A	1,013.00'	6,149 cf	**46.67'W x 53.61'L x 10.00'H Field A** 25,017 cf Overall - 6,551 cf Embedded = 18,467 cf x 33.3% Voids
#2A	1,017.00'	6,551 cf	**ADS_StormTech MC-7200 +Cap** x 35 Inside #1 Effective Size= 91.2"W x 60.0"H => 26.68 sf x 6.59'L = 175.9 cf Overall Size= 100.0"W x 60.0"H x 6.95'L with 0.36' Overlap 35 Chambers in 5 Rows Cap Storage= 39.5 cf x 2 x 5 rows = 395.0 cf
#3B	1,013.00'	640 cf	**17.42'W x 14.06'L x 10.00'H Field B** 2,448 cf Overall - 510 cf Embedded = 1,939 cf x 33.0% Voids
#4B	1,017.00'	510 cf	**ADS_StormTech MC-7200 +Cap** x 2 Inside #3 Effective Size= 91.2"W x 60.0"H => 26.68 sf x 6.59'L = 175.9 cf Overall Size= 100.0"W x 60.0"H x 6.95'L with 0.36' Overlap 2 Chambers in 2 Rows Cap Storage= 39.5 cf x 2 x 2 rows = 158.0 cf
#5C	1,013.00'	640 cf	**17.42'W x 14.06'L x 10.00'H Field C** 2,448 cf Overall - 510 cf Embedded = 1,939 cf x 33.0% Voids
#6C	1,017.00'	510 cf	**ADS_StormTech MC-7200 +Cap** x 2 Inside #5 Effective Size= 91.2"W x 60.0"H => 26.68 sf x 6.59'L = 175.9 cf Overall Size= 100.0"W x 60.0"H x 6.95'L with 0.36' Overlap 2 Chambers in 2 Rows Cap Storage= 39.5 cf x 2 x 2 rows = 158.0 cf
		14,999 cf	Total Available Storage

Storage Group A created with Chamber Wizard
Storage Group B created with Chamber Wizard
Storage Group C created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	1,020.00'	**12.0" Round Culvert** L= 20.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 1,020.00' / 1,019.80' S= 0.0100 '/' Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 0.79 sf
#2	Device 1	1,020.00'	**6.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#3	Device 1	1,021.50'	**4.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s)
#4	Discarded	1,013.00'	**1.630 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=0.11 cfs @ 11.24 hrs HW=1,013.10' (Free Discharge)
└**4=Exfiltration** (Exfiltration Controls 0.11 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=1,013.00' TW=0.00' (Dynamic Tailwater)
└**1=Culvert** (Controls 0.00 cfs)
  ├**2=Orifice/Grate** (Controls 0.00 cfs)
  └**3=Sharp-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond 3P: Underground Infiltration 2 - Chamber Wizard Field A

Chamber Model = ADS_StormTech MC-7200 +Cap (ADS StormTech® MC-7200 with cap volume)
Effective Size= 91.2"W x 60.0"H => 26.68 sf x 6.59'L = 175.9 cf
Overall Size= 100.0"W x 60.0"H x 6.95'L with 0.36' Overlap
Cap Storage= 39.5 cf x 2 x 5 rows = 395.0 cf

100.0" Wide + 9.0" Spacing = 109.0" C-C Row Spacing

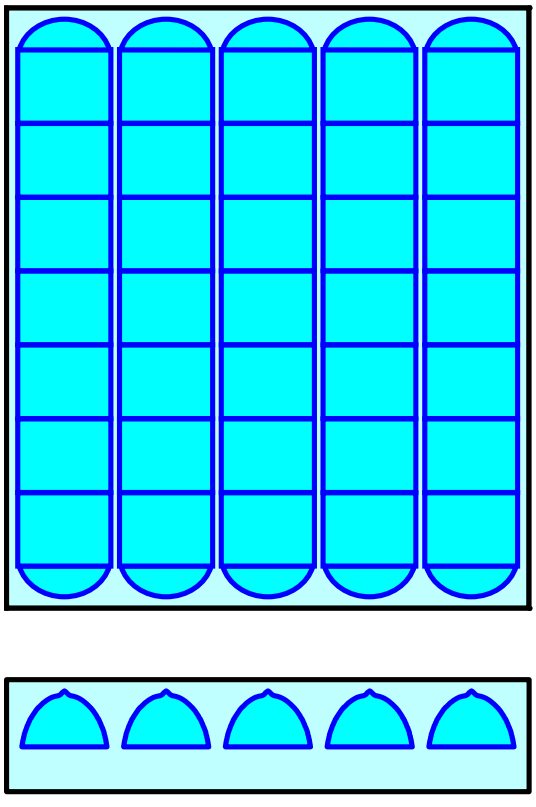
7 Chambers/Row x 6.59' Long +2.73' Cap Length x 2 = 51.61' Row Length +12.0" End Stone x 2 = 53.61' Base Length
5 Rows x 100.0" Wide + 9.0" Spacing x 4 + 12.0" Side Stone x 2 = 46.67' Base Width
48.0" Stone Base + 60.0" Chamber Height + 12.0" Stone Cover = 10.00' Field Height

35 Chambers x 175.9 cf + 39.5 cf Cap Volume x 2 x 5 Rows = 6,550.6 cf Chamber Storage

25,017.2 cf Field - 6,550.6 cf Chambers = 18,466.6 cf Stone x 33.3% Voids = 6,149.4 cf Stone Storage

Chamber Storage + Stone Storage = 12,700.0 cf = 0.292 af
Overall Storage Efficiency = 50.8%
Overall System Size = 53.61' x 46.67' x 10.00'

35 Chambers
926.6 cy Field
683.9 cy Stone



Pond 3P: Underground Infiltration 2 - Chamber Wizard Field B

Chamber Model = ADS_StormTech MC-7200 +Cap (ADS StormTech® MC-7200 with cap volume)
Effective Size= 91.2"W x 60.0"H => 26.68 sf x 6.59'L = 175.9 cf
Overall Size= 100.0"W x 60.0"H x 6.95'L with 0.36' Overlap
Cap Storage= 39.5 cf x 2 x 2 rows = 158.0 cf

100.0" Wide + 9.0" Spacing = 109.0" C-C Row Spacing

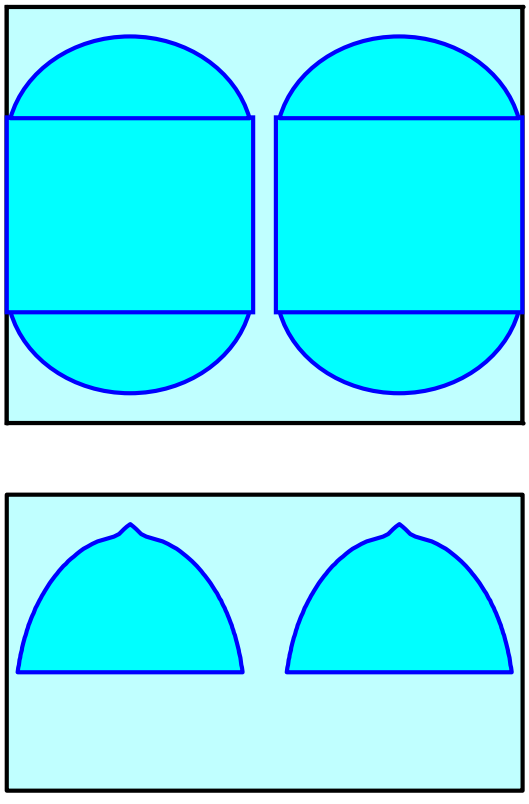
1 Chambers/Row x 6.59' Long +2.73' Cap Length x 2 = 12.06' Row Length +12.0" End Stone x 2 = 14.06' Base Length
2 Rows x 100.0" Wide + 9.0" Spacing x 1 = 17.42' Base Width
48.0" Stone Base + 60.0" Chamber Height + 12.0" Stone Cover = 10.00' Field Height

2 Chambers x 175.9 cf + 39.5 cf Cap Volume x 2 x 2 Rows = 509.8 cf Chamber Storage

2,448.5 cf Field - 509.8 cf Chambers = 1,938.7 cf Stone x 33.0% Voids = 639.8 cf Stone Storage

Chamber Storage + Stone Storage = 1,149.5 cf = 0.026 af
Overall Storage Efficiency = 46.9%
Overall System Size = 14.06' x 17.42' x 10.00'

2 Chambers
90.7 cy Field
71.8 cy Stone



Pond 3P: Underground Infiltration 2 - Chamber Wizard Field C

Chamber Model = ADS_StormTech MC-7200 +Cap (ADS StormTech® MC-7200 with cap volume)
Effective Size= 91.2"W x 60.0"H => 26.68 sf x 6.59'L = 175.9 cf
Overall Size= 100.0"W x 60.0"H x 6.95'L with 0.36' Overlap
Cap Storage= 39.5 cf x 2 x 2 rows = 158.0 cf

100.0" Wide + 9.0" Spacing = 109.0" C-C Row Spacing

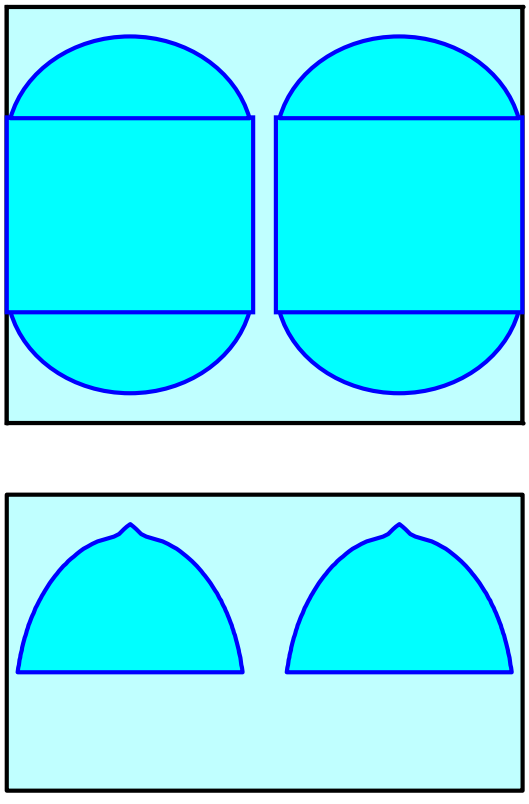
1 Chambers/Row x 6.59' Long +2.73' Cap Length x 2 = 12.06' Row Length +12.0" End Stone x 2 = 14.06' Base Length
2 Rows x 100.0" Wide + 9.0" Spacing x 1 = 17.42' Base Width
48.0" Stone Base + 60.0" Chamber Height + 12.0" Stone Cover = 10.00' Field Height

2 Chambers x 175.9 cf + 39.5 cf Cap Volume x 2 x 2 Rows = 509.8 cf Chamber Storage

2,448.5 cf Field - 509.8 cf Chambers = 1,938.7 cf Stone x 33.0% Voids = 639.8 cf Stone Storage

Chamber Storage + Stone Storage = 1,149.5 cf = 0.026 af
Overall Storage Efficiency = 46.9%
Overall System Size = 14.06' x 17.42' x 10.00'

2 Chambers
90.7 cy Field
71.8 cy Stone



Summary for Pond 4P: Underground Infiltration 1

Inflow Area = 68,504 sf, 77.00% Impervious, Inflow Depth = 2.18" for 2-year NRCS event
Inflow = 4.85 cfs @ 12.13 hrs, Volume= 12,435 cf
Outflow = 0.06 cfs @ 9.95 hrs, Volume= 11,596 cf, Atten= 99%, Lag= 0.0 min
Discarded = 0.06 cfs @ 9.95 hrs, Volume= 11,596 cf
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Routed to Link 1L : E Spyglass Ct

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Peak Elev= 1,017.48' @ 19.04 hrs Surf.Area= 5,097 sf Storage= 8,860 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 1,197.0 min (1,960.8 - 763.8)

Volume	Invert	Avail.Storage	Storage Description
#1A	1,013.00'	12,327 cf	**28.50'W x 178.85'L x 10.00'H Field A** 50,972 cf Overall - 13,955 cf Embedded = 37,017 cf x 33.3% Voids
#2A	1,017.00'	13,955 cf	**ADS_StormTech MC-7200 +Cap** x 78 Inside #1 Effective Size= 91.2"W x 60.0"H => 26.68 sf x 6.59'L = 175.9 cf Overall Size= 100.0"W x 60.0"H x 6.95'L with 0.36' Overlap 78 Chambers in 3 Rows Cap Storage= 39.5 cf x 2 x 3 rows = 237.0 cf
		26,282 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	1,020.00'	**12.0" Round Culvert** L= 20.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 1,020.00' / 1,019.80' S= 0.0100 '/' Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 0.79 sf
#2	Device 1	1,020.00'	**6.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#3	Device 1	1,021.50'	**4.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s)
#4	Discarded	1,013.00'	**0.500 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=0.06 cfs @ 9.95 hrs HW=1,013.10' (Free Discharge)
└**4=Exfiltration** (Exfiltration Controls 0.06 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=1,013.00' TW=0.00' (Dynamic Tailwater)
└**1=Culvert** (Controls 0.00 cfs)
  ├**2=Orifice/Grate** (Controls 0.00 cfs)
  └**3=Sharp-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond 4P: Underground Infiltration 1 - Chamber Wizard Field A

Chamber Model = ADS_StormTech MC-7200 +Cap (ADS StormTech® MC-7200 with cap volume)
Effective Size= 91.2"W x 60.0"H => 26.68 sf x 6.59'L = 175.9 cf
Overall Size= 100.0"W x 60.0"H x 6.95'L with 0.36' Overlap
Cap Storage= 39.5 cf x 2 x 3 rows = 237.0 cf

100.0" Wide + 9.0" Spacing = 109.0" C-C Row Spacing

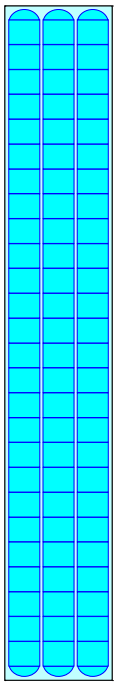
26 Chambers/Row x 6.59' Long +2.73' Cap Length x 2 = 176.85' Row Length +12.0" End Stone x 2 = 178.85' Base Length
3 Rows x 100.0" Wide + 9.0" Spacing x 2 + 12.0" Side Stone x 2 = 28.50' Base Width
48.0" Stone Base + 60.0" Chamber Height + 12.0" Stone Cover = 10.00' Field Height

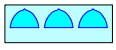
78 Chambers x 175.9 cf + 39.5 cf Cap Volume x 2 x 3 Rows = 13,955.3 cf Chamber Storage

50,972.3 cf Field - 13,955.3 cf Chambers = 37,017.0 cf Stone x 33.3% Voids = 12,326.6 cf Stone Storage

Chamber Storage + Stone Storage = 26,281.9 cf = 0.603 af
Overall Storage Efficiency = 51.6%
Overall System Size = 178.85' x 28.50' x 10.00'

78 Chambers
1,887.9 cy Field
1,371.0 cy Stone





Summary for Pond 6P: Green Roof Storm Sewer

Inflow Area = 3,966 sf, 8.83% Impervious, Inflow Depth = 1.06" for 2-year NRCS event
Inflow = 0.15 cfs @ 12.14 hrs, Volume= 350 cf
Outflow = 0.15 cfs @ 12.14 hrs, Volume= 350 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.15 cfs @ 12.14 hrs, Volume= 350 cf
Routed to Pond 3P : Underground Infiltration 2
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Routed to Link W : West - Strickers Pond

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Peak Elev= 1,026.27' @ 12.14 hrs
Flood Elev= 1,027.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	1,026.00'	**6.0" Round Culvert** L= 10.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 1,026.00' / 1,025.90' S= 0.0100 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.20 sf
#2	Secondary	1,026.50'	**20.0' long x 5.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.34 2.50 2.70 2.68 2.68 2.66 2.65 2.65 2.65 2.65 2.67 2.66 2.68 2.70 2.74 2.79 2.88

Primary OutFlow Max=0.15 cfs @ 12.14 hrs HW=1,026.27' TW=1,015.15' (Dynamic Tailwater)
1=Culvert (Inlet Controls 0.15 cfs @ 1.39 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=1,026.00' TW=0.00' (Dynamic Tailwater)
2=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Summary for Pond 7P: Green Roof Storm Sewer

Inflow Area = 4,952 sf, 10.80% Impervious, Inflow Depth = 1.09" for 2-year NRCS event
Inflow = 0.19 cfs @ 12.14 hrs, Volume= 451 cf
Outflow = 0.19 cfs @ 12.14 hrs, Volume= 451 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.19 cfs @ 12.14 hrs, Volume= 451 cf
Routed to Pond 4P : Underground Infiltration 1
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Routed to Link W : West - Strickers Pond

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Peak Elev= 1,026.31' @ 12.14 hrs
Flood Elev= 1,027.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	1,026.00'	**6.0" Round Culvert** L= 10.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 1,026.00' / 1,025.90' S= 0.0100 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.20 sf
#2	Secondary	1,026.50'	**20.0' long x 5.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.34 2.50 2.70 2.68 2.68 2.66 2.65 2.65 2.65 2.65 2.67 2.66 2.68 2.70 2.74 2.79 2.88

Primary OutFlow Max=0.19 cfs @ 12.14 hrs HW=1,026.31' TW=1,015.62' (Dynamic Tailwater)
└**1=Culvert** (Inlet Controls 0.19 cfs @ 1.50 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=1,026.00' TW=0.00' (Dynamic Tailwater)
└**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Link 1L: E Spyglass Ct

Inflow Area = 141,347 sf, 60.53% Impervious, Inflow Depth > 0.07" for 2-year NRCS event
Inflow = 0.10 cfs @ 12.14 hrs, Volume= 782 cf
Primary = 0.10 cfs @ 12.14 hrs, Volume= 782 cf, Atten= 0%, Lag= 0.0 min
Routed to Link W : West - Strickers Pond

Primary outflow = Inflow, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs

Summary for Link 2L: North - Harvest Hill Rd

Inflow Area = 8,146 sf, 0.00% Impervious, Inflow Depth = 0.67" for 2-year NRCS event
Inflow = 0.19 cfs @ 12.14 hrs, Volume= 455 cf
Primary = 0.19 cfs @ 12.14 hrs, Volume= 455 cf, Atten= 0%, Lag= 0.0 min
Routed to Link W : West - Strickers Pond

Primary outflow = Inflow, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs

Summary for Link E: East - Mendota-Gammon Greenway

Inflow Area = 3,400 sf, 42.06% Impervious, Inflow Depth = 1.49" for 2-year NRCS event
Inflow = 0.17 cfs @ 12.13 hrs, Volume= 421 cf
Primary = 0.17 cfs @ 12.13 hrs, Volume= 421 cf, Atten= 0%, Lag= 0.0 min
Routed to Link Pro : Post

Primary outflow = Inflow, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs

Summary for Link Pro: Post

Inflow Area = 161,025 sf, 55.45% Impervious, Inflow Depth > 0.19" for 2-year NRCS event
Inflow = 0.78 cfs @ 12.14 hrs, Volume= 2,484 cf
Primary = 0.78 cfs @ 12.14 hrs, Volume= 2,484 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs

Summary for Link W: West - Strickers Pond

Inflow Area = 157,625 sf, 55.74% Impervious, Inflow Depth > 0.16" for 2-year NRCS event
Inflow = 0.62 cfs @ 12.14 hrs, Volume= 2,063 cf
Primary = 0.62 cfs @ 12.14 hrs, Volume= 2,063 cf, Atten= 0%, Lag= 0.0 min
Routed to Link Pro : Post

Primary outflow = Inflow, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs

Time span=0.00-60.00 hrs, dt=0.01 hrs, 6001 points
Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv.
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment A: Runoff Area=29,200 sf 100.00% Impervious Runoff Depth=3.22"
Tc=6.0 min CN=0/98 Runoff=3.00 cfs 7,827 cf

Subcatchment A1: Runoff Area=4,952 sf 10.80% Impervious Runoff Depth=1.53"
Tc=6.0 min CN=76/98 Runoff=0.27 cfs 633 cf

Subcatchment A2: Runoff Area=34,352 sf 66.98% Impervious Runoff Depth=2.50"
Tc=6.0 min CN=71/98 Runoff=2.79 cfs 7,143 cf

Subcatchment B: Runoff Area=12,690 sf 100.00% Impervious Runoff Depth=3.22"
Tc=6.0 min CN=0/98 Runoff=1.30 cfs 3,402 cf

Subcatchment B1: Runoff Area=3,966 sf 8.83% Impervious Runoff Depth=1.50"
Tc=6.0 min CN=76/98 Runoff=0.21 cfs 494 cf

Subcatchment B2: Runoff Area=29,498 sf 65.16% Impervious Runoff Depth=2.46"
Tc=6.0 min CN=71/98 Runoff=2.36 cfs 6,036 cf

Subcatchment C: Runoff Area=22,384 sf 2.46% Impervious Runoff Depth=1.25"
Tc=6.0 min CN=74/98 Runoff=1.03 cfs 2,341 cf

Subcatchment E1: Runoff Area=3,400 sf 42.06% Impervious Runoff Depth=1.95"
Tc=6.0 min CN=71/98 Runoff=0.22 cfs 553 cf

Subcatchment E2: Runoff Area=8,146 sf 0.00% Impervious Runoff Depth=1.03"
Tc=6.0 min CN=71/0 Runoff=0.31 cfs 701 cf

Subcatchment E3: Runoff Area=4,305 sf 0.00% Impervious Runoff Depth=1.03"
Tc=6.0 min CN=71/0 Runoff=0.16 cfs 370 cf

Subcatchment E4: Runoff Area=8,132 sf 28.34% Impervious Runoff Depth=1.65"
Tc=6.0 min CN=71/98 Runoff=0.45 cfs 1,119 cf

Pond 1P: Infiltration Basin Peak Elev=1,018.43' Storage=1,442 cf Inflow=1.03 cfs 2,341 cf
Primary=0.05 cfs 1,291 cf Secondary=0.00 cfs 0 cf Outflow=0.05 cfs 1,291 cf

Pond 3P: Underground Infiltration 2 Peak Elev=1,017.64' Storage=5,534 cf Inflow=3.88 cfs 9,932 cf
Discarded=0.11 cfs 9,932 cf Primary=0.00 cfs 0 cf Outflow=0.11 cfs 9,932 cf

Pond 4P: Underground Infiltration 1 Peak Elev=1,018.15' Storage=11,715 cf Inflow=6.06 cfs 15,603 cf
Discarded=0.06 cfs 11,780 cf Primary=0.00 cfs 0 cf Outflow=0.06 cfs 11,780 cf

Pond 6P: Green Roof Storm Sewer Peak Elev=1,026.33' Inflow=0.21 cfs 494 cf
Primary=0.21 cfs 494 cf Secondary=0.00 cfs 0 cf Outflow=0.21 cfs 494 cf

Pond 7P: Green Roof Storm Sewer Peak Elev=1,026.39' Inflow=0.27 cfs 633 cf
Primary=0.27 cfs 633 cf Secondary=0.00 cfs 0 cf Outflow=0.27 cfs 633 cf

Link 1L: E Spyglass Ct Inflow=0.16 cfs 1,662 cf
Primary=0.16 cfs 1,662 cf

Link 2L: North - Harvest Hill Rd Inflow=0.31 cfs 701 cf
Primary=0.31 cfs 701 cf

Link E: East - Mendota-Gammon Greenway Inflow=0.22 cfs 553 cf
Primary=0.22 cfs 553 cf

Link Pro: Post Inflow=1.14 cfs 4,034 cf
Primary=1.14 cfs 4,034 cf

Link W: West - Strickers Pond Inflow=0.92 cfs 3,481 cf
Primary=0.92 cfs 3,481 cf

Total Runoff Area = 161,025 sf Runoff Volume = 30,619 cf Average Runoff Depth = 2.28"
44.55% Pervious = 71,735 sf 55.45% Impervious = 89,290 sf

Summary for Subcatchment A:

Runoff = 3.00 cfs @ 12.13 hrs, Volume= 7,827 cf, Depth= 3.22"
Routed to Pond 4P : Underground Infiltration 1

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
MSE 24-hr 4 5-year NRCS Rainfall=3.45"

	Area (sf)	CN	Description
	29,200	98	Roofs, HSG C
*	0	68	Intensive Green Roof
*	0	76	Extensive Green Roof
	0	98	Paved parking, HSG C
*	0	98	Sidewalk, HSG C
*	0	71	>75% Grass cover, Good, HSG C
	29,200	98	Weighted Average
	29,200	98	100.00% Impervious Area

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

Summary for Subcatchment A1:

