

Madison, Wisconsin

# CITY OF MADISON

## CITY ENGINEERING DIVISION

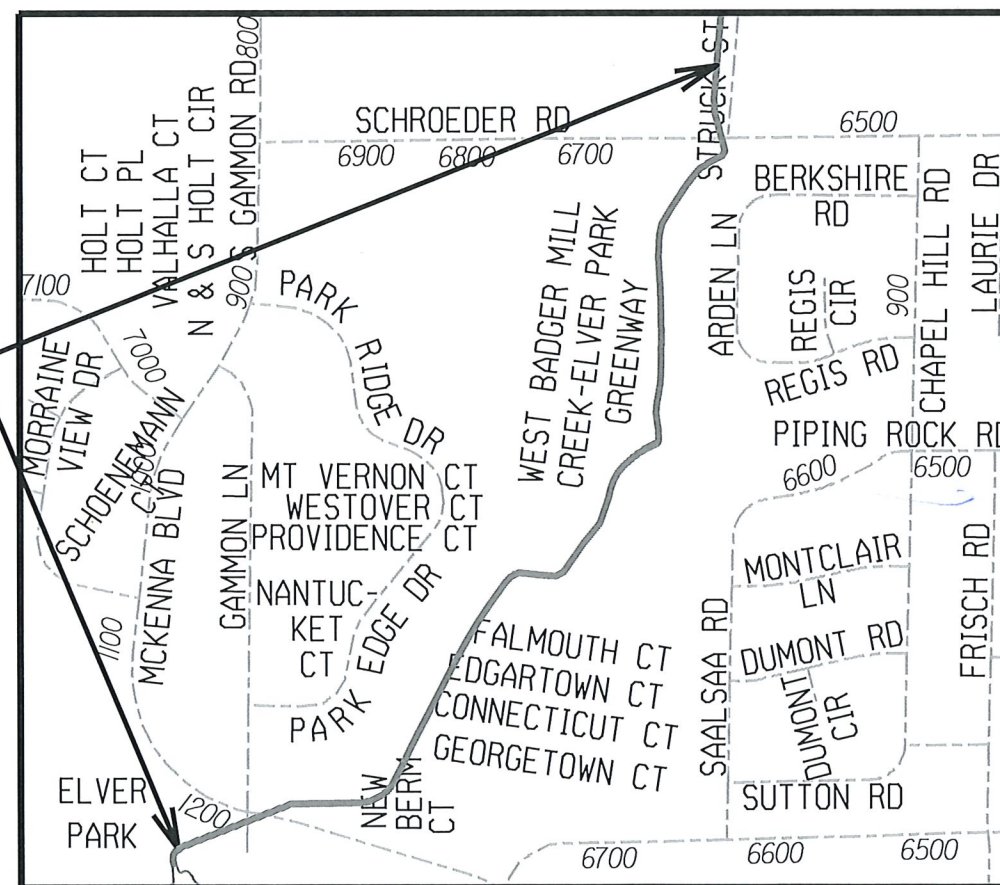
### DEPARTMENT OF PUBLIC WORKS

## PLAN OF PROPOSED IMPROVEMENT

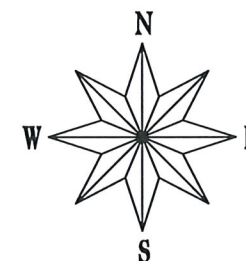
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DTI	

PROJECT  
EXTENTS



CITY PROJECT NO. 12011  
9411



PUBLIC IMPROVEMENT PROJECT  
APPROVED

MAY 14, 2019

BY THE COMMON COUNCIL  
OF MADISON, WISCONSIN

PUBLIC IMPROVEMENT DESIGN  
APPROVED BY:

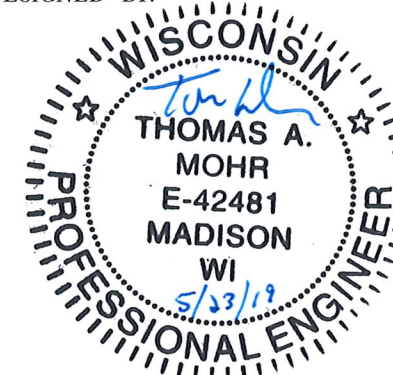
City Engineer

Date

STREET  
DESIGNED BY:



PAVEMENT MARKINGS &  
TRAFFIC CONTROL  
DESIGNED BY:



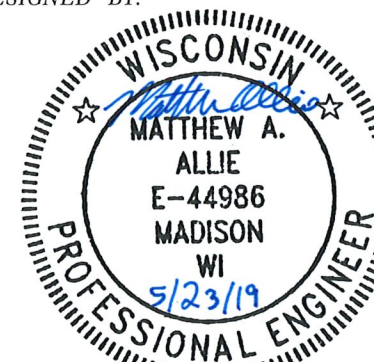
SANITARY SEWER  
DESIGNED BY:



WATER MAIN  
DESIGNED BY:



STORM SEWER  
DESIGNED BY:



#### CONVENTIONAL SIGNS

FIELD VERIFY ALL UTILITY LOCATIONS

GAS	— G —
STORM SEWER	— ST —
SANITARY SEWER	— SAN —
WATER	— W —
OVERHEAD ELECTRIC	— OH —
POWER POLE	□

NOTES:  
ALL GUTTERS SHALL DRAIN WITH A MINIMUM GRADE OF 0.50% TOWARD STORM SEWER INLETS.  
SIDEWALK RAMPS AND CURB THRU SIDEWALK RAMPS SHALL HAVE A MAXIMUM SLOPE OF 1" PER 12". SIDEWALK AND CURB RAMPS SHALL BE CONSTRUCTED WITH A SIDE SLOPE OF 2.00%.  
SIDEWALK SHALL HAVE A MINIMUM LONGITUDINAL SLOPE OF 0.50% AND A MAXIMUM LONGITUDINAL SLOPE OF 5.00% EXCEPT WHERE STREET GRADES EXCEED 5.00%.

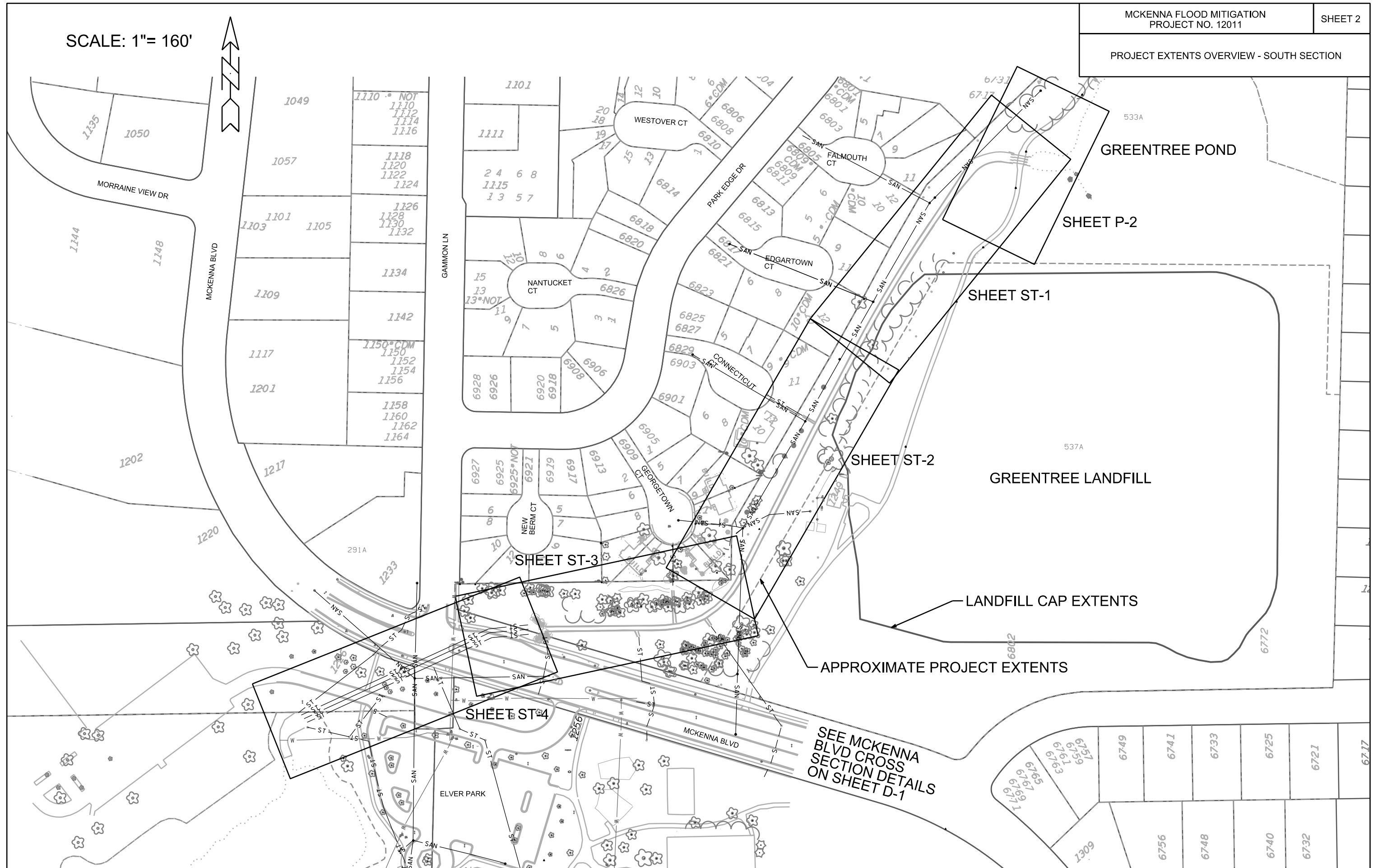


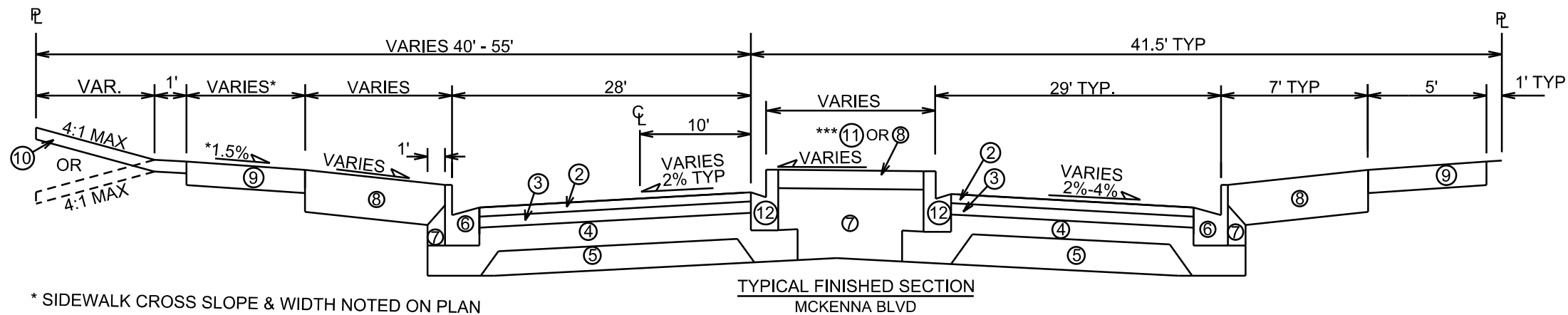
SCALE: 1"= 160'



REV. DATE: \_\_\_\_

ORIGINATOR: CITY OF MADISON, STREETS DIVISION



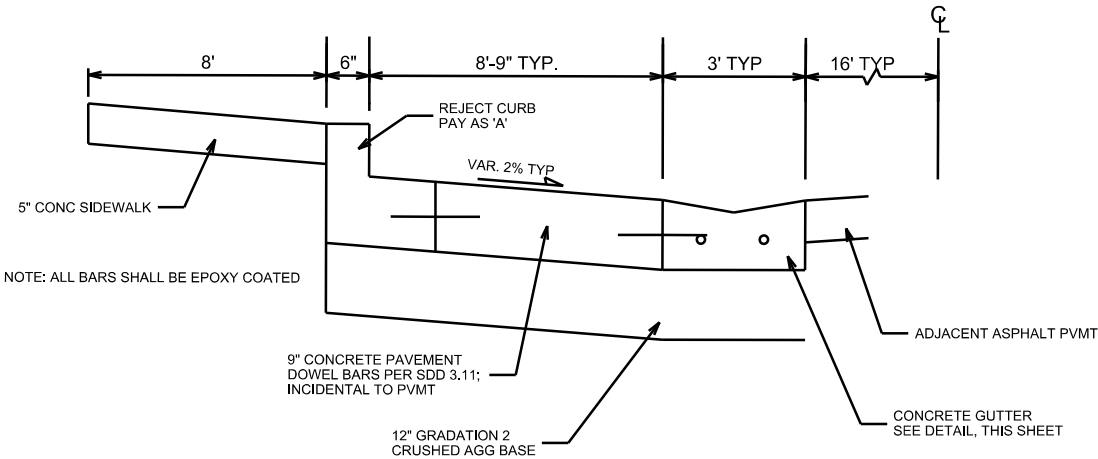


- ① POINT REFERRED TO ON PROFILE
- ② 2" HMA PAVEMENT, 4 MT 58-28 S
- ③ 4" HMA PAVEMENT, 3 MT 58-28 S
- ④ 8" GRADATION 2 CRUSHED AGGREGATE BASE
- ⑤ 8" GRADATION 1 CRUSHED AGGREGATE BASE
- ⑥ TYPE 'A' CONCRETE CURB & GUTTER
- ⑦ FILL, INCIDENTAL
- ⑧ 12" TOPSOIL, SEED & EROSION MAT
- ⑨ 5" CONCRETE SIDEWALK, SEE PLAN FOR LOCATIONS
- ⑩ 6" TOPSOIL, SEED & EROSION MAT
- ⑪ 7" STAMPED & COLORED CONCRETE
- ⑫ TYPE 'H' CONCRETE CURB & GUTTER
- ⑬ 2.5" HMA PAVEMENT, 3 MT 58-28 S
- ⑭ 6" GRADATION 2 CRUSHED AGGREGATE BASE
- ⑮ 6" GRADATION 1 CRUSHED AGGREGATE BASE
- ⑯ PULVERIZE & SHAPE EXISTING PAVEMENT

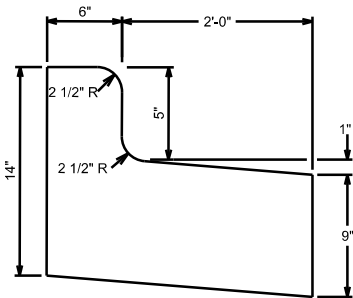
TYPICAL SECTIONS & DETAILS NOT TO SCALE

FOR BIKE PATH TYPICAL SECTION  
SEE S.D.D. 4.08. WIDTH VARIES; SEE  
PLAN FOR OFFSETS & DIMENSIONS

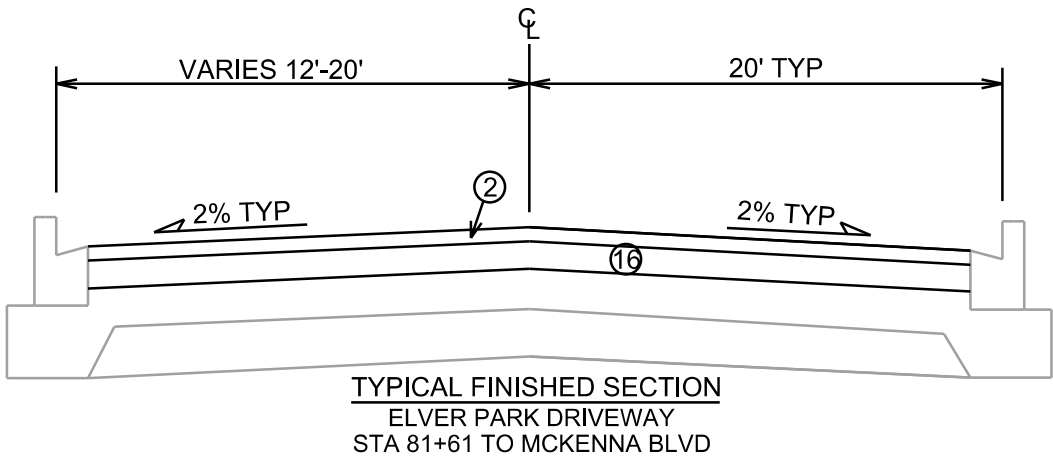
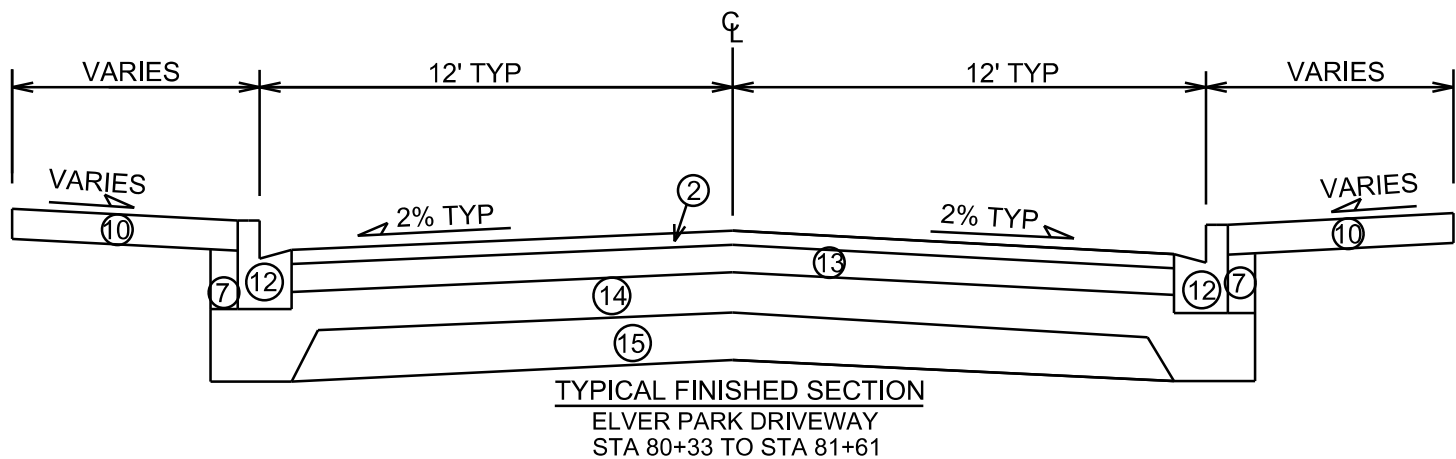
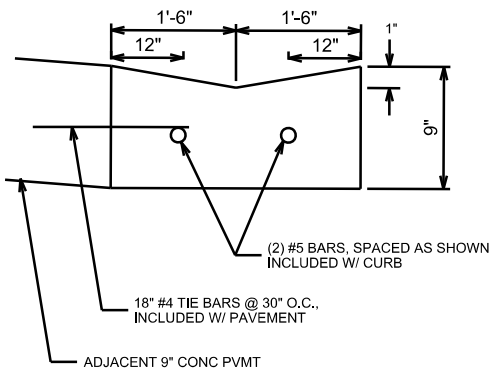
BUS PULL-OUT DETAIL  
NOT TO SCALE



REJECT CURB DETAIL  
NOT TO SCALE



CONCRETE GUTTER DETAIL  
NOT TO SCALE



NOTE: EXISTING CURB & BASE MATERIAL TO REMAIN

PLOT SCALE: \_\_\_\_\_

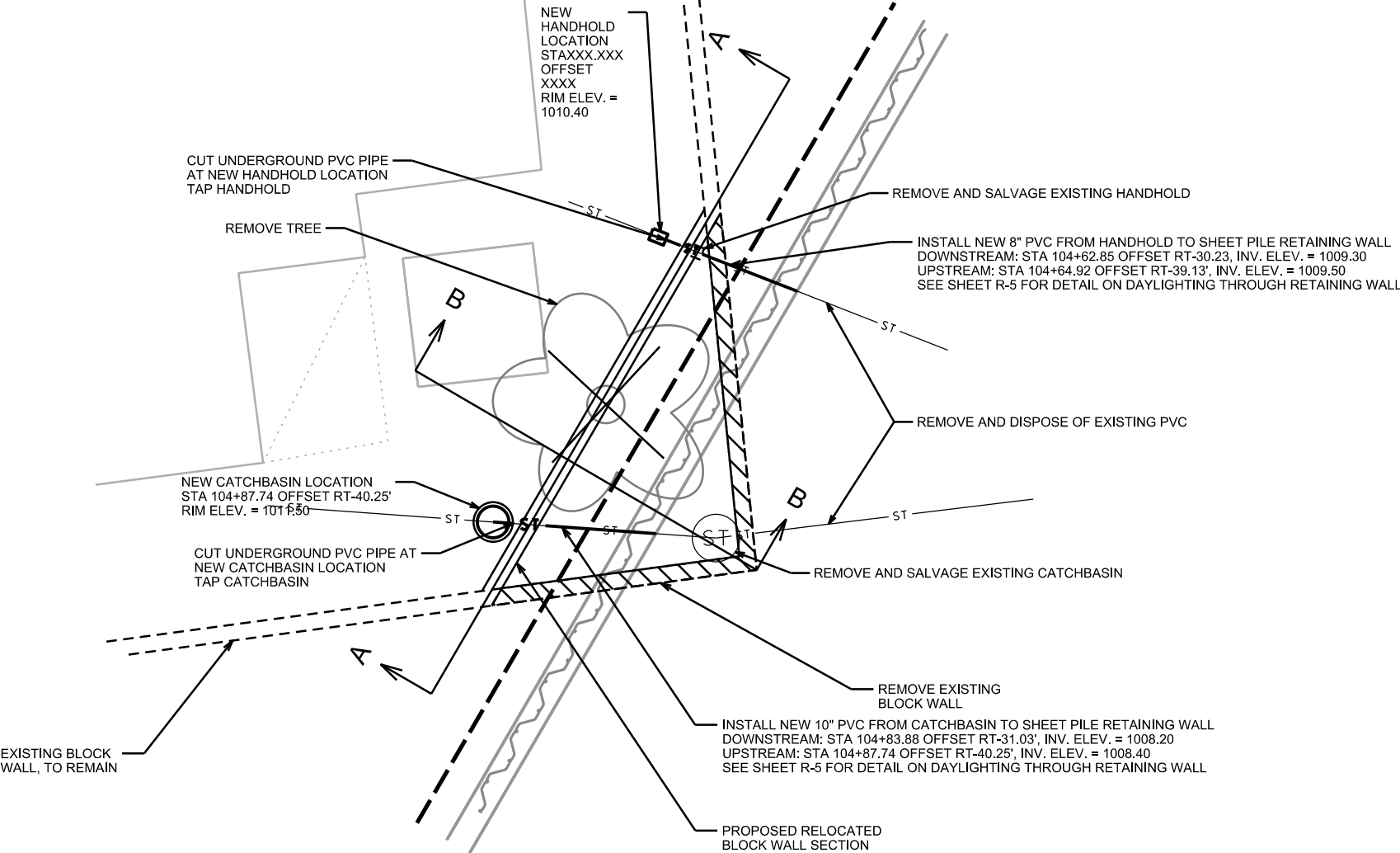
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REV. DATE: \_\_\_\_\_

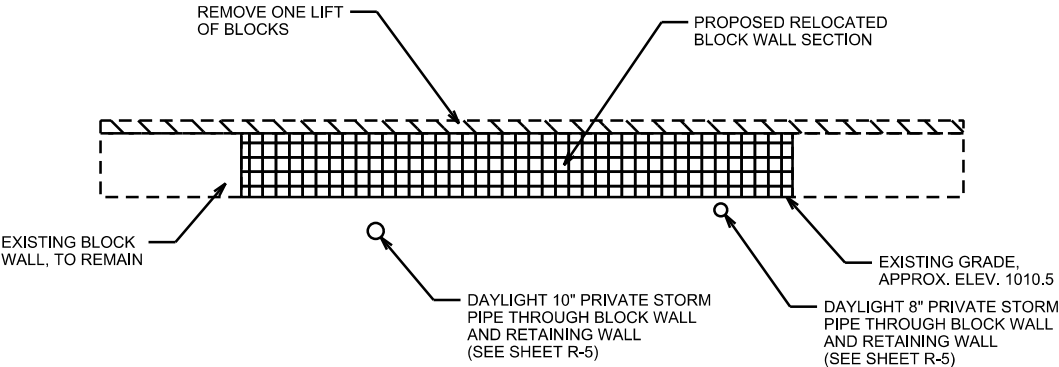
ORIGINATOR: CITY OF MADISON, STREETS DIVISION

DETAIL FOR REMOVAL AND REPLACEMENT OF BLOCK WALL (BID ITEM 90035)

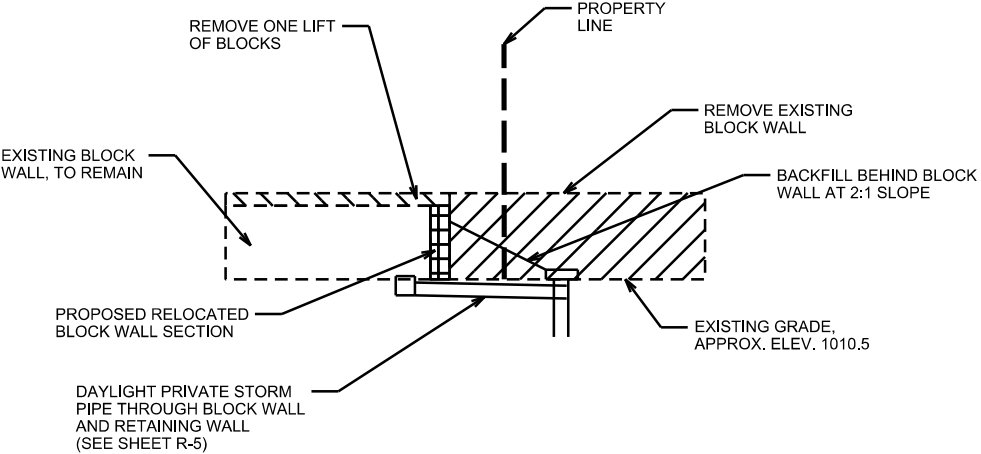
MCKENNA FLOOD MITIGATION PROJECT NO. 12011	SHEET NO. SD-1
REMOVE AND REPLACE BLOCK WALL 10/12 EDGARTOWN CT	
PLAN CITY OF MADISON	



SECTION A-A



SECTION B-B



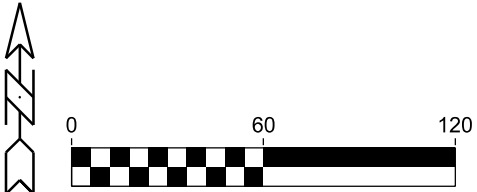
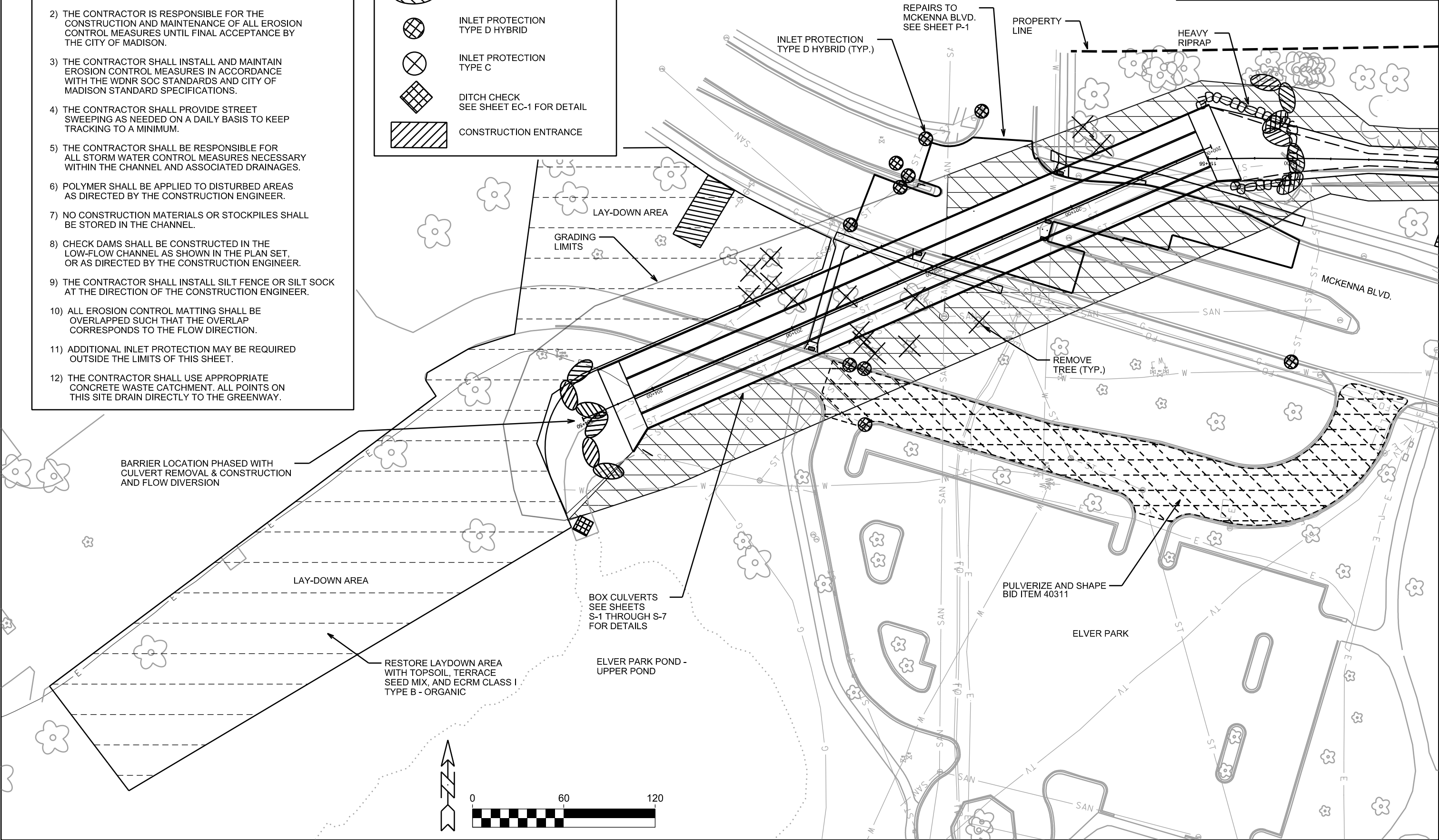
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PLOT NAME: \_\_\_\_\_  
REV. DATE: \_\_\_\_\_  
ORIGINATOR: CITY OF MADISON, STREETS DIVISION



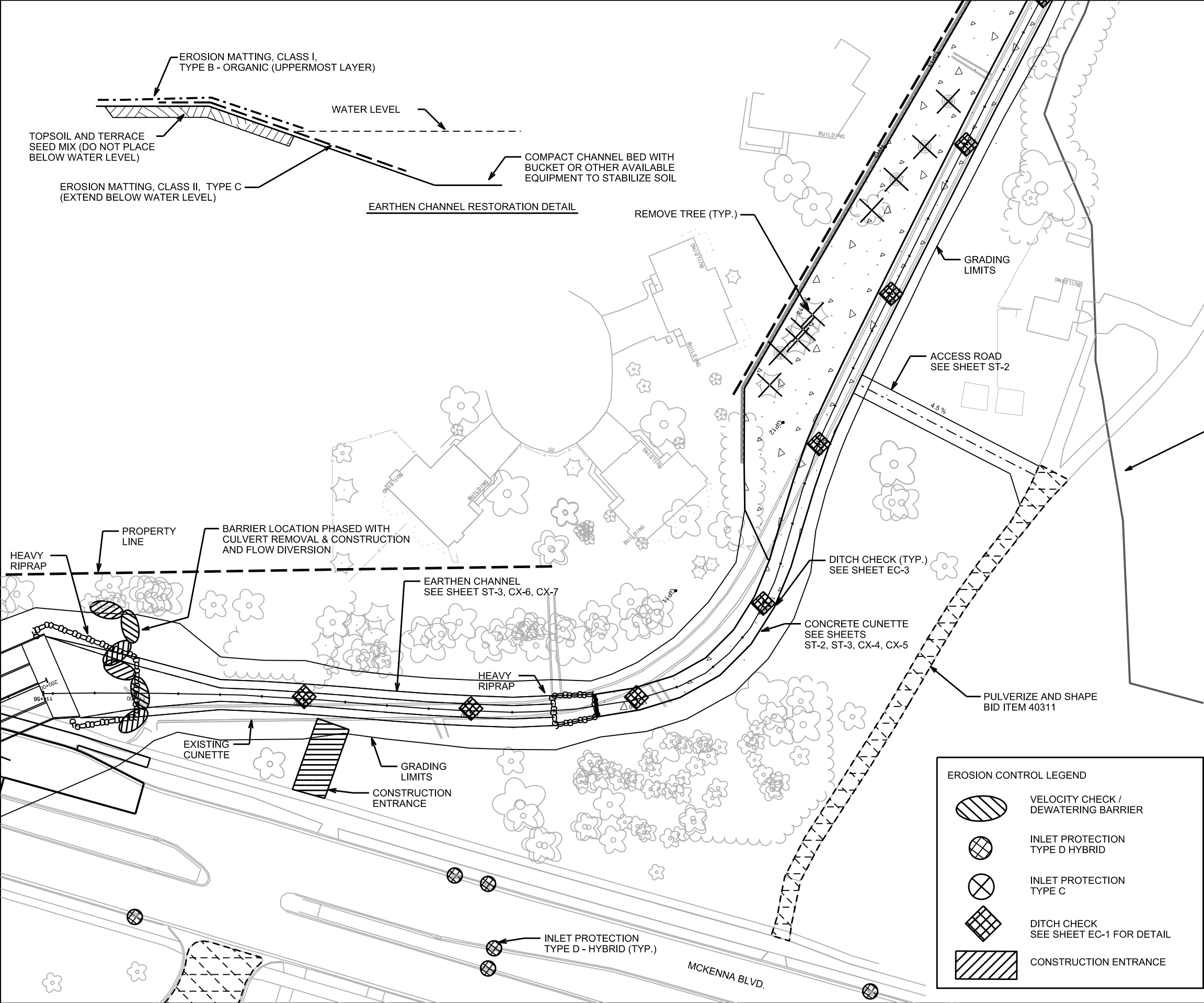
- EROSION CONTROL NOTES:
- 1) EROSION CONTROL MEASURES SHALL BE IN PLACE PRIOR TO ANY OTHER CONSTRUCTION ACTIVITIES.
  - 2) THE CONTRACTOR IS RESPONSIBLE FOR THE CONSTRUCTION AND MAINTENANCE OF ALL EROSION CONTROL MEASURES UNTIL FINAL ACCEPTANCE BY THE CITY OF MADISON.
  - 3) THE CONTRACTOR SHALL INSTALL AND MAINTAIN EROSION CONTROL MEASURES IN ACCORDANCE WITH THE WDNR SOC STANDARDS AND CITY OF MADISON STANDARD SPECIFICATIONS.
  - 4) THE CONTRACTOR SHALL PROVIDE STREET SWEEPING AS NEEDED ON A DAILY BASIS TO KEEP TRACKING TO A MINIMUM.
  - 5) THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL STORM WATER CONTROL MEASURES NECESSARY WITHIN THE CHANNEL AND ASSOCIATED DRAINAGES.
  - 6) POLYMER SHALL BE APPLIED TO DISTURBED AREAS AS DIRECTED BY THE CONSTRUCTION ENGINEER.
  - 7) NO CONSTRUCTION MATERIALS OR STOCKPILES SHALL BE STORED IN THE CHANNEL.
  - 8) CHECK DAMS SHALL BE CONSTRUCTED IN THE LOW-FLOW CHANNEL AS SHOWN IN THE PLAN SET, OR AS DIRECTED BY THE CONSTRUCTION ENGINEER.
  - 9) THE CONTRACTOR SHALL INSTALL SILT FENCE OR SILT SOCK AT THE DIRECTION OF THE CONSTRUCTION ENGINEER.
  - 10) ALL EROSION CONTROL MATTING SHALL BE OVERLAPPED SUCH THAT THE OVERLAP CORRESPONDS TO THE FLOW DIRECTION.
  - 11) ADDITIONAL INLET PROTECTION MAY BE REQUIRED OUTSIDE THE LIMITS OF THIS SHEET.
  - 12) THE CONTRACTOR SHALL USE APPROPRIATE CONCRETE WASTE CATCHMENT. ALL POINTS ON THIS SITE DRAIN DIRECTLY TO THE GREENWAY.

