



City of Fitchburg
 Planning/Zoning Department
 5520 Lacy Road
 Fitchburg, WI 53711
 (608-270-4200)

ARCHITECTURAL & DESIGN REVIEW APPLICATION

Applicant/Contact Person: _____

Address: _____ **Phone Number of Contact Person:** _____

City, State, Zip Code: _____ **Email of Contact Person:** _____

Project Address: _____ **Lot:** _____ **Subdivision:** _____

Project Type: _____ **Multi-Family** _____ **Commercial** _____ **Industrial** _____ **Other**
 _____ **New** _____ **Addition**

Impervious Surface Ratio (ISR): _____ (City Standard: maximum 65% ISR)

All items listed below must be included with the application to be considered complete. If an item is not included with the application, the applicant must provide in writing the basis for not including it. Building and site plans submitted to the Fitchburg Plan Commission for architectural and design review shall contain the following information:

Site Data:

- 1. Lot or property dimensions.
- 2. Orientation (to north).
- 3. Adjacent highways, roads, drive, etc.
- 4. Existing natural features (rivers, ponds, wetlands).
- 5. Existing buildings and/or improvements.
- 6. Existing and proposed site drainage.
- 7. Utility plans, including main/lateral sizes and existing fire hydrants on site or within 300 feet of the site
- 8. ISR shall be indicated on all plans.
- 9. Stormwater management plans and details, including grading plan.
- 10. Lighting plan in footcandles and light fixture cut sheets.

Building:

- 1. Building size, configuration and orientation.
- 2. Distance from lot lines.
- 3. Distance from other buildings, improvements and natural features.
- 4. Location of well, septic tank, drainfield, etc. (if applicable) **N/A**
- 5. Additional proposed additions or new structures, including trash/recycling enclosure(s).
- 6. Construction type (wood frame, structural steel, etc.).
- 7. Foundation type (full basement, slab on grade, etc.).
- 8. Number of levels.
- 9. Siding/exterior covering type, color, texture, etc.
- 10. Roof type (gable, hip, shed, flat, etc.) and pitch.
- 11. Roofing material type, color, texture, etc.
- 12. Exterior door and window location, size, type, etc.
- 13. Fire protection sprinklers or fire alarm systems. **See Summary Letter**

Ingress, Egress, Parking:

- 1. Location of highway and road access points.
- 2. Location, size, configuration of drivers and walks.
- 3. Number, size, location of parking spaces.
- 4. Location of handicapped parking and accessible building entrances.
- 5. Bicycle rack(s). **See Summary Letter**

Landscaping:

- 1. Location, species, size of existing trees, shrubs, and plantings.
- 2. Location, species, size of proposed plantings.
- 3. Location and size of all paved, seeded/sodded and gravelled areas.
- 4. Location of all retaining walls, fences, berms and other landscape features.

***It is highly recommended that an applicant hold at least one neighborhood meeting prior to submitting an ADR application to identify any concerns or issues of surrounding residents.**

The preceding information is considered to be the minimum information for submission, and the City may require additional information for its review. Any interpretations provided by city officials as the result of submitting the attached information are based on the submitted plans, and any plan changes, may affect the interpretations.

It is the responsibility of the owner/applicant to insure compliance with all local and state requirements. The below signed applicant acknowledges the above information and hereby submits the attached information for the City's Architectural and Design Review Process.

Signed: Greg Brockmeyer Date: 5/23/2022
Applicant or Authorized Agent

***** Application shall be accompanied by one (1) sets of full-size plans, two (2) sets no larger than 11"x17", and one (1) pdf document of the complete submittal to planning@fitchburgwi.gov. Applications are due at least 4 weeks prior to the desired Plan Commission Meeting. The time frame assumes a complete set of plans is provided, and if it is not provided the Plan Commission date will be adjusted.**

FOR CITY USE ONLY

Date Received: _____ Plan Commission Date: _____

Comments:



P.O. Box 990, St. Charles, IL 60174
630.221.0671 prairieforgegroup.com

May 24, 2022

Deanna Schmidt, AICP Deanna.Schmidt@fitchburgwi.gov
City of Fitchburg - City Planner & Zoning Administrator
5550 Lacey Road
Fitchburg, WI 53711

Re: Architectural and Design Review – ADR Application
Dane County Emergency Management (EM) Facility - Elevator Addition
2982 Kapec Road
Fitchburg, WI 53711

Dear Deanna:

Enclosed is the Architectural and Design Review (ADR) Application and the associated exhibits for the review and approval by the City of Fitchburg Plan Commission for the Dane County Emergency Management (EM) Elevator Addition Project located at 2982 Kapec Road (formerly known as 5415 King James Way), Fitchburg, Wisconsin.

The primary contact for Dane County is:
Scott Carlson, P.E., CEM, Carlson.scott@countyofdane.com
Public Works Engineering Division
Dane County Dept. of Administration
1919 Alliant Energy Center Way
Madison, WI 53713
direct: 608/266-4179
mobile: 608/575-8767

Authorized signatory for Dane County is:
Greg Brockmeyer, Dane County Administrator, brockmeyer@countyofdane.com
210 Martin Luther King Blvd – CCB-4, Room 425
Madison, WI 53703

The Architect for the project is:
Prairie Forge Group (PFG)
Tom Tristano, AIA Principal-in-Charge, tmtristano@p-fgroup.com
Rebecca Strader, AIA Senior Project Architect, rbstrader@p-fgroup.com
P. O. Box 990
Saint Charles, IL 60174

The Civil Engineer is:
Jason Green, PE, CPESC, DECI, Vice President of Civil Engineering Jason.green@wtengineering.com
W-T Group
2675 Pratum Avenue
Hoffman Estates, IL 60192

The Emergency Management (EM) Facility - Elevator Addition Project Summary is as follows: The building at 2982 Kapec Road, Fitchburg, Wisconsin was constructed in 1993 as a fire station. Renovation of the building began last year under a previously approved ADR submission and is scheduled to be substantially complete by fall of 2022. The Elevator Addition is to provide necessary storage of supplies for the Dane County Emergency Management Department. This elevator addition will allow the occupants to access the existing basement storage space as their supply and storage needs expand in the coming years. The existing building has a primary occupancy classification of Civic Administration (B: Business) and secondary occupancy of Emergency Vehicle Storage (S-1: Medium Hazard Storage). The property is in the B-G: General Business zoning district, where "Government Offices" is a permitted use.

The proposed building Addition will add 189 SF to the current 12,520 SF, for a total first-floor footprint of 12,709 SF. The highest point of the building is at the existing Vehicle storage bays at 22'-6" above grade. The new Elevator Addition will be 18'-9" above grade.

The existing building is Construction Type IIB (noncombustible, unprotected, fully sprinklered), and the proposed Addition will be the same. The elevator shaft will have structural walls of concrete masonry units (CMU), concrete and steel reinforcing bars, with an exterior cladding of architectural metal panels (AMP) and a base of two courses of architectural concrete masonry units that will match the smooth courses of the existing building. The Vestibule exterior wall will be constructed of steel, with the AMP cladding, aluminum fixed windows, aluminum storefront entry doors, and a steel cantilevered canopy. The new window and door frames will be finished in black to match the renovated building.

The exterior building and site changes include:

1. Exterior building revisions include adding a vestibule and entry doors; providing a small steel entry canopy; cladding the addition with architectural metal panels; and providing a new ADA accessible main entry.
2. New entry vestibules with two sets of doors for wind protection.
3. New roofing and roof drainage with one downspout tied into new underground storm water piping.
4. Re-grading around the building to lower the earth off the masonry block and slope away from the building.
5. New concrete sidewalks to connect parking to the new entry – ADA compliant.
6. New exterior building light at the vestibule entry and one new light to illuminate the building sign and the Dane County logo.
7. Revised the landscape areas to accommodate the new addition with native plantings.

The existing fire protection system will remain and be updated/modified to accommodate the new remodeled plan. The fire alarm (FA) system will be modified to accommodate the new addition that will meet current building code requirements. Since the building is a secured Emergency Management operation and will not be open for public use or access, the previously approved ADR agreed that staff bikes will be stored in the fleet/garage area. There will not be any modifications to the parking lot and no roof-mounted equipment will be part of this addition.

If you have any questions or require further clarification, please feel free to contact any of us.

Cordially,



Thomas M. Tristano, AIA
Principal

**DANE COUNTY
EMERGENCY MANAGEMENT
NEW ELEVATOR ADDITION**

PROJECT NO. 2020-001



MAY 24, 2022

ARCHITECTURAL & DESIGN REVIEW (ADR)

Owner: Dane County Department of Public Works,
Highway & Transportation
1919 Alliant Energy Center Way
Madison, WI 53713

Architect: Prairie Forge Group
P.O. Box 990
St. Charles, Illinois 60174
630-221-0671



P.O. Box 990, St. Charles, IL 60174
630.221.0671 prairieforgegroup.com

**DANE COUNTY EMERGENCY MANAGEMENT NEW ELEVATOR ADDITION
2982 KAPEC ROAD, FITCHBURG, WI
PROJECT NO. 2020-001**



EXISTING NORTH ELEVATION



EXISTING NORTH ELEVATION



**DANE COUNTY EMERGENCY MANAGEMENT NEW ELEVATOR ADDITION
2982 KAPEC ROAD, FITCHBURG, WI
PROJECT NO. 2020-001**



EXISTING WEST ELEVATION



EXISTING WEST ELEVATION



**DANE COUNTY EMERGENCY MANAGEMENT NEW ELEVATOR ADDITION
2982 KAPEC ROAD, FITCHBURG, WI
PROJECT NO. 2020-001**

PREVIOUSLY APPROVED ADR:

EXISTING METAL FASCIA - PAINTED
COLOR: SW7076 CYBERSPACE

NEW ELEVATOR ADDITION METAL PARAPET COPING
COLOR: MATCH CYBERSPACE



**DANE COUNTY EMERGENCY MANAGEMENT NEW ELEVATOR ADDITION
2982 KAPEC ROAD, FITCHBURG, WI
PROJECT NO. 2020-001**

PREVIOUSLY APPROVED ADR:

EXTERIOR METAL DOORS - PAINTED

OVERHEAD METAL DOORS - PAINTED

NEW SIDING - PAINTED

COLOR: SW7026 GRIFFIN



**DANE COUNTY EMERGENCY MANAGEMENT NEW ELEVATOR ADDITION
2982 KAPEC ROAD, FITCHBURG, WI
PROJECT NO. 2020-001**

PREVIOUSLY APPROVED ADR:

NEW WINDOW FRAMES

COLOR: BLACK

NEW ELEVATOR ADDITION WINDOW/DOOR FRAMES

COLOR: BLACK



**DANE COUNTY EMERGENCY MANAGEMENT NEW ELEVATOR ADDITION
2982 KAPEC ROAD, FITCHBURG, WI
PROJECT NO. 2020-001**

NEW ELEVATOR ADDITION ARCHITECTURAL METAL PANELS

COLOR: PEWTER



**DANE COUNTY EMERGENCY MANAGEMENT NEW ELEVATOR ADDITION
2982 KAPEC ROAD, FITCHBURG, WI
PROJECT NO. 2020-001**



BUILDING ACROSS THE STREET ON KING JAMES WAY



BUILDING ACROSS THE STREET ON KAPEC ROAD



d^{series}

D-Series Size 1 LED Flood Luminaire



Catalog Number

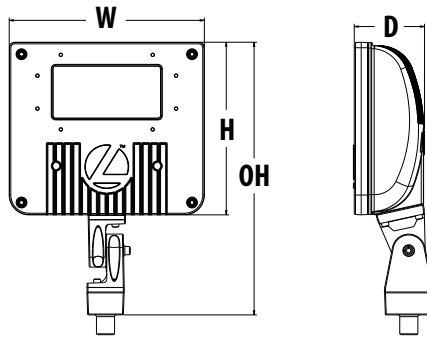
Notes

Type

Hit the Tab key or mouse over the page to see all interactive elements.

Specifications

EPA:	0.6 ft ² (0.05 m ²)
Depth:	3-1/8" (8.0 cm)
Width:	8-7/8" (22.4 cm)
Height:	7-3/4" (19.8 cm)
Overall Height:	12" (30.5 cm)
Weight:	7.2 lbs (3.3 kg)



Introduction

The D-Series floodlights feature a site-wide offering to meet specifier's every floodlighting need in application. The D-Series flood offers three sizes delivering 3,000 to 27,000 lumens. Available with seven precision optics, three mountings and three color temperatures, D-Series floodlights offer vast design capabilities while delivering significant energy savings and long life.

The DSXF1 delivers 3,000 to 5,500 lumens, meeting a large breadth of illumination requirements for design and renovation when replacing 70W to 150W HID floodlights. All configurations are made in North America allowing for quick delivery.

Ordering Information

EXAMPLE: DSXF1 LED P1 40K MSP MVOLT THK DDBXD

Series	Performance Package	Color Temperature	Distribution	Voltage	Mounting	Options	Finish (required)
DSXF1 LED	P1	30K 3000K	WFL Wide flood (6X6)	MVOLT ¹	Shipped included	PE Photocontrol, button style ⁵	DDBXD Dark bronze
		40K 4000K	FL Flood (5X5)	120 ²			
	P2	50K 5000K	MFL Medium flood (4X4)	208 ²	IS Integral slipfitter (fits 2-3/8" O.D. tenon)	SF Single fuse (120, 277, 347V) ²	DNAXD Natural aluminum
		WFK Wide flood rectangular (6X5)	240 ²	YKC62 Yoke with 16-3 SO cord			
		HMF Horizontal medium flood (6X4)	277 ²		Shipped separately⁴		
		MSP Medium spot (4X4)	347 ^{2,3}			DSXF1/2TS Tenon slipfitter (2-3/8" O.D. THK required)	DMG 0-10v dimming wires pulled outside fixture (for use with an external control, ordered separately)
		NSP Narrow spot (3X3)		FTS CG6 Tenon Slipfitter (fits 2-3/8" to 2-7/8" O.D. tenon. YKC62 required)	Shipped separately³	UBV Upper/bottom visor (universal)	
					FV Full visor		
					VG Vandal guard		

Accessories

Ordered and shipped separately.

DSXF1/2TS DDBXD U	Slipfitter for 1-1/4" to 2-3/8" OD tenons; mates with 1/2" threaded knuckle (specify finish)
FRWB DDBXD U	Radius wall bracket, 2-3/8" OD tenon (specify finish)
FSPB DDBXD U	Steel square pole bracket, 2-3/8" OD tenon (specify finish)
DSXF1UBV DDBXD U	Upper/bottom visor accessory (specify finish)
DSXF1FV DDBXD U	Full visor accessory (specify finish)
DSXF1VG U	Vandal guard accessory

For more mounting options, visit our [Floodlighting Accessories](#) pages.

Stock configurations are offered for shorter lead times:

Standard Part Number	Stock Part Number	CI Code
DSXF1 LED P1 40K WFL MVOLT THK DDBXD	DSXF1 LED P1 40K	*240TJH
DSXF1 LED P1 50K WFL MVOLT THK DDBXD	DSXF1 LED P1 50K	*240TJG
DSXF1 LED P2 40K WFL MVOLT THK DDBXD	DSXF1 LED P2 40K	*240TJL
DSXF1 LED P2 50K WFL MVOLT THK DDBXD	DSXF1 LED P2 50K	*240TJJ
DSXF1/2 Slip-fitter Tenon Accessory DDBXD	DSXF1/2TS DDBXD U	*216GSK

NOTES

- MVOLT driver operates on line voltage from 120-277V.
- Single fuse (SF) requires 120V, 277V or 347V. Double fuse (DF) requires 208V, 240V or 480V.
- Not available with option PEX.
- Also available as accessories; see Accessories information at left.
- Photocontrol (PE) requires 120, 208, 240, 277 or 347 voltage option. Photocontrol PEX requires 120, 208, 240 or 277 voltage option.



Performance Data

Lumen Output

Lumen values are from photometric tests performed in accordance with IESNA LM-79-08. Data is considered to be representative of the configurations shown within applicable tolerances. Actual performance may differ as a result of end-user environment and application. Actual wattage may differ by +/- 8% when operating between 120-480V +/- 10%. Contact factory for performance data on any configurations not shown here.

Performance Package	System Watts	Dist. Type	Field Angle		Beam Angle		30K (3000K, 70 CRI)			40K (4000K, 70 CRI)			50K (5000K, 70 CRI)		
			°H	°V	°H	°V	Max Cd	Lumens	LPW	Max Cd	Lumens	LPW	Max Cd	Lumens	LPW
P1	21W	NSP	37	38	18	19	16,316	2,601	124	18,039	2,876	137	18,039	2,876	137
		MSP	51	51	27	28	9,908	2,578	123	10,954	2,850	136	10,954	2,850	136
		MFL	60	60	46	45	4,027	2,435	116	4,452	2,692	128	4,452	2,692	128
		FL	84	91	59	72	2,255	2,682	128	2,494	2,965	141	2,494	2,965	141
		WFL	109	101	86	85	1,494	2,766	132	1,652	3,058	146	1,652	3,058	146
		WFR	103	92	80	71	1,809	2,794	133	2,000	3,089	147	2,000	3,089	147
		HMF	124	63	100	48	2,001	2,329	111	2,212	2,575	123	2,212	2,575	123
P2	42W	NSP	37	38	18	19	29,740	4,741	113	32,881	5,242	125	32,881	5,242	125
		MSP	51	51	27	28	18,060	4,699	112	19,967	5,195	124	19,967	5,195	124
		MFL	60	50	46	45	7,340	4,439	106	8,115	4,908	117	8,115	4,908	117
		FL	84	91	59	72	4,111	4,889	116	4,545	5,406	129	4,545	5,405	129
		WFL	109	101	86	85	2,568	4,753	113	3,011	5,573	133	3,011	5,573	133
		WFR	103	92	80	71	3,297	5,094	121	3,645	5,631	134	3,645	5,632	134
		HMF	124	63	100	48	3,647	4,245	101	4,032	4,693	112	4,032	4,693	112

Lumen Ambient Temperature (LAT) Multipliers

Use these factors to determine relative lumen output for average ambient temperatures from 0-40°C (32-104°F).

Ambient	
0°C	32°F
10°C	50°F
20°C	68°F
25°C	77°F
30°C	86°F
40°C	104°F

Projected LED Lumen Maintenance

Data references the extrapolated performance projections for the **DSXF1 LED P2** platform noted in a 25C ambient, based on 10,000 hours of LED testing (tested per IESNA LM-80-08 and projected per IESNA TM-21-11).

To calculate LLF, use the lumen maintenance factor that corresponds to the desired number of operating hours. For other lumen maintenance values, contact factory.

Operating Hours	0	25,000	50,000	100,000
Lumen Maintenance Factor	1.0	0.97	0.96	0.95

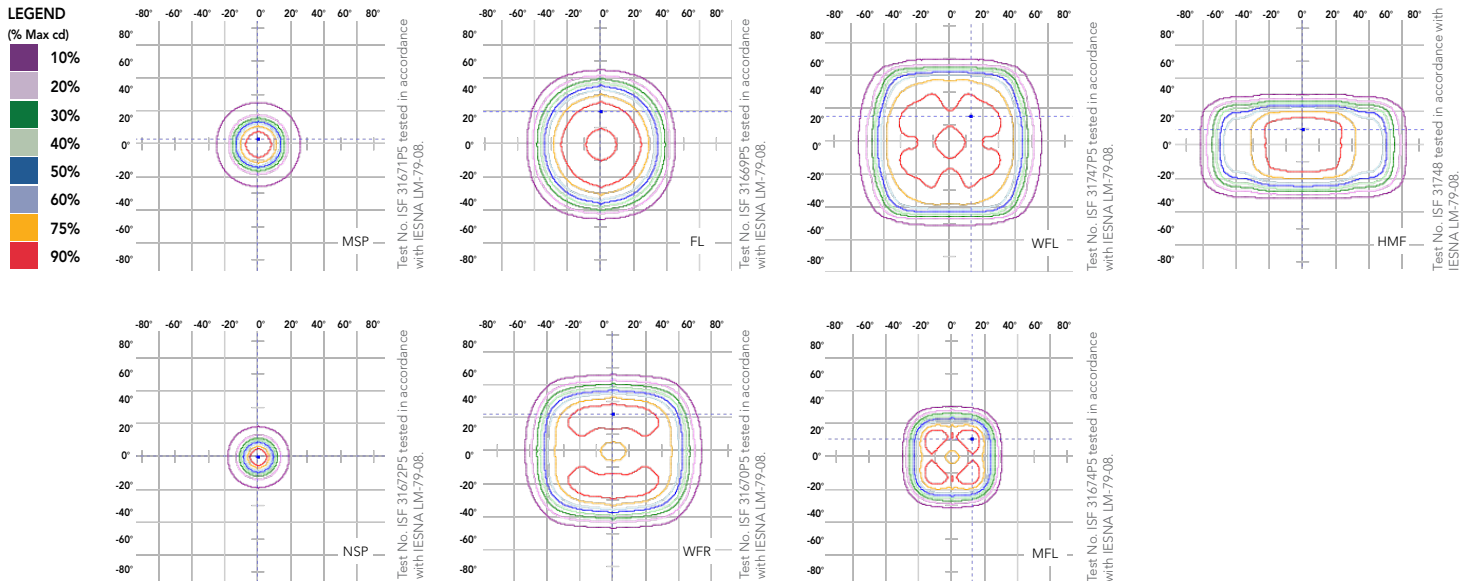
Electrical Load

Light Engines	System Watts	Current (A)					
		120	208	240	277	347	480
P1	21W	0.18	0.1	0.09	0.08	0.07	-
P2	42W	0.35	0.20	0.18	0.15	0.12	-

Photometric Diagrams

To see complete photometric reports or download .ies files for this product, visit Lithonia Lighting's [D-Series Flood Size 1 homepage](#).

Iscandela plots for the DSXF1 LED P2 40K.



Mounting, Options and Accessories



THK - Knuckle with 1/2" NPS threaded pipe



YKC62 - Yoke with 50 cord
H= 4-1/4" (10.7 cm)
D= 2-1/4" (5.7 cm)



IS - Integral slipfitter
H= 2-1/2" (6.3 cm)
ID= 2-3/8" (6.0 cm)
OD= 3-1/2" (8.8 cm)



UBV - Upper/bottom visor
W= 5-1/4" (13.3 cm)
H= 2-1/2" (6.3 cm)
D= 3" (7.6 cm)



FV - Full visor
W= 5-1/4" (13.3 cm)
H= 2-1/2" (6.3 cm)
D= 3" (7.6 cm)



VG - Vandal guard
W= 6-1/2" (16.5 cm)
H= 4" (10.1 cm)

FEATURES & SPECIFICATIONS

INTENDED USE

The sleek and compact design of the D-Series floodlights reflects the embedded high performance LED technology while offering a clean aesthetic suitable for specification and general purpose floodlighting applications. Three sizes are available with seven precision optics allowing for maximum design versatility. DSXF1 delivers 3,000 to 5,500 lumens and is ideal for commercial lighting applications including new construction and replacing 70W to 150W HID floodlights. DSXF1 is ideal for security, facade, flagpole, column grazing and signage lighting applications.

CONSTRUCTION

The DSXF1 LED floodlight features rugged die-cast aluminum construction with integral heat sink fins that optimize thermal management through conductive and convective cooling. The LED driver is mounted in direct contact with the casting to promote low operating temperature and long life. The housing and lens frame are completely sealed against moisture and environmental contaminants providing an IP66 rating. Low EPA (0.6 ft²) for optimized wind loading. DSXF1 is 1.5G vibration rated per ANSI C136.31.

FINISH

Exterior painted parts are protected by a zinc-infused Super Durable TGIC thermoset powder coat finish that provides superior resistance to corrosion and weathering. A tightly controlled multi-stage process ensures a 3 mils thickness for a finish that can withstand extreme climate changes without cracking or peeling. Standard Super Durable colors include dark bronze, black, natural aluminum, and white. Available in textured and non-textured finishes.

OPTICS

Seven unique precision-molded vacuum-metalized specular reflectors are engineered for superior field-to-beam ratios, uniformity and spacing. Light engines are available in 3000K, 4000K or 5000K (minimum 70 CRI) configurations. Optional visors offer additional versatility when shielding is required.

ELECTRICAL

Light engine(s) consist of chip-on-board (COB) LEDs directly coupled to the housing to maximize heat dissipation and promote long life. Class 2 electronic driver has a power factor >90%, THD <20%, and has an expected life of 100,000 hours with <1% failure rate. Standard 6kV surge protection meets a minimum Category C Low operation (per ANSI/IEEE C62.41.2).

INSTALLATION

Integral adjustable knuckle with 1/2-14 NPT threaded pipe, tenon slipfitter, or yoke mounting, facilitates quick and easy installation to a variety of mounting accessories. DSXF3 features a glass lens enclosure that is protected to IP66 and is rated for lighting aimed up above 90°. Suitable for mounting within 4 feet of ground.

LISTINGS

CSA Certified to meet U.S. and Canadian standards. Suitable for wet locations. Rated for -40°C minimum ambient.

DesignLights Consortium® (DLC) Premium qualified product and DLC qualified product. Not all versions of this product may be DLC Premium qualified or DLC qualified. Please check the DLC Qualified Products List at www.designlights.org/QPL to confirm which versions are qualified.

WARRANTY

5-year limited warranty. Complete warranty terms located at: www.acuitybrands.com/support/warranty/terms-and-conditions

Note: Actual performance may differ as a result of end-user environment and application. All values are design or typical values, measured under laboratory conditions at 25 °C. Specifications subject to change without notice.



WSQ LED

Architectural Wall Sconce



Inverted available with WLU option only.

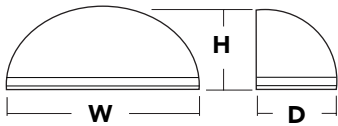
Specifications Luminaire

Height: 9-3/8"
(23.8 cm)

Width: 18"
(45.7 cm)

Depth: 9"
(22.8 cm)

Weight: 17 lbs
(7.7 kg)

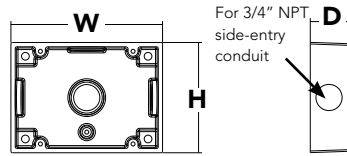


Optional Back Box (BBW)

Height: 4"
(10.2 cm)

Width: 5-1/2"
(14.0 cm)

Depth: 1-1/2"
(3.8 cm)



Catalog Number

Notes

Type

Hit the Tab key or mouse over the page to see all interactive elements.

Introduction

Classic Architectural Wall Sconce with the LED technology. Long-life, maintenance-free product with typical energy savings of 80% compared to metal halide versions. The integral battery backup option provides emergency egress lighting, without the use of a back-box or remote gear, so installations maintain their aesthetic integrity. The WSQ LED is ideal for replacing existing 50 – 250W metal halide wall-mounted products. The expected service life is 20+ years of nighttime use.

Ordering Information

EXAMPLE: WSQ LED P2 40K SR3 MVOLT DDBTXD

WSQ LED	Performance Package	Color Temperature	Distribution	Voltage	Mounting	Options	Finish (required)
WSQ LED	P1 P2 P3 P4	30K 40K 50K	SR2 Type II SR3 Type III SR4 Type IV	MVOLT ¹ 120 208 240 277 347 480	Shipped included (blank) Surface mount Shipped separately ² BBW Surface-mounted back box	Shipped installed PE Photoelectric cell, button type ^{2,3} SF Single fuse (120, 277, 347V) ⁴ DF Double fuse (208, 240, 480V) ⁴ DMG 0-10v dimming wires pulled outside fixture (for use with an external control, ordered separately) E20WC Emergency battery backup, Certified in CA Title 20 MAEDBS (18W, -20°C) ⁵ E10WH Emergency battery backup, Certified in CA Title 20 MAEDBS (10W, 5°C) ⁵ WLU Wet location door for up orientation ⁶ PIR Motion/ambient light sensor ⁷ DS Dual switching ⁸ SPD Separate Surge Protection ⁹ Shipped separately VG Vandal guard WG Wire guard	DDBXD Dark bronze DBLXD Black DNAXD Natural aluminum DWHXD White DSSXD Sandstone DDBTXD Textured dark bronze DBLBXD Textured black DNATXD Textured natural aluminum DWHGXD Textured white DSSTXD Textured sandstone

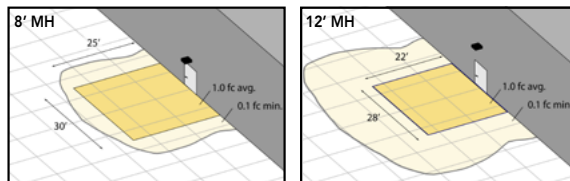
Emergency Battery Operation

The emergency battery backup (E20WC & E10WH options) is integral to the luminaire - no external housing required! This design provides reliable emergency operation while maintaining the aesthetics of the product. All E20WC & E10WH configurations include an independent secondary driver with an integral relay to immediately detect AC power loss.

The emergency battery will power the luminaire for a minimum duration of 90 minutes (maximum duration of three hours) from the time supply power is lost, per [International Building Code Section 1006](#) and [NFPA 101 Life Safety Code Section 7.9](#), provided luminaires are mounted at an appropriate height and illuminate an open space with no major obstructions.

The examples below show illuminance of 1 fc average and 0.1 fc minimum of the P1 power package Type IV product in emergency mode.

WSR P1 LED 40K SR4 MVOLT E20WC
10' x 10' Gridlines
8' and 12' Mounting Height



NOTES

- MVOLT driver operates on any line voltage from 120-277V (50/60 Hz).
- Not available with 480V option.
- PE option is voltage specific.
- Single fuse (SF) requires 120V, 277V or 347V options. Double fuse (DF) requires 208V, 240V or 480V options.
- Not available with 347V or 480V. Not available with WLU.
- WLU not available with PIR, E20WC or E10WH.
- See PIR Table for default settings.
- Only available with P3 & P4 packages. Provides 50/50 luminaire operation via two independent drivers and light engines on two separate circuits. Not available with E20WC, E10WH, WLU, SF, or DF. When ordered with photocell (PE) or motion sensor (PIR), only the primary power source leads will be controlled.
- See electrical section on page 2 for more details.



Commercial Outdoor

One Lithonia Way • Conyers, Georgia 30012 • Phone: 1-800-705-7378 • www.lithonia.com
© 2011-2019 Acuity Brands Lighting, Inc. All rights reserved.

WSQ-LED
Rev. 04/22/19

Performance Data

Lumen Output

Lumen values are from photometric tests performed in accordance with IESNA LM-79-08. Data is considered to be representative of the configurations shown, within the tolerances allowed by Lighting Facts.

Performance Package	System Watts (MVOLT)	Dist. Type	30K (3000K, 70CRI)		40K (4000K, 70CRI)		50K (5000K, 70CRI)	
			Lumens	LPW	Lumens	LPW	Lumens	LPW
P1	20W	SR2	2,111	108	2,251	115	2,305	118
		SR3	2,104	108	2,244	115	2,298	117
		SR4	2,053	105	2,189	112	2,242	115
P2	29W	SR2	2,943	101	3,139	108	3,214	110
		SR3	2,934	101	3,129	107	3,204	110
		SR4	2,863	98	3,053	105	3,126	107
P3	40W	SR2	4,500	114	4,799	122	4,913	125
		SR3	4,486	114	4,784	122	4,898	125
		SR4	4,377	111	4,667	119	4,779	122
P4	61W	SR2	6,159	102	6,567	108	6,724	111
		SR3	6,139	101	6,547	108	6,703	110
		SR4	5,991	99	6,388	105	6,541	108

Motion/Ambient Sensor Default Settings

	Dimmed State	High Level (when triggered)	Photocell Operation	Ramp-up Time	Dwell Time	Ramp-down Time
*PIR	3V (37%) Output	10V (100%) Output	Enabled @ 5FC	3 sec	5 min	5 min

*PIR USES SFOD 7

Lumen Ambient Temperature (LAT) Multipliers

Use these factors to determine relative lumen output for average ambient temperatures from 0-40°C (32-104°F).

Ambient		Normalized Lumen Multiplier
0°C	32°F	1.05
10°C	50°F	1.03
20°C	68°F	1.01
25°C	77°F	1.00
30°C	86°F	0.99
40°C	104°F	0.97

Projected LED Lumen Maintenance

Data references the extrapolated performance projections for the **MRW LED P4** platform in a **25°C ambient**, based on 10,000 hours of LED testing (tested per IESNA LM-80-08 and projected per IESNA TM-21-11).

To calculate LLF, use the lumen maintenance factor that corresponds to the desired number of operating hours below. For other lumen maintenance values, contact factory.

Operating Hours	0	25000	50000	100000	L90
Lumen Maintenance Factor	1	0.96	0.95	0.92	>60000

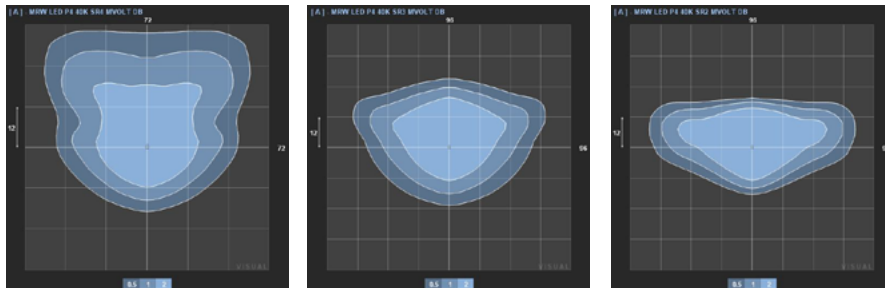
Electrical Load

Power Package	System Watts	Current (A)					
		120V	208V	240V	277V	347V	480V
P1	20W	0.17	0.10	0.09	0.08	0.06	0.05
P2	29W	0.26	0.15	0.13	0.12	0.09	0.07
P3	40W	0.37	0.21	0.18	0.16	0.13	0.09
P4	61W	0.59	0.33	0.18	0.25	0.19	0.14

Photometric Diagrams

To see complete photometric reports or download .ies files for this product, visit Lithonia Lighting's [WSQ LED homepage](#).

Isfootcandle plots for the WSQ LED P4 40K SR2, SR3, and SR4. Distances are in units of mounting height (12').



FEATURES & SPECIFICATIONS

INTENDED USE

The classic architectural shape of the WSQ LED was designed for applications such as hospitals, schools, malls, restaurants, and commercial buildings. The long life LEDs and driver make this luminaire nearly maintenance-free.

CONSTRUCTION

The die-cast aluminum housing integrates secondary heat sinks to optimize thermal transfer from the internal light engine heat sinks and promote long life. The driver is mounted in direct contact with the casting for a low operating temperature and long life. The die-cast door frame is fully gasketed with a one-piece solid silicone gasket to keep out moisture and dust, providing an IP65 rating for the luminaire.

FINISH

Exterior parts are protected by a zinc-infused Super Durable TGIC thermoset powder coat finish that provides superior resistance to corrosion and weathering. A tightly controlled multi-stage process ensures a minimum 3 mils thickness for a finish that can withstand extreme climate changes without cracking or peeling. Standard Super Durable colors include dark bronze, black, natural aluminum, sandstone and white. Available in textured and non-textured finishes.

OPTICS

Precision-molded acrylic lenses are engineered for superior distribution, uniformity, and spacing in wall-mount applications. Light engines are 4000K (70 CRI). The WSQ LED has zero uplight and qualifies as a Nighttime Friendly™ product, meaning it is consistent with the LEED® and Green Globes™ criteria for eliminating wasteful uplight.

ELECTRICAL

Light engine(s) consist of 8 high-efficacy LEDs mounted to a metal core circuit board and integral aluminum heat sinks to maximize heat dissipation and promote long life (100,000 hrs at 25°C, L77). Class 2 electronic driver has a power factor >90%, THD <20%, and a minimum 6 KV surge protection. When ordering the SPD option, a separate surge protection device is installed within the luminaire which meets a minimum Category C low operation (per ANSI/IEEE C62.41.2).

INSTALLATION

A universal mounting plate with integral mounting support arms allows the fixture to hinge down for easy access while making wiring connections.

LISTINGS

CSA certified to U.S. and Canadian standards. Light engines are IP66 rated; luminaire is IP65 rated and suitable for wet locations when mounted with the lenses down. WLU option offers wet location listing in "up" orientation. Rated for -30°C minimum ambient. DesignLights Consortium® (DLC) Premium qualified product and DLC qualified product. Not all versions of this product may be DLC Premium qualified or DLC qualified. Please check the DLC Qualified Products List at www.designlights.org/QPL to confirm which versions are qualified.

WARRANTY

5-year limited warranty. Complete warranty terms located at: www.acuitybrands.com/CustomerResources/Terms_and_conditions.aspx.

Note: Actual performance may differ as a result of end-user environment and application. All values are design or typical values, measured under laboratory conditions at 25 °C. Specifications subject to change without notice.



Commercial Outdoor

One Lithonia Way • Conyers, Georgia 30012 • Phone: 1-800-705-7378 • www.lithonia.com
© 2011-2019 Acuity Brands Lighting, Inc. All rights reserved.

WSQ-LED
Rev. 04/22/19

FEATURES & SPECIFICATIONS

INTENDED USE — The 4", 6" and 8" Wafer™ LED Downlight with Switchable White provides high-quality light output and efficiency featuring a switch for easy color temperature adjustment - while eliminating the need for recessed housings. The innovative, slim design allows for easy retrofit, remodel or new construction installation from below the ceiling. The Wafer LED downlight is wet location listed – making it ideal for use in a breadth of outdoor residential, hospitality, commercial and multifamily applications. The LED module maintains at least 70% light output for 50,000 hours.

CONSTRUCTION — Aluminum die cast outer frame. Durable, powder coat paint to prevent rust. FT4 plenum rated cable connector to connect from module to remote driver box. IC rated driver with convenience and value of two remote selectable color temperature options, each with a setting choice to choose either 2700K, 3000K, and 3500K or 3000K, 4000K, and 5000K using the switch. The isolated driver integrated inside steel remote box with four 7/8" knockouts with slots for pryout. Suitable for pulling wires with the 12 cubic-inch wiring compartment to accommodate up to (6) 14 gauge insulated conductors; making the Wafer LED Downlights much easier to wire in 2in/2out (plus ground) daisy-chain applications and contractor friendly.

INSTALLATION — Ideal for shallow ceiling plenum; no housing required. Steel spring clip for easy installation. 4", 6" or 8" cut out template is provided to ensure a correct sized hole is cut into ceiling for proper installation of the trim. Size of hole should not exceed 4-1/4" for the WF4, 6-1/4" for the WF6 and 8-1/4" for the WF8. Suitable for installation in t-grid and drop ceiling applications. 3" plenum space required for installation of the remote driver box.

OPTICS — Edge-lit LED technology uses light guided plate to distribute light. Polycarbonate lens provides even illumination throughout the space.

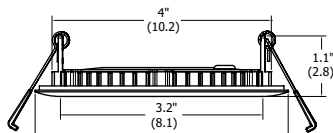
ELECTRICAL — Multi-volt (120-277V, 50/60Hz) proprietary remote LED driver/splice box, with two (2) additional low-voltage wires for 0-10v dimming, down to 10% (depending on dimmer model and application). High efficient driver with power factor > 0.9. Ambient operating temperature: -40°F (-40°C) to +104°F (+40°C). Replaces 65W incandescent (WF4), 75W incandescent (WF6) or 100W incandescent (WF8).

LISTINGS — CSA certified to US and Canadian safety standards. ENERGY STAR® certified. Wet location. Air Tight certified in accordance with ASTM E283-2004. NOM Certified. Can be used to comply with California Title 24 Part 6 High Efficacy LED Light Source Requirements.

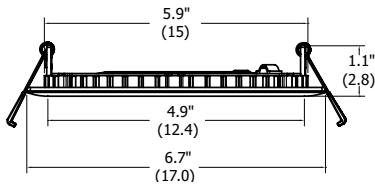
WARRANTY — 5-year limited warranty. Complete warranty terms located at: www.acuitybrands.com/support/warranty/terms-and-conditions

Note: Actual performance may differ as a result of end-user environment and application. All values are design or typical values, measured under laboratory conditions at 25 °C. Specifications subject to change without notice.

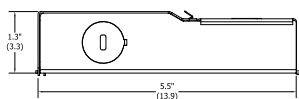
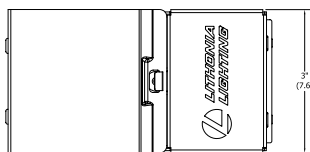
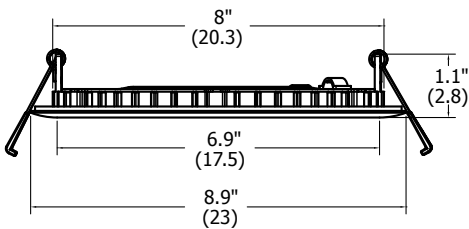
WF4



WF6



WF8



Catalog Number
Notes
Type

Wafer LED Recessed Downlight

WF4/WF6/WF8 MVOLT 4", 6" and 8" LED Switchable White Color Temperature

IC/Non-IC
New Construction/Remodel



Matte black



Brushed nickel



Oil-rubbed bronze

	WF4 Specifications	WF6 Specifications	WF8 Specifications
Aperture:	3.2 (8.1)	Aperture: 4.9 (12.4)	Aperture: 6.9"
Ceiling opening:	4.2 (10.7)	Ceiling opening: 6 (15.2)	Ceiling opening: 8"
Overlap trim:	4.7 (12.0)	Overlap trim: 6.7 (17)	Over lamp trim: 8.9"
Height:	1.1 (2.8)	Height: 1.1 (2.8)	Height : 1.1"

All dimensions are in inches (centimeters) unless otherwise indicated.

WF4 WF6 WF8 MVOLT Switchable White 4", 6" or 8" LED Wafer Module

ORDERING INFORMATION

For shortest lead times, configure product using **standard options (shown in bold)**.

Example: WF4 LED 30K40K50K MVOLT 90CRI MW

WF4	LED				
Series	Lamp	CCT/W/Lumens ¹	Voltage	CRI	Finish
WF4 4" wafer-thin LED downlight	LED LED	27K30K35K 2700K/10.5W/730L 3000K/10.5W/800L 3500K/10.5W/780L	MVOLT Multi-Volt (120-277V)	90CRI 90CRI	MW Matte White MB Matte Black BN Brush Nickel ORB Oil-Rubbed Bronze
		30K40K50K 3000K/10.5W/750L 4000K/10.5W/810L 5000K/10.5W/790L			

ORDERING INFORMATION

For shortest lead times, configure product using **standard options (shown in bold)**.

Example: WF6 LED 30K40K50K MVOLT 90CRI MW

WF6	LED				
Series	Lamp	CCT/W/Lumens ¹	Voltage	CRI	Finish
WF6 6" wafer-thin LED downlight	LED LED	27K30K35K 2700K/14W/1070L 3000K/14W/1150L 3500K/14W/1110L	MVOLT Multi-Volt (120-277V)	90CRI 90CRI	MW Matte White MB Matte Black BN Brush Nickel ORB Oil-Rubbed Bronze
		30K40K50K 3000K/14W/1090L 4000K/14W/1190L 5000K/14W/1120L			

ORDERING INFORMATION

For shortest lead times, configure product using **standard options (shown in bold)**.

Example: WF8 LED 30K40K50KT MVOLT 90CRI MW

WF8	LED				
Series	Lamp	CCT/W/Lumens ¹	Voltage	CRI	Finish
WF8 8" wafer-thin LED downlight	LED LED	27K30K35K 2700K/20.5W/1630L 3000K/20.5W/1800L 3500K/20.5W/1740L	MVOLT Multi-Volt (120-277V)	90CRI 90CRI	MW Matte White
		30K40K50K 3000K/20.5W/1690L 4000K/20.5W/1850L 5000K/20.5W/1820L			

Notes

1 Total system delivered lumens.

Accessories: Order as separate catalog number.

WF8643 Pan U	Universal new construction pan
WF4 PAN R12	4" new construction pan, retail pack of 12
WF6 PAN R12	6" new construction pan, retail pack of 12
WFJB U	Remodel joist bar
WFEXC6 SW3PIN FT4	3-Pin 6ft Cable
WFEXC10 SW3PIN FT4	3-Pin 10ft Cable
WFEXC20 SW3PIN FT4	3-Pin 20ft Cable
WF4GR MW JZ	4" round oversized trim ring
WF6GR MW	6" round oversized trim ring
WF8GR MW	8" round oversized trim ring

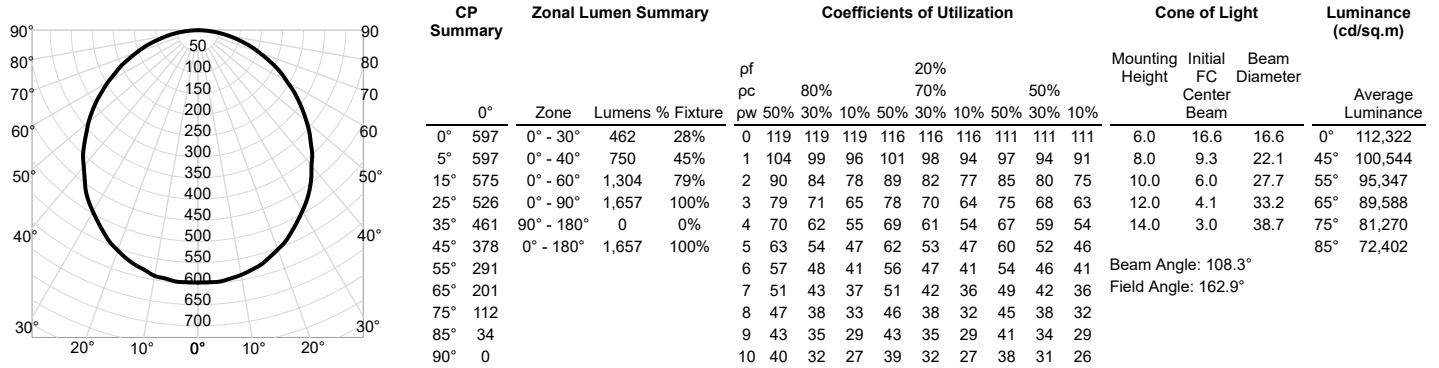


WF4 WF6 WF8 MVOLT Switchable White 4", 6" or 8" LED Wafer Module

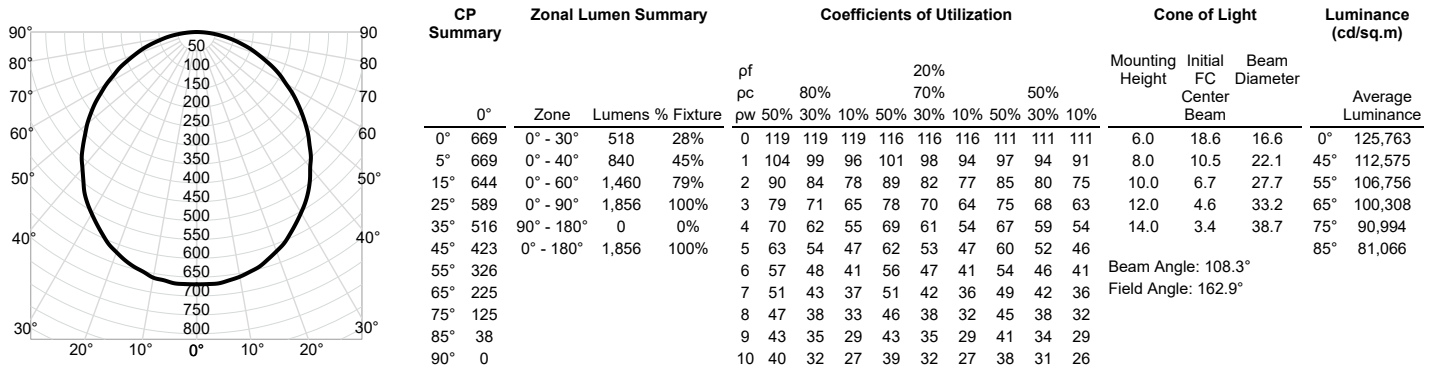
PHOTOMETRICS

Distribution Curve	Distribution Data	Output Data	Coefficient of Utilization	Illuminance Data at 30" Above Floor for a Single Luminaire
--------------------	-------------------	-------------	----------------------------	--

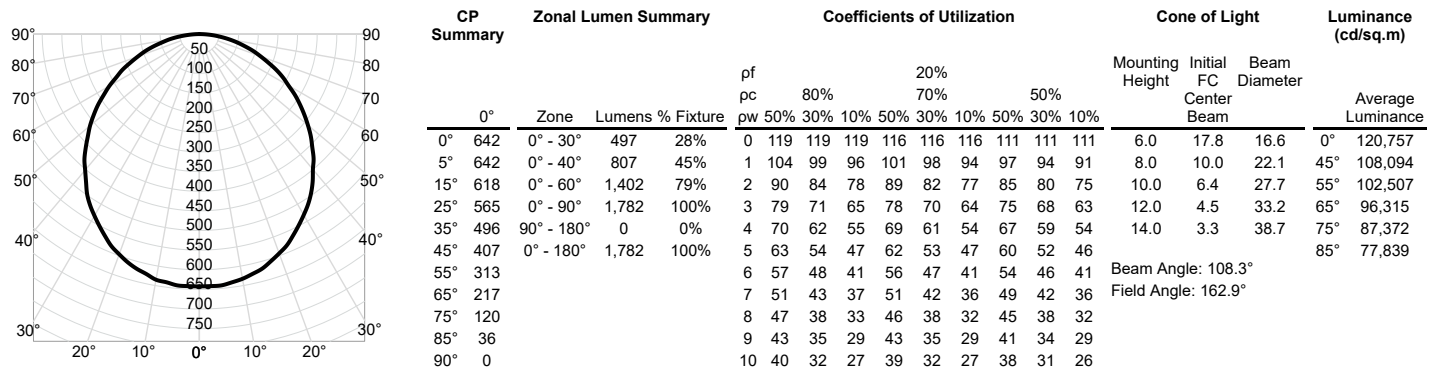
WF8 LED 27K30K35K MVOLT 90CRI 2700K Input Watts: 20.7, Delivered Lumens: 1657, LPW: 80.0, S/MH: 1.23, Test No: ISF 36826P113



WF8 LED 27K30K35K MVOLT 90CRI 3000K Input Watts: 19.8, Delivered Lumens: 1856, LPW: 93.7, S/MH: 1.23, Test No: ISF 36826P114



WF8 LED 27K30K35K MVOLT 90CRI 3500K Input Watts: 20.8, Delivered Lumens: 1782, LPW: 85.7, S/MH: 1.23, Test No: ISF 36826P115



WF4 WF6 WF8 MVOLT Switchable White 4", 6" or 8" LED Wafer Module

PHOTOMETRICS

Distribution Curve

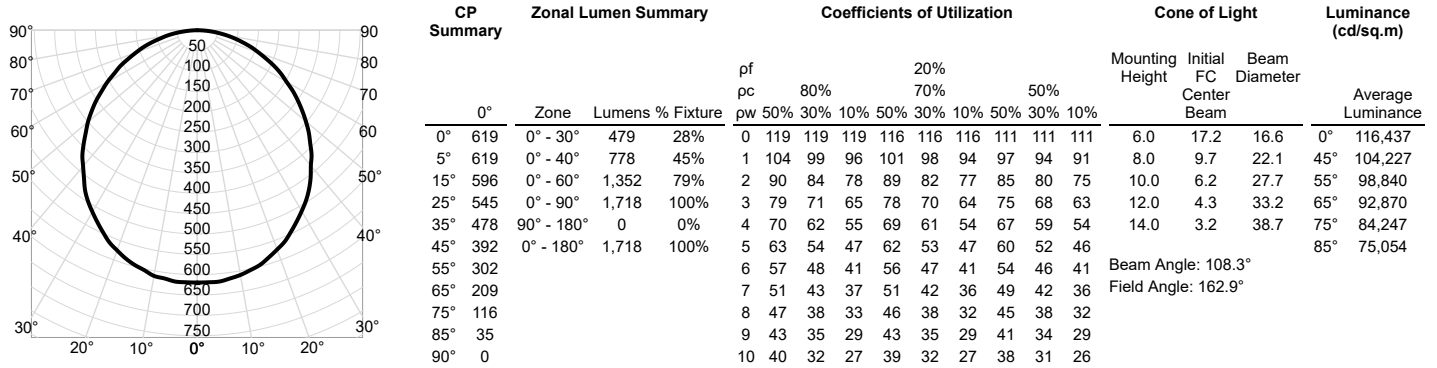
Distribution Data

Output Data

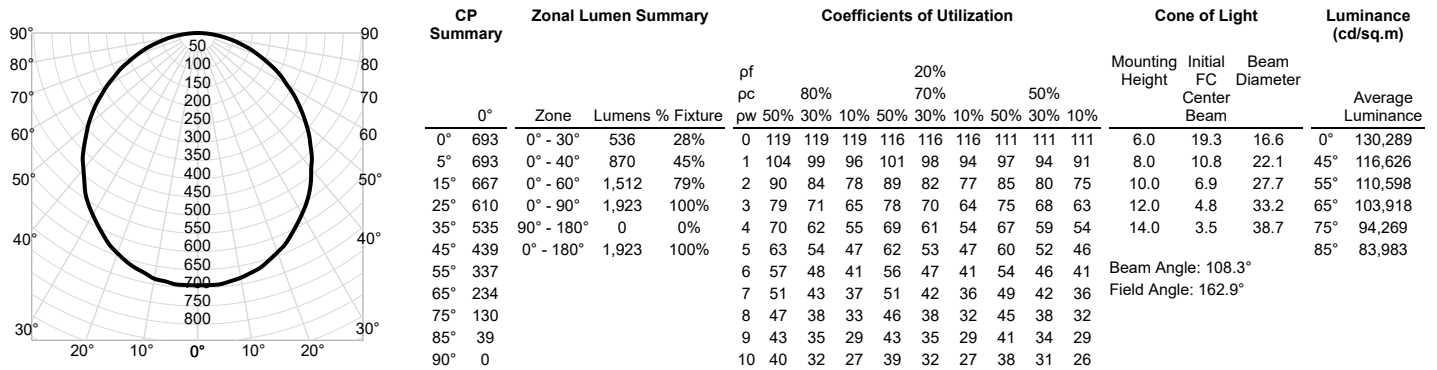
Coefficient of Utilization

Illuminance Data at 30" Above Floor for a Single Luminaire

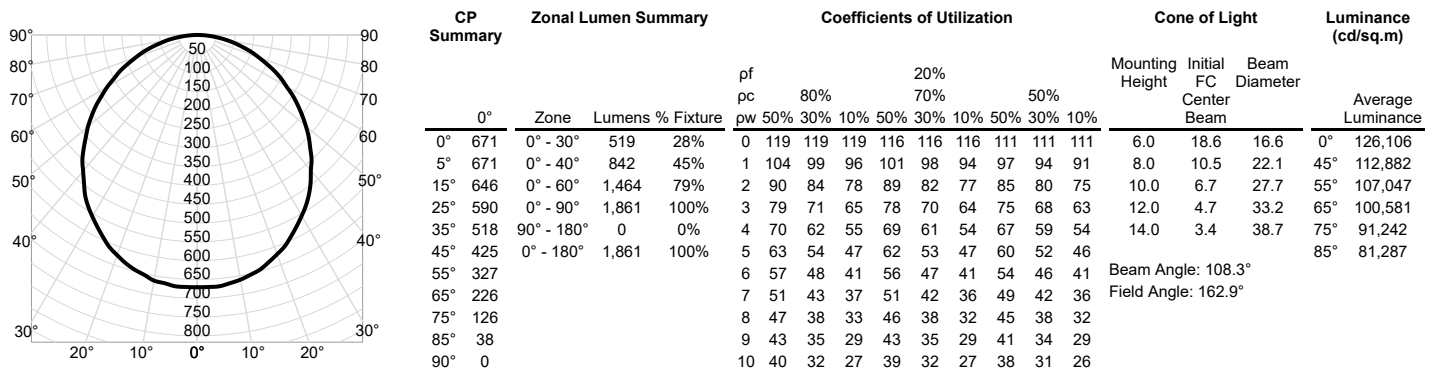
WF8 LED 30K40K50K MVOLT 90CRI 3000K Input Watts: 20.4, Delivered Lumens: 1718, LPW: 84.2, S/MH: 1.23, Test No: ISF 36826P116



WF8 LED 30K40K50K MVOLT 90CRI 4000K Input Watts: 19.6, Delivered Lumens: 1923, LPW: 98.1, S/MH: 1.23, Test No: ISF 36826P117



WF8 LED 30K40K50K MVOLT 90CRI 5000K Input Watts: 20.6, Delivered Lumens: 1861, LPW: 90.3, S/MH: 1.23, Test No: ISF 36826P118



WF4 WF6 WF8 MVOLT Switchable White 4", 6" or 8" LED Wafer Module

ENERGY DATA

WF8 LED 27K30K35K MVOLT			
Color Temperature	2700K	3000K	3500K
Lumens	1630	1800	1740
CRI	90	90	90
Rated wattage	20.7	19.8	20.8
Lu/Watts	78.7	90.9	83.7
Min. starting temp	-40°C (-40°F)	-40°C (-40°F)	-40°C (-40°F)
EMI/RFI	FCC Title 47 CFR, Part 15, Class B	FCC Title 47 CFR, Part 15, Class B	FCC Title 47 CFR, Part 15, Class B
Sound rating	Class A Standards	Class A Standards	Class A Standards
Input voltage	120V	120V	120V
Min. power factor	0.98	0.98	0.98
Input frequency	50/60 Hz	50/60 Hz	50/60 Hz
Input power	120V	120V	120V
Input current	0.17A	0.17A	0.17A

WF8 LED 30K40K50K MVOLT			
Color Temperature	3000K	4000K	5000K
Lumens	1690	1850	1820
CRI	90	90	90
Rated wattage	20.4	19.6	20.6
Lu/Watts	82.8	94.4	88.3
Min. starting temp	-40°C (-40°F)	-40°C (-40°F)	-40°C (-40°F)
EMI/RFI	FCC Title 47 CFR, Part 15, Class B	FCC Title 47 CFR, Part 15, Class B	FCC Title 47 CFR, Part 15, Class B
Sound rating	Class A Standards	Class A Standards	Class A Standards
Input voltage	120V	120V	120V
Min. power factor	0.98	0.98	0.98
Input frequency	50/60 Hz	50/60 Hz	50/60 Hz
Input power	120V	120V	120V
Input current	0.17A	0.17A	0.17A

WF4 WF6 WF8 MVOLT Switchable White 4", 6" or 8" LED Wafer Module

LIGHTING PERFORMANCE DATA

WF4



LIGHTING PERFORMANCE DATA DONNÉES SUR LE RENDEMENT DE L'ÉCLAIRAGE	
Light Appearance (CCT) Aspect de la lumière (CCT)	
2700K soft white blanc doux	730 lumens 70 lumens per watt
3000K warm white blanc chaud	800 lumens 76 lumens per watt
3500K neutral white blanc neutre	780 lumens 74 lumens per watt
Watts	10.5
Color Accuracy (CRI) Précision des couleurs (CRI)	90

LIGHTING PERFORMANCE DATA DONNÉES SUR LE RENDEMENT DE L'ÉCLAIRAGE	
Light Appearance (CCT) Aspect de la lumière (CCT)	
3000K warm white blanc chaud	750 lumens 71 lumens per watt
4000K cool white blanc froid	810 lumens 77 lumens per watt
5000K daylight lumière du jour	790 lumens 75 lumens per watt
Watts	10.5
Color Accuracy (CRI) Précision des couleurs (CRI)	90

WF6



LIGHTING PERFORMANCE DATA DONNÉES SUR LE RENDEMENT DE L'ÉCLAIRAGE	
Light Appearance (CCT) Aspect de la lumière (CCT)	
2700K soft white blanc doux	1070 lumens 76 lumens per watt
3000K warm white blanc chaud	1150 lumens 82 lumens per watt
3500K neutral white blanc neutre	1110 lumens 79 lumens per watt
Watts	14
Color Accuracy (CRI) Précision des couleurs (CRI)	90

LIGHTING PERFORMANCE DATA DONNÉES SUR LE RENDEMENT DE L'ÉCLAIRAGE	
Light Appearance (CCT) Aspect de la lumière (CCT)	
3000K warm white blanc chaud	1090 lumens 78 lumens per watt
4000K cool white blanc froid	1190 lumens 85 lumens per watt
5000K daylight blanc neutre	1120 lumens 80 lumens per watt
Watts	14
Color Accuracy (CRI) Précision des couleurs (CRI)	90

WF8



LIGHTING PERFORMANCE DATA DONNÉES SUR LE RENDEMENT DE L'ÉCLAIRAGE	
Light Appearance (CCT) Aspect de la lumière (CCT)	
2700K soft white blanc doux	1630 lumens 82 lumens per watt
3000K warm white blanc chaud	1800 lumens 90 lumens per watt
3500K neutral white blanc neutre	1740 lumens 87 lumens per watt
Watts	20.5
Color Accuracy (CRI) Précision des couleurs (CRI)	90

LIGHTING PERFORMANCE DATA DONNÉES SUR LE RENDEMENT DE L'ÉCLAIRAGE	
Light Appearance (CCT) Aspect de la lumière (CCT)	
3000K warm white blanc chaud	1690 lumens 85 lumens per watt
4000K cool white blanc froid	1850 lumens 93 lumens per watt
5000K daylight lumière du jour	1820 lumens 91 lumens per watt
Watts	20.5
Color Accuracy (CRI) Précision des couleurs (CRI)	90

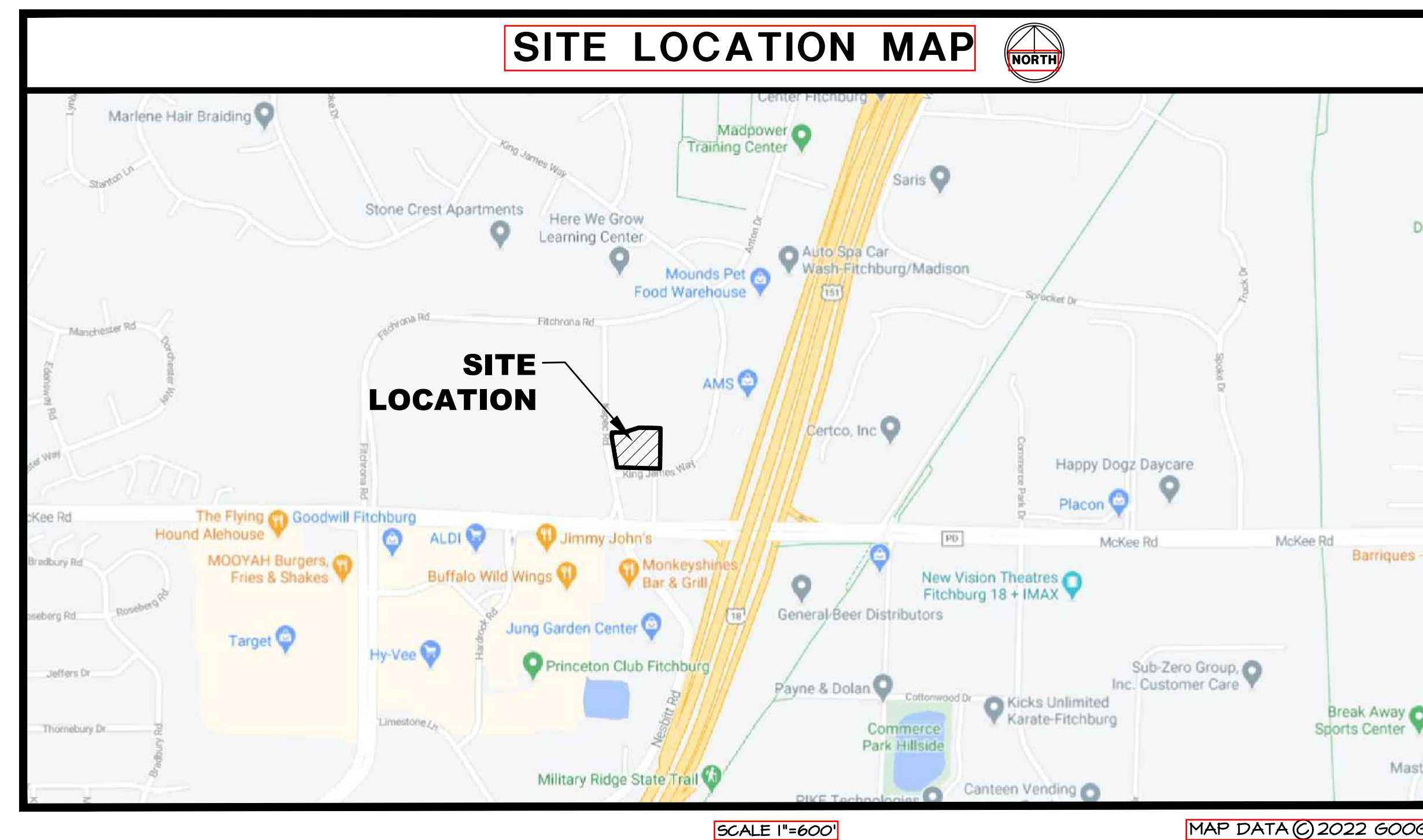
DANE COUNTY EMERGENCY MANAGEMENT ELEVATOR ADDITION 2982 KAPEC ROAD (5415 KING JAMES WAY) FITCHBURG, WISCONSIN 53719

PRairie FORGE GROUP
300 CARDINAL DRIVE
SUITE 160
SAINT CHARLES IL 60175
630.221.0671 | P
630.221.0118 | F
www.prairieforgroup.com

COPYRIGHT STATEMENT
THESE PLANS ARE COPYRIGHTED AND ARE SUBJECT TO COPYRIGHT PROTECTION AS AN INDIVIDUAL WORK UNDER SECTION 102 OF THE COPYRIGHT ACT, 17 U.S.C. AS AMENDED (SECTION 102). KNOWN AS THE ARCHITECTURAL WORKS COPYRIGHT PROTECTION ACT OF 1990. THE PROTECTION PROVIDED TO PRAIRIE FORGE GROUP INCLUDES, BUT IS NOT LIMITED TO, THE ORIGINAL FORM AS WELL AS THE ARRANGEMENT AND COMPOSITION OF WORDS AND ELEMENTS OF THE DESIGN. WITHOUT WRITTEN APPROVAL OF PRAIRIE FORGE GROUP, ANY UNAUTHORIZED USE OF THESE PLANS, WORK OR HOME REPRESENTED, CAN LIABLY RESULT IN THE OCCURRENCE OF CONSTRUCTION, SEVERE OF PLANS, AND/OR MONETARY COMPENSATION AND TO PRAIRIE FORGE GROUP. PRAIRIE FORGE GROUP IS NOT RESPONSIBLE FOR ANY CLAIMS, DAMAGES, OR EXPENSE ARISING OUT OF THE UNAUTHORIZED USE OF THE INFORMATION CONTAINED IN THESE ELECTRONIC FILES. THESE PLANS MAY NOT ACCURATELY REFLECT THE FINAL AS-BUILT CONDITIONS. THE USER ASSUMES FULL RESPONSIBILITY FOR VERIFYING ALL LOCATIONS, DIMENSIONS, AND OTHER RELATED INFORMATION.

COPYRIGHT © 2018-2022
PRAIRIE FORGE GROUP | SAINT CHARLES IL

CIVIL DRAWING INDEX		
SHEET	DESCRIPTION	DATE
T-1.0	TITLE SHEET	5-24-22
C-1.0	SITE DEMOLITION PLAN	5-24-22
C-2.0	SITE GEOMETRIC PLAN	5-24-22
C-3.0	SITE DEVELOPMENT PLAN	5-24-22
C-3.1 - C-3.2	SITE DEVELOPMENT DETAILS	5-24-22
C-4.0	SITE GRADING PLAN	5-24-22
C-5.0	SITE UTILITY PLAN	5-24-22
4C-5.1 - C-5.3	SITE UTILITY DETAILS	5-24-22
C-6.0	STORM WATER POLLUTION PREVENTION PLAN	5-24-22
C-6.1	STORM WATER POLLUTION PREVENTION DETAILS	5-24-22
C-7.0 - C-7.4	PROJECT SPECIFICATIONS	5-24-22
EX-2.0	EXISTING VS. PROPOSED CONDITION EXHIBIT	5-24-22
SUR-1	BOUNDARY AND TOPOGRAPHIC SURVEY (PREPARED BY WT GROUP)	2-3-21



**SECTION 6
TOWNSHIP 6N
RANGE 9E**

BENCHMARKS:

- BENCHMARK #1 - SET CROSS ON HYDRANT ON THE EAST SIDE OF KAPEC ROAD, 8' SOUTH OF THE ENTRANCE AS SHOWN. ELEVATION = 1001.46' (NAVD88)
- BENCHMARK #2 - TAG BOLT ON HYDRANT ON THE SOUTH SIDE OF KING JAMES WAY, 91' SOUTHEAST OF LIGHT POLE ON THE EAST SIDE OF EAST ENTRANCE & 30' SOUTHWEST OF EXISTING #1#3. ELEVATION = 1000.80' (NAVD88)

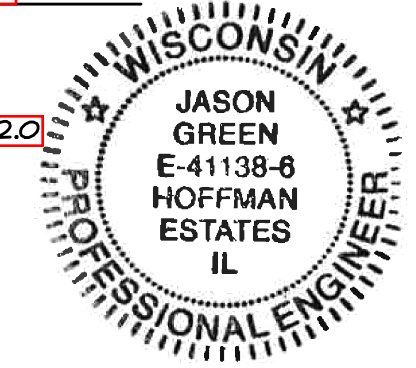
CIVIL ENGINEERING STATEMENT AND SEAL

I, JASON E. GREEN, P.E., DULY LICENSED IN THE STATE OF WISCONSIN BY THE WISCONSIN PROFESSIONAL LICENSING AGENCY, DO HEREBY STATE THAT THIS DOCUMENT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION.

DATE: 5-20-2022

JASON E. GREEN - WISCONSIN P.E. #41138-6
DATE OF EXPIRATION - JULY 31, 2022

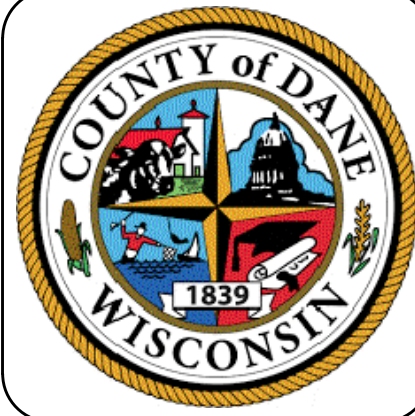
NOTE: SIGNED AND SEALED FOR SHEETS T-1.0 THROUGH EX-2.0



DIGGERS HOTLINE: WISCONSIN'S ONE-CALL CENTER
CALL 811 OR (800) 242-0511
(262) 432-7910
(877) 500-4542 (EMERGENCY ONLY)



CONTRACTOR MUST LOCATE PRIVATE UTILITIES IN AREA OF CONSTRUCTION PRIOR TO PROCEEDING WITH WORK.



DANE COUNTY
EMERGENCY MANAGEMENT
ELEVATOR ADDITION
2982 KAPEC ROAD
FITCHBURG, WISCONSIN

CLIENT APPROVAL

APPROVED
 APPROVED AS NOTED

APPROVED BY / DATE:

ISSUE RECORD

ADDITION ADR	05/24/22

CHECKED BY: JEG
DRAWN BY: BRA
DATE: 5/12/2022 10:28:45 AM
PROJECT NUMBER: 2020-001

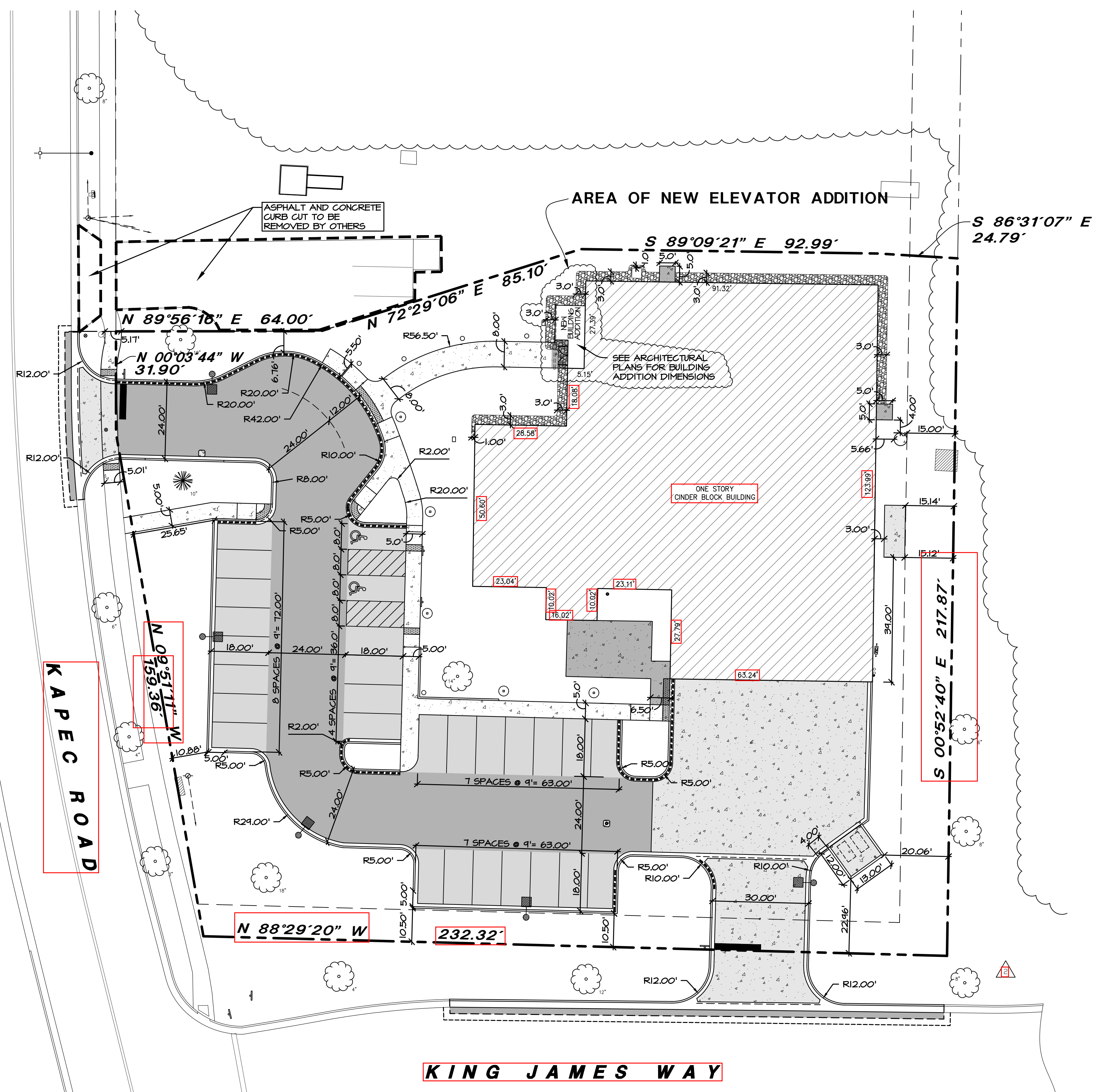
WT JOB NUMBER - 2002139C

WT Group
Engineering • Design • Consulting
Structural | Mechanical/Electrical/Plumbing
Civil | Land Survey | Telecommunication | Aquatic
Accessibility Consulting | Design & Program Management
Engineering with Precision, Pace & Passion.

2875 Pratum Avenue | Hoffman Estates, IL 60192
P: 224.293.6333 | F: 224.293.6444
wtengineering.com

IL License No. 184.007570-0015 | Exp. 04.30.2023
© COPYRIGHT 2022 THE W-T GROUP, LLC

TITLE SHEET
T-1.0



- ### PREVIOUSLY APPROVED ADR HATCH LEGEND
- NEW CONCRETE SIDEWALK
 - 5" PORTLAND CEMENT CONCRETE
 - 4" CRUSHED AGGREGATE BASE COURSE (CABC), DOT DENSE GRADED 3/4" PER SECTION 305 WISDOT SPECIFICATIONS
 - NEW CONCRETE PAVEMENT / CONCRETE PAD
 - 8" PORTLAND CEMENT CONCRETE
 - 8" CRUSHED AGGREGATE BASE COURSE (CABC), UPPER 4" 1 1/4" DENSE GRADED BASE (DGB), BOTTOM PART OF THE LAYER CAN CONSIST OF 3" DGB PER SECTION 305 WISDOT SPECIFICATIONS
 - NEW CONCRETE STOOP / CONCRETE PATIO
 - 8" PORTLAND CEMENT CONCRETE
 - 8" CRUSHED AGGREGATE BASE COURSE (CABC), UPPER 4" 1 1/4" DENSE GRADED BASE (DGB), BOTTOM PART OF THE LAYER CAN CONSIST OF 3" DGB PER SECTION 305 WISDOT SPECIFICATIONS
 - NEW FULL DEPTH LIGHT DUTY ASPHALT PAVEMENT
 - 1-3/4" HMA SURFACE COURSE
 - 2" HMA BINDER COURSE
 - 8" CRUSHED AGGREGATE BASE COURSE (CABC), UPPER 4" 1 1/4" DENSE GRADED BASE (DGB), BOTTOM PART OF THE LAYER CAN CONSIST OF 3" DGB PER SECTION 305 WISDOT SPECIFICATIONS
 - NEW FULL DEPTH MEDIUM DUTY ASPHALT PAVEMENT
 - 1-3/4" HMA SURFACE COURSE
 - 4" HMA BINDER COURSE
 - 10" CRUSHED AGGREGATE BASE COURSE (CABC), UPPER 4" 1 1/4" DENSE GRADED BASE (DGB), BOTTOM PART OF THE LAYER CAN CONSIST OF 3" DGB PER SECTION 305 WISDOT SPECIFICATIONS
 - NEW GRAVEL TRENCH DRAIN SYSTEM
 - NEW GRAVEL TRENCH DRAIN SYSTEM UNDER CONCRETE STOOP / SIDEWALK

- ### PREVIOUSLY APPROVED ADR SITE GEOMETRIC NOTES:
- A. EXISTING CONDITIONS AND TOPOGRAPHY SHOWN REPRESENTS SITE CONDITIONS PER THE BOUNDARY AND TOPOGRAPHIC SURVEY LAST DATED 2-3-21, PREPARED BY W-T GROUP. CONTRACTOR SHALL FIELD VERIFY EXISTING ELEVATIONS AND CONDITIONS (INCLUDING BUT NOT LIMITED TO VERIFICATION OF CONTROL AND ALL UTILITIES WHETHER DEPICTED OR NOT) PRIOR TO CONSTRUCTION AND NOTIFY ENGINEER OF ANY DISCREPANCIES.
 - B. ALL DIMENSIONS SHOWN ARE MEASURED FROM EDGE OF PAVEMENT TO EDGE OF PAVEMENT OR FACE OF CURB UNLESS OTHERWISE NOTED.
 - C. CONTRACTOR SHALL NOTIFY THE ENGINEER OF ANY DISCREPANCIES WITH THE ARCHITECTURAL PLANS.
 - D. SEE THE ARCHITECTURAL PLANS FOR THE DESIGN OF ALL BUILDING ENTRIES.
 - E. CONSTRUCTION SURVEY AND STAKEOUT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
 - F. CONTRACTOR SHALL HIRE A PRIVATE UTILITY LOCATOR TO LOCATE UTILITIES PRIOR TO CONSTRUCTION AND SHALL CONTACT THE SITE ENGINEER IF A CONFLICT EXISTS.
 - G. CONTRACTOR SHALL CONTACT DIGGERS HOTLINE, WISCONSIN ONE-CALL CENTER (811 OR 1-800-242-8811) AND PRIVATE LOCATING SERVICE TO LOCATE ALL UNDERGROUND UTILITY LINES PRIOR TO STARTING ANY DEMOLITION AND/OR EXCAVATION. EXACT LOCATIONS OF ANY EXISTING ELECTRIC, GAS, TELEPHONE, ETC. LINES ARE UNKNOWN.
 - H. ASPHALT PAVEMENT MARKINGS SHALL BE MADE WITH HIGH QUALITY PAINT CONFORMING TO THE WISCONSIN DOT STANDARD SPECIFICATIONS.
 - I. ALL PAINTED CURBS ON SITE TO BE REPAINTED FOLLOWING RESURFACING OF THE PARKING LOT. MATCH EXISTING COLOR, REPAINT WITH HIGH QUALITY PAINT CONFORMING TO DOT.

PREVIOUSLY APPROVED ADR PARKING STALL COUNTS

	STANDARD	ADA	TOTAL
PROPOSED	26	2	28

IMPERVIOUS SURFACE RATIO (ISR) = 62.50%

1 SITE GEOMETRIC PLAN
SCALE 1" = 20'



DANE COUNTY
EMERGENCY MANAGEMENT
ELEVATOR ADDITION
2982 KAPEC ROAD
FITCHBURG, WISCONSIN

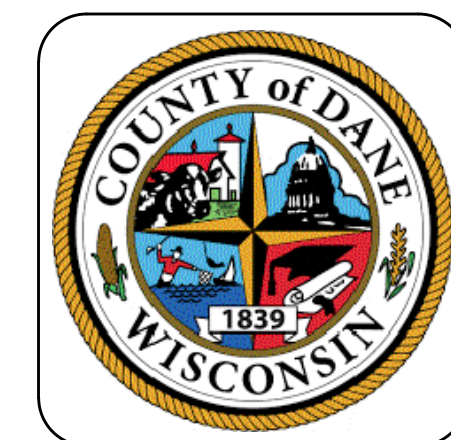
CLIENT APPROVAL
 APPROVED
 APPROVED AS NOTED
APPROVED BY / DATE:

ISSUE RECORD

ADDITION ADR	DATE
	05/24/22

CHECKED BY
JEG
DRAWN BY
BRA
DATE
5/12/2022 10:28:45 AM
PROJECT NUMBER
2020-001

SITE GEOMETRIC PLAN
C-2.0



**DANE COUNTY
 EMERGENCY MANAGEMENT**
ELEVATOR ADDITION
 2982 KAPEC ROAD
 FITCHBURG, WISCONSIN

CLIENT APPROVAL
 APPROVED
 APPROVED AS NOTED
 APPROVED BY / DATE:

ISSUE RECORD

ADDITION ADR	05/24/22

CHECKED BY _____
 JEG
 DRAWN BY _____
 BRA
 DATE _____
 5/12/2022 10:28:45 AM
 PROJECT NUMBER
 2020-001

SITE DEVELOPMENT PLAN
C-3.0

PREVIOUSLY APPROVED ADR HATCH LEGEND

	NEW CONCRETE SIDEWALK 8" PORTLAND CEMENT CONCRETE 3" CRUSHED AGGREGATE BASE COURSE (CABC), DOT DENSE GRADED 3/4" PER SECTION 305 WISDOT SPECIFICATIONS.
	NEW CONCRETE PAVEMENT / CONCRETE PAD 8" PORTLAND CEMENT CONCRETE 3" CRUSHED AGGREGATE BASE COURSE (CABC), UPPER 4" IS 1-1/4" DENSE GRADED BASE (DGB), BOTTOM PART OF THE LAYER CAN CONSIST OF 3" DGB PER SECTION 305 WISDOT SPECIFICATIONS.
	NEW CONCRETE STOOP / CONCRETE PATIO 8" PORTLAND CEMENT CONCRETE 3" CRUSHED AGGREGATE BASE COURSE (CABC), UPPER 4" IS 1-1/4" DENSE GRADED BASE (DGB), BOTTOM PART OF THE LAYER CAN CONSIST OF 3" DGB PER SECTION 305 WISDOT SPECIFICATIONS.
	NEW FULL DEPTH HIGH DUTY ASPHALT PAVEMENT 1-3/4" HMA SURFACE COURSE 2" HMA BINDER COURSE 8" CRUSHED AGGREGATE BASE COURSE (CABC), UPPER 4" IS 1-1/4" DENSE GRADED BASE (DGB), BOTTOM PART OF THE LAYER CAN CONSIST OF 3" DGB PER SECTION 305 WISDOT SPECIFICATIONS.
	NEW FULL DEPTH MEDIUM DUTY ASPHALT PAVEMENT 1-3/4" HMA SURFACE COURSE 2-1/4" HMA BINDER COURSE 10" CRUSHED AGGREGATE BASE COURSE (CABC), UPPER 4" IS 1-1/4" DENSE GRADED BASE (DGB), BOTTOM PART OF THE LAYER CAN CONSIST OF 3" DGB PER SECTION 305 WISDOT SPECIFICATIONS.
	NEW GRAVEL TRENCH DRAIN SYSTEM UNDER CONCRETE STOOP / SIDEWALK

PREVIOUSLY APPROVED ADR SITE DEVELOPMENT NOTES:

- EXISTING CONDITIONS AND TOPOGRAPHY SHOWN REPRESENTS SITE CONDITIONS PER THE BOUNDARY AND TOPOGRAPHIC SURVEY LAST DATED 2-3-21 PREPARED BY WT GROUP. CONTRACTOR SHALL VERIFY EXISTING ELEVATIONS AND CONDITIONS (INCLUDING BUT NOT LIMITED TO VERIFICATION OF CONTROL AND ALL UTILITIES WHETHER DEPICTED OR NOT) PRIOR TO CONSTRUCTION AND NOTIFY ENGINEER OF ANY DISCREPANCIES.
- CONTRACTOR SHALL NOTIFY THE ENGINEER OF ANY DISCREPANCIES WITH THE ARCHITECTURAL PLANS.
- SEE THE ARCHITECTURAL PLANS FOR THE DESIGN OF ALL BUILDING ENTRIES.
- CONTRACTOR SHALL COORDINATE ALL LANDSCAPING IMPROVEMENTS WITH LANDSCAPE PLANS.
- CONSTRUCTION SURVEY AND STAKEOUT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
- ALL EXISTING TREES SHOWN ARE TO REMAIN UNLESS OTHERWISE NOTED.
- CONTRACTOR SHALL RESTORE ALL DISTURBED AREAS OUTSIDE OF CONSTRUCTION LIMITS TO ORIGINAL CONDITION OR BETTER.
- ASPHALT PAVEMENT MARKINGS SHALL BE MADE WITH HIGH QUALITY PAINT CONFORMING TO WISDOT SPECIFICATIONS.
- CONTRACTOR SHALL RESTORE ALL DISTURBED GREEN SPACES WITH 6" OF TOPSOIL, SEED, AND EROSION CONTROL BLANKET.
- CONTRACTOR SHALL REPAIR AT HIS EXPENSE ANY DAMAGE TO EXISTING ASPHALT, CONCRETE, CURBS, ETC., RESULTING FROM CONSTRUCTION TRAFFIC AND/OR OPERATIONS. REPAIRS SHALL BE MADE TO THE SATISFACTION OF THE OWNER AND/OR ENGINEER.
- CONTRACTOR SHALL RE-STRIPE ALL STRIPING DISTURBED WITHIN THE EXISTING ROADWAYS/PARKING LOT TO MATCH EXISTING.
- CONTRACTOR SHALL FIELD VERIFY A PRIVATE UTILITY LOCATOR TO LOCATE UTILITIES PRIOR TO CONSTRUCTION AND SHALL CONTACT THE SITE ENGINEER IF A CONFLICT EXISTS.
- ALL ITEMS MARKED "EXISTING" SHALL BE PROTECTED FROM DAMAGE FOR THE DURATION OF CONSTRUCTION.
- ALL EXISTING SUBGRADE TO BE SCARIFIED (DISKED) TO A DEPTH OF 12" AND RE-COMPACTED, AND THEN TESTED USING A DYNAMIC CONE PENETROMETER. SEE GEOTECHNICAL REPORT FOR ADDITIONAL REQUIREMENTS.

PREVIOUSLY APPROVED ADR PROJECT NOTES:

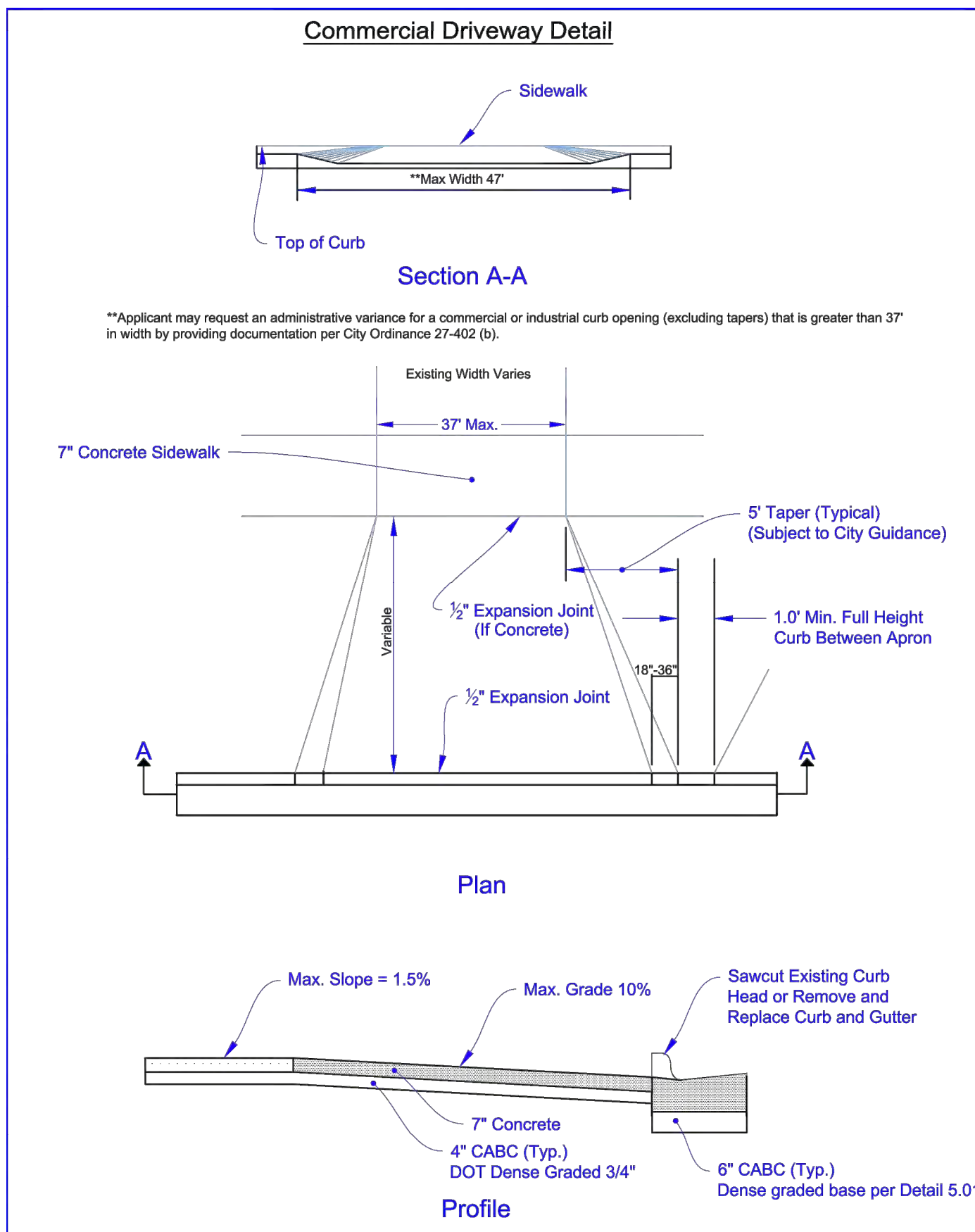
- EXISTING BUILDING TO REMAIN.
- EXISTING ASPHALT PAVEMENT TO REMAIN.
- EXISTING CONCRETE TO REMAIN.
- EXISTING HYDRANT AND ASSOCIATED PIPING TO REMAIN.
- EXISTING CURB AND GUTTER TO REMAIN.
- NEW AREA LIGHT. SEE ELECTRICAL PLAN FOR MORE DETAILS.
- EXISTING UTILITY POLE, GUY WIRE AND ASSOCIATED WIRING TO REMAIN.
- EXISTING SIGN TO REMAIN.
- EXISTING CONCRETE PAD AND RADIO TOWER TO REMAIN. PROTECT DURING CONSTRUCTION.
- NEW FULL DEPTH SAWCUT OF EXISTING CURB/CONCRETE TO PROVIDE CLEAN CONSTRUCTION BREAK.
- NEW FULL DEPTH SAWCUT OF EXISTING ASPHALT PAVEMENT TO PROVIDE CLEAN CONSTRUCTION BREAK.
- NEW 2" BUTT JOINT.
- NEW LIGHT DUTY ASPHALT PAVEMENT.
- NEW CONCRETE SIDEWALK.
- NEW BOLLARD LIGHT. SEE ELECTRICAL PLAN FOR MORE DETAILS.
- NEW MEDIUM DUTY ASPHALT PAVEMENT.
- NEW 8" CONCRETE PAD.
- NEW CONCRETE TOWER FOUNDATION. SEE TELECOMMUNICATION PLANS FOR DETAILS.
- NEW CONCRETE PAVEMENT.
- NEW 30" CONCRETE CURB AND GUTTER.
- NEW 10" CONCRETE CURB AND GUTTER.
- NEW DETECTABLE WARNING PLATE.
- NEW "STOP" SIGN.
- NEW ACCESSIBLE PARKING SPACE STRIPING AND SYMBOL.
- NEW ACCESSIBLE PARKING SIGN.
- NEW 4" WIDE, YELLOW PAINTED PAVEMENT STRIPING.
- NEW TRASH ENCLOSURE. SEE ARCHITECTURAL PLANS FOR DETAILS.
- NEW BOLLARD.
- NEW 36" DEPRESSED CURB.
- NEW 24" WIDE, WHITE PAINTED STOP BAR.
- NEW TOP POST AREA LIGHT. SEE ELECTRICAL PLAN FOR MORE DETAILS.
- NEW WATERPROOFING FOUNDATION / STONE STRIP TRENCH SYSTEM. SEE ARCHITECTURAL, PLUMBING AND LANDSCAPING PLANS FOR MORE DETAILS.
- NEW 8" CONCRETE STOOP, DOWELLED TO THE BUILDING. SEE STRUCTURAL PLANS FOR ALL DETAILS.
- NEW MONOLITHIC CONCRETE CURB AND SIDEWALK.
- NEW CONCRETE COLLAR.
- NEW 10" CONCRETE CURB AND GUTTER WITH REVERSE GUTTER PITCH SECTION.
- NEW 8" CONCRETE PAVEMENT, DOWELLED TO THE BUILDING. SEE STRUCTURAL PLANS FOR ALL DETAILS.
- EXISTING FIRE DEPARTMENT CONNECTION TO REMAIN.
- NEW FLOOD LIGHT. SEE ELECTRICAL PLAN FOR MORE DETAILS.
- VARIABLE HEIGHT CONCRETE CURB WITH GUTTER.
- NEW RETAINING CURB.
- NEW 8" CONCRETE PATIO, DOWELLED TO THE BUILDING. SEE STRUCTURAL PLANS FOR ALL DETAILS.
- NEW CONCRETE CURB CUT.
- NEW 24" DEPRESSED CONCRETE CURB AND GUTTER.
- NEW ADA CONCRETE CURB RAMP.
- NEW CONCRETE RETAINING CURB AND GUTTER WITH REVERSE GUTTER PITCH SECTION.
- NEW CONCRETE SIDEWALK TO BE FLUSH WITH ADJACENT ASPHALT.
- EXISTING TREE TO REMAIN. LIMBS TO BE TRIMMED TO PROVIDE CLEARANCE FOR PEDESTRIANS USING PROPOSED SIDEWALK.
- NEW ELEVATOR BUILDING ADDITION. SEE ARCHITECTURAL PLANS FOR DETAILS.
- NEW WATERPROOFING FOUNDATION / STONE STRIP TRENCH SYSTEM UNDER THE CONCRETE STOOP / SIDEWALK. SEE ARCHITECTURAL, PLUMBING AND LANDSCAPING PLANS FOR MORE DETAILS.



