

EAU

PROJECT ID: 1530-06-80

WITH: N/A

COUNTY: TREMPEALEAU

NOVEMBER 2024

ORDER OF SHEETS

Section No.	1	Title
Section No.	2	Typical Sections and Details
Section No.	3	Estimate of Quantities
Section No.	3	Miscellaneous Quantities
Section No.	4	Right of Way Plat
Section No.	5	Plan and Profile
Section No.	6	Standard Detail Drawings
Section No.	7	Sign Plates
Section No.	8	Structure Plans
Section No.	9	Computer Earthwork Data
Section No.	9	Cross Sections

TOTAL SHEETS = 266

STATE OF WISCONSIN

DEPARTMENT OF TRANSPORTATION

PLAN OF PROPOSED IMPROVEMENT

MONDOVI - OSSEO

HUNT LANE TO NELSON ROAD

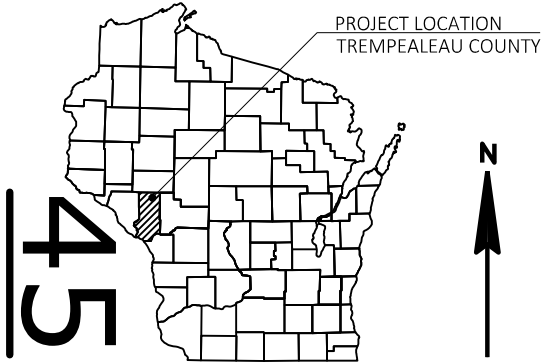
USH 10

TREMPEALEAU

STATE PROJECT	FEDERAL PROJECT	
	PROJECT	CONTRACT
1530-06-80	WISC 2025044	1

STATE PROJECT NUMBER

1530-06-80



DESIGN DESIGNATION

A.A.D.T.	2025	=	4,770
A.A.D.T.	2045	=	5,490
D.H.V.		=	604
D.D.		=	60/40
T.		=	10.1%
DESIGN SPEED		=	55 MPH
ESALS		=	1,500,000

BEGIN PROJECT

1530-06-80

STA 4+50

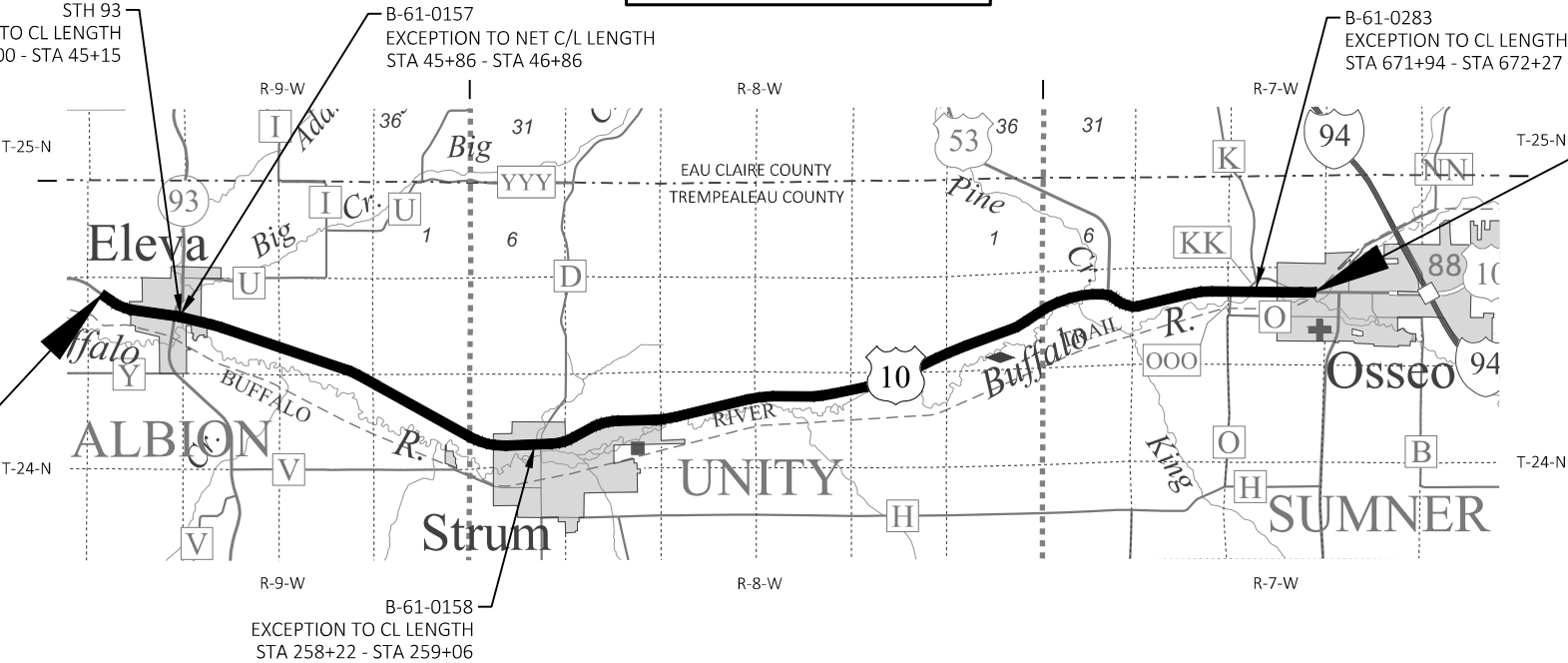
Y = 516,793.452

X = 812,249.629

CONVENTIONAL SYMBOLS

PLAN	
CORPORATE LIMITS	
PROPERTY LINE	
LOT LINE	
LIMITED HIGHWAY EASEMENT	
EXISTING RIGHT OF WAY	
PROPOSED OR NEW R/W LINE	
SLOPE INTERCEPT	
REFERENCE LINE	
EXISTING CULVERT	
PROPOSED CULVERT (Box or Pipe)	
COMBUSTIBLE FLUIDS	
MARSH AREA	
WOODED OR SHRUB AREA	

PROFILE	
GRADE LINE	
ORIGINAL GROUND	
MARSH OR ROCK PROFILE (To be noted as such)	
SPECIAL DITCH	
GRADE ELEVATION	
CULVERT (Profile View)	
UTILITIES	
ELECTRIC	
FIBER OPTIC	
GAS	
SANITARY SEWER	
STORM SEWER	
TELEPHONE	
WATER	
UTILITY PEDESTAL	
POWER POLE	
TELEPHONE POLE	



END PROJECT

1530-06-80

STA 704+46

Y = 517,052.848

X = 878,741.522

ORIGINAL PLANS PREPARED BY

146 North Central Ave, Marshfield WI 54449

(715) 384-2133 www.msa-ps.com

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DATE: 7/18/2024

(Professional Engineer Signature)

STATE OF WISCONSIN

DEPARTMENT OF TRANSPORTATION

PREPARED BY	
Surveyor	WISDOT
Designer	MSA PROFESSIONAL SERVICES, INC.
Project Manager	KYLE MCLEAN, P.E.
Regional Examiner	TOU YANG, P.E.
Regional Supervisor	DAVE KOEPP, P.E.