Runoff = 0.27 cfs @ 12.13 hrs, Volume= 633 cf, Depth= 1.53"
Routed to Pond 7P : Green Roof Storm Sewer

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
MSE 24-hr 4 5-year NRCS Rainfall=3.45"

	Area (sf)	CN	Description
	0	98	Roofs, HSG C
*	0	68	Intensive Green Roof
*	4,417	76	Extensive Green Roof
	0	98	Paved parking, HSG C
*	535	98	Sidewalk, HSG C
*	0	71	>75% Grass cover, Good, HSG C
	4,952	78	Weighted Average
	4,417	76	89.20% Pervious Area
	535	98	10.80% Impervious Area

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

Summary for Subcatchment A2:

Runoff = 2.79 cfs @ 12.13 hrs, Volume= 7,143 cf, Depth= 2.50"
Routed to Pond 4P : Underground Infiltration 1

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
MSE 24-hr 4 5-year NRCS Rainfall=3.45"

	Area (sf)	CN	Description
	0	98	Roofs, HSG C
*	0	68	Intensive Green Roof
*	0	76	Extensive Green Roof
	14,440	98	Paved parking, HSG C
*	8,570	98	Sidewalk, HSG C
*	11,342	71	>75% Grass cover, Good, HSG C
	34,352	89	Weighted Average
	11,342	71	33.02% Pervious Area
	23,010	98	66.98% Impervious Area

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

Summary for Subcatchment B:

Runoff = 1.30 cfs @ 12.13 hrs, Volume= 3,402 cf, Depth= 3.22"
Routed to Pond 3P : Underground Infiltration 2

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
MSE 24-hr 4 5-year NRCS Rainfall=3.45"

	Area (sf)	CN	Description
	12,690	98	Roofs, HSG C
*	0	68	Intensive Green Roof
*	0	76	Extensive Green Roof
	0	98	Paved parking, HSG C
*	0	98	Sidewalk, HSG C
*	0	71	>75% Grass cover, Good, HSG C
	12,690	98	Weighted Average
	12,690	98	100.00% Impervious Area

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

Summary for Subcatchment B1:

Runoff = 0.21 cfs @ 12.14 hrs, Volume= 494 cf, Depth= 1.50"
Routed to Pond 6P : Green Roof Storm Sewer

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
MSE 24-hr 4 5-year NRCS Rainfall=3.45"

	Area (sf)	CN	Description
	0	98	Roofs, HSG C
*	0	68	Intensive Green Roof
*	3,616	76	Extensive Green Roof
	0	98	Paved parking, HSG C
*	350	98	Sidewalk, HSG C
*	0	71	>75% Grass cover, Good, HSG C
	3,966	78	Weighted Average
	3,616	76	91.17% Pervious Area
	350	98	8.83% Impervious Area

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

Summary for Subcatchment B2:

Runoff = 2.36 cfs @ 12.13 hrs, Volume= 6,036 cf, Depth= 2.46"
Routed to Pond 3P : Underground Infiltration 2

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
MSE 24-hr 4 5-year NRCS Rainfall=3.45"

	Area (sf)	CN	Description
	7,940	98	Roofs, HSG C
*	0	68	Intensive Green Roof
*	0	76	Extensive Green Roof
	6,915	98	Paved parking, HSG C
*	4,365	98	Sidewalk, HSG C
*	10,278	71	>75% Grass cover, Good, HSG C
	29,498	89	Weighted Average
	10,278	71	34.84% Pervious Area
	19,220	98	65.16% Impervious Area

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

Summary for Subcatchment C:

Runoff = 1.03 cfs @ 12.14 hrs, Volume= 2,341 cf, Depth= 1.25"
Routed to Pond 1P : Infiltration Basin

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
MSE 24-hr 4 5-year NRCS Rainfall=3.45"

	Area (sf)	CN	Description
	0	98	Roofs, HSG C
*	0	68	Intensive Green Roof
*	0	76	Extensive Green Roof
	0	98	Paved parking, HSG C
*	550	98	Sidewalk, HSG C
	21,834	74	>75% Grass cover, Good, HSG C
	22,384	75	Weighted Average
	21,834	74	97.54% Pervious Area
	550	98	2.46% Impervious Area

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

Summary for Subcatchment E1:

Runoff = 0.22 cfs @ 12.13 hrs, Volume= 553 cf, Depth= 1.95"
Routed to Link E : East - Mendota-Gammon Greenway

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
MSE 24-hr 4 5-year NRCS Rainfall=3.45"

	Area (sf)	CN	Description
	0	98	Roofs, HSG C
*	0	68	Intensive Green Roof
*	0	76	Extensive Green Roof
	755	98	Paved parking, HSG C
*	675	98	Sidewalk, HSG C
*	1,970	71	>75% Grass cover, Good, HSG C
	3,400	82	Weighted Average
	1,970	71	57.94% Pervious Area
	1,430	98	42.06% Impervious Area

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

Summary for Subcatchment E2:

Runoff = 0.31 cfs @ 12.14 hrs, Volume= 701 cf, Depth= 1.03"
Routed to Link 2L : North - Harvest Hill Rd

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
MSE 24-hr 4 5-year NRCS Rainfall=3.45"

	Area (sf)	CN	Description
	0	98	Roofs, HSG C
*	0	68	Intensive Green Roof
*	0	76	Extensive Green Roof
	0	98	Paved parking, HSG C
*	0	98	Sidewalk, HSG C
*	8,146	71	>75% Grass cover, Good, HSG C
	8,146	71	Weighted Average
	8,146	71	100.00% Pervious Area

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

Summary for Subcatchment E3:

Runoff = 0.16 cfs @ 12.14 hrs, Volume= 370 cf, Depth= 1.03"
Routed to Link 1L : E Spyglass Ct

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
MSE 24-hr 4 5-year NRCS Rainfall=3.45"

	Area (sf)	CN	Description
	0	98	Roofs, HSG C
*	0	68	Intensive Green Roof
*	0	76	Extensive Green Roof
	0	98	Paved parking, HSG C
*	0	98	Sidewalk, HSG C
*	4,305	71	>75% Grass cover, Good, HSG C
	4,305	71	Weighted Average
	4,305	71	100.00% Pervious Area

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

Summary for Subcatchment E4:

Runoff = 0.45 cfs @ 12.13 hrs, Volume= 1,119 cf, Depth= 1.65"
Routed to Link W : West - Strickers Pond

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
MSE 24-hr 4 5-year NRCS Rainfall=3.45"

	Area (sf)	CN	Description
	0	98	Roofs, HSG C
*	0	68	Intensive Green Roof
*	0	76	Extensive Green Roof
	0	98	Paved parking, HSG C
*	2,305	98	Sidewalk, HSG C
*	5,827	71	>75% Grass cover, Good, HSG C
	8,132	79	Weighted Average
	5,827	71	71.66% Pervious Area
	2,305	98	28.34% Impervious Area

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

Summary for Pond 1P: Infiltration Basin

Inflow Area = 22,384 sf, 2.46% Impervious, Inflow Depth = 1.25" for 5-year NRCS event
Inflow = 1.03 cfs @ 12.14 hrs, Volume= 2,341 cf
Outflow = 0.05 cfs @ 13.60 hrs, Volume= 1,291 cf, Atten= 95%, Lag= 88.1 min
Primary = 0.05 cfs @ 13.60 hrs, Volume= 1,291 cf
Routed to Link 1L : E Spyglass Ct
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Routed to Link 1L : E Spyglass Ct

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Peak Elev= 1,018.43' @ 13.60 hrs Surf.Area= 5,367 sf Storage= 1,442 cf

Plug-Flow detention time= 388.0 min calculated for 1,291 cf (55% of inflow)
Center-of-Mass det. time= 280.7 min (1,114.4 - 833.7)

Volume	Invert	Avail.Storage	Storage Description
#1	1,018.00'	33,500 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
1,018.00	1,300	0	0
1,019.00	10,700	6,000	6,000
1,020.00	13,600	12,150	18,150
1,021.00	17,100	15,350	33,500

Device	Routing	Invert	Outlet Devices
#1	Primary	1,017.00'	**8.0" Round Culvert** L= 10.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 1,017.00' / 1,016.90' S= 0.0100 '/' Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 0.35 sf
#2	Device 1	1,018.35'	**36.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#3	Secondary	1,020.00'	**20.0' long x 6.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.37 2.51 2.70 2.68 2.68 2.67 2.65 2.65 2.65 2.65 2.66 2.66 2.67 2.69 2.72 2.76 2.83

Primary OutFlow Max=0.05 cfs @ 13.60 hrs HW=1,018.43' TW=0.00' (Dynamic Tailwater)
└**1=Culvert** (Passes 0.05 cfs of 1.39 cfs potential flow)
└**2=Orifice/Grate** (Orifice Controls 0.05 cfs @ 0.98 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=1,018.00' TW=0.00' (Dynamic Tailwater)
└**3=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond 3P: Underground Infiltration 2

Inflow Area = 46,154 sf, 69.90% Impervious, Inflow Depth = 2.58" for 5-year NRCS event
Inflow = 3.88 cfs @ 12.13 hrs, Volume= 9,932 cf
Outflow = 0.11 cfs @ 11.04 hrs, Volume= 9,932 cf, Atten= 97%, Lag= 0.0 min
Discarded = 0.11 cfs @ 11.04 hrs, Volume= 9,932 cf
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Routed to Link 1L : E Spyglass Ct

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Peak Elev= 1,017.64' @ 15.03 hrs Surf.Area= 2,991 sf Storage= 5,534 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 427.9 min (1,192.2 - 764.2)

Volume	Invert	Avail.Storage	Storage Description
#1A	1,013.00'	6,149 cf	**46.67'W x 53.61'L x 10.00'H Field A** 25,017 cf Overall - 6,551 cf Embedded = 18,467 cf x 33.3% Voids
#2A	1,017.00'	6,551 cf	**ADS_StormTech MC-7200 +Cap** x 35 Inside #1 Effective Size= 91.2"W x 60.0"H => 26.68 sf x 6.59'L = 175.9 cf Overall Size= 100.0"W x 60.0"H x 6.95'L with 0.36' Overlap 35 Chambers in 5 Rows Cap Storage= 39.5 cf x 2 x 5 rows = 395.0 cf
#3B	1,013.00'	640 cf	**17.42'W x 14.06'L x 10.00'H Field B** 2,448 cf Overall - 510 cf Embedded = 1,939 cf x 33.0% Voids
#4B	1,017.00'	510 cf	**ADS_StormTech MC-7200 +Cap** x 2 Inside #3 Effective Size= 91.2"W x 60.0"H => 26.68 sf x 6.59'L = 175.9 cf Overall Size= 100.0"W x 60.0"H x 6.95'L with 0.36' Overlap 2 Chambers in 2 Rows Cap Storage= 39.5 cf x 2 x 2 rows = 158.0 cf
#5C	1,013.00'	640 cf	**17.42'W x 14.06'L x 10.00'H Field C** 2,448 cf Overall - 510 cf Embedded = 1,939 cf x 33.0% Voids
#6C	1,017.00'	510 cf	**ADS_StormTech MC-7200 +Cap** x 2 Inside #5 Effective Size= 91.2"W x 60.0"H => 26.68 sf x 6.59'L = 175.9 cf Overall Size= 100.0"W x 60.0"H x 6.95'L with 0.36' Overlap 2 Chambers in 2 Rows Cap Storage= 39.5 cf x 2 x 2 rows = 158.0 cf
		14,999 cf	Total Available Storage

Storage Group A created with Chamber Wizard
Storage Group B created with Chamber Wizard
Storage Group C created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	1,020.00'	**12.0" Round Culvert** L= 20.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 1,020.00' / 1,019.80' S= 0.0100 '/' Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 0.79 sf
#2	Device 1	1,020.00'	**6.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#3	Device 1	1,021.50'	**4.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s)
#4	Discarded	1,013.00'	**1.630 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=0.11 cfs @ 11.04 hrs HW=1,013.10' (Free Discharge)
└**4=Exfiltration** (Exfiltration Controls 0.11 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=1,013.00' TW=0.00' (Dynamic Tailwater)
└**1=Culvert** (Controls 0.00 cfs)
  ├**2=Orifice/Grate** (Controls 0.00 cfs)
  └**3=Sharp-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond 3P: Underground Infiltration 2 - Chamber Wizard Field A

Chamber Model = ADS_StormTech MC-7200 +Cap (ADS StormTech® MC-7200 with cap volume)
Effective Size= 91.2"W x 60.0"H => 26.68 sf x 6.59'L = 175.9 cf
Overall Size= 100.0"W x 60.0"H x 6.95'L with 0.36' Overlap
Cap Storage= 39.5 cf x 2 x 5 rows = 395.0 cf

100.0" Wide + 9.0" Spacing = 109.0" C-C Row Spacing

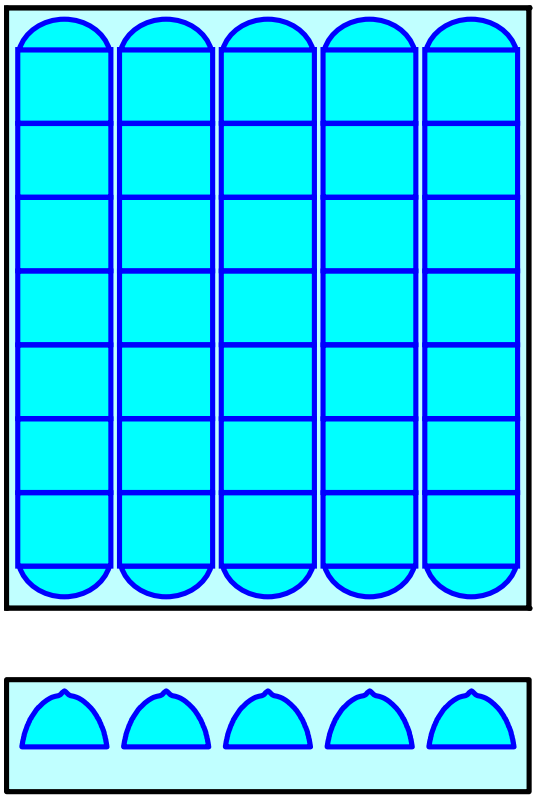
7 Chambers/Row x 6.59' Long +2.73' Cap Length x 2 = 51.61' Row Length +12.0" End Stone x 2 = 53.61' Base Length
5 Rows x 100.0" Wide + 9.0" Spacing x 4 + 12.0" Side Stone x 2 = 46.67' Base Width
48.0" Stone Base + 60.0" Chamber Height + 12.0" Stone Cover = 10.00' Field Height

35 Chambers x 175.9 cf + 39.5 cf Cap Volume x 2 x 5 Rows = 6,550.6 cf Chamber Storage

25,017.2 cf Field - 6,550.6 cf Chambers = 18,466.6 cf Stone x 33.3% Voids = 6,149.4 cf Stone Storage

Chamber Storage + Stone Storage = 12,700.0 cf = 0.292 af
Overall Storage Efficiency = 50.8%
Overall System Size = 53.61' x 46.67' x 10.00'

35 Chambers
926.6 cy Field
683.9 cy Stone



Pond 3P: Underground Infiltration 2 - Chamber Wizard Field B

Chamber Model = ADS_StormTech MC-7200 +Cap (ADS StormTech® MC-7200 with cap volume)
Effective Size= 91.2"W x 60.0"H => 26.68 sf x 6.59'L = 175.9 cf
Overall Size= 100.0"W x 60.0"H x 6.95'L with 0.36' Overlap
Cap Storage= 39.5 cf x 2 x 2 rows = 158.0 cf

100.0" Wide + 9.0" Spacing = 109.0" C-C Row Spacing

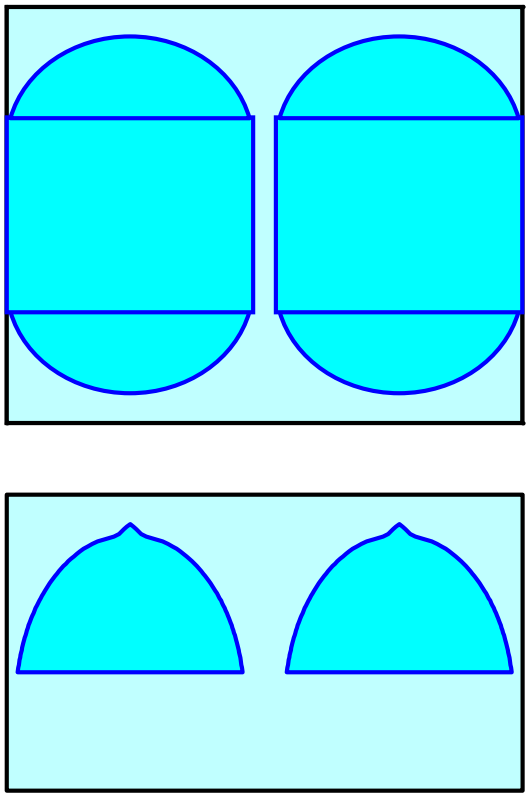
1 Chambers/Row x 6.59' Long +2.73' Cap Length x 2 = 12.06' Row Length +12.0" End Stone x 2 = 14.06' Base Length
2 Rows x 100.0" Wide + 9.0" Spacing x 1 = 17.42' Base Width
48.0" Stone Base + 60.0" Chamber Height + 12.0" Stone Cover = 10.00' Field Height

2 Chambers x 175.9 cf + 39.5 cf Cap Volume x 2 x 2 Rows = 509.8 cf Chamber Storage

2,448.5 cf Field - 509.8 cf Chambers = 1,938.7 cf Stone x 33.0% Voids = 639.8 cf Stone Storage

Chamber Storage + Stone Storage = 1,149.5 cf = 0.026 af
Overall Storage Efficiency = 46.9%
Overall System Size = 14.06' x 17.42' x 10.00'

2 Chambers
90.7 cy Field
71.8 cy Stone



Pond 3P: Underground Infiltration 2 - Chamber Wizard Field C

Chamber Model = ADS_StormTech MC-7200 +Cap (ADS StormTech® MC-7200 with cap volume)
Effective Size= 91.2"W x 60.0"H => 26.68 sf x 6.59'L = 175.9 cf
Overall Size= 100.0"W x 60.0"H x 6.95'L with 0.36' Overlap
Cap Storage= 39.5 cf x 2 x 2 rows = 158.0 cf

100.0" Wide + 9.0" Spacing = 109.0" C-C Row Spacing

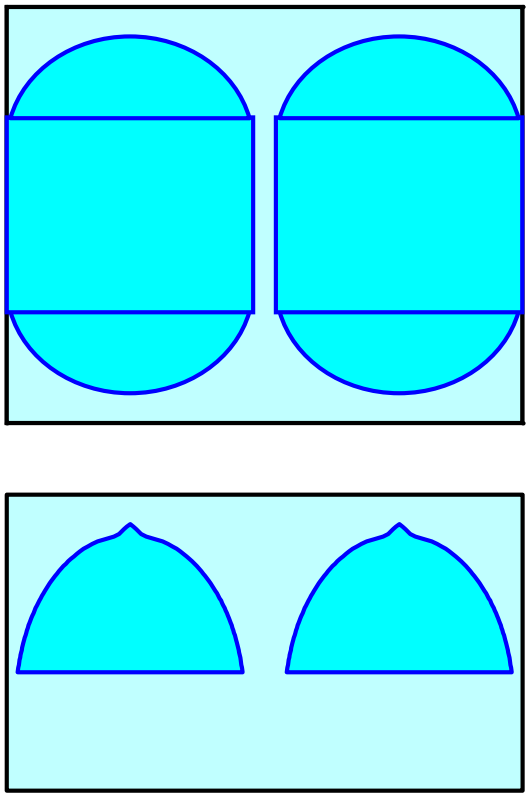
1 Chambers/Row x 6.59' Long +2.73' Cap Length x 2 = 12.06' Row Length +12.0" End Stone x 2 = 14.06' Base Length
2 Rows x 100.0" Wide + 9.0" Spacing x 1 = 17.42' Base Width
48.0" Stone Base + 60.0" Chamber Height + 12.0" Stone Cover = 10.00' Field Height

2 Chambers x 175.9 cf + 39.5 cf Cap Volume x 2 x 2 Rows = 509.8 cf Chamber Storage

2,448.5 cf Field - 509.8 cf Chambers = 1,938.7 cf Stone x 33.0% Voids = 639.8 cf Stone Storage

Chamber Storage + Stone Storage = 1,149.5 cf = 0.026 af
Overall Storage Efficiency = 46.9%
Overall System Size = 14.06' x 17.42' x 10.00'

2 Chambers
90.7 cy Field
71.8 cy Stone



Summary for Pond 4P: Underground Infiltration 1

Inflow Area = 68,504 sf, 77.00% Impervious, Inflow Depth = 2.73" for 5-year NRCS event
Inflow = 6.06 cfs @ 12.13 hrs, Volume= 15,603 cf
Outflow = 0.06 cfs @ 9.34 hrs, Volume= 11,780 cf, Atten= 99%, Lag= 0.0 min
Discarded = 0.06 cfs @ 9.34 hrs, Volume= 11,780 cf
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Routed to Link 1L : E Spyglass Ct

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Peak Elev= 1,018.15' @ 20.38 hrs Surf.Area= 5,097 sf Storage= 11,715 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 1,174.3 min (1,935.3 - 761.0)

Volume	Invert	Avail.Storage	Storage Description
#1A	1,013.00'	12,327 cf	**28.50'W x 178.85'L x 10.00'H Field A** 50,972 cf Overall - 13,955 cf Embedded = 37,017 cf x 33.3% Voids
#2A	1,017.00'	13,955 cf	**ADS_StormTech MC-7200 +Cap** x 78 Inside #1 Effective Size= 91.2"W x 60.0"H => 26.68 sf x 6.59'L = 175.9 cf Overall Size= 100.0"W x 60.0"H x 6.95'L with 0.36' Overlap 78 Chambers in 3 Rows Cap Storage= 39.5 cf x 2 x 3 rows = 237.0 cf
		26,282 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	1,020.00'	**12.0" Round Culvert** L= 20.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 1,020.00' / 1,019.80' S= 0.0100 '/' Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 0.79 sf
#2	Device 1	1,020.00'	**6.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#3	Device 1	1,021.50'	**4.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s)
#4	Discarded	1,013.00'	**0.500 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=0.06 cfs @ 9.34 hrs HW=1,013.10' (Free Discharge)
└**4=Exfiltration** (Exfiltration Controls 0.06 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=1,013.00' TW=0.00' (Dynamic Tailwater)
└**1=Culvert** (Controls 0.00 cfs)
  ├**2=Orifice/Grate** (Controls 0.00 cfs)
  └**3=Sharp-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond 4P: Underground Infiltration 1 - Chamber Wizard Field A

Chamber Model = ADS_StormTech MC-7200 +Cap (ADS StormTech® MC-7200 with cap volume)
Effective Size= 91.2"W x 60.0"H => 26.68 sf x 6.59'L = 175.9 cf
Overall Size= 100.0"W x 60.0"H x 6.95'L with 0.36' Overlap
Cap Storage= 39.5 cf x 2 x 3 rows = 237.0 cf

100.0" Wide + 9.0" Spacing = 109.0" C-C Row Spacing

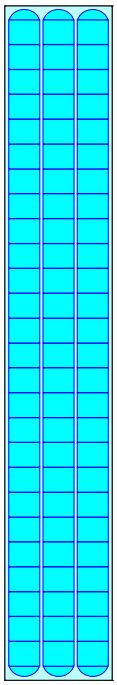
26 Chambers/Row x 6.59' Long +2.73' Cap Length x 2 = 176.85' Row Length +12.0" End Stone x 2 = 178.85' Base Length
3 Rows x 100.0" Wide + 9.0" Spacing x 2 + 12.0" Side Stone x 2 = 28.50' Base Width
48.0" Stone Base + 60.0" Chamber Height + 12.0" Stone Cover = 10.00' Field Height

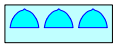
78 Chambers x 175.9 cf + 39.5 cf Cap Volume x 2 x 3 Rows = 13,955.3 cf Chamber Storage

50,972.3 cf Field - 13,955.3 cf Chambers = 37,017.0 cf Stone x 33.3% Voids = 12,326.6 cf Stone Storage

Chamber Storage + Stone Storage = 26,281.9 cf = 0.603 af
Overall Storage Efficiency = 51.6%
Overall System Size = 178.85' x 28.50' x 10.00'

