THE CITY OF WATERTOWN

SITE PLAN REVIEW COMMITTEE MEETING AGENDA

MONDAY, NOVEMBER 25, 2024 AT 1:30 PM

COUNCIL CHAMBERS, SECOND FLOOR, MUNICIPAL BUILDING, 106 JONES STREET, WATERTOWN, WI 53094

Virtual Meeting
Info: https://us06web.zoom.us/j/2371460557?pwd=UXjvqLXKCdw12jl4jl1b7GlUPaClat.1&omn=89965079208 or call: 1-646-931-3860 and use Meeting ID: 237 146 0557 Passcode: 144391

All public participants' devices will be muted during the meeting except during the public comment period.

1. **CALL TO ORDER**
2. **APPROVAL OF MINUTES**
   - A. Review and take action: Site Plan Review minutes dated September 9, 2024
3. **BUSINESS**
   - A. Review and take action: Hunter Oaks Planned Development Amendment
   - B. Review and take action: Site Plan for Lumin Terrace Apartments
   - C. Review and take action: 1911 Gateway Drive Site Plan
4. **ADJOURNMENT**

Persons requiring other reasonable accommodations for any of the above meetings, may contact the office of the City Clerk at mdunneisen@watertownwi.gov*, phone 920-262-4006*

A quorum of any City of Watertown Council, Committee, Board, Commission, or other body, may be present at this meeting for observing and gathering of information only

SITE PLAN REVIEW COMMITTEE
September 9, 2024

The Site Plan Review Committee met on the above date at 1:30 P.M. in the Council Chambers on the second floor of City Hall. The following members were present: Brian Zirbes, Andrew Beyer of Public Works and Engineering, Doug Zwieg, Maureen McBroom, Stacy Winkelman of the Streets and Solid Waste Department, Tanya Reyen and Kyle Esmeier of the Fire Department, Strategic Initiatives and Development Coordinator Mason Becker, Kristine Butteris of Park & Rec. Also in attendance were Nikki Zimmerman, Todd and Tammy Grady, Tim Sullivan of the Watertown Daily Times. Ryan Jones joined via telephone.

1. **Call to Order**
   The meeting was called to order by Chairperson Brian Zirbes.

2. **Approval of Minutes**
   A. **Review and take action: Site Plan Review Minutes Dated June 24, 2204**
   Motion was made by Doug Zwieg and seconded by Andrew Beyer to approve the minutes as submitted. Unanimously approved.

3. **Business**
   A. **Review and take action: 919 Charles Street – addition to First Kindergarten**
   This is for a 720 square foot proposed addition to the First Kindergarten building.

   The following was presented by staff:

Building:	No comments
Fire:	If there is a Knox Box, it will need to get updated. If not, one needs to be installed. If there is a fire alarm system, it needs to be extended into the addition. Extinguishers and emergency lighting shall also be installed in the addition.
Stormwater:	No comments.
Engineering:	No comments.
Streets and Solid Waste:	No comments.
Parks:	No comments.
Zoning:	No comments.

Motion made and seconded to approve with contingencies that a Knox Box shall be updated or installed; if there is a fire alarm system, it would need to be extended into the addition; and extinguishers and emergency lighting shall be installed in the addition.

   B. **Review and take action: 1629 E. Main Street – proposed 48' x 48' storage building**
   This is for a proposed 48' x 48' storage structure which is being presented here since this would exceed the total square footage for a combination of accessory structures on a property under § 550-56C(1)(b)[1]; exceed the maximum height of an accessory structure under Sections § 550-83C; and be allowed exceptions to exterior construction material standards under Section § 550-121F.

Building:	No comments
Fire:	Add a second address to the property for the new building to make it clear where fire and police personnel would be going to.
Stormwater:	No comments.
Engineering:	No comments.
Streets and Solid Waste:	No comments.
Parks:	No comments.
Zoning:	No comments.

Motion made and seconded to approve with the contingency that a second address be added to the property for the new building.

4. **Adjournment**
   Motion was made and seconded to adjourn. Unanimously approved.

Respectfully submitted,
Nikki Zimmerman
Recording Secretary

NOTE: These minutes are uncorrected, and any corrections made thereto will be noted in the proceedings at which the minutes are approved.

PETITION AND REQUEST TO

AMEND THE PUD/GDP FOR HUNTER OAKS NEIGHBORHOOD

(Second Amendment)

CITY OF WATERTOWN, WI

Bielinski Development Inc. ("Bielinski") hereby respectfully requests that the City of Watertown Plan Commission and Common Council review the real property consisting of approximately 13.13 acres, which is more particularly described in the Site Plans dated 10/30/24 which are incorporated herein ("Subject Parcels") with this submission.

Bielinski is requesting amending the approved (August 20th, 2024) Planned Unit Development (PUD) & General Development Plan (GDP) for these two parcels in the Hunter Oaks Neighborhood.

All the below statements and information, whether written on this Petition or attached, are true and correct to the undersigned's knowledge and belief.

Proposal and Commitments

The Petitioner, Bielinski, respectfully requests that the City Planning Commission and Common Council approve this amended General Development Plan land use of the Subject Parcels with substantial conformance of the enclosed site plans dated 10/30/24, a Bielinski Affordable Housing Initiative of Single Family Residential Small Lot Homes.

This amended GDP includes the following amended term(s):

- **Name of this Subdivision: The Enclave at Hunter Oaks**
- **The GDP serves as the PIP exclusively for Area C(b).**
- **Minimum Lot Width at Street Frontage: 45 ft.**
- **Minimum Lot Width at Front Setback: 45 ft. (previously approved at 50 ft.)**
- **Building Setback Street (Front): 24 ft. (previously approved at 20 ft.)**
- **Single Family lots reduced from 53 to 44 to accommodate an improved design layout.**

All other terms of the approved GDP on June 20th, 2023 and the approved amendment on August 20th, 2024 stay the same.

Dated this 7th day of November, 2024.

OWNER & PETITIONER:

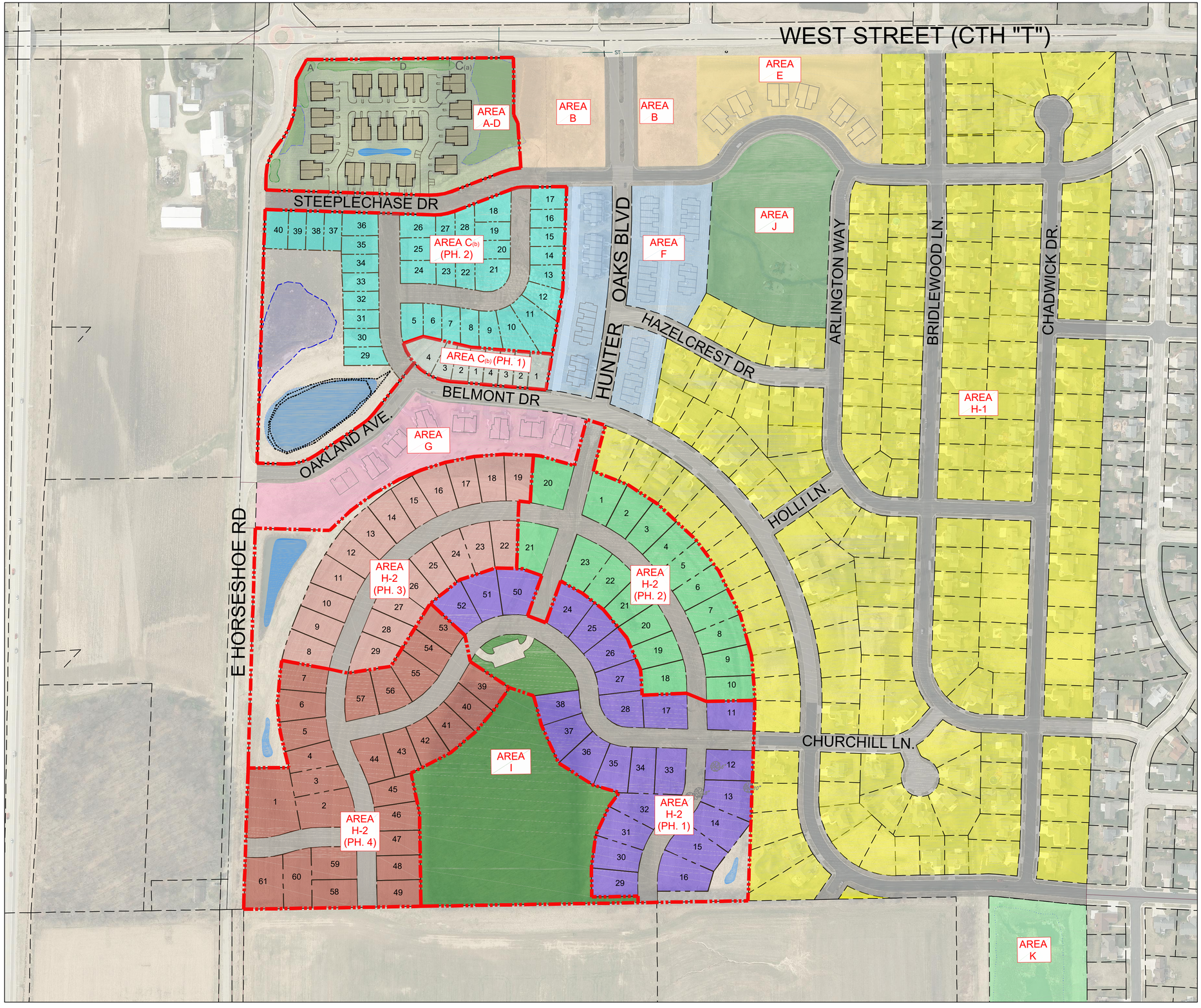
Bielinski Development, Inc.

1830 Meadow Lane, Suite A

Pewaukee, Wisconsin 53072

By: _____ Dated: 11/7/24

Frank Bielinski, President



BIELINSKI HOMES

GENERAL DEVELOPMENT PLAN (AMENDMENT)

"Hunter Oaks Neighborhood"

City of Watertown, Wisconsin

Site Data Table (Original)

Acreage Calculations & Unit Counts					
Area	Land Use	Net Acreage	Number of Units	Net Density	% of Unit Count
$C_{(a)}$	Multi-Family Homes	3.8	54	14.2	9.0%
$C_{(b)}$	Multi-Family Homes	6.2	81	13.1	16.7%
E	Single-Family Attached Condos (2-Unit)	3.3	12	3.8	2.0%
F	Single-Family Attached Condos (4 to 6 Unit)	5	50	10	9.0%
G	Single-Family Attached Condos (4 to 8 Unit)	6.4	60	9.4	11.0%
H	Single-Family Attached Condos (2-Unit)	3.7	20	5.4	4.0%
I	Single-Family Lots (75'w to 110'w)	3.8	294	3.9	51.0%
J	Neighborhood Park	8.2	-	-	
K	Neighborhood Park	4.3	-	-	
L	Storm Water Detention	8.9	-	-	
	Street Right of Way	38.9			
	Total		571		

Site Data Table (Amended)

Acreage Calculations & Unit Counts					
Area	Land Use	Net Acreage	Number of Units	Net Density	% of Unit Count
A-D	Multi-Family Condos (2-Unit)	6.5	34	5.23	7.66%
B	Single-Family Attached Condos (2-Unit)	3.5	20	5.71	4.50%
$C_{(b)}$ (PH1)	Single-Family Lots	1.1	8	7.3	1.80%
$C_{(b)}$ (PH2)	Single-Family Lots	10.4	36	3.5	8.11%
E	Single-Family Attached Condos (2-unit)	3.3	12	3.64	2.70%
F	Single-Family Attached Condos (4 to 6 Unit)	5.1	50	9.80	11.26%
G	Single-Family Attached Condos (2-Unit)	3.8	20	5.26	4.50%
H-1	Single-Family Lots	48.1	174	3.60	39.19%
H-2 (PH1)	Single-Family Lots	8.1	25	3.09	5.63%
H-2 (PH2)	Single-Family Lots	5.3	18	3.40	4.05%
H-2 (PH3)	Single-Family Lots	7.8	20	2.56	4.50%
H-2 (PH4)	Single-Family Lots	8.1	27	3.33	6.08%
I	Neighborhood Park	7.5	-	-	–
J	Neighborhood Park	4.4	-	-	–
K	Storm Water Detention	8.9	-	-	–
	Street Right of Way	31.5	-	–	–
	Total Project Area	163.4	444		

Overall Gross Density:

- 444 Total Units / 163.4 Total Project Acres = 2.72 DUA

Overall Net Density:

- 444 Total Units / 123.0 = 3.61 DUA
  *Net Residential & Neighborhood Park Land Use Acres

*Net Residential & Neighborhood Park Land Use Acres is Equal to Areas A-D, B, $C_{(b)}$, E, F, G, H, I, J

TRIO DESIGN • LAND SURVEYING • CIVIL ENGINEERING
4100 North Calhoun Road
Brookfield, WI 53005
PHONE: (262) 790-1480
FAX: (262) 790-1481
EMAIL: info@trioeng.com

0 75 150 300

Scale: 1" = 150' (22"X34")

Scale: 1" = 300' (11"X17")

DATE: 10-30-2024

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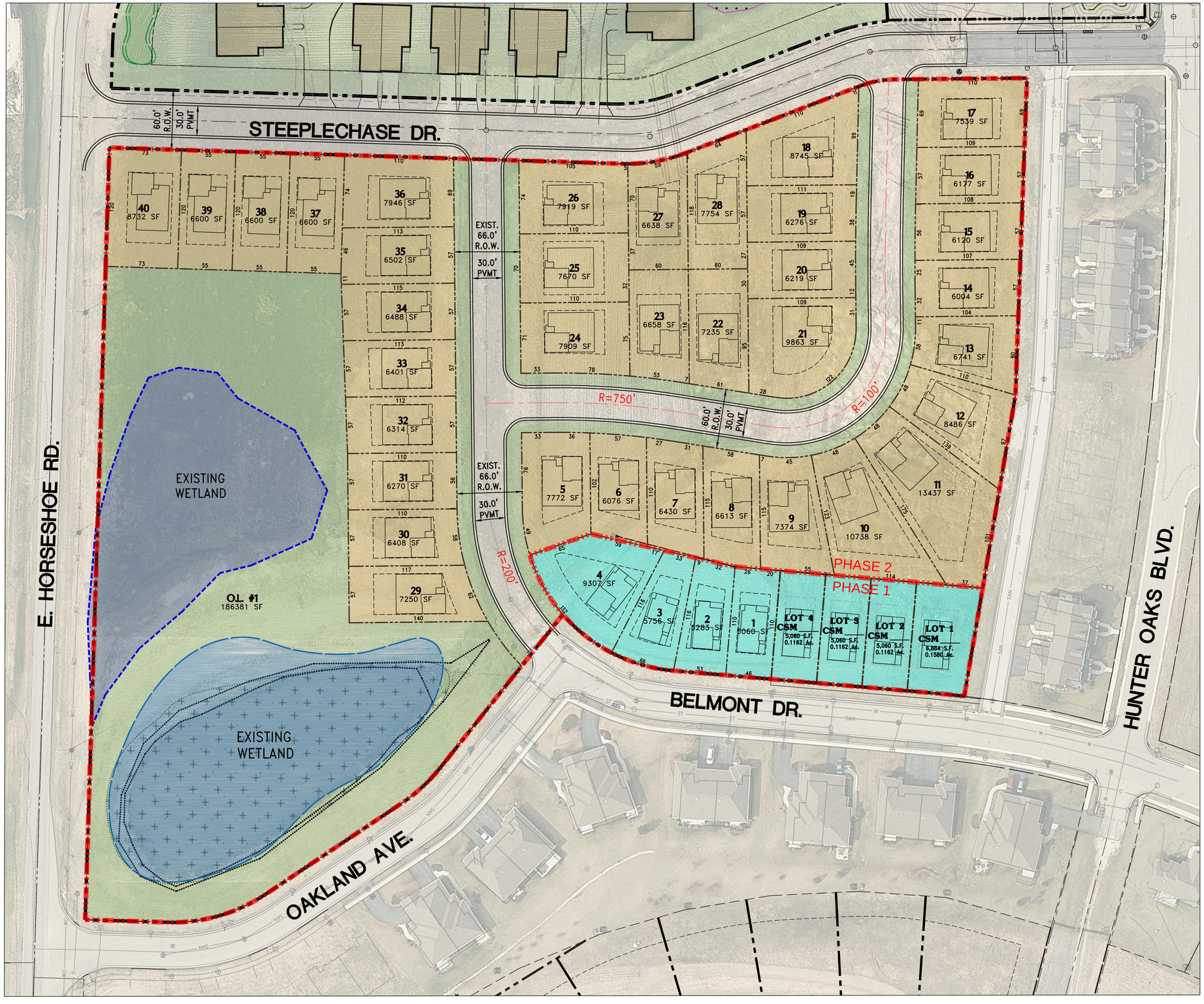

BIELINSKI™ HOMES

TRIO — DESIGN • LAND SURVEYING • CIVIL ENGINEERING

4100 N. CALHOUN RD
SUITE 300
BROOKFIELD, WI 53005
t: (262) 790-1480
e: info@trioeng.com
www.trioeng.com

PIP SITE PLAN

EXCLUSIVE FOR

AREA Cb

"THE ENCLAVE AT HUNTER OAKS"
SINGLE FAMILY HOME SITES
City of Watertown, WI

DATA SUMMARY	
Proposed Site	AREA Cb
Parcel Area:	13.13 acres
Development:	44 lots
Density:	3.35 lots/acre
Average Lot Size:	7,090 s.f. (0.163 Ac)
Proposed Phasing:	
Phase 1:	8 lots, CSM Lots 1-4 & Plat Lots 1-4 (Fall 2024)
Phase 2:	36 lots, 5-40 (2025)
Proposed Pad Dimensions:	
	28'x48' - CSM Lots 1-4 & Plat Lots 1-4
	38'x58' - Lots 37-40
	40'x50' - Lots 5-36
Proposed Building Setbacks:	
Street (Front):	24'
Street (Corner):	20'
Rear:	25'
Side:	8'
Min. Lot Width:	45'

0 25 50 100

Scale: 1" = 50' (22"X34")
Scale: 1" = 100' (11"X17")

DATE: 10-30-2024

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November 8, 2024

Project Narrative

Project: Lumin Terrace
Johnson Street
Watertown, WI 53094

Horizon Development Group, Inc. is requesting conditional use permit and site plan review and approval for a new multi-family development, Lumin Terrace, located on the east side of Johnson Street (between Johnson Steet and Hoffman Road) on the northern portion of parcel 291-0815-0814-001, in the City of Watertown. The property is zoned MR-10 and a conditional use permit is required for the proposed development. City Land Use Plan map designation for the property is Riverside Mixed Use and the proposed use is compatible. The existing property is currently wooded with some asphalt paths. The trees and existing asphalt paths will be removed for the proposed development.

The property area is 9.33 acres, and the area of site disturbance is proposed at 8.90 acres. The development will consist of four (4) buildings: 3 buildings will be 12,996 SF and 1 building will be 10,560 SF. All buildings will be 2-stories. Exterior building materials consist of a variety of styles of vinyl siding, composite stone veneer, vinyl windows, asphalt shingles, and aluminum fascia, soffit, gutters, and downspouts. A 20' x 20' outdoor pavilion area with grill and picnic tables is proposed towards the northeastern part of the site. A fenced in dog park area (42' x 60') is also proposed in this area. Two waste enclosures are proposed: one on the northern end and one on the southern end of the development. The waste enclosures will contain a sufficient number of waste bins to conveniently accommodate all trash and waste generated by the proposed use. All improvements located within the development comply with all building setback requirements.

The proposed number of dwelling units is 93, with 92 apartment units for lease and 1 unit utilized as a model unit/leasing office that could be leased as an apartment in the future. The overall development will include 36 one-bedroom units, 32 two-bedroom units, 24 three-bedroom units, and a one-bedroom model unit/leasing office. The leasing office will be staffed by the property manager, Horizon Management Services, Inc., with regular office hours. There will be 92 non-age-restricted households living at Lumin Terrace, with the number of residents being dependent on family household size. Commercial traffic to the property will include mail/parcel deliveries, refuse pickup, and maintenance/vendor services, all with varying frequency. Hours of operation will be consistent with residential uses throughout the City. The development will be comprised of the ratios below. The floor area ratio is 0.24.

Building Floor Area	1.14 AC	49,548 SF	12.2%
Pavement	3.04 AC	132,373 SF	32.6%
Total Impervious	4.18 AC	181,921 SF	44.8%
Landscape Open Space	5.16 AC	224,606 SF	55.2%
Project Site	9.33 AC	406,527 SF	100%

Access to development will be via (2) driveways from the newly constructed Johnson Street, constructed as part of the Rock River Ridge Project. Parking is provided primarily to the east and west of the buildings with a total of 196 parking spaces, including 8 ADA spaces. All required off-street parking and access drives are designed entirely within the boundaries of the group development. Internal sidewalks are provided around each building for pedestrian access and a bike rack is also provided at each building.

Two 8" water service connections are proposed to connect to the newly constructed water main in Johnson Street, constructed as part of the Rock River Ridge Phase 1 Project. A private 8" water loop is proposed to service each of the buildings and proposed site hydrants. Sanitary services from each of the buildings are proposed to connect into an 8" private sanitary interceptor line to connect into the existing sanitary main in the Hoffman Road ROW via a newly proposed sanitary manhole.

Post-construction stormwater management is provided with a wet pond in the southeast portion of the site which will discharge to an infiltration basin on the northeast portion of the site. The infiltration basin will discharge via an 8" pipe which will connect to an existing catch basin beehive structure on the east central portion of the site.

The proposed development shall comply with all requirements of Article XI Performance Standards. The development will not create any potential nuisances related to access, visibility, off-street parking, off-street loading, exterior storage, exterior lighting, vibration, noise, air pollution, odors, electromagnetic radiation, glare and heat, fire and explosion, toxic and noxious materials, waste materials, drainage, exterior construction materials, and hazardous materials.

The proposed development will fit well with the general character of this area. The vacant property will be transformed into a development that is aesthetically pleasing and complementary to other area structures. Building exterior will feature high-quality materials along with coordinated landscaping with resilient plantings enhancing property and neighborhood appeal. Site lighting will be provided in a fashion that provides appropriate foot candles for safety with cut-off fixtures for minimal light trespass and directed inward toward the development. The building and grounds will be well maintained. No hazards or nuisances to nearby neighbors are anticipated as a result of this project.

FRONT ELEVATION

SCALE: 1/8" = 1'-0"

REAR ELEVATION

SCALE: 1/8" = 1'-0"

SIDE ELEVATION

SCALE: 1/8" = 1'-0"

SIDE ELEVATION

SCALE: 1/8" = 1'-0"

ARCHITECTURAL EXTERIOR ELEVATIONS

EXCEL
Always a Better Plan
100 Camelot Drive
Fond du Lac, WI 54935
920-926-9800
excelengineer.com

PROJECT INFORMATION

PROPOSED MULTI-FAMILY DEVELOPMENT

LUMIN TERRACE

JOHNSON STREET • WATERTOWN, WI

PROFESSIONAL SEAL

PRELIMINARY DATES
OCT. 14, 2024
NOV. 7, 2024

NOT FOR CONSTRUCTION

JOB NUMBER
240136200

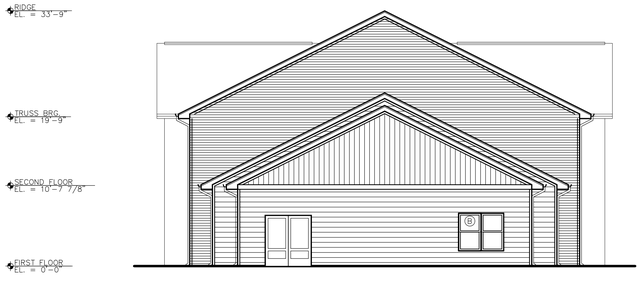
SHEET NUMBER
A2.0

FRONT ELEVATION

SCALE: 1/8" = 1'-0"

REAR ELEVATION

SCALE: 1/8" = 1'-0"



SIDE ELEVATION

SCALE: 1/8" = 1'-0"

SIDE ELEVATION

SCALE: 1/8" = 1'-0"

ARCHITECTURAL EXTERIOR ELEVATIONS

EXCEL
Always a Better Plan
100 Camelot Drive
Fond du Lac, WI 54935
920-926-9800
excelengineer.com

PROJECT INFORMATION

PROPOSED MULTI-FAMILY DEVELOPMENT

LUMIN TERRACE

JOHNSON STREET • WATERTOWN, WI

PROFESSIONAL SEAL

PRELIMINARY DATES

NOV. 7, 2024

NOT FOR CONSTRUCTION

JOB NUMBER

240136200

SHEET NUMBER

A2.1

PROPOSED MULTI-FAMILY DEVELOPMENT

LUMIN TERRACE

WATERTOWN, WISCONSIN

PROJECT INFORMATION

SITE INFORMATION:

PROPERTY AREA: 406,529 S.F. (9.33 ACRES).

EXISTING ZONING: MR-10

PROPOSED ZONING: MR-10

PROPOSED USE: MULTI-FAMILY APARTMENTS

AREA OF SITE DISTURBANCE: 387,800 S.F. (8.90 ACRES)

SETBACKS:
BUILDING: FRONT (WEST) = 25'
SIDE (NORTH/SOUTH) = 10% LOT WIDTH, OR MIN OF 8', MAX OF 14'
STREET (EAST) = 10% LOT WIDTH, OR MIN OF 8', MAX OF 14'

PAVEMENT: FRONT (WEST) = 10'
SIDE (NORTH/SOUTH) = 3'
STREET (EAST) = 3'

PROPOSED BUILDING HEIGHT: 34' (MAX. HEIGHT ALLOWED: 35')

PARKING REQUIRED: 2.5 SPACES PER 3-BED, 2 SPACES PER 2-BED, 1-BED, OR EFFICIENCY (196)

PARKING PROVIDED: 196 SPACES (8 H.C. ACCESSIBLE)

HANDICAP STALLS REQUIRED: 5, HANDICAP STALLS PROVIDED: 8

LANDSCAPE REQUIREMENTS: MIN. LANDSCAPE SURFACE RATIO: 50%
MAXIMUM LOT COVERAGE - BUILDING ONLY: 40%

EXISTING SITE DATA

	AREA (AC)	AREA (SF)	RATIO
BUILDING FLOOR AREA	0.00	0	0.0%
PAVEMENT (ASP. & CONC.)	0.86	37,255	9.2%
TOTAL IMPERVIOUS	0.86	37,255	9.2%
LANDSCAPE/ OPEN SPACE	8.48	369,272	90.8%
PROJECT SITE	9.33	406,527	100.0%

PROPOSED SITE DATA

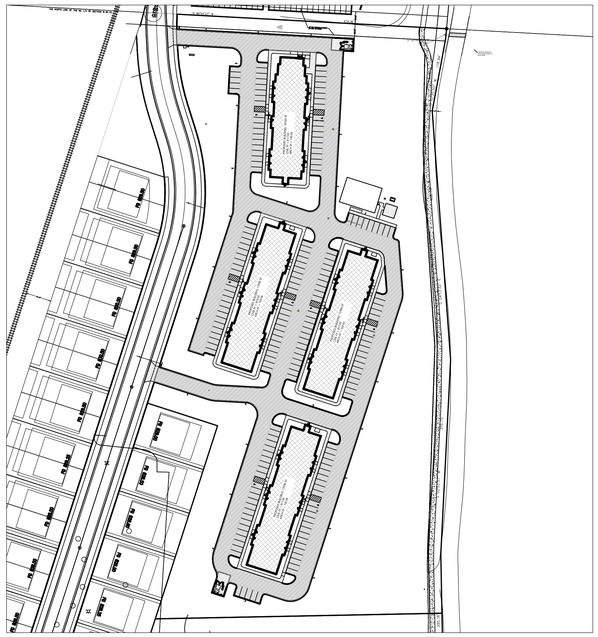
	AREA (AC)	AREA (SF)	RATIO
BUILDING FLOOR AREA	1.14	49,548	12.2%
PAVEMENT (ASP. & CONC.)	3.04	132,373	32.6%
TOTAL IMPERVIOUS	4.18	181,921	44.8%
LANDSCAPE/ OPEN SPACE	5.16	224,606	55.2%
PROJECT SITE	9.33	406,527	100.0%

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

CALL DIGGERS HOTLINE
1-800-242-8511

TOLL FREE TELEFAX (414) 259-0947
TDD (FOR THE HEARING IMPAIRED)
1-800 542-2289

WISCONSIN STATUTE 182.0175 (1974)
REQUIRES MINIMUM OF 3 WORK DAYS
NOTICE BEFORE YOU EXCAVATE



NORTH

SITE PLAN OVERVIEW
SCALE: 1"= 100'
100' 0 100' 200'

PROJECT CONTACTS

OWNER INFORMATION:
HORIZON DEVELOPMENT GROUP, INC.
SCOTT KWIECINSKI
5201 EAST TERRACE DRIVE, SUITE 300
MADISON, WI 53718
Phone: (608) 354-0820
Email: S.Kwiecinski@horizondbm.com

CIVIL ENGINEER:
REID JAHNS
Phone: (920)926-3109
E-mail: ReidJ@excelengineer.com

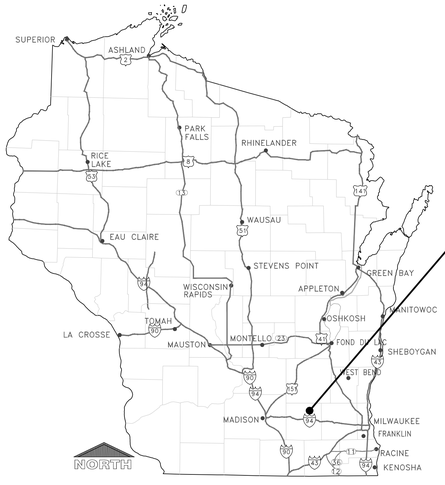
CITY ZONING ADMINISTRATOR:
BRIAN ZIRBES
Phone: (920) 262-4041
E-mail: BZirbes@watertownwi.gov

CITY ENGINEER/PUBLIC WORKS DIRECTOR:
ANDREW BEYER
Phone: (920)262-4050
E-mail: abeyer@watertownwi.gov

CITY FIRE CHIEF:
TANYA REYNEN
Phone: (920)206-4243
E-mail: treynen@watertownwi.gov

CITY BUILDING INSPECTOR:
DOUG ZWIEG
Phone: (920)262-4062
E-mail: DZwieg@watertownwi.gov

LOCATION MAP



NTS

PROJECT NOTES

GENERAL PROJECT NOTES

1. ALL DRIVEWAYS AND CURB CUTS TO BE CONSTRUCTED ACCORDING TO LOCAL ORDINANCES. CONTRACTOR TO OBTAIN ALL NECESSARY PERMITS.
2. THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING ALL WORK IN ROW PERMITS.
3. CONTRACTOR TO CONTACT EXCEL ENGINEERING TO COMPLETE AS-BUILT SURVEY OF STORMWATER POND FOLLOWING COMPLETION OF THE POND.
4. CONTRACTOR TO REFERENCE ROCK RIVER RIDGE PHASE 1 PLANS FOR SCOPE OF WORK COVERED BY ROCK RIVER RIDGE PHASE 1 CONTRACTOR. CONTRACTOR TO FILED VERIFY ROCK RIVER PHASE 1 REMOVALS AND IMPROVEMENTS HAVE BEEN COMPLETED AND NOTIFY ENGINEER OF ANY DISCREPANCIES PRIOR TO CONSTRUCTION.

CONSTRUCTION STAKING SERVICES

CONSTRUCTION STAKING SHALL BE COMPLETED BY EXCEL ENGINEERING AS REQUESTED BY THE CONTRACTOR AT THE CONTRACTOR'S EXPENSE. CONTRACTOR TO CONTACT RYAN WILGREEN AT 920-926-9800 OR RYAN.W@EXCELENGINEER.COM TO GET STAKING PRICE TO INCLUDE IN BID TO OWNER. PAYMENT OF STAKING COSTS ABOVE AND BEYOND THE BASE PRICE DUE TO RESTAKING WILL BE THE RESPONSIBILITY OF THE CONTRACTOR, NOT THE OWNER. CAD DRAWING FILES AND SURVEY CONTROL WILL NOT BE PROVIDED FOR STAKING PURPOSES.

STORMWATER POND ASBUILT NOTE

CONTRACTOR TO CONTACT EXCEL ENGINEERING TO COMPLETE AN AS-BUILT SURVEY FOLLOWING COMPLETION OF THE CONSTRUCTION OF THE STORMWATER POND. THE SURVEY SHALL BE COMPLETED PRIOR TO THE POND FILLING WITH WATER. CONTRACTOR SHALL GIVE EXCEL ENGINEERING A MINIMUM OF A 3 DAY NOTICE. PLEASE NOTE THAT THE HORIZONTAL TOLERANCE FOR POND CONSTRUCTION IS 0.50' AND THE VERTICAL TOLERANCE FOR POND, OUTLET, AND SPILLWAY CONSTRUCTION IS 0.10'. ANY ADDITIONAL WORK REQUIRED TO SURVEY A POND FULL OF WATER OR FOR SURVEYING FOLLOWING REWORK SHALL BE AT THE CONTRACTOR'S EXPENSE.

LEGEND

NOTE: ALL SYMBOLS SHOWN MAY NOT APPEAR ON DRAWINGS.

SYM.	IDENTIFICATION	SYM.	IDENTIFICATION
SPOT ELEVATIONS			
000.00	PROPOSED SPOT ELEVATIONS (FLOW LINE OF CURB UNLESS OTHERWISE SPECIFIED)	000.00 TC 000.00 FL	PROPOSED SPOT ELEVATIONS (TOP OF CURB, FLOWLINE OF CURB)
000.00 EG	EXISTING GRADE SPOT ELEVATIONS		
000.00 BG 000.00 FG	PROPOSED SPOT ELEVATIONS (REFERENCE R-WALL DETAIL) BG-FINISHED SURFACE GRADE AT BACK OF WALL FG-FINISHED SURFACE GRADE AT FRONT OF WALL	000.00 TW 000.00 BW	PROPOSED SPOT ELEVATIONS (TOP OF WALK, BOTTOM OF WALK @ FLOWLINE)
EXISTING SITE SYMBOLS			
	EXISTING SIGN		EXISTING UTILITY POLE
	EXISTING HANDICAP PARKING STALL		EXISTING UTILITY POLE WITH GUY WIRE
	EXISTING WATER VALVE IN BOX		EXISTING STREET LIGHT
	EXISTING WATER VALVE IN MANHOLE		EXISTING TELEPHONE PEDESTAL
	EXISTING WATER SERVICE VALVE		EXISTING ELECTRIC PEDESTAL
	EXISTING WELL		EXISTING ELECTRIC BOX
	EXISTING STORM CATCH BASIN		EXISTING FLOOD LIGHT
	EXISTING STORM CURB INLET		EXISTING TELEPHONE MANHOLE
	EXISTING SQUARE CATCH BASIN		EXISTING CABLE TV PEDESTAL
	EXISTING LIGHT POLE		EXISTING GAS VALVE
	1-1/4" REBAR SET WEIGHING 4.30 LB/FT.		EXISTING HEDGE
	3/4" REBAR SET WEIGHING 1.50 LB/FT.		EXISTING WOODED AREA
	1-1/4" REBAR FOUND		EXISTING MARSH AREA
	3/4" REBAR FOUND		EXISTING DECIDUOUS TREE WITH TRUNK DIAMETER
	2" IRON PIPE FOUND		EXISTING CONIFEROUS TREE
	1" IRON PIPE FOUND		EXISTING SHRUB
	SECTION CORNER		EXISTING STUMP
PROPOSED SITE SYMBOLS			
	PROPOSED SIGN		PROPOSED STORM FIELD INLET - ST FI
	PROPOSED HANDICAP PARKING STALL		PROPOSED LIGHT POLE
	PROPOSED WATER VALVE IN BOX		PROPOSED DRAINAGE FLOW
	PROPOSED WATER VALVE IN MANHOLE		PROPOSED APRON END SECTION
	PROPOSED WATER SERVICE VALVE		SOIL BORING
	PROPOSED WELL		CENTER LINE
	PROPOSED STORM CATCH BASIN - ST CB	CO	PROPOSED CLEANOUT
	PROPOSED STORM CURB INLET - ST CI	DSG	PROPOSED DOWNSPOUT TO GRADE
		DSR	PROPOSED DOWNSPOUT TO RISER
EXISTING LINETYPES			
	EXISTING CHAINLINK FENCE	POL	EXISTING POLISH SEWER AND MANHOLE
	EXISTING WOOD FENCE	P	EXISTING PROCESS SEWER AND MANHOLE
	EXISTING BARBED WIRE FENCE	CLW	EXISTING CLEAR WATER LINE
	EXISTING CURB AND GUTTER	FO	EXISTING UNDERGROUND FIBER OPTIC LINE
	EXISTING GUARD RAIL	E	EXISTING UNDERGROUND ELECTRIC CABLE
800	EXISTING GROUND CONTOUR	T	EXISTING UNDERGROUND TELEPHONE CABLE
ST	EXISTING STORM SEWER AND MANHOLE	G	EXISTING UNDERGROUND GAS LINE
SA	EXISTING SANITARY SEWER AND MANHOLE	OU	EXISTING OVERHEAD UTILITY LINE
	EXISTING WATER LINE AND HYDRANT		RAILROAD TRACKS
	INTERIOR PROPERTY LINE		RIGHT-OF-WAY LINE
PROPOSED LINETYPES			
	PROPOSED CHAINLINK FENCE	POL	PROPOSED POLISH SEWER AND MANHOLE
	PROPOSED WOOD FENCE	P	PROPOSED PROCESS SEWER AND MANHOLE
	PROPOSED BARBED WIRE FENCE	CLW	PROPOSED CLEAR WATER LINE
	PROPOSED CURB AND GUTTER	FO	PROPOSED UNDERGROUND FIBER OPTIC LINE
	PROPOSED GUARD RAIL	E	PROPOSED UNDERGROUND ELECTRIC CABLE
800	PROPOSED GROUND CONTOUR	T	PROPOSED UNDERGROUND TELEPHONE CABLE
ST	PROPOSED STORM SEWER AND MANHOLE - ST MH	G	PROPOSED UNDERGROUND GAS LINE
SA	PROPOSED SANITARY SEWER AND MANHOLE - SAN MH	OU	PROPOSED OVERHEAD UTILITY LINE
	PROPOSED WATER LINE AND HYDRANT		MATCHLINE
	PROPOSED PROPERTY LINE		GRADING/SEEDING LIMITS

SHEET INDEX

SHEETS BELOW INTENDED TO BE PRINTED IN: COLOR. REFER TO DIGITAL FORMAT DRAWINGS IF PRINTED GRAYSCALE TO ENSURE SCOPE CLARITY.

NUMBER	SHEET NAME / DESCRIPTION
C0.1	CIVIL COVER SHEET
C0.2	CIVIL SPECIFICATIONS
C1.0	EXISTING SITE AND DEMOLITION PLAN
C1.1	SITE PLAN
C1.2A	GRADING AND EROSION CONTROL PLAN - OVERALL
C1.2B	GRADING AND EROSION CONTROL PLAN - NORTH
C1.2C	GRADING AND EROSION CONTROL PLAN - SOUTH
C1.3A	UTILITY PLAN - OVERALL
C1.3B	UTILITY PLAN - NORTH
C1.3C	UTILITY PLAN - SOUTH
C1.4	LANDSCAPE AND RESTORATION PLAN
C2.0	DETAILS
C2.1	DETAILS
C3.1	SITE PHOTOMETRIC PLAN & DETAILS

EXCEL
Always a Better Plan
100 Camelot Drive
Fond du Lac, WI 54935
920-926-9800
excelengineer.com

PROJECT INFORMATION

PROPOSED MULTI-FAMILY DEVELOPMENT
LUMIN TERRACE
JOHNSON STREET • WATERTOWN, WI

PROFESSIONAL SEAL

WISCONSIN JASON DAVE 38777-006 FOND DU LAC WISCONSIN PROFESSIONAL ENGINEER

PRELIMINARY DATES

OCT. 23, 2024
OCT. 25, 2024
OCT. 30, 2024
NOV. 8, 2024

NOT FOR CONSTRUCTION

JOB NUMBER

240136200

SHEET NUMBER

C0.1

CIVIL COVER SHEET

CIVIL SPECIFICATIONS

DIVISION 31 EARTH WORK

31 10 00 SITE CLEARING (DEMOLITION)

A. CONTRACTOR SHALL CALL DIGGER'S HOT LINE AND CONDUCT A PRIVATE UTILITY LOCATE AS REQUIRED TO ENSURE THAT ALL UTILITIES HAVE BEEN LOCATED BEFORE STARTING SITE DEMOLITION. DESIGN ENGINEER SHALL BE NOTIFIED OF ANY DISCREPANCIES BETWEEN PLAN AND FIELD CONDITIONS PRIOR TO CONSTRUCTION.
B. DEMOLITION PLAN IS AN OVERVIEW OF DEMOLITION TO TAKE PLACE ON SITE. CONTRACTOR TO FIELD VERIFY EXISTING SITE CONDITIONS PRIOR TO BIDDING. CONTRACTOR SHALL REMOVE, REPLACE, OR DEMOLISH ALL ITEMS AS NEEDED DURING CONSTRUCTION.
C. CONTRACTOR TO PROTECT EXISTING IMPROVEMENTS THAT ARE SCHEDULED TO REMAIN. ANY DAMAGE TO EXISTING FACILITIES SHALL BE REPLACED AT CONTRACTORS EXPENSE.
D. ALL CONCRETE NOTED TO BE REMOVED SHALL BE REMOVED TO THE NEAREST CONTROL JOINT.

31 20 00 EARTH MOVING

A. CONTRACTOR SHALL CALL DIGGER'S HOT LINE AND CONDUCT A PRIVATE UTILITY LOCATE AS REQUIRED TO ENSURE THAT ALL UTILITIES HAVE BEEN LOCATED BEFORE STARTING EXCAVATION. DESIGN ENGINEER SHALL BE NOTIFIED OF ANY DISCREPANCIES BETWEEN PLAN AND FIELD CONDITIONS PRIOR TO CONSTRUCTION.
B. PROVIDE ALL LABOR, MATERIALS AND EQUIPMENT FOR ALL EXCAVATION, GRADING, FILL AND BACKFILL WORK AS REQUIRED TO COMPLETE THE GENERAL CONSTRUCTION WORK. ALL EXCAVATION AND BACKFILL FOR ELECTRICALS AND MECHANICALS ARE THE RESPONSIBILITY OF THE RESPECTIVE CONTRACTOR UNLESS OTHERWISE SPECIFIED IN THE BID DOCUMENTS.
C. ALL ORGANIC TOPSOIL INSIDE THE BUILDING AREA, UNDER PAVED AREAS, AND AT SITE FILL AREAS SHALL BE REMOVED. PROOF ROLL SUBGRADES BEFORE PLACING FILL WITH HEAVY PNEUMATIC-TIRED EQUIPMENT, SUCH AS A FULLY-LOADED TANDEM AXLE DUMP TRUCK, TO IDENTIFY SOFT POCKETS AND AREAS OF EXCESS YIELDING. CONTRACTOR SHALL VERIFY TOPSOIL DEPTHS PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL REVIEW AND FOLLOW THE RECOMMENDATIONS OF THE GEOTECHNICAL REPORT AND ACCOUNT FOR EXISTING CONDITIONS PRIOR TO SUBMITTING BID FOR THE PROJECT. EXCESS MATERIALS SHALL BE REMOVED FROM THE SITE UNLESS OTHERWISE DIRECTED IN THE PLANS OR BY LOCAL ZONING REQUIREMENTS.
D. PLACE AND COMPACT FILL MATERIAL IN LAYERS TO REQUIRED ELEVATIONS. UNIFORMLY MOISTEN OR AERATE SUBGRADE AND EACH SUBSEQUENT FILL OR BACKFILL LAYER BEFORE COMPACTION AS RECOMMENDED TO ACHIEVE SPECIFIED DRY DENSITY. REMOVE AND REPLACE, OR SCARIFY AND AIR DRY, OTHERWISE SATISFACTORY SOIL MATERIAL THAT IS TOO WET TO COMPACT TO SPECIFIED DRY DENSITY.
E. PLACE BACKFILL AND FILL MATERIALS IN LAYERS NOT MORE THAN 8" IN LOOSE DEPTH FOR MATERIAL COMPACTED BY HEAVY COMPACTION EQUIPMENT, AND NOT MORE THAN 4" IN LOOSE DEPTH FOR MATERIAL COMPACTED BY HAND-OPERATED TAMPERS.
F. COMPACT THE SOIL TO NOT LESS THAN THE FOLLOWING PERCENTAGES OF MAXIMUM DRY DENSITY ACCORDING TO ASTM D 698, STANDARD PROCTOR TEST. FILL MAY NOT BE PLACED ON FROZEN GROUND AND NO FROZEN MATERIALS MAY BE USED FOR BACK FILL. APPLY THE MORE STRINGENT REQUIREMENTS WHEN COMPARING BETWEEN THE FOLLOWING AND THE GEOTECHNICAL REPORT.
   1. UNDER FOUNDATIONS - SUBGRADE, AND EACH LAYER OF BACKFILL OR FILL MATERIAL, TO NOT LESS THAN 98 PERCENT.
   2. UNDER INTERIOR SLAB-ON-GRADE WHERE GROUNDWATER IS MORE THAN 3 FEET BELOW THE SLAB - PLACE A DRAINAGE COURSE LAYER OF 3/4" CRUSHED STONE, WITH 5% TO 12% FINES, PER THICKNESS INDICATED ON FOUNDATION PLANS ON PREPARED SUBGRADE. COMPACT THE SUBGRADE AND DRAINAGE COURSE TO NOT LESS THAN 95 PERCENT.
   3. UNDER INTERIOR SLAB-ON-GRADE WHERE GROUNDWATER IS WITHIN 3 FEET OF THE SLAB SURFACE- PLACE A DRAINAGE COURSE LAYER OF CLEAN 3/4" CRUSHED STONE, WITH NO MORE THAN 5% FINES, PER THICKNESS INDICATED ON FOUNDATION PLANS ON PREPARED SUBGRADE. COMPACT THE SUBGRADE AND DRAINAGE COURSE TO NOT LESS THAN 95 PERCENT.
   4. UNDER EXTERIOR CONCRETE AND ASPHALT PAVEMENTS - COMPACT THE SUBGRADE AND EACH LAYER OF BACKFILL OR FILL MATERIAL TO NOT LESS THAN 95 PERCENT.
   5. UNDER WALKWAYS - COMPACT SUBGRADE AND EACH LAYER OF BACKFILL OR FILL MATERIAL TO NOT LESS THAN 95 PERCENT.
   6. UNDER LAWN OR UNPAVED AREAS - COMPACT SUBGRADE AND EACH LAYER OF BACKFILL OR FILL MATERIAL, TO NOT LESS THAN 85 PERCENT.
G. CONTRACTOR SHALL ENGAGE A QUALIFIED INDEPENDENT TESTING AND INSPECTING AGENCY TO PERFORM FIELD TESTS AND INSPECTIONS. CONTRACTOR SHALL PROVIDE DOCUMENTATION OF PASSING DENSITY TESTING AND PROOF-ROLLING TO ENGINEER UPON COMPLETION. IT IS SUGGESTED THAT THE GEOTECHNICAL FIRM USED TO PERFORM THE SUBSURFACE SOIL INVESTIGATION BE ENGAGED FOR THE FIELD QUALITY CONTROL TESTS. THE GEOTECHNICAL REPORT WAS PERFORMED BY GESTRA ENGINEERING, INC.
H. ALLOW THE TESTING AGENCY TO TEST AND INSPECT SUBGRADES AND EACH FILL OR BACKFILL LAYER. PROCEED WITH SUBSEQUENT EARTHWORK ONLY AFTER TEST RESULTS FOR PREVIOUSLY COMPLETED WORK COMPLY WITH REQUIREMENTS. PROVIDE ONE TEST FOR EVERY 2000 SQUARE FEET OF PAVED AREA OR BUILDING SLAB, ONE TEST FOR EACH SPREAD FOOTING, AND ONE TEST FOR EVERY 50 LINEAR FEET OF WALL STRIP FOOTING.
I. WHEN THE TESTING AGENCY REPORTS THAT SUBGRADES, FILLS, OR BACKFILLS HAVE NOT ACHIEVED DEGREE OF COMPACTION SPECIFIED, SCARIFY AND MOISTEN OR AERATE, OR REMOVE AND REPLACE SOIL TO DEPTH REQUIRED; RECOMPACT AND RETEST UNTIL SPECIFIED COMPACTION IS OBTAINED.
J. THE BUILDING SITE SHALL BE GRADED TO PROVIDE DRAINAGE AWAY FROM THE BUILDING AS INDICATED ON THE PLANS. SITE EARTHWORK SHALL BE GRADED TO WITHIN 0.10' OF REQUIRED EARTHWORK ELEVATIONS ASSUMING POSITIVE DRAINAGE IS MAINTAINED IN ACCORDANCE WITH THE GRADING PLAN.

31 30 00 EROSION CONTROL/STORMWATER MANAGEMENT

A. THE EXCEL ENGINEERING DESIGN ENGINEER SHALL PREPARE A SITE SPECIFIC EROSION CONTROL AND A STORMWATER MANAGEMENT PLAN PURSUANT TO NR 216.46 AND NR 216.47. THE DESIGN ENGINEER SHALL ALSO FILE A CONSTRUCTION NOTICE OF INTENT WITH THE WISCONSIN DEPARTMENT OF NATURAL RESOURCES PURSUANT TO NR 216.43 OR TO AN AUTHORIZED LOCAL PROGRAM PURSUANT TO NR 216.415 TO OBTAIN COVERAGE UNDER THE GENERAL WPDES STORM WATER PERMIT.
B. THE CONTRACTOR SHALL KEEP THE NOTICE OF INTENT PERMIT, APPROVED EROSION CONTROL AND STORMWATER MANAGEMENT PLANS, AND PLAN AMENDMENTS ON THE CONSTRUCTION SITE AT ALL TIMES PURSUANT TO NR 216.455 UNTIL PERMIT COVERAGE IS TERMINATED.
C. THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING ALL LOCAL EROSION CONTROL PERMITS.
D. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MEETING THE MONITORING, MAINTENANCE, AND REPORTING REQUIREMENTS OF NR 216.48. INSPECTIONS OF IMPLEMENTED EROSION AND SEDIMENT CONTROL BEST MANAGEMENT PRACTICES MUST AT A MINIMUM BE INSPECTED EVERY 7 CALENDAR DAYS OR EVERY 14 DAYS AND WITHIN 24 HOURS OF THE END OF A RAIN EVENT OF 0.5" OR MORE. A RAIN EVENT MAY BE CONSIDERED TO BE THE TOTAL AMOUNT OF PRECIPITATION RECORDED IN ANY CONTINUOUS 24-HOUR PERIOD. THE CONTRACTOR SHALL REPAIR OR REPLACE EROSION AND SEDIMENT CONTROL AS NECESSARY WITHIN 24 HOURS OF AN INSPECTION OR AFTER A DEPARTMENT NOTIFICATION WHERE REPAIR OR REPLACEMENT IS REQUESTED.
E. THE CONTRACTOR SHALL MAINTAIN, AT THE CONSTRUCTION SITE OR AVAILABLE VIA AN INTERNET WEBSITE, WEEKLY WRITTEN REPORTS OF ALL INSPECTIONS CONDUCTED. WISCONSIN DNR CONSTRUCTION SITE INSPECTION REPORT FORM 3400-187 SHALL BE USED. WEEKLY INSPECTION REPORTS SHALL INCLUDE ALL OF THE FOLLOWING:
   1. THE DATE, TIME, AND LOCATION OF THE CONSTRUCTION SITE INSPECTION.
   2. THE NAME OF THE INDIVIDUAL WHO PERFORMED THE INSPECTION.
   3. AN ASSESSMENT OF THE CONDITION OF THE EROSION AND SEDIMENT CONTROLS.
   4. A DESCRIPTION OF ANY EROSION AND SEDIMENT CONTROL BEST MANAGEMENT PRACTICE IMPLEMENTATION AND MAINTENANCE PERFORMED.
   5. A DESCRIPTION OF THE PRESENT PHASE OF LAND DISTURBING CONSTRUCTION ACTIVITY AT THE CONSTRUCTION SITE.
F. EROSION AND SEDIMENT CONTROL IMPLEMENTED DURING CONSTRUCTION SHALL STRICTLY COMPLY WITH THE GUIDELINES AND REQUIREMENTS SET FORTH IN WISCONSIN ADMINISTRATIVE CODE (W.A.C.) NR 151, THE STATE OF WISCONSIN DEPARTMENT OF NATURAL RESOURCES RUNOFF MANAGEMENT PERFORMANCE STANDARDS. TECHNICAL STANDARDS PUBLISHED BY THE WISCONSIN DNR SHALL ALSO BE UTILIZED TO IMPLEMENT THE REQUIRED PERFORMANCE STANDARDS. THE METHODS AND TYPES OF EROSION CONTROL WILL BE DEPENDENT ON THE LOCATION AND TYPE OF WORK INVOLVED. ALL SEDIMENT CONTROL MEASURES SHALL BE ADJUSTED TO MEET FIELD CONDITIONS AT THE TIME OF CONSTRUCTION, AND INSTALLED PRIOR TO ANY GRADING OR DISTURBANCE OF EXISTING SURFACE MATERIAL. BELOW IS A LIST OF EROSION AND SEDIMENT CONTROL BEST MANAGEMENT PRACTICES TO ACHIEVE THE PERFORMANCE STANDARDS REQUIRED.
   1. SILT FENCE SHALL BE PLACED ON SITE AT LOCATIONS SHOWN ON THE EROSION CONTROL PLAN. SILT FENCE SHALL ALSO BE PROVIDED AROUND THE PERIMETER OF ALL SOIL STOCKPILES THAT WILL EXIST FOR MORE THAN 7 DAYS. FOLLOW PROCEDURES FOUND IN WISCONSIN DNR TECHNICAL STANDARD 1056 (CURRENT EDITION).
   2. DITCH CHECKS SHALL BE PROVIDED TO REDUCE THE VELOCITY OF WATER FLOWING IN DITCH BOTTOMS. PLACE AT LOCATIONS SHOWN ON THE EROSION CONTROL PLAN. FOLLOW PROCEDURES FOUND IN WISCONSIN DNR TECHNICAL STANDARD 1062 (CURRENT EDITION).
   3. STONE TRACKING PADS AND TRACKOUT CONTROL PRACTICES SHALL BE PLACED AT ALL CONSTRUCTION SITE ENTRANCES AND SHALL BE INSTALLED PRIOR TO ANY TRAFFIC LEAVING THE CONSTRUCTION SITE. SEE THE EROSION CONTROL PLAN FOR LOCATIONS. THE AGGREGATE USED FOR THE STONE TRACKING PAD SHALL BE 3/8" TO 3 INCH CLEAR OR WASHED STONE AND SHALL BE PLACED IN A LAYER AT LEAST 12 INCHES THICK. THE STONE SHALL BE UNDERLAIN WITH A WISDOT TYPE R GEOTEXTILE FABRIC AS NEEDED. THE TRACKING PAD SHALL BE THE FULL WIDTH OF THE EGRESS POINT (12' MIN WIDTH) AND SHALL BE A MINIMUM OF 50 FEET LONG. SURFACE WATER MUST BE PREVENTED FROM PASSING THROUGH THE TRACKING PAD. OTHER TRACKOUT CONTROL PRACTICES INCLUDING STABILIZED WORK SURFACES, MANUFACTURED TRACKOUT CONTROL DEVICES, TIRE WASHING, AND STREET/PAVEMENT CLEANING SHALL BE IMPLEMENTED AS NECESSARY TO MITIGATE THE TRACKOUT OF SEDIMENT OFFSITE. FOLLOW PROCEDURES FOUND IN WISCONSIN DNR TECHNICAL STANDARD 1057 (CURRENT EDITION).
   4. STORM DRAIN INLET PROTECTION SHALL BE PROVIDED FOR ALL NEW AND DOWNSTREAM STORM CATCH BASINS AND CURB INLETS. TYPE D OR DM PROTECTION SHOULD BE PROVIDED AND SHALL BE IN CONFORMANCE WITH WISCONSIN DNR TECHNICAL STANDARD 1060 (CURRENT EDITION).
   5. DUST CONTROL MEASURES SHALL BE PROVIDED TO REDUCE OR PREVENT THE SURFACE AND AIR TRANSPORT OF DUST DURING CONSTRUCTION. CONTROL MEASURES INCLUDE APPLYING MULCH AND ESTABLISHING VEGETATION, WATER SPRAYING, SURFACE ROUGHENING, APPLYING POLYMERS, SPRAY-ON TACKIFIERS, CHLORIDES, AND BARRIERS. SOME SITES MAY REQUIRE AN APPROACH THAT UTILIZES A COMBINATION OF MEASURES FOR DUST CONTROL. FOLLOW PROCEDURES FOUND IN WISCONSIN DNR TECHNICAL STANDARD 1068 (CURRENT EDITION).
   6. THE USE, STORAGE, AND DISPOSAL OF CHEMICALS, CEMENT, AND OTHER COMPOUNDS AND MATERIALS USED ON SITE SHALL BE MANAGED DURING THE CONSTRUCTION PERIOD TO PREVENT THEIR TRANSPORT BY RUNOFF INTO WATERS OF THE STATE.
   7. CONTRACTOR SHALL PROVIDE AN OPEN AGGREGATE CONCRETE TRUCK WASHOUT AREA ON SITE. CONTRACTOR TO ENSURE THAT CONCRETE WASHOUT SHALL BE CONTAINED TO THIS DESIGNATED AREA AND NOT BE ALLOWED TO RUN INTO STORM INLETS OR INTO THE OVERLAND STORMWATER DRAINAGE SYSTEM. WASHOUT AREA SHALL BE REMOVED UPON COMPLETION OF CONSTRUCTION.
   8. TEMPORARY SITE RESTORATION SHALL TAKE PLACE IN DISTURBED AREAS THAT WILL NOT BE BROUGHT TO FINAL GRADE OR ON WHICH LAND DISTURBING ACTIVITIES WILL NOT BE PERFORMED FOR A PERIOD GREATER THAN 14 DAYS AND REQUIRES VEGETATIVE COVER FOR LESS THAN ONE YEAR. THIS TEMPORARY SITE RESTORATION REQUIREMENT ALSO APPLIES TO SOIL STOCKPILES THAT EXIST FOR MORE THAN 7 DAYS. PERMANENT RESTORATION APPLIES TO AREAS WHERE PERENNIAL VEGETATIVE COVER IS NEEDED TO PERMANENTLY STABILIZE AREAS OF EXPOSED SOIL. PERMANENT STABILIZATION SHALL OCCUR WITHIN 3 WORKING DAYS OF FINAL GRADING. TOPSOIL, SEED, AND MULCH SHALL BE IN GENERAL CONFORMANCE WITH TECHNICAL STANDARDS 1058 AND 1059 AND SHALL MEET THE SPECIFICATIONS FOUND IN THE LANDSCAPING AND SITE STABILIZATION SECTION OF THIS CONSTRUCTION DOCUMENT. ANY SOIL EROSION THAT OCCURS AFTER FINAL GRADING AND/OR FINAL STABILIZATION MUST BE REPAIRED AND THE STABILIZATION WORK REDONE.
   9. IF SITE DEWATERING IS REQUIRED FOR PROPOSED CONSTRUCTION ACTIVITIES, ALL SEDIMENT LADEN WATER GENERATED DURING THE DEWATERING PROCESS SHALL BE TREATED TO REMOVE SEDIMENT PRIOR TO DISCHARGING OFF-SITE OR TO WATERS OF THE STATE. FOLLOW ALL PROCEDURES FOUND IN TECHNICAL STANDARD 1061.
   10. ALL OFF-SITE SEDIMENT DEPOSITS OCCURRING AS A RESULT OF CONSTRUCTION WORK OR A STORM EVENT SHALL BE CLEANED UP BY THE END OF EACH WORKING DAY. DUST CONTROL REQUIREMENTS SHALL BE FOLLOWED PER WI DNR TECHNICAL STANDARD 1068 (CURRENT EDITION). FLUSHING SHALL NOT BE ALLOWED.
G. EROSION CONTROL MEASURES SHALL NOT BE REMOVED UNTIL THE AREA(S) SERVED HAVE ESTABLISHED VEGETATIVE COVER.
H. ONCE THE CONSTRUCTION SITE HAS BEEN FULLY STABILIZED AND TEMPORARY EROSION CONTROL BEST MANAGEMENT PRACTICES HAVE BEEN REMOVED, THE CONTRACTOR SHALL FILE A CONSTRUCTION NOTICE OF TERMINATION WITH THE WISCONSIN DEPARTMENT OF NATURAL RESOURCES IN ACCORDANCE WITH NR 216.55.
I. AT THE COMPLETION OF THE PROJECT, THE CONTRACTOR SHALL GIVE THE OWNER COPIES OF THE EROSION CONTROL AND STORM WATER MANAGEMENT PLANS, AMENDMENTS TO PLANS, SUPPORTING PLAN DATA, AND CONSTRUCTION SITE EROSION CONTROL INSPECTION REPORTS. THE OWNER SHALL RETAIN THESE FOR A PERIOD OF 3 YEARS FROM THE DATE OF TERMINATING COVERAGE UNDER WPDES GENERAL PERMIT.
J. ALL POST CONSTRUCTION STORMWATER MANAGEMENT BEST MANAGEMENT PRACTICES SHALL BE CONSTRUCTED BEFORE THE SITE HAS UNDERGONE FINAL STABILIZATION.

DIVISION 32 EXTERIOR IMPROVEMENTS

32 10 00 AGGREGATE BASE & ASPHALT PAVEMENT

A. CONTRACTOR TO PROVIDE COMPACTED AGGREGATE BASE AND HOT MIX ASPHALT PAVEMENT WHERE INDICATED ON THE PLANS. ALL AGGREGATE PROVIDED MUST COMPLY WITH SECTION 305 OF THE WISCONSIN STANDARD SPECIFICATIONS FOR HIGHWAY AND STRUCTURE CONSTRUCTION. PROVIDE HOT MIX ASPHALT MIXTURE TYPES PER SECTION 460 OF THE WISCONSIN STANDARD SPECIFICATIONS FOR HIGHWAY AND STRUCTURE CONSTRUCTION. CONTRACTOR SHALL OBTAIN AND REVIEW SOILS REPORT FOR RECOMMENDATIONS FOR GEO-GRID / GEOTEXTILE BELOW CRUSHED AGGREGATE (IF APPLICABLE). CONTRACTOR TO PROVIDE AGGREGATE BASE AND HOT MIX ASPHALT PAVEMENT TYPES AND DEPTHS AS INDICATED BELOW:

STANDARD ASPHALT PAVING SECTION	HEAVY ASPHALT PAVING SECTION
1-1/2" SURFACE COURSE (5 LT 58-28S)	2" SURFACE COURSE (5 LT 58-28S)
(WISDOT 455.2.5 TACK COAT (STAGED PAVING)	WISDOT 455.2.5 TACK COAT (STAGED PAVING)
2-1/12" BINDER COURSE (4 LT 58-28S)	2-1/2" BINDER COURSE (4 LT 58-28S)
9" OF 1-1/4" CRUSHED AGGREGATE	12" OF 1-1/4" CRUSHED AGGREGATE

B. CONTRACTOR TO COMPACT THE AGGREGATE BASE, ASPHALT BINDER COURSE, AND ASPHALT SURFACE COURSE TO AN AVERAGE DENSITY PER WISCONSIN STANDARD SPECIFICATIONS FOR HIGHWAY AND STRUCTURE CONSTRUCTION. ALL ASPHALT PAVEMENT AREAS SHALL BE PAVED TO WITHIN 0.05' OF DESIGN SURFACE GRADES WITH POSITIVE DRAINAGE BEING MAINTAINED IN ACCORDANCE WITH DESIGN PLANS. A MINIMUM OF 1.0% SLOPE SHALL BE MAINTAINED IN ALL ASPHALT PAVEMENT AREA.
C. HOT MIX ASPHALT CONSTRUCTION TO BE PROVIDED PER MORE STRINGENT REQUIREMENTS OF GEOTECHNICAL REPORT OR CONSTRUCTION DOCUMENTS.
D. CONTRACTOR TO PROVIDE 4" WIDE WHITE PAINTED STRIPING FOR PARKING STALLS, TRAFFIC LANES, AND NO PARKING AREAS. WHITE PAINT MARKINGS SHALL ALSO BE PROVIDED FOR H.C. ACCESSIBLE SYMBOLS, TRAFFIC ARROWS, AND TRAFFIC MESSAGES.

32 20 00 CONCRETE AND AGGREGATE BASE

A. CONTRACTOR TO PROVIDE CRUSHED AGGREGATE BASE AND CONCRETE WHERE INDICATED ON THE PLANS.
B. ALL AGGREGATE PROVIDED MUST COMPLY WITH SECTION 305 OF THE WISCONSIN STANDARD SPECIFICATIONS FOR HIGHWAY AND STRUCTURE CONSTRUCTION. ALL AGGREGATE PLACED MUST BE COMPACTED TO AN AVERAGE DENSITY PER WISCONSIN STANDARD SPECIFICATIONS FOR HIGHWAY AND STRUCTURE CONSTRUCTION.
C. DESIGN AND CONSTRUCTION OF ALL CAST-IN-PLACE EXTERIOR CONCRETE FLAT WORK SHALL CONFORM TO ACI 330R-08 & ACI 318-08.
D. EXTERIOR CONCRETE FLAT WORK CONSTRUCTION TO BE PROVIDED PER MORE STRINGENT REQUIREMENTS OF THE GEOTECHNICAL REPORT OR THIS SPECIFICATION. CONCRETE FLAT WORK CONSTRUCTION IS AS FOLLOWS:
   1. SIDEWALK/BIKE RACK/PICNIC TABLE/MAILBOX CONCRETE - 4" OF CONCRETE OVER 4" OF 3/4" CRUSHED AGGREGATE BASE. CONTRACTION JOINTS SHALL CONSIST OF 1/8" WIDE BY 1" DEEP TOOLED JOINT WHERE INDICATED ON THE PLANS.
   2. DUMPSTER PAD/APRON CONCRETE - 8" OF CONCRETE OVER 6" OF AGGREGATE BASE.
      a. CONCRETE SHALL BE STEEL REINFORCED WITH THE FOLLOWING AND PLACED IN THE UPPER 1/3 TO ½ OF THE SLAB:
         1) TIE BARS AT ALL CONTRACTION JOINTS OF THE CONCRETE. TIE BARS SHALL BE #4 REBAR 30" LONG PLACED AT 30" O.C.
      b. DUMPSTER PAD CONCRETE JOINTING SHALL BE AS FOLLOWS:
         1) CONTRACTION SAWCUT JOINT - CONTRACTOR SHALL PROVIDE A SAWCUT JOINT AT MAXIMUM SPACING OF 15' ON CENTER. SAWCUT SHALL BE 2" IN DEPTH.
         2) TYPICAL POUR CONTROL JOINT - POUR CONTROL JOINT SHALL BE PROVIDED WITH 1-1/4" DIAMETER BY 20" LONG SMOOTH DOWEL PLACED AT 12" O.C. ONE HALF OF THE DOWEL SHALL BE GREASED. GREENSTREAK 9" SPEED DOWEL TUBES SHALL BE USED.
   3. HEAVY DUTY CONCRETE - 6" OF CONCRETE OVER 6" OF 3/4" CRUSHED AGGREGATE. CONCRETE SHALL BE REINFORCED WITH #3 REBARS ON CHAIRS AT 3' O.C. REBAR SHALL BE PLACED PLACED IN THE UPPER 1/3 TO ½ OF THE SLAB. CONTRACTION JOINTS SHALL BE SAWCUT 1.5" IN DEPTH AND BE SPACED A MAXIMUM OF 15' ON CENTER.
E. DESIGN MIXES SHALL BE IN ACCORDANCE WITH ASTM C94
   1. STRENGTH TO BE MINIMUM OF 4,500 PSI AT 28 DAYS FOR EXTERIOR CONCRETE.
   2. MAXIMUM WATER/CEMENT RATIO SHALL BE 0.45.
   3. SLUMP SHALL NOT EXCEED 4" FOR EXTERIOR CONCRETE FLAT WORK
   4. SLUMP SHALL BE 2.5" OR LESS FOR SLIP-FORMED CURB AND GUTTER
   5. SLUMP SHALL BE BETWEEN 1.5" TO 3" FOR NON SLIP-FORMED CURB AND GUTTER.
   6. ALL EXTERIOR CONCRETE SHALL BE AIR ENTRAINED WITH 4% TO 7% AIR CONTENT. NO OTHER ADMIXTURES SHALL BE USED WITHOUT APPROVAL OF EXCEL ENGINEERING, INC. CALCIUM CHLORIDE SHALL NOT BE USED.
   7. MAXIMUM AGGREGATE SIZE FOR ALL EXTERIOR CONCRETE SHALL BE 0.75 INCHES.
F. VERIFY EQUIPMENT CONCRETE PAD SIZES WITH CONTRACTOR REQUIRING PAD. PADS SHALL HAVE FIBERMESH 300 FIBERS AT A RATE OF 1.5 LBS/CU. YD. OR 6 X 6-W1.4 X W1.4 WELDED WIRE MESH WITH MINIMUM 1 INCH COVER. EQUIPMENT PADS SHALL BE 5.5 INCHES THICK WITH 1 INCH CHAMFER UNLESS SPECIFIED OTHERWISE. COORDINATE ADDITIONAL PAD REQUIREMENTS WITH RESPECTIVE CONTRACTOR.
G. ALL CONCRETE FLAT WORK SURFACES AND CONCRETE CURB FLOWLINES SHALL BE CONSTRUCTED TO WITHIN 0.05' OF DESIGN SURFACE AND FLOWLINE GRADES ASSUMING POSITIVE DRAINAGE IS MAINTAINED IN ACCORDANCE WITH THE DESIGN PLANS.
H. CONCRETE FLAT WORK SHALL HAVE CONSTRUCTION JOINTS OR SAW CUT JOINTS PLACED AS INDICATED ON THE PLANS OR PER THIS SPECIFICATION. SAWCUTS SHALL BE DONE AS SOON AS POSSIBLE, BUT NO LATER THAN 24 HOURS AFTER CONCRETE IS PLACED. CONCRETE CURB AND GUTTER JOINTING SHALL BE PLACED EVERY 10' OR CLOSER (6' MIN.). IF CONCRETE PAVEMENT IS ADJACENT TO CONCRETE CURB, JOINTING IN THE PAVEMENT AND CURB SHALL ALIGN. ALL EXTERIOR CONCRETE SHALL HAVE A BROOM FINISH UNLESS NOTED OTHERWISE. A UNIFORM COAT OF A HIGH SOLIDS CURING COMPOUND MEETING ASTM C309 SHALL BE APPLIED TO ALL EXPOSED CONCRETE SURFACES. ALL CONCRETE IS TO BE CURED FOR 7 DAYS. EXTERIOR CONCRETE SHALL BE SEPARATED FROM BUILDINGS WITH CONTINUOUS 0.5 INCH FIBER EXPANSION JOINT AND/OR 0.25 INCH FIBER EXPANSION JOINT AT DECORATIVE MASONRY UNITS.
I. ALL REINFORCING BARS SHALL BE ASTM A615 GRADE 60. THICKNESS OF CONCRETE COVER OVER REINFORCEMENT SHALL BE NOT LESS THAN 3" WHERE CONCRETE IS DEPOSITED AGAINST THE GROUND WITHOUT THE USE OF FORMS AND NOT LESS THAN 1.5" FOR UP TO #5 BARS AND 2" FOR #6 TO #10 BARS IN ALL OTHER LOCATIONS. ALL REINFORCING SHALL BE LAPPED 48 DIAMETERS FOR UP TO #6 BARS, 62 DIAMETERS FOR #7 TO #9 BARS, 68 DIAMETERS FOR #10 BARS OR AS NOTED ON THE DRAWINGS AND EXTENDED AROUND CORNERS WITH CORNER BARS. PLACING AND DETAILING OF STEEL REINFORCING AND REINFORCING SUPPORTS SHALL BE IN ACCORDANCE WITH CRSI AND ACI MANUAL AND STANDARD PRACTICES. THE REINFORCEMENT SHALL NOT BE PAINTED AND MUST BE FREE OF GREASE/OIL, DIRT OR DEEP RUST WHEN PLACED IN THE WORK. ALL WELDED WIRE FABRIC SHALL MEET THE REQUIREMENTS OF ASTM A 1064. WELDED WIRE FABRIC SHALL BE PLACED 2" FROM TOP OF SLAB, UNLESS INDICATED OTHERWISE.
J. CONTRACTOR SHALL ENGAGE A QUALIFIED INDEPENDENT TESTING AND INSPECTING AGENCY TO SAMPLE MATERIALS, PERFORM TESTS, AND SUBMIT TEST REPORTS DURING CONCRETE PLACEMENT. TESTS WILL BE PERFORMED ACCORDING TO ACI 301. CAST AND LABORATORY CURE ONE SET OF FOUR STANDARD CYLINDERS FOR EACH COMPOSITE SAMPLE FOR EACH DAY'S POUR OF EACH CONCRETE MIX EXCEEDING 5 CU. YD., BUT LESS THAN 25 CU. YD., PLUS ONE SET FOR EACH ADDITIONAL 50 CU. YD. OR FRACTION THEREOF. PERFORM COMPRESSIVE-STRENGTH TESTS ACCORDING TO ASTM C 39. TEST TWO SPECIMENS AT 7 DAYS AND TWO SPECIMENS AT 28 DAYS. PERFORM SLUMP TESTING ACCORDING TO ASTM C 143. PROVIDE ONE TEST AT POINT OF PLACEMENT FOR EACH COMPOSITE SAMPLE, BUT NOT LESS THAN ONE TEST FOR EACH DAY'S POUR OF EACH CONCRETE MIX. PERFORM ADDITIONAL TESTS WHEN CONCRETE CONSISTENCY APPEARS TO CHANGE.
K. PROTECT FRESHLY PLACED CONCRETE FROM PREMATURE DRYING AND EXCESSIVE COLD OR HOT TEMPERATURES. IN HOT, DRY, AND WINDY WEATHER, APPLY AN EVAPORATION-CONTROL COMPOUND ACCORDING TO MANUFACTURER'S INSTRUCTIONS AFTER SCREEDING AND BULL FLOATING, BUT BEFORE POWER FLOATING AND TROWELLING.
L. LIMIT MAXIMUM WATER-CEMENTITIOUS RATIO OF CONCRETE EXPOSED TO FREEZING, THAWING AND DEICING SALTS TO 0.45.
M. TEST RESULTS WILL BE REPORTED IN WRITING TO THE DESIGN ENGINEER, READY-MIX PRODUCER, AND CONTRACTOR WITHIN 24 HOURS AFTER TESTS. REPORTS OF COMPRESSIVE STRENGTH TESTS SHALL CONTAIN THE PROJECT IDENTIFICATION NAME AND NUMBER, DATE OF CONCRETE PLACEMENT, NAME OF CONCRETE TESTING SERVICE, CONCRETE TYPE AND CLASS, LOCATION OF CONCRETE BATCH ON SITE, DESIGN COMPRESSIVE STRENGTH AT 28 DAYS, CONCRETE MIX PROPORTIONS AND MATERIALS, COMPRESSIVE BREAKING STRENGTH, AND TYPE OF BREAK FOR BOTH 7-DAY TESTS AND 28-DAY TESTS.

32 30 00 LANDSCAPING AND SITE STABILIZATION

A. TOPSOIL: CONTRACTOR TO PROVIDE A MINIMUM OF 6" OF TOPSOIL FOR ALL DISTURBED OPEN AREAS, OTHER THAN LANDSCAPE ISLANDS SHALL BE PROVIDED WITH A MINIMUM OF 10" OF TOPSOIL. REUSE SURFACE SOIL STOCKPILED ON SITE AND SUPPLEMENT WITH IMPORTED OR MANUFACTURED TOPSOIL FROM OFF SITE SOURCES WHEN QUANTITIES ARE INSUFFICIENT. EXCAVATOR SHALL BE RESPONSIBLE FOR ROUGH PLACEMENT OF TOPSOIL TO WITHIN 1" OF FINAL GRADE PRIOR TO LANDSCAPER FINAL GRADING. LANDSCAPER TO PROVIDE PULVERIZING AND FINAL GRADING OF TOPSOIL. PROVIDE SOIL ANALYSIS BY A QUALIFIED SOIL TESTING LABORATORY AS REQUIRED TO VERIFY THE SUITABILITY OF SOIL TO BE USED AS TOPSOIL AND TO DETERMINE THE NECESSARY SOIL AMENDMENTS. TEST SOIL FOR PRESENCE OF ATRAZINE AND INFORM EXCEL ENGINEERING, INC. IF PRESENT PRIOR TO BIDDING PROJECT. TOPSOIL SHALL HAVE A PH RANGE OF 5.5 TO 8, CONTAIN A MINIMUM OF 5 PERCENT ORGANIC MATERIAL CONTENT, AND SHALL BE FREE OF STONES 1 INCH OR LARGER IN DIAMETER. ALL MATERIALS HARMFUL TO PLANT GROWTH SHALL ALSO BE REMOVED.
   TOPSOIL INSTALLATION: LOOSEN SUBGRADE TO A MINIMUM DEPTH OF 6 INCHES AND REMOVE STONES LARGER THAN 1" IN DIAMETER. ALSO REMOVE ANY STICKS, ROOTS, RUBBISH, AND OTHER EXTRANEOUS MATTER AND DISPOSE OF THEM OFF THE PROPERTY. SPREAD TOPSOIL TO A DEPTH OF 6" BUT NOT LESS THAN WHAT IS REQUIRED TO MEET FINISHED GRADES AFTER LIGHT ROLLING AND NATURAL SETTLEMENT. DO NOT SPREAD TOPSOIL IF SUBGRADE IS FROZEN, MUDDY, OR EXCESSIVELY WET. GRADE PLANTING AREAS TO A SMOOTH, UNIFORM SURFACE PLANE WITH LOOSE, UNIFORMLY FINE TEXTURE. GRADE TO WITHIN 0.05 FEET OF FINISHED GRADE ELEVATION.
B. SEEDED LAWNS:
   1. CONTRACTOR TO SUBMIT NO MOW SEED MIX TO ENGINEER FOR APPROVAL FOR SEEDING ALL GRASS SLOPES.
   2. PERMANENT LAWN AREAS OUTSIDE OF SLOPED NO MOW SEEDED AREA SHALL BE SEEDED WITH THE FOLLOWING MIXTURE: 65% KENTUCKY BLUEGRASS BLEND (2.0-2.6 LBS./1,000 S.F.), 20% PERENNIAL RYEGRASS (0.6-0.8 LBS./1,000 S.F.), 15% FINE FESCUE (0.4-0.6 LBS/1,000 S.F.). STRAW AND MULCH SHALL BE LAID AT 100LBS/1,000 S.F. FERTILIZE AS PER SOIL TEST OR APPLY 5-10-10 OR EQUIVALENT AT 5-6 LBS/1,000 S.F. SEE EROSION MATTING SPECIFICATIONS AS REQUIRED. ALL SITE DISTURBED AREAS NOT DESIGNATED FOR OTHER LANDSCAPING AND SITE STABILIZATION METHODS SHALL BE SEEDED AS PERMANENT LAWN. NO BARE TOPSOIL SHALL BE LEFT ONSITE. FOLLOW PROCEDURES FOUND IN WDNR TECHNICAL STANDARDS 1058 & 1059.
   3. ALL PERMANENT AND TEMPORARY STORM WATER CONVEYANCE SWALE BOTTOMS AND SIDE SLOPES OUTSIDE OF NO MOW SEEDED AREAS SHALL BE SEEDED WITH THE FOLLOWING MIXTURE: 45% KENTUCKY BLUEGRASS (0.60 LBS./1000 S.F.), 40% CREEPING RED FESCUE (0.50 LBS./1,000 S.F.), AND 15% PERENNIAL RYEGRASS (0.20 LBS./1,000 S.F.). FERTILIZE AS PER SOIL TEST OR APPLY 5-10-10 OR EQUIVALENT AT 5-6 LBS./1,000 S.F. SEE EROSION MATTING SPECIFICATIONS AS REQUIRED. FOLLOW PROCEDURES FOUND IN WDNR TECHNICAL STANDARDS 1058 & 1059.
   4. ALL TEMPORARY SEEDING SHALL CONSIST OF THE FOLLOWING MIXTURE: 100% RYEGRASS AT 1.9 LBS./1,000 S.F. STRAW AND MULCH SHALL BE LAID AT 100 LBS./1,000 S.F. FERTILIZE AS PER SOIL TEST OR APPLY 5-10-10 OR EQUIVALENT AT 5-6 LBS./1,000 S.F. SEE EROSION MATTING SPECIFICATIONS AS REQUIRED. FOLLOW PROCEDURES FOUND IN WDNR TECHNICAL STANDARDS 1058 & 1059.
C. SEEDED LAWN MAINTENANCE: CONTRACTOR TO PROVIDE MAINTENANCE OF ALL LANDSCAPING FOR A PERIOD OF 90 DAYS FROM THE DATE OF INSTALLATION. AT THE END OF THE MAINTENANCE PERIOD, A HEALTHY, UNIFORM, CLOSE STAND OF GRASS SHOULD BE ESTABLISHED FREE OF WEEDS AND SURFACE IRREGULARITIES. LAWN COVERAGE SHOULD EXCEED 90% AND BARE SPOTS SHOULD NOT EXCEED 5"X5". CONTRACTOR SHOULD REESTABLISH LAWNS THAT DO NOT COMPLY WITH THESE REQUIREMENTS AND CONTINUE MAINTENANCE UNTIL LAWNS ARE SATISFACTORY.
D. EROSION MATTING:
   1. CONTRACTOR TO PROVIDE EROSION CONTROL MATTING (NORTH AMERICAN GREEN S150) OR EQUIVALENT ON ALL SLOPES THAT ARE 4:1 AND GREATER. LAWN SEED SHALL BE PLACED BELOW MATTING IN ACCORDANCE WITH SEEDING REQUIREMENTS AND MANUFACTURER SPECIFICATIONS.
   2. CONTRACTOR TO PROVIDE EROSION MATTING (NORTH AMERICAN GREEN C125) OR EQUIVALENT IN ALL SWALE BOTTOMS AND SIDE SLOPES AS REQUIRED. LAWN SEED SHALL BE PLACED BELOW MATTING IN ACCORDANCE WITH SEEDING REQUIREMENTS AND MANUFACTURER SPECIFICATIONS.
E. TREES AND SHRUBS: FURNISH NURSERY-GROWN TREES AND SHRUBS WITH HEALTHY ROOT SYSTEMS DEVELOPED BY TRANSPLANTING OR ROOT PRUNING. PROVIDE WELL-SHAPED, FULLY BRANCHED, AND HEALTHY LOOKING STOCK. STOCK SHOULD ALSO BE FREE OF DISEASE, INSECTS, EGGS, LARVAE, AND DEFECTS SUCH AS KNOTS, SUN SCALD, INJURIES, ABRASIONS, AND DISFIGUREMENT. SEE THE LANDSCAPE PLAN FOR SPECIFIC SPECIE TYPE, SIZE, AND LOCATION.
F. TREE AND SHRUB INSTALLATION: EXCAVATE CIRCULAR PITS WITH SIDES SLOPED INWARD. TRIM BASE LEAVING CENTER AREA RAISED SLIGHTLY TO SUPPORT ROOT BALL. EXCAVATE PIT APPROXIMATELY THREE TIMES AS WIDE AS THE ROOT BALL DIAMETER. SET TREES AND SHRUBS PLUMB AND IN CENTER OF PIT WITH TOP OF BALL 1" ABOVE ADJACENT FINISHED GRADES. PLACE PLANTING SOIL MIX AROUND ROOT BALL IN LAYERS AND TAMP TO SETTLE MIX. WATER ALL PLANTS THOROUGHLY. PROVIDE TEMPORARY STAKING FOR TREES AS REQUIRED.
G. TREE AND SHRUB MAINTENANCE/WARRANTY: CONTRACTOR TO PROVIDE MAINTENANCE OF ALL LANDSCAPING FOR A PERIOD OF 90 DAYS FROM THE DATE OF INSTALLATION. MAINTENANCE TO INCLUDE REGULAR WATERING AS REQUIRED FOR SUCCESSFUL PLANT ESTABLISHMENT. CONTRACTOR TO PROVIDE 1 YEAR WARRANTY ON ALL TREES, SHRUBS, AND PERENNIALS.
H. ORGANIC MULCH: PROVIDE 3" MINIMUM THICK BLANKET OF SHREDDED HARDWOOD MULCH AT ALL PLANTING AREAS INDICATED ON THE LANDSCAPE PLAN. INSTALL OVER NON-WOVEN WEED BARRIER FABRIC. COLOR BY OWNER.
I. MINERAL MULCH: PROVIDE 3" MINIMUM THICK BLANKET OF 1.5" MINIMUM TO 2.5" MAXIMUM CRUSHED DECORATIVE STONE AT ALL PLANTING AREAS INDICATED ON THE LANDSCAPE PLAN. INSTALL OVER NON-WOVEN WEED BARRIER FABRIC. COLOR BY OWNER.
J. PLASTIC EDGING: INSTALL VALLEY VIEW INDUSTRIES BLACK DIAMOND LAWN EDGING TO SEPARATE ALL PLANTING BEDS FROM LAWN AREAS. EDGING TO BE 5.5" TALL WITH METAL STAKES INSTALLED PER MANUFACTURER'S WRITTEN INSTRUCTIONS.