APPROVED FOR THE DEPARTMENT

DATE: 07/18/2024

(Signature)

LAYOUT

SCALE 0 2 MI

TOTAL NET LENGTH OF CENTERLINE = 13.194 MI

HORIZONTAL POSITIONS SHOWN ON THIS PLAN ARE WISCONSIN COORDINATE REFERENCE SYSTEM (WISCRS), TREMPEALEAU COUNTY, NAD83 (2011), IN U.S. SURVEY FEET. POSITIONS SHOWN ARE GRID COORDINATES, GRID BEARINGS, AND GRID DISTANCES. GRID DISTANCES ARE THE SAME AS GROUND DISTANCES. ELEVATIONS ARE REFERENCED TO NAVD 88 (2012). GPS DERIVED ELEVATIONS ARE BASED ON GEOID 12A.

GENERAL NOTES

PAVING
APPLY TACK COAT AT A MINIMUM RATE OF 0.07 GAL/SY TO MILLED SURFACES, AND 0.05 GAL/SY BETWEEN HMA LIFTS. HMA PAVEMENT WEIGHT CALCULATIONS ARE BASED ON 112 LB/SY/INCH.

THE LIMITS OF PAVEMENT REMOVAL ON SIDE STREETS ARE APPROXIMATE AND WILL BE VERIFIED IN THE FIELD BY THE ENGINEER.

MISCELLANEOUS
THE LOCATION OF EXISTING UTILITY INSTALLATIONS AS SHOWN ON THE PLANS IN THE AREA OF GRADING ONLY, ARE APPROXIMATE. THERE ARE OTHER UTILITY INSTALLATIONS WITHIN THE PROJECT AREA THAT ARE NOT SHOWN.

EXISTING RIGHT OF WAY LINES ARE APPROXIMATE.

REMOVALS
NO TREES AND SHRUBS ARE TO BE REMOVED WITHOUT APPROVAL OF THE ENGINEER.

GRADING AND EROSION CONTROL
THE EROSION CONTROL ITEMS SHOWN ON THE PLANS ARE AT SUGGESTED LOCATIONS. THE ENGINEER WILL DETERMINE THE EXACT LOCATIONS OF EROSION CONTROL ITEMS. ALL EROSION CONTROL MEASURES SHALL BE MAINTAINED UNTIL SUCH TIME AS THE ENGINEER DETERMINES THE MEASURE IS NO LONGER NECESSARY.

DISTURBED AREAS WITHIN THE RIGHT-OF-WAY SHALL BE FERTILIZED, PERMANENT SEEDED, TEMPORARY SEEDED AND MULCHED OR EROSION MAT PLACED AS DIRECTED BY THE ENGINEER.

MARK SCRIBNER
BRIGHTSPEED CTRL OF WI - COMMUNICATION LINE
1905 WARD AVENUE
LA CROSSE, WI 54601
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MENDOTA HEIGHTS, MN 55120
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UTILITIES

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1400 WESTERN AVE
EAU CLAIRE, WI 54701
PHONE: (715) 226-8936
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*NOT A MEMBER OF DIGGERS HOTLINE.

DIGGERSHOTLINE

Dial 811 or (800)242-8511

www.DiggersHotline.com

STANDARD ABBREVIATIONS

AC	ACRES	MON	MONUMENT
AEW	APRON ENDWALL	N	NORTH
AGG	AGGREGATE	NB	NORTHBOUND
AH	AHEAD	N.C.	NORMAL CROWN
ALUM.	ALUMINUM	NO	NUMBER
A.P.	ACCESS POINT	PB	PULLBOX
ASPH	ASPHALT	PC	POINT OF CURVATURE
AVE	AVENUE	PI	POINT OF INTERSECTION
BAD	BASE AGGREGATE DENSE	PL	PROPERTY LINE
BK	BACK	PLE	PERMANENT LIMITED EASEMENT
BLK	BLOCK	POB	POINT OF BEGINNING
BOC	BACK OF CURB	PT	POINT OF TANGENCY
BOW	BACK OF SIDEWALK	R	RADIUS
BM	BENCHMARK	R	RANGE
CABC	CRUSHED AGGREGATE BASE COURSE	RCP	REINFORCED CONCRETE PIPE
CL or C	CENTERLINE	RD	ROAD
Δ	CENTRAL ANGLE or DELTA	REQ'D	REQUIRED
CMCP	CORRUGATED METAL CULVERT PIPE	RL or R/L	REFERENCE LINE
CONC	CONCRETE	RP	RADIUS POINT
CP	CONTROL POINT	RT	RIGHT
CPCS	CULVERT PIPE CORRUGATED STEEL	R/W	RIGHT OF WAY
CSM	CERTIFIED SURVEY MAP	S	SOUTH
CTH	COUNTY TRUNK HIGHWAY	SAN	SANITARY SEWER
D	DEGREE OF CURVATURE	SB	SOUTHBOUND
DES	DESIRABLE	S.E.	SUPERELEVATION
E	EAST	SEC	SECTION
EB	EASTBOUND	SSPRC	STORM SEWER PIPE REINFORCED CONCRETE
EBS	EXCAVATION BELOW SUBGRADE		
EOP	EDGE OF PAVEMENT		
ET AL	AND OTHERS	SSPRCHE	STORM SEWER PIPE REINFORCED CONCRETE HORIZONTAL ELLIPTICAL
EW	ENDWALL		
EXIST	EXISTING	SQ	SQUARE
FT	FOOT	ST	STREET
FT2	SQUARE FEET	STA	STATION
GN	GRID NORTH	STD	STANDARD
GV	GAS VALVE	STH	STATE TRUNK HIGHWAY
HERCP	HORIZONTAL ELLIPTICAL REINFORCED CONCRETE PIPE	STM	STORM SEWER
		STR	STRUCTURE
HYD	HYDRANT	T	TANGENT
IN	INCH	TAN	TANGENT
INL	INLET	TEMP	TEMPORARY
INV	INVERT	TLE	TEMPORARY LIMITED EASEMENT
IP	IRON PIPE	T or TN	TOWN
L	LENGTH	TYP.	TYPICAL
L	LENGTH OF CURVE	WM	WATERMIN
LC	LONG CHORD	WV	WATER VALVE
LCP	LONG CHORD BEARING	W	WEST
LF	LINEAR FEET	WB	WESTBOUND
LT	LEFT	X	EAST GRID COORDINATE
MH	MANHOLE	Y	NORTH GRID COORDINATE