1 SITE DEVELOPMENT PLAN
 SCALE 1" = 20'

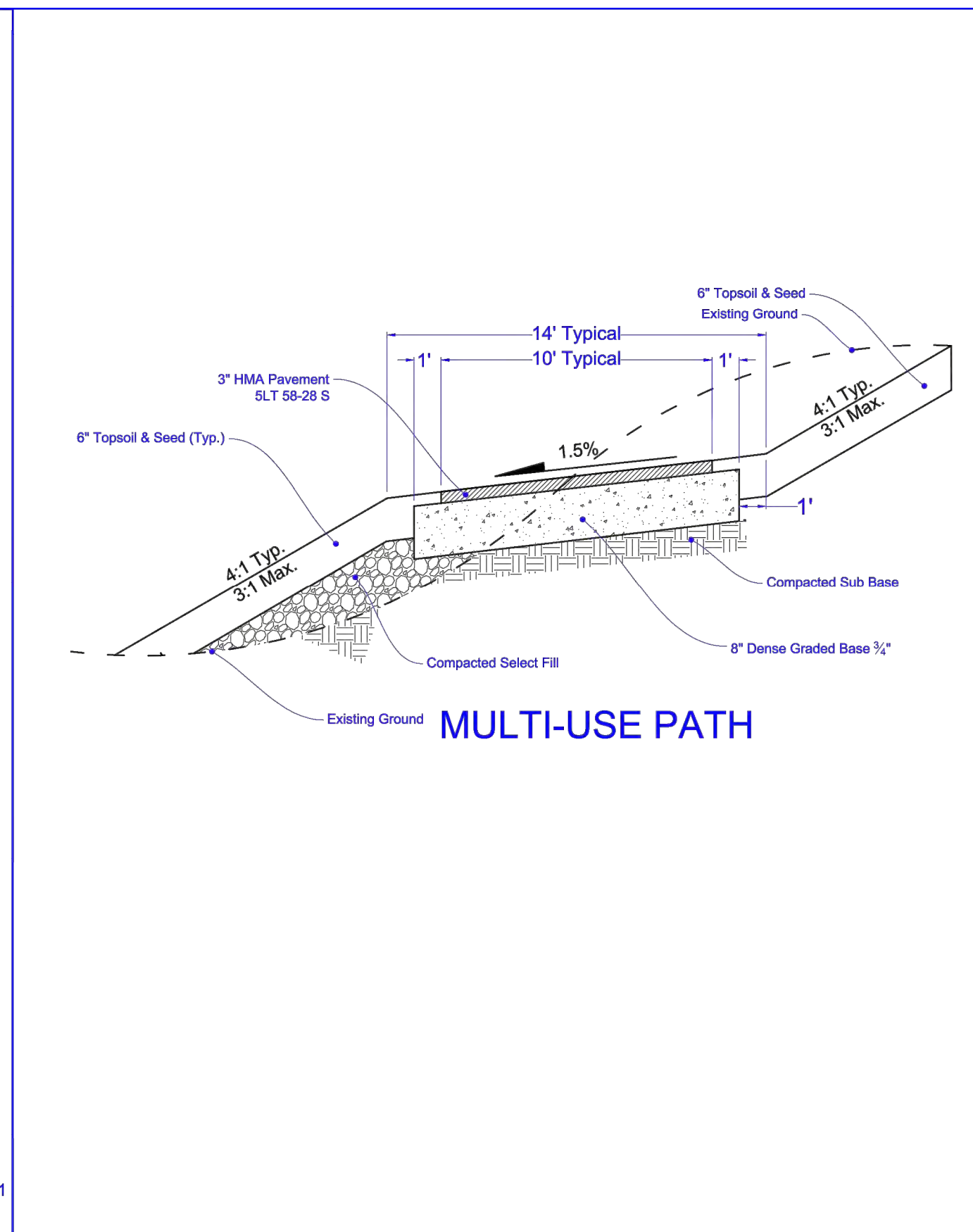
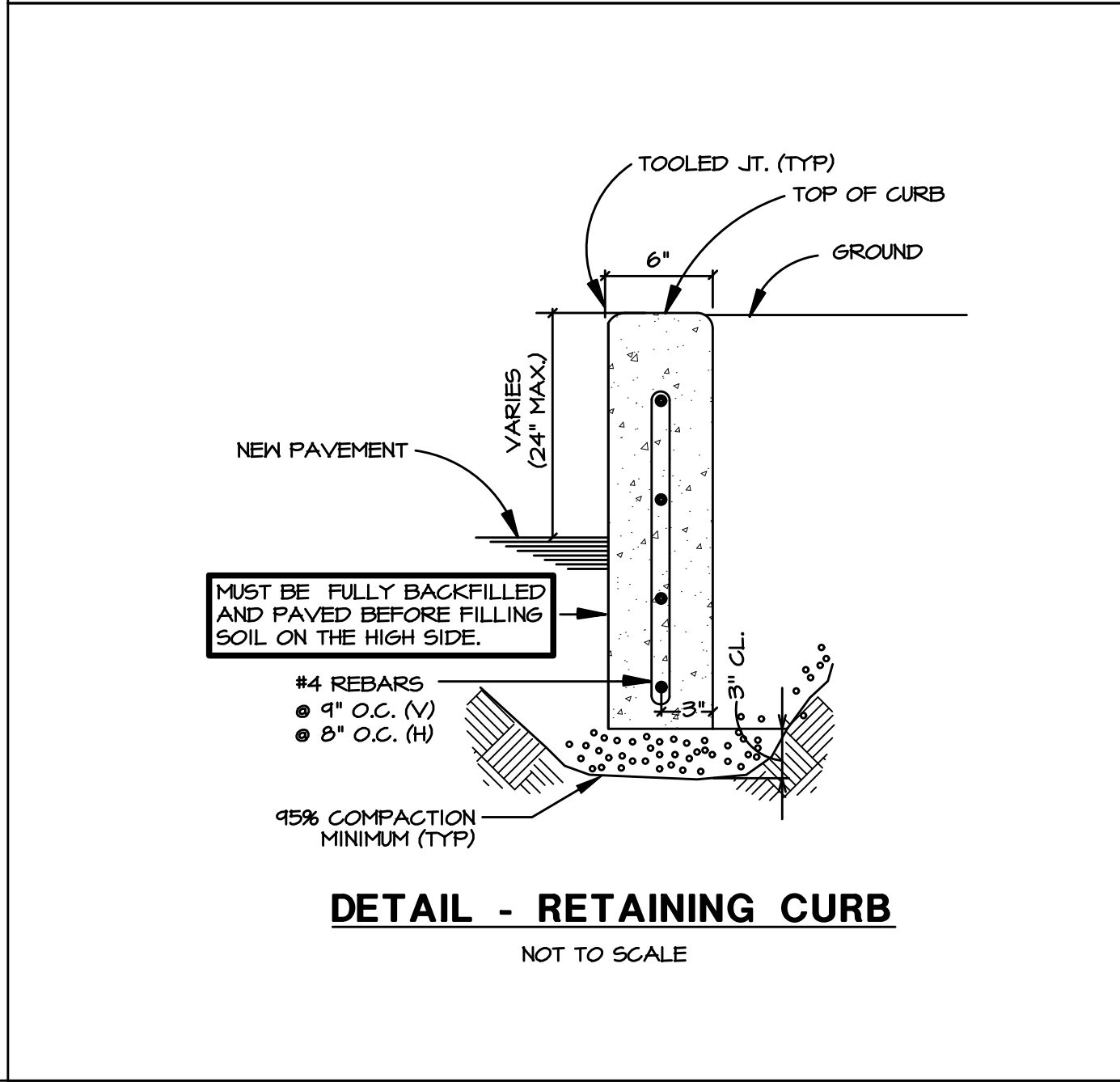
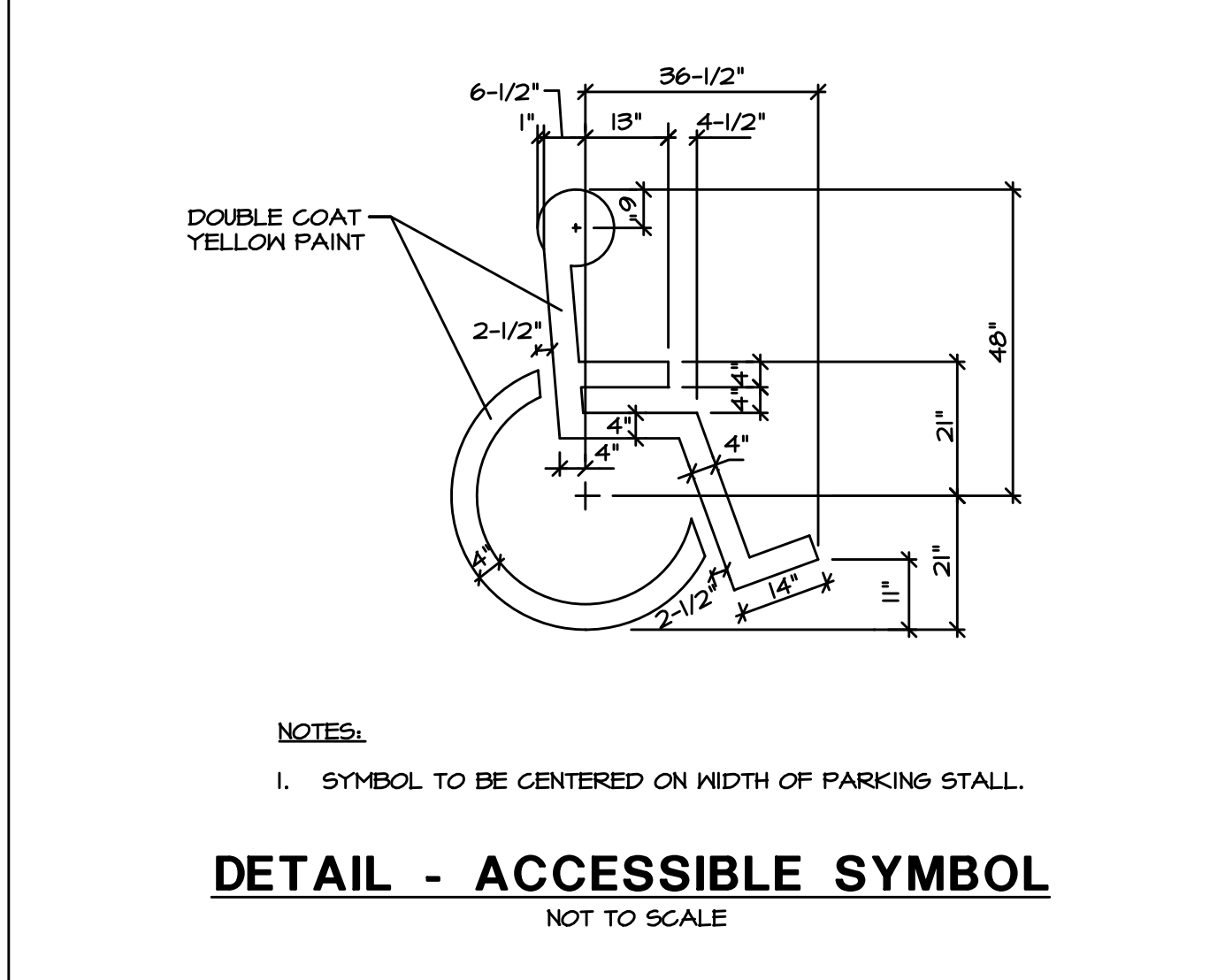
WT JOB NUMBER - 2002139C

WT Group
 Engineering • Design • Consulting
 Structural | Mechanical | Electrical | Plumbing
 Civil | Land Survey | Telecommunication | Aquatic
 Accessibility Consulting | Design & Program Management
 Engineering with Precision, Pace & Passion.
 2875 Pratum Avenue | Hoffman Estates, IL 60192
 P: 224.293.6333 | F: 224.293.6444
 wtgroup.com
 IL License No. 184.007570-0015 | Exp. 04.30.2023
 © COPYRIGHT 2022 THE W-T GROUP, LLC



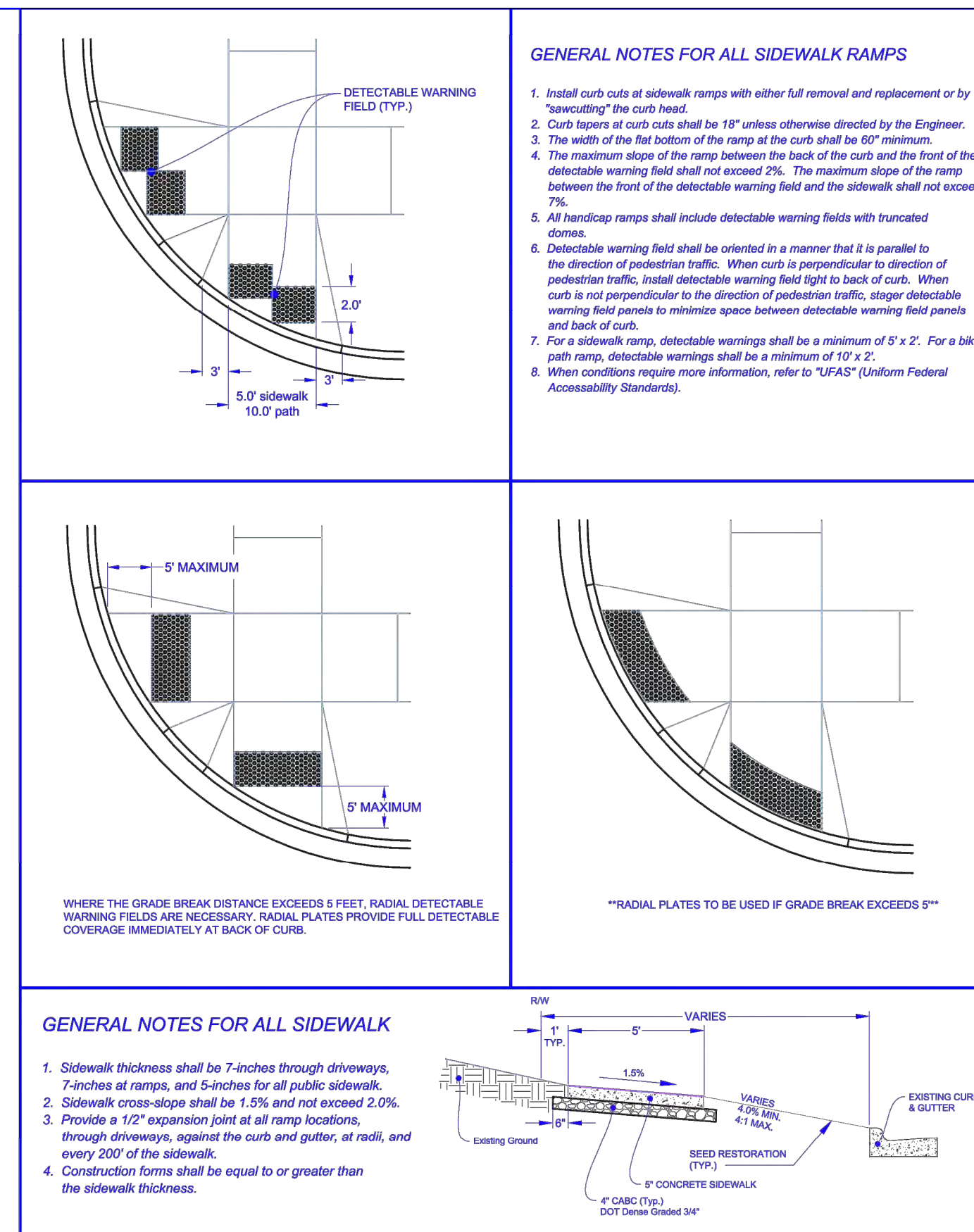
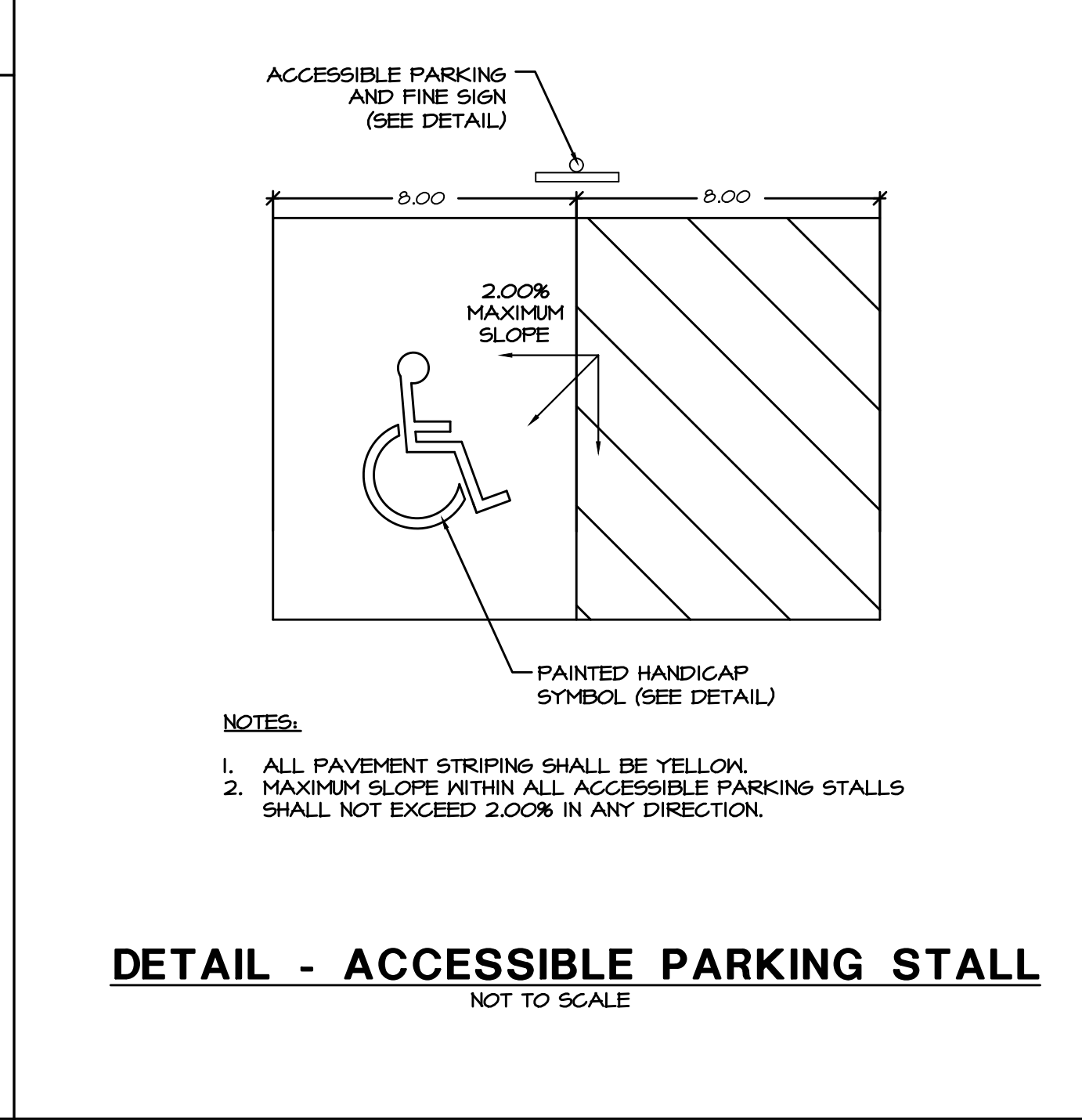
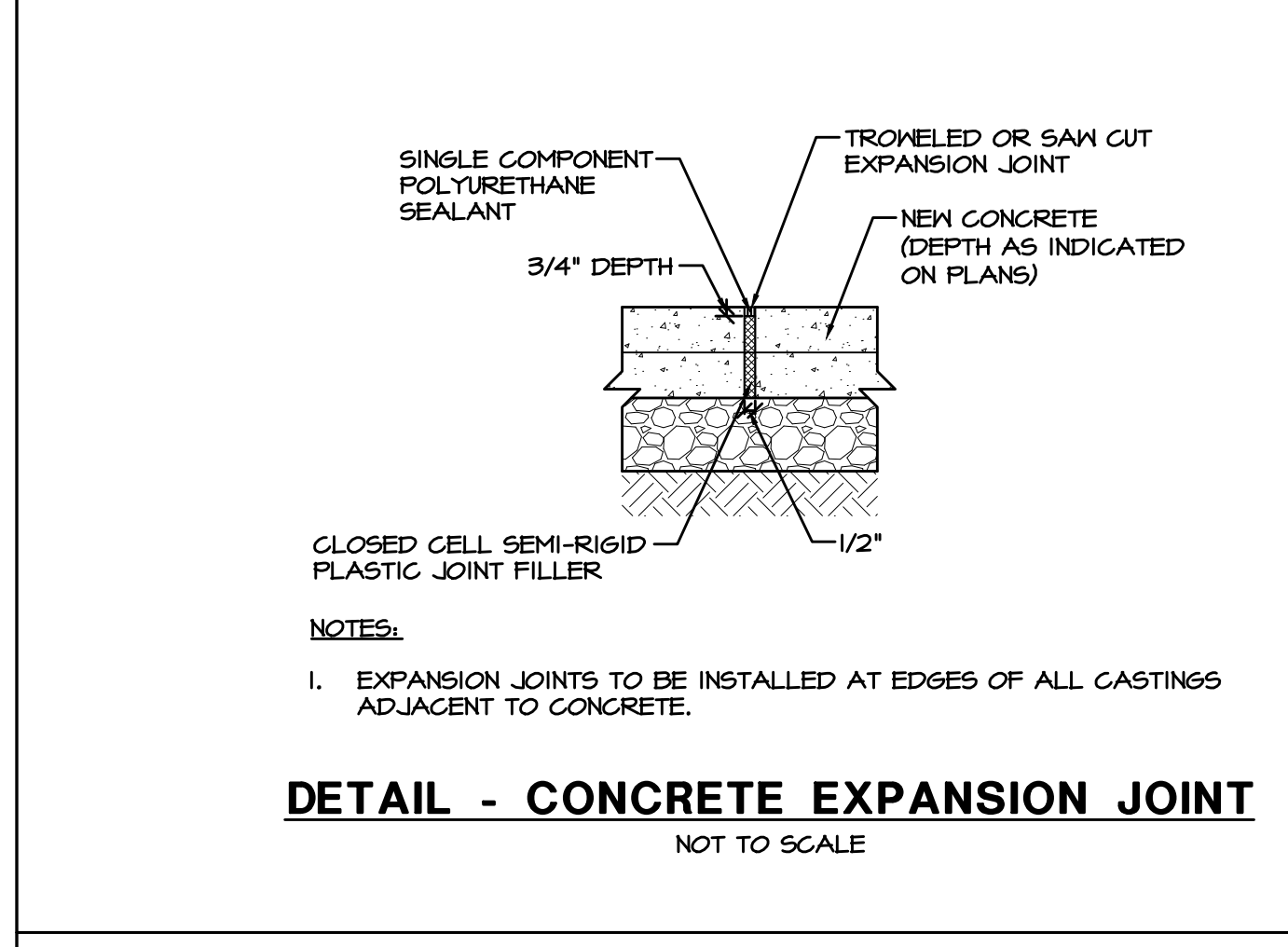
COMMERCIAL DRIVEWAY
STANDARD DETAIL DRAWING

DATE: 2/1/2017
SHEET NO.: 4.03



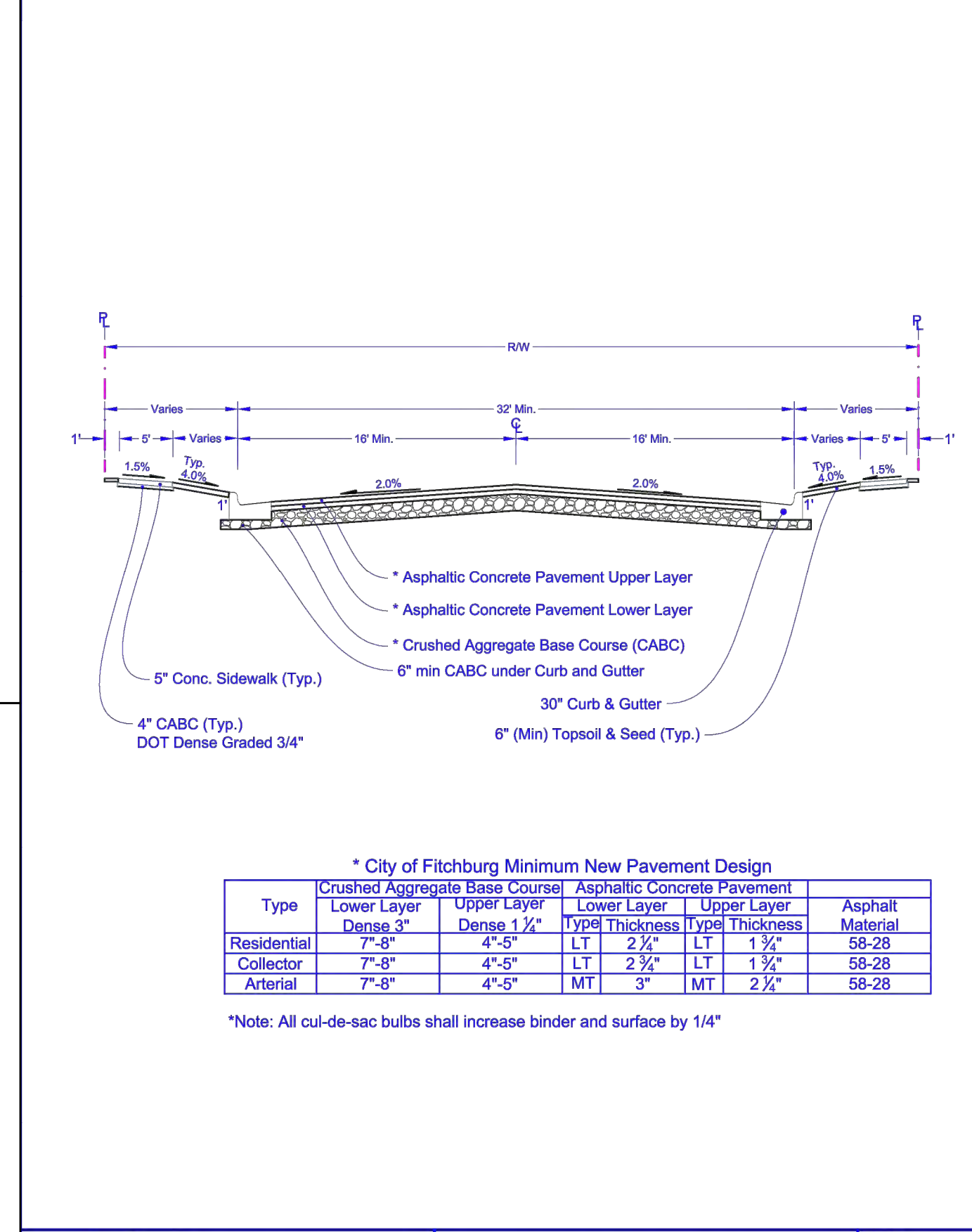
PATHS
STANDARD DETAIL DRAWING

DATE: 2/1/2017
SHEET NO.: 4.02



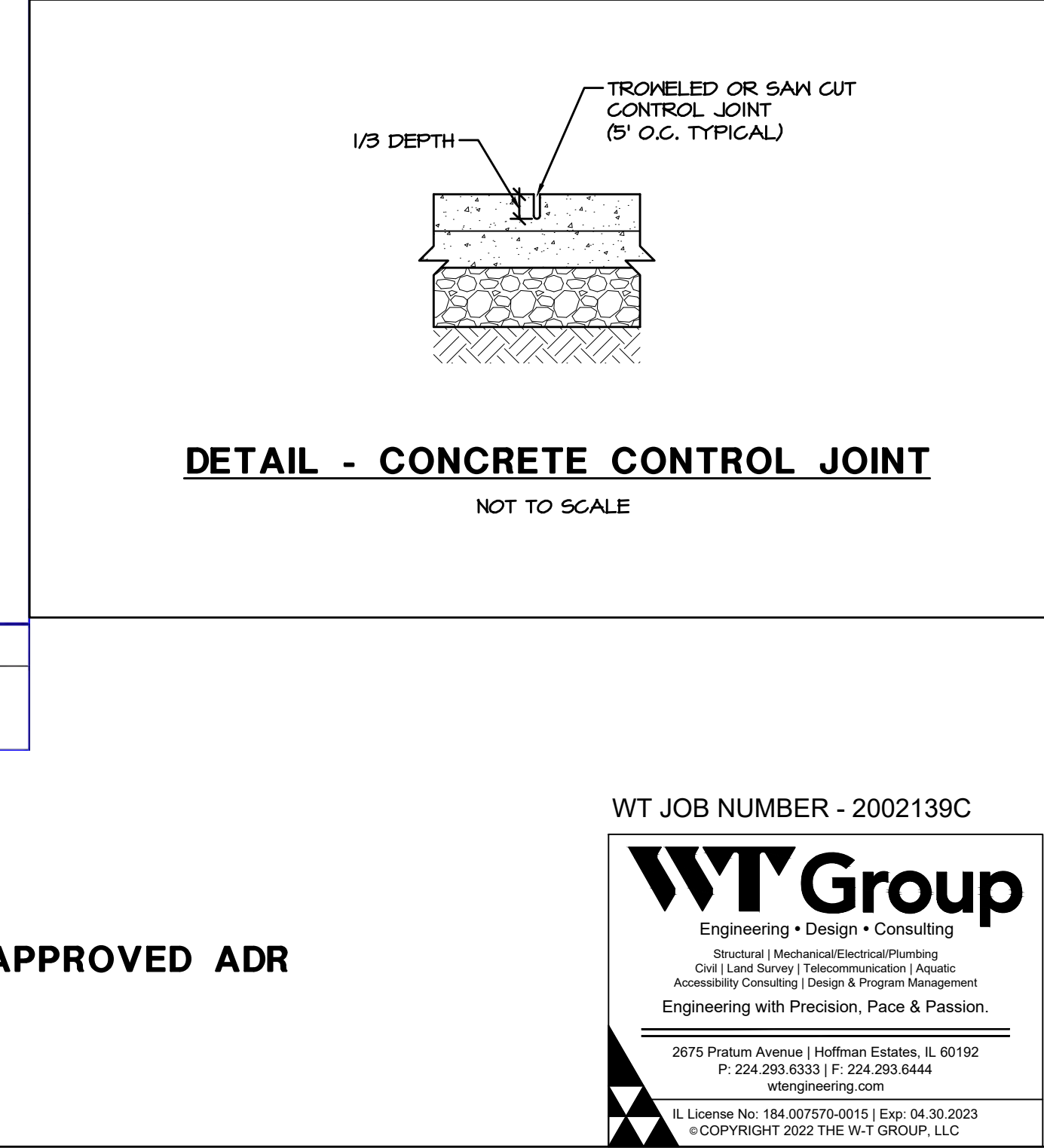
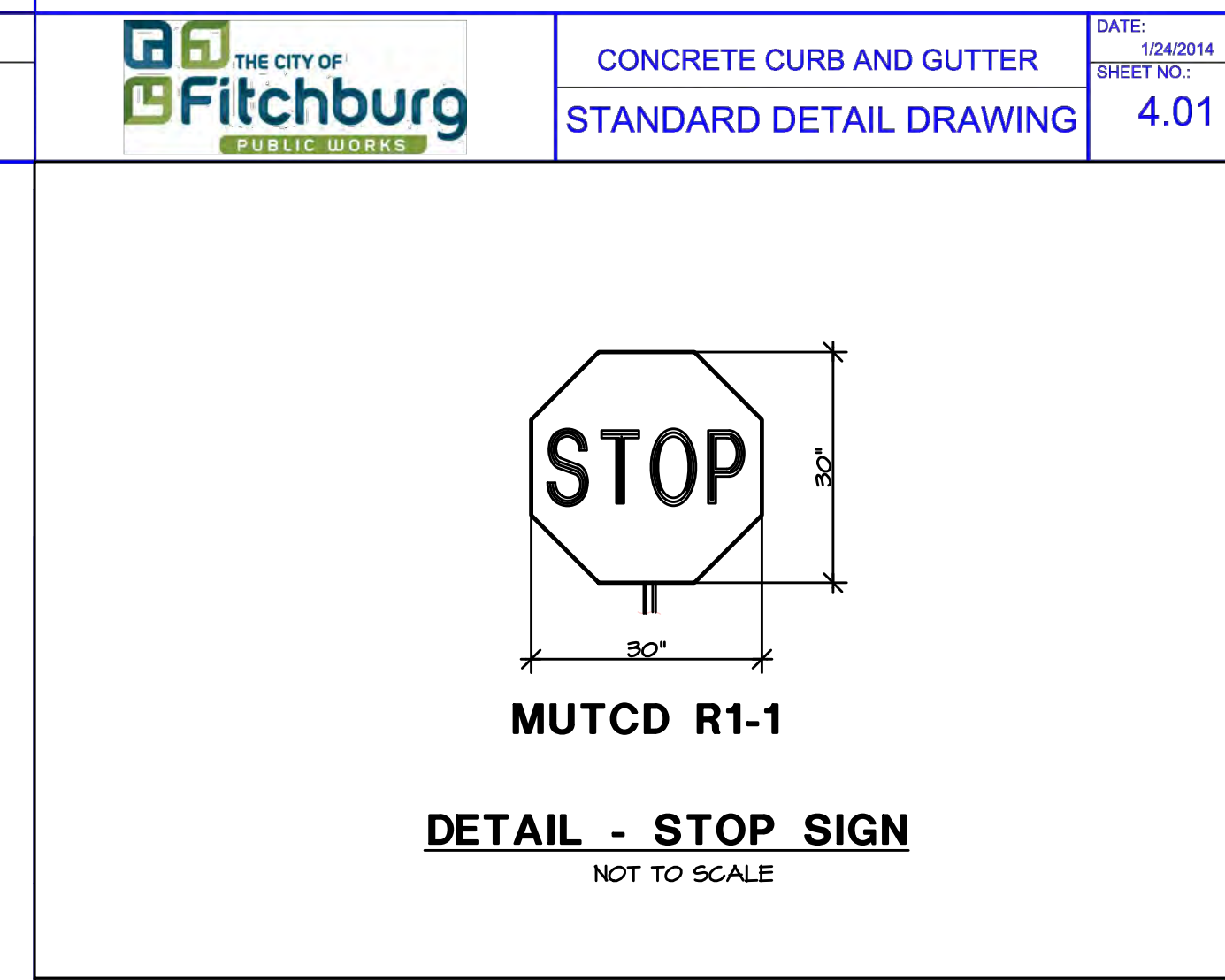
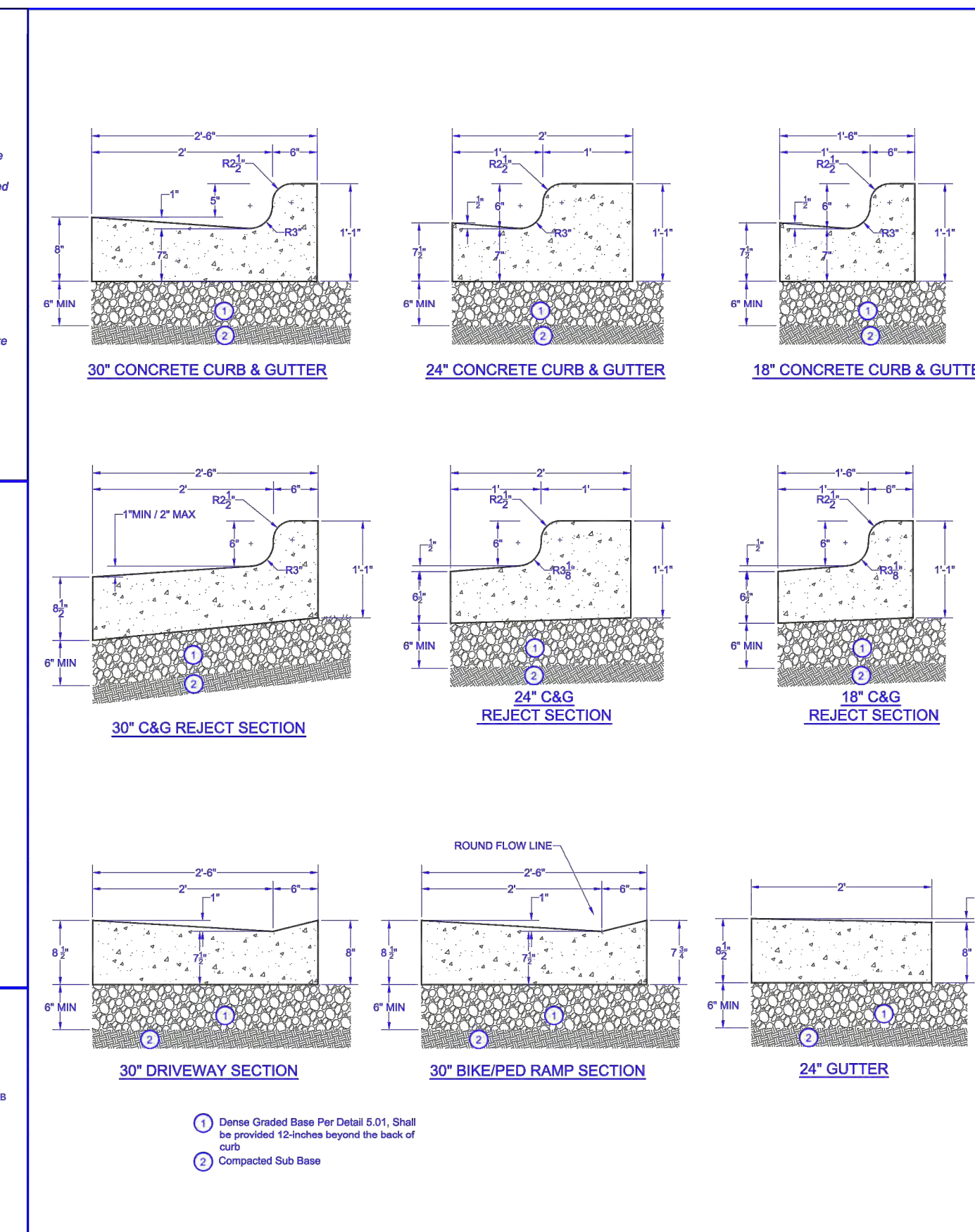
SIDEWALK & RAMPs
STANDARD DETAIL DRAWING

DATE: 2/1/2017
SHEET NO.: 4.02



STREET TYPES
STANDARD DETAIL DRAWING

DATE: 2/1/2017
SHEET NO.: 5.01



WT Group
Engineering • Design • Consulting

2875 Pratum Avenue | Hoffman Estates, IL 60192
P: 224.293.6333 | F: 224.293.6444
wtengineering.com

WT JOB NUMBER - 2002139C

PRAIRIE FORGE GROUP
300 CARDINAL DRIVE
SUITE 160
SAINT CHARLES IL 60175
630.221.0671 | P
630.221.0118 | F
www.prairieforgegroup.com

COPYRIGHT STATEMENT
THESE PLANS ARE COPYRIGHTED AND ARE SUBJECT TO COPYRIGHT PROTECTION AS AN ARCHITECTURAL WORK UNDER SECTION 102 OF THE COPYRIGHT ACT, 17 U.S.C. AS AMENDED (SECTION 102A). AS THE ARCHITECTURAL WORKS COPYRIGHT PROTECTION ACT OF 1990, THE PROTECTION PROVIDED TO PRAIRIE FORGE GROUP INCLUDES, BUT IS NOT LIMITED TO, THE ORIGINAL FORM AS WELL AS THE ARRANGEMENT AND COMPOSITION OF WORDS AND ELEMENTS OF THE DESIGN. WITHOUT WRITTEN APPROVAL OF PRAIRIE FORGE GROUP, ANY UNAUTHORIZED USE OF THESE PLANS, WORK OR HOME REPRESENTED, CAN LIABLY RESULT IN THE OBSTRUCTION OF CONSTRUCTION. PRAIRIE FORGE GROUP IS NOT RESPONSIBLE FOR ANY CLAIMS, DAMAGES, OR EXPENSE ARISING OUT OF THE UNAUTHORIZED USE OF THE INFORMATION CONTAINED IN THESE ELECTRONIC FILES. THESE PLANS MAY NOT ACCURATELY REFLECT THE USE, FINISH, OR CONDITIONS OF THE PROJECT. THE USER SHALL BE USED TO VERIFY ALL LAIERS, DIMENSIONS, AND OTHER RELATED INFORMATION.

COPYRIGHT © 2018-2023
PRAIRIE FORGE GROUP | SAINT CHARLES, IL



DANE COUNTY
EMERGENCY MANAGEMENT
ELEVATOR ADDITION
2982 KAPEC ROAD
FITCHBURG, WISCONSIN

CLIENT APPROVAL

APPROVED
 APPROVED AS NOTED
APPROVED BY / DATE:

ISSUE RECORD

ADDITION ADR	05/24/22

CHECKED BY
JEG
DRAWN BY
BRA
DATE
5/12/2022 10:28:45 AM
PROJECT NUMBER
2020-001

SITE DEVELOPMENT DETAILS
C-3.1

THIS SHEET PREVIOUSLY APPROVED ADR

COPYRIGHT STATEMENT
 THESE PLANS ARE COPYRIGHTED AND ARE SUBJECT TO COPYRIGHT PROTECTION AS AN ARCHITECTURAL WORK UNDER SECTION 102 OF THE COPYRIGHT ACT, 17 U.S.C. AN AMENDED DECISION OF THE U.S. SUPREME COURT IN THE ARCHITECTURAL WORKS COPYRIGHT PROTECTION ACT OF 1990. THE PROTECTION PROVIDED BY PRAIRIE FORGE GROUP INCLUDES, BUT IS NOT LIMITED TO, THE ORIGINAL FORM AS WELL AS THE ARRANGEMENT AND COMPOSITION OF LETTERS AND SYMBOLS OF THE ORIGINAL. WITHOUT WRITTEN APPROVAL OF PRAIRIE FORGE GROUP, ANY UNAUTHORIZED USE OF THESE PLANS, WORK OR HOME REPRESENTED, CAN LIABLY RESULT IN THE VIOLATION OF COPYRIGHT LAW. PRAIRIE FORGE GROUP IS NOT RESPONSIBLE FOR ANY CLAIMS, DAMAGES, OR EXPENSES ARISING OUT OF THE UNAUTHORIZED USE OF THE INFORMATION CONTAINED IN THESE ELECTRONIC FILES. THESE PLANS MAY NOT BE REPRODUCED, COPIED, TRANSMITTED, FORWARDED, USED TO REPRODUCE, OR OTHERWISE USED TO VERIFY ALL LAYERS, DIMENSIONS, AND OTHER RELATED INFORMATION.
 COPYRIGHT © 2018-2023
 PRAIRIE FORGE GROUP | SAINT CHARLES IL



DANE COUNTY
EMERGENCY MANAGEMENT
ELEVATOR ADDITION
 2982 KAPEC ROAD
 FITCHBURG, WISCONSIN

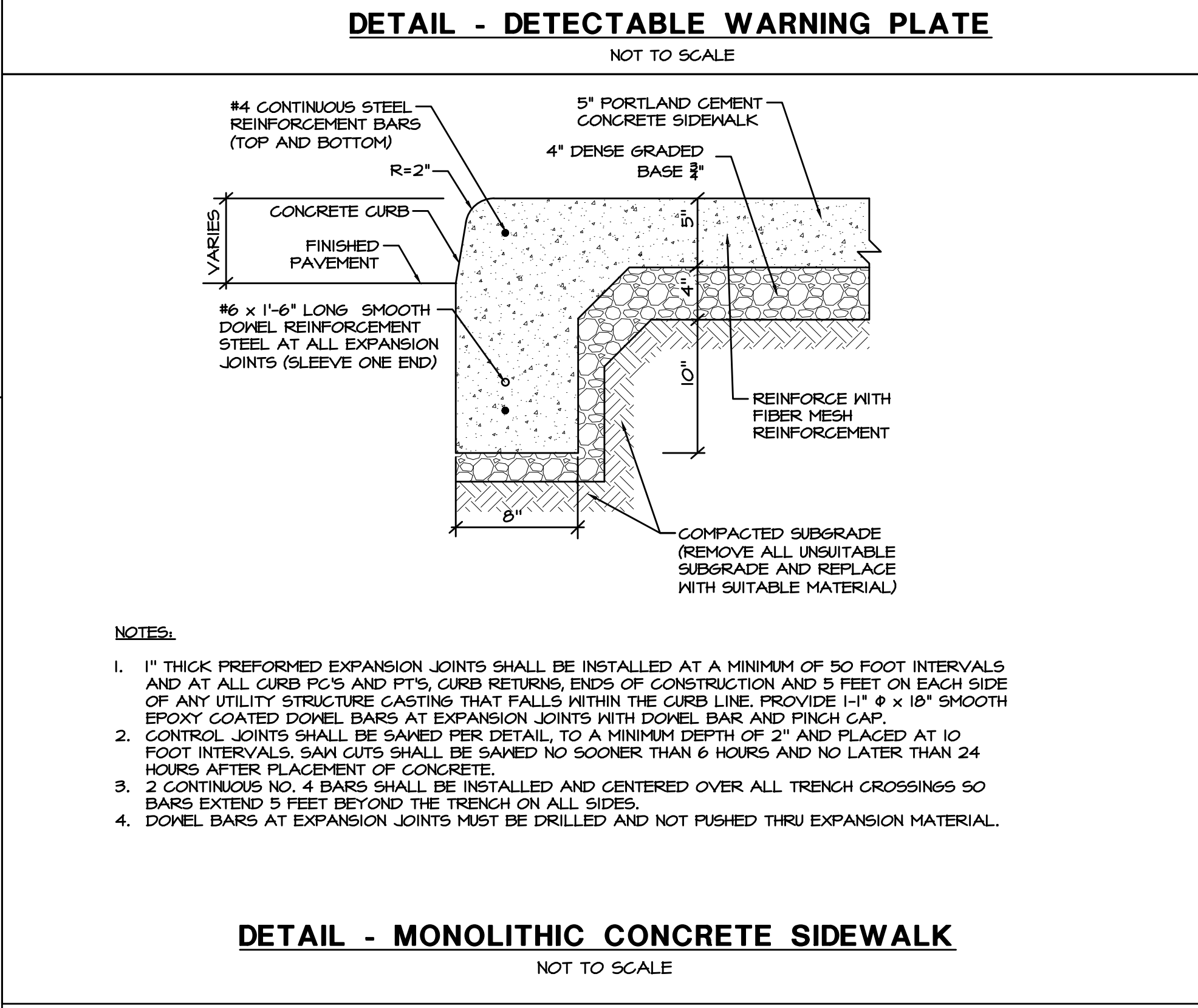
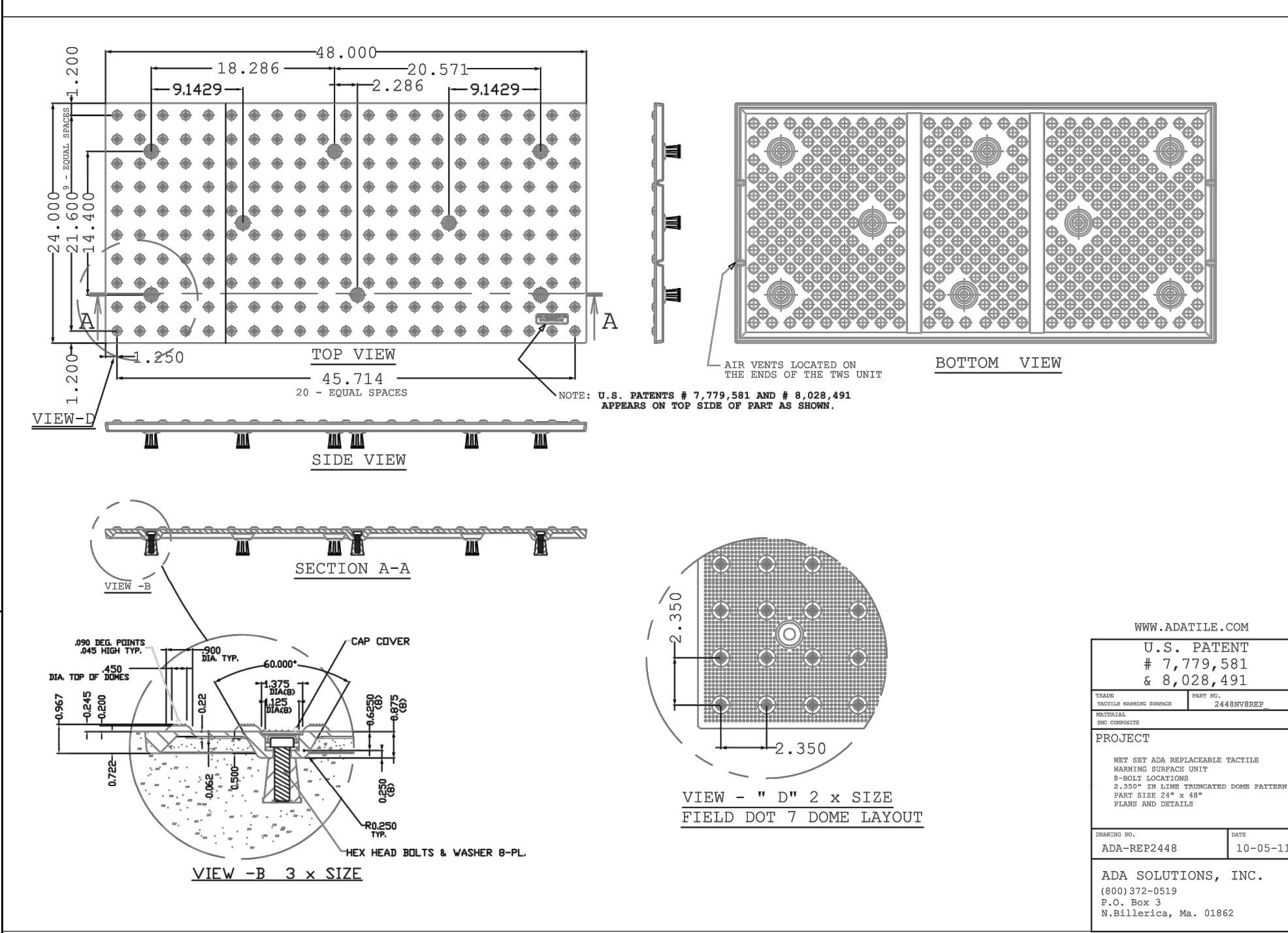
CLIENT APPROVAL
 APPROVED
 APPROVED AS NOTED
 APPROVED BY / DATE:

ISSUE RECORD

ADDITION ADR	05/24/22

CHECKED BY: JEG
 DRAWN BY: BRA
 DATE: 5/12/2022 10:28:45 AM
 PROJECT NUMBER: 2020-001

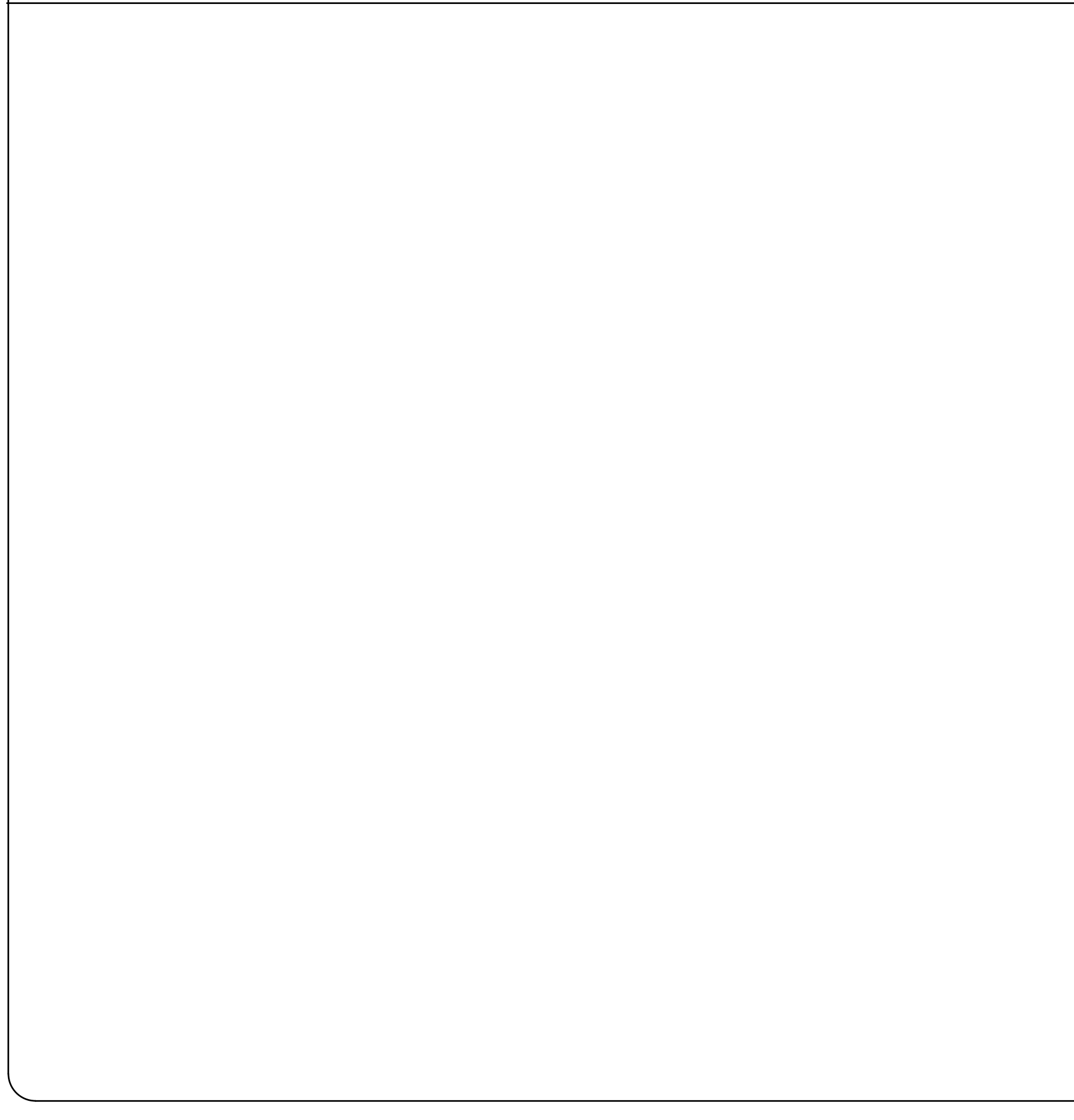
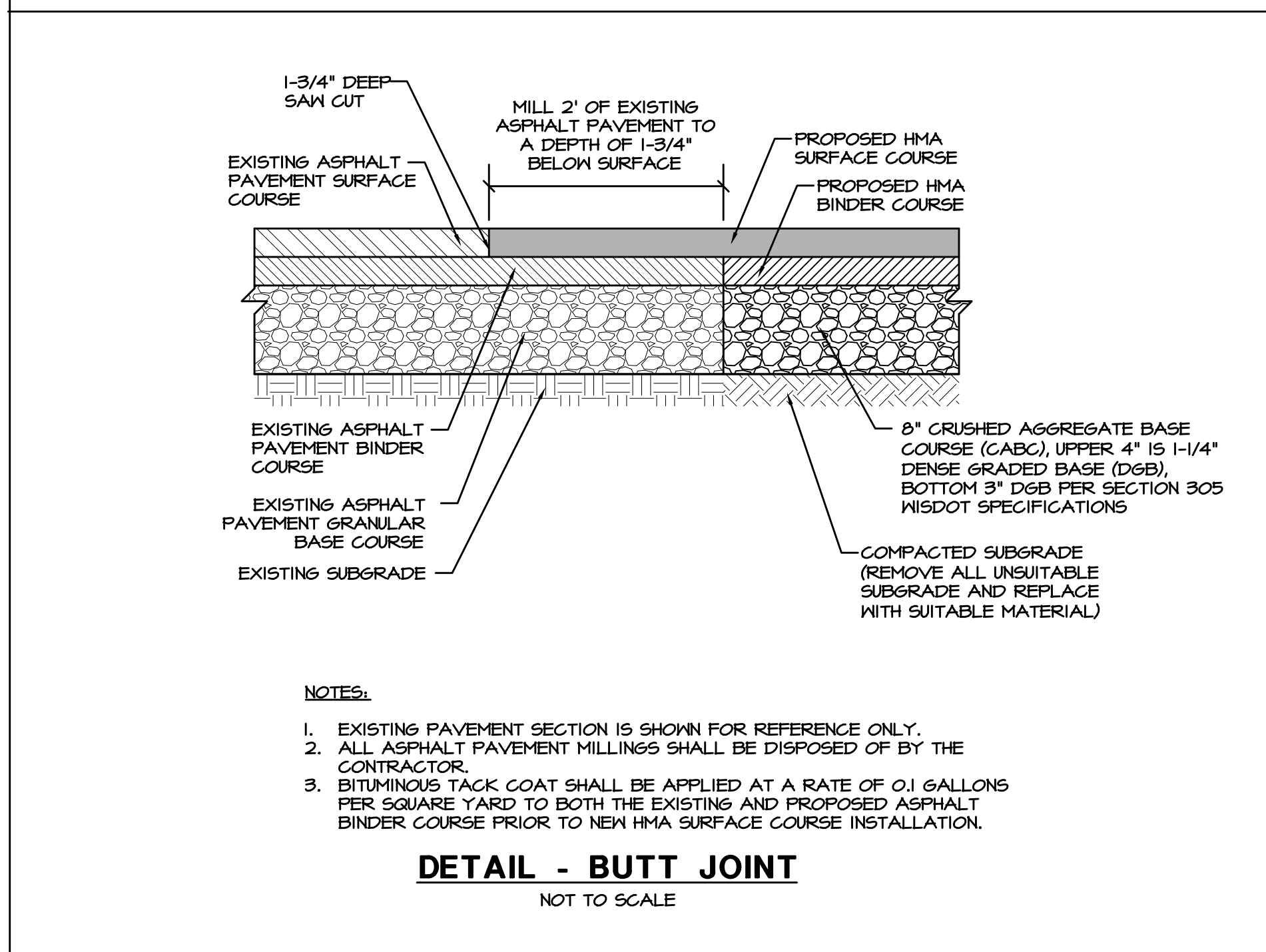
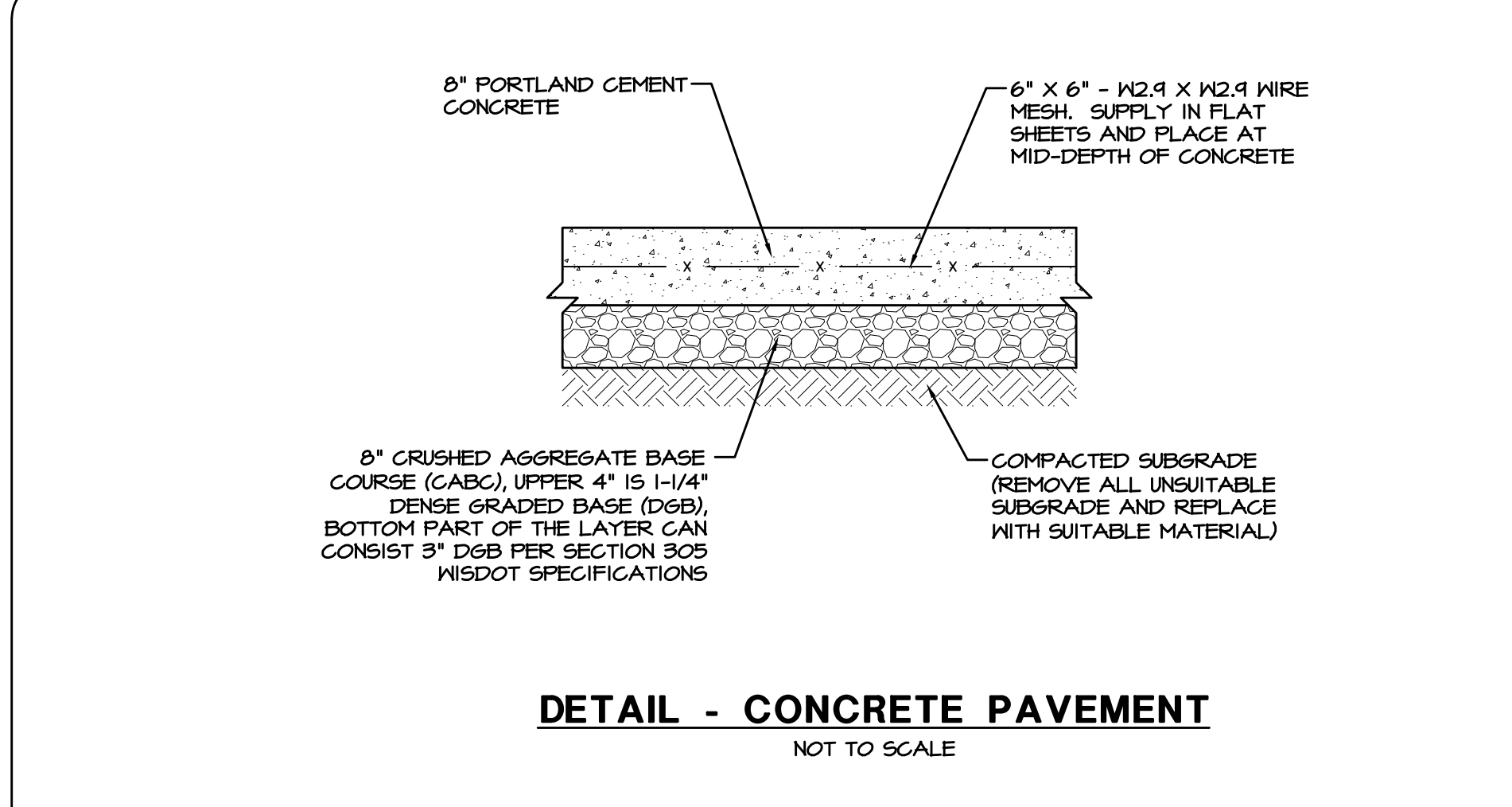
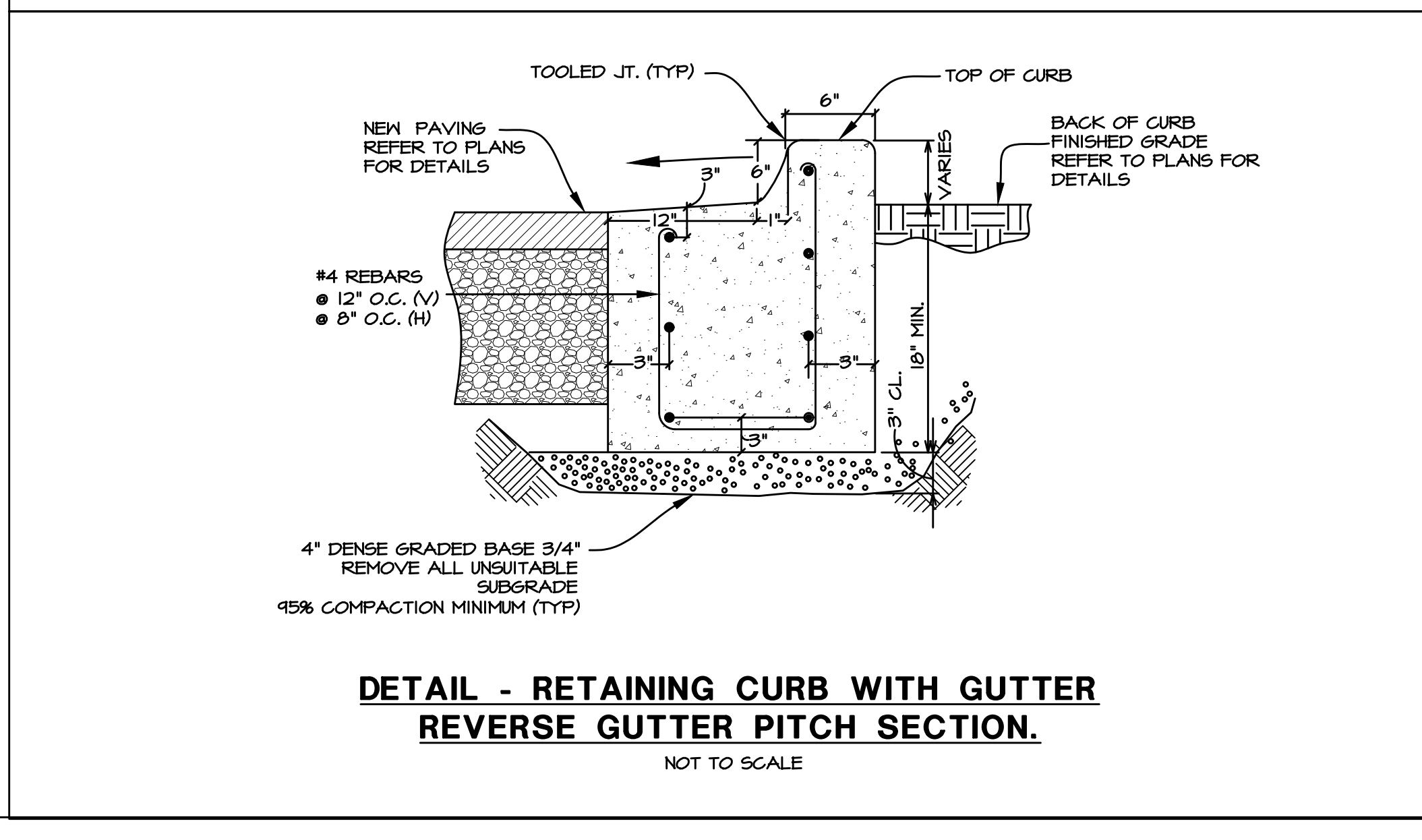
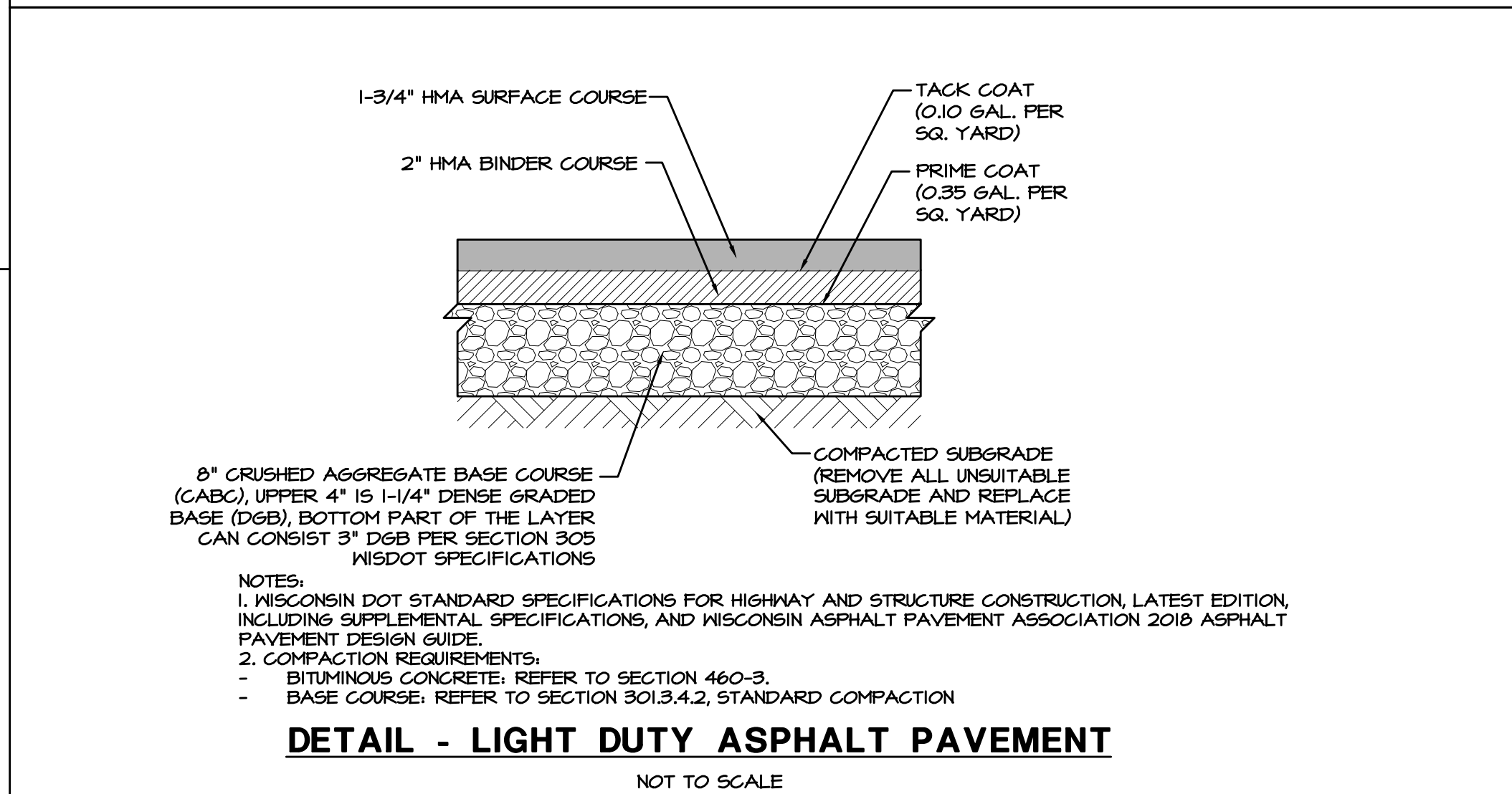
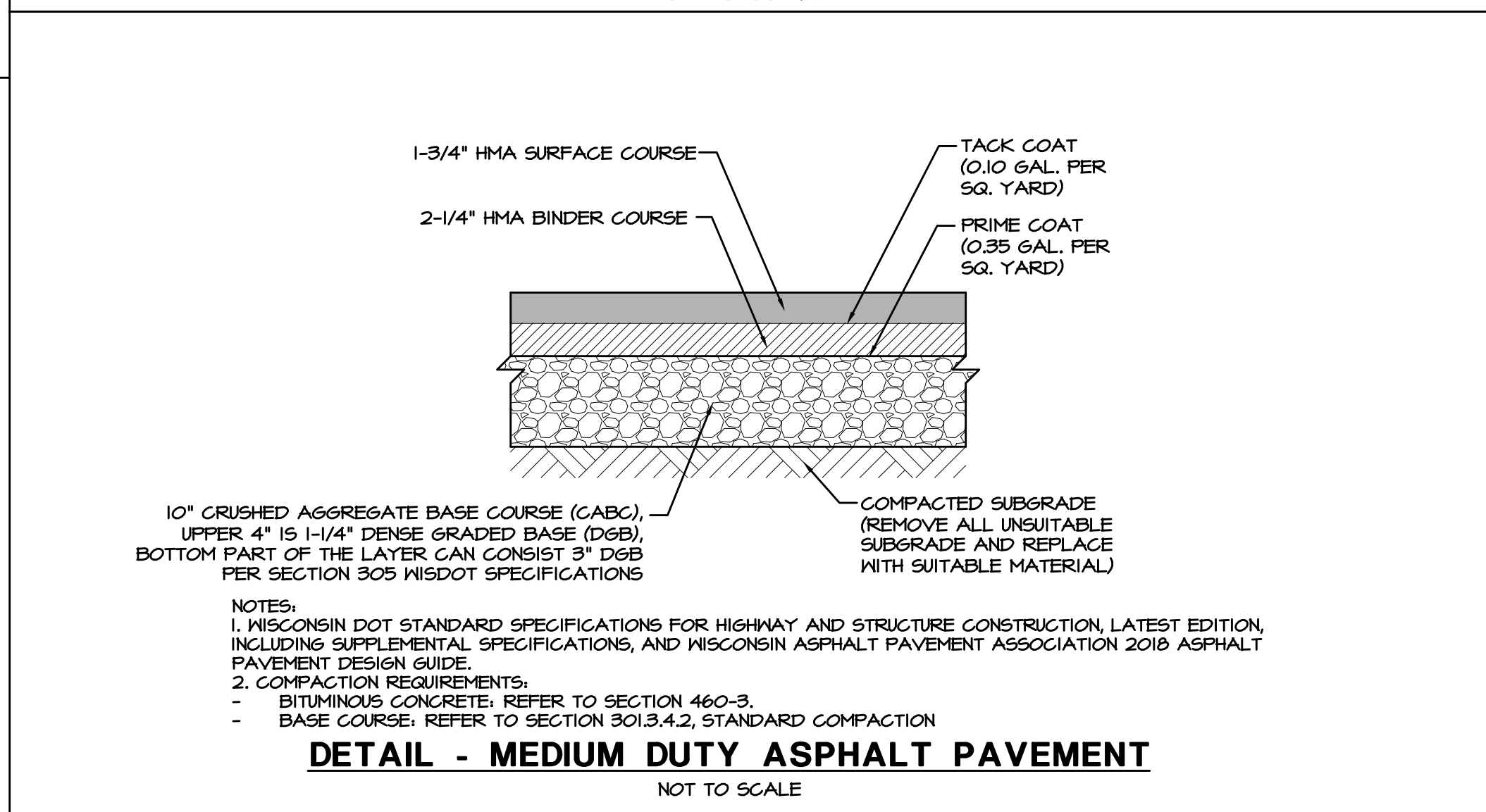
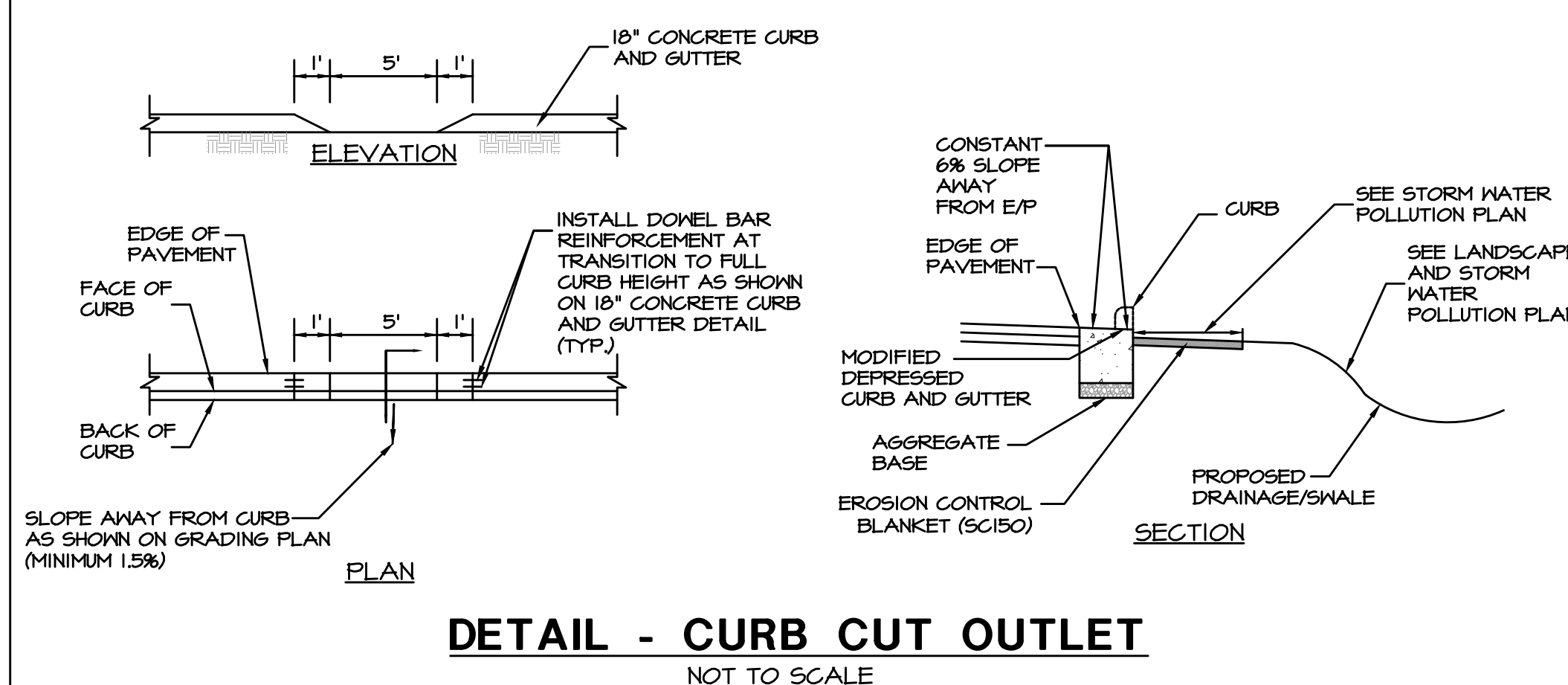
SITE DEVELOPMENT DETAILS
C-3.2

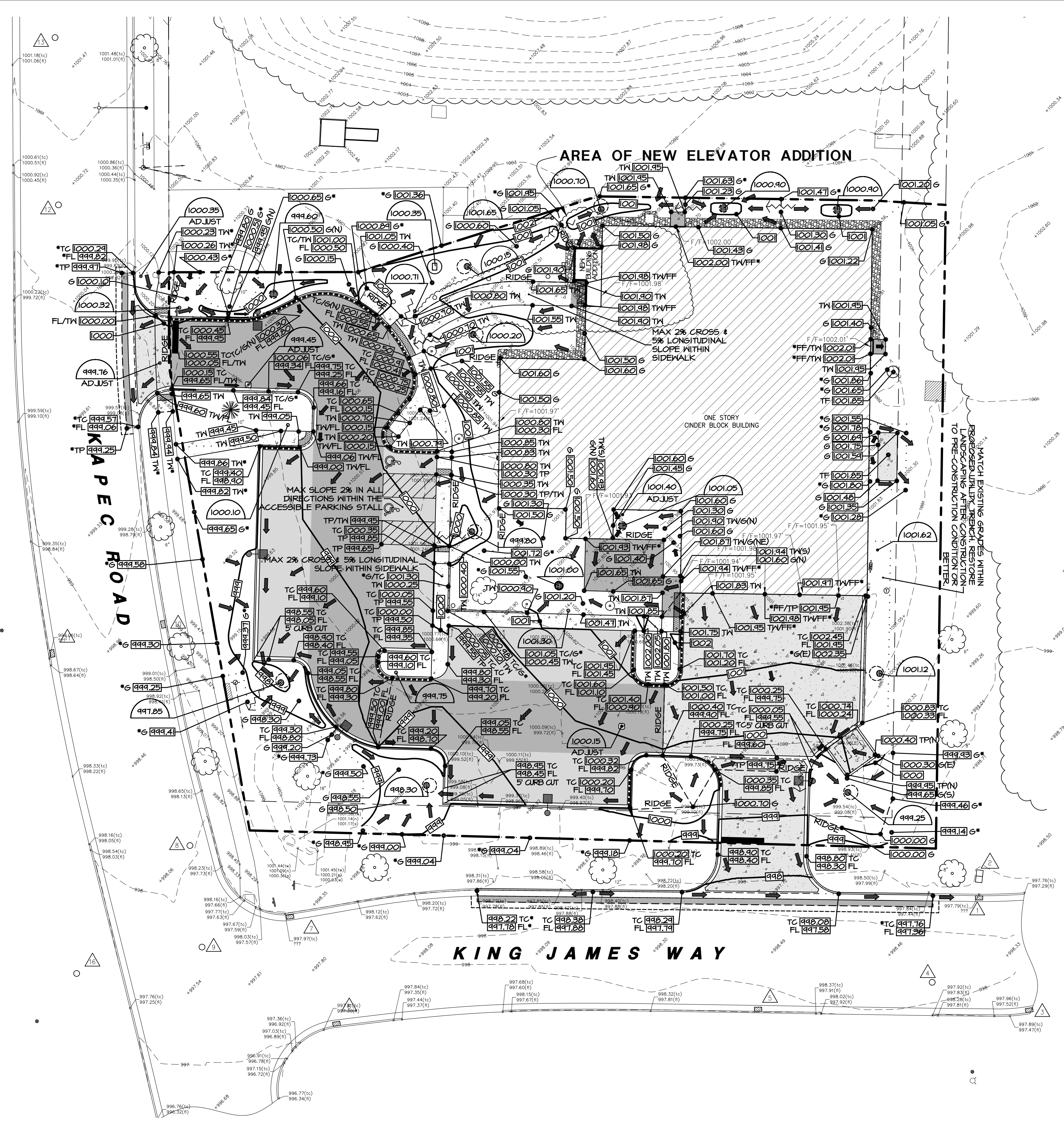


WT Group
 Engineering • Design • Consulting
 Structural | Mechanical | Electrical | Plumbing
 Civil | Land Survey | Telecommunication | Aquatic
 Accessibility Consulting | Design & Program Management
 Engineering with Precision, Pace & Passion.
 2875 Pratum Avenue | Hoffman Estates, IL 60192
 P: 224.293.6333 | F: 224.293.6444
 wtgroupinc.com
 IL License No. 184.007570-0015 | Exp. 04.30.2023
 © COPYRIGHT 2022 THE W-T GROUP, LLC

WT JOB NUMBER - 2002139C

THIS SHEET PREVIOUSLY APPROVED ADR





1 SITE GRADING PLAN
SCALE 1" = 20'

- ### GRADING LEGEND
- EXISTING SPOT GRADE
 - PROPOSED SPOT GRADE
 - INTERPOLATED SPOT GRADE
 - PROPOSED RIM ELEVATION
 - EXISTING CONTOUR LINE
 - PROPOSED CONTOUR LINE
 - OVERLAND FLOW ARROW
 - 100 YEAR OVERLAND FLOW ROUTE
 - EMERGENCY OVERFLOW ARROW
 - TOP OF PAVEMENT ELEVATION
 - TOP OF SIDEWALK ELEVATION
 - FINISHED GRADE ELEVATION
 - FINISHED FLOOR ELEVATION
 - TOP OF CURB ELEVATION
 - FLOW LINE ELEVATION
 - ADJUST EXISTING RIM ELEVATION
 - TOP OF FOUNDATION ELEVATION
 - EXISTING CLOSED MANHOLE
 - EXISTING OPEN GRATE MANHOLE
 - EXISTING BEEHIVE GRATE MANHOLE
 - EXISTING CURB INLET
 - EXISTING FIRE HYDRANT
 - EXISTING VALVE VAULT
 - EXISTING B-BOX
 - PROPOSED INLET
 - PROPOSED OPEN LID MANHOLE / CATCH BASIN
 - PROPOSED CLOSED LID MANHOLE

- ### EXISTING UTILITY DATA
- 1. RIM=997.22' (STORM)
36"x18" CONCRETE STRUCTURE
INV=993.85' (18" RCP N/SSE)
RIM=997.95' (STORM)
12"x12" CONCRETE STRUCTURE
INV=991.80' (48"x76" RCP N)
ELLIPTICAL PIPE
INV=993.55' (18" RCP S)
INV=991.80' (53"x83" RCP W)
ELLIPTICAL PIPE
 - 2. RIM=997.10' (STORM)
36"x18" CONCRETE STRUCTURE
INV=994.79' (15" PVC S)
RIM=998.34' (SANITARY)
48" CONCRETE STRUCTURE
INV=993.34' (12" RCP NE/S)
INV=993.66' (8" PVC W)
 - 3. RIM=997.65' (STORM)
36"x18" CONCRETE STRUCTURE
INV=992.90' (18" RCP N)
 - 4. RIM=997.26' (STORM)
36"x18" CONCRETE STRUCTURE
INV=993.61' (12" RCP NNW)
 - 5. RIM=997.31' (STORM)
36"x18" CONCRETE STRUCTURE
INV=992.54' (12" RCP NNW/SSE)
 - 6. RIM=998.05' (STORM)
CONCRETE STRUCTURE
UNABLE TO DETERMINE SIZE
INV=988.55' (53"x83" RCP E)
ELLIPTICAL PIPE
INV=988.55' (66" RCP SW)
INV=988.65' (36" RCP NW)
 - 7. RIM=997.87' (STORM)
60" CONCRETE STRUCTURE
INV=990.45' (42" RCP SSE/NW)
 - 8. RIM=998.51' (STORM)
36"x18" CONCRETE STRUCTURE
INV=992.68' (18" RCP WSW)
 - 9. RIM=998.42' (STORM)
72" CONCRETE STRUCTURE
INV=990.23' (30" RCP N)
INV=990.47' (18" RCP ENE)
INV=981.23' (42" RCP SE)
 - 10. RIM=1000.57' (STORM)
48" CONCRETE STRUCTURE
INV=995.85' (30" RCP N)
INV=993.23' (30" RCP S)
 - 11. RIM=1001.59' (STORM)
48" CONCRETE STRUCTURE
INV=997.28' (30" RCP N/S)
RIM=1002.81' (SANITARY)
48" CONCRETE STRUCTURE
INV=998.35' (8" PVC N/S)
 - 12. RIM=1005.42' (STORM)
60" CONCRETE STRUCTURE
INV=999.57' (30" RCP N/S)
INV=999.72' (18" RCP E)
INV=999.87' (18" RCP W)
 - 13. RIM=998.11' (SANITARY)
48" CONCRETE STRUCTURE
INV=998.67' (8" PVC N/E/SW)
 - 14. RIM=995.13' (STORM)
84" CONCRETE STRUCTURE
INV=987.18' (36" RCP ENE)
INV=979.93' (42" RCP SSE/NNW)
 - 15. RIM=996.01' (STORM)
CONCRETE STRUCTURE
UNABLE TO DETERMINE SIZE
INV=987.45' (60" RCP NE/SW)
INV=989.21' (24" RCP ESE CAPPED)
 - 16. RIM=997.33' (SANITARY)
48" CONCRETE STRUCTURE
INV=992.28' (15" PVC E)
INV=992.28' (12" RCP N)
 - 17. RIM=999.10' (SANITARY)
48" CONCRETE STRUCTURE
INV=994.45' (12" RCP NNE/SW)
INV=995.72' (4" PVC E)
 - 18. RIM=1010.75' (STORM)
84" CONCRETE STRUCTURE
INV=996.20' (48" RCP N)
INV=996.20' (48"x76" RCP S)
* ELLIPTICAL PIPE

- ### PREVIOUSLY APPROVED ADR HATCH LEGEND
- NEW CONCRETE SIDEWALK
5" PORTLAND CEMENT CONCRETE
4" CRUSHED AGGREGATE BASE COURSE (ABC), DOT DENSE GRADED
3/4" PER SECTION 305 WISDOT SPECIFICATIONS
NEW CONCRETE PAVEMENT / CONCRETE PAD
8" PORTLAND CEMENT CONCRETE
8" CRUSHED AGGREGATE BASE COURSE (ABC), UPPER 4" IS 1-1/4" DENSE GRADED BASE (DGB), BOTTOM PART OF THE LAYER CAN CONSIST OF 3" DGB PER SECTION 305 WISDOT SPECIFICATIONS
NEW CONCRETE STOOPT / CONCRETE PATIO
8" PORTLAND CEMENT CONCRETE
8" CRUSHED AGGREGATE BASE COURSE (ABC), UPPER 4" IS 1-1/4" DENSE GRADED BASE (DGB), BOTTOM PART OF THE LAYER CAN CONSIST OF 3" DGB PER SECTION 305 WISDOT SPECIFICATIONS
NEW FULL DEPTH LIGHT DUTY ASPHALT PAVEMENT
1-3/4" HMA SURFACE COURSE
2-1/4" HMA BINDER COURSE
10" CRUSHED AGGREGATE BASE COURSE (ABC), UPPER 4" IS 1-1/4" DENSE GRADED BASE (DGB), BOTTOM PART OF THE LAYER CAN CONSIST OF 3" DGB PER SECTION 305 WISDOT SPECIFICATIONS
NEW GRAVEL TRENCH DRAIN SYSTEM
NEW GRAVEL TRENCH DRAIN SYSTEM UNDER CONCRETE STOOPT / SIDEWALKS

- ### PREVIOUSLY APPROVED ADR SITE GRADING NOTES:
- A. EXISTING CONDITIONS AND TOPOGRAPHY SHOWN REPRESENTS SITE CONDITIONS PER THE BOUNDARY AND TOPOGRAPHIC SURVEY LAST DATED 2-3-14. CONTRACTOR SHALL VERIFY EXISTING ELEVATIONS AND CONDITIONS (INCLUDING BUT NOT LIMITED TO VERIFICATION OF CONTROL AND ALL UTILITIES WHETHER DEPICTED OR NOT) PRIOR TO CONSTRUCTION AND NOTIFY ENGINEER OF ANY DISCREPANCIES.
 - B. ALL PROPOSED GRADES ARE GIVEN TO FINISHED GRADE, I.E. TOP OF PROPOSED ASPHALT, CONCRETE, TOP OF PROPOSED CURB, ETC. SEE DETAILS FOR PAVEMENT THICKNESS.
 - C. CONTRACTOR SHALL CONTACT DIGGERS HOTLINE (811 OR 1-800-242-8811) AND PRIVATE LOCATING SERVICES TO LOCATE ALL UNDERGROUND UTILITIES PRIOR TO STARTING ANY DEMOLITION AND/OR EXCAVATION. EXACT LOCATIONS OF ANY EXISTING ELECTRIC, GAS, TELEPHONE, ETC. LINES ARE UNKNOWN.
 - D. CONTRACTOR SHALL ENSURE POSITIVE SITE DRAINAGE AT THE END OF EACH DAY DURING CONSTRUCTION OPERATIONS. FAILURE TO PROVIDE ADEQUATE DRAINAGE WILL PRECLUDE THE CONTRACTOR FROM ANY POSSIBLE COMPENSATION REQUESTED DUE TO DELAYS OR UNSUITABLE MATERIALS CREATED AS A RESULT.
 - E. CONTRACTOR SHALL RESTORE ALL DISTURBED AREAS OUTSIDE OF CONSTRUCTION TO ORIGINAL CONDITION OR BETTER.
 - F. CONTRACTOR SHALL REPAIR AT HIS EXPENSE ANY DAMAGE TO EXISTING ASPHALT, CONCRETE, CURBS, SIDEWALKS, ETC. RESULTING FROM CONSTRUCTION TRAFFIC AND/OR OPERATIONS. REPAIRS SHALL BE MADE TO THE SATISFACTION OF THE OWNER AND/OR ENGINEER.
 - G. CONTRACTOR TO UTILIZE CARE WHEN WORKING NEAR EXISTING UTILITIES TO REMAIN. ANY DAMAGE TO EXISTING UTILITIES NOT NOTED TO BE REMOVED SHALL BE REPAIRED AT CONTRACTOR'S EXPENSE TO THE SATISFACTION OF THE OWNER AND/OR ENGINEER.
 - H. ALL EXISTING TREES SHOWN ARE TO REMAIN UNLESS OTHERWISE NOTED.
 - I. ALL HANDICAP ACCESSIBLE ROUTES (SIDEWALKS, WALKWAYS, PAVEMENTS, ETC.) SHALL MAINTAIN A MAXIMUM CROSS SLOPE OF 2.0% AND A MAXIMUM LONGITUDINAL SLOPE OF 5.0%. ACCESSIBLE PARKING SPACES SHALL MAINTAIN A MAXIMUM SLOPE OF 2.0% IN ALL DIRECTIONS.
 - J. VOIDS LEFT BY ANY ITEM REMOVED UNDER ANY PROPOSED BUILDING, PAVEMENT, OR WALK OR WITHIN 24" THEREOF SHALL BE BACKFILLED WITH ENGINEERED FILL ACCORDING TO THE GEOTECHNICAL REPORT.
 - K. ALL FIRE ACCESS LANES WITHIN THE PROJECT AREA SHALL REMAIN IN SERVICE. CLEAN UP OF DEBRIS, AND ACCESSIBLE FOR USE BY EMERGENCY VEHICLES.
 - L. CONSTRUCTION ACCESS POINTS TO THE SITE SHALL BE PROTECTED IN SUCH A MANNER AS TO PREVENT TRACKING OF MUD OR SOIL ONTO PUBLIC THOROUGHFARES. ALL SEDIMENT SPILLED, DROPPED, WASHED OR TRACKED ONTO PUBLIC RIGHTS-OF-WAY MUST BE REMOVED IMMEDIATELY BY THE CONTRACTOR.
 - M. ALL EXISTING SUBGRADE TO BE SCARIFIED (DISKED) TO A DEPTH OF 12" AND RE-COMPACTED, AND THEN TESTED USING A DYNAMIC CONE PENETROMETER. SEE GEOTECHNICAL REPORT FOR ADDITIONAL REQUIREMENTS.
 - N. ALL EXCESS SOILS THAT CANNOT BE USED AS SUITABLE FILL SHALL BE HAULED FROM THE SITE AND LEGALLY DISPOSED OF.
 - O. CONTRACTOR TO PROVIDE SOIL TESTING SERVICES FOR COMPLETION OF THE WISCONSIN DEPARTMENT OF NATURAL RESOURCES FORMS AS PART OF THEIR CONTRACT.
 - P. PREPARE SUBGRADE AS SPECIFIED WITHIN THE GEOTECHNICAL EXPLORATION REPORT DATED AUGUST 17, 2020 PREPARED BY CONSTRUCTION GEOTECHNICAL CONSULTANTS, INC. (CGC).
 - Q. ALL TOPSOIL BENEATH PROPOSED STRUCTURES AND PAVEMENT SHALL BE REMOVED. REFER TO THE GEOTECHNICAL EXPLORATION REPORT DATED AUGUST 17, 2020 PREPARED BY CONSTRUCTION GEOTECHNICAL CONSULTANTS, INC. (CGC) FOR EXISTING TOPSOIL DEPTHS.
 - R. PROFFROLL OF SUBGRADE AND STONE PER GEOTECHNICAL EXPLORATION REPORT DATED AUGUST 17, 2020 PREPARED BY CONSTRUCTION GEOTECHNICAL CONSULTANTS, INC. (CGC).
 - S. PROFFROLL OF SUBGRADE AND STONE PER GEOTECH REPORT.

PRAIRIE FORGE GROUP
300 CARDINAL DRIVE
SUITE 160
SAINT CHARLES IL 60175
630.221.0671 | P
630.221.0118 | F
www.prairieforgegroup.com

COPYRIGHT STATEMENT
THIS PLAN AND ANY INFORMATION CONTAINED HEREIN IS THE PROPERTY OF PRAIRIE FORGE GROUP AND IS NOT TO BE REPRODUCED, COPIED, OR TRANSMITTED IN ANY FORM OR BY ANY MEANS, ELECTRONIC OR MECHANICAL, INCLUDING PHOTOCOPYING, RECORDING, OR BY ANY INFORMATION STORAGE AND RETRIEVAL SYSTEM, WITHOUT THE WRITTEN APPROVAL OF PRAIRIE FORGE GROUP. PRAIRIE FORGE GROUP IS NOT RESPONSIBLE FOR ANY CLAIMS, DAMAGES, OR EXPENSES ARISING OUT OF THE UNAUTHORIZED USE OF THIS INFORMATION CONTAINED IN THESE ELECTRONIC FILES. THESE FILES MAY NOT BE USED FOR ANY PURPOSES OTHER THAN THE SPECIFIC CONDITIONS OF THE PROJECT. PRAIRIE FORGE GROUP IS NOT RESPONSIBLE FOR ANY CLAIMS, DAMAGES, OR EXPENSES ARISING OUT OF THE UNAUTHORIZED USE OF THIS INFORMATION CONTAINED IN THESE ELECTRONIC FILES.
COPYRIGHT © 2018-2023
PRAIRIE FORGE GROUP | SAINT CHARLES IL



**DANE COUNTY
EMERGENCY MANAGEMENT
ELEVATOR ADDITION
2982 KAPEC ROAD
FITCHBURG, WISCONSIN**

CLIENT APPROVAL

APPROVED
 APPROVED AS NOTED
APPROVED BY / DATE:

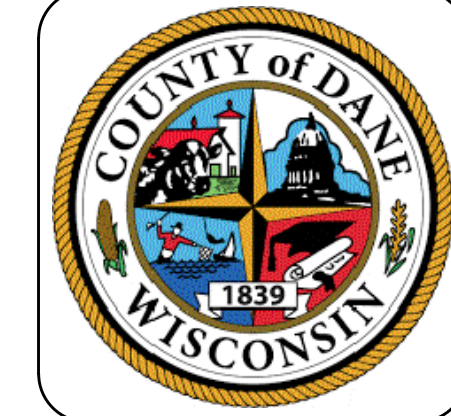
ISSUE RECORD

ADDITION ADR	05/24/22

CHECKED BY _____
JEG
DRAWN BY _____
BRA
DATE _____
5/12/2022 10:28:45 AM
PROJECT NUMBER _____
2020-001

WT Group
Engineering • Design • Consulting
Structural | Mechanical | Electrical | Plumbing
Civil | Land Survey | Telecommunication | Aquatics
Accessibility Consulting | Design & Program Management
Engineering with Precision, Pace & Passion.
2875 Pratum Avenue | Hoffman Estates, IL 60192
P: 224.293.6333 | F: 224.293.6444
wtengineering.com
IL License No. 184.007570-0015 | Exp. 04.30.2023
© COPYRIGHT 2022 THE WT GROUP, LLC

**SITE GRADING PLAN
C-4.0**



**DANE COUNTY
 EMERGENCY MANAGEMENT**
ELEVATOR ADDITION
 2982 KAPEC ROAD
 FITCHBURG, WISCONSIN

CLIENT APPROVAL
 APPROVED
 APPROVED AS NOTED
 APPROVED BY / DATE:

ISSUE RECORD

ADDITION ADR	05/24/22

CHECKED BY
 JEG
DRAWN BY
 BRA
DATE
 5/12/2022 10:28:45 AM
PROJECT NUMBER
 2020-001

SITE UTILITY PLAN
C-5.0

PREVIOUSLY APPROVED ADR SITE UTILITY NOTES:

- CONTRACTOR SHALL CONTACT DIGGERS HOTLINE, WISCONSIN ONE-CALL CENTER (811 OR 1-800-242-8511) AND PRIVATE LOCATING SERVICE TO LOCATE ALL UNDERGROUND UTILITY LINES PRIOR TO STARTING ANY DEMOLITION AND/OR EXCAVATION. EXACT LOCATIONS OF ANY EXISTING ELECTRIC, GAS, TELEPHONE, ETC. LINES ARE UNKNOWN.
- CONTRACTOR TO UTILIZE CARE WHEN WORKING NEAR EXISTING UTILITIES TO REMAIN. ANY DAMAGE TO EXISTING UTILITIES NOTICED TO BE REMOVED SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE AND TO THE SATISFACTION OF THE OWNER AND/OR ENGINEER.
- CONTRACTOR SHALL EXCAVATE AND VERIFY IN FIELD ALL EXISTING UTILITY LOCATIONS AND PROPOSED LOCATIONS AT PROPOSED POINTS OF CONNECTION PRIOR TO ANY UNDERGROUND CONSTRUCTION. CONTRACTOR SHALL NOTIFY THE OWNER AND ENGINEER OF ANY DISCREPANCIES OR CONFLICTS PRIOR TO PROCEEDING WITH CONSTRUCTION.
- REFER TO THE GENERAL NOTES AND SPECIFICATION SHEETS FOR ALL PIPE MATERIAL AND JOINT SPECIFICATIONS.
- CONTRACTOR SHALL RESTORE ALL DISTURBED AREAS OUTSIDE OF CONSTRUCTION LIMITS TO ORIGINAL CONDITION OR BETTER.
- CONTRACTOR SHALL VERIFY IN FIELD EXACT SIZE, MATERIAL, INVERT, PIPE SIZES, AND LOCATIONS OF ALL UTILITIES AND NOTIFY THE OWNER AND ENGINEER OF ANY DISCREPANCIES OR CONFLICTS PRIOR TO CONSTRUCTION.
- THE CONTRACTOR IS RESPONSIBLE FOR THE STABILITY OF UTILITY TRENCHES DURING CONSTRUCTION AND SHALL PROVIDE TEMPORARY SHORING AND BRACING AS NECESSARY TO MAINTAIN STABILITY UNTIL CONSTRUCTION OF THE UTILITY IS COMPLETE IN ORDER TO MEET OSHA AND LOCAL CODES, AS WELL AS MANUFACTURER'S REQUIREMENTS.
- ALL RCP 36" DIA. PRECAST CONCRETE PIPE, CLASS IV, PER ASTM C-76 WITH FLEXIBLE (O-RING) GASKET JOINTS IN CONFORMANCE WITH ASTM C-448.
- TRENCH BACKFILL MATERIAL SHALL BE PLACED AND COMPACTED TO A MINIMUM OF 95% MODIFIED PROCTOR DENSITY (ASTM D-1557) OVER ALL UNDERGROUND UTILITIES WHICH ARE CONSTRUCTED UNDER OR WITHIN 2 FEET OF ANY PROPOSED OR EXISTING PAVEMENT SURFACE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION.
- ADJUST RIM ELEVATIONS OF EXISTING STRUCTURES IN PAVEMENT AS NECESSARY TO MEET PROPOSED FINISHED GRADE.
- CONTRACTOR TO COORDINATE ALL CONNECTIONS TO CITY UTILITIES AND STORM SEWERS WITH THE PUBLIC WORKS DEPARTMENT.
- CONTRACTOR TO USE CAUTION WHEN EXCAVATING AT EXISTING UTILITY LINES. ALL EXISTING UTILITIES TO BE ABANDONED IN PLACE SHALL BE CAPPED WITH 2' LONG (MIN) NON-SHRINK CONCRETE MORTAR PLUGS AT BOTH ENDS. CONTRACTOR SHALL ALLOWANCE FOR RODDING AND TELEVISION EXISTING ON-SITE STORM AND SANITARY SEWERS.

PREVIOUSLY APPROVED ADR STORM SEWER

- EXISTING STORM STRUCTURE AND ASSOCIATED PIPES TO REMAIN.
- EXISTING STORM SEWER TO REMAIN.
- NEW 6" RCP DRAIN CONNECTION WITH ALL FITTINGS REQUIRED. SEE PLUMBING PLANS FOR CONTINUATION AND MORE DETAILS.
- NEW BLIND CONNECTION PIPE #5 TO EXISTING HORIZONTAL ORIENTED ELLIPTICAL PIPE WITH ALL FITTINGS REQUIRED. CONTRACTOR TO MATCH THE INVERT OF THE PIPE WITH THE PROPOSED INVERT OF THE EXISTING ELLIPTICAL PIPE. CONTRACTOR TO VERIFY IN FIELD EXACT LOCATION, AND INVERT ELEVATION PRIOR TO CONSTRUCTION.
- NEW 18" R.C.P., 21 L.F., @ 0.71% SLOPE.
- NEW 48" DIA. PRECAST CONCRETE CATCH BASIN WITH DRAIN TILE.
- NEW 18" R.C.P., 61 L.F., @ 1.64% SLOPE.
- NEW 48" DIA. PRECAST CONCRETE CATCH BASIN WITH DRAIN TILE.
- NEW 18" R.C.P., 12 L.F., @ 1.34% SLOPE.
- NEW 48" DIA. PRECAST CONCRETE CATCH BASIN WITH DRAIN TILE.
- NEW 16" P.V.C. C-400 (WATER MAIN QUALITY), 67 L.F., @ 0.90% SLOPE.
- NEW 48" DIA. PRECAST CONCRETE CATCH BASIN WITH DRAIN TILE, WITH R-1555 FRAME AND R-2553 GRATE.
- NEW 15" H.D.P.E., 23 L.F., @ 0.87% SLOPE.
- NEW 48" DIA. PRECAST CONCRETE CATCH BASIN WITH DRAIN TILE, WITH R-1555 FRAME AND R-2553 GRATE.
- NEW 15" H.D.P.E., 44 L.F., @ 0.82% SLOPE.
- NEW 48" DIA. PRECAST CONCRETE CATCH BASIN WITH DRAIN TILE.
- NEW 15" H.D.P.E., 42 L.F., @ 0.71% SLOPE.
- NEW 24" DIA. PRECAST CONCRETE INLET WITH DRAIN TILE.
- NEW 6" H.D.P.E., 34 L.F., @ 1.03% SLOPE.
- NEW 4" SDR 26 P.V.C. PIPE, 12 L.F., @ MINIMUM 1.00% SLOPE, WITH ALL FITTINGS REQUIRED. BURIED MINIMUM 12".
- NEW BUILDING CONNECTION. SEE PLUMBING PLANS FOR MORE INFORMATION.
- NEW 8" SDR 26 P.V.C. PIPE, 50 L.F., @ MINIMUM 1.00% SLOPE, WITH ALL FITTINGS REQUIRED.
- CONNECT TO FOOTING UNDERDRAIN SYSTEM. CONTRACTOR TO COORDINATE INSTALLATION, INVERT ELEVATIONS WITH STONE STRIP TRENCH SYSTEM, TO AVOID ANY CONFLICTS. SEE PLUMBING AND STRUCTURAL PLANS FOR MORE DETAILS AND CONTINUATION.
- NEW 6" SDR 26 P.V.C. PIPE, 10 L.F., @ MINIMUM 1.00% SLOPE, WITH ALL FITTINGS REQUIRED. BLIND CONNECT DOWNSTREAM END TO 15" PIPE #11, MATCH SPRING LINE OF BOTH PIPES. CONTRACTOR TO COORDINATE INSTALLATION WITH STONE STRIP TRENCH SYSTEM, TO AVOID CONFLICTS.
- NEW 12" H.D.P.E., 34 L.F., @ 4.12% SLOPE.
- NEW 24" DIA. PRECAST CONCRETE INLET WITH DRAIN TILE.
- NEW 24" DIA. PRECAST CONCRETE INLET WITH DRAIN TILE. CONSTRUCT OVER EXISTING PIPE TO THE SOUTH. MATCH EXISTING PIPE TO THE SOUTH AND NORTH SIDES OF THE STRUCTURE. MATCH INVERT ELEVATION. CONTRACTOR TO VERIFY IN FIELD EXACT LOCATION, SIZE, MATERIAL AND INVERT ELEVATION OF EXISTING PIPE. POINT PRIOR TO CONSTRUCTION, NOTIFY ENGINEER OF ANY DISCREPANCIES.
- NEW 3" P.V.C., 10 L.F., @ MIN. 1.00% SLOPE. COORDINATE INVERT ELEVATION WITH LIFT STATION MANHOLE.
- NEW 48" DIA. PRECAST CONCRETE STRUCTURE WITH DUPLEX STORM WATER LIFT STATION. SEE DETAIL ON SHEET C-5.2.
- NEW 12" R.C.P., 143 L.F., @ 0.83% SLOPE.
- NEW 48" DIA. PRECAST CONCRETE CATCH BASIN WITH DRAIN TILE.
- NEW 12" R.C.P., 41 L.F., @ 1.45% SLOPE.
- NEW 48" DIA. PRECAST CONCRETE CATCH BASIN WITH DRAIN TILE.
- NEW 8" SDR 26 P.V.C. PIPE, 42 L.F., @ MINIMUM 1.00% SLOPE, WITH ALL FITTINGS REQUIRED. BLIND CONNECT DOWNSTREAM END TO 12" PIPE #35, MATCH SPRING LINE OF BOTH PIPES.
- NEW 8" RCP DRAIN CONNECTION WITH ALL FITTINGS REQUIRED. SEE PLUMBING PLANS FOR CONTINUATION AND MORE DETAILS.
- EXISTING CLEAN OUT TO REMAIN. ADJUST RIM ELEVATION TO MATCH PROPOSED GRADE. REPLACE CLEAN OUT LID WITH HEAVY DUTY TYPE.
- NEW CLEAN OUT WITH FROST SLEEVE TOTAL 7'.
- EXISTING CLEAN OUT TO REMAIN. ADJUST RIM ELEVATION TO MATCH PROPOSED GRADE. REPLACE CLEAN OUT LID WITH HEAVY DUTY TYPE.
- EXISTING STORM SEWER TO REMAIN. SHOWN PER RECORDS. CONTRACTOR SHALL PERFORM INVESTIGATION, INCLUDING BUT NOT LIMITED TO TRACING, TEST HOLES, VACUUM EXCAVATION IN ORDER TO CONFIRM EXISTENCE, EXACT LOCATION, SIZE, INVERT ELEVATION AND CONDITION PRIOR TO CONSTRUCTION. NOTIFY ENGINEER OF ANY FINDINGS AND DISCREPANCIES.
- INSTALL PERMANENT FLEXIBLE STORM P.C. SHORT (12") FILTER BAG, WITH HYDROCARBON BOOM, ONCE TEMPORARY INLET PROTECTION DEVICES HAVE BEEN REMOVED FROM STRUCTURES FOLLOWING CONSTRUCTION, TOTAL 3'.
- NEW 12" H.D.P.E., TO L.F., @ 0.36% SLOPE.
- NEW 24" DIA. PRECAST CONCRETE INLET WITH DRAIN TILE.
- NEW 4" PERFORATED P.V.C. UNDERDRAINAGE SYSTEM 33 L.F., @ 1.56% SLOPE, WITH ALL FITTINGS REQUIRED. SEE 'DETAIL - 4" PERFORATED P.V.C. UNDERDRAINAGE SYSTEM' ON SHEET C-51.
- NEW 4" PERFORATED P.V.C. UNDERDRAINAGE SYSTEM 53 L.F., @ 1.83% SLOPE, WITH ALL FITTINGS REQUIRED. SEE 'DETAIL - 4" PERFORATED P.V.C. UNDERDRAINAGE SYSTEM' ON SHEET C-51.
- NEW 4" PERFORATED P.V.C. UNDERDRAINAGE SYSTEM 76 L.F., @ 4.68% SLOPE, WITH ALL FITTINGS REQUIRED. SEE 'DETAIL - 4" PERFORATED P.V.C. UNDERDRAINAGE SYSTEM' ON SHEET C-51.
- NEW 4" PERFORATED P.V.C. UNDERDRAINAGE SYSTEM 33 L.F., @ 6.15% SLOPE, WITH ALL FITTINGS REQUIRED. SEE 'DETAIL - 4" PERFORATED P.V.C. UNDERDRAINAGE SYSTEM' ON SHEET C-51.
- NEW 4" PERFORATED P.V.C. UNDERDRAINAGE SYSTEM 81 L.F., @ 2.87% SLOPE, WITH ALL FITTINGS REQUIRED. SEE 'DETAIL - 4" PERFORATED P.V.C. UNDERDRAINAGE SYSTEM' ON SHEET C-51.
- EXCAVATE TO EXISTING STORM SEWER AND BACKFILL TRENCH AS SPECIFIED ON THE TRENCH DETAIL. FOR THE LOCATIONS WHICH PAVEMENT GROESSES OVER THE STORM SEWER. PROTECT THE SANITARY SEWER LINE DURING CONSTRUCTION.
- NEW BLIND CONNECTION WITH ALL FITTINGS REQUIRED. MATCH SPRING LINE OF THE BOTH PIPES.
- NEW BLIND CONNECTION WITH ALL FITTINGS REQUIRED. MATCH SPRING LINE OF THE BOTH PIPES.
- NEW 6" H.D.P.E., 11 L.F., @ MIN. 1.00% SLOPE, WITH ALL FITTINGS REQUIRED.
- NEW DOWNSPOUT CONNECTION, WITH ALL FITTINGS REQUIRED.

PREVIOUSLY APPROVED ADR MISC. UTILITY

- EXISTING UTILITY POLE, GUY WIRE AND ASSOCIATED OVERHEAD LINES TO REMAIN.
- EXISTING GAS LINE TO REMAIN.
- EXISTING OVERHEAD LINES TO REMAIN.
- EXISTING UNDERGROUND ELECTRIC TO REMAIN.
- EXISTING UNDERGROUND TELCO TO REMAIN.
- NEW TOP POST AREA LIGHT. SEE ELECTRICAL PLAN FOR MORE DETAILS.
- EXISTING ELECTRIC METER TO REMAIN.
- NEW AREA LIGHT. SEE ELECTRICAL PLAN FOR MORE DETAILS.
- EXISTING GAS METER TO REMAIN.
- EXISTING TELCO PEDESTAL TO REMAIN.
- NEW BOLLARD LIGHT. SEE ELECTRICAL PLAN FOR MORE DETAILS.
- NEW WATERPROOFING FOUNDATION / STONE STRIP TRENCH SYSTEM, SEE LANDSCAPE, ARCHITECTURAL AND PLUMBING PLANS FOR MORE DETAILS.
- NEW FLOOD LIGHT. SEE ELECTRICAL PLAN FOR MORE DETAILS.
- EXISTING TELECOMMUNICATION LINE TO REMAIN. CONTRACTOR TO VERIFY IN FIELD, AND COORDINATE WITH UTILITY OWNER IF THIS STRUCTURE AND RELATED TELECOMMUNICATION LINES IS ACTIVE AND SERVING THE EXISTING BUILDING.
- NEW GENERATOR PAD. SEE ELECTRICAL PLANS FOR GENERATOR DETAILS AND REQUIREMENTS.
- NEW CONCRETE TOWER FOUNDATION. SEE TELECOMMUNICATION PLANS FOR ALL DETAILS AND REQUIREMENTS. CONTRACTOR TO COORDINATE INSTALLATION WITH EXISTING UTILITIES IN THE AREA.
- EXISTING TELECOMMUNICATION LINE TO REMAIN.
- EXISTING ELECTRICAL PANEL TO REMAIN.
- NEW CONDUIT AND FIBER OPTIC. SEE ELECTRICAL PLANS FOR ALL DETAILS.
- NEW HANDHOLE BY FIBER OPTIC. SEE ELECTRICAL PLANS FOR ALL DETAILS. CONTRACTOR TO CONFIRM LOCATION PRIOR TO CONSTRUCTION.
- NEW WATERPROOFING FOUNDATION / STONE STRIP TRENCH SYSTEM UNDER THE CONCRETE STOOP / SIDEWALK. SEE LANDSCAPE, ARCHITECTURAL AND PLUMBING PLANS FOR MORE DETAILS.