EROSION CONTROL LEGEND

	VELOCITY CHECK / DEWATERING BARRIER
	INLET PROTECTION TYPE D HYBRID
	INLET PROTECTION TYPE C
	DITCH CHECK SEE SHEET EC-1 FOR DETAIL
	CONSTRUCTION ENTRANCE



ORIGINATOR: CITY OF MADISON, STREETS DIVISION



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EROSION CONTROL LEGEND

VELOCITY CHECK /  
DEWATERING BARRIER

INLET PROTECTION  
TYPE D HYBRID

INLET PROTECTION  
TYPE C

DITCH CHECK  
SEE SHEET EC-1 FOR DETAIL

CONSTRUCTION ENTRANCE

ORIGINATOR: CITY OF MADISON, STREETS DIVISION

REV. DATE: \_\_\_\_\_

PLOT NAME: \_\_\_\_\_

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EROSION CONTROL LEGEND

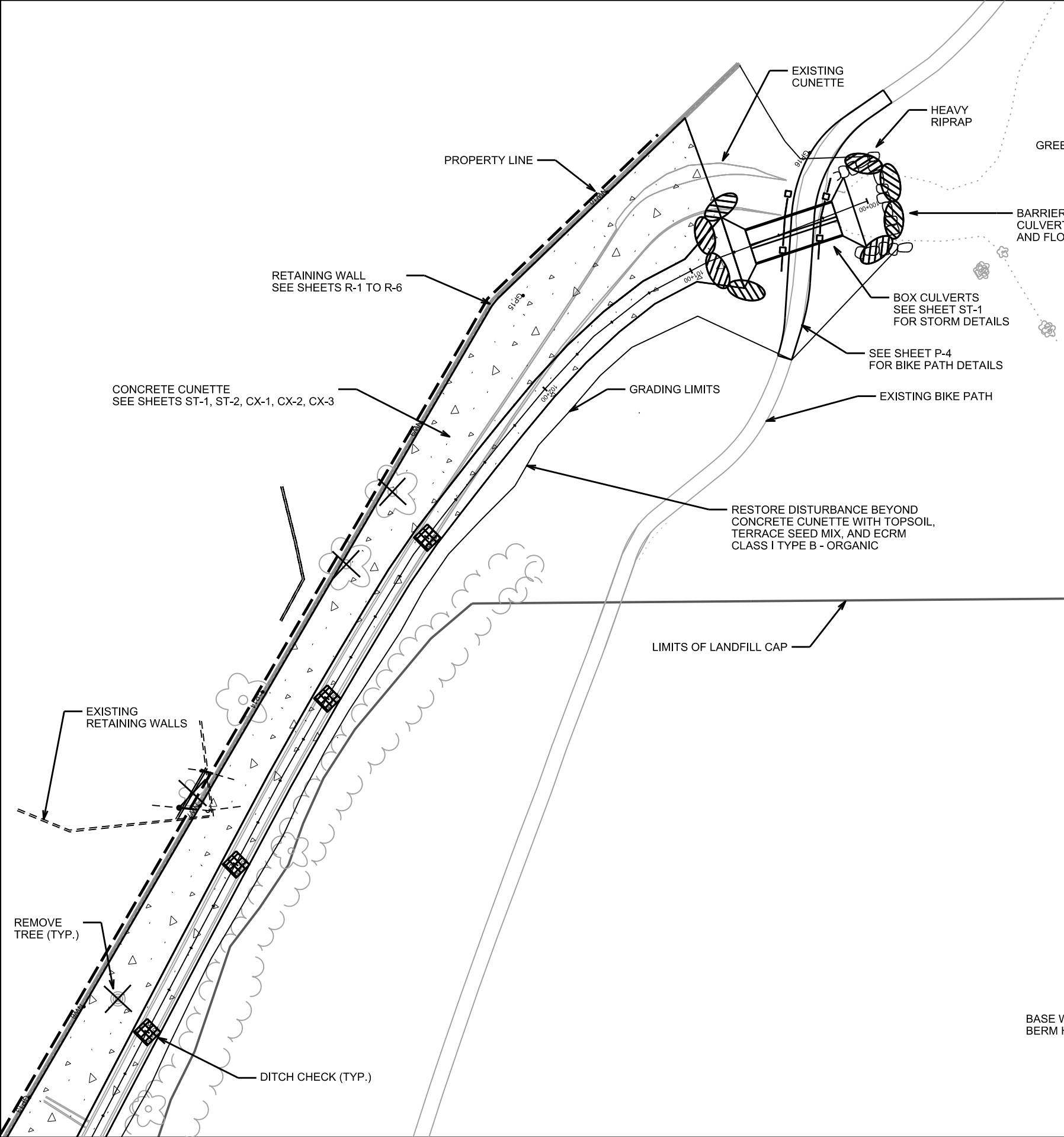
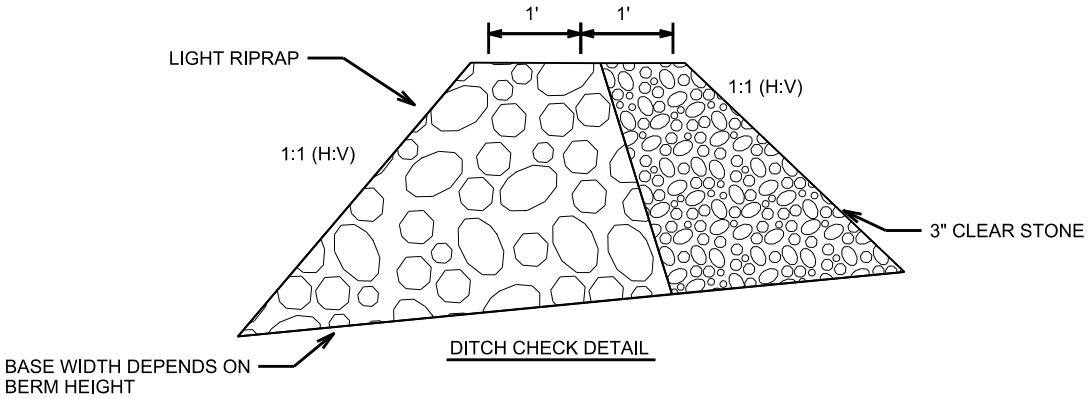
VELOCITY CHECK /  
DEWATERING BARRIER

INLET PROTECTION  
TYPE D HYBRID

INLET PROTECTION  
TYPE C

DITCH CHECK  
SEE SHEET EC-1 FOR DETAIL

CONSTRUCTION ENTRANCE



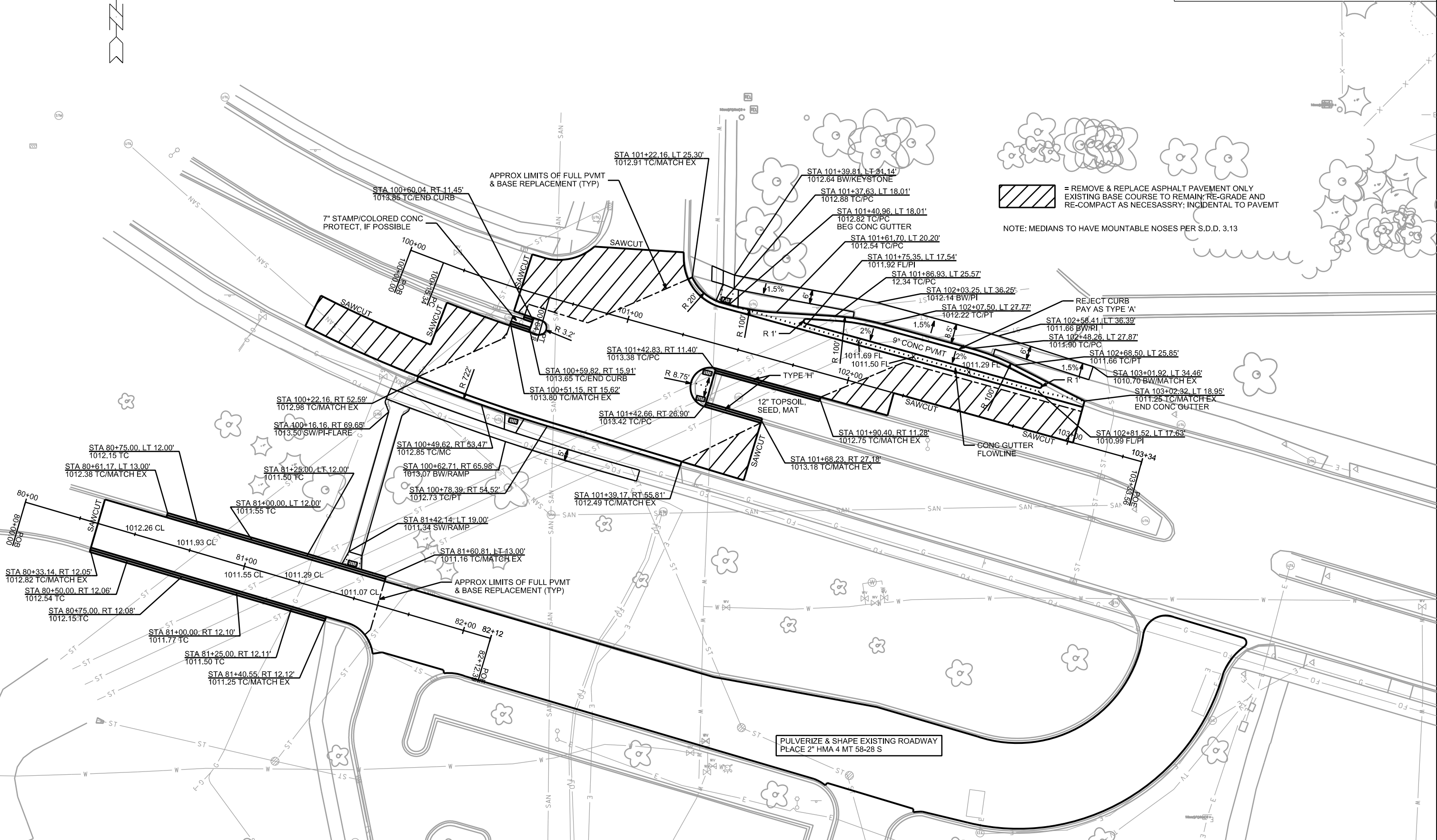
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REV. DATE: \_\_\_\_\_

PLOT NAME: \_\_\_\_\_

PLOT SCALE: \_\_\_\_\_





PLOT SCALE: \_\_\_\_\_

PLOT NAME: \_\_\_\_\_

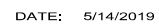
REV. DATE: \_\_\_\_\_

ORIGINATOR: CITY OF MADISON, STREETS DIVISION

BIKE PATH CITY OF MADISON



IF ON A SLOPE, THE POSTS SHOULD  
REMAIN VERTICAL AND THE RAILS SLOPED  
WITH THE WINGWALL



CROSS SECTIONS

SCHROEDER RD.

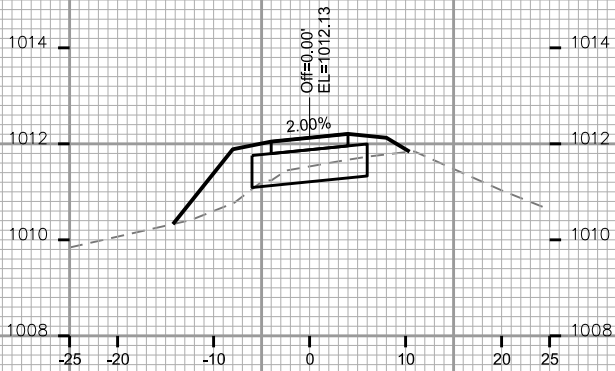
CITY OF MADISON

PLOT SCALE:

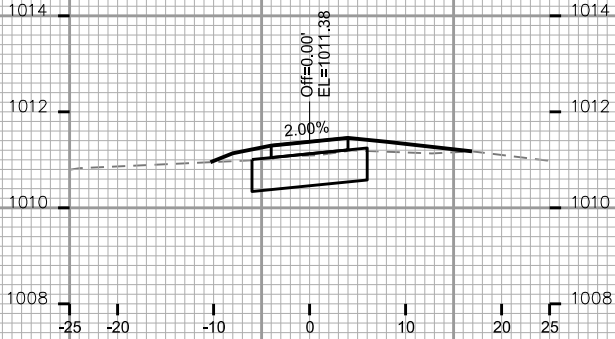
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REV. DATE:

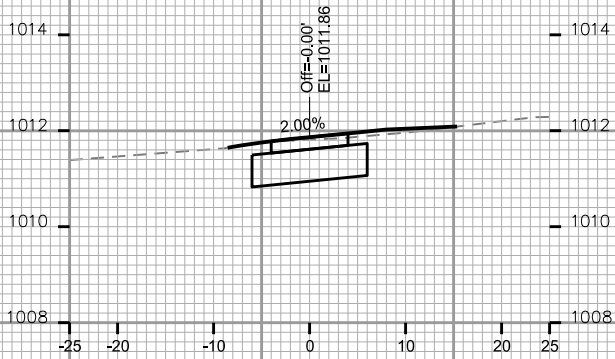
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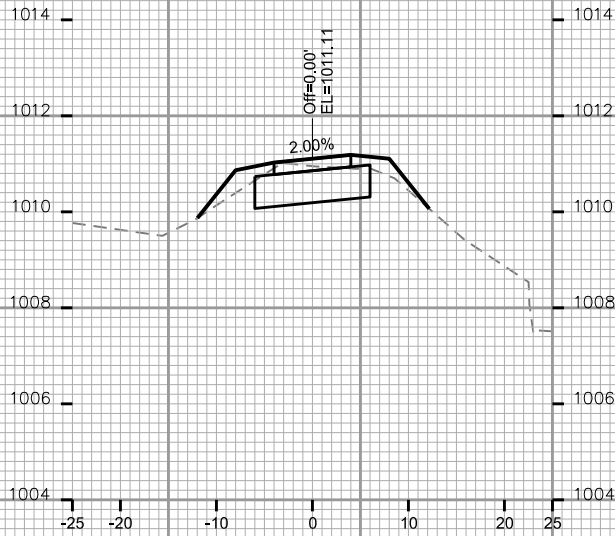
STA. 80+75



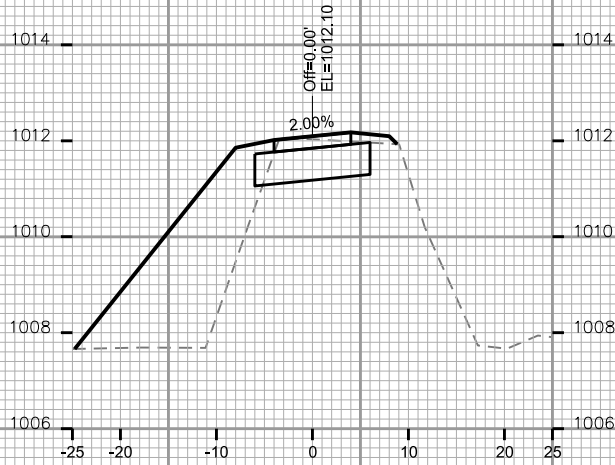
STA. 80+50



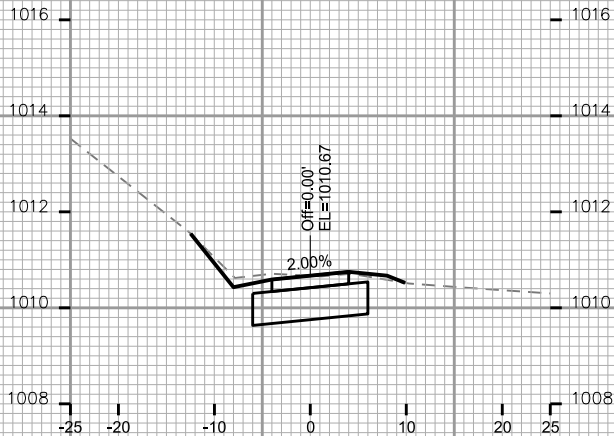
STA. 80+25



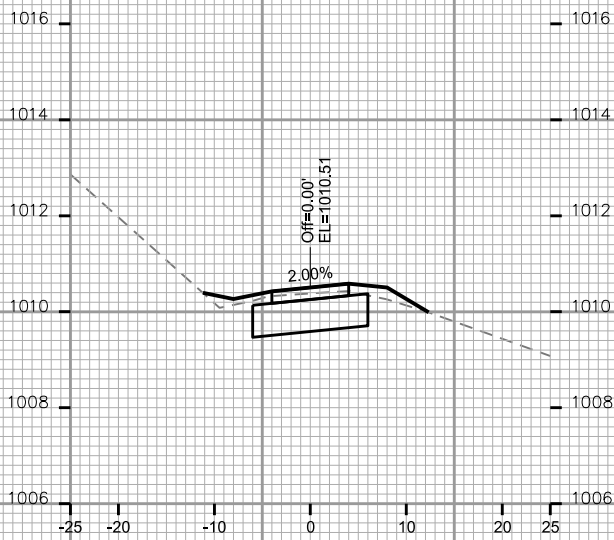
STA. 81+25



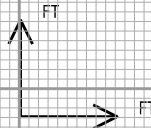
STA. 81+00



STA. 81+75



STA. 81+50



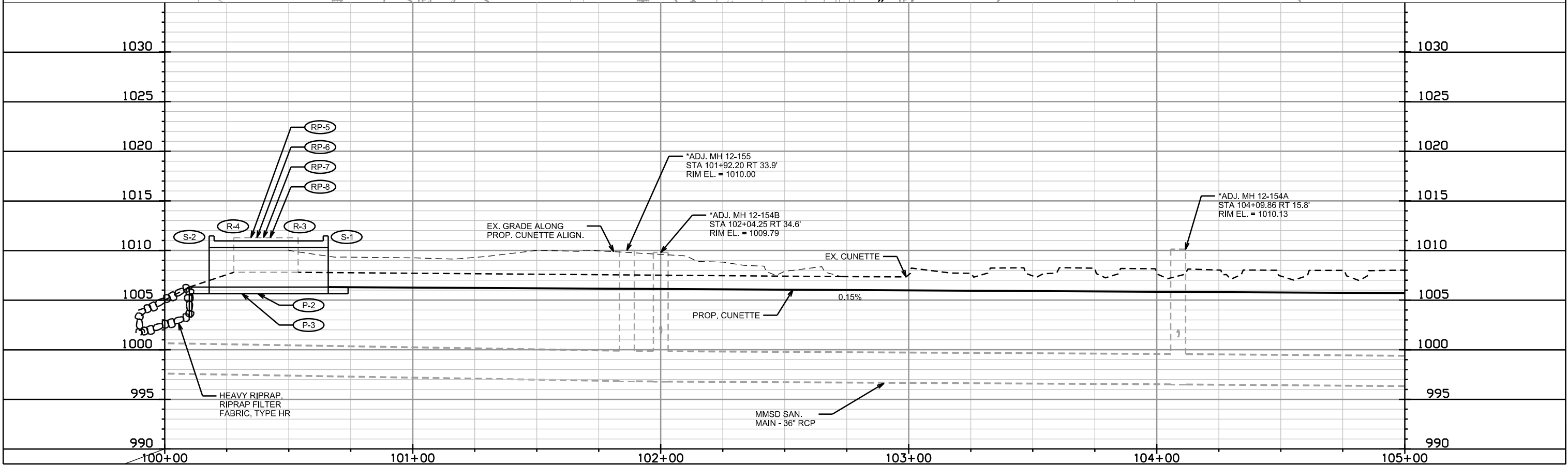
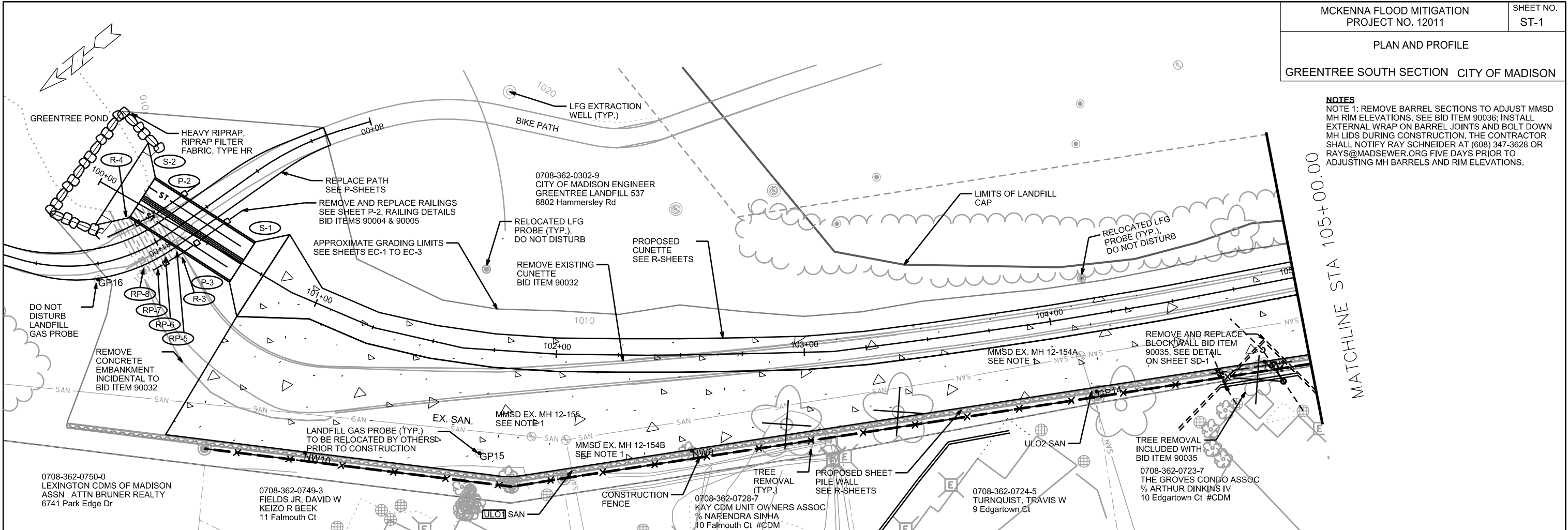


PLAN AND PROFILE

GREENTREE SOUTH SECTION CITY OF MADISON

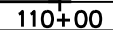
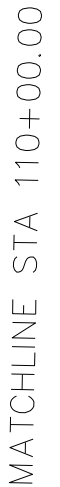
NOTES

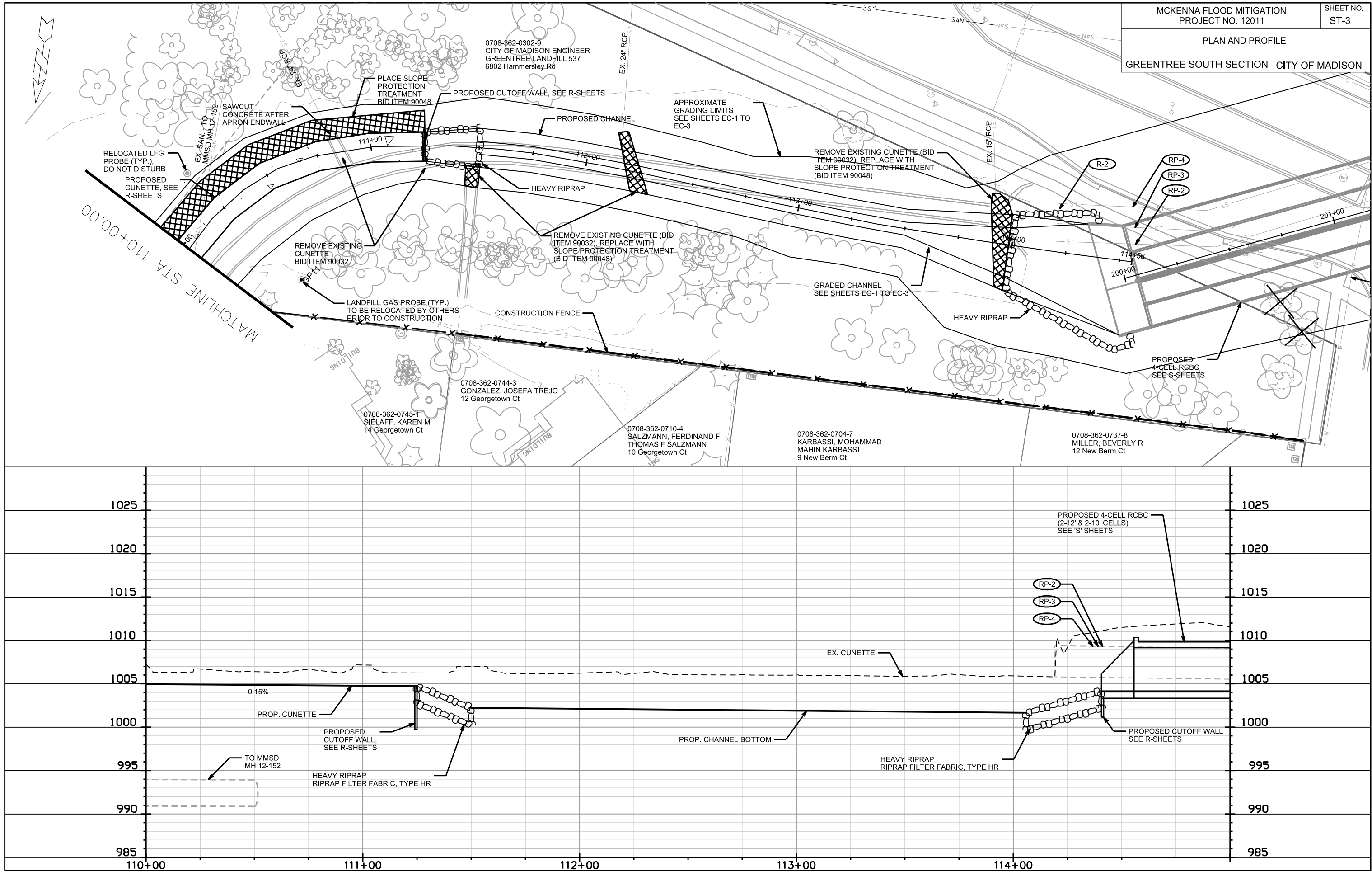
NOTE 1: REMOVE BARREL SECTIONS TO ADJUST MMSD MH RIM ELEVATIONS. SEE BID ITEM 90036; INSTALL EXTERNAL WRAP ON BARREL JOINTS AND BOLT DOWN MH LIDS DURING CONSTRUCTION. THE CONTRACTOR SHALL NOTIFY RAY SCHNEIDER AT (608) 347-3628 OR RAYS@MADSEWER.ORG FIVE DAYS PRIOR TO ADJUSTING MH BARRELS AND RIM ELEVATIONS.



GREENTREE SOUTH SECTION CITY OF MADISON

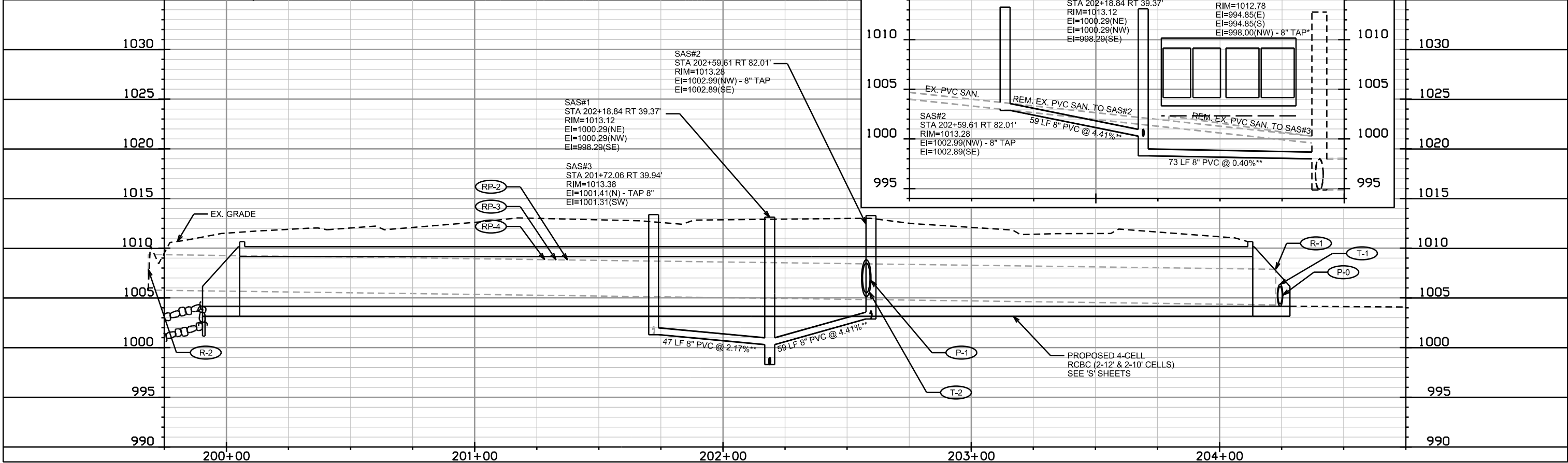
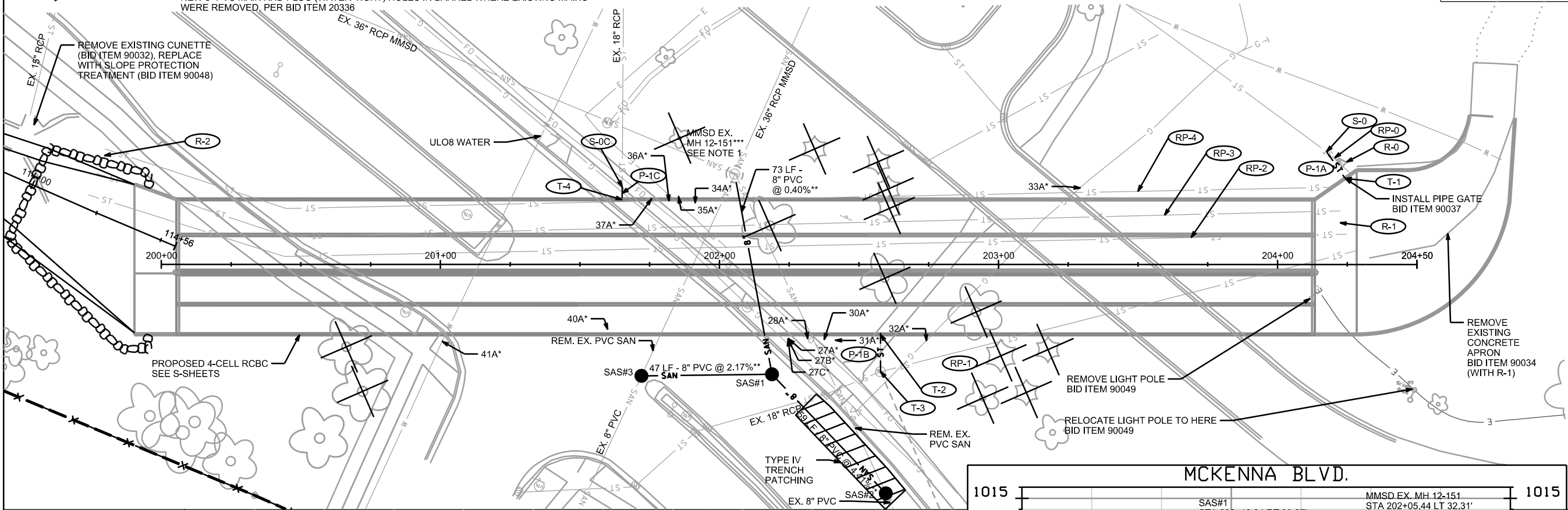
NOTE 3: PROVIDE AND INCLUDE KOR-N-SEAL BOOT WITH TAP AT DOWNSTREAM END OF BOTH LATERALS AND PLUG (WATER-TIGHT) HOLES IN EX MMSD MH12-153 WHERE EXISTING LATERALS REMOVED, PER BID ITEM 20336; INSTALL PRESSURE SANITARY SEWER PIPE, PER BID ITEM 50321







**NOTES**  
NOTE 1: THE CONTRACTOR SHALL NOTIFY RAY SCHNEIDER AT (608) 347-3628 OR RAYS@MADSEWER.ORG FIVE DAYS PRIOR TO CORING THROUGH MH BARREL.  
\*EXISTING ULO DONE MARCH 2019, SEE SHEET ST-7 FOR ADDITIONAL INFORMATION  
\*\*PRESSURE SANITARY SEWER PIPE, PER BID ITEM 50321  
\*\*\*FIELD CORE (TAP) FOR NEW 8" PVC MAIN MUST GO THROUGH EXTENDED HEIGHT BENCH; PROVIDE AND INSTALL KOR-N-SEAL BOOT WITH TAP AT DOWNSTREAM END OF NEW 8" PVC MAIN AND PLUG (WATER-TIGHT) HOLES IN BARREL WHERE EXISTING MAINS WERE REMOVED, PER BID ITEM 20336



SANITARY SEWER SCHEDULE

MCKENNA FLOOD MITIGATION PROJECT NO. 12011	SHEET NO. ST-5
SANITARY SEWER SCHEDULE	
CITY OF MADISON	

PROPOSED SANITARY STRUCTURES

SAS NO.	STATION	LOCATION (OFFSET)	TOP OF CASTING	E.I.	DEPTH	NOTES
MCKENNA BOULEVARD						
SAS#1	202+18.84	RT-39.37	1013.12	998.29	14.83	[7]
SAS#2	202+59.61	RT-82.01	1013.28	1002.89	10.39	[7]
SAS#3	201+72.06	RT-39.94	1013.38	1001.31	12.07	[7]

PROPOSED SANITARY PIPES

FROM (DNSTM)	TO (UPSTM)	DWNSTRM E.I.	UPSTRM E.I.	PLAN LGTH (FT)	SLOPE (%)	PIPE SIZE	PVC TYPE	NOTES
MCKENNA BOULEVARD								
MMSD EX MH12-151	SAS#1	998.00	998.29	73	0.40%	8"	C900	[1]; [2]; [6]
SAS#1	SAS#2	1000.29	1002.89	59	4.41%	8"	C900	-
SAS#1	SAS#3	1000.29	1001.31	47	2.17%	8"	C900	-

EXISTING SANITARY PIPES

FROM (DNSTM)	TO (UPSTM)	DWNSTRM E.I.	UPSTRM E.I.	PLAN LGTH (FT)	SLOPE (%)	PIPE SIZE	PIPE TYPE	NOTES
MCKENNA BOULEVARD								
SAS#2	EX SAS 2664-003	1002.99	1006.21	120	2.68%	8"	PVC	[3]
SAS#3	EX SAS 2664-004	1001.41	1003.60	97	2.26%	8"	PVC	[3]

REMOVE SANITARY PIPES

FROM (DNSTM)	TO (UPSTM)	PLAN LGTH (FT)	PAID (Y/N)	PAY LGTH (FT)	PIPE SIZE	PIPE TYPE	NOTES
MCKENNA BOULEVARD							
MMSD EX MH12-151	SAS#2	127	N	51	8"	PVC	[4]
MMSD EX MH12-151	SAS#3	80	Y	10	8"	PVC	[4]

ADJUST SANITARY STRUCTURE RIMS

SAS NO.	STATION	LOCATION (OFFSET)	TOP OF CASTING	PROP. RIM ELEV.	ADJ. HEIGHT	NOTES
GREENWAY						
MMSD EX MH12-153	108+90.06	RT-37.7	1010.23	1006.55	-3.68	[5]; [6]
MMSD EX MH12-153A	106+63.35	RT-22.5	1009.62	1006.74	-2.88	[5]; [6]
MMSD EX MH12-154	105+32.35	RT-19.4	1009.84	1006.90	-2.94	[5]; [6]
MMSD EX MH12-154A	104+09.86	RT-15.8	1010.13	1007.04	-3.09	[5]; [6]
MMSD EX MH12-154B	102+04.25	RT-34.6	1009.79	1007.53	-2.26	[5]; [6]
MMSD EX MH12-155	101+92.20	RT-33.9	1010.00	1007.54	-2.46	[5]; [6]

SPECIFIC NOTES:

- [1] PROVIDE AND INSTALL KOR-N-SEAL BOOT WITH TAP CONNECTION AT DOWNSTREAM END OF PIPE, AT EX MMSD MH12-151
- [2] FIELD CORE (TAP) FOR PROPOSED SANITARY MAIN MUST GO THROUGH EXTENDED HEIGHT BENCH IN EX MMSD MH12-151
- [3] FIELD CORE OPENING FOR EXISTING PIPE INTO SAS
- [4] PLUG (WATER-TIGHT) HOLE IN EX MMSD MH12-151 BARREL WHERE EXISTING SANITARY MAIN IS REMOVED
- [5] DO NOT SAW CUT CHIMNEY BARREL; REPLACE CHIMNEY SECTION(S) AND ADJUSTING RINGS TO ADJUST ELEVATION
- [6] THE CONTRACTOR SHALL NOTIFY RAY SCHNEIDER (MMSD) AT (608) 347-3628 OR RAYS@MADSEWER.ORG FIVE (5) DAYS PRIOR TO DOING WORK ON MMSD FACILITIES; PERMIT AND FEES FOR THIS WORK IS THE RESPONSIBILITY OF THE CONTRACTOR
- [7] INSTALL INTERNAL CHIMNEY SEAL IN CONFORMANCE WITH S.D.D. 5.7.17

# STORM SEWER SCHEDULE

MCKENNA FLOOD MITIGATION

PROJECT NO. 12011

SHEET NO.

ST-6

STORM SEWER SCHEDULE

CITY OF MADISON

## PROPOSED STORM STRUCTURES

STRUC. NO.	STATION	LOCATION (OFFSET)	TYPE	TOP OF CASTING	E.I.	DEPTH	NOTES
MCKENNA BOULEVARD							
S-0	204+17.62	LT-40.3	COLLAR	-	1005.00	-	-
S-0C	201+65.17	LT-27.8	COLLAR	-	1005.95	-	-
GREENWAY							
S-1	100+76.00	LT-0.4	RCBC WINGWALL	-	1006.30	-	[1]
S-2	100+18.08	LT-2.9	RCBC WINGWALL	-	1006.30	-	[1]
S-3	24+11.20	CL	RCBC WINGWALL	-	1006.80	-	[1]
S-4	23+79.20	CL	RCBC WINGWALL	-	1006.80	-	[1]
S-5	9+59.37	LT-1.1	RCBC WINGWALL	-	1010.80	-	[1]
S-6	7+70.66	CL	RCBC WINGWALL	-	1012.10	-	[1]

## STORM STRUCTURE TAPS

STRUC. NO.	STRUC. I.D.	STATION	LOCATION (OFFSET)	E.I.	NOTES
MCKENNA BOULEVARD					
T-1		204+24.27	LT-30.8	1004.16	RCBC WW (S-1)
T-2		202+57.72	RT-25.2	1005.50	4-CELL RCBC
T-3	AS 2664-010	202+57.72	RT-38.4	1007.10	4X4 AS (EX AS 2664-010)
T-4		201+65.14	LT-23.2	1005.92	4-CELL RCBC

## 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
MCKENNA BOULEVARD										
P-1A	T-3	S-0	1004.16	1005.00	11.6	11.1	7.57%	21"	TYPE I	[3]; TAP WINGWALL FOR DS END
P-1B	T-1	T-2	1005.50	1007.10	16.9	13.9	11.51%	36"	TYPE I	TAP FOR BOTH ENDS
P-1C	T-4	S-0C	1005.92	1005.95	4.7	4.7	0.64%	18"	TYPE I	
GREENWAY										
P-2	S-1	S-2	1006.3	1006.3	48.0	48.0	0.00%	4'X8'	RCBC	-
P-3	S-1	S-2	1006.3	1006.3	48.0	48.0	0.00%	4'X8'	RCBC	-
P-4	S-3	S-4	1006.8	1006.8	32.0	32.0	0.00%	42"	TYPE I	-
P-5	S-3	S-4	1006.8	1006.8	32.0	32.0	0.00%	42"	TYPE I	-
P-6	S-3	S-4	1006.8	1006.8	32.0	32.0	0.00%	42"	TYPE I	-
P-7	S-3	S-4	1006.8	1006.8	32.0	32.0	0.00%	42"	TYPE I	-
P-8	S-5	S-6	1010.80	1012.10	200.0	200.0	0.65%	4'X8'	RCBC	-
P-9	S-5	S-6	1010.80	1012.10	200.0	200.0	0.65%	4'X8'	RCBC	-

## STANDARD NOTES:

- 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; RCBC = REINFORCED CONCRETE BOX CULVERT; DS = DOWNSTREAM

- 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.

- TOP OF CONCRETE ROOF (TR) IS 1.25' BELOW TOP OF CASTING UNLESS OTHERWISE NOTED.  
- 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 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 MATT OF CITY ENGINEERING AT (608) 266-4058 FOR PRECAST APPROVALS, FAX SHOP DRAWINGS TO (608)264-9275, OR EMAIL SHOP DRAWINGS TO MALLIE@CITYOFMADISON.COM.

## SPECIFIC NOTES

- [1] PER S.D.D. 5.5.1  
[2] PER S.D.D. 5.7.12A  
[3] INSTALL PIPE GRATE AT OUTLET, PER BID ITEM 90031  
[4] INSTALL PIPE GRATE AT OUTLET, PER BID ITEM 90032  
[5] INSTALL PIPE GRATE AT OUTLET, PER BID ITEM 90033



STORM SEWER SCHEDULE

MCKENNA FLOOD MITIGATION  
PROJECT NO. 12011

SHEET NO.  
ST-7

STORM SEWER SCHEDULE

CITY OF MADISON

UTILITY LINE OPENINGS (ULO)

ULO NO.	STATION	LOCATION (OFFSET)	TYPE	TOP ELEV.	NOTES
GREENWAY					
ULO1	102+06.80	RT-46.7	SAN	-	-
ULO2	104+11.82	RT-30.0	SAN	-	-
ULO3	106+62.15	RT-39.5	SAN	-	-
ULO4	107+78.62	RT-46.4	ELEC	-	-
ULO5	108+85.63	RT-54.2	SAN LAT	-	-
ULO6	108+94.56	RT-51.8	SAN	-	-
ULO7	109+01.85	RT-46.8	SAN LAT	-	-
ULO8	201+36.19	LT-46.0	WAT	-	-

EXISTING UTILITY LINE OPENINGS (ULO)

ULO NO.	TYPE	TOP ELEV.	NOTES
MCKENNA BOULEVARD			
ULO 27A	ELEC	1009.72	-
ULO 27B	ELEC	1009.743	-
ULO 27C	ELEC	1009.788	-
ULO 28A	FO	1010.072	-
ULO 30A	TV	1011.543	-
ULO 31A	FO	1011.024	-
ULO 32A	GAS	1013.147	-
ULO 33A	GAS	1007.833	-
ULO 34A	FO	1010.044	-
ULO 35A	ELEC	1010.03	-
ULO 36A	TV	1011.092	-
ULO 37A	FO	1010.122	-
ULO 40A	ELEC	1011.002	-
ULO 41A	WAT	1003.082	-

REMOVE STORM STRUCTURES

STRUC. NO.	ID NO.	STATION	LOCATION (OFFSET)	TYPE	NOTES
MCKENNA BOULEVARD					
R-0		204+23.98	LT-35.7	APRON ENDWALL	-
R-1		204+22.55	LT-19.1	WINGWALL	SEE SPEC. NOTE 1
R-2		114+19.18	LT-13.5	WINGWALL	-
GREENWAY					
R-3		100+40.23	RT-17.5	WINGWALL	-
R-4		100+17.83	RT-4.3	WINGWALL	-
R-5		24+07.61	RT-0.2	WINGWALL	-
R-6		23+81.73	CL	WINGWALL	-

REMOVE STORM PIPES

REMOVE NO.	REMOVE FROM	REMOVE TO	PLAN LGTH (FT)	PIPE SIZE	PIPE TYPE	PAID (Y/N)	PAY LGTH (FT)	NOTES
MCKENNA BOULEVARD								
RP-0	R-0	S-0	5.0	21"	RCP	N	0	-
RP-1	R-1	AS 2664-010	175.7	36"	RCP	Y	41.7	-
RP-2	R-1	R-2	454.5	43"X68"	HERCP	N	0	-
RP-3	R-1	R-2	449.6	43"X68"	HERCP	N	0	-
RP-4	R-1	R-2	443.9	43"X68"	HERCP	N	0	-
GREENWAY								
RP-5	R-3	R-4	26.0	42"	CMP	Y	0	-
RP-6	R-3	R-4	26.0	42"	CMP	Y	18.9	-
RP-7	R-3	R-4	26.0	42"	CMP	Y	9.3	-
RP-8	R-3	R-4	26.0	42"	CMP	N	0	-
RP-9	R-5	R-6	26.0	36"	CMP	N	0	-
RP-10	R-5	R-6	26.0	36"	CMP	N	0	-
RP-11	R-5	R-6	26.0	36"	CMP	N	0	-
RP-12	R-5	R-6	26.0	36"	CMP	N	0	-

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SPECIFIC NOTES

1) WORK TO BE PAID UNDER BID ITEM 90042

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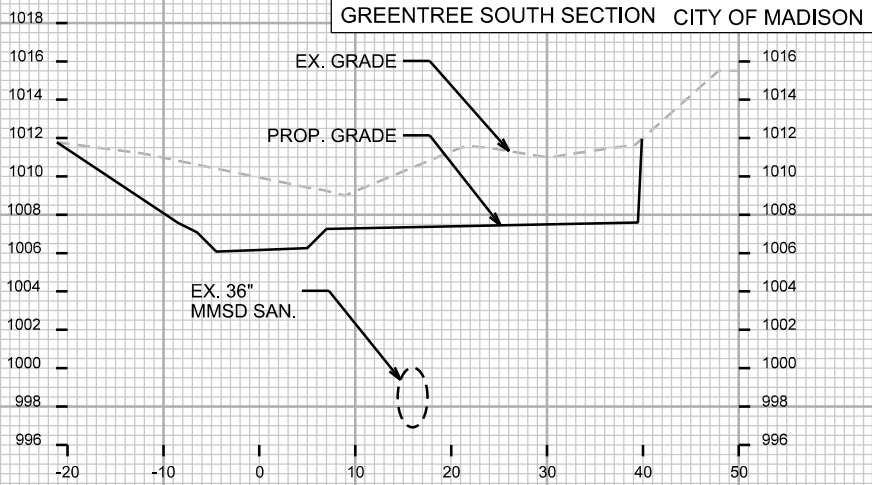
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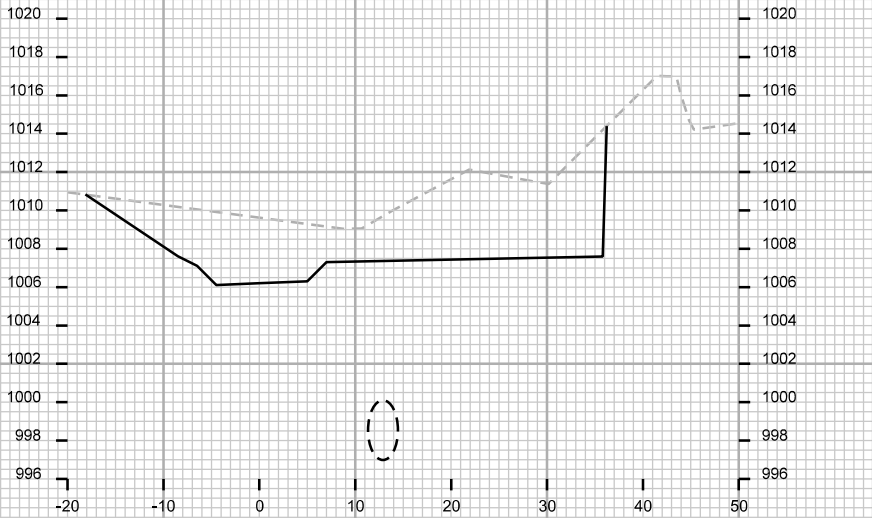
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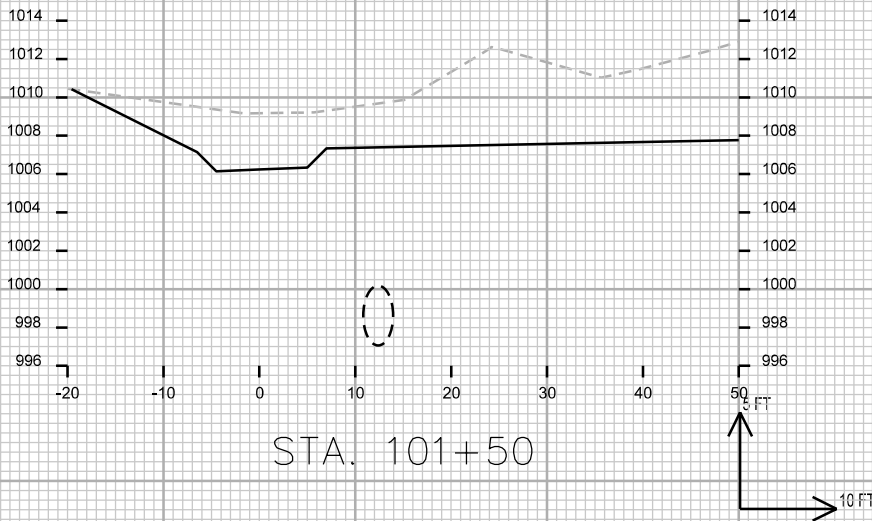
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STA. 102+00