DNR LIAISON

WISCONSIN DEPARTMENT OF NATURAL RESOURCES
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EAU CLAIRE, WI 54701
PHONE: (715) 495-1903
EMAIL: AMYL.LESIK@WISCONSIN.GOV

SECTION 2 ORDER OF SHEETS

- GENERAL NOTES
- PROJECT OVERVIEW
- TYPICAL SECTIONS
- CONSTRUCTION DETAILS
- CURB RAMP DETAILS
- TRAFFIC CONTROL
- PEDESTRIAN ACCOMMODATIONS
- PAVEMENT MARKING

DESIGN CONTACTS

WISCONSIN DEPARTMENT OF TRANSPORTATION
NORTHWEST REGION
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718 W CLAIREMONT AVE
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MSA PROFESSIONAL SERVICES, INC.
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MARSHFIELD, WI 54449
PHONE: (715) 304-0451
EMAIL: SSPROMBERG@MSA-PS.COM

RUNOFF COEFFICIENT TABLE

	HYDROLOGIC SOIL GROUP											
	A			B			C			D		
	SLOPE RANGE (PERCENT)			SLOPE RANGE (PERCENT)			SLOPE RANGE (PERCENT)			SLOPE RANGE (PERCENT)		
LAND USE:	0-2	2-6	6 & OVER	0-2	2-6	6 & OVER	0-2	2-6	6 & OVER	0-2	2-6	6 & OVER
ROW CROPS	.08	.16	.22	.12	.20	.27	.15	.24	.33	.19	.28	.38
	.22	.30	.38	.26	.34	.44	.30	.37	.50	.34	.41	.56
MEDIAN STRIP- TURF	.19	.20	.24	.19	.22	.26	.20	.23	.30	.20	.25	.30
	.24	.26	.30	.25	.28	.33	.26	.30	.37	.27	.32	.40
SIDE SLOPE- TURF			.25			.27			.28			.30
			.32			.34			.36			.38
PAVEMENT:												
ASPHALT	.70 - .95											
CONCRETE	.80 - .95											
BRICK	.70 - .80											
DRIVES, WALKS	.75 - .85											
ROOFS	.75 - .95											
GRAVEL ROADS, SHOULDERS	.40 - .60											