WT JOB NUMBER - 2002139C

WT Group
 Engineering • Design • Consulting
 2875 Pratum Avenue | Hoffman Estates, IL 60192
 P: 224.293.6333 | F: 224.293.6444
 www.wtgroup.com
 IL License No. 184.007570-0015 | Exp. 04.30.2023
 © COPYRIGHT 2022 THE WT GROUP, LLC

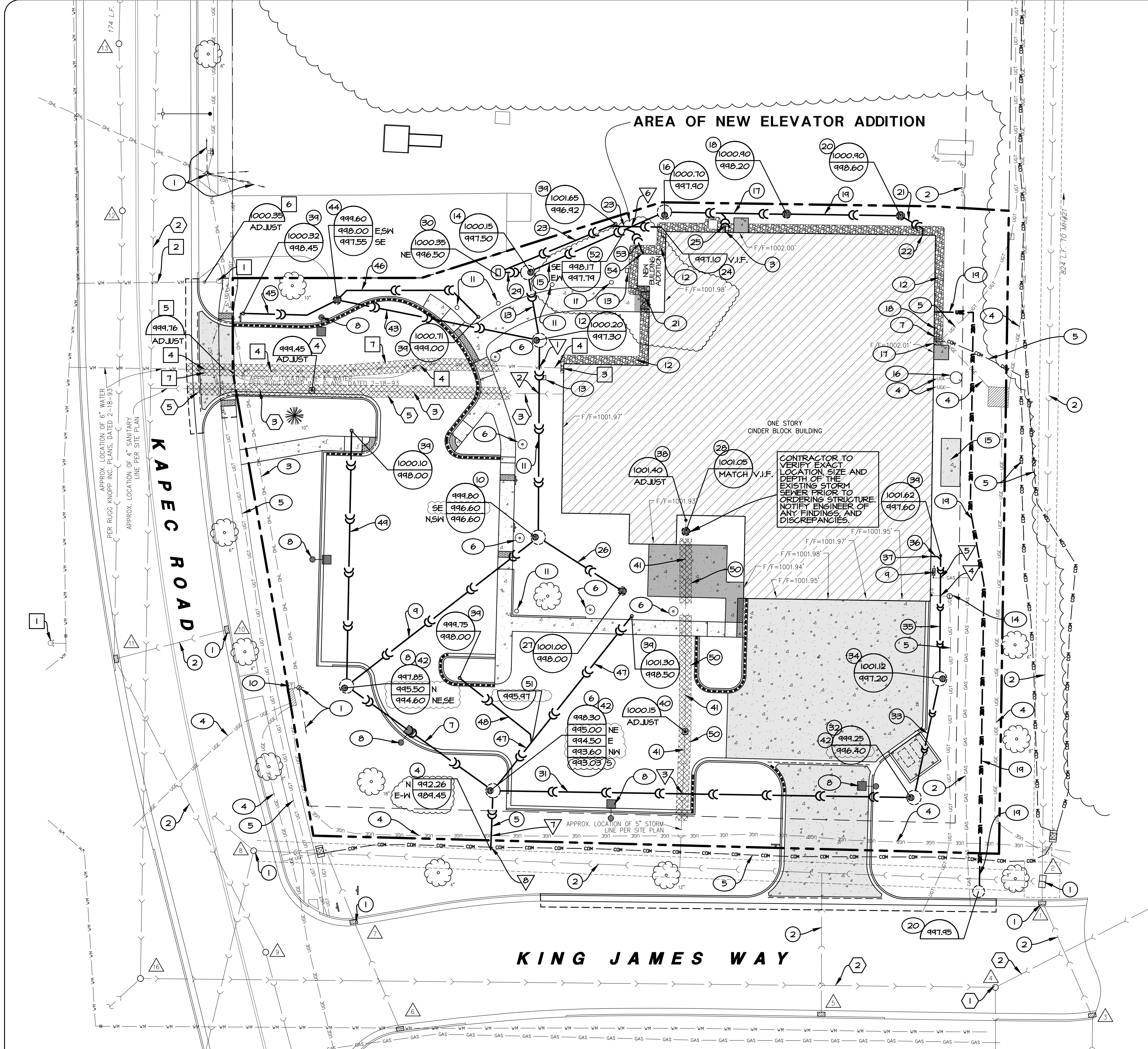
UTILITY LEGEND

- EXISTING STORM SEWER
- PROPOSED STORM SEWER
- EXISTING SANITARY SEWER
- EXISTING WATER MAIN
- EXISTING GAS LINE
- EXISTING OVERHEAD LINES
- EXISTING UNDERGROUND ELECTRIC LINE
- EXISTING UNDERGROUND TELCO LINE
- EXISTING UNDERGROUND COMMUNICATION LINE
- PROPOSED RIM ELEVATION
- PROPOSED INVERT ELEVATION
- EXISTING UTILITY BACKFILL TRENCH
- V.I.F. VERIFY IN FIELD
- FF FINISHED FLOOR ELEVATION
- ADJUST ADJUST EXISTING RIM ELEVATION
- EXISTING CLOSED MANHOLE
- EXISTING OPEN GRATE MANHOLE
- EXISTING BEEHIVE GRATE MANHOLE
- EXISTING CURB INLET
- EXISTING FIRE HYDRANT
- EXISTING B-X-BOX
- NEW AREA LIGHT
- NEW TOP POST AREA LIGHT
- NEW FLOOD LIGHT
- NEW BOLLARD LIGHT
- PROPOSED INLET
- PROPOSED OPEN LID MANHOLE / CATCH BASIN
- PROPOSED CLOSED LID MANHOLE
- PROPOSED LIFT STATION STRUCTURE

EXISTING UTILITY DATA

1. RIM=997.22' (STORM) 36" CONCRETE STRUCTURE INV=993.85' (18" RCP N/SE)	16. RIM=1000.57' (STORM) 48" CONCRETE STRUCTURE INV=995.85' (30" RCP N)
2. RIM=997.95' (STORM) 12" 12" CONCRETE STRUCTURE INV=991.80' (15" PVC S)	17. RIM=1001.59' (STORM) 48" CONCRETE STRUCTURE INV=997.28' (30" RCP N/S)
3. RIM=997.10' (STORM) 36" CONCRETE STRUCTURE INV=994.79' (18" RCP NW)	18. RIM=1002.81' (SANITARY) 48" CONCRETE STRUCTURE INV=996.35' (8" PVC N/S)
4. RIM=998.34' (SANITARY) 48" CONCRETE STRUCTURE INV=993.34' (12" RCP NE/S)	19. RIM=1005.42' (STORM) 60" CONCRETE STRUCTURE INV=999.57' (30" RCP N/S)
5. RIM=997.65' (STORM) 36" CONCRETE STRUCTURE INV=992.90' (18" RCP N)	20. RIM=998.11' (SANITARY) 48" CONCRETE STRUCTURE INV=994.67' (8" PVC N/E/SW)
6. RIM=997.26' (STORM) 36" CONCRETE STRUCTURE INV=993.61' (12" RCP NW)	21. RIM=995.13' (STORM) 48" CONCRETE STRUCTURE INV=997.15' (36" RCP ENE)
7. RIM=997.31' (STORM) 36" CONCRETE STRUCTURE INV=992.54' (12" RCP NW/SE)	22. RIM=998.01' (STORM) CONCRETE STRUCTURE UNABLE TO DETERMINE SIZE
8. RIM=998.05' (STORM) CONCRETE STRUCTURE UNABLE TO DETERMINE SIZE	23. RIM=997.33' (SANITARY) CONCRETE STRUCTURE UNABLE TO DETERMINE SIZE
9. RIM=997.87' (STORM) 60" CONCRETE STRUCTURE INV=988.55' (36" RCP NW)	24. RIM=999.10' (SANITARY) 48" CONCRETE STRUCTURE INV=994.46' (12" RCP N/E/S)
10. RIM=998.45' (42" RCP SSE/NW)	25. RIM=999.72' (4" PVC E)
11. RIM=998.42' (STORM) 36" CONCRETE STRUCTURE INV=992.68' (18" RCP WSW)	26. RIM=1010.75' (STORM) 84" CONCRETE STRUCTURE INV=996.20' (48" RCP N)
12. RIM=998.42' (STORM) 72" CONCRETE STRUCTURE INV=990.23' (30" RCP N)	27. RIM=996.20' (48" RCP N) INV=996.20' (48" RCP N) * ELLIPTICAL PIPE
13. RIM=990.47' (18" RCP ENE) INV=981.23' (42" RCP SE)	

AREA OF NEW ELEVATOR ADDITION



1 SITE UTILITY PLAN
 SCALE 1" = 20'

PREVIOUSLY APPROVED ADR PIPE CROSSING INFORMATION

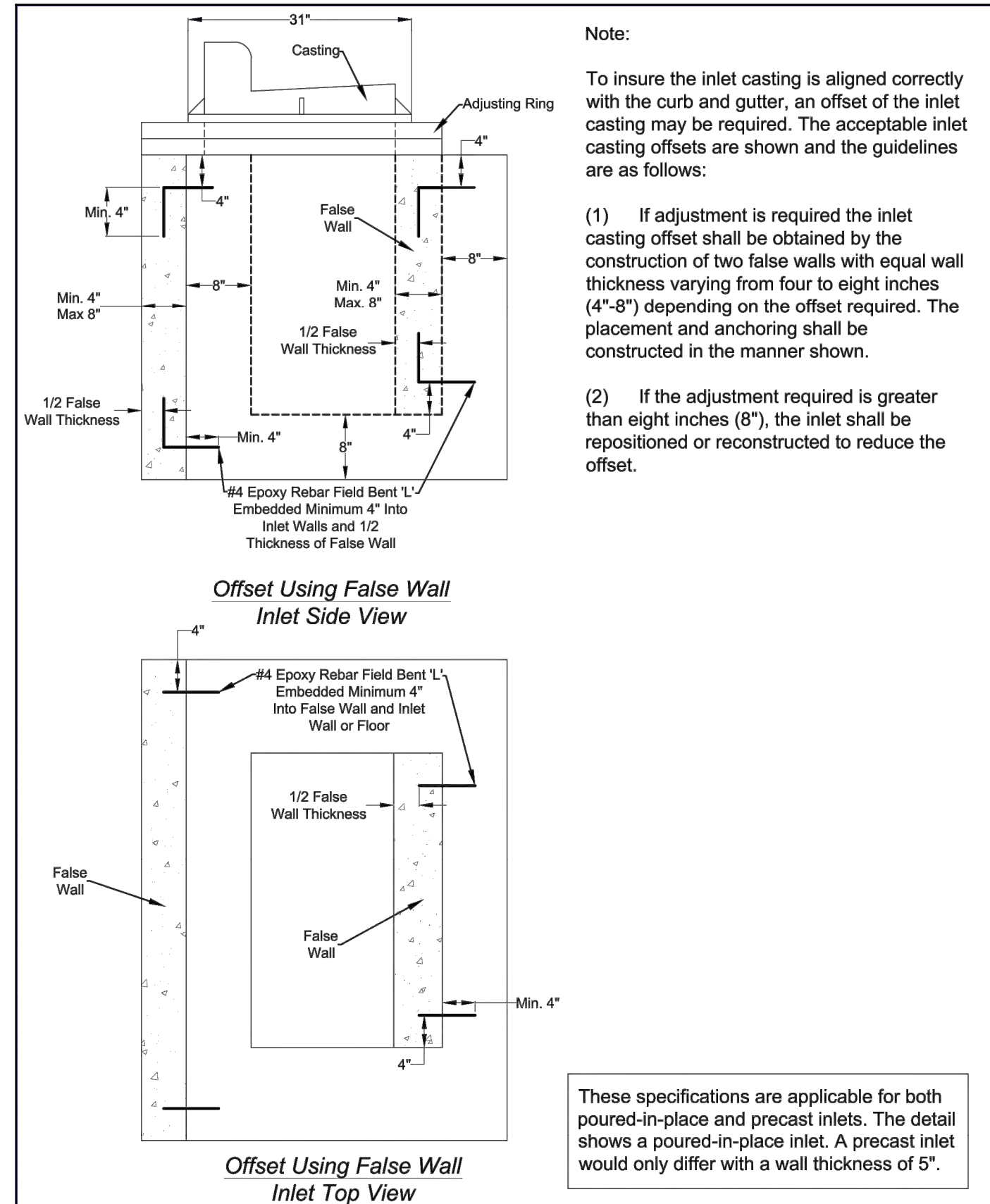
- CONTRACTOR TO FIELD VERIFY CROSSINGS. IF FIELD CONDITIONS PROHIBIT 18" OF CLEARANCE BETWEEN PROPOSED STORM SEWER AND EXISTING WATER MAIN, NOTIFY ENGINEER PRIOR TO PROCEEDING. FOLLOW EPA WATER-SEWER SEPARATION REQUIREMENTS. (V.I.F. - VERIFY IN FIELD)
- GRADE ELEV. 1001.5 +/-
BOT OF 18" STORM = 947.2 +/-
TOP OF 4" WATER = 945.6 +/- V.I.F.
 - GRADE ELEV. 1001.3 +/-
BOT OF 18" STORM = 947.1 +/-
TOP OF 4" SANITARY = 946.4 +/- V.I.F.
 - GRADE ELEV. 999.6 +/-
BOT OF 12" STORM = 946.0 +/-
TOP OF 5" STORM = 943.0 +/- V.I.F.
 - GRADE ELEV. 1001.7 +/-
BOT OF TELCO LINE = 944.0 +/- V.I.F.
TOP OF 8" STORM = 940.2 +/-
 - GRADE ELEV. 1001.7 +/-
BOT OF GAS = 944.0 +/- V.I.F.
TOP OF 8" STORM = 940.1 +/-
 - GRADE ELEV. 1001.0 +/-
BOT OF 18" STORM = 947.7 +/-
TOP OF 8" STORM = 947.4 +/- V.I.F.
 - GRADE ELEV. 999.1 +/-
BOT OF ELECTRIC = 947.1 +/- V.I.F.
TOP OF 18" STORM = 947.1 +/-
 - GRADE ELEV. 999.0 +/-
BOT OF TELCO LINE = 947.0 +/- V.I.F.
TOP OF 18" STORM = 945.0 +/-

PREVIOUSLY APPROVED ADR SANITARY

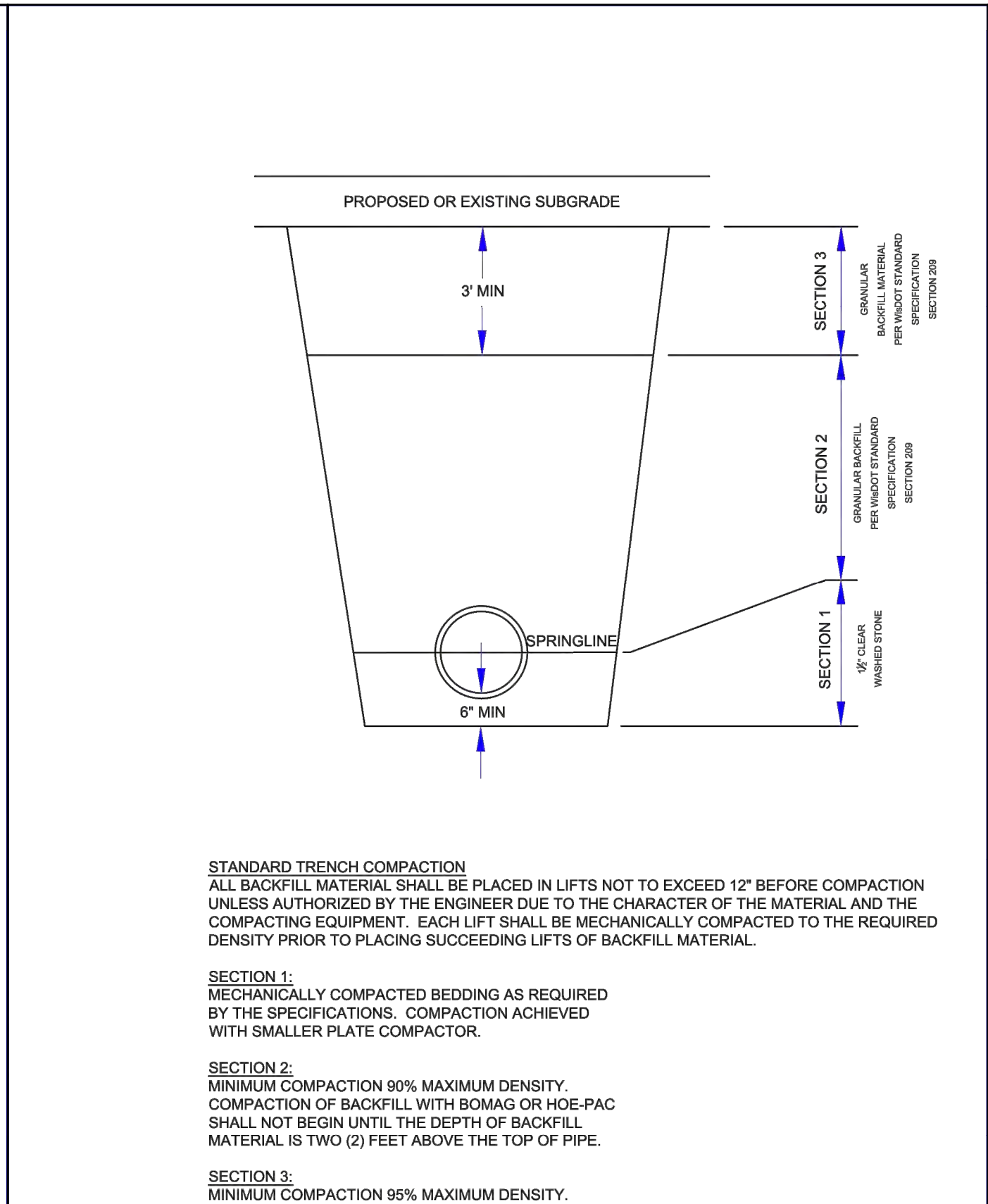
- EXISTING SANITARY STRUCTURE AND ASSOCIATED PIPES TO REMAIN.
- EXISTING SANITARY SEWER TO REMAIN.
- EXISTING SANITARY SEWER TO REMAIN. SHOWN PER RECORDS. CONTRACTOR SHALL PERFORM INVESTIGATION, INCLUDING BUT NOT LIMITED TO TRACING, TEST HOLES, VACUUM EXCAVATION IN ORDER TO CONFIRM EXISTENCE, EXACT LOCATION, SIZE, INVERT ELEVATION AND CONDITION PRIOR TO CONSTRUCTION. NOTIFY ENGINEER OF ANY FINDINGS AND DISCREPANCIES.
- EXISTING CLEAN OUT TO REMAIN. SHOWN PER RECORDS. CONTRACTOR TO VERIFY IN FIELD EXACT LOCATION. ADJUST RIM ELEVATION TO MATCH PROPOSED GRADE. REPLACE CLEAN OUT LID WITH HEAVY DUTY TYPE.
- EXCAVATE TO EXISTING SANITARY SEWER AND BACKFILL TRENCH AS SPECIFIED ON THE TRENCH DETAIL. FOR THE LOCATIONS WHICH PAVEMENT GROESSES OVER THE SANITARY SEWER. PROTECT THE SANITARY SEWER LINE DURING CONSTRUCTION.

PREVIOUSLY APPROVED ADR WATER

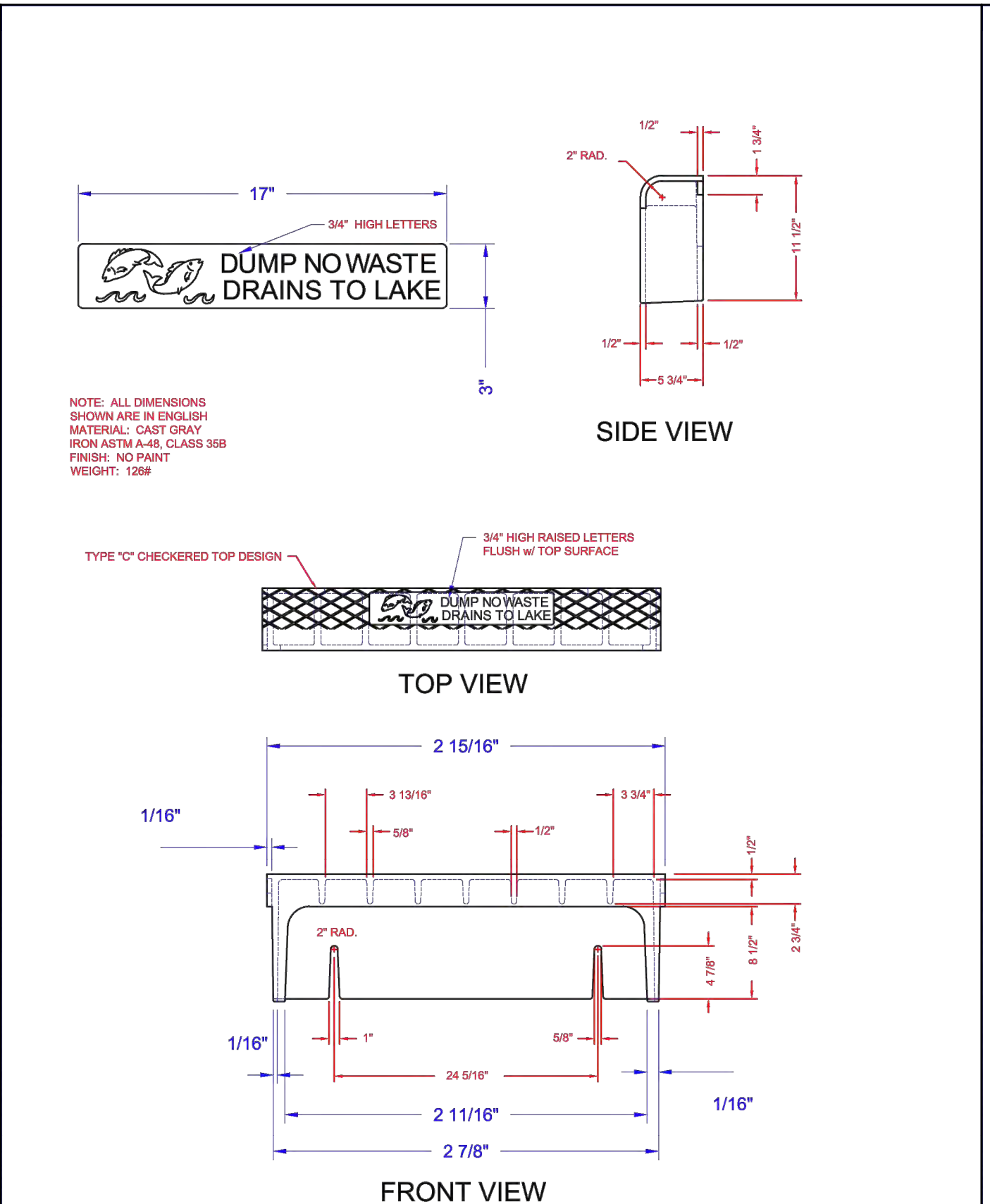
- GENERAL WATER NOTES:
- ALL FITTINGS SHALL HAVE MECHANICAL JOINTS RESTRAINED BY MEGALUGS GLANDS.
 - CONTRACTOR SHALL COORDINATE WATER TAPS WITH THE VILLAGE PUBLIC WORKS DEPARTMENT PRIOR TO CONSTRUCTION.
 - EXISTING HYDRANT TO REMAIN.
 - EXISTING WATERMAIN TO REMAIN.
 - EXISTING FIRE DEPARTMENT CONNECTION TO REMAIN.
 - EXISTING WATER SERVICE LINE TO REMAIN. SHOWN PER RECORDS. CONTRACTOR SHALL PERFORM INVESTIGATION, INCLUDING BUT NOT LIMITED TO TRACING, TEST HOLES, VACUUM EXCAVATION IN ORDER TO CONFIRM EXISTENCE, EXACT LOCATION, SIZE, INVERT ELEVATION AND CONDITION PRIOR TO CONSTRUCTION. NOTIFY ENGINEER OF ANY FINDINGS AND DISCREPANCIES.
 - EXISTING B-X-BOX TO REMAIN. ADJUST RIM ELEVATION TO MATCH PROPOSED GRADE. REPLACE B-X-BOX LID WITH HEAVY DUTY TYPE.
 - EXISTING B-X-BOX TO REMAIN. ADJUST RIM ELEVATION TO MATCH PROPOSED GRADE. REPLACE B-X-BOX LID WITH HEAVY DUTY TYPE.
 - EXCAVATE TO EXISTING WATER MAIN AND BACKFILL TRENCH AS SPECIFIED ON THE TRENCH DETAIL. FOR THE LOCATIONS WHICH PAVEMENT GROESSES OVER THE WATER SERVICE. PROTECT THE WATER SERVICE DURING CONSTRUCTION.



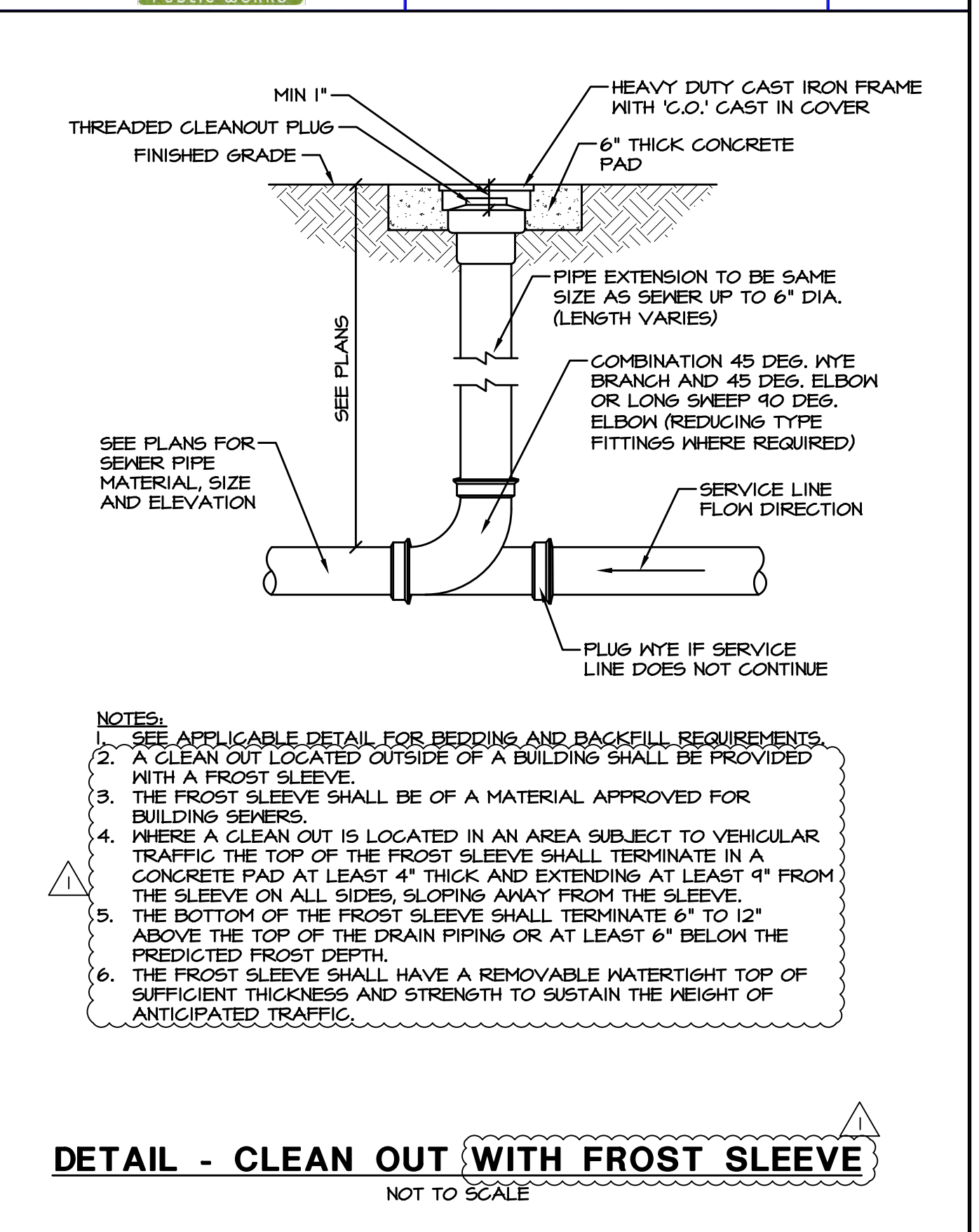
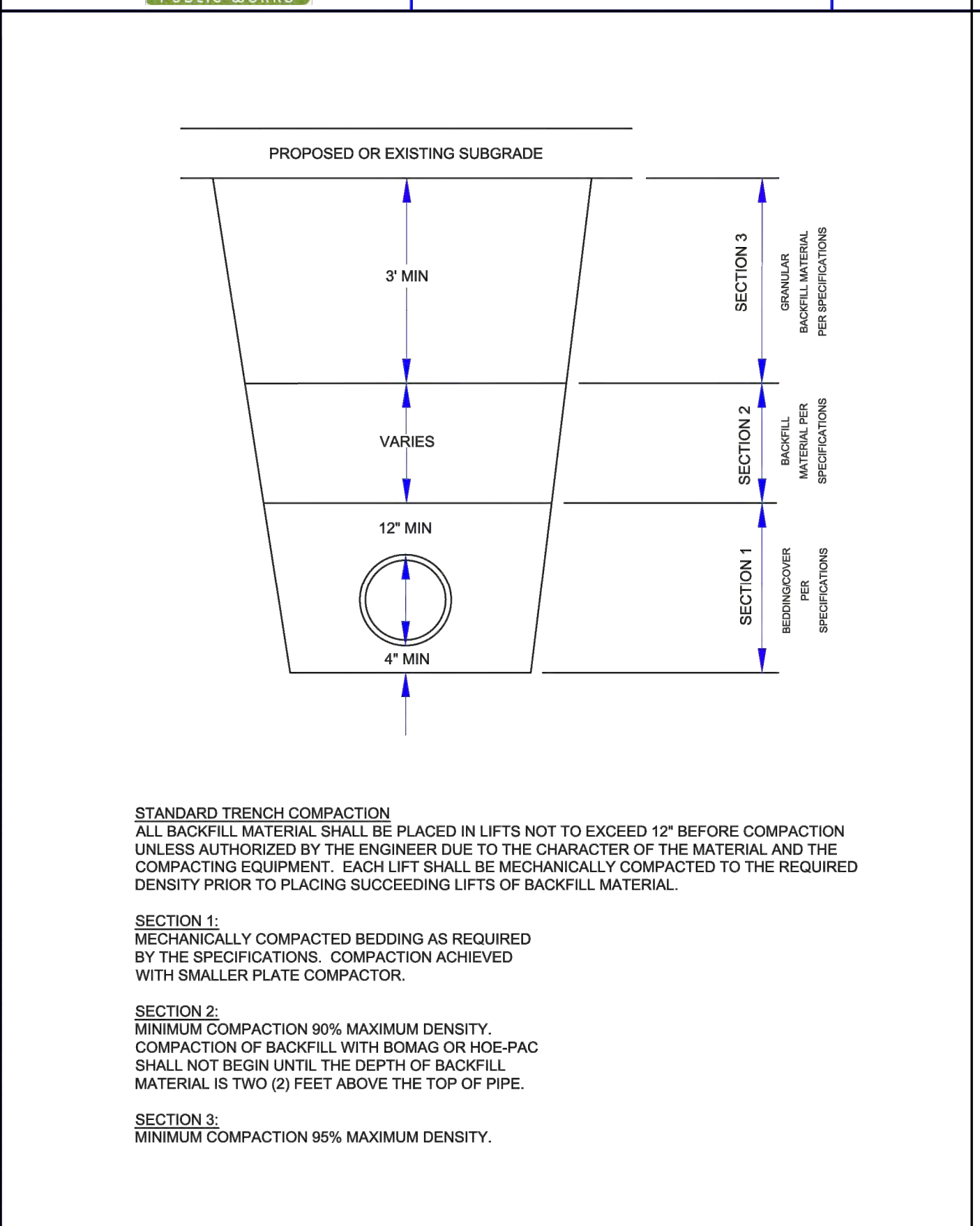
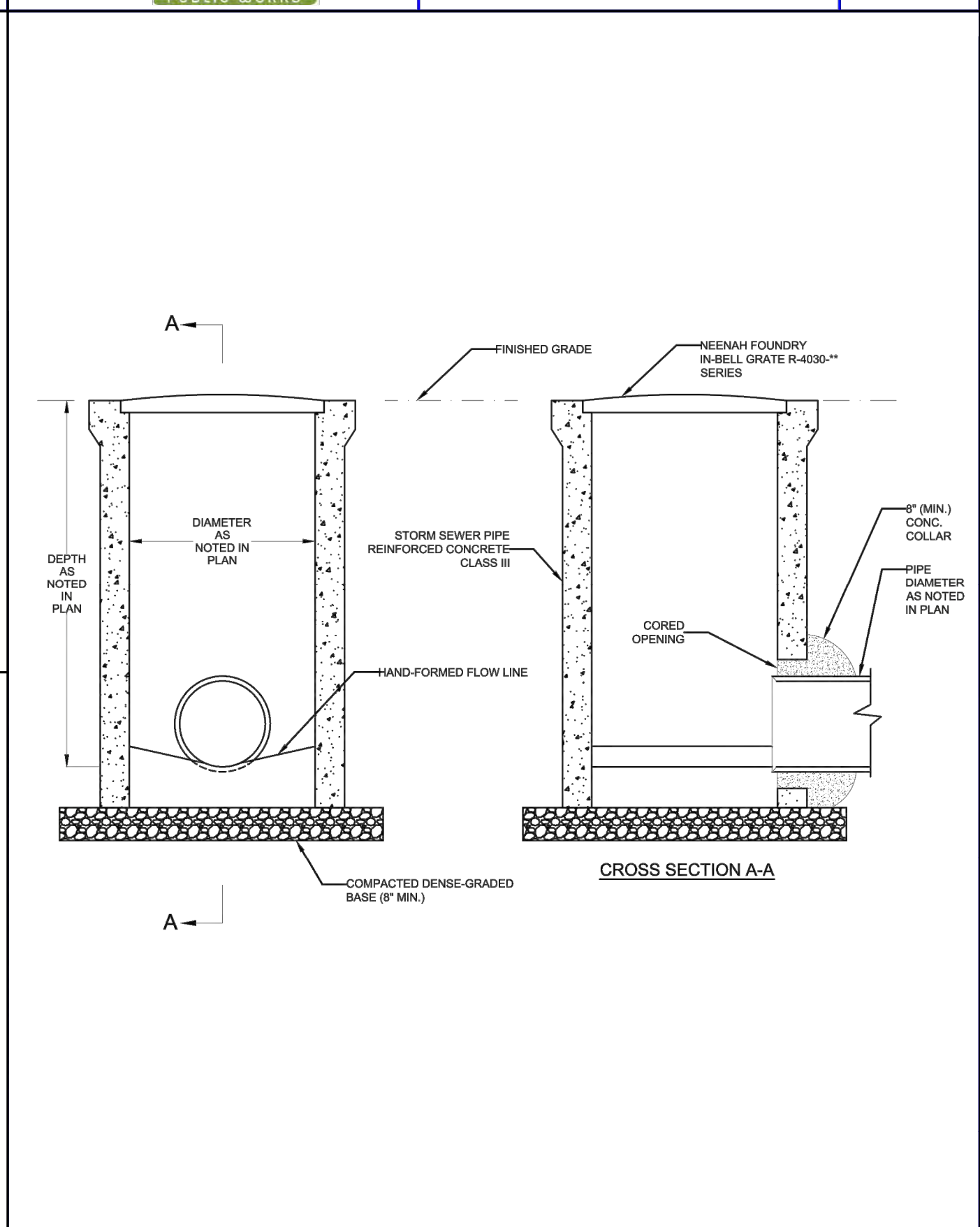
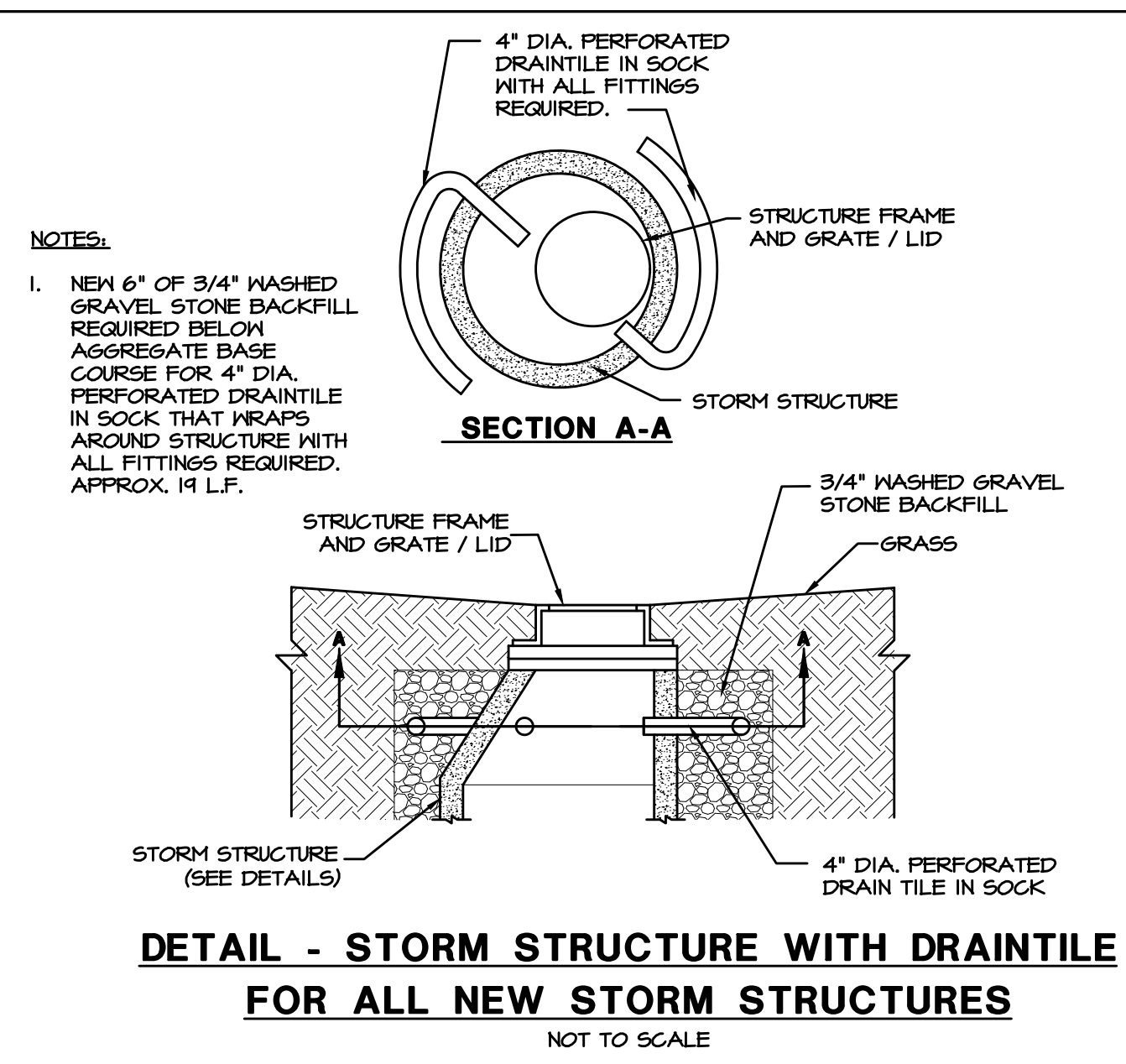
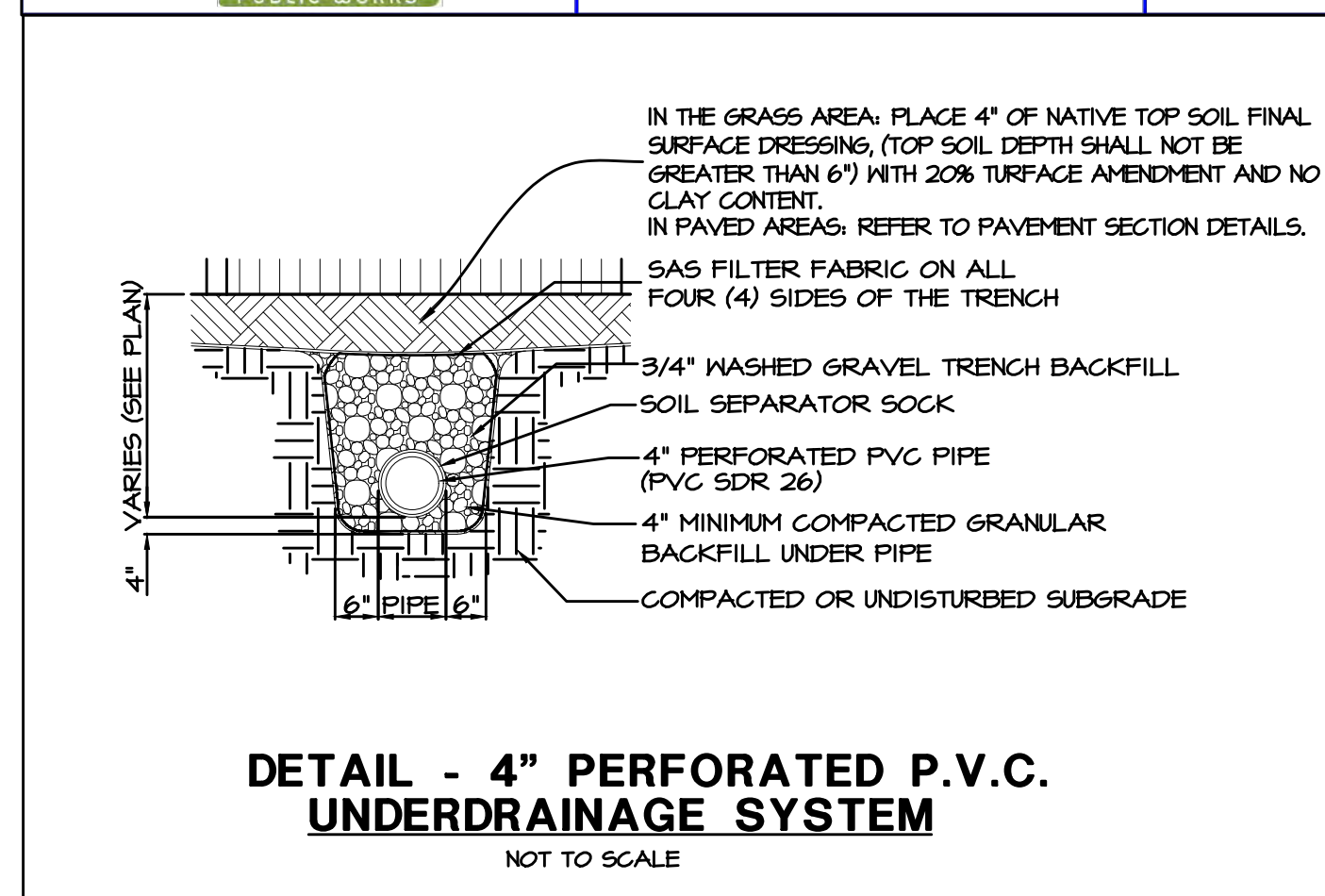
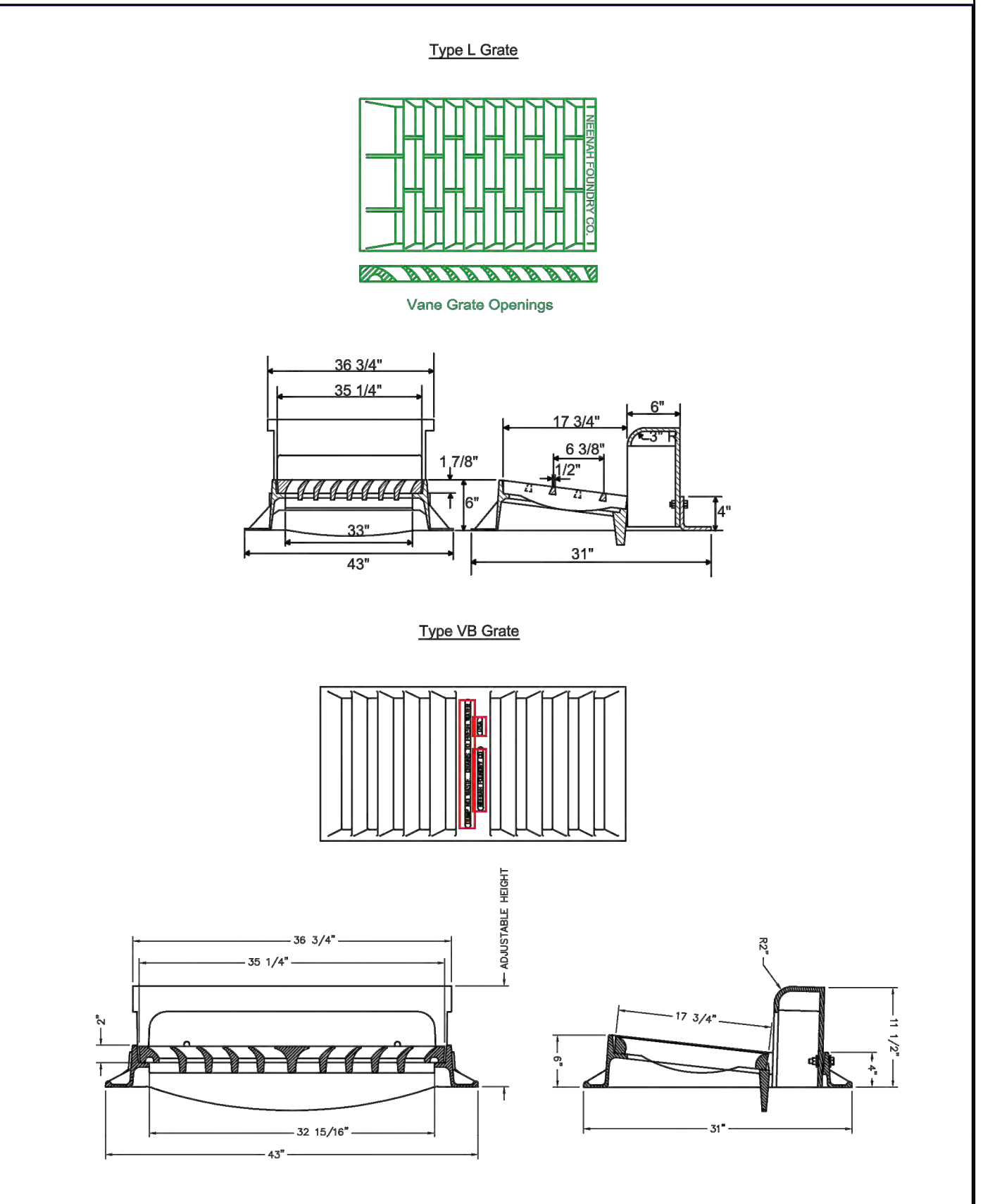
INLET FALSE WALL
STANDARD DETAIL DRAWING
DATE: 1/8/2015
SHEET NO.: 6.04



STORM SEWER TRENCH
STANDARD DETAIL DRAWING
DATE: 2/1/2017
SHEET NO.: 6.01

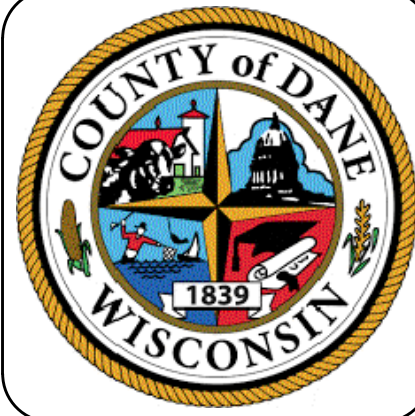


CURB BOX
STANDARD DETAIL DRAWING
DATE: 1/24/2014
SHEET NO.: 6.02



CLASS III REINFORCED CONCRETE INLET
STANDARD DETAIL DRAWING
DATE: 1/29/2019
SHEET NO.: 6.07

SANITARY SEWER & WATER MAIN TRENCH
STANDARD DETAIL DRAWING
DATE: 1/24/2014
SHEET NO.: 7.01



DANE COUNTY
EMERGENCY MANAGEMENT
ELEVATOR ADDITION
2982 KAPEC ROAD
FITCHBURG, WISCONSIN

CLIENT APPROVAL

APPROVED
 APPROVED AS NOTED

APPROVED BY / DATE:

ISSUE RECORD

ADDITION ADR	05/24/22

CHECKED BY: JEG
DRAWN BY: DATE: BATE
5/12/2022 10:28:45 AM
PROJECT NUMBER: 2020-001

SITE UTILITY DETAILS
C-5.1

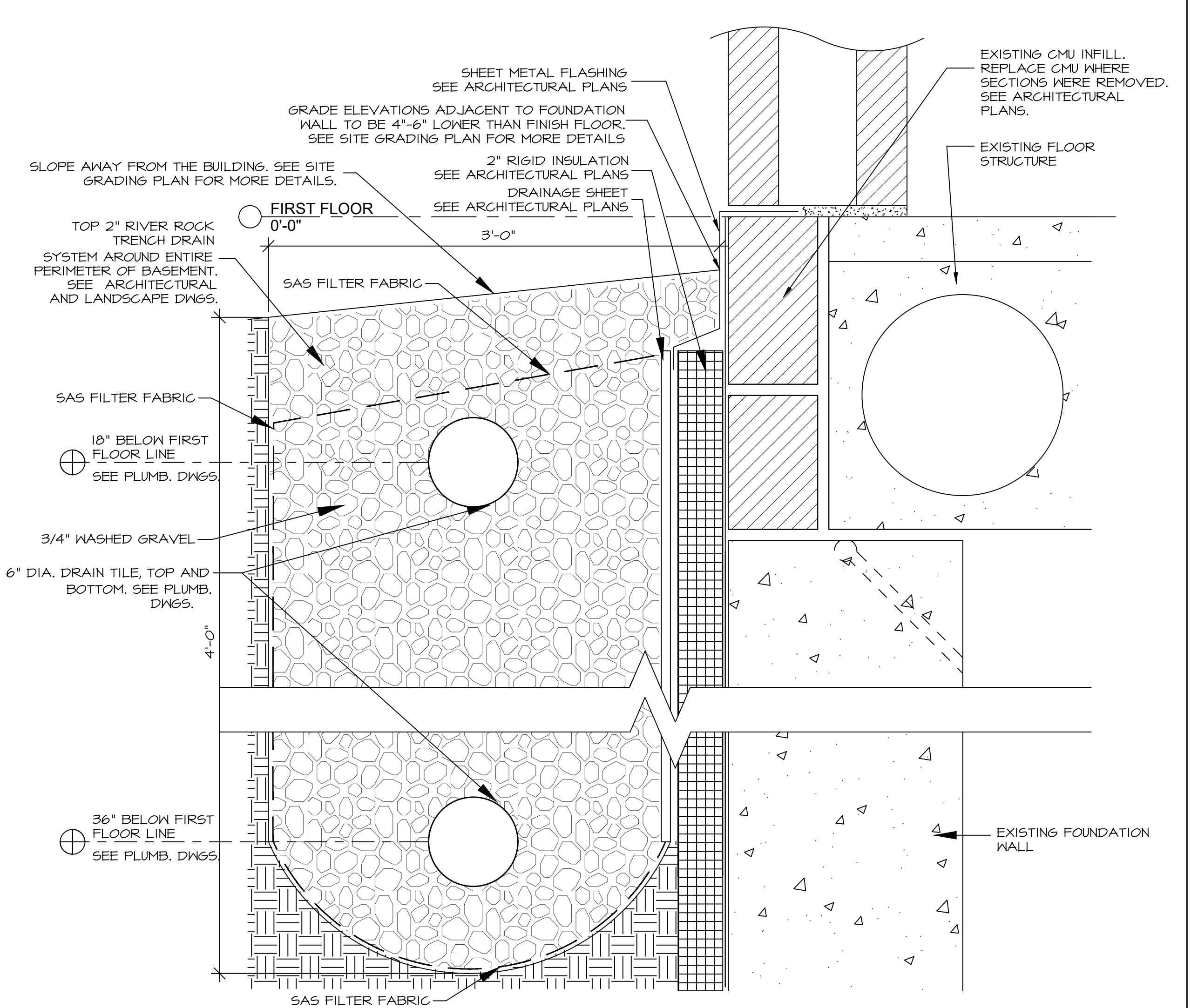
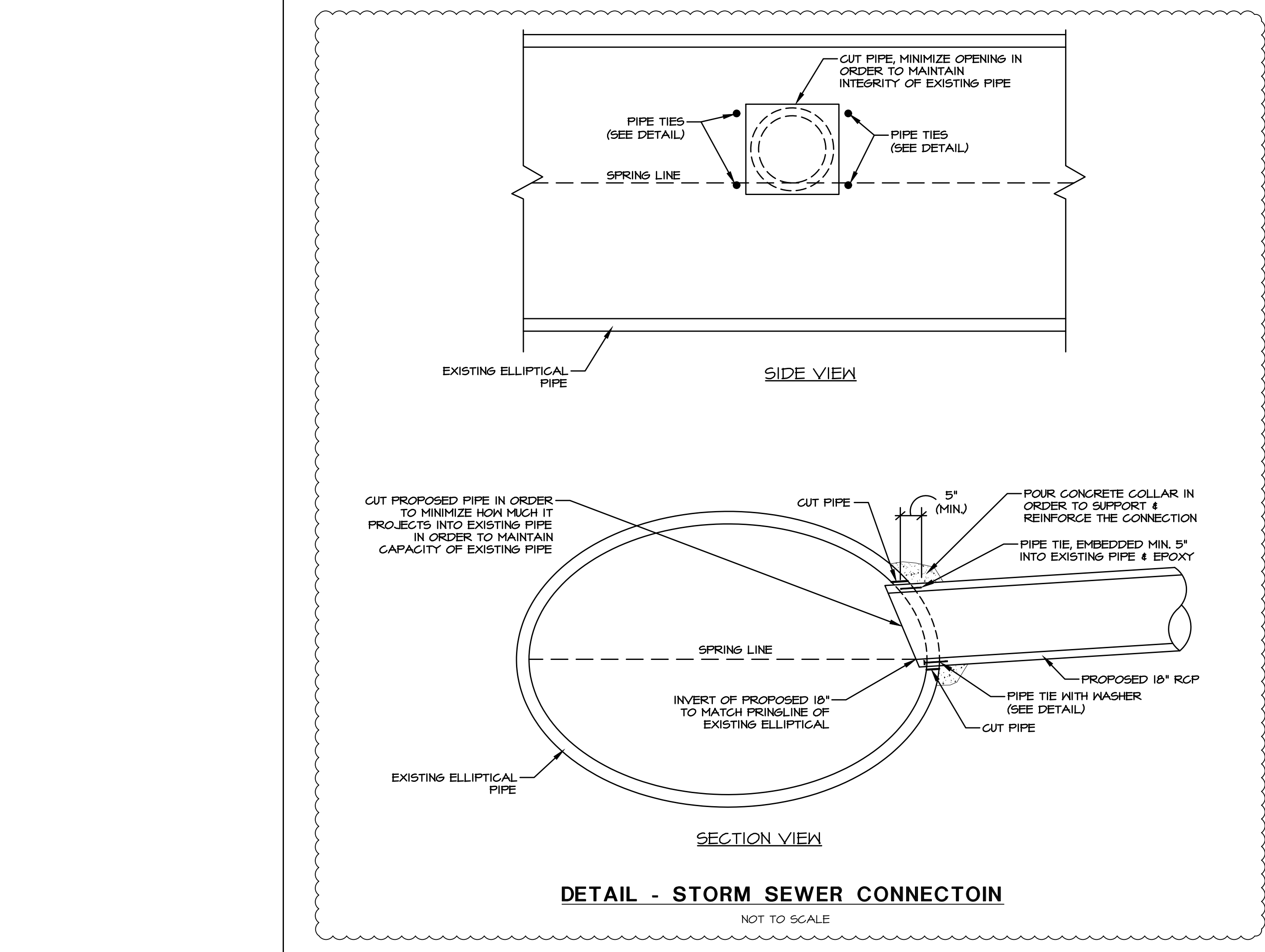
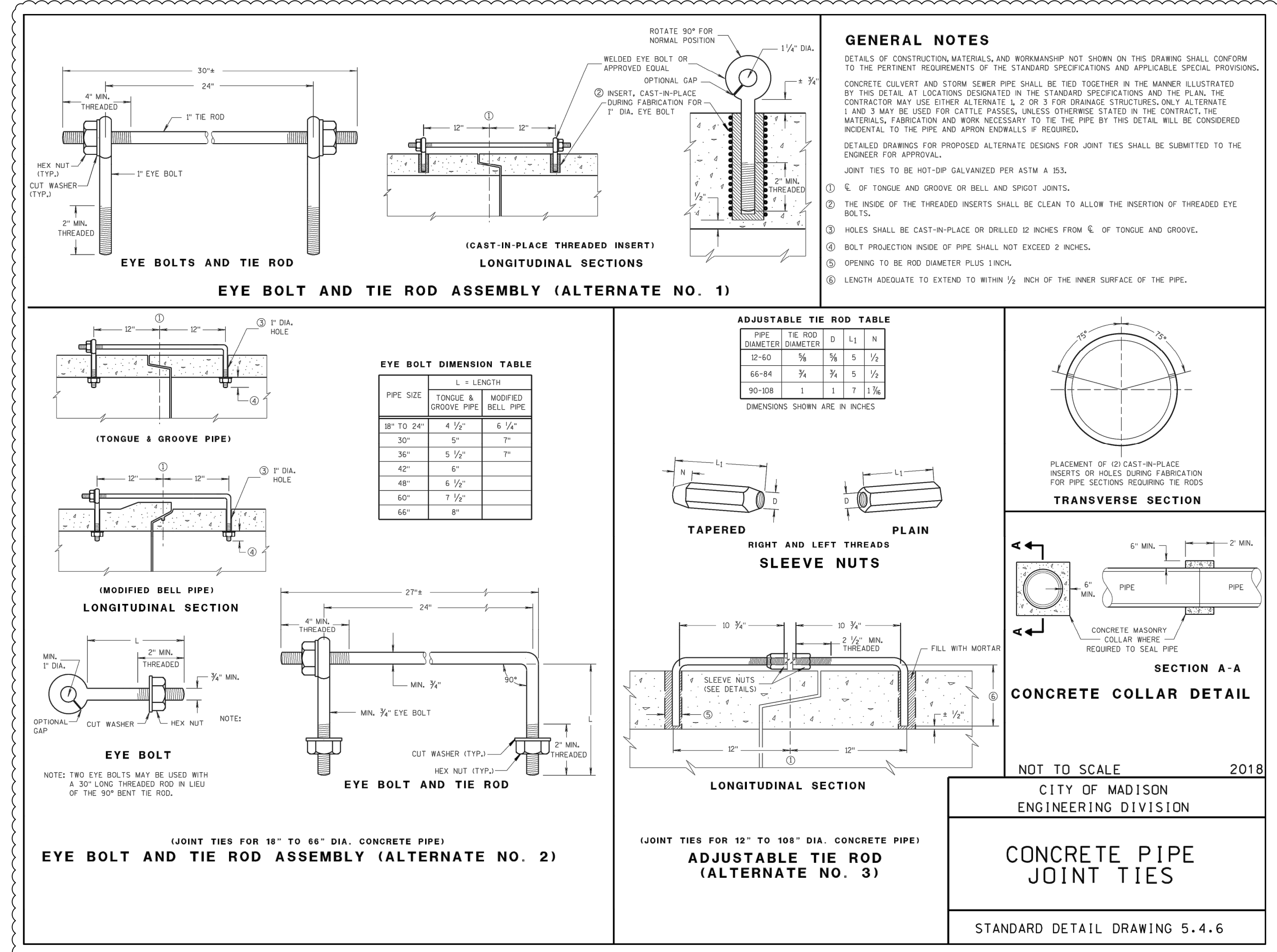
THIS SHEET PREVIOUSLY APPROVED ADR

WT JOB NUMBER - 2002139C

WT Group
Engineering • Design • Consulting
Structural | Mechanical/Electrical/Plumbing
Civil | Land Survey | Telecommunication | Aquatics
Accessibility Consulting | Design & Program Management
Engineering with Precision, Pace & Passion.

2875 Pratum Avenue | Hoffman Estates, IL 60192
P: 224.293.6333 | F: 224.293.6444
wtengineering.com

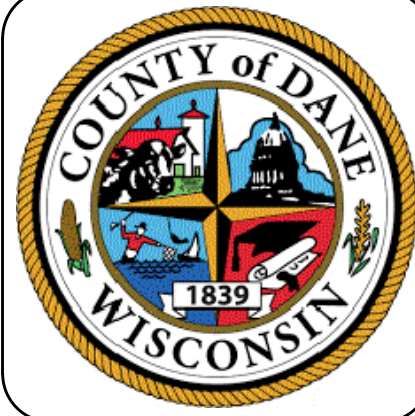
IL License No. 184.007570-0015 | Exp. 04.30.2023
© COPYRIGHT 2022 THE W-T GROUP, LLC



PRAIRIE FORGE GROUP
 300 CARDINAL DRIVE
 SUITE 160
 SAINT CHARLES IL 60175
 630.221.0671 | P
 630.221.0118 | F
 www.prairieforgegroup.com

COPYRIGHT STATEMENT
 THESE PLANS ARE COPYRIGHTED AND ARE SUBJECT TO COPYRIGHT PROTECTION AS AN INDIVIDUAL WORK UNDER SECTION 102 OF THE COPYRIGHT ACT, 17 U.S.C. AS AMENDED (SECTION 102). INASMUCH AS THE ARCHITECTURAL WORKS COPYRIGHT PROTECTION ACT OF 1909, THE PROTECTION PROVIDED TO PRAIRIE FORGE GROUP INCLUDES, BUT IS NOT LIMITED TO, THE ORIGINAL FORM AS WELL AS THE ARRANGEMENT AND COMPOSITION OF WORDS AND ELEMENTS OF THE DESIGN. WITHOUT WRITTEN APPROVAL OF PRAIRIE FORGE GROUP, ANY REPRODUCTION OF THESE PLANS, WORK OR HOME REPRESENTED, CAN BE CONSIDERED A VIOLATION OF THE COPYRIGHT ACT. PRAIRIE FORGE GROUP IS NOT RESPONSIBLE FOR ANY CLAIMS, DAMAGES OR EXPENSES ARISING OUT OF THE UNAUTHORIZED USE OF THE INFORMATION CONTAINED IN THESE ELECTRONIC FILES. THESE PLANS MAY NOT ACCURATELY REFLECT THE FINAL AS-BUILT CONDITIONS. IT IS THE RESPONSIBILITY OF THE USER TO VERIFY ALL LOCATIONS, DIMENSIONS AND OTHER RELATED INFORMATION.

COPYRIGHT © 2018-2022 PRAIRIE FORGE GROUP | SAINT CHARLES, IL



**DANE COUNTY
 EMERGENCY MANAGEMENT
 ELEVATOR ADDITION
 2982 KAPEC ROAD
 FITCHBURG, WISCONSIN**

CLIENT APPROVAL
 APPROVED
 APPROVED AS NOTED
 APPROVED BY / DATE:

ISSUE RECORD

ADDITION ADR	05/24/22

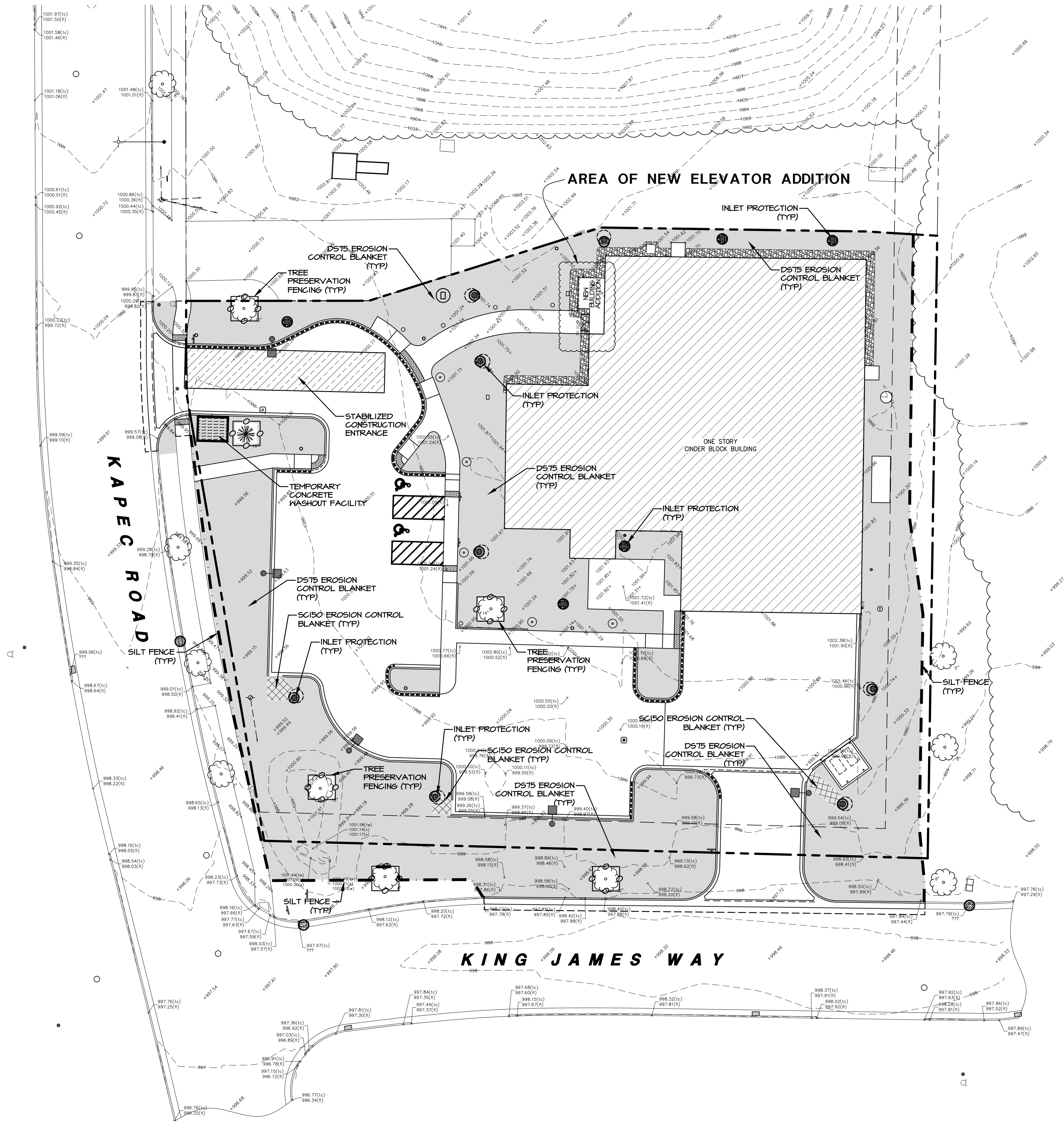
CHECKED BY
 JEG
 DRAWN BY
 BRA
 DATE
 5/12/2022 10:28:45 AM
 PROJECT NUMBER
 2020-001

THIS SHEET PREVIOUSLY APPROVED ADR

WT JOB NUMBER - 2002139C

WT Group
 Engineering • Design • Consulting
 Structural | Mechanical | Electrical | Plumbing
 Civil | Land Survey | Telecommunication | Aquatic
 Accessibility Consulting | Design & Program Management
 Engineering with Precision, Pace & Passion.
 2675 Pratum Avenue | Hoffman Estates, IL 60192
 P: 224.293.6333 | F: 224.293.6444
 wtengineering.com
 IL License No. 184.007570-0015 | Exp. 04.30.2023
 © COPYRIGHT 2022 THE W-T GROUP, LLC

**SITE
 UTILITY
 DETAILS
 C-5.3**



PREVIOUSLY APPROVED ADR SWPPP NOTES:

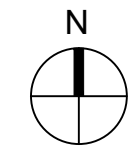
- A. ALL DISTURBED GREEN SPACES ON THE SITE SHALL BE RESTORED ACCORDING TO THE SEED BED PREPARATION SPECIFICATIONS BELOW AND BLANKETED OR MATTED AS SHOWN ON THE PLANS.
- B. TEMPORARY OR PERMANENT STABILIZATION SHALL OCCUR IMMEDIATELY WHENEVER EARTH DISTURBING ACTIVITIES HAVE PERMANENTLY OR TEMPORARILY CEASED ON ANY PORTION OF THE SITE. TEMPORARY STABILIZATION SHALL CONSIST OF THE INSTALLATION OF TEMPORARY SEEDINGS.
- C. CONTRACTOR TO INSTALL TEMPORARY CONSTRUCTION ENTRANCES AS NECESSARY TO EXCAVATE AREAS AND HAUL SOILS ON-SITE. TRACKING OF DEBRIS ON SITE WILL NOT BE TOLERATED. ANY DEBRIS LEFT OUTSIDE OF THE PROJECT LIMITS MUST BE CLEANED IMMEDIATELY.
- D. EROSION CONTROL BLANKETS AND TURF REINFORCEMENT MATS SHALL BE INSTALLED USING 6" BIO-STAKES AS MANUFACTURED BY NORTH AMERICAN GREEN. METAL STAKES AND STAPLES ARE PROHIBITED.
- E. CONTRACTOR SHALL PROVIDE ALL NECESSARY MAINTENANCE FOR THE SEDIMENT AND EROSION CONTROL MEASURES FOR THE DURATION OF THE PROJECT.
- F. CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING ALL ACTIVITIES LOGS, SWPPP TRAINING LOGS, AND DELEGATION OF AUTHORITY FORMS FOR THE DURATION OF THE PROJECT.
- G. CONTRACTOR SHALL PROVIDE COPIES OF ALL SWPPP REPORTS, FORMS, AND LOGS TO THE WIT GROUP ONCE THE SITE HAS BEEN STABILIZED. THE CONTRACTOR SHALL MAINTAIN THESE DOCUMENTS FOR A PERIOD OF 3 YEARS FROM THE FINAL STABILIZATION OF THE SITE.
- H. FOLLOWING THE REMOVAL OF THE SILT FENCE, THE CONTRACTOR SHALL RESTORE THE SILT FENCE TRENCH WITH SOD.
- I. CONTRACTOR SHALL INITIATE STABILIZATION OF ALL DISTURBED AREAS WITHIN ONE CALENDAR DAY.

SWPPP LEGEND

- +000.00--- EXISTING SPOT GRADE
- - - - - EXISTING CONTOUR LINE
- o--- PROPOSED CONTOUR LINE
- ADJUST ADJUST EXISTING RIM ELEVATION
- o EXISTING CLOSED MANHOLE
- o EXISTING OPEN GRATE MANHOLE
- o EXISTING BEEHIVE GRATE MANHOLE
- o EXISTING CURB INLET
- o EXISTING FIRE HYDRANT
- o EXISTING B-BOX
- o PROPOSED INLET
- o PROPOSED OPEN LID MANHOLE / CATCH BASIN
- o PROPOSED CLOSED LID MANHOLE
- SILT FENCE
- o FLEXSTORM CATCH-IN INLET PROTECTION
- o RIP RAP
- o FINE GRADE, FERTILIZE, AND SEED. INSTALL D575 EROSION CONTROL BLANKET WITH 6" BIO-STAKES AS MANUFACTURED BY NORTH AMERICAN GREEN. FOLLOW MANUFACTURER'S INSTALLATION INSTRUCTIONS.
- o TEMPORARY CONCRETE WASHOUT FACILITY
- o STABILIZED CONSTRUCTION ENTRANCE
- o FINE GRADE, FERTILIZE, AND SEED. INSTALL SC150 EROSION CONTROL BLANKET WITH 6" BIO-STAKES AS MANUFACTURED BY NORTH AMERICAN GREEN. FOLLOW MANUFACTURER'S INSTALLATION INSTRUCTIONS.
- o TREE PRESERVATION FENCING

STORM WATER POLLUTION PREVENTION PLAN

1 SCALE 1" = 20'



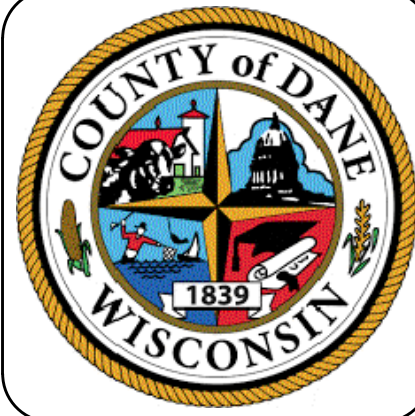
WT JOB NUMBER - 2002139C

WT Group
 Engineering • Design • Consulting
 Structural | Mechanical/Electrical/Plumbing
 Civil | Land Survey | Telecommunication | Aquatic
 Accessibility Consulting | Design & Program Management
 Engineering with Precision, Pace & Passion.
 2875 Pratum Avenue | Hoffman Estates, IL 60192
 P: 224.293.6333 | F: 224.293.6444
 wtengineering.com
 IL License No. 184.007570-0015 | Exp. 04.30.2023
 © COPYRIGHT 2022 THE W-T GROUP, LLC

PRAIRIE FORGE GROUP
 300 CARDINAL DRIVE
 SUITE 160
 SAINT CHARLES IL 60175
 630.221.0671 | P
 630.221.0118 | F
 www.prairieforgroup.com

COPYRIGHT STATEMENT
 THESE PLANS ARE COPYRIGHTED AND ARE SUBJECT TO COPYRIGHT PROTECTION AS AN ARCHITECTURAL WORK UNDER SECTION 102 OF THE COPYRIGHT ACT, 17 U.S.C. AS AMENDED (COPYRIGHT 1991). AS THE ARCHITECTURAL WORKS COPYRIGHT PROTECTION ACT OF 1991, THE PROTECTION PROVIDED TO PRAIRIE FORGE GROUP INCLUDES, BUT IS NOT LIMITED TO, THE ORIGINAL FORM AS WELL AS THE ARRANGEMENT AND COMPOSITION OF WORDS AND ELEMENTS OF THE DESIGN. WITHOUT WRITTEN APPROVAL OF PRAIRIE FORGE GROUP, ANY REPRODUCTION OR TRANSMISSION OF THESE PLANS, WORK OR HOME REPRESENTED, CAN BE CONSIDERED A VIOLATION OF THE COPYRIGHT ACT. PRAIRIE FORGE GROUP IS NOT RESPONSIBLE FOR ANY CLAIMS, DAMAGES OR EXPENSES ARISING OUT OF THE UNAUTHORIZED USE OF THE INFORMATION CONTAINED IN THESE ELECTRONIC FILES. THESE PLANS MAY NOT BE REPRODUCED, COPIED, TRANSMITTED, OR OTHERWISE USED IN ANY MANNER WITHOUT THE WRITTEN CONSENT OF PRAIRIE FORGE GROUP. ALL RIGHTS ARE RESERVED.

COPYRIGHT © 2018-2023
 PRAIRIE FORGE GROUP | SAINT CHARLES, IL



DANE COUNTY
EMERGENCY MANAGEMENT
ELEVATOR ADDITION
 2982 KAPEC ROAD
 FITCHBURG, WISCONSIN

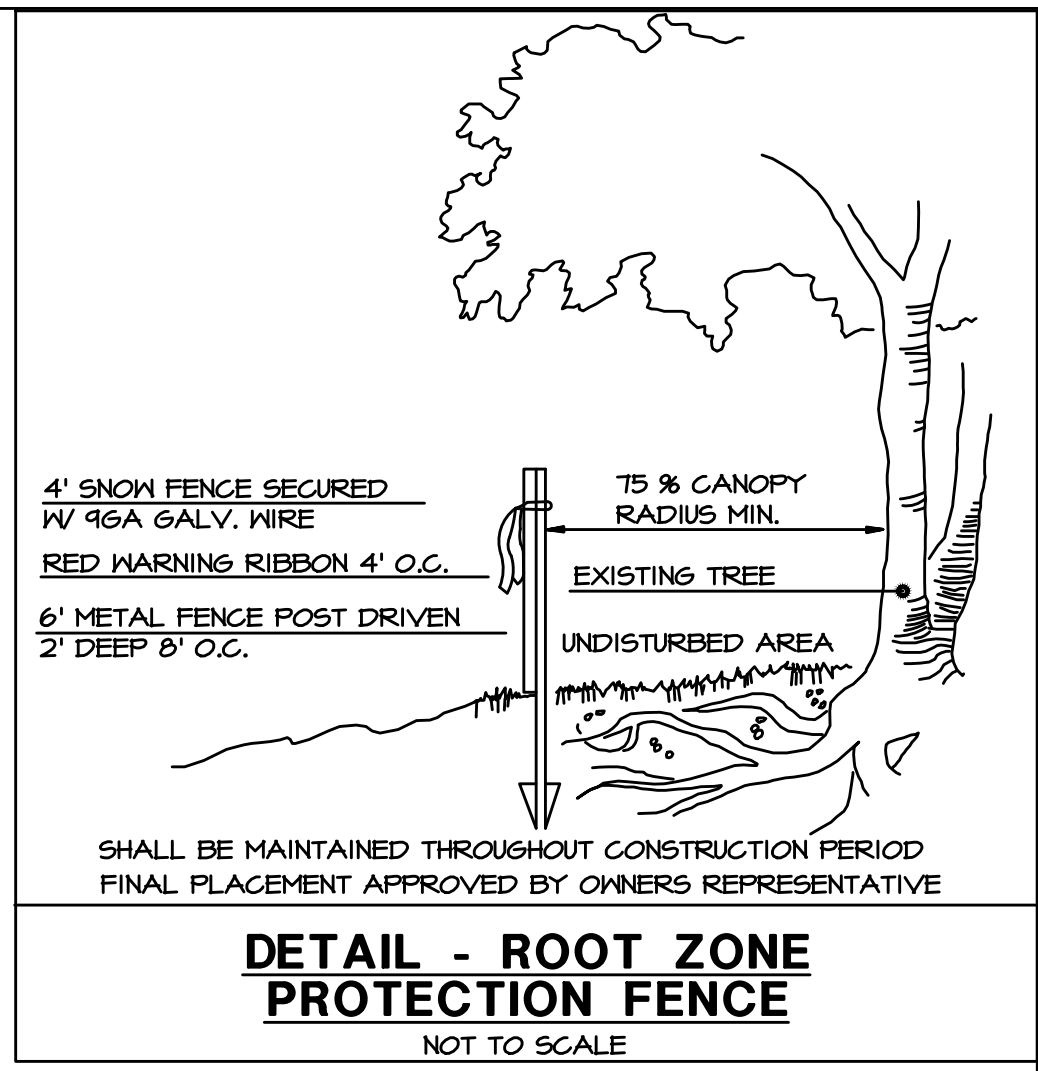
CLIENT APPROVAL
 APPROVED
 APPROVED AS NOTED
 APPROVED BY / DATE:

ISSUE RECORD

ADDITION ADR	05/24/22

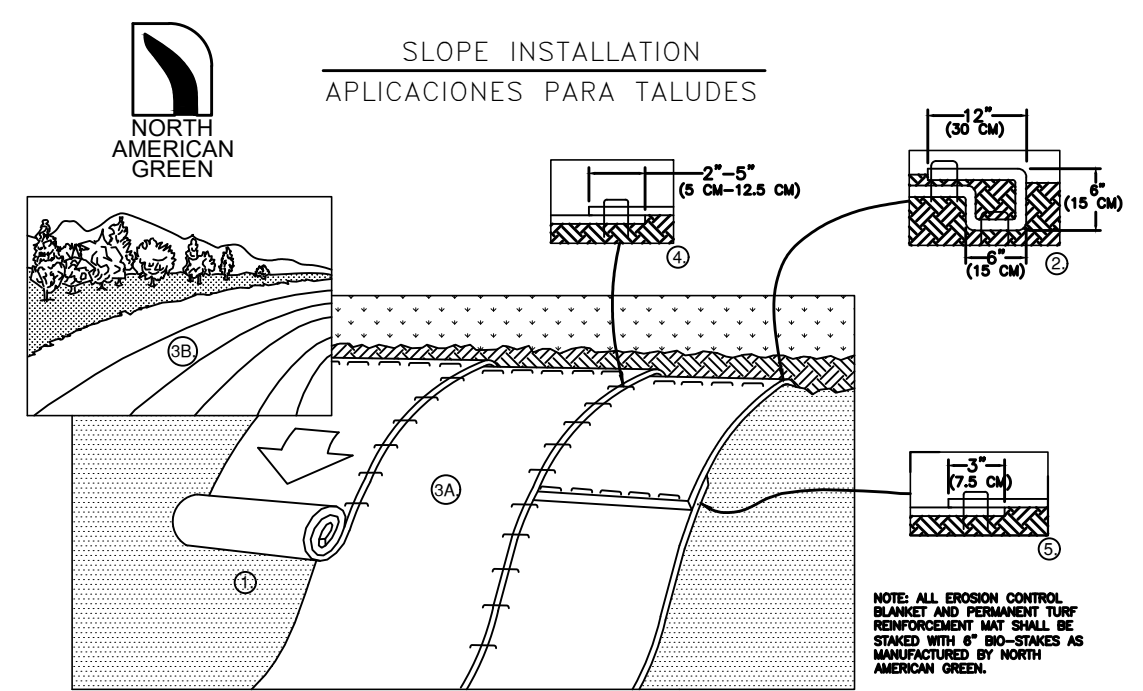
CHECKED BY _____
 JEG
 DRAWN BY _____
 BRA
 DATE _____
 5/12/2022 10:28:45 AM
 PROJECT NUMBER
 2020-001

STORMWATER POLLUTION PREVENTION PLAN
C-6.0



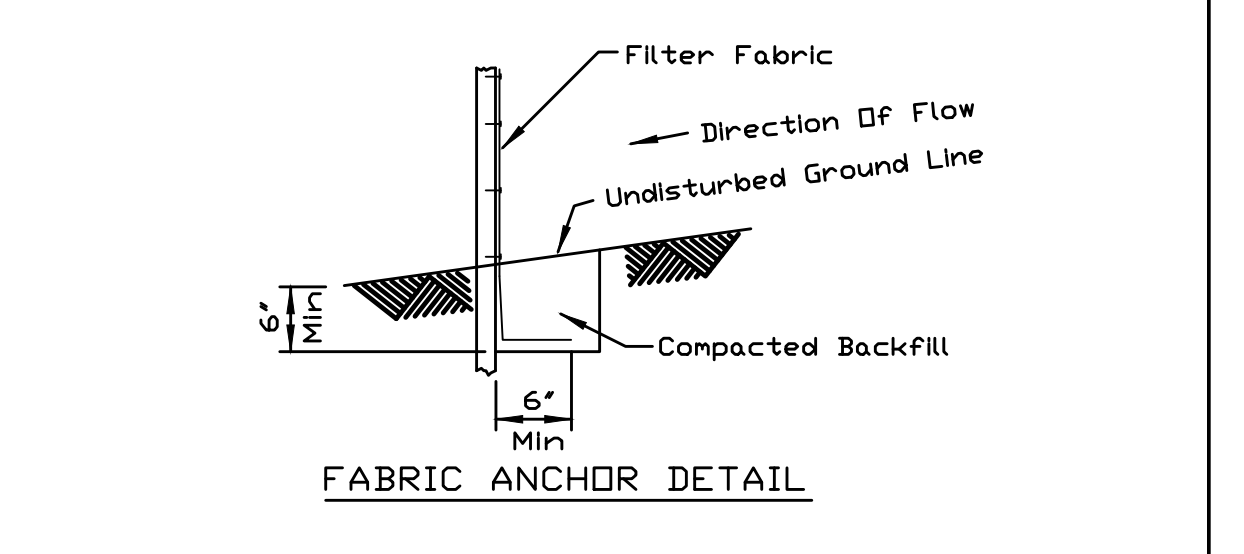
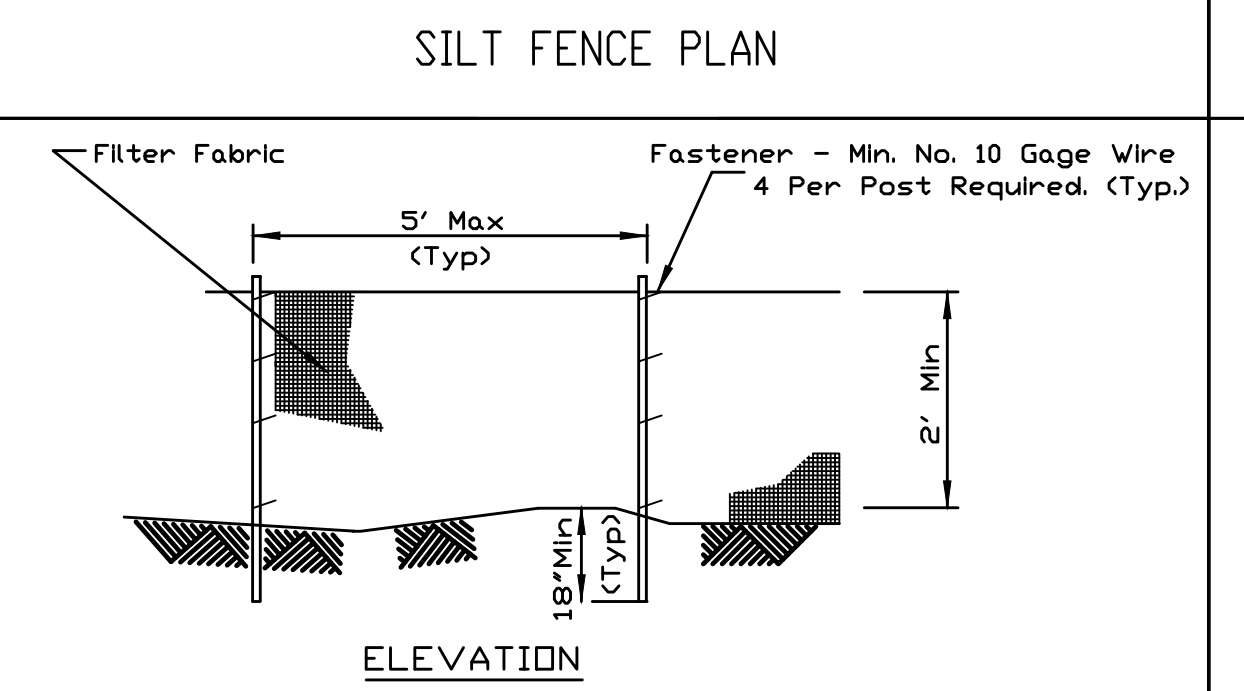
SHALL BE MAINTAINED THROUGHOUT CONSTRUCTION PERIOD
FINAL PLACEMENT APPROVED BY OWNERS REPRESENTATIVE

DETAIL - ROOT ZONE PROTECTION FENCE
NOT TO SCALE



- NOTES:**
- PREPARE SOIL BEFORE INSTALLING BLANKETS, INCLUDING ANY NECESSARY APPLICATION OF LIME, FERTILIZER, AND SEED. NOTE: WHEN USING CELL-0-SEED DO NOT SEED PREPARED AREA. CELL-0-SEED MUST BE INSTALLED WITH PAPER SIDE DOWN.
 - BEGIN AT THE TOP OF THE SLOPE BY ANCHORING THE BLANKET IN A 6" (15 CM) DEEP X 6" (15 CM) WIDE TRENCH WITH APPROXIMATELY 12" (30 CM) OF BLANKET EXTENDING BEYOND THE UP-SLOPE PORTION OF THE TRENCH. ANCHOR THE BLANKET WITH A ROW OF STAPLES/STAKES APPROXIMATELY 12" (30 CM) APART IN THE BOTTOM OF THE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING. APPLY SEED TO COMPACTED SOIL AND FOLD REMAINING 12" (30 CM) PORTION OF BLANKET BACK OVER SEED AND COMPACTED SOIL. SECURE BLANKET OVER COMPACTED SOIL WITH A ROW OF STAPLES/STAKES SPACED APPROXIMATELY 12" (30 CM) APART ACROSS THE WIDTH OF THE BLANKET.
 - ROLL THE BLANKETS (A) DOWN OR (B) HORIZONTALLY ACROSS THE SLOPE. BLANKETS WILL UNROLL WITH APPROPRIATE SIDE AGAINST THE SOIL SURFACE. ALL BLANKETS MUST BE SECURELY FASTENED TO SOIL SURFACE BY PLACING STAPLES/STAKES IN APPROPRIATE LOCATIONS AS SHOWN IN THE STAPLE PATTERN GUIDE. WHEN USING THE DOT SYSTEM, STAPLES/STAKES SHOULD BE PLACED THROUGH EACH OF THE COLORED DOTS CORRESPONDING TO THE APPROPRIATE STAPLE PATTERN.
 - THE EDGES OF PARALLEL BLANKETS MUST BE STAPLED WITH APPROXIMATELY 2" - 5" (5 CM - 12.5 CM) OVERLAP DEPENDING ON BLANKET TYPE.
 - CONSECUTIVE BLANKETS SPLICED DOWN THE SLOPE MUST BE PLACED END OVER END (SHINGLE STYLES) WITH AN APPROXIMATE 2" (5 CM) OVERLAP. STAPLE THROUGH OVERLAPPED AREA APPROXIMATELY 12" (30 CM) APART ACROSS ENTIRE BLANKET WIDTH.

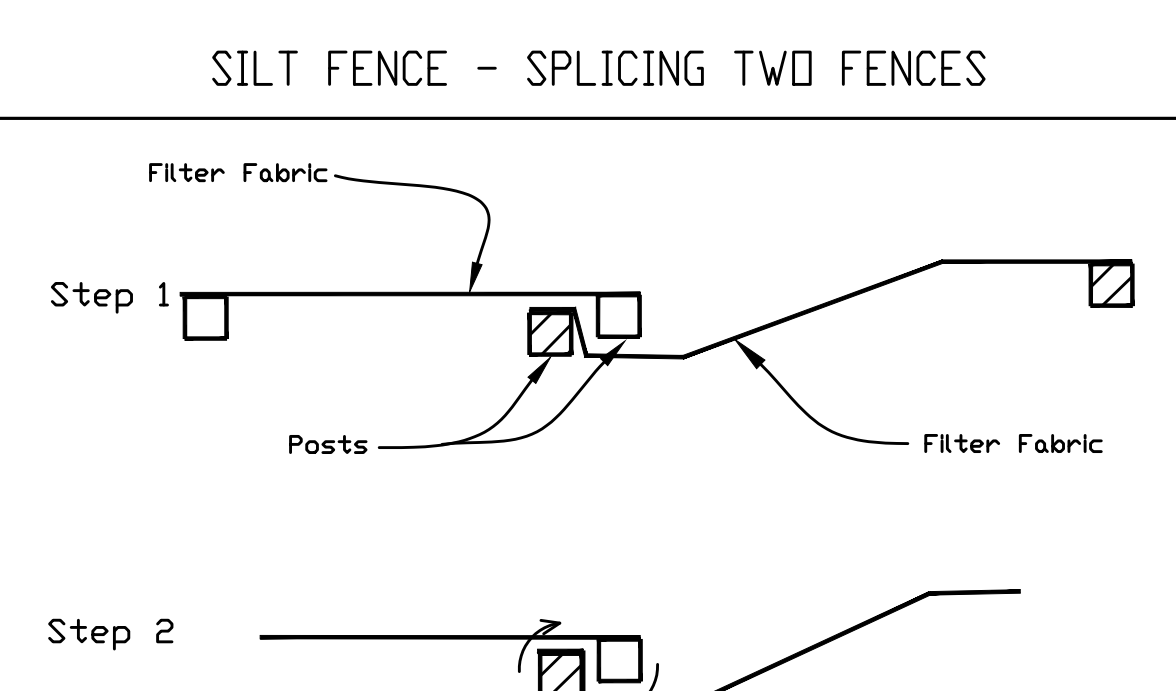
DETAIL - EROSION CONTROL BLANKET
NOT TO SCALE



- NOTES:**
- Temporary sediment fence shall be installed prior to any grading work in the area to be protected. They shall be maintained throughout the construction period and removed in conjunction with the final grading and site stabilization.
 - Filter fabric shall meet the requirements of material specification 592 Geotextile Table 1 or 2, Class I with equivalent opening size of at least 30 for nonwoven and 40 for woven.
 - Fence posts shall be either standard steel post or wood post with a minimum cross-sectional area of 3.0 sq. in.

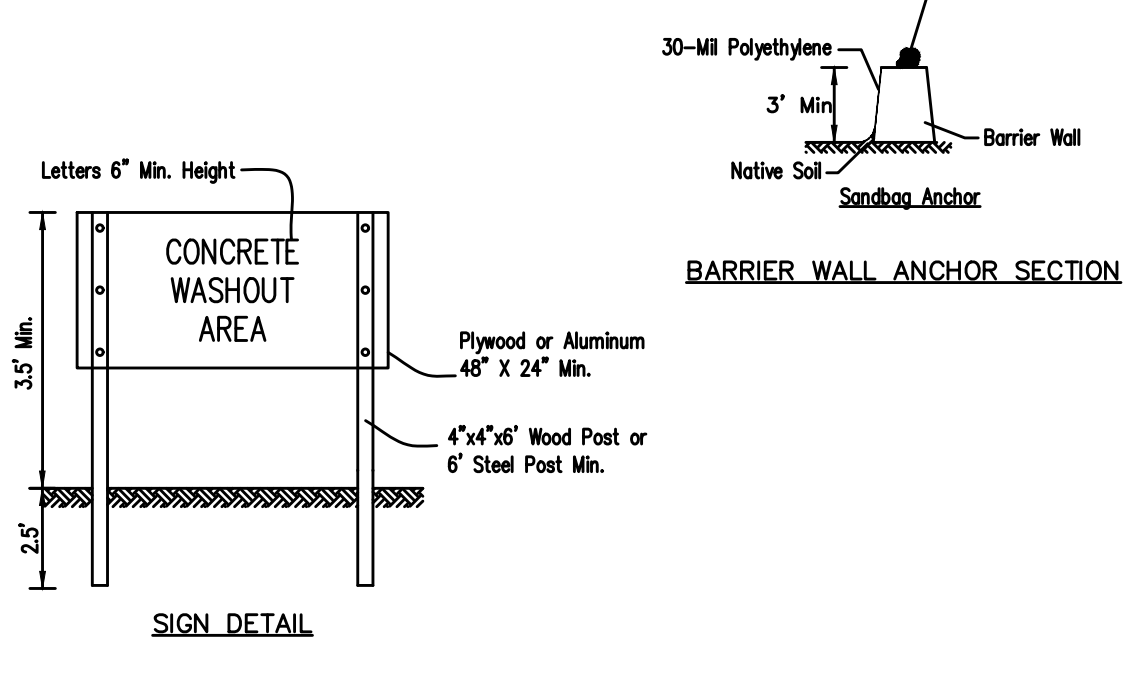
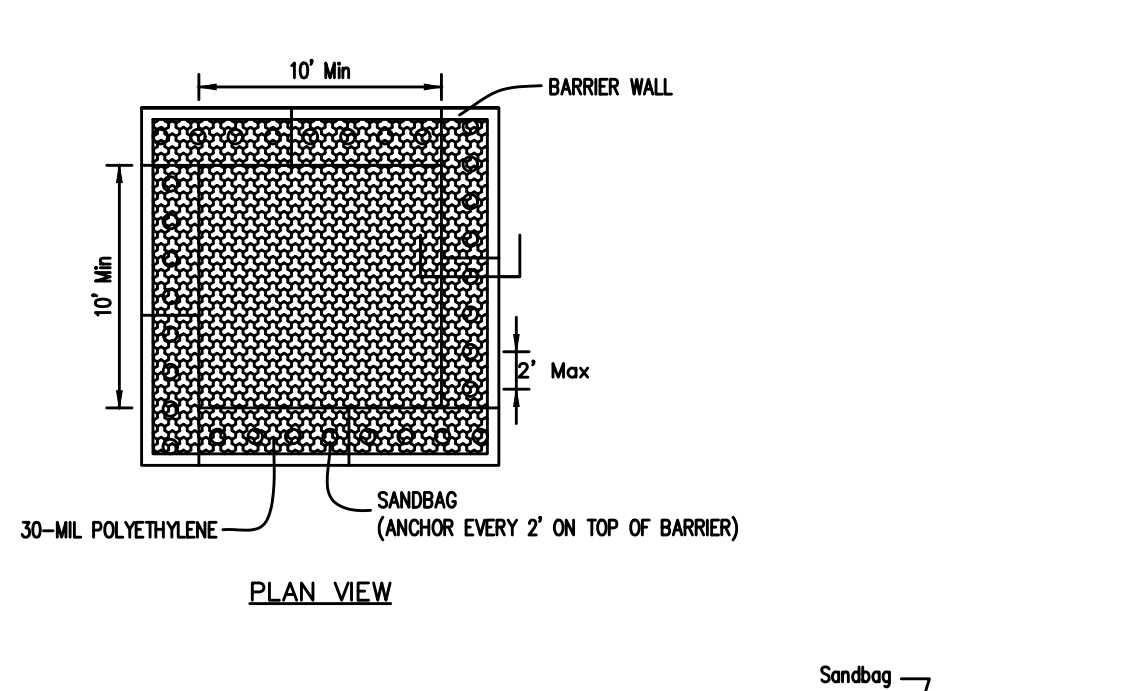
REFERENCE Project	DATE	STANDARD DWG. NO. IUM-620A	REFERENCE Project	DATE	STANDARD DWG. NO. IUM-620B(C)
Designed	DATE	SHEET 1 OF 2	Designed	DATE	SHEET 1 OF 1
Checked	DATE	DATE 3-16-12	Checked	DATE	DATE 2-06-2012
Approved	DATE		Approved	DATE	

DETAIL - SILT FENCE
NOT TO SCALE



- Place the end post of the second fence inside the end post of the first fence.
- Rotate both posts at least 180 degrees in a clockwise direction to create a tight seal with the fabric material.
- Cut the fabric near the bottom of the stakes to accommodate the 6" flap.
- Drive both posts a minimum of 18 inches into the ground and bury the flap.
- Compact backfill (particularly at splices) completely to prevent stormwater piping.

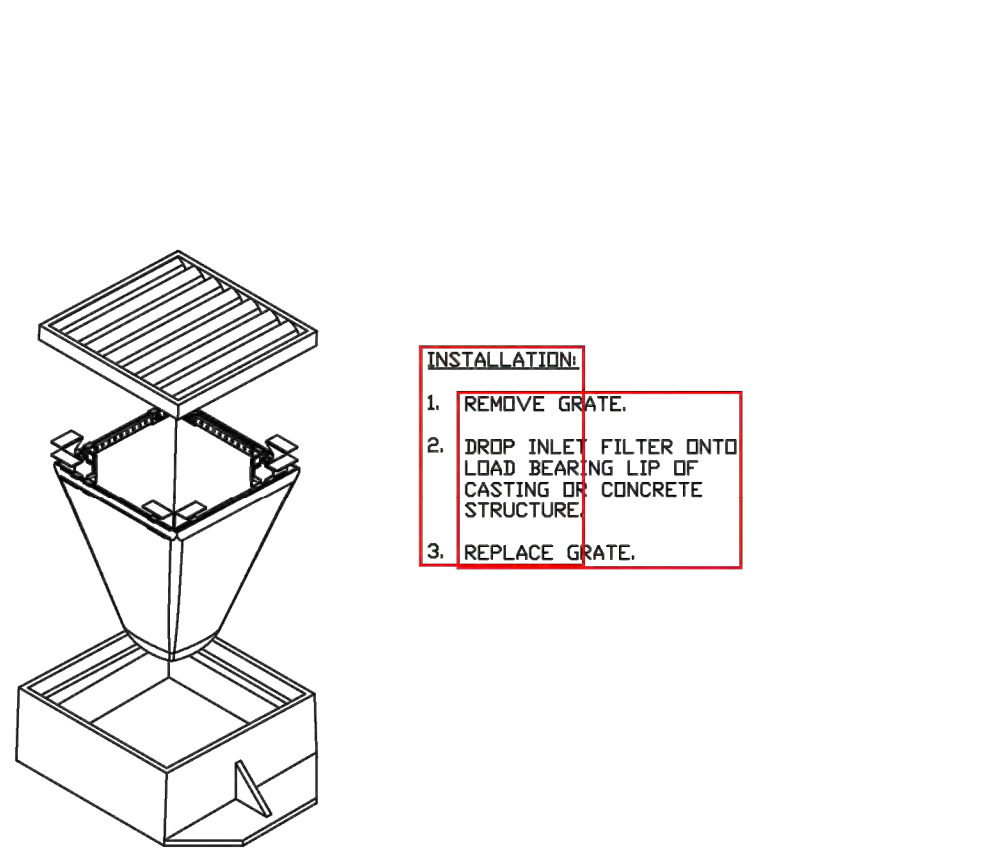
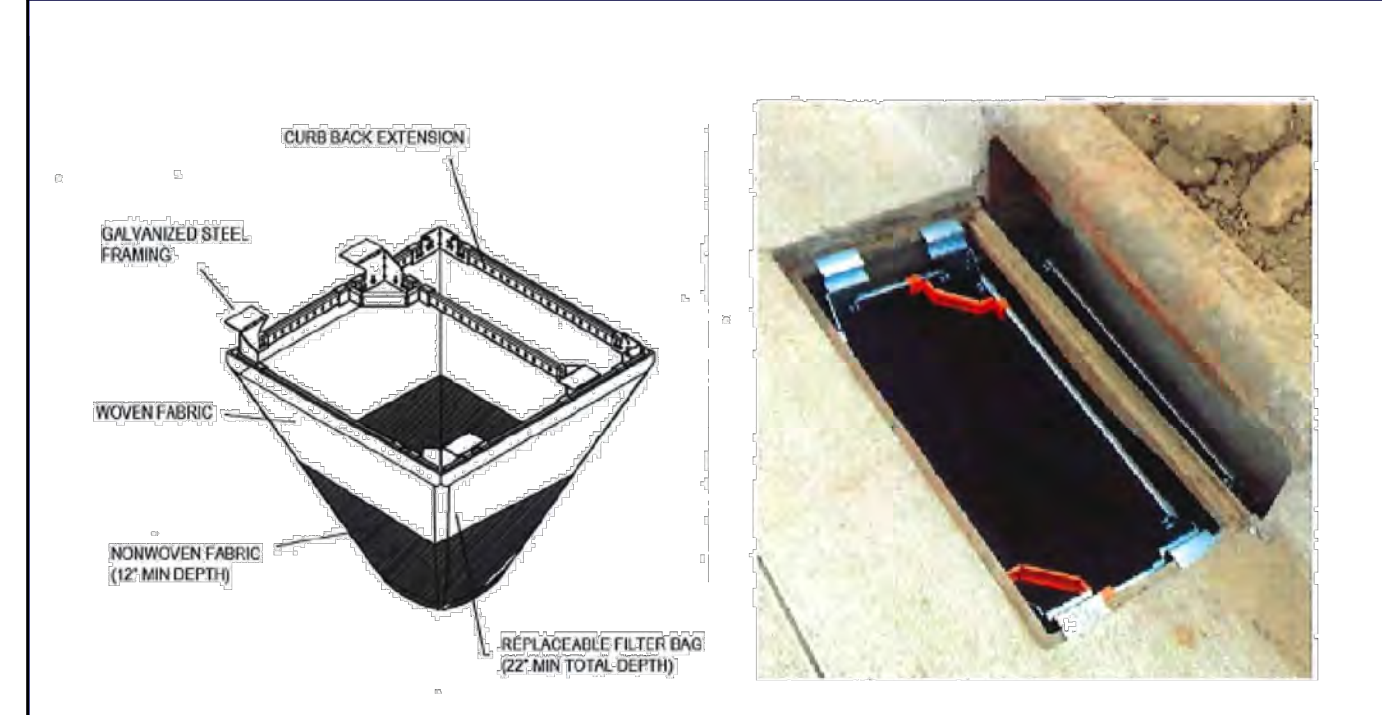
REFERENCE Project	DATE	STANDARD DWG. NO. IUM-620B(C)	REFERENCE Project	DATE	STANDARD DWG. NO. IUM-620B(C)
Designed	DATE	SHEET 1 OF 1	Designed	DATE	SHEET 1 OF 1
Checked	DATE	DATE 2-06-2012	Checked	DATE	DATE 2-06-2012
Approved	DATE		Approved	DATE	



- NOTES:**
- Maintaining temporary concrete washout facilities shall include removing and disposing of hardened concrete and/or slurry and returning the facilities to a functional condition.
 - Facility shall be cleaned or reconstructed in a new area once washout becomes two-thirds full.