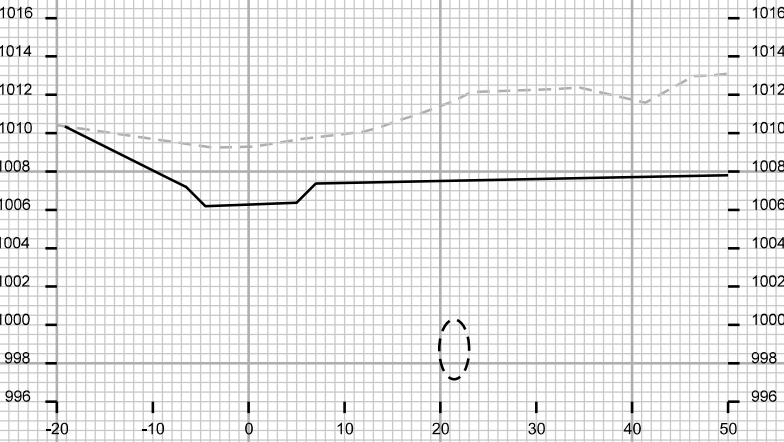
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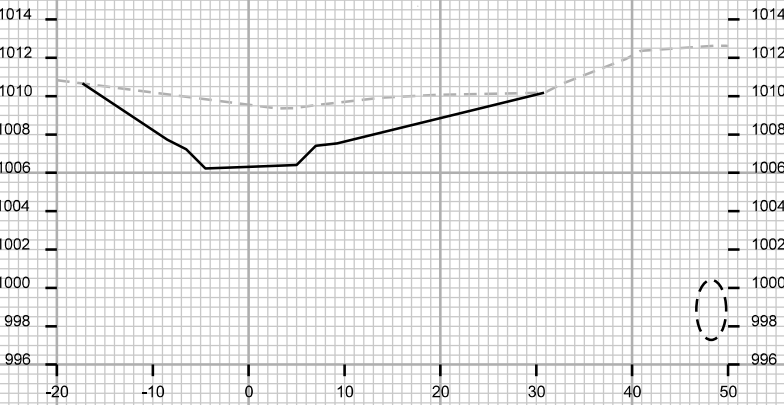
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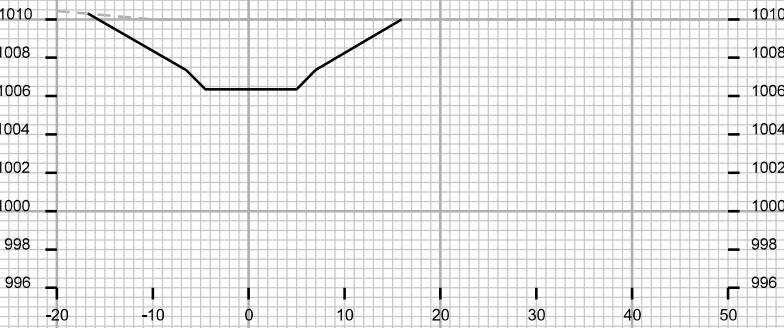
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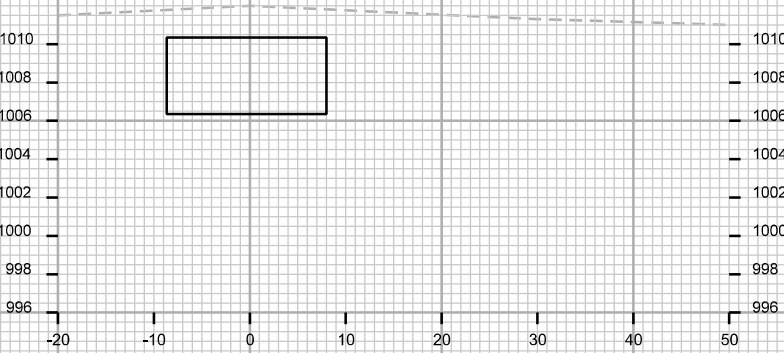
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STA. 100+75



STA. 100+25

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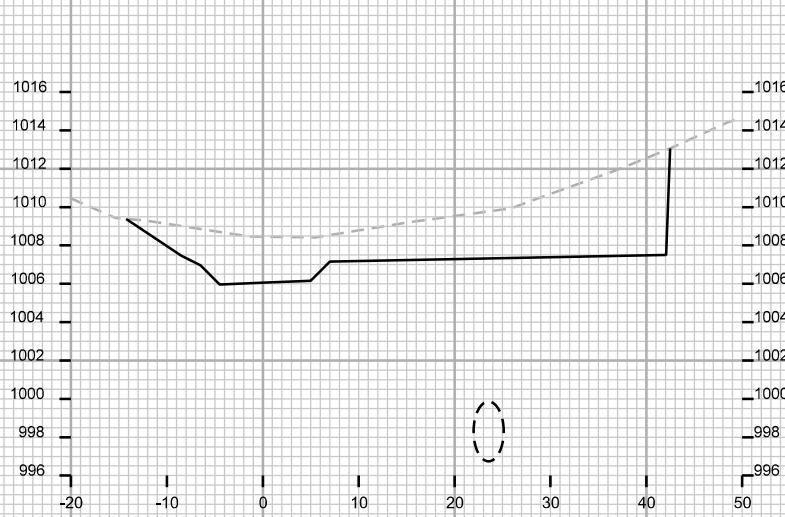
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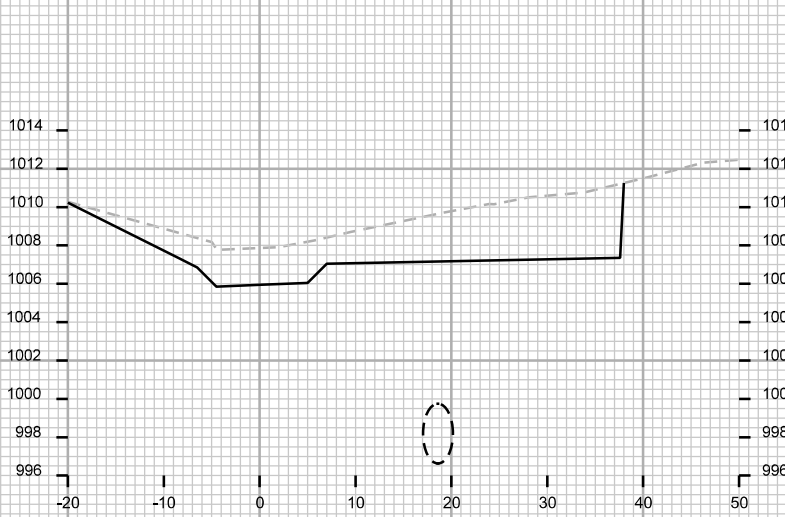
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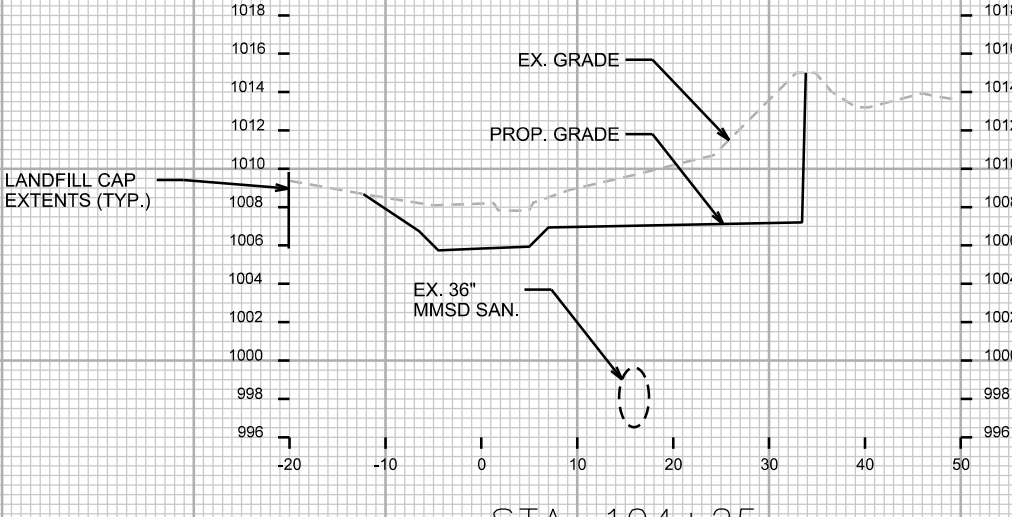
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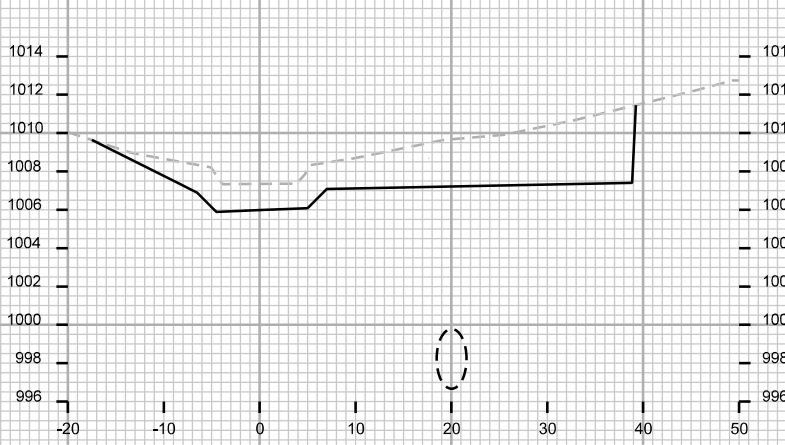
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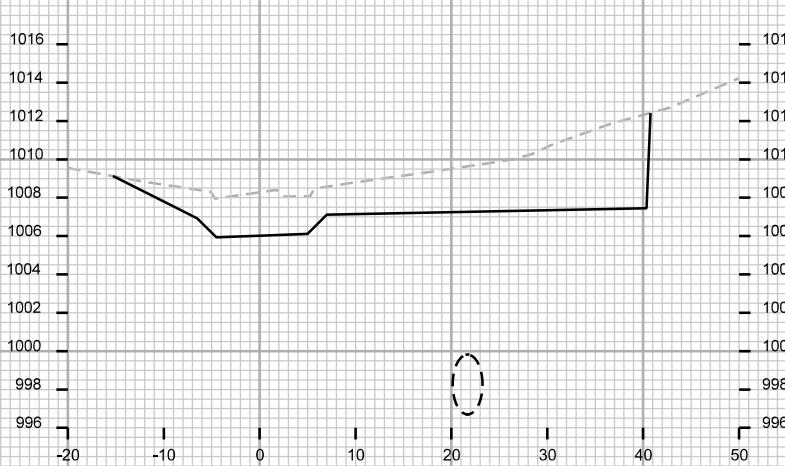
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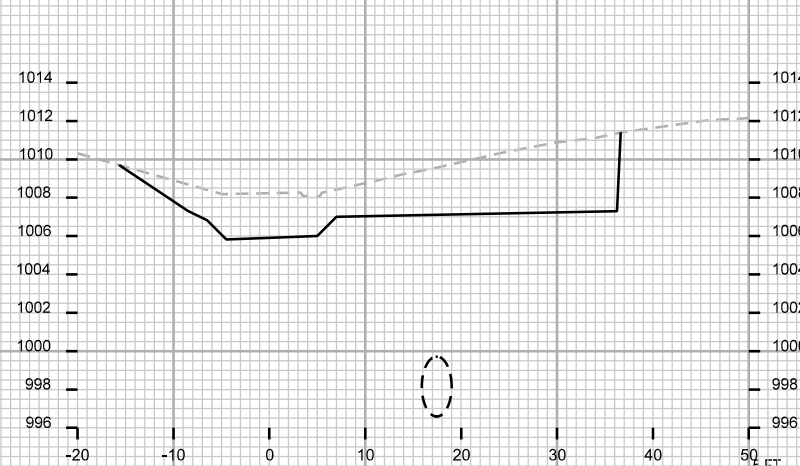
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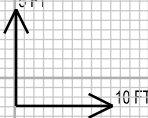
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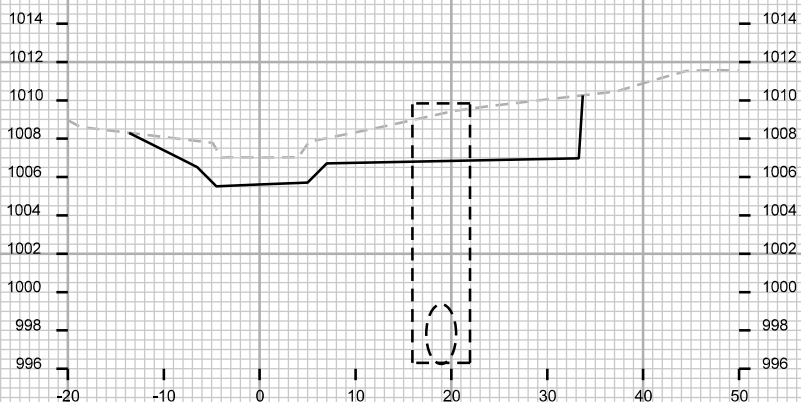
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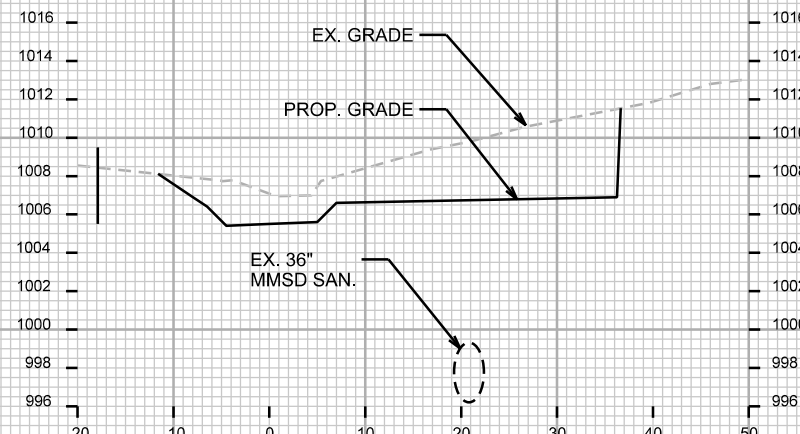
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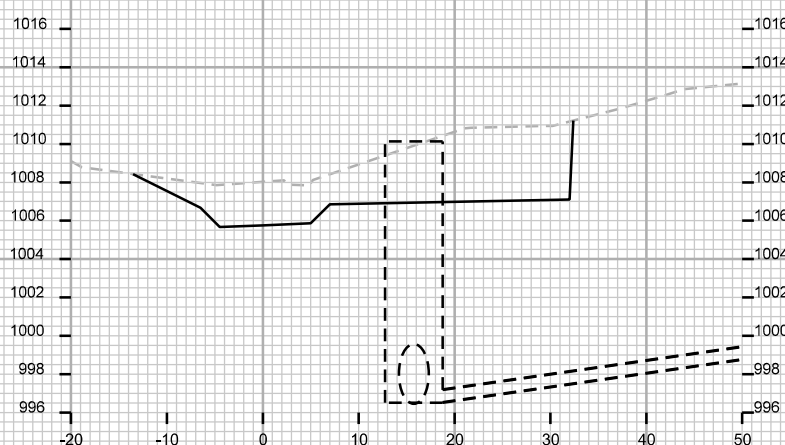
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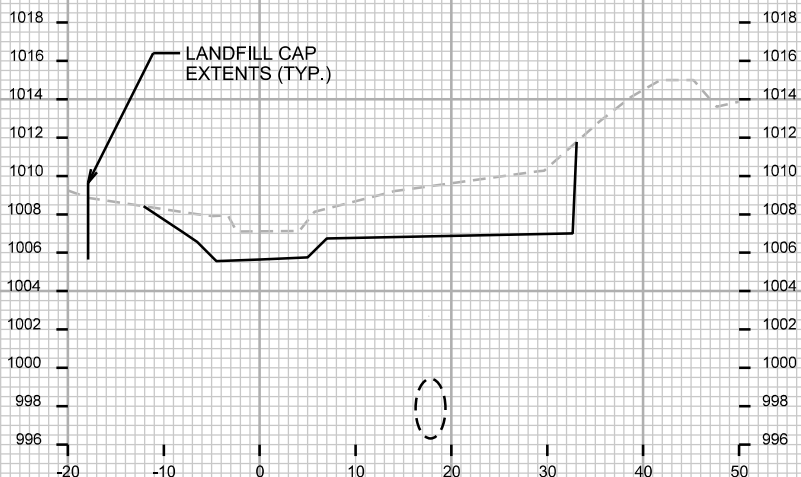
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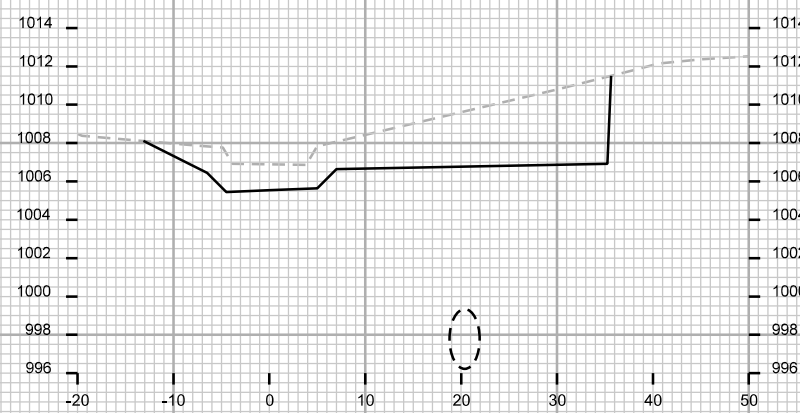
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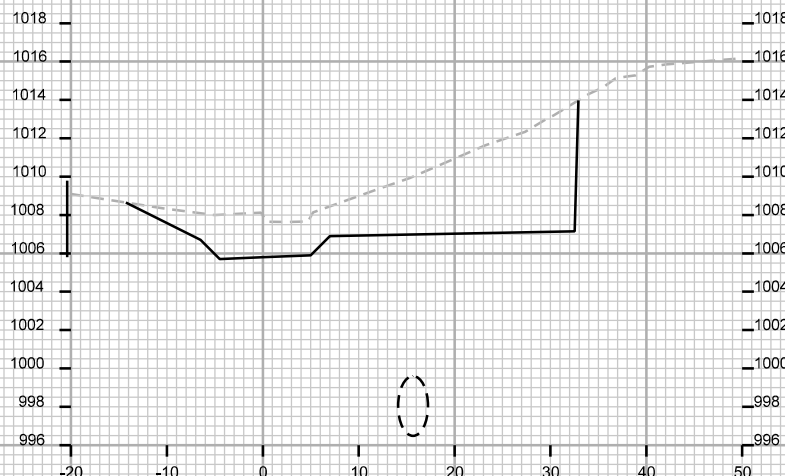
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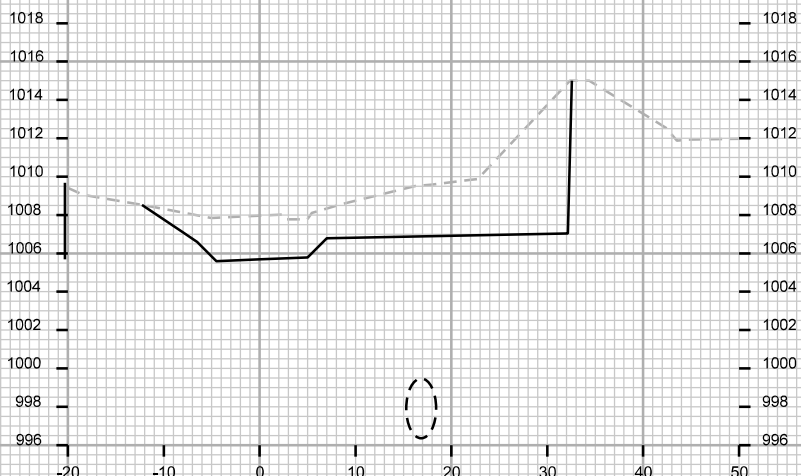
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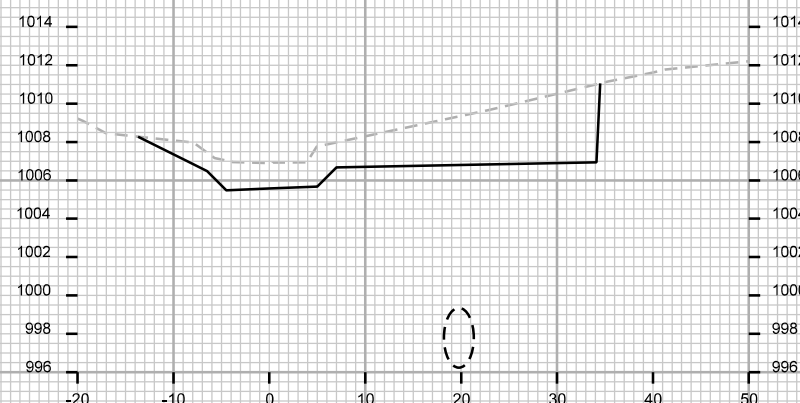
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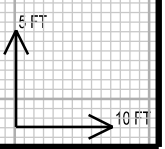
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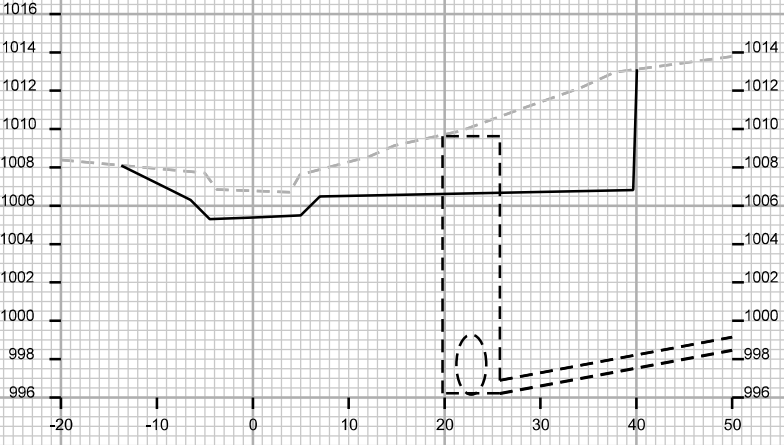
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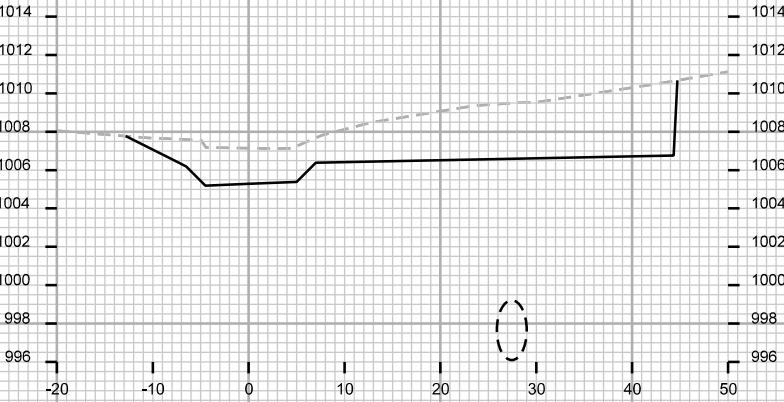
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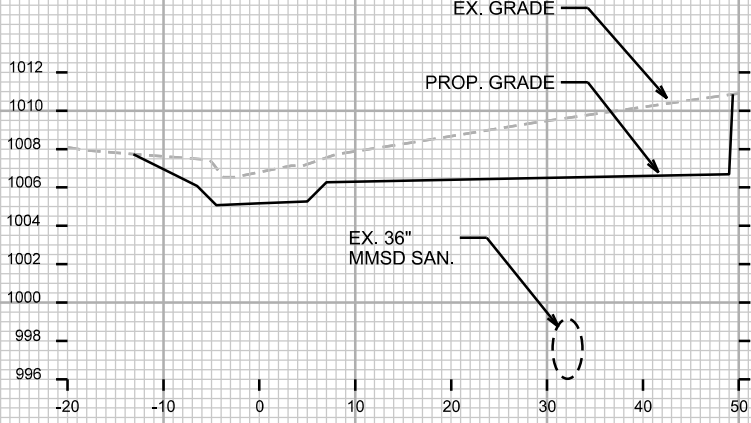
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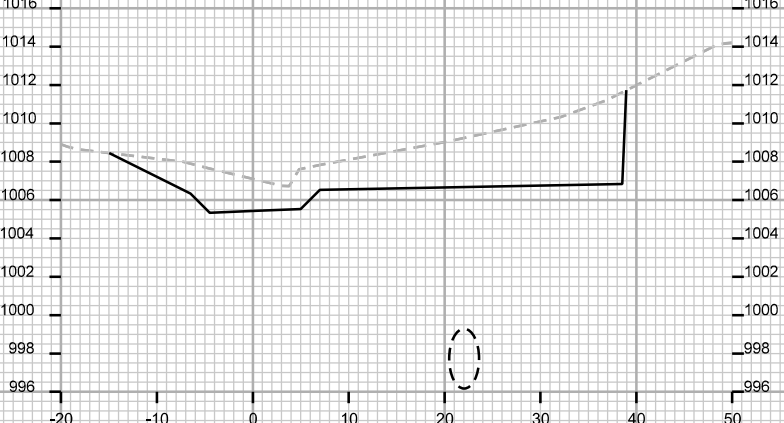
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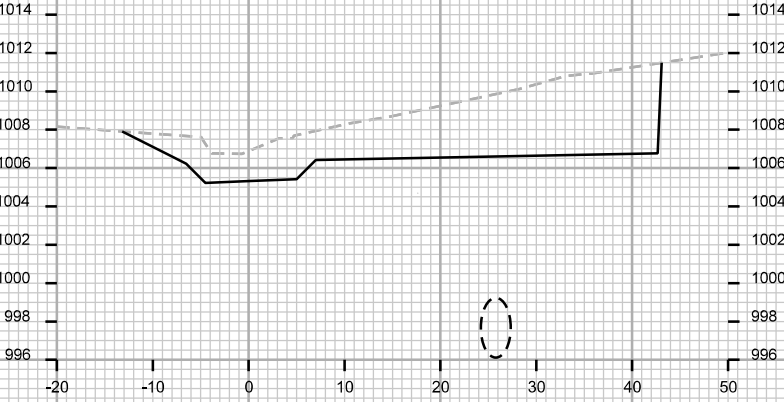
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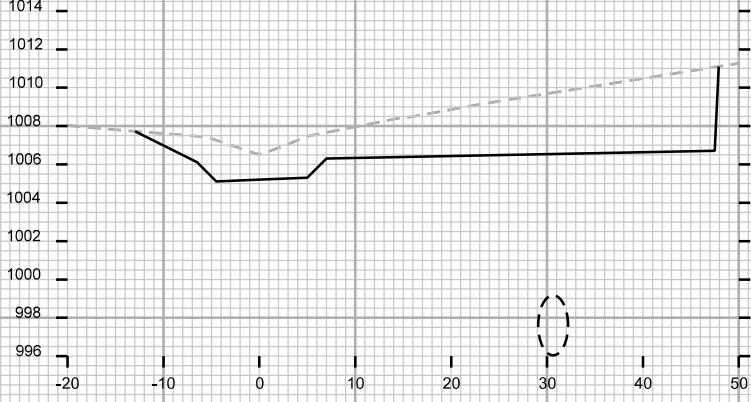
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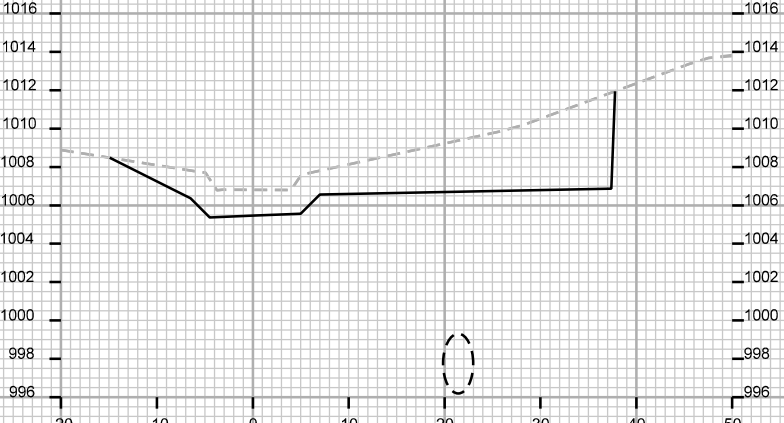
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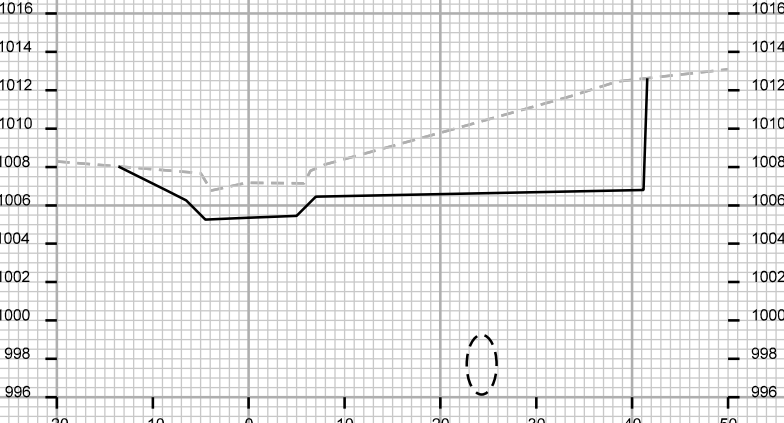
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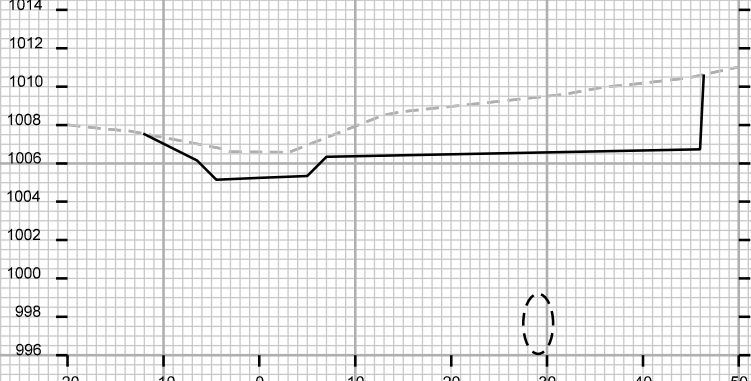
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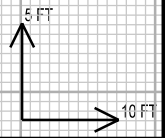
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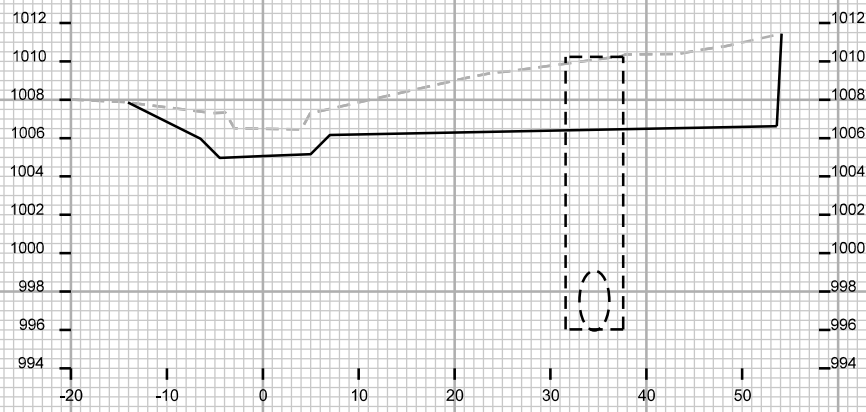
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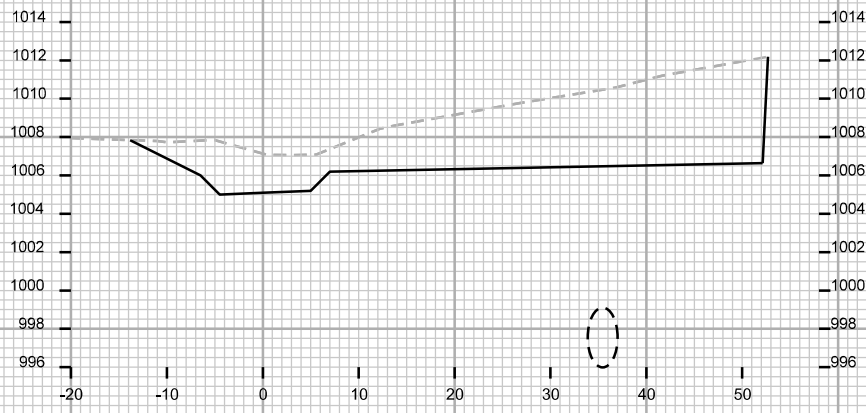
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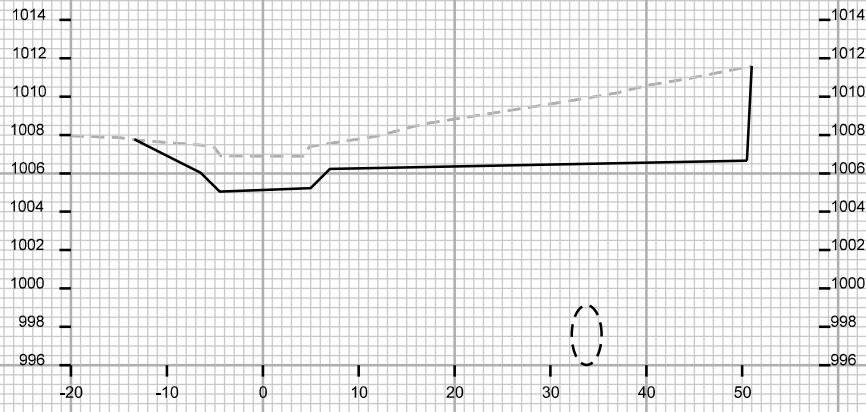
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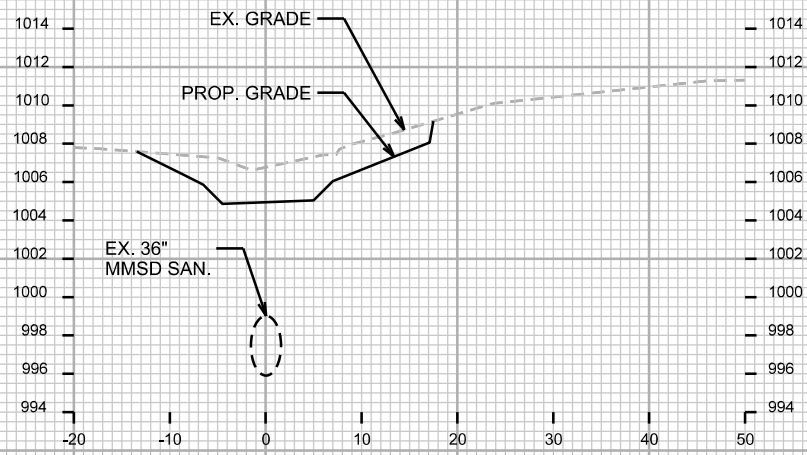
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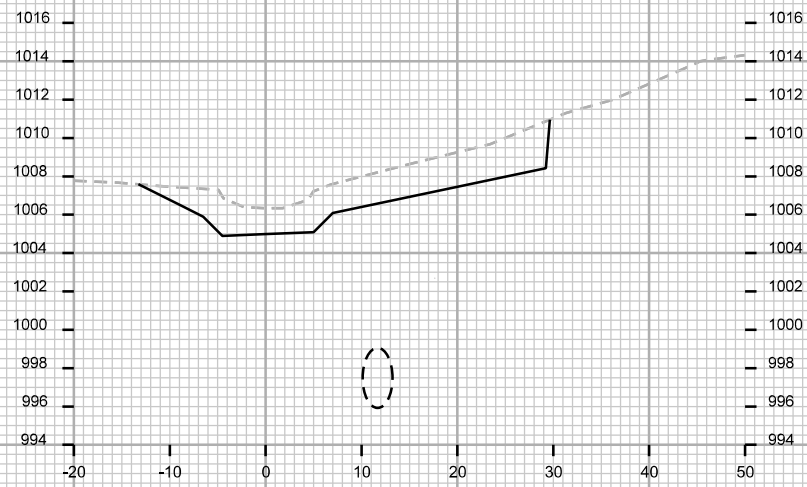
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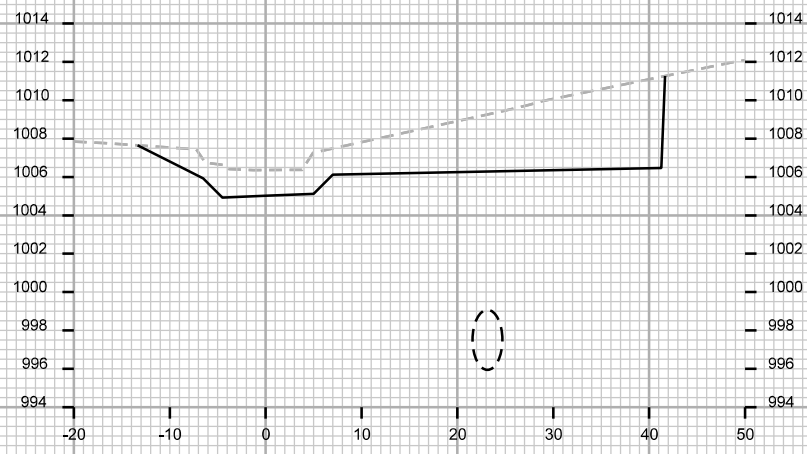
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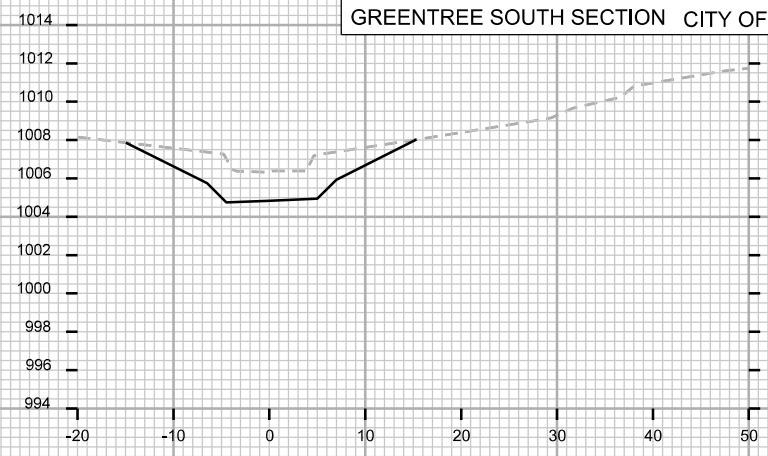
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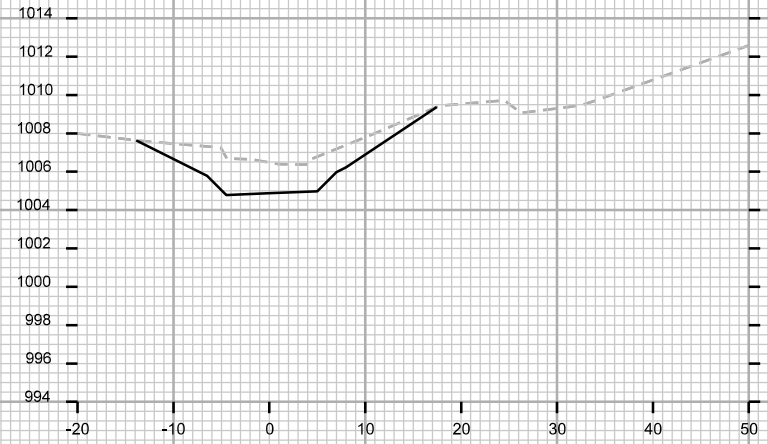
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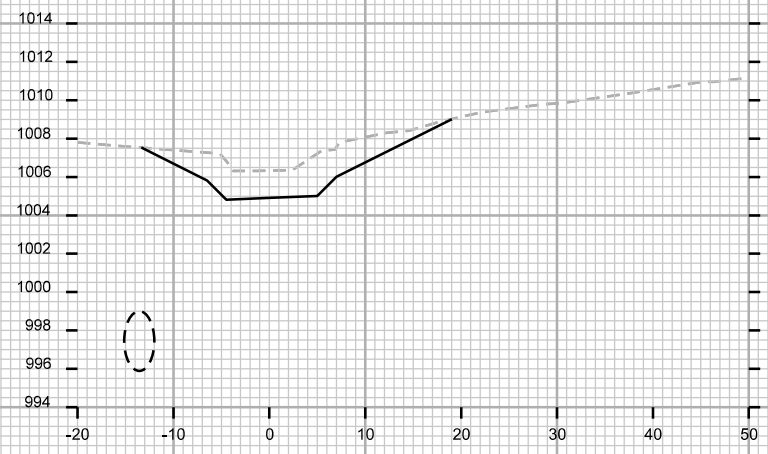
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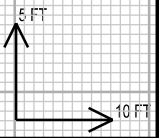
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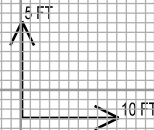
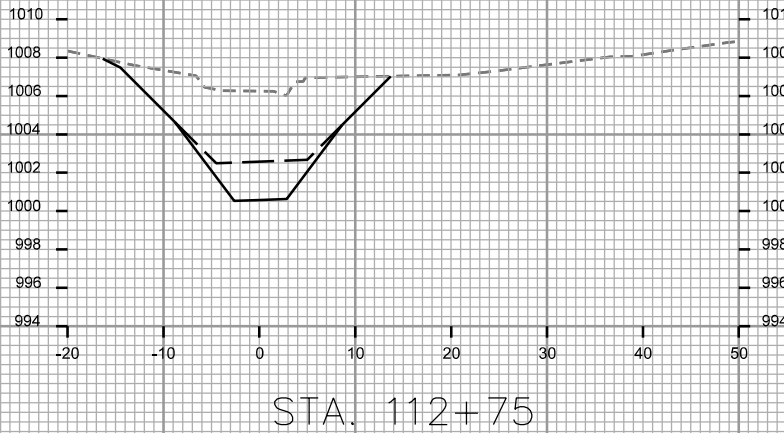
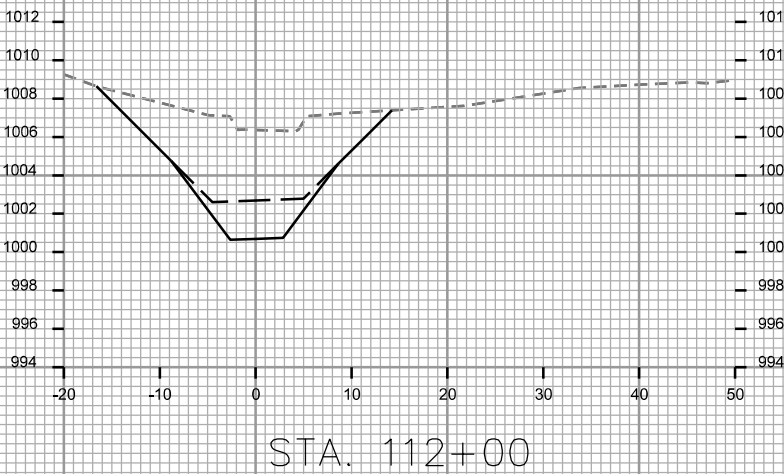
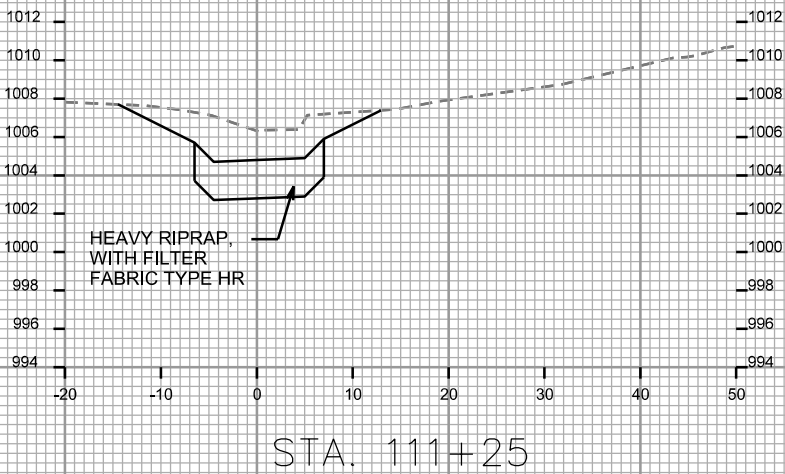
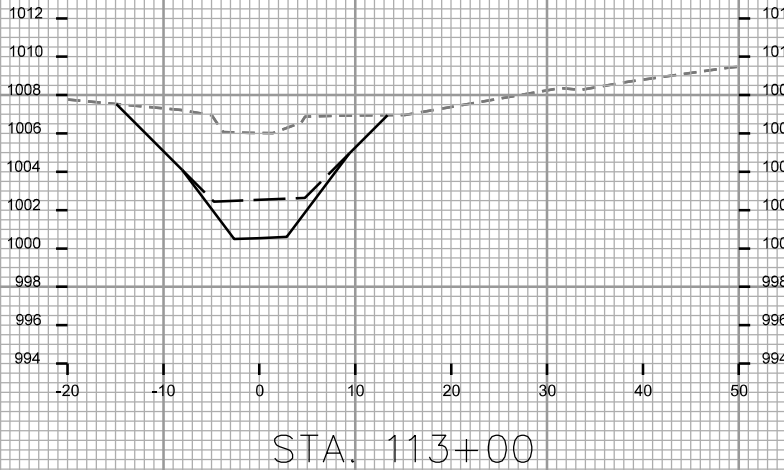
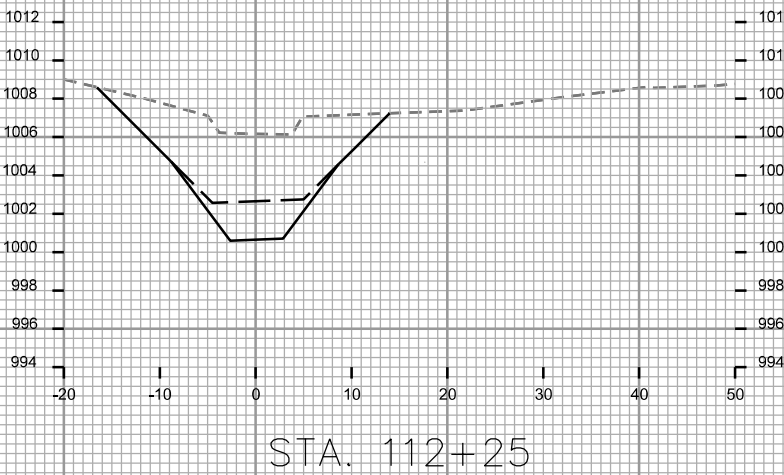
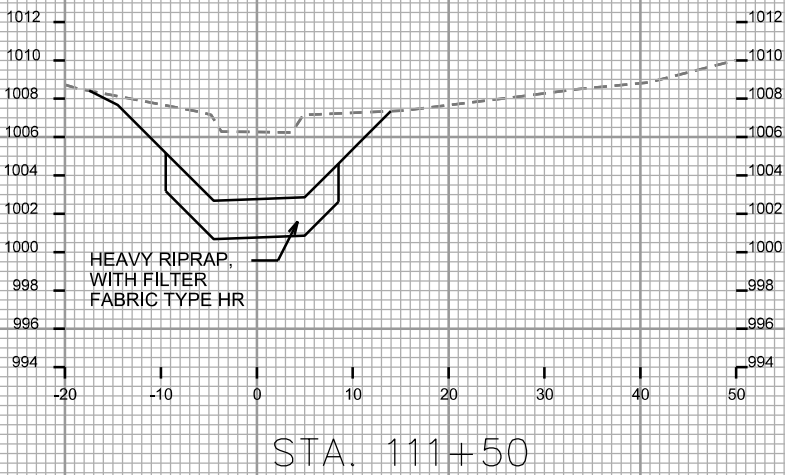
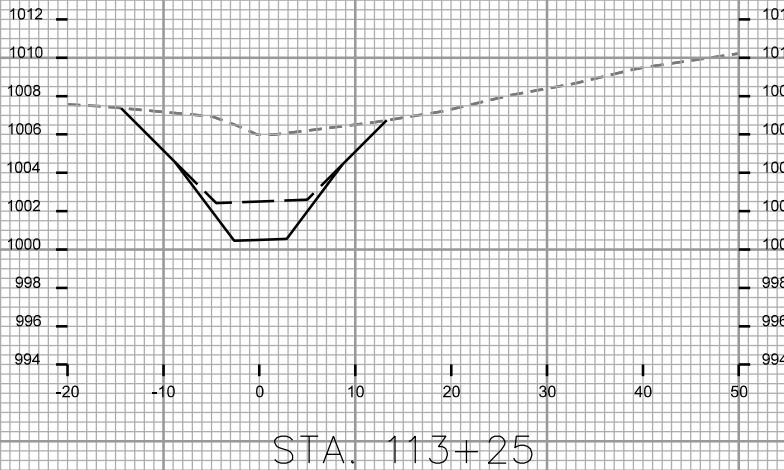
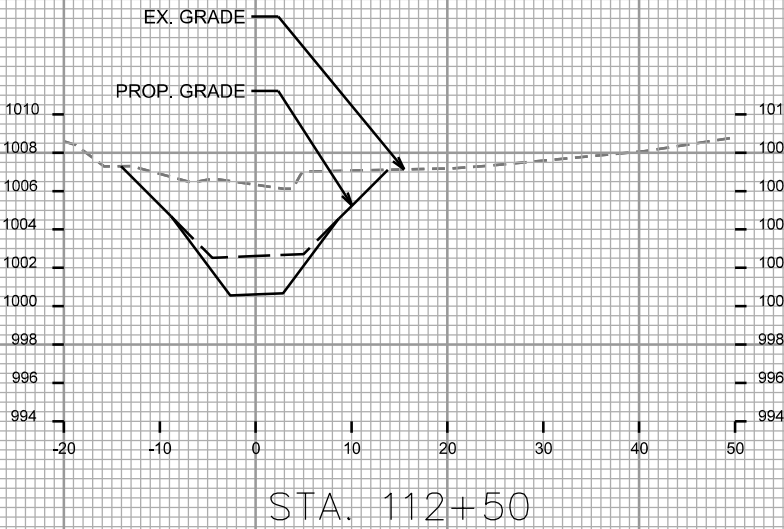
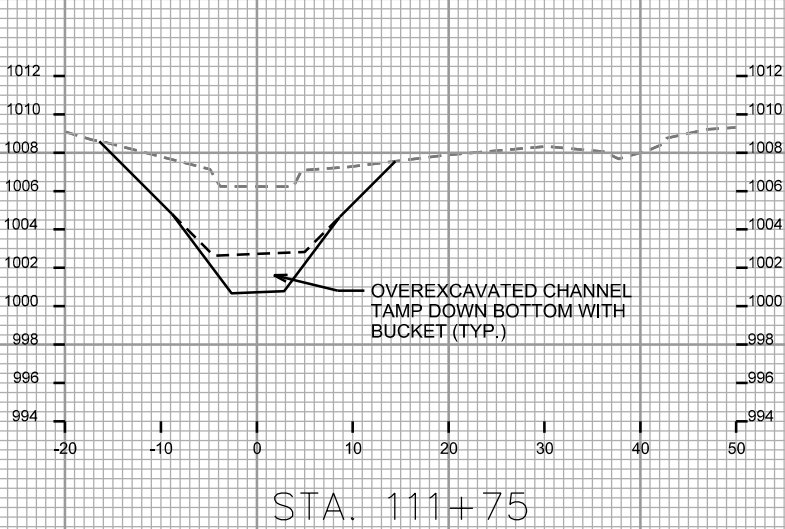