DIVISION 33 UTILITIES

33 10 00 SITE UTILITIES

A. CONTRACTOR TO FIELD VERIFY ALL EXISTING UNDERGROUND UTILITIES ON SITE. CONTRACTOR TO VERIFY PIPE LOCATIONS, SIZES, AND DEPTHS AT POINT OF PROPOSED CONNECTIONS AND VERIFY PROPOSED UTILITY ROUTES ARE CLEAR (PER CODE) OF ALL EXISTING UTILITIES AND OTHER OBSTRUCTIONS PRIOR TO CONSTRUCTION. COSTS INCURRED FOR FAILURE TO DO SO SHALL BE THE CONTRACTORS RESPONSIBILITY.
B. ALL SANITARY PIPE SHALL BE IN ACCORDANCE WITH MATERIALS SPECIFIED IN TABLE A: ALLOWABLE PIPE MATERIAL SCHEDULE. ALL SANITARY PIPE BELOW PROPOSED & FUTURE BUILDINGS SHALL BE IN ACCORDANCE WITH MATERIALS SPECIFIED IN TABLE A: ALLOWABLE PIPE MATERIAL. INSULATION SHALL BE PROVIDED PER STATE PLUMBING CODES AS NECESSARY BASED ON PROPOSED DEPTH PER PLANS.
C. SANITARY MANHOLES SHALL BE 48" PRECAST AND CONFORM TO THE STANDARD SPECIFICATIONS FOR SEWER & WATER CONSTRUCTION IN WISCONSIN-CURRENT EDITION UNLESS OTHERWISE DIRECTED BY THE ENGINEER. SANITARY MANHOLE FRAME AND GRATE TO BE NEENAH R-1550-A OR EQUAL. RIM ELEVATION TO BE SET AT FINISHED GRADE IN DEVELOPED AREAS AND 12" ABOVE FINISHED GRADE IN UNDEVELOPED AREAS EXCEPT AS OTHERWISE DIRECTED BY THE ENGINEER.
D. CLEANOUTS SHALL BE PROVIDED FOR THE SANITARY & STORM SERVICES AT LOCATIONS INDICATED ON THE UTILITY PLAN. THE CLEANOUT SHALL CONSIST OF A COMBINATION WYE FITTING IN LINE WITH THE SANITARY/STORM SERVICE WITH THE CLEANOUT LEG OF THE COMBINATION WYE FACING STRAIGHT UP. THE CLEANOUT SHALL CONSIST OF A 6" VERTICAL PVC PIPE WITH A WATER TIGHT REMOVABLE CLEANOUT PLUG. AN 8" PVC FROST SLEEVE SHALL BE PROVIDED. THE BOTTOM OF THE FROST SLEEVE SHALL TERMINATE 12" ABOVE THE TOP OF THE SANITARY LATERAL OR AT LEAST 6" BELOW THE PREDICTED FROST DEPTH, WHICHEVER IS SHALLOWER. THE CLEANOUT SHALL EXTEND JUST ABOVE THE SURFACE GRADE IN LAWN OR LANDSCAPE AREAS WITH THE FROST SLEEVE TERMINATING AT THE GRADE SURFACE. THE CLEANOUT SHALL EXTEND TO 4 INCHES BELOW SURFACE GRADE IN PAVED SURFACES WITH A ZURN (Z-1474-N) HEAVY DUTY CLEANOUT HOUSING PLACED OVER THE TOP OF THE CLEANOUT FLUSH WITH THE SURFACE GRADE. IN PAVED SURFACES, THE FROST SLEEVE SHALL TERMINATE IN A CONCRETE PAD AT LEAST 6" THICK AND EXTENDING AT LEAST 9" FROM THE SLEEVE ON ALL SIDES, SLOPING AWAY FROM THE SLEEVE. THE CLEANOUT HOUSING SHALL BE CONSTRUCTED PER MANUFACTURERS REQUIREMENTS.
E. ALL PROPOSED WATER PIPE SHALL BE IN ACCORDANCE WITH MATERIALS SPECIFIED IN TABLE A: ALLOWABLE PIPE MATERIAL SCHEDULE. 6' MINIMUM COVER SHALL BE PROVIDED OVER ALL WATER PIPING UNLESS OTHERWISE SPECIFIED.
F. ALL PROPOSED STORM PIPE SHALL BE IN ACCORDANCE WITH MATERIALS SPECIFIED IN TABLE A: ALLOWABLE PIPE MATERIAL SCHEDULE. ALL PROPOSED STORM PIPE BELOW BUILDINGS SHALL BE IN ACCORDANCE WITH MATERIALS SPECIFIED IN TABLE A: ALLOWABLE PIPE MATERIAL SCHEDULE. SEE UTILITY PLANS FOR ALL STORM PIPE MATERIAL TYPES TO BE USED. PIPE SHALL BE PLACED MIN. 8' HORIZONTALLY FROM FOUNDATION WALLS.
G. SANITARY, STORM, AND WATER UTILITY PIPE INVERTS SHALL BE CONSTRUCTED WITHIN 0.10' OF DESIGN INVERT ELEVATIONS ASSUMING PIPE SLOPE AND SEPARATION IS MAINTAINED PER THE UTILITY DESIGN PLANS AND STATE REQUIREMENTS.
H. SITE UTILITY CONTRACTOR SHALL RUN SANITARY SERVICE TO A POINT WHICH IS A MAXIMUM OF 5' FROM THE EXTERIOR WALL OF THE FOUNDATION. SITE UTILITY CONTRACTOR SHALL RUN STORM SEWER FOR INTERNALLY DRAINED BUILDINGS TO A POINT WHICH IS A MAXIMUM OF 5' FROM THE EXTERIOR WALL OF THE FOUNDATION. SITE UTILITY CONTRACTOR SHALL RUN DOWNSPOUT LEADS TO BUILDING FOUNDATION AND UP 6" ABOVE SURFACE GRADE FOR CONNECTION TO DOWNSPOUT FOR ALL DOWNSPOUT TO RISER (DSR) CONNECTIONS. DOWNSPOUTS TO GRADE (DSG) SHALL BE PROVIDED WITH SPLASH BLOCKS AT THE DISCHARGE LOCATION. ALL DOWNSPOUT LOCATIONS SHOULD BE VERIFIED WITH ARCHITECTURAL PLANS AND DOWNSPOUT CONTRACTOR/GC PRIOR TO INSTALLATION OF DOWNSPOUT LEADS. DOWNSPOUT LEADS SHALL NOT UNDERMINE BUILDING FOUNDATIONS. SITE UTILITY CONTRACTOR SHALL RUN WATER SERVICE TO A POINT WITHIN THE FOUNDATION SPECIFIED BY THE PLUMBING PLANS. CONTRACTOR TO CUT AND CAP WATER SERVICE 12" ABOVE FINISHED FLOOR ELEVATION.
I. ALL UTILITIES SHALL BE INSTALLED WITH PLASTIC COATED TRACER WIRE (10 TO 14 GAUGE SOLID COPPER, OR COPPER COATED STEEL WIRE). PLASTIC WIRE MAY BE TAPED TO PLASTIC WATER OR SEWER PIPE. IF ATTACHED, THE TRACER WIRE SHALL BE SECURED EVERY 6 TO 20 FEET AND AT ALL BENDS. TRACER WIRE SHALL HAVE ACCESS POINTS AT LEAST EVERY 300 FEET. TRACER WIRE SHALL TERMINATE IN ACCORDANCE WITH MANUFACTURER SPECIFICATIONS AT GRADE OR IN TERMINATION BOX PER LOCAL/STATE REQUIREMENTS.
J. ALL UTILITIES SHALL BE INSTALLED PER STATE, LOCAL, AND INDUSTRY STANDARDS. WATER, SANITARY, AND STORM SEWER SHALL BE INSTALLED PER "STANDARD SPECIFICATION FOR SEWER AND WATER CONSTRUCTION IN WISCONSIN". THE EXCEL ENGINEERING DESIGN ENGINEER SHALL BE RESPONSIBLE FOR OBTAINING STATE PLUMBING REVIEW APPROVAL (IF REQUIRED). THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING ALL OTHER PERMITS REQUIRED TO INSTALL WATER, SANITARY AND STORM SEWER.
K. SEE PLANS FOR ALL OTHER UTILITY SPECIFICATIONS AND DETAILS.

SHOP DRAWING SUBMITTALS

MATERIAL / INFORMATION

2. 31.20.00 - FILL
   - PRODUCT DATA
   - SOURCE MATERIAL
3. 32.10.00 (A) - AGGREGATE BASE & ASPHALT PAVEMENT
   - HOT MIX ASPHALT SPECIFICATIONS
   - AGGREGATE BASE
   - PAVEMENT MARKINGS
4. 32.20.00-CONCRETE AND AGGREGATE BASE
   - DESIGN MIX
   - AGGREGATE BASE
   - COMPRESSION TEST RESULTS
   - PAVEMENT MARKINGS
   - DETECTABLE WARNING PLATES
5. 32.30.00 LANDSCAPING
   - AMENDED SOIL MIX
   - SEEDING PRODUCT DATA
   - PLANTING SUBSTITUTION SCHEDULE
   - MULCH PRODUCT DATA
   - EROSION MATTING
6. 33.10.00 - SITE UTILITIES
   - SANITARY & STORM MANHOLES
   - SANITARY PIPING MATERIALS
   - WATER PIPING MATERIALS
   - WATER FITTINGS & APPURTENANCES
   - STORM PIPING MATERIALS
7. MISCELLANEOUS ITEMS
   - SITE LIGHTING
   - EXTERIOR SIGNAGE
   - BOLLARDS

TABLE A: ALLOWABLE PIPE MATERIAL SCHEDULE

Utility	Material	Pipe Code	Fitting Code	Joint Code
Combined Domestic/Fire Service	C900 PVC	AWWA C900, ASTM D1785, ASTM D2241	AWWA C110, AWWA C153, ASTM D2464, ASTM D2466, ASTM D2467, ASTM D3311, ASTM F409, ASTM F1336, ASTM F1866	Joint: ASTM D3139 Integral Bell & Spigot Elastomeric Seal: ASTM F477
Sanitary Sewer	SDR 35 PVC	ASTM D1785, ASTM D2665, ASTM D3034, ASTM F891	ASTM F1336	Push On: ASTM D3212 for Tightness Elastomeric Gasket: ASTM F477
Storm Sewer	HDPE	ASTM F2648, ASTM F2306, AASHTO M252, TYPE S (4 IN - 10 IN), AASHTO M294, TYPE S (12 IN - 60 IN)	ASTM F2648, ASTM F2306, AASHTO M252, or AASHTO M294	Joint: ASTM F2648, ASTM F2306, AASHTO M252, or AASHTO M294 Elastomeric Seal: ASTM F477
Storm Sewer	RRCP-Class IV	ASTM C14, ASTM C76, AASHTO M170		ASTM C443 Rubber Gasket

EXCEL
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PROJECT INFORMATION

PROPOSED MULTI-FAMILY DEVELOPMENT
LUMIN TERRACE
JOHNSON STREET • WATERTOWN, WI

PROFESSIONAL SEAL

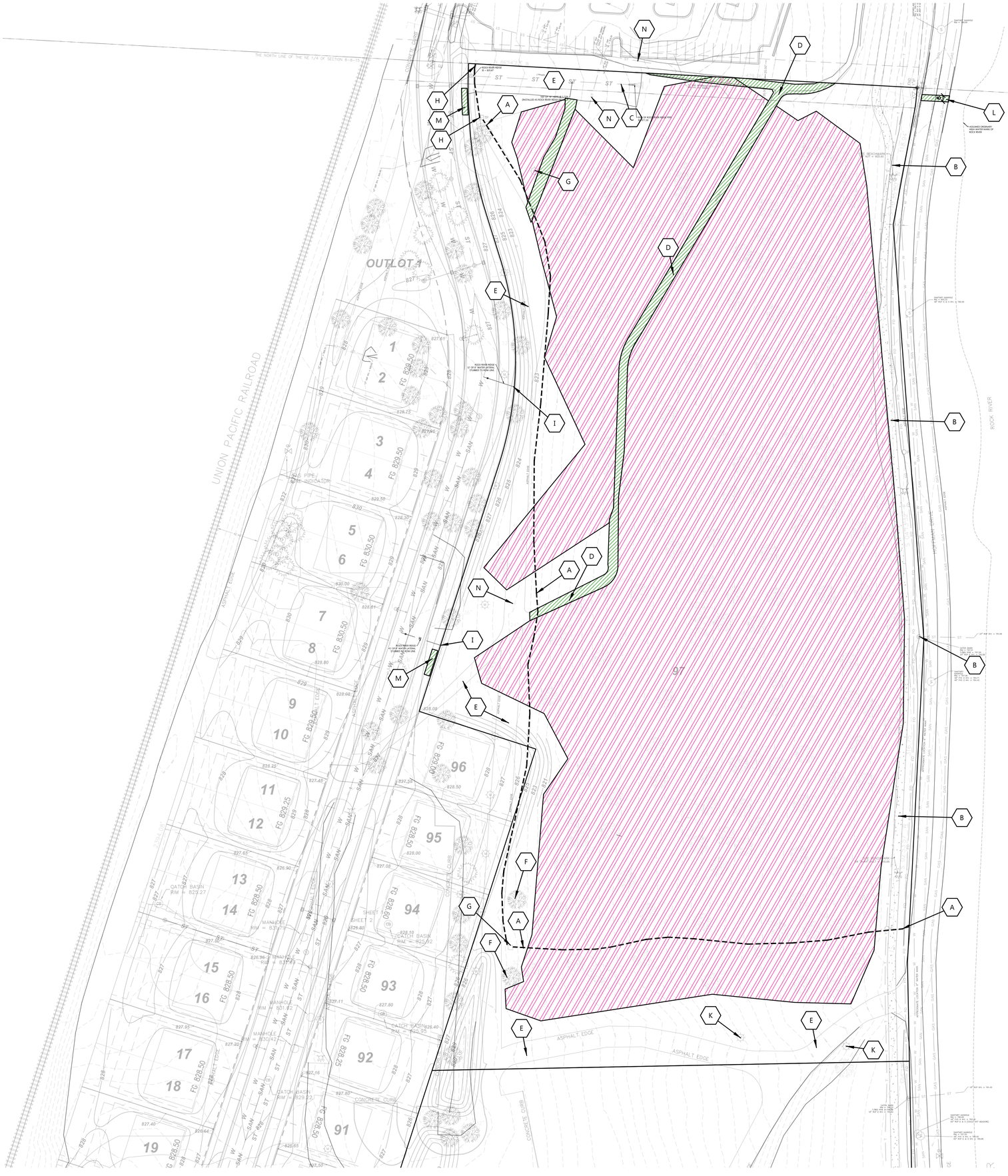
PRELIMINARY DATES
OCT. 23, 2024
OCT. 25, 2024
OCT. 30, 2024
NOV. 8, 2024

NOT FOR CONSTRUCTION

JOB NUMBER
240136200

CIVIL SPECIFICATION SHEET

SHEET NUMBER
C0.2



GENERAL NOTES:

CONTRACTOR TO REFERENCE ROCK RIVER RIDGE PHASE 1 PLANS FOR SCOPE OF REMOVALS. COVERED BY ROCK RIVER RIDGE PHASE 1 CONTRACTOR. CONTRACTOR TO FILED VERIFY ROCK RIVER PHASE 1 REMOVALS AND IMPROVEMENTS HAVE BEEN COMPLETED AND NOTIFY ENGINEER OF ANY DISCREPANCIES PRIOR TO CONSTRUCTION.

LEGEND:

- REMOVE PAVEMENT & BASE
- CLEAR AND GRUB TREES WITHIN HATCHED AREA

KEYNOTES

A	ROCK RIVER RIDGE PHASE 1 PLANS DENOTE EXISTING TELECOM TO BE ABANDONED. OWNER/CONTRACTOR TO COORDINATE WITH ADJACENT DEVELOPER.
B	PROTECT CONCRETE TRAIL INSTALLED AS PART OF ROCK RIVER RIDGE PHASE 1 PLANS. FIELD VERIFY SANITARY AND STORM CONNECTIONS HAVE BEEN MADE PRIOR TO CONCRETE TRAIL INSTALLATION. IF NOT, CONTRACTOR TO SAWCUT AND REMOVE AND REPLACE CONCRETE AS NECESSARY FOR PROPOSED UTILITY CONNECTIONS.
C	PROTECT STORM PIPE INSTALLED AS PART OF ROCK RIVER RIDGE PHASE 1 PLANS.
D	SAWCUT (AS NECESSARY) AND REMOVE ASPHALT AND REMOVE BASE. VERIFY WITH NORTH NEIGHBOR THAT TRAIL WILL BE DISCONNECTED AS NEEDED.
E	FIELD VERIFY ASPHALT REMOVED AS PART OF ROCK RIVER RIDGE PHASE 1 PLANS.
F	FIELD VERIFY TREE REMOVED AS PART OF ROCK RIVER RIDGE PHASE 1 PLANS.
G	FIELD VERIFY LIGHT POLE REMOVED AS PART OF ROCK RIVER RIDGE PHASE 1 PLANS.
H	CONTRACTOR TO COORDINATE WITH UTILITY PROVIDER FOR TELECOM LINE TO BE ABANDONED AND REMOVED AS NECESSARY FOR PROPOSED GRADING AND IMPROVEMENTS. REMOVE PEDESTAL.
I	FIELD VERIFY 8" WATER PIPE STUBBED TO PROPERTY LINES AS PART OF ROCK RIVER RIDGE PHASE 1 PLANS.
K	REMOVE LIGHT POLE, WIRING & CONDUIT
L	SAWCUT (AS NECESSARY) AND REMOVE ASPHALT FOR INSTALLATION OF STORM SEWER.
M	CONTRACTOR TO SAWCUT AND REMOVE SIDEWALK IF INSTALLED THROUGH PROPOSED ENTRANCE TO DEVELOPMENT.
N	CONTRACTOR TO DETERMINE IF STORM SEWER EXISTS OR WAS REMOVED AS PART OF NEIGHBORING DEVELOPMENT. NOTIFY ENGINEER WITH FINDINGS.

EXISTING CONDITIONS NOTE:

EXISTING CONDITIONS SURVEY WAS COMPLETED BY CAPITOL SURVEY ENTERPRISES.

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PHONE: 414-475-5554

SCALE: 1" = 40'
40' 0 40' 80'
NORTH

CIVIL EXISTING SITE AND DEMOLITION PLAN

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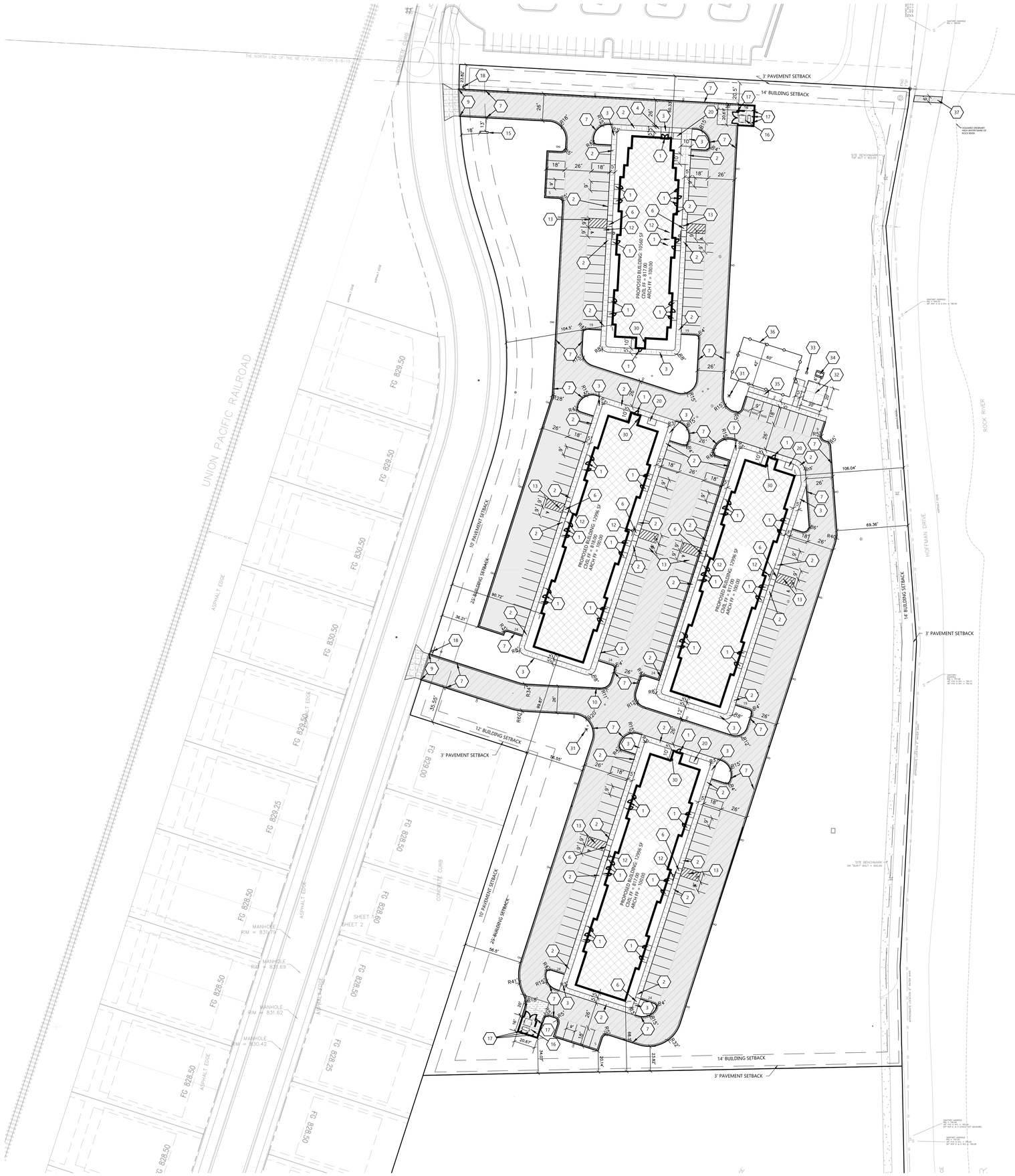

KEYNOTES

1	CONCRETE STOOP (SEE STRUCTURAL PLANS FOR DETAILS)
2	RAISED WALK (SEE DETAIL)
3	FLUSH WALK (SEE DETAIL)
4	TAPER ASPHALT IN 12' TO CREATE RAISED WALK
6	ADA CURB RAMP (SEE DETAIL)
7	18" CURB & GUTTER (SEE DETAIL)
9	CURB TAPER (SEE DETAIL)
10	CURB CUT (SEE DETAIL)
11	CONCRETE TRANSFORMER PAD BY UTILITY SUPPLIER (CONTRACTOR TO VERIFY FINAL LOCATION & DESIGN PRIOR TO CONSTRUCTION)
12	HANDICAP SIGN PER STATE CODE (SEE DETAIL)
13	HANDICAP STALL & STRIPING PER STATE CODES
15	MONUMENT SIGN (DETAILS, FINAL LOCATION, & APPROVAL BY SIGN VENDOR)
16	DUMPSTER ENCLOSURE (SEE ARCH PLANS FOR DETAILS)
17	6" CONCRETE BOLLARDS (TYP.) (SEE ARCH PLANS FOR DETAILS)
18	STOP SIGN PER MUTCD.
20	BIKE RACK (TYP.) (TYPE & COLOR BY OWNER)
22	TRAFFIC FLOW ARROWS (TYP). COLOR TO MATCH PARKING STALL STRIPING
30	FDC LOCATION. FDC SHALL HAVE AN ANGLED 5 INCH STORZ CONNECTION AND SHALL BE MARKED WITH A STROBE OR REFLECTIVE SIGN.
31	FIRE HYDRANT LOCATION. FIRE HYDRANTS SHALL NOT BE PLACED CLOSER THAN 40 FEET TO ANY BUILDING AND SHALL BE NO MORE THAN 100 FEET FROM THE FDC.
32	PAVILION ON CONCRETE PAD. SEE ARCH PLANS.
33	PARK GRILL. TYPE BY OWNER.
34	PICNIC TABLE ON CONCRETE PAD. TABLEBY OWNER.
35	MAILBOX AND PARCEL CLUSTERS ON CONCRETE PAD. SEE ARCH PLANS.
36	PROPOSED DOG PARK WITH 4' BLACK VINYL CHAINLINK FENCE.
37	ASPHALT/BASE SECTION TO MATCH EXISTING ROAD SECTION PER CITY OF WATERTOWN SPECIFICATIONS.

LEGEND:

HATCH	PAVEMENT SECTION	HATCH	PAVEMENT SECTION
	STANDARD ASPHALT		HEAVY DUTY CONCRETE
	HEAVY DUTY ASPHALT		
	SIDEWALK CONCRETE		DUMPSTER PAD / APRON CONCRETE
	INVERTED CURB & GUTTER		SHEDDING CURB & GUTTER

SCALE: 1" = 40'

40' 0 40' 80'

NORTH

CIVIL SITE PLAN

EXCEL

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920-926-9800
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PROJECT INFORMATION

PROPOSED MULTI-FAMILY DEVELOPMENT
LUMIN TERRACE
JOHNSON STREET • WATERTOWN, WI

PROFESSIONAL SEAL

PRELIMINARY DATES

OCT. 3, 2024
OCT. 11, 2024
OCT.14, 2024
OCT. 18, 2024
OCT. 23, 2024
OCT. 25, 2024
OCT. 30, 2024
NOV. 8, 2024

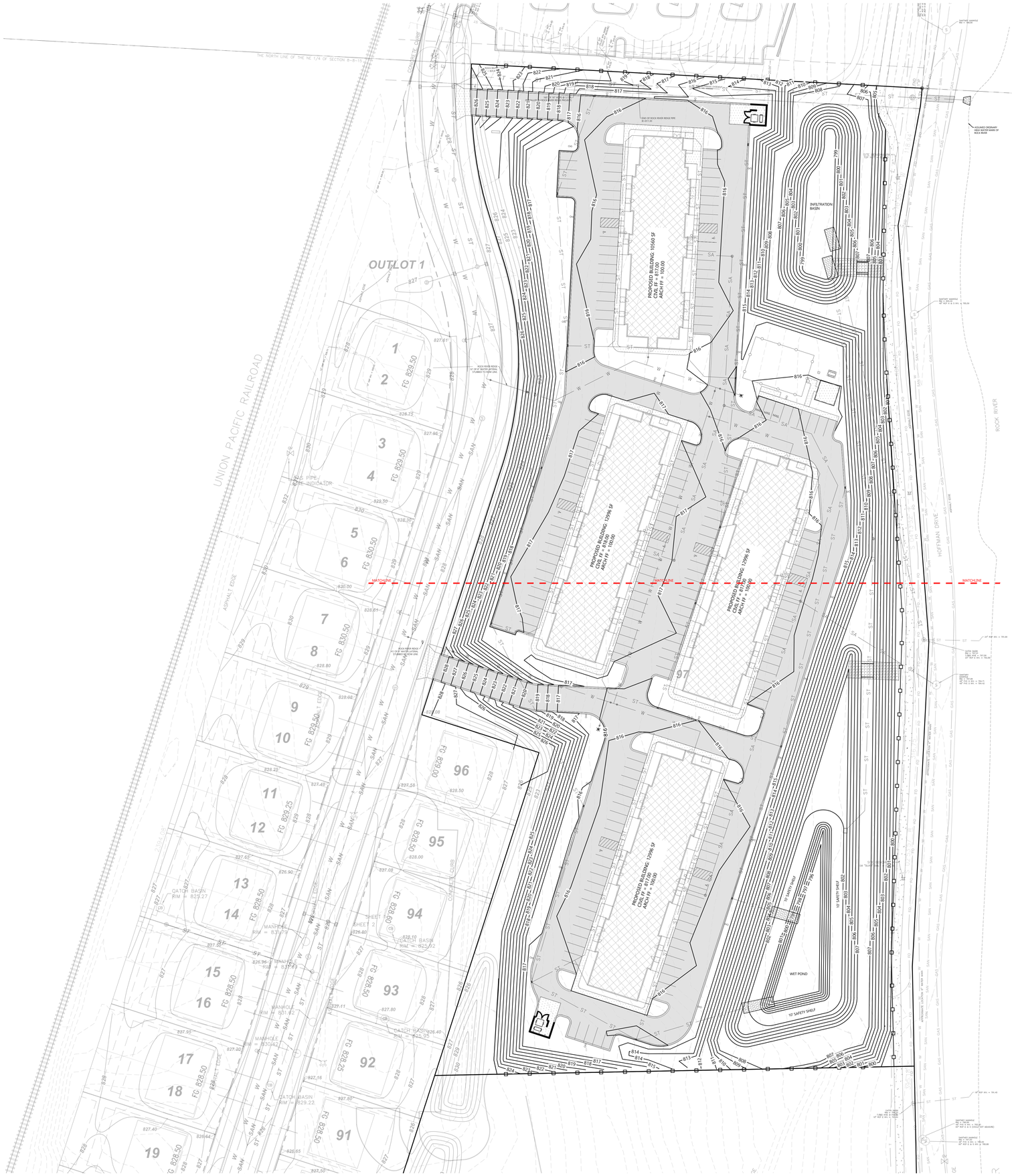
NOT FOR CONSTRUCTION

JOB NUMBER

240136200

SHEET NUMBER

C1.1



GENERAL NOTES:

- HANDICAP STALL AND ACCESS AISLES SHALL NOT EXCEED A SLOPE OF 1.50% IN ANY DIRECTION. HANDICAP STALL & ACCESS AISLES SHALL CONFORM TO ADA REQUIREMENTS (CURRENT EDITION)
- ALL SIDEWALKS SHALL NOT EXCEED A MAXIMUM CROSS SLOPE OF 1.50% AND RUNNING SLOPE OF 4.50% UNLESS OTHERWISE SPECIFIED.
- CONTRACTOR SHALL PROVIDE STABILIZED CONSTRUCTION ENTRANCE AT CONSTRUCTION ENTRANCE FOR PROPOSED IMPROVEMENTS AS REQUIRED PER CODE.
- CONTRACTOR SHALL PROVIDE CONCRETE WASHOUT AS REQUIRED PER CODE. FINAL LOCATION TBD BY CONTRACTOR.
- CONTRACTOR SHALL PROVIDE TEMPORARY INLET PROTECTION FOR ALL CURB INLETS & CATCH BASINS ONSITE & OFFSITE IMMEDIATELY DOWNSTREAM OF THE PROJECT SITE PER LOCAL CODE.

KEYNOTES

EC 1	SILT FENCE
EC 3	STABILIZED CONSTRUCTION ENTRANCE
EC 4	INLET PROTECTION

SCALE: 1" = 40'

NORTH

40' 0 40' 80'

CIVIL GRADING AND EROSION CONTROL PLAN - OVERALL

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920-926-9800
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PROJECT INFORMATION

PROPOSED MULTI-FAMILY DEVELOPMENT

LUMIN TERRACE

JOHNSON STREET • WATERTOWN, WI

PROFESSIONAL SEAL

PRELIMINARY DATES

OCT. 11, 2024
OCT. 18, 2024
OCT. 23, 2024
OCT. 25, 2024
OCT. 30, 2024
NOV. 8, 2024

NOT FOR CONSTRUCTION

JOB NUMBER

240136200

SHEET NUMBER

C1.2A

GENERAL NOTES:

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KEYNOTES

EC 1	SILT FENCE
EC 3	STABILIZED CONSTRUCTION ENTRANCE
EC 4	INLET PROTECTION

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PROPOSED MULTI-FAMILY DEVELOPMENT
LUMIN TERRACE
JOHNSON STREET • WATERTOWN, WI

PROFESSIONAL SEAL

PRELIMINARY DATES
NOV. 8, 2024

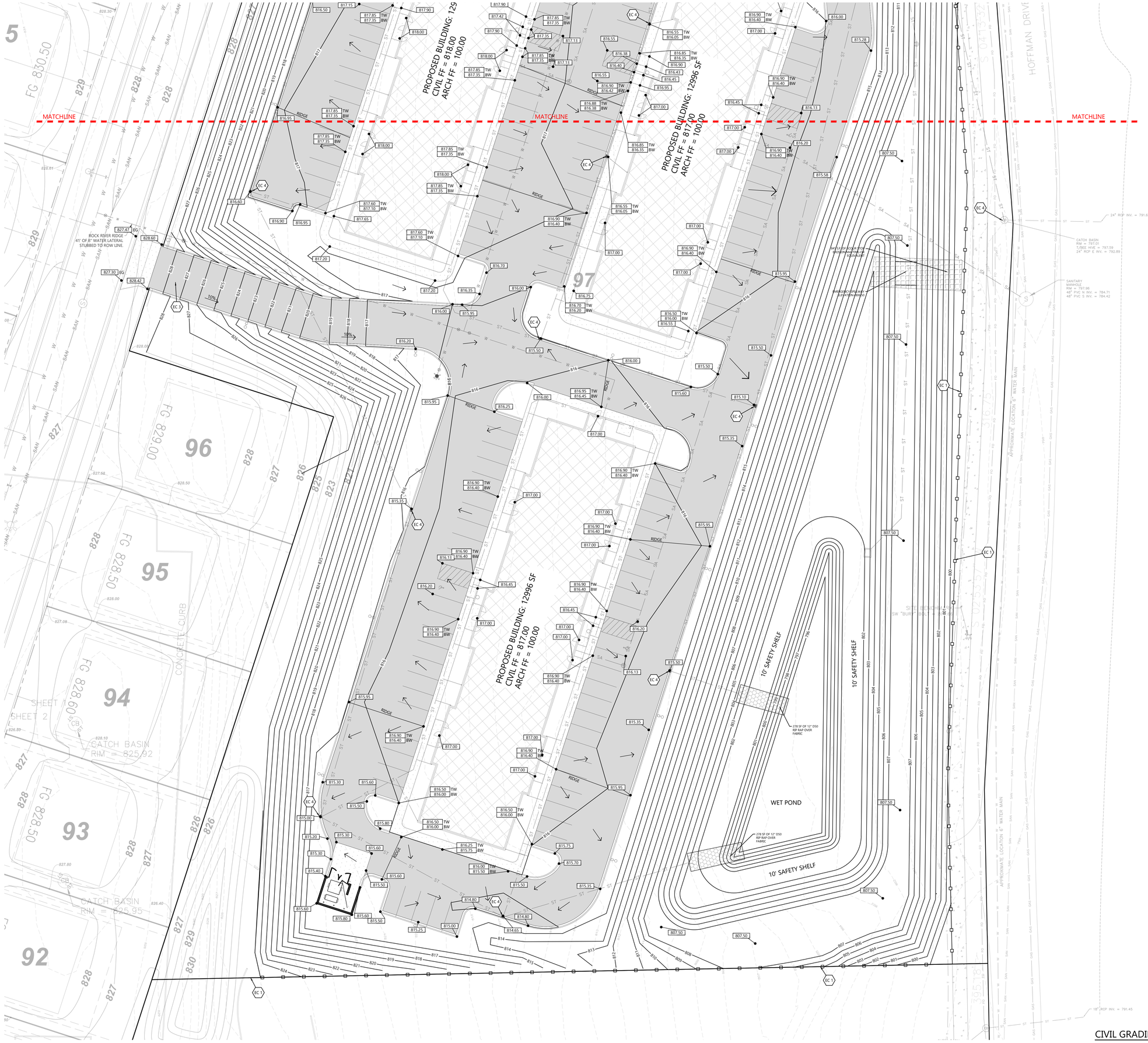
NOT FOR CONSTRUCTION

JOB NUMBER
240136200

SHEET NUMBER
C1.2B

SCALE: 1" = 20'
20' 0 20' 40'
NORTH

CIVIL GRADING AND EROSION CONTROL PLAN - NORTH



GENERAL NOTES:

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- CONTRACTOR SHALL PROVIDE STABILIZED CONSTRUCTION ENTRANCE AT CONSTRUCTION ENTRANCE FOR PROPOSED IMPROVEMENTS AS REQUIRED PER CODE.
- CONTRACTOR SHALL PROVIDE CONCRETE WASHOUT AS REQUIRED PER CODE. FINAL LOCATION TBD BY CONTRACTOR.
- CONTRACTOR SHALL PROVIDE TEMPORARY INLET PROTECTION FOR ALL CURB INLETS & CATCH BASINS ONSITE & OFFSITE IMMEDIATELY DOWNSTREAM OF THE PROJECT SITE PER LOCAL CODE.

KEYNOTES

EC 1	SILT FENCE
EC 3	STABILIZED CONSTRUCTION ENTRANCE
EC 4	INLET PROTECTION

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PROJECT INFORMATION

PROPOSED MULTI-FAMILY DEVELOPMENT
LUMIN TERRACE
JOHNSON STREET • WATERTOWN, WI

PROFESSIONAL SEAL

PRELIMINARY DATES
NOV. 8, 2024

NOT FOR CONSTRUCTION

JOB NUMBER
240136200

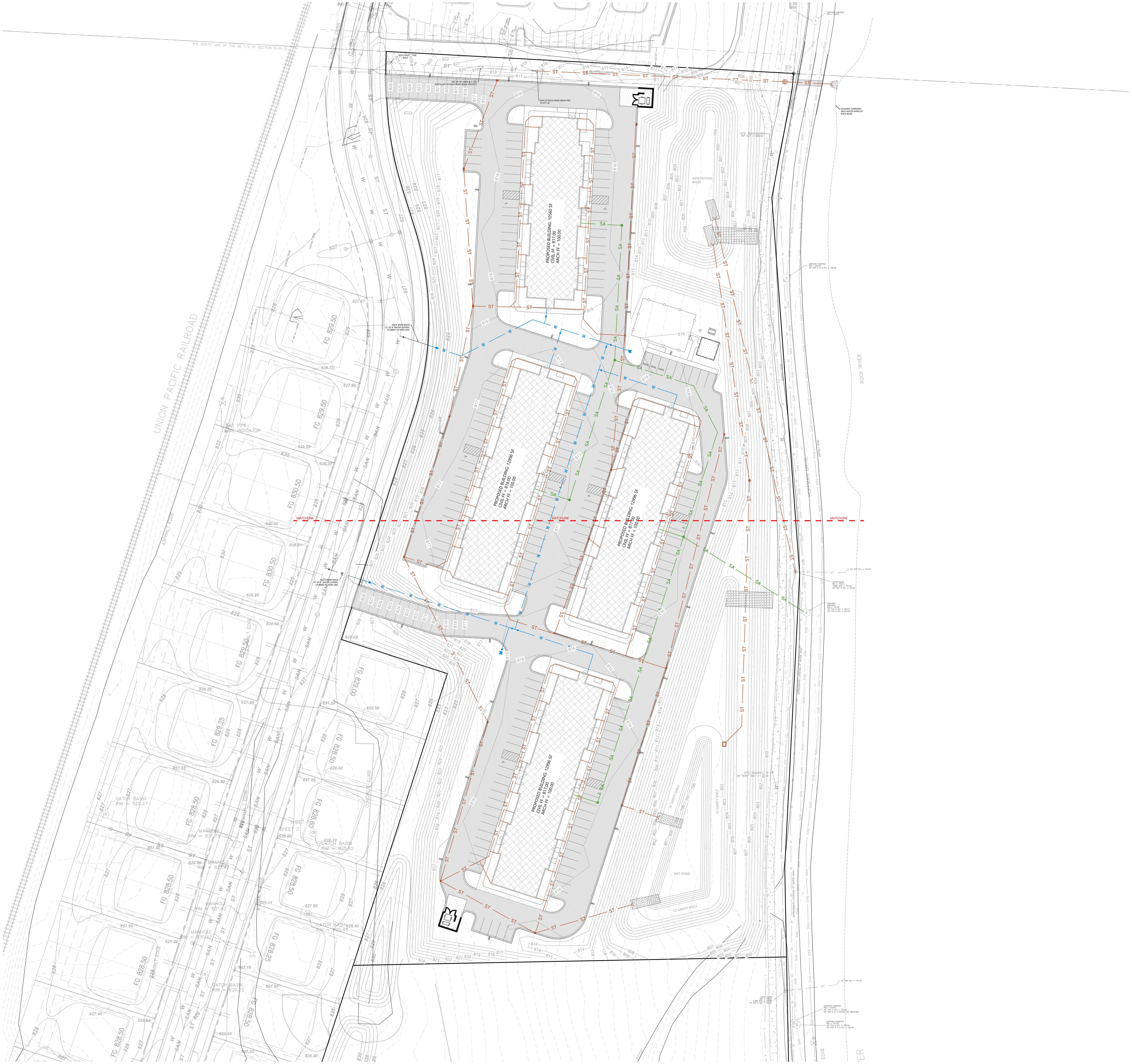
SHEET NUMBER
C1.2C

CIVIL GRADING AND EROSION CONTROL PLAN - SOUTH

Section 3, Item B.

GENERAL NOTES:

- ALL DOWNSPOUT LEADERS WITH DS TAG SHALL BE 6" HDPE PIPES WITH LENGTH OF LEADER NOTED AFTER DS PREFIX.
- CONTRACTOR TO VERIFY WATER AND SANITARY PIPE SIZING WITH INTERIOR PLUMBER PRIOR TO CONSTRUCTION AND NOTIFY ENGINEER IF INTERIOR PLUMBER REQUIRES DIFFERENT PIPE SIZES.



EXCEL

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PROJECT INFORMATION

PROPOSED MULTI-FAMILY DEVELOPMENT

LUMIN TERRACE

JOHNSON STREET • WATERTOWN, WI

PROFESSIONAL SEAL

PRELIMINARY DATES

OCT. 17, 2024
OCT. 18, 2024
OCT. 23, 2024
OCT. 25, 2024
OCT. 30, 2024
NOV. 7, 2024

NOT FOR CONSTRUCTION

SCALE: 1"= 40'

NORTH

CIVIL UTILITY PLAN - OVERALL

JOB NUMBER

240136200

SHEET NUMBER

C1.3A

GENERAL NOTES:

- ALL DOWNSPOUT LEADERS WITH DS TAG SHALL BE 6" HDPE PIPES WITH LENGTH OF LEADER NOTED AFTER DS PREFIX.
- CONTRACTOR TO VERIFY WATER AND SANITARY PIPE SIZING WITH INTERIOR PLUMBER PRIOR TO CONSTRUCTION AND NOTIFY ENGINEER IF INTERIOR PLUMBER REQUIRES DIFFERENT PIPE SIZES.

ROCK RIVER RIDGE
IE = 820.47

160' OF 18" HDPE @ 5.73%
(INSTALLED AS ROCK RIVER RIDGE PROJECT)

STORM CI 1 [2' X 3']
RIM = 815.50
IE SW = 811.99

CONNECT TO END OF STORM PIPE INSTALLED AS PART OF ROCK RIVER RIDGE DEVELOPMENT

END OF ROCK RIVER RIDGE PIPE
IE=811.30

267' OF 18" HDPE @ 5.73%

40' WDE WATERMAIN EASEMENT

STORM MH
RIM=800.50
IE E 18"=796.00
IE W 18"=796.00

50' OF 18" RCP @ 1%

ENDSECTION
IE = 795.50

PROTECT EXISTING FIBER OPTIC, WATER LINE & GAS LINE. MAINTAIN ADEQUATE SEPARATION PER DSPS.

ASSUMED ORDINARY HIGH WATER MARK OF ROCK RIVER

LIGHT POLE (TYP)
SEE C3.1.

STORM PIPE I
101' OF 12" HDPE @ 0.3%
(100 YR =893 GPM)

STORM CI 9 [2' X 3']
RIM = 815.10
IE S = 811.33

SITE BENCHMARK
TOP NUT = 803.90

DOWNSPOUT LEAD COLLECTOR 1
235' OF 8" HDPE @ 1%
(100 YR = 485 GPM)

STORM CI 2 [4']
RIM = 815.40
IE NE=811.68
IE SE = 811.68

DOWNSPOUT LEAD COLLECTOR 2
256' OF 8" HDPE @ 1%
(100 YR = 485 GPM)

STORM PIPE A
227' OF 12" HDPE @ 1%
(100 YR = 1,131 GPM)

INFILTRATION BASIN

ENDSECTION 3
IE = 800.00

ENDSECTION 2
IE = 800.00

STORM PIPE J
149' OF 18" HDPE @ 0.3%
(100 YR =2,374 GPM)

PROPOSED BUILDING: 10560 SF
CIVIL FF = 817.00
ARCH FF = 100.00

IE=807.55

SANITARY PIPE 4
44' OF 6" SDR 35
PVC @ 1%

SANITARY MH C [4']
RIM = 815.20
IE W= 807.10
IE S= 807.00

LIGHT POLE (TYP)
SEE C3.1.

SANITARY PIPE 3
146' OF 6" SDR 35 PVC @ 1%

SANITARY MANHOLE
RIM = 800.32
48" RCP N & S INV. = 785.59

STORM PIPE 5
391' OF 8" HDPE @ 1.5%

STORM CI 3 [4']
RIM = 815.50
IE N= 811.23
IE SW = 811.23
IE E = 811.23

WATER PIPE 2
17' OF 6" C900 PVC WITH VALVE

LIGHT POLE (TYP)
SEE C3.1.

WATER PIPE 4
23' OF 6" C900 PVC
HYDRANT LEAD WITH VALVE

STORM CI 10 [2' X 3']
RIM = 814.80
IE N = 809.06
IE S = 809.06
IE W = 809.06

IE STORM=808.78
IE SAN=805.37

ROCK RIVER RIDGE
32' OF 8" WATER LATERAL STUBBED TO ROW LINE.

CONNECT TO END OF WATER LATERAL INSTALLED AS PART OF ROCK RIVER RIDGE DEVELOPMENT

WATER PIPE 1
209' OF 8" C900 PVC

CHECK VALVE IN MANHOLE

WATER PIPE 3
44' OF 6" C900 PVC
WITH VALVE

VALVE

STORM PIPE R
257' OF 10" HDPE @ 0.37%

SANITARY MH B [4']
RIM = 815.20
IE N = 805.50
IE SW= 805.50
IE SE= 805.40

STORM PIPE K
122' OF 24" HDPE @ 0.5%
(100YR = 4,192 GPM)

SANITARY PIPE 5
158' OF 6" SDR 35 PVC @ 1%

WATER PIPE 5
104' OF 6" C900 PVC
WITH VALVE

45° BEND

SANITARY PIPE 2
264' OF 6" SDR 35 PVC @ 1%

DOWNSPOUT LEAD COLLECTOR 3
270' OF 8" HDPE @ 1.25%
(100 YR = 597 GPM)

STORM CI 14 [2' X 3']
RIM = 815.00
IE S = 811.00

45° BEND

LIGHT POLE (TYP)
SEE C3.1.

STORM CI 4 [4']
RIM = 816.15
IE N=810.62
IE SW = 810.62

STORM PIPE B
145' OF 18" HDPE @ 1%
(100 YR = 3,110 GPM)

STORM CI 11 [4']
RIM = 816.05
IE NE =807.61
IE SW = 807.61
IE E NE=812.00

PROPOSED BUILDING: 12996 SF
CIVIL FF = 818.00
ARCH FF = 100.00

STORM PIPE C
78' OF 18" HDPE @ 1%
(100 YR = 4,035 GPM)

IE=807.60

STORM MH 1 [4']
RIM = 808.00
IE N = 800.93
IE S = 800.93

STORM PIPE F
260' OF 10" HDPE @ 2%
(100 YR = 1,198 GPM)

STORM PIPE L
159' OF 24" HDPE @ 1%
(100 YR = 5,547 GPM)

LIGHT POLE (TYP)
SEE C3.1.

SANITARY PIPE 6
39' OF 6" SDR 35 PVC @ 1%

SANITARY MH D [4']
RIM = 817.00
IE NE= 807.10
IE NW= 807.20

MATCHLINE

MATCHLINE

MATCHLINE

PROPOSED BUILDING: 12996 SF
CIVIL FF = 817.00
ARCH FF = 100.00

IE=804.16

SANITARY PIPE 7
28' OF 6" SDR 35 PVC @ 5%

STORM PIPE J
149' OF 18" HDPE @ 0.3%
(100 YR =2,374 GPM)

DOWNSPOUT LEAD COLLECTOR 4
315' OF 8" HDPE @ 1.25%
(100 YR = 597 GPM)

STORM CI 12 [4']
RIM = 816.05
IE NE =806.83
IE SW = 806.83
IE SE=812.00

SANITARY MH A [4']
RIM = 816.20
IE NE = 802.76
IE NW = 802.76
IE SW = 805.80 PROVIDE EXTERNAL DROP TO 802.76
IE SW = 802.76
IE E = 802.66

STORM PIPE Q
289' OF 10" HDPE @ 0.37%

PROTECT EXISTING FIBER OPTIC LINES.

STORM CI 5 [4']
RIM = 816.60
IE NE=809.03
IE 24" SE = 809.03

SCALE: 1"= 20'
20' 0 20' 40'
NORTH

CIVIL UTILITY PLAN - NORTH

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920-926-9800
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PROJECT INFORMATION

PROPOSED MULTI-FAMILY DEVELOPMENT
LUMIN TERRACE
JOHNSON STREET • WATERTOWN, WI

PROFESSIONAL SEAL

PRELIMINARY DATES
NOV. 8, 2024

NOT FOR CONSTRUCTION

JOB NUMBER
240136200

SHEET NUMBER
C1.3B

GENERAL NOTES:

- ALL DOWNSPOUT LEADERS WITH DS TAG SHALL BE 6" HDPE PIPES WITH LENGTH OF LEADER NOTED AFTER DS PREFIX.
- CONTRACTOR TO VERIFY WATER AND SANITARY PIPE SIZING WITH INTERIOR PLUMBER PRIOR TO CONSTRUCTION AND NOTIFY ENGINEER IF INTERIOR PLUMBER REQUIRES DIFFERENT PIPE SIZES.

MATCHLINE

MATCHLINE

MATCHLINE

ROCK RIVER RIDGE
41' OF 8" WATER LATERAL STUBBED TO ROW LINE.

CONNECT TO END OF WATER LATERAL INSTALLED AS PART OF ROCK RIVER RIDGE DEVELOPMENT

CHECK VALVE IN MANHOLE

WATER PIPE 9
175' OF 8" C900 PVC

LIGHT POLE (TYP)
SEE C3.1.

STORM PIPE L
159' OF 24" HDPE @ 1%
(100 YR = 5,547 GPM)

LIGHT POLE (TYP)
SEE C3.1.

STORM PIPE J
149' OF 18" HDPE @ 0.8%
(100 YR =2,374 GPM)

STORM CI 5 [4']
RIM = 816.60
IE NE=809.03
IE 24" SE = 809.03
IE 8"SE = 812.19

STORM PIPE M
200' OF 24" HDPE @ 1%
(100 YR = 6,745 GPM)

STORM CI 6 [4']
RIM = 815.35
IE SW = 807.03

STORM PIPE N
178' OF 24" HDPE @ 1%
(100 YR = 9,371 GPM)

LIGHT POLE (TYP)
SEE C3.1.

STORM CI 7 [5']
RIM = 815.00
IE SE = 805.25
IE NE= 805.25
IE 8" NE=809.00

STORM PIPE O
116' OF 30" HDPE @ 1%
(100 YR = 11,426 GPM)

STORM PIPE P
108' OF 30" HDPE @ 1%
(100 YR = 12,840 GPM)

STORM CI 8 [5']
RIM = 814.65
IE NW = 804.08
IE 8" NW=809.00
IE NE=804.08

ENDSECTION 4
IE = 803.00

WATER PIPE 8
28' OF 6" C900 PVC
HYDRANT LEAD WITH VALVE

VALVE

STORM CI 13 [5']
RIM = 815.50
IE NW=809.00
IE NE = 805.75
IE SE = 805.75

WATER PIPE 7
110' OF 6" C900 PVC WITH VALVE

DOWNSPOUT LEAD COLLECTOR 6
268' OF 8" HDPE @ 1.25%
(100 YR = 597 GPM)

DOWNSPOUT LEAD COLLECTOR 7
271' OF 8" HDPE @ 1.25%
(100 YR = 597 GPM)

PROPOSED BUILDING: 12996 SF
CIVIL FF = 817.00
ARCH FF = 100.00

PROPOSED BUILDING: 12996 SF
CIVIL FF = 817.00
ARCH FF = 100.00

DOWNSPOUT LEAD COLLECTOR 4
315' OF 8" HDPE @ 1.25%
(100 YR = 597 GPM)

STORM CI 12 [4']
RIM = 816.05
IE NE =806.83
IE SW = 806.83
IE SE=812.00

WATER PIPE 6
324' OF 8" C900 PVC

STORM PIPE D
108' OF 18" HDPE @ 1%
(100 YR = 4,757 GPM)

DOWNSPOUT LEAD COLLECTOR 5
259' OF 8" HDPE @ 1.25%
(100 YR = 597 GPM)

STORM CI [4'] [5']
RIM = 816.05
IE NE =807.61
IE SW = 807.61
IE 6" NE=812.00

STORM PIPE C
78' OF 18" HDPE @ 1%
(100 YR = 4,035 GPM)

IE=807.60

SANITARY MH D [4']
RIM = 817.00
IE NE= 807.10
IE NW= 807.20

SANITARY PIPE 6
39' OF 6" SDR 35 PVC @ 1%

IE=804.16

SANITARY PIPE 7
28' OF 6" SDR 35 PVC @ 5%

SANITARY MH A [4']
RIM = 816.20
IE NE = 802.76
IE NW = 802.76
IE SW = 805.80 PROVIDE EXTERNAL DROP TO 802.76
IE SW = 802.76
IE E = 802.66

STORM MH 1 [4']
RIM = 808.00
IE N = 800.93
IE S = 800.93

STORM PIPE F
260' OF 10" HDPE @ 2%
(100 YR = 1,198 GPM)

STORM PIPE Q
289' OF 10" HDPE @ 0.37%

SANITARY PIPE 1
153' OF 8" SDR 35 PVC @ 2%

PROTECT EXISTING FIBER OPTIC LINES.

CONNECT PROPOSED 8" STORM PIPE TO EXISTING CATCH BASIN AT IE=794.00. CONTRACTOR TO FIELD VERIFY STRUCTURAL INTEGRITY OF EXISTING CATCH BASIN AND REPLACE AS NECESSARY.

24" RCP INV. = 791.66

CATCH BASIN
RIM = 797.01
T/BEE HYE = 797.59
24" RCP E INV. = 792.89

PROTECT EXISTING FIBER OPTIC AND WATER LINES. MAINTAIN ADEQUATE SEPARATION PER DSPS.

SANITARY MANHOLE
RIM = 797.96
48" PVC N INV. = 784.71
48" PVC S INV. = 784.42
IE W 8" = 799.60 PROVIDE EXTERNAL DROP TO 786.38
IE W 8" = 786.38

LIGHT POLE (TYP)
SEE C3.1.

IE STORM=804.75
IE SAN=807.21

STORM PIPE E
125' OF 24" HDPE @ 1%
(100 YR = 8,011 GPM)

STORM CI 15 [5']
RIM = 815.10
IE SW = 804.46
IE NE = 805.80
IE NW= 804.46

STORM PIPE G
155' OF 24" HDPE @ 1%
(100 YR = 10,165 GPM)

OUTLET STRUCTURE
RIM= 805.00
IE 20" V-NOTCH= 802.00
IE 10"= 802.00

SANITARY PIPE 8
301' OF 6" SDR 35 PVC @ 1%

IE=809.20

SANITARY MH E [4']
RIM = 816.20
IE NE = 808.81
IE NW= 808.91

SANITARY PIPE 9
28' OF 6" SDR 35 PVC @ 1%

STORM CI 16 [5']
RIM = 815.50
IE SE = 802.91
IE NE =802.91

STORM PIPE H
41' OF 24" HDPE @ 1%
(100 YR = 10,874 GPM)

ENDSECTION 3
IE = 802.50

LIGHT POLE (TYP)
SEE C3.1.

10' SAFETY SHELF

10' SAFETY SHELF

10' SAFETY SHELF

WET POND

SITE BENCHMARK
SW "BURY" BOLT = 801.66

CONCRETE CURB

SHEET 1
SHEET 2

CATCH BASIN
RIM = 825.92

CATCH BASIN
RIM = 825.95

CATCH BASIN
RIM =794.22

18" RCP INV. = 791.45

APPROXIMATE LOCATION 6" WATER MAIN

APPROXIMATE LOCATION 6" WATER MAIN

HOFFMAN DR

SCALE: 1"= 20'
20' 0 20' 40'
NORTH

CIVIL UTILITY PLAN - SOUTH

EXCEL
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PROJECT INFORMATION

PROPOSED MULTI-FAMILY DEVELOPMENT
LUMIN TERRACE
JOHNSON STREET • WATERTOWN, WI

PROFESSIONAL SEAL

PRELIMINARY DATES
NOV. 8, 2024

NOT FOR CONSTRUCTION

JOB NUMBER
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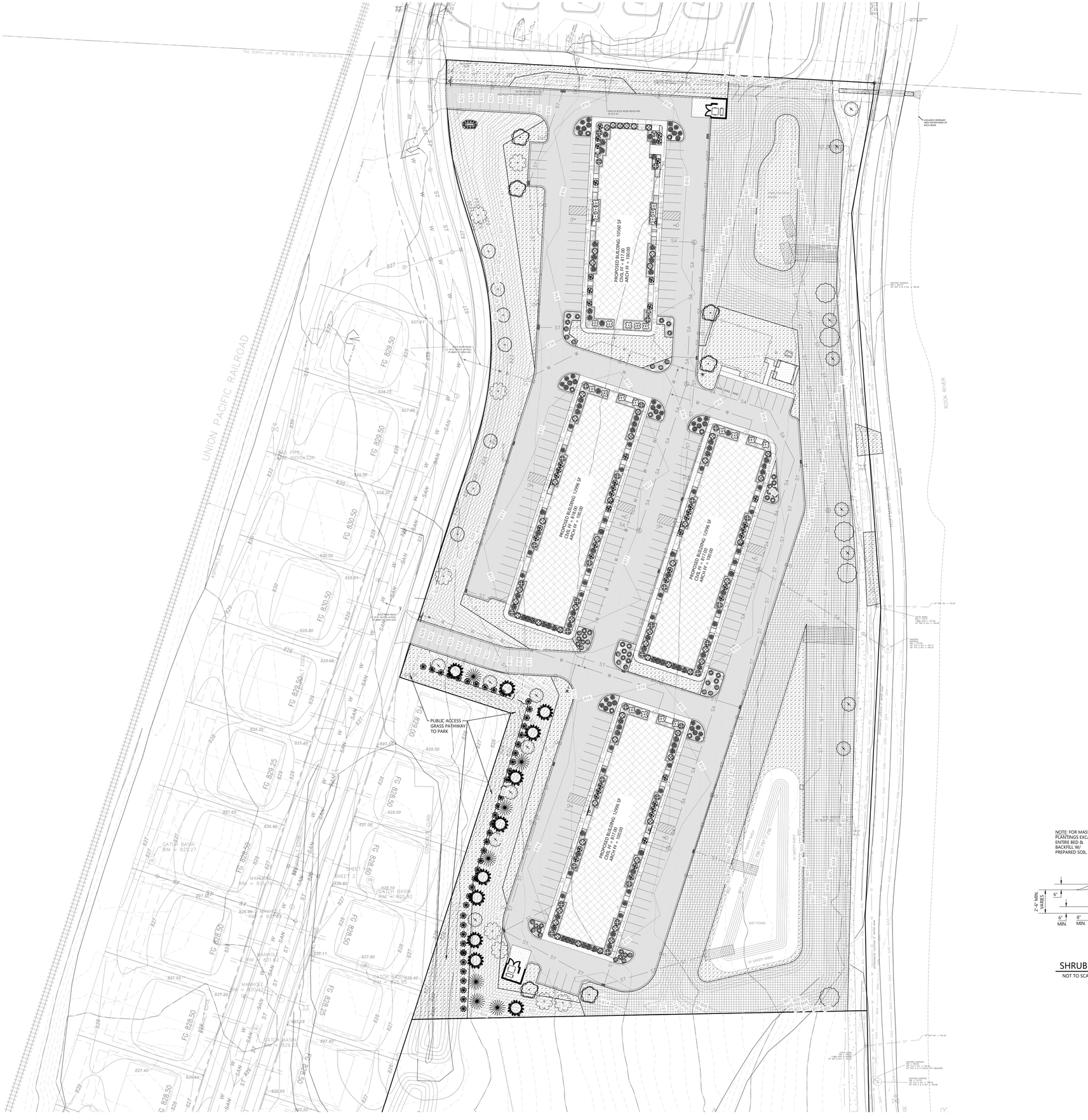
SHEET NUMBER
C1.3C



HATCH KEY:

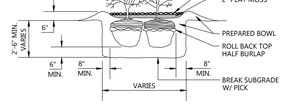
HATCH	LANDSCAPE MATERIAL
	ORGANIC MULCH
	SEEDED LAWN
	EROSION MATTING (NAG S150) OVER NO MOW SEEDED LAWN. CONTRACTOR TO SUBMIT NO MOW SEED MIX TO ENGINEER FOR APPROVAL. (> OR = 4:1 SLOPES OUTSIDE OF SWM)
	EROSION MATTING (NAG C125) OVER NO MOW SEEDED LAWN.CONTRACTOR TO SUBMIT NO MOW SEED MIX TO ENGINEER FOR APPROVAL. (SWALE BOTTOMS & SWM)

LANDSCAPING CALCULATIONS

ZONE	REQ. PLANTS	PLANTS PROVIDED
PAVED AREAS	GREATER OF: 100 POINTS PER 20 PARKING STALLS OR 10,000 SQUARE FEET OF PARKING AREA A MINIMUM OF 30% OF POINTS DEVOTED TO CLIMAX/TALL TREES AND 40% TO SHRUBS $\frac{38}{20}$*100=980 $\frac{10560}{10000}$*100=1324 POINTS TOTAL REQUIRED 1324*.3=398 POINTS MINIMUM TALL TREES 1324*.4=530 POINTS MINIMUM SHRUBS	66 (5-POINT) DECIDUOUS SHRUBS 40 (5-POINT) EVERGREEN SHRUBS 530 TOTAL SHRUB POINTS PROVIDED 11 (75 POINT) CLIMAX TREE 825 TOTAL TREE POINTS 1355 POINTS TOTAL PROVIDED
DEVELOPED LOTS	20 POINTS PER 1,000 SQUARE FEET OF BUILDING FOOTPRINT $\frac{10560}{1000}$*20=991 POINTS REQD	48 (3 POINT) DECIDUOUS SHRUBS=144 7 (20 POINT) MEDIUM TREES =140 18(40 POINT) TALL EVERGREEN TREES=760
STREET	50 POINTS PER 100 LINEAR FEET OF STREET FRONTAGE SHRUBS NOT ALLOWED; A MINIMUM OF 50% OF POINTS DEVOTED TO CLIMAX/TALL TRESS AND 30% TO MEDIUM TREES HOFFMAN ROAD=$\frac{958}{200}$*50=479 MINIMUM 240 TALL/CLIMAX MINIMUM 144 MEDIUM JOHNSON STREET=$\frac{654}{200}$*50=327 MINIMUM 164 TALL/CLIMAX MINIMUM 99 MEDIUM	HOFFMAN ROAD 5 (75 POINT) CLIMAX=375 8 (20 POINT)MEDIUM=160 535 TOTAL JOHNSON STREET 3 (75 POINT) CLIMAX=225 7 (15 POINT)MEDIUM=105 330 TOTAL
BUILDING FOUNDATION	50 POINTS PER 100 FEET OF BUILDING FOUNDATION CLIMAX TREES AND TALL TREES SHALL NOT BE USED TO MEET THIS REQUIREMENT. (637+637+637+550)/100*50=1,234 POINTS REQD	131 (5-POINT) DECIDUOUS SHRUBS 9 (3-POINT) DECIDUOUS SHRUBS 81 (5-POINT) EVERGREEN SHRUBS 55 (3-POINT) EVERGREEN SHRUBS TOTAL 1,234 POINTS PROVIDED

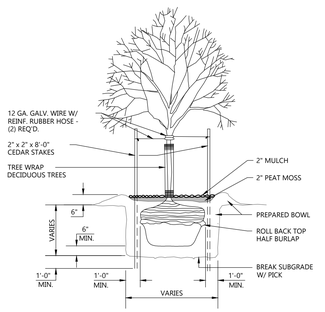
LANDSCAPING PLANTING SCHEDULE

SYMBOL	COMMON NAME	BOTANICAL NAME	PLANTED SIZE	QUANTITY	POINTS
	DECIDUOUS TREES				
	Sugar Maple	Acer saccharum	2"	6	75
	Red Oak	Quercus rubra	2"	8	75
	Ginkgo	Ginkgo bilboa	2"	5	75
	River Birch	Betula nigra	2"	7	15
	EVERGREEN TREES				
	American Arborvitae	Thuja occidentalis	2'	15	4'-10'
	Austrian Pine	Pinus nigra	4'	7	40
	Black Hills Spruce	Picea glauca	4'	11	40
	DECIDUOUS SHRUBS				
	Common Lilac	Syringa vulgaris	24"	81	5
	Weigela Carnaval	Weigela Florida 'courtalor'	24"	3	3
	Rhus glabra	Rhus glabra	24"	21	5
	Tamarisk	Tamarix ramosissima	24"	23	5
	Gray Dogwood	Cornus racemosa	24"	24	5
	Eastern Ninebark	Physocarpus opulifolius	24"	51	5
	Hedge Cotoneaster	Cotoneaster lucida	24"	48	3
	EVERGREEN SHRUBS				
	Pfitzer Juniper	Juniperus chinensis 'Pfitzeriana'	12"-15"	48	5
	Arcadia Juniper	Juniperus sabina 'arcadia'	24"	55	3
	Ware American Arborvitae	Thuja occidentalis "Robusta"	36"	19	5
	Hunnewell Yew	Taxus cuspidata "Expansa"	24"	21	5
	Mugo Pine	Pinus mugo	12"	33	5
	PERENNIALS				
	Hostas	Hostas 'Royal Standard'	1 gal pot	11	



SHRUB PLANTING DETAIL

NOT TO SCALE



TREE PLANTING DETAIL

NOT TO SCALE

SCALE: 1" = 40'

40' 0 40' 80'

NORTH

CIVIL LANDSCAPE AND RESTORATION PLAN

EXCEL

Always a Better Plan

100 Camelot Drive
Fond du Lac, WI 54935
920-926-9800
excelengineer.com

PROJECT INFORMATION

PROPOSED MULTI-FAMILY DEVELOPMENT

LUMIN TERRACE

JOHNSON STREET • WATERTOWN, WI

PROFESSIONAL SEAL

PRELIMINARY DATES

OCT. 23, 2024
OCT. 25, 2024
OCT. 30, 2024
NOV. 8, 2024

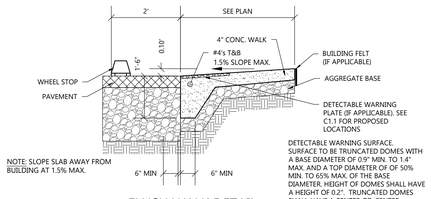
NOT FOR CONSTRUCTION

JOB NUMBER

240136200

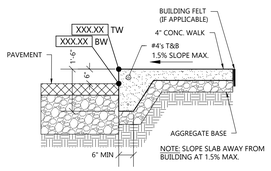
SHEET NUMBER

C1.4

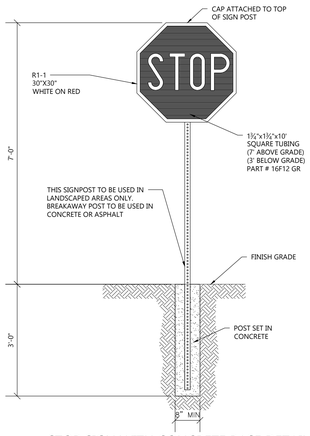


DETECTABLE WARNING SURFACE. SURFACE TO BE TRUNCATED DOMES WITH A BASE DIAMETER OF 0.9" MIN. TO 1.4" MAX. AND A TOP DIAMETER OF OF 50% MIN. TO 65% MAX. OF THE BASE DIAMETER. HEIGHT OF DOMES SHALL HAVE A HEIGHT OF 0.2". TRUNCATED DOMES SHALL HAVE A CENTER-TO-CENTER SPACING OF 1.6" MIN. AND 2.4" MAX. AND A BASE-TO-BASE SPACING OF 0.65" MIN. MEASURED BETWEEN THE MOST ADJACENT DOMES ON THE GRID. DOMES SHALL BE ALIGNED IN A SQUARE GRID PATTERN.

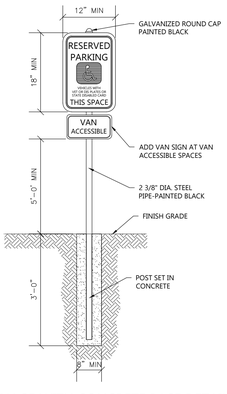
FLUSH WALK DETAIL
NOT TO SCALE



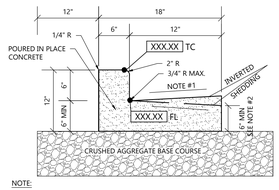
RAISED WALK DETAIL
NOT TO SCALE



STOP SIGN WITH CONCRETE BASE DETAIL
NOT TO SCALE

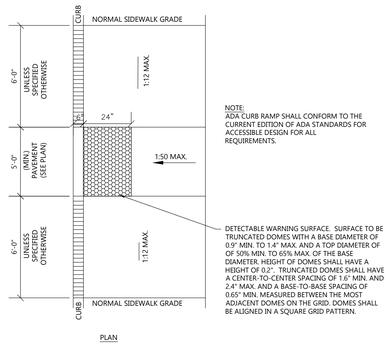


HANDICAP SIGNAGE WITH CONCRETE BASE DETAIL
NOT TO SCALE



NOTE:
1. USE 4% GUTTER CROSS SLOPE UNLESS OTHERWISE NOTED IN THE PLANS.
2. THE BOTTOM OF CURB AND GUTTER MAY BE CONSTRUCTED EITHER LEVEL OR PARALLEL TO THE SLOPE OF THE SUBGRADE OR BASE AGGREGATE PROVIDED A 6" MIN. GUTTER THICKNESS IS MAINTAINED.
3. SEE SITE PLAN & GRADING PLAN FOR INVERTED & SHEDDING CURB LOCATIONS

18" CONCRETE CURB & GUTTER DETAIL
NOT TO SCALE

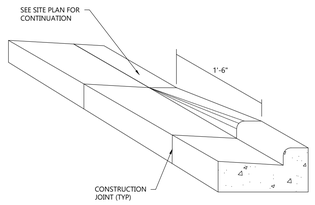


PLAN

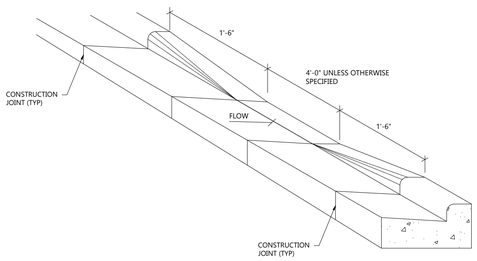
NOTE:
ADA CURB RAMP SHALL CONFORM TO THE CURRENT EDITION OF ADA STANDARDS FOR ACCESSIBLE DESIGN FOR ALL REQUIREMENTS.

DETECTABLE WARNING SURFACE. SURFACE TO BE TRUNCATED DOMES WITH A BASE DIAMETER OF 0.9" MIN. TO 1.4" MAX. AND A TOP DIAMETER OF 50% MIN. TO 65% MAX. OF THE BASE DIAMETER. HEIGHT OF DOMES SHALL HAVE A HEIGHT OF 0.2". TRUNCATED DOMES SHALL HAVE A CENTER-TO-CENTER SPACING OF 1.6" MIN. AND 2.4" MAX. AND A BASE-TO-BASE SPACING OF 0.65" MIN. MEASURED BETWEEN THE MOST ADJACENT DOMES ON THE GRID. DOMES SHALL BE ALIGNED IN A SQUARE GRID PATTERN.

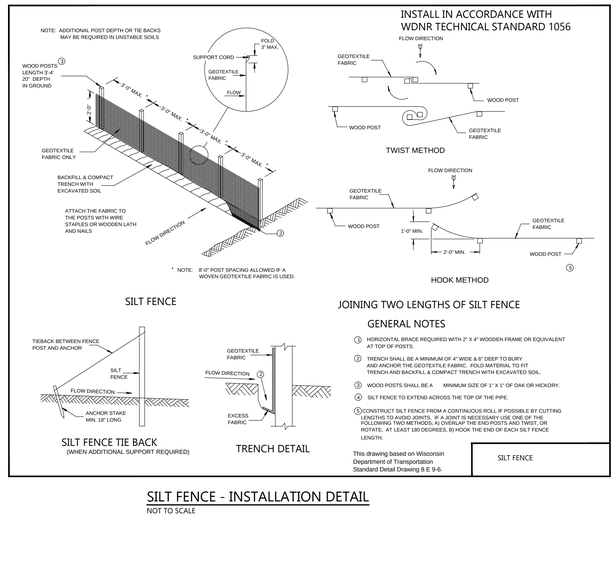
ADA SIDEWALK RAMP DETAIL
NOT TO SCALE



CURB TAPER DETAIL
NOT TO SCALE

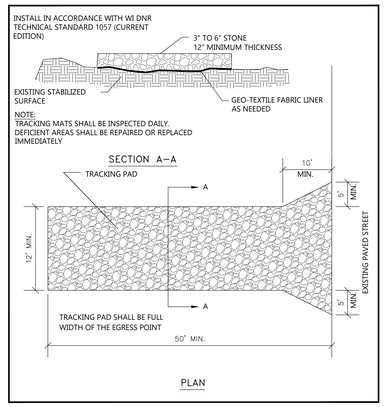


CURB CUT DETAIL
NOT TO SCALE

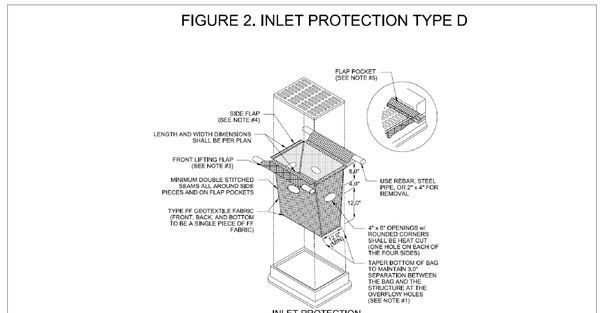


HANDICAP STALL SYMBOL
NOT TO SCALE

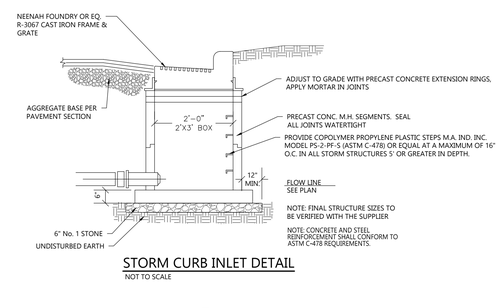
SILT FENCE - INSTALLATION DETAIL
NOT TO SCALE



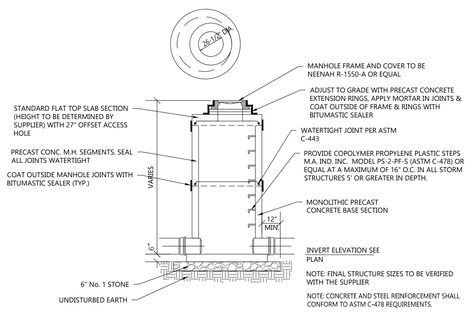
TRACKPAD DETAILS
NOT TO SCALE



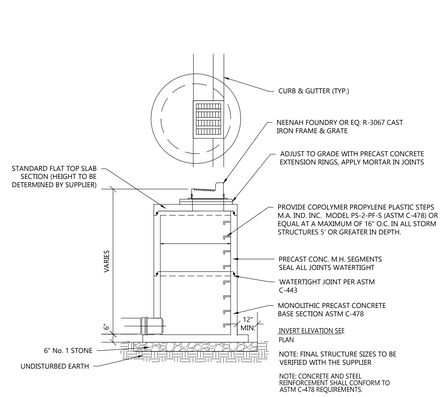
INLET PROTECTION DETAIL
NOT TO SCALE



STORM CURB INLET DETAIL
NOT TO SCALE

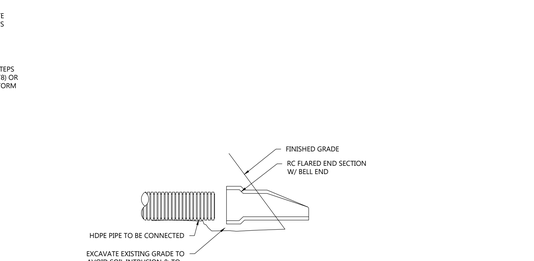


SANITARY MANHOLE DETAIL
NOT TO SCALE



STORM CURB INLET W/ ROUND STRUCTURE DETAIL
NOT TO SCALE

CONCRETE FLUME DETAIL (PAVEMENT)
NOT TO SCALE



CONNECTION DETAIL FOR HDPE PIPE TO RC FLARED END SECTION BELL END
NOT TO SCALE

CIVIL DETAILS

EXCEL
Always a Better Plan
100 Camelot Drive
Fond du Lac, WI 54935
920-926-9800
excelengineer.com

PROJECT INFORMATION

PROPOSED MULTI-FAMILY DEVELOPMENT
LUMIN TERRACE
JOHNSON STREET • WATERTOWN, WI

PROFESSIONAL SEAL

PRELIMINARY DATES
OCT. 23, 2024
OCT. 25, 2024
OCT. 30, 2024
NOV. 8, 2024

NOT FOR CONSTRUCTION

JOB NUMBER
240136200

SHEET NUMBER
C2.0

EXCEL
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Fond du Lac, WI 54935
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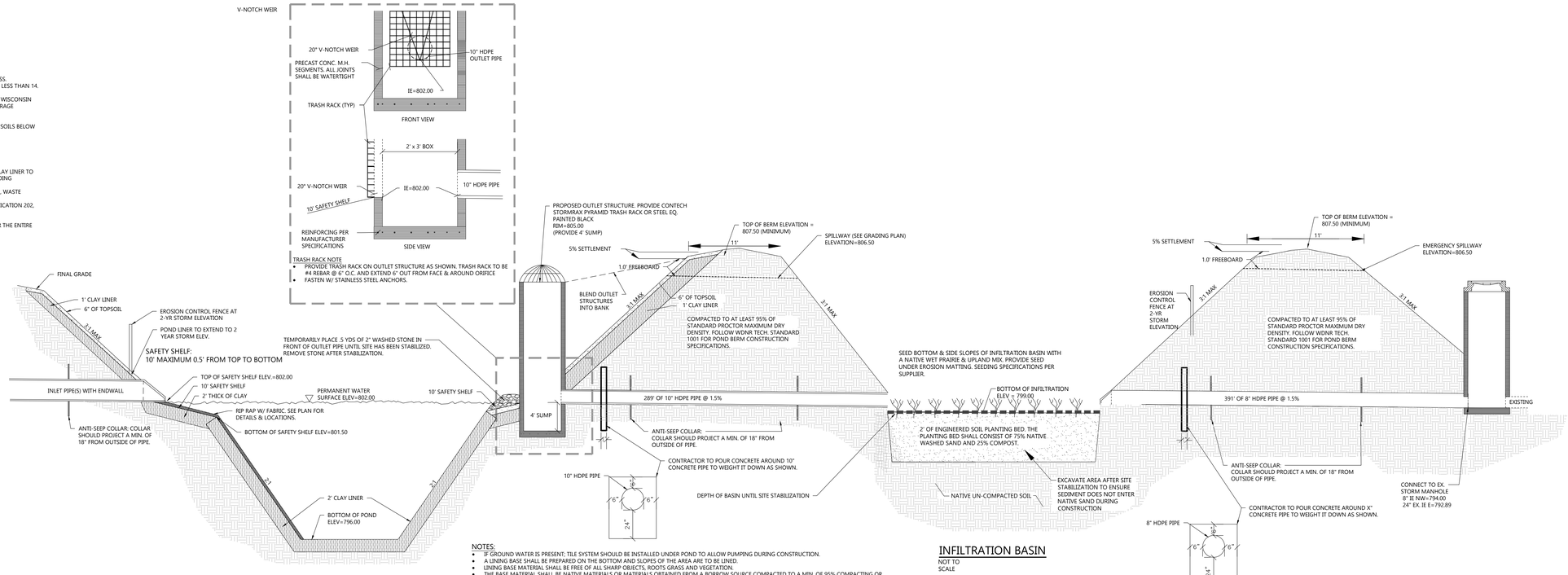
PROJECT INFORMATION

PROPOSED MULTI-FAMILY DEVELOPMENT
LUMIN TERRACE
JOHNSON STREET • WATERTOWN, WI

POND LINER CRITERIA FOR SAFETY SHELF AND BELOW (CLAY):
- 50% FINES (200 SIEVE) OR MORE.
- AN IN-PLACE HYDRAULIC CONDUCTIVITY OF $1x10^{-6}$ CM./SEC. OR LESS.
- AVERAGE LIQUID LIMIT VALUE OF 16 OR GREATER, WITH NO VALUE LESS THAN 14.
- AVERAGE PI OF 7 OR MORE WITH NO VALUES LESS THAN 5.
- CLAY COMPACTION AND DOCUMENTATION AS SPECIFIED IN NRCS WISCONSIN CONSTRUCTION SPECIFICATION 204, EARTHWORK FOR WASTE STORAGE FACILITIES.
- MINIMUM THICKNESS OF TWO FEET.
- SPECIFY METHOD FOR KEEPING POOL FULL OR USE OF COMPOSITE SOILS BELOW LINER.

