

Madison, Wisconsin

CITY OF MADISON

CITY ENGINEERING DIVISION

DEPARTMENT OF PUBLIC WORKS

PLAN OF PROPOSED IMPROVEMENT

SPRING HARBOR OUTFALL REPAIR

INDEX OF SHEETS

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CITY PROJECT NO. 12154
CONTRACT NO. 8525

PROJECT LOCATIONS



CONVENTIONAL SIGNS	
FIELD VERIFY ALL UTILITY LOCATIONS	
GAS	— G —
STORM SEWER	— ST —
SANITARY SEWER	— SN —
WATER	— W —
BURIED ELECTRIC	— E —
OVERHEAD ELECTRIC	— OH —
POWER POLE	□
ADA COMPLIANT RAMP W/ DETECTABLE WARNING FIELD	▣
COMBUSTIBLE FLUIDS	☀

PUBLIC IMPROVEMENT PROJECT APPROVED

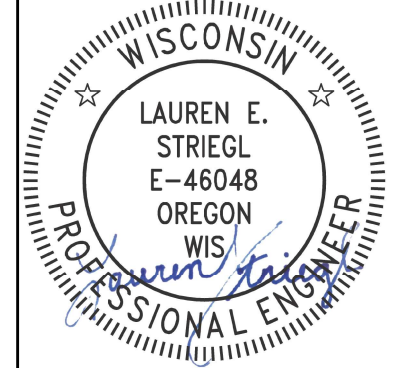
OCTOBER 1, 2019

BY THE COMMON COUNCIL OF MADISON, WISCONSIN

PUBLIC IMPROVEMENT DESIGN APPROVED BY:

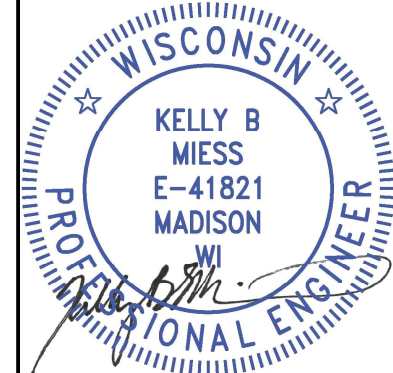
W- Greg Fries Aug 18, 2021
City Engineer Date

STORM SEWER DESIGNED BY:



Aug 18, 2021

WATER DESIGNED BY:



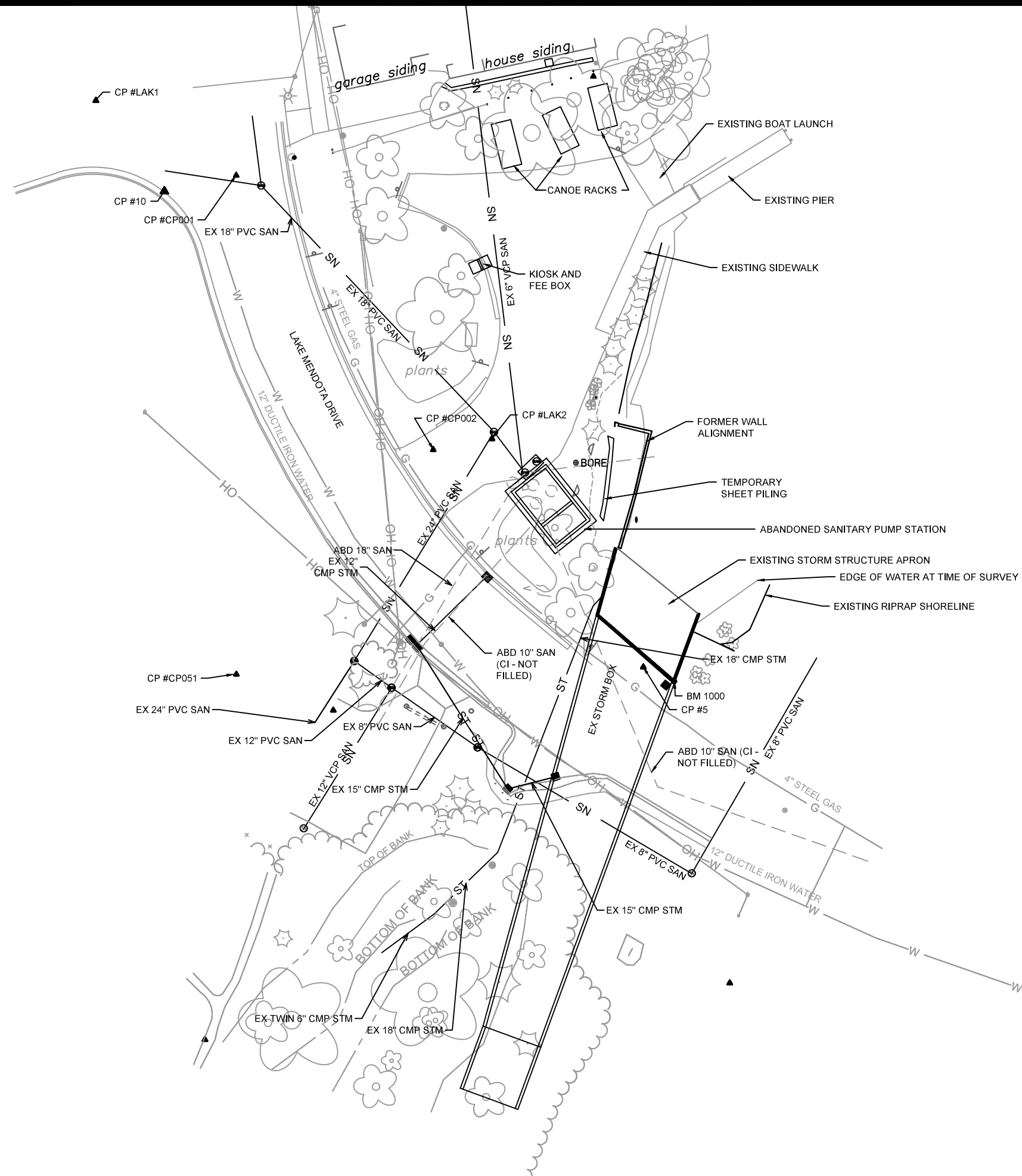
Aug 18, 2021

PLOT SCALE: 1:1_XREF

PLOT NAME: ----

REV. DATE: 8/13/2021 2:18 PM

ORIGINATOR: CITY_OF_MADISON



CONTROL POINTS				
POINT #	LOCATION	NORTHING	EASTING	ELEVATION
CP #LAK1	CUT X CONC MEDIAN ENGR	485187.4000	798054.9300	860.4000
CP #10	MAGNAIL ASPH ENGR	485155.7200	798078.8100	859.1700
CP #CP001	MAGNAIL	485161.2300	798103.9700	859.0000
CP #CP051	S BOLT FNTN	484986.7600	798104.0800	859.3100
CP #LAK2	MAGNAIL BY MH ENGR	485069.1200	798193.4300	857.8900
CP #CP002	MAGNAIL ASPH	485065.3100	798172.9200	857.5400
CP #5	SPIKE ENGR	484989.2800	798246.3500	8.8600
BM 1000				859.8700

MARK	REVISION	DATE	BY

12154
 MADISON, WI
 CONTRACT NO: 8525

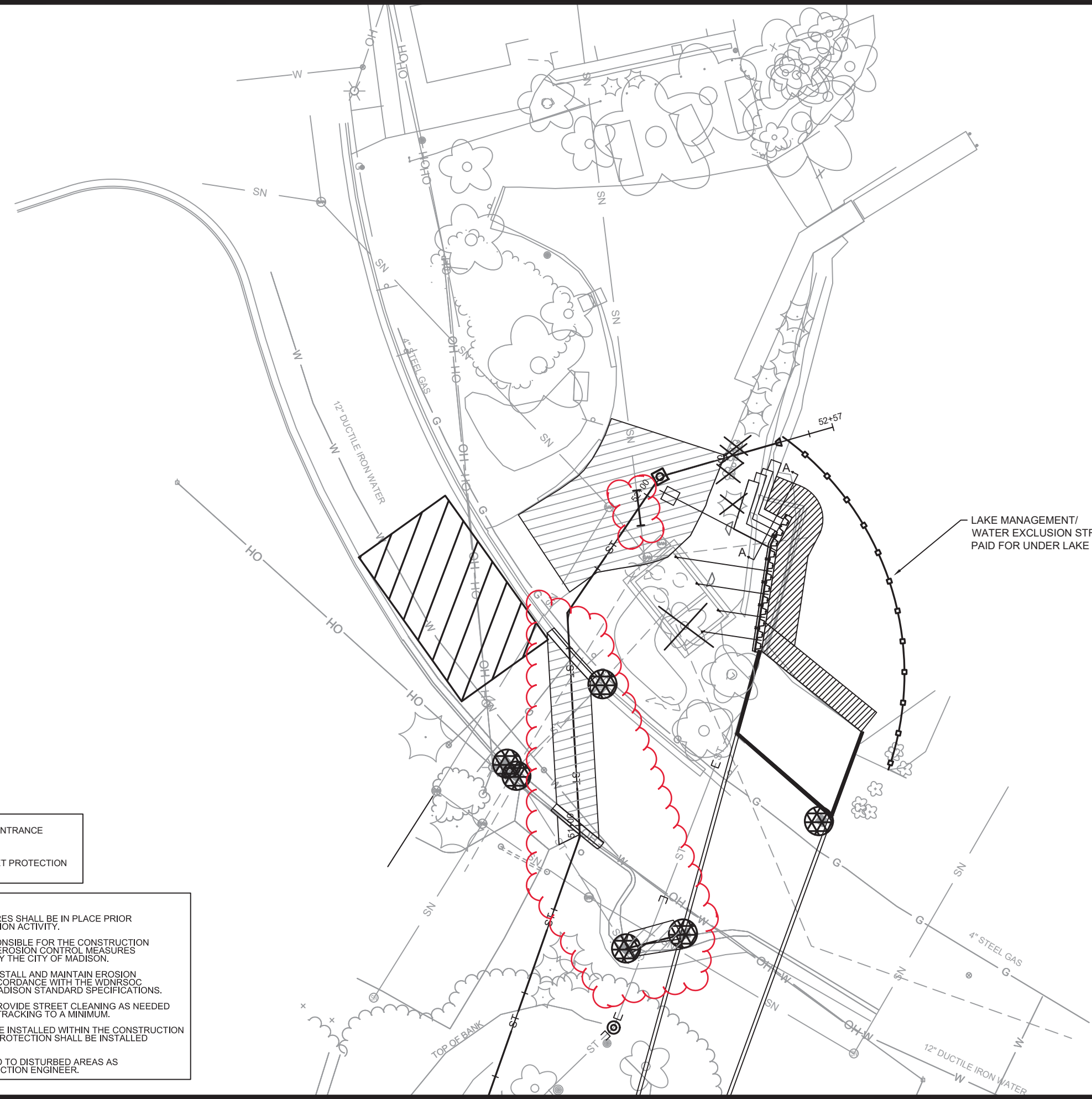
EXISTING CONDITIONS
 SPRING HARBOR OUTFALL REPAIR
 CITY OF MADISON




12154
 EX-1


Designed By: LES Date: 03-01-2021 Scale: 1" = 40'
 12154 EX-1

REV 8/30/21 LES



LAKE MANAGEMENT/
WATER EXCLUSION STRUCTURE
PAID FOR UNDER LAKE & STORM CONTROL

 CONSTRUCTION ENTRANCE

 RIGID FRAME INLET PROTECTION

EROSION CONTROL NOTES:

EROSION CONTROL MEASURES SHALL BE IN PLACE PRIOR TO ANY OTHER CONSTRUCTION ACTIVITY.

THE CONTRACTOR IS RESPONSIBLE FOR THE CONSTRUCTION AND MAINTENANCE OF ALL EROSION CONTROL MEASURES UNTIL FINAL ACCEPTANCE BY THE CITY OF MADISON.

THE CONTRACTOR SHALL INSTALL AND MAINTAIN EROSION CONTROL MEASURES IN ACCORDANCE WITH THE WDNR SOC STANDARDS AND CITY OF MADISON STANDARD SPECIFICATIONS.

THE CONTRACTOR SHALL PROVIDE STREET CLEANING AS NEEDED ON A DAILY BASIS TO KEEP TRACKING TO A MINIMUM.

INLET PROTECTION SHALL BE INSTALLED WITHIN THE CONSTRUCTION LIMITS. ADDITIONAL INLET PROTECTION SHALL BE INSTALLED AS DIRECTED.

POLYMER SHALL BE APPLIED TO DISTURBED AREAS AS DIRECTED BY THE CONSTRUCTION ENGINEER.

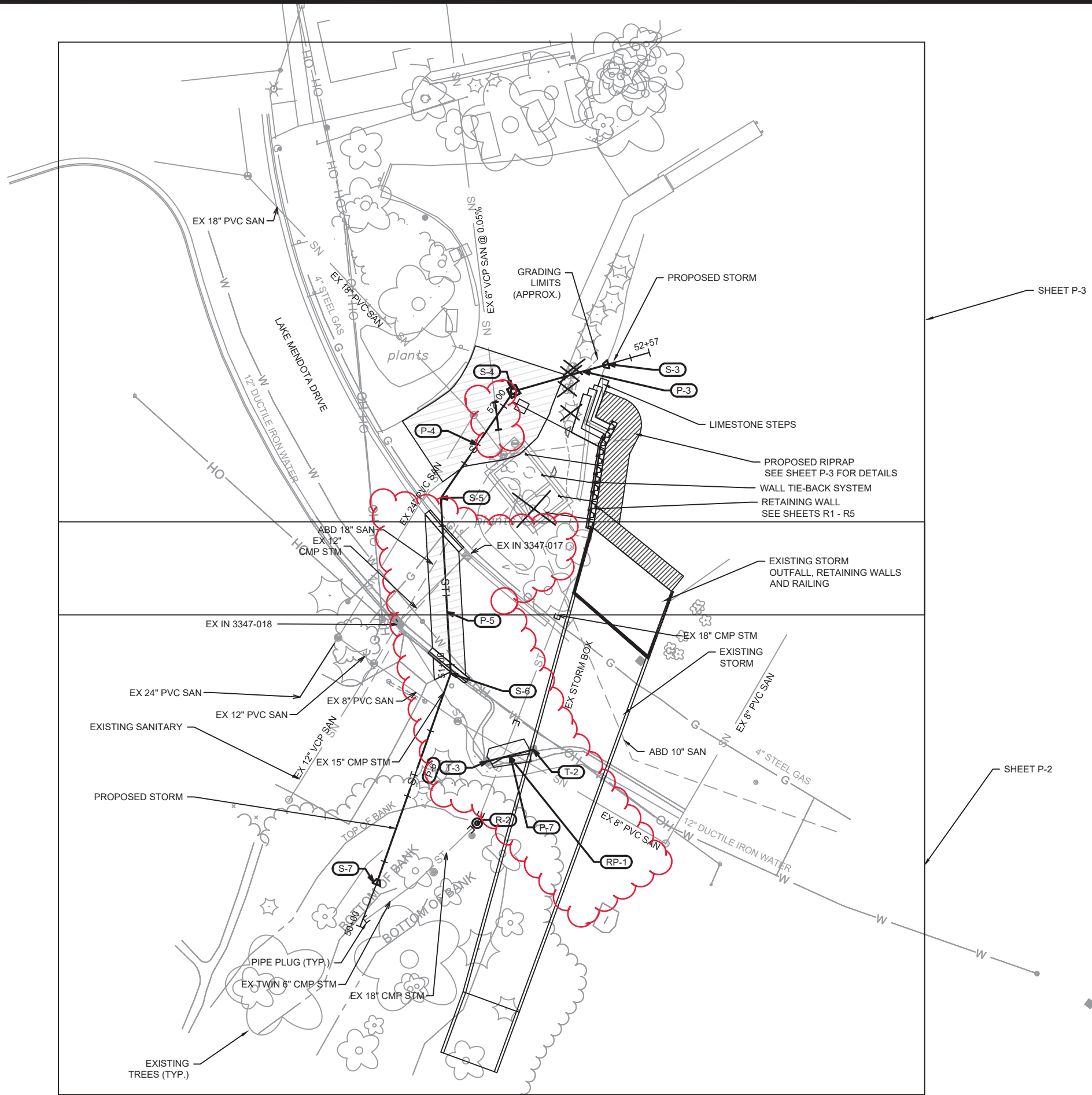
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12154
MADISON, WI
8525
CONTRACT NO:

EROSION CONTROL PLAN
SPRING HARBOR OUTFALL REPAIR
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12154
EC-1



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12154	DESIGNED BY: LES	DATE: ##/##/###	Scale: 1" = 40'

