

2975 Kapec Road  
High-Density Residential Development  
Fitchburg, Wisconsin

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## PROJECT TEAM

CF Investments LLC  
3636 Skytop Road  
McFarland, WI 53558  
Contact: Craig Frank  
608.576.4309

Concepts in Architecture, LLC  
W125 Amidon Road  
Brooklyn, WI 53521  
Contact: Jeffrey Groenier, Architect  
608.698.3196

Snyder & Associates, Inc.  
5010 Voges Road  
Madison, WI 53718  
Contact: Brian Arcand, P.E.  
608.838.0444

## PROJECT LOCATION & GENERAL DESCRIPTION

This proposal is for the development of the Multi-Family Lot 1 from the Jamestown Quarry General Implementation Plan. This lot has been approved for high-density, multi-family units as part of the General Implementation Plan approved for the ~ 33-acre site northwest of McKee Road and Fitchrona Road.

The development will consist of 273 market-rate multi-family units serving the increased demand for quality, higher-density housing in the Fitchburg area over the next five years and beyond.

### Existing Site Conditions

A GIP approval was issued and recorded in May 2024 for the Jamestown Quarry. This SIP application is substantially in accordance with that GIP approval.

Legal Description: Lot \_\_, Certified Survey Map Number \_\_\_\_\_ as recorded in Volume \_\_\_\_ of Certified Survey Maps, on page \_\_\_\_ as Document Number \_\_\_\_\_, Dane County Registry and located in the SE Quarter of the SW Quarter of Section 06, Township 6 North, Range 9 East, City of Fitchburg, Dane County, Wisconsin.

## LAND USE

When complete, this project will contain multi-family residential units. The parcel will be consistent with the City's Comprehensive Plan with a High-Density Multi-Family Residential Use. The lot will have a total of 273 market-rate housing units. At the time of this Specific Implementation Plan, the mix of residential units (18 of which are townhome units) is as follows:

152 1-bedroom units	56%
101 2-bedroom units	37%
20 3-bedroom units	7%

## SITE DESIGN & GENERAL INFORMATION

### Vehicle Parking

The approved GIP does not include specific parking count requirements., however, it did state that parking should be located in the side yard, within the overall building footprint, or generally in a location separated from public right of way by buildings themselves. Additionally, a buffer should be provided between parking lots and adjoining streets using landscaping and/or decorative wall/fencing two to four feet in height. Parking lots with rows of more than fifteen (15) parking spaces should be interrupted by a landscaped median or island.

The proposed project provides 376 parking spaces with an additional 8 ADA parking spaces in the parking ramp on the interior of the building. The exterior parking provides an additional 67 parking stalls and another 2 ADA parking stalls for a total of 443 parking stalls and 10 ADA stalls for a combined total of 453 parking stalls, a ratio of 1.6 stalls per unit.

## Bicycle Parking

In addition to off-street vehicular parking, we are proposing dedicated bike storage areas that will provide 207 bike stalls in the covered parking area. In addition, there will be 36 bike parking spaces at the exterior of the buildings for use by visitors.

## Site Density

The overall density of the development is 41.84 dwelling units per acre, which is consistent with the GIP approval.

## Stormwater Management Overview

The stormwater for the site has been designed to handle all State, County, and City requirements on site. Additionally, due to downstream flooding issues, the City has asked that no more than 1 cfs per acre be discharged to Fitchrona Road in the 100-year storm event.

Stormwater discharge from the building and site has been designed to discharge to the infrastructure designed as part of that project. Incremental treatment infrastructure within the driveways and site will be provided as needed to connect to those facilities, and the project will meet certification requirements under the relevant ordinances, etc.

All City of Fitchburg ordinance requirements will be met.

Maintenance of all storm sewer structures, pipes, and stormwater management facilities within the development parcel will be the responsibility of the property owner.

## Landscape Design

The new landscape design for this project will meet all City of Fitchburg landscape design requirements.

## Refuse and Recycling Storage and Removal

A private waste management company will be contracted to provide recycling and refuse services as appropriate for the development. Dumpsters are located within the parking garage and will be brought outside on wheels and emptied.

## Specific Implementation Plan Data

At the time of this Specific Implementation Plan, the proposed data is as follows.

**Base Site Calculations**

Proposed Zoning	PD (Planned Development)
Lot Area	284,196 SF (6.5242 acres)
Lot Coverage	146,782 SF = 51.7%
Dwelling Units (DU)	273 units
Lot Area/DU	1,041 SF/DU
Density	41.84 DU/acre
Gross Floor Area (incl. parking garage)	103,622 SF

## Unit Types (includes 18 townhome units)

1-bedroom	152
2-bedroom	101
3-bedroom	20
<b>Total units</b>	<b>273</b>

## Parking spaces

Surface	69
Garage	384
<b>Total parking spaces</b>	<b>453</b>

## Bike parking spaces

Garage (long term)	207
Surface (short term)	36
<b>Total bike parking spaces</b>	<b>243</b>

Under the proposed Planned Development Zoning, the project shall meet the following GIP Zoning Standards:

Minimum Lot Area	Per adopted SIP plans
Minimum Lot Width at Front Yard	
Setback	Per adopted SIP plans
Minimum Lot Depth	Per adopted SIP Plans
Minimum Front Street Setback	30 feet
Minimum Side Setback	10 feet
Minimum Side Street Setback	20 feet
Minimum Rear Setback	25 feet
Maximum Building Height	The lesser of 5 stories or 62'

## PROJECT IMPLEMENTATION

The construction is anticipated to start in the fall of 2024 and maintain a schedule that allows for all improvements to be done in one single phase with completion in late 2025.

## NEIGHBORHOOD INPUT

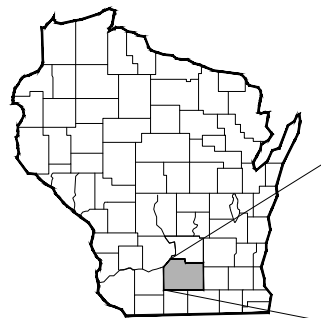
As this project is one portion of the larger project that has already had substantive neighborhood and community engagement and is consistent with that approved GIP

and Comprehensive plan, no building-specific additional engagement has been planned at this time.

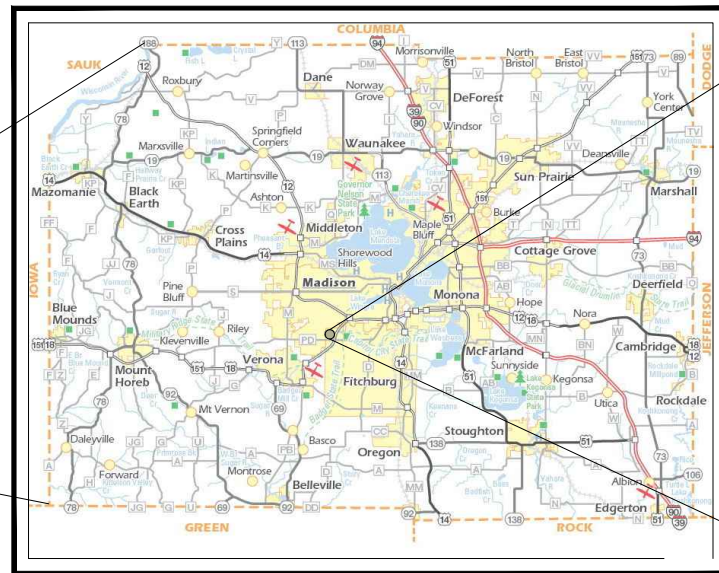
The neighborhood meeting for the GIP review took place on April 18, 2024.

# 2975 KAPEC ROAD CITY OF FITCHBURG

## SECTION 06, TOWNSHIP 6N, RANGE 9E



REGIONAL MAP



DANE COUNTY  
DANE COUNTY, WISCONSIN



SITE LOCATION MAP  
CITY OF FITCHBURG,  
DANE COUNTY, WISCONSIN



### CONTACT INFORMATION

ENGINEER:  
SNYDER & ASSOCIATES  
BRIAN ARCAND  
5010 VOGES ROAD  
MADISON, WI 53718  
608-838-0444 EXT. 3224

LAND OWNER  
CF INVESTMENTS LLC  
CRAIG FRANK  
3636 SKYTOP ROAD  
MCFARLAND, WI 53558

CITY OF FITCHBURG  
TIM VOELKER - DIRECTOR OF PUBLIC WORKS  
608-270-4261  
TRACY FOSS - ASSISTANT DIRECTOR OF PUBLIC WORKS  
608-270-4272  
5520 LACY RD  
FITCHBURG, WI 53711

### UTILITY CONTACT INFORMATION

AT&T  
CONTACT : LISA GUNDLACH  
152 DIXON STREET  
MADISON WI 53704  
608-252-2006

SPECTRUM  
CONTACT : BRANDON STORM  
2701 DANIEL STREET  
MADISON WI 53718  
608-444-9493

MG&E - ELECTRIC  
CONTACT : JIM HERFEL  
133 BLAIR STREET  
MADISON WI 53703  
608-252-7224

MG&E - GAS  
CONTACT : JANE ROSSING  
133 BLAIR STREET  
MADISON WI 53703  
608-252-7233

### Sheet List Table

Sheet Number	Sheet Title
C 100	TITLE SHEET
C 300	SITE PLAN
C 400	GRADING PLAN
C 401	EROSION CONTROL PLAN
C 402	BASIN DETAILS
C 403	DETAILED GRADING PLAN - WEST
C 404	DETAILED GRADING PLAN - EAST
C 500	UTILITY PLAN
C 700	NOTES
C 701	EROSION CONTROL NOTES
C 702	EROSION CONTROL DETAILS
C 703	SITE & PAVEMENT DETAILS
C 704	SITE AND PAVEMENT DETAILS CONTINUED
C 705	SANITARY DETAILS
C 706	STORM DETAILS
C 707	WATER MAIN DETAILS
L 100	LANDSCAPE NOTES
L 200	LANDSCAPE PLAN
L 300	LANDSCAPE DETAILS

### UTILITY WARNING

THE UTILITIES SHOWN HAVE BEEN LOCATED FROM FIELD SURVEY INFORMATION AND/OR RECORDS OBTAINED. THE SURVEYOR MAKES NO GUARANTEE THAT THE UTILITIES OR SUBSURFACE FEATURES SHOWN COMPRISE ALL SUCH ITEMS IN THE AREA, EITHER IN SERVICE OR ABANDONED. THE SURVEYOR FURTHER DOES NOT WARRANT THAT THE UTILITIES OR SUBSTANCES FEATURES SHOWN ARE IN EXACT LOCATION INDICATED.



TO OBTAIN LOCATION OF PARTICIPANTS' UNDERGROUND FACILITIES BEFORE YOU DIG IN WISCONSIN

**CALL DIGGERS HOTLINE**  
**1-800-242-8511**  
**TOLL FREE**

WIS. STATUTE 182.0175 (1974) REQUIRES MIN. OF 3 WORK DAYS NOTICE BEFORE YOU EXCAVATE

2975 KAPEC ROAD

TITLE SHEET

**SNYDER & ASSOCIATES, INC.**



Project No: 124.0465.30

Sheet C 100

CITY OF FITCHBURG, DANE COUNTY, WI

5010 VOGES ROAD  
MADISON, WISCONSIN 53718  
608-838-0444 | www.snyder-associates.com

Sheet C 100

Project No: 124.0465.30

MARK	REVISION	DATE	BY
Engineer: BCA	Checked By: MLC	Scale: 1" = ##	
Technician: TECH	Date: 05-21-24	T-R-S: TTN-RRW-SS	

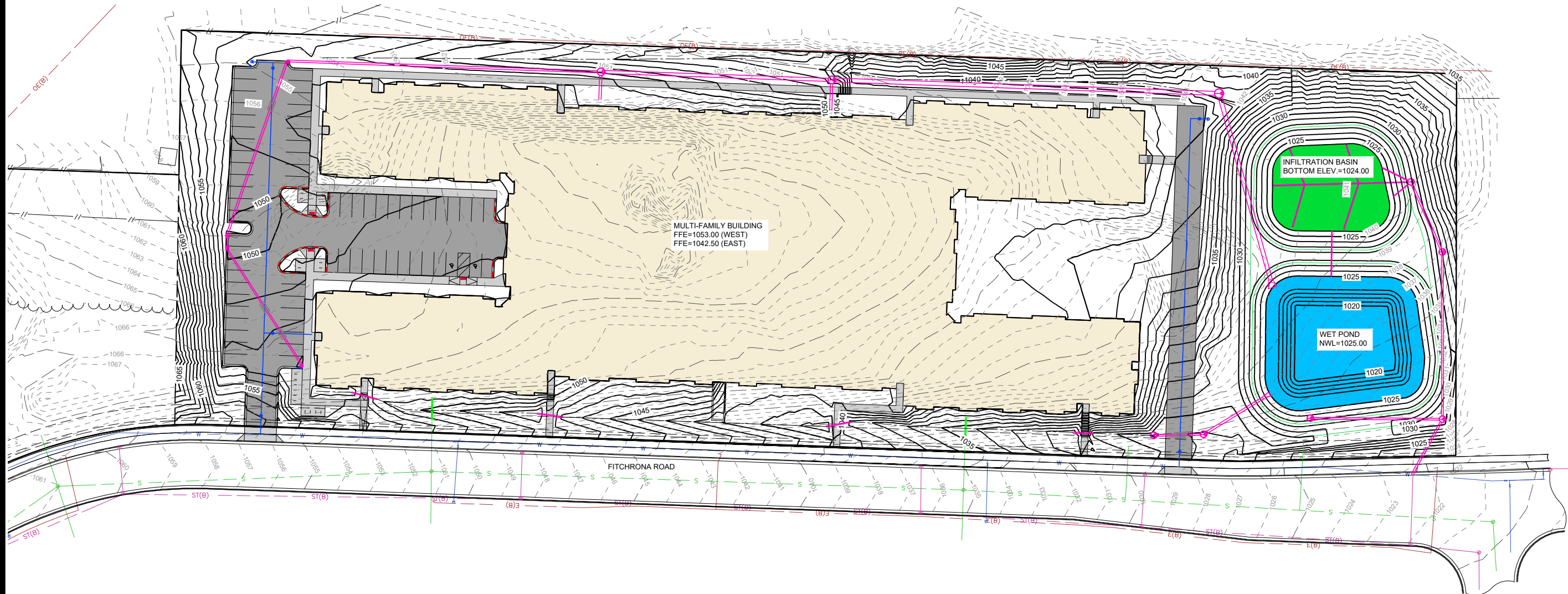
SIP SUBMITTAL 07-25-24 BCA

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**CONSTRUCTION SEQUENCE**  
 (09-01-2024) - INSTALL EROSION CONTROL DEVICES  
 (09-01-2024 - 09-15-2024) - STRIP AND STOCKPILE TOPSOIL  
 (09-15-2024 - 04-14-2025) - GRADE SITE  
 (04-14-2025 - 06-14-2025) - SEED AND MULCH AND ESTABLISH VEGETATION  
 \*REMOVE EROSION CONTROL MEASURES ONLY AFTER SOILS HAVE BEEN STABILIZED

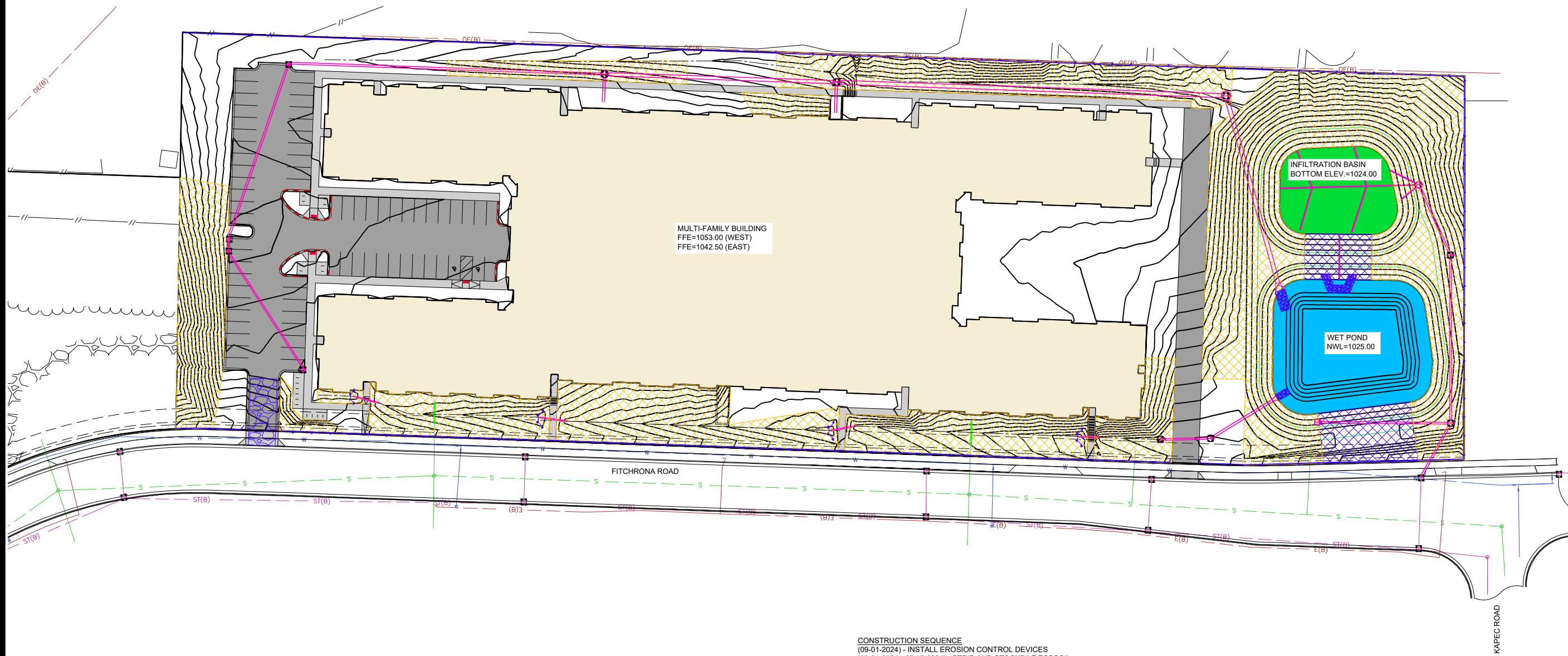
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Engineer:	BCA	Checked By:	MLC
Technician:	TECH	Date:	05-21-24
Project No.:			124,0465.30
Sheet:			C 400

**2975 KAPEC ROAD**  
**GRADING PLAN**  
 CITY OF FITCHBURG, DANE COUNTY, WI  
**SNYDER & ASSOCIATES, INC.**  
 5010 VOGES ROAD  
 MADISON, WISCONSIN 53718  
 608-838-0444 | www.snyder-associates.com

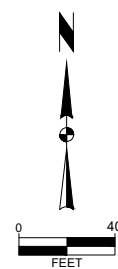
**SNYDER & ASSOCIATES**

Project No: 124,0465.30  
 Sheet C 400

- LEGEND**
-  CONSTRUCTION ENTRANCE
  -  SILT FENCE
  -  INLET PROTECTION
  -  EROSION MATTING
  -  TURF REINFORCEMENT MAT
  -  TEMPORARY STONE CULVERT PROTECTION
  -  RIP RAP



**CONSTRUCTION SEQUENCE**  
 (09-01-2024) - INSTALL EROSION CONTROL DEVICES  
 (09-01-2024 - 09-15-2024) - STRIP AND STOCKPILE TOPSOIL  
 (09-15-2024 - 04-14-2025) - GRADE SITE  
 (04-14-2025 - 06-14-2025) - SEED AND MULCH AND ESTABLISH VEGETATION  
 \*REMOVE EROSION CONTROL MEASURES ONLY AFTER SOILS HAVE BEEN STABILIZED



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Technician: TECH	Date: 05-21-24	T-R-S: TTN+RRW-SS		
Project No: 124.0465.30				Sheet C 401


2975 KAPEC ROAD

EROSION CONTROL PLAN

CITY OF FITCHBURG, DANE COUNTY, WI

SNYDER & ASSOCIATES, INC.

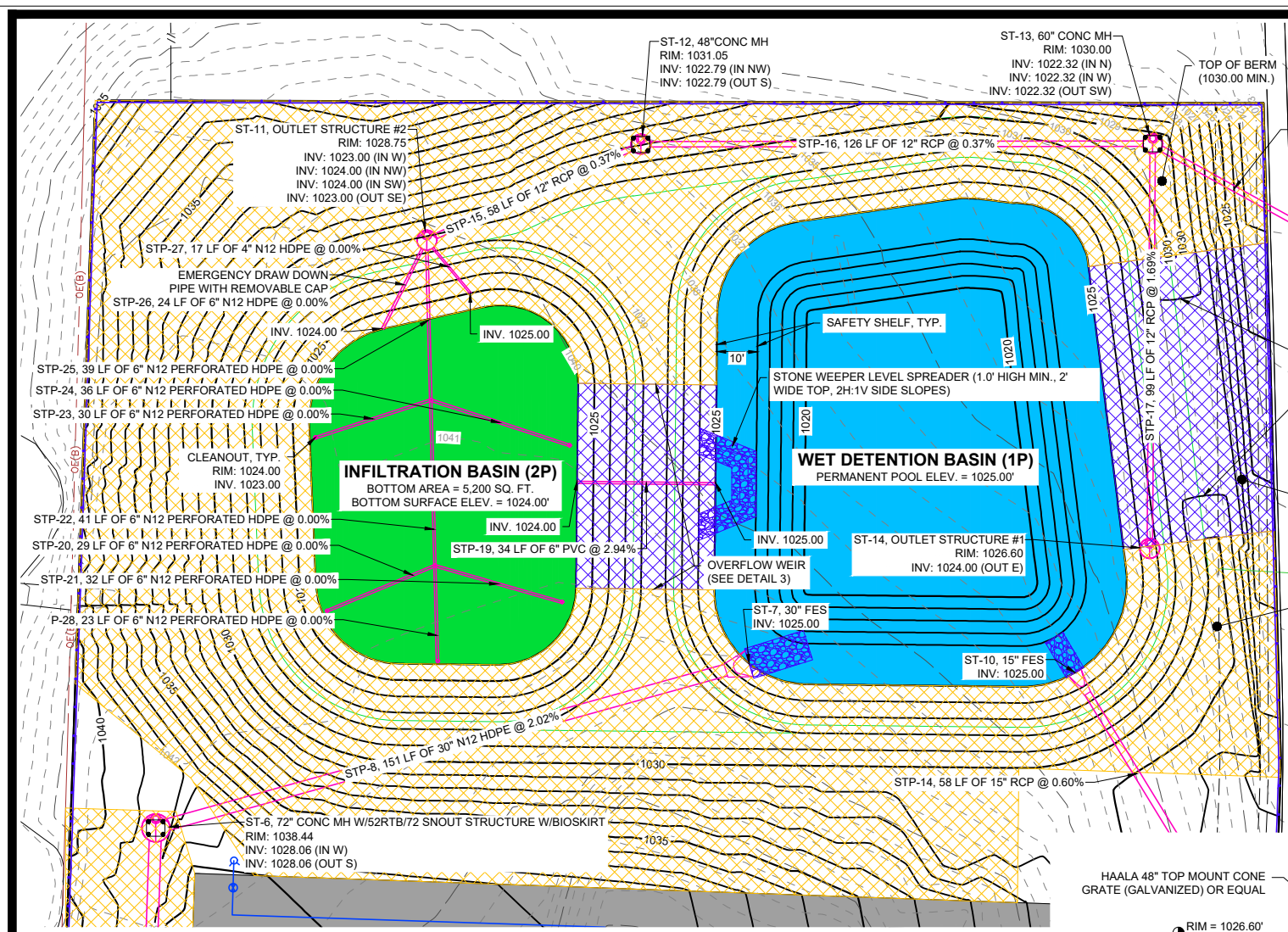
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 MADISON, WISCONSIN 53718  
 608-835-0444 | www.snyder-associates.com



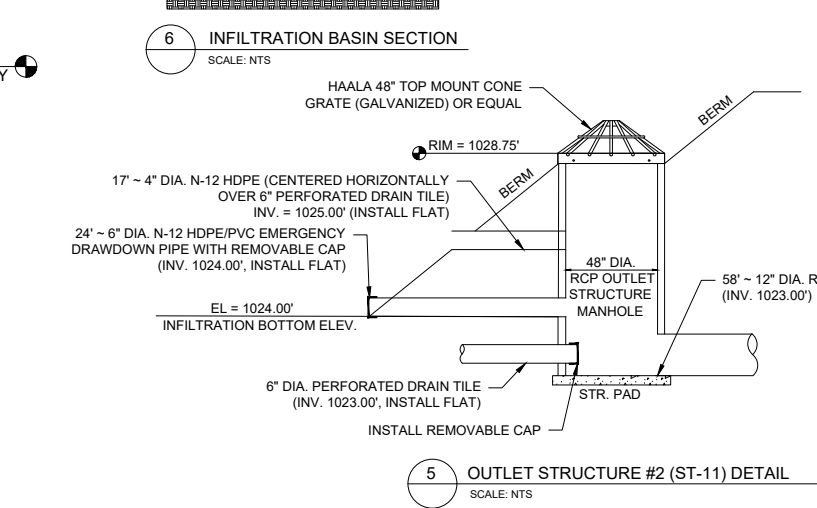
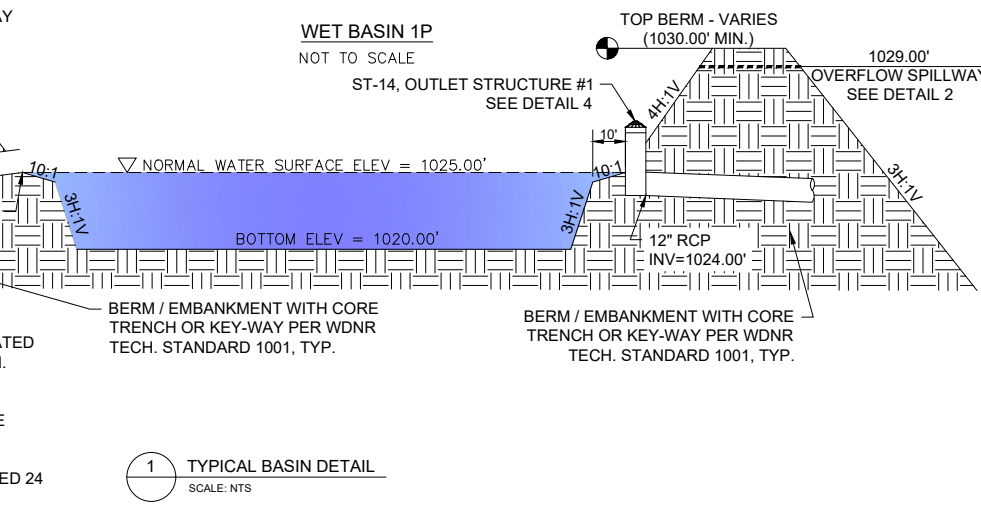
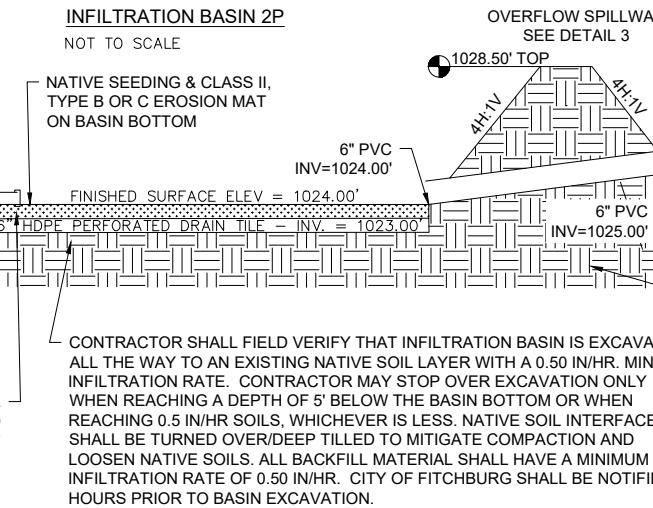
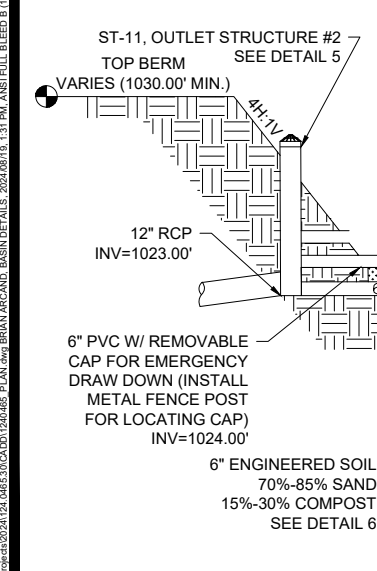
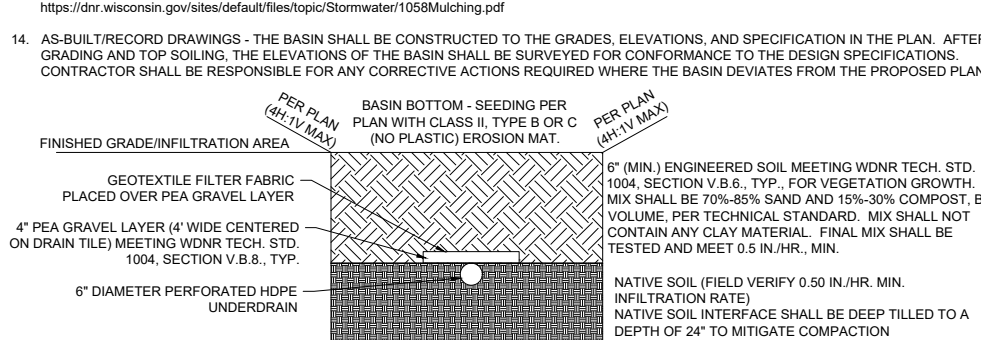
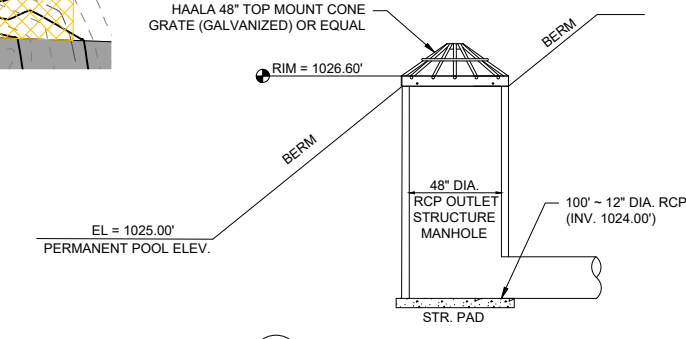
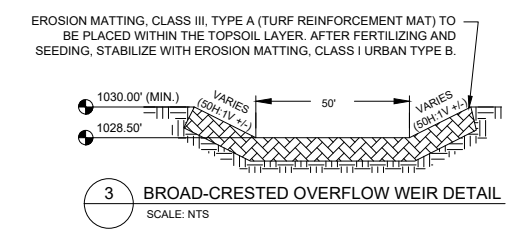
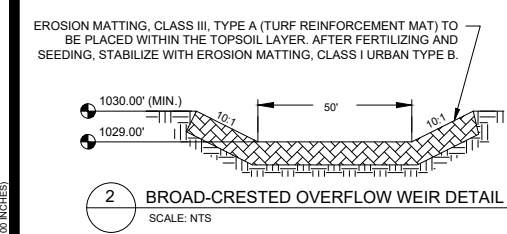
SNYDER & ASSOCIATES

Project No: 124.0465.30

Sheet C 401



- INFILTRATION BASIN CONSTRUCTION METHODS, MATERIALS, OPERATION, AND MAINTENANCE SHALL BE IN ACCORDANCE WITH WISCONSIN DEPARTMENT OF NATURAL RESOURCES (WDNR) TECHNICAL STANDARD 1003 & PROJECT SPECIFICATIONS. FOR TECH. STANDARD 1003, SEE WEBSITE [http://dnr.wi.gov/topic/stormwater/documents/InfiltrationBasin\\_1003.pdf](http://dnr.wi.gov/topic/stormwater/documents/InfiltrationBasin_1003.pdf)
- ROUGH GRADING & DRAINAGE - INFILTRATION AREA SHALL BE GRADED AND LEFT ONE FOOT ABOVE FINISHED GRADE DURING CONSTRUCTION. IF PONDING OR DRAINAGE ISSUES OCCUR WHILE LEAVING BASIN BOTTOM ONE FOOT ABOVE FINISHED GRADE, CONTRACTOR SHALL NOTIFY ENGINEER. FINAL GRADING AND INSTALLATION SHALL TAKE PLACE AFTER SITE DRAINING TO THE BASIN IS SEEDING AND VEGETATION IS ESTABLISHED. FOR BASINS WHERE MULTIPLE LOTS/PARCELS SUCH AS A RESIDENTIAL SUBDIVISION DRAIN TO THE BASIN, BRINGING THE BASIN ON-LINE SHALL BE IN ACCORDANCE WITH WDNR TECH. STANDARD 1003, SECTION V.C.2. SNOW SHALL NOT BE PLACED ON THE BASIN BOTTOM.
- EXCAVATION & BACKFILLING - CONTRACTOR MUST EXCAVATE BASINS UNTIL REACHING THE A NATIVE SOIL LAYER WITH A MINIMUM INFILTRATION RATE OF 0.5 IN./HR. BACKFILL TO THE 6\"/>



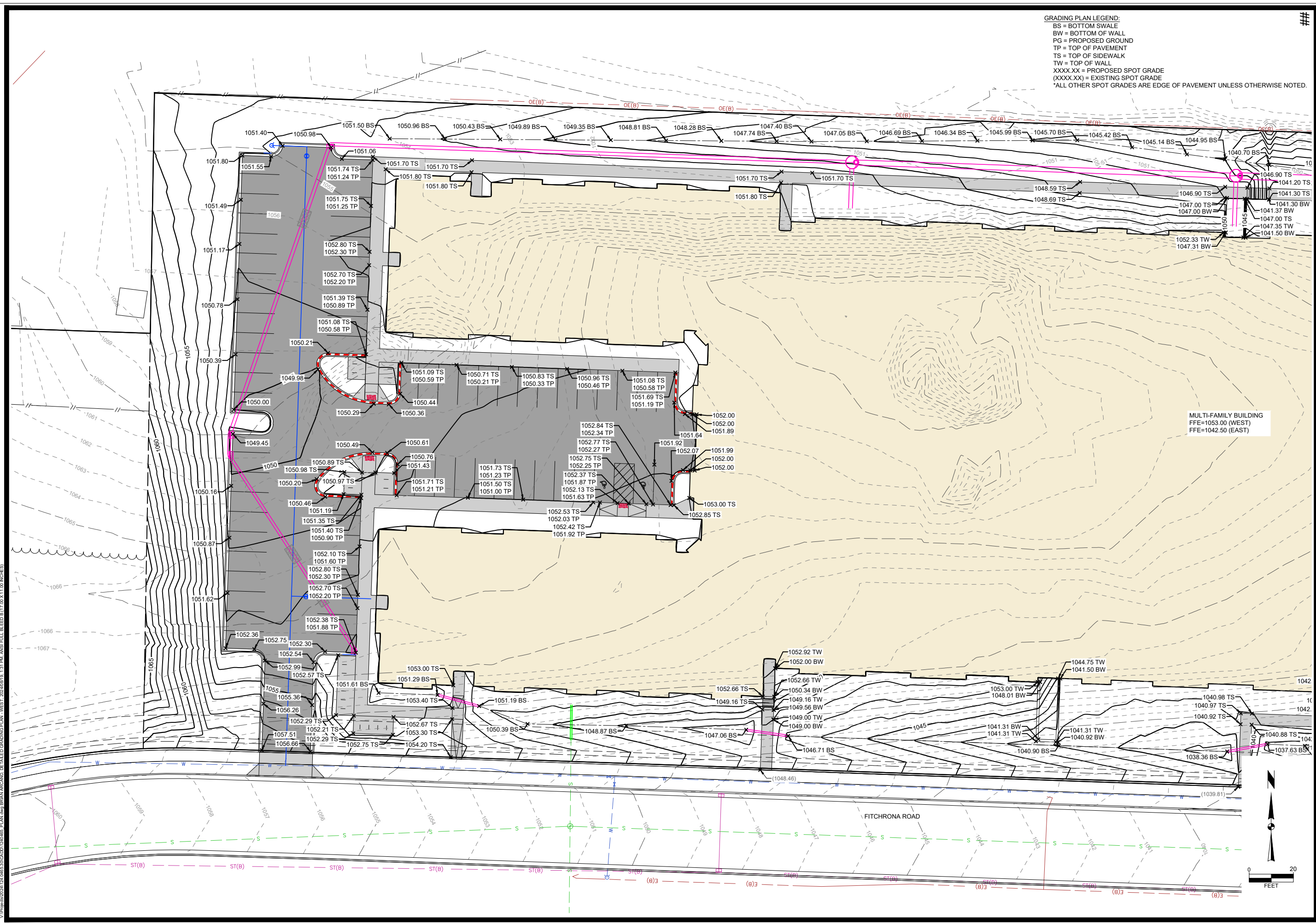
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Project No: 124.0465.30  
Sheet C 402

CITY OF FITCHBURG, DANE COUNTY, WI  
5010 VOGES ROAD  
MADISON, WISCONSIN 53718  
608-836-0441 | www.snyder-associates.com

2975 KAPEC ROAD  
BASIN DETAILS  
SNYDER & ASSOCIATES, INC.

Project No: 124.0465.30  
Sheet C 402



GRADING PLAN LEGEND:  
 BS = BOTTOM SWALE  
 BW = BOTTOM OF WALL  
 PG = PROPOSED GROUND  
 TP = TOP OF PAVEMENT  
 TS = TOP OF SIDEWALK  
 TW = TOP OF WALL  
 XXXX.XX = PROPOSED SPOT GRADE  
 (XXXX.XX) = EXISTING SPOT GRADE  
 \*ALL OTHER SPOT GRADES ARE EDGE OF PAVEMENT UNLESS OTHERWISE NOTED.

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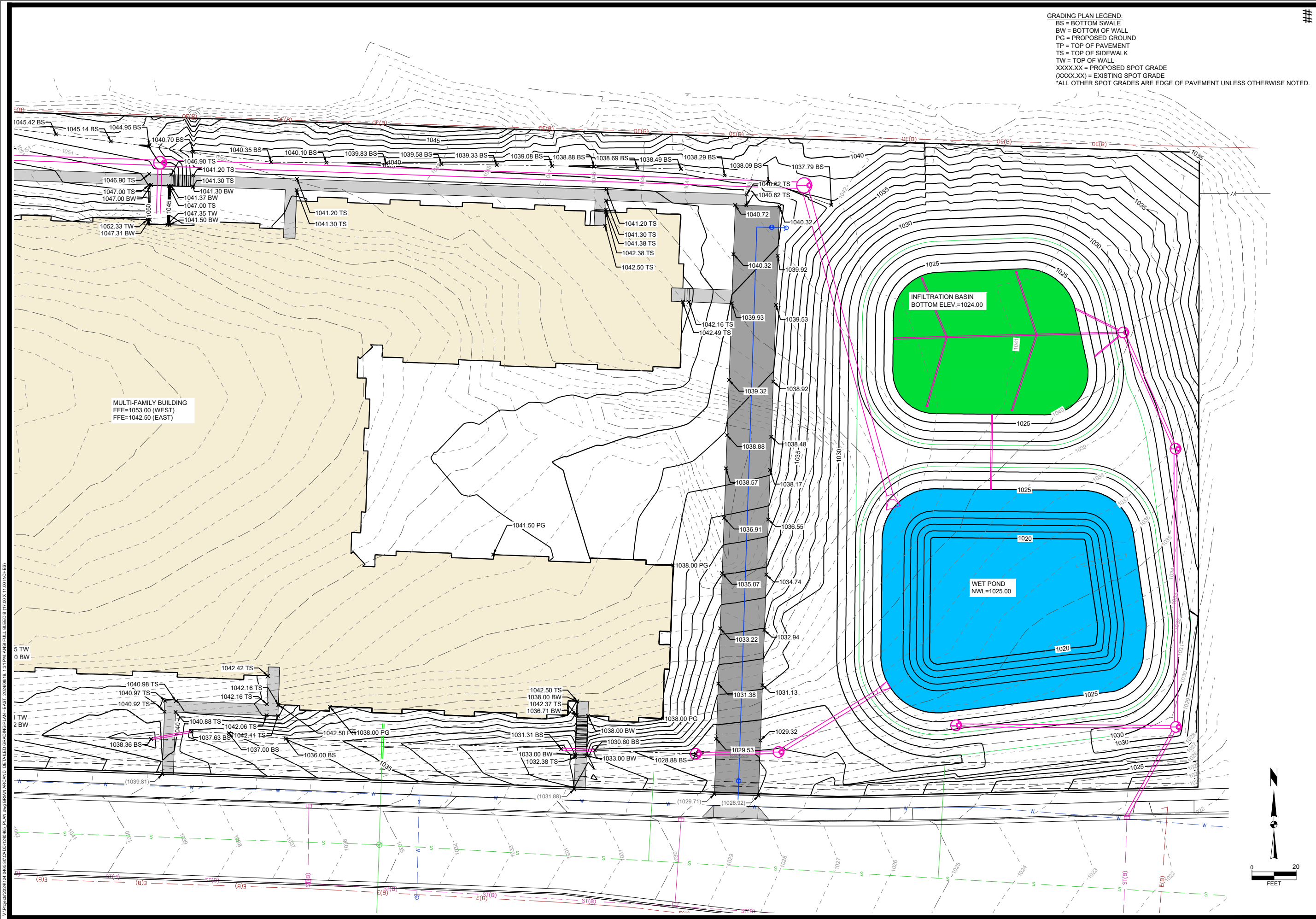
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Engineer:	BCA	Date:	05-21-24
Technician:	TECH	T-R-S:	TIN+RRW+SS
Project No.:			124.0465.30
Sheet:			C 403

**2975 KAPEC ROAD**  
**DETAILED GRADING PLAN - WEST**  
**CITY OF FITCHBURG, DANE COUNTY, WI**  
**SNYDER & ASSOCIATES, INC.**  
 5010 VOGES ROAD  
 MADISON, WISCONSIN 53718  
 608-838-0444 | www.snyder-associates.com

**SNYDER & ASSOCIATES**

Project No: 124.0465.30  
 Sheet C 403

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GRADING PLAN LEGEND:  
 BS = BOTTOM SWALE  
 BW = BOTTOM OF WALL  
 PG = PROPOSED GROUND  
 TP = TOP OF PAVEMENT  
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 (XXXX.XX) = EXISTING SPOT GRADE  
 \*ALL OTHER SPOT GRADES ARE EDGE OF PAVEMENT UNLESS OTHERWISE NOTED.

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MARK	SIP SUBMITTAL	DATE	BY
Engineer: BCA	Checked By: MLC	Scale: 1" = 20'	
Technician: TECH	Date: 05-21-24	T-R-S: TTN+RRW-SS	
Project No: 124.0465.30			Sheet C 404

MULTI-FAMILY BUILDING  
 FFE=1053.00 (WEST)  
 FFE=1042.50 (EAST)

INFILTRATION BASIN  
 BOTTOM ELEV.=1024.00

WET POND  
 NWL=1025.00

2975 KAPEC ROAD

DETAILED GRADING PLAN - EAST

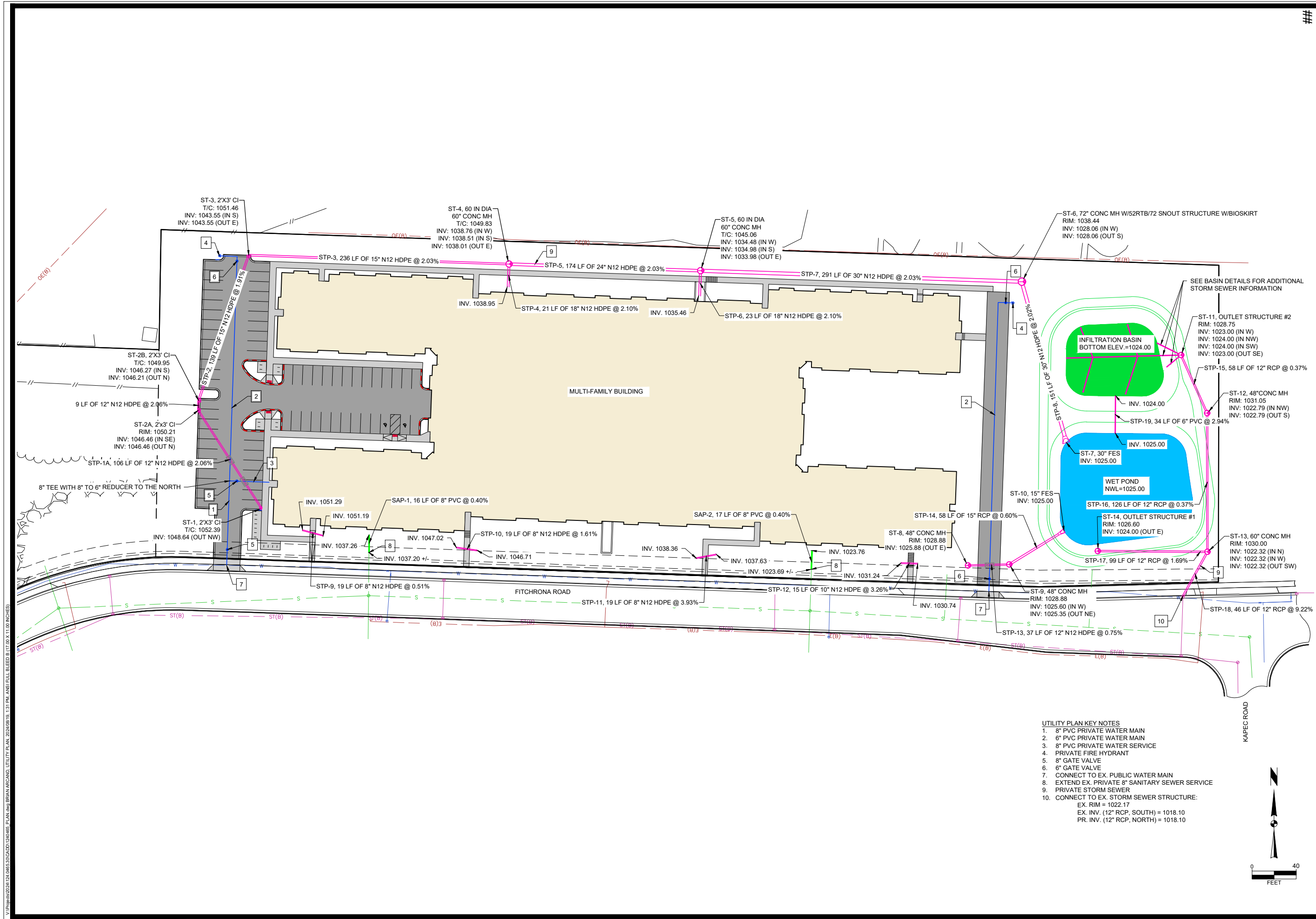
CITY OF FITCHBURG, DANE COUNTY, WI

**SNYDER & ASSOCIATES, INC.**

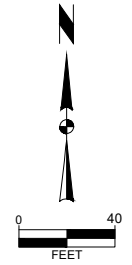


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 Sheet C 404

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- UTILITY PLAN KEY NOTES**
- 8" PVC PRIVATE WATER MAIN
  - 6" PVC PRIVATE WATER MAIN
  - 8" PVC PRIVATE WATER SERVICE
  - PRIVATE FIRE HYDRANT
  - 8" GATE VALVE
  - 6" GATE VALVE
  - CONNECT TO EX. PUBLIC WATER MAIN
  - EXTEND EX. PRIVATE 8" SANITARY SEWER SERVICE
  - PRIVATE STORM SEWER
  - CONNECT TO EX. STORM SEWER STRUCTURE:  
EX. RIM = 1022.17  
EX. INV. (12" RCP, SOUTH) = 1018.10  
PR. INV. (12" RCP, NORTH) = 1018.10



MARK	SIP SUBMITTAL	DATE	07-25-24	BCA
REVISION	BY	DATE		
Checked By:	MLC	Scale:	1" = 40'	
Engineer:	BCA			
Technician:	TECH	Date:	05-21-24	TIN-RRW-SS
Project No.:				124,0465.30
Sheet:				C 500

**2975 KAPEC ROAD**  
**UTILITY PLAN**  
 CITY OF FITCHBURG, DANE COUNTY, WI  
**SNYDER & ASSOCIATES, INC.**  
 5010 VOGES ROAD  
 MADISON, WISCONSIN 53718  
 608-835-0444 | www.snyder-associates.com

Project No: 124,0465.30  
 Sheet C 500

**GENERAL CONDITIONS**

- 1. THE CONTRACTOR SHALL NOTIFY THE OWNER AND THE MUNICIPALITY TWO WORKING DAYS (48 HOURS) PRIOR TO THE START OF CONSTRUCTION.
2. THE CONTRACTOR SHALL INDEMNIFY THE OWNER, THE ENGINEER, AND THE MUNICIPALITY, THEIR AGENTS, ETC, FROM ALL LIABILITY INVOLVED WITH THE CONSTRUCTION, INSTALLATION, AND TESTING OF THE WORK ON THIS PROJECT.
3. SITE SAFETY SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR.
4. THE BIDDER WILL BE SOLELY RESPONSIBLE FOR DETERMINING QUANTITIES AND SHALL STATE SUCH QUANTITIES IN HIS PROPOSAL. HE SHALL BASE HIS BID ON HIS OWN ESTIMATE OF THE WORK REQUIRED AND SHALL NOT RELY ON THE ENGINEER'S ESTIMATE.
5. THE CONTRACTOR IS RESPONSIBLE FOR VERIFYING SOIL CONDITIONS PRIOR TO COMMENCEMENT OF CONSTRUCTION. A GEOTECHNICAL REPORT IS AVAILABLE FROM THE OWNER. THE CONTRACTOR SHALL ABIDE BY THE RECOMMENDATIONS OF THE GEOTECHNICAL ENGINEER.
6. THE CONTRACTOR IS RESPONSIBLE FOR EXAMINING ALL SITE CONDITIONS PRIOR TO COMMENCEMENT OF CONSTRUCTION AND SHALL COMPARE FIELD CONDITIONS WITH DRAWINGS.
7. THE CONTRACTOR SHALL CONDUCT HIS WORK ACCORDING TO THE REQUIREMENTS OF THE PERMITS.
8. THE CONTRACTOR IS RESPONSIBLE FOR FIELD VERIFYING ALL UTILITY INFORMATION SHOWN ON THE PLANS PRIOR TO THE START OF CONSTRUCTION. THE CONTRACTOR SHALL CALL DIGGER'S HOTLINE AT 1-800-242-8511 TO NOTIFY THE UTILITIES OF HIS INTENTIONS, AND TO REQUEST FIELD STAKING OF EXISTING UTILITIES.
9. CONTRACTOR IS ADVISED THAT ALL MUD AND DEBRIS MUST NOT BE DEPOSITED ONTO THE ADJACENT ROADWAYS PER THE REQUIREMENT OF THE MUNICIPALITY OR OTHER APPROPRIATE GOVERNMENT AGENCIES.
10. ANY ADJACENT PROPERTIES OR ROAD RIGHT-OF-WAYS WHICH ARE DAMAGED DURING CONSTRUCTION MUST BE RESTORED BY THE CONTRACTOR. THE COST OF THE RESTORATION IS CONSIDERED INCIDENTAL, AND SHOULD BE INCLUDED IN THE BID PRICES.

**CONCRETE SIDEWALK**

- 1. SIDEWALK SHALL BE A MINIMUM OF 5" THICK ON A BASE OF 4" OF 3/4" DENSE AGGREGATE BASE COURSE. SIDEWALKS ACROSS DRIVEWAYS SHALL BE A MINIMUM OF 7" THICK ON A BASE OF 4" 3/4" DENSE AGGREGATE BASE COURSE.
2. SIDEWALKS SHALL MEET ADA REQUIREMENTS.
3. SIDEWALKS SHALL HAVE A MAXIMUM CROSS SLOPE OF 1.5%.
4. CURB RAMPS AND DETECTABLE WARNING FIELDS (TRUNCATED DOMES) WILL BE REQUIRED AT ALL ADA RAMPS. DETECTABLE WARNING FIELDS SHALL BE NEENAH #4898 OR METAPANEL BY METADOME, LLC, UNPAINTED OR APPROVED EQUAL.

**STORM SEWER & STORM WATER MANAGEMENT NOTES**

STORM SEWER AND STORMWATER MANAGEMENT SHALL BE AS FOLLOWS:

- 1. STORM SEWER PIPE BEDDING SHALL BE CLEAR STONE.
2. MINIMUM COVER FOR ALL STORM SEWER SHALL BE 2'.
3. EXCAVATED MATERIAL FROM THE TRENCH NOT SUITABLE FOR BACKFILL AS DEEMED BY THE PUBLIC SERVICES DIRECTOR SHALL BE HAULED OFF-SITE AND SELECT TRENCH BACKFILL WILL BE REQUIRED.
7. EXTREME CAUTION MUST BE FOLLOWED REGARDING THE COMPACTION OF ALL UTILITY TRENCHES. MECHANICALLY COMPACTED GRANULAR BACKFILL IS REQUIRED UNDER AND WITHIN 5 FEET OF ALL PAVEMENT INCLUDING SIDEWALKS AND FUTURE PARKING AREA AS SPECIFIED ON PLANS. FLOODING OF BACKFILL MATERIAL IS NOT ALLOWED. THE COST OF THIS GRANULAR MATERIAL AND ITS COMPACTION IS CONSIDERED INCIDENTAL AND SHALL BE INCLUDED IN THE COST OF THE PROPOSED UTILITY.
8. PRIOR TO FINAL PAVING OPERATIONS, THE UTILITY CONTRACTOR SHALL ADJUST ALL MANHOLE AND INLET RIMS AND VALVE BOXES TO FINISHED GRADE.
9. THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING THE OWNER WITH A SET OF MARKED-UP PRINTS SHOWING ALL CHANGES MADE DURING THE CONSTRUCTION PROCESS. ANY CHANGES TO THE DRAWINGS OR ADDITIONAL ITEMS MUST BE REPORTED TO THE OWNER.
10. STORM SEWER WITHIN STREET RIGHT-OF-WAYS SHALL BE REINFORCED CONCRETE PIPE.
11. EXCAVATED MATERIAL FROM THE TRENCH NOT SUITABLE FOR BACKFILL AS DEEMED BY THE ENGINEER SHALL BE REMOVED AND REPLACED WITH SELECT TRENCH BACKFILL.
13. MANHOLES 3' DEEP AND GREATER SHALL BE CONSTRUCTED WITH STEPS.
14. INLETS AT LOW POINTS SHALL HAVE TYPE NEENAH TYPE R GRATES. INLETS ON GRADE SHALL BE DIRECTIONAL TYPE L. INLETS SHALL ALL BE STAMPED "DRAINS TO RIVER".
15. ALL INFILTRATION BASINS SHALL INCLUDE ENGINEERED SOILS OR PERMAMATRIX SOIL AMENDMENT APPLIED PER MANUFACTURER RECOMMENDATIONS.
16. ALL STORM WATER MANAGEMENT FACILITIES SHALL BE SEEDED WITH A NATIVE SEED MIXTURE WITHIN THE LIMITS OF THE OUTLOT OR EASEMENT. THE NATIVE SEED MIXTURE SHALL BE APPROVED BY THE ENGINEER.
17. ALL STORM WATER FACILITIES SHALL CONFORM TO WISDNR TECHNICAL STANDARDS FOR PRE AND POST CONSTRUCTION STORM WATER MANAGEMENT.
18. THE LAST TWO PIPES SHALL BE STRAPPED TOGETHER AT END SECTIONS ON ALL PIPES 18" AND GREATER.
19. TRASH GRATES SHALL BE PROVIDED ON ALL END SECTIONS ON ENCLOSED STORM SEWER NETWORKS.
20. EROSION MAT IS REQUIRED FOR ALL RESTORATION ON SLOPES AT OR GREATER THAN 4:1, AND IN AREAS THAT CHANNEL WATER.
21. BIODEGRADABLE EROSION MAT AND BIODEGRADABLE STAPLES ARE REQUIRED ON ALL SLOPES LESS THAN 3:1 OUTSIDE OF DRAINAGE CHANNELS WHERE EROSION MAT IS REQUIRED. EROSION MAT SHALL BE PROVIDED IN ALL STREET TERRACES.
22. SILT FENCE AND INLET PROTECTION REMOVAL IS REQUIRED AFTER VEGETATION HAS BEEN ESTABLISHED.
23. STORM SEWER SHALL BE HDPE UNLESS OTHERWISE SPECIFIED ON PLANS.
24. ADJUSTMENT RINGS SHALL HAVE A MINIMUM HEIGHT OF 4" AND A MAXIMUM HEIGHT OF 12". ADJUSTMENT RINGS FOR STORM MANHOLES SHALL BE POLYETHYLENE PLASTIC OR APPROVED EQUAL. CURB INLET ADJUSTMENT RINGS SHALL BE CONCRETE.

**SANITARY SEWER**

- 1. SANITARY SEWER SHALL BE PVC AND BEDDED WITH CLASS C BEDDING (CLEAR STONE). SEWER SHALL BE SDR-35 FOR DEPTHS UP TO 20' AND SDR-26 FOR DEPTHS GREATER THAN 20'.
2. TRACER WIRE SHALL BE INSTALLED WITH ALL NEW LATERALS IN ACCORDANCE TO THE STANDARD DETAIL DRAWINGS.
3. TRACER WIRE BOXES SHALL BE PROVIDED. "SEWER" SHALL BE STAMPED IN THE LID OF THE ACCESS BOX.
4. EXCAVATED MATERIAL FROM THE TRENCH NOT SUITABLE FOR BACKFILL AS DEEMED BY THE ENGINEER SHALL BE REMOVED AND REPLACED WITH SELECT TRENCH BACKFILL.
5. MANDREL TESTING IS REQUIRED ON ALL SANITARY SEWER. LOW PRESSURE AIR TESTS ARE REQUIRED ON ALL NEW SANITARY SEWER CONSTRUCTION.
6. LATERAL ENDS SHALL BE CAPPED WITH A GLUED ON CAP AND MARKED WITH A PAINTED 4X4 POST.
7. ALL SANITARY SEWER CONSTRUCTION SHALL MEET THE STANDARD SPECIFICATIONS FOR SEWER AND WATER CONSTRUCTION IN WISCONSIN.

**WATER MAIN**

- 1. WATER MAIN SHALL BE PVC UNLESS OTHERWISE APPROVED, AND BEDDED WITH TYPE 3 EMBEDMENT (SAND OR SAND SCREENINGS). BEDDING SHALL BE A MINIMUM OF 6" UNDER AND 12" OVER TOP OF THE PIPE.
2. WATER MAIN SHALL BE INSTALLED WITH TRACER WIRE. TRACER WIRE SHALL EXTEND TO THE SURFACE AT ALL HYDRANTS IN A TRACER WIRE ACCESS BOX.
3. MECHANICAL JOINT FITTINGS WITH MEGA LUGS ARE REQUIRED FOR ALL DIRECTIONAL CHANGE FITTINGS AND WATERMAIN ENDS. ALL BOLTS SHALL BE STAINLESS STEEL. ALL FITTINGS SHALL BE "MADE IN AMERICA" CERTIFIED.
4. LATERAL ENDS SHALL BE MARKED WITH A PAINTED 4X4 WOOD POST.
5. WATER MAINS SHALL UNDERGO A PRESSURE AND LEAKAGE TEST. SERVICES SHALL BE TESTED TO THE CURB STOP. SERVICES 4" AND LARGER WITH JOINTED PIPE SHALL BE TESTED AGAINST THE VALVE WITH A SECOND TEST OUT TO THE PLUG. THE SECOND TEST MAY BE OF SHORTER DURATION AS APPROVED BY THE PUBLIC SERVICES DIRECTOR.
6. EXCAVATED MATERIAL FROM THE TRENCH NOT SUITABLE FOR BACKFILL AS DEEMED BY THE ENGINEER SHALL BE REMOVED AND REPLACED WITH SELECT TRENCH BACKFILL.
7. ALL WATER MAIN CONSTRUCTION SHALL MEET THE STANDARD SPECIFICATIONS FOR SEWER AND WATER CONSTRUCTION IN WISCONSIN.
8. INSULATION SHALL BE PROVIDED AT ALL STORMS SEWER CROSSINGS OF MAINS AND LATERALS.

**ADDITIONAL UTILITY NOTES**

- 1. THE CONTRACTOR SHALL VERIFY THE LOCATION OF ALL EXISTING UTILITIES PRIOR TO THE START OF CONSTRUCTION.
2. BEFORE PROCEEDING WITH ANY UTILITY CONSTRUCTION, THE CONTRACTOR SHALL EXCAVATE EACH EXISTING LATERAL OR POINT OF CONNECTION AND VERIFY THE LOCATION AND ELEVATION OF ALL UTILITIES. IF ANY EXISTING UTILITIES ARE NOT AS SHOWN ON THE DRAWINGS, THE CONTRACTOR SHALL NOTIFY THE ENGINEER IMMEDIATELY FOR POSSIBLE REDESIGN.
3. PRIOR TO FINAL PAVING OPERATIONS, THE UTILITY CONTRACTOR SHALL ADJUST ALL MANHOLE AND INLET RIMS AND VALVE BOXES TO FINISHED GRADE.
4. THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING THE OWNER WITH A SET OF MARKED-UP PRINTS SHOWING ALL CHANGES MADE DURING THE CONSTRUCTION PROCESS. ANY CHANGES TO THE DRAWINGS OR ADDITIONAL ITEMS MUST BE REPORTED TO THE OWNER.
5. THE PROPOSED IMPROVEMENTS SHALL BE CONSTRUCTED ACCORDING TO WISCONSIN ADMINISTRATIVE CODE. SECTION SPS 382-384, LATEST EDITION, THE STANDARD SPECIFICATIONS FOR SEWER AND WATER CONSTRUCTION IN WISCONSIN, LATEST EDITION, AND THE LOCAL ORDINANCES AND SPECIFICATIONS.
6. ALL CONNECTIONS TO EXISTING PIPES AND MANHOLES SHALL BE CORED CONNECTIONS.
7. PROPOSED SANITARY SEWER, WATER MAIN, AND INTERNALLY CONNECTED STORM SEWER SHOWN ON THIS PLAN SHALL TERMINATE AT POINT FIVE (5) FEET FROM THE EXTERIOR BUILDING WALL. STORM SEWER CONNECTING TO EXTERIOR DOWN SPOUTS SHALL BE PER DETAILS ON THE ARCHITECTURAL PLANS. THE EXACT LOCATION OF ALL DOWN SPOUTS SHALL BE PER THE ARCHITECTURAL PLANS.
8. EXTREME CAUTION MUST BE FOLLOWED REGARDING THE COMPACTION OF ALL UTILITY TRENCHES. MECHANICALLY COMPACTED GRANULAR BACKFILL IS REQUIRED UNDER AND WITHIN 5 FEET OF ALL PAVEMENT INCLUDING SIDEWALKS. FLOODING OF BACKFILL MATERIAL IS NOT ALLOWED. THE COST OF THIS GRANULAR MATERIAL AND ITS COMPACTION IS CONSIDERED INCIDENTAL AND SHALL BE INCLUDED IN THE COST OF THE PROPOSED UTILITY.
9. TRACER WIRE SHALL BE INSTALLED ON ALL BURIED NON-METALLIC SANITARY SEWERS, PRIVATE SANITARY INTERCEPTOR MAIN SEWERS, STORM BUILDING SEWERS, AND PRIVATE STORM INTERCEPTOR MAIN SEWERS THAT DISCHARGE TO MUNICIPAL MAINS. TRACER WIRE SHALL BE A MINIMUM OF 12-GAUGE, INSULATED, SINGLE-CONDUCTOR COPPER WIRE OR EQUIVALENT. TRACER WIRE COLOR SHALL BE BLUE FOR POTABLE WATER, GREEN FOR SANITARY SEWER, AND BROWN FOR STORM SEWER.

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NOTES  
CITY OF FITCHBURG, DANE COUNTY, WI  
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**CONSTRUCTION SEQUENCE**

- INSTALL AND MAINTAIN THE TEMPORARY GRAVEL CONSTRUCTION ENTRANCE/EXITS AS DESCRIBED IN THE DANE COUNTY EROSION CONTROL AND STORMWATER MANAGEMENT MANUAL. ADDITIONALLY INSTALL CONSTRUCTION EQUIPMENT PARKING AREAS. STABILIZE BARE AREAS IMMEDIATELY WITH GRAVEL AND TEMPORARY VEGETATION AS CONSTRUCTION TAKES PLACE. THE TEMPORARY ACCESS POINT SHALL BE PLACED IN THE LOCATION SHOWN ON THE GRADING AND EROSION CONTROL PLAN. THE ENTRANCE/EXITS WILL BE INSPECTED DAILY. IF THE AGGREGATE WITHIN THE TEMPORARY ACCESS PADS BECOMES COVERED WITH SOIL OR IF SIGNIFICANT QUANTITIES OF SOIL ARE TRACKED ONTO THE EXISTING ROADWAY THEN ADDITIONAL AGGREGATE WILL BE INSTALLED TO ALLOW THE ENTRANCE/EXITS TO FUNCTION PROPERLY.
- INSTALL EROSION AND SEDIMENT CONTROL BARRIERS (SILT FENCE) IMMEDIATELY DOWNSLOPE OF AREAS TO BE DISTURBED DURING CONSTRUCTION AS SHOWN ON THE APPROVED GRADING PLAN. THE BARRIERS MUST BE INSTALLED PARALLEL TO THE SITE CONTOURS TO THE EXTENT PRACTICABLE WITH THE ENDS EXTENDED UPSLOPE ONE TO TWO FEET TO PREVENT FLANKING OF THE RUNOFF. AT NO TIME FROM THE START OF ROUGH GRADING UNTIL SITE STABILIZATION SHALL AN UNBROKEN SLOPE EXIST BETWEEN DISTURBED AREAS AND THE RECEIVING WATERS. THE DANE COUNTY EROSION CONTROL AND STORMWATER MANAGEMENT MANUAL WILL BE REFERENCED FOR THE PROPER INSTALLATION AND MAINTENANCE OF SILT FENCE AND ALL OTHER EROSION CONTROL MEASURES ON THE SITE.
- STRIP TOPSOIL FROM THE AREAS OF THE SITE THAT WILL BE GRADED WITHIN 48 HOURS. ANY AREAS THAT WILL NOT BE IMMEDIATELY GRADED MUST NOT BE STRIPPED OF TOPSOIL UNTIL THE PRECEDING AREAS ARE TOPSOILED, SEEDED AND MULCHED. PLACE SOIL STOCKPILES AT LEAST 25 FEET AWAY FROM ANY DOWNSLOPE STREET, DRIVEWAY, OR DITCH. ALL TOPSOIL PILES WILL HAVE SILT FENCE PLACED ON THEIR DOWNSLOPE SIDES. TOPSOIL PILES WILL BE SEEDED WITH ANNUAL RYE IF THEY ARE IN PLACE FOR MORE THAN 7 DAYS. ANY AREAS LEFT INACTIVE FOR MORE THAN 7 DAYS WILL BE STABILIZED IMMEDIATELY WITH SEED AND MULCH.
- GRADING WILL BE PHASED TO THE EXTENT PRACTICABLE TO LIMIT THE AMOUNT OF THE EXPOSED SOIL AT ANY ONE TIME AND TO PROVIDE A BUFFER BETWEEN THE GRADED AREAS AND THE RECEIVING WATERS. THE INTENT OF THESE GRADING RESTRICTIONS IS TO PROVIDE AN UNDISTURBED BUFFER AREA ALLOWING ADDITIONAL EROSION AND SEDIMENTATION PROTECTION DURING CONSTRUCTION.
- TOPSOIL, SEED AND MULCH ALL AREAS WHICH ARE AT FINAL GRADE AND WHICH WILL NOT BE DISTURBED DURING SUBSEQUENT PHASES OF CONSTRUCTION. ANY AREAS LEFT INACTIVE FOR MORE THAN 7 DAYS MUST BE STABILIZED IMMEDIATELY.
- INSTALL ANY UTILITIES.
- COMPLETE FINAL GRADING FOR PARKING LOT & DRIVES AND STABILIZE WITH GRAVEL.
- COMPLETE FINAL GRADE OF THE SITE.
- UTILITY TRENCHES SHALL BE FILLED WITH SUITABLE BACKFILL MATERIAL AND COMPACTED AS NEEDED. TOPSOIL SHALL BE REPLACED, FERTILIZED, SEEDED AND PROTECTED AS CALLED FOR BELOW IN ITEMS 11 AND 12. UTILITY CONSTRUCTION SHALL BE COORDINATED WITH OTHER GRADING ACTIVITIES SO THAT RESTORATION CAN BE COMPLETED AS SOON AS POSSIBLE AFTER CONSTRUCTION.
- WITHIN 7 DAYS OF THE COMPLETION OF FINAL GRADING, A MINIMUM OF 4 INCHES OF TOPSOIL SHALL BE REPLACED ON ALL DISTURBED SURFACES THAT ARE TO BE REVEGETATED. TOPSOIL SHALL BE UNIFORMLY PLACED, GRADED SMOOTH AND SCARIFIED FOR SEEDING.

- FERTILIZE ALL AREAS TO BE SEEDED OR SODDED WITH 500LBS. PER ACRE OF 16-8-8 (MINIMUM). INCORPORATE THE FERTILIZER INTO THE SOIL BY SCARIFYING AS INDICATED. SEED ALL DISTURBED AREAS WITH THE FOLLOWING SEEDING MIXTURE:  
 30.50 LBS/ACRE OF KENTUCKY BLUEGRASS  
 17.50 LBS/ACRE OF RED FESCUE  
 17.50 LBS/ACRE OF HARD FESCUE  
 22.00 LBS/ACRE OF PERENNIAL RYE GRASS  
 THE OWNER RESERVES THE RIGHT TO REVISE THE SEEDING MIXTURE SUBJECT TO APPROVAL BY THE LOCAL MUNICIPALITY.  
  
 SOD MAY BE SUBSTITUTED FOR SEEDING ON ALL AREAS TO BE SEEDED AND IS RECOMMENDED FOR ALL AREAS WITH SLOPES OF 5:1 OR STEEPER.  
 MULCH ALL SEEDED AREAS WITH 1.5 TONS PER ACRE OF CLEAN STRAW. STRAW SHALL BE ANCHORED IN PLACE WITH SUITABLE EQUIPMENT OR STAKING WITH TWINE.  
  
 FOR AREAS ON WHICH GRADING IS COMPLETED AFTER SEPTEMBER 30.  
  
 TEMPORARY SEED SHALL INCLUDE A SOIL STABILIZING POLYMER AND COVER CROP OF WINTER RYE (AT A RATE OF 75#/ACRE) AND MUST BE APPLIED AS SOON AS THESE AREAS REACH THEIR FINAL GRADE. ADDITIONAL EROSION CONTROL BARRIERS MAY BE NEEDED DOWNSLOPE OF THESE AREAS UNTIL FINAL SEEDING OR SODDING IS COMPLETED IN SPRING (BY JUNE 1). ANY AREAS WITH SLOPES GREATER THAN 6:1 MUST BE SEEDED AND MULCHED BUT NOT TOPSOILED. AREAS WITH SLOPED LESS THAN 6:1 MUST BE TOPSOILED, SEEDED AND MULCHED. ALL AREAS MUST BE TOPSOILED, SEEDED OR MULCHED AS DESCRIBED ABOVE IN THE FOLLOWING SPRING.
- WHENEVER POSSIBLE, PRESERVE EXISTING TREES, SHRUBS, AND OTHER VEGETATION. TO PREVENT ROOT DAMAGE, DO NOT GRADE, PLACE SOIL PILES, OR PARK VEHICLES NEAR TREES MARKED FOR PRESERVATION.
- SILT FENCE MAINTENANCE:** EROSION CONTROL BARRIERS (SILT FENCE) MUST BE INSPECTED WITHIN 24 HOURS AFTER EACH RAINFALL OF 0.5-INCHES OR MORE, AND DAILY DURING PERIODS OF PROLONGED RAINFALL. REPAIRS OR REPLACEMENT SHALL BE MADE IMMEDIATELY. SEDIMENT DEPOSITS ON THE UPSLOPE SIDE ON THE SILT FENCES SHALL BE REMOVED WHEN THE DEPOSITS REACH HALF THE HEIGHT OF THE SILT FENCE.
- GRAVEL TRACKING PAD MAINTENANCE:** ADDITIONAL STONE IS REQUIRED IF EXISTING STONE BECOMES BURIED OR IF SEDIMENT IS NOT BEING REMOVED EFFECTIVELY FROM TIRES. SEDIMENT THAT IS TRACKED ONTO THE ROADWAY MUST BE REMOVED IMMEDIATELY. TRACKING PADS MAY REQUIRE PERIODIC CLEANING TO MAINTAIN THE EFFECTIVENESS OF THE PRACTICE, WHICH MAY INCLUDE THE REMOVAL AND RE-INSTALLATION OF THE STONE.

**EROSION CONTROL NOTES**

- THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING COPIES OF ALL PERMITS, INCLUDING WISDNR WPDES DISCHARGE PERMIT (IF APPLICABLE), COUNTY AND LOCAL EROSION CONTROL PERMIT. CONTRACTOR IS RESPONSIBLE FOR ABIDING BY ALL PERMIT REQUIREMENTS AND RESTRICTIONS.
- ALL EROSION CONTROL MEASURES SHALL BE INSTALLED PRIOR TO LAND DISTURBING ACTIVITIES.
- ALL INSTALLATION AND MAINTENANCE OF EROSION CONTROL PRACTICES SHALL BE IN ACCORDANCE WITH THE APPLICABLE WISCONSIN DEPARTMENT OF NATURAL RESOURCES (WisDNR) TECHNICAL STANDARD, FOUND AT: [http://dnr.wi.gov/topic/stormwater/standards/const\\_standards.html](http://dnr.wi.gov/topic/stormwater/standards/const_standards.html) OR THE WISCONSIN CONSTRUCTION SITE BEST MANAGEMENT PRACTICE HANDBOOK IF A TECHNICAL STANDARD IS NOT AVAILABLE.
- ALL EROSION CONTROL FACILITIES SHALL BE MAINTAINED THROUGHOUT THE DURATION OF THE PROJECT AND WARRANTY PERIOD IN CONFORMANCE WITH ALL APPLICABLE PERMITS ISSUED FOR THE PROJECT.
- ALL EROSION AND SEDIMENTATION CONTROL PRACTICES 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. REPAIRS SHALL BE MADE IMMEDIATELY TO EROSION CONTROL PRACTICES AS NECESSARY.
- TEMPORARY STOCKPILES SHALL BE STABILIZED IF NOT REMOVED IN 10 DAYS. PERIMETER CONTROL ON THE DOWNHILL SIDE SHALL BE IN PLACE AT ALL TIMES (SILT FENCE OR APPROVED EQUAL).
- TEMPORARY SEED MIXTURE SHALL CONFORM TO 630.2.1.5.1.4 OF THE WisDOT STANDARD SPECIFICATIONS USE WINTER WHEAT OR RYE FOR FALL PLANTINGS STARTED AFTER SEPTEMBER 1.
- DISTURBED AREAS THAT CANNOT BE STABILIZED WITH A DENSE GROWTH OF VEGETATION BY SEEDING AND MULCHING DUE TO TEMPERATURE OR TIMING OF CONSTRUCTION, SHALL BE STABILIZED BY APPLYING ANIONIC POLYACRYLAMIDE (PAM) IN ACCORDANCE WITH WisDNR TECHNICAL STANDARD 1050.
- SEDIMENT SHALL BE REMOVED FROM THE SEDIMENT BASINS TO MAINTAIN A THREE FOOT DEPTH OF TREATMENT, MEASURED BELOW THE NORMAL WATER ELEVATION. SEDIMENT WILL BE REMOVED FROM THE DIVERSION DITCHES WHEN IT REACHES HALF THE HEIGHT OF THE DITCH. SEDIMENT WILL BE REMOVED FROM BEHIND THE SILT FENCE AND DITCH CHECKS WHEN IT REACHES HALF THE HEIGHT OF THE FENCE/BALE THE SILT FENCE AND DITCH CHECKS SHALL BE REPAIRED AS NECESSARY TO MAINTAIN A BARRIER.
- ALL WATER FROM CONSTRUCTION DEWATERING SHALL BE TREATED IN ACCORDANCE WITH WisDNR TECHNICAL STANDARD 1061 PRIOR TO DISCHARGE TO WATERS OF THE STATE, WETLANDS, OR OFFSITE.
- THE CONTRACTOR IS RESPONSIBLE FOR INSTALLATION OF ANY ADDITIONAL EROSION CONTROL MEASURES NECESSARY TO PREVENT EROSION AND SEDIMENTATION. ALL DISTURBED AREAS ARE TO DRAIN TO APPROVED SEDIMENT CONTROL MEASURES AT ALL TIMES DURING SITE DEVELOPMENT UNTIL FINAL STABILIZATION IS ACHIEVED. DEPENDING ON HOW THE CONTRACTOR GRADES THE SITE, IT MAY BE NECESSARY TO INSTALL TEMPORARY EROSION CONTROL AND/OR SEDIMENT TRAPS IN VARIOUS LOCATIONS THROUGHOUT THE PROJECT. TEMPORARY SEDIMENT TRAPS SHALL BE DESIGNED, INSTALLED, AND MAINTAINED IN ACCORDANCE WITH WisDNR TECHNICAL STANDARD 1063.
- TRACKED MATERIAL TO ADJACENT STREETS SHALL BE COLLECTED AT THE END OF EACH WORKING DAY OR AS REQUIRED BY THE LOCAL MUNICIPALITY.
- DUST CONTROL SHALL BE PROVIDED AS NECESSARY IN ACCORDANCE WITH WisDNR TECHNICAL STANDARD 106B.
- THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING ALL EROSION CONTROL FACILITIES AND MEASURES NECESSARY TO CONTROL EROSION AND SEDIMENTATION AT THE PROJECT SITE. THESE FACILITIES AND MEASURES MAY OR MAY NOT BE SHOWN ON THE DRAWINGS AND THEIR ABSENCE ON THE DRAWINGS DOES NOT ALLEVIATE THE CONTRACTOR FROM PROVIDING THEM. ANY MEASURES AND FACILITIES SHOWN ON THE DRAWINGS ARE THE MINIMUM ACTIONS REQUIRED.
- ERODED MATERIAL THAT HAS LEFT THE CONSTRUCTION SITE SHALL BE COLLECTED AND RETURNED TO THE SITE BY THE CONTRACTOR.
- AFTER FINAL VEGETATION IS ESTABLISHED, REMOVE ALL EROSION CONTROL FACILITIES. RESTORE AREAS DISTURBED BY THE REMOVALS.
- KEEP A COPY OF THE CURRENT EROSION CONTROL PLAN ON SITE THROUGHOUT THE DURATION OF THE PROJECT.
- COMPLETE AND STABILIZE SEDIMENT BASINS/TRAPS 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. CONSTRUCT AND MAINTAIN THE SEDIMENT BASIN PER WisDNR TECHNICAL STANDARDS.
- 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.
- FOR NON-CANNELIZED FLOW ON DISTURBED OR CONSTRUCTED SLOPES 4:1, USE CLASS I URBAN, TYPE A EROSION CONTROL MATTING. FOR SLOPES GREATER THAN 4:1 BUT LESS THAN 2.5:1, USE CLASS I URBAN TYPE B. FOR SLOPES GREATER THAN 2.5:1 USE CLASS I TYPE B. SELECT EROSION MATTING FROM APPROPRIATE MATRIX IN WisDOT'S FACILITIES DEVELOPMENT MANUAL AND INSTALL AND MAINTAIN PER WisDNR TECHNICAL STANDARDS.
- FOR CHANNELIZED FLOW ON DISTURBED OR CONSTRUCTED AREAS, PROVIDE CLASS I TYPE B EROSION CONTROL MATTING. ELECT EROSION MATTING FROM APPROPRIATE MATRIX IN WisDOT'S FACILITIES DEVELOPMENT MANUAL; INSTALL AND MAINTAIN PER WisDNR TECHNICAL STANDARDS.
- ALL DISTURBED AREAS WITHIN THE RIGHT-OF-WAY SHALL BE COVERED WITH A BIO-DEGRADABLE EROSION MAT INCLUDING BIO-DEGRADABLE STAPLES.
- ALL BIO-DEGRADABLE EROSION MAT SHALL BE CURLEX NET FREE OR APPROVED EQUAL.
- WATERING OF NEW SEEDING SHALL BE OF A DURATION AND FREQUENCY ADEQUATE TO ENSURE PROPER ESTABLISHMENT OF NEW SEEDING.
- 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.

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**EROSION CONTROL NOTES**

**CITY OF FITCHBURG, DANE COUNTY, WI**

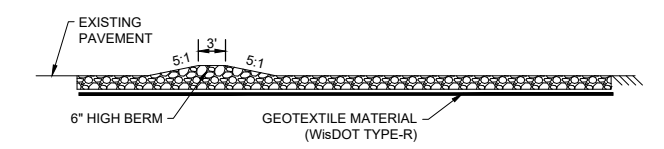
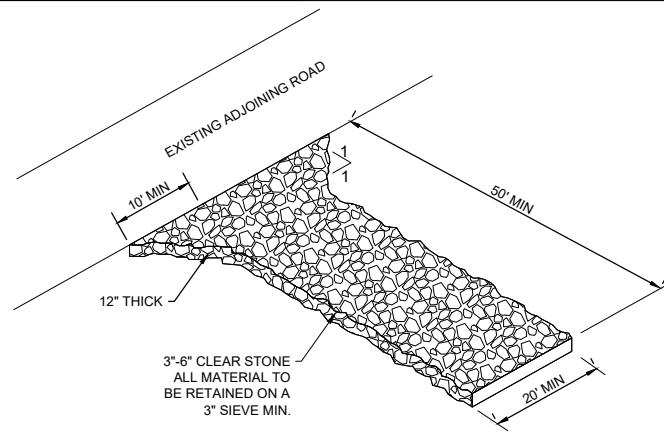
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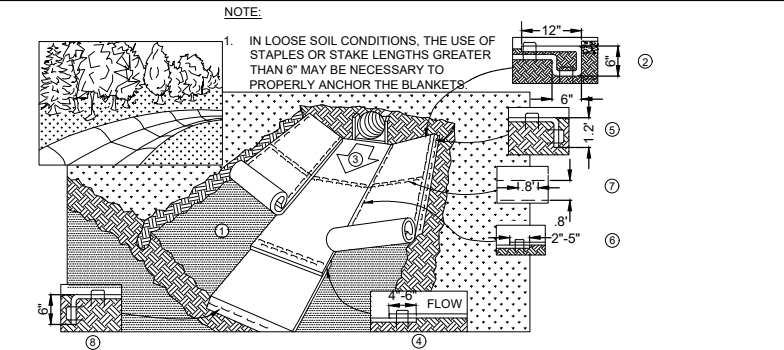
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**NOTE:**

1. MAINTAIN THE ROCK ENTRANCE TO PREVENT TRACKING ONTO PAVEMENT

**1** **STONE ENTRANCE DETAIL**  
SCALE: 3"=1'



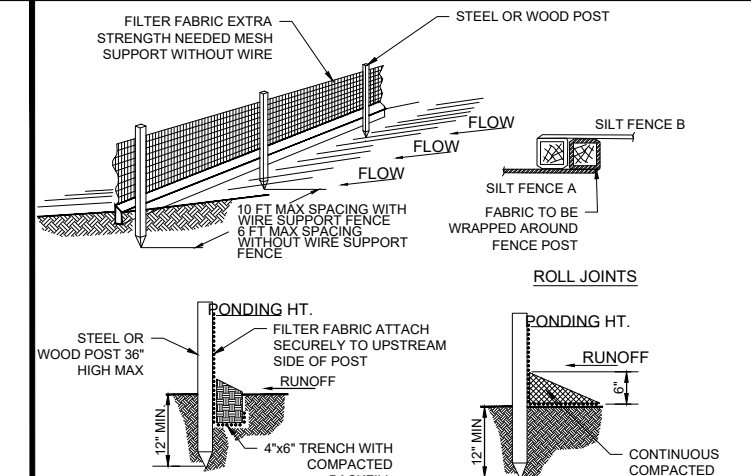
**NOTE:**

1. IN LOOSE SOIL CONDITIONS, THE USE OF STAPLES OR STAKE LENGTHS GREATER THAN 6" MAY BE NECESSARY TO PROPERLY ANCHOR THE BLANKETS

**INSTALLATION:**

1. PREPARE SOIL BEFORE INSTALLING BLANKETS, INCLUDING APPLICATION OF FERTILIZER AND SEED.
2. BEGIN AT THE TOP OF THE CHANNEL BY ANCHORING THE BLANKET IN A 6" DEEP X 6" WIDE TRENCH WITH APPROXIMATELY 12" OF BLANKET EXTENDED BEYOND THE UP-SLOPE PORTION OF THE TRENCH. ANCHOR THE BLANKET WITH A ROW OF STAPLES/STAKES APPROXIMATELY 12" APART IN THE BOTTOM OF THE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING. APPLY SEED TO COMPACTED SOIL AND FOLD REMAINING 12" PORTION OF BLANKET BACK OVER SEED AND COMPACTED SOIL. SECURE BLANKET OVER COMPACTED SOIL WITH A ROW OF STAPLES/STAKES SPACED APPROXIMATELY 12" APART ACROSS THE WIDTH OF THE BLANKET.
3. ROLL CENTER BLANKET IN DIRECTION OF WATER FLOW IN BOTTOM OF CHANNEL. BLANKETS WILL UNROLL WITH APPROPRIATE SIDE AGAINST THE SOIL SURFACE. ALL BLANKETS MUST BE SECURELY FASTENED TO THE SOIL SURFACE BY PLACING STAPLES/STAKES IN APPROPRIATE LOCATIONS AS RECOMMENDED BY THE MANUFACTURER.
4. PLACE CONSECUTIVE BLANKETS END OVER END (SHINGLE STYLE) WITH A 4"-6" OVERLAP. USE A DOUBLE ROW OF STAPLES STAGGERED 4" APART AND 4" ON CENTER TO SECURE BLANKETS.
5. FULL LENGTH EDGE OF BLANKETS AT TOP OF SIDE SLOPE MUST BE ANCHORED WITH A ROW OF STAPLES/STAKES APPROXIMATELY 12" APART IN A 6" DEEP X 6" WIDE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING.
6. A STAPLE CHECK SLOT IS RECOMMENDED AT 30 TO 40 FOOT INTERVALS. USE A DOUBLE ROW OF STAPLES STAGGERED 4" APART AND 4" ON CENTER OVER ENTIRE WIDTH OF THE CHANNEL.
7. THE TERMINAL END OF THE BLANKETS MUST BE ANCHORED WITH A ROW OF STAPLES/STAKES APPROXIMATELY 12" APART IN A 6" DEEP X 6" WIDE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING.
8. EROSION MAT SHALL EXTEND FOR WHICHEVER IS GREATER: UPSLOPE ONE FOOT MIN. VERTICALLY FROM DITCH BOTTOM OR 6" HIGHER THAN DESIGN FLOW DEPTH.
9. EROSION MAT SHALL BE INSTALLED AND MAINTAINED IN ACCORDANCE WITH WDNr TECHNICAL STANDARDS 1053.