TOTAL PROJECT AREA = .242 ACRES
TOTAL AREA EXPECTED TO BE DISTURBED BY CONSTRUCTION ACTIVITIES = 0.652 ACRES

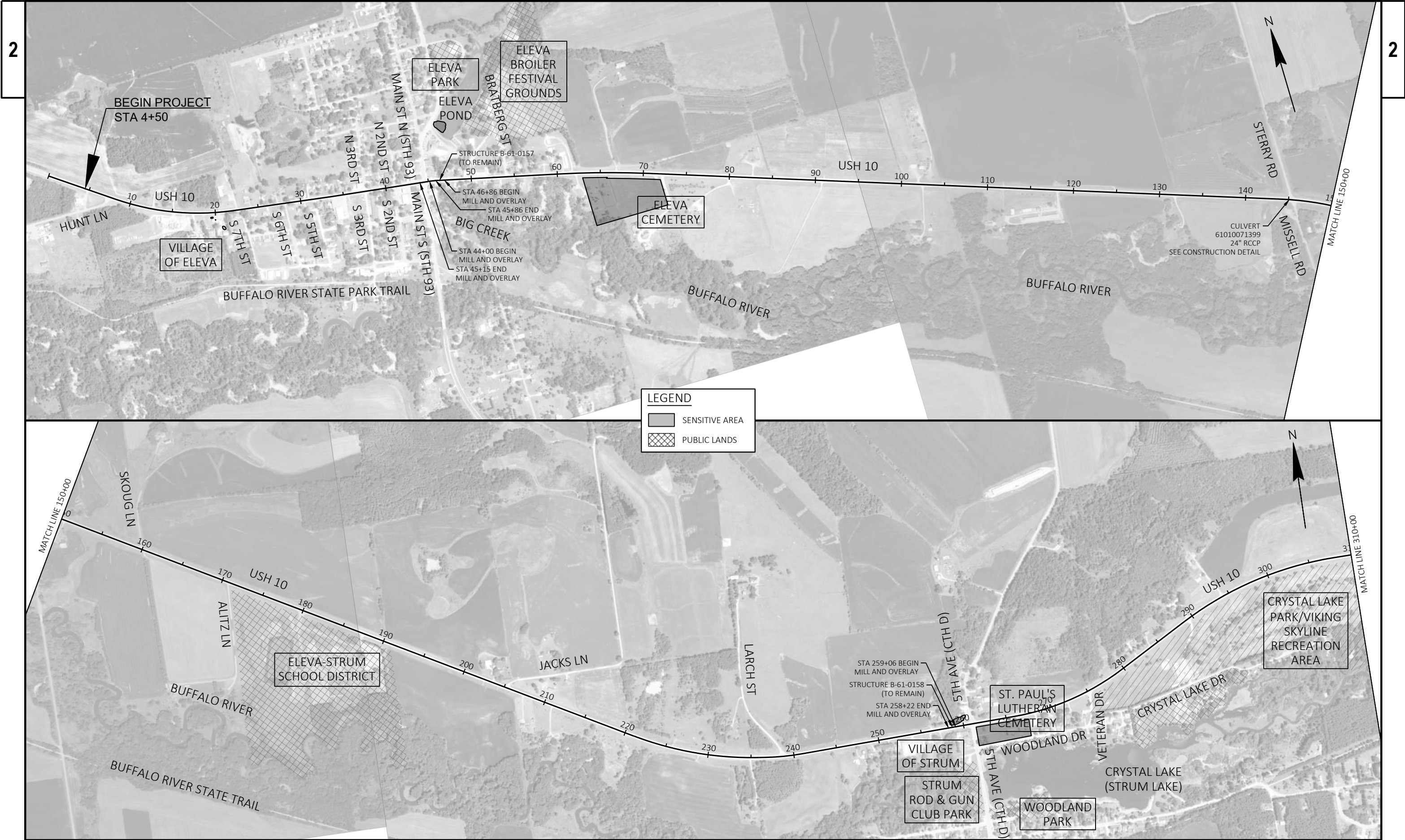
PROJECT NO: 1530-06-80

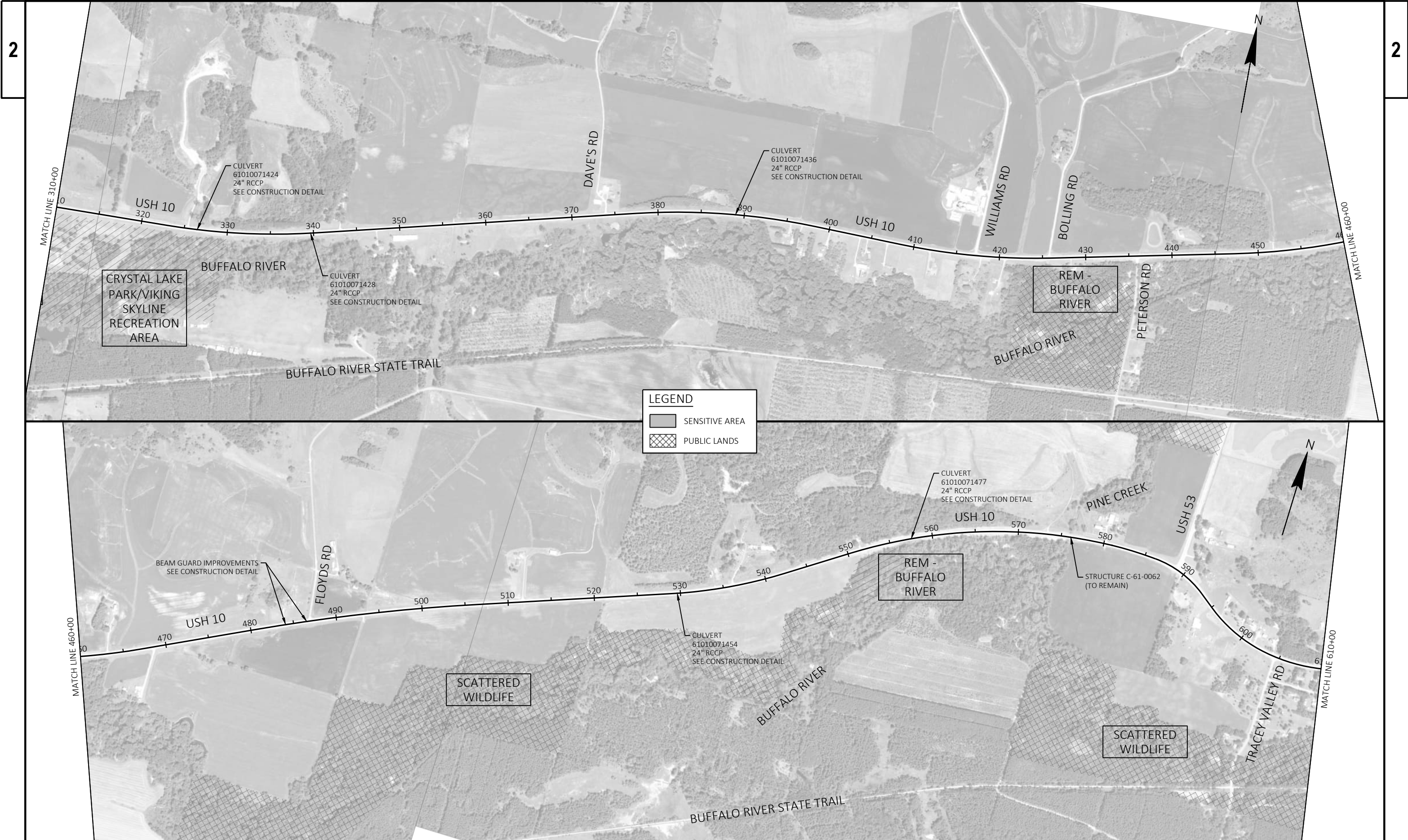
HWY: USH 10

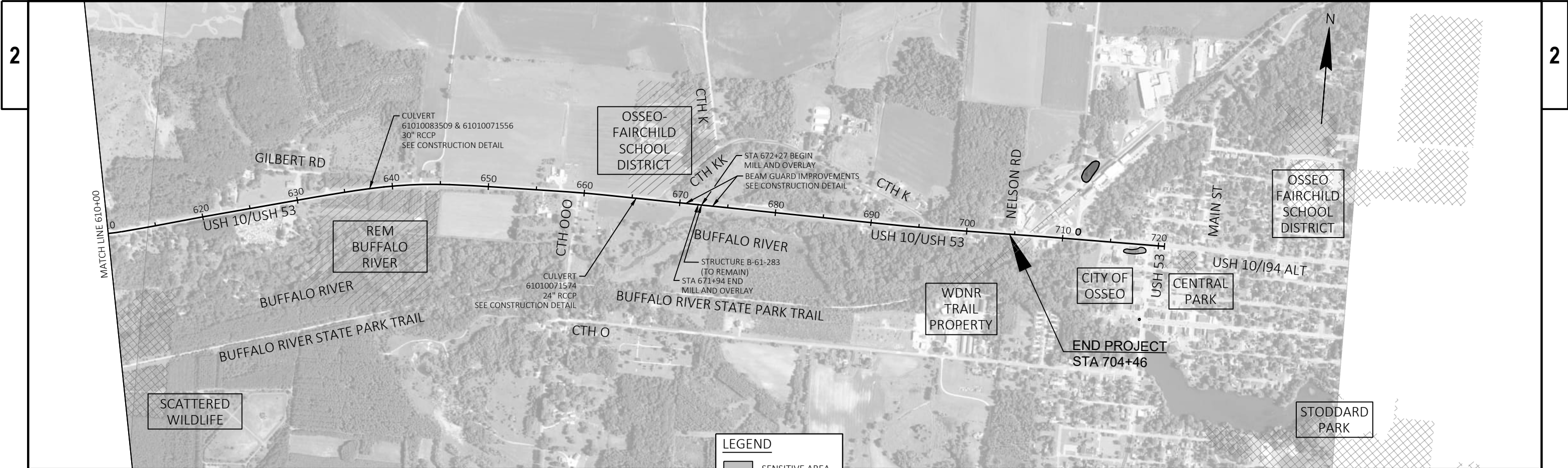