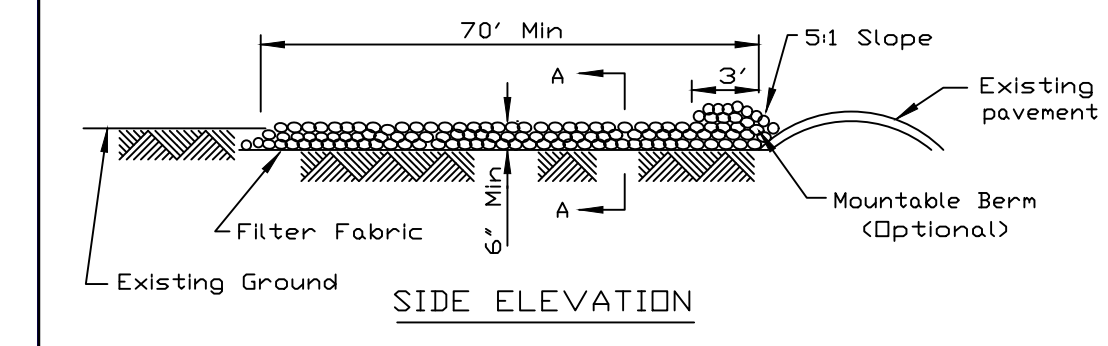
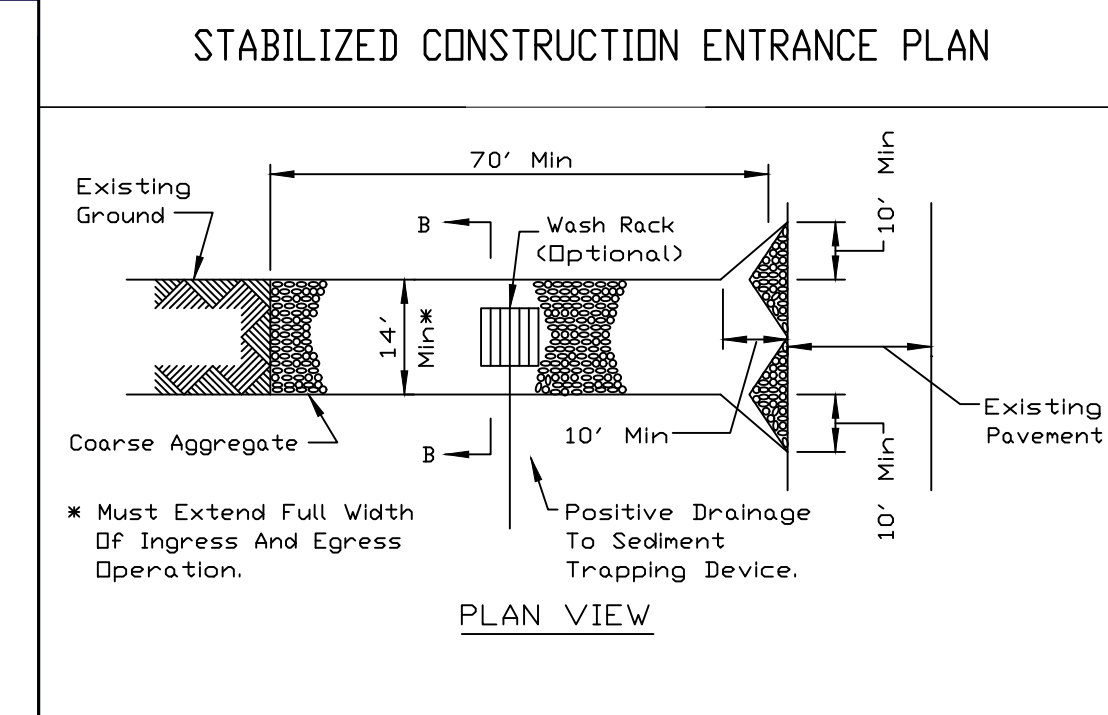
REFERENCE Project	DATE	STANDARD DWG. NO. IUM-620B(C)	REFERENCE Project	DATE	STANDARD DWG. NO. IUM-620B(C)
Designed	DATE	SHEET 1 OF 1	Designed	DATE	SHEET 1 OF 1
Checked	DATE	DATE 2-06-2012	Checked	DATE	DATE 2-06-2012
Approved	DATE		Approved	DATE	

CONCRETE WASHOUT FACILITY



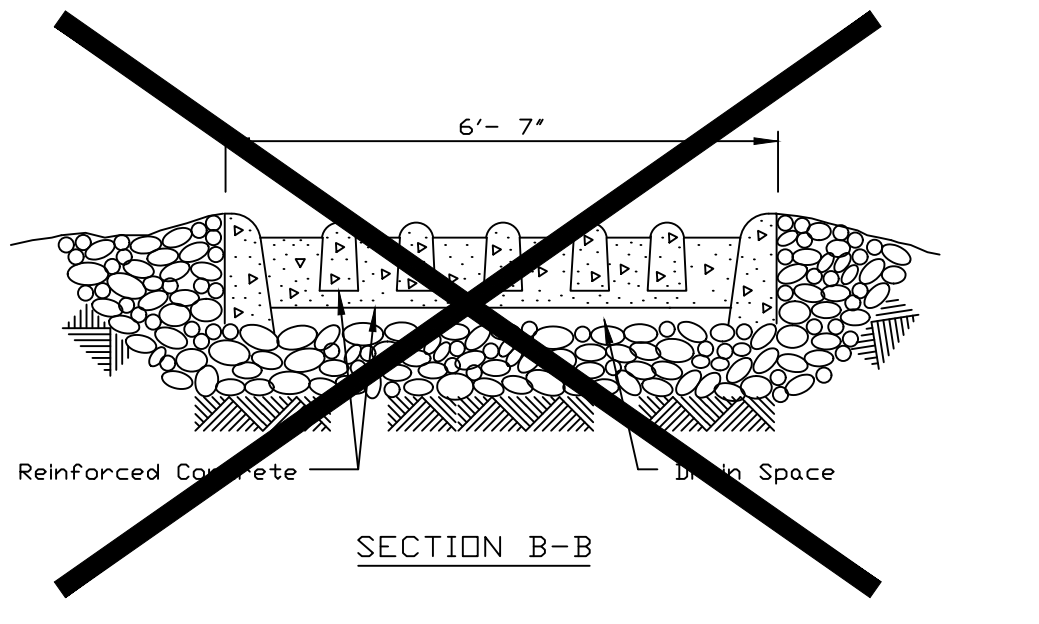
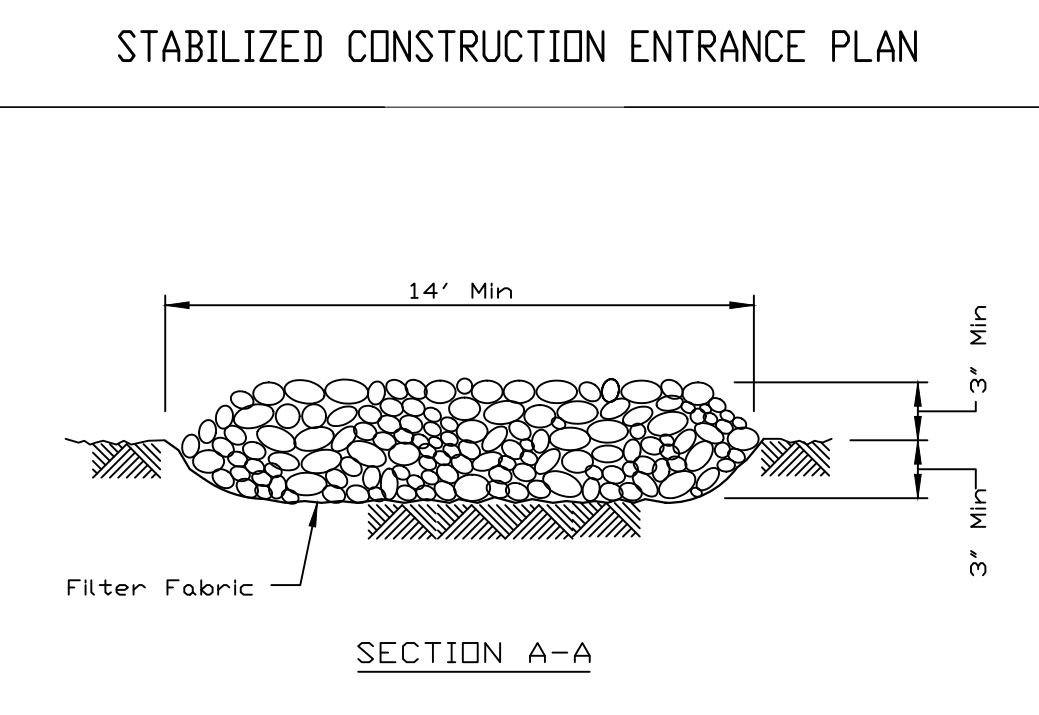
REFERENCE Project	DATE	STANDARD DWG. NO. IUM-630	REFERENCE Project	DATE	STANDARD DWG. NO. IUM-630
Designed	DATE	SHEET 1 OF 2	Designed	DATE	SHEET 1 OF 2
Checked	DATE	DATE 8-18-94	Checked	DATE	DATE 8-18-94
Approved	DATE		Approved	DATE	

DETAIL - STABILIZED CONSTRUCTION ENTRANCE
NOT TO SCALE



- NOTES:**
- Filter fabric shall meet the requirements of material specification 592 GEOTEXTILE, Table 1 or 2, Class I, II or IV and shall be placed over the cleared area prior to the placing of rock.
 - Rock or reclaimed concrete shall meet one of the following IDOT coarse aggregate gradation, CA-1, CA-2, CA-3 or CA-4 and be placed according to construction specification 25 RDCKFILL using placement Method 1 and Class III compaction.
 - Any drainage facilities required because of washing shall be constructed according to manufacturers specifications.
 - If wash racks are used they shall be installed according to the manufactures specifications.

REFERENCE Project	DATE	STANDARD DWG. NO. IUM-630	REFERENCE Project	DATE	STANDARD DWG. NO. IUM-630
Designed	DATE	SHEET 1 OF 2	Designed	DATE	SHEET 1 OF 2
Checked	DATE	DATE 8-18-94	Checked	DATE	DATE 8-18-94
Approved	DATE		Approved	DATE	

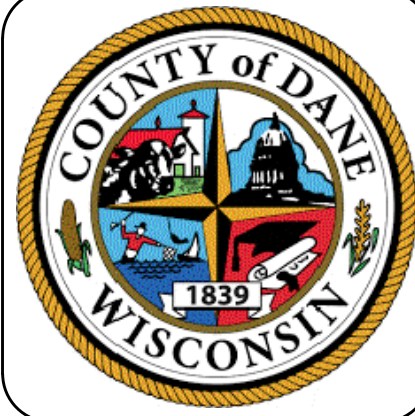


REFERENCE Project	DATE	STANDARD DWG. NO. IUM-630	REFERENCE Project	DATE	STANDARD DWG. NO. IUM-630
Designed	DATE	SHEET 2 OF 2	Designed	DATE	SHEET 2 OF 2
Checked	DATE	DATE 8-18-94	Checked	DATE	DATE 8-18-94
Approved	DATE		Approved	DATE	

PRAIRIE FORGE GROUP
300 CARDINAL DRIVE
SUITE 160
SAINT CHARLES IL 60175
630.221.0671 | P
630.221.0118 | F
www.prairieforgroup.com

COPYRIGHT STATEMENT
THESE PLANS ARE COPYRIGHTED AND ARE SUBJECT TO COPYRIGHT PROTECTION AS AN ARCHITECTURAL WORK UNDER SECTION 102 OF THE COPYRIGHT ACT, 17 U.S.C. AS AMENDED (SECTION 102). KNOWINGLY OR UNKNOWINGLY REPRODUCING OR TRANSMITTING IN ANY FORM OR BY ANY MEANS, WITHOUT WRITTEN APPROVAL OF PRAIRIE FORGE GROUP, IS PROHIBITED. THE USE OF THESE PLANS, WORK OR HOME REPRESENTED, CAN BE USED ONLY IN THE COURSE OF CONSTRUCTION. PRAIRIE FORGE GROUP IS NOT RESPONSIBLE FOR ANY CLAIMS, DAMAGES OR EXPENSES ARISING OUT OF THE UNAUTHORIZED USE OF THE INFORMATION CONTAINED IN THESE ELECTRONIC FILES. THESE PLANS MAY NOT BE REPRODUCED, COPIED, TRANSMITTED, OR OTHERWISE USED IN ANY MANNER WITHOUT THE WRITTEN APPROVAL OF PRAIRIE FORGE GROUP. ALL RIGHTS ARE RESERVED AND OTHER RIGHTS ARE PROTECTED AND ENFORCED.

© COPYRIGHT © 2018-2022 PRAIRIE FORGE GROUP | SAINT CHARLES, IL



DANE COUNTY
EMERGENCY MANAGEMENT
ELEVATOR ADDITION
2982 KAPEC ROAD
FITCHBURG, WISCONSIN

CLIENT APPROVAL
 APPROVED
 APPROVED AS NOTED
APPROVED BY / DATE:

ISSUE RECORD

ADDITION ADR	DATE
05/24/22	

CHECKED BY
JEG
DRAWN BY
BRA
DATE
5/12/2022 10:28:45 AM
PROJECT NUMBER
2020-001

STORMWATER POLLUTION PREVENTION DETAILS
C-6.1

THE CITY OF Fitchburg PUBLIC WORKS
FRAMED INLET PROTECTION
STANDARD DETAIL DRAWING
DATE: 2/8/2019
SHEET NO.: 2.01

THIS SHEET PREVIOUSLY APPROVED ADR

WT Group
Engineering • Design • Consulting
Structural | Mechanical/Electrical/Plumbing
Civil | Land Survey | Telecommunication | Aquatics
Accessibility Consulting | Design & Program Management
Engineering with Precision, Pace & Passion.
2875 Pratum Avenue | Hoffman Estates, IL 60192
P: 224.293.6333 | F: 224.293.6444
wtengineering.com
IL License No. 184.007570-0015 | Exp. 04.30.2023
© COPYRIGHT 2022 THE W-T GROUP, LLC

CITY OF FITCHBURG STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION

SECTION 1 - GENERAL REQUIREMENTS

1.1 DEFINITIONS AND TERMS

CITY, THE CITY OF FITCHBURG, WISCONSIN. CITY CONTRACT, THE WRITTEN AGREEMENT BETWEEN THE CITY AND THE CONTRACTOR SETTING FORTH THE OBLIGATION OF THE PARTIES THEREUNDER, INCLUDING, BUT NOT LIMITED TO, THE PERFORMANCE OF THE WORK TO BE DONE, THE FURNISHING OF LABOR AND MATERIALS, THE BASIS OF PAYMENT, AND CONTRACT TIME. OTHER CONTRACT DOCUMENTS ARE INCORPORATED INTO THE AGREEMENT.

CONTRACTOR, THE INDIVIDUAL OR ENTITY WITH WHOM THE OWNER HAS ENTERED INTO THE AGREEMENT.

DEPARTMENT, THE CITY OF FITCHBURG PUBLIC WORKS DEPARTMENT.

DEVELOPER, THE INDIVIDUAL, PARTNERSHIP, JOINT VENTURE, CORPORATION OR AGENCY UNDERTAKING PUBLIC IMPROVEMENTS UNDER THE TERMS OF THE SUB-DIVIDER'S AGREEMENT AND ACTING DIRECTLY OR THROUGH A DULY AUTHORIZED REPRESENTATIVE.

SUB-DIVIDER'S AGREEMENT, THE AGREEMENT BETWEEN THE CITY OF FITCHBURG AND THE DEVELOPER SETTING FORTH THE OBLIGATION OF THE PARTIES THEREUNDER FOR PUBLIC IMPROVEMENTS.

SUB-DIVIDER'S ENGINEER, THE CONSULTING ENGINEER RETAINED BY THE DEVELOPER AND ACTING AS THE SUB-DIVIDER'S REPRESENTATIVE.

ENGINEER, THE CITY ENGINEER OF THE CITY OF FITCHBURG ACTING PERSONALLY OR THROUGH A DULY AUTHORIZED REPRESENTATIVE.

INSPECTOR, A REPRESENTATIVE OF THE ENGINEER ASSIGNED AND AUTHORIZED TO MAKE DETAILED INSPECTION OF ANY AND ALL PORTIONS OF THE WORK OR MATERIALS.

MATERIALS, ANY SUBSTANCE SPECIFIED FOR USE IN THE CONSTRUCTION OF THE PROJECT AND ITS APPURTENANCES.

OWNER, A PARTY WHO AWARDS A CONTRACT FOR A PROJECT AND UNDERTAKES TO PAY THE CONTRACTOR.

PLANS, THE APPROVED PLANS, PROFILES, TYPICAL CROSS SECTIONS, AND OTHER DRAWINGS IDENTIFIED IN THE CONTRACT DOCUMENTS, WHICH SHOW THE LOCATION, CHARACTER, DIMENSIONS, AND DETAILS OF THE WORK TO BE DONE.

PROJECT, THE TOTAL CONSTRUCTION OF WHICH THE WORK TO BE PERFORMED UNDER THE CONTRACT DOCUMENTS MAY BE THE WHOLE, OR A PART.

PROJECT AREA, THE LOCATION OF THE CONSTRUCTION TO BE PERFORMED UNDER THE CONTRACT.

SHOP DRAWINGS, ALL DRAWINGS, DIAGRAMS, ILLUSTRATIONS, SCHEDULES, AND OTHER DATA OR INFORMATION WHICH ARE SPECIFICALLY PREPARED OR ASSEMBLED BY OR FOR CONTRACTOR AND SUBMITTED BY CONTRACTOR TO ILLUSTRATE SOME PORTION OF THE WORK.

SPECIAL PROVISIONS, SPECIAL DIRECTIONS, PROVISIONS, OR REQUIREMENTS PECULIAR TO THE PROJECT UNDER CONSIDERATION AND NOT OTHERWISE DETAILED OR SET FORTH IN THE STANDARD SPECIFICATIONS.

SPECIFICATIONS, THE DIRECTIONS, PROVISIONS, AND REQUIREMENTS CONTAINED AND REFERENCED HEREIN, TOGETHER WITH WRITTEN AGREEMENTS AND DOCUMENTS INCORPORATED IN THE CONTRACT DOCUMENTS, PERTAINING TO THE METHOD OR MANNER OF PERFORMING THE WORK, THE QUANTITIES, AND THE QUALITY OF MATERIALS TO BE FURNISHED UNDER THE CONTRACT.

STANDARD SPECIFICATIONS, THAT PART OF THE CONTRACT DOCUMENTS CONSISTING OF WRITTEN REQUIREMENTS FOR MATERIALS, EQUIPMENT, METHODS, STANDARDS AND WORKMANSHIP AS APPLIED TO THE WORK, AND CERTAIN ADMINISTRATIVE REQUIREMENTS AND PROCEDURAL MATTERS APPLICABLE THERETO.

SUBCONTRACTOR, AN INDIVIDUAL OR ENTITY HAVING A DIRECT CONTRACT WITH CONTRACTOR OR WITH ANY OTHER SUBCONTRACTOR FOR THE PERFORMANCE OF A PART OF THE WORK AT THE SITE.

SUPPLEMENTAL SPECIFICATIONS, SPECIFICATION ADOPTED SUBSEQUENT TO THE PUBLICATION OF THESE SPECIFICATIONS.

UNDISTRIBUTED QUANTITY, A CERTAIN ESTIMATED AMOUNT OF AN ITEM OF WORK WHERE THE LOCATION IS NOT YET DETERMINED, THE WORK COULD TAKE PLACE ANYWHERE WITHIN THE CITY OF FITCHBURG MUNICIPAL BOUNDARY.

WORK, THE ENTIRE CONSTRUCTION OR THE VARIOUS SEPARATELY IDENTIFIABLE PARTS THEREOF REQUIRED TO BE PROVIDED UNDER THE CONTRACT DOCUMENTS, WORK INCLUDING AND IS THE RESULT OF PERFORMING OR PROVIDING ALL LABOR, SERVICES, AND DOCUMENTATION NECESSARY TO PRODUCE SUCH CONSTRUCTION, AND FURNISHING, INSTALLING, AND INCORPORATING ALL MATERIALS AND EQUIPMENT INTO SUCH CONSTRUCTION, ALL AS REQUIRED BY THE CONTRACT DOCUMENTS.

1.2 GENERAL REQUIREMENTS

1.2.01 RELATED DOCUMENTS

SPECIFICATIONS SHALL CONSIST OF THE CITY OF FITCHBURG STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION LATEST EDITION (HEREINAFTER REFERRED TO AS FITCHBURG SPECIFICATIONS) AND THE STATE OF WISCONSIN STANDARD SPECIFICATIONS FOR HIGHWAY AND STRUCTURE CONSTRUCTION LATEST EDITION (HEREINAFTER REFERRED TO AS WISDOT SPECIFICATIONS), EXCEPT AS MODIFIED HEREIN, WHERE THERE IS CONFLICT BETWEEN THE FITCHBURG SPECIFICATIONS AND THE WISDOT SPECIFICATIONS, THE FITCHBURG SPECIFICATIONS SHALL GOVERN.

STANDARD SPECIFICATIONS SHALL REFERENCE THE STANDARD SPECIFICATIONS FOR SEWER AND WATER CONSTRUCTION IN WISCONSIN, LATEST EDITION, (HEREINAFTER "MICA SPECIFICATIONS") EXCEPT AS MODIFIED HEREIN, WHERE THERE IS CONFLICT BETWEEN FITCHBURG SPECIFICATIONS AND THE MICA SPECIFICATIONS, FITCHBURG SPECIFICATIONS SHALL GOVERN.

1.2.02 PRE-CONSTRUCTION CONFERENCE

A PRE-CONSTRUCTION CONFERENCE FOR THE REPRESENTATIVES OF THE CONTRACTOR AND THE CITY SHALL BE HELD BEFORE THE CONTRACTOR PROCEEDS WITH THE CONSTRUCTION. THE CONFERENCE SHALL BE ARRANGED BY THE CONTRACTOR AND SHALL BE HELD AT FITCHBURG CITY HALL TO DISCUSS THE PROJECT SCHEDULE AND POTENTIAL CONCERNS OF THE CITY RESIDENTS.

1.2.03 PERMITS

ALL EQUIPMENT, MATERIALS AND WORK SHALL BE IN FULL ACCORDANCE WITH THE PROVISIONS OF THE OCCUPATIONAL SAFETY AND HEALTH ACT. ANY SPECIFICATION OR REQUIREMENT HEREIN IS IN ADDITION TO OSHA REQUIREMENTS, IF ANY OR SPECIFICATION OR REQUIREMENT CONFLICTS WITH OSHA REQUIREMENTS, THE OSHA REQUIREMENT SHALL SUPERSEDE.

1.2.04 PERMITS

THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS NEEDED FOR CONSTRUCTION. THESE PERMITS MAY INCLUDE, BUT SHALL NOT BE LIMITED TO: STREET OPENING PERMIT, STREET OCCUPANCY PERMIT, EROSION CONTROL AND STORM WATER MANAGEMENT PERMIT (ECCSWM), BULK WATER USE PERMIT, AND FLUSHING PERMIT. THESE PERMITS MAY BE OBTAINED ON THE 3RD FLOOR AT FITCHBURG CITY HALL, FROM THE PUBLIC WORKS DEPARTMENT. THE WORK ASSOCIATED WITH THESE PERMITS SHALL BE COMPLETED IN ACCORDANCE WITH ALL APPLICABLE STATUTES, ORDINANCES, RULES AND REGULATION OF THE STATE AND THE CITY.

1.2.05 SHOP DRAWINGS

ALL DRAWINGS, DIAGRAMS, ILLUSTRATIONS, SCHEDULES, AND OTHER DATA OR INFORMATION WHICH ARE SPECIFICALLY PREPARED BY OR FOR THE CONTRACTOR OR SUB-DIVIDER'S ENGINEER, OR BY SUBCONTRACTOR, MANUFACTURER, FABRICATOR, OR SUPPLIER, WHICH THE CONTRACTOR IS REQUIRED TO SUBMIT TO THE ENGINEER FOR APPROVAL.

1.2.06 PROTECTION OF PROPERTY IRONS AND MONUMENTS

PRIOR TO COMMENCING WORK, ALL EXISTING PROPERTY IRONS WITHIN THE DEVELOPMENT SHALL BE MARKED WITH STEEL FENCE POSTS. STEEL FENCE POSTS SHALL EXTEND FIVE FEET (5') ABOVE GROUND SURFACE.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTING AND PRESERVING ALL PROPERTY IRONS AND MONUMENTS DURING CONSTRUCTION. AT THE OPTION OF THE CONTRACTOR, THE CITY WILL HIRE A PROFESSIONAL LAND SURVEYOR (PLS) TO RESET ALL LOST IRONS AND MONUMENTS NOT REPLACED BY THE CONTRACTOR'S PLS. THE ENGINEER SHALL DETERMINE WHICH IRONS AND MONUMENTS WERE LOST DUE TO THE CONTRACTOR'S (OR CONTRACTOR'S SUBCONTRACTOR'S) WORK, AND SHALL, IN ADDITION TO WITHOLD UP TO \$2,000 FOR EACH LOST OR DAMAGED IRON AND \$2,000 FOR EACH LOST OR DAMAGED MONUMENT FROM THE CONTRACTOR'S PAYMENT AS A DEPOSIT IN ADDITION TO ANY OTHER PENALTIES UNDER LAW, ONCE THE ACTUAL COSTS OF REPAIR AND/OR REPLACEMENT ARE DETERMINED, THE ACTUAL COSTS SHALL BE DEDUCTED FROM THE CONTRACTOR'S FINAL PAYMENT, UNDER CIRCUMSTANCES WHERE THE CONTRACTOR IS PERFORMING WORK AS PART OF A SUB-DIVIDER'S AGREEMENT, THE ACTUAL COSTS SHALL BE INVOICED TO THE OWNER.

ALL NEW PROPERTY IRONS WITHIN THE DEVELOPMENT SHALL BE MARKED WITH STEEL FENCE POSTS. STEEL FENCE POSTS SHALL EXTEND FIVE FEET (5') ABOVE GROUND SURFACE.

1.2.07 DRAWING SUBMISSIONS

ONE SET OF 24" X 36" MYLAR COPIES AND A DIGITAL FILE OF THE RECORD DRAWINGS ON A FLASH DRIVE SHALL BE DELIVERED TO THE ENGINEER WITHIN THREE (3) MONTHS OF ACCEPTANCE OF THE WORK. ONE SET OF 11x 17x ITS DRAINAGE DRAWINGS THAT SHOW RECORD ELEVATIONS IN ENOUGH DETAIL TO SHOW CHANGE MATTERS MATCH THE DESIGN TO BE SUBMITTED AS A DIGITAL FILE BY FLASH DRIVE OR ELECTRONIC TRANSFER. ALL COORDINATES SHALL BE IN THE DANE COUNTY COORDINATE SYSTEM, NAD 1983 (2011) WISCONS DANE COUNTY US SURVEY FEET. ALL ELEVATIONS SHALL BE REFERENCED TO NAVD 88, FEET. ELEVATIONS BASED ON THE CITY OF MADISON, LAKE MENDOTA DATUM SHALL NOT BE ACCEPTED. THE DIGITAL FILE OF THE RECORD DRAWINGS SHALL BE IN AUTOCAD FORMAT AND SHALL INCLUDE A PLAN LAYOUT OF THE ENTIRE PROJECT AND PLAN AND PROFILE LAYOUTS UTILIZING THE DANE COUNTY COORDINATE SYSTEM. ALL LAYERS IN THE DIGITAL FILE SHALL HAVE NAMES CONSISTENT WITH THE NATIONAL CAD STANDARD. AN AUTOCAD TEMPLATE DRAWING IS AVAILABLE FROM THE PUBLIC WORKS DEPARTMENT. ALONG WITH THE ABOVE SUBMITTALS PROVIDE TWO POINTS AT OPPOSITE CORNERS OF THE PROJECT IN DANE COUNTY COORDINATES AND IN UNIVERSAL TRANSVERSE MERCATOR COORDINATES OF AN EXISTING, EASILY RECOGNIZABLE, AND IMMOBILE OBJECT (FIRE HYDRANT, STREET LIGHT, ETC.). IN THE EVENT THAT ACCURATE RECORD DRAWINGS ARE NOT SUBMITTED IN A TIMELY FASHION, THE ENGINEER RESERVES THE RIGHT TO RESTRICT COMMENCEMENT OF SUBSEQUENT PROJECT PHASES AND/OR ASSESS THE DEVELOPER FOR ACTUAL EXPENSES INCURRED FOR CREATION OF SUCH DRAWINGS.

CONTRACTOR'S CONSTRUCTION NOTES, AS WELL AS TELEVISED SEWER AND SURVEY INFORMATION SHALL BE INCORPORATED INTO THE RECORD DRAWINGS. THE CONTRACTOR SHALL MAINTAIN IN A SAFE PLACE ONE (1) COPY OF ALL DRAWINGS WITH CONSTRUCTION NOTES, FOR THE USE OF GENERATING RECORD DRAWINGS, WHICH INCLUDE THE MEASUREMENTS LISTED BELOW. SEWER LATERAL LOCATIONS AT THE MAIN, AS INDICATED ON THE TELEVISION REPORT, SHALL BE INCORPORATED INTO THE RECORD DRAWINGS. ALL EXPOSED UTILITIES, PROPERTY PINS, AND ALL VISIBLE CHANGES MADE TO CITY INFRASTRUCTURE DURING CONSTRUCTION SHALL BE RE-SURVEYED. THE RECORDED RECORD DRAWING INFORMATION UTILITIES SHALL INCLUDE THE LOCATION, ELEVATIONS, AND ADJUSTED PIPE SLOPES, IF APPLICABLE, FOR ALL UTILITY INFRASTRUCTURE. APPLICABLE ELEVATIONS INCLUDE, BUT ARE NOT LIMITED TO, RIM ELEVATIONS, PIPE INVERT ELEVATIONS, AND TOP HYDRANT NJ ELEVATIONS.

CONTRACTOR'S CONSTRUCTION NOTES SHALL INCLUDE ALL CHANGES MADE DURING CONSTRUCTION, LOCATIONS AND DEPTH OF ANY ABANDONMENTS, AND THE MEASUREMENTS LISTED BELOW. FAILURE OF CONTRACTOR TO PROVIDE REQUIRED CONSTRUCTION NOTES SHALL RESULT IN A \$200 PER HOUR DEDUCTION IN CONTRACT PRICE FOR THE INSTALLATION AND MATERIALS OF EACH UTILITY CONSTRUCTION NOTES ARE NOT PROVIDED FOR.

A. STORM SEWER, A COMPLETE AND ACCURATE TABULATION OF LENGTH AND DEPTHS OF ALL STORM SEWERS SHALL BE KEPT BY CONTRACTOR. DEPTHS OF ALL STORM SEWER PIPE INVERTS AT EACH STRUCTURE SHALL BE RECORDED (DISTANCE BETWEEN INVERT OF EACH PIPE AND TOP OF CURB OR RIM IF IN THE ROADWAY). B. WATER MAIN, A COMPLETE AND ACCURATE TABULATION OF THE LENGTH AND DEPTH AND LOCATION OF ALL WATER MAIN FITTINGS, LATERALS, CORPORATIONS AND CURB STOPS SHALL BE KEPT BY CONTRACTOR. ALL BURIED UTILITY FITTINGS SHALL BE TIED TO TWO PERMANENT LANDMARKS SUCH AS VALVES, MANHOLE CASTINGS, PROPERTY IRONS, ETC. FOR WATER SERVICES THE DISTANCE FROM THE MAIN TO THE CURB STOP TO END OF THE SERVICE SHALL BE RECORDED. C. SANITARY SEWER, A COMPLETE AND ACCURATE TABULATION OF LENGTH, DEPTH AND LOCATION OF ALL SEWER BRANCHES, RISERS, LATERALS, AND KYES SHALL BE KEPT BY CONTRACTOR. MEASUREMENT SHALL BE MADE FROM THE NEAREST DOWNSTREAM MANHOLE, OR EQUIVALENT PERMANENT LANDMARK.

THE FOLLOWING INFORMATION FOR EACH LISTED ITEM SHALL BE PLACED IN A DGEASE IV OR ASCII TABLE AND PROVIDED TO THE CITY WITHIN THREE (3) MONTHS OF ACCEPTANCE. ALL COORDINATES SHALL BE IN THE DANE COUNTY COORDINATE SYSTEM, NAD 83(1911), US SURVEY FEET. ALL ELEVATIONS SHALL BE REFERENCED TO NAVD 88, FEET. ELEVATIONS BASED ON THE CITY OF MADISON, LAKE MENDOTA DATUM

Item	Dbase IV or ASCII Table Information
Sanitary Sewer Structures	Feature Number, Type of Feature, Year of Installation, Street, Easting, Northing, Rim Elevation, Invert Elevation
Sanitary Sewer Pipe	Feature Number, Type of Feature, Year of Installation, Street, Invert Elevation, Pipe Material, Pipe Size, Pipe Length, Slope, Up Stream Manhole
Sanitary Sewer Lateral	Feature Number, Type of Feature, Year of Installation, Street, Invert Elevation, Pipe Material, Pipe Size, Pipe Length, Slope, Up Stream Manhole, Distance from upstream manhole to lateral
Storm Manholes	Feature Number, Type of Feature, Year of Installation, Street, Easting, Northing, Rim Elevation, Invert Elevation
Storm Pipe	Feature Number, Type of Feature (box culvert, feeder, main, etc.), Year of Installation, Street, Invert Elevation, Pipe Material, Pipe Size, Pipe Length, Slope, Up Stream Manhole
Storm Outfalls	Feature Number, Type of Feature, Year of Installation, Street or nearest street, Easting, Northing, Invert Elevation, Size, Material, Endwall (Y/N), Grate (Y/N), Treatment (Riprap, Grass Swale, Gabion, etc.)
Storm Inlets	Feature Number, Type of Feature (H, Beehive, Field, Driveway, etc.) Year of Installation, Street, Easting, Northing, Rim Elevation, Invert Elevation
Water Valves	Feature Number, Type of Feature (Gate, Butterfly, Service, etc.) Year of Installation, Street, Easting, Northing, Rim Elevation, Cover (Valve Box, Manhole, Curb Stop), Purpose (Main, Service, Hydrant), Size, Material
Water Main Pipe	Feature Number, Type of Feature, Year of Installation, Street, Start and Ending x,y Coordinates, Pipe Material, Pipe Size, Pipe Length

Water Main Bends	Feature Number, Type of Feature, Year of Installation, Street, Easting, Northing, Invert Elevation, Pipe Material, Pipe Size, Pipe Length, Degree, Orientation (Horizontal or Vertical)
Fire Hydrants	Feature Number, Type of Feature, Year of Manufacture, Street, Easting, Northing, Top Nut Elevation, Address (if known)
Water Service Laterals	Feature Number, Type of Feature, Year of Installation, Street, Invert Elevation, Lateral Material, Lateral Size, Lateral Length (Main to Service Valve), Address (if known)
Benchmarks	Benchmark Number, Location of Benchmark, Type of Benchmark, Year of Benchmark, Elevation
Street Signs	MUTCD sign code, Label
Street Lights	Fixture Type, Pole Type, Arm, Transformer Base, P.C. Sensor, Lamp Type
Pavement Marking Lines	Material, Color, Width, Type
Pavement Marking Symbols	Material, Color, Type, Size
Pavement Marking Area	Material, Color, Type

1.2.08 PLANT VALUES SUBMISSIONS

A COPY OF THE FINAL CONSTRUCTION COSTS, BROKEN DOWN PER ITEM, SHALL BE SUBMITTED TO THE ENGINEER BY DECEMBER 15 OF THE YEAR IN WHICH THE CONSTRUCTION IS COMPLETED.

1.2.09 ACCEPTANCE OF IMPROVEMENTS

WHEN THE CONTRACTOR CONSIDERS THE ENTIRE WORK COMPLETED, THE CONTRACTOR SHALL NOTIFY THE ENGINEER IN WRITING THAT THE WORK IS COMPLETE AND REQUEST THAT THE ENGINEER CONDUCT AN INSPECTION OF THE WORK. WITHIN A REASONABLE TIME THEREAFTER, THE CONTRACTOR AND THE ENGINEER SHALL MAKE AN INSPECTION OF THE WORK TO DETERMINE THE STATUS OR COMPLETION. IF THE ENGINEER DOES NOT CONSIDER THE WORK TO BE COMPLETE OR SATISFACTORY IN ANY WAY, THE ENGINEER WILL NOTIFY THE CONTRACTOR IN WRITING OF THE REASONS. AT THAT TIME, ANY DEFECTS OR IMPERFECTIONS THAT APPEAR IN THE WHOLE OR ANY PART OF THE WORK, WHICH ARE CAUSED BY OR DUE TO ANY FAULT OR NEGLIGENCE OF THE CONTRACTOR, SHALL BE CORRECTED BEFORE THE WORK IS ACCEPTED. UPON COMPLETION OF THE WORK TO REPAIR THE DEFECTS AND/OR IMPERFECTIONS OF THE CONTRACTOR, THE CONTRACTOR SHALL NOTIFY THE ENGINEER IN WRITING THAT THE WORK HAS BEEN COMPLETED. IF, UPON INSPECTION, THE WORK IS FOUND TO BE SATISFACTORY AND COMPLETE BY THE ENGINEER, AND THE OTHER REQUIREMENTS LISTED HEREIN HAVE BEEN MET, THE PROJECT WILL BE CONSIDERED ACCEPTED. AT THE DISCRETION OF THE ENGINEER, CONDITIONAL ACCEPTANCE MAY BE GRANTED PRIOR TO THE COMPLETION OF THE ASPHALTIC SURFACE COURSE.

NO PROJECT SHALL BE ACCEPTED PRIOR TO SUBMISSION OF DOCUMENTATION DEMONSTRATING THAT THE AS-BUILT STORMWATER TREATMENT FACILITIES (E.G., PONDS, INFILTRATION BASINS, BIORETENTION BASINS, ETC.) MEET THE STORMWATER REQUIREMENTS AS DOCUMENTED IN THE STORMWATER REPORT.

NO PROJECT SHALL BE ACCEPTED PRIOR TO CONTRACTOR'S SUBMISSION OF FINAL LIEN WAIVERS FOR CONTRACTOR AND CONTRACTOR'S SUBCONTRACTORS AND PROOF OF STREET LIGHT WARRANTIES. NO PROJECT SHALL BE DEEMED COMPLETE UNTIL ALL EXCESS MID, BITUMINOUS MATERIAL, AND OTHER OBJECTIONABLE MATERIAL ARE REMOVED FROM THE SIDEWALK, TERRACE, GUTTER, AND PAVEMENT; INLETS AND STORM SEWERS CLEANED, AND EROSION CONTROL MEASURES IN PLACE.

1.2.10 GUARANTEE OF WORK

UNLESS OTHERWISE STATED IN THE SPECIAL PROVISIONS, THE CONTRACTOR SHALL GUARANTEE THE WORK RELATED TO ALL PUBLIC IMPROVEMENTS FOR A MINIMUM PERIOD OF ONE (1) YEAR FROM THE DATE OF FINAL ACCEPTANCE. FOR CITY LET PROJECTS, THE CONTRACTOR SHALL ALSO GUARANTEE ANY REPLACEMENT OR REPAIR WORK, AS REQUIRED FOR ANY DEFECTIVE IMPROVEMENTS FOR A MINIMUM PERIOD OF ONE (1) YEAR FROM THE DATE OF FINAL ACCEPTANCE OF THE REPLACEMENT OR REPAIR WORK.

1.2.11 TRAFFIC CONTROL

WHEN THE PROJECT WORK IS ON OR ADJACENT TO AN ACTIVE ROADWAY, VEHICULAR AND PEDESTRIAN TRAFFIC SHALL BE MAINTAINED AT ALL TIMES, UNLESS SPECIFICALLY PERMITTED BY THE ENGINEER. THE CONTRACTOR SHALL NOTIFY THE FITCHBURG-PUBLIC WORKS DEPARTMENT (270-4260) A MINIMUM OF FIVE (5) BUSINESS DAYS IN ADVANCE OF ANY PLANNED DETOURS OR OTHER ROADWAY WORK THAT MAY IMPED THE MOVEMENT OF EMERGENCY VEHICLES. THE CONTRACTOR SHALL PROVIDE A TIMELINE FOR ALL CLOSURES AND GIVE 72 HOURS NOTICE OF ACTUAL CLOSURE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR NOTIFYING ANY AFFECTED BUSINESSES OR RESIDENTS. ALL WORK SHALL BE IN CONFORMANCE WITH THE LATEST EDITION OF THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) AND THE APPROPRIATE SUPPLEMENTS FOR ITS USE IN THE STATE OF WISCONSIN, AND THESE SPECIFICATIONS. THIS MANUAL IS AVAILABLE AT [HTTP://MUTCD.FHWA.DOT.GOV/](http://mutcd.fhwa.dot.gov/).

ALL TRAFFIC CONTROL BARRICADES SHALL BE HEIGHTED DOWN WITH SAND BAGS OR OTHER APPROVED METHODS. \$200 PER DAY SHALL BE DEDUCTED FROM CONTRACTOR'S TOTAL CONTRACT PRICE FOR TRAFFIC CONTROL THAT IS NOT MAINTAINED PER MUTCD REQUIREMENTS.

CONTRACTOR IS RESPONSIBLE FOR MAINTAINING VISIBLE STOP SIGNS DURING ALL CONSTRUCTION PHASES.

CONTRACTOR SHALL INSTALL TEMPORARY NO PARKING SIGNS AND SUBMIT PHOTOS OF ALL INSTALLED SIGNS TO ENGINEER A MINIMUM OF 48 HOURS PRIOR TO PARKING RESTRICTIONS. CONTRACTOR SHALL LABEL TEMPORARY NO PARKING SIGNS FOR ONLY THE DURATION PARKING NEEDS TO BE RESTRICTED TO ACCOMMODATE THE WORK. CONTRACTOR SHALL REMOVE TEMPORARY NO PARKING SIGNS WITHIN 48 HOURS OF RESTRICTION. NO PARKING SIGNS SHALL BE OBTAINED FROM THE CITY.

1.2.12 STREET CLOSING NOTIFICATIONS

ALL CONTRACTORS PERFORMING WORK ON CITY CONTRACTS OR AS A PART OF A SUB-DIVIDER'S AGREEMENT SHALL GIVE THE ENGINEER NOTICE OF THEIR INTENT TO BEGIN WORK ON ANY CITY STREET A MINIMUM OF 48 HOURS IN ADVANCE OF COMMENCING OPERATIONS. IF IT IS DEEMED NECESSARY BY THE CONTRACTOR THAT A DETOUR BE USED DURING THE DURATION OF THE PROJECT, THE ENGINEER SHALL BE GIVEN AT LEAST FIVE (5) BUSINESS DAYS NOTICE. SATURDAYS, SUNDAYS, AND LEGAL HOLIDAYS SHALL NOT BE INCLUDED IN THE MEASUREMENT OF NOTICE TIME. FURTHER NOTICE SHALL BE GIVEN OF ANY MAJOR CHANGE IN PROJECT SCHEDULING FOLLOWING THE ORIGINAL NOTIFICATION. THE CONTRACTOR SHALL PROVIDE A TIMELINE FOR ALL CLOSURES AND GIVE 72 HOURS NOTICE OF ACTUAL CLOSURE.

THE CONTRACTOR SHALL NOT, IN ANY MANNER UNNECESSARILY OBSTRUCT THE STREETS OR CROSSING, AND SHALL, UNDER ALL CIRCUMSTANCES, PROVIDE SAFE AND SUFFICIENT MEANS OF TRAVEL FOR PEDESTRIANS AND VEHICLES.

THE CONTRACTOR SHALL NOT, AT ANY TIME, CLOSE ANY STREET TO THE PUBLIC EXCEPT BY EXPRESS PERMISSION OF THE ENGINEER. WHEN CLOSURE OF THE ROADWAY HAS BEEN PERMITTED, THE CONTRACTOR SHALL NOTIFY THE ENGINEER AT THE EARLIEST POSSIBLE DATE OR A MINIMUM OF FIVE (5) BUSINESS DAYS SO THAT ARRANGEMENT MAY BE MADE FOR CLOSING THE STREET AND PROVIDING DETOURS IF POSSIBLE.

1.2.13 TESTING AND SAMPLING

ALL MATERIALS SHALL BE SUBJECT TO TESTING, AND SHALL BE TESTED IF SO ORDERED BY THE ENGINEER. THE CONTRACTOR SHALL FURNISH WITHOUT CHARGE ALL SUCH FACILITIES AND SUCH EQUIPMENT FOR THE COLLECTION AND FORWARDING OF SUCH SAMPLES, UNLESS OTHERWISE SPECIFIED ELSEWHERE HEREIN. ALL TESTING SHALL BE COMPLETED BY THE CITY'S SUBCONTRACTOR, WHEN APPLICABLE, THE CONTRACTOR SHALL USE THE CITY'S STANDARD TESTING FORMS.

1.2.14 MATERIALS

ALL MATERIALS USED IN CONSTRUCTION SHALL BE NEW MATERIALS (I.E. MANUFACTURED WITHIN THE LAST 12 MONTHS) UNLESS OTHERWISE APPROVED BY THE ENGINEER. ANY DISCOLORATION, CORROSION, CRACKING, FADING, OR ANY OTHER DEFECT IS UNACCEPTABLE. THE CONTRACTOR IS RESPONSIBLE FOR ENSURING ALL MATERIALS ON SITE MEET CITY STANDARDS.

1.2.15 CONSTRUCTION STAKING

GLOBAL POSITION SYSTEM (GPS) IS NOT ALLOWED FOR STAKING OPERATIONS WITHIN THE PUBLIC RIGHT OF WAY, WHETHER BY PERMIT, PUBLIC SIDEWALK, AND CURB AND GUTTER, UNLESS AUTHORIZED BY THE ENGINEER. CONTRACTOR IS REQUIRED TO PROVIDE FIELD VERIFICATION OF ANY HORIZONTAL STAKING COMPLETED WITH GPS EQUIPMENT. VERIFICATION SHALL CONSIST OF TYING STAKING SURVEY TO TWO KNOWN CONTROL POINTS AND ESTABLISHING ACCURATE HORIZONTAL POSITIONINGS.

1.2.16 TREE PROTECTION THESE SPECIFICATIONS SHALL BE APPLICABLE TO ALL CONTRACTORS WORKING IN THE PUBLIC RIGHT OF WAY. WHETHER BY PERMIT, PUBLIC WORKS CONTRACT, SUB-DIVIDER'S AGREEMENT OR ANY OTHER PERMISSION TO WORK WITHIN THE PUBLIC RIGHT OF WAY, FOR THE PURPOSES OF THESE SPECIFICATIONS, PUBLIC RIGHT OF WAY SHALL INCLUDE ANY PROPERTY THAT THE CITY OF FITCHBURG HAS AN OWNERSHIP INTEREST IN, INCLUDING, BUT NOT LIMITED TO, HIGHWAYS AND HIGHWAY RIGHTS-OF-WAY, SIDEWALKS AND BIKE PATHS, PARKS, GREENWAYS AND STORMWATER MANAGEMENT AREAS.

DAMAGE CAN BE PREVENTED OR MINIMIZED BY FOLLOWING THE SPECIFICATIONS BELOW AND PROPERLY EDUCATING CONSTRUCTION STAFF OF THESE SPECIFICATIONS AND USE OF CARE WHEN WORKING AROUND TREES DURING THE CONSTRUCTION PROCESS. IF THE CITY DETERMINES THAT A TREE HAS BEEN DAMAGED DUE TO FAILURE TO FOLLOW THESE SPECIFICATIONS, THE CONTRACTOR SHALL BE RESPONSIBLE FOR REPAIRS. A SUBCONTRACTOR, A FINE OR LIQUIDATED DAMAGES SHALL BE ASSESSED TO THE CONTRACTOR OR PERMIT HOLDER.

THE CONTRACTOR SHALL NOT GRADE, EXCAVATE, OR OTHERWISE DISTURB THE AREA WITHIN TEN FEET (10') OF ANY TREE AS MEASURED FROM THE OUTSIDE EDGE OF THE TREE TRUNK OR VISIBLE ABOVEGROUND PORTION OF THE ROOT SYSTEM.

ALL ROOTS OVER ONE (1) INCH IN DIAMETER THAT ARE DAMAGED SHALL BE CLEANLY CUT IMMEDIATELY IN BACK OF THE DAMAGED SECTION ON THE SAME DAY OF THE EXCAVATION. CUTS MAY BE MADE WITH LOPPING SHEARS, CHAINSAW, STUMP GRINDER, OR OTHER MEANS WHICH WILL PRODUCE A CLEAN CUT. EXPOSED ROOTS SHOULD BE COVERED AS SOON AS EXCAVATION AND INSTALLATION WORK ARE COMPLETE. THE CONTRACTOR SHALL NOT RIP OR PULL ROOTS OUT TOWARDS THE TRUNK OF A TREE WHILE EXCAVATING WITH A BACKHOE. THE USE OF A BACKHOE TO CUT ROOTS IS NOT ACCEPTABLE.

CONTRACTOR SHALL TAKE PRECAUTIONS DURING CONSTRUCTION NOT TO DISFIGURE, SCAR, OR IMPAIR THE HEALTH OF ANY TREE ON PUBLIC OR PRIVATE PROPERTY. ALL PRUNING SHALL BE DONE ACCORDING TO ANSI A300 TREE PRUNING SPECIFICATIONS.

CONTRACTOR SHALL NOTIFY CITY STAFF THE SAME DAY OF ANY DAMAGE TO TREES RESULTING FROM CONSTRUCTION ACTIVITIES.

NO EQUIPMENT OR MATERIALS WILL BE ALLOWED TO BE PARKED ON DRIVEN OVER, OR BE PILED ON AREAS WITHIN TEN FEET (10') OF A TREE AS MEASURED FROM THE OUTSIDE EDGE OF THE TREE TRUNK OR VISIBLE ABOVEGROUND PORTION OF THE ROOT SYSTEM.

WHERE CONSTRUCTION DAMAGE OCCURS OR RESULTS IN REMOVAL OF THE TREE, THE CONTRACTOR IS RESPONSIBLE FOR ANY REPAIRS OR REPLACEMENT OF THE TREE PER THE CITY FORESTER.

SECTION 2 - EROSION CONTROL

2.1 GENERAL

2.1.01 RELATED DOCUMENTS

WISCONSIN DOT EROSION CONTROL PRODUCT ACCEPTABILITY LIST (PAL), LATEST EDITION AVAILABLE AT [HTTP://WWW.DOT.WISCONSIN.GOV/DOING-BUSINESS-CONSULTANTS/CNLT-RSrgces/TOOLS/PAL/DEFAULT.ASPX](http://www.dot.wisconsin.gov/doing-business/consultants/cnslt-rsrgces/tools/pal/default.aspx)

DANE COUNTY EROSION CONTROL & STORMWATER MANAGEMENT MANUAL AVAILABLE AT [HTTP://WWW.DANE.WISCONSIN.GOV/PDF/MANUAL/EC&SM_MANUAL.PDF](http://www.dane.wisconsin.gov/doing-business/consultants/cnslt-rsrgces/tools/pal/default.aspx) AND THE WISCONSIN DNR TECHNICAL STANDARDS AVAILABLE AT [HTTP://DNR.WIS.GOV/TOPIC/STORM-WATER/STANDARDS/CONST_STANDARDS.HTML](http://dnr.wis.gov/topic/storm-water/standards/const_standards.html)

CITY OF FITCHBURG EROSION CONTROL AND STORMWATER MANAGEMENT PERMIT APPLICATION AVAILABLE AT [WWW.FITCHBURGWI.GOV/1316/PERMITS-APPLICATIONS](http://www.fitchburgwi.gov/1316/PERMITS-APPLICATIONS)

2.1.02 DESCRIPTION OF WORK

THERE ARE A VARIETY OF STRATEGIES FOR MINIMIZING SOIL LOSS FROM CONSTRUCTION SITES. THESE INCLUDE PREVENTING SOIL DETACHMENT, DIVERTING RUNOFF AROUND DISTURBED AREAS, AND TRAPPING SEDIMENT CARRIED BY RUNOFF BEFORE IT LEAVES THE SITE. THE MOST IMPORTANT STRATEGY FOR CONTROLLING CONSTRUCTION SITE EROSION IS PREVENTING SOIL PARTICLE DETACHMENT THROUGH SOIL STABILIZATION. VEGETATION SHALL BE REESTABLISHED AS SOON AS POSSIBLE AFTER LAND IS DISTURBED. IN THE MEANTIME, OTHER EROSION CONTROL PRACTICES, SUCH AS POLYMER APPLICATION, EROSION MATTING, AND MULCHING, MUST BE IN PLACE. A SECOND LINE OF DEFENSE IS TO PREVENT RUNOFF FROM CONTACTING DETACHED SOIL PARTICLES BY DIVERTING RUNOFF AROUND DISTURBED AREAS. DIVERSIONS MINIMIZE THE OPPORTUNITY FOR RUNOFF TO ENTRAIN DETACHED SOIL PARTICLES AND CARRY THEM OFFSITE. FINALLY, WHEN SOIL PARTICLES ARE DETACHED AND CARRIED BY RUNOFF, PRACTICES THAT SLOW AND/OR TRAP SEDIMENT MUST BE INSTALLED TO PREVENT SUSPENDED SEDIMENT FROM LEAVING THE SITE AND ENTERING WATER BODIES.

2.2 MATERIALS

2.2.01 EROSION CONTROL MATERIALS EROSION CONTROL MATERIALS SHALL CONFORM TO THE WISDOT PAL OR AS SPECIFIED IN THE DANE COUNTY EROSION CONTROL AND STORMWATER MANAGEMENT MANUAL UNLESS OTHERWISE APPROVED IN WRITING BY THE DEPARTMENT.

2.2.02 INLET PROTECTION

FRAMED INLET PROTECTION SHALL MEET ASTM STANDARD DB051-17 REQUIREMENTS INCLUDING:
A. BYPASS OVERTLOW THAT MEETS OR EXCEEDS INLET DESIGN FLOW
B. FRAME AND BAGG STRONG ENOUGH TO HANDLE FULL SEDIMENT LOAD

FRAMED INLET GRATES SHALL BE INSTALLED IN ALL INLETS UNLESS APPROVED OTHERWISE BY ENGINEER. FIELD INLETS SHALL BE PROTECTED AS APPROVED BY ENGINEER. ONCE INSTALLED, NO PORTION OF THE INLET PROTECTION (FABRIC BAG) SHALL PROJECT ABOVE GRATE.

2.3 EXECUTION

2.3.01 EROSION CONTROL PERMIT REQUIRED ON SITE

CONTRACTOR SHALL MAINTAIN A COPY OF THE APPROVED EROSION CONTROL AND STORMWATER MANAGEMENT PERMIT ON-SITE AT ALL TIMES UNTIL FINAL STABILIZATION OF THE PROJECT IS ACHIEVED.

2.3.02 EROSION CONTROL INSTALLATION, MONITORING, MAINTENANCE, & REMOVAL

THE INSTALLATION, MONITORING, MAINTENANCE, AND REMOVAL OF EROSION CONTROL SHALL CONFORM TO THE DANE COUNTY EROSION CONTROL AND STORMWATER MANAGEMENT MANUAL UNLESS OTHERWISE APPROVED BY THE DEPARTMENT.

SECTION 3 - EARTHWORK AND RESTORATION

3.1 GENERAL

3.1.01 RELATED DOCUMENTS

WISDOT SPECIFICATIONS, LATEST REVISION AVAILABLE AT [HTTP://WWW.DOT.WISCONSIN.GOV/DOING-BUSINESS-CONSULTANTS/CNLT-RSrgces/TOOLS/PAL/DEFAULT.ASPX](http://www.dot.wisconsin.gov/doing-business/consultants/cnslt-rsrgces/tools/pal/default.aspx)

CITY OF FITCHBURG TREE PROTECTION AND PRUNING GUIDELINES AVAILABLE AT [HTTP://WWW.FITCHBURGWI.GOV/614/](http://www.fitchburgwi.gov/614/) TREE-PROTECTION-PRESERVATION

3.1.02 DESCRIPTION OF WORK

EARTHWORK INCLUDES CLEARING AND GRUBBING, EXCAVATION, FILL, COMPACTION, AND GRADING OF MATERIAL TO MEET THE SUBGRADE ELEVATIONS INDICATED AND SUBSEQUENT DISPOSAL OF SURPLUS MATERIALS FROM THE PROJECT. RESTORATION INCLUDES THE PROVISION AND PLACEMENT OF TOPSOIL, SEED, FERTILIZER, AND MULCH FOR THE DISTURBED AREAS WITHIN THE PROJECT.

3.1.03 SITE CONDITIONS

A. EXISTING UTILITIES, LOCATE EXISTING UNDERGROUND UTILITIES IN AREAS OF WORK. IF UTILITIES ARE TO REMAIN IN PLACE, PROVIDE ADEQUATE MEANS OF SUPPORT AND PROTECTION DURING EARTHWORK OPERATIONS.

SHOULD UNCHANGED, OR INCORRECTLY CHARTED, PIPING OR OTHER UTILITIES BE ENCOUNTERED DURING EXCAVATION, CONSULT UTILITY OWNER IMMEDIATELY FOR DIRECTIONS. COOPERATE WITH OWNER AND UTILITY COMPANIES IN KEEPING RESPECTIVE SERVICES AND FACILITIES IN OPERATION. REPAIR DAMAGED UTILITIES TO SATISFACTION OF UTILITY OWNER.

B. PROTECTION OF EXISTING TREES AND VEGETATION. PROTECT EXISTING TREES AND ALL VEGETATION INDICATED TO REMAIN IN PLACE, AGAINST UNNECESSARY CUTTING, BREAKING OR SKINNING OF ROOTS, SKINNING AND BRUISING OF BARK, SMOTHERING OF TREES BY STOCKPILING CONSTRUCTION MATERIALS OR EXCAVATED MATERIALS WITHIN DRIP LINE, EXCESS FOOT OR VEHICULAR TRAFFIC, OR PARKING OF VEHICLES WITHIN DRIP LINE.

WHERE INDICATED ON DRAWINGS, CONTRACTOR SHALL PROVIDE TEMPORARY MEASURES TO PROTECT TREES AND VEGETATION TO BE LEFT STANDING. TEMPORARY MEASURES SHALL BE INSTALLED PRIOR TO THE START OF CONSTRUCTION. ALL UNIDENTIFIED TREES WITH DRIP LINES IN THE CONSTRUCTION ZONE SHALL BE REPORTED TO THE CITY PRIOR TO THE COMMENCEMENT OF CONSTRUCTION ACTIVITIES. CONTRACTOR SHALL FOLLOW THE CITY OF FITCHBURG TREE PROTECTION AND PRUNING GUIDELINES. SEE SECTION 3.1.01 RELATED DOCUMENTS.

C. PROTECTION OF PERSONS AND PROPERTY. BARRICADE OPEN EXCAVATIONS OCCURRING AS PART OF THIS WORK

Common Name	% by weight
Grasses	
Creeping Red Fescue	25.0%
Turf-Type Perennial Ryegrass	25.0%
Kentucky Bluegrass	50.0%
	100.00%

B. TURF GRASS SEED MIX FOR SHADY AREAS. SEED MIXTURE SHALL MATCH THE FOLLOWING CHART OR APPROVED EQUAL AND BE SEEDED AT A RATE OF 5 LBS./1000SQ.F.

Common Name	% by weight
Grasses	
Creeping Red Fescue	20.0%
Turf-Type Perennial Ryegrass	20.0%
Hard Fescue	20.0%
Chewings Fescue	20.0%
Kentucky Bluegrass	20.0%
	100.00%

C. DITCHES.

SEED MIXTURE SHALL BE NO. 40 PER SECTION 630.2 OF THE WISDOT SPECIFICATIONS.

D. PONDS, SHALES, AND BIORETENTION FACILITIES. SEED MIXTURE SHALL BE NATIVE VEGETATION AS SPECIFIED IN THE SPECIAL PROVISIONS.

3.2.01 FERTILIZER

FERTILIZER SHALL BE TYPE B PER SECTION 624 OF THE WISDOT SPECIFICATIONS.

3.2.08 MULCH

A. CELLULOSE MULCH. MULCH SHALL BE CELLULOSE HYDRAULIC FIBER MULCH AS APPROVED BY ENGINEER.

B. LOOSE STRAW MULCH. LOOSE STRAW MULCH SHALL BE DERIVED FROM WHEAT, OATS, RICE, OR BARLEY AND SHALL BE NEED-FREE, FEEED-FREE HAY DERIVED FROM NATIVE GRASSES IS ALSO ACCEPTABLE. USE OF HAY DERIVED FROM ALFALFA IS NOT ALLOWED.

3.2.04 EROSION MAT

EROSION MAT SHALL MEET TYPE I, URBAN, CLASS A (EXCEL SR-1 ALL NATURAL OR APPROVED EQUAL) FOR NON-CHANNEL AREAS AND TYPE II, CLASS C (ROLANCA'S BIOD-MAT TO OR APPROVED EQUAL) FOR CHANNEL AREAS. EROSION MAT FOR NON-CHANNEL AREAS SHALL BE SECURED WITH A BIODEGRADABLE PLASTIC EROSION MAT STAKES A MINIMUM OF FOUR (4) INCHES IN LENGTH WITH A BARBED HEAD. EROSION MAT FOR CHANNEL AREAS SHALL BE SECURED USING ROUND TOP METAL STAPLE WITH A MINIMUM OF EIGHT (8) INCHES IN LENGTH AND 1/2 GA.

3.2.10 RETAINING WALLS

A. BOULDER WALL. THE BOULDERS SHALL BE ROUND FIELDSTONE. THE STONE SHALL CONSIST OF VARYING SIZES AND HEIGHTS. THE MINIMUM WEIGHT SHALL BE 250 POUNDS.

B. MODULAR BLOCK WALL.

1. MASONRY UNITS SHALL BE KEYSTONE RETAINING UNITS, OR EQUAL, AS MANUFACTURED BY MADISON BLOCK AND STONE IN ACCORDANCE WITH ASTM C40 AND ASTM C140.

2. MASONRY UNITS SHALL HAVE A MINIMUM 28-DAY COMPRESSIVE STRENGTH OF 3000 PSI. THE CONCRETE SHALL HAVE A MAXIMUM MOISTURE ABSORPTION OF 8%.

3. STANDARD UNITS SHALL BE CLASSIC STRAIGHT SPLIT FACE, 8 INCHES HIGH BY 10 INCHES WIDE. TOP ROW OF UNITS SHALL HAVE A SMOOTH FACE. COLOR OF UNITS TO BE SELECTED BY OWNER.

4. CONNECTING PINS SHALL BE 1/2-INCH DIAMETER THERMOSET ISOPHTHALIC POLYESTER RESIN-POLYTRUDED FIBERGLASS REINFORCEMENT RODS. PINS SHALL HAVE A MINIMUM FLEXURAL STRENGTH OF 120,000 PSI AND SHORT BEAM SHEAR OF 6,400 POUNDS PER ASTM D4475.

5. BASE LEVELLING PAD MATERIAL SHALL BE 6 INCHES OF COMPACTED CRUSHED STONE, 3/8 INCH TO 3/4 INCH. FEA GRAVEL SHALL NOT BE ALLOWED.

6. UNIT FILL SHALL BE FREE DRAINING, WELL GRADED CRUSHED STONE, 3/8 INCH TO 3/4 INCH, WITH NO MORE THAN 5% PASSING THE NO. 200 SIEVE.

3.3 EXECUTION

3.3.01 SITE CLEARING

A. GENERAL. REMOVE TREE SHRUBS, GRASS AND OTHER VEGETATION, IMPROVEMENTS, OR OBSTRUCTIONS INTERFERING WITH INSTALLATION OF NEW CONSTRUCTION. REMOVE SUCH ITEMS ELSEWHERE ON SITE OR PREMISES AS SPECIFICALLY INDICATED. REMOVE AND LEGALLY DISPOSE OF ALL STUMPS AND ROOTS THAT ARE NOT SUITABLE FOR BACKFILL MATERIAL WITHIN THE RIGHT-OF-WAY.

WHEN REMOVING TREES, SPECIAL CARE SHALL BE TAKEN SO AS NOT TO DAMAGE SURROUNDING PRIVATE PROPERTY.

TREES AND SHRUBS MARKED FOR REMOVAL ON THE PLANS SHALL NOT BE REPLACED. CONTRACTOR SHALL REPLACE ALL OTHER REMOVED AND DAMAGED TREES, BUSHES AND SHRUBS WITHIN THE PROJECT LIMITS WITH NEW STOCK AT CONTRACTOR'S EXPENSE. NEW TREES SHALL BE LOCATED AS REQUESTED BY ENGINEER. IF THE BUSH OR SHRUB IS DAMAGED, OR DIES AFTER RESTORING, CONTRACTOR SHALL REPLACE IT WITH ONE OF SAME KIND AND SIZE UP TO A HEIGHT OF FOUR FEET (4). BUSHES AND SHRUBS BEYOND THIS HEIGHT SHALL BE REPLACED WITH ONE OF SAME KIND AND HEIGHT OF FOUR FEET (4).

B. TREE PROTECTION. CAREFULLY AND CLEANLY CUT ROOTS AND BRANCHES OF TREES INDICATED TO BE LEFT STANDING. WHERE SUCH ROOTS AND BRANCHES OBSTRUCT NEW CONSTRUCTION SEE SECTION 1.215 TREE PROTECTION.

TREES WHICH ARE DAMAGED DURING CONSTRUCTION SHALL BE REPAIRED. CONTRACTOR SHALL RETAIN THE SERVICES OF A PROFESSIONAL NURSERYMAN WHO IS A MEMBER OF THE NATIONAL ARBORIST ASSOCIATION TO DIRECT THEM ON THE PROPER REPAIR OF DAMAGED TREES. DAMAGED LIMBS AND ROOTS SHALL BE PRUNED OR DRESSED ACCORDING TO RECOMMENDATIONS OF THE NURSERYMAN. BACKFILL SHALL BE REPLACED AS SOON AS POSSIBLE TO REDUCE EXPOSURE OF ROOTS TO AIR. SCARRED AREAS ON TREES SHALL BE SUITABLY DRESSED.

C. TOPSOIL STRIPPING. STRIP TOPSOIL TO WHATEVER DEPTHS ENCOUNTERED IN A MANNER TO PREVENT INTERMIXING WITH UNDERLYING SUBSOIL OR OTHER OBJECTIONABLE MATERIAL.

1. REMOVE HEAVY GROWTHS OF GRASS FROM AREAS BEFORE STRIPPING.

2. WHERE TREES ARE INDICATED TO BE LEFT STANDING, STOP TOPSOIL STRIPPING AT DRIP LINE OF TREE TO PREVENT DAMAGE TO MAIN ROOT SYSTEM UNLESS DIRECTED OTHERWISE BY THE ENGINEER.

STOCKPILE TOPSOIL IN STORAGE PILES IN AREAS SHOWN, OR WHERE DIRECTED. CONSTRUCT STORAGE PILES TO FREE DRAIN SURFACE WATER. COVER STORAGE PILES IF REQUIRED TO PREVENT WIND-BLOWN DUST.

3.3.02 EXCAVATION

UNLESS OTHERWISE SPECIFIED WITH APPROPRIATE BID ITEMS, EXCAVATION IS UNCLASSIFIED AND INCLUDES ALL TYPES OF EXCAVATIONS INDICATED, REGARDLESS OF CHARACTER OF MATERIALS AND OBSTRUCTIONS ENCOUNTERED.

WHEN EXCAVATION HAS REACHED REQUIRED SUBGRADE ELEVATIONS AND ALL UTILITY CROSSINGS HAVE BEEN INSTALLED, NOTIFY THE ENGINEER WHO WILL MAKE INSPECTIONS OF CONDITIONS. ENGINEER SHALL CHECK SUBGRADE ELEVATIONS AND VERIFY ALL UTILITY CROSSINGS HAVE BEEN INSTALLED. ONCE SUBGRADE ELEVATIONS ARE CORRECT AND ALL CROSSINGS HAVE BEEN INSTALLED, ENGINEER SHALL PERFORM A TEST ROLL PRIOR TO PLACEMENT OF BASE COURSE. IF UNSUITABLE BEARING MATERIALS ARE ENCOUNTERED AT REQUIRED SUBGRADE ELEVATIONS, CONTRACTOR SHALL CARRY EXCAVATIONS DEEPER AND REPLACE EXCAVATED MATERIAL AS DIRECTED BY ENGINEER.

BASE COURSE PLACED ON UNSTABLE FOUNDATION SHALL BE REMOVED AND REPLACED FOLLOWING UNDERCUT OF THE AFFECTED AREA, ALL AT CONTRACTOR'S EXPENSE.

UNDERCUT AREAS SHALL BE BACKFILLED WITH BREAKER RUN MATERIAL PER SECTION 5 - PAVEMENTS AND, WHERE REQUESTED BY ENGINEER IN THE FIELD, SHALL BE LINED WITH GEOTEXTILE MATERIAL. 1) TAPERED EDGES SHALL BE PROVIDED FOR ALL UNDERCUT AREAS AS DIRECTED BY ENGINEER. UNDERCUT SHALL BE CARRIED THROUGH UTILITY TRENCH WHEN DIRECTED BY THE ENGINEER. SLOPE SIDES OF EXCAVATIONS SHALL COMPLY WITH LOCAL CODES AND ORDINANCES HAVING JURISDICTION. SHORE AND BRACE WHERE SLOPING IS NOT POSSIBLE BECAUSE OF SPACE RESTRICTIONS OR STABILITY OF MATERIAL EXCAVATED.

MAINTAIN SIDES AND SLOPES OF EXCAVATIONS IN SAFE CONDITION UNTIL COMPLETION OF BACKFILLINGS.

STOCKPILE SATISFACTORY EXCAVATED MATERIALS WHERE DIRECTED UNTIL REQUIRED FOR BACKFILL OR FILL. PLACE, GRADE AND SHAPE STOCKPILES FOR PROPER DRAINAGE.

ALL ABANDONED PRIVATE UTILITY PIPES THAT ARE EXPOSED DURING EXCAVATION SHALL BE PLUGGED WITH CONCRETE, UNLESS DIRECTED OTHERWISE BY THE PRIVATE UTILITY OWNER. CONTRACTOR SHALL NOTIFY ENGINEER AND OBTAIN APPROVAL OF ABANDONMENT PRIOR TO BACKFILLING.

LOCATE AND RETAIN SOIL MATERIAL AWAY FROM EDGE OF EXCAVATIONS. DO NOT STORE WITHIN DRIP LINE OF TREES INDICATED TO REMAIN.

A. EXCAVATION FOR STRUCTURES. CONFORM TO ELEVATIONS AND DIMENSIONS SHOWN WITHIN A TOLERANCE OF PLUS OR MINUS 0.10; AND EXTENDING A SUFFICIENT DISTANCE FROM FOOTINGS AND FOUNDATIONS TO PERMIT PLACING AND REMOVAL OF CONCRETE FORM WORK, INSTALLATION OF SERVICES, OTHER CONSTRUCTION, AND FOR INSPECTION.

B. EXCAVATION FOR FOOTINGS AND FOUNDATIONS. IN EXCAVATING FOR FOOTINGS AND FOUNDATIONS, TAKE CARE NOT TO DISTURB BOTTOM OF EXCAVATION. EXCAVATE BY HAND TO FINAL GRADE JUST BEFORE CONCRETE REINFORCEMENT IS PLACED. TRIM BOTTOMS TO REQUIRED LINES AND GRADES TO LEAVE SOLID BASE TO RECEIVE OTHER WORK.

C. FULVERIZE PAVEMENT. CONTRACTOR SHALL FULVERIZE THE FULL-DEPTH EXISTING ASPHALT SURFACE. THE FULVERIZED MATERIAL SHALL BE USED AS PART OF THE ROAD BASE. ANY SURPLUS GRINDINGS SHALL BE HAULED TO A CITY DESIGNATED SITE. BY THE CONTRACTOR. ALL LIMITS FOR THE FULVERIZED AREA SHALL BE SAWN CUT TO PROVIDE BUTT JOINTS AT INTERSECTING STREETS AND DRIVEWAYS.

3.3.03 DISPOSAL OF WASTE MATERIALS

REMOVE WASTE MATERIALS AND UNSUITABLE AND EXCESS TOPSOIL FROM OWNER'S PROPERTY AND DISPOSE OF OFF-SITE IN A LEGAL MANNER. BURNING ON OWNER'S PROPERTY IS NOT PERMITTED, UNLESS APPROVED BY THE CITY.

3.3.04 BACKFILL AND FILL

PLACE ACCEPTABLE SOIL MATERIAL LAYERS TO REQUIRED SUBGRADE ELEVATIONS, FOR EACH AREA CLASSIFICATION LISTED BELOW. CONTRACTOR SHALL BACKFILL EXCAVATIONS AS PROMPTLY AS WORK PERMITS.

A. IN EXCAVATIONS, USE SATISFACTORY EXCAVATED OR BORROW MATERIAL.

B. UNDER GRASSED AREAS, USE SATISFACTORY EXCAVATED OR BORROW MATERIAL.

C. UNDER WALLS, PAVEMENTS AND RIGHT-OF-WAY. SELECT FILL FOR THE FIRST THREE FEET (3') BELOW FINISHED SURFACE AND SATISFACTORY EXCAVATED OR BORROW MATERIAL BELOW THE FIRST THREE FEET (3') THAT WILL MEET THE COMPACTION REQUIREMENTS.

D. UNDER BUILDING SLABS, USE SELECT FILL MATERIAL.

3.3.05 COMPACTION

CONTROL SOIL COMPACTION DURING CONSTRUCTION PROVIDING MINIMUM PERCENTAGE OF DENSITY SPECIFIED FOR EACH AREA CLASSIFICATION.

COMPACT SOIL TO NOT LESS THAN THE FOLLOWING PERCENTAGES OF MAXIMUM DRY DENSITY FOR SOILS WHICH EXHIBIT A WELL-DEFINED MOISTURE DENSITY RELATIONSHIP (COHESIVE SOILS) DETERMINED IN ACCORDANCE WITH ASTM D 1587; AND NOT LESS THAN THE FOLLOWING PERCENTAGE OF MAXIMUM DRY DENSITY, DETERMINED IN ACCORDANCE WITH ASTM D 2048, FOR SOILS WHICH WILL NOT EXHIBIT A WELL-DEFINED MOISTURE-DENSITY RELATIONSHIP (COHESION LESS SOILS).

A. STRUCTURES, WALKWAYS AND PAVEMENTS. COMPACT TOP THREE FEET (3') OF BACKFILL OR FILL MATERIAL AT 95% MAXIMUM DRY DENSITY AND ALL LAYERS BELOW THREE FEET (3') AT 90% MAXIMUM DRY DENSITY.

B. LAWN OR UNPAVED AREAS. COMPACT TOP SIX INCHES (6") OF SUBGRADE AND EACH LAYER OF BACKFILL OR FILL MATERIAL AT 95% MAXIMUM DRY DENSITY FOR COHESIVE SOILS AND 90% MAXIMUM DRY DENSITY FOR COHESIONLESS SOILS.

C. FULVERIZED PAVEMENT. TO ACHIEVE COMPACTION, CONTRACTOR SHALL WATER AND ROLL THE FULVERIZED MATERIAL USING A VIBRATING ROLLER.

WHERE SUBGRADE OR LAYER OF SOIL MATERIAL MUST BE MOISTURE CONDITIONED BEFORE COMPACTION, UNIFORMLY APPLY WATER TO SURFACE OF SUBGRADE, OR LAYER OF SOIL MATERIAL. APPLY WATER IN MANNER TO PREVENT FREE WATER APPEARING ON SURFACE DURING OR SUBSEQUENT TO COMPACTION OPERATIONS.

WHERE SUBGRADE OR LAYER OF SOIL MATERIAL IS TOO MOIST REMOVE AND REPLACE, OR SCARIFY AND AIR DRY, TO PERMIT COMPACTION TO SPECIFIED DENSITY. SOIL MATERIAL THAT HAS BEEN REMOVED BECAUSE IT IS TOO MOIST TO PERMIT COMPACTION MAY BE STOCKPILED OR SPREAD AND ALLOWED TO DRY. ASSIST DRYING BY DISKING, HARROWING OR FULVERIZING UNTIL MOISTURE CONTENT IS REDUCED TO A SATISFACTORY VALUE.

3.3.06 GEOTEXTILES

GEOTEXTILES SHALL BE PLACED AS REQUESTED BY THE ENGINEER TO STABILIZE SUBGRADE AREAS. CONSTRUCTION FABRIC SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.

3.3.07 DEEP TILLING

PRIOR TO FINAL LANDSCAPING, THE SOIL STRUCTURE OF ALL AREAS THAT HAVE BEEN COMPACTED BY CONSTRUCTION EQUIPMENT SHALL BE RESTORED TO PRE-CONSTRUCTION CONDITIONS BY DEEP TILLING WITH A RIPPER OR SIMILAR TOOL FOLLOWED BY CHISEL PLOWING OR SIMILAR METHODS. THE CUTS SHALL BE MADE ON THE CONTOURS PERPENDICULAR TO THE DIRECTION OF SURFACE WATER FLOW. THE DEPTH OF TILLING SHALL BE AT LEAST 2 INCHES BELOW THE HARDPAN LAYER OR COMPACTED ZONE, AS DETERMINED BY A SOIL PROBE OR SOIL PENETROMETER, UP TO A MAXIMUM DEPTH OF 36 INCHES. THE MAXIMUM SPACING OF THE RIPPER CUTS SHALL BE 5 FEET. RIPPING SHALL BE FOLLOWED BY CHISEL PLOWING TO A DEPTH OF 12 INCHES, IN CASES WHERE THE DEPTH OF THE HARDPAN LAYER OR COMPACTED ZONE IS LESS THAN 10 INCHES. CHISEL PLOWING ALONE MAY BE USED WITHOUT PRIOR RIPPING.

3.3.08 TOPSOIL

TOPSOIL SHALL BE PLACED AND SPREAD AT A UNIFORM DEPTH. IF NO DEPTH IS SHOWN, PLACE AND SPREAD TOPSOIL TO A MINIMUM DEPTH OF SIX INCHES (6').

3.3.04 FINE GRADING

UNIFORMLY GRADE AREAS THAT ARE CALLED OUT FOR RESTORATION. BREAK DOWN ALL CLODS AND LUMPS WITHIN THE TOPSOIL USING THE APPROPRIATE EQUIPMENT, TO PROVIDE A UNIFORMLY TEXTURED SOIL. A SMOOTH FINISHED SURFACE SHALL BE PROVIDED WITHIN A TOLERANCE OF PLUS OR MINUS ONE-HALF INCH (1/2").

3.3.10 SEED RESTORATION

ALL AREAS DISTURBED BY GRADING, STREET, UTILITY, CURB AND GUTTER, AND SIDEWALK CONSTRUCTION, SHALL BE RESTORED. BACKSLOPES ADJACENT TO THE SIDEWALK SHALL BE SEEDED TO THE SLOPE INTERCEPT.

SEEDING SHALL BE PERFORMED IN ACCORDANCE WITH METHOD A OR A MODIFIED METHOD B OF SECTION 630 OF THE WISDOT SPECIFICATIONS AND APPLIED AT A RATE OF 5 LB/1000 SF.

HYDROMULCHING SHALL BE PERFORMED IN ACCORDANCE WITH METHOD B, OF SECTION 630 OF THE WISDOT SPECIFICATIONS, MODIFIED TO INCLUDE A MULCHING MATERIAL. . MULCH SHALL BE APPLIED IN AT LEAST TWO DIRECTIONS AT A RATE OF 2,000 POUNDS PER ACRE.

FOR RESTORATION OF AREAS UNDER 50 SQUARE FEET, LOOSE STRAW MAY BE HAND SCATTERED UNIFORMLY OVER THE SEEDED AREA IN LIEU OF HYDROMULCHING.

3.3.11 EROSION MAT

ALL EROSION MAT SHALL BE SECURED ACCORDING TO MANUFACTURER'S SPECIFICATIONS OR THE FOLLOWING, WHICHEVER IS MORE RESTRICTIVE. CLASS I, URBAN TYPE A EROSION MAT SHALL BE SECURED WITH A MINIMUM 1.75 STAPLES PER SQUARE YARD. SPACING OF ANY SINGLE STAPLE SHALL NOT BE MORE THAN THREE FEET (3') FROM AN ADJOINING STAPLE. CLASS II, TYPE C MAT SHALL BE SECURED WITH A MINIMUM 3.5 STAPLES PER SQUARE YARD. SPACING SHALL NOT BE MORE THAN TWO FEET (2') FROM AN ADJOINING STAPLE. EROSION MAT IS NECESSARY FOR ALL SLOPES STEEPER THAN 5:1 WITH CLASS OF MAT SPECIFIED BY ENGINEER.

3.3.12 INFILTRATIVE PRACTICES

INFILTRATIVE PRACTICES (SUCH AS BIORETENTION BASINS AND INFILTRATION BASINS) SHALL BE CONSTRUCTED IN ACCORDANCE WITH DANE COUNTY / GREEN TIERS INFILTRATION PRACTICE CONSTRUCTION GUIDANCE DOCUMENT, AVAILABLE AT: [HTTPS://WWW.LHRD.COM/DOCUMENTS/STORMWATER/INFILTRATION-PRACTICE-CONSTRUCTION-GUIDANCE.PDF](https://www.lhrd.com/documents/stormwater/infiltration-practice-construction-guidance.pdf).

A GEOTECHNICAL ENGINEER SHALL BE ON SITE DURING CONSTRUCTION OF INFILTRATION PRACTICES TO VERIFY CONSTRUCTION OF PRACTICE. ALL MATERIALS USED, AND NATIVE SOILS. DOCUMENTATION FROM THIS PROFESSIONAL SHALL BE REQUIRED AS PART OF THE AS-BUILT CERTIFICATION.

DEEP TILL NATIVE SOILS PRIOR TO PLACING IMPORTED MATERIALS ON TOP, IF APPLICABLE. AFTER FINAL GRADING OF INFILTRATION PRACTICE, DEEP TILL THE ENTIRE PRACTICE PRIOR TO RESTORATION UPON ENGINEER'S DISCRETION.

3.3.13 RETAINING WALLS

A. BOULDER WALL. IN AREAS AS GENERALLY SHOWN ON THE DRAWINGS AND AS SPECIFICALLY NOTED IN THE FIELD BY THE ENGINEER, CONTRACTOR SHALL CONSTRUCT BOULDER RETAINING WALLS. THE STONE SHALL BE PLACED RANDOMLY. THE LARGER STONE SHALL BE PLACED AT THE BOTTOM. THE MINIMUM BATTER SHALL BE THREE INCHES (3") IN ONE VERTICAL FOOT UNLESS OTHERWISE ALLOWED BY ENGINEER. GEOTEXTILE FABRIC SHALL BE INSTALLED BEHIND THE WALL TO PREVENT THE BACKFILL FROM ERODING THROUGH THE JOINTS AND COURSES. BACKFILL SHALL MEET THE REQUIREMENTS OF SECTION 204 OF THE WISDOT SPECIFICATIONS. THE LAYOUT OF THE WALL SHALL BE APPROVED BY ENGINEER PRIOR TO CONSTRUCTION OF THE WALL. A SUITABLE FOUNDATION, AS APPROVED BY ENGINEER, SHALL BE PROVIDED TO PRECLUDE SETTLEMENT. THE WALL MAY BE CONSTRUCTED IN CONJUNCTION WITH THE NEW EMBANKMENT. SOME CHINKING MAY BE REQUIRED TO SECURE STABILITY OF THE STONES.

B. MODULAR BLOCK RETAINING WALL. MODULAR WALL UNITS SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE FOLLOWING STANDARDS.

- ASTM C40 - LOAD BEARING CONCRETE MASONRY UNITS.
- ASTM C140 - SAMPLING AND TESTING CONCRETE MASONRY UNITS.
- ASTM D4475 - APPARENT HORIZONTAL SHEAR STRENGTH OF FULTRUDED REINFORCED PLASTIC RODS BY THE SHORT-BEAM METHOD.
- ASTM D2394 - STRENGTH PROPERTIES ADHESIVES IN TWO-PLY WOOD CONSTRUCTION IN SHEAR BY TENSION LAPPING.

THE FIRST COURSE OF WALL UNITS SHALL BE PLACED ON THE BASE LEVELLING PAD. THE UNITS SHALL BE CHECKED FOR LEVEL AND ALIGNMENT. BOTTOM OF WALL SHALL BE A MINIMUM OF 12 INCHES BELOW FINISHED GRADE.

UNITS SHALL BE PLACED SIDE BY SIDE FOR FULL LENGTH OF WALL. ALIGNMENT ALIGNMENT MAY BE DONE BY A STRING OFFSET OR OFFSET FROM SIDEWALK.

UNITS SHALL BE INTERLOCKED WITH NON-CORROSIVE FIBERGLASS PINS. PINS SHALL PROTRUDE INTO ADJOINING COURSES ABOVE A MINIMUM OF ONE INCH (1"). TWO PINS REQUIRED PER UNIT.

UNIT FILL SHALL BE PLACED DIRECTLY BEHIND THE WALL TO A MINIMUM WIDTH OF 12 INCHES.

ALL VOIDS INSIDE AND BETWEEN UNITS AND DRAINAGE ZONE BEHIND UNITS SHALL BE FILLED WITH TAMPED UNIT FILL MATERIAL.

ALL CAPSTONE BLOCK SHALL BE ATTACHED WITH THE ADHESIVE PER THE MANUFACTURER'S INSTRUCTIONS.

3.3.14 MAINTENANCE

PROTECT NEWLY GRADED AREAS FROM TRAFFIC AND EROSION. KEEP FREE OF TRASH AND DEBRIS. REPAIR AND RE-ESTABLISH GRADES IN SETTLED, ERODED, AND RUTTED AREAS TO SPECIFIED TOLERANCES.

WHERE SETTLING IS MEASURABLE OR OBSERVABLE AT EXCAVATED AREAS DURING GENERAL PROJECT WARRANTY PERIOD, REMOVE SURFACE (PAVEMENT, LAWN OR OTHER FINISH), ADD BACKFILL MATERIAL, COMPACT, AND REPLACE SURFACE TREATMENT. RESTORE APPEARANCE, QUALITY, AND CONDITION OF SURFACE OR FINISH TO MATCH ADJACENT WORK, AND ELIMINATE EVIDENCE OF RESTORATION TO GREATEST EXTENT POSSIBLE.

3.3.15 RIPRAP

RIPRAP SHALL BE UNDERLINED WITH A GEOTEXTILE FABRIC AND SHALL BE PLACED AT THE ENDS OF PIPE OUTFALLS AS SHOWN ON THE PLANS OR AS DIRECTED BY THE ENGINEER IN ACCORDANCE WITH SECTION 606 OF THE WISDOT SPECIFICATIONS. GEOTEXTILE FABRIC SHALL BE INSTALLED PER THE MANUFACTURER'S RECOMMENDATIONS AND IN ACCORDANCE WITH SECTION 645 OF THE WISDOT SPECIFICATIONS. GEOTEXTILE FABRIC SHALL EXTEND A MINIMUM OF TWO FEET (2') UNDER APRON ENDWALLS. RIPRAP SHALL EXTEND TO THE SPRING LINE OF THE ENDWALL. SUBSTITUTION OF RECYCLED CONCRETE FOR RIPRAP IS PROHIBITED. SEE STANDARD DETAIL DRAWING 6.06.

3.3.16 UTILITY LINE OPENINGS (ULO'S)

THIS WORK CONSISTS OF EXCAVATING TO UNCOVER UTILITIES FOR THE PURPOSE OF DETERMINING ELEVATION AND POTENTIAL CONFLICT AS SHOWN ON THE PLANS OR AS DIRECTED BY THE ENGINEER IN THE FIELD. THE EXCAVATION SHALL BE DONE IN SUCH A MANNER THAT THE UTILITY IN QUESTION IS NOT DAMAGED, AND THE SAFETY OF THE WORKERS IS NOT COMPROMISED. THE UTILITY LINE OPENINGS SHALL BE PERFORMED AS SOON AS POSSIBLE AND AT LEAST THREE (3) DAYS IN ADVANCE OF PROPOSED UTILITY OR STREET CONSTRUCTION TO ALLOW ANY CONFLICTS TO BE RESOLVED WITH MINIMAL DISRUPTION ALL UTILITY LINE OPENINGS SHALL BE APPROVED AND COORDINATED WITH THE ENGINEER. STEPS FOR BASIC POTHOLING:

- A) SAW CUT PAVEMENT FULL-DEPTH WITH A BIT 12" TO 16A IN DIAMETER RESULTING IN A "CORE".
- B) REMOVE CORE AND SAVE FOR REUSE IF STRUCTURALLY SOUND.
- C) PLACE A PROTECTIVE STEEL RING TO PROTECT THE EDGE OF THE OPENING FROM DAMAGE.
- D) USE VACUUM EQUIPMENT TO EXCAVATE COMPACTED MATERIAL FROM THE BOTTOM OF BASE COURSE TO BENEATH THE UTILITY FACILITY.
- E) PERFORM UTILITY WORK (E.G., WATCH BORE HEAD, LEAK REPAIR, SERVICE CONNECTION).
- F) PROTECT UTILITY FACILITY WITH FINE MATERIAL.
- G) PLACE SELF-MIXING FLOWABLE FILL MATERIAL FROM THE TOP OF THE FINE MATERIAL TO BOTTOM OF THE BASE COURSE (FILL IS DESIGNED TO BE TRAFFIC-BEARING IN ~40 MINUTES).
- H) PLACE NON-SHRINK GROUT (GROUT IS DESIGNED TO BE TRAFFIC-BEARING IN ~40 MINUTES).
- I) PLACE THE REMOVED CORE (OR A GENERIC EQUIVALENT REPLACEMENT CORE) IN THE REMAINING OPENING (ORIGINAL ALIGNMENT AND ORIENTATION IS MAINTAINED IF REMOVED CORE IS USED) FORGING THE GROUT TO THE SURFACE TO FILL THE ANNULAR SPACE AND CORE EXTRACTION HOLE.
- J) SEAL THE RESTORED OPENING END

SECTION 4 - CONCRETE AND CONCRETE STRUCTURES

4.1 GENERAL

4.1.01 RELATED DOCUMENTS WISDOT SPECIFICATIONS, LATEST REVISION AVAILABLE AT [HTTP://ROADWAYSTANDARDS.DOT.WI.GOV/STANDARDS/STNSPEC/INDEX.HTM](http://roadwaystandards.dot.wi.gov/standards/stdnspec/index.htm)

4.1.02 DESCRIPTION OF WORK

THIS SECTION INCLUDES THE PROVISION AND PLACEMENT OF CONCRETE FOR CURBS AND GUTTER, TRAFFIC MEDIANS, SIDEWALKS, CONCRETE DRIVEWAYS AND RELATED APPURTENANCES INCLUDING DETECTABLE WARNING FIELDS.

4.2 MATERIALS

4.2.01 CONCRETE

CONCRETE MATERIALS SHALL BE PROVIDED IN ACCORDANCE WITH THE REQUIREMENTS OF SECTION 501 OF THE WISDOT SPECIFICATIONS.

THE CONCRETE SHALL BE SIX (6) BAG, AIR-ENTRAINED CONCRETE AS SUPPLIED BY A REPUTABLE READY-MIX SUPPLIER AND BE DESIGNED TO OBTAIN 4,000 PSI IN 28 DAYS.

ALL CONCRETE SHALL BE AIR-ENTRAINED AND SHALL CONTAIN SEVEN (7) PERCENT AIR BY VOLUME, PLUS OR MINUS 1.5%.

SPECIAL HIGH EARLY STRENGTH (SHE) CONCRETE SHALL CONFORM TO SECTION 416 OF THE WISDOT SPECIFICATIONS.

ADDITION OF WATER TO CONCRETE ON SITE IS PROHIBITED.

MIX DESIGN ADJUSTMENTS MAY BE REQUESTED BY CONTRACTOR WHEN CHARACTERISTICS OF MATERIALS, JOB CONDITIONS, WEATHER, TEST RESULTS, OR OTHER CIRCUMSTANCES WARRANT; AT NO ADDITIONAL COST TO OWNER AND AS ACCEPTED BY ENGINEER. LABORATORY TEST DATA FOR REVISED MIX DESIGN AND STRENGTH RESULTS MUST BE SUBMITTED TO AND ACCEPTED BY ENGINEER BEFORE USING IN WORK.

COLORED CONCRETE:

- A) CONCRETE COLOR FOR CYCLE TRACKS SHALL BE "DCS GREEN W/ GREY CEMENT 11004 OR AS APPROVED BY ENGINEER.
- B) CONCRETE COLOR FOR MEDIANS AND DECORATIVE TERRACES SHALL BE "RED BRICK" OR AS APPROVED BY ENGINEER. STAMP SHALL BE 4" X 8" RUNNING BOND PATTERN PERPENDICULAR TO CURB.
- C) CONCRETE COLOR FOR ROUNDABOUTS SHALL BE "DOT RED" OR AS APPROVED BY ENGINEER.

4.2.02 EXPANSION JOINT FILLER MATERIAL

ONE-HALF INCH (1/2") EXPANSION JOINT FILLER SHALL BE FURNISHED IN LENGTHS EQUAL TO THE JOINT WIDTH AND TO THE THICKNESS AND HEIGHT THAT IS REQUIRED. USE OF MULTIPLE FILLER SECTIONS AT A JOINT, STREET LIGHT BASE, VALVE BOX, OR MANHOLE TO ACHIEVE REQUIRED LENGTH, HEIGHT, AND/OR THICKNESS IS PROHIBITED.

EXPANDED POLYOLEFIN (EPOFOAM) JOINT FILLER TO BE USED AROUND ALL VALVE BOXES, LIGHT BASES, MANHOLES AND HYDRANTS IN THE CONCRETE. SEAL THE TOP 1/4" WITH MANUFACTURER SPECIFIED NP-1 SONGELASTIC CAULK.

4.2.03 DETECTABLE WARNING FIELDS

DETECTABLE WARNING FIELDS SHALL BE NENAH FOUNDRY'S DETECTABLE WARNING PLATE R-4484, NATURAL FINISH OR APPROVED EQUAL, CAST IRON PLATE. THE DETECTABLE WARNING FIELDS SHALL CONSIST OF A COMBINATION OF PANELS TO MEET THE SPECIFIED LENGTH AND WIDTH FOR THE WARNING FIELDS. THE COLOR OF THE DETECTABLE WARNING FIELDS SHALL BE NATURAL PATINA UNLESS OTHERWISE SPECIFIED IN PLANS.

RADIAL PLATES SHALL BE FROM THE WISDOT MANUFACTURER'S APPROVED LIST. THE CONTRACTOR SHALL SELECT THE APPROPRIATE RADIAL PLATE RADIUS THAT MATCHES THE INTERSECTION RADIUS DESIGN.

4.2.04 SIGN BASE

ALL SIGNS IN CONCRETE SHALL UTILIZE AN EIGHT INCH (8") V-LOG (23-VR1) AND WEDGE FOR A 2-3/8" GALVANIZED STEEL POST FOR THE BASE.

4.3 EXECUTION

4.3.01 GENERAL CONCRETE

PLACEMENT OF CONCRETE SHALL CONFORM TO THE REQUIREMENTS OF SECTION 415 OF THE WISDOT SPECIFICATIONS.

DEPOSIT AND CONSOLIDATE CONCRETE SLABS IN A CONTINUOUS OPERATION, WITHIN LIMITS OF CONSTRUCTION JOINTS, UNTIL THE PLACING OF A PANEL OR SECTION IS COMPLETED.

CONSOLIDATE CONCRETE DURING PLACING OPERATIONS SO THAT CONCRETE IS THOROUGHLY WORKED AROUND REINFORCEMENT AND OTHER EMBEDDED ITEMS AND INTO CORNERS.

BRING SLAB SURFACES TO CORRECT LEVEL WITH STRAIGHTEDGE AND STRIKE OFF. USE BULL FLOATS OR DARBIES TO SMOOTH SURFACE, FREE OF HUMPS OR HOLLOWNS. DO NOT DISTURB SLAB SURFACES PRIOR TO BEGINNING FINISHING OPERATIONS.

ALL EXPOSED NON-COLORED CONCRETE SURFACES SHALL BE PROTECTED DURING CURING WITH A WHITE PIGMENTED CURING COMPOUND. ALL COLORED CONCRETE SURFACES SHALL BE PROTECTED DURING CURING WITH CLEAR CURING COMPOUND.

CONCRETE TO BE REMOVED AND REPLACED SHALL BE SAWN CUT AT THE NEAREST EXISTING JOINTS. INSTALL TWO (2) #4 EPOXY COATED TIE BARS, 12 INCHES (12") IN LENGTH, EXTENDING SIX INCHES (6") INTO THE EXISTING AND THE NEW CONCRETE AT THE JOINTS UNLESS DIRECTED BY THE ENGINEER.

NO CONCRETE WORK MAY TAKE PLACE WHILE IT IS RAINING. ALL CONCRETE POURED DURING RAIN EVENTS SHALL BE REMOVED AND REPLACED AT CONTRACTOR'S EXPENSE. ALTERING VISUALLY DAMAGED CONCRETE IS NOT ACCEPTABLE I.E. BRUSHING.

4.3.05 CYCLE TRACK

CYCLE TRACKS SHALL BE INSTALLED PER SIDEWALK REQUIREMENTS. CYCLE TRACK JOINTS SHALL BE SAUNGT AT 1/8 INCH IN WIDTH AND, WHERE APPLICABLE, LINE UP WITH ADJACENT CURB JOINTS.

4.3.06 DETECTABLE WARNING FIELDS

DETECTABLE WARNING FIELDS ARE REQUIRED WHERE A SIDEWALK OR BIKE PATH CROSSES A VEHICULAR WAY (EXCLUDING DRIVEWAYS), WHERE A RAIL SYSTEM CROSSES PEDESTRIAN FACILITIES THAT ARE NOT SHARED WITH VEHICULAR WAYS, AT REFLECTING POOLS WITHIN THE PUBLIC RIGHT-OF-WAY, WHICH DOES NOT HAVE CURB OR RIM PROTRUDING ABOVE THE WALKING SURFACE, AT ISLANDS AND MEDIANS THAT ARE CUT THROUGH LEVEL WITH THE ROADWAY, AND AT ANY OTHER LOCATION REQUIRED BY ENGINEER.

DETECTABLE WARNING FIELDS FOR SIDEWALK AND BIKE PATH RAMPS SHALL EXTEND 24 INCHES IN THE DIRECTION OF THE PEDESTRIAN TRAVEL AND SHALL EXTEND THE FULL LENGTH OF THE CURB RAMP OR FLUSH SURFACE, A MINIMUM OF FIVE FEET (5') FOR SIDEWALK RAMPS AND A MINIMUM OF TEN FEET (10') FOR BIKE PATH RAMPS. WHEN POSSIBLE DETECTABLE WARNING FIELDS SHALL BE FLUSH TO THE FELT ON THE BACK OF CURB FOR STRAIGHT APPROACHES.

VOIDS MAY NOT EXIST BETWEEN THE DETECTABLE WARNING FIELD AND CONCRETE. IN THE EVENT VOIDS EXIST, THE WARNING PLATE AND CONCRETE SHALL BE REMOVED AND REPLACED. SLURRY OR CAULK REPAIRS ARE NOT PERMITTED.

SEE DETAILS FOR GUIDANCE ON WHEN TO USE RADIAL FIELD PLATES. WHEN SELECTING RADIAL PLATES, SLIGHT VARIANCE OF UP TO 3 FEET BETWEEN THE RADIUS OF THE DETECTABLE WARNING FIELD AND THE BACK OF CURB WILL PROVIDE A UNIFORM CONCRETE BORDER BETWEEN BACK OF CURB AND RADIAL FIELD. A MAXIMUM 3-INCH CONCRETE BORDER IS ALLOWABLE BETWEEN THE BACK OF CURB AND RADIAL DETECTABLE WARNING FIELD, WITH THE CONCRETE BORDER WIDTH VARIABLE UP TO 1 INCH.

WHEN RADIAL DETECTABLE WARNING FIELDS ARE USED, THE OUTERMOST RADIAL PLATES WILL NOT COINCIDE WITH THE CURB RAMP EDGES. THE OUTERMOST RADIAL PLATES WILL NEED TO BE FIELD CUT TO MATCH THE CURB RAMP EDGES. DEVELOP CONSTRUCTION DETAILS OF EACH CURB RAMP, INCLUDING THE LAYOUT OF INDIVIDUAL FULL-SIZE RADIAL PLATES AS WELL AS FLANKING CUT RADIAL PLATES. FIELD-CUT PLATES CANNOT BE SHORTER THAN 6 INCHES ALONG ANY CUT EDGE. DEVELOP FULL-SIZE RADIAL PLATES WITHIN THE INTERIOR OF THE CURB RAMP LAYOUT, AS INTERMEDIATE JOINTS WITHIN THE WARNING FIELD MUST NOT BE FIELD CUT. THE RADIAL PLATE FINAL FIELD PLACEMENT MAY VARY, AS THE CONTRACTOR WILL DETERMINE THE FINAL WARNING FIELD CONFIGURATION AND ITS INDIVIDUAL PLATE LOCATIONS.

4.3.07 DRIVEWAYS

ALL COMMERCIAL DRIVEWAYS LOCATED ALONG A ROADWAY WITH CURB AND GUTTER SHALL CONFORM TO THESE SPECIFICATIONS UNLESS SPECIFICALLY PERMITTED OTHERWISE BY THE ENGINEER.

CONCRETE THICKNESS FOR DRIVEWAY APRONS SHALL BE SEVEN INCHES (7") AND THE CRUSHED AGGREGATE BASE THICKNESS SHALL BE A MINIMUM OF FOUR INCHES (4").

PROVIDE ONE-HALF INCH (1/2") EXPANSION JOINT FILLER AGAINST SIDEWALKS AND CURB AND GUTTER.

FOR RESIDENTIAL AND COMMERCIAL DRIVEWAY OPENINGS ALONG STREETS WITH EXISTING CURB AND GUTTER, THE CONTRACTOR SHALL EITHER REMOVE AND REPLACE EXISTING CURB AND GUTTER AT THE DRIVEWAY OPENING PER SPECIFICATIONS OR MAKE A PROFILE CURB CUT IN WHICH THE CURB HEAD IS CUT WITH A CONCRETE SAM SPECIFICALLY DESIGNED FOR THIS TYPE OF WORK.

4.3.08 PROTECTION OF CONCRETE

A. GENERAL. CONTRACTOR SHALL ERECT AND MAINTAIN SUITABLE BARRICADES TO PROTECT THE NEW CONCRETE, WHERE IT IS NECESSARY TO PROVIDE FOR PEDESTRIAN TRAFFIC, THE CONTRACTOR SHALL, AT HIS THEIR OWN COST, CONSTRUCT ADEQUATE CROSSINGS AS SHOWN ON THE DRAWINGS OR AS SPECIFIED. CROSSING CONSTRUCTION SHALL BE SUCH THAT NO LOAD IS TRANSMITTED TO THE NEW CONCRETE.

ANY PART OF THE WORK DAMAGED, UNDERMINED, OR VANDALIZED PRIOR TO FINAL ACCEPTANCE SHALL BE REPAIRED OR REPLACED AT THE EXPENSE OF THE CONTRACTOR.

APPLY CURING COMPOUND AS SOON AS THE CONCRETE IS DRY TO THE TOUCH AND WILL NOT BE MARRERD FROM STEPPING ON IT. IF CURING COMPOUND IS NOT APPLIED, CONCRETE MUST BE CURED WITH PLASTIC UNTIL STRENGTH OF 3,000 PSI IS ACHIEVED (7) DAYS, WHICHEVER COMES FIRST. REMOVAL OF PLASTIC, WHETHER TEMPORARY OR PERMANENT, DURING THIS TIME, IS PROHIBITED.

CONSTRUCTION ACTIVITIES AND VEHICULAR TRAFFIC SHALL NOT BE PERMITTED ADJACENT TO OR OVER NEWLY PLACED CONCRETE UNTIL A MINIMUM COMPRESSIVE STRENGTH OF 3,000 PSI HAS BEEN ACHIEVED.

B. COLD WEATHER PROTECTION. PROTECT CONCRETE WORK FROM PHYSICAL DAMAGE OR REDUCED STRENGTH WHICH COULD BE CAUSED BY FROST, FREEZING ACTIONS, OR LOW TEMPERATURES, IN COMPLIANCE WITH ACI 306, WISDOT SPECIFICATIONS, AND AS HEREIN SPECIFIED.

AT ANY TIME OF THE YEAR, IF THE NATIONAL WEATHER SERVICE FORECAST FOR THE CONSTRUCTION AREA PREDICTS FREEZING TEMPERATURES WITHIN THE NEXT 24 HOURS, OR WHEN FREEZING TEMPERATURES ACTUALLY OCCUR, PROVIDE THE MINIMUM LEVEL OF THERMAL PROTECTION SPECIFIED BELOW FOR CONCRETE THAT HAS YET TO CONFORM TO THE OPENING CRITERIA SPECIFIED IN WISDOT 415.15.

Predicted or Actual Air Temperature Minimum Equivalent Level of Protection	
22 to <28 F	single layer of polyethylene
17 to <22 F	double layer of polyethylene
<17 F	6" of loose, dry straw or hay between two layers of polyethylene

UNLESS WRITTEN APPROVAL IS PROVIDED BY THE ENGINEER, SUSPEND CONCRETING OPERATIONS IF THE DESCENDING AIR TEMPERATURE IN THE SHADE AND AWAY FROM ARTIFICIAL HEAT FALLS BELOW 35 DEGREES FAHRENHEIT. DO NOT RESUME CONCRETING OPERATIONS UNLESS TEMPERATURES IN THE SHADE AND AWAY FROM ARTIFICIAL HEAT REACHES 32 DEGREES FAHRENHEIT AND IS RISING, AT ALL TIMES THE CONCRETE TEMPERATURE AT THE POINT OF PLACEMENT SHALL BE ABOVE 50 DEGREES FAHRENHEIT.

CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF THE CONCRETE PLACED. ANY CONCRETE DAMAGED BY FREEZING OR FROST ACTION DURING THE FIRST SEVEN (7) DAYS FOLLOWING ITS PLACEMENT SHALL BE REMOVED AND REPLACED BY THE CONTRACTOR AT CONTRACTOR'S EXPENSE.

CALCIUM CHLORIDE, SALT AND OTHER MATERIALS CONTAINING ANTIFREEZE AGENTS OR CHEMICAL ACCELERATORS SHALL NOT BE USED, UNLESS OTHERWISE ACCEPTED IN MIX DESIGNS.

C. HOT WEATHER PROTECTION. WHEN HOT WEATHER CONDITIONS EXIST THAT WOULD SERIOUSLY IMPAIR QUALITY AND STRENGTH OF CONCRETE, PLACE CONCRETE IN COMPLIANCE WITH AMERICAN CONCRETE INSTITUTE ACI 305.

4.4 FIELD QUALITY CONTROL AND TESTING

4.4.01 TESTING

OWNER WILL BE RESPONSIBLE FOR CONCRETE TESTING. CONTRACTOR SHALL COORDINATE TESTING WITH THE OWNER.

MATERIALS AND INSTALLED WORK MAY REQUIRE TESTING AND RETESTING AT ANY TIME DURING PROGRESS OF WORK. TESTS, INCLUDING RETESTING OF REJECTED MATERIALS AND INSTALLED WORK, SHALL BE DONE AT CONTRACTOR'S EXPENSE.