78 Chambers
1,887.9 cy Field
1,371.0 cy Stone





Summary for Pond 6P: Green Roof Storm Sewer

Inflow Area = 3,966 sf, 8.83% Impervious, Inflow Depth = 1.50" for 5-year NRCS event
Inflow = 0.21 cfs @ 12.14 hrs, Volume= 494 cf
Outflow = 0.21 cfs @ 12.14 hrs, Volume= 494 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.21 cfs @ 12.14 hrs, Volume= 494 cf
Routed to Pond 3P : Underground Infiltration 2
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Routed to Link W : West - Strickers Pond

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Peak Elev= 1,026.33' @ 12.14 hrs
Flood Elev= 1,027.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	1,026.00'	**6.0" Round Culvert** L= 10.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 1,026.00' / 1,025.90' S= 0.0100 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.20 sf
#2	Secondary	1,026.50'	**20.0' long x 5.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.34 2.50 2.70 2.68 2.68 2.66 2.65 2.65 2.65 2.65 2.67 2.66 2.68 2.70 2.74 2.79 2.88

Primary OutFlow Max=0.21 cfs @ 12.14 hrs HW=1,026.33' TW=1,015.86' (Dynamic Tailwater)
└**1=Culvert** (Inlet Controls 0.21 cfs @ 1.55 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=1,026.00' TW=0.00' (Dynamic Tailwater)
└**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond 7P: Green Roof Storm Sewer

Inflow Area = 4,952 sf, 10.80% Impervious, Inflow Depth = 1.53" for 5-year NRCS event
Inflow = 0.27 cfs @ 12.13 hrs, Volume= 633 cf
Outflow = 0.27 cfs @ 12.13 hrs, Volume= 633 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.27 cfs @ 12.13 hrs, Volume= 633 cf
Routed to Pond 4P : Underground Infiltration 1
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Routed to Link W : West - Strickers Pond

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Peak Elev= 1,026.39' @ 12.13 hrs
Flood Elev= 1,027.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	1,026.00'	**6.0" Round Culvert** L= 10.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 1,026.00' / 1,025.90' S= 0.0100 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.20 sf
#2	Secondary	1,026.50'	**20.0' long x 5.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.34 2.50 2.70 2.68 2.68 2.66 2.65 2.65 2.65 2.65 2.67 2.66 2.68 2.70 2.74 2.79 2.88

Primary OutFlow Max=0.27 cfs @ 12.13 hrs HW=1,026.39' TW=1,016.42' (Dynamic Tailwater)
1=Culvert (Inlet Controls 0.27 cfs @ 1.67 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=1,026.00' TW=0.00' (Dynamic Tailwater)
2=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Summary for Link 1L: E Spyglass Ct

Inflow Area = 141,347 sf, 60.53% Impervious, Inflow Depth > 0.14" for 5-year NRCS event
Inflow = 0.16 cfs @ 12.14 hrs, Volume= 1,662 cf
Primary = 0.16 cfs @ 12.14 hrs, Volume= 1,662 cf, Atten= 0%, Lag= 0.0 min
Routed to Link W : West - Strickers Pond

Primary outflow = Inflow, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs

Summary for Link 2L: North - Harvest Hill Rd

Inflow Area = 8,146 sf, 0.00% Impervious, Inflow Depth = 1.03" for 5-year NRCS event
Inflow = 0.31 cfs @ 12.14 hrs, Volume= 701 cf
Primary = 0.31 cfs @ 12.14 hrs, Volume= 701 cf, Atten= 0%, Lag= 0.0 min
Routed to Link W : West - Strickers Pond

Primary outflow = Inflow, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs

Summary for Link E: East - Mendota-Gammon Greenway

Inflow Area = 3,400 sf, 42.06% Impervious, Inflow Depth = 1.95" for 5-year NRCS event
Inflow = 0.22 cfs @ 12.13 hrs, Volume= 553 cf
Primary = 0.22 cfs @ 12.13 hrs, Volume= 553 cf, Atten= 0%, Lag= 0.0 min
Routed to Link Pro : Post

Primary outflow = Inflow, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs

Summary for Link Pro: Post

Inflow Area = 161,025 sf, 55.45% Impervious, Inflow Depth > 0.30" for 5-year NRCS event
Inflow = 1.14 cfs @ 12.14 hrs, Volume= 4,034 cf
Primary = 1.14 cfs @ 12.14 hrs, Volume= 4,034 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs

Summary for Link W: West - Strickers Pond

Inflow Area = 157,625 sf, 55.74% Impervious, Inflow Depth > 0.27" for 5-year NRCS event
Inflow = 0.92 cfs @ 12.14 hrs, Volume= 3,481 cf
Primary = 0.92 cfs @ 12.14 hrs, Volume= 3,481 cf, Atten= 0%, Lag= 0.0 min
Routed to Link Pro : Post

Primary outflow = Inflow, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs

Time span=0.00-60.00 hrs, dt=0.01 hrs, 6001 points
Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv.
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment A: Runoff Area=29,200 sf 100.00% Impervious Runoff Depth=3.85"
Tc=6.0 min CN=0/98 Runoff=3.57 cfs 9,380 cf

Subcatchment A1: Runoff Area=4,952 sf 10.80% Impervious Runoff Depth=2.03"
Tc=6.0 min CN=76/98 Runoff=0.36 cfs 837 cf

Subcatchment A2: Runoff Area=34,352 sf 66.98% Impervious Runoff Depth=3.06"
Tc=6.0 min CN=71/98 Runoff=3.42 cfs 8,768 cf

Subcatchment B: Runoff Area=12,690 sf 100.00% Impervious Runoff Depth=3.85"
Tc=6.0 min CN=0/98 Runoff=1.55 cfs 4,077 cf

Subcatchment B1: Runoff Area=3,966 sf 8.83% Impervious Runoff Depth=1.99"
Tc=6.0 min CN=76/98 Runoff=0.29 cfs 657 cf

Subcatchment B2: Runoff Area=29,498 sf 65.16% Impervious Runoff Depth=3.02"
Tc=6.0 min CN=71/98 Runoff=2.90 cfs 7,421 cf

Subcatchment C: Runoff Area=22,384 sf 2.46% Impervious Runoff Depth=1.72"
Tc=6.0 min CN=74/98 Runoff=1.42 cfs 3,202 cf

Subcatchment E1: Runoff Area=3,400 sf 42.06% Impervious Runoff Depth=2.46"
Tc=6.0 min CN=71/98 Runoff=0.28 cfs 698 cf

Subcatchment E2: Runoff Area=8,146 sf 0.00% Impervious Runoff Depth=1.46"
Tc=6.0 min CN=71/0 Runoff=0.44 cfs 988 cf

Subcatchment E3: Runoff Area=4,305 sf 0.00% Impervious Runoff Depth=1.46"
Tc=6.0 min CN=71/0 Runoff=0.23 cfs 522 cf

Subcatchment E4: Runoff Area=8,132 sf 28.34% Impervious Runoff Depth=2.14"
Tc=6.0 min CN=71/98 Runoff=0.59 cfs 1,448 cf

Pond 1P: Infiltration Basin Peak Elev=1,018.48' Storage=1,706 cf Inflow=1.42 cfs 3,202 cf
Primary=0.13 cfs 2,152 cf Secondary=0.00 cfs 0 cf Outflow=0.13 cfs 2,152 cf

Pond 3P: Underground Infiltration 2 Peak Elev=1,018.34' Storage=7,176 cf Inflow=4.74 cfs 12,155 cf
Discarded=0.11 cfs 12,156 cf Primary=0.00 cfs 0 cf Outflow=0.11 cfs 12,156 cf

Pond 4P: Underground Infiltration 1 Peak Elev=1,018.92' Storage=14,873 cf Inflow=7.35 cfs 18,985 cf
Discarded=0.06 cfs 11,918 cf Primary=0.00 cfs 0 cf Outflow=0.06 cfs 11,918 cf

Pond 6P: Green Roof Storm Sewer Peak Elev=1,026.40' Inflow=0.29 cfs 657 cf
Primary=0.29 cfs 657 cf Secondary=0.00 cfs 0 cf Outflow=0.29 cfs 657 cf

Pond 7P: Green Roof Storm Sewer Peak Elev=1,026.48' Inflow=0.36 cfs 837 cf
Primary=0.36 cfs 837 cf Secondary=0.00 cfs 0 cf Outflow=0.36 cfs 837 cf

Link 1L: E Spyglass Ct Inflow=0.23 cfs 2,674 cf
Primary=0.23 cfs 2,674 cf

Link 2L: North - Harvest Hill Rd Inflow=0.44 cfs 988 cf
Primary=0.44 cfs 988 cf

Link E: East - Mendota-Gammon Greenway Inflow=0.28 cfs 698 cf
Primary=0.28 cfs 698 cf

Link Pro: Post Inflow=1.55 cfs 5,809 cf
Primary=1.55 cfs 5,809 cf

Link W: West - Strickers Pond Inflow=1.27 cfs 5,110 cf
Primary=1.27 cfs 5,110 cf

Total Runoff Area = 161,025 sf Runoff Volume = 37,999 cf Average Runoff Depth = 2.83"
44.55% Pervious = 71,735 sf 55.45% Impervious = 89,290 sf

Summary for Subcatchment A:

Runoff = 3.57 cfs @ 12.13 hrs, Volume= 9,380 cf, Depth= 3.85"
Routed to Pond 4P : Underground Infiltration 1

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
MSE 24-hr 4 10-year NRCS Rainfall=4.09"

	Area (sf)	CN	Description
	29,200	98	Roofs, HSG C
*	0	68	Intensive Green Roof
*	0	76	Extensive Green Roof
	0	98	Paved parking, HSG C
*	0	98	Sidewalk, HSG C
*	0	71	>75% Grass cover, Good, HSG C
	29,200	98	Weighted Average
	29,200	98	100.00% Impervious Area

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

Summary for Subcatchment A1:

Runoff = 0.36 cfs @ 12.13 hrs, Volume= 837 cf, Depth= 2.03"
Routed to Pond 7P : Green Roof Storm Sewer

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
MSE 24-hr 4 10-year NRCS Rainfall=4.09"

	Area (sf)	CN	Description
	0	98	Roofs, HSG C
*	0	68	Intensive Green Roof
*	4,417	76	Extensive Green Roof
	0	98	Paved parking, HSG C
*	535	98	Sidewalk, HSG C
*	0	71	>75% Grass cover, Good, HSG C
	4,952	78	Weighted Average
	4,417	76	89.20% Pervious Area
	535	98	10.80% Impervious Area

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

Summary for Subcatchment A2:

Runoff = 3.42 cfs @ 12.13 hrs, Volume= 8,768 cf, Depth= 3.06"
Routed to Pond 4P : Underground Infiltration 1

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
MSE 24-hr 4 10-year NRCS Rainfall=4.09"

	Area (sf)	CN	Description
	0	98	Roofs, HSG C
*	0	68	Intensive Green Roof
*	0	76	Extensive Green Roof
	14,440	98	Paved parking, HSG C
*	8,570	98	Sidewalk, HSG C
*	11,342	71	>75% Grass cover, Good, HSG C
	34,352	89	Weighted Average
	11,342	71	33.02% Pervious Area
	23,010	98	66.98% Impervious Area

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

Summary for Subcatchment B:

Runoff = 1.55 cfs @ 12.13 hrs, Volume= 4,077 cf, Depth= 3.85"
Routed to Pond 3P : Underground Infiltration 2

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
MSE 24-hr 4 10-year NRCS Rainfall=4.09"

	Area (sf)	CN	Description
	12,690	98	Roofs, HSG C
*	0	68	Intensive Green Roof
*	0	76	Extensive Green Roof
	0	98	Paved parking, HSG C
*	0	98	Sidewalk, HSG C
*	0	71	>75% Grass cover, Good, HSG C
	12,690	98	Weighted Average
	12,690	98	100.00% Impervious Area

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

Summary for Subcatchment B1:

Runoff = 0.29 cfs @ 12.13 hrs, Volume= 657 cf, Depth= 1.99"
Routed to Pond 6P : Green Roof Storm Sewer

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
MSE 24-hr 4 10-year NRCS Rainfall=4.09"

	Area (sf)	CN	Description
	0	98	Roofs, HSG C
*	0	68	Intensive Green Roof
*	3,616	76	Extensive Green Roof
	0	98	Paved parking, HSG C
*	350	98	Sidewalk, HSG C
*	0	71	>75% Grass cover, Good, HSG C
	3,966	78	Weighted Average
	3,616	76	91.17% Pervious Area
	350	98	8.83% Impervious Area

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

Summary for Subcatchment B2:

Runoff = 2.90 cfs @ 12.13 hrs, Volume= 7,421 cf, Depth= 3.02"
Routed to Pond 3P : Underground Infiltration 2

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
MSE 24-hr 4 10-year NRCS Rainfall=4.09"

	Area (sf)	CN	Description
	7,940	98	Roofs, HSG C
*	0	68	Intensive Green Roof
*	0	76	Extensive Green Roof
	6,915	98	Paved parking, HSG C
*	4,365	98	Sidewalk, HSG C
*	10,278	71	>75% Grass cover, Good, HSG C
	29,498	89	Weighted Average
	10,278	71	34.84% Pervious Area
	19,220	98	65.16% Impervious Area

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

Summary for Subcatchment C:

Runoff = 1.42 cfs @ 12.14 hrs, Volume= 3,202 cf, Depth= 1.72"
Routed to Pond 1P : Infiltration Basin

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
MSE 24-hr 4 10-year NRCS Rainfall=4.09"

	Area (sf)	CN	Description
	0	98	Roofs, HSG C
*	0	68	Intensive Green Roof
*	0	76	Extensive Green Roof
	0	98	Paved parking, HSG C
*	550	98	Sidewalk, HSG C
	21,834	74	>75% Grass cover, Good, HSG C
	22,384	75	Weighted Average
	21,834	74	97.54% Pervious Area
	550	98	2.46% Impervious Area

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

Summary for Subcatchment E1:

Runoff = 0.28 cfs @ 12.13 hrs, Volume= 698 cf, Depth= 2.46"
Routed to Link E : East - Mendota-Gammon Greenway

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
MSE 24-hr 4 10-year NRCS Rainfall=4.09"

	Area (sf)	CN	Description
	0	98	Roofs, HSG C
*	0	68	Intensive Green Roof
*	0	76	Extensive Green Roof
	755	98	Paved parking, HSG C
*	675	98	Sidewalk, HSG C
*	1,970	71	>75% Grass cover, Good, HSG C
	3,400	82	Weighted Average
	1,970	71	57.94% Pervious Area
	1,430	98	42.06% Impervious Area

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

Summary for Subcatchment E2:

Runoff = 0.44 cfs @ 12.14 hrs, Volume= 988 cf, Depth= 1.46"
Routed to Link 2L : North - Harvest Hill Rd

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
MSE 24-hr 4 10-year NRCS Rainfall=4.09"

	Area (sf)	CN	Description
	0	98	Roofs, HSG C
*	0	68	Intensive Green Roof
*	0	76	Extensive Green Roof
	0	98	Paved parking, HSG C
*	0	98	Sidewalk, HSG C
*	8,146	71	>75% Grass cover, Good, HSG C
	8,146	71	Weighted Average
	8,146	71	100.00% Pervious Area

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

Summary for Subcatchment E3:

Runoff = 0.23 cfs @ 12.14 hrs, Volume= 522 cf, Depth= 1.46"
Routed to Link 1L : E Spyglass Ct

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
MSE 24-hr 4 10-year NRCS Rainfall=4.09"

	Area (sf)	CN	Description
	0	98	Roofs, HSG C
*	0	68	Intensive Green Roof
*	0	76	Extensive Green Roof
	0	98	Paved parking, HSG C
*	0	98	Sidewalk, HSG C
*	4,305	71	>75% Grass cover, Good, HSG C
	4,305	71	Weighted Average
	4,305	71	100.00% Pervious Area

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

Summary for Subcatchment E4:

Runoff = 0.59 cfs @ 12.13 hrs, Volume= 1,448 cf, Depth= 2.14"
Routed to Link W : West - Strickers Pond

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
MSE 24-hr 4 10-year NRCS Rainfall=4.09"

	Area (sf)	CN	Description
	0	98	Roofs, HSG C
*	0	68	Intensive Green Roof
*	0	76	Extensive Green Roof
	0	98	Paved parking, HSG C
*	2,305	98	Sidewalk, HSG C
*	5,827	71	>75% Grass cover, Good, HSG C
	8,132	79	Weighted Average
	5,827	71	71.66% Pervious Area
	2,305	98	28.34% Impervious Area

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

Summary for Pond 1P: Infiltration Basin

Inflow Area = 22,384 sf, 2.46% Impervious, Inflow Depth = 1.72" for 10-year NRCS event
Inflow = 1.42 cfs @ 12.14 hrs, Volume= 3,202 cf
Outflow = 0.13 cfs @ 13.09 hrs, Volume= 2,152 cf, Atten= 91%, Lag= 57.3 min
Primary = 0.13 cfs @ 13.09 hrs, Volume= 2,152 cf
Routed to Link 1L : E Spyglass Ct
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Routed to Link 1L : E Spyglass Ct

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Peak Elev= 1,018.48' @ 13.09 hrs Surf.Area= 5,810 sf Storage= 1,706 cf

Plug-Flow detention time= 293.4 min calculated for 2,152 cf (67% of inflow)
Center-of-Mass det. time= 199.7 min (1,026.2 - 826.5)

Volume	Invert	Avail.Storage	Storage Description
#1	1,018.00'	33,500 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
1,018.00	1,300	0	0
1,019.00	10,700	6,000	6,000
1,020.00	13,600	12,150	18,150
1,021.00	17,100	15,350	33,500

Device	Routing	Invert	Outlet Devices
#1	Primary	1,017.00'	**8.0" Round Culvert** L= 10.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 1,017.00' / 1,016.90' S= 0.0100 '/' Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 0.35 sf
#2	Device 1	1,018.35'	**36.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#3	Secondary	1,020.00'	**20.0' long x 6.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.37 2.51 2.70 2.68 2.68 2.67 2.65 2.65 2.65 2.65 2.66 2.66 2.67 2.69 2.72 2.76 2.83

Primary OutFlow Max=0.13 cfs @ 13.09 hrs HW=1,018.48' TW=0.00' (Dynamic Tailwater)
└**1=Culvert** (Passes 0.13 cfs of 1.42 cfs potential flow)
└**2=Orifice/Grate** (Orifice Controls 0.13 cfs @ 1.23 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=1,018.00' TW=0.00' (Dynamic Tailwater)
└**3=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond 3P: Underground Infiltration 2

Inflow Area = 46,154 sf, 69.90% Impervious, Inflow Depth = 3.16" for 10-year NRCS event
Inflow = 4.74 cfs @ 12.13 hrs, Volume= 12,155 cf
Outflow = 0.11 cfs @ 10.89 hrs, Volume= 12,156 cf, Atten= 98%, Lag= 0.0 min
Discarded = 0.11 cfs @ 10.89 hrs, Volume= 12,156 cf
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Routed to Link 1L : E Spyglass Ct

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Peak Elev= 1,018.34' @ 15.09 hrs Surf.Area= 2,991 sf Storage= 7,176 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 554.7 min (1,316.8 - 762.1)

Volume	Invert	Avail.Storage	Storage Description
#1A	1,013.00'	6,149 cf	**46.67'W x 53.61'L x 10.00'H Field A** 25,017 cf Overall - 6,551 cf Embedded = 18,467 cf x 33.3% Voids
#2A	1,017.00'	6,551 cf	**ADS_StormTech MC-7200 +Cap** x 35 Inside #1 Effective Size= 91.2"W x 60.0"H => 26.68 sf x 6.59'L = 175.9 cf Overall Size= 100.0"W x 60.0"H x 6.95'L with 0.36' Overlap 35 Chambers in 5 Rows Cap Storage= 39.5 cf x 2 x 5 rows = 395.0 cf
#3B	1,013.00'	640 cf	**17.42'W x 14.06'L x 10.00'H Field B** 2,448 cf Overall - 510 cf Embedded = 1,939 cf x 33.0% Voids
#4B	1,017.00'	510 cf	**ADS_StormTech MC-7200 +Cap** x 2 Inside #3 Effective Size= 91.2"W x 60.0"H => 26.68 sf x 6.59'L = 175.9 cf Overall Size= 100.0"W x 60.0"H x 6.95'L with 0.36' Overlap 2 Chambers in 2 Rows Cap Storage= 39.5 cf x 2 x 2 rows = 158.0 cf
#5C	1,013.00'	640 cf	**17.42'W x 14.06'L x 10.00'H Field C** 2,448 cf Overall - 510 cf Embedded = 1,939 cf x 33.0% Voids
#6C	1,017.00'	510 cf	**ADS_StormTech MC-7200 +Cap** x 2 Inside #5 Effective Size= 91.2"W x 60.0"H => 26.68 sf x 6.59'L = 175.9 cf Overall Size= 100.0"W x 60.0"H x 6.95'L with 0.36' Overlap 2 Chambers in 2 Rows Cap Storage= 39.5 cf x 2 x 2 rows = 158.0 cf
		14,999 cf	Total Available Storage

Storage Group A created with Chamber Wizard
Storage Group B created with Chamber Wizard
Storage Group C created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	1,020.00'	**12.0" Round Culvert** L= 20.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 1,020.00' / 1,019.80' S= 0.0100 '/' Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 0.79 sf
#2	Device 1	1,020.00'	**6.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#3	Device 1	1,021.50'	**4.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s)
#4	Discarded	1,013.00'	**1.630 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=0.11 cfs @ 10.89 hrs HW=1,013.10' (Free Discharge)
└**4=Exfiltration** (Exfiltration Controls 0.11 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=1,013.00' TW=0.00' (Dynamic Tailwater)
└**1=Culvert** (Controls 0.00 cfs)
  ├**2=Orifice/Grate** (Controls 0.00 cfs)
  └**3=Sharp-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond 3P: Underground Infiltration 2 - Chamber Wizard Field A

Chamber Model = ADS_StormTech MC-7200 +Cap (ADS StormTech® MC-7200 with cap volume)
Effective Size= 91.2"W x 60.0"H => 26.68 sf x 6.59'L = 175.9 cf
Overall Size= 100.0"W x 60.0"H x 6.95'L with 0.36' Overlap
Cap Storage= 39.5 cf x 2 x 5 rows = 395.0 cf

100.0" Wide + 9.0" Spacing = 109.0" C-C Row Spacing

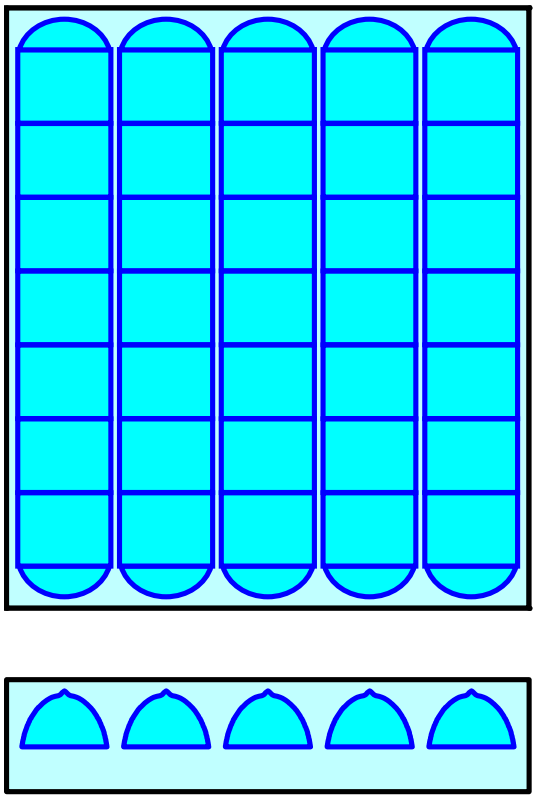
7 Chambers/Row x 6.59' Long +2.73' Cap Length x 2 = 51.61' Row Length +12.0" End Stone x 2 = 53.61' Base Length
5 Rows x 100.0" Wide + 9.0" Spacing x 4 + 12.0" Side Stone x 2 = 46.67' Base Width
48.0" Stone Base + 60.0" Chamber Height + 12.0" Stone Cover = 10.00' Field Height

35 Chambers x 175.9 cf + 39.5 cf Cap Volume x 2 x 5 Rows = 6,550.6 cf Chamber Storage

25,017.2 cf Field - 6,550.6 cf Chambers = 18,466.6 cf Stone x 33.3% Voids = 6,149.4 cf Stone Storage

Chamber Storage + Stone Storage = 12,700.0 cf = 0.292 af
Overall Storage Efficiency = 50.8%
Overall System Size = 53.61' x 46.67' x 10.00'