POND LINER ALTERNATE:
- CONTRACTOR TO PROVIDE 40 MIL/HDPE POND LINER IN LIEU OF CLAY LINER TO LINE ENTIRE POND AREA UP TO THE 2 YEAR, 24-HOUR WATER PONDING ELEVATION (SEE ELEVATION ON DETAIL)
- DESIGN ACCORDING TO THE CRITERIA IN TABLE 3 OF THE NRCS 313, WASTE STORAGE FACILITY TECHNICAL STANDARD
- INSTALL ACCORDING TO NRCS WISCONSIN CONSTRUCTION SPECIFICATION 202, POLYETHYLENE GEOMEMBRANE LINING.

4-6" ROUND STONE OVER FILTER FABRIC SHALL BE PROVIDED TO COVER THE ENTIRE LINER. TOP OF STONE SHALL MATCH PROPOSED POND ELEVATIONS.

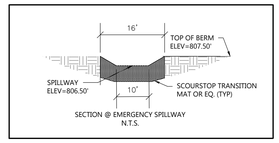


WET RETENTION POND
NOT TO SCALE

INFILTRATION BASIN
NOT TO SCALE

NOTES:
- IF GROUND WATER IS PRESENT; TILE SYSTEM SHOULD BE INSTALLED UNDER POND TO ALLOW PUMPING DURING CONSTRUCTION.
- A LINING BASE SHALL BE PREPARED ON THE BOTTOM AND SLOPES OF THE AREA ARE TO BE LINED.
- LINING BASE MATERIAL SHALL BE FREE OF ALL SHARP OBJECTS, ROOTS GRASS AND VEGETATION.
- THE BASE MATERIAL SHALL BE NATIVE MATERIALS OR MATERIALS OBTAINED FROM A BORROW SOURCE COMPACTED TO A MIN. OF 95% COMPACTING OR AN APPROVED CONSTRUCTION FABRIC.
- THE SUBGRADE SHALL BE PREPARED IMMEDIATELY PRIOR TO THE PLACING OF THE LINER. THE SURFACE ON WHICH THE LINER IS TO BE PLACED IS TO BE FIRM, CLEAN, DRY AND SMOOTH.
- AT END OF SITE CONSTRUCTION, POND DEPTH SHALL BE CHECKED FOR SEDIMENTATION AND DREDGED, IF NECESSARY, TO THE DESIGN DEPTH ORIGINALLY PROPOSED.
- CONTRACTOR SHALL PROVIDE EROSION MATTING AS REQUIRED PER SPECIFICATIONS NOTED ON C0.2.
- CONTRACTOR TO CONTACT EXCEL ENGINEERING TO COMPLETE AN AS-BUILT SURVEY FOLLOWING COMPLETION OF THE CONSTRUCTION OF THE STORMWATER POND. THE SURVEY SHALL BE COMPLETED PRIOR TO THE POND FILLING WITH WATER. CONTRACTOR SHALL GIVE EXCEL ENGINEERING A MINIMUM OF A 3 DAY NOTICE. PLEASE NOTE THAT THE HORIZONTAL TOLERANCE FOR POND CONSTRUCTION IS 0.50' AND THE VERTICAL TOLERANCE FOR POND, OUTLET, AND SPILLWAY CONSTRUCTION IS 0.10'. ANY ADDITIONAL WORK REQUIRED TO SURVEY A POND FULL OF WATER OR FOR SURVEYING FOLLOWING REWORK SHALL BE AT THE CONTRACTOR'S EXPENSE.

OVERALL STORMWATER FACILITY DETAIL
NOT TO SCALE



EMERGENCY SPILLWAY DETAIL
NOT TO SCALE

PROFESSIONAL SEAL

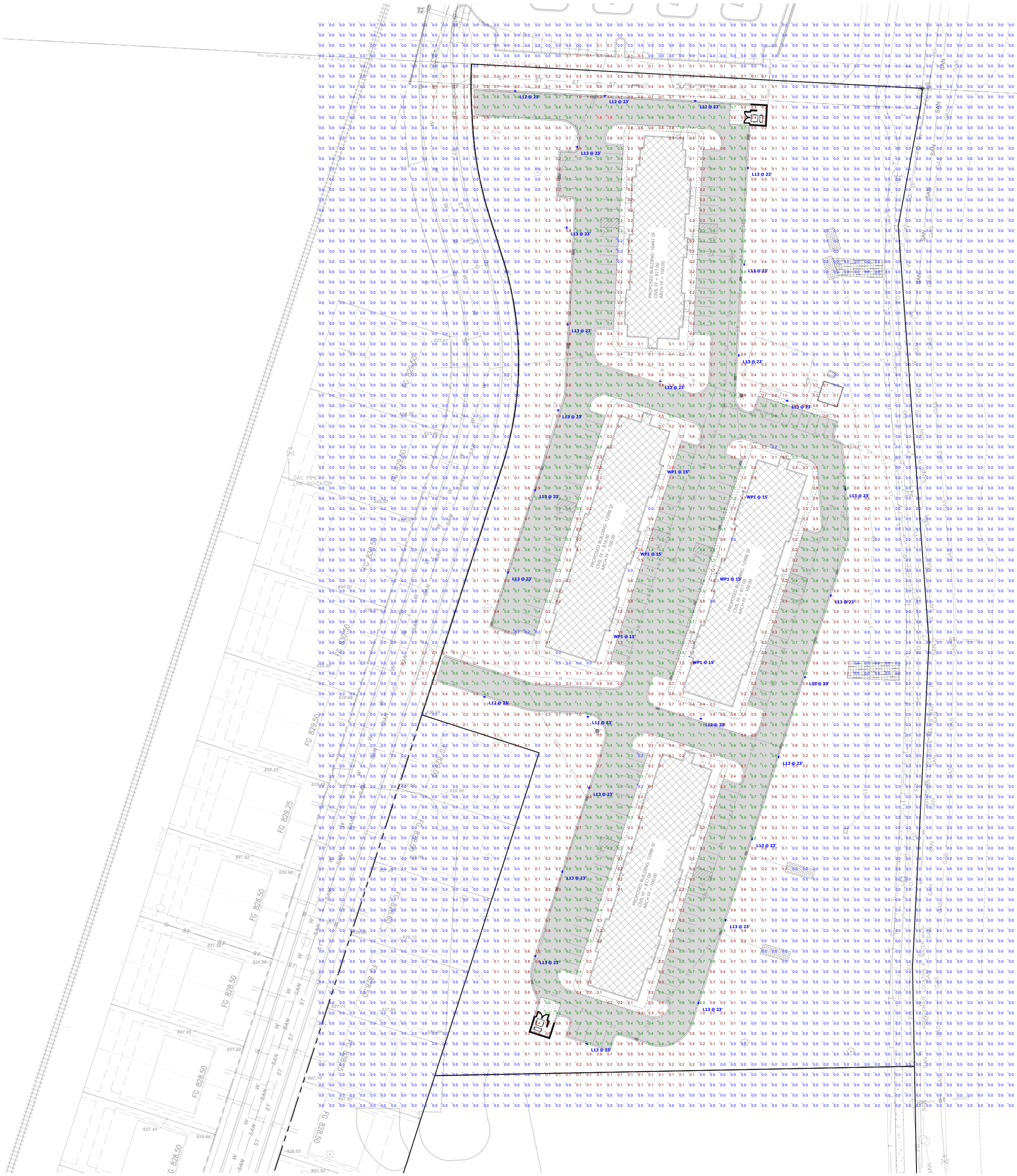
PRELIMINARY DATES
OCT. 23, 2024
OCT. 25, 2024
OCT. 30, 2024
NOV. 8, 2024

NOT FOR CONSTRUCTION

JOB NUMBER
240136200

SHEET NUMBER
C2.1

CIVIL DETAILS



Project		Catalog #		Type	
Prepared by		Notes		Date	

Lumark

Prevail Discrete 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
- Control Options page 8

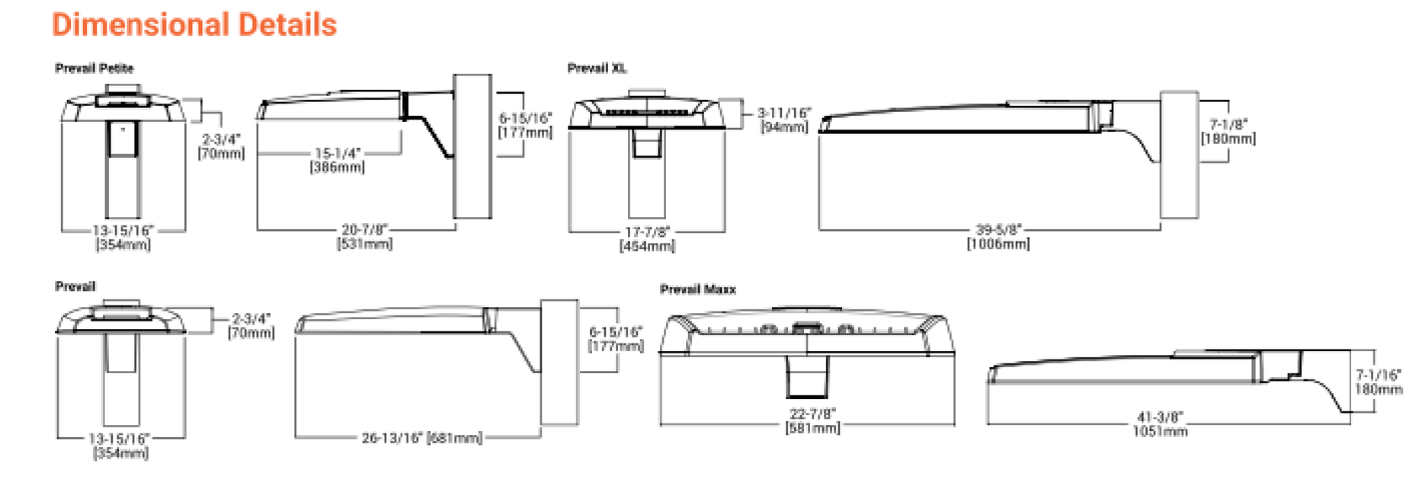
Quick Facts

- Direct-mounted discrete light engine for improved optical uniformity and visual comfort
- Lumen packages range from 4,300 - 68,000 nominal lumens (30W - 550W)
- Replaces 70W up to 1,000W HID equivalents
- Efficacies up to 157 lumens per watt
- 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.

COOPER Lighting Solutions

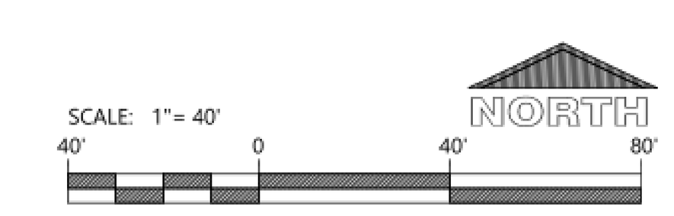
PS500005EN page 1
June 6, 2024 6:54 PM

Schedule

Symbol	Label	Quantity	Catalog Number	Description	Number Lamps	Lumens Per Lamp	Manufacturer	Light Loss Factor	Wattage	Wattage
	L13	21	PRV-P-PA1A-730-U-T3	PREVAIL AREA AND WALL LUMINAIRE (1) 70 CRI, 3000K, 375mA LIGHT ENGINE WITH 24 LEDS AND TYPE III OPTICS	24	169	COOPER LIGHTING SOLUTIONS - LUMARK (FORMERLY EATON)	1	30.7	
	L12	7	PRV-P-PA1A-730-U-T2U	PREVAIL AREA AND WALL LUMINAIRE (1) 70 CRI, 3000K, 375mA LIGHT ENGINE WITH 24 LEDS AND TYPE II U OPTICS	24	171	COOPER LIGHTING SOLUTIONS - LUMARK (FORMERLY EATON)	1	30.7	
	WP1	6	PRV-P-PA1A-730-U-T4W	PREVAIL AREA AND WALL LUMINAIRE (1) 70 CRI, 3000K, 375mA LIGHT ENGINE WITH 24 LEDS AND TYPE IV WIDE OPTICS	24	165	COOPER LIGHTING SOLUTIONS - LUMARK (FORMERLY EATON)	1	30.7	

Statistics

Description	Symbol	Avg	Max	Min	Max/Min	Avg/Min
PARKING LOT	✳	0.7 fc	1.8 fc	0.2 fc	9.0:1	3.5:1
Calc Zone #1	+	0.2 fc	2.0 fc	0.0 fc	N/A	N/A



CIVIL SITE PHOTOMETRIC PLAN & DETAILS

EXCEL

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100 Camelot Drive
Fond du Lac, WI 54935
920-926-9800
excelengineer.com

PROJECT INFORMATION

PROPOSED MULTI-FAMILY DEVELOPMENT

LUMIN TERRACE

JOHNSON STREET • WATERTOWN, WI

PROFESSIONAL SEAL

PRELIMINARY DATES

OCT. 25, 2024
NOV. 8, 2024

NOT FOR CONSTRUCTION

JOB NUMBER

240136200

SHEET NUMBER

C3.1

PROPOSED MULTI-FAMILY DEVELOPMENT
LUMIN TERRACE
WATERTOWN, WISCONSIN

PROJECT INFORMATION

SITE INFORMATION:

PROPERTY AREA: 406,529 S.F. (9.33 ACRES).

EXISTING ZONING: MR-10

PROPOSED ZONING: MR-10

PROPOSED USE: MULTI-FAMILY APARTMENTS

AREA OF SITE DESTURBANCE: 387,800 S.F. (8.90 ACRES)

SETBACKS:
BUILDING: FRONT (WEST) = 25'
SIDE (NORTH/SOUTH) = 10% LOT WIDTH, OR MIN OF 8', MAX OF 14'
STREET (EAST) = 10% LOT WIDTH, OR MIN OF 8', MAX OF 14'
PAVEMENT: FRONT (WEST) = 10'
SIDE (NORTH/SOUTH) = 3'
STREET (EAST) = 3'

PROPOSED BUILDING HEIGHT: 34' (MAX. HEIGHT ALLOWED: 35')

PARKING REQUIRED: 2.5 SPACES PER 3-BED, 2 SPACES PER 2-BED, 1-BED, OR EFFICIENCY (196)

PARKING PROVIDED: 196 SPACES (8 H.C. ACCESSIBLE)

HANDICAP STALLS REQUIRED: 5, HANDICAP STALLS PROVIDED: 8

LANDSCAPE REQUIREMENTS: MIN. LANDSCAPE SURFACE RATIO: 50%
MAXIMUM LOT COVERAGE - BUILDING ONLY: 40%

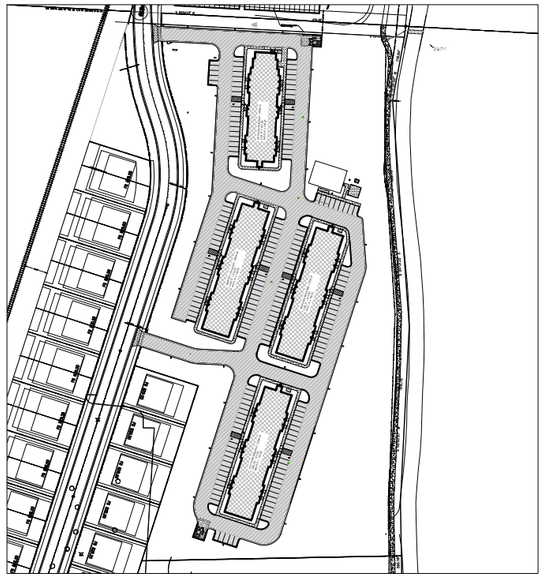
EXISTING SITE DATA

	AREA (AC)	AREA (SF)	RATIO
BUILDING FLOOR AREA	0.00	0	0.0%
PAVEMENT (ASP. & CONC.)	0.86	37,255	9.2%
TOTAL IMPERVIOUS	0.86	37,255	9.2%
LANDSCAPE/ OPEN SPACE	8.48	369,272	90.8%
PROJECT SITE	9.33	406,527	100.0%

PROPOSED SITE DATA

	AREA (AC)	AREA (SF)	RATIO
BUILDING FLOOR AREA	1.14	49,548	12.2%
PAVEMENT (ASP. & CONC.)	3.04	132,373	32.6%
TOTAL IMPERVIOUS	4.18	181,921	44.8%
LANDSCAPE/ OPEN SPACE	5.16	224,606	55.2%
PROJECT SITE	9.33	406,527	100.0%

TO OBTAIN LOCATION OF PARTICIPANTS' UNDERGROUND FACILITIES BEFORE YOU DIG IN WISCONSIN
CALL DIGGERS HOTLINE
1-800-242-8511
TOLL FREE TELEFAX (414) 259-0947
TDD (FOR THE HEARING IMPAIRED)
1-800 542-2289
WISCONSIN STATUTE 182.0175 (1974)
REQUIRES MINIMUM OF 3 WORK DAYS
NOTICE BEFORE YOU EXCAVATE



SITE PLAN OVERVIEW
SCALE: 1"= 100'
100' 0 100' 200'
NORTH

PROJECT CONTACTS

OWNER INFORMATION:
HORIZON DEVELOPMENT GROUP, INC.
SCOTT KWIECINSKI
5201 EAST TERRACE DRIVE, SUITE 300
MADISON, WI 53718
Phone: (608) 354-0820
Email: S.Kwiecinski@thorizondbm.com

CIVIL ENGINEER:
REID JAHNS
Phone: (920)926-3109
e-mail: ReidJ@excelengineer.com

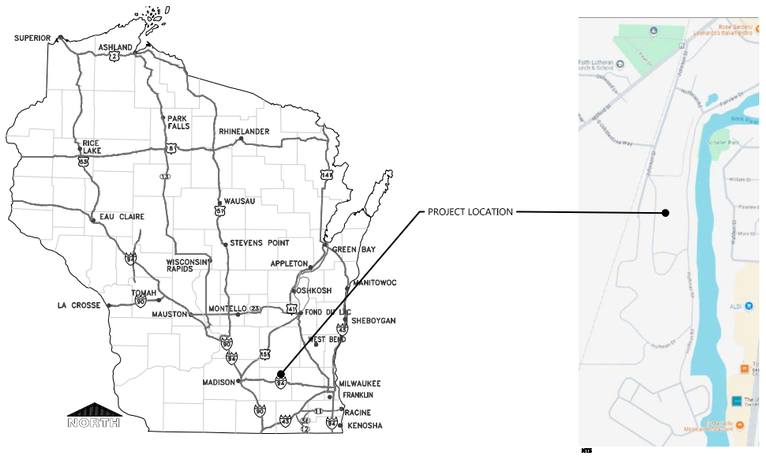
CITY ZONING ADMINISTRATOR:
BRIAN ZIRBES
Phone: (920) 262-4041
e-mail: BZirbes@watertownwi.gov

CITY ENGINEER/PUBLIC WORKS DIRECTOR:
ANDREW BEYER
Phone: (920)262-4050
e-mail: abeyer@watertownwi.gov

CITY FIRE CHIEF:
TANYA REYHEN
Phone: (920)206-4243
e-mail: treynen@watertownwi.gov

CITY BUILDING INSPECTOR:
DOUG ZWIEG
Phone: (920)262-4062
e-mail: DZwieg@watertownwi.gov

LOCATION MAP



PROJECT NOTES

GENERAL PROJECT NOTES

1. ALL DRIVEWAYS AND CURB CUTS TO BE CONSTRUCTED ACCORDING TO LOCAL ORDINANCES. CONTRACTOR TO OBTAIN ALL NECESSARY PERMITS.
2. THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING ALL WORK IN ROW PERMITS.
3. CONTRACTOR TO CONTACT EXCEL ENGINEERING TO COMPLETE AS-BUILT SURVEY OF STORMWATER POND FOLLOWING COMPLETION OF THE POND.
4. CONTRACTOR TO REFERENCE ROCK RIVER RIDGE PHASE 1 PLANS FOR SCOPE OF WORK COVERED BY ROCK RIVER RIDGE PHASE 1 CONTRACTOR. CONTRACTOR TO FIELD VERIFY ROCK RIVER PHASE 1 REMOVALS AND IMPROVEMENTS HAVE BEEN COMPLETED AND NOTIFY ENGINEER OF ANY DISCREPANCIES PRIOR TO CONSTRUCTION.

CONSTRUCTION STAKING SERVICES

CONSTRUCTION STAKING SHALL BE COMPLETED BY EXCEL ENGINEERING AS REQUESTED BY THE CONTRACTOR AT THE CONTRACTOR'S EXPENSE. CONTRACTOR TO CONTACT RYAN WILGREEN AT 920-926-9800 OR RYAN.W@EXCELENGINEER.COM TO GET STAKING PRICE TO INCLUDE IN BID TO OWNER. PAYMENT OF STAKING COSTS ABOVE AND BEYOND THE BASE PRICE DUE TO RESTAKING WILL BE THE RESPONSIBILITY OF THE CONTRACTOR, NOT THE OWNER. CAD DRAWING FILES AND SURVEY CONTROL WILL NOT BE PROVIDED FOR STAKING PURPOSES.

STORMWATER POND ASBUILT NOTE

CONTRACTOR TO CONTACT EXCEL ENGINEERING TO COMPLETE AN AS-BUILT SURVEY FOLLOWING COMPLETION OF THE CONSTRUCTION OF THE STORMWATER POND. THE SURVEY SHALL BE COMPLETED PRIOR TO THE POND FILLING WITH WATER. CONTRACTOR SHALL GIVE EXCEL ENGINEERING A MINIMUM OF A 3 DAY NOTICE. PLEASE NOTE THAT THE HORIZONTAL TOLERANCE FOR POND CONSTRUCTION IS 0.50' AND THE VERTICAL TOLERANCE FOR POND, OUTLET, AND SPILLWAY CONSTRUCTION IS 0.10'. ANY ADDITIONAL WORK REQUIRED TO SURVEY A POND FULL OF WATER OR FOR SURVEYING FOLLOWING REWORK SHALL BE AT THE CONTRACTOR'S EXPENSE.

LEGEND

NOTE: ALL SYMBOLS SHOWN MAY NOT APPEAR ON DRAWINGS.

SYM.	IDENTIFICATION	SYM.	IDENTIFICATION
SPOT ELEVATIONS			
000.00	PROPOSED SPOT ELEVATIONS (FLOW LINE OF CURB UNLESS OTHERWISE SPECIFIED)	000.00TC / 000.00FL	PROPOSED SPOT ELEVATIONS (TOP OF CURB, FLOWLINE OF CURB)
000.00FG	EXISTING GRADE SPOT ELEVATIONS		
000.00RG / 000.00FG	PROPOSED SPOT ELEVATIONS (REFERENCE R=WALL DETAIL) RG=FINISHED SURFACE GRADE AT BACK OF WALL FG=FINISHED SURFACE GRADE AT FRONT OF WALL	000.00TW / 000.00BW	PROPOSED SPOT ELEVATIONS (TOP OF WALK, BOTTOM OF WALK @ FLOWLINE)
EXISTING SITE SYMBOLS			
	EXISTING SIGN		EXISTING UTILITY POLE
	EXISTING HANDICAP PARKING STALL		EXISTING UTILITY POLE WITH GUY WIRE
	EXISTING WATER VALVE IN BOX		EXISTING STREET LIGHT
	EXISTING WATER VALVE IN MANHOLE		EXISTING TELEPHONE PEDESTAL
	EXISTING WATER SERVICE VALVE		EXISTING ELECTRIC PEDESTAL
	EXISTING WELL		EXISTING ELECTRIC BOX
	EXISTING STORM CATCH BASIN		EXISTING FLOOD LIGHT
	EXISTING STORM CURB INLET		EXISTING TELEPHONE MANHOLE
	EXISTING SQUARE CATCH BASIN		EXISTING CABLE TV PEDESTAL
	EXISTING LIGHT POLE		EXISTING GAS VALVE
	1-1/4" REBAR SET WEIGHING 4.30 LB/FT.		EXISTING HEDGE
	3/4" REBAR SET WEIGHING 1.50 LB/FT.		EXISTING WOODED AREA
	1-1/4" REBAR FOUND		EXISTING MARSH AREA
	3/4" REBAR FOUND		EXISTING DECIDUOUS TREE WITH TRUNK DIAMETER
	2" IRON PIPE FOUND		EXISTING CONIFEROUS TREE
	1" IRON PIPE FOUND		EXISTING SHRUB
	SECTION CORNER		EXISTING STUMP
PROPOSED SITE SYMBOLS			
	PROPOSED SIGN		PROPOSED STORM FIELD INLET + ST FI
	PROPOSED HANDICAP PARKING STALL		PROPOSED LIGHT POLE
	PROPOSED WATER VALVE IN BOX		PROPOSED DRAINAGE FLOW
	PROPOSED WATER VALVE IN MANHOLE		PROPOSED APRON END SECTION
	PROPOSED WATER SERVICE VALVE		SOIL BORING
	PROPOSED WELL		CENTER LINE
	PROPOSED STORM CATCH BASIN + ST CB	CO	PROPOSED CLEANOUT
	PROPOSED STORM CURB INLET + ST CI	DSG	PROPOSED DOWNSPOUT TO GRADE
		DSR	PROPOSED DOWNSPOUT TO RISER
EXISTING LINETYPES			
	EXISTING CHAINLINK FENCE	POL	EXISTING POLISH SEWER AND MANHOLE
	EXISTING WOOD FENCE	P	EXISTING PROCESS SEWER AND MANHOLE
	EXISTING BARBED WIRE FENCE	CLW	EXISTING CLEAR WATER LINE
	EXISTING CURB AND GUTTER	FO	EXISTING UNDERGROUND FIBER OPTIC LINE
	EXISTING GUARD RAIL	E	EXISTING UNDERGROUND ELECTRIC CABLE
880	EXISTING GROUND CONTOUR	T	EXISTING UNDERGROUND TELEPHONE CABLE
ST	EXISTING STORM SEWER AND MANHOLE	G	EXISTING UNDERGROUND GAS LINE
SA	EXISTING SANITARY SEWER AND MANHOLE	OU	EXISTING OVERHEAD UTILITY LINE
	EXISTING WATER LINE AND HYDRANT		RAILROAD TRACKS
	INTERIOR PROPERTY LINE		RIGHT-OF-WAY LINE
PROPOSED LINETYPES			
	PROPOSED CHAINLINK FENCE	POL	PROPOSED POLISH SEWER AND MANHOLE
	PROPOSED WOOD FENCE	P	PROPOSED PROCESS SEWER AND MANHOLE
	PROPOSED BARBED WIRE FENCE	CLW	PROPOSED CLEAR WATER LINE
	PROPOSED CURB AND GUTTER	FO	PROPOSED UNDERGROUND FIBER OPTIC LINE
	PROPOSED GUARD RAIL	E	PROPOSED UNDERGROUND ELECTRIC CABLE
880	PROPOSED GROUND CONTOUR	T	PROPOSED UNDERGROUND TELEPHONE CABLE
ST	PROPOSED STORM SEWER AND MANHOLE + ST MH	G	PROPOSED UNDERGROUND GAS LINE
SA	PROPOSED SANITARY SEWER AND MANHOLE + SAN MH	OU	PROPOSED OVERHEAD UTILITY LINE
	PROPOSED WATER LINE AND HYDRANT		MATCHLINE
	PROPOSED PROPERTY LINE		GRADING/SEEDING LIMITS

SHEET INDEX

SHEETS BELOW INTENDED TO BE PRINTED IN: COLOR. REFER TO DIGITAL FORMAT DRAWINGS IF PRINTED GRAYSCALE TO ENSURE SCOPE CLARITY.

NUMBER	SHEET NAME / DESCRIPTION
C0.1	CIVIL COVER SHEET
C0.2	CIVIL SPECIFICATIONS
C1.0	EXISTING SITE AND DEMOLITION PLAN
C1.1	SITE PLAN
C1.2A	GRADING AND EROSION CONTROL PLAN - OVERALL
C1.2B	GRADING AND EROSION CONTROL PLAN - NORTH
C1.2C	GRADING AND EROSION CONTROL PLAN - SOUTH
C1.3A	UTILITY PLAN - OVERALL
C1.3B	UTILITY PLAN - NORTH
C1.3C	UTILITY PLAN - SOUTH
C1.4	LANDSCAPE AND RESTORATION PLAN
C2.0	DETAILS
C2.1	DETAILS
C3.1	SITE PHOTOMETRIC PLAN & DETAILS

Excel
Always a Better Plan
100 Camelot Drive
Fond du Lac, WI 54935
920-926-9800
excelengineer.com

PROJECT INFORMATION

PROPOSED MULTI-FAMILY DEVELOPMENT
LUMIN TERRACE
JOHNSON STREET • WATERTOWN, WI

PROFESSIONAL SEAL
WISCONSIN JASON DAVIS E-37777-006 ENGINEER

PRELIMINARY DATES
OCT. 23, 2024
OCT. 25, 2024
OCT. 30, 2024
NOV. 8, 2024

NOT FOR CONSTRUCTION

JOB NUMBER
240136200

SHEET NUMBER
C0.1

CIVIL SPECIFICATIONS

DIVISION 31 EARTH WORK

31 10 00 SITE CLEARING (DEMOLITION)

A. CONTRACTOR SHALL CALL DIGGER'S HOT LINE AND CONDUCT A PRIVATE UTILITY LOCATE AS REQUIRED TO ENSURE THAT ALL UTILITIES HAVE BEEN LOCATED BEFORE STARTING SITE DEMOLITION. DESIGN ENGINEER SHALL BE NOTIFIED OF ANY DISCREPANCIES BETWEEN PLAN AND FIELD CONDITIONS PRIOR TO CONSTRUCTION.
B. DEMOLITION PLAN IS AN OVERVIEW OF DEMOLITION TO TAKE PLACE ON SITE. CONTRACTOR TO FIELD VERIFY EXISTING SITE CONDITIONS PRIOR TO BIDDING. CONTRACTOR SHALL REMOVE, REPLACE, OR DEMOLISH ALL ITEMS AS NEEDED DURING CONSTRUCTION.
C. CONTRACTOR TO PROTECT EXISTING IMPROVEMENTS THAT ARE SCHEDULED TO REMAIN. ANY DAMAGE TO EXISTING FACILITIES SHALL BE REPLACED AT CONTRACTORS EXPENSE.
D. ALL CONCRETE NOTED TO BE REMOVED SHALL BE REMOVED TO THE NEAREST CONTROL JOINT.

31 20 00 EARTH MOVING

A. CONTRACTOR SHALL CALL DIGGER'S HOT LINE AND CONDUCT A PRIVATE UTILITY LOCATE AS REQUIRED TO ENSURE THAT ALL UTILITIES HAVE BEEN LOCATED BEFORE STARTING EXCAVATION. DESIGN ENGINEER SHALL BE NOTIFIED OF ANY DISCREPANCIES BETWEEN PLAN AND FIELD CONDITIONS PRIOR TO CONSTRUCTION.
B. PROVIDE ALL LABOR, MATERIALS AND EQUIPMENT FOR ALL EXCAVATION, GRADING, FILL AND BACKFILL WORK AS REQUIRED TO COMPLETE THE GENERAL CONSTRUCTION WORK. ALL EXCAVATION AND BACKFILL FOR ELECTRICALS AND MECHANICALS ARE THE RESPONSIBILITY OF THE RESPECTIVE CONTRACTOR UNLESS OTHERWISE SPECIFIED IN THE BID DOCUMENTS.
C. ALL ORGANIC TOPSOIL INSIDE THE BUILDING AREA, UNDER PAVED AREAS, AND AT SITE FILL AREAS SHALL BE REMOVED. PROOF ROLL SUBGRADES BEFORE PLACING FILL WITH HEAVY PNEUMATIC-TIRED EQUIPMENT, SUCH AS A FULLY-LOADED TANDEM AXLE DUMP TRUCK, TO IDENTIFY SOFT POCKETS AND AREAS OF EXCESS YIELDING. CONTRACTOR SHALL VERIFY TOPSOIL DEPTHS PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL REVIEW AND FOLLOW THE RECOMMENDATIONS OF THE GEOTECHNICAL REPORT AND ACCOUNT FOR EXISTING CONDITIONS PRIOR TO SUBMITTING BID FOR THE PROJECT. EXCESS MATERIALS SHALL BE REMOVED FROM THE SITE UNLESS OTHERWISE DIRECTED IN THE PLANS OR BY LOCAL ZONING REQUIREMENTS.
D. PLACE AND COMPACT FILL MATERIAL IN LAYERS TO REQUIRED ELEVATIONS. UNIFORMLY MOISTEN OR AERATE SUBGRADE AND EACH SUBSEQUENT FILL OR BACKFILL LAYER BEFORE COMPACTION AS RECOMMENDED TO ACHIEVE SPECIFIED DRY DENSITY. REMOVE AND REPLACE, OR SCARIFY AND AIR DRY, OTHERWISE SATISFACTORY SOIL MATERIAL THAT IS TOO WET TO COMPACT TO SPECIFIED DRY DENSITY.
E. PLACE BACKFILL AND FILL MATERIALS IN LAYERS NOT MORE THAN 8" IN LOOSE DEPTH FOR MATERIAL COMPACTED BY HEAVY COMPACTION EQUIPMENT, AND NOT MORE THAN 4" IN LOOSE DEPTH FOR MATERIAL COMPACTED BY HAND-OPERATED TAMPERS.
F. COMPACT THE SOIL TO NOT LESS THAN THE FOLLOWING PERCENTAGES OF MAXIMUM DRY DENSITY ACCORDING TO ASTM D 698, STANDARD PROCTOR TEST. FILL MAY NOT BE PLACED ON FROZEN GROUND AND NO FROZEN MATERIALS MAY BE USED FOR BACK FILL. APPLY THE MORE STRINGENT REQUIREMENTS WHEN COMPARING BETWEEN THE FOLLOWING AND THE GEOTECHNICAL REPORT.
   1. UNDER FOUNDATIONS - SUBGRADE, AND EACH LAYER OF BACKFILL OR FILL MATERIAL, TO NOT LESS THAN 98 PERCENT.
   2. UNDER INTERIOR SLAB-ON-GRADE WHERE GROUNDWATER IS MORE THAN 3 FEET BELOW THE SLAB - PLACE A DRAINAGE COURSE LAYER OF 3/4" CRUSHED STONE, WITH 5% TO 12% FINES, PER THICKNESS INDICATED ON FOUNDATION PLANS ON PREPARED SUBGRADE. COMPACT THE SUBGRADE AND DRAINAGE COURSE TO NOT LESS THAN 95 PERCENT.
   3. UNDER INTERIOR SLAB-ON-GRADE WHERE GROUNDWATER IS WITHIN 3 FEET OF THE SLAB SURFACE- PLACE A DRAINAGE COURSE LAYER OF CLEAN 3/4" CRUSHED STONE, WITH NO MORE THAN 5% FINES, PER THICKNESS INDICATED ON FOUNDATION PLANS ON PREPARED SUBGRADE. COMPACT THE SUBGRADE AND DRAINAGE COURSE TO NOT LESS THAN 95 PERCENT.
   4. UNDER EXTERIOR CONCRETE AND ASPHALT PAVEMENTS - COMPACT THE SUBGRADE AND EACH LAYER OF BACKFILL OR FILL MATERIAL TO NOT LESS THAN 95 PERCENT.
   5. UNDER WALKWAYS - COMPACT SUBGRADE AND EACH LAYER OF BACKFILL OR FILL MATERIAL TO NOT LESS THAN 95 PERCENT.
   6. UNDER LAWN OR UNPAVED AREAS - COMPACT SUBGRADE AND EACH LAYER OF BACKFILL OR FILL MATERIAL, TO NOT LESS THAN 85 PERCENT.
G. CONTRACTOR SHALL ENGAGE A QUALIFIED INDEPENDENT TESTING AND INSPECTING AGENCY TO PERFORM FIELD TESTS AND INSPECTIONS. CONTRACTOR SHALL PROVIDE DOCUMENTATION OF PASSING DENSITY TESTING AND PROOF-ROLLING TO ENGINEER UPON COMPLETION. IT IS SUGGESTED THAT THE GEOTECHNICAL FIRM USED TO PERFORM THE SUBSURFACE SOIL INVESTIGATION BE ENGAGED FOR THE FIELD QUALITY CONTROL TESTS. THE GEOTECHNICAL REPORT WAS PERFORMED BY GESTRA ENGINEERING, INC.
H. ALLOW THE TESTING AGENCY TO TEST AND INSPECT SUBGRADES AND EACH FILL OR BACKFILL LAYER. PROCEED WITH SUBSEQUENT EARTHWORK ONLY AFTER TEST RESULTS FOR PREVIOUSLY COMPLETED WORK COMPLY WITH REQUIREMENTS. PROVIDE ONE TEST FOR EVERY 2000 SQUARE FEET OF PAVED AREA OR BUILDING SLAB, ONE TEST FOR EACH SPREAD FOOTING, AND ONE TEST FOR EVERY 50 LINEAR FEET OF WALL STRIP FOOTING.
I. WHEN THE TESTING AGENCY REPORTS THAT SUBGRADES, FILLS, OR BACKFILLS HAVE NOT ACHIEVED DEGREE OF COMPACTION SPECIFIED, SCARIFY AND MOISTEN OR AERATE, OR REMOVE AND REPLACE SOIL TO DEPTH REQUIRED; RECOMPACT AND RETEST UNTIL SPECIFIED COMPACTION IS OBTAINED.
J. THE BUILDING SITE SHALL BE GRADED TO PROVIDE DRAINAGE AWAY FROM THE BUILDING AS INDICATED ON THE PLANS. SITE EARTHWORK SHALL BE GRADED TO WITHIN 0.10' OF REQUIRED EARTHWORK ELEVATIONS ASSUMING POSITIVE DRAINAGE IS MAINTAINED IN ACCORDANCE WITH THE GRADING PLAN.

31 30 00 EROSION CONTROL/STORMWATER MANAGEMENT

A. THE EXCEL ENGINEERING DESIGN ENGINEER SHALL PREPARE A SITE SPECIFIC EROSION CONTROL AND A STORMWATER MANAGEMENT PLAN PURSUANT TO NR 216.46 AND NR 216.47. THE DESIGN ENGINEER SHALL ALSO FILE A CONSTRUCTION NOTICE OF INTENT WITH THE WISCONSIN DEPARTMENT OF NATURAL RESOURCES PURSUANT TO NR 216.43 OR TO AN AUTHORIZED LOCAL PROGRAM PURSUANT TO NR 216.415 TO OBTAIN COVERAGE UNDER THE GENERAL WPDES STORM WATER PERMIT.
B. THE CONTRACTOR SHALL KEEP THE NOTICE OF INTENT PERMIT, APPROVED EROSION CONTROL AND STORMWATER MANAGEMENT PLANS, AND PLAN AMENDMENTS ON THE CONSTRUCTION SITE AT ALL TIMES PURSUANT TO NR 216.455 UNTIL PERMIT COVERAGE IS TERMINATED.
C. THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING ALL LOCAL EROSION CONTROL PERMITS.
D. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MEETING THE MONITORING, MAINTENANCE, AND REPORTING REQUIREMENTS OF NR 216.48. INSPECTIONS OF IMPLEMENTED EROSION AND SEDIMENT CONTROL BEST MANAGEMENT PRACTICES MUST AT A MINIMUM BE INSPECTED EVERY 7 CALENDAR DAYS OR EVERY 14 DAYS AND WITHIN 24 HOURS OF THE END OF A RAIN EVENT OF 0.5" OR MORE. A RAIN EVENT MAY BE CONSIDERED TO BE THE TOTAL AMOUNT OF PRECIPITATION RECORDED IN ANY CONTINUOUS 24-HOUR PERIOD. THE CONTRACTOR SHALL REPAIR OR REPLACE EROSION AND SEDIMENT CONTROL AS NECESSARY WITHIN 24 HOURS OF AN INSPECTION OR AFTER A DEPARTMENT NOTIFICATION WHERE REPAIR OR REPLACEMENT IS REQUESTED.
E. THE CONTRACTOR SHALL MAINTAIN, AT THE CONSTRUCTION SITE OR AVAILABLE VIA AN INTERNET WEBSITE, WEEKLY WRITTEN REPORTS OF ALL INSPECTIONS CONDUCTED. WISCONSIN DNR CONSTRUCTION SITE INSPECTION REPORT FORM 3400-187 SHALL BE USED. WEEKLY INSPECTION REPORTS SHALL INCLUDE ALL OF THE FOLLOWING:
   1. THE DATE, TIME, AND LOCATION OF THE CONSTRUCTION SITE INSPECTION.
   2. THE NAME OF THE INDIVIDUAL WHO PERFORMED THE INSPECTION.
   3. AN ASSESSMENT OF THE CONDITION OF THE EROSION AND SEDIMENT CONTROLS.
   4. A DESCRIPTION OF ANY EROSION AND SEDIMENT CONTROL BEST MANAGEMENT PRACTICE IMPLEMENTATION AND MAINTENANCE PERFORMED.
   5. A DESCRIPTION OF THE PRESENT PHASE OF LAND DISTURBING CONSTRUCTION ACTIVITY AT THE CONSTRUCTION SITE.
F. EROSION AND SEDIMENT CONTROL IMPLEMENTED DURING CONSTRUCTION SHALL STRICTLY COMPLY WITH THE GUIDELINES AND REQUIREMENTS SET FORTH IN WISCONSIN ADMINISTRATIVE CODE (W.A.C.) NR 151, THE STATE OF WISCONSIN DEPARTMENT OF NATURAL RESOURCES RUNOFF MANAGEMENT PERFORMANCE STANDARDS. TECHNICAL STANDARDS PUBLISHED BY THE WISCONSIN DNR SHALL ALSO BE UTILIZED TO IMPLEMENT THE REQUIRED PERFORMANCE STANDARDS. THE METHODS AND TYPES OF EROSION CONTROL WILL BE DEPENDENT ON THE LOCATION AND TYPE OF WORK INVOLVED. ALL SEDIMENT CONTROL MEASURES SHALL BE ADJUSTED TO MEET FIELD CONDITIONS AT THE TIME OF CONSTRUCTION, AND INSTALLED PRIOR TO ANY GRADING OR DISTURBANCE OF EXISTING SURFACE MATERIAL. BELOW IS A LIST OF EROSION AND SEDIMENT CONTROL BEST MANAGEMENT PRACTICES TO ACHIEVE THE PERFORMANCE STANDARDS REQUIRED.
   1. SILT FENCE SHALL BE PLACED ON SITE AT LOCATIONS SHOWN ON THE EROSION CONTROL PLAN. SILT FENCE SHALL ALSO BE PROVIDED AROUND THE PERIMETER OF ALL SOIL STOCKPILES THAT WILL EXIST FOR MORE THAN 7 DAYS. FOLLOW PROCEDURES FOUND IN WISCONSIN DNR TECHNICAL STANDARD 1056 (CURRENT EDITION).
   2. DITCH CHECKS SHALL BE PROVIDED TO REDUCE THE VELOCITY OF WATER FLOWING IN DITCH BOTTOMS. PLACE AT LOCATIONS SHOWN ON THE EROSION CONTROL PLAN. FOLLOW PROCEDURES FOUND IN WISCONSIN DNR TECHNICAL STANDARD 1062 (CURRENT EDITION).
   3. STONE TRACKING PADS AND TRACKOUT CONTROL PRACTICES SHALL BE PLACED AT ALL CONSTRUCTION SITE ENTRANCES AND SHALL BE INSTALLED PRIOR TO ANY TRAFFIC LEAVING THE CONSTRUCTION SITE. SEE THE EROSION CONTROL PLAN FOR LOCATIONS. THE AGGREGATE USED FOR THE STONE TRACKING PAD SHALL BE 3/8" TO 3 INCH CLEAR OR WASHED STONE AND SHALL BE PLACED IN A LAYER AT LEAST 12 INCHES THICK. THE STONE SHALL BE UNDERLAIN WITH A WISDOT TYPE R GEOTEXTILE FABRIC AS NEEDED. THE TRACKING PAD SHALL BE THE FULL WIDTH OF THE EGRESS POINT (12' MIN WIDTH) AND SHALL BE A MINIMUM OF 50 FEET LONG. SURFACE WATER MUST BE PREVENTED FROM PASSING THROUGH THE TRACKING PAD. OTHER TRACKOUT CONTROL PRACTICES INCLUDING STABILIZED WORK SURFACES, MANUFACTURED TRACKOUT CONTROL DEVICES, TIRE WASHING, AND STREET/PAVEMENT CLEANING SHALL BE IMPLEMENTED AS NECESSARY TO MITIGATE THE TRACKOUT OF SEDIMENT OFFSITE. FOLLOW PROCEDURES FOUND IN WISCONSIN DNR TECHNICAL STANDARD 1057 (CURRENT EDITION).
   4. STORM DRAIN INLET PROTECTION SHALL BE PROVIDED FOR ALL NEW AND DOWNSTREAM STORM CATCH BASINS AND CURB INLETS. TYPE D OR DM PROTECTION SHOULD BE PROVIDED AND SHALL BE IN CONFORMANCE WITH WISCONSIN DNR TECHNICAL STANDARD 1060 (CURRENT EDITION).
   5. DUST CONTROL MEASURES SHALL BE PROVIDED TO REDUCE OR PREVENT THE SURFACE AND AIR TRANSPORT OF DUST DURING CONSTRUCTION. CONTROL MEASURES INCLUDE APPLYING MULCH AND ESTABLISHING VEGETATION, WATER SPRAYING, SURFACE ROUGHENING, APPLYING POLYMERS, SPRAY-ON TACKIFIERS, CHLORIDES, AND BARRIERS. SOME SITES MAY REQUIRE AN APPROACH THAT UTILIZES A COMBINATION OF MEASURES FOR DUST CONTROL. FOLLOW PROCEDURES FOUND IN WISCONSIN DNR TECHNICAL STANDARD 1068 (CURRENT EDITION).
   6. THE USE, STORAGE, AND DISPOSAL OF CHEMICALS, CEMENT, AND OTHER COMPOUNDS AND MATERIALS USED ON SITE SHALL BE MANAGED DURING THE CONSTRUCTION PERIOD TO PREVENT THEIR TRANSPORT BY RUNOFF INTO WATERS OF THE STATE.
   7. CONTRACTOR SHALL PROVIDE AN OPEN AGGREGATE CONCRETE TRUCK WASHOUT AREA ON SITE. CONTRACTOR TO ENSURE THAT CONCRETE WASHOUT SHALL BE CONTAINED TO THIS DESIGNATED AREA AND NOT BE ALLOWED TO RUN INTO STORM INLETS OR INTO THE OVERLAND STORMWATER DRAINAGE SYSTEM. WASHOUT AREA SHALL BE REMOVED UPON COMPLETION OF CONSTRUCTION.
   8. TEMPORARY SITE RESTORATION SHALL TAKE PLACE IN DISTURBED AREAS THAT WILL NOT BE BROUGHT TO FINAL GRADE OR ON WHICH LAND DISTURBING ACTIVITIES WILL NOT BE PERFORMED FOR A PERIOD GREATER THAN 14 DAYS AND REQUIRES VEGETATIVE COVER FOR LESS THAN ONE YEAR. THIS TEMPORARY SITE RESTORATION REQUIREMENT ALSO APPLIES TO SOIL STOCKPILES THAT EXIST FOR MORE THAN 7 DAYS. PERMANENT RESTORATION APPLIES TO AREAS WHERE PERENNIAL VEGETATIVE COVER IS NEEDED TO PERMANENTLY STABILIZE AREAS OF EXPOSED SOIL. PERMANENT STABILIZATION SHALL OCCUR WITHIN 3 WORKING DAYS OF FINAL GRADING. TOPSOIL, SEED, AND MULCH SHALL BE IN GENERAL CONFORMANCE WITH TECHNICAL STANDARDS 1058 AND 1059 AND SHALL MEET THE SPECIFICATIONS FOUND IN THE LANDSCAPING AND SITE STABILIZATION SECTION OF THIS CONSTRUCTION DOCUMENT. ANY SOIL EROSION THAT OCCURS AFTER FINAL GRADING AND/OR FINAL STABILIZATION MUST BE REPAIRED AND THE STABILIZATION WORK REDONE.
   9. IF SITE DEWATERING IS REQUIRED FOR PROPOSED CONSTRUCTION ACTIVITIES, ALL SEDIMENT LADEN WATER GENERATED DURING THE DEWATERING PROCESS SHALL BE TREATED TO REMOVE SEDIMENT PRIOR TO DISCHARGING OFF-SITE OR TO WATERS OF THE STATE. FOLLOW ALL PROCEDURES FOUND IN TECHNICAL STANDARD 1061.
   10. ALL OFF-SITE SEDIMENT DEPOSITS OCCURRING AS A RESULT OF CONSTRUCTION WORK OR A STORM EVENT SHALL BE CLEANED UP BY THE END OF EACH WORKING DAY. DUST CONTROL REQUIREMENTS SHALL BE FOLLOWED PER WI DNR TECHNICAL STANDARD 1068 (CURRENT EDITION). FLUSHING SHALL NOT BE ALLOWED.
G. EROSION CONTROL MEASURES SHALL NOT BE REMOVED UNTIL THE AREA(S) SERVED HAVE ESTABLISHED VEGETATIVE COVER.
H. ONCE THE CONSTRUCTION SITE HAS BEEN FULLY STABILIZED AND TEMPORARY EROSION CONTROL BEST MANAGEMENT PRACTICES HAVE BEEN REMOVED, THE CONTRACTOR SHALL FILE A CONSTRUCTION NOTICE OF TERMINATION WITH THE WISCONSIN DEPARTMENT OF NATURAL RESOURCES IN ACCORDANCE WITH NR 216.55.
I. AT THE COMPLETION OF THE PROJECT, THE CONTRACTOR SHALL GIVE THE OWNER COPIES OF THE EROSION CONTROL AND STORM WATER MANAGEMENT PLANS, AMENDMENTS TO PLANS, SUPPORTING PLAN DATA, AND CONSTRUCTION SITE EROSION CONTROL INSPECTION REPORTS. THE OWNER SHALL RETAIN THESE FOR A PERIOD OF 3 YEARS FROM THE DATE OF TERMINATING COVERAGE UNDER WPDES GENERAL PERMIT.
J. ALL POST CONSTRUCTION STORMWATER MANAGEMENT BEST MANAGEMENT PRACTICES SHALL BE CONSTRUCTED BEFORE THE SITE HAS UNDERGONE FINAL STABILIZATION.

DIVISION 32 EXTERIOR IMPROVEMENTS

32 10 00 AGGREGATE BASE & ASPHALT PAVEMENT

A. CONTRACTOR TO PROVIDE COMPACTED AGGREGATE BASE AND HOT MIX ASPHALT PAVEMENT WHERE INDICATED ON THE PLANS. ALL AGGREGATE PROVIDED MUST COMPLY WITH SECTION 305 OF THE WISCONSIN STANDARD SPECIFICATIONS FOR HIGHWAY AND STRUCTURE CONSTRUCTION. PROVIDE HOT MIX ASPHALT MIXTURE TYPES PER SECTION 460 OF THE WISCONSIN STANDARD SPECIFICATIONS FOR HIGHWAY AND STRUCTURE CONSTRUCTION. CONTRACTOR SHALL OBTAIN AND REVIEW SOILS REPORT FOR RECOMMENDATIONS FOR GEO-GRID / GEOTEXTILE BELOW CRUSHED AGGREGATE (IF APPLICABLE). CONTRACTOR TO PROVIDE AGGREGATE BASE AND HOT MIX ASPHALT PAVEMENT TYPES AND DEPTHS AS INDICATED BELOW:

STANDARD ASPHALT PAVING SECTION	HEAVY ASPHALT PAVING SECTION
1-1/2" SURFACE COURSE (5 LT 58-28S)	2" SURFACE COURSE (5 LT 58-28S)
(WISDOT 455.2.5 TACK COAT (STAGED PAVING)	WISDOT 455.2.5 TACK COAT (STAGED PAVING)
2-1/12" BINDER COURSE (4 LT 58-28S)	2-1/2" BINDER COURSE (4 LT 58-28S)
9" OF 1-1/4" CRUSHED AGGREGATE	12" OF 1-1/4" CRUSHED AGGREGATE

B. CONTRACTOR TO COMPACT THE AGGREGATE BASE, ASPHALT BINDER COURSE, AND ASPHALT SURFACE COURSE TO AN AVERAGE DENSITY PER WISCONSIN STANDARD SPECIFICATIONS FOR HIGHWAY AND STRUCTURE CONSTRUCTION. ALL ASPHALT PAVEMENT AREAS SHALL BE PAVED TO WITHIN 0.05' OF DESIGN SURFACE GRADES WITH POSITIVE DRAINAGE BEING MAINTAINED IN ACCORDANCE WITH DESIGN PLANS. A MINIMUM OF 1.0% SLOPE SHALL BE MAINTAINED IN ALL ASPHALT PAVEMENT AREA.
C. HOT MIX ASPHALT CONSTRUCTION TO BE PROVIDED PER MORE STRINGENT REQUIREMENTS OF GEOTECHNICAL REPORT OR CONSTRUCTION DOCUMENTS.
D. CONTRACTOR TO PROVIDE 4" WIDE WHITE PAINTED STRIPING FOR PARKING STALLS, TRAFFIC LANES, AND NO PARKING AREAS. WHITE PAINT MARKINGS SHALL ALSO BE PROVIDED FOR H.C. ACCESSIBLE SYMBOLS, TRAFFIC ARROWS, AND TRAFFIC MESSAGES.

32 20 00 CONCRETE AND AGGREGATE BASE

A. CONTRACTOR TO PROVIDE CRUSHED AGGREGATE BASE AND CONCRETE WHERE INDICATED ON THE PLANS.
B. ALL AGGREGATE PROVIDED MUST COMPLY WITH SECTION 305 OF THE WISCONSIN STANDARD SPECIFICATIONS FOR HIGHWAY AND STRUCTURE CONSTRUCTION. ALL AGGREGATE PLACED MUST BE COMPACTED TO AN AVERAGE DENSITY PER WISCONSIN STANDARD SPECIFICATIONS FOR HIGHWAY AND STRUCTURE CONSTRUCTION.
C. DESIGN AND CONSTRUCTION OF ALL CAST-IN-PLACE EXTERIOR CONCRETE FLAT WORK SHALL CONFORM TO ACI 330R-08 & ACI 318-08.
D. EXTERIOR CONCRETE FLAT WORK CONSTRUCTION TO BE PROVIDED PER MORE STRINGENT REQUIREMENTS OF THE GEOTECHNICAL REPORT OR THIS SPECIFICATION. CONCRETE FLAT WORK CONSTRUCTION IS AS FOLLOWS:
   1. SIDEWALK/BIKE RACK/PICNIC TABLE/MAILBOX CONCRETE - 4" OF CONCRETE OVER 4" OF 3/4" CRUSHED AGGREGATE BASE. CONTRACTION JOINTS SHALL CONSIST OF 1/8" WIDE BY 1" DEEP TOOLED JOINT WHERE INDICATED ON THE PLANS.
   2. DUMPSTER PAD/APRON CONCRETE - 8" OF CONCRETE OVER 6" OF AGGREGATE BASE.
      a. CONCRETE SHALL BE STEEL REINFORCED WITH THE FOLLOWING AND PLACED IN THE UPPER 1/3 TO ½ OF THE SLAB:
         1) TIE BARS AT ALL CONTRACTION JOINTS OF THE CONCRETE. TIE BARS SHALL BE #4 REBAR 30" LONG PLACED AT 30" O.C.
      b. DUMPSTER PAD CONCRETE JOINTING SHALL BE AS FOLLOWS:
         1) CONTRACTION SAWCUT JOINT - CONTRACTOR SHALL PROVIDE A SAWCUT JOINT AT MAXIMUM SPACING OF 15' ON CENTER. SAWCUT SHALL BE 2" IN DEPTH.
         2) TYPICAL POUR CONTROL JOINT - POUR CONTROL JOINT SHALL BE PROVIDED WITH 1-1/4" DIAMETER BY 20" LONG SMOOTH DOWEL PLACED AT 12" O.C. ONE HALF OF THE DOWEL SHALL BE GREASED. GREENSTREAK 9" SPEED DOWEL TUBES SHALL BE USED.
   3. HEAVY DUTY CONCRETE - 6" OF CONCRETE OVER 6" OF 3/4" CRUSHED AGGREGATE. CONCRETE SHALL BE REINFORCED WITH #3 REBARS ON CHAIRS AT 3' O.C. REBAR SHALL BE PLACED PLACED IN THE UPPER 1/3 TO ½ OF THE SLAB. CONTRACTION JOINTS SHALL BE SAWCUT 1.5" IN DEPTH AND BE SPACED A MAXIMUM OF 15' ON CENTER.
E. DESIGN MIXES SHALL BE IN ACCORDANCE WITH ASTM C94
   1. STRENGTH TO BE MINIMUM OF 4,500 PSI AT 28 DAYS FOR EXTERIOR CONCRETE.
   2. MAXIMUM WATER/CEMENT RATIO SHALL BE 0.45.
   3. SLUMP SHALL NOT EXCEED 4" FOR EXTERIOR CONCRETE FLAT WORK
   4. SLUMP SHALL BE 2.5" OR LESS FOR SLIP-FORMED CURB AND GUTTER
   5. SLUMP SHALL BE BETWEEN 1.5" TO 3" FOR NON SLIP-FORMED CURB AND GUTTER.
   6. ALL EXTERIOR CONCRETE SHALL BE AIR ENTRAINED WITH 4% TO 7% AIR CONTENT. NO OTHER ADMIXTURES SHALL BE USED WITHOUT APPROVAL OF EXCEL ENGINEERING, INC. CALCIUM CHLORIDE SHALL NOT BE USED.
   7. MAXIMUM AGGREGATE SIZE FOR ALL EXTERIOR CONCRETE SHALL BE 0.75 INCHES.
F. VERIFY EQUIPMENT CONCRETE PAD SIZES WITH CONTRACTOR REQUIRING PAD. PADS SHALL HAVE FIBERMESH 300 FIBERS AT A RATE OF 1.5 LBS/CU. YD. OR 6 X 6-W1.4 X W1.4 WELDED WIRE MESH WITH MINIMUM 1 INCH COVER. EQUIPMENT PADS SHALL BE 5.5 INCHES THICK WITH 1 INCH CHAMFER UNLESS SPECIFIED OTHERWISE. COORDINATE ADDITIONAL PAD REQUIREMENTS WITH RESPECTIVE CONTRACTOR.
G. ALL CONCRETE FLAT WORK SURFACES AND CONCRETE CURB FLOWLINES SHALL BE CONSTRUCTED TO WITHIN 0.05' OF DESIGN SURFACE AND FLOWLINE GRADES ASSUMING POSITIVE DRAINAGE IS MAINTAINED IN ACCORDANCE WITH THE DESIGN PLANS.
H. CONCRETE FLAT WORK SHALL HAVE CONSTRUCTION JOINTS OR SAW CUT JOINTS PLACED AS INDICATED ON THE PLANS OR PER THIS SPECIFICATION. SAWCUTS SHALL BE DONE AS SOON AS POSSIBLE, BUT NO LATER THAN 24 HOURS AFTER CONCRETE IS PLACED. CONCRETE CURB AND GUTTER JOINTING SHALL BE PLACED EVERY 10' OR CLOSER (6' MIN.). IF CONCRETE PAVEMENT IS ADJACENT TO CONCRETE CURB, JOINTING IN THE PAVEMENT AND CURB SHALL ALIGN. ALL EXTERIOR CONCRETE SHALL HAVE A BROOM FINISH UNLESS NOTED OTHERWISE. A UNIFORM COAT OF A HIGH SOLIDS CURING COMPOUND MEETING ASTM C309 SHALL BE APPLIED TO ALL EXPOSED CONCRETE SURFACES. ALL CONCRETE IS TO BE CURED FOR 7 DAYS. EXTERIOR CONCRETE SHALL BE SEPARATED FROM BUILDINGS WITH CONTINUOUS 0.5 INCH FIBER EXPANSION JOINT AND/OR 0.25 INCH FIBER EXPANSION JOINT AT DECORATIVE MASONRY UNITS.
I. ALL REINFORCING BARS SHALL BE ASTM A615 GRADE 60. THICKNESS OF CONCRETE COVER OVER REINFORCEMENT SHALL BE NOT LESS THAN 3" WHERE CONCRETE IS DEPOSITED AGAINST THE GROUND WITHOUT THE USE OF FORMS AND NOT LESS THAN 1.5" FOR UP TO #5 BARS AND 2" FOR #6 TO #10 BARS IN ALL OTHER LOCATIONS. ALL REINFORCING SHALL BE LAPPED 48 DIAMETERS FOR UP TO #6 BARS, 62 DIAMETERS FOR #7 TO #9 BARS, 68 DIAMETERS FOR #10 BARS OR AS NOTED ON THE DRAWINGS AND EXTENDED AROUND CORNERS WITH CORNER BARS. PLACING AND DETAILING OF STEEL REINFORCING AND REINFORCING SUPPORTS SHALL BE IN ACCORDANCE WITH CRSI AND ACI MANUAL AND STANDARD PRACTICES. THE REINFORCEMENT SHALL NOT BE PAINTED AND MUST BE FREE OF GREASE/OIL, DIRT OR DEEP RUST WHEN PLACED IN THE WORK. ALL WELDED WIRE FABRIC SHALL MEET THE REQUIREMENTS OF ASTM A 1064. WELDED WIRE FABRIC SHALL BE PLACED 2" FROM TOP OF SLAB, UNLESS INDICATED OTHERWISE.
J. CONTRACTOR SHALL ENGAGE A QUALIFIED INDEPENDENT TESTING AND INSPECTING AGENCY TO SAMPLE MATERIALS, PERFORM TESTS, AND SUBMIT TEST REPORTS DURING CONCRETE PLACEMENT. TESTS WILL BE PERFORMED ACCORDING TO ACI 301. CAST AND LABORATORY CURE ONE SET OF FOUR STANDARD CYLINDERS FOR EACH COMPOSITE SAMPLE FOR EACH DAY'S POUR OF EACH CONCRETE MIX EXCEEDING 5 CU. YD., BUT LESS THAN 25 CU. YD., PLUS ONE SET FOR EACH ADDITIONAL 50 CU. YD. OR FRACTION THEREOF. PERFORM COMPRESSIVE-STRENGTH TESTS ACCORDING TO ASTM C 39. TEST TWO SPECIMENS AT 7 DAYS AND TWO SPECIMENS AT 28 DAYS. PERFORM SLUMP TESTING ACCORDING TO ASTM C 143. PROVIDE ONE TEST AT POINT OF PLACEMENT FOR EACH COMPOSITE SAMPLE, BUT NOT LESS THAN ONE TEST FOR EACH DAY'S POUR OF EACH CONCRETE MIX. PERFORM ADDITIONAL TESTS WHEN CONCRETE CONSISTENCY APPEARS TO CHANGE.
K. PROTECT FRESHLY PLACED CONCRETE FROM PREMATURE DRYING AND EXCESSIVE COLD OR HOT TEMPERATURES. IN HOT, DRY, AND WINDY WEATHER, APPLY AN EVAPORATION-CONTROL COMPOUND ACCORDING TO MANUFACTURER'S INSTRUCTIONS AFTER SCREEDING AND BULL FLOATING, BUT BEFORE POWER FLOATING AND TROWELLING.
L. LIMIT MAXIMUM WATER-CEMENTITIOUS RATIO OF CONCRETE EXPOSED TO FREEZING, THAWING AND DEICING SALTS TO 0.45.
M. TEST RESULTS WILL BE REPORTED IN WRITING TO THE DESIGN ENGINEER, READY-MIX PRODUCER, AND CONTRACTOR WITHIN 24 HOURS AFTER TESTS. REPORTS OF COMPRESSIVE STRENGTH TESTS SHALL CONTAIN THE PROJECT IDENTIFICATION NAME AND NUMBER, DATE OF CONCRETE PLACEMENT, NAME OF CONCRETE TESTING SERVICE, CONCRETE TYPE AND CLASS, LOCATION OF CONCRETE BATCH ON SITE, DESIGN COMPRESSIVE STRENGTH AT 28 DAYS, CONCRETE MIX PROPORTIONS AND MATERIALS, COMPRESSIVE BREAKING STRENGTH, AND TYPE OF BREAK FOR BOTH 7-DAY TESTS AND 28-DAY TESTS.

32 30 00 LANDSCAPING AND SITE STABILIZATION

A. TOPSOIL: CONTRACTOR TO PROVIDE A MINIMUM OF 6" OF TOPSOIL FOR ALL DISTURBED OPEN AREAS, OTHER THAN LANDSCAPE ISLANDS SHALL BE PROVIDED WITH A MINIMUM OF 10" OF TOPSOIL. REUSE SURFACE SOIL STOCKPILED ON SITE AND SUPPLEMENT WITH IMPORTED OR MANUFACTURED TOPSOIL FROM OFF SITE SOURCES WHEN QUANTITIES ARE INSUFFICIENT. EXCAVATOR SHALL BE RESPONSIBLE FOR ROUGH PLACEMENT OF TOPSOIL TO WITHIN 1" OF FINAL GRADE PRIOR TO LANDSCAPER FINAL GRADING. LANDSCAPER TO PROVIDE PULVERIZING AND FINAL GRADING OF TOPSOIL. PROVIDE SOIL ANALYSIS BY A QUALIFIED SOIL TESTING LABORATORY AS REQUIRED TO VERIFY THE SUITABILITY OF SOIL TO BE USED AS TOPSOIL AND TO DETERMINE THE NECESSARY SOIL AMENDMENTS. TEST SOIL FOR PRESENCE OF ATRAZINE AND INFORM EXCEL ENGINEERING, INC. IF PRESENT PRIOR TO BIDDING PROJECT. TOPSOIL SHALL HAVE A PH RANGE OF 5.5 TO 8, CONTAIN A MINIMUM OF 5 PERCENT ORGANIC MATERIAL CONTENT, AND SHALL BE FREE OF STONES 1 INCH OR LARGER IN DIAMETER. ALL MATERIALS HARMFUL TO PLANT GROWTH SHALL ALSO BE REMOVED.
TOPSOIL INSTALLATION: LOOSEN SUBGRADE TO A MINIMUM DEPTH OF 6 INCHES AND REMOVE STONES LARGER THAN 1" IN DIAMETER. ALSO REMOVE ANY STICKS, ROOTS, RUBBISH, AND OTHER EXTRANEOUS MATTER AND DISPOSE OF THEM OFF THE PROPERTY. SPREAD TOPSOIL TO A DEPTH OF 6" BUT NOT LESS THAN WHAT IS REQUIRED TO MEET FINISHED GRADES AFTER LIGHT ROLLING AND NATURAL SETTLEMENT. DO NOT SPREAD TOPSOIL IF SUBGRADE IS FROZEN, MUDDY, OR EXCESSIVELY WET. GRADE PLANTING AREAS TO A SMOOTH, UNIFORM SURFACE PLANE WITH LOOSE, UNIFORMLY FINE TEXTURE. GRADE TO WITHIN 0.05 FEET OF FINISHED GRADE ELEVATION.
B. SEEDED LAWNS:
   1. CONTRACTOR TO SUBMIT NO MOW SEED MIX TO ENGINEER FOR APPROVAL FOR SEEDING ALL GRASS SLOPES.
   2. PERMANENT LAWN AREAS OUTSIDE OF SLOPED NO MOW SEEDED AREA SHALL BE SEEDED WITH THE FOLLOWING MIXTURE: 65% KENTUCKY BLUEGRASS BLEND (2.0-2.6 LBS./1,000 S.F.), 20% PERENNIAL RYEGRASS (0.6-0.8 LBS./1,000 S.F.), 15% FINE FESCUE (0.4-0.6 LBS/1,000 S.F.). STRAW AND MULCH SHALL BE LAID AT 100LBS/1,000 S.F. FERTILIZE AS PER SOIL TEST OR APPLY 5-10-10 OR EQUIVALENT AT 5-6 LBS/1,000 S.F. SEE EROSION MATTING SPECIFICATIONS AS REQUIRED. ALL SITE DISTURBED AREAS NOT DESIGNATED FOR OTHER LANDSCAPING AND SITE STABILIZATION METHODS SHALL BE SEEDED AS PERMANENT LAWN. NO BARE TOPSOIL SHALL BE LEFT ONSITE. FOLLOW PROCEDURES FOUND IN WDNR TECHNICAL STANDARDS 1058 & 1059.
   3. ALL PERMANENT AND TEMPORARY STORM WATER CONVEYANCE SWALE BOTTOMS AND SIDE SLOPES OUTSIDE OF NO MOW SEEDED AREAS SHALL BE SEEDED WITH THE FOLLOWING MIXTURE: 45% KENTUCKY BLUEGRASS (0.60 LBS./1000 S.F.), 40% CREEPING RED FESCUE (0.50 LBS./1,000 S.F.), AND 15% PERENNIAL RYEGRASS (0.20 LBS./1,000 S.F.). FERTILIZE AS PER SOIL TEST OR APPLY 5-10-10 OR EQUIVALENT AT 5-6 LBS./1,000 S.F. SEE EROSION MATTING SPECIFICATIONS AS REQUIRED. FOLLOW PROCEDURES FOUND IN WDNR TECHNICAL STANDARDS 1058 & 1059.
   4. ALL TEMPORARY SEEDING SHALL CONSIST OF THE FOLLOWING MIXTURE: 100% RYEGRASS AT 1.9 LBS./1,000 S.F. STRAW AND MULCH SHALL BE LAID AT 100 LBS./1,000 S.F. FERTILIZE AS PER SOIL TEST OR APPLY 5-10-10 OR EQUIVALENT AT 5-6 LBS./1,000 S.F. SEE EROSION MATTING SPECIFICATIONS AS REQUIRED. FOLLOW PROCEDURES FOUND IN WDNR TECHNICAL STANDARDS 1058 & 1059.
C. SEEDED LAWN MAINTENANCE: CONTRACTOR TO PROVIDE MAINTENANCE OF ALL LANDSCAPING FOR A PERIOD OF 90 DAYS FROM THE DATE OF INSTALLATION. AT THE END OF THE MAINTENANCE PERIOD, A HEALTHY, UNIFORM, CLOSE STAND OF GRASS SHOULD BE ESTABLISHED FREE OF WEEDS AND SURFACE IRREGULARITIES. LAWN COVERAGE SHOULD EXCEED 90% AND BARE SPOTS SHOULD NOT EXCEED 5"X5". CONTRACTOR SHOULD REESTABLISH LAWNS THAT DO NOT COMPLY WITH THESE REQUIREMENTS AND CONTINUE MAINTENANCE UNTIL LAWNS ARE SATISFACTORY.
D. EROSION MATTING:
   1. CONTRACTOR TO PROVIDE EROSION CONTROL MATTING (NORTH AMERICAN GREEN S150) OR EQUIVALENT ON ALL SLOPES THAT ARE 4:1 AND GREATER. LAWN SEED SHALL BE PLACED BELOW MATTING IN ACCORDANCE WITH SEEDING REQUIREMENTS AND MANUFACTURER SPECIFICATIONS.
   2. CONTRACTOR TO PROVIDE EROSION MATTING (NORTH AMERICAN GREEN C125) OR EQUIVALENT IN ALL SWALE BOTTOMS AND SIDE SLOPES AS REQUIRED. LAWN SEED SHALL BE PLACED BELOW MATTING IN ACCORDANCE WITH SEEDING REQUIREMENTS AND MANUFACTURER SPECIFICATIONS.
E. TREES AND SHRUBS: FURNISH NURSERY-GROWN TREES AND SHRUBS WITH HEALTHY ROOT SYSTEMS DEVELOPED BY TRANSPLANTING OR ROOT PRUNING. PROVIDE WELL-SHAPED, FULLY BRANCHED, AND HEALTHY LOOKING STOCK. STOCK SHOULD ALSO BE FREE OF DISEASE, INSECTS, EGGS, LARVAE, AND DEFECTS SUCH AS KNOTS, SUN SCALD, INJURIES, ABRASIONS, AND DISFIGUREMENT. SEE THE LANDSCAPE PLAN FOR SPECIFIC SPECIE TYPE, SIZE, AND LOCATION.
F. TREE AND SHRUB INSTALLATION: EXCAVATE CIRCULAR PITS WITH SIDES SLOPED INWARD. TRIM BASE LEAVING CENTER AREA RAISED SLIGHTLY TO SUPPORT ROOT BALL. EXCAVATE PIT APPROXIMATELY THREE TIMES AS WIDE AS THE ROOT BALL DIAMETER. SET TREES AND SHRUBS PLUMB AND IN CENTER OF PIT WITH TOP OF BALL 1" ABOVE ADJACENT FINISHED GRADES. PLACE PLANTING SOIL MIX AROUND ROOT BALL IN LAYERS AND TAMP TO SETTLE MIX. WATER ALL PLANTS THOROUGHLY. PROVIDE TEMPORARY STAKING FOR TREES AS REQUIRED.
G. TREE AND SHRUB MAINTENANCE/WARRANTY: CONTRACTOR TO PROVIDE MAINTENANCE OF ALL LANDSCAPING FOR A PERIOD OF 90 DAYS FROM THE DATE OF INSTALLATION. MAINTENANCE TO INCLUDE REGULAR WATERING AS REQUIRED FOR SUCCESSFUL PLANT ESTABLISHMENT. CONTRACTOR TO PROVIDE 1 YEAR WARRANTY ON ALL TREES, SHRUBS, AND PERENNIALS.
H. ORGANIC MULCH: PROVIDE 3" MINIMUM THICK BLANKET OF SHREDDED HARDWOOD MULCH AT ALL PLANTING AREAS INDICATED ON THE LANDSCAPE PLAN. INSTALL OVER NON-WOVEN WEED BARRIER FABRIC. COLOR BY OWNER.
I. MINERAL MULCH: PROVIDE 3" MINIMUM THICK BLANKET OF 1.5" MINIMUM TO 2.5" MAXIMUM CRUSHED DECORATIVE STONE AT ALL PLANTING AREAS INDICATED ON THE LANDSCAPE PLAN. INSTALL OVER NON-WOVEN WEED BARRIER FABRIC. COLOR BY OWNER.
J. PLASTIC EDGING: INSTALL VALLEY VIEW INDUSTRIES BLACK DIAMOND LAWN EDGING TO SEPARATE ALL PLANTING BEDS FROM LAWN AREAS. EDGING TO BE 5.5" TALL WITH METAL STAKES INSTALLED PER MANUFACTURER'S WRITTEN INSTRUCTIONS.