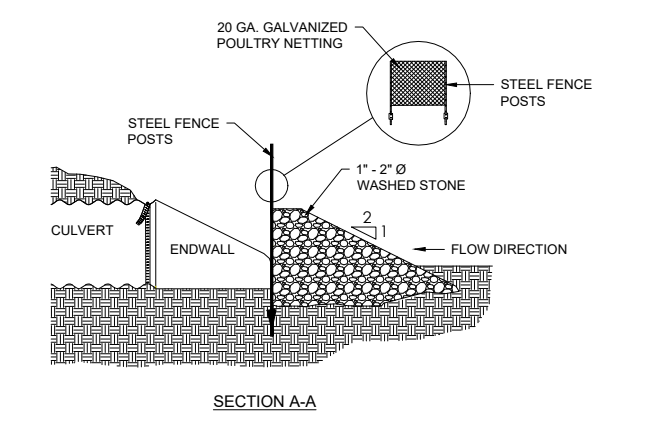
**2** **EROSION CONTROL MAT - CHANNEL INSTALLATION**  
SCALE: 3"=1'



**NOTE:**

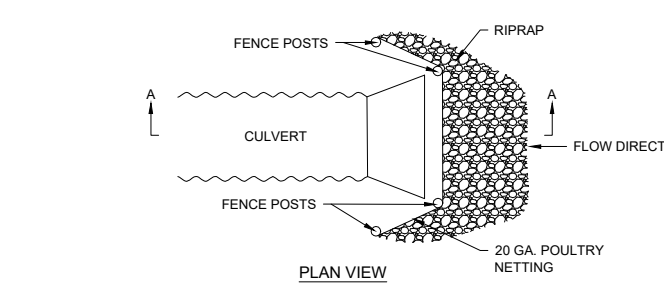
1. INSPECT FENCE WEEKLY AND AFTER EACH RAIN EVENT OF 0.5 INCHES AND REPAIR IF REQUIRED. REMOVE SEDIMENT WHEN NECESSARY OR WHEN SEDIMENT REACHES 1/2 OF FENCE HEIGHT.
2. REMOVED SEDIMENT SHALL BE DEPOSITED TO AN AREA THAT WILL NOT CONTRIBUTE SEDIMENT OFF-SITE AND CAN BE PERMANENTLY STABILIZED.
3. SILT FENCE SHALL BE PLACED ON SLOPE CONTOURS TO MAXIMIZE PONDING EFFICIENCY.
4. SILT FENCE SHALL BE INSTALLED AND MAINTAINED IN ACCORDANCE WITH WDNr TECHNICAL STANDARD 1056.

**3** **SILT FENCE DETAIL**  
SCALE: 3"=1'

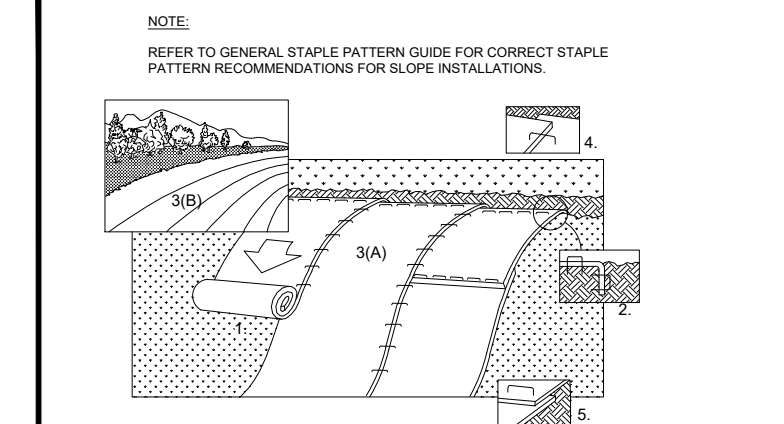


**NOTE:**

1. STONE CULVERT PROTECTION SHOWN TO BE USED FOR CULVERTS UP TO 18" IN DIAMETER. CONSULT ENGINEER FOR MODIFICATIONS FOR >18" DIAMETER CULVERTS.



**4** **STONE CULVERT PROTECTION**  
SCALE: 3"=1'



**NOTE:**

REFER TO GENERAL STAPLE PATTERN GUIDE FOR CORRECT STAPLE PATTERN RECOMMENDATIONS FOR SLOPE INSTALLATIONS.

**INSTALLATION:**

1. PREPARE SOIL BEFORE INSTALLING BLANKETS, INCLUDING APPLICATION OF FERTILIZER AND SEED. NOTE: WHEN USING CELL-O-SEED DO NOT SEED PREPARED AREA. CELL-O-SEED MUST BE INSTALLED WITH PAPER SIDE DOWN.
2. BEGIN AT THE TOP OF THE SLOPE BY ANCHORING THE BLANKET IN 6" DEEP X 6" WIDE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING.
3. ROLL THE BLANKETS (A.) DOWN THE SLOPE (B.) HORIZONTALLY ACROSS THE SLOPE
4. THE EDGES OF PARALLEL BLANKETS MUST BE STAPLED WITH APPROXIMATELY 2" OVERLAP.
5. WHEN BLANKETS MUST BE SPICED DOWN THE SLOPE, PLACE BLANKETS END OVER END (SHINGLE STYLE) WITH APPROXIMATELY 4" OVERLAP. STAPLE THROUGH OVERLAPPED AREA, APPROXIMATELY 12" APART.
6. ALL BLANKETS MUST BE SECURELY FASTENED TO THE SLOPE BY PLACING STAPLES/STAKES IN APPROPRIATE LOCATIONS AS RECOMMENDED BY THE MANUFACTURER.
7. EROSION MAT SHALL BE INSTALLED AND MAINTAINED IN ACCORDANCE WITH WDNr TECHNICAL STANDARD # 1052.

**5** **EROSION CONTROL MAT - SLOPE INSTALLATION**  
SCALE: 3"=1'

**NOTE:**

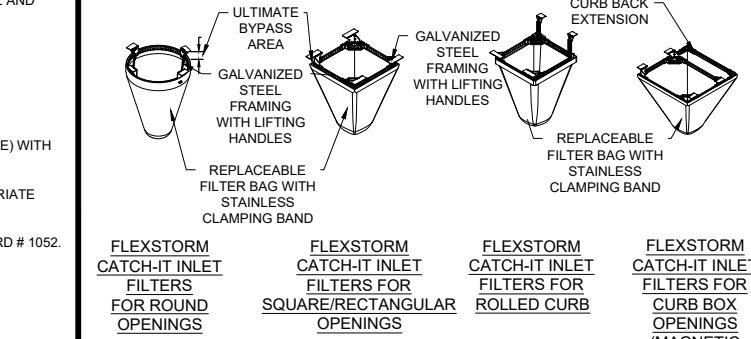
\*FLOW RATINGS SHOWN ARE 50% MAXIMUM

1. ALL FRAMING IS CONSTRUCTED OF CORROSION RESISTANT STEEL FRAMING FOR PROLONGED PRODUCT LIFE.
2. TOTAL BYPASS CAPACITY WILL VARY WITH EACH SIZED DRAINAGE STRUCTURE. FLEXSTORM DESIGNS FRAMING BYPASS TO MEET OR EXCEED THE DESIGN FLOW OF THE PARTICULAR DRAINAGE STRUCTURE. CONCRETE STRUCTURES MAY REQUIRE ADDITIONAL REVIEW.
3. UPON ORDERING THE ADS P/N CONFIRMATION OF THE DOT CALLOUT, FLEXSTORM ITEM CODE, CASTING MAKE AND MODEL, OR DETAILED DIMENSIONAL FORMS MUST BE PROVIDED.
4. FOR WRITTEN SPECIFICATIONS AND MAINTENANCE GUIDELINES VISIT [WWW.INLETFILTERS.COM](http://WWW.INLETFILTERS.COM)

**INSTALLATION:**

1. REMOVE GRATE
2. DROP FLEXSTORM INLET FILTER ONTO LOAD BEARING LIP OF CASTING OR CONCRETE STRUCTURE
3. REPLACE GRATE

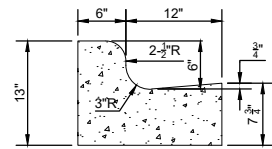
Product selection for FLEXSTORM CATCH-IT Filters (Temporary Inlet Protection)							
Neenah Casting	Inlet Type	Grate Size	Opening Size	Bag Cap (ft <sup>2</sup> )	Flow Ratings (CFS)		ADS P/N
					FX	Bypass	
1040/1642/1733	Round	26	24	1.9	1.5	5.4	62MRDFX
3067 w/FLAP	Curb Box	35.25 x 17.75	33.0 x 15.0	3.8	1.9	5.6	62LCBEXTFX
3067 EXTENDED BACK	Curb Box	35.25 x 17.75	33.0 x 15.0	4.4	2.3	5.8	62LCBEXTFX
3246A	Curb Box	35.75 x 23.875	33.5 x 21.0	4.2	2.2	3.3	62LCBFX
3030	Square/Rect (SQ)	23 x 16	20.5 x 13.5	1.6	1.4	2.2	62MCBFX
3067-C	Square/Rect (SQ)	35.25 x 17.75	33 x 15	3.2	2.0	5.2	62LSOFX



**6** **INLET PROTECTION DETAIL**  
SCALE: 3"=1'

MARK	SIP SUBMITTAL	DATE	07-25-24	BCA
REVISION	BY	DATE		
Checked By:	MLC	Scale:	1" = 10'	
Engineer:	BCA	Date:	05-21-24	
Technician:	TECH	T-R-S:	TTN-RRW-SS	
Project No.:				124.0465.30
Sheet:				C 702

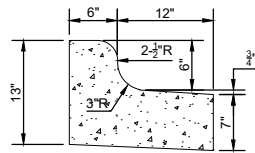
2975 KAPEC ROAD  
CITY OF FITCHBURG, DANE COUNTY, WI  
EROSION CONTROL DETAILS  
SNYDER & ASSOCIATES, INC. |  
5010 VOGES ROAD  
MADISON, WISCONSIN 53718  
608-835-0444 | www.snyder-associates.com  
Project No. 124.0465.30  
Sheet C 702



**NOTES:**

- LATERAL CONTRACTION JOINTS SHALL BE PLACED AT INTERVALS OF NOT MORE THAN 15' NOR LESS THAN 6' IN LENGTH. THE JOINTS SHALL BE A MINIMUM OF 3" IN DEPTH. EXPANSION JOINTS SHALL BE PLACED TRANSVERSELY AT RADIUS POINTS ON CURVES OF RADIUS 200' OR LESS AND AT ANGLE POINTS, OR AS DIRECTED BY THE ENGINEER.
- THE EXPANSION JOINT SHALL BE A ONE PIECE ASPHALTIC MATERIAL HAVING THE SAME DIMENSIONS AS CURB & GUTTER AT THAT STATION AND BE 1/2" THICK. IN ALL CASES, CONCRETE CURB & GUTTER SHALL BE PLACED ON THOROUGHLY COMPACTED CRUSHED STONE.

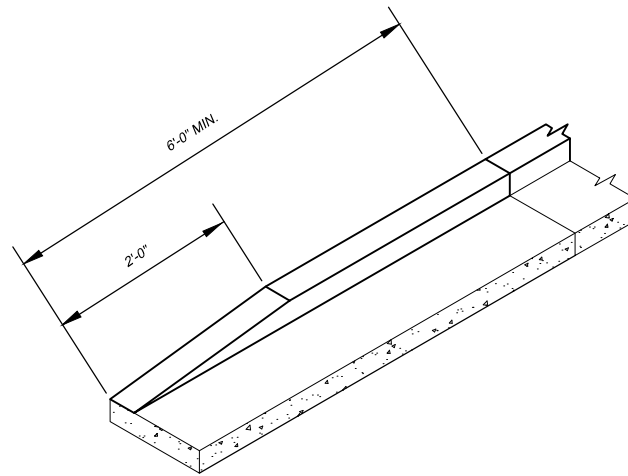
**1** 18" STANDARD CONCRETE CURB & GUTTER  
SCALE: 1" = 1'



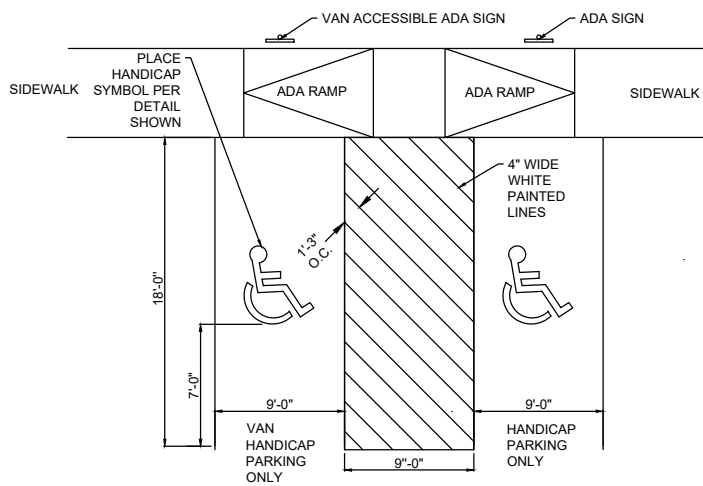
**NOTES:**

- LATERAL CONTRACTION JOINTS SHALL BE PLACED AT INTERVALS OF NOT MORE THAN 15' NOR LESS THAN 6' IN LENGTH. THE JOINTS SHALL BE A MINIMUM OF 3" IN DEPTH. EXPANSION JOINTS SHALL BE PLACED TRANSVERSELY AT RADIUS POINTS ON CURVES OF RADIUS 200' OR LESS AND AT ANGLE POINTS, OR AS DIRECTED BY THE ENGINEER.
- THE EXPANSION JOINT SHALL BE A ONE PIECE ASPHALTIC MATERIAL HAVING THE SAME DIMENSIONS AS CURB & GUTTER AT THAT STATION AND BE 1/2" THICK. IN ALL CASES, CONCRETE CURB & GUTTER SHALL BE PLACED ON THOROUGHLY COMPACTED CRUSHED STONE.

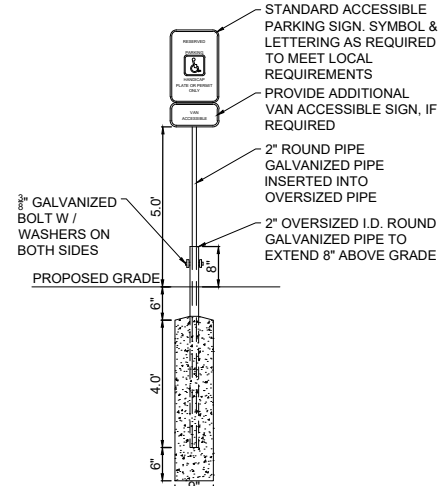
**2** 18" REJECT CONCRETE CURB & GUTTER  
SCALE: 1" = 1'



**3** TAPER END CURB & GUTTER  
SCALE: N.T.S.

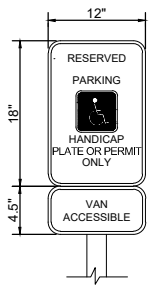


**4** ADA PARKING DETAIL  
SCALE: N.T.S.

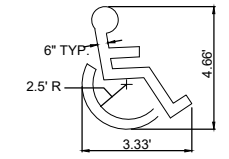


**NOTES:**

- SIGNS SHALL BE LOCATED SO THAT THEY CANNOT BE OBSCURED BY A VEHICLE PARKED IN THE SPACE
- SIGNS TO BE PROVIDED AND INSTALLED BY SITE CONTRACTOR
- ADA ACCESSIBLE SIGN MUST COMPLY WITH WI ADMINISTRATIVE RULE (TRANSPORTATION 200.07)

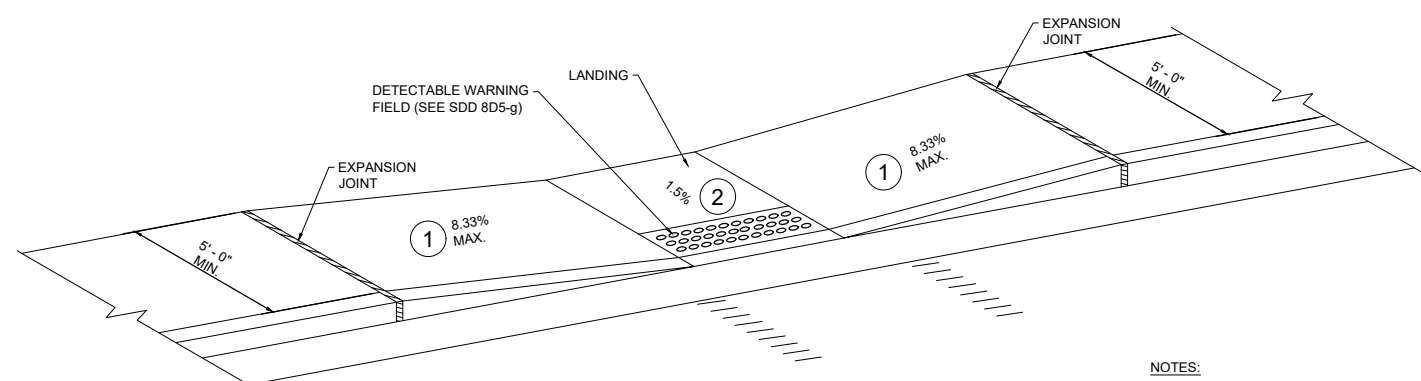


ADA PARKING SIGN



LOCATE 7' FROM THE REAR OF THE PARKING STALL

ACCESSIBLE PARKING SYMBOL



**NOTES:**

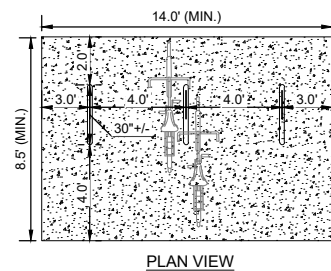
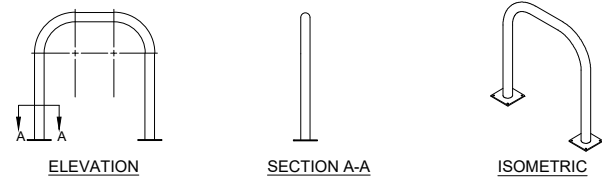
- SLOPE SIDEWALK TOWARD LANDING AS SHOWN WHERE THERE IS NOT TERRACE OR WHERE THE TERRACE WIDTH IS LESS THAN 6 FEET WIDE.
- PROVIDE A LEVEL LANDING (MAXIMUM 2% SLOPE) IN ANY DIRECTION OF PEDESTRIAN TRAVEL. STANDARD LEVEL LANDING SIZE IS 5 FEET BY 5 FEET.

**5** CURB RAMP DETAIL  
SCALE: N.T.S.

MARK	07-23-24	BCA
Engineer: BCA	Checked By: MLC	Scale: 1" =
Technician: TECH	Date: 05-21-24	T-R-S: TTN-RRW-SS
SIP SUBMITTAL		Project No: 124.0465.30
REVISION		Sheet

2975 KAPEC ROAD  
CITY OF FITCHBURG, DANE COUNTY, WI  
SITE & PAVEMENT DETAILS  
**SNYDER & ASSOCIATES, INC.**  
5010 VOGES ROAD  
MADISON, WISCONSIN 53718  
608-838-0444 | www.snyder-associates.com

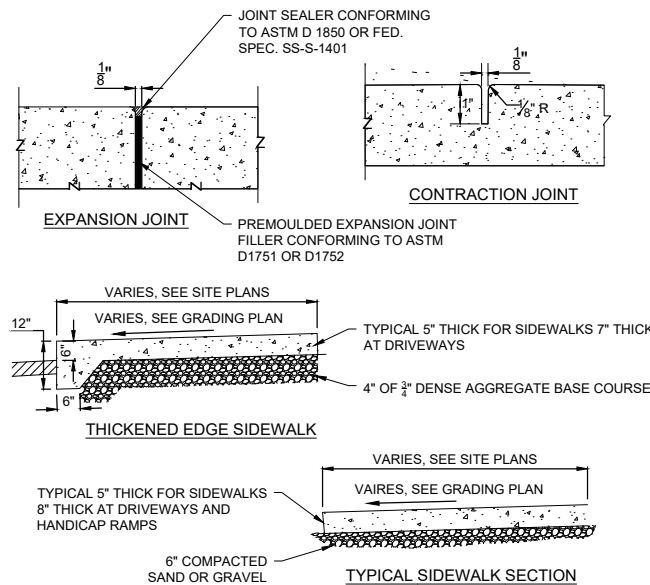




(2) 6" X 6" X .25" SQUARE FLANGE MOUNTING PLATES WITH (4) 5/8" Ø MOUNTING HOLES

NOTE:  
1. INSTALLATION TO BE COMPLETED IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS

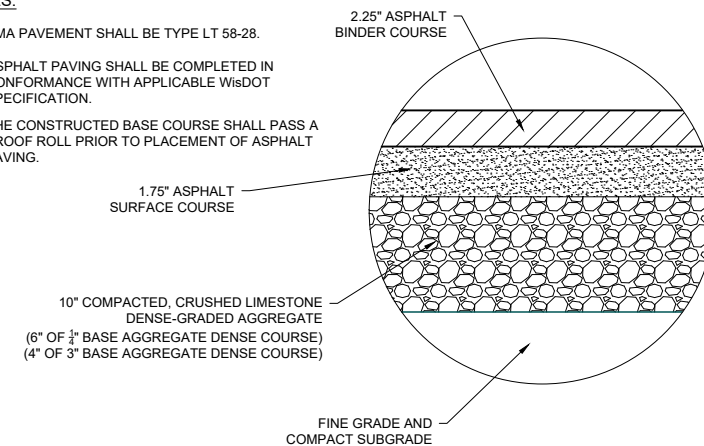
1 BIKE RACK DETAIL  
SCALE: 3" = 1'



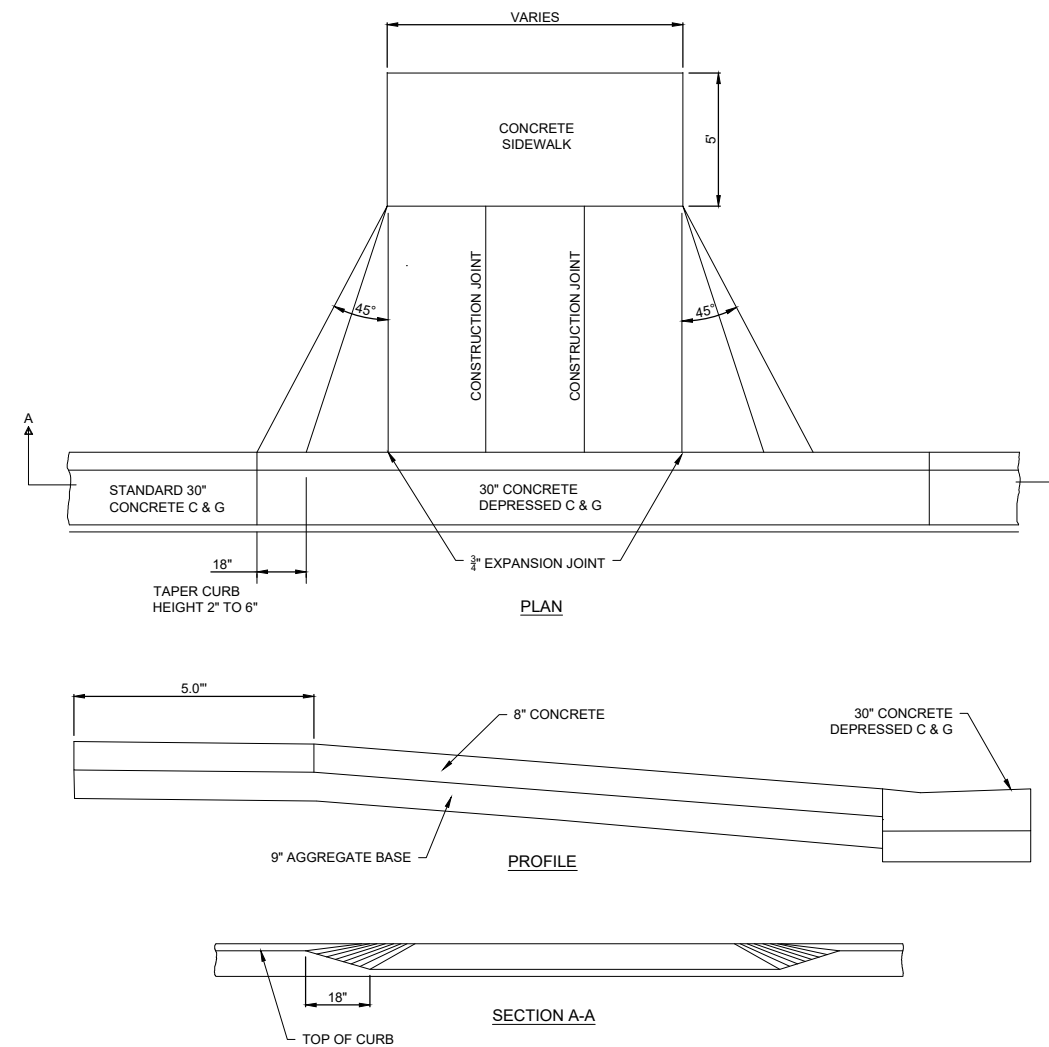
2 SIDEWALK DETAIL  
SCALE: 6" = 1'

NOTES:

- HMA PAVEMENT SHALL BE TYPE LT 58-28.
- ASPHALT PAVING SHALL BE COMPLETED IN CONFORMANCE WITH APPLICABLE WisDOT SPECIFICATION.
- THE CONSTRUCTED BASE COURSE SHALL PASS A PROOF ROLL PRIOR TO PLACEMENT OF ASPHALT PAVING.



3 MEDIUM DUTY ASPHALT PAVING DETAIL  
SCALE: N.T.S.



4 DRIVEWAY DETAIL  
SCALE: N.T.S.

MARK	REVISION	DATE	BY
Engineer: BCA	Checked By: MLC	Date: 05-21-24	Scale: 1" =
Technician: TECH			T-R-S: TTN-RRW-SS
SIP SUBMITTAL			07-23-24 BCA
Project No: 124.0465.30			
Sheet			

2975 KAPEC ROAD

SITE AND PAVEMENT DETAILS CONTINUED CITY OF FITCHBURG, DANE COUNTY, WI

SNYDER & ASSOCIATES, INC.

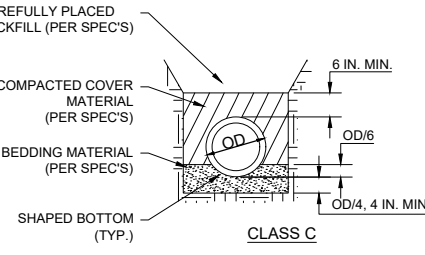
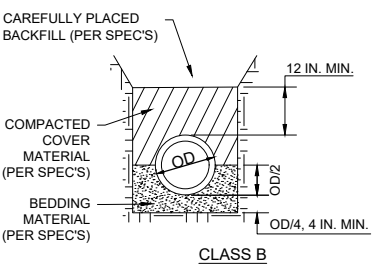
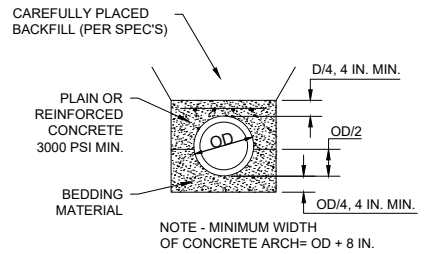
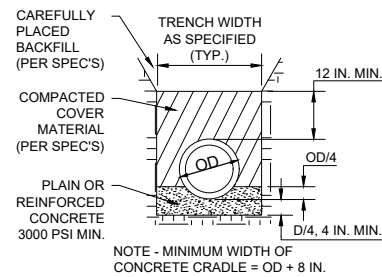
5010 VOGES ROAD  
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Project No: 124.0465.30

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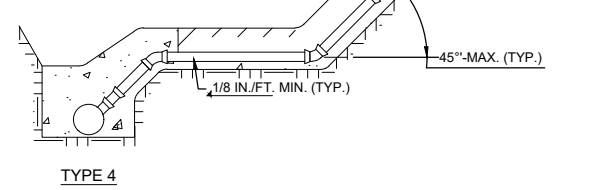
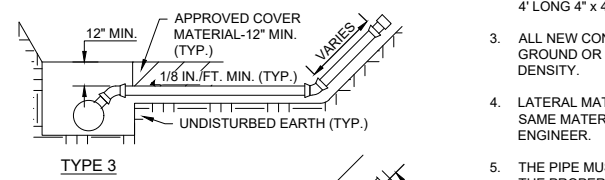
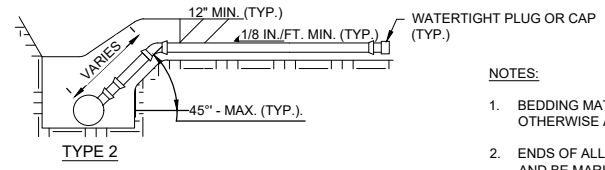
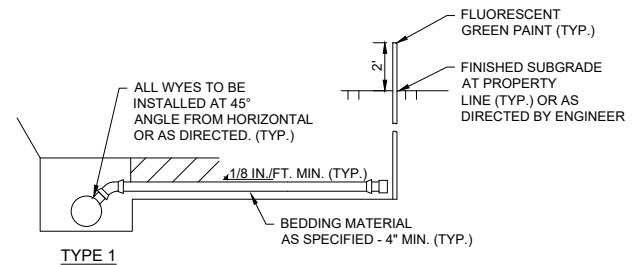
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**NOTES:**

1. ALL PVC AND ABS SEWER MAINS AND LATERALS SHALL BE CLASS "B" MIN., OR AS CALLED FOR IN THE SPECIAL PROVISIONS.
2. ALL BEDDING AND COVER MATERIALS SHALL BE AS SPECIFIED AND SHALL BE SUBJECT TO THE APPROVAL OF THE ENGINEER.
3. UNDERCUT SHALL BE IN ACCORDANCE WITH SECTION 3 OF THE STORM AND SANITARY SEWER STANDARD SPECIFICATIONS.

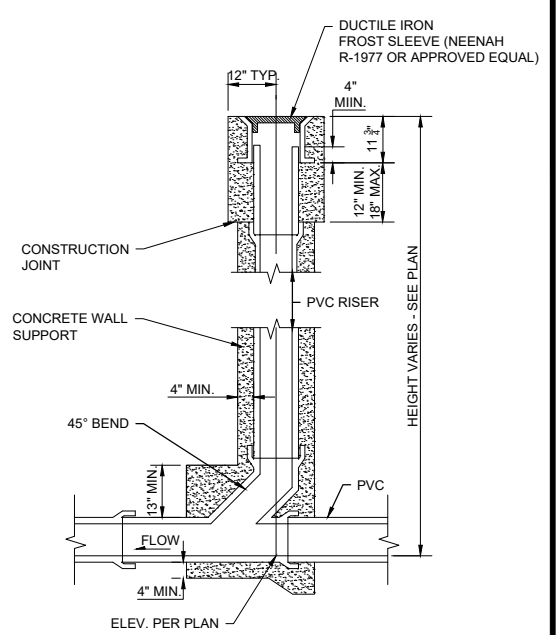
**1** SANITARY SEWER BEDDING DETAIL  
SCALE: 6" = 1'



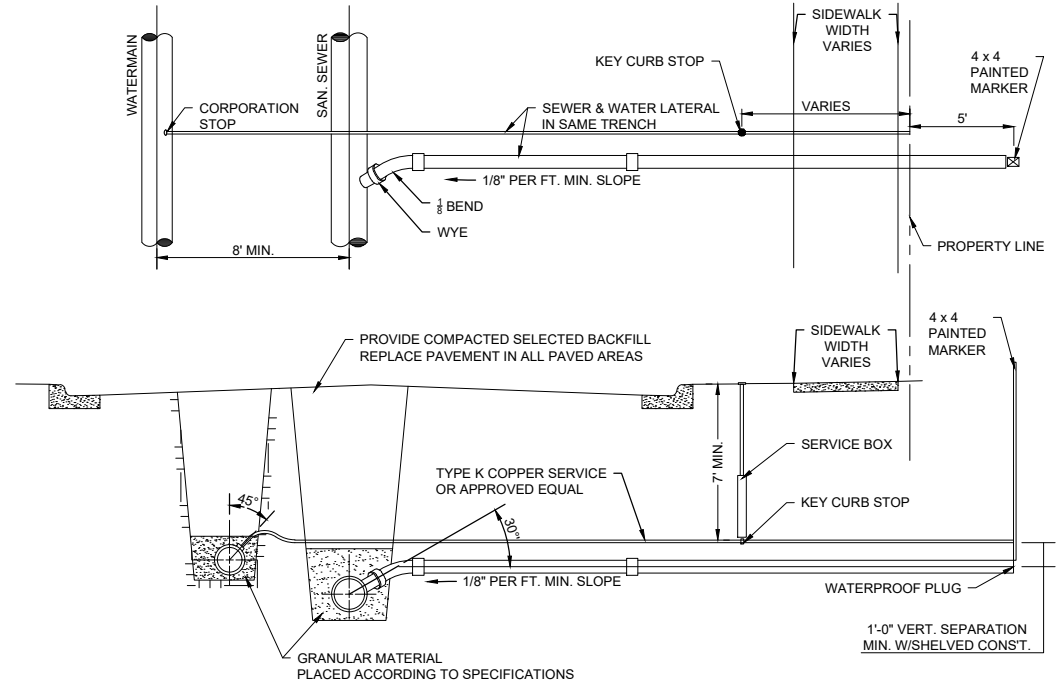
**NOTES:**

1. BEDDING MATERIAL SHALL BE 3/8" CLEAR STONE, UNLESS OTHERWISE APPROVED BY ENGINEER.
2. ENDS OF ALL LATERALS TO BE 10 FT. MIN. COVER AT END, AND BE MARKED BOTH BELOW AND ABOVE SURFACE WITH 4" LONG 4" x 4".
3. ALL NEW CONSTRUCTION TO BE PLACED ON UNDISTURBED GROUND OR SAND COMPACTED TO 95% MAXIMUM DENSITY.
4. LATERAL MATERIAL INCLUDING FITTINGS SHALL BE OF SAME MATERIAL AS THE SEWER MAIN, OR AS DIRECTED BY ENGINEER.
5. THE PIPE MUST EXTEND AT LEAST 5' Laterally BEYOND THE PROPERTY LINE

**3** SANITARY LATERAL DETAIL  
SCALE: 3" = 1'



**2** CLEAN OUT DETAIL  
SCALE: 6" = 1'



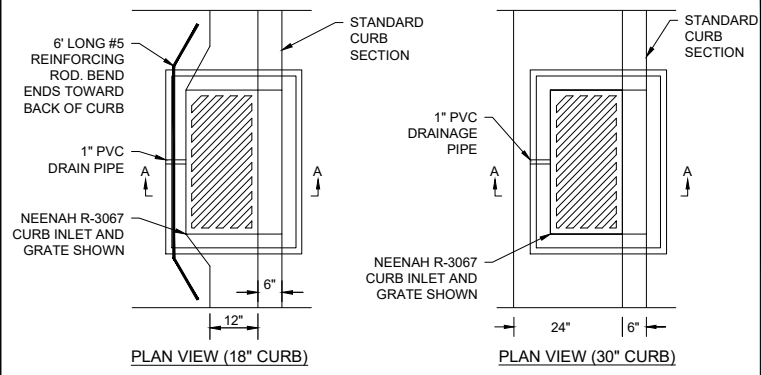
**4** SEWER AND WATER CONNECTION DETAIL  
SCALE: 3" = 1'

MARK	DATE	BY
SIP SUBMITTAL	07-23-24	BCA
REVISION		
Checked By: MLC	Scale: 1" =	
Engineer: BCA	Date: 05-21-24	
Technician: TECH	T-R-S: TTN-RRW-SS	
Project No: 124.0465.30		
Sheet		

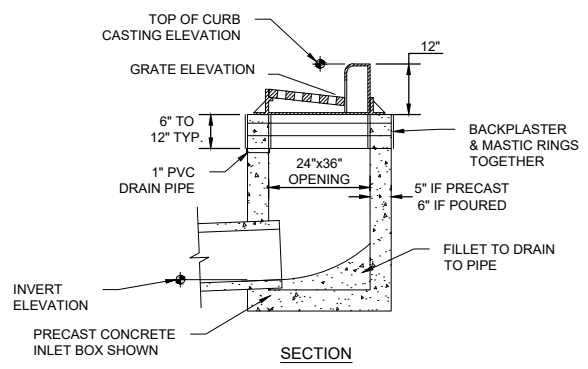
**2975 KAPEC ROAD**  
**SANITARY DETAILS**  
**CITY OF FITCHBURG, DANE COUNTY, WI**  
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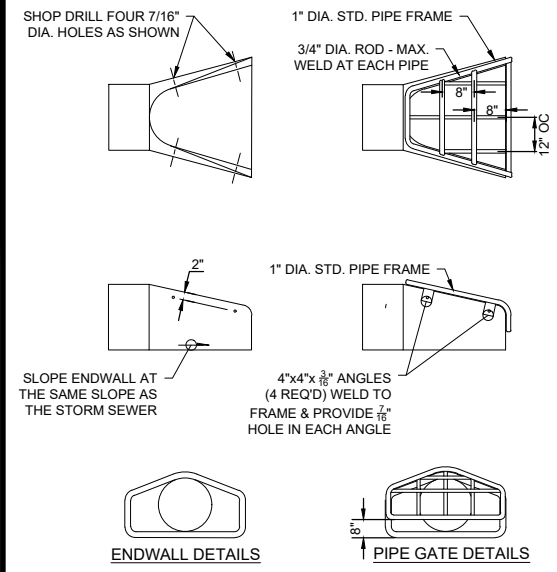




- NOTES:**
1. TOP OF CURB AND PIPE INVERT ELEVATIONS ARE SHOWN ON THE PLANS.
  2. THE GRATE ELEVATION SHALL BE DEPRESSED 0.1' FROM STRAIGHT GUTTER GRADE STARTING 5' FROM THE INLET AND EXTENDING IN BOTH DIRECTIONS.
  3. THE CASTING SHALL BE NEENAH FOUNDRY R-3067 CURB INLET WITH REVERSIBLE GRATES WHERE RUNOFF REACHES THE INLET FROM BOTH DIRECTIONS. WHERE RUNOFF REACHES THE INLET FROM ONE DIRECTION A NEENAH R-3067-L CASTING SHALL BE USED. DIRECTIONAL SLOTS TO BE LOCATED TO DIRECT THE FLOW INTO THE STREET INLET.
  4. FRAME ADJUSTING RINGS SHALL BE AT LEAST TWO CONCRETE RINGS OF VARIABLE THICKNESS. MASTIC BETWEEN RINGS AND BACKPLASTER A SMOOTH LAYER OF GROUT OVER THE ENTIRE INNER AND OUTER SURFACES OF THE RINGS.

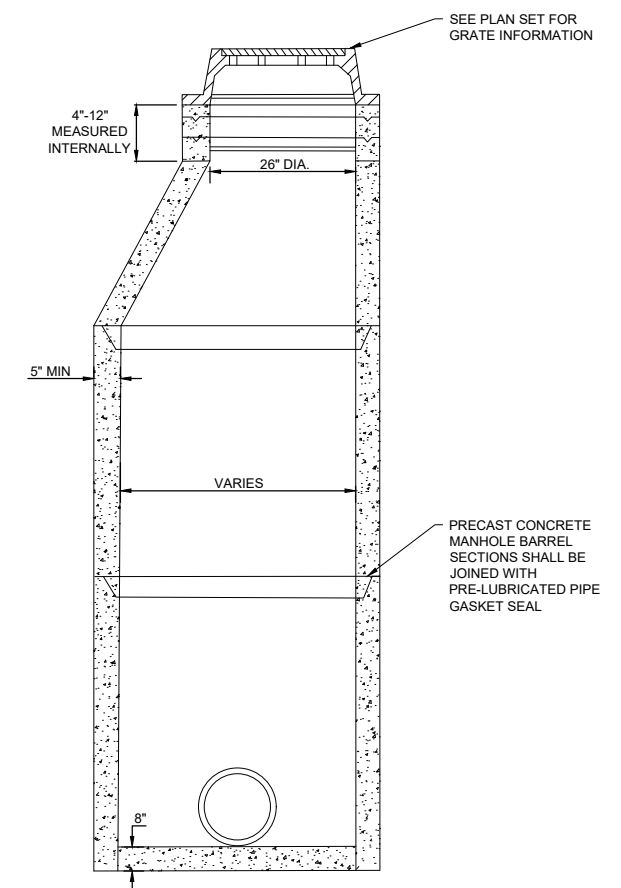


**1** RECTANGULAR CURB INLET DETAIL  
SCALE: 6" = 1'



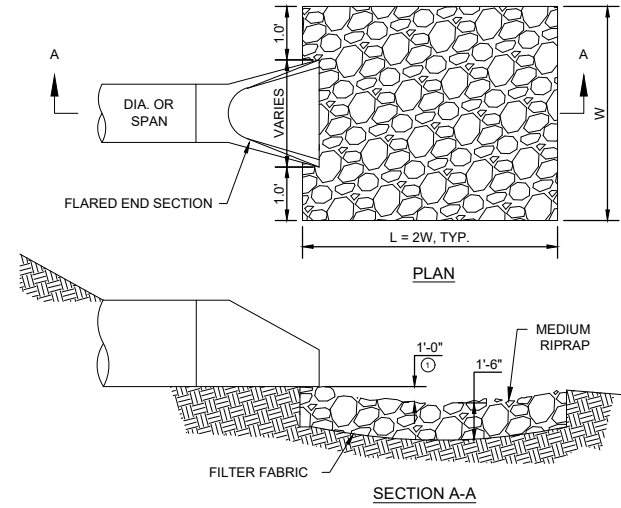
- NOTE:**
1. THE CONTRACTOR SHALL BOLT THE PIPE GATE TO THE CONCRETE ENDWALL WITH FOUR 3/8"x6" MACHINE BOLTS WITH NUTS ON INSIDE WALL.
- PAINTING SPECIFICATION:**
1. THE PIPE GATE SHALL RECEIVE THE FOLLOWING PREPARATION & PAINTING. THE FIRST COAT SHALL BE RUS-OLEUM X-60 RED BARE METAL PRIMER OR APPROVED EQUAL. THE SECOND COAT SHALL BE RUS-OLEUM 960 ZINC CHROMATE PRIMER OR APPROVED EQUAL. THE THIRD COAT SHALL BE RUS-OLEUM 1282 HIGH GLOSS METAL FINISH OR APPROVED EQUAL.
- PREPARATION STEPS:**
1. BARE METAL SURFACES - TREAT WITH THE THREE-COAT PAINTING SYSTEM LISTED AFTER A THOROUGH SCRAPING, WIRE BRUSHING & CLEANING.
  2. EACH COAT OF PAINT SHALL BE APPLIED OVER THE ENTIRE GATE SURFACE.
  3. ALLOW 24-48 HOURS DRYING TIME AT 60° OR ABOVE BETWEEN COATS.

**3** STANDARD ENDWALL DETAILS  
SCALE: 6" = 1'



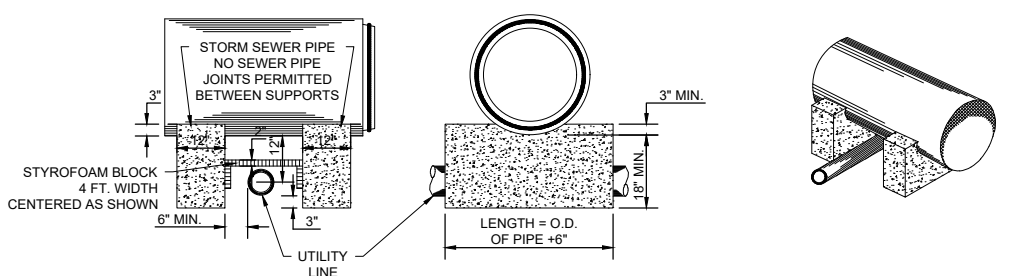
- NOTES:**
1. FOR STRUCTURES LESS THAN 5.0' DEEP A PRECAST REINFORCED CONCRETE FLATTOP IS REQUIRED.
  2. WALL THICKNESS SHALL BE 5" FOR 48" MANHOLE AND 6" FOR 60" MANHOLE.
  3. THE USE OF WOOD WEDGES OR SHIMS FOR FRAME OR RING ADJUSTMENT IS NOT ALLOWED.
  4. MAXIMUM TOTAL CHIMNEY HEIGHT, EXCLUDING MANHOLE FRAME, SHALL NOT EXCEED 16 INCHES, WITH A MINIMUM OF 1 - 2 INCH PRECAST RING.
  5. THE ANNULAR SPACE BETWEEN THE PIPE AND MANHOLE WALL SHALL BE FILLED WITH CONCRETE TO THE HEIGHT OF THE BENCH.
  6. MANHOLES 3' DEEP AND GREATER SHALL BE CONSTRUCTED WITH STEPS.

**4** STORM SEWER MANHOLE DETAIL  
SCALE: 6" = 1'



- NOTES:**
1. GEOTEXTILE FILTER FABRIC SHALL BE TYPE "HR" UNLESS OTHERWISE SPECIFIED. REFER TO SECTION 401.4.1.
  - FOR PIPES GREATER THAN OR EQUAL TO 30" USE 1.5'.

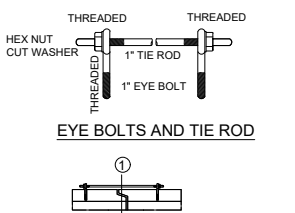
**6** ENDWALL RIP-RAP DETAIL  
SCALE: 6" = 1'



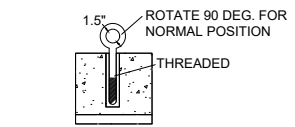
- NOTE:**
1. EACH PAIR OF SUPPORTS IN ANY SIZE IS ONE PAY ITEM.

**2** CONCRETE PIPE SUPPORT  
SCALE: 6" = 1'

**ALTERNATE 1**  
EYE BOLT AND TIE ROD ASSEMBLY  
(JOINT TIES FOR 72" DIA. AND OVER CONCRETE PIPE)



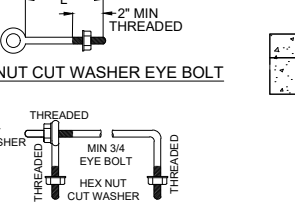
- ② INSERT. CAST-IN-PLACE WELDED EYE BOLT OR APPROVED EQUAL DURING FABRICATION FOR 1" DIA. EYE BOLT



**CAST-IN-PLACE THREADED INSERT LONGITUDINAL SECTIONS**

**5** CONCRETE PIPE JOINT TIES  
SCALE: 6" = 1'

**ALTERNATE 2**  
EYE BOLT AND TIE ROD ASSEMBLY  
(JOINT TIES FOR 18" TO 66" DIA. CONCRETE PIPE)

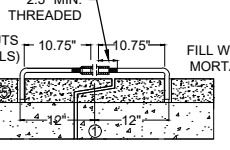


- NOTE:**
1. TWO EYE BOLTS MAY BE USED WITH A 30° LONG THREADED ROD IN LIEU OF THE 90° DEG BENT TIE ROD EYE BOLT AND TIE ROD

PIPE SIZE	TONGUE AND GROOVE PIPE	MODIFIED BELL PIPE
18" TO 24"	4 1/2"	6 1/4"
30"	5"	7"
36"	5 1/2"	7"
42"	6"	
48"	6 1/2"	
60"	7 1/2"	
66"	8"	

**EYE BOLT DIMENSION TABLE**

**ALTERNATE 3**  
ADJUSTABLE TIE ROD  
(JOINT TIES FOR 12" TO 108" DIA. CONCRETE PIPE)



- LONGITUDINAL SECTION**
- ① > OF TONGUE AND GROOVE OR BELL AND SPIGOT JOINT
  - ② THE INSIDE OF THE THREADED INSERTS SHALL BE CLEAN TO ALLOW THE INSERTION OF THREADED EYE BOLTS
  - ③ HOLES SHALL BE CAST-IN-PLACE OR DRILLED, 12" FROM > OF TONGUE AND GROOVE
  - ④ BOLT PROJECTION INSIDE OF PIPE SHALL NOT EXCEED 2"
  - ⑤ ROD DIAMETER = 1 INCH

PIPE DIAMETER	TIE ROD DIAMETER	D	L1	H	R
12" TO 30"	1/2"	1/2"	5"	1/2"	1 3/4"
36" TO 48"	3/4"	3/4"	5"	1/2"	5"
60" TO 104"	1"	1"	7"	1/2"	7 1/2"

**ADJUSTABLE TIE ROD TABLE**



- RIGHT AND LEFT THREADS SLEEVE NUT**
- GENERAL NOTES:**
1. CONCRETE CULVERT PIPE SHALL BE TIED TOGETHER IN THE MANNER ILLUSTRATED BY THIS DETAIL AND PER STANDARD SPEC. 502.7 (D)
  2. THE CONTRACTOR MAY USE EITHER ALTERNATE 1, 2, OR 3 FOR DRAINAGE STRUCTURES. UNLESS OTHERWISE STATED IN THE CONTRACT, THE MATERIALS, FABRICATION AND WORK NECESSARY TO THE CULVERT PIPE AS SHOWN ON THIS DETAIL WILL BE CONSIDERED INCIDENTAL TO THE CULVERT PIPE.

PLACEMENT OF (2) CAST-IN-PLACE INSERTS OR HOLES DURING FABRICATION FOR PIPE SECTIONS REQUIRING TIE RODS

DETAILED DRAWINGS FOR PROPOSED ALTERNATE DESIGNS FOR JOINT TIES SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL.

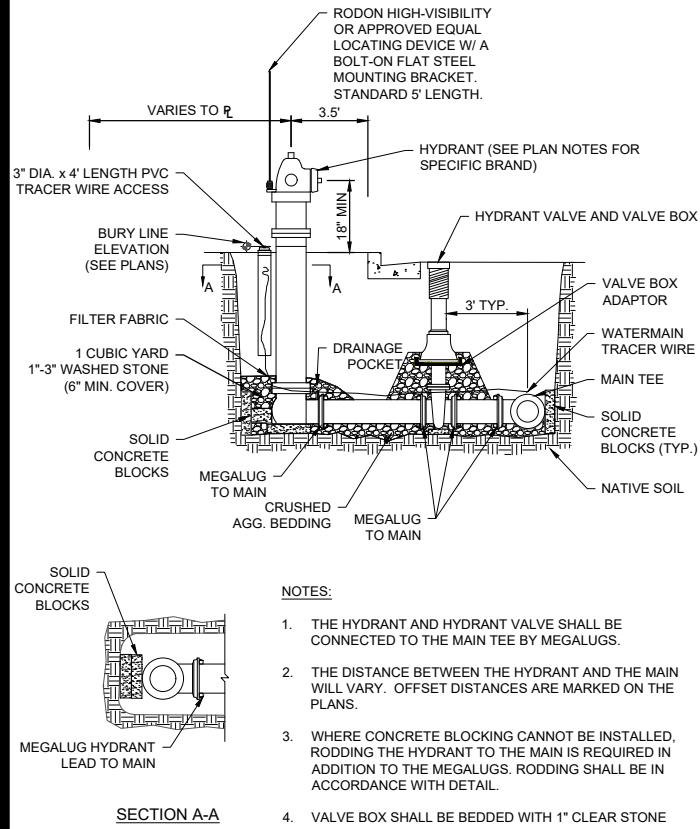


**TRANSVERSE SECTION**

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REVISION	DATE	BY	
Engineer: BCA	Checked By: MLC	Scale: 1" =	
Technician: TECH	Date: 05-21-24	T-R-S:	
Project No: 124.0465.30			Sheet

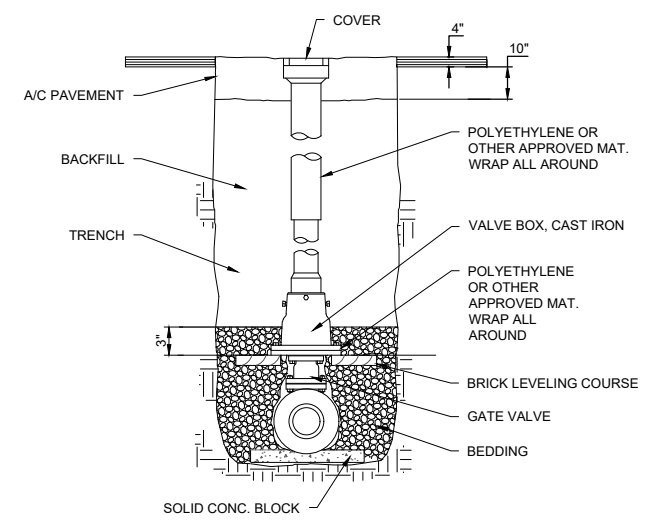
2975 KAPEC ROAD  
STORM DETAILS  
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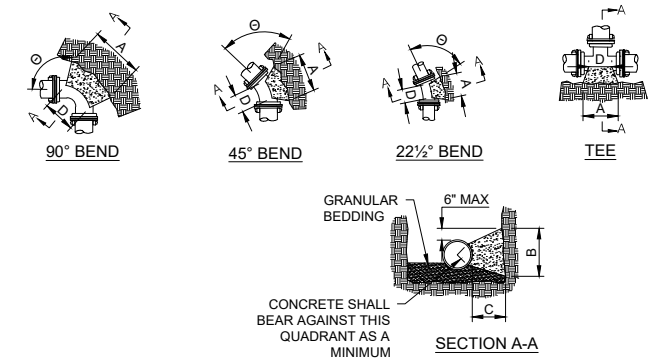


- NOTES:**
1. THE HYDRANT AND HYDRANT VALVE SHALL BE CONNECTED TO THE MAIN TEE BY MEGALUGS.
  2. THE DISTANCE BETWEEN THE HYDRANT AND THE MAIN WILL VARY. OFFSET DISTANCES ARE MARKED ON THE PLANS.
  3. WHERE CONCRETE BLOCKING CANNOT BE INSTALLED, RODDING THE HYDRANT TO THE MAIN IS REQUIRED IN ADDITION TO THE MEGALUGS. RODDING SHALL BE IN ACCORDANCE WITH DETAIL.
  4. VALVE BOX SHALL BE BEDDED WITH 1" CLEAR STONE

**1** STANDARD HYDRANT DETAIL  
SCALE: 6" = 1'



**3** VALVE BOX DETAIL  
SCALE: 3" = 1'



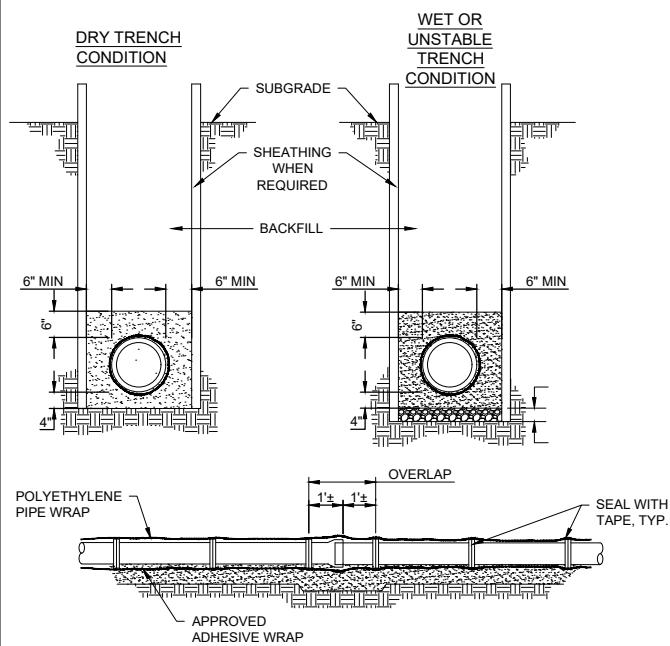
- NOTES:**
1. WOOD BLOCKING MAY NOT BE USED. ONLY SOLID CONCRETE BLOCKS ARE ALLOWED.
  2. DIMENSION "D" SHALL BE AS LARGE AS POSSIBLE, BUT THE CONCRETE SHALL NOT INTERFERE WITH THE MECHANICAL JOINTS.
  3. DIMENSION "C" SHALL BE AT LEAST 6 INCHES, AND LARGE ENOUGH TO MAKE THE "B" ANGLE EQUAL TO OR GREATER THAN 45 DEGREES WITH THE DIMENSION "A" AS SHOWN ON THE TABLE, OR GREATER, AND WITH DIMENSION "D" AS LARGE AS POSSIBLE.
  4. CONCRETE SHALL BE CLASS "CC".
  5. ALL BUTTRESSED JOINTS SHALL INCLUDE MEGALUGS AND CONCRETE BUTTRESSING.

PIPE SIZE	TEES				22 1/2° BEND		45° BEND		90° BEND	
	A	B	A	B	A	B	A	B	A	B
6	1'-3"	1'-0"	1'-0"	1'-0"	1'-0"	1'-4"	1'-2"	1'-10"	1'-6"	1'-2"
8	1'-6"	1'-4"	1'-0"	1'-0"	1'-4"	1'-2"	1'-10"	1'-6"	1'-2"	1'-6"
10/12	2'-3"	2'-0"	1'-4"	1'-4"	1'-10"	1'-10"	2'-8"	2'-3"	2'-3"	2'-3"
14/16	3'-2"	2'-8"	1'-10"	1'-8"	2'-8"	2'-4"	3'-10"	2'-10"	2'-10"	2'-10"
18/20	4'-0"	3'-0"	2'-4"	2'-0"	3'-3"	2'-10"	5'-0"	3'-4"	3'-4"	3'-4"
22/24	5'-3"	3'-4"	2'-10"	2'-4"	4'-0"	3'-3"	6'-4"	3'-10"	3'-10"	3'-10"
30	6'-3"	4'-3"	3'-6"	3'-0"	5'-4"	3'-10"	8'-0"	4'-8"	4'-8"	4'-8"

\* = FOR TEE THIS WILL BE THE BRANCH PIPE

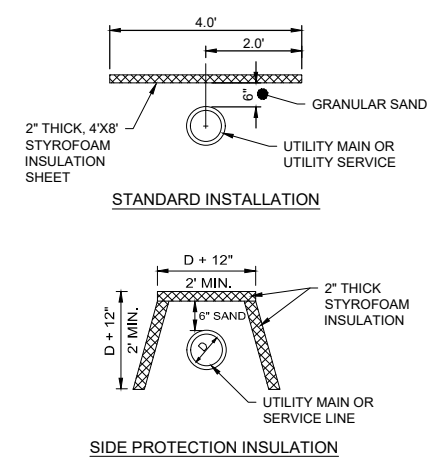
DIMENSIONS IN THE TABLE ARE BASED ON A WATER PRESSURE OF 150 PSI AND SOIL RESISTANCE OF 2000 LBS./SQ.FT.

**2** BUTTRESS DETAIL  
SCALE: 3" = 1'



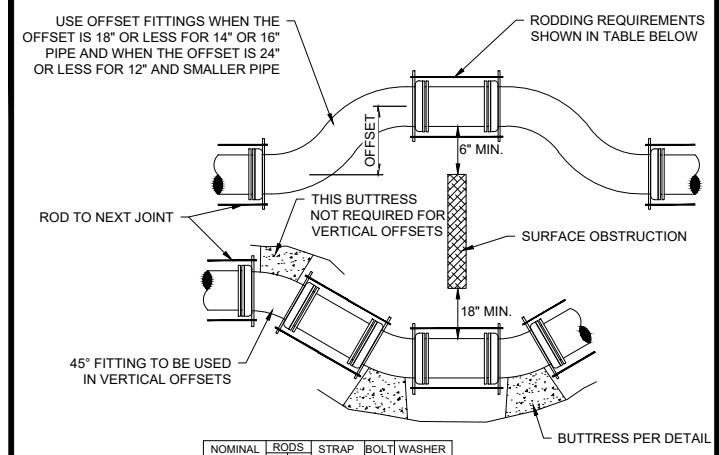
- INSTALLATION:**
1. PLACE 4" OF BEDDING MATERIAL BENEATH PIPE. PLACE BEDDING MATERIAL AROUND THE PIPE TO THE SPRING LINE. WORK THE MATERIAL IN AND AROUND THE PIPE BY HAND TO PROVIDE UNIFORM SUPPORT. PLACE COVER MATERIAL CAREFULLY TO A LEVEL 6" ABOVE THE PIPE.

**4** WATER PIPE BEDDING DETAIL  
SCALE: 6" = 1'



- GENERAL NOTES:**
1. THE SIDE PROTECTION INSTALLATION SHALL BE USED WHERE FROST WILL PENETRATE BELOW THE PIPE INVERT.

**5** WATER PIPE INSULATION DETAIL  
SCALE: 6" = 1'



NOMINAL PIPE SIZE	RODS NO. DIA.	STRAP SIZE	BOLT DIA.	WASHER SIZE
6	3	1/2 x 2	3/8	1/2 x 3 x 5
8	4	1/2 x 2	3/8	1/2 x 3 x 5
10	4	1/2 x 2 1/2	1/2	1/2 x 3 x 5
12	4	1/2 x 2 1/2	1/2	1/2 x 3 x 5
14	4	1/2 x 2 1/2	1/2	1/2 x 3 x 5

- NOTES:**
1. ALL OFFSETS SHALL BE RESTRAINED WITH MEGALUGS. WHERE CONCRETE BUTTRESSING CANNOT BE USED, RODDING MUST BE USED IN ADDITION TO THE MEGALUGS.
  2. RODS AND WASHERS TO BE ASTM A-575 MERCHANT QUALITY 0.17-0.24 CARBON. NUTS TO BE AMERICAN STANDARD HEAVY, NOT PRESSED.
  3. TIE RODS, BOLTS, NUTS, BANDS AND WASHERS TO BE FURNISHED AND ASSEMBLED BY THE CONTRACTOR.
  4. ALL STEEL MATERIAL TO BE GALVANIZED OR BE THOROUGHLY COATED WITH ENGINEER APPROVED COATING.
  5. OFFSET FITTINGS REQUIRE CONTINUOUS RODDING IN ALL POSITIONS.
  6. VERTICAL OFFSETS SHALL NOT CREATE A HIGH POINT IN THE WATER MAIN. VERTICAL OFFSETS REQUIRE THE SAME RODDING AND BUTTRESSING AS SHOWN ABOVE.

**6** OFFSET & RODDING DETAIL  
SCALE: 6" = 1'

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**GENERAL LANDSCAPE NOTES**


- UTILITY WARNING: THE UTILITIES SHOWN HAVE BEEN LOCATED FROM FIELD SURVEY INFORMATION AND/OR RECORDS OBTAINED. THE SURVEYOR MAKES NO GUARANTEE THAT THE UTILITIES SHOWN COMPRISE ALL SUCH UTILITIES IN THE AREA, EITHER IN SERVICE OR ABANDONED. THE SURVEY FURTHER DOES NOT WARRANT THAT THE UTILITIES SHOWN ARE IN THE EXACT LOCATION INDICATED.
- NOTIFY UTILITY OWNERS PRIOR TO BEGINNING ANY CONSTRUCTION. CONTRACTOR IS RESPONSIBLE FOR DETERMINING EXISTENCE, EXACT LOCATION AND DEPTH OF ALL UTILITIES. AVOID DAMAGE TO UTILITIES AND SERVICES DURING CONSTRUCTION. ANY DAMAGE DUE TO THE CONTRACTOR'S CARELESSNESS SHALL BE CORRECTED AT THE CONTRACTOR'S EXPENSE. COORDINATE AND COOPERATE WITH UTILITY COMPANIES DURING CONSTRUCTION.
- THE CONTRACTOR SHALL FOLLOW THE LANDSCAPE PLANS AS CLOSELY AS POSSIBLE. ANY SUBSTITUTION OR ALTERATION SHALL NOT BE ALLOWED WITHOUT APPROVAL OF THE OWNER'S REPRESENTATIVE. OVERALL PLANT QUANTITY AND QUALITY SHALL BE CONSISTENT WITH THE PLANS.
- ALL PLANT MATERIAL SHALL AT LEAST MEET MINIMUM REQUIREMENTS SHOWN IN THE "AMERICAN STANDARDS FOR NURSERY STOCK" (ANSI Z60.1-LATEST EDITION).
- MULCH SHALL NOT BE PLACED AROUND THE COLLAR OF SHRUB OR TREE. PROVIDE A MINIMUM OF 2" BETWEEN MULCH AND COLLAR OF SHRUB OR TREE.
- ALL PLANT MATERIAL SHALL BE GROWN IN ZONE CAPABLE OF WITHSTANDING LOCAL CLIMATE AND GROWING CONDITIONS.
- TREE OR SHRUB SHALL STAND PLUMB. DO NOT ALLOW AIR POCKETS TO FORM WHEN BACK FILLING.
- LIVE PLANTS CAN BE PLANTED IN THE FIELD DURING THE GROWING SEASON FROM MAY 1 THROUGH OCTOBER 1. ANY SUGGESTED PLANTING TIMES NOT IN THIS WINDOW SHALL BE APPROVED BY LANDSCAPE ARCHITECT. IF PLANTING OCCURS OUTSIDE OF THIS WINDOW, ADDITIONAL MEASURES MAY NEED TO BE TAKEN (I.E. MULCH) TO ENSURE PLANT SURVIVAL. IN THESE INSTANCES, THE CONTRACT PRICE MAY NEED TO BE ADJUSTED ACCORDINGLY.
- PLANTS SHOULD BE WATERED IN AFTER INSTALLATION TO ENSURE THEIR SURVIVAL. THIS TYPICALLY INVOLVES WATERING AT TIME OF INSTALLATION AND 2 TIMES WEEKLY FOR A ONE MONTH PERIOD OR UNTIL GROUND FREEZE UP IF NATURAL RAINFALLS ARE INSUFFICIENT. A SINGLE WATERING EVENT INVOLVES WATERING THE SOIL IN THE PLANTED AREAS TO THE POINT OF SATURATION BUT STOPPING SHORT OF SOIL DISPLACEMENT. SHOULD VERY DRY CONDITIONS DEVELOP WITHIN ONE YEAR OF PLANTING, ADDITIONAL WATERINGS MAY BE NECESSARY. CONSULTANT OR LANDSCAPE ARCHITECT WILL DETERMINE THIS AND CONTRACT PRICES MAY BE ADJUSTED TO ACCOMMODATE THIS ACTION.
- ALL PLANT MATERIAL SHALL BE SPECIMEN QUALITY, HEALTHY, FREE OF DISEASE AND INSECTS AND SHALL HAVE HEALTHY, WELL-DEVELOPED ROOT SYSTEMS. PLANTS SHALL ALSO BE FREE FROM PHYSICAL DAMAGE OR OTHER CONDITIONS THAT WOULD PREVENT VIGOROUS GROWTH.
- ALL PROPOSED PLANTS SHALL BE LOCATED AS SHOWN ON PLANS. ALL TREES TO BE PLANTED A MINIMUM DISTANCE OF 5 FEET FROM PAVEMENTS AND 6 FEET FROM ALL HYDRANTS.
- CONTRACTOR IS RESPONSIBLE FOR PLANTS AWAITING INSTALLATION AND SHALL PROTECT THEM FROM INJURY AND THEFT.
- THE CONTRACTOR IS RESPONSIBLE FOR VERIFYING ALL PLANT QUANTITIES. GRAPHIC QUANTITIES TAKES PRECEDENCE OVER WRITTEN QUANTITIES.
- THE OWNER'S REPRESENTATIVE RESERVES THE RIGHT TO INSPECT AND TAG ALL PLANT MATERIAL PRIOR TO SHIPPING TO THE SITE. IN ALL CASES, THE OWNER'S REPRESENTATIVE MAY REJECT PLANT MATERIAL AT THE SITE IF MATERIAL IS DAMAGED, DISEASED, OR DECLINING IN HEALTH AT THE TIME OF ONSITE INSPECTIONS OR IF THE PLANT MATERIAL DOES NOT MEET THE MINIMUM SPECIFIED STANDARD IDENTIFIED ON THE PLANS. THE CONTRACTOR SHALL COORDINATE WITH THE OWNER'S REPRESENTATIVE FOR INSPECTION AND APPROVAL OF ALL MATERIALS AND PRODUCTS PRIOR TO INSTALLATION.
- THE OWNER'S REPRESENTATIVE MAY ELECT TO UPSIZE PLANT MATERIAL AT THEIR DISCRETION BASED ON SELECTION, AVAILABILITY, OR TO ENHANCE SPECIFIC AREAS OF THE PROJECT. THE CONTRACTOR SHALL VERIFY PLANT MATERIAL SIZES WITH OWNER'S REPRESENTATIVE PRIOR TO PURCHASING, SHIPPING OR STOCKING OF PLANT MATERIALS. SUBMIT CHANGE ORDER REQUEST TO OWNER'S REPRESENTATIVE FOR APPROVAL IF ADDITIONAL COST IS REQUESTED BY THE CONTRACTOR PRIOR TO INSTALLATION. RE-STOCKING CHARGES WILL NOT BE APPROVED IF THE CONTRACTOR FAILS TO SUBMIT A REQUEST FOR MATERIAL CHANGES.
- THE CONTRACTOR SHALL WARRANTY ALL CONTRACTED WORK AND MATERIALS FOR A PERIOD OF ONE YEAR AFTER SUBSTANTIAL COMPLETION HAS BEEN ISSUED BY THE OWNER'S REPRESENTATIVE FOR THE ENTIRE PROJECT UNLESS OTHERWISE SPECIFIED IN THE CONTRACT DOCUMENTS.
- LANDSCAPE MATERIAL LOCATIONS SHALL HAVE PRECEDENCE OVER IRRIGATION MAINLINE AND LATERAL LOCATIONS. IF IRRIGATION IS INCLUDED, COORDINATE INSTALLATION OF IRRIGATION EQUIPMENT SO THAT IT DOES NOT INTERFERE WITH THE PLANTING OF TREES OR OTHER LANDSCAPE MATERIAL.
- THE LANDSCAPE CONTRACTOR SHALL BE RESPONSIBLE FOR ENSURING POSITIVE DRAINAGE EXISTS IN ALL LANDSCAPE AREAS. SURFACE DRAINAGE ON LANDSCAPE AREAS SHALL NOT FLOW TOWARD STRUCTURES AND FOUNDATIONS. MAINTAIN SLOPE AWAY FROM FOUNDATIONS PER THE GEOTECHNICAL REPORT RECOMMENDATIONS. ALL LANDSCAPE AREAS BETWEEN WALKS AND CURBS SHALL DRAIN FREELY TO THE CURB UNLESS OTHERWISE IDENTIFIED ON THE GRADING PLAN. IN NO CASE SHALL THE GRADE, TURF THATCH, OR OTHER LANDSCAPE MATERIALS DAM WATER AGAINST WALKS. MINIMUM SLOPES ON LANDSCAPE AREAS SHALL BE 2%; MAXIMUM SLOPE SHALL BE 25% UNLESS SPECIFICALLY IDENTIFIED ON THE PLANS OR APPROVED BY THE OWNER'S REPRESENTATIVE.
- PRIOR TO INSTALLATION OF PLANT MATERIALS, AREAS THAT HAVE BEEN COMPACTED OR DISTURBED BY CONSTRUCTION ACTIVITY SHALL BE THOROUGHLY LOOSENEED TO A DEPTH OF 8" - 12".
- ALL LANDSCAPED AREAS ARE TO RECEIVE ORGANIC SOIL PREPARATION PER RATE IDENTIFIED BY A SOIL TEST.
- TREES SHALL NOT BE LOCATED IN DRAINAGE SWALES, DRAINAGE AREAS, OR UTILITY EASEMENTS. CONTACT OWNER'S REPRESENTATIVE FOR RELOCATION OF PLANTS IN QUESTIONABLE AREAS PRIOR TO INSTALLATION.
- THE CENTER OF EVERGREEN TREES SHALL NOT BE PLACED CLOSER THAN 8' AND THE CENTER OF ORNAMENTAL TREES CLOSER THAN 6' FROM A SIDEWALK, STREET OR DRIVE LANE. EVERGREEN TREES SHALL NOT BE LOCATED ANY CLOSER THAN 15' FROM IRRIGATION ROTOR HEADS. NOTIFY OWNER'S REPRESENTATIVE IF TREE LOCATIONS CONFLICT WITH THESE STANDARDS FOR FURTHER DIRECTION.
- ALL EVERGREEN TREES SHALL BE FULLY BRANCHED TO THE GROUND AND SHALL NOT EXHIBIT SIGNS OF ACCELERATED GROWTH AS DETERMINED BY THE OWNER'S REPRESENTATIVE.
- ALL TREES ARE TO BE STAKED AND GUYED PER DETAILS FOR A PERIOD OF 1 YEAR. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVING STAKES AT THE END OF 1 YEAR FROM ACCEPTANCE OF LANDSCAPE INSTALLATION BY THE OWNER'S REPRESENTATIVE. OBTAIN APPROVAL BY OWNER'S REPRESENTATIVE PRIOR TO REMOVAL.
- ALL TREES INSTALLED ABOVE RETAINING WALLS UTILIZING GEO-GRID MUST BE HAND DUG TO PROTECT GEO-GRID. IF GEO-GRID MUST BE CUT TO INSTALL TREES, APPROVAL MUST BE GIVEN BY OWNER'S REPRESENTATIVE PRIOR TO DOING WORK.
- ALL TREES IN SEED OR TURF AREAS SHALL RECEIVE MULCH RINGS. OBTAIN APPROVAL FROM OWNER'S REPRESENTATIVE FOR ANY TREES THAT WILL NOT BE MULCHED FOR EXCESSIVE MOISTURE REASONS.
- EXISTING TURF AREAS THAT ARE DISTURBED DURING CONSTRUCTION, ESTABLISHMENT AND THE MAINTENANCE PERIOD SHALL BE RESTORED WITH NEW SOD TO MATCH EXISTING TURF SPECIES. DISTURBED NATIVE AREAS WHICH ARE TO REMAIN SHALL BE OVER SEEDED AND RESTORED WITH SPECIFIED SEED MIX.
- WHEN COMPLETE, ALL GRADES SHALL BE WITHIN +/- 1/8" OF FINISHED GRADES AS SHOWN ON THE PLANS.
- WHEN PLANTER POTS ARE SHOWN ON PLANS, CONTRACTOR SHALL INCLUDE THE FOLLOWING: PLANTER MIX, ANNUAL FLOWER PLANTING PROGRAM (INCLUDES 2 PLANTINGS FOR THE 1ST YEAR (SPRING AND FALL) AND WINTER HAND-WATERING AS NEEDED. UNLESS OTHERWISE SPECIFIED, CONTRACTOR TO PROVIDE ANNUAL PLANTING SELECTION FOR REVIEW BY OWNER. IRRIGATION FOR PLANTERS TO BE ON SEPARATE ZONE(S). CONTRACTOR TO COORDINATE PLACEMENT OF NECESSARY SLEEVING PRIOR TO PLACEMENT OF PAVEMENT.
- PRIOR TO THE PLACEMENT OF MULCH AND WEED FABRIC, A GRANULAR, PRE-EMERGENT, WEED CONTROL AGENT SHALL BE ADDED TO ALL PLANTING BEDS IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTION, EXCEPT AROUND ORNAMENTAL GRASSES.
- THE CONTRACTOR IS EXPECTED TO KNOW AND UNDERSTAND THE CITY AND COUNTY SPECIFICATIONS FOR LANDSCAPE AND IRRIGATION. IN CASES OF DISCREPANCIES THE HIGHER OF THE TWO STANDARDS SHALL HAVE PRECEDENCE.
- ALL TREES PLANTED WITHIN RIGHT-OF-WAY WILL INCLUDE CITY APPROVED ROOT BARRIERS.

**PLANT SCHEDULE**

SYMBOL	CODE	QTY	BOTANICAL NAME	COMMON NAME	SIZE	TYPE
<b>TREES</b>						
	AO	5	Acer rubrum 'October Glory'	October Glory Red Maple	1.75" Cal.	B&B
	BB2	6	Betula nigra 'Cully'	Heritage River Birch Multi-trunk	1.5" Cal.	B&B
	GT	5	Gleditsia triacanthos inermis 'Skyline'	Skyline Honey Locust	1.75" Cal.	B&B
<b>EVERGREEN TREES</b>						
	PG2	4	Picea glauca	White Spruce	5' Ht.	B&B
	PW2	6	Pinus strobus	White Pine	6' Ht.	B&B
	TP2	6	Thuja plicata	Western Red Cedar	5' Ht.	B&B
<b>ORNAMENTAL TREES</b>						
	AG2	9	Amelanchier x grandiflora 'Autumn Brilliance'	Autumn Brilliance Apple Serviceberry	#7	Pot
	LM	7	Liquidambar styraciflua 'Moraine'	Moraine Sweet Gum	2" Cal.	B&B
	PO2	20	Prunus maackii 'Jeffree'	Goldrush® Amur Chokecherry	5' Ht.	B&B
<b>SHRUBS</b>						
	BG2	52	Buxus x 'Green Mountain'	Green Mountain Boxwood	3 gal.	Pot
	CF	47	Cornus sericea 'Farrow' TM	Arctic Fire Red Twig Dogwood	3 gal.	Pot
	HP2	37	Hydrangea paniculata	Panicle Hydrangea	3 gal.	Pot
	JK	47	Juniperus x pfitzeriana 'Kallay's Compact'	Kallay's Compact Pfitzer Juniper	3 gal.	Pot
	PC3	43	Physocarpus opulifolius 'Center Glow'	Center Glow Ninebark	3 gal.	Pot
	RA	45	Rhus aromatica 'Gro-Low'	Gro-Low Fragrant Sumac	3 gal.	Pot
	TD2	50	Taxus x media 'Densiformis'	Dense Anglo-Japanese Yew	3 gal.	Pot
	VJ	42	Viburnum x juddii	Judd Viburnum	3 gal.	Pot
<b>GRASSES</b>						
	CE2	82	Cenchrus alopecuroides 'Hamel'	Hamel Fountain Grass	1 gal.	Pot
	PH	59	Panicum virgatum 'Heavy Metal'	Heavy Metal Switch Grass	1 gal.	Pot
	SP2	58	Schizachyrium scoparium 'Prairie Blues'	Prairie Blues Little Bluestem	1 gal.	Pot
	SA	71	Sesleria autumnalis	Autumn Moor Grass	1 gal.	Pot
	SP	83	Sporobolus heterolepis	Prairie Dropseed	1 gal.	Pot
<b>GROUND COVERS</b>						
	NN	18,790 sf	Native Seed Mix	See Construction Notes for Type	seed	
	RM	21,603 sf	Rock Mulch	See Construction Notes for Type	---	
	TD	49,032 sf	Turf Seed Drought Tolerant Dwarf Fescue Blend	See Construction Notes for Type	seed	
	TS2	36,929 sf	Turf Sod	See Construction Notes for Type	sod	

MARK	07-25-24	BCA
REVISION	DATE	BY
SIP SUBMITTAL		
Checked By: MLC	Scale: 1" = ##'	
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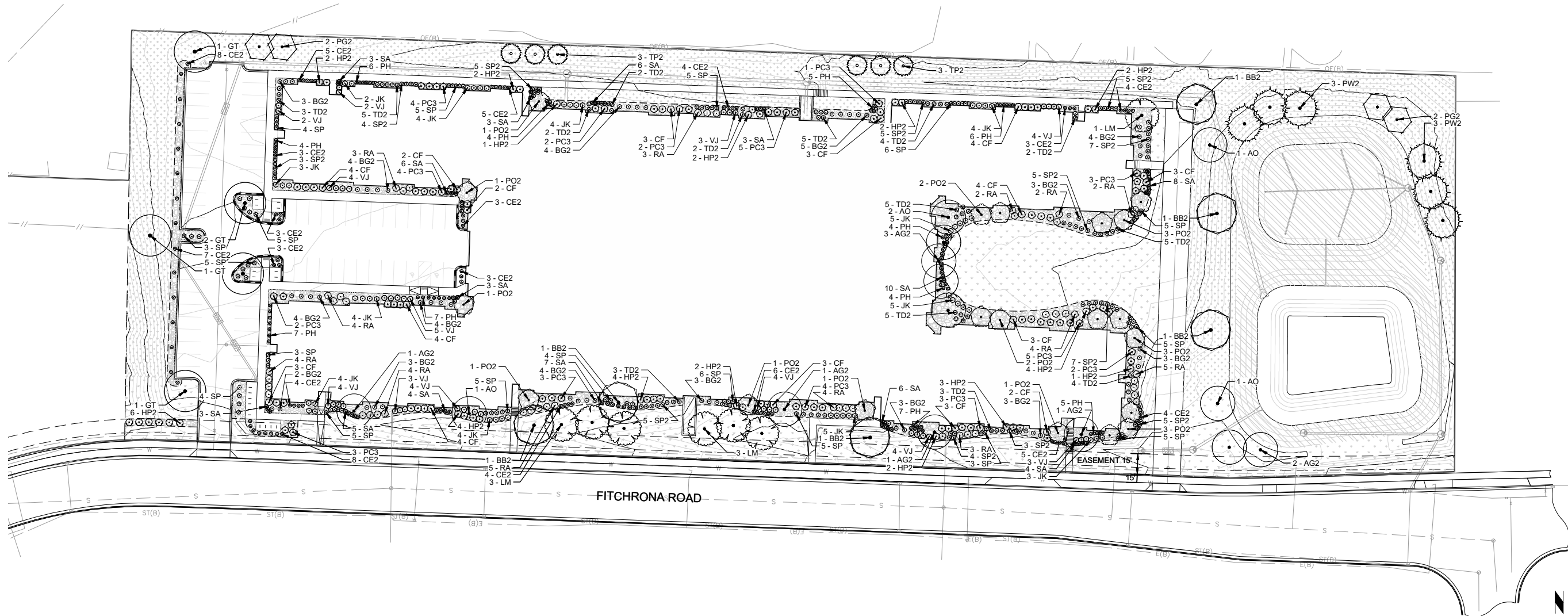
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**LANDSCAPE NOTES**  
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Project No: 124.0465.30  
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**PLANT SCHEDULE**

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CODE	QTY	BOTANICAL NAME	COMMON NAME	SIZE	CONTAINER
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CF	47	Cornus sericea 'Farrow' TM	Arctic Fire Red Twig Dogwood	3 gal.	Pot
HP2	37	Hydrangea paniculata	Panicle Hydrangea	3 gal.	Pot
JK	47	Juniperus x pfitzeriana 'Kallay's Compact'	Kallay's Compact Pfitzer Juniper	3 gal.	Pot
PC3	43	Physocarpus opulifolius 'Center Glow'	Center Glow Ninebark	3 gal.	Pot
RA	45	Rhus aromatica 'Gro-Low'	Gro-Low Fragrant Sumac	3 gal.	Pot
TD2	50	Taxus x media 'Densiformis'	Dense Anglo-Japanese Yew	3 gal.	Pot
VJ	42	Viburnum x juddii	Judd Viburnum	3 gal.	Pot
<b>GRASSES</b>					
CE2	82	Cenchrus alopecuroides 'Hameln'	Hameln Fountain Grass	1 gal.	Pot
PH	59	Panicum virgatum 'Heavy Metal'	Heavy Metal Switch Grass	1 gal.	Pot
SP2	58	Schizachyrium scoparium 'Prairie Blues'	Prairie Blues Little Bluestem	1 gal.	Pot
SA	71	Sesleria autumnalis	Autumn Moor Grass	1 gal.	Pot
SP	83	Sporobolus heterolepis	Prairie Dropseed	1 gal.	Pot

**PLANT SCHEDULE**

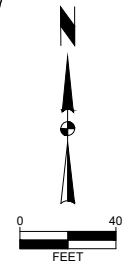
SYMBOL	CODE	QTY	BOTANICAL NAME	COMMON NAME	SIZE
<b>GROUND COVERS</b>					
	NN	18,790 sf	Native Seed Mix	See Construction Notes for Type	seed
	RM	21,603 sf	Rock Mulch	See Construction Notes for Type	---
	TD	49,032 sf	Turf Seed Drought Tolerant Dwarf Fescue Blend	See Construction Notes for Type	seed
	TS2	36,929 sf	Turf Sod	See Construction Notes for Type	sod

**LANDSCAPE LEGEND**

--- SPADE CUT EDGER, RE: DETAIL 2/L-300

**LANDSCAPE CONSTRUCTION NOTES**

- NATIVE SEED SHALL BE LAND RESTORATION SEED MIX FOR MEDIUM SOILS PROVIDED BY PRAIRIE NURSERY (prairienursery.com) OR APPROVED EQUAL. HYDROMULCHING AND HYDROSEEDING NOT PERMITTED.
- ROCK MULCH SHALL BE INSTALLED AT A 3" DEPTH OVER GEOTEXTILE WEED CONTROL FABRIC. MULCH BEDS SHALL HAVE A SPADE CUT EDGER WHEN PERIMETER IS NOT CONCRETE CURB, BUILDING OR HARDSAPCE SURFACE. NO WEED FABRIC AT GROUND COVER OR PERENNIAL PLANTS. ROCK MULCH SHALL BE AMERICAN 2" PROVIDED BY MADISON BLOCK AND STONE (https://www.madisonblockandstone.com/)
- TURF SEED SHALL BE DROUGHT TOLERANT DWARF FESCUE BLEND
- TURF SOD SHALL BE DROUGHT TOLERANT FESCUE BLEND



2975 KAPEC ROAD

LANDSCAPE PLAN



Project No: 124.0465.30

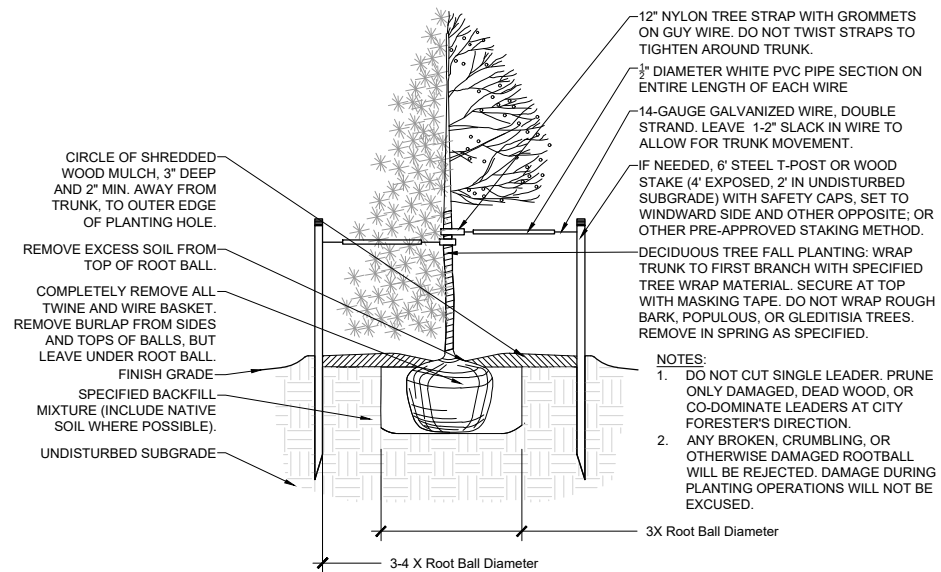
Sheet L 200

CITY OF FITCHBURG, DANE COUNTY, WI

SNYDER & ASSOCIATES, INC.