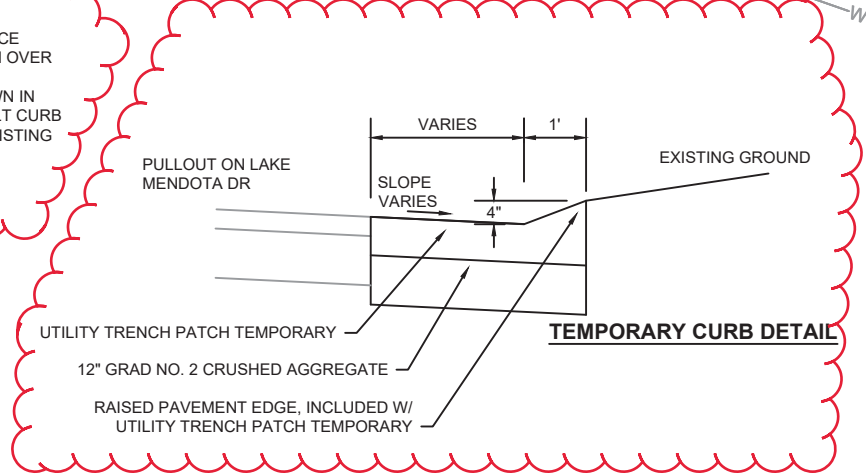
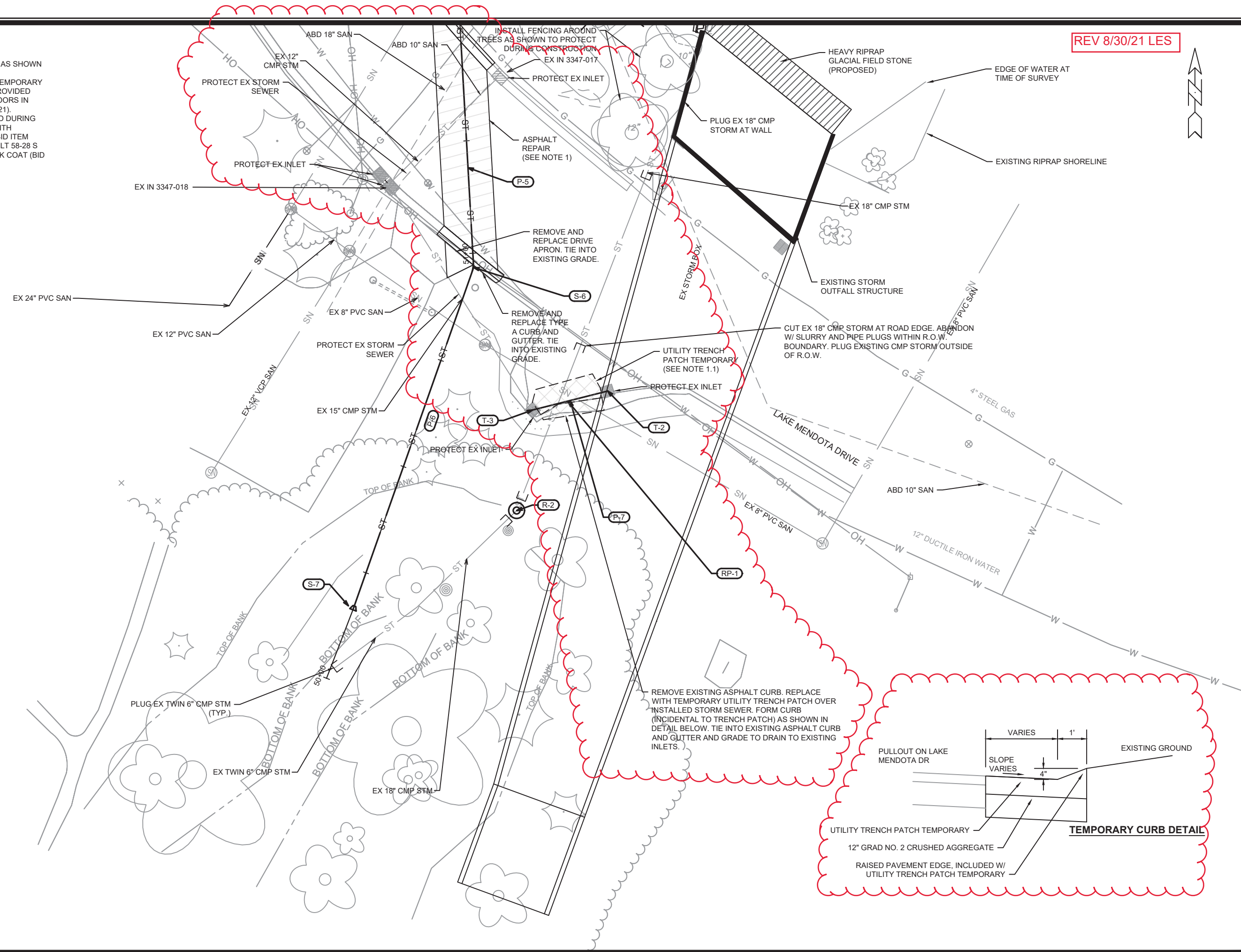
12154
 MADISON, WI
 CONTRACT NO: 8525

PROPOSED CONDITIONS - OVERVIEW
 SPRING HARBOR OUTFALL REPAIR
 CITY OF MADISON



REV 8/30/21 LES

- NOTES**
- IN AREA OF ASPHALT REPAIR, AS SHOWN IN THE PLANS:
 - UTILITY TRENCH PATCH TEMPORARY (BID ITEM 50229) TO BE PROVIDED OVER ALL UTILITY CORRIDORS IN PHASE I (FALL/WINTER 2021).
 - ASPHALT TO BE REPAIRED DURING PHASE II (SPRING 2022) WITH PULVERIZE AND SHAPE (BID ITEM 40311), HMA PAVEMENT 4 LT 58-28 S (BID ITEM 40202) AND TACK COAT (BID ITEM 40218).



MARK	REVISION	DATE	BY

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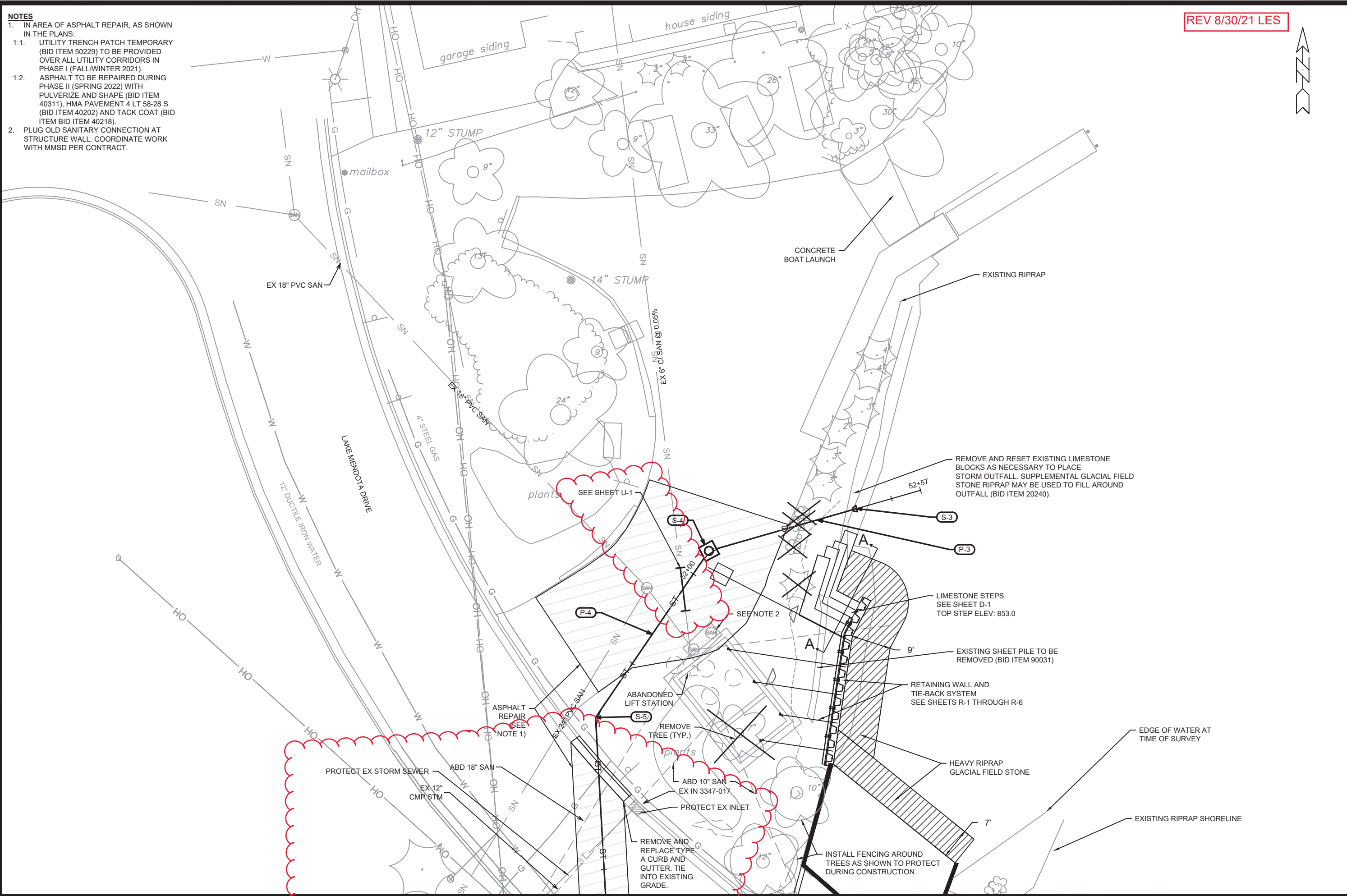
12154
MADISON, WI
CONTRACT NO: 8525

STORM SEWER AND ROAD REPAIRS
SPRING HARBOR OUTFALL REPAIR
CITY OF MADISON



- NOTES**
- IN AREA OF ASPHALT REPAIR, AS SHOWN IN THE PLANS:
 - UTILITY TRENCH PATCH TEMPORARY (BID ITEM 50229) TO BE PROVIDED OVER ALL UTILITY CORRIDORS IN PHASE I (FALL/WINTER 2021).
 - ASPHALT TO BE REPAIRED DURING PHASE II (SPRING 2022) WITH PULVERIZE AND SHAPE (BID ITEM 40311), HMA PAVEMENT 4 LT 58-28 S (BID ITEM 40202) AND TACK COAT (BID ITEM 40218).
 - PLUG OLD SANITARY CONNECTION AT STRUCTURE WALL. COORDINATE WORK WITH MMSD PER CONTRACT.

REV 8/30/21 LES



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12154	12154	12154	12154

12154
MADISON, WI
CONTRACT NO: 8525

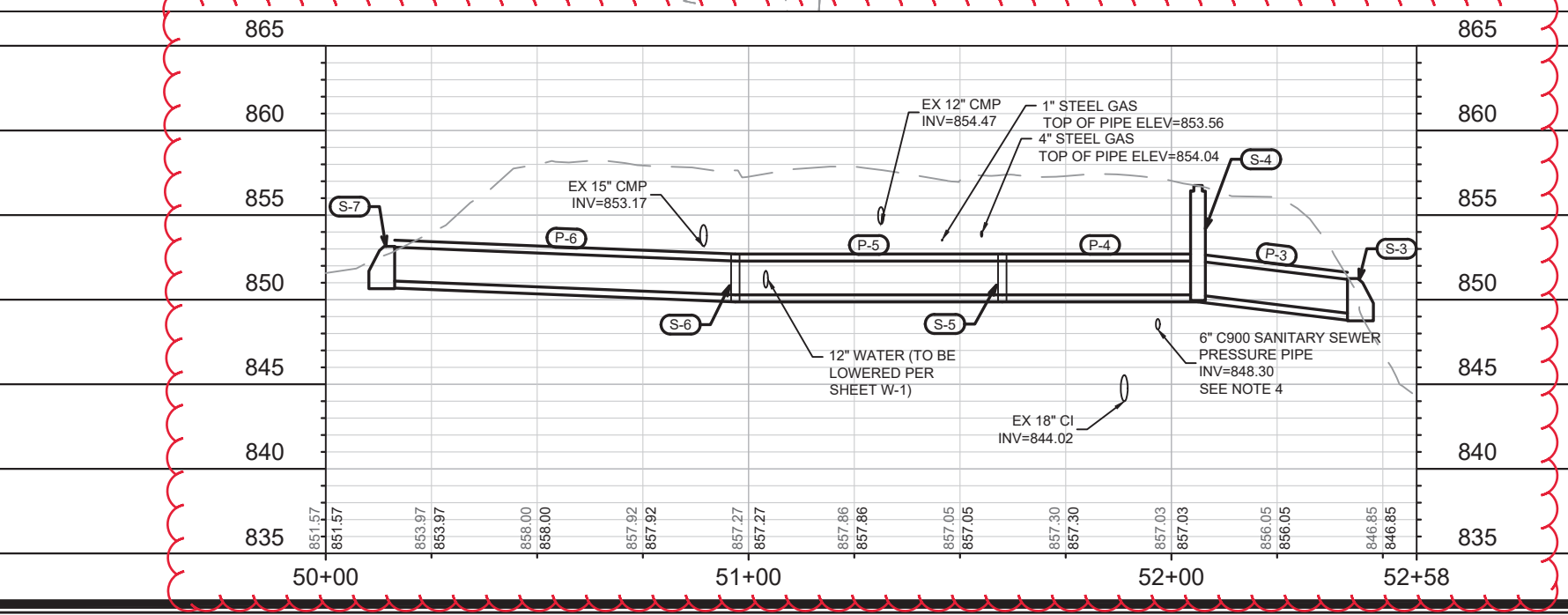
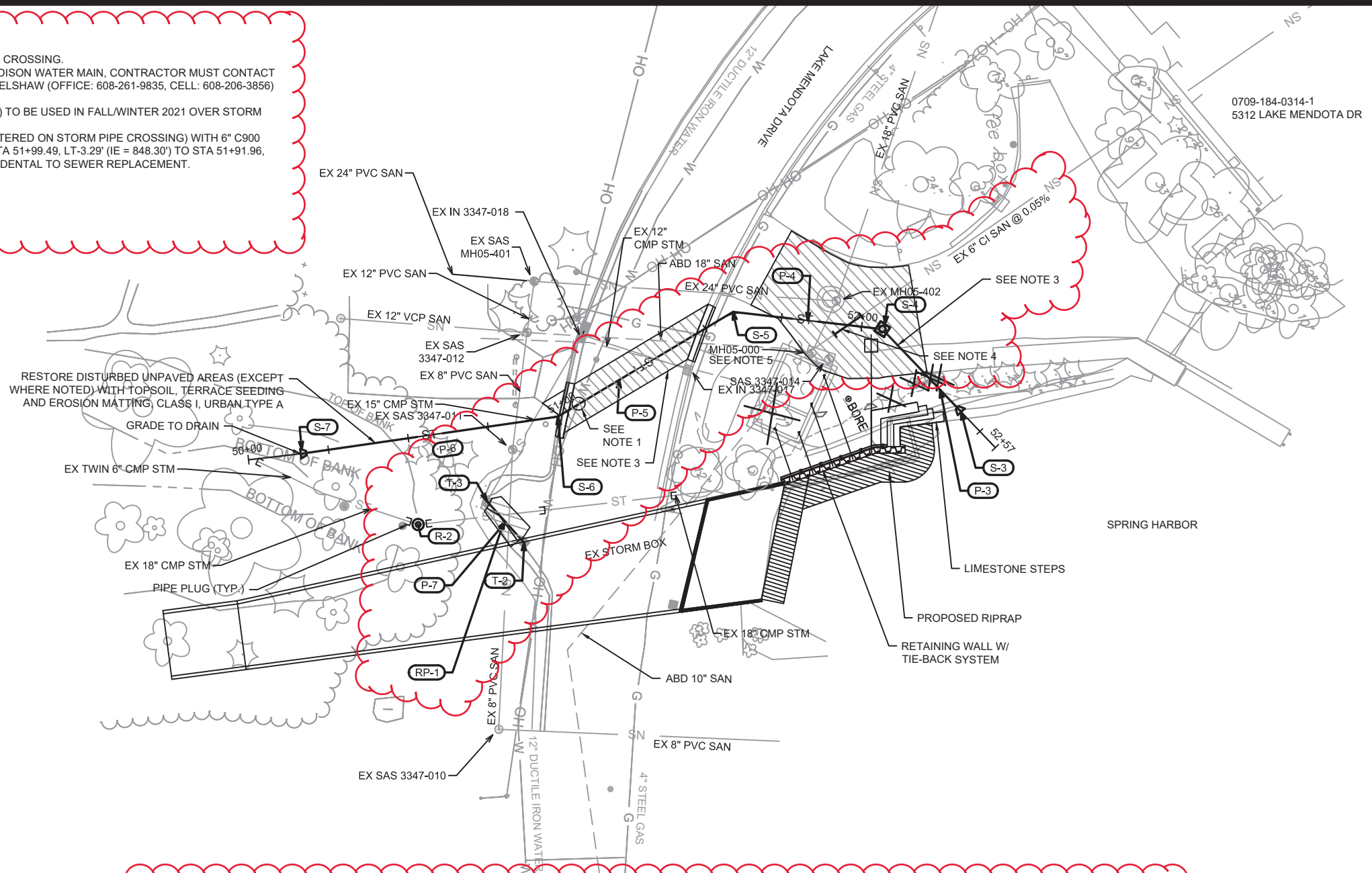
STORM SEWER AND ROAD REPAIRS
SPRING HARBOR OUTFALL REPAIR
CITY OF MADISON



12154
P-3

NOTES

1. SEE SHEET W-1 FOR DETAILS OF WATER/STORM PIPE CROSSING.
2. WHERE WORK MUST BE PERFORMED ON CITY OF MADISON WATER MAIN, CONTRACTOR MUST CONTACT WATER UTILITY CONSTRUCTION SUPERVISOR JEFF BELSHAW (OFFICE: 608-261-9835, CELL: 608-206-3856) AT LEAST ONE WEEK PRIOR TO WORK.
3. UTILITY TRENCH PATCH TEMPORARY (BID ITEM 50229) TO BE USED IN FALL/WINTER 2021 OVER STORM SEWER CORRIDOR UNDER STREET/PARKING LOT.
4. REPLACE 10' EXISTING 6" CI SANITARY LATERAL (CENTERED ON STORM PIPE CROSSING) WITH 6" C900 SANITARY SEWER LATERAL PRESSURE PIPE FROM STA 51+99.49, LT-3.29' (IE = 848.30') TO STA 51+91.96, RT-3.29' (IE = 848.30'). STRONGBACK FERNCOS (2) INCIDENTAL TO SEWER REPLACEMENT.
5. MMSD MH05-000
IE (6" CI) (N) = 848.29'
IE (18" VCP) (N) = 844.19'



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12154
MADISON, WI
8525
CONTRACT NO:

PLAN AND PROFILE - STORM SEWER
SPRING HARBOR OUTFALL REPAIR
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12154
U-1

STORM SEWER SCHEDULE

*REV 8/30/21 LES

SPRING HARBOR OUTFALL REPAIR	SHEET NO.
PROJECT NO. 12154	U-STM
STORM SEWER SCHEDULE	
CITY OF MADISON	

PROPOSED STORM STRUCTURES

STRUC. NO.	STATION	LOCATION (OFFSET)	TYPE	TOP OF CASTING	E.I.	DEPTH	NOTES
* S-1	51+02.18	RT-41.38	SADDLED 3X3 STORM SAS	857.61	851.00	6.61	FP; SEE SPEC. NOTE 1
* S-2	51+25.99	RT-9.64	3X3 STORM SAS	857.53	853.52	4.01	W/ R-1550-0054
* S-2A	51+15.40	LT-17.27	H INLET	857.57	854.14	3.43	FP; W/ R-3067-7004VB
S-3	52+41.63	CL	24-IN RCP AE W/ GATE	-	849.20	-	
* S-4	52+06.29	LT-0.63	3X3 STORM SAS	856.75	850.28	6.47	W/ R-1550-0054
* S-5	51+59.99	LT-0.56	PRECAST 24-IN 37.7° RCP BEND	-	850.28	-	SEE BID ITEM 90036
* S-6	50+96.85	RT-0.20	PRECAST 24-IN 22.8° RCP BEND	-	850.28	-	SEE BID ITEM 90037
S-7	50+16.30	CL	24-IN RCP AE W/ GATE	-	851.10	-	

PROPOSED STORM PIPES

PIPE NO.	FROM (DNSTM)	TO (UPSTM)	DISCH. E.I.	INLET E.I.	PLAN (PAY) LGTH (FT)	PIPE LGTH (FT)	SLOPE (%)	PIPE SIZE	TYPE	NOTES
* P-1	S-1	S-2	853.32	853.52	40	37	0.55%	18"	RCP	
* P-2	S-2	T-1	854.01	854.56	13	10	5.74%	12"	RCP	
* P-2A	S-2	S-2A	854.01	854.14	29	26	0.50%	12"	RCP	
* P-3	S-3	S-4	849.2	850.28	35	34	3.15%	24"	RCP	
* P-4	S-4	S-5	850.28	850.28	47	45	0.00%	24"	RCP	
* P-5	S-5	S-6	850.28	850.28	63	63	0.00%	24"	RCP	
* P-6	S-6	S-7	850.28	851.1	81	81	1.02%	24"	RCP	
* P-7	T-2	T-3	851.74	852.18	17	15	3.00%	15"	RCP	

PROPOSED STORM TAPS

TAP NO.	STRUC. NO.	STATION	LOCATION (OFFSET)	TOP OF CASTING	E.I.	DEPTH	NOTES
* T-1	IN 3347-017	51+39.41	RT-8.88	857.46	854.56	2.90	12" RCP
* T-2	EX. SADDLED STRUC	50+80.91	RT-37.20	856.25	851.74	4.51	
* T-3	EX. IN 3347-019	50+71.38	RT-22.85	856.03	852.18	3.85	

PROPOSED STORM REMOVALS

REMOVAL NO.	STRUC. NO.	STATION	LOCATION (OFFSET)	TOP OF CASTING	E.I.	DEPTH	NOTES
* R-1	EX. IN 3347-018	51+14.21	LT-15.70	857.57	854.14	3.43	REPLACE W/ S-2A
R-2	EX. STM STRUC	50+49.16	RT-26.97	858.26	-	-	
* R-3	EX. IN 3347-019	50+71.38	RT-22.85	856.03	852.18	3.85	
* R-4	EX. SADDLED STRUC	50+80.91	RT-37.20	856.25	851.74	4.51	

PROPOSED STORM PIPE REMOVALS

REMOVAL NO.	REMOVE FROM	REMOVE TO	LGTH (FT)	PIPE SIZE	PIPE TYPE	PAID (Y/N)	NOTES
* RP-1	T-2	T-3	17	15"	CMP	N	

SPECIFIC NOTES:

1) SADDLED SAS TO BE CONSTRUCTED PER CITY OF MADISON S.D.D. 5.7.9A (TYPE B); W/ R-1550-0054 CASTING; DEPTH TO BE VERIFIED IN THE FIELD

STANDARD NOTES:

- PLAN LENGTH (PAY LENGTH) IS FROM CENTER OF STRUCTURE TO CENTER OF STRUCTURE. PIPE LENGTH IS ACTUAL LENGTH OF PIPE FROM STRUCTURE WALL TO STRUCTURE WALL. SLOPE CALCULATED USING PIPE LENGTH.