DIVISION 33 UTILITIES

33 10 00 SITE UTILITIES

A. CONTRACTOR TO FIELD VERIFY ALL EXISTING UNDERGROUND UTILITIES ON SITE. CONTRACTOR TO VERIFY PIPE LOCATIONS, SIZES, AND DEPTHS AT POINT OF PROPOSED CONNECTIONS AND VERIFY PROPOSED UTILITY ROUTES ARE CLEAR (PER CODE) OF ALL EXISTING UTILITIES AND OTHER OBSTRUCTIONS PRIOR TO CONSTRUCTION. COSTS INCURRED FOR FAILURE TO DO SO SHALL BE THE CONTRACTORS RESPONSIBILITY.
B. ALL SANITARY PIPE SHALL BE IN ACCORDANCE WITH MATERIALS SPECIFIED IN TABLE A: ALLOWABLE PIPE MATERIAL SCHEDULE. ALL SANITARY PIPE BELOW PROPOSED & FUTURE BUILDINGS SHALL BE IN ACCORDANCE WITH MATERIALS SPECIFIED IN TABLE A: ALLOWABLE PIPE MATERIAL. INSULATION SHALL BE PROVIDED PER STATE PLUMBING CODES AS NECESSARY BASED ON PROPOSED DEPTH PER PLANS.
C. SANITARY MANHOLES SHALL BE 48" PRECAST AND CONFORM TO THE STANDARD SPECIFICATIONS FOR SEWER & WATER CONSTRUCTION IN WISCONSIN-CURRENT EDITION UNLESS OTHERWISE DIRECTED BY THE ENGINEER. SANITARY MANHOLE FRAME AND GRATE TO BE NEENAH R-1550-A OR EQUAL. RIM ELEVATION TO BE SET AT FINISHED GRADE IN DEVELOPED AREAS AND 12" ABOVE FINISHED GRADE IN UNDEVELOPED AREAS EXCEPT AS OTHERWISE DIRECTED BY THE ENGINEER.
D. CLEANOUTS SHALL BE PROVIDED FOR THE SANITARY & STORM SERVICES AT LOCATIONS INDICATED ON THE UTILITY PLAN. THE CLEANOUT SHALL CONSIST OF A COMBINATION WYE FITTING IN LINE WITH THE SANITARY/STORM SERVICE WITH THE CLEANOUT LEG OF THE COMBINATION WYE FACING STRAIGHT UP. THE CLEANOUT SHALL CONSIST OF A 6" VERTICAL PVC PIPE WITH A WATER TIGHT REMOVABLE CLEANOUT PLUG. AN 8" PVC FROST SLEEVE SHALL BE PROVIDED. THE BOTTOM OF THE FROST SLEEVE SHALL TERMINATE 12" ABOVE THE TOP OF THE SANITARY LATERAL OR AT LEAST 6" BELOW THE PREDICTED FROST DEPTH, WHICHEVER IS SHALLOWER. THE CLEANOUT SHALL EXTEND JUST ABOVE THE SURFACE GRADE IN LAWN OR LANDSCAPE AREAS WITH THE FROST SLEEVE TERMINATING AT THE GRADE SURFACE. THE CLEANOUT SHALL EXTEND TO 4 INCHES BELOW SURFACE GRADE IN PAVED SURFACES WITH A ZURN (Z-1474-N) HEAVY DUTY CLEANOUT HOUSING PLACED OVER THE TOP OF THE CLEANOUT FLUSH WITH THE SURFACE GRADE. IN PAVED SURFACES, THE FROST SLEEVE SHALL TERMINATE IN A CONCRETE PAD AT LEAST 6" THICK AND EXTENDING AT LEAST 9" FROM THE SLEEVE ON ALL SIDES, SLOPING AWAY FROM THE SLEEVE. THE CLEANOUT HOUSING SHALL BE CONSTRUCTED PER MANUFACTURERS REQUIREMENTS.
E. ALL PROPOSED WATER PIPE SHALL BE IN ACCORDANCE WITH MATERIALS SPECIFIED IN TABLE A: ALLOWABLE PIPE MATERIAL SCHEDULE. 6' MINIMUM COVER SHALL BE PROVIDED OVER ALL WATER PIPING UNLESS OTHERWISE SPECIFIED.
F. ALL PROPOSED STORM PIPE SHALL BE IN ACCORDANCE WITH MATERIALS SPECIFIED IN TABLE A: ALLOWABLE PIPE MATERIAL SCHEDULE. ALL PROPOSED STORM PIPE BELOW BUILDINGS SHALL BE IN ACCORDANCE WITH MATERIALS SPECIFIED IN TABLE A: ALLOWABLE PIPE MATERIAL SCHEDULE. SEE UTILITY PLANS FOR ALL STORM PIPE MATERIAL TYPES TO BE USED. PIPE SHALL BE PLACED MIN. 8' HORIZONTALLY FROM FOUNDATION WALLS.
G. SANITARY, STORM, AND WATER UTILITY PIPE INVERTS SHALL BE CONSTRUCTED WITHIN 0.10' OF DESIGN INVERT ELEVATIONS ASSUMING PIPE SLOPE AND SEPARATION IS MAINTAINED PER THE UTILITY DESIGN PLANS AND STATE REQUIREMENTS.
H. SITE UTILITY CONTRACTOR SHALL RUN SANITARY SERVICE TO A POINT WHICH IS A MAXIMUM OF 5' FROM THE EXTERIOR WALL OF THE FOUNDATION. SITE UTILITY CONTRACTOR SHALL RUN STORM SEWER FOR INTERNALLY DRAINED BUILDINGS TO A POINT WHICH IS A MAXIMUM OF 5' FROM THE EXTERIOR WALL OF THE FOUNDATION. SITE UTILITY CONTRACTOR SHALL RUN DOWNSPOUT LEADS TO BUILDING FOUNDATION AND UP 6" ABOVE SURFACE GRADE FOR CONNECTION TO DOWNSPOUT FOR ALL DOWNSPOUT TO RISER (DSR) CONNECTIONS. DOWNSPOUTS TO GRADE (DSG) SHALL BE PROVIDED WITH SPLASH BLOCKS AT THE DISCHARGE LOCATION. ALL DOWNSPOUT LOCATIONS SHOULD BE VERIFIED WITH ARCHITECTURAL PLANS AND DOWNSPOUT CONTRACTOR/GC PRIOR TO INSTALLATION OF DOWNSPOUT LEADS. DOWNSPOUT LEADS SHALL NOT UNDERMINE BUILDING FOUNDATIONS. SITE UTILITY CONTRACTOR SHALL RUN WATER SERVICE TO A POINT WITHIN THE FOUNDATION SPECIFIED BY THE PLUMBING PLANS. CONTRACTOR TO CUT AND CAP WATER SERVICE 12" ABOVE FINISHED FLOOR ELEVATION.
I. ALL UTILITIES SHALL BE INSTALLED WITH PLASTIC COATED TRACER WIRE (10 TO 14 GAUGE SOLID COPPER, OR COPPER COATED STEEL WIRE). PLASTIC WIRE MAY BE TAPED TO PLASTIC WATER OR SEWER PIPE. IF ATTACHED, THE TRACER WIRE SHALL BE SECURED EVERY 6 TO 20 FEET AND AT ALL BENDS. TRACER WIRE SHALL HAVE ACCESS POINTS AT LEAST EVERY 300 FEET. TRACER WIRE SHALL TERMINATE IN ACCORDANCE WITH MANUFACTURER SPECIFICATIONS AT GRADE OR IN TERMINATION BOX PER LOCAL/STATE REQUIREMENTS.
J. ALL UTILITIES SHALL BE INSTALLED PER STATE, LOCAL, AND INDUSTRY STANDARDS. WATER, SANITARY, AND STORM SEWER SHALL BE INSTALLED PER "STANDARD SPECIFICATION FOR SEWER AND WATER CONSTRUCTION IN WISCONSIN". THE EXCEL ENGINEERING DESIGN ENGINEER SHALL BE RESPONSIBLE FOR OBTAINING STATE PLUMBING REVIEW APPROVAL (IF REQUIRED). THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING ALL OTHER PERMITS REQUIRED TO INSTALL WATER, SANITARY AND STORM SEWER.
K. SEE PLANS FOR ALL OTHER UTILITY SPECIFICATIONS AND DETAILS.

SHOP DRAWING SUBMITTALS

MATERIAL / INFORMATION

2. 31.20.00 - FILL
   - PRODUCT DATA
   - SOURCE MATERIAL
3. 32.10.00 (A) - AGGREGATE BASE & ASPHALT PAVEMENT
   - HOT MIX ASPHALT SPECIFICATIONS
   - AGGREGATE BASE
   - PAVEMENT MARKINGS
4. 32.20.00-CONCRETE AND AGGREGATE BASE
   - DESIGN MIX
   - AGGREGATE BASE
   - COMPRESSION TEST RESULTS
   - PAVEMENT MARKINGS
   - DETECTABLE WARNING PLATES
5. 32.30.00 LANDSCAPING
   - AMENDED SOIL MIX
   - SEEDING PRODUCT DATA
   - PLANTING SUBSTITUTION SCHEDULE
   - MULCH PRODUCT DATA
   - EROSION MATTING
6. 33.10.00 - SITE UTILITIES
   - SANITARY & STORM MANHOLES
   - SANITARY PIPING MATERIALS
   - WATER PIPING MATERIALS
   - WATER FITTINGS & APPURTENANCES
   - STORM PIPING MATERIALS
7. MISCELLANEOUS ITEMS
   - SITE LIGHTING
   - EXTERIOR SIGNAGE
   - BOLLARDS

TABLE A: ALLOWABLE PIPE MATERIAL SCHEDULE

Utility	Material	Pipe Code	Fitting Code	Joint Code
Combined Domestic/Fire Service	C900 PVC	AWWA C900, ASTM D1785, ASTM D2241	AWWA C110, AWWA C153, ASTM D2464, ASTM D2466, ASTM D2467, ASTM D3311, ASTM F409, ASTM F1336, ASTM F1866	Joint: ASTM D3139 Integral Bell & Spigot Elastomeric Seal: ASTM F477
Sanitary Sewer	SDR 35 PVC	ASTM D1785, ASTM D2665, ASTM D3034, ASTM F891	ASTM F1336	Push On: ASTM D3212 for Tightness Elastomeric Gasket: ASTM F477
Storm Sewer	HDPE	ASTM F2648, ASTM F2306, AASHTO M252, TYPE S (4 IN - 10 IN), AASHTO M294, TYPE S (12 IN - 60 IN)	ASTM F2648, ASTM F2306, AASHTO M252, or AASHTO M294	Joint: ASTM F2648, ASTM F2306, AASHTO M252, or AASHTO M294 Elastomeric Seal: ASTM F477
Storm Sewer	RRCP-Class IV	ASTM C14, ASTM C76, AASHTO M170		ASTM C443 Rubber Gasket

Always a Better Plan
100 Camelot Drive
Fond du Lac, WI 54935
920-926-9800
excelengineer.com

PROJECT INFORMATION

PROPOSED MULTI-FAMILY DEVELOPMENT
LUMIN TERRACE
JOHNSON STREET • WATERTOWN, WI

PROFESSIONAL SEAL

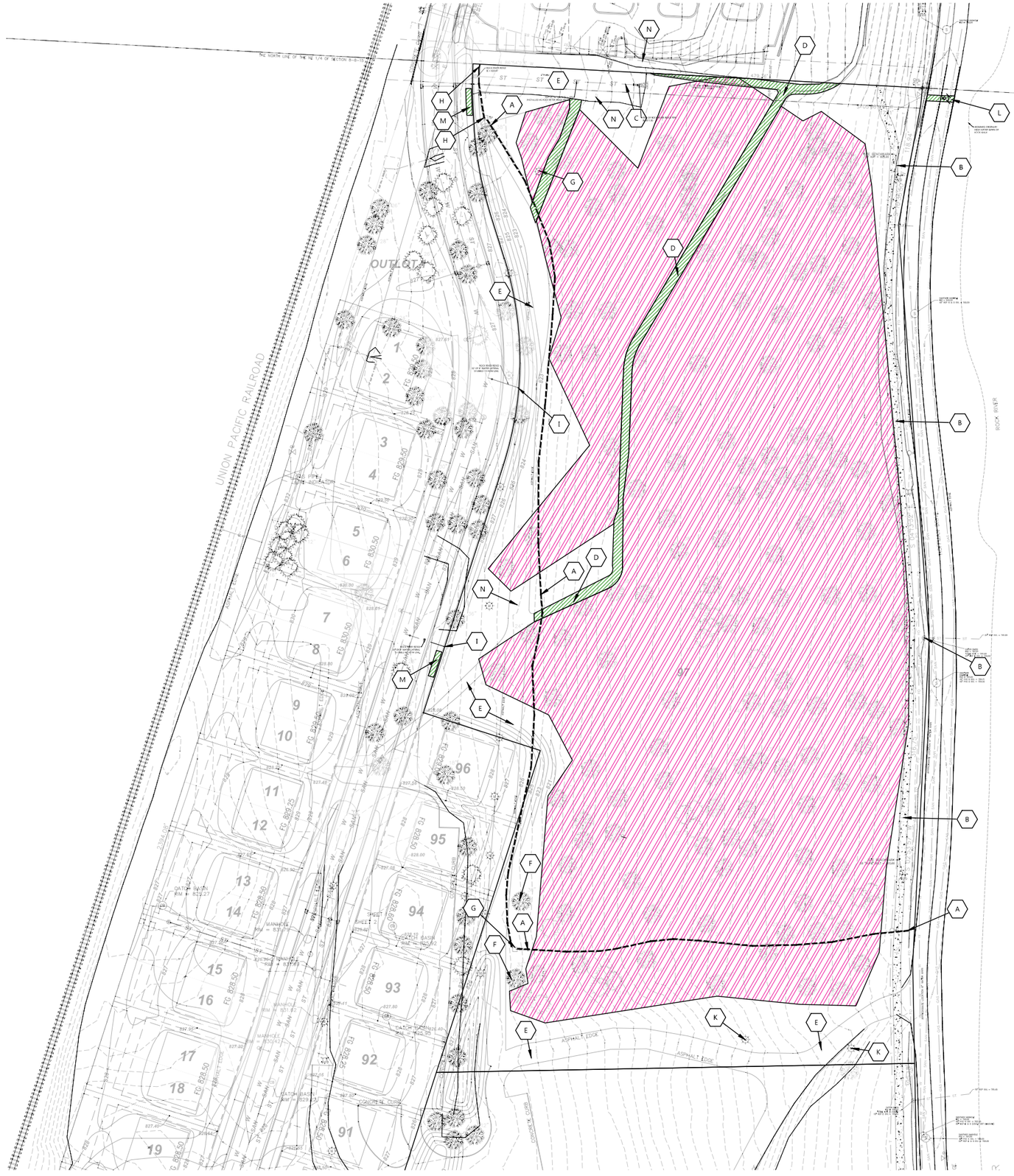
PRELIMINARY DATES
OCT. 23, 2024
OCT. 25, 2024
OCT. 30, 2024
NOV. 8, 2024

NOT FOR CONSTRUCTION

JOB NUMBER
240136200

SHEET NUMBER
C0.2

CIVIL SPECIFICATION SHEET



GENERAL NOTES:

CONTRACTOR TO REFERENCE ROCK RIVER RIDGE PHASE 1 PLANS FOR SCOPE OF REMOVALS COVERED BY ROCK RIVER RIDGE PHASE 1 CONTRACTOR. CONTRACTOR TO FIELD VERIFY ROCK RIVER PHASE 1 REMOVALS AND IMPROVEMENTS HAVE BEEN COMPLETED AND NOTIFY ENGINEER OF ANY DISCREPANCIES PRIOR TO CONSTRUCTION.

LEGEND:

- REMOVE PAVEMENT & BASE
- CLEAR AND GRUB TREES WITHIN HATCHED AREA

KEYNOTES

A	ROCK RIVER RIDGE PHASE 1 PLANS DENOTE EXISTING TELECOM TO BE ABANDONED. OWNER/CONTRACTOR TO COORDINATE WITH ADJACENT DEVELOPER.
B	PROTECT CONCRETE TRAIL INSTALLED AS PART OF ROCK RIVER RIDGE PHASE 1 PLANS. FIELD VERIFY SANITARY AND STORM CONNECTIONS HAVE BEEN MADE PRIOR TO CONCRETE TRAIL INSTALLATION. IF NOT, CONTRACTOR TO SAWCUT AND REMOVE AND REPLACE CONCRETE AS NECESSARY FOR PROPOSED UTILITY CONNECTIONS.
C	PROTECT STORM PIPE INSTALLED AS PART OF ROCK RIVER RIDGE PHASE 1 PLANS.
D	SAWCUT (AS NECESSARY) AND REMOVE ASPHALT AND REMOVE BASE. VERIFY WITH NORTH NEIGHBOR THAT TRAIL WILL BE DISCONNECTED AS NEEDED.
E	FIELD VERIFY ASPHALT REMOVED AS PART OF ROCK RIVER RIDGE PHASE 1 PLANS.
F	FIELD VERIFY TREE REMOVED AS PART OF ROCK RIVER RIDGE PHASE 1 PLANS.
G	FIELD VERIFY LIGHT POLE REMOVED AS PART OF ROCK RIVER RIDGE PHASE 1 PLANS.
H	CONTRACTOR TO COORDINATE WITH UTILITY PROVIDER FOR TELECOM UNIT TO BE ABANDONED AND REMOVED AS NECESSARY FOR PROPOSED GRADING AND IMPROVEMENTS. REMOVE PEDESTAL.
I	FIELD VERIFY 8" WATER PIPE STUBBED TO PROPERTY LINES AS PART OF ROCK RIVER RIDGE PHASE 1 PLANS.
K	REMOVE LIGHT POLE, WIRING & CONDUIT
L	SAWCUT (AS NECESSARY) AND REMOVE ASPHALT FOR INSTALLATION OF STORM SEWER.
M	CONTRACTOR TO SAWCUT AND REMOVE SIDEWALK IF INSTALLED THROUGH PROPOSED ENTRANCE TO DEVELOPMENT.
N	CONTRACTOR TO DETERMINE IF STORM SEWER EXISTS OR WAS REMOVED AS PART OF NEIGHBORING DEVELOPMENT. NOTIFY ENGINEER WITH FINDINGS.

EXISTING CONDITIONS NOTE:

EXISTING CONDITIONS SURVEY WAS COMPLETED BY CAPITOL SURVEY ENTERPRISES.

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SCALE: 1" = 40'
40' 0 40' 80'
NORTH

CIVIL EXISTING SITE AND DEMOLITION PLAN

Exc
Always a Better Plan
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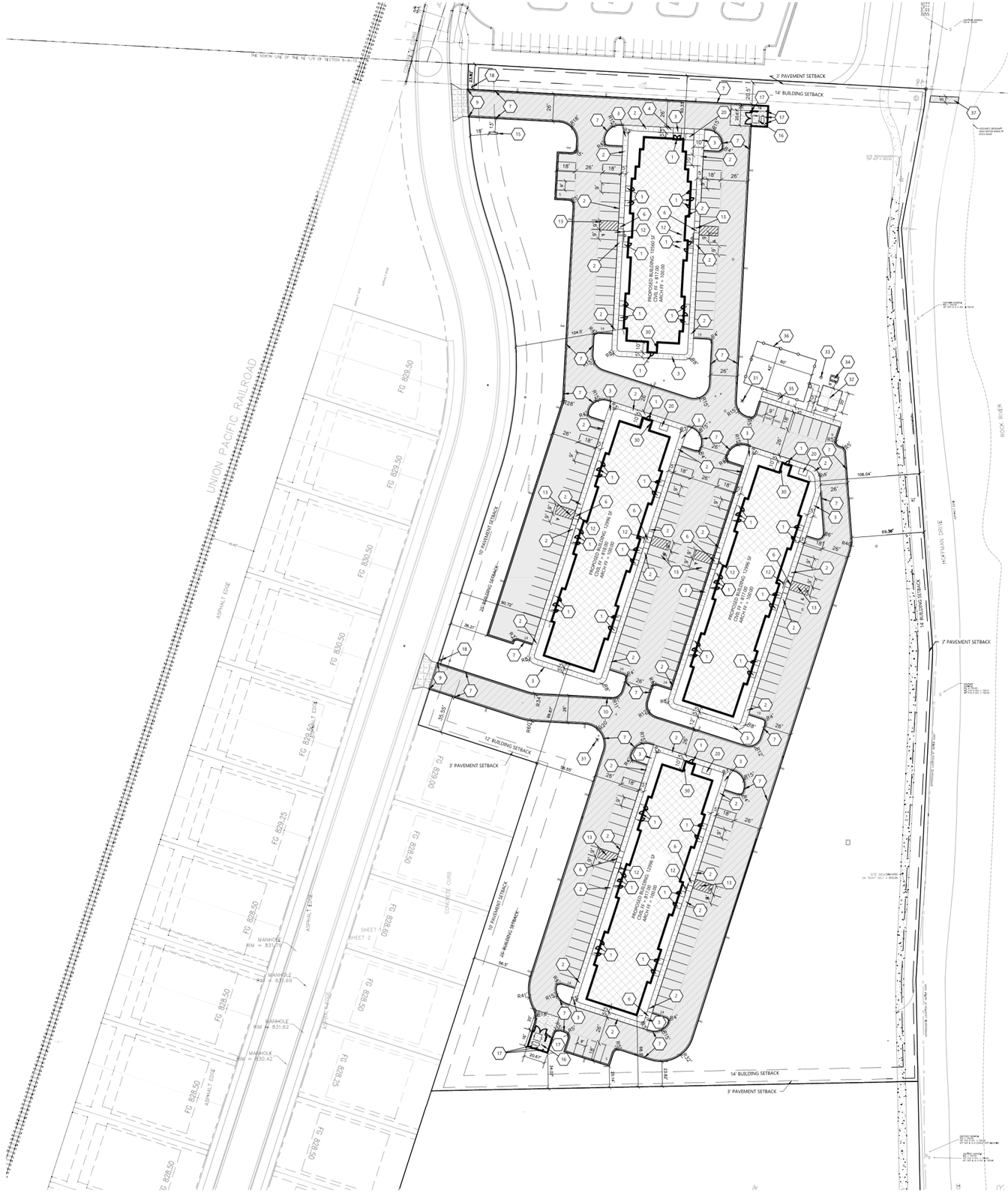
C1.0



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100 Camelot Drive
Fond du Lac, WI 54935
920-926-9800
excelengineer.com

PROJECT INFORMATION

PROPOSED MULTI-FAMILY DEVELOPMENT

LUMIN TERRACE

JOHNSON STREET • WATERTOWN, WI

PROFESSIONAL SEAL

PRELIMINARY DATES

OCT. 3, 2024
OCT. 11, 2024
OCT.14, 2024
OCT. 18, 2024
OCT. 23, 2024
OCT. 25, 2024
OCT. 30, 2024
NOV. 8, 2024

NOT FOR CONSTRUCTION

JOB NUMBER
240136200

SHEET NUMBER
C1.1

KEYNOTES

1	CONCRETE STOOP (SEE STRUCTURAL PLANS FOR DETAILS)
2	RAISED WALK (SEE DETAIL)
3	FLUSH WALK (SEE DETAIL)
4	TAPER ASPHALT IN 12" TO CREATE RAISED WALK
6	ADA CURB RAMP (SEE DETAIL)
7	18" CURB & GUTTER (SEE DETAIL)
9	CURB TAPER (SEE DETAIL)
10	CURB CUT (SEE DETAIL)
11	CONCRETE TRANSFORMER PAD BY UTILITY SUPPLIER (CONTRACTOR TO VERIFY FINAL LOCATION & DESIGN PRIOR TO CONSTRUCTION)
12	HANDICAP SIGN PER STATE CODE (SEE DETAIL)
13	HANDICAP STALL & STRIPING PER STATE CODES
15	MONUMENT SIGN (DETAILS, FINAL LOCATION, & APPROVAL BY SIGN VENDOR)
16	DUMPSTER ENCLOSURE (SEE ARCH PLANS FOR DETAILS)
17	6" CONCRETE BOLLARDS (TYP.) (SEE ARCH PLANS FOR DETAILS)
18	STOP SIGN PER MUTCD.
20	BIKE RACK (TYP.) (TYPE & COLOR BY OWNER)
22	TRAFFIC FLOW ARROWS (TYP). COLOR TO MATCH PARKING STALL STRIPING
30	FDC LOCATION. FDC SHALL HAVE AN ANGLED 5 INCH STORZ CONNECTION AND SHALL BE MARKED WITH A STROBE OR REFLECTIVE SIGN.
31	FIRE HYDRANT LOCATION. FIRE HYDRANTS SHALL NOT BE PLACED CLOSER THAN 40 FEET TO ANY BUILDING AND SHALL BE NO MORE THAN 100 FEET FROM THE FDC.
32	PAVILION ON CONCRETE PAD. SEE ARCH PLANS.
33	PARK GRILL. TYPE BY OWNER.
34	PICNIC TABLE ON CONCRETE PAD. TABLE BY OWNER.
35	MAILBOX AND PARCEL CLUSTERS ON CONCRETE PAD. SEE ARCH PLANS.
36	PROPOSED DOG PARK WITH 4' BLACK VINYL CHAINLINK FENCE.
37	ASPHALT/BASE SECTION TO MATCH EXISTING ROAD SECTION PER CITY OF WATERTOWN SPECIFICATIONS.

LEGEND:

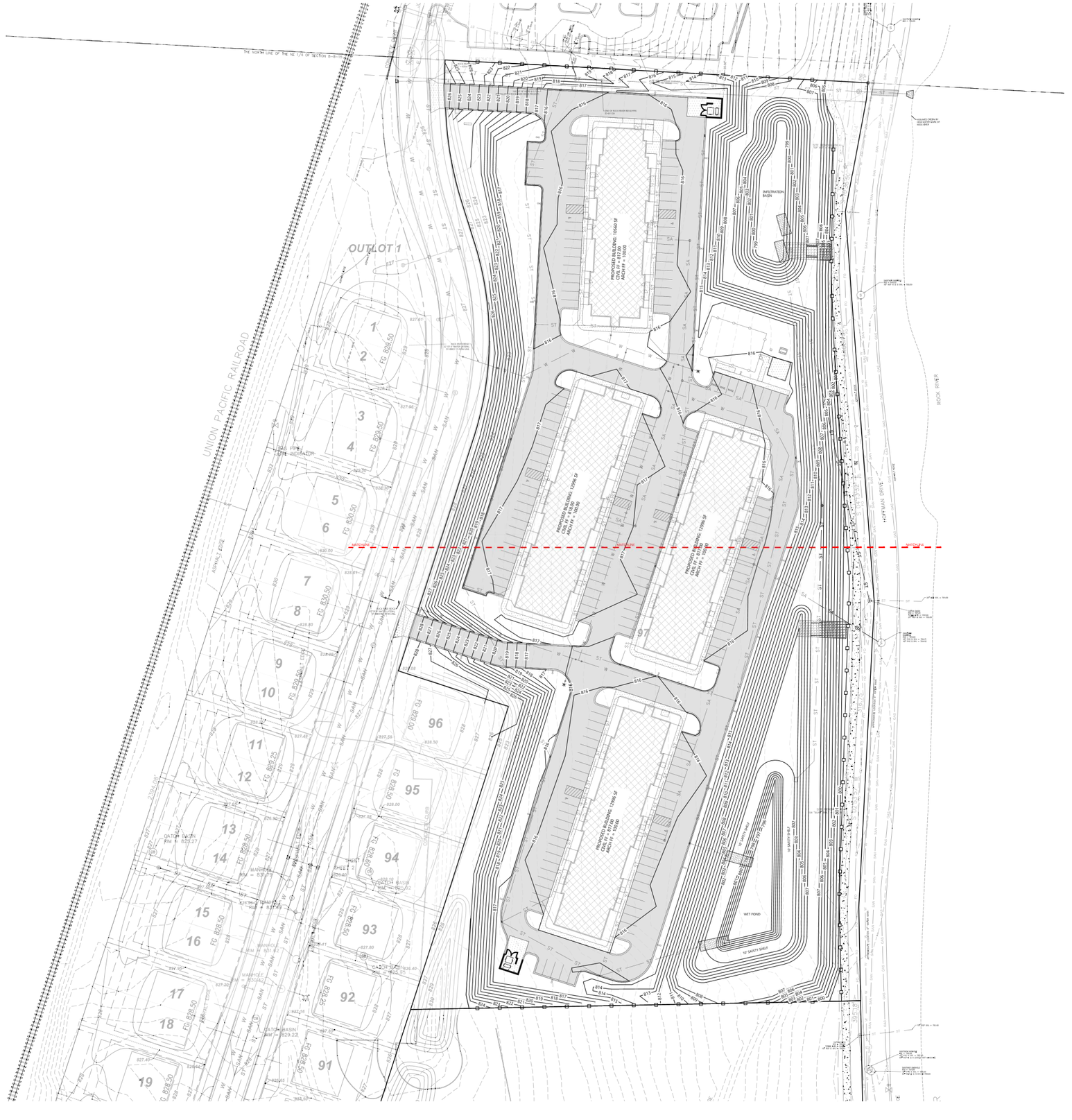
HATCH	PAVEMENT SECTION	HATCH	PAVEMENT SECTION
	STANDARD ASPHALT		HEAVY DUTY CONCRETE
	HEAVY DUTY ASPHALT		
	SIDEWALK CONCRETE		DUMPSTER PAD / APRON CONCRETE
	INVERTED CURB & GUTTER		SHEDDING CURB & GUTTER

SCALE: 1" = 40'

NORTH

40' 0 40' 80'

CIVIL SITE PLAN



GENERAL NOTES:

- HANDICAP STALL AND ACCESS AISLES SHALL NOT EXCEED A SLOPE OF 1.50% IN ANY DIRECTION. HANDICAP STALL & ACCESS AISLES SHALL CONFORM TO ADA REQUIREMENTS (CURRENT EDITION)
- ALL SIDEWALKS SHALL NOT EXCEED A MAXIMUM CROSS SLOPE OF 1.50% AND RUNNING SLOPE OF 4.50% UNLESS OTHERWISE SPECIFIED.
- CONTRACTOR SHALL PROVIDE STABILIZED CONSTRUCTION ENTRANCE AT CONSTRUCTION ENTRANCE FOR PROPOSED IMPROVEMENTS AS REQUIRED PER CODE.
- CONTRACTOR SHALL PROVIDE CONCRETE WASHOUT AS REQUIRED PER CODE. FINAL LOCATION TBD BY CONTRACTOR.
- CONTRACTOR SHALL PROVIDE TEMPORARY INLET PROTECTION FOR ALL CURB INLETS, & CATCH BASINS ONSITE & OFFSITE IMMEDIATELY DOWNSTREAM OF THE PROJECT SITE PER LOCAL CODE.

KEYNOTES

EC 1	SILT FENCE
EC 3	STABILIZED CONSTRUCTION ENTRANCE
EC 4	INLET PROTECTION

SCALE: 1" = 40'

NORTH

CIVIL GRADING AND EROSION CONTROL PLAN - OVERALL

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920-926-9800
excelengineer.com

PROJECT INFORMATION

PROPOSED MULTI-FAMILY DEVELOPMENT

LUMIN TERRACE

JOHNSON STREET • WATERTOWN, WI

PROFESSIONAL SEAL

PRELIMINARY DATES
OCT. 11, 2024
OCT. 18, 2024
OCT. 23, 2024
OCT. 25, 2024
OCT. 30, 2024
NOV. 8, 2024

NOT FOR CONSTRUCTION

JOB NUMBER
240136200

SHEET NUMBER
C1.2A

GENERAL NOTES:

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- ALL SIDEWALKS SHALL NOT EXCEED A MAXIMUM CROSS SLOPE OF 1.50% AND RUNNING SLOPE OF 4.50% UNLESS OTHERWISE SPECIFIED.
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- CONTRACTOR SHALL PROVIDE CONCRETE WASHOUT AS REQUIRED PER CODE. FINAL LOCATION TBD BY CONTRACTOR
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KEYNOTES

EC 1	SILT FENCE
EC 3	STABILIZED CONSTRUCTION ENTRANCE
EC 4	INLET PROTECTION

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LUMIN TERRACE

JOHNSON STREET • WATERTOWN, WI

PROFESSIONAL SEAL

PRELIMINARY DATES
NOV. 8, 2024

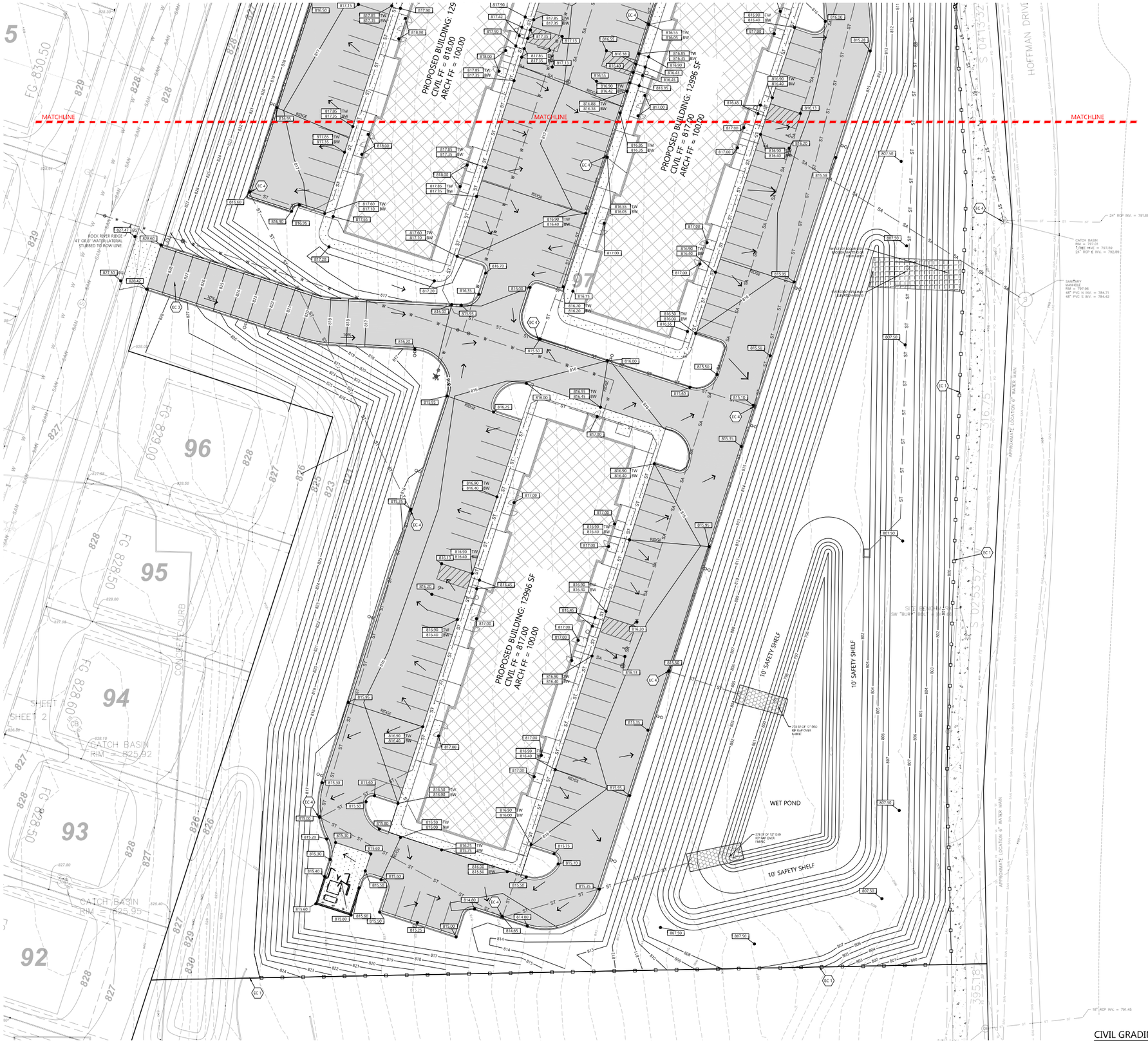
NOT FOR CONSTRUCTION

JOB NUMBER
240136200

SHEET NUMBER
C1.2B

SCALE: 1" = 20'

CIVIL GRADING AND EROSION CONTROL PLAN - NORTH



GENERAL NOTES:

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- CONTRACTOR SHALL PROVIDE TEMPORARY INLET PROTECTION FOR ALL CURB INLETS & CATCH BASINS ONSITE & OFFSITE IMMEDIATELY DOWNSTREAM OF THE PROJECT SITE PER LOCAL CODE.

KEYNOTES

EC 1	SILT FENCE
EC 3	STABILIZED CONSTRUCTION ENTRANCE
EC 4	INLET PROTECTION

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PROJECT INFORMATION

PROPOSED MULTI-FAMILY DEVELOPMENT

LUMIN TERRACE

JOHNSON STREET • WATERTOWN, WI

PROFESSIONAL SEAL

PRELIMINARY DATES
NOV. 8, 2024

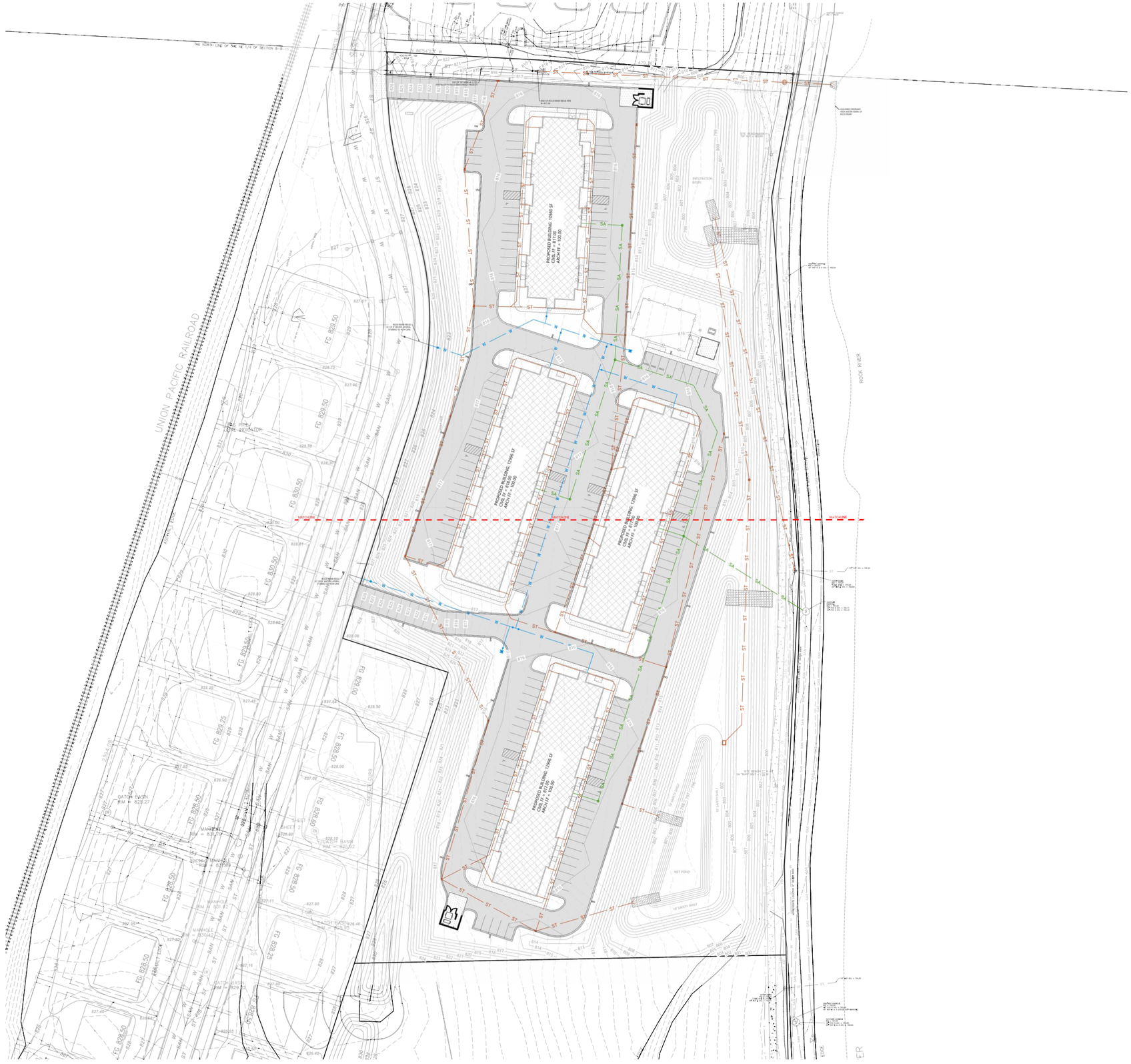
NOT FOR CONSTRUCTION

JOB NUMBER
240136200

SHEET NUMBER
C1.2C

SCALE: 1" = 20'
20' 0 20' 40'

CIVIL GRADING AND EROSION CONTROL PLAN - SOUTH



GENERAL NOTES:

- ALL DOWNSPOUT LEADERS WITH DS TAG SHALL BE 6" HDPE PIPES WITH LENGTH OF LEADER NOTED AFTER DS PREFIX.
- CONTRACTOR TO VERIFY WATER AND SANITARY PIPE SIZING WITH INTERIOR PLUMBER PRIOR TO CONSTRUCTION AND NOTIFY ENGINEER IF INTERIOR PLUMBER REQUIRES DIFFERENT PIPE SIZES.

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PROJECT INFORMATION

PROPOSED MULTI-FAMILY DEVELOPMENT

LUMIN TERRACE

JOHNSON STREET • WATERTOWN, WI

PROFESSIONAL SEAL

PRELIMINARY DATES
OCT. 17, 2024
OCT. 18, 2024
OCT. 23, 2024
OCT. 25, 2024
OCT. 30, 2024
NOV. 7, 2024

NOT FOR CONSTRUCTION

JOB NUMBER
240136200

SHEET NUMBER
C1.3A

SCALE: 1" = 40'
40' 0 40' 80'
NORTH

CIVIL UTILITY PLAN - OVERALL

GENERAL NOTES:

- ALL DOWNSPOUT LEADERS WITH DS TAG SHALL BE 6" HDPE PIPES WITH LENGTH OF LEADER NOTED AFTER DS PREFIX.
- CONTRACTOR TO VERIFY WATER AND SANITARY PIPE SIZING WITH INTERIOR PLUMBER PRIOR TO CONSTRUCTION AND NOTIFY ENGINEER IF INTERIOR PLUMBER REQUIRES DIFFERENT PIPE SIZES.

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PROJECT INFORMATION

PROPOSED MULTI-FAMILY DEVELOPMENT

LUMIN TERRACE

JOHNSON STREET • WATERTOWN, WI

PROFESSIONAL SEAL

PRELIMINARY DATES
NOV. 8, 2024

NOT FOR CONSTRUCTION

JOB NUMBER
240136200

SHEET NUMBER
C1.3B

CIVIL UTILITY PLAN - NORTH

GENERAL NOTES:

- ALL DOWNSPOUT LEADERS WITH DS TAG SHALL BE 6" HDPE PIPES WITH LENGTH OF LEADER NOTED AFTER DS PREFIX.
- CONTRACTOR TO VERIFY WATER AND SANITARY PIPE SIZING WITH INTERIOR PLUMBER PRIOR TO CONSTRUCTION AND NOTIFY ENGINEER IF INTERIOR PLUMBER REQUIRES DIFFERENT PIPE SIZES.

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PROJECT INFORMATION

PROPOSED MULTI-FAMILY DEVELOPMENT

LUMIN TERRACE

JOHNSON STREET • WATERTOWN, WI

PROFESSIONAL SEAL

PRELIMINARY DATES

NOV. 8, 2024

NOT FOR CONSTRUCTION

JOB NUMBER

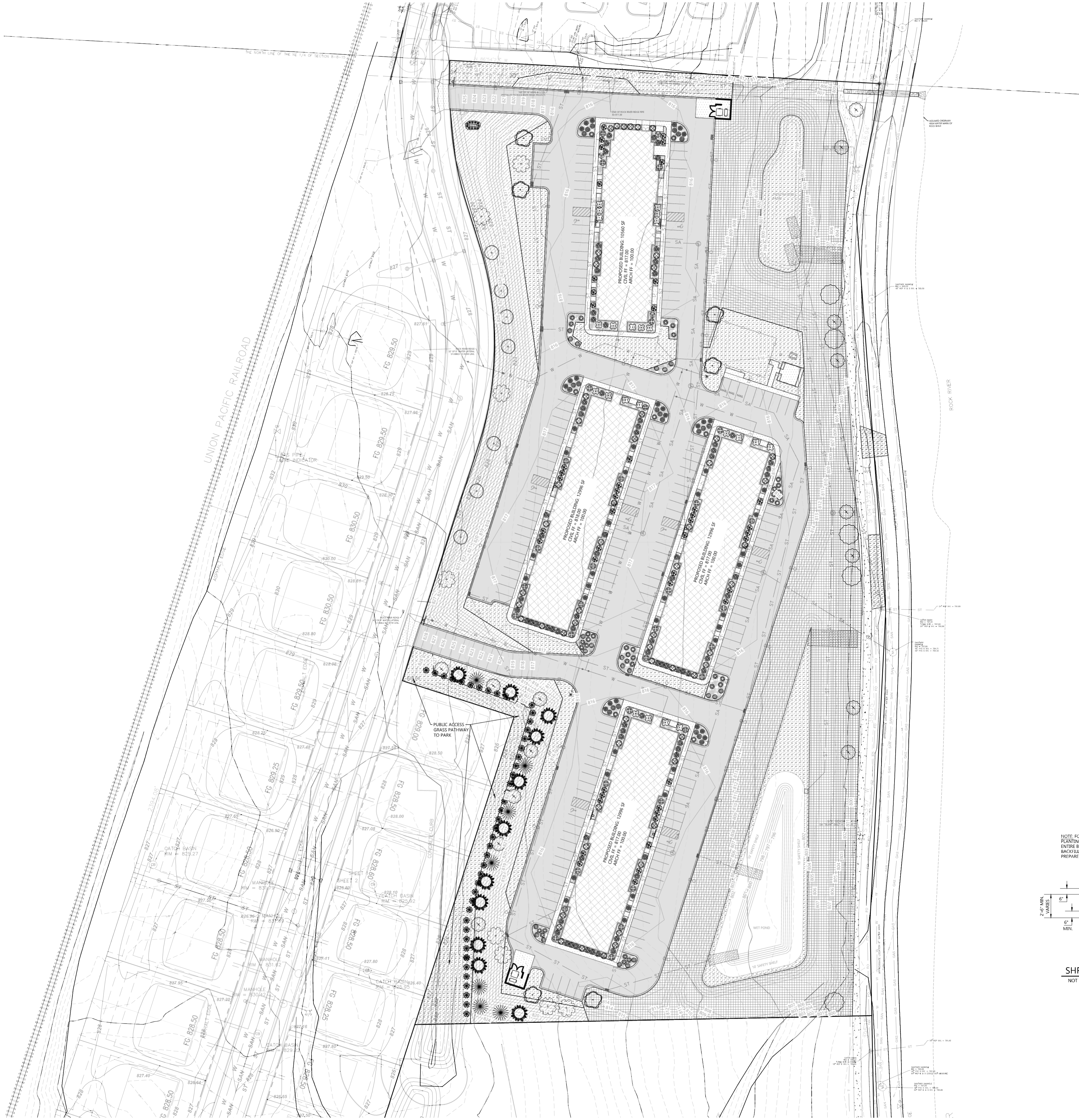
240136200

SHEET NUMBER

C1.3C

SCALE: 1" = 20'

CIVIL UTILITY PLAN - SOUTH



HATCH KEY:

HATCH	LANDSCAPE MATERIAL
	ORGANIC MULCH
	SEEDED LAWN
	EROSION MATTING (NAG S150) OVER NO MOW SEEDED LAWN . CONTRACTOR TO SUBMIT NO MOW SEED MIX TO ENGINEER FOR APPROVAL. (> OR = 4:1 SLOPES OUTSIDE OF SWM)
	EROSION MATTING (NAG C125) OVER NO MOW SEEDED LAWN.CONTRACTOR TO SUBMIT NO MOW SEED MIX TO ENGINEER FOR APPROVAL. (SWALE BOTTOMS & SWM)

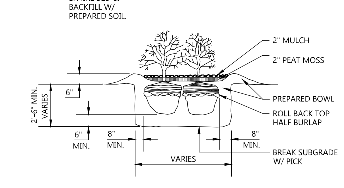
LANDSCAPING CALCULATIONS

ZONE	REQ. PLANTS	PLANTS PROVIDED
PAVED AREAS	GREATER OF: 100 POINTS PER 20 PARKING STALLS OR 10,000 SQUARE FEET OF PARKING AREA A MINIMUM OF 30% OF POINTS DEVOTED TO CLIMAX/TALL TREES AND 40% TO SHRUBS $\frac{196}{20}$*100=980 $\frac{132373}{10000}$*100=1324 POINTS TOTAL REQUIRED 1324*.3=398 POINTS MINIMUM TALL TREES 1324*.4=530 POINTS MINIMUM SHRUBS	66 (5-POINT) DECIDUOUS SHRUBS 40 (5-POINT) EVERGREEN SHRUBS 530 TOTAL SHRUB POINTS PROVIDED 11 (75 POINT) CLIMAX TREE 825 TOTAL TREE POINTS 1355 POINTS TOTAL PROVIDED
DEVELOPED LOTS	20 POINTS PER 1,000 SQUARE FEET OF BUILDING FOOTPRINT $\frac{49548}{1000}$*20=991 POINTS REQD	48 (3 POINT) DECIDUOUS SHRUBS=144 7 (20 POINT) MEDIUM TREES =140 18(40 POINT) TALL EVERGREEN TREES=760
STREET	50 POINTS PER 100 LINEAR FEET OF STREET FRONTAGE SHRUBS NOT ALLOWED; A MINIMUM OF 50% OF POINTS DEVOTED TO CLIMAX/TALL TRESS AND 30% TO MEDIUM TREES HOFFMAN ROAD=$\frac{957}{100}$*50=479 MINIMUM 240 TALL/CLIMAX MINIMUM 144 MEDIUM JOHNSON STREET=$\frac{654}{100}$*50=327 MINIMUM 164 TALL/CLIMAX MINIMUM 99 MEDIUM	HOFFMAN ROAD 5 (75 POINT) CLIMAX=375 8 (20 POINT)MEDIUM=160 535 TOTAL JOHNSON STREET 3 (75 POINT) CLIMAX=225 7 (15 POINT)MEDIUM=105 330 TOTAL
BUILDING FOUNDATION	50 POINTS PER 100 FEET OF BUILDING FOUNDATION CLIMAX TREES AND TALL TREES SHALL NOT BE USED TO MEET THIS REQUIREMENT. (637+637+637+556)/100*50=1,234 POINTS REQD	131 (5-POINT) DECIDUOUS SHRUBS 9 (3-POINT) DECIDUOUS SHRUBS 81 (5-POINT) EVERGREEN SHRUBS 55 (3-POINT) EVERGREEN SHRUBS TOTAL 1,234 POINTS PROVIDED

LANDSCAPING PLANTING SCHEDULE

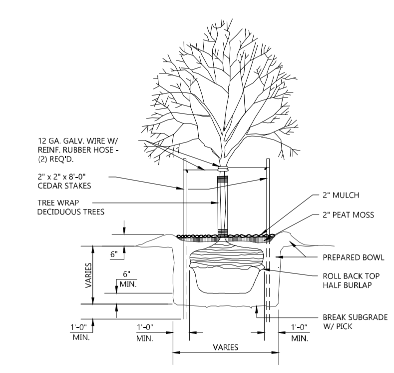
SYMBOL	COMMON NAME	BOTANICAL NAME	PLANTED SIZE	QUANTITY	POINTS
		DECIDUOUS TREES			
	Sugar Maple	Acer saccharum	2"	6	75
	Red Oak	Quercus rubra	2"	8	75
	Ginkgo	Ginkgo bilboa	2"	5	75
	River Birch	Betula nigra	2"	7	15
		EVERGREEN TREES			
	American Arborvitae	Thuja occidentalis	2'	15	4'-10'
	Austrian Pine	Pinus nigra	4'	7	40
	Black Hills Spruce	Picea glauca	4'	11	40
		DECIDUOUS SHRUBS			
	Common Lilac	Syringa vulgaris	24"	81	5
	Weigela Carnaval	Weigela Florida 'courtalor'	24"	3	3
	Smooth Sumac	Rhus glabra	24"	21	5
	Tamarisk	Tamarix ramosissima	24"	23	5
	Gray Dogwood	Cornus racemosa	24"	24	5
	Eastern Ninebark	Physocarpus opulifolius	24"	51	5
	Hedge Cotoneaster	Cotoneaster lucida	24"	48	3
		EVERGREEN SHRUBS			
	Pfitzer Juniper	Juniperus chinensis 'Pfitzeriana'	12"-15"	48	5
	Arcadia Juniper	Juniperus sabina 'arcadia'	24"	55	3
	Ware American Arborvitae	Thuja occidentalis "Robusta"	36"	19	5
	Hunnewell Yew	Taxus cuspidata "Expansa"	24"	21	5
	Mugo Pine	Pinus mugo	12"	33	5
		PERENNIALS			
*	Hostas	Hostas 'Royal Standard'	1 gal pot	11	

NOTE: FOR MASS PLANTINGS EXCAVATE ENTIRE BED & BACKFILL W/ PREPARED SOIL.



SHRUB PLANTING DETAIL

NOT TO SCALE



TREE PLANTING DETAIL

NOT TO SCALE

SCALE: 1"= 40'

40' 0 40' 80'

NORTH

CIVIL LANDSCAPE AND RESTORATION PLAN

Excel

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Fond du Lac, WI 54935
920-926-9800
excelengineer.com

PROJECT INFORMATION

PROPOSED MULTI-FAMILY DEVELOPMENT

LUMIN TERRACE

JOHNSON STREET • WATERTOWN, WI

PROFESSIONAL SEAL

PRELIMINARY DATES

OCT. 23, 2024
OCT. 25, 2024
OCT. 30, 2024
NOV. 8, 2024

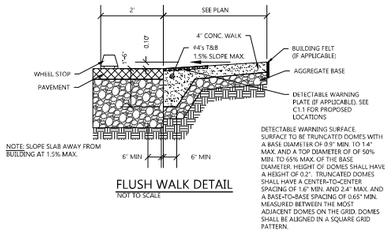
NOT FOR CONSTRUCTION

JOB NUMBER

240136200

SHEET NUMBER

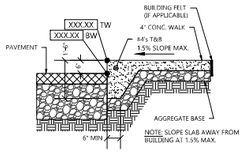
C1.4



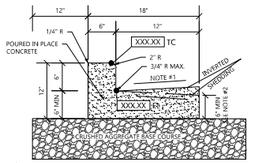
NOTE: SLOPE SLAB AWAY FROM BUILDING AT 1.5% MAX.

DETECTABLE WARNING SURFACE. SURFACE TO BE TRUNCATED DOMES WITH A BASE DIAMETER OF 0.9" MIN. TO 1.4" MAX. AND A TOP DIAMETER OF OF 50% MIN. TO 65% MAX. OF THE BASE DIAMETER. HEIGHT OF DOMES SHALL HAVE A HEIGHT OF 0.2". TRUNCATED DOMES SHALL HAVE A CENTER-TO-CENTER SPACING OF 1.6" MIN. AND 2.4" MAX. AND A BASE-TO-BASE SPACING OF 0.65" MIN. MEASURED BETWEEN THE MOST ADJACENT DOMES ON THE GRID. DOMES SHALL BE ALIGNED IN A SQUARE GRID PATTERN.

FLUSH WALK DETAIL
NOT TO SCALE

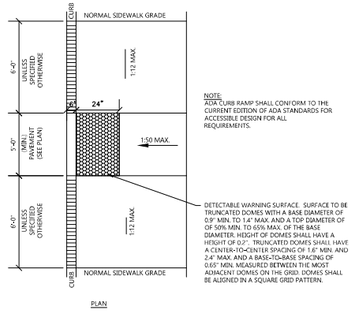


RAISED WALK DETAIL
NOT TO SCALE



NOTE:
1. USE 4% GUTTER CROSS SLOPE UNLESS OTHERWISE NOTED IN THE PLANS.
2. THE BOTTOM OF CURB AND GUTTER MAY BE CONSTRUCTED EITHER LEVEL OR PARALLEL TO THE SLOPE OF THE SUBGRADE OR BASE AGGREGATE PROVIDED A 6" MIN. GUTTER THICKNESS IS MAINTAINED.
3. SEE SITE PLAN & GRADING PLAN FOR INVERTED & SHEDDING CURB LOCATIONS

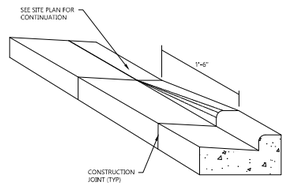
18" CONCRETE CURB & GUTTER DETAIL
NOT TO SCALE



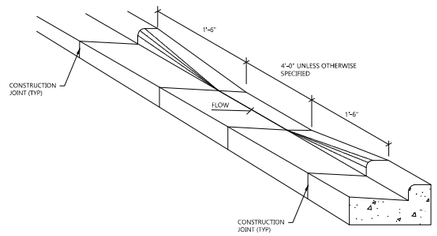
NOTE:
ADA CURB RAMP SHALL CONFORM TO THE CURRENT EDITION OF ADA STANDARDS FOR ACCESSIBLE DESIGN FOR ALL REQUIREMENTS.

DETECTABLE WARNING SURFACE. SURFACE TO BE TRUNCATED DOMES WITH A BASE DIAMETER OF 0.9" MIN. TO 1.4" MAX. AND A TOP DIAMETER OF OF 50% MIN. TO 65% MAX. OF THE BASE DIAMETER. HEIGHT OF DOMES SHALL HAVE A HEIGHT OF 0.2". TRUNCATED DOMES SHALL HAVE A CENTER-TO-CENTER SPACING OF 1.6" MIN. AND 2.4" MAX. AND A BASE-TO-BASE SPACING OF 0.65" MIN. MEASURED BETWEEN THE MOST ADJACENT DOMES ON THE GRID. DOMES SHALL BE ALIGNED IN A SQUARE GRID PATTERN.

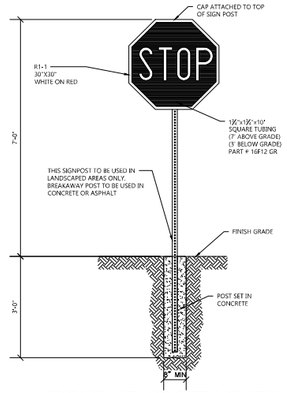
ADA SIDEWALK RAMP DETAIL
NOT TO SCALE



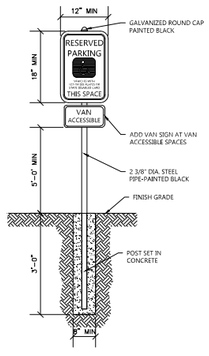
CURB TAPER DETAIL
NOT TO SCALE



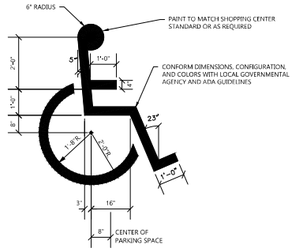
CURB CUT DETAIL
NOT TO SCALE



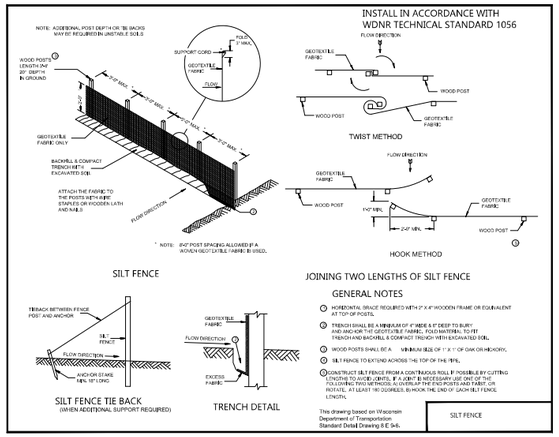
STOP SIGN WITH CONCRETE BASE DETAIL
NOT TO SCALE



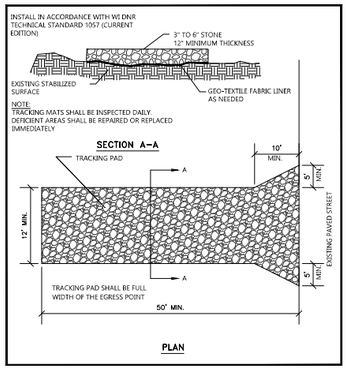
HANDICAP SIGNAGE WITH CONCRETE BASE DETAIL
NOT TO SCALE



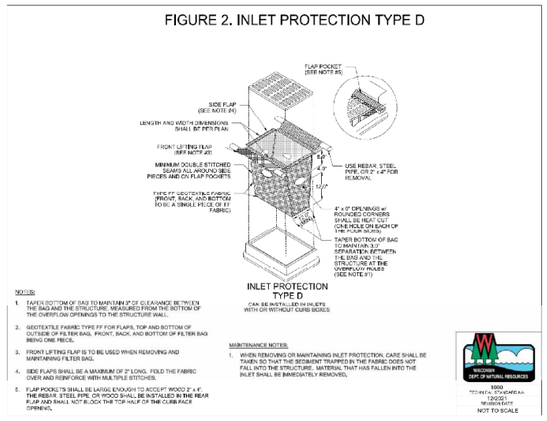
HANDICAP STALL SYMBOL
NOT TO SCALE



SILT FENCE - INSTALLATION DETAIL
NOT TO SCALE

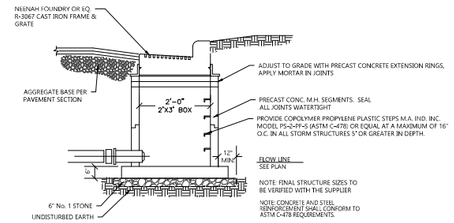


TRACKPAD DETAILS
NOT TO SCALE

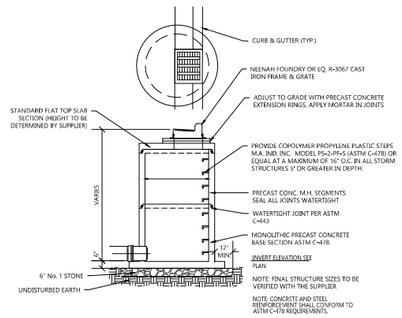


NOT TO SCALE

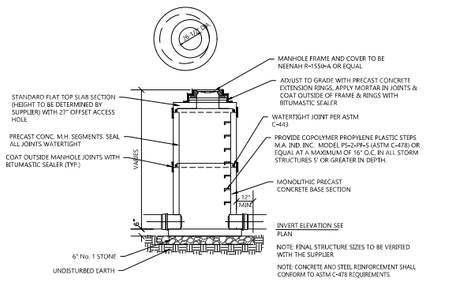
INLET PROTECTION DETAIL
NOT TO SCALE



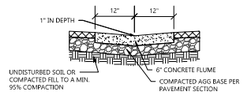
STORM CURB INLET DETAIL
NOT TO SCALE



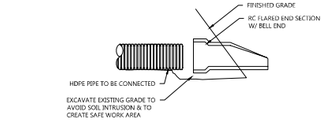
STORM CURB INLET W/ ROUND STRUCTURE DETAIL
NOT TO SCALE

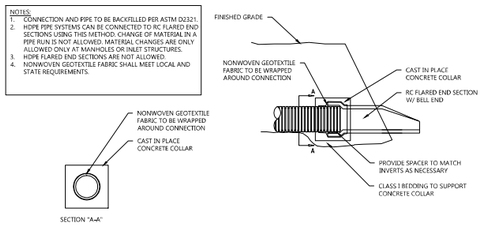


SANITARY MANHOLE DETAIL
NOT TO SCALE



CONCRETE FLUME DETAIL (PAVEMENT)
NOT TO SCALE





CONNECTION DETAIL FOR HDPE PIPE TO RC FLARED END SECTION BELL END
NOT TO SCALE

Excel
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100 Camelot Drive
Fond du Lac, WI 54935
920-926-9800
excelengineer.com

PROJECT INFORMATION

PROPOSED MULTI-FAMILY DEVELOPMENT
LUMIN TERRACE
JOHNSON STREET • WATERTOWN, WI

PROFESSIONAL SEAL

PRELIMINARY DATES
OCT. 23, 2024
OCT. 25, 2024
OCT. 30, 2024
NOV. 8, 2024

NOT FOR CONSTRUCTION

JOB NUMBER
240136200

SHEET NUMBER
C2.0

CIVIL DETAILS

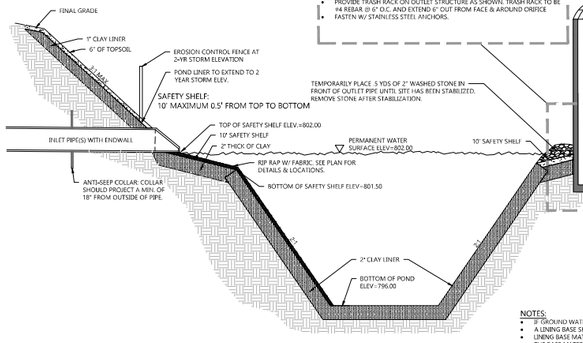
POND LINER CRITERIA FOR SAFETY SHELF AND BELOW (CLAY):

- 50% TIMES (200 SIEVE) OR MORE.
- AN IN-PLACE HYDRAULIC CONDUCTIVITY OF 1x10^{-6} CM./SEC. OR LESS.
- AVERAGE LIQUID LIMIT VALUE OF 16 OR GREATER, WITH NO VALUE LESS THAN 14.
- AVERAGE PI OF 7 OR MORE WITH NO VALUES LESS THAN 5.
- CLAY COMPACTION AND DOCUMENTATION AS SPECIFIED IN NRCS WISCONSIN CONSTRUCTION SPECIFICATION 204, EARTHWORK FOR WASTE STORAGE FACILITIES.
- MINIMUM THICKNESS OF TWO FEET.
- SPECIFY METHOD FOR KEEPING POOL FULL OR USE OF COMPOSITE SOILS BELOW LINER.

POND LINER ALTERNATE:

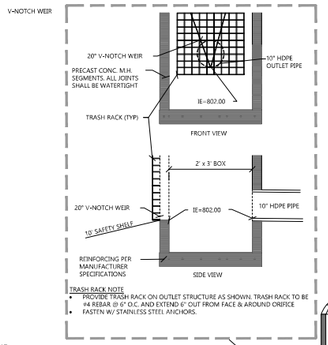
- CONTRACTOR TO PROVIDE 40 MIL/HDPE POND LINER IN LIEU OF CLAY LINER TO LINE ENTIRE POND AREA UP TO THE 2 YEAR, 24-HOUR WATER PONDING ELEVATION (SEE ELEVATION ON DETAIL).
- DESIGN ACCORDING TO THE CRITERIA IN TABLE 3 OF THE NRCS 313, WASTE STORAGE FACILITY TECHNICAL STANDARD
- INSTALL ACCORDING TO NRCS WISCONSIN CONSTRUCTION SPECIFICATION 202, POLYETHYLENE GEOMEMBRANE LINING.

4-6" ROUND STONE OVER FILTER FABRIC SHALL BE PROVIDED TO COVER THE ENTIRE LINER. TOP OF STONE SHALL MATCH PROPOSED POND ELEVATIONS.



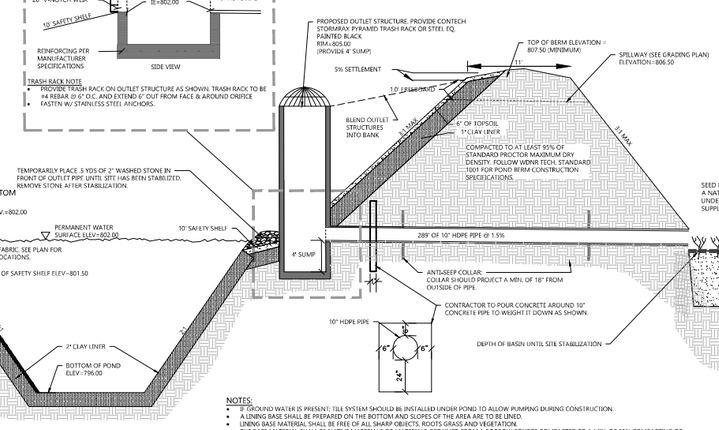
WET RETENTION POND

NOT TO SCALE



TRASH RACK NOTE

- PROVIDE TRASH RACK ON OUTLET STRUCTURE AS SHOWN. TRASH RACK TO BE #4 REBAR @ 6" O.C. AND EXTEND 6" OUT FROM FACE & AROUND ORIFICE
- FASTEN W/ STAINLESS STEEL ANCHORS.

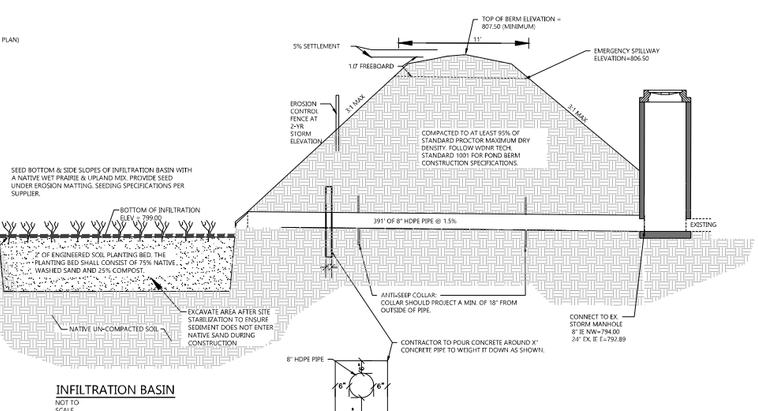


NOTES:

- IF GROUND WATER IS PRESENT, TILE SYSTEM SHOULD BE INSTALLED UNDER POND TO ALLOW PUMPING DURING CONSTRUCTION.
- A LINING BASE SHALL BE PREPARED ON THE BOTTOM AND SLOPES OF THE AREA ARE TO BE LINED.
- LINING BASE MATERIAL SHALL BE FREE OF ALL SHARP OBJECTS, ROOTS GRASS AND VEGETATION.
- THE BASE MATERIAL SHALL BE NATIVE MATERIALS OR MATERIALS OBTAINED FROM A BORROW SOURCE COMPACTED TO A MIN. OF 95% COMPACTING OR AN APPROVED CONSTRUCTION FABRIC.
- THE SUBGRADE SHALL BE PREPARED IMMEDIATELY PRIOR TO THE PLACING OF THE LINER. THE SURFACE ON WHICH THE LINER IS TO BE PLACED IS TO BE FIRM, CLEAN, DRY AND SMOOTH.
- AT END OF SITE CONSTRUCTION, POND DEPTH SHALL BE CHECKED FOR SEDIMENTATION AND DREDGED, IF NECESSARY, TO THE DESIGN DEPTH ORIGINALLY PROPOSED.
- CONTRACTOR SHALL PROVIDE EROSION MATTING AS REQUIRED PER SPECIFICATIONS NOTED ON C0.2.
- CONTRACTOR TO CONTACT EXCEL ENGINEERING TO COMPLETE AN AS-BUILT SURVEY FOLLOWING COMPLETION OF THE CONSTRUCTION OF THE STORMWATER POND. THE SURVEY SHALL BE COMPLETED PRIOR TO THE POND FILLING WITH WATER. CONTRACTOR SHALL GIVE EXCEL ENGINEERING A MINIMUM OF A 3 DAY NOTICE. PLEASE NOTE THAT THE HORIZONTAL TOLERANCE FOR POND CONSTRUCTION IS 0.50' AND THE VERTICAL TOLERANCE FOR POND, OUTLET, AND SPILLWAY CONSTRUCTION IS 0.10'. ANY ADDITIONAL WORK REQUIRED TO SURVEY A POND FULL OF WATER OR FOR SURVEYING FOLLOWING REWORK SHALL BE AT THE CONTRACTOR'S EXPENSE.

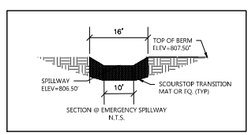
OVERALL STORMWATER FACILITY DETAIL

NOT TO SCALE



INFILTRATION BASIN

NOT TO SCALE



EMERGENCY SPILLWAY DETAIL

NOT TO SCALE

CIVIL DETAILS

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excelengineer.com

PROJECT INFORMATION

PROPOSED MULTI-FAMILY DEVELOPMENT

LUMIN TERRACE

JOHNSON STREET • WATERTOWN, WI

PROFESSIONAL SEAL

PRELIMINARY DATES

OCT. 23, 2024
OCT. 25, 2024
OCT. 30, 2024
NOV. 8, 2024

NOT FOR CONSTRUCTION

JOB NUMBER

240136200

SHEET NUMBER

C2.1

Section 3, Item B.

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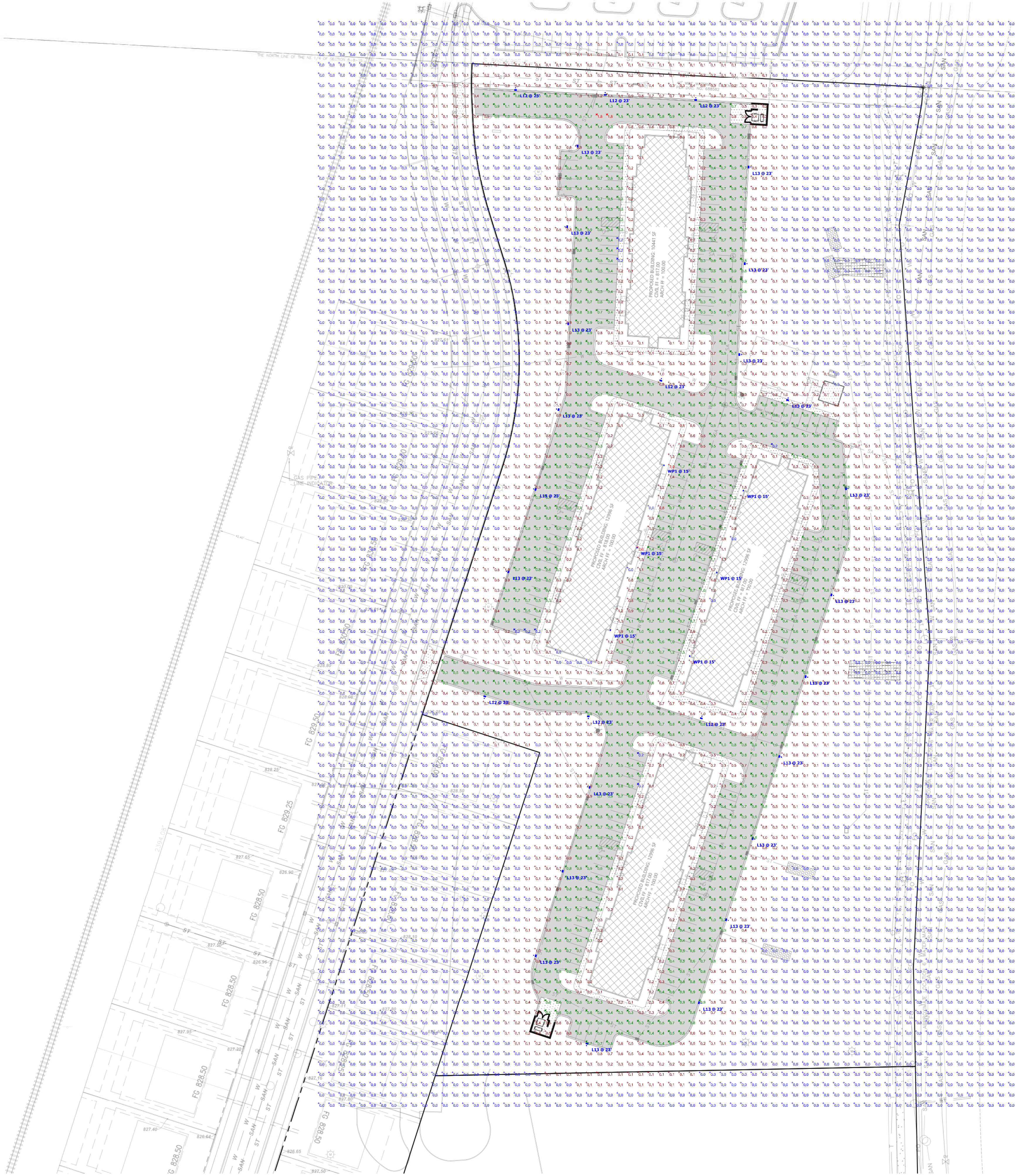
Fond du Lac, WI 54935
920-926-9800
excelengineer.com



Project		Catalog #		Type	
Prepared by		Notes		Date	

Lumark

Prevail Discrete LED

Area / Site Luminaire

Product Features

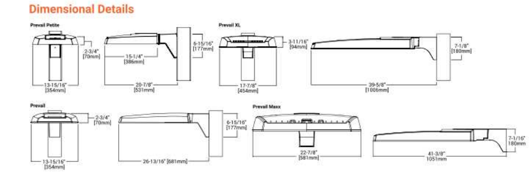
Interactive Menu
- Ordering Information page 2
- Mounting Details page 3, 4
- Optical Configurations page 5
- Product Specifications page 5
- Energy and Performance Data page 6
- Control Options page 8

Product Certifications

Quick Facts
- Direct-mounted discrete light engine for improved optical uniformity and visual comfort
- Lumen packages range from 4,300 - 68,000 nominal lumens (30W - 550W)
- Replaces 70W up to 1,000W HID equivalents
- Efficacies up to 157 lumens per watt
- 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.

COOPER Lighting Solutions

PS500005EN page 1
June 6, 2024 6:54 PM

Schedule

Symbol	Label	Quantity	Catalog Number	Description	Number Lamps	Lumens Per Lamp	Manufacturer	Light Loss Factor	Wattage	Wattage
	L13	21	PRV-P-PA1A-730-U-T3	PREVAIL AREA AND WALL LUMINAIRE (1) 70 CRI, 3000K, 375mA LIGHT ENGINE WITH 24 LEDS AND TYPE III OPTICS	24	169	COOPER LIGHTING SOLUTIONS - LUMARK (FORMERLY EATON)	1	30.7	
	L12	7	PRV-P-PA1A-730-U-T2U	PREVAIL AREA AND WALL LUMINAIRE (1) 70 CRI, 3000K, 375mA LIGHT ENGINE WITH 24 LEDS AND TYPE II U OPTICS	24	171	COOPER LIGHTING SOLUTIONS - LUMARK (FORMERLY EATON)	1	30.7	
	WP1	6	PRV-P-PA1A-730-U-T4W	PREVAIL AREA AND WALL LUMINAIRE (1) 70 CRI, 3000K, 375mA LIGHT ENGINE WITH 24 LEDS AND TYPE IV WIDE OPTICS	24	165	COOPER LIGHTING SOLUTIONS - LUMARK (FORMERLY EATON)	1	30.7	

Statistics

Description	Symbol	Avg	Max	Min	Max/Min	Avg/Min
PARKING LOT	X	0.7 fc	1.8 fc	0.2 fc	9.0:1	3.5:1
Calc Zone #1	+	0.2 fc	2.0 fc	0.0 fc	N/A	N/A

SCALE: 1"= 40'
40' 0 40' 80'
NORTH

CIVIL SITE PHOTOMETRIC PLAN & DETAILS

PROJECT INFORMATION

PROPOSED MULTI-FAMILY DEVELOPMENT
LUMIN TERRACE
JOHNSON STREET • WATERTOWN, WI

PROFESSIONAL SEAL

PRELIMINARY DATES
OCT. 25, 2024
NOV. 8, 2024

NOT FOR CONSTRUCTION

JOB NUMBER
240136200

SHEET NUMBER
C3.1

FRONT ELEVATION
SCALE: 1/8" = 1'-0"

REAR ELEVATION
SCALE: 1/8" = 1'-0"

SIDE ELEVATION
SCALE: 1/8" = 1'-0"

SIDE ELEVATION
SCALE: 1/8" = 1'-0"

EXCEL
Always a Better Plan
100 Camelot Drive
Fond du Lac, WI 54935
920-926-9800
excelengineer.com

PROJECT INFORMATION

PROPOSED MULTI-FAMILY DEVELOPMENT
LUMIN TERRACE
JOHNSON STREET • WATERTOWN, WI

PROFESSIONAL SEAL

PRELIMINARY DATES
OCT. 14, 2024
NOV. 7, 2024

NOT FOR CONSTRUCTION

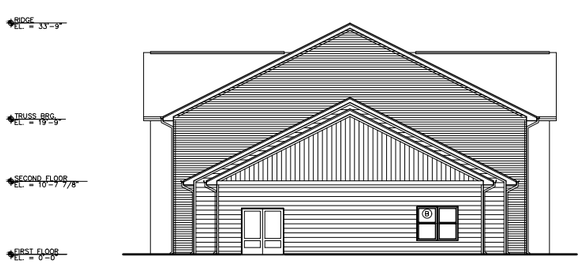
JOB NUMBER
240136200

SHEET NUMBER
A2.0

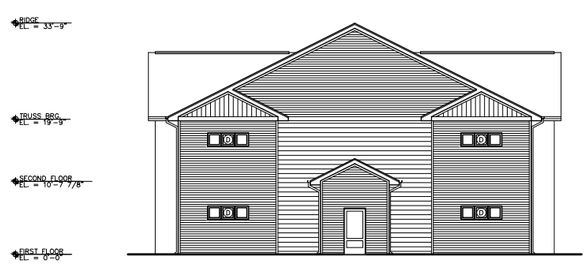
ARCHITECTURAL EXTERIOR ELEVATIONS

FRONT ELEVATION
SCALE: 1/8" = 1'-0"

REAR ELEVATION
SCALE: 1/8" = 1'-0"



SIDE ELEVATION
SCALE: 1/8" = 1'-0"



SIDE ELEVATION
SCALE: 1/8" = 1'-0"

EXCEL
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Fond du Lac, WI 54935
920-926-9800
excelengineer.com

PROJECT INFORMATION

PROPOSED MULTI-FAMILY DEVELOPMENT
LUMIN TERRACE
JOHNSON STREET • WATERTOWN, WI

PROFESSIONAL SEAL

PRELIMINARY DATES
NOV. 7, 2024
NOT FOR CONSTRUCTION

JOB NUMBER
240136200

SHEET NUMBER
A2.1

City of Watertown

City Boundary

Parcels Lines

Address Points

THE CITY OF WATERTOWN
Opportunity runs through it.

N

City of Watertown Geographic Information System

Scale: 1:4,565

SCALE BAR = 1"

Printed on: October 22, 2024

Author:

THE CITY OF WATERTOWN

Site Plan Review Checklist

City of Watertown Procedural Checklist for Site Plan Review and Approval
(Requirements per Section § 550-145)

This form should be used by the Applicant as a guide to submitting a complete application for Site Plan Review *and* by the City to process said application.

I. Step 1 – Pre-submittal staff meeting

☒ 1. Preliminary meeting with the Building, Safety, & Zoning Department.

Building, Safety & Zoning	Engineering
Brian Zirbes Zoning & Floodplain Administrator (920) 262-4041 bzirbes@watertownwi.gov	**Andrew Beyer** City Engineer (920) 262-4050 abeyer@watertownwi.gov

☒ 2. Contacts for other departments (as needed)

Fire	Water & Sanitary	Streets
Tanya Reynen Fire Chief (920) 206-4243 treynen@watertownwi.gov	**Pete Hartz** Water Systems Manager (920) 262-4075 phartz@watertownwi.gov	**Stacy Winkelman** Street Superintendent (920) 262-4080 swinkelman@watertownwi.gov
Police	**Parks**	**City Attorney**
Dave Brower Captain (920) 206-4205 dbrower@watertownwi.gov	**Kristine Butteris** Director (920) 262-8080 kbutteris@watertownwi.gov	**Steven Chesebro** City Attorney (920) 262-4033 schesebro@watertownwi.gov

II. Step 2 – Application Submittal Packet Requirements

☐ **(a) A written description of the intended use describing in reasonable detail the following:**

☒ 1. Existing zoning district(s) (and proposed zoning district(s) if different).
☒ 2. Land us plan map designation(s).
☒ 3. Current land uses present on the subject property
☒ 4. Proposed land uses for the subject property (per Chapter 550, Article IV)
☐ 5. Projected number of residents, employees, and daily customers
☐ 6. Proposed amount of dwelling units, floor area, impervious surface area, and landscape surface area, and resulting density, floor area ratio, impervious surface area ratio, and landscape surface area ratio.
☐ 7. Operational considerations relating to hours of operation, projected normal and peak water usage, sanitary sewer or septic loadings, and traffic generation.
☐ 8. Operational considerations relating to potential nuisance creating pertaining to noncompliance with the performance standards addressed in Article XI: Performance Standards.
☐ 9. If no nuisances will be created (as indicated by complete and continuous compliance with the

THE CITY OF WATERTOWN

Site Plan Review Checklist

provisions of Article XI), then include the statement "The proposed development shall comply with all requirements of Article XI.".

- ☐ 10. Exterior building and fencing materials (Sections § 550-121 & § 550-123).
- ☐ 11. Possible future expansion and related implications for points above.
- ☐ 12. Any other information pertinent to adequate understanding by the Plan Commission of the intended use and its relation to nearby properties.