STA. 110+50



CROSS SECTIONS

GREENTREE SOUTH SECTION CITY OF MADISON



PLOT SCALE: \_\_\_\_\_

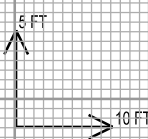
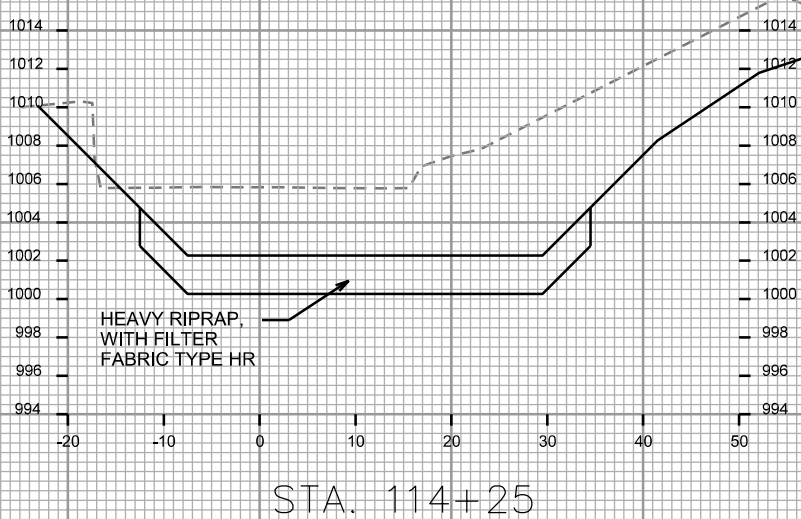
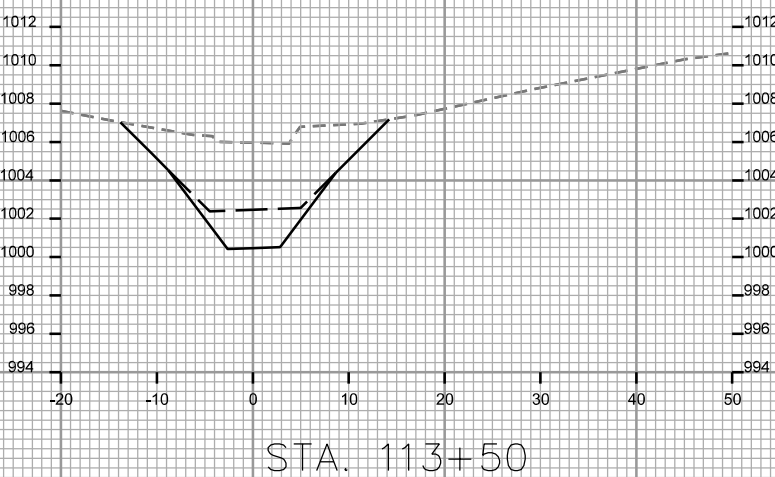
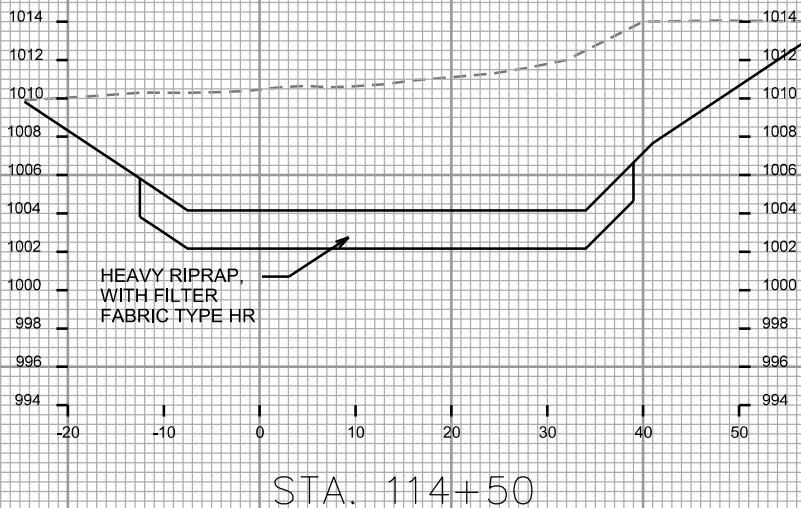
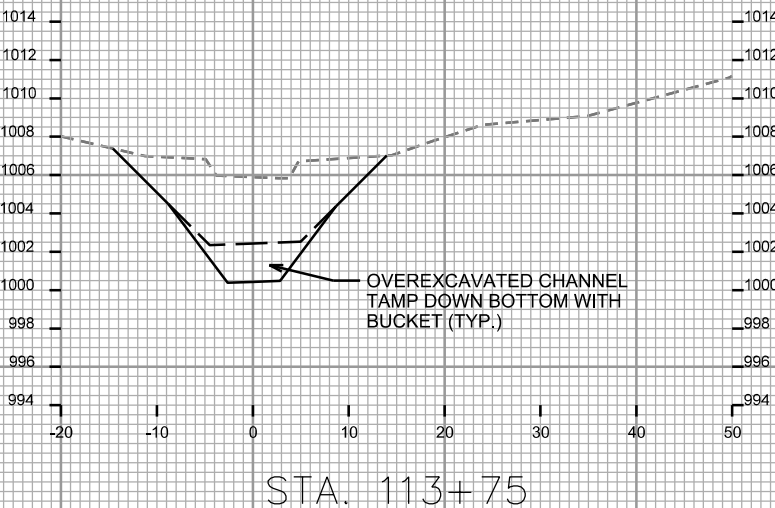
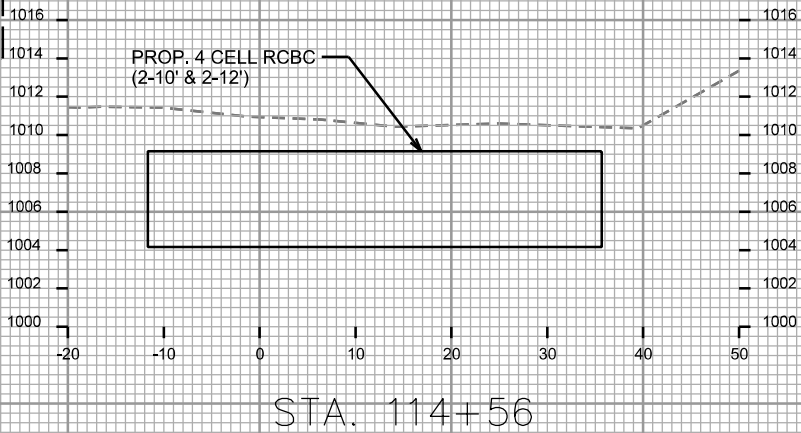
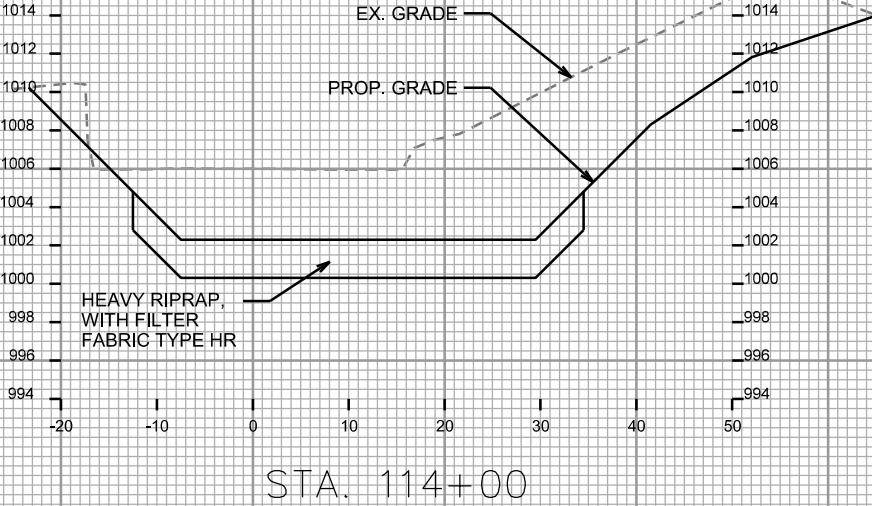
PLOT NAME: \_\_\_\_\_

REV. DATE: \_\_\_\_\_

ORIGINATOR: CITY OF MADISON, STREETS DIVISION

CROSS SECTIONS

GREENTREE SOUTH SECTION CITY OF MADISON



PLOT SCALE: \_\_\_\_\_

PLOT NAME: \_\_\_\_\_

REV. DATE: \_\_\_\_\_

ORIGINATOR: CITY OF MADISON, STREETS DIVISION

MCKENNA FLOOD MITIGATION  
PROJECT NO. 11475

SHEET NO.  
S-1

STRUCTURAL DETAILS  
GREENTREE SOUTH SECTION CITY OF MADISON

emcs

1300 W. Canal Street, Suite 200  
Milwaukee, WI 53233  
414.347.1607 Fax 414.347.1347

DESIGNED  
BY JRM

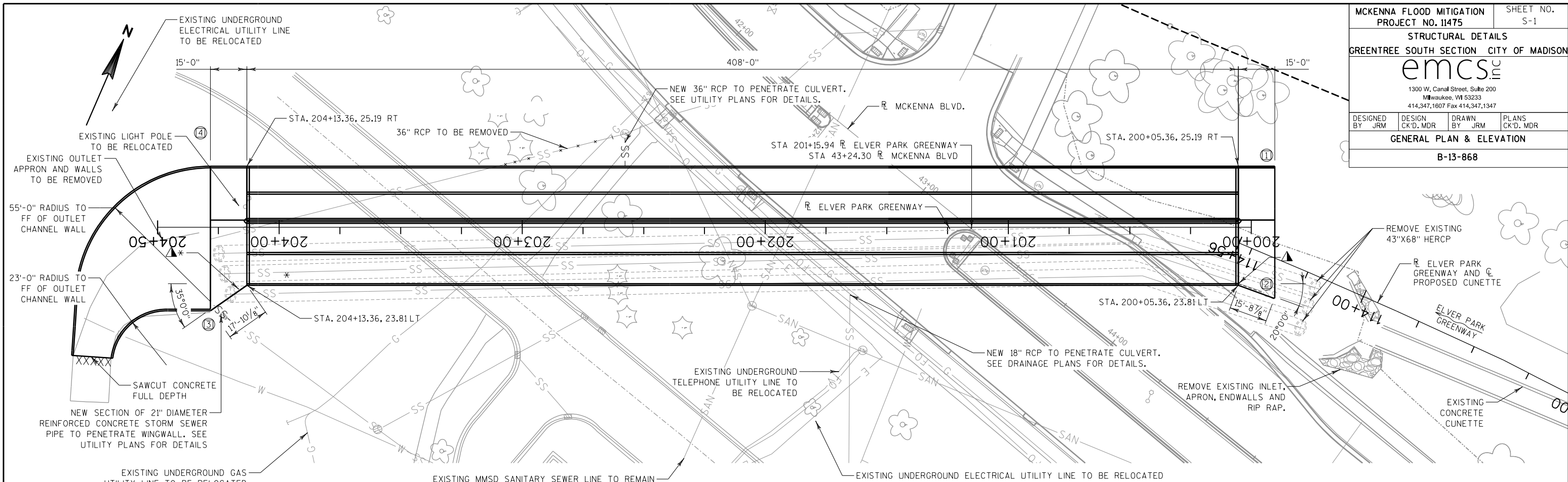
DESIGN  
CK'D. MDR

DRAWN  
BY JRM

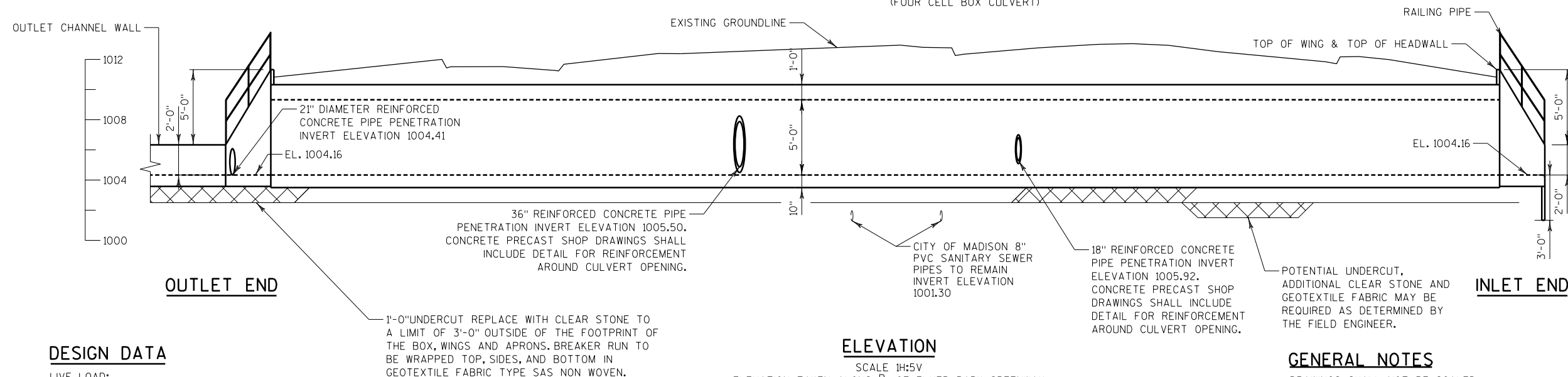
PLANS  
CK'D. MDR

GENERAL PLAN & ELEVATION

B-13-868



PLAN  
(FOUR CELL BOX CULVERT)



ELEVATION

SCALE 1H:5V  
ELEVATION TAKEN ALONG R OF ELVER PARK GREENWAY

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.
- REMOVAL OF EXISTING INLET AND OUTLET WILL BE PAID FOR UNDER BID ITEM "REMOVE EXISTING 43" X 68" HERCP WINGWALL". SEE DRAINAGE PLANS FOR DETAILS.
- REMOVAL OF EXISTING OUTLET APRON SHALL BE PAID FOR UNDER ITEM "REMOVE EXISTING 43" X 68" HERCP CONCRETE SLAB". SEE DRAINAGE PLANS FOR DETAILS.
- ALL REINFORCEMENT STEEL 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 3/4" UNLESS NOTED OTHERWISE.
- SEE R-13-337 PLANS FOR WORK EAST OF STATION 114+30.

LIST OF DRAWINGS

1. GENERAL PLAN & ELEVATION
2. CROSS SECTION & QUANTITIES
3. CONSTRUCTION STAGING DETAILS
4. APRON DETAILS
5. WINGWALL DETAILS
6. OUTLET SLAB DETAILS
7. RAILING PIPE DETAILS

LEGEND

- (X) DENOTES WINGWALL NUMBER
- \* FOR NAME PLATE LOCATION, SEE "BOX CULVERT DETAIL" SHEET.
- ▲ FOR CORNER DETAILS SEE "APRON DETAILS" SHEET.

DESIGN DATA

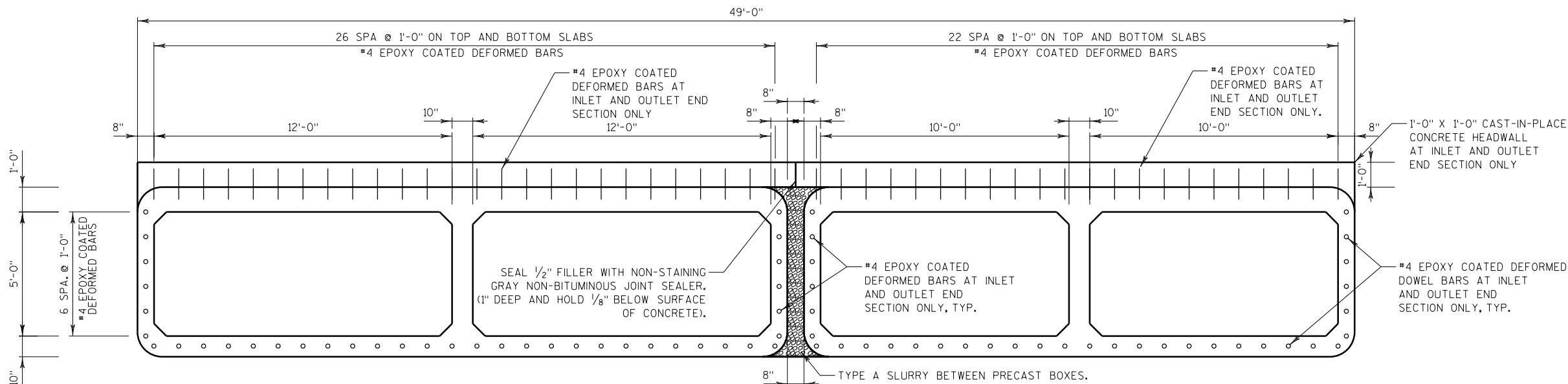
LIVE LOAD:  
DESIGN LOADING: HL-93  
EARTH LOAD:  
DESIGN FOR FILL HEIGHT RANGE OF 1.0 TO 3.0 FEET.  
MATERIAL PROPERTIES:  
CONCRETE MASONRY CAST-IN-PLACE f'c = 3.5 KSI  
CONCRETE MASONRY PRECAST f'c = 4.0 KSI  
BAR STEEL REINFORCEMENT fy = 60 KSI

SOIL DATA

DRY UNIT WEIGHT OF SOIL γ = 120 LBS/FT<sup>3</sup>  
K<sub>0</sub> = 0.5 FOR AT REST CONDITIONS  
φ = 30°  
LL SURCHARGE = 2 FT  
MAX FACTORED BEARING RESISTANCE = 2,000 PSF



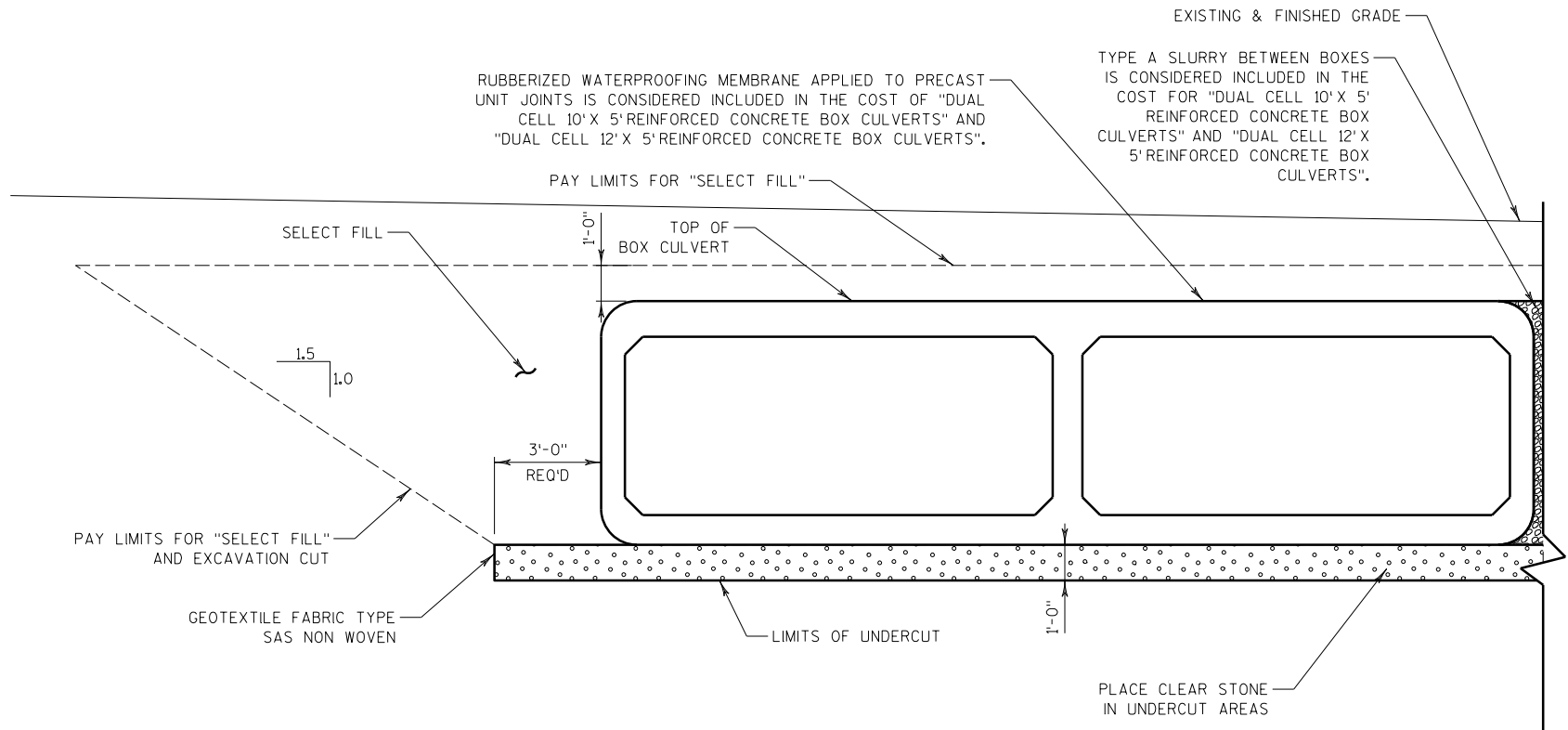
MCKENNA FLOOD MITIGATION PROJECT NO. 11475			SHEET NO. S-2
STRUCTURAL DETAILS			
GREENTREE SOUTH SECTION CITY OF MADISON			
emcs inc 1300 W. Canal Street, Suite 200 Milwaukee, WI 53233 414.347.1607 Fax 414.347.1347			
DESIGNED BY JRM	DESIGN CK'D. MDR	DRAWN BY JRM	PLANS CK'D. MDR
CROSS SECTION & QUANTITIES			
B-13-868			