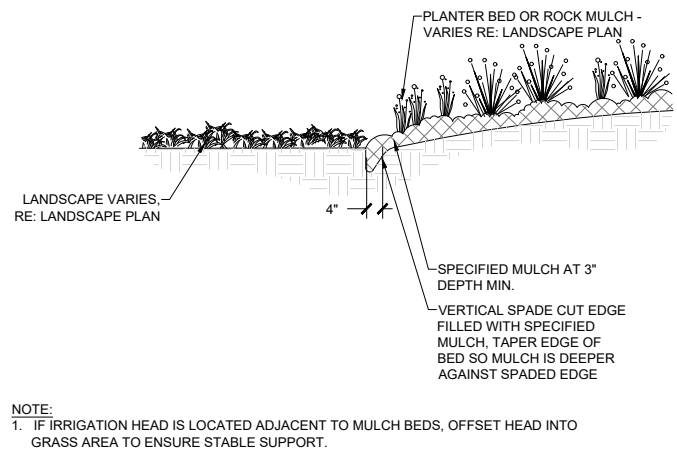
5010 VOGES ROAD  
MADISON, WISCONSIN 53718  
608-838-0444 | www.snyder-associates.com

MARK	SIP SUBMITTAL	DATE	07-25-24	BCA
REVISION	BY	DATE		
Checked By:	M.L.C.	Scale:	1" = ##'	
Engineer:	BCA	Date:	05-21-24	
Technician:	TECH	T-R-S:	TTN+RRW+SS	
Project No:	124.0465.30			
Sheet	L 200			



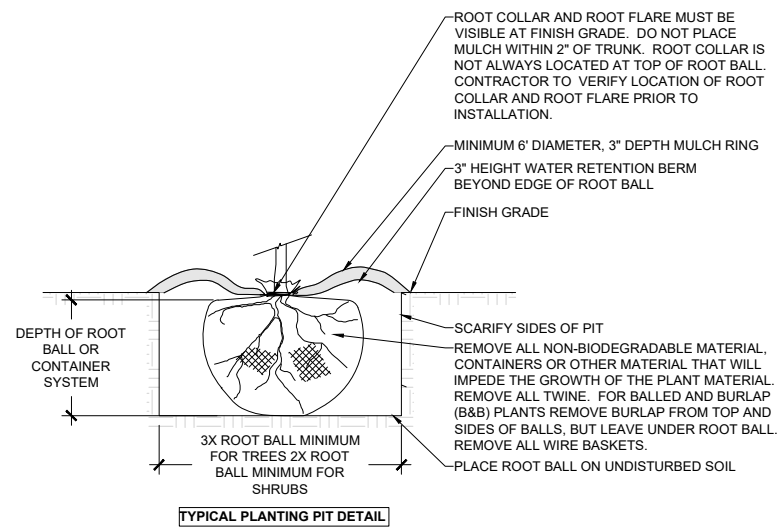
1 TREE PLANTING

SCALE: 1/2" = 1'-0"



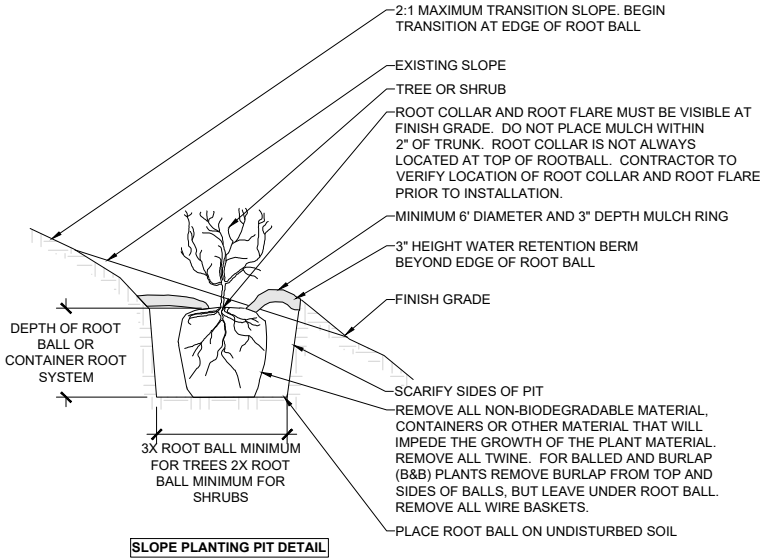
2 SPADE CUT EDGE

SCALE: 1/2" = 1'-0"



3 PLANTING PIT

NO SCALE



V:\projects\10224120\0465.0465\LANDSCAPE\LANDSCAPE DETAILS\LANDSCAPE DETAILS.dwg JACK DAVIS LANDSCAPE DETAILS 2/20/2020 12:58 PM ANSI FULL BLEED (17.00 X 11.00 INCHES)

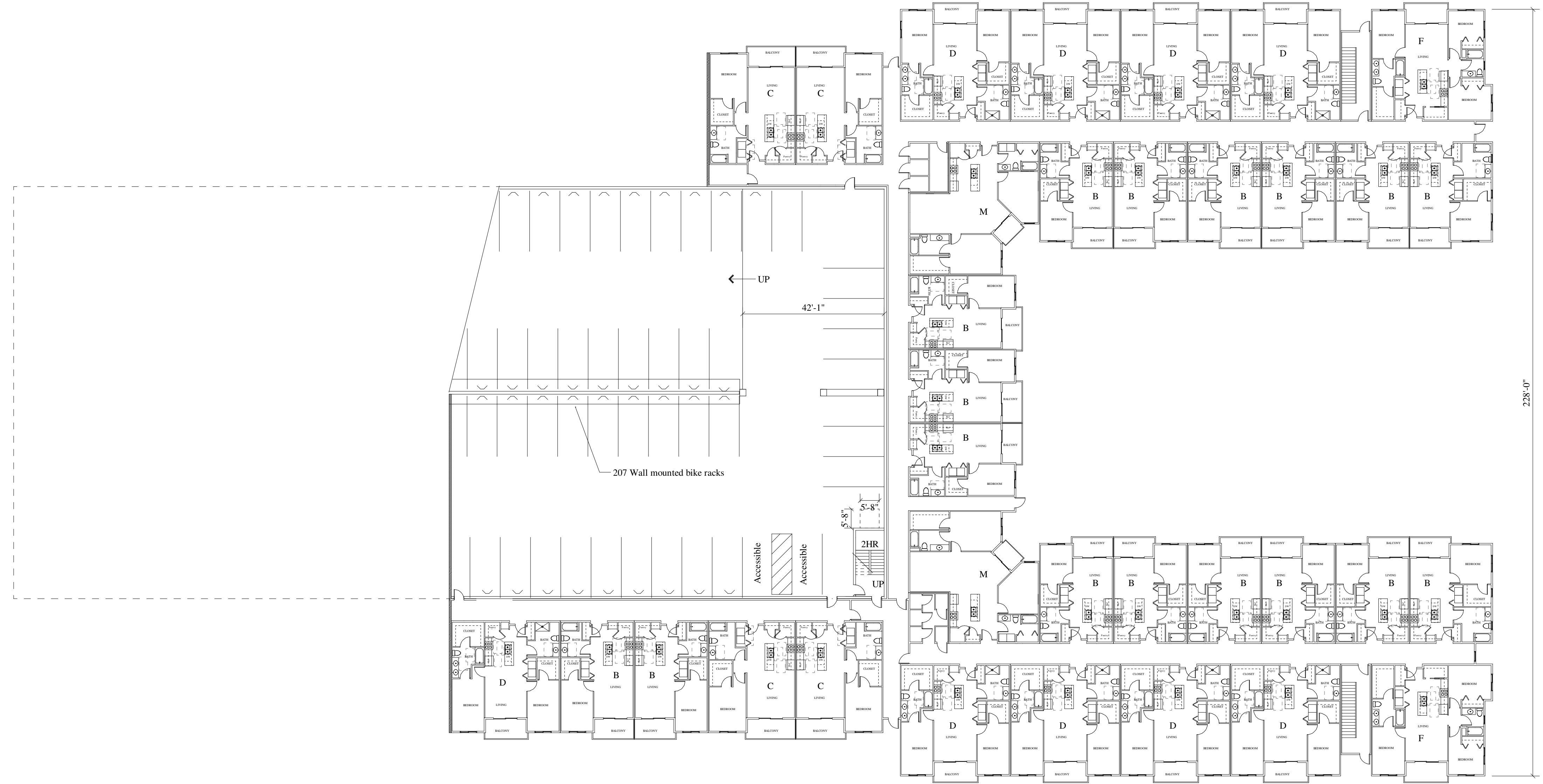
MARK	SIP SUBMITTAL	DATE	07-25-24	BCA
REVISION		BY		
Checked By:	MJC	Scale:	1" = 1'	
Engineer:	BCA	Date:	05-21-24	
Technician:	TECH	T-R-S:	TN+RRW+SS	
Project No: 124.0465.30				Sheet L 300

2975 KAPEC ROAD  
LANDSCAPE DETAILS  
CITY OF FITCHBURG, DANE COUNTY, WI  
SNYDER & ASSOCIATES, INC. |  
5010 VOGES ROAD  
MADISON, WISCONSIN 53718  
608-835-0444 | www.snyder-associates.com



Lower Level Plan

Scale = 1"=20'-0"



Project: Apartment Building

Address: Fitchburg, WI

Sheet Title: Lower Level Plan

Date: 06-09-2024

Scale: As Noted

Job #: 13-01

Proposed for: CF Investments, LLC

Craig Frank

3636 Skytop Road  
McFarland, WI 53558  
608-576-4309

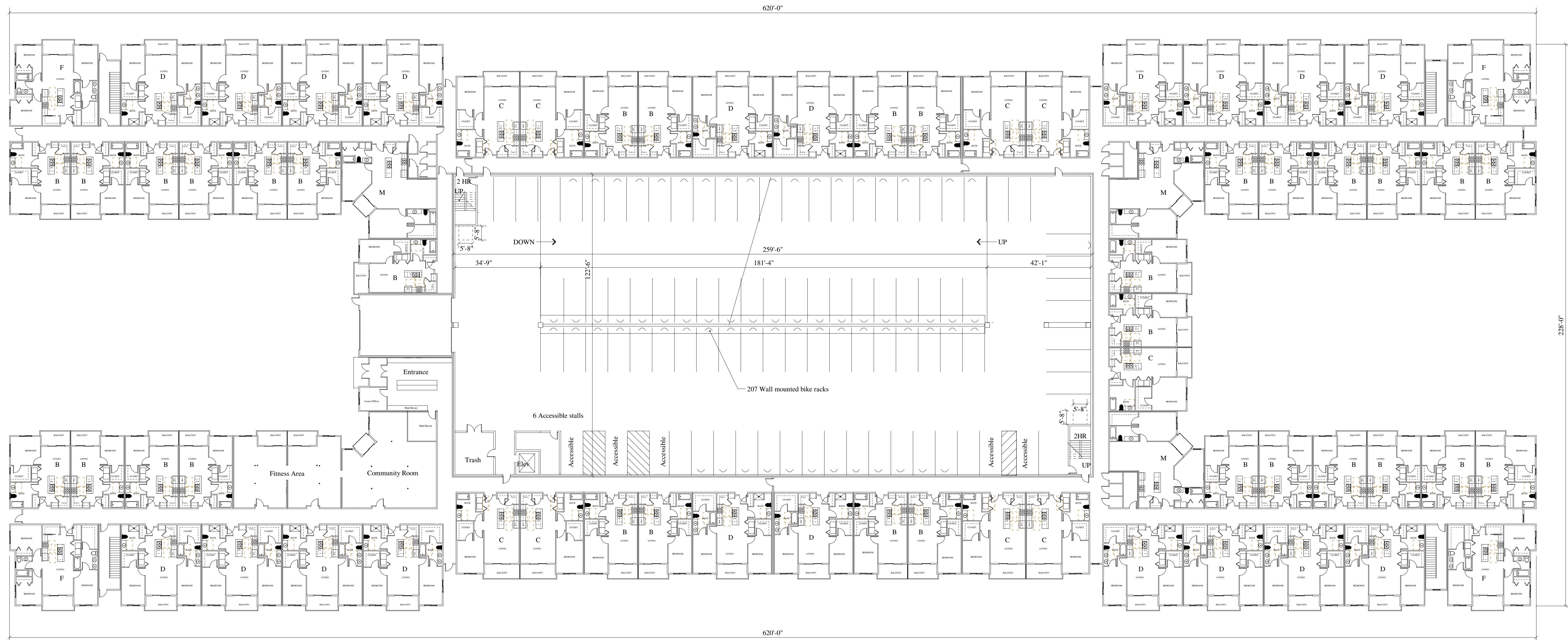
Concepts

In Architecture, LLC

Jeffery Greiner, Architect  
W125 Amidon Road  
Brooklyn, WI 53521  
608-698-3196

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SHEET  
A1.0



First Floor Plan  
Scale = 1"=20'-0"

**Building Notes**

1. Construction types - Residential - Wood frame  
Parking garage - Precast concrete
2. Foundation type - Frost wall
3. Number of Levels - 4 Residential - 71,834 sf  
Parking garage - 31,788 sf
4. Roof pitch - Flat
5. Fire protection - Sprinklered per NFPA 13
6. Fire alarm system - Yes

Unit Type	Number of units
B - One Bedroom 602 sf	118
C - One Bedroom 802 sf	34
D - Two Bedroom 1,034 sf	64
F - Three Bedroom 1,475 sf	16
I - Two Bedroom town 1,352 sf	13
J - Two Bedroom town 1,803 sf	1
K - Three Bedroom town 2,058 sf	4
M - One Bedroom plus Den 1,158 sf	15
	273

Jeffery Greiner, Architect  
W125 Amidon Road  
Brooklyn, WI 53521  
608-698-3196  
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**Concepts**  
**in**  
**Architecture, LLC**

Proposed for: **CF Investments, LLC**  
**Craig Frank**  
3636 Skytop Road  
McFarland, WI 53558  
Address: 608-576-4309

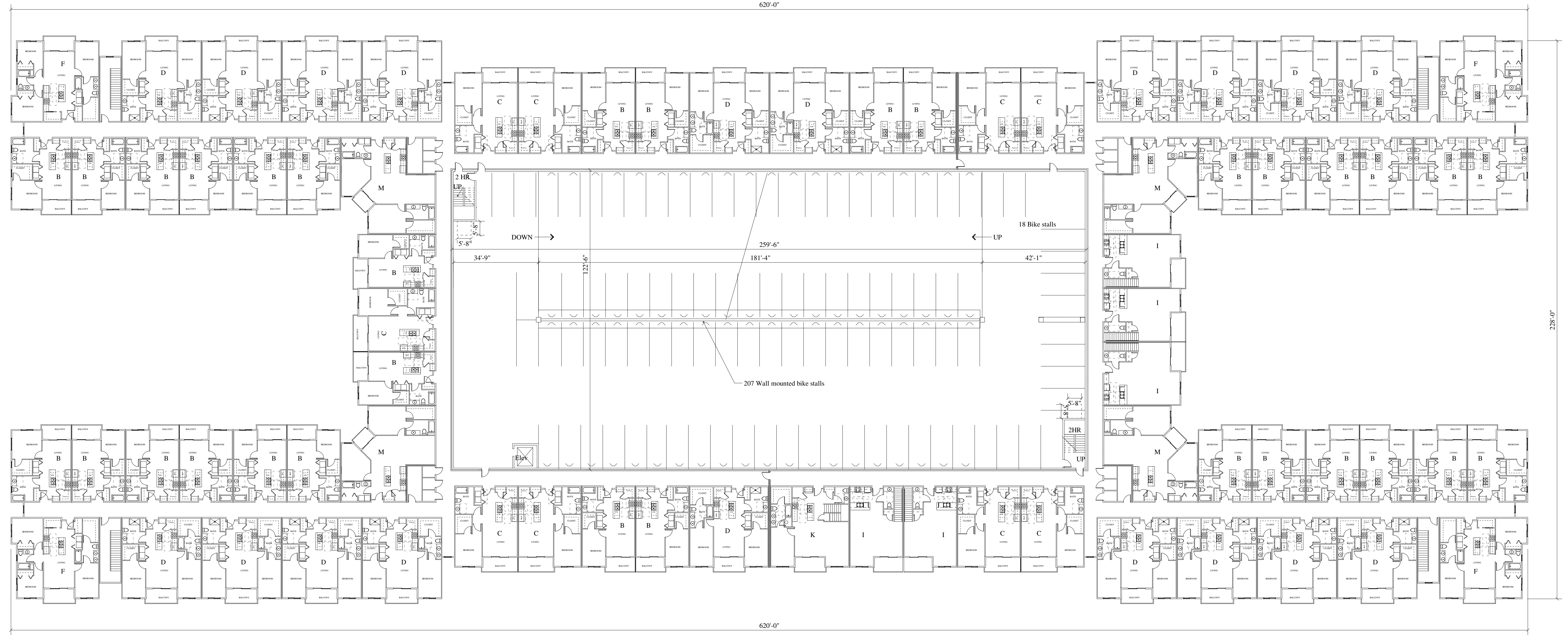
Project: **Apartment Building**  
Address: **Fitchburg, WI**  
Sheet Title: **First Floor Plan**

Date: 06-09-2024

Scale: As Noted

Job #: 13-01

SHEET  
**A1.1**



Second Floor Plan  
Scale = 1"=20'-0"

Jeffery Greiner, Architect  
W125 Amidon Road  
Brooklyn, WI 53521  
608-698-3196  
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Proposed for: CF Investments, LLC  
Craig Frank  
3636 Skytop Road  
McFarland, WI 53558  
Address: 608-576-4309

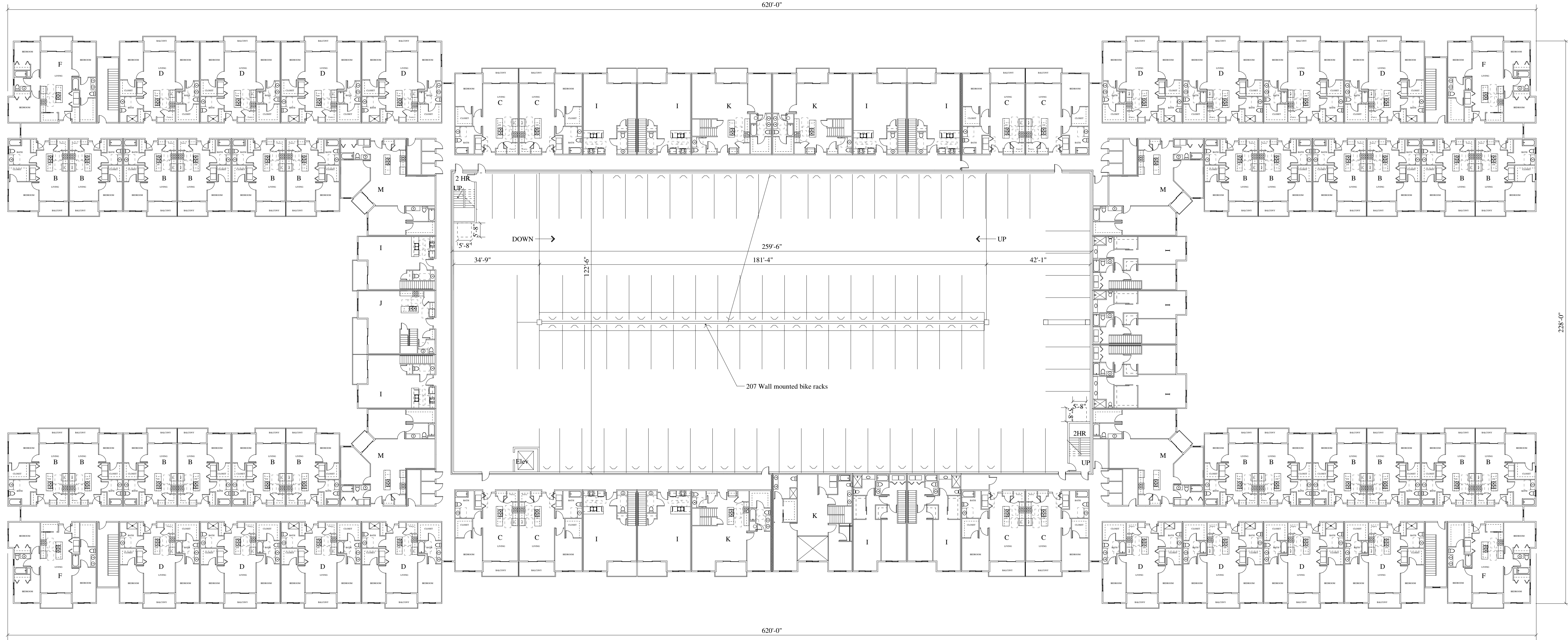
Project: Apartment Building  
Address: Fitchburg, WI  
Sheet Title: Second Floor Plan

Date: 06-09-2024

Scale: As Noted

Job #: 13-01

SHEET  
A1.2



Third Floor Plan  
Scale = 1"=20'-0"

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W125 Amidon Road  
Brooklyn, WI 53521  
608-698-3196  
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Architecture, LLC

Proposed for: CF Investments, LLC  
Craig Frank  
3636 Skytop Road  
McFarland, WI 53558  
608-576-4309  
Address:

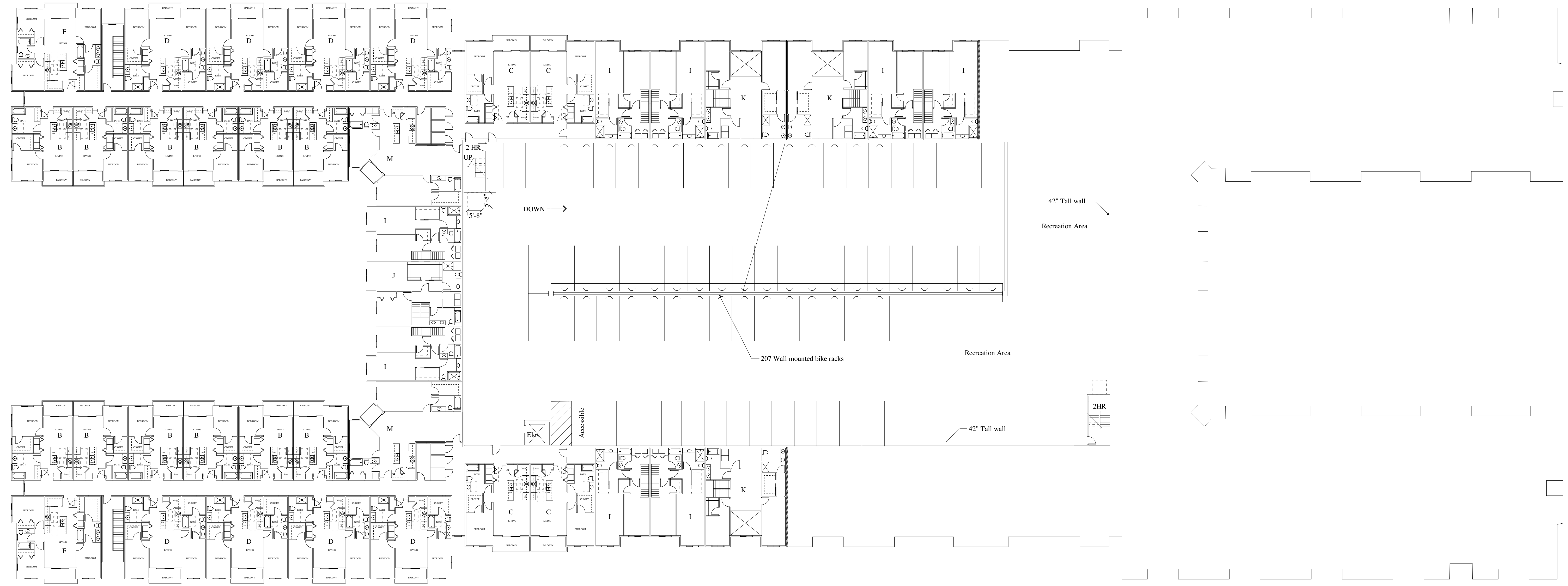
Project: Apartment Building  
Address: Fitchburg, WI  
Sheet Title: Third Floor Plan

Date: 06-09-2024

Scale: As Noted

Job #: 13-01

SHEET  
A1.3



Fourth Floor Plan  
 Scale = 1"=20'-0"

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**C**oncepts  
**I**n  
**A**rchitecture, LLC

Proposed for: CF Investments, LLC  
 Address: 3636 Skytop Road  
 McFarland, WI 53558  
 608-576-4309  
 Address: Craig Frank

Project: Apartment Building  
 Address: Fitchburg, WI  
 Sheet Title: Fourth Floor Plan

Date: 06-09-2024

Scale: As Noted

Job #: 13-01

SHEET  
**A1.4**



West Elevation

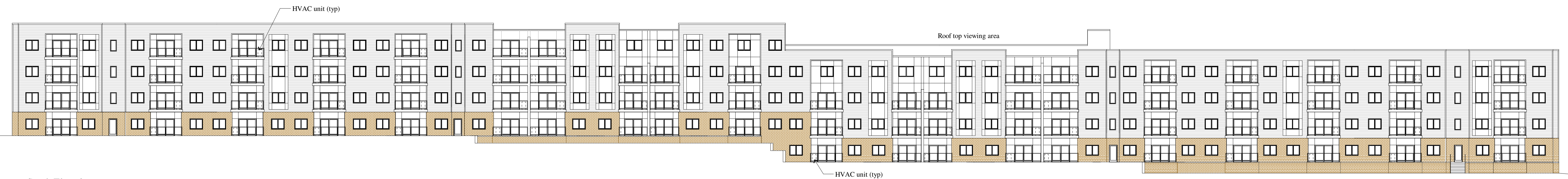
Scale = 1/8"=1'-0"

- Roof cap - Black
- Railings - Black with tinted glass
- Deck accent - Black
- Flat panel siding - Hardie - Cobblestone
- Lap siding - Hardie evening blue
- Windows and Patio doors - White
- Brick - United Brick Fawn



East Elevation

Scale = 1/8"=1'-0"



South Elevation

Scale = 1/8"=1'-0"



North Elevation

Scale = 1/8"=1'-0"

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Concepts  
 in  
 Architecture, LLC

Proposed for: CF Investments, LLC  
 Craig Frank  
 3636 Skytop Road  
 McFarland, WI 53558  
 Address: 608-576-4309

Project: Apartment Building  
 Address: Fitchburg, WI  
 Sheet Title: Elevations

Date: 07-23-2024

Scale: As Noted

Job #: 13-01

SHEET  
 A2

# Exterior Colors

Brick: "Fawn"



Hardie Deck Accent: "Iron Gray"



Hardie Lap Siding: "Evening Blue"

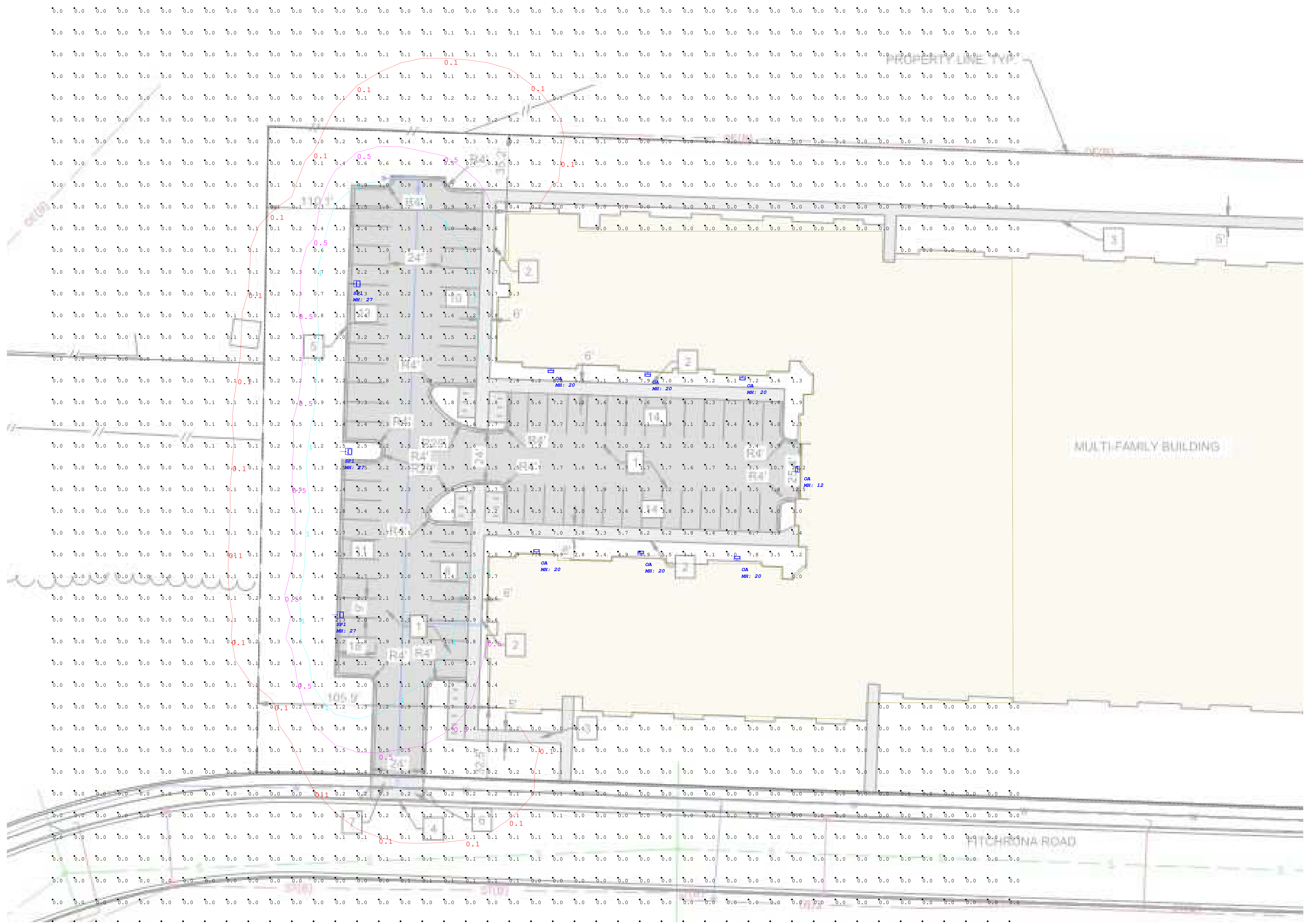


Hardie Flat Panel Siding: "Cobblestone"



**COBBLESTONE**





1. Standard Reflectance of 80/50/20 unless noted otherwise
2. Not a Construction Document, for Design purposes only
3. Standard indoor calc points @ 30" A.F.F. unless noted otherwise
4. Standard outdoor calc points @ Grade unless noted otherwise
5. Egress calc points @ 0' A.F.F.
6. Mlazar Associates assumes no responsibility for installed light levels due to field conditions, etc.

Calculation Summary							
Label	CalcType	Units	Avg	Max	Min	Avg/Min	Max/Min
CalcPts_1	Illuminance	Fc	0.53	24.2	0.0	N.A.	N.A.
PROPERTY LINE	Illuminance	Fc	0.07	0.4	0.0	N.A.	N.A.

Luminaire Schedule									
Symbol	Qty	Label	Manufacturer	Description	Arrangement	Lum. Lumens	Lum. Watts	LLF	
□	7	OA		AXCL8A	Single	9695	72	0.900	
□	3	SP1		PRV-C40-D-UNV-T4-BZ	Single	17087	131	0.900	

#	Date	Comments
Revisions		

RLMA Project #: 161002  
 Drawn By: BS  
 Date: 7/22/2024  
 Scale: 1" = 16'

Project		Catalog #		Type	
Prepared by		Notes		Date	



# Lumark

## Axcent

### Wall Mount Luminaire

#### Product Features



#### Product Certifications



#### Interactive Menu

- Ordering Information [page 2](#)
- Mounting Details [page 3](#)
- Product Specifications [page 4](#)
- Energy and Performance Data [page 4](#)
- Control Options [page 6](#)

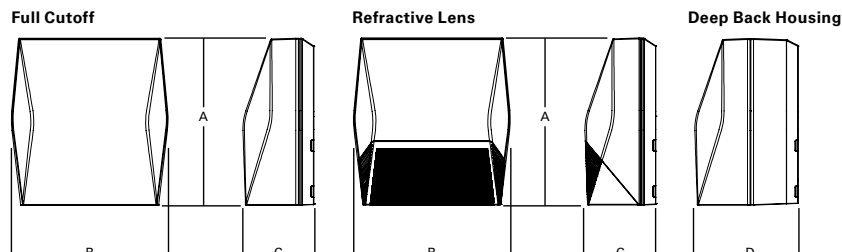
#### Quick Facts

- Available in 14W - 116W (1,800 - 16,000 lumens) models
- Full cutoff and refractive lens models available
- Energy and maintenance savings up to 95% compared to HID
- Energy efficient illumination results in up to 144 LPW
- Replaces 70W up to 450W HID equivalents

#### Connected Systems

- WaveLinx PRO Wireless
- WaveLinx LITE Wireless
- Enlighted

#### Dimensional Details



#### Dimensional Data

	AXCS Small	AXCL Large
A	8" [202mm]	11-1/2" [292mm]
B	7-1/2" [190mm]	10-3/4" [273mm]
C	3-5/8" [94mm]	4-7/8" [124mm]
D	6-1/8" [155mm]	7-1/8" [181mm]

## Ordering Information

SAMPLE NUMBER: **AXCS1A-AP-347V**

Domestic Preferences <sup>27</sup>	Model Series <sup>1</sup>	LED Color Temperature	Color	Options (Add as Suffix)
<b>[Blank]</b> =Standard <b>BAA</b> =Buy American Act <b>TAA</b> =Trade Agreements Act	<b>Full Cutoff</b> <b>AXCS1A</b> =14W <b>AXCS2A</b> =21W <b>AXCS3A</b> =27W <b>AXCS4A</b> =44W <b>AXCS5A</b> =52W <b>AXCL6A</b> =50W <b>AXCL8A</b> =66W <b>AXCL10A</b> =89W <b>AXCL12A</b> =116W  <b>Refractive Lens</b> <b>AXCS1ARL</b> =14W <b>AXCS2ARL</b> =21W <b>AXCS3ARL</b> =27W <b>AXCS4ARL</b> =44W <b>AXCS5ARL</b> =52W <b>AXCL6ARL</b> =50W <b>AXCL8ARL</b> =66W <b>AXCL10ARL</b> =89W <b>AXCL12ARL</b> =116W	<b>[Blank]</b> =4000K, Neutral <b>C</b> =5000K, Cool <b>W</b> =3000K, Warm	<b>[Blank]</b> =Carbon Bronze (Standard) <b>WT</b> =Summit White <b>BK</b> =Black <b>AP</b> =Grey <b>GM</b> =Graphite Metallic <b>DP</b> =Dark Platinum	<b>347V</b> =347V <sup>2</sup> <b>480V</b> =480V <sup>2</sup> <b>PC1</b> =Photocontrol 120V <sup>3,4,5</sup> <b>PC2</b> =Photocontrol 208-277V, 347V, 480V <sup>4,5,6</sup> <b>PC</b> =Photocontrol 120-277V, 347V, 480V <sup>4,7,8</sup> <b>KKIT</b> =Knuckle Floodlight Mount <sup>7</sup> <b>TRNKIT</b> =Trunnion Floodlight Mount <b>SFKIT</b> =Slipfitter Floodlight Mount <b>PMAKIT</b> =Pole Mount Arm <b>WPS2XX</b> =Wavelinx Pro, SR Driver, Dimming Motion and Daylight, WAC Programmable, 7' - 15' Mounting Height <sup>4,9,10,11</sup> <b>WPS4XX</b> =Wavelinx Pro, SR Driver, Dimming Motion and Daylight, WAC Programmable, 15' - 40' Mounting Height <sup>4,9,10,11</sup> <b>WLS2XX</b> =WaveLinx Lite, SR Driver, Dimming Motion and Daylight, Bluetooth Programmable, 7' - 15' Mounting <sup>4,9,10,11</sup> <b>WLS4XX</b> =WaveLinx Lite, SR Driver, Dimming Motion and Daylight, Bluetooth Programmable, 15' - 40' Mounting <sup>4,9,10,11</sup> <b>LWR-LW</b> =Enlighted Wireless Sensor, Wide Lens for 8' - 16' Mounting Height <sup>4,9,12</sup> <b>LWR-LN</b> =Enlighted Wireless Sensor, Narrow Lens for 16' - 40' Mounting Height <sup>4,9,12</sup> <b>MSP/DIM-L12</b> =Integrated Sensor for Dimming Operation, 8' - 12' Mounting Height <sup>4,9,13</sup> <b>MSP/DIM-L30</b> =Integrated Sensor for Dimming Operation, 12' - 30' Mounting Height <sup>4,9,13</sup> <b>MSP-L12</b> =Integrated Sensor for ON/OFF Operation, 8' - 12' Mounting Height <sup>4,9,13</sup> <b>MSP-L30</b> =Integrated Sensor for ON/OFF Operation, 12' - 30' Mounting Height <sup>4,9,13</sup> <b>CBP</b> =Cold Weather Battery Pack <sup>3,14,15,16,17,18</sup> <b>CBP-CEC</b> =Cold Weather Battery Pack, CEC compliant <sup>3,14,15,16,17,18</sup> <b>10K</b> =10kV/10kA Surge Protection <b>HA</b> =50°C High Ambient <sup>15,19</sup> <b>GRF</b> =Glare Reducing Lens <sup>20</sup> <b>AHD145</b> =After Hours Dim, 5 Hours <sup>5,21</sup> <b>AHD245</b> =After Hours Dim, 6 Hours <sup>5,21</sup> <b>AHD255</b> =After Hours Dim, 7 Hours <sup>5,21</sup> <b>AHD355</b> =After Hours Dim, 8 Hours <sup>5,21</sup>
<b>Accessories (Order Separately)</b> <sup>22,28</sup>				
<b>VS/AXCS-XX</b> =Vandal Shield Axcent Small <sup>7,23</sup> <b>VS/AXCS-MS</b> =Vandal Shield Axcent Small (With Motion Sensor) <sup>7,23</sup> <b>WG/AXCS</b> =Wire Guard Axcent Small <sup>7</sup> <b>WG/AXCS-MS</b> =Wire Guard Axcent Small (With Motion Sensor) <sup>7</sup> <b>VS/AXCL-XX</b> =Vandal Shield Axcent Large <sup>5,23</sup> <b>VS/AXCL-MS</b> =Vandal Shield Axcent (With Motion Sensor) <sup>5,23</sup> <b>WG/AXCL</b> =Wire Guard Axcent Large <sup>5</sup> <b>WG/AXCL-MS</b> =Wire Guard Axcent (With Motion Sensor) <sup>5</sup> <b>BB/AXC</b> =Axcent Lumen Select Back Box, Carbon Bronze <sup>24</sup> <b>BB/AXC-PC</b> =Axcent Lumen Select Back Box with PC, Carbon Bronze <sup>24,25</sup> <b>BB/AXC-WT</b> =Axcent Lumen Select Back Box, Summit White <sup>24</sup> <b>BB/AXC-WT-PC</b> =Axcent Lumen Select Back Box with PC, Summit White <sup>24,25</sup>				
<b>NOTES:</b> 1. DesignLights Consortium® Qualified. Refer to <a href="http://www.designlights.org">www.designlights.org</a> Qualified Products List under Family Models for details. 2. Transformer used only when ordered with motion sensor or AXCS1 through AXCS5 or AXCL6 fixture wattages. 3. Not available in 347 or 480 VAC. 4. Button photocontrol and any motion sensor (MSP or LWR) not offered together. 5. Only available on AXCL6-AXCL12 models. 6. Used with 277, 347, and 480 VAC options. 7. Only available on AXCS1-AXCS5 models. 8. This configuration may contain materials that are not RoHS compliant. Contact your lighting representative for more information. 9. Uses deep back housing. 10. Sensor passive infrared (PIR) may be overly sensitive when operating below -20°C (-4°F). For the device to be field-configurable, requires WAC Gateway components WAC-PoE and WPOE-120 in appropriate quantities. Only compatible with WaveLinx system and software and requires system components to be installed for operation. See website for more Wavelinx application information. 11. Replace XX with sensor color (WH, BZ, or BK). 12. Enlighted wireless sensors are factory installed and require network components LWP-EM-1, LWP-GW-1, and LWP-PoE8 in appropriate quantities. See website for application information. 13. The ISHH-01 accessory is required to adjust parameters. 14. Ambient operating temperature -20°C to 25°C for AXCL6 through AXCL10. Ambient operating temperature -20°C to 30°C on AXCS4 models. Ambient operating temperature -20°C to 40°C on AXCS1 through AXCS3 models. 15. Not available with AXCS5 or AXCL12 models. 16. Uses deep back housing for AXCS1, AXCL2, AXCS3, and AXCS4 models. 17. Not to be mounted in upwards / inverted orientation. Downlight wall mount only for AXCS1 through AXCS4. 18. CBP cannot be used with PC and motion sensor (MSP or LWR). CBP can be used with PC or motion sensor (MSP or LWR). 19. Can not be ordered with CBP or PC options. 20. Use dedicated IES files on product website for lumen values and distributions. 21. Requires the use of PC1 or PC2 button photocontrol. See After Hours Dim supplemental guide for additional information. 22. Replace XX with color designation. 23. For use with full cutoff lens configurations only. 24. Lumen Select functionality not available in conjunction with any motion sensor option (MSP or LWR). Photocontrol back box not available with any photocontrol or motion sensor options (PC, MSP or LWR). 25. Photocell only operates at 120-277V input voltages. Not for use with 347 or 480V systems. 26. This tool enables adjustment to parameters including high and low modes, sensitivity, time delay, cutoff and more. Consult your lighting representative for more information. 27. Only product configurations with these designated prefixes are built to be compliant with the Buy American Act of 1933 (BAA) or Trade Agreements Act of 1979 (TAA), respectively. Please refer to <a href="http://DOMESTIC_PREFERENCES">DOMESTIC_PREFERENCES</a> website for more information. Components shipped separately may be separately analyzed under domestic preference requirements. 28. Accessories sold separately will be separately analyzed under domestic preference requirements. Consult factory for further information.				

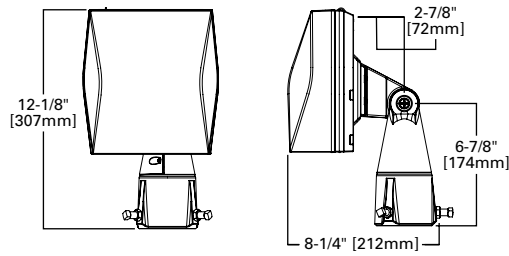
## Stock Ordering Information

Model Series <sup>1</sup>			
Full Cutoff		Refractive Lens	
<b>AXCS1A</b> =14W	<b>AXCL10A</b> =102W	<b>AXCS1ARL</b> =14W	<b>AXCL10ARL</b> =89W
<b>AXCS2A</b> =21W	<b>AXCL12A</b> =123W	<b>AXCS2ARL</b> =21W	<b>AXCL12ARL</b> =116W
<b>AXCS3A</b> =27W	<b>AXCL6A-347V</b> =50W	<b>AXCS3ARL</b> =27W	<b>AXCL6ARL-347V</b> =50W
<b>AXCS4A</b> =44W	<b>AXCL8A-347V</b> =66W	<b>AXCS4ARL</b> =44W	<b>AXCL8ARL-347V</b> =66W
<b>AXCS5A</b> =52W	<b>AXCL10A-347V</b> =89W	<b>AXCS5ARL</b> =52W	<b>AXCL10ARL-347V</b> =89W
<b>AXCL6A</b> =56W	<b>AXCL12A-347V</b> =116W	<b>AXCL6ARL</b> =50W	<b>AXCL12ARL-347V</b> =116W
<b>AXCL8A</b> =72W		<b>AXCL8ARL</b> =66W	

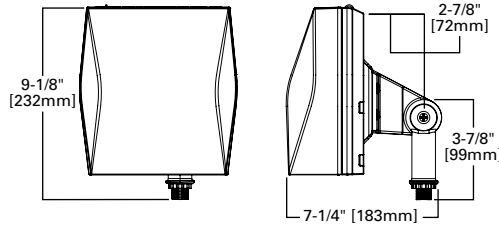
**Note:** All stock configurations are 4000K color temperatures, standard Carbon Bronze finish, and wall mount configuration.

## Mounting Details

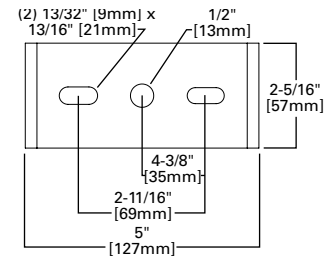
**Slipfitter Mount (Small)**  
Tenon OD: 2-3/8" | EPA: 0.60



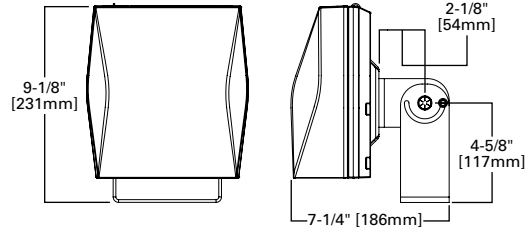
**Knuckle Mount (Small)**



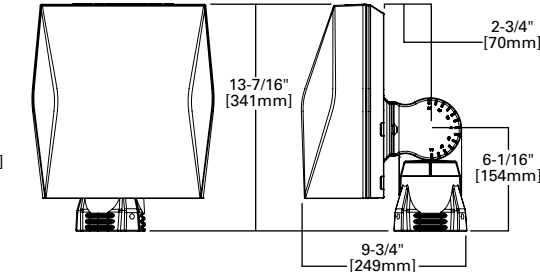
**Trunnion Mount Detail**



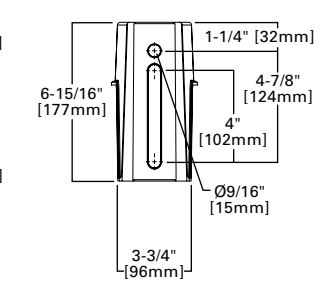
**Trunnion Mount (Small)**



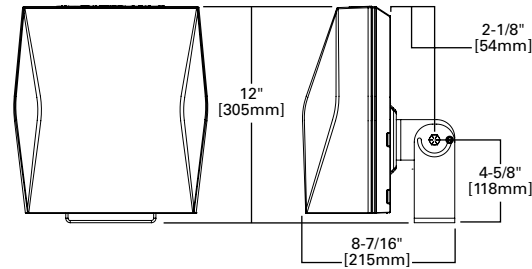
**Slipfitter Mount (Large)**  
Tenon OD: 2-3/8" to 2-7/8" | EPA: 1.10



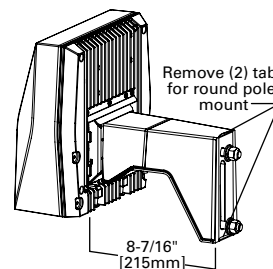
**Pole Mount Arm Drill Pattern**



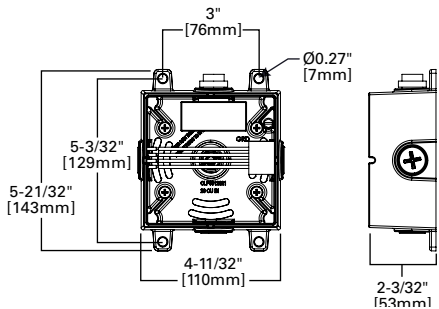
**Trunnion Mount (Large)**



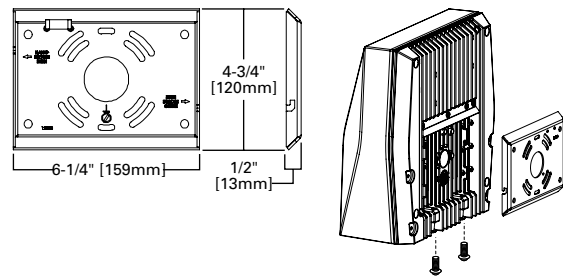
**Pole Mount Arm (Large)**  
EPA: 1.10



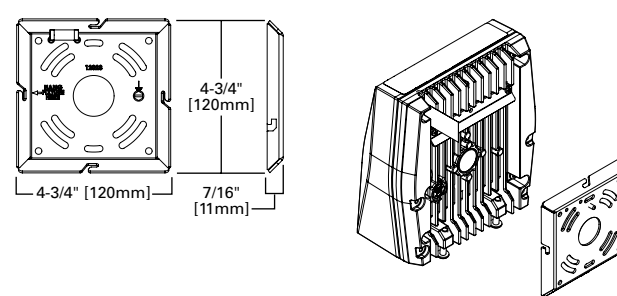
**Lumen Select Back Box**



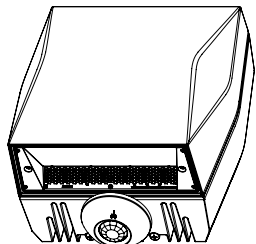
**Wall Mount Plate Detail (Large)**



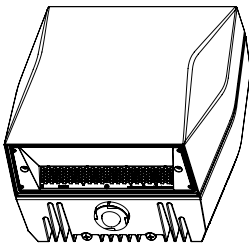
**Wall Mount Plate Detail (Small)**



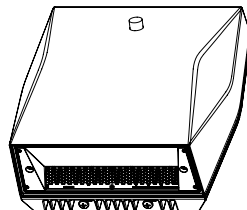
**Enlighted Sensor**



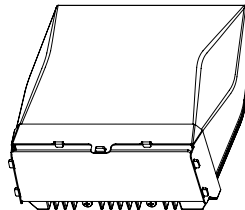
**Occupancy Sensor**



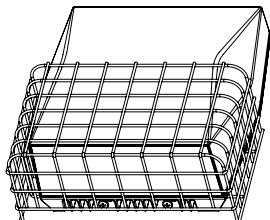
**Button Photocontrol**



**Vandal Shield**



**Wire Guard**



## Product Specifications

### Construction

- Die-cast aluminum housing
- External back fin design extracts heat from the surface to thermally optimize design for longer luminaire life

### Optics

- Dark Sky Approved (Fixed mount, Full cutoff, and 3000K CCT only)
- Silicone-sealed optical LED chamber
- Acrylic refractive or full cutoff lens options for Type IV distributions

### Electrical

- Standard universal voltage (120-277V, 50/60Hz)
- Driver incorporates 6kV surge protection
- -40°C minimum operating temperature
- 40°C maximum operating temperature
- <20% total harmonic distortion

- 0-10V dimming driver is standard with leads external to the fixture

### Mounting

- Steel wedge mounting plate fits directly to 4" standard j-box or directly to wall with the "Hook-N-Lock" mechanism
- Stainless steel set screws
- Lumen Select Back Box accessory offers four 1/2" NPT conduit entry wire ways. Resistor Pack combinations allow field-dimming of 75% or 50% when connected to luminaire dimming leads
- Not suitable for indoor use when installed in inverted/uplight orientation

### Emergency Egress

- Optional integral cold weather battery emergency egress includes emergency operation test switch, an AC-ON indicator light and a premium, maintenance-free battery pack

- The separate emergency lighting LEDs are wired to provide redundant emergency lighting. Listed to UL Standard 924, Emergency Lighting

### Finish

- Five-stage super TGIC polyester powder coat paint, 2.5 mil nominal thickness

### Shipping Data

- Small fixture=5 lbs. [2.36 kgs.]
- Small with sensor or CBP=10 lbs. [4.40 kgs.]
- Large fixture=12 lbs. [5.45 kgs.]
- Large with sensor or CBP=17 lbs. [7.73 kgs.]
- Large with sensor & CBP=21 lbs. [9.54 kgs.]

### Warranty

Five year limited warranty, consult website for details. [www.cooperlighting.com/legal](http://www.cooperlighting.com/legal)

## Energy and Performance Data

### Power and Lumens (Axcent Small)

Light Engine		AXCS1A	AXCS2A	AXCS3A	AXCS4A	AXCS5A
Power (Watts)		14	21	27	44	52
Input Current @ 120V (A)		0.12	0.18	0.23	0.37	0.43
Input Current @ 240V (A)		0.06	0.09	0.11	0.18	0.22
Input Current @ 277V (A)		0.05	0.08	0.10	0.16	0.19
Input Current @ 347V (A)		0.04	0.06	0.08	0.13	0.15
Input Current @ 480V (A)		0.03	0.04	0.06	0.09	0.11
Configuration						
Full Cutoff	4000K/5000K Lumens	1,806	2,561	3,537	5,520	6,300
	3000K Lumens	1,526	2,164	2,989	4,665	5,324
	BUG Rating	B1-U0-G0	B1-U0-G0	B1-U0-G0	B2-U0-G1	B2-U0-G1
Refractive Lens	4000K/5000K Lumens	1,915	2,716	3,704	5,858	6,699
	3000K Lumens	1,618	2,295	3,130	4,950	5,661
	BUG Rating	B1-U3-G2	B1-U3-G2	B1-U3-G2	B1-U4-G3	B1-U4-G3

### Power and Lumens (Axcent Large)

Light Engine		AXCL6A	AXCL8A	AXCL10A	AXCL12A
Power (Watts)		50	66	89	115
Input Current @ 120V (A)		0.41	0.54	0.74	0.96
Input Current @ 240V (A)		0.21	0.27	0.37	0.48
Input Current @ 277V (A)		0.18	0.24	0.32	0.42
Input Current @ 347V (A)		0.14	0.19	0.26	0.33
Input Current @ 480V (A)		0.10	0.14	0.19	0.24
Configuration					
Full Cutoff	4000K Lumens	7,594	9,716	12,719	16,302
	5000K Rating	7,501	9,598	12,564	16,103
	3000K Lumens	6,502	8,319	10,890	13,958
	BUG Rating	B2-U0-G1	B2-U0-G2	B3-U0-G2	B3-U0-G2
Refractive Lens	4000K Lumens	7,809	10,331	13,665	16,637
	5000K Rating	7,714	10,205	13,498	16,434
	3000K Lumens	6,686	8,845	11,700	14,244
	BUG Rating	B1-U4-G4	B2-U5-G5	B2-U5-G5	B2-U5-G5

Energy and Performance Data

Power and Lumens (Small + CBP)

Light Engine		AXCS1A	AXCS2A	AXCS3A	AXCS4A
Power (Watts)		18	25	31	48
Input Current @ 120V (A)		0.15	0.21	0.26	0.40
Input Current @ 240V (A)		0.08	0.11	0.13	0.20
Input Current @ 277V (A)		0.07	0.09	0.11	0.18
Configuration					
Full Cutoff	4000K/5000K Lumens	629	587	647	570
	3000K Lumens	531	496	547	482
Refractive Lens	4000K/5000K Lumens	667	623	686	605
	3000K Lumens	563	526	580	511

Note: Power and current based on full power consumption while CBP is charging. Lumen outputs are while operating in emergency mode only.

Power and Lumens (Large + CBP)

Light Engine		AXCL6A	AXCL8A	AXCL10A
Power (Watts)		54	70	93
Input Current @ 120V (A)		0.45	0.58	0.77
Input Current @ 240V (A)		0.22	0.29	0.38
Input Current @ 277V (A)		0.19	0.25	0.33
Configuration				
Full Cutoff	4000K/5000K Lumens	=141*10W=1410		
	3000K Lumens	122*10=1220		
Refractive Lens	4000K/5000K Lumens	151*10=1510		
	3000K Lumens	131*10=1310		

Note: Power and current based on full power consumption while CBP is charging. Lumen outputs are while operating in emergency mode only.

Power and Lumens Multipliers  
(Lumen Select Back Box + Axcent Small)

Configuration		~75% Nominal Output	~50% Nominal Output
Catalog Number	Material Number	Connect per Installation Instructions	
AXCS1A*	13109741 or 13109939 or Other	74%	50%
AXCS2A*	13109698 or 13109938 or Other	74%	50%
AXCS3A*	13109697 or 13109937 or Other	74%	50%
AXCS4A*	13109695 or 13109936	75%	40%
AXCS4A*	13495299 or 13495470 or Other	72%	50%
AXCS5A*	13109652 or 13109935	75%	40%
AXCS5A*	13495471 or 13495472 or Other	72%	50%

Power and Lumens Multipliers  
(Lumen Select Back Box + Axcent Large)

Configuration		~75% Nominal Output	~50% Nominal Output
Catalog Number	Material Number	Connect per Installation Instructions	
AXCL6A*	13645910 or 13645979	69%	47%
AXCL8A*	13645970 or 13645984	69%	47%
AXCL10A*	13645971 or 13645989	69%	47%
AXCL12A*	13645972 & 13645993	72%	49%

Lumen Maintenance (Axcent Small)

Ambient Temperature	TM-21 Lumen Maintenance (72,000 Hours)	Theoretical L70 (Hours)
<b>Up to 3A</b>		
25°C	90%	246,000
40°C	90%	225,000
50°C	89%	195,000
<b>Up to 5A</b>		
25°C	89%	240,000
40°C	88%	223,000
50°C	87%	186,000

Lumen Maintenance (Axcent Large)

Ambient Temperature	TM-21 Lumen Maintenance (72,000 Hours)	Theoretical L70 (Hours)
<b>Up to 8A</b>		
25°C	89%	216,000
40°C	87%	192,000
50°C	86%	179,000
<b>Up to 10A</b>		
25°C	88%	199,000
40°C	86%	179,000
50°C	85%	162,000
<b>Up to 12A</b>		
25°C	85%	162,000
40°C	82%	138,000

Lumen Multiplier

Ambient Temperature	Lumen Multiplier
10°C	1.02
15°C	1.01
25°C	1.00
40°C	0.97

Control Options

**0-10V** This fixture is offered standard with 0-10V dimming driver(s) for use with a lighting control panel or other control method.

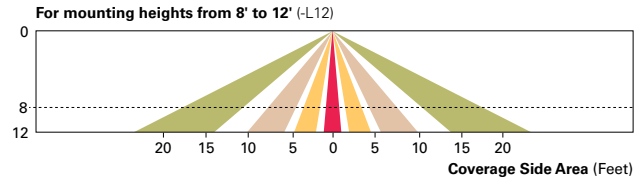
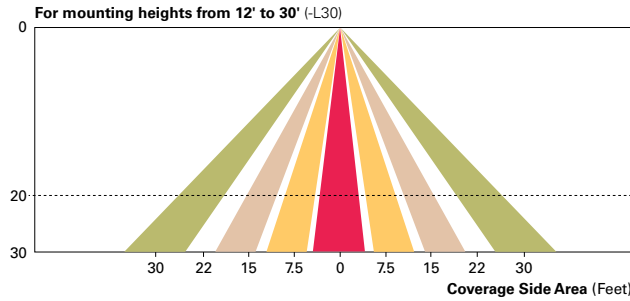
**Photocontrol** (PC1, PC2 and PC) Optional button-type photocontrol provides a flexible solution to enable "dusk-to-dawn" lighting by sensing light levels.

**After Hours Dim** (AHD) This feature allows photocontrol-enabled luminaires to achieve additional energy savings by dimming during scheduled portions of the night. The dimming profile will automatically take effect after a "dusk-to-dawn" period has been calculated from the photocontrol input. Specify the desired dimming profile for a simple, factory-shipped dimming solution requiring no external control wiring. Reference the After Hours Dim supplemental guide for additional information.

**Dimming Occupancy Sensor** (MSP/DIM-LXX and MSP-LXX) These sensors are factory installed in the luminaire housing. When the MSP/DIM-LXX sensor option is selected, the occupancy sensor is connected to a dimming driver and the entire luminaire dims when there is no activity detected. When activity is detected, the luminaire returns to full light output. The MSP/DIM sensor is factory preset to dim down to approximately 50 percent power with a time delay of ten minutes. The MSP-LXX sensor is factory preset to turn the luminaire off after five minutes of no activity.

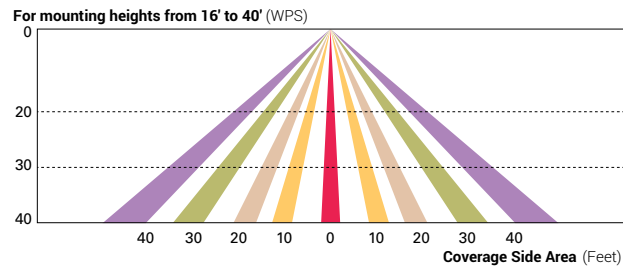
These occupancy sensors includes an integrated photocell that can be activated with the ISHH-01 accessory for "dusk-to-dawn" control or daylight harvesting - the factory preset is ON. The ISHH-01 is a wireless tool utilized for changing the dimming level, time delay, sensitivity and other parameters.

A variety of sensor lens are available to optimize the coverage pattern for mounting heights from 8'-30'.

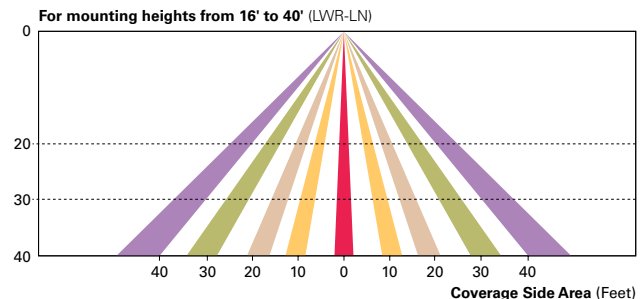
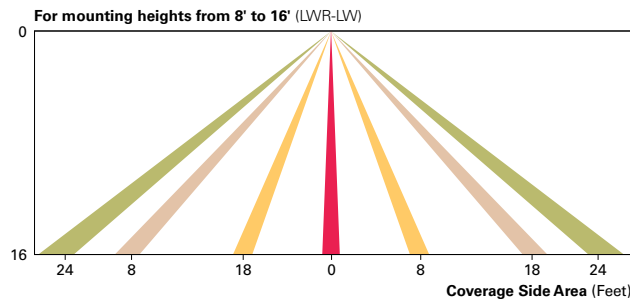


**WaveLinx Wireless Control and Monitoring System** The WaveLinx Outdoor control platform operates on a wireless mesh network based on IEEE 802.15.4 standards enabling wireless control of outdoor lighting. Use the WaveLinx Mobile application for set-up and configuration. At least one Wireless Area Controller (WAC) is required for full functionality and remote communication (including adjustment of any factory pre-sets).

**WaveLinx Wireless Sensor** (WPS2 and WPS4) These outdoor sensors offer passive infrared (PIR) occupancy and a photocell for closed loop daylight sensing. These sensors are factory preset to dim down to approximately 50 percent power after 15 minutes of no activity detected. These occupancy sensors include an integral photocell for "dusk-to-dawn" control or daylight harvesting that is factory-enabled. A variety of sensor lenses are available to optimize the coverage pattern for mounting heights from 7'-40'.



**Enlighted Wireless Control and Monitoring System** (LWR-LW and LWR-LN) The Enlighted System is a connected lighting solution that combines LED luminaires with an integrated wireless sensor system. The sensor controls the lighting system in compliance with the latest energy codes and collects valuable data about building performance and use. Software applications turn the granular data into information through energy dashboards and specialized apps that make it simple and help optimize the use of other resources beyond lighting.



Project		Catalog #		Type	
Prepared by		Notes		Date	



# Lumark

## Prevail LED

Area / Site Luminaire

### Product Features



### Product Certifications



### Interactive Menu

- Ordering Information [page 2](#)
- Mounting Details [page 3, 4](#)
- Optical Configurations [page 5](#)
- Product Specifications [page 5](#)
- Energy and Performance Data [page 6, 7](#)
- Control Options [page 8](#)

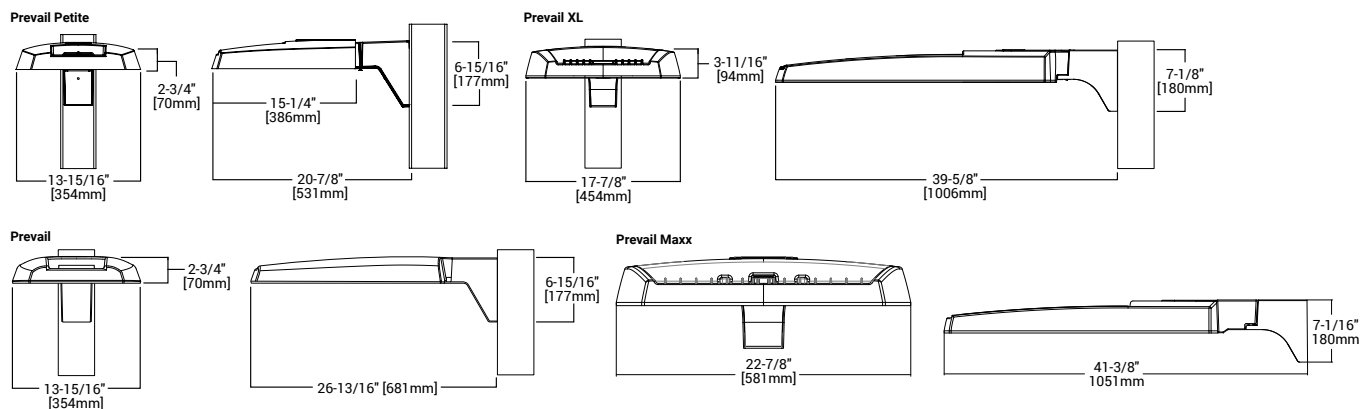
### Quick Facts

- Lumen packages range from 4,800 - 84,000 lumens (35W - 588W)
- Replaces 70W up to 1,000W HID equivalents
- Efficacies up to 160 lumens per watt
- Energy and maintenance savings up to 85% versus HID solutions
- Standard universal quick mount arm with universal drill pattern

### Connected Systems

- WaveLinx PRO Wireless
- WaveLinx LITE Wireless

### Dimensional Details



NOTES:  
 1. Visit <https://www.designlights.org/search/> to confirm qualification. Not all product variations are DLC qualified.  
 2. IDA Certified for 3000K CCT and warmer only.

Ordering Information

SAMPLE NUMBER: PRV-XL-C75-D-UNV-T4-SA-BZ


Product Family <sup>1,2</sup>	Light Engine <sup>4</sup>	Color Temperature	Driver	Voltage	Distribution	Mounting	Color
PRV-P=Prevail Petite BAA-PRV-P=Prevail Petite BAA Compliant <sup>3</sup> TAA-PRV-P=Prevail Petite TAA Compliant <sup>3</sup>	C10=(1 LED) 4,900 Nominal Lumens C15=(1 LED) 6,900 Nominal Lumens C20=(1 LED) 9,800 Nominal Lumens C25=(1 LED) 11,800 Nominal Lumens	740=70CRI, 4000K 727=70CRI, 2700K 730=70CRI, 3000K 750=70CRI, 5000K 8540=85CRI, 4000K	D=Dimming (0-10V)	UNV=Universal (120-277V) H=High Voltage, 347-480V 8=480V <sup>5</sup> 9=347V DV=DuraVolt (277-480V) <sup>5,6</sup>	T2=Type II T3=Type III T4=Type IV T5=Type V	SA=QM Standard Versatile Arm MA=QM Mast Arm FMA= Fixed Mast Arm <sup>27</sup> WM=QM Wall Mount Arm ADJA-WM=Adjustable Arm-Wall Mount <sup>29</sup> ADJA=Adjustable Arm-Pole Mount <sup>29</sup> ADJS=Adjustable Arm-Slipfitter, 3" vertical tenon <sup>29</sup> SP2=Adjustable Arm-Slipfitter, 2 3/8" vertical tenon <sup>27,29</sup>	BZ=Bronze AP=Grey BK=Black DP=Dark Platinum GM=Graphite Metallic WH=White
PRV=Prevail BAA-PRV=Prevail BAA Compliant <sup>3</sup> TAA-PRV=Prevail TAA Compliant <sup>3</sup>	C15=(1 LED) 7,100 Nominal Lumens C25=(2 LEDs) 13,100 Nominal Lumens C40=(2 LEDs) 17,100 Nominal Lumens C60=(2 LEDs) 20,000 Nominal Lumens						
PRV-XL=Prevail XL BAA-PRV-XL=Prevail XL BAA Compliant <sup>3</sup> TAA-PRV-XL=Prevail XL TAA Compliant <sup>3</sup>	C75=(4 LED) 26,100 Nominal Lumens C100=(4 LED) 31,000 Nominal Lumens C125=(4 LED) 36,000 Nominal Lumens C150=(6 LED) 41,100 Nominal Lumens C175=(6 LED) 48,600 Nominal Lumens						
PRV-M=Prevail Maxx BAA-PRV-M=Prevail Maxx BAA Compliant <sup>3</sup> TAA-PRV-M=Prevail MaxxTAA Compliant <sup>3</sup>	C200=(9 LED) 48,000 Nominal Lumens C225=(9 LED) 56,000 Nominal Lumens C250=(9 LED) 65,000 Nominal Lumens C275=(9 LED) 73,000 Nominal Lumens						

Options (Add as Suffix)		Accessories (Order Separately) <sup>20,21</sup>	
7030=70 CRI / 3000K CCT <sup>7</sup> 7050=70 CRI / 5000K CCT <sup>7</sup> CC=Coastal Construction finish <sup>10</sup> HSS=House Side Shield <sup>8</sup> L90=Optics Rotated 90° Left R90=Optics Rotated 90° Right 10K=10kV/10kA UL 1449 Fused Surge Protective Device 20MSP=20kV MOV Surge Protective Device 20K=20kV UL 1449 Fused Surge Protective Device HA=50°C High Ambient Temperature <sup>9</sup> PR=NEMA 3-PIN Twistlock Photocontrol Receptacle <sup>11</sup> PR7=NEMA 7-PIN Twistlock Photocontrol Receptacle <sup>11</sup> FADC=Field Adjustable Dimming Controller <sup>30</sup> MS/DIM-L08=Dimming Motion and Daylight Sensor, IR Remote Programmable, < 8' Mounting Height <sup>12,13</sup> MS/DIM-L20=Dimming Motion and Daylight Sensor, IR Remote Programmable, 8' - 20' Mounting Height <sup>12,13</sup> MS/DIM-L40=Dimming Motion and Daylight Sensor, IR Remote Programmable, 21' - 40' Mounting Height <sup>12,13</sup>	SPB1=Dimming Motion and Daylight Sensor, Bluetooth Programmable, < 8' Mounting Height <sup>12,14</sup> SPB2=Dimming Motion and Daylight Sensor, Bluetooth Programmable, 8' - 20' Mounting Height <sup>12,14</sup> SPB4=Dimming Motion and Daylight Sensor, Bluetooth Programmable, 21' - 40' Mounting Height <sup>12,14,27,28</sup> WPS2XX=WaveLinX Pro, SR Driver, Dimming Motion and Daylight, WAC Programmable, 7' - 15' Mounting <sup>12,15,16,17</sup> WPS4XX=WaveLinX Pro, SR Driver, Dimming Motion and Daylight, WAC Programmable, 15' - 40' Mounting <sup>12,15,16,17</sup> WLS2XX=WaveLin Lite, SR Driver, Dimming Motion and Daylight, Bluetooth Programmable, 7' - 15' Mounting <sup>12,15,16,17</sup> WLS4XX=WaveLin Lite, SR Driver, Dimming Motion and Daylight, Bluetooth Programmable, 15' - 40' Mounting <sup>12,15,16,17</sup> (See Table Below)=LumenSafe Integrated Network Security Camera <sup>18,19</sup>	PRVSA-XX=Standard Arm Mounting Kit <sup>22</sup> PRVMA-XX=Mast Arm Mounting Kit <sup>22</sup> PRVWM-XX=Wall Mount Kit <sup>22</sup> PRV-ADJA-XX=Adjustable Arm - Pole Mount Kit <sup>22</sup> PRV-ADJS-XX=Adjustable Arm - Slipfitter Kit <sup>22</sup> PRV-ADJA-WM-XX=Adjustable Arm - Wall Mount Kit <sup>22</sup> PRVXLSA-XX=Standard Arm Mounting Kit <sup>28</sup> PRVXLMA-XX=Mast Arm Mounting Kit <sup>28</sup> PRVXLWM-XX=Wall Mount Kit <sup>28</sup> PRV-XL-ADJA-XX=Adjustable Arm - Pole Mount Kit <sup>28</sup> PRV-XL-ADJS-XX=Adjustable Arm - Slipfitter Kit <sup>28</sup> PRV-XL-ADJA-WM-XX=Adjustable Arm - Wall Mount Kit <sup>28</sup> PRV-M-ADJA-XX=Adjustable Arm - Pole Mount Kit <sup>27</sup> PRV-M-ADJS-XX=Adjustable Arm - Slipfitter Kit <sup>27</sup> PRV-M-ADJA-WM-XX=Adjustable Arm - Wall Mount Kit <sup>27</sup> MA1010-XX=Single Tenon Adapter for 3-1/2" O.D. Tenon MA1011-XX=2@180° Tenon Adapter for 3-1/2" O.D. Tenon	MA1017-XX=Single Tenon Adapter for 2-3/8" O.D. Tenon MA1018-XX=2@180° Tenon Adapter for 2-3/8" O.D. Tenon SRA238=Tenon Adapter from 3" to 2-3/8" PRV/COB-FDV=Full Drop Visor <sup>23</sup> PRV/L/COB-FDV=Full Drop Visor <sup>18</sup> HS/VERD=House Side Shield Kit <sup>8,24</sup> VGS-F/B=Vertical Glare Shield Kit, Front/Back <sup>24</sup> VGS-SIDE=Vertical Glare Shield Kit, Side <sup>24</sup> OA/RA1013=Photocontrol Shorting Cap OA/RA1014=NEMA Photocontrol - 120V OA/RA1016=NEMA Photocontrol - Multi-Tap 105-285V OA/RA1201=NEMA Photocontrol - 347V OA/RA1027=NEMA Photocontrol - 480V FSIR-100=Wireless Configuration Tool for Occupancy Sensor <sup>25</sup> WOLC-7P-10A=WaveLinX Outdoor Control Module (7-PIN) <sup>26</sup>

NOTES:

- DesignLights Consortium® Qualified. Refer to [www.designlights.org](http://www.designlights.org) Qualified Products List under Family Models for details.
- Customer is responsible for engineering analysis to confirm pole and fixture compatibility for all applications. Refer to installation instructions IB500002EN and pole white paper WP513001EN for additional support information.
- Only product configurations with these designated prefixes are built to be compliant with the Buy American Act of 1933 (BAA) or Trade Agreements Act of 1979 (TAA), respectively. Please refer to [DOMESTIC PREFERENCES](http://www.designlights.org) website for more information. Components shipped separately may be separately analyzed under domestic preference requirements.
- Standard 4000K CCT and 70CRI.
- 480V not to be used with ungrounded or impedance grounded systems.
- DuraVolt drivers feature added protection from power quality issues such as loss of neutral, transients and voltage fluctuations. Visit [www.signify.com/duravolt](http://www.signify.com/duravolt) for more information.
- Use dedicated IES files on product website for non-standard CCTs.
- House Side Shield not suitable with T5 distribution. Not available with PRV-C60 lumen package.
- Not available with PRV-C60 lumen package. Not available with PRV-P-C25 lumen package.
- Coastal construction finish salt spray tested to over 5,000-hours per ASTM B117, with a scribe rating of 9 per ASTM D1654.
- If DuraVolt (DV) is specified, use a photocontrol that matches the input voltage used.
- Controls system is not available in combination with a photocontrol receptacle (PR & PER7) or another controls system (MS or SPB). Option not available with DuraVolt (DV) voltage option.
- Utilizes the Wattstopper sensor FSP-211. Sensor color white unless specified otherwise via PDR. To field-configure, order FSIR-100 accessory separately.
- Utilizes the Wattstopper sensor FSP-3XX series. Sensor color determined by product finish. See Sensor Color Reference Table. Field-configures via mobile application. See Controls section for details.
- Sensor passive infrared (PIR) may be overly sensitive when operating below -20°C (-4°F).
- For the device to be field-configurable, requires WAC Gateway components WAC-PoE and WPOE-120 in appropriate quantities. Only compatible with WaveLinX system and software and requires system components to be installed for operation. See website for more WaveLinX application information.
- Replace XX with sensor color (WH, BZ, or BK).
- Only available in PRV-XL configurations C75, C100, C125, C150, or C175.
- Not available with 347V, 480V, DV, or HA options. Consult LumenSafe system product pages for additional details and compatibility information.
- Replace XX with paint color.
- For BAA or TAA requirements, Accessories sold separately will be separately analyzed under domestic preference requirements. Consult factory for further information.
- Not for use with PRV-XL or PRV-M configurations.
- Only for use with PRV. Not applicable to PRV-M, PRV-XL, or PRV-P.
- Must order one per optic/LED when ordering as a field-installable accessory (1, 2, 4, 6 or 9).
- This tool enables adjustment to Motion Sensor (MS) parameters including high and low modes, sensitivity, time delay, cutoff and more. Consult your lighting representative for more information.
- Requires 7-PIN NEMA twistlock photocontrol receptacle (PR & PER7) option. The WOLC-7 cannot be used in conjunction with other controls systems (MS or LWR). Operates on 120-347V input voltages.
- Only for use with PRV-M configurations.
- Only for use with PRV-XL configurations.
- Fixed for PRV-M.
- Cannot be used with PR7 or other motion response control options

LumenSafe Integrated Network Security Camera Technology Options (Add as Suffix)

Product Family	Camera Type	Data Backhaul		
L=LumenSafe Technology 	H=Dome Camera, High Res Z=Dome Camera, Remote PTZ	C=Cellular, Customer Installed SIM Card A=Cellular, Factory Installed AT&T SIM Card	V=Cellular, Factory Installed Verizon SIM Card S=Cellular, Factory Installed Sprint SIM Card	E=Ethernet Networking

Stock Ordering Information

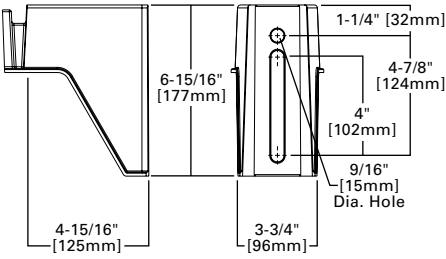
Product Family <sup>1</sup>	Light Engine	Voltage	Distribution
PRVS=Prevail	C15=(1 LED) 7,100 Nominal Lumens C25=(2 LEDs) 13,100 Nominal Lumens C40=(2 LEDs) 17,100 Nominal Lumens C60=(2 LEDs) 20,000 Nominal Lumens	UNV=Universal (120-277V) 347=347V <sup>2</sup>	T3=Type III T4=Type IV
PRVS-XL=Prevail XL	C75=(4 LED) 26,100 Nominal Lumens C100=(4 LED) 31,000 Nominal Lumens C125=(4 LED) 36,000 Nominal Lumens C150=(6 LED) 41,100 Nominal Lumens C175=(6 LED) 48,600 Nominal Lumens		

NOTES:

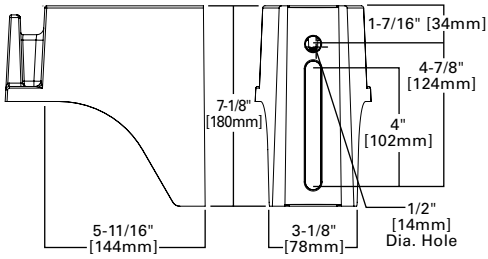
- All stock configurations are standard 4000K/70CRI, bronze finish, and include the standard versatile mounting arm.
- Only available in PRVS configurations C15, C25, C40 or C60.