☒ **(b) A *Small Location Map* at 11" x 17" showing the subject property, all properties within 300 feet, and illustrating its relationship to the nearest street intersection. (A print out from the City's GIS Mapping Tool with the subject property clearing indicated shall suffice to meet this requirement).**

☐ **(c) A Property Site Plan drawing which includes the following:**

- ☒ 1. A title block which indicates the name, address, email, and phone/fax number(s) of the current property owner and/or agent(s) (developers, architect, engineer, planner) for project.
- ☒ 2. The date of the original plan and the latest date of revision to the plan.
- ☒ 3. A north arrow and a graphic scale (not smaller than one-inch equals 100 feet).
- ☐ 4. A reduction of the drawing at 11" x 17".
- ☒ 5. A legal description of the subject property.
- ☒ 6. All property lines and existing and proposed right-of-way lines with bearings and dimensions clearly labeled.
- ☒ 7. All existing and proposed easement lines and dimensions with a key provided and explained on the margins of the plan as to ownership and purpose.
- ☒ 8. All required building setback lines.
- ☒ 9. All existing and proposed buildings, structures, and paved areas, including building entrances, walks, drives, decks, patios, fences utility poles, drainage facilities, and walks.
- ☒ 10. The location and dimensions (cross-section and entry throat) of all access points onto public streets.
- ☒ 11. The location and dimensions of all on-site parking (and off-site parking provisions if they are to be employed), including a summary of the number of parking stalls provided versus required by the Ordinance.
- ☒ 12. The location of all outdoor storage areas and the design of all screening devices.
- ☒ 13. The location, height, design/type, illumination power and orientation of all exterior lighting on the subject property – including the clear demonstration of compliance with Section § 550-110.
- ☒ 14. The location and type of any permanently protected green space areas.
- ☒ 15. The location of existing and proposed drainage facilities.
- ☒ 16. In the legend, data for the subject property on the following:
    a. Lot Area
    b. Floor Area
    c. Floor Area Ratio (b/a)
    d. Impervious Surface Area
    e. Impervious Surface Ratio (d/a)
    f. Building height

☐ **(d) A *Detailed Landscaping Plan* of the subject property:**

- ☒ 1. Scale same as main plan (> or equal to 1" equals 100').
- ☒ 2. Map reduction at 11" x 17".

THE CITY OF WATERTOWN

Site Plan Review Checklist

☒ 3. Showing the location of all required bufferyard and landscaping areas.
☒ 4. Showing existing and proposed Landscape Point fencing.
☒ 5. Showing berm options for meeting said requirements.
☒ 6. Demonstrating complete compliance with the requirement of Article X.
☒ 7. Providing individual plan locations and species, fencing types and heights, and berm heights.

☒ **(e) A *Grading and Erosion Control Plan:***
☒ 1. Scale same as main plan (> or equal to 1" equals 100').
☒ 2. Map reduction at 11" x 17".
☒ 3. Showing existing and proposed grades including retention walls and related devices, and erosion control measures-including the clear demonstration of compliance with Chapter 288, Article I.

☒ **(f) A *Post-Construction Stormwater Control Plan:***
☒ 1. Submit a Post-Construction Stormwater Control Plan compliant with Chapter 288, Article II.

☒ **(g) *Elevation Drawings* of proposed buildings or remodeling of existing buildings:**
☒ 1. Showing finished exterior treatment.
☒ 2. With adequate labels provided to clearly depict exterior materials, texture, color and overall Appearance.
☒ 3. Perspective renderings of the proposed project and/or photos of similar structures may be submitted, but not in lieu of adequate drawings showing the actual intended appearance of the buildings.

III. Final Application Packet Information Submitted to Zoning Administrator

☒ **Submit 1 – 11" x 17" Site Plan Packet (covering items under Part II), 1-Arch D (24" x 36") or Arch E1 (30" x 42") Site Plan Packet (covering items under Part II), and submit an electronic version of the Site Plan Packet (covering items under Part II).**

THE CITY OF WATERTOWN

EROSION CONTROL AND STORM WATER RUNOFF PERMIT APPLICATION

106 JONES STREET
PO BOX 477
WATERTOWN, WI 53094
(920) 262-4060

FOR OFFICE USE ONLY

Permit #_____ Date_____

Permit Effective Date_____

Permit Expires_____

Amount Paid (Calculations on Page 2 of this permit):_____

Payment Method (or Check #)_____

700 Hoffman Drive		
Project Address		
Horizon - Lumin Terrace Multifamily		s.kwiecinski@horizondbm.com
Project Name and Description		**Applicant Email**
Horizon Development Group, Inc.	5201 E Terrace Dr Suite 300, Madison, WI 53718	608-354-0820
Applicant	**Address**	**Phone**
Hoffman Matz LLC	600 E Main St Suite 200, Watertown, WI 53094	920-390-4000
Landowner	**Address**	**Phone**

Proposed:

Redeveloped/Existing Impervious Area= 37,255 Square Feet

New Impervious Area= 144,666 Square Feet

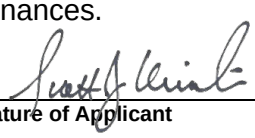
Total Land Disturbance Area= 387,800 Square Feet
(existing pervious or impervious, disturbed this project)

Check All That Applicable:

- [X] Land Disturbing/Erosion Control Permit (Section 288, Article I)
- [X] Storm Water Runoff Control Permit (Section 288, Article II):
  - [X] Plan Submittal Checklist
  - [X] Site and Grading Plan
  - [ ] Financial Guarantee (up to 120% of the estimated cost of construction and maintenance)
  - [X] Storm Water Calculations
  - [X] Maintenance Agreement

I, Scott Kwiecinski , hereby certify that all the information herein and attached hereto is Correct, that I understand the provisions of City of Watertown's Erosion and Sediment Control Ordinance and Program (Section 288, Article I) and/or Storm Water Runoff Control Ordinance and Program (Section 288, Article II), and that I accept responsibility for carrying out, in full compliance with all pertinent City Ordinances, the Erosion and Sediment Control Plan, and the Storm Water Runoff Control Plan for the above-referenced project as approved by the City. I understand that the Permit Application Fee is non-refundable and must be paid at the time of permit submittal.

I further grant the right-of-entry onto this property, as described above, to the designated personnel of the City of Watertown for the purpose of inspecting and monitoring for compliance with the aforesaid Ordinances.



Signature of Applicant

November 7, 2024
Date

Scott Kwiecinski
Print Name

Approved:

City of Watertown Official _____ Date _____

City of Watertown Official _____ Date _____

FEE CALCULATIONS

Erosion Control Plan Review

Total Disturbed Area (this project):	387,800	Square feet x	0.002	$ per Square Foot =	$ 775.60
Total New Impervious Area (this project):	144,666	Square feet x	0.003	$ per Square Foot =	$ 434.00
Total Redeveloped Impervious Area (this project):	37,255	Square feet x	0.0015	$ per Square Foot =	$ 55.88
				Total Erosion Fee =	$ 1,265.48

Storm Water Runoff Control

Total Disturbed Area (this project):	387,800	Square feet x	0.002	$ per Square Foot =	$ 775.60
Total New Impervious Area (this project):	144,666	Square feet x	0.003	$ per Square Foot =	$ 434.00
Total Redeveloped Impervious Area (this project):	37,255	Square feet x	0.0015	$ per Square Foot =	$ 55.88
				Total Storm Water Fee =	$ 1,265.48

Erosion Control Inspections**

- 3,000 Square Feet > 1 Acre: $55 x _____ months site will be disturbed = $ _____
- 1 Acre > 5 Acres: $110 x _____ months site will be disturbed = $ _____
- 5 Acres or more: $165 x 12 months site will be disturbed = $ 1,980.00

Long Term Maintenance Agreement County Recording Fee

$30.00

Base Fee = $125.00

Total Permit Fee (Erosion+Stormwater+Inspection+Recording+Base)= $ 4,665.96

Permit applies for:

- Disturbing or grading more than 3,000 square feet of land
- Excavating and/or filling more than 400 cubic yards of material

**Erosion control inspections completed by a 3rd party consultant may be charged at consultant rates.

THE CITY OF WATERTOWN

Construction Site Erosion Control Inspections

City staff or a consultant conduct erosion control inspections on construction sites to meet Section 2.4.4 of the Wisconsin Department of Natural Resources (WDNR) Municipal Separate Storm Sewer System (MS4) Permit No. WI-S050075-3 and Section § 288.11-1. Inspection. of the City of Watertown (City) Municipal Code.

Per City municipal code § 288-11., Fee Schedule: *The fees referred to in other sections of this article shall be established by the Common Council and may from time to time be modified by resolution. A schedule of the fees established by the Common Council shall be available for review in City Hall. The fee shall cover all City and consultant costs to review the permit application and perform the required site inspections.*

(Single & Two-Family Residential Building Permit sites < 1 acre are exempt from this erosion control inspection and inspection fee requirement. Erosion control on Single & Two-Family Residential Building sites < 1 acre is reviewed, inspected and enforced through the City's Single & Two-Family Residential Building Permit.)

Erosion Control Inspections

Permit-Holders: Any construction site with 3,000 square feet or more of land disturbance within the City is required to obtain an Erosion Control and Stormwater Permit from the City Engineering Department. The Erosion Control and Stormwater Permit requires permit holders to conduct erosion control inspections on their sites:

- Once per week, and
- After every ½-inch rain event

Permit holders are requested to send the weekly and post – ½ inch rain event inspection reports to the City at maureenm@cityofwatertown.org

City Inspectors: City erosion control inspectors also complete erosion control inspections to ensure the sites are in compliance with the Erosion Control and Stormwater Permit and related technical standards. City inspections on conducted:

- Within the 1st two weeks of construction*
- Monthly
    - Weekly if deficiencies are noted on site, until erosion control measures are properly installed and maintained
- Final inspection after construction is done

*Permit holders are requested to notify the City Engineering Department when construction starts on site at 920-262-4060 or maureenm@cityofwatertown.org.

Erosion Control Inspection Fees

An erosion control inspection fee is included with the Erosion Control and Stormwater Permit Fee, to be paid at the time the permit application is submitted. The erosion control inspection fee is calculated based on the following rates** multiplied by the estimated number of months the site will be under construction:

- 3,000 Square Feet > 1 Acre: $55 x _____ months site will be disturbed = $_____
- 1 Acre > 5 Acres: $110 x _____ months site will be disturbed = $_____
- 5 Acres or more: $165 x _____ months site will be disturbed = $_____

Example: a 4.5-acre site that will be under construction from April through October ($110 x 7 months) = $770

**Erosion control inspections completed by a 3rd party consultant may be charged at consultant rates.

The City implements a Construction Site Pollutant Control Program to engage residents, private property owners, developers, engineers and other interested parties in activities with the goal of reducing the amount of pollution from active construction sites that enters local streams, lakes and wetlands. This program is implemented per Section 2.4 of the WDNR MS4 Permit No. WI-S050075-3. The City's Construction Site Stormwater Runoff Program uses permitting, inspections, enforcement and education measures to reduce the amount of Total Suspended Solids (TSS), Total Phosphorus (TP) and other pollutants from reaching the Rock River, Silver Creek, Silver Creek Pond, Lake Victoria, Heiden Pond, and other local tributaries and wetlands through stormwater runoff.

Additional information on Construction Site Stormwater Management and the City's Stormwater Management Program can be found at:

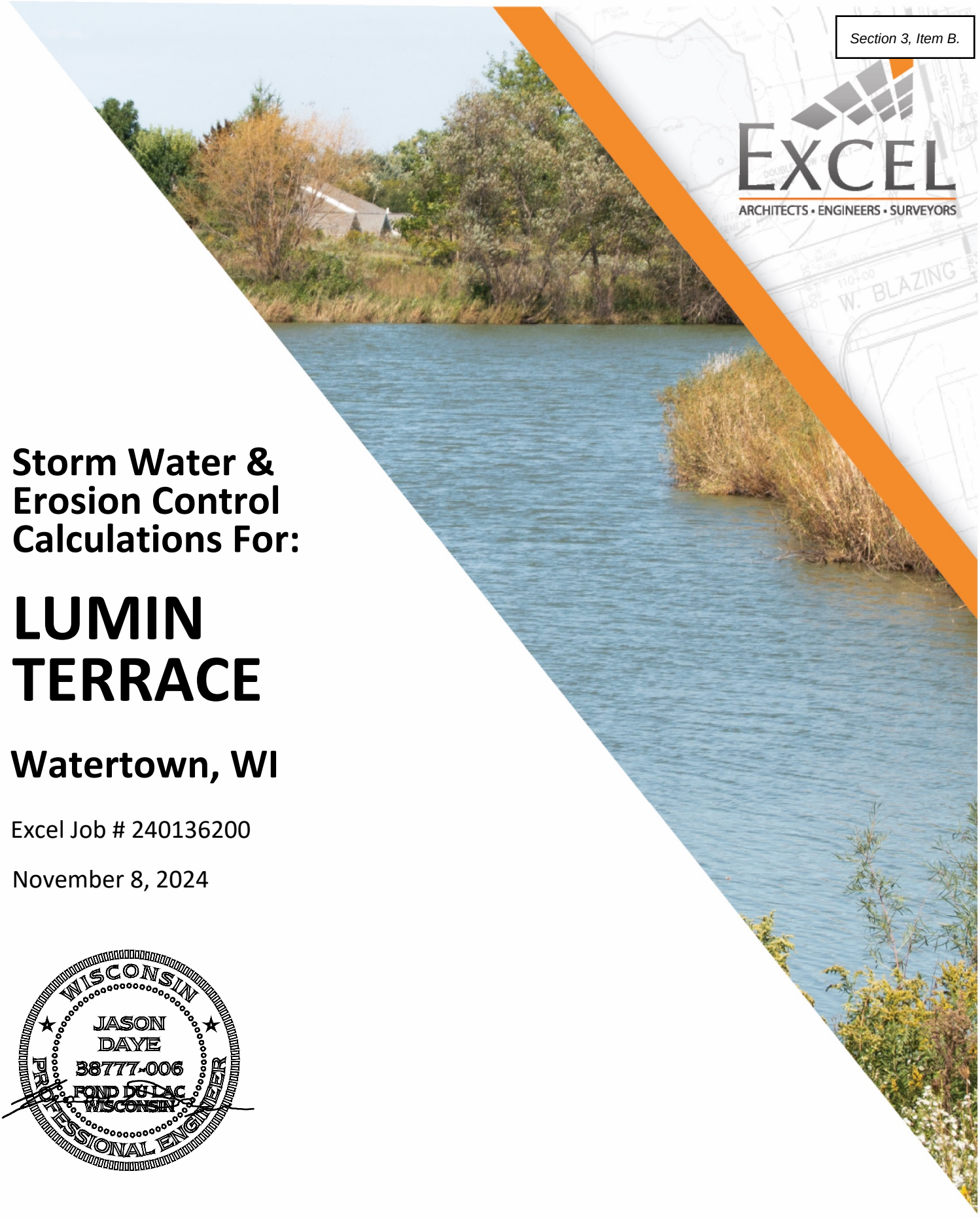
City of Watertown Stormwater Utility:
https://www.ci.watertown.wi.us/departments/stormwater_information.php

Wisconsin Construction Site Erosion Control Field Guide:

https://dnr.wi.gov/topic/stormWater/documents/WIconstECfieldGuide.pdf

Protect WI Waterways:

https://protectwiwaterways.org/learn-about-stormwater/construction-and-stormwater/



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Storm Water & Erosion Control Calculations For:

LUMIN TERRACE

Watertown, WI

Excel Job # 240136200

November 8, 2024

WISCONSIN
JASON DAYE
38777-006
FOND DU LAC WISCONSIN
PROFESSIONAL ENGINEER

Prepared by Excel Engineering
100 Camelot Drive • Fond du Lac, WI 54935
920-926-9800 • www.excelengineer.com

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Appendices

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Appendix B: Post Development Basin Area(s)
Appendix C: Peak Discharge Calculations
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0.0 Introduction

0.1 Existing Conditions

The proposed development is located on the east side of Johnson Street in the city of Watertown, Wisconsin. The project site is bound by Johson Street to the west, Hoffman Road to the east, proposed development to the north, and vacant land to the south. The existing site currently contains trees. The site currently drains to the east to Hoffman Road. The existing site can be seen in Appendix A.

- Property Area: 9.33 acres

0.2 Proposed Project Overview

The proposed project will include four proposed buildings with parking located primarily east and west of the proposed buildings. The proposed development will drain to inlets that will drain stormwater east to a proposed wet pond and infiltration basin. The stormwater management pond and infiltration basin will reduce peak flows and treat stormwater to meet local and state requirements. The wet pond will drain into an infiltration basin to meet local and state infiltration requirements. The proposed site can be seen in Appendix B.

- Disturbed Area: 8.90 acres

1.0 Design Criteria

1.1 Soils

Soil characteristics were determined using the web soil survey. See Table 1 for a summary of the soils and hydrologic ratings indicated by the web soil survey and Appendix D for web soil survey map.

Table 1: Web Soil Survey

MAP SYMBOL	SOIL TYPE	HYDROLOGIC RATING
Gtb	Grellton fine sandy loam	B
RtB	Rotamer loam	B
SoB	Sisson fine sandy loam	B

Soil borings were completed for the project site. The boring logs can be seen in Appendix E.

1.2 Rainfall Data

NOAA Atlas 14, city of Watertown rainfall depths with a MSE 3 distribution was used for stormwater calculations.

Table 2: NOAA Atlas 14 24-hour Rainfall Depth

DESIGN STORM	RAINFALL DEPTH (INCHES)
1-YEAR	2.42
2-YEAR	2.73
100-YEAR	6.19

2.0 Stormwater Management Requirements

2.1 Peak Discharge

City of Watertown- Maintain or reduce the 1-yr and 100-yr, 24 hour post development peak runoff discharge rates to the 1-yr, and 2-yr, 24 hour pre development peak runoff discharge rates respectively.

Wisconsin DNR- Maintain or reduce the 1-yr and 2-yr, 24 hour post development peak runoff discharge rates to the 1-yr and 2-yr, 24 hour predevelopment peak runoff discharge rates respectively.

A wet pond will be used to reduce peak flows to predevelopment flows.

Table 3: Runoff Summary

	PREDEVELOPMENT	POST DEVELOPMENT			
DESIGN STORM	**Peak Discharge (cfs)**	**To Pond (cfs)**	**Offsite (cfs)**	**Infiltration Basin discharge (cfs)**	Peak Discharge (To Pond + Offsite) (cfs)
1YR-24 HR	**2.99**	16.89	0.60	0.87	0.89
2YR-24 HR	**4.16**	20.36	0.68	1.04	1.08
100YR-24HR	**21.64**	60.47	1.56	1.25	2.57

Table 4: Wet Pond Summary

DESIGN STORM	POND RELEASE RATE (CFS)	STORAGE VOLUME (C.F.)	MAXIMUM ELEVATION (FT)
1YR-24 HR	0.98	21,311	803.34
2YR-24 HR	1.40	25,146	803.54
100YR-24HR	2.12	90,528	806.42

Table 5: 100yr-24hr storm pond summary

POND	EMERGENCY SPILLWAY ELEVATION (FT)	CALCULATED POND ELEVATION (FT)	POND DISCHARGE IN (CFS)	DISCHARGE EXIT POINT
WET	806.50	806.42	2.12	INFILTRATION BASIN
INFIL	806.50	804.90	1.25	STORM SEWER

Table 6: Peak Discharge Release Summary

DESIGN STORM	PREDEVELOPMENT (CFS)	POST DEVELOPMENT (CFS)
1 YR- 24 HR	**2.99**	0.89
2 YR- 24 HR	**4.16**	1.08
100 YR- 24 HR	**21.64**	2.57

Table 6 shows that post development release rates will be less than predevelopment release rates for all design storms. See sheet C1.3 and C2.0 of the construction plans for pond design and Appendix C for peak discharge calculations.

Therefore, peak discharge requirements are met.

2.2 Stormwater Quality

Wisconsin DNR and city of Watertown- The site is considered a new development project and will be required to remove 80% of total suspended solids (TSS) from site runoff.

The site will treat stormwater using a wet pond and infiltration basin. SLAMM analysis was used to determine the quantity of suspended solids that will be removed by the proposed wet pond and infiltration basin. The proposed site will create 2,423 lbs of TSS and the proposed wet pond and infiltration basin will reduce TSS to 252 lbs, which results in a 89.60% reduction in TSS release.

The proposed wet pond removes 89.60% of suspended solids which is greater than the required 80%.

Therefore, stormwater quality requirements have been met.

2.3 Infiltration

City of Watertown and Wisconsin DNR- Infiltrate sufficient runoff volume so that the post-development infiltration volume shall be at least 75% of the pre-development infiltration

volume, based on an average annual rainfall. However, no more than 2% of the post-construction site is required as an effective infiltration area.

The proposed development will be 387,800 sf, which means that a maximum 7,756 sf of area will be required for infiltration onsite. The proposed soils are classified as silt and have an estimated infiltration rate of 0.50 in/hr respectively per the Wisconsin DNR evaluation for infiltration standard (1002). Since the basin must empty within 24 hrs after the storm the basin be 12" deep (0.5 in/hr * 24 hr= 12 in).

There is one infiltration basin proposed onsite. The infiltration basin will be downstream of the proposed wet pond. The basin will be 15,000 sf and 12" deep.

Therefore, Infiltration requirements are met.

3.0 Storm Sewer Design

All storm sewer has been designed to convey the 100-year 24-hour post development storm.

See Appendix F, Appendix G, and Appendix H for pipe drainage areas and pipe sizing calculations.

3.1 Emergency Overflow Route

The emergency overflow route is to the east, over the curb and gutter. Maximum ponding onsite will be 9" in drive aisles and 6" in parking stalls.

4.0 Erosion Control

The erosion control specifications, construction sequence, site stabilization notes, seeding notes, dewatering notes, and post construction and maintenance plan will be included on sheet C0.2 of the construction plan set.

Appendix A: Pre-Development Basin Area(s)

Section 3, Item B.

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PROJECT INFORMATION

PROPOSED MULTI-FAMILY DEVELOPMENT
LUMIN TERRACE
JOHNSON STREET ● WATERTOWN, WI

PROFESSIONAL SEAL

PRELIMINARY DATES

NOT FOR CONSTRUCTION

JOB NUMBER
240136200

SHEET NUMBER
PRE

58

PRE BASIN	TOTAL (SF)	TOTAL (AC)	BLDG (SF)	BLDG (AC)	PAVEMENT (SF)	PAVEMENT (AC)	OPEN (SF)	OPEN (AC)
A	373,688	8.58	0	0.00	37,397	0.86	336,531	7.72

Appendix B: Post Development Basin Area(s)

POST BASIN	TOTAL (SF)	TOTAL (AC)	BLDG (SF)	BLDG (AC)	PAVEMENT (SF)	PAVEMENT (AC)	OPEN (SF)	OPEN (AC)
A	312,698	7.18	49,429	1.13	124,161	2.85	139,108	3.19
B	20,550	0.47	8,643	0.20	0	0.00	11,907	0.27
C	32,761	0.75	0	0.00	583	0.01	32,178	0.74
D	7,629	0.18	0	0.00	7,629	0.18	0	0.00

SCALE: 1" = 40'

NORTH

POST DEVELOPMENT BASIN AREAS

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920-926-9800
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PROJECT INFORMATION

PROPOSED MULTI-FAMILY DEVELOPMENT

LUMIN TERRACE

JOHNSON STREET • WATERTOWN, WI

PROFESSIONAL SEAL

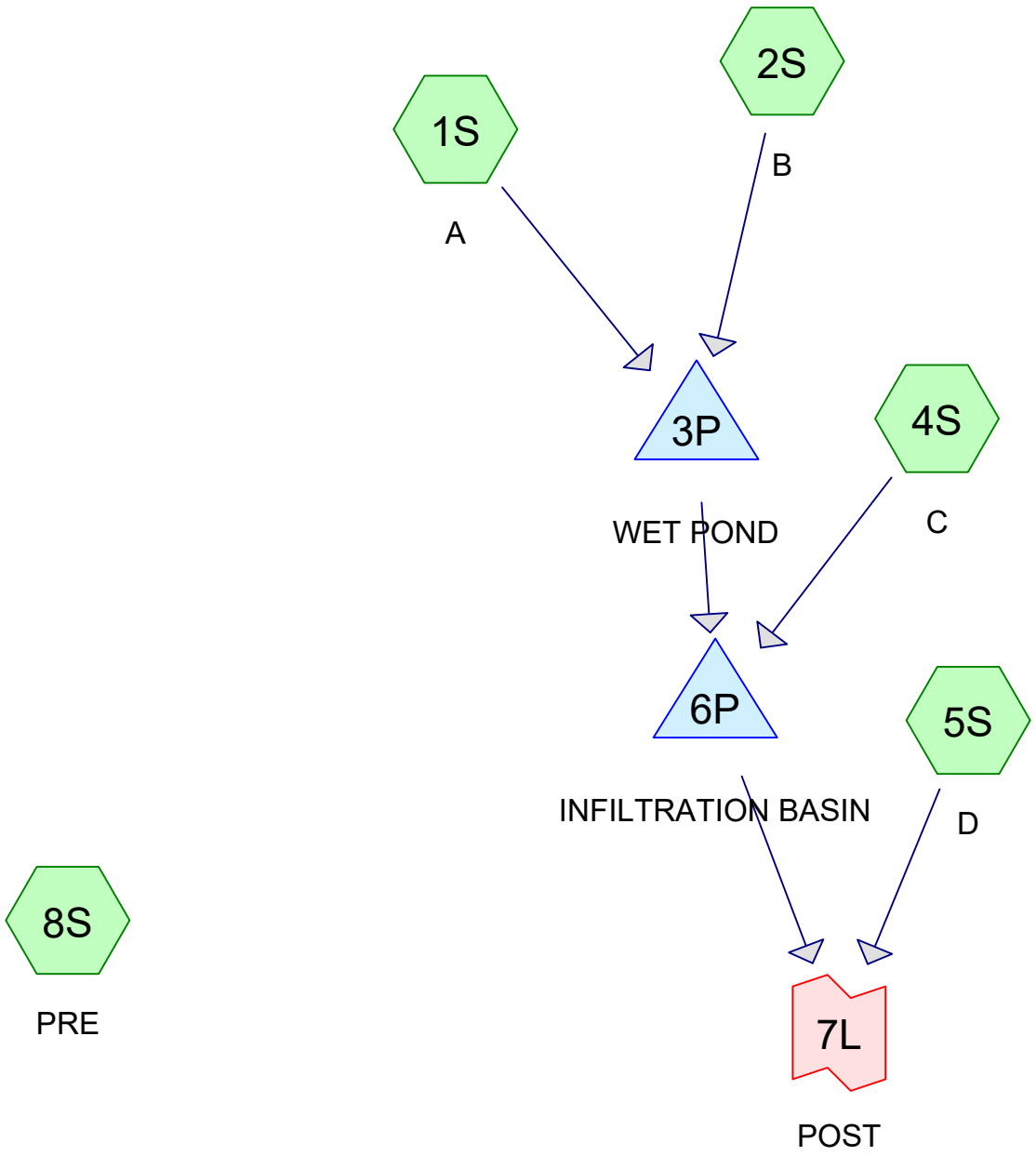
PRELIMINARY DATES

NOT FOR CONSTRUCTION

JOB NUMBER
240136200

SHEET NUMBER
C1.2

Appendix C: Peak Discharge Calculations



Subcat Reach Pond Link

Routing Diagram for hydrocad240136200
Prepared by Excel Engineering, Printed 10/29/2024
HydroCAD® 10.20-4a s/n 01178 © 2023 HydroCAD Software Solutions LLC

Area Listing (selected nodes)

Area (acres)	CN	Description (subcatchment-numbers)
5.228	98	(1S, 2S, 4S, 5S, 8S)
0.273	74	(2S)
7.721	70	(8S)
4.002	74	>75% Grass cover, Good, HSG C (1S, 4S)

Soil Listing (selected nodes)

Area (acres)	Soil Group	Subcatchment Numbers
0.000	HSG A	
0.000	HSG B	
4.002	HSG C	1S, 4S
0.000	HSG D	
13.223	Other	1S, 2S, 4S, 5S, 8S

Ground Covers (selected nodes)

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchment Numbers
0.000	0.000	0.000	0.000	13.223	13.223		1S, 2S, 4S, 5S, 8S
0.000	0.000	4.002	0.000	0.000	4.002	>75% Grass cover, Good	1S, 4S

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

Subcatchment1S: A Runoff Area=312,698 sf 55.51% Impervious Runoff Depth>1.19"
Tc=6.0 min CN=87 Runoff=15.99 cfs 0.712 af

Subcatchment2S: B Runoff Area=20,550 sf 42.06% Impervious Runoff Depth>1.00"
Tc=6.0 min CN=84 Runoff=0.89 cfs 0.040 af

Subcatchment4S: C Runoff Area=35,816 sf 1.63% Impervious Runoff Depth>0.53"
Tc=0.0 min CN=74 Runoff=0.92 cfs 0.036 af

Subcatchment5S: D Runoff Area=7,629 sf 100.00% Impervious Runoff Depth>2.12"
Tc=6.0 min CN=98 Runoff=0.60 cfs 0.031 af

Subcatchment8S: PRE Runoff Area=373,638 sf 9.98% Impervious Runoff Depth>0.48"
Flow Length=433' Slope=0.0600 '/' Tc=37.9 min CN=73 Runoff=2.99 cfs 0.346 af

Pond 3P: WET POND Peak Elev=803.34' Storage=21,311 cf Inflow=16.89 cfs 0.752 af
Outflow=0.98 cfs 0.436 af

Pond 6P: INFILTRATIONBASIN Peak Elev=800.66' Storage=2,864 cf Inflow=1.05 cfs 0.472 af
Discarded=0.05 cfs 0.035 af Primary=0.87 cfs 0.400 af Outflow=0.93 cfs 0.435 af

Link 7L: POST Inflow=0.89 cfs 0.431 af
Primary=0.89 cfs 0.431 af

Summary for Subcatchment 1S: A

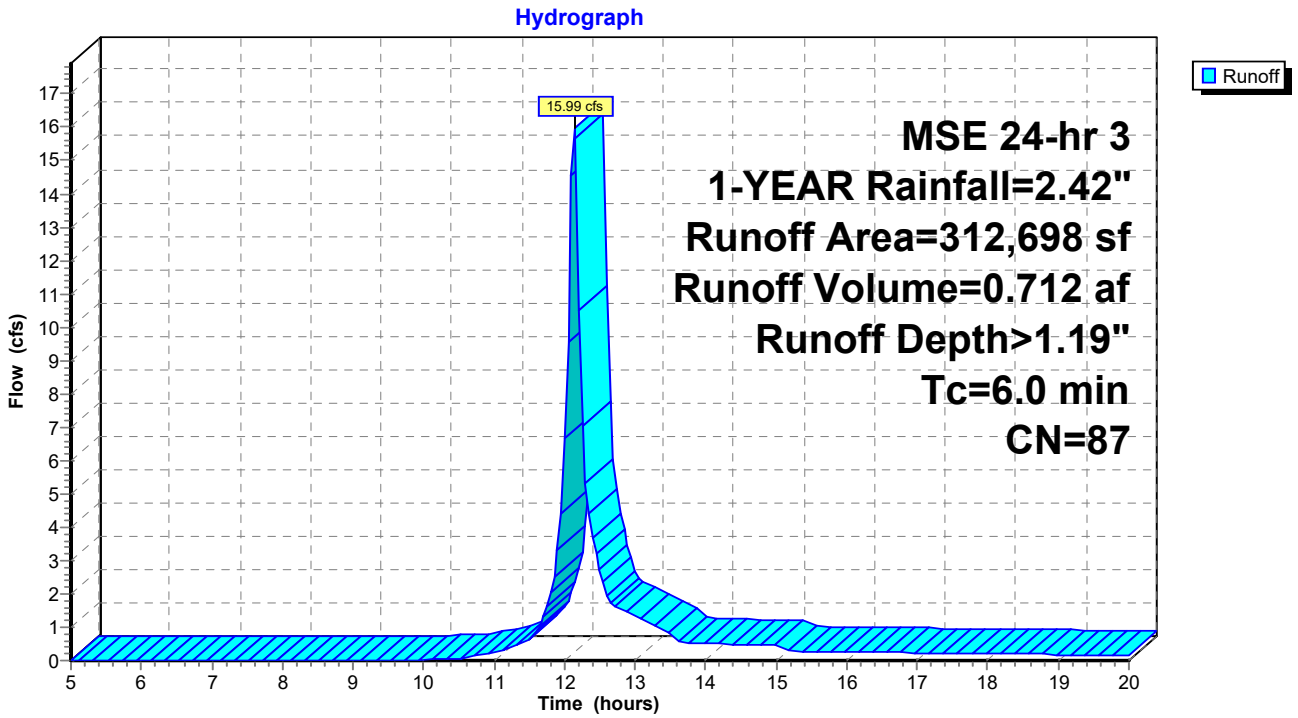
Runoff = 15.99 cfs @ 12.13 hrs, Volume= 0.712 af, Depth> 1.19"
Routed to Pond 3P : WET POND

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
MSE 24-hr 3 1-YEAR Rainfall=2.42"

	Area (sf)	CN	Description
*	49,429	98	
*	124,161	98	
	139,108	74	>75% Grass cover, Good, HSG C
	312,698	87	Weighted Average
	139,108		44.49% Pervious Area
	173,590		55.51% Impervious Area

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

Subcatchment 1S: A



Summary for Subcatchment 2S: B

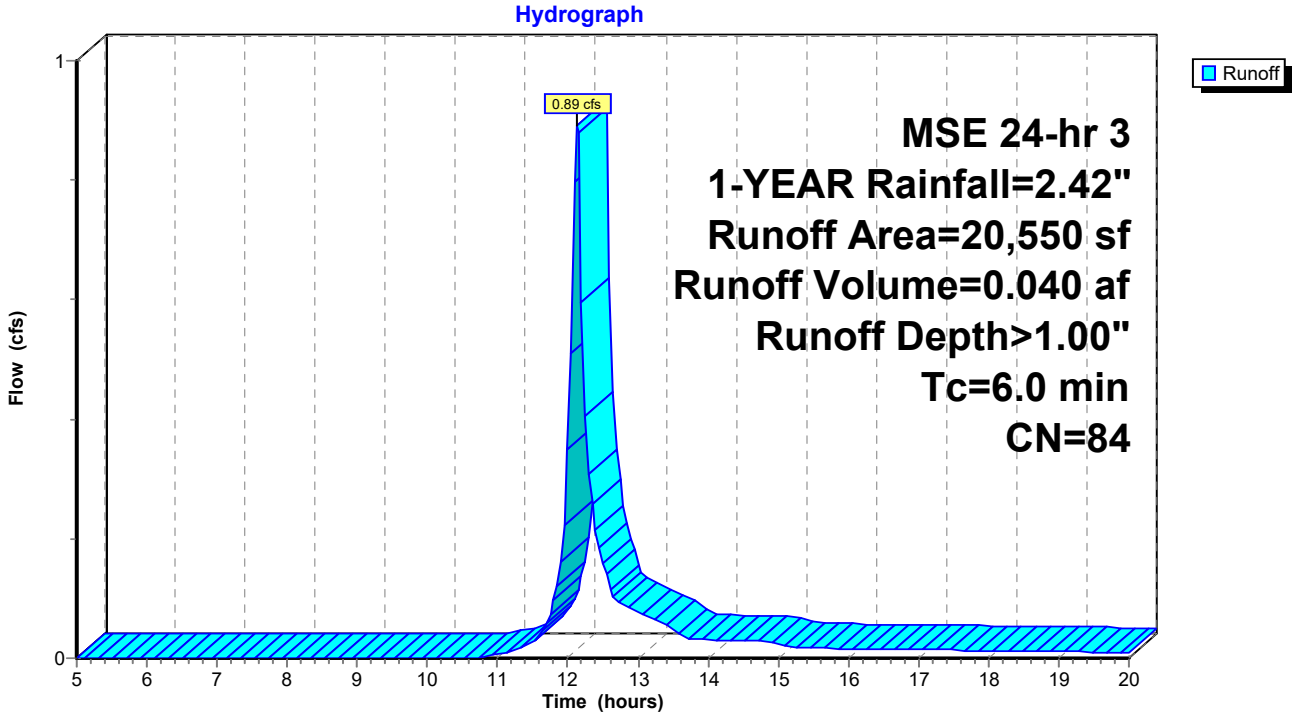
Runoff = 0.89 cfs @ 12.14 hrs, Volume= 0.040 af, Depth> 1.00"
Routed to Pond 3P : WET POND

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
MSE 24-hr 3 1-YEAR Rainfall=2.42"

	Area (sf)	CN	Description
*	8,643	98	
*	11,907	74	
	20,550	84	Weighted Average
	11,907		57.94% Pervious Area
	8,643		42.06% Impervious Area

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

Subcatchment 2S: B



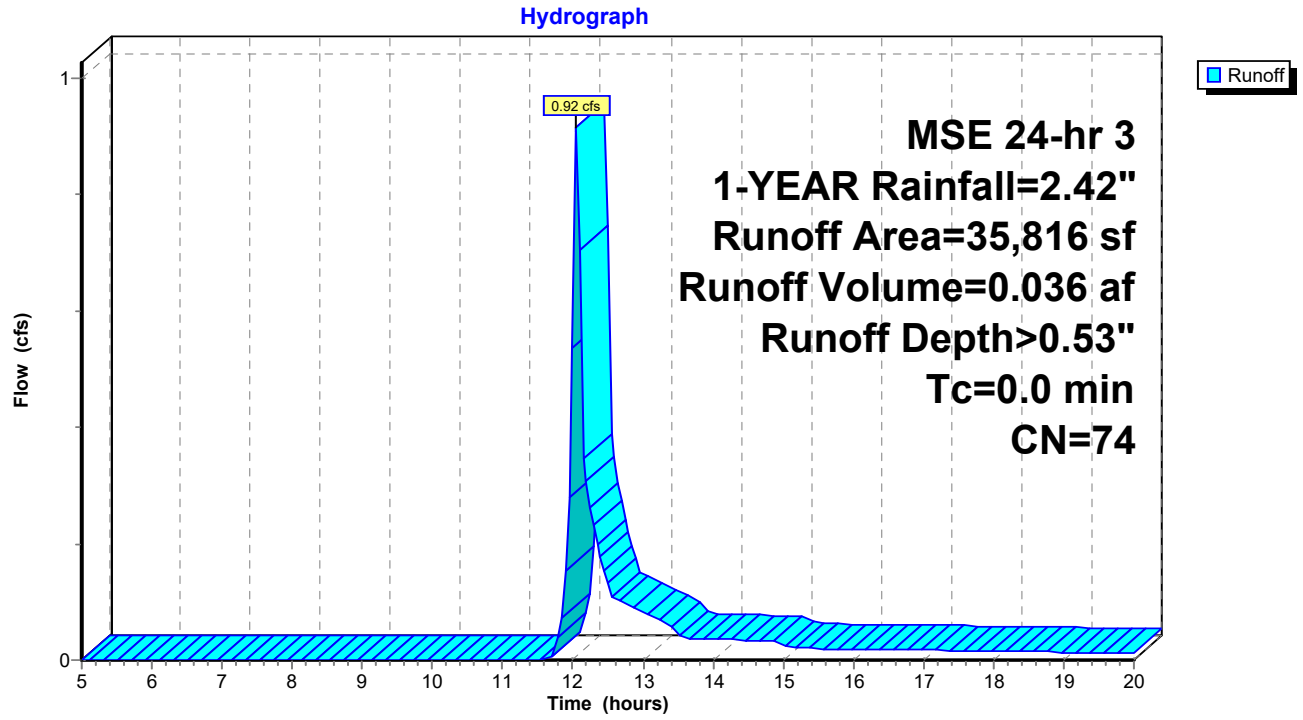
Summary for Subcatchment 4S: C

Runoff = 0.92 cfs @ 12.06 hrs, Volume= 0.036 af, Depth> 0.53"
Routed to Pond 6P : INFILTRATION BASIN

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
MSE 24-hr 3 1-YEAR Rainfall=2.42"

	Area (sf)	CN	Description
*	583	98	
	35,233	74	>75% Grass cover, Good, HSG C
	35,816	74	Weighted Average
	35,233		98.37% Pervious Area
	583		1.63% Impervious Area

Subcatchment 4S: C



Summary for Subcatchment 5S: D

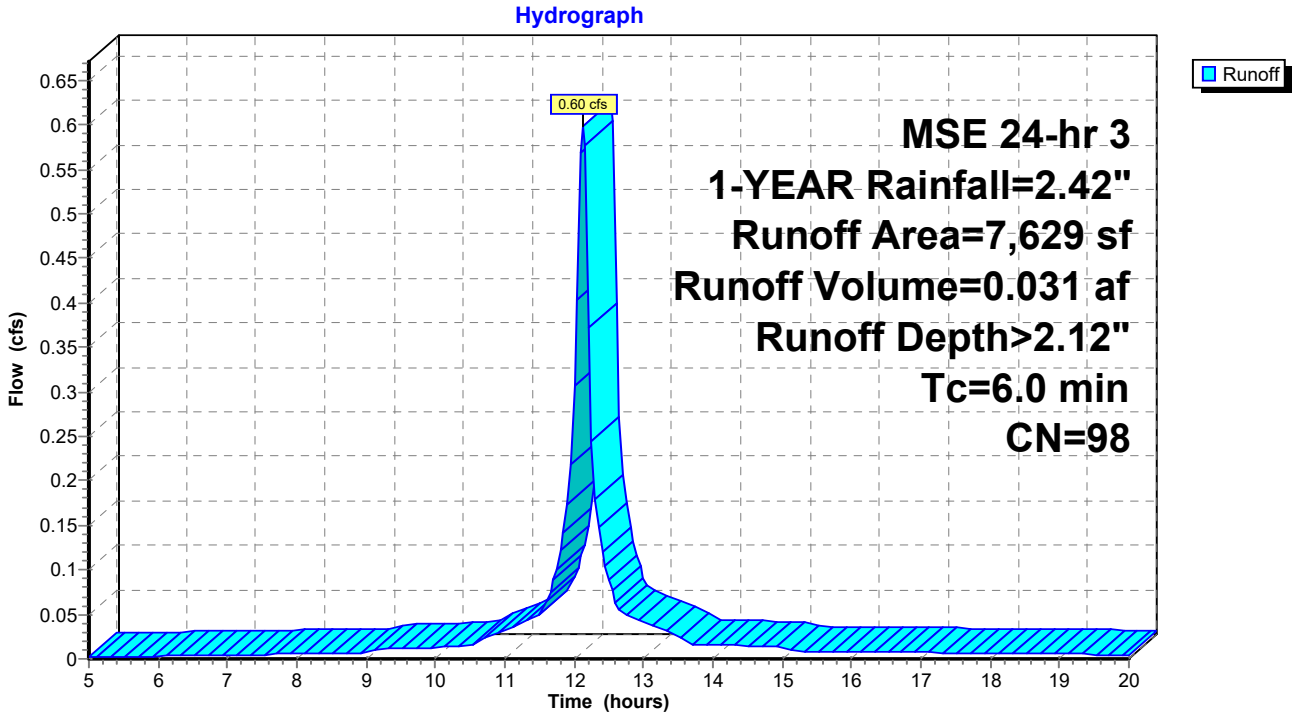
Runoff = 0.60 cfs @ 12.13 hrs, Volume= 0.031 af, Depth> 2.12"
Routed to Link 7L : POST

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
MSE 24-hr 3 1-YEAR Rainfall=2.42"

	Area (sf)	CN	Description
*	7,629	98	
	7,629		100.00% Impervious Area

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

Subcatchment 5S: D



Summary for Subcatchment 8S: PRE

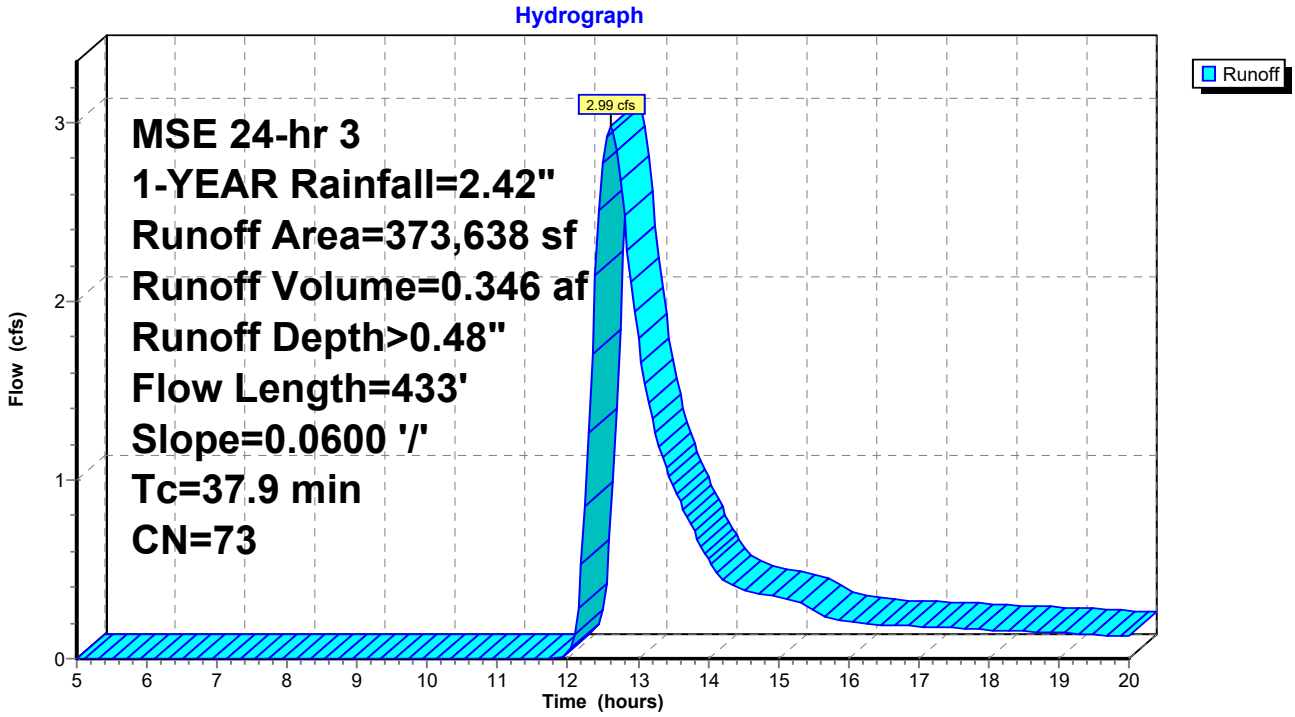
Runoff = 2.99 cfs @ 12.61 hrs, Volume= 0.346 af, Depth> 0.48"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
MSE 24-hr 3 1-YEAR Rainfall=2.42"

	Area (sf)	CN	Description
*	336,331	70	
*	37,307	98	
	373,638	73	Weighted Average
	336,331		90.02% Pervious Area
	37,307		9.98% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
36.1	300	0.0600	0.14		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 2.73"
1.8	133	0.0600	1.22		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
37.9	433	Total			

Subcatchment 8S: PRE



Summary for Pond 3P: WET POND

Inflow Area = 7.650 ac, 54.68% Impervious, Inflow Depth > 1.18" for 1-YEAR event
Inflow = 16.89 cfs @ 12.13 hrs, Volume= 0.752 af
Outflow = 0.98 cfs @ 13.41 hrs, Volume= 0.436 af, Atten= 94%, Lag= 76.6 min
Primary = 0.98 cfs @ 13.41 hrs, Volume= 0.436 af
Routed to Pond 6P : INFILTRATION BASIN

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 803.34' @ 13.41 hrs Surf.Area= 18,345 sf Storage= 21,311 cf

Plug-Flow detention time= 207.2 min calculated for 0.436 af (58% of inflow)
Center-of-Mass det. time= 145.1 min (929.4 - 784.3)

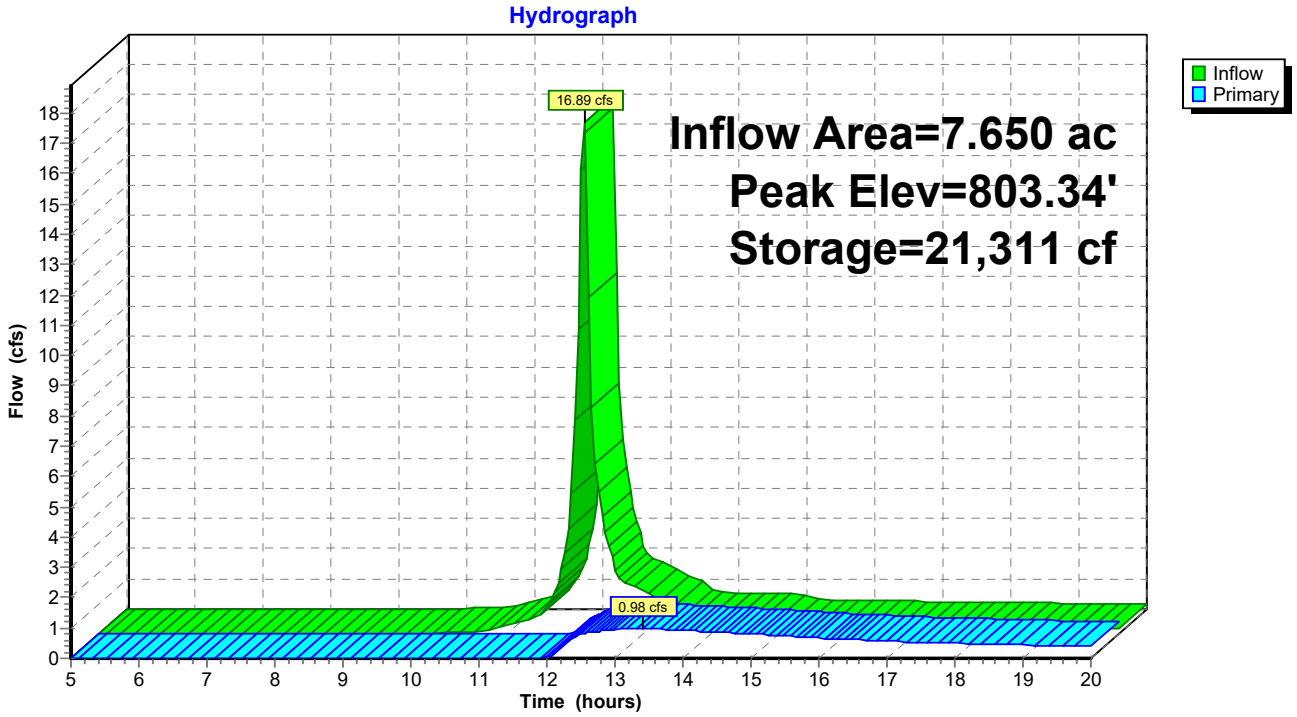
Volume	Invert	Avail.Storage	Storage Description
#1	802.00'	120,650 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
802.00	13,000	0	0
803.00	17,500	15,250	15,250
804.00	20,000	18,750	34,000
805.00	22,900	21,450	55,450
806.00	25,500	24,200	79,650
807.00	28,000	26,750	106,400
807.50	29,000	14,250	120,650

Device	Routing	Invert	Outlet Devices
#1	Primary	802.00'	**10.0" Round Culvert** L= 546.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 802.00' / 800.00' S= 0.0037 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.55 sf
#2	Device 1	802.00'	**20.0 deg Sharp-Crested Vee/Trap Weir** Cv= 2.69 (C= 3.36)
#3	Primary	806.50'	**10.0' long x 10.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64
#4	Device 1	805.00'	**24.0" x 36.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.98 cfs @ 13.41 hrs HW=803.34' (Free Discharge)
- **1=Culvert** (Passes 0.98 cfs of 1.42 cfs potential flow)
  - **2=Sharp-Crested Vee/Trap Weir** (Weir Controls 0.98 cfs @ 3.11 fps)
  - **4=Orifice/Grate** (Controls 0.00 cfs)
- **3=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond 3P: WET POND



Summary for Pond 6P: INFILTRATION BASIN

Inflow Area = 8.473 ac, 49.54% Impervious, Inflow Depth > 0.67" for 1-YEAR event
Inflow = 1.05 cfs @ 13.25 hrs, Volume= 0.472 af
Outflow = 0.93 cfs @ 14.24 hrs, Volume= 0.435 af, Atten= 12%, Lag= 59.9 min
Discarded = 0.05 cfs @ 14.24 hrs, Volume= 0.035 af
Primary = 0.87 cfs @ 14.24 hrs, Volume= 0.400 af
Routed to Link 7L : POST

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 800.66' @ 14.24 hrs Surf.Area= 4,661 sf Storage= 2,864 cf

Plug-Flow detention time= 52.2 min calculated for 0.433 af (92% of inflow)
Center-of-Mass det. time= 31.0 min (951.1 - 920.1)

Volume	Invert	Avail.Storage	Storage Description
#1	800.00'	62,850 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

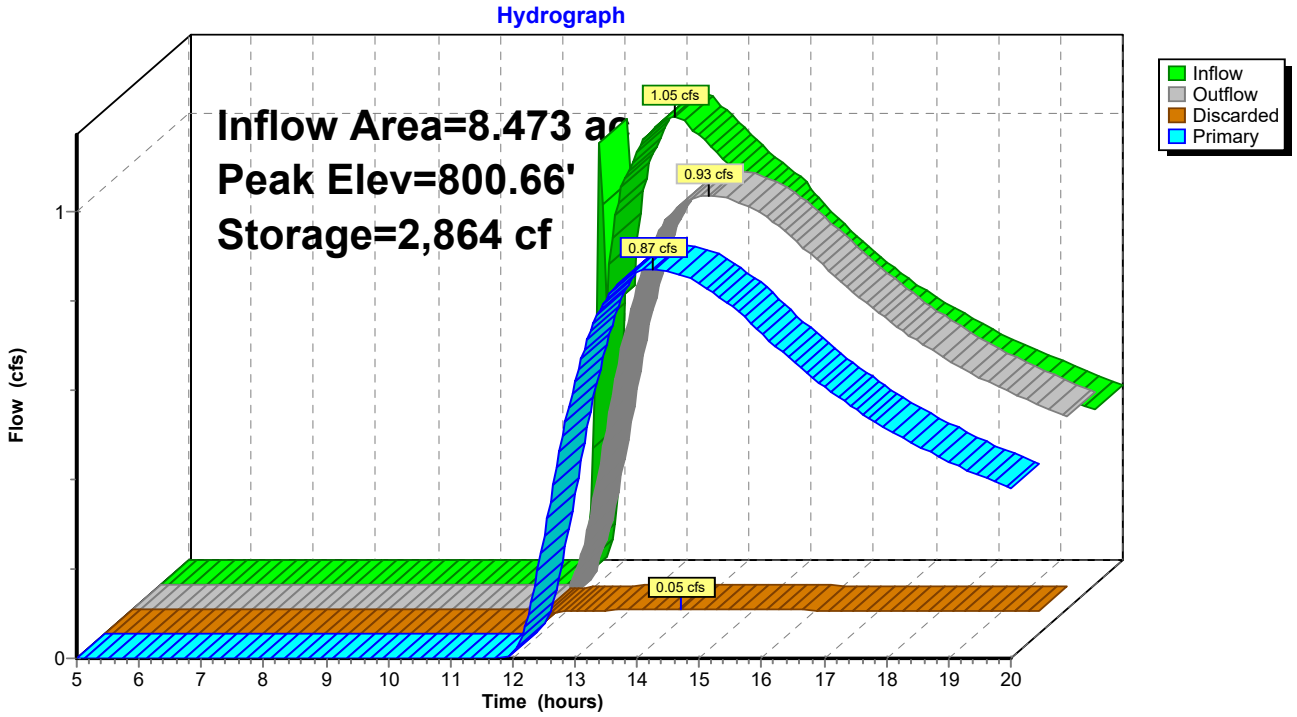
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
800.00	4,000	0	0
801.00	5,000	4,500	4,500
802.00	6,100	5,550	10,050
803.00	7,500	6,800	16,850
804.00	8,500	8,000	24,850
805.00	10,000	9,250	34,100
806.00	11,000	10,500	44,600
807.00	12,500	11,750	56,350
807.50	13,500	6,500	62,850

Device	Routing	Invert	Outlet Devices
#1	Primary	800.00'	**8.0" Round Culvert** L= 391.0' CMP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 800.00' / 794.00' S= 0.0153 '/' Cc= 0.900 n= 0.020 Corrugated PE, corrugated interior, Flow Area= 0.35 sf
#2	Primary	806.50'	**10.0' long x 10.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64
#3	Discarded	800.00'	**0.500 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 700.00'

Discarded OutFlow Max=0.05 cfs @ 14.24 hrs HW=800.66' (Free Discharge)
└**3=Exfiltration** (Controls 0.05 cfs)

Primary OutFlow Max=0.87 cfs @ 14.24 hrs HW=800.66' (Free Discharge)
└**1=Culvert** (Barrel Controls 0.87 cfs @ 3.13 fps)
└**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond 6P: INFILTRATION BASIN

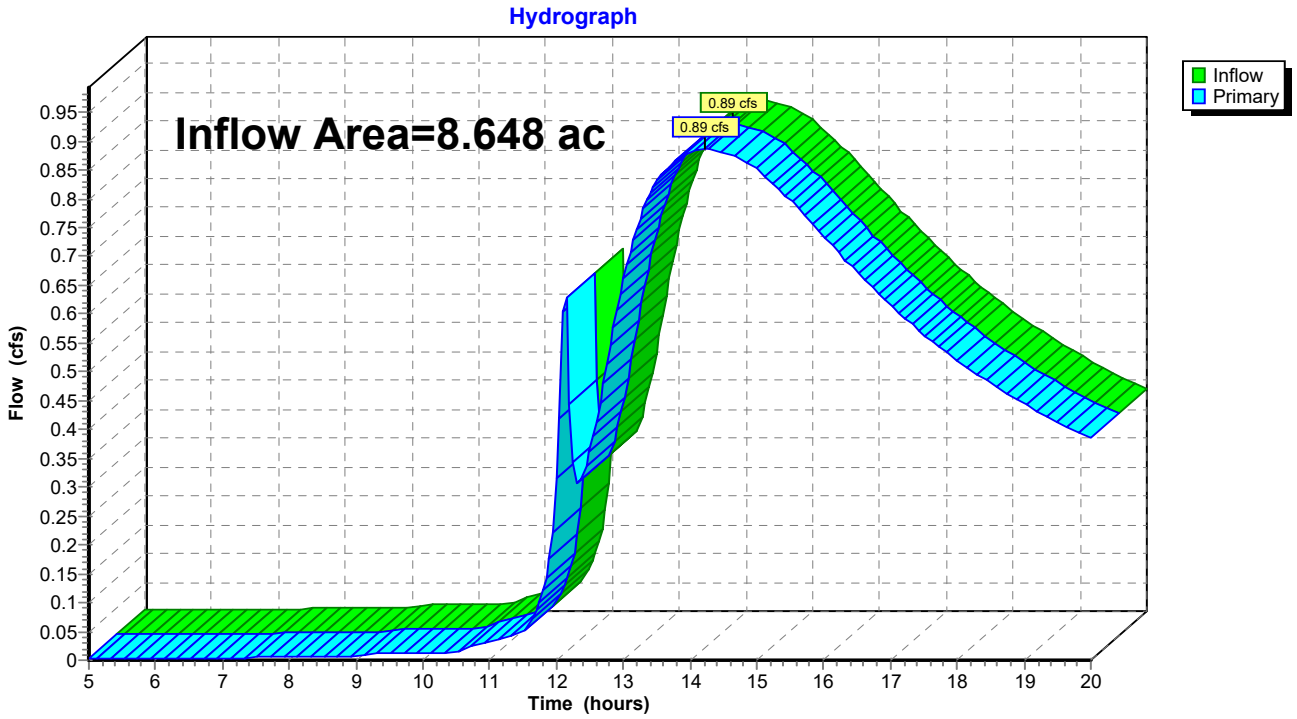


Summary for Link 7L: POST

Inflow Area = 8.648 ac, 50.56% Impervious, Inflow Depth > 0.60" for 1-YEAR event
Inflow = 0.89 cfs @ 14.23 hrs, Volume= 0.431 af
Primary = 0.89 cfs @ 14.23 hrs, Volume= 0.431 af, Atten= 0%, Lag= 0.0 min

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

Link 7L: POST



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

Subcatchment1S: A Runoff Area=312,698 sf 55.51% Impervious Runoff Depth>1.44"
Tc=6.0 min CN=87 Runoff=19.27 cfs 0.863 af

Subcatchment2S: B Runoff Area=20,550 sf 42.06% Impervious Runoff Depth>1.24"
Tc=6.0 min CN=84 Runoff=1.10 cfs 0.049 af

Subcatchment4S: C Runoff Area=35,816 sf 1.63% Impervious Runoff Depth>0.70"
Tc=0.0 min CN=74 Runoff=1.24 cfs 0.048 af

Subcatchment5S: D Runoff Area=7,629 sf 100.00% Impervious Runoff Depth>2.41"
Tc=6.0 min CN=98 Runoff=0.68 cfs 0.035 af

Subcatchment8S: PRE Runoff Area=373,638 sf 9.98% Impervious Runoff Depth>0.65"
Flow Length=433' Slope=0.0600 '/' Tc=37.9 min CN=73 Runoff=4.16 cfs 0.462 af

Pond 3P: WET POND Peak Elev=803.54' Storage=25,146 cf Inflow=20.36 cfs 0.912 af
Outflow=1.40 cfs 0.573 af

Pond 6P: INFILTRATIONBASIN Peak Elev=801.09' Storage=4,971 cf Inflow=1.50 cfs 0.621 af
Discarded=0.06 cfs 0.036 af Primary=1.04 cfs 0.543 af Outflow=1.10 cfs 0.579 af

Link 7L: POST Inflow=1.08 cfs 0.578 af
Primary=1.08 cfs 0.578 af

Summary for Subcatchment 1S: A

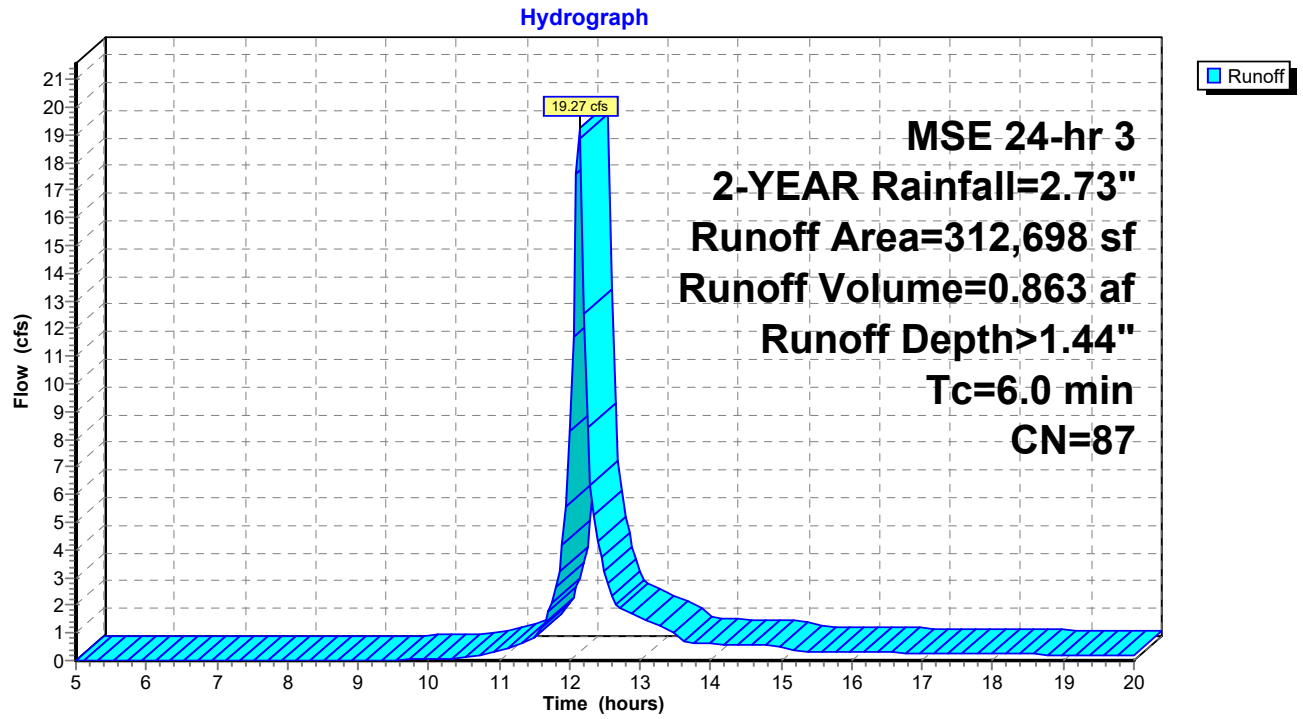
Runoff = 19.27 cfs @ 12.13 hrs, Volume= 0.863 af, Depth> 1.44"
Routed to Pond 3P : WET POND

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
MSE 24-hr 3 2-YEAR Rainfall=2.73"

	Area (sf)	CN	Description
*	49,429	98	
*	124,161	98	
	139,108	74	>75% Grass cover, Good, HSG C
	312,698	87	Weighted Average
	139,108		44.49% Pervious Area
	173,590		55.51% Impervious Area

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

Subcatchment 1S: A



Summary for Subcatchment 2S: B

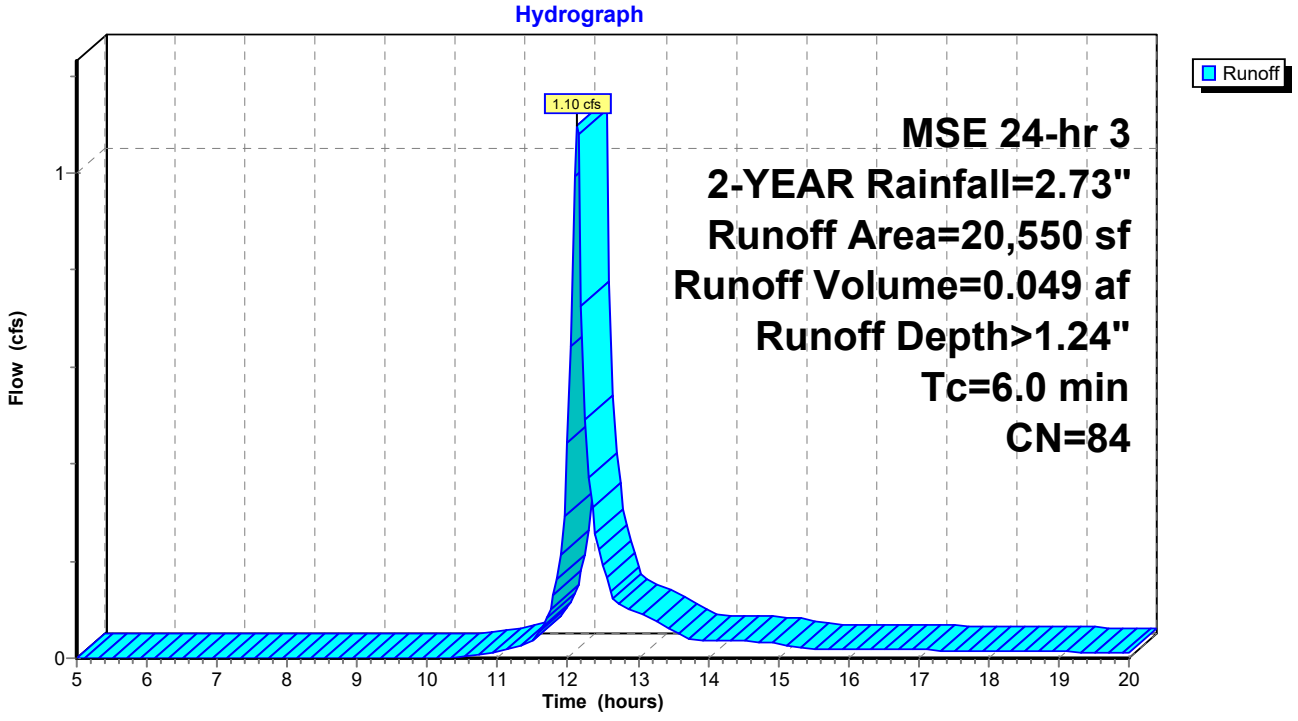
Runoff = 1.10 cfs @ 12.13 hrs, Volume= 0.049 af, Depth> 1.24"
Routed to Pond 3P : WET POND

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
MSE 24-hr 3 2-YEAR Rainfall=2.73"

	Area (sf)	CN	Description
*	8,643	98	
*	11,907	74	
	20,550	84	Weighted Average
	11,907		57.94% Pervious Area
	8,643		42.06% Impervious Area

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

Subcatchment 2S: B



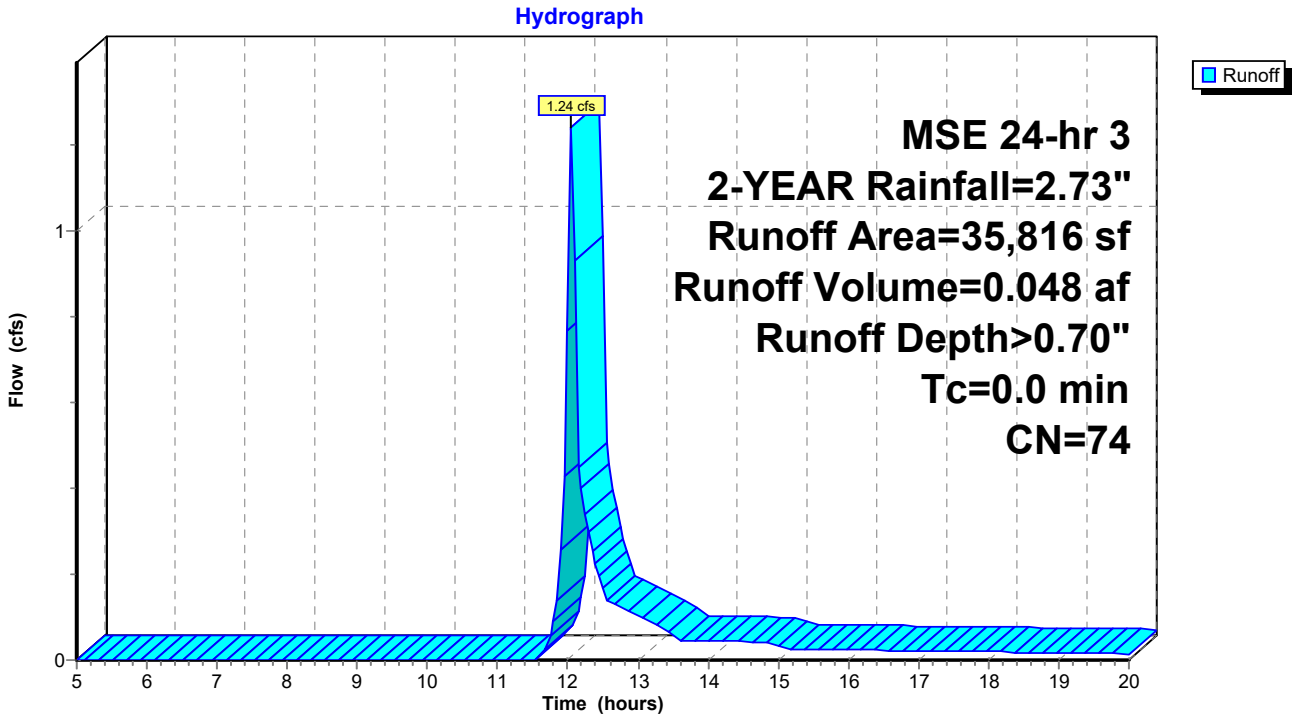
Summary for Subcatchment 4S: C

Runoff = 1.24 cfs @ 12.06 hrs, Volume= 0.048 af, Depth> 0.70"
Routed to Pond 6P : INFILTRATION BASIN

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
MSE 24-hr 3 2-YEAR Rainfall=2.73"

	Area (sf)	CN	Description
*	583	98	
	35,233	74	>75% Grass cover, Good, HSG C
	35,816	74	Weighted Average
	35,233		98.37% Pervious Area
	583		1.63% Impervious Area

Subcatchment 4S: C



Summary for Subcatchment 5S: D

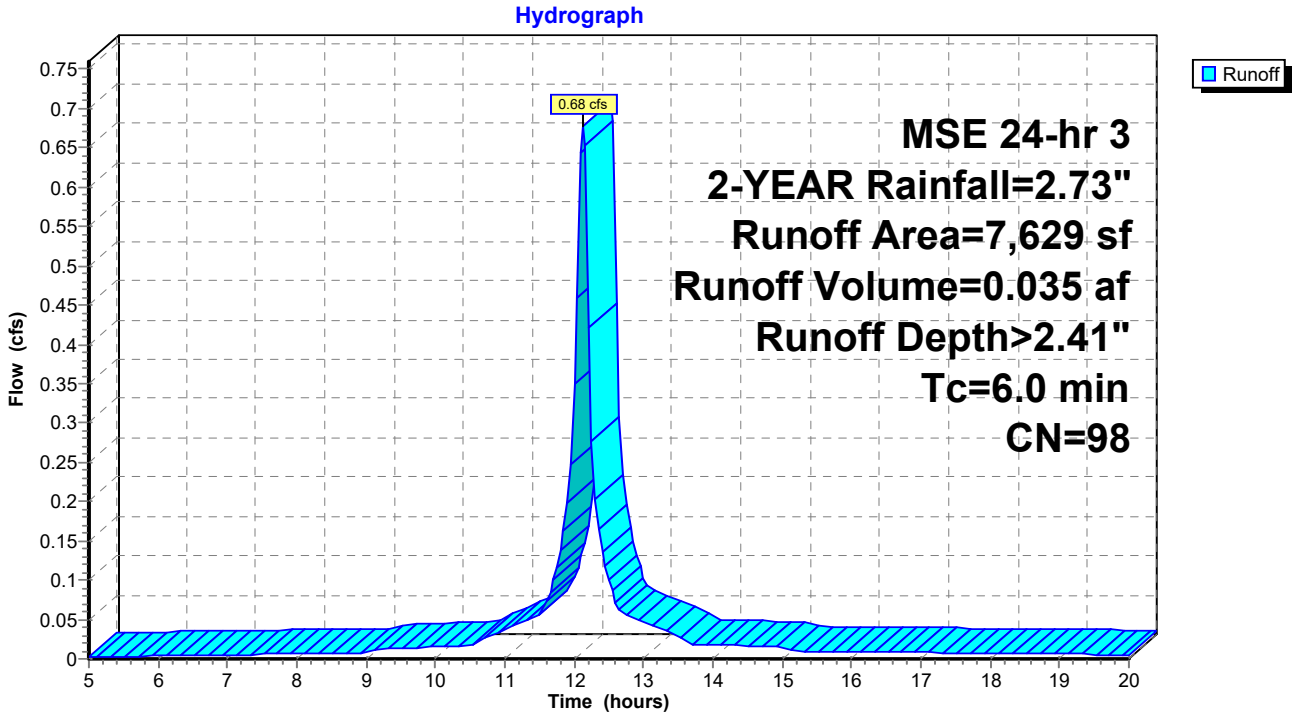
Runoff = 0.68 cfs @ 12.13 hrs, Volume= 0.035 af, Depth> 2.41"
Routed to Link 7L : POST

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
MSE 24-hr 3 2-YEAR Rainfall=2.73"

	Area (sf)	CN	Description
*	7,629	98	
	7,629		100.00% Impervious Area

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

Subcatchment 5S: D



Summary for Subcatchment 8S: PRE

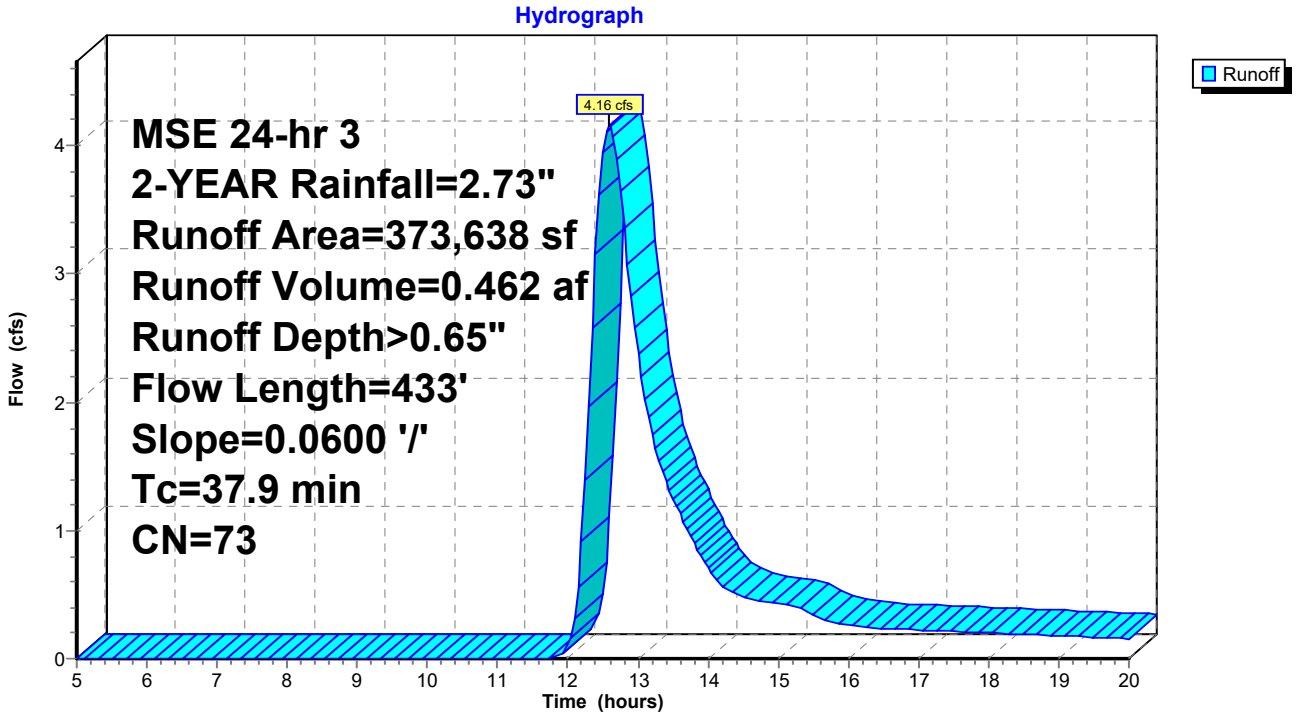
Runoff = 4.16 cfs @ 12.59 hrs, Volume= 0.462 af, Depth> 0.65"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
MSE 24-hr 3 2-YEAR Rainfall=2.73"

	Area (sf)	CN	Description
*	336,331	70	
*	37,307	98	
	373,638	73	Weighted Average
	336,331		90.02% Pervious Area
	37,307		9.98% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
36.1	300	0.0600	0.14		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 2.73"
1.8	133	0.0600	1.22		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
37.9	433	Total			

Subcatchment 8S: PRE



Summary for Pond 3P: WET POND

Inflow Area = 7.650 ac, 54.68% Impervious, Inflow Depth > 1.43" for 2-YEAR event
Inflow = 20.36 cfs @ 12.13 hrs, Volume= 0.912 af
Outflow = 1.40 cfs @ 13.21 hrs, Volume= 0.573 af, Atten= 93%, Lag= 64.7 min
Primary = 1.40 cfs @ 13.21 hrs, Volume= 0.573 af
Routed to Pond 6P : INFILTRATION BASIN

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 803.54' @ 13.21 hrs Surf.Area= 18,861 sf Storage= 25,146 cf

Plug-Flow detention time= 196.3 min calculated for 0.573 af (63% of inflow)
Center-of-Mass det. time= 137.4 min (918.5 - 781.2)

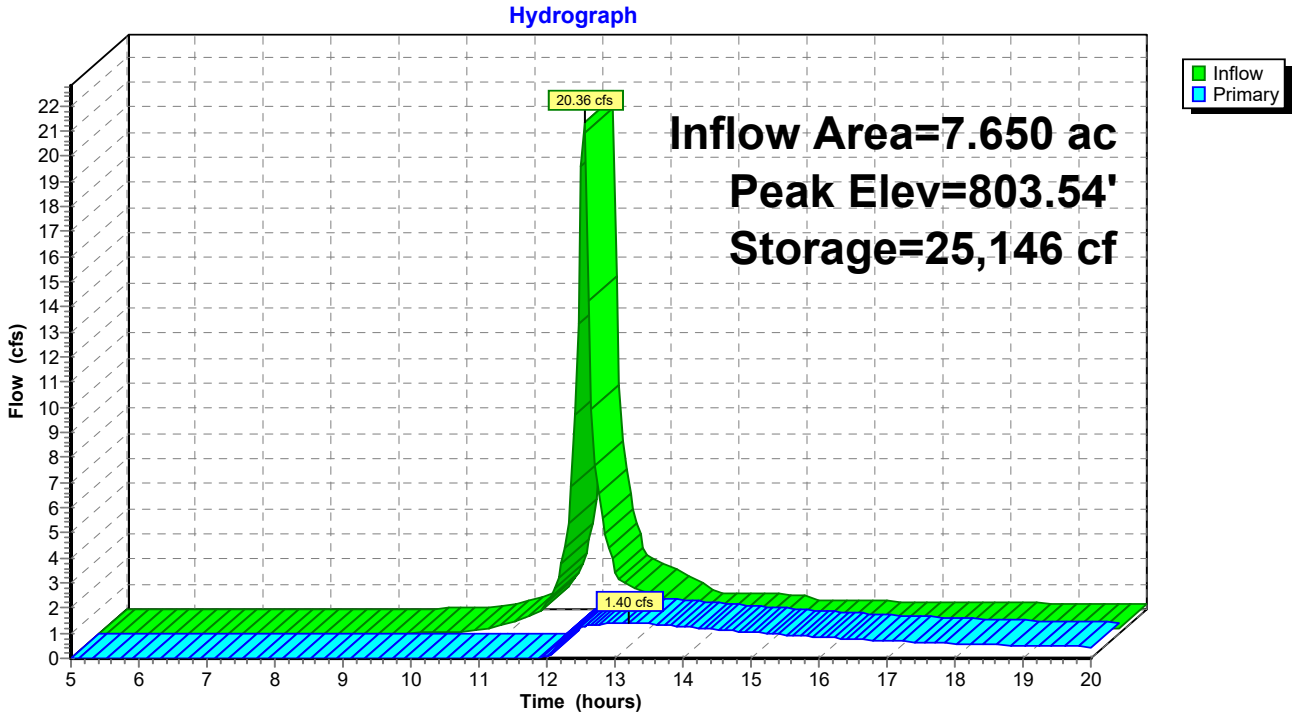
Volume	Invert	Avail.Storage	Storage Description
#1	802.00'	120,650 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
802.00	13,000	0	0
803.00	17,500	15,250	15,250
804.00	20,000	18,750	34,000
805.00	22,900	21,450	55,450
806.00	25,500	24,200	79,650
807.00	28,000	26,750	106,400
807.50	29,000	14,250	120,650