COUNTY: TREMPPEALEAU

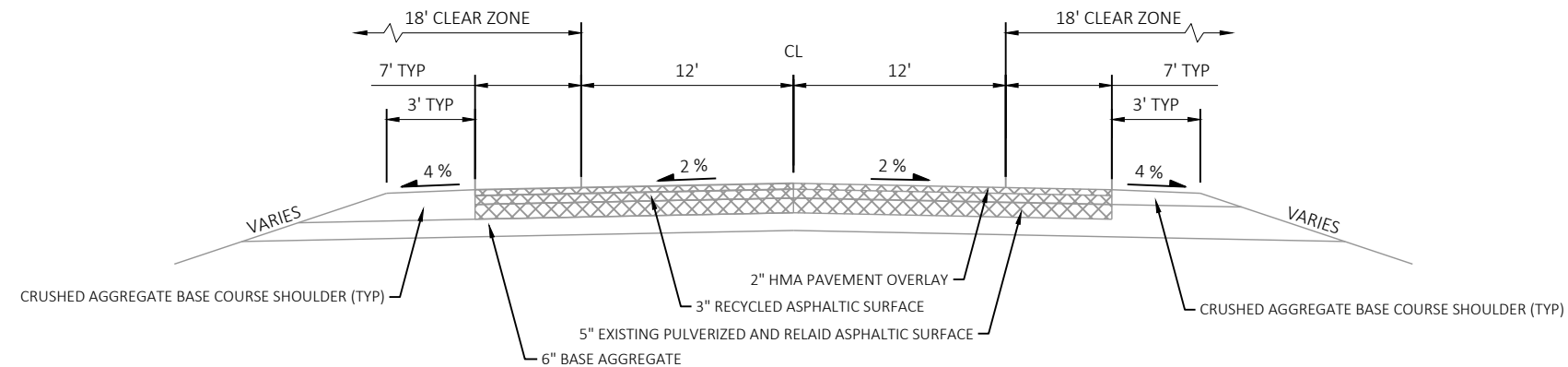
GENERAL NOTES

SHEET

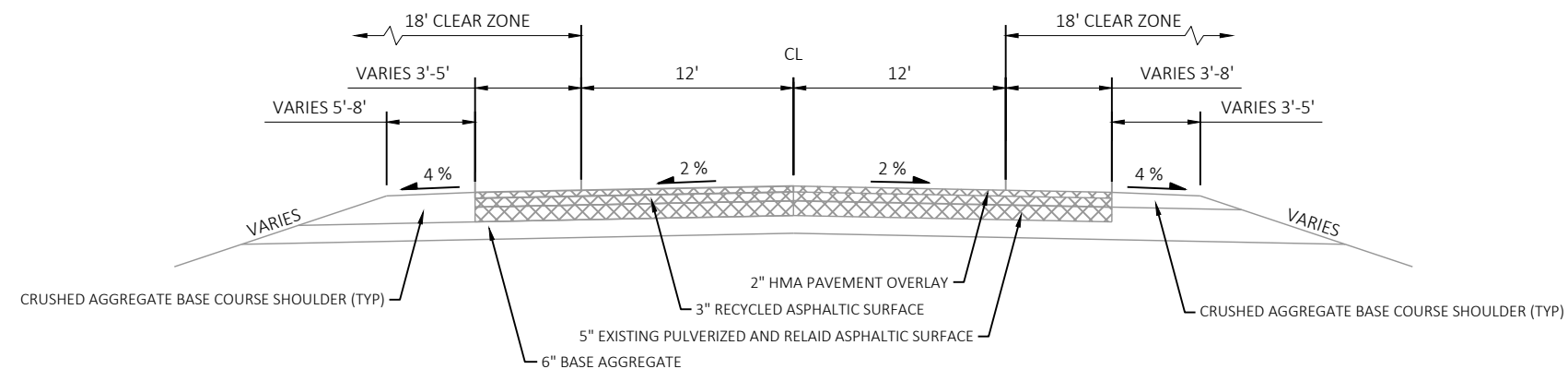




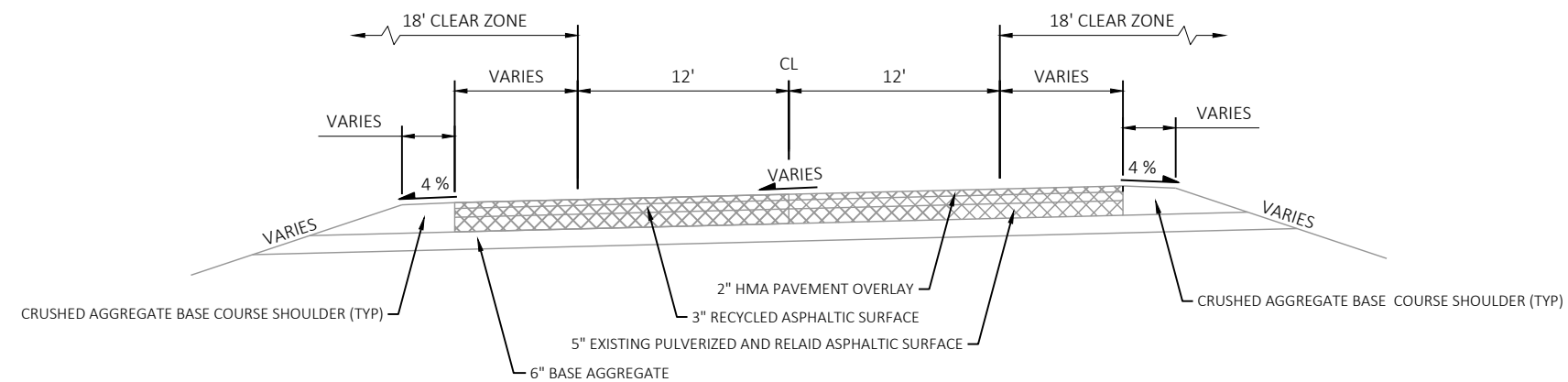




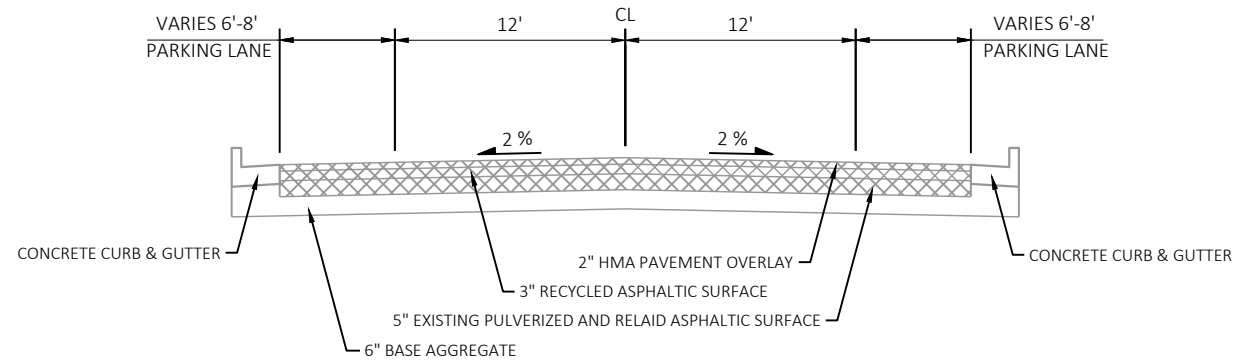
EXISTING TYPICAL SECTION
STA 4+51 - STA 4+99