SECTION THRU PRECAST BOX  
LOOKING UPSTATION

GENERAL NOTES

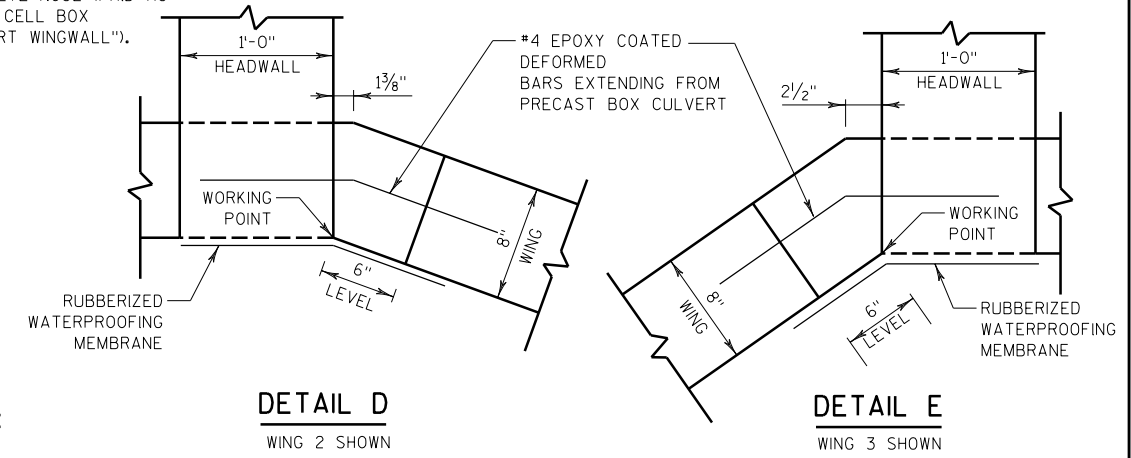
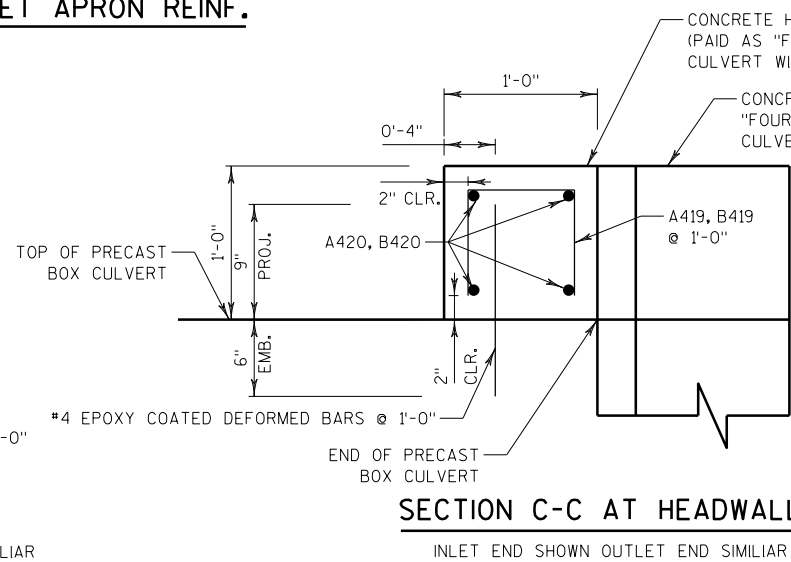
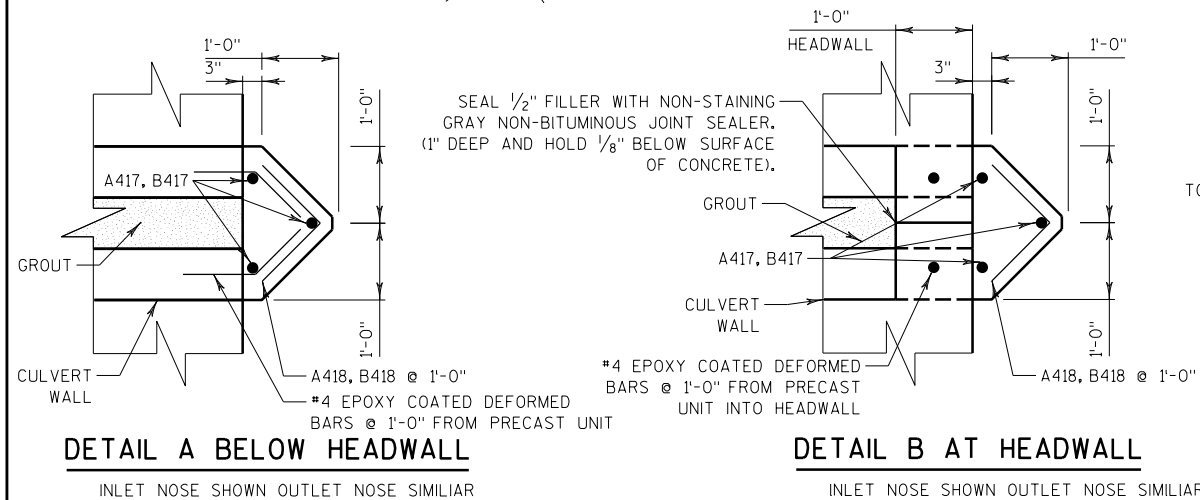
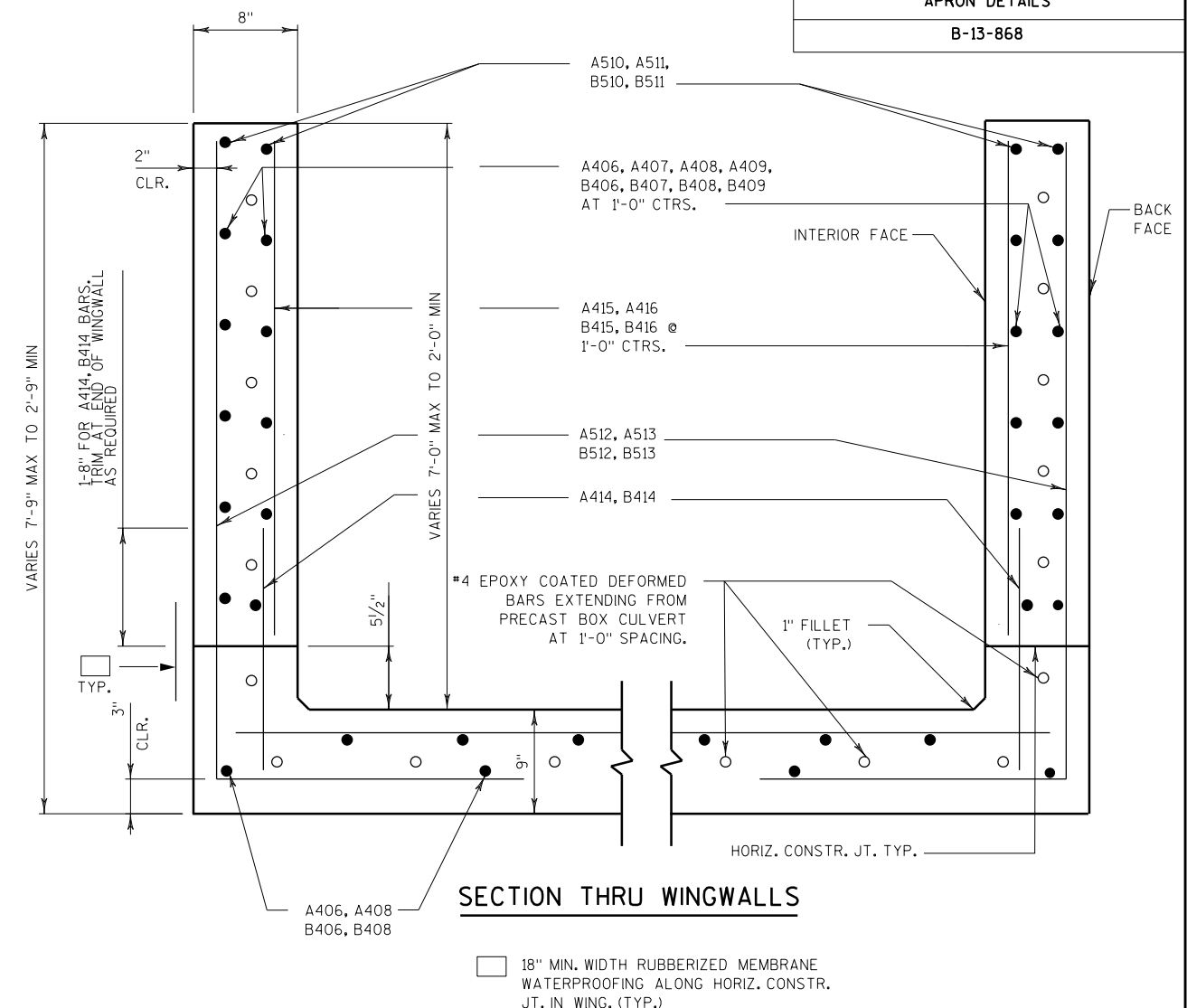
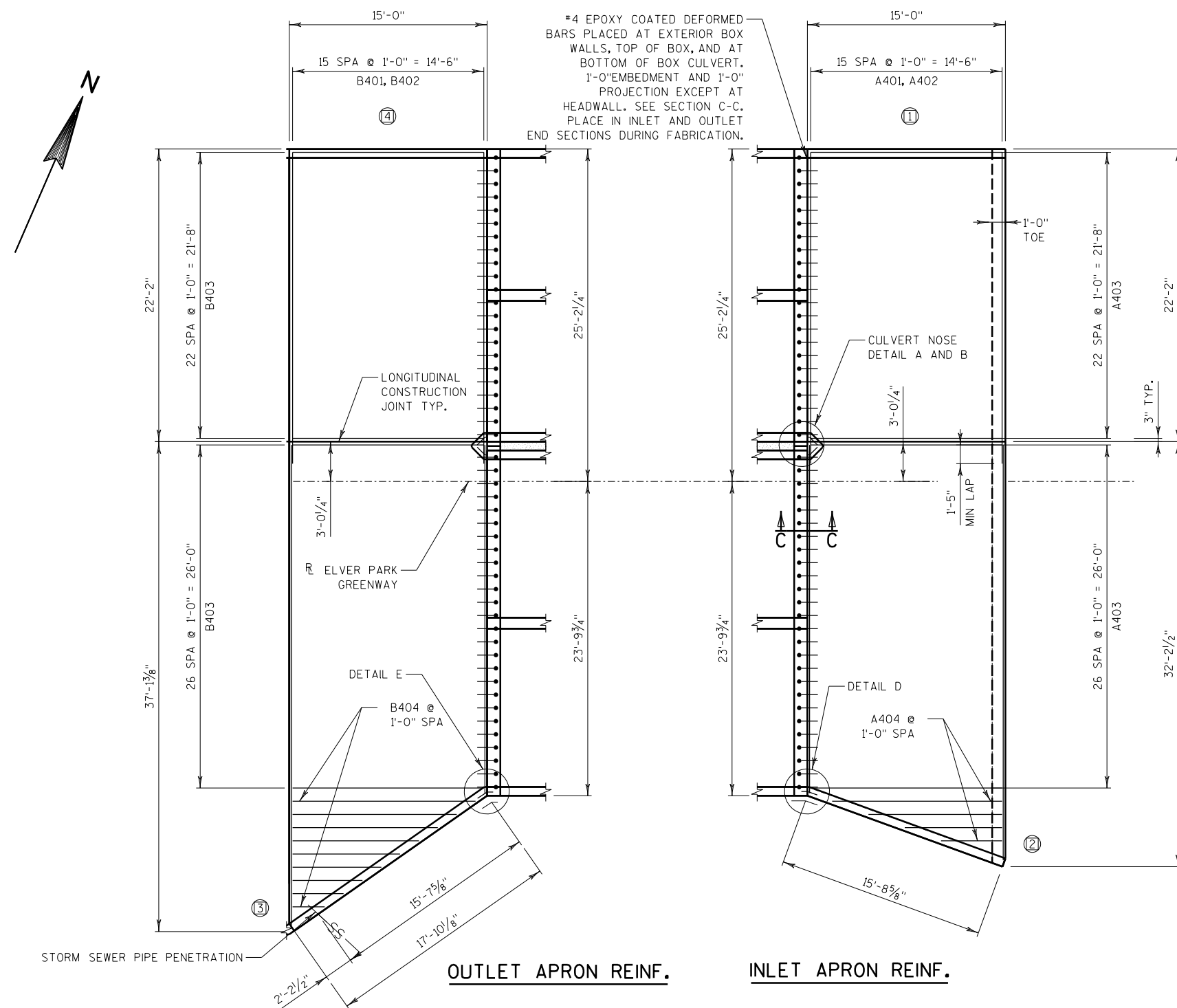
- MEMBER THICKNESSES SHOWN ON THIS PLAN ARE BASED ON ENGINEERING JUDGEMENT. CONTRACTOR SHALL HAVE A REGISTERED ENGINEER DESIGN THE PRECAST BOX CULVERTS AND PROVIDE SEALED DRAWINGS TO THE CITY OF MADISON FOR APPROVAL.
- DETAILS FOR MATERIALS, FABRICATION, CONSTRUCTION AND DESIGN OF PRECAST BOX CULVERTS NOT SHOWN OR STATED ON THESE PLANS SHALL BE IN ACCORDANCE WITH THE CURRENT ASTM SPECIFICATION, C1577; AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS; EXCEPT THAT THE CONCRETE MIXTURE SHALL CONTAIN NOT LESS THAN 565 LBS. OF CEMENTITIOUS MATERIALS PER CUBIC YARD.
- THE DESIGN OF PRECAST BOX CULVERTS WITH ALL FILL HEIGHTS SHALL BE AS STATED IN ASTM C1577.
- NOT MORE THAN FOUR (4) HOLES MAY BE CAST, DRILLED OR OTHERWISE NEATLY MADE IN THE SHELL OF EACH PIECE OF BOX SECTION FOR HANDLING. THE HOLES SHALL BE TAPERED UNLESS DRILLED. HOLES SHALL BE FILLED WITH PORTLAND CEMENT MORTAR EXCEPT TAPERED HOLES MAY BE FILLED WITH CONCRETE PLUGS SECURED WITH PORTLAND CEMENT MORTAR OR OTHER APPROVED ADHESIVE.
- THE JOINT ON THE BOTTOM OF THE CULVERT AND THE SIDES OF THE CULVERT FROM THE BOTTOM TO A POINT 1'-0" FROM THE CEILING SHALL BE SEALED WITH A PREFORMED MASTIC. PREFORMED MASTIC MUST CONFORM TO AASHTO MATERIALS, SPECIFICATION M198, TYPE B. A 2'-0" STRIP OF GEOTEXTILE TYPE DF SCHEDULE A SHALL BE PLACED OVER THE JOINTS ON THE TOP AND SIDES OF THE CULVERT. THE GEOTEXTILE SHALL CONFORM TO WISDOT STANDARD SPECIFICATION 645.22.4. (FABRIC NOT REQUIRED OVER INSIDE WALL JOINTS OF MULTICELL INSTALLATION.)
- IF MEMBER THICKNESSES SHOWN ON THIS PLAN REQUIRE MODIFICATION, ADJUST WINGWALL, HEADWALL, APRON, AND REINFORCEMENT DIMENSIONS AS NECESSARY.
- #4 EPOXY COATED DEFORMED BARS TO BE PLACED IN END SECTIONS DURING FABRICATION OF THE BOX CULVERT. ALL DOWEL BARS SHALL BE INCIDENTAL TO ITEMS "DUAL CELL 10' X 5' REINFORCED CONCRETE BOX CULVERTS" AND "DUAL CELL 12' X 5' REINFORCED CONCRETE BOX CULVERTS".
- THE UPPER LIMITS OF "EXCAVATION CUT" FOR B-13-868 SHALL BE THE EXISTING GROUNDLINE.
- ALL SPACES EXCAVATED AND NOT OCCUPIED BY THE NEW STRUCTURE SHALL BE BACKFILLED WITH "SELECT FILL" TO THE TOP OF THE BOX WITHIN THE LENGTH OF THE BOX.
- THE BACKFILL QUANTITIES ARE BASED ON THE PAY LIMITS SHOWN ON THE PLANS AND MAY NOT REFLECT ACTUAL PLACED QUANTITIES.
- "SELECT FILL" REQUIRED ON THE BOX CULVERT SIDES AND BEHIND APRON WINGS FOR 3 FEET. BACKFILL PLACED BEYOND PAY LIMITS OR EXCEEDING PLAN QUANTITIES SHALL BE INCIDENTAL TO "EXCAVATION CUT".
- DETAILS OF CONSTRUCTION NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE CITY OF MADISON STANDARD SPECIFICATIONS AND SPECIAL PROVISIONS.
- UNLESS OTHERWISE SPECIFIED, CONTRACTION JOINTS SHALL BE NORMAL TO THE CENTERLINE.
- DOWEL BARS SHALL BE INSTALLED PARALLEL TO THE PAVEMENT CENTERLINE AND PAVEMENT SURFACE.
- CONSTRUCTION JOINTS SHALL BE A MINIMUM OF 4 FEET FROM THE NEAREST CONTRACTION JOINT AND ALIGNED EITHER PARALLEL TO CONTRACTION JOINTS OR AT 90 DEGREES TO THE CENTERLINE.
- APPLY A THIN UNIFORM COATING OF SURFACE TREATMENT TO THE FREE END OF THE DOWEL BARS TO PREVENT BONDING.



PRECAST BOX BACKFILL DETAILS  
LEFT SIDE SHOWN, RIGHT SIDE SIMILAR

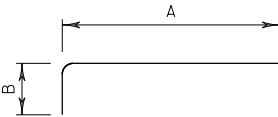




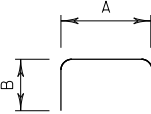


BAR BEND DIAGRAMS

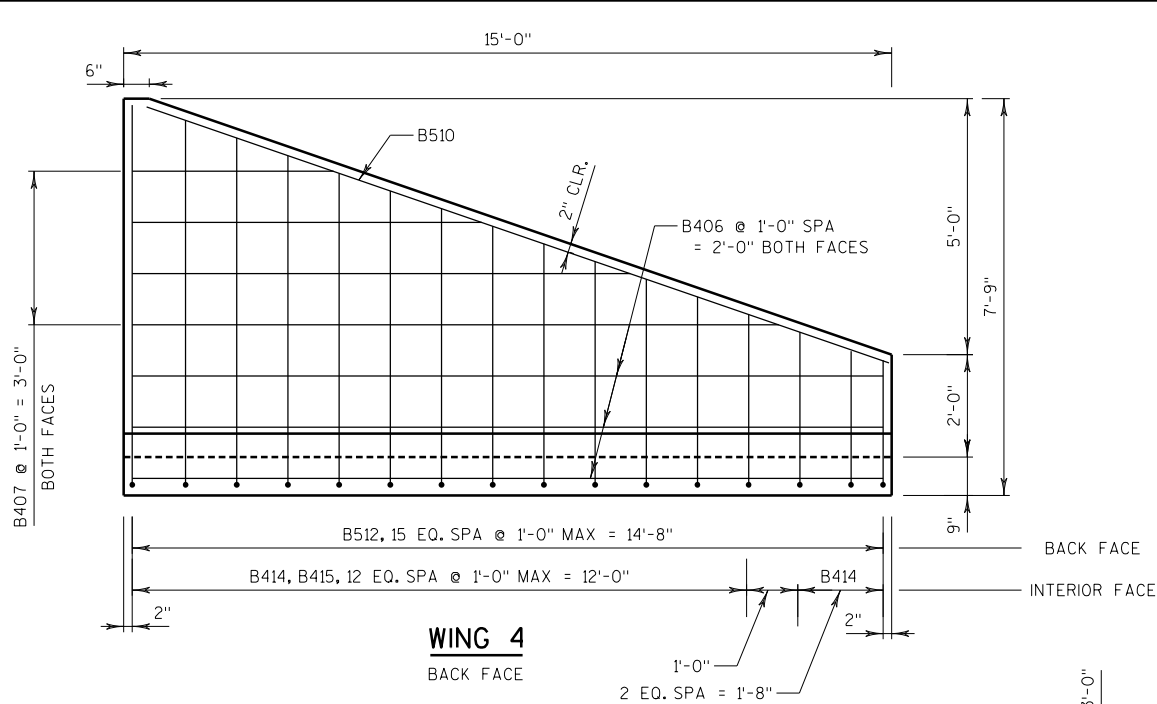
BAR MARK	'A'	'B'
A512	2'-4" TO 7'-4"	6'-1"
A513	2'-4" TO 7'-4"	6'-1"
A418	1'-0"	1'-0"
A419	0'-8"	0'-9"
A422	1'-0"	2'-7"
B512	2'-4" TO 7'-4"	6'-1"
B513	2'-4" TO 7'-4"	6'-1"
B418	1'-0"	1'-0"
B419	0'-8"	0'-9"



A512, A513, A418, B512, B513, B418

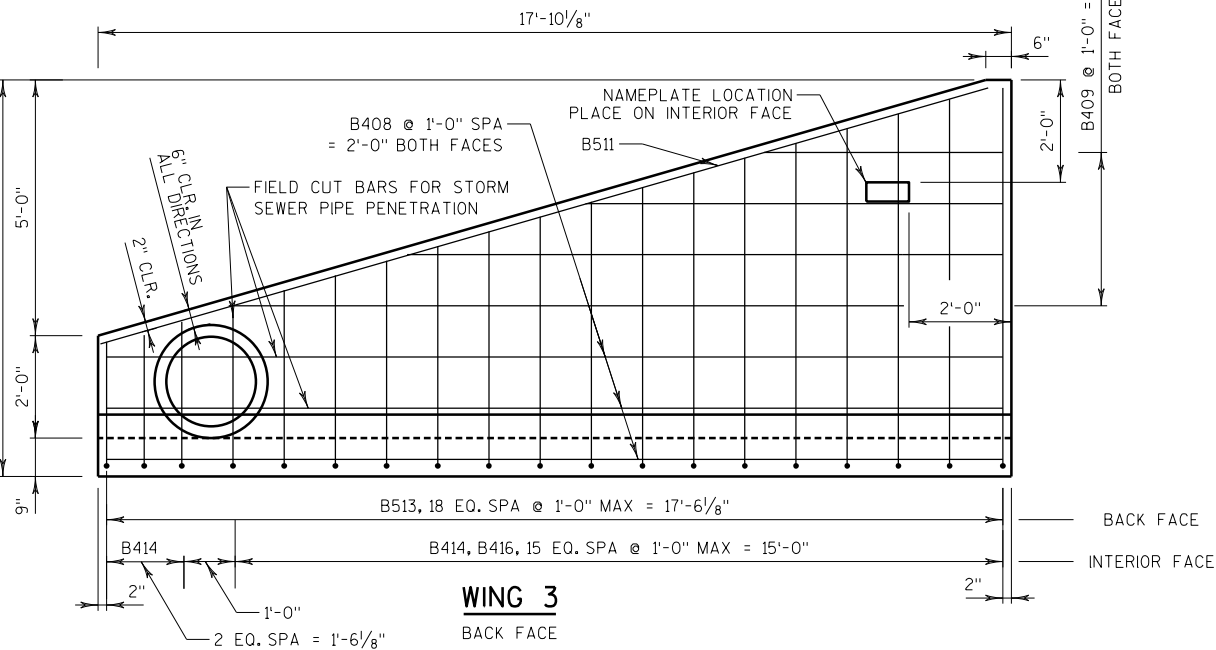


A419, B419



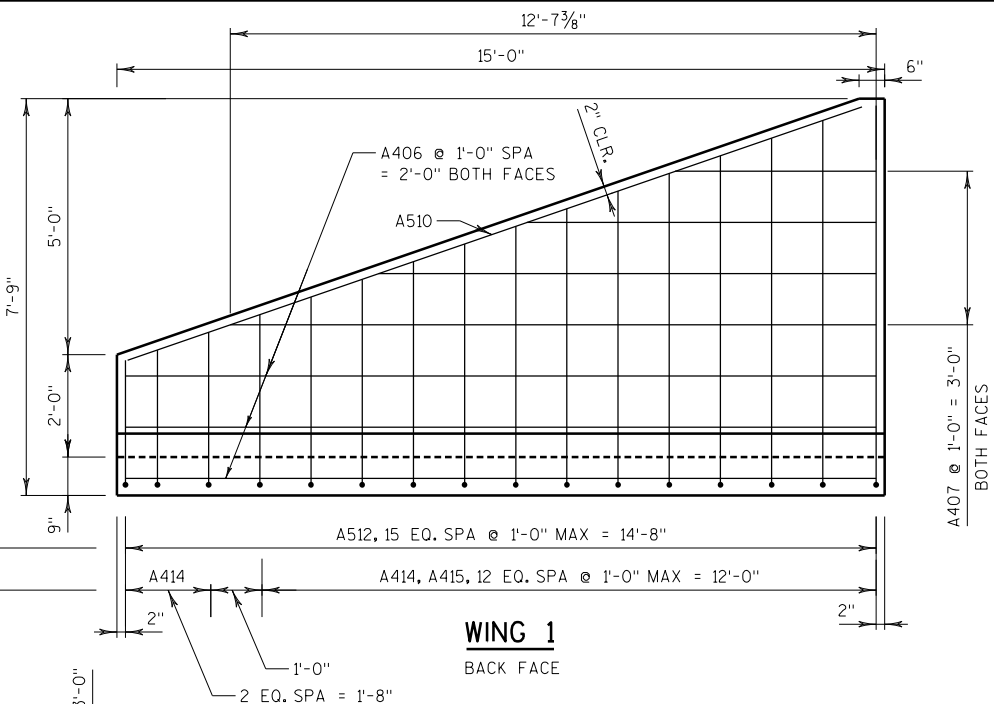
WING 4

BACK FACE



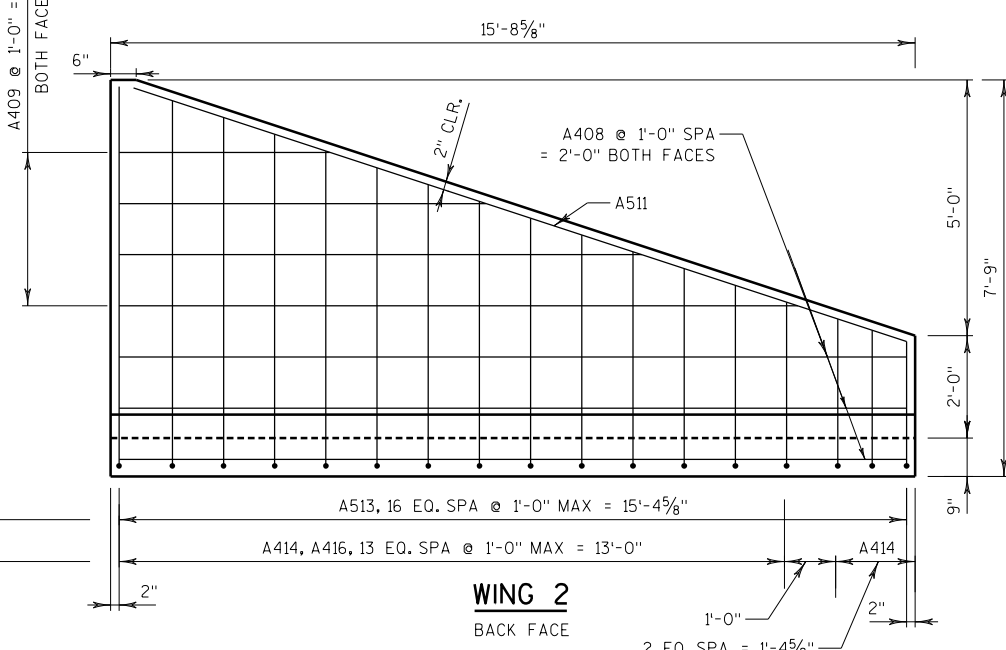
WING 3

BACK FACE



WING 1

BACK FACE



WING 2

BACK FACE

BILL OF BARS - OUTLET

BAR MARK	NO. REQ'D	LENGTH	BENT	BAR SERIES	LOCATION
B401	16	23'-7"			OUTLET APRON LONGITUDINAL STAGE 1
B402	16	31'-6"		X	OUTLET APRON LONGITUDINAL STAGE 2
B403	50	14'-6"			OUTLET APRON TRANSVERSE
B404	9	8'-2"		X	OUTLET APRON TRANSVERSE
B406	6	14'-8"			LONG. AT WING 4
B407	8	8'-3"		X	LONG. AT WING 4 TOP
B408	6	17'-6"			LONG. AT WING 3
B409	8	9'-10"		X	LONG. AT WING 3 TOP
B510	2	15'-0"			WINGWALL 4 DIAGONAL TOP
B511	2	18'-0"			WINGWALL 3 DIAGONAL TOP
B512	16	10'-10"	X	X	WINGWALL 4 VERT. B.F.
B513	19	10'-10"	X	X	WINGWALL 3 VERT. B.F.
B414	35	2'-8"			WINGWALL 3 & 4 VERT. I.F.
B415	13	4'-4"		X	WINGWALL 4 VERT. I.F.
B416	16	4'-2"		X	WINGWALL 3 VERT. I.F.
B417	3	6'-8"			OUTLET NOSE VERT.
B418	8	1'-11"	X		OUTLET NOSE HORIZ.
B419	56	2'-1"	X		OUTLET HEADERS TIES
B420	4	26'-0"			OUTLET HEADERS LONGITUDINAL
B421	4	22'-0"			OUTLET HEADERS LONGITUDINAL

BAR SERIES TABLE- OUTLET

BAR MARK	NO. REQ'D.	LENGTHS FOR EACH SERIES
B402	1 SERIES OF 16	26'-5" TO 36'-5"
B404	1 SERIES OF 9	2'-5" TO 13'-10"
B407	2 SERIES OF 4	3'-11" TO 12'-7"
B409	2 SERIES OF 4	4'-7" TO 15'-0"
B512	1 SERIES OF 16	8'-4" TO 13'-4"
B513	1 SERIES OF 19	8'-4" TO 13'-4"
B415	1 SERIES OF 13	2'-4" TO 6'-4"
B416	1 SERIES OF 16	2'-0" TO 6'-4"

BILL OF BARS - INLET

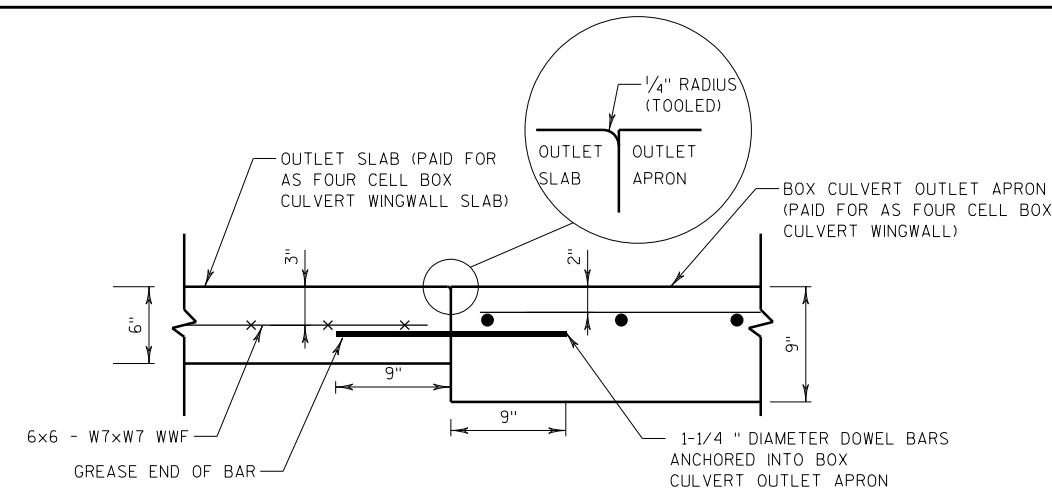
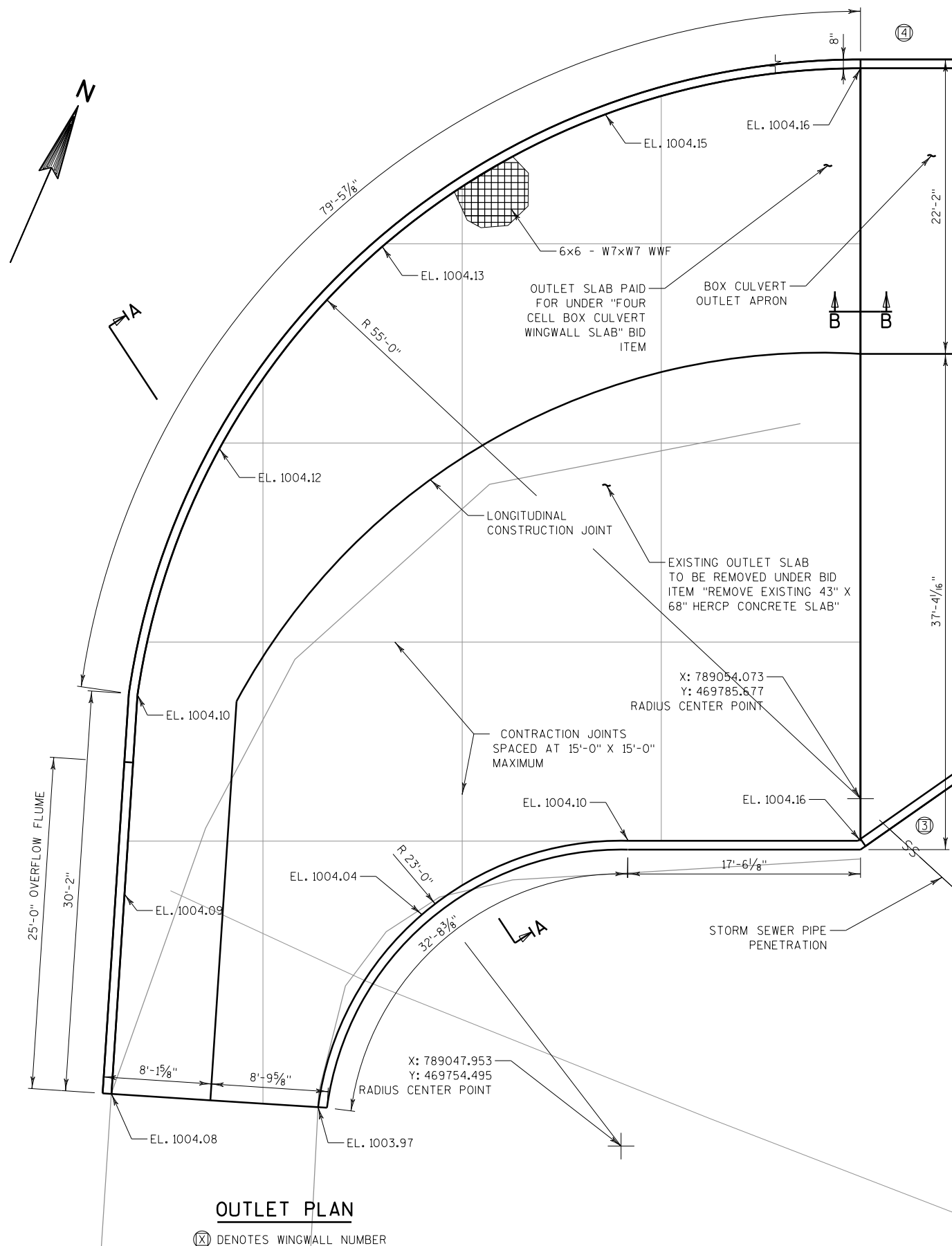
BAR MARK	NO. REQ'D	LENGTH	BENT	BAR SERIES	LOCATION
A401	16	23'-7"			INLET APRON LONGITUDINAL STAGE 1
A402	16	28'-11"		X	INLET APRON LONGITUDINAL STAGE 2
A403	50	14'-6"			INLET APRON TRANSVERSE
A404	4	8'-9"		X	INLET APRON TRANSVERSE
A406	6	14'-8"			LONG. AT WING 1
A407	8	8'-4"		X	LONG. AT WING 1 TOP
A408	6	15'-5"			LONG. AT WING 2
A409	8	8'-8"		X	LONG. AT WING 2 TOP
A510	2	15'-0"			WINGWALL 1 DIAGONAL
A511	2	15'-11"			WINGWALL 2 DIAGONAL
A512	16	10'-10"	X	X	WINGWALL 1 VERT. B.F.
A513	17	10'-10"	X	X	WINGWALL 2 VERT. B.F.
A414	33	2'-12"			WINGWALL 1 & 2 VERT. I.F.
A415	13	4'-4"		X	WINGWALL 1 VERT. I.F.
A416	14	4'-3"		X	WINGWALL 2 VERT. I.F.
A417	3	6'-8"			INLET NOSE VERT.
A418	8	1'-11"	X		INLET NOSE HORIZ.
A419	56	2'-1"	X		INLET HEADERS TIES
A420	4	26'-0"			INLET HEADERS LONGITUDINAL
A421	4	22'-0"			INLET HEADERS LONGITUDINAL
A422	33	3'-6"	X		INLET TOE VERTICAL
A423	2	31'-11"			INLET TOE LONGITUDINAL STAGE 2
A424	2	23'-7"			INLET TOE LONGITUDINAL STAGE 1

BAR SERIES TABLE - INLET

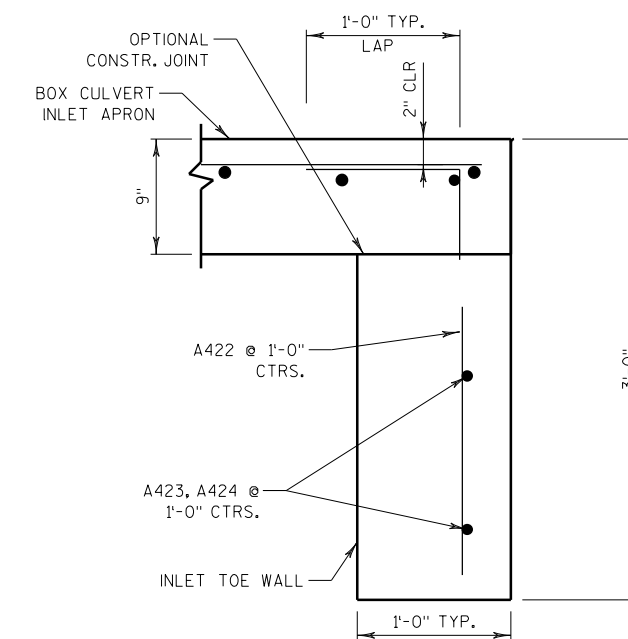
BAR MARK	NO. REQ'D.	LENGTHS FOR EACH SERIES
A402	1 SERIES OF 16	26'-5" TO 31'-5"
A404	1 SERIES OF 4	4'-8" TO 12'-10"
A407	2 SERIES OF 4	3'-11" TO 12'-7"
A409	2 SERIES OF 4	4'-1" TO 13'-3"
A512	1 SERIES OF 16	8'-4" TO 13'-4"
A513	1 SERIES OF 17	8'-4" TO 13'-4"
A415	1 SERIES OF 13	2'-4" TO 6'-4"
A416	1 SERIES OF 14	2'-2" TO 4'-3"

NOTE

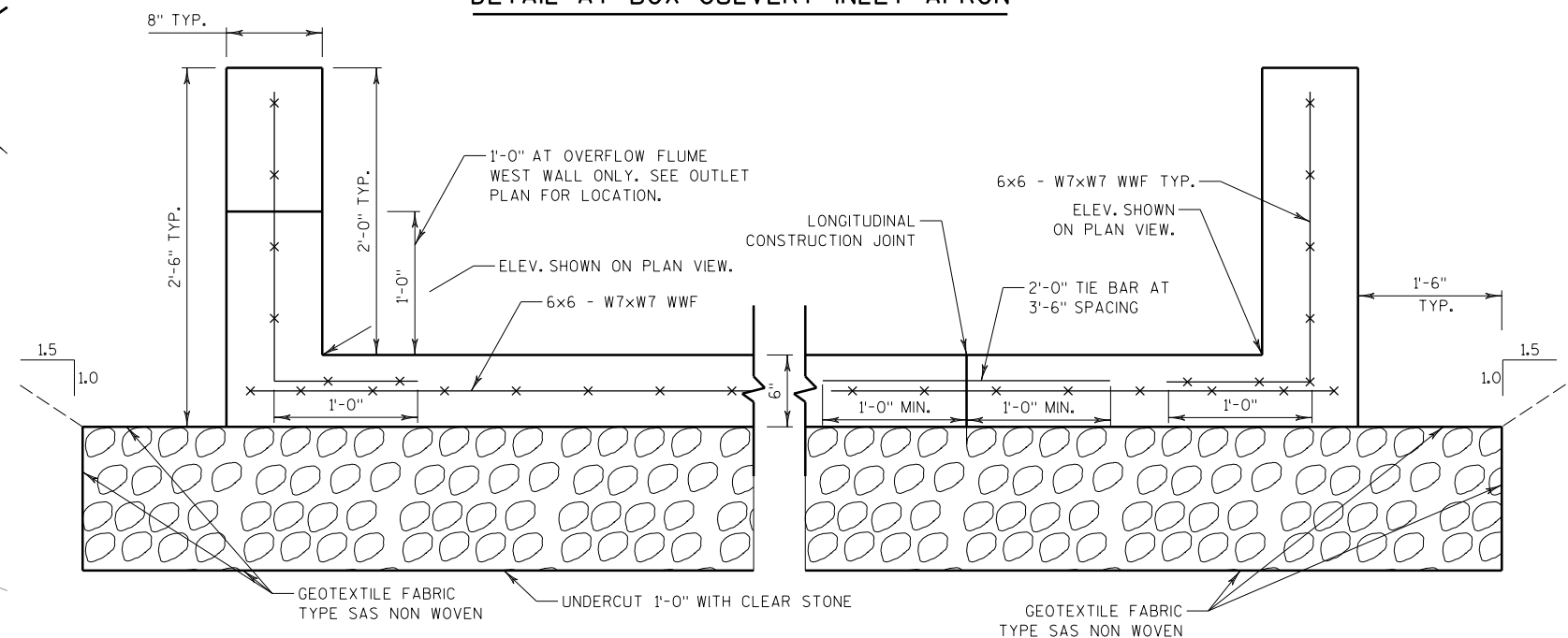
ALL WING ELEVATION VIEWS SHOW BACK FACE REINFORCING ONLY. INTERIOR FACE REINFORCING NOT SHOWN FOR CLAIRTY.



**SECTION B-B THRU OUTLET SLAB & BOX CULVERT OUTLET APRON**



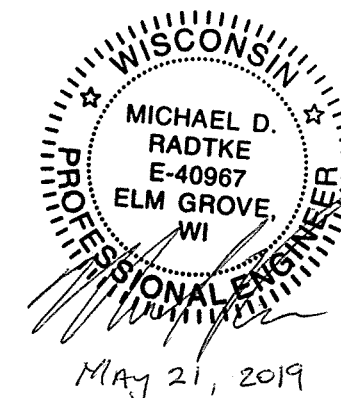
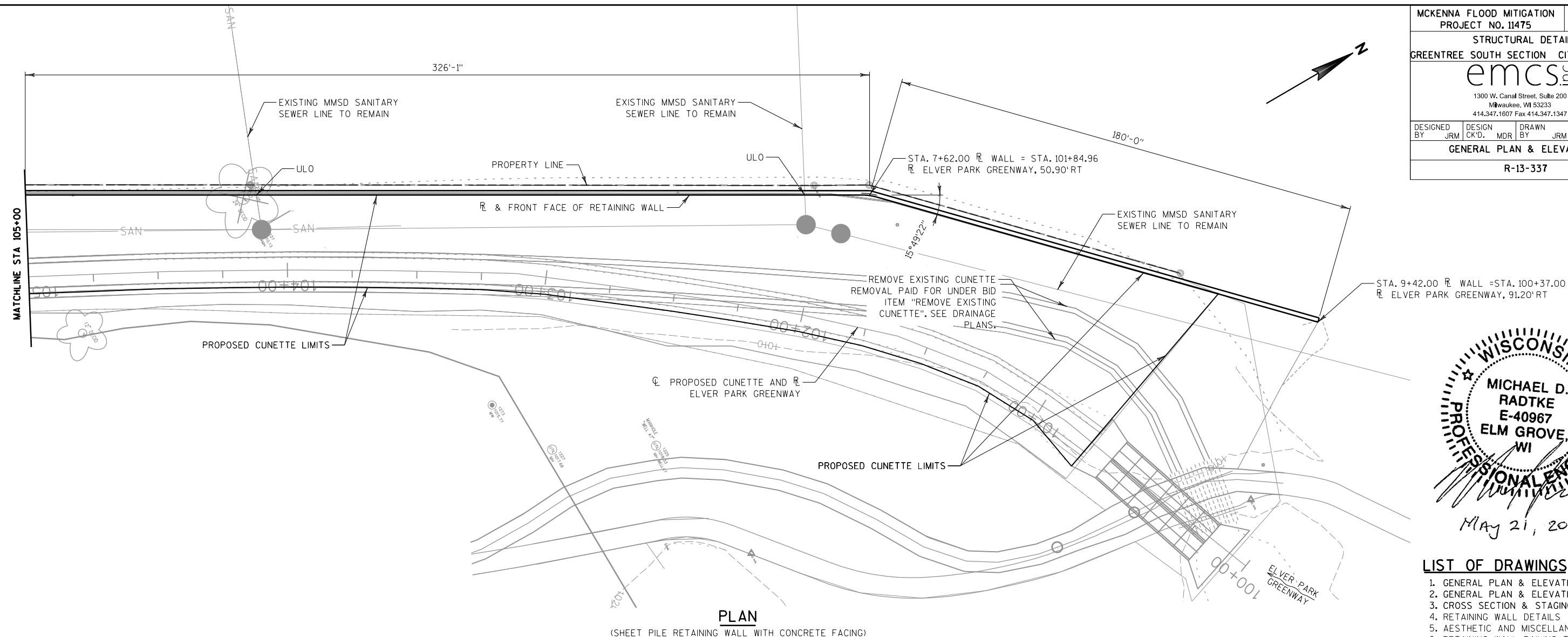
**DETAIL AT BOX CULVERT INLET APRON**



**SECTION A-A THRU OUTLET SLAB & WALLS**







- LIST OF DRAWINGS**
1. GENERAL PLAN & ELEVATION 1
  2. GENERAL PLAN & ELEVATION 2
  3. CROSS SECTION & STAGING DETAILS
  4. RETAINING WALL DETAILS
  5. AESTHETIC AND MISCELLANEOUS DETAILS
  6. RETAINING WALL RAILING TUBULAR SCREENING DETAILS

## 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.

REMOVING EXISTING CUNETTE WILL BE PAID FOR UNDER BID ITEM "REMOVE EXISTING CUNETTE". SEE DRAINAGE PLANS.

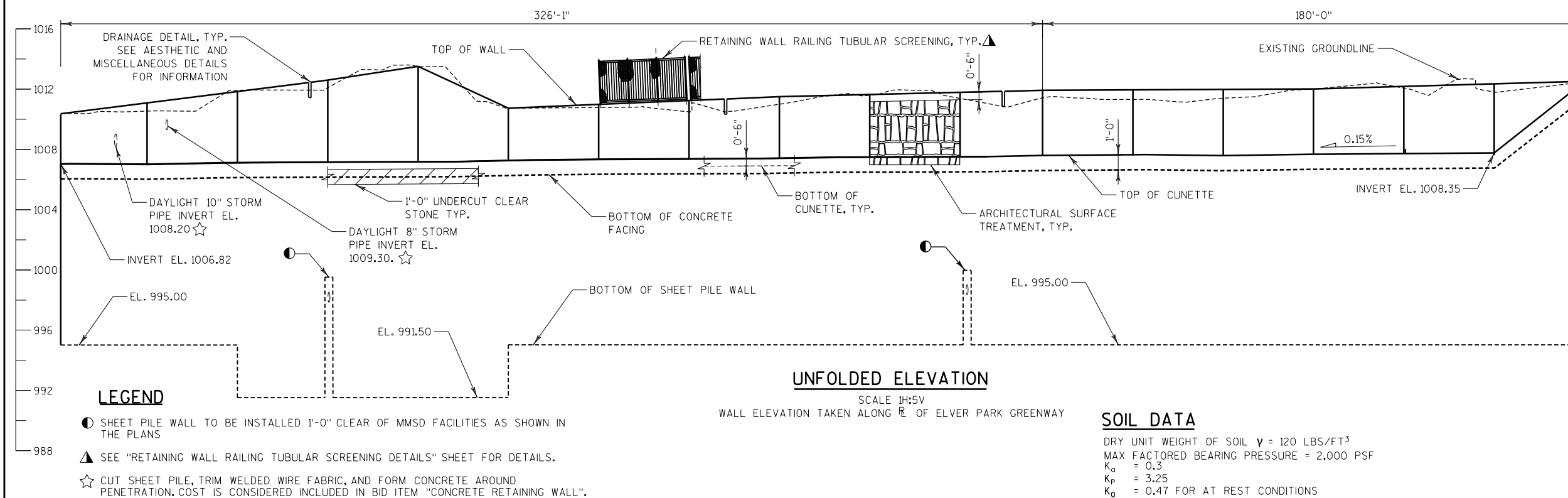
WALL JOINTS ARE SHOWN AT 30'-0" SPACING, HOWEVER, JOINTS SHOULD COINCIDE WITH STEEL SHEET PILE JOINTS. THE WALL JOINTS SHOULD ALSO COINCIDE WITH THE TUBULAR SCREENING RAILING POST MAX SPACING AND RAIL POST OFFSETS. THE MAXIMUM SPACING OF JOINTS SHALL BE 50'-0" .