Mounting Details

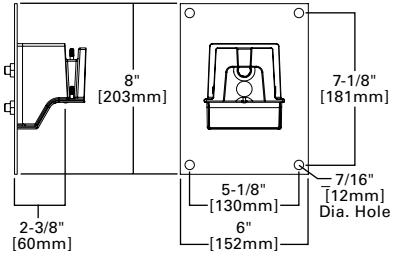
SA=QM Pole Mount Arm (PRV & PRV-P)



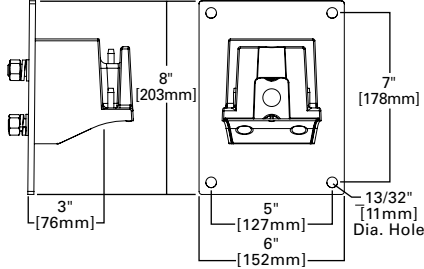
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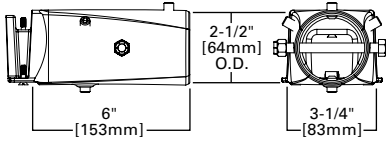
WM=QM Wall Mount Arm (PRV & PRV-P)



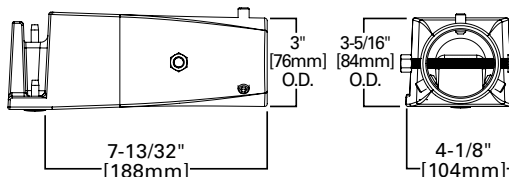
WM=QM Wall Mount Arm (PRV-XL)



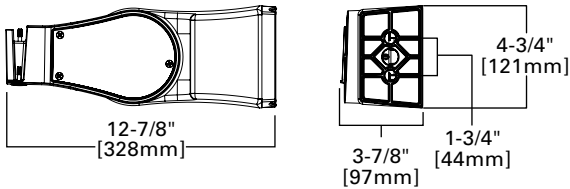
MA=QM Mast Arm (PRV & PRV-P)



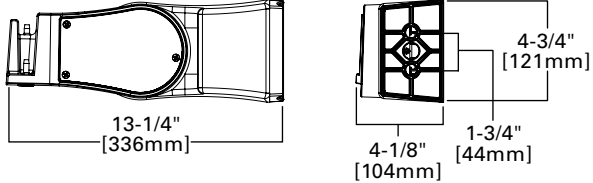
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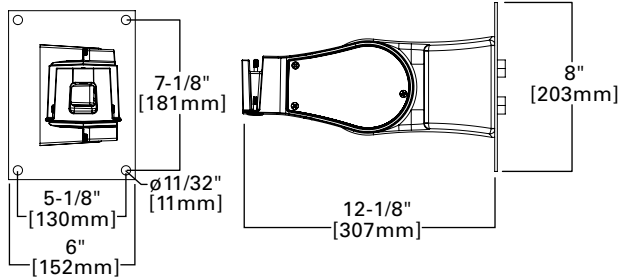
ADJA=Adjustable Arm Pole Mount (PRV & PRV-P)



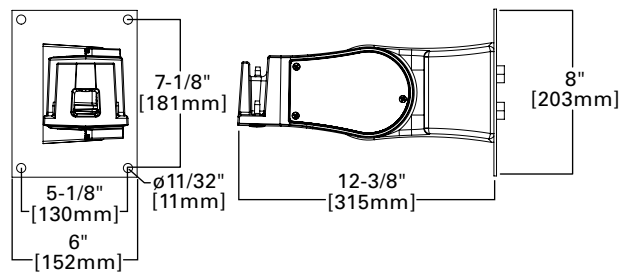
ADJA=Adjustable Arm Pole Mount (PRV-XL)



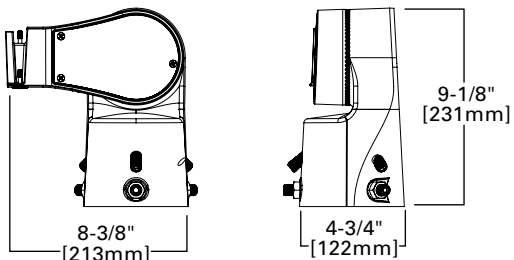
ADJA-WM=Adjustable Arm Wall Mount (PRV & PRV-P)



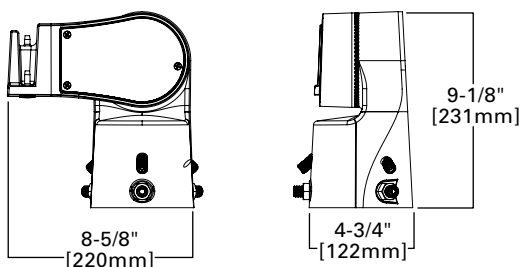
ADJA-WM=Adjustable Arm Wall Mount (PRV-XL)



ADJS=Adjustable Slipfitter 3 (PRV & PRV-P)

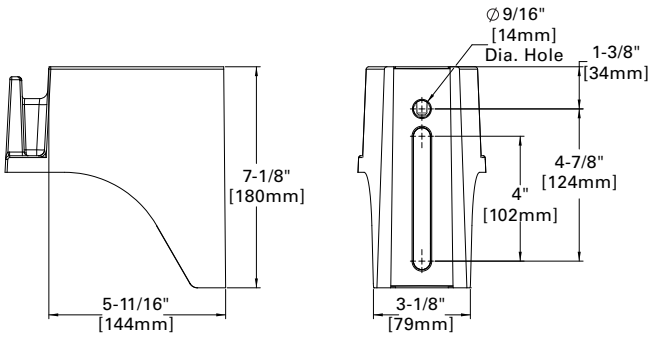


ADJS=Adjustable Slipfitter 3 (PRV-XL)

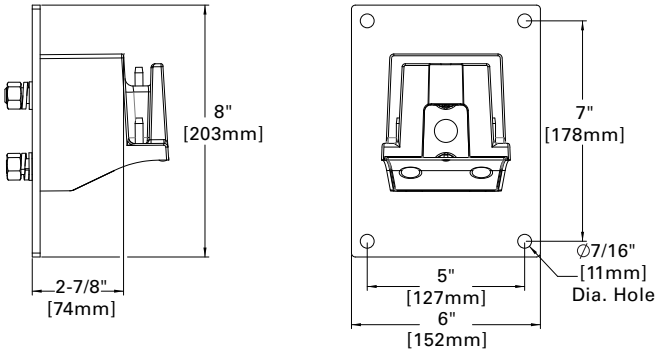


Mounting Details

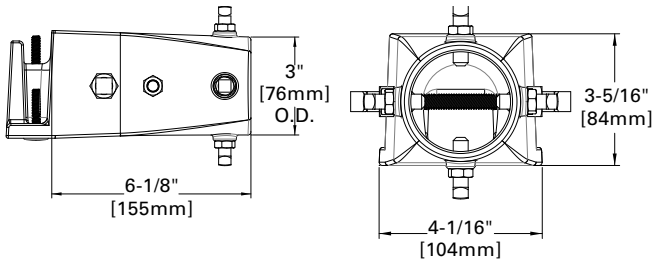
SA=QM Pole Mount Arm (PRV-M)



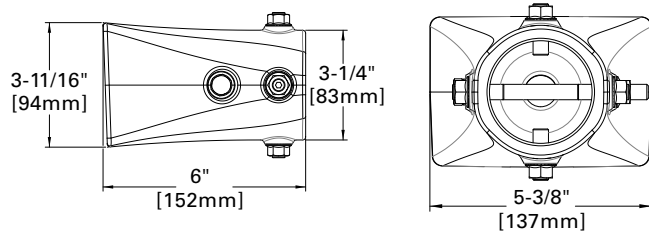
WM=QM Wall Mount Arm (PRV-M)



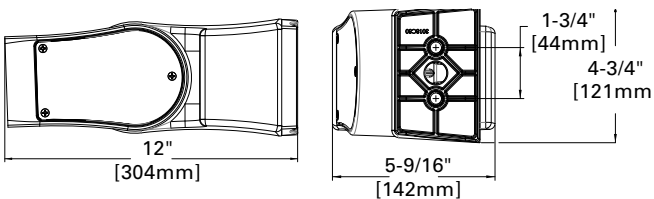
MA=QM Mast Arm (PRV-M)



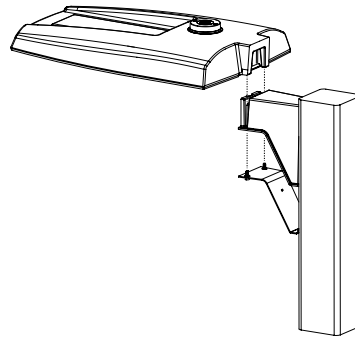
FMA=Fixed Mast Arm (PRV-M)



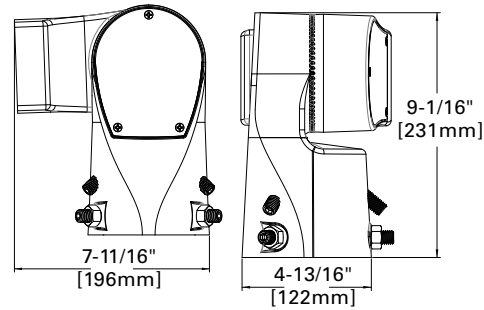
DM=Direct Pole Mount Arm (PRV-M)



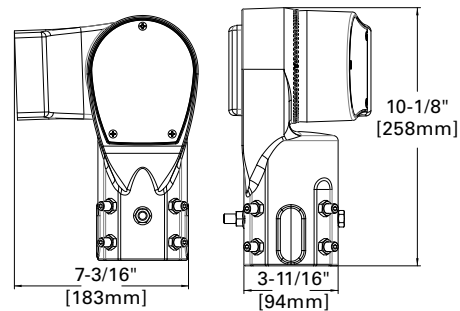
Versatile Mount System



ADJS=Adjustable Slipfitter (PRV-M)



SP2=Adjustable Slipfitter 2-3/8\" (PRV-M)



## Mounting Details

### Mounting Configurations and EPAs

**NOTE:** For 2 PRV's mounted at 90°, requires minimum 3" square or 4" round pole for fixture clearance. For 2 PRV-XL's mounted at 90°, requires minimum 4" square or round pole for fixture clearance. Customer is responsible for engineering analysis to confirm pole and fixture compatibility for applications.

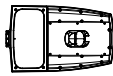
Housing Size	Tilt Angle (Degrees)	Arm Mount Single	Arm Mount 2 @ 180°	Arm Mount 2 @ 90°	Arm Mount 3 @ 90°	Arm Mount 4 @ 90°
Prevail Petite	0°	0.54	1.08	0.84	1.38	1.38
	60°	1.68	1.85	2.42	3.15	3.30
Prevail	0°	0.92	1.35	1.42	1.63	1.63
	60°	2.20	2.40	3.05	3.88	4.07
	60° + Full Drop Visor	2.20	2.40	3.25	4.28	4.47
Prevail XL	0°	1.12	2.25	2.13	2.52	2.52
	60°	3.99	4.30	5.26	6.51	6.79
	60° + Full Drop Visor	3.99	4.30	5.59	7.17	7.49
Prevail Maxx	0°	1.28	2.56	1.7	2.69	2.69
	60°	5.09	5.52	6.34	7.49	7.81

## Optical Configurations

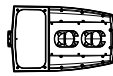
**PRV-P-C10/C15/C20/C25**  
(4,900/6,900/9,800/11,800 Nominal Lumens)



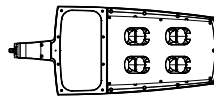
**PRV-C15**  
(7,100 Nominal Lumens)



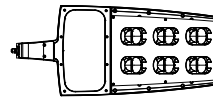
**PRV-C25/C40/C60**  
(13,100/17,100/20,000 Nominal Lumens)



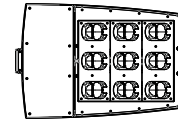
**PRV-XL-C75/C100/C125**  
(26,100/31,000/36,300 Nominal Lumens)



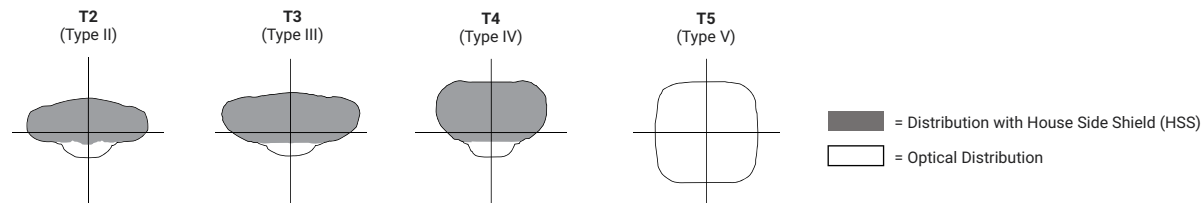
**PRV-XL-C150/C175**  
(41,100/48,600 Nominal Lumens)



**PRV-M-PA6X**  
(50,000/60,000/70,000/80,000 Nominal Lumens)



### Optical Distributions



## Product Specifications

### Construction

- Single-piece die-cast aluminum housing
- Tethered die-cast aluminum door

### Optics

- Dark Sky Approved (3000K CCT and warmer only)
- Precision molded polycarbonate optics

### Electrical

- -40°C minimum operating temperature
- 40°C maximum operating temperature
- >.9 power factor
- <20% total harmonic distortion
- Class 1 electronic drivers have expected life of 100,000 hours with <1% failure rate
- 0-10V dimming driver is standard with leads external to the fixture
- Standard MOV surge protective device designed to withstand 10kV of transient line surge
- Luminaire available with the field adjustable dimming controller (FADC) to manually adjust wattage and reduce the total lumen output and light levels. Comes pre-set to the highest position at the lumen output selected.

### Mounting

- Versatile, patented, standard mount arm accommodates multiple drill patterns ranging from 1-1/2" to 4-7/8" (Type M drilling recommended for new installations)
- A knock-out on the standard mounting arm enables round pole mounting
- Adjustable pole and wall mount arms adjust in 5° increments from 0° to 60°; Downward facing orientation only (Type N drilling required for ADJA mount)
- Adjustable slipfitter arm adjusts in 5° increments from -5° to 85°; Downward facing orientation only
- Adjustable Arms: 1.5G vibration rated
- Prevail and Prevail Petite: 3G vibration rated
- Prevail XL Mast Arm: 3G vibration rated
- Prevail XL Standard Arm: 1.5G vibration rated

### Typical Applications

- Parking lots, Walkways, Roadways and Building Areas

### Finish

- Five-stage super TGIC polyester powder coat paint, 2.5 mil nominal thickness
- Finish is compliant to 3,000 hour salt spray standard (per ASTM B117)

### Shipping Data

- Prevail Petite: 18 lbs. (7.94 kgs.)
- Prevail: 20 lbs. (9.09 kgs.)
- Prevail XL: 45 lbs. (20.41 kgs.)
- Prevail Maxx: 49 lbs. (22.23 kgs.)

### Warranty

- Five year limited warranty, consult website for details. [www.cooperlighting.com/legal](http://www.cooperlighting.com/legal)

Energy and Performance Data

[View PRV-P IES files](#)

[View PRV IES files](#)

[View PRV-XL IES files](#)

Power and Lumens

Product Family	Prevail Petite				Prevail				Prevail XL				Prevail Maxx					
Light Engine	C10	C15	C20	C25	C15	C25	C40	C60	C75	C100	C125	C150	C175	C200	C225	C250	C275	
Power (Watts)	35	49	73	94	52	96	131	153	176	217	264	285	346	346	418	487	588	
Input Current @ 120V (A)	0.29	0.41	0.61	0.79	0.43	0.80	1.09	1.32	1.50	1.84	2.21	2.38	2.92	2.89	3.49	4.06	4.90	
Input Current @ 277V (A)	0.13	0.18	0.27	0.35	0.19	0.35	0.48	0.57	0.66	0.82	0.97	1.04	1.25	1.26	1.51	1.72	2.06	
Input Current @ 347V (A)	0.11	0.16	0.23	0.29	0.17	0.30	0.41	0.48	0.54	0.66	0.79	0.84	1.02	1.00	1.21	1.40	1.70	
Input Current @ 480V (A)	0.08	0.12	0.17	0.22	0.12	0.22	0.30	0.35	0.40	0.48	0.57	0.62	0.74	0.73	0.88	1.00	1.21	
Distribution <sup>1</sup>																		
Type II	4000K Lumens	4,775	6,717	9,542	11,521	7,123	13,205	17,172	20,083	26,263	31,231	36,503	41,349	48,876	50,349	59,444	68,447	79,322
	BUG Rating	B1-U0-G1	B1-U0-G1	B2-U0-G2	B2-U0-G2	B2-U0-G2	B2-U0-G2	B3-U0-G3	B3-U0-G3	B3-U0-G3	B3-U0-G4	B4-U0-G4	B4-U0-G4	B4-U0-G5	B4-U0-G5	B4-U0-G5	B4-U0-G5	B5-U0-G5
	Lumens per Watt	138	137	131	122	137	138	131	131	149	144	138	145	141	146	142	141	135
	3000K Lumens <sup>1</sup>	4,869	6,595	9,369	11,312	6,994	12,965	16,860	19,718	25,786	30,664	35,840	40,598	47,989	49,437	58,368	67,208	77,886
Type III	4000K Lumens	4,782	6,727	9,556	11,538	7,111	13,183	17,144	20,050	26,120	31,061	36,304	41,124	48,610	50,162	59,223	68,193	79,027
	BUG Rating	B1-U0-G2	B1-U0-G2	B2-U0-G3	B2-U0-G3	B1-U0-G2	B2-U0-G3	B3-U0-G4	B3-U0-G4	B3-U0-G5	B3-U0-G5	B3-U0-G5	B4-U0-G5	B4-U0-G5	B4-U0-G5	B4-U0-G5	B5-U0-G5	B5-U0-G5
	Lumens per Watt	138	137	131	123	137	137	131	131	148	143	138	144	140	145	142	140	135
	3000K Lumens <sup>1</sup>	4,695	6,605	9,383	11,329	6,982	12,944	16,832	19,686	25,646	30,497	35,645	40,377	47,727	49,254	58,151	66,958	77,596
Type IV	4000K Lumens	4,880	6,865	9,752	11,774	7,088	13,140	17,087	19,984	26,098	31,035	36,274	41,089	48,569	50,575	59,711	68,754	79,678
	BUG Rating	B1-U0-G2	B1-U0-G2	B2-U0-G3	B2-U0-G3	B1-U0-G3	B2-U0-G4	B2-U0-G4	B3-U0-G5	B3-U0-G5	B3-U0-G5	B3-U0-G5	B3-U0-G5	B4-U0-G5	B4-U0-G5	B4-U0-G5	B4-U0-G5	B5-U0-G5
	Lumens per Watt	141	140	134	125	136	137	130	131	148	143	137	144	140	146	143	141	136
	3000K Lumens <sup>1</sup>	4,792	6,740	9,575	11,561	6,959	12,901	16,777	19,621	25,624	30,471	35,615	40,343	47,687	49,659	58,630	67,510	78,235
Type V	4000K Lumens	5,067	7,128	10,126	12,226	7,576	14,045	18,264	21,360	28,129	33,450	39,097	44,287	52,349	53,531	63,201	72,773	84,335
	BUG Rating	B3-U0-G2	B3-U0-G2	B4-U0-G3	B4-U0-G3	B3-U0-G3	B4-U0-G3	B4-U0-G4	B5-U0-G4	B5-U0-G5	B5-U0-G5	B5-U0-G5	B5-U0-G5	B5-U0-G5	B5-U0-G5	B5-U0-G5	B5-U0-G5	B5-U0-G5
	Lumens per Watt	146	145	139	130	146	146	139	140	160	154	148	155	151	155	151	150	144
	3000K Lumens <sup>1</sup>	4,975	6,999	9,942	12,004	7,438	13,790	17,932	20,972	27,618	32,843	38,387	43,483	51,398	52,562	62,057	71,455	82,808

NOTES:  
1. For 3000K, 5000K or HSS data, refer to published IES files.

Lumen Maintenance

Configuration	TM-21 Lumen Maintenance (50,000 Hours)	Theoretical L70 (Hours)
Prevail and Prevail Petite at 25°C	91.30%	> 194,000
Prevail and Prevail Petite at 40°C	87.59%	> 134,000
Prevail XL at 25°C	91.40%	> 204,000
Prevail XL at 40°C	89.41%	> 158,000
Prevail Maxx at 25°C	91.40%	> 204,000
Prevail Maxx at 40°C	89.41%	> 158,000

Lumen Multiplier

Ambient Temperature	Lumen Multiplier
10°C	1.02
15°C	1.01
25°C	1.00
40°C	0.99

FADC Settings

FADC Position	Lumen Multiplier
1	25%
2	46%
3	55%
4	62%
5	72%
6	77%
7	82%
8	85%
9	90%
10	100%

Note: +/-5% typical value

Sensor Color Reference Table (SPBx)

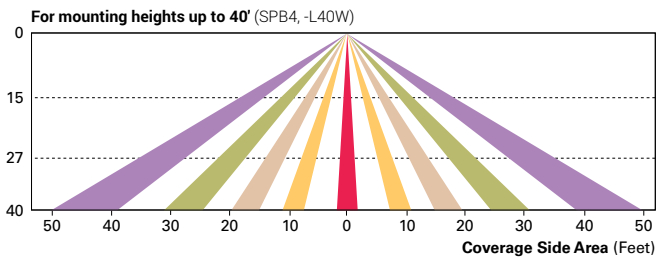
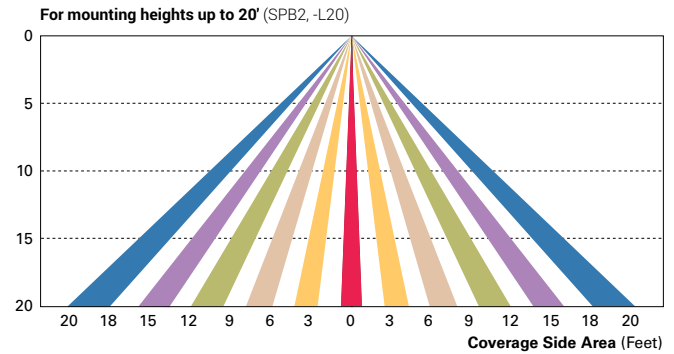
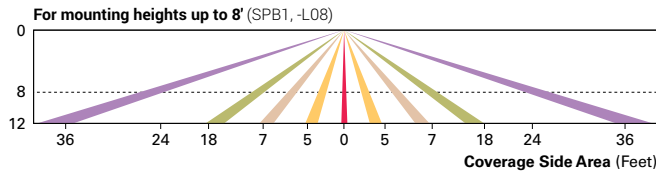
Housing Finish	Sensor Color
AP=Grey	Grey
BZ=Bronze	Bronze
BK=Black	Black
DP=Dark Platinum	Grey
GM=Graphite Metallic	Black
WH=White	White

### Control Options

**0-10V** This fixture provides 0-10V dimming wire leads for use with a lighting control panel or other control method.

**Photocontrol (PR and PR7)** Photocontrol receptacles provide a flexible solution to enable “dusk-to-dawn” lighting by sensing light levels. Advanced control systems compatible with NEMA 7-PIN standards can be utilized with the PR7 receptacles.

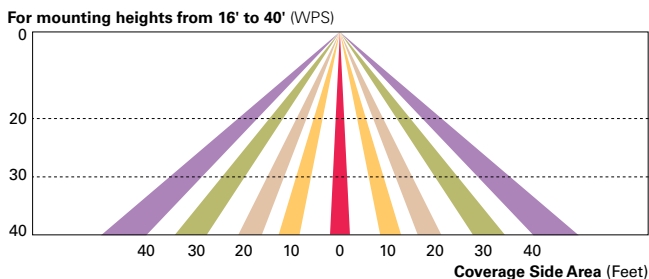
**Dimming Occupancy Sensor (SPB, MS/DIM-LXX)** These sensors are factory installed in the luminaire housing. When the SPB or MS/DIM sensor options are selected, the luminaire will dim down after five minutes of no activity detected. When activity is detected, the luminaire returns to full light output. These occupancy sensors include an integral photocell for “dusk-to-dawn” control or “daylight harvesting.” Factory default is enabled for the MS sensors and disabled for the SPB. SPB motion sensors require the Sensor Configuration mobile application by Wattstopper to change factory default dimming level, time delay, sensitivity and other parameters. Available for iOS and Android devices. The SPB sensor is factory preset to dim down to approximately 10% power with a time delay of five minutes.



**WaveLinx Wireless Control and Monitoring System** Available in 7-PIN or 4-PIN configurations, the WaveLinx Outdoor control platform operates on a wireless mesh network based on IEEE 802.15.4 standards enabling wireless control of outdoor lighting. At least one Wireless Area Controller (WAC) is required for full functionality and remote communication (including adjustment of any factory pre-sets).

**WaveLinx Outdoor Control Module (WOLC-7P-10A)** A photocontrol that enables astronomical or time-based schedules to provide ON, OFF and dimming control of fixtures utilizing a 7-PIN receptacle. The out-of-box functionality is ON at dusk and OFF at dawn.

**WaveLinx Wireless Sensor (WPS2 and WPS4)** These outdoor sensors offer passive infrared (PIR) occupancy sensing and a photocell for closed-loop daylight sensing. These sensors are factory preset to dim down to approximately 50 percent power after 15 minutes of no activity detected, and the photocell for “dusk-to-dawn” control is default enabled. A variety of sensor lenses are available to optimize the coverage pattern for mounting heights from 7'-40'.



**LumenSafe (LD)** The LumenSafe integrated network camera is a streamlined, outdoor-ready camera that provides high definition video surveillance. This IP camera solution is optimally designed to integrate into virtually any video management system or security software platform of choice. No additional wiring is needed beyond providing line power to the luminaire. LumenSafe features factory-installed power and networking gear in a variety of networking options allowing security integrators to design the optimal solution for active surveillance.

**STORMWATER MAGAGEMENT AND EROSION CONTROL  
PLAN**  
2975 Kapec Road

City of Fitchburg, WI | July 23, 2024

Prepared for:

CF INVESTMENTS LLC  
3636 Skytop Road  
McFarland, WI 53558

Snyder & Associates, Inc. Project No. 124.0465.30

Prepared by:

<u>Brian C. Arcand, P.E.</u>	<u>7/23/2024</u>
Name	Date

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Pre-Development Hydrology .....	Appendix E
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Storm Sewer Catchment Area Map and Calculations.....	Appendix H
Universal Soil Loss Equation for Construction Sites .....	Appendix I
Draft Maintenance Agreement.....	Appendix J
Soil Test Pits .....	Appendix K



IOWA | MISSOURI | NEBRASKA | SOUTH DAKOTA | WISCONSIN

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## 1. INTRODUCTION

The purpose of this stormwater management and erosion control plan is to evaluate the impacts of the proposed development on stormwater runoff leaving the site. To protect receiving waters and lands, runoff caused by development generally must be treated, detained and, if appropriate, infiltrated per Municipal, County, CARPC, and State regulations.

The proposed site is located at 2975 Kapec Road in the City of Fitchburg, Section 06, T 6 N, R 9 E.

The project area is approximately 6.5 acres and will consist of a multi-family building, parking lot, fire access drive, and stormwater management area.

The stormwater system requirements include:

- ◆ Comply with NR-151 requirements.
- ◆ Maintain the pre-developed peak flow runoff rates for the 1, 2, 10, 100, and 200-year storm events.
- ◆ Safely pass the 500-year storm event.
- ◆ Infiltrate 90% of the pre-development infiltration volume, based on average annual rainfall.
- ◆ 80% of total suspended solids removal for water quality.
- ◆ Thermal control.
- ◆ Effectively treat oil and grease for the first 0.5 inches of runoff during rainfall events.
- ◆ Provide sediment control during construction, limiting construction sediment loss to 5 tons per acre per year.

## 2. STORMWATER RUNOFF ANALYSIS

### a. Pre-Developed and Post-Developed Conditions

The existing site is currently two existing multi-family buildings and a shared parking lot. The soil survey map referenced in Appendix A indicates the soils in the vicinity of the site consist mainly of Quarry and Ringwood silt loam (Rn). These soils have a Hydrologic Soil Group Rating of primarily “B” type soils (Appendix A).

The project will consist of a multi-family building, parking lot, fire access drive, and stormwater management area. See the Grading and Erosion Control Plan in Appendix B.

There is a regional basin downstream that was intended to include this parcel but the infrastructure cannot convey the proper flows and there is not an ideal overland flow route. Due to those restrictions, the existing stormwater report (Final Design Report Stage 2 US 18/151 (Verona Road), County PD to Raymond Road completed by Strand Associates, Inc. in November 2015) states that this parcel will need to handle its own stormwater management. Additionally, the City of Fitchburg has requested the runoff for the 100-year storm event be held to approximately 1 cfs per acre (6.5 acres for this development, hence approximately 6.5 cfs in the 100-year storm event).

Several time of concentration routes were analyzed for the pre-development 2-SX area and due to steep slopes, all of them came out to below the 6 minute minimum so direct entry was utilized for this area.

## b. Pre-Developed and Post-Developed Peak Discharge Rates

The site is designed to maintain peak discharge rates as required by the City of Fitchburg and Dane County for the 1, 2, 10, 100, and 200-year storms and safely pass the 500-year storm, in addition to a 1 cfs maximum per acre as described above (Appendices E and F). Some of the project site will run directly offsite. Runoff from these uncaptured areas is intended to be from mainly grassed areas.

**Table 2-1: Pre-Development**

Storm Event (Yr.)	Total Flow (cfs)
1	0.70
2	1.76
10	7.60
100	24.15
200	30.54
500	41.39

**Table 2-2: Post-Development**

Storm Event (Yr.)	Total Flow (cfs)	Total Flow With No Controls (cfs)
1	0.35	14.64
2	0.60	17.65
10	5.13	28.59
100	6.13	51.22
200	6.45	58.86
500	8.31	71.19

**Table 2-3: Stormwater Management Systems**

Storm Event (Yr.)	High Water Level – 1P	High Water Level – 2P
1	1026.45	1025.84
2	1026.66	1025.99
10	1027.14	1026.22
100	1028.57	1027.31
200	1028.71	1028.27
500	1029.00	1029.03

## c. Total Suspended Solids Removal

As runoff flows through a site it picks up and carries sediment. This sediment will flow off site if it does not settle out prior to discharging. WinSLAMM modeling was used to determine the extent of TSS removal that will be met for the proposed development. Appendix G includes the WinSLAMM calculations for water quality.

**Table 2-4: Total Suspended Solid Calculations**

	Particulate Solids Yield (lbs.)	Percent Particulate Solids Reduction
<b>Total of All Land Uses without Controls</b>	1259	
<b>Outfall Total with Controls</b>	185.4	85.27
<b>Annualized Total After Outfall Controls</b>	185.9	

#### d. Infiltration

Per the City of Madison Ordinance, the site is required to infiltrate 90% of the pre-developed infiltration volume for the proposed development. Infiltration calculations can be found in Appendix G.

**Table 2-5: Total Infiltration**

Condition	Runoff Volume (cu. ft.)	Percent Infiltrated
<b>Pre-Development</b>	40,945	
<b>Post-Development</b>	101,795	90.5

#### e. Thermal Control

The proposed project area is located within a thermally sensitive area (Appendix A). Runoff from the site will be infiltrated to pre-development conditions and the “first flush” of stormwater will mitigate the thermal impacts of runoff when the water leaves the site.

#### f. Oil and Grease Control

The first 0.5 inch of rainfall across the parking lot must be treated for oil and grease. This requirement will be met by a SNOOT structure with a bioskirt placed in the downstream storm sewer manhole ST-6 prior to outletting to the wet pond.

### 3. STORM SEWER DESIGN

Storm sewer will be sized to handle the 200-year storm event without surcharging in order to properly direct flow to the given stormwater management systems for the 200-year storm event. Additionally, the 500-year event for the site will be safely routed to the public right-of-way. Storm sewer calculations and drainage exhibit can be found in Appendix H.

### 4. EROSION CONTROL

#### a. Erosion Control Devices and Practices

Sediment discharge from construction sites must be limited to 5.0 tons/acre/year. The Universal Soil Loss Equation Worksheet for Construction Sites will be used to calculate the soil loss for the proposed development. Silt fence, stone construction entrances/tracking pads, erosion matting, and inlet protection will be utilized to reduce soil loss before and during construction. Upon completion of construction these areas will be re-graded and restored. The contractor will minimize areas of exposed soil and will temporarily seed as necessary. These measures will keep sediment discharge below 5.0 tons/acre/year. USLE worksheets and an exhibit of flow paths can be found in Appendix I.

## **b. Monitoring and Maintenance**

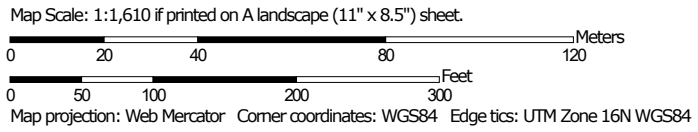
A draft maintenance agreement for all private portions of the stormwater management can be found in Appendix J.

**APPENDIX A**  
**SITE MAPS**

Hydrologic Soil Group—Dane County, Wisconsin




Soil Map may not be valid at this scale.



## 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
QUA	Quarry		0.1	1.2%
RnB	Ringwood silt loam, 2 to 6 percent slopes	B	4.5	71.0%
RnC2	Ringwood silt loam, 6 to 12 percent slopes, eroded	B	1.8	27.9%
<b>Totals for Area of Interest</b>			<b>6.3</b>	<b>100.0%</b>

### 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

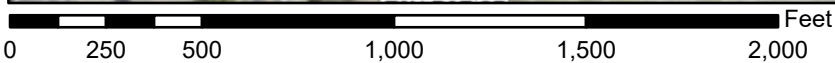
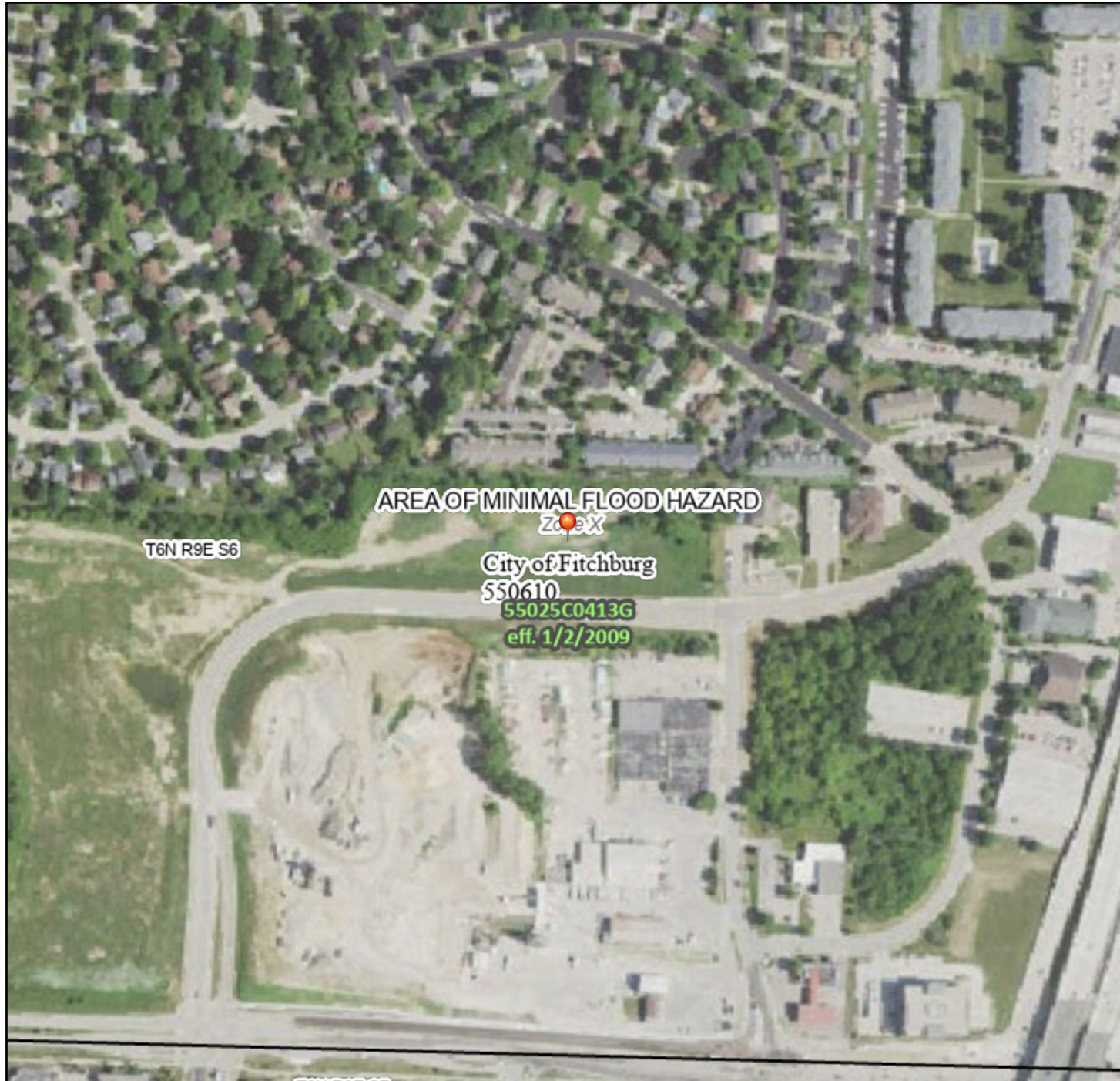
*Component Percent Cutoff:* None Specified

*Tie-break Rule:* Higher

# National Flood Hazard Layer FIRMMette



89°28'57"W 43°1'22"N



1:6,000

89°28'20"W 43°0'56"N

## Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

SPECIAL FLOOD HAZARD AREAS		Without Base Flood Elevation (BFE) Zone A, V, A99
		With BFE or Depth Zone AE, AO, AH, VE, AR
		Regulatory Floodway

OTHER AREAS OF FLOOD HAZARD		0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile Zone X
		Future Conditions 1% Annual Chance Flood Hazard Zone X
		Area with Reduced Flood Risk due to Levee. See Notes. Zone X
		Area with Flood Risk due to Levee Zone D

OTHER AREAS		NO SCREEN Area of Minimal Flood Hazard Zone X
		Effective LOMRs
		Area of Undetermined Flood Hazard Zone D

GENERAL STRUCTURES		Channel, Culvert, or Storm Sewer
		Levee, Dike, or Floodwall

OTHER FEATURES		Cross Sections with 1% Annual Chance Water Surface Elevation
		Coastal Transect
		Base Flood Elevation Line (BFE)

OTHER FEATURES		Limit of Study
		Jurisdiction Boundary
		Coastal Transect Baseline
		Profile Baseline
		Hydrographic Feature

MAP PANELS		Digital Data Available
		No Digital Data Available
		Unmapped

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

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

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 7/19/2024 at 1:44 PM and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

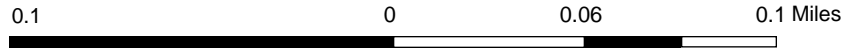
This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date. Map images for unmapped and unmodernized areas cannot be used for regulatory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



# Surface Water Data Viewer Map



- Legend**
- Wetland Indicators
  - NRCS Wetspots
  - Municipality
  - State Boundaries
  - County Boundaries
  - Major Roads**
    - Interstate Highway
    - State Highway
    - US Highway
  - County and Local Roads**
    - County HWY
    - Local Road
  - Railroads
  - Tribal Lands
  - Railroads
  - Rivers and Streams
  - Intermittent Streams
  - Lakes and Open water

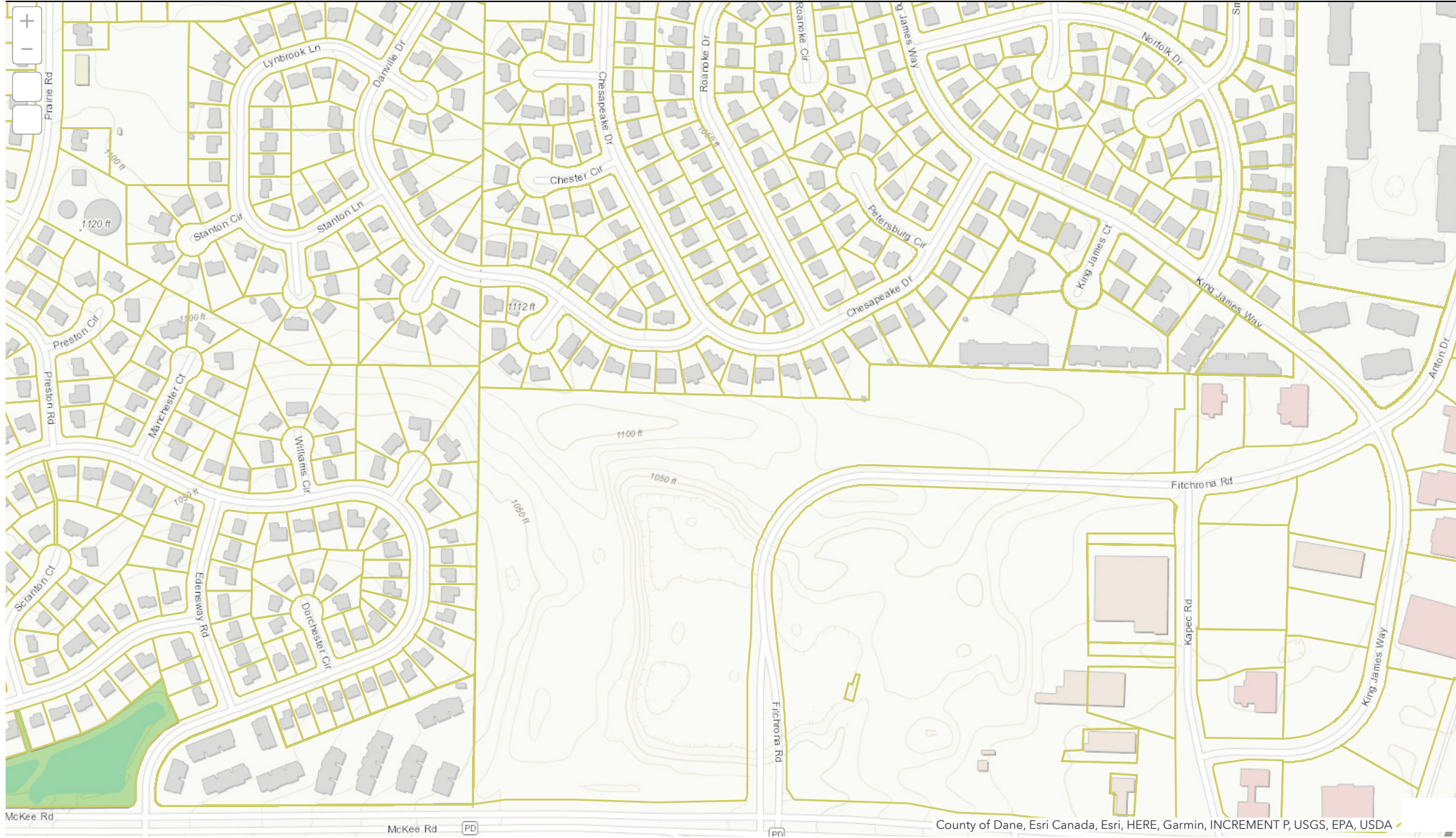


NAD\_1983\_HARN\_Wisconsin\_TM

1: 3,960

DISCLAIMER: The information shown on these maps has been obtained from various sources, and are of varying age, reliability and resolution. These maps are not intended to be used for navigation, nor are these maps an authoritative source of information about legal land ownership or public access. No warranty, expressed or implied, is made regarding accuracy, applicability for a particular use, completeness, or legality of the information depicted on this map. For more information, see the DNR Legal Notices web page: <http://dnr.wi.gov/legal/>

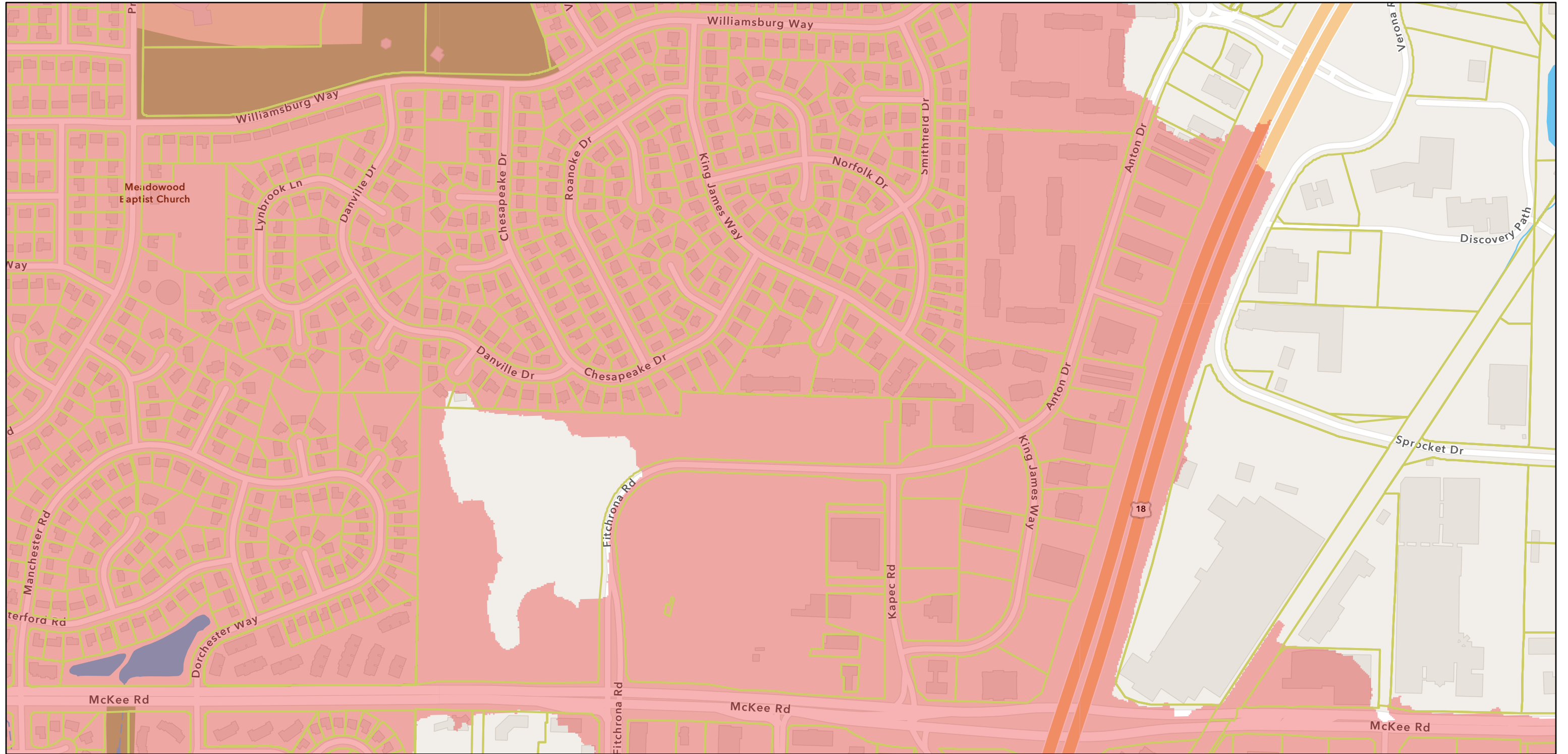
## Notes





**Legend**

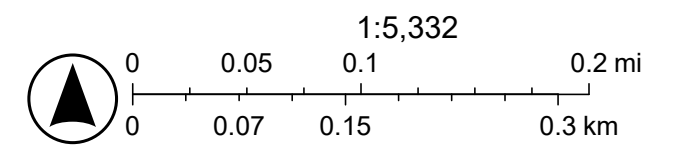
- Parcels
- Sewer Service Area Boundaries: 02162022
- Environmental Corridor

# Dane County



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-  Parcels
-  Thermally Sensitive Areas

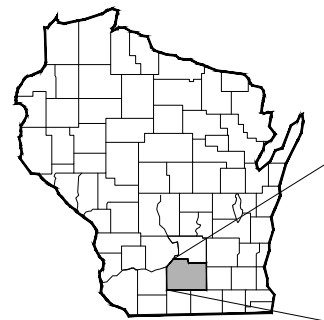


Sources: Esri, TomTom, Garmin, FAO, NOAA, USGS, © OpenStreetMap contributors, and the GIS User Community

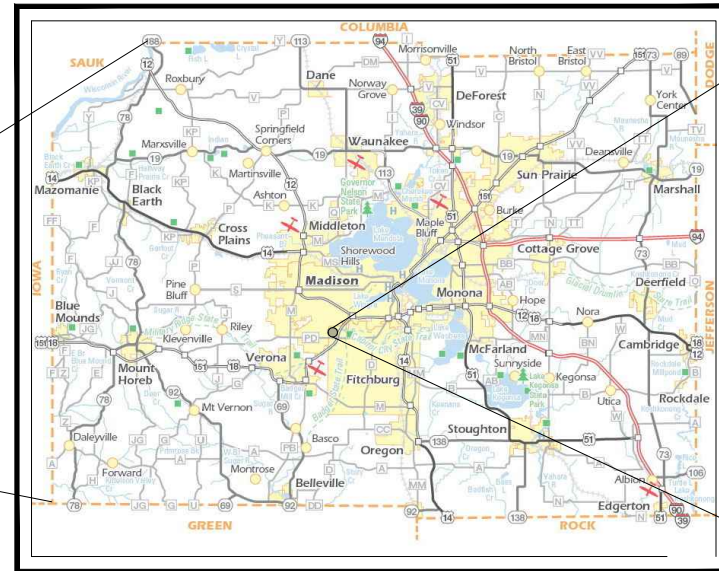
**APPENDIX B**  
**GRADING & EROSION CONTROL PLAN**

# 2975 KAPEC ROAD CITY OF FITCHBURG

## SECTION 06, TOWNSHIP 6N, RANGE 9E



REGIONAL MAP



DANE COUNTY  
DANE COUNTY, WISCONSIN



SITE LOCATION MAP  
CITY OF FITCHBURG,  
DANE COUNTY, WISCONSIN



### CONTACT INFORMATION

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CF INVESTMENTS LLC  
CRAIG FRANK  
3636 SKYTOP ROAD  
MCFARLAND, WI 53558

CITY OF FITCHBURG  
TIM VOELKER - DIRECTOR OF PUBLIC WORKS  
608-270-4261  
TRACY FOSS - ASSISTANT DIRECTOR OF PUBLIC WORKS  
608-270-4272  
5520 LACY RD  
FITCHBURG, WI 53711

### UTILITY CONTACT INFORMATION

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152 DIXON STREET  
MADISON WI 53704  
608-252-2006

SPECTRUM  
CONTACT : BRANDON STORM  
2701 DANIEL STREET  
MADISON WI 53718  
608-444-9493

MG&E - ELECTRIC  
CONTACT : JIM HERFEL  
133 BLAIR STREET  
MADISON WI 53703  
608-252-7224

MG&E - GAS  
CONTACT : JANE ROSSING  
133 BLAIR STREET  
MADISON WI 53703  
608-252-7233

### Sheet List Table

Sheet Number	Sheet Title
C 100	TITLE SHEET
C 300	SITE PLAN
C 400	GRADING PLAN
C 401	EROSION CONTROL PLAN
C 402	BASIN DETAILS
C 403	DETAILED GRADING PLAN - WEST
C 404	DETAILED GRADING PLAN - EAST
C 500	UTILITY PLAN
C 700	NOTES
C 701	EROSION CONTROL NOTES
C 702	EROSION CONTROL DETAILS
C 703	SITE & PAVEMENT DETAILS
C 704	SITE AND PAVEMENT DETAILS CONTINUED
C 705	SANITARY DETAILS
C 706	STORM DETAILS
C 707	WATER MAIN DETAILS
L 100	LANDSCAPE NOTES
L 200	LANDSCAPE PLAN
L 300	LANDSCAPE DETAILS

### UTILITY WARNING

THE UTILITIES SHOWN HAVE BEEN LOCATED FROM FIELD SURVEY INFORMATION AND/OR RECORDS OBTAINED. THE SURVEYOR MAKES NO GUARANTEE THAT THE UTILITIES OR SUBSURFACE FEATURES SHOWN COMPRISE ALL SUCH ITEMS IN THE AREA, EITHER IN SERVICE OR ABANDONED. THE SURVEYOR FURTHER DOES NOT WARRANT THAT THE UTILITIES OR SUBSTANCES FEATURES SHOWN ARE IN EXACT LOCATION INDICATED.



TO OBTAIN LOCATION OF PARTICIPANTS' UNDERGROUND FACILITIES BEFORE YOU DIG IN WISCONSIN

**CALL DIGGERS HOTLINE**  
**1-800-242-8511**  
**TOLL FREE**

WIS. STATUTE 182.0175 (1974) REQUIRES MIN. OF 3 WORK DAYS NOTICE BEFORE YOU EXCAVATE

MARK	SIP SUBMITTAL	DATE	BY
Engineer: BCA	Checked By: MLC	Scale: 1" = ##'	
Technician: TECH	Date: 05-21-24	T-R-S: TTN-RRW-SS	
Project No: 124,0465.30			Sheet C 100

2975 KAPEC ROAD  
TITLE SHEET  
CITY OF FITCHBURG, DANE COUNTY, WI  
**SNYDER & ASSOCIATES, INC.**  
5010 VOGES ROAD  
MADISON, WISCONSIN 53718  
608-838-0444 | www.snyder-associates.com



V:\proweb\10224124\0465.30\CADD\1240465\_Plan.dwg, BRIAN ARCAND, TITLE SHEET, 2024/05/19, 1:30 PM, ANSI FULL BLEED B (17.9X11.00 INCHES)

V:\proj\2412\0465\30\CD\120465\_Plan.dwg BRN\ARCAND, SITE PLAN, 2024/08/19, 1:39 PM, ANSI FULL BLEED (17.00 X 11.00 INCHES)

**SITE STATISTICS:**

ZONING  
 PUD (PLANNED UNIT DEVELOPMENT)

PARCEL NUMBER  
 PART OF PARCEL NO. 0609-063-9920-2

GENERAL USE  
 MULTI-FAMILY

1-BEDROOM	152 UNITS
2-BEDROOM	101 UNITS
3-BEDROOM	20 UNITS
TOTAL	273 UNITS

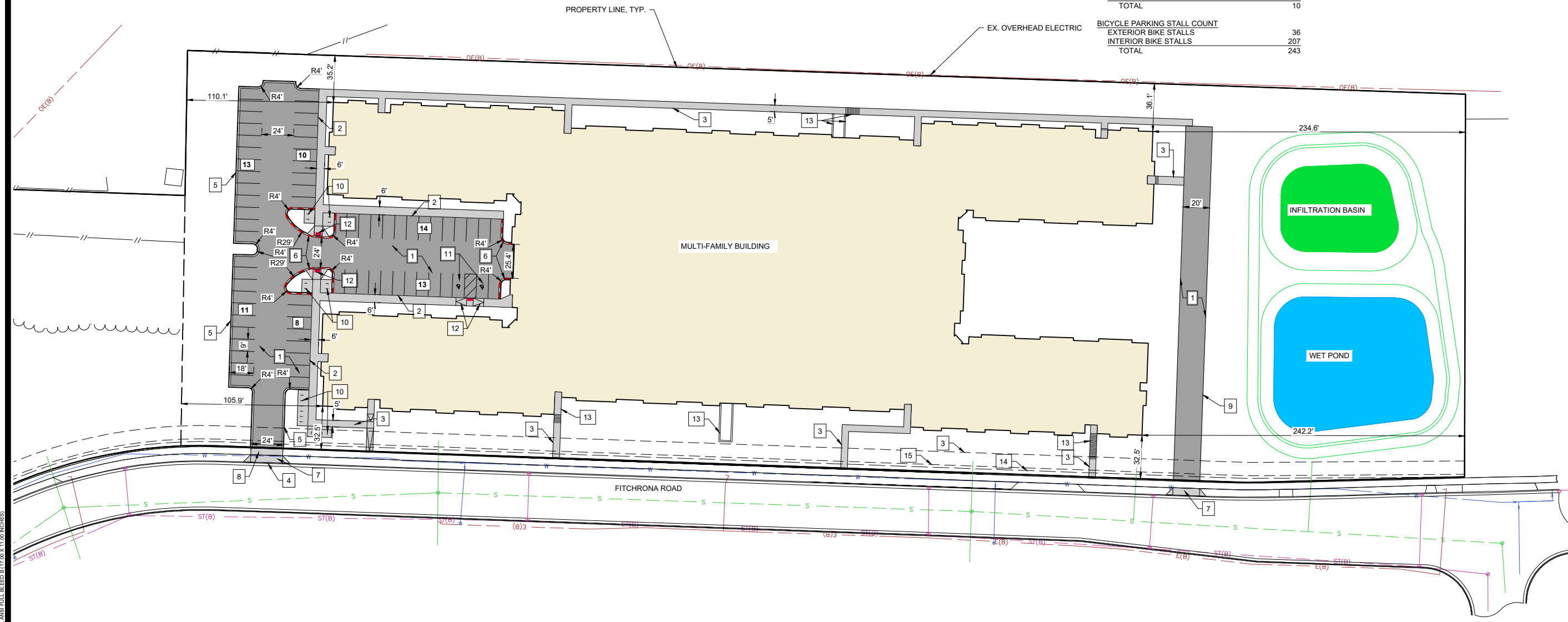
VEHICLE PARKING STALL COUNT	
EXTERIOR/OUTDOOR STALLS (NON-ADA)	67
INTERIOR/PARKING RAMP STALLS (NON-ADA)	376
TOTAL	443

EXTERIOR/OUTDOOR ADA STALLS	
EXTERIOR BIKE STALLS	2
INTERIOR/PARKING RAMP ADA STALLS	8
TOTAL	10

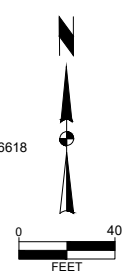
BICYCLE PARKING STALL COUNT	
EXTERIOR BIKE STALLS	36
INTERIOR BIKE STALLS	207
TOTAL	243

COVERAGE  
 BUILDING = 109,963 SQ. FT.  
 PARKING/DRIVE = 27,786 SQ. FT.  
 SIDEWALK/BICYCLE STALLS = 9,033 SQ. FT.  
 TOTAL IMPERVIOUS = 146,782 SQ. FT.

LOT AREA = 284,196 SQ. FT. (6.5242 ACRES)  
 LOT COVERAGE = 51.7%  
 DENSITY = 41.84 DWELLING UNITS/ACRE



- SITE PLAN KEY NOTES**
1. ASPHALT PAVEMENT
  2. THICKENED EDGE SIDEWALK
  3. SIDEWALK
  4. CUT CURB FOR PROPOSED DRIVEWAY
  5. STANDARD 18" CURB & GUTTER
  6. REJECT 18" CURB & GUTTER
  7. CONCRETE DRIVEWAY APRON
  8. REPLACE EXISTING PUBLIC SIDEWALK
  9. FIRE ACCESS DRIVEWAY
  10. BIKE RACK
  11. ADA PARKING STALL
  12. ADA RAMP
  13. RETAINING WALL
  14. 3' WIDE PUBLIC WATER MAIN EASEMENT, DOCUMENT NO. 5396618
  15. 5' PUBLIC BIKE AND PEDESTRIAN EASEMENT
  16. 12' PUBLIC UNDERGROUND UTILITY EASEMENT



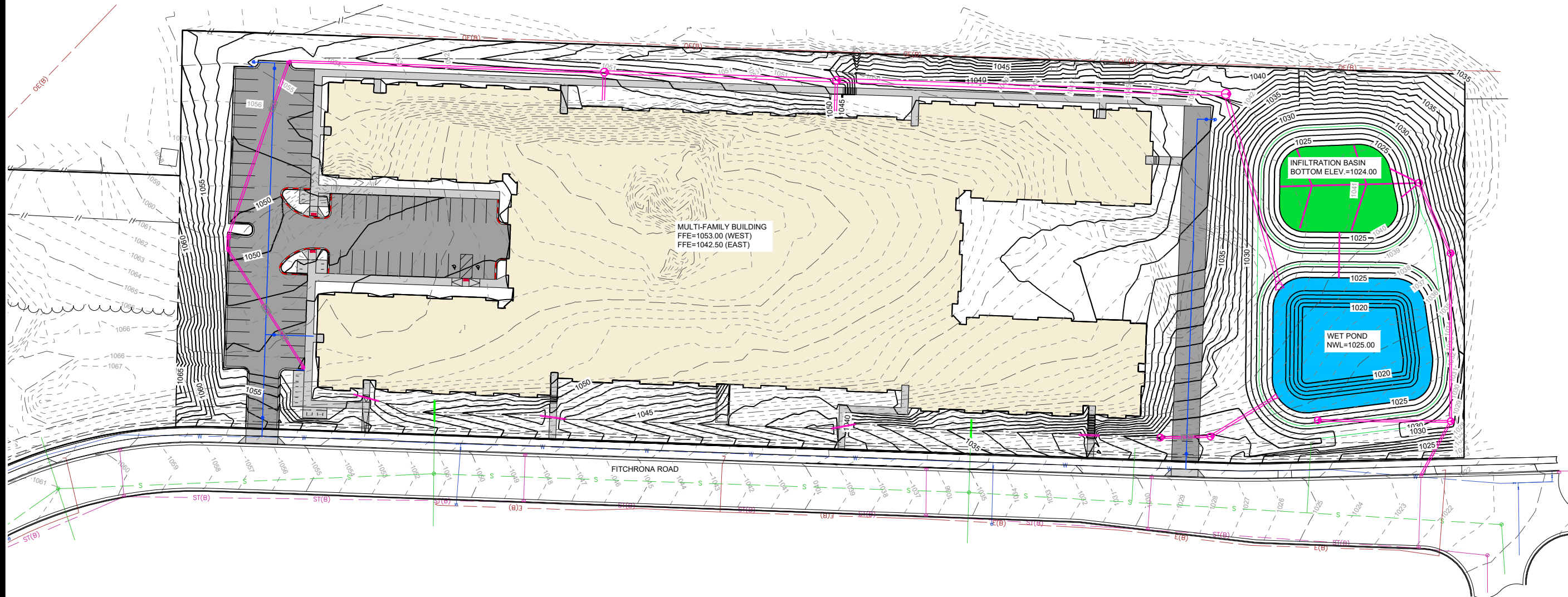
MARK	SIP SUBMITTAL	07-25-24	BCA	BY
REVISION	REVISION	DATE	DATE	BY
Checked By: MLC	Checked By: MLC	Scale: 1" = 40'	T-R-S: TTN+RRW+SS	
Engineer: BCA	Engineer: BCA	Date: 05-21-24		
Technician: TECH	Technician: TECH			

**2975 KAPEC ROAD**  
**SITE PLAN**  
**CITY OF FITCHBURG, DANE COUNTY, WI**  
**SNYDER & ASSOCIATES, INC.**  
 5010 VOGES ROAD  
 MADISON, WISCONSIN 53718  
 608-835-0444 | www.snyder-associates.com

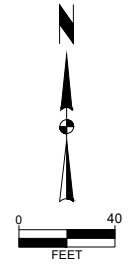


Project No: 124.0465.30  
 Sheet C 300

V:\projects\124.0465.30\124.0465.30\124.0465.30.dwg, BRUNN, AISCAND, GRADING PLAN, 07/25/24, 1:30 PM, ANS: FULL BLEED B (7.00 X 11.00 INCHES)



**CONSTRUCTION SEQUENCE**  
 (09-01-2024) - INSTALL EROSION CONTROL DEVICES  
 (09-01-2024 - 09-15-2024) - STRIP AND STOCKPILE TOPSOIL  
 (09-15-2024 - 04-14-2025) - GRADE SITE  
 (04-14-2025 - 06-14-2025) - SEED AND MULCH AND ESTABLISH VEGETATION  
 \*REMOVE EROSION CONTROL MEASURES ONLY AFTER SOILS HAVE BEEN STABILIZED

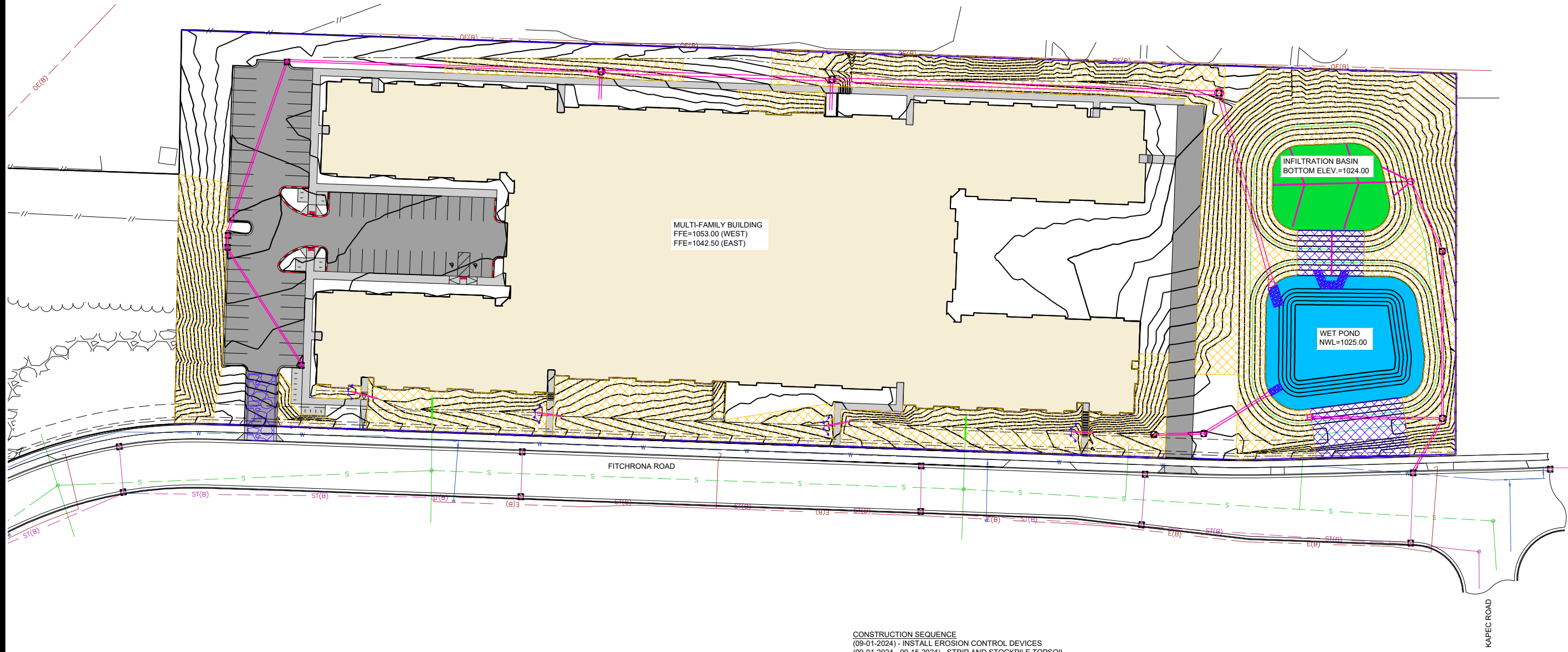


MARK	SIP SUBMITTAL	07-25-24	BCA
Engineer:	BCA	Checked By:	MLC
Technician:	TECH	Date:	05-21-24
			T-R-S: TTN+RRW-SS
			Scale: 1" = 40'
			Project No: 124.0465.30
			Sheet C 400

**2975 KAPEC ROAD**  
**GRADING PLAN**  
 CITY OF FITCHBURG, DANE COUNTY, WI  
**SNYDER & ASSOCIATES, INC.**  
 5010 VOGES ROAD  
 MADISON, WISCONSIN 53718  
 608-838-0444 | www.snyder-associates.com

**SNYDER & ASSOCIATES**  
 Project No: 124.0465.30  
 Sheet C 400

LEGEND	
	CONSTRUCTION ENTRANCE
	SILT FENCE
	INLET PROTECTION
	EROSION MATTING
	TURF REINFORCEMENT MAT
	TEMPORARY STONE CULVERT PROTECTION
	RIP RAP



**CONSTRUCTION SEQUENCE**  
 (09-01-2024) - INSTALL EROSION CONTROL DEVICES  
 (09-01-2024 - 09-15-2024) - STRIP AND STOCKPILE TOPSOIL  
 (09-15-2024 - 04-14-2025) - GRADE SITE  
 (04-14-2025 - 06-14-2025) - SEED AND MULCH AND ESTABLISH VEGETATION  
 \*REMOVE EROSION CONTROL MEASURES ONLY AFTER SOILS HAVE BEEN STABILIZED

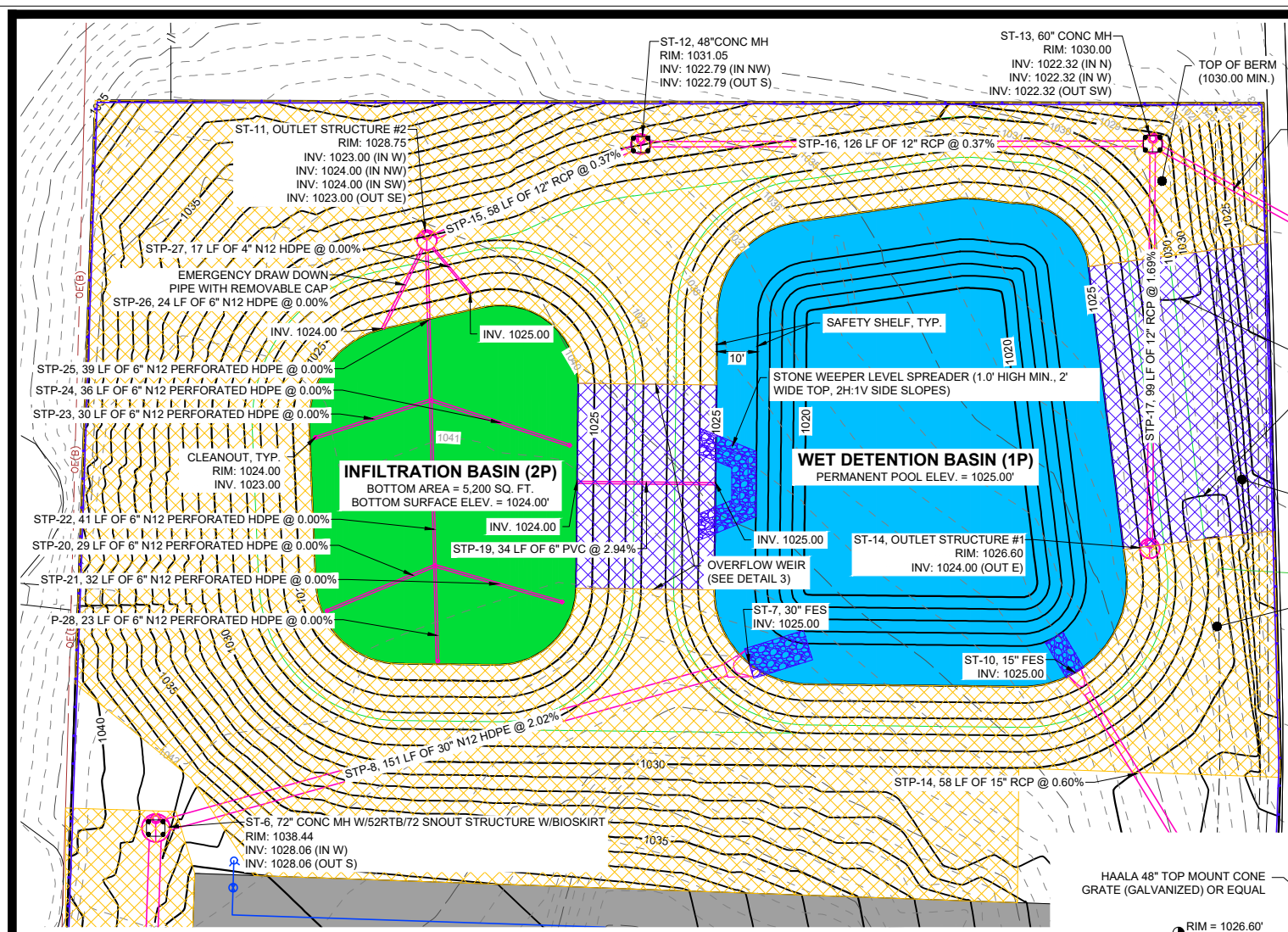
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MARK	SIP SUBMITTAL	REVISION	DATE	BY
Engineer:	BCA	Checked By:	MLC	Scale: 1" = 40'
Technician:	TECH	Date:	05-21-24	T-R-S: TTN+RRW-SS
Project No: 124,0465.30				Sheet C 401

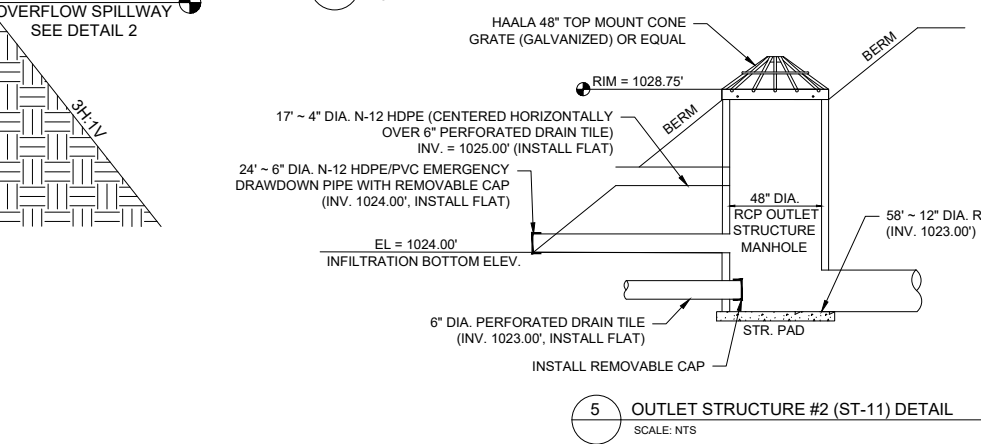
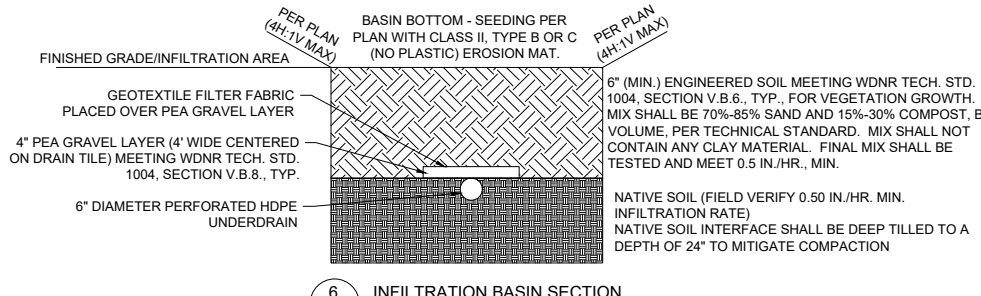
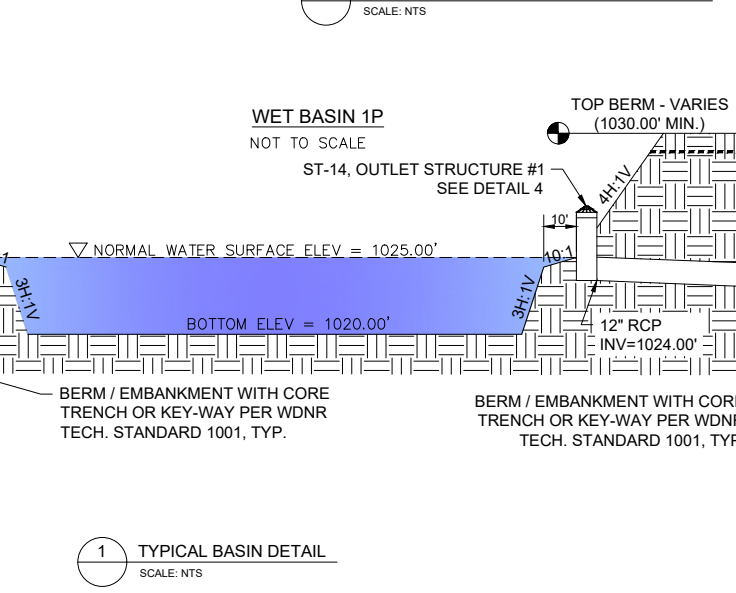
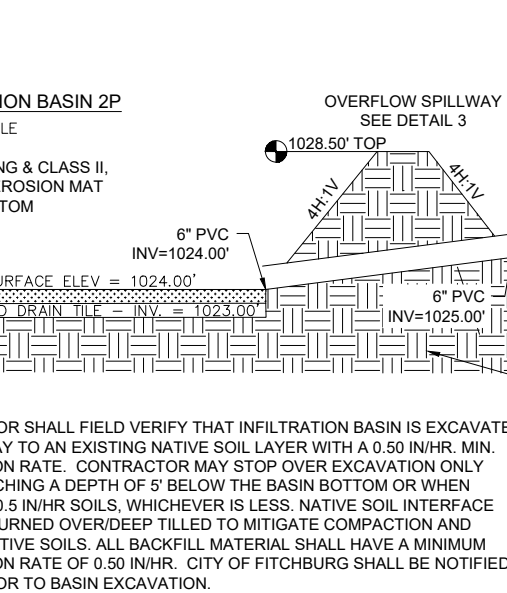
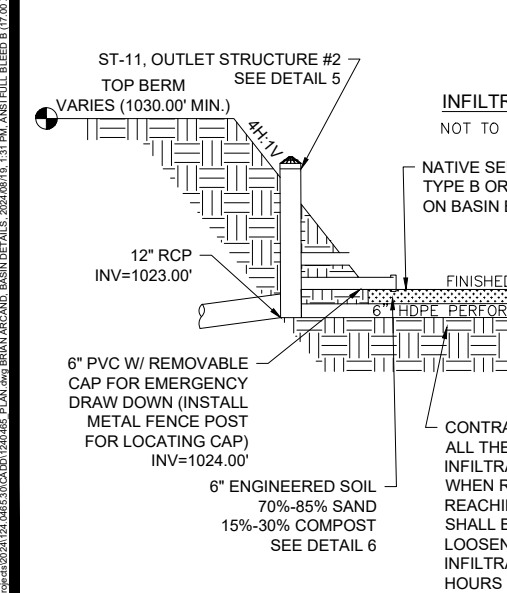
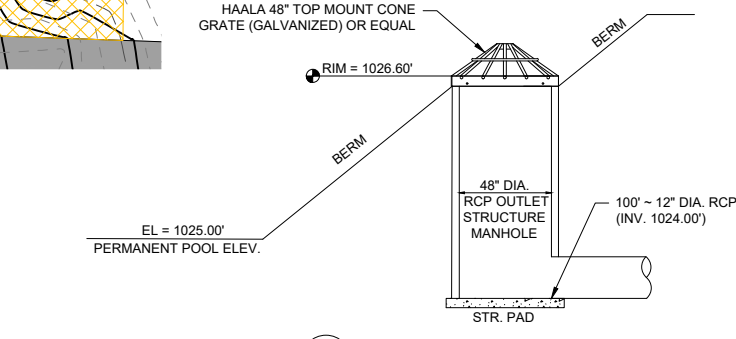
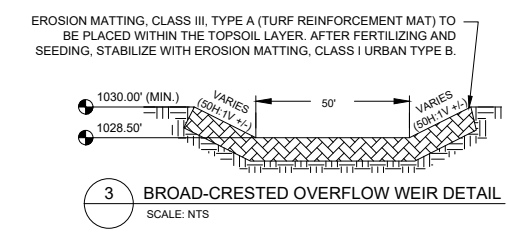
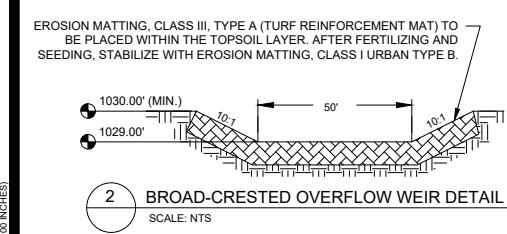
**2975 KAPEC ROAD**  
**EROSION CONTROL PLAN**  
 CITY OF FITCHBURG, DANE COUNTY, WI  
**SNYDER & ASSOCIATES, INC.**  
 5010 VOGES ROAD  
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Project No: 124,0465.30  
 Sheet C 401



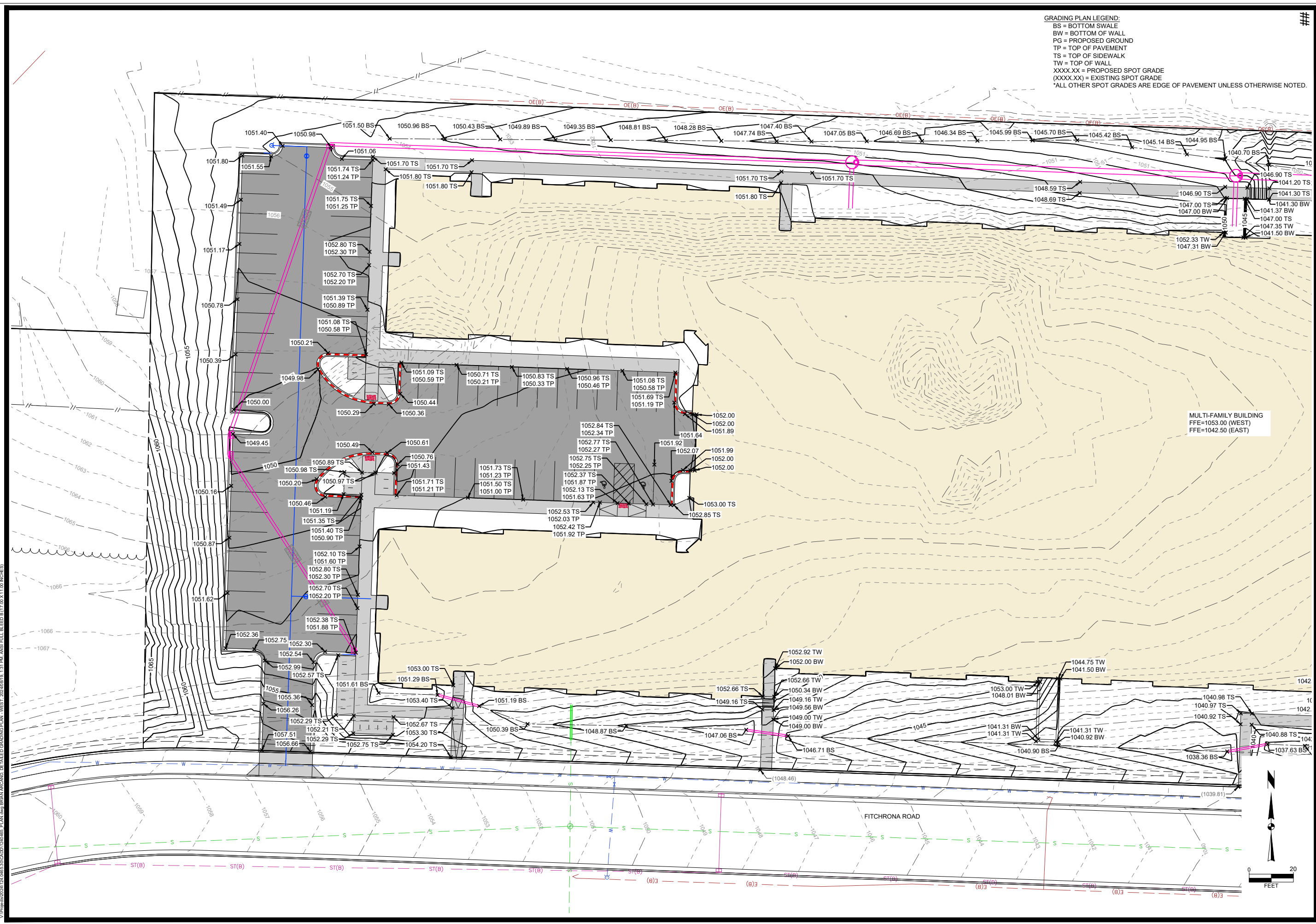
- INFILTRATION BASIN CONSTRUCTION METHODS, MATERIALS, OPERATION, AND MAINTENANCE SHALL BE IN ACCORDANCE WITH WISCONSIN DEPARTMENT OF NATURAL RESOURCES (WDNR) TECHNICAL STANDARD 1003 & PROJECT SPECIFICATIONS. FOR TECH. STANDARD 1003, SEE WEBSITE [http://dnr.wi.gov/topic/stormwater/documents/InfiltrationBasin\\_1003.pdf](http://dnr.wi.gov/topic/stormwater/documents/InfiltrationBasin_1003.pdf)
- ROUGH GRADING & DRAINAGE - INFILTRATION AREA SHALL BE GRADED AND LEFT ONE FOOT ABOVE FINISHED GRADE DURING CONSTRUCTION. IF PONDING OR DRAINAGE ISSUES OCCUR WHILE LEAVING BASIN BOTTOM ONE FOOT ABOVE FINISHED GRADE, CONTRACTOR SHALL NOTIFY ENGINEER. FINAL GRADING AND INSTALLATION SHALL TAKE PLACE AFTER SITE DRAINING TO THE BASIN IS SEEDING AND VEGETATION IS ESTABLISHED. FOR BASINS WHERE MULTIPLE LOTS/PARCELS SUCH AS A RESIDENTIAL SUBDIVISION DRAIN TO THE BASIN, BRINGING THE BASIN ON-LINE SHALL BE IN ACCORDANCE WITH WDNR TECH. STANDARD 1003, SECTION V.C.2. SNOW SHALL NOT BE PLACED ON THE BASIN BOTTOM.
- EXCAVATION & BACKFILLING - CONTRACTOR MUST EXCAVATE BASINS UNTIL REACHING THE A NATIVE SOIL LAYER WITH A MINIMUM INFILTRATION RATE OF 0.5 IN./HR. BACKFILL TO THE 6" ENGINEERED SOIL LAYER SHALL CONSIST OF NATIVE SOIL OR SAND MEETING THE 0.5 IN./HR. (MIN.) INFILTRATION RATE.
- FIELD INFILTRATION TESTING - IMMEDIATELY AFTER ROUGH GRADING OF STORMWATER BIOINFILTRATION AND INFILTRATION DEVICES, PROVIDE FIELD INFILTRATION TESTING (COMMONLY TEST PITS) CONDUCTED BY A THIRD-PARTY TESTING AGENCY TO VERIFY INFILTRATION RATES FOR ALL STORMWATER BIOINFILTRATION AND INFILTRATION DEVICES. DETERMINE INFILTRATION RATES IN ACCORDANCE WITH WDNR "SITE EVALUATION FOR STORMWATER INFILTRATION", TECH. STANDARD 1002. FREQUENCY OF TESTING SHALL BE 1 TEST PER 5000 SQUARE FEET OF SURFACE AREA OF THE STORMWATER INFILTRATION DEVICE MEASURED AT THE DESIGN HIGH WATER LEVEL AND AT LEAST TWO TESTS PER DEVICE. FURNISH A REPORT OF THE TEST RESULTS TO ENGINEER.
- SLOPES - LONGITUDINAL SLOPE ON THE BASIN BOTTOM, IF APPLICABLE, SHALL NOT EXCEED 1 PERCENT. BASIN BOTTOM SHALL NOT HAVE LATERAL SLOPES. ALL SIDE SLOPES FOR INTERIOR AND EXTERIOR BERMS SHALL HAVE 4H:1V SLOPES OR FLATTER.
- BERM/EMBANKMENT CONSTRUCTION - EMBANKMENTS AND EMBANKMENT CORE TRENCH OR KEY-WAY SHALL CONFORM WITH WDNR TECHNICAL STANDARD "WET DETENTION BASIN" 1001. FOR TECH. STANDARD 1001, SEE WEBSITE <https://dnr.wisconsin.gov/sites/default/files/topic/Stormwater/1001WetDetentionPond.pdf>
- DRAW DOWN DEVICE - A MEANS SHALL BE PROVIDED TO QUICKLY REMOVE STANDING WATER FROM THE BASIN(S) FOR MAINTENANCE AND WINTER DIVERSION. SEE PLANS AND DETAILS.
- UNDERDRAIN / DRAIN TILE - IF A UNDERDRAIN IS PROPOSED (SEE PLAN), THE UNDERDRAIN SHALL BE IN ACCORDANCE WITH WDNR TECH. STANDARD "BIORETENTION FOR INFILTRATION" 1004, SECTION V.B.8., WHICH SHALL INCLUDE BUT NOT LIMITED TO PROTECTION FROM CLOGGING AND CLEANOUT PORTS INSTALLED. FOR TECH. STANDARD 1004, SEE WEBSITE <https://dnr.wisconsin.gov/sites/default/files/topic/Stormwater/1004Bioretention.pdf>
- WEATHER & SITE CONDITIONS - CONSTRUCTION SHALL BE SUSPENDED DURING PERIODS OF RAINFALL OR SNOW MELT. CONSTRUCTION SHALL REMAIN SUSPENDED IF PONDING WATER IS PRESENT OR IF RESIDUAL SOIL MOISTURE CONTRIBUTES SIGNIFICANTLY TO THE POTENTIAL FOR SOIL SMEARING, CLUMPING, OR OTHER FORMS OF COMPACTION.
- COMPACTION MITIGATION - COMPACTION MITIGATION SHALL BE PERFORMED IN ACCORDANCE WITH WDNR TECH. STANDARD 1003, SECTION V.C.3.b. IT IS RECOMMENDED THAT TRACKED VEHICLES BE USED IN CONSTRUCTION, THAT NO DISTURBANCE TAKE PLACE ON THE BASIN BOTTOM AREA, AND THAT THE BOTTOM AREA BE FENCED OFF TO PREVENT HEAVY EQUIPMENT FROM ACCESSING THE AREA DURING CONSTRUCTION. THE BASIN IS REQUIRED TO DRAW DOWN WITHIN 24 HOURS AFTER A RAINFALL EVENT IS COMPLETE. CONTRACTOR IS RESPONSIBLE FOR ANY CORRECTIVE ACTIONS REQUIRED DUE TO CONSTRUCTION METHODS, MATERIALS, AND MAINTENANCE, INCLUDING COMPACTION, THAT PREVENT THE BASIN FROM DRAWING DOWN IN THE REQUIRED AMOUNT OF TIME. IF THE ENGINEER OR REVIEWING AGENCY DETERMINES THE BASIN IS NOT FUNCTIONING OR DRAWING DOWN PER PLAN, A GEOTECHNICAL ENGINEER MAY BE REQUIRED TO INSPECT THE BASIN AND PROVIDE RECOMMENDATIONS FOR CORRECTIVE ACTIONS AND/OR CORRECTIVE ACTIONS SPECIFIED IN WDNR TECHNICAL STANDARD 1003 MAY BE REQUIRED AT THE CONTRACTOR'S EXPENSE.
- ENGINEERED SOIL - THE 6" ENGINEERED SOIL MIXTURE SHALL MEET THE REQUIREMENTS OF WDNR TECH. STANDARD 1004, SECTION V.B.6.d., HAVE A MINIMUM 0.5 IN./HR. INFILTRATION RATE, AND BE THOROUGHLY MIXED. SOILS BENEATH THE 6" ENGINEERED SOIL MIXTURE SHALL BE UNDERCUT AS NEEDED TO REACH A PERMEABLE LAYER MEETING REQUIREMENTS.
- VEGETATION - VEGETATIVE COVER SHALL BE ESTABLISHED IN ACCORDANCE WITH WDNR TECH. STANDARDS 1003, SECTION V.D. PERMANENT SEEDING SHALL BE PER PLAN, IF SPECIFIED. IF PERMANENT SEEDING IS NOT SPECIFIED IN PLANS/SPECIFICATIONS, SEEDING SHALL BE NATIVE SEEDING WITH A MIX, APPLICATION RATE, AND APPLICATION TIMING AS REQUIRED BY REVIEWING AUTHORITY OR PER RECOMMENDATION FROM A QUALIFIED NATIVE NURSERY IN THE PROJECT AREA IF NO LOCAL REQUIREMENTS EXIST. IT IS RECOMMENDED THAT PERMANENT SEEDING TAKE PLACE IN LATE FALL OR EARLY SPRING. TEMPORARY SEEDING OF INFILTRATION BASIN BOTTOM AND SIDE SLOPES SHALL TAKE PLACE IN LATE FALL IF NOT ALREADY PERMANENTLY SEEDING. TEMPORARY SEEDING SHALL BE WITH OATS TO HELP STABILIZE SOIL AND PREVENT EROSION. SEEDING, BOTH PERMANENT AND TEMPORARY, SHALL TAKE PLACE PRIOR TO ANY SNOW COVER.
- STABILIZATION - SIDE SLOPES SHALL BE STABILIZED PER THE EROSION CONTROL PLAN AND SIDE SLOPES 5H:1V OR STEEPER REQUIRE EROSION MATTING AS SPECIFIED ON THE PLAN. THE BASIN BOTTOM SHALL BE PROTECTED FROM EROSION AND WASHOUTS BY INSTALLING A CLASS II, TYPE B OR C, EROSION MAT THAT USES ONLY ORGANIC MATERIAL (NO PLASTIC), SUCH AS COCONUT MATTING, AND CONFORMS TO THE WISCONSIN DOT EROSION CONTROL PRODUCT ACCEPTABILITY LIST (PAL). MORE INFORMATION FOR WISDOT PAL CAN BE FOUND AT THE WEBSITE <https://wisconsindot.gov/Pages/doing-bus/eng-consultants/cnsl-trcees/tools/pal/default.aspx>. MULCHING SHALL CONFORM TO THE WDNR TECH. STANDARD "MULCHING FOR CONSTRUCTION SITES" 1058. FOR TECH. STANDARD 1058, SEE WEBSITE <https://dnr.wisconsin.gov/sites/default/files/topic/Stormwater/1058Mulching.pdf>
- AS-BUILT/RECORD DRAWINGS - THE BASIN SHALL BE CONSTRUCTED TO THE GRADES, ELEVATIONS, AND SPECIFICATION IN THE PLAN. AFTER GRADING AND TOP SOILING, THE ELEVATIONS OF THE BASIN SHALL BE SURVEYED FOR CONFORMANCE TO THE DESIGN SPECIFICATIONS. CONTRACTOR SHALL BE RESPONSIBLE FOR ANY CORRECTIVE ACTIONS REQUIRED WHERE THE BASIN DEVIATES FROM THE PROPOSED PLAN.