35 Chambers
926.6 cy Field
683.9 cy Stone



Pond 3P: Underground Infiltration 2 - Chamber Wizard Field B

Chamber Model = ADS_StormTech MC-7200 +Cap (ADS StormTech® MC-7200 with cap volume)
Effective Size= 91.2"W x 60.0"H => 26.68 sf x 6.59'L = 175.9 cf
Overall Size= 100.0"W x 60.0"H x 6.95'L with 0.36' Overlap
Cap Storage= 39.5 cf x 2 x 2 rows = 158.0 cf

100.0" Wide + 9.0" Spacing = 109.0" C-C Row Spacing

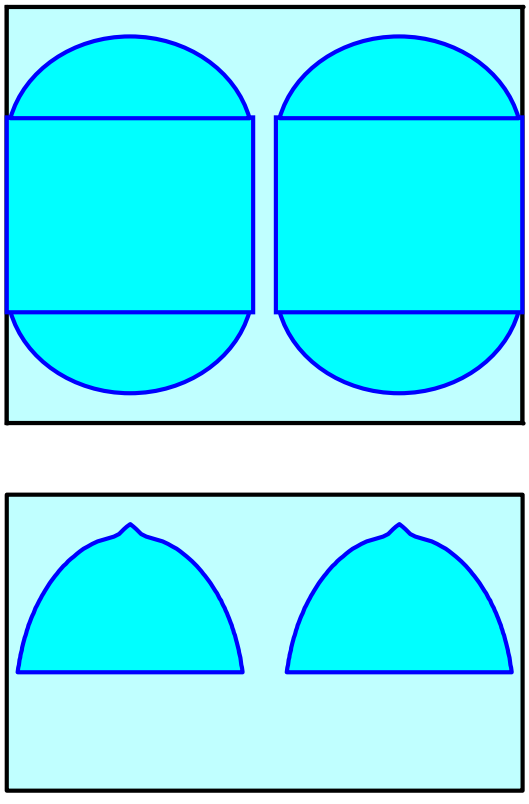
1 Chambers/Row x 6.59' Long +2.73' Cap Length x 2 = 12.06' Row Length +12.0" End Stone x 2 = 14.06' Base Length
2 Rows x 100.0" Wide + 9.0" Spacing x 1 = 17.42' Base Width
48.0" Stone Base + 60.0" Chamber Height + 12.0" Stone Cover = 10.00' Field Height

2 Chambers x 175.9 cf + 39.5 cf Cap Volume x 2 x 2 Rows = 509.8 cf Chamber Storage

2,448.5 cf Field - 509.8 cf Chambers = 1,938.7 cf Stone x 33.0% Voids = 639.8 cf Stone Storage

Chamber Storage + Stone Storage = 1,149.5 cf = 0.026 af
Overall Storage Efficiency = 46.9%
Overall System Size = 14.06' x 17.42' x 10.00'

2 Chambers
90.7 cy Field
71.8 cy Stone



Pond 3P: Underground Infiltration 2 - Chamber Wizard Field C

Chamber Model = ADS_StormTech MC-7200 +Cap (ADS StormTech® MC-7200 with cap volume)
Effective Size= 91.2"W x 60.0"H => 26.68 sf x 6.59'L = 175.9 cf
Overall Size= 100.0"W x 60.0"H x 6.95'L with 0.36' Overlap
Cap Storage= 39.5 cf x 2 x 2 rows = 158.0 cf

100.0" Wide + 9.0" Spacing = 109.0" C-C Row Spacing

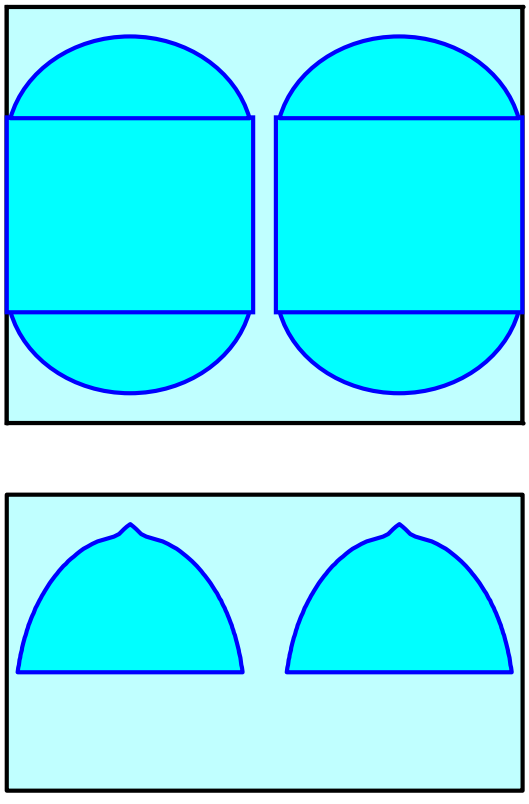
1 Chambers/Row x 6.59' Long +2.73' Cap Length x 2 = 12.06' Row Length +12.0" End Stone x 2 = 14.06' Base Length
2 Rows x 100.0" Wide + 9.0" Spacing x 1 = 17.42' Base Width
48.0" Stone Base + 60.0" Chamber Height + 12.0" Stone Cover = 10.00' Field Height

2 Chambers x 175.9 cf + 39.5 cf Cap Volume x 2 x 2 Rows = 509.8 cf Chamber Storage

2,448.5 cf Field - 509.8 cf Chambers = 1,938.7 cf Stone x 33.0% Voids = 639.8 cf Stone Storage

Chamber Storage + Stone Storage = 1,149.5 cf = 0.026 af
Overall Storage Efficiency = 46.9%
Overall System Size = 14.06' x 17.42' x 10.00'

2 Chambers
90.7 cy Field
71.8 cy Stone



Summary for Pond 4P: Underground Infiltration 1

Inflow Area = 68,504 sf, 77.00% Impervious, Inflow Depth = 3.33" for 10-year NRCS event
Inflow = 7.35 cfs @ 12.13 hrs, Volume= 18,985 cf
Outflow = 0.06 cfs @ 8.40 hrs, Volume= 11,918 cf, Atten= 99%, Lag= 0.0 min
Discarded = 0.06 cfs @ 8.40 hrs, Volume= 11,918 cf
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Routed to Link 1L : E Spyglass Ct

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Peak Elev= 1,018.92' @ 21.31 hrs Surf.Area= 5,097 sf Storage= 14,873 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 1,157.4 min (1,916.1 - 758.7)

Volume	Invert	Avail.Storage	Storage Description
#1A	1,013.00'	12,327 cf	**28.50'W x 178.85'L x 10.00'H Field A** 50,972 cf Overall - 13,955 cf Embedded = 37,017 cf x 33.3% Voids
#2A	1,017.00'	13,955 cf	**ADS_StormTech MC-7200 +Cap** x 78 Inside #1 Effective Size= 91.2"W x 60.0"H => 26.68 sf x 6.59'L = 175.9 cf Overall Size= 100.0"W x 60.0"H x 6.95'L with 0.36' Overlap 78 Chambers in 3 Rows Cap Storage= 39.5 cf x 2 x 3 rows = 237.0 cf
		26,282 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	1,020.00'	**12.0" Round Culvert** L= 20.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 1,020.00' / 1,019.80' S= 0.0100 '/' Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 0.79 sf
#2	Device 1	1,020.00'	**6.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#3	Device 1	1,021.50'	**4.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s)
#4	Discarded	1,013.00'	**0.500 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=0.06 cfs @ 8.40 hrs HW=1,013.10' (Free Discharge)
└**4=Exfiltration** (Exfiltration Controls 0.06 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=1,013.00' TW=0.00' (Dynamic Tailwater)
└**1=Culvert** (Controls 0.00 cfs)
  ├**2=Orifice/Grate** (Controls 0.00 cfs)
  └**3=Sharp-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond 4P: Underground Infiltration 1 - Chamber Wizard Field A

Chamber Model = ADS_StormTech MC-7200 +Cap (ADS StormTech® MC-7200 with cap volume)
Effective Size= 91.2"W x 60.0"H => 26.68 sf x 6.59'L = 175.9 cf
Overall Size= 100.0"W x 60.0"H x 6.95'L with 0.36' Overlap
Cap Storage= 39.5 cf x 2 x 3 rows = 237.0 cf

100.0" Wide + 9.0" Spacing = 109.0" C-C Row Spacing

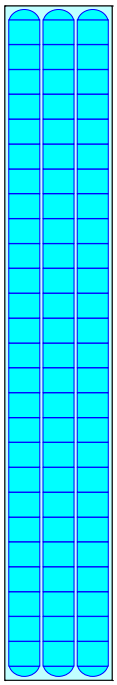
26 Chambers/Row x 6.59' Long +2.73' Cap Length x 2 = 176.85' Row Length +12.0" End Stone x 2 = 178.85' Base Length
3 Rows x 100.0" Wide + 9.0" Spacing x 2 + 12.0" Side Stone x 2 = 28.50' Base Width
48.0" Stone Base + 60.0" Chamber Height + 12.0" Stone Cover = 10.00' Field Height

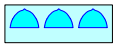
78 Chambers x 175.9 cf + 39.5 cf Cap Volume x 2 x 3 Rows = 13,955.3 cf Chamber Storage

50,972.3 cf Field - 13,955.3 cf Chambers = 37,017.0 cf Stone x 33.3% Voids = 12,326.6 cf Stone Storage

Chamber Storage + Stone Storage = 26,281.9 cf = 0.603 af
Overall Storage Efficiency = 51.6%
Overall System Size = 178.85' x 28.50' x 10.00'

78 Chambers
1,887.9 cy Field
1,371.0 cy Stone





Summary for Pond 6P: Green Roof Storm Sewer

Inflow Area = 3,966 sf, 8.83% Impervious, Inflow Depth = 1.99" for 10-year NRCS event
Inflow = 0.29 cfs @ 12.13 hrs, Volume= 657 cf
Outflow = 0.29 cfs @ 12.13 hrs, Volume= 657 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.29 cfs @ 12.13 hrs, Volume= 657 cf
Routed to Pond 3P : Underground Infiltration 2
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Routed to Link W : West - Strickers Pond

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Peak Elev= 1,026.40' @ 12.13 hrs
Flood Elev= 1,027.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	1,026.00'	**6.0" Round Culvert** L= 10.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 1,026.00' / 1,025.90' S= 0.0100 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.20 sf
#2	Secondary	1,026.50'	**20.0' long x 5.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.34 2.50 2.70 2.68 2.68 2.66 2.65 2.65 2.65 2.65 2.67 2.66 2.68 2.70 2.74 2.79 2.88

Primary OutFlow Max=0.29 cfs @ 12.13 hrs HW=1,026.40' TW=1,016.65' (Dynamic Tailwater)
1=Culvert (Inlet Controls 0.29 cfs @ 1.70 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=1,026.00' TW=0.00' (Dynamic Tailwater)
2=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Summary for Pond 7P: Green Roof Storm Sewer

Inflow Area = 4,952 sf, 10.80% Impervious, Inflow Depth = 2.03" for 10-year NRCS event
Inflow = 0.36 cfs @ 12.13 hrs, Volume= 837 cf
Outflow = 0.36 cfs @ 12.13 hrs, Volume= 837 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.36 cfs @ 12.13 hrs, Volume= 837 cf
Routed to Pond 4P : Underground Infiltration 1
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Routed to Link W : West - Strickers Pond

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Peak Elev= 1,026.48' @ 12.13 hrs
Flood Elev= 1,027.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	1,026.00'	**6.0" Round Culvert** L= 10.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 1,026.00' / 1,025.90' S= 0.0100 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.20 sf
#2	Secondary	1,026.50'	**20.0' long x 5.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.34 2.50 2.70 2.68 2.68 2.66 2.65 2.65 2.65 2.65 2.67 2.66 2.68 2.70 2.74 2.79 2.88

Primary OutFlow Max=0.36 cfs @ 12.13 hrs HW=1,026.48' TW=1,017.12' (Dynamic Tailwater)
1=Culvert (Inlet Controls 0.36 cfs @ 1.87 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=1,026.00' TW=0.00' (Dynamic Tailwater)
2=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Summary for Link 1L: E Spyglass Ct

Inflow Area = 141,347 sf, 60.53% Impervious, Inflow Depth > 0.23" for 10-year NRCS event
Inflow = 0.23 cfs @ 12.14 hrs, Volume= 2,674 cf
Primary = 0.23 cfs @ 12.14 hrs, Volume= 2,674 cf, Atten= 0%, Lag= 0.0 min
Routed to Link W : West - Strickers Pond

Primary outflow = Inflow, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs

Summary for Link 2L: North - Harvest Hill Rd

Inflow Area = 8,146 sf, 0.00% Impervious, Inflow Depth = 1.46" for 10-year NRCS event
Inflow = 0.44 cfs @ 12.14 hrs, Volume= 988 cf
Primary = 0.44 cfs @ 12.14 hrs, Volume= 988 cf, Atten= 0%, Lag= 0.0 min
Routed to Link W : West - Strickers Pond

Primary outflow = Inflow, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs

Summary for Link E: East - Mendota-Gammon Greenway

Inflow Area = 3,400 sf, 42.06% Impervious, Inflow Depth = 2.46" for 10-year NRCS event
Inflow = 0.28 cfs @ 12.13 hrs, Volume= 698 cf
Primary = 0.28 cfs @ 12.13 hrs, Volume= 698 cf, Atten= 0%, Lag= 0.0 min
Routed to Link Pro : Post

Primary outflow = Inflow, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs

Summary for Link Pro: Post

Inflow Area = 161,025 sf, 55.45% Impervious, Inflow Depth = 0.43" for 10-year NRCS event
Inflow = 1.55 cfs @ 12.13 hrs, Volume= 5,809 cf
Primary = 1.55 cfs @ 12.13 hrs, Volume= 5,809 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs

Summary for Link W: West - Strickers Pond

Inflow Area = 157,625 sf, 55.74% Impervious, Inflow Depth > 0.39" for 10-year NRCS event
Inflow = 1.27 cfs @ 12.14 hrs, Volume= 5,110 cf
Primary = 1.27 cfs @ 12.14 hrs, Volume= 5,110 cf, Atten= 0%, Lag= 0.0 min
Routed to Link Pro : Post

Primary outflow = Inflow, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs

Time span=0.00-60.00 hrs, dt=0.01 hrs, 6001 points
Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv.
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment A: Runoff Area=29,200 sf 100.00% Impervious Runoff Depth=6.42"
Tc=6.0 min CN=0/98 Runoff=5.84 cfs 15,625 cf

Subcatchment A1: Runoff Area=4,952 sf 10.80% Impervious Runoff Depth=4.22"
Tc=6.0 min CN=76/98 Runoff=0.75 cfs 1,742 cf

Subcatchment A2: Runoff Area=34,352 sf 66.98% Impervious Runoff Depth=5.44"
Tc=6.0 min CN=71/98 Runoff=6.05 cfs 15,563 cf

Subcatchment B: Runoff Area=12,690 sf 100.00% Impervious Runoff Depth=6.42"
Tc=6.0 min CN=0/98 Runoff=2.54 cfs 6,790 cf

Subcatchment B1: Runoff Area=3,966 sf 8.83% Impervious Runoff Depth=4.17"
Tc=6.0 min CN=76/98 Runoff=0.60 cfs 1,379 cf

Subcatchment B2: Runoff Area=29,498 sf 65.16% Impervious Runoff Depth=5.38"
Tc=6.0 min CN=71/98 Runoff=5.16 cfs 13,230 cf

Subcatchment C: Runoff Area=22,384 sf 2.46% Impervious Runoff Depth=3.81"
Tc=6.0 min CN=74/98 Runoff=3.14 cfs 7,112 cf

Subcatchment E1: Runoff Area=3,400 sf 42.06% Impervious Runoff Depth=4.69"
Tc=6.0 min CN=71/98 Runoff=0.54 cfs 1,330 cf

Subcatchment E2: Runoff Area=8,146 sf 0.00% Impervious Runoff Depth=3.44"
Tc=6.0 min CN=71/0 Runoff=1.04 cfs 2,335 cf

Subcatchment E3: Runoff Area=4,305 sf 0.00% Impervious Runoff Depth=3.44"
Tc=6.0 min CN=71/0 Runoff=0.55 cfs 1,234 cf

Subcatchment E4: Runoff Area=8,132 sf 28.34% Impervious Runoff Depth=4.28"
Tc=6.0 min CN=71/98 Runoff=1.21 cfs 2,903 cf

Pond 1P: Infiltration Basin Peak Elev=1,018.69' Storage=3,097 cf Inflow=3.14 cfs 7,112 cf
Primary=0.85 cfs 6,062 cf Secondary=0.00 cfs 0 cf Outflow=0.85 cfs 6,062 cf

Pond 3P: Underground Infiltration 2 Peak Elev=1,020.54' Storage=11,875 cf Inflow=8.09 cfs 21,337 cf
Discarded=0.11 cfs 17,699 cf Primary=0.51 cfs 3,639 cf Outflow=0.63 cfs 21,338 cf

Pond 4P: Underground Infiltration 1 Peak Elev=1,020.76' Storage=21,557 cf Inflow=12.29 cfs 32,795 cf
Discarded=0.06 cfs 12,220 cf Primary=0.68 cfs 8,993 cf Outflow=0.73 cfs 21,213 cf

Pond 6P: Green Roof Storm Sewer Peak Elev=1,026.53' Inflow=0.60 cfs 1,379 cf
Primary=0.39 cfs 1,316 cf Secondary=0.20 cfs 63 cf Outflow=0.60 cfs 1,379 cf

Pond 7P: Green Roof Storm Sewer Peak Elev=1,026.54' Inflow=0.75 cfs 1,742 cf
Primary=0.40 cfs 1,607 cf Secondary=0.35 cfs 136 cf Outflow=0.75 cfs 1,742 cf

Link 1L: E Spyglass Ct Inflow=1.70 cfs 19,928 cf
Primary=1.70 cfs 19,928 cf

Link 2L: North - Harvest Hill Rd Inflow=1.04 cfs 2,335 cf
Primary=1.04 cfs 2,335 cf

Link E: East - Mendota-Gammon Greenway Inflow=0.54 cfs 1,330 cf
Primary=0.54 cfs 1,330 cf

Link Pro: Post Inflow=4.33 cfs 26,695 cf
Primary=4.33 cfs 26,695 cf

Link W: West - Strickers Pond Inflow=3.79 cfs 25,365 cf
Primary=3.79 cfs 25,365 cf

Total Runoff Area = 161,025 sf Runoff Volume = 69,244 cf Average Runoff Depth = 5.16"
44.55% Pervious = 71,735 sf 55.45% Impervious = 89,290 sf

Summary for Subcatchment A:

Runoff = 5.84 cfs @ 12.13 hrs, Volume= 15,625 cf, Depth= 6.42"
Routed to Pond 4P : Underground Infiltration 1

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
MSE 24-hr 4 100-year NRCS Rainfall=6.66"

	Area (sf)	CN	Description
	29,200	98	Roofs, HSG C
*	0	68	Intensive Green Roof
*	0	76	Extensive Green Roof
	0	98	Paved parking, HSG C
*	0	98	Sidewalk, HSG C
*	0	71	>75% Grass cover, Good, HSG C
	29,200	98	Weighted Average
	29,200	98	100.00% Impervious Area

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

Summary for Subcatchment A1:

Runoff = 0.75 cfs @ 12.13 hrs, Volume= 1,742 cf, Depth= 4.22"
Routed to Pond 7P : Green Roof Storm Sewer

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
MSE 24-hr 4 100-year NRCS Rainfall=6.66"

	Area (sf)	CN	Description
	0	98	Roofs, HSG C
*	0	68	Intensive Green Roof
*	4,417	76	Extensive Green Roof
	0	98	Paved parking, HSG C
*	535	98	Sidewalk, HSG C
*	0	71	>75% Grass cover, Good, HSG C
	4,952	78	Weighted Average
	4,417	76	89.20% Pervious Area
	535	98	10.80% Impervious Area

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

Summary for Subcatchment A2:

Runoff = 6.05 cfs @ 12.13 hrs, Volume= 15,563 cf, Depth= 5.44"
Routed to Pond 4P : Underground Infiltration 1

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
MSE 24-hr 4 100-year NRCS Rainfall=6.66"

	Area (sf)	CN	Description
	0	98	Roofs, HSG C
*	0	68	Intensive Green Roof
*	0	76	Extensive Green Roof
	14,440	98	Paved parking, HSG C
*	8,570	98	Sidewalk, HSG C
*	11,342	71	>75% Grass cover, Good, HSG C
	34,352	89	Weighted Average
	11,342	71	33.02% Pervious Area
	23,010	98	66.98% Impervious Area

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

Summary for Subcatchment B:

Runoff = 2.54 cfs @ 12.13 hrs, Volume= 6,790 cf, Depth= 6.42"
Routed to Pond 3P : Underground Infiltration 2

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
MSE 24-hr 4 100-year NRCS Rainfall=6.66"

	Area (sf)	CN	Description
	12,690	98	Roofs, HSG C
*	0	68	Intensive Green Roof
*	0	76	Extensive Green Roof
	0	98	Paved parking, HSG C
*	0	98	Sidewalk, HSG C
*	0	71	>75% Grass cover, Good, HSG C
	12,690	98	Weighted Average
	12,690	98	100.00% Impervious Area

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

Summary for Subcatchment B1:

Runoff = 0.60 cfs @ 12.13 hrs, Volume= 1,379 cf, Depth= 4.17"
Routed to Pond 6P : Green Roof Storm Sewer

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
MSE 24-hr 4 100-year NRCS Rainfall=6.66"

	Area (sf)	CN	Description
	0	98	Roofs, HSG C
*	0	68	Intensive Green Roof
*	3,616	76	Extensive Green Roof
	0	98	Paved parking, HSG C
*	350	98	Sidewalk, HSG C
*	0	71	>75% Grass cover, Good, HSG C
	3,966	78	Weighted Average
	3,616	76	91.17% Pervious Area
	350	98	8.83% Impervious Area

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

Summary for Subcatchment B2:

Runoff = 5.16 cfs @ 12.13 hrs, Volume= 13,230 cf, Depth= 5.38"
Routed to Pond 3P : Underground Infiltration 2

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
MSE 24-hr 4 100-year NRCS Rainfall=6.66"

	Area (sf)	CN	Description
	7,940	98	Roofs, HSG C
*	0	68	Intensive Green Roof
*	0	76	Extensive Green Roof
	6,915	98	Paved parking, HSG C
*	4,365	98	Sidewalk, HSG C
*	10,278	71	>75% Grass cover, Good, HSG C
	29,498	89	Weighted Average
	10,278	71	34.84% Pervious Area
	19,220	98	65.16% Impervious Area

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

Summary for Subcatchment C:

Runoff = 3.14 cfs @ 12.13 hrs, Volume= 7,112 cf, Depth= 3.81"
Routed to Pond 1P : Infiltration Basin

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
MSE 24-hr 4 100-year NRCS Rainfall=6.66"

	Area (sf)	CN	Description
	0	98	Roofs, HSG C
*	0	68	Intensive Green Roof
*	0	76	Extensive Green Roof
	0	98	Paved parking, HSG C
*	550	98	Sidewalk, HSG C
	21,834	74	>75% Grass cover, Good, HSG C
	22,384	75	Weighted Average
	21,834	74	97.54% Pervious Area
	550	98	2.46% Impervious Area

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

Summary for Subcatchment E1:

Runoff = 0.54 cfs @ 12.13 hrs, Volume= 1,330 cf, Depth= 4.69"
Routed to Link E : East - Mendota-Gammon Greenway

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
MSE 24-hr 4 100-year NRCS Rainfall=6.66"

	Area (sf)	CN	Description
	0	98	Roofs, HSG C
*	0	68	Intensive Green Roof
*	0	76	Extensive Green Roof
	755	98	Paved parking, HSG C
*	675	98	Sidewalk, HSG C
*	1,970	71	>75% Grass cover, Good, HSG C
	3,400	82	Weighted Average
	1,970	71	57.94% Pervious Area
	1,430	98	42.06% Impervious Area

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

Summary for Subcatchment E2:

Runoff = 1.04 cfs @ 12.13 hrs, Volume= 2,335 cf, Depth= 3.44"
Routed to Link 2L : North - Harvest Hill Rd

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
MSE 24-hr 4 100-year NRCS Rainfall=6.66"

	Area (sf)	CN	Description
	0	98	Roofs, HSG C
*	0	68	Intensive Green Roof
*	0	76	Extensive Green Roof
	0	98	Paved parking, HSG C
*	0	98	Sidewalk, HSG C
*	8,146	71	>75% Grass cover, Good, HSG C
	8,146	71	Weighted Average
	8,146	71	100.00% Pervious Area

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

Summary for Subcatchment E3:

Runoff = 0.55 cfs @ 12.13 hrs, Volume= 1,234 cf, Depth= 3.44"
Routed to Link 1L : E Spyglass Ct

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
MSE 24-hr 4 100-year NRCS Rainfall=6.66"

	Area (sf)	CN	Description
	0	98	Roofs, HSG C
*	0	68	Intensive Green Roof
*	0	76	Extensive Green Roof
	0	98	Paved parking, HSG C
*	0	98	Sidewalk, HSG C
*	4,305	71	>75% Grass cover, Good, HSG C
	4,305	71	Weighted Average
	4,305	71	100.00% Pervious Area

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

Summary for Subcatchment E4:

Runoff = 1.21 cfs @ 12.13 hrs, Volume= 2,903 cf, Depth= 4.28"
Routed to Link W : West - Strickers Pond

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
MSE 24-hr 4 100-year NRCS Rainfall=6.66"

	Area (sf)	CN	Description
	0	98	Roofs, HSG C
*	0	68	Intensive Green Roof
*	0	76	Extensive Green Roof
	0	98	Paved parking, HSG C
*	2,305	98	Sidewalk, HSG C
*	5,827	71	>75% Grass cover, Good, HSG C
	8,132	79	Weighted Average
	5,827	71	71.66% Pervious Area
	2,305	98	28.34% Impervious Area

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

Summary for Pond 1P: Infiltration Basin

Inflow Area = 22,384 sf, 2.46% Impervious, Inflow Depth = 3.81" for 100-year NRCS event
Inflow = 3.14 cfs @ 12.13 hrs, Volume= 7,112 cf
Outflow = 0.85 cfs @ 12.35 hrs, Volume= 6,062 cf, Atten= 73%, Lag= 13.2 min
Primary = 0.85 cfs @ 12.35 hrs, Volume= 6,062 cf
Routed to Link 1L : E Spyglass Ct
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Routed to Link 1L : E Spyglass Ct

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Peak Elev= 1,018.69' @ 12.35 hrs Surf.Area= 7,740 sf Storage= 3,097 cf

Plug-Flow detention time= 165.1 min calculated for 6,061 cf (85% of inflow)
Center-of-Mass det. time= 106.1 min (914.6 - 808.6)

Volume	Invert	Avail.Storage	Storage Description
#1	1,018.00'	33,500 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
1,018.00	1,300	0	0
1,019.00	10,700	6,000	6,000
1,020.00	13,600	12,150	18,150
1,021.00	17,100	15,350	33,500

Device	Routing	Invert	Outlet Devices
#1	Primary	1,017.00'	**8.0" Round Culvert** L= 10.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 1,017.00' / 1,016.90' S= 0.0100 '/' Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 0.35 sf
#2	Device 1	1,018.35'	**36.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#3	Secondary	1,020.00'	**20.0' long x 6.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.37 2.51 2.70 2.68 2.68 2.67 2.65 2.65 2.65 2.65 2.66 2.66 2.67 2.69 2.72 2.76 2.83

Primary OutFlow Max=0.85 cfs @ 12.35 hrs HW=1,018.69' TW=0.00' (Dynamic Tailwater)
└**1=Culvert** (Passes 0.85 cfs of 1.54 cfs potential flow)
└**2=Orifice/Grate** (Orifice Controls 0.85 cfs @ 1.97 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=1,018.00' TW=0.00' (Dynamic Tailwater)
└**3=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond 3P: Underground Infiltration 2

Inflow Area = 46,154 sf, 69.90% Impervious, Inflow Depth = 5.55" for 100-year NRCS event
Inflow = 8.09 cfs @ 12.13 hrs, Volume= 21,337 cf
Outflow = 0.63 cfs @ 13.07 hrs, Volume= 21,338 cf, Atten= 92%, Lag= 56.5 min
Discarded = 0.11 cfs @ 9.54 hrs, Volume= 17,699 cf
Primary = 0.51 cfs @ 13.07 hrs, Volume= 3,639 cf
Routed to Link 1L : E Spyglass Ct

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Peak Elev= 1,020.54' @ 13.07 hrs Surf.Area= 2,991 sf Storage= 11,875 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 720.4 min (1,476.9 - 756.5)

Volume	Invert	Avail.Storage	Storage Description
#1A	1,013.00'	6,149 cf	**46.67'W x 53.61'L x 10.00'H Field A** 25,017 cf Overall - 6,551 cf Embedded = 18,467 cf x 33.3% Voids
#2A	1,017.00'	6,551 cf	**ADS_StormTech MC-7200 +Cap** x 35 Inside #1 Effective Size= 91.2"W x 60.0"H => 26.68 sf x 6.59'L = 175.9 cf Overall Size= 100.0"W x 60.0"H x 6.95'L with 0.36' Overlap 35 Chambers in 5 Rows Cap Storage= 39.5 cf x 2 x 5 rows = 395.0 cf
#3B	1,013.00'	640 cf	**17.42'W x 14.06'L x 10.00'H Field B** 2,448 cf Overall - 510 cf Embedded = 1,939 cf x 33.0% Voids
#4B	1,017.00'	510 cf	**ADS_StormTech MC-7200 +Cap** x 2 Inside #3 Effective Size= 91.2"W x 60.0"H => 26.68 sf x 6.59'L = 175.9 cf Overall Size= 100.0"W x 60.0"H x 6.95'L with 0.36' Overlap 2 Chambers in 2 Rows Cap Storage= 39.5 cf x 2 x 2 rows = 158.0 cf
#5C	1,013.00'	640 cf	**17.42'W x 14.06'L x 10.00'H Field C** 2,448 cf Overall - 510 cf Embedded = 1,939 cf x 33.0% Voids
#6C	1,017.00'	510 cf	**ADS_StormTech MC-7200 +Cap** x 2 Inside #5 Effective Size= 91.2"W x 60.0"H => 26.68 sf x 6.59'L = 175.9 cf Overall Size= 100.0"W x 60.0"H x 6.95'L with 0.36' Overlap 2 Chambers in 2 Rows Cap Storage= 39.5 cf x 2 x 2 rows = 158.0 cf
		14,999 cf	Total Available Storage

Storage Group A created with Chamber Wizard
Storage Group B created with Chamber Wizard
Storage Group C created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	1,020.00'	**12.0" Round Culvert** L= 20.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 1,020.00' / 1,019.80' S= 0.0100 '/' Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 0.79 sf
#2	Device 1	1,020.00'	**6.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#3	Device 1	1,021.50'	**4.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s)
#4	Discarded	1,013.00'	**1.630 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=0.11 cfs @ 9.54 hrs HW=1,013.10' (Free Discharge)
└**4=Exfiltration** (Exfiltration Controls 0.11 cfs)

Primary OutFlow Max=0.51 cfs @ 13.07 hrs HW=1,020.54' TW=0.00' (Dynamic Tailwater)
└**1=Culvert** (Passes 0.51 cfs of 0.87 cfs potential flow)
  ├**2=Orifice/Grate** (Orifice Controls 0.51 cfs @ 2.61 fps)
  └**3=Sharp-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond 3P: Underground Infiltration 2 - Chamber Wizard Field A

Chamber Model = ADS_StormTech MC-7200 +Cap (ADS StormTech® MC-7200 with cap volume)
Effective Size= 91.2"W x 60.0"H => 26.68 sf x 6.59'L = 175.9 cf
Overall Size= 100.0"W x 60.0"H x 6.95'L with 0.36' Overlap
Cap Storage= 39.5 cf x 2 x 5 rows = 395.0 cf

100.0" Wide + 9.0" Spacing = 109.0" C-C Row Spacing

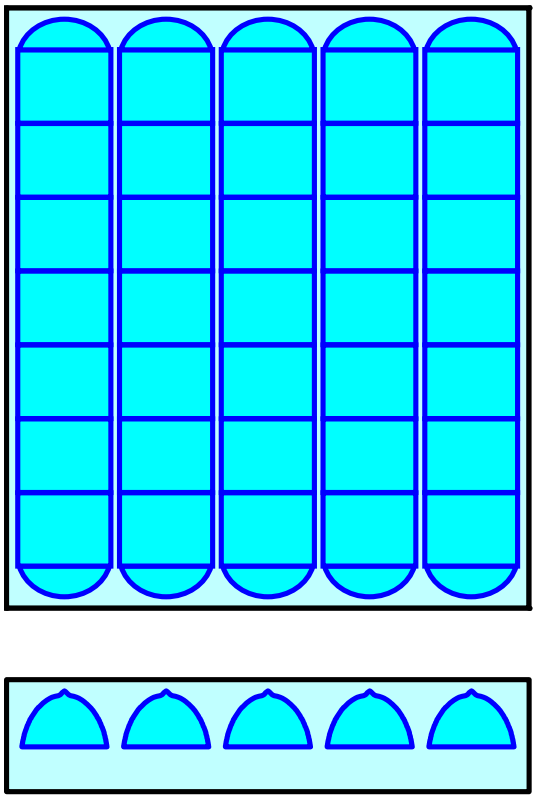
7 Chambers/Row x 6.59' Long +2.73' Cap Length x 2 = 51.61' Row Length +12.0" End Stone x 2 = 53.61' Base Length
5 Rows x 100.0" Wide + 9.0" Spacing x 4 + 12.0" Side Stone x 2 = 46.67' Base Width
48.0" Stone Base + 60.0" Chamber Height + 12.0" Stone Cover = 10.00' Field Height

35 Chambers x 175.9 cf + 39.5 cf Cap Volume x 2 x 5 Rows = 6,550.6 cf Chamber Storage

25,017.2 cf Field - 6,550.6 cf Chambers = 18,466.6 cf Stone x 33.3% Voids = 6,149.4 cf Stone Storage

Chamber Storage + Stone Storage = 12,700.0 cf = 0.292 af
Overall Storage Efficiency = 50.8%
Overall System Size = 53.61' x 46.67' x 10.00'

35 Chambers
926.6 cy Field
683.9 cy Stone



Pond 3P: Underground Infiltration 2 - Chamber Wizard Field B

Chamber Model = ADS_StormTech MC-7200 +Cap (ADS StormTech® MC-7200 with cap volume)
Effective Size= 91.2"W x 60.0"H => 26.68 sf x 6.59'L = 175.9 cf
Overall Size= 100.0"W x 60.0"H x 6.95'L with 0.36' Overlap
Cap Storage= 39.5 cf x 2 x 2 rows = 158.0 cf

100.0" Wide + 9.0" Spacing = 109.0" C-C Row Spacing

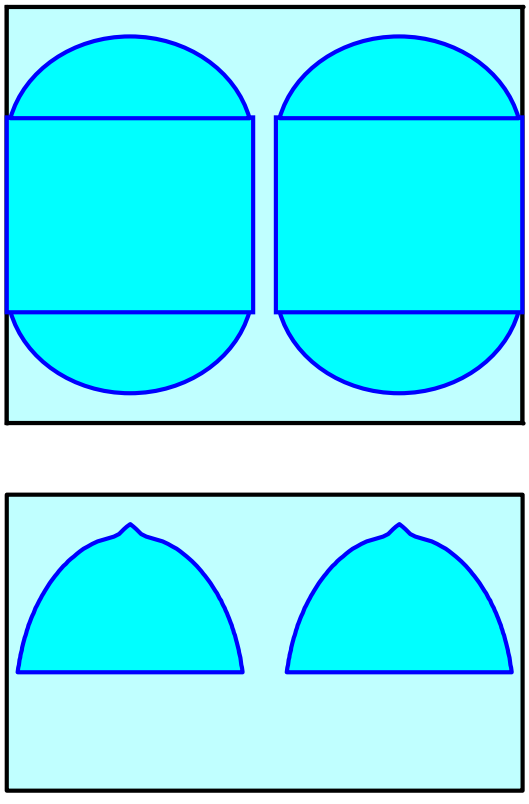
1 Chambers/Row x 6.59' Long +2.73' Cap Length x 2 = 12.06' Row Length +12.0" End Stone x 2 = 14.06' Base Length
2 Rows x 100.0" Wide + 9.0" Spacing x 1 = 17.42' Base Width
48.0" Stone Base + 60.0" Chamber Height + 12.0" Stone Cover = 10.00' Field Height

2 Chambers x 175.9 cf + 39.5 cf Cap Volume x 2 x 2 Rows = 509.8 cf Chamber Storage

2,448.5 cf Field - 509.8 cf Chambers = 1,938.7 cf Stone x 33.0% Voids = 639.8 cf Stone Storage

Chamber Storage + Stone Storage = 1,149.5 cf = 0.026 af
Overall Storage Efficiency = 46.9%
Overall System Size = 14.06' x 17.42' x 10.00'

2 Chambers
90.7 cy Field
71.8 cy Stone



Pond 3P: Underground Infiltration 2 - Chamber Wizard Field C

Chamber Model = ADS_StormTech MC-7200 +Cap (ADS StormTech® MC-7200 with cap volume)
Effective Size= 91.2"W x 60.0"H => 26.68 sf x 6.59'L = 175.9 cf
Overall Size= 100.0"W x 60.0"H x 6.95'L with 0.36' Overlap
Cap Storage= 39.5 cf x 2 x 2 rows = 158.0 cf

100.0" Wide + 9.0" Spacing = 109.0" C-C Row Spacing

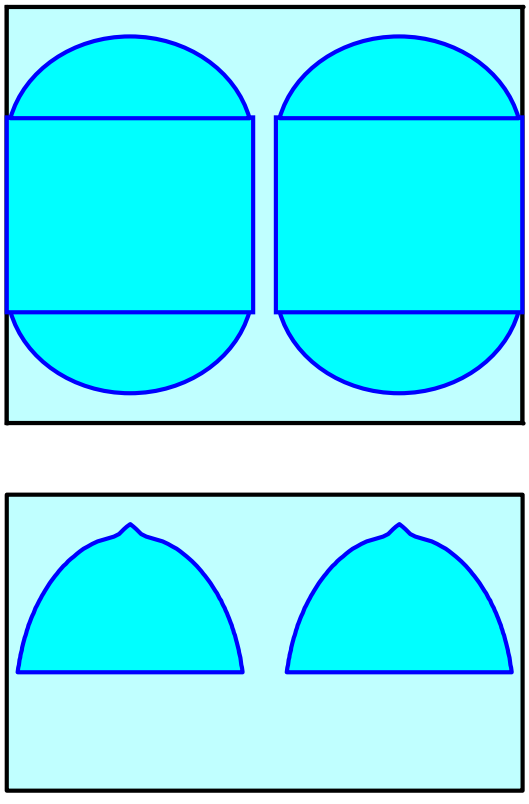
1 Chambers/Row x 6.59' Long +2.73' Cap Length x 2 = 12.06' Row Length +12.0" End Stone x 2 = 14.06' Base Length
2 Rows x 100.0" Wide + 9.0" Spacing x 1 = 17.42' Base Width
48.0" Stone Base + 60.0" Chamber Height + 12.0" Stone Cover = 10.00' Field Height

2 Chambers x 175.9 cf + 39.5 cf Cap Volume x 2 x 2 Rows = 509.8 cf Chamber Storage

2,448.5 cf Field - 509.8 cf Chambers = 1,938.7 cf Stone x 33.0% Voids = 639.8 cf Stone Storage

Chamber Storage + Stone Storage = 1,149.5 cf = 0.026 af
Overall Storage Efficiency = 46.9%
Overall System Size = 14.06' x 17.42' x 10.00'

2 Chambers
90.7 cy Field
71.8 cy Stone



Summary for Pond 4P: Underground Infiltration 1

Inflow Area = 68,504 sf, 77.00% Impervious, Inflow Depth = 5.74" for 100-year NRCS event
Inflow = 12.29 cfs @ 12.13 hrs, Volume= 32,795 cf
Outflow = 0.73 cfs @ 13.37 hrs, Volume= 21,213 cf, Atten= 94%, Lag= 74.3 min
Discarded = 0.06 cfs @ 5.56 hrs, Volume= 12,220 cf
Primary = 0.68 cfs @ 13.37 hrs, Volume= 8,993 cf
Routed to Link 1L : E Spyglass Ct

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Peak Elev= 1,020.76' @ 13.37 hrs Surf.Area= 5,097 sf Storage= 21,557 cf

Plug-Flow detention time= 810.0 min calculated for 21,213 cf (65% of inflow)
Center-of-Mass det. time= 720.6 min (1,473.4 - 752.9)

Volume	Invert	Avail.Storage	Storage Description
#1A	1,013.00'	12,327 cf	**28.50'W x 178.85'L x 10.00'H Field A** 50,972 cf Overall - 13,955 cf Embedded = 37,017 cf x 33.3% Voids
#2A	1,017.00'	13,955 cf	**ADS_StormTech MC-7200 +Cap** x 78 Inside #1 Effective Size= 91.2"W x 60.0"H => 26.68 sf x 6.59'L = 175.9 cf Overall Size= 100.0"W x 60.0"H x 6.95'L with 0.36' Overlap 78 Chambers in 3 Rows Cap Storage= 39.5 cf x 2 x 3 rows = 237.0 cf
		26,282 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	1,020.00'	**12.0" Round Culvert** L= 20.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 1,020.00' / 1,019.80' S= 0.0100 '/' Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 0.79 sf
#2	Device 1	1,020.00'	**6.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#3	Device 1	1,021.50'	**4.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s)
#4	Discarded	1,013.00'	**0.500 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=0.06 cfs @ 5.56 hrs HW=1,013.10' (Free Discharge)
└**4=Exfiltration** (Exfiltration Controls 0.06 cfs)

Primary OutFlow Max=0.68 cfs @ 13.37 hrs HW=1,020.76' TW=0.00' (Dynamic Tailwater)
└**1=Culvert** (Passes 0.68 cfs of 1.50 cfs potential flow)
  ├**2=Orifice/Grate** (Orifice Controls 0.68 cfs @ 3.44 fps)
  └**3=Sharp-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond 4P: Underground Infiltration 1 - Chamber Wizard Field A

Chamber Model = ADS_StormTech MC-7200 +Cap (ADS StormTech® MC-7200 with cap volume)
Effective Size= 91.2"W x 60.0"H => 26.68 sf x 6.59'L = 175.9 cf
Overall Size= 100.0"W x 60.0"H x 6.95'L with 0.36' Overlap
Cap Storage= 39.5 cf x 2 x 3 rows = 237.0 cf

100.0" Wide + 9.0" Spacing = 109.0" C-C Row Spacing

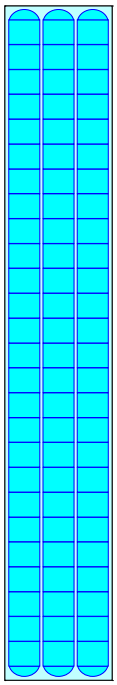
26 Chambers/Row x 6.59' Long +2.73' Cap Length x 2 = 176.85' Row Length +12.0" End Stone x 2 = 178.85' Base Length
3 Rows x 100.0" Wide + 9.0" Spacing x 2 + 12.0" Side Stone x 2 = 28.50' Base Width
48.0" Stone Base + 60.0" Chamber Height + 12.0" Stone Cover = 10.00' Field Height

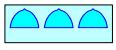
78 Chambers x 175.9 cf + 39.5 cf Cap Volume x 2 x 3 Rows = 13,955.3 cf Chamber Storage

50,972.3 cf Field - 13,955.3 cf Chambers = 37,017.0 cf Stone x 33.3% Voids = 12,326.6 cf Stone Storage

Chamber Storage + Stone Storage = 26,281.9 cf = 0.603 af
Overall Storage Efficiency = 51.6%
Overall System Size = 178.85' x 28.50' x 10.00'

78 Chambers
1,887.9 cy Field
1,371.0 cy Stone





Summary for Pond 6P: Green Roof Storm Sewer

Inflow Area = 3,966 sf, 8.83% Impervious, Inflow Depth = 4.17" for 100-year NRCS event
Inflow = 0.60 cfs @ 12.13 hrs, Volume= 1,379 cf
Outflow = 0.60 cfs @ 12.13 hrs, Volume= 1,379 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.39 cfs @ 12.13 hrs, Volume= 1,316 cf
Routed to Pond 3P : Underground Infiltration 2
Secondary = 0.20 cfs @ 12.13 hrs, Volume= 63 cf
Routed to Link W : West - Strickers Pond

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Peak Elev= 1,026.53' @ 12.13 hrs
Flood Elev= 1,027.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	1,026.00'	**6.0" Round Culvert** L= 10.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 1,026.00' / 1,025.90' S= 0.0100 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.20 sf
#2	Secondary	1,026.50'	**20.0' long x 5.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.34 2.50 2.70 2.68 2.68 2.66 2.65 2.65 2.65 2.65 2.67 2.66 2.68 2.70 2.74 2.79 2.88

Primary OutFlow Max=0.39 cfs @ 12.13 hrs HW=1,026.53' TW=1,018.39' (Dynamic Tailwater)
↑—**1=Culvert** (Inlet Controls 0.39 cfs @ 2.00 fps)

Secondary OutFlow Max=0.20 cfs @ 12.13 hrs HW=1,026.53' TW=0.00' (Dynamic Tailwater)
↑—**2=Broad-Crested Rectangular Weir** (Weir Controls 0.20 cfs @ 0.38 fps)

Summary for Pond 7P: Green Roof Storm Sewer

Inflow Area = 4,952 sf, 10.80% Impervious, Inflow Depth = 4.22" for 100-year NRCS event
Inflow = 0.75 cfs @ 12.13 hrs, Volume= 1,742 cf
Outflow = 0.75 cfs @ 12.13 hrs, Volume= 1,742 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.40 cfs @ 12.13 hrs, Volume= 1,607 cf
Routed to Pond 4P : Underground Infiltration 1
Secondary = 0.35 cfs @ 12.13 hrs, Volume= 136 cf
Routed to Link W : West - Strickers Pond

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Peak Elev= 1,026.54' @ 12.13 hrs
Flood Elev= 1,027.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	1,026.00'	**6.0" Round Culvert** L= 10.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 1,026.00' / 1,025.90' S= 0.0100 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.20 sf
#2	Secondary	1,026.50'	**20.0' long x 5.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.34 2.50 2.70 2.68 2.68 2.66 2.65 2.65 2.65 2.65 2.67 2.66 2.68 2.70 2.74 2.79 2.88

Primary OutFlow Max=0.40 cfs @ 12.13 hrs HW=1,026.54' TW=1,018.67' (Dynamic Tailwater)
1=Culvert (Inlet Controls 0.40 cfs @ 2.04 fps)

Secondary OutFlow Max=0.35 cfs @ 12.13 hrs HW=1,026.54' TW=0.00' (Dynamic Tailwater)
2=Broad-Crested Rectangular Weir (Weir Controls 0.35 cfs @ 0.46 fps)

Summary for Link 1L: E Spyglass Ct

Inflow Area = 141,347 sf, 60.53% Impervious, Inflow Depth = 1.69" for 100-year NRCS event
Inflow = 1.70 cfs @ 12.86 hrs, Volume= 19,928 cf
Primary = 1.70 cfs @ 12.86 hrs, Volume= 19,928 cf, Atten= 0%, Lag= 0.0 min
Routed to Link W : West - Strickers Pond

Primary outflow = Inflow, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs

Summary for Link 2L: North - Harvest Hill Rd

Inflow Area = 8,146 sf, 0.00% Impervious, Inflow Depth = 3.44" for 100-year NRCS event
Inflow = 1.04 cfs @ 12.13 hrs, Volume= 2,335 cf
Primary = 1.04 cfs @ 12.13 hrs, Volume= 2,335 cf, Atten= 0%, Lag= 0.0 min
Routed to Link W : West - Strickers Pond

Primary outflow = Inflow, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs

Summary for Link E: East - Mendota-Gammon Greenway

Inflow Area = 3,400 sf, 42.06% Impervious, Inflow Depth = 4.69" for 100-year NRCS event
Inflow = 0.54 cfs @ 12.13 hrs, Volume= 1,330 cf
Primary = 0.54 cfs @ 12.13 hrs, Volume= 1,330 cf, Atten= 0%, Lag= 0.0 min
Routed to Link Pro : Post

Primary outflow = Inflow, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs

Summary for Link Pro: Post

Inflow Area = 161,025 sf, 55.45% Impervious, Inflow Depth = 1.99" for 100-year NRCS event
Inflow = 4.33 cfs @ 12.14 hrs, Volume= 26,695 cf
Primary = 4.33 cfs @ 12.14 hrs, Volume= 26,695 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs

Summary for Link W: West - Strickers Pond

Inflow Area = 157,625 sf, 55.74% Impervious, Inflow Depth = 1.93" for 100-year NRCS event
Inflow = 3.79 cfs @ 12.14 hrs, Volume= 25,365 cf
Primary = 3.79 cfs @ 12.14 hrs, Volume= 25,365 cf, Atten= 0%, Lag= 0.0 min
Routed to Link Pro : Post