## DESIGN DATA

### MATERIAL PROPERTIES:

CONCRETE MASONRY \_\_\_\_\_  $f'_c$  = 3.5 KSI  
BAR STEEL REINFORCEMENT \_\_\_\_\_  $f_y$  = 60 KSI  
STEEL SHEET PILING \_\_\_\_\_  $f_y$  = 50 KSI

**PLAN**  
(SHEET PILE RETAINING WALL WITH CONCRETE FACING)



## LEGEND

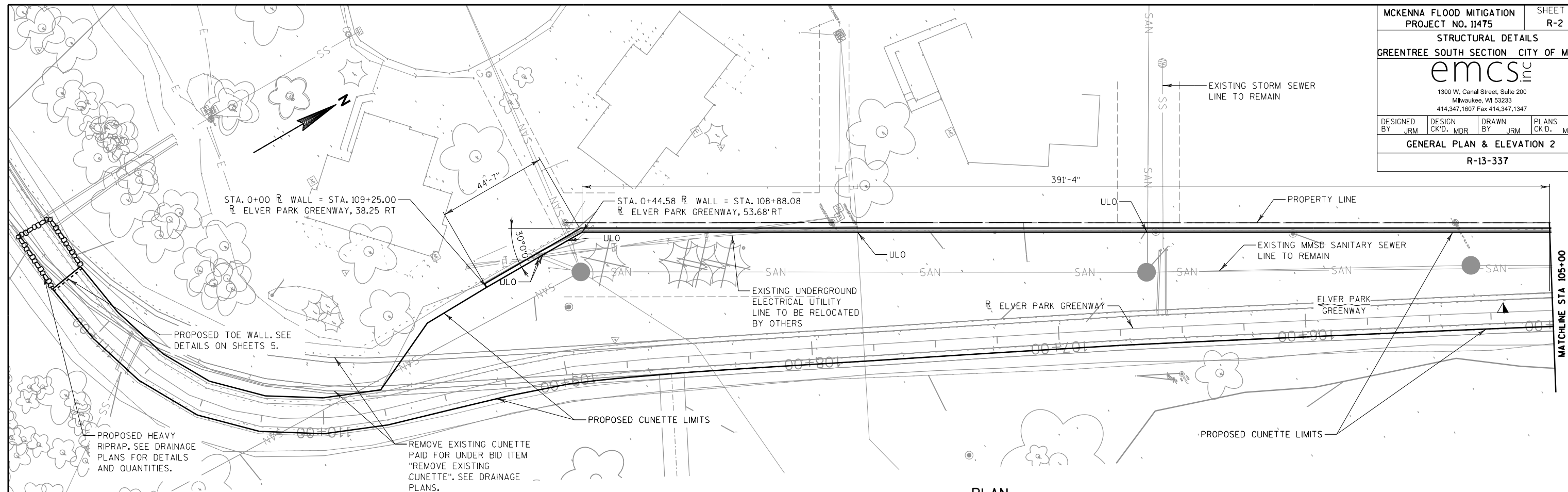
- SHEET PILE WALL TO BE INSTALLED 1'-0" CLEAR OF MMSD FACILITIES AS SHOWN IN THE PLANS
- ▲ SEE "RETAINING WALL RAILING TUBULAR SCREENING DETAILS" SHEET FOR DETAILS.
- ☆ CUT SHEET PILE, TRIM WELDED WIRE FABRIC, AND FORM CONCRETE AROUND PENETRATION. COST IS CONSIDERED INCLUDED IN BID ITEM "CONCRETE RETAINING WALL".

## UNFOLDED ELEVATION

SCALE 1H:5V  
WALL ELEVATION TAKEN ALONG R OF ELVER PARK GREENWAY

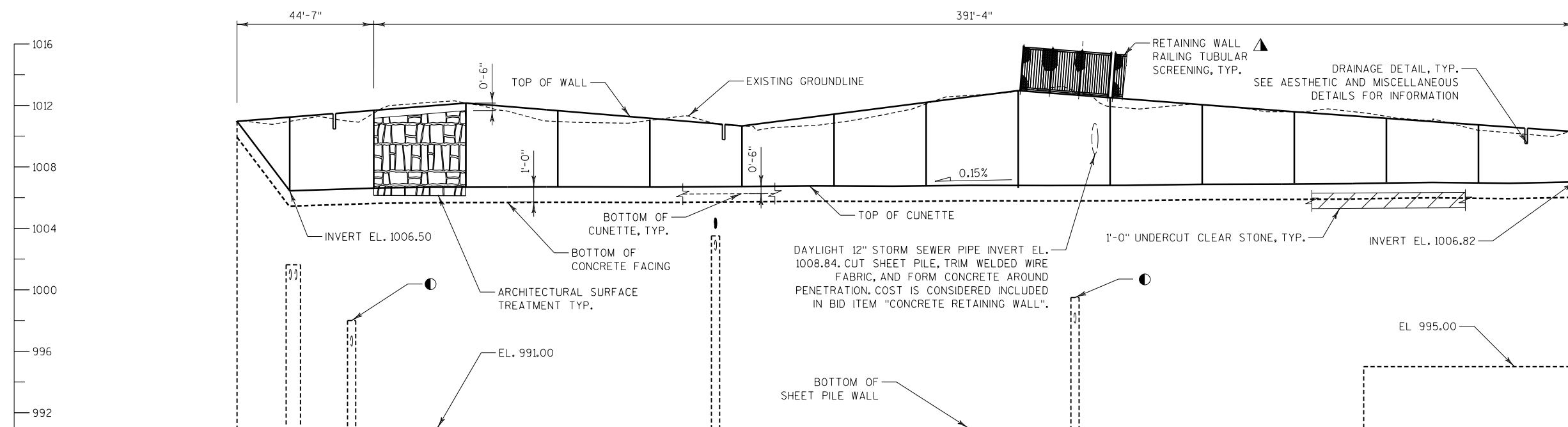
## SOIL DATA

DRY UNIT WEIGHT OF SOIL  $\gamma$  = 120 LBS/FT<sup>3</sup>  
MAX FACTORED BEARING PRESSURE = 2,000 PSF  
 $K_o$  = 0.3  
 $K_p$  = 3.25  
 $K_o$  = 0.47 FOR AT REST CONDITIONS  
 $\phi$  = 30°



# PLAN

(SHEET PILE RETAINING WALL WITH CONCRETE FACING)



# UNFOLDED ELEVATION

SCALE 1/4"=1'-0"  
WALL ELEVATION TAKEN ALONG R OF ELVER PARK GREENWAY

## NOTES

SEE NOTES FROM SHEET R-1.

## LEGEND

- SHEET PILE WALL TO BE INSTALLED 1'-0" CLEAR OF MMSD AND ELECTRICAL FACILITIES AS SHOWN IN THE PLANS
- ▲ SEE "RETAINING WALL RAILING TUBULAR SCREENING DETAILS" SHEET FOR DETAILS.

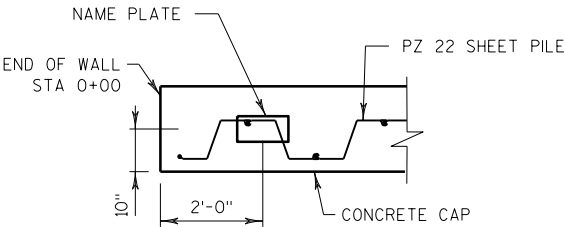


CUNETTE ELEVATIONS

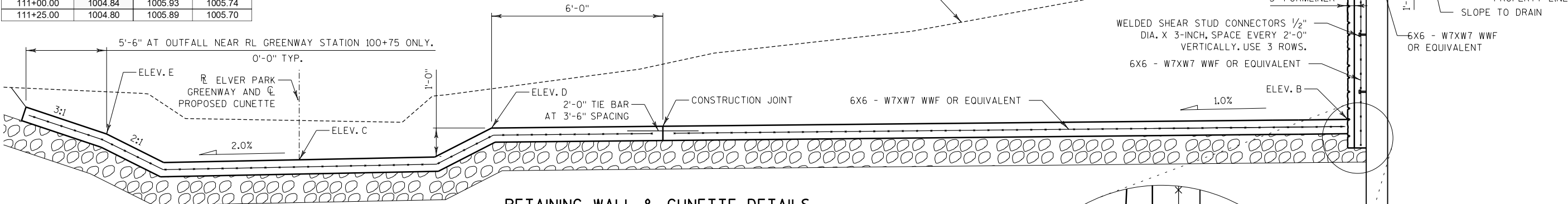
ELVER PARK GREENWAY STATION	ELEV. C	ELEV. D	ELEV. E
100+66.00	1006.36	1007.46	1007.27
100+75.00	1006.35	1007.44	1007.25
101+00.00	1006.31	1007.41	1007.22
101+25.00	1006.28	1007.37	1007.18
101+50.00	1006.24	1007.33	1007.14
101+75.00	1006.20	1007.30	1007.11
102+00.00	1006.17	1007.26	1007.07
102+25.00	1006.13	1007.22	1007.03
102+50.00	1006.09	1007.19	1007.00
102+75.00	1006.05	1007.15	1006.96
103+00.00	1006.02	1007.12	1006.93
103+25.00	1005.98	1007.08	1006.89
103+50.00	1005.94	1007.04	1006.85
103+75.00	1005.91	1007.00	1006.81
104+00.00	1005.87	1006.97	1006.78
104+25.00	1005.83	1006.93	1006.74
104+50.00	1005.80	1006.89	1006.70
104+75.00	1005.76	1006.85	1006.66
105+00.00	1005.72	1006.82	1006.63
105+25.00	1005.68	1006.78	1006.59
105+50.00	1005.65	1006.74	1006.55
105+75.00	1005.61	1006.71	1006.52
106+00.00	1005.55	1006.65	1006.46
106+25.00	1005.54	1006.63	1006.44
106+50.00	1005.50	1006.60	1006.41
106+75.00	1005.46	1006.56	1006.37
107+00.00	1005.43	1006.52	1006.33
107+25.00	1005.39	1006.48	1006.29
107+50.00	1005.35	1006.45	1006.26
107+75.00	1005.32	1006.41	1006.22
108+00.00	1005.28	1006.38	1006.19
108+25.00	1005.24	1006.34	1006.15
108+50.00	1005.20	1006.30	1006.11
108+75.00	1005.17	1006.26	1006.07
109+00.00	1005.13	1006.23	1006.04
109+25.00	1005.09	1006.19	1006.00
109+50.00	1005.06	1006.15	1005.96
109+75.00	1005.02	1006.11	1005.92
110+00.00	1004.98	1006.08	1005.89
110+25.00	1004.95	1006.04	1005.85
110+50.00	1004.91	1006.00	1005.81
110+75.00	1004.87	1005.97	1005.78
111+00.00	1004.84	1005.93	1005.74
111+25.00	1004.80	1005.89	1005.70

RETAINING WALL ELEVATIONS

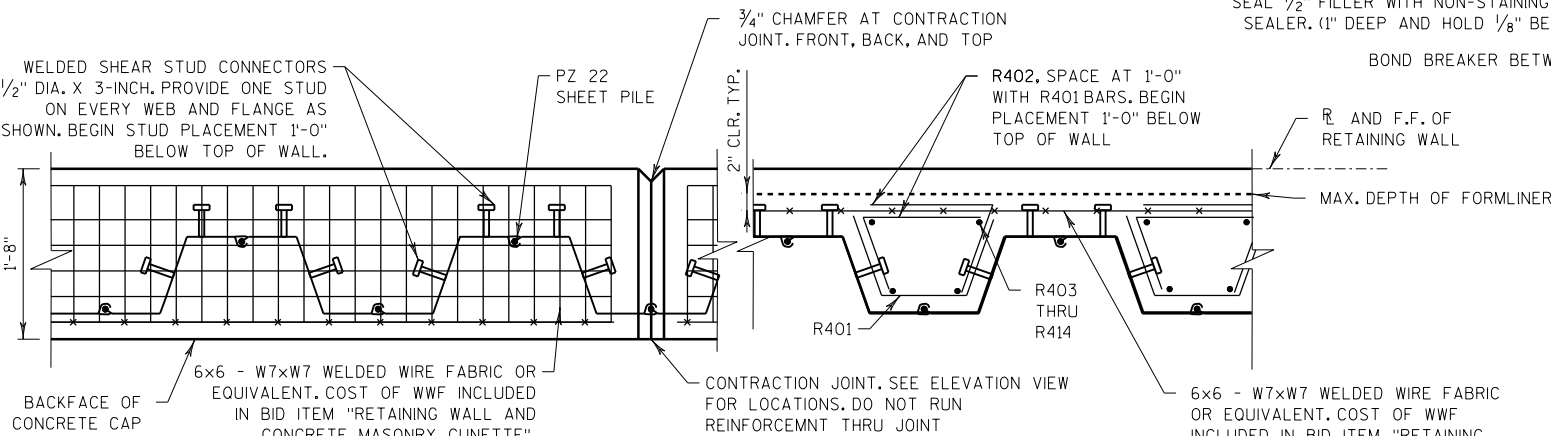
WALL STATION	EASTING	NORTHING	ELVER PARK GREENWAY STATION	ELVER PARK GREENWAY OFFSET	ELEV. A	ELEV. B
0+00.00	789851.83	470114.31	109+25.00	38.25	1010.97	1006.51
0+17.00	789851.90	470131.31	109+08.91	43.71	1011.24	1006.58
0+44.58	789852.02	470158.89	108+88.08	53.68	1011.68	1006.71
0+74.58	789867.14	470184.81	108+59.78	50.91	1012.16	1006.73
1+04.58	789882.25	470210.72	108+30.19	48.94	1011.66	1006.75
1+34.58	789897.36	470236.64	108+00.04	47.04	1011.17	1006.78
1+64.58	789912.48	470262.56	107+70.07	45.14	1010.67	1006.80
1+94.58	789927.59	470288.47	107+40.31	43.22	1011.44	1006.83
2+24.58	789942.70	470314.39	107+10.37	41.42	1012.20	1006.85
2+54.58	789957.81	470340.30	106+80.42	39.64	1012.96	1006.88
2+84.58	789972.93	470366.22	106+51.03	38.13	1012.51	1006.91
3+14.58	789988.04	470392.13	106+21.06	36.78	1012.05	1006.94
3+44.58	790003.15	470418.05	105+91.14	35.43	1011.59	1006.97
3+74.58	790018.27	470443.96	105+61.17	34.13	1011.16	1007.00
4+04.58	790033.38	470469.88	105+31.39	32.83	1010.73	1007.03
4+34.58	790048.49	470495.79	105+01.41	31.69	1010.31	1007.07
4+64.58	790063.61	470521.71	104+71.43	30.52	1011.07	1007.10
4+79.58	790071.16	470534.66	104+56.44	29.98	1011.44	1007.12
4+94.58	790078.72	470547.62	104+42.25	29.52	1011.82	1007.13
5+24.58	790093.83	470573.54	104+12.25	29.19	1012.47	1007.17
5+54.58	790108.94	470599.45	103+82.77	29.14	1013.48	1007.22
5+84.58	790124.06	470625.37	103+53.19	29.42	1010.71	1007.26
6+14.58	790139.17	470651.28	103+23.29	30.08	1010.97	1007.31
6+44.58	790154.28	470677.20	102+96.58	32.52	1011.22	1007.38
6+74.58	790169.40	470703.11	102+67.10	36.44	1011.47	1007.46
7+04.58	790184.51	470729.03	102+37.65	40.58	1011.62	1007.54
7+34.58	790199.62	470754.94	102+08.98	45.48	1011.76	1007.64
7+50.00	470768.26	790207.39	101+96.34	48.29	1011.84	1007.68
7+62.00	470778.63	790213.43	101+84.96	50.92	1011.89	1007.73
7+92.00	470799.44	790235.04	101+62.50	49.75	1011.92	1007.75
8+22.00	470820.25	790256.65	101+32.66	52.75	1011.95	1007.82
8+52.00	470841.07	790278.25	101+13.25	58.92	1011.98	1007.91
8+82.00	470861.88	790299.86	100+93.30	67.33	1012.15	1008.03
9+12.00	470882.69	790321.47	100+64.57	79.37	1012.33	1008.19
9+42.00	470903.50	790343.07	100+37.00	91.00	1012.50	1008.35



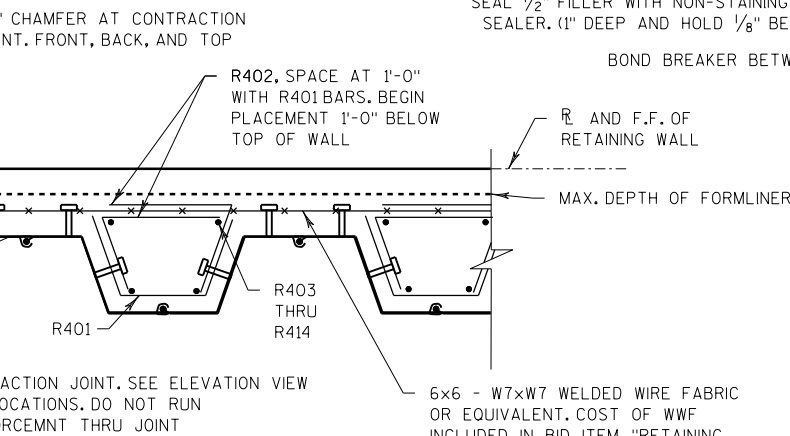
NAME PLATE DETAIL  
(PLAN VIEW OF CAP)



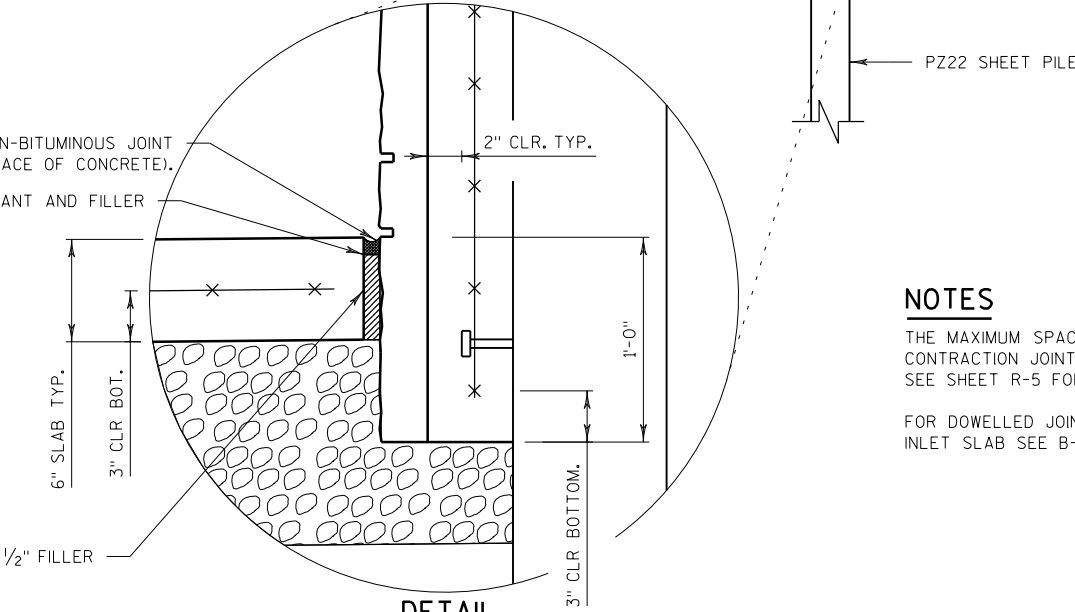
RETAINING WALL & CUNETTE DETAILS  
(LOOKING UPSTATION)



CONCRETE CAP DETAIL  
(PLAN VIEW OF CAP)



WALL REINFORCING DETAIL  
(PLAN VIEW BELOW CAP)



DETAIL

NOTES

THE MAXIMUM SPACING BETWEEN SAWCUT CONTRACTION JOINTS IS 15'-0" IN BOTH DIRECTIONS. SEE SHEET R-5 FOR DETAILS.

FOR DOWELLED JOINT DETAILS AT BOX CULVERT INLET SLAB SEE B-13-868 PLANS.

MCKENNA FLOOD MITIGATION  
PROJECT NO. 11475

SHEET NO.  
R-4

STRUCTURAL DETAILS  
GREENTREE SOUTH SECTION CITY OF MADISON

emcs

1300 W. Canal Street, Suite 200  
Milwaukee, WI 53233  
414.347.1607 Fax 414.347.1347

DESIGNED BY JRM

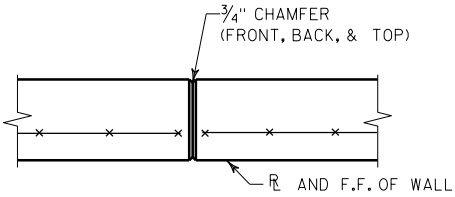
DESIGN CK'D. MDR

DRAWN BY JRM

PLANS CK'D. MDR

RETAINING WALL DETAILS

R-13-337

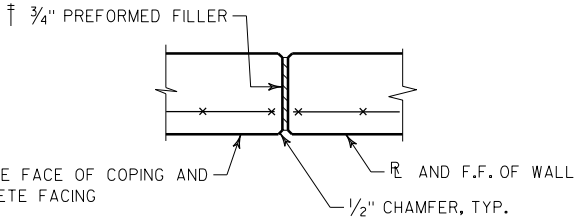


WALL CONTRACTION JOINT

DO NOT RUN BAR STEEL THRU JOINT

MAXIMUM SPACING OF JOINTS SHALL BE 12'-0" AND MUST LINE UP WITH THE STEEL SHEET PILE JOINTS.

ALL CONTRACTION JOINTS TO EXTEND THE FULL DEPTH OF COPING.



WALL EXPANSION JOINT

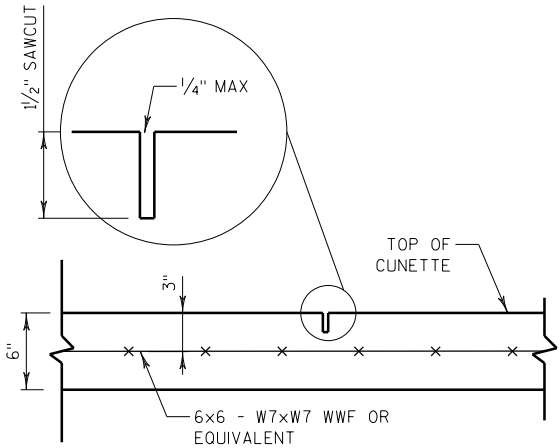
DO NOT RUN BAR STEEL THRU JOINT

WALL JOINTS ARE SHOWN AT 30'-0" SPACING, HOWEVER, JOINTS SHOULD COINCIDE WITH STEEL SHEET PILE JOINTS. THE WALL JOINTS SHOULD ALSO COINCIDE WITH THE TUBULAR SCREENING RAILING POST MAX SPACING AND RAIL POST OFFSETS. THE MAXIMUM SPACING OF JOINTS SHALL BE 50'-0" .

SEAL ALL EXPOSED HORIZ. AND VERT. SURFACES OF PREFORMED FILLER WITH A NON-STAINING, GREY, NON-BITUMINOUS JOINT SEALER. (1" DEEP AND HOLD 1/8" BELOW SURFACE OF CONC.)

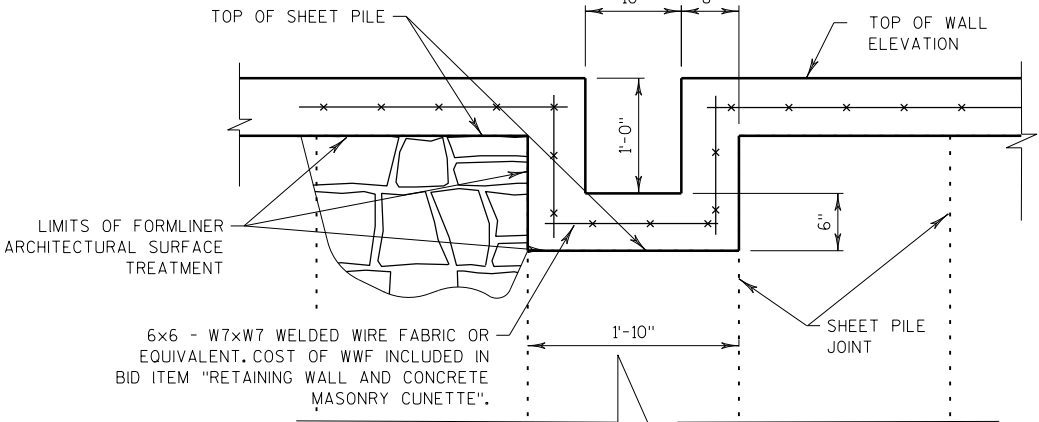
BILL OF BARS

BAR MARK	COAT	NO.	LENGTH	BENT	LOCATION
R401	X	2570	2'-4"	X	SHEET PILE HORIZ. STIRRUP
R402	X	1285	1'-5"	X	SHEET PILE HORIZ. STIRRUP
R403	X	72	3'-10"		SHEET PILE VERTICAL
R404	X	72	4'-1"		SHEET PILE VERTICAL
R405	X	90	4'-4"		SHEET PILE VERTICAL
R406	X	396	4'-7"		SHEET PILE VERTICAL
R407	X	72	4'-10"		SHEET PILE VERTICAL
R408	X	144	5'-1"		SHEET PILE VERTICAL
R409	X	72	5'-4"		SHEET PILE VERTICAL
R410	X	36	5'-7"		SHEET PILE VERTICAL
R411	X	108	5'-10"		SHEET PILE VERTICAL
R412	X	36	6'-1"		SHEET PILE VERTICAL
R413	X	36	6'-4"		SHEET PILE VERTICAL
R414	X	36	6'-7"		SHEET PILE VERTICAL
R415	X	15	5'-5"	X	TOE WALL VERTICAL
R416	X	5	14'-0"		TOE WALL LONGITUDINAL



SAWCUT CONTRACTION JOINT

SAWCUT CONTRACTION JOINTS AT 15'-0" MAX SPACING IN BOTH TRANSVERSE AND LONGITUDINAL DIRECTIONS



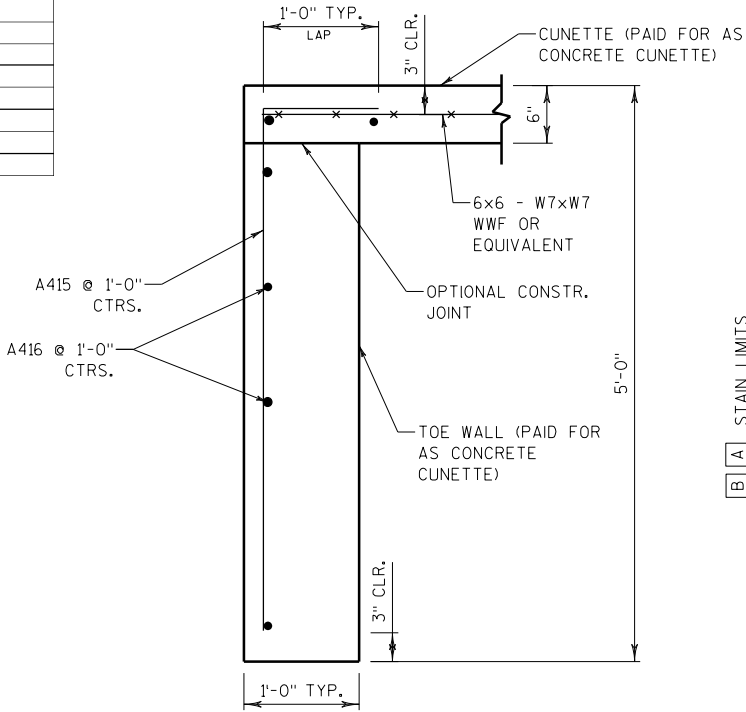
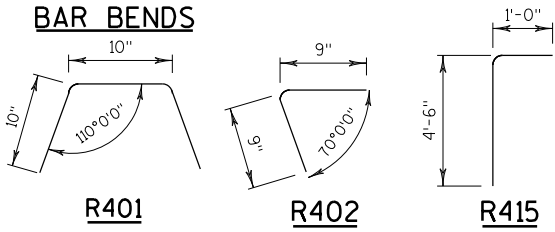
DRAINAGE DETAIL

(ELEVATION VIEW AT TOP OF CAP)

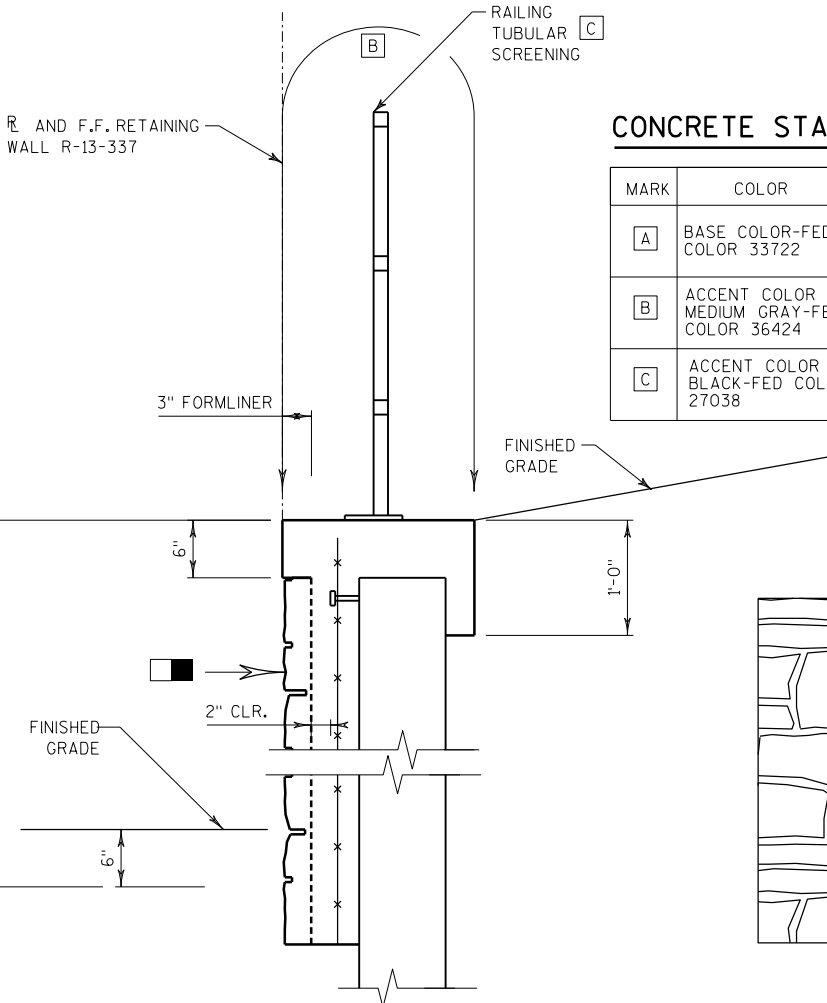
PLACE AT EXISTING LOW SWALES AT THE DIRECTION OF THE FIELD ENGINEER TO ALLOW FOR DRAINAGE.

SPACE RAIL POSTS A MIN. 7" FROM EDGE OF DRAINAGE DETAIL. SEE RETAINING WALL RAILING TUBULAR SCREENING SHEET FOR POST ANCHORAGE DETAILS.

BAR BENDS



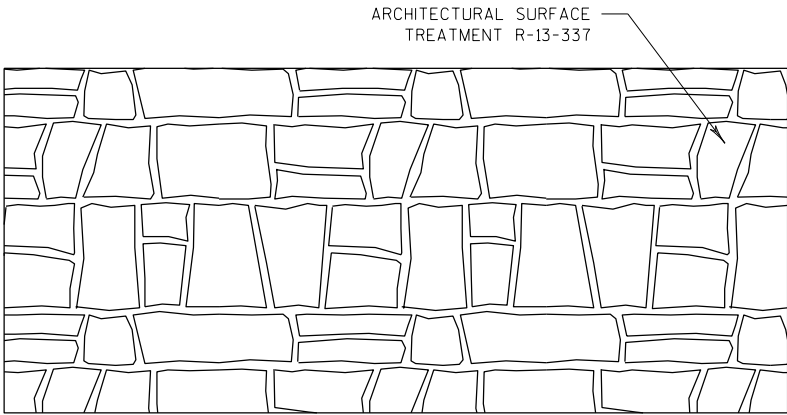
DETAIL AT CUNETTE TOE WALL



FORMLINER AND STAINING DETAILS AT WALL

CONCRETE STAINING SCHEDULE

MARK	COLOR	LOCATION	NOTES
A	BASE COLOR-FED COLOR 33722	RAISED AREAS (STONE)	EXPOSED FACES TO 0'-6" BELOW FINAL GRADE
B	ACCENT COLOR MEDIUM GRAY-FED COLOR 36424	DEPRESSED AREAS (GROUT) COPING	EXPOSED FACES TO 0'-6" BELOW FINAL GRADE FACE, TOP, AND UNDERSIDE
C	ACCENT COLOR BLACK-FED COLOR 27038	RAILING TUBULAR SCREENING	TWO-COAT FOR SPECIFIC USE WITH GALVANIZED STEEL



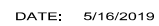
RUSTIC ASHLAR PATTERN

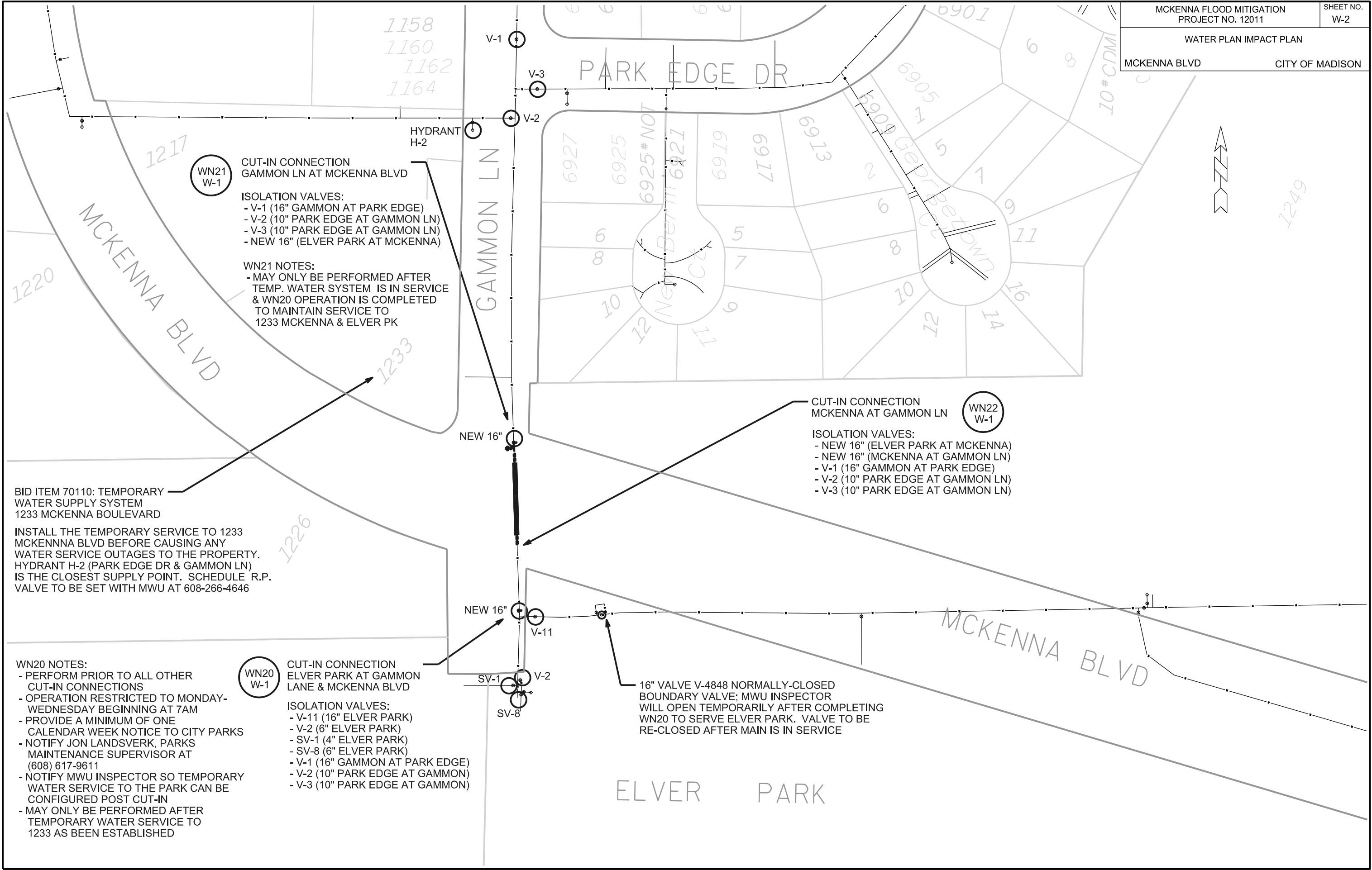
FORMLINER THICKNESS = 3"  
SIZE = 8" TO 32"  
MAX. RELIEF = 2"





MCKENNA BLVD	CITY OF MADISON
--------------	-----------------





PLOT SCALE: \_\_\_\_\_

PLOT NAME: \_\_\_\_\_

REV. DATE: \_\_\_\_\_

ORIGINATOR: CITY OF MADISON, STREETS DIVISION

## WATER ESTIMATE OF MATERIALS

CITY OF MADISON

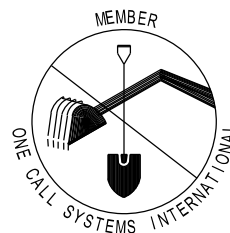
- WN1 REPLACE THE EXISTING LEAD SERVICE WITH A NEW COPPER SERVICE.
- WN2 EXTEND AND RECONNECT THE EXISTING COPPER SERVICE TO THE NEW WATER MAIN.
- WN3 EXISTING SERVICE TO BE ABANDONED WHEN THE WATER MAIN IS CUT OFF.
- WN4 DISCONNECT FROM THE OLD WATER MAIN AND RECONNECT THE EXISTING COPPER WATER SERVICE LATERAL TO THE NEW WATER MAIN.
- WN5 RELOCATE THE EXISTING FIRE HYDRANT.
- WN6 ABANDON WATER VALVE ACCESS STRUCTURE.
- WN7 FURNISH AND INSTALL THE NEW TOP SECTION FOR THE WATER ACCESS STRUCTURE.
- WN8 ABANDON THE VALVE BOX.
- WN9 FURNISH THE DITCH, COMPACTION, AND ALL MATERIALS AND LABOR FOR THE INSTALLATION OF NEW SERVICE LATERAL.
- WN10 REMOVE AND SALVAGE EXISTING HYDRANT
- WN11 REPLACE THE EXISTING COPPER SERVICE WITH A COPPER SERVICE
- WN20+ SEE WATER IMPACT PLAN FOR CONNECTION POINT ISOLATION AND WATER SHUT-OFF NOTIFICATION INFORMATION.

\* ESTIMATE OF MATERIALS IS FOR INFORMATION ONLY. ENGINEER DOES NOT GUARANTEE ACCURACY OF MATERIAL TAKE-OFF

1 - 16-IN X 6-IN TEE  
4 - 16-IN 45° BEND  
1 - 5-IN HYDRANT  
168-FT - 2-IN STYROFOAM INSULATION  
135-FT - POLY WRAP

CALL DIGGERS HOTLINE  
TOLL FREE  
811 OR 1-800-242-8511  
FAX-A-LOCATE 1-800-338-3860  
TDD (FOR HEARING IMPAIRED) 1-800-542-2289

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



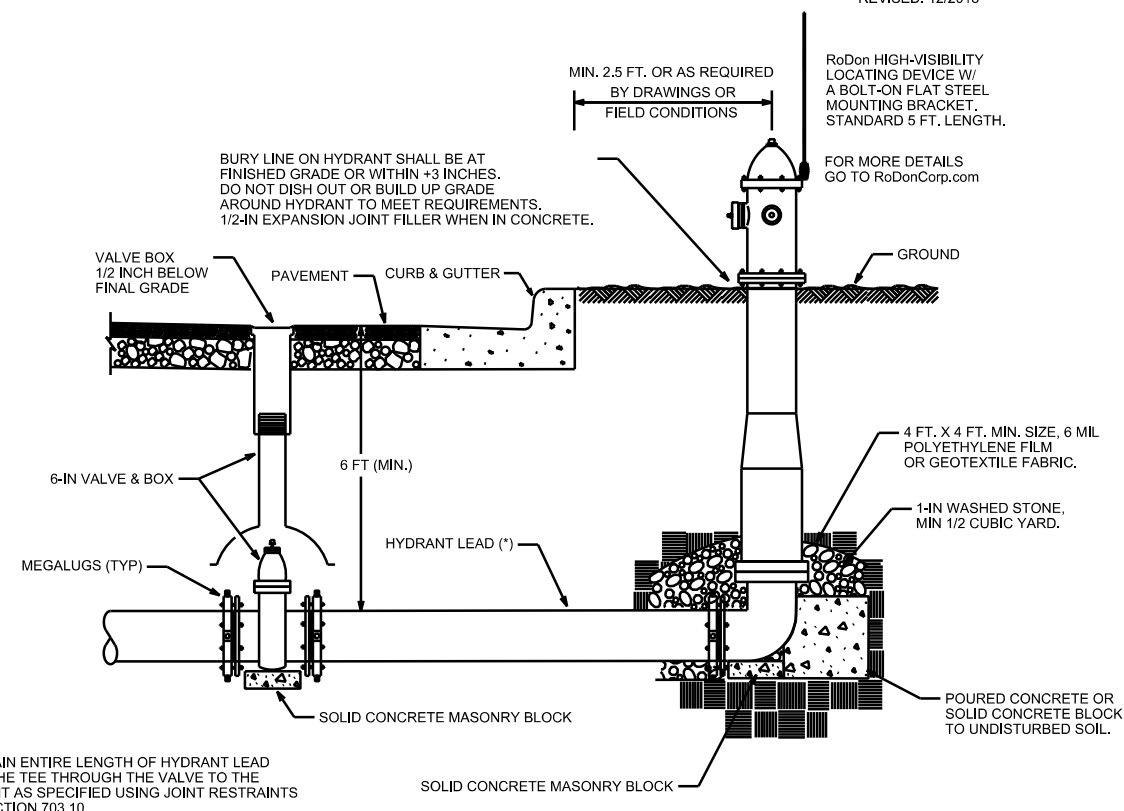
\* ESTIMATE OF MATERIALS IS FOR INFORMATION ONLY. ENGINEER DOES NOT GUARANTEE ACCURACY OF MATERIAL TAKE-OFF

\* ESTIMATE OF MATERIALS IS FOR INFORMATION ONLY. ENGINEER DOES NOT GUARANTEE ACCURACY OF MATERIAL TAKE-OFF

**DISCLAIMER NOTE:**  
UTILITY LOCATIONS SHOWN ARE APPROXIMATE ONLY. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO DETERMINE THE EXACT HORIZONTAL AND VERTICAL LOCATION OF ALL EXISTING UNDERGROUND AND OVERHEAD UTILITIES PRIOR TO COMMENCING WORK.