SECTION 5 - PAVEMENTS AND BASE COURSE

5.1 GENERAL

5.1.01 RELATED DOCUMENTS WISDOT SPECIFICATION, LATEST REVISION AVAILABLE AT [HTTP://ROADWAYSSTANDARDS.DOT.NJ.GOV/STANDARDS/STNDSPEC/INDEX.HTM](http://roadwaysstandards.dot.nj.gov/standards/STNDSPEC/INDEX.HTM)

- OMIT THE FOLLOWING SECTIONS
- SECTION 440 RIDE QUALITY REQUIREMENTS AND TESTING
 - SECTION 455.2.1 AND 455.2.3 PG ASPHALT BINDER AND TACK COAT SAMPLING AND TESTING
 - SECTION 450.3.2.1 COLD WEATHER PAVING
 - SECTION 450.3.2.1.1 SAFETY EDGE
 - SECTION 460.2.B QMP SAMPLING AND TESTING
 - SECTION 460.3.3 NUCLEAR DENSITY TESTING

5.1.02 DESCRIPTION OF WORK

THIS SECTION INCLUDES REQUIREMENTS FOR THE PROVISION AND PLACEMENT OF BASE COURSE, ASPHALTIC PAVEMENT, AND PAVEMENT MARKINGS.

5.1.03 SCHEDULE

UNLESS SPECIFIED DIFFERENTLY, ALL UPPER LAYER PAVING SHALL BE COMPLETE BY SEPTEMBER 15 AND ALL LOWER LAYER PAVING SHALL BE COMPLETED BY OCTOBER 31. ONLY PATCHING WILL BE ALLOWED AFTER THESE DATES AS APPROVED BY THE ENGINEER.

5.1.04 SUBMITTALS

PRIOR TO PAVING THE FOLLOWING ITEMS, SHALL BE SUBMITTED TO ENGINEER FOR APPROVAL.

- HMA MIX DESIGN MEETING THE SPECIFICATIONS OF SECTION 1.2.04 SHOP DRAWINGS FOR EACH APPLICABLE ROADWAY PAVEMENT TYPE
- REGRESSION OF AIR VOIDS DOCUMENTATION, ALONG WITH NEWLY CALCULATED %AC, VMA, VFB, AND GMB
- RAS STOCKPILE PRODUCTION SAMPLES, IF RAS IS USED IN THE MIX DESIGN

5.2 MATERIALS

5.2.01 CRUSHED AGGREGATE BASE COURSE

THE AGGREGATES SHALL CONSIST OF HARD, DURABLE PARTICLES OF CRUSHED STONE RESULTING FROM THE ARTIFICIAL CRUSHING OF ROCK, Boulders, OR LARGE COBBLESTONES SUBSTANTIALLY ALL FACES OF WHICH HAVE RESULTED FROM THE CRUSHING OPERATION. THE MATERIAL SHALL BE FREE FROM DIRT, ASPHALT, DEBRIS, FROZEN MATERIALS, ORGANIC MATTER, SHALE AND LUMPS OR BALLS OF CLAY.

THE DETERMINATION OF THE ACCEPTABILITY OF THE AGGREGATES WILL BE MADE BY VISUAL OBSERVATION AND/OR LABORATORY TEST. THE ENGINEER RESERVES THE RIGHT TO PROHIBIT THE USE OF MATERIAL FROM ANY SOURCE, PLANT, PIT, QUARRY OR DEPOSIT WHERE THE CHARACTER OF THE MATERIAL OR METHOD OF OPERATION IS NOT FURNISHING AGGREGATE THAT CONFORMS TO THE REQUIREMENTS OF THESE SPECIFICATION, UNLESS SATISFACTORY EVIDENCE IS SHOWN THAT MATERIAL CONFORMING TO THE SPECIFICATION REQUIREMENTS IS PRODUCED. NOTE: THE CITY SHALL BE NOTIFIED 24 HOURS PRIOR TO THE PLACEMENT OF BASE COURSE. IN GIVING THIS NOTICE, THE CONTRACTOR SHALL INDICATE THE SOURCE FOR THE BASE COURSE. IF DURING ROCKING OPERATIONS THE SOURCE CHANGES, THE CITY MUST BE NOTIFIED. THE CONTRACTOR TAKES ON THE FINANCIAL RESPONSIBILITY OF PLACEMENT OF THE BASE COURSE FROM THE NEW SOURCE IF THE MATERIAL IS UNSUITABLE.

UNLESS SPECIFIED DIFFERENTLY, BASE COURSE THICKNESS SHALL BE TWELVE-INCHES (12") CONSISTING OF THREE-INCH (3") DENSE IN THE BOTTOM SEVEN TO EIGHT INCHES (7'-8") AND ONE AND ONE-QUARTER INCH (1-1/4") DENSE IN THE TOP FOUR TO FIVE INCHES (4"-5") GRADATIONS SHALL CONFORM TO THE REQUIREMENTS OF SECTION 305 WISDOT SPECIFICATIONS OR AS DIRECTED BY THE ENGINEER.

5.2.02 UNSCREENED BREAKER RUN STONE THE MATERIALS SHALL CONFORM TO THE REQUIREMENTS OF SECTION 311 WISDOT SPECIFICATIONS OR AS DIRECTED BY THE ENGINEER.

5.2.03 BREAKER RUN MATERIAL THE MATERIALS SHALL CONFORM TO THE REQUIREMENTS OF SECTION 311 WISDOT SPECIFICATIONS OR AS DIRECTED BY THE ENGINEER. ENGINEER RESERVES THE RIGHT TO REQUIRE MODIFICATIONS TO THE MATERIAL, IF MATERIAL DOES NOT CONTAIN SUFFICIENT GRADATION TO ELIMINATE VOIDS, DOES NOT PROVIDE ADEQUATE 54 TO 64" MATERIAL TO PROVIDE STRUCTURAL SUPPORT, AND/OR CONTAINS TOO MANY FINES. THE MATERIAL SHALL BE FREE FROM DIRT, ASPHALT, CONCRETE, DEBRIS, FROZEN MATERIALS, ORGANIC MATTER, SHALE AND LUMPS OR BALLS OF CLAY.

5.2.04 FLOWABLE FILL. FLOWABLE FILL SHALL BE EXCAVATABLE, HAVING STRENGTH GREATER THAN 200 PSI BUT NOT EXCEEDING 300 PSI. THE FOLLOWING FLOWABLE FILL MIX DESIGN IS RECOMMENDED.

FLOWABLE FILL MIX DESIGN		
Material	Unit	Quantity
Sand	lb.	3000
Water	Gal.	43
Fly Ash	lb.	200
Air Content	%	25 - 30
Cement	lb.	50

5.2.05 ASPHALTIC PAVEMENT

HMA MIX DESIGN. REFER TO WISDOT SPECIFICATIONS, SECTIONS 460.2.1 - 460.2.7 AND 460.3.2 EXCEPT WHEREIN MODIFIED OR APPENDED.

ASPHALT MIX DESIGN SHALL BE THE FOLLOWING UNLESS OTHERWISE SPECIFIED IN THE SPECIAL PROVISIONS.

ASPHALT MIX TYPES		
HMA Type	Asphalt Material	Roadway Type
MT	58-28	Arterial
MT or LT	58-28H	Roundabouts & Turn Lanes*
LT	58-28	Collector & Residential
LT	58-28	Shared-use paths
LT	58-28H	Tennis Court / Basketball Court

*Surface Only			
ASPHALT MIX THICKNESS			
Nominal Maximum Aggregate Size (MMAS)	Use	Minimum Layer Thickness (in)	Maximum Layer Thickness (in)
3	Lower Layer	2.25	4.0
4	Lower Layer	1.75	3.0
5	Upper Layer	1.5	3.0
5	Basketball / Tennis Courts/ Shared-use Path	1.5	3.0

460.2.2.3 AGGREGATE GRADATION MASTER RANGE LOWER LAYER SHALL BE ASPHALT MIX GRADATION 4 AND UPPER LAYER SHALL BE ASPHALT MIX GRADATION 5. THE LOWER LAYER MAY BE ASPHALT MIX GRADATION 5 WHERE THE LOWER AND UPPER LAYERS ARE APPLIED IN THE SAME CALENDAR YEAR.

460.2.7 HMA MIX DESIGN (ROADWAY, ARTERIAL, COLLECTOR, RESIDENTIAL AND SHARED USE PATHS) ALL HMA MIX DESIGNS FOR ARTERIAL, COLLECTOR, RESIDENTIAL AND SHARED USE PATHS SHALL HAVE A TARGET OF 3.0% AIR VOIDS. THIS SHALL BE ACCOMPLISHED BY TAKING AN EXISTING MIX DESIGN THAT TARGETS 4.0% AIR VOIDS, AND INCREASING THE ASPHALT CONTENT TO ACHIEVE 3.0% AIR VOIDS. NEW VMA, VFA AND GMB JMF TARGETS WILL BE RECALCULATED WITH THE NEW ASPHALT CONTENT.

5.2.06 ADJUSTING RINGS

NON-ROCKING NENEAH CAST IRON ADJUSTING RINGS OR APPROVED EQUAL. NENEAH REFERENCE NO. 1550-7151 FOR 1-1/2" ADJUSTING RINGS AND NO. 1550-7201 FOR TWO INCH (2") ADJUSTING RINGS.

5.2.07 TACK COAT

TYPE MS-2, 95-1H, 95-1H, C65-1, C65-1H, OR AN APPROVED MODIFIED EMULSIFIED ASPHALT. TACK NEEDS TO BREAK BEFORE PAVING COMMENCES.

5.2.08 PAVEMENT MARKINGS

PAVEMENT MARKINGS SHALL BE EPOXY PAINT UNLESS OTHERWISE DIRECTED BY ENGINEER.

5.2.04 CYCLE TRACK

GENERAL: FOR AREAS WHERE CYCLE TRACK TRANSITIONS TO ASPHALT PAVEMENT, INSTALL HIGH FRICTION COLORED SURFACE IN ACCORDANCE WITH MANUFACTURERS SPECIFICATIONS. USE COLOR-SAFE PAVEMENT MARKING WITH ANTI-SKID SURFACE BY TRANSPCO INDUSTRIES OR AN APPROVED EQUAL. USE AN MMA BASED SYSTEM CAPABLE OF RETAINING AN AGGREGATE TOPPING UNDER VEHICULAR TRAFFIC CONDITIONS.

THE MMA BASED RESIN SYSTEM SHALL COMPLY WITH CHROMACRY REQUIREMENTS IN ACCORDANCE WITH MUTCD INTERIM APPROVAL FOR OPTIONAL USE OF GREEN COLORED PAVEMENT FOR BIKE LANES.

MMA BASED RESIN SYSTEM THE MMA BASED RESIN SYSTEM SHALL MEET THE FOLLOWING REQUIREMENTS:

Property	Value	Test Method
Tensile Strength @ 7 days, psi, minimum	1000	ASTM D 638
Hardness, Shore D, minimum	80	ASTM D 2240
Gel Time, minutes, minimum	10	ASTM D 2471
Cure Rate, hours, maximum	3	Film @ 75°F
Water Absorption @ 24 hours, max	0.25%	ASTM D 570
Aggregate: The aggregate shall be high friction crushed Bauxites, Granite, or gravel. The aggregate will be delivered to the construction site in clearly labeled bags or sacks. The aggregate shall be clean, dry and free from foreign matter. The aggregate shall meet the following requirements:		
Property	Value	Test Method
Aggregate Abrasion Value,	maximum 20	LA Abrasion
Aggregate Grading,		
No 6 Sieve Size,	minimum passing, 95%	
No 16 Sieve Size,	maximum passing, 5%	
Aggregate Color	Green	
Certification: Finished surface shall have a minimum 60 FN40R in accordance with ASTM E274 of aggregate bonded to a vehicular bearing surface using the modified epoxy binder.		

5.3 EXECUTION

5.3.01 BASE COURSE

PRIOR TO PLACEMENT OF THE BASE COURSE, THE SUBBASE SHALL BE TEST ROLLED WITHIN THE PRESENCE OF THE ENGINEER, GIVE A MINIMUM OF 24-HOURS NOTICE TO THE ENGINEER PRIOR TO TEST ROLLING. BASE COURSE GRADE SHALL BE SET TO ALLOW THICKNESS OF ASPHALTIC PAVEMENT SUCH THAT NEW ASPHALT IS 1/4" ABOVE CURB AND GUTTER.

DEPTH OF BASE COURSE SHALL MATCH EXISTING, TWELVE-INCH (12") MINIMUM.

EACH LAYER OF BASE COURSE SHALL BE WETTED AND ROLLED TO PROVIDE MAXIMUM COMPACTION IN ACCORDANCE WITH SECTION 301 OF THE WISDOT SPECIFICATIONS.

THE FINISHED BASE COURSE SHALL BE FINE GRADED IN PREPARATION FOR PAVING.

AFTER FINAL GRADING, CONTRACTOR SHALL MAINTAIN THE BASE COURSE UNTIL ASPHALTIC PAVING WORK HAS BEEN COMPLETED. ALL GRAVEL SURFACES DAMAGED DURING CONSTRUCTION SHALL BE REPLACED.

5.3.02 FLOWABLE FILL

FLOWABLE FILL IS REQUIRED AT ALL LOCATIONS WHERE STREETS CURB AND GUTTER, SIDEWALKS AND PAVEMENTS HAVE BEEN UNDERMINED.

5.3.03 FINISHING ROADWAY

THE FINISHED BASE COURSE SHALL BE FINE GRADED IN PREPARATION FOR ASPHALTIC PAVING. BASE COURSE RAMPS AT ALL EXISTING PAVEMENT SHALL BE REMOVED TO PROVIDE A FULL DEPTH BUTT JOINT.

IF CONTRACTOR CHOOSES TO USE ASPHALTIC RAMPS AT BUTT JOINTS DURING PAVING, RAMPS MUST BE REMOVED PRIOR TO PLACING BINDER.

5.3.04 NEW ROADWAYS

NEWLY CONSTRUCTED ROADWAYS SHALL, UNLESS OTHERWISE DIRECTED BY THE ENGINEER, RECEIVE LOWER LAYER ONLY MMAS 4 (12.5MM). PLACEMENT OF THE UPPER LAYER(S) MMAS 5 (4.5M) SHALL BE POSTPONED AS DEEMED NECESSARY BY THE ENGINEER SO AS TO MINIMIZE DAMAGE CAUSED BY CONSTRUCTION TRAFFIC.

MANHOLE CASTINGS AND VALVE BOXES IN ROADWAYS TEMPORARILY RECEIVING THE LOWER LAYER ONLY SHALL BE SET TO LOWER LAYER GRADE. MANHOLE CASTINGS AND VALVE BOXES SHALL BE SET ONE-QUARTER INCH (1/4") BELOW FINAL GRADE IN ALL OTHER AREAS UNLESS OTHERWISE DIRECTED BY ENGINEER. 95CABA AND MONOLITHIC RAMPING IS PROHIBITED.

IMMEDIATELY PRIOR TO PLACEMENT OF UPPER LAYER(S), CONTRACTOR SHALL INSTALL NON-ROCKING CAST IRON ADJUSTING RINGS ON ALL MANHOLES LOCATED WITHIN THE AREA TO BE PAVED AND RAISE ALL VALVE BOXES TO ONE-QUARTER INCH (1/4") BELOW FINAL GRADE.

5.3.05 ASPHALTIC PAVING

PRIOR TO COMMENCEMENT OF PAVING OPERATIONS, CONTRACTOR SHALL EXAMINE THE FINISHED ROAD BED. CONTRACTOR SHALL NOTIFY ENGINEER OF ANY AREAS OF SUSPECTED INSTABILITY. THE ENGINEER MAY REQUIRE AN ADDITIONAL TEST ROLL IF THERE IS A RAIN EVENT BEFORE PAVING COMMENCES. THE PAVEMENT STRUCTURE FOR NEW ROADWAYS SHALL BE DETERMINED FROM THE STANDARD CROSS-SECTIONS ENCOUNTERED IN THE FIELD. 24 HOURS PRIOR TO PAVING CONTRACTOR SHALL NOTIFY ADJACENT PROPERTY OWNERS OF PAVING OPERATIONS.

ENGINEER SHALL CHECK GRADE OF BASE AND STRUCTURE ADJUSTMENTS PRIOR TO PAVING. 48-HOURS NOTICE SHALL BE PROVIDED TO ENGINEER PRIOR TO PAVING AFTER GRADING AND ADJUSTMENTS ARE COMPLETE.

ALL ADJACENT CONCRETE SURFACES SHALL BE INSTALLED AND HAVE A MINIMUM COMPRESSIVE STRENGTH OF 3,000 PSI PRIOR TO PAVING.

CONTRACTOR SHALL NOT PAVE DURING RAIN EVENTS. CONTRACTOR SHALL OBTAIN APPROVAL FROM ENGINEER BEFORE COMMENCING PAVING ACTIVITIES AFTER RAIN EVENTS.

NEW FINISHED ASPHALTIC UPPER LAYER SHALL BE ONE-QUARTER INCH (1/4") ABOVE FLAG OF ADJACENT CURB AND GUTTER.

ALL MANHOLE CASTINGS AND VALVE BOXES WITHIN THE PAVING LIMITS OF THE STREET SHALL BE ADJUSTED TO A ONE-QUARTER INCH (1/4") BELOW THE FINISHED ASPHALTIC UPPER LAYER. FAILURE TO MEET THIS TOLERANCE MAY REQUIRE REMOVAL AND REPLACEMENT OF THE PAVEMENT, TO LIMITS DETERMINED BY ENGINEER, AT CONTRACTOR'S EXPENSE.

BASE COURSE AROUND MANHOLE CASTINGS AND VALVE BOXES SHALL BE HAND TRIMMED AND COMPACTED WITH A VIBRATORY PLATE COMPACTOR.

THE FITCHBURG UTILITY DEPARTMENT SHALL INSPECT THEIR VALVE BOXES AND MANHOLES PRIOR TO PAVING. CONTRACTOR SHALL PROVIDE TWO (2) DAYS NOTICE PRIOR TO PAVING TO COORDINATE THE INSPECTION OF THE WATER VALVES. FOR CITY OF FITCHBURG UTILITY, CALL (608)210-4210.

CONTRACTOR SHALL FURNISH CLASS 1 BARRICADES WITH FLASHERS ON ALL ADJUSTED CASTINGS UNTIL PAVING HAS BEEN COMPLETED. TOPS OF CASTINGS AND VALVE BOXES SHALL BE OILED, OR PROTECTED BY OTHER METHODS TO PREVENT SEALING OF LIDS AND FILLING OF LIFT HOLES DURING PAVING. UPON COMPLETION OF PAVING OPERATIONS, CONTRACTOR SHALL CHECK ALL CASTINGS AND VALVE BOXES TO INSURE THAT THE LIDS ARE CLEAN AND OPERATIONAL.

THE THICKNESS OF LOWER AND/OR UPPER COURSE MIXTURE SHALL BE INSTALLED IN ONE COURSE EACH. THE MIXTURE SHALL BE LAID AND COMPACTED SO THAT THE AVERAGE YIELDS IN POUNDS PER SQUARE YARD CONFORM TO THE FOLLOWING CHART:

SURFACE & BINDER YIELD - # / S.Y.		
Thickness	Min.	Max.
1"	112	118
1 1/2"	168	177
1 3/4"	195	205.5
2"	224	238
2 1/4"	252	265.5
2 1/2"	280	295
3"	336	354

WHENEVER THE YIELDS FALL BELOW THE MINIMUM ALLOWABLE YIELDS SPECIFIED ABOVE, THE ENGINEER SHALL DETERMINE THE CORRECTIVE ACTION TO BE TAKEN. THE CORRECTIVE ACTION MAY INCLUDE REMOVAL AND REPLACEMENT OF THE AREA OF DEFICIENT THICKNESS, AN OVERLAY WITH APPROVED MATERIAL OF THE AREA OF DEFICIENT THICKNESS, OR SUCH OTHER ACTION AS THE ENGINEER SHALL DETERMINE. THE AREA OF DEFICIENT THICKNESS SHALL BE DETERMINED ON THE BASIS OF STREET AREA, OR AREA COVERED IN ONE DAY'S OPERATION, WHICHEVER IS LESS. THE ENGINEER'S DETERMINATION WILL BE BASED ON THE CIRCUMSTANCES OF THE AREA INVOLVED, AND WILL INCLUDE A DETERMINATION OF THE DISTRIBUTION OF COSTS OF THE CORRECTIVE WORK REQUIRED.

WHEN THE AVERAGE YIELD ON A PROJECT EXCEEDS THE MAXIMUM ALLOWABLE YIELD, ALL EXCESS MATERIAL SHALL BE PAID FOR AT THE RATE OF ONE-HALF THE CONTRACT UNIT PRICE FOR THE TYPE OF MATERIAL INVOLVED. THE AVERAGE YIELD FOR THIS PURPOSE SHALL BE COMPUTED ON A DAILY BASIS, OR A STREET AREA, WHICHEVER COVERS THE SMALLEST AREA OF PAVING.

PLACE ASPHALT MIXTURE ON PREPARED SURFACE, SPREAD AND STRIKE-OFF. PLACE INACCESSIBLE AND SMALL AREAS BY HAND. PLACE EACH COURSE TO REQUIRED GRADE, CROSS-SECTION, AND COMPACTED THICKNESS.

PLACE ASPHALT IN STRIPS NOT LESS THAN TEN FEET (10') WIDE, UNLESS OTHERWISE ACCEPTABLE TO THE ENGINEER. COMPLETE LOWER COURSE FOR A SECTION BEFORE PLACING UPPER LAYER COURSE.

COLD WEATHER PAVING

CONTRACTOR SHALL NOT PLACE ASPHALTIC MIXTURE WHEN THE AIR TEMPERATURE APPROXIMATELY 3 FEET ABOVE GRADE, IN SHADE, AND AWAY FROM ARTIFICIAL HEAT SOURCE IS LESS THAN 40 DEGREES F UNLESS AN ENGINEER APPROVED COLD WEATHER PAVING PLAN IS IN EFFECT.

A COLD WEATHER PAVING PLAN SHALL BE SUBMITTED ANY TIME THE NATIONAL WEATHER SERVICE WEATHER FORECAST PREDICTS AMBIENT AIR TEMPERATURE LESS THAN 40 DEGREES F AT THE TIME OF PAVING. COLD WEATHER PAVING PLAN NEEDS TO BE SUBMITTED TO THE ENGINEER FOR APPROVAL PRIOR TO COMMENCEMENT OF PAVING DURING COLD WEATHER CONDITIONS.

COLD WEATHER PAVING PLAN SHALL INCLUDE CHANGES TO MIX DESIGN, AND ANY OPERATIONAL AND EQUIPMENT CHANGES PLANNED TO DEAL WITH COLD WEATHER CONDITIONS.

ENGINEER APPROVAL OR ACCEPTANCE OF COLD WEATHER PAVING PLAN DOES NOT RELIEVE THE CONTRACTOR OF RESPONSIBILITY FOR THE QUALITY OF HMA PAVEMENT PLACED IN COLD WEATHER UNDER ANY CIRCUMSTANCES.

IF CONTRACTOR FAILS TO FOLLOW APPROVED COLD WEATHER PAVING PLAN PAVING OPERATIONS WILL BE TERMINATED AND MATERIAL PLACED WITHOUT FOLLOWING APPROVED COLD WEATHER PAVING PLAN MAY BE REMOVED AT THE CONTRACTOR'S EXPENSE.

CONTRACTOR IS RESPONSIBLE FOR ALL COSTS ASSOCIATED WITH COLD WEATHER PAVING PLAN AND NO ADDITIONAL COMPENSATION FOR SUCH SHALL BE CONSIDERED.

NO ASPHALT PAVEMENT SHALL BE PLACED UNLESS THE AIR TEMPERATURE IS 40 DEGREES F AND RISING FOR UPPER LAYER AND 34 DEGREES F AND RISING FOR LOWER LAYERS. AIR TEMPERATURE SHALL BE MEASURED 3 FEET ABOVE GRADE, IN SHADE, AND AWAY FROM ARTIFICIAL HEAT SOURCE.

5.3.06 ROLLING

BEGIN ROLLING WHEN MIXTURE WILL BEAR ROLLER WEIGHT WITHOUT EXCESSIVE DISPLACEMENT. TWO OPERATIONAL ROLLERS MUST BE ON SITE AT ALL TIMES. IN THE EVENT A ROLLER DOES NOT WORK, THE PAVING OPERATION MUST CEASE IMMEDIATELY.

COMPACT MIXTURE WITH HOT HAND TAMPER OR VIBRATING PLATE COMPACTORS IN AREAS INACCESSIBLE TO ROLLERS.

PERFORM FINISH ROLLING WHILE MIXTURE IS STILL WARM ENOUGH FOR REMOVAL OF ROLLER MARKS. CONTINUE ROLLING UNTIL ROLLER MARKS ARE ELIMINATED AND ASPHALT HAS ATTAINED THE MAXIMUM DENSITY.

5.3.07 JOINTS

JOINTS BETWEEN OLD AND NEW PAVEMENTS OR BETWEEN SUCCESSIVE DAYS WORK SHALL BE CONSTRUCTED AND TREATED AS TO ENSURE THOROUGH AND CONTINUOUS BOND BETWEEN THE OLD AND NEW MIXTURES.

A. TRANSVERSE JOINTS. TRANSVERSE JOINTS SHALL BE CONSTRUCTED BY CUTTING THE MATERIAL BACK FOR ITS FULL DEPTH SO AS TO EXPOSE THE FULL DEPTH OF THE COURSE. WHERE A HEADER IS USED, THE CUTTING MAY BE OMITTED PROVIDED THE JOINT CONFORMS TO THE SPECIFIED THICKNESS. THESE JOINTS SHALL BE TREATED WITH TACK COAT MATERIAL.

B. LONGITUDINAL JOINT. THE LONGITUDINAL JOINT SHALL BE MADE BY OVERLAPPING THE SCREED ON THE PREVIOUSLY LAID MATERIAL FOR A WIDTH OF NOT MORE THAN TWO INCHES (2"), AND DEPOSITING A SUFFICIENT AMOUNT OF ASPHALTIC MIXTURE SO THAT THE FINISHED JOINT WILL BE SMOOTH AND TIGHT.

LONGITUDINAL JOINTS IN THE UPPER LAYER COURSE SHALL AT NO TIME BE PLACED IMMEDIATELY OVER SIMILAR JOINTS IN THE LOWER LAYER COURSE BENEATH. A MINIMUM DISTANCE OF TWELVE INCHES (12") SHALL BE PERMITTED BETWEEN THE LOCATION OF THE JOINTS IN THE LOWER LAYER COURSE AND THE LOCATION OF SIMILAR JOINTS IN THE UPPER LAYER COURSE ABOVE. THESE JOINTS SHALL BE TREATED WITH TACK COAT MATERIAL TO FULLY COAT THE JOINT SURFACE.

5.3.08 PRIME AND TACK COAT

HMA Pavement Densities shall conform to the following:

HMA PAVEMENT MINIMUM DENSITIES		
MINIMUM %DENSITY REQUIREMENT	UPPER LAYER	LOWER LAYER
Roadways	93.0	91.0
Basketball/Tennis Court/Shared-use Path	92%	92%

At the Engineer's discretion, if the average lot density falls below the minimum densities listed above, the material payment will be reduced based on the payment schedule below:

PAYMENT FACTORS	
PERCENT LOT DENSITY BELOW SPECIFIED MINIMUM	PAYMENT FACTOR (% of contract price)
From 0.0 to 0.5	98
From 0.6 – 1.5	95
From 1.6 to 3.0	85
Greater than 3.0	Remove & Replace at Contractor's expense

ASSESSED TONNAGE MAY INCLUDE UP TO THE TOTAL DAY'S PRODUCTION. ALL AVAILABLE TEST DATA WILL BE REVIEWED BY THE CITY AND TAKEN INTO CONSIDERATION. THE FINAL ASSESSED TONNAGE WILL BE DETERMINED BY THE CITY AT THE CITY'S SOLE DISCRETION.

HMA MIXTURE TESTING:

THE CITY SHALL USE A THIRD PARTY CONSULTANT WISDOT QUALIFIED LABORATORY FOR VERIFICATION OF HMA SAMPLES. THE TESTING MAY INCLUDE ANY OF THE FOLLOWING:

1. GRADATION
2. ASPHALT CONTENT (AASHTO T-164)
3. AIR VOIDS
4. VMA

ALL TEST RESULTS WILL BE MADE AVAILABLE TO THE CONTRACTOR.

Individual tests of the HMA pavement properties must conform to the requirements below as compared to the submitted mix design:

HMA VERIFICATION PRODUCTION TESTING	
HMA PROPERTY	ALLOWABLE JM/T TOLERANCE
#200 (0.075mm)	+/- 2.0%
%Va	+/- 1.3%
Asphalt Content (AASHTO T-164)	- 0.3%
Minimum % VMA	- 0.5%

At the Engineer's discretion, if the individual HMA property falls out of specification, the material payment will be reduced based on the payment schedule below.

HMA PAVEMENT REDUCTION OF PAYMENT SCHEDULE	
HMA PROPERTY	PAYMENT FACTOR (percent of contract price)
#200 (0.075mm)	95
Asphalt Content (AC) (AASHTO T-164)	90
%Va or %VMA	90

ASSESSED TONNAGE MAY INCLUDE UP TO THE TOTAL DAY'S PRODUCTION. ALL AVAILABLE TEST DATA WILL BE REVIEWED BY THE CITY AND TAKEN INTO CONSIDERATION. THE FINAL ASSESSED TONNAGE WILL BE DETERMINED BY THE CITY AT THE CITY'S SOLE DISCRETION.

IF MULTIPLE PAY FACTORS EXIST FOR THE SAME TONNAGE, THE ASSESSED PENALTY WILL USE THE LOWEST OF THE PAYMENT FACTORS. IT IS NOT INTENDED TO PENALIZE THE SAME MATERIAL TWICE.

THE CONTRACTOR MAY DISPUTE THE CITY'S QUALITY VERIFICATION TEST RESULTS BY HAVING THEIR RETAINED SAMPLE TESTED IN A SEPARATE, THIRD PARTY, WISDOT QUALIFIED LABORATORY. THE TEST RESULTS FROM THE CITY'S THIRD PARTY CONSULTANT LABORATORY AND THE CONTRACTOR'S THIRD PARTY LABORATORY WILL BE AVERAGED FOR PAY ADJUSTMENTS.

SECTION 6 - STORM SEWER

6.1 GENERAL

6.1.01 RELATED DOCUMENTS

WISDOT SPECIFICATIONS, LATEST REVISION AVAILABLE AT [HTTP://ROADWAYSTANDARDS.DOT.WI.GOV/STANDARDS/STNDSPEC/INDEX.HTM](http://ROADWAYSTANDARDS.DOT.WI.GOV/STANDARDS/STNDSPEC/INDEX.HTM)

CITY OF MADISON STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION, LATEST EDITION, AVAILABLE AT: [HTTP://WWW.CITYOFMADISON.COM/BUSINESS/PWSPECS.CFM](http://WWW.CITYOFMADISON.COM/BUSINESS/PWSPECS.CFM)

ASTM C16-90 - REINFORCED CONCRETE CULVERT, STORM DRAIN, AND SEWER PIPE

AASHTO M-198 - JOINTS FOR CIRCULAR CONCRETE SEWER AND CULVERT PIPE USING FLEXIBLE WATER TIGHT GASKETS

6.2 MATERIALS

6.2.01 BEDDING AND COVER

BEDDING AND COVER MATERIAL SHALL BE WASHED STONE, ALL OF WHICH PASSES A 1-1/2" SIEVE.

6.2.02 GRANULAR BACKFILL

GRANULAR BACKFILL FOR STORM SEWER SHALL BE GRADE I OR GRADE 2 AS SPECIFIED IN SECTION 209 OF THE WISDOT SPECIFICATIONS. USE OF SCREENINGS FOR GRANULAR BACKFILL MATERIAL IS PROHIBITED. NO CLAY LUMPS AND/OR FROZEN MATERIAL SHALL BE PRESENT.

6.2.03 STORM SEWER PIPE

REINFORCED CONCRETE PIPE SHALL BE THE ONLY STORM SEWER MATERIAL APPROVED FOR USE WITHIN PUBLIC RIGHTS OF WAY WITHOUT SPECIFIC WRITTEN PERMISSION FROM THE DEPARTMENT.

REINFORCED CONCRETE PIPE SHALL MEET THE STANDARD SPECIFICATIONS FOR REINFORCED CONCRETE CULVERT, STORM DRAIN, AND SEWER PIPE OF THE AMERICAN SOCIETY FOR TESTING MATERIALS, SERIAL DESIGNATION C76 FOR CIRCULAR PIPE, SERIAL DESIGNATION C307 FOR ELLIPTICAL PIPE. PROVIDE CLASS III UNLESS INDICATED OTHERWISE IN THE SPECIFICATIONS OR ON THE DRAWINGS.

JOINTS FOR CIRCULAR PIPE SHALL BE TONGUE AND GROOVE MEETING REQUIREMENTS OF ASTM C443.

6.2.04 APRON ENDWALLS REINFORCED CONCRETE PIPE APRON ENDWALLS SHALL BE THE ONLY ENDWALLS APPROVED FOR USE WITHIN PUBLIC RIGHTS OF WAY WITHOUT SPECIFIC WRITTEN PERMISSION FROM THE DEPARTMENT. FIRE CLASSES SHALL MATCH THE ADJACENT PIPE MATERIAL UNLESS OTHERWISE APPROVED BY THE DEPARTMENT.

CUTOFF WALLS SHALL BE INSTALLED ON APRON ENDWALLS LOCATED ON THE DOWNSTREAM END OF PIPES THAT ARE 24" OR GREATER, OR IF THE APRON ENDWALL IS LOCATED WITHIN THREE INCHES OF THE PERMANENT POOL ELEVATION.

6.2.05 PIPE GATES

PIPE GATES FOR REINFORCED CONCRETE PIPE APRON ENDWALLS SHALL BE PROVIDED IN ACCORDANCE WITH THE CITY OF MADISON STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION, LATEST EDITION, FOR ALL PIPES 15" IN DIAMETER AND LARGER THAT ARE UPSTREAM OR DOWNSTREAM OF A CLOSED SYSTEM. REFER TO THE CITY OF MADISON STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION, LATEST EDITION FOR THE SPECIFICATIONS AND STANDARD DETAIL DRAWINGS.

6.2.06 STORM SEWER STRUCTURES

STORM SEWER STRUCTURES LESS THAN OR EQUAL TO 6-FT IN DIAMETER SHALL BE PRECAST REINFORCED CONCRETE WITH CORED, NON-SCORED, SMOOTH-FORMED OPENINGS. ALL PRECAST STORM SEWER STRUCTURES LIDS SHALL BE TONGUE AND GROOVE. STORM SEWER STRUCTURES GREATER THAN 6-FT IN DIAMETER SHALL BE FIELD POURED, IN LIEU OF CORED OPENINGS, STRUCTURES MAY ALSO HAVE FORMED OPENINGS AND/OR BE POURED IN PLACE.

2 X 3 INLETS SHALL CONFORM TO WISDOT TYPE 2X3-FT INLETS, FOUR (4), FIVE (5), AND SIX (6) FOOT DIAMETER MANHOLES SHALL CONFORM TO WISDOT TYPE 4-FT DIAMETER, 5-FT DIAMETER, AND 6-FT DIAMETER MANHOLES, RESPECTIVELY.

MANHOLES SHALL BE REINFORCED CONCRETE CONFORMING TO THE STANDARD SPECIFICATIONS FOR PRECAST REINFORCED CONCRETE MANHOLE SECTIONS OF ASTM C418.

THE CONTRACTOR IS RESPONSIBLE FOR NOTIFYING THE CITY OF INLETS PER STANDARD DETAIL DRAWING 6.04 AND MUST BE POURED PRIOR TO PLACEMENT OF CURB AND GUTTER.

ADJUSTING RINGS SHALL BE LADTECH HDPE ADJUSTING RINGS OR APPROVED EQUAL. THE FIRST ADJUSTING RING SHALL BE SEALED TO THE CONE AND THE LAST ADJUSTING RING SHALL BE SEALED TO THE CASTING USING PRE-COMPRESSED BUTYL RUBBER 3/8" X 3/8". AN APPROVED BUTYL SEALANT OR A 3/8" ROUND BUTYL SEALANT ROPE SHALL BE PLACED IN THE ANNULAR SPACE BETWEEN THE REMAINING RINGS. USE OF PHIMS TO ADJUST HDPE ADJUSTING RINGS IS PROHIBITED.

6.2.07 CASTINGS

CASTINGS FOR VARIOUS STRUCTURE TYPES SHALL BE PROVIDED AS FOLLOWS. CONTRACTOR SHALL CORRECTLY ORIENT THE INLET GRATES RELATIVE TO THE DIRECTION OF FLOW AS DIRECTED BY THE ENGINEER. INLET CURB BOX HEADS SHALL READ "DUMP NO WASTE DRAINS TO LAKE" PER STANDARD DETAIL DRAWING 6.02.

Structure Type	Neenah Casting Designator
Type 2x3-FT Inlet (Continuous Grade)	R-3067-7004-L (vane grate)
Type 2x3-FT Inlet (Low Point, single)	R-3067-7004-VB (two-way vane grate)
Type 2x3-FT Inlet (Low Point, twin)	R-3067-7004-L (vane grate)
Type 2x3-FT Inlet (Driveway)	R-3246-1 (grate as noted for conditions above)
Manhole	R-1550 (self seal, non-rock)

Non-rocking cast iron adjusting rings shall be as specified in SECTION 5 - PAVEMENTS.

6.3 EXECUTION

6.3.01 GENERAL

BEFORE THE START OF CONSTRUCTION, THE CONTRACTOR SHALL VERIFY EXISTING STORM SEWERS ELEVATIONS WITH PROPOSED PLAN ELEVATIONS. ALL SIGNIFICANT DIFFERENCES BETWEEN EXISTING STORM SEWER INVERTS AND PLAN INVERTS (GREATER THAN 0.1") SHALL BE REPORTED TO THE ENGINEER.

STORM SEWER SHALL BE INSTALLED TO AN ELEVATION TOLERANCE OF PLUS OR MINUS 0.1 FEET OF THE PLAN ELEVATION OR ELEVATION PROVIDED ON THE GRADE SHEET AT ANY POINT ALONG THE MAIN.

WHEN A SEWER CROSSES UNDER A WATER MAIN, PROVIDE A MINIMUM OF SIX INCHES (6") SEPARATION BETWEEN THE BOTTOM OF THE WATER MAIN AND THE TOP OF THE SEWER. WHEN A SEWER CROSSES OVER A WATER MAIN, PROVIDE A MINIMUM OF 18 INCHES SEPARATION BETWEEN THE TOP OF THE WATER MAIN AND THE BOTTOM OF THE STORM SEWER.

6.3.02 HANDLING OF MATERIALS

HANDLE MATERIALS WITH CARE TO AVOID DAMAGE. DO NOT DUMP OR DROP MATERIALS. REMOVE ALL DAMAGED OR FLAWED MATERIALS FROM THE SITE.

ARRANGE FOR SUITABLE SITES FOR MATERIAL STORAGE.

6.3.03 LAYING OF PIPE

THE TRENCH SHALL BE EXCAVATED TO AN ELEVATION AT LEAST SIX INCHES (6") BELOW THE ELEVATION ESTABLISHED FOR THE BOTTOM OF THE PIPE. THIS DEPTH SHALL BE BACKFILLED WITH BEDDING MATERIAL. BEDDING AND COVER MATERIAL SHALL BE USED FOR THE FULL CROSS SECTION OF THE EXCAVATED TRENCH TO THE SPRINGLINE OF THE PIPE. BEINGS INSTALLED, GRANULAR MATERIAL SHALL BE PROVIDED FROM THE SPRINGLINE OF THE PIPE TO THE PROPOSED PAVEMENT SUBGRADE.

COMPACTION OF GRANULAR BACKFILL MATERIAL SHALL MEET 95% MODIFIED PROCTOR, THE STANDARD SPECIFICATION OF ASTM D-1557, WITHIN THREE VERTICAL FEET (3') OF THE PAVEMENT SUBGRADE. COMPACTION OF GRANULAR BACKFILL MATERIAL SHALL MEET 90% MODIFIED PROCTOR, THE STANDARD SPECIFICATION OF ASTM D-1557, IN THE CROSS-SECTIONAL AREA OF THE TRENCH BETWEEN THE SPRINGLINE OF THE PIPE AND THE PLANE THREE VERTICAL FEET (3') FROM THE PROPOSED PAVEMENT SUBGRADE.

NOT MORE THAN 200 FEET OF TRENCH SHALL BE OPENED AT ANY ONE TIME. NOT MORE THAN 200 FEET OF TRENCH MAY BE OPENED IN ADVANCE OF THE COMPLETED PIPE LAYING OPERATIONS, AND NOT MORE THAN ONE STREET CROSSING MAY BE OBSTRUCTED BY THE SAME TRENCH AT ANY ONE TIME.

LAY PIPE UNIFORMLY TO LINE AND GRADE SO THAT THE FINISHED SEWER FREEZE AS A SURFACE BORE. NOTICEABLE VARIATIONS FROM THE ALIGNMENT AND GRADE WILL BE SUFFICIENT CAUSE FOR REJECTION OF THE WORK.

COMMENCE AT THE LOWEST POINT AND PROCEED TO THE UPPER END. LAY PIPE WITH BELL-END POINTING UP-GRADE.

ALL STORM SEWER PIPE MUST EXTEND THROUGH THE ENTIRE STRUCTURE WALL PLUS TWO INCHES (2") BEYOND.

WHEN WORK HAS STOPPED FOR ANY REASON, SECURELY PLUG THE END OF THE PIPE.

PIPE JOINTING: ASSEMBLE JOINTS IN ACCORDANCE WITH THE PIPE MANUFACTURER'S INSTRUCTIONS.

CONCRETE PIPE PICK HOLES SHALL BE TAR SEALED WITH A FORMED CONCRETE PLUS, OR PLUGGED WITH A POPIT PLASTIC PLUS OR APPROVED ALTERNATIVE.

6.3.04 BEDDING AND COVER

PROVIDE A MINIMUM OF SIX INCHES (6") OF BEDDING MATERIAL UNDER THE PIPE BARREL AND FOUR INCHES (4") UNDER THE APRON ENDWALLS. THE SHOULDER-SLICE THE MATERIAL SO THAT IT FILLS AND SUPPORTS THE HAUNCH AREA AND ENCASES THE PIPE. IF EXCAVATION IS CARRIED DEEPER THAN SIX INCHES (6") BELOW THE PIPE BARREL, BACKFILL THE EXCESS DEPTH WITH BEDDING MATERIAL. AFTER THE PIPE HAS BEEN LAID AND UNIFORMED, PLACE COVER MATERIAL BY HAND OR EQUALLY CAREFUL MEANS TO THE SPRINGLINE OF THE PIPE. CONTACT COVER MATERIAL USING TAMPING BARS AND/OR MECHANICAL TAMPERS.

SEE STANDARD DETAIL DRAWING 6.01 STORM SEWER TRENCH.

6.3.05 APRON ENDWALLS

JOINT TIES SHALL BE INSTALLED AT THE LAST UPSTREAM AND DOWNSTREAM TIE (2) JOINTS ON ANY PIPE RUN ENDING IN AN APRON ENDWALL. CONSTRUCTED WITH REINFORCED CONCRETE PIPE OR HORIZONTAL ELLIPTICAL REINFORCED CONCRETE PIPE OF ANY SIZE. RIPRAP, UNDERLINED WITH GEOTEXTILE FABRIC, SHALL BE PROVIDED AT THE ENDS OF THE APRON ENDWALL AS INDICATED ON THE PLANS OR AS DIRECTED BY THE ENGINEER. PLACEMENT SHALL BE IN ACCORDANCE WITH SECTION 6.06 OF THE WISDOT SPECIFICATIONS. GEOTEXTILE FABRIC SHALL EXTEND A MINIMUM OF TWO FEET (2') UNDER THE APRON ENDWALL. SEE STANDARD DETAIL DRAWING 6.06 RIP RAP AND ENDWALL INSTALLATION.

PICK HOLES SHALL BE SEALED WITH CONCRETE ON THE INSIDE AND THE OUTSIDE OF THE STRUCTURE PRIOR TO BACKFILLING.

6.3.06 PIPE GATES

PIPE GATES FOR REINFORCED CONCRETE APRON ENDWALLS SHALL BE INSTALLED IN ACCORDANCE WITH THE CITY OF MADISON STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION, LATEST EDITION.

6.3.07 STORM SEWER STRUCTURES

STORM SEWER STRUCTURES SHALL HAVE A MINIMUM OF THREE INCHES (3") AND A MAXIMUM OF NINE INCHES (9") OF ADJUSTING RINGS. ADJUSTING RINGS SHALL BE INSTALLED PER MANUFACTURER'S SPECIFICATIONS AND AS HEREIN SPECIFIED. PRIOR TO INSTALLATION OF ADJUSTING RINGS, CLEAN TOP OF CONCRETE STRUCTURE OF DEBRIS. PRECAST FLAT SEALABLE SURFACE USING NON-SHRINK MORTAR (4000 PSI) IF THE TOP OF THE CONCRETE STRUCTURE IS TOO BADLY CHIPPED TO INSTALL THE RINGS CORRECTLY. RINGS FOR STORM SEWER MANHOLE STRUCTURES INSTALL PRE-COMPRESSED BUTYL RUBBER 3/8" X 3/8" BETWEEN STRUCTURE AND FIRST RING WHERE THE FLAT AREA OF THE RING WILL BE IN CONTACT WITH THE STRUCTURE FOR THE ENTIRE 360 DEGREES, ONE (1) 1/4" BEAD OF SEALANT OR 3/8" ROUND BUTYL SEALANT ROPE ON THE ENTIRE 360 DEGREES OF EACH RING. RINGS MAKE LIP AND INSTALL PRE-COMPRESSED BUTYL RUBBER 3/8" X 3/8" ON TOP OF THE UPPER RING IN A LOCATION SO THAT IT CONTACTS THE COVER FRAME THE FULL 360 DEGREES. MAKE SURE ALL LOOSE RUST IS REMOVED FROM THE CASTING BEFORE IT IS PLACED ON THE ADJUSTING RINGS.

STORM SEWER 2X3 INLETS, INSTALL PRE-COMPRESSED BUTYL RUBBER 3/8" X 3/8" BETWEEN STRUCTURE AND FIRST RING AND THE TOP RING AND THE CASTING. WRAP OUTSIDE OF THE ADJUSTING RINGS ON INLETS WITH MINIMUM FOUR (4) OUNCES NON-WOVEN FILTER FABRIC. LAP FILTER FABRIC OVER INLET STRUCTURE AND CASTING BY FOUR INCHES (4") AND ITSELF BY ONE FOOT (1'). FASTEN FILTER FABRIC IN PLACE DURING BACKFILL OPERATIONS. ALL ADJUSTMENT FOR MATCHING ROAD GRADE SHALL BE MADE BY UTILIZING A MOLDED AND INDEXED SLOPE RING. USE OF MORTAR OR SHIMS, OR MODIFYING ADJUSTING RINGS

TO MATCH ROAD GRADINGS IS PROHIBITED. A FALSE WALL MUST BE POURED IF A HORIZONTAL ADJUSTMENT IS NECESSARY, SEE STANDARD DETAIL DRAWING 6.04 INLET FALSE WALL.

STORM SEWER MANHOLE RIMS MAY NEED ADJUSTMENT FROM THE PLAN ELEVATION TO MEET FIELD CONDITIONS. THE COST OF THIS WORK SHALL BE INCIDENTAL TO THE CONTRACT.

POURED CONCRETE COLLARS SHALL BE VIBRATED AND TROWEL FINISHED. COLLAR SHALL BE EIGHT INCH BY EIGHT INCH (8"X8") ON THE EXTERIOR AND EXTEND AROUND THE ENTIRE PIPE ON BOTH SIDES. THE INSIDE AND OUTSIDE OF THE COLLARS SHALL BE COMPLETED AT THE SAME TIME. CONCRETE COLLARS SHALL CURE FOR 24 HOURS AND BE INSPECTED AND APPROVED BY THE ENGINEER PRIOR TO BACKFILLING. ALL STORM SEWER STRUCTURES SHALL HAVE A FIELD POURED BENCH WITH A POSITIVE FLOW CHANNEL AND BENCH. CONCRETE SHALL BE PER SECTION 4.2.01 - CONCRETE.

PICK HOLES SHALL BE SEALED WITH CONCRETE ON THE INSIDE AND THE OUTSIDE OF THE STRUCTURE PRIOR TO BACKFILLING.

6.3.08 CASTINGS

INLET CASTINGS SHALL BE SET TO FINAL GRADE WITH ADJUSTING RINGS PER SECTION 6.3.08 - STORM SEWER STRUCTURES PRIOR TO AND SEPARATE FROM POURING THE CURB AND GUTTER. INLET CASTINGS SHALL BE SET WITH AN EIGHT INCH (8") FLOW LINE DEPRESSION FROM THE TOP OF CURB. CONCRETE SHALL BE POURED BEHIND THE INLET CASTING SO AS TO COVER THE BOLT HOLES.

MANHOLE CASTINGS IN ROADWAYS TEMPORARILY RECEIVING LOWER COURSE ONLY, SHALL BE SET TO BINDER GRADE. MANHOLE CASTINGS SHALL BE SET TO FINISH GRADE INCH (1") BELOW FINAL GRADE IN ALL OTHER AREAS UNLESS OTHERWISE DIRECTED BY ENGINEER. "SCAB" AND MONOLITHIC RAMPING IS PROHIBITED.

MANHOLE CASTINGS SET TO BINDER GRADE, SHALL BE BROUGHT TO ONE-QUARTER INCH (1/4") BELOW SURFACE GRADE IMMEDIATELY PRIOR TO PLACEMENT OF SURFACE COARSE, WITH NON-ROCKING CAST IRON ADJUSTMENT RINGS PER SECTION 5.2.06 - ADJUSTING RINGS.

6.3.09 EXISTING STORM SEWER CONNECTIONS

ALL STORM SEWER CONNECTIONS TO EXISTING STRUCTURES SHALL BE MADE BY USING A CORING MACHINE WITH A POURED CONCRETE COLLAR. THE INSIDE AND OUTSIDE OF THE POURED CONCRETE COLLAR SHALL BE COMPLETED AT THE SAME TIME. CONCRETE COLLAR SHALL BE VIBRATED AND TROWEL FINISHED. POURED CONCRETE COLLARS SHALL CURE FOR 24 HOURS AND BE INSPECTED AND APPROVED BY THE ENGINEER PRIOR TO BACKFILLING. FOR CONNECTIONS, THE CONTRACTOR SHALL HAVE THE OPTION OF USING AN APPROVED WATERTIGHT ADAPTOR FOR THE JOINT.

A POURED CONCRETE COLLAR MAY BE REQUIRED AT THE JUNCTION OF A NEW RCP PIPE TO AN EXISTING RCP PIPE WHEN IDENTIFIED ON THE PLANS OR DIRECTED BY ENGINEER. THE JUNCTION SHALL BE CLEAN CUT WITH NO GROUT. CONCRETE COLLAR SHALL HAVE A MINIMUM WIDTH EXTENDING ONE FOOT (1') IN EITHER DIRECTION OF THE JOINT AND A MINIMUM THICKNESS AROUND THE PIPE OF EIGHT INCHES (8"). CONCRETE COLLAR SHALL BE VIBRATED AND TROWEL FINISHED. POURED CONCRETE COLLARS SHALL CURE FOR 24 HOURS AND BE INSPECTED AND APPROVED BY THE ENGINEER PRIOR TO BACKFILLING.

6.3.10 ABANDONMENT A. STRUCTURES, THE CASTING, ALL ADJUSTING RINGS, AND THE TOP THREE FEET (3') OF THE STRUCTURE SHALL BE REMOVED. CASTINGS ARE THE PROPERTY OF THE CITY. A HOLE SHALL BE CUT INTO THE BOTTOM OF THE STRUCTURE TO ACCOMMODATE DRAINAGE THROUGH THE STRUCTURE. ALL OPENINGS WITHIN THE STRUCTURE SHALL BE PLUGGED WITH CONCRETE. THE ENTIRE STRUCTURE SHALL BE COMPLETELY FILLED IN WITH GRANULAR MATERIAL OR CELLULAR CONCRETE. ALL DISTURBED AREAS SHALL BE BACKFILLED WITH THE REQUIRED BACKFILL MATERIAL.

B. PIPE THE APRON ENDWALL SHALL BE REMOVED. THE PIPE END SHALL BE PLUGGED WITH CONCRETE.

6.3.11 DENATERING

IF CONDITIONS WARRANT, CONTRACTOR SHALL FURNISH AND INSTALL WELL POINT SYSTEMS OR DEEP WELLS. SPACING AND DEPTH OF WELL POINTS OR DEEP WELLS SHALL BE ADEQUATE TO LOWER THE GROUND WATER TABLE BELOW THE TRENCH BOTTOM. NO EXTRA PAYMENT WILL BE MADE FOR DENATERING OF THE TRENCH WHETHER ACCOMPLISHED BY THE USE OF SUMPS AND PUMPS, WELL POINT SYSTEMS OR DEEP WELLS.

CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS DURING THE DENATERING OPERATION TO PROTECT ADJACENT STRUCTURES AGAINST SUBSIDENCE, FLOODING OR OTHER DAMAGE.

IN AREAS WHERE CONTINUOUS OPERATION OF DENATERING PUMPS IS NECESSARY, CONTRACTOR SHALL AVOID NOISE DISTURBANCE TO NEARBY RESIDENCES TO THE GREATEST EXTENT POSSIBLE BY USING ELECTRIC DRIVEN PUMPS, INTAKE AND EXHAUST SILENCERS OR HOUSING TO MINIMIZE NOISE.

UPON COMPLETION OF THE DENATERING PROJECT, ALL DENATERING WELLS SHALL BE PERMANENTLY ABANDONED; IF DENATERING WELLS ARE LESS THAN 25 FEET DEEP THEY SHALL BE PERMANENTLY ABANDONED BY REMOVING THE WELL CASING AND SCREENS AND FILLING THE BOREHOLE WITH BENTONITE. IF DENATERING WELLS ARE 25 FEET DEEP OR GREATER, THEY SHALL BE ABANDONED PER NR 912.26.

6.3.12 FROST CLEARANCES

STORM SEWERS OR CULVERTS, WHICH CROSS AN ACTIVE SEWER, WATER MAIN OR LATERAL SHALL HAVE A MINIMUM CLEAR VERTICAL CLEARANCE OF THREE FEET (3'). CROSSINGS WITH LESSER VERTICAL CLEARANCE SHALL BE PROTECTED FROM FROST DAMAGE BY PLACEMENT OF TWO SHEETS (4'X8') OF TWO-INCH THICK R-10, 25 PSI, EXTRUDED POLYSTYRENE BOARD INSULATION FOUR INCHES (4") TOTAL STAGGERED AS DIRECTED BY THE ENGINEER.

6.4 FIELD QUALITY CONTROL AND TESTING

6.4.01 TELEVISION

ALL STORM SEWERS, PIPES AND STRUCTURES, SHALL BE TELEVISED.

CLOSED CIRCUIT TELEVISION SHALL BE UTILIZED FOR INSPECTING THE INTERIOR OF ALL COMPLETED SECTIONS OF THE MAINS. TELEVISION SHALL TAKE PLACE AFTER ALL UTILITIES ARE INSTALLED, BACKFILLED AND CONTACTED. ALL STORM SEWER HAS BEEN CLEANED. THE INTERIOR OF UNDERCUTS ARE COMPLETE, AND PRIOR TO PLACEMENT OF ANY HARD SURFACE. FLASH DRIVE RECORDINGS OF THESE INSPECTIONS AND WRITTEN AND PDF LOGS OF SAME SHALL BE SUBMITTED TO AND REVIEWED BY THE ENGINEER FIVE BUSINESS DAYS PRIOR TO THE PLACEMENT OF ANY HARD SURFACE. FLASH DRIVE RECORDINGS AND WRITTEN AND PDF LOGS SUBMITTED TO THE ENGINEER SHALL EXCLUSIVELY BE FOR STORM SEWER, OR FLASH DRIVE RECORDINGS AND WRITTEN AND PDF LOGS FOR SANITARY SEWER SHALL BE SUBMITTED SEPARATELY. INSPECTION RECORDS SHALL BE OF SUITABLE FORM AND SHALL INCLUDE, BUT NOT NECESSARILY BE LIMITED TO, THE FOLLOWING DATA:

PROJECT TITLE, OWNER NAME
DATE OF INSPECTION, TYPE OF PIPE AND SIZE
WEATHER
NAMES OF INSPECTORS AND TECHNICIANS
LOCATION OF LINE
MANHOLE NUMBERS, SECTION LENGTH
DIRECTION OF INSPECTION AND MEASUREMENTS
LOCATION, SIZE, AND DIRECTION OF ALL LATERALS, INCLUDING LATERALS EXTENDING FROM MANHOLES
GENERAL CONDITION OF LINE
DEFLECTIONS (VERTICAL AND HORIZONTAL)
JOINT CONDITIONS
POINTS OF INFILTRATION, LOCATIONS OF OBSTRUCTIONS

THE TELEVISION CAMERA USED SHALL BE SPECIFICALLY DESIGNED AND CONSTRUCTED FOR SEWER INSPECTION AND SHALL TAKE PICTURE IN COLOR, BLACK AND WHITE IMAGERY SHALL NOT BE ACCEPTED. LIGHTING FOR THE CAMERA SHALL BE OPERATIVE IN 100 PERCENT HUMIDITY CONDITIONS. THE CAMERA SHALL HAVE A MINIMUM OF 120X480 RESOLUTION. PICTURE QUALITY AND DEFINITION SHALL BE TO THE COMPLETE SATISFACTION OF THE OWNER. THE IMPROVEMENTS SHALL NOT BE ELIGIBLE FOR ACCEPTANCE PRIOR TO CONTRACTOR'S SUBMISSION OF TELEVISION RECORDS WHICH ARE DEEMED SATISFACTORY BY THE OWNER.

THE CONTRACTOR SHALL, PRIOR TO TELEVISIONS, DEPOSIT INTO THE NEW SEWER MAINS AND SERVICES A MINIMUM AMOUNT OF WATER AS DIRECTED BY THE ENGINEER TO ALLOW FOR INDICATION OF SAGS IN THE PIPE.

FLASH DRIVE RECORDS SHALL BE MADE OF ALL SECTIONS OF THE NEW SEWER MAIN. THE VIDEO SHALL BE MADE CONTINUOUSLY AS THE CAMERA IS PULLED OR DRIVEN THROUGH THE LINE AND SHALL INCLUDE A PANORAMA VIEW OF EACH MANHOLE, AS WELL AS CONFIRMATION THAT A PLUS HAS BEEN INSTALLED ON THE PIPE EACH RECORDING SHALL BE IN FLASH DRIVE FORMAT AND SHALL BE NUMBERED AND DATED. A LIST SHALL BE PROVIDED ON THE CONTAINER FOR EACH FLASH DRIVE INDICATING THE FLASH DRIVE NUMBER, PROJECT NAME AND SECTIONS OF SEWER INCLUDED. ALL RECORDINGS SHALL BE MADE ON NEW FLASH DRIVES AND THE FLASH DRIVES SHALL BECOME THE PROPERTY OF THE OWNER. THE CONTRACTOR SHALL BE RESPONSIBLE FOR SUPPLYING ALL SAFETY EQUIPMENT NECESSARY TO COMPLETE THE WORK IN COMPLIANCE WITH APPLICABLE OSHA AND DCOM STANDARDS.

SECTION 7 - WATER MAINS, HYDRANTS, AND SERVICE LATERALS

7.1 GENERAL

7.1.01 RELATED DOCUMENTS

MCA SPECIFICATIONS, LATEST EDITION

AMERICAN WATER WORKS ASSOCIATION STANDARDS (AWWA), LATEST EDITION

WISDOT SPECIFICATIONS, LATEST REVISION AVAILABLE AT [HTTP://ROADWAYSTANDARDS.DOT.WI.GOV/STANDARDS/STNDSPEC/INDEX.HTM](http://ROADWAYSTANDARDS.DOT.WI.GOV/STANDARDS/STNDSPEC/INDEX.HTM)

7.1.02 DESCRIPTION OF WORK

THIS SECTION INCLUDES REQUIREMENTS FOR THE PROVISION AND INSTALLATION OF WATER MAINS, FIRE HYDRANTS, WATER SERVICES, AND RELATED FITTINGS.

7.2 MATERIALS

7.2.01 BEDDING AND COVER

BEDDING AND COVER MATERIAL FOR WATER MAIN, VALVES, HYDRANTS, HYDRANT LEADS, WATER SERVICES, AND RELATED FITTINGS, SHALL BE APPROVED BEDDING SAND WITH 100% OF MATERIAL PASSING A 3/8" SIEVE. NO NATIVE MATERIAL FROM TRENCH SHALL BE USED FOR BEDDING OR COVER MATERIAL. UNWASHED BANK RUN SAND AND CRUSHED BANK RUN GRAVEL WILL BE CONSIDERED GENERALLY ACCEPTABLE COVER MATERIAL.

7.2.02 GRANULAR BACKFILL

GRANULAR BACKFILL FOR WATER MAIN SHALL BE GRADE I OR GRADE 2 AS SPECIFIED IN SECTION 209 OF THE WISDOT SPECIFICATIONS. USE OF SCREENINGS FOR GRANULAR BACKFILL MATERIAL IS PROHIBITED. NO CLAY LUMPS AND/OR FROZEN MATERIAL SHALL BE PRESENT.

7.2.03 BACKFILL MATERIAL

WHEN THE TYPE OF BACKFILL MATERIAL IS NOT SPECIFIED, EXCAVATED BACKFILL MATERIAL MAY BE USED PROVIDED, THAT SUCH MATERIAL CONSISTS OF LOAM CLAY, SAND, GRAVEL, OR OTHER MATERIALS, WHICH, IN THE OPINION OF THE ENGINEER, ARE SUITABLE FOR BACKFILLING. ALL BACKFILL MATERIALS SHALL BE FREE FROM GUNDERS, ASHES, REFUSE, ORGANIC MATTER, BOULDERS, ROCKS OR STONE, FROZEN LUMPS OR OTHER SUCH DELETERIOUS, UNSUITABLE MATERIAL.

7.2.04 WATER MAIN PIPE, FITTINGS, AND ACCESSORIES

ALL WATER MAIN PIPE, FITTINGS AND SPECIALS SHALL BE DUCTILE IRON CONFORMING TO AWWA C151 AND SHALL BE MANUFACTURED IN THE UNITED STATES OF AMERICA (U.S.) AND LABELED AS SUCH. ALL WATER MAIN PIPE AND FITTING MANUFACTURERS SHALL BE U.S. COMPANIES WITH THEIR HEADQUARTERS LOCATED IN THE U.S. USE OF FOREIGN MATERIALS IS PROHIBITED. THICKNESS CLASS AND JOINT STYLE SHALL BE AS SPECIFIED BELOW FOR TYPE OF INSTALLATION. USE OF POLYVINYL CHLORIDE WATER PIPE OR OTHER COMPOSITE MATERIALS IS NOT ALLOWED.

A. PIPE, ALL BURIED WATER MAIN PIPE SHALL BE PUSH-ON OR MECHANICAL JOINT AND MINIMUM SPECIAL THICKNESS CLASS 52 WITH A MINIMUM RATED WORKING PRESSURE OF 350 PSI. PIPE WALL THICKNESS SHALL ALSO MEET THE REQUIREMENTS OF AWWA C150 FOR BURIED PIPING WITH DEPTH AND COVER AS SHOWN IN FIGURE 1 FOR LAYING CONDITION TYPE 5 WITH THE ADDITION OF ONE FOOT (1') OF COVER OVER TOP OF PIPE. THE WORDS "DUCTILE IRON" OR "DIO" ALONG WITH THE HEIGHT AND THICKNESS CLASS OF PIPE SHALL BE PLAINLY MARKED ON THE EXTERIOR OF EACH WATER MAIN PIPE.

ALL PIPE SHALL BE FURNISHED WITH CABLE BOND CONDUCTOR OR ELECTROBOND CONDUCTIVITY STRIPS. THERMITE WELDED STRIPS ARE ALLOWED PROVIDED WELD POINTS ARE THOROUGHLY COATED WITH BITUMASTIC MATERIAL.

INNER SURFACES OF ALL DUCTILE IRON PIPING SHALL BE CEMENT MORTAR LINED AND COATED PER ANNA C104. ALL BURIED DUCTILE IRON PIPING SHALL BE COATED ON THE OUTSIDE PER ANNA C104.

ALL EXPOSED WATER MAIN, INTERIOR PIPING, AND PIPING IN PITS OR MANHOLES SHALL BE FLANGED JOINT AND MINIMUM SPECIAL THICKNESS CLASS 53 WITH A MINIMUM RATED WORKING PRESSURE OF 350 PSI. PIPE WALL THICKNESS SHALL ALSO MEET THE REQUIREMENTS OF AWWA C151 FOR FLANGED JOINT.

EXPOSED INTERIOR PIPING SHALL BE FINISHED WITH INSIDE SURFACES PREPARED IN ACCORDANCE WITH NEAR WHITE GRADE NAPP 500-03, REMOVING ALL DIRT, RUST SCALE, AND FOREIGN MATERIALS. CLEANED SURFACES SHALL BE SHOP PRIMED. SHOP PRIMING SHALL BE WITH ONE COAT OF TNE66 64-1255 HI-BUILD EPOXOLINE PRIMER, OR EQUAL, APPLIED TO A MINIMUM OF 5.0-MILS DRY THICKNESS. PRIMER USED SHALL BE COMPATIBLE WITH PROPOSED FINISH COATS; CONTRACTOR TO VERIFY. ALL PIPING SUPPORTS AND APPURTENANCES SHALL BE FURNISHED SHOP PRIMED, CLEAN, AND READY TO ACCEPT FINISH PAINTING BY CONTRACTOR, WITH A MINIMAL AMOUNT OF SURFACE PREPARATION.

IN CASES WHERE CORPORATION STOPS ARE TO BE TAPPED INTO MAINS, PIPE WALL THICKNESS SHALL BE FURNISHED AS SPECIFIED IN ANNA C151. PIPE SADDLES MAY BE FURNISHED IN LIEU OF PIPE THICKNESS AS APPROVED BY UTILITY.

B. GASKETS. MECHANICAL JOINTS OR PUSH-ON JOINTS SHALL UTILIZE VULCANIZED SYNTHETIC RUBBER GASKETS AND SHALL CONFORM TO ANNA C111. BOLTS ON THE EXTERIOR JOINTS SHALL BE HIGH-STRENGTH LOW-ALLOY STEEL (CORTEN OR EQUAL) CONFORMING TO ANNA C111. CERTIFICATE TO THE EFFECT SHALL BE PROVIDED.

ALL VALVES, HYDRANTS, AND FITTINGS REQUIRE ARMOR TIPPED GASKETS AT MECHANICAL JOINTS. LEAD TIPPED CONDUCTIVITY GASKETS AND BRONZE WEDGES ARE PROHIBITED.

USE RESTRAINED JOINT LOCKING GASKETS WHEN ELECTING TO OR ARE OTHERWISE REQUIRED TO MEET THRUST-RESTRAINT REQUIREMENTS. RESTRAINED-JOINT LOCKING GASKETS MUST BE CERTIFIED AS COMPLIANT FOR USE WITH THE FURNISHED

E. FITTINGS, ALL WATER MAIN FITTINGS SHALL BE DUCTILE IRON CONFORMING TO ANNA C153 OR ANNA C110.

SLIP JOINT FITTINGS ARE PROHIBITED.

INNER SURFACES OF ALL DUCTILE IRON PIPE FITTINGS SHALL BE CEMENT MORTAR LINED AND COATED PER ANNA C104. ALL BURIED DUCTILE IRON PIPE FITTINGS SHALL BE COATED ON THE OUTSIDE PER ANNA C104.

WATER MAIN PLUGS, IN THE ABSENCE OF A FLUSHING HYDRANT, CONTRACTOR SHALL FURNISH AND INSTALL MECHANICAL JOINT CAPS WITH A 1/2" CORPORATION STOP IN ALL PLUGGED DEAD ENDS. CARE SHALL BE TAKEN IN PLACING CONCRETE FOR THRUST BLOCKS TO PROTECT THE CORPORATION AND RETAIN OPERABILITY. ALL ENDS SHALL BE MARKED WITH A 10-FOOT, 4X4X4 PLACED AT THE INVERT AND PAINTED BLUE.

TAPPING SLEEVES SHALL BE SMITH BLAIR 622, EPOXY COATED CARBON STEEL, SLEEVE WITH MECHANICAL JOINT OUTLET AND STAINLESS STEEL BOLTS, OR APPROVED EQUAL.

1.2.05 VALVES AND VALVE BOXES

RESILIENT WEDGE GATE VALVES, ALL VALVES 16" OR SMALLER SHALL BE RESILIENT SEAT GATE VALVES MEETING THE REQUIREMENTS OF ANNA C504. GATE VALVES SHALL HAVE DUCTILE IRON BODY, RESILIENT WEDGE, NON-RISING STEM AND O-RING PACKING BOX, AND RATED FOR 250-PSI WORKING PRESSURE. ALL WATER MAIN GATE VALVES SHALL HAVE MECHANICAL JOINT ENDS UNLESS OTHERWISE SPECIFIED. VALVES SHALL BE AMERICAN FLOW CONTROL RESILIENT WEDGE GATE VALVES OR APPROVED EQUAL. OPERATORS ON WATER MAIN VALVES SHALL BE 2-INCH SQUARE NUT. STAINLESS STEEL BOLTS SHALL BE USED FOR CONNECTION OF VALVE TO WATER MAIN PIPE.

BURIED VALVES SHALL BE EPOXY COATED IN ACCORDANCE WITH ANNA C550.

VALVE BOX STABILIZER SHALL BE ADAPTOR, INC., OR APPROVED EQUAL. DETERMINATION OF SPECIFIC MODEL SHALL BE AS RECOMMENDED BY THE MANUFACTURER.

VALVE BOXES SHALL BE TYLER MODEL NO. 6860DD, OR EQUAL, WITH NO. 6 BASE, THREE (3) PIECE SCREW TYPE BOX, 5-1/4 INCH SHAFT AND STAY-PUT COVER MARKED "WATER". VALVE BOXES SHALL BE MANUFACTURED IN THE UNITED STATES OF AMERICA AND LABELED AS SUCH. USE OF FOREIGN MATERIALS IS PROHIBITED.

A MINIMUM OF 10 GAUGE COATED COPPER WIRE OR EQUIVALENT SHALL BE USED TO PROVIDE CONTINUITY ACROSS VALVE.

RUBBER-SEATED BUTTERFLY VALVES, ALL VALVES 20" OR LARGER SHALL BE RUBBER-SEATED BUTTERFLY VALVES MEETING THE REQUIREMENTS OF ANNA C504. JOINT STYLE SHALL BE AS SPECIFIED FOR PIPING INSTALLATION. BUTTERFLY VALVES SHALL BE OPEN LEFT, MUELLER 3211-20 OR APPROVED EQUAL.

1.2.06 FIRE HYDRANTS

ALL FIRE HYDRANTS, PRIVATE AND PUBLIC, SHALL CONFORM TO ANNA C502 WITH 5-1/4 INCH MAIN VALVE OPENING, 6-INCH MECHANICAL JOINT INLET, TWO (2) 2-1/2 INCH NATIONAL STANDARD HOSE CONNECTIONS, ONE 4-1/2 INCH NATIONAL STANDARD RUMPER CONNECTION, 1-1/2 INCH PENTAGON OPERATING NUT AND CAPS, OPEN LEFT. NO WEATHER SHIELD SHALL BE PROVIDED ON TOP OPERATING NUT. HYDRANT SHALL HAVE BRONZE SEAT RING AND SEAT INSERT, AND DUCTILE IRON STAND PIPE, NOZZLE SECTION, BOTTOM AND CROSS ARM. HYDRANT SHALL BE WATERCLO 18-61 SEVEN FOOT (7) BURY, WITH BREAKAWAY FLANGE AND PAINTED RED. ALL AREAS OF HYDRANT WITH PAINT DEFECTS SHALL BE REPAINTED WITH WATERLOUS TOUCH-UP KIT OR APPROVED EQUAL. STAINLESS STEEL BOLTS SHALL BE USED FOR CONNECTION OF HYDRANT TO WATER MAIN PIPE.

FIRE HYDRANT MARKERS SHALL BE 36-INCH, ORANGE, SLIMLINE FH FIRE HYDRANT MARKER MANUFACTURED BY FLEXSTAKE, INC., MODEL NO. 5FH-3.

FIRE HYDRANT LEADS SHALL BE CLASS 52 DUCTILE IRON AND ALL JOINTS IN THE LEAD SHALL BE MECHANICAL JOINTS WITH MEGALUG GLANDS, RODDING, OR AN APPROVED LOCKING JOINT CONFORMING TO THE REQUIREMENTS IN 1.2.04 WATER MAIN PIPE FITTINGS AND ACCESSORIES. ALL PUBLIC FIRE HYDRANT LEADS SHALL BE SIX INCH (6") IN DIAMETER UNLESS OTHERWISE SPECIFIED. ALL PRIVATE MAINS BETWEEN A MUNICIPAL MAIN AND A PRIVATE FIRE HYDRANT SHALL BE EIGHT INCH (8") IN DIAMETER.

FIRE HYDRANT AUXILIARY VALVES SHALL BE GATE VALVES CONFORMING TO THE REQUIREMENTS IN 1.2.05 VALVES AND VALVE BOXES.

A MINIMUM OF 10 GAUGE COATED COPPER WIRE OR EQUIVALENT SHALL BE USED TO PROVIDE CONTINUITY ACROSS HYDRANT FOOT VALVE.

1.2.07 WATER SERVICES

MATERIALS FOR WATER SERVICES FOUR INCHES (4") AND LARGER SHALL BE AS SPECIFIED ABOVE IN 1.2.04 WATER MAIN PIPE FITTINGS AND ACCESSORIES AND IN 1.2.05 VALVES AND VALVE BOXES.

WATER SERVICE PIPING FOR SERVICES SMALLER THAN FOUR INCHES (4") SHALL BE TYPE K SOFT COPPER CONFORMING ASTM B88. USE OF PVC WATER SERVICE PIPING OR OTHER COMPOSITE MATERIALS IS NOT ALLOWED. CORPORATIONS, CURB STOP VALVES, AND CURB BOXES SHALL BE AS FOLLOWS:

A. 3/4-INCH AND 1-INCH SERVICES. CORPORATIONS SHALL BE MUELLER H-1500N, COMPRESSION FITTING CONNECTION. CURB STOP VALVES SHALL BE MUELLER II ORISEAL H-1520N, COMPRESSION FITTING CONNECTION.

B. 1-1/2-INCH AND 2-INCH SERVICES. SADDLES SHALL BE A MUELLER DOUBLE-STRAP BRONZE SERVICE SADDLES OR APPROVED EQUAL. CORPORATIONS SHALL BE MUELLER H-1501N, COMPRESSION FITTING CONNECTION. CURB STOP VALVES SHALL BE MUELLER II ORISEAL H-1520N, COMPRESSION FITTING CONNECTION.

C. CURB BOXES. CURB BOXES SHALL BE MUELLER H-10385 OR H-10386, AS APPLICABLE. ARCH STYLE. COMPLETE WITH LID AND 4-FOOT STATIONARY ROD, MUELLER 84154 OR 58055. LIDS SHALL BE MARKED "WATER" AND SET TO FINAL GRADE.

D. CONNECTION UNION SHALL BE MUELLER H-15403N, THREE-PIECE COMPRESSION UNION FOR SPLICING COPPER. SPLICING WILL ONLY BE ALLOWED IF SERVICE RUN IS LONGER THAN AVAILABLE LENGTHS OF SERVICE MATERIAL.

1.2.08 ABANDONMENT

WATER MAINS ENDS TO BE ABANDONED AND TO BE LEFT IN SERVICE SHALL BE SEALED WITH MECHANICAL JOINT PLUGS AND CAPS SHALL BE DUCTILE IRON CONFORMING TO ANNA C153 OR ANNA C110.

ROUGH BRASS PLUGS SHALL BE INSTALLED WITH MUELLER H-15451N I10 COMPRESSION FITTING, AT THE ENDS OF ALL COPPER WATER SERVICES TO BE ABANDONED.

1.2.09 INSULATION

INSULATE WITH TWO SHEETS (4XB) OF TWO-INCH (2") THICK R-10, 25 PSI, EXTRUDED POLYSTYRENE BOARD INSULATION (FOUR INCHES (4") TOTAL).

1.3 EXECUTION

1.3.01 GENERAL

BEFORE THE START OF CONSTRUCTION, THE CONTRACTOR SHALL VERIFY EXISTING WATER MAIN LOCATION AND ELEVATIONS WITH PROPOSED PLANS. ALL SIGNIFICANT DIFFERENCES BETWEEN EXISTING WATER MAIN LOCATIONS (GREATER THAN ONE FOOT (1)) AND ELEVATIONS (GREATER THAN SIX INCHES (6")) SHALL BE REPORTED TO THE ENGINEER.

WATER MAIN SHALL BE INSTALLED TO AN ELEVATION TOLERANCE OF PLUS OR MINUS 0.1 FEET OF THE PLAN ELEVATION OR ELEVATION PROVIDED ON THE GRADE SHEET AT ANY POINT ALONG THE MAIN.

WHEN A SEWER CROSSES UNDER A WATER MAIN, PROVIDE A MINIMUM OF SIX INCHES (6") OF SEPARATION BETWEEN THE BOTTOM OF THE WATER MAIN AND THE TOP OF THE SEWER. WHEN A SEWER CROSSES OVER A WATER MAIN, PROVIDE A MINIMUM OF 18 INCHES SEPARATION BETWEEN THE TOP OF THE WATER MAIN AND THE BOTTOM OF THE SEWER.

1.3.02 HANDLING OF MATERIALS

HANDLE MATERIALS WITH CARE TO AVOID DAMAGE. DO NOT DUMP OR DROP MATERIALS. REMOVE ALL DAMAGED OR FLAMED MATERIALS FROM THE SITE.

1.3.03 TRENCH

THE WIDTH OF TRENCH BELOW THE OUTSIDE TOP OF THE PIPE SHALL BE AS SHOWN IN THE FOLLOWING TABLE FOR THE SIZES LISTED. A MINIMUM CLEARANCE OF EIGHT INCHES BETWEEN THE OUTSIDE OF THE PIPE BARREL AND THE TRENCH WALL AT THE PIPE SPRING LINE SHALL BE MAINTAINED. IF SHEETING IS USED, THE TRENCH WIDTH SHALL BE MEASURED AS THE CLEAR DISTANCE BETWEEN INSIDE FACES OF THE SHEETING.

MAXIMUM WIDTH OF TRENCH BELOW TOP OF PIPE	
Internal Pipe Diameter (inches)	Trench Width (inches)
4 - 6	30
8 - 12	36
18	39
20 or larger	42

NOT MORE THAN 200 FEET OF TRENCH SHALL BE OPENED AT ANY ONE TIME. NOT MORE THAN 100 FEET OF TRENCH MAY BE OPENED IN ADVANCE OF THE COMPLETED PIPE LAYING OPERATIONS, AND NOT MORE THAN ONE STREET CROSSING MAY BE OBSTRUCTED BY THE SAME TRENCH AT ANY ONE TIME.

1.3.04 BEDDING AND COVER

BEDDING AND COVER MATERIAL SHALL BE PROVIDED FOR ALL WATER MAIN, VALVES, HYDRANTS, HYDRANT LEADS, WATER SERVICES, AND RELATED FITTINGS.

BEDDING SHALL BE A MINIMUM OF SIX INCHES (6") THICK. BEDDING SHALL EXTEND TO THE FULL WIDTH OF THE TRENCH. CONTRACTOR SHALL PERFORM ALL NECESSARY EXCAVATION AND SHALL FURNISH ALL REQUIRED MATERIAL TO PROVIDE THIS BEDDING. IF EXCAVATION IS CARRIED DEEPER THAN THE REQUIRED BEDDING THICKNESS, THE EXCESS DEPTH SHALL BE BACKFILLED WITH BEDDING MATERIAL. BEDDING MATERIAL SHALL BE COMPACTED USING TAMPING BARS AND/OR MECHANICAL TAMPERS. MAXIMUM WIDTH OF TRENCH BELOW TOP OF PIPE INTERNAL PIPE DIAMETER (INCHES) TRENCH WIDTH (INCHES) 4 - 6 30 8 - 12 36 16 39 20 OR LARGER 42

ALL TRENCHES SHALL BE BACKFILLED TO ONE FOOT (1) ABOVE THE TOP OF THE PIPE WITH APPROVED COVER MATERIAL. COVER MATERIAL SHALL BE DEPOSITED IN THE TRENCH FOR ITS FULL WIDTH ON EACH SIDE OF THE PIPE, FITTINGS AND APPURTENANCES SIMULTANEOUSLY AND SHALL BE COMPACTED USING HAND TAMPING BARS AND/OR MECHANICAL TAMPERS.

1.3.05 GRANULAR BACKFILL

GRANULAR BACKFILL SHALL EXTEND FROM ONE FOOT (1) ABOVE THE PIPE TO THE PROPOSED PAVEMENT OR HARD SURFACE SUBGRADE AND WITHIN THE SURFACES ZONE OF INFLUENCE. COMPACTION OF GRANULAR BACKFILL MATERIAL SHALL MEET 95% MODIFIED PROCTOR, THE STANDARD SPECIFICATION OF ASTM D-1557, WITHIN THREE FEET (3) OF THE PAVEMENT OR HARD SURFACE SUBGRADE. COMPACTION OF GRANULAR BACKFILL MATERIAL SHALL MEET 90% MODIFIED PROCTOR, THE STANDARD SPECIFICATION OF ASTM D-1557, IN THE CROSS-SECTIONAL AREA OF THE TRENCH BETWEEN ONE FOOT (1) ABOVE THE PIPE AND THE PLANE THREE VERTICAL FEET (3) FROM THE PROPOSED PAVEMENT OR HARD SURFACE SUBGRADE.

1.3.06 BACKFILL

WHEN THE TYPE OF BACKFILL MATERIAL IS NOT OTHERWISE SPECIFIED, EXCAVATED MATERIAL MAY BE USED FOR BACKFILL MATERIAL AS LONG AS IT MEETS THE REQUIREMENTS OF 1.2.03 BACKFILL MATERIAL. COMPACTION OF BACKFILL MATERIAL SHALL MEET 90% MODIFIED PROCTOR, THE STANDARD SPECIFICATION OF ASTM D-1557.

1.3.07 WATER MAIN PIPE, FITTINGS, AND ACCESSORIES

ALL PIPE AND FITTINGS SHALL BE INSTALLED TO A MINIMUM DEPTH OF COVER OF SIX AND ONE HALF FEET (6.5). INSTALLATIONS, WHICH CANNOT MEET THIS REQUIREMENT, WILL REQUIRE INSULATION AS REQUIRED AND APPROVED BY THE ENGINEER.

ALL DUCTILE IRON PIPE AND FITTINGS SHALL BE ENCASED IN POLYETHYLENE IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS. ANY RIPS OR PUNCTURES SHALL BE COVERED WITH POLYETHYLENE AND SEALED.

THRUST RESTRAINT SHALL BE DESIGNED AND PROVIDED IN ACCORDANCE WITH ANNA M41, MANUAL OF WATER SUPPLY PRACTICES. CONCRETE THRUST BLOCKING IS ALSO REQUIRED FOR HYDRANTS, TEES, AND BENDS. THRUST BLOCKING FOR MAINS 12-INCHES AND LARGER AS WELL AS AREAS WITH HIGH PRESSURE AND/OR FLOWS SHALL BE POURED IN PLACE. CONCRETE THRUST BLOCKS SHALL BE PLACED TO PERMIT FULL ACCESS TO PIPE AND ACCESSORIES.

MEGALUG GLANDS OR STEEL RODDING SHALL BE USED AT ALL HORIZONTAL AND VERTICAL BENDS, TEES, REDUCERS, HYDRANT LEADS, VALVES, AND ANY JOINT FIFTEEN FEET (15) OR LESS FROM A HORIZONTAL OR VERTICAL BEND, REDUCER, CAP/PLUG, OR BRANCH SECTION OF TEE. RESTRAINED-JOINT LOCKING GASKETS MAY BE USED AT PIPE JOINTS.

WHEN WORK IS STOPPED FOR ANY REASON, SECURELY PLUG THE END OF THE PIPE WITH A WATERTIGHT PLUG OR CAP.

WATER MAIN WITH LESS THAN THREE FEET (3) OF VERTICAL CLEARANCE AT A STORM SEWER OR CULVERT CROSSING, OR WITH LESS THAN SIX AND ONE-HALF FEET (6.5) OF COVER FROM SURFACE ELEVATION, SHALL BE PROTECTED FROM FROST DAMAGE BY INSTALLING TWO (2) 4XB SHEETS OF TWO INCH (2") THICK INSULATION BOARD (FOUR INCH (4") TOTAL THICKNESS) WITHIN SIX INCHES (6") OF THE MAIN ON EVEN COVER MATERIAL. JOINTS SHALL BE STAGGERED AND TAPED AS DIRECTED BY ENGINEER.

1.3.08 VALVES AND VALVE BOXES

VALVES SHALL BE SET ON SOLID BEARING GROUND. JUMP VALVES WITH COATED COPPER WIRE OR EQUIVALENT TO ADJACENT PIPES AS NECESSARY TO PROVIDE FULL CONTINUITY ACROSS VALVE. INSTALL ALL VALVE BOX STABILIZERS ON ALL GATE VALVES FOUR INCHES (4") AND LARGER. SET VALVE BOX ON VALVE BOX STABILIZER, PLUMB OVER VALVE. VALVE BOXES SHALL BE SET TO BINDER GRADE UNLESS OTHERWISE DIRECTED BY ENGINEER. VALVE BOXES MUST BE STRAIGHT AND CENTERED OVER VALVE OPERATING NUT. VALVE WRENCH SHALL NOT TOUCH SIDES OF BOX WHEN OPERATING.

AN OPERATOR NUT EXTENSION SHALL BE INSTALLED BY THE CONTRACTOR WHEN THE VERTICAL DISTANCE BETWEEN THE TOP OF THE NUT TO THE FINISHED PAVEMENT SURFACE EXCEEDS EIGHT FEET (8). OPERATOR NUT EXTENSIONS WILL BE SUPPLIED BY THE CITY AT NO COST TO THE CONTRACTOR.

1.3.04 FIRE HYDRANTS THE FIRE HYDRANT SHALL BE CONNECTED TO THE AUXILIARY VALVE WITH A TWO FOOT (2) LENGTH OF PIPE. ALL JOINTS ON THE FIRE HYDRANT LEADS, INCLUDING VALVE JOINTS, SHALL BE MADE USING MEGALUG GLANDS, RODDING, OR AN APPROVED LOCKING JOINT. REACTION BACKING SHALL BE PROVIDED FOR ALL HYDRANTS. ABOUT ONE-HALF CUBIC YARD OF 1/2" CLEAR (WASHED) STONE SHALL BE PLACED FROM THE BOTTOM OF THE TRENCH AROUND THE HYDRANT ELBOW AND UP THE HYDRANT BARREL. THE CLEAR STONE SHALL BE COVERED WITH 8MIL PLASTIC TO PREVENT THE MIXING OF FINES FROM THE BACKFILL.

THRUST RESTRAINT SHALL BE DESIGNED AND PROVIDED IN ACCORDANCE WITH ANNA M41, MANUAL OF WATER SUPPLY PRACTICES. ALL THRUST BLOCKING FOR HYDRANTS SHALL BE CONCRETE. CONCRETE THRUST BLOCKS SHALL BE PLACED TO PERMIT FULL ACCESS TO PIPE, DRAIN HOLES, AND ACCESSORIES.

CONTRACTOR SHALL FURNISH ALL NECESSARY FITTINGS IN THE FIRE HYDRANT LEAD IN ORDER TO INSTALL THE FIRE HYDRANT IN A PLUMB CONDITION AT LOCATIONS SHOWN ON THE DRAWINGS AND AT THE SPECIFIED DEPTH OF BURY. THE LUMPEL NOZZLE ALL FIRE HYDRANTS SHALL BE INSTALLED WITH THE NOZZLE POINTING TOWARD THE STREET OR OTHER ACCESSIBLE HARD SURFACE WITH CENTER AT 24" ABOVE THE GROUND. FIRE HYDRANT AUXILIARY VALVES SHALL BE INSTALLED BEHIND THE CURB, UNLESS OTHERWISE DIRECTED BY ENGINEER. ENGINEER RESERVES THE RIGHT TO ALTER THE LOCATION OF FIRE HYDRANTS FROM THAT SHOWN ON THE DRAWINGS.

HYDRANTS AND HYDRANT AUXILIARY VALVES SHALL BE JUMPED WITH COPPER WIRE OR EQUIVALENT TO ADJACENT PIPES AS NECESSARY TO PROVIDE FULL CONTINUITY ACROSS HYDRANT AND VALVE.

HYDRANT LEADS WITH LESS THAN THREE FEET (3) OF VERTICAL CLEARANCE AT A STORM SEWER OR CULVERT CROSSING, OR WITH LESS THAN SIX AND ONE-HALF FEET (6.5) OF COVER FROM SURFACE ELEVATION, SHALL BE PROTECTED FROM FROST DAMAGE BY INSTALLING TWO (2) 4XB SHEETS OF TWO INCH (2") THICK INSULATION BOARD (FOUR INCH (4") TOTAL THICKNESS) WITHIN SIX INCHES (6") OF THE LEAD ON EVEN COVER MATERIAL. JOINTS SHALL BE STAGGERED AND TAPED AS DIRECTED BY ENGINEER.

THE BASE OF THE HYDRANT MAY NOT EXCEED A DEPTH OF NINE FEET (9) BELOW FINISH GRADE.

ENSURE THAT THE HYDRANT IS SET SO THE BURY-LINE IS NOT BELOW FINISH GRADE AND NOT MORE THAN TWO INCHES (2") ABOVE FINISH GRADE.

NO MORE THAN ONE (1) HYDRANT EXTENSION WILL BE PERMITTED PER HYDRANT INSTALLATION. NOTIFY THE ENGINEER AT LEAST TWO (2) WORKING DAYS PRIOR TO INSTALLING AN EXTENSION. ENGINEER MUST BE PRESENT DURING EXTENSION INSTALLATION.

1.3.10 WATER SERVICES

ALL SERVICES SHALL BE INSTALLED TO A MINIMUM DEPTH OF COVER OF SIX AND ONE-HALF FEET (6.5). INSTALLATIONS, WHICH CANNOT MEET THIS REQUIREMENT, WILL REQUIRE INSULATION AS REQUIRED AND APPROVED BY ENGINEER.

LATERALS SHALL BE EXTENDED 10 FEET BEYOND THE RIGHT-OF-WAY OR EASEMENT LINE, WHICHEVER IS FURTHER FROM THE ROADWAY CENTERLINE.

WATER SERVICES LESS THAN FOUR INCHES (4") IN DIAMETER SHALL INCLUDE A CORPORATION STOP, COPPER TUBING, CURB STOP, CURB BOX, COUPLINGS, AND ALL OTHER APPURTENANCES NECESSARY FOR COMPLETE INSTALLATION. ALL CORPORATIONS SHALL BE PRESSURE TAPPED. CURB BOXES SHALL BE PLACED ON A MINIMUM 8"X12"X2" THICK SOLID CONCRETE BLOCKS LYING ON SOLID BEARING GROUND. CURB STOP BOXES SHALL BE ADJUSTED TO GRADE BY USING THE EXTENSION WITHIN THE BOX. NO ADDITIONAL EXTENSIONS ARE ALLOWED, UNLESS DIRECTED BY ENGINEER.

WATER SERVICES FOUR INCHES (4") AND LARGER SHALL BE INSTALLED PER SECTION 1.3.07 WATER MAIN PIPE FITTINGS AND ACCESSORIES. WATER SERVICE VALVES FOR SERVICES FOUR INCHES (4") AND LARGER SHALL BE INSTALLED PER 1.3.05 VALVES AND VALVE BOXES WITH THE EXCEPTION THAT VALVE BOX SHALL BE SET TO FINAL GRADE IF NOT LOCATED WITHIN THE PAVEMENT. WATER SERVICE CURB BOXES AND VALVE BOXES SHALL BE MARKED WITH A 2X4X4 WOOD POST, PLACED VERTICALLY TWO FEET (2) UNDER THE SURFACE AND EXTENDING TWO FEET (2) ABOVE GROUND. ALL CURB BOX/VALVE BOX MARKERS SHALL BE PAINTED BLUE. ALL WATER SERVICE STUBS SHALL BE MARKED WITH A 4"X4" WOOD POST, PLACED VERTICALLY AT THEIR INVERT AND EXTENDING TWO FEET (2) ABOVE GROUND. ALL WATER SERVICE MARKERS SHALL BE PAINTED BLUE.

WATER SERVICES TWO INCHES (2") OR LESS IN DIAMETER SHALL BE INSTALLED MORE THAN FIVE FEET (5) FROM A SEWER (CLEAR DISTANCE) AND/OR A MINIMUM OF 12 INCHES ABOVE SEWER (CLEAR DISTANCE). WATER SERVICES LARGER THAN TWO INCHES (2") IN DIAMETER SHALL BE INSTALLED A MINIMUM OF EIGHT FEET (8) FROM A SEWER (CENTER OF PIPE TO CENTER OF PIPE).

WATER LATERALS WITH LESS THAN THREE FEET (3) OF VERTICAL CLEARANCE AT A STORM SEWER OR CULVERT CROSSING, OR WITH LESS THAN SIX AND ONE-HALF FEET (6.5) OF COVER FROM SURFACE ELEVATION, SHALL BE PROTECTED FROM FROST DAMAGE BY INSTALLING TWO (2) 4XB SHEETS OF TWO INCH (2") THICK INSULATION BOARD (FOUR INCH (4") TOTAL THICKNESS) WITHIN SIX INCHES (6") OF THE LATERAL ON EVEN COVER MATERIAL. JOINTS SHALL BE STAGGERED AND TAPED AS DIRECTED BY ENGINEER.

1.3.11 ABANDONMENT

WATER MAINS AND WATER SERVICE LATERALS SHALL BE ABANDONED IN ACCORDANCE WITH NUGA SPECIFICATIONS ACCEPT AS HEREIN MODIFIED.

WHEN ABANDONING EXISTING WATER MAIN, MECHANICAL JOINT PLUGS SHALL BE INSTALLED INTO EXISTING FITTINGS AND MECHANICAL JOINT CAPS SHALL BE INSTALLED OVER EXISTING PIPE ENDS OF WATER MAIN TO BE ABANDONED AND WATER MAIN THAT WILL REMAIN IN SERVICE, PLUGS, CAPS, AND ALL JOINTS WITHIN FIFTEEN FEET (15) OF THE CAP OR PLUG OF MAIN TO REMAIN IN SERVICE SHALL HAVE MEGALUG GLANDS, RODDING, OR AN APPROVED RESTRAINED-JOINT LOCKING GASKET. THE ENDS OF EXISTING PIPE AND ANY DISTURBED FITTINGS TO REMAIN IN SERVICE SHALL BE THRUST BLOCKED. WHEN VALVES ARE TO BE ABANDONED, THE ENTIRE VALVE BOX SHALL BE REMOVED. ALL DISTURBED AREAS SHALL BE BACKFILLED WITH THE REQUIRED BACKFILL MATERIAL.

ALL WATER SERVICE LATERALS, TO BE ABANDONED, SHALL BE ABANDONED AT THE CORPORATION UNLESS OTHERWISE DIRECTED BY THE ENGINEER. THE COPPER PIPE SHALL BE CUT TWO FEET (2) FROM THE CORPORATION AND ROUGH BRASS PLUGS SHALL BE INSTALLED WITH MUELLER H-15451N I10

COMPRESSION FITTING, AT THE ENDS OF ALL COPPER WATER SERVICES TO BE ABANDONED. THE ENTIRE CURB/VALVE BOX SHALL BE REMOVED AND ALL DISTURBED AREAS SHALL BE BACKFILLED WITH THE REQUIRED BACKFILL MATERIAL.

1.4 FIELD QUALITY CONTROL AND TESTING

1.4.01 DISINFECTION AND STERILIZATION

CONTRACTOR SHALL DISINFECT AND STERILIZE ALL NEW AND OLD MAINS WHERE IT IS NECESSARY TO CUT INTO THEM. THE DISINFECTION SHALL BE DONE IN ACCORDANCE WITH ANNA C651. ALL MATERIALS AND EQUIPMENT NEEDED FOR DISINFECTION OF MAINS SHALL BE FURNISHED BY THE CONTRACTOR. HEAVILY CHLORINATED WATER, USED FOR THE PURPOSE OF DISINFECTING THE MAINS, SHALL NOT REMAIN IN THE WATER MAINS FOR MORE THAN FIVE (5) DAYS. CONTRACTOR SHALL BE RESPONSIBLE FOR FLUSHING OF MAINS. CONTRACTOR SHALL FILL CUT A FLUSHING PERMIT 24 HOURS PRIOR TO ANY FLUSHING. FLUSHING PROCEDURES SHALL BE REVIEWED AND APPROVED BY THE ENGINEER PRIOR TO FLUSHING. NO FLUSHING SHALL BE PERMITTED ON FRIDAYS. HEAVY CHLORINATED WATER SHALL BE FLUSHED DOWN SANITARY SEWER UNLESS DIRECTED OTHERWISE BY THE ENGINEER. CONTRACTOR SHALL BE REQUIRED TO OBTAIN ALL SAFE WATER SAMPLES FOR ENTIRE SYSTEM BEING INSTALLED PRIOR TO HYDROSTATIC AND LEAKAGE TEST. CONTRACTOR SHALL OBTAIN WATER SAMPLE BOTTLES FROM THE UTILITY AND DELIVER THEM TO THE STATE LAB OF HYGIENE. ALL TESTING SHALL BE UNDER THE DIRECTION OF THE ENGINEER. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY NECESSARY WATER MAIN REPAIRS, PERMITS FOR FLUSHING, FLUSHING AND RE-SAMPLING UNTIL SAFE SAMPLES ARE RECEIVED. THE UTILITY WILL OPEN THE TESTED MAIN TO THE SYSTEM.

WATER MAINS SHALL BE FLUSHED PRIOR TO INSTALLATION OF COPPER WATER SERVICES. TWO (2) SETS OF SAFE WATER SAMPLES SHALL BE OBTAINED; ONE (1) SET PRIOR TO INSTALLATION OF WATER SERVICES AND A SECOND SET AFTER INSTALLATION OF WATER SERVICES. BOTH SETS OF SAFE SAMPLES SHALL BE OBTAINED PRIOR TO HYDROSTATIC AND LEAKAGE TEST.

1.4.02 TESTING

A COMBINED HYDROSTATIC PRESSURE AND LEAKAGE TEST SHALL BE PERFORMED ON ALL PIPE, FITTINGS, SERVICES AND JOINTS IN ACCORDANCE WITH ANNA C600 AFTER SERVICE LATERALS AND STORM SEWER ARE INSTALLED, AND PRIOR TO PLACEMENT OF BASE COURSE. DURING PERFORMANCE OF TEST, WATER MAIN SHALL BE PRESSURIZED TO 150% OF MAXIMUM OPERATING PRESSURE, 150 PSI MINIMUM. ALL AIR SHALL BE REMOVED FROM THE MAINS PRIOR TO TESTING BY FLUSHING AND, AS NECESSARY, BY INSTALLING CORPORATIONS AT HIGH POINTS. TEST SHALL MEET REQUIREMENTS OF ANNA C600 FOR A MINIMUM OF TWO (2) CONSECUTIVE HOURS. PRIOR TO CONDUCTING THE COMBINED PRESSURE AND LEAKAGE TEST, CONTRACTOR SHALL BACKFILL THE TRENCH FOR ITS FULL DEPTH. ALL BENDS, SERVICES AND SPECIAL CONNECTIONS TO THE MAIN SHALL BE ADEQUATELY BLOCKED AND TIED PRIOR TO THE TEST. ANY DAMAGE CAUSED TO THE WATER MAIN, OR ITS APPURTENANCES DURING PERFORMANCE OF THESE TESTS SHALL BE CORRECTED BY CONTRACTOR AT THE CONTRACTOR'S EXPENSE. USE OF HYDRANTS TO PRESSURE TEST MAINS SHALL BE AT CONTRACTOR'S RISK. IF THE BRONZE DRAINAGE TUBE IN A HYDRANT IS THE CAUSE OF A FAILED LEAKAGE TEST, CONTRACTOR SHALL REPLACE BRONZE DRAINAGE TUBE WITH A PLASTIC DRAINAGE TUBE AND RETEST AT THEIR EXPENSE.

CONTRACTOR SHALL KEEP A RECORD OF ALL TESTS PERFORMED. THESE RECORDS SHALL SHOW THE INDIVIDUAL LENGTHS OF MAIN TESTED AND TEST RESULTS.

WHERE CONNECTIONS ARE MADE TO EXISTING MAINS, IT SHALL BE THE RESPONSIBILITY OF CONTRACTOR TO PROVIDE THE NECESSARY HYDROSTATIC TEST ON ALL NEW MAINS INSTALLED. THIS MAY REQUIRE, BUT IS NOT LIMITED TO, THE INSTALLATION OF TEMPORARY VALVES TO ISOLATE THE NEW SYSTEM FROM THE EXISTING SYSTEM. ALL MATERIALS, WORK AND EQUIPMENT NECESSARY FOR THIS WORK SHALL BE FURNISHED BY CONTRACTOR AT THE CONTRACTOR'S EXPENSE.