- ABBREVIATIONS: AE = APRON ENDWALL; RCP = REINFORCED CONCRETE PIPE; HERCP = HORIZONTAL ELLIPTICAL REINFORCED CONCRETE PIPE; DNA = DOES NOT APPLY; SAS = SEWER ACCESS STRUCTURE; LP = LOW POINT INLET STRUCTURE; FP = FIELD POURED STRUCTURE; TR = TOP OF CONCRETE ROOF; NCM = NO CROWN MATCH FOR PIPES; UD = UNDERDRAIN

- APPROXIMATE DISCHARGE E.I. GIVEN, ADJUST E.I. AND PIPE SLOPE IN THE FIELD.

- TOP OF CASTING GRADE GIVEN IS THE TOP OF CURB FOR INLET STRUCTURES AND THE FLOWLINE OF THE CLOSED CASTING FOR SAS's.

- ALL REINFORCED CONCRETE PIPES TO BE CLASS III UNLESS OTHERWISE NOTED.

- SURVEYOR TO CONFIRM THAT ALL INLET STATION / OFFSETS LINE UP WITH PROPOSED CURB AND GUTTER.

- ALL FIELD POURED SAS STORM STRUCTURES SHALL BE CONSTRUCTED IN ACCORDANCE WITH STANDARD DETAIL DRAWING 5.7.3. ALL PRECAST SAS STORM STRUCTURES SHALL BE CONSTRUCTED IN ACCORDANCE WITH STANDARD DETAIL DRAWING 5.7.5.

- ALL STRUCTURES CALLED OUT AS FIELD POURED SHALL BE FIELD POURED. ALL OTHER STRUCTURES (NOT INDICATED AS FIELD POURED) SHALL BE SUBMITTED TO CITY ENGINEERING FOR APPROVAL IF PRECAST STRUCTURES ARE PREFERRED. CONTACT LAUREN STRIEGL OF CITY ENGINEERING AT (608) 266-4094 FOR PRECAST APPROVALS, FAX SHOP DRAWINGS TO (608)264-9275, OR EMAIL SHOP DRAWINGS TO LSTRIEGL@CITYOFMADISON.COM.

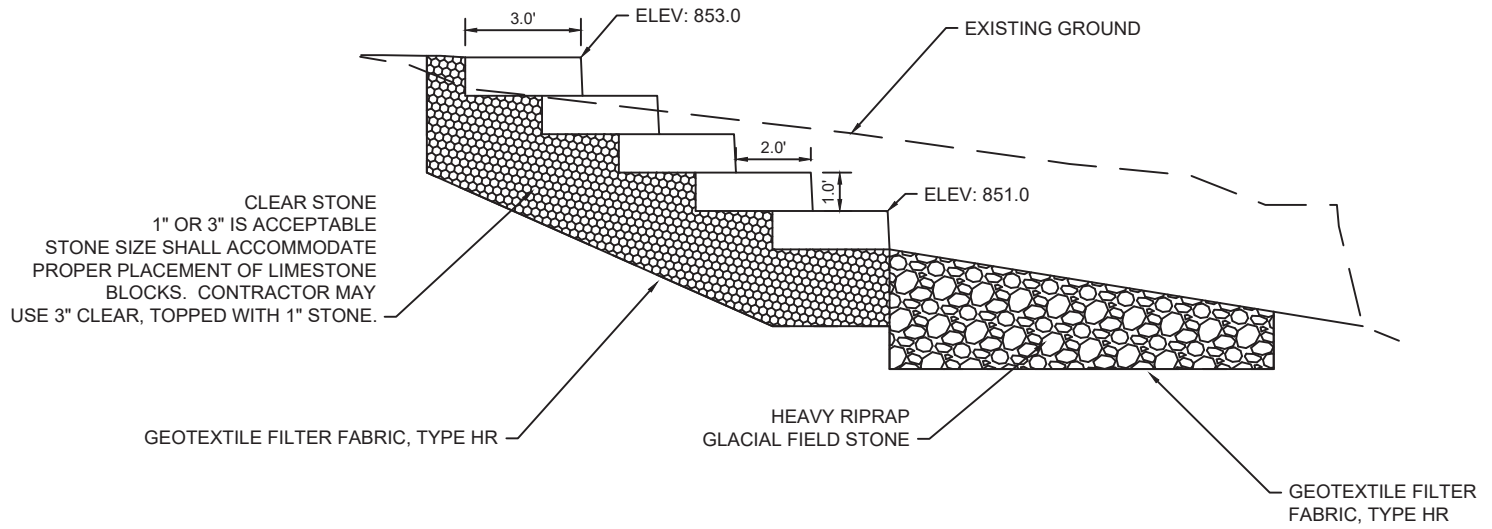
- ALL REBAR FOR FIELD POUR STRUCTURES SHALL BE EPOXY COATED. ANY EXPOSED STEEL SHALL BE TOUCHED UP OR RECOATED PRIOR TO USE.

LIMESTONE STEP SIZING:

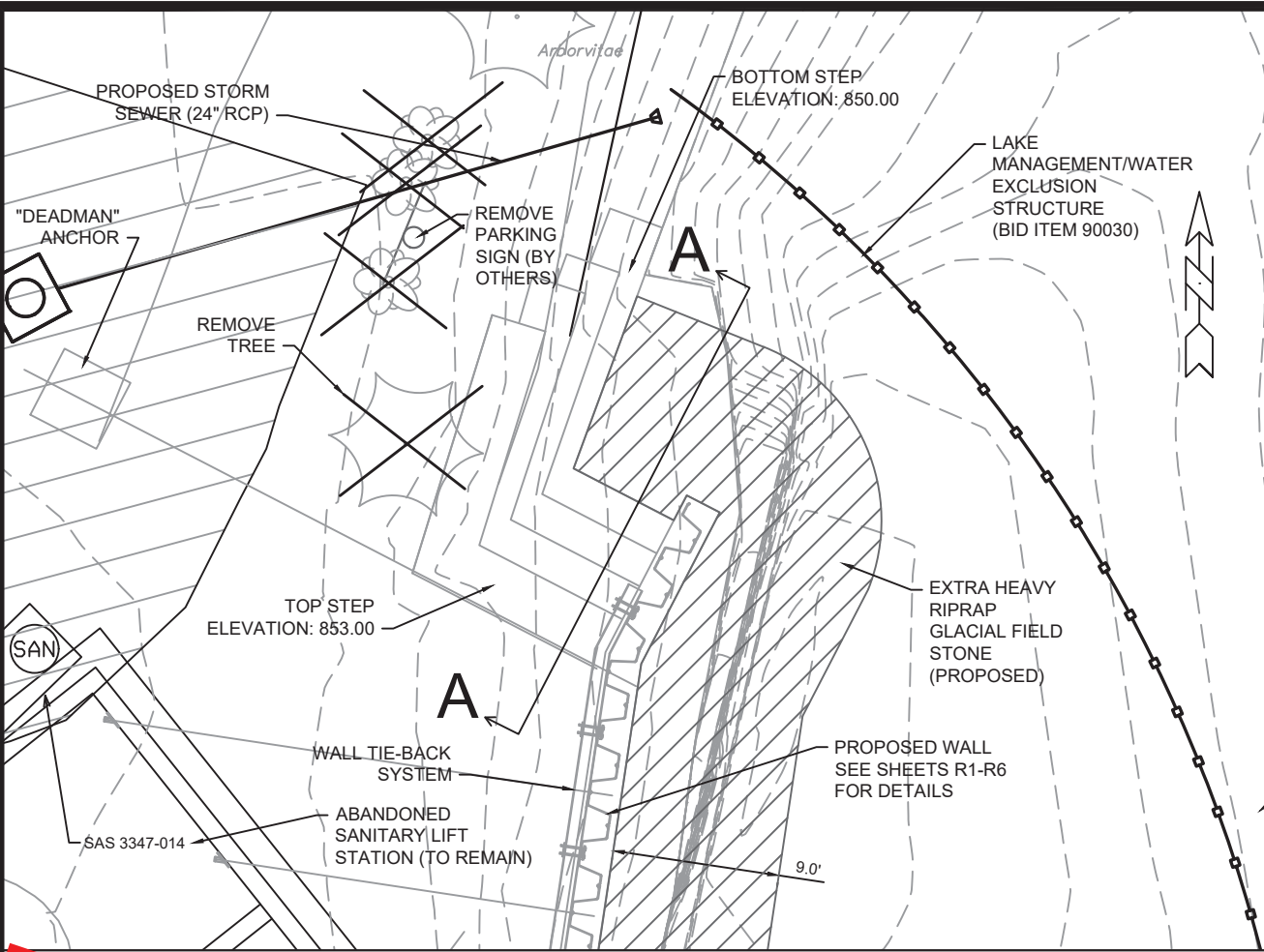
1. HEIGHT: 10" - 14"
2. WIDTH: 32" - 38"
3. LENGTH: 24" - 48"
4. SURFACES CAN BE EITHER SNAPPED OR CUT, PROVIDED PLACEMENT GUIDELINES LISTED BELOW ARE MET. CHISELING OF INDIVIDUAL STONES MAY BE NECESSARY.

PLACE STONES SUCH THAT:

- 60% OF ALL JOINED FACES ARE IN DIRECT CONTACT
- MAXIMUM GAP BETWEEN STONES IS < 1.5"
- VARIATION ALONG EACH STEP LAYER IS < 1" OR WITHIN THE NATURAL VARIATION OF THE STONE SURFACE
- SEAMS SHALL OVERLAP AT LEAST 30% OF THE STONE BELOW IT

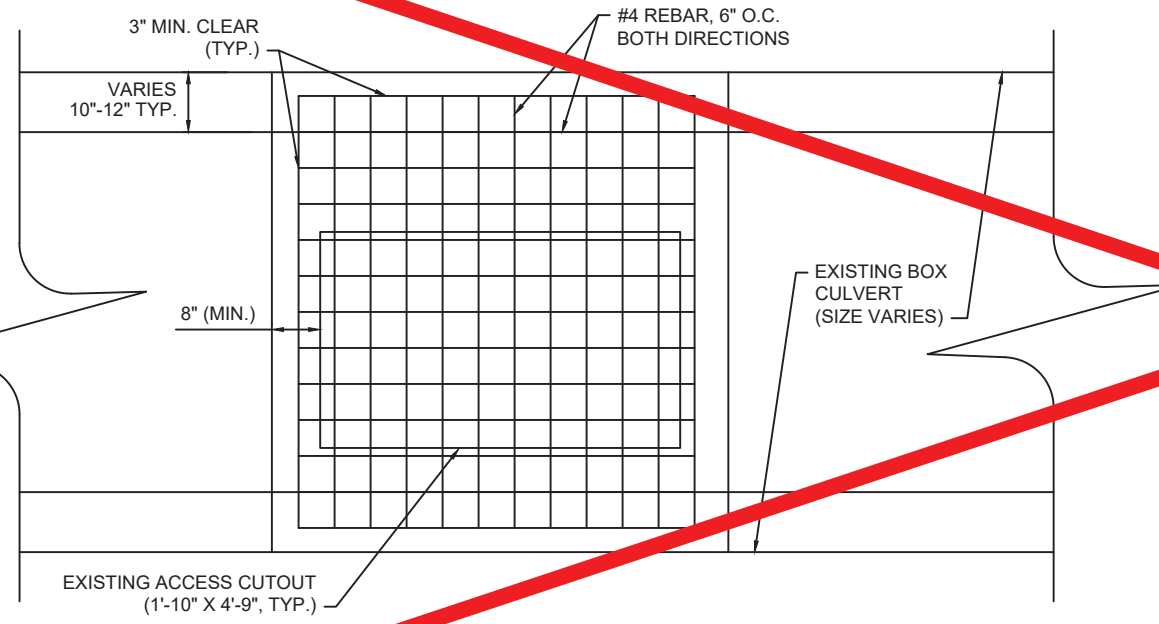


SECTION A-A: LIMESTONE STEPS CROSS-SECTION

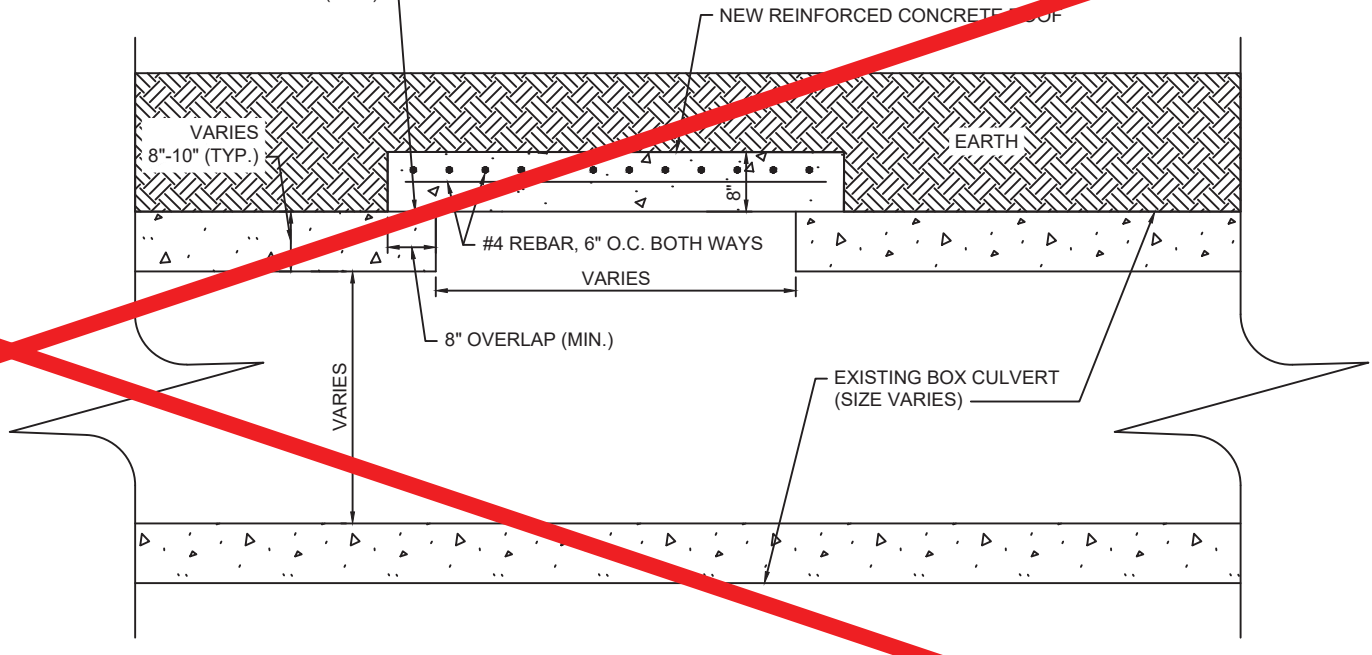


SEALTIGHT COLD PLASTIC SEWER JOINT COMPOUND OR AIR ENTRAINED TYPE M OR S MORTAR (PER THE CITY OF MADISON STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION) (TYP.)

NOTE: NEW ROOFS FOR TYPE I RCBC ROOF REPAIR SHALL BE POURED SEPARATELY FROM THE EXISTING BOX CULVERT. NEW ROOFS SHALL BE POURED ON A LEVEL, FLAT SURFACE.