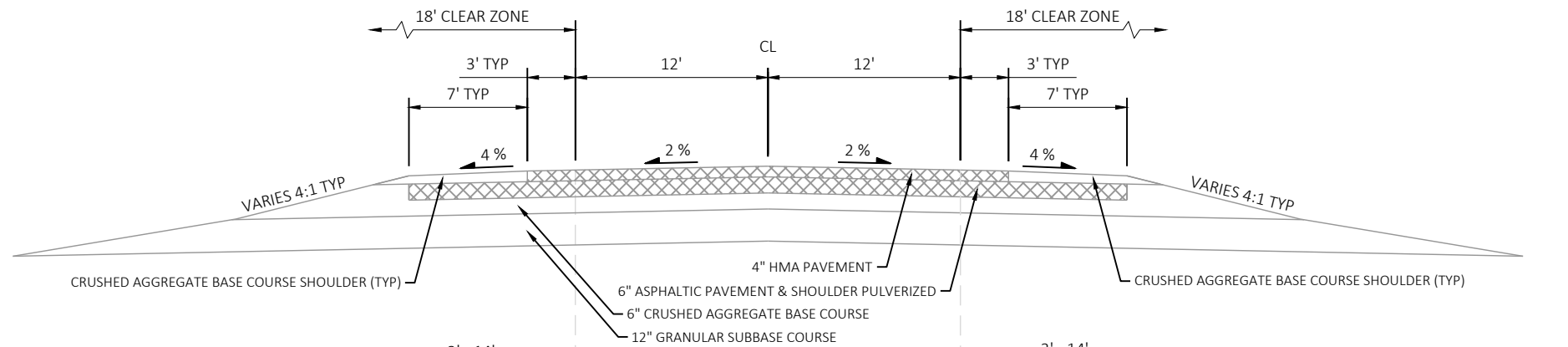
EXISTING TYPICAL SECTION
STA 4+99 - STA 28+63



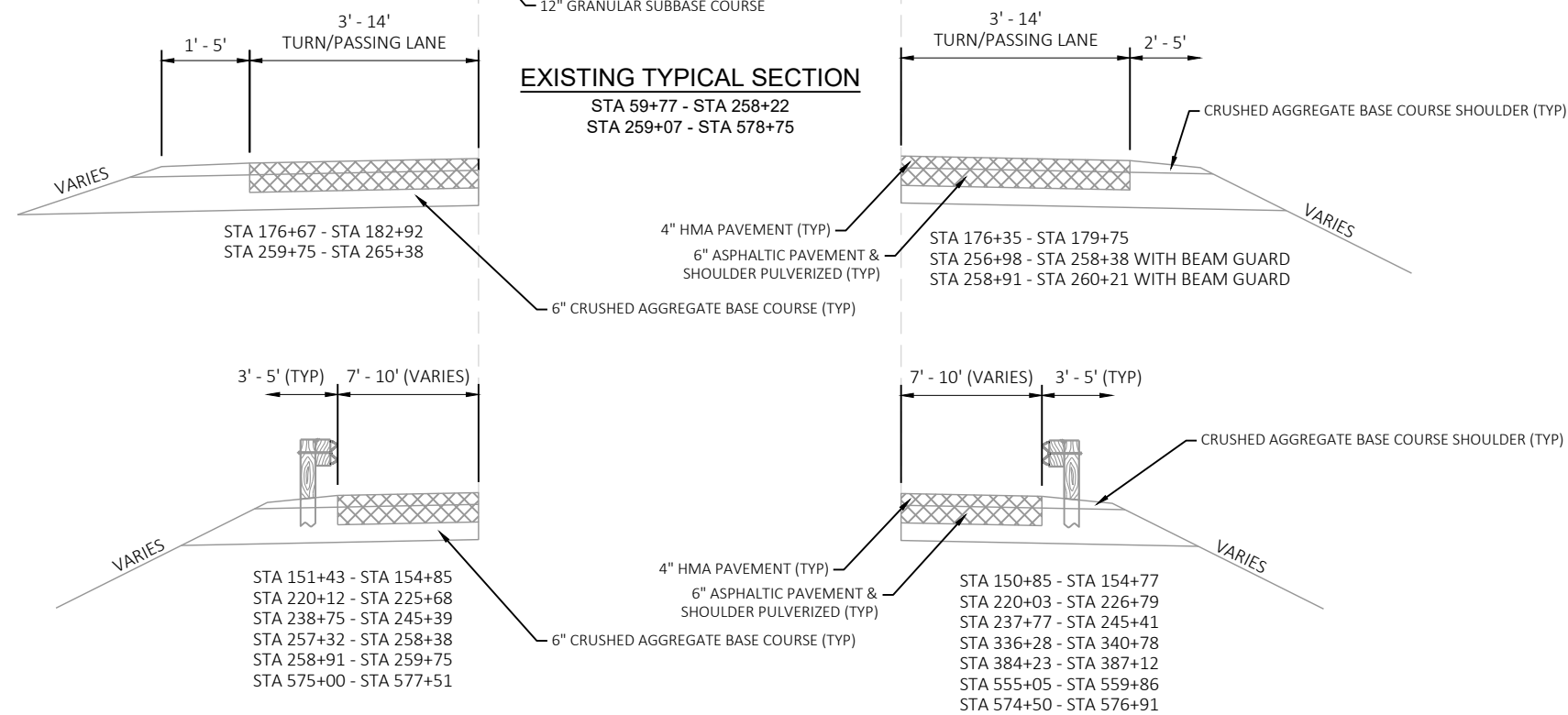
EXISTING SUPERELEVATION TYPICAL SECTION
CURVE TO LEFT SHOWN, CURVE TO RIGHT SIMILAR (WEST OF ELEVA)