TAPPING SLEEVES SHALL BE PRESSURIZED TO 150PSI FOR 10 MINUTES. CONTINUITY TESTS. CONTRACTOR SHALL FURNISH ALL EQUIPMENT, LABOR AND MISCELLANEOUS ITEMS NECESSARY TO PERFORM ELECTRICAL CONTINUITY TEST ON ALL NEW WATER MAIN INSTALLED. THREE (3) METHODS ARE ACCEPTABLE FOR TESTING CONTINUITY. METHOD 1 TESTS SHALL BE PERFORMED USING AN OHMMETER TO ASSURE THAT ELECTRICAL CONTINUITY EXISTS ACROSS ALL JOINTS. METHOD 2 TESTS SHALL BE PERFORMED USING A REACTIVITY TESTER. METHOD 3 TESTS SHALL BE PERFORMED THROUGH THE USE OF AN ENERGIZED UNDERGROUND UTILITY LOCATING DEVICE. CONTRACTOR SHALL MAKE ALL NECESSARY REPAIRS TO ESTABLISH CONTINUITY ACROSS JOINTS. END



COPYRIGHT STATEMENT
THIS PLAN AND SPECIFICATIONS ARE AN ORIGINAL COPYRIGHTED WORK AND ARE SUBMITTED TO THE COUNTY OF DAKE AS THE COPYRIGHT ACT 17 U.S.C. AS AMENDED (SECTION 101). ANY REPRODUCTION OF THIS ARCHITECTURAL OR ENGINEERING WORKS WITHOUT THE WRITTEN APPROVAL OF PRAIRIE FORGE GROUP IS PROHIBITED. ANY UNAUTHORIZED USE OF THESE PLANS, WORK OR ITEMS REPRESENTED, CAN BE PROSECUTED TO THE EXTENT OF THE LAW. PRAIRIE FORGE GROUP IS NOT RESPONSIBLE FOR ANY DAMAGES OR EXPENSE ARISING OUT OF THE UNAUTHORIZED USE OF THE INFORMATION CONTAINED IN THESE ELECTRICAL FILES. THESE PLANS MAY NOT ACCURATELY REFLECT THE FINAL AS-BUILT CONDITIONS. THESE PLANS, SPECIFICATIONS AND NOTES TO VERIFY ALL LAIORS, DIMENSIONS AND CONDITIONS. CONTACT THE ENGINEER FOR MORE INFORMATION.
COPYRIGHT © 2018-2023 PRAIRIE FORGE GROUP | SAINT CHARLES IL



DAKE COUNTY
EMERGENCY MANAGEMENT
ELEVATOR ADDITION
2982 KAPEC ROAD
FITCHBURG, WISCONSIN

CLIENT APPROVAL
 APPROVED
 APPROVED AS NOTED
APPROVED BY / DATE:

ISSUE RECORD	
ADDITION ADR	05/24/22

CHECKED BY _____
JEG
DRAWN BY _____
BRA
DATE _____
5/12/2022 10:28:45 AM
PROJECT NUMBER _____
2020-001

WT JOB NUMBER - 2002139C

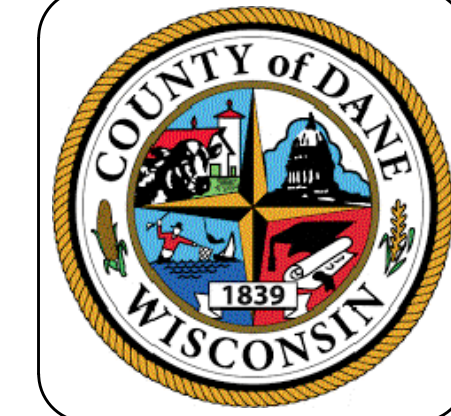


CITY OF
FITCHBURG
PROJECT
SPECIFICATIONS

C-7.4

THIS SHEET PREVIOUSLY APPROVED ADR

COPYRIGHT STATEMENT
 THESE PLANS ARE COPYRIGHTED AND ARE SUBJECT TO COPYRIGHT PROTECTION AS AN ARCHITECTURAL WORK UNDER SECTION 17 OF THE COPYRIGHT ACT, 17 U.S.C. AN AMENDED DECISION 1991. AS THE ARCHITECTURAL WORKS COPYRIGHT PROTECTION ACT OF 1991, THE PROTECTION PROVIDED TO PRAIRIE FORGE GROUP INCLUDES, BUT IS NOT LIMITED TO, THE ORIGINAL FORM AS WELL AS THE ARRANGEMENT AND COMPOSITION OF WORDS AND ELEMENTS OF THE DESIGN. WITHOUT WRITTEN APPROVAL OF PRAIRIE FORGE GROUP, ANY UNAUTHORIZED USE OF THESE PLANS, WORK OR HOME REPRESENTED, CAN LEGALLY RESULT IN THE OCCURRENCE OF CONSTRUCTION, SEIZURE OF PLANS, AND/OR MONETARY COMPENSATION AND TO PRAIRIE FORGE GROUP. PRAIRIE FORGE GROUP IS NOT RESPONSIBLE FOR ANY CLAIMS, DAMAGES, OR EXPENSE ARISING OUT OF THE UNAUTHORIZED USE OF THE INFORMATION CONTAINED IN THESE ELECTRONIC FILES. THESE PLANS MAY NOT ACCURATELY REFLECT THE DESIGN, PRAIRIE FORGE GROUP ACCEPTS NO RESPONSIBILITY FOR THE USE OF THESE PLANS, DIMENSIONS, AND OTHER RELATED INFORMATION.
 COPYRIGHT © 2018-2022
 PRAIRIE FORGE GROUP | SAINT CHARLES, IL



**DANE COUNTY
 EMERGENCY MANAGEMENT
 ELEVATOR ADDITION
 2982 KAPEC ROAD
 FITCHBURG, WISCONSIN**

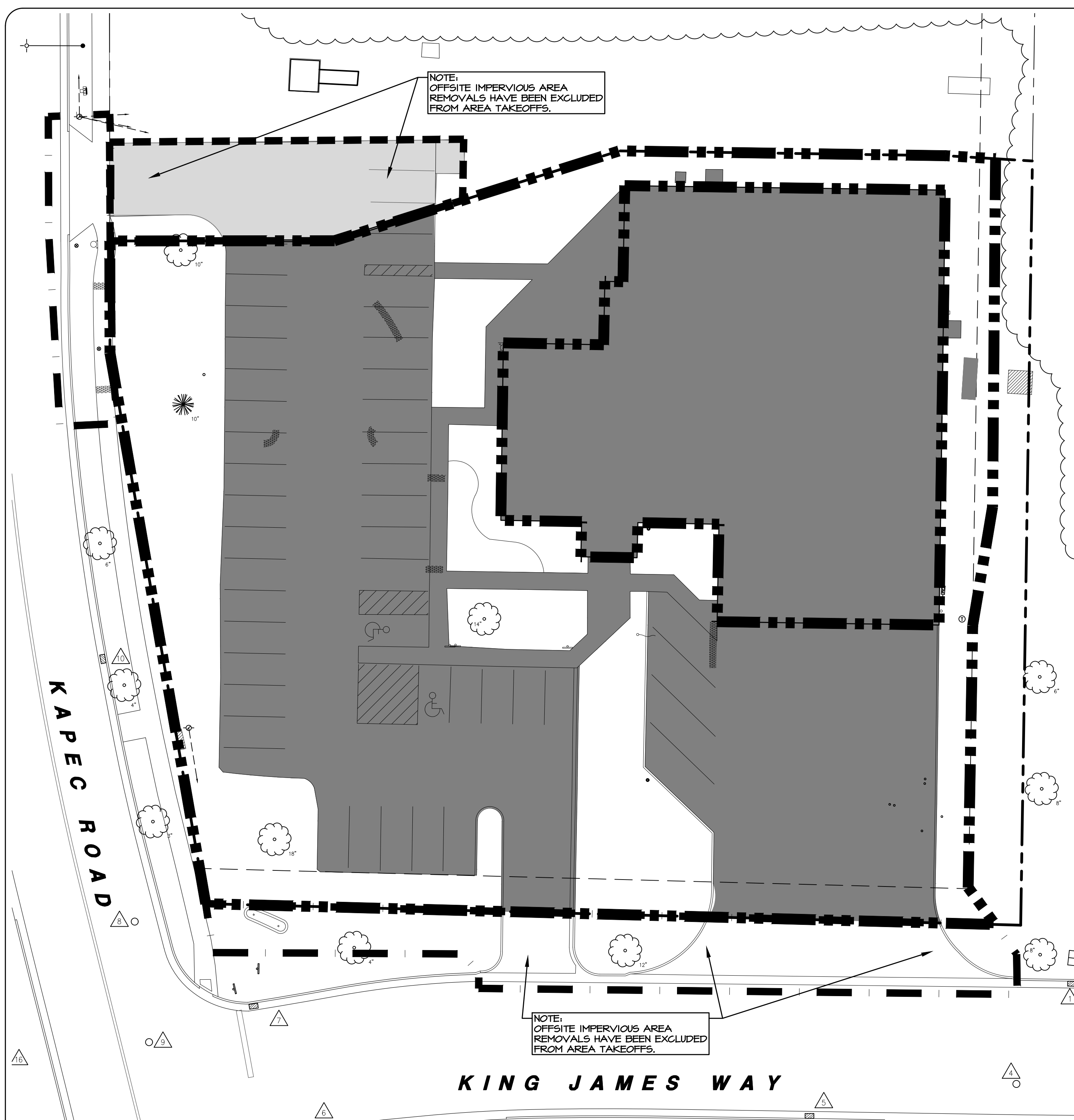
CLIENT APPROVAL
 APPROVED
 APPROVED AS NOTED
 APPROVED BY / DATE:

ISSUE RECORD

ADDITION ADR	05/24/22

CHECKED BY _____
 JEG
 DRAWN BY _____
 BRA
 DATE _____
 5/12/2022 10:28:45 AM
 PROJECT NUMBER
 2020-001

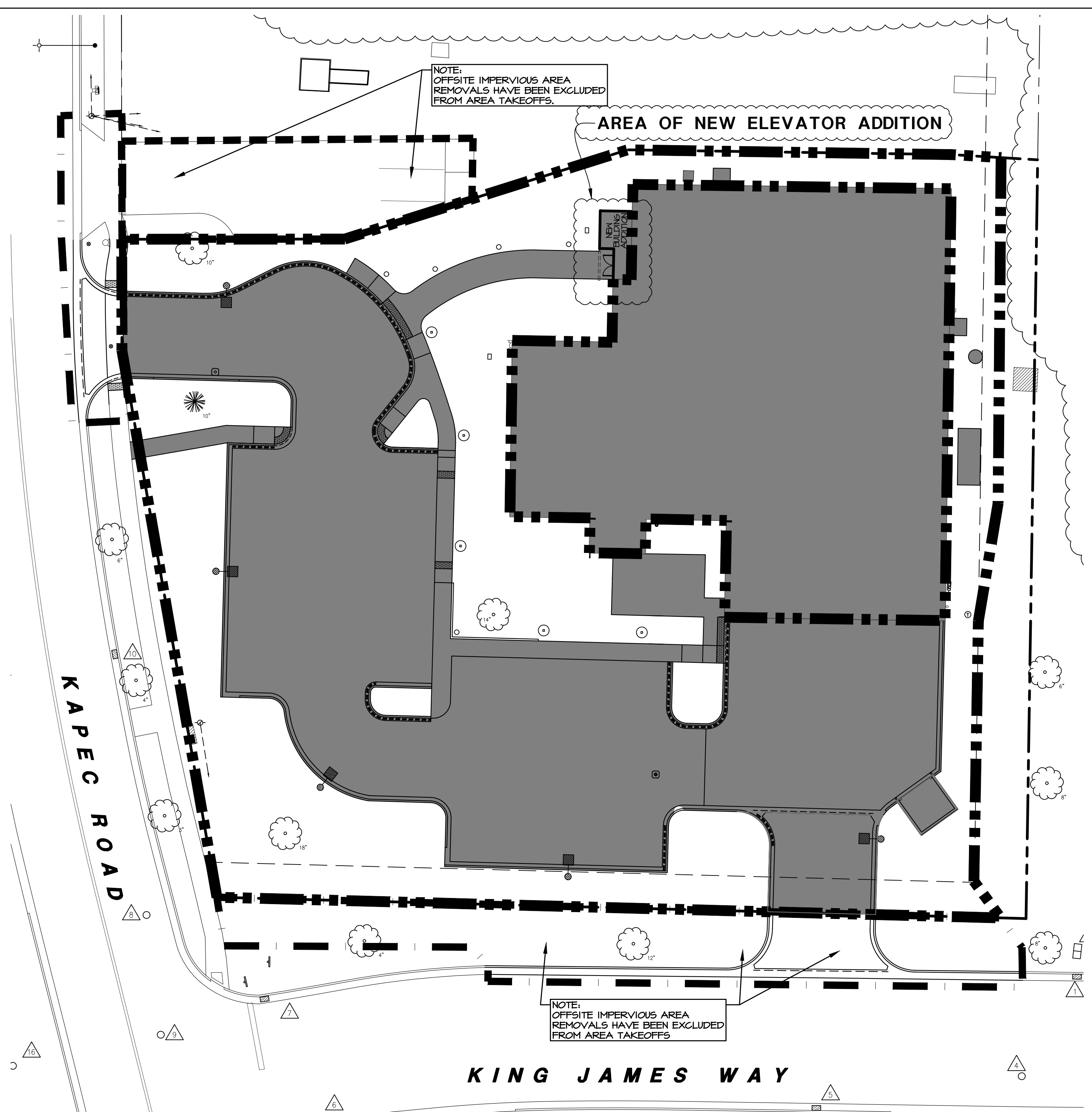
EXISTING VS.
 PROPOSED
 CONDITION
 EXHIBIT
EX-2.0



1 EXISTING CONDITION EXHIBIT
 SCALE 1" = 20'

EXISTING CONDITION

	AREA (ACRE)	AREA (SF)	IMPERVIOUS SURFACE RATIO (ISR)
IMPERVIOUS	0.7830	34,109	65.80%
PERVIOUS	0.4070	17,727	34.20%
TOTAL PROPERTY AREA	1.1900	51,836	
OFFSITE NORTH IMPERVIOUS AREA	0.0541	2,358	



2 PROPOSED CONDITION EXHIBIT
 SCALE 1" = 20'

PROPOSED CONDITION

	AREA (ACRE)	AREA (SF)	IMPERVIOUS SURFACE RATIO (ISR)
IMPERVIOUS ONSITE	0.7438	32,400	62.50%
PERVIOUS ONSITE	0.4462	19,436	37.50%
TOTAL PROPERTY AREA	1.1900	51,836	
OFFSITE NORTH IMPERVIOUS AREA	0.0000	0	

DISTURBED AREAS:	AREA (ACRE)	AREA (SF)
TOTAL DISTURBED AREA ONSITE:	0.8500	36,796
RIGHT OF WAY AREA OF DISTURBANCE	0.1300	5,703
TOTAL DISTURBED AREA (THIS SITE), INCLUDING ON SITE AREAS, AND RIGHT-OF-WAY	0.9800	42,499
OFFSITE NORTH AREA OF DISTURBANCE (BY OTHERS)	0.0540	2,358

WT JOB NUMBER - 2002139C

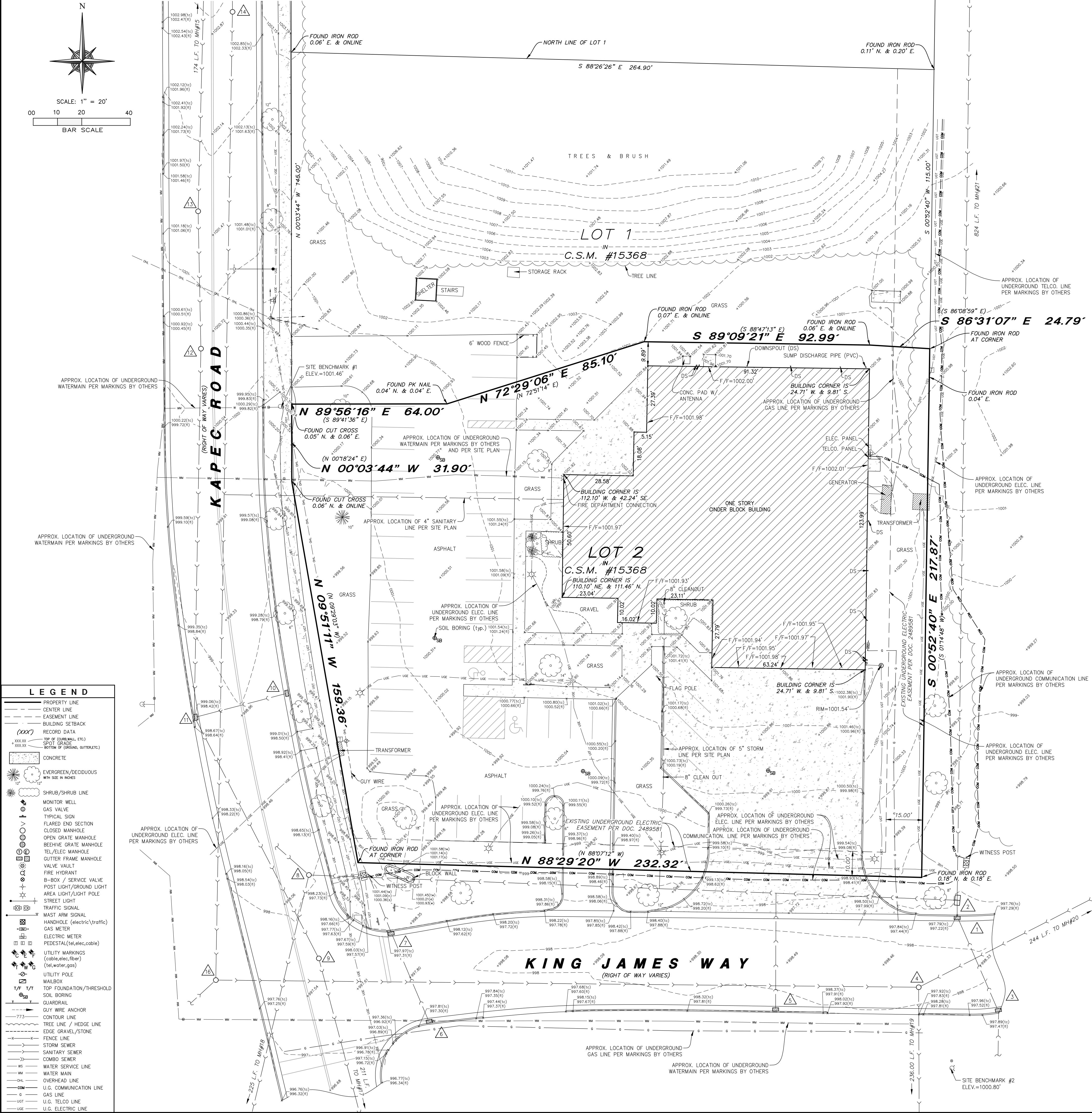
WT Group
 Engineering • Design • Consulting
 Structural | Mechanical/Electrical/Plumbing
 Civil | Land Survey | Telecommunication | Aquatic
 Accessibility Consulting | Design & Program Management
 Engineering with Precision, Pace & Passion.
 2675 Pratum Avenue | Hoffman Estates, IL 60192
 P: 224.293.6333 | F: 224.293.6444
 wtengineering.com
 IL License No. 184.007570-0015 | Exp. 04.30.2023
 © COPYRIGHT 2022 THE W-T GROUP, LLC

BOUNDARY & TOPOGRAPHIC SURVEY

LOTS ONE OF CERTIFIED SURVEY MAP NO. 15368, RECORDED IN THE DANE COUNTY REGISTER OF DEEDS OFFICE IN VOLUME 110 OF CERTIFIED SURVEY MAPS, PAGES 86-88, AS DOCUMENT NO. 5567984, IN THE CITY OF FITCHBURG, DANE COUNTY, WISCONSIN.



LOCATION MAP



- | | |
|--|--|
| 1. RIM=997.22' (STORM)
36"x18" CONCRETE STRUCTURE
INV=993.85' (18" RCP N/SSE) | 12. RIM=1000.57' (STORM)
48" CONCRETE STRUCTURE
INV=995.85' (30" RCP N)
INV=993.23' (30" RCP S) |
| 2. RIM=997.95' (STORM)
12"x12" CONCRETE STRUCTURE
INV=991.80' (48"x76" RCP N)
INV=993.55' (18" RCP S)
INV=991.80' (53"x83" RCP W) | 13. RIM=1001.58' (STORM)
48" CONCRETE STRUCTURE
INV=997.28' (30" RCP N/S) |
| 3. RIM=997.10' (STORM)
36"x18" CONCRETE STRUCTURE
INV=994.79' (18" RCP NNW)
INV=994.79' (15" PVC S) | 14. RIM=1002.81' (SANITARY)
48" CONCRETE STRUCTURE
INV=996.35' (8" PVC N/S) |
| 4. RIM=998.34' (SANITARY)
48" CONCRETE STRUCTURE
INV=993.34' (12" RCP NE/S)
INV=993.66' (8" PVC W) | 15. RIM=1005.42' (STORM)
60" CONCRETE STRUCTURE
INV=999.57' (30" RCP N/S)
INV=999.72' (18" RCP E)
INV=999.87' (18" RCP W) |
| 5. RIM=997.65' (STORM)
36"x18" CONCRETE STRUCTURE
INV=992.90' (18" RCP N) | 16. RIM=998.11' (SANITARY)
48" CONCRETE STRUCTURE
INV=994.67' (8" PVC N/E/SW) |
| 6. RIM=997.26' (STORM)
36"x18" CONCRETE STRUCTURE
INV=993.61' (12" RCP NNW) | 17. RIM=995.13' (STORM)
84" CONCRETE STRUCTURE
INV=987.18' (36" RCP ENE)
INV=979.93' (42" RCP SSE/NNW) |
| 7. RIM=997.31' (STORM)
36"x18" CONCRETE STRUCTURE
INV=992.54' (12" RCP NNW/SSE) | 18. RIM=996.01' (STORM)
CONCRETE STRUCTURE
UNABLE TO DETERMINE SIZE
INV=987.46' (60" RCP NE/SW)
INV=989.21' (24" RCP ESE/CAPPED) |
| 8. RIM=998.05' (STORM)
CONCRETE STRUCTURE
UNABLE TO DETERMINE SIZE
INV=988.55' (53"x83" RCP E)
INV=988.55' (66" RCP SW)
INV=988.65' (36" RCP NW CAPPED) | 19. RIM=997.33' (SANITARY)
48" CONCRETE STRUCTURE
INV=992.28' (15" PVC E)
INV=992.28' (12" RCP N) |
| 9. RIM=997.87' (STORM)
60" CONCRETE STRUCTURE
INV=980.45' (42" RCP SSE/NW) | 20. RIM=999.10' (SANITARY)
48" CONCRETE STRUCTURE
INV=994.46' (12" RCP NNE/SW)
INV=995.72' (4" PVC E) |
| 10. RIM=998.51' (STORM)
36"x18" CONCRETE STRUCTURE
INV=992.68' (18" RCP WSW) | 21. RIM=1010.75' (STORM)
84" CONCRETE STRUCTURE
INV=990.20' (48" RCP N)
INV=996.20' (48"x76" RCP S) |
| 11. RIM=998.42' (STORM)
72" CONCRETE STRUCTURE
INV=990.23' (30" RCP N)
INV=990.47' (18" RCP ENE)
INV=981.23' (42" RCP SE) | |

NOTES:

- BENCHMARK #1 - SET CROSS ON HYDRANT ON THE EAST SIDE OF KAPEC ROAD, 8' SOUTH OF THE ENTRANCE AS SHOWN. ELEVATION=1001.46' (NAVD88)
- BENCHMARK #2 - TAG BOLT ON HYDRANT ON THE SOUTH SIDE OF KING JAMES WAY, 91' SOUTHEAST OF LIGHT POLE ON THE EAST SIDE OF ENTRANCE & 30' SOUTHWEST OF EXISTING MH#3. ELEVATION=1000.80' (NAVD88)
- PARCEL NUMBER: 060906399652
- THE LOCATION OF UNDERGROUND UTILITIES WAS DETERMINED BY FIELD OBSERVATION AND VISIBLE MARKINGS ONLY.
- FIELD WORK COMPLETED ON SEPTEMBER 11TH, 2020.
- SURVEY PREPARED WITHOUT THE AID OF A TITLE REPORT, REFER TO A CURRENT TITLE REPORT, DEED AND LOCAL CODES FOR ANY EASEMENT, BUILDING SETBACKS AND OTHER LOCAL RESTRICTIONS NOT SHOWN HERON. DESCRIPTION PER WARRANTY DEED DOC.#5569234
- SURVEY PREPARED FOR: PRAIRIE FORGE GROUP
- BASIS OF BEARINGS IS TRUE NORTH BASED ON ILLINOIS STATE PLANE COORDINATE SYSTEM, WISCONSIN SOUTH 4803 ZONE.
- ANY DISCREPANCIES FOUND WITHIN THIS DOCUMENT NEED TO BE REPORTED TO THE SURVEYOR AS SOON AS POSSIBLE.

STATE OF ILLINOIS)
COUNTY OF COOK) SS

WE THE W-T GROUP DO HEREBY DECLARE THAT WE HAVE SURVEYED THE ABOVE DESCRIBED PROPERTY AND THAT THIS PLAT IS A CORRECT REPRESENTATION OF SAID SURVEY. THIS PROFESSIONAL SERVICE CONFORMS TO THE CURRENT WISCONSIN MINIMUM STANDARDS FOR A PROPERTY AND TOPOGRAPHIC SURVEY.

GIVEN UNDER OUR HAND AND SEAL THIS 3rd DAY OF FEBRUARY, 2021 AT HOFFMAN ESTATES, ILLINOIS.

THE W-T GROUP, LLC
Franjo I. Matijic
FRANJO I. MATIJIC - #S-2933-008
WISCONSIN PROFESSIONAL LAND SURVEYOR



LEGEND

---	PROPERTY LINE
---	CENTER LINE
---	EASEMENT LINE
---	BUILDING SETBACK
(---)	RECORD DATA
---	TOP OF CURB/WALL, ETC.
---	SPOT GRADE
---	BOTTOM OF (ORIGINAL, OUTTRICK)
---	CONCRETE
---	EVERGREEN/DECIDUOUS WITH SIZE IN NOTES
---	SHRUB/SHRUB LINE
---	MONITOR WELL
---	GAS VALVE
---	TYPICAL SIGN
---	FLARED END SECTION
---	CLOSED MANHOLE
---	OPEN GRATE MANHOLE
---	BEDDING GRATE MANHOLE
---	TEL/ELEC MANHOLE
---	GUTTER FRAME MANHOLE
---	VALVE VAULT
---	FIRE HYDRANT
---	B-BOX / SERVICE VALVE
---	POST LIGHT/GROUND LIGHT
---	AREA LIGHT/LIGHT POLE
---	STREET LIGHT
---	TRAFFIC SIGNAL
---	MAST ARM SIGNAL
---	HANDHOLE (electric/traffic)
---	GAS METER
---	ELECTRIC METER
---	PEDESTAL (tel,elec,cable)
---	UTILITY MARKINGS (cable,elec,fiber) (tel,water,gas)
---	UTILITY POLE
---	MAILBOX
---	TOP FOUNDATION/THRESHOLD
---	SOIL BORING
---	GUARDRAIL
---	GUY WIRE ANCHOR
---	CONTOUR LINE
---	TREE LINE / HEDGE LINE
---	EDGE GRAVEL/STONE
---	FENCE LINE
---	STORM SEWER
---	SANITARY SEWER
---	COMBO SEWER
---	WATER SERVICE LINE
---	WATER MAIN
---	OVERHEAD LINE
---	U.G. COMMUNICATION LINE
---	GAS LINE
---	U.G. TELCO LINE
---	U.G. ELECTRIC LINE

WT GROUP
Engineering with Precision, Peace and Passion.
2075 Prairie Avenue Hoffman Estates, IL 60192
630-328-0444
www.wtgroup.com
IL License No. 184-007670-0015 Expires 03/30/2024
© COPYRIGHT 2021 THE WT GROUP, LLC

WT Group
Engineering • Design • Consulting

AQUATIC \ CIVIL \ MECHANICAL \ ELECTRICAL \ PLUMBING \ TELECOMMUNICATION \ STRUCTURAL \ ACCESSIBILITY CONSULTING \ DESIGN & PROGRAM MANAGEMENT \ LAND SURVEY

EMERGENCY MANAGEMENT FACILITY
5415 KING JAMES WAY
FITCHBURG, WISCONSIN

ISSUE

TO	DATE
CLIENT	9/15/20
CLIENT	9/17/20
CLIENT	9/23/20
CLIENT	10/7/20
CLIENT	2/3/21

CHECK-FIRM
DRAWN-REM
JOB: 2002193S

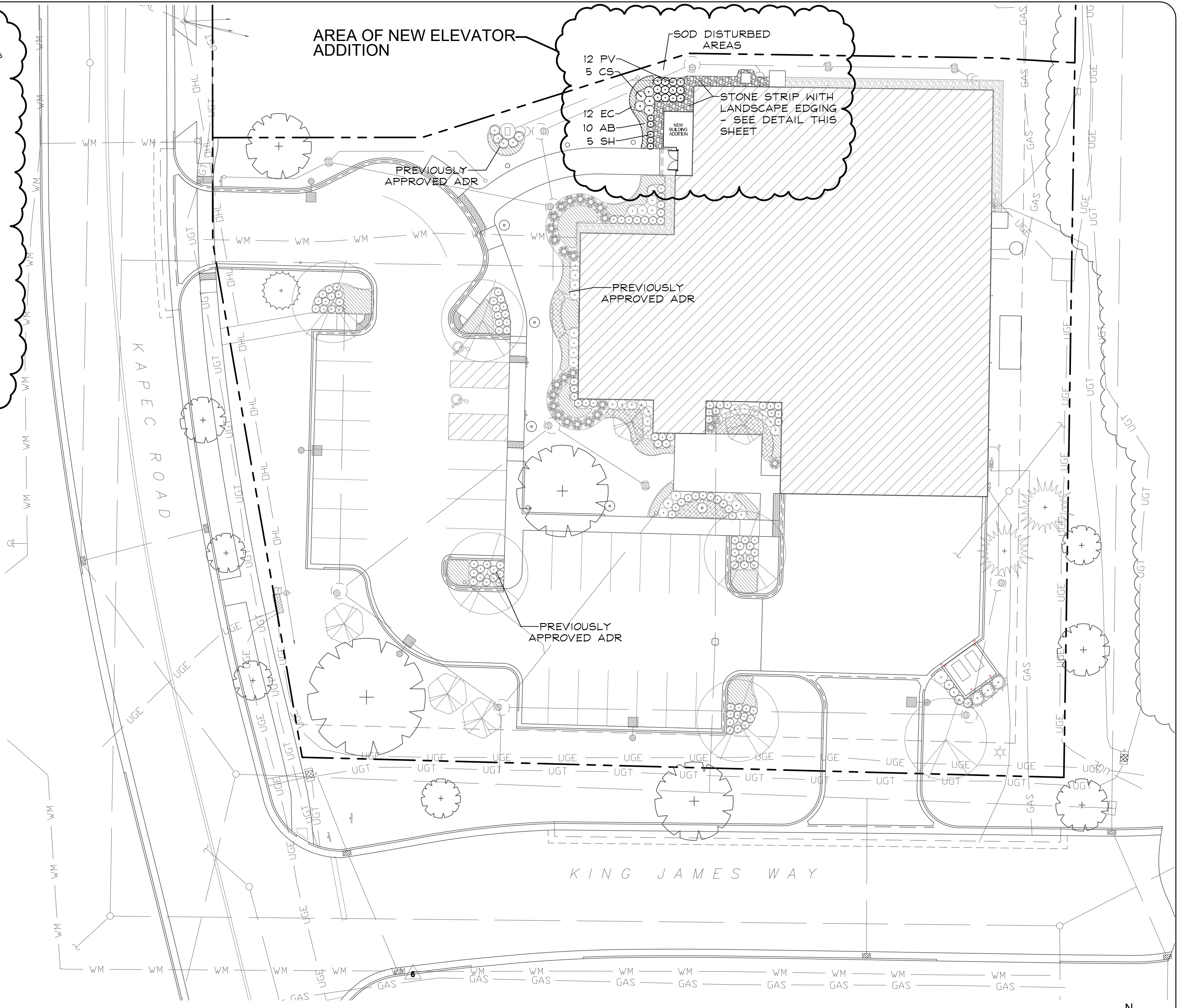
SUR-1
SHEET 1 OF 1
BOUNDARY & TOPOGRAPHIC SURVEY

PREVIOUSLY APPROVED PLANT LIST

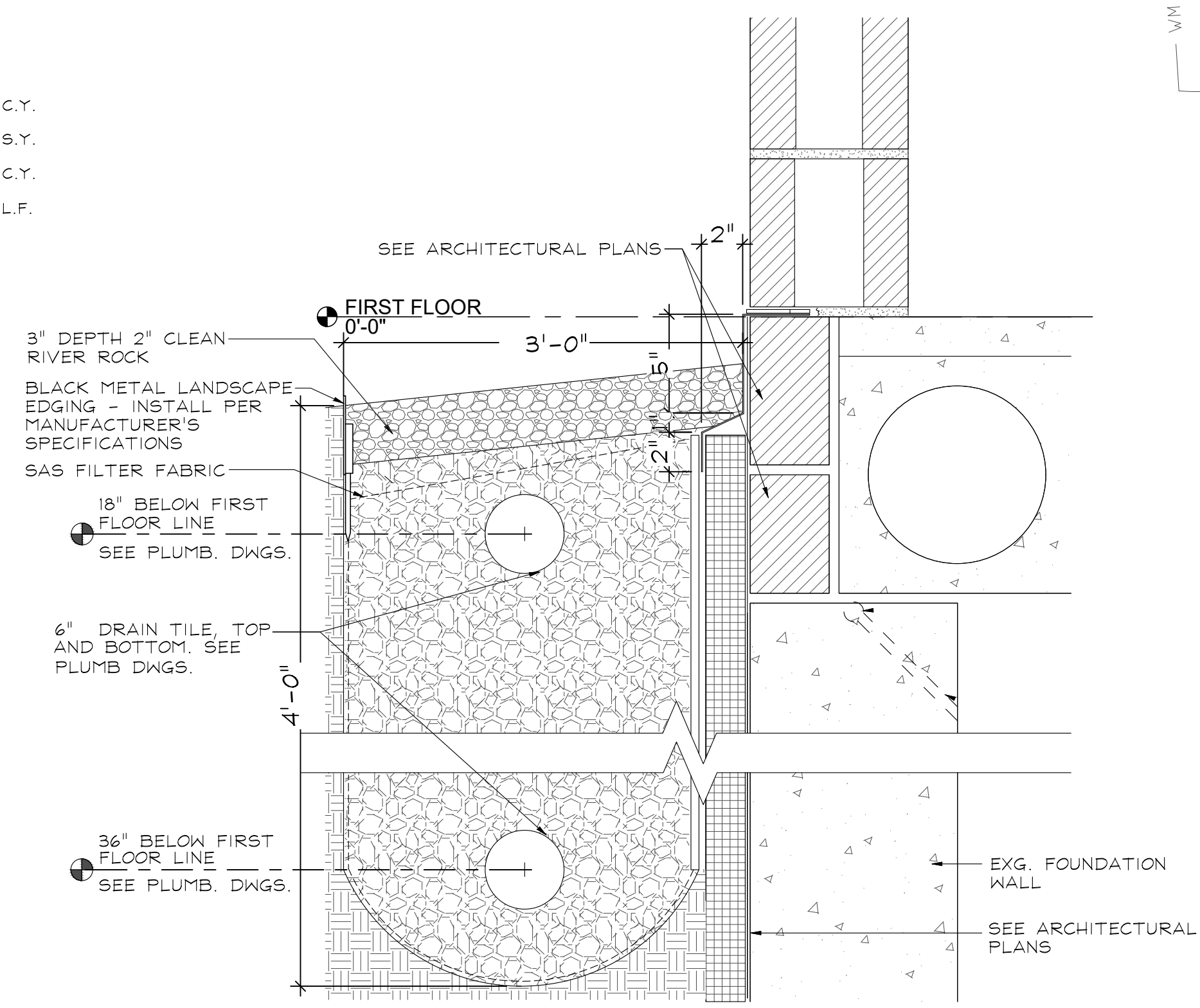
Key	Qty	Botanical/Common Name	Size	Remarks
SHADE TREES				
AF	2	Acer x freemanii 'Marina' MARMO FREEMAN MAPLE	2 1/2" Cal.	
QR	2	Quercus rubra RED OAK	2 1/2" Cal.	
TC	2	Tilia cordata 'Greenspire' GREENSPIRE LITTLELEAF LINDEN	2 1/2" Cal.	
ORNAMENTAL TREES				
AG	1	Amelanchier x grandiflora APPLE SERVICEBERRY	8' Ht.	Multi-Stem
CC	3	Cercis canadensis EASTERN REDBUD	8' Ht.	Clump Form
CM	1	Cornus mas CORNELIANCHERRY DOGWOOD	2' Cal.	Tree Form
EVERGREEN TREES				
PS	2	Picea strobus EASTERN WHITE PINE	8' Ht.	
TO	3	Thuja occidentalis 'Techny' TECHNY ARBORVITAE	6' Ht.	
DECIDUOUS SHRUBS				
CS	12	Cornus sericea 'Farrow' ARCTIC FIRE REDTWIG DOGWOOD	24" Tall	3' O.C.
PO	22	Physocarpus opulifolius 'Donna May' LITTLE DEVIL NINEBARK	24" Tall	3' O.C.
VJ	1	Viburnum x juddii JUDD VIBURNUM	36" Tall	4' O.C.
EVERGREEN SHRUBS				
JK	2	Juniperus chinensis 'Kallays Compact' KALLAYS COMPACT PFITZER JUNIPER	24" Wide	4' O.C.
JB	22	Juniperus conferta 'Blue Pacific' BLUE PACIFIC JUNIPER	24" Wide	4' O.C.
ORNAMENTAL GRASSES				
PH	9	Panicum virgatum 'Heavy Metal' HEAVY METAL SWITCHGRASS	#1	30" O.C.
PV	11	Panicum virgatum 'Shenandoah' SHENANDOAH RED SWITCHGRASS	#1	30" O.C.
SS	23	Schizachyrium scapanium LITTLE BLUESTEM	#1	30" O.C.
SH	70	Sporobolus heterolepis PRAIRIE DROPSEED	#1	30" O.C.
PERENNIALS				
AB	132	Allium 'Summer Beauty' SUMMER BEAUTY ONION	#1	18" O.C.
EC	74	Echinacea 'CBG Cone 2' PIXIE MEADOWBRITE CONEFLOWER	#1	18" O.C.
IS	40	Iris sibirica SIBERIAN IRIS	#1	18" O.C.
MD	18	Monarda didyma 'Raspberry Wine' RASPBERRY WINE BEEBALM	#1	24" O.C.
GROUNDCOVERS				
CF	160	Carex flacca BLUE SEDGE	#SP4	12" O.C.
LS	90	Liriope spicata CREEPING LILYTURF	#SP4	12" O.C.
MISC. MATERIALS				
	18	SHREDDED HARDWOOD MULCH	C.Y.	
	1,755	SOD	S.Y.	
	10	2" CLEAN RIVER ROCK	C.Y.	
	198	BLACK METAL LANDSCAPE EDGING	L.F.	

PROPOSED PLANT LIST

Key	Qty	Botanical/Common Name	Size	Remarks
DECIDUOUS SHRUBS				
CS	5	Cornus sericea 'Farrow' ARCTIC FIRE REDTWIG DOGWOOD	24" Tall	3' O.C.
ORNAMENTAL GRASSES				
PV	12	Panicum virgatum 'Rotstrahlbusch' RED SWITCHGRASS	#1	24" O.C.
SH	5	Sporobolus heterolepis PRAIRIE DROPSEED	#1	24" O.C.
PERENNIALS				
AB	10	Allium 'Summer Beauty' SUMMER BEAUTY ONION	#1	18" O.C.
EC	12	Echinacea 'CBG Cone 2' PIXIE MEADOWBRITE CONEFLOWER	#1	18" O.C.
MISC. MATERIALS				
	2	SHREDDED HARDWOOD MULCH	C.Y.	
	AS REQ'D	SOD	S.Y.	
	1.25	2" CLEAN RIVER ROCK	C.Y.	
	58	BLACK METAL LANDSCAPE EDGING	L.F.	



1 LANDSCAPE PLAN
SCALE 1" = 20'-0"



2 STONE STRIP DETAIL
NOT TO SCALE

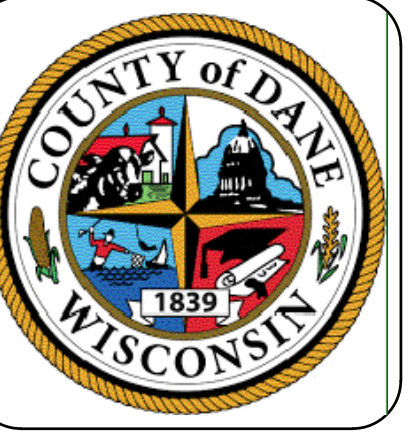
EXISTING PLANT LIST

Tree #	Botanic Name	Common Name	Size (DBH)
1	Acer platanoides	Norway Maple	10"
2	Picea pungens 'Glauca'	Colorado Blue Spruce	10"
3	Gymnocladus dioicus	Kentucky Coffeetree	6"
4	Syringa reticulata	Japanese Tree Lilac	4"
5	Gymnocladus dioicus	Kentucky Coffeetree	3"
6	Gleditsia triacanthos inermis	Thornless Honeylocust	18"
7	Gymnocladus dioicus	Kentucky Coffeetree	4"
8	Gleditsia triacanthos inermis	Thornless Honeylocust	12"
9	Acer freemanii	Freeman Maple	8"
10	Quercus muehlenbergii	Chinkapin Oak	8"
11	Acer freemanii	Freeman Maple	6"
12	Gleditsia triacanthos inermis	Thornless Honeylocust	14"

PRAIRIE FORGE GROUP
300 CARDINAL DRIVE
SUITE 160
SAINT CHARLES IL 60175
630.221.0671 | P
630.221.0118 | F
www.prairieforgroup.com

COPYRIGHT STATEMENT
THIS PLAN AND COPYRIGHTED AND IS SUBJECT TO COPYRIGHT PROTECTION AS AN ARCHITECTURAL WORK UNDER SECTION 172 OF THE COPYRIGHT ACT, 17 USC, AS AMENDED (DECEMBER 1, 1993). ANY REPRODUCTION, ARCHITECTURAL WORKS, WITHOUT WRITTEN APPROVAL OF PRAIRIE FORGE GROUP, IS PROHIBITED. THE INFORMATION PROVIDED TO PRAIRIE FORGE GROUP INCLUDES, BUT IS NOT LIMITED TO, THE ORIGINAL FROM AS WELL AS THE AGREEMENT AND COMPENSATION OF GROUP AND ELEMENTS OF THE DESIGN. WITHOUT WRITTEN APPROVAL OF PRAIRIE FORGE GROUP, ANY REPRODUCTION OF THESE PLANS, WORK OR HOME REPRESENTED, CAN BE USED IN ANY MANNER, INCLUDING CONSTRUCTION, REVISION, REPRODUCTION, OR MONETARY COMPENSATION. PRAIRIE FORGE GROUP IS NOT RESPONSIBLE FOR ANY CLAIMS, DAMAGES, OR EXPENSES ARISING OUT OF THE UNAUTHORIZED USE OF THE INFORMATION CONTAINED IN THESE ELECTRONIC FILES. THESE PLANS MAY NOT ACCURATELY REFLECT THE FINAL AS-BUILT CONDITIONS. IT IS THE RESPONSIBILITY OF THE USER TO VERIFY ALL LOCATIONS, DIMENSIONS, AND OTHER RELATED INFORMATION.

COPYRIGHT © 2018-2023
PRAIRIE FORGE GROUP | SAINT CHARLES IL



**DANE COUNTY
EMERGENCY MANAGEMENT
ELEVATOR ADDITION
2982 KAPEC ROAD
FITZBURG, WISCONSIN**

CLIENT APPROVAL
 APPROVED
 APPROVED AS NOTED
APPROVED BY / DATE:

ISSUE RECORD

ADDITION ADR	DATE
	05/24/22

PROJECT ARCHITECT
XXX
DRAWN BY
XXX
DATE
5/12/2022 10:28:45 AM
PROJECT NUMBER
2020-001

GRWA
LAND PLANNING
BIOLOGICAL CONSULTING
LANDSCAPE ARCHITECTURE
402 W. LIBERTY DRIVE
WILTON, ILLINOIS 60181
PHONE: 630.668.7197

WT Group
Engineering • Design • Consulting
Structural | Mechanical/Electrical/Plumbing
Civil | Land Survey | Telecommunication | Aquatic
Accessibility Consulting | Design & Program Management
Engineering with Precision, Pace & Passion.

2675 Pratum Avenue | Hoffman Estates, IL 60192
P: 224.293.6333 | F: 224.293.6444
wtgroup.com
IL License No. 184.007570-0015 | Exp. 04/30/2023
© COPYRIGHT 2020 THE WT GROUP, LLC



**ADR
LANDSCAPE
PLAN**
L-1

LANDSCAPE WORK PART 1 - GENERAL

1.1 DESCRIPTION OF WORK

The work shall consist of furnishing, transporting and installing all seeds, plants and other materials required for:

1. The establishment of trees, shrubs, perennial, annual and lawn areas as shown on Landscape Plan;
2. The provision of post-planting management as specified herein;
3. Any remedial operations necessary in conformance with the plans as specified in this document;
4. Permits which may be required.

1.2 QUALITY ASSURANCE

- A. Work shall conform to State of Wisconsin Horticultural Standards and local municipal requirements.
- B. Quality Control Procedures:

1. Ship landscape materials with certificates of inspection as required by governmental authorities. Comply with governing regulations applicable to landscape materials.
2. Do not make substitutions. If specified landscape material is not obtainable, submit to Landscape Architect proof of non-availability and proposal for use of equivalent material.
3. Analysis and Standards: Package standard products with manufacturer's certified analysis.

1.3 SUBMITTALS

- A. Planting Schedule

Submit three (3) copies of the proposed planting schedule showing dates for each type of planting

- B. Maintenance Instruction - Landscape Work

Submit two (2) copies of typewritten instructions recommending procedures to be established by the Owner for the maintenance of landscape work for one full year. Submit prior to expiration of required maintenance periods.

Instructions shall include: watering, fertilizing, spraying, mulching and pruning for plant material and trimming groundcover. Instructions for watering, fertilizing and mowing grass areas shall be provided ten (10) days prior to request for inspection for final acceptance. Landscape Architect shall receive copies of all instructions when issued.

- C. Submit two (2) copies of soil test of existing topsoil with recommendations for soil additive requirement to Landscape Architect for review and written approval.
- D. Submit two (2) samples of shredded hardwood bark mulch, erosion control blankets, and all other products and materials as specified on plans to Landscape Architect for review and written approval.
- E. Nursery packing lists indicating the species and quantities of material installed must be provided to the Owner and/or City upon request.

1.4 JOB CONDITIONS

- A. Examine and evaluate grades, soils and water levels. Observe the conditions under which work is to be performed and notify Landscape Architect of unsatisfactory conditions. Do not proceed with the work until unsatisfactory conditions have been corrected in an acceptable manner.
- B. Utilities: Review underground utility location maps and plans; notify local utility location services; demonstrate an awareness of utility locations; and certify acceptance of liability for the protection of utilities during course of work. Contractor shall be responsible for any damage to utilities or property.
- C. Excavation: When conditions detrimental to plant growth are encountered such as rubble fill, adverse drainage conditions or obstructions, notify Landscape Architect before planting.

1.5 GUARANTEES

- A. Guarantee seeded and sodded areas through the specified maintenance period and until final acceptance.
- B. Guarantee trees, shrubs, groundcover and perennials for a period of one year after date of acceptance against defects including death and unsatisfactory growth, except for defects resulting from neglect by Owner, abuse or damage by others or unusual phenomena or incidents which are beyond Landscape Installer's control.

LANDSCAPE WORK PART 2 - PLANT MATERIALS

2.1 LAWN SOD

Provide strongly rooted sod, not less than two (2) years old and free of weeds and undesirable native grasses. Provide only sod capable of growth and development when planted (viable, not dormant) and in strips not more than 18" wide x 4' long. Provide sod composed of a 5-way blend of Kentucky Bluegrass such as: Midnight, Allure, Viva, Washington, Liberty.

2.2 LAWN SEED MIXTURE

Grass Seed: Provide fresh, clean, new crop seed complying with the tolerance for purity and germination established by the Official Seed Analysts of North America. Provide seed of the grass species, proportions and maximum percentage of weed seed, as specified.

- A. Lawn Seed Mixture - 5 lbs./1,000 sq. ft.
 - 50% Kentucky Bluegrass 98/85
 - 15% Cutter Perennial Ryegrass
 - 10% Spartan Hard Fescue
 - 10% Edge Perennial Ryegrass
 - 10% Express Perennial Ryegrass
 - 5% Pennlawn Creeping Red Fescue

2.3 GROUNDCOVERS, PERENNIALS AND ANNUALS

Provide plants established and well-rooted in removable containers or integral peat pots and with not less than the minimum number and length of runners required by ANSI Z60.1 for the pot size shown or listed.

2.4 TREES AND SHRUBS

- A. Name and Variety: Provide nursery grown plant material true to name and variety.
- B. Quality: Provide trees, shrubs and other plants complying with the recommendations and requirements of ANSI Z60.1 "Standard for Nursery Stock" and as further specified.
- C. Deciduous Trees: Provide trees of height and caliper listed or shown and with branching configuration recommended by ANSI Z60.1 for type and species required. Provide single stem trees except where special forms are shown or listed. Provide balled and burlapped (B&B) deciduous trees.
- D. Deciduous Shrubs: Provide shrubs of the height shown or listed and with not less than the minimum number of canes required by ANSI Z60.1 for the type and height of shrub required. Provide balled and burlapped (B&B) deciduous shrubs.

- E. Coniferous Evergreen: Provide evergreens of the sizes shown or listed. Dimensions indicate minimum spread for spreading and semi-spreading type evergreens and height for other types. Provide quality evergreens with well-balanced form complying with requirements for other size relationships to the primary dimension shown. Provide balled and burlapped (B&B) evergreen trees and containerized shrubs.
- F. Inspection: All plants shall be subject to inspection and review at the place of growth or upon delivery and conformity to specification requirements as to quality, right of inspection and rejection upon delivery at the site or during the progress of the work for size and condition of balls or roots, diseases, insects and latent defects or injuries. Rejected plants shall be removed immediately from the site.

2.6 PLANTING SOIL MIXTURE

Provide planting soil mixture consisting of clean uncompacted topsoil (stockpiled at site) for all planting pits, perennial, annual and groundcover areas. Topsoil shall be conditioned based on any recommendations resulting from the soil test in I.3.C.

2.7 EROSION CONTROL

- A. Turf Seed Areas Erosion Control Blanket: North American Green DS75, or equivalent approved equal.

2.8 MULCH

Provide mulch consisting of shredded hardwood. Provide sample to Landscape Architect for approval prior to ordering materials.

LANDSCAPE WORK PART 3 - EXECUTION

3.1 PLANTING SCHEDULE

At least thirty (30) days prior to the beginning of work in each area, submit a planting schedule for approval by the Landscape Architect.

3.2 PLANTINGS

- A. Sodding New Lawns

1. Remove existing grass, vegetation and turf. Dispose of such material legally off-site, do not turn over into soil being prepared for lawns.
2. Till to a depth of not less than 6"; apply soil amendments as needed; remove high areas and fill in depressions; till soil to a homogenous mixture of fine texture, remove lumps, clods, stones over 1" diameter, roots and other extraneous matter. Dispose of such material legally off-site.
3. Sodded areas shall receive an application of commercial fertilizer at the rate of 10 lbs. per 1,000 sq. ft. and shall have an analysis of 16-8-8.
4. Lay sod within 24 hours from time of stripping.
5. Lay sod to form a solid mass with tightly fitted joints. Butt ends and sides of sod strips; do not overlap. Stagger strips to offset joints in adjacent courses. Work from boards to avoid damage to subgrade or sod. Tamp or roll lightly to ensure contact with subgrade. Work sifted soil into minor cracks between pieces of sod; remove excess to avoid smothering of adjacent grass.
6. Water sod thoroughly with a fine spray immediately after planting.

- B. Seeding New Lawns

1. Remove existing grass, vegetation and turf. Dispose of such material legally off-site. Do not turn over into soil being prepared for lawns.
2. Till to a depth of not less than 6"; apply soil amendments; remove high areas and fill in depressions; till soil to a homogenous mixture of fine texture, remove lumps, clods, stones over 1" diameter, roots and other extraneous matter. Dispose of such material legally off-site.
3. Seeded lawn areas shall receive an application of commercial fertilizer at the rate of 5 lbs. per 1,000 sq. ft. and shall be 6-24-24. Fertilizer shall be uniformly spread and mixed into the soil to a depth of 1" inches.
4. Do not use wet seed or seed which is moldy or otherwise damaged in transit or storage.
5. Sow seed using a spreader or seeding machine. Do not seed when wind velocity exceeds five (5) miles per hour. Distribute seed evenly over entire area by sowing equal quantity in two directions at right angles to each other.
6. Sow not less than specified rate.
7. Rake lawn seed lightly into top 1" of soil, roll lightly and water with a fine spray.
8. After the seeding operation is completed, spray a wood fiber mulch (Conueb 2000 with tacifier or approved equal) over the entire grassed area at the rate of 2,000 lbs. per acre. Use a mechanical spray unit to insure uniform coverage. Exercise care to protect buildings, automobiles and people during the application of the mulch.

- C. Groundcover and Perennial Beds

Groundcover, perennials, and annuals shall be planted in continuous beds of planting soil mixture a minimum of 8" deep. Install per spacing indicated on plan.

- D. Trees and Shrubs

1. Set balled and burlapped (B&B) stock plumb and in center of pit or trench with top of ball at an elevation that will keep the root flare exposed upon backfill and mulching. Remove burlap from top and sides of balls; retain on bottoms. When set, place additional topsoil backfill around base and sides of ball and work each layer to settle backfill and eliminate voids and air pockets. When excavation is approximately 2/3 full, water thoroughly before placing remainder of backfill. Repeat watering until no more is absorbed. Water again after placing final layer of backfill.
2. Dish top of backfill to allow for mulching. Provide additional backfill berm around edge of excavations to form shallow saucer to collect water.
3. Mulch pits, trenches and planted areas. Provide not less than 2" thickness of mulch and work into top of backfill and finish level with adjacent finish grades. Maintain exposed root flare at all times.
4. Prune only injured or dead branches from flowering trees, if any. Protect central leader of tree during shipping and pruning operations. Prune shrubs to retain natural character in accordance with standard horticultural practices.
5. Remove and replace excessively pruned or ill-formed stock resulting from improper pruning.
6. The Contractor shall be wholly responsible for assuring that all trees are planted in a vertical and plumb position and remain so throughout the life of this contract and guarantee period. Trees may or may not be staked and guyed depending upon the individual preference of the Contractor; however, any bracing procedure(s) must be approved by the Owner prior to its installation.

3.3 INITIAL MAINTENANCE

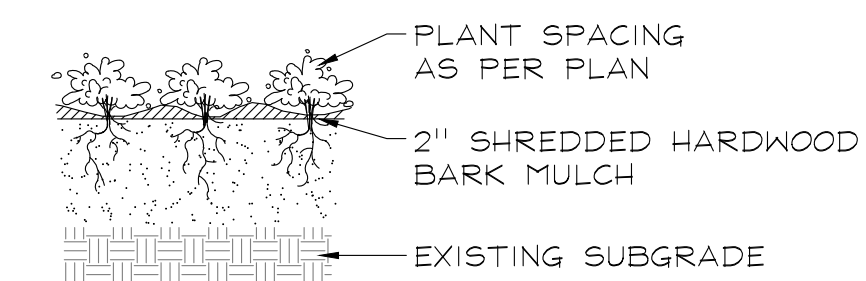
- A. Begin maintenance immediately after planting, continuing until final acceptance. A minimum of thirty (30) days.
- B. Maintain planted and seeded areas by watering, rolling/regrading, replanting and implementing erosion control as required to establish vegetation free of eroded or bare areas.

3.4 CLEAN UP AND PROTECTION

- A. During landscape work, store materials and equipment where directed. Keep pavements clean and work areas and adjoining areas in an orderly condition.
- B. Protect landscape work and materials from damage due to landscape operations, operations by other trades and trespassers. Maintain protection during installation and maintenance periods. Treat, repair or replace damaged landscape work as directed by Landscape Architect.

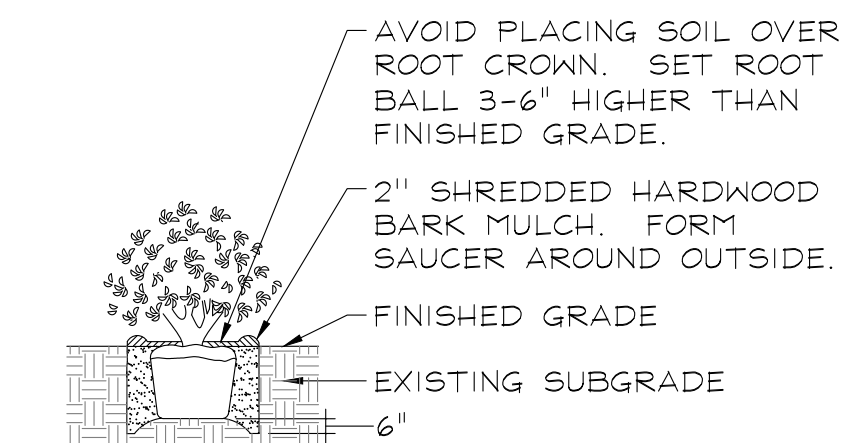
3.5 INSPECTION AND ACCEPTANCE

- A. The Landscape Architect reserves the right to inspect seeds, plants, trees and shrubs either at place of growth or at site before planting for compliance with requirements for name, variety, size, quantity, quality and mix proportion.
- B. Supply written affidavit certifying composition of seed mixtures and integrity of plant materials with respect to species, variety and source.
- C. Notify the Landscape Architect within five (5) days after completing initial and/or supplemental plantings in each area.
- D. When the landscape work is completed, including maintenance, the Landscape Architect will, upon request, make a final inspection to determine acceptability. After final acceptance, the Owner will be responsible for maintenance.



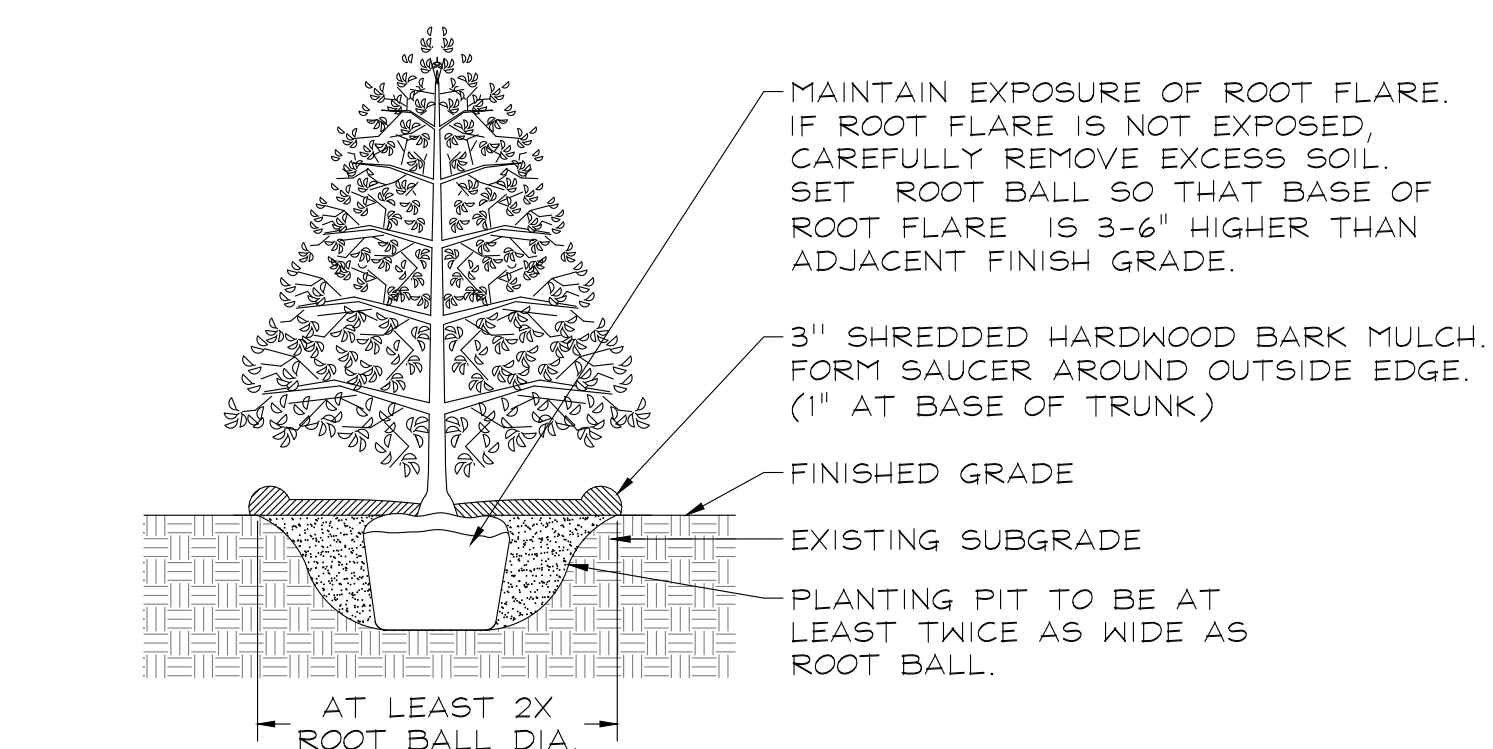
3 PERENNIALS & GROUNDCOVERS PLANTING DETAIL

NOT TO SCALE



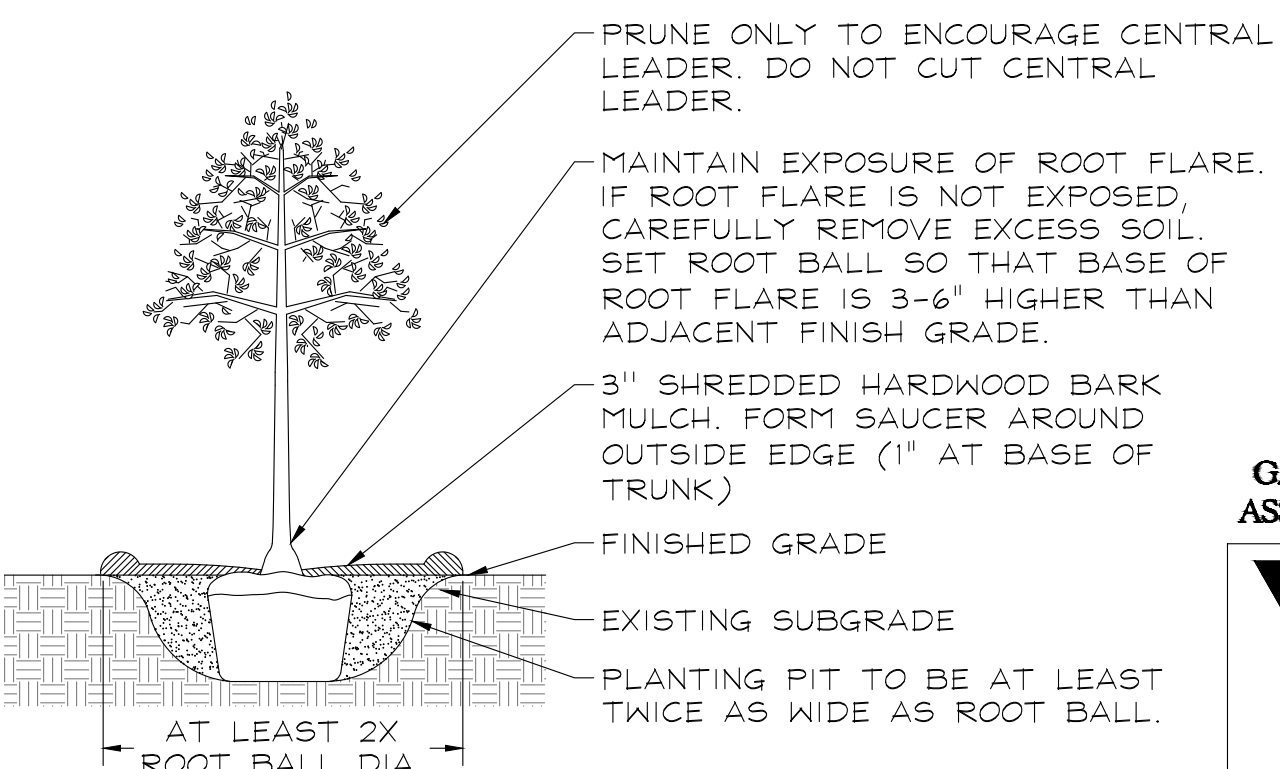
4 DECIDUOUS & EVERGREEN SHRUBS PLANTING DETAIL

NOT TO SCALE



5 EVERGREEN TREE PLANTING DETAIL

NOT TO SCALE



6 SHADE TREE PLANTING DETAIL

NOT TO SCALE

PRAIRIE FORGE GROUP
 300 CARDINAL DRIVE
 SUITE 160
 SAINT CHARLES IL 60175
 630.221.0671 | P
 630.221.0118 | F
 www.prairieforgegrup.com

COPYRIGHT STATEMENT
 THESE PLANS ARE COPYRIGHTED AND ARE SUBJECT TO COPYRIGHT PROTECTION AS AN ARCHITECTURAL WORK UNDER SECTION 102 OF THE COPYRIGHT ACT, 17 U.S.C. AS AMENDED (DECEMBER 1, 1976), AND/OR AS THE ARCHITECTURAL OR WORKS COPYRIGHT PROTECTION ACT OF 1990. THE COPYRIGHT PROVIDED TO PRAIRIE FORGE GROUP INCLUDES, BUT IS NOT LIMITED TO, THE DESIGN, DRAWING, AND THE ARRANGEMENT AND COMPOSITION OF ANY UNPUBLISHED USE OF THESE PLANS, WORK OR HOME REPRESENTED, CAN LOAN, REPRODUCE, IN THE FORMATION OF CONSTRUCTION DOCUMENTS, OR ANY OTHER MANUSCRIPTS, OR INFORMATION, AND TO PRAIRIE FORGE GROUP'S LIABILITY FOR ANY CLAIMS, DAMAGES, OR EXPENSES ARISING OUT OF THE UNAUTHORIZED USE OF THE INFORMATION CONTAINED IN THESE ELECTRONIC FILES. THESE PLANS MAY NOT ACCURATELY REFLECT THE FINAL AS-BUILT CONDITIONS. IT IS THE RESPONSIBILITY OF THE USER TO VERIFY ALL LOCATIONS, DIMENSIONS, AND OTHER RELATED INFORMATION.
 COPYRIGHT © 2018-2023
 PRAIRIE FORGE GROUP | SAINT CHARLES IL

**DANE COUNTY
 EMERGENCY MANAGEMENT
 ELEVATOR ADDITION
 2982 KAPEC ROAD
 FITCHBURG, WISCONSIN**

CLIENT APPROVAL
 APPROVED
 APPROVED AS NOTED
 APPROVED BY / DATE:

ISSUE RECORD

ADDITION ADR	05/24/22

PROJECT ARCHITECT
 GFB
DRAWN BY
 TRC
DATE
 5/12/2022 10:28:45 AM
PROJECT NUMBER
 2020-001

GRWA
 LAND PLANNING
 BIOLOGICAL CONSULTING
 LANDSCAPE ARCHITECTURE
 402 W. LIBERTY DRIVE
 WHEATON, ILLINOIS 60187
 PHONE: 630.668.7197

WT Group
 Engineering • Design • Consulting
 Structural • Mechanical • Electrical • Plumbing
 Civil • Land Survey • Telecommunication • Aquatic
 Accessibility Consulting • Design • Program Management
 Engineering with Precision, Pace & Passion.
 2675 Pratum Avenue | Hoffman Estates, IL 60192
 P: 224.293.6333 | F: 224.293.6444
 wtengineering.com
 IL License No. 184.007570-0015 | Exp: 04/30/2023
 © COPYRIGHT 2020 THE WT GROUP, LLC

811
 Know what's below.
 Call before you dig.

LANDSCAPE SPECIFICATIONS
L-2

AREA OF NEW ELEVATOR ADDITION

NEW ELEVATOR ADDITION KEY NOTES

- S32 NEW IN-GROUND LIGHT TO ILLUMINATE BUILDING SIGNAGE - SEE ELECTRICAL PLANS
- S33 EXTEND BUILDING DRAINAGE PIPES AND STONE EDGING AROUND NEW BUILDING ADDITION
- S34 REVISED LANDSCAPING TO ACCOMMODATE NEW ADDITION - SEE LANDSCAPE PLAN

PREVIOUSLY APPROVED ADR KEY NOTES

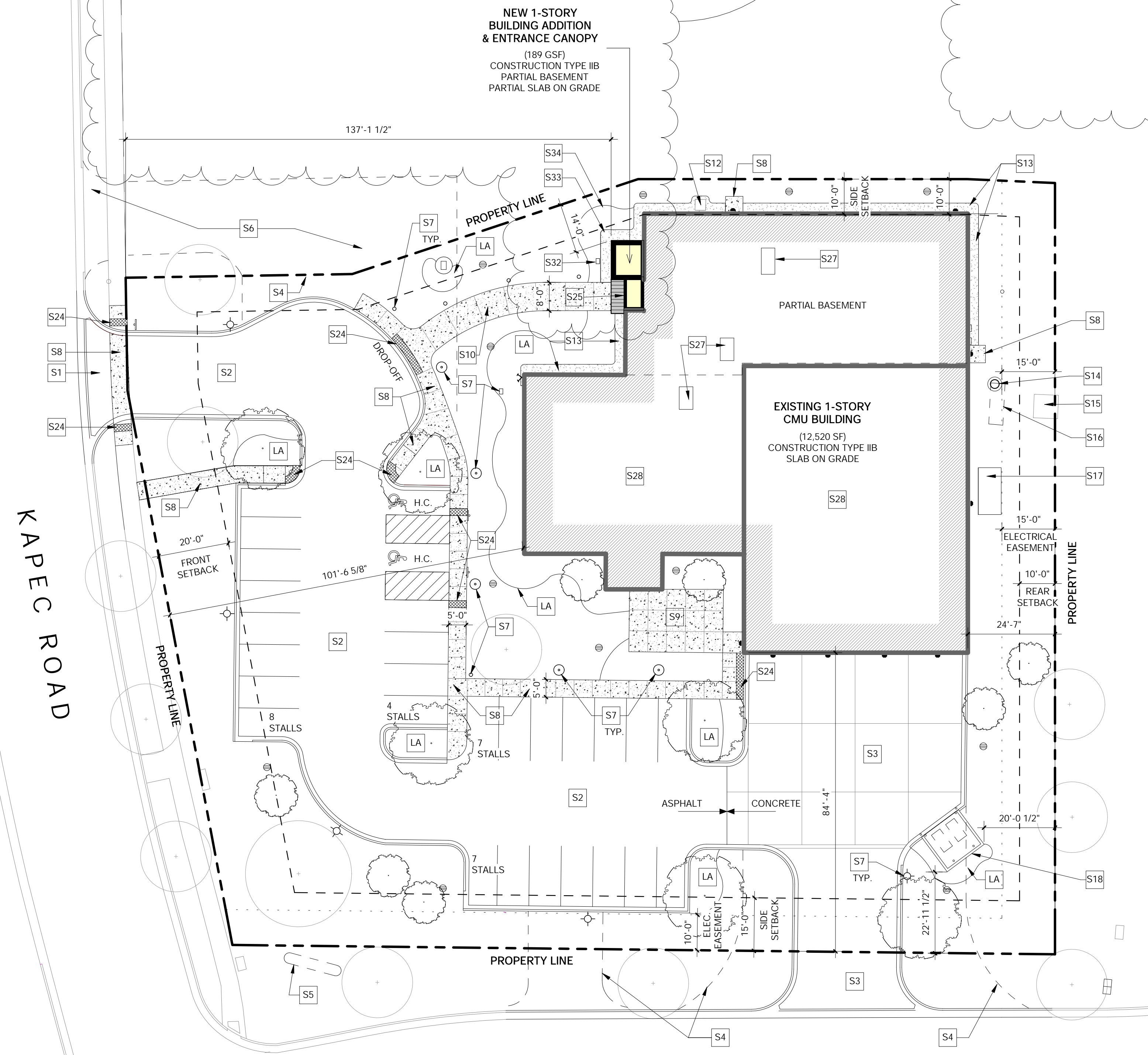
- S1 NEW CONCRETE APRON + CURB CUT - SEE CIVIL DWGS.
- S2 NEW ASPHALT DRIVE + PARKING LOT (26 STALLS + 2 ADA STALLS) SEE CIVIL DWGS.
- S3 NEW CONCRETE DRIVE - SEE CIVIL DWGS.
- S4 EXISTING DRIVEWAYS AND CURB CUTS TO BE REMOVED - SEE CIVIL DWGS.
- S5 EXISTING MONUMENTAL SIGN + MASONRY BASE TO BE REMOVED.
- S6 EXISTING CURB CUT AND DRIVEWAY TO BE REMOVED BY OTHERS.
- S7 NEW SITE LIGHTING. SEE ELECTRICAL DRAWINGS.
- S8 NEW CONCRETE SIDEWALKS / STOOPS. SEE STRUCT. DWGS.
- S9 NEW CONCRETE PATIO.
- S10 NEW CONCRETE ACCESSIBLE MAIN ENTRY WALKWAY.
- S11 NEW GLASS + METAL ENTRY CANOPY.
- S12 EXISTING RADIO TOWER AND CONCRETE PAD TO REMAIN.
- S13 STONE PERIMETER EDGING - SEE CIVIL + LANDSCAPE DWGS.
- S14 PROPOSED RADIO TOWER - BY OWNER.
- S15 EXISTING TRANSFORMER.
- S16 EXISTING GENERATOR + CONC. PAD TO BE REMOVED.
- S17 NEW GENERATOR + CONC. PAD. SEE ELEC. DWGS.
- S18 NEW TRASH ENCLOSURE. SEE DWGS. ON AS 1.2
- S24 DETECTABLE WARNING WALKWAY - SEE CIVIL DWGS.
- S25 ACCESSIBLE BUILDING ENTRANCE.
- S26 NOT USED
- S27 NEW ROOF TOP AIR HANDLING UNIT. SEE MECH. DWGS.
- S28 NEW ROOFING. MODIFIED BITUMINOUS MEMBRANE.
- LA SEE LANDSCAPE PLAN FOR PLANTING AND TREE DETAILS.

SITE PLAN GENERAL NOTES

1. REFER TO CIVIL DRAWINGS FOR ALL SITE/CIVIL INFORMATION.
2. REFER TO LANDSCAPE DRAWINGS FOR ALL LANDSCAPE INFORMATION.
3. EXISTING VEGETATION AND LANDSCAPING TO REMAIN WHEREVER POSSIBLE. COORDINATE WITH OWNER.
4. PROTECT EXISTING TREES UNLESS NOTED OTHERWISE. SEE CIVIL + LANDSCAPE DWGS.

SITE PLAN LEGEND

- EXISTING TREE TO REMAIN
- NEW TREE, SEE LANDSCAPE PLAN
- NEW CONCRETE SIDEWALK
- EXISTING LIGHT POLE
- NEW LIGHT FIXTURE - 20' POLE
- NEW LIGHT FIXTURE - 10' POLE
- NEW LIGHT FIXTURE - BOLLARD TYPE
- NEW BUILDING MOUNTED LIGHT FIXTURE
- EXISTING FIRE DEPARTMENT CONNECTION
- NEW DRAINAGE STRUCTURE - SEE CIVIL DRAWINGS



1 ARCHITECTURAL SITE PLAN
SCALE 1" = 20'-0"

ZONING ANALYSIS

REQUIREMENTS	PROPOSED
EXISTING ADDRESS: 5415 KING JAMES WAY	ADDRESS: 2982 KAPEC ROAD
ZONE: B-G GENERAL BUSINESS	USE: GOVERNMENT OFFICES
MIN. LOT AREA: 8,000 SQUARE FEET	EXISTING LOT AREA: 51,836 SQUARE FEET (1.19 ACRE)
MIN. LOT WIDTH: 60 FEET	EXISTING LOT WIDTH: 191.26 FEET
MIN. FRONT SETBACK: 20 FEET	EXG. FRONT SETBACK: 101.55 FEET ADDITION FRONT SETBACK: 137.13 FEET
MIN. SIDE SETBACK: 10 FEET	EXG. SIDE SETBACK: 10 FEET ADDITION SIDE SETBACK: 14 FEET
MIN. SIDE STREET S.B.: 15 FEET	SIDE STREET S.B.: 22.96 FEET
MIN. REAR SETBACK: 10 FEET	REAR SETBACK: 20.06 FEET
MAX. BUILDING HEIGHT: 42 FEET, OR 3 STORIES	EXG. BUILDING HEIGHT: 22.75 FEET, 1 STORY
MIN. OPEN SPACE: 25%	OPEN SPACE: 37.50%
	IMPERVIOUS SURFACE RATIO: 62.50%
PARKING REQUIREMENT: OFFICE = 1 STALL PER 300 GSF OF BUILDING AREA	PARKING REQUIREMENT: OFFICE AREA = 7,360 GSF / 300 = 24.5 = 25 PARKING STALLS

DIGGERS HOTLINE: WISCONSIN'S ONE-CALL CENTER
CALL 811 OR (800) 242-8511
(262) 432-7910
(877) 500-9592 (EMERGENCY ONLY)



CONTRACTOR MUST LOCATE PRIVATE UTILITIES IN AREA OF CONSTRUCTION PRIOR TO PROCEEDING WITH WORK.

PRAIRIE FORGE GROUP
300 CARDINAL DRIVE
SUITE 160
SAINT CHARLES IL 60175
630.221.0671 | P
630.221.0118 | F
www.prairieforgroup.com

COPYRIGHT STATEMENT
THESE PLANS ARE COPYRIGHTED AND ARE SUBJECT TO COPYRIGHT PROTECTION AS AN ARCHITECTURAL WORK UNDER SECTION 102 OF THE COPYRIGHT ACT OF 1976, AS AMENDED (DECEMBER, 1992). ANYONE WHO REPRODUCES, COPIES, OR TRANSMITS THESE PLANS IN ANY MANNER WITHOUT WRITTEN APPROVAL OF PRAIRIE FORGE GROUP OR HOME REPRESENTATIVE, CAN LEGALLY BE HELD LIABLE FOR VIOLATION OF THE COPYRIGHT ACT. PRAIRIE FORGE GROUP IS NOT RESPONSIBLE FOR ANY CLAIMS, DAMAGES, OR EXPENSES ARISING OUT OF THE UNAUTHORIZED USE OF THE INFORMATION CONTAINED IN THESE ELECTRONIC FILES. THESE PLANS MAY NOT BE REPRODUCED, COPIED, OR TRANSMITTED IN ANY MANNER WITHOUT THE WRITTEN APPROVAL OF PRAIRIE FORGE GROUP. IT IS THE RESPONSIBILITY OF THE USER TO VERIFY ALL LOCAL, STATE, AND FEDERAL REGULATIONS AND OTHER RELATED INFORMATION.
COPYRIGHT © 2018-2022 PRAIRIE FORGE GROUP / SAINT CHARLES, IL



DANE COUNTY EMERGENCY MANAGEMENT
ELEVATOR ADDITION
2982 KAPEC ROAD
FITCHBURG, WISCONSIN

CLIENT APPROVAL
 APPROVED
 APPROVED AS NOTED
APPROVED BY / DATE:

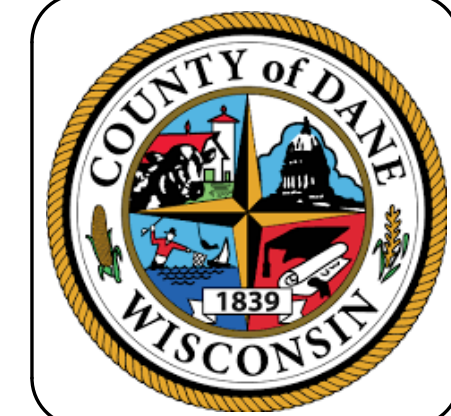
ISSUE RECORD

ADDITION ADR	DATE
	05/24/22

PROJECT ARCHITECT
RBS
DRAWN BY
LMB / RBS
DATE
5/19/2022 11:02:41 AM
PROJECT NUMBER
2020-001

ARCHITECTURAL SITE PLAN
AS 1

COPYRIGHT STATEMENT
 THESE PLANS ARE COPYRIGHTED AND ARE SUBJECT TO COPYRIGHT PROTECTION AS AN "ARCHITECTURAL WORK" UNDER SECTION 102 OF THE COPYRIGHT ACT OF 1976. AS AMENDED (DECEMBER, 1992). ANY REPRODUCTION, ARCHITECTURAL ACT OF WORKS OR REPRODUCTION PROVIDED TO PRAIRIE FORGE GROUP INCLUDES BUT IS NOT LIMITED TO ORIGINAL WORKS, AS WELL AS THE ARRANGEMENT AND COMPOSITION OF SUCH AND ELEMENTS OF THE DESIGN. WITHOUT WRITTEN APPROVAL OF PRAIRIE FORGE GROUP ANY UNAUTHORIZED USE OF THESE PLANS, WORK OR HOME REPRESENTED, CAN LEGALLY RESULT IN THE VIOLATION OF CONSTRUCTION, SECURE OF PLANS, AND/OR MONETARY COMPENSATION. PRAIRIE FORGE GROUP IS NOT RESPONSIBLE FOR ANY CLAIMS, DAMAGES OR EXPENSES ARISING OUT OF THE UNAUTHORIZED USE OF THE INFORMATION CONTAINED IN THESE ELECTIONS. THESE PLANS MAY NOT BE REPRODUCED, COPIED, REPRODUCED, OR OTHERWISE USED IN ANY MANNER WITHOUT THE WRITTEN PERMISSION OF PRAIRIE FORGE GROUP. IT IS THE RESPONSIBILITY OF THE USER TO VERIFY ALL LOCAL, STATE, AND FEDERAL REGULATIONS AND OTHER RELATED INFORMATION.
 COPYRIGHT © 2018-2022
 PRAIRIE FORGE GROUP | SAINT CHARLES IL



**DANE COUNTY
 EMERGENCY MANAGEMENT
 ELEVATOR ADDITION**
 2982 KAPEC ROAD
 FITCHBURG, WISCONSIN

CLIENT APPROVAL
 APPROVED
 APPROVED AS NOTED
 APPROVED BY / DATE:

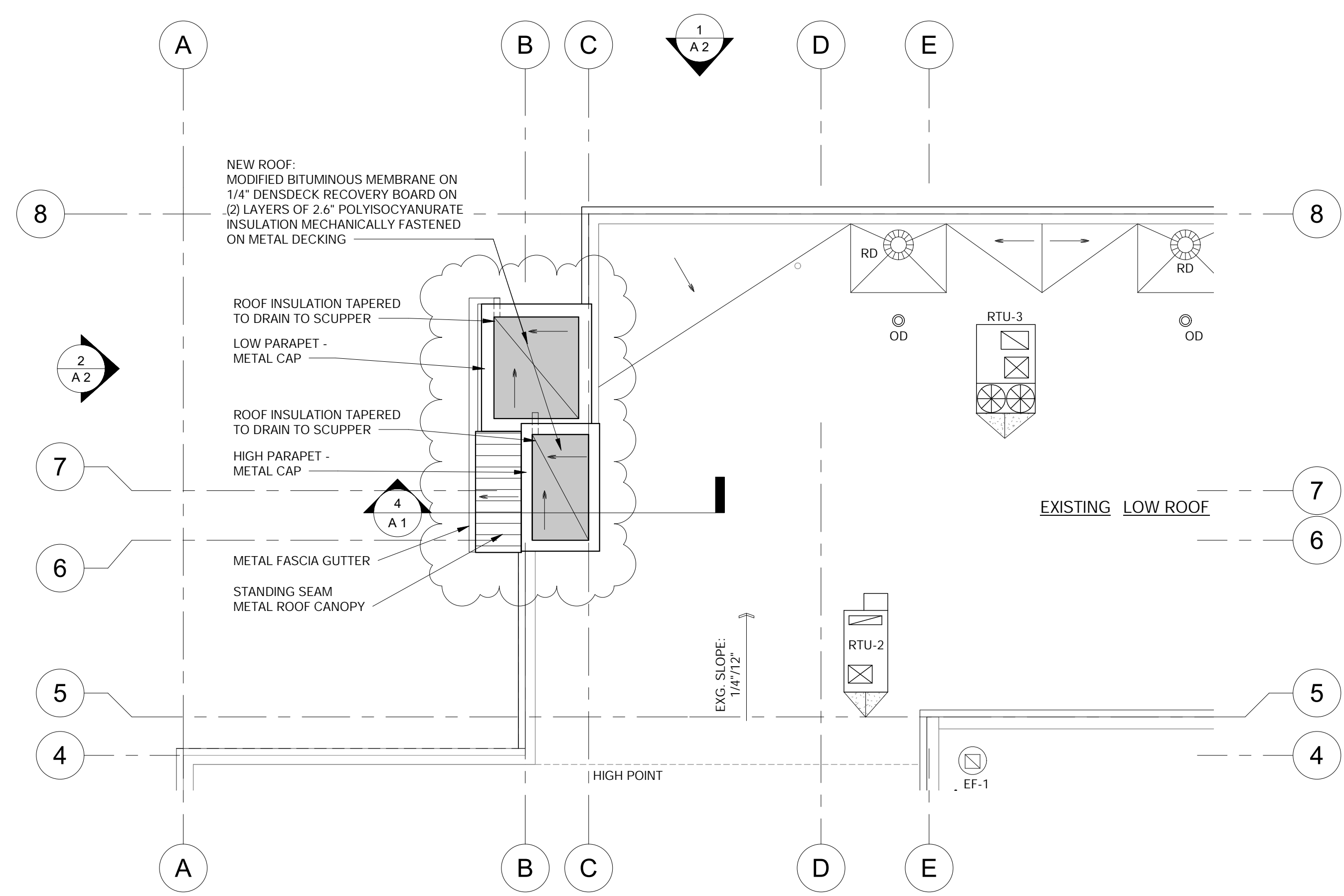
ISSUE RECORD

NO.	DESCRIPTION	DATE
ADDITION ADR		05/24/22

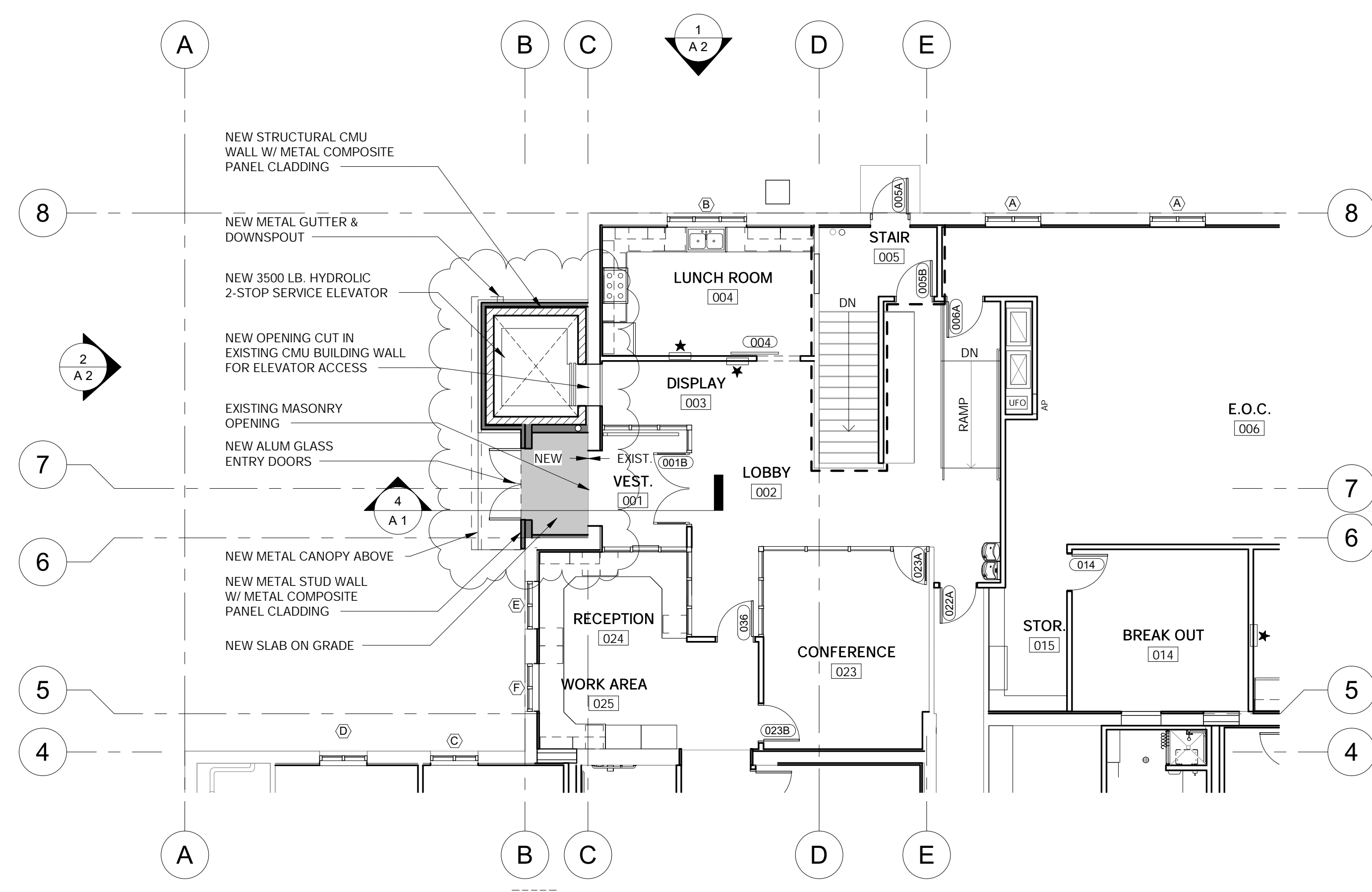
PROJECT ARCHITECT
 RBS
DRAWN BY
 LMB / RBS
DATE
 5/19/2022 10:56:56 AM
PROJECT NUMBER
 2020-001

PLANS & SECTIONS

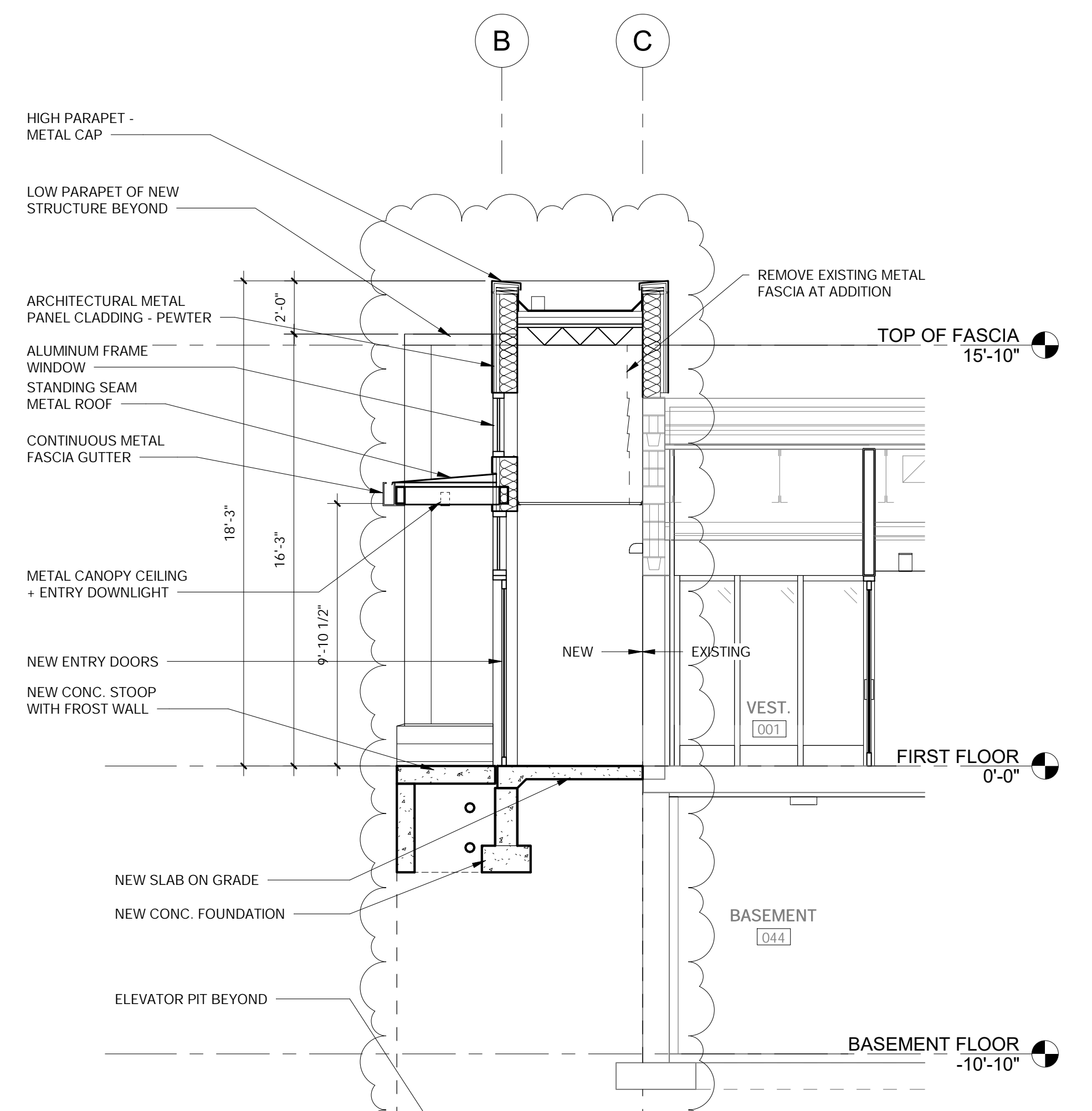
A 1



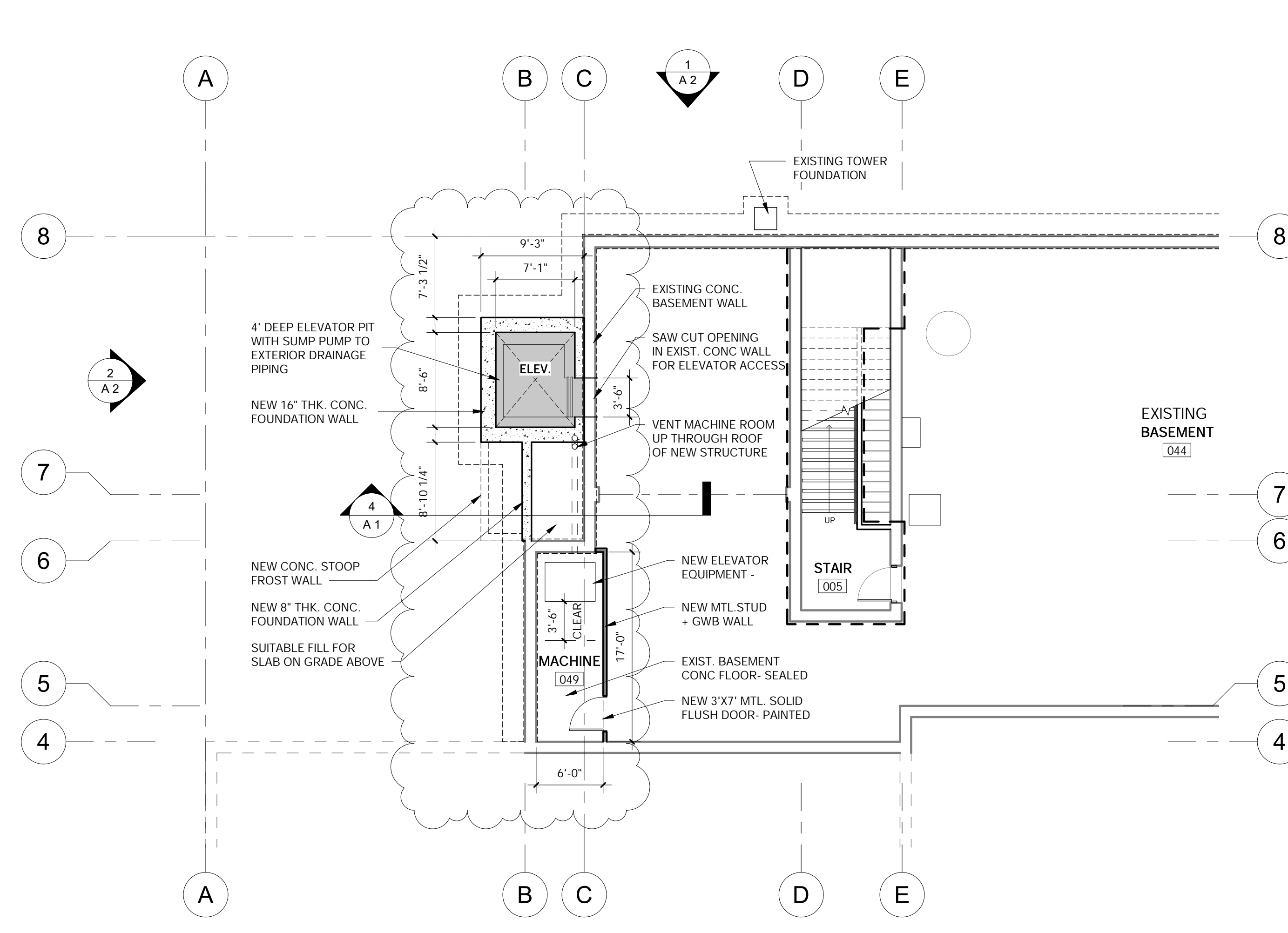
3 ROOF PLAN
 SCALE 1/8" = 1'-0"



2 FIRST FLOOR PLAN
 SCALE 1/8" = 1'-0"



4 ENTRY SECTION
 SCALE 1/4" = 1'-0"



1 BASEMENT PLAN
 SCALE 1/8" = 1'-0"

AREA OF NEW ELEVATOR ADDITION

NEW ELEVATOR ADDITION EXTERIOR ELEVATION KEY NOTES

- E21 NEW ARCHITECTURAL METAL COMPOSITE PANELS - COLOR: ARCONIC PEWTER
- E22 NEW SEAMLESS ALUM. GUTTER + DOWNSPOUT - COLOR: BLACK
- E23 NEW METAL PARAPET CAP - COLOR: CYBERSPACE
- E24 TWO COURSES OF ARCHITECTURAL CONCRETE MASONRY UNITS - T.M.E. SMOOTH BLOCK
- E25 METAL STANDOFF SIGNAGE AND LOGO - COLOR: BRUSHED ALUMINUM
- E26 NEW METAL ROOF CANOPY - COLOR: BLACK
- E27 NEW ALUMINUM FRAME CLERESTORY WINDOWS - T.M.E. BLACK FRAMES
- E28 NEW GLASS ENTRANCE DOORS, ALUMINUM FRAME - T.M.E. BLACK FRAME

PREVIOUSLY APPROVED ADR EXTERIOR ELEVATION KEY NOTES

- E1 NEW ROOF ACCESS LADDER. SEE DETAIL 4/A3.6
- E2 NEW STEEL STRUCTURE (BLACK) AND TEMPERED GLASS CANOPY
- E3 EXISTING METAL FASCIA, PAINTED (TYP. ALL). COLOR: SW7076 CYBERSPACE.
- E4 REMOVE EXG. METAL FASCIA @ DOOR + LADDER LOCATION. PROVIDE NEW METAL FASCIA INFILL ABOVE. EPOXY PAINT EXG. CMU BEHIND. REMOVED FASCIA. COLOR: SW7076 CYBERSPACE.
- E5 EXISTING RADIO TOWER TO REMAIN.
- E6 EXG. ROOF DRAIN NOZZLE/SCUPPER TO REMAIN. TIE NEW OVERFLOW DRAINS TO OPENING. SEE PLUMBING DWGS.
- E7 REMOVE EXISTING DOWNSPOUTS AND SCUPPERS. PATCH OPENINGS IN METAL FASCIA. P.T.M.E.
- E8 EXG. ROOF OVERFLOW DRAIN NOZZLE TO REMAIN. SEE PLUMBING DWGS.
- E9 REMOVE EXG. ROOF DRAIN NOZZLE/SCUPPER. FILL HOLE WITH NEW CMU TO MATCH EXG.
- E10 EXISTING EXHAUST HOOD REMOVED AND REPLACED WITH NEW FAN. SEE MECH. & STRUCTURAL DRAWINGS. P.T.M.E.
- E11 EXISTING COLORED TILE TO BE COVERED WITH HARDIE PANEL BOARD. SEE DETAIL 7/A3.3. COLOR: SW7026 GRIFFIN.
- E12 INFILL AREA WITH MATCHING CMU WHERE EXG. DOOR HAS BEEN REMOVED. HARDIE PANEL SHEATHING PER DETAIL 7/A3.3
- E13 SCRAPE, PRIME, AND PAINT EXISTING O.H. DOOR STEEL JAMBS + HEAD. COLOR: SW7026 GRIFFIN.
- E14 INFILL AREA WITH MATCHING CMU WHERE EXG. DOOR HAS BEEN REMOVED. P.T.M.E.
- E15 BLACK ALUMINUM STAND-OFF ADDRESS. FONT: BAHNSCHRIFT, 7" HEIGHT. VERIFY ADDRESS WITH OWNER.
- E16 NEW BUILDING MOUNTED EXTERIOR LIGHTING. SEE ELEC. DWGS.
- E17 NEW H.M. FRAME & INSULATED METAL DOOR. PAINTED. COLOR: SW7026 GRIFFIN.
- E18 EXISTING OVERHEAD DOORS. CLEAN, PRIME, AND PAINT. COLOR: SW7026 GRIFFIN.
- E19 EXG. FIRE DEPT. CONNECTION TO REMAIN.
- E20 NEW BELOW GRADE WATERPROOF SYSTEM. SEE DETAIL 1/A 3.3



1 NORTH ELEVATION
SCALE 1/8" = 1'-0"



2 WEST ELEVATION
SCALE 1/8" = 1'-0"



**DANE COUNTY
EMERGENCY MANAGEMENT
ELEVATOR ADDITION**
2982 KAPEC ROAD
FITCHBURG, WISCONSIN

CLIENT APPROVAL
 APPROVED
 APPROVED AS NOTED
APPROVED BY / DATE:

ISSUE RECORD

ADDITION ADR	DATE
	05/24/22

PROJECT ARCHITECT
RBS
DRAWN BY
LMB / RBS
DATE
5/9/2022 2:52:44 PM
PROJECT NUMBER
2020-001

BUILDING ELEVATIONS
A 2



DANE COUNTY
 EMERGENCY MANAGEMENT
 ELEVATOR ADDITION
 2982 KAPEC ROAD
 FITCHBURG, WISCONSIN

CLIENT APPROVAL
 APPROVED
 APPROVED AS NOTED
 APPROVED BY / DATE:

ISSUE RECORD

ADDITION ADR	DATE
	05/24/22

PROJECT ARCHITECT
 xxx
DRAWN BY
 KS
DATE
 5/12/2022 10:28:45 AM
 2020-001

ELECTRICAL SITE PHOTOMETRIC PLAN
 ESP1.0

Statistics

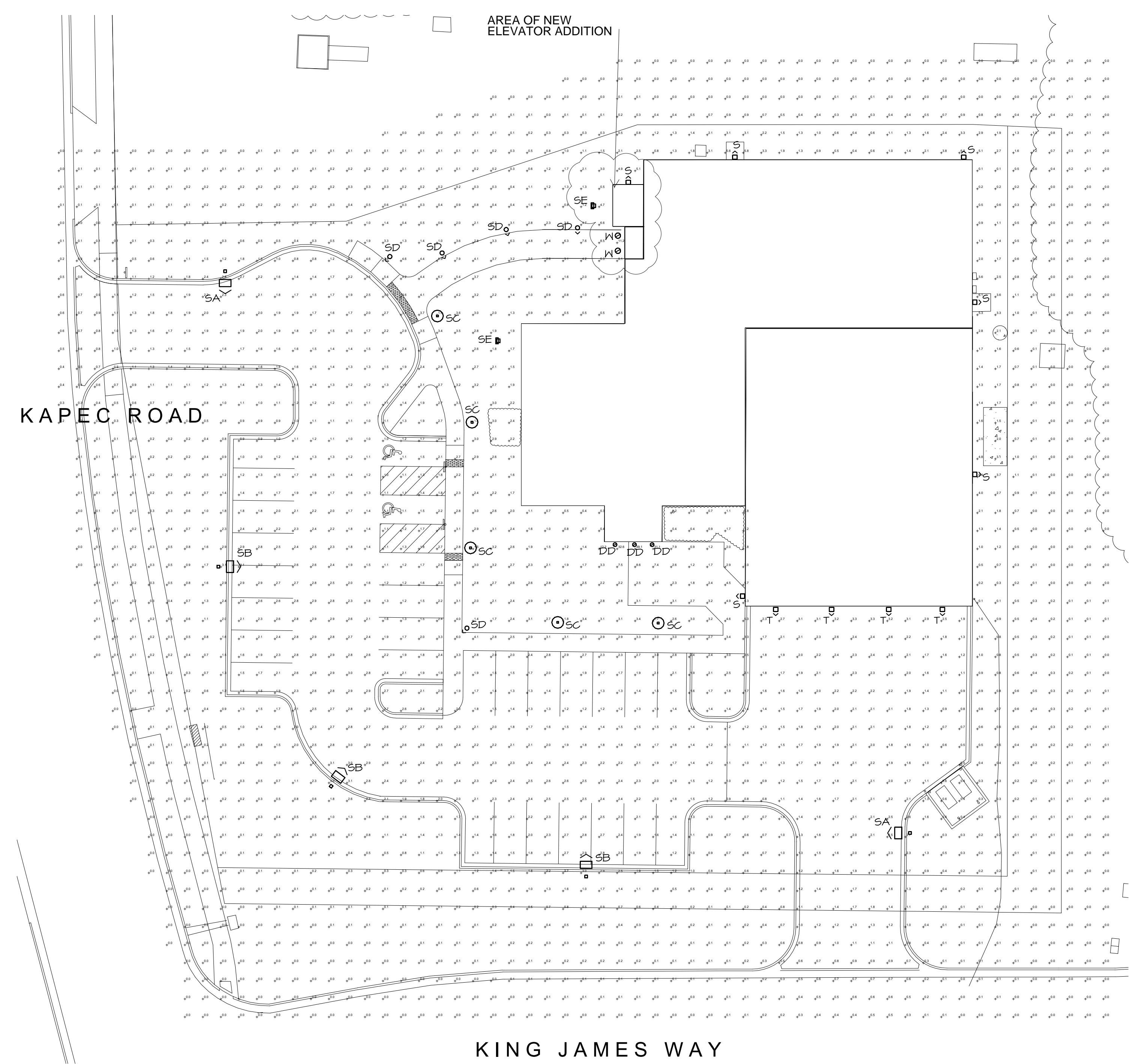
Description	Symbol	Avg	Max	Min	Max/Min	Avg/Min
Calc Zone #2	+	1.2 fc	39.1 fc	0.0 fc	N/A	N/A

Luminaire Locations

No.	Label	Location			MH	Orientation	Tilt	Aim		
		X	Y	Z				X	Y	Z
1	S	129425.00	-151184.80	9.00	9.00	90.00	0.00	129425.00	-151184.80	0.00
2	S	129358.40	-151144.30	9.00	9.00	0.00	0.00	129358.40	-151144.30	0.00
3	S	129360.50	-151286.20	9.00	9.00	270.00	0.00	129360.50	-151286.20	0.00
4	S	129425.00	-151232.40	9.00	9.00	90.00	0.00	129425.00	-151232.40	0.00
5	S	129421.90	-151144.30	9.00	9.00	0.00	0.00	129421.90	-151144.30	0.00
6	S	129328.80	-151151.30	9.00	9.00	0.00	0.00	129328.80	-151151.30	0.00
1	SA	129407.00	-151332.00	20.00	20.00	270.00	0.00	129405.90	-151332.00	0.00
2	SA	129216.90	-151176.00	20.00	20.00	180.00	0.00	129216.90	-151177.10	0.00
1	SB	129317.10	-151344.10	20.00	20.00	0.00	0.00	129317.10	-151343.00	0.00
2	SB	129215.00	-151258.00	20.00	20.00	90.00	0.00	129216.10	-151258.00	0.00
3	SB	129246.30	-151319.00	20.00	20.00	37.15	0.00	129246.90	-151318.10	0.00
1	SC	129337.10	-151273.70	10.00	10.00	0.00	0.00	129337.10	-151273.70	0.00
2	SC	129309.20	-151273.50	10.00	10.00	0.00	0.00	129309.20	-151273.50	0.00
3	SC	129285.00	-151252.80	10.00	10.00	0.00	0.00	129285.00	-151252.80	0.00
4	SC	129275.80	-151188.40	10.00	10.00	0.00	0.00	129275.80	-151188.40	0.00
5	SC	129285.40	-151217.90	10.00	10.00	0.00	0.00	129285.40	-151217.90	0.00
1	SD	129282.60	-151171.90	10.00	10.00	221.64	0.00	129282.60	-151171.90	0.00
2	SD	129277.10	-151170.90	10.00	10.00	152.25	0.00	129277.10	-151170.90	0.00
3	SD	129294.90	-151164.40	10.00	10.00	162.83	0.00	129294.90	-151164.40	0.00
4	SD	129314.70	-151163.90	10.00	10.00	179.63	0.00	129314.70	-151163.90	0.00
5	SD	129284.00	-151275.10	10.00	10.00	221.64	0.00	129284.00	-151275.10	0.00
1	SE	129325.10	-151251.90	10.00	10.00	0.00	0.00	129325.10	-151251.90	0.00
2	SE	129335.40	-151251.90	10.00	10.00	0.00	0.00	129335.40	-151251.90	0.00
3	SE	129330.50	-151251.90	10.00	10.00	0.00	0.00	129330.50	-151251.90	0.00
1	SF	129292.70	-151195.30	1.50	1.50	90.00	120.00	129294.20	-151195.30	2.37
3	SF	129319.20	-151157.80	1.50	1.50	90.00	120.00	129319.20	-151157.80	1.50
1	T	129369.70	-151269.90	16.00	16.00	180.00	0.00	129369.70	-151269.90	0.00
2	T	129416.00	-151269.90	16.00	16.00	180.00	0.00	129416.00	-151269.90	0.00
3	T	129401.10	-151269.90	16.00	16.00	180.00	0.00	129401.10	-151269.90	0.00
4	T	129385.20	-151269.90	16.00	16.00	180.00	0.00	129385.20	-151269.90	0.00
1	W	129325.90	-151186.10	10.00	10.00	0.00	0.00	129325.90	-151186.10	0.00
2	W	129325.90	-151170.30	10.00	10.00	0.00	0.00	129325.90	-151170.30	0.00