TOP VIEW (NOT TO SCALE)



SIDE VIEW (NOT TO SCALE)

DETAIL: RCBC ROOF REPAIR, TYPE I (NO CASTING)

MARK	REVISION	DATE	BY	SCALE
12154	LES	04-12-2021	LES	NOT TO SCALE

12154
MADISON, WI
8525
CONTRACT NO:

DETAILS
SPRING HARBOR OUTFALL REPAIR
CITY OF MADISON



LIST OF DRAWINGS

1. GENERAL PLAN & ELEVATION
2. TYPICAL SECTIONS & RETAINING WALL DETAILS
3. RETAINING WALL DETAILS 2
4. ANCHOR DETAILS
5. RAILING DETAILS
6. SUBSURFACE EXPLORATION

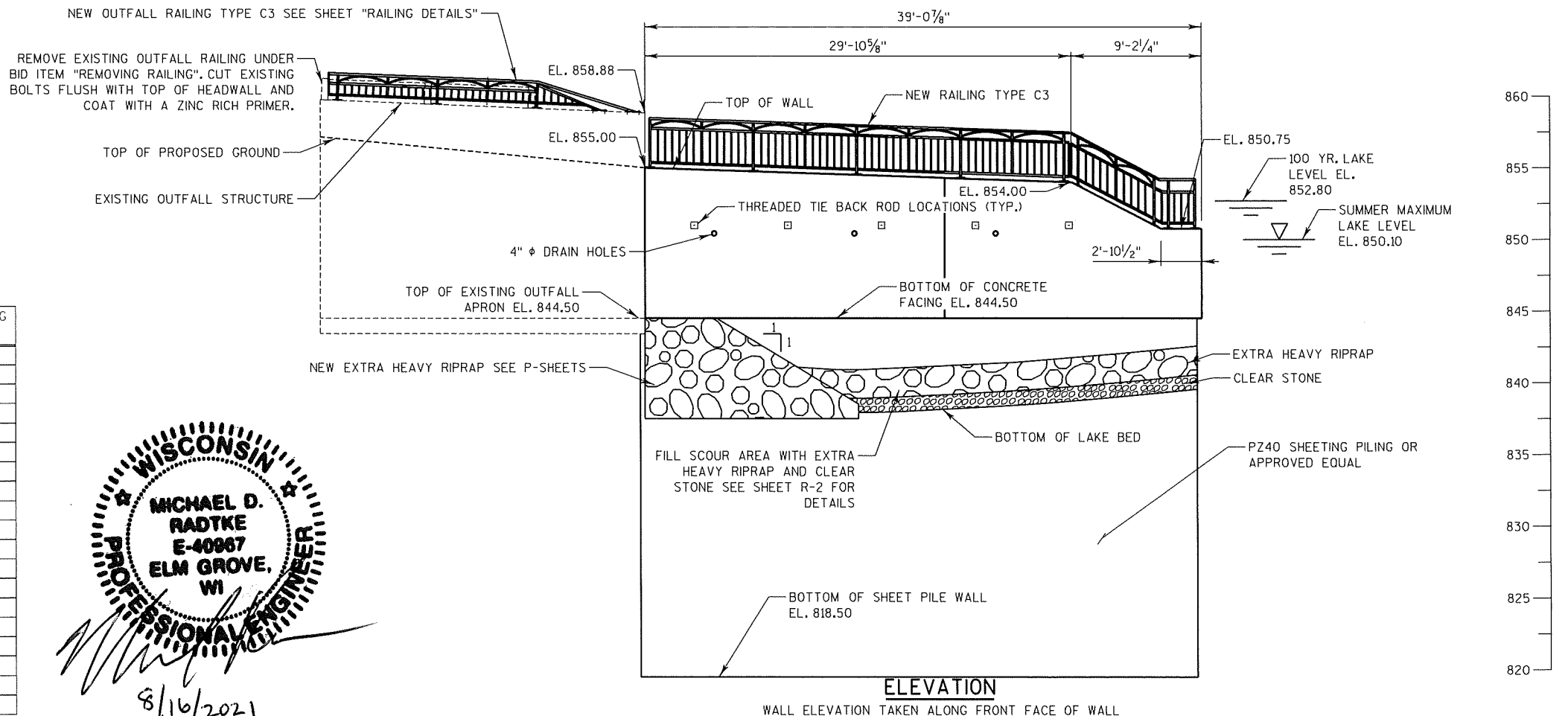
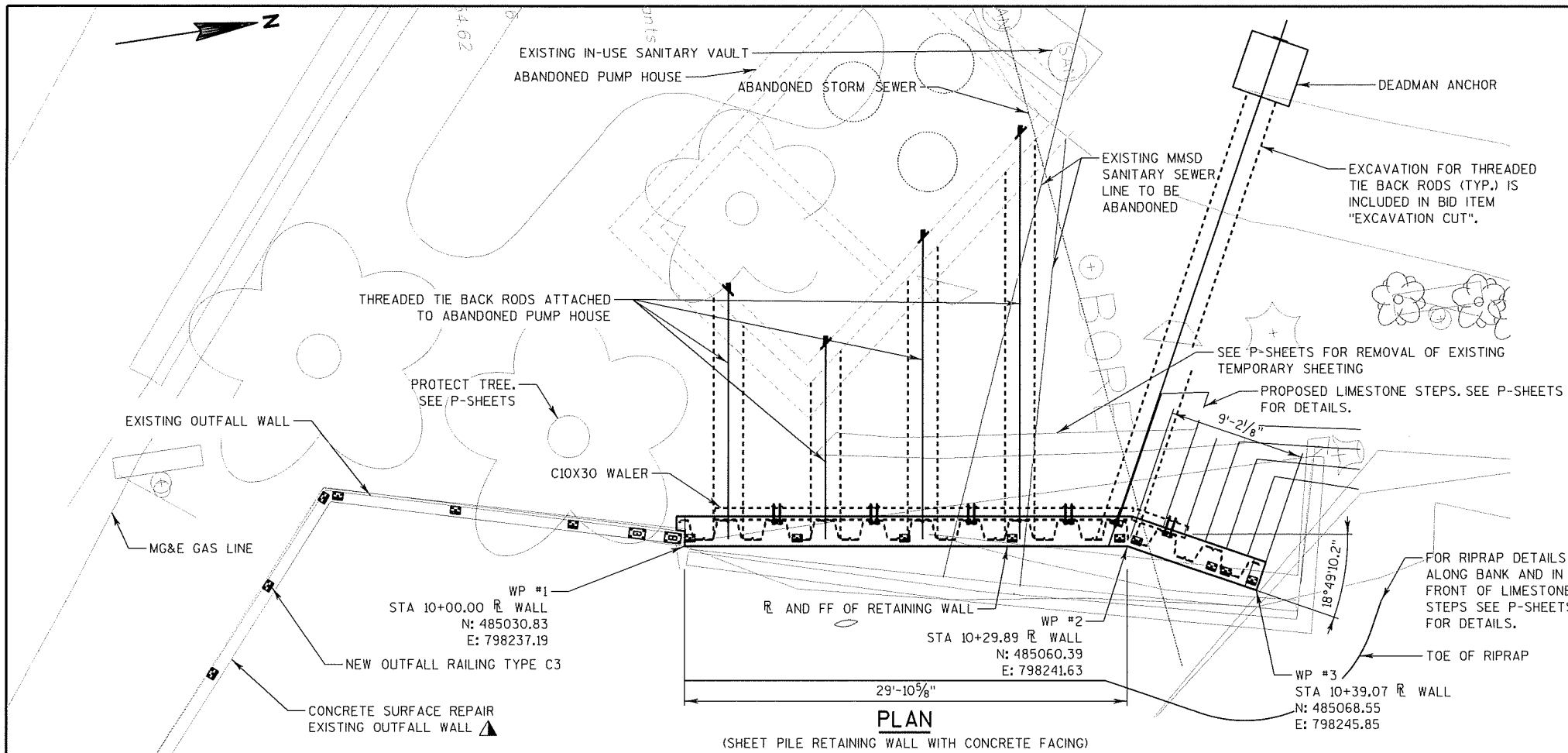
DESIGN DATA

MATERIAL PROPERTIES:

CONCRETE MASONRY $f'_c = 3.5$ KSI
 BAR STEEL REINFORCEMENT $f_y = 60$ KSI
 STEEL SHEET PILING (HOT-ROLLED) $f_y = 50$ KSI
 STRUCTURAL CHANNELS & PLATES
 ASTM A709 GRADE 36 $f_y = 36$ KSI
 THREADED TIE BACK RODS
 ASTM A722 GRADE 150 $f_y = 150$ KSI
 STRUCTURAL MEMBERS GALVANIZED A153
 HARDWARE GALVANIZED A153 CLASS C

GENERAL NOTES

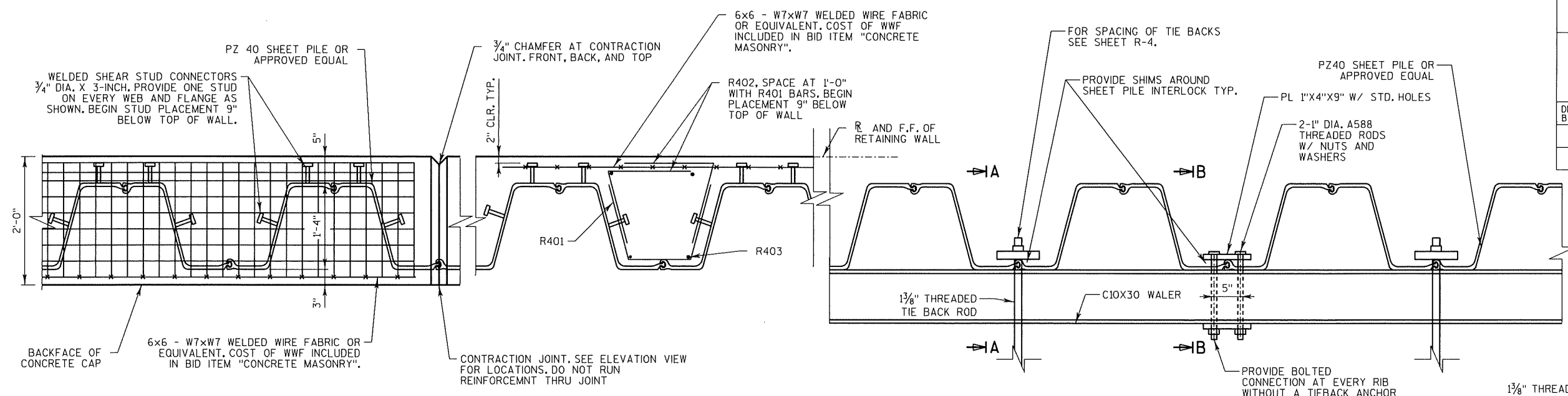
- DRAWINGS SHALL NOT BE SCALED.
- ALL DIMENSIONS ARE IN FEET AND INCHES UNLESS OTHERWISE NOTED.
- ALL STATIONS AND ALL ELEVATIONS ARE IN FEET.
- ALL REINFORCING BARS SHALL BE EPOXY COATED.
- THE FIRST OR FIRST TWO DIGITS OF THE BAR MARK SIGNIFIES THE BAR SIZE.
- ALL WELDED WIRE FABRIC SHALL BE UNCOATED.
- ALL CONCRETE EDGES TO BE BEVELED $\frac{3}{4}$ " UNLESS NOTED OTHERWISE.
- HOT DIP GALVANIZE THREADED TIE BACK RODS, WALERS AND HARDWARE PER ASTM A153 SUPPLEMENTED BY ASTM F2329 OR MECHANICALLY ZINC COATED PER ASTM B695, CLASS 50.
- THE UPPER LIMIT OF EXCAVATION FOR THE RETAINING WALL SHALL BE THE PROPOSED GROUNDLINE BEHIND THE WALL.
- ALL SPACES EXCAVATED AND NOT OCCUPIED BY THE NEW STRUCTURE SHALL BE BACKFILLED WITH STRUCTURE BACKFILL PAID AS ITEM "SELECT FILL".
- ▲ CONCRETE SURFACE REPAIR QUANTITIES ARE AN ESTIMATE, ACTUAL QUANTITIES TO BE DETERMINED IN THE FIELD BY THE FIELD ENGINEER. DEFINE SURFACE REPAIR AREAS WITH A $\frac{1}{2}$ " SAWCUT.



TOTAL ESTIMATED QUANTITIES

BID ITEM NO.	BID ITEMS	UNIT	RETAINING WALL
20101	EXCAVATION CUT	CY	350
20130	UNDERDRAIN	LF	40
20205	SELECT FILL	CY	169
20217	CLEAR STONE	TON	26
20232	EXTRA HEAVY RIPRAP	TON	23
20233	RIPRAP FILTER FABRIC, TYPE HR	SY	56
30121	EPOXY COATED BAR STEEL REINFORCNG	LBS	899
30450	CONCRETE RETAINING WALL	SF	367
90000	WELDED STUD SHEAR CONNECTORS 3/4 X 3-INCH	EACH	350
90001	PZ40 SHEET PILE DELIVERED	SF	1,330
90002	PZ40 SHEET PILE DRIVEN	SF	1,330
90003	CONCRETE DEADMAN TIE BACK	EACH	5
90004	GEOTEXTILE FABRIC TYPE DF	SY	39
90005	CONCRETE SURFACE REPAIR	SF	18
90006	STRUCTURAL STEEL CARBON	LBS	2,580
90007	ADHESIVE ANCHORS	EACH	32
90008	RAILING STEEL TYPE C3	LF	126
90009	PROTECTIVE SURFACE TREATMENT	SF	460
90038	REMOVING RAILING	EACH	1

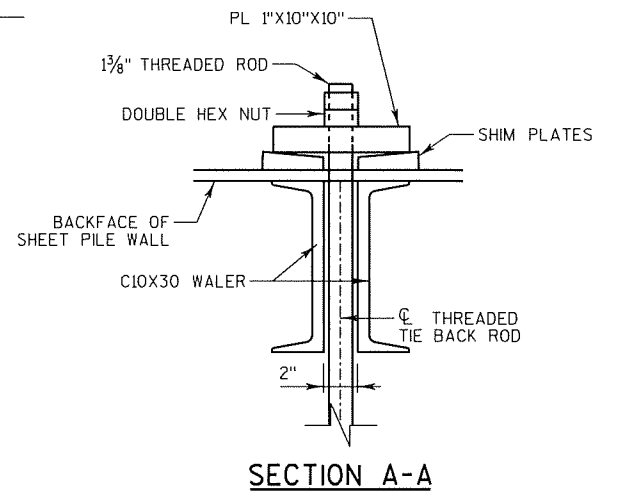
PROFESSIONAL ENGINEER
 MICHAEL D. RADTKE
 E-40867
 ELM GROVE, WI
 8/16/2021



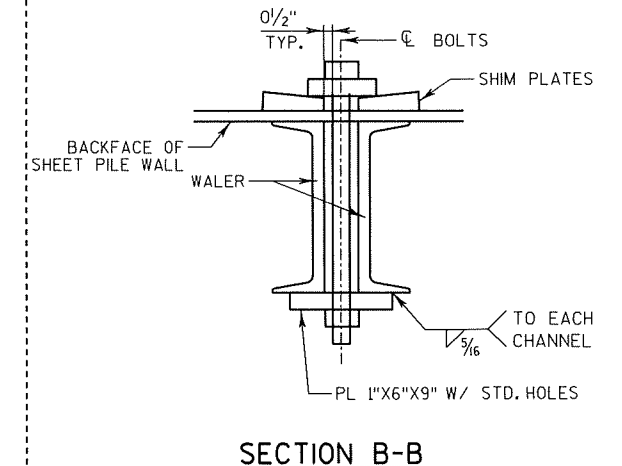
CONCRETE CAP DETAIL
(PLAN VIEW OF CAP)

WALL REINFORCING DETAIL
(PLAN VIEW BELOW CAP)