**EXISTING TYPICAL SECTION**

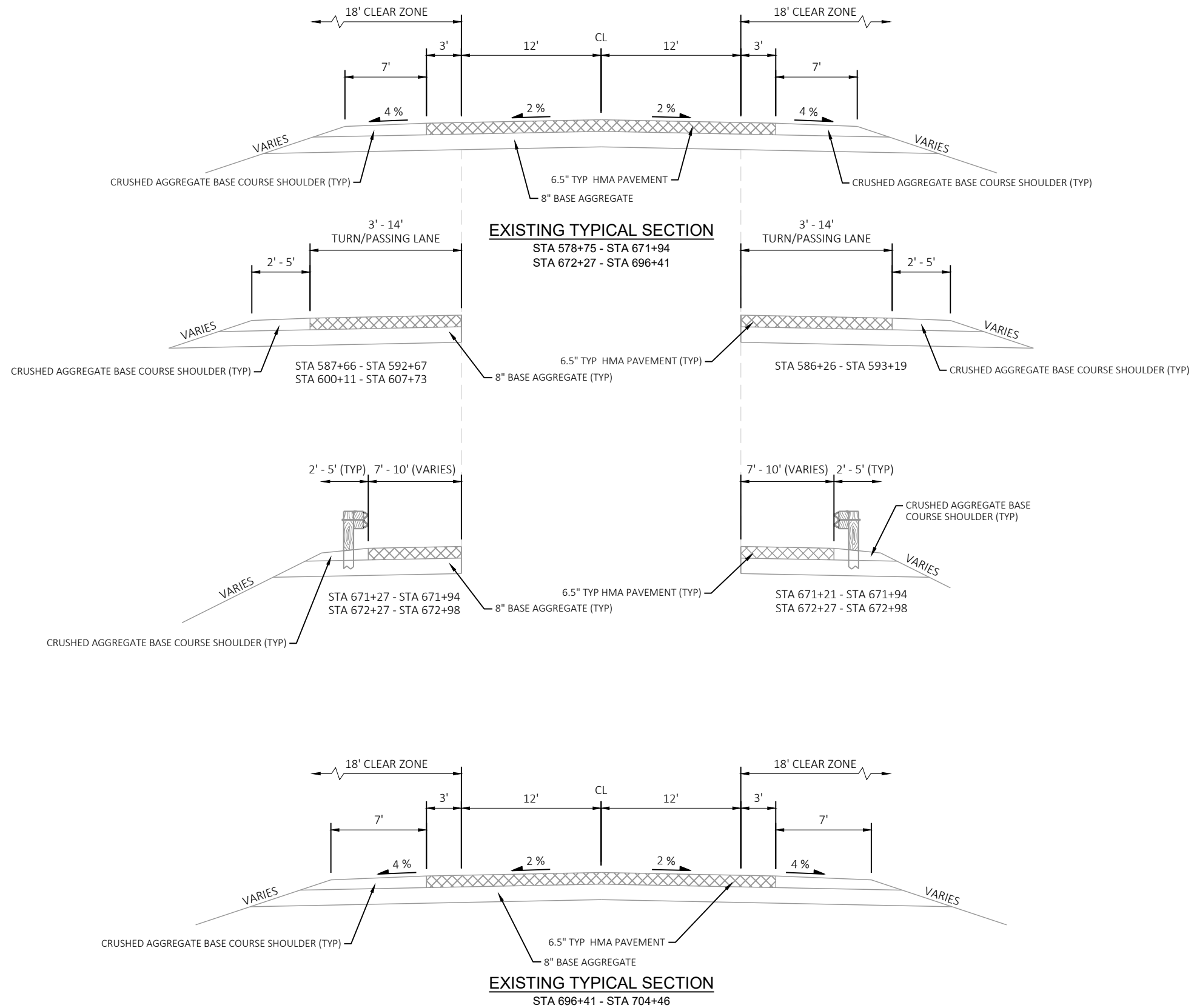
STA 28+63 TO STA 44+00
STA 45+14 TO STA 45+86
STA 46+87 TO STA 59+77

**EXISTING TYPICAL SECTION**

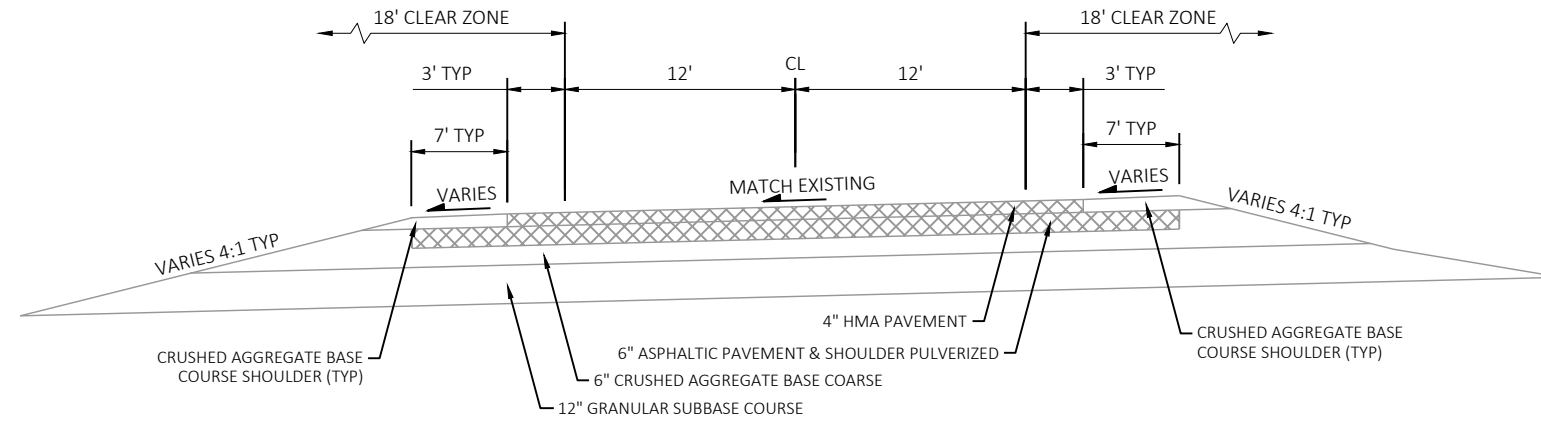
STA 59+77 - STA 258+22
STA 259+07 - STA 578+75



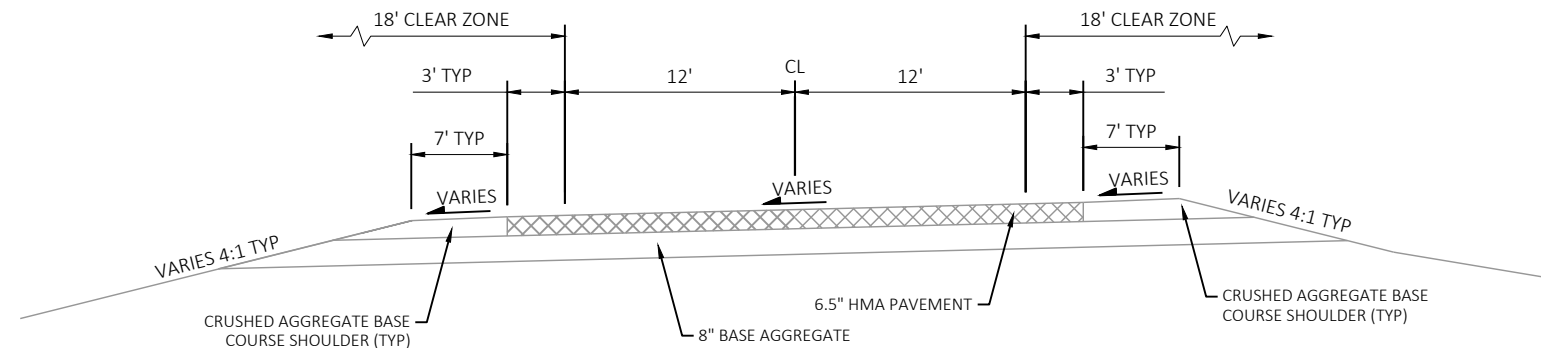
NOTE:
STA 44+00 TO STA 45+14 (INTERSECTION OF MAIN ST)
STA 45+86 TO STA 46+87 (B-61-157)
STA 258+22 TO STA 259+07 (B-61-0158)