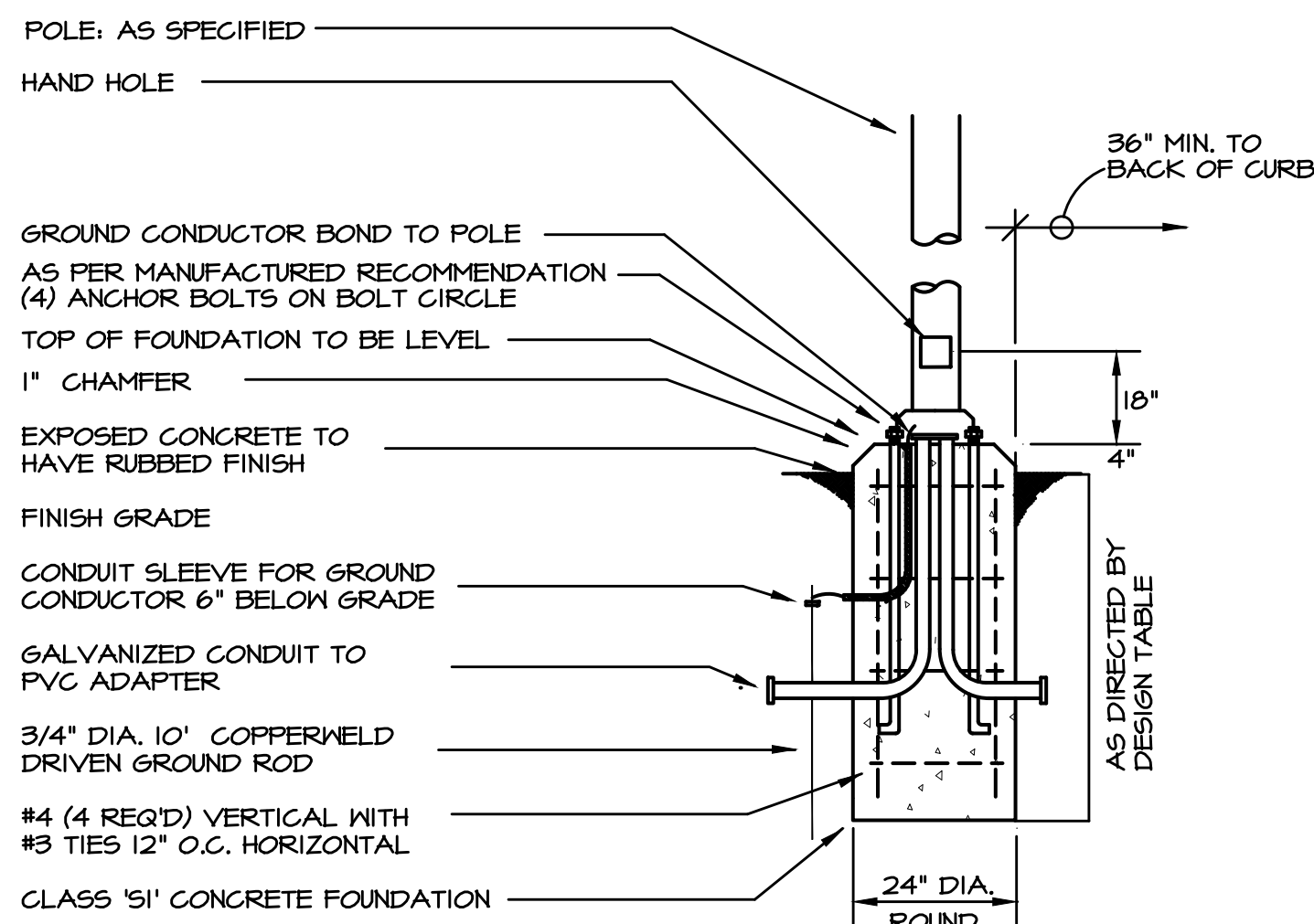
PREVIOUSLY APPROVED ADR SCHEDULE

Symbol	Label	Quantity	Manufacturer	Catalog Number	Description	Number Lamps	Lumens Per Lamp	Light Loss Factor	Wattage
⊙	SA	2	Lithonia Lighting	GRXD LED P1 40K T3M MVOLT HS	GRXD LED P1 40K T3M MVOLT with houseshield	1	6649	0.94	71
⊙	SB	3	Lithonia Lighting	GRXD LED P1 40K T3M MVOLT HS	GRXD LED P1 40K T3M MVOLT with houseshield	1	6649	0.94	92
⊙	SC	5	Lithonia Lighting	RAOPT P1 40K SYM	RACEN Flat Top with P1 4000K Symmetric distribution	1	3044	0.94	25,4134
⊙	T	4	Lithonia Lighting	W90 LED P1 SR4 40K MVOLT	W90 LED WITH P1 PERFORMANCE PACKAGE, 4000K, AND SR4 OPTIC TYPE	1	2100	0.94	19.98
⊙	SD	5	Lithonia Lighting	RA08 LED P1 40K A5Y DBLXD	RA08 LED P1 40K A5Y DBLXD	1	1266	0.94	16.99
⊙	SE	3	Custom Architectural Lighting	EVOR 4020 AR MD LBS	EVOR 4020 AR MD LBS 4000K, 2000LM MD OPT CLEAR, 90CM SPFC	1	1891	0.94	19.7
⊙	DO	4	Lithonia Lighting	W90 LED P1 SR2 40K MVOLT	W90 LED WITH P1 PERFORMANCE PACKAGE, 4000K, AND SR2 OPTIC TYPE	1	2051	0.94	19.98
⊙	S	2	Lithonia Lighting	GRXP LED P1 40K WFR	GRXP LED P1 40K WFR	1	-1	0.94	21
⊙	SF	2	Lithonia Lighting	WFR LED 40K MVOLT 90CR	WFR LED 40K MVOLT 90CR	1	1829	0.94	19.97



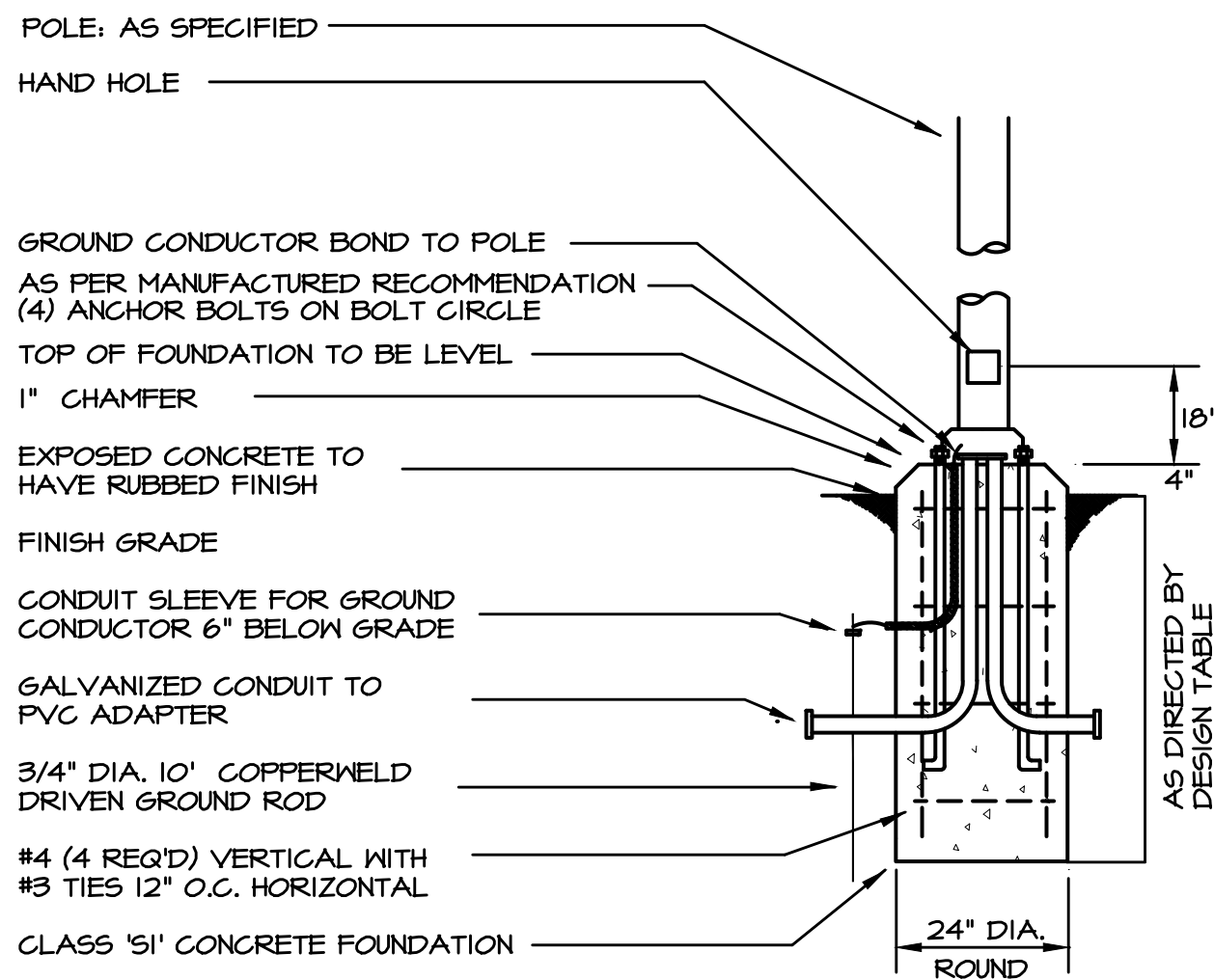
1 ELECTRICAL SITE PHOTOMETRIC PLAN
 SCALE 1" = 20'-0"

W-T Group
 Engineering • Design • Consulting
 Structural | Mechanical/Electrical/Plumbing
 Civil | Land Survey | Telecommunication | Aquatic
 Accessibility Consulting | Design & Program Management
 Engineering with Precision, Pace & Passion.
 2675 Pratum Avenue | Hoffman Estates, IL 60192
 P: 224.293.6333 | F: 224.293.6444
 www.wtgroup.com
 IL License No: 184.007570-0015 | Exp: 04.30.2023
 © COPYRIGHT 2020 THE W-T GROUP, LLC



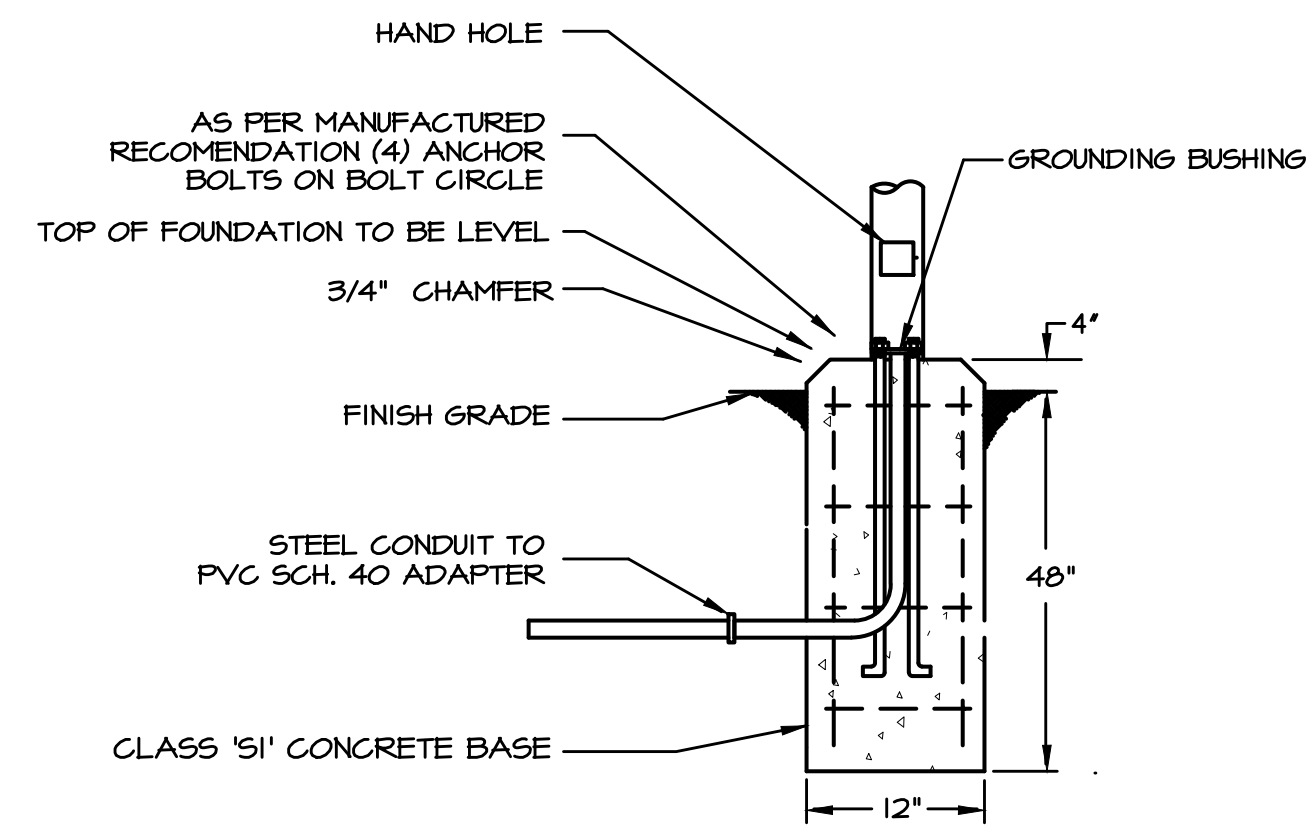
4 TYPE SA & SB POLE BASE DETAIL
SCALE: NONE

TYPE OF SOIL		DESIGN DEPTH OF FOUNDATION (IN FEET)
DESCRIPTIONS	STANDARDS	20' POLE
1. SOFT CLAY	QU-0.25-0.5 TSF	14.0
2. MED. STIFF CLAY	QU-0.5-1.0 TSF	9.5
3. STIFF CLAY	QU-1.0-2.0 TSF	7.5

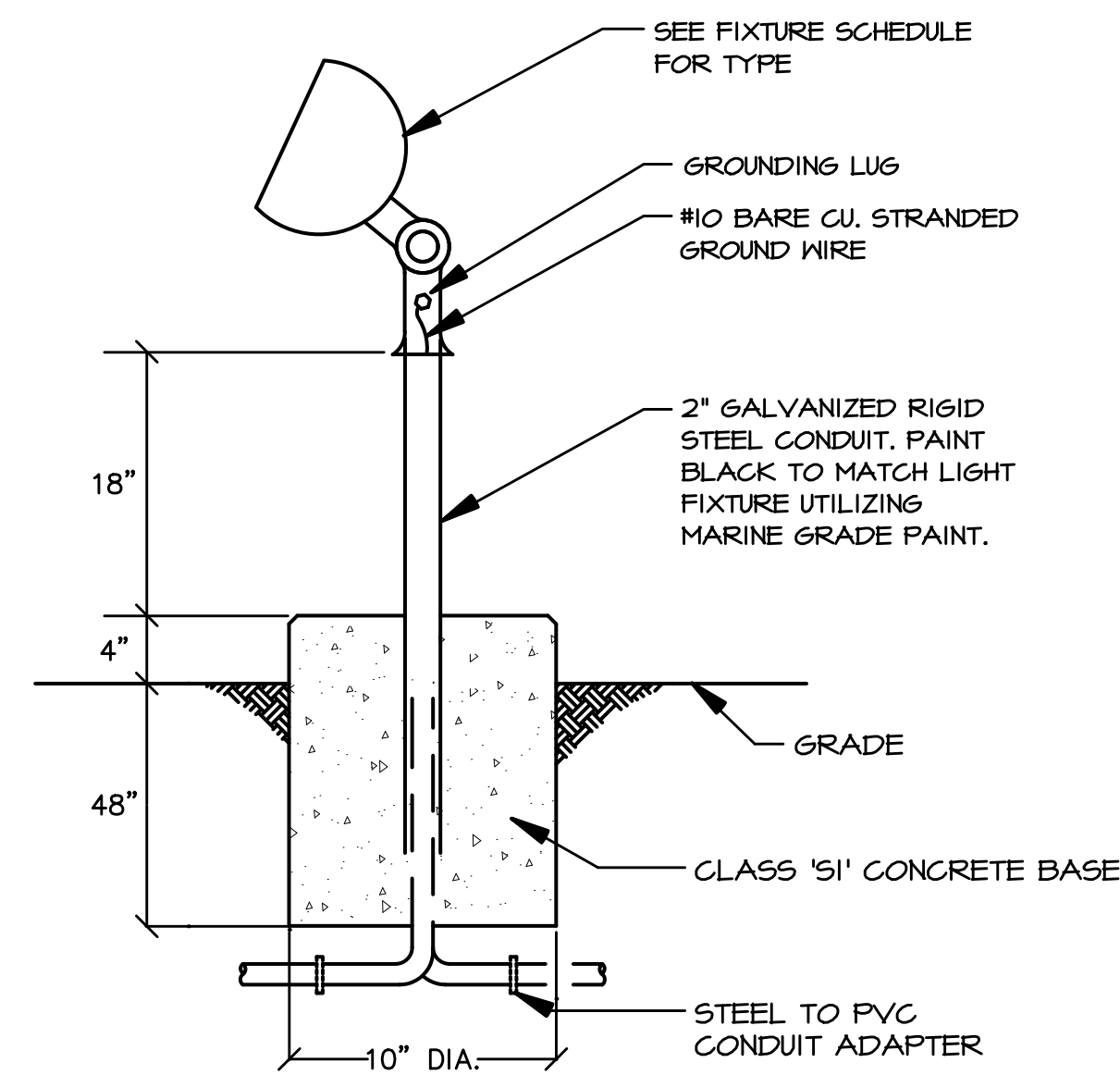


5 TYPE SC POLE BASE DETAIL
SCALE: NONE

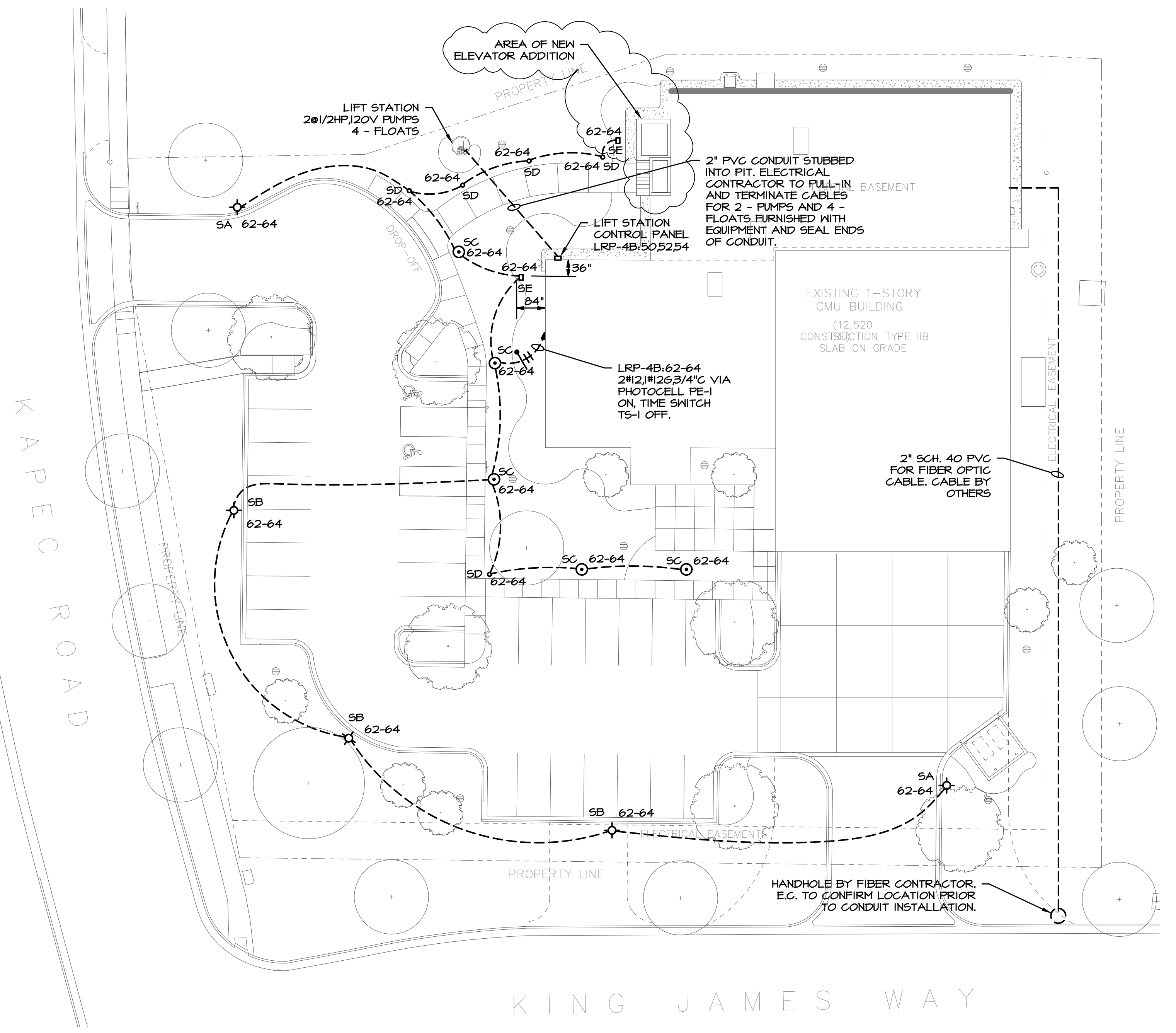
TYPE OF SOIL		DESIGN DEPTH OF FOUNDATION (IN FEET)
DESCRIPTIONS	STANDARDS	10' POLE
1. SOFT CLAY	QU-0.25-0.5 TSF	12.0
2. MED. STIFF CLAY	QU-0.5-1.0 TSF	8.5
3. STIFF CLAY	QU-1.0-2.0 TSF	6.5



2 TYPE SD BOLLARD BASE DETAIL
SCALE: NONE



3 TYPE SE FLOOD LIGHT BASE DETAIL
SCALE: NONE



1 ELECTRICAL SITE PLAN
SCALE 1" = 20'-0"

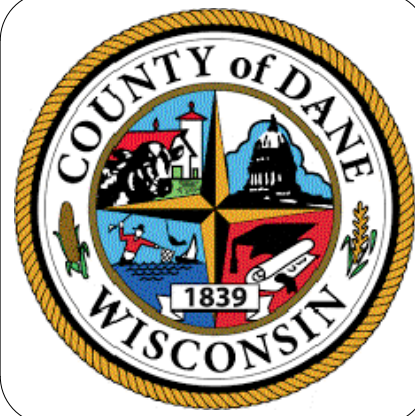
PREVIOUSLY APPROVED ADR SITE LIGHTING FIXTURE SCHEDULE					
TYPE	DESCRIPTION & FEATURES	LAMPS	MOUNTING	VOLTS	SPECIFIED MANUFACTURER AND CATALOG NUMBER
		TYPE	CLG./POLE-TYPE		
SA	POLE MOUNTED LUMINAIRE	71W LED	20'-0" POLE	200	LITHONIA #DSXO-LED-P3-40K-T3M-MVOLT-RPA-HS-DBLXD W/ #R55-20-4B-DM19AS-DBLXD POLE
SB	POLE MOUNTED LUMINAIRE	92W LED	20'-0" POLE	200	LITHONIA #DSXO-LED-P4-40K-TFTM-MVOLT-RPA-HS-DBLXD W/ #R55-20-4B-DM19AS-DBLXD POLE
SC	POLE MOUNTED LUMINAIRE	25W LED	10'-0" POLE	200	LITHONIA #RADPT-LED-PI-30K-SYM-MVOLT-RADPT20-DBLXD W/ #R55-10-4B-T20-DBLXD POLE
SD	41.5" H BOLLARD	19W LED	BASE	200	RADB-LED-P4-30K-ASY-MVOLT-BTSDBLXD-BCCDBLXD-DBLXD
SE	FLOODLIGHT	21W LED	2" GRS/BASE	200	LITHONIA #DSXFI-LED-PI-40K-MFR-MVOLT-IS-DBLXD

- NOTES:**
- VERIFY TYPE OF MOUNTING FOR ALL LIGHTING FIXTURES PRIOR TO ORDERING.
 - PROVIDE ALL ADDITIONAL HARDWARE FOR FIXTURE MOUNTING AS REQUIRED AT NO EXTRA COST.
 - THE FIXTURE SCHEDULE DOES NOT NECESSARILY LIST ALL ACCESSORIES AND HARDWARE NECESSARY FOR THE COMPLETION OF INSTALLATION. NOR DOES IT DETAIL THE CEILING CONSTRUCTION TO BE ENCOUNTERED. IT IS THE CONTRACTOR'S RESPONSIBILITY TO PROPERLY DETERMINE AND PROVIDE CORRECT COMPONENTS, ACCESSORIES, AND HARDWARE AS REQUIRED FOR THE INSTALLATION.
 - CONTRACTOR SHALL COORDINATE WITH ARCHITECTURAL DRAWINGS AND CIVIL CONTRACTOR FOR EXACT LIGHTING FIXTURE LOCATIONS AND HEIGHTS.
 - ALL LAMPS SHALL BE 4000K, UNLESS OTHERWISE INDICATED.

W Group
Engineering • Design • Consulting
Structural | Mechanical | Electrical | Plumbing
Civil | Land Survey | Telecommunication | Aquatics
Accessibility Consulting | Design & Program Management
Engineering with Precision, Pace & Passion.
2675 Pratum Avenue | Hoffman Estates, IL 60192
P: 224.293.6333 | F: 224.293.6444
www.wgroup.com
IL License No. 194.007570-0015 | Exp. 04.30.2023
© COPYRIGHT 2020 THE W-GROUP, LLC

PRAIRIE FORGE GROUP
300 CARDINAL DRIVE
SUITE 160
SAINT CHARLES IL 60175
630.221.0671 | P
630.221.0118 | F
www.prairieforgroup.com

COPYRIGHT STATEMENT
THESE PLANS ARE COPYRIGHTED AND ARE SUBJECT TO COPYRIGHT PROTECTION AS AN ARCHITECTURAL WORK UNDER SECTION 102 OF THE COPYRIGHT ACT. IT IS UNLAWFUL TO REPRODUCE, TRANSMIT, OR IN ANY MANNER MAKE AVAILABLE TO THE PUBLIC, IN ANY FORM OR BY ANY MEANS, ELECTRONIC OR MECHANICAL, INCLUDING PHOTOCOPYING, RECORDING, OR BY ANY INFORMATION STORAGE AND RETRIEVAL SYSTEM, WITHOUT THE WRITTEN APPROVAL OF PRAIRIE FORGE GROUP. ANY UNAUTHORIZED USE OF THESE PLANS, WORK OR HOME REPRESENTED, CAN OCCUR. PRAIRIE FORGE GROUP IS NOT RESPONSIBLE FOR ANY CLAIMS, DAMAGES, OR EXPENSES ARISING OUT OF THE UNAUTHORIZED USE OF THE INFORMATION CONTAINED IN THESE ELECTRONIC FILES. THESE PLANS MAY NOT ACCURATELY REFLECT THE FINAL AS-BUILT CONDITIONS. IT IS THE RESPONSIBILITY OF THE USER TO VERIFY ALL LOCATIONS, DIMENSIONS, AND OTHER RELATED INFORMATION.
COPYRIGHT © 2018-2023
PRAIRIE FORGE GROUP | SAINT CHARLES IL



DANE COUNTY
EMERGENCY MANAGEMENT
ELEVATOR ADDITION
2982 KAPEC ROAD
FITCHBURG, WISCONSIN

CLIENT APPROVAL
 APPROVED
 APPROVED AS NOTED
APPROVED BY: DATE:

ISSUE RECORD

ADDITION ADR	DATE
05/24/22	

PROJECT ARCHITECT
xxx
DRAWN BY
KS
DATE
5/12/2022 10:28:45 AM
2020-001

ELECTRICAL SITE PLAN

ES1.0



Engineering • Design • Consulting

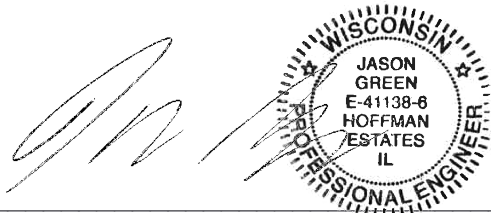
Stormwater Management Report City of Fitchburg



Dane County Emergency Management Remodel

5415 King James Way
Fitchburg, WI 53719
WT Group Project #2002139C

October 13, 2020
Revised November 6, 2020
Revised May 17, 2022



Jason E. Green P.E. CPESC, DECI
Wisconsin P.E. License No. 41138-6
Expires: 07-31-2022

2675 Pratum Avenue
Hoffman Estates, IL 60192

224.293.6333
wtengineering.com

Engineering with Precision, Pace & Passion.

Table of Contents

- Project Narrative
- Maps
 - Location Map
 - FIRM Panel # 55025C0413G
 - NRCS Hydrologic Soil Group Map
 - National Wetlands Inventory Map
- Stormwater Management Calculations
 - Existing vs. Proposed Condition Exhibit
 - TSS Removal Calculations
 - WinSLAMM Exhibit
 - WinSLAMM Calculations
 - Soil Loss and Sediment Discharge
 - Calculation Tool
 - Storm Sewer Calculations
 - Storm Sewer Area Exhibit
 - Hydraflow Calculations
- Appendix
 - Geotechnical Report (Prepared by CGC, Inc. dated August 17, 2020)

Project Narrative

Renovations are proposed for Dane County Emergency Management located at 5415 King James Way in Fitchburg, Wisconsin. The total contiguous property is approximately 1.19 acres. The proposed improvements include relocating the west driveway, replacing/reconfiguring the 15,000 square foot parking lot, replacing the 8,000 square feet concrete apron to garage bays, drainage improvements at the northeast face of the building, sidewalk replacement, roof drainage improvements and elevator addition at the northwest corner of the existing building.

In the existing condition, the proposed site consists of existing building and parking lot. The site consists of 34,109 square feet (s.f.) (0.783) acres of impervious area and 17,727 s.f. (0.407) acres of pervious area.

The proposed improvements on the site consist of the relocation of west driveway, replacement/reconfiguration of the parking lot, replacement of concrete apron, and sidewalk replacement. The site consists of 32,400 s.f. (0.7438 acres) of impervious area and 19,436 s.f. (0.4462 acres) of pervious area.

The proposed improvements will not require detention to meet the City/County Ordinance as runoff is reduced by reduced imperviousness of the site. Impervious area is reduced by approximately 1,709 s.f.

Redevelopment requirements are triggered, as there is greater than 4,000 s.f. of disturbance and a decrease in impervious area on the property. The regional basin (WisDOT Pond A) was designed to treat TSS for existing impervious areas as of 2015. Since this impervious area existed in 2015, TSS requirements will be met at the regional basin. In order to meet the oil and grease requirement, hydrocarbon booms will be installed on permanent flexstorm baskets.

To provide additional TSS reduction, catch basins and grass swales are provided (the required 60% TSS reduction per City/County Ordinance from the paved areas). The paved parking will be treated by a grass swale planted with Bermuda grass, which will discharge into the proposed storm sewer. The paved areas will be treated by 3 catch basins, and the majority of the site, will be directed through the grass swale located southwest of the parking lot. These methods were modeled in WINSLMM and will combine to provide 66.27% TSS removal compared to the proposed condition with no controls, exceeding the requirement of 60% removal.

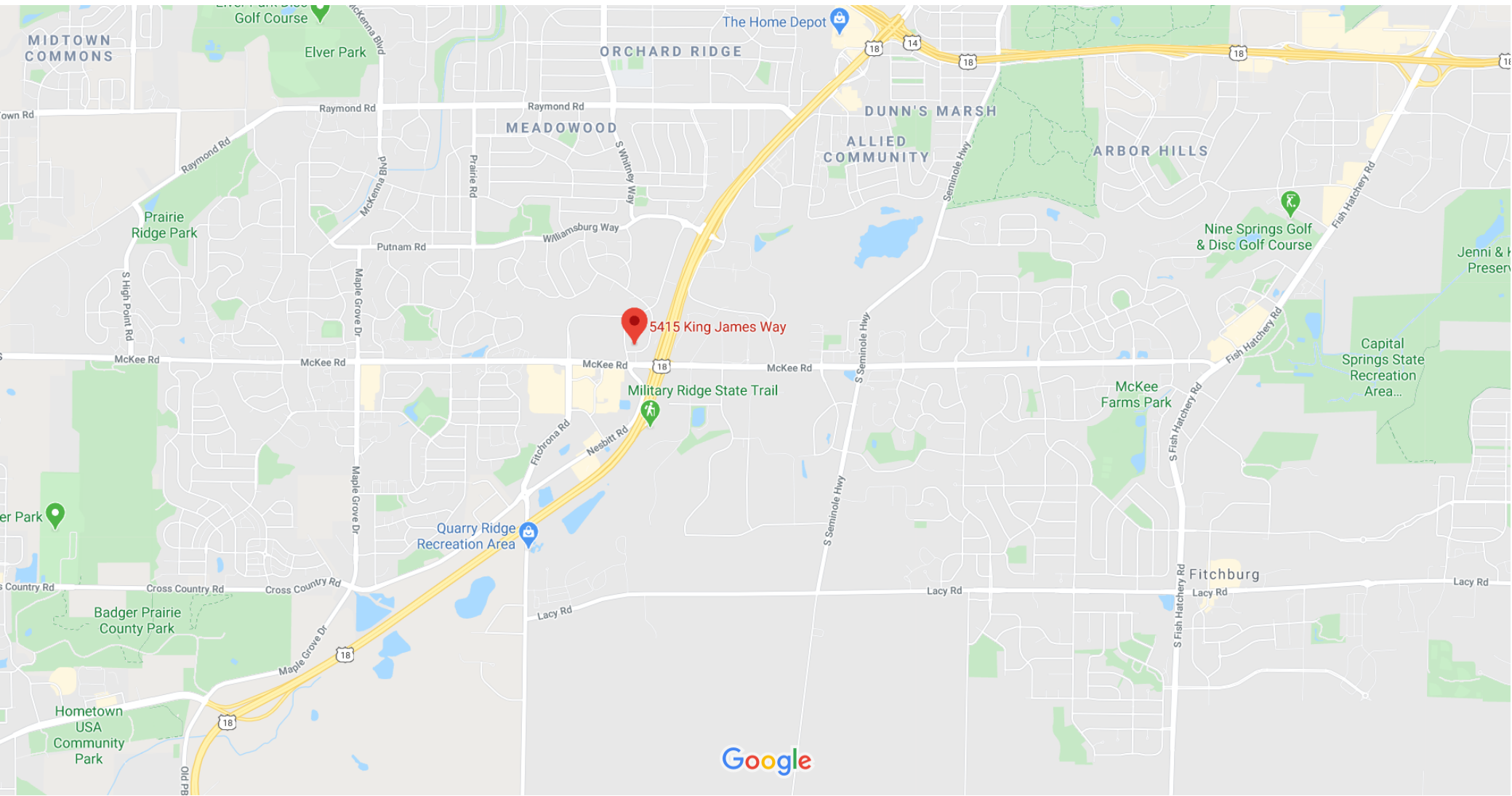
A stormwater maintenance agreement (recorded at the Dane County Register of Deeds office) will be provided for the private stormwater management practices. Proposed stormwater management practices include private storm sewer.

All new storm sewers were designed to pass the 100-year event using Hydraflow software. Storm sewer calculations for the 100-year storm are enclosed.

Maps

- Location Map
- FIRM Panel # 55025C0413G
- NRCS Hydrologic Soil Group Map
- National Wetlands Inventory Map

Location Map



5415 King James Way

Military Ridge State Trail

Quarry Ridge Recreation Area

McKee Farms Park

Nine Springs Golf & Disc Golf Course

Fitchburg

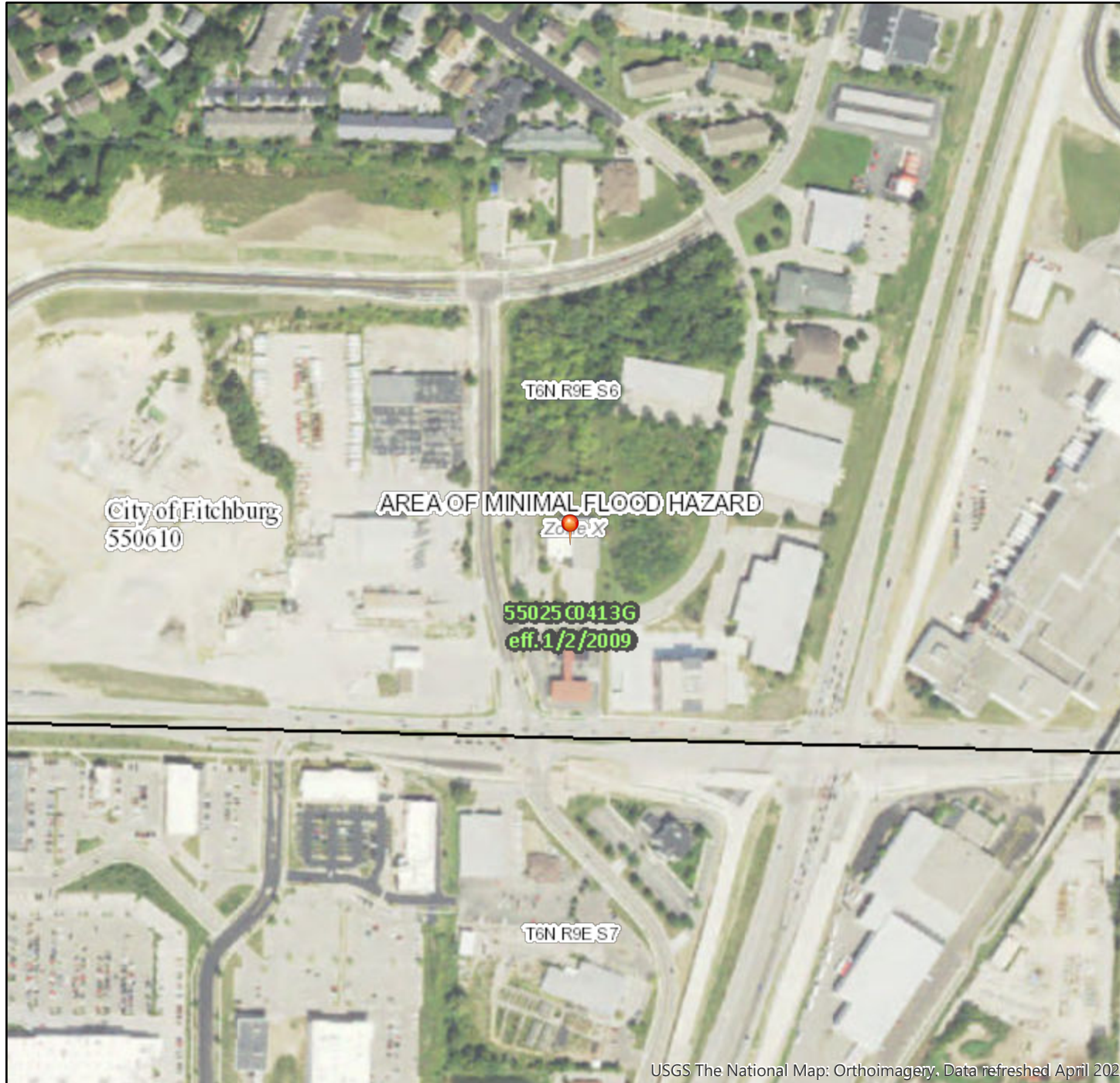


FIRM Panel # 55025C0413G

National Flood Hazard Layer FIRMMette



89°28'49"W 43°1'14"N



Legend

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

- | | |
|------------------------------------|--|
| SPECIAL FLOOD HAZARD AREAS | Without Base Flood Elevation (BFE)
<i>Zone A, V, A99</i> |
| | With BFE or Depth <i>Zone AE, AO, AH, VE, AR</i> |
| | Regulatory Floodway |
| OTHER AREAS OF FLOOD HAZARD | 0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile <i>Zone X</i> |
| | Future Conditions 1% Annual Chance Flood Hazard <i>Zone X</i> |
| | Area with Reduced Flood Risk due to Levee. See Notes. <i>Zone X</i> |
| | Area with Flood Risk due to Levee <i>Zone D</i> |
| OTHER AREAS | NO SCREEN Area of Minimal Flood Hazard <i>Zone X</i> |
| | Effective LOMRs |
| | Area of Undetermined Flood Hazard <i>Zone D</i> |
| GENERAL STRUCTURES | Channel, Culvert, or Storm Sewer |
| | Levee, Dike, or Floodwall |
| OTHER FEATURES | Cross Sections with 1% Annual Chance Water Surface Elevation 20.2 |
| | Cross Sections with 1% Annual Chance Water Surface Elevation 17.5 |
| | Coastal Transect |
| | Base Flood Elevation Line (BFE) |
| | Limit of Study |
| | Jurisdiction Boundary |
| | Coastal Transect Baseline |
| | Profile Baseline |
| | Hydrographic Feature |
| MAP PANELS | Digital Data Available |
| | No Digital Data Available |
| | Unmapped |

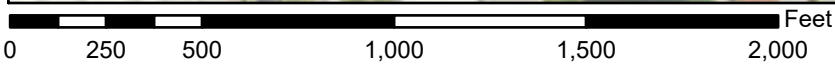


The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.

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

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on **7/9/2020 at 11:49 AM** and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

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



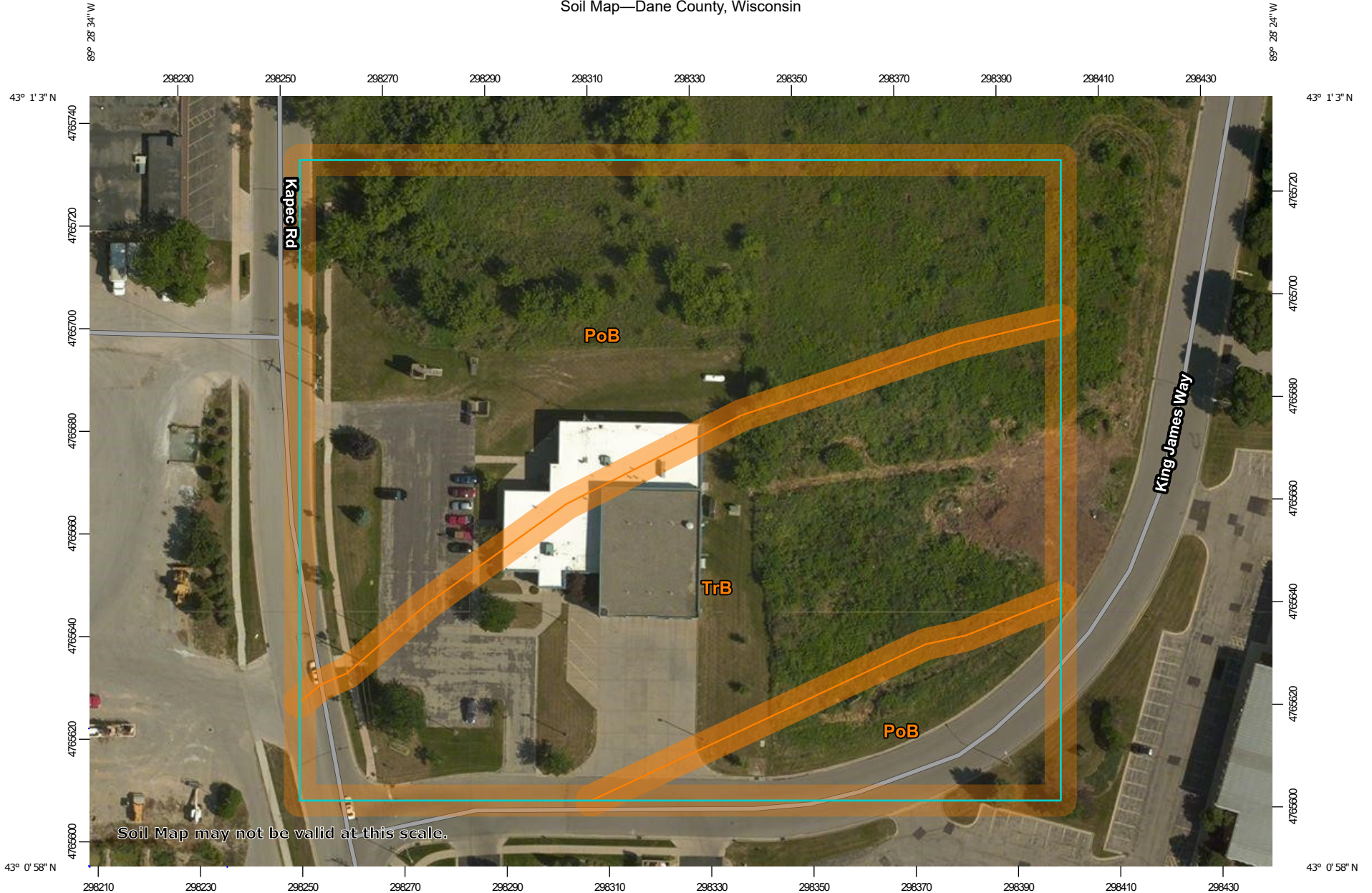
USGS The National Map: Orthoimagery. Data refreshed April 2020

89°28'12"W 43°0'48"N

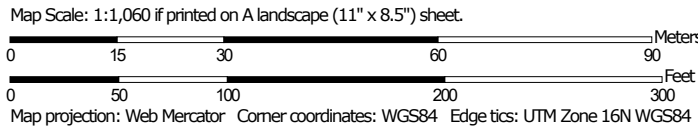
1:6,000

NRCS Hydrologic Soil Group Map

Soil Map—Dane County, Wisconsin




Soil Map may not be valid at this scale.





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: Dane County, Wisconsin

Survey Area Data: Version 19, Jun 8, 2020

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

Date(s) aerial images were photographed: Aug 16, 2013—Aug 29, 2013

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
PoB	Plano silt loam, gravelly substratum, 2 to 6 percent slopes	2.7	58.6%
TrB	Troxel silt loam, 0 to 3 percent slopes	1.9	41.4%
Totals for Area of Interest		4.6	100.0%

Dane County, Wisconsin

PoB—Plano silt loam, gravelly substratum, 2 to 6 percent slopes

Map Unit Setting

National map unit symbol: 2tjwz

Elevation: 720 to 1,120 feet

Mean annual precipitation: 33 to 37 inches

Mean annual air temperature: 45 to 48 degrees F

Frost-free period: 110 to 174 days

Farmland classification: All areas are prime farmland

Map Unit Composition

Plano, gravelly substratum, and similar soils: 85 percent

Minor components: 15 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Plano, Gravelly Substratum

Setting

Landform: Outwash plains

Landform position (three-dimensional): Tread

Down-slope shape: Linear

Across-slope shape: Linear

Parent material: Loess over loamy outwash over sandy and gravelly outwash

Typical profile

Ap - 0 to 14 inches: silt loam

Bt1 - 14 to 46 inches: silty clay loam

2Bt2 - 46 to 57 inches: loam

2C - 57 to 79 inches: stratified gravelly sand

Properties and qualities

Slope: 2 to 6 percent

Depth to restrictive feature: More than 80 inches

Natural 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 in profile: 10 percent

Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)

Available water storage in profile: High (about 11.5 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 2e

Hydrologic Soil Group: B
Forage suitability group: High AWC, adequately drained
(G095BY008WI)
Hydric soil rating: No

Minor Components

Warsaw

Percent of map unit: 8 percent
Landform: Outwash plains
Landform position (three-dimensional): Rise
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

Plano, moderately wet gravelly substratum

Percent of map unit: 7 percent
Landform: Outwash plains
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

Data Source Information

Soil Survey Area: Dane County, Wisconsin
Survey Area Data: Version 19, Jun 8, 2020

Dane County, Wisconsin

TrB—Troxel silt loam, 0 to 3 percent slopes

Map Unit Setting

National map unit symbol: 2wsqw

Elevation: 750 to 1,150 feet

Mean annual precipitation: 31 to 37 inches

Mean annual air temperature: 45 to 66 degrees F

Frost-free period: 110 to 185 days

Farmland classification: All areas are prime farmland

Map Unit Composition

Troxel, wet substratum, and similar soils: 85 percent

Minor components: 15 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Troxel, Wet Substratum

Setting

Landform: Moraines, depressions

Landform position (two-dimensional): Footslope

Landform position (three-dimensional): Base slope

Down-slope shape: Linear

Across-slope shape: Concave

Parent material: Silty colluvium

Typical profile

Ap - 0 to 31 inches: silt loam

Bt - 31 to 54 inches: silty clay loam

BC - 54 to 79 inches: silt loam

Properties and qualities

Slope: 0 to 3 percent

Depth to restrictive feature: More than 80 inches

Natural drainage class: Moderately 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: About 36 to 72 inches

Frequency of flooding: None

Frequency of ponding: None

Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)

Available water storage in profile: Very high (about 12.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 1

Hydrologic Soil Group: B

Forage suitability group: High AWC, adequately drained (G095BY008WI)

Hydric soil rating: No

Minor Components

Elburn

Percent of map unit: 8 percent

Landform: Drainageways

Landform position (two-dimensional): Toeslope

Landform position (three-dimensional): Base slope

Down-slope shape: Concave

Across-slope shape: Linear

Hydric soil rating: No

Plano

Percent of map unit: 7 percent

Landform: Till plains

Landform position (two-dimensional): Summit

Landform position (three-dimensional): Interfluve

Down-slope shape: Linear

Across-slope shape: Linear

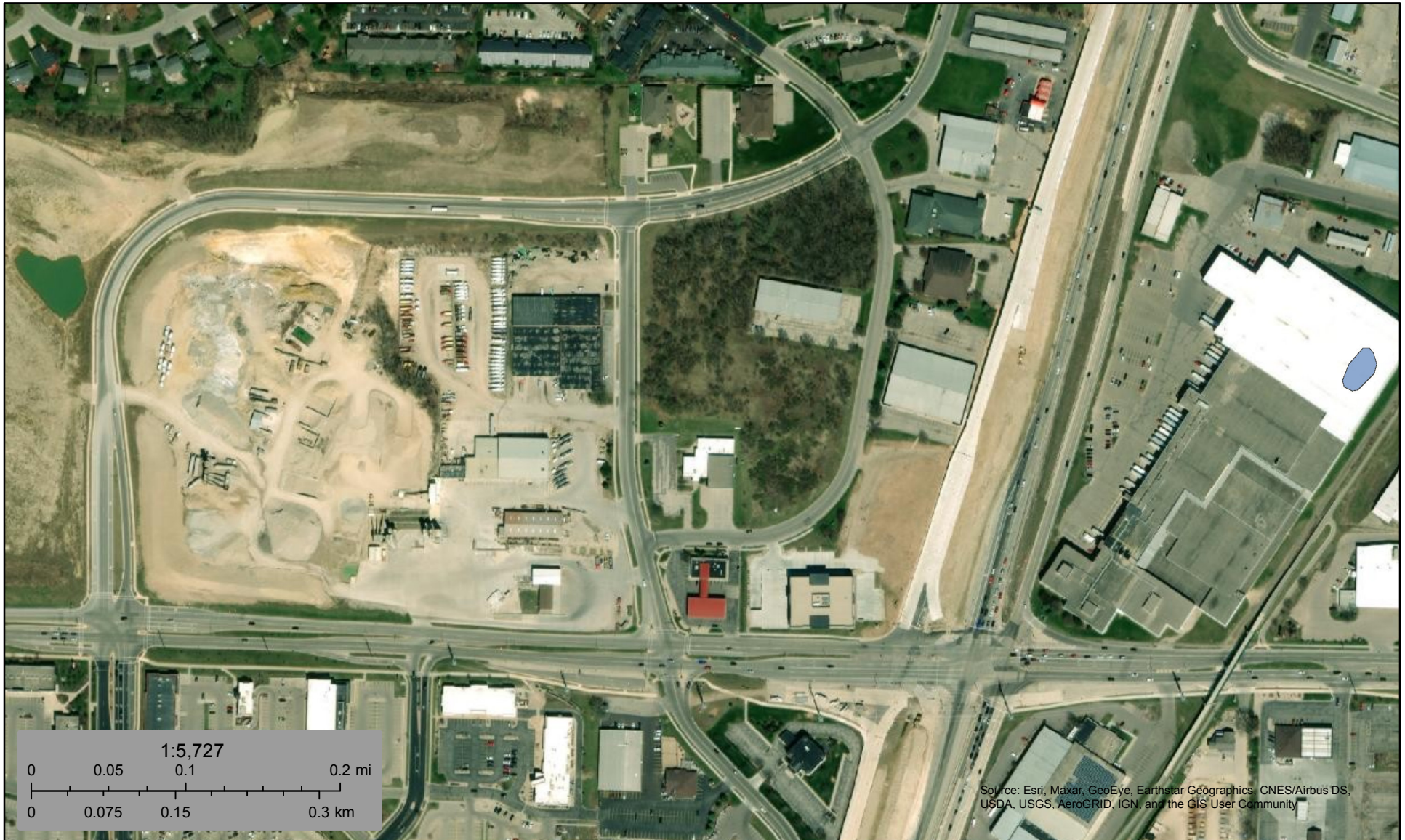
Hydric soil rating: No

Data Source Information

Soil Survey Area: Dane County, Wisconsin









Survey Area Data: Version 19, Jun 8, 2020

National Wetlands Inventory Map



July 9, 2020

Wetlands

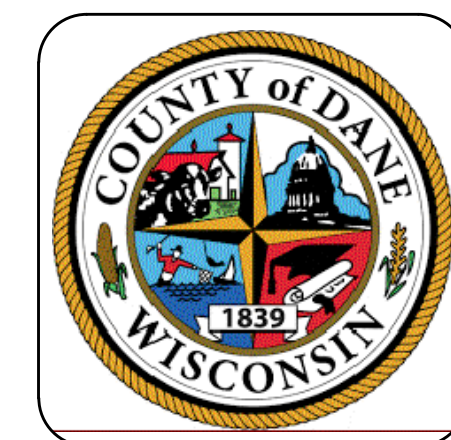
- | | | | | | |
|---|--------------------------------|---|-----------------------------------|---|----------|
|  | Estuarine and Marine Deepwater |  | Freshwater Emergent Wetland |  | Lake |
|  | Estuarine and Marine Wetland |  | Freshwater Forested/Shrub Wetland |  | Other |
| | |  | Freshwater Pond |  | Riverine |

This map is for general reference only. The US Fish and Wildlife Service is not responsible for the accuracy or currentness of the base data shown on this map. All wetlands related data should be used in accordance with the layer metadata found on the Wetlands Mapper web site.

Stormwater Management Calculations

- Existing vs Proposed Condition Exhibit
- TSS Removal Calculations
 - WinSLAMM Exhibit
 - WinSLAMM Calculations
- Soil Loss and Sediment Discharge
 - Calculation Tool
- Storm Sewer Calculations
 - Storm Sewer Area Exhibit
 - Hydraflow Calculations

Existing vs Proposed Condition Exhibit



DANE COUNTY
EMERGENCY MANAGEMENT
ELEVATOR ADDITION
 2982 KAPEC ROAD
 FITCHBURG, WISCONSIN

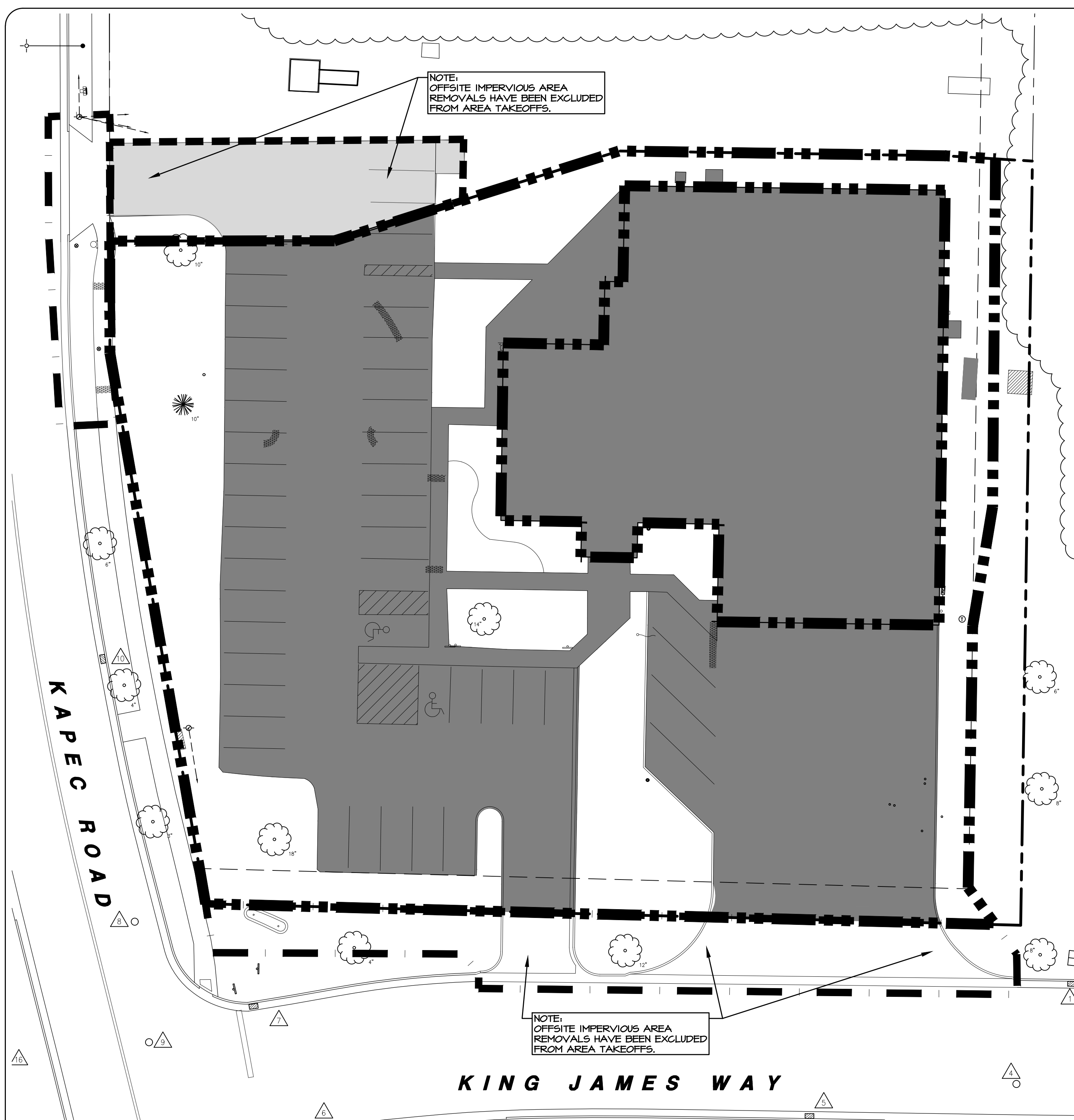
CLIENT APPROVAL
 APPROVED
 APPROVED AS NOTED
 APPROVED BY / DATE:

ISSUE RECORD

ADDITION	ADR	05/24/22

CHECKED BY: JEG
 DRAWN BY: BRA
 DATE: 5/12/2022 10:28:45 AM
 PROJECT NUMBER: 2020-001

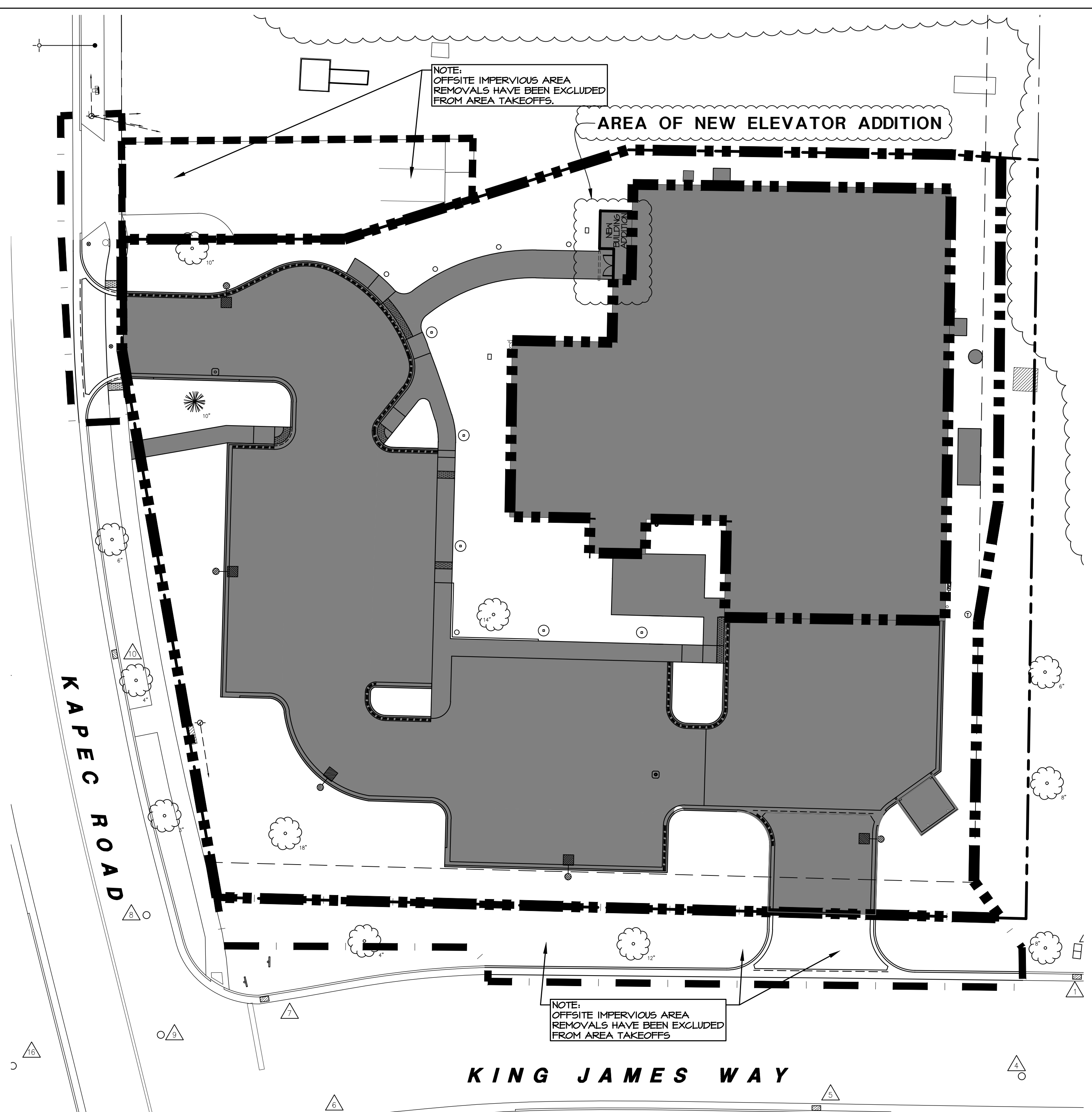
EXISTING VS. PROPOSED CONDITION EXHIBIT
EX-2.0



1 EXISTING CONDITION EXHIBIT
 SCALE 1" = 20'

EXISTING CONDITION

	AREA (ACRE)	AREA (SF)	IMPERVIOUS SURFACE RATIO (ISR)
IMPERVIOUS	0.7830	34,109	65.80%
PERVIOUS	0.4070	17,727	34.20%
TOTAL PROPERTY AREA	1.1900	51,836	
OFFSITE NORTH IMPERVIOUS AREA	0.0541	2,358	



2 PROPOSED CONDITION EXHIBIT
 SCALE 1" = 20'

PROPOSED CONDITION

	AREA (ACRE)	AREA (SF)	IMPERVIOUS SURFACE RATIO (ISR)
IMPERVIOUS ONSITE	0.7438	32,400	62.50%
PERVIOUS ONSITE	0.4462	19,436	37.50%
TOTAL PROPERTY AREA	1.1900	51,836	
OFFSITE NORTH IMPERVIOUS AREA	0.0000	0	

DISTURBED AREAS:

	AREA (ACRE)	AREA (SF)
TOTAL DISTURBED AREA ONSITE:	0.8500	36,796
RIGHT OF WAY AREA OF DISTURBANCE	0.1300	5,703
TOTAL DISTURBED AREA (THIS SITE), INCLUDING ON SITE AREAS, AND RIGHT-OF-WAY	0.9800	42,499
OFFSITE NORTH AREA OF DISTURBANCE (BY OTHERS)	0.0540	2,358

WT JOB NUMBER - 2002139C

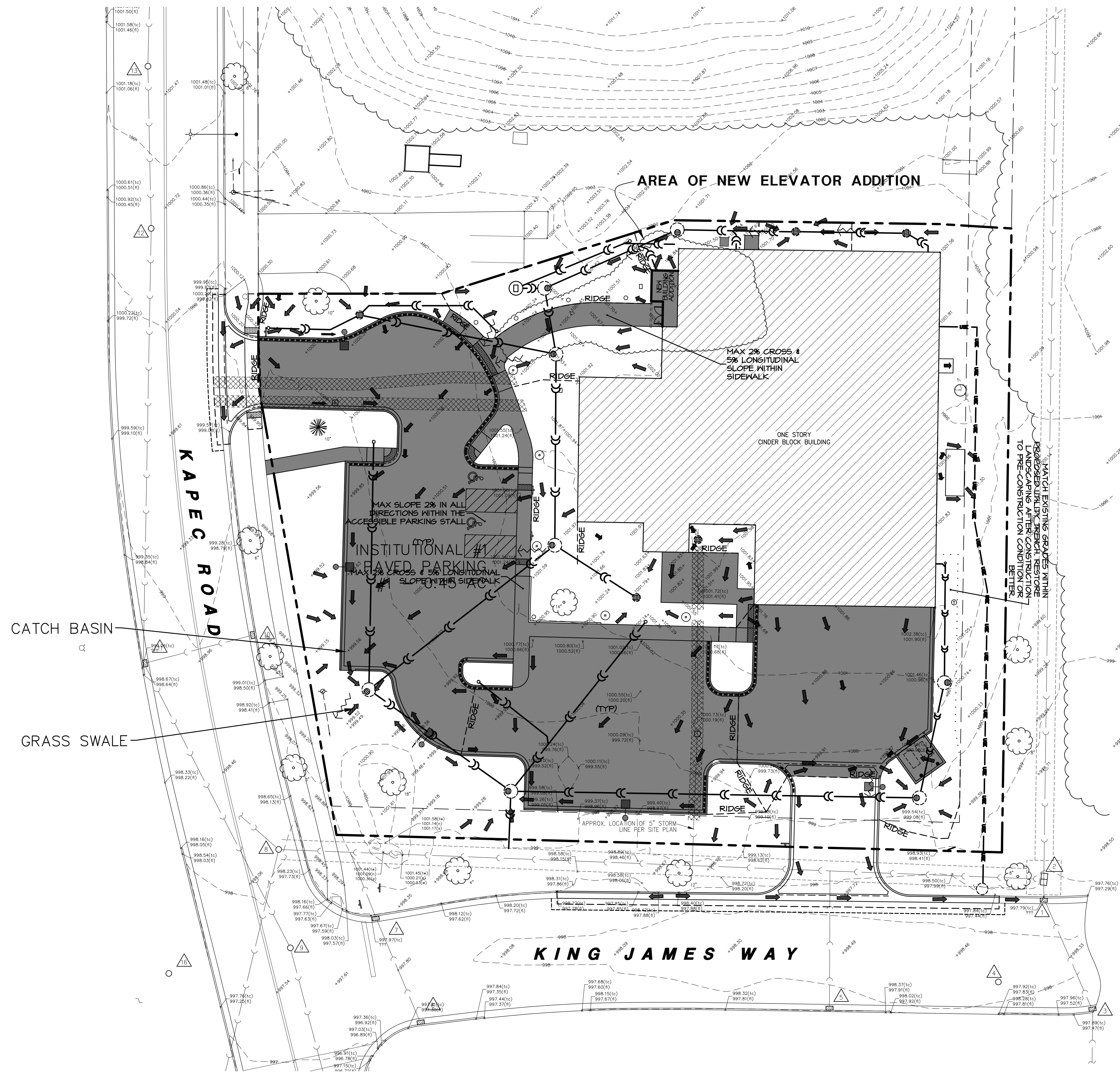


IL License No. 184.007570-0015 | Exp. 04.30.2023
 © COPYRIGHT 2022 THE W-T GROUP, LLC

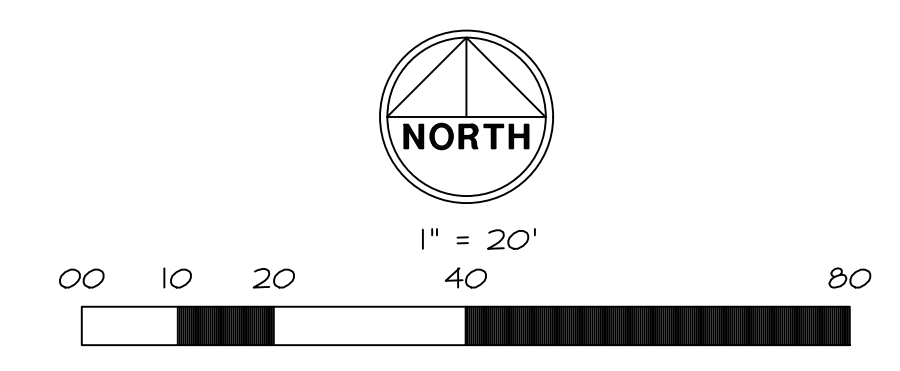
TSS Removal Calculations

- WinSLAMM Exhibit
- WinSLAMM Calculations

WinSLAMM Exhibit



- NOTES:
1. CATCH BASINS TO BE CLEANED ANNUALLY.
 2. GRASS SWALE TO BE PLANTED WITH BERMUDA GRASS MAINTAINED AT 6" (RETARDANCE CLASS C).



WT JOB NUMBER - 2002139C

WT Group
 Engineering • Design • Consulting
 Structural | Mechanical/Electrical/Plumbing
 Civil | Land Survey | Telecommunication | Aquatic
 Accessibility Consulting | Design & Program Management
 Engineering with Precision, Pace & Passion.
 2675 Pratum Avenue | Hoffman Estates, IL 60192
 P: 224.293.6333 | F: 224.293.6444
 wtgroupinc.com
 IL License No. 184.007570-0015 | Exp. 04.30.2023
 © COPYRIGHT 2022 THE W-T GROUP, LLC

PRAIRIE FORGE GROUP
 300 CARDINAL DRIVE
 SUITE 160
 SAINT CHARLES IL 60175
 630.221.0671 | P
 630.221.0118 | F
 www.prairieforgroup.com

COPYRIGHT STATEMENT
 THESE PLANS ARE COPYRIGHTED AND ARE SUBJECT TO COPYRIGHT PROTECTION AS AN ARCHITECTURAL WORK UNDER SECTION 102 OF THE COPYRIGHT ACT, 17 U.S.C. AS AMENDED (DECEMBER 1992). INASMUCH AS THE ARCHITECTURAL WORKS COPYRIGHT PROTECTION ACT OF 1976, THE PROTECTION PROVIDED TO PRAIRIE FORGE GROUP INCLUDES, BUT IS NOT LIMITED TO, THE ORIGINAL FORM AS WELL AS THE ARRANGEMENT AND COMPOSITION OF WORDS AND ELEMENTS OF THE DESIGN. WITHOUT WRITTEN APPROVAL OF PRAIRIE FORGE GROUP, ANY UNAUTHORIZED USE OF THESE PLANS, WORK OR HOME REPRESENTED, CAN LIABLY RESULT IN THE OCCURRENCE OF CONSTRUCTION, SEIZURE OF PLANS, AND/OR MONETARY COMPENSATION PAID TO PRAIRIE FORGE GROUP. PRAIRIE FORGE GROUP IS NOT RESPONSIBLE FOR ANY CLAIMS, DAMAGES, OR EXPENSE ARISING OUT OF THE UNAUTHORIZED USE OF THE INFORMATION CONTAINED IN THESE ELECTRONIC FILES. THESE PLANS MAY NOT ACCURATELY REFLECT THE FINAL AS-BUILT CONDITIONS OF THE PROJECT. PRAIRIE FORGE GROUP IS NOT RESPONSIBLE FOR THE USE OF THESE PLANS TO VERIFY ALL LAWS, ORDINANCES, AND OTHER REGULATORY REQUIREMENTS.
 COPYRIGHT © 2018-2022
 PRAIRIE FORGE GROUP | SAINT CHARLES, IL



DANE COUNTY
EMERGENCY MANAGEMENT
ELEVATOR ADDITION
 2982 KAPEC ROAD
 FITCHBURG, WISCONSIN

CLIENT APPROVAL
 APPROVED
 APPROVED AS NOTED
 APPROVED BY / DATE:

ISSUE RECORD

ADDITION ADR	05/24/22

CHECKED BY _____
 JEG
 DRAWN BY _____
 BRA
 DATE _____
 5/12/2022 10:28:45 AM
 PROJECT NUMBER
 2020-001

WINSLAMM
 EXHIBIT
EX-3.0

WinSLAMM Calculations

DaneWI_P - InputData

Data file name: V:\2020 Jobs\096. 2002139C - Dane County EMF - Fitchburg, WI\2002139C_Calcs\Detention\WinSlamm\DaneWI_P.mdb

WinSLAMM Version 10.1.6

Rain file name: C:\WinSLAMM Files\Rain Files\WI Madison Dane Co AP 4899.RAN

Particulate Solids Concentration file name: C:\WinSLAMM Files\v10.1 WI_AVG01.pscx

Runoff Coefficient file name: C:\WinSLAMM Files\WI_SL06 Dec06.rsvx

Residential Street Delivery file name: C:\WinSLAMM Files\WI_Res and Other Urban Dec06.std

Institutional Street Delivery file name: C:\WinSLAMM Files\WI_Com Inst Indust Dec06.std

Commercial Street Delivery file name: C:\WinSLAMM Files\WI_Com Inst Indust Dec06.std

Industrial Street Delivery file name: C:\WinSLAMM Files\WI_Com Inst Indust Dec06.std

Other Urban Street Delivery file name: C:\WinSLAMM Files\WI_Res and Other Urban Dec06.std

Freeway Street Delivery file name: C:\WinSLAMM Files\Freeway Dec06.std

Apply Street Delivery Files to Adjust the After Event Load Street Dirt Mass Balance: False

Pollutant Relative Concentration file name: C:\WinSLAMM Files\WI_GEO03.ppdx

Cost Data file name:

Seed for random number generator: -42

Study period starting date: 01/01/99

Study period ending date: 12/27/99

Start of Winter Season: 12/02

End of Winter Season: 03/12

Date: 10-13-2020

Time: 11:16:21

Site information:

LU# 1 - Institutional:	Institutional 1	Total area (ac):	0.450		
13 - Paved Parking 1:	0.450 ac.	Disconnected	Normal Clayey	Low	
Density	GS-CP#1	CB-CP#2			

Control Practice 1: Grass Swale CP# 1 (SA) - SA Device, LU# 1 ,SA# 13

Total drainage area (acres)= 0.450

Fraction of drainage area served by swales (ac) = 1.00

Swale density (ft/ac) = 240.00

Total swale length (ft) = 108

Average swale length to outlet (ft)= 108

Typical bottom width (ft) = 22.0

Typical swale side slope (_H:1V) = 4.0

Typical longitudinal slope (ft.H/ft.V) = 0.053

Swale retardance factor: C

Typical grass height (in) = 6.0

Swale dynamic infiltration rate (in/hr)= 0.025

Typical swale depth (ft) for cost analysis (optional) = 0.0

Particle size distribution file name: Not needed - calculated by program

DaneWI_P - InputData

Use total swale length instead of swale density for infiltration calculations: False

Control Practice 2: Catchbasin Cleaning CP# 1 (SA) - SA Device, LU# 1 ,SA# 13

1. Fraction of area served by catchbasins = 1.00
2. Number of catchbasins = 3
3. Average sump depth below catchbasin outlet invert (feet) = 3
4. Depth of sediment in catchbasin sump at beginning of study period (ft)
= 0
5. Typical outlet pipe diameter (ft) = 1
6. Typical outlet pipe Mannings n = 0.013
7. Typical outlet pipe slope (ft/ft) = 0.007
8. Typical catchbasin sump surface area (square feet) = 12.6
9. Total catchbasin depth (feet) = 8
10. Inflow hydrograph peak to average flow ratio = 3.8
11. Leakage rate through sump bottom (in/hr) = 0
12. Catchbasin Critical Particle Size File Name: Not needed - calculated
by program
13. Catchbasin cleaning frequency: Annually

DaneWI_P - Output Summary

SLAMM for Windows Version 10.1.6
 (c) Copyright Robert Pitt and John Voorhees 2012
 All Rights Reserved

Data file name: V:\2020 Jobs\096. 2002139C - Dane County EMF - Fitchburg,
 WI\2002139C_Calcs\Detention\WinSlamm\DaneWI_P.mdb
 Data file description:
 Rain file name: C:\WinSLAMM Files\Rain Files\WI Madison Dane Co AP 4899.RAN
 Particulate Solids Concentration file name: C:\WinSLAMM Files\v10.1 WI_AVG01.pscx
 Runoff Coefficient file name: C:\WinSLAMM Files\WI_SL06 Dec06.rsvx
 Residential Street Delivery file name: C:\WinSLAMM Files\WI_Res and Other Urban
 Dec06.std
 Institutional Street Delivery file name: C:\WinSLAMM Files\WI_Com Inst Indust
 Dec06.std
 Commercial Street Delivery file name: C:\WinSLAMM Files\WI_Com Inst Indust
 Dec06.std
 Industrial Street Delivery file name: C:\WinSLAMM Files\WI_Com Inst Indust
 Dec06.std
 Other Urban Street Delivery file name: C:\WinSLAMM Files\WI_Res and Other Urban
 Dec06.std
 Freeway Street Delivery file name: C:\WinSLAMM Files\Freeway Dec06.std
 Pollutant Relative Concentration file name: C:\WinSLAMM Files\WI_GE003.ppd
 Start of Winter Season: 12/02 End of Winter Season: 03/12
 Model Run Start Date: 01/01/99 Model Run End Date: 12/27/99
 Date of run: 10-13-2020 Time of run: 11:16:08
 Total Area Modeled (acres): 0.450
 Years in Model Run: 0.98

Particulate	Percent	Runoff	Percent Particulate
Solids	Particulate	Volume	Runoff Solids
Yield	Solids	(cu ft)	Volume Conc.
(lbs)	Reduction		Reduction (mg/L)
Total of all Land Uses without Controls:		3810	- 130.0
30.92	-		
Outfall Total with Controls:		2566	32.65% 65.14
10.43	66.27%		
Annualized Total After Outfall Controls:		2616	
10.64			

Soil Loss and Sediment Discharge

- Calculation Tool

Calculation Tool



Universal Soil Loss Equation for Construction Sites

Dane County Land Conservation Division



Developer: Prairie Forge Group
Project: Dane County Emergency Management Remodel
Date: 5/4/2022

Version 2.2

Land Disturbing Activity	Begin Date	End Date	Period % R	Annual R Factor	Soil Map Unit	Soil Erodibility K Factor	Slope (%)	Slope Length (feet)	LS Factor	Land Cover C Factor	Soil loss A=%R _x R _x K _x LS _x C (tons/acre)	Percent Reduction Required
												(7.5 tons/acre)
disturb ground	4 2 6/1/2021	5 2 7/1/2021	5 10.0%	150	TrB	0.28	2.0%	170	0.24	1.00	4.9 0.5	<div style="display: flex; align-items: center; justify-content: center;"> <div style="border-left: 1px solid black; border-right: 1px solid black; height: 100px; margin: 0 5px;"></div> <div style="font-size: 2em;">↓</div> </div>
disturb ground	5 2 7/1/2021	9 2 10/1/2021	54 52.0%	150	TrB	0.28	2.0%	170	0.24	1.00	5.1 5.3	
seed and mulch	8 2 10/1/2021	-----	27 25.0%	150	TrB	0.28	2.0%	170	0.24	0.12	0.3	
TOTAL											2.8 6.2	NONE

Land Disturbing Activities:	input disturb ground apply mulch seed and mulch seeding sod paving	definition activity which leaves the ground devoid of vegetation application of straw mulch at 1.5 tons/acre seeding and application of straw mulch at 1.5 tons/acre temporary or permanent seeding without the use of mulching materials installation of sod providing 100% cover to disturbed ground with paving materials or stone
------------------------------------	---	--

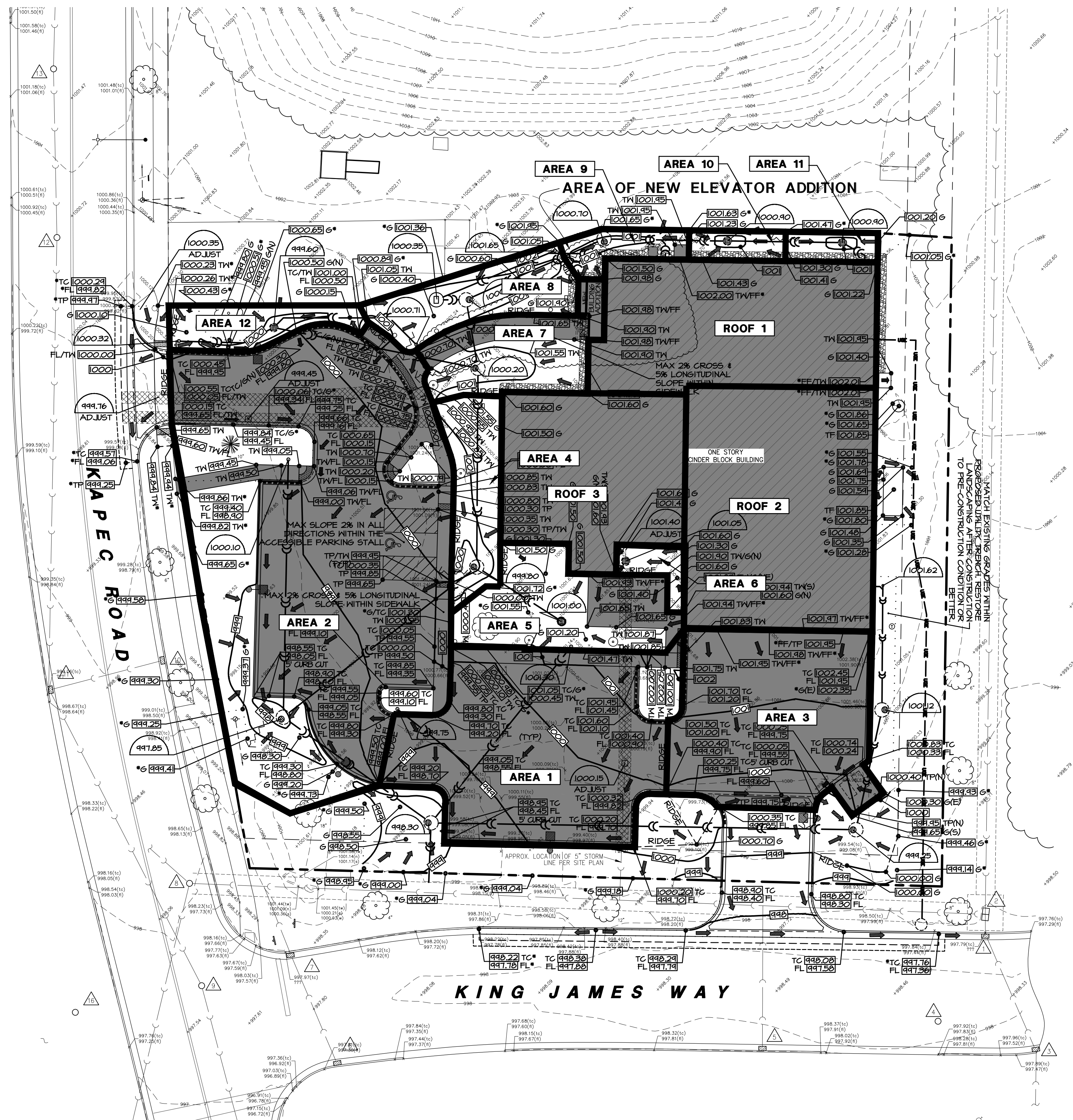
Notes:

Designed By:	
Date	
Checked By:	
Date	

Storm Sewer Calculations

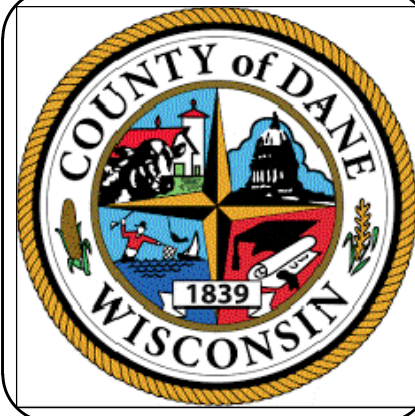
- Storm Sewer Area Exhibit
- Hydraflow Calculations

Storm Sewer Area Exhibit



PRAIRIE FORGE GROUP
 300 CARDINAL DRIVE
 SUITE 160
 SAINT CHARLES IL 60175
 630.221.0671 | P
 630.221.0118 | F
 www.prairieforgroup.com

COPYRIGHT STATEMENT
 THESE PLANS ARE COPYRIGHTED AND ARE SUBJECT TO COPYRIGHT PROTECTION AS AN ARCHITECTURAL WORK UNDER SECTION 17 OF THE COPYRIGHT ACT, 17 U.S.C. AS AMENDED (DECEMBER 1992). KNOWINGLY OR UNKNOWINGLY THE REPRODUCTION OR TRANSMISSION OF THESE PLANS WITHOUT WRITTEN APPROVAL OF PRAIRIE FORGE GROUP IS PROHIBITED. ANY UNAUTHORIZED REPRODUCTION OR TRANSMISSION OF THESE PLANS, WORK OR HOME REPRESENTED, CAN BE PROSECUTED IN COURT. PRAIRIE FORGE GROUP IS NOT RESPONSIBLE FOR ANY CLAIMS, DAMAGES, OR EXPENSES ARISING OUT OF THE UNAUTHORIZED USE OF THE INFORMATION CONTAINED IN THESE ELECTRONIC FILES. THESE PLANS MAY NOT BE REPRODUCED, COPIED, OR TRANSMITTED IN ANY FORM OR BY ANY MEANS, ELECTRONIC OR MECHANICAL, INCLUDING PHOTOCOPYING, RECORDING, OR BY ANY INFORMATION STORAGE AND RETRIEVAL SYSTEM. ALL RIGHTS ARE RESERVED.
 COPYRIGHT © 2018-2022 PRAIRIE FORGE GROUP | SAINT CHARLES, IL



DANE COUNTY
EMERGENCY MANAGEMENT
ELEVATOR ADDITION
 2982 KAPEC ROAD
 FITCHBURG, WISCONSIN

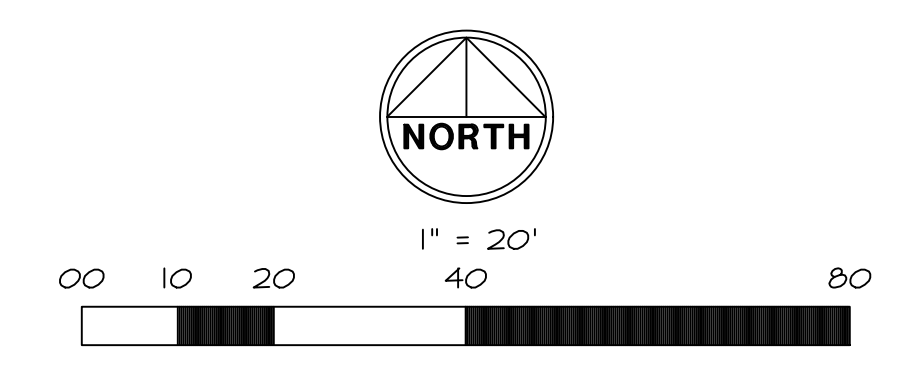
CLIENT APPROVAL
 APPROVED
 APPROVED AS NOTED
 APPROVED BY / DATE:

ISSUE RECORD

ADDITION ADR	05/24/22

CHECKED BY
 JEG
DRAWN BY
 BRA
DATE
 5/12/2022 10:28:45 AM
PROJECT NUMBER
 2020-001

STORM SEWER AREA EXHIBIT
EX-4.0



WT JOB NUMBER - 2002139C
WT Group
 Engineering • Design • Consulting
 Structural | Mechanical/Electrical/Plumbing
 Civil | Land Survey | Telecommunication | Aquatic
 Accessibility Consulting | Design & Program Management
 Engineering with Precision, Pace & Passion.
 2675 Pratum Avenue | Hoffman Estates, IL 60192
 P: 224.293.6333 | F: 224.293.6444
 wtengineering.com
 IL License No. 184.007570-0015 | Exp. 04.30.2023
 © COPYRIGHT 2022 THE W-T GROUP, LLC

Hydraflow Calculations



Engineering • Design • Consulting

CIVIL ENGINEERING
2675 PRATUM AVENUE
HOFFMAN ESTATES, IL 60192
(224) 293-6333
WWW.WTENGINEERING.COM

PROJECT NAME: Dane County EMF
PROJECT NUMBER: 2002139C
LOCATION: Fitchburg, WI
DATE: 10/12/2020
BY: DAK

Actual Flow to Accommodate - Area # 1

<u>Upstream Flow</u>	
Upstream Q ₁₀ =	0.00 cfs
Upstream Q ₁₀₀ =	0.00 cfs
<u>Tributary Flow</u>	
Where: Impervious Area=	5054 ft ²
=	0.116 Acres
Pervious Area=	255 ft ²
=	0.006 Acres
Cimpervious=	0.90
Cpervious=	0.45
Cweighted=	0.88
TC=	5 min.
Storm Event =	10 Year
Storm Event =	100 Year
Rainfall (10 year)=	0.49 in
Rainfall (100 year)=	0.80 in
I (10 year)=	5.88 in/hr
I (100 year)=	9.60 in/hr
A=	0.122 Acres
Q=	C*I*A cfs
Q ₁₀ =	0.63 cfs
Q ₁₀₀ =	1.03 cfs
Total Q ₁₀ to Accommodate=	0.63 cfs
Total Q ₁₀₀ to Accommodate=	1.03 cfs

Inlet Capacity Structure

6

Neenah # R-2504 - D

$$Q(\text{orifice}) = 0.6A(2gH)^{0.5}$$

Where: A=	0.9 ft ²
g=	32.2 FT/S
Q ₁₀ (REQ.)=	0.63 CFS
Q ₁₀₀ (REQ.)=	1.03 CFS
H ₁₀ =	0.02 FT
H ₁₀₀ =	0.06 FT

$$Q(\text{weir}) = 3.3P(H)^{1.5}$$

Where: P=	6 ft
Q ₁₀ (REQ.)=	0.63 CFS
Q ₁₀₀ (REQ.)=	1.03 CFS
H ₁₀ =	0.10 FT
H ₁₀₀ =	0.14 FT
MAX H₁₀=	0.10 FT
MAX H₁₀₀=	0.14 FT

Actual Flow to Accommodate - Area # 2

<u>Upstream Flow</u>	
Upstream Q ₁₀ =	0.00 cfs
Upstream Q ₁₀₀ =	0.00 cfs
<u>Tributary Flow</u>	
Where: Impervious Area=	8576 ft ²
=	0.197 Acres
Pervious Area=	3646 ft ²
=	0.084 Acres
Cimpervious=	0.90
Cpervious=	0.45
Cweighted=	0.77
TC=	5 min.
Storm Event =	10 Year
Storm Event =	100 Year
Rainfall (10 year)=	0.49 in
Rainfall (100 year)=	0.80 in
I (10 year)=	5.88 in/hr
I (100 year)=	9.60 in/hr
A=	0.281 Acres
Q=	C*I*A cfs
Q ₁₀ =	1.26 cfs
Q ₁₀₀ =	2.06 cfs
Total Q ₁₀ to Accommodate=	1.26 cfs
Total Q ₁₀₀ to Accommodate=	2.06 cfs

Inlet Capacity Structure #

8

Neenah # R-2504 - D

$$Q(\text{orifice}) = 0.6A(2gH)^{0.5}$$

Where: A=	0.9 ft ²
g=	32.2 FT/S
Q ₁₀ (REQ.)=	1.26 CFS
Q ₁₀₀ (REQ.)=	2.06 CFS
H ₁₀ =	0.08 FT
H ₁₀₀ =	0.23 FT

$$Q(\text{weir}) = 3.3P(H)^{1.5}$$

Where: P=	6 ft
Q ₁₀ (REQ.)=	1.26 CFS
Q ₁₀₀ (REQ.)=	2.06 CFS
H ₁₀ =	0.16 FT
H ₁₀₀ =	0.22 FT
MAX H₁₀=	0.16 FT
MAX H₁₀₀=	0.23 FT



Engineering • Design • Consulting

CIVIL ENGINEERING
2675 PRATUM AVENUE
HOFFMAN ESTATES, IL 60192
(224) 293-6333
WWW.WTENGINEERING.COM

PROJECT NAME: Dane County EMF
PROJECT NUMBER: 2002139C
LOCATION: Fitchburg, WI
DATE: 10/12/2020
BY: DAK

Actual Flow to Accommodate - Area # 3

<u>Upstream Flow</u>	
Upstream Q ₁₀ =	0.00 cfs
Upstream Q ₁₀₀ =	0.00 cfs
<u>Tributary Flow</u>	
Where: Impervious Area=	3836 ft ²
=	0.088 Acres
Pervious Area=	0 ft ²
=	0.000 Acres
Cimpervious=	0.90
Cpervious=	0.45
Cweighted=	0.90
TC=	5 min.
Storm Event =	10 Year
Storm Event =	100 Year
Rainfall (10 year)=	0.49 in
Rainfall (100 year)=	0.80 in
I (10 year)=	5.88 in/hr
I (100 year)=	9.60 in/hr
A=	0.088 Acres
Q=	C*I*A cfs
Q ₁₀ =	0.47 cfs
Q ₁₀₀ =	0.76 cfs
Total Q ₁₀ to Accommodate=	0.47 cfs
Total Q ₁₀₀ to Accommodate=	0.76 cfs

Inlet Capacity Structure

32

Neenah # R-2504 - D

$$Q(\text{orifice}) = 0.6A(2gH)^{0.5}$$

Where: A=	0.9 ft ²
g=	32.2 FT/S
Q ₁₀ (REQ.)=	0.47 CFS
Q ₁₀₀ (REQ.)=	0.76 CFS
H ₁₀ =	0.01 FT
H ₁₀₀ =	0.03 FT

$$Q(\text{weir}) = 3.3P(H)^{1.5}$$

Where: P=	6 ft
Q ₁₀ (REQ.)=	0.47 CFS
Q ₁₀₀ (REQ.)=	0.76 CFS
H ₁₀ =	0.08 FT
H ₁₀₀ =	0.11 FT
MAX H₁₀=	0.08 FT
MAX H₁₀₀=	0.11 FT



Engineering • Design • Consulting

CIVIL ENGINEERING
2675 PRATUM AVENUE
HOFFMAN ESTATES, IL 60192
(224) 293-6333
WWW.WTENGINEERING.COM

PROJECT NAME: Dane County EMF
PROJECT NUMBER: 2002139C
LOCATION: Fitchburg, WI
DATE: 10/12/2020
BY: DAK

Actual Flow to Accommodate - Area # 4

Upstream Flow

Upstream Q₁₀= 0.00 cfs
Upstream Q₁₀₀= 0.00 cfs

Tributary Flow

Where: Impervious Area= 0 ft²
= 0.000 Acres
Pervious Area= 1163 ft²
= 0.027 Acres
C_{impervious}= 0.90
C_{pervious}= 0.45
C_{weighted}= 0.45
TC= 5 min.
Storm Event = 10 Year
Storm Event = 100 Year
Rainfall (10 year)= 0.49 in
Rainfall (100 year)= 0.80 in
I (10 year)= 5.88 in/hr
I (100 year)= 9.60 in/hr
A= 0.027 Acres
Q= C*I*A cfs
Q₁₀= 0.07 cfs
Q₁₀₀= 0.12 cfs

Total Q₁₀ to Accommodate= 0.07 cfs
Total Q₁₀₀ to Accommodate= 0.12 cfs

Inlet Capacity Structure #

10

Neenah # R-2504 - D

$Q(\text{orifice}) = 0.6A(2gH)^{0.5}$

Where: A= 0.9 ft²
g= 32.2 FT/S
Q₁₀(REQ.)= 0.07 CFS
Q₁₀₀(REQ.)= 0.12 CFS
H₁₀= 0.00 FT
H₁₀₀= 0.00 FT

$Q(\text{weir}) = 3.3P(H)^{1.5}$

Where: P= 6 ft
Q₁₀(REQ.)= 0.07 CFS
Q₁₀₀(REQ.)= 0.12 CFS
H₁₀= 0.02 FT
H₁₀₀= 0.03 FT

MAX H₁₀= 0.02 FT
MAX H₁₀₀= 0.03 FT



Engineering • Design • Consulting

CIVIL ENGINEERING
2675 PRATUM AVENUE
HOFFMAN ESTATES, IL 60192
(224) 293-6333
WWW.WTENGINEERING.COM

PROJECT NAME: Dane County EMF
PROJECT NUMBER: 2002139C
LOCATION: Fitchburg, WI
DATE: 10/12/2020
BY: DAK

Actual Flow to Accommodate - Area # 5

<u>Upstream Flow</u>	
Upstream Q ₁₀ =	0.00 cfs
Upstream Q ₁₀₀ =	0.00 cfs
<u>Tributary Flow</u>	
Where: Impervious Area=	545 ft ²
=	0.013 Acres
Pervious Area=	1454 ft ²
=	0.033 Acres
Cimpervious=	0.90
Cpervious=	0.45
Cweighted=	0.57
TC=	5 min.
Storm Event =	10 Year
Storm Event =	100 Year
Rainfall (10 year)=	0.49 in
Rainfall (100 year)=	0.80 in
I (10 year)=	5.88 in/hr
I (100 year)=	9.60 in/hr
A=	0.046 Acres
Q=	C*I*A cfs
Q ₁₀ =	0.15 cfs
Q ₁₀₀ =	0.25 cfs
Total Q ₁₀ to Accommodate=	0.15 cfs
Total Q ₁₀₀ to Accommodate=	0.25 cfs

Inlet Capacity Structure

27

Neenah # R-2504 - D

$$Q(\text{orifice}) = 0.6A(2gH)^{0.5}$$

Where: A=	0.9 ft ²
g=	32.2 FT/S
Q ₁₀ (REQ.)=	0.15 CFS
Q ₁₀₀ (REQ.)=	0.25 CFS
H ₁₀ =	0.00 FT
H ₁₀₀ =	0.00 FT

$$Q(\text{weir}) = 3.3P(H)^{1.5}$$

Where: P=	6 ft
Q ₁₀ (REQ.)=	0.15 CFS
Q ₁₀₀ (REQ.)=	0.25 CFS
H ₁₀ =	0.04 FT
H ₁₀₀ =	0.05 FT
MAX H₁₀=	0.04 FT
MAX H₁₀₀=	0.05 FT



Engineering • Design • Consulting

CIVIL ENGINEERING
2675 PRATUM AVENUE
HOFFMAN ESTATES, IL 60192
(224) 293-6333
WWW.WTENGINEERING.COM

PROJECT NAME: Dane County EMF
PROJECT NUMBER: 2002139C
LOCATION: Fitchburg, WI
DATE: 10/12/2020
BY: DAK

Actual Flow to Accommodate - Area # 6

Upstream Flow

Upstream Q₁₀= 0.00 cfs
Upstream Q₁₀₀= 0.00 cfs

Tributary Flow

Where: Impervious Area= 0 ft²
 = 0.000 Acres
 Pervious Area= 272 ft²
 = 0.006 Acres
 C_{impervious}= 0.90
 C_{pervious}= 0.45
 C_{weighted}= 0.45
 TC= 5 min.
 Storm Event = 10 Year
 Storm Event = 100 Year
 Rainfall (10 year)= 0.49 in
 Rainfall (100 year)= 0.80 in
 I (10 year)= 5.88 in/hr
 I (100 year)= 9.60 in/hr
 A= 0.006 Acres
 Q= C*I*A cfs
 Q₁₀= 0.02 cfs
 Q₁₀₀= 0.03 cfs

Total Q₁₀ to Accommodate= 0.02 cfs
 Total Q₁₀₀ to Accommodate= 0.03 cfs

Inlet Capacity Structure

28

Neenah # R-2504 - D

$$Q(\text{orifice}) = 0.6A(2gH)^{0.5}$$

Where: A= 0.9 ft²
 g= 32.2 FT/S
 Q₁₀(REQ.)= 0.02 CFS
 Q₁₀₀(REQ.)= 0.03 CFS
 H₁₀= 0.00 FT
 H₁₀₀= 0.00 FT

$$Q(\text{weir}) = 3.3P(H)^{1.5}$$

Where: P= 6 ft
 Q₁₀(REQ.)= 0.02 CFS
 Q₁₀₀(REQ.)= 0.03 CFS
 H₁₀= 0.01 FT
 H₁₀₀= 0.01 FT

MAX H₁₀= 0.01 FT
MAX H₁₀₀= 0.01 FT



Engineering • Design • Consulting

CIVIL ENGINEERING
2675 PRATUM AVENUE
HOFFMAN ESTATES, IL 60192
(224) 293-6333
WWW.WTENGINEERING.COM

PROJECT NAME: Dane County EMF
PROJECT NUMBER: 2002139C
LOCATION: Fitchburg, WI
DATE: 5/17/2022
BY: DAK

Actual Flow to Accommodate - Area # 7

Upstream Flow

Upstream Q₁₀= 0.00 cfs
Upstream Q₁₀₀= 0.00 cfs

Tributary Flow

Where: Impervious Area= 723 ft²
= 0.017 Acres
Pervious Area= 777 ft²
= 0.018 Acres
Cimpervious= 0.90
Cpervious= 0.45
Cweighted= 0.67
TC= 5 min.
Storm Event = 10 Year
Storm Event = 100 Year
Rainfall (10 year)= 0.49 in
Rainfall (100 year)= 0.80 in
I (10 year)= 5.88 in/hr
I (100 year)= 9.60 in/hr
A= 0.034 Acres
Q= C*I*A cfs
Q₁₀= 0.14 cfs
Q₁₀₀= 0.22 cfs

Total Q₁₀ to Accommodate= 0.14 cfs
Total Q₁₀₀ to Accommodate= 0.22 cfs

Inlet Capacity Structure #

12

Neenah # R-2504 - D

$Q(\text{orifice}) = 0.6A(2gH)^{0.5}$

Where: A= 0.9 ft²
g= 32.2 FT/S
Q₁₀(REQ.)= 0.14 CFS
Q₁₀₀(REQ.)= 0.22 CFS
H₁₀= 0.00 FT
H₁₀₀= 0.00 FT

$Q(\text{weir}) = 3.3P(H)^{1.5}$

Where: P= 6 ft
Q₁₀(REQ.)= 0.14 CFS
Q₁₀₀(REQ.)= 0.22 CFS
H₁₀= 0.04 FT
H₁₀₀= 0.05 FT

MAX H₁₀= 0.04 FT
MAX H₁₀₀= 0.05 FT



Engineering • Design • Consulting

CIVIL ENGINEERING
2675 PRATUM AVENUE
HOFFMAN ESTATES, IL 60192
(224) 293-6333
WWW.WTENGINEERING.COM

PROJECT NAME: Dane County EMF
PROJECT NUMBER: 2002139C
LOCATION: Fitchburg, WI
DATE: 5/17/2022
BY: DAK