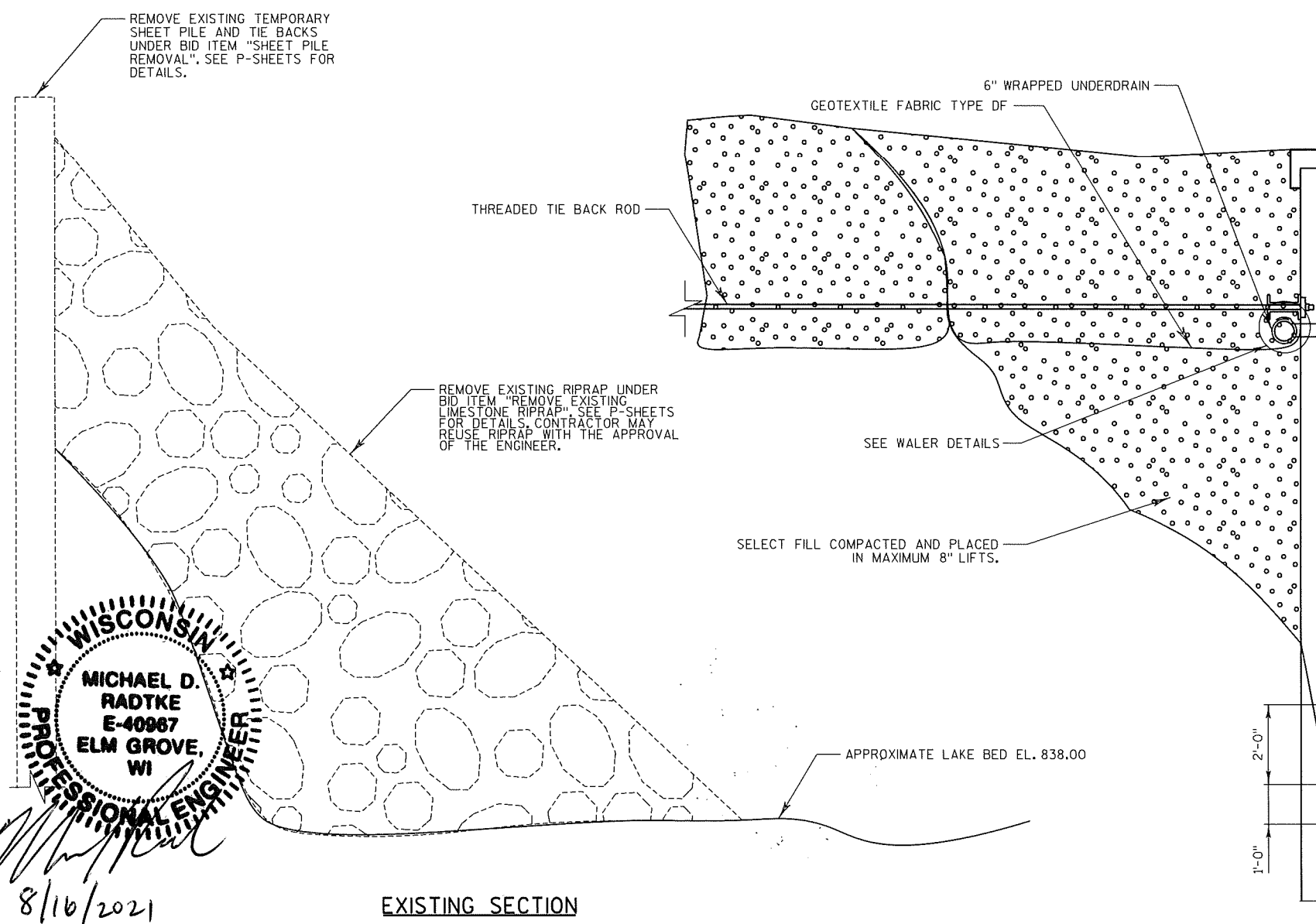
WALER DETAIL



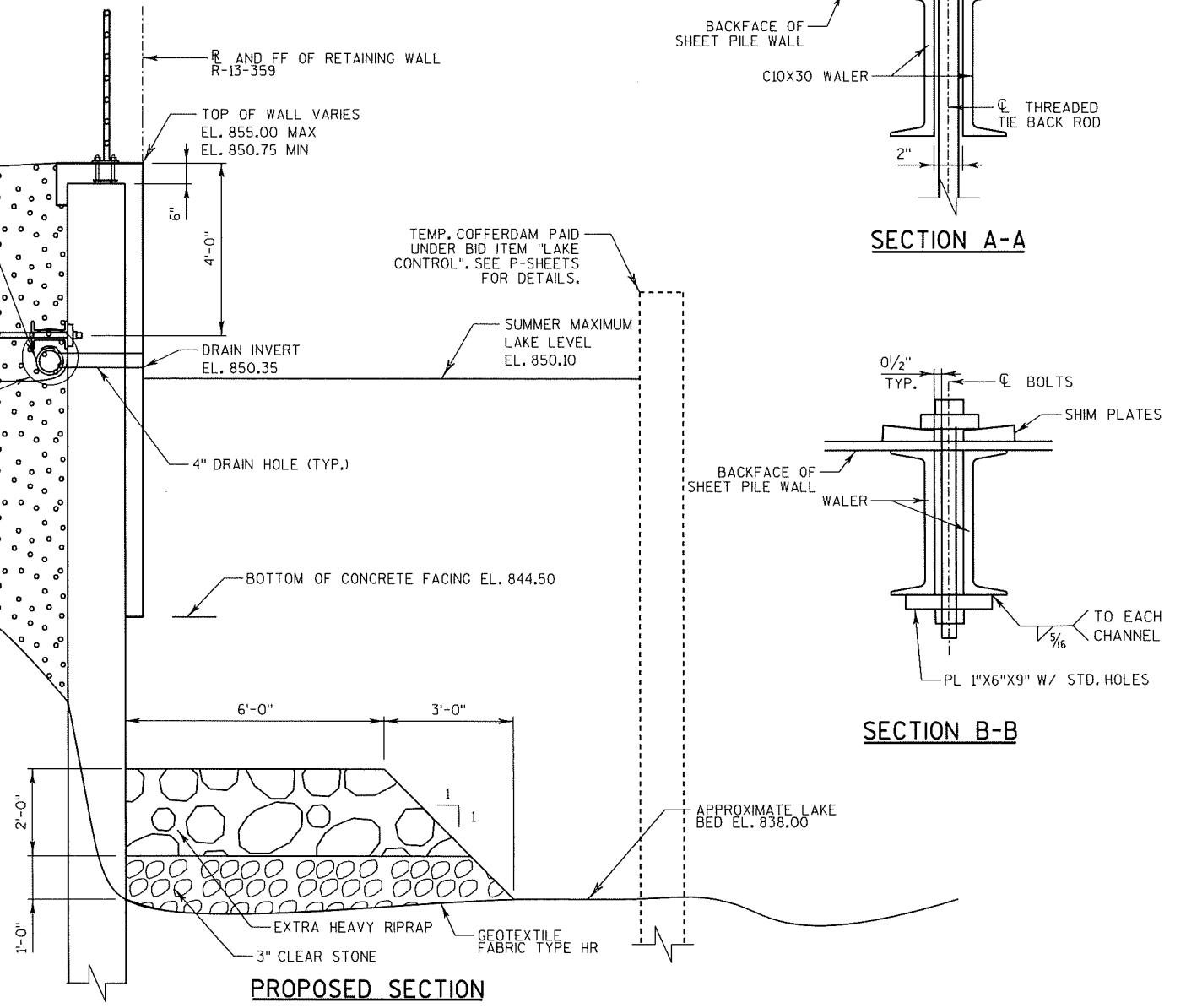
SECTION A-A



SECTION B-B

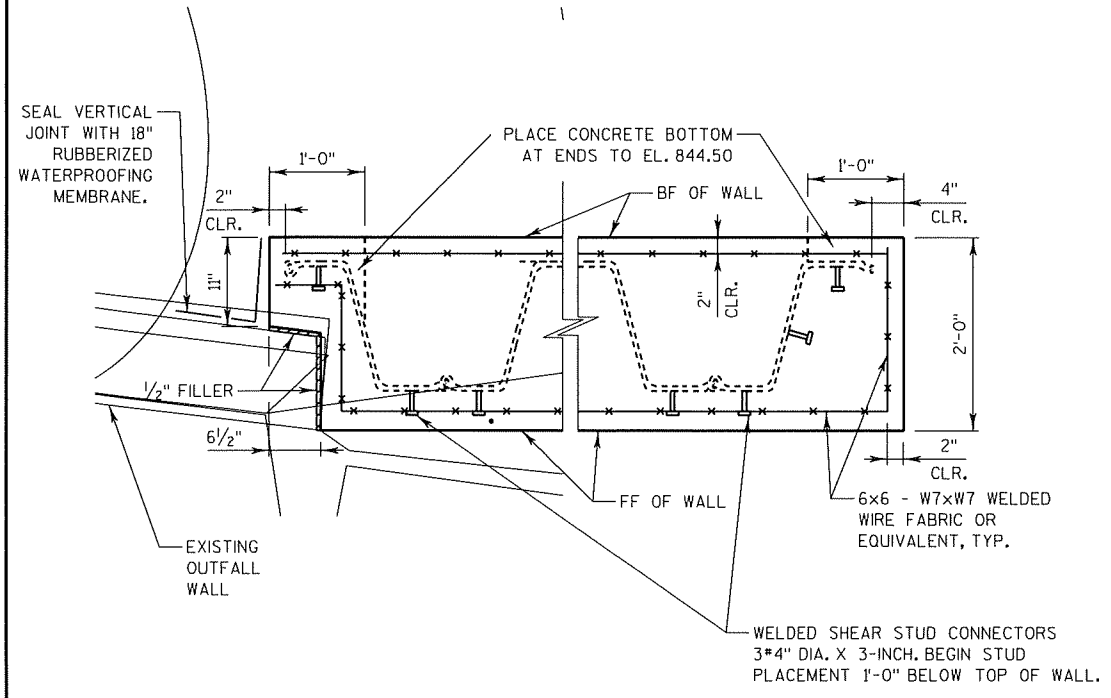


EXISTING SECTION

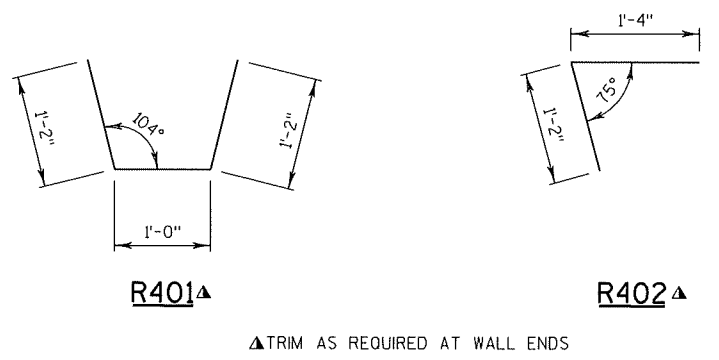


PROPOSED SECTION

WISCONSIN
 MICHAEL D. RADTKE
 E-40967
 ELM GROVE, WI
 PROFESSIONAL ENGINEER
 8/16/2021



END OF WALL DETAILS
 WALER AND RAILING C3 OMITTED FOR CLARITY



BILL OF BARS

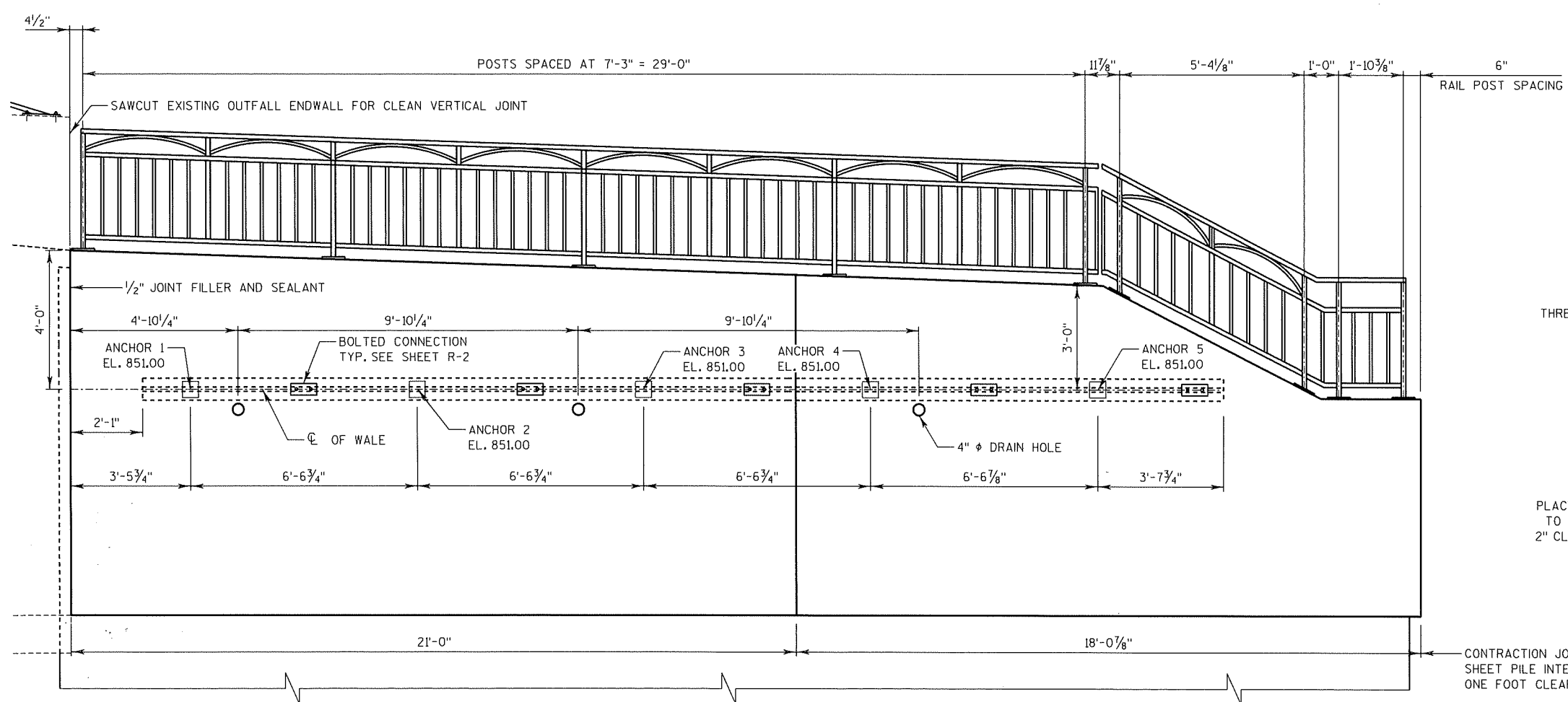
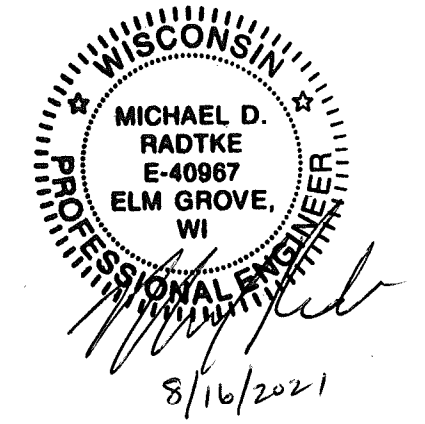
BAR MARK	COAT	NO.	LENGTH	BENT	LOCATION
R401	X	104	3'-2"	X	SHEET PILE HORIZ. STIRRUP
R402	X	208	2'-5"	X	SHEET PILE HORIZ. STIRRUP
R403	X	40	9'-9"		SHEET PILE VERTICAL
R404	X	4	7'-0"		SHEET PILE VERTICAL
R405	X	4	5'-6"		SHEET PILE VERTICAL
R406	X	20	3'-8"		DEADMAN ANCHOR

BAR SERIES ☆

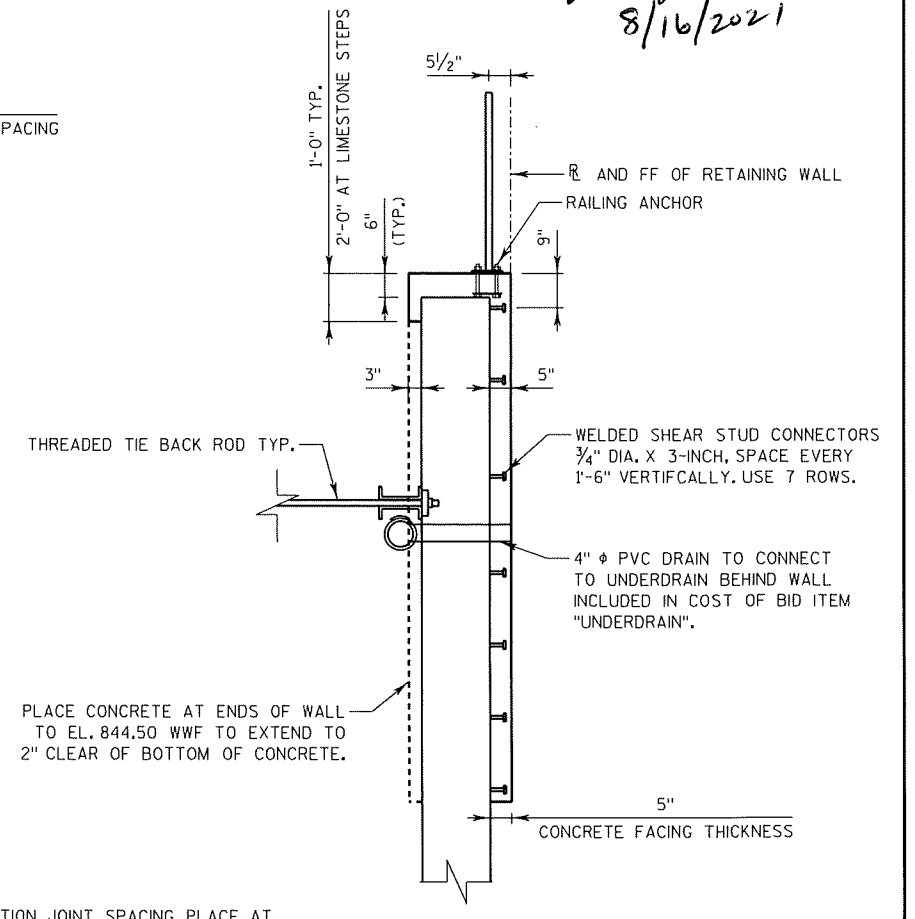
BAR MARK	NO. REQ'D	LENGTH
R403	4 SERIES OF 10	9'-3" TO 10'-3"

NOTES

THE WATERPROOFING MEMBRANE, JOINT FILLER, SEALANT, AND SAWCUTTING OF EXISTING OUTFALL, ARE CONSIDERED INCLUDED IN BID ITEM "CONCRETE RETAINING WALL".