Primary outflow = Inflow, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs

Time span=0.00-60.00 hrs, dt=0.01 hrs, 6001 points
Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv.
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment A: Runoff Area=29,200 sf 100.00% Impervious Runoff Depth=7.29"
Tc=6.0 min CN=0/98 Runoff=6.61 cfs 17,740 cf

Subcatchment A1: Runoff Area=4,952 sf 10.80% Impervious Runoff Depth=5.01"
Tc=6.0 min CN=76/98 Runoff=0.89 cfs 2,067 cf

Subcatchment A2: Runoff Area=34,352 sf 66.98% Impervious Runoff Depth=6.26"
Tc=6.0 min CN=71/98 Runoff=6.96 cfs 17,924 cf

Subcatchment B: Runoff Area=12,690 sf 100.00% Impervious Runoff Depth=7.29"
Tc=6.0 min CN=0/98 Runoff=2.87 cfs 7,710 cf

Subcatchment B1: Runoff Area=3,966 sf 8.83% Impervious Runoff Depth=4.96"
Tc=6.0 min CN=76/98 Runoff=0.71 cfs 1,639 cf

Subcatchment B2: Runoff Area=29,498 sf 65.16% Impervious Runoff Depth=6.20"
Tc=6.0 min CN=71/98 Runoff=5.94 cfs 15,252 cf

Subcatchment C: Runoff Area=22,384 sf 2.46% Impervious Runoff Depth=4.58"
Tc=6.0 min CN=74/98 Runoff=3.75 cfs 8,536 cf

Subcatchment E1: Runoff Area=3,400 sf 42.06% Impervious Runoff Depth=5.48"
Tc=6.0 min CN=71/98 Runoff=0.63 cfs 1,554 cf

Subcatchment E2: Runoff Area=8,146 sf 0.00% Impervious Runoff Depth=4.17"
Tc=6.0 min CN=71/0 Runoff=1.26 cfs 2,833 cf

Subcatchment E3: Runoff Area=4,305 sf 0.00% Impervious Runoff Depth=4.17"
Tc=6.0 min CN=71/0 Runoff=0.67 cfs 1,497 cf

Subcatchment E4: Runoff Area=8,132 sf 28.34% Impervious Runoff Depth=5.06"
Tc=6.0 min CN=71/98 Runoff=1.42 cfs 3,427 cf

Pond 1P: Infiltration Basin Peak Elev=1,018.75' Storage=3,590 cf Inflow=3.75 cfs 8,536 cf
Primary=1.19 cfs 7,485 cf Secondary=0.00 cfs 0 cf Outflow=1.19 cfs 7,485 cf

Pond 3P: Underground Infiltration 2 Peak Elev=1,021.10' Storage=12,842 cf Inflow=9.21 cfs 24,487 cf
Discarded=0.11 cfs 18,135 cf Primary=0.87 cfs 6,353 cf Outflow=0.98 cfs 24,488 cf

Pond 4P: Underground Infiltration 1 Peak Elev=1,021.43' Storage=23,450 cf Inflow=13.98 cfs 37,516 cf
Discarded=0.06 cfs 12,278 cf Primary=1.03 cfs 13,618 cf Outflow=1.08 cfs 25,896 cf

Pond 6P: Green Roof Storm Sewer Peak Elev=1,026.54' Inflow=0.71 cfs 1,639 cf
Primary=0.40 cfs 1,526 cf Secondary=0.31 cfs 113 cf Outflow=0.71 cfs 1,639 cf

Pond 7P: Green Roof Storm Sewer Peak Elev=1,026.55' Inflow=0.89 cfs 2,067 cf
Primary=0.41 cfs 1,851 cf Secondary=0.48 cfs 216 cf Outflow=0.89 cfs 2,067 cf

Link 1L: E Spyglass Ct Inflow=2.90 cfs 28,954 cf
Primary=2.90 cfs 28,954 cf

Link 2L: North - Harvest Hill Rd Inflow=1.26 cfs 2,833 cf
Primary=1.26 cfs 2,833 cf

Link E: East - Mendota-Gammon Greenway Inflow=0.63 cfs 1,554 cf
Primary=0.63 cfs 1,554 cf

Link Pro: Post Inflow=5.49 cfs 37,096 cf
Primary=5.49 cfs 37,096 cf

Link W: West - Strickers Pond Inflow=4.86 cfs 35,542 cf
Primary=4.86 cfs 35,542 cf

Total Runoff Area = 161,025 sf Runoff Volume = 80,179 cf Average Runoff Depth = 5.98"
44.55% Pervious = 71,735 sf 55.45% Impervious = 89,290 sf

Summary for Subcatchment A:

Runoff = 6.61 cfs @ 12.13 hrs, Volume= 17,740 cf, Depth= 7.29"
Routed to Pond 4P : Underground Infiltration 1

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
MSE 24-hr 4 200-year NRCS Rainfall=7.53"

	Area (sf)	CN	Description
	29,200	98	Roofs, HSG C
*	0	68	Intensive Green Roof
*	0	76	Extensive Green Roof
	0	98	Paved parking, HSG C
*	0	98	Sidewalk, HSG C
*	0	71	>75% Grass cover, Good, HSG C
	29,200	98	Weighted Average
	29,200	98	100.00% Impervious Area

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

Summary for Subcatchment A1:

Runoff = 0.89 cfs @ 12.13 hrs, Volume= 2,067 cf, Depth= 5.01"
Routed to Pond 7P : Green Roof Storm Sewer

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
MSE 24-hr 4 200-year NRCS Rainfall=7.53"

	Area (sf)	CN	Description
	0	98	Roofs, HSG C
*	0	68	Intensive Green Roof
*	4,417	76	Extensive Green Roof
	0	98	Paved parking, HSG C
*	535	98	Sidewalk, HSG C
*	0	71	>75% Grass cover, Good, HSG C
	4,952	78	Weighted Average
	4,417	76	89.20% Pervious Area
	535	98	10.80% Impervious Area

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

Summary for Subcatchment A2:

Runoff = 6.96 cfs @ 12.13 hrs, Volume= 17,924 cf, Depth= 6.26"
Routed to Pond 4P : Underground Infiltration 1

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
MSE 24-hr 4 200-year NRCS Rainfall=7.53"

	Area (sf)	CN	Description
	0	98	Roofs, HSG C
*	0	68	Intensive Green Roof
*	0	76	Extensive Green Roof
	14,440	98	Paved parking, HSG C
*	8,570	98	Sidewalk, HSG C
*	11,342	71	>75% Grass cover, Good, HSG C
	34,352	89	Weighted Average
	11,342	71	33.02% Pervious Area
	23,010	98	66.98% Impervious Area

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

Summary for Subcatchment B:

Runoff = 2.87 cfs @ 12.13 hrs, Volume= 7,710 cf, Depth= 7.29"
Routed to Pond 3P : Underground Infiltration 2

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
MSE 24-hr 4 200-year NRCS Rainfall=7.53"

	Area (sf)	CN	Description
	12,690	98	Roofs, HSG C
*	0	68	Intensive Green Roof
*	0	76	Extensive Green Roof
	0	98	Paved parking, HSG C
*	0	98	Sidewalk, HSG C
*	0	71	>75% Grass cover, Good, HSG C
	12,690	98	Weighted Average
	12,690	98	100.00% Impervious Area

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

Summary for Subcatchment B1:

Runoff = 0.71 cfs @ 12.13 hrs, Volume= 1,639 cf, Depth= 4.96"
Routed to Pond 6P : Green Roof Storm Sewer

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
MSE 24-hr 4 200-year NRCS Rainfall=7.53"

	Area (sf)	CN	Description
	0	98	Roofs, HSG C
*	0	68	Intensive Green Roof
*	3,616	76	Extensive Green Roof
	0	98	Paved parking, HSG C
*	350	98	Sidewalk, HSG C
*	0	71	>75% Grass cover, Good, HSG C
	3,966	78	Weighted Average
	3,616	76	91.17% Pervious Area
	350	98	8.83% Impervious Area

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

Summary for Subcatchment B2:

Runoff = 5.94 cfs @ 12.13 hrs, Volume= 15,252 cf, Depth= 6.20"
Routed to Pond 3P : Underground Infiltration 2

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
MSE 24-hr 4 200-year NRCS Rainfall=7.53"

	Area (sf)	CN	Description
	7,940	98	Roofs, HSG C
*	0	68	Intensive Green Roof
*	0	76	Extensive Green Roof
	6,915	98	Paved parking, HSG C
*	4,365	98	Sidewalk, HSG C
*	10,278	71	>75% Grass cover, Good, HSG C
	29,498	89	Weighted Average
	10,278	71	34.84% Pervious Area
	19,220	98	65.16% Impervious Area

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

Summary for Subcatchment C:

Runoff = 3.75 cfs @ 12.13 hrs, Volume= 8,536 cf, Depth= 4.58"
Routed to Pond 1P : Infiltration Basin

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
MSE 24-hr 4 200-year NRCS Rainfall=7.53"

	Area (sf)	CN	Description
	0	98	Roofs, HSG C
*	0	68	Intensive Green Roof
*	0	76	Extensive Green Roof
	0	98	Paved parking, HSG C
*	550	98	Sidewalk, HSG C
	21,834	74	>75% Grass cover, Good, HSG C
	22,384	75	Weighted Average
	21,834	74	97.54% Pervious Area
	550	98	2.46% Impervious Area

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

Summary for Subcatchment E1:

Runoff = 0.63 cfs @ 12.13 hrs, Volume= 1,554 cf, Depth= 5.48"
Routed to Link E : East - Mendota-Gammon Greenway

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
MSE 24-hr 4 200-year NRCS Rainfall=7.53"

	Area (sf)	CN	Description
	0	98	Roofs, HSG C
*	0	68	Intensive Green Roof
*	0	76	Extensive Green Roof
	755	98	Paved parking, HSG C
*	675	98	Sidewalk, HSG C
*	1,970	71	>75% Grass cover, Good, HSG C
	3,400	82	Weighted Average
	1,970	71	57.94% Pervious Area
	1,430	98	42.06% Impervious Area

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

Summary for Subcatchment E2:

Runoff = 1.26 cfs @ 12.13 hrs, Volume= 2,833 cf, Depth= 4.17"
Routed to Link 2L : North - Harvest Hill Rd

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
MSE 24-hr 4 200-year NRCS Rainfall=7.53"

	Area (sf)	CN	Description
	0	98	Roofs, HSG C
*	0	68	Intensive Green Roof
*	0	76	Extensive Green Roof
	0	98	Paved parking, HSG C
*	0	98	Sidewalk, HSG C
*	8,146	71	>75% Grass cover, Good, HSG C
	8,146	71	Weighted Average
	8,146	71	100.00% Pervious Area

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

Summary for Subcatchment E3:

Runoff = 0.67 cfs @ 12.13 hrs, Volume= 1,497 cf, Depth= 4.17"
Routed to Link 1L : E Spyglass Ct

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
MSE 24-hr 4 200-year NRCS Rainfall=7.53"

	Area (sf)	CN	Description
	0	98	Roofs, HSG C
*	0	68	Intensive Green Roof
*	0	76	Extensive Green Roof
	0	98	Paved parking, HSG C
*	0	98	Sidewalk, HSG C
*	4,305	71	>75% Grass cover, Good, HSG C
	4,305	71	Weighted Average
	4,305	71	100.00% Pervious Area

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

Summary for Subcatchment E4:

Runoff = 1.42 cfs @ 12.13 hrs, Volume= 3,427 cf, Depth= 5.06"
Routed to Link W : West - Strickers Pond

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
MSE 24-hr 4 200-year NRCS Rainfall=7.53"

	Area (sf)	CN	Description
	0	98	Roofs, HSG C
*	0	68	Intensive Green Roof
*	0	76	Extensive Green Roof
	0	98	Paved parking, HSG C
*	2,305	98	Sidewalk, HSG C
*	5,827	71	>75% Grass cover, Good, HSG C
	8,132	79	Weighted Average
	5,827	71	71.66% Pervious Area
	2,305	98	28.34% Impervious Area

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

Summary for Pond 1P: Infiltration Basin

Inflow Area = 22,384 sf, 2.46% Impervious, Inflow Depth = 4.58" for 200-year NRCS event
Inflow = 3.75 cfs @ 12.13 hrs, Volume= 8,536 cf
Outflow = 1.19 cfs @ 12.30 hrs, Volume= 7,485 cf, Atten= 68%, Lag= 10.3 min
Primary = 1.19 cfs @ 12.30 hrs, Volume= 7,485 cf
Routed to Link 1L : E Spyglass Ct
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Routed to Link 1L : E Spyglass Ct

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Peak Elev= 1,018.75' @ 12.30 hrs Surf.Area= 8,317 sf Storage= 3,590 cf

Plug-Flow detention time= 147.5 min calculated for 7,485 cf (88% of inflow)
Center-of-Mass det. time= 95.1 min (899.5 - 804.4)

Volume	Invert	Avail.Storage	Storage Description
#1	1,018.00'	33,500 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
1,018.00	1,300	0	0
1,019.00	10,700	6,000	6,000
1,020.00	13,600	12,150	18,150
1,021.00	17,100	15,350	33,500

Device	Routing	Invert	Outlet Devices
#1	Primary	1,017.00'	**8.0" Round Culvert** L= 10.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 1,017.00' / 1,016.90' S= 0.0100 '/' Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 0.35 sf
#2	Device 1	1,018.35'	**36.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#3	Secondary	1,020.00'	**20.0' long x 6.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.37 2.51 2.70 2.68 2.68 2.67 2.65 2.65 2.65 2.65 2.66 2.66 2.67 2.69 2.72 2.76 2.83

Primary OutFlow Max=1.19 cfs @ 12.30 hrs HW=1,018.75' TW=0.00' (Dynamic Tailwater)
1=Culvert (Passes 1.19 cfs of 1.58 cfs potential flow)
2=Orifice/Grate (Orifice Controls 1.19 cfs @ 2.14 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=1,018.00' TW=0.00' (Dynamic Tailwater)
3=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Summary for Pond 3P: Underground Infiltration 2

Inflow Area = 46,154 sf, 69.90% Impervious, Inflow Depth = 6.37" for 200-year NRCS event
Inflow = 9.21 cfs @ 12.13 hrs, Volume= 24,487 cf
Outflow = 0.98 cfs @ 12.65 hrs, Volume= 24,488 cf, Atten= 89%, Lag= 31.0 min
Discarded = 0.11 cfs @ 9.33 hrs, Volume= 18,135 cf
Primary = 0.87 cfs @ 12.65 hrs, Volume= 6,353 cf
Routed to Link 1L : E Spyglass Ct

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Peak Elev= 1,021.10' @ 12.65 hrs Surf.Area= 2,991 sf Storage= 12,842 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 647.7 min (1,402.8 - 755.2)

Volume	Invert	Avail.Storage	Storage Description
#1A	1,013.00'	6,149 cf	**46.67'W x 53.61'L x 10.00'H Field A** 25,017 cf Overall - 6,551 cf Embedded = 18,467 cf x 33.3% Voids
#2A	1,017.00'	6,551 cf	**ADS_StormTech MC-7200 +Cap** x 35 Inside #1 Effective Size= 91.2"W x 60.0"H => 26.68 sf x 6.59'L = 175.9 cf Overall Size= 100.0"W x 60.0"H x 6.95'L with 0.36' Overlap 35 Chambers in 5 Rows Cap Storage= 39.5 cf x 2 x 5 rows = 395.0 cf
#3B	1,013.00'	640 cf	**17.42'W x 14.06'L x 10.00'H Field B** 2,448 cf Overall - 510 cf Embedded = 1,939 cf x 33.0% Voids
#4B	1,017.00'	510 cf	**ADS_StormTech MC-7200 +Cap** x 2 Inside #3 Effective Size= 91.2"W x 60.0"H => 26.68 sf x 6.59'L = 175.9 cf Overall Size= 100.0"W x 60.0"H x 6.95'L with 0.36' Overlap 2 Chambers in 2 Rows Cap Storage= 39.5 cf x 2 x 2 rows = 158.0 cf
#5C	1,013.00'	640 cf	**17.42'W x 14.06'L x 10.00'H Field C** 2,448 cf Overall - 510 cf Embedded = 1,939 cf x 33.0% Voids
#6C	1,017.00'	510 cf	**ADS_StormTech MC-7200 +Cap** x 2 Inside #5 Effective Size= 91.2"W x 60.0"H => 26.68 sf x 6.59'L = 175.9 cf Overall Size= 100.0"W x 60.0"H x 6.95'L with 0.36' Overlap 2 Chambers in 2 Rows Cap Storage= 39.5 cf x 2 x 2 rows = 158.0 cf
		14,999 cf	Total Available Storage

Storage Group A created with Chamber Wizard
Storage Group B created with Chamber Wizard
Storage Group C created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	1,020.00'	**12.0" Round Culvert** L= 20.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 1,020.00' / 1,019.80' S= 0.0100 '/' Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 0.79 sf
#2	Device 1	1,020.00'	**6.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#3	Device 1	1,021.50'	**4.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s)
#4	Discarded	1,013.00'	**1.630 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=0.11 cfs @ 9.33 hrs HW=1,013.10' (Free Discharge)
└**4=Exfiltration** (Exfiltration Controls 0.11 cfs)

Primary OutFlow Max=0.87 cfs @ 12.65 hrs HW=1,021.10' TW=0.00' (Dynamic Tailwater)
└**1=Culvert** (Passes 0.87 cfs of 2.31 cfs potential flow)
  ├**2=Orifice/Grate** (Orifice Controls 0.87 cfs @ 4.43 fps)
  └**3=Sharp-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond 3P: Underground Infiltration 2 - Chamber Wizard Field A

Chamber Model = ADS_StormTech MC-7200 +Cap (ADS StormTech® MC-7200 with cap volume)
Effective Size= 91.2"W x 60.0"H => 26.68 sf x 6.59'L = 175.9 cf
Overall Size= 100.0"W x 60.0"H x 6.95'L with 0.36' Overlap
Cap Storage= 39.5 cf x 2 x 5 rows = 395.0 cf

100.0" Wide + 9.0" Spacing = 109.0" C-C Row Spacing

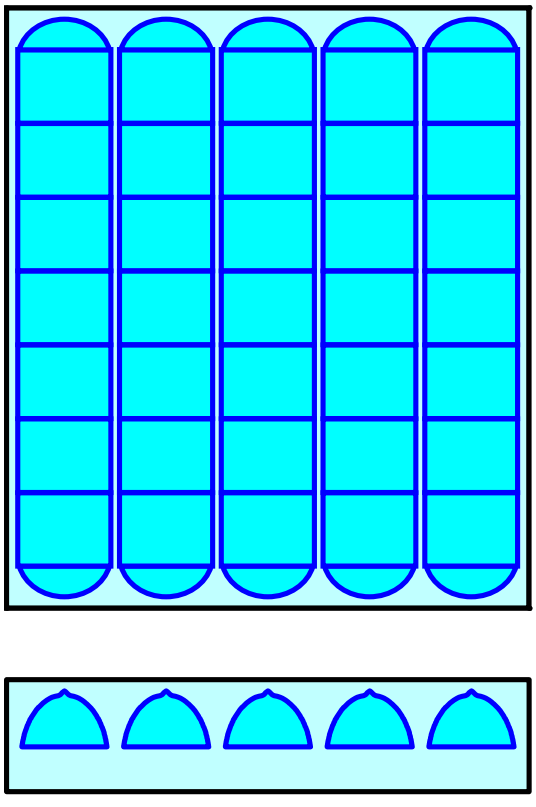
7 Chambers/Row x 6.59' Long +2.73' Cap Length x 2 = 51.61' Row Length +12.0" End Stone x 2 = 53.61' Base Length
5 Rows x 100.0" Wide + 9.0" Spacing x 4 + 12.0" Side Stone x 2 = 46.67' Base Width
48.0" Stone Base + 60.0" Chamber Height + 12.0" Stone Cover = 10.00' Field Height

35 Chambers x 175.9 cf + 39.5 cf Cap Volume x 2 x 5 Rows = 6,550.6 cf Chamber Storage

25,017.2 cf Field - 6,550.6 cf Chambers = 18,466.6 cf Stone x 33.3% Voids = 6,149.4 cf Stone Storage

Chamber Storage + Stone Storage = 12,700.0 cf = 0.292 af
Overall Storage Efficiency = 50.8%
Overall System Size = 53.61' x 46.67' x 10.00'

35 Chambers
926.6 cy Field
683.9 cy Stone



Pond 3P: Underground Infiltration 2 - Chamber Wizard Field B

Chamber Model = ADS_StormTech MC-7200 +Cap (ADS StormTech® MC-7200 with cap volume)
Effective Size= 91.2"W x 60.0"H => 26.68 sf x 6.59'L = 175.9 cf
Overall Size= 100.0"W x 60.0"H x 6.95'L with 0.36' Overlap
Cap Storage= 39.5 cf x 2 x 2 rows = 158.0 cf

100.0" Wide + 9.0" Spacing = 109.0" C-C Row Spacing

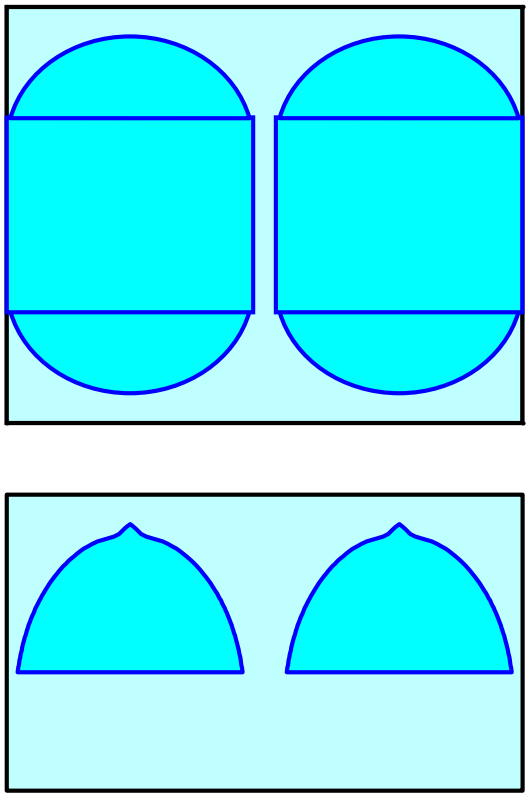
1 Chambers/Row x 6.59' Long +2.73' Cap Length x 2 = 12.06' Row Length +12.0" End Stone x 2 = 14.06' Base Length
2 Rows x 100.0" Wide + 9.0" Spacing x 1 = 17.42' Base Width
48.0" Stone Base + 60.0" Chamber Height + 12.0" Stone Cover = 10.00' Field Height

2 Chambers x 175.9 cf + 39.5 cf Cap Volume x 2 x 2 Rows = 509.8 cf Chamber Storage

2,448.5 cf Field - 509.8 cf Chambers = 1,938.7 cf Stone x 33.0% Voids = 639.8 cf Stone Storage

Chamber Storage + Stone Storage = 1,149.5 cf = 0.026 af
Overall Storage Efficiency = 46.9%
Overall System Size = 14.06' x 17.42' x 10.00'

2 Chambers
90.7 cy Field
71.8 cy Stone



Pond 3P: Underground Infiltration 2 - Chamber Wizard Field C

Chamber Model = ADS_StormTech MC-7200 +Cap (ADS StormTech® MC-7200 with cap volume)
Effective Size= 91.2"W x 60.0"H => 26.68 sf x 6.59'L = 175.9 cf
Overall Size= 100.0"W x 60.0"H x 6.95'L with 0.36' Overlap
Cap Storage= 39.5 cf x 2 x 2 rows = 158.0 cf