Device	Routing	Invert	Outlet Devices
#1	Primary	802.00'	**10.0" Round Culvert** L= 546.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 802.00' / 800.00' S= 0.0037 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.55 sf
#2	Device 1	802.00'	**20.0 deg Sharp-Crested Vee/Trap Weir** Cv= 2.69 (C= 3.36)
#3	Primary	806.50'	**10.0' long x 10.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64
#4	Device 1	805.00'	**24.0" x 36.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=1.41 cfs @ 13.21 hrs HW=803.54' (Free Discharge)
- **1=Culvert** (Passes 1.41 cfs of 1.48 cfs potential flow)
  - **2=Sharp-Crested Vee/Trap Weir** (Weir Controls 1.41 cfs @ 3.34 fps)
  - **4=Orifice/Grate** (Controls 0.00 cfs)
- **3=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond 3P: WET POND



Summary for Pond 6P: INFILTRATION BASIN

Inflow Area = 8.473 ac, 49.54% Impervious, Inflow Depth > 0.88" for 2-YEAR event
Inflow = 1.50 cfs @ 13.04 hrs, Volume= 0.621 af
Outflow = 1.10 cfs @ 13.34 hrs, Volume= 0.579 af, Atten= 27%, Lag= 17.9 min
Discarded = 0.06 cfs @ 13.34 hrs, Volume= 0.036 af
Primary = 1.04 cfs @ 13.34 hrs, Volume= 0.543 af
Routed to Link 7L : POST

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 801.09' @ 15.10 hrs Surf.Area= 5,103 sf Storage= 4,971 cf

Plug-Flow detention time= 62.0 min calculated for 0.577 af (93% of inflow)
Center-of-Mass det. time= 43.2 min (952.9 - 909.6)

Volume	Invert	Avail.Storage	Storage Description
#1	800.00'	62,850 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

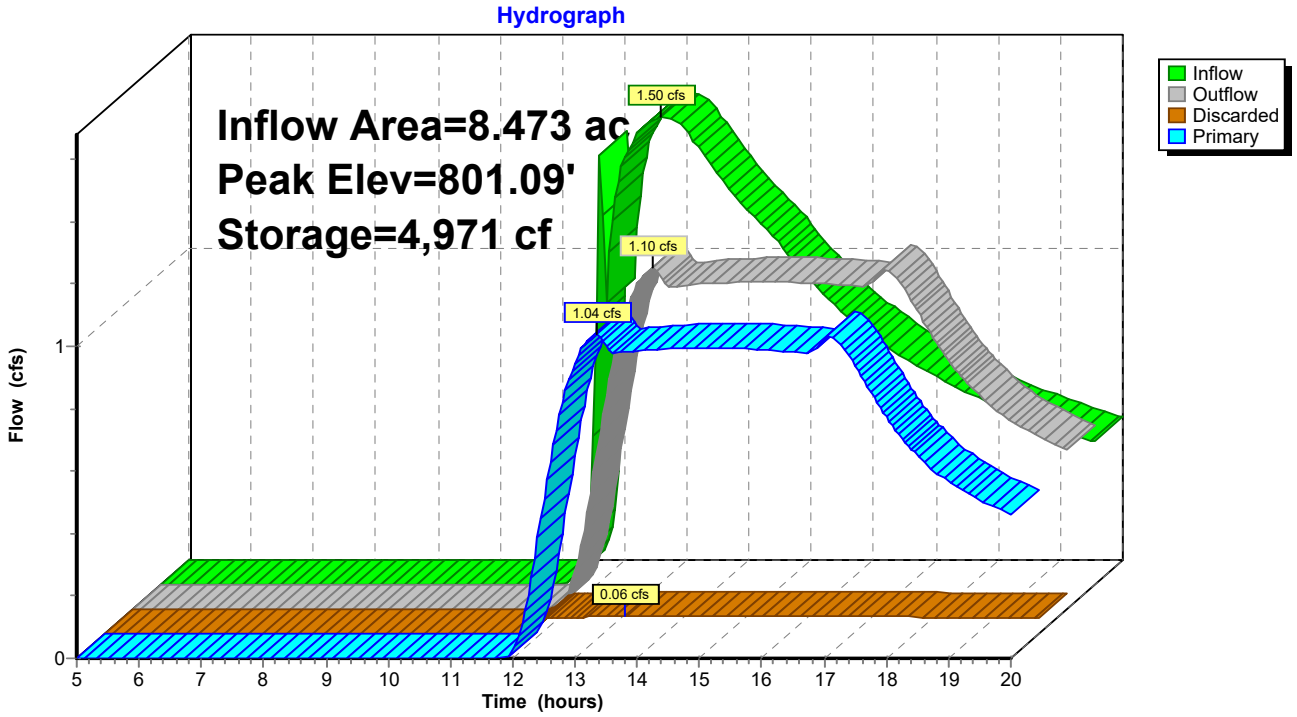
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
800.00	4,000	0	0
801.00	5,000	4,500	4,500
802.00	6,100	5,550	10,050
803.00	7,500	6,800	16,850
804.00	8,500	8,000	24,850
805.00	10,000	9,250	34,100
806.00	11,000	10,500	44,600
807.00	12,500	11,750	56,350
807.50	13,500	6,500	62,850

Device	Routing	Invert	Outlet Devices
#1	Primary	800.00'	**8.0" Round Culvert** L= 391.0' CMP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 800.00' / 794.00' S= 0.0153 '/' Cc= 0.900 n= 0.020 Corrugated PE, corrugated interior, Flow Area= 0.35 sf
#2	Primary	806.50'	**10.0' long x 10.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64
#3	Discarded	800.00'	**0.500 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 700.00'

Discarded OutFlow Max=0.06 cfs @ 13.34 hrs HW=800.83' (Free Discharge)
↑**3=Exfiltration** (Controls 0.06 cfs)

Primary OutFlow Max=1.04 cfs @ 13.34 hrs HW=800.83' (Free Discharge)
↑**1=Culvert** (Barrel Controls 1.04 cfs @ 3.09 fps)
2=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Pond 6P: INFILTRATION BASIN

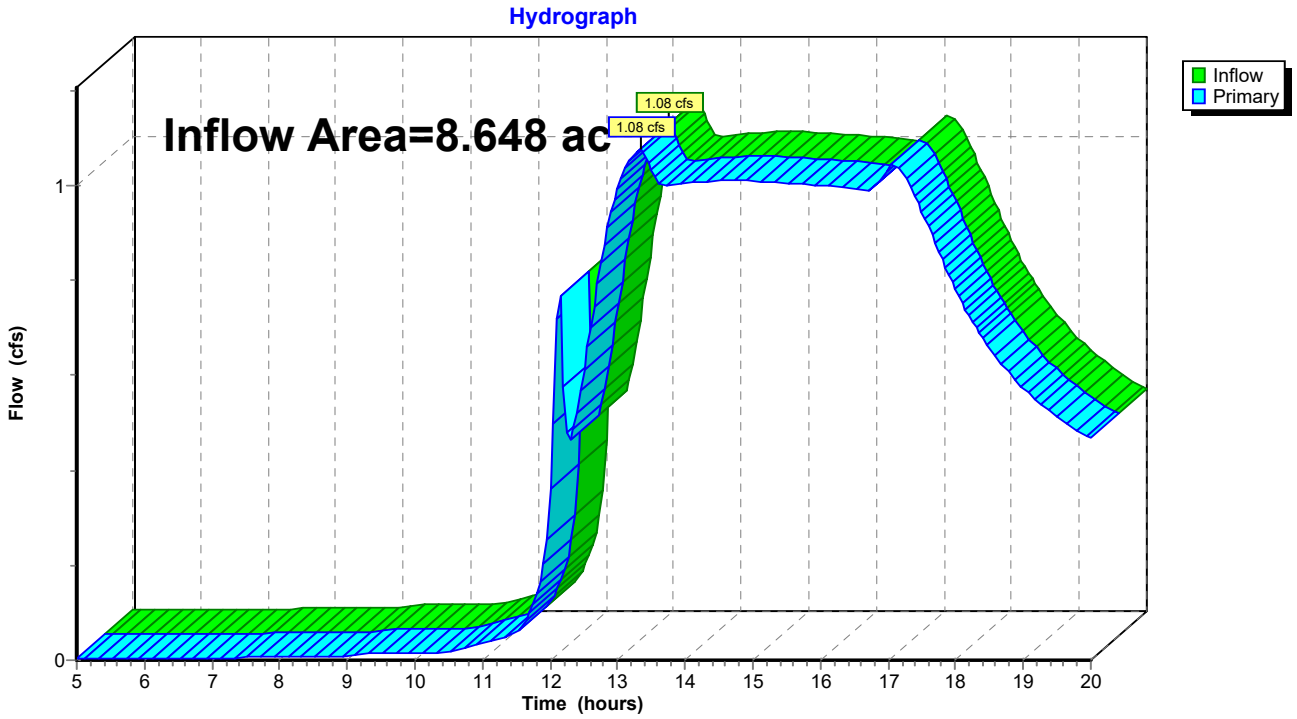


Summary for Link 7L: POST

Inflow Area = 8.648 ac, 50.56% Impervious, Inflow Depth > 0.80" for 2-YEAR event
Inflow = 1.08 cfs @ 13.33 hrs, Volume= 0.578 af
Primary = 1.08 cfs @ 13.33 hrs, Volume= 0.578 af, Atten= 0%, Lag= 0.0 min

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

Link 7L: POST



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

Subcatchment1S: A Runoff Area=312,698 sf 55.51% Impervious Runoff Depth>4.54"
Tc=6.0 min CN=87 Runoff=56.92 cfs 2.716 af

Subcatchment2S: B Runoff Area=20,550 sf 42.06% Impervious Runoff Depth>4.22"
Tc=6.0 min CN=84 Runoff=3.55 cfs 0.166 af

Subcatchment4S: C Runoff Area=35,816 sf 1.63% Impervious Runoff Depth>3.21"
Tc=0.0 min CN=74 Runoff=5.72 cfs 0.220 af

Subcatchment5S: D Runoff Area=7,629 sf 100.00% Impervious Runoff Depth>5.70"
Tc=6.0 min CN=98 Runoff=1.56 cfs 0.083 af

Subcatchment8S: PRE Runoff Area=373,638 sf 9.98% Impervious Runoff Depth>3.08"
Flow Length=433' Slope=0.0600 '/' Tc=37.9 min CN=73 Runoff=21.64 cfs 2.202 af

Pond 3P: WET POND Peak Elev=806.42' Storage=90,528 cf Inflow=60.47 cfs 2.882 af
Outflow=2.12 cfs 1.400 af

Pond 6P: INFILTRATIONBASIN Peak Elev=804.90' Storage=33,065 cf Inflow=7.36 cfs 1.620 af
Discarded=0.12 cfs 0.069 af Primary=1.25 cfs 0.790 af Outflow=1.37 cfs 0.860 af

Link 7L: POST Inflow=2.57 cfs 0.874 af
Primary=2.57 cfs 0.874 af

Summary for Subcatchment 1S: A

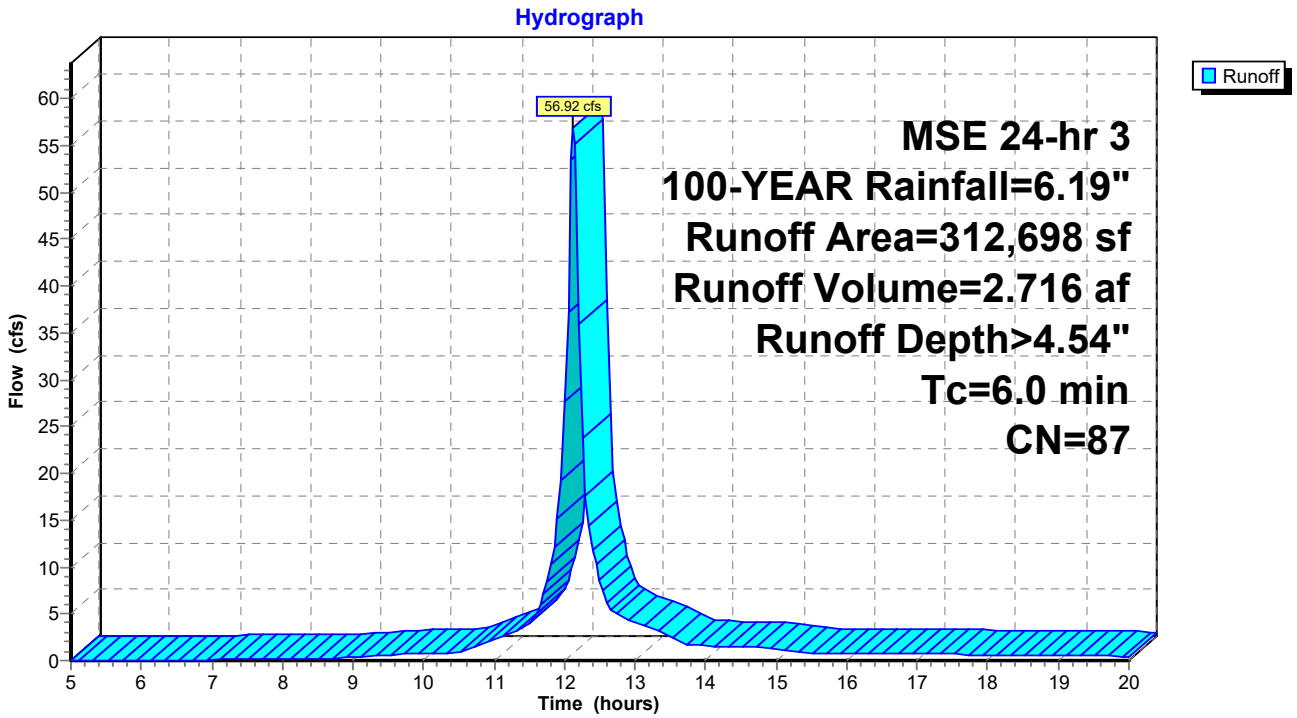
Runoff = 56.92 cfs @ 12.13 hrs, Volume= 2.716 af, Depth> 4.54"
Routed to Pond 3P : WET POND

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
MSE 24-hr 3 100-YEAR Rainfall=6.19"

	Area (sf)	CN	Description
*	49,429	98	
*	124,161	98	
	139,108	74	>75% Grass cover, Good, HSG C
	312,698	87	Weighted Average
	139,108		44.49% Pervious Area
	173,590		55.51% Impervious Area

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

Subcatchment 1S: A



Summary for Subcatchment 2S: B

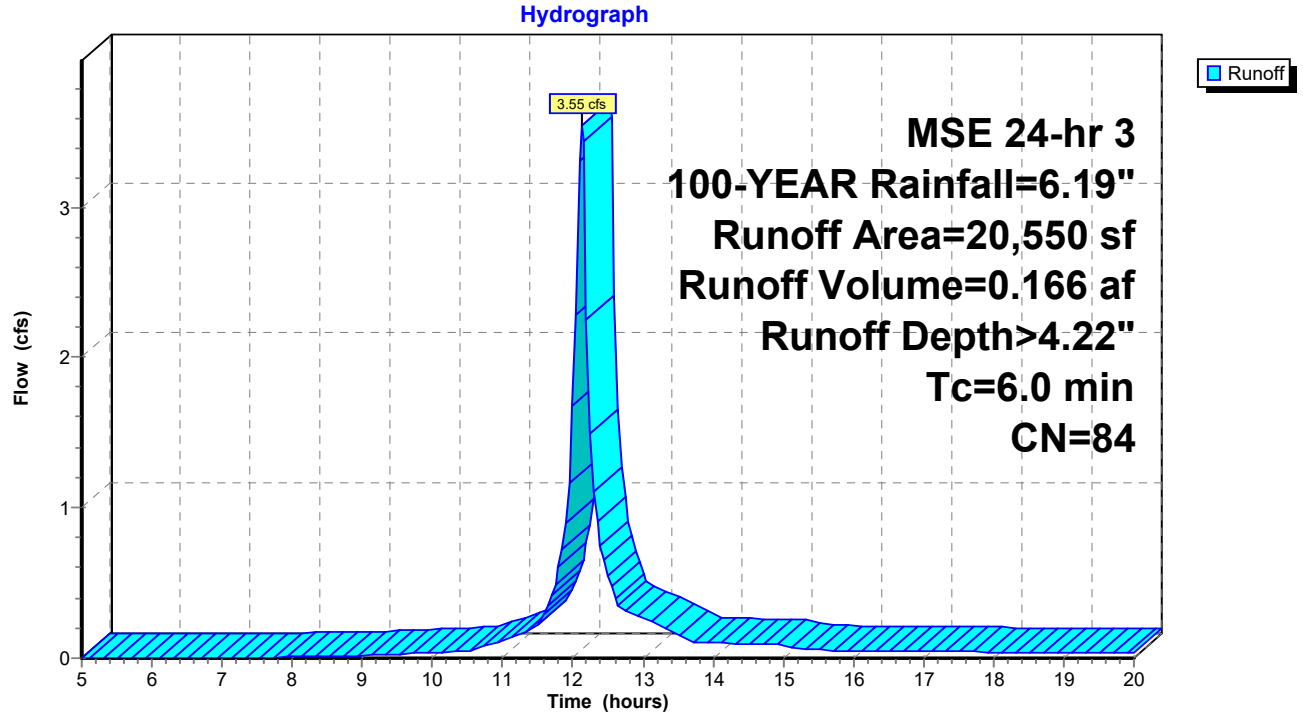
Runoff = 3.55 cfs @ 12.13 hrs, Volume= 0.166 af, Depth> 4.22"
Routed to Pond 3P : WET POND

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
MSE 24-hr 3 100-YEAR Rainfall=6.19"

	Area (sf)	CN	Description
*	8,643	98	
*	11,907	74	
	20,550	84	Weighted Average
	11,907		57.94% Pervious Area
	8,643		42.06% Impervious Area

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

Subcatchment 2S: B



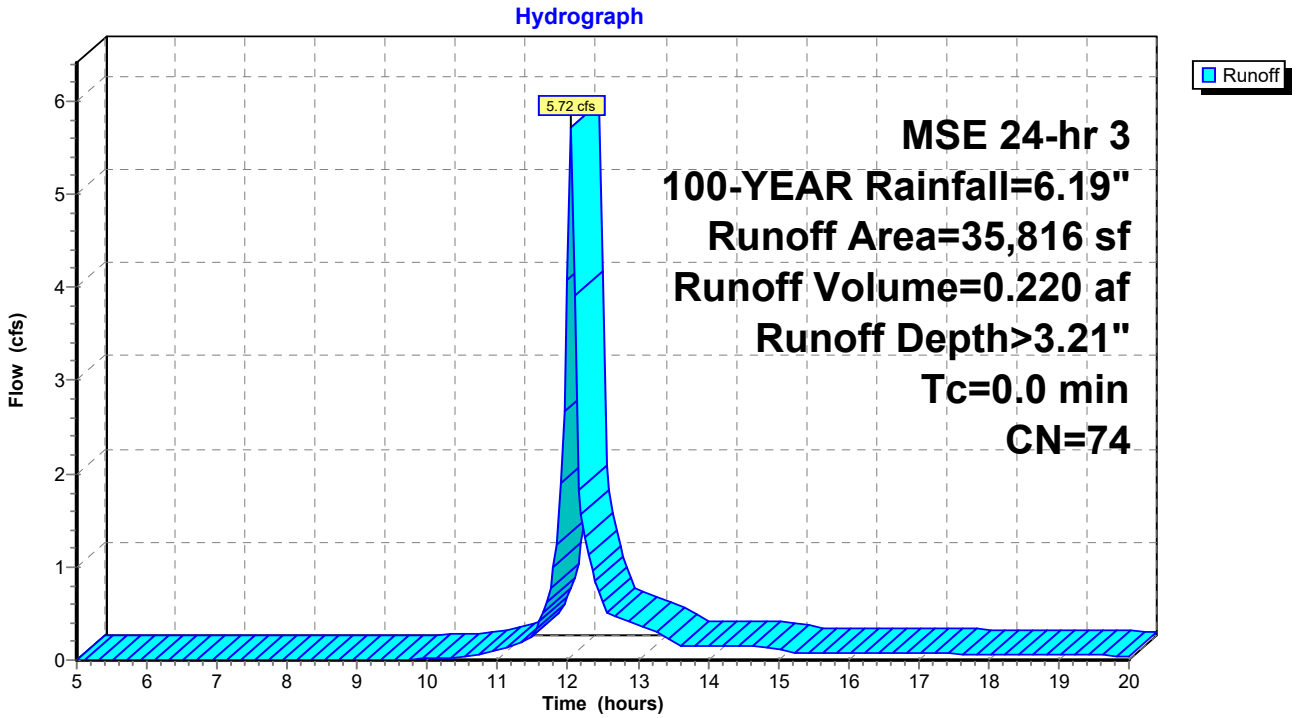
Summary for Subcatchment 4S: C

Runoff = 5.72 cfs @ 12.05 hrs, Volume= 0.220 af, Depth> 3.21"
Routed to Pond 6P : INFILTRATION BASIN

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
MSE 24-hr 3 100-YEAR Rainfall=6.19"

	Area (sf)	CN	Description
*	583	98	
	35,233	74	>75% Grass cover, Good, HSG C
	35,816	74	Weighted Average
	35,233		98.37% Pervious Area
	583		1.63% Impervious Area

Subcatchment 4S: C



Summary for Subcatchment 5S: D

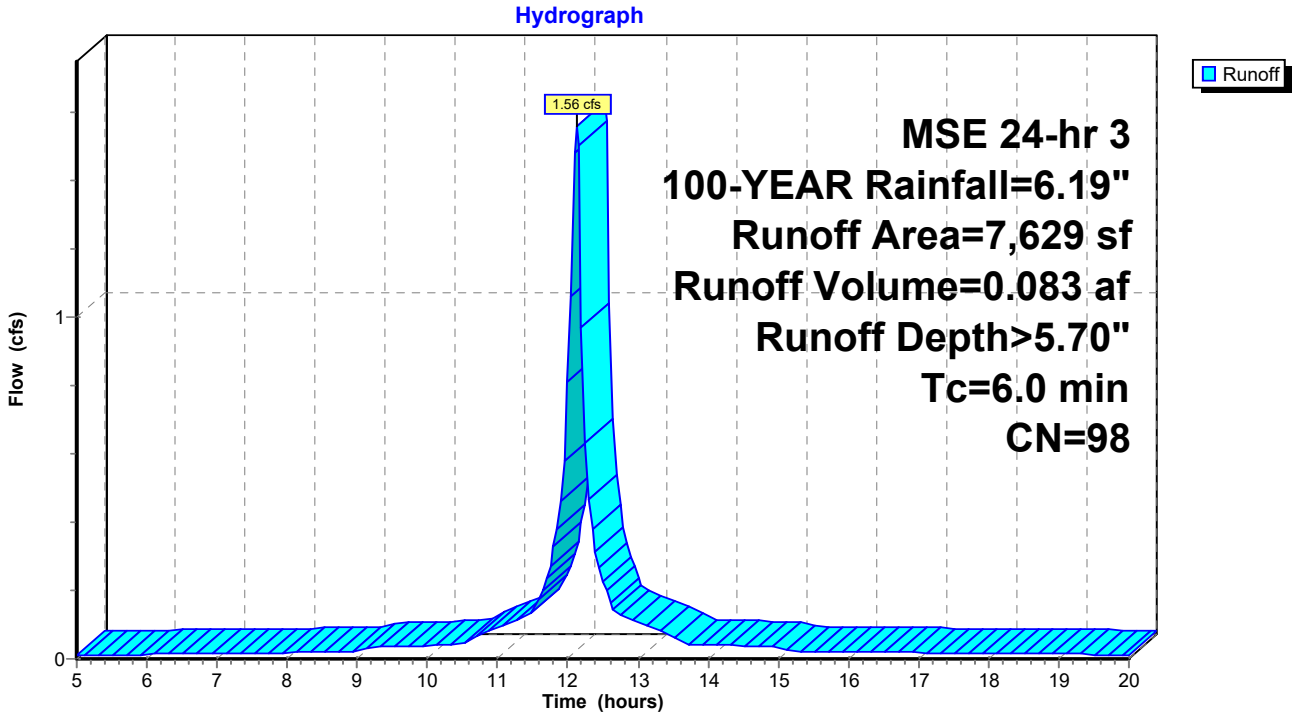
Runoff = 1.56 cfs @ 12.13 hrs, Volume= 0.083 af, Depth> 5.70"
Routed to Link 7L : POST

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
MSE 24-hr 3 100-YEAR Rainfall=6.19"

	Area (sf)	CN	Description
*	7,629	98	
	7,629		100.00% Impervious Area

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

Subcatchment 5S: D



Summary for Subcatchment 8S: PRE

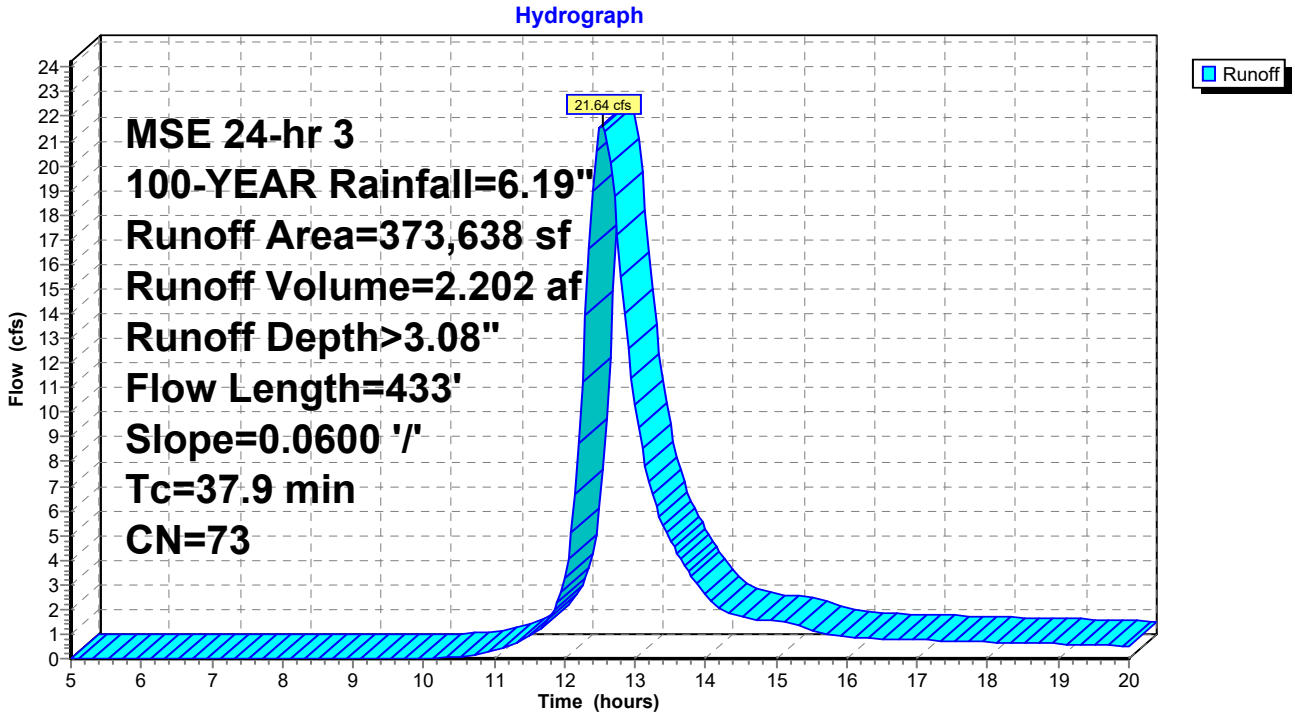
Runoff = 21.64 cfs @ 12.53 hrs, Volume= 2.202 af, Depth> 3.08"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
MSE 24-hr 3 100-YEAR Rainfall=6.19"

	Area (sf)	CN	Description
*	336,331	70	
*	37,307	98	
	373,638	73	Weighted Average
	336,331		90.02% Pervious Area
	37,307		9.98% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
36.1	300	0.0600	0.14		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 2.73"
1.8	133	0.0600	1.22		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
37.9	433	Total			

Subcatchment 8S: PRE



Summary for Pond 3P: WET POND

Inflow Area = 7.650 ac, 54.68% Impervious, Inflow Depth > 4.52" for 100-YEAR event
Inflow = 60.47 cfs @ 12.13 hrs, Volume= 2.882 af
Outflow = 2.12 cfs @ 13.60 hrs, Volume= 1.400 af, Atten= 96%, Lag= 88.2 min
Primary = 2.12 cfs @ 13.60 hrs, Volume= 1.400 af
Routed to Pond 6P : INFILTRATION BASIN

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 806.42' @ 13.60 hrs Surf.Area= 26,545 sf Storage= 90,528 cf

Plug-Flow detention time= 250.8 min calculated for 1.395 af (48% of inflow)
Center-of-Mass det. time= 187.5 min (949.2 - 761.7)

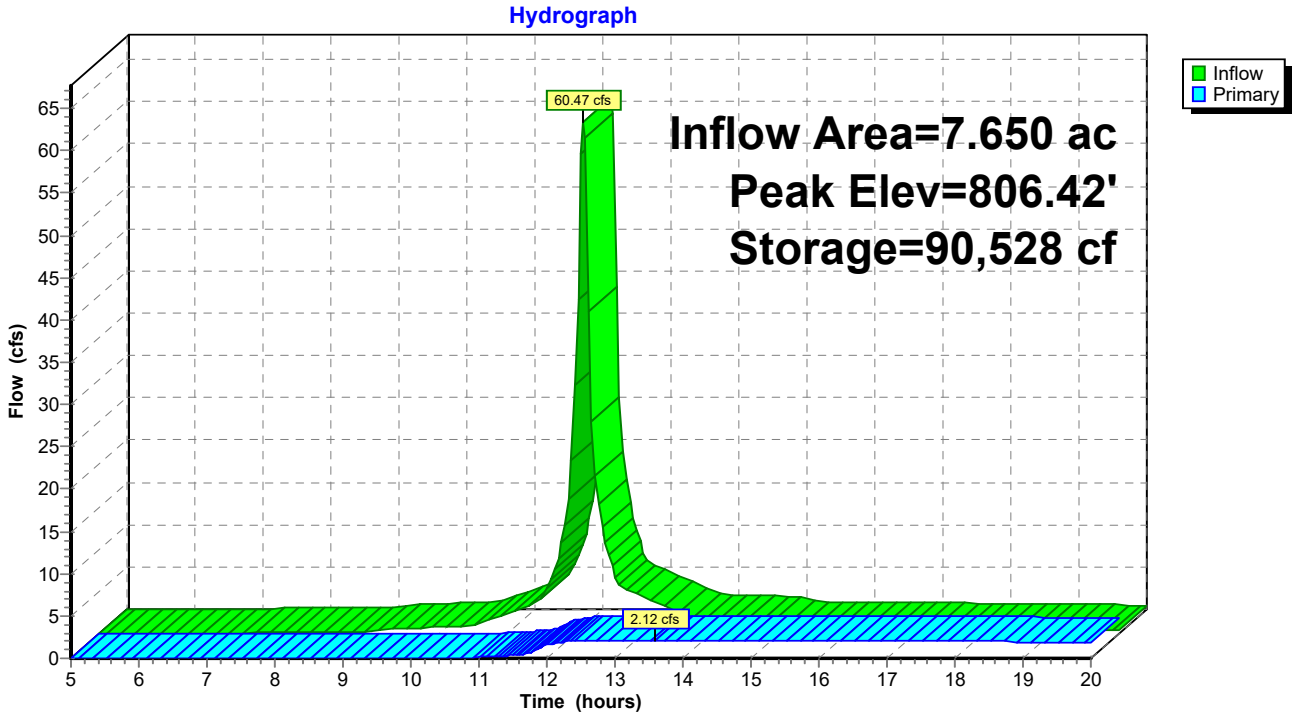
Volume	Invert	Avail.Storage	Storage Description
#1	802.00'	120,650 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
802.00	13,000	0	0
803.00	17,500	15,250	15,250
804.00	20,000	18,750	34,000
805.00	22,900	21,450	55,450
806.00	25,500	24,200	79,650
807.00	28,000	26,750	106,400
807.50	29,000	14,250	120,650

Device	Routing	Invert	Outlet Devices
#1	Primary	802.00'	**10.0" Round Culvert** L= 546.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 802.00' / 800.00' S= 0.0037 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.55 sf
#2	Device 1	802.00'	**20.0 deg Sharp-Crested Vee/Trap Weir** Cv= 2.69 (C= 3.36)
#3	Primary	806.50'	**10.0' long x 10.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64
#4	Device 1	805.00'	**24.0" x 36.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=2.12 cfs @ 13.60 hrs HW=806.42' (Free Discharge)
- **1=Culvert** (Barrel Controls 2.12 cfs @ 3.89 fps)
  - **2=Sharp-Crested Vee/Trap Weir** (Passes < 19.46 cfs potential flow)
  - **4=Orifice/Grate** (Passes < 34.40 cfs potential flow)
- **3=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond 3P: WET POND



Summary for Pond 6P: INFILTRATION BASIN

Inflow Area = 8.473 ac, 49.54% Impervious, Inflow Depth > 2.29" for 100-YEAR event
Inflow = 7.36 cfs @ 12.05 hrs, Volume= 1.620 af
Outflow = 1.37 cfs @ 20.00 hrs, Volume= 0.860 af, Atten= 81%, Lag= 477.0 min
Discarded = 0.12 cfs @ 20.00 hrs, Volume= 0.069 af
Primary = 1.25 cfs @ 20.00 hrs, Volume= 0.790 af
Routed to Link 7L : POST

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 804.90' @ 20.00 hrs Surf.Area= 9,843 sf Storage= 33,065 cf

Plug-Flow detention time= 159.2 min calculated for 0.857 af (53% of inflow)
Center-of-Mass det. time= 35.7 min (961.5 - 925.8)

Volume	Invert	Avail.Storage	Storage Description
#1	800.00'	62,850 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

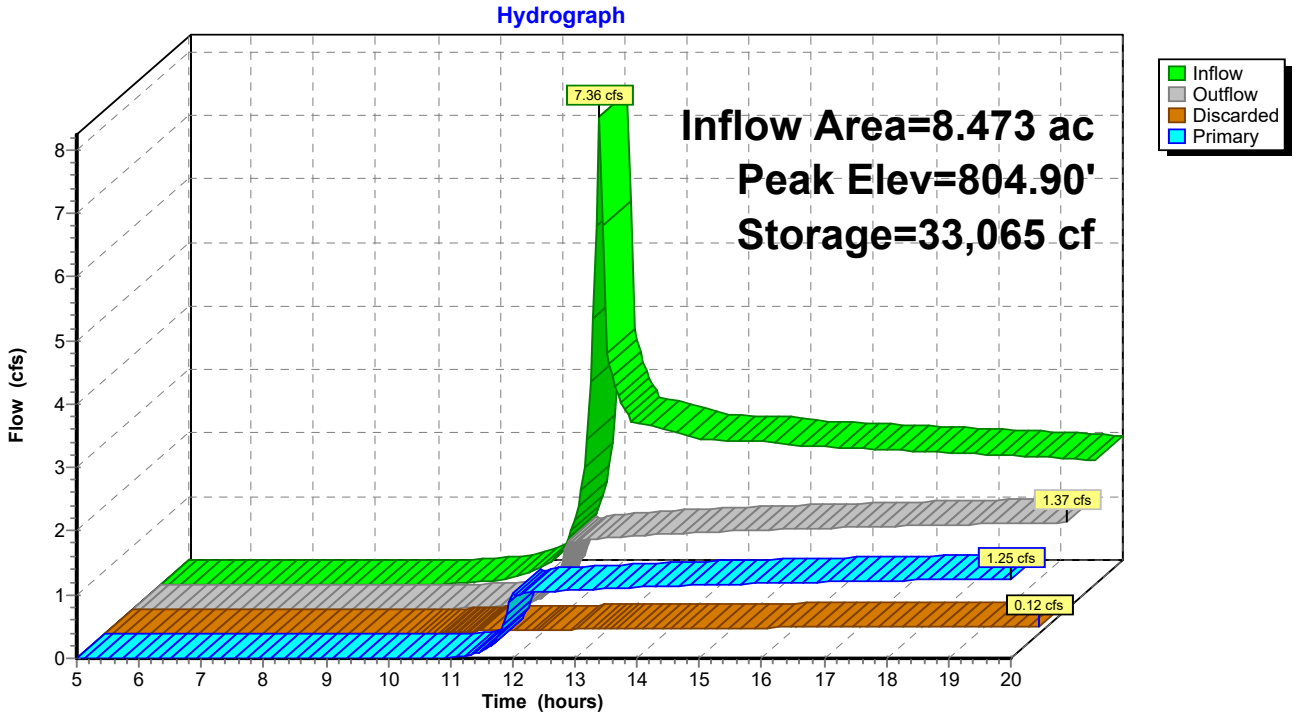
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
800.00	4,000	0	0
801.00	5,000	4,500	4,500
802.00	6,100	5,550	10,050
803.00	7,500	6,800	16,850
804.00	8,500	8,000	24,850
805.00	10,000	9,250	34,100
806.00	11,000	10,500	44,600
807.00	12,500	11,750	56,350
807.50	13,500	6,500	62,850

Device	Routing	Invert	Outlet Devices
#1	Primary	800.00'	**8.0" Round Culvert** L= 391.0' CMP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 800.00' / 794.00' S= 0.0153 '/' Cc= 0.900 n= 0.020 Corrugated PE, corrugated interior, Flow Area= 0.35 sf
#2	Primary	806.50'	**10.0' long x 10.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64
#3	Discarded	800.00'	**0.500 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 700.00'

Discarded OutFlow Max=0.12 cfs @ 20.00 hrs HW=804.90' (Free Discharge)
└**3=Exfiltration** (Controls 0.12 cfs)

Primary OutFlow Max=1.25 cfs @ 20.00 hrs HW=804.90' (Free Discharge)
└**1=Culvert** (Barrel Controls 1.25 cfs @ 3.58 fps)
└**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond 6P: INFILTRATION BASIN

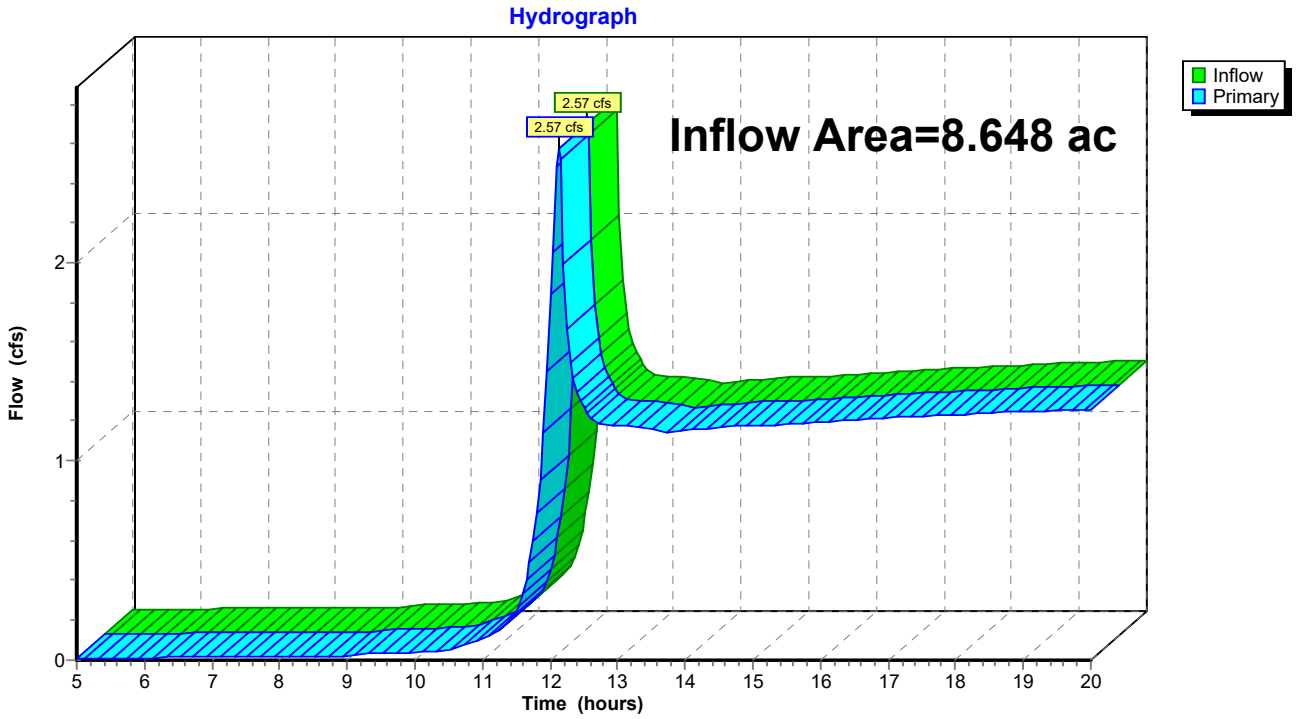


Summary for Link 7L: POST

Inflow Area = 8.648 ac, 50.56% Impervious, Inflow Depth > 1.21" for 100-YEAR event
Inflow = 2.57 cfs @ 12.13 hrs, Volume= 0.874 af
Primary = 2.57 cfs @ 12.13 hrs, Volume= 0.874 af, Atten= 0%, Lag= 0.0 min

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

Link 7L: POST



Appendix D: Web Soil Survey Map

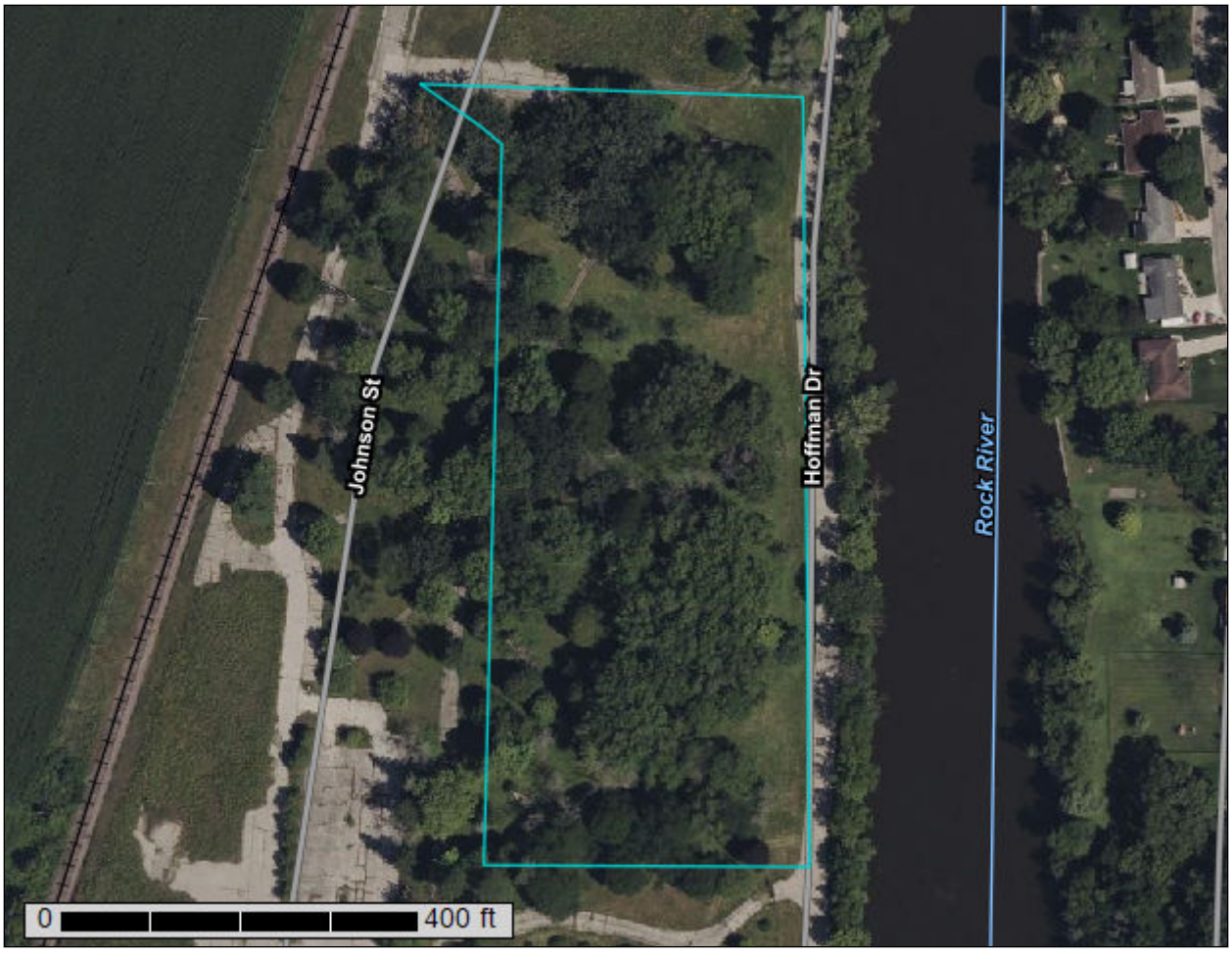
United States Department of Agriculture

NRCS

Natural Resources Conservation Service

A product of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local participants

Custom Soil Resource Report for Jefferson County, Wisconsin



Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (https://offices.sc.egov.usda.gov/locator/app?agency=nrcs) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

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How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil

scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

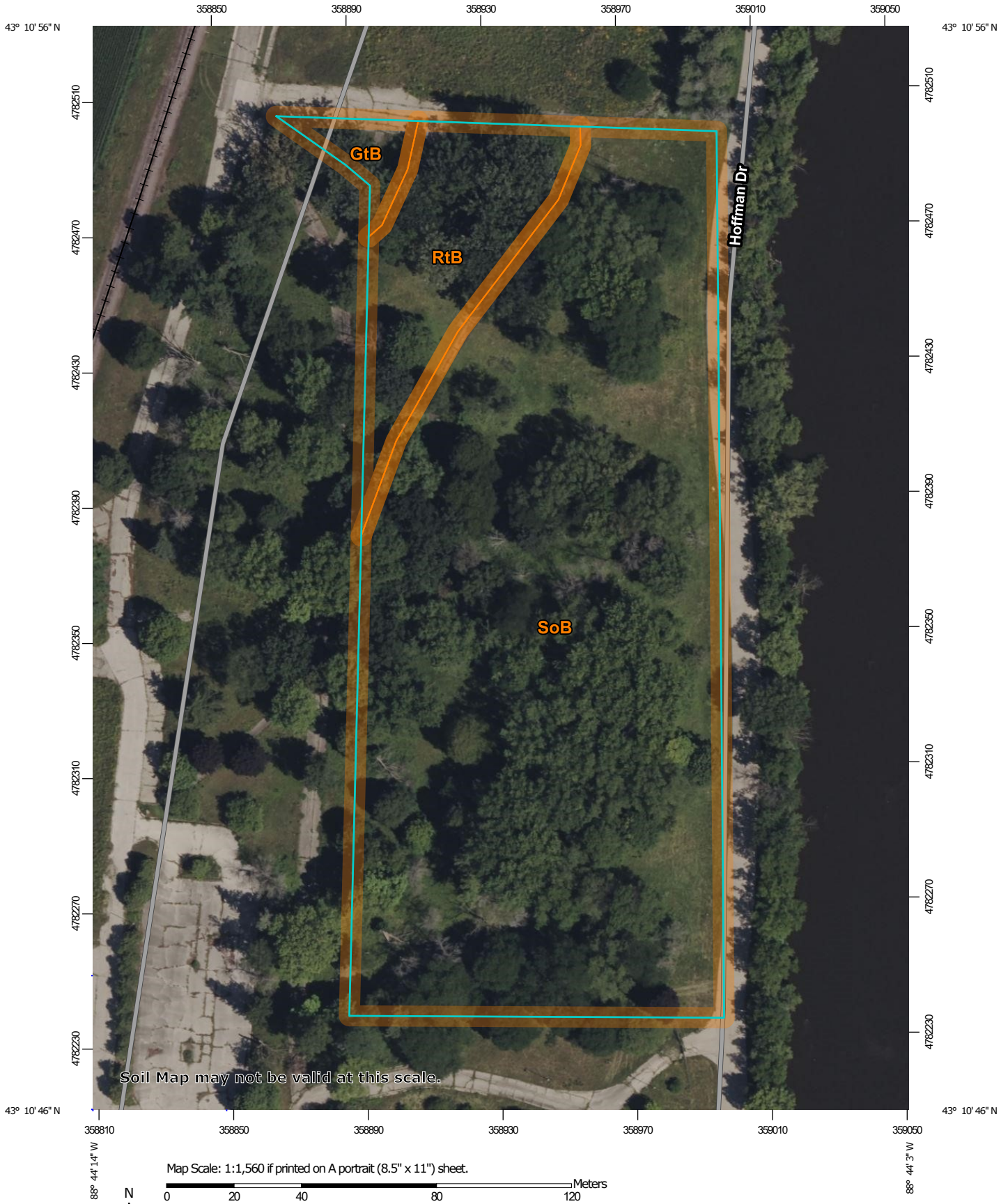
After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and

identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

Custom Soil Resource Report
Soil Map



Map Scale: 1:1,560 if printed on A portrait (8.5" x 11") sheet.

N

Meters: 0 20 40 80 120

Feet: 0 50 100 200 300

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 16N WGS84

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

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: Jefferson County, Wisconsin
Survey Area Data: Version 23, Sep 3, 2024

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

Date(s) aerial images were photographed: Aug 4, 2022—Sep 13, 2022

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.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
GtB	Grellton fine sandy loam, 2 to 6 percent slopes	0.1	2.0%
RtB	Rotamer loam, 2 to 6 percent slopes, eroded	0.8	12.0%
SoB	Sisson fine sandy loam, 2 to 6 percent slopes	6.1	86.0%
Totals for Area of Interest		**7.1**	**100.0%**

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or

landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

Jefferson County, Wisconsin

GtB—Grellton fine sandy loam, 2 to 6 percent slopes

Map Unit Setting

National map unit symbol: g6zl
Elevation: 780 to 1,060 feet
Mean annual precipitation: 28 to 35 inches
Mean annual air temperature: 36 to 57 degrees F
Frost-free period: 135 to 170 days
Farmland classification: All areas are prime farmland

Map Unit Composition

Grellton and similar soils: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Grellton

Setting

Landform: Till plains
Landform position (three-dimensional): Rise
Down-slope shape: Convex
Across-slope shape: Linear
Parent material: Loamy eolian deposits and/or loamy outwash over eolian deposits

Typical profile

Ap,BA - 0 to 14 inches: fine sandy loam
Bt - 14 to 35 inches: loam
2Bt - 35 to 44 inches: silt loam
2C - 44 to 60 inches: sandy loam

Properties and qualities

Slope: 2 to 6 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 1.98 in/hr)
Depth to water table: About 36 to 60 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 20 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water supply, 0 to 60 inches: High (about 9.8 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2e
Hydrologic Soil Group: B
Ecological site: F095XB010WI - Loamy and Clayey Upland
Forage suitability group: Mod AWC, adequately drained (G095BY005WI)
Other vegetative classification: Mod AWC, adequately drained (G095BY005WI)
Hydric soil rating: No

RtB—Rotamer loam, 2 to 6 percent slopes, eroded

Map Unit Setting

National map unit symbol: 2wpxt
Elevation: 790 to 1,070 feet
Mean annual precipitation: 33 to 35 inches
Mean annual air temperature: 45 to 48 degrees F
Frost-free period: 150 to 180 days
Farmland classification: All areas are prime farmland

Map Unit Composition

Rotamer, eroded, and similar soils: 90 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Rotamer, Eroded

Setting

Landform: Moraines, drumlins
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Crest
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Calcareous loamy till

Typical profile

Ap - 0 to 9 inches: loam
Bt - 9 to 19 inches: clay loam
C - 19 to 79 inches: gravelly sandy loam

Properties and qualities

Slope: 2 to 6 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.20 to 1.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 40 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water supply, 0 to 60 inches: Moderate (about 8.2 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2e
Hydrologic Soil Group: B
Ecological site: F095XB007WI - Loamy Upland with Carbonates
Forage suitability group: Mod AWC, adequately drained (G095BY005WI)
Other vegetative classification: Mod AWC, adequately drained (G095BY005WI)
Hydric soil rating: No

Minor Components

Kidder

Percent of map unit: 5 percent
Landform: Moraines, drumlins
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Crest
Down-slope shape: Convex
Across-slope shape: Convex
Ecological site: F095XB010WI - Loamy and Clayey Upland
Other vegetative classification: Mod AWC, adequately drained (G095BY005WI)
Hydric soil rating: No

Lapeer

Percent of map unit: 3 percent
Landform: Moraines, drumlins
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Crest
Down-slope shape: Convex
Across-slope shape: Convex
Ecological site: F095XB007WI - Loamy Upland with Carbonates
Hydric soil rating: No

Lamartine

Percent of map unit: 2 percent
Landform: Moraines, drumlins
Landform position (two-dimensional): Summit, backslope
Landform position (three-dimensional): Crest
Down-slope shape: Concave
Across-slope shape: Linear
Ecological site: F095XB005WI - Moist Loamy or Clayey Lowland
Hydric soil rating: No

SoB—Sisson fine sandy loam, 2 to 6 percent slopes

Map Unit Setting

National map unit symbol: 2wsr8
Elevation: 590 to 1,030 feet
Mean annual precipitation: 29 to 35 inches
Mean annual air temperature: 43 to 48 degrees F
Frost-free period: 124 to 193 days
Farmland classification: All areas are prime farmland

Map Unit Composition

Sisson and similar soils: 90 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Sisson

Setting

Landform: Lake plains
Landform position (three-dimensional): Rise
Down-slope shape: Convex
Across-slope shape: Linear
Parent material: Loamy lacustrine deposits over stratified sandy and silty lacustrine deposits

Typical profile

Ap - 0 to 8 inches: fine sandy loam
E - 8 to 12 inches: fine sandy loam
Bt - 12 to 30 inches: loam
2C - 30 to 79 inches: stratified fine sand to silt loam

Properties and qualities

Slope: 2 to 6 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.60 to 2.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 35 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water supply, 0 to 60 inches: High (about 9.5 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2e
Hydrologic Soil Group: B
Ecological site: F095XB010WI - Loamy and Clayey Upland
Forage suitability group: Mod AWC, adequately drained (G095BY005WI)
Other vegetative classification: Mod AWC, adequately drained (G095BY005WI)
Hydric soil rating: No

Minor Components

Kibbie

Percent of map unit: 4 percent
Landform: Lake plains
Landform position (three-dimensional): Dip
Down-slope shape: Linear
Across-slope shape: Concave
Ecological site: F095XB005WI - Moist Loamy or Clayey Lowland
Hydric soil rating: No

Yahara

Percent of map unit: 3 percent
Landform: Lake plains
Landform position (three-dimensional): Dip
Down-slope shape: Linear
Across-slope shape: Concave
Ecological site: F095XB005WI - Moist Loamy or Clayey Lowland

Other vegetative classification: Mod AWC, high water table (G095BY004WI)
Hydric soil rating: No

Plainfield, eroded

Percent of map unit: 3 percent
Landform: Lake plains
Landform position (three-dimensional): Rise
Down-slope shape: Convex
Across-slope shape: Linear
Ecological site: F095XB009WI - Sandy Upland
Hydric soil rating: No

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Appendix E: Soil Borings

= Site Borings (12)

= Stormwater Area Borings (8)

PROPOSED PATHWAY

PROPOSED PATHWAY. CONNECT TO COLLECTIVE PATHWAY

SB-1

SB-2

SB-3

SB-4

SB-5

SB-6

SB-7

SB-8

SB-9

SB-10

SB-11

SB-12

SW-1

SW-2

SW-3

SW-4

SW-5

SW-6

SW-7

SW-8

MULTI FAMILY BUILDING

TWIN HOMES

TWIN HOMES (9)

POTENTIAL STORMWATER BASIN

775'

780'

584'

177'

752'

345'

102'

244'

210'

225'

NEIGHBORHOOD PLAN

MULTI-FAMILY HOUSING - 20 UNITS PER BUILDING (4) = 80 UNITS

TWIN HOMES - 2 UNITS PER BUILDING (9) = 18 UNITS

SINGLE FAMILY HOMES - 80 UNITS

HARWOOD

255 N 21st Street, Milwaukee, WI 53233 | 414-475-5554

GWCHF Development

Site Exhibit

2/01/2024

North

Scale: 1" = 80'

CGC Inc.

LOG OF TEST BORING

Project **GWCHF Residential Development**
Hoffmann Drive
Location **Watertown, Wisconsin**

Boring No. **SB-1**
Surface Elevation (ft) **819±**
Job No. **CM24062**
Sheet **1** of **1**

336 S. Curtis Rd, West Allis, WI 53214 (414) 443-2000, FAX (414) 443-2099

SAMPLE						VISUAL CLASSIFICATION and Remarks	SOIL PROPERTIES				
No.	TYPE	Rec (in.)	Moist	N	Depth (ft)		qu (qa) (tsf)	W	LL	PL	LOI
						18" Dark Brown Clayey TOPSOIL					
1		18	VM	1		Very Loose, Dark Brown Sandy SILT; Little Clay, Trace Gravel (ML)					
2		18	VM	8		Loose, Brown and Gray Mottled Sandy SILT; Little Clay, Trace Gravel (ML)					
3		12	VM	6	5						
4		16	VM	47		Dense, Brown and Gray Mottled Sandy SILT; Little Clay, Trace Gravel (ML)					
5		18	W	91	10	Very Dense, Light Brown SILT; Little Fine Sand, Few Cobbles (ML)					
6		12	W	50	15	Very Dense, Brown and Gray Mottled Sandy SILT; Little Gravel (ML)					
					20	End of Boring at 20 ft Backfilled with Bentonite Chips					
					25						

WATER LEVEL OBSERVATIONS

While Drilling ▽ **13.0'** Upon Completion of Drilling **--**
Time After Drilling **5 min.**
Depth to Water **5.0'** ▼
Depth to Cave in

The stratification lines represent the approximate boundary between soil types and the transition may be gradual.

GENERAL NOTES

Start **5/2/24** End **5/2/24**
Driller **GeoServe** Chief **Eddie** Rig **7822**
Logger **Eddie** Editor **TAC**
Drill Method **2.25" HSA**

CGC Inc.

LOG OF TEST BORING

Project **GWCHF Residential Development**
Hoffmann Drive
Location **Watertown, Wisconsin**

Boring No. **SB-2**
Surface Elevation (ft) **809.5±**
Job No. **CM24062**
Sheet **1** of **1**

336 S. Curtis Rd, West Allis, WI 53214 (414) 443-2000, FAX (414) 443-2099

SAMPLE No.	TYPE	Rec (in.)	Moist	N	Depth (ft)	VISUAL CLASSIFICATION and Remarks	SOIL PROPERTIES qu (qa) (tsf)	W	LL	PL	LOI
					0	8" Black Clayey TOPSOIL					
1		18	VM	6		Medium Stiff, Brown and Gray Mottled Lean CLAY; Trace Sand and Gravel (CL)	(1.0)				
2		18	VM	10		Medium Dense, Brown and Gray Mottled SILT; with Clay, Little Sand, Trace Gravel (ML)					
3		4	VM	16	5						
4		16	M	23							
					10	Very Dense, Gray Sandy SILT; Little Gravel, Few Cobbles and Boulders (ML)					
5		12	M	70 ▽							
					15	End of Boring and Refusal on Probable Boulder at 16 ft Backfilled with Bentonite Chips					
					20						
					25						

WATER LEVEL OBSERVATIONS

While Drilling ▽	**14.0'**	Upon Completion of Drilling		**--**
Time After Drilling				**5 min.**
Depth to Water				**NW** ▼
Depth to Cave in				

The stratification lines represent the approximate boundary between soil types and the transition may be gradual.

GENERAL NOTES

Start **5/2/24** End **5/2/24**
Driller **GeoServe** Chief **Eddie** Rig **7822**
Logger **Eddie** Editor **TAC**
Drill Method **2.25" HSA**

CGC Inc.

LOG OF TEST BORING

Project **GWCHF Residential Development**
Hoffmann Drive
Location **Watertown, Wisconsin**

Boring No. **SB-3**
Surface Elevation (ft) **817±**
Job No. **CM24062**
Sheet **1** of **1**

336 S. Curtis Rd, West Allis, WI 53214 (414) 443-2000, FAX (414) 443-2099

SAMPLE No.	TYPE	Rec (in.)	Moist	N	Depth (ft)	VISUAL CLASSIFICATION and Remarks	qu (qa) (tsf)	W	LL	PL	LOI
						12" Black Clayey TOPSOIL					
1		18	W	2		Very Loose, Dark Brown Sandy SILT; Little Clay, Trace Gravel (ML)	(2.0)				
						Stiff, Brown and Gray Mottled Lean CLAY; Trace Sand and Gravel (CL)					
2		18	M	14		Medium Dense, Brown and Gray Mottled Sandy SILT; Little Gravel (ML)					
					5						
3		18	VM	22		Medium Dense to Very Dense, Brown Sandy SILT; Trace Gravel (ML)					
4		18	W	45							
					10						
5		16	W	95							
					15						
						Dense, Gray Sandy SILT; Little Clay, Trace Gravel (ML)					
6		18	W	32							
					20	End of Boring at 20 ft Backfilled with Bentonite Chips Note: Boring offset 15 ft south due to dense brush.					
					25						

WATER LEVEL OBSERVATIONS

While Drilling ▽ **14.0'**			Upon Completion of Drilling	**--**
Time After Drilling				**5 min.**
Depth to Water				**5.0'** ▼
Depth to Cave in				

The stratification lines represent the approximate boundary between soil types and the transition may be gradual.

GENERAL NOTES

Start **5/2/24** End **5/2/24**
Driller **GeoServe** Chief **Eddie** Rig **7822**
Logger **Eddie** Editor **TAC**
Drill Method **2.25" HSA**

CGC Inc.

LOG OF TEST BORING

Project **GWCHF Residential Development**
Hoffmann Drive
Location **Watertown, Wisconsin**

Boring No. **SB-4**
Surface Elevation (ft) **807.5±**
Job No. **CM24062**
Sheet **1** of **1**

336 S. Curtis Rd, West Allis, WI 53214 (414) 443-2000, FAX (414) 443-2099

SAMPLE No.	TYPE	Rec (in.)	Moist	N	Depth (ft)	VISUAL CLASSIFICATION and Remarks	SOIL PROPERTIES qu (qa) (tsf)	W	LL	PL	LOI
						24" Black Clayey TOPSOIL					
1		12	VM	4			(1.0)				
						Medium Stiff, Brown and Gray Mottled Lean CLAY; Trace Sand and Gravel (CL)					
2		18	M	12		Medium Demse, Brown and Gray Mottled Sandy SILT; Little Clay, Trace Gravel (ML)					
					5						
3		18	M	51		Very Dense, Brown and Gray Mottled Sandy SILT; Little Gravel (ML)					
					▽						
4		18	M	71	▼	Very Dense, Gray Sandy SILT; Little Gravel (ML)					
					10						
5		18	M	82							
					15						
6		18	M	34							
					20	End of Boring at 20 ft Backfilled with Bentonite Chips					
					25						

WATER LEVEL OBSERVATIONS

While Drilling ▽ **8.0'**	Upon Completion of Drilling			**--**
Time After Drilling				**5 min.**
Depth to Water				**9.0'** ▼
Depth to Cave in				

The stratification lines represent the approximate boundary between soil types and the transition may be gradual.

GENERAL NOTES

Start **5/2/24** End **5/2/24**
Driller **GeoServe** Chief **Eddie** Rig **7822**
Logger **Eddie** Editor **TAC**
Drill Method **2.25" HSA**

CGC Inc.

LOG OF TEST BORING

Project **GWCHF Residential Development**
Hoffmann Drive
Location **Watertown, Wisconsin**

Boring No. **SB-5**
Surface Elevation (ft) **825.5±**
Job No. **CM24062**
Sheet **1** of **1**

336 S. Curtis Rd, West Allis, WI 53214 (414) 443-2000, FAX (414) 443-2099

SAMPLE No.	TYPE	Rec (in.)	Moist	N	Depth (ft)	VISUAL CLASSIFICATION and Remarks	SOIL PROPERTIES qu (qa) (tsf)	W	LL	PL	LOI
						10" Dark Brown Clayey TOPSOIL					
1		18	VM	2		Stiff to Soft, Dark Brown Sandy CLAY; Trace Gravel (CL)	(1.5)				
2		18	VM	3	5		(0.5)				
3		16	M/W	15		Medium Dense to Very Dense, Brown Sandy SILT; Little Gravel (ML)					
4		18	W	20	10						
5		12	M	50	15						
6		18	W	42		Very Dense, Gray Sandy SILT; Little Gravel (ML)					
					20	End of Boring at 20 ft Backfilled with Bentonite Chips					
					25						

WATER LEVEL OBSERVATIONS

While Drilling ▽ **7.0'**	Upon Completion of Drilling			**--**
Time After Drilling				**5 min.**
Depth to Water				**8.0'** ▼
Depth to Cave in				

The stratification lines represent the approximate boundary between soil types and the transition may be gradual.

GENERAL NOTES

Start **5/2/24** End **5/2/24**
Driller **GeoServe** Chief **Eddie** Rig **7822**
Logger **Eddie** Editor **TAC**
Drill Method **2.25" HSA**

CGC Inc.

LOG OF TEST BORING

Project **GWCHF Residential Development**
Hoffmann Drive
Location **Watertown, Wisconsin**

Boring No. **SB-6**
Surface Elevation (ft) **828±**
Job No. **CM24062**
Sheet **1** of **1**

336 S. Curtis Rd, West Allis, WI 53214 (414) 443-2000, FAX (414) 443-2099

SAMPLE No.	TYPE	Rec (in.)	Moist	N	Depth (ft)	VISUAL CLASSIFICATION and Remarks	SOIL PROPERTIES qu (qa) (tsf)	W	LL	PL	LOI
						3.5" ASPHALT over 8" Gray Crushed Stone BASE COURSE					
1		16	M	7		Very Stiff to Stiff, Dark Brown Sandy CLAY; Trace Gravel (CL)	(3.0)				
2		4	VM	9			(1.5)				
					5	Loose, Brown Sandy SILT; Little Clay, Trace Gravel (ML)					
3		18	VM	11		Medium Dense, Brown Sandy SILT; Little Gravel (ML)					
4		18	VM	12							
					10						
						Very Dense, Brown and Gray Mottled SILT; Little Fine Sand (ML)					
5		18	W	66							
					15						
						Very Dense, Gray SILT; Little Fine Sand (ML)					
6		3	M	50							
					20	End of Boring at 20 ft Backfilled with Bentonite Chips					
					25						

WATER LEVEL OBSERVATIONS

While Drilling ▽ **13.0'** Upon Completion of Drilling **--**
Time After Drilling **5 min.**
Depth to Water **12.0'** ▼
Depth to Cave in

The stratification lines represent the approximate boundary between soil types and the transition may be gradual.

GENERAL NOTES

Start **5/2/24** End **5/2/24**
Driller **GeoServe** Chief **Eddie** Rig **7822**
Logger **Eddie** Editor **TAC**
Drill Method **2.25" HSA**

CGC Inc.

LOG OF TEST BORING

Project **GWCHF Residential Development**
Hoffmann Drive
Location **Watertown, Wisconsin**

Boring No. **SB-7**
Surface Elevation (ft) **833±**
Job No. **CM24062**
Sheet **1** of **1**

336 S. Curtis Rd, West Allis, WI 53214 (414) 443-2000, FAX (414) 443-2099

SAMPLE No.	TYPE	Rec (in.)	Moist	N	Depth (ft)	VISUAL CLASSIFICATION and Remarks	qu (qa) (tsf)	W	LL	PL	LOI
						FILL: 4" Black Clayey Topsoil					
1	■	18	M	41		FILL: Gray Crushed/Reprocessed Concrete					
2	■	18	M	61							
					5						
3	■	18	M	25							
4	■	18	VM	6		FILL: Brown, Gray and Dark Brown Lean Clay, Trace Sand and Gravel	(1.0)				
					10						
					▼	Loose, Dark Brown and Dark Clayey SAND (SC)					
5	■	18	W	6	▽						
					15						
						Medium Dense, Brown Sandy SILT; Little Clay, Trace Gravel (ML)					
6	■	12	W	21							
					20	End of Boring at 20 ft Backfilled with Bentonite Chips					
					25						

WATER LEVEL OBSERVATIONS

While Drilling ▽ **14.0'**	Upon Completion of Drilling			**--**
Time After Drilling				**5 min.**
Depth to Water				**12.0'** ▼
Depth to Cave in				

The stratification lines represent the approximate boundary between soil types and the transition may be gradual.

GENERAL NOTES

Start **5/3/24** End **5/3/24**
Driller **GeoServe** Chief **Eddie** Rig **7822**
Logger **Eddie** Editor **TAC**
Drill Method **2.25" HSA**

CGC Inc.

LOG OF TEST BORING

Project **GWCHF Residential Development**
Hoffmann Drive
Location **Watertown, Wisconsin**

Boring No. **SB-8**
Surface Elevation (ft) **816±**
Job No. **CM24062**
Sheet **1** of **1**

336 S. Curtis Rd, West Allis, WI 53214 (414) 443-2000, FAX (414) 443-2099

SAMPLE						VISUAL CLASSIFICATION and Remarks	SOIL PROPERTIES				
No.	TYPE	Rec (in.)	Moist	N	Depth (ft)		qu (qa) (tsf)	W	LL	PL	LOI
						FILL: 4" Dark Brown Clayey Topsoil					
1		18	M	7		FILL: Brown/Dark Brown Mixed Sandy Silt, Little Clay, Trace Gravel					
2		16	M	8	5						
3		18	M	11		FILL: Dark Brown Sandy Silt, Trace Clay, Little Gravel					
4		18	M	10	10						
5		6	M	23							
6		18	M	17	15						
7		18	W	61	▽	Very Dense, Light Brown Sandy SILT; Trace Gravel (ML)					
8		18	M	54	20	Very Dense, Gray SILT; Little Fine Sand (ML)					
						End of Boring at 20 ft Backfilled with Bentonite Chips					
					25						

WATER LEVEL OBSERVATIONS

While Drilling ▽ **17.0'**	Upon Completion of Drilling			**--**
Time After Drilling				**5 min.**
Depth to Water				**NW** ▼
Depth to Cave in				

The stratification lines represent the approximate boundary between soil types and the transition may be gradual.

GENERAL NOTES

Start **5/2/24** End **5/2/24**
Driller **GeoServe** Chief **Eddie** Rig **7822**
Logger **Matt** Editor **TAC**
Drill Method **2.25" HSA**

CGC Inc.

LOG OF TEST BORING

Project **GWCHF Residential Development**
Hoffmann Drive
Location **Watertown, Wisconsin**

Boring No. **SB-9**
Surface Elevation (ft) **821±**
Job No. **CM24062**
Sheet **1** of **1**

336 S. Curtis Rd, West Allis, WI 53214 (414) 443-2000, FAX (414) 443-2099

SAMPLE No.	TYPE	Rec (in.)	Moist	N	Depth (ft)	VISUAL CLASSIFICATION and Remarks	SOIL PROPERTIES qu (qa) (tsf)	W	LL	PL	LOI
						18" Black Clayey TOPSOIL					
1		18	M	4		Stiff, Brown and Gray Mottled Lean CLAY; Trace Sand and Gravel (CL)	(1.5)				
2		18	M/W	5	▽	Loose, Brown and Gray Mottled Sandy SILT; Little Gravel (ML)					
					5						
3		16	W	17		Medium Dense, Brown Sandy SILT; Little Clay, Trace Gravel (ML)					
4		18	W	13							
					10						
					▼	Medium Dense, Brown SILT; with Clay, Little Sand, Trace Gravel (ML)					
5		4	VM/W	25							
					15						
						Medium Dense, Gray Sandy SILT; Little Clay, Trace Gravel (ML)					
6		18	VM	14							
					20	End of Boring at 20 ft Backfilled with Bentonite Chips					
					25						

WATER LEVEL OBSERVATIONS

While Drilling ▽ **4.0'**			Upon Completion of Drilling	**--**
Time After Drilling				**5 min.**
Depth to Water				**12.0'** ▼
Depth to Cave in				

The stratification lines represent the approximate boundary between soil types and the transition may be gradual.

GENERAL NOTES

Start **5/3/24** End **5/3/24**
Driller **GeoServe** Chief **Eddie** Rig **7822**
Logger **Eddie** Editor **TAC**
Drill Method **2.25" HSA**

CGC Inc.

LOG OF TEST BORING

Project **GWCHF Residential Development**
Hoffmann Drive
Location **Watertown, Wisconsin**

Boring No. **SB-10**
Surface Elevation (ft) **816±**
Job No. **CM24062**
Sheet **1** of **1**

336 S. Curtis Rd, West Allis, WI 53214 (414) 443-2000, FAX (414) 443-2099

SAMPLE						VISUAL CLASSIFICATION and Remarks	SOIL PROPERTIES				
No.	TYPE	Rec (in.)	Moist	N	Depth (ft)		qu (qa) (tsf)	W	LL	PL	LOI
						FILL: Black Clayey Topsoil					
1	■	18	M	12							
						Loose, Brown and Gray Mottled Sandy SILT; Little Clay, Trace Gravel (ML)					
2	■	18	VM	6	5						
						Medium Dense, Brown Sandy SILT; Little Clay, Trace Gravel (ML)					
3	■	18	VM	13							
4	■	18	VM	16	10						
					▼						
						Dense to Very Dense, Gray Sandy SILT; Little Gravel (ML)					
5	■	18	M/W	48	▽ 15						
6	■	18	W	71	20						
						End of Boring at 20 ft Backfilled with Bentonite Chips					
					25						

WATER LEVEL OBSERVATIONS

While Drilling ▽ **14.0'**			Upon Completion of Drilling	**--**
Time After Drilling				**5 min.**
Depth to Water				**11.0'** ▼
Depth to Cave in				

The stratification lines represent the approximate boundary between soil types and the transition may be gradual.

GENERAL NOTES

Start **5/2/24** End **5/2/24**
Driller **GeoServe** Chief **Eddie** Rig **7822**
Logger **Eddie** Editor **TAC**
Drill Method **2.25" HSA**

CGC Inc.

LOG OF TEST BORING

Project **GWCHF Residential Development**
Hoffmann Drive
Location **Watertown, Wisconsin**

Boring No. **SB-11**
Surface Elevation (ft) **807.5±**
Job No. **CM24062**
Sheet **1** of **1**

336 S. Curtis Rd, West Allis, WI 53214 (414) 443-2000, FAX (414) 443-2099

SAMPLE No.	TYPE	Rec (in.)	Moist	N	Depth (ft)	VISUAL CLASSIFICATION and Remarks	SOIL PROPERTIES qu (qa) (tsf)	W	LL	PL	LOI
						FILL: 5" Dark Brown Clayey Topsoil					
1		18	VM	3		FILL: Brown Sandy Clay, Trace Gravel	(1.25-1.5)				
						FILL: Gray and Dark Gray Mixed Sandy Silt, Little Clay, Trace Gravel					
2		18	VM	5	5		(1.5)				
						Stiff, Black Silty CLAY; with Organics (BURIED TOPSOIL) (OL)					
3		18	M	5			(1.5)				
						Stiff, Dark Gray Lean CLAY; Trace Sand and Gravel (CL)					
4		4	M	14	10	Medium Dense, Tan and Gray Mottled Sandy SILT; Little Gravel (ML)	(2.0)				
5		18	M	19	15	Dense, Gray Sandy SILT; Little Gravel (ML)					
6		18	M	36	20	End of Boring at 20 ft Backfilled with Bentonite Chips					
					25						

WATER LEVEL OBSERVATIONS

While Drilling ▽ **NW** Upon Completion of Drilling **--**
Time After Drilling **5 min.**
Depth to Water **NW** ▼
Depth to Cave in

The stratification lines represent the approximate boundary between soil types and the transition may be gradual.

GENERAL NOTES

Start **5/12/24** End **5/1/24**
Driller **GeoServe** Chief **Matt** Rig **7822**
Logger **Matt** Editor **TAC**
Drill Method **2.25" HSA**

CGC Inc.

LOG OF TEST BORING

Project **GWCHF Residential Development**
Hoffmann Drive
Location **Watertown, Wisconsin**

Boring No. **SB-12**
Surface Elevation (ft) **824±**
Job No. **CM24062**
Sheet **1** of **1**

336 S. Curtis Rd, West Allis, WI 53214 (414) 443-2000, FAX (414) 443-2099

SAMPLE						VISUAL CLASSIFICATION and Remarks	SOIL PROPERTIES				
No.	TYPE	Rec (in.)	Moist	N	Depth (ft)		qu (qa) (tsf)	W	LL	PL	LOI
						FILL: Gray Crushed/Reprocessed Concrete					
1	■	18	M	33							
2	■	18	VM	10	▽						
					5	Stiff, Brown and Dark Gray Mottled Sandy CLAY; Trace Gravel (CL)	(1.5)				
3	■	18	VM	10		Very Stiff, Light Brown and Gray Mottled Lean CLAY; Trace Sand and Gravel (CL)	(2.5)				
4	■	12	W	7		Loose, Brown and Gray Mottled Sandy SILT; Little Clay, Trace Gravel (ML)					
					10						
						Dense to Medium Dense, Brown Sandy SILT; Little Clay, Trace Gravel (ML)					
5	■	18	W	39							
					15						
6	■	6	W	13							
					20	End of Boring at 20 ft Backfilled with Bentonite Chips					
					25						

WATER LEVEL OBSERVATIONS

While Drilling ▽ **4.0'** Upon Completion of Drilling **--**
Time After Drilling **5 min.**
Depth to Water **NW** ▼
Depth to Cave in

The stratification lines represent the approximate boundary between soil types and the transition may be gradual.

GENERAL NOTES

Start **5/3/24** End **5/3/24**
Driller **GeoServe** Chief **Eddie** Rig **7822**
Logger **Eddie** Editor **TAC**
Drill Method **2.25" HSA**

CGC Inc.

LOG OF TEST BORING

Project **GWCHF Residential Development**
Hoffmann Drive
Location **Watertown, Wisconsin**

Boring No. **SW-1**
Surface Elevation (ft) **801±**
Job No. **CM24062**
Sheet **1** of **1**

336 S. Curtis Rd, West Allis, WI 53214 (414) 443-2000, FAX (414) 443-2099

SAMPLE No.	TYPE	Rec (in.)	Moist	N	Depth (ft)	VISUAL CLASSIFICATION and Remarks	qu (qa) (tsf)	W	LL	PL	LOI
						8" Black Clayey TOPSOIL					
1	■	6	W	6		Loose, Tan and Gray Mottled SILT; with Clay, Little Sand, Trace Gravel (ML)					
2	■	18	W	20	5	Medium Dense, Tan and Gray Mottled Fine SAND; Little Silt (SP-SM)					
3	■	18	W/M	18		Medium Dense, Gray SILT; Little Fine Sand (ML)					
4	■	18	M	23	10						
5	■	18	M	12							
6	■	18	M	32		Dense, Gray Sandy SILT; Little Gravel (ML)					
7	■	18	M	38	15						
8	■	18	M	31							
					20	End of Boring at 20 ft Backfilled with Bentonite Chips					
					25						

WATER LEVEL OBSERVATIONS

While Drilling ▽ **1.0'** Upon Completion of Drilling **--**
Time After Drilling **5 min.**
Depth to Water **5.0'** ▼
Depth to Cave in

The stratification lines represent the approximate boundary between soil types and the transition may be gradual.

GENERAL NOTES

Start **5/1/24** End **5/1/24**
Driller **GeoServe** Chief **Matt** Rig **7822**
Logger **Matt** Editor **TAC**
Drill Method **2.25" HSA**

CGC Inc.

LOG OF TEST BORING

Project **GWCHF Residential Development**
Hoffmann Drive
Location **Watertown, Wisconsin**

Boring No. **SW-2**
Surface Elevation (ft) **804±**
Job No. **CM24062**
Sheet **1** of **1**

336 S. Curtis Rd, West Allis, WI 53214 (414) 443-2000, FAX (414) 443-2099

SAMPLE No.	TYPE	Rec (in.)	Moist	N	Depth (ft)	VISUAL CLASSIFICATION and Remarks	SOIL PROPERTIES qu (qa) (tsf)	W	LL	PL	LOI
						24" Black Clayey TOPSOIL					
1		18	VM	5							
						Stiff, Tan and Gray Mottled Silty CLAY; Trace Sand and Fine Roots (CL/CL-ML)	(1.0-2.0)				
2		18	M	18		Medium Dense, Tan and Gray Mottled Sandy SILT; Little Gravel (ML)					
					5						
3		16	W	31		Dense, Grayish Brown Sandy SILT; Little Gravel (ML)					
4		18	M	25		Medium Dense to Very Dense, Gray Sandy SILT; Little Gravel, Occasional Cobbles and Boulders (ML)					
					10						
5		12	M	80/9"							
6		12	M	69							
					15						
7		18	M	60							
8		18	M	66							
					20						
						End of Boring at 20 ft Backfilled with Bentonite Chips					
					25						

WATER LEVEL OBSERVATIONS

While Drilling ▽ **7.0'**	Upon Completion of Drilling			**--**
Time After Drilling				**5 min.**
Depth to Water				**8.0'** ▼
Depth to Cave in				

The stratification lines represent the approximate boundary between soil types and the transition may be gradual.