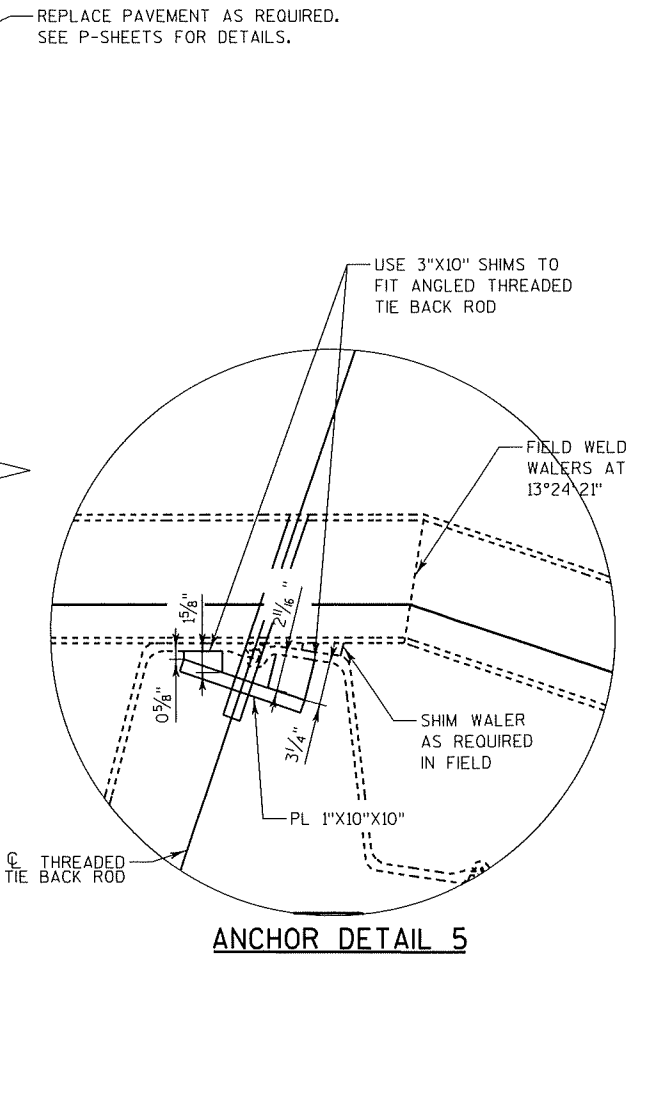
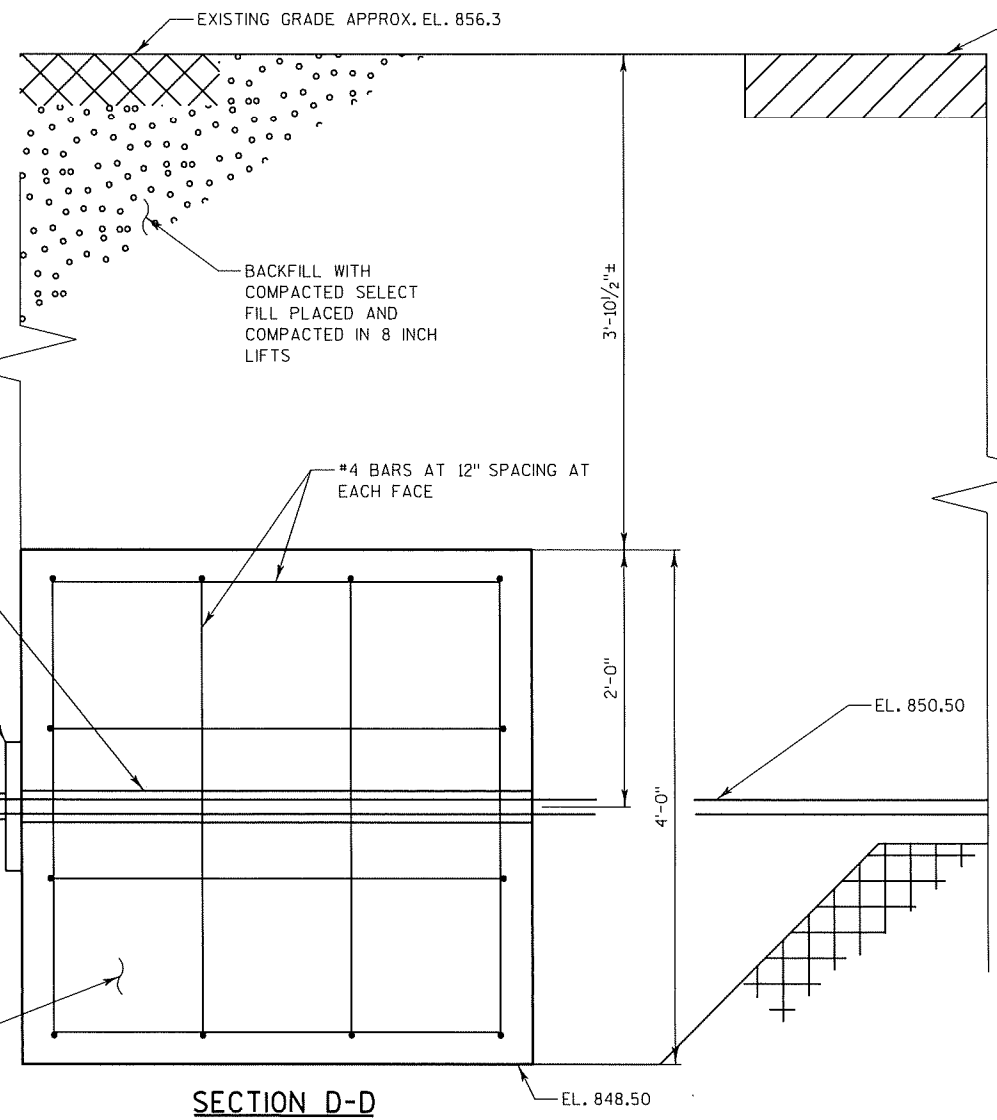
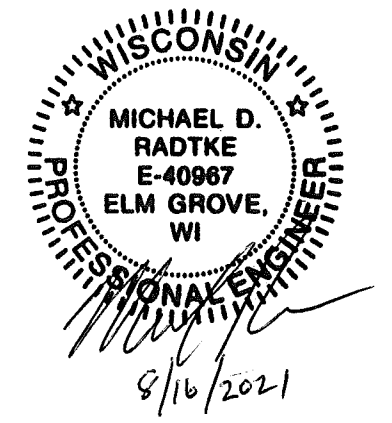
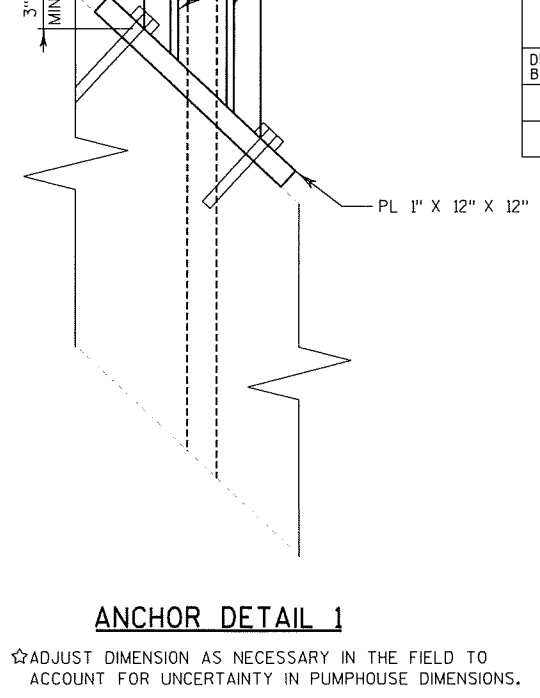
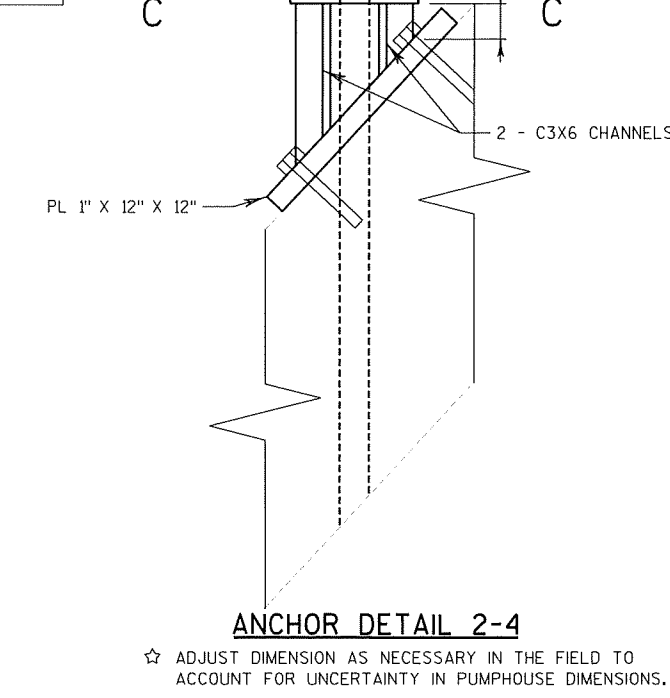
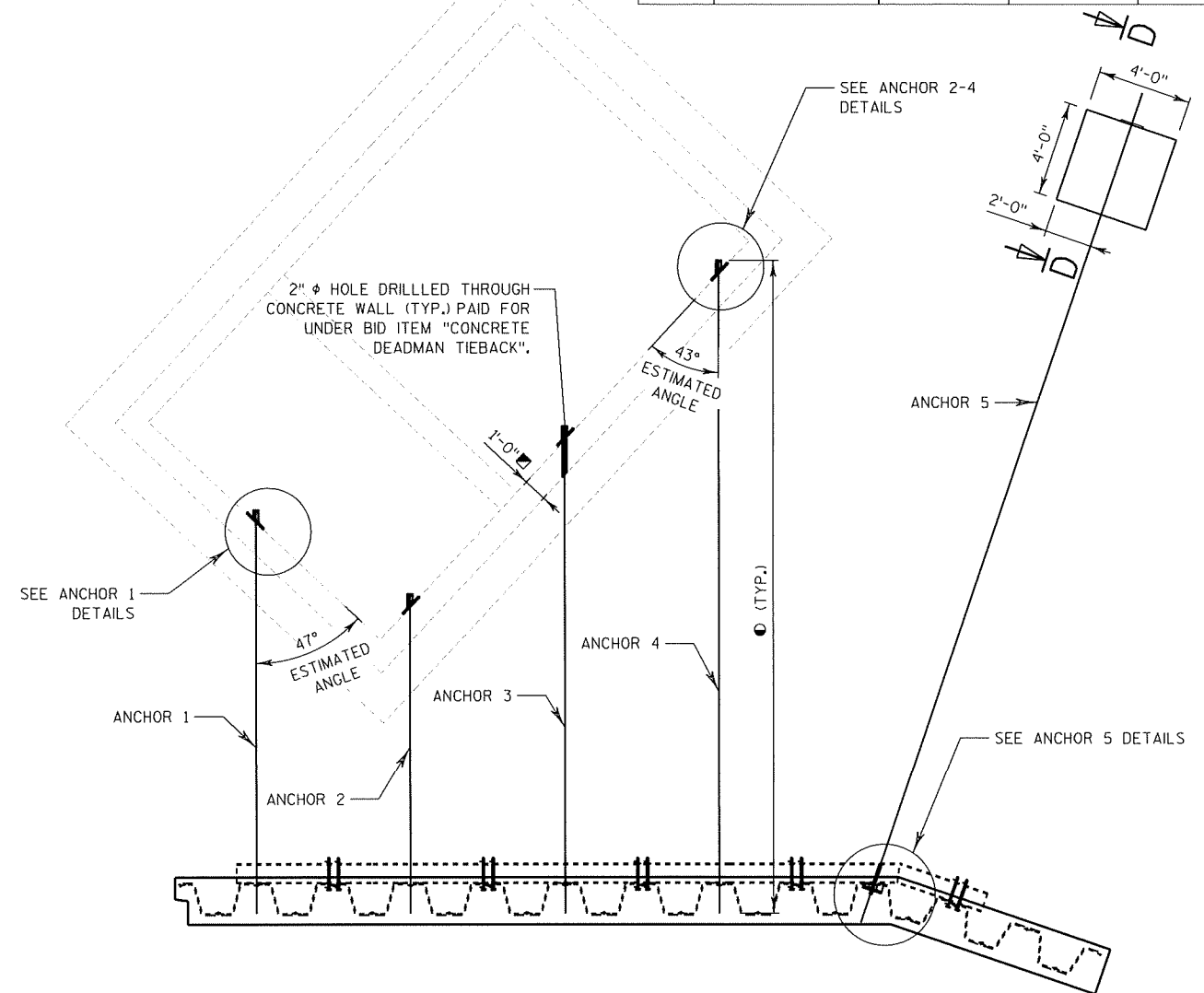
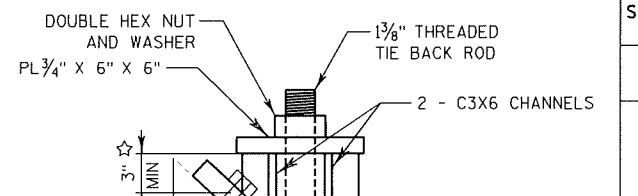
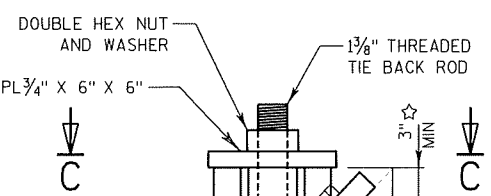


ANCHOR AND RAILING C3 ELEVATION



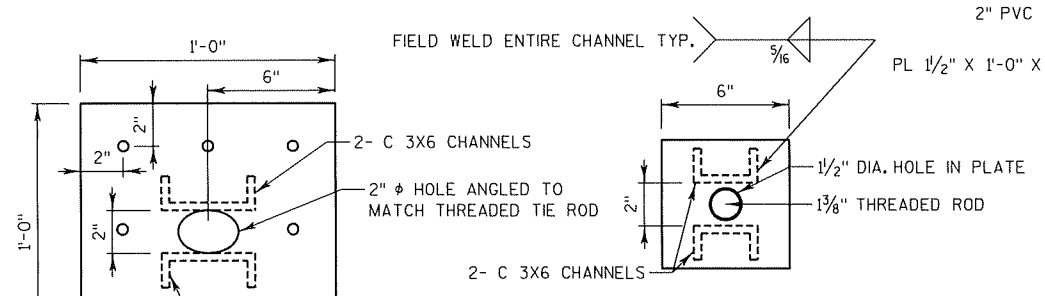
SECTION THRU WALL

ANCHOR	ESTIMATED TIEBACK LENGTH (FT)	TIEBACK DESIGN LOAD (K)	TIEBACK TEST LCAD (K)	STATION	E.E.V.
1	16.5	45	60	10+02.96	851.00
2	14	45	60	10+09.52	851.00
3	22	45	60	10+16.08	851.00
4	28	45	60	10+22.65	851.00
5	40	45	60	10+29.21	851.00



ANCHOR PLAN

ESTIMATED REINFORCED CONCRETE WALL THICKNESS
 BASED ON EXISTING 1931 PUMP STATION PLANS.

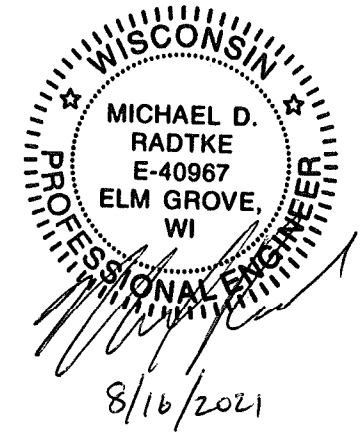
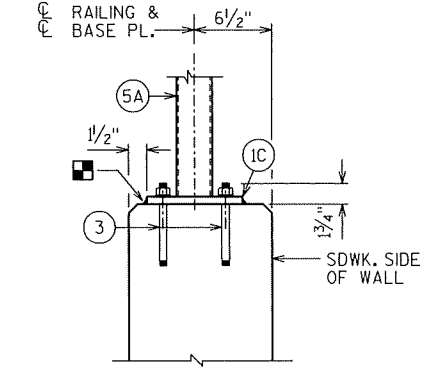
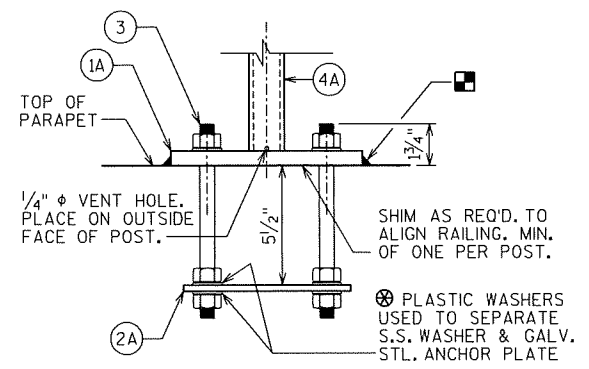
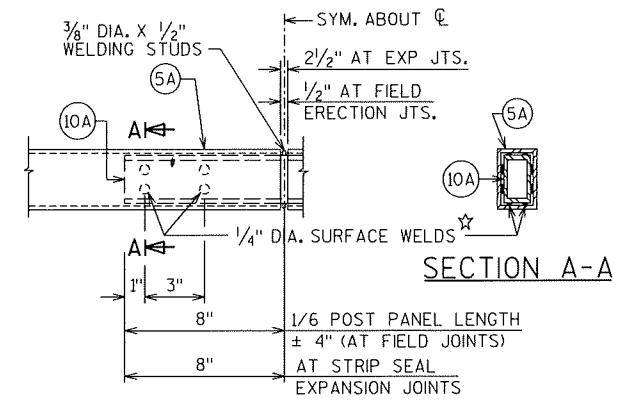
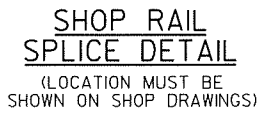
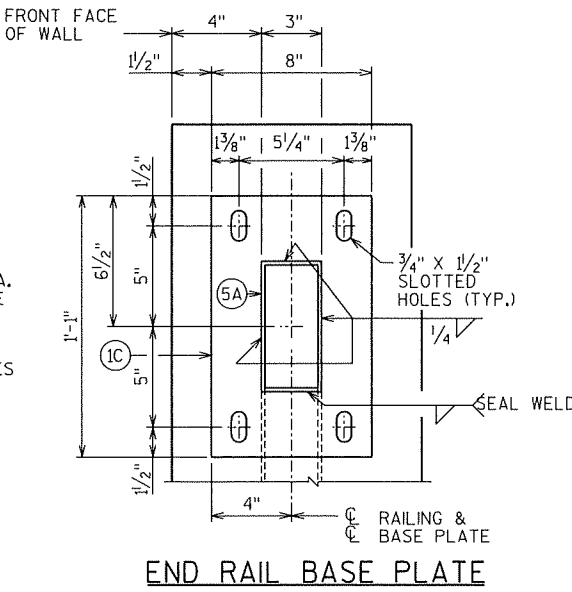
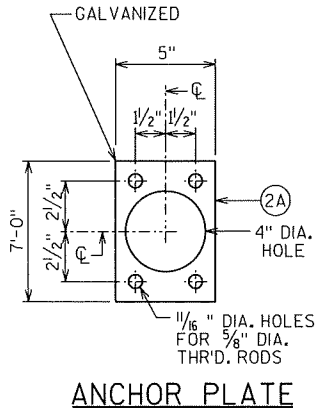
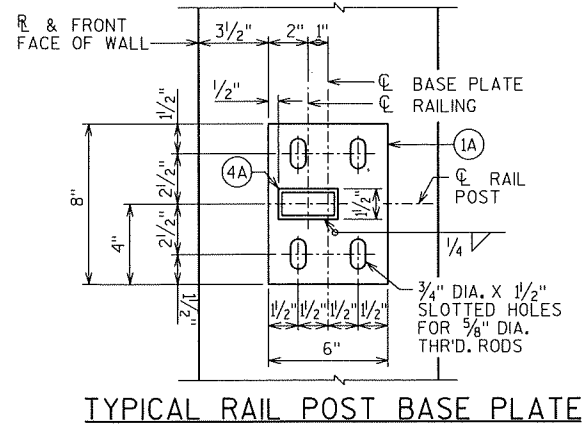


BASE PLATE DETAILS

SECTION C-C

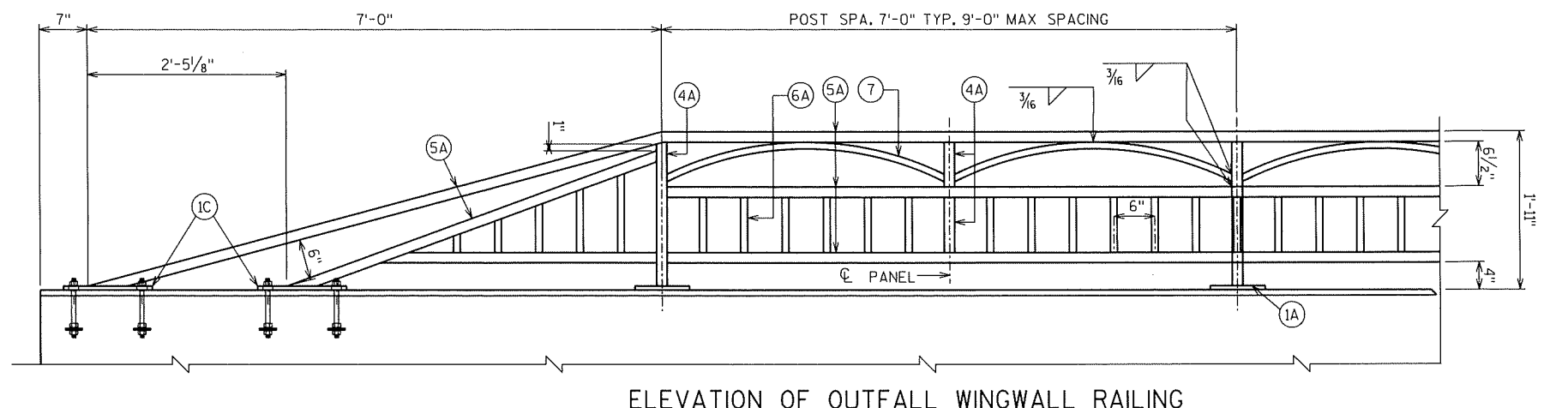
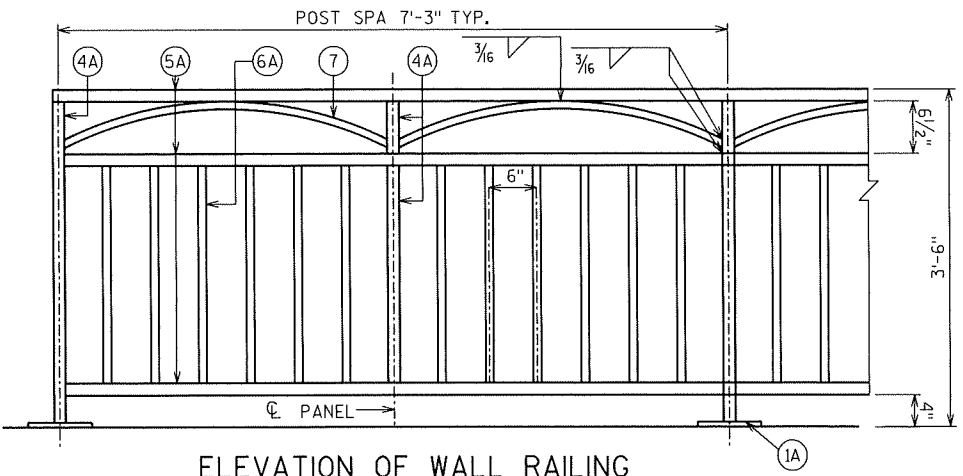
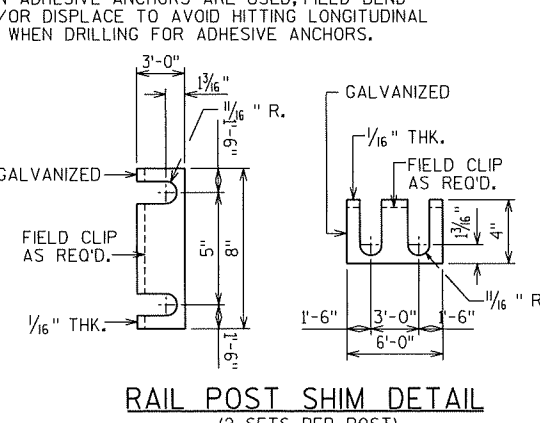
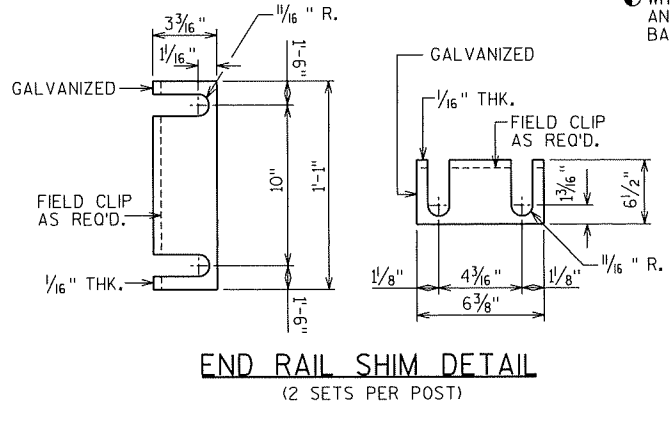
SECTION D-D