MARK	SIP SUBMITTAL	REVISION	DATE	BY
Engineer: BCA	Checked By: MLC	Scale: 1" = #'	T-R-S: TTN-RRV-SS	Project No: 124.0465.30
Technician: TECH	Date: 05-21-24			Sheet C 402

2975 KAPEC ROAD  
BASIN DETAILS  
CITY OF FITCHBURG, DANE COUNTY, WI  
SNYDER & ASSOCIATES, INC.  
5010 VOGES ROAD  
MADISON, WISCONSIN 53718  
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Project No: 124.0465.30  
Sheet C 402



**GRADING PLAN LEGEND:**  
 BS = BOTTOM SWALE  
 BW = BOTTOM OF WALL  
 PG = PROPOSED GROUND  
 TP = TOP OF PAVEMENT  
 TS = TOP OF SIDEWALK  
 TW = TOP OF WALL  
 XXXX.XX = PROPOSED SPOT GRADE  
 (XXXX.XX) = EXISTING SPOT GRADE  
 \*ALL OTHER SPOT GRADES ARE EDGE OF PAVEMENT UNLESS OTHERWISE NOTED.

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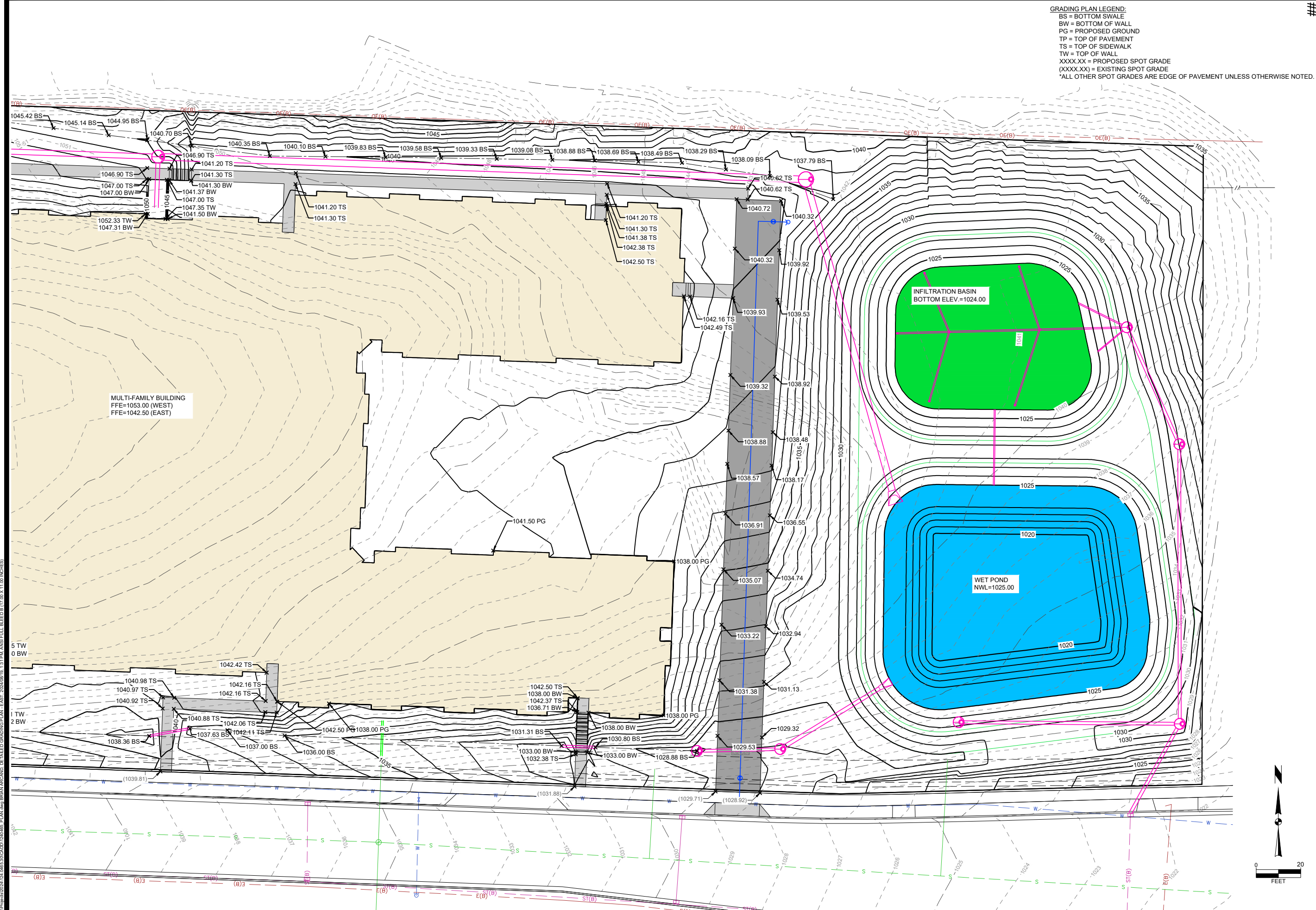
MARK	SIP SUBMITTAL	DATE	BY
REVISION	07-25-24	BCA	
Checked By:	MLC	Scale:	1" = 20'
Engineer:	BCA	Date:	05-21-24
Technician:	TECH	T-R-S:	TIN+RRW+SS
Project No.:	124.0465.30		
Sheet:	C 403		

**2975 KAPEC ROAD**  
**DETAILED GRADING PLAN - WEST**  
**CITY OF FITCHBURG, DANE COUNTY, WI**  
**SNYDER & ASSOCIATES, INC.**  
 5010 VOGES ROAD  
 MADISON, WISCONSIN 53718  
 608-838-0444 | www.snyder-associates.com

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Project No: 124.0465.30  
 Sheet C 403

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GRADING PLAN LEGEND:  
 BS = BOTTOM SWALE  
 BW = BOTTOM OF WALL  
 PG = PROPOSED GROUND  
 TP = TOP OF PAVEMENT  
 TS = TOP OF SIDEWALK  
 TW = TOP OF WALL  
 XXXX.XX = PROPOSED SPOT GRADE  
 (XXXX.XX) = EXISTING SPOT GRADE  
 \*ALL OTHER SPOT GRADES ARE EDGE OF PAVEMENT UNLESS OTHERWISE NOTED.

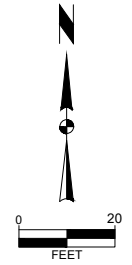
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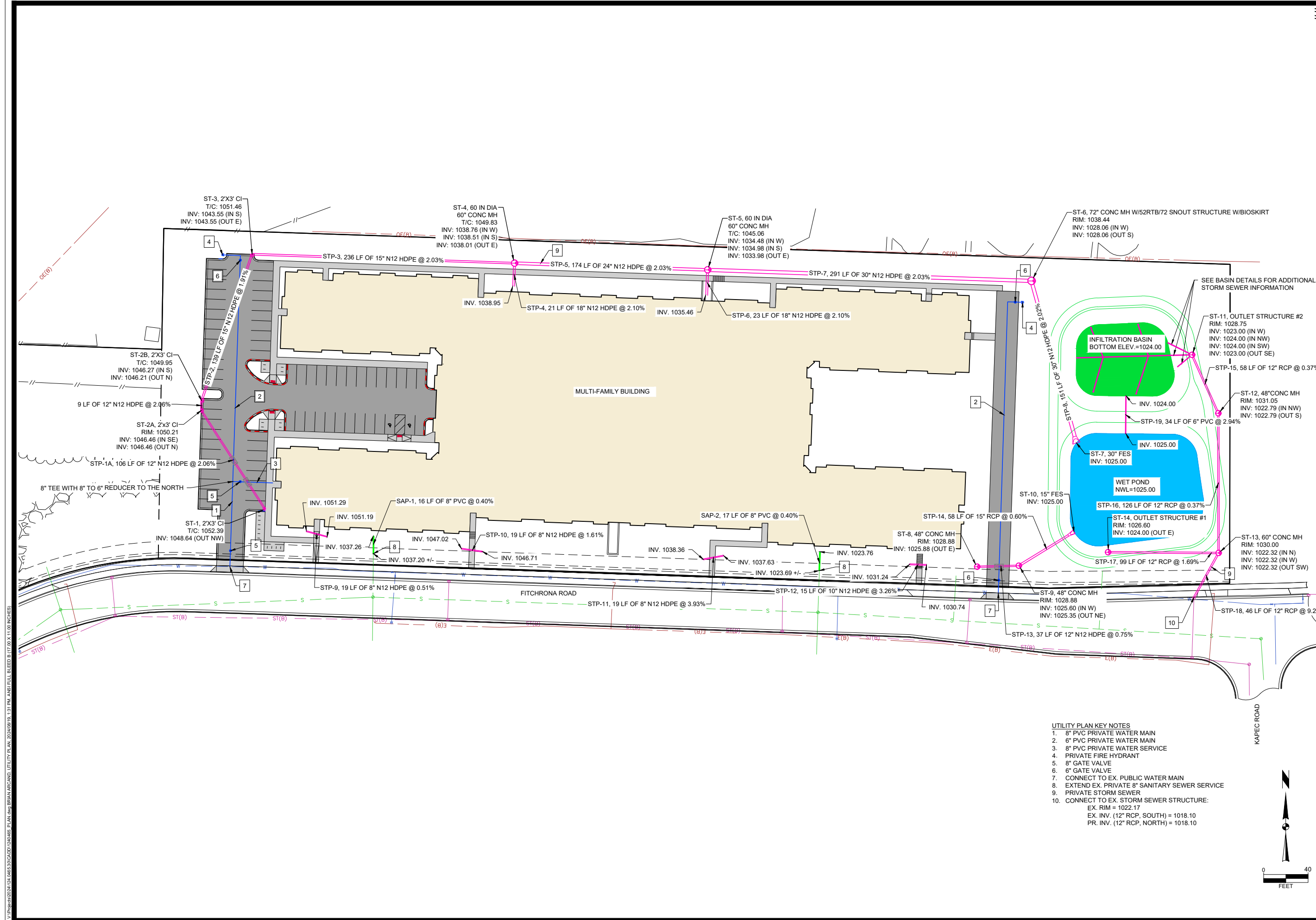
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MARK	SIP SUBMITTAL	DATE	BY
Engineer: BCA	Checked By: MLC	Scale: 1" = 20'	
Technician: TECH	Date: 05-21-24	T-R-S: TTN-RRW-SS	
Project No: 124.0465.30			Sheet C 404

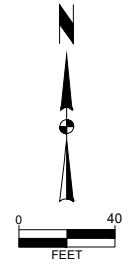
**2975 KAPEC ROAD**  
**DETAILED GRADING PLAN - EAST**  
**CITY OF FITCHBURG, DANE COUNTY, WI**  
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Project No: 124.0465.30  
 Sheet C 404





- UTILITY PLAN KEY NOTES**
- 8" PVC PRIVATE WATER MAIN
  - 6" PVC PRIVATE WATER MAIN
  - 8" PVC PRIVATE WATER SERVICE
  - PRIVATE FIRE HYDRANT
  - 8" GATE VALVE
  - 6" GATE VALVE
  - CONNECT TO EX. PUBLIC WATER MAIN
  - EXTEND EX. PRIVATE 8" SANITARY SEWER SERVICE
  - PRIVATE STORM SEWER
  - CONNECT TO EX. STORM SEWER STRUCTURE:  
EX. RIM = 1022.17  
EX. INV. (12" RCP, SOUTH) = 1018.10  
PR. INV. (12" RCP, NORTH) = 1018.10



MARK	SIP SUBMITTAL	DATE	07-25-24	BCA
REVISION	BY	DATE		
Checked By:	MLC	Scale:	1" = 40'	
Engineer:	BCA			
Technician:	TECH	Date:	05-21-24	TIN-RRW-SS
Project No. 124.0465.30				Sheet C 500

**2975 KAPEC ROAD**  
**UTILITY PLAN**  
 CITY OF FITCHBURG, DANE COUNTY, WI  
**SNYDER & ASSOCIATES, INC.**  
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 MADISON, WISCONSIN 53718  
 608-835-0444 | www.snyder-associates.com

Project No: 124.0465.30  
 Sheet C 500

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**GENERAL CONDITIONS**

1. THE CONTRACTOR SHALL NOTIFY THE OWNER AND THE MUNICIPALITY TWO WORKING DAYS (48 HOURS) PRIOR TO THE START OF CONSTRUCTION.
2. THE CONTRACTOR SHALL INDEMNIFY THE OWNER, THE ENGINEER, AND THE MUNICIPALITY, THEIR AGENTS, ETC, FROM ALL LIABILITY INVOLVED WITH THE CONSTRUCTION, INSTALLATION, AND TESTING OF THE WORK ON THIS PROJECT.
3. SITE SAFETY SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR.
4. THE BIDDER WILL BE SOLELY RESPONSIBLE FOR DETERMINING QUANTITIES AND SHALL STATE SUCH QUANTITIES IN HIS PROPOSAL. HE SHALL BASE HIS BID ON HIS OWN ESTIMATE OF THE WORK REQUIRED AND SHALL NOT RELY ON THE ENGINEER'S ESTIMATE.
5. THE CONTRACTOR IS RESPONSIBLE FOR VERIFYING SOIL CONDITIONS PRIOR TO COMMENCEMENT OF CONSTRUCTION. A GEOTECHNICAL REPORT IS AVAILABLE FROM THE OWNER. THE CONTRACTOR SHALL ABIDE BY THE RECOMMENDATIONS OF THE GEOTECHNICAL ENGINEER.
6. THE CONTRACTOR IS RESPONSIBLE FOR EXAMINING ALL SITE CONDITIONS PRIOR TO COMMENCEMENT OF CONSTRUCTION AND SHALL COMPARE FIELD CONDITIONS WITH DRAWINGS.
7. THE CONTRACTOR SHALL CONDUCT HIS WORK ACCORDING TO THE REQUIREMENTS OF THE PERMITS.
8. THE CONTRACTOR IS RESPONSIBLE FOR FIELD VERIFYING ALL UTILITY INFORMATION SHOWN ON THE PLANS PRIOR TO THE START OF CONSTRUCTION. THE CONTRACTOR SHALL CALL DIGGER'S HOTLINE AT 1-800-242-8511 TO NOTIFY THE UTILITIES OF HIS INTENTIONS, AND TO REQUEST FIELD STAKING OF EXISTING UTILITIES.
9. CONTRACTOR IS ADVISED THAT ALL MUD AND DEBRIS MUST NOT BE DEPOSITED ONTO THE ADJACENT ROADWAYS PER THE REQUIREMENT OF THE MUNICIPALITY OR OTHER APPROPRIATE GOVERNMENT AGENCIES.
10. ANY ADJACENT PROPERTIES OR ROAD RIGHT-OF-WAYS WHICH ARE DAMAGED DURING CONSTRUCTION MUST BE RESTORED BY THE CONTRACTOR. THE COST OF THE RESTORATION IS CONSIDERED INCIDENTAL, AND SHOULD BE INCLUDED IN THE BID PRICES.

**CONCRETE SIDEWALK**

1. SIDEWALK SHALL BE A MINIMUM OF 5" THICK ON A BASE OF 4" OF 3/4" DENSE AGGREGATE BASE COURSE. SIDEWALKS ACROSS DRIVEWAYS SHALL BE A MINIMUM OF 7" THICK ON A BASE OF 4" 3/4" DENSE AGGREGATE BASE COURSE.
2. SIDEWALKS SHALL MEET ADA REQUIREMENTS.
3. SIDEWALKS SHALL HAVE A MAXIMUM CROSS SLOPE OF 1.5%.
4. CURB RAMPS AND DETECTABLE WARNING FIELDS (TRUNCATED DOMES) WILL BE REQUIRED AT ALL ADA RAMPS. DETECTABLE WARNING FIELDS SHALL BE NEENAH #4898 OR METAPANEL BY METADOME, LLC, UNPAINTED OR APPROVED EQUAL.

**STORM SEWER & STORM WATER MANAGEMENT NOTES**

STORM SEWER AND STORMWATER MANAGEMENT SHALL BE AS FOLLOWS:

1. STORM SEWER PIPE BEDDING SHALL BE CLEAR STONE.
2. MINIMUM COVER FOR ALL STORM SEWER SHALL BE 2'.
3. EXCAVATED MATERIAL FROM THE TRENCH NOT SUITABLE FOR BACKFILL AS DEEMED BY THE PUBLIC SERVICES DIRECTOR SHALL BE HAULED OFF-SITE AND SELECT TRENCH BACKFILL WILL BE REQUIRED.
7. EXTREME CAUTION MUST BE FOLLOWED REGARDING THE COMPACTION OF ALL UTILITY TRENCHES. MECHANICALLY COMPACTED GRANULAR BACKFILL IS REQUIRED UNDER AND WITHIN 5 FEET OF ALL PAVEMENT INCLUDING SIDEWALKS AND FUTURE PARKING AREA AS SPECIFIED ON PLANS. FLOODING OF BACKFILL MATERIAL IS NOT ALLOWED. THE COST OF THIS GRANULAR MATERIAL AND ITS COMPACTION IS CONSIDERED INCIDENTAL AND SHALL BE INCLUDED IN THE COST OF THE PROPOSED UTILITY.
8. PRIOR TO FINAL PAVING OPERATIONS, THE UTILITY CONTRACTOR SHALL ADJUST ALL MANHOLE AND INLET RIMS AND VALVE BOXES TO FINISHED GRADE.
9. THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING THE OWNER WITH A SET OF MARKED-UP PRINTS SHOWING ALL CHANGES MADE DURING THE CONSTRUCTION PROCESS. ANY CHANGES TO THE DRAWINGS OR ADDITIONAL ITEMS MUST BE REPORTED TO THE OWNER.
10. STORM SEWER WITHIN STREET RIGHT-OF-WAYS SHALL BE REINFORCED CONCRETE PIPE.
11. EXCAVATED MATERIAL FROM THE TRENCH NOT SUITABLE FOR BACKFILL AS DEEMED BY THE ENGINEER SHALL BE REMOVED AND REPLACED WITH SELECT TRENCH BACKFILL.
13. MANHOLES 3' DEEP AND GREATER SHALL BE CONSTRUCTED WITH STEPS.
14. INLETS AT LOW POINTS SHALL HAVE TYPE NEENAH TYPE R GRATES. INLETS ON GRADE SHALL BE DIRECTIONAL TYPE L. INLETS SHALL ALL BE STAMPED "DRAINS TO RIVER".
15. ALL INFILTRATION BASINS SHALL INCLUDE ENGINEERED SOILS OR PERMAMATRIX SOIL AMENDMENT APPLIED PER MANUFACTURER RECOMMENDATIONS.
16. ALL STORM WATER MANAGEMENT FACILITIES SHALL BE SEEDED WITH A NATIVE SEED MIXTURE WITHIN THE LIMITS OF THE OUTLOT OR EASEMENT. THE NATIVE SEED MIXTURE SHALL BE APPROVED BY THE ENGINEER.
17. ALL STORM WATER FACILITIES SHALL CONFORM TO WisDNR TECHNICAL STANDARDS FOR PRE AND POST CONSTRUCTION STORM WATER MANAGEMENT.
18. THE LAST TWO PIPES SHALL BE STRAPPED TOGETHER AT END SECTIONS ON ALL PIPES 18" AND GREATER.
19. TRASH GRATES SHALL BE PROVIDED ON ALL END SECTIONS ON ENCLOSED STORM SEWER NETWORKS.
20. EROSION MAT IS REQUIRED FOR ALL RESTORATION ON SLOPES AT OR GREATER THAN 4:1, AND IN AREAS THAT CHANNEL WATER.
21. BIODEGRADABLE EROSION MAT AND BIODEGRADABLE STAPLES ARE REQUIRED ON ALL SLOPES LESS THAN 3:1 OUTSIDE OF DRAINAGE CHANNELS WHERE EROSION MAT IS REQUIRED. EROSION MAT SHALL BE PROVIDED IN ALL STREET TERRACES.
22. SILT FENCE AND INLET PROTECTION REMOVAL IS REQUIRED AFTER VEGETATION HAS BEEN ESTABLISHED.
23. STORM SEWER SHALL BE HDPE UNLESS OTHERWISE SPECIFIED ON PLANS.
24. ADJUSTMENT RINGS SHALL HAVE A MINIMUM HEIGHT OF 4" AND A MAXIMUM HEIGHT OF 12". ADJUSTMENT RINGS FOR STORM MANHOLES SHALL BE POLYETHYLENE PLASTIC OR APPROVED EQUAL. CURB INLET ADJUSTMENT RINGS SHALL BE CONCRETE.

**SANITARY SEWER**

1. SANITARY SEWER SHALL BE PVC AND BEDDED WITH CLASS C BEDDING (CLEAR STONE). SEWER SHALL BE SDR-35 FOR DEPTHS UP TO 20' AND SDR-26 FOR DEPTHS GREATER THAN 20'.
2. TRACER WIRE SHALL BE INSTALLED WITH ALL NEW LATERALS IN ACCORDANCE TO THE STANDARD DETAIL DRAWINGS.
3. TRACER WIRE BOXES SHALL BE PROVIDED. "SEWER" SHALL BE STAMPED IN THE LID OF THE ACCESS BOX.
4. EXCAVATED MATERIAL FROM THE TRENCH NOT SUITABLE FOR BACKFILL AS DEEMED BY THE ENGINEER SHALL BE REMOVED AND REPLACED WITH SELECT TRENCH BACKFILL.
5. MANDREL TESTING IS REQUIRED ON ALL SANITARY SEWER. LOW PRESSURE AIR TESTS ARE REQUIRED ON ALL NEW SANITARY SEWER CONSTRUCTION.
6. LATERAL ENDS SHALL BE CAPPED WITH A GLUED ON CAP AND MARKED WITH A PAINTED 4X4 POST.
7. ALL SANITARY SEWER CONSTRUCTION SHALL MEET THE STANDARD SPECIFICATIONS FOR SEWER AND WATER CONSTRUCTION IN WISCONSIN.

**WATER MAIN**

1. WATER MAIN SHALL BE PVC UNLESS OTHERWISE APPROVED, AND BEDDED WITH TYPE 3 EMBEDMENT (SAND OR SAND SCREENINGS). BEDDING SHALL BE A MINIMUM OF 6" UNDER AND 12" OVER TOP OF THE PIPE.
2. WATER MAIN SHALL BE INSTALLED WITH TRACER WIRE. TRACER WIRE SHALL EXTEND TO THE SURFACE AT ALL HYDRANTS IN A TRACER WIRE ACCESS BOX.
3. MECHANICAL JOINT FITTINGS WITH MEGA LUGS ARE REQUIRED FOR ALL DIRECTIONAL CHANGE FITTINGS AND WATERMAIN ENDS. ALL BOLTS SHALL BE STAINLESS STEEL. ALL FITTINGS SHALL BE "MADE IN AMERICA" CERTIFIED.
4. LATERAL ENDS SHALL BE MARKED WITH A PAINTED 4X4 WOOD POST.
5. WATER MAINS SHALL UNDERGO A PRESSURE AND LEAKAGE TEST. SERVICES SHALL BE TESTED TO THE CURB STOP. SERVICES 4" AND LARGER WITH JOINTED PIPE SHALL BE TESTED AGAINST THE VALVE WITH A SECOND TEST OUT TO THE PLUG. THE SECOND TEST MAY BE OF SHORTER DURATION AS APPROVED BY THE PUBLIC SERVICES DIRECTOR.
6. EXCAVATED MATERIAL FROM THE TRENCH NOT SUITABLE FOR BACKFILL AS DEEMED BY THE ENGINEER SHALL BE REMOVED AND REPLACED WITH SELECT TRENCH BACKFILL.
7. ALL WATER MAIN CONSTRUCTION SHALL MEET THE STANDARD SPECIFICATIONS FOR SEWER AND WATER CONSTRUCTION IN WISCONSIN.
8. INSULATION SHALL BE PROVIDED AT ALL STORMS SEWER CROSSINGS OF MAINS AND LATERALS.


**ADDITIONAL UTILITY NOTES**

1. THE CONTRACTOR SHALL VERIFY THE LOCATION OF ALL EXISTING UTILITIES PRIOR TO THE START OF CONSTRUCTION.
2. BEFORE PROCEEDING WITH ANY UTILITY CONSTRUCTION, THE CONTRACTOR SHALL EXCAVATE EACH EXISTING LATERAL OR POINT OF CONNECTION AND VERIFY THE LOCATION AND ELEVATION OF ALL UTILITIES. IF ANY EXISTING UTILITIES ARE NOT AS SHOWN ON THE DRAWINGS, THE CONTRACTOR SHALL NOTIFY THE ENGINEER IMMEDIATELY FOR POSSIBLE REDESIGN.
3. PRIOR TO FINAL PAVING OPERATIONS, THE UTILITY CONTRACTOR SHALL ADJUST ALL MANHOLE AND INLET RIMS AND VALVE BOXES TO FINISHED GRADE.
4. THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING THE OWNER WITH A SET OF MARKED-UP PRINTS SHOWING ALL CHANGES MADE DURING THE CONSTRUCTION PROCESS. ANY CHANGES TO THE DRAWINGS OR ADDITIONAL ITEMS MUST BE REPORTED TO THE OWNER.
5. THE PROPOSED IMPROVEMENTS SHALL BE CONSTRUCTED ACCORDING TO WISCONSIN ADMINISTRATIVE CODE. SECTION SPS 382-384, LATEST EDITION, THE STANDARD SPECIFICATIONS FOR SEWER AND WATER CONSTRUCTION IN WISCONSIN, LATEST EDITION, AND THE LOCAL ORDINANCES AND SPECIFICATIONS.
6. ALL CONNECTIONS TO EXISTING PIPES AND MANHOLES SHALL BE CORED CONNECTIONS.
7. PROPOSED SANITARY SEWER, WATER MAIN, AND INTERNALLY CONNECTED STORM SEWER SHOWN ON THIS PLAN SHALL TERMINATE AT POINT FIVE (5) FEET FROM THE EXTERIOR BUILDING WALL. STORM SEWER CONNECTING TO EXTERIOR DOWN SPOUTS SHALL BE PER DETAILS ON THE ARCHITECTURAL PLANS. THE EXACT LOCATION OF ALL DOWN SPOUTS SHALL BE PER THE ARCHITECTURAL PLANS.
8. EXTREME CAUTION MUST BE FOLLOWED REGARDING THE COMPACTION OF ALL UTILITY TRENCHES. MECHANICALLY COMPACTED GRANULAR BACKFILL IS REQUIRED UNDER AND WITHIN 5 FEET OF ALL PAVEMENT INCLUDING SIDEWALKS. FLOODING OF BACKFILL MATERIAL IS NOT ALLOWED. THE COST OF THIS GRANULAR MATERIAL AND ITS COMPACTION IS CONSIDERED INCIDENTAL AND SHALL BE INCLUDED IN THE COST OF THE PROPOSED UTILITY.
9. TRACER WIRE SHALL BE INSTALLED ON ALL BURIED NON-METALLIC SANITARY SEWERS, PRIVATE SANITARY INTERCEPTOR MAIN SEWERS, STORM BUILDING SEWERS, AND PRIVATE STORM INTERCEPTOR MAIN SEWERS THAT DISCHARGE TO MUNICIPAL MAINS. TRACER WIRE SHALL BE A MINIMUM OF 12-GAUGE, INSULATED, SINGLE-CONDUCTOR COPPER WIRE OR EQUIVALENT. TRACER WIRE COLOR SHALL BE BLUE FOR POTABLE WATER, GREEN FOR SANITARY SEWER, AND BROWN FOR STORM SEWER.

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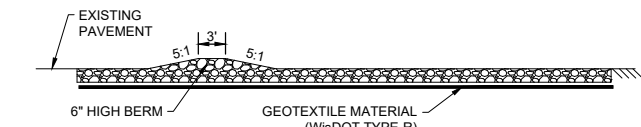
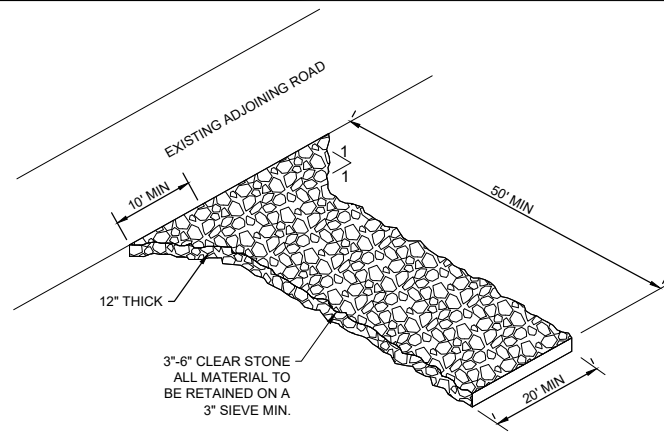
07-23-24	BCA	BY
SIP SUBMITTAL	REVISION	DATE
MARK	Engineer: BCA	Checked By: MLC
	Technician: TECH	Date: 05-21-24
		T-R-S: TTN-RRW-SS
		Scale: 1" =
		Project No: 124.0465.30
		Sheet

**2975 KAPEC ROAD**  
**NOTES**  
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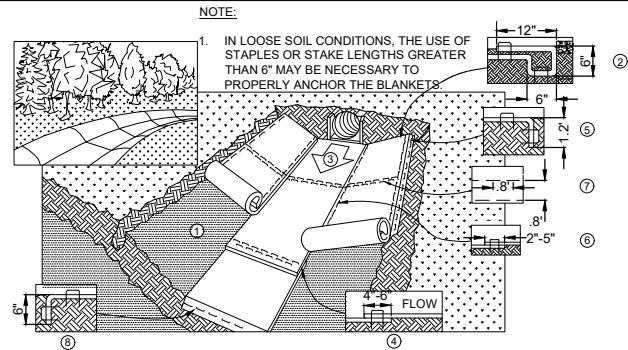




NOTE:

1. MAINTAIN THE ROCK ENTRANCE TO PREVENT TRACKING ONTO PAVEMENT

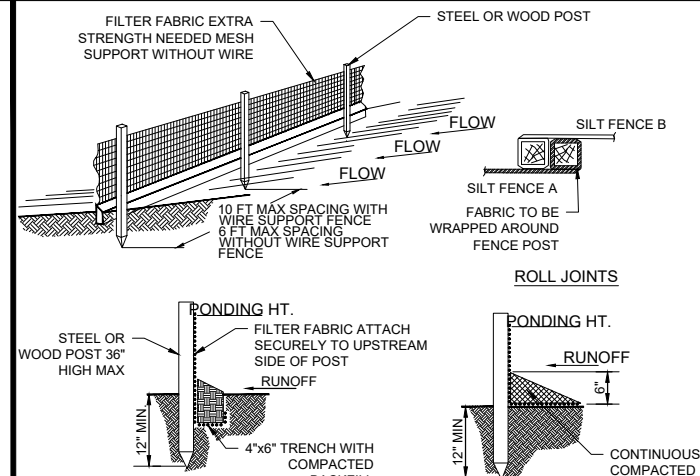
**1** **STONE ENTRANCE DETAIL**  
SCALE: 3"=1'



INSTALLATION:

1. PREPARE SOIL BEFORE INSTALLING BLANKETS, INCLUDING APPLICATION OF FERTILIZER AND SEED.
2. BEGIN AT THE TOP OF THE CHANNEL BY ANCHORING THE BLANKET IN A 6" DEEP X 6" WIDE TRENCH WITH APPROXIMATELY 12" OF BLANKET EXTENDED BEYOND THE UP-SLOPE PORTION OF THE TRENCH. ANCHOR THE BLANKET WITH A ROW OF STAPLES/STAKES APPROXIMATELY 12" APART IN THE BOTTOM OF THE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING. APPLY SEED TO COMPACTED SOIL AND FOLD REMAINING 12" PORTION OF BLANKET BACK OVER SEED AND COMPACTED SOIL. SECURE BLANKET OVER COMPACTED SOIL WITH A ROW OF STAPLES/STAKES SPACED APPROXIMATELY 12" APART ACROSS THE WIDTH OF THE BLANKET.
3. ROLL CENTER BLANKET IN DIRECTION OF WATER FLOW IN BOTTOM OF CHANNEL. BLANKETS WILL UNROLL WITH APPROPRIATE SIDE AGAINST THE SOIL SURFACE. ALL BLANKETS MUST BE SECURELY FASTENED TO THE SOIL SURFACE BY PLACING STAPLES/STAKES IN APPROPRIATE LOCATIONS AS RECOMMENDED BY THE MANUFACTURER.
4. PLACE CONSECUTIVE BLANKETS END OVER END (SHINGLE STYLE) WITH A 4"-6" OVERLAP. USE A DOUBLE ROW OF STAPLES STAGGERED 4" APART AND 4" ON CENTER TO SECURE BLANKETS.
5. FULL LENGTH EDGE OF BLANKETS AT TOP OF SIDE SLOPE MUST BE ANCHORED WITH A ROW OF STAPLES/STAKES APPROXIMATELY 12" APART IN A 6" DEEP X 6" WIDE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING.
6. A STAPLE CHECK SLOT IS RECOMMENDED AT 30 TO 40 FOOT INTERVALS. USE A DOUBLE ROW OF STAPLES STAGGERED 4" APART AND 4" ON CENTER OVER ENTIRE WIDTH OF THE CHANNEL.
7. THE TERMINAL END OF THE BLANKETS MUST BE ANCHORED WITH A ROW OF STAPLES/STAKES APPROXIMATELY 12" APART IN A 6" DEEP X 6" WIDE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING.
8. EROSION MAT SHALL EXTEND FOR WHICHEVER IS GREATER: UPSLOPE ONE FOOT MIN. VERTICALLY FROM DITCH BOTTOM OR 6" HIGHER THAN DESIGN FLOW DEPTH.
9. EROSION MAT SHALL BE INSTALLED AND MAINTAINED IN ACCORDANCE WITH WDNR TECHNICAL STANDARDS 1053.

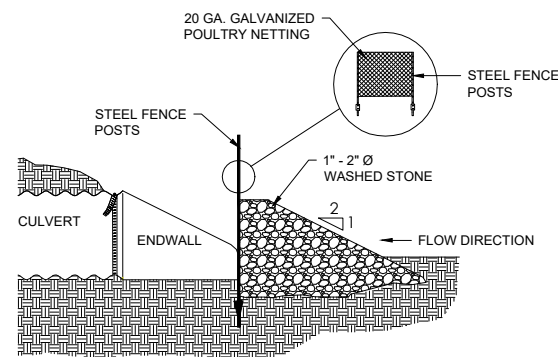
**2** **EROSION CONTROL MAT - CHANNEL INSTALLATION**  
SCALE: 3"=1'



NOTES:

1. INSPECT FENCE WEEKLY AND AFTER EACH RAIN EVENT OF 0.5 INCHES AND REPAIR IF REQUIRED. REMOVE SEDIMENT WHEN NECESSARY OR WHEN SEDIMENT REACHES 1/2 OF FENCE HEIGHT.
2. REMOVED SEDIMENT SHALL BE DEPOSITED TO AN AREA THAT WILL NOT CONTRIBUTE SEDIMENT OFF-SITE AND CAN BE PERMANENTLY STABILIZED.
3. SILT FENCE SHALL BE PLACED ON SLOPE CONTOURS TO MAXIMIZE PONDING EFFICIENCY.
4. SILT FENCE SHALL BE INSTALLED AND MAINTAINED IN ACCORDANCE WITH WDNR TECHNICAL STANDARD 1056.

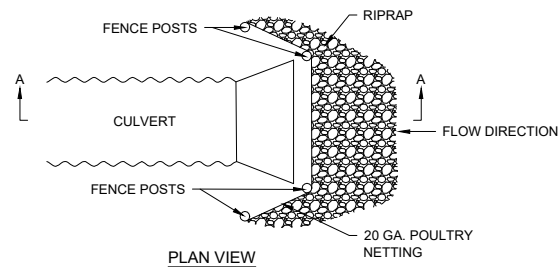
**3** **SILT FENCE DETAIL**  
SCALE: 3"=1'



SECTION A-A

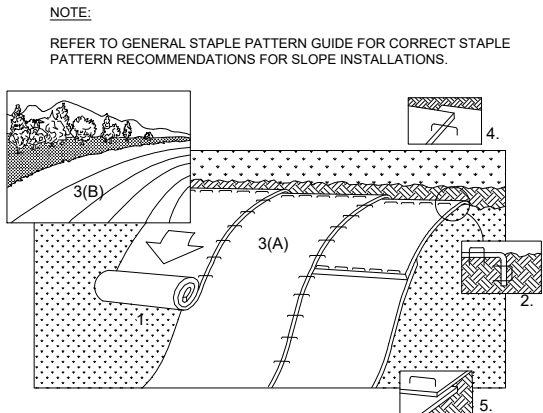
NOTES:

1. STONE CULVERT PROTECTION SHOWN TO BE USED FOR CULVERTS UP TO 18" IN DIAMETER. CONSULT ENGINEER FOR MODIFICATIONS FOR >18" DIAMETER CULVERTS.



PLAN VIEW

**4** **STONE CULVERT PROTECTION**  
SCALE: 3"=1'



INSTALLATION:

1. PREPARE SOIL BEFORE INSTALLING BLANKETS, INCLUDING APPLICATION OF FERTILIZER AND SEED. NOTE: WHEN USING CELL-O-SEED DO NOT SEED PREPARED AREA. CELL-O-SEED MUST BE INSTALLED WITH PAPER SIDE DOWN.
2. BEGIN AT THE TOP OF THE SLOPE BY ANCHORING THE BLANKET IN 6" DEEP X 6" WIDE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING.
3. ROLL THE BLANKETS (A.) DOWN THE SLOPE (B.) HORIZONTALLY ACROSS THE SLOPE
4. THE EDGES OF PARALLEL BLANKETS MUST BE STAPLED WITH APPROXIMATELY 2" OVERLAP.
5. WHEN BLANKETS MUST BE SPLICED DOWN THE SLOPE, PLACE BLANKETS END OVER END (SHINGLE STYLE) WITH APPROXIMATELY 4" OVERLAP. STAPLE THROUGH OVERLAPPED AREA, APPROXIMATELY 12" APART.
6. ALL BLANKETS MUST BE SECURELY FASTENED TO THE SLOPE BY PLACING STAPLES/STAKES IN APPROPRIATE LOCATIONS AS RECOMMENDED BY THE MANUFACTURER.
7. EROSION MAT SHALL BE INSTALLED AND MAINTAINED IN ACCORDANCE WITH WDNR TECHNICAL STANDARD # 1052.

**5** **EROSION CONTROL MAT - SLOPE INSTALLATION**  
SCALE: 3"=1'

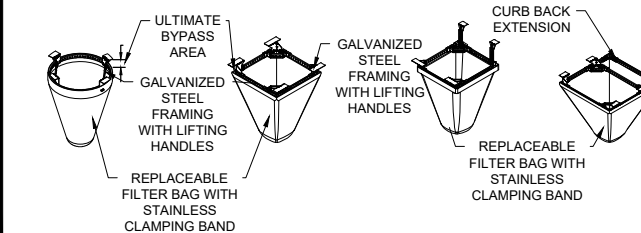
NOTES: \*FLOW RATINGS SHOWN ARE 50% MAXIMUM

1. ALL FRAMING IS CONSTRUCTED OF CORROSION RESISTANT STEEL FRAMING FOR PROLONGED PRODUCT LIFE.
2. TOTAL BYPASS CAPACITY WILL VARY WITH EACH SIZED DRAINAGE STRUCTURE. FLEXSTORM DESIGNS FRAMING BYPASS TO MEET OR EXCEED THE DESIGN FLOW OF THE PARTICULAR DRAINAGE STRUCTURE. CONCRETE STRUCTURES MAY REQUIRE ADDITIONAL REVIEW.
3. UPON ORDERING THE ADS P/N CONFIRMATION OF THE DOT CALLOUT, FLEXSTORM ITEM CODE, CASTING MAKE AND MODEL, OR DETAILED DIMENSIONAL FORMS MUST BE PROVIDED.
4. FOR WRITTEN SPECIFICATIONS AND MAINTENANCE GUIDELINES VISIT [WWW.INLETFILTERS.COM](http://WWW.INLETFILTERS.COM)

INSTALLATION:

1. REMOVE GRATE
2. DROP FLEXSTORM INLET FILTER ONTO LOAD BEARING LIP OF CASTING OR CONCRETE STRUCTURE
3. REPLACE GRATE

Product selection for FLEXSTORM CATCH-IT Filters (Temporary Inlet Protection)							
Neenah Casting	Inlet Type	Grate Size	Opening Size	Bag Cap (ft <sup>2</sup> )	Flow Ratings (CFS)		ADS P/N
					FX	Bypass	
1040/1642/1733	Round	26	24	1.9	1.5	5.4	62MRDFX
3067 w/FLAP	Curb Box	35.25 x 17.75	33.0 x 15.0	3.8	1.9	5.6	62LCBEXTFX
3067 EXTENDED BACK	Curb Box	35.25 x 17.75	33.0 x 15.0	4.4	2.3	5.8	62LCBEXTFX
3246A	Curb Box	35.75 x 23.875	33.5 x 21.0	4.2	2.2	3.3	62LCBFX
3030	Square/Rect (SQ)	23 x 16	20.5 x 13.5	1.6	1.4	2.2	62MCBFX
3067-C	Square/Rect (SQ)	35.25 x 17.75	33 x 15	3.2	2.0	5.2	62LSOFX



- FLEXSTORM CATCH-IT INLET FILTERS FOR ROUND OPENINGS
- FLEXSTORM CATCH-IT INLET FILTERS FOR SQUARE/RECTANGULAR OPENINGS
- FLEXSTORM CATCH-IT INLET FILTERS FOR ROLLED CURB
- FLEXSTORM CATCH-IT INLET FILTERS FOR CURB BOX OPENINGS (MAGNETIC CURB FLAP)

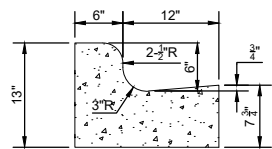
**6** **INLET PROTECTION DETAIL**  
SCALE: 3"=1'

MARK	SIP SUBMITTAL	DATE	07-25-24	BCA
REVISION		BY		
Checked By:	MLC	Scale:	1" = 10'	
Engineer:	BCA	Date:	05-21-24	
Technician:	TECH	T-R-S:	TTN-RRW-SS	
Project No.:				124.0465.30
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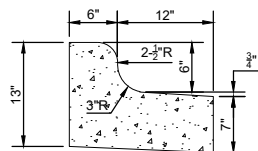




**NOTES:**

- LATERAL CONTRACTION JOINTS SHALL BE PLACED AT INTERVALS OF NOT MORE THAN 15' NOR LESS THAN 6' IN LENGTH. THE JOINTS SHALL BE A MINIMUM OF 3" IN DEPTH. EXPANSION JOINTS SHALL BE PLACED TRANSVERSELY AT RADIUS POINTS ON CURVES OF RADIUS 200' OR LESS AND AT ANGLE POINTS, OR AS DIRECTED BY THE ENGINEER.
- THE EXPANSION JOINT SHALL BE A ONE PIECE ASPHALTIC MATERIAL HAVING THE SAME DIMENSIONS AS CURB & GUTTER AT THAT STATION AND BE 1/2" THICK. IN ALL CASES, CONCRETE CURB & GUTTER SHALL BE PLACED ON THOROUGHLY COMPACTED CRUSHED STONE.

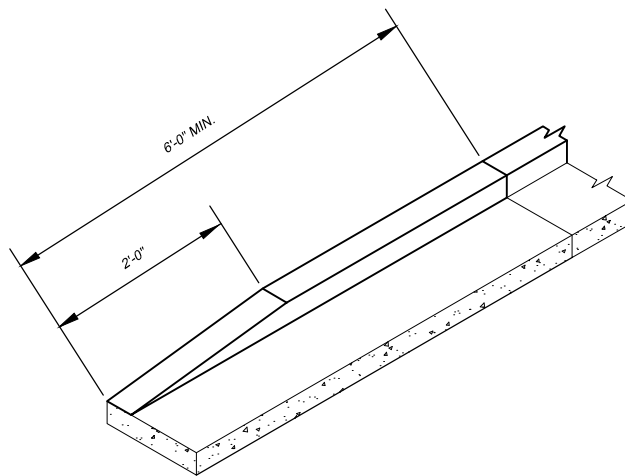
**1** 18" STANDARD CONCRETE CURB & GUTTER  
SCALE: 1" = 1'



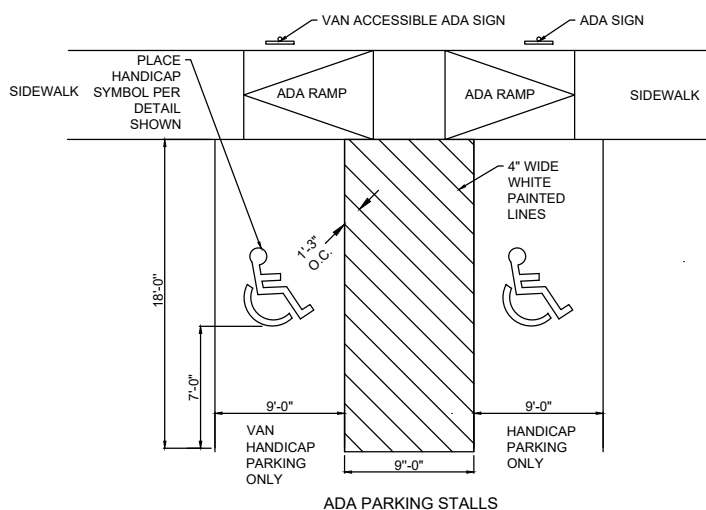
**NOTES:**

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- THE EXPANSION JOINT SHALL BE A ONE PIECE ASPHALTIC MATERIAL HAVING THE SAME DIMENSIONS AS CURB & GUTTER AT THAT STATION AND BE 1/2" THICK. IN ALL CASES, CONCRETE CURB & GUTTER SHALL BE PLACED ON THOROUGHLY COMPACTED CRUSHED STONE.

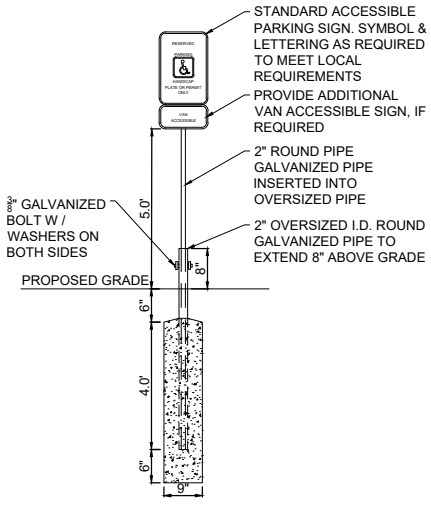
**2** 18" REJECT CONCRETE CURB & GUTTER  
SCALE: 1" = 1'



**3** TAPER END CURB & GUTTER  
SCALE: N.T.S.

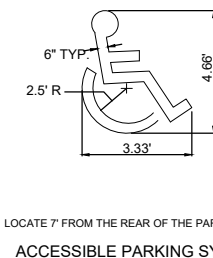
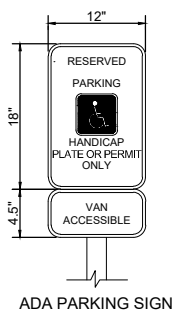


**4** ADA PARKING DETAIL  
SCALE: N.T.S.

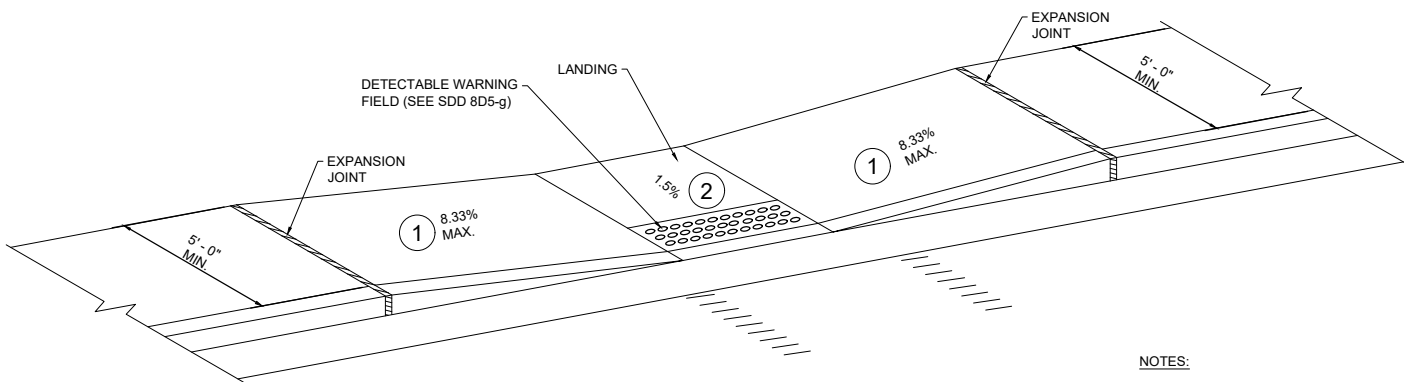


**NOTES:**

- SIGNS SHALL BE LOCATED SO THAT THEY CANNOT BE OBSCURED BY A VEHICLE PARKED IN THE SPACE
- SIGNS TO BE PROVIDED AND INSTALLED BY SITE CONTRACTOR
- ADA ACCESSIBLE SIGN MUST COMPLY WITH WI ADMINISTRATIVE RULE (TRANSPORTATION 200.07)



LOCATE 7' FROM THE REAR OF THE PARKING STALL



**NOTES:**

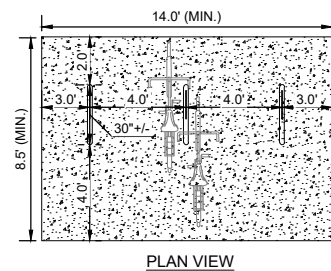
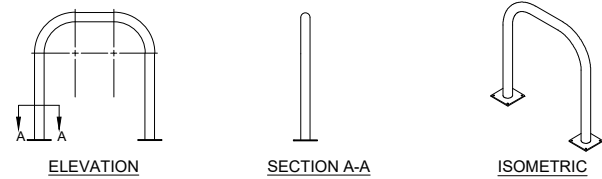
- SLOPE SIDEWALK TOWARD LANDING AS SHOWN WHERE THERE IS NOT TERRACE OR WHERE THE TERRACE WIDTH IS LESS THAN 6 FEET WIDE.
- PROVIDE A LEVEL LANDING (MAXIMUM 2% SLOPE) IN ANY DIRECTION OF PEDESTRIAN TRAVEL. STANDARD LEVEL LANDING SIZE IS 5 FEET BY 5 FEET.

**5** CURB RAMP DETAIL  
SCALE: N.T.S.

MARK	Engineer: BCA	Checked By: MLC	Date: 05-21-24
REVISION	DATE	BY	
SIP SUBMITTAL	07-23-24	BCA	
Scale: 1" =	TTN-RRW-SS		
Technician: TECH			
Project No: 124.0465.30			
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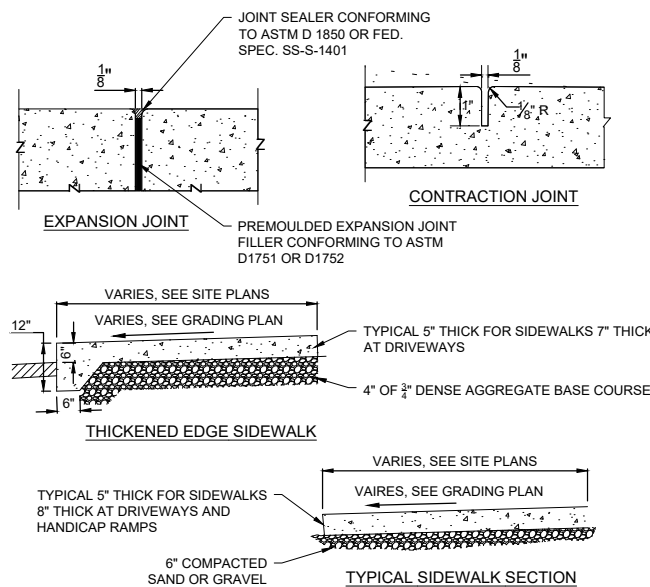




(2) 6" X 6" X .25" SQUARE FLANGE MOUNTING PLATES WITH (4) 5/8" Ø MOUNTING HOLES

**NOTE:**  
1. INSTALLATION TO BE COMPLETED IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS

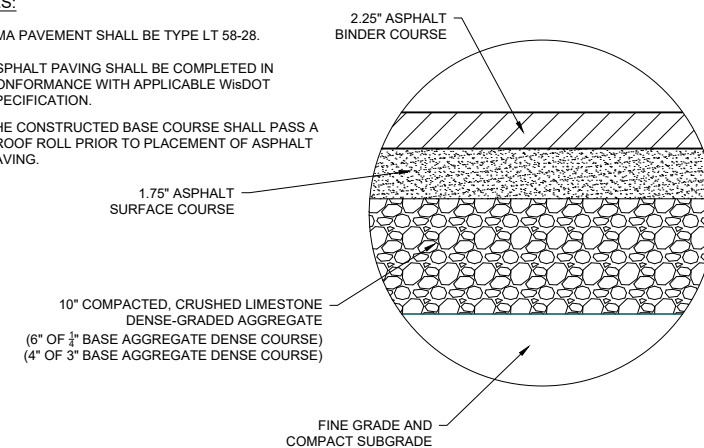
**1 BIKE RACK DETAIL**  
SCALE: 3" = 1'



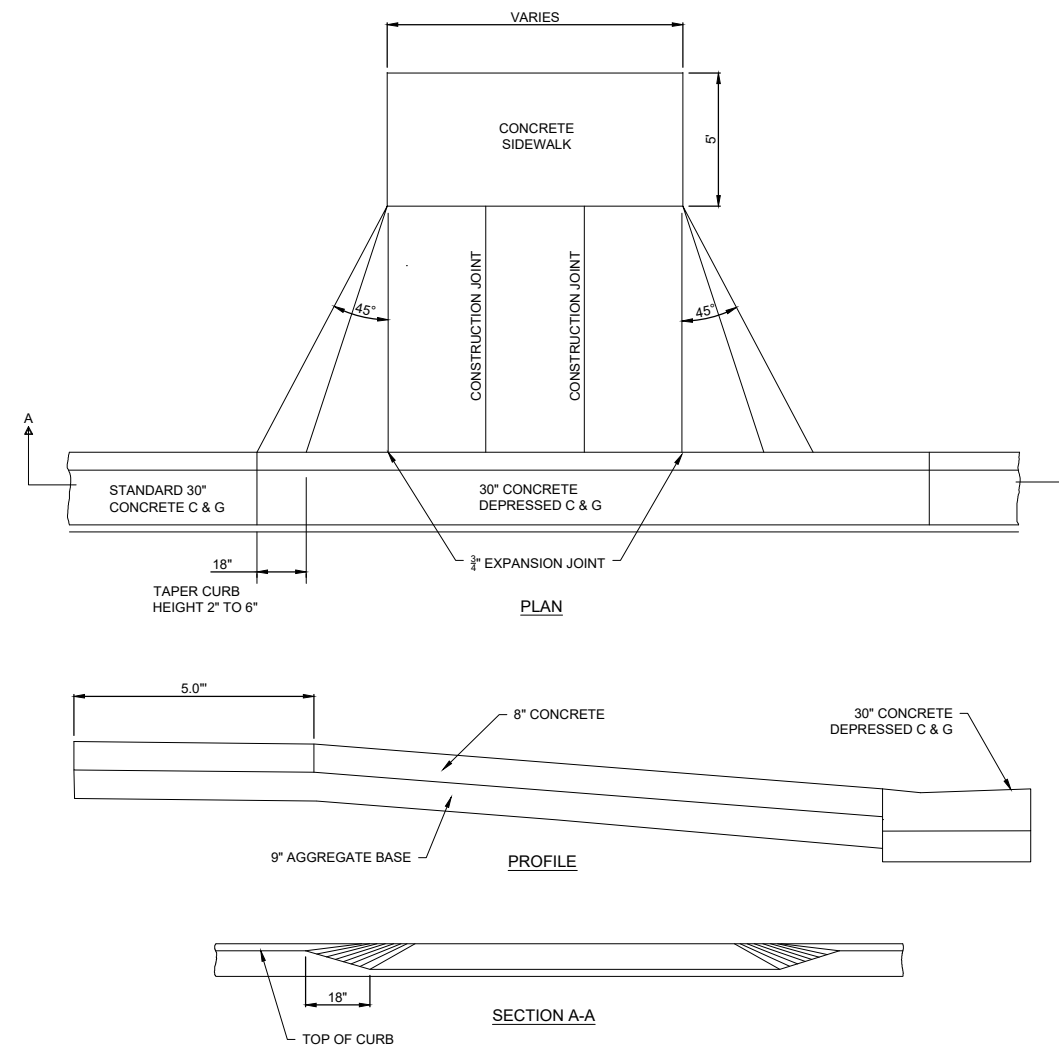
**2 SIDEWALK DETAIL**  
SCALE: 6" = 1'

**NOTES:**

- HMA PAVEMENT SHALL BE TYPE LT 58-28.
- ASPHALT PAVING SHALL BE COMPLETED IN CONFORMANCE WITH APPLICABLE WisDOT SPECIFICATION.
- THE CONSTRUCTED BASE COURSE SHALL PASS A PROOF ROLL PRIOR TO PLACEMENT OF ASPHALT PAVING.



**3 MEDIUM DUTY ASPHALT PAVING DETAIL**  
SCALE: N.T.S.



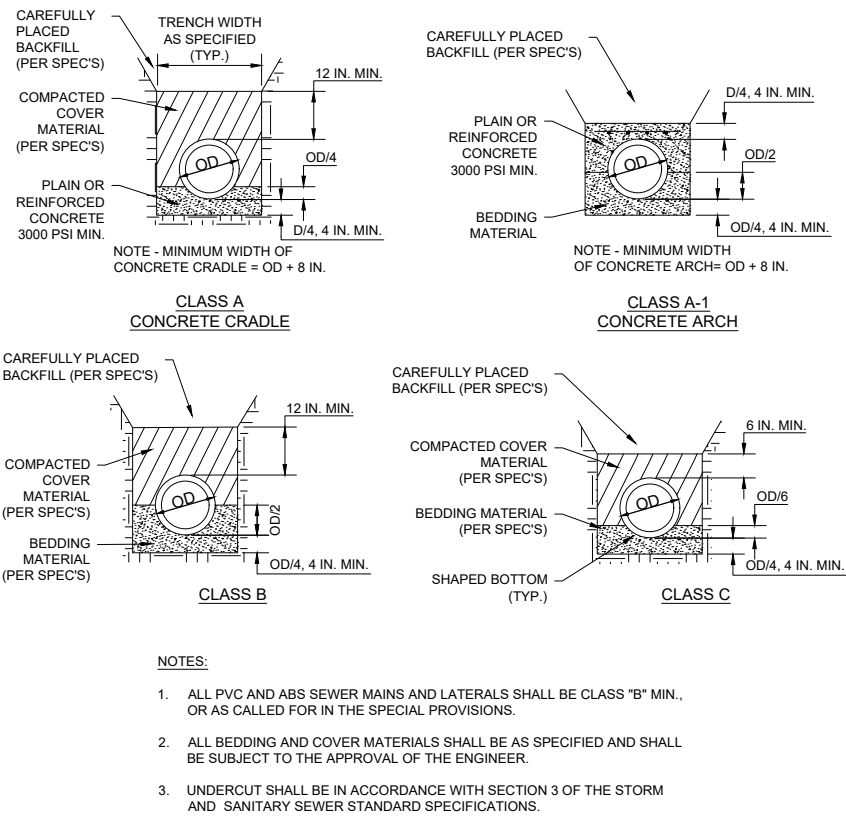
**4 DRIVEWAY DETAIL**  
SCALE: N.T.S.

MARK	REVISION	DATE	BY
Engineer: BCA	Checked By: MLC	Date: 05-21-24	Scale: 1" =
Technician: TECH		T-R-S: TTN-RRW-SS	
SIP SUBMITTAL			07-23-24 BCA
Project No: 124.0465.30			
Sheet			

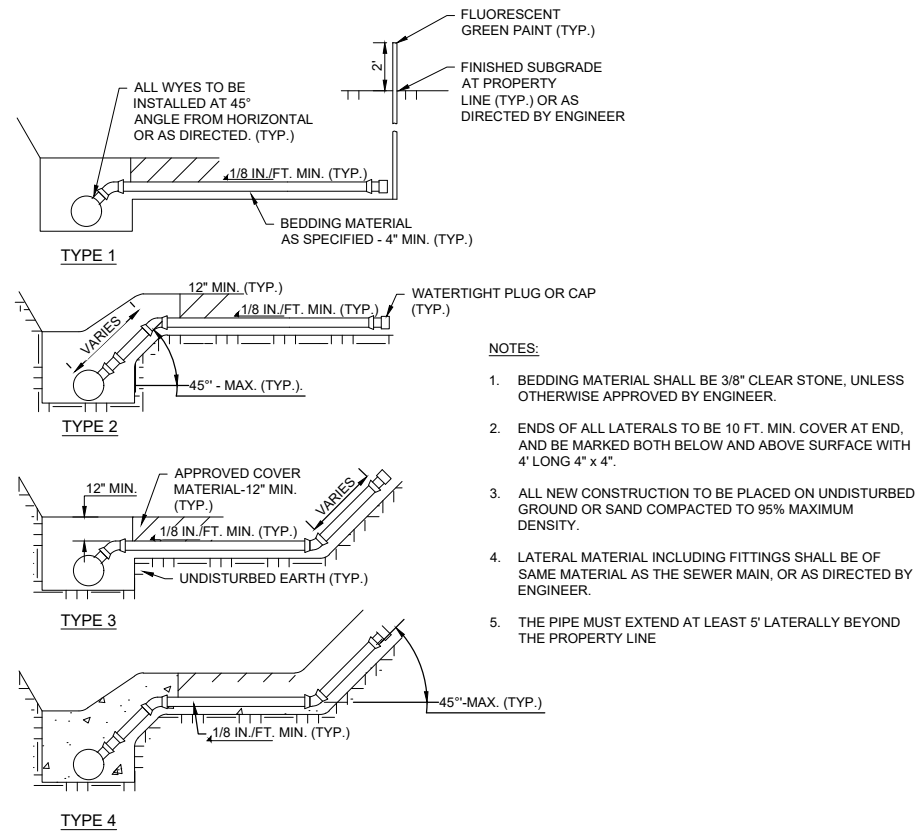
**2975 KAPEC ROAD**  
**SITE AND PAVEMENT DETAILS CONTINUED** CITY OF FITCHBURG, DANE COUNTY, WI  
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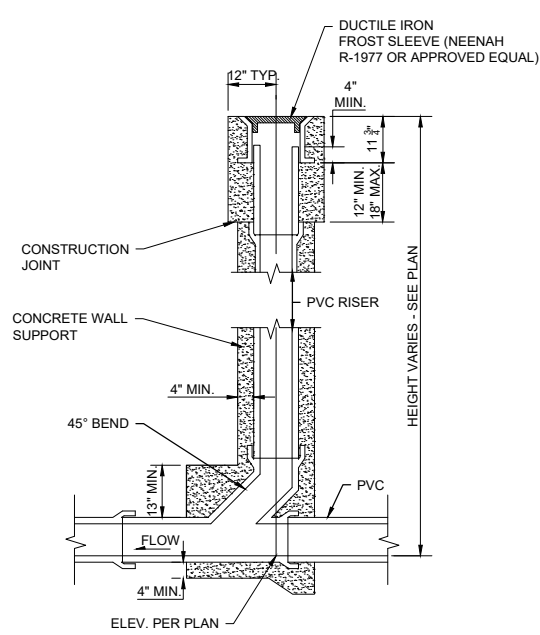




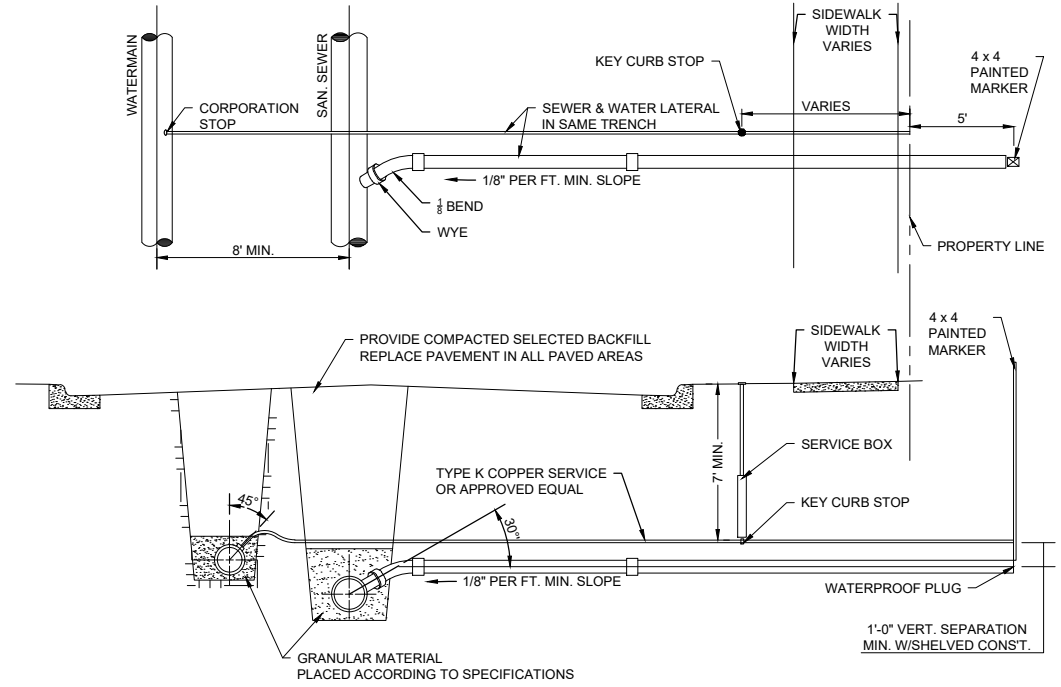
**1 SANITARY SEWER BEDDING DETAIL**  
SCALE: 6" = 1'



**3 SANITARY LATERAL DETAIL**  
SCALE: 3" = 1'



**2 CLEAN OUT DETAIL**  
SCALE: 6" = 1'



**4 SEWER AND WATER CONNECTION DETAIL**  
SCALE: 3" = 1'

MARK	DATE	BY
SIP SUBMITTAL	07-23-24	BCA
REVISION		
Checked By: MLC	Scale: 1" =	
Engineer: BCA	Date: 05-21-24	
Technician: TECH	T-R-S: TTN-RRW-SS	
Project No: 124.0465.30		
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**2975 KAPEC ROAD**

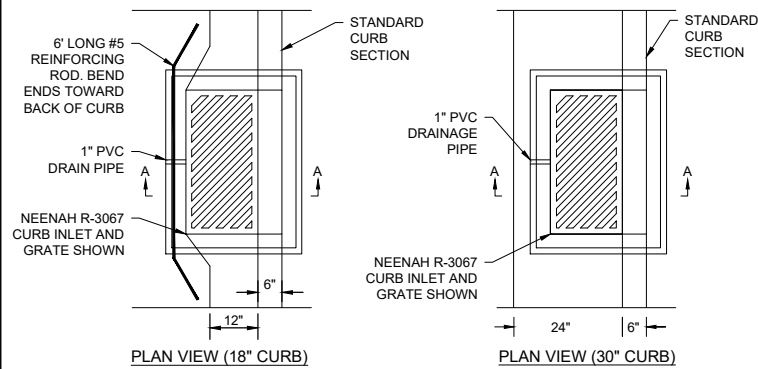
**SANITARY DETAILS**

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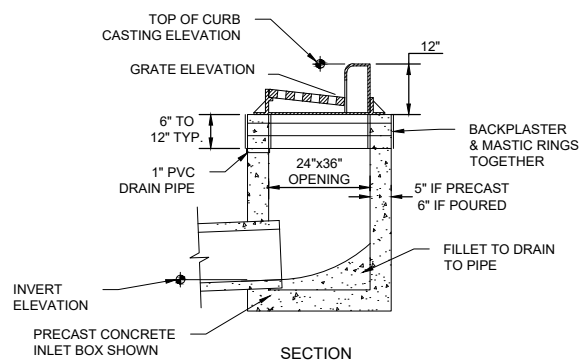
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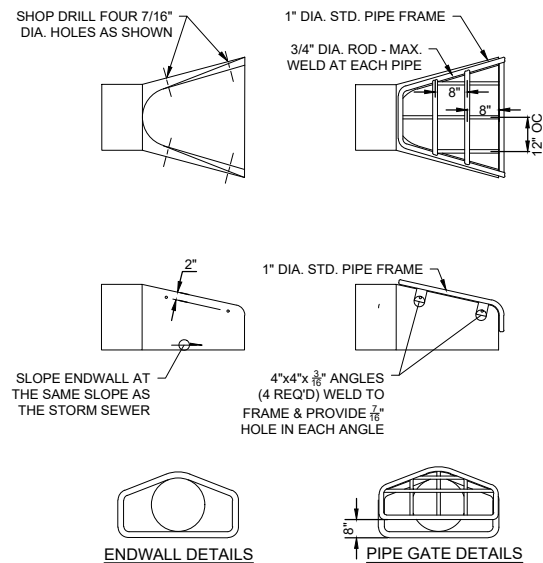


**NOTES:**

1. TOP OF CURB AND PIPE INVERT ELEVATIONS ARE SHOWN ON THE PLANS.
2. THE GRATE ELEVATION SHALL BE DEPRESSED 0.1' FROM STRAIGHT GUTTER GRADE STARTING 5' FROM THE INLET AND EXTENDING IN BOTH DIRECTIONS.
3. THE CASTING SHALL BE NEENAH FOUNDRY R-3067 CURB INLET WITH REVERSIBLE GRATES WHERE RUNOFF REACHES THE INLET FROM BOTH DIRECTIONS. WHERE RUNOFF REACHES THE INLET FROM ONE DIRECTION A NEENAH R-3067-L CASTING SHALL BE USED. DIRECTIONAL SLOTS TO BE LOCATED TO DIRECT THE FLOW INTO THE STREET INLET.
4. FRAME ADJUSTING RINGS SHALL BE AT LEAST TWO CONCRETE RINGS OF VARIABLE THICKNESS. MASTIC BETWEEN RINGS AND BACKPLASTER A SMOOTH LAYER OF GROUT OVER THE ENTIRE INNER AND OUTER SURFACES OF THE RINGS.



**1** RECTANGULAR CURB INLET DETAIL  
SCALE: 6" = 1'



**NOTE:**

1. THE CONTRACTOR SHALL BOLT THE PIPE GATE TO THE CONCRETE ENDWALL WITH FOUR 3/8"x6" MACHINE BOLTS WITH NUTS ON INSIDE WALL.

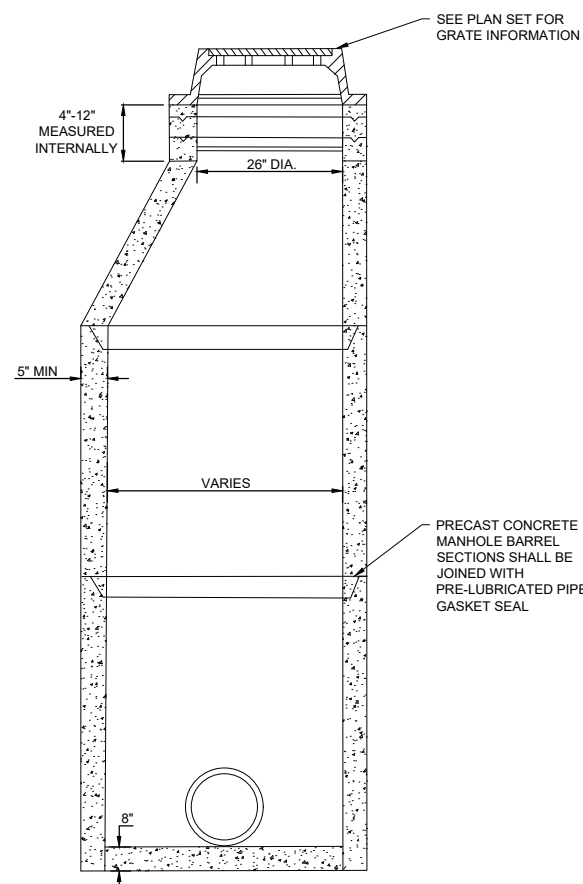
**PAINTING SPECIFICATION:**

1. THE PIPE GATE SHALL RECEIVE THE FOLLOWING PREPARATION & PAINTING. THE FIRST COAT SHALL BE RUS-OLEUM X-60 RED BARE METAL PRIMER OR APPROVED EQUAL. THE SECOND COAT SHALL BE RUS-OLEUM 960 ZINC CHROMATE PRIMER OR APPROVED EQUAL. THE THIRD COAT SHALL BE RUS-OLEUM 1282 HIGH GLOSS METAL FINISH OR APPROVED EQUAL.

**PREPARATION STEPS:**

1. BARE METAL SURFACES - TREAT WITH THE THREE-COAT PAINTING SYSTEM LISTED AFTER A THOROUGH SCRAPING, WIRE BRUSHING & CLEANING.
2. EACH COAT OF PAINT SHALL BE APPLIED OVER THE ENTIRE GATE SURFACE.
3. ALLOW 24-48 HOURS DRYING TIME AT 60° OR ABOVE BETWEEN COATS.

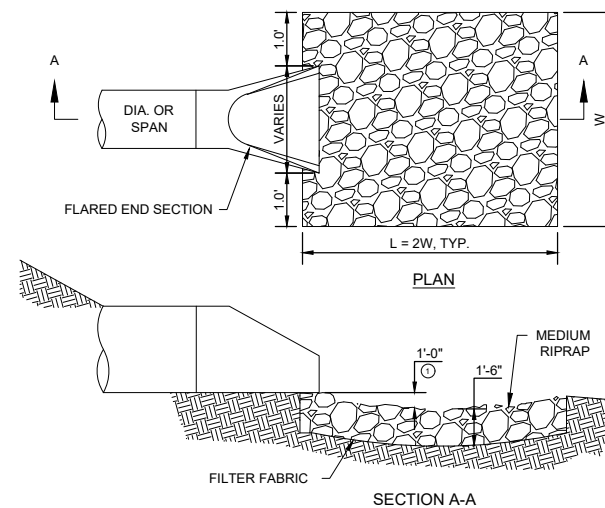
**3** STANDARD ENDWALL DETAILS  
SCALE: 6" = 1'



**NOTES:**

1. FOR STRUCTURES LESS THAN 5.0' DEEP A PRECAST REINFORCED CONCRETE FLATTOP IS REQUIRED.
2. WALL THICKNESS SHALL BE 5" FOR 48" MANHOLE AND 6" FOR 60" MANHOLE.
3. THE USE OF WOOD WEDGES OR SHIMS FOR FRAME OR RING ADJUSTMENT IS NOT ALLOWED.
4. MAXIMUM TOTAL CHIMNEY HEIGHT, EXCLUDING MANHOLE FRAME, SHALL NOT EXCEED 16 INCHES, WITH A MINIMUM OF 1 - 2 INCH PRECAST RING.
5. THE ANNULAR SPACE BETWEEN THE PIPE AND MANHOLE WALL SHALL BE FILLED WITH CONCRETE TO THE HEIGHT OF THE BENCH.
6. MANHOLES 3' DEEP AND GREATER SHALL BE CONSTRUCTED WITH STEPS.

**4** STORM SEWER MANHOLE DETAIL  
SCALE: 6" = 1'

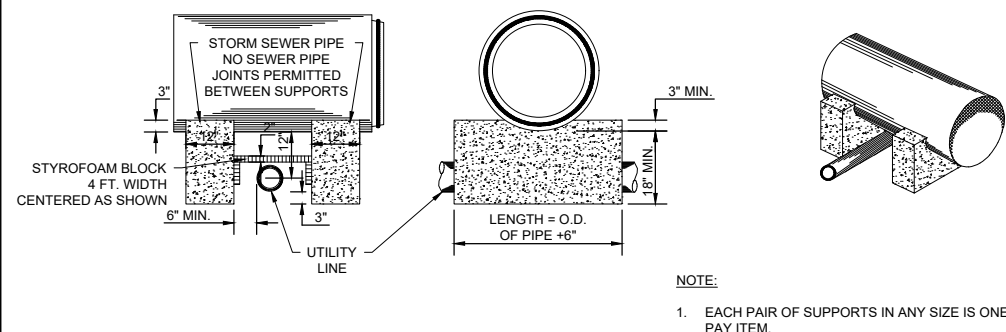


**NOTES:**

1. GEOTEXTILE FILTER FABRIC SHALL BE TYPE "HR" UNLESS OTHERWISE SPECIFIED. REFER TO SECTION 401.4.1.

○ FOR PIPES GREATER THAN OR EQUAL TO 30" USE 1.5'

**6** ENDWALL RIP-RAP DETAIL  
SCALE: 6" = 1'

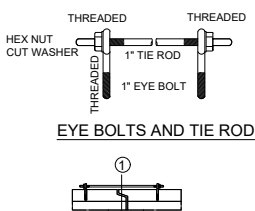


**NOTE:**

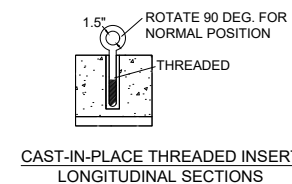
1. EACH PAIR OF SUPPORTS IN ANY SIZE IS ONE PAY ITEM.