GENERAL NOTES

Start **5/1/24** End **5/1/24**
Driller **GeoServe** Chief **Matt** Rig **7822**
Logger **Matt** Editor **TAC**
Drill Method **2.25" HSA**

CGC Inc.

LOG OF TEST BORING

Project **GWCHF Residential Development**
Hoffmann Drive
Location **Watertown, Wisconsin**

Boring No. **SW-3**
Surface Elevation (ft) **798±**
Job No. **CM24062**
Sheet **1** of **1**

336 S. Curtis Rd, West Allis, WI 53214 (414) 443-2000, FAX (414) 443-2099

SAMPLE						VISUAL CLASSIFICATION and Remarks	SOIL PROPERTIES				
No.	TYPE	Rec (in.)	Moist	N	Depth (ft)		qu (qa) (tsf)	W	LL	PL	LOI
						FILL: 5" Black Clayey Topsoil					
1		18	M	11		FILL: Brown and Dark Brown Mixed Sandy Silt, Little Gravel, Trace Clay					
2		18	M	12		Black Silty CLAY; with Organics (BURIED TOPSOIL)					
					5						
3		18	M	11		Medium Dense, Tan and Gray Sandy SILT; Little Gravel (ML)					
4		4	VM/W	20		Medium Dense, Grayish Brown Sandy SILT; Little Clay, Trace Gravel (ML)					
					10						
5		18	M/W	36		Dense to Very Dense, Gray SILT; Trace to Some Sand, Few Sand Seams (ML)					
6		16	M	32							
					15						
7		18	W	37							
8		18	W	83							
					20						
						End of Boring at 20 ft Backfilled with Bentonite Chips					
					25						

WATER LEVEL OBSERVATIONS

While Drilling ▽ **12.0'**			Upon Completion of Drilling	**--**
Time After Drilling				**5 min.**
Depth to Water				**10.0'** ▼
Depth to Cave in				

The stratification lines represent the approximate boundary between soil types and the transition may be gradual.

GENERAL NOTES

Start **5/1/24** End **5/1/24**
Driller **GeoServe** Chief **Matt** Rig **7822**
Logger **Matt** Editor **TAC**
Drill Method **2.25" HSA**

CGC Inc.

LOG OF TEST BORING

Project **GWCHF Residential Development**
Hoffmann Drive
Location **Watertown, Wisconsin**

Boring No. **SW-4**
Surface Elevation (ft) **801.5±**
Job No. **CM24062**
Sheet **1** of **1**

336 S. Curtis Rd, West Allis, WI 53214 (414) 443-2000, FAX (414) 443-2099

SAMPLE						VISUAL CLASSIFICATION and Remarks	SOIL PROPERTIES				
No.	TYPE	Rec (in.)	Moist	N	Depth (ft)		qu (qa) (tsf)	W	LL	PL	LOI
						FILL: 4" Black Clayey Topsoil					
1		18	M	20		FILL: Brown Silty Sand, Trace Clay and Gravel					
2		18	M	10		FILL: Black and Dark Gray Mixed Sandy Silt, Little Clay, Trace Gravel with Intermixed Topsoil					
					5	Black Silty CLAY; with Organics (BURIED TOPSOIL)					
3		18	M	12							
4		18	M	8		Loose, Brown and Gray Mottled SILT; Little Clay, Trace to Little Sand, Trace Gravel (ML)					
					10						
5		18	M/W	28	▽	Medium Dense, Brown Sandy SILT; Little Gravel (ML)					
6		18	M	38		Dense, Gray SILT; Trace Fine Sand (ML)					
					15 ▼						
7		18	M	70		Very Dense, Gray Sandy SILT; Little Gravel (ML)					
8		18	M	54							
					20	End of Boring at 20 ft Backfilled with Bentonite Chips					
					25						

WATER LEVEL OBSERVATIONS

While Drilling ▽ **12.0'**	Upon Completion of Drilling			**--**
Time After Drilling				**5 min.**
Depth to Water				**15.0'** ▼
Depth to Cave in				

The stratification lines represent the approximate boundary between soil types and the transition may be gradual.

GENERAL NOTES

Start **5/1/24** End **5/1/24**
Driller **GeoServe** Chief **Matt** Rig **7822**
Logger **Matt** Editor **TAC**
Drill Method **2.25" HSA**

CGC Inc.

LOG OF TEST BORING

Project **GWCHF Residential Development**
Hoffmann Drive
Location **Watertown, Wisconsin**

Boring No. **SW-5**
Surface Elevation (ft) **823±**
Job No. **CM24062**
Sheet **1** of **1**

336 S. Curtis Rd, West Allis, WI 53214 (414) 443-2000, FAX (414) 443-2099

SAMPLE						VISUAL CLASSIFICATION and Remarks	SOIL PROPERTIES				
No.	TYPE	Rec (in.)	Moist	N	Depth (ft)		qu (qa) (tsf)	W	LL	PL	LOI
						FILL: Gray Crushed/Reprocessed Concrete					
1		18	M	12							
2		12	W	7							
					5	Dark Gray and Black Mottled Silty CLAY; with Organics (BURIED TOPSOIL)	(1.75)				
3		16	W	10		Very Stiff, Brown and Gray Mottled Silty CLAY; Trace Sand (CL/CL-ML)	(2.5-3.0)				
4		18	W	11		Medium Dense, Brown Sandy SILT; Little Gravel (ML)					
					10						
5		18	W	8							
6		18	W	14							
					15						
						Soft, Sandy CLAY; Trace Gravel (CL)					
7		18	W	6			(0.5)				
8		4	W	9							
					20						
						End of Boring at 20 ft Backfilled with Bentonite Chips					
					25						

WATER LEVEL OBSERVATIONS

While Drilling ▽ **3.0'**			Upon Completion of Drilling	**--**
Time After Drilling				**5 min.**
Depth to Water				**2.0'** ▼
Depth to Cave in				

The stratification lines represent the approximate boundary between soil types and the transition may be gradual.

GENERAL NOTES

Start **5/3/24** End **5/3/24**
Driller **GeoServe** Chief **Matt** Rig **7822**
Logger **Matt** Editor **TAC**
Drill Method **2.25" HSA**

CGC Inc.

LOG OF TEST BORING

Project **GWCHF Residential Development**
Hoffmann Drive
Location **Watertown, Wisconsin**

Boring No. **SW-6**
Surface Elevation (ft) **822.5±**
Job No. **CM24062**
Sheet **1** of **1**

336 S. Curtis Rd, West Allis, WI 53214 (414) 443-2000, FAX (414) 443-2099

SAMPLE						VISUAL CLASSIFICATION and Remarks	SOIL PROPERTIES				
No.	TYPE	Rec (in.)	Moist	N	Depth (ft)		qu (qa) (tsf)	W	LL	PL	LOI
						FILL: Gray Crushed/Reprocessed Concrete					
1		18	M	10							
						Black Silty CLAY; with Organics (BURIED TOPSOIL)					
2		18	W	4	▽						
					5	Loose, Brown and Gray Mottled Sandy SILT; Some Clay, Few Sand Seams (ML)					
3		18	M	10		Very Stiff, Brown and Gray Mottled Lean CLAY; Trace Sand and Gravel (CL)	(2.5-2.75)				
						Medium Stiff, Gray Lean CLAY; Trace Sand and Gravel, Few Silt Seams (CL)					
4		18	W	6	▼		(1.0)				
					10	Loose, Gray Sandy SILT; Little to Some Clay, Trace Gravel (ML)					
5		18	W	9							
6		4	W	8							
					15	Medium Dense, Gray Sandy SILT; Little Gravel (ML)					
7		18	W	20							
8		18	W	15							
					20	End of Boring at 20 ft Backfilled with Bentonite Chips					
					25						

WATER LEVEL OBSERVATIONS

While Drilling ▽ **4.0'**	Upon Completion of Drilling			**--**
Time After Drilling				**5 min.**
Depth to Water				**10.0'** ▼
Depth to Cave in				

The stratification lines represent the approximate boundary between soil types and the transition may be gradual.

GENERAL NOTES

Start **5/3/24** End **5/3/24**
Driller **GeoServe** Chief **Matt** Rig **7822**
Logger **Matt** Editor **TAC**
Drill Method **2.25" HSA**

CGC Inc.

LOG OF TEST BORING

Project **GWCHF Residential Development**
Hoffmann Drive
Location **Watertown, Wisconsin**

Boring No. **SW-7**
Surface Elevation (ft) **794±**
Job No. **CM24062**
Sheet **1** of **1**

336 S. Curtis Rd, West Allis, WI 53214 (414) 443-2000, FAX (414) 443-2099

SAMPLE No.	TYPE	Rec (in.)	Moist	N	Depth (ft)	VISUAL CLASSIFICATION and Remarks	SOIL PROPERTIES qu (qa) (tsf)	W	LL	PL	LOI
						Black Clayey TOPSOIL					
1		18	M	4			(1.0-2.0)				
2		6	M	41							
					5	Dense, Brown and Gray Mottled Silty SAND; Little Gravel (SM)					
						Medium Dense to Dense, Gray Gravelly, Sandy SILT; Little Clay (ML)					
3		2	W	24							
4		2	W	32							
					10						
						Very Dense to Medium Dense, Gray SILT; Little Sand, Trace to Little Gravel, Trace Clay (ML)					
5		18	VM	46							
6		18	M	56							
					15						
7		8	W	45							
8		18	W	24			(4.5)				
					20						
						End of Boring at 20 ft Backfilled with Bentonite Chips					
					25						

WATER LEVEL OBSERVATIONS

While Drilling ▽ **6.0'**			Upon Completion of Drilling	**--**
Time After Drilling				**5 min.**
Depth to Water				**2.0'** ▼
Depth to Cave in				

The stratification lines represent the approximate boundary between soil types and the transition may be gradual.

GENERAL NOTES

Start **5/1/24** End **5/1/24**
Driller **GeoServe** Chief **Matt** Rig **7822**
Logger **Matt** Editor **TAC**
Drill Method **2.25" HSA**

CGC Inc.

LOG OF TEST BORING

Project **GWCHF Residential Development**
Hoffmann Drive
Location **Watertown, Wisconsin**

Boring No. **SW-8**
Surface Elevation (ft) **797.5±**
Job No. **CM24062**
Sheet **1** of **1**

336 S. Curtis Rd, West Allis, WI 53214 (414) 443-2000, FAX (414) 443-2099

SAMPLE No.	TYPE	Rec (in.)	Moist	N	Depth (ft)	VISUAL CLASSIFICATION and Remarks	SOIL PROPERTIES qu (qa) (tsf)	W	LL	PL	LOI
						18" Black Clayey TOPSOIL					
1		18	VM	4		Stiff, Light Gray and Brown Mottled Lean CLAY; Trace Sand and Gravel (CL)	(1.5)				
2		18	VM	6		Loose, Brown and Gray Mottled Sandy SILT; Little Gravel (ML)					
					5						
3		2	M/W	20	▽	Stiff, Brown and Gray Mottled Sandy CLAY; Trace Gravel (CL)					
4		12	M	22		Medium Dense to Very Dense, Gray SILT; Little Sand and Gravel (ML)					
					10						
5		18	M	75							
6		12	M	36	▼						
					15						
7		18	M	18		Medium Dense, Gray Sandy CLAY; Trace Gravel (CL)					
8		4	M	24							
					20	End of Boring at 20 ft Backfilled with Bentonite Chips					
					25						

WATER LEVEL OBSERVATIONS

While Drilling ▽ **6.0'**			Upon Completion of Drilling	**--**
Time After Drilling				**5 min.**
Depth to Water				**15.0'** ▼
Depth to Cave in				

The stratification lines represent the approximate boundary between soil types and the transition may be gradual.

GENERAL NOTES

Start **5/1/24** End **5/1/24**
Driller **GeoServe** Chief **Matt** Rig **7822**
Logger **Matt** Editor **TAC**
Drill Method **2.25" HSA**

Wisconsin Department of Commerce
Division of Safety and Buildings

SOIL AND SITE EVALUATION - STORM

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

Attach 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 slope, scale or dimensions, north arrow, and BM referenced to nearest road.

Please print all information.

Personal information you provide may be used for secondary purposes (Privacy Law, s.15.04 (1) (m)).

County	Jefferson
Parcel I.D.	291-0815-0814-001
Review by	**Date**

Property Owner		**Property Location**	600 and 700 Hoffman Drive
Hoffman Matz LLC		**Govt. Lot**	SE 1/4 of NE 1/4 S08 T8N R15E
Property Owner's Mailing Address		**Lot #**	**Block #** / **Subd. Name or CSM#**
600 E. Main Street, Suite 200		1	4146-02-181
City	**State** / **Zip Code** / **Phone Number**	[X] **City** [ ] **Village** [ ] **Town**	**Nearest Road**
Watertown	WI 53094	Watertown	Johnson Street

Drainage area: _____ [ ] **sq. ft.** [ ] **acres**

Test Site Suitable for (check all that apply) [ ] **Site not suitable**

[ ] **Bioretention** [ ] **Subsurface Dispersal System**

[ ] **Reuse** [ ] **Irrigation** [ ] **Other** _____

Hydraulic Application Test Method

[X] **Morphological Evaluation**

[ ] **Double-Ring Infiltrometer**

[ ] **Other (Specify)** _____

Soil Moisture

Date of soil borings: May 1-3, 2024

USDA-NRCS WETS Value:

[ ] **Dry = 1**

[X] **Normal = 2**

[ ] **Wet = 3**

SW-1 **Obs. #** [X] **Boring** [ ] **Pit** **Ground Surface Elev.** **801±** **ft** **Elevation of limiting factor** **801±** **ft**

Horizon	Depth in.	Dominant Color Munsell	Redox Description Qu. Sz. Cont. Color	Texture	Structure Gr. Sz. Sh.	Consistence	Boundary	% Rock Frag.	% Fines	Hydraulic App. Rate Inches/Hr
1	0-8	Topsoil (Not Sampled)								
2	8-36	10YR6/4	c2d 10YR7/2	L	0,m	mfr	g	<5	70	0.24
3	36-66	10YR5/6	c2f 10YR7/2	LFS	0,sg	mfr	g	<5	15	0.50
4	66-156	10YR5/1	--	SICL	0,m	mvfi	g	<5	80	0.04
5	156-240	10YR6/1	--	SL	0,m	mvfi	g	<15	50	0.50

Comments:

SW-2 **Obs. #** [X] **Boring** [ ] **Pit** **Ground Surface Elev.** **804±** **ft** **Elevation of limiting factor** **804±** **ft**

Horizon	Depth in.	Dominant Color Munsell	Redox Description Qu. Sz. Cont. Color	Texture	Structure Gr. Sz. Sh.	Consistence	Boundary	% Rock Frag.	% Fines	Hydraulic App. Rate Inches/Hr
1	0-24	Topsoil (Not Sampled)								
2	24-36	10YR6/2	c2d 10YR7/4	SIC	0,m	mfi	g	<5	>90	0.07
3	36-66	10YR6/4	c2d 10YR7/1	SL	0,m	mfr	g	<15	40	0.50
4	66-96	10YR6/2	--	SL	0,m	mfi	g	<15	50	0.50
5	96-240	10YR6/1	--	SL	0,m	mvfi	g	<15	50	0.50

Comments:

CST/PSS Name (Please Print)	Signature	CST Number
Paul J. Giese, CST	Paul J. Giese	SP-030800004
Address	**Date Evaluation Conducted**	**Telephone Number**
336 S. Curtis Road, West Allis, WI 53214	5/9/24	(414) 443-2000

SBD-10793 (R 01/17)

Property Owner Hoffman Matz LLC **Parcel ID#** 291-0815-0814-001 **Page** 2 **of** 3

SW-3 **Obs. #** [X] **Boring** [ ] **Pit** **Ground Surface Elev.** 798± ft **Elevation of limiting factor** 798± ft

Horizon	Depth in.	Dominant Color Munsell	Redox Description Qu. Sz. Cont. Color	Texture	Structure Gr. Sz. Sh.	Consistence	Boundary	% Rock Frag.	% Fines	Hydraulic App. Rate Inches/Hr
1	0-5	Topsoil Fill (Not Sampled)								
2	5-36	10YR4/2 & 10YR6/4	--	L*	0,m	mfi	a	<15	60	0.24
3	36-66	10YR2/1	--	SICL**	0,m	mfi	a	<5	>90	0.04
4	66-96	10YR5/6	c2d 10YR7/2	SL	0,m	mfr	g	<5	50	0.50
5	96-126	10YR6/2	--	SCL	0,m	mfr	g	<5	55	0.11
6	126-240	10YR6/2	--	SIL	0,m	mvfi	g	<15	70-80	0.13

Comments: * FILL ** Buried Topsoil

SW-4 **Obs. #** [X] **Boring** [ ] **Pit** **Ground Surface Elev.** 801.5± ft **Elevation of limiting factor** 801.5± ft

Horizon	Depth in.	Dominant Color Munsell	Redox Description Qu. Sz. Cont. Color	Texture	Structure Gr. Sz. Sh.	Consistence	Boundary	% Rock Frag.	% Fines	Hydraulic App. Rate Inches/Hr
1	0-4	Topsoil Fill (Not Sampled)								
2	4-36	10YR5/4	--	SL*	0,sg	mfr	a	<15	15	0.50
3	36-54	10YR4/2 & 10YR2/1	--	SL*	0,m	mfr	a	<5	50	0.50
4	54-96	10YR2/1	--	SICL**	0,m	mfi	a	<5	>90	0.04
5	96-126	10YR6/4	c2d 2.5Y7/1	CL	0,m	mfi	g	<5	70	0.03
6	126-156	10YR6/6	c2f 10YR7/2	SL	0,m	mfi	g	<5	40	0.50
7	156-186	10YR6/2	--	SI	0,m	mfr	g	<5	90	0.13
8	186-240	10YR6/2	--	SL	0,m	mfi	g	<15	50	0.50

Comments: * FILL ** Buried Topsoil

SW-5 **Obs. #** [X] **Boring** [ ] **Pit** **Ground Surface Elev.** 823± ft **Elevation of limiting factor** 823± ft

Horizon	Depth in.	Dominant Color Munsell	Redox Description Qu. Sz. Cont. Color	Texture	Structure Gr. Sz. Sh.	Consistence	Boundary	% Rock Frag.	% Fines	Hydraulic App. Rate Inches/Hr
1	0-48	10YR6/2	--	GRS*	0,sg	mfr	a	15-35	5-10	3.60
2	48-66	10YR3/1	m2p 10YR2/1	SIC**	0,m	mfr	a	<5	>90	0.07
3	66-96	10YR5/6	m2p 10YR7/2	SIC	0,m	mfi	g	<5	>90	0.07
4	96-186	10YR6/4	--	SICL	0,m	mfi	g	<5	50	0.04
5	186-240	10YR6/2	--	SC	0,m	mfr	g	<5	55	0.04

Comments: * FILL (Crushed/Reprocessed Concrete) ** Buried Topsoil

Property Owner Hoffman Matz LLC **Parcel ID#** 291-0815-0814-001 **Page** 3 **of** 3

SW-6 **Obs. #** [X] **Boring** [ ] **Pit** **Ground Surface Elev.** 822.5± ft **Elevation of limiting factor** 822.5± ft

Horizon	Depth in.	Dominant Color Munsell	Redox Description Qu. Sz. Cont. Color	Texture	Structure Gr. Sz. Sh.	Consistence	Boundary	% Rock Frag.	% Fines	Hydraulic App. Rate Inches/Hr
1	0-24	10YR6/2	--	GRS*	0,sg	mfr	a	15-35	5-10	3.60
2	24-48	10YR2/1	--	SIC**	0,m	mfr	g	<5	>90	0.07
3	48-72	2.5Y6/1	c2f 10YR7/3	SCL	0,m	mfr	g	<5	55	0.11
4	72-96	10YR5/6	m2p 10YR6/3	C	0,m	mfi	g	<5	>90	0.07
5	96-126	10YR6/2	--	C	0,m	mfi	g	<5	>90	0.07
6	126-186	10YR6/1	--	SCL	0,m	mfr	g	<15	55	0.11
7	186-240	10YR6/2	--	SL	0,m	mfi	g	<15	50	0.50

Comments: * FILL (Crushed/Reprocessed Concrete) ** Buried Topsoil

SW-7 **Obs. #** [X] **Boring** [ ] **Pit** **Ground Surface Elev.** 794± ft **Elevation of limiting factor** 794± ft

Horizon	Depth in.	Dominant Color Munsell	Redox Description Qu. Sz. Cont. Color	Texture	Structure Gr. Sz. Sh.	Consistence	Boundary	% Rock Frag.	% Fines	Hydraulic App. Rate Inches/Hr
1	0-48	10YR2/1	--	SIC*	0,m	mfr	g	<5	>90	0.07
2	48-66	10YR6/8	m2p 10YR7/1	SL	0,sg	mfr	g	<15	15-20	0.50
3	66-126	10YR6/2	--	GRSCL	0,m	mfi	g	15-35	50	0.11
4	126-240	10YR6/2	--	L	0,m	mfi	g	<15	60	0.24

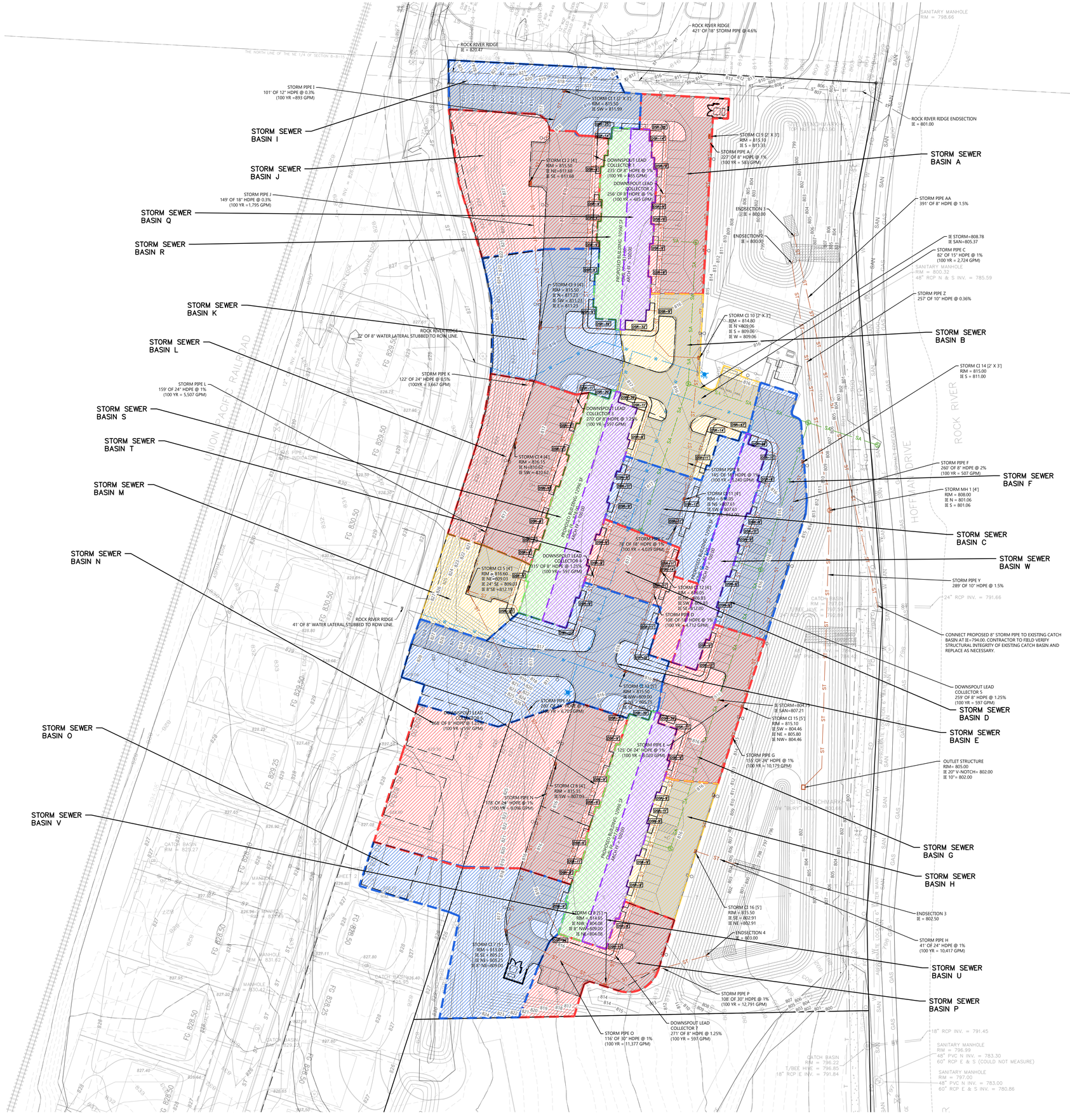
Comments: * Topsoil

SW-8 **Obs. #** [X] **Boring** [ ] **Pit** **Ground Surface Elev.** 797.5± ft **Elevation of limiting factor** 797.5± ft

Horizon	Depth in.	Dominant Color Munsell	Redox Description Qu. Sz. Cont. Color	Texture	Structure Gr. Sz. Sh.	Consistence	Boundary	% Rock Frag.	% Fines	Hydraulic App. Rate Inches/Hr
1	0-18	Topsoil (Not Sampled)								
2	18-48	10YR7/1	m2d 10YR6/4	C	0,m	mfi	g	<5	>90	0.07
3	48-66	10YR6/4	m2d 10YR7/1	SCL	0,m	mfi	g	5-10	50	0.11
4	66-96	10YR6/2	c2d 10YR6/2	SC	0,m	mfi	g	5	50	0.04
5	96-186	10YR6/1	--	GRL	0,m	mfi	g	15-35	50-60	0.24
6	186-240	10YR5/1	--	SC	0,m	mfr	g	<15	55	0.04

Comments:

Appendix F: Storm Sewer Basin Map



PIPE BASIN	TOTAL (SF)	TOTAL (AC)	IMPERVIOUS (SF)	IMPERVIOUS (AC)	OPEN (SF)	OPEN (AC)
A	12,555	0.29	11,184	0.26	1,371	0.03
B	17,077	0.39	12,838	0.29	4,239	0.10
C	10,199	0.23	9,465	0.22	734	0.02
D	7,944	0.18	7,209	0.17	735	0.02
E	25,631	0.59	13,246	0.30	12,385	0.28
F	13,281	0.30	11,761	0.27	1,520	0.03
G	10,820	0.25	8,456	0.19	2,364	0.05
H	7,815	0.18	7,214	0.17	601	0.01
I	10,955	0.25	6,155	0.14	4,800	0.11
J	19,472	0.45	7,525	0.17	11,947	0.27
K	16,867	0.39	7,637	0.18	9,230	0.21
L	16,596	0.38	8,993	0.21	7,603	0.17
M	8,078	0.19	2,567	0.06	5,511	0.13
N	33,870	0.78	14,078	0.32	19,792	0.45
O	19,598	0.45	6,728	0.15	12,870	0.30
P	9,415	0.22	6,543	0.15	2,872	0.07
Q	5,280	0.12	5,280	0.12	0	0.00
R	5,280	0.12	5,280	0.12	0	0.00
S	6,498	0.15	6,498	0.15	0	0.00
T	6,498	0.15	6,498	0.15	0	0.00
U	6,498	0.15	6,498	0.15	0	0.00
V	6,498	0.15	6,498	0.15	0	0.00
W	6,498	0.15	6,498	0.15	0	0.00

SCALE: 1" = 40'
40' 0 40' 80'
NORTH

STORM SEWER BASIN MAP

EXCEL
Always a Better Plan
100 Camelot Drive
Fond du Lac, WI 54935
920-926-9800
excelengineer.com

PROJECT INFORMATION

PROPOSED MULTI-FAMILY DEVELOPMENT
LUMIN TERRACE
JOHNSON STREET • WATERTOWN, WI

PROFESSIONAL SEAL

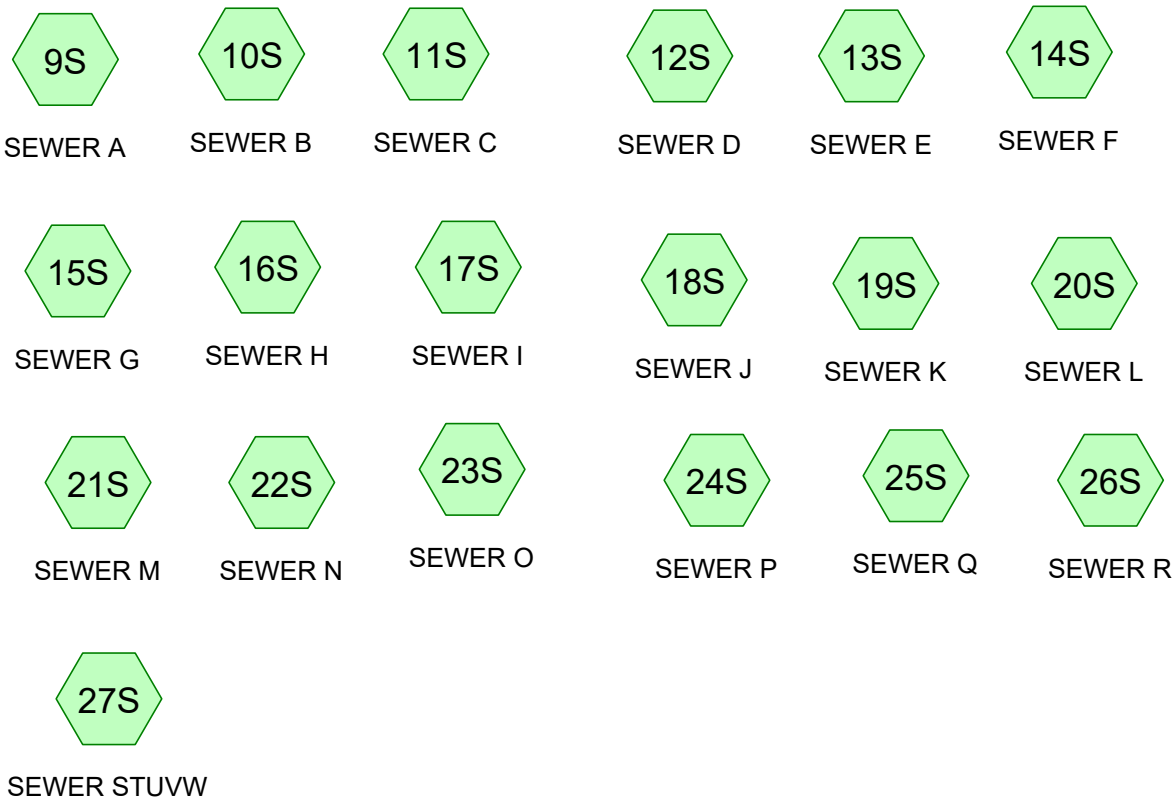
PRELIMINARY DATES

NOT FOR CONSTRUCTION

JOB NUMBER
240136200

SHEET NUMBER
SSBM

Appendix G: Storm Sewer TR-55 Calculations



Subcat Reach Pond Link

Routing Diagram for hydrocad240136200
Prepared by Excel Engineering, Printed 10/29/2024
HydroCAD® 10.20-4a s/n 01178 © 2023 HydroCAD Software Solutions LLC

Area Listing (selected nodes)

Area (acres)	CN	Description (subcatchment-numbers)
3.642	98	(9S, 10S, 11S, 12S, 13S, 14S, 15S, 16S, 17S, 18S, 19S, 20S, 21S, 22S, 23S, 24S, 25S, 26S, 27S)
2.263	74	(9S, 10S, 11S, 12S, 13S, 14S, 15S, 16S, 17S, 18S, 19S, 20S, 21S, 22S, 23S, 24S)

Soil Listing (selected nodes)

Area (acres)	Soil Group	Subcatchment Numbers
0.000	HSG A	
0.000	HSG B	
0.000	HSG C	
0.000	HSG D	
5.905	Other	9S, 10S, 11S, 12S, 13S, 14S, 15S, 16S, 17S, 18S, 19S, 20S, 21S, 22S, 23S, 24S, 25S, 26S, 27S

Ground Covers (selected nodes)

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchment Numbers
0.000	0.000	0.000	0.000	5.905	5.905		9S, 10S, 11S, 12S, 13S, 14S, 15S, 16S, 17S, 18S, 19S, 20S, 21S, 22S, 23S, 24S, 25S, 26S, 27S

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

Subcatchment9S: SEWER A Runoff Area=12,555 sf 89.08% Impervious Runoff Depth>5.41"
Tc=6.0 min CN=95 Runoff=2.52 cfs 0.130 af

Subcatchment10S: SEWER B Runoff Area=17,077 sf 75.18% Impervious Runoff Depth>5.09"
Tc=6.0 min CN=92 Runoff=3.33 cfs 0.166 af

Subcatchment11S: SEWER C Runoff Area=10,199 sf 92.80% Impervious Runoff Depth>5.52"
Tc=6.0 min CN=96 Runoff=2.06 cfs 0.108 af

Subcatchment12S: SEWER D Runoff Area=7,944 sf 90.75% Impervious Runoff Depth>5.52"
Tc=6.0 min CN=96 Runoff=1.61 cfs 0.084 af

Subcatchment13S: SEWER E Runoff Area=25,631 sf 51.68% Impervious Runoff Depth>4.43"
Tc=6.0 min CN=86 Runoff=4.59 cfs 0.217 af

Subcatchment14S: SEWER F Runoff Area=13,281 sf 88.56% Impervious Runoff Depth>5.41"
Tc=6.0 min CN=95 Runoff=2.67 cfs 0.138 af

Subcatchment15S: SEWER G Runoff Area=10,820 sf 78.15% Impervious Runoff Depth>5.20"
Tc=6.0 min CN=93 Runoff=2.13 cfs 0.108 af

Subcatchment16S: SEWER H Runoff Area=7,815 sf 92.31% Impervious Runoff Depth>5.52"
Tc=6.0 min CN=96 Runoff=1.58 cfs 0.082 af

Subcatchment17S: SEWER I Runoff Area=10,955 sf 56.18% Impervious Runoff Depth>4.54"
Tc=6.0 min CN=87 Runoff=1.99 cfs 0.095 af

Subcatchment18S: SEWER J Runoff Area=19,472 sf 38.65% Impervious Runoff Depth>4.11"
Tc=6.0 min CN=83 Runoff=3.30 cfs 0.153 af

Subcatchment19S: SEWER K Runoff Area=16,867 sf 45.28% Impervious Runoff Depth>4.33"
Tc=6.0 min CN=85 Runoff=2.97 cfs 0.140 af

Subcatchment20S: SEWER L Runoff Area=16,596 sf 54.19% Impervious Runoff Depth>4.54"
Tc=6.0 min CN=87 Runoff=3.02 cfs 0.144 af

Subcatchment21S: SEWER M Runoff Area=8,078 sf 31.78% Impervious Runoff Depth>4.01"
Tc=6.0 min CN=82 Runoff=1.34 cfs 0.062 af

Subcatchment22S: SEWER N Runoff Area=33,870 sf 41.56% Impervious Runoff Depth>4.22"
Tc=6.0 min CN=84 Runoff=5.85 cfs 0.273 af

Subcatchment23S: SEWER O Runoff Area=19,598 sf 34.33% Impervious Runoff Depth>4.01"
Tc=6.0 min CN=82 Runoff=3.25 cfs 0.150 af

Subcatchment24S: SEWER P Runoff Area=9,415 sf 69.50% Impervious Runoff Depth>4.98"
Tc=6.0 min CN=91 Runoff=1.82 cfs 0.090 af

Subcatchment25S: SEWER Q Runoff Area=5,280 sf 100.00% Impervious Runoff Depth>5.70"
Tc=6.0 min CN=98 Runoff=1.08 cfs 0.058 af

Subcatchment26S: SEWER R Runoff Area=5,280 sf 100.00% Impervious Runoff Depth>5.70"
Tc=6.0 min CN=98 Runoff=1.08 cfs 0.058 af

Subcatchment27S: SEWER STUVW Runoff Area=6,498 sf 100.00% Impervious Runoff Depth>5.70"
Tc=6.0 min CN=98 Runoff=1.33 cfs 0.071 af

Summary for Subcatchment 9S: SEWER A

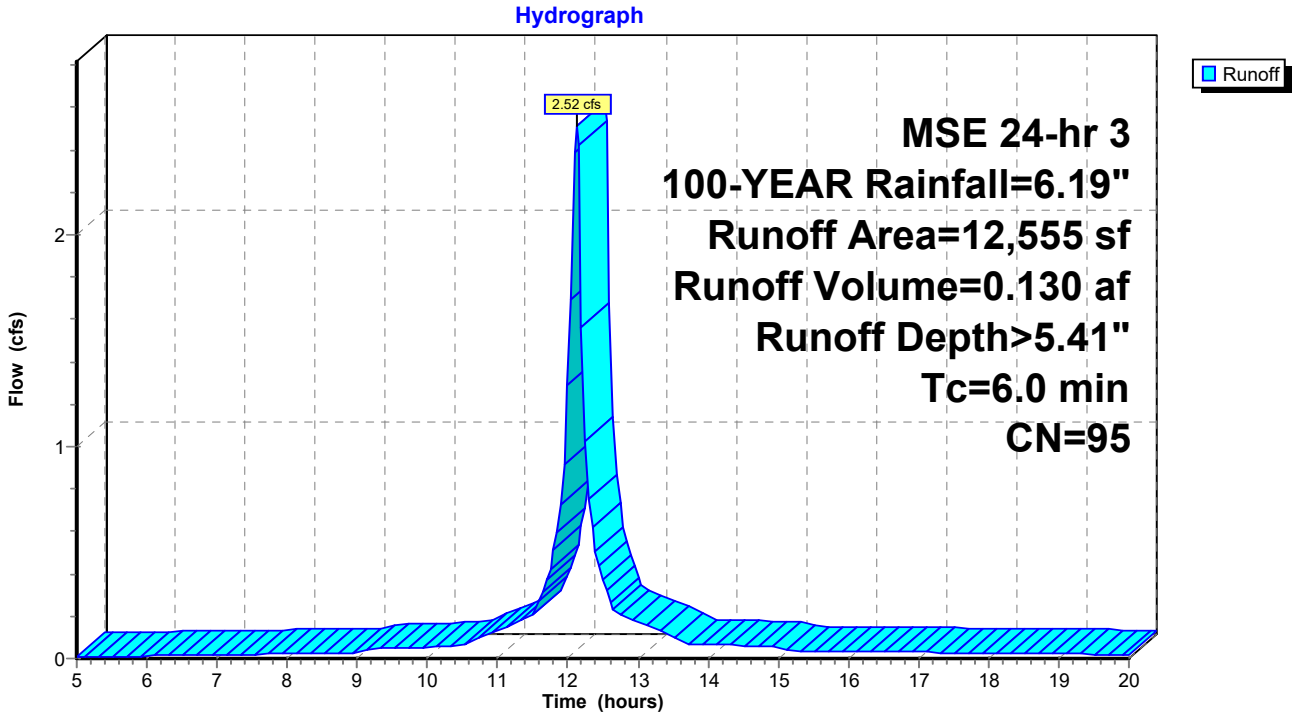
Runoff = 2.52 cfs @ 12.13 hrs, Volume= 0.130 af, Depth> 5.41"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
MSE 24-hr 3 100-YEAR Rainfall=6.19"

	Area (sf)	CN	Description
*	11,184	98	
*	1,371	74	
	12,555	95	Weighted Average
	1,371		10.92% Pervious Area
	11,184		89.08% Impervious Area

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

Subcatchment 9S: SEWER A



Summary for Subcatchment 10S: SEWER B

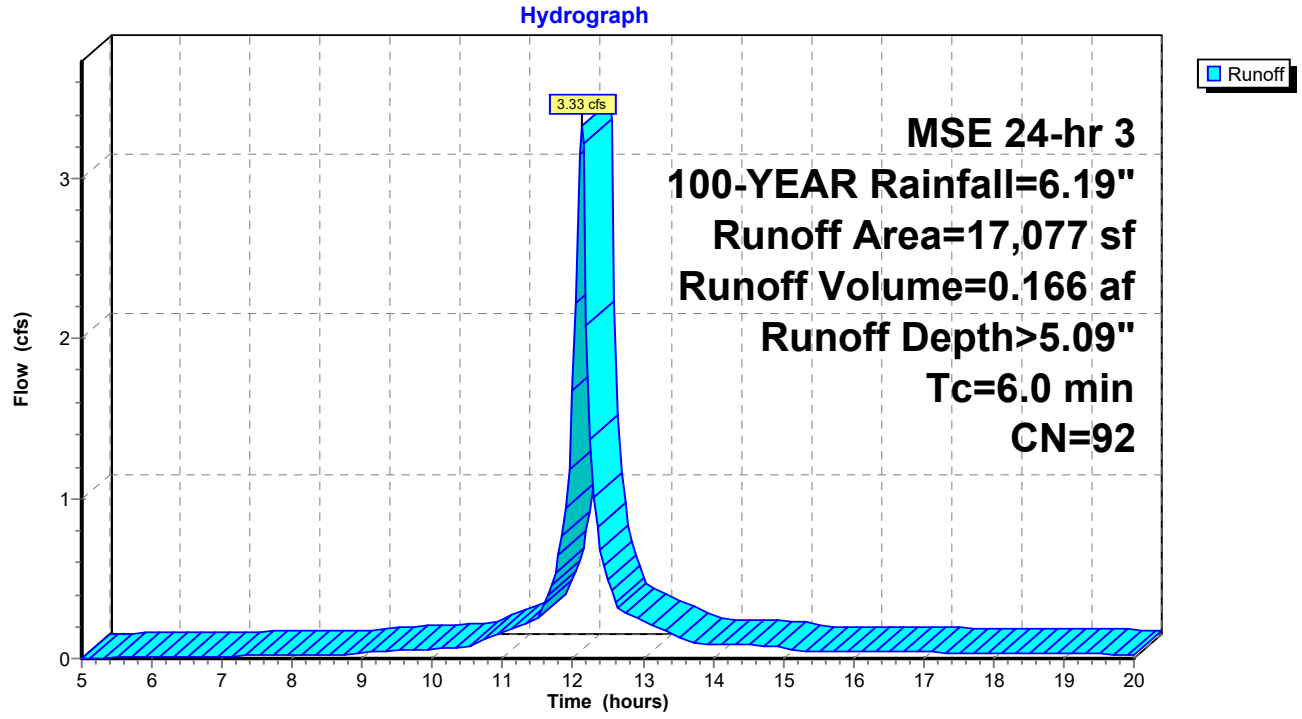
Runoff = 3.33 cfs @ 12.13 hrs, Volume= 0.166 af, Depth> 5.09"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
MSE 24-hr 3 100-YEAR Rainfall=6.19"

	Area (sf)	CN	Description
*	12,838	98	
*	4,239	74	
	17,077	92	Weighted Average
	4,239		24.82% Pervious Area
	12,838		75.18% Impervious Area

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

Subcatchment 10S: SEWER B



Summary for Subcatchment 11S: SEWER C

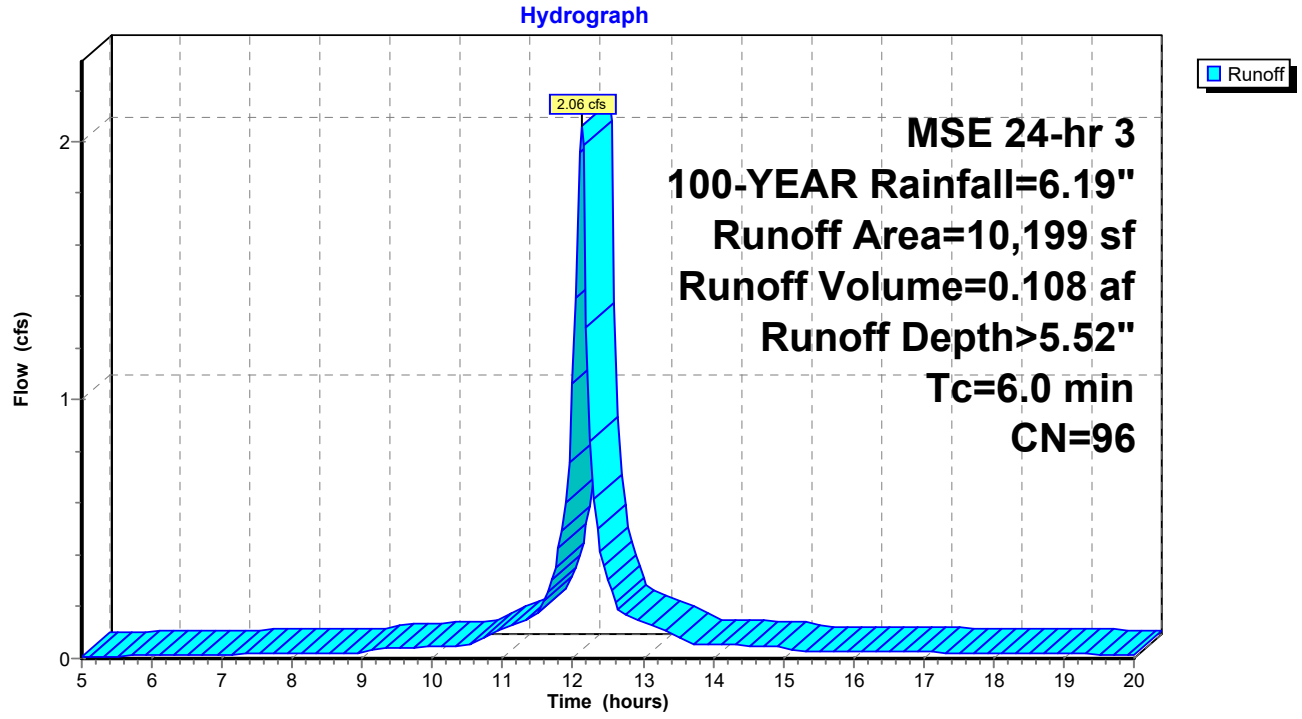
Runoff = 2.06 cfs @ 12.13 hrs, Volume= 0.108 af, Depth> 5.52"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
MSE 24-hr 3 100-YEAR Rainfall=6.19"

	Area (sf)	CN	Description
*	9,465	98	
*	734	74	
	10,199	96	Weighted Average
	734		7.20% Pervious Area
	9,465		92.80% Impervious Area

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

Subcatchment 11S: SEWER C



Summary for Subcatchment 12S: SEWER D

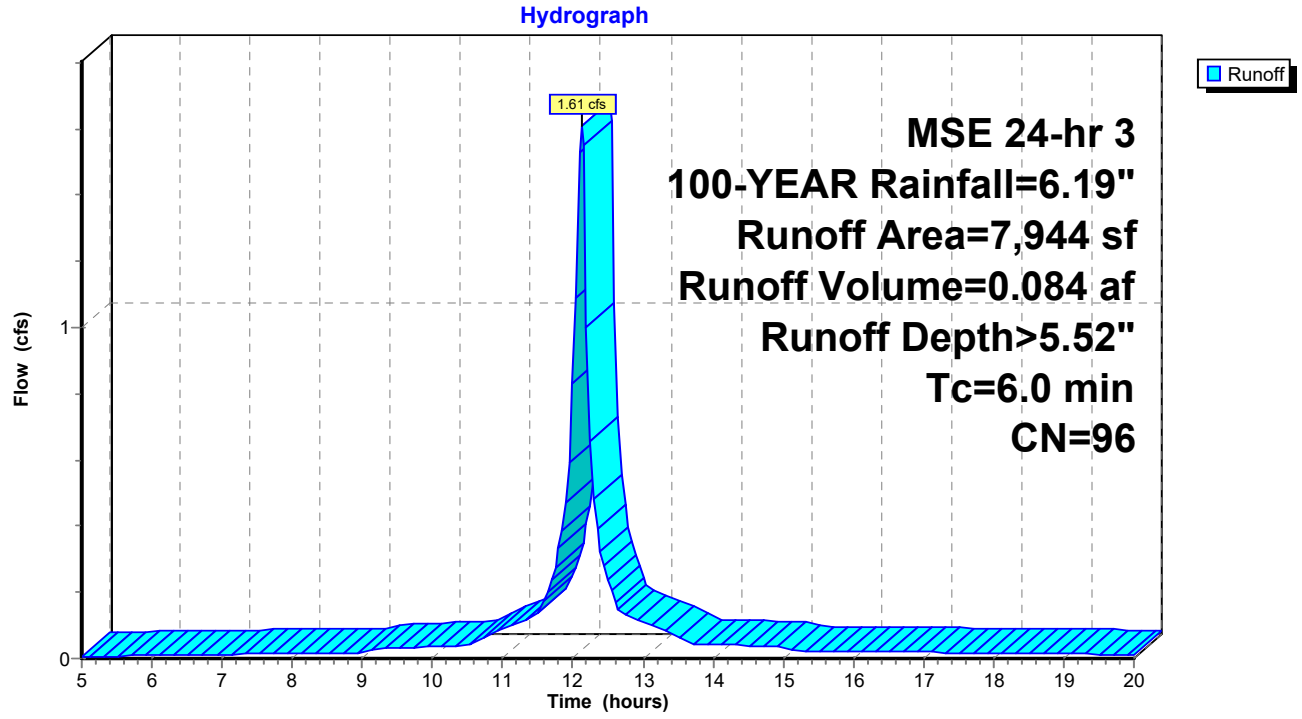
Runoff = 1.61 cfs @ 12.13 hrs, Volume= 0.084 af, Depth> 5.52"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
MSE 24-hr 3 100-YEAR Rainfall=6.19"

	Area (sf)	CN	Description
*	7,209	98	
*	735	74	
	7,944	96	Weighted Average
	735		9.25% Pervious Area
	7,209		90.75% Impervious Area

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

Subcatchment 12S: SEWER D



Summary for Subcatchment 13S: SEWER E

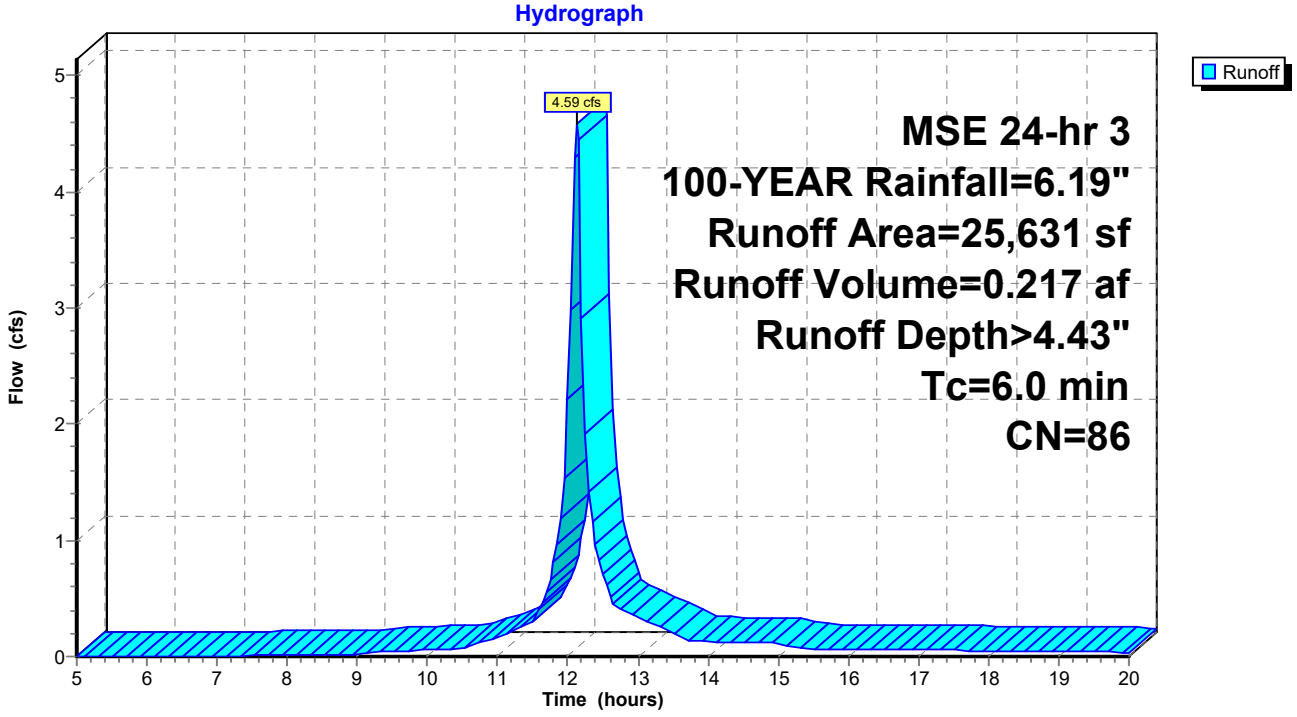
Runoff = 4.59 cfs @ 12.13 hrs, Volume= 0.217 af, Depth> 4.43"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
MSE 24-hr 3 100-YEAR Rainfall=6.19"

	Area (sf)	CN	Description
*	13,246	98	
*	12,385	74	
	25,631	86	Weighted Average
	12,385		48.32% Pervious Area
	13,246		51.68% Impervious Area

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

Subcatchment 13S: SEWER E



Summary for Subcatchment 14S: SEWER F

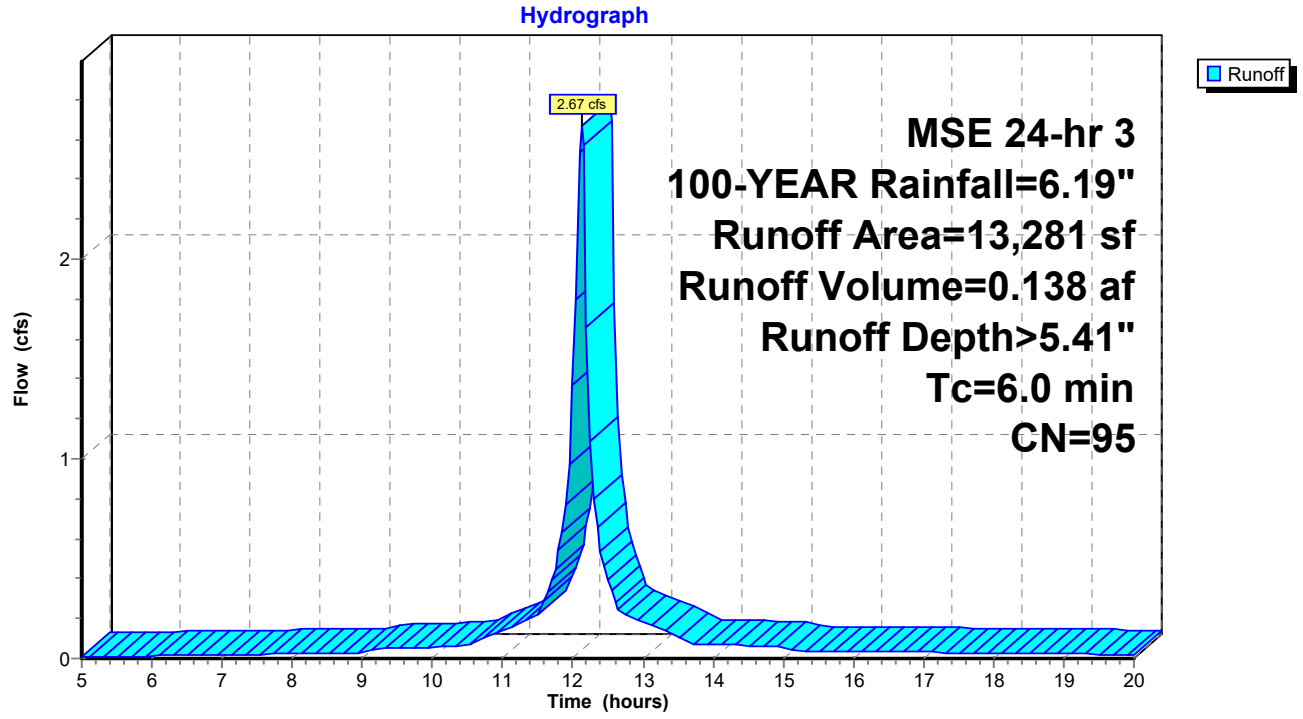
Runoff = 2.67 cfs @ 12.13 hrs, Volume= 0.138 af, Depth> 5.41"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
MSE 24-hr 3 100-YEAR Rainfall=6.19"

	Area (sf)	CN	Description
*	11,761	98	
*	1,520	74	
	13,281	95	Weighted Average
	1,520		11.44% Pervious Area
	11,761		88.56% Impervious Area

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

Subcatchment 14S: SEWER F



Summary for Subcatchment 15S: SEWER G

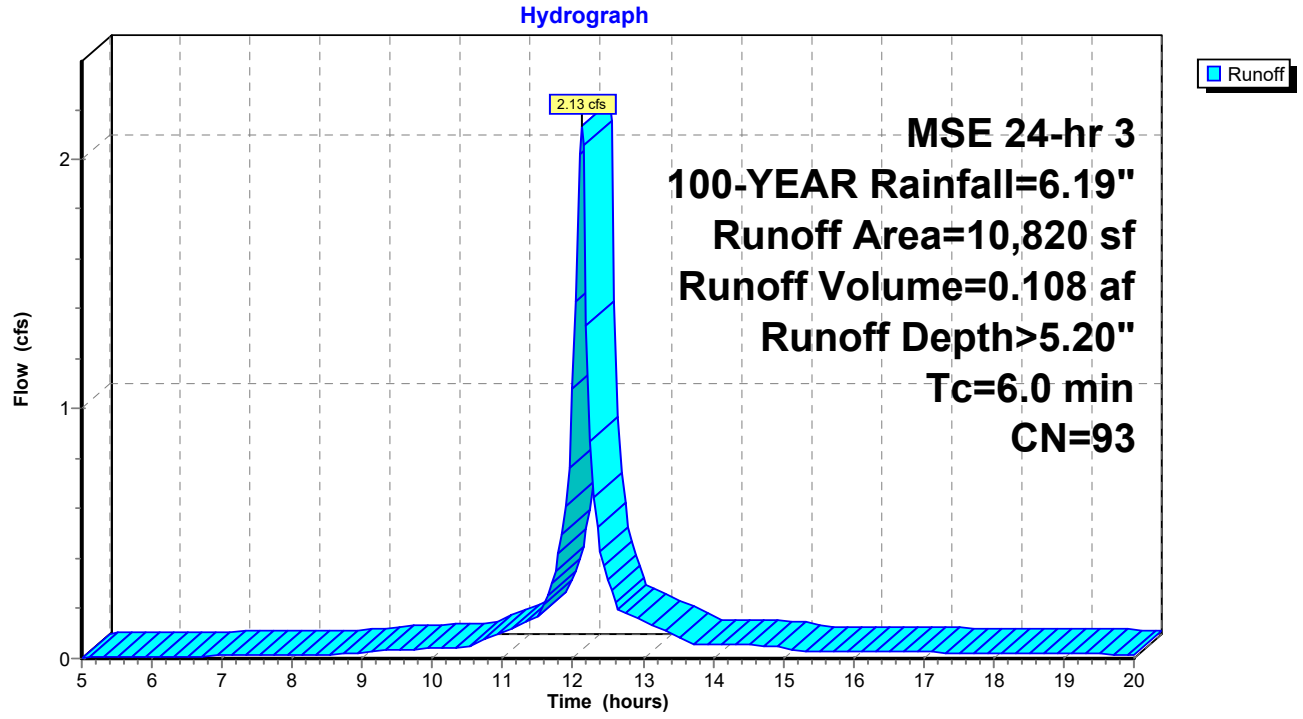
Runoff = 2.13 cfs @ 12.13 hrs, Volume= 0.108 af, Depth> 5.20"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
MSE 24-hr 3 100-YEAR Rainfall=6.19"

	Area (sf)	CN	Description
*	8,456	98	
*	2,364	74	
	10,820	93	Weighted Average
	2,364		21.85% Pervious Area
	8,456		78.15% Impervious Area

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

Subcatchment 15S: SEWER G



Summary for Subcatchment 16S: SEWER H

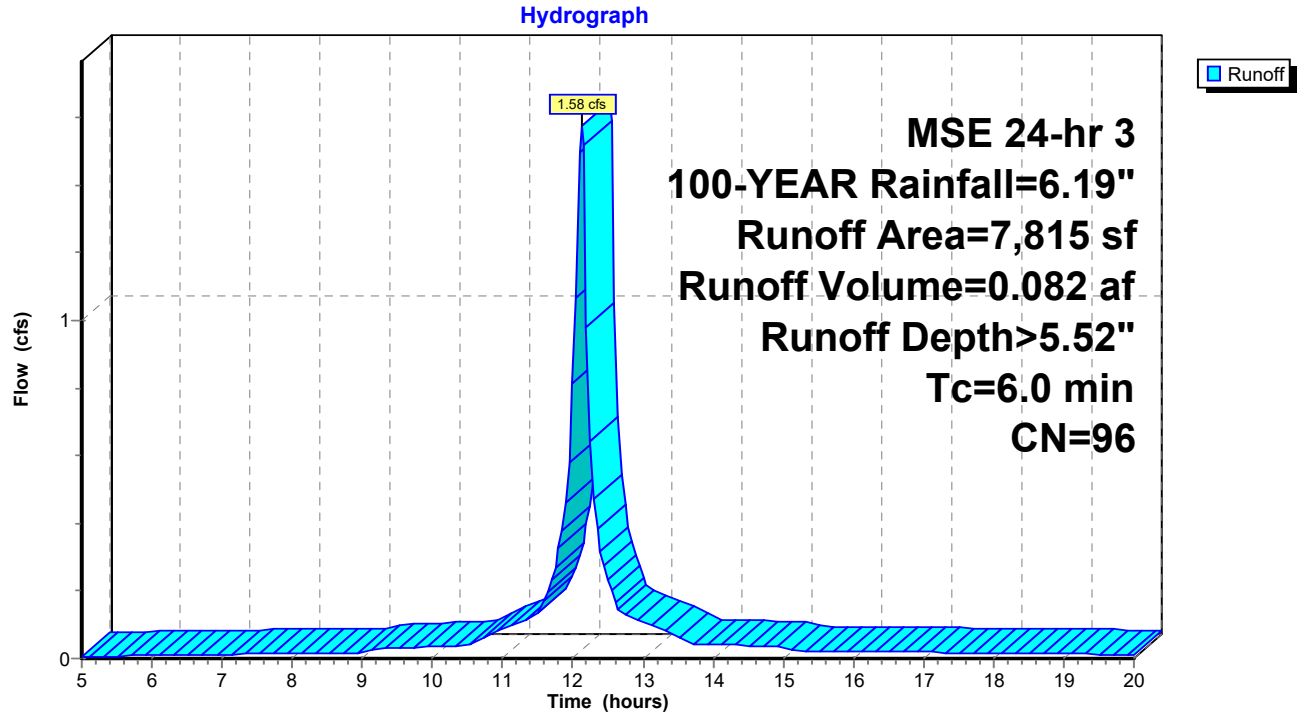
Runoff = 1.58 cfs @ 12.13 hrs, Volume= 0.082 af, Depth> 5.52"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
MSE 24-hr 3 100-YEAR Rainfall=6.19"

	Area (sf)	CN	Description
*	7,214	98	
*	601	74	
	7,815	96	Weighted Average
	601		7.69% Pervious Area
	7,214		92.31% Impervious Area

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

Subcatchment 16S: SEWER H



Summary for Subcatchment 17S: SEWER I

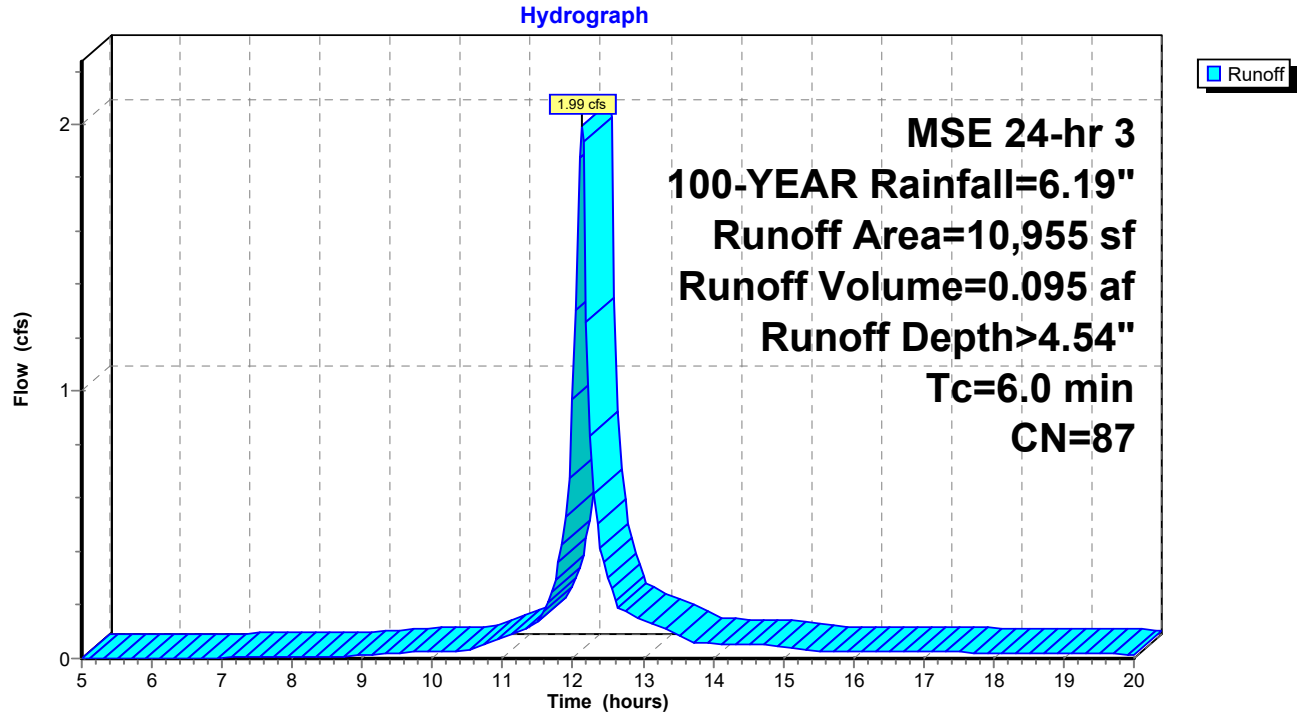
Runoff = 1.99 cfs @ 12.13 hrs, Volume= 0.095 af, Depth> 4.54"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
MSE 24-hr 3 100-YEAR Rainfall=6.19"

	Area (sf)	CN	Description
*	6,155	98	
*	4,800	74	
	10,955	87	Weighted Average
	4,800		43.82% Pervious Area
	6,155		56.18% Impervious Area

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

Subcatchment 17S: SEWER I



Summary for Subcatchment 18S: SEWER J

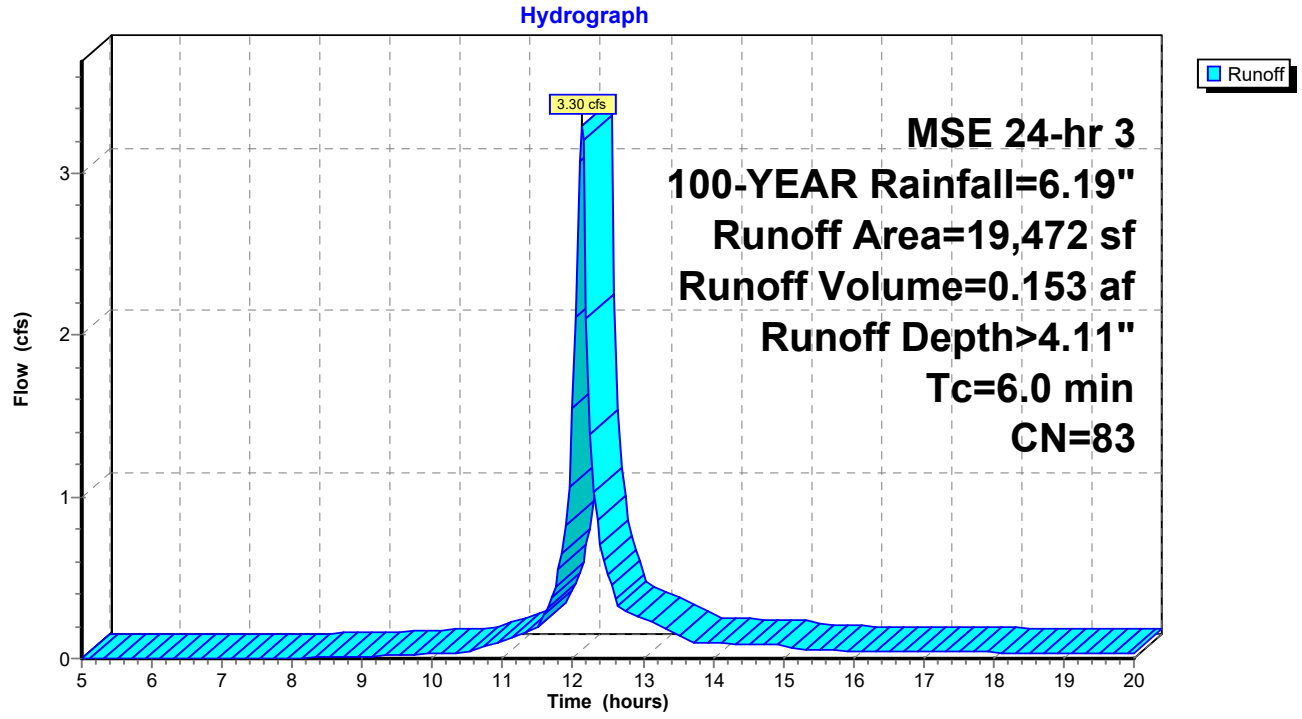
Runoff = 3.30 cfs @ 12.13 hrs, Volume= 0.153 af, Depth> 4.11"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
MSE 24-hr 3 100-YEAR Rainfall=6.19"

	Area (sf)	CN	Description
*	7,525	98	
*	11,947	74	
	19,472	83	Weighted Average
	11,947		61.35% Pervious Area
	7,525		38.65% Impervious Area

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

Subcatchment 18S: SEWER J



Summary for Subcatchment 19S: SEWER K

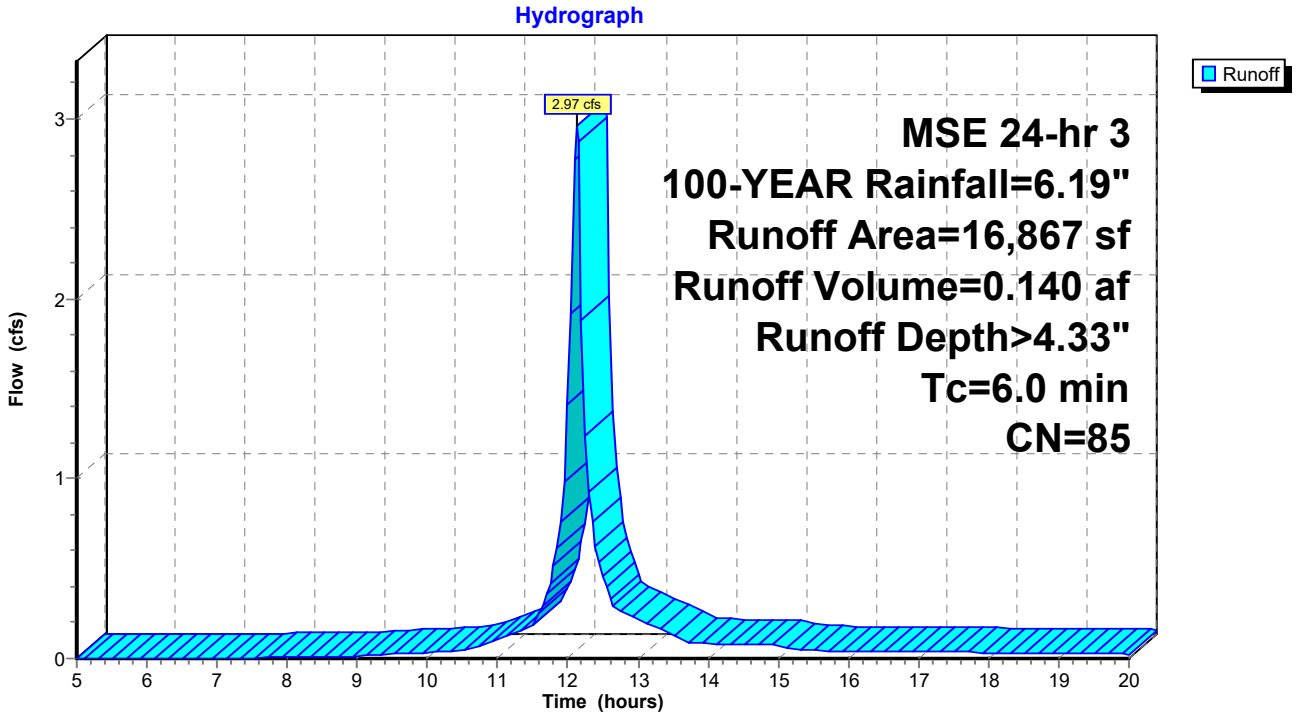
Runoff = 2.97 cfs @ 12.13 hrs, Volume= 0.140 af, Depth> 4.33"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
MSE 24-hr 3 100-YEAR Rainfall=6.19"

	Area (sf)	CN	Description
*	7,637	98	
*	9,230	74	
	16,867	85	Weighted Average
	9,230		54.72% Pervious Area
	7,637		45.28% Impervious Area

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

Subcatchment 19S: SEWER K



Summary for Subcatchment 20S: SEWER L

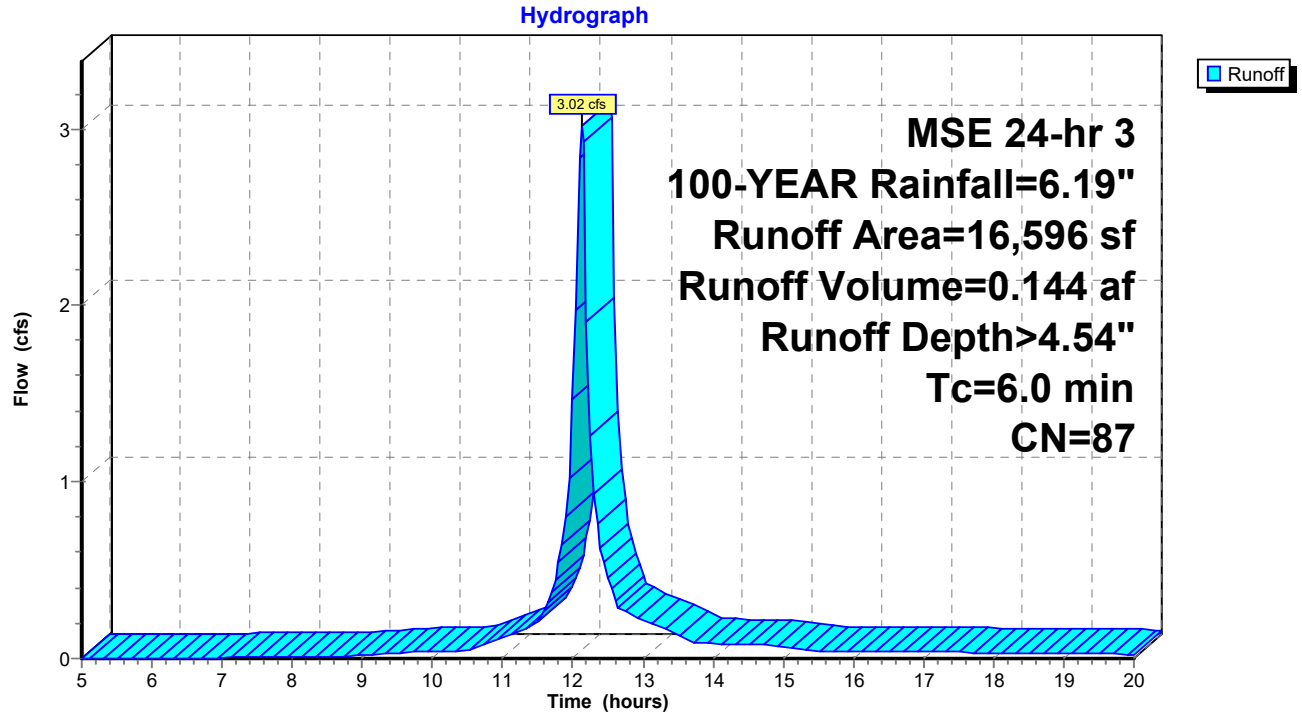
Runoff = 3.02 cfs @ 12.13 hrs, Volume= 0.144 af, Depth> 4.54"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
MSE 24-hr 3 100-YEAR Rainfall=6.19"

	Area (sf)	CN	Description
*	8,993	98	
*	7,603	74	
	16,596	87	Weighted Average
	7,603		45.81% Pervious Area
	8,993		54.19% Impervious Area

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

Subcatchment 20S: SEWER L



Summary for Subcatchment 21S: SEWER M

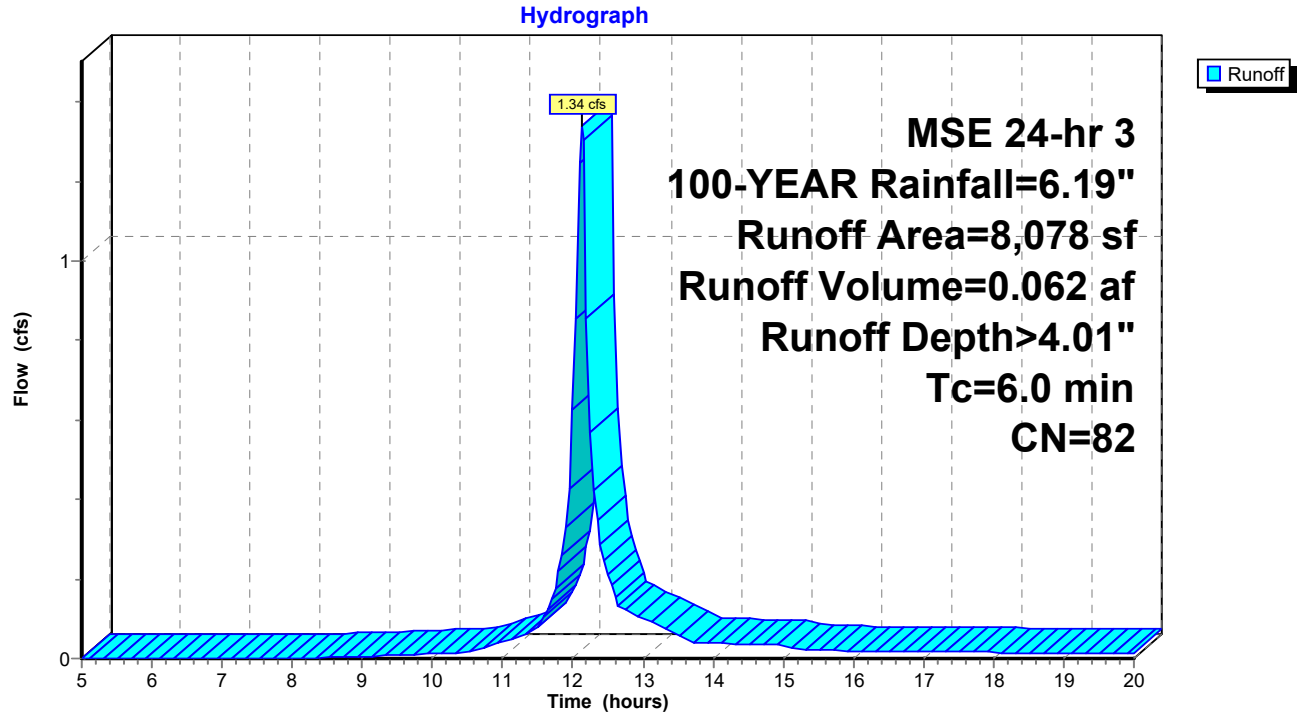
Runoff = 1.34 cfs @ 12.13 hrs, Volume= 0.062 af, Depth> 4.01"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
MSE 24-hr 3 100-YEAR Rainfall=6.19"

	Area (sf)	CN	Description
*	2,567	98	
*	5,511	74	
	8,078	82	Weighted Average
	5,511		68.22% Pervious Area
	2,567		31.78% Impervious Area