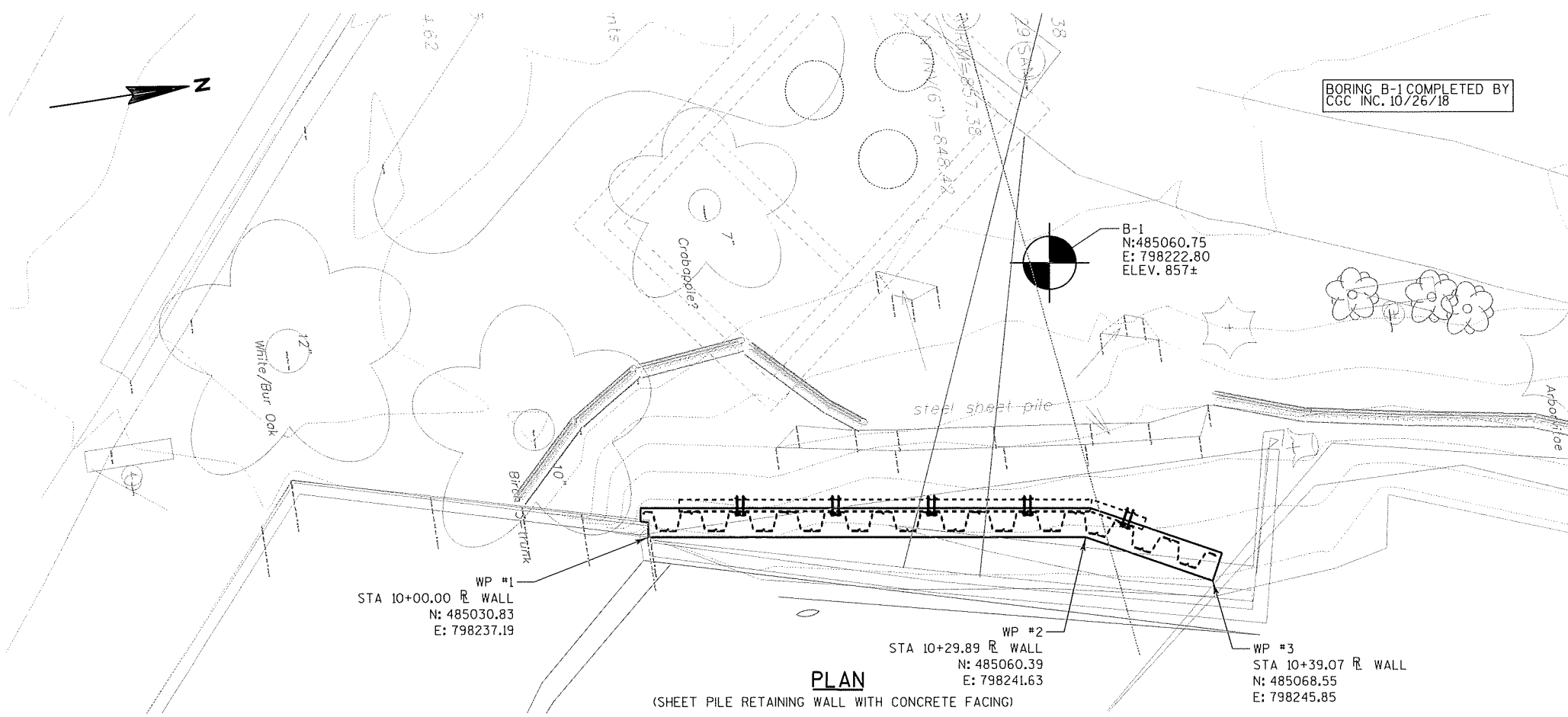
ANCHOR DETAIL 5



- LEGEND**
- (1A) PLATE 5/8" X 6" X 8" WITH 3/4" X 1/2" SLOTTED HOLES.
 - (1C) PLATE 5/8" X 8" X 1'-1" WITH 3/4" X 1/2" SLOTTED HOLES.
 - (2A) 1/4" X 5" X 7" ANCHOR PLATE WITH 1/16" DIA. HOLES FOR THR'D. RODS NO. 3.
 - (3) 3/8" DIA. X 9" LONG, TYPE 316 STAINLESS STEEL THREADED RODS (MIN. TENSILE STRENGTH = 70 KSI) WITH NUT AND WASHERS OF SAME ALLOY GROUP. ALTERNATIVE ANCHORAGE: CONCRETE ADHESIVE ANCHORS 5/8"-INCH. EMBED 7" IN CONCRETE FOR RAIL POSTS, EMBED 5" IN CONCRETE FOR END RAILS. ADHESIVE ANCHORS SHALL CONFORM TO SECTION 502.2.12 OF THE STANDARD SPECIFICATIONS.
 - (4A) STRUCTURAL TUBING 3" X 1/2" X 3/16". PLACE VERTICAL. WELD TO NO. 1 & 5.
 - (5A) STRUCTURAL TUBING 3" X 1/2" X 3/16" RAILS. WELD TO NO. 1 & NO. 4. INSIDE OF TUBE TO BE PAINTED AT ALL FIELD ERECTION & EXPANSION JOINTS.
 - (6B) BAR 1" X 1/2" PICKETS. WELD TO NO. 5. (SPACE AT 6" MAX. C/C TO C/C SPACING) PLACE VERTICAL.
 - (6C) BAR 1" X 1/2" PICKETS. WELD TO NO. 11. PLACE VERTICAL.
 - (8) STRUCTURAL TUBING 5" DIA. (STANDARD SIZE) (5.563" O.D.) 1/2" LONG SLICES. WELD TO NO. 5A.
 - (9A) RECTANGULAR SLEEVE FABRICATED FROM 3/16" PLATES. PROVIDE "SLIDING FIT".
 - (10A) RECTANGULAR SLEEVE FABRICATED FROM 3/16" PLATES. (1'-4" @ FIELD ERECTION JTS.) (1'-4" @ STRIP SEAL EXP. JTS.)
 - (11A) BAR 2 1/2" X 1" X 1/4".
 - (12) 1/2" DIA. STAINLESS STEEL BOLT WITH NUT AND LOCKWASHER.

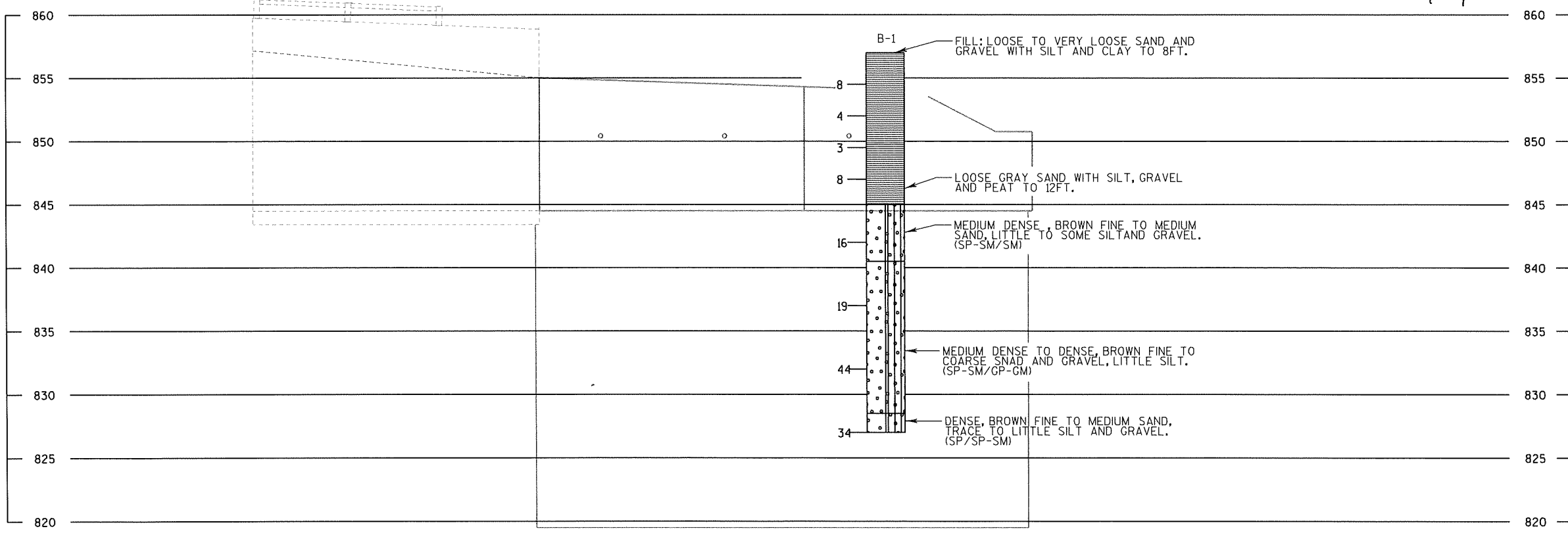
- RAILING NOTES**
- BID ITEM SHALL BE "RAILING STEEL TYPE C3", WHICH SHALL INCLUDE ALL STEEL ITEMS SHOWN.
 - POST BASE PLATES SHALL BE FLAT WITH ALL SURFACES SMOOTH AND FREE FROM WARP AND ALL EDGES SMOOTH, STRAIGHT AND VERTICAL. ALL PLATE CUTS SHALL BE MACHINE OR MACHINE FLAME CUTS.
 - ALL PLATES, BARS, AND RECTANGULAR SLEEVES SHALL CONFORM TO ASTM A709 GRADE 36. ALL STRUCTURAL TUBING SHALL CONFORM TO ASTM A500 GRADE B.
 - ANCHORAGES SHALL BE ACCURATELY PLACED TO PROVIDE CORRECT ALIGNMENT OF RAILING. SET NORMAL TO GRADE. POST INSTALLED ANCHORS WILL BE REQUIRED FOR RAILING ON OUTFALL WINGWALL AND ARE CONSIDERED INCLUDED IN THE COST OF "RAILING STEEL TYPE C3". ANY REPAIR DUE TO DAMAGE DURING ANCHOR PLACEMENT IS INCLUDED WITH THE COST OF THE RAILING.
 - CONTRACTOR SHALL FABRICATE RAILING TO FIT ON EXISTING OUTFALL WINGWALL AND HEADWALL BASED ON EXISTING ELEVATIONS AND DIMENSIONS AS SURVEYED IN THE FIELD BY THE CONTRACTOR.
 - CUT BOTTOM OF POST TO MAKE POST VERTICAL IN BOTH TRANSVERSE AND LONGITUDINAL DIRECTION.
 - STEEL SHIMS SHALL BE PROVIDED & USED UNDER BASE PLATES WHERE REQUIRED FOR ALIGNMENT, AND SHALL BE GALVANIZED.
 - CAULK AROUND PERIMETER OF BASE PLATES, NO. 1, AND FILL BOLT SLOT OPENINGS IN SHIMS AND BASE PLATES WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER.
 - ALL JOINTS AND RECESSES IN CONCRETE PARAPET ARE TO BE VERTICAL.
 - ALL MATERIAL (EXCEPT NO. 3 & 12) SHALL BE GALVANIZED AFTER FABRICATION. PRIOR TO GALVANIZING, THE STEEL RAILING SHALL BE GIVEN A NO. 6 BLAST CLEANING PER SSPC SPECIFICATIONS. PAINT OVER GALVANIZING WITH AN APPROVED TIE COAT AND TOP COAT AS SPECIFIED IN THE CONTRACT DOCUMENTS. THE RAILING SHALL BE PAINTED GREEN, COLOR TO BE APPROVED BY THE CITY OF MADISON.
 - VENT HOLES SHALL BE DRILLED IN POST AND RAIL MEMBERS AS REQUIRED TO FACILITATE GALVANIZING AND DRAINAGE.
 - RAILING SHALL BE FABRICATED IN LENGTHS THAT INCLUDE 3 OR 4 POSTS.
 - TOUCH-UP PAINTING TO BE DONE AT COMPLETION OF STEEL RAILING INSTALLATION TO THE SATISFACTION OF THE ENGINEER AT NO EXTRA COST.





PLAN

(SHEET PILE RETAINING WALL WITH CONCRETE FACING)



ELEVATION

ELEVATION ALONG R OF RETAINING WALL

ABBREVIATIONS

F — FINE M — MEDIUM C — COARSE
WS — WEATHERED SO — SOUND

MATERIAL SYMBOLS

[Symbol] TOPSOIL / FILL	[Symbol] SILT	[Symbol] SANDSTONE
[Symbol] SAND	[Symbol] PEAT	[Symbol] LIMESTONE
[Symbol] GRAVEL	[Symbol] CLAY	[Symbol] IGNEOUS ROCK

LEGEND OF PROBING

PROBING NO. STA. ELEVATION

95/6=95 BLOWS FOR 6" PENETRATION PROBING TAKEN WITH A 350# WT. FALLING 18" ON A 2" O.D. POINT.

7 AVERAGE BLOWS PER FOOT

REFUSAL 95/6

LEGEND OF BORING

ELEV. BORING NO. STA.

UNCONFINED STRENGTH (TSF) [Symbol] 7.7

BLOWS PER FT. USING 140# WT. FALLING 30"

WASH SAMPLE

SHELBY TUBE — S.T.

GROUND WATER ELEVATION

NO GROUND WATER OBSERVED ABOVE THIS ELEVATION

SANDY GRAVEL

F. BOULDERS OR COBBLES

SAND

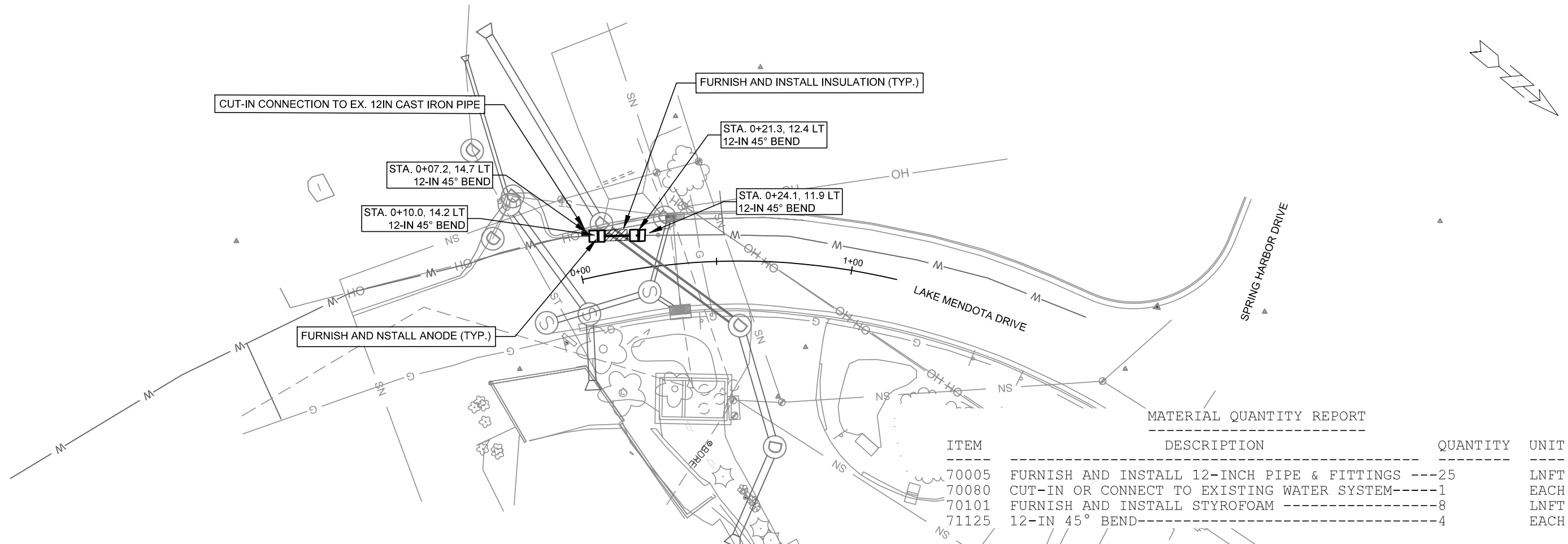
SILT

SO LIMESTONE

UNLESS OTHERWISE SPECIFIED, THE BLOWS PER FOOT AT THE LOCATIONS INDICATED ARE BASED ON DRIVING A 2" O.D. X 1.4" I.D. SPLIT SPOON SAMPLER WITH A 140# HAMMER HAVING A FREE FALL OF 30". THE BLOW COUNT IS TAKEN IN UNDISTURBED SOIL IMMEDIATELY BELOW A CASED OR OPEN HOLE ELIMINATING SIDE FRICTION ON THE DRIVE PIPE.