**2** CONCRETE PIPE SUPPORT  
SCALE: 6" = 1'

**ALTERNATE 1**  
EYE BOLT AND TIE ROD ASSEMBLY  
(JOINT TIES FOR 72" DIA. AND OVER CONCRETE PIPE)

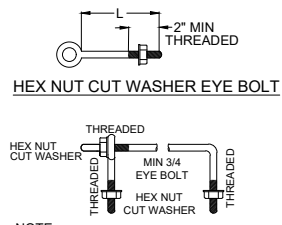


- ② INSERT. CAST-IN-PLACE WELDED EYE BOLT OR APPROVED EQUAL DURING FABRICATION FOR 1" DIA. EYE BOLT



**5** CONCRETE PIPE JOINT TIES  
SCALE: 6" = 1'

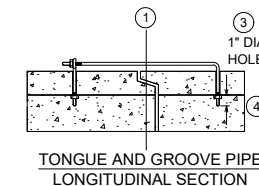
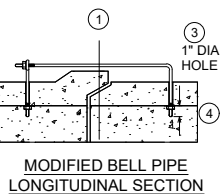
**ALTERNATE 2**  
EYE BOLT AND TIE ROD ASSEMBLY  
(JOINT TIES FOR 18" TO 66" DIA. CONCRETE PIPE)



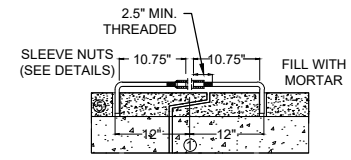
- NOTE:**
1. TWO EYE BOLTS MAY BE USED WITH A 30° LONG THREADED ROD IN LIEU OF THE 90° DEG BENT TIE ROD EYE BOLT AND TIE ROD

PIPE SIZE	TONGUE AND GROOVE PIPE	MODIFIED BELL PIPE
18" TO 24"	4 1/2"	6 1/4"
30"	5"	7"
36"	5 1/2"	7"
42"	6"	
48"	6 1/2"	
60"	7 1/2"	
66"	8"	

**EYE BOLT DIMENSION TABLE**



**ALTERNATE 3**  
ADJUSTABLE TIE ROD  
(JOINT TIES FOR 12" TO 108" DIA. CONCRETE PIPE)



**LONGITUDINAL SECTION**

- ① > OF TONGUE AND GROOVE OR BELL AND SPIGOT JOINT
- ② THE INSIDE OF THE THREADED INSERTS SHALL BE CLEAN TO ALLOW THE INSERTION OF THREADED EYE BOLTS
- ③ HOLES SHALL BE CAST-IN-PLACE OR DRILLED, 12" FROM > OF TONGUE AND GROOVE
- ④ BOLT PROJECTION INSIDE OF PIPE SHALL NOT EXCEED 2"
- ⑤ ROD DIAMETER = 1 INCH

PIPE DIAMETER	TIE ROD DIAMETER	D	L1	H	R
12" TO 30"	1/2"	1/2"	5"	1/2"	1 3/4"
36" TO 48"	3/4"	3/4"	5"	1/2"	5"
60" TO 104"	1"	1"	7"	1/2"	7 1/2"

**ADJUSTABLE TIE ROD TABLE**



**GENERAL NOTES:**

1. CONCRETE CULVERT PIPE SHALL BE TIED TOGETHER IN THE MANNER ILLUSTRATED BY THIS DETAIL AND PER STANDARD SPEC. 502.7 (D)
2. THE CONTRACTOR MAY USE EITHER ALTERNATE 1, 2, OR 3 FOR DRAINAGE STRUCTURES. UNLESS OTHERWISE STATED IN THE CONTRACT, THE MATERIALS, FABRICATION AND WORK NECESSARY TO THE CULVERT PIPE AS SHOWN ON THIS DETAIL WILL BE CONSIDERED INCIDENTAL TO THE CULVERT PIPE.

PLACEMENT OF (2) CAST-IN-PLACE INSERTS OR HOLES DURING FABRICATION FOR PIPE SECTIONS REQUIRING TIE RODS

DETAILED DRAWINGS FOR PROPOSED ALTERNATE DESIGNS FOR JOINT TIES SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL.



**TRANSVERSE SECTION**

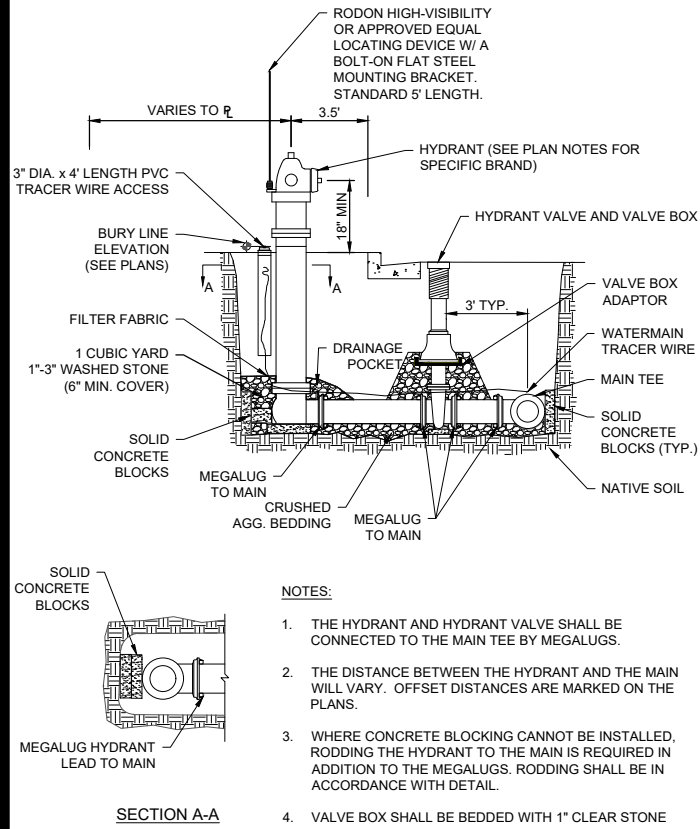
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Engineer: BCA	Checked By: MLC	Scale: 1" =	
Technician: TECH	Date: 05-21-24	T-R-S:	
Project No: 124.0465.30			Sheet

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STORM DETAILS  
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Project No: 124.0465.30

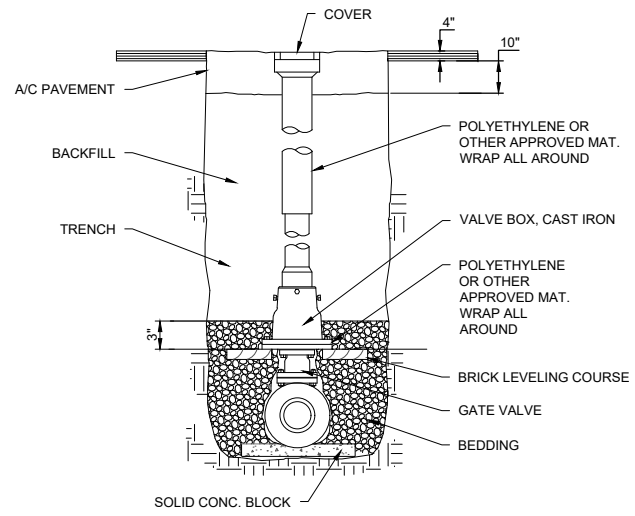
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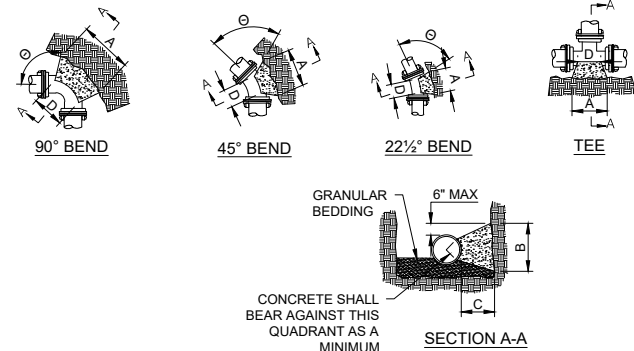
**NOTES:**

1. THE HYDRANT AND HYDRANT VALVE SHALL BE CONNECTED TO THE MAIN TEE BY MEGALUGS.
2. THE DISTANCE BETWEEN THE HYDRANT AND THE MAIN WILL VARY. OFFSET DISTANCES ARE MARKED ON THE PLANS.
3. WHERE CONCRETE BLOCKING CANNOT BE INSTALLED, RODDING THE HYDRANT TO THE MAIN IS REQUIRED IN ADDITION TO THE MEGALUGS. RODDING SHALL BE IN ACCORDANCE WITH DETAIL.
4. VALVE BOX SHALL BE BEDDED WITH 1" CLEAR STONE

**1 STANDARD HYDRANT DETAIL**  
SCALE: 6" = 1'



**3 VALVE BOX DETAIL**  
SCALE: 3" = 1'



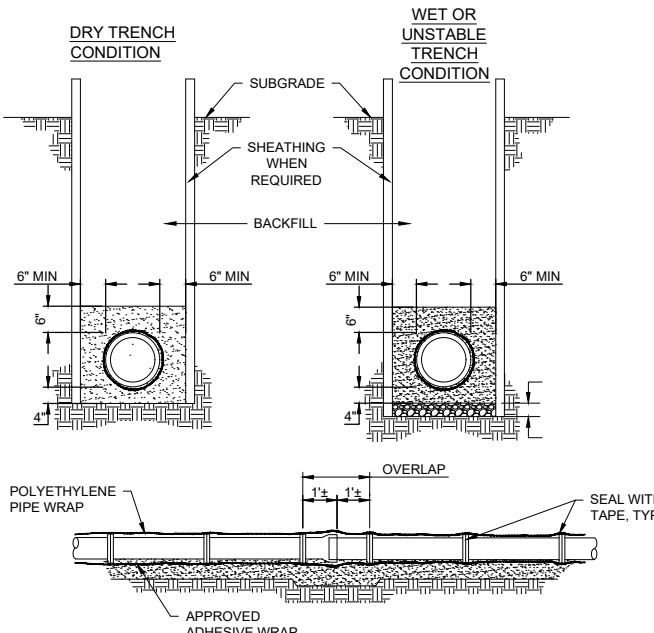
- NOTES:**
1. WOOD BLOCKING MAY NOT BE USED. ONLY SOLID CONCRETE BLOCKS ARE ALLOWED.
  2. DIMENSION "D" SHALL BE AS LARGE AS POSSIBLE, BUT THE CONCRETE SHALL NOT INTERFERE WITH THE MECHANICAL JOINTS.
  3. DIMENSION "C" SHALL BE AT LEAST 6 INCHES, AND LARGE ENOUGH TO MAKE THE "B" ANGLE EQUAL TO OR GREATER THAN 45 DEGREES WITH THE DIMENSION "A" AS SHOWN ON THE TABLE, OR GREATER, AND WITH DIMENSION "D" AS LARGE AS POSSIBLE.
  4. CONCRETE SHALL BE CLASS "CC".
  5. ALL BUTTRESSED JOINTS SHALL INCLUDE MEGALUGS AND CONCRETE BUTTRESSING.

PIPE SIZE	TEES				22 1/2° BEND		45° BEND		90° BEND	
	A	B	A	B	A	B	A	B	A	B
6	1'-3"	1'-0"	1'-0"	1'-0"	1'-0"	1'-4"	1'-2"	1'-10"	1'-6"	1'-2"
8	1'-6"	1'-4"	1'-0"	1'-0"	1'-4"	1'-2"	1'-10"	1'-6"	1'-2"	1'-6"
10/12	2'-3"	2'-0"	1'-4"	1'-4"	1'-10"	1'-10"	2'-8"	2'-3"	2'-3"	2'-3"
14/16	3'-2"	2'-8"	1'-10"	1'-8"	2'-8"	2'-4"	3'-10"	2'-10"	2'-10"	2'-10"
18/20	4'-0"	3'-0"	2'-4"	2'-0"	3'-3"	2'-10"	5'-0"	3'-4"	3'-4"	3'-4"
22/24	5'-3"	3'-4"	2'-10"	2'-4"	4'-0"	3'-3"	6'-4"	3'-10"	3'-10"	3'-10"
30	6'-3"	4'-3"	3'-6"	3'-0"	5'-4"	3'-10"	8'-0"	4'-8"	4'-8"	4'-8"

\* = FOR TEE THIS WILL BE THE BRANCH PIPE

DIMENSIONS IN THE TABLE ARE BASED ON A WATER PRESSURE OF 150 PSI AND SOIL RESISTANCE OF 2000 LBS./SQ.FT.

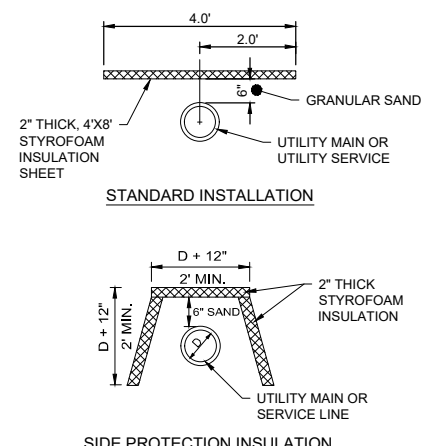
**2 BUTTRESS DETAIL**  
SCALE: 3" = 1'



**INSTALLATION:**

1. PLACE 4" OF BEDDING MATERIAL BENEATH PIPE. PLACE BEDDING MATERIAL AROUND THE PIPE TO THE SPRING LINE. WORK THE MATERIAL IN AND AROUND THE PIPE BY HAND TO PROVIDE UNIFORM SUPPORT. PLACE COVER MATERIAL CAREFULLY TO A LEVEL 6" ABOVE THE PIPE.

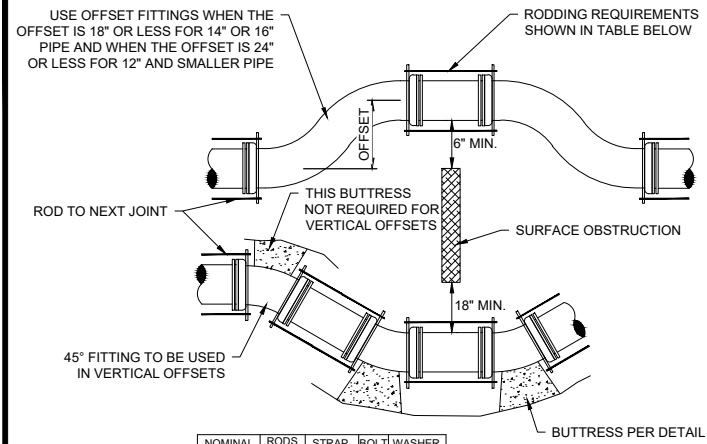
**4 WATER PIPE BEDDING DETAIL**  
SCALE: 6" = 1'



**GENERAL NOTES:**

1. THE SIDE PROTECTION INSTALLATION SHALL BE USED WHERE FROST WILL PENETRATE BELOW THE PIPE INVERT.

**5 WATER PIPE INSULATION DETAIL**  
SCALE: 6" = 1'



NOMINAL PIPE SIZE	RODS NO. DIA.	STRAP SIZE	BOLT DIA.	WASHER SIZE
6	3	1/2 x 2	3/8	1/2 x 3 x 5
8	4	1/2 x 2	3/8	1/2 x 3 x 5
10	4	1/2 x 2 1/2	1/2	1/2 x 3 x 5
12	4	1/2 x 2 1/2	1/2	1/2 x 3 x 5
14	4	1/2 x 2 1/2	1/2	1/2 x 3 x 5

ALL DIMENSIONS IN THIS TABLE ARE IN INCHES

**NOTES:**

1. ALL OFFSETS SHALL BE RESTRAINED WITH MEGALUGS. WHERE CONCRETE BUTTRESSING CANNOT BE USED, RODDING MUST BE USED IN ADDITION TO THE MEGALUGS.
2. RODS AND WASHERS TO BE ASTM A-575 MERCHANT QUALITY 0.17-0.24 CARBON. NUTS TO BE AMERICAN STANDARD HEAVY, NOT PRESSED.
3. TIE RODS, BOLTS, NUTS, BANDS AND WASHERS TO BE FURNISHED AND ASSEMBLED BY THE CONTRACTOR.
4. ALL STEEL MATERIAL TO BE GALVANIZED OR BE THOROUGHLY COATED WITH ENGINEER APPROVED COATING.
5. OFFSET FITTINGS REQUIRE CONTINUOUS RODDING IN ALL POSITIONS.
6. VERTICAL OFFSETS SHALL NOT CREATE A HIGH POINT IN THE WATER MAIN. VERTICAL OFFSETS REQUIRE THE SAME RODDING AND BUTTRESSING AS SHOWN ABOVE.

**6 OFFSET & RODDING DETAIL**  
SCALE: 6" = 1'

MARK	SIP SUBMITTAL	07-25-24	BCA	BY
Engineer:	BCA	Checked By:	M.L.C.	Scale: 1" =
Technician:	TECH	Date:	05-21-24	T-R-S: TTN+RRW-SS

Project No.: 124.0465.30  
Sheet

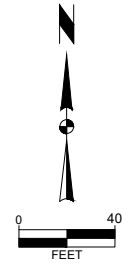
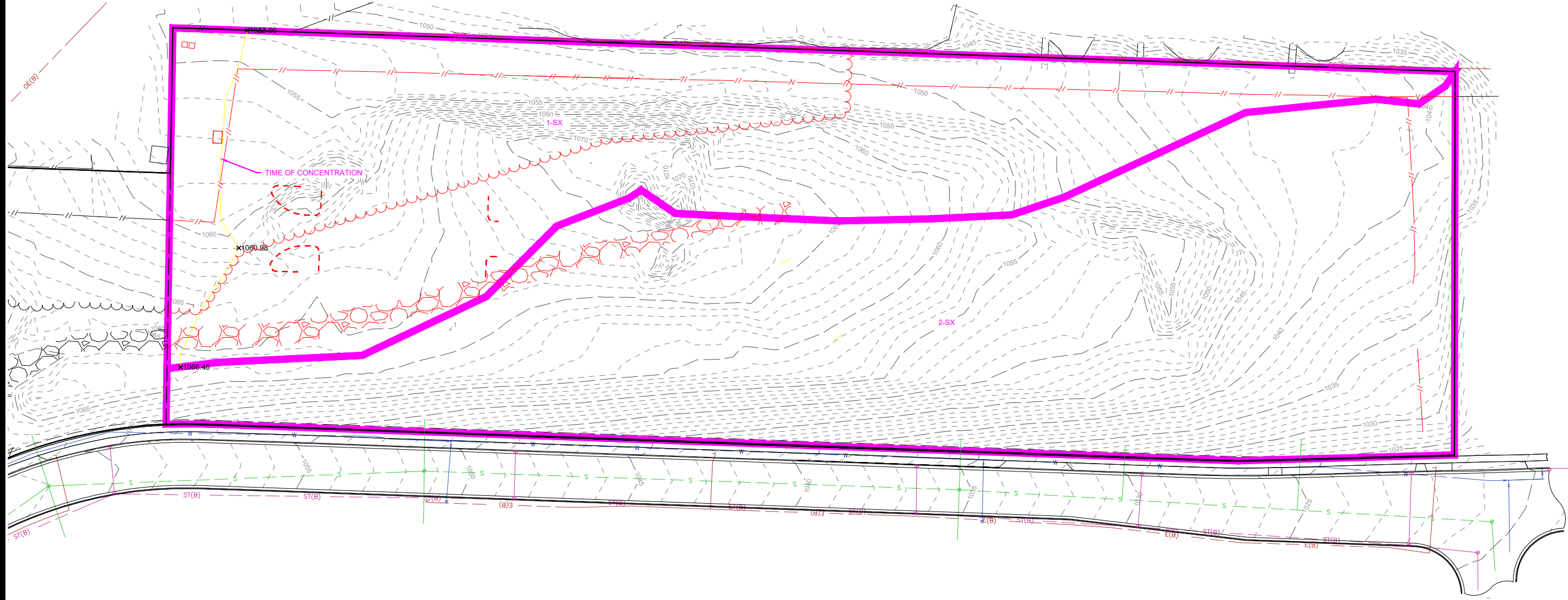
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**APPENDIX C**  
**PRE-DEVELOPMENT DRIANAGE AREA MAP**

V:\pww\1102121\0465.0465\30444\1240465.DWG (BRAN) ARCAD, PRE-DEV, DRAINAGE AREA MAP, 2024/07/19, 1:22 PM, ANSI FULL BLEED (17.00 X 11.00 INCHES)




MARK	SIP SUBMITTAL	DATE	07-25-24	BY	BCA
Engineer:	BCA	Checked By:	MLC	Scale:	1" = 40'
Technician:	TECH	Date:	05-21-24	T-R-S:	TIN+RRW+SS
Project No.:				124.0465.30	
				Sheet APP C	

**2975 KAPEC ROAD**  
**PRE-DEV. DRAINAGE AREA MAP**  
**SNYDER & ASSOCIATES, INC.**

CITY OF FITCHBURG, DANE COUNTY, WI

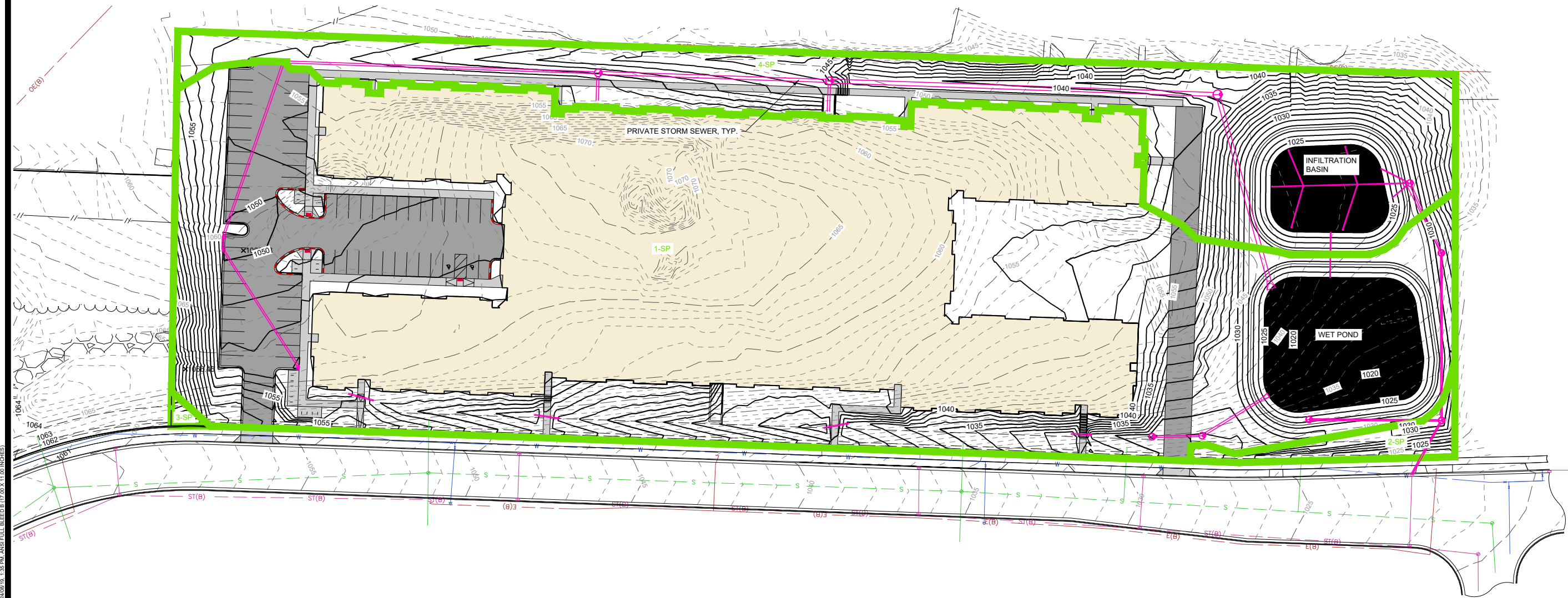
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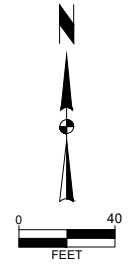
Project No: 124.0465.30  
Sheet APP C

##

**APPENDIX D**  
**POST-DEVELOPMENT DRIANAGE AREA MAP**



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##

MARK	SIP SUBMITTAL	DATE	07-23-24	BCA
Engineer:	BCA	Checked By:	MLC	Scale: 1" = 40'
Technician:	TECH	Date:	05-21-24	T-R-S: TTN+RRW-SS
Project No. 124.0465.30				Sheet APP D

**2975 KAPEC ROAD**  
**POST-DEV. DRAINAGE AREA MAP**  
**CITY OF FITCHBURG, DANE COUNTY, WI**  
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 Sheet APP D

**APPENDIX E**  
**PRE-DEVELOPMENT HYDROLOGY**

**Model\_2024-07-23\_Predev**

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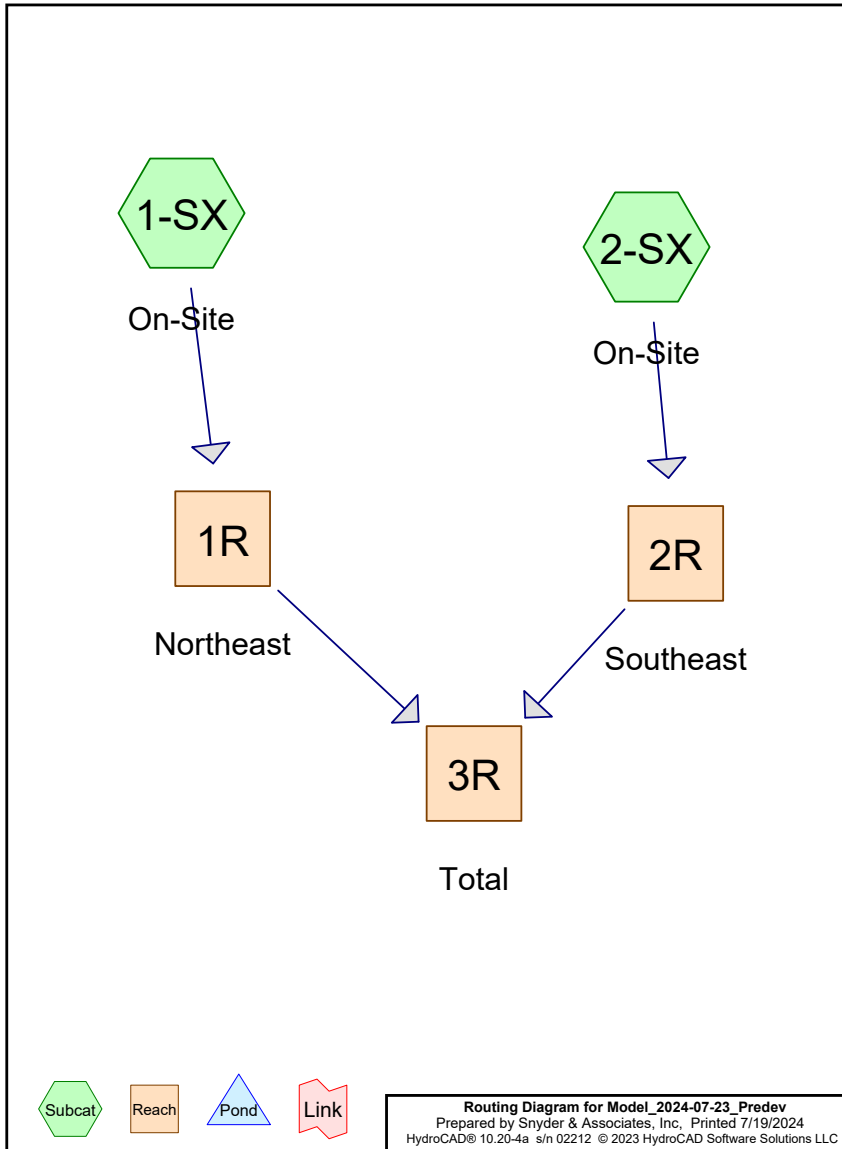
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**Rainfall Events Listing (selected events)**

Event#	Event Name	Storm Type	Curve	Mode	Duration (hours)	B/B	Depth (inches)	AMC
1	1-yr. Dane	MSE 24-hr	4	Default	24.00	1	2.49	2
2	2-yr. Dane	MSE 24-hr	4	Default	24.00	1	2.84	2
3	10-yr. Dane	MSE 24-hr	4	Default	24.00	1	4.09	2
4	100-yr. Dane	MSE 24-hr	4	Default	24.00	1	6.66	2
5	200-yr. Dane	MSE 24-hr	4	Default	24.00	1	7.53	2
6	500-yr. Dane	MSE 24-hr	4	Default	24.00	1	8.94	2



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**Area Listing (all nodes)**

Area (acres)	CN	Description (subcatchment-numbers)
6.523	61	>75% Grass cover, Good, HSG B (1-SX, 2-SX)
<b>6.523</b>	<b>61</b>	<b>TOTAL AREA</b>

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**Soil Listing (all nodes)**

Area (acres)	Soil Group	Subcatchment Numbers
0.000	HSG A	
6.523	HSG B	1-SX, 2-SX
0.000	HSG C	
0.000	HSG D	
0.000	Other	
<b>6.523</b>		<b>TOTAL AREA</b>

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**Ground Covers (all nodes)**

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchment Numbers
0.000	6.523	0.000	0.000	0.000	6.523	>75% Grass cover, Good	1-SX, 2-SX
<b>0.000</b>	<b>6.523</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>6.523</b>	<b>TOTAL AREA</b>	

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MSE 24-hr 4 1-yr. Dane Rainfall=2.49"

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Time span=0.00-96.00 hrs, dt=0.05 hrs, 1921 points

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN

Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

**Subcatchment1-SX: On-Site**

Runoff Area=2.862 ac 0.00% Impervious Runoff Depth=0.19"  
Flow Length=270' Tc=7.8 min CN=61 Runoff=0.29 cfs 0.046 af

**Subcatchment2-SX: On-Site**

Runoff Area=3.661 ac 0.00% Impervious Runoff Depth=0.19"  
Tc=6.0 min CN=61 Runoff=0.40 cfs 0.059 af

**Reach 1R: Northeast**

Inflow=0.29 cfs 0.046 af  
Outflow=0.29 cfs 0.046 af

**Reach 2R: Southeast**

Inflow=0.40 cfs 0.059 af  
Outflow=0.40 cfs 0.059 af

**Reach 3R: Total**

Inflow=0.70 cfs 0.105 af  
Outflow=0.70 cfs 0.105 af

**Total Runoff Area = 6.523 ac Runoff Volume = 0.105 af Average Runoff Depth = 0.19"**  
**100.00% Pervious = 6.523 ac 0.00% Impervious = 0.000 ac**

**Model\_2024-07-23\_Predev**

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MSE 24-hr 4 1-yr. Dane Rainfall=2.49"

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**Summary for Subcatchment 1-SX: On-Site**

Runoff = 0.29 cfs @ 12.23 hrs, Volume= 0.046 af, Depth= 0.19"  
 Routed to Reach 1R : Northeast

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-96.00 hrs, dt= 0.05 hrs  
 MSE 24-hr 4 1-yr. Dane Rainfall=2.49"

Area (ac)	CN	Description
2.862	61	>75% Grass cover, Good, HSG B
2.862		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.0	100	0.0548	0.24		<b>Sheet Flow,</b> Grass: Short n= 0.150 P2= 2.81"
0.8	170	0.0469	3.49		<b>Shallow Concentrated Flow,</b> Unpaved Kv= 16.1 fps
7.8	270	Total			

**Model\_2024-07-23\_Predev**

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MSE 24-hr 4 1-yr. Dane Rainfall=2.49"

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Page 8

**Summary for Subcatchment 2-SX: On-Site**

Runoff = 0.40 cfs @ 12.20 hrs, Volume= 0.059 af, Depth= 0.19"  
 Routed to Reach 2R : Southeast

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-96.00 hrs, dt= 0.05 hrs  
 MSE 24-hr 4 1-yr. Dane Rainfall=2.49"

Area (ac)	CN	Description
3.661	61	>75% Grass cover, Good, HSG B
3.661		100.00% Pervious Area

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

**Model\_2024-07-23\_Predev**

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*MSE 24-hr 4 1-yr. Dane Rainfall=2.49"*

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**Summary for Reach 1R: Northeast**

Inflow Area = 2.862 ac, 0.00% Impervious, Inflow Depth = 0.19" for 1-yr. Dane event  
Inflow = 0.29 cfs @ 12.23 hrs, Volume= 0.046 af  
Outflow = 0.29 cfs @ 12.23 hrs, Volume= 0.046 af, Atten= 0%, Lag= 0.0 min  
Routed to Reach 3R : Total

Routing by Dyn-Stor-Ind method, Time Span= 0.00-96.00 hrs, dt= 0.05 hrs

**Model\_2024-07-23\_Predev**

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*MSE 24-hr 4 1-yr. Dane Rainfall=2.49"*

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**Summary for Reach 2R: Southeast**

Inflow Area = 3.661 ac, 0.00% Impervious, Inflow Depth = 0.19" for 1-yr. Dane event  
Inflow = 0.40 cfs @ 12.20 hrs, Volume= 0.059 af  
Outflow = 0.40 cfs @ 12.20 hrs, Volume= 0.059 af, Atten= 0%, Lag= 0.0 min  
Routed to Reach 3R : Total

Routing by Dyn-Stor-Ind method, Time Span= 0.00-96.00 hrs, dt= 0.05 hrs

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MSE 24-hr 4 1-yr. Dane Rainfall=2.49"

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**Summary for Reach 3R: Total**

Inflow Area = 6.523 ac, 0.00% Impervious, Inflow Depth = 0.19" for 1-yr. Dane event  
Inflow = 0.70 cfs @ 12.22 hrs, Volume= 0.105 af  
Outflow = 0.70 cfs @ 12.22 hrs, Volume= 0.105 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-96.00 hrs, dt= 0.05 hrs

**Model\_2024-07-23\_Predev**

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MSE 24-hr 4 2-yr. Dane Rainfall=2.84"

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Time span=0.00-96.00 hrs, dt=0.05 hrs, 1921 points  
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN  
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

**Subcatchment1-SX: On-Site**

Runoff Area=2.862 ac 0.00% Impervious Runoff Depth=0.31"  
Flow Length=270' Tc=7.8 min CN=61 Runoff=0.72 cfs 0.073 af

**Subcatchment2-SX: On-Site**

Runoff Area=3.661 ac 0.00% Impervious Runoff Depth=0.31"  
Tc=6.0 min CN=61 Runoff=1.06 cfs 0.093 af

**Reach 1R: Northeast**

Inflow=0.72 cfs 0.073 af  
Outflow=0.72 cfs 0.073 af

**Reach 2R: Southeast**

Inflow=1.06 cfs 0.093 af  
Outflow=1.06 cfs 0.093 af

**Reach 3R: Total**

Inflow=1.76 cfs 0.167 af  
Outflow=1.76 cfs 0.167 af

**Total Runoff Area = 6.523 ac Runoff Volume = 0.167 af Average Runoff Depth = 0.31"**  
**100.00% Pervious = 6.523 ac 0.00% Impervious = 0.000 ac**

**Model\_2024-07-23\_Predev**

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MSE 24-hr 4 2-yr. Dane Rainfall=2.84"

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**Summary for Subcatchment 1-SX: On-Site**

Runoff = 0.72 cfs @ 12.20 hrs, Volume= 0.073 af, Depth= 0.31"  
 Routed to Reach 1R : Northeast

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-96.00 hrs, dt= 0.05 hrs  
 MSE 24-hr 4 2-yr. Dane Rainfall=2.84"

Area (ac)	CN	Description
2.862	61	>75% Grass cover, Good, HSG B
2.862		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.0	100	0.0548	0.24		<b>Sheet Flow,</b> Grass: Short n= 0.150 P2= 2.81"
0.8	170	0.0469	3.49		<b>Shallow Concentrated Flow,</b> Unpaved Kv= 16.1 fps
7.8	270	Total			

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MSE 24-hr 4 2-yr. Dane Rainfall=2.84"

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**Summary for Subcatchment 2-SX: On-Site**

Runoff = 1.06 cfs @ 12.16 hrs, Volume= 0.093 af, Depth= 0.31"  
 Routed to Reach 2R : Southeast

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-96.00 hrs, dt= 0.05 hrs  
 MSE 24-hr 4 2-yr. Dane Rainfall=2.84"

Area (ac)	CN	Description
3.661	61	>75% Grass cover, Good, HSG B
3.661		100.00% Pervious Area

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

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*MSE 24-hr 4 2-yr. Dane Rainfall=2.84"*

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**Summary for Reach 1R: Northeast**

Inflow Area = 2.862 ac, 0.00% Impervious, Inflow Depth = 0.31" for 2-yr. Dane event  
Inflow = 0.72 cfs @ 12.20 hrs, Volume= 0.073 af  
Outflow = 0.72 cfs @ 12.20 hrs, Volume= 0.073 af, Atten= 0%, Lag= 0.0 min  
Routed to Reach 3R : Total

Routing by Dyn-Stor-Ind method, Time Span= 0.00-96.00 hrs, dt= 0.05 hrs

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*MSE 24-hr 4 2-yr. Dane Rainfall=2.84"*

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**Summary for Reach 2R: Southeast**

Inflow Area = 3.661 ac, 0.00% Impervious, Inflow Depth = 0.31" for 2-yr. Dane event  
Inflow = 1.06 cfs @ 12.16 hrs, Volume= 0.093 af  
Outflow = 1.06 cfs @ 12.16 hrs, Volume= 0.093 af, Atten= 0%, Lag= 0.0 min  
Routed to Reach 3R : Total

Routing by Dyn-Stor-Ind method, Time Span= 0.00-96.00 hrs, dt= 0.05 hrs

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MSE 24-hr 4 2-yr. Dane Rainfall=2.84"

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**Summary for Reach 3R: Total**

Inflow Area = 6.523 ac, 0.00% Impervious, Inflow Depth = 0.31" for 2-yr. Dane event  
Inflow = 1.76 cfs @ 12.17 hrs, Volume= 0.167 af  
Outflow = 1.76 cfs @ 12.17 hrs, Volume= 0.167 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-96.00 hrs, dt= 0.05 hrs

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MSE 24-hr 4 10-yr. Dane Rainfall=4.09"

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Time span=0.00-96.00 hrs, dt=0.05 hrs, 1921 points

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN

Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

**Subcatchment1-SX: On-Site**

Runoff Area=2.862 ac 0.00% Impervious Runoff Depth=0.86"  
Flow Length=270' Tc=7.8 min CN=61 Runoff=3.20 cfs 0.205 af

**Subcatchment2-SX: On-Site**

Runoff Area=3.661 ac 0.00% Impervious Runoff Depth=0.86"  
Tc=6.0 min CN=61 Runoff=4.45 cfs 0.262 af

**Reach 1R: Northeast**

Inflow=3.20 cfs 0.205 af  
Outflow=3.20 cfs 0.205 af

**Reach 2R: Southeast**

Inflow=4.45 cfs 0.262 af  
Outflow=4.45 cfs 0.262 af

**Reach 3R: Total**

Inflow=7.60 cfs 0.467 af  
Outflow=7.60 cfs 0.467 af

**Total Runoff Area = 6.523 ac Runoff Volume = 0.467 af Average Runoff Depth = 0.86"**  
**100.00% Pervious = 6.523 ac 0.00% Impervious = 0.000 ac**

**Model\_2024-07-23\_Predev**

MSE 24-hr 4 10-yr. Dane Rainfall=4.09"

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**Summary for Subcatchment 1-SX: On-Site**

Runoff = 3.20 cfs @ 12.16 hrs, Volume= 0.205 af, Depth= 0.86"  
 Routed to Reach 1R : Northeast

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-96.00 hrs, dt= 0.05 hrs  
 MSE 24-hr 4 10-yr. Dane Rainfall=4.09"

Area (ac)	CN	Description
2.862	61	>75% Grass cover, Good, HSG B
2.862		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.0	100	0.0548	0.24		<b>Sheet Flow,</b> Grass: Short n= 0.150 P2= 2.81"
0.8	170	0.0469	3.49		<b>Shallow Concentrated Flow,</b> Unpaved Kv= 16.1 fps
7.8	270	Total			

**Model\_2024-07-23\_Predev**

MSE 24-hr 4 10-yr. Dane Rainfall=4.09"

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**Summary for Subcatchment 2-SX: On-Site**

Runoff = 4.45 cfs @ 12.15 hrs, Volume= 0.262 af, Depth= 0.86"  
 Routed to Reach 2R : Southeast

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-96.00 hrs, dt= 0.05 hrs  
 MSE 24-hr 4 10-yr. Dane Rainfall=4.09"

Area (ac)	CN	Description
3.661	61	>75% Grass cover, Good, HSG B
3.661		100.00% Pervious Area

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

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MSE 24-hr 4 10-yr. Dane Rainfall=4.09"

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**Summary for Reach 1R: Northeast**

Inflow Area = 2.862 ac, 0.00% Impervious, Inflow Depth = 0.86" for 10-yr. Dane event  
Inflow = 3.20 cfs @ 12.16 hrs, Volume= 0.205 af  
Outflow = 3.20 cfs @ 12.16 hrs, Volume= 0.205 af, Atten= 0%, Lag= 0.0 min  
Routed to Reach 3R : Total

Routing by Dyn-Stor-Ind method, Time Span= 0.00-96.00 hrs, dt= 0.05 hrs

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MSE 24-hr 4 10-yr. Dane Rainfall=4.09"

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**Summary for Reach 2R: Southeast**

Inflow Area = 3.661 ac, 0.00% Impervious, Inflow Depth = 0.86" for 10-yr. Dane event  
Inflow = 4.45 cfs @ 12.15 hrs, Volume= 0.262 af  
Outflow = 4.45 cfs @ 12.15 hrs, Volume= 0.262 af, Atten= 0%, Lag= 0.0 min  
Routed to Reach 3R : Total

Routing by Dyn-Stor-Ind method, Time Span= 0.00-96.00 hrs, dt= 0.05 hrs

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MSE 24-hr 4 10-yr. Dane Rainfall=4.09"

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**Summary for Reach 3R: Total**

Inflow Area = 6.523 ac, 0.00% Impervious, Inflow Depth = 0.86" for 10-yr. Dane event  
Inflow = 7.60 cfs @ 12.15 hrs, Volume= 0.467 af  
Outflow = 7.60 cfs @ 12.15 hrs, Volume= 0.467 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-96.00 hrs, dt= 0.05 hrs

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MSE 24-hr 4 100-yr. Dane Rainfall=6.66"

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Time span=0.00-96.00 hrs, dt=0.05 hrs, 1921 points

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN

Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

**Subcatchment1-SX: On-Site**

Runoff Area=2.862 ac 0.00% Impervious Runoff Depth=2.46"  
Flow Length=270' Tc=7.8 min CN=61 Runoff=10.27 cfs 0.587 af

**Subcatchment2-SX: On-Site**

Runoff Area=3.661 ac 0.00% Impervious Runoff Depth=2.46"  
Tc=6.0 min CN=61 Runoff=14.03 cfs 0.750 af

**Reach 1R: Northeast**

Inflow=10.27 cfs 0.587 af  
Outflow=10.27 cfs 0.587 af

**Reach 2R: Southeast**

Inflow=14.03 cfs 0.750 af  
Outflow=14.03 cfs 0.750 af

**Reach 3R: Total**

Inflow=24.15 cfs 1.337 af  
Outflow=24.15 cfs 1.337 af

**Total Runoff Area = 6.523 ac Runoff Volume = 1.337 af Average Runoff Depth = 2.46"**  
**100.00% Pervious = 6.523 ac 0.00% Impervious = 0.000 ac**

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MSE 24-hr 4 100-yr. Dane Rainfall=6.66"

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**Summary for Subcatchment 1-SX: On-Site**

Runoff = 10.27 cfs @ 12.16 hrs, Volume= 0.587 af, Depth= 2.46"  
 Routed to Reach 1R : Northeast

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-96.00 hrs, dt= 0.05 hrs  
 MSE 24-hr 4 100-yr. Dane Rainfall=6.66"

Area (ac)	CN	Description
2.862	61	>75% Grass cover, Good, HSG B
2.862		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.0	100	0.0548	0.24		<b>Sheet Flow,</b> Grass: Short n= 0.150 P2= 2.81"
0.8	170	0.0469	3.49		<b>Shallow Concentrated Flow,</b> Unpaved Kv= 16.1 fps
7.8	270	Total			

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MSE 24-hr 4 100-yr. Dane Rainfall=6.66"

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**Summary for Subcatchment 2-SX: On-Site**

Runoff = 14.03 cfs @ 12.14 hrs, Volume= 0.750 af, Depth= 2.46"  
 Routed to Reach 2R : Southeast

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-96.00 hrs, dt= 0.05 hrs  
 MSE 24-hr 4 100-yr. Dane Rainfall=6.66"

Area (ac)	CN	Description
3.661	61	>75% Grass cover, Good, HSG B
3.661		100.00% Pervious Area

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

**Model\_2024-07-23\_Predev**

MSE 24-hr 4 100-yr. Dane Rainfall=6.66"

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**Summary for Reach 1R: Northeast**

Inflow Area = 2.862 ac, 0.00% Impervious, Inflow Depth = 2.46" for 100-yr. Dane event  
Inflow = 10.27 cfs @ 12.16 hrs, Volume= 0.587 af  
Outflow = 10.27 cfs @ 12.16 hrs, Volume= 0.587 af, Atten= 0%, Lag= 0.0 min  
Routed to Reach 3R : Total

Routing by Dyn-Stor-Ind method, Time Span= 0.00-96.00 hrs, dt= 0.05 hrs

**Model\_2024-07-23\_Predev**

MSE 24-hr 4 100-yr. Dane Rainfall=6.66"

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**Summary for Reach 2R: Southeast**

Inflow Area = 3.661 ac, 0.00% Impervious, Inflow Depth = 2.46" for 100-yr. Dane event  
Inflow = 14.03 cfs @ 12.14 hrs, Volume= 0.750 af  
Outflow = 14.03 cfs @ 12.14 hrs, Volume= 0.750 af, Atten= 0%, Lag= 0.0 min  
Routed to Reach 3R : Total

Routing by Dyn-Stor-Ind method, Time Span= 0.00-96.00 hrs, dt= 0.05 hrs

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MSE 24-hr 4 100-yr. Dane Rainfall=6.66"

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**Summary for Reach 3R: Total**

Inflow Area = 6.523 ac, 0.00% Impervious, Inflow Depth = 2.46" for 100-yr. Dane event  
Inflow = 24.15 cfs @ 12.14 hrs, Volume= 1.337 af  
Outflow = 24.15 cfs @ 12.14 hrs, Volume= 1.337 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-96.00 hrs, dt= 0.05 hrs

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MSE 24-hr 4 200-yr. Dane Rainfall=7.53"

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Time span=0.00-96.00 hrs, dt=0.05 hrs, 1921 points

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN

Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

**Subcatchment1-SX: On-Site**

Runoff Area=2.862 ac 0.00% Impervious Runoff Depth=3.09"  
Flow Length=270' Tc=7.8 min CN=61 Runoff=13.01 cfs 0.737 af

**Subcatchment2-SX: On-Site**

Runoff Area=3.661 ac 0.00% Impervious Runoff Depth=3.09"  
Tc=6.0 min CN=61 Runoff=17.72 cfs 0.943 af

**Reach 1R: Northeast**

Inflow=13.01 cfs 0.737 af  
Outflow=13.01 cfs 0.737 af

**Reach 2R: Southeast**

Inflow=17.72 cfs 0.943 af  
Outflow=17.72 cfs 0.943 af

**Reach 3R: Total**

Inflow=30.54 cfs 1.680 af  
Outflow=30.54 cfs 1.680 af

**Total Runoff Area = 6.523 ac Runoff Volume = 1.680 af Average Runoff Depth = 3.09"**  
**100.00% Pervious = 6.523 ac 0.00% Impervious = 0.000 ac**

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MSE 24-hr 4 200-yr. Dane Rainfall=7.53"

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**Summary for Subcatchment 1-SX: On-Site**

Runoff = 13.01 cfs @ 12.15 hrs, Volume= 0.737 af, Depth= 3.09"  
 Routed to Reach 1R : Northeast

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-96.00 hrs, dt= 0.05 hrs  
 MSE 24-hr 4 200-yr. Dane Rainfall=7.53"

Area (ac)	CN	Description
2.862	61	>75% Grass cover, Good, HSG B
2.862		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.0	100	0.0548	0.24		<b>Sheet Flow,</b> Grass: Short n= 0.150 P2= 2.81"
0.8	170	0.0469	3.49		<b>Shallow Concentrated Flow,</b> Unpaved Kv= 16.1 fps
7.8	270	Total			

**Model\_2024-07-23\_Preview**

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MSE 24-hr 4 200-yr. Dane Rainfall=7.53"

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**Summary for Subcatchment 2-SX: On-Site**

Runoff = 17.72 cfs @ 12.14 hrs, Volume= 0.943 af, Depth= 3.09"  
 Routed to Reach 2R : Southeast

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-96.00 hrs, dt= 0.05 hrs  
 MSE 24-hr 4 200-yr. Dane Rainfall=7.53"

Area (ac)	CN	Description
3.661	61	>75% Grass cover, Good, HSG B
3.661		100.00% Pervious Area

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

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MSE 24-hr 4 200-yr. Dane Rainfall=7.53"

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**Summary for Reach 1R: Northeast**

Inflow Area = 2.862 ac, 0.00% Impervious, Inflow Depth = 3.09" for 200-yr. Dane event  
Inflow = 13.01 cfs @ 12.15 hrs, Volume= 0.737 af  
Outflow = 13.01 cfs @ 12.15 hrs, Volume= 0.737 af, Atten= 0%, Lag= 0.0 min  
Routed to Reach 3R : Total

Routing by Dyn-Stor-Ind method, Time Span= 0.00-96.00 hrs, dt= 0.05 hrs

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MSE 24-hr 4 200-yr. Dane Rainfall=7.53"

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**Summary for Reach 2R: Southeast**

Inflow Area = 3.661 ac, 0.00% Impervious, Inflow Depth = 3.09" for 200-yr. Dane event  
Inflow = 17.72 cfs @ 12.14 hrs, Volume= 0.943 af  
Outflow = 17.72 cfs @ 12.14 hrs, Volume= 0.943 af, Atten= 0%, Lag= 0.0 min  
Routed to Reach 3R : Total

Routing by Dyn-Stor-Ind method, Time Span= 0.00-96.00 hrs, dt= 0.05 hrs

**Model\_2024-07-23\_Predev**

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MSE 24-hr 4 200-yr. Dane Rainfall=7.53"

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**Summary for Reach 3R: Total**

Inflow Area = 6.523 ac, 0.00% Impervious, Inflow Depth = 3.09" for 200-yr. Dane event  
Inflow = 30.54 cfs @ 12.14 hrs, Volume= 1.680 af  
Outflow = 30.54 cfs @ 12.14 hrs, Volume= 1.680 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-96.00 hrs, dt= 0.05 hrs

**Model\_2024-07-23\_Predev**

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MSE 24-hr 4 500-yr. Dane Rainfall=8.94"

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Time span=0.00-96.00 hrs, dt=0.05 hrs, 1921 points

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN

Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

**Subcatchment1-SX: On-Site**

Runoff Area=2.862 ac 0.00% Impervious Runoff Depth=4.18"  
Flow Length=270' Tc=7.8 min CN=61 Runoff=17.65 cfs 0.996 af

**Subcatchment2-SX: On-Site**

Runoff Area=3.661 ac 0.00% Impervious Runoff Depth=4.18"  
Tc=6.0 min CN=61 Runoff=23.98 cfs 1.274 af

**Reach 1R: Northeast**

Inflow=17.65 cfs 0.996 af  
Outflow=17.65 cfs 0.996 af

**Reach 2R: Southeast**

Inflow=23.98 cfs 1.274 af  
Outflow=23.98 cfs 1.274 af

**Reach 3R: Total**

Inflow=41.39 cfs 2.270 af  
Outflow=41.39 cfs 2.270 af

**Total Runoff Area = 6.523 ac Runoff Volume = 2.270 af Average Runoff Depth = 4.18"**  
**100.00% Pervious = 6.523 ac 0.00% Impervious = 0.000 ac**

**Model\_2024-07-23\_Predev**

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MSE 24-hr 4 500-yr. Dane Rainfall=8.94"

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**Summary for Subcatchment 1-SX: On-Site**

Runoff = 17.65 cfs @ 12.15 hrs, Volume= 0.996 af, Depth= 4.18"  
 Routed to Reach 1R : Northeast

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-96.00 hrs, dt= 0.05 hrs  
 MSE 24-hr 4 500-yr. Dane Rainfall=8.94"

Area (ac)	CN	Description
2.862	61	>75% Grass cover, Good, HSG B
2.862		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.0	100	0.0548	0.24		<b>Sheet Flow,</b> Grass: Short n= 0.150 P2= 2.81"
0.8	170	0.0469	3.49		<b>Shallow Concentrated Flow,</b> Unpaved Kv= 16.1 fps
7.8	270	Total			

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**Summary for Subcatchment 2-SX: On-Site**

Runoff = 23.98 cfs @ 12.13 hrs, Volume= 1.274 af, Depth= 4.18"  
 Routed to Reach 2R : Southeast

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-96.00 hrs, dt= 0.05 hrs  
 MSE 24-hr 4 500-yr. Dane Rainfall=8.94"

Area (ac)	CN	Description
3.661	61	>75% Grass cover, Good, HSG B
3.661		100.00% Pervious Area

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

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**Summary for Reach 1R: Northeast**

Inflow Area = 2.862 ac, 0.00% Impervious, Inflow Depth = 4.18" for 500-yr. Dane event  
Inflow = 17.65 cfs @ 12.15 hrs, Volume= 0.996 af  
Outflow = 17.65 cfs @ 12.15 hrs, Volume= 0.996 af, Atten= 0%, Lag= 0.0 min  
Routed to Reach 3R : Total

Routing by Dyn-Stor-Ind method, Time Span= 0.00-96.00 hrs, dt= 0.05 hrs

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MSE 24-hr 4 500-yr. Dane Rainfall=8.94"

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**Summary for Reach 2R: Southeast**

Inflow Area = 3.661 ac, 0.00% Impervious, Inflow Depth = 4.18" for 500-yr. Dane event  
Inflow = 23.98 cfs @ 12.13 hrs, Volume= 1.274 af  
Outflow = 23.98 cfs @ 12.13 hrs, Volume= 1.274 af, Atten= 0%, Lag= 0.0 min  
Routed to Reach 3R : Total

Routing by Dyn-Stor-Ind method, Time Span= 0.00-96.00 hrs, dt= 0.05 hrs

**Summary for Reach 3R: Total**

Inflow Area = 6.523 ac, 0.00% Impervious, Inflow Depth = 4.18" for 500-yr. Dane event  
Inflow = 41.39 cfs @ 12.14 hrs, Volume= 2.270 af  
Outflow = 41.39 cfs @ 12.14 hrs, Volume= 2.270 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-96.00 hrs, dt= 0.05 hrs

**APPENDIX F**  
**POST-DEVELOPMENT HYDROLOGY**

**Model\_2024-07-23\_Postdev**

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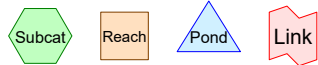
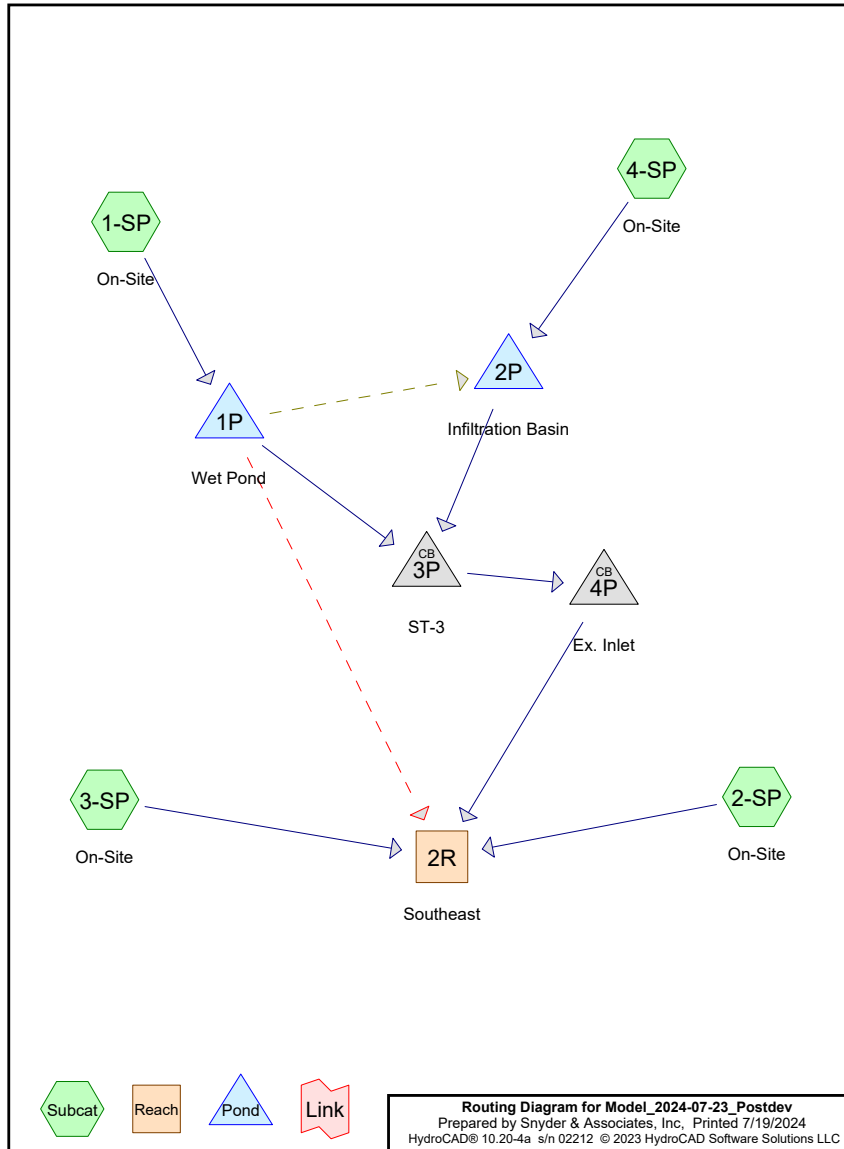
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**Rainfall Events Listing (selected events)**

Event#	Event Name	Storm Type	Curve	Mode	Duration (hours)	B/B	Depth (inches)	AMC
1	1-yr. Dane	MSE 24-hr	4	Default	24.00	1	2.49	2
2	2-yr. Dane	MSE 24-hr	4	Default	24.00	1	2.84	2
3	10-yr. Dane	MSE 24-hr	4	Default	24.00	1	4.09	2
4	100-yr. Dane	MSE 24-hr	4	Default	24.00	1	6.66	2
5	200-yr. Dane	MSE 24-hr	4	Default	24.00	1	7.53	2
6	500-yr. Dane	MSE 24-hr	4	Default	24.00	1	8.94	2



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**Area Listing (all nodes)**

Area (acres)	CN	Description (subcatchment-numbers)
2.782	74	>75% Grass cover, Good, HSG C (1-SP, 2-SP, 3-SP, 4-SP)
0.122	98	Driveway (1-SP, 4-SP)
0.119	100	Infiltration Basin Bottom (4-SP)
0.516	98	Parking Lot (1-SP)
2.524	98	Roof (1-SP)
0.210	98	Sidewalk (1-SP, 4-SP)
0.250	100	Wet Pond NWL (1-SP)
<b>6.523</b>	<b>88</b>	<b>TOTAL AREA</b>

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**Soil Listing (all nodes)**

Area (acres)	Soil Group	Subcatchment Numbers
0.000	HSG A	
0.000	HSG B	
2.782	HSG C	1-SP, 2-SP, 3-SP, 4-SP
0.000	HSG D	
3.741	Other	1-SP, 4-SP
<b>6.523</b>		<b>TOTAL AREA</b>

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**Ground Covers (all nodes)**

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchment Numbers
0.000	0.000	2.782	0.000	0.000	2.782	>75% Grass cover, Good	1-SP, 2-SP, 3-SP, 4-SP
0.000	0.000	0.000	0.000	0.122	0.122	Driveway	1-SP, 4-SP
0.000	0.000	0.000	0.000	0.119	0.119	Infiltration Basin Bottom	4-SP
0.000	0.000	0.000	0.000	0.516	0.516	Parking Lot	1-SP
0.000	0.000	0.000	0.000	2.524	2.524	Roof	1-SP
0.000	0.000	0.000	0.000	0.210	0.210	Sidewalk	1-SP, 4-SP
0.000	0.000	0.000	0.000	0.250	0.250	Wet Pond NWL	1-SP
<b>0.000</b>	<b>0.000</b>	<b>2.782</b>	<b>0.000</b>	<b>3.741</b>	<b>6.523</b>	<b>TOTAL AREA</b>	

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**Pipe Listing (all nodes)**

Line#	Node Number	In-Invert (feet)	Out-Invert (feet)	Length (feet)	Slope (ft/ft)	n	Width (inches)	Diam/Height (inches)	Inside-Fill (inches)	Node Name
1	1P	1,024.00	1,022.32	99.5	0.0169	0.013	0.0	12.0	0.0	
2	1P	1,025.00	1,024.00	26.0	0.0385	0.013	0.0	6.0	0.0	
3	2P	1,023.00	1,022.32	184.1	0.0037	0.013	0.0	12.0	0.0	
4	3P	1,022.32	1,018.10	45.7	0.0923	0.013	0.0	12.0	0.0	
5	4P	1,018.10	1,017.39	50.0	0.0142	0.013	0.0	12.0	0.0	

**Model\_2024-07-23\_Postdev**

MSE 24-hr 4 1-yr. Dane Rainfall=2.49"

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Time span=0.00-96.00 hrs, dt=0.030 hrs, 3201 points

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN

Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

**Subcatchment1-SP: On-Site**

Runoff Area=5.105 ac 68.44% Impervious Runoff Depth=1.60"  
Tc=6.0 min CN=91 Runoff=12.84 cfs 0.681 af

**Subcatchment2-SP: On-Site**

Runoff Area=0.087 ac 0.00% Impervious Runoff Depth=0.60"  
Tc=6.0 min CN=74 Runoff=0.08 cfs 0.004 af

**Subcatchment3-SP: On-Site**

Runoff Area=0.009 ac 0.00% Impervious Runoff Depth=0.60"  
Tc=6.0 min CN=74 Runoff=0.01 cfs 0.000 af

**Subcatchment4-SP: On-Site**

Runoff Area=1.322 ac 18.68% Impervious Runoff Depth=0.83"  
Tc=6.0 min CN=79 Runoff=1.74 cfs 0.092 af

**Reach 2R: Southeast**

Inflow=0.35 cfs 0.452 af  
Outflow=0.35 cfs 0.452 af

**Pond 1P: Wet Pond**

Peak Elev=1,026.45' Storage=17,392 cf Inflow=12.84 cfs 0.681 af

Primary=0.00 cfs 0.000 af Secondary=0.00 cfs 0.000 af Tertiary=0.82 cfs 0.676 af Outflow=0.82 cfs 0.676 af

**Pond 2P: Infiltration Basin**

Peak Elev=1,025.84' Storage=11,448 cf Inflow=2.35 cfs 0.768 af

Discarded=0.06 cfs 0.321 af Primary=0.34 cfs 0.447 af Outflow=0.41 cfs 0.768 af

**Pond 3P: ST-3**

Peak Elev=1,022.61' Inflow=0.34 cfs 0.447 af

12.0" Round Culvert n=0.013 L=45.7' S=0.0923 '/' Outflow=0.34 cfs 0.447 af

**Pond 4P: Ex. Inlet**

Peak Elev=1,018.39' Inflow=0.34 cfs 0.447 af

12.0" Round Culvert n=0.013 L=50.0' S=0.0142 '/' Outflow=0.34 cfs 0.447 af

**Total Runoff Area = 6.523 ac Runoff Volume = 0.778 af Average Runoff Depth = 1.43"**  
**42.65% Pervious = 2.782 ac 57.35% Impervious = 3.741 ac**

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MSE 24-hr 4 1-yr. Dane Rainfall=2.49"

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**Summary for Subcatchment 1-SP: On-Site**

Runoff = 12.84 cfs @ 12.13 hrs, Volume= 0.681 af, Depth= 1.60"  
Routed to Pond 1P : Wet Pond

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-96.00 hrs, dt= 0.030 hrs  
MSE 24-hr 4 1-yr. Dane Rainfall=2.49"

Area (ac)	CN	Description
* 2.524	98	Roof
* 0.516	98	Parking Lot
* 0.080	98	Driveway
* 0.124	98	Sidewalk
* 0.250	100	Wet Pond NWL
1.611	74	>75% Grass cover, Good, HSG C
5.105	91	Weighted Average
1.611		31.56% Pervious Area
3.494		68.44% Impervious Area

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

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MSE 24-hr 4 1-yr. Dane Rainfall=2.49"

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**Summary for Subcatchment 2-SP: On-Site**

Runoff = 0.08 cfs @ 12.14 hrs, Volume= 0.004 af, Depth= 0.60"  
Routed to Reach 2R : Southeast

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-96.00 hrs, dt= 0.030 hrs  
MSE 24-hr 4 1-yr. Dane Rainfall=2.49"

Area (ac)	CN	Description
0.087	74	>75% Grass cover, Good, HSG C
0.087		100.00% Pervious Area

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

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MSE 24-hr 4 1-yr. Dane Rainfall=2.49"

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**Summary for Subcatchment 3-SP: On-Site**

Runoff = 0.01 cfs @ 12.14 hrs, Volume= 0.000 af, Depth= 0.60"  
Routed to Reach 2R : Southeast

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-96.00 hrs, dt= 0.030 hrs  
MSE 24-hr 4 1-yr. Dane Rainfall=2.49"

Area (ac)	CN	Description
0.009	74	>75% Grass cover, Good, HSG C
0.009		100.00% Pervious Area

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

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MSE 24-hr 4 1-yr. Dane Rainfall=2.49"

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**Summary for Subcatchment 4-SP: On-Site**

Runoff = 1.74 cfs @ 12.14 hrs, Volume= 0.092 af, Depth= 0.83"  
 Routed to Pond 2P : Infiltration Basin

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-96.00 hrs, dt= 0.030 hrs  
 MSE 24-hr 4 1-yr. Dane Rainfall=2.49"

Area (ac)	CN	Description
* 0.042	98	Driveway
* 0.086	98	Sidewalk
* 0.119	100	Infiltration Basin Bottom
1.075	74	>75% Grass cover, Good, HSG C
1.322	79	Weighted Average
1.075		81.32% Pervious Area
0.247		18.68% Impervious Area

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

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MSE 24-hr 4 1-yr. Dane Rainfall=2.49"

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**Summary for Reach 2R: Southeast**

Inflow Area = 6.523 ac, 57.35% Impervious, Inflow Depth = 0.83" for 1-yr. Dane event  
 Inflow = 0.35 cfs @ 18.40 hrs, Volume= 0.452 af  
 Outflow = 0.35 cfs @ 18.40 hrs, Volume= 0.452 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-96.00 hrs, dt= 0.030 hrs

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MSE 24-hr 4 1-yr. Dane Rainfall=2.49"

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**Summary for Pond 1P: Wet Pond**

Inflow Area = 5.105 ac, 68.44% Impervious, Inflow Depth = 1.60" for 1-yr. Dane event  
 Inflow = 12.84 cfs @ 12.13 hrs, Volume= 0.681 af  
 Outflow = 0.82 cfs @ 13.37 hrs, Volume= 0.676 af, Atten= 94%, Lag= 74.4 min  
 Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af  
 Routed to Pond 3P : ST-3  
 Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af  
 Routed to Reach 2R : Southeast  
 Tertiary = 0.82 cfs @ 13.37 hrs, Volume= 0.676 af  
 Routed to Pond 2P : Infiltration Basin

Routing by Dyn-Stor-Ind method, Time Span= 0.00-96.00 hrs, dt= 0.030 hrs  
 Peak Elev= 1,026.45' @ 13.37 hrs Surf.Area= 13,158 sf Storage= 17,392 cf

Plug-Flow detention time= 498.7 min calculated for 0.676 af (99% of inflow)  
 Center-of-Mass det. time= 495.4 min ( 1,296.9 - 801.5 )

Volume	Invert	Avail.Storage	Storage Description		
#1	1,025.00'	75,504 cf	<b>Custom Stage Data (Irregular)</b> Listed below (Recalc)		
Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
1,025.00	10,800	380.0	0	0	10,800
1,026.00	12,400	410.0	11,591	11,591	12,727
1,027.00	14,100	430.0	13,241	24,832	14,128
1,028.00	15,900	460.0	14,991	39,823	16,299
1,029.00	17,800	480.0	16,841	56,664	17,867
1,030.00	19,900	510.0	18,840	75,504	20,282

Device	Routing	Invert	Outlet Devices
#1	Primary	1,024.00'	<b>12.0" Round 12" RCP</b> L= 99.5' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 1,024.00' / 1,022.32' S= 0.0169 '/ Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf
#2	Tertiary	1,025.00'	<b>6.0" Round 6" PVC</b> L= 26.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 1,025.00' / 1,024.00' S= 0.0385 '/ Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.20 sf
#3	Device 1	1,026.60'	<b>48.0" Horiz. 48" Standpipe</b> C= 0.600 Limited to weir flow at low heads
#4	Tertiary	1,028.50'	<b>50.0' long x 12.0' breadth Broad-Crested Rectangular Weir</b> Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.57 2.62 2.70 2.67 2.66 2.67 2.66 2.64
#5	Secondary	1,029.00'	<b>50.0' long x 15.0' breadth Broad-Crested Rectangular Weir</b> Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

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MSE 24-hr 4 1-yr. Dane Rainfall=2.49"

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**Primary OutFlow** Max=0.00 cfs @ 0.00 hrs HW=1,025.00' TW=1,022.32' (Dynamic Tailwater)  
 ↳ **1=12" RCP** (Passes 0.00 cfs of 2.67 cfs potential flow)  
 ↳ **3=48" Standpipe** ( Controls 0.00 cfs)

**Secondary OutFlow** Max=0.00 cfs @ 0.00 hrs HW=1,025.00' TW=0.00' (Dynamic Tailwater)  
 ↳ **5=Broad-Crested Rectangular Weir** ( Controls 0.00 cfs)

**Tertiary OutFlow** Max=0.82 cfs @ 13.37 hrs HW=1,026.45' TW=1,025.09' (Dynamic Tailwater)  
 ↳ **2=6" PVC** (Inlet Controls 0.82 cfs @ 4.17 fps)  
 ↳ **4=Broad-Crested Rectangular Weir** ( Controls 0.00 cfs)

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MSE 24-hr 4 1-yr. Dane Rainfall=2.49"

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**Summary for Pond 2P: Infiltration Basin**

Inflow Area = 1.322 ac, 18.68% Impervious, Inflow Depth > 6.97" for 1-yr. Dane event  
 Inflow = 2.35 cfs @ 12.14 hrs, Volume= 0.768 af  
 Outflow = 0.41 cfs @ 18.45 hrs, Volume= 0.768 af, Atten= 83%, Lag= 378.8 min  
 Discarded = 0.06 cfs @ 11.85 hrs, Volume= 0.321 af  
 Primary = 0.34 cfs @ 18.45 hrs, Volume= 0.447 af  
 Routed to Pond 3P : ST-3

Routing by Dyn-Stor-Ind method, Time Span= 0.00-96.00 hrs, dt= 0.030 hrs  
 Peak Elev= 1,025.84' @ 18.45 hrs Surf.Area= 7,301 sf Storage= 11,448 cf

Plug-Flow detention time= 640.8 min calculated for 0.768 af (100% of inflow)  
 Center-of-Mass det. time= 640.5 min ( 1,883.2 - 1,242.7 )

Volume	Invert	Avail.Storage	Storage Description		
#1	1,024.00'	53,747 cf	<b>Custom Stage Data (Irregular)</b> Listed below (Recalc)		
Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
1,024.00	5,200	260.0	0	0	5,200
1,025.00	6,300	290.0	5,741	5,741	6,542
1,026.00	7,500	310.0	6,891	12,632	7,542
1,027.00	8,800	340.0	8,141	20,774	9,128
1,028.00	10,200	360.0	9,491	30,265	10,296
1,029.00	11,700	390.0	10,941	41,207	12,125
1,030.00	13,400	410.0	12,540	53,747	13,460

Device	Routing	Invert	Outlet Devices
#1	Discarded	1,024.00'	<b>0.500 in/hr Exfiltration over Surface area from 1,023.99' - 1,024.01'</b> Excluded Surface area = 0 sf Phase-In= 0.01'
#2	Primary	1,023.00'	<b>12.0" Round 12" RCP</b> L= 184.1' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 1,023.00' / 1,022.32' S= 0.0037 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf
#3	Device 2	1,025.00'	<b>4.0" Vert. 4" Orifice</b> C= 0.600 Limited to weir flow at low heads
#4	Device 2	1,028.75'	<b>48.0" Horiz. 48" Standpipe</b> C= 0.600 Limited to weir flow at low heads

**Discarded OutFlow** Max=0.06 cfs @ 11.85 hrs HW=1,024.06' (Free Discharge)  
 ↳1=Exfiltration (Exfiltration Controls 0.06 cfs)

**Primary OutFlow** Max=0.34 cfs @ 18.45 hrs HW=1,025.84' TW=1,022.61' (Dynamic Tailwater)  
 ↳2=12" RCP (Passes 0.34 cfs of 3.71 cfs potential flow)  
 ↳3=4" Orifice (Orifice Controls 0.34 cfs @ 3.95 fps)  
 ↳4=48" Standpipe ( Controls 0.00 cfs)

**Model\_2024-07-23\_Postdev**

MSE 24-hr 4 1-yr. Dane Rainfall=2.49"

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**Summary for Pond 3P: ST-3**

Inflow Area = 6.427 ac, 58.21% Impervious, Inflow Depth = 0.83" for 1-yr. Dane event  
 Inflow = 0.34 cfs @ 18.45 hrs, Volume= 0.447 af  
 Outflow = 0.34 cfs @ 18.45 hrs, Volume= 0.447 af, Atten= 0%, Lag= 0.0 min  
 Primary = 0.34 cfs @ 18.45 hrs, Volume= 0.447 af  
 Routed to Pond 4P : Ex. Inlet

Routing by Dyn-Stor-Ind method, Time Span= 0.00-96.00 hrs, dt= 0.030 hrs  
 Peak Elev= 1,022.61' @ 18.45 hrs  
 Flood Elev= 1,030.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	1,022.32'	<b>12.0" Round 12" RCP</b> L= 45.7' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 1,022.32' / 1,018.10' S= 0.0923 '/' Cc= 0.900 n= 0.013 Concrete pipe, bends & connections, Flow Area= 0.79 sf

**Primary OutFlow** Max=0.34 cfs @ 18.45 hrs HW=1,022.61' TW=1,018.39' (Dynamic Tailwater)  
 ↳1=12" RCP (Inlet Controls 0.34 cfs @ 1.83 fps)

**Model\_2024-07-23\_Postdev**

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MSE 24-hr 4 1-yr. Dane Rainfall=2.49"

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**Summary for Pond 4P: Ex. Inlet**

Inflow Area = 6.427 ac, 58.21% Impervious, Inflow Depth = 0.83" for 1-yr. Dane event  
 Inflow = 0.34 cfs @ 18.45 hrs, Volume= 0.447 af  
 Outflow = 0.34 cfs @ 18.45 hrs, Volume= 0.447 af, Atten= 0%, Lag= 0.0 min  
 Primary = 0.34 cfs @ 18.45 hrs, Volume= 0.447 af  
 Routed to Reach 2R : Southeast

Routing by Dyn-Stor-Ind method, Time Span= 0.00-96.00 hrs, dt= 0.030 hrs  
 Peak Elev= 1,018.39' @ 18.45 hrs  
 Flood Elev= 1,021.81'

Device	Routing	Invert	Outlet Devices
#1	Primary	1,018.10'	<b>12.0" Round 12" RCP</b> L= 50.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 1,018.10' / 1,017.39' S= 0.0142 '/' Cc= 0.900 n= 0.013 Concrete pipe, bends & connections, Flow Area= 0.79 sf

**Primary OutFlow** Max=0.34 cfs @ 18.45 hrs HW=1,018.39' TW=0.00' (Dynamic Tailwater)  
 ↳ **12" RCP** (Inlet Controls 0.34 cfs @ 1.83 fps)

**Model\_2024-07-23\_Postdev**

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MSE 24-hr 4 2-yr. Dane Rainfall=2.84"

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Time span=0.00-96.00 hrs, dt=0.030 hrs, 3201 points  
 Runoff by SCS TR-20 method, UH=SCS, Weighted-CN  
 Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

**Subcatchment1-SP: On-Site** Runoff Area=5.105 ac 68.44% Impervious Runoff Depth=1.92"  
 Tc=6.0 min CN=91 Runoff=15.28 cfs 0.818 af

**Subcatchment2-SP: On-Site** Runoff Area=0.087 ac 0.00% Impervious Runoff Depth=0.81"  
 Tc=6.0 min CN=74 Runoff=0.11 cfs 0.006 af

**Subcatchment3-SP: On-Site** Runoff Area=0.009 ac 0.00% Impervious Runoff Depth=0.81"  
 Tc=6.0 min CN=74 Runoff=0.01 cfs 0.001 af

**Subcatchment4-SP: On-Site** Runoff Area=1.322 ac 18.68% Impervious Runoff Depth=1.07"  
 Tc=6.0 min CN=79 Runoff=2.27 cfs 0.118 af

**Reach 2R: Southeast** Inflow=0.60 cfs 0.602 af  
 Outflow=0.60 cfs 0.602 af

**Pond 1P: Wet Pond** Peak Elev=1,026.66' Storage=20,123 cf Inflow=15.28 cfs 0.818 af  
 Primary=0.59 cfs 0.040 af Secondary=0.00 cfs 0.000 af Tertiary=0.89 cfs 0.773 af Outflow=1.47 cfs 0.813 af

**Pond 2P: Infiltration Basin** Peak Elev=1,025.99' Storage=12,592 cf Inflow=2.96 cfs 0.891 af  
 Discarded=0.06 cfs 0.335 af Primary=0.38 cfs 0.556 af Outflow=0.44 cfs 0.891 af

**Pond 3P: ST-3** Peak Elev=1,022.70' Inflow=0.59 cfs 0.596 af  
 12.0" Round Culvert n=0.013 L=45.7' S=0.0923 '/' Outflow=0.59 cfs 0.596 af

**Pond 4P: Ex. Inlet** Peak Elev=1,018.48' Inflow=0.59 cfs 0.596 af  
 12.0" Round Culvert n=0.013 L=50.0' S=0.0142 '/' Outflow=0.59 cfs 0.596 af

**Total Runoff Area = 6.523 ac Runoff Volume = 0.943 af Average Runoff Depth = 1.73"**  
**42.65% Pervious = 2.782 ac 57.35% Impervious = 3.741 ac**

**Model\_2024-07-23\_Postdev**

MSE 24-hr 4 2-yr. Dane Rainfall=2.84"

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**Summary for Subcatchment 1-SP: On-Site**

Runoff = 15.28 cfs @ 12.13 hrs, Volume= 0.818 af, Depth= 1.92"  
Routed to Pond 1P : Wet Pond

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-96.00 hrs, dt= 0.030 hrs  
MSE 24-hr 4 2-yr. Dane Rainfall=2.84"

Area (ac)	CN	Description
* 2.524	98	Roof
* 0.516	98	Parking Lot
* 0.080	98	Driveway
* 0.124	98	Sidewalk
* 0.250	100	Wet Pond NWL
1.611	74	>75% Grass cover, Good, HSG C
5.105	91	Weighted Average
1.611		31.56% Pervious Area
3.494		68.44% Impervious Area

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

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MSE 24-hr 4 2-yr. Dane Rainfall=2.84"

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**Summary for Subcatchment 2-SP: On-Site**

Runoff = 0.11 cfs @ 12.14 hrs, Volume= 0.006 af, Depth= 0.81"  
Routed to Reach 2R : Southeast

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-96.00 hrs, dt= 0.030 hrs  
MSE 24-hr 4 2-yr. Dane Rainfall=2.84"

Area (ac)	CN	Description
0.087	74	>75% Grass cover, Good, HSG C
0.087		100.00% Pervious Area

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

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MSE 24-hr 4 2-yr. Dane Rainfall=2.84"

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**Summary for Subcatchment 3-SP: On-Site**

Runoff = 0.01 cfs @ 12.14 hrs, Volume= 0.001 af, Depth= 0.81"  
 Routed to Reach 2R : Southeast

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-96.00 hrs, dt= 0.030 hrs  
 MSE 24-hr 4 2-yr. Dane Rainfall=2.84"

Area (ac)	CN	Description
0.009	74	>75% Grass cover, Good, HSG C
0.009		100.00% Pervious Area

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

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MSE 24-hr 4 2-yr. Dane Rainfall=2.84"

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**Summary for Subcatchment 4-SP: On-Site**

Runoff = 2.27 cfs @ 12.14 hrs, Volume= 0.118 af, Depth= 1.07"  
 Routed to Pond 2P : Infiltration Basin

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-96.00 hrs, dt= 0.030 hrs  
 MSE 24-hr 4 2-yr. Dane Rainfall=2.84"

Area (ac)	CN	Description
* 0.042	98	Driveway
* 0.086	98	Sidewalk
* 0.119	100	Infiltration Basin Bottom
1.075	74	>75% Grass cover, Good, HSG C
1.322	79	Weighted Average
1.075		81.32% Pervious Area
0.247		18.68% Impervious Area

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

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MSE 24-hr 4 2-yr. Dane Rainfall=2.84"

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**Summary for Reach 2R: Southeast**

Inflow Area = 6.523 ac, 57.35% Impervious, Inflow Depth = 1.11" for 2-yr. Dane event  
Inflow = 0.60 cfs @ 12.79 hrs, Volume= 0.602 af  
Outflow = 0.60 cfs @ 12.79 hrs, Volume= 0.602 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-96.00 hrs, dt= 0.030 hrs

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MSE 24-hr 4 2-yr. Dane Rainfall=2.84"

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**Summary for Pond 1P: Wet Pond**

Inflow Area = 5.105 ac, 68.44% Impervious, Inflow Depth = 1.92" for 2-yr. Dane event  
Inflow = 15.28 cfs @ 12.13 hrs, Volume= 0.818 af  
Outflow = 1.47 cfs @ 12.80 hrs, Volume= 0.813 af, Atten= 90%, Lag= 40.0 min  
Primary = 0.59 cfs @ 12.80 hrs, Volume= 0.040 af  
Routed to Pond 3P : ST-3  
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af  
Routed to Reach 2R : Southeast  
Tertiary = 0.89 cfs @ 12.80 hrs, Volume= 0.773 af  
Routed to Pond 2P : Infiltration Basin

Routing by Dyn-Stor-Ind method, Time Span= 0.00-96.00 hrs, dt= 0.030 hrs  
Peak Elev= 1,026.66' @ 12.80 hrs Surf.Area= 13,508 sf Storage= 20,123 cf

Plug-Flow detention time= 512.3 min calculated for 0.813 af (99% of inflow)  
Center-of-Mass det. time= 508.3 min ( 1,305.5 - 797.2 )

Volume	Invert	Avail.Storage	Storage Description
#1	1,025.00'	75,504 cf	Custom Stage Data (Irregular) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
1,025.00	10,800	380.0	0	0	10,800
1,026.00	12,400	410.0	11,591	11,591	12,727
1,027.00	14,100	430.0	13,241	24,832	14,128
1,028.00	15,900	460.0	14,991	39,823	16,299
1,029.00	17,800	480.0	16,841	56,664	17,867
1,030.00	19,900	510.0	18,840	75,504	20,282

Device	Routing	Invert	Outlet Devices
#1	Primary	1,024.00'	<b>12.0" Round 12" RCP</b> L= 99.5' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 1,024.00' / 1,022.32' S= 0.0169 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf
#2	Tertiary	1,025.00'	<b>6.0" Round 6" PVC</b> L= 26.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 1,025.00' / 1,024.00' S= 0.0385 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.20 sf
#3	Device 1	1,026.60'	<b>48.0" Horiz. 48" Standpipe</b> C= 0.600 Limited to weir flow at low heads
#4	Tertiary	1,028.50'	<b>50.0' long x 12.0' breadth Broad-Crested Rectangular Weir</b> Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.57 2.62 2.70 2.67 2.66 2.67 2.66 2.64
#5	Secondary	1,029.00'	<b>50.0' long x 15.0' breadth Broad-Crested Rectangular Weir</b> Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