DETAIL DRAWING NO. **7.04**

REVISSED: 12/2018



## TYPICAL HYDRANT INSTALLATION

City of Madison Standard Specifications for Public Works Construction

Callout	Description
1	Pavement Marking Epoxy, Double Line, 4-Inch
2	Pavement Marking Epoxy, 6-Inch Solid White
3	Pavement Marking Epoxy, 6-Inch White Skips, (10' Line, 30' Gap)
4	Pavement Marking Epoxy, 8-Inch Solid White
5	Pavement Marking Epoxy, Radius Line, 6-Inch (5' Line, 5' Gap)
6	Pavement Marking Epoxy, Crosswalk, 6-Inch
7	Pavement Marking Epoxy, Crosswalk, 12-Inch
8	Pavement Marking Epoxy, Stop Line, 24-Inch
9	Pavement Marking Epoxy, Symbol, Bike Lane

PLOT SCALE:

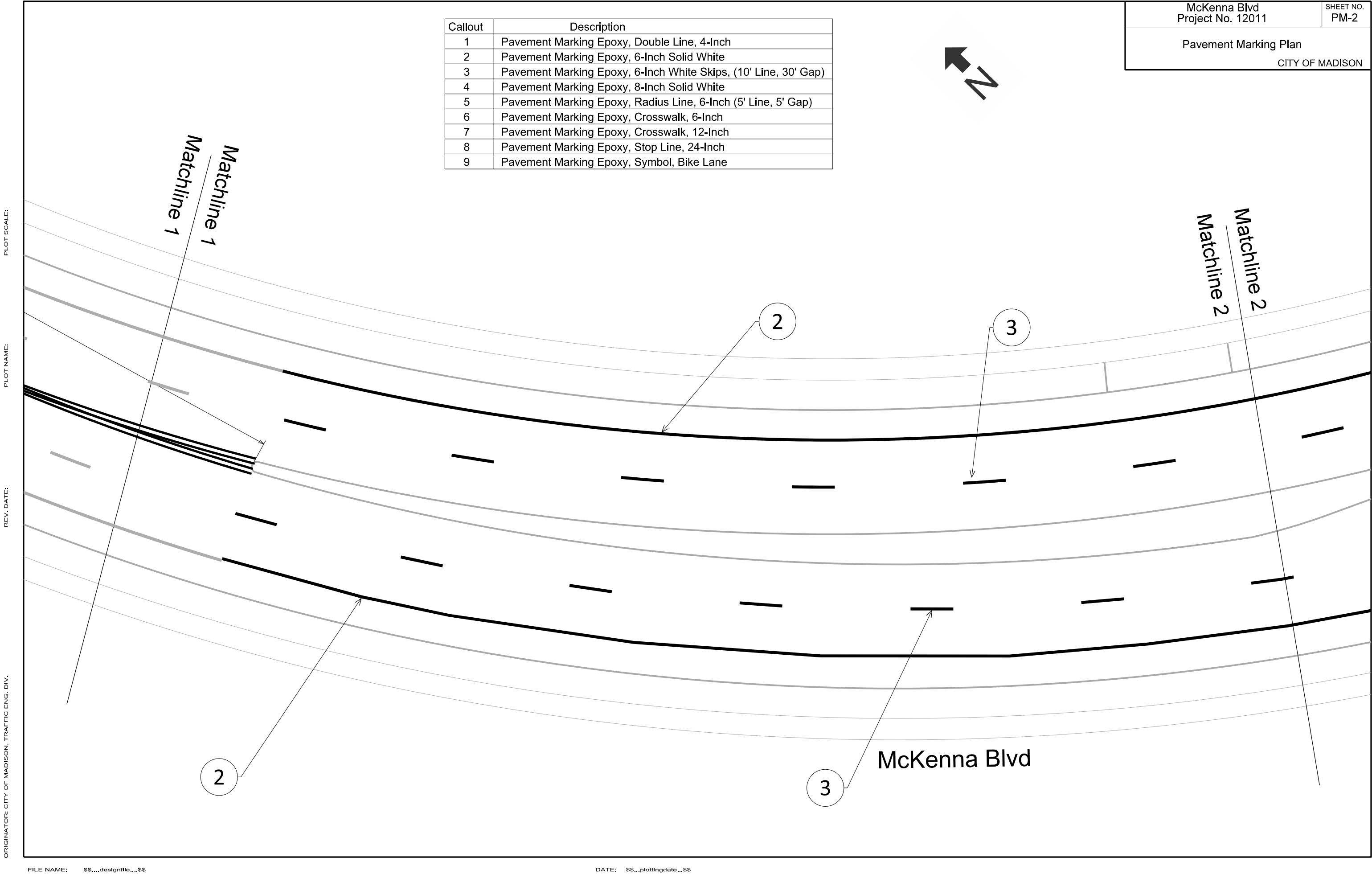
PLOT NAME:

REV. DATE:

ORIGINATOR: CITY OF MADISON, TRAFFIC ENG. DIV.



Note: Pavement markings in gray are existing.  
Only install pavement markings shown in black



PLOT SCALE:

PLOT NAME:

REV. DATE:

ORIGINATOR: CITY OF MADISON, TRAFFIC ENG. DIV.

FILE NAME: \$\$....designfile....\$\$

DATE: \$\$...plottingdate...\$\$



PLOT SCALE:

PLOT NAME:

REV. DATE:

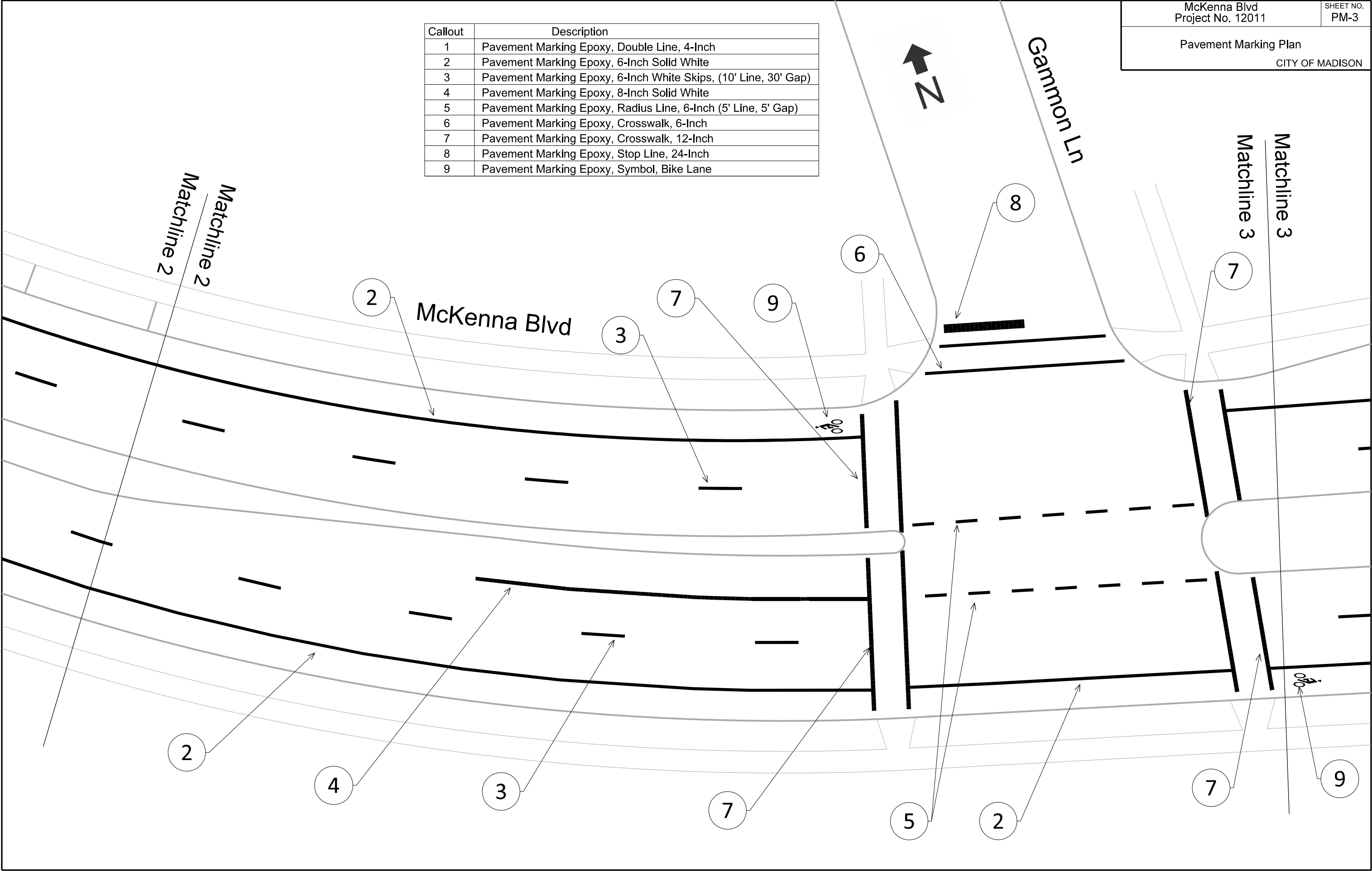
ORIGINATOR: CITY OF MADISON, TRAFFIC ENG. DIV.

Callout	Description
1	Pavement Marking Epoxy, Double Line, 4-Inch
2	Pavement Marking Epoxy, 6-Inch Solid White
3	Pavement Marking Epoxy, 6-Inch White Skips, (10' Line, 30' Gap)
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6	Pavement Marking Epoxy, Crosswalk, 6-Inch
7	Pavement Marking Epoxy, Crosswalk, 12-Inch
8	Pavement Marking Epoxy, Stop Line, 24-Inch
9	Pavement Marking Epoxy, Symbol, Bike Lane

McKenna Blvd  
Project No. 12011

SHEET NO.  
PM-3

Pavement Marking Plan  
CITY OF MADISON



Callout	Description
1	Pavement Marking Epoxy, Double Line, 4-Inch
2	Pavement Marking Epoxy, 6-Inch Solid White
3	Pavement Marking Epoxy, 6-Inch White Skips, (10' Line, 30' Gap)
4	Pavement Marking Epoxy, 8-Inch Solid White
5	Pavement Marking Epoxy, Radius Line, 6-Inch (5' Line, 5' Gap)
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7	Pavement Marking Epoxy, Crosswalk, 12-Inch
8	Pavement Marking Epoxy, Stop Line, 24-Inch
9	Pavement Marking Epoxy, Symbol, Bike Lane

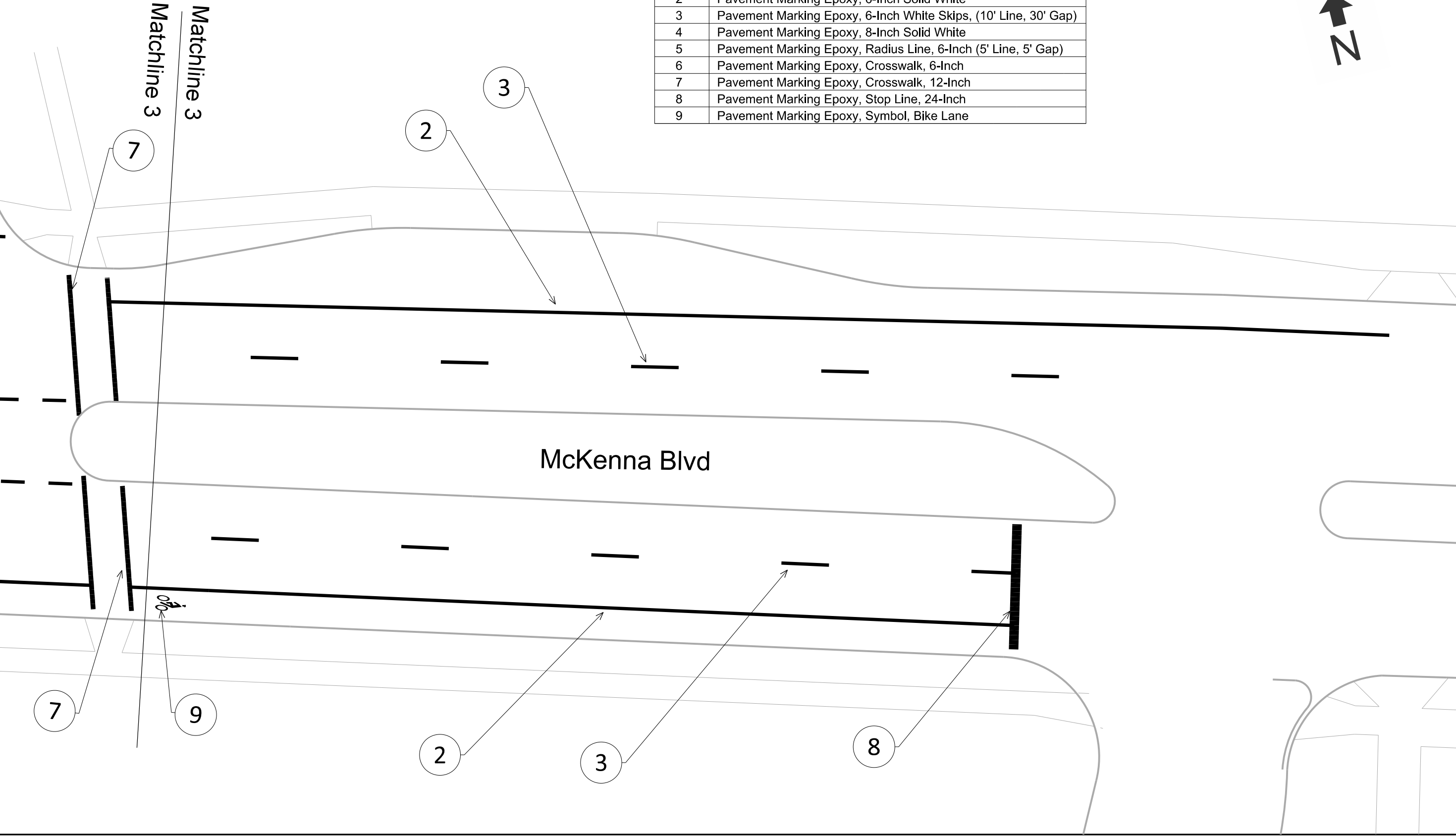


PLOT SCALE:

PLOT NAME:

REV. DATE:

ORIGINATOR: CITY OF MADISON, TRAFFIC ENG. DIV.



PLOT SCALE:

PLOT NAME:

REV. DATE:

ORIGINATOR: CITY OF MADISON, TRAFFIC ENG. DIV.

Jacobs Way

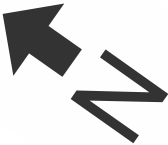
Callout	Description
1	Pavement Marking Epoxy, Double Line, 4-Inch
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8	Pavement Marking Epoxy, Stop Line, 24-Inch
9	Pavement Marking Epoxy, Symbol, Bike Lane

McKenna Blvd  
Project No. 12011

SHEET NO.  
PM-5

Pavement Marking Plan

CITY OF MADISON



390'

McKenna Blvd

1

Note: Pavement markings in gray are existing.  
Only install pavement markings shown in black

LEGEND

Sign

Traffic Flow

Arrow Board

Barrel

Tubular Marker

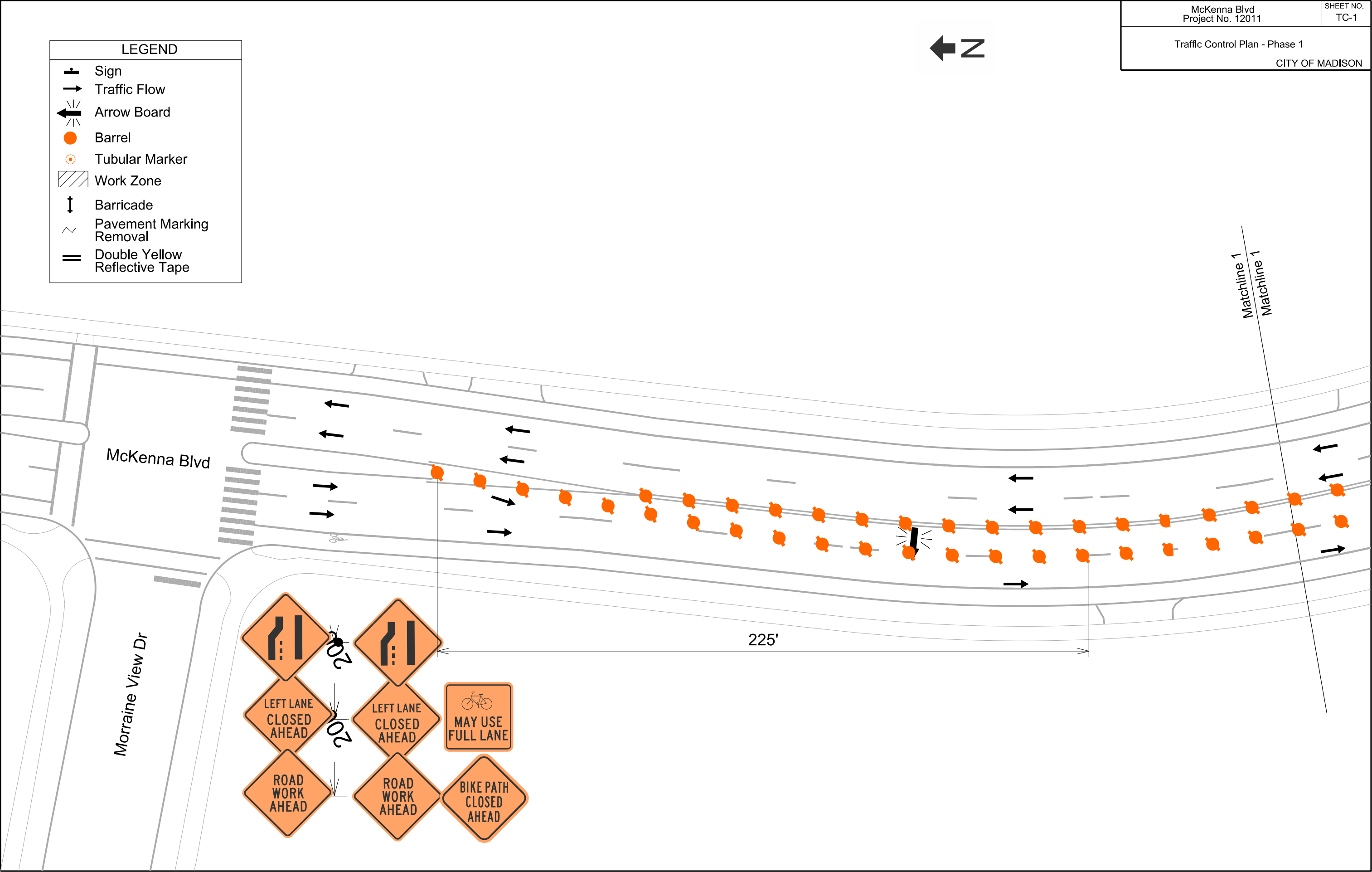
Work Zone

Barricade

Pavement Marking Removal

Double Yellow Reflective Tape


PLOT SCALE:  
  
PLOT NAME:  
  
REV. DATE:  
  
ORIGINATOR: CITY OF MADISON, TRAFFIC ENG. DIV.





LEGEND


 Sign


 Traffic Flow


 Arrow Board


 Barrel

 Tubular Marker

 Work Zone

 Barricade

 Pavement Marking Removal

 Double Yellow Reflective Tape

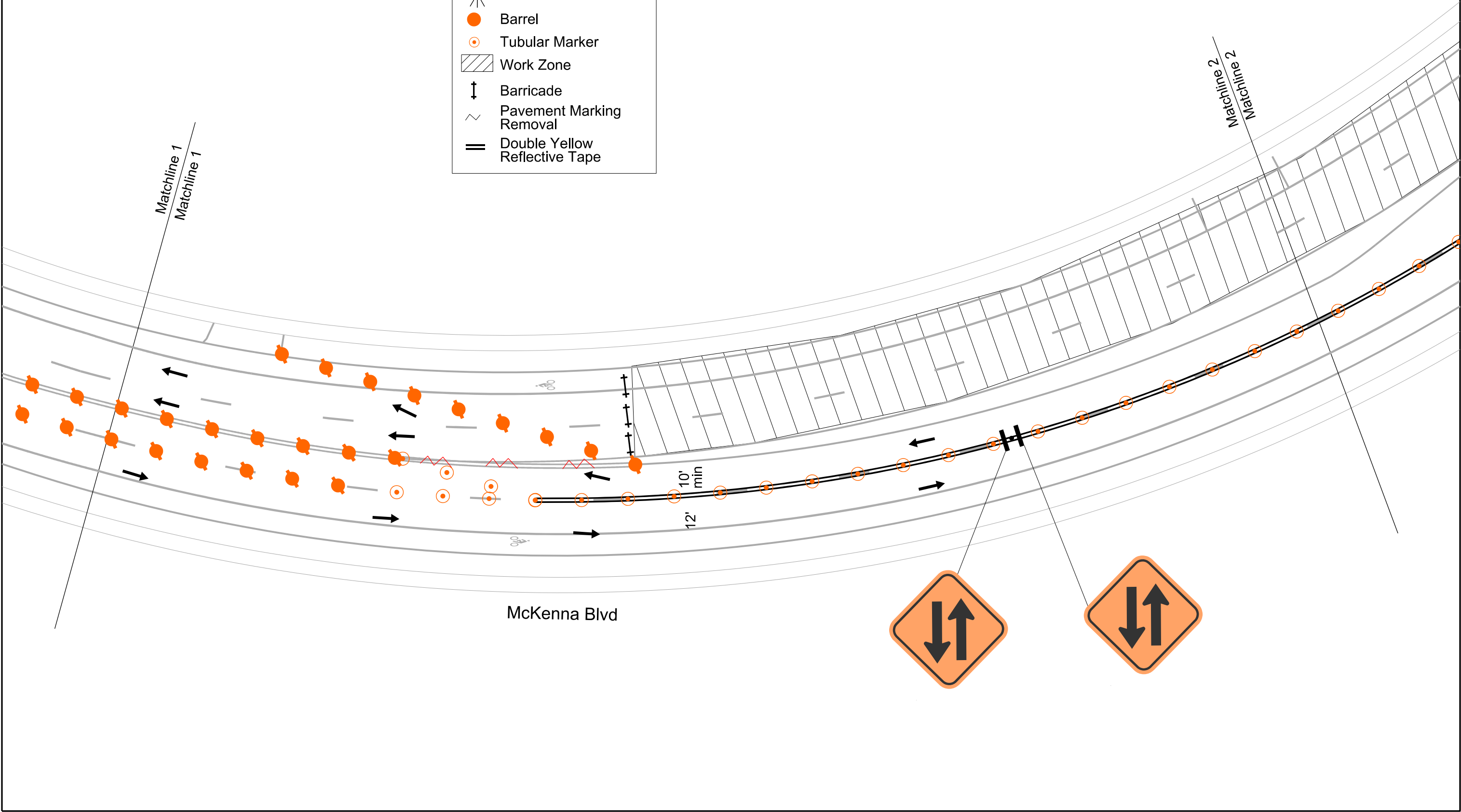


PLOT SCALE:

PLOT NAME:

REV. DATE:

ORIGINATOR: CITY OF MADISON, TRAFFIC ENG. DIV.

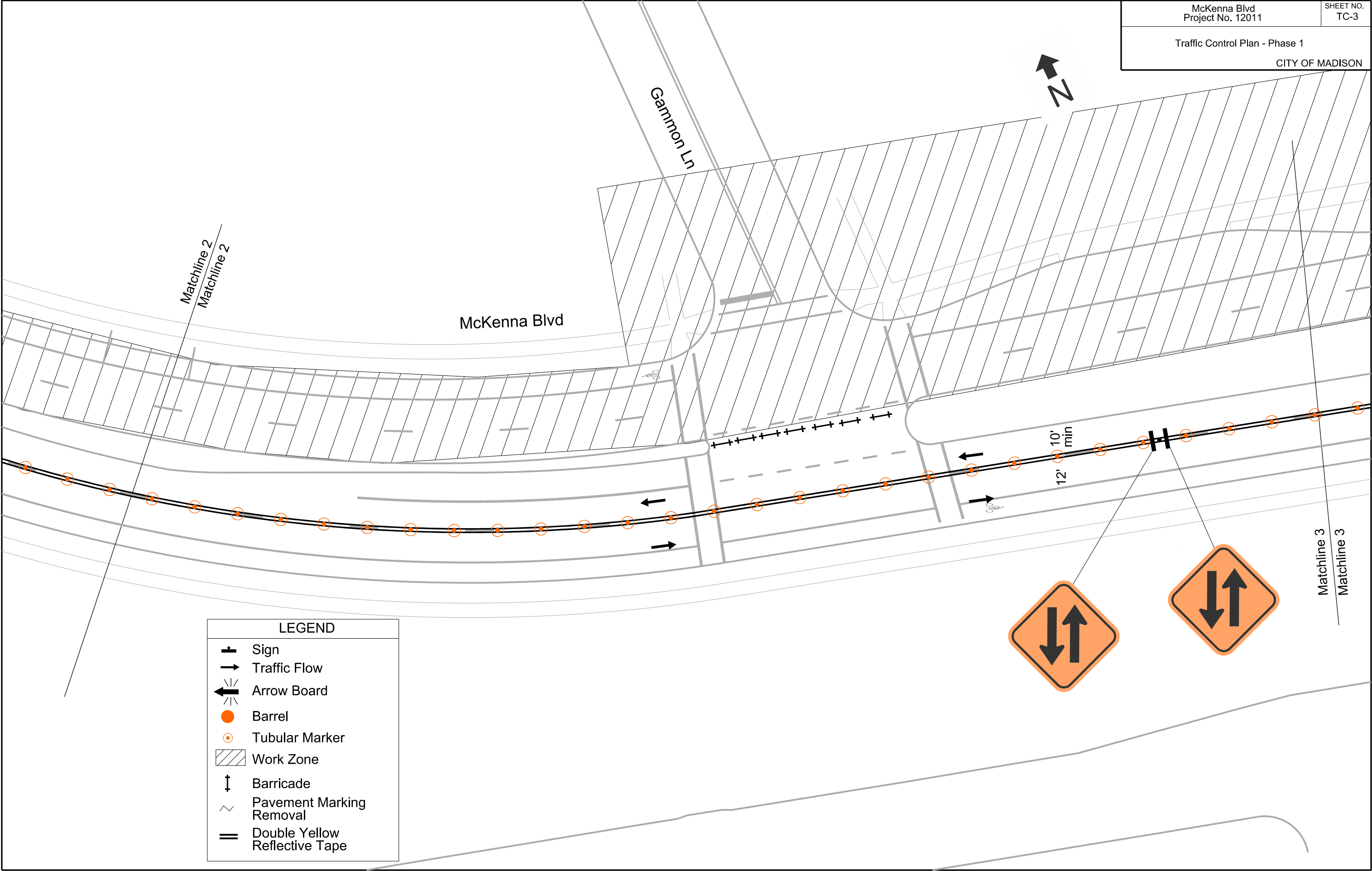


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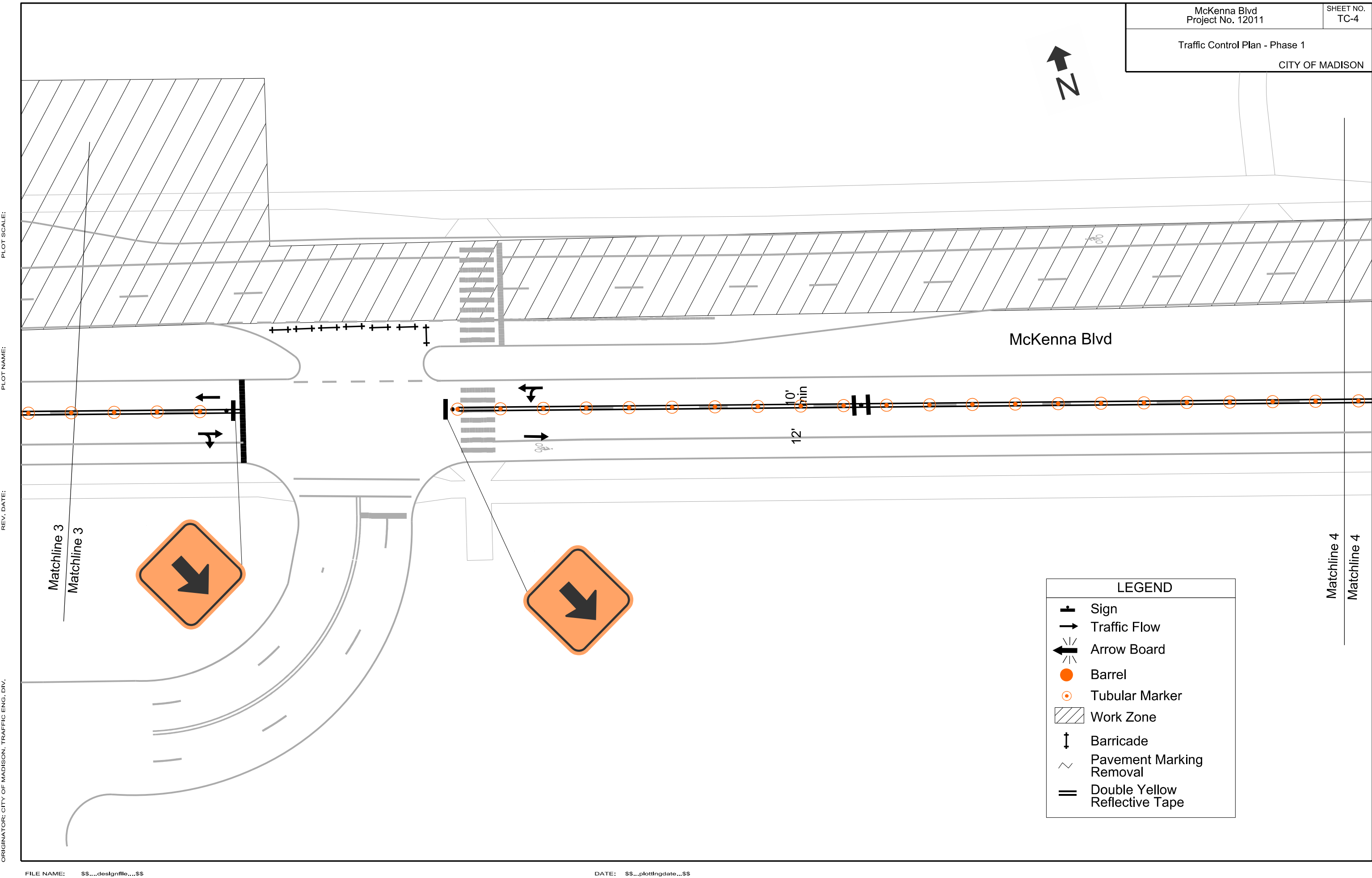
REV. DATE:

ORIGINATOR: CITY OF MADISON, TRAFFIC ENG. DIV.



LEGEND	
	Sign
	Traffic Flow
	Arrow Board
	Barrel
	Tubular Marker
	Work Zone
	Barricade
	Pavement Marking Removal
	Double Yellow Reflective Tape





PLOT SCALE:

PLOT NAME:

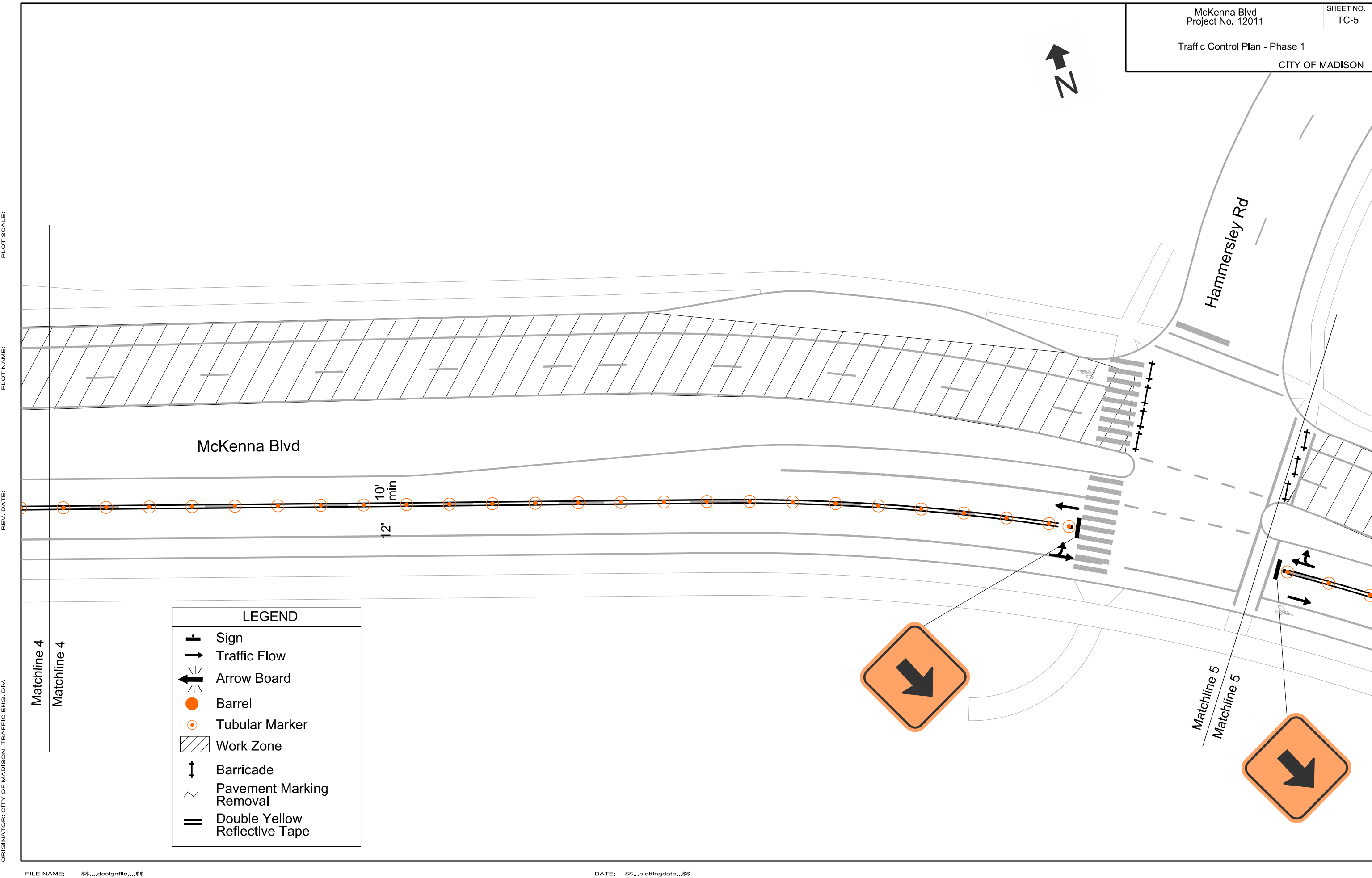
REV. DATE:

ORIGINATOR: CITY OF MADISON, TRAFFIC ENG. DIV.

Matchline 3  
Matchline 3

Matchline 4  
Matchline 4

LEGEND	
	Sign
	Traffic Flow
	Arrow Board
	Barrel
	Tubular Marker
	Work Zone
	Barricade
	Pavement Marking Removal
	Double Yellow Reflective Tape



PLOT SCALE:

PLOT NAME:

REV. DATE:

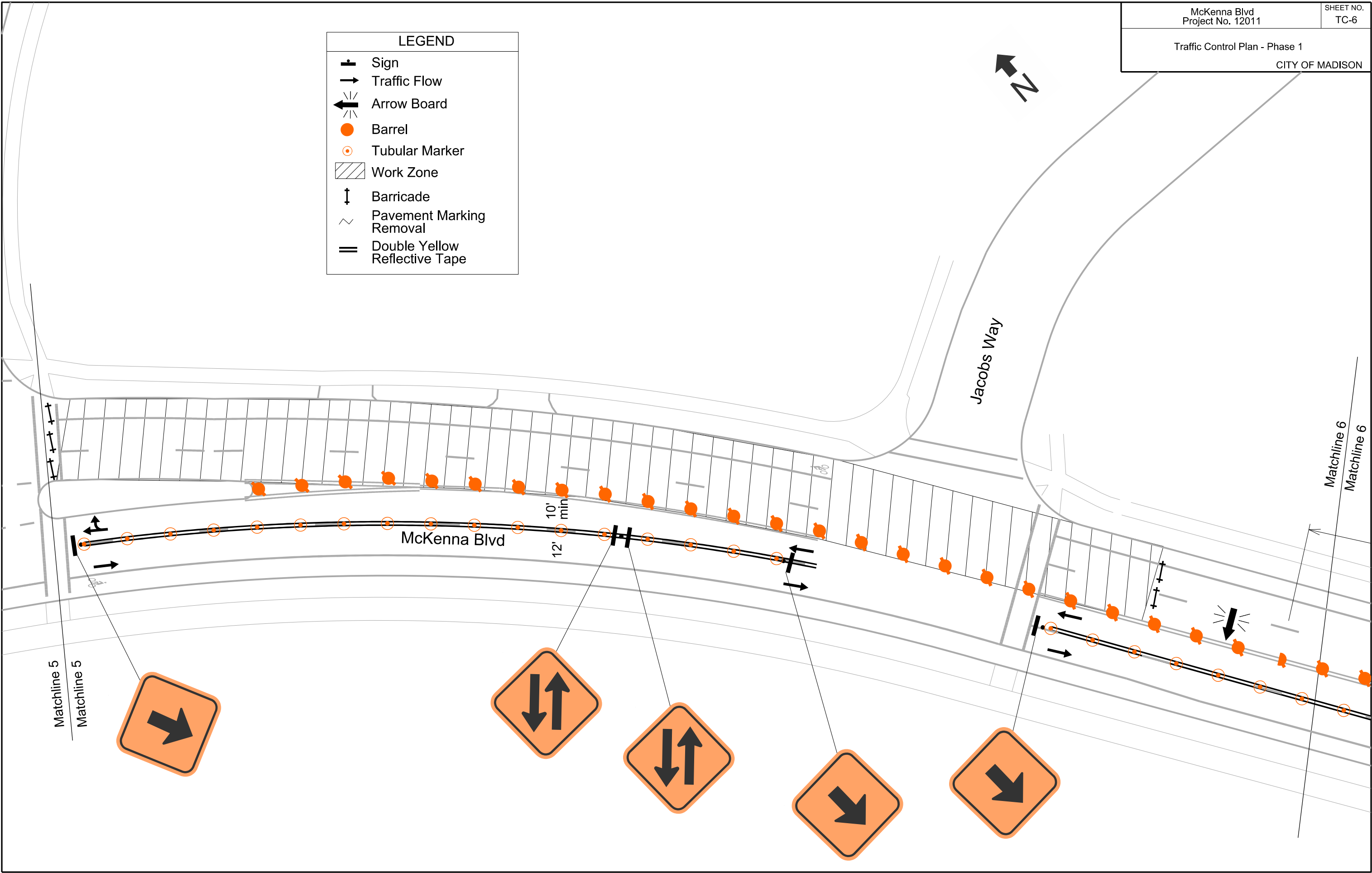
ORIGINATOR: CITY OF MADISON, TRAFFIC ENG. DIV.

PLOT SCALE:


PLOT NAME:


REV. DATE:


ORIGINATOR: CITY OF MADISON, TRAFFIC ENG. DIV.





LEGEND


 Sign


 Traffic Flow


 Arrow Board


 Barrel

 Tubular Marker

 Work Zone

 Barricade

 Pavement Marking Removal

 Double Yellow Reflective Tape

PLOT SCALE:

PLOT NAME:

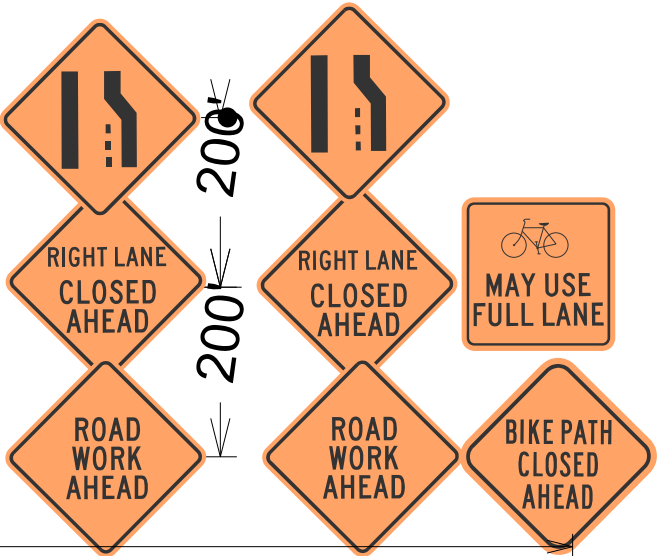
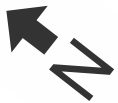
REV. DATE:

ORIGINATOR: CITY OF MADISON, TRAFFIC ENG. DIV.