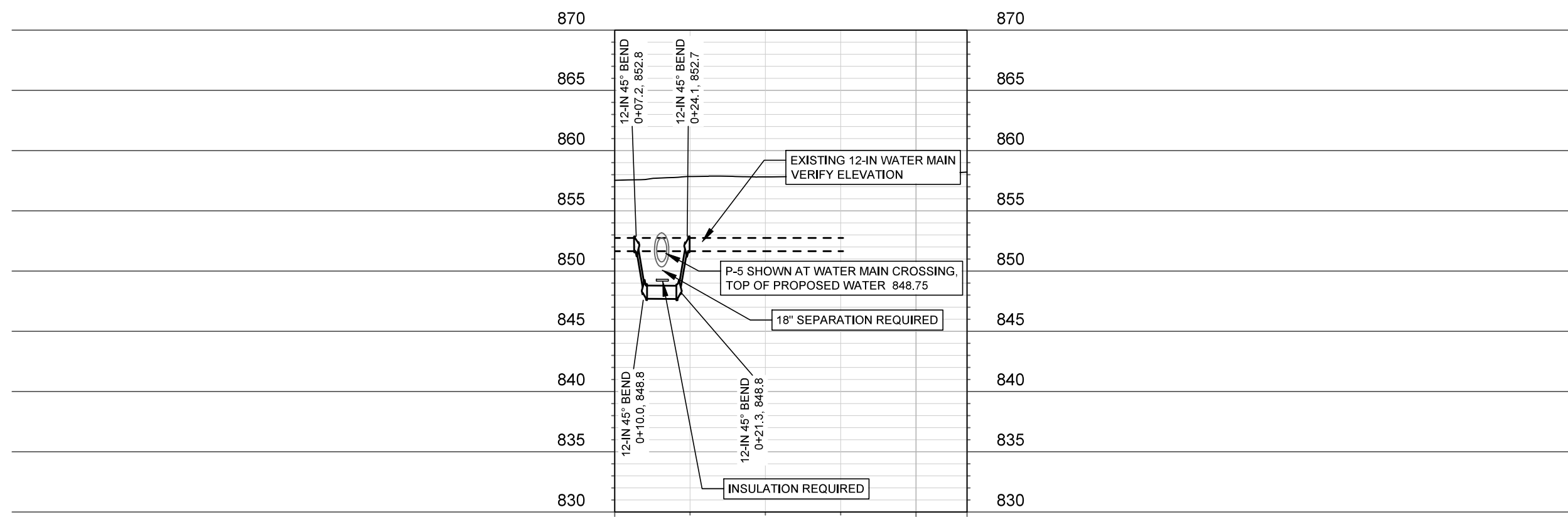
SUBSURFACE EXPLORATION FOR FOUNDATION DESIGN AND BIDDERS INFORMATION

TO OBTAIN RELATIVE DATA CONCERNING THE CHARACTER OF MATERIAL IN AND UPON WHICH THE FOUNDATION MIGHT BE BUILT, BORINGS AND/OR SOUNDINGS WERE MADE AT POINTS APPROXIMATELY AS INDICATED ON THIS DRAWING. THE DATA PRESENTED HEREIN REPRESENTS THE FINDINGS OF THE SUBSURFACE EXPLORATIONS MADE. HOWEVER, BECAUSE THE DEPTHS INVESTIGATED ARE LIMITED AND THE AREA OF THE BORINGS AND/OR SOUNDINGS IS VERY SMALL IN RELATION TO THE ENTIRE AREA, THE WISCONSIN DEPARTMENT OF TRANSPORTATION DOES NOT WARRANT CONDITIONS BELOW THE DEPTHS INVESTIGATED OR THAT THE CLASSIFICATION OF MATERIAL ENCOUNTERED IN THESE INVESTIGATIONS IS NECESSARILY TYPICAL OF THE ENTIRE SITE.



MATERIAL QUANTITY REPORT

ITEM	DESCRIPTION	QUANTITY	UNIT
70005	FURNISH AND INSTALL 12-INCH PIPE & FITTINGS	25	LNFT
70080	CUT-IN OR CONNECT TO EXISTING WATER SYSTEM	1	EACH
70101	FURNISH AND INSTALL STYROFOAM	8	LNFT
71125	12-IN 45° BEND	4	EACH



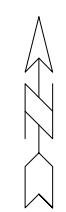
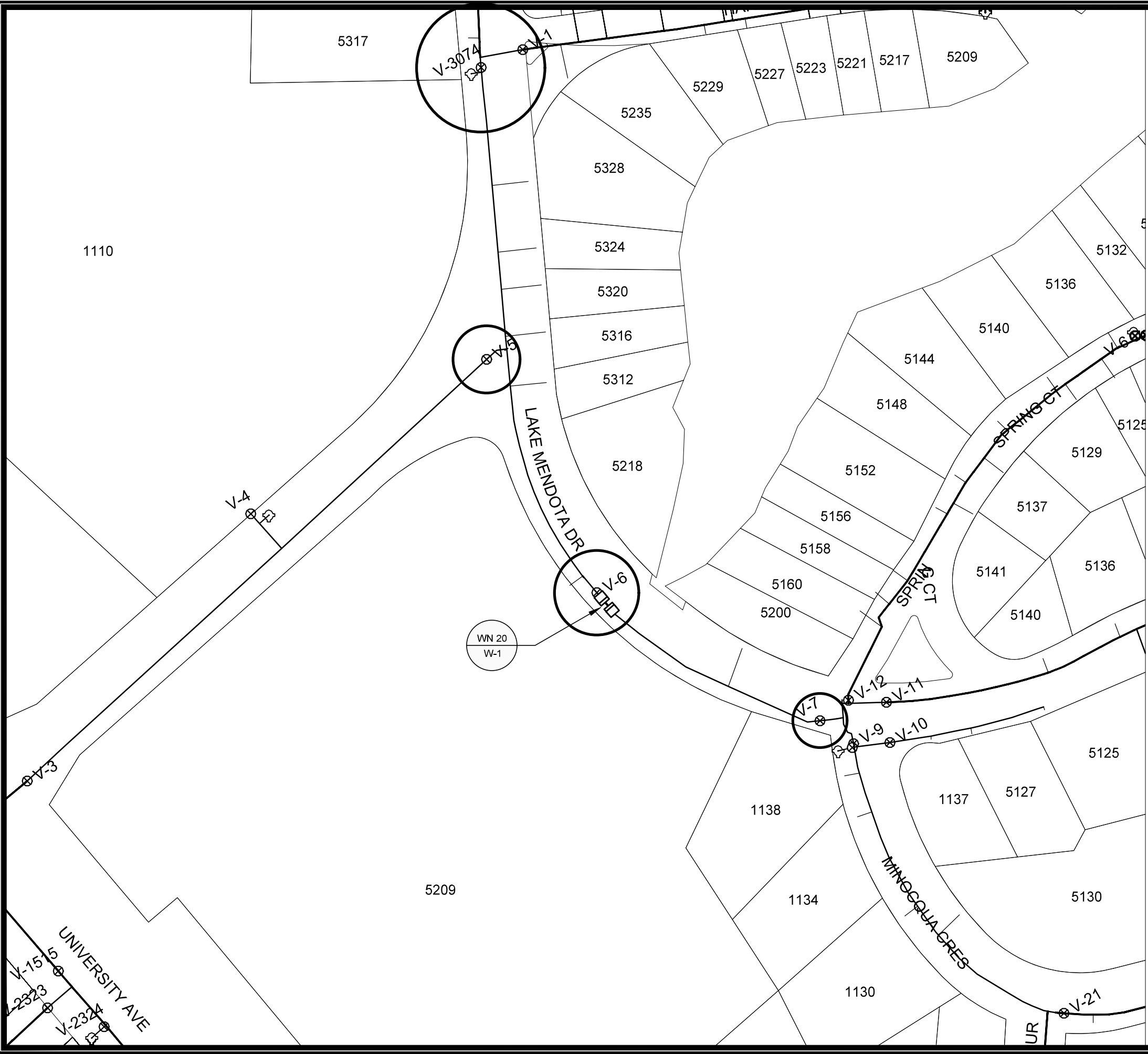
SCALE: 1" = 40'
 DESIGNED BY: ARW/TDP
 MADISON WATER UTILITY
 119 E OLIN AVE, MADISON, WI 53713
 PRINTING DATE: 8/1/21

CONTRACT NO: 8525

SPRING HARBOR OUTFALL REPAIR
 LAKE MENDOTA DR
 CITY OF MADISON, WISCONSIN



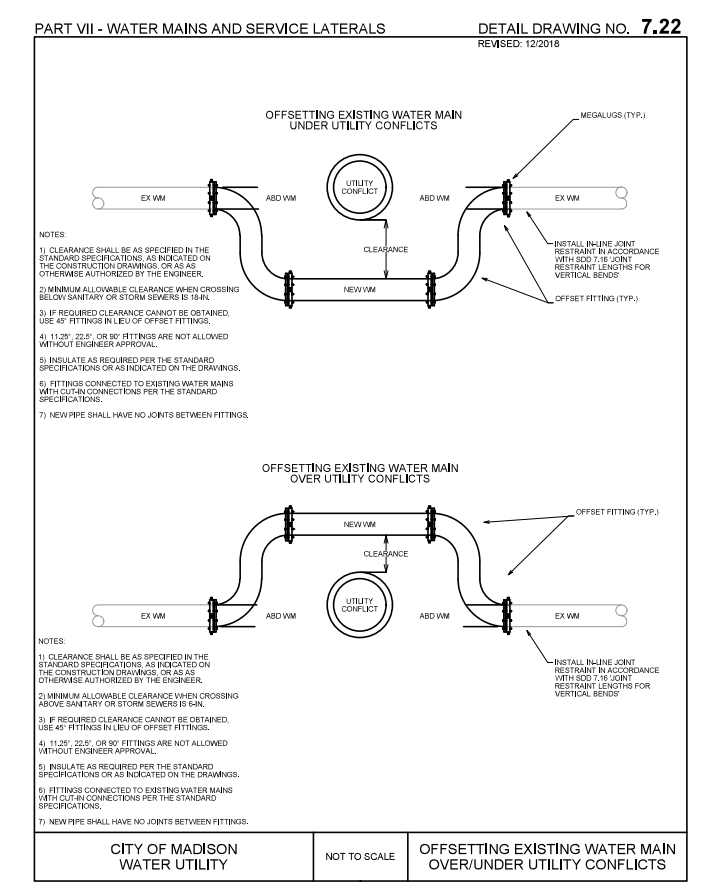
12154
 W-1



CUT-IN CONNECTION WN20 W-1 AT LAKE MENDOTA DR 12IN

ISOLATION VALVES: V-12 AT SPRING CT, V-5 AT SPRING HARBOR DR, V-3074 AT HARBOR CT, AND V-6 AT LAKE MENDOTA DR

NOTIFY: 5200 THROUGH 5328 LAKE MENDOTA DRIVE, AND SPRING HARBOR PARK AT 5221 LAKE MENDOTA DRIVE



DISCLAIMER NOTE:
THE WATER IMPACT PLAN IS PROVIDED FOR REFERENCE PURPOSES TO AID PLANNING CONNECTION POINT ISOLATION AND PREPARING NOTIFICATION LISTS DURING PLANNED OUTAGES. REQUEST ANY ALTERNATIVE CONNECTION METHODS IN WRITING, PER SPECS.

SCALE: 1"=100'
DESIGNED BY: ARW/TDP
MADISON WATER UTILITY
119 E OLIN AVE, MADISON, WI 53713
PRINTING DATE: 6/15/21

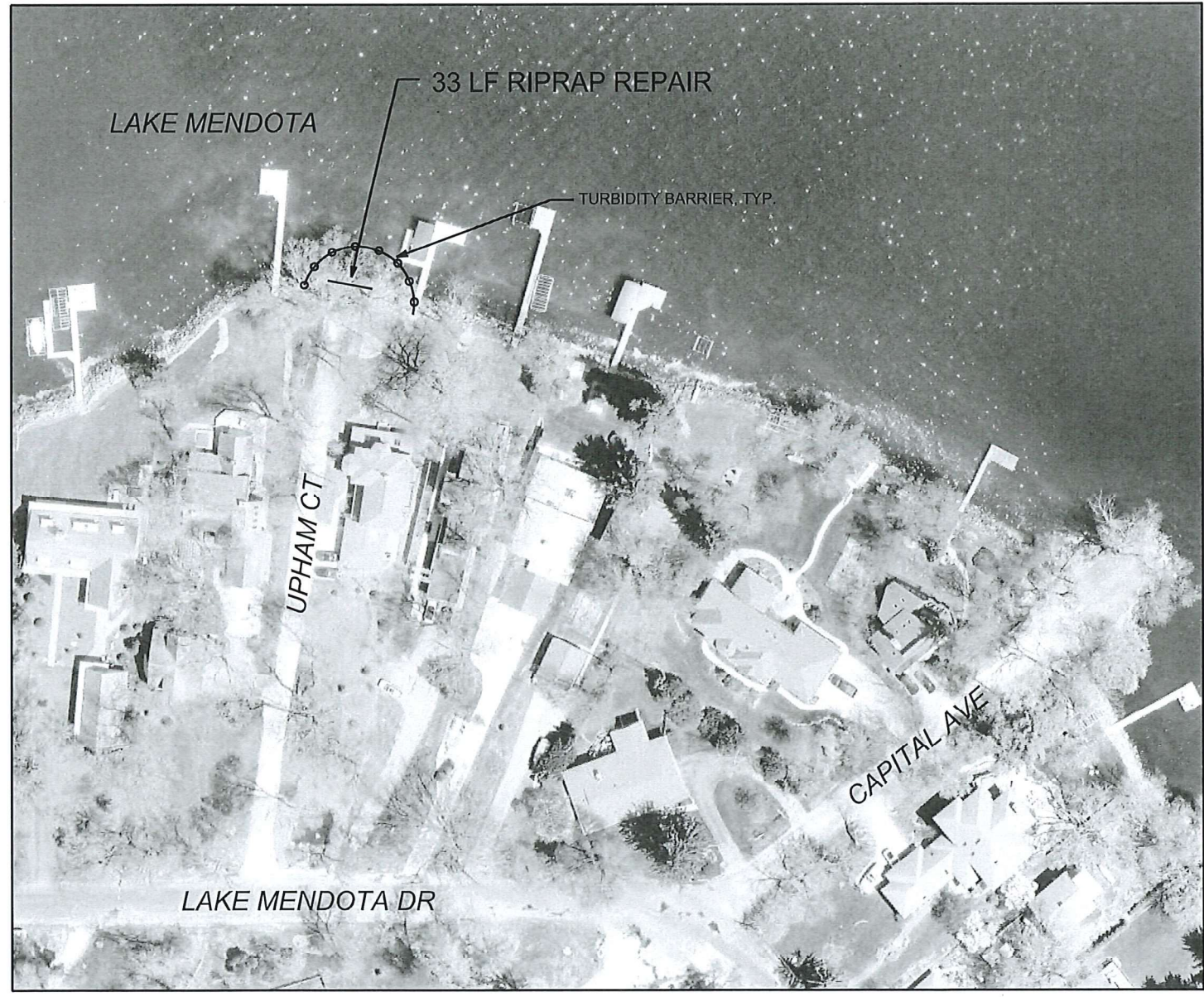
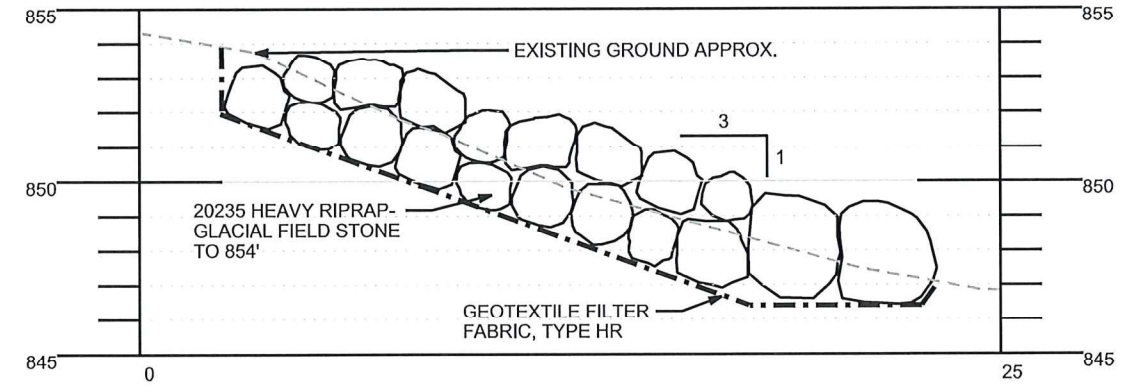
CONTRACT NO: 8525

SPRING HARBOR OUTFALL REPAIR
WATER IMPACT PLAN LAKE MENDOTA DR
CITY OF MADISON, WISCONSIN



12154
W-2

LAKE MENDOTA

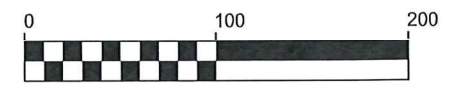
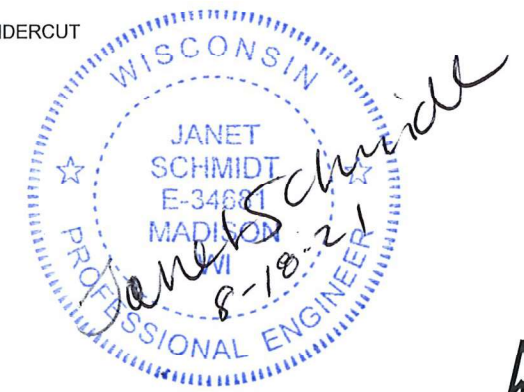


EROSION CONTROL NOTES:

- 1) TURBIDITY BARRIER WILL BE PLACED AROUND EACH SECTION OF RIPRAP REPAIR. TURBIDITY BARRIER WILL BE PLACED PRIOR TO ANY SHORELINE DISTURBANCE. TURBIDITY BARRIER IN GOOD CONDITION MAY BE REUSED AT MULTIPLE LOCATIONS.
- 2) ALL DISTURBED AREAS SHALL BE RESTORED WITH 4 INCHES OF TOPSOIL, SHADY INFILTRATION SEED MIX, AND EROSION MATTING, UNLESS OTHERWISE NOTED.
- 3) SILT FENCE OR SILT SOCK SHALL BE INSTALLED AS DIRECTED BY THE CONSTRUCTION ENGINEER.
- 4) SILT FENCE SHALL BE PLACED AROUND ALL STOCKPILE AREAS.
- 5) THE PROJECT SITE SHALL BE INSPECTED WEEKLY, AND WITHIN 24 HOURS OF A RAINFALL EVENT GREATER THAN 0.5".
- 6) ALL EQUIPMENT ON SITE SHALL BE DECONTAMINATED FOR INVASIVE SPECIES AND VIRUSES.

CONSTRUCTION NOTES:

- 1) THE EXISTING GLACIAL FIELD STONE WILL BE REMOVED. REUSABLE STONE WILL BE SALVAGED AND STOCKPILED.
- 2) MINOR BANK REGRADING OR FILLING MAY BE NECESSARY WHERE EROSION HAS UNDERCUT THE TOP OF BANK.
- 3) GEOTEXTILE FILTER FABRIC, TYPE HR WILL BE PLACED ON THE REGRADED BANK.
- 4) THE SALVAGED STONE WILL BE REPLACED AND AUGMENTED WITH ADDITIONAL GLACIAL FIELD STONE AS NECESSARY.



PLOT SCALE: _____
 PLOT NAME: _____
 REV. DATE: _____
 ORIGINATOR: CITY OF MADISON, STREETS DIVISION