**Model\_2024-07-23\_Postdev**

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MSE 24-hr 4 2-yr. Dane Rainfall=2.84"

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**Primary OutFlow** Max=0.59 cfs @ 12.80 hrs HW=1,026.66' TW=1,022.70' (Dynamic Tailwater)

- ↳ 1=12" RCP (Passes 0.59 cfs of 5.36 cfs potential flow)
- ↳ 3=48" Standpipe (Weir Controls 0.59 cfs @ 0.79 fps)

**Secondary OutFlow** Max=0.00 cfs @ 0.00 hrs HW=1,025.00' TW=0.00' (Dynamic Tailwater)

- ↳ 5=Broad-Crested Rectangular Weir ( Controls 0.00 cfs)

**Tertiary OutFlow** Max=0.89 cfs @ 12.80 hrs HW=1,026.66' TW=1,024.98' (Dynamic Tailwater)

- ↳ 2=6" PVC (Inlet Controls 0.89 cfs @ 4.51 fps)
- ↳ 4=Broad-Crested Rectangular Weir ( Controls 0.00 cfs)

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MSE 24-hr 4 2-yr. Dane Rainfall=2.84"

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**Summary for Pond 2P: Infiltration Basin**

Inflow Area = 1.322 ac, 18.68% Impervious, Inflow Depth > 8.09" for 2-yr. Dane event  
 Inflow = 2.96 cfs @ 12.14 hrs, Volume= 0.891 af  
 Outflow = 0.44 cfs @ 18.66 hrs, Volume= 0.891 af, Atten= 85%, Lag= 391.4 min  
 Discarded = 0.06 cfs @ 11.64 hrs, Volume= 0.335 af  
 Primary = 0.38 cfs @ 18.66 hrs, Volume= 0.556 af  
 Routed to Pond 3P : ST-3

Routing by Dyn-Stor-Ind method, Time Span= 0.00-96.00 hrs, dt= 0.030 hrs  
 Peak Elev= 1,025.99' @ 18.66 hrs Surf.Area= 7,493 sf Storage= 12,592 cf

Plug-Flow detention time= 615.6 min calculated for 0.891 af (100% of inflow)  
 Center-of-Mass det. time= 615.3 min ( 1,881.8 - 1,266.5 )

Volume	Invert	Avail.Storage	Storage Description		
#1	1,024.00'	53,747 cf	<b>Custom Stage Data (Irregular)</b> Listed below (Recalc)		
Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
1,024.00	5,200	260.0	0	0	5,200
1,025.00	6,300	290.0	5,741	5,741	6,542
1,026.00	7,500	310.0	6,891	12,632	7,542
1,027.00	8,800	340.0	8,141	20,774	9,128
1,028.00	10,200	360.0	9,491	30,265	10,296
1,029.00	11,700	390.0	10,941	41,207	12,125
1,030.00	13,400	410.0	12,540	53,747	13,460

Device	Routing	Invert	Outlet Devices
#1	Discarded	1,024.00'	<b>0.500 in/hr Exfiltration over Surface area from 1,023.99' - 1,024.01'</b> Excluded Surface area = 0 sf Phase-In= 0.01'
#2	Primary	1,023.00'	<b>12.0" Round 12" RCP</b> L= 184.1' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 1,023.00' / 1,022.32' S= 0.0037 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf
#3	Device 2	1,025.00'	<b>4.0" Vert. 4" Orifice</b> C= 0.600 Limited to weir flow at low heads
#4	Device 2	1,028.75'	<b>48.0" Horiz. 48" Standpipe</b> C= 0.600 Limited to weir flow at low heads

**Discarded OutFlow** Max=0.06 cfs @ 11.64 hrs HW=1,024.06' (Free Discharge)

- ↳ 1=Exfiltration (Exfiltration Controls 0.06 cfs)

**Primary OutFlow** Max=0.38 cfs @ 18.66 hrs HW=1,025.99' TW=1,022.63' (Dynamic Tailwater)

- ↳ 2=12" RCP (Passes 0.38 cfs of 3.82 cfs potential flow)
- ↳ 3=4" Orifice (Orifice Controls 0.38 cfs @ 4.38 fps)
- ↳ 4=48" Standpipe ( Controls 0.00 cfs)

**Model\_2024-07-23\_Postdev**

MSE 24-hr 4 2-yr. Dane Rainfall=2.84"

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**Summary for Pond 3P: ST-3**

Inflow Area = 6.427 ac, 58.21% Impervious, Inflow Depth = 1.11" for 2-yr. Dane event  
Inflow = 0.59 cfs @ 12.80 hrs, Volume= 0.596 af  
Outflow = 0.59 cfs @ 12.80 hrs, Volume= 0.596 af, Atten= 0%, Lag= 0.0 min  
Primary = 0.59 cfs @ 12.80 hrs, Volume= 0.596 af  
Routed to Pond 4P : Ex. Inlet

Routing by Dyn-Stor-Ind method, Time Span= 0.00-96.00 hrs, dt= 0.030 hrs  
Peak Elev= 1,022.70' @ 12.80 hrs  
Flood Elev= 1,030.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	1,022.32'	<b>12.0" Round 12" RCP</b> L= 45.7' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 1,022.32' / 1,018.10' S= 0.0923 '/' Cc= 0.900 n= 0.013 Concrete pipe, bends & connections, Flow Area= 0.79 sf

**Primary OutFlow** Max=0.59 cfs @ 12.80 hrs HW=1,022.70' TW=1,018.48' (Dynamic Tailwater)  
↑**1=12" RCP** (Inlet Controls 0.59 cfs @ 2.11 fps)

**Model\_2024-07-23\_Postdev**

MSE 24-hr 4 2-yr. Dane Rainfall=2.84"

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**Summary for Pond 4P: Ex. Inlet**

Inflow Area = 6.427 ac, 58.21% Impervious, Inflow Depth = 1.11" for 2-yr. Dane event  
Inflow = 0.59 cfs @ 12.80 hrs, Volume= 0.596 af  
Outflow = 0.59 cfs @ 12.80 hrs, Volume= 0.596 af, Atten= 0%, Lag= 0.0 min  
Primary = 0.59 cfs @ 12.80 hrs, Volume= 0.596 af  
Routed to Reach 2R : Southeast

Routing by Dyn-Stor-Ind method, Time Span= 0.00-96.00 hrs, dt= 0.030 hrs  
Peak Elev= 1,018.48' @ 12.80 hrs  
Flood Elev= 1,021.81'

Device	Routing	Invert	Outlet Devices
#1	Primary	1,018.10'	<b>12.0" Round 12" RCP</b> L= 50.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 1,018.10' / 1,017.39' S= 0.0142 '/' Cc= 0.900 n= 0.013 Concrete pipe, bends & connections, Flow Area= 0.79 sf

**Primary OutFlow** Max=0.59 cfs @ 12.80 hrs HW=1,018.48' TW=0.00' (Dynamic Tailwater)  
↑**1=12" RCP** (Inlet Controls 0.59 cfs @ 2.11 fps)

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MSE 24-hr 4 10-yr. Dane Rainfall=4.09"

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Time span=0.00-96.00 hrs, dt=0.030 hrs, 3201 points

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN

Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

**Subcatchment1-SP: On-Site**

Runoff Area=5.105 ac 68.44% Impervious Runoff Depth=3.10"  
Tc=6.0 min CN=91 Runoff=24.02 cfs 1.320 af

**Subcatchment2-SP: On-Site**

Runoff Area=0.087 ac 0.00% Impervious Runoff Depth=1.66"  
Tc=6.0 min CN=74 Runoff=0.23 cfs 0.012 af

**Subcatchment3-SP: On-Site**

Runoff Area=0.009 ac 0.00% Impervious Runoff Depth=1.66"  
Tc=6.0 min CN=74 Runoff=0.02 cfs 0.001 af

**Subcatchment4-SP: On-Site**

Runoff Area=1.322 ac 18.68% Impervious Runoff Depth=2.04"  
Tc=6.0 min CN=79 Runoff=4.31 cfs 0.224 af

**Reach 2R: Southeast**

Inflow=5.13 cfs 1.193 af  
Outflow=5.13 cfs 1.193 af

**Pond 1P: Wet Pond**

Peak Elev=1,027.14' Storage=26,892 cf Inflow=24.02 cfs 1.320 af

Primary=4.88 cfs 0.434 af Secondary=0.00 cfs 0.000 af Tertiary=1.03 cfs 0.881 af Outflow=5.85 cfs 1.315 af

**Pond 2P: Infiltration Basin**

Peak Elev=1,026.22' Storage=14,308 cf Inflow=5.23 cfs 1.105 af

Discarded=0.06 cfs 0.359 af Primary=0.43 cfs 0.746 af Outflow=0.49 cfs 1.105 af

**Pond 3P: ST-3**

Peak Elev=1,024.52' Inflow=4.93 cfs 1.180 af

12.0" Round Culvert n=0.013 L=45.7' S=0.0923 '/' Outflow=4.93 cfs 1.180 af

**Pond 4P: Ex. Inlet**

Peak Elev=1,020.30' Inflow=4.93 cfs 1.180 af

12.0" Round Culvert n=0.013 L=50.0' S=0.0142 '/' Outflow=4.93 cfs 1.180 af

**Total Runoff Area = 6.523 ac Runoff Volume = 1.558 af Average Runoff Depth = 2.87"**  
**42.65% Pervious = 2.782 ac 57.35% Impervious = 3.741 ac**

**Model\_2024-07-23\_Postdev**

MSE 24-hr 4 10-yr. Dane Rainfall=4.09"

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**Summary for Subcatchment 1-SP: On-Site**

Runoff = 24.02 cfs @ 12.13 hrs, Volume= 1.320 af, Depth= 3.10"  
Routed to Pond 1P : Wet Pond

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-96.00 hrs, dt= 0.030 hrs  
MSE 24-hr 4 10-yr. Dane Rainfall=4.09"

Area (ac)	CN	Description
* 2.524	98	Roof
* 0.516	98	Parking Lot
* 0.080	98	Driveway
* 0.124	98	Sidewalk
* 0.250	100	Wet Pond NWL
1.611	74	>75% Grass cover, Good, HSG C
5.105	91	Weighted Average
1.611		31.56% Pervious Area
3.494		68.44% Impervious Area

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

**Model\_2024-07-23\_Postdev**

MSE 24-hr 4 10-yr. Dane Rainfall=4.09"

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**Summary for Subcatchment 2-SP: On-Site**

Runoff = 0.23 cfs @ 12.13 hrs, Volume= 0.012 af, Depth= 1.66"  
 Routed to Reach 2R : Southeast

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-96.00 hrs, dt= 0.030 hrs  
 MSE 24-hr 4 10-yr. Dane Rainfall=4.09"

Area (ac)	CN	Description
0.087	74	>75% Grass cover, Good, HSG C
0.087		100.00% Pervious Area

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

**Model\_2024-07-23\_Postdev**

MSE 24-hr 4 10-yr. Dane Rainfall=4.09"

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**Summary for Subcatchment 3-SP: On-Site**

Runoff = 0.02 cfs @ 12.13 hrs, Volume= 0.001 af, Depth= 1.66"  
 Routed to Reach 2R : Southeast

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-96.00 hrs, dt= 0.030 hrs  
 MSE 24-hr 4 10-yr. Dane Rainfall=4.09"

Area (ac)	CN	Description
0.009	74	>75% Grass cover, Good, HSG C
0.009		100.00% Pervious Area

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

**Model\_2024-07-23\_Postdev**

MSE 24-hr 4 10-yr. Dane Rainfall=4.09"

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**Summary for Subcatchment 4-SP: On-Site**

Runoff = 4.31 cfs @ 12.13 hrs, Volume= 0.224 af, Depth= 2.04"  
 Routed to Pond 2P : Infiltration Basin

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-96.00 hrs, dt= 0.030 hrs  
 MSE 24-hr 4 10-yr. Dane Rainfall=4.09"

Area (ac)	CN	Description
* 0.042	98	Driveway
* 0.086	98	Sidewalk
* 0.119	100	Infiltration Basin Bottom
1.075	74	>75% Grass cover, Good, HSG C
1.322	79	Weighted Average
1.075		81.32% Pervious Area
0.247		18.68% Impervious Area

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

**Model\_2024-07-23\_Postdev**

MSE 24-hr 4 10-yr. Dane Rainfall=4.09"

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**Summary for Reach 2R: Southeast**

Inflow Area = 6.523 ac, 57.35% Impervious, Inflow Depth = 2.19" for 10-yr. Dane event  
 Inflow = 5.13 cfs @ 12.15 hrs, Volume= 1.193 af  
 Outflow = 5.13 cfs @ 12.15 hrs, Volume= 1.193 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-96.00 hrs, dt= 0.030 hrs

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MSE 24-hr 4 10-yr. Dane Rainfall=4.09"

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**Summary for Pond 1P: Wet Pond**

Inflow Area = 5.105 ac, 68.44% Impervious, Inflow Depth = 3.10" for 10-yr. Dane event  
 Inflow = 24.02 cfs @ 12.13 hrs, Volume= 1.320 af  
 Outflow = 5.85 cfs @ 12.22 hrs, Volume= 1.315 af, Atten= 76%, Lag= 5.3 min  
 Primary = 4.88 cfs @ 12.15 hrs, Volume= 0.434 af  
 Routed to Pond 3P : ST-3  
 Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af  
 Routed to Reach 2R : Southeast  
 Tertiary = 1.03 cfs @ 12.33 hrs, Volume= 0.881 af  
 Routed to Pond 2P : Infiltration Basin

Routing by Dyn-Stor-Ind method, Time Span= 0.00-96.00 hrs, dt= 0.030 hrs  
 Peak Elev= 1,027.14' @ 12.37 hrs Surf.Area= 14,354 sf Storage= 26,892 cf

Plug-Flow detention time= 407.7 min calculated for 1.314 af (100% of inflow)  
 Center-of-Mass det. time= 406.2 min ( 1,192.2 - 786.0 )

Volume	Invert	Avail.Storage	Storage Description		
#1	1,025.00'	75,504 cf	<b>Custom Stage Data (Irregular)</b> Listed below (Recalc)		
Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
1,025.00	10,800	380.0	0	0	10,800
1,026.00	12,400	410.0	11,591	11,591	12,727
1,027.00	14,100	430.0	13,241	24,832	14,128
1,028.00	15,900	460.0	14,991	39,823	16,299
1,029.00	17,800	480.0	16,841	56,664	17,867
1,030.00	19,900	510.0	18,840	75,504	20,282

Device	Routing	Invert	Outlet Devices
#1	Primary	1,024.00'	<b>12.0" Round 12" RCP</b> L= 99.5' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 1,024.00' / 1,022.32' S= 0.0169 '/ Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf
#2	Tertiary	1,025.00'	<b>6.0" Round 6" PVC</b> L= 26.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 1,025.00' / 1,024.00' S= 0.0385 '/ Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.20 sf
#3	Device 1	1,026.60'	<b>48.0" Horiz. 48" Standpipe</b> C= 0.600 Limited to weir flow at low heads
#4	Tertiary	1,028.50'	<b>50.0' long x 12.0' breadth Broad-Crested Rectangular Weir</b> Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.57 2.62 2.70 2.67 2.66 2.67 2.66 2.64
#5	Secondary	1,029.00'	<b>50.0' long x 15.0' breadth Broad-Crested Rectangular Weir</b> Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

**Model\_2024-07-23\_Postdev**

MSE 24-hr 4 10-yr. Dane Rainfall=4.09"

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**Primary OutFlow** Max=4.50 cfs @ 12.15 hrs HW=1,026.84' TW=1,024.48' (Dynamic Tailwater)  
 ↳ **1=12" RCP** (Outlet Controls 4.50 cfs @ 5.73 fps)  
 ↳ **3=48" Standpipe** (Passes 4.50 cfs of 4.88 cfs potential flow)

**Secondary OutFlow** Max=0.00 cfs @ 0.00 hrs HW=1,025.00' TW=0.00' (Dynamic Tailwater)  
 ↳ **5=Broad-Crested Rectangular Weir** ( Controls 0.00 cfs)

**Tertiary OutFlow** Max=1.02 cfs @ 12.33 hrs HW=1,027.14' TW=1,025.26' (Dynamic Tailwater)  
 ↳ **2=6" PVC** (Inlet Controls 1.02 cfs @ 5.21 fps)  
 ↳ **4=Broad-Crested Rectangular Weir** ( Controls 0.00 cfs)

**Model\_2024-07-23\_Postdev**

MSE 24-hr 4 10-yr. Dane Rainfall=4.09"

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**Summary for Pond 2P: Infiltration Basin**

Inflow Area = 1.322 ac, 18.68% Impervious, Inflow Depth > 10.03" for 10-yr. Dane event  
 Inflow = 5.23 cfs @ 12.13 hrs, Volume= 1.105 af  
 Outflow = 0.49 cfs @ 18.55 hrs, Volume= 1.105 af, Atten= 91%, Lag= 385.0 min  
 Discarded = 0.06 cfs @ 10.74 hrs, Volume= 0.359 af  
 Primary = 0.43 cfs @ 18.55 hrs, Volume= 0.746 af  
 Routed to Pond 3P : ST-3

Routing by Dyn-Stor-Ind method, Time Span= 0.00-96.00 hrs, dt= 0.030 hrs  
 Peak Elev= 1,026.22' @ 18.55 hrs Surf.Area= 7,776 sf Storage= 14,308 cf

Plug-Flow detention time= 586.7 min calculated for 1.105 af (100% of inflow)  
 Center-of-Mass det. time= 586.4 min ( 1,869.1 - 1,282.7 )

Volume	Invert	Avail.Storage	Storage Description		
#1	1,024.00'	53,747 cf	<b>Custom Stage Data (Irregular)</b> Listed below (Recalc)		
Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
1,024.00	5,200	260.0	0	0	5,200
1,025.00	6,300	290.0	5,741	5,741	6,542
1,026.00	7,500	310.0	6,891	12,632	7,542
1,027.00	8,800	340.0	8,141	20,774	9,128
1,028.00	10,200	360.0	9,491	30,265	10,296
1,029.00	11,700	390.0	10,941	41,207	12,125
1,030.00	13,400	410.0	12,540	53,747	13,460

Device	Routing	Invert	Outlet Devices
#1	Discarded	1,024.00'	<b>0.500 in/hr Exfiltration over Surface area from 1,023.99' - 1,024.01'</b> Excluded Surface area = 0 sf Phase-In= 0.01'
#2	Primary	1,023.00'	<b>12.0" Round 12" RCP</b> L= 184.1' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 1,023.00' / 1,022.32' S= 0.0037 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf
#3	Device 2	1,025.00'	<b>4.0" Vert. 4" Orifice</b> C= 0.600 Limited to weir flow at low heads
#4	Device 2	1,028.75'	<b>48.0" Horiz. 48" Standpipe</b> C= 0.600 Limited to weir flow at low heads

**Discarded OutFlow** Max=0.06 cfs @ 10.74 hrs HW=1,024.06' (Free Discharge)  
 ↳1=Exfiltration (Exfiltration Controls 0.06 cfs)

**Primary OutFlow** Max=0.43 cfs @ 18.55 hrs HW=1,026.22' TW=1,022.65' (Dynamic Tailwater)  
 ↳2=12" RCP (Passes 0.43 cfs of 3.98 cfs potential flow)  
 ↳3=4" Orifice (Orifice Controls 0.43 cfs @ 4.94 fps)  
 ↳4=48" Standpipe ( Controls 0.00 cfs)

**Model\_2024-07-23\_Postdev**

MSE 24-hr 4 10-yr. Dane Rainfall=4.09"

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**Summary for Pond 3P: ST-3**

Inflow Area = 6.427 ac, 58.21% Impervious, Inflow Depth = 2.20" for 10-yr. Dane event  
 Inflow = 4.93 cfs @ 12.46 hrs, Volume= 1.180 af  
 Outflow = 4.93 cfs @ 12.46 hrs, Volume= 1.180 af, Atten= 0%, Lag= 0.0 min  
 Primary = 4.93 cfs @ 12.46 hrs, Volume= 1.180 af  
 Routed to Pond 4P : Ex. Inlet

Routing by Dyn-Stor-Ind method, Time Span= 0.00-96.00 hrs, dt= 0.030 hrs  
 Peak Elev= 1,024.52' @ 12.46 hrs  
 Flood Elev= 1,030.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	1,022.32'	<b>12.0" Round 12" RCP</b> L= 45.7' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 1,022.32' / 1,018.10' S= 0.0923 '/' Cc= 0.900 n= 0.013 Concrete pipe, bends & connections, Flow Area= 0.79 sf

**Primary OutFlow** Max=4.93 cfs @ 12.46 hrs HW=1,024.52' TW=1,020.30' (Dynamic Tailwater)  
 ↳1=12" RCP (Inlet Controls 4.93 cfs @ 6.28 fps)

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MSE 24-hr 4 10-yr. Dane Rainfall=4.09"

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**Summary for Pond 4P: Ex. Inlet**

Inflow Area = 6.427 ac, 58.21% Impervious, Inflow Depth = 2.20" for 10-yr. Dane event  
Inflow = 4.93 cfs @ 12.46 hrs, Volume= 1.180 af  
Outflow = 4.93 cfs @ 12.46 hrs, Volume= 1.180 af, Atten= 0%, Lag= 0.0 min  
Primary = 4.93 cfs @ 12.46 hrs, Volume= 1.180 af  
Routed to Reach 2R : Southeast

Routing by Dyn-Stor-Ind method, Time Span= 0.00-96.00 hrs, dt= 0.030 hrs  
Peak Elev= 1,020.30' @ 12.46 hrs  
Flood Elev= 1,021.81'

Device	Routing	Invert	Outlet Devices
#1	Primary	1,018.10'	<b>12.0" Round 12" RCP</b> L= 50.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 1,018.10' / 1,017.39' S= 0.0142 '/' Cc= 0.900 n= 0.013 Concrete pipe, bends & connections, Flow Area= 0.79 sf

**Primary OutFlow** Max=4.93 cfs @ 12.46 hrs HW=1,020.30' TW=0.00' (Dynamic Tailwater)  
↑=12" RCP (Inlet Controls 4.93 cfs @ 6.28 fps)

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MSE 24-hr 4 100-yr. Dane Rainfall=6.66"

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Time span=0.00-96.00 hrs, dt=0.030 hrs, 3201 points  
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN  
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

**Subcatchment1-SP: On-Site** Runoff Area=5.105 ac 68.44% Impervious Runoff Depth=5.60"  
Tc=6.0 min CN=91 Runoff=41.78 cfs 2.384 af

**Subcatchment2-SP: On-Site** Runoff Area=0.087 ac 0.00% Impervious Runoff Depth=3.75"  
Tc=6.0 min CN=74 Runoff=0.52 cfs 0.027 af

**Subcatchment3-SP: On-Site** Runoff Area=0.009 ac 0.00% Impervious Runoff Depth=3.75"  
Tc=6.0 min CN=74 Runoff=0.05 cfs 0.003 af

**Subcatchment4-SP: On-Site** Runoff Area=1.322 ac 18.68% Impervious Runoff Depth=4.27"  
Tc=6.0 min CN=79 Runoff=8.88 cfs 0.471 af

**Reach 2R: Southeast** Inflow=6.13 cfs 2.496 af  
Outflow=6.13 cfs 2.496 af

**Pond 1P: Wet Pond** Peak Elev=1,028.57' Storage=49,236 cf Inflow=41.78 cfs 2.384 af  
Primary=5.37 cfs 1.499 af Secondary=0.00 cfs 0.000 af Tertiary=3.57 cfs 0.880 af Outflow=8.94 cfs 2.378 af

**Pond 2P: Infiltration Basin** Peak Elev=1,027.31' Storage=23,576 cf Inflow=9.92 cfs 1.351 af  
Discarded=0.06 cfs 0.383 af Primary=0.62 cfs 0.967 af Outflow=0.68 cfs 1.351 af

**Pond 3P: ST-3** Peak Elev=1,025.23' Inflow=5.87 cfs 2.466 af  
12.0" Round Culvert n=0.013 L=45.7' S=0.0923 '/' Outflow=5.87 cfs 2.466 af

**Pond 4P: Ex. Inlet** Peak Elev=1,021.06' Inflow=5.87 cfs 2.466 af  
12.0" Round Culvert n=0.013 L=50.0' S=0.0142 '/' Outflow=5.87 cfs 2.466 af

**Total Runoff Area = 6.523 ac Runoff Volume = 2.885 af Average Runoff Depth = 5.31"**  
**42.65% Pervious = 2.782 ac 57.35% Impervious = 3.741 ac**

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MSE 24-hr 4 100-yr. Dane Rainfall=6.66"

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**Summary for Subcatchment 1-SP: On-Site**

Runoff = 41.78 cfs @ 12.13 hrs, Volume= 2.384 af, Depth= 5.60"  
Routed to Pond 1P : Wet Pond

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-96.00 hrs, dt= 0.030 hrs  
MSE 24-hr 4 100-yr. Dane Rainfall=6.66"

Area (ac)	CN	Description
* 2.524	98	Roof
* 0.516	98	Parking Lot
* 0.080	98	Driveway
* 0.124	98	Sidewalk
* 0.250	100	Wet Pond NWL
1.611	74	>75% Grass cover, Good, HSG C
5.105	91	Weighted Average
1.611		31.56% Pervious Area
3.494		68.44% Impervious Area

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

**Model\_2024-07-23\_Postdev**

MSE 24-hr 4 100-yr. Dane Rainfall=6.66"

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**Summary for Subcatchment 2-SP: On-Site**

Runoff = 0.52 cfs @ 12.13 hrs, Volume= 0.027 af, Depth= 3.75"  
Routed to Reach 2R : Southeast

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-96.00 hrs, dt= 0.030 hrs  
MSE 24-hr 4 100-yr. Dane Rainfall=6.66"

Area (ac)	CN	Description
0.087	74	>75% Grass cover, Good, HSG C
0.087		100.00% Pervious Area

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

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MSE 24-hr 4 100-yr. Dane Rainfall=6.66"

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**Summary for Subcatchment 3-SP: On-Site**

Runoff = 0.05 cfs @ 12.13 hrs, Volume= 0.003 af, Depth= 3.75"  
 Routed to Reach 2R : Southeast

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-96.00 hrs, dt= 0.030 hrs  
 MSE 24-hr 4 100-yr. Dane Rainfall=6.66"

Area (ac)	CN	Description
0.009	74	>75% Grass cover, Good, HSG C
0.009		100.00% Pervious Area

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

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MSE 24-hr 4 100-yr. Dane Rainfall=6.66"

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**Summary for Subcatchment 4-SP: On-Site**

Runoff = 8.88 cfs @ 12.13 hrs, Volume= 0.471 af, Depth= 4.27"  
 Routed to Pond 2P : Infiltration Basin

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-96.00 hrs, dt= 0.030 hrs  
 MSE 24-hr 4 100-yr. Dane Rainfall=6.66"

Area (ac)	CN	Description
* 0.042	98	Driveway
* 0.086	98	Sidewalk
* 0.119	100	Infiltration Basin Bottom
1.075	74	>75% Grass cover, Good, HSG C

1.322	79	Weighted Average
1.075		81.32% Pervious Area
0.247		18.68% Impervious Area

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

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MSE 24-hr 4 100-yr. Dane Rainfall=6.66"

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**Summary for Reach 2R: Southeast**

Inflow Area = 6.523 ac, 57.35% Impervious, Inflow Depth = 4.59" for 100-yr. Dane event  
Inflow = 6.13 cfs @ 12.16 hrs, Volume= 2.496 af  
Outflow = 6.13 cfs @ 12.16 hrs, Volume= 2.496 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-96.00 hrs, dt= 0.030 hrs

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MSE 24-hr 4 100-yr. Dane Rainfall=6.66"

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**Summary for Pond 1P: Wet Pond**

Inflow Area = 5.105 ac, 68.44% Impervious, Inflow Depth = 5.60" for 100-yr. Dane event  
Inflow = 41.78 cfs @ 12.13 hrs, Volume= 2.384 af  
Outflow = 8.94 cfs @ 12.40 hrs, Volume= 2.378 af, Atten= 79%, Lag= 16.3 min  
Primary = 5.37 cfs @ 12.36 hrs, Volume= 1.499 af  
Routed to Pond 3P : ST-3  
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af  
Routed to Reach 2R : Southeast  
Tertiary = 3.57 cfs @ 12.40 hrs, Volume= 0.880 af  
Routed to Pond 2P : Infiltration Basin

Routing by Dyn-Stor-Ind method, Time Span= 0.00-96.00 hrs, dt= 0.030 hrs  
Peak Elev= 1,028.57' @ 12.40 hrs Surf.Area= 16,975 sf Storage= 49,236 cf

Plug-Flow detention time= 297.9 min calculated for 2.378 af (100% of inflow)  
Center-of-Mass det. time= 296.3 min ( 1,068.9 - 772.6 )

Volume	Invert	Avail.Storage	Storage Description
#1	1,025.00'	75,504 cf	Custom Stage Data (Irregular) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
1,025.00	10,800	380.0	0	0	10,800
1,026.00	12,400	410.0	11,591	11,591	12,727
1,027.00	14,100	430.0	13,241	24,832	14,128
1,028.00	15,900	460.0	14,991	39,823	16,299
1,029.00	17,800	480.0	16,841	56,664	17,867
1,030.00	19,900	510.0	18,840	75,504	20,282

Device	Routing	Invert	Outlet Devices
#1	Primary	1,024.00'	<b>12.0" Round 12" RCP</b> L= 99.5' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 1,024.00' / 1,022.32' S= 0.0169 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf
#2	Tertiary	1,025.00'	<b>6.0" Round 6" PVC</b> L= 26.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 1,025.00' / 1,024.00' S= 0.0385 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.20 sf
#3	Device 1	1,026.60'	<b>48.0" Horiz. 48" Standpipe</b> C= 0.600 Limited to weir flow at low heads
#4	Tertiary	1,028.50'	<b>50.0' long x 12.0' breadth Broad-Crested Rectangular Weir</b> Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.57 2.62 2.70 2.67 2.66 2.67 2.66 2.64
#5	Secondary	1,029.00'	<b>50.0' long x 15.0' breadth Broad-Crested Rectangular Weir</b> Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

**Model\_2024-07-23\_Postdev**

MSE 24-hr 4 100-yr. Dane Rainfall=6.66"

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**Primary OutFlow** Max=5.36 cfs @ 12.36 hrs HW=1,028.57' TW=1,025.22' (Dynamic Tailwater)↳ **1=12" RCP** (Outlet Controls 5.36 cfs @ 6.83 fps)↳ **3=48" Standpipe** (Passes 5.36 cfs of 84.83 cfs potential flow)**Secondary OutFlow** Max=0.00 cfs @ 0.00 hrs HW=1,025.00' TW=0.00' (Dynamic Tailwater)↳ **5=Broad-Crested Rectangular Weir** ( Controls 0.00 cfs)**Tertiary OutFlow** Max=3.52 cfs @ 12.40 hrs HW=1,028.57' TW=1,026.66' (Dynamic Tailwater)↳ **2=6" PVC** (Inlet Controls 1.03 cfs @ 5.26 fps)↳ **4=Broad-Crested Rectangular Weir** (Weir Controls 2.48 cfs @ 0.69 fps)**Model\_2024-07-23\_Postdev**

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**Summary for Pond 2P: Infiltration Basin**

Inflow Area = 1.322 ac, 18.68% Impervious, Inflow Depth > 12.26" for 100-yr. Dane event  
 Inflow = 9.92 cfs @ 12.13 hrs, Volume= 1.351 af  
 Outflow = 0.68 cfs @ 13.97 hrs, Volume= 1.351 af, Atten= 93%, Lag= 110.5 min  
 Discarded = 0.06 cfs @ 8.73 hrs, Volume= 0.383 af  
 Primary = 0.62 cfs @ 13.97 hrs, Volume= 0.967 af  
 Routed to Pond 3P : ST-3

Routing by Dyn-Stor-Ind method, Time Span= 0.00-96.00 hrs, dt= 0.030 hrs  
 Peak Elev= 1,027.31' @ 13.97 hrs Surf.Area= 9,224 sf Storage= 23,576 cf

Plug-Flow detention time= 589.0 min calculated for 1.351 af (100% of inflow)  
 Center-of-Mass det. time= 588.9 min ( 1,818.7 - 1,229.8 )

Volume	Invert	Avail.Storage	Storage Description		
#1	1,024.00'	53,747 cf	<b>Custom Stage Data (Irregular)</b> Listed below (Recalc)		
Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
1,024.00	5,200	260.0	0	0	5,200
1,025.00	6,300	290.0	5,741	5,741	6,542
1,026.00	7,500	310.0	6,891	12,632	7,542
1,027.00	8,800	340.0	8,141	20,774	9,128
1,028.00	10,200	360.0	9,491	30,265	10,296
1,029.00	11,700	390.0	10,941	41,207	12,125
1,030.00	13,400	410.0	12,540	53,747	13,460

Device	Routing	Invert	Outlet Devices
#1	Discarded	1,024.00'	<b>0.500 in/hr Exfiltration over Surface area from 1,023.99' - 1,024.01'</b> Excluded Surface area = 0 sf Phase-In= 0.01'
#2	Primary	1,023.00'	<b>12.0" Round 12" RCP</b> L= 184.1' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 1,023.00' / 1,022.32' S= 0.0037 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf
#3	Device 2	1,025.00'	<b>4.0" Vert. 4" Orifice</b> C= 0.600 Limited to weir flow at low heads
#4	Device 2	1,028.75'	<b>48.0" Horiz. 48" Standpipe</b> C= 0.600 Limited to weir flow at low heads

**Discarded OutFlow** Max=0.06 cfs @ 8.73 hrs HW=1,024.06' (Free Discharge)↳ **1=Exfiltration** (Exfiltration Controls 0.06 cfs)**Primary OutFlow** Max=0.62 cfs @ 13.97 hrs HW=1,027.31' TW=1,024.86' (Dynamic Tailwater)↳ **2=12" RCP** (Passes 0.62 cfs of 3.65 cfs potential flow)↳ **3=4" Orifice** (Orifice Controls 0.62 cfs @ 7.05 fps)↳ **4=48" Standpipe** ( Controls 0.00 cfs)

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MSE 24-hr 4 100-yr. Dane Rainfall=6.66"

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**Summary for Pond 3P: ST-3**

Inflow Area = 6.427 ac, 58.21% Impervious, Inflow Depth = 4.60" for 100-yr. Dane event  
Inflow = 5.87 cfs @ 12.49 hrs, Volume= 2.466 af  
Outflow = 5.87 cfs @ 12.49 hrs, Volume= 2.466 af, Atten= 0%, Lag= 0.0 min  
Primary = 5.87 cfs @ 12.49 hrs, Volume= 2.466 af  
Routed to Pond 4P : Ex. Inlet

Routing by Dyn-Stor-Ind method, Time Span= 0.00-96.00 hrs, dt= 0.030 hrs  
Peak Elev= 1,025.23' @ 12.49 hrs  
Flood Elev= 1,030.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	1,022.32'	<b>12.0" Round 12" RCP</b> L= 45.7' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 1,022.32' / 1,018.10' S= 0.0923 ' /' Cc= 0.900 n= 0.013 Concrete pipe, bends & connections, Flow Area= 0.79 sf

**Primary OutFlow** Max=5.87 cfs @ 12.49 hrs HW=1,025.23' TW=1,021.06' (Dynamic Tailwater)  
↑=12" RCP (Inlet Controls 5.87 cfs @ 7.48 fps)

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MSE 24-hr 4 100-yr. Dane Rainfall=6.66"

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**Summary for Pond 4P: Ex. Inlet**

Inflow Area = 6.427 ac, 58.21% Impervious, Inflow Depth = 4.60" for 100-yr. Dane event  
Inflow = 5.87 cfs @ 12.49 hrs, Volume= 2.466 af  
Outflow = 5.87 cfs @ 12.49 hrs, Volume= 2.466 af, Atten= 0%, Lag= 0.0 min  
Primary = 5.87 cfs @ 12.49 hrs, Volume= 2.466 af  
Routed to Reach 2R : Southeast

Routing by Dyn-Stor-Ind method, Time Span= 0.00-96.00 hrs, dt= 0.030 hrs  
Peak Elev= 1,021.06' @ 12.49 hrs  
Flood Elev= 1,021.81'

Device	Routing	Invert	Outlet Devices
#1	Primary	1,018.10'	<b>12.0" Round 12" RCP</b> L= 50.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 1,018.10' / 1,017.39' S= 0.0142 ' /' Cc= 0.900 n= 0.013 Concrete pipe, bends & connections, Flow Area= 0.79 sf

**Primary OutFlow** Max=5.87 cfs @ 12.49 hrs HW=1,021.06' TW=0.00' (Dynamic Tailwater)  
↑=12" RCP (Barrel Controls 5.87 cfs @ 7.48 fps)

**Model\_2024-07-23\_Postdev**

MSE 24-hr 4 200-yr. Dane Rainfall=7.53"

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Time span=0.00-96.00 hrs, dt=0.030 hrs, 3201 points

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN

Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

**Subcatchment1-SP: On-Site**

Runoff Area=5.105 ac 68.44% Impervious Runoff Depth=6.46"  
Tc=6.0 min CN=91 Runoff=47.73 cfs 2.749 af

**Subcatchment2-SP: On-Site**

Runoff Area=0.087 ac 0.00% Impervious Runoff Depth=4.51"  
Tc=6.0 min CN=74 Runoff=0.62 cfs 0.033 af

**Subcatchment3-SP: On-Site**

Runoff Area=0.009 ac 0.00% Impervious Runoff Depth=4.51"  
Tc=6.0 min CN=74 Runoff=0.06 cfs 0.003 af

**Subcatchment4-SP: On-Site**

Runoff Area=1.322 ac 18.68% Impervious Runoff Depth=5.07"  
Tc=6.0 min CN=79 Runoff=10.45 cfs 0.559 af

**Reach 2R: Southeast**

Inflow=6.45 cfs 2.947 af  
Outflow=6.45 cfs 2.947 af

**Pond 1P: Wet Pond**

Peak Elev=1,028.71' Storage=51,602 cf Inflow=47.73 cfs 2.749 af  
Primary=5.43 cfs 1.803 af Secondary=0.00 cfs 0.000 af Tertiary=13.50 cfs 0.940 af Outflow=18.91 cfs 2.743 af

**Pond 2P: Infiltration Basin**

Peak Elev=1,028.27' Storage=33,075 cf Inflow=18.08 cfs 1.498 af  
Discarded=0.06 cfs 0.391 af Primary=0.74 cfs 1.108 af Outflow=0.80 cfs 1.498 af

**Pond 3P: ST-3**

Peak Elev=1,025.33' Inflow=5.99 cfs 2.910 af  
12.0" Round Culvert n=0.013 L=45.7' S=0.0923 '/' Outflow=5.99 cfs 2.910 af

**Pond 4P: Ex. Inlet**

Peak Elev=1,021.16' Inflow=5.99 cfs 2.910 af  
12.0" Round Culvert n=0.013 L=50.0' S=0.0142 '/' Outflow=5.99 cfs 2.910 af

**Total Runoff Area = 6.523 ac Runoff Volume = 3.343 af Average Runoff Depth = 6.15"**  
**42.65% Pervious = 2.782 ac 57.35% Impervious = 3.741 ac**

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MSE 24-hr 4 200-yr. Dane Rainfall=7.53"

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**Summary for Subcatchment 1-SP: On-Site**

Runoff = 47.73 cfs @ 12.13 hrs, Volume= 2.749 af, Depth= 6.46"  
Routed to Pond 1P : Wet Pond

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-96.00 hrs, dt= 0.030 hrs  
MSE 24-hr 4 200-yr. Dane Rainfall=7.53"

Area (ac)	CN	Description
* 2.524	98	Roof
* 0.516	98	Parking Lot
* 0.080	98	Driveway
* 0.124	98	Sidewalk
* 0.250	100	Wet Pond NWL
1.611	74	>75% Grass cover, Good, HSG C
5.105	91	Weighted Average
1.611		31.56% Pervious Area
3.494		68.44% Impervious Area

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

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MSE 24-hr 4 200-yr. Dane Rainfall=7.53"

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**Summary for Subcatchment 2-SP: On-Site**

Runoff = 0.62 cfs @ 12.13 hrs, Volume= 0.033 af, Depth= 4.51"  
 Routed to Reach 2R : Southeast

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-96.00 hrs, dt= 0.030 hrs  
 MSE 24-hr 4 200-yr. Dane Rainfall=7.53"

Area (ac)	CN	Description
0.087	74	>75% Grass cover, Good, HSG C
0.087		100.00% Pervious Area

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

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MSE 24-hr 4 200-yr. Dane Rainfall=7.53"

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**Summary for Subcatchment 3-SP: On-Site**

Runoff = 0.06 cfs @ 12.13 hrs, Volume= 0.003 af, Depth= 4.51"  
 Routed to Reach 2R : Southeast

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-96.00 hrs, dt= 0.030 hrs  
 MSE 24-hr 4 200-yr. Dane Rainfall=7.53"

Area (ac)	CN	Description
0.009	74	>75% Grass cover, Good, HSG C
0.009		100.00% Pervious Area

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

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MSE 24-hr 4 200-yr. Dane Rainfall=7.53"

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**Summary for Subcatchment 4-SP: On-Site**

Runoff = 10.45 cfs @ 12.13 hrs, Volume= 0.559 af, Depth= 5.07"  
 Routed to Pond 2P : Infiltration Basin

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-96.00 hrs, dt= 0.030 hrs  
 MSE 24-hr 4 200-yr. Dane Rainfall=7.53"

Area (ac)	CN	Description
* 0.042	98	Driveway
* 0.086	98	Sidewalk
* 0.119	100	Infiltration Basin Bottom
1.075	74	>75% Grass cover, Good, HSG C
1.322	79	Weighted Average
1.075		81.32% Pervious Area
0.247		18.68% Impervious Area

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

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MSE 24-hr 4 200-yr. Dane Rainfall=7.53"

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**Summary for Reach 2R: Southeast**

Inflow Area = 6.523 ac, 57.35% Impervious, Inflow Depth = 5.42" for 200-yr. Dane event  
 Inflow = 6.45 cfs @ 12.16 hrs, Volume= 2.947 af  
 Outflow = 6.45 cfs @ 12.16 hrs, Volume= 2.947 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-96.00 hrs, dt= 0.030 hrs

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MSE 24-hr 4 200-yr. Dane Rainfall=7.53"

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**Summary for Pond 1P: Wet Pond**

Inflow Area = 5.105 ac, 68.44% Impervious, Inflow Depth = 6.46" for 200-yr. Dane event  
 Inflow = 47.73 cfs @ 12.13 hrs, Volume= 2.749 af  
 Outflow = 18.91 cfs @ 12.26 hrs, Volume= 2.743 af, Atten= 60%, Lag= 7.8 min  
 Primary = 5.43 cfs @ 12.23 hrs, Volume= 1.803 af  
 Routed to Pond 3P : ST-3  
 Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af  
 Routed to Reach 2R : Southeast  
 Tertiary = 13.50 cfs @ 12.26 hrs, Volume= 0.940 af  
 Routed to Pond 2P : Infiltration Basin

Routing by Dyn-Stor-Ind method, Time Span= 0.00-96.00 hrs, dt= 0.030 hrs  
 Peak Elev= 1,028.71' @ 12.26 hrs Surf.Area= 17,240 sf Storage= 51,602 cf

Plug-Flow detention time= 276.7 min calculated for 2.742 af (100% of inflow)  
 Center-of-Mass det. time= 276.4 min ( 1,045.9 - 769.5 )

Volume	Invert	Avail.Storage	Storage Description		
#1	1,025.00'	75,504 cf	<b>Custom Stage Data (Irregular)</b> Listed below (Recalc)		
Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
1,025.00	10,800	380.0	0	0	10,800
1,026.00	12,400	410.0	11,591	11,591	12,727
1,027.00	14,100	430.0	13,241	24,832	14,128
1,028.00	15,900	460.0	14,991	39,823	16,299
1,029.00	17,800	480.0	16,841	56,664	17,867
1,030.00	19,900	510.0	18,840	75,504	20,282

Device	Routing	Invert	Outlet Devices
#1	Primary	1,024.00'	<b>12.0" Round 12" RCP</b> L= 99.5' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 1,024.00' / 1,022.32' S= 0.0169 '/ Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf
#2	Tertiary	1,025.00'	<b>6.0" Round 6" PVC</b> L= 26.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 1,025.00' / 1,024.00' S= 0.0385 '/ Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.20 sf
#3	Device 1	1,026.60'	<b>48.0" Horiz. 48" Standpipe</b> C= 0.600 Limited to weir flow at low heads
#4	Tertiary	1,028.50'	<b>50.0' long x 12.0' breadth Broad-Crested Rectangular Weir</b> Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.57 2.62 2.70 2.67 2.66 2.67 2.66 2.64
#5	Secondary	1,029.00'	<b>50.0' long x 15.0' breadth Broad-Crested Rectangular Weir</b> Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

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MSE 24-hr 4 200-yr. Dane Rainfall=7.53"

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**Primary OutFlow** Max=5.40 cfs @ 12.23 hrs HW=1,028.70' TW=1,025.30' (Dynamic Tailwater)  
 ↳ **1=12" RCP** (Outlet Controls 5.40 cfs @ 6.88 fps)  
 ↳ **3=48" Standpipe** (Passes 5.40 cfs of 87.59 cfs potential flow)

**Secondary OutFlow** Max=0.00 cfs @ 0.00 hrs HW=1,025.00' TW=0.00' (Dynamic Tailwater)  
 ↳ **5=Broad-Crested Rectangular Weir** ( Controls 0.00 cfs)

**Tertiary OutFlow** Max=13.27 cfs @ 12.26 hrs HW=1,028.71' TW=1,027.03' (Dynamic Tailwater)  
 ↳ **2=6" PVC** (Inlet Controls 0.97 cfs @ 4.93 fps)  
 ↳ **4=Broad-Crested Rectangular Weir**(Weir Controls 12.30 cfs @ 1.18 fps)

**Model\_2024-07-23\_Postdev**

MSE 24-hr 4 200-yr. Dane Rainfall=7.53"

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**Summary for Pond 2P: Infiltration Basin**

Inflow Area = 1.322 ac, 18.68% Impervious, Inflow Depth = 13.60" for 200-yr. Dane event  
 Inflow = 18.08 cfs @ 12.25 hrs, Volume= 1.498 af  
 Outflow = 0.80 cfs @ 13.59 hrs, Volume= 1.498 af, Atten= 96%, Lag= 80.5 min  
 Discarded = 0.06 cfs @ 8.13 hrs, Volume= 0.391 af  
 Primary = 0.74 cfs @ 13.59 hrs, Volume= 1.108 af  
 Routed to Pond 3P : ST-3

Routing by Dyn-Stor-Ind method, Time Span= 0.00-96.00 hrs, dt= 0.030 hrs  
 Peak Elev= 1,028.27' @ 13.30 hrs Surf.Area= 10,595 sf Storage= 33,075 cf

Plug-Flow detention time= 614.6 min calculated for 1.498 af (100% of inflow)  
 Center-of-Mass det. time= 614.5 min ( 1,781.1 - 1,166.6 )

Volume	Invert	Avail.Storage	Storage Description		
#1	1,024.00'	53,747 cf	<b>Custom Stage Data (Irregular)</b> Listed below (Recalc)		
Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
1,024.00	5,200	260.0	0	0	5,200
1,025.00	6,300	290.0	5,741	5,741	6,542
1,026.00	7,500	310.0	6,891	12,632	7,542
1,027.00	8,800	340.0	8,141	20,774	9,128
1,028.00	10,200	360.0	9,491	30,265	10,296
1,029.00	11,700	390.0	10,941	41,207	12,125
1,030.00	13,400	410.0	12,540	53,747	13,460

Device	Routing	Invert	Outlet Devices
#1	Discarded	1,024.00'	<b>0.500 in/hr Exfiltration over Surface area from 1,023.99' - 1,024.01'</b> Excluded Surface area = 0 sf Phase-In= 0.01'
#2	Primary	1,023.00'	<b>12.0" Round 12" RCP</b> L= 184.1' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 1,023.00' / 1,022.32' S= 0.0037 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf
#3	Device 2	1,025.00'	<b>4.0" Vert. 4" Orifice</b> C= 0.600 Limited to weir flow at low heads
#4	Device 2	1,028.75'	<b>48.0" Horiz. 48" Standpipe</b> C= 0.600 Limited to weir flow at low heads

**Discarded OutFlow** Max=0.06 cfs @ 8.13 hrs HW=1,024.06' (Free Discharge)  
 ↳1=Exfiltration (Exfiltration Controls 0.06 cfs)

**Primary OutFlow** Max=0.74 cfs @ 13.59 hrs HW=1,028.25' TW=1,025.16' (Dynamic Tailwater)  
 ↳2=12" RCP (Passes 0.74 cfs of 4.11 cfs potential flow)  
 ↳3=4" Orifice (Orifice Controls 0.74 cfs @ 8.46 fps)  
 ↳4=48" Standpipe ( Controls 0.00 cfs)

**Model\_2024-07-23\_Postdev**

MSE 24-hr 4 200-yr. Dane Rainfall=7.53"

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**Summary for Pond 3P: ST-3**

Inflow Area = 6.427 ac, 58.21% Impervious, Inflow Depth = 5.43" for 200-yr. Dane event  
 Inflow = 5.99 cfs @ 12.37 hrs, Volume= 2.910 af  
 Outflow = 5.99 cfs @ 12.37 hrs, Volume= 2.910 af, Atten= 0%, Lag= 0.0 min  
 Primary = 5.99 cfs @ 12.37 hrs, Volume= 2.910 af  
 Routed to Pond 4P : Ex. Inlet

Routing by Dyn-Stor-Ind method, Time Span= 0.00-96.00 hrs, dt= 0.030 hrs  
 Peak Elev= 1,025.33' @ 12.37 hrs  
 Flood Elev= 1,030.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	1,022.32'	<b>12.0" Round 12" RCP</b> L= 45.7' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 1,022.32' / 1,018.10' S= 0.0923 '/' Cc= 0.900 n= 0.013 Concrete pipe, bends & connections, Flow Area= 0.79 sf

**Primary OutFlow** Max=5.99 cfs @ 12.37 hrs HW=1,025.33' TW=1,021.16' (Dynamic Tailwater)  
 ↳1=12" RCP (Inlet Controls 5.99 cfs @ 7.62 fps)

**Model\_2024-07-23\_Postdev**

MSE 24-hr 4 200-yr. Dane Rainfall=7.53"

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**Summary for Pond 4P: Ex. Inlet**

Inflow Area = 6.427 ac, 58.21% Impervious, Inflow Depth = 5.43" for 200-yr. Dane event  
Inflow = 5.99 cfs @ 12.37 hrs, Volume= 2.910 af  
Outflow = 5.99 cfs @ 12.37 hrs, Volume= 2.910 af, Atten= 0%, Lag= 0.0 min  
Primary = 5.99 cfs @ 12.37 hrs, Volume= 2.910 af  
Routed to Reach 2R : Southeast

Routing by Dyn-Stor-Ind method, Time Span= 0.00-96.00 hrs, dt= 0.030 hrs  
Peak Elev= 1,021.16' @ 12.37 hrs  
Flood Elev= 1,021.81'

Device	Routing	Invert	Outlet Devices
#1	Primary	1,018.10'	<b>12.0" Round 12" RCP</b> L= 50.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 1,018.10' / 1,017.39' S= 0.0142 '/' Cc= 0.900 n= 0.013 Concrete pipe, bends & connections, Flow Area= 0.79 sf

**Primary OutFlow** Max=5.99 cfs @ 12.37 hrs HW=1,021.16' TW=0.00' (Dynamic Tailwater)  
↑**1=12" RCP** (Barrel Controls 5.99 cfs @ 7.62 fps)

**Model\_2024-07-23\_Postdev**

MSE 24-hr 4 500-yr. Dane Rainfall=8.94"

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Time span=0.00-96.00 hrs, dt=0.030 hrs, 3201 points  
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN  
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

**Subcatchment1-SP: On-Site** Runoff Area=5.105 ac 68.44% Impervious Runoff Depth=7.85"  
Tc=6.0 min CN=91 Runoff=57.32 cfs 3.341 af

**Subcatchment2-SP: On-Site** Runoff Area=0.087 ac 0.00% Impervious Runoff Depth=5.77"  
Tc=6.0 min CN=74 Runoff=0.79 cfs 0.042 af

**Subcatchment3-SP: On-Site** Runoff Area=0.009 ac 0.00% Impervious Runoff Depth=5.77"  
Tc=6.0 min CN=74 Runoff=0.08 cfs 0.004 af

**Subcatchment4-SP: On-Site** Runoff Area=1.322 ac 18.68% Impervious Runoff Depth=6.39"  
Tc=6.0 min CN=79 Runoff=13.01 cfs 0.704 af

**Reach 2R: Southeast** Inflow=8.31 cfs 3.684 af  
Outflow=8.31 cfs 3.684 af

**Pond 1P: Wet Pond** Peak Elev=1,029.00' Storage=56,678 cf Inflow=57.32 cfs 3.341 af  
Primary=5.50 cfs 2.173 af Secondary=0.00 cfs 0.000 af Tertiary=33.78 cfs 1.162 af Outflow=39.26 cfs 3.335 af

**Pond 2P: Infiltration Basin** Peak Elev=1,029.03' Storage=41,570 cf Inflow=42.74 cfs 1.866 af  
Discarded=0.06 cfs 0.401 af Primary=3.66 cfs 1.465 af Outflow=3.72 cfs 1.866 af

**Pond 3P: ST-3** Peak Elev=1,027.52' Inflow=8.22 cfs 3.638 af  
12.0" Round Culvert n=0.013 L=45.7' S=0.0923 '/' Outflow=8.22 cfs 3.638 af

**Pond 4P: Ex. Inlet** Peak Elev=1,023.61' Inflow=8.22 cfs 3.638 af  
12.0" Round Culvert n=0.013 L=50.0' S=0.0142 '/' Outflow=8.22 cfs 3.638 af

**Total Runoff Area = 6.523 ac Runoff Volume = 4.091 af Average Runoff Depth = 7.53"**  
**42.65% Pervious = 2.782 ac 57.35% Impervious = 3.741 ac**

**Model\_2024-07-23\_Postdev**

MSE 24-hr 4 500-yr. Dane Rainfall=8.94"

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**Summary for Subcatchment 1-SP: On-Site**

Runoff = 57.32 cfs @ 12.13 hrs, Volume= 3.341 af, Depth= 7.85"  
Routed to Pond 1P : Wet Pond

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-96.00 hrs, dt= 0.030 hrs  
MSE 24-hr 4 500-yr. Dane Rainfall=8.94"

Area (ac)	CN	Description
* 2.524	98	Roof
* 0.516	98	Parking Lot
* 0.080	98	Driveway
* 0.124	98	Sidewalk
* 0.250	100	Wet Pond NWL
1.611	74	>75% Grass cover, Good, HSG C
5.105	91	Weighted Average
1.611		31.56% Pervious Area
3.494		68.44% Impervious Area

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

**Model\_2024-07-23\_Postdev**

MSE 24-hr 4 500-yr. Dane Rainfall=8.94"

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**Summary for Subcatchment 2-SP: On-Site**

Runoff = 0.79 cfs @ 12.13 hrs, Volume= 0.042 af, Depth= 5.77"  
Routed to Reach 2R : Southeast

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-96.00 hrs, dt= 0.030 hrs  
MSE 24-hr 4 500-yr. Dane Rainfall=8.94"

Area (ac)	CN	Description
0.087	74	>75% Grass cover, Good, HSG C
0.087		100.00% Pervious Area

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

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MSE 24-hr 4 500-yr. Dane Rainfall=8.94"

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**Summary for Subcatchment 3-SP: On-Site**

Runoff = 0.08 cfs @ 12.13 hrs, Volume= 0.004 af, Depth= 5.77"  
 Routed to Reach 2R : Southeast

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-96.00 hrs, dt= 0.030 hrs  
 MSE 24-hr 4 500-yr. Dane Rainfall=8.94"

Area (ac)	CN	Description
0.009	74	>75% Grass cover, Good, HSG C
0.009		100.00% Pervious Area

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

**Model\_2024-07-23\_Postdev**

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MSE 24-hr 4 500-yr. Dane Rainfall=8.94"

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**Summary for Subcatchment 4-SP: On-Site**

Runoff = 13.01 cfs @ 12.13 hrs, Volume= 0.704 af, Depth= 6.39"  
 Routed to Pond 2P : Infiltration Basin

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-96.00 hrs, dt= 0.030 hrs  
 MSE 24-hr 4 500-yr. Dane Rainfall=8.94"

Area (ac)	CN	Description
* 0.042	98	Driveway
* 0.086	98	Sidewalk
* 0.119	100	Infiltration Basin Bottom
1.075	74	>75% Grass cover, Good, HSG C
1.322	79	Weighted Average
1.075		81.32% Pervious Area
0.247		18.68% Impervious Area

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

**Model\_2024-07-23\_Postdev**

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MSE 24-hr 4 500-yr. Dane Rainfall=8.94"

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**Summary for Reach 2R: Southeast**

Inflow Area = 6.523 ac, 57.35% Impervious, Inflow Depth = 6.78" for 500-yr. Dane event  
Inflow = 8.31 cfs @ 12.81 hrs, Volume= 3.684 af  
Outflow = 8.31 cfs @ 12.81 hrs, Volume= 3.684 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-96.00 hrs, dt= 0.030 hrs

**Model\_2024-07-23\_Postdev**

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MSE 24-hr 4 500-yr. Dane Rainfall=8.94"

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**Summary for Pond 1P: Wet Pond**

Inflow Area = 5.105 ac, 68.44% Impervious, Inflow Depth = 7.85" for 500-yr. Dane event  
Inflow = 57.32 cfs @ 12.13 hrs, Volume= 3.341 af  
Outflow = 39.26 cfs @ 12.19 hrs, Volume= 3.335 af, Atten= 32%, Lag= 4.0 min  
Primary = 5.50 cfs @ 12.17 hrs, Volume= 2.173 af  
Routed to Pond 3P : ST-3  
Secondary = 0.00 cfs @ 12.64 hrs, Volume= 0.000 af  
Routed to Reach 2R : Southeast  
Tertiary = 33.78 cfs @ 12.19 hrs, Volume= 1.162 af  
Routed to Pond 2P : Infiltration Basin

Routing by Dyn-Stor-Ind method, Time Span= 0.00-96.00 hrs, dt= 0.030 hrs  
Peak Elev= 1,029.00' @ 12.63 hrs Surf.Area= 17,802 sf Storage= 56,678 cf

Plug-Flow detention time= 257.3 min calculated for 3.334 af (100% of inflow)  
Center-of-Mass det. time= 257.3 min ( 1,022.7 - 765.4 )

Volume	Invert	Avail.Storage	Storage	Description	
#1	1,025.00'	75,504 cf		<b>Custom Stage Data (Irregular)</b> Listed below (Recalc)	
Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
1,025.00	10,800	380.0	0	0	10,800
1,026.00	12,400	410.0	11,591	11,591	12,727
1,027.00	14,100	430.0	13,241	24,832	14,128
1,028.00	15,900	460.0	14,991	39,823	16,299
1,029.00	17,800	480.0	16,841	56,664	17,867
1,030.00	19,900	510.0	18,840	75,504	20,282

Device	Routing	Invert	Outlet Devices
#1	Primary	1,024.00'	<b>12.0" Round 12" RCP</b> L= 99.5' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 1,024.00' / 1,022.32' S= 0.0169 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf
#2	Tertiary	1,025.00'	<b>6.0" Round 6" PVC</b> L= 26.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 1,025.00' / 1,024.00' S= 0.0385 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.20 sf
#3	Device 1	1,026.60'	<b>48.0" Horiz. 48" Standpipe</b> C= 0.600 Limited to weir flow at low heads
#4	Tertiary	1,028.50'	<b>50.0' long x 12.0' breadth Broad-Crested Rectangular Weir</b> Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.57 2.62 2.70 2.67 2.66 2.67 2.66 2.64
#5	Secondary	1,029.00'	<b>50.0' long x 15.0' breadth Broad-Crested Rectangular Weir</b> Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

**Model\_2024-07-23\_Postdev**

MSE 24-hr 4 500-yr. Dane Rainfall=8.94"

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**Primary OutFlow** Max=5.44 cfs @ 12.17 hrs HW=1,028.85' TW=1,025.41' (Dynamic Tailwater)

↳ **1=12" RCP** (Outlet Controls 5.44 cfs @ 6.93 fps)

↳ **3=48" Standpipe** (Passes 5.44 cfs of 90.75 cfs potential flow)

**Secondary OutFlow** Max=0.00 cfs @ 12.64 hrs HW=1,029.00' TW=0.00' (Dynamic Tailwater)

↳ **5=Broad-Crested Rectangular Weir** (Weir Controls 0.00 cfs @ 0.07 fps)

**Tertiary OutFlow** Max=32.10 cfs @ 12.19 hrs HW=1,028.89' TW=1,027.67' (Dynamic Tailwater)

↳ **2=6" PVC** (Inlet Controls 0.82 cfs @ 4.19 fps)

↳ **4=Broad-Crested Rectangular Weir** (Weir Controls 31.28 cfs @ 1.62 fps)

**Model\_2024-07-23\_Postdev**

MSE 24-hr 4 500-yr. Dane Rainfall=8.94"

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**Summary for Pond 2P: Infiltration Basin**

Inflow Area = 1.322 ac, 18.68% Impervious, Inflow Depth = 16.94" for 500-yr. Dane event  
Inflow = 42.74 cfs @ 12.19 hrs, Volume= 1.866 af  
Outflow = 3.72 cfs @ 12.81 hrs, Volume= 1.866 af, Atten= 91%, Lag= 37.1 min  
Discarded = 0.06 cfs @ 7.38 hrs, Volume= 0.401 af  
Primary = 3.66 cfs @ 12.81 hrs, Volume= 1.465 af  
Routed to Pond 3P : ST-3

Routing by Dyn-Stor-Ind method, Time Span= 0.00-96.00 hrs, dt= 0.030 hrs  
Peak Elev= 1,029.03' @ 12.55 hrs Surf.Area= 11,751 sf Storage= 41,570 cf

Plug-Flow detention time= 565.6 min calculated for 1.866 af (100% of inflow)  
Center-of-Mass det. time= 565.5 min ( 1,653.3 - 1,087.8 )

Volume	Invert	Avail.Storage	Storage Description		
#1	1,024.00'	53,747 cf	<b>Custom Stage Data (Irregular)</b> Listed below (Recalc)		
Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
1,024.00	5,200	260.0	0	0	5,200
1,025.00	6,300	290.0	5,741	5,741	6,542
1,026.00	7,500	310.0	6,891	12,632	7,542
1,027.00	8,800	340.0	8,141	20,774	9,128
1,028.00	10,200	360.0	9,491	30,265	10,296
1,029.00	11,700	390.0	10,941	41,207	12,125
1,030.00	13,400	410.0	12,540	53,747	13,460

Device	Routing	Invert	Outlet Devices
#1	Discarded	1,024.00'	<b>0.500 in/hr Exfiltration over Surface area from 1,023.99' - 1,024.01'</b> Excluded Surface area = 0 sf Phase-In= 0.01'
#2	Primary	1,023.00'	<b>12.0" Round 12" RCP</b> L= 184.1' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 1,023.00' / 1,022.32' S= 0.0037 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf
#3	Device 2	1,025.00'	<b>4.0" Vert. 4" Orifice</b> C= 0.600 Limited to weir flow at low heads
#4	Device 2	1,028.75'	<b>48.0" Horiz. 48" Standpipe</b> C= 0.600 Limited to weir flow at low heads

**Discarded OutFlow** Max=0.06 cfs @ 7.38 hrs HW=1,024.06' (Free Discharge)

↳ **1=Exfiltration** (Exfiltration Controls 0.06 cfs)

**Primary OutFlow** Max=2.96 cfs @ 12.81 hrs HW=1,029.00' TW=1,027.39' (Dynamic Tailwater)

↳ **2=12" RCP** (Outlet Controls 2.96 cfs @ 3.77 fps)

↳ **3=4" Orifice** (Passes < 0.53 cfs potential flow)

↳ **4=48" Standpipe** (Passes < 5.07 cfs potential flow)

**Model\_2024-07-23\_Postdev**

MSE 24-hr 4 500-yr. Dane Rainfall=8.94"

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**Summary for Pond 3P: ST-3**

Inflow Area = 6.427 ac, 58.21% Impervious, Inflow Depth = 6.79" for 500-yr. Dane event  
Inflow = 8.22 cfs @ 12.81 hrs, Volume= 3.638 af  
Outflow = 8.22 cfs @ 12.81 hrs, Volume= 3.638 af, Atten= 0%, Lag= 0.0 min  
Primary = 8.22 cfs @ 12.81 hrs, Volume= 3.638 af  
Routed to Pond 4P : Ex. Inlet

Routing by Dyn-Stor-Ind method, Time Span= 0.00-96.00 hrs, dt= 0.030 hrs  
Peak Elev= 1,027.52' @ 12.81 hrs  
Flood Elev= 1,030.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	1,022.32'	<b>12.0" Round 12" RCP</b> L= 45.7' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 1,022.32' / 1,018.10' S= 0.0923 '/' Cc= 0.900 n= 0.013 Concrete pipe, bends & connections, Flow Area= 0.79 sf

**Primary OutFlow** Max=7.34 cfs @ 12.81 hrs HW=1,027.39' TW=1,023.42' (Dynamic Tailwater)  
↑1=12" RCP (Outlet Controls 7.34 cfs @ 9.34 fps)

**Model\_2024-07-23\_Postdev**

MSE 24-hr 4 500-yr. Dane Rainfall=8.94"

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**Summary for Pond 4P: Ex. Inlet**

Inflow Area = 6.427 ac, 58.21% Impervious, Inflow Depth = 6.79" for 500-yr. Dane event  
Inflow = 8.22 cfs @ 12.81 hrs, Volume= 3.638 af  
Outflow = 8.22 cfs @ 12.81 hrs, Volume= 3.638 af, Atten= 0%, Lag= 0.0 min  
Primary = 8.22 cfs @ 12.81 hrs, Volume= 3.638 af  
Routed to Reach 2R : Southeast

Routing by Dyn-Stor-Ind method, Time Span= 0.00-96.00 hrs, dt= 0.030 hrs  
Peak Elev= 1,023.61' @ 12.81 hrs  
Flood Elev= 1,021.81'

Device	Routing	Invert	Outlet Devices
#1	Primary	1,018.10'	<b>12.0" Round 12" RCP</b> L= 50.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 1,018.10' / 1,017.39' S= 0.0142 '/' Cc= 0.900 n= 0.013 Concrete pipe, bends & connections, Flow Area= 0.79 sf

**Primary OutFlow** Max=8.06 cfs @ 12.81 hrs HW=1,023.42' TW=0.00' (Dynamic Tailwater)  
↑1=12" RCP (Barrel Controls 8.06 cfs @ 10.27 fps)

**APPENDIX G**  
**WATER QUALITY AND INFILTRATION**

## Model Assumptions

### Notes:

1. WinSLAMM model is based on the post-development HydroCAD model for the proposed project site along with the assumptions stated below.

### Assumptions:

1. Post-development WinSLAMM model assumes normal clayey soil for any disturbed areas to account for compaction during construction.
2. Post-development HydroCAD model lowers permeable areas by one permeability class to account for compaction during construction.



Data file name: V:\Projects\2024\124.0465.30\Design\StormwaterModels\WinSLAMM\Model\_2024-07-23\_Predev.mdb  
WinSLAMM Version 10.5.0

Rain file name: C:\WinSLAMM Files\Rain Files\WisReg - Madison WI 1981.RAN

Particulate Solids Concentration file name: C:\WinSLAMM Files\v10.1 WI\_AVG01.pscx

Runoff Coefficient file name: C:\WinSLAMM Files\WI\_SL06 Dec06.rsvx

Residential Street Delivery file name: C:\WinSLAMM Files\WI\_Res and Other Urban Dec06.std

Institutional Street Delivery file name: C:\WinSLAMM Files\WI\_Com Inst Indust Dec06.std

Commercial Street Delivery file name: C:\WinSLAMM Files\WI\_Com Inst Indust Dec06.std

Industrial Street Delivery file name: C:\WinSLAMM Files\WI\_Com Inst Indust Dec06.std

Other Urban Street Delivery file name: C:\WinSLAMM Files\WI\_Res and Other Urban Dec06.std

Freeway Street Delivery file name: C:\WinSLAMM Files\Freeway Dec06.std

Apply Street Delivery Files to Adjust the After Event Load Street Dirt Mass Balance: False

Pollutant Relative Concentration file name: C:\WinSLAMM Files\WI\_GEO03.ppdx

Source Area PSD and Peak to Average Flow Ratio File: C:\WinSLAMM Files\NURP Source Area PSD Files.csv

Cost Data file name:

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: 07-19-2024

Time: 13:46:06

Site information:

LU# 1 - Residential: 1-SX (On-Site) Total area (ac): 2.862

57 - Undeveloped Areas 1: 2.862 ac. Normal Silty Source Area PSD File: C:\WinSLAMM Files\NURP.cpz

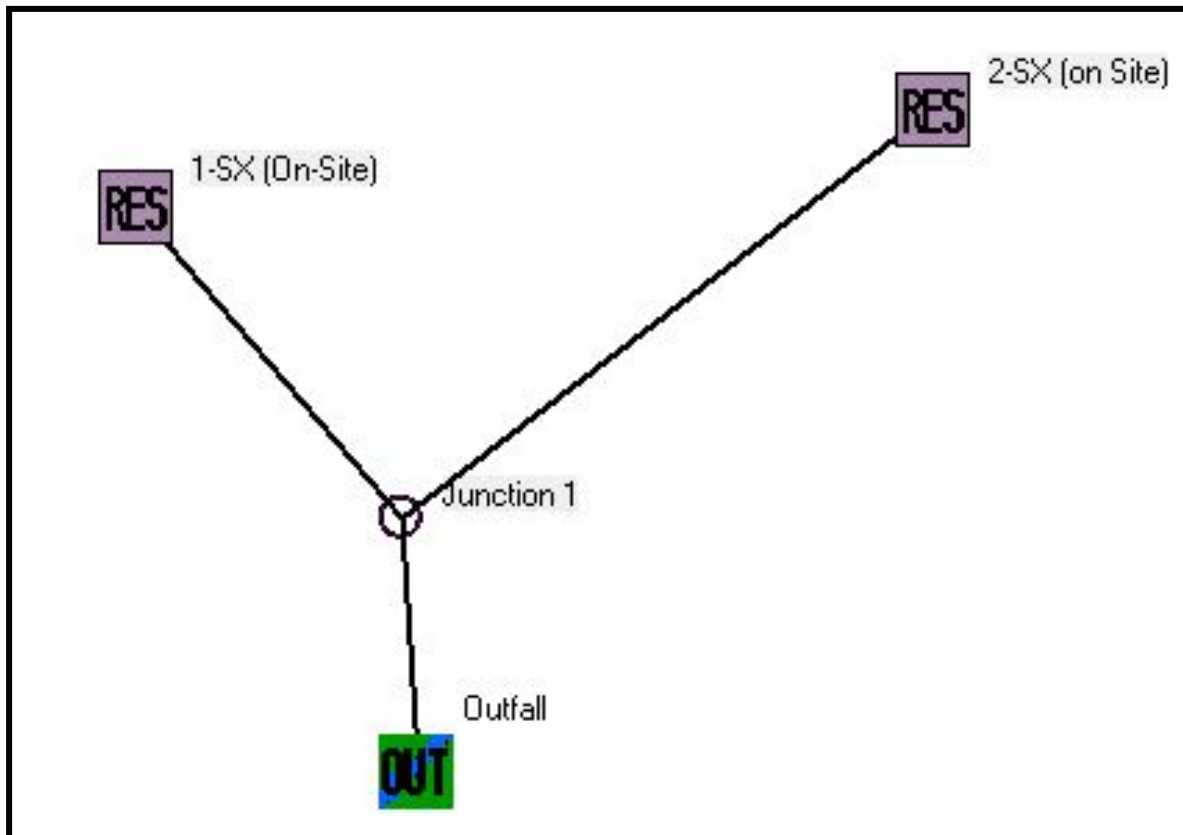
LU# 2 - Residential: 2-SX (on Site) Total area (ac): 3.661

57 - Undeveloped Areas 1: 3.661 ac. Normal Silty Source Area PSD File: C:\WinSLAMM Files\NURP.cpz

# WinSLAMM Model Input Data - Screen Captures

## WinSLAMM Model (Pre-Development):

Routing Diagram:



**File Data:**

**Current File Data**

**SLAMM Data File Name:**  
V:\Projects\2024\124.0465.30\Design\StormwaterModels\WinSLAMM\Model\_2024-07-23\_Predev.mdk

Site Descript.:

**Edit** Seed:

**Edit** Rain File:

**Edit** Start Date:   Winter Season Range  
**Edit** End Date:  Start of Winter (mm/dd)  End of Winter (mm/dd)

**Edit** Pollutant Probability Distribution File:

**Edit** Runoff Coefficient File:

**Edit** Particulate Solids Concentration File:

**Edit** Street Delivery File (Select LU)  
 Residential LU  Other Urban LU  
 Institutional LU  Freeways   
 Commercial LU  
 Industrial LU

**Edit** Source Area PSD and Peak to Average Flow Ratio File:

Use Cost Estimation Option

**Overall Land Uses:**

Land Use #	Land Use Type	Land Use Label	Land Use Area (acres)
1	Residential	1-SX (On-Site)	2.862
2	Residential	2-SX (on Site)	3.661

**Individual Land Uses:**

**Land Use #1 1-SX (On-Site):**

Land Use:					
1-SX (On-Site)					
Source Area #	Source Area	Area (acres)	Source Area Parameters	First Control Practice	Second Control Practice
	<b>Roofs</b>	0.000			
	<b>Parking</b>	0.000			
	<b>Driveways/Sidewalks</b>	0.000			
	<b>Streets</b>	0.000			
	<b>Landscaped Areas</b>	2.862			
57	Undeveloped Areas 1	2.862	Entered	-- ▾	-- ▾
	<b>Other Areas</b>	0.000			

**Land Use #2 2-SX (On-Site):**

Land Use:					
2-SX (on Site)					
Source Area #	Source Area	Area (acres)	Source Area Parameters	First Control Practice	Second Control Practice
	<b>Roofs</b>	0.000			
	<b>Parking</b>	0.000			
	<b>Driveways/Sidewalks</b>	0.000			
	<b>Streets</b>	0.000			
	<b>Landscaped Areas</b>	3.661			
57	Undeveloped Areas 1	3.661	Entered	-- ▾	-- ▾
	<b>Other Areas</b>	0.000			

## Runoff Volume:

Data File: V:\Projects\2024\124.0465.30\Design\StormwaterModels\WinSLAMM\Model_2024-07-23_Predev.mdb							
Rain File: WisReg - Madison WI 1981.RAN							
Date: 07-19-24 Time: 2:01:14 PM							
Site Description:							
Runoff Volume Total (cf) at the Outfall							
Rain Number	Start Date	Rain Total (in)	Outfall Total (cf)	Rv	Total Losses (in.)	Calculated CN*	Event Peak Flow (cfs)
73	08/28/81	0.04	0	0.000	0.04	n/a	0.000
74	08/31/81	0.03	0	0.000	0.03	n/a	0.000
75	08/31/81	1.52	1934	0.054	1.44	69.5	0.131
76	09/07/81	0.89	907.1	0.043	0.85	78.5	0.160
77	09/11/81	0.08	0	0.000	0.08	n/a	0.000
78	09/16/81	0.03	0	0.000	0.03	n/a	0.000
79	09/21/81	0.45	251.2	0.024	0.44	86.4	0.028
80	09/24/81	0.90	919.4	0.043	0.86	78.4	0.034
81	09/26/81	0.12	0	0.000	0.12	n/a	0.000
82	09/28/81	0.10	0	0.000	0.10	n/a	0.000
83	09/29/81	0.16	0	0.000	0.16	n/a	0.000
84	09/30/81	0.36	148.4	0.017	0.35	88.3	0.131
85	10/01/81	0.01	0	0.000	0.01	n/a	0.000
86	10/04/81	0.15	0	0.000	0.15	n/a	0.000
87	10/05/81	0.04	0	0.000	0.04	n/a	0.000
88	10/05/81	0.02	0	0.000	0.02	n/a	0.000
89	10/09/81	0.14	0	0.000	0.14	n/a	0.000
90	10/13/81	1.20	1480	0.052	1.14	74.1	0.100
91	10/15/81	0.02	0	0.000	0.02	n/a	0.000
92	10/17/81	0.95	981.9	0.044	0.91	77.5	0.108
93	10/18/81	0.06	0	0.000	0.06	n/a	0.000
94	10/21/81	0.06	0	0.000	0.06	n/a	0.000
95	10/21/81	0.01	0	0.000	0.01	n/a	0.000
96	10/24/81	0.01	0	0.000	0.01	n/a	0.000
97	10/31/81	0.01	0	0.000	0.01	n/a	0.000
98	11/05/81	0.04	0	0.000	0.04	n/a	0.000
99	11/15/81	0.07	0	0.000	0.07	n/a	0.000
100	11/18/81	0.05	0	0.000	0.05	n/a	0.000
101	11/19/81	0.26	41.47	0.007	0.26	90.3	0.001
102	11/23/81	0.18	0	0.000	0.18	n/a	0.000
103	11/25/81	0.89	907.1	0.043	0.85	78.5	0.038
104	11/30/81	0.37	161.8	0.018	0.36	88.1	0.006
105	12/03/81	-	-	-	-	-	-
106	12/14/81	-	-	-	-	-	-
107	12/20/81	-	-	-	-	-	-
108	12/26/81	-	-	-	-	-	-
109	12/31/81	-	-	-	-	-	-
Minimum:		0.00	0	0.000	0.01	69.5	0.000
Maximum:		2.59	12265	0.200	2.07	90.7	1.199
Average:		0.26	375.6	0.012	0.25	74.5	0.577
Total:		28.81	40945		27.09		
* Note: NRCS does not recommend using CN method for rains < 0.5 in.							
See 'PreDevelopment Areas and CN' Help for more info.							