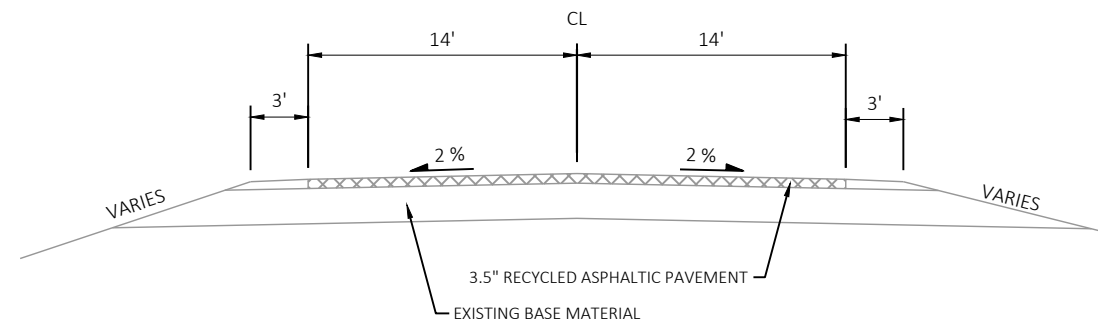
NOTE:
STA 671+94 TO STA 672+27 (B-61-0283)



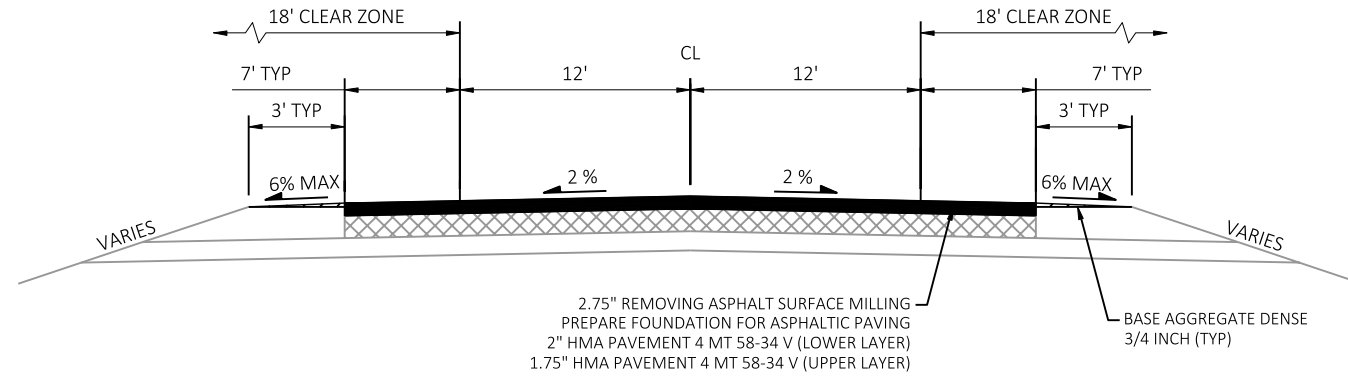
EXISTING TYPICAL SUPERELEVATED SECTION
CURVE TO LEFT SHOWN, CURVE TO RIGHT SIMILAR (EAST OF ELEVA TO USH 53)



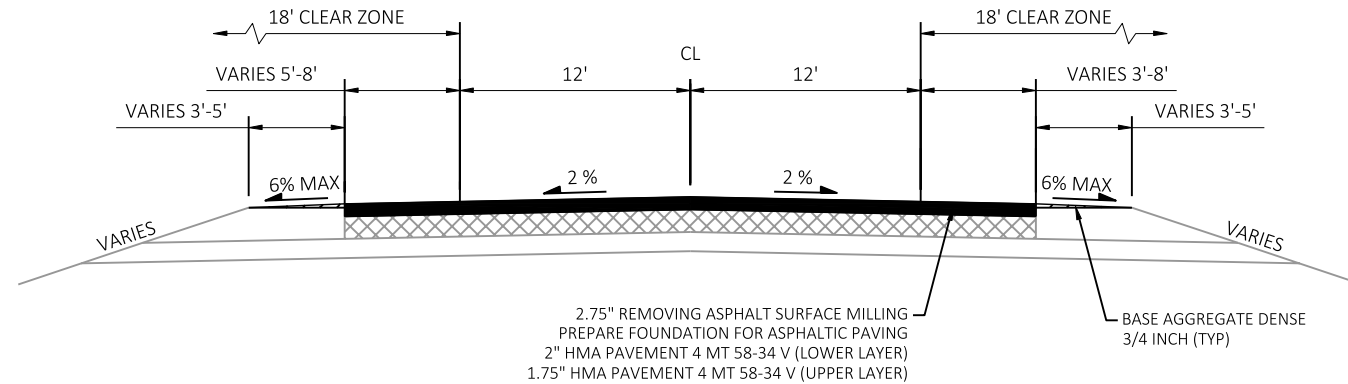
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CURVE TO LEFT SHOWN, CURVE TO RIGHT SIMILAR (EAST OF USH 53)



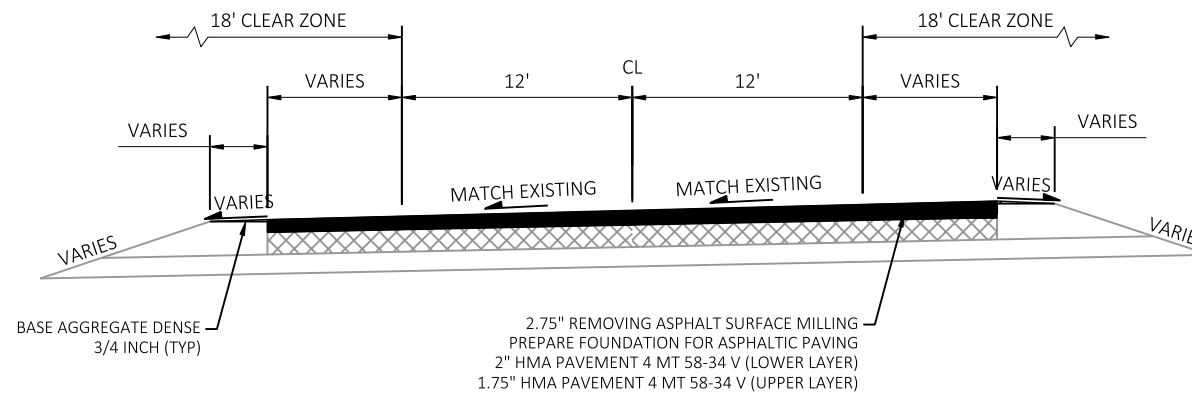
EXISTING TYPICAL WAYSIDE SECTION

**FINISHED TYPICAL SECTION**

STA 4+51 - STA 4+99

**FINISHED TYPICAL SECTION**