100.0" Wide + 9.0" Spacing = 109.0" C-C Row Spacing

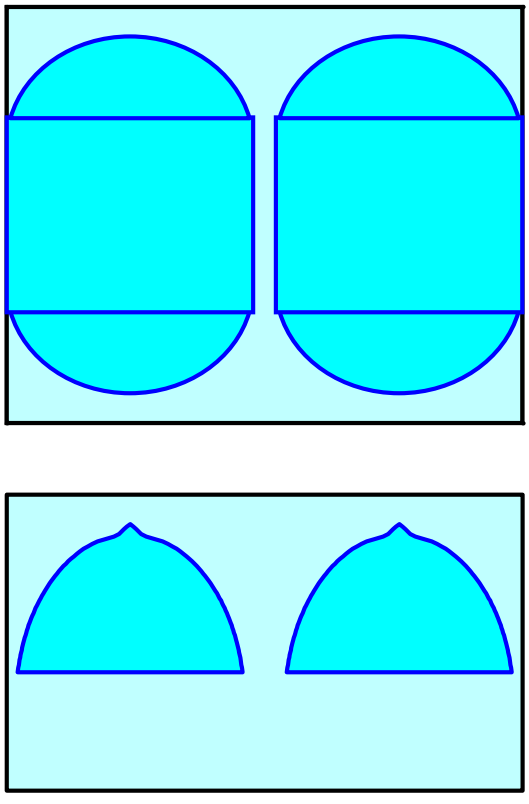
1 Chambers/Row x 6.59' Long +2.73' Cap Length x 2 = 12.06' Row Length +12.0" End Stone x 2 = 14.06' Base Length
2 Rows x 100.0" Wide + 9.0" Spacing x 1 = 17.42' Base Width
48.0" Stone Base + 60.0" Chamber Height + 12.0" Stone Cover = 10.00' Field Height

2 Chambers x 175.9 cf + 39.5 cf Cap Volume x 2 x 2 Rows = 509.8 cf Chamber Storage

2,448.5 cf Field - 509.8 cf Chambers = 1,938.7 cf Stone x 33.0% Voids = 639.8 cf Stone Storage

Chamber Storage + Stone Storage = 1,149.5 cf = 0.026 af
Overall Storage Efficiency = 46.9%
Overall System Size = 14.06' x 17.42' x 10.00'

2 Chambers
90.7 cy Field
71.8 cy Stone



Summary for Pond 4P: Underground Infiltration 1

Inflow Area = 68,504 sf, 77.00% Impervious, Inflow Depth = 6.57" for 200-year NRCS event
Inflow = 13.98 cfs @ 12.13 hrs, Volume= 37,516 cf
Outflow = 1.08 cfs @ 13.06 hrs, Volume= 25,896 cf, Atten= 92%, Lag= 56.0 min
Discarded = 0.06 cfs @ 5.00 hrs, Volume= 12,278 cf
Primary = 1.03 cfs @ 13.06 hrs, Volume= 13,618 cf
Routed to Link 1L : E Spyglass Ct

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Peak Elev= 1,021.43' @ 13.06 hrs Surf.Area= 5,097 sf Storage= 23,450 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 610.2 min (1,361.7 - 751.5)

Volume	Invert	Avail.Storage	Storage Description
#1A	1,013.00'	12,327 cf	**28.50'W x 178.85'L x 10.00'H Field A** 50,972 cf Overall - 13,955 cf Embedded = 37,017 cf x 33.3% Voids
#2A	1,017.00'	13,955 cf	**ADS_StormTech MC-7200 +Cap** x 78 Inside #1 Effective Size= 91.2"W x 60.0"H => 26.68 sf x 6.59'L = 175.9 cf Overall Size= 100.0"W x 60.0"H x 6.95'L with 0.36' Overlap 78 Chambers in 3 Rows Cap Storage= 39.5 cf x 2 x 3 rows = 237.0 cf
		26,282 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	1,020.00'	**12.0" Round Culvert** L= 20.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 1,020.00' / 1,019.80' S= 0.0100 '/' Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 0.79 sf
#2	Device 1	1,020.00'	**6.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#3	Device 1	1,021.50'	**4.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s)
#4	Discarded	1,013.00'	**0.500 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=0.06 cfs @ 5.00 hrs HW=1,013.10' (Free Discharge)
└**4=Exfiltration** (Exfiltration Controls 0.06 cfs)

Primary OutFlow Max=1.03 cfs @ 13.06 hrs HW=1,021.43' TW=0.00' (Dynamic Tailwater)
└**1=Culvert** (Passes 1.03 cfs of 2.87 cfs potential flow)
  ├**2=Orifice/Grate** (Orifice Controls 1.03 cfs @ 5.22 fps)
  └**3=Sharp-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond 4P: Underground Infiltration 1 - Chamber Wizard Field A

Chamber Model = ADS_StormTech MC-7200 +Cap (ADS StormTech® MC-7200 with cap volume)
Effective Size= 91.2"W x 60.0"H => 26.68 sf x 6.59'L = 175.9 cf
Overall Size= 100.0"W x 60.0"H x 6.95'L with 0.36' Overlap
Cap Storage= 39.5 cf x 2 x 3 rows = 237.0 cf

100.0" Wide + 9.0" Spacing = 109.0" C-C Row Spacing

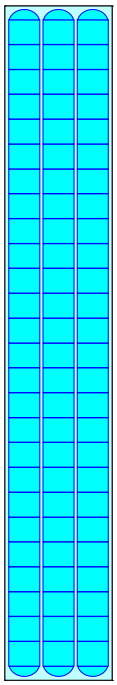
26 Chambers/Row x 6.59' Long +2.73' Cap Length x 2 = 176.85' Row Length +12.0" End Stone x 2 = 178.85' Base Length
3 Rows x 100.0" Wide + 9.0" Spacing x 2 + 12.0" Side Stone x 2 = 28.50' Base Width
48.0" Stone Base + 60.0" Chamber Height + 12.0" Stone Cover = 10.00' Field Height

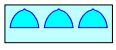
78 Chambers x 175.9 cf + 39.5 cf Cap Volume x 2 x 3 Rows = 13,955.3 cf Chamber Storage

50,972.3 cf Field - 13,955.3 cf Chambers = 37,017.0 cf Stone x 33.3% Voids = 12,326.6 cf Stone Storage

Chamber Storage + Stone Storage = 26,281.9 cf = 0.603 af
Overall Storage Efficiency = 51.6%
Overall System Size = 178.85' x 28.50' x 10.00'

78 Chambers
1,887.9 cy Field
1,371.0 cy Stone





Summary for Pond 6P: Green Roof Storm Sewer

Inflow Area = 3,966 sf, 8.83% Impervious, Inflow Depth = 4.96" for 200-year NRCS event
Inflow = 0.71 cfs @ 12.13 hrs, Volume= 1,639 cf
Outflow = 0.71 cfs @ 12.13 hrs, Volume= 1,639 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.40 cfs @ 12.13 hrs, Volume= 1,526 cf
Routed to Pond 3P : Underground Infiltration 2
Secondary = 0.31 cfs @ 12.13 hrs, Volume= 113 cf
Routed to Link W : West - Strickers Pond

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Peak Elev= 1,026.54' @ 12.13 hrs
Flood Elev= 1,027.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	1,026.00'	**6.0" Round Culvert** L= 10.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 1,026.00' / 1,025.90' S= 0.0100 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.20 sf
#2	Secondary	1,026.50'	**20.0' long x 5.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.34 2.50 2.70 2.68 2.68 2.66 2.65 2.65 2.65 2.65 2.67 2.66 2.68 2.70 2.74 2.79 2.88

Primary OutFlow Max=0.40 cfs @ 12.13 hrs HW=1,026.54' TW=1,018.96' (Dynamic Tailwater)
1=Culvert (Inlet Controls 0.40 cfs @ 2.03 fps)

Secondary OutFlow Max=0.31 cfs @ 12.13 hrs HW=1,026.54' TW=0.00' (Dynamic Tailwater)
2=Broad-Crested Rectangular Weir (Weir Controls 0.31 cfs @ 0.44 fps)

Summary for Pond 7P: Green Roof Storm Sewer

Inflow Area = 4,952 sf, 10.80% Impervious, Inflow Depth = 5.01" for 200-year NRCS event
Inflow = 0.89 cfs @ 12.13 hrs, Volume= 2,067 cf
Outflow = 0.89 cfs @ 12.13 hrs, Volume= 2,067 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.41 cfs @ 12.13 hrs, Volume= 1,851 cf
Routed to Pond 4P : Underground Infiltration 1
Secondary = 0.48 cfs @ 12.13 hrs, Volume= 216 cf
Routed to Link W : West - Strickers Pond

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Peak Elev= 1,026.55' @ 12.13 hrs
Flood Elev= 1,027.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	1,026.00'	**6.0" Round Culvert** L= 10.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 1,026.00' / 1,025.90' S= 0.0100 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.20 sf
#2	Secondary	1,026.50'	**20.0' long x 5.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.34 2.50 2.70 2.68 2.68 2.66 2.65 2.65 2.65 2.65 2.67 2.66 2.68 2.70 2.74 2.79 2.88

Primary OutFlow Max=0.41 cfs @ 12.13 hrs HW=1,026.55' TW=1,019.25' (Dynamic Tailwater)
└**1=Culvert** (Inlet Controls 0.41 cfs @ 2.07 fps)

Secondary OutFlow Max=0.48 cfs @ 12.13 hrs HW=1,026.55' TW=0.00' (Dynamic Tailwater)
└**2=Broad-Crested Rectangular Weir** (Weir Controls 0.48 cfs @ 0.51 fps)

Summary for Link 1L: E Spyglass Ct

Inflow Area = 141,347 sf, 60.53% Impervious, Inflow Depth = 2.46" for 200-year NRCS event
Inflow = 2.90 cfs @ 12.51 hrs, Volume= 28,954 cf
Primary = 2.90 cfs @ 12.51 hrs, Volume= 28,954 cf, Atten= 0%, Lag= 0.0 min
Routed to Link W : West - Strickers Pond

Primary outflow = Inflow, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs

Summary for Link 2L: North - Harvest Hill Rd

Inflow Area = 8,146 sf, 0.00% Impervious, Inflow Depth = 4.17" for 200-year NRCS event
Inflow = 1.26 cfs @ 12.13 hrs, Volume= 2,833 cf
Primary = 1.26 cfs @ 12.13 hrs, Volume= 2,833 cf, Atten= 0%, Lag= 0.0 min
Routed to Link W : West - Strickers Pond

Primary outflow = Inflow, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs

Summary for Link E: East - Mendota-Gammon Greenway

Inflow Area = 3,400 sf, 42.06% Impervious, Inflow Depth = 5.48" for 200-year NRCS event
Inflow = 0.63 cfs @ 12.13 hrs, Volume= 1,554 cf
Primary = 0.63 cfs @ 12.13 hrs, Volume= 1,554 cf, Atten= 0%, Lag= 0.0 min
Routed to Link Pro : Post

Primary outflow = Inflow, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs

Summary for Link Pro: Post

Inflow Area = 161,025 sf, 55.45% Impervious, Inflow Depth = 2.76" for 200-year NRCS event
Inflow = 5.49 cfs @ 12.14 hrs, Volume= 37,096 cf
Primary = 5.49 cfs @ 12.14 hrs, Volume= 37,096 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs

Summary for Link W: West - Strickers Pond

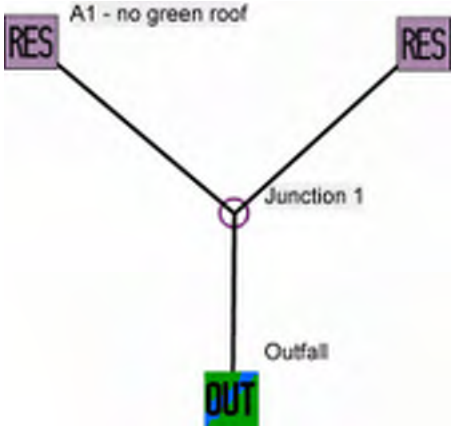
Inflow Area = 157,625 sf, 55.74% Impervious, Inflow Depth = 2.71" for 200-year NRCS event
Inflow = 4.86 cfs @ 12.14 hrs, Volume= 35,542 cf
Primary = 4.86 cfs @ 12.14 hrs, Volume= 35,542 cf, Atten= 0%, Lag= 0.0 min
Routed to Link Pro : Post

Primary outflow = Inflow, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs

TABLE OF CONTENTS

APPENDIX F

Infiltration Water Quality Calculations


A1 - no green roof
RES
RES
B1 - no green roof
Junction 1
Outfall
OUT

Data file name: \\WYSERSERVER2\Wyser Engineering\2023\231085_Butcher - 6706-6614 Old Sauk Road\SWMP\SLAMM\231085_6706-6614 Old Sauk Road_no gre
WinSLAMM Version 10.4.1
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:
If Other Device Pollutant Load Reduction Values = 1, Off-site Pollutant Loads are Removed from Pollutant Load % Reduction calculations
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: 04-05-2024 Time: 13:09:42
Site information:

LU# 1 - Residential: A1 - no green roof Total area (ac): 0.113
1 - Roofs 1: 0.101 ac. Flat Connected PSD File: C:\WinSLAMM Files\NURP.cpz
31 - Sidewalks 1: 0.012 ac. Connected PSD File: C:\WinSLAMM Files\NURP.cpz

LU# 2 - Residential: B1 - no green roof Total area (ac): 0.091
1 - Roofs 1: 0.083 ac. Flat Connected PSD File: C:\WinSLAMM Files\NURP.cpz
31 - Sidewalks 1: 0.008 ac. Connected PSD File: C:\WinSLAMM Files\NURP.cpz

SLAMM for Windows Version 10.4.1

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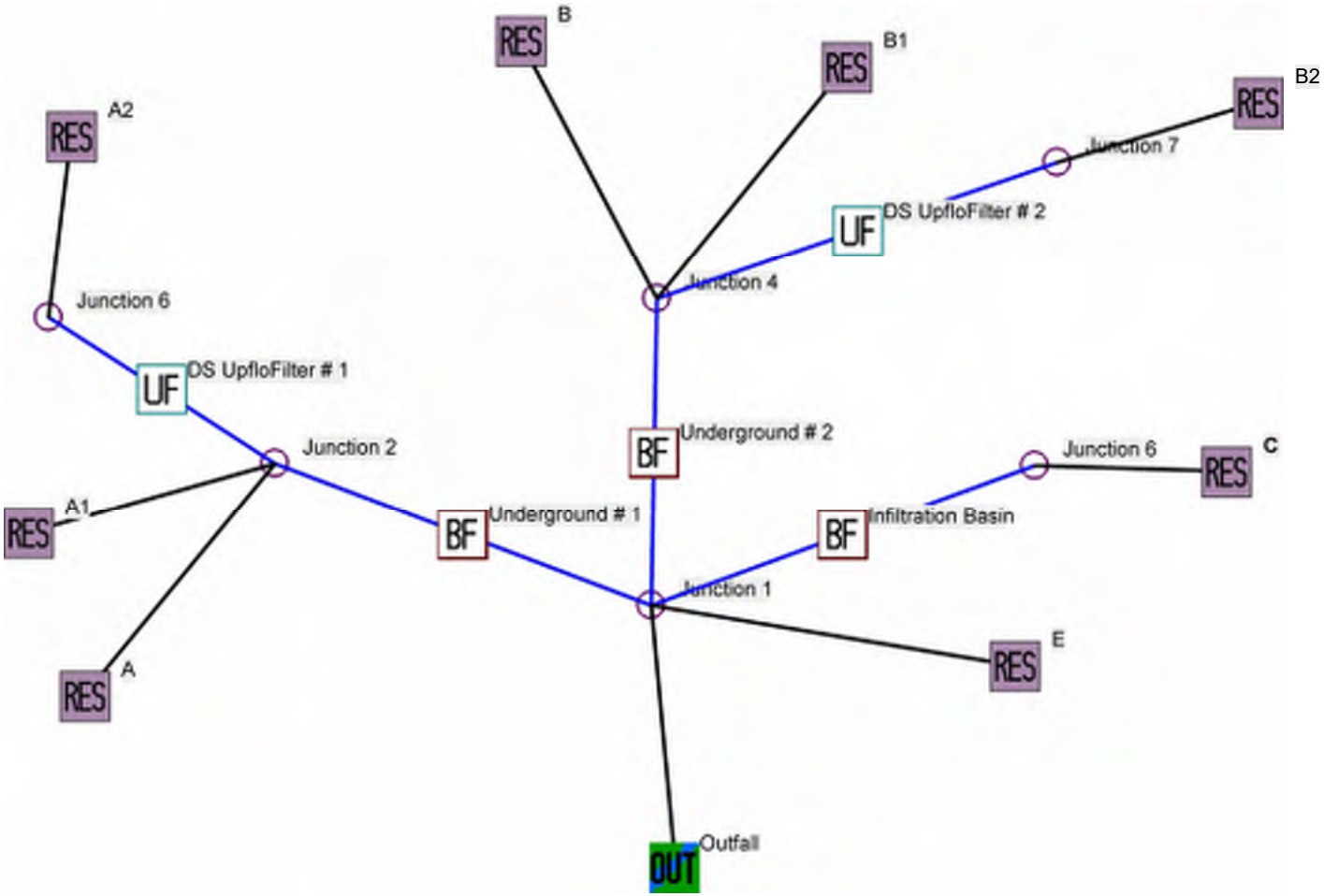
WinSLAMM Version 10.4.1
Rain file name: C:\WinSLAMM Files\Rain Files\WisReg - Madison WI 1981.RAN
Particulate Solids Concentration file name: C:\WinSLAMM Files\v10.1 WI_AVG01.pscx
Runoff Coefficient file name: C:\WinSLAMM Files\WI_SL06 Dec06.rsvx
Pollutant Relative Concentration file name: C:\WinSLAMM 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:
If Other Device Pollutant Load Reduction Values = 1, Off-site Pollutant Loads are Removed from Pollutant Load % Reduction calculations
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: 04-05-2024 Time of run: 13:10:25
Total Area Modeled (acres): 0.204
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:	16279	-	40.54	41.20	-
Outfall Total with Controls:	16278	0.01%	40.55	41.20	0.00%
Annualized Total After Outfall Controls:	16323			41.32	


RES
B
RES
B1
RES
B2
RES
A2
Junction 7
UF
DS UpfloFilter # 2
Junction 4
Junction 6
UF
DS UpfloFilter # 1
BF
Underground # 2
Junction 6
RES
C
Junction 2
RES
A1
BF
Underground # 1
BF
Infiltration Basin
Junction 1
RES
E
RES
A
OUT
Outfall

Data file name: \\WYSERSERVER2\Wyser Engineering\2023\231085_Butcher - 6706-6614 Old Sauk Road\SWMP\SLAMM\231085_6706-6614 Old Sauk Road.mdb
WinSLAMM Version 10.4.1
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:
If Other Device Pollutant Load Reduction Values = 1, Off-site Pollutant Loads are Removed from Pollutant Load % Reduction calculations
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: 04-05-2024 Time: 13:06:11
Site information:

Pre-Development Area Description	Pre-Development Area (ac)	Pre-Development CN
Grass	1.650	61
Woods	2.050	55
Total Area (ac)/Composite CN	3.700	58

LU# 1 - Residential: A Total area (ac): 0.670
1 - Roofs 1: 0.670 ac. Flat Connected Source Area PSD File: C:\WinSLAMM Files\NURP.cpz

LU# 2 - Residential: A1 Total area (ac): 0.113
31 - Sidewalks 1: 0.012 ac. Connected Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
45 - Large Landscaped Areas 1: 0.101 ac. Normal Clayey Source Area PSD File: C:\WinSLAMM Files\NURP.cpz

LU# 3 - Residential: A2 Total area (ac): 0.789
13 - Paved Parking 1: 0.331 ac. Connected Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
31 - Sidewalks 1: 0.197 ac. Connected Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
45 - Large Landscaped Areas 1: 0.261 ac. Normal Clayey Source Area PSD File: C:\WinSLAMM Files\NURP.cpz

LU# 4 - Residential: B Total area (ac): 0.291
1 - Roofs 1: 0.291 ac. Flat Connected Source Area PSD File: C:\WinSLAMM Files\NURP.cpz

LU# 5 - Residential: B1 Total area (ac): 0.091
31 - Sidewalks 1: 0.008 ac. Connected Source Area PSD

File: C:\WinSLAMM Files\NURP.cpz
     45 - Large Landscaped Areas 1: 0.083 ac.   Normal Clayey
 Source Area PSD File: C:\WinSLAMM Files\NURP.cpz

LU# 6 - Residential: B2   Total area (ac): 0.677
     1 - Roofs 1: 0.182 ac.   Flat   Connected   Source Area
PSD File: C:\WinSLAMM Files\NURP.cpz
     13 - Paved Parking 1: 0.159 ac.   Connected   Source Area
PSD File: C:\WinSLAMM Files\NURP.cpz
     31 - Sidewalks 1: 0.100 ac.   Connected   Source Area PSD
File: C:\WinSLAMM Files\NURP.cpz
     45 - Large Landscaped Areas 1: 0.236 ac.   Normal Clayey
 Source Area PSD File: C:\WinSLAMM Files\NURP.cpz

LU# 7 - Residential: C   Total area (ac): 0.514
     31 - Sidewalks 1: 0.013 ac.   Connected   Source Area PSD
File: C:\WinSLAMM Files\NURP.cpz
     45 - Large Landscaped Areas 1: 0.471 ac.   Normal Clayey
 Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     70 - Water Body Areas: 0.030 ac.   Source Area PSD File:

LU# 8 - Residential: E   Total area (ac): 0.551
     13 - Paved Parking 1: 0.017 ac.   Connected   Source Area
PSD File: C:\WinSLAMM Files\NURP.cpz
     31 - Sidewalks 1: 0.068 ac.   Connected   Source Area PSD
File: C:\WinSLAMM Files\NURP.cpz
     45 - Large Landscaped Areas 1: 0.466 ac.   Normal Clayey
 Source Area PSD File: C:\WinSLAMM Files\NURP.cpz

      Control Practice 1: Biofilter CP# 1 (DS) - Underground # 1
         1. Top area (square feet) = 5000
         2. Bottom aea (square feet) = 5000
         3. Depth (ft):   9

4. Biofilter width (ft) - for Cost Purposes Only: 10
5. Infiltration rate (in/hr) = 0.5
6. Random infiltration rate generation? No
7. Infiltration rate fraction (side): 0.001
8. Infiltration rate fraction (bottom): 1
9. Depth of biofilter that is rock filled (ft) 4
10. Porosity of rock filled volume = 0.33
11. Engineered soil infiltration rate: 0
12. Engineered soil depth (ft) = 0
13. Engineered soil porosity = 0.27
14. Percent solids reduction due to flow through engineered soil = 0
15. Biofilter peak to average flow ratio = 3.8
16. Number of biofiltration control devices = 1
17. Particle size distribution file: Not needed - calculated by program
18. Initial water surface elevation (ft): 0

Soil Data Soil Type Fraction in Eng. Soil

User-Defined Soil Type 1.000

Biofilter Outlet/Discharge Characteristics:

Outlet type: Sharp Crested Weir

1. Weir length (ft): 4
2. Invert elevation above datum (ft): 8.5

Outlet type: Broad Crested Weir

1. Weir crest length (ft): 0.01
2. Weir crest width (ft): 0.01
3. Height of datum to bottom of weir opening: 8.99

Outlet type: Surface Discharge Pipe

1. Surface discharge pipe outlet diameter (ft): 0.5
2. Pipe invert elevation above datum (ft): 7
3. Number of surface pipe outlets: 1

Control Practice 2: Biofilter CP# 2 (DS) - Underground # 2

1. Top area (square feet) = 3000
2. Bottom aea (square feet) = 3000
3. Depth (ft): 9
4. Biofilter width (ft) - for Cost Purposes Only: 10
5. Infiltration rate (in/hr) = 1.63
6. Random infiltration rate generation? No
7. Infiltration rate fraction (side): 0.001
8. Infiltration rate fraction (bottom): 1
9. Depth of biofilter that is rock filled (ft) 4
10. Porosity of rock filled volume = 0.33
11. Engineered soil infiltration rate: 0
12. Engineered soil depth (ft) = 0
13. Engineered soil porosity = 0.27
14. Percent solids reduction due to flow through engineered soil = 0
15. Biofilter peak to average flow ratio = 3.8
16. Number of biofiltration control devices = 1
17. Particle size distribution file: Not needed - calculated by program
18. Initial water surface elevation (ft): 0

Soil Data Soil Type Fraction in Eng. Soil

User-Defined Soil Type 1.000

Biofilter Outlet/Discharge Characteristics:

Outlet type: Sharp Crested Weir

1. Weir length (ft): 4
2. Invert elevation above datum (ft): 8.5

Outlet type: Broad Crested Weir

1. Weir crest length (ft): 0.01
2. Weir crest width (ft): 0.01
3. Height of datum to bottom of weir opening: 8.99

Outlet type: Surface Discharge Pipe

1. Surface discharge pipe outlet diameter (ft): 0.5
2. Pipe invert elevation above datum (ft): 7
3. Number of surface pipe outlets: 1

Control Practice 3: Upflo Filter CP# 1 (DS) - DS UpfloFilter # 1
Media Type: CPZ
Fraction of Area Served by Upflo Filters (0-1): 1.0
Height from Outlet Invert to Structure Top (ft): 3.0
Sump Depth (ft): 3.00
The program will determine the Sump Cleaning/Filter Replacement Frequency
Solve for Given Conditions
Number of filters: 10