WET POND 1P

ELEVATION (FT)	AREA (FT SQ)	AVERAGE AREA (FT SQ)	DEPTH (FT)	VOLUME (CU FT)	VOLUME (AC-FT)	AREA (ACRES)
1020.00	3800.00	0	0.0	0	0.000	0.0872
1021.00	4600.00	4200	1.0	4200	0.096	0.1056
1022.00	5400.00	5000	1.0	5000	0.115	0.1240
1023.00	6300.00	5850	1.0	5850	0.134	0.1446
1024.00	7300.00	6800	1.0	6800	0.156	0.1676
1025.00	10800.00	9050	1.0	9050	0.208	0.2479
1026.00	12400.00	11600	1.0	11600	0.266	0.2847
1027.00	14100.00	13250	1.0	13250	0.304	0.3237
1028.00	15900.00	15000	1.0	15000	0.344	0.3650
1029.00	17800.00	16850	1.0	16850	0.387	0.4086
1030.00	19900.00	18850	1.0	18850	0.433	0.4568

**VOLUME 2.44**

Data file name: V:\Projects\2024\124.0465.30\Design\StormwaterModels\WinSLAMM\Model\_2024-07-23\_Postdev.mdb  
WinSLAMM Version 10.5.0

Rain file name: C:\WinSLAMM Files\Rain Files\WisReg - Madison WI 1981.RAN

Particulate Solids Concentration file name: C:\WinSLAMM Files\v10.1 WI\_AVG01.pscx

Runoff Coefficient file name: C:\WinSLAMM Files\WI\_SL06 Dec06.rsvx

Residential Street Delivery file name: C:\WinSLAMM Files\WI\_Res and Other Urban Dec06.std

Institutional Street Delivery file name: C:\WinSLAMM Files\WI\_Com Inst Indust Dec06.std

Commercial Street Delivery file name: C:\WinSLAMM Files\WI\_Com Inst Indust Dec06.std

Industrial Street Delivery file name: C:\WinSLAMM Files\WI\_Com Inst Indust Dec06.std

Other Urban Street Delivery file name: C:\WinSLAMM Files\WI\_Res and Other Urban Dec06.std

Freeway Street Delivery file name: C:\WinSLAMM Files\Freeway Dec06.std

Apply Street Delivery Files to Adjust the After Event Load Street Dirt Mass Balance: False

Pollutant Relative Concentration file name: C:\WinSLAMM Files\WI\_GEO03.ppdx

Source Area PSD and Peak to Average Flow Ratio File: C:\WinSLAMM Files\NURP Source Area PSD Files.csv

Cost Data file name:

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: 07-19-2024

Time: 14:02:42

Site information:

LU# 1 - Residential: 1-SP (On-Site) Total area (ac): 5.105

1 - Roofs 1: 2.524 ac. Flat Connected Source Area PSD File: C:\WinSLAMM Files\NURP.cpz

13 - Paved Parking 1: 0.516 ac. Connected Source Area PSD File: C:\WinSLAMM Files\NURP.cpz

25 - Driveways 1: 0.080 ac. Connected Source Area PSD File: C:\WinSLAMM Files\NURP.cpz

31 - Sidewalks 1: 0.124 ac. Connected Source Area PSD File: C:\WinSLAMM Files\NURP.cpz

45 - Large Landscaped Areas 1: 1.611 ac. Normal Clayey Source Area PSD File: C:\WinSLAMM

Files\NURP.cpz

70 - Water Body Areas: 0.250 ac. Source Area PSD File:

LU# 2 - Residential: 2-SP (On-Site) Total area (ac): 0.087

45 - Large Landscaped Areas 1: 0.087 ac. Normal Clayey Source Area PSD File: C:\WinSLAMM  
Files\NURP.cpz

LU# 3 - Residential: 3-SP (On-Site) Total area (ac): 0.009  
 45 - Large Landscaped Areas 1: 0.009 ac. Normal Clayey Source Area PSD File: C:\WinSLAMM Files\NURP.cpz

LU# 4 - Residential: 4-SP (On-Site) Total area (ac): 1.322  
 25 - Driveways 1: 0.042 ac. Connected Source Area PSD File: C:\WinSLAMM Files\NURP.cpz  
 31 - Sidewalks 1: 0.086 ac. Connected Source Area PSD File: C:\WinSLAMM Files\NURP.cpz  
 45 - Large Landscaped Areas 1: 1.075 ac. Normal Clayey Source Area PSD File: C:\WinSLAMM Files\NURP.cpz  
 70 - Water Body Areas: 0.119 ac. Source Area PSD File:

Control Practice 1: Wet Detention Pond CP# 1 (DS) - 1P (DS Wet Pond # 1)  
 Particle Size Distribution file name: Not needed - calculated by program  
 Initial stage elevation (ft): 5  
 Peak to Average Flow Ratio: 3.8  
 Maximum flow allowed into pond (cfs): No maximum value entered  
 Outlet Characteristics:

Outlet type: Orifice 1

1. Orifice diameter (ft): 0.5
2. Number of orifices: 1
3. Invert elevation above datum (ft): 5

Outlet type: Broad Crested Weir

1. Weir crest length (ft): 50
2. Weir crest width (ft): 12
3. Height from datum to bottom of weir opening: 8.5

Outlet type: Vertical Stand Pipe

1. Stand pipe diameter (ft): 4
2. Stand pipe height above datum (ft): 6.6

Pond stage and surface area

Entry Number	Stage (ft)	Pond Area (acres)	Natural Seepage (in/hr)	Other Outflow (cfs)
0	0.00	0.0000	0.00	0.00
1	0.01	0.0872	0.00	0.00
2	1.00	0.1056	0.00	0.00

3	2.00	0.1240	0.00	0.00
4	3.00	0.1446	0.00	0.00
5	4.00	0.1676	0.00	0.00
6	5.00	0.2479	0.00	0.00
7	6.00	0.2847	0.00	0.00
8	7.00	0.3237	0.00	0.00
9	8.00	0.3650	0.00	0.00
10	9.00	0.4086	0.00	0.00
11	10.00	0.4568	0.00	0.00

Control Practice 2: Biofilter CP# 1 (DS) - 2P (DS Biofilters # 1)

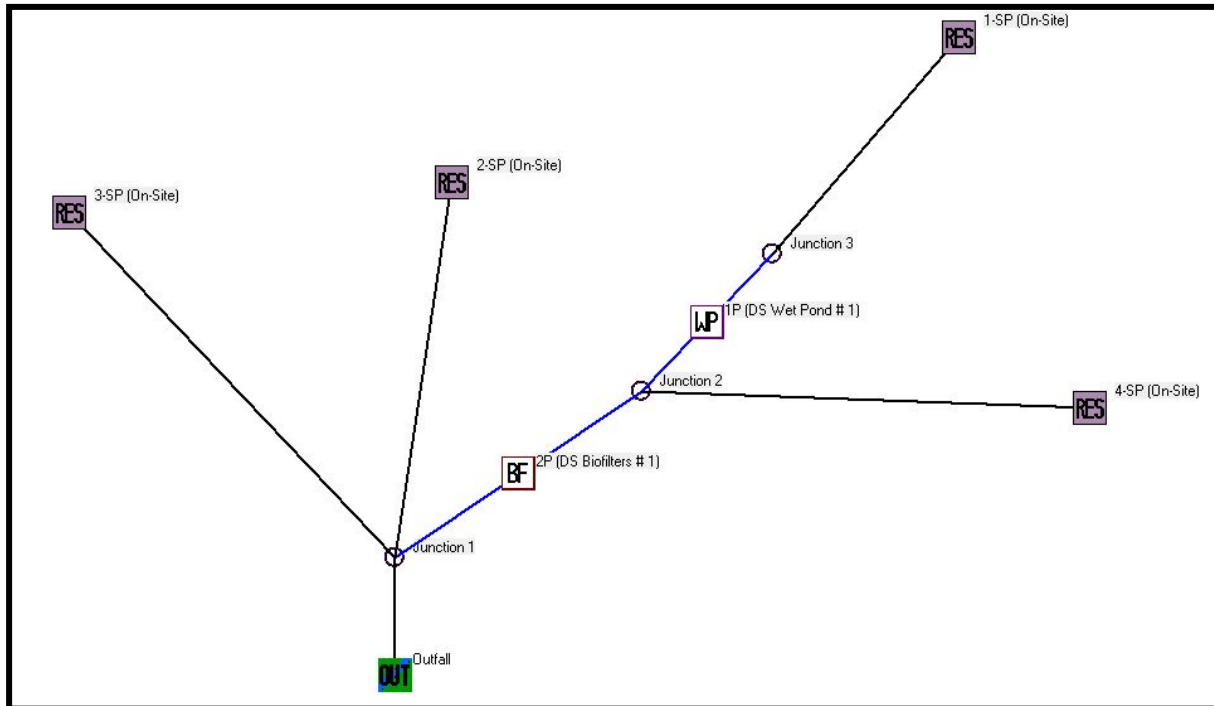
1. Top area (square feet) = 13400
2. Bottom area (square feet) = 5200
3. Depth (ft): 6
4. Biofilter width (ft) - for Cost Purposes Only: 10
5. Infiltration rate (in/hr) = 0.5
6. Random infiltration rate generation? No
7. Infiltration rate fraction (side): 0.01
8. Infiltration rate fraction (bottom): 1
9. Depth of biofilter that is rock filled (ft) 0
10. Porosity of rock filled volume = 0
11. Engineered soil infiltration rate: 0
12. Engineered soil depth (ft) = 0
13. Engineered soil porosity = 0
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
  - Biofilter Outlet/Discharge Characteristics:
  - Outlet type: Broad Crested Weir
    1. Weir crest length (ft): 50
    2. Weir crest width (ft): 20
    3. Height of datum to bottom of weir opening: 5.99
  - Outlet type: Vertical Stand Pipe
    1. Stand pipe diameter (ft): 4

2. Stand pipe height above datum (ft): 4.75  
Outlet type: Surface Discharge Pipe  
1. Surface discharge pipe outlet diameter (ft): 0.33  
2. Pipe invert elevation above datum (ft): 1  
3. Number of surface pipe outlets: 1

# WinSLAMM Model Input Data - Screen Captures

## WinSLAMM Model (Post-Development):

### Routing Diagram:



**File Data:**

**Current File Data**

**SLAMM Data File Name:**  
Y:\Projects\2024\124.0465.30\Design\StormwaterModels\WinSLAMM\Model\_2024-07-23\_Postdev.mc

Site Descript:

**Edit** Seed:

**Edit** Rain File:

**Edit** Start Date:   Winter Season Range  
**Edit** End Date:  Start of Winter (mm/dd)  End of Winter (mm/dd)

**Edit** Pollutant Probability Distribution File:

**Edit** Runoff Coefficient File:

**Edit** Particulate Solids Concentration File:

**Edit** Street Delivery File (Select LU)  
 Residential LU  Other Urban LU  
 Institutional LU  Freeways   
 Commercial LU  
 Industrial LU

**Edit** Source Area PSD and Peak to Average Flow Ratio File:

Use Cost Estimation Option

**Overall Land Uses:**

Land Use #	Land Use Type	Land Use Label	Land Use Area (acres)
1	Residential	1-SP (On-Site)	5.105
2	Residential	2-SP (On-Site)	0.087
3	Residential	3-SP (On-Site)	0.009
4	Residential	4-SP (On-Site)	1.322

**Individual Land Uses:**

**Land Use #1 1-SP (on-Site):**

Land Use:					
1-SP (On-Site)					
Source Area #	Source Area	Area (acres)	Source Area Parameters	First Control Practice	Second Control Practice
	<b>Roofs</b>	2.524			
1	Roofs 1	2.524	Entered	-- ▾	-- ▾
	<b>Parking</b>	0.516			
13	Paved Parking 1	0.516	Entered	-- ▾	-- ▾
	<b>Driveways/Sidewalks</b>	0.204			
25	Driveways 1	0.080	Entered	-- ▾	-- ▾
31	Sidewalks 1	0.124	Entered	-- ▾	-- ▾
	<b>Streets</b>	0.000			
	<b>Landscaped Areas</b>	1.611			
45	Large Landscaped Areas 1	1.611	Entered	-- ▾	-- ▾
	<b>Other Areas</b>	0.250			
70	Water Body Areas	0.250	Entered	--	--

**Land Use #2 2-SP (On-Site):**

Land Use:					
2-SP (On-Site)					
Source Area #	Source Area	Area (acres)	Source Area Parameters	First Control Practice	Second Control Practice
	<b>Roofs</b>	0.000			
	<b>Parking</b>	0.000			
	<b>Driveways/Sidewalks</b>	0.000			
	<b>Streets</b>	0.000			
	<b>Landscaped Areas</b>	0.087			
45	Large Landscaped Areas 1	0.087	Entered	-- ▾	-- ▾
	<b>Other Areas</b>	0.000			

**Land Use #3 3-SP (On-Site):**

<b>Land Use:</b>					
3-SP (On-Site)					
Source Area #	Source Area	Area (acres)	Source Area Parameters	First Control Practice	Second Control Practice
	<b>Roofs</b>	0.000			
	<b>Parking</b>	0.000			
	<b>Driveways/Sidewalks</b>	0.000			
	<b>Streets</b>	0.000			
	<b>Landscaped Areas</b>	0.009			
45	Large Landscaped Areas 1	0.009	Entered	-- ▾	-- ▾
	<b>Other Areas</b>	0.000			

**Land Use #4 4-SP (On-Site):**

<b>Land Use:</b>					
4-SP (On-Site)					
Source Area #	Source Area	Area (acres)	Source Area Parameters	First Control Practice	Second Control Practice
	<b>Roofs</b>	0.000			
	<b>Parking</b>	0.000			
	<b>Driveways/Sidewalks</b>	0.128			
25	Driveways 1	0.042	Entered	-- ▾	-- ▾
31	Sidewalks 1	0.086	Entered	-- ▾	-- ▾
	<b>Streets</b>	0.000			
	<b>Landscaped Areas</b>	1.075			
45	Large Landscaped Areas 1	1.075	Entered	-- ▾	-- ▾
	<b>Other Areas</b>	0.119			
70	Water Body Areas	0.119	Entered	--	--

**Overall Control Practices:**

CP #	Control Practice Type	Control Practice Name or Location
1	Wet Detention Pond	1P (DS Wet Pond # 1)
2	Biofilter	2P (DS Biofilters # 1)

# Individual Control Practices:

## Control Practice #1 – 1P (DS Wet Pond # 1):

Wet Detention Control Device

### Pond Number 1 Drainage System Control Practice

Initial Stage Elevation (ft):

Maximum Inflow into Pond (cfs)  
Enter 0 or leave blank for no limit:

Enter Two Stage Area Values in Ponds 1 and 2, and Press to Interpolate

Create Pond Stage-Area Values

Refresh Schematic

Enter fraction (greater than 0) that you want to modify all pond areas by and then select 'Modify Pond Areas' button

0.00

Copy Pond Data    Paste Pond Data

Save or Delete Pond Data to Database File

Stage (ft)	Area (acres)	Cumulative Volume (ac-ft)
0	0.0000	0.0000
1	0.0872	0.0000
2	0.1056	0.036
3	0.1240	0.211
4	0.1446	0.345
5	0.1676	0.501
6	0.2479	0.709
7	0.2847	0.975
8	0.3237	1.279
9	0.3650	1.624
10	0.4086	2.010
11	0.4568	2.443
12		
13		
14		
15		
16		
17		

Recalculate Cumulative Volume

Get Pond Data From Database File

**Add** **Sharp Crested Weir**

Weir Length (ft)

Height from datum to bottom of weir opening (ft)

**Add** **V-Notch Weir**

Weir Angle (<180 degrees)

Height from datum to bottom of weir opening (ft)

Number of V-Notch weirs

**Remove** **Orifice Set 1**

Orifice Diameter (ft)

Invert elevation above datum (ft)

Number of orifices in set

**Add** **Orifice Set 2**

Orifice Diameter (ft)

Invert elevation above datum (ft)

Number of orifices in set

**Add** **Orifice Set 3**

Orifice Diameter (ft)

Invert elevation above datum (ft)

Number of orifices in set

**Add** **Stone Weeper**

Width at bottom of weeper (ft)

Weeper side slope [H:1V]

Upstream side slope [H:1V]

Downstream side slope [H:1V]

Horizontal flow path length at top of weeper (ft)

Average rock diameter (ft)

Distance from bottom to top of weeper (ft)

Height from datum to bottom of weeper (ft)

**Remove** **Vertical Stand Pipe**

Pipe diameter (ft)

Height above datum (ft)

Month	Evaporation (in/day)	Add	Water Withdrawal Rate (ac-ft/day)	Add
Jan	0.00		0.000	
Feb	0.00		0.000	
Mar	0.00		0.000	
Apr	0.00		0.000	
May	0.00		0.000	
Jun	0.00		0.000	
Jul	0.00		0.000	
Aug	0.00		0.000	
Sep	0.00		0.000	
Oct	0.00		0.000	
Nov	0.00		0.000	
Dec	0.00		0.000	

Stage (ft)	Natural Seepage Rate (in/hr)	Add	Other Outflow Rate (cfs)	Add
0.00	0.00		0.000	
0.01	0.00		0.000	
1.00	0.00		0.000	
2.00	0.00		0.000	
3.00	0.00		0.000	
4.00	0.00		0.000	
5.00	0.00		0.000	

**Remove** **Broad Crested Weir**

Weir crest length (ft)

Weir crest width (ft)

Height from datum to bottom of weir opening (ft)

**Add** **Seepage Basin**

Infiltration rate (in/hr)

Width of device (ft)

Length of device (ft)

Invert elevation of seepage basin inlet above datum (ft)

**Add** **Pump**

Only Vertical Dimension is Relative Scale

**To Delete This Practice, Right Mouse Click on Icon and Select Delete**

Press 'F1' for Help

Control Practice #: 1    CP Index #: 1

# Control Practice #2 – 2P (DS Biofilters # 1):

Biofiltration Control Device

### Drainage System Control Practice

**Device Properties**    Biofilter Number 1

Top Area (sf)	13400
Bottom Area (sf)	5200
Total Depth (ft)	6.00
Typical Width (ft) (Cost est. only)	10.00
Native Soil Infiltration Rate (in/hr)	0.500
Native Soil Infiltration Rate COV	N/A
Infiltr. Rate Fraction-Bottom (0.001-1)	1.000
Infiltr. Rate Fraction-Sides (0.001-1)	0.010
Rock Filled Depth (ft)	0.00
Rock Fill Porosity (0-1)	0.00
Engineered Media Type	Media Data
Engineered Media Infiltration Rate	0.00
Engineered Media Infiltration Rate COV	N/A
Engineered Media Depth (ft)	0.00
Engineered Media Porosity (0-1)	0.00
Percent solids reduction due to Engineered Media (0-1.00)	N/A
Inflow Hydrograph Peak to Average Flow Ratio	3.80
Number of Devices in Source Area or Upstream Drainage System	1

### Other Outlet

Stage Number	Stage (ft)	Other Outflow Rate (cfs)
1		
2		
3		
4		
5		

### Sharp Crested Weir

Weir Length (ft)	
Height from datum to bottom of weir opening (ft)	
Weir crest length (ft)	50.00
Weir crest width (ft)	20.00
Height from datum to bottom of weir opening (ft)	5.99

### Evapotranspiration

Month	Evapotranspiration (in/day)
Jan	
Feb	
Mar	
Apr	
May	
Jun	
Jul	
Aug	
Sep	
Oct	
Nov	
Dec	

### Vertical Stand Pipe

Pipe diameter (ft)	4.00
Height above datum (ft)	4.75

### Surface Discharge Pipe

Pipe Diameter (ft)	0.33
Invert elevation above datum (ft)	1.00
Number of pipes at invert elev.	1

### Drain Tile/Underdrain

Pipe Diameter (ft)	
Invert elevation above datum (ft)	
Number of pipes at invert elev.	

### Plant Types

Plant Types	1	2	3	4
Plant type				
Root depth (ft)				
E.T. Crop Adjustment Factor				

### Soil Porosity

Soil porosity (saturation moisture content, 0-1)	
Soil field moisture capacity (0-1)	
Permanent wilting point (0-1)	
Supplemental irrigation used?	<input type="checkbox"/>
Fraction of available capacity when irrigation starts (0-1)	
Fraction of available capacity when irrigation slope (0-1)	

### Use Random Number Generation to Account for Infiltration Rate Uncertainty

Use Random Number Generation to Account for Infiltration Rate Uncertainty

Copy Biofilter Data    Paste Biofilter Data

### Select Native Soil Infiltration Rate

- Sand - 8 in/hr
- Loamy sand - 2.5 in/hr
- Sandy loam - 1.0 in/hr
- Loam - 0.5 in/hr
- Silt loam - 0.3 in/hr
- Sandy silt loam - 0.2 in/hr
- Clay loam - 0.1 in/hr
- Silty clay loam - 0.05 in/hr
- Sandy clay - 0.05 in/hr
- Silty clay - 0.04 in/hr
- Clay - 0.02 in/hr
- Rim Barrel/Cistern - 0.00 in/hr

Estimated Surface Drain Time = 24.00 hrs.

Save or Delete Biofilter Data to Database File    Get Biofilter Data From Database File

Control Practice #: 2    CP Index #: 2

### Biofilter Geometry Schematic

Press 'F1' for Help    To Delete This Practice, Right Mouse Click on Icon and Select Delete    Cancel    Continue



## Runoff Volume:

Data File: V:\Projects\2024\124.0465.30\Design\StormwaterModels\WinSLAMM\Model_2024-07-23_Postdev.mdb							
Rain File: WisReg - Madison WI 1981.RAN							
Date: 07-19-24 Time: 2:22:54 PM							
Site Description:							
Runoff Volume Total (cf) at the Outfall							
Rain Number	Start Date	Rain Total (in)	Outfall Total (cf)	Rv	Total Losses (in.)	Calculated CN*	Event Peak Flow (cfs)
73	08/28/81	0.04	0	0.000	0.04	n/a	0.000
74	08/31/81	0.03	0	0.000	0.03	n/a	0.000
75	08/31/81	1.52	9511	0.264	1.12	83.3	0.271
76	09/07/81	0.89	2289	0.109	0.79	83.3	0.128
77	09/11/81	0.08	0	0.000	0.08	n/a	0.000
78	09/16/81	0.03	0	0.000	0.03	n/a	0.000
79	09/21/81	0.45	4.280	0.000	0.45	82.3	0.000
80	09/24/81	0.90	20.16	0.001	0.90	70.4	0.001
81	09/26/81	0.12	0	0.000	0.12	n/a	0.000
82	09/28/81	0.10	0	0.000	0.10	n/a	0.000
83	09/29/81	0.16	0	0.000	0.16	n/a	0.000
84	09/30/81	0.36	2.391	0.000	0.36	85.2	0.002
85	10/01/81	0.01	0	0.000	0.01	n/a	0.000
86	10/04/81	0.15	0	0.000	0.15	n/a	0.000
87	10/05/81	0.04	0	0.000	0.04	n/a	0.000
88	10/05/81	0.02	0	0.000	0.02	n/a	0.000
89	10/09/81	0.14	0	0.000	0.14	n/a	0.000
90	10/13/81	1.20	5062	0.178	0.99	82.7	0.180
91	10/15/81	0.02	0	0.000	0.02	n/a	0.000
92	10/17/81	0.95	2636	0.117	0.84	82.9	0.136
93	10/18/81	0.06	0	0.000	0.06	n/a	0.000
94	10/21/81	0.06	0	0.000	0.06	n/a	0.000
95	10/21/81	0.01	0	0.000	0.01	n/a	0.000
96	10/24/81	0.01	0	0.000	0.01	n/a	0.000
97	10/31/81	0.01	0	0.000	0.01	n/a	0.000
98	11/05/81	0.04	0	0.000	0.04	n/a	0.000
99	11/15/81	0.07	0	0.000	0.07	n/a	0.000
100	11/18/81	0.05	0	0.000	0.05	n/a	0.000
101	11/19/81	0.26	0.6685	0.000	0.26	88.7	0.000
102	11/23/81	0.18	0	0.000	0.18	n/a	0.000
103	11/25/81	0.89	19.77	0.001	0.89	70.7	0.001
104	11/30/81	0.37	2.609	0.000	0.37	84.9	0.000
105	12/03/81	-	-	-	-	-	-
106	12/14/81	-	-	-	-	-	-
107	12/20/81	-	-	-	-	-	-
108	12/26/81	-	-	-	-	-	-
109	12/31/81	-	-	-	-	-	-
Minimum:		0.00	0	0.000	0.01	70.4	0.000
Maximum:		2.59	26488	0.451	1.47	91.1	0.510
Average:		0.26	933.9	0.026	0.22	84.8	0.341
Total:		28.81	101795		24.51		
* Note: NRCS does not recommend using CN method for rains < 0.5 in.							
See 'PreDevelopment Areas and CN' Help for more info.							

## Output Summary:

File Name:

### Outfall Output Summary

	Runoff Volume (cu. ft.)	Percent Runoff Reduction	Runoff Coefficient (Rv)	Particulate Solids Conc. (mg/L)	Particulate Solids Yield (lbs)	Percent Particulate Solids Reduction
Total of All Land Uses without Controls	327275		0.43	61.61	1259	
Outfall Total with Controls	101795	68.90 %	0.13	29.18	185.4	85.27 %
Current File Output: Annualized Total After Outfall Controls	102074	Years in Model Run:	1.00		185.9	

Total Area Modeled (ac)

### Receiving Water Impacts Due To Stormwater Runoff

(CWP Impervious Cover Model)

	Calculated Rv	Approximate Urban Stream Classification
Without Controls	0.43	Poor
With Controls	0.13	Good

### Total Control Practice Costs

Capital Cost	N/A
Land Cost	N/A
Annual Maintenance Cost	N/A
Present Value of All Costs	N/A
Annualized Value of All Costs	N/A



# Infiltration Calculations

**Average Annual Rainfall = 28.81 inches**

Notes:

- 1.) Infiltration calculations are based on runoff volume outputs from WinSLAMM v10.2.1
- 2.) [Redacted] = Cells That Require Data Input.

**Pre-Development Infiltration Calculations:**

1.) Pre-development Project Site Area = **6.523** acres

$$6.523 \text{ acres} * (43,560 \text{ sq. ft./1 acre}) = 284,142 \text{ sq. ft.}$$

2.) Pre-development runoff volume = **40,945** cu. ft.

3.) Pre-development runoff depth = (40,945 cu. ft. / 284,142 sq. ft.)

$$= 0.14 \text{ ft.}$$

$$= 1.73 \text{ in.}$$

4.) Pre-development stay-on depth = (28.81 in. - 1.73 in.)

$$= 27.08 \text{ in}$$

Target Post-Development Stay-On Depth = **90.0%** of Pre-Development Stay-On Depth

5.) Target Post-development stay-on = (27.08 in. \* 0.9)

$$= \mathbf{24.37 \text{ in.}}$$

**Post-Development Infiltration Calculations:**

1.) Post-development Project Site Area = 6.523 acres

$$6.523 \text{ acres} * (43,560 \text{ sq. ft./1 acre}) = 284,142 \text{ sq. ft.}$$

2.) Post-development runoff volume = **101,795** cu. ft.

3.) Post-development runoff depth = (101,795 cu. ft. / 284,142 sq. ft.)

$$= 0.36 \text{ ft.}$$

$$= 4.30 \text{ in.}$$

## Post-Development Infiltration Calculations (Continued):

4.) Post-development stay-on depth = (28.81 in. - 4.3 in.)

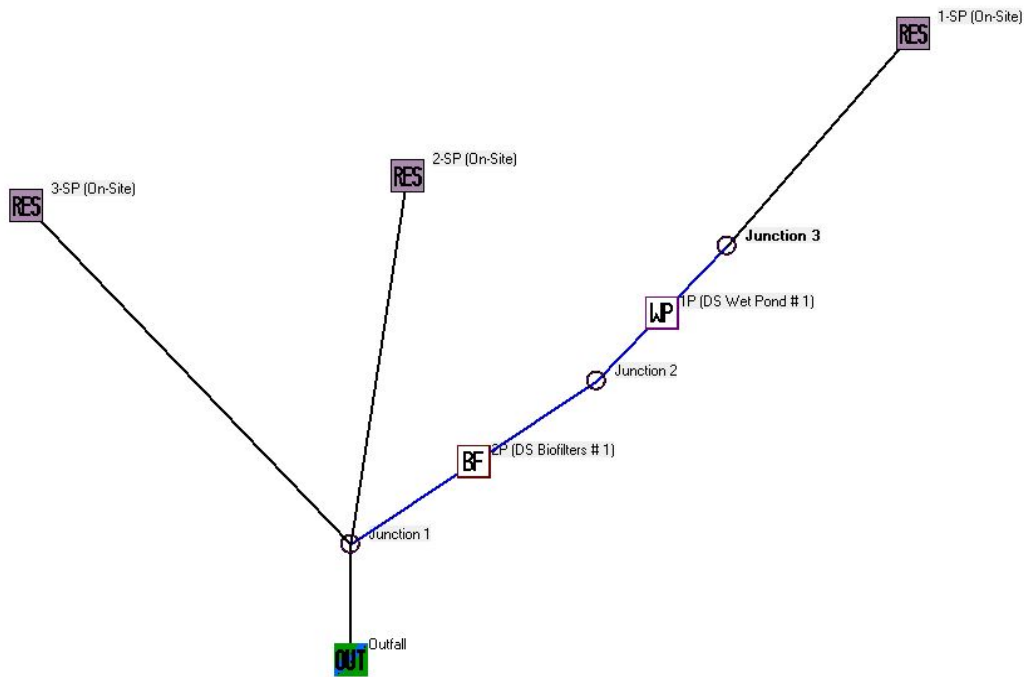
$$= \quad \mathbf{24.51 \text{ in}}$$

5.) Post-development stay-on percentage as compared to pre-development stay-on:

$$= (24.51 \text{ in.} / 27.08 \text{ in.})$$

$$= \quad \mathbf{90.5\%}$$

The post-development project site infiltrates approximately **90.5%** of the pre-development infiltration volume.



## **APPENDIX H**

### **STORM SEWER CATCHMENT AREA MAP AND CALCULATIONS**





PROJECT: 2975 KAPEC ROAD  
 SUBJECT: STORM SEWER DESIGN

No: 124.0465.30  
 DATE: July 23, 2024  
 BY: BCA CK: MLC  
 PAGE: 2 OF: 2



Storm Recurrence Interval: 200-year

SECTION	Pipe Name	Drainage Area (acres) A	Runoff Coeff. C	Equiv. Area (acres) CA	Accum. Area (acres) Σ CA	Time of Concen. (min) T	Rainfall Intensity (in/hr) I	Other Flow (cfs)	TOTAL RUNOFF (cfs) Q=(ΣCA)I	TOTAL RUNOFF (gpm) Q=(ΣA)I	Pipe Length (ft) L	Pipe Slope (ft/ft) S	Req'd Pipe Size (in) D	PIPE SIZE (in) D	Full Flow Velocity (fps) V <sub>full</sub>	Full Flow Capacity (cfs) Q <sub>full</sub>	Full Flow Capacity (gpm) Q <sub>full</sub>	Time in Section (min) t	Type of Pipe	Comment
1	STP-1A&B	0.021	0.97	0.02	0.02	5	12.30		0.25	112	115	0.0206	3.9	12	6.53	5.13	2,301	0.29	HDPE	
2	STP-2	0.806	0.73	0.59	0.59	5	12.30	0.25	7.52	3,374	139	0.0191	14.0	15	7.29	8.95	4,018	0.32	HDPE	
3	STP-3	0.088	0.76	0.07	0.07	5	12.30	7.52	8.34	3,745	236	0.0203	14.4	15	7.52	9.23	4,142	0.52	HDPE	
4	STP-4	1.263	0.97	1.23	1.23	5	12.30		15.07	6,764	21	0.0210	17.9	18	8.64	15.26	6,851	0.04	HDPE	
	STP-5							23.41	23.41	10,508	174	0.0203	21.3	24	10.29	32.32	14,507	0.28	HDPE	
5	STP-6	1.263	0.97	1.23	1.23	5	12.30		15.07	6,764	21	0.0210	17.9	18	8.64	15.26	6,851	0.04	HDPE	
	STP-7							38.48	38.48	17,272	292	0.0203	25.6	30	11.94	58.60	26,302	0.41	HDPE	
	STP-8							38.48	38.48	17,272	151	0.0202	25.6	30	11.91	58.45	26,237	0.21	HDPE	
6	STP-9	0.055	0.49	0.03	0.03	5	12.30		0.33	147	20	0.0051	5.6	8	2.48	0.87	388	0.13	HDPE	
7	STP-10	0.103	0.35	0.04	0.04	5	12.30	0.33	0.77	344	19	0.0161	6.2	8	4.40	1.54	690	0.07	HDPE	
8	STP-11	0.237	0.34	0.08	0.08	5	12.30	0.77	1.77	795	18	0.0402	7.1	8	6.96	2.43	1,090	0.04	HDPE	
9	STP-12	0.136	0.36	0.05	0.05	5	12.30	1.77	2.37	1,064	15	0.0328	8.2	10	7.29	3.98	1,786	0.03	HDPE	
10	STP-13	0.042	0.95	0.04	0.04	5	12.30	2.37	2.86	1,284	40	0.0070	11.8	12	3.81	2.99	1,342	0.18	HDPE	
11	STP-14	0.425	0.38	0.16	0.16	5	12.30	2.86	4.85	2,175	58	0.0060	14.8	15	4.09	5.02	2,252	0.24	HDPE	
										#VALUE!							#VALUE!			
										#VALUE!							#VALUE!			
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										#VALUE!							#VALUE!			
										#VALUE!							#VALUE!			

Comments:  
 1. Design calculations based on Rational Method peak runoff flows and Manning's full flow pipe capacity.

**Inlet Capacity in Sump Condition**

INPUT (per Neenah Manual):

ST-1

Inlet Grate Type: R-3067-R, Type R Grate 0.25 CFS in 200-Year Event

Perimeter of Grate: 5.8

Area of Grate: 2

C value for orifice: 0.6 (C is always 0.6 unless told otherwise)

Reduction Factor 0.65 For Sump Conditions: 0.8 for Curb Openings  
(per FDM 13-25-30, 0.5 for Grates  
Figure 1) 0.65 for Combination (C&G Inlets)

Head (ft)	Weir Flow (cfs)	Orifice Flow (cfs)	Controlling Flow (cfs)	Actual Flow (cfs)
0.05	0.21	2.15	0.21	0.14
0.073	0.38	2.60	0.38	0.25
0.10	0.61	3.05	0.61	0.39
0.15	1.11	3.73	1.11	0.72
0.20	1.71	4.31	1.71	1.11
0.25	2.39	4.81	2.39	1.56
0.30	3.15	5.27	3.15	2.04
0.35	3.96	5.70	3.96	2.58
0.40	4.84	6.09	4.84	3.15
0.45	5.78	6.46	5.78	3.76
0.50	6.77	6.81	6.77	4.40
0.55	7.81	7.14	7.14	4.64
0.60	8.90	7.46	7.46	4.85
0.65	10.03	7.76	7.76	5.05
0.70	11.21	8.06	8.06	5.24
0.75	12.43	8.34	8.34	5.42
0.80	13.70	8.61	8.61	5.60
0.85	15.00	8.88	8.88	5.77
0.90	16.34	9.14	9.14	5.94
0.95	17.72	9.39	9.39	6.10
1.00	19.14	9.63	9.63	6.26
1.05	20.59	9.87	9.87	6.41
1.10	22.08	10.10	10.10	6.56
1.15	23.60	10.33	10.33	6.71
1.20	25.16	10.55	10.55	6.86
1.25	26.75	10.77	10.77	7.00
1.30	28.37	10.98	10.98	7.14
1.35	30.02	11.19	11.19	7.27
1.40	31.71	11.39	11.39	7.41
1.45	33.42	11.60	11.60	7.54
1.50	35.16	11.79	11.79	7.67
1.55	36.94	11.99	11.99	7.79
1.60	38.74	12.18	12.18	7.92
1.65	40.57	12.37	12.37	8.04
1.70	42.42	12.56	12.56	8.16
1.75	44.31	12.74	12.74	8.28
1.80	46.22	12.92	12.92	8.40
1.85	48.16	13.10	13.10	8.51
1.90	50.13	13.27	13.27	8.63
1.95	52.12	13.45	13.45	8.74
2.00	54.14	13.62	13.62	8.85

**Inlet Capacity in Sump Condition**

INPUT (per Neenah Manual):

	ST-2A&2B	
Inlet Grate Type:	R-3067-R, Type R Grate	7.27 CFS in 200-Year Event
Perimeter of Grate:	11.6	2 Inlets
Area of Grate:	4	
C value for orifice:	0.6	(C is always 0.6 unless told otherwise)
Reduction Factor	0.65	For Sump Conditions: 0.8 for Curb Openings (per FDM 13-25-30, 0.5 for Grates Figure 1) 0.65 for Combination (C&G Inlets)

Head (ft)	Weir Flow (cfs)	Orifice Flow (cfs)	Controlling Flow (cfs)	Actual Flow (cfs)
0.05	0.43	4.31	0.43	0.28
0.10	1.21	6.09	1.21	0.79
0.15	2.22	7.46	2.22	1.45
0.20	3.42	8.61	3.42	2.23
0.25	4.79	9.63	4.79	3.11
0.30	6.29	10.55	6.29	4.09
0.35	7.93	11.39	7.93	5.15
0.40	9.68	12.18	9.68	6.29
0.4402	11.18	12.78	11.18	7.27
0.45	11.56	12.92	11.56	7.51
0.50	13.53	13.62	13.53	8.80
0.55	15.61	14.28	14.28	9.28
0.60	17.79	14.92	14.92	9.70
0.65	20.06	15.53	15.53	10.09
0.70	22.42	16.11	16.11	10.47
0.75	24.86	16.68	16.68	10.84
0.80	27.39	17.23	17.23	11.20
0.85	30.00	17.76	17.76	11.54
0.90	32.68	18.27	18.27	11.88
0.95	35.45	18.77	18.77	12.20
1.00	38.28	19.26	19.26	12.52
1.05	41.19	19.74	19.74	12.83
1.10	44.16	20.20	20.20	13.13
1.15	47.21	20.65	20.65	13.43
1.20	50.32	21.10	21.10	13.71
1.25	53.50	21.53	21.53	14.00
1.30	56.74	21.96	21.96	14.27
1.35	60.04	22.38	22.38	14.55
1.40	63.41	22.79	22.79	14.81
1.45	66.84	23.19	23.19	15.07
1.50	70.32	23.59	23.59	15.33
1.55	73.87	23.98	23.98	15.59
1.60	77.47	24.36	24.36	15.84
1.65	81.13	24.74	24.74	16.08
1.70	84.85	25.11	25.11	16.32
1.75	88.62	25.48	25.48	16.56
1.80	92.44	25.84	25.84	16.80
1.85	96.32	26.20	26.20	17.03
1.90	100.25	26.55	26.55	17.26
1.95	104.24	26.89	26.89	17.48
2.00	108.27	27.24	27.24	17.70

**Inlet Capacity in Sump Condition**

INPUT (per Neenah Manual):

ST-3

Inlet Grate Type: R-3067-R, Type R Grate 0.82 CFS in 200-Year Event

Perimeter of Grate: 5.8

Area of Grate: 2

C value for orifice: 0.6 (C is always 0.6 unless told otherwise)

Reduction Factor 0.65 For Sump Conditions: 0.8 for Curb Openings  
(per FDM 13-25-30, 0.5 for Grates  
Figure 1) 0.65 for Combination (C&G Inlets)

Head (ft)	Weir Flow (cfs)	Orifice Flow (cfs)	Controlling Flow (cfs)	Actual Flow (cfs)
0.05	0.21	2.15	0.21	0.14
0.10	0.61	3.05	0.61	0.39
0.15	1.11	3.73	1.11	0.72
0.163	1.26	3.89	1.26	0.82
0.20	1.71	4.31	1.71	1.11
0.25	2.39	4.81	2.39	1.56
0.30	3.15	5.27	3.15	2.04
0.35	3.96	5.70	3.96	2.58
0.40	4.84	6.09	4.84	3.15
0.45	5.78	6.46	5.78	3.76
0.50	6.77	6.81	6.77	4.40
0.55	7.81	7.14	7.14	4.64
0.60	8.90	7.46	7.46	4.85
0.65	10.03	7.76	7.76	5.05
0.70	11.21	8.06	8.06	5.24
0.75	12.43	8.34	8.34	5.42
0.80	13.70	8.61	8.61	5.60
0.85	15.00	8.88	8.88	5.77
0.90	16.34	9.14	9.14	5.94
0.95	17.72	9.39	9.39	6.10
1.00	19.14	9.63	9.63	6.26
1.05	20.59	9.87	9.87	6.41
1.10	22.08	10.10	10.10	6.56
1.15	23.60	10.33	10.33	6.71
1.20	25.16	10.55	10.55	6.86
1.25	26.75	10.77	10.77	7.00
1.30	28.37	10.98	10.98	7.14
1.35	30.02	11.19	11.19	7.27
1.40	31.71	11.39	11.39	7.41
1.45	33.42	11.60	11.60	7.54
1.50	35.16	11.79	11.79	7.67
1.55	36.94	11.99	11.99	7.79
1.60	38.74	12.18	12.18	7.92
1.65	40.57	12.37	12.37	8.04
1.70	42.42	12.56	12.56	8.16
1.75	44.31	12.74	12.74	8.28
1.80	46.22	12.92	12.92	8.40
1.85	48.16	13.10	13.10	8.51
1.90	50.13	13.27	13.27	8.63
1.95	52.12	13.45	13.45	8.74
2.00	54.14	13.62	13.62	8.85

**Inlet Capacity in Sump Condition**

INPUT (per Neenah Manual):

	ST-8	
Inlet Grate Type:	R-4342	2.86 CFS in 200-Year Event
Perimeter of Grate:	6	1.05 CFS BYPASS FROM ST-9 = 3.91 CFS
Area of Grate:	2	
C value for orifice:	0.6	(C is always 0.6 unless told otherwise)
Reduction Factor	1	For Sump Conditions: 0.8 for Curb Openings (per FDM 13-25-30, 0.5 for Grates Figure 1) 0.65 for Combination (C&G Inlets)

Head (ft)	Weir Flow (cfs)	Orifice Flow (cfs)	Controlling Flow (cfs)	Actual Flow (cfs)
0.05	0.22	2.15	0.22	0.22
0.10	0.63	3.05	0.63	0.63
0.15	1.15	3.73	1.15	1.15
0.20	1.77	4.31	1.77	1.77
0.25	2.48	4.81	2.48	2.48
0.30	3.25	5.27	3.25	3.25
0.339	3.91	5.61	3.91	3.91
0.35	4.10	5.70	4.10	4.10
0.40	5.01	6.09	5.01	5.01
0.45	5.98	6.46	5.98	5.98
0.50	7.00	6.81	6.81	6.81
0.55	8.08	7.14	7.14	7.14
0.60	9.20	7.46	7.46	7.46
0.65	10.38	7.76	7.76	7.76
0.70	11.60	8.06	8.06	8.06
0.75	12.86	8.34	8.34	8.34
0.80	14.17	8.61	8.61	8.61
0.85	15.52	8.88	8.88	8.88
0.90	16.91	9.14	9.14	9.14
0.95	18.33	9.39	9.39	9.39
1.00	19.80	9.63	9.63	9.63
1.05	21.30	9.87	9.87	9.87
1.10	22.84	10.10	10.10	10.10
1.15	24.42	10.33	10.33	10.33
1.20	26.03	10.55	10.55	10.55
1.25	27.67	10.77	10.77	10.77
1.30	29.35	10.98	10.98	10.98
1.35	31.06	11.19	11.19	11.19
1.40	32.80	11.39	11.39	11.39
1.45	34.57	11.60	11.60	11.60
1.50	36.37	11.79	11.79	11.79
1.55	38.21	11.99	11.99	11.99
1.60	40.07	12.18	12.18	12.18
1.65	41.97	12.37	12.37	12.37
1.70	43.89	12.56	12.56	12.56
1.75	45.84	12.74	12.74	12.74
1.80	47.82	12.92	12.92	12.92
1.85	49.82	13.10	13.10	13.10
1.90	51.86	13.27	13.27	13.27
1.95	53.92	13.45	13.45	13.45
2.00	56.00	13.62	13.62	13.62

**Inlet Capacity in Sump Condition**

INPUT (per Neenah Manual):

	ST-9	
Inlet Grate Type:	HAALA	1.99 CFS in 200-Year Event
Perimeter of Grate:	12.6	1.05 CFS BYPASSES TO ST-8
Area of Grate:	12.6	
C value for orifice:	0.6	(C is always 0.6 unless told otherwise)
Reduction Factor	1	For Sump Conditions: 0.8 for Curb Openings (per FDM 13-25-30, 0.5 for Grates Figure 1) 0.65 for Combination (C&G Inlets)

Head (ft)	Weir Flow (cfs)	Orifice Flow (cfs)	Controlling Flow (cfs)	Actual Flow (cfs)
0.05	0.46	13.57	0.46	0.46
0.08	0.94	17.16	0.94	0.94
0.10	1.31	19.19	1.31	1.31
0.15	2.42	23.50	2.42	2.42
0.20	3.72	27.13	3.72	3.72
0.25	5.20	30.33	5.20	5.20
0.30	6.83	33.23	6.83	6.83
0.35	8.61	35.89	8.61	8.61
0.40	10.52	38.37	10.52	10.52
0.45	12.55	40.70	12.55	12.55
0.50	14.70	42.90	14.70	14.70
0.55	16.96	44.99	16.96	16.96
0.60	19.32	46.99	19.32	19.32
0.65	21.79	48.91	21.79	21.79
0.70	24.35	50.76	24.35	24.35
0.75	27.01	52.54	27.01	27.01
0.80	29.75	54.26	29.75	29.75
0.85	32.58	55.93	32.58	32.58
0.90	35.50	57.56	35.50	35.50
0.95	38.50	59.13	38.50	38.50
1.00	41.58	60.67	41.58	41.58
1.05	44.74	62.17	44.74	44.74
1.10	47.97	63.63	47.97	47.97
1.15	51.28	65.06	51.28	51.28
1.20	54.66	66.46	54.66	54.66
1.25	58.11	67.83	58.11	58.11
1.30	61.63	69.17	61.63	61.63
1.35	65.22	70.49	65.22	65.22
1.40	68.88	71.78	68.88	68.88
1.45	72.60	73.05	72.60	72.60
1.50	76.39	74.30	74.30	74.30
1.55	80.24	75.53	75.53	75.53
1.60	84.15	76.74	76.74	76.74
1.65	88.13	77.93	77.93	77.93
1.70	92.16	79.10	79.10	79.10
1.75	96.26	80.26	80.26	80.26
1.80	100.41	81.40	81.40	81.40
1.85	104.63	82.52	82.52	82.52
1.90	108.90	83.63	83.63	83.63
1.95	113.22	84.72	84.72	84.72
2.00	117.61	85.80	85.80	85.80



**NOAA Atlas 14, Volume 8, Version 2**  
**Location name: Madison, Wisconsin, USA\***  
**Latitude: 43.0194°, Longitude: -89.4777°**  
**Elevation: m/ft\*\***  
 \* source: ESRI Maps  
 \*\* source: USGS



**POINT PRECIPITATION FREQUENCY ESTIMATES**

Sanja Perica, Deborah Martin, Sandra Pavlovic, Ishani Roy, Michael St. Laurent, Carl Trypaluk, Dale Unruh, Michael Yekta, Geoffery Bonnin

NOAA, National Weather Service, Silver Spring, Maryland

[PF\\_tabular](#) | [PF\\_graphical](#) | [Maps\\_&\\_aerials](#)

**PF tabular**

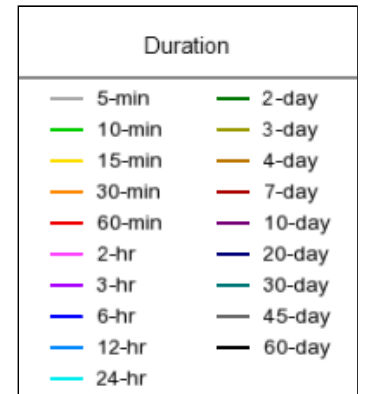
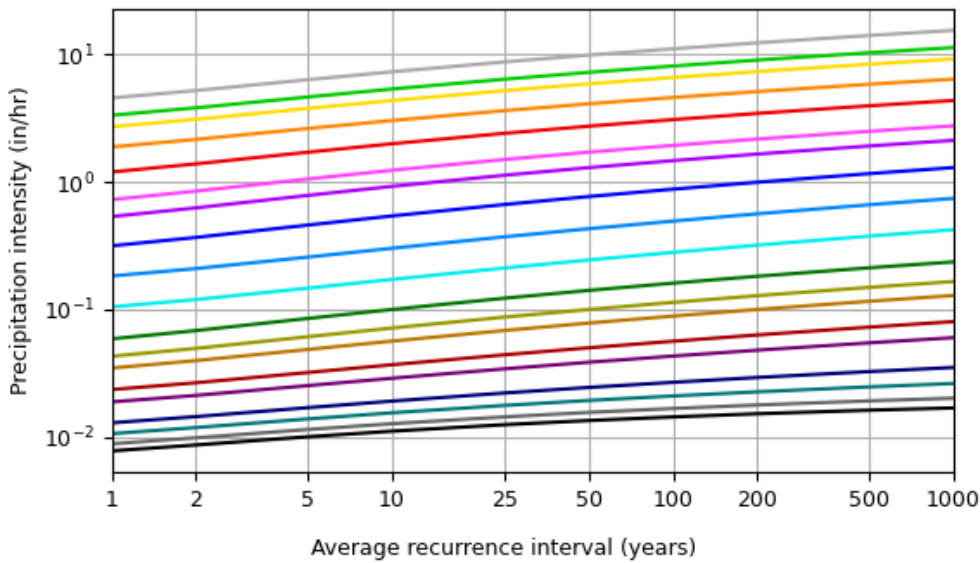
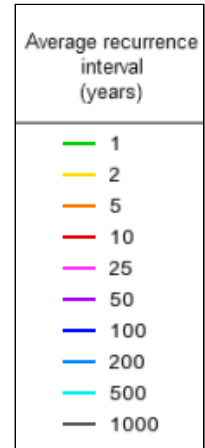
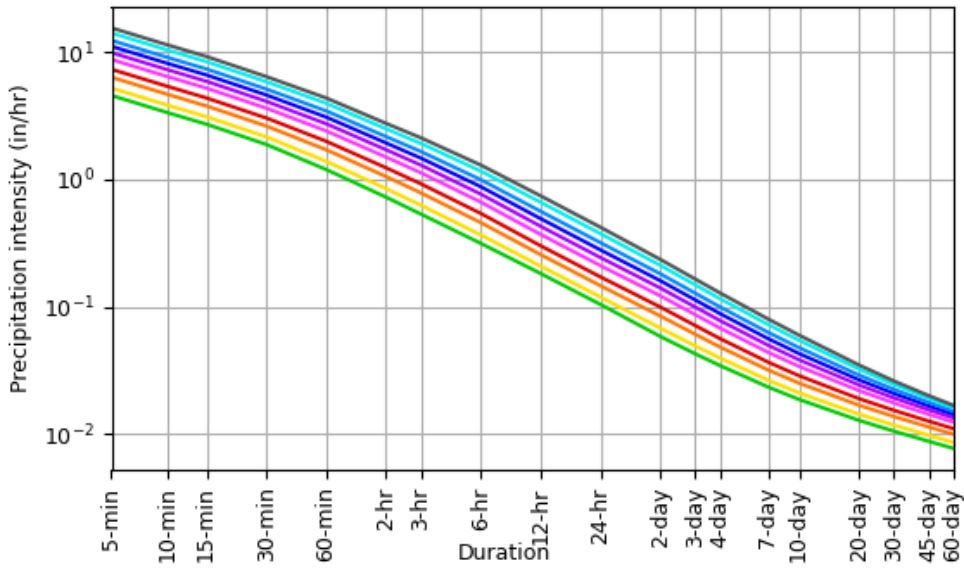
<b>PDS-based point precipitation frequency estimates with 90% confidence intervals (in inches/hour)<sup>1</sup></b>										
Duration	Average recurrence interval (years)									
	1	2	5	10	25	50	100	200	500	1000
5-min	4.55 (3.79-5.42)	5.20 (4.34-6.20)	6.32 (5.27-7.56)	7.30 (6.05-8.75)	8.71 (7.04-10.7)	9.86 (7.80-12.2)	11.1 (8.50-13.9)	12.3 (9.12-15.8)	14.1 (10.1-18.4)	15.4 (10.8-20.3)
10-min	3.32 (2.78-3.97)	3.80 (3.18-4.54)	4.63 (3.85-5.53)	5.35 (4.43-6.41)	6.38 (5.16-7.86)	7.22 (5.71-8.96)	8.09 (6.22-10.2)	9.02 (6.68-11.6)	10.3 (7.37-13.5)	11.3 (7.89-14.9)
15-min	2.70 (2.26-3.23)	3.09 (2.58-3.70)	3.76 (3.13-4.50)	4.34 (3.60-5.21)	5.19 (4.20-6.39)	5.87 (4.64-7.29)	6.58 (5.06-8.30)	7.33 (5.43-9.41)	8.37 (5.99-10.9)	9.19 (6.42-12.1)
30-min	1.88 (1.57-2.24)	2.15 (1.80-2.57)	2.62 (2.18-3.13)	3.03 (2.51-3.63)	3.61 (2.92-4.45)	4.09 (3.24-5.08)	4.59 (3.52-5.78)	5.11 (3.78-6.56)	5.83 (4.17-7.61)	6.39 (4.46-8.42)
60-min	1.19 (0.997-1.42)	1.38 (1.15-1.65)	1.71 (1.42-2.04)	1.99 (1.65-2.38)	2.40 (1.94-2.96)	2.73 (2.16-3.39)	3.08 (2.36-3.88)	3.44 (2.55-4.42)	3.95 (2.82-5.16)	4.34 (3.03-5.72)
2-hr	0.724 (0.609-0.858)	0.844 (0.710-1.00)	1.05 (0.881-1.25)	1.23 (1.03-1.47)	1.49 (1.22-1.83)	1.71 (1.36-2.11)	1.93 (1.49-2.42)	2.16 (1.61-2.76)	2.49 (1.79-3.23)	2.75 (1.93-3.59)
3-hr	0.532 (0.450-0.628)	0.624 (0.526-0.736)	0.781 (0.658-0.924)	0.920 (0.771-1.09)	1.12 (0.920-1.37)	1.29 (1.03-1.59)	1.46 (1.14-1.83)	1.65 (1.24-2.10)	1.91 (1.38-2.47)	2.11 (1.49-2.75)
6-hr	0.314 (0.267-0.368)	0.365 (0.310-0.428)	0.457 (0.387-0.536)	0.539 (0.455-0.635)	0.662 (0.547-0.807)	0.765 (0.618-0.937)	0.874 (0.685-1.09)	0.992 (0.749-1.26)	1.16 (0.845-1.49)	1.29 (0.918-1.67)
12-hr	0.182 (0.156-0.211)	0.208 (0.178-0.242)	0.256 (0.218-0.298)	0.300 (0.255-0.351)	0.369 (0.308-0.448)	0.427 (0.348-0.522)	0.491 (0.388-0.609)	0.560 (0.427-0.707)	0.660 (0.486-0.847)	0.741 (0.530-0.953)
24-hr	0.104 (0.089-0.120)	0.119 (0.102-0.137)	0.146 (0.125-0.169)	0.171 (0.146-0.198)	0.210 (0.176-0.253)	0.243 (0.199-0.294)	0.279 (0.222-0.343)	0.318 (0.244-0.398)	0.374 (0.277-0.477)	0.420 (0.302-0.536)
2-day	0.058 (0.050-0.067)	0.067 (0.058-0.077)	0.084 (0.073-0.097)	0.099 (0.085-0.114)	0.121 (0.102-0.145)	0.140 (0.115-0.168)	0.160 (0.128-0.195)	0.181 (0.139-0.224)	0.211 (0.157-0.266)	0.235 (0.170-0.298)
3-day	0.042 (0.037-0.048)	0.049 (0.042-0.056)	0.060 (0.052-0.069)	0.071 (0.061-0.081)	0.086 (0.073-0.102)	0.099 (0.082-0.118)	0.113 (0.090-0.137)	0.127 (0.098-0.157)	0.148 (0.110-0.186)	0.164 (0.120-0.208)
4-day	0.034 (0.030-0.039)	0.039 (0.034-0.044)	0.048 (0.042-0.055)	0.056 (0.048-0.064)	0.067 (0.057-0.080)	0.077 (0.064-0.092)	0.088 (0.071-0.106)	0.099 (0.077-0.122)	0.115 (0.086-0.144)	0.128 (0.093-0.161)
7-day	0.023 (0.020-0.026)	0.026 (0.023-0.029)	0.031 (0.027-0.036)	0.036 (0.031-0.041)	0.043 (0.037-0.051)	0.049 (0.041-0.058)	0.056 (0.045-0.067)	0.062 (0.049-0.076)	0.072 (0.054-0.090)	0.079 (0.058-0.100)
10-day	0.018 (0.016-0.021)	0.021 (0.018-0.023)	0.025 (0.022-0.028)	0.028 (0.025-0.032)	0.033 (0.029-0.039)	0.038 (0.032-0.045)	0.042 (0.034-0.051)	0.047 (0.037-0.058)	0.054 (0.041-0.067)	0.059 (0.044-0.074)
20-day	0.012 (0.011-0.014)	0.014 (0.012-0.016)	0.016 (0.014-0.018)	0.019 (0.016-0.021)	0.021 (0.018-0.025)	0.024 (0.020-0.028)	0.026 (0.021-0.031)	0.029 (0.022-0.035)	0.032 (0.024-0.039)	0.034 (0.025-0.043)
30-day	0.010 (0.009-0.011)	0.011 (0.010-0.013)	0.013 (0.012-0.015)	0.015 (0.013-0.017)	0.017 (0.015-0.019)	0.019 (0.016-0.022)	0.020 (0.017-0.024)	0.022 (0.017-0.026)	0.024 (0.018-0.029)	0.026 (0.019-0.032)
45-day	0.008 (0.007-0.009)	0.009 (0.008-0.010)	0.011 (0.010-0.012)	0.012 (0.011-0.014)	0.014 (0.012-0.016)	0.015 (0.013-0.017)	0.016 (0.013-0.019)	0.017 (0.014-0.020)	0.019 (0.014-0.023)	0.020 (0.014-0.024)
60-day	0.007 (0.006-0.008)	0.008 (0.007-0.009)	0.009 (0.008-0.011)	0.011 (0.009-0.012)	0.012 (0.010-0.013)	0.013 (0.011-0.015)	0.014 (0.011-0.016)	0.015 (0.011-0.017)	0.016 (0.012-0.019)	0.016 (0.012-0.020)

<sup>1</sup> Precipitation frequency (PF) estimates in this table are based on frequency analysis of partial duration series (PDS). Numbers in parenthesis are PF estimates at lower and upper bounds of the 90% confidence interval. The probability that precipitation frequency estimates (for a given duration and average recurrence interval) will be greater than the upper bound (or less than the lower bound) is 5%. Estimates at upper bounds are not checked against probable maximum precipitation (PMP) estimates and may be higher than currently valid PMP values. Please refer to NOAA Atlas 14 document for more information.

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**PF graphical**

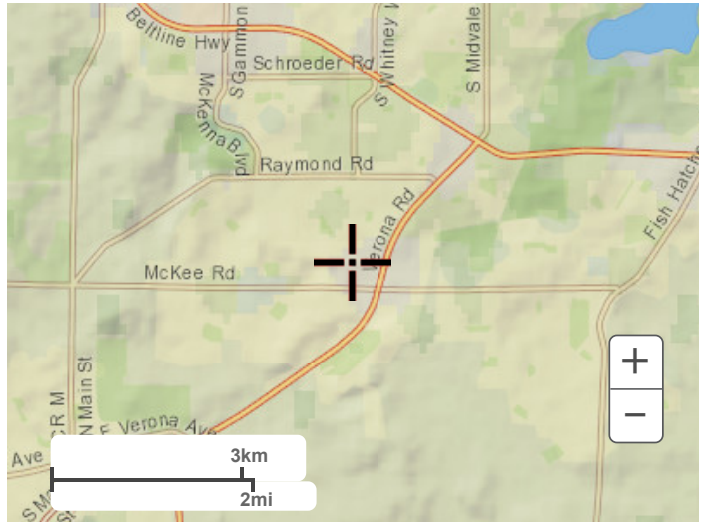
PDS-based intensity-duration-frequency (IDF) curves  
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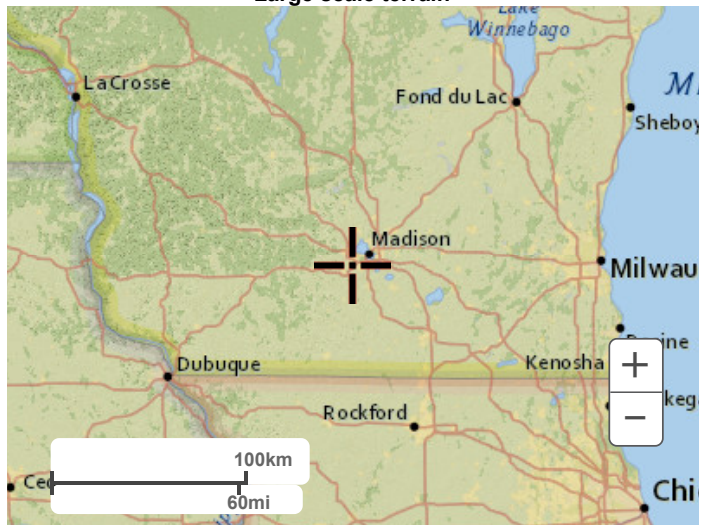
[Back to Top](#)

**Maps & aerials**

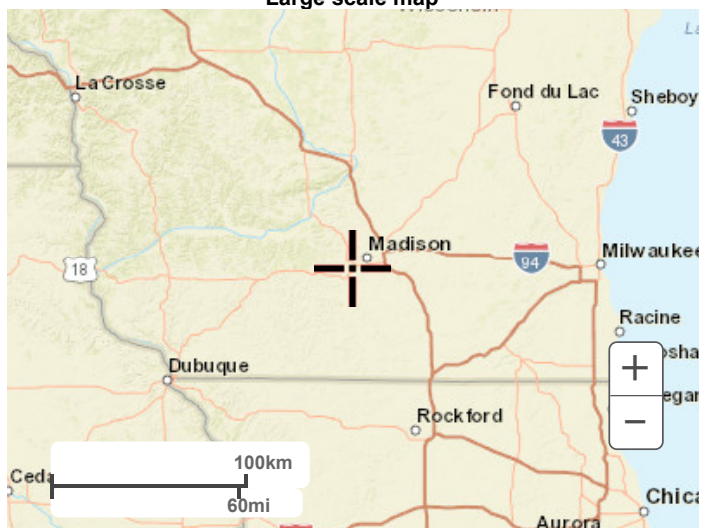
**Small scale terrain**



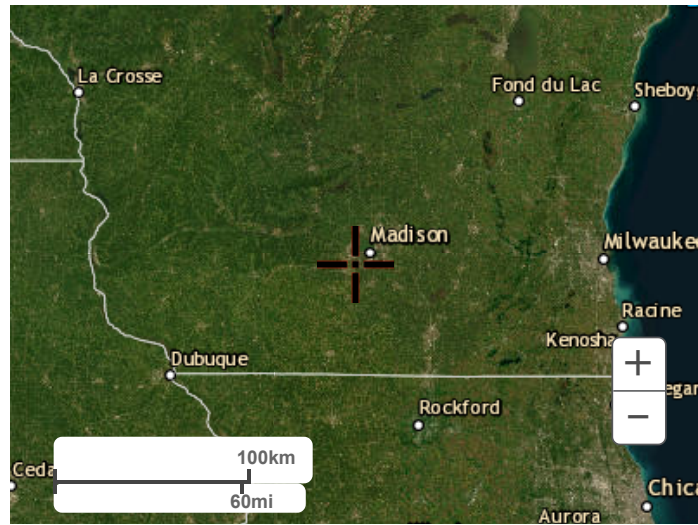
Large scale terrain



Large scale map



Large scale aerial



[Back to Top](#)

Could not retrieve elevation data due to Cross-Origin permissions.

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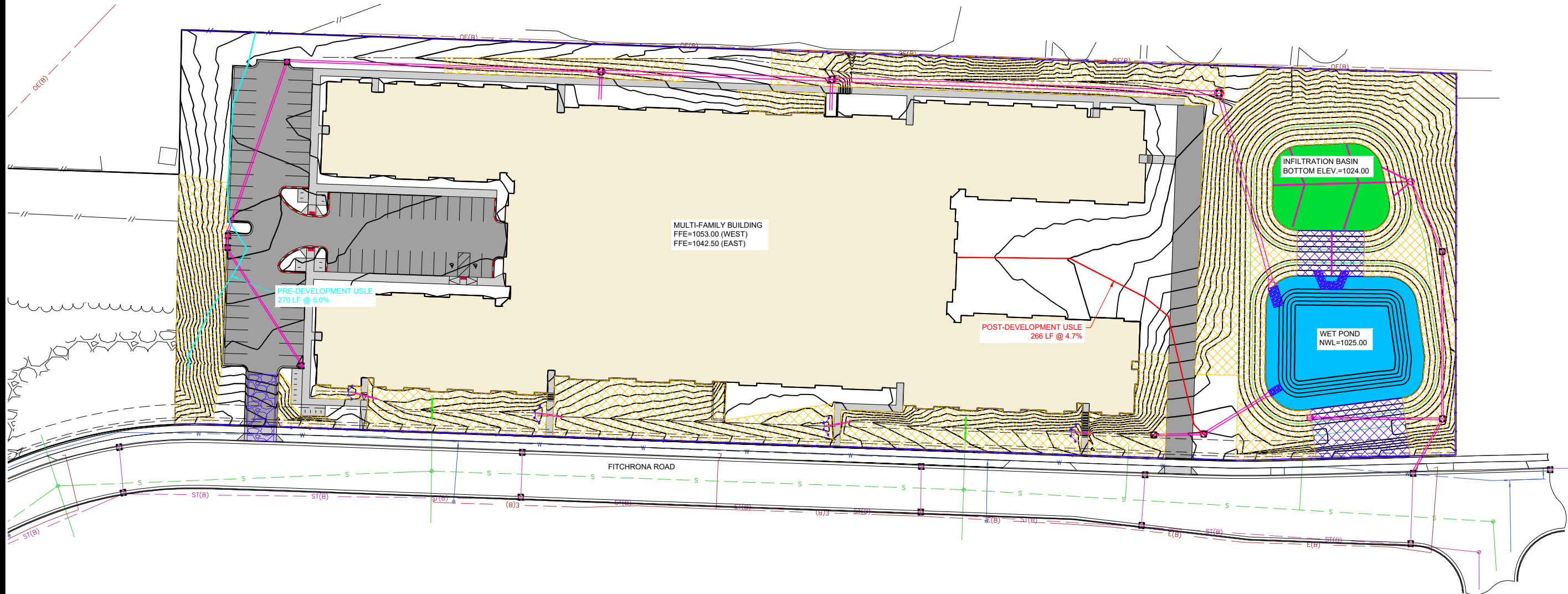
[US Department of Commerce](#)  
[National Oceanic and Atmospheric Administration](#)  
[National Weather Service](#)  
[National Water Center](#)  
1325 East West Highway  
Silver Spring, MD 20910  
Questions?: [HDSC.Questions@noaa.gov](mailto:HDSC.Questions@noaa.gov)

[Disclaimer](#)

## **APPENDIX I**

### **UNIVERSAL SOIL LOSS EQUATION FOR CONSTRUCTION SITES**

LEGEND	
	CONSTRUCTION ENTRANCE
	SILT FENCE
	INLET PROTECTION
	EROSION MATTING
	TURF REINFORCEMENT MAT
	TEMPORARY STONE CULVERT PROTECTION
	RIP RAP



MULTI-FAMILY BUILDING  
FFE=1053.00 (WEST)  
FFE=1042.50 (EAST)

PRE-DEVELOPMENT USLE  
270 LF @ 5.0%

POST-DEVELOPMENT USLE  
266 LF @ 4.7%

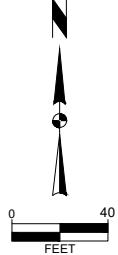
INFILTRATION BASIN  
BOTTOM ELEV.=1024.00

WET POND  
NWL=1025.00

FITCHRONA ROAD

KAPEC ROAD

- CONSTRUCTION SEQUENCE**
- (09-01-2024) - INSTALL EROSION CONTROL DEVICES
  - (09-01-2024 - 09-15-2024) - STRIP AND STOCKPILE TOPSOIL
  - (09-15-2024 - 04-14-2025) - GRADE SITE
  - (04-14-2025 - 06-14-2025) - SEED AND MULCH AND ESTABLISH VEGETATION
  - \*REMOVE EROSION CONTROL MEASURES ONLY AFTER SOILS HAVE BEEN STABILIZED



V:\proweb\1024124\0465.30\CD\1240465\_Plan.dwg BRAN.ABCAND, USLE, 20240809, 1:36 PM, ANSI FULL BLEED, B (17.00 X 11.00 INCHES)

MARK	SIP SUBMITTAL	07-25-24	BCA
Engineer:	BCA	Checked By:	MLC
Technician:	TECH	Date:	05-21-24
			T-R-S: TTN+RRW-SS
			Scale: 1" = 40'
			Project No.: 124,0465.30
			Sheet APP I

**2975 KAPEC ROAD**  
USLE  
CITY OF FITCHBURG, DANE COUNTY, WI  
**SNYDER & ASSOCIATES, INC.**  
5010 VOGES ROAD  
MADISON, WISCONSIN 53718  
608-835-0444 | www.snyder-associates.com

**SNYDER & ASSOCIATES**  
Project No: 124,0465.30  
Sheet APP I



# Soil Loss & Sediment Discharge Calculation Tool

for use on Construction Sites in the State of Wisconsin

WDNR Version 2.0 (06-29-2017)



YEAR 1

Developer: CF Investments LLC

Project: 2975 Kapec Road

Date: 07/19/24

County: Dane

Version 1.0

Activity (1)	Begin Date (2)	End Date (3)	Period % R (4)	Annual R Factor (5)	Sub Soil Texture (6)	Soil Erodibility K Factor (7)	Slope (%) (8)	Slope Length (ft) (9)	LS Factor (10)	Land Cover C Factor (11)	Soil loss A (tons/acre) (12)	SDF (13)	Sediment Control Practice (14)	Sediment Discharge (t/ac) (15)
Bare Ground	09/01/24	09/15/24	6.8%	150	Silty Clay	0.28	5.0%	270	0.88	1.00	2.5	0.752	Silt Fence	1.1
Bare Ground	09/15/24	04/14/25	18.8%	150	Silty Clay	0.28	4.7%	266	0.81	1.00	6.4	0.771	Inlet Protection	3.4
Seed with Mulch or Er	04/14/25	06/14/25	22.0%	150	Silty Clay	0.28	4.7%	266	0.81	0.10	0.7	0.771	Inlet Protection	0.4
End	06/14/25	-----	-----	-----	-----	-----	4.7%	266	0.81	-----	-----	0.000	Inlet Protection	0.0
		-----	-----	-----	-----	-----	4.7%	0	-----	-----	-----	0.000		0.0
		-----	-----	-----	-----	-----	0.0%	0	-----	-----	-----	0.000		0.0
<b>TOTAL</b>											<b>9.6</b>		<b>TOTAL</b>	<b>5.0</b>
													<b>% Reduction Required</b>	<b>NONE</b>

**Notes:**

See Help Page for further descriptions of variables and items in drop-down boxes.  
 The last land disturbing activity on each sheet must be 'End'. This is either 12 months from the start of construction or final stabilization.  
 For periods of construction that exceed 12 months, please demonstrate that 5 tons/acre/year is not exceeded in any given 12 month period.

NOTE: THIS TOOL ONLY ADDRESSED SOIL EROSION DUE TO SHEET FLOW. MEASURES TO CONTROL CHANNEL EROSION MAY ALSO BE REQUIRED TO MEET SEDIMENT DISCHARGE REQUIREMENTS.

**Recommended Permanent Seeding Dates:**

4/1-5/15 and 8/7-8/29 Turf, introduced grasses and legumes  
 Thaw-6/30 Native Grasses, forbs, and legumes

Designed By:	
Date	

**APPENDIX J**

**DRAFT MAINTENANCE AGREEMENT**

DECLARATION OF CONDITIONS AND RESTRICTIONS FOR  
MAINTENANCE OF STORMWATER MANAGEMENT MEASURES

RECITALS:

- A. \_\_\_\_\_ (“Owner”) is the owner of \_\_\_\_\_ more particularly described on Exhibit A attached hereto (the “Property”).
- B. Owner desires to construct stormwater management measures on the Property in accordance with certain plans and specifications approved by the City of Fitchburg (the “City”).
- C. The City requires Owner to record this Declaration of Conditions and Restrictions for Maintenance of Stormwater Management Measures (this “Declaration”) regarding maintenance of certain stormwater management measures (“Stormwater Management Measures”) to be located on the Property all as more particularly described in Exhibit A and shown on Exhibit B. 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 approved plans on file with the City. 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. *Specific maintenance tasks and their schedules shall be conducted in accordance with Exhibit A.*
- 2. Easement to City. In the event that the Owner fails to maintain the Stormwater Management Measures as required by Section 1, and such failure continues for a period of 30 days following the delivery of written notice to the Owner, then the City and its agents, employees, and contractors, shall have the right, but not the obligation, to enter the Property at any time for purposes of inspection, maintenance, and repairs. The City is hereby granted a permanent, non-exclusive easement over Property to conduct such inspections, maintenance, and repairs. These rights and remedies include, but are not limited to, ultimately contracting to perform such maintenance or repairs as it shall deem necessary and charging the costs incurred by the City as a special assessment or a special charge upon the next tax roll equally against Property. In accordance with Wisconsin Statutes Section 66.0703(7)(b), Owner or any subsequent owner of the Property hereby waive all special assessment notices and hearings required by Wisconsin Section 66.0703, and further agree and admit that the assessed property receives a benefit from the work, which is equal to or greater than the total cost of the work.
- 3. Term/Termination. The term of this Declaration shall commence on the date that this Declaration 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 Declaration 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 Declaration 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 the City: City Engineering Division  
5520 Lacy Road

This space reserved for recording data

Return to:  
City of Fitchburg  
5520 Lacy Road  
Fitchburg, WI 53711

PIN#:



**EXHIBIT A**  
**Stormwater Management Maintenance Measures**

Legal Description of Property:

---

Tax Parcel Numbers: \_\_\_\_\_

**Stormwater Management Measures Included in this Agreement (as shown on the attached Erosion Control Plan, Grading Plan, and Utility Plan, hereby made a part of Exhibit B):**

- All site storm sewer pipes and structures
- Infiltration Trenches/Ponds
- Stormwater Conveyance Channel
- 1 SNOOT structure with bioskirt

**Specific Maintenance Requirements:**

*Short Term Maintenance (during construction and/or restoration):*

- The building construction contractor at the owner's expense or as agreed to by the owner and contractor shall perform inspection of all facilities during construction and until site stabilization.
- Inspections during construction shall be weekly and/or after a rainfall event of 0.5" or more.
- Repairs necessary to restore the facility to design performance will be made within 48 hours of the inspection.
- Deficiencies include, but are not limited to, rill erosion, sediment deposition in the infiltration pond or behind perimeter control, and deposition of sediment on the tracking pad.
- Tracking on the public right-of-way shall be inspected regularly during days that construction traffic is leaving the construction site. Any excessive sediment tracked onto the public right-of-way shall be scraped immediately. Thorough sweeping, with appropriate equipment that physically picks up and removes the sediment (vs. pushing it to other locations within the public right-of-way) shall be conducted at the end of each working day during construction activities.

*Long Term Maintenance:*

- Inspector qualifications for Long Term Maintenance: Inspectors under this item shall maintain a current Registered Professional Engineer License in the State of Wisconsin or possess an alternate certification approved by the **City of Fitchburg's** Public Works Department.
- All stormwater provisions constructed as part of this project are permanent in location and function over time. The constructed stormwater provisions such as infiltration ponds, inlet filters, and storm structures shall not be removed or significantly altered without written permission from the **City of Fitchburg's** Public Works Department. Owner shall maintain records of inspections and maintenance as described below in accordance with Chapter 30 – Article II of the **City of Fitchburg** Municipal Code of Ordinances. Inspections and maintenance reports shall be submitted to the **City of Fitchburg's** Public Works Department on an annual basis.
- An operation and maintenance plan shall be developed that is consistent with the purposes of the infiltration device, its intended life, safety requirements and the criteria for its design. The plan shall be developed for inspection, operation and maintenance of the device. The plan shall assign responsibility for activities and the qualifications of the personnel performing the work.

## **STORM SEWER**

- Proprietary sedimentation devices shall be installed and maintained in a manner consistent with laboratory testing and modeling assumptions used to predict effectiveness. This includes the following requirements: the device shall be installed in accordance with manufacturer recommendations; the installed device shall be equipped with an internal or external bypass to divert flows in excess of the design treatment flow rate.
- Storm structures outfitted with devices to capture total suspended solids (TSS) shall be inspected semi-annually in early spring and early fall. Cleaning of TSS and other debris shall be performed anytime the sediment in the unit reaches 8 inches in depth or the volume exceeds 15% of the total storage volume.
- Visual inspection of components shall be performed, and debris removed from inlets and storm sewer manholes.
- Repair inlet/outlet areas that are damaged or show signs of erosion.
- Rip-rap shall be replaced as necessary.
- Repairs must restore the component to the specifications of the original plan.

## **SNOUT STRUCTURE WITH BIOSKIRT**

- The Owner shall install and maintain a SNOUT structure with bioskirt or equal. Said insert is installed for mitigation and control of sediment and/or oil and grease in the stormwater runoff.
- SNOUT and bioskirt shall be maintained per manufacturer guidelines.
- Oil & grease management devices shall be inspected quarterly. Repair work needs to be done whenever the performance of a stormwater structure is compromised. Bioskirt shall be replaced once a year or more frequently if the bioskirt is damaged.
- Owner shall maintain records of inspections, cleaning and replacement of the device or components of the device.

## **WET POND**

- At a minimum, all components of the wet pond, including inlets, outlets, riprap, and safety shelf, and sediment depth, shall be inspected annually. Structures can be accessed via Fitchrona Road or the fire access drive.
- Embankments shall be kept clear of woody vegetation.
- To maximize filtration, mowing in buffer areas around stormwater ponds should be minimized. If occasional mowing is necessary, the mowing height is recommended to be no shorter than 6 inches. Applications of fertilizer, herbicide, pesticide or other chemicals are discouraged unless an approved chemical application plan is on file with the **City of Fitchburg's** Public Works Department.
- Sediment removal shall be required once the average depth of the permanent pool is 3.5 ft.
- Excavation is prohibited below the original design depth unless geotechnical analysis is completed in accordance with DNR's guidance document "Wet Detention Pond (1001)."
- Repairs must restore the component to the specifications of the original plan.

## **TURF DITCH**

- Inspect turf ditches annually to detect signs of bare ground / soil erosion. Turf ditches that show signs of erosion shall be restored. If erosion is persistent, erosion control matting may be helpful in establishing vegetation.

- Inspect turn ditches for signs of standing water or sediment buildup. Regrade the ditch as necessary to maintain proper stormwater conveyance.
- Repairs must restore the component to the specifications of the original plan.

## **INFILTRATION BASIN**

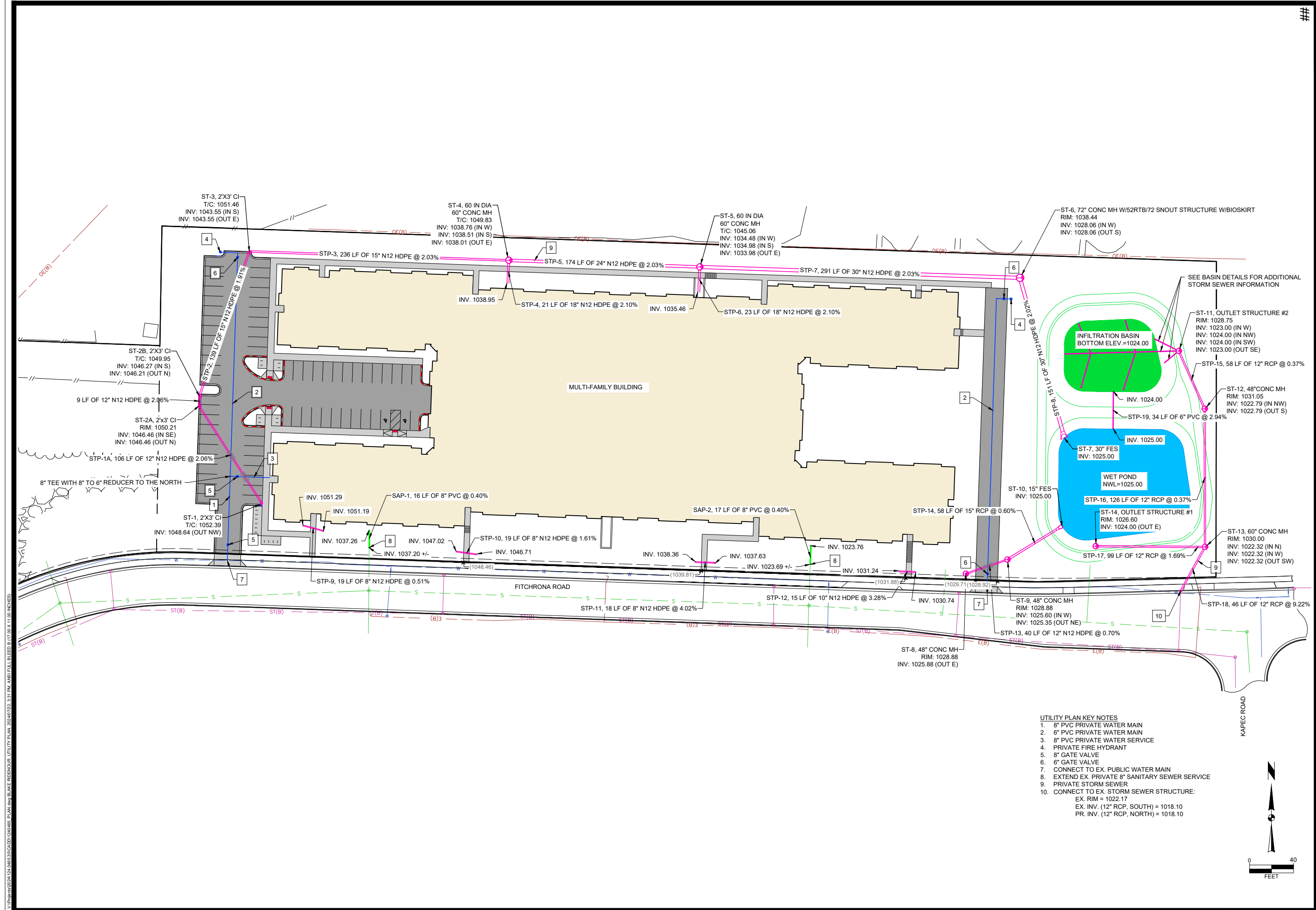
- At minimum, quarterly inspections shall occur. Inspection shall include spreader and overflow spillway for indication of failure. Note the condition of vegetation as part of inspection. If standing water is observed over 50% of the basin floor 3 days after rainfall, the basin is clogged and measures should be undertaken to unclog it.
- Native Vegetation - Mowing (cutting) or burning shall be used to maintain the vegetation.
  - Establishment - The first mowing of newly planted seed shall occur once it reaches a height of 10 to 12 inches.
  - Mowing
    - Mowing shall reduce the height of plants to 5 to 6 inches.
    - After establishment, if burning cannot be accommodated, mowing shall occur once in the fall (after November 1). The area shall be mowed to a height of 5 to 6 inches.
  - Burning
    - Routine Maintenance - Beginning the second year, burning shall occur in the early spring (prior to May 1st) or in the late fall (after November 1st)
    - Burning shall be done two consecutive years and then up to three years can pass before the next burning.
    - Under no circumstances shall burning occur every other year.
- Restoration Procedures – these include removing the top 2 to 3 inches, chisel plowing and adding topsoil and compost. If deep tilling is used, the basin shall be drained, and the soils dried to a depth of 8 inches. If the basin was planted in turf grass and clogging again occurs after these restoration procedures have been used, the owner /operator shall replant with prairie style vegetation using the soil preparation method recommended by the native nursery in the area.
- Trash shall be removed as quickly as possible once observed.
- Pretreatment - If wet detention is used, see WDNR Conservation Practice Technical Standard Wet Detention Basin (1001) for operations and maintenance requirements.
- Winter Maintenance - All draw down devices in the pond shall be opened during winter months to discourage infiltration of runoff water containing high levels of chlorides. If this practice is an enclosed basin, the use of chloride deicers shall be limited in the area draining to the basin to reduce the chance of exceeding the limits in Ch. NR 140.
- Repairs must restore the component to the specifications of the original plan.

## **EXHIBIT B**

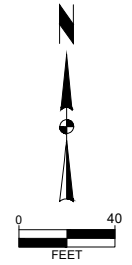
### **Figure(s) of Stormwater Management Maintenance Measures**







- UTILITY PLAN KEY NOTES**
1. 8" PVC PRIVATE WATER MAIN
  2. 6" PVC PRIVATE WATER MAIN
  3. 8" PVC PRIVATE WATER SERVICE
  4. PRIVATE FIRE HYDRANT
  5. 8" GATE VALVE
  6. 6" GATE VALVE
  7. CONNECT TO EX. PUBLIC WATER MAIN
  8. EXTEND EX. PRIVATE 8" SANITARY SEWER SERVICE
  9. PRIVATE STORM SEWER
  10. CONNECT TO EX. STORM SEWER STRUCTURE:  
 EX. RIM = 1022.17  
 EX. INV. (12" RCP, SOUTH) = 1018.10  
 PR. INV. (12" RCP, NORTH) = 1018.10



MARK	SIP SUBMITTAL	DATE	07-25-24	BCA	BY
Engineer:	BCA	Checked By:	MLC	Scale:	1" = 40'
Technician:	TECH	Date:	05-21-24	T-R-S:	TIN-RRW-SS
Project No.: 124,0465.30					
Sheet C 500					

**2975 KAPEC ROAD**  
**UTILITY PLAN**  
 CITY OF FITCHBURG, DANE COUNTY, WI  
**SNYDER & ASSOCIATES, INC.**  
 5010 VOGES ROAD  
 MADISON, WISCONSIN 53718  
 608-835-0444 | www.snyder-associates.com

Project No: 124,0465.30  
 Sheet C 500

V:\proj\1240465\24121\0465\30\CD\1240465\_Plan.dwg, BLAKE ROSENTHAL, UTILITY PLAN, 2024/07/22, 3:31 PM, ANSIFULL BLEED, B (17.00 X 11.00) INCHES

**APPENDIX K**

**SOIL TEST PITS**





**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 1/2 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  <p style="text-align: center;"><b>Please print all information</b></p> Personal information you provide may be used for secondary purposes [Privacy Law, s. 15.04(1)(m)]	County <u>Dane</u> Parcel I.D. <u>225/060906399202</u> Reviewed by: Date:
--	--

Property Owner <u>Wingra Real Estate LLC</u>	Property Location Govt. Lot <u>SE 1/4 SW 1/4 S 6 T 6 N R 9 E</u>		
Property Owner's Mail Address <u>PO Box 44284</u>	Lot #	Block#	Subd. Name or CSM #
City <u>Madison</u> State <u>WI</u> Zip Code <u>53744-4284</u> Phone Number	<input checked="" type="checkbox"/> City <input type="checkbox"/> Village <input checked="" type="checkbox"/> Town <u>Fitchburg</u>		Nearest Road <u>2975 Kapec Road</u>
Drainage area _____ <input type="checkbox"/> sq ft <input type="checkbox"/> acres Test site suitable for (check all that apply): <input type="checkbox"/> Site not suitable;	Hydraulic Application Test Method <input checked="" type="checkbox"/> Morphological Evaluation <input type="checkbox"/> Double Ring Infiltrometer <input type="checkbox"/> Other: (specify) _____		Soil Moisture Date of soil borings: <u>7/16/2024</u> USDA-NRCS WETS Value: <input type="checkbox"/> Dry = 1; <input type="checkbox"/> Normal = 2; <input type="checkbox"/> Wet = 3.
<input type="checkbox"/> Bioretention; <input type="checkbox"/> Subsurface Dispersal System; <input type="checkbox"/> Reuse; <input type="checkbox"/> Irrigation; <input type="checkbox"/> Other _____			

<b>TP-1</b>	#OBS. <input checked="" type="checkbox"/> Pit <input type="checkbox"/> Boring	Ground surface elevation <u>1041.4</u> ft.	Elevation of limiting factor <u>1022.4</u> ft. (Bedrock)							
Horizon	Depth in.	Dominant Color Munsell	Redox Description Qu. Sz. Cont. Color	Texture	Structure Gr. Sz. Sh.	Consistence	Boundary	% Rock Frags.	% Fines	Hydraulic App Rate Inches/Hr
1	0-14	10YR 2/2	None	SIL	1fsbk	mfr	gw	< 5		0.13
2	-72	10YR 4/4	None	SICL	1fsbk	mvfi	gw	< 5		0.04
3	-156	10YR 6/4	None	GRSL	1fsbk	mfr	gw	15-25		0.5
4	-228	10YR 8/1; 2.5YR 7/4	None	GRLFS	1fsbk	mfr	cs	15-25		0.5
5	>228			BR						
<b>Comments:</b> No apparent groundwater encountered during excavation. Excavator refusal experienced upon bedrock at about 19 ft. Horizon 4 characterized as weathered sandstone, which could be easily excavated.										

<b>TP-2</b>	#OBS. <input checked="" type="checkbox"/> Pit <input type="checkbox"/> Boring	Ground surface elevation <u>1041.0</u> ft.	Elevation of limiting factor <u>1022.0</u> ft. (Bedrock)							
Horizon	Depth in.	Dominant Color Munsell	Redox Description Qu. Sz. Cont. Color	Texture	Structure Gr. Sz. Sh.	Consistence	Boundary	% Rock Frags.	% Fines	Hydraulic App Rate Inches/Hr
1	0-15	10YR 2/2	None	SIL	1fsbk	mfr	gw	< 5		0.13
2	-48	10YR 4/4	None	SICL	1fsbk	mvfi	gw	< 5		0.04
3	-120	10YR 6/4	None	GRSL	1fsbk	mfr	gw	15-25		0.5
4	-228	10YR 8/1; 2.5YR 7/4	None	GRLFS	1fsbk	mfr	cs	15-25		0.5
5	>228			BR						
<b>Comments:</b> No apparent groundwater encountered during excavation. Excavator refusal experienced upon bedrock at about 19 ft. Horizon 4 characterized as weathered sandstone, which could be easily excavated.										

Name (Please Print) <u>Ryan J. Portman</u>	Signature	Credential Number <u>1201636</u>
Address <u>201 N. Mallard Dr., Sun Prairie, WI 53590</u>	Date Evaluation Conducted <u>7/16/2024</u>	Telephone Number <u>608-288-4100</u>



## Conditional Use - Owner or Authorized Agent Acknowledgement

\*\* It is highly recommended that an applicant hold at least one neighborhood meeting prior to submitting a CUP application to identify any concerns or issues of surrounding residents.

PLEASE NOTE - Applicants shall be responsible for legal or outside consultant costs incurred by the City. Submissions shall be made at least four (4) weeks prior to desired plan commission meeting.

By signing below, I certify that the information included with this Conditional Use application is true and correct, to the best of my knowledge. Any agent signing below verifies that he/she has the consent of the owner to file the application.

*Cory Frank*

\_\_\_\_\_  
Owner's or Authorized Agent's Signature

08/20/2024

Date (DD/MM/YYYY)