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

Subcatchment 21S: SEWER M



Summary for Subcatchment 22S: SEWER N

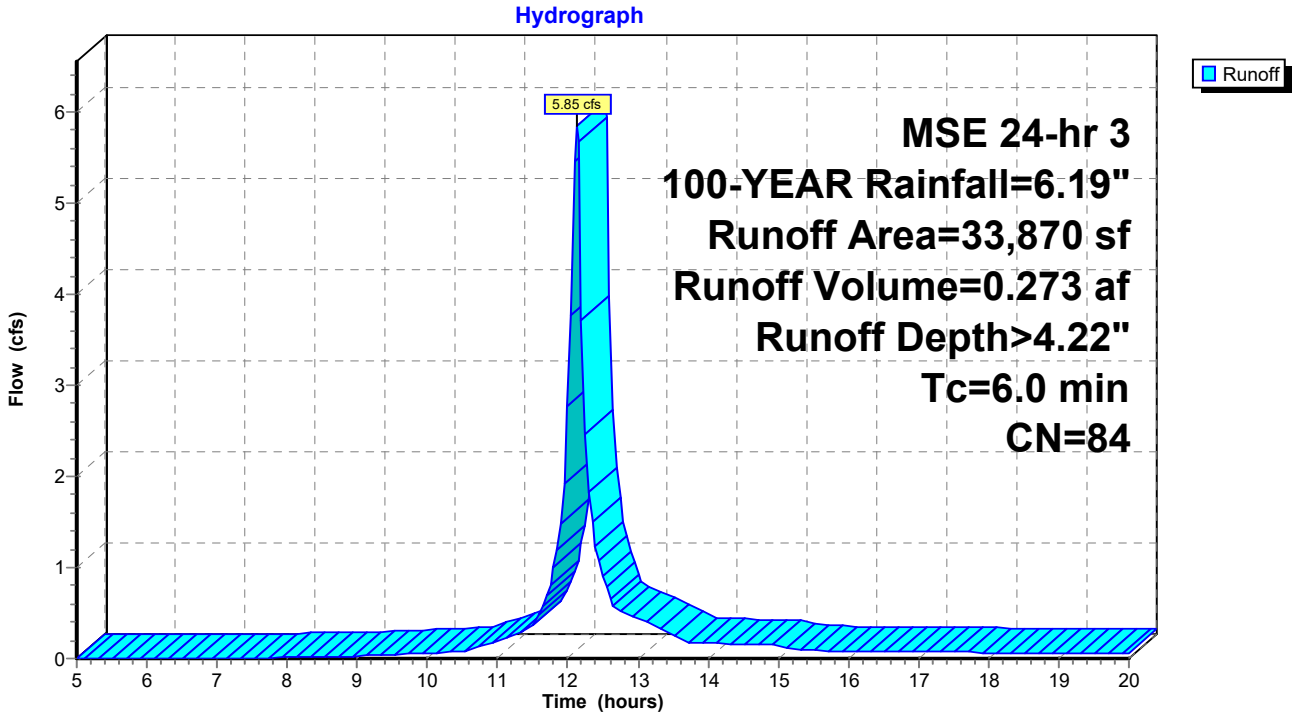
Runoff = 5.85 cfs @ 12.13 hrs, Volume= 0.273 af, Depth> 4.22"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
MSE 24-hr 3 100-YEAR Rainfall=6.19"

	Area (sf)	CN	Description
*	14,078	98	
*	19,792	74	
	33,870	84	Weighted Average
	19,792		58.44% Pervious Area
	14,078		41.56% Impervious Area

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

Subcatchment 22S: SEWER N



Summary for Subcatchment 23S: SEWER O

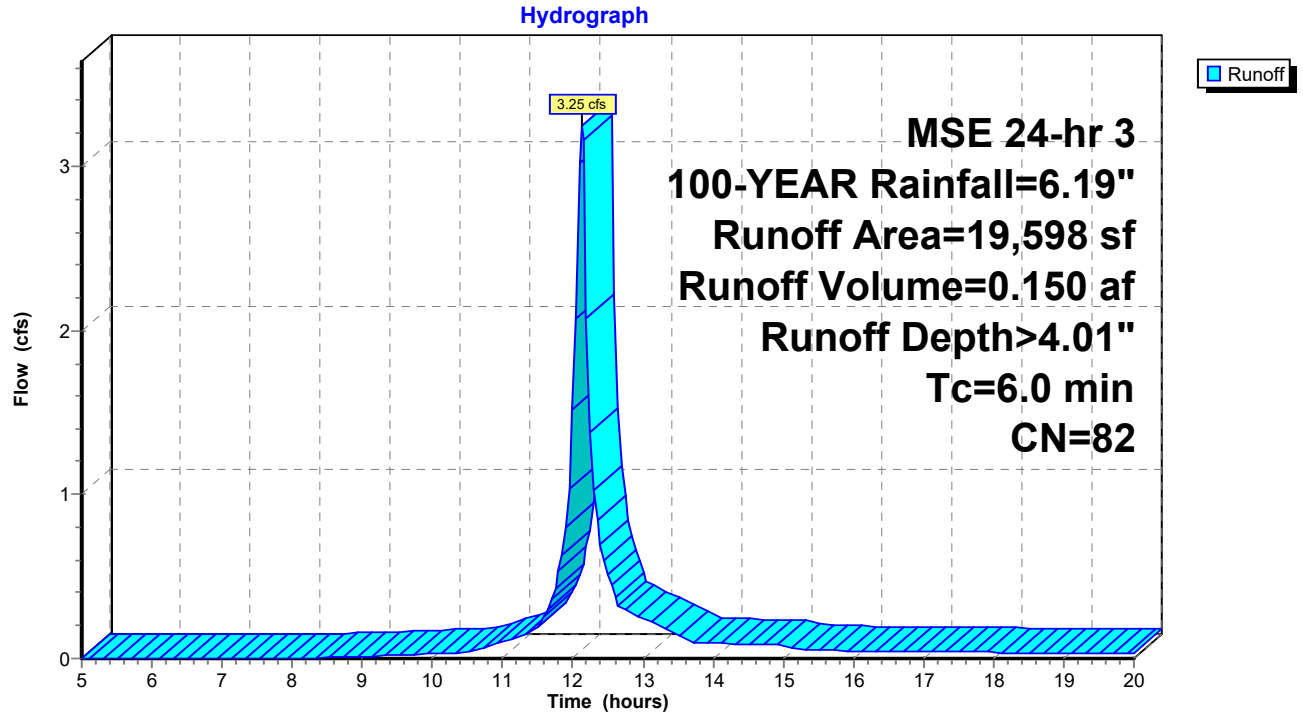
Runoff = 3.25 cfs @ 12.13 hrs, Volume= 0.150 af, Depth> 4.01"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
MSE 24-hr 3 100-YEAR Rainfall=6.19"

	Area (sf)	CN	Description
*	6,728	98	
*	12,870	74	
	19,598	82	Weighted Average
	12,870		65.67% Pervious Area
	6,728		34.33% Impervious Area

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

Subcatchment 23S: SEWER O



Summary for Subcatchment 24S: SEWER P

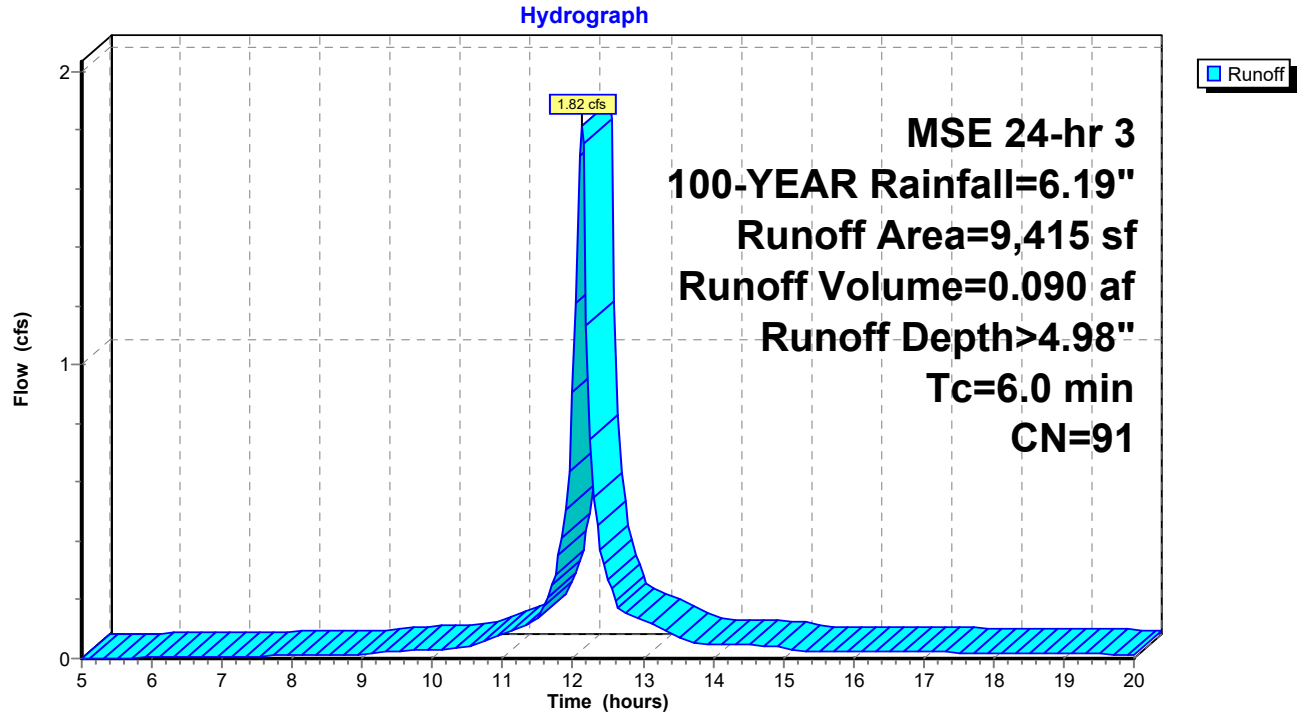
Runoff = 1.82 cfs @ 12.13 hrs, Volume= 0.090 af, Depth> 4.98"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
MSE 24-hr 3 100-YEAR Rainfall=6.19"

	Area (sf)	CN	Description
*	6,543	98	
*	2,872	74	
	9,415	91	Weighted Average
	2,872		30.50% Pervious Area
	6,543		69.50% Impervious Area

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

Subcatchment 24S: SEWER P



Summary for Subcatchment 25S: SEWER Q

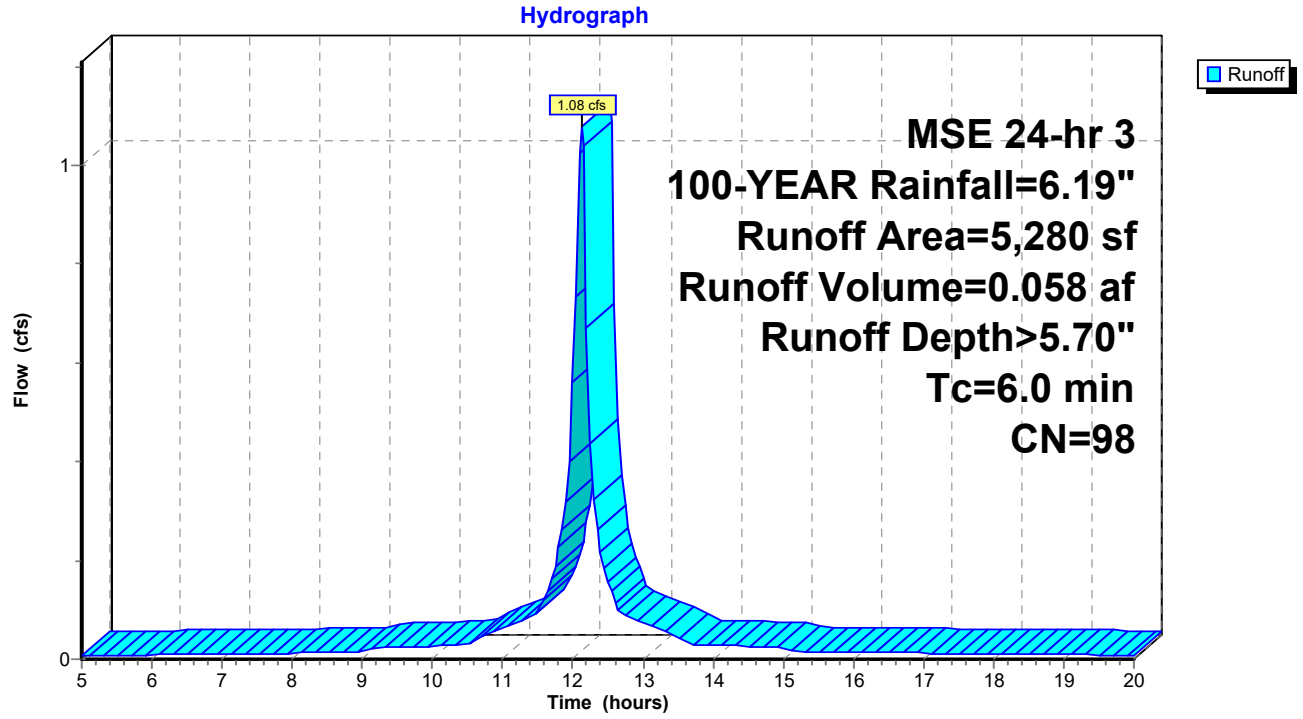
Runoff = 1.08 cfs @ 12.13 hrs, Volume= 0.058 af, Depth> 5.70"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
MSE 24-hr 3 100-YEAR Rainfall=6.19"

	Area (sf)	CN	Description
*	5,280	98	
	5,280		100.00% Impervious Area

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

Subcatchment 25S: SEWER Q



Summary for Subcatchment 26S: SEWER R

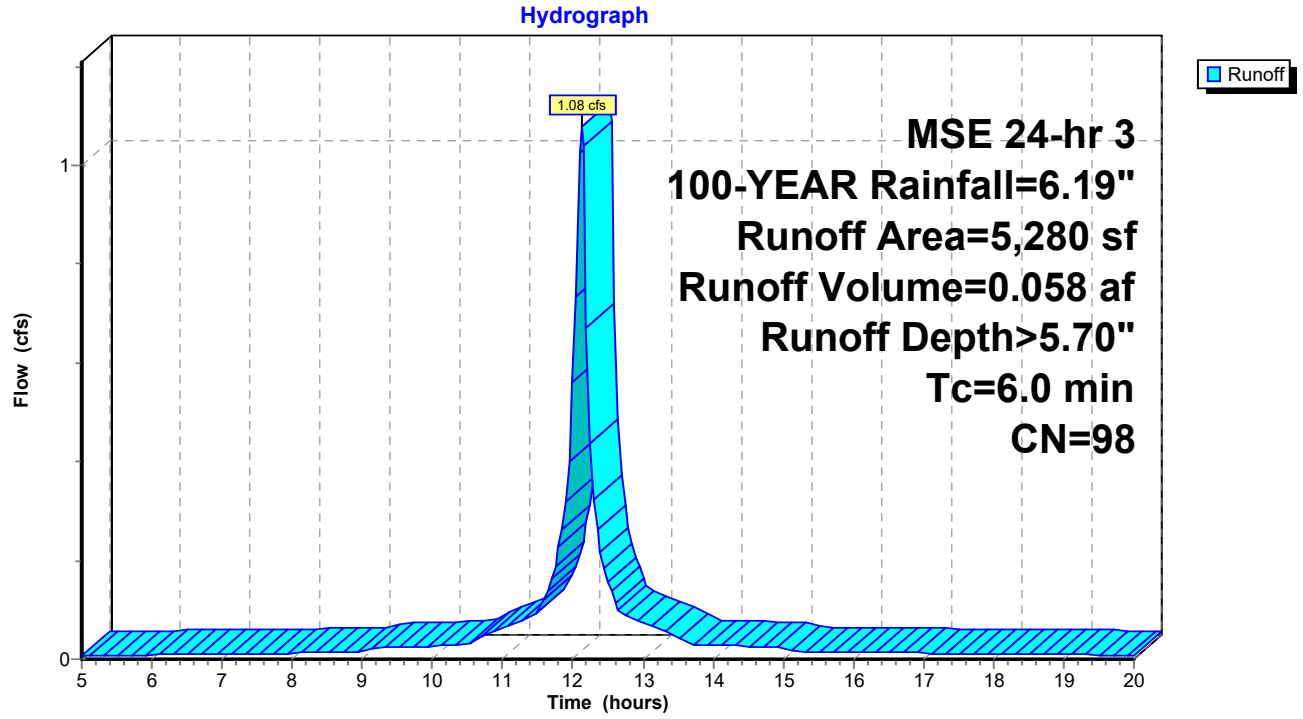
Runoff = 1.08 cfs @ 12.13 hrs, Volume= 0.058 af, Depth> 5.70"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
MSE 24-hr 3 100-YEAR Rainfall=6.19"

	Area (sf)	CN	Description
*	5,280	98	
	5,280		100.00% Impervious Area

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

Subcatchment 26S: SEWER R



Summary for Subcatchment 27S: SEWER STUVW

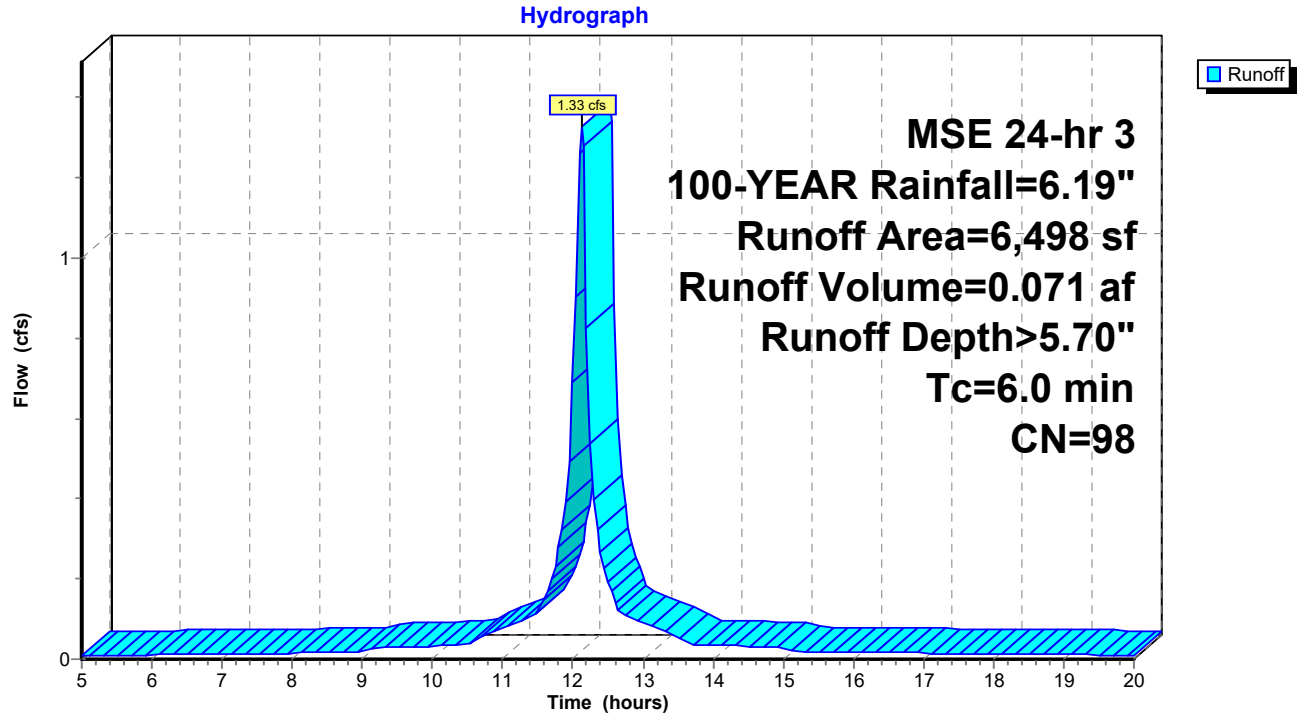
Runoff = 1.33 cfs @ 12.13 hrs, Volume= 0.071 af, Depth> 5.70"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
MSE 24-hr 3 100-YEAR Rainfall=6.19"

	Area (sf)	CN	Description
*	6,498	98	
	6,498		100.00% Impervious Area

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

Subcatchment 27S: SEWER STUVW



Appendix H: Storm Sewer Manning's Spreadsheet

Excel Engineering Project No. 240136200 Project Name Lumin Terrace

Pipe Data				Pipe Capacity (100-yr)				
Pipe ID	Diameter (FT)	Slope (FT/FT)	Manning's n	Basin No.	Total Flow (cfs)	Total Flow (gpm)	Full Flow Capacity (cfs)	Full Flow Capacity (gpm)
A	1	0.010	0.012	A	2.52	1131	3.87	1737
B	1.5	0.010	0.012	A,B,Q	6.93	3110	11.41	5121
C	1.5	0.010	0.012	A,B,C,Q	8.99	4035	11.41	5121
D	1.5	0.010	0.012	A,B,C,D,Q	10.60	4757	11.41	5121
E	2	0.010	0.012	A,B,C,D,E,Q,T,W	17.85	8011	24.57	11029
F	0.83	0.020	0.012	F	2.67	1198	3.37	1511
G	2	0.010	0.012	A,B,C,D,E,F,G,Q,T,W	22.65	10165	24.57	11029
H	2	0.010	0.012	A,B,C,D,E,F,G,H,Q,T,W	24.23	10874	24.57	11029
I	1.00	0.003	0.012	I	1.99	893	2.12	951
J	1.5	0.003	0.012	I,J	5.29	2374	6.25	2805
K	2	0.005	0.012	I,J,K,R	9.34	4192	17.38	7798
L	2	0.010	0.012	I,J,K,L,R	12.36	5547	24.57	11029
M	2	0.010	0.012	I,J,K,L,M,R,S	15.03	6745	24.57	11029
N	2	0.010	0.012	I,J,K,L,M,N,R,S	20.88	9371	24.57	11029
O	2.5	0.010	0.012	I,J,K,L,M,N,O,R,S,V	25.46	11426	44.55	19996
P	1.5	0.010	0.012	I,J,K,L,M,N,O,P,R,S,U,V	28.61	12840	11.41	5121
DS	0.666666667	0.010	0.012	Q	1.08	485	1.31	589
DS	0.666666667	0.013	0.012	S	1.33	597	1.47	659

Full Flow Capacity based off Manning's Equation $Q = \frac{1.49}{n} R^{2/3} S^{1/2} a$

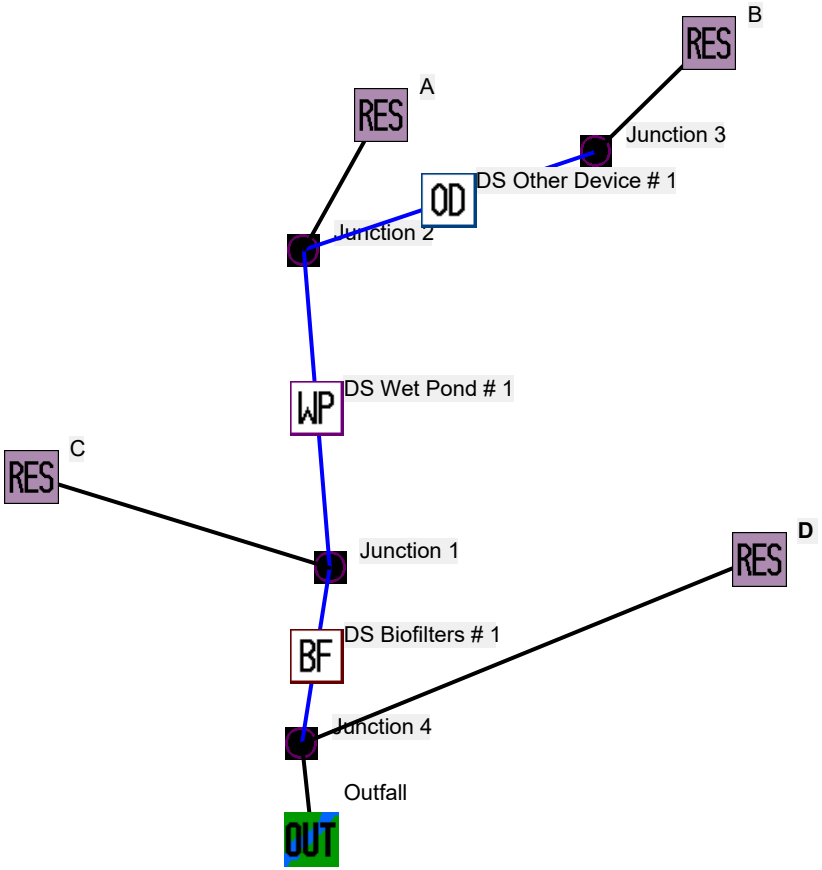
Where:
- Q = Full Flow Capacity of Pipe (cfs)
- n = manning's roughness coefficient
- R = hydraulic radius (ft) (D/4)
- s = hydraulic gradient, slope (ft/ft)
- a = flow area (sq. ft.)

Typical Manning's n

HDPE	0.012
PVC	0.012
Concrete	0.013
CMP	0.024

*Total Flow calculated via TR-55 hydrologic calculations. Reference Storm Pipe Basin Map & TR-55 Calculations

Appendix I: SLAMM Input/ Output Information


B
RES
A
RES
Junction 3
DS Other Device # 1
OD
Junction 2
DS Wet Pond # 1
WP
C
RES
Junction 1
D
RES
DS Biofilters # 1
BF
Junction 4
Outfall
OUT

Data file name: \\job-files\2024 Job Files\240136200 Horizon - Lumin Terrace Multifamily - Watertown WI\240136204 Civil\storm water report and calculations\2024-10-10 SUBMITTAL\CALCS\slamm2340136200.mdb
WinSLAMM Version 10.5.0
Rain file name: J:\Programs\civil\WinSLAMM\v10.5.0\Parameter Files\WisReg - Madison WI 1981.ran
Particulate Solids Concentration file name: J:\Programs\civil\WinSLAMM\v10.5.0\Parameter Files\v10.1 WI_AVG01.pscx
Runoff Coefficient file name: J:\Programs\civil\WinSLAMM\v10.5.0\Parameter Files\WI_SL06 Dec06.rsvx
Residential Street Delivery file name: J:\Programs\civil\WinSLAMM\v10.5.0\Parameter Files\WI_Res and Other Urban Dec06.std
Institutional Street Delivery file name: J:\Programs\civil\WinSLAMM\v10.5.0\Parameter Files\WI_Com Inst Indust Dec06.std
Commercial Street Delivery file name: J:\Programs\civil\WinSLAMM\v10.5.0\Parameter Files\WI_Com Inst Indust Dec06.std
Industrial Street Delivery file name: J:\Programs\civil\WinSLAMM\v10.5.0\Parameter Files\WI_Com Inst Indust Dec06.std
Other Urban Street Delivery file name: J:\Programs\civil\WinSLAMM\v10.5.0\Parameter Files\WI_Res and Other Urban Dec06.std
Freeway Street Delivery file name: J:\Programs\civil\WinSLAMM\v10.5.0\Parameter Files\Freeway Dec06.std
Apply Street Delivery Files to Adjust the After Event Load Street Dirt Mass Balance: False
Pollutant Relative Concentration file name: J:\Programs\civil\WinSLAMM\v10.5.0\Parameter Files\WI_GEO03.ppdx
Source Area PSD and Peak to Average Flow Ratio File: J:\Programs\civil\WinSLAMM\v10.5.0\Parameter 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: 10-30-2024 Time: 08:24:21
Site information:

LU# 1 - Residential: A Total area (ac): 7.170
  1 - Roofs 1: 1.130 ac. Pitched Connected Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
  13 - Paved Parking 1: 2.850 ac. Connected Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
  45 - Large Landscaped Areas 1: 3.190 ac. Normal Silty Source Area PSD File: C:\WinSLAMM Files\NURP.cpz

```
LU# 2 - Residential:  D     Total area (ac):  0.180
     31 - Sidewalks 1:  0.180 ac.    Connected    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz

LU# 3 - Residential:  C     Total area (ac):  0.750
     31 - Sidewalks 1:  0.010 ac.    Connected    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     45 - Large Landscaped Areas 1:  0.740 ac.    Normal Silty    Source Area PSD File: C:\WinSLAMM
Files\NURP.cpz

LU# 4 - Residential:  B     Total area (ac):  0.470
     1 - Roofs 1:  0.200 ac.    Pitched    Connected    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     45 - Large Landscaped Areas 1:  0.270 ac.    Normal Silty    Source Area PSD File: C:\WinSLAMM
Files\NURP.cpz


      Control Practice 1:  Wet Detention Pond CP# 1 (DS) - DS Wet Pond # 1
         Particle Size Distribution file name:  Not needed - calculated by program
         Initial stage elevation (ft):   6
         Peak to Average Flow Ratio:   3.8
         Maximum flow allowed into pond (cfs):  No maximum value entered
         Outlet Characteristics:
              Outlet type:  V - notch weir
                     1.  Weir angle (degrees):   20
                     2.  Weir height from invert:   0
                     3.  Invert elevation above datum (ft):   6
              Outlet type:  Broad Crested Weir
                     1.  Weir crest length (ft):   10
                     2.  Weir crest width (ft):   10
                     3.  Height from datum to bottom of weir opening:   10.5
         Pond stage and surface area
                   Entry       Stage     Pond Area   Natural Seepage   Other Outflow
                   Number      (ft)      (acres)              (in/hr)                   (cfs)
                      0           0.00        0.0000           0.00                     0.00
                      1           0.01        0.0700           0.00                     0.00
                      2           1.00        0.0900           0.00                     0.00
                      3           2.00        0.1000           0.00                     0.00
                      4           3.00        0.1300           0.00                     0.00
                      5           4.00        0.1500           0.00                     0.00
                      6           5.00        0.1600           0.00                     0.00
```

7	6.00	0.3000	0.00	0.00
8	7.00	0.4000	0.00	0.00
9	8.00	0.4600	0.00	0.00
10	9.00	0.5300	0.00	0.00
11	10.00	0.5900	0.00	0.00
12	11.00	0.6400	0.00	0.00
13	11.50	0.6700	0.00	0.00

Control Practice 2: Other Device CP# 1 (DS) - DS Other Device # 1
   Fraction of drainage area served by device (ac) = 1.00
   Particulate Concentration reduction fraction = 1.00
   Filterable Concentration reduction fraction = 1.00
   Runoff volume reduction fraction = 0

Control Practice 3: Biofilter CP# 1 (DS) - DS Biofilters # 1
   1. Top area (square feet) = 15000
   2. Bottom aea (square feet) = 3300
   3. Depth (ft):   8.5
   4. Biofilter width (ft) - for Cost Purposes Only: 10
   5. Infiltration rate (in/hr) = 0.5
   6. Random infiltration rate generation? No
   7. Infiltration rate fraction (side):   1
   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):   10
               2. Weir crest width (ft):   10

3. Height of datum to bottom of weir opening: 7.5

Outlet type: Surface Discharge Pipe

1. Surface discharge pipe outlet diameter (ft): 0.67
2. Pipe invert elevation above datum (ft): 1
3. Number of surface pipe outlets: 1

SLAMM for Windows Version 10.5.0

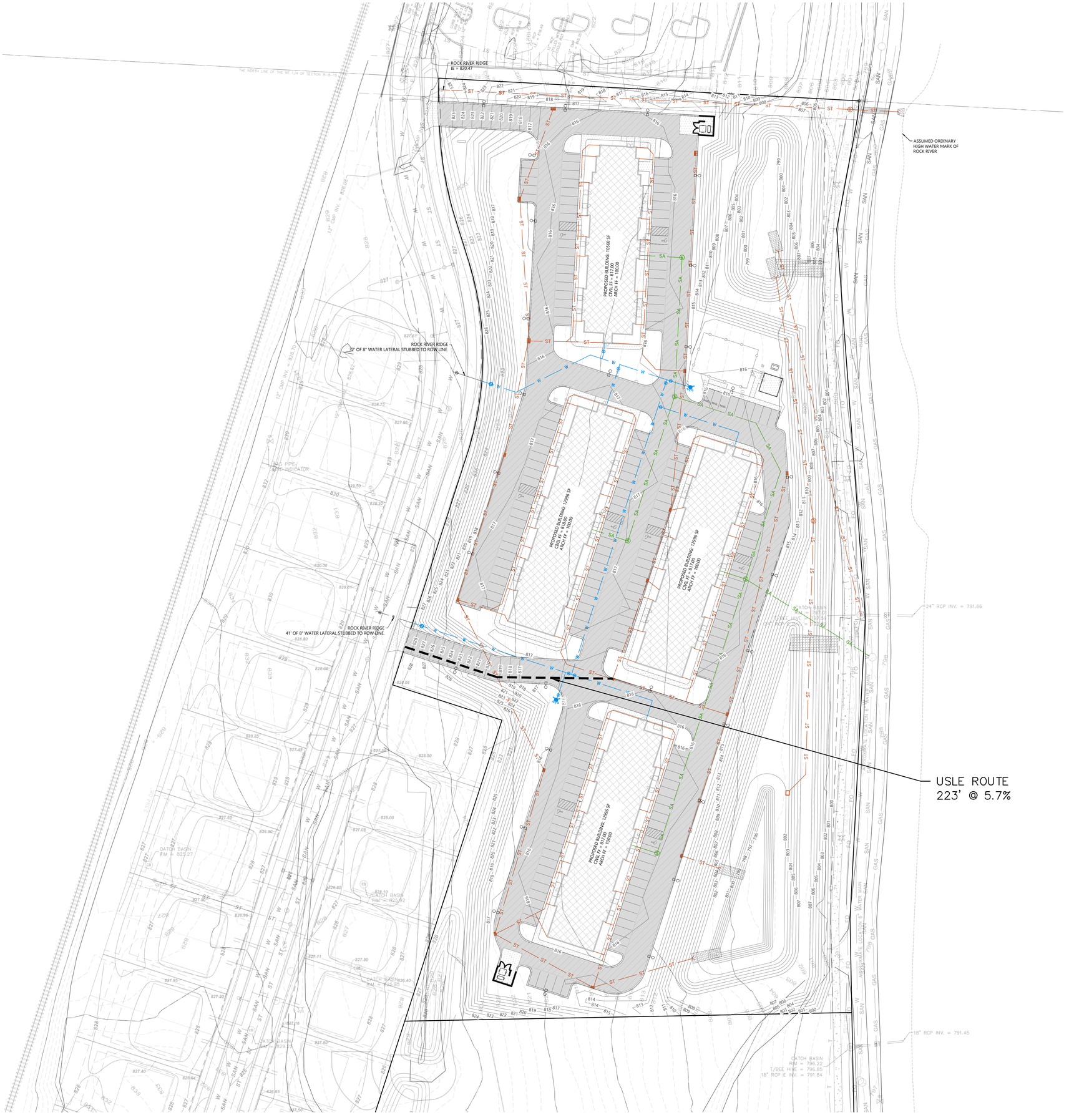
Data file name: \\job-files\2024 Job Files\240136200 Horizon - Lumin Terrace Multifamily - Watertown WI\240136204 Civil\storm water report and calculations\2024-10-10 SUBMITTAL\CALCS\slamm2340136200.mdb
Data file description:
Rain file name: J:\Programs\civil\WinSLAMM\v10.5.0\Parameter Files\WisReg - Madison WI 1981.ran
Particulate Solids Concentration file name:
J:\Programs\civil\WinSLAMM\v10.5.0\Parameter Files\v10.1 WI_AVG01.pscx
Runoff Coefficient file name: J:\Programs\civil\WinSLAMM\v10.5.0\Parameter Files\WI_SL06 Dec06.rsvx
Pollutant Relative Concentration file name:
J:\Programs\civil\WinSLAMM\v10.5.0\Parameter Files\WI_GEO03.ppdx
Residential Street Delivery file name: J:\Programs\civil\WinSLAMM\v10.5.0\Parameter Files\WI_Res and Other Urban Dec06.std
Institutional Street Delivery file name:
J:\Programs\civil\WinSLAMM\v10.5.0\Parameter Files\WI_Com Inst Indust Dec06.std
Commercial Street Delivery file name: J:\Programs\civil\WinSLAMM\v10.5.0\Parameter Files\WI_Com Inst Indust Dec06.std
Industrial Street Delivery file name: J:\Programs\civil\WinSLAMM\v10.5.0\Parameter Files\WI_Com Inst Indust Dec06.std
Other Urban Street Delivery file name: J:\Programs\civil\WinSLAMM\v10.5.0\Parameter Files\WI_Res and Other Urban Dec06.std
Freeway Street Delivery file name: J:\Programs\civil\WinSLAMM\v10.5.0\Parameter Files\Freeway Dec06.std
Apply Street Delivery Files to Adjust the After Event Load Street Dirt Mass Balance: False
Source Area PSD and Peak to Average Flow Ratio File:
J:\Programs\civil\WinSLAMM\v10.5.0\Parameter 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
Start of Winter Season: 12/02 End of Winter Season: 03/12
Model Run Start Date: 01/01/81 Model Run End Date: 12/31/81
Date of run: 10-30-2024 Time of run: 08:23:55
Total Area Modeled (acres): 8.570
Years in Model Run: 1.00

Runoff Volume (cu ft)	Percent Runoff Volume Reduction	Particulate Solids Conc. (mg/L)	Particulate Solids Yield (lbs)	Percent Particulate Solids Reduction

Total of all Land Uses without Controls:	384604	-	100.9	2423 -
Outfall Total with Controls:	129292	66.38%	31.23	252.0 89.60%
Annualized Total After Outfall Controls:	129647			252.7

. Percent Solids Reduction due to Engineered Media Not Used

Appendix J: USLE Map and Calculations



USLE

EXCEL
Always a Better Plan
100 Camelot Drive
Fond du Lac, WI 54935
920-926-9800
excelengineer.com

PROJECT INFORMATION

PROPOSED MULTI-FAMILY DEVELOPMENT
LUMIN TERRACE
JOHNSON STREET • WATERTOWN, WI

PROFESSIONAL SEAL

PRELIMINARY DATES

NOT FOR CONSTRUCTION

JOB NUMBER
240136200

SHEET NUMBER

Soil Loss & Sediment Discharge Calculation Tool

for use on Construction Sites in the State of Wisconsin

WDNR Version 2.0 (06-29-2017)

WISCONSIN DEPT. OF NATURAL RESOURCES

YEAR 1

Developer:

Project:

Date: 11/08/24

County: Jefferson

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	04/01/25	06/08/25	20.4%	140	Sandy Loam	0.28	5.7%	223	0.94	1.00	7.5	0.923	Inlet Protection	4.9
End	06/08/25	-----	-----	-----	-------	-----	5.7%	223	0.94	------	-----	0.000		0.0
		-----	-----	-----	-------	-----	5.7%	223	0.94	-----	-----	0.000		0.0
		-----	-----	-----	-------	-----	5.7%	223	0.94	-----	-----	0.000		0.0
		-----	-----	-----	-------	-----	5.7%	0	-----	-----	-----	0.000		0.0
		-----	-----	-----	-------	-----	0.0%	0	-----	-----	-----	0.000		0.0
										TOTAL	**7.5**		**TOTAL**	**4.9**
													% Reduction Required	**NONE**

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 K: Post Construction Operation and Maintenance Plan

The owner of the property affected shall inspect and maintain the following stormwater management systems frequently, especially after heavy rainfalls, but at least on an annual basis unless otherwise specified.	
STORMWATER FACILITY	**TYPE OF ACTION**
1. Lawn and Landscaped Areas	All lawn areas shall be kept clear of any materials that block the flow of stormwater. Rills and small gullies shall immediately be filled and seeded or have sod placed in them. The lawn shall be kept mowed, tree seedlings shall be removed, and litter shall be removed from landscaped areas.
2. Rip Rap	All rip rap showing signs of erosion or scour shall be repaired, reinforced, and revegetated immediately. Rip rap should be kept clean of vegetation and sediment. All rip rap shall be repaired to the construction plan requirements.
3. Catch Basin/Curb Inlet Grates	The grate openings to these structures must be cleared of any clogging or the blocking of stormwater flow from getting into the stormwater conveyance system of any kind.
4. Retention/Detention Basins	Trash racks, standpipes, outlet structures, inlet and outlet pipes, and anti vortex devices shall be kept clear of debris. Non-structurally sound devices shall be replaced. Floating litter and algae shall be removed monthly. All grassed areas, embankments, and flow control devices showing signs of erosion shall be repaired, reinforced, and revegetated immediately to the original plan requirements. Dry basins shall be mowed no less than twice per year at a height of no less than 3 inches. Grasses shall not be allowed to grow to a height that permits branching or bending. Mowing shall only take place when the ground is dry and able to support machinery. Every 5 years, the elevations of the pond bottom shall be surveyed to determine the permanent pool depth and sediment depth in the pond. When silt has accumulated three feet from the original design depth elevation of the pond, the pond shall be cleaned out and restored back to the original design depth of a minimum of 5’ from the normal water elevation. Cleaning, removal, and deposit of silt from the detention pond shall be done by means and methods acceptable to the Wisconsin Department of Natural Resources.
5. Infiltration Basin	Inspections shall occur at minimum every 3 months. Inspections shall include the spreader, overflow spillway, and the condition of vegetation. To maintain vegetation, the first mowing of newly planted seed shall occur once it reaches a height of 10 to 12 inches. 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 1st. Mowing shall reduce the height of plants to 5 to 6 inches. If burning can take

	place, beginning the second year, burning shall occur in the early spring prior to May 1st, or in 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. If standing water is observed over 50% of the basin floor 3 days after rainfall, the basin is considered clogged. If this ever occurs, remove the top 2 to 3 inches, chisel plow and add topsoil and compost. If deep tilling is used, the basin shall be drained and soils dried to a depth of 8 inches. Replant with turf grass. If clogging again occurs, the basin shall be replanted with prairie style vegetation. During winter conditions, all draw down devices in the pond shall be opened to discourage the infiltration of high levels of chlorides. For enclosed basins, the use of chloride deicers shall be limited in the upland areas of the basin. Trash shall be removed as quickly as possible once observed.
6. Record of Maintenance	The operation and maintenance plan shall remain onsite and be available for inspection when requested by WDNR. When requested, the owner shall make available for inspection all maintenance records to the department or agent for the life of the system.

The proposed amendment to the comprehensive plan, which involves changing the land use designation from a Planned Neighborhood to Multifamily Residential, is strategically aligned with the city's broader objectives for balanced growth, sustainable community development, and integration. This is a thoughtfully designed community that aspires to redefine the standards of multifamily living, while enhancing the social fabric of Watertown. The below outlines the key reasons for supporting this change, leveraging the guiding principles and objectives set forth in the city's planning documents.

Strategic Dispersal of Multifamily Development

The transition of Air Park Drive to a multifamily residential designation supports the city's goal of dispersing multifamily housing throughout the city. By integrating a multifamily development on this parcel, the city avoids the creation of large concentrations of such developments in limited areas. Our primary objective is to create a dynamic and desirable residential community that not only meets but exceeds the current market expectations, thereby significantly contributing to the growth and vibrancy of the local area. This approach promotes diversity and ensures that all neighborhoods benefit from well-planned housing options.

Provision of On-Site Open Space

A key advantage of our multifamily residential development is the requirement to provide on-site open spaces tailored to the needs of the residents. As you can see the large open green space and walking trail complement the public parkland requirements while enhancing the livability and community feel within the multifamily development. This open space ensures that residents have access to recreational areas without overburdening nearby public parks, thereby contributing to the overall quality of life in the community.

Architectural and Design Integration

The plan encourages the use of architectural features such as balconies, porches, stoops, garden walls, and varied building and facade setbacks. These design elements help to break down the scale of larger buildings, making them appear as a cohesive grouping of smaller residential units. This is the exact approach we took that ensures that blends seamlessly to create a neighborhood feel, while maintaining the community’s character and scale. The promotion of architectural design that will set the standard for this area in terms of building materials, height, bulk, setbacks, and roof designs further supports this integration.

Conclusion

In conclusion, the proposed amendment to change the comprehensive plan from a Planned Neighborhood to Multifamily Residential is justified by the strategic alignment with city-wide objectives, the rigorous planning and design standards imposed on multifamily developments, and the benefits of integrating housing into diverse areas of the city. This change not only addresses the growing demand for multifamily housing but also does so in a way that is sensitive to the existing fabric, promotes sustainability, and enhances the overall quality of life for residents.

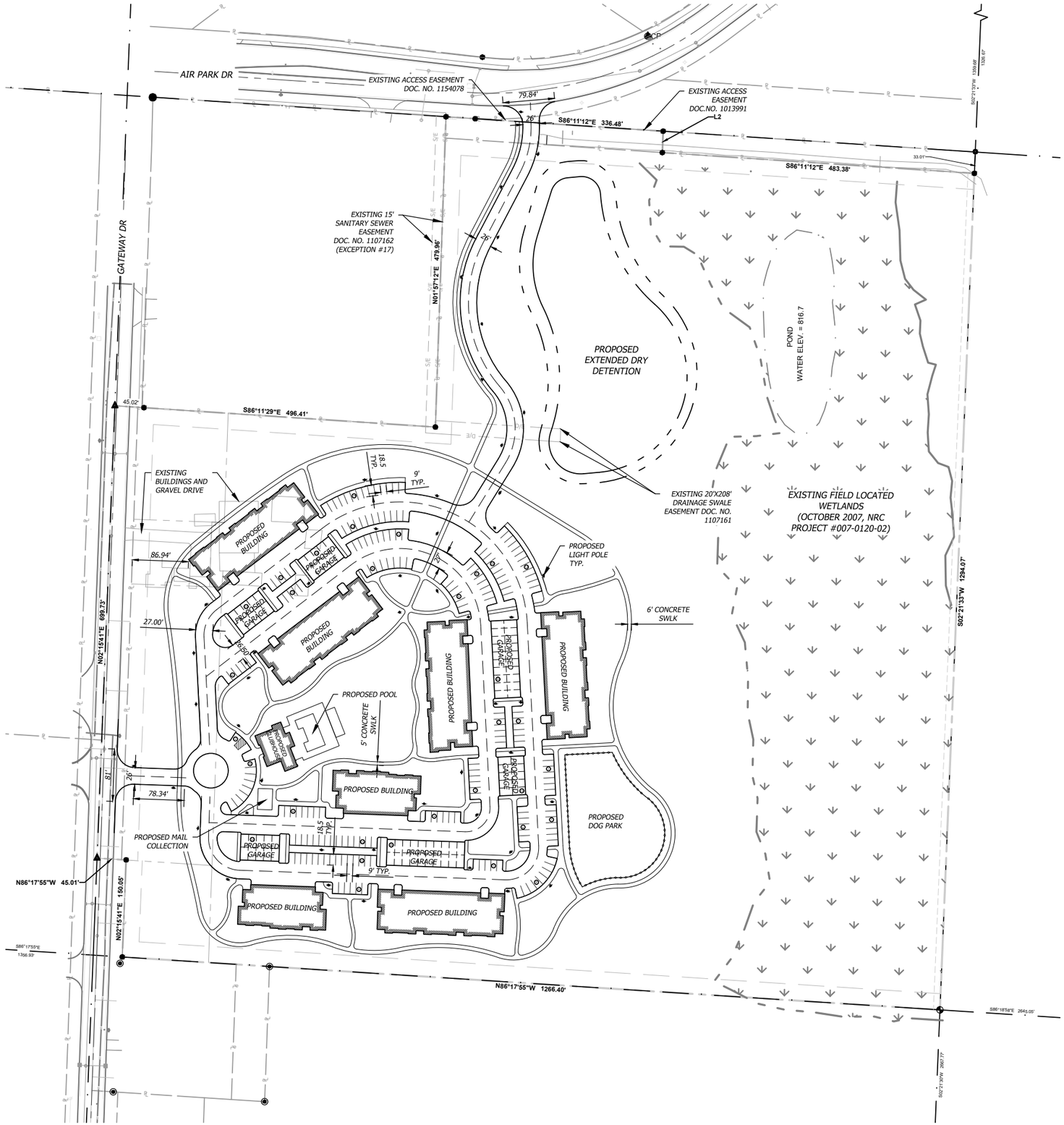
THE CITY OF WATERTOWN
Opportunity runs through it.

Watertown GIS Viewer

Search by Address

PROJECT SITE

300' PROPERTY LINE OFFSET



SITE DATA

SITE		
SITE AREA:	*33.3*	*AC*
	1,451,358	*SF*
BUILDING FLOOR AREA	*79,651*	*SF*
FLOOR AREA RATIO	*5.49*	*%*
IMPERVIOUS AREA:		
EXISTING:	*18,334*	*SF (1.26%)*
PROPOSED:	*310,137*	*SF (21.37%)*
PROPOSED IMPERVIOUS RATIO	*21.37*	*%*
PROPOSED BUILDING HEIGHT	*35*	*FEET*
PARKING		
PARKING PROVIDED:	*202*	*STANDARD SURFACE STALLS*
	7	*ACCESSIBLE STALLS (2 VAN)*
	80	*DETACHED GARAGE STALLS*
	86	*ATTACHED GARAGE STALLS*
TOTAL PROPOSED PARKING PROVIDED:	*368*	*PARKING STALLS*
PARKING RATIO	*1.88*	*STALLS/UNIT*
PARKING REQUIRED:		
(1 STALL/UNIT)	*196*	*STALLS*
(196 TOTAL UNITS)		
ADA STALLS:	*6*	*ADA STALLS*
(BASED ON 196 CUSTOMER & EMPLOYEE PARKING)		

LEGAL DESCRIPTION

Legal Description as described in Title Commitment File No.: 37381C, dated: January 30, 2024 @ 7:00 AM, issued by Fidelity Title, Ltd. :

Lot 1 of CERTIFIED SURVEY MAP No._____ recorded in Volume ___ of Certified Surveys on Page ___ as Document No. ____ , being a part of _____ City of Waterown, Jefferson County, Wisconsin.

291-0815-1624-000
291-0815-1624-006
291-0815-1624-005
291-0815-1624-004
291-0815-1624-003
291-0815-1624-002

ZONING

MR-10 (MULTIFAMILY RESIDENTIAL-10 DISTRICT)

SITE LEGEND

- *PROPOSED PROPERTY LINE*
- *EXISTING PROPERTY LINE*
- *PROPOSED BUILDING*
- *PARKING STALL COUNT*
- *STANDARD CURB & GUTTER*

GRAPHIC SCALE
80 0 80

BHC
(CIVIL ENGINEERING / SURVEYING / UTILITIES)
7101 College Blvd., Suite 400
Overland Park, Kansas 66210
p. (913) 663-1900
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GRADING NOTES

1. Contractor shall obtain a copy of the Geotechnical Services Report for the project and be familiar with the existing conditions and recommendations contained in the report if such a report has been prepared.
2. Contractor is responsible for any over excavation of existing unsuitable soils will be required under building and pavement areas. Contractor shall perform over excavation of unsuitable soils as a part of this work.
3. Contractor shall obtain soils suitable as structural fill from off-site sources. All borrow materials must be tested and approved by the Geotechnical Engineer prior to importing the soils to the project site.
4. Contractor shall operate under the terms and permits included in the Stormwater Pollution Prevention Plan (SWPPP) prepared for this project and permitted through the State of Wisconsin. Contractor shall employ a qualified person to conduct regular inspections of the site erosion control measures and document such inspections in the SWPPP document maintained by the Contractor.
5. All topsoil, vegetation, root structures, and deleterious materials shall be stripped from the ground surface prior to the placement of embankments. Contractor shall obtain the on-site geotechnical representative's acceptance of the existing ground surface materials and the proposed fill material prior to the placement of fill.
6. All proposed contour lines and spot elevations shown are finish ground elevations. Contractor shall account for pavement depths, building pads, topsoil, etc when grading the site.
7. All disturbed areas that are not to be paved (green spaces) shall be finish graded with a minimum of six inches of topsoil.
8. All excavation and embankments shall comply with the recommendations provided by the geotechnical engineer.

EROSION CONTROL LEGEND

- SF — SILT/SEDIMENT FENCE
- INLET PROTECTION FILTER BAGS
- 980 — FINISH GRADE MAJOR CONTOURS
- 982 — FINISH GRADE MINOR CONTOURS
- 980 — EXISTING GRADE MAJOR CONTOURS
- 982 — EXISTING GRADE MINOR CONTOURS

GRAPHIC SCALE
80 0 80

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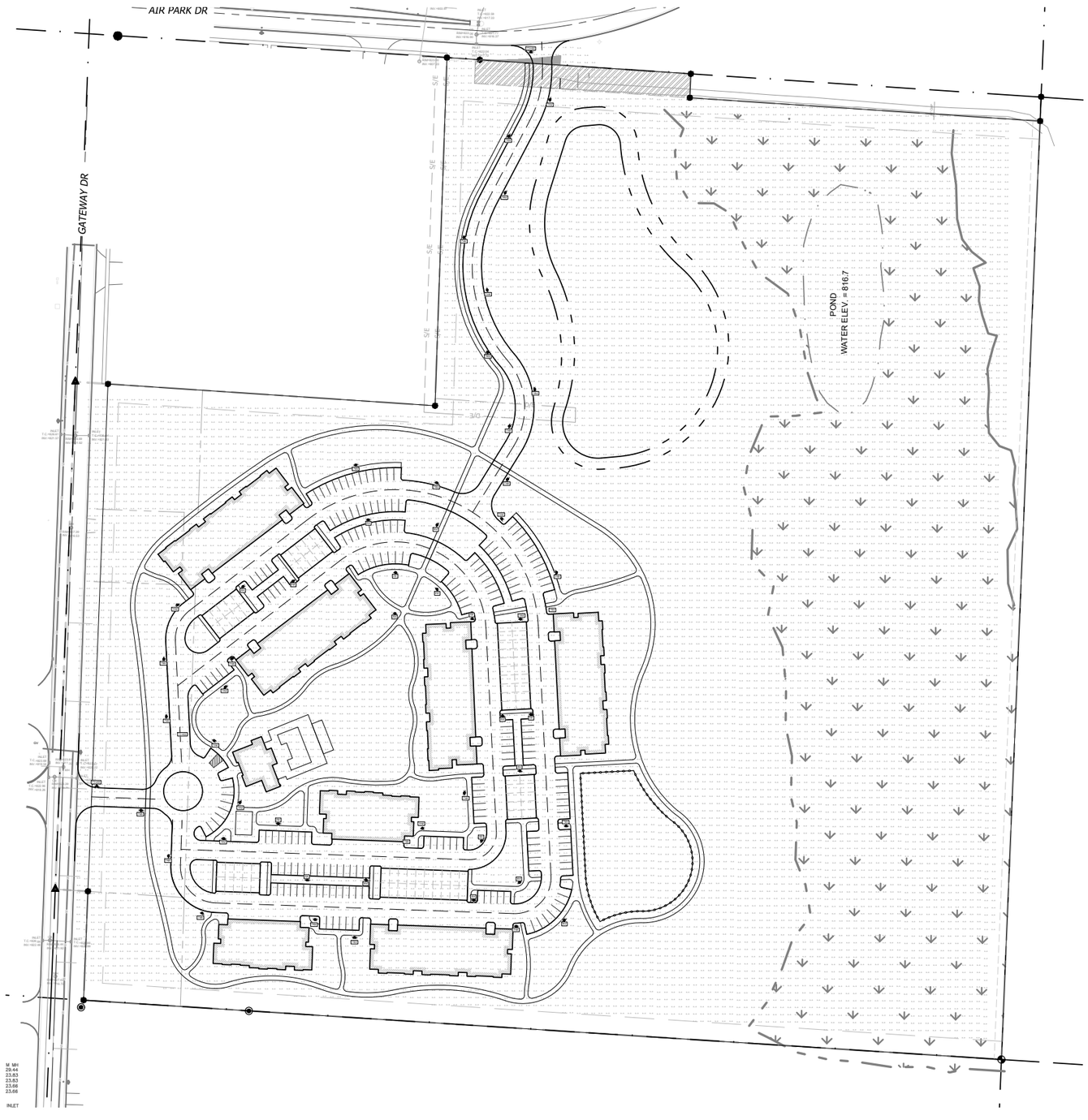


Luminaire Schedule					
Symbol	Qty	Label	Description	Mounting Height	Arm
	16	D	GLEON-SA2D-740-U-RW	30	1
	36	B	GLEON-SA2C-740-U-T4W	30	1
	2	A	GLEON-SA2C-740-U-T3-HSS	30	1

Calculation Summary							
Label	CalcType	Units	Avg	Max	Min	Avg/Min	Max/Min
Calculation Grid	Illuminance	Fc	1.84	4.1	0.4	4.60	10.25
Drive isles	Illuminance	Fc	1.86	4.1	0.4	4.65	10.25

Project		Catalog #		Type	
Prepared by		Notes		Date	

McGraw-Edison

GLEON Galleon

Area / Site Luminaire

Product Features

Interactive Menu

- Ordering Information page 2
- Mounting Details page 3
- Optical Distributions page 4
- Product Specifications page 4
- Energy and Performance Data page 4
- Control Options page 9

Product Certifications

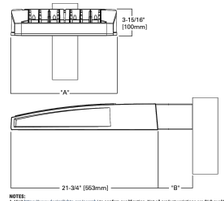
Quick Facts

- Lumen packages range from 4,200 - 80,800 (34W - 640W)
- Efficacy up to 156 lumens per watt
- Options to meet Buy American and other domestic preference requirements

Connected Systems

- WaveLinx
- Enlighted

Dimensional Details



Number of Light Squares	"A" Width	"B" Standard Arm Length	"B" Extended Arm Length [1]	"B" QM Arm Length	"B" QML Length	"B" OMEA Length
1-4	15-1/2"	7"	10"	10-5/8"	--	16-9/16"
5-6	21-5/8"	7"	10"	10-5/8"	--	16-9/16"
7-8	27-5/8"	7"	13"	10-5/8"	10-5/16"	--
9-10	33-3/4"	7"	16"	--	10-5/16"	--

NOTES:
For arm selection requirements and additional tree art, see MountingDetails section.

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.

COOPER Lighting Solutions

PSS000320EN page 1
May 24, 2023 7:00 PM

GRAPHIC SCALE
80 0 80

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PHOTOMETRIC PLAN

08/26/2024

WATERTOWN, WI - MULTIFAMILY
Gateway Drive & Air Park Drive, Watertown, WI 53094

PREPARED FOR: AIMEE OSBORNE
WATERTOWN LLC

148 E MILWAUKEE ST. #1054
JEFFERSON, WI 53549

P: (914)346-1137
AIMEE@THEOSBORNEGROUP.ORG

C3

rosemann & ASSOCIATES

CONCEPT PLANT SCHEDULE

+	CLIMAX TREES: 75 POINTS 2" caliper @ planting Acer saccharum / Sugar Maple Ginkgo biloba 'Autumn Gold' / Autumn Gold Maidenhair Tree Quercus rubra / Northern Red Oak Quercus x schuettei / Swamp Bur Oak	36
+	TALL DECIDUOUS TREES: 30 POINTS 1-1/2" caliper @ planting Carya ovata / Shagbark Hickory Gleditsia triacanthos / Honey Locust Populus grandidentata / Largetooth Aspen Tilia americana / American Linden	12
+	MEDIUM DECIDUOUS TREES: 15 POINTS 6' tall @ planting Larix laricina / Tamarack Nyssa sylvatica / Tupelo Prunus pensylvanica / Pin Cherry Prunus serotina / Black Cherry Prunus virginiana / Chokecherry	33
+	LOW DECIDUOUS TREES: 10 POINTS 4' tall @ planting Alnus incana rugosa / Speckled Alder Amelanchier laevis / Allegheny Serviceberry Multi-trunk Crataegus crus-galli inermis / Thornless Cockspur Hawthorn Malus ioensis / Prairie Crabapple	83
+	TALL EVERGREEN TREE: 40 POINTS 5' tall @ planting Abies balsamea / Balsam Fir Picea glauca / White Spruce Pinus strobus / White Pine	38
+	MEDIUM EVERGREEN TREES: 20 POINTS 4' tall @ planting Thuja occidentalis / American Arborvitae	41
+	LOW EVERGREEN TREES: 12 POINTS 3' tall @ planting Juniperus chinensis 'Mountbatten' / Mountbatten Juniper	10
+	TALL DECIDUOUS SHRUB: 5 POINTS 36" tall @ planting Cornus sericea / Red Twig Dogwood Hamamelis virginiana / Common Witch Hazel Rhus glabra / Smooth Sumac Sambucus canadensis / American Elderberry Staphylea trifolia / American Bladdernut Viburnum prunifolium / Blackhaw Viburnum	66
+	MEDIUM DECIDUOUS SHRUB: 3 POINTS 24" tall @ planting Aronia melanocarpa elata / Glossy Black Chokeberry Corylus americana / American Hazelnut Rhamnus alnifolia / Alder-leaved Buckthorn	374
+	LOW DECIDUOUS SHRUB: 1 POINT 18" tall @ planting Comptonia peregrina / Sweet Fern Diervilla lonicera / Bush Honeysuckle Hypericum kalmianum / Kalm St. Johnswort Lonicera oblongifolia / Swampfly Honeysuckle Myrica gale / Sweetgale Rhus aromatica / Fragrant Sumac Rosa palustris / Swamp Rose Spiraea alba / White Meadowsweet Spiraea tomentosa / Steeplebush Symphoricarpos albus / Common White Snowberry	730
+	LOW EVERGREEN SHRUB: 3 POINTS 12" tall/wide @ planting Juniperus communis depressa / Common Juniper Juniperus horizontalis / Creeping Juniper	37

Project Zone: MR-10	Developed Lot Plant Units			Building Fou... U...		
	SF	Required	Provided	LF	Required	Provided
CLUBHOUSE	2883	58		252	126	144
BLDG 1	12743	255		625	313	316
BLDG 2	12516	251		607	304	312
BLDG 3	12743	255		607	304	312
BLDG 4	12516	251		625	313	319
BLDG 5	8170	164		435	218	228
BLDG 6	12516	251		607	304	312
BLDG 7	8170	164		435	218	232
TOTALS	82257	1649	1650	4193	2100	2175

Project Zone: MR-10	Bufferyard Plant Units				
	Zone	Buffer Width	LF	Required	Provided
Health Facility NW	PO	15'	207	410	1370
Health Facility NW	PO	40+'	692	934	
Walmart - W	GB	40+'	2114	1777	1980
TOTALS				3121	3350

Project Zone: MR-10	Street Foundation Plant Units				
	Zone	Width	LF	Required	Provided
Gateway Drive	CB	10'	850	425	495
TOTALS				425	495

Project Zone: MR-10	Paved Area Plant Units		
	# Stallls	Required	Provided
Parking Stalls	290	1450	1450
TOTALS		1450	1450

GRAPHIC SCALE
80 0 80

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CONCEPTUAL PLANTING PLAN
08/26/2024

WATERTOWN, WI - MULTIFAMILY
Gateway Drive & Air Park Drive, Watertown, WI 53094

PREPARED FOR: AIMEE OSBORNE
WATERTOWN LLC

148 E MILWAUKEE ST. #1054
JEFFERSON, WI 53549

P: (914)346-1137
AIMEE@THEOSBORNEGROUP.ORG

L1

rosemann & ASSOCIATES PC

RESIDENTIAL BUILDING TYPE A (2)
UNIT MIX PER BUILDING
(4) 1-BED SMALL
(10) 1-BED
(13) 2-BED
(3) 3-BED
(30) TOTAL UNITS

14 SINGLE CAR GARAGES

RESIDENTIAL BUILDING TYPE B (3)
UNIT MIX PER BUILDING
(4) 1-BED SMALL
(10) 1-BED
(16) 2-BED
(30) TOTAL UNITS

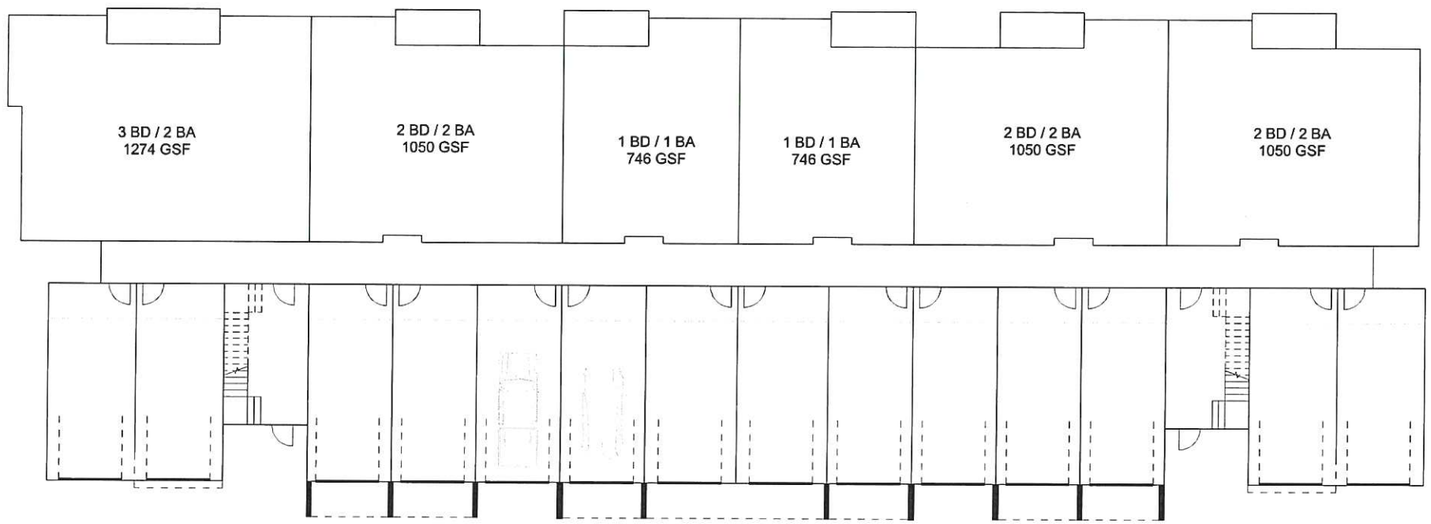
14 SINGLE CAR GARAGES

RESIDENTIAL BUILDING TYPE C (2)
UNIT MIX PER BUILDING
(10) 1-BED SMALL
(10) 1-BED
(3) 2-BED
(23) TOTAL UNITS

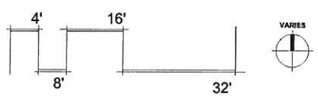
8 SINGLE CAR GARAGES

TOTAL PROJECT
(7) RESIDENTIAL BUILDINGS
(40) 1-BED SMALL
(70) 1-BED
(80) 2-BED
(6) 3-BED
(196) TOTAL PROJECT UNITS

COMMUNITY BUILDING
+/- 6 INDEPENDENT 10 / 20 STALL GARAGES



1 BUILDING A - FIRST FLOOR - PLAN DIAGRAM
1/8" = 1'-0"



PRELIMINARY FLOOR PLANS
08/26/2024

WATERTOWN, WI - MULTIFAMILY
Gateway Drive & Air Park Drive, Watertown, WI 53094

A1

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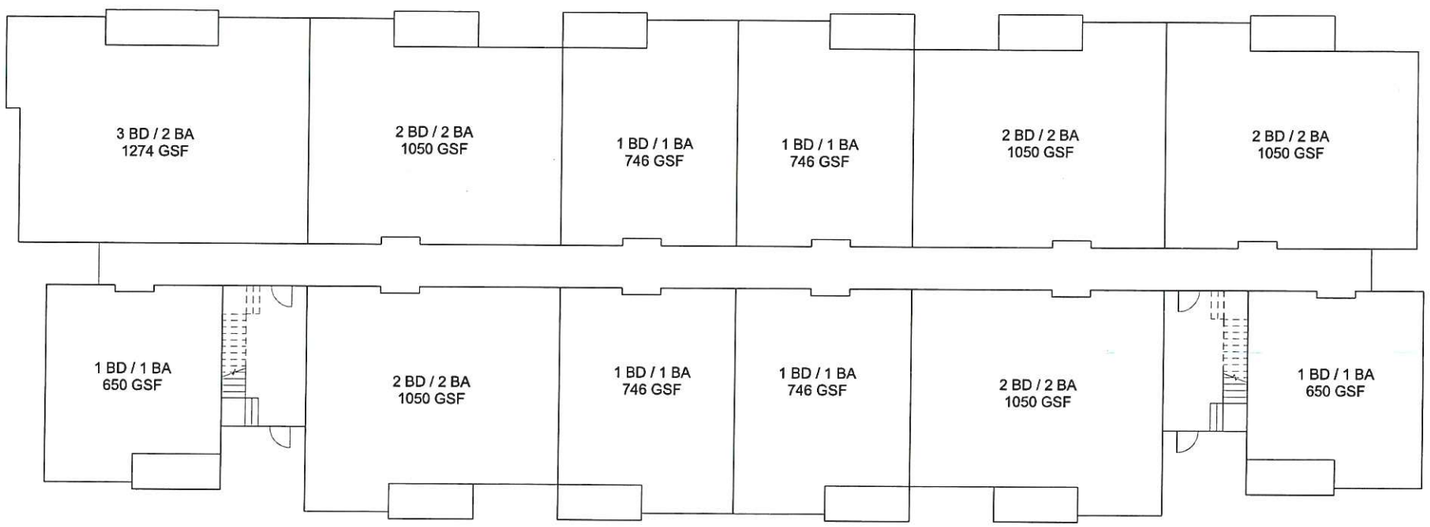
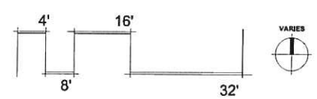


1 BUILDING A - FLOOR 2 & 3 - PLAN DIAGRAM
1/8" = 1'-0"



PRELIMINARY FLOOR PLANS
08/26/2024

WATERTOWN, WI - MULTIFAMILY
Gateway Drive & Air Park Drive, Watertown, WI 53094

A2

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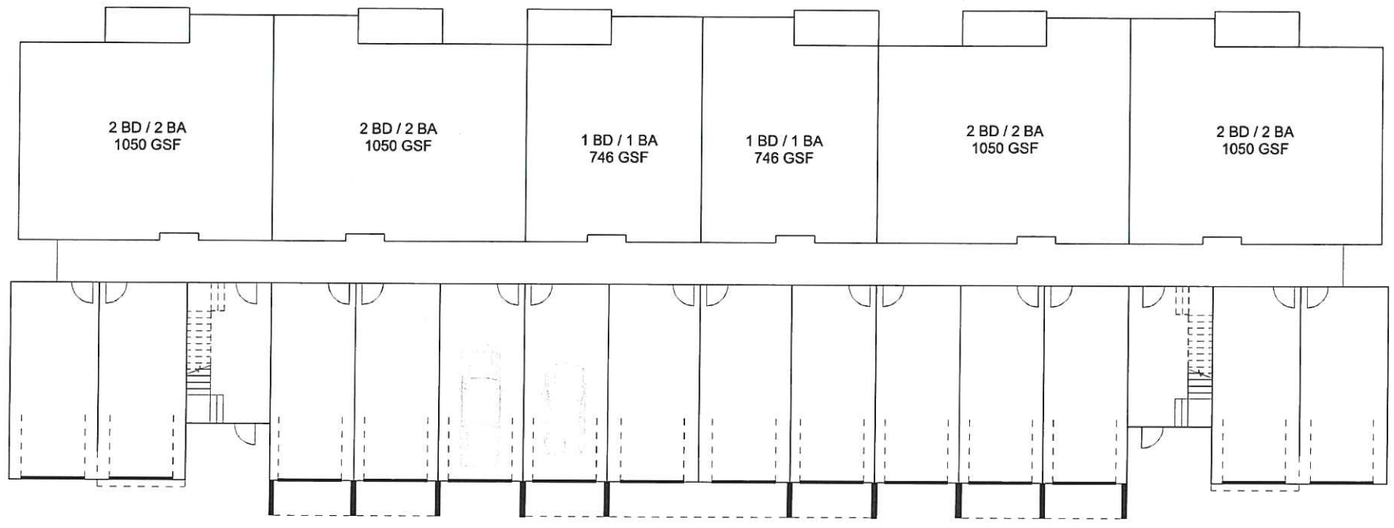

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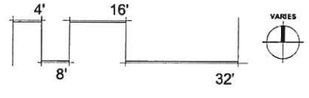

PRELIMINARY FLOOR PLANS

08/26/2024

WATERTOWN, WI - MULTIFAMILY

Gateway Drive & Air Park Drive, Watertown, WI 53094

A3

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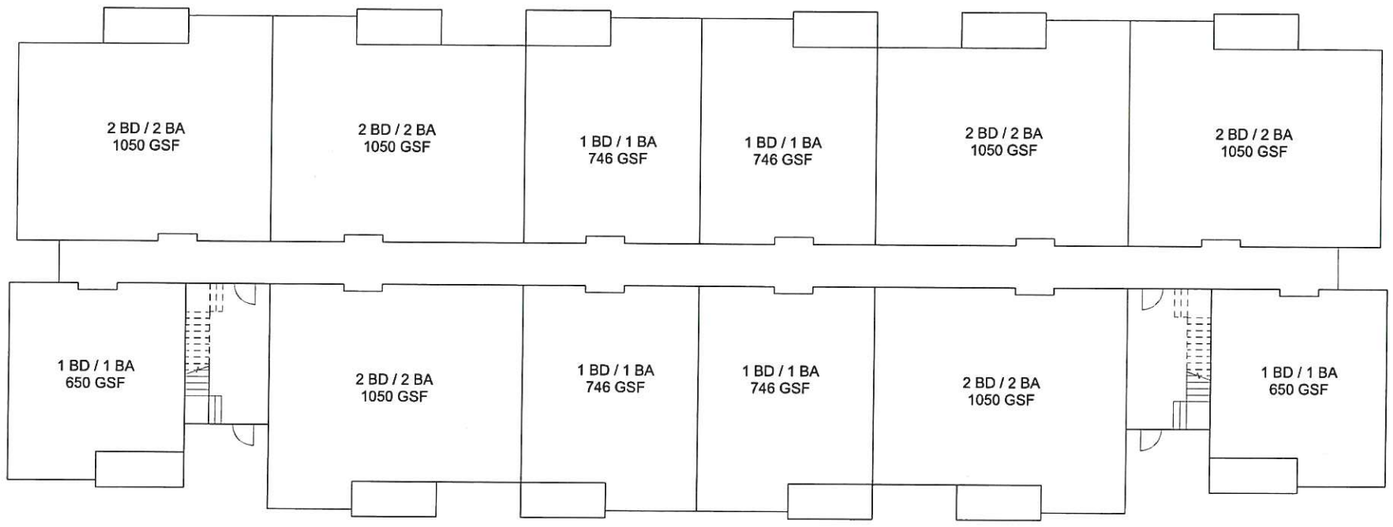
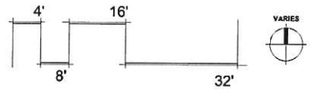


1 BUILDING B - FLOOR 2 & 3 - PLAN DIAGRAM
1/8" = 1'-0"



PRELIMINARY FLOOR PLANS

08/26/2024

WATERTOWN, WI - MULTIFAMILY

Gateway Drive & Air Park Drive, Watertown, WI 53094

A4

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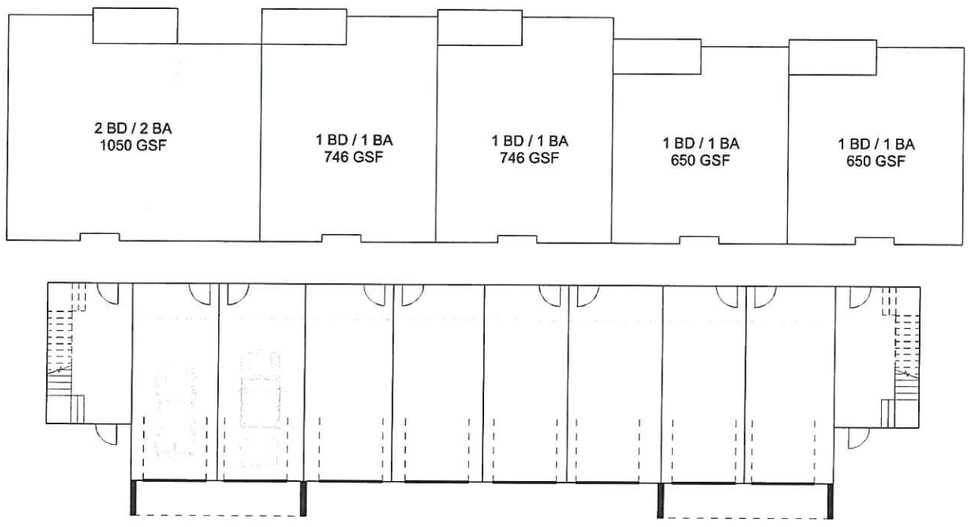
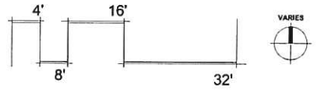


1 BUILDING C - FIRST FLOOR - PLAN DIAGRAM
1/8" = 1'-0"



PRELIMINARY FLOOR PLANS

08/26/2024

WATERTOWN, WI - MULTIFAMILY

Gateway Drive & Air Park Drive, Watertown, WI 53094

A5

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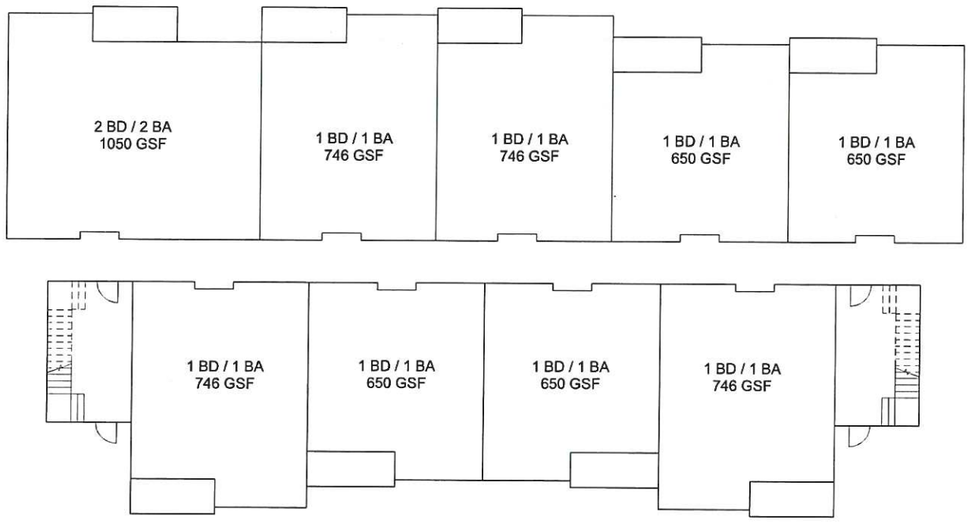
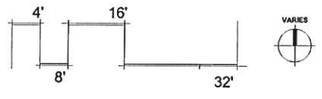


1 BUILDING C - FLOOR 2 & 3 - PLAN DIAGRAM
1/8" = 1'-0"



PRELIMINARY FLOOR PLANS

08/26/2024

WATERTOWN, WI - MULTIFAMILY

Gateway Drive & Air Park Drive, Watertown, WI 53094

A6

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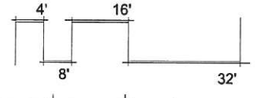
2 BUILDING A - FRONT ELEVATION
1/8" = 1'-0"

1 BUILDING A - REAR ELEVATION
1/8" = 1'-0"



BUILDING A - EXTERIOR ELEVATIONS

08/26/2024

WATERTOWN, WI - MULTIFAMILY

Gateway Drive & Air Park Drive, Watertown, WI 53094

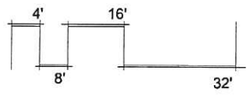
A7

rosemann & ASSOCIATES

3 BUILDING A - 3D VIEW

2 BUILDING A - LEFT SIDE ELEVATION
1/8" = 1'-0"

1 BUILDING A - RIGHT SIDE ELEVATION
1/8" = 1'-0"



BUILDING A - EXTERIOR ELEVATIONS

08/26/2024

WATERTOWN, WI - MULTIFAMILY
Gateway Drive & Air Park Drive, Watertown, WI 53094

A8

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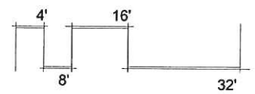
2 BUILDING B - FRONT ELEVATION
1/8" = 1'-0"

1 BUILDING B - REAR ELEVATION
1/8" = 1'-0"



BUILDING B - EXTERIOR ELEVATIONS

08/26/2024

WATERTOWN, WI - MULTIFAMILY
Gateway Drive & Air Park Drive, Watertown, WI 53094

A9

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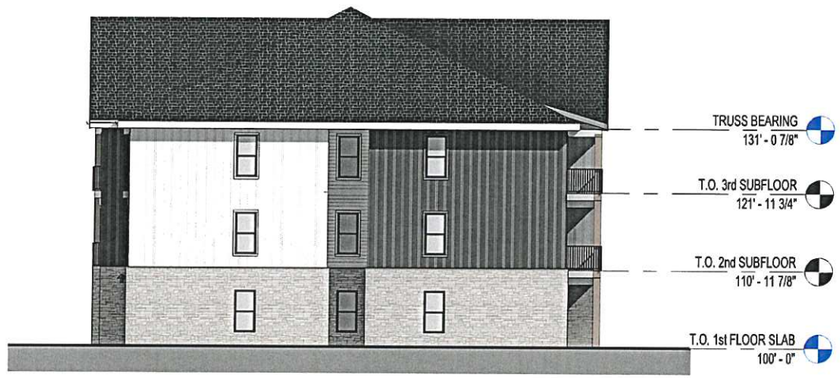
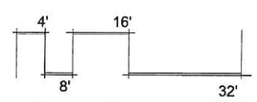
3 BUILDING B - 3D VIEW



2 BUILDING B - RIGHT SIDE ELEVATION
1/8" = 1'-0"

1 BUILDING B - LEFT SIDE ELEVATION
1/8" = 1'-0"



BUILDING B - EXTERIOR ELEVATIONS

08/26/2024

WATERTOWN, WI - MULTIFAMILY
Gateway Drive & Air Park Drive, Watertown, WI 53094

A10

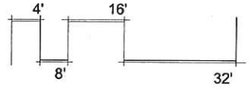
rosemann & ASSOCIATES INC.

4 BUILDING C - RIGHT SIDE ELEVATION
1/16" = 1'-0"

3 BUILDING C - FRONT ELEVATION
1/16" = 1'-0"

2 BUILDING C - LEFT SIDE ELEVATION
1/8" = 1'-0"

1 BUILDING C - REAR ELEVATION
1/8" = 1'-0"



BUILDING C - EXTERIOR ELEVATIONS

08/26/2024

WATERTOWN, WI - MULTIFAMILY
Gateway Drive & Air Park Drive, Watertown, WI 53094

A11

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1 BUILDING C - 3D VIEW

BUILDING C - EXTERIOR 3D VIEW 08/26/2024	**WATERTOWN, WI - MULTIFAMILY** Gateway Drive & Air Park Drive, Watertown, WI 53094	A12

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1 BUILDING A - PERSPECTIVE VIEW

2 BUILDING B - PERSPECTIVE VIEW

3 BUILDING C - PERSPECTIVE VIEW

PERSPECTIVE VIEWS 08/26/2024	**WATERTOWN, WI - MULTIFAMILY** Gateway Drive & Air Park Drive, Watertown, WI 53094	A13

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