Control Practice 4: Upflo Filter CP# 2 (DS) - DS UpfloFilter # 2
Media Type: CPZ
Fraction of Area Served by Upflo Filters (0-1): 1.0
Height from Outlet Invert to Structure Top (ft): 3.0
Sump Depth (ft): 3.00
The program will determine the Sump Cleaning/Filter Replacement Frequency
Solve for Given Conditions
Number of filters: 10

Control Practice 5: Biofilter CP# 3 (DS) - Infiltration Basin
1. Top area (square feet) = 17100
2. Bottom aea (square feet) = 1300
3. Depth (ft): 7.5
4. Biofilter width (ft) - for Cost Purposes Only: 10
5. Infiltration rate (in/hr) = 0.5
6. Random infiltration rate generation? No
7. Infiltration rate fraction (side): 0.001
8. Infiltration rate fraction (bottom): 1
9. Depth of biofilter that is rock filled (ft) 4
10. Porosity of rock filled volume = 0.33
11. Engineered soil infiltration rate: 3.6
12. Engineered soil depth (ft) = 0.5
13. Engineered soil porosity = 0.27

14. Percent solids reduction due to flow through engineered soil = 80
15. Biofilter peak to average flow ratio = 3.8
16. Number of biofiltration control devices = 1
17. Particle size distribution file: Not needed - calculated by program
18. Initial water surface elevation (ft): 0

Soil Data Soil Type Fraction in Eng. Soil

User-Defined Soil Type 1.000

Biofilter Outlet/Discharge Characteristics:

Outlet type: Broad Crested Weir

1. Weir crest length (ft): 20
2. Weir crest width (ft): 6
3. Height of datum to bottom of weir opening: 6.5

Outlet type: Vertical Stand Pipe

1. Stand pipe diameter (ft): 3
2. Stand pipe height above datum (ft): 4.85

Outlet type: Drain Tile/Underdrain

1. Underdrain outlet diameter (ft): 0.5
2. Invert elevation above datum (ft): 3.5
3. Number of underdrain outlets: 1

SLAMM for Windows Version 10.4.1

Data file name: \\WYSERSERVER2\Wyser Engineering\2023\231085_Butcher - 6706-6614 Old Sauk Road\SWMP\SLAMM\231085_6706-6614 Old Sauk Road.mdb
WinSLAMM Version 10.4.1
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:
If Other Device Pollutant Load Reduction Values = 1, Off-site Pollutant Loads are Removed from Pollutant Load % Reduction calculations
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: 04-05-2024 Time of run: 13:08:33
Total Area Modeled (acres): 3.696
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:	176226	-	76.86	845.6	-
Outfall Total with Controls:	10110	94.26%	137.0	86.48	89.77%
Annualized Total After Outfall Controls:	10138			86.72	

Data File: \\WYSERSERVER2\Wyser Engineering\2023\231085_Butcher - 6706-6614 Old Sauk Road\SWMP\SLAMM\231085_6706-6614 Old Sauk Road.mdb
Rain File: WisReg - Madison WI 1981.RAN
Date: 04-05-24 Time: 9:45:52 AM
Site Description:

Col. #:	2	3	4	5	6	7	8	9	10	11	12	13	14	15	18	19	27	28	29	30	31	32	33	34	35	39	48	49	50	51	52	54	61
Control Practice No.	Control Practice Type	Control Practice Name or Location	Total Inflow Volume (cf)	Total Outflow Volume (cf)	Percent Volume Reduction	Total Influent Load (lbs)	Total Effluent Load (lbs)	Percent Load Reduction	Weighted Influent Conc (mg/L)	Weighted Effluent Conc (mg/L)	Percent Conc. Reduction	Influent Median Part. Size (microns)	Effluent Median Part. Size (microns)	Notes	Maximum Stage (ft)	Hydraulic Volume Out (cf)	Surface Ponding Time (hrs)	Maximum Subsurface Ponding Time (hrs)	Volume Infiltrated (cf)	Underdrain Discharge Vol. (cf)	Evapo-Transpir. Vol. (cf)	Minimum Soil Moist. (frac)	Surface Discharge Bypass Vol. (cf)	Evap. Vol. (cf)	Volume Supplemtl. Irriq.(cf)	Ponding Events >72 hrs (Count)	Cartridge Flow Volume (cf)	Cartridge Effluent Conc. (mg/L)	Cartridge Effluent Mass (lbs)	Final Device Sediment Depth (ft)	Average Cleaning Frequency (yrs)	Residence Time in Media (hrs)	Runoff Producing Events/ Ttl. Rains
1	Biofilter	Underground # 1	97688	0	100	197.5	0	100	32.39	0	100	7.03	0	No Biofilter Overflows	5.41	0	39.9	68.06	180297	0			0			0						0	0/90
2	Biofilter	Underground # 2	60808	0	100	98.64	0	100	25.98	0	100	6.8	0	No Biofilter Overflows	4.88	0	11.8	17.66	114157.5	0			0			0						0	0/90
3	Upflo Filter	DS UpfloFilter # 1	42127	42236	-0.259	303	57.89	80.89	115.2	21.96	80.94	7.8	5.34		5.83												42114	21.72	57.12	0.05	Not Cleaned	0.038	90/90
4	Upflo Filter	DS UpfloFilter # 2	36112	36205	-0.258	193.5	32.64	83.13	85.82	14.44	83.172	7.8	5.19		5.83												36166	14.38	32.46	0.03	Not Cleaned	0.039	90/90
5	Biofilter	Infiltration Basin	7822	0	100	57.02	0	100	116.8	0	100	7.8	0	No Biofilter Overflows	4.54	0	0.8	15.3	7839.51	0			0			0						0.45	0/90

Data File: \\WYSERSERVER2\Wyser Engineering\2023\231085_Butcher - 6706-6614 Old Sauk Road\SWMP\SLAMM\231085_6706-6614 Old Sau
Rain File: WisReg - Madison WI 1981.RAN
Date: 04-05-24 Time: 9:45:52 AM
Site Description:

Runoff Volume Total (cf) at the Outfall

Rain Numb	Start Date	Rain Total	Outfall Tot	Rv	Total Loss	Calculated Event Peal	Pre-Dev Runoff Vol. (cf)
Minimum:		0	0	0.002	0.01	56.2 0	0
Maximum:		2.59	1608	0.046	2.47	99.6 0.253	2088
Average:		0.26	92.75	0.011	0.26	72 0.074	31.8
Total:		28.81	10110		28.09		2859

* Note: NRCS does not recommend using CN method for rains < 0.5 in.
See 'PreDevelopment Areas and CN' Help for more info.

Infiltration Calculations - WinSLAMM

Project: Old Sauk Road Apartments
Modeled By: KLM
Date: 04/08/24

WYSER ENGINEERING
300 E. Front Street
Mt. Horeb, Wisconsin 53572
Ph: (608) 437-1980

Watershed	WinSLAMM Node	Area	Postdevelopment Stay-on No Controls		Post Development Infiltration Runoff	Postdevelopment Stay-on with Controls		Runoff
		(Acres)	(in)	(cf)	(cf)	(in)	(cf)	(cf)
		A	**E**	**F**	**G**	**H**	**I**	**J**
			= F / A	= (28.81 * A) - G	(From SLAMM)	= I / A	= (28.12 * A) - J	(From SLAMM)
Watershed A - Underground Infiltration 1	**Watershed A**	0.67	6.72	16,355	53,749	-	-	-
Watershed A1 - Green Roof - E	**Watershed A1**	0.11	6.97	2,876	9,013	-	-	-
-	**Green Roof - East**	-	-	-	-	-	10,185	1704
Watershed A2 - Up-Flo Filter 1	**Watershed A2**	0.79	14.09	40,344	42,129	-	-	-
-	**Underground Infiltration 1**	-	-	-	-	-	154,282	0
Watershed B - Underground Infiltration 2	**Watershed B**	0.29	6.74	7,124	23,343	-	-	-
Watershed B1 - Green Roof - W	**Watershed B1**	0.09	6.83	2,256	7,266	-	-	-
-	**Green Roof - West**	-	-	-	-	-	8,263	1259
Watershed B2 - Up-Flo Filter 2	**Watershed B2**	0.68	14.12	34,708	36,112	-	-	-
-	**Underground Infiltration 2**	-	-	-	-	-	102,545	0
Watershed C - Infiltration Basin	**Watershed C**	0.51	24.62	45,918	7,822	-	-	-
-	**Infiltration Basin**	-	-	-	-	-	53,740	0
Watershed E - No Treatment	**Watershed E**	0.55	23.75	47,469	10,110	-	47,469	10110
		3.70	14.68	197,050	189,544	28.06	376,484	10,110

Predevelopment Stay-on (from WinSLAMM - New Development Area Only)					Post-Development (WinSLAMM)	
Predevelopment Stay-on		Runoff	Stay-on Required (90% Predevelopment Stay-on)		Stay-on Provided (Entire Development)	
K	**L**	**M**	**N**	**O1**	**T**	**U**
= L / A	= (28.81 * A) - M	(From SLAMM)	= K * 90%	= L * 90%	= H	= I
(in)	(cf)	(cf)	(in)	(cf)	(in)	(cf)
28.60	383,735	2,859	25.74	345,362	28.06	376,484

TSS Calculations - WinSLAMM

Project: Old Sauk Road Apartments
Modeled By: KLM
Date: 04/08/2024

WYSER ENGINEERING
300 E. Front Street
Mt. Horeb, Wisconsin 53572
Ph: (608) 437-1980

Watershed	WinSLAMM Node	Area	Particulate Solids Yield	Treatement Required	Post Development Particulate Solids Treatement Required	Particulate Solid Yield After Controls	Particulate Solids Treatement Provided	Percent Reduction
		(Acres)	(lbs)	(%)	(lbs)	(lbs)	(lbs)	(%)
Watershed A - Underground Infiltration 1	Watershed A	0.67	124.2	80.00%	99.3	-	-	-
Watershed A1 - Green Roof - E	Watershed A1	0.11	23.0	80.00%	18.4	-	-	-
-	Green Roof - East	-	-	-	-	15.5	7.48	32.55%
Watershed A2 - Up-Flo Filter 1	Watershed A2	0.79	303.0	80.00%	242.4	-	-	-
-	Up-Flo Filter 1	-	-	-	-	57.9	245.06	80.89%
-	Underground Infiltration 1	-	-	-	-	0.0	197.54	100.00%
Watershed B - Underground Infiltration 2	Watershed B	0.29	53.9	80.00%	43.1	-	-	-
Watershed B1 - Green Roof - W	Watershed B1	0.09	18.2	80.00%	14.6	-	-	-
-	Green Roof - West	-	-	-	-	12.1	6.14	33.70%
Watershed B2 - Up-Flo Filter 2	Watershed B2	0.68	193.5	80.00%	154.8	-	-	-
-	Up-Flo Filter 2	-	-	-	-	32.6	160.81	83.13%
-	Underground Infiltration 2	-	-	-	-	0.0	98.64	100.00%
Watershed C - Infiltration Basin	Watershed C	0.51	57.0	80.00%	45.6	-	-	-
-	Infiltration Basin	-	-	-	-	0.0	57.01	100.00%
Watershed E - No Treatment	Watershed E	0.55	86.5	80.00%	69.2	86.5	0.00	0.00%
		3.70	859.2	80.00%	687.3	86.5	772.7	89.93%

APPENDIX G

Declaration of Conditions, Covenants and Restrictions for

Maintenance of Stormwater Management Measures

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

This space is reserved for recording data

Return to:
Daniel Olivares
City Engineering Division
Rm. 115, City-County Building
Madison, Wisconsin

Tax Parcel No.: 251-____-___-____-_

RECITALS:

A. _____, is the owner of _____, more particularly described on Exhibit A attached hereto ("Property").

B. Owner desires to construct buildings and/or parking facilities on the Property in accordance with certain plans and specifications approved by the City.

C. The City requires Owner to record this Declaration regarding maintenance of stormwater management measures to be located on the Property. Owner agrees 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 owner agrees as follows:

1. Maintenance. Owner and its 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. Owner 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 Owner fails to maintain the stormwater management measures as required in Section 1, then City shall have the right, after providing Owner 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. and Section 4.09 of the Madison General Ordinances.

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 Dane 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 Dane 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 Owner: _____
_____
_____
_____
_____

If to City: City Engineering Division
Room 115, City County Building
210 Martin Luther King Jr. Blvd.
Madison, WI 53703-3342
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 DANE) 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 Engineering Division
Rm. 115, City-County Building
Madison, Wisconsin

MAE:DAO

EXHIBIT A
Legal Description

Lot _, Dane County Certified Survey Map Number _____, recorded in Volume _____ of Certified Surveys, pages _____-_____, as Document No. _____, Dane County Register of Deeds, in the City of Madison, Dane County, Wisconsin.

EXHIBIT B
Maintenance Provisions

Applicable to All Facilities:

An initial installation certification (as-built) stamped by a P.E. registered in the state of Wisconsin shall be submitted to the City Engineer upon completion of construction. The as-built shall be of sufficient detail to show the system was constructed and is functioning as designed. A statement by the certifying P.E. along with a drawing and digital photographs will suffice.

Storm Sewer System

The owner shall maintain all components of the storm sewer system located onsite.

Installation and maintenance shall be in accordance with the manufacturer's guidelines. Any alterations to the approved storm sewer shall be approved by the City Engineer.

At a minimum, the storm sewer system shall be inspected annually and cleaned as needed to maintain design capacity.

Owner shall maintain records of inspections, cleaning and replacement of the storm sewer system all in accordance with Chapter 37 of the Madison General Ordinances.

Green Roof System

The owner shall maintain all components of the green roof system located onsite. Installation and maintenance shall be in accordance with the manufacturer's guidelines as included. Any alterations to approved Green Roof System shall be approved by the City Engineer. Owner shall maintain records of installation, inspections, cleaning, replacement, and any other maintenance all in accordance with Chapter 37 of the Madison General Ordinances.

A. Inspection frequency
    1. During vegetation establishment, green roofs shall be inspected at least twice a week. Water as needed.
    2. After vegetation has been established, green roof system must be inspected at least four times annually (at least once each season) and after every storm or melt event exceeding 1 inch.
    3. Additional inspections shall be completed after major weather events including but not limited to high winds and periods of drought.
B. General Inspection
    1. Inspect pipes, outlets, and overflows.
    2. Inspect structures for cracking, erosion, and deterioration at least once each year.
    3. Remove sediment, trash and debris as needed. Any clogs or blockages shall be removed as needed. Dispose of waste materials in accordance with local regulations.
    4. Inspect the green roof for potential issues which may include displaced soil, weeds, plant health, pest control and roof drains.
    5. Repairs must restore the component to the specifications of the original plan.
    6. Snow should not be moved or piled on the roof. De-icing materials should not be used on the green roof.
C. Vegetation Inspection
    1. It is strongly recommended to work with a landscaping professional to develop a site specific plan and determine the appropriate frequency and timing for vegetation maintenance. Different parts of the green roof may require different maintenance procedures due to microclimate conditions.
    2. Vegetative cover shall be maintained at 85%. Dead vegetation and bare soil areas shall be addressed as soon as practical and in accordance with the original specifications.
    3. Pruning and trimming of vegetation shall be performed on a regular schedule based on site specific conditions. Trimming, if needed, should be done using a string trimmer. Mowing with other equipment can damage the roof.
    4. Review and record plant health, density, and diversity.
    5. Periodically check soil depth and moisture levels across the planted area. Add growing media to the system as needed to maintain design depths.
    6. Use integrated pest management practices to minimize use of pesticides. Only use products and methods acceptable to membrane roofing manufacturer.
    7. To prevent the spread of weeds, it is recommended to do visual inspections every other week during the growing season and pulling any weeds before they go to seed.
    8. Look for and remove debris and dead vegetation. Minimize disruption to remaining vegetation when removing unwanted growth.
    9. Restoration of plant material shall be by plugging, not seeding alone.
D. Access and Safety
    1. In elevated environments, maintenance workers shall use appropriate fall protection and have proper training using these measures. Fall protection measures should be inspected annually.
    2. Mitigate fire risk by removing dry/dead vegetation regularly. Keep fire breaks around the perimeter of the planting bed clear of rubbish. Increase inspection during long dry spells and irrigate if needed.
E. Drain Time
    1. The green roof facilities shall be deemed to have failed if standing water is evident 72 hours after the rainfall event has ended. Ponding beyond 72 hours may result in odor, water quality, and mosquito breeding issues, vegetation loss, drain clogging, and damage to the roof. If the system has failed, the soil and plantings in the affected area shall be replaced to ensure proper infiltration and seepage into the underlying drain tiles.
F. Irrigation
    1. If the irrigation system is present, it should be turned on after the last frost in the spring and turned off before the first frost in the fall.
    2. In the fall, the irrigation system should be blown out and drained.
    3. Do not water the green roof between October 15 and April 1, unless temperatures are above 55 degrees Fahrenheit. If temperatures are unseasonably warm, manually water the green roof and take care to drain the system at the end of each watering.
    4. Consult your green roof manufacturer or landscaping professional to determine your irrigation duration and timing. Adjusted as needed.

a. A typical irrigation schedule for native vegetation roofs in the midwest during the establishment phase,is run 2-3 times daily for 5-10 minutes each cycle so that the soil remains damp.
b. Once the roof is established, run no more than once daily for 5-10 minutes each cycle.
c. Use a water sensor to minimize water use and monitor soil moisture.

Up-Flo Filter System

The owner shall install and maintain an Up-Flo Filter system (10-filter packs per device) as distributed by Hydro International. Said system is installed for water quality purposes of stormwater runoff from the parking lot. Installation and maintenance shall be in accordance with the manufacturer's guidelines. Inspection of the filter shall be done a minimum of two (2) times per year or as needed until an understanding of the site characteristics is developed. More specifically, within the manhole there is a sump that will the removal of floatable and oils that have accumulated on the water surface and removal of sediment from the sump. Maintenance performed inside the vessel includes removal and replacement of Media Bags, Flow Distribution Media and the Drain Down Filter. A vactor truck is required for removal of oils, water, sediment, and to completely pump out the vessel to allow for maintenance inside. The minimum required frequency for replacement of the media pack is annually. The minimum required frequency for removal of sediment is dependent on the site conditions and should be completed whenever the sump has 16-inches of move of sediment buildup. The Owner shall maintain records of inspections, any survey data and cleaning schedules all in accord with the requirements of the City of Madison of Ordinances.

Detailed information regarding installation and maintenance can be found on the Internet at www.hydro-int.com or by calling Hydro International at 207-756-6200.

Underground Infiltration System

The owner shall install and maintain an underground storage chamber system (MC-7200) as distributed by StormTech. Said system is installed for detention and infiltration purposes to control peak runoff discharge rates. Installation and maintenance shall be in accordance with the manufacturer's guidelines.

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 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. 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 inches throughout the length of the Isolator Row PLUS, clean-out should be performed. Maintenance is accomplished with the JetVac process. StormTech recommends a maximum nozzle pressure of 2000 psi be utilized during cleaning. The JetVac process shall only be performed on StormTech Isolator Row that have ADS Fabric (as specified by StormTech) over their angular base stone.

The Owner shall maintain records of inspections, any survey data and cleaning schedules all in accord with the requirements of the City of Madison Code of Ordinances.

Detailed information regarding installation and maintenance can be found on the Internet at www.stormtech.com or by calling StormTech at 888-892-2694.

Infiltration Basin

Infiltration Basin shall be installed in accordance with WDNR Conservation Practice Standard #1003 Infiltration Basin.

The Owners' Association shall visually inspect the infiltration basin, outfalls and outlet structure annually.

The infiltration basin shall be mowed a minimum of twice per year. Mowing shall maintain a minimum grass height of 6 to 8 inches. All undesirable vegetation and volunteer tree growth shall be removed, including close proximity to any outfall and the outlet structure.

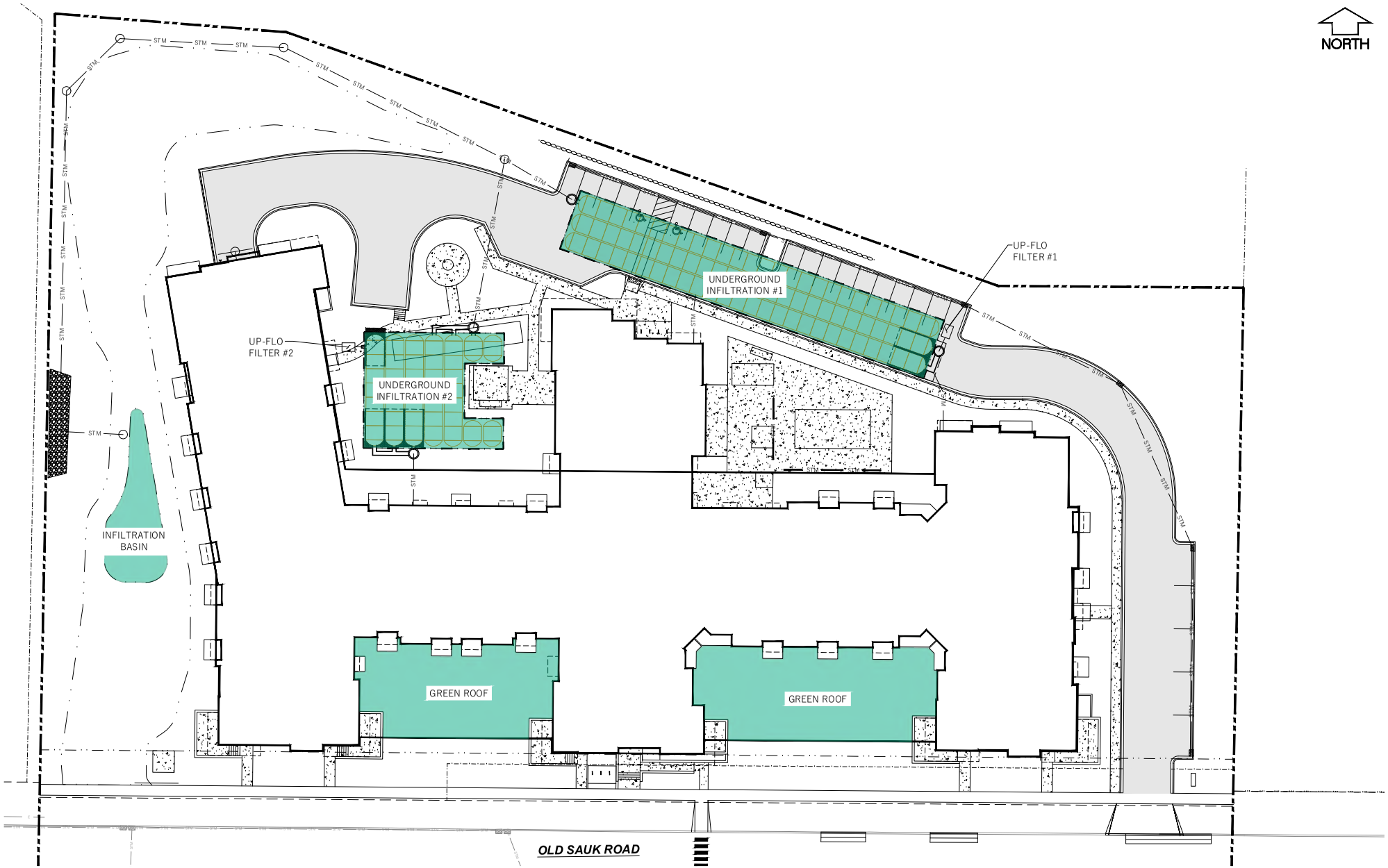
No structures of any kind are permitted within the infiltration basin area, without prior written approval of the City Engineer.

A topographic survey of the infiltration basin shall be taken once every three (3) years. The survey shall be of sufficient detail so as to insure maintenance of basin and outlet structure design and integrity of outfall structures. Survey data shall be sealed by a registered land surveyor and submitted to City Engineer for review.

Siltation in the basin, as identified by the topographic survey, shall be dredged and disposed offsite in accordance with NR 347. Dredging shall be as required by the City Engineer.

Maintenance shall be required when system shows standing water beyond 72 hours of rain event.

The Owners' Association shall maintain records of inspections, mowings, and survey data, all in accordance with Chapter 37 of the Madison General Ordinances.


NORTH
UP-FLO
FILTER #1
UNDERGROUND
INFILTRATION #1
UP-FLO
FILTER #2
UNDERGROUND
INFILTRATION #2
INFILTRATION
BASIN
GREEN ROOF
GREEN ROOF
OLD SAUK ROAD
STM