Matchline 6  
Matchline 6


225'


225'





McKenna Blvd


LEGEND


 Sign


 Traffic Flow


 Arrow Board


 Barrel

 Tubular Marker

 Work Zone

 Barricade

 Pavement Marking Removal

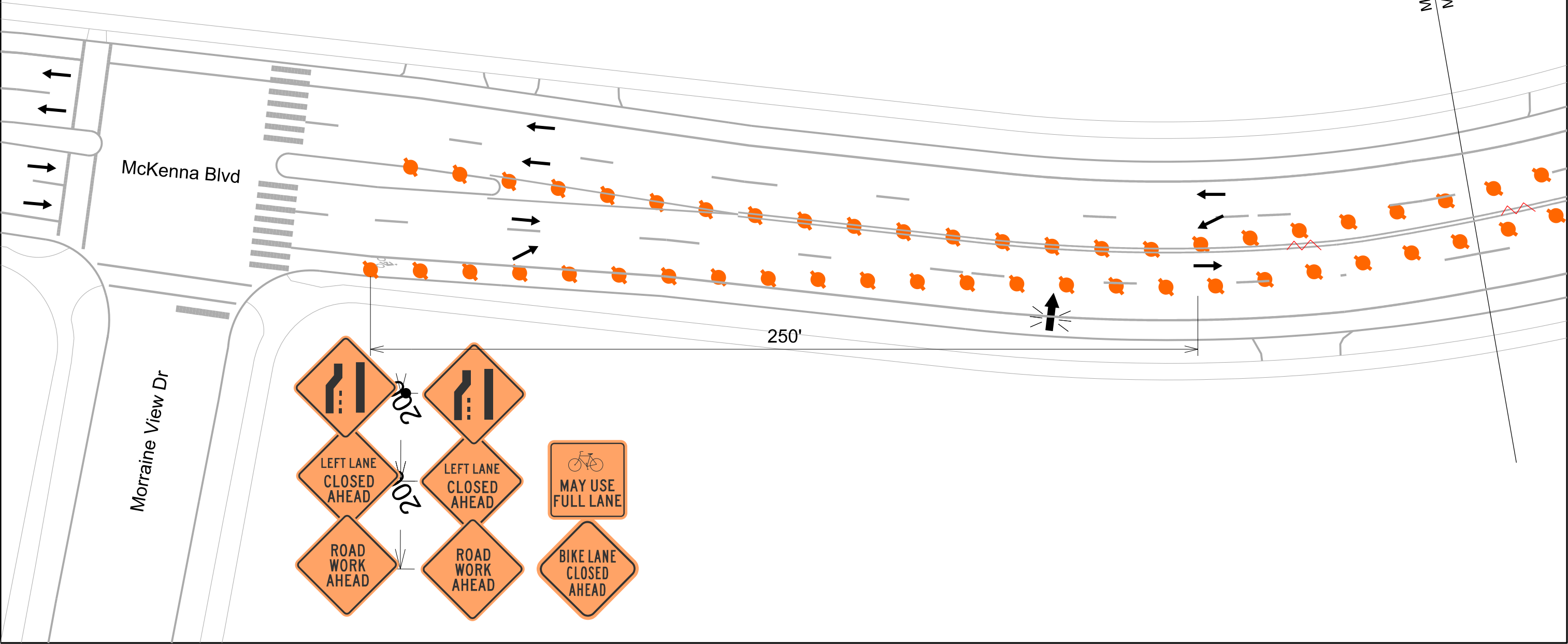
 Double Yellow Reflective Tape

PLOT SCALE:

PLOT NAME:

REV. DATE:

ORIGINATOR: CITY OF MADISON, TRAFFIC ENG. DIV.




PLOT SCALE:


PLOT NAME:


REV. DATE:


ORIGINATOR: CITY OF MADISON, TRAFFIC ENG. DIV.


LEGEND


 Sign


 Traffic Flow


 Arrow Board


 Barrel

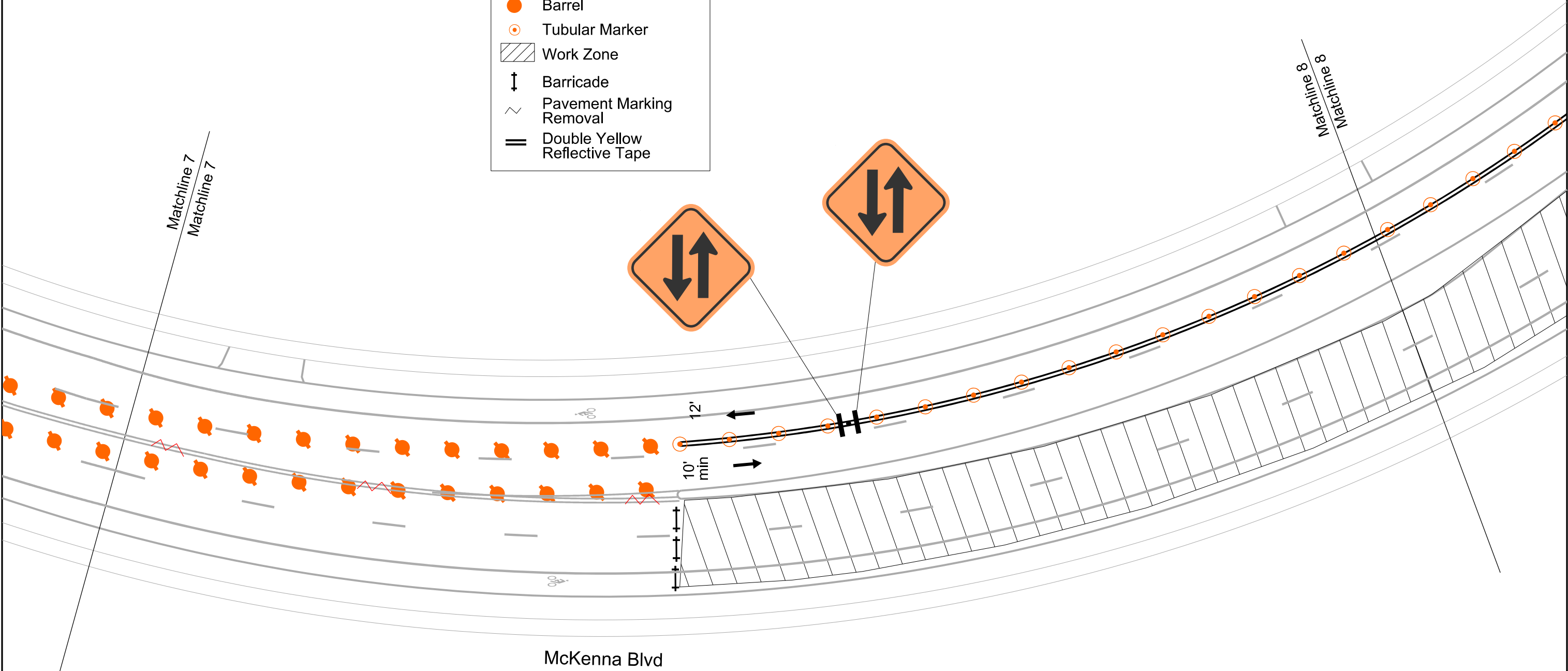
 Tubular Marker

 Work Zone

 Barricade

 Pavement Marking Removal

 Double Yellow Reflective Tape



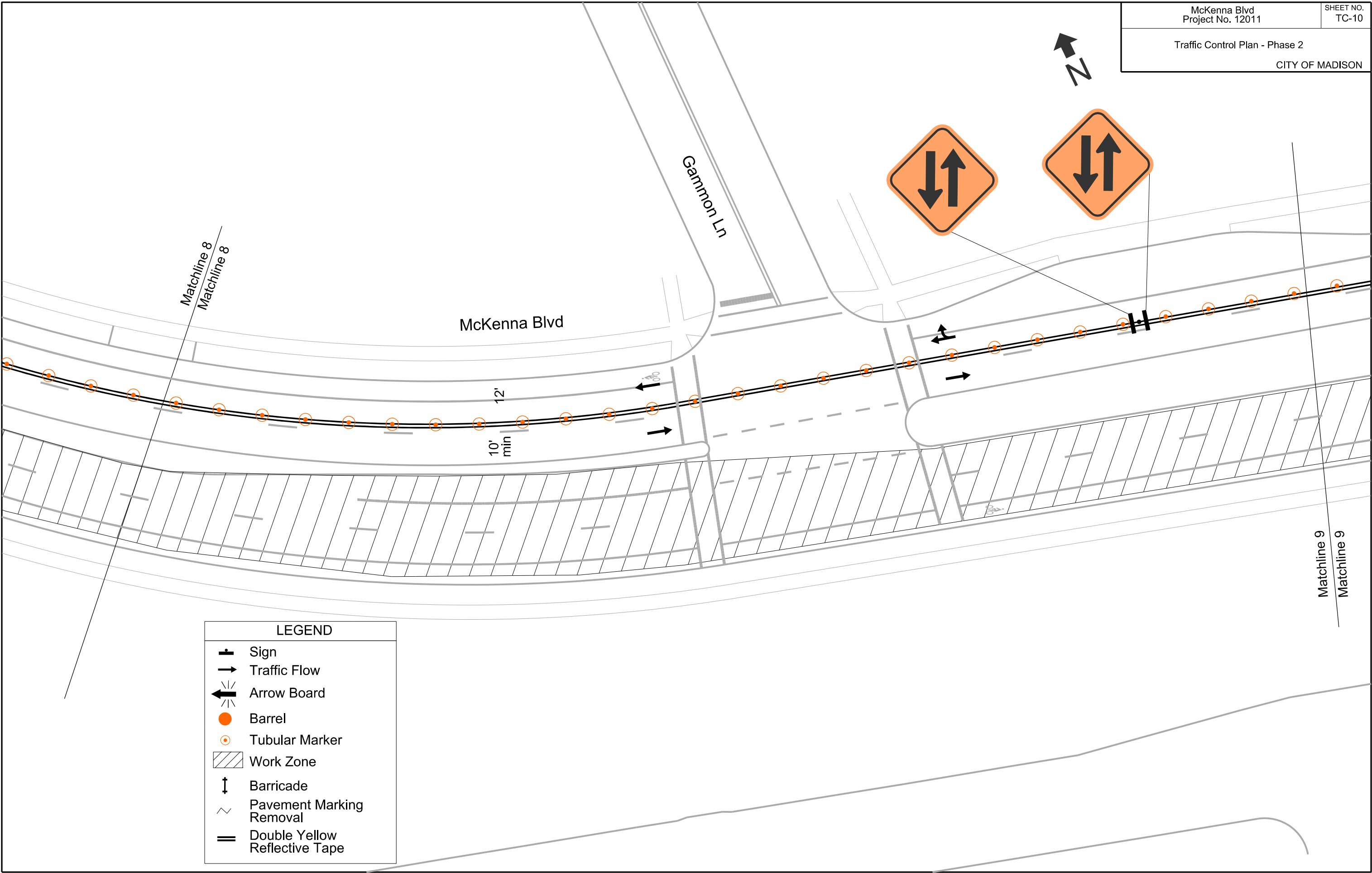


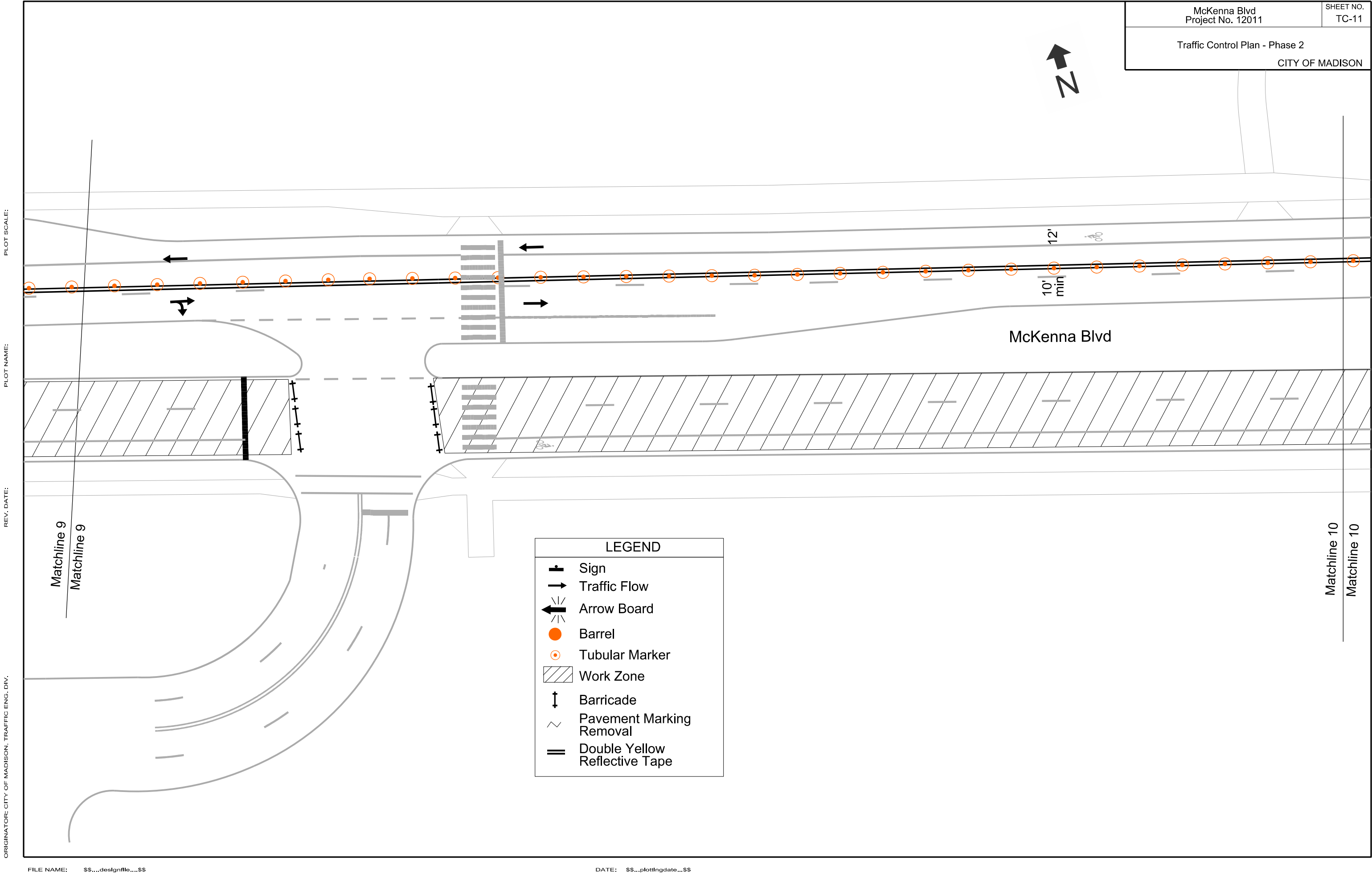
PLOT SCALE:

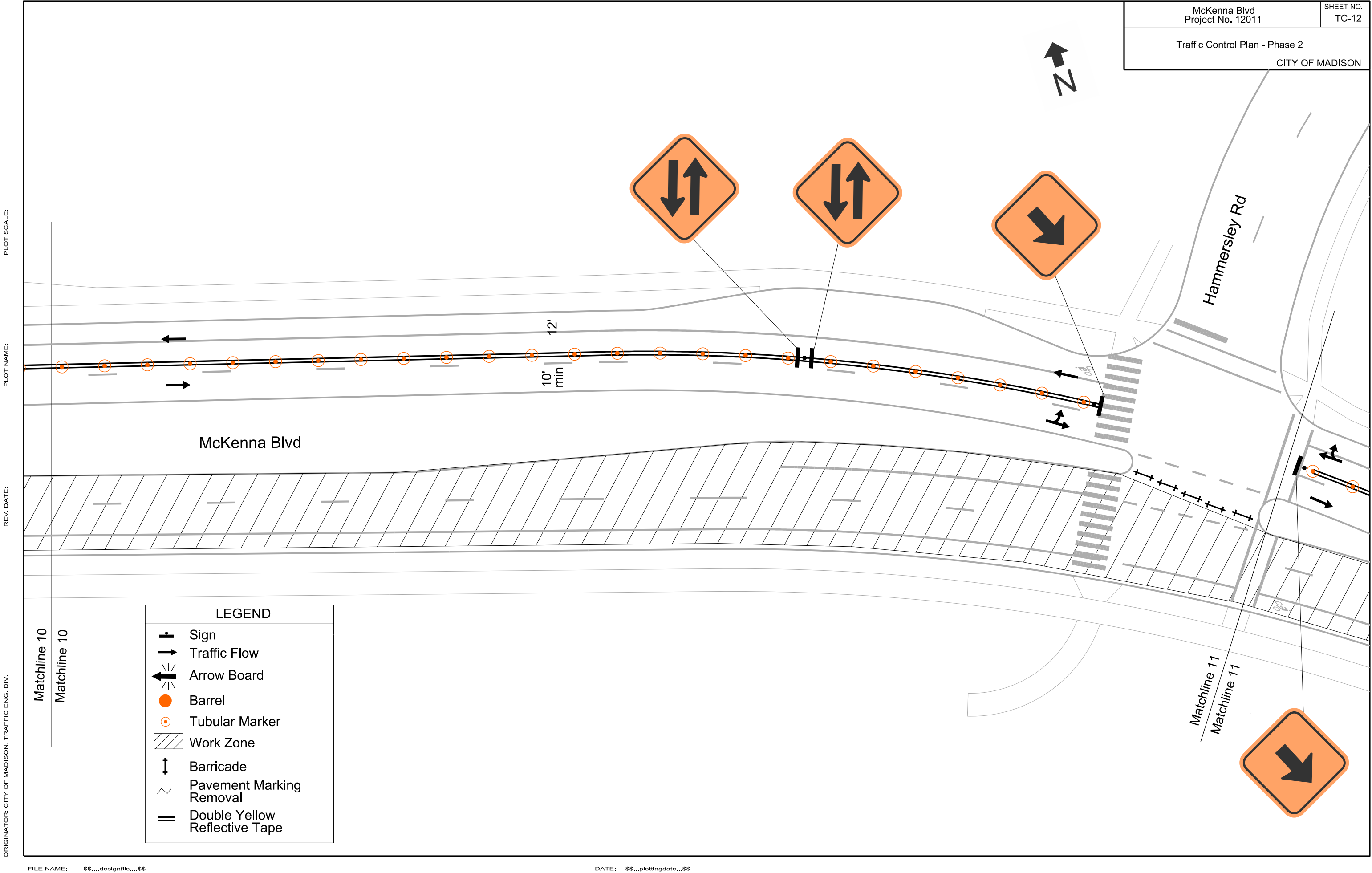
PLOT NAME:

REV. DATE:

ORIGINATOR: CITY OF MADISON, TRAFFIC ENG. DIV.








PLOT SCALE:


PLOT NAME:


REV. DATE:


ORIGINATOR: CITY OF MADISON, TRAFFIC ENG. DIV.


LEGEND


 Sign


 Traffic Flow


 Arrow Board


 Barrel

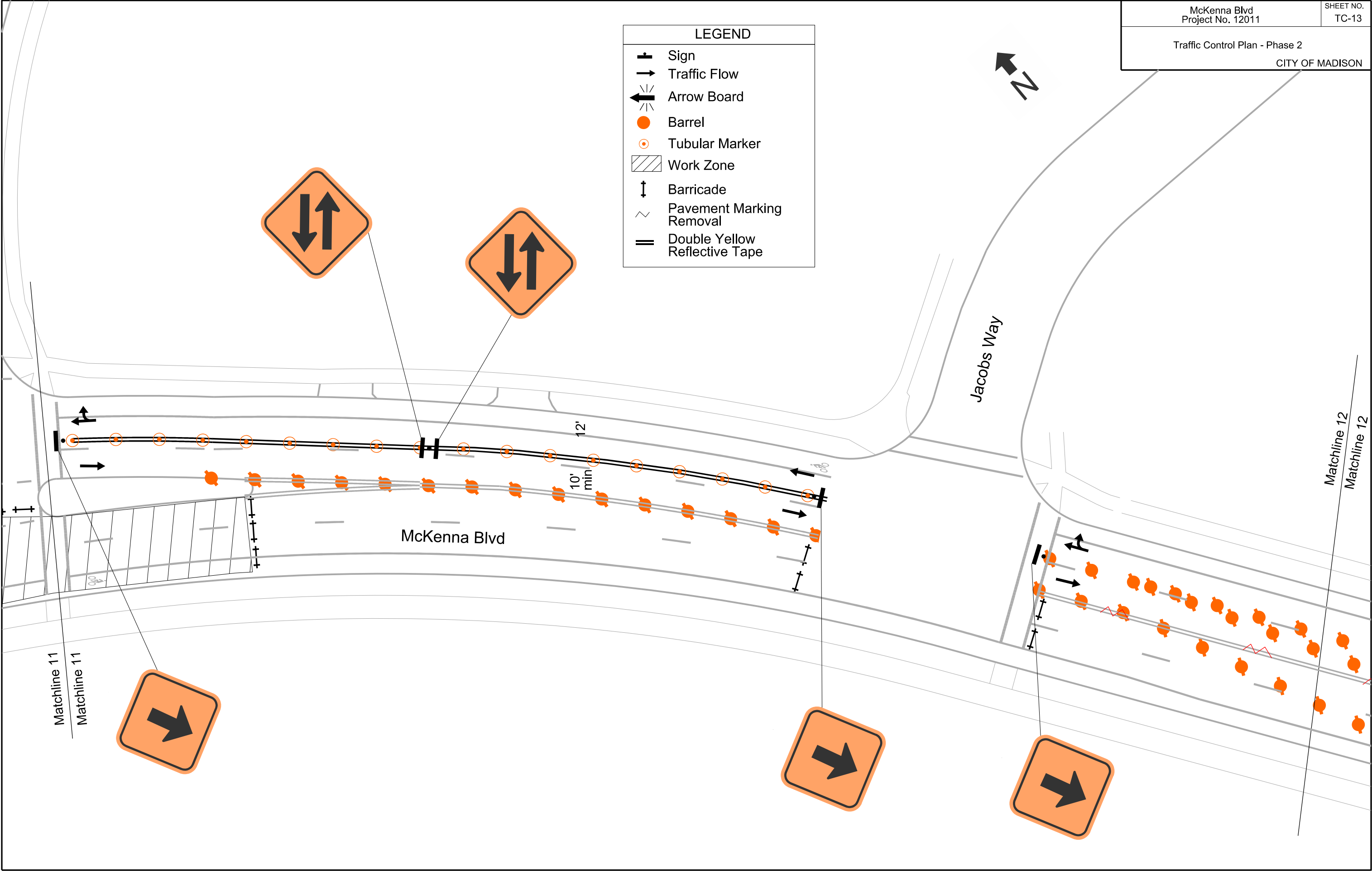
 Tubular Marker

 Work Zone

 Barricade

 Pavement Marking Removal

 Double Yellow Reflective Tape




PLOT SCALE:


PLOT NAME:


REV. DATE:


ORIGINATOR: CITY OF MADISON, TRAFFIC ENG. DIV.


LEGEND


 Sign


 Traffic Flow


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 Work Zone


 Barricade


 Pavement Marking Removal


 Double Yellow Reflective Tape





LEGEND


 Sign


 Traffic Flow


 Arrow Board


 Barrel

 Tubular Marker

 Work Zone

 Barricade

 Pavement Marking Removal

 Double Yellow Reflective Tape

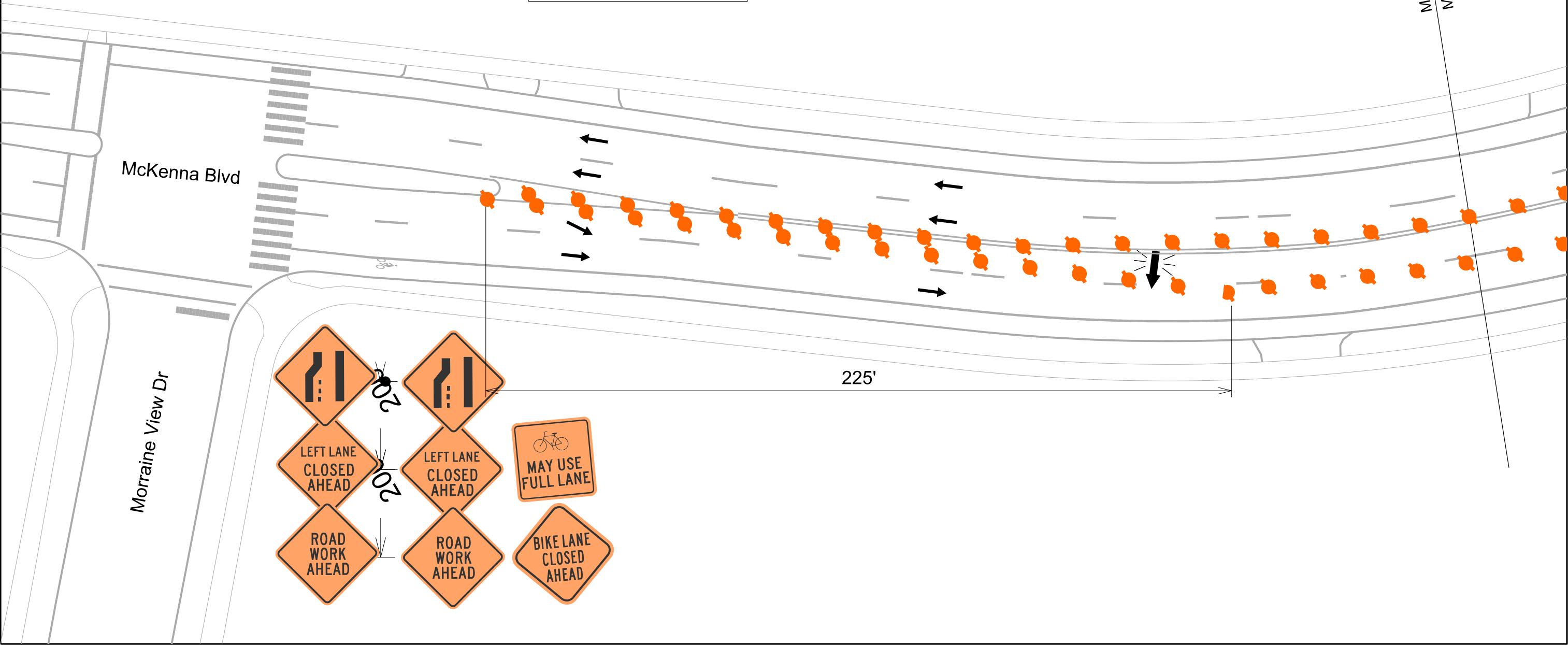


PLOT SCALE:

PLOT NAME:

REV. DATE:

ORIGINATOR: CITY OF MADISON, TRAFFIC ENG. DIV.





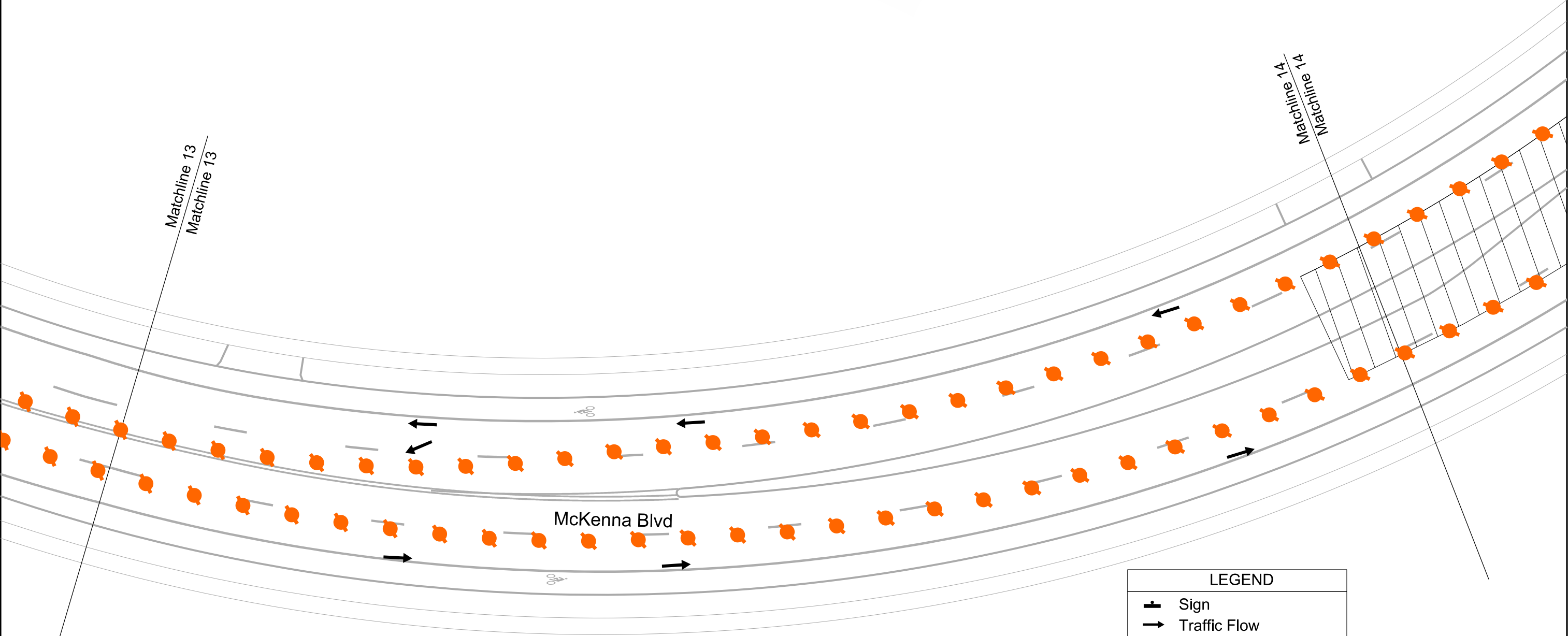


PLOT SCALE:

PLOT NAME:

REV. DATE:

ORIGINATOR: CITY OF MADISON, TRAFFIC ENG. DIV.



LEGEND

Sign

Traffic Flow

Arrow Board

Barrel

Tubular Marker

Work Zone

Barricade

Pavement Marking Removal

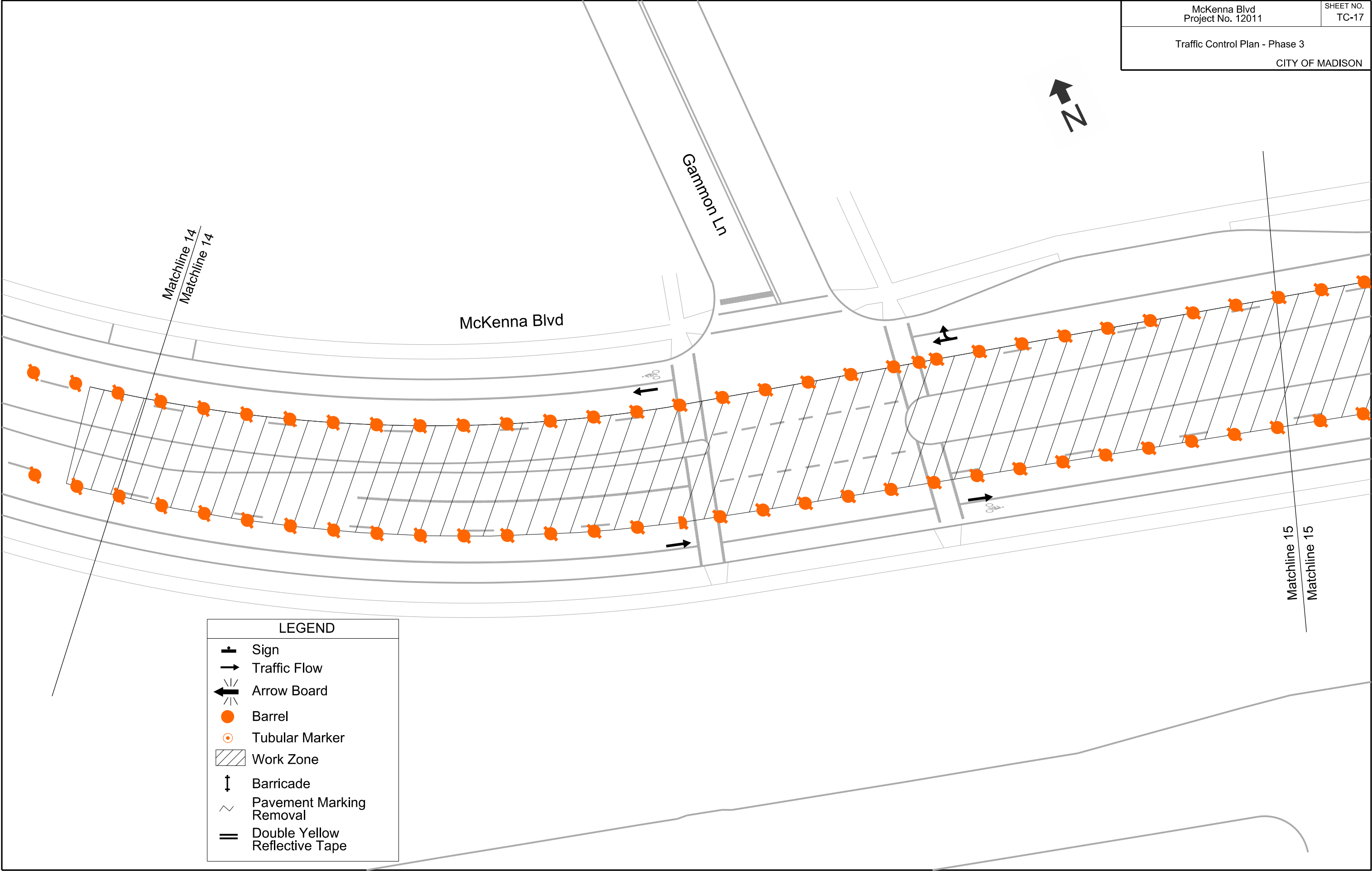
Double Yellow Reflective Tape

PLOT SCALE:

PLOT NAME:

REV. DATE:

ORIGINATOR: CITY OF MADISON, TRAFFIC ENG. DIV.



LEGEND

Sign

Traffic Flow

Arrow Board

Barrel

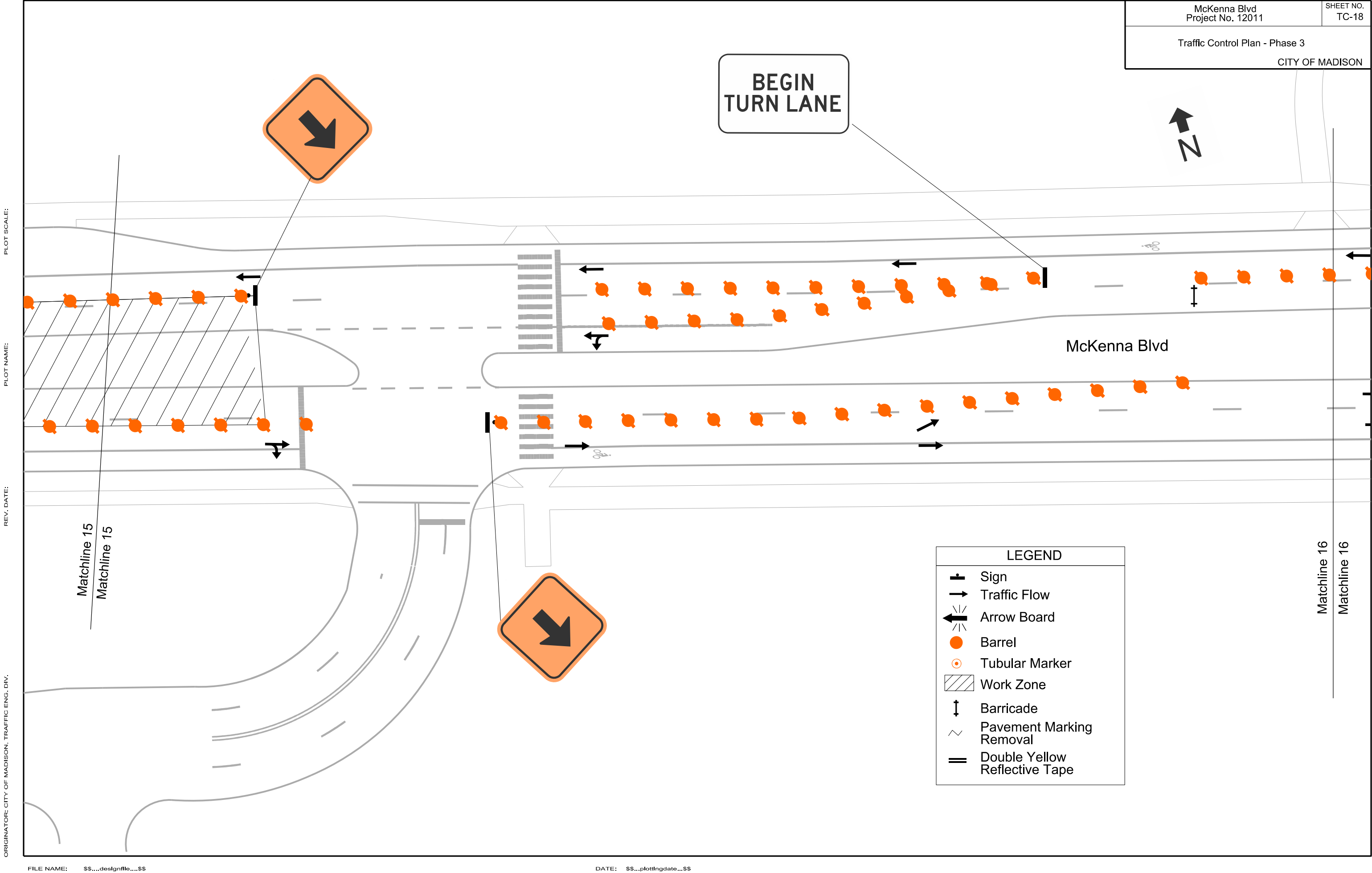
Tubular Marker

Work Zone

Barricade

Pavement Marking Removal

Double Yellow Reflective Tape



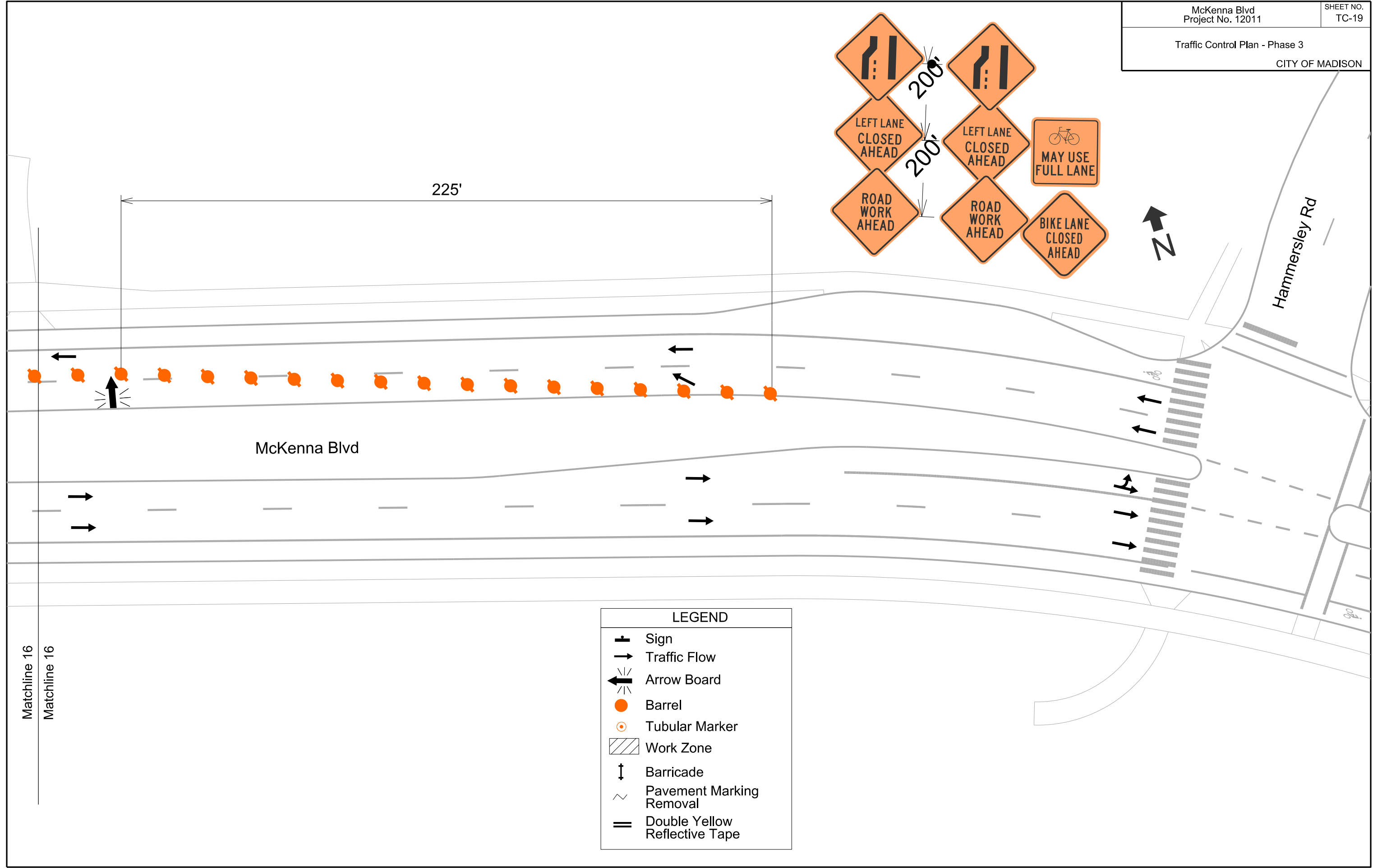
PLOT SCALE:

PLOT NAME:

REV. DATE:

ORIGINATOR: CITY OF MADISON, TRAFFIC ENG. DIV.

Matchline 16  
Matchline 16



McKenna Blvd  
Project No. 12011

SHEET NO.  
TC-19

Traffic Control Plan - Phase 3

CITY OF MADISON

PLOT SCALE:

PLOT NAME:

REV. DATE:

ORIGINATOR: CITY OF MADISON, TRAFFIC ENG. DIV.