Actual Flow to Accommodate - Area # 8

Upstream Flow

Upstream Q₁₀= 0.00 cfs
Upstream Q₁₀₀= 0.00 cfs

Tributary Flow

Where: Impervious Area= 0 ft²
 = 0.000 Acres
 Pervious Area= 1199 ft²
 = 0.028 Acres
 C_{impervious}= 0.90
 C_{pervious}= 0.45
 C_{weighted}= 0.45
 TC= 5 min.
 Storm Event = 10 Year
 Storm Event = 100 Year
 Rainfall (10 year)= 0.49 in
 Rainfall (100 year)= 0.80 in
 I (10 year)= 5.88 in/hr
 I (100 year)= 9.60 in/hr
 A= 0.028 Acres
 Q= C*I*A cfs
 Q₁₀= 0.07 cfs
 Q₁₀₀= 0.12 cfs

Total Q₁₀ to Accommodate= 0.07 cfs
 Total Q₁₀₀ to Accommodate= 0.12 cfs

Inlet Capacity Structure

14

Neenah # R-2504 - D

$$Q(\text{orifice}) = 0.6A(2gH)^{0.5}$$

Where: A= 0.9 ft²
 g= 32.2 FT/S
 Q₁₀(REQ.)= 0.07 CFS
 Q₁₀₀(REQ.)= 0.12 CFS
 H₁₀= 0.00 FT
 H₁₀₀= 0.00 FT

$$Q(\text{weir}) = 3.3P(H)^{1.5}$$

Where: P= 6 ft
 Q₁₀(REQ.)= 0.07 CFS
 Q₁₀₀(REQ.)= 0.12 CFS
 H₁₀= 0.02 FT
 H₁₀₀= 0.03 FT

MAX H₁₀= 0.02 FT
MAX H₁₀₀= 0.03 FT



Engineering • Design • Consulting

CIVIL ENGINEERING
2675 PRATUM AVENUE
HOFFMAN ESTATES, IL 60192
(224) 293-6333
WWW.WTENGINEERING.COM

PROJECT NAME: Dane County EMF
PROJECT NUMBER: 2002139C
LOCATION: Fitchburg, WI
DATE: 10/12/2020
BY: DAK

Actual Flow to Accommodate - Area # 9

<u>Upstream Flow</u>	
Upstream Q ₁₀ =	0.00 cfs
Upstream Q ₁₀₀ =	0.00 cfs
<u>Tributary Flow</u>	
Where: Impervious Area=	24 ft ²
=	0.001 Acres
Pervious Area=	436 ft ²
=	0.010 Acres
Cimpervious=	0.90
Cpervious=	0.45
Cweighted=	0.47
TC=	5 min.
Storm Event =	10 Year
Storm Event =	100 Year
Rainfall (10 year)=	0.49 in
Rainfall (100 year)=	0.80 in
I (10 year)=	5.88 in/hr
I (100 year)=	9.60 in/hr
A=	0.011 Acres
Q=	C*I*A cfs
Q ₁₀ =	0.03 cfs
Q ₁₀₀ =	0.05 cfs
Total Q ₁₀ to Accommodate=	0.03 cfs
Total Q ₁₀₀ to Accommodate=	0.05 cfs

Inlet Capacity Structure

16

Neenah # R-2504 - D

$$Q(\text{orifice}) = 0.6A(2gH)^{0.5}$$

Where: A=	0.9 ft ²
g=	32.2 FT/S
Q ₁₀ (REQ.)=	0.03 CFS
Q ₁₀₀ (REQ.)=	0.05 CFS
H ₁₀ =	0.00 FT
H ₁₀₀ =	0.00 FT

$$Q(\text{weir}) = 3.3P(H)^{1.5}$$

Where: P=	6 ft
Q ₁₀ (REQ.)=	0.03 CFS
Q ₁₀₀ (REQ.)=	0.05 CFS
H ₁₀ =	0.01 FT
H ₁₀₀ =	0.02 FT
MAX H₁₀=	0.01 FT
MAX H₁₀₀=	0.02 FT



Engineering • Design • Consulting

CIVIL ENGINEERING
2675 PRATUM AVENUE
HOFFMAN ESTATES, IL 60192
(224) 293-6333
WWW.WTENGINEERING.COM

PROJECT NAME: Dane County EMF
PROJECT NUMBER: 2002139C
LOCATION: Fitchburg, WI
DATE: 10/12/2020
BY: DAK

Actual Flow to Accommodate - Area # 10

Upstream Flow

Upstream Q₁₀= 0.00 cfs
Upstream Q₁₀₀= 0.00 cfs

Tributary Flow

Where: Impervious Area= 0 ft²
= 0.000 Acres
Pervious Area= 319 ft²
= 0.007 Acres
C_{impervious}= 0.90
C_{pervious}= 0.45
C_{weighted}= 0.45
TC= 5 min.
Storm Event = 10 Year
Storm Event = 100 Year
Rainfall (10 year)= 0.49 in
Rainfall (100 year)= 0.80 in
I (10 year)= 5.88 in/hr
I (100 year)= 9.60 in/hr
A= 0.007 Acres
Q= C*I*A cfs
Q₁₀= 0.02 cfs
Q₁₀₀= 0.03 cfs

Total Q₁₀ to Accommodate= 0.02 cfs
Total Q₁₀₀ to Accommodate= 0.03 cfs

Inlet Capacity Structure #

18

Neenah # R-2504 - D

$Q(\text{orifice}) = 0.6A(2gH)^{0.5}$

Where: A= 0.9 ft²
g= 32.2 FT/S
Q₁₀(REQ.)= 0.02 CFS
Q₁₀₀(REQ.)= 0.03 CFS
H₁₀= 0.00 FT
H₁₀₀= 0.00 FT

$Q(\text{weir}) = 3.3P(H)^{1.5}$

Where: P= 6 ft
Q₁₀(REQ.)= 0.02 CFS
Q₁₀₀(REQ.)= 0.03 CFS
H₁₀= 0.01 FT
H₁₀₀= 0.01 FT

MAX H₁₀= 0.01 FT
MAX H₁₀₀= 0.01 FT



Engineering • Design • Consulting

CIVIL ENGINEERING
2675 PRATUM AVENUE
HOFFMAN ESTATES, IL 60192
(224) 293-6333
WWW.WTENGINEERING.COM

PROJECT NAME: Dane County EMF
PROJECT NUMBER: 2002139C
LOCATION: Fitchburg, WI
DATE: 10/12/2020
BY: DAK

Actual Flow to Accommodate - Area # 11

Upstream Flow

Upstream Q₁₀= 0.00 cfs
Upstream Q₁₀₀= 0.00 cfs

Tributary Flow

Where: Impervious Area= 0 ft²
 = 0.000 Acres
 Pervious Area= 304 ft²
 = 0.007 Acres
 C_{impervious}= 0.90
 C_{pervious}= 0.45
 C_{weighted}= 0.45
 TC= 5 min.
 Storm Event = 10 Year
 Storm Event = 100 Year
 Rainfall (10 year)= 0.49 in
 Rainfall (100 year)= 0.80 in
 I (10 year)= 5.88 in/hr
 I (100 year)= 9.60 in/hr
 A= 0.007 Acres
 Q= C*I*A cfs
 Q₁₀= 0.02 cfs
 Q₁₀₀= 0.03 cfs

Total Q₁₀ to Accommodate= 0.02 cfs
 Total Q₁₀₀ to Accommodate= 0.03 cfs

Inlet Capacity Structure #

20

Neenah # R-2504 - D

$Q(\text{orifice}) = 0.6A(2gH)^{0.5}$

Where: A= 0.9 ft²
 g= 32.2 FT/S
 Q₁₀(REQ.)= 0.02 CFS
 Q₁₀₀(REQ.)= 0.03 CFS
 H₁₀= 0.00 FT
 H₁₀₀= 0.00 FT

$Q(\text{weir}) = 3.3P(H)^{1.5}$

Where: P= 6 ft
 Q₁₀(REQ.)= 0.02 CFS
 Q₁₀₀(REQ.)= 0.03 CFS
 H₁₀= 0.01 FT
 H₁₀₀= 0.01 FT

MAX H₁₀= 0.01 FT
MAX H₁₀₀= 0.01 FT



Engineering • Design • Consulting

CIVIL ENGINEERING
2675 PRATUM AVENUE
HOFFMAN ESTATES, IL 60192
(224) 293-6333
WWW.WTENGINEERING.COM

PROJECT NAME: Dane County EMF
PROJECT NUMBER: 2002139C
LOCATION: Fitchburg, WI
DATE: 10/12/2020
BY: DAK

Actual Flow to Accommodate - Area # 12

Upstream Flow

Upstream Q₁₀= 0.00 cfs
Upstream Q₁₀₀= 0.00 cfs

Tributary Flow

Where: Impervious Area= 0 ft²
= 0.000 Acres
Pervious Area= 771 ft²
= 0.018 Acres
C_{impervious}= 0.90
C_{pervious}= 0.45
C_{weighted}= 0.45
TC= 5 min.
Storm Event = 10 Year
Storm Event = 100 Year
Rainfall (10 year)= 0.49 in
Rainfall (100 year)= 0.80 in
I (10 year)= 5.88 in/hr
I (100 year)= 9.60 in/hr
A= 0.018 Acres
Q= C*I*A cfs
Q₁₀= 0.05 cfs
Q₁₀₀= 0.08 cfs

Total Q₁₀ to Accommodate= 0.05 cfs
Total Q₁₀₀ to Accommodate= 0.08 cfs

Inlet Capacity Structure #

44

Neenah # R-2504 - D

$Q(\text{orifice}) = 0.6A(2gH)^{0.5}$

Where: A= 0.9 ft²
g= 32.2 FT/S
Q₁₀(REQ.)= 0.05 CFS
Q₁₀₀(REQ.)= 0.08 CFS
H₁₀= 0.00 FT
H₁₀₀= 0.00 FT

$Q(\text{weir}) = 3.3P(H)^{1.5}$

Where: P= 6 ft
Q₁₀(REQ.)= 0.05 CFS
Q₁₀₀(REQ.)= 0.08 CFS
H₁₀= 0.02 FT
H₁₀₀= 0.02 FT

MAX H₁₀= 0.02 FT
MAX H₁₀₀= 0.02 FT

Actual Flow to Accommodate - Area # Roof #1

<u>Upstream Flow</u>	
Upstream Q_{10} =	0.00 cfs
Upstream Q_{100} =	0.00 cfs
<u>Tributary Flow</u>	
Where: Impervious Area=	4040 ft ²
=	0.093 Acres
Pervious Area=	0 ft ²
=	0.000 Acres
Cimpervious=	0.90
Cpervious=	0.45
Cweighted=	0.90
TC=	5 min.
Storm Event =	10 Year
Storm Event =	100 Year
Rainfall (10 year)=	0.49 in
Rainfall (100 year)=	0.80 in
I (10 year)=	5.88 in/hr
I (100 year)=	9.60 in/hr
A=	0.093 Acres
Q=	$C \cdot I \cdot A$ cfs
Q_{10} =	0.49 cfs
Q_{100} =	0.80 cfs
Total Q_{10} to Accommodate=	0.49 cfs
Total Q_{100} to Accommodate=	0.80 cfs

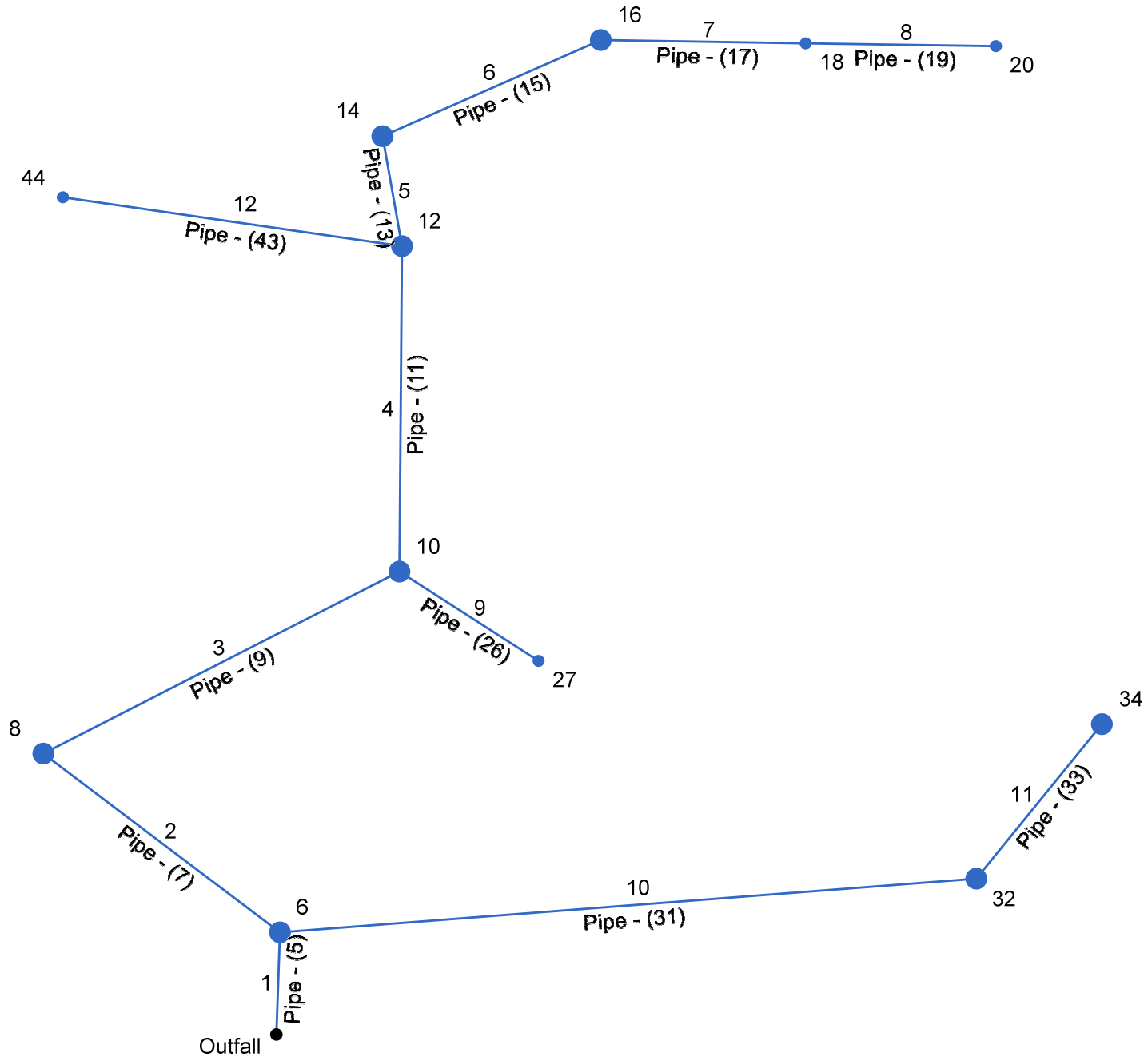
Actual Flow to Accommodate - Area # Roof #2

<u>Upstream Flow</u>	
Upstream Q ₁₀ =	0.00 cfs
Upstream Q ₁₀₀ =	0.00 cfs
<u>Tributary Flow</u>	
Where: Impervious Area=	5185 ft ²
=	0.119 Acres
Pervious Area=	0 ft ²
=	0.000 Acres
C _{impervious} =	0.90
C _{pervious} =	0.45
C _{weighted} =	0.90
TC=	5 min.
Storm Event =	10 Year
Storm Event =	100 Year
Rainfall (10 year)=	0.49 in
Rainfall (100 year)=	0.80 in
I (10 year)=	5.88 in/hr
I (100 year)=	9.60 in/hr
A=	0.119 Acres
Q=	C*I*A cfs
Q ₁₀ =	0.63 cfs
Q ₁₀₀ =	1.03 cfs
Total Q ₁₀ to Accommodate=	0.63 cfs
Total Q ₁₀₀ to Accommodate=	1.03 cfs

Actual Flow to Accommodate - Area # **Roof #3**

<u>Upstream Flow</u>	
Upstream Q ₁₀ =	0.00 cfs
Upstream Q ₁₀₀ =	0.00 cfs
<u>Tributary Flow</u>	
Where: Impervious Area=	3285 ft ²
=	0.075 Acres
Pervious Area=	0 ft ²
=	0.000 Acres
C _{impervious} =	0.90
C _{pervious} =	0.45
C _{weighted} =	0.90
TC=	5 min.
Storm Event =	10 Year
Storm Event =	100 Year
Rainfall (10 year)=	0.49 in
Rainfall (100 year)=	0.80 in
I (10 year)=	5.88 in/hr
I (100 year)=	9.60 in/hr
A=	0.075 Acres
Q=	C*I*A cfs
Q ₁₀ =	0.40 cfs
Q ₁₀₀ =	0.65 cfs
Total Q ₁₀ to Accommodate=	0.40 cfs
Total Q ₁₀₀ to Accommodate=	0.65 cfs

Hydraflow Storm Sewers Extension for Autodesk® Civil 3D® Plan



Line No.	Line ID	Line Length (ft)	Drng Area (ac)	Runoff Coeff (C)	Incr CxA	Tc (min)	Pipe Travel (min)	i Inlet (in/hr)	Flow Rate (cfs)	Line Rise (in)	Line Span (in)	n-val Pipe	Capac Full (cfs)	Pipe Travel (min)	i Sys (in/hr)	Drng Area (ac)	Runoff Coeff (C)	Incr CxA	Coeff C1 (C)	Area A1 (ac)	Coeff C2 (C)
1	Pipe - (5)	21.000	0.12	0.88	0.11	17.4	0.09	9.59	4.99	18	18	0.013	20.11	0.09	6.50	0.12	0.88	0.11	0.90	0.12	0.45
2	Pipe - (7)	61.000	0.28	0.77	0.22	17.1	0.30	9.59	3.07	15	15	0.013	11.40	0.30	6.55	0.28	0.77	0.22	0.90	0.20	0.45
3	Pipe - (9)	82.000	0.03	0.45	0.01	16.4	0.72	9.59	1.69	15	15	0.013	7.48	0.72	6.68	0.03	0.45	0.01	0.90	0.00	0.45
4	Pipe - (11)	67.000	0.11	0.83	0.09	15.6	0.80	9.59	1.43	16	16	0.009	11.32	0.80	6.82	0.11	0.83	0.09	0.90	0.09	0.45
5	Pipe - (13)	23.000	0.03	0.45	0.01	10.0	0.46	9.59	0.88	15	15	0.012	6.52	0.46	8.04	0.03	0.45	0.01	0.90	0.00	0.45
6	Pipe - (15)	49.000	0.01	0.49	0.00	8.9	1.10	9.59	0.80	15	15	0.012	6.32	1.10	8.33	0.01	0.49	0.00	0.90	0.00	0.45
7	Pipe - (17)	42.000	0.10	0.87	0.09	8.0	0.99	9.59	0.79	15	15	0.012	5.91	0.99	8.61	0.10	0.87	0.09	0.90	0.09	0.45
8	Pipe - (19)	39.000	0.01	0.45	0.00	5.0	2.96	9.59	0.04	6	6	0.012	0.62	2.96	9.59	0.01	0.45	0.00	0.90	0.00	0.45
9	Pipe - (26)	34.000	0.05	0.58	0.03	5.0	1.60	9.59	0.28	12	12	0.012	7.83	1.60	9.59	0.05	0.58	0.03	0.90	0.01	0.45
10	Pipe - (31)	143.000	0.09	0.90	0.08	5.5	1.01	9.59	1.83	12	12	0.013	4.11	1.01	9.41	0.09	0.90	0.08	0.90	0.09	0.45
11	Pipe - (33)	41.000	0.13	0.87	0.11	5.0	0.49	9.59	1.09	12	12	0.013	4.97	0.49	9.59	0.13	0.87	0.11	0.90	0.12	0.45
12	Pipe - (43)	70.000	0.02	0.45	0.01	5.0	10.61	9.59	0.09	12	12	0.012	2.31	10.61	9.59	0.02	0.45	0.01	0.90	0.00	0.45

Project File: Storm Sewer Connection 4.stm

Number of lines: 12

Date: 5/17/2022

NOTES: Intensity = 210.58 / (Inlet time + 19.90) ^ 0.96 -- Return period = 100 Yrs. ; ** Critical depth

Area A2	DnStm Ln No	Gnd/Rim El Up	Gnd/Rim El Dn	HGL Up	HGL Dn	Known Q	Inlet Time	
(ac)		(ft)	(ft)	(ft)	(ft)	(cfs)	(min)	
0.01	Outfall	998.30	999.00	993.89	992.77	0.00	5.0	
0.08	1	997.85	998.30	996.20	994.04	0.00	5.0	
0.03	2	999.80	997.85	997.12 j	996.20	0.00	5.0	
0.02	3	1000.20	999.80	997.76 j	997.12	0.00	5.0	
0.03	4	1000.15	1000.20	997.87 j	997.76	0.00	5.0	
0.01	5	1000.70	1000.15	998.25 j	997.87	0.00	5.0	
0.01	6	1000.90	1000.70	998.55 j	998.25	0.00	5.0	
0.01	7	1000.90	1000.90	998.70 j	998.55	0.00	5.0	
0.03	3	1001.00	999.80	998.22 j	997.12	0.00	5.0	
0.00	1	999.25	998.30	996.98	994.97	0.00	5.0	
0.01	10	1001.20	999.25	997.64 j	996.98	0.00	5.0	
0.02	4	999.60	1000.20	997.77	997.76	0.00	5.0	

Project File: Storm Sewer Connection 4.stm	Number of lines: 12	Date: 5/17/2022
--	---------------------	-----------------

NOTES: ** Critical depth

Hydraulic Grade Line Computations

Line (1)	Size (in) (2)	Q (cfs) (3)	Downstream								Len (ft) (12)	Upstream								Check		JL coeff (K) (23)	Minor loss (ft) (24)
			Invert elev (ft) (4)	HGL elev (ft) (5)	Depth (ft) (6)	Area (sqft) (7)	Vel (ft/s) (8)	Vel head (ft) (9)	EGL elev (ft) (10)	Sf (%) (11)		Invert elev (ft) (13)	HGL elev (ft) (14)	Depth (ft) (15)	Area (sqft) (16)	Vel (ft/s) (17)	Vel head (ft) (18)	EGL elev (ft) (19)	Sf (%) (20)	Ave Sf (%) (21)	Enrgy loss (ft) (22)		
1	18	4.99	992.26	992.77	0.51	0.53	9.44	0.35	993.12	0.000	21.000	993.03	993.89	0.86**	1.05	4.77	0.35	994.24	0.000	0.000	n/a	0.99	0.35
2	15	3.07	993.60	994.04	0.44*	0.39	7.88	0.29	994.33	0.000	61.000	995.50	996.20	0.70**	0.71	4.31	0.29	996.49	0.000	0.000	n/a	1.00	0.29
3	15	1.69	995.50	996.20	0.70	0.48	2.37	0.19	996.40	0.000	82.000	996.60	997.12 j	0.52**	0.48	3.54	0.19	997.31	0.000	0.000	n/a	0.91	0.18
4	16	1.43	996.60	997.12	0.52	0.43	2.88	0.17	997.29	0.000	67.000	997.30	997.76 j	0.46**	0.43	3.31	0.17	997.94	0.000	0.000	n/a	0.99	n/a
5	15	0.88	997.30	997.76	0.46	0.30	2.13	0.13	997.90	0.000	23.000	997.50	997.87 j	0.37**	0.30	2.92	0.13	998.00	0.000	0.000	n/a	0.98	0.13
6	15	0.80	997.50	997.87	0.37	0.28	2.66	0.13	997.99	0.000	49.000	997.90	998.25 j	0.35**	0.28	2.85	0.13	998.38	0.000	0.000	n/a	0.48	n/a
7	15	0.79	997.90	998.25	0.35	0.28	2.79	0.12	998.38	0.000	42.000	998.20	998.55 j	0.35**	0.28	2.83	0.12	998.67	0.000	0.000	n/a	0.15	n/a
8	6	0.04	998.20	998.55	0.35	0.03	0.30	0.04	998.58	0.000	39.000	998.60	998.70 j	0.10**	0.03	1.51	0.04	998.74	0.000	0.000	n/a	1.00	n/a
9	12	0.28	996.60	997.12	0.52	0.13	0.68	0.08	997.19	0.000	34.000	998.00	998.22 j	0.22**	0.13	2.22	0.08	998.29	0.000	0.000	n/a	1.00	n/a
10	12	1.83	994.50	994.97	0.47*	0.36	5.07	0.24	995.21	0.000	143.000	996.40	996.98	0.58**	0.47	3.91	0.24	997.21	0.000	0.000	n/a	0.77	0.18
11	12	1.09	996.40	996.98	0.58	0.33	2.32	0.17	997.14	0.000	41.000	997.20	997.64 j	0.44**	0.33	3.28	0.17	997.81	0.000	0.000	n/a	1.00	n/a
12	12	0.09	997.30	997.76	0.46	0.36	0.24	0.00	997.77	0.003	70.000	997.55	997.77	0.22	0.13	0.66	0.01	997.78	0.041	0.022	0.015	1.00	0.01

Project File: Storm Sewer Connection 4.stm

Number of lines: 12

Run Date: 5/17/2022

Notes: * Normal depth assumed; ** Critical depth.; j-Line contains hyd. jump ; c = cir e = ellip b = box

General Procedure:

Hydraflow computes the HGL using the Bernoulli energy equation. Manning's equation is used to determine energy losses due to pipe friction. In a standard step, iterative procedure, Hydraflow assumes upstream HGLs until the energy equation balances. If the energy equation cannot balance, supercritical flow exists and critical depth is temporarily assumed at the upstream end. A supercritical flow Profile is then computed using the same procedure in a downstream direction using momentum principles.

Col. 1 The line number being computed. Calculations begin at Line 1 and proceed upstream.

Col. 2 The line size. In the case of non-circular pipes, the line rise is printed above the span.

Col. 3 Total flow rate in the line.

Col. 4 The elevation of the downstream invert.

Col. 5 Elevation of the hydraulic grade line at the downstream end. This is computed as the upstream HGL + Minor loss of this line's downstream line.

Col. 6 The downstream depth of flow inside the pipe (HGL - Invert elevation) but not greater than the line size.

Col. 7 Cross-sectional area of the flow at the downstream end.

Col. 8 The velocity of the flow at the downstream end, (Col. 3 / Col. 7).

Col. 9 Velocity head (Velocity squared / 2g).

Col. 10 The elevation of the energy grade line at the downstream end, HGL + Velocity head, (Col. 5 + Col. 9).

Col. 11 The friction slope at the downstream end (the S or Slope term in Manning's equation).

Col. 12 The line length.

Col. 13 The elevation of the upstream invert.

Col. 14 Elevation of the hydraulic grade line at the upstream end.

Col. 15 The upstream depth of flow inside the pipe (HGL - Invert elevation) but not greater than the line size.

Col. 16 Cross-sectional area of the flow at the upstream end.

Col. 17 The velocity of the flow at the upstream end, (Col. 3 / Col. 16).

Col. 18 Velocity head (Velocity squared / 2g).

Col. 19 The elevation of the energy grade line at the upstream end, HGL + Velocity head, (Col. 14 + Col. 18) .

Col. 20 The friction slope at the upstream end (the S or Slope term in Manning's equation).

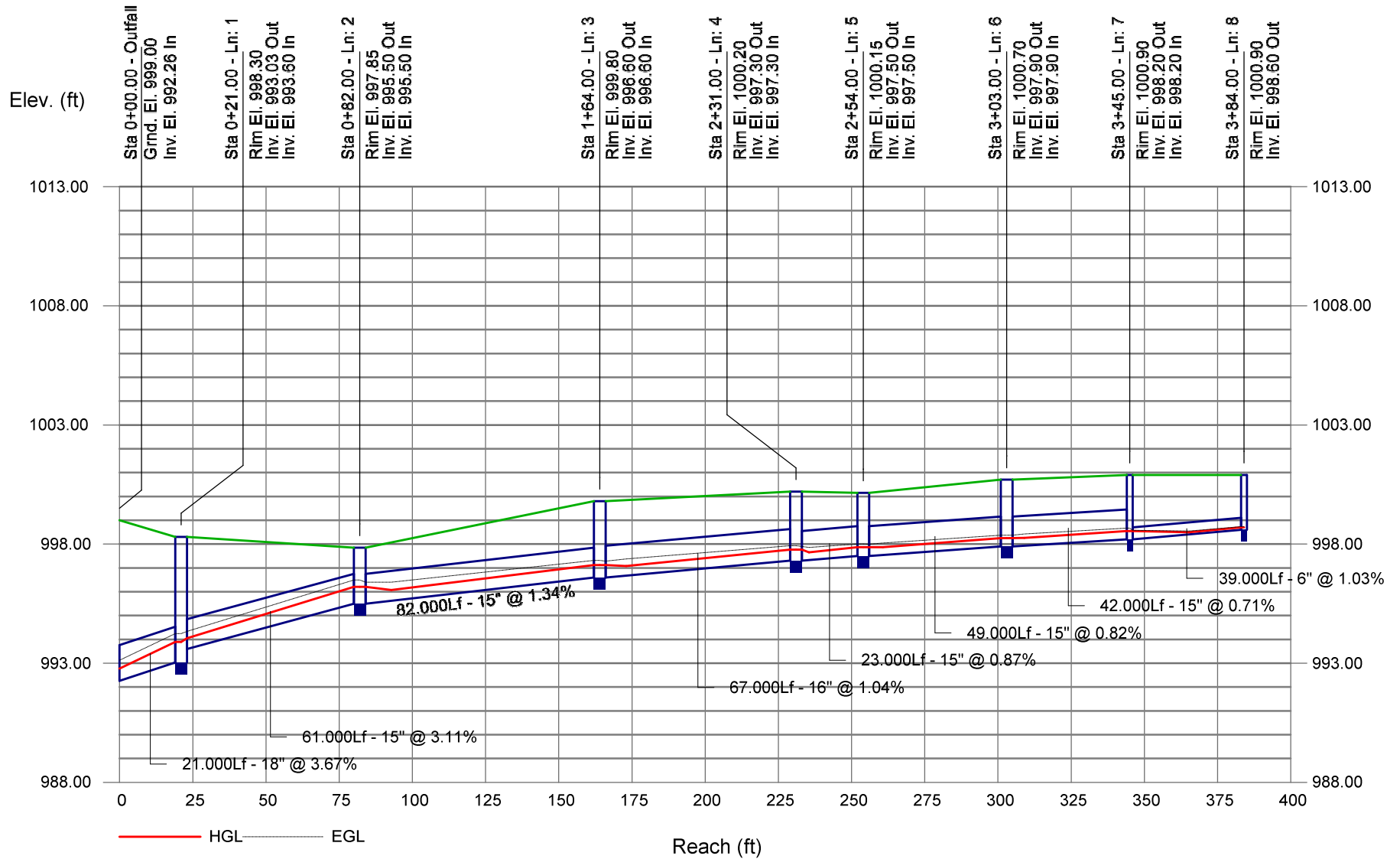
Col. 21 The average of the downstream and upstream friction slopes.

Col. 22 Energy loss. Average $Sf/100 \times \text{Line Length}$ (Col. 21/100 x Col. 12). Equals (EGL upstream - EGL downstream) +/- tolerance.

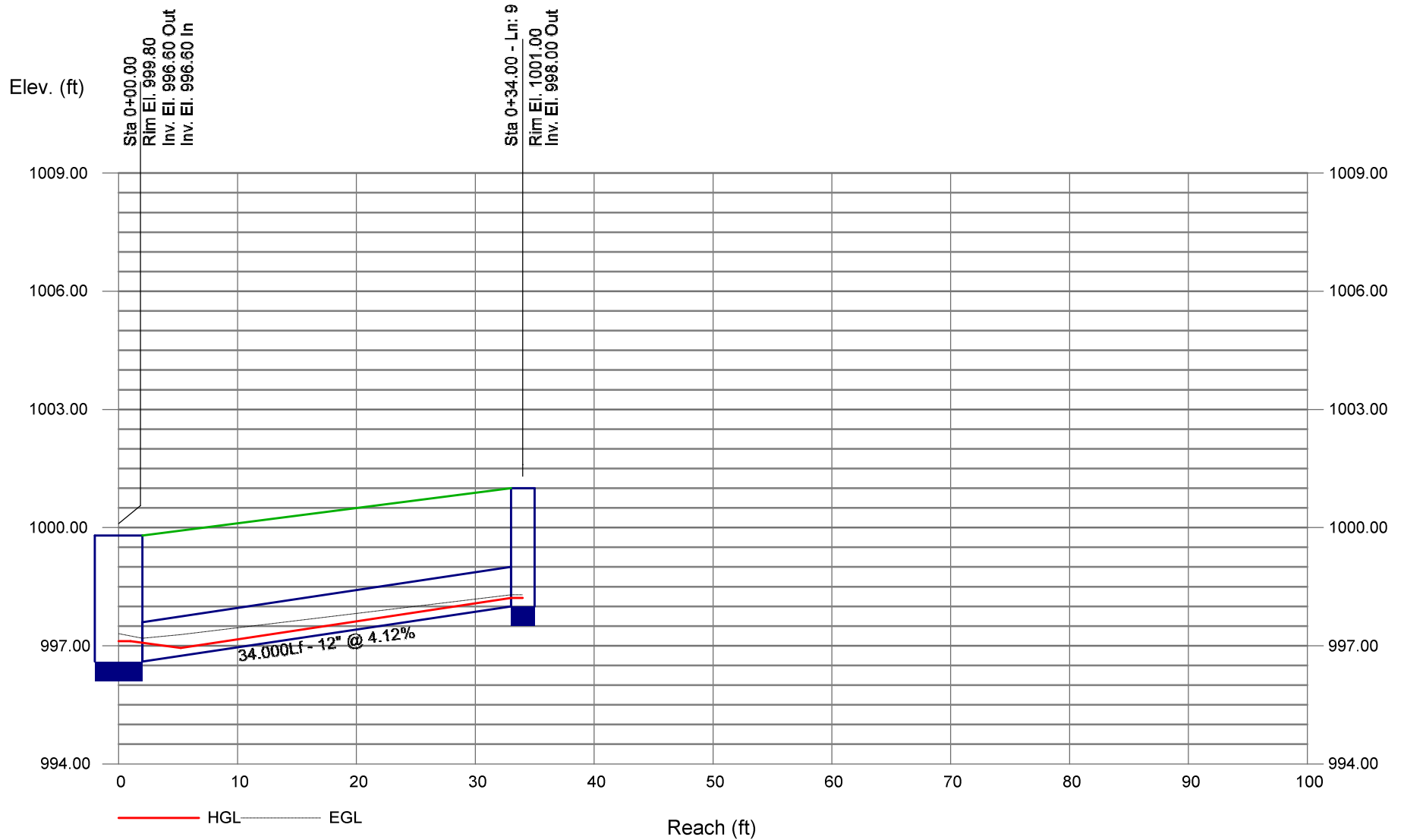
Col. 23 The junction loss coefficient (K).

Col. 24 Minor loss. (Col. 23 x Col. 18). Is added to upstream HGL and used as the starting HGL for the next upstream line(s).

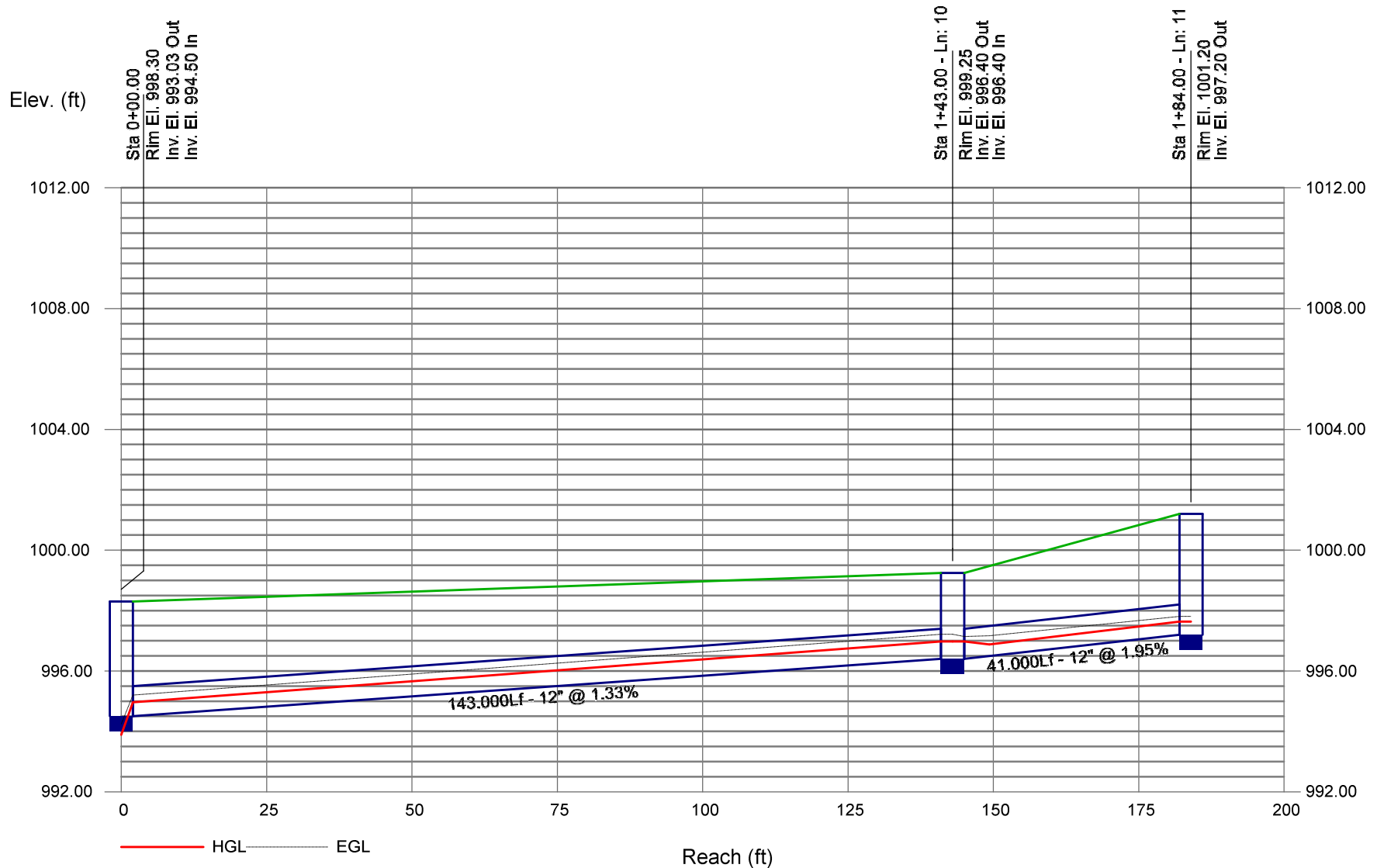
Storm Sewer Profile



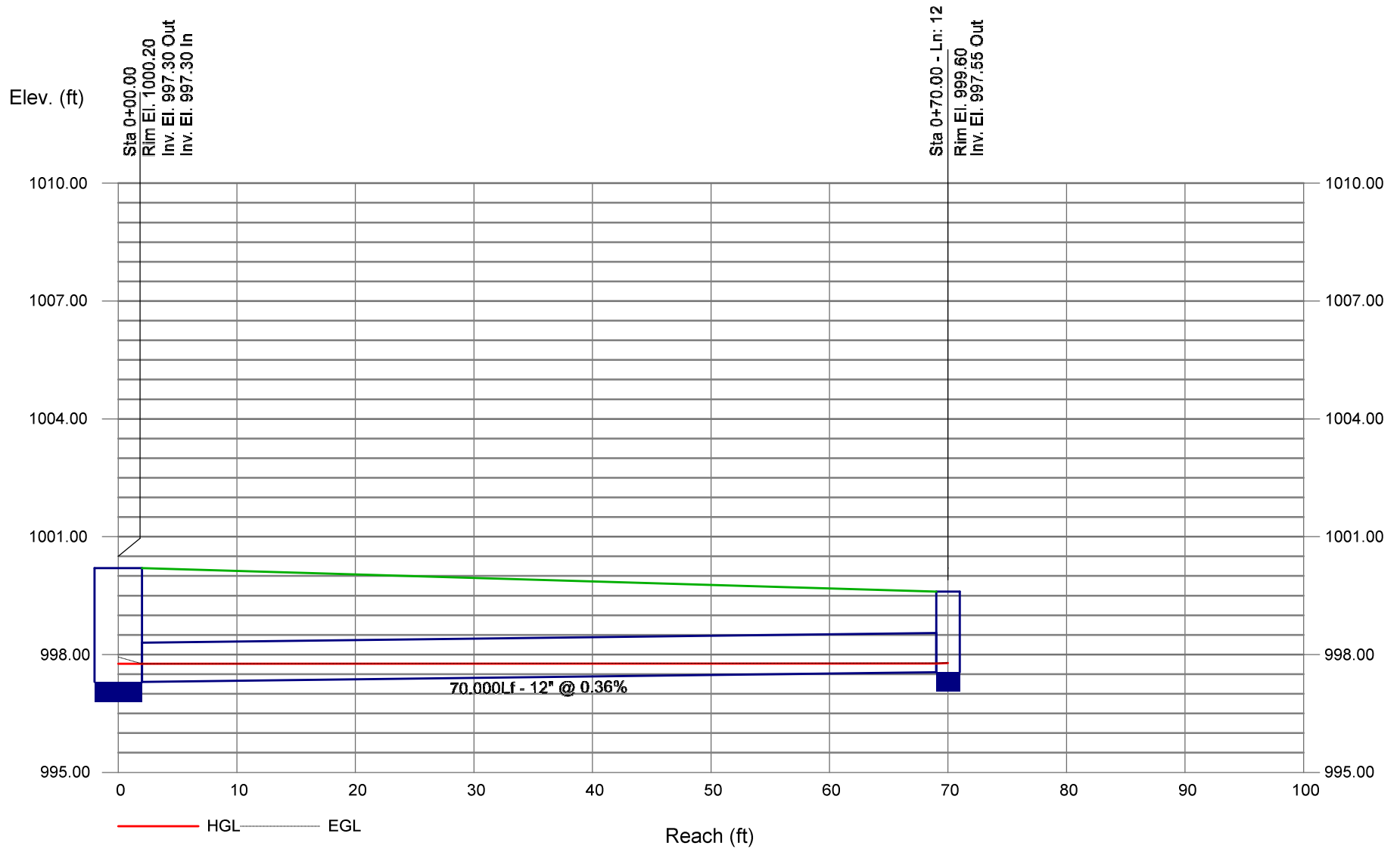
Storm Sewer Profile



Storm Sewer Profile



Storm Sewer Profile



Appendix

- Geotechnical Report (Prepared by CGC, Inc. dated August 17, 2020)



Construction • Geotechnical
Consulting Engineering/Testing

August 17, 2020
C20341

Mr. J. Eric Urtes, AIA, LEED-AP
Dane County / Dept. of Public Works, Highway & Transportation
Public Works Engineering Division
1919 Alliant Energy Center Way
Madison, WI 53713

Re: Geotechnical Exploration Report
Proposed Parking Lot Reconstruction
Future Dane County Emergency Management Facility
5415 King James Way
Fitchburg, Wisconsin

Dear Mr. Urtes:

Construction • Geotechnical Consultants, Inc. (CGC) has completed the geotechnical exploration program for the project referenced above. The purpose of this exploration program was to evaluate the subsurface conditions within the existing asphalt pavement areas to be reconstructed and to provide geotechnical recommendations regarding site preparation and asphalt pavement design/construction. We are providing you with an electronic copy of this report for your use, and we can provide a paper copy upon request.

PROJECT AND SITE DESCRIPTIONS

We understand that the reconstruction and reconfiguration of the existing asphalt and concrete pavement areas located at 5415 King James Way in Fitchburg, Wisconsin is planned; however, the extent of the reconstruction/reconfiguration was being evaluated at the time of this report. As a result, a final site layout plan was not available. The existing building, which previously was utilized as a fire station, will also be remodeled to become a future Dane County Emergency Management facility.

The western portion of the existing pavement area is comprised of asphalt pavement and appears to have been utilized for employee and/or visitor parking. An apparent dumpster enclosure is present near the northeast corner of the western pavement area. The eastern portion of the existing pavement areas, located immediately south of the former fire truck bays, consists of concrete pavement.

Existing site grades within the parking lot area are generally flat, and appear to vary between about EL 1002 near the northern limits of the existing pavement areas and 999 ft along the southern limits (based on a topographical map of the site viewed on-line via DCiMap). Future pavement grades are anticipated to be at or near existing grades.

Mr. J. Eric Urtes
Dane County DPW
August 17, 2020
Page 2

In general, the majority of the asphalt pavement was observed to be in fair to poor condition, with alligator and longitudinal cracking present in areas. Similarly, the existing concrete pavement was observed to generally be in fair to poor condition, with extensive cracking present within the concrete aligned with the overhead bay doors (i.e. fire truck travel areas). No evidence of pavement maintenance, such as crack sealing or isolated patching/replacement, was observed within the existing pavement areas. Although, seal coating may have been performed within the existing pavement areas. While the exact ages of the existing pavements are unknown, it is possible that the current pavement sections are the original from the mid-1990's, based on a review of readily available on-line aerial photographs. Note that the existing asphalt pavement area appears to have been expanded northward in or around 2000.

SUBSURFACE CONDITIONS

Subsurface conditions on site were explored by drilling four (4) Standard Penetration Test (SPT) soil borings to a planned depth of 10 ft below existing site grades at the approximate locations selected by the client and located in the field by CGC. Note that auger refusal on possible cobbles, boulders or bedrock was experienced at a depth of about 3 ft at Boring 3. The borings were drilled on August 7, 2020 by Badger State Drilling (under subcontract to CGC) using a truck-mounted CME-55 rotary drill rig equipped with hollow-stem augers and an automatic SPT hammer. The specific procedures used for drilling and sampling are described in Appendix A. The boring locations are shown in plan on the Boring Location Map attached in Appendix B. Ground surface elevations at the boring locations were estimated by CGC based on topographical site information (1-ft contour intervals) viewed on-line via DCiMap, and the elevations should therefore be considered approximate.

The subsurface profiles at the boring locations were fairly similar, and the following strata were typically encountered (in descending order):

- About 5 in. of **concrete pavement** over 6 in. of **aggregate base course** at Boring 1, or about 3.5 to 4.5 in. of **asphalt pavement** over about 7 to 8.5 in. of **aggregate base course**; followed by
- About 2 to 4.5 ft of medium stiff to hard, native **lean clay, organic clay** or **clayey silt**, with varying sand and gravel contents; over
- Dense to very dense **sand**, with varying silt, gravel and cobble contents, extending to the maximum depths explored.

As exceptions to the above generalized soil profile, approximately $2\pm$ ft of **existing fill**, comprised of very stiff to hard **lean clay**, with varying sand and gravel contents, was encountered below the pavement section at Borings 1 and 2. As previously noted, auger refusal on possible cobbles, boulders or bedrock was experienced in Boring 1 at a depth of about 3 ft. Additionally, rock fragments/chips, were encountered below depths of about 7 to $8.5\pm$ ft in Borings 2, 3 and 4, which may be indicative of the depth to weathered bedrock.

Mr. J. Eric Urtes
Dane County DPW
August 17, 2020
Page 3

Moisture contents in representative samples obtained from the shallow clay/silt soils ranged from 10.0% to 21.8%. In addition, samples of the organic clay and clayey silt soils from Borings 2 and 3, respectively, were tested for their organic content by means of loss on ignition (LOI), based on their dark coloration, organic odor and/or the presence of visible organic matter. The organic clay and clayey silt samples from Borings 2 and 3 were determined to have an organic content of 4.2% and 3.3%, respectively. Note that soils having an organic content of 4% or more are typically considered organic.

Groundwater was not encountered in the borings during or shortly after drilling. Groundwater levels should be expected to fluctuate with season and precipitation, evaporation and other factors. A more detailed description of the site soil and groundwater conditions is presented on the Soil Boring Logs attached in Appendix B.

DISCUSSION AND RECOMMENDATIONS

Subject to the limitations described below and based on the subsurface exploration, it is our opinion that the proposed reconstruction can be completed as planned. *However, excavation below subgrade (EBS) or stabilization with coarse aggregate may be required in some portions of the parking lot, especially where expansion of the lot is planned, based on the prevalence of moisture sensitive lean clay to clayey silt soils.* Provisions to improve site and subgrade drainage in an effort to remove and/or minimize the accumulation of water within the base course section should also be considered. Our recommendations regarding subgrade preparation and pavement design/construction are presented below. Our assessment of the site class for seismic design is also provided. General limitations regarding the conclusions and opinions presented in this report are discussed in Appendix C.

1. Subgrade Preparation

We recommend that topsoil, where present, be stripped at least 10 ft beyond the proposed new pavement limits. The topsoil can be stockpiled on-site and re-used as fill in landscaped areas. Existing topsoil thicknesses were not defined with the borings performed. As such, when a final site layout has been established, consideration should be given to performing shallow test holes within existing topsoil areas of future planned pavement areas to define the topsoil thicknesses.

Based on the presence of moisture sensitive lean clay and clayey silt soils within the near surface profile in the borings performed, some subgrade instability may be experienced in portions of the site upon removal of the existing pavement and/or topsoil. Therefore, it will be important that after removal of the existing asphalt and topsoil (and cutting to grade, if needed) that the stability of the subgrade be checked by thoroughly recompacting and proof-rolling with a loaded tri-axle dump truck. Note that exposed cohesive soils will require static recompaction (i.e., without vibration). If soft/yielding areas develop, these soils should be undercut and replaced or stabilized as described herein.

Mr. J. Eric Urtes
Dane County DPW
August 17, 2020
Page 4

Based on the condition of the lot and the presence of lean clay/clayey silt subgrade soils in the borings, we expect that some unstable areas may be encountered that will need to be dried, or undercut/stabilized to develop a suitable subgrade prior to re-paving or development of additional pavement areas, and we recommend that the project budget include a contingency for subgrade improvement. Soft or yielding areas that show excessive rutting, deflection and/or cracking should be undercut (as determined by a CGC representative during proof-rolling), with subgrade restored with compacted coarse aggregate (e.g., 3-in. dense graded base (Section 305), as described in Appendix D) possibly in conjunction with an appropriate geotextile fabric or geogrid as determined based upon field observations. Note that the existing base course materials can likely be salvaged and stockpiled for later re-use, where present within undercut areas, if carefully sorted from the underlying clay/silt subgrade soils. Additionally, properly crushed recycled asphalt and/or concrete could also be re-used on this site.

Note that prior to undercutting unstable clay/silt soils, an initial attempt could be made to dry them followed by recompaction. However, this process is highly weather-dependent (i.e., dry, windy and warm conditions) and multiple cycles of discing/overturning will likely be required, which could potentially delay construction progress.

As previously noted, the areas requiring undercutting/stabilization and the depth of undercutting should be determined in the field by proof-rolling. The need for undercutting/stabilization will likely depend on the weather conditions during construction, as the subgrade soils may become susceptible to disturbance/weakening from precipitation and repeated construction traffic, which should be expected during reconstruction operations. If construction occurs during fairly wet weather without adequate time to dry, undercutting/stabilization could be more widespread. Conversely, if warm/dry conditions prevail during construction, less undercutting/stabilization may be required.

Where large, continuous areas of instability are encountered, consideration could be given to including biaxial geogrid (e.g., Tensar BX Type 1 or equivalent) or woven geotextile fabric (e.g., Mirafi 600X or equivalent) below the existing or planned base course layer (or the additional coarse aggregate layer where undercutting is warranted) to reduce the chance of migration of the clay/silt soils into the dense graded base layer that would reduce the integrity of the base course over time. The geogrid or geotextile fabric will provide additional subgrade support when the subgrade becomes relatively weak (e.g., in spring time after thawing has occurred, after prolonged periods of wet weather, etc.), and the separation and stabilization effect may improve the lifespan of the pavements to some degree.

The existing clay/silt soils have low permeability, which can result in perched water accumulating within the overlying base course layer. The presence of perched water within the base course layer over the moisture-sensitive subgrade soils can lead to instability, particularly as it relates to freeze/thaw. The detrimental effects of frost action on the subgrade materials are manifested by non-uniform heave of pavements during winter months and/or the loss of strength within the subgrade during thawing periods. In order to maintain relatively dry subgrade conditions and reduce the

Mr. J. Eric Urtes
Dane County DPW
August 17, 2020
Page 5

potential for frost action, it will be necessary to control surface water runoff and water seepage. Adequate slope should be provided within and around the lot to divert surface water away from the pavement subgrade. Regular maintenance, including crack sealing, should also be performed. Further, we also recommend incorporating a series of collector (spider) drains, if installation of a storm sewer system with catch basins is planned. Subsurface drains can help reduce the amount of trapped water under the pavement surfaces, improve subgrade support, and reduce the detrimental effects of freeze-thaw cycles.

2. Pavement Design

We anticipate that new pavement design will be controlled by the near surface, stiff to hard clay/silt soils, and subgrades should be prepared as described in the Site Preparation section of this report, with recompaction/proof-rolling completed following removal of the existing pavement or prior to base course placement (after topsoil removal) in planned expansion areas. As previously indicated, soft, yielding or unstable areas should be expected at least on an isolated basis, and we therefore recommend the project budget include a contingency for subgrade undercutting/stabilization.

We anticipate that asphalt pavement on this site will primarily be exposed to automobile traffic with less than one 18-kip equivalent single axle load (ESAL) per day. In view of this, we have assumed Traffic Class I following Wisconsin Asphalt Pavement Association (WAPA) recommendations for parking areas and driveways that are mainly used by light passenger vehicles. However, the southeast portion of the planned pavement area is likely to experience heavier traffic loads (e.g., due to emergency vehicles, garbage and/or delivery trucks). For pavement areas where trucks will routinely travel, we have assumed a traffic load of less than 10 ESALs per day and Traffic Class II according to WAPA. The pavement sections summarized in Table 1 were selected assuming a Soil Support Value “SSV” of about 4.0 for a firm or adequately stabilized clay subgrade and a design life of 20 years.

Mr. J. Eric Urtes
 Dane County DPW
 August 17, 2020
 Page 6

TABLE 1 – Recommended Asphalt Pavement Sections

Material	Thicknesses (in.)		WDOT Specification ⁽¹⁾
	Traffic Class I (Light Duty)	Traffic Class II (Medium Duty)	
Bituminous Upper Layer ^(2,3)	1.5	1.75	Section 460, Table 460-1, 9.5 mm (light duty) or 12.5mm (medium duty)
Bituminous Lower Layer ^(2,3)	2.0	2.25	Section 460, Table 460-1, 12.5 mm (light duty) or 19 mm (medium duty)
Dense Graded Base Course ^(2,4)	8.0	10.0	Sections 301 and 305, 3 in. and 1¼ in.
Total Thickness	11.5	14.0	

Notes:

- 1) Wisconsin DOT *Standard Specifications for Highway and Structure Construction*, latest edition, including supplemental specifications, and *Wisconsin Asphalt Pavement Association 2018 Asphalt Pavement Design Guide*.
- 2) Compaction requirements:
 - Bituminous concrete: Refer to Section 460-3.
 - Base course: Refer to Section 301.3.4.2, Standard Compaction
- 3) Mixture Type LT (or E-0.3) bituminous; refer to Section 460, Table 460-2 of the *Standard Specifications*.
- 4) The upper 4 in. should consist of 1¼-in. DGB; the bottom part of the layer can consist of 3-in. DGB.

The recommended pavement sections assume regular maintenance (crack sealing, etc.) will occur, as needed. Note that if traffic volumes are greater than those assumed, CGC should be allowed to review the recommended pavement sections and adjust them accordingly. Alternative pavement designs may prove acceptable and should be reviewed by CGC. If there is a delay between subgrade preparation and placing the base course, the subgrade should be recompact.

The clay/silt soils prevalent on this site are considered to be relatively impermeable. Therefore, we recommend that consideration be given to installing pavement underdrains, such as finger drains

Mr. J. Eric Urtes
Dane County DPW
August 17, 2020
Page 7

around catch basins or directed to the suitable drainage infrastructure, to minimize the accumulation of water within the subgrade soils and/or the base course section. The final pavement surface should be constructed to direct surface water off of the pavement to suitable drainage infrastructure.

Where concrete pavement is planned, such as within the southeast portion of the lot or in pavement areas subjected to concentrated wheel loads (e.g., dumpster pads), we recommend that the concrete be at least 6 in. thick and contain adequate reinforcement for crack control. Concrete slabs underlain by a minimum 6-in. thick dense graded base layer over a firm or stabilized subgrade can be designed utilizing a subgrade modulus of 150 pci.

3. Site Class for Seismic Design

In our opinion, the average soil/rock properties in the upper 100 ft of the site (based on SPT blow counts (N-values) increasing significantly with depth to 50+ blows per foot and the known presence of bedrock in the project vicinity) can be characterized as a very dense soil and soft rock profile. This characterization would place the site in Site Class C for seismic design according to the International Building Code and ASCE 7.

CONSTRUCTION CONSIDERATIONS

Due to variations in weather, construction methods and other factors, specific construction problems are difficult to predict. Soil related difficulties that could be encountered on the site are discussed below:

- Due to the sensitive nature of the on-site soils, we recommend that final site grading activities be completed during dry weather, if possible. Construction traffic should be avoided on prepared subgrades to minimize potential disturbance.
- Contingencies in the project budget for subgrade stabilization with coarse stone should be increased if the project schedule requires that work proceed during adverse weather conditions.
- Earthwork construction during the early spring or late fall could be complicated as a result of wet weather and freezing temperatures. Fill should never be placed while frozen or on frozen ground.
- Excavations extending greater than 4 ft in depth below the existing ground surface should be sloped or braced in accordance with current OSHA standards.



Mr. J. Eric Urtes
Dane County DPW
August 17, 2020
Page 8

RECOMMENDED CONSTRUCTION MONITORING

The quality of the pavement subgrades will be largely determined by the level of care exercised during site work. To check that earthwork proceeds in accordance with our recommendations, the following operations should be monitored by CGC:

- Pavement removal, subgrade recompaction and proof-rolling within the construction areas;
- Geotextile installation and fill placement and compaction, where necessary; and
- Asphalt paving.

* * * * *

It has been a pleasure to serve you on this project. If you have any questions or need additional consultation, please contact us.

Sincerely,

CGC, Inc.

Ryan Portman, P.E.
Senior Consulting Professional

Alex J. Bina, P.E.
Project Engineer

- Encl: Appendix A - Field Exploration
Appendix B - Boring Location Map
Logs of Test Borings (4)
Log of Test Boring-General Notes
Unified Soil Classification System
Appendix C - Document Qualifications
Appendix D - Recommended Compacted Fill Specifications

APPENDIX A

FIELD EXPLORATION

APPENDIX A

FIELD EXPLORATION

Subsurface conditions on site were explored by drilling four (4) Standard Penetration Test (SPT) soil borings to a planned depth of 10 ft below existing site grades at the approximate locations selected by the client and located in the field by CGC. Note that auger refusal on possible cobbles, boulders or bedrock was experienced at a depth of about 3 ft at Boring 3. The borings were drilled on August 7, 2020 by Badger State Drilling (under subcontract to CGC) using a truck-mounted CME-55 rotary drill rig equipped with hollow-stem augers and an automatic SPT hammer. The boring locations are shown in plan on the Boring Location Map attached in Appendix B. Ground surface elevations at the boring locations were estimated by CGC based on topographical site information (1-ft contour intervals) viewed on-line via DCiMap, and the elevations should therefore be considered approximate.

Soil samples were obtained by augering through the asphalt and base course to a depth of 1 ft, followed by collecting split-spoon samples at 2.5-ft intervals to the boring termination depth. The soil samples were obtained in general accordance with specifications for standard penetration testing, ASTM D 1586. The specific procedures used for drilling and sampling are described below.

1. Boring Procedures between Samples

The boring is extended downward, between samples, by a hollow-stem auger.

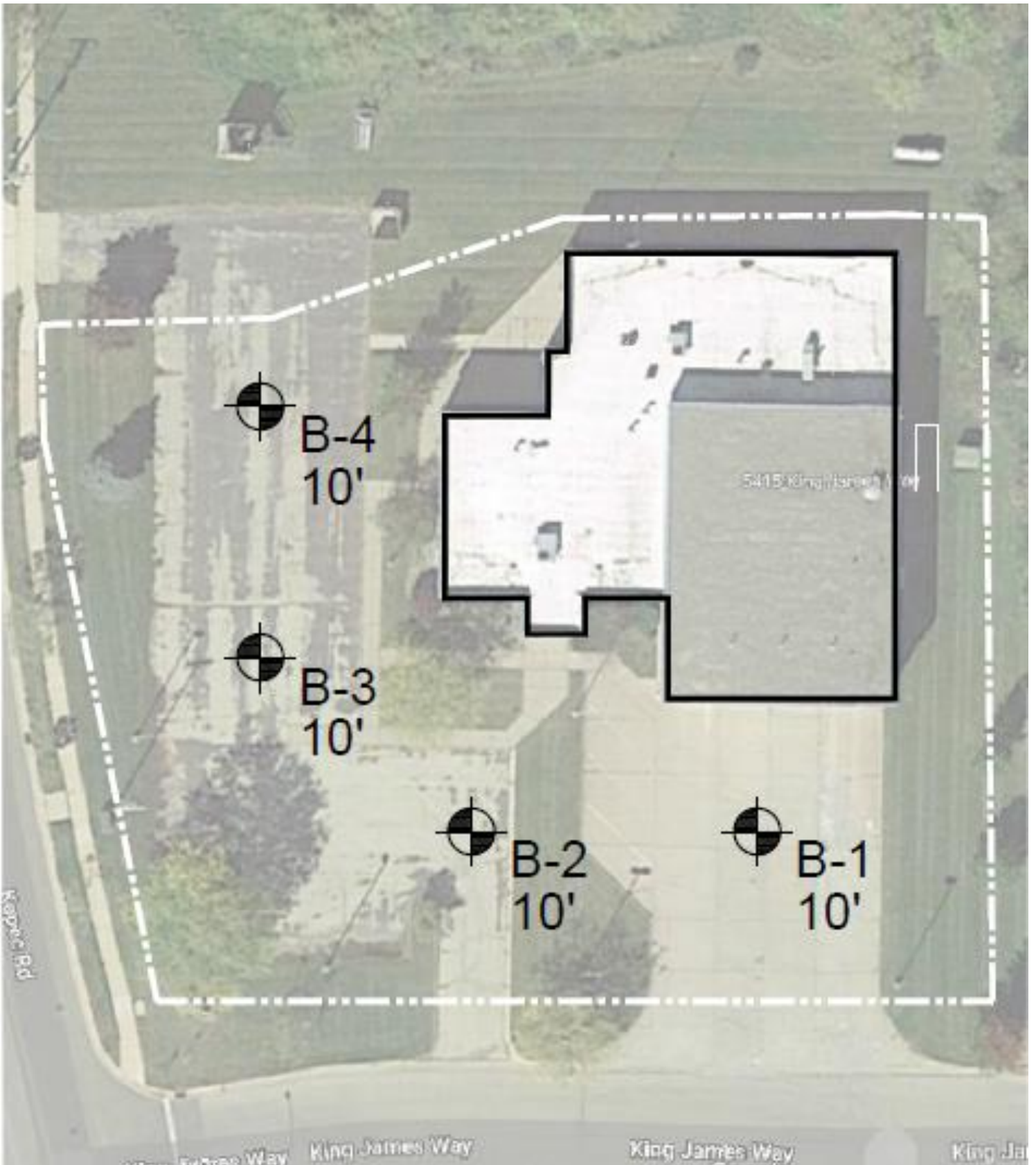
2. Standard Penetration Test and Split-Barrel Sampling of Soils
(ASTM Designation: D 1586)

This method consists of driving a 2-inch outside diameter split-barrel sampler using a 140-pound weight falling freely through a distance of 30 inches. The sampler is first seated 6 inches into the material to be sampled and then driven 12 inches. The number of blows required to drive the sampler the final 12 inches is recorded on the log of borings and is known as the Standard Penetration Resistance.

During the field exploration, the driller visually classified the soil and prepared a field log. *Field screening of the soil samples for possible environmental contaminants was not conducted by the drillers as environmental site assessment activities were not part of CGC's work scope.* Water level observations were made in each boring during and after drilling and are shown at the bottom of each boring log. Upon completion of drilling, the borings were backfilled with bentonite (where required) to satisfy WDNR regulations and the soil samples were delivered to our laboratory for visual classification and laboratory testing. The soil samples were visually classified by a geotechnical engineer using the Unified Soil Classification System. The final logs prepared by the engineer and a description of the Unified Soil Classification System are presented in Appendix B.

APPENDIX B

**BORING LOCATION MAP
LOGS OF TEST BORINGS (4)
LOG OF TEST BORING-GENERAL NOTES
UNIFIED SOIL CLASSIFICATION SYSTEM**



Legend

⊕ Approximate Boring Location, Boring Label & Planned Depth



Notes

1. Soil borings were performed by Badger State Drilling on August 7, 2020
2. Base map was provided by Dane County DPW.
3. Boring locations are approximate.

Job No.
C20341

Date:
8/10/20

CGC, Inc.

BORING LOCATION MAP
Dane County Emergency
Management Remodel
5415 King James Way, Fitchburg, WI



LOG OF TEST BORING

Project **Dane County Emergency Management Remodel**
5415 King James Way
 Location **Fitchburg, WI**

Boring No. **B-1**
 Surface Elevation (ft) **1000.5±**
 Job No. **C20341**
 Sheet **1** of **1**

2921 Perry Street, Madison, WI 53713 (608) 288-4100, FAX (608) 288-7887

SAMPLE					VISUAL CLASSIFICATION and Remarks	SOIL PROPERTIES				
No.	TYPE	Rec (in.)	Moist	N		Depth (ft)	qu (qa) (tsf)	W	LL	PL
					X	5-in. Concrete Pavement/6-in. Base Course				
1		12	M	50/1"	█	FILL: Very Stiff, Dark Gray/Brown Lean Clay, Some Sand and Gravel				
					█	End Boring/Auger Refusal on Possible Cobble, Boulder or Bedrock at 3± ft Borehole backfilled with bentonite chips and asphalt patch				

WATER LEVEL OBSERVATIONS	GENERAL NOTES
While Drilling <input checked="" type="checkbox"/> NW Upon Completion of Drilling <input type="checkbox"/> NW Time After Drilling _____ Depth to Water _____ Depth to Cave in _____	Start 8/7/20 End 8/7/20 Driller BSD Chief MC Rig CME-55 Logger DB-GB Editor RJP Drill Method 2.25" HSA; Autohammer
The stratification lines represent the approximate boundary between soil types and the transition may be gradual.	



LOG OF TEST BORING

Project **Dane County Emergency Management Remodel**
5415 King James Way
 Location **Fitchburg, WI**

Boring No. **B-2**
 Surface Elevation (ft) **1000±**
 Job No. **C20341**
 Sheet **1** of **1**

2921 Perry Street, Madison, WI 53713 (608) 288-4100, FAX (608) 288-7887

SAMPLE					VISUAL CLASSIFICATION and Remarks	SOIL PROPERTIES				
No.	TYPE	Rec (in.)	Moist	N		Depth (ft)	qu (qa) (tsf)	W	LL	PL
					0	3.5-in. Asphalt Pavement/7-in. Base Course				
1		16	M	15	15	FILL: Very Stiff to Hard, Dark Gray Lean Clay, Some Sand and Gravel				
2		14	M	11	11	Medium Stiff, Black/Dark Gray Organic CLAY, Trace Sand (OL)				
3		18	M	38	38	Dense to Very Dense, Brown Fine to Medium SAND, Some Gravel, Little Silt, Scattered Cobbles (SP-SM)				
4		2	M	50/3"	50/3"	Gray Rock Fragments (Possible Weathered Bedrock)				
					10	End Boring at 10± ft				
					15	Borehole backfilled with bentonite chips and asphalt patch				

WATER LEVEL OBSERVATIONS

While Drilling **NW** Upon Completion of Drilling **NW**
 Time After Drilling _____
 Depth to Water _____
 Depth to Cave in _____

GENERAL NOTES

Start **8/7/20** End **8/7/20**
 Driller **BSD** Chief **MC** Rig **CME-55**
 Logger **DB-GB** Editor **RJP**
 Drill Method **2.25" HSA; Autohammer**

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



LOG OF TEST BORING

Project **Dane County Emergency Management Remodel**
5415 King James Way
 Location **Fitchburg, WI**

Boring No. **B-3**
 Surface Elevation (ft) **1000.5±**
 Job No. **C20341**
 Sheet **1** of **1**

2921 Perry Street, Madison, WI 53713 (608) 288-4100, FAX (608) 288-7887

SAMPLE					VISUAL CLASSIFICATION and Remarks	SOIL PROPERTIES								
No.	TYPE	Rec (in.)	Moist	N		Depth (ft)	qu (qa) (tsf)	W	LL	PL	LOI			
					0	4.5-in. Asphalt Pavement/8.5-in. Base Course								
1		18	M	13	13	Stiff, Dark Greenish Gray Clayey SILT, Little Sand, Trace Organic Matter (CL-ML)					(1.75)	19.2		3.3
2		8	M	12	12	Very Stiff, Brown Lean CLAY, Little Sand, Trace Gravel (CL)					(2.5)			
3		18	M	66	66	Very Dense, Brown Fine to Medium SAND, Some Gravel, Little Silt, Scattered Cobbles (SP-SM)								
4		18	M	50/3"	50/3"	(Scattered Rock Fragments within Sample 4)								
					10	End Boring at 10± ft								
					15	Borehole backfilled with bentonite chips and asphalt patch								

WATER LEVEL OBSERVATIONS

While Drilling **NW** Upon Completion of Drilling **NW**
 Time After Drilling _____
 Depth to Water _____
 Depth to Cave in _____

GENERAL NOTES

Start **8/7/20** End **8/7/20**
 Driller **BSD** Chief **MC** Rig **CME-55**
 Logger **DB-GB** Editor **RJP**
 Drill Method **2.25" HSA; Autohammer**

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



LOG OF TEST BORING

Project **Dane County Emergency Management Remodel**
 Location **5415 King James Way**
Fitchburg, WI

Boring No. **B-4**
 Surface Elevation (ft) **1001±**
 Job No. **C20341**
 Sheet **1** of **1**

2921 Perry Street, Madison, WI 53713 (608) 288-4100, FAX (608) 288-7887

SAMPLE					VISUAL CLASSIFICATION and Remarks	SOIL PROPERTIES				
No.	TYPE	Rec (in.)	Moist	N		Depth (ft)	qu (qa) (tsf)	W	LL	PL
					4-in. Asphalt Pavement/8-in. Base Course					
1		12	M	17	Hard, Greenish Gray Lean CLAY, Little Sand, Trace Gravel (CL)	(4.5)	15.0			
2		10	M	26	Stiff to Very Stiff, Brown Lean CLAY, Little Sand, Trace Gravel (CL)	(2.0)				
3		18	M	34	Dense to Very Dense, Brown Fine to Medium SAND, Some Gravel, Little Silt, Scattered Cobbles (SP-SM)					
4		18	M	52	(Scattered Rock Fragments within Sample 4)					
					End Boring at 10± ft					
					Borehole backfilled with bentonite chips and asphalt patch					

WATER LEVEL OBSERVATIONS				
While Drilling	<input checked="" type="checkbox"/>	NW	Upon Completion of Drilling	NW
Time After Drilling				
Depth to Water				
Depth to Cave in				

GENERAL NOTES				
Start	8/7/20	End	8/7/20	
Driller	BSD	Chief	MC	Rig CME-55
Logger	DB-GB	Editor	RJP	
Drill Method	2.25" HSA; Autohammer			

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

LOG OF TEST BORING
General Notes

DESCRIPTIVE SOIL CLASSIFICATION

Grain Size Terminology

Soil Fraction	Particle Size	U.S. Standard Sieve Size
Boulders	Larger than 12"	Larger than 12"
Cobbles	3" to 12"	3" to 12"
Gravel: Coarse.....	¾" to 3"	¾" to 3"
Fine	4.76 mm to ¾"	#4 to ¾"
Sand: Coarse.....	2.00 mm to 4.76 mm.....	#10 to #4
Medium	0.42 to mm to 2.00 mm	#40 to #10
Fine	0.074 mm to 0.42 mm.....	#200 to #40
Silt.....	0.005 mm to 0.074 mm.....	Smaller than #200
Clay.....	Smaller than 0.005 mm.....	Smaller than #200

Plasticity characteristics differentiate between silt and clay.

General Terminology

Physical Characteristics
 Color, moisture, grain shape, fineness, etc.
Major Constituents
 Clay, silt, sand, gravel
Structure
 Laminated, varved, fibrous, stratified, cemented, fissured, etc.
Geologic Origin
 Glacial, alluvial, eolian, residual, etc.

Relative Density

Term "N" Value
 Very Loose..... . 0 - 4
 Loose..... 4 - 10
 Medium Dense.....10 - 30
 Dense.....30 - 50
 Very Dense.....Over 50

Relative Proportions Of Cohesionless Soils

Proportional Term	Defining Range by Percentage of Weight
Trace.....	0% - 5%
Little.....	5% - 12%
Some.....	12% - 35%
And	35% - 50%

Consistency

Term	q _u -tons/sq. ft
Very Soft.....	0.0 to 0.25
Soft.....	0.25 to 0.50
Medium.....	0.50 to 1.0
Stiff.....	1.0 to 2.0
Very Stiff.....	2.0 to 4.0
Hard.....	Over 4.0

Organic Content by Combustion Method

Soil Description	Loss on Ignition
Non Organic.....	Less than 4%
Organic Silt/Clay.....	4 - 12%
Sedimentary Peat.....	12% - 50%
Fibrous and Woody Peat...	More than 50%

Plasticity

Term	Plastic Index
None to Slight.....	0 - 4
Slight.....	5 - 7
Medium.....	8 - 22
High to Very High ..	Over 22

The penetration resistance, N, is the summation of the number of blows required to effect two successive 6" penetrations of the 2" split-barrel sampler. The sampler is driven with a 140 lb. weight falling 30" and is seated to a depth of 6" before commencing the standard penetration test.

SYMBOLS

Drilling and Sampling

- CS – Continuous Sampling
- RC – Rock Coring: Size AW, BW, NW, 2"W
- RQD – Rock Quality Designation
- RB – Rock Bit/Roller Bit
- FT – Fish Tail
- DC – Drove Casing
- C – Casing: Size 2 ½", NW, 4", HW
- CW – Clear Water
- DM – Drilling Mud
- HSA – Hollow Stem Auger
- FA – Flight Auger
- HA – Hand Auger
- COA – Clean-Out Auger
- SS - 2" Dia. Split-Barrel Sample
- 2ST – 2" Dia. Thin-Walled Tube Sample
- 3ST – 3" Dia. Thin-Walled Tube Sample
- PT – 3" Dia. Piston Tube Sample
- AS – Auger Sample
- WS – Wash Sample
- PTS – Peat Sample
- PS – Pitcher Sample
- NR – No Recovery
- S – Sounding
- PMT – Borehole Pressuremeter Test
- VS – Vane Shear Test
- WPT – Water Pressure Test

Laboratory Tests

- q_a – Penetrometer Reading, tons/sq ft
- q_a – Unconfined Strength, tons/sq ft
- W – Moisture Content, %
- LL – Liquid Limit, %
- PL – Plastic Limit, %
- SL – Shrinkage Limit, %
- LI – Loss on Ignition
- D – Dry Unit Weight, lbs/cu ft
- pH – Measure of Soil Alkalinity or Acidity
- FS – Free Swell, %

Water Level Measurement

- ▽ - Water Level at Time Shown
- NW – No Water Encountered
- WD – While Drilling
- BCR – Before Casing Removal
- ACR – After Casing Removal
- CW – Cave and Wet
- CM – Caved and Moist

Note: Water level measurements shown on the boring logs represent conditions at the time indicated and may not reflect static levels, especially in cohesive soils.

CGC, Inc.

Madison - Milwaukee

Unified Soil Classification System

UNIFIED SOIL CLASSIFICATION AND SYMBOL CHART

COARSE-GRAINED SOILS

(more than 50% of material is larger than No. 200 sieve size)

Clean Gravels (Less than 5% fines)



GW

Well-graded gravels, gravel-sand mixtures, little or no fines



GP

Poorly-graded gravels, gravel-sand mixtures, little or no fines

Gravels with fines (More than 12% fines)



GM

Silty gravels, gravel-sand-silt mixtures



GC

Clayey gravels, gravel-sand-clay mixtures

Clean Sands (Less than 5% fines)



SW

Well-graded sands, gravelly sands, little or no fines



SP

Poorly graded sands, gravelly sands, little or no fines

Sands with fines (More than 12% fines)



SM

Silty sands, sand-silt mixtures



SC

Clayey sands, sand-clay mixtures

FINE-GRAINED SOILS

(50% or more of material is smaller than No. 200 sieve size.)



ML

Inorganic silts and very fine sands, rock flour, silty or clayey fine sands or clayey silts with slight plasticity



CL

Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, silty clays, lean clays



OL

Organic silts and organic silty clays of low plasticity



MH

Inorganic silts, micaceous or diatomaceous fine sandy or silty soils, elastic silts



CH

Inorganic clays of high plasticity, fat clays



OH

Organic clays of medium to high plasticity, organic silts



PT

Peat and other highly organic soils

LABORATORY CLASSIFICATION CRITERIA

GW $C_u = \frac{D_{60}}{D_{10}}$ greater than 4; $C_c = \frac{D_{30}}{D_{10} \times D_{60}}$ between 1 and 3

GP Not meeting all gradation requirements for GW

GM Atterberg limits below "A" line or P.I. less than 4

GC Atterberg limits above "A" line or P.I. greater than 7

Above "A" line with P.I. between 4 and 7 are borderline cases requiring use of dual symbols

SW $C_u = \frac{D_{60}}{D_{10}}$ greater than 4; $C_c = \frac{D_{30}}{D_{10} \times D_{60}}$ between 1 and 3

SP Not meeting all gradation requirements for GW

SM Atterberg limits below "A" line or P.I. less than 4

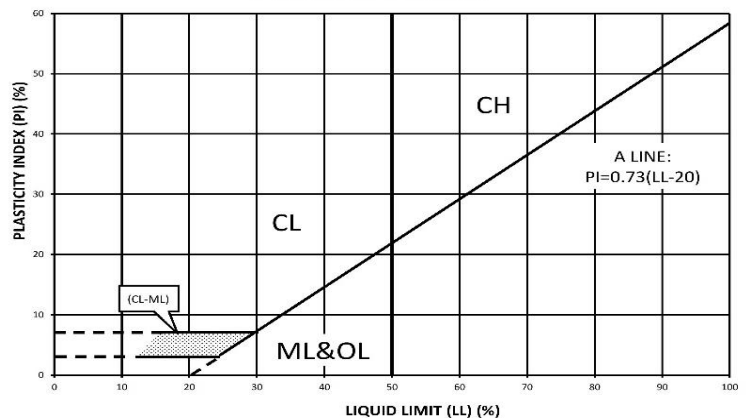
SC Atterberg limits above "A" line with P.I. greater than 7

Limits plotting in shaded zone with P.I. between 4 and 7 are borderline cases requiring use of dual symbols

Determine percentages of sand and gravel from grain-size curve. Depending on percentage of fines (fraction smaller than No. 200 sieve size), coarse-grained soils are classified as follows:

Less than 5 percent GW, GP, SW, SP
 More than 12 percent GM, GC, SM, SC
 5 to 12 percent Borderline cases requiring dual symbols

PLASTICITY CHART



APPENDIX C

DOCUMENT QUALIFICATIONS

APPENDIX C

DOCUMENT QUALIFICATIONS

I. GENERAL RECOMMENDATIONS/LIMITATIONS

CGC, Inc. should be provided the opportunity for a general review of the final design and specifications to confirm that earthwork and foundation requirements have been properly interpreted in the design and specifications. CGC should be retained to provide soil engineering services during excavation and subgrade preparation. This will allow us to observe that construction proceeds in compliance with the design concepts, specifications and recommendations, and also will allow design changes to be made in the event that subsurface conditions differ from those anticipated prior to the start of construction. CGC does not assume responsibility for compliance with the recommendations in this report unless we are retained to provide construction testing and observation services.

This report has been prepared in accordance with generally accepted soil and foundation engineering practices and no other warranties are expressed or implied. The opinions and recommendations submitted in this report are based on interpretation of the subsurface information revealed by the test borings indicated on the location plan. The report does not reflect potential variations in subsurface conditions between or beyond these borings. Therefore, variations in soil conditions can be expected between the boring locations and fluctuations of groundwater levels may occur with time. The nature and extent of the variations may not become evident until construction.

II. IMPORTANT INFORMATION ABOUT YOUR GEOTECHNICAL ENGINEERING REPORT

Subsurface problems are a principal cause of construction delays, cost overruns, claims, and disputes. While you cannot eliminate all such risks, you can manage them. The following information is provided to help.

Geotechnical engineers structure their services to meet the specific needs of their clients. A geotechnical engineering study conducted for a civil engineer may not fulfill the needs of a construction contractor or even another civil engineer. Because each geotechnical engineering study is unique, each geotechnical engineering report is unique, prepared *solely* for the client. *No one except you* should rely on your geotechnical engineering report without first conferring with the geotechnical engineer who prepared it. *And no one - not even you* - should apply the report for any purpose or project except the one originally contemplated.

READ THE FULL REPORT

Serious problems have occurred because those relying on a geotechnical engineering report did not read it all. Do not rely on an executive summary. Do not read selected elements only.

A GEOTECHNICAL ENGINEERING REPORT IS BASED ON A UNIQUE SET OF PROJECT-SPECIFIC FACTORS

Geotechnical engineers consider a number of unique, project-specific factors when establishing the scope of a study. Typical factors include: the client's goals, objectives, and risk management preferences; the general nature of the structure involved, its size, and configuration; the location of the structure on the site; and other planned or existing site improvements, such as access roads, parking lots, and underground utilities. Unless the geotechnical engineer who conducted the study specifically indicates otherwise, *do not rely on a geotechnical engineering report* that was:

- not prepared for you,
- not prepared for your project,
- not prepared for the specific site explored, or
- completed before important project changes were made.

Typical changes that can erode the reliability of an existing geotechnical report include those that affect:

- the function of the proposed structure, as when it's changed from a parking garage to an office building, or from a light industrial plant to a refrigerated warehouse,
- elevation, configuration, location, orientation, or weight of the proposed structure,
- composition of the design team, or project ownership.

As a general rule, *always* inform your geotechnical engineer of project changes - even minor ones - and request an assessment of their impact. *CGC cannot accept responsibility or liability for problems that occur because our reports do not consider developments of which we were not informed.*

SUBSURFACE CONDITIONS CAN CHANGE

A geotechnical engineering report is based on conditions that existed at the time the geotechnical engineer performed the study. *Do not rely on a geotechnical engineering report* whose adequacy may have been affected by: the passage of time; by man-made events, such as construction on or adjacent to the site; or by natural events, such as floods, earthquakes, or groundwater fluctuations. *Always* contact the geotechnical engineer before applying the report to determine if it is still reliable. A minor amount of additional testing or analysis could prevent major problems.

MOST GEOTECHNICAL FINDINGS ARE PROFESSIONAL OPINION

Site exploration identifies subsurface conditions only at those points where subsurface tests are conducted or samples are taken. Geotechnical engineers review field and laboratory data and then apply their professional judgement to render an opinion about subsurface conditions throughout the site. Actual subsurface conditions may differ - sometimes significantly - from those indicated in your report. Retaining the geotechnical engineer who developed your report to provide construction observation is the most

effective method of managing the risks associated with unanticipated conditions.

A REPORT'S RECOMMENDATIONS ARE NOT FINAL

Do not over-rely on the confirmation-dependent recommendations included in your report. *Those confirmation-dependent recommendations are not final*, because geotechnical engineers develop them principally from judgement and opinion. Geotechnical engineers can finalize their recommendations *only* by observing actual subsurface conditions revealed during construction. *CGC cannot assume responsibility or liability for the report's confirmation-dependent recommendations if we do not perform the geotechnical-construction observation required to confirm the recommendations' applicability.*

A GEOTECHNICAL ENGINEERING REPORT IS SUBJECT TO MISINTERPRETATION

Other design team members' misinterpretation of geotechnical engineering reports has resulted in costly problems. Confront that risk by having your geotechnical engineer confer with appropriate members of the design team after submitting the report. Also retain your geotechnical engineer to review pertinent elements of the design team's plans and specifications. Constructors can also misinterpret a geotechnical engineering report. Confront that risk by having CGC participate in prebid and preconstruction conferences, and by providing geotechnical construction observation.

DO NOT REDRAW THE ENGINEER'S LOGS

Geotechnical engineers prepare final boring and testing logs based upon their interpretation of field logs and laboratory data. To prevent errors or omissions, the logs included in a geotechnical engineering report should *never* be redrawn for inclusion in architectural or other design drawings. Only photographic or electronic reproduction is acceptable, *but recognize that separating logs from the report can elevate risk.*

GIVE CONSTRUCTORS A COMPLETE REPORT AND GUIDANCE

Some owners and design professionals mistakenly believe they can make constructors liable for unanticipated subsurface conditions by limiting what they provide for bid preparation. To help prevent costly problems, give constructors the complete geotechnical engineering report, *but* preface it with a clearly written letter of transmittal. In that letter, advise constructors that the report was not prepared for purposes of bid development and that the report's accuracy is limited; encourage them to confer with the geotechnical engineer who prepared the report (a modest fee may be required) and/or to conduct additional study to obtain the specific types of information they need or prefer. A prebid conference can also be valuable. *Be sure constructors have sufficient time* to perform additional study. Only then might you be in a position to give constructors the best information available to you, while requiring them to at least share some of the financial responsibilities stemming from unanticipated conditions.

READ RESPONSIBILITY PROVISIONS CLOSELY

Some clients, design professionals, and constructors do not recognize that geotechnical engineering is far less exact than other engineering disciplines. This lack of understanding has created unrealistic

expectations that have led to disappointments, claims, and disputes. To help reduce the risk of such outcomes, geotechnical engineers commonly include a variety of explanatory provisions in their reports. Sometimes labeled "limitations," many of these provisions indicate where geotechnical engineer's responsibilities begin and end, to help others recognize their own responsibilities and risks. *Read these provisions closely.* Ask questions. Your geotechnical engineer should respond fully and frankly.

ENVIRONMENTAL CONCERNS ARE NOT COVERED

The equipment, techniques, and personnel used to perform an *environmental* study differ significantly from those used to perform a *geotechnical* study. For that reason, a geotechnical engineering report does not usually relate any environmental findings, conclusions, or recommendations; e.g., about the likelihood of encountering underground storage tanks or regulated contaminants. *Unanticipated environmental problems have led to numerous project failures.* If you have not yet obtained your own environmental information, ask your geotechnical consultant for risk management guidance. *Do not rely on an environmental report prepared for someone else.*

OBTAIN PROFESSIONAL ASSISTANCE TO DEAL WITH MOLD

Diverse strategies can be applied during building design, construction, operation, and maintenance to prevent significant amounts of mold from growing on indoor surfaces. To be effective, all such strategies should be devised for the *express purpose* of mold prevention, integrated into a comprehensive plan, and executed with diligent oversight by a professional mold prevention consultant. Because just a small amount of water or moisture can lead to the development of severe mold infestations, many mold prevention strategies focus on keeping building surfaces dry. While groundwater, water infiltration, and similar issues may have been addressed as part of the geotechnical engineering study whose findings are conveyed in this report, the geotechnical engineer in charge of this project is not a mold prevention consultant; *none of the services performed in connection with the geotechnical engineer's study were designed or conducted for the purpose of mold prevention.* *Proper implementation of the recommendations conveyed in this report will not of itself be sufficient to prevent mold from growing in or on the structure involved.*

RELY ON YOUR GEOTECHNICAL ENGINEER FOR ADDITIONAL ASSISTANCE

Membership in the Geotechnical Business Council (GBC) of Geoprofessional Business Association exposes geotechnical engineers to a wide array of risk confrontation techniques that can be of genuine benefit for everyone involved with a construction project. Confer with CGC, a member of GBC, for more information.

Modified and reprinted with permission from:

Geotechnical Business Council
of the Geoprofessional Business Association
8811 Colesville Road, Suite G 106
Silver Spring, MD 20910

APPENDIX D

RECOMMENDED COMPACTED FILL SPECIFICATIONS

APPENDIX D

CGC, INC.

RECOMMENDED COMPACTED FILL SPECIFICATIONS

General Fill Materials

Proposed fill shall contain no vegetation, roots, topsoil, peat, ash, wood or any other non-soil material which by decomposition might cause settlement. Also, fill shall never be placed while frozen or on frozen surfaces. Rock, stone or broken concrete greater than 6 in. in the largest dimension shall not be placed within 10 ft of the building area. Fill used greater than 10 ft beyond the building limits shall not contain rock, boulders or concrete pieces greater than a 2 sq ft area and shall not be placed within the final 2 ft of finish subgrade or in designated utility construction areas. Fill containing rock, boulders or concrete pieces should include sufficient finer material to fill voids among the larger fragments.

Special Fill Materials

In certain cases, special fill materials may be required for specific purposes, such as stabilizing subgrades, backfilling undercut excavations or filling behind retaining walls. For reference, WisDOT gradation specifications for various types of granular fill are attached in Table 1.

Placement Method

The approved fill shall be placed, spread and leveled in layers generally not exceeding 10 in. in thickness before compaction. The fill shall be placed at moisture content capable of achieving the desired compaction level. For clay soils or granular soils containing an appreciable amount of cohesive fines, moisture conditioning will likely be required.

It is the Contractor's responsibility to provide all necessary compaction equipment and other grading equipment that may be required to attain the specified compaction. Hand-guided vibratory or tamping compactors will be required whenever fill is placed adjacent to walls, footings, columns or in confined areas.

Compaction Specifications

Maximum dry density and optimum moisture content of the fill soil shall be determined in accordance with modified Proctor methods (ASTM D1557). The recommended field compaction as a percentage of the maximum dry density is shown in Table 2. Note that these compaction guidelines would generally not apply to coarse gravel/stone fill. Instead, a method specification would apply (e.g., compact in thin lifts with a vibratory compactor until no further consolidation is evident).

Testing Procedures

Representative samples of proposed fill shall be submitted to CGC, Inc. for optimum moisture-maximum density determination (ASTM D1557) prior to the start of fill placement. The sample size should be approximately 50 lb.

CGC, Inc. shall be retained to perform field density tests to determine the level of compaction being achieved in the fill. The tests shall generally be conducted on each lift at the beginning of fill placement and at a frequency mutually agreed upon by the project team for the remainder of the project.

**Table 1
Gradation of Special Fill Materials**

Material	WisDOT Section 311	WisDOT Section 312	WisDOT Section 305			WisDOT Section 209		WisDOT Section 210
	Breaker Run	Select Crushed Material	3-in. Dense Graded Base	1 1/4-in. Dense Graded Base	3/4-in. Dense Graded Base	Grade 1 Granular Backfill	Grade 2 Granular Backfill	Structure Backfill
Sieve Size	Percent Passing by Weight							
6 in.	100							
5 in.		90-100						
3 in.			90-100					100
1 1/2 in.		20-50	60-85					
1 1/4 in.				95-100				
1 in.					100			
3/4 in.			40-65	70-93	95-100			
3/8 in.				42-80	50-90			
No. 4			15-40	25-63	35-70	100 (2)	100 (2)	25-100
No. 10		0-10	10-30	16-48	15-55			
No. 40			5-20	8-28	10-35	75 (2)		
No. 100						15 (2)	30 (2)	
No. 200			2-12	2-12	5-15	8 (2)	15 (2)	15 (2)

Notes:

1. Reference: Wisconsin Department of Transportation *Standard Specifications for Highway and Structure Construction*.
2. Percentage applies to the material passing the No. 4 sieve, not the entire sample.
3. Per WisDOT specifications, both breaker run and select crushed material can include concrete that is 'substantially free of steel, building materials and other deleterious material'.

**Table 2
Compaction Guidelines**

Area	Percent Compaction (1)	
	Clay/Silt	Sand/Gravel
<u>Within 10 ft of building lines</u>		
Footing bearing soils	93 - 95	95
Under floors, steps and walks		
- Lightly loaded floor slab	90	90
- Heavily loaded floor slab and thicker fill zones	92	95
<u>Beyond 10 ft of building lines</u>		
Under walks and pavements		
- Less than 2 ft below subgrade	92	95
- Greater than 2 ft below subgrade	90	90
Landscaping	85	90

Notes:

1. Based on Modified Proctor Dry Density (ASTM D 1557)



City of Fitchburg Erosion Control and Stormwater Management Permit Application

Last Revised 5/4/2020

Permit # _____
Start Date: _____
Completion: _____
Office Use Only

Project Name: _____ Latitude/Longitude: _____
Coordinates to 6 decimal digits req'd (e.g. 43.002512, -89.424248)

Site Address: _____ Parcel ID(s): _____

Landowner Name, Phone & E-mail: _____

Landowner Address: _____

Applicant Name, Phone & E-mail: _____

Designer Name, Phone & E-mail: _____

Contractor Name, Phone & E-mail: _____

Total New Impervious Area added since 8-22-01: _____ s.f.

Total Disturbed Area (this project): _____ s.f. Total New Impervious Area (this project): _____ s.f.

Total Redeveloped Area (this project): _____ s.f. Total Impervious Area (after project): _____ s.f.

Proposed Permit Fee for Plat Projects*

Type of Permit Erosion Control Only Erosion Control and Stormwater Management Stormwater Management Only
(check only one)
 (EC Base Fee = \$200) (EC+SWM Base Fee = \$200 + \$400 = \$600) (SWM Base Fee = \$400)
 (EC Amendment Fee = \$100) (EC+SWM Amendment Fee = \$300) (SWM Amendment Fee = \$200)

Total Disturbed Area (this project): _____ s.f. x \$0.005 / s.f. = \$ _____

Total New Impervious Area (this project): _____ s.f. x \$0.010 / s.f. = \$ _____

Total Redeveloped Impervious Area (this project): _____ s.f. x \$0.005 / s.f. = \$ _____

Permit fee of \$ _____ received by _____ on _____ <small>name date</small>	Base Fee = \$ _____ <small>(see above)</small>
	Total Permit Fee = \$ _____

Make checks payable to "City of Fitchburg." Permit fee must be paid before Dane County review will begin.

Fees DOUBLE if work starts before permit is approved.

Note: Maximum length of permit duration is 3 years from permit start date.

* Plat projects include initial grading and infrastructure construction for plats. Development of individual lots within a plat are not considered "Plat projects" for the purposes of permit fee calculation.

Proposed Permit Fee for non-Plat Projects

Type of Permit Erosion Control Only Erosion Control and Stormwater Management Stormwater Management Only
(check only one)
 (EC Base Fee = \$275) (EC+SWM Base Fee = \$450) (SWM Base Fee = \$375)
 (EC Amendment Fee = \$100) (EC+SWM Amendment Fee = \$100) (SWM Amendment Fee = \$100)
 Plus actual costs** Plus actual costs** Plus actual costs**

**In addition, the applicant shall pay the actual costs incurred by the City from any consultant or agent with whom the City may contract to provide services relating to the administration of this Code. The City shall bill the applicant for such charges, which shall be paid within thirty (30) days. Any unpaid charges shall be assessed to the subject property as a special charge pursuant to Wis. Stats. 66.0627 and placed on the tax roll.

Make checks payable to "City of Fitchburg." Permit fee must be paid before Dane County review will begin.

Base fee DOUBLES if work starts before permit is approved.

Landowner or Applicant Signature: Greg Brockmeyer Date: 5/23/2022

Reviewed by: _____ Date: _____

Conditionally Approved by City Engineer: _____ Date: _____

Submit 1 electronic copy of Permit Application, Report, and Plans (11"x17" max. size) to: dakota.dorn@fitchburgwi.gov, claudia.guy@fitchburgwi.gov, and Mergen.Elliott@countyofdane.com. Submit permit fee to: Fitchburg Public Works Department, Attn: Environmental Engineer, 5520 Lacy Road, Fitchburg, WI 53711.

The following permit conditions are in addition to Conditions 1-4 listed on Page 1 of this permit.

Landowner / Applicant hereby acknowledged / agrees to the following:

1. Landowner / Applicant have reviewed Chapter 30, Article II of the City of Fitchburg Code of Ordinances and agree to follow all necessary requirements.
2. Landowner / Applicant agree to the permit conditions on the bottom of this permit.
3. Landowner / Applicant hereby grant the City of Fitchburg and its agent's permission to enter the project property for inspection and/or curative action.

Landowner / Applicant agree to keep a copy of the approved permit(s) and plan(s) available on the site at all times until final completion.

4. **City R/W Permit** - Landowner/Applicant shall check on whether a Right-of-Way (R/W) permit application is required for construction work within the City R/W. No land disturbance within the R/W is allowed unless a R/W Permit is approved.
5. **Street Access** - Per Fitchburg Chapter 70, Article V s. 70-145 vehicles over 10,000 lbs. gross weight shall use wood curb blocking when mounting or crossing curb & gutter, unless specifically permitted in writing by the City. Gravel & soil curb ramping is expressly prohibited.
6. **WDNR, Army Corps of Engineers, CARPC, etc. Permits** - Landowner/Applicant is responsible for checking with appropriate agencies for determining applicable permits. Copies of any applicable permits must be provided to the City prior to commencing land disturbance.
7. **Property Transfer** - If there is a transfer of property ownership prior to completion of the permit requirements, the permittee must notify the City and coordinate either a new permit application or permit transfer per Fitchburg Chapter 30 Article II 30-26 (f).
8. **Digger's Hotline** - Permittee shall be responsible for calling in all necessary underground utility locates for the construction work, and keeping the locates current/up-to-date. **Digger's Hotline for the area is 1-800-242-8511.**
9. **Traffic Control / Job Site Safety** - Traffic control shall comply with the current edition of the Manual on Uniform Traffic Control Devices (MUTCD). The Permittee and Permittee's Contractor are responsible for all job site safety and shall ensure that they communicate all applicable emergency contact information to the City and County emergency management services (EMS) departments.
10. **Erosion Control** - R/W surfaces shall be thoroughly cleaned before the end of each working day. All inlets, culverts, or other storm sewer structures subject to drainage shall be protected with silt screen protection device specifically designed for that structure. Any deposits of dirt, mud, rock, debris, or other material entering the storm sewer system shall be promptly and thoroughly cleaned out. If not clean by the end of the day, the City reserves the right to coordinate the work and charge back all equipment use and labor deemed necessary by the City to the Permittee. All erosion control measures shall be installed in accordance with the City of Fitchburg Standard Specifications, current edition. The City reserves the right to require additional erosion control measures as conditions warrant.
11. **Restoration** shall be completed as noted in the construction schedule unless otherwise authorized by the City. All public improvements (ie: curb and gutter, sidewalks, driveways, topsoil, vegetative cover, terrace trees, underground utilities, storm water conveyance and detention facilities, etc.) shall be installed and/or restored in accordance with the City of Fitchburg Standard Specifications, current edition.
12. **Construction Schedule Notification** - Permittee shall notify the City within 10 days of initial installation of all erosion control measures to arrange an inspection. No grading or construction work is allowed until the permit is approved and erosion control measures have been put in place and approved by the City. Permittee shall again contact the City a minimum of 2 working days prior to commencing any grading or construction work. Landowner/Applicant shall notify the City of any changes to the construction schedule as work progresses.
13. **Construction Site Erosion Control Inspections** - Contractor shall complete and upload weekly construction site erosion control inspections online using the PermiTrack system (<https://www.mypermitrack.com/sehsvc/login>) until Complete Stabilization is met. City Staff will set up the accounts, project, and provide training as needed to permittee, consultants, and contractors. If the site will be inactive, but stable, for a prolonged period (e.g. winter shutdown, etc.), Contractor may contact the City to request bumping inspection status to "Inactive" so weekly inspections don't need to be done until construction work resumes.
14. **Completion Date / Notice of Stabilization** - The site shall be stabilized by the Completion Date listed on Page 1 of this permit. If the site cannot be stabilized by that date, written notice shall be given to the City along with revised stabilization date, revised Soil Loss spreadsheet(s) and request to extend the Completion Date. If appropriate notification is not given prior to the Completion Date, a new permit application and appropriate fees

must be submitted for any remaining disturbed areas. Within ten days after installation of all practices in the approved erosion control plan and achievement of soil stabilization, the permittee shall notify the City to arrange a confirmation of project completion and stabilization.

15. **Approved Plan Sheets** (Include dates, sheet numbers, revision, etc.):

16. **Special Conditions:**

City of Fitchburg – Erosion Control Application Checklist

Project Name / Location: _____ **Permit #:** _____

Please check the appropriate box: I = Included; N/A = Not Applicable (If "N/A" is checked, an explanation must be entered.)

Plan Requirements (refer to Chapter 30, Article II s. 30-27 (a))		Applicant			Public Works	
		I	N/A	Explanation / Location of Information (Page Number of Attachment)	I	N/A
(1)	Property lines, lot dimensions, and limits of disturbed area.					
(2)	Limits of impervious area, including buildings and paved areas					
(3)	All natural and artificial water features					
(4)	All erosion control measures to be installed					
(5)	Cross sections and profiles of road ditches and channels (existing and proposed).					
(6)	Storm sewer pipes and/or culvert sizes (existing and proposed).					
(7)	Direction of runoff flow (contours or runoff arrows).					
(8)	Watershed size for each contributing drainage area.					
(9)	Design discharge for ditches and structural measures (flow calculations).					
(10)	Runoff velocities in channels (ft/s).					
(11)	Fertilizer and seeding rates (seed, fertilizer, polymer, mulch, etc.).					
(12)	Detailed description and proposed completion schedule of each element of the erosion control plan, including stabilization of ditches and slopes.					
(13)	Show steps and calculations demonstrating the erosion control performance standards under Chapter 30, Article II s. 30-27(c) will be met. Include Soil Loss spreadsheet.					
(14)	Provisions to prevent mud-tracking off-site onto public thoroughfares during the construction period.					
(15)	Provisions to disconnect impervious surfaces, where feasible.					
(16)	Provisions to prevent sediment delivery to, and accumulation in, any proposed or existing stormwater conveyance systems.					
(17)	Copy of permits or approvals by other agencies (e.g. WDNR, Army Corps of Engineers, etc.).					
(18)	Existing and proposed elevations and contours (NAVD 88)					
(19)	Itemized estimated cost (including labor) for installation of all elements of the erosion control plan.					
(20)	Any other information necessary to reasonably determine the location, nature, and condition of any physical or environmental features of the site.					
(21)	Plan Commission Approval (if parcel is 5 acres or more); See Chapter 30, Article II s. 30-32 for details.					
(22)	Submit completed City of Fitchburg Inspection Form					

Indicates plan requirement must always be included

City of Fitchburg – Stormwater Management Application Checklist

Project Name / Location: _____ Permit #: _____

Please check the appropriate box: I = Included; N/A = Not Applicable (If "N/A" is checked, an explanation must be entered.)

*SWM Plan/Report must have P.E. Stamp on Cover Page		Applicant			Public Works	
		I	N/A	Explanation / Location of Information (Page Number of Attachment)	I	N/A
Plan Requirements (refer to Chapter 30, Article II s. 30-27 (a))						
(1)	Narrative describing the proposed project, including implementation schedule of designed practices.					
(2)	Identification of the entity responsible for long-term maintenance of the project.					
(3)	Map showing drainage areas for each watershed area.					
(4)	A topographic map of the site location, including the contiguous properties, existing drainage patterns and watercourses affected by the proposed development of the site and the existing vegetative cover					
(5)	Design practices to maintain peak discharge rates for the 1, 2, 10, and 100-year 24-hour storm events. Include a summary table showing the results of the analysis.					
	a. Pre-development peak flow rates					
	b. Post development peak flow rates with no detention					
	c. Post development peak flow rates with detention					
	d. Assumed runoff curve numbers					
	e. Time of concentration used in calculations					
(6)	Complete site plan and specifications.					
	a. Property lines and lot dimensions					
	b. All buildings and outdoor uses, existing and proposed, including all dimensions and setbacks					
	c. All public and private roads, interior roads, driveways and parking lots, showing traffic patterns and type of paving and surfacing material					
	d. All natural and artificial water features					
	e. Depth to bedrock					
	f. Depth to seasonal high water table					
	g. The extent and location of all soil types as described in the Dane County Soil Survey, slopes exceeding 12%, and areas of natural woodland or prairie					
	h. Existing and proposed elevations (NAVD 88)					
	i. Elevations, sections, profiles, and details as needed to describe all natural and artificial features of the project					
	j. Soil erosion control and overland runoff control measures, including runoff calculations as appropriate					
	k. Detailed construction schedule					
	l. Copies of permits or permit applications required by any other governmental entities or agencies					
	m. Location of all stormwater management practices					
	n. All existing and proposed drainage features					
	o. The location and area of all proposed impervious surfaces					
	p. The size (ft ²) and limits of the disturbed area					
q.	Any other information necessary to reasonably determine the location, nature and condition of any physical or environmental features					


 Indicates plan requirement must always be included

City of Fitchburg – Stormwater Management Application Checklist

Project Name / Location: _____ Permit #: _____

Please check the appropriate box: I = Included; N/A = Not Applicable (If "N/A" is checked, an explanation must be entered.)

(7)	Calculations demonstrating the stormwater management performance standards under Chapter 30, Article II s. 30-28 (b) will be met.					
(8)	Engineered designs for all structural management practices.					
(9)	Description of methods to control oil and grease or written justification for not providing such control.					
(10)	Description and plans to control temperature of runoff.					
(11)	Maintenance plan and schedule for all permanent stormwater management practices.					
(12)	"A summary of infiltration calculations including: predevelopment infiltration volume, calculated infiltration volume goal, achieved post-development infiltration volume.					
(13)	Submit completed City of Fitchburg Inspector Form.					

 Indicates plan requirement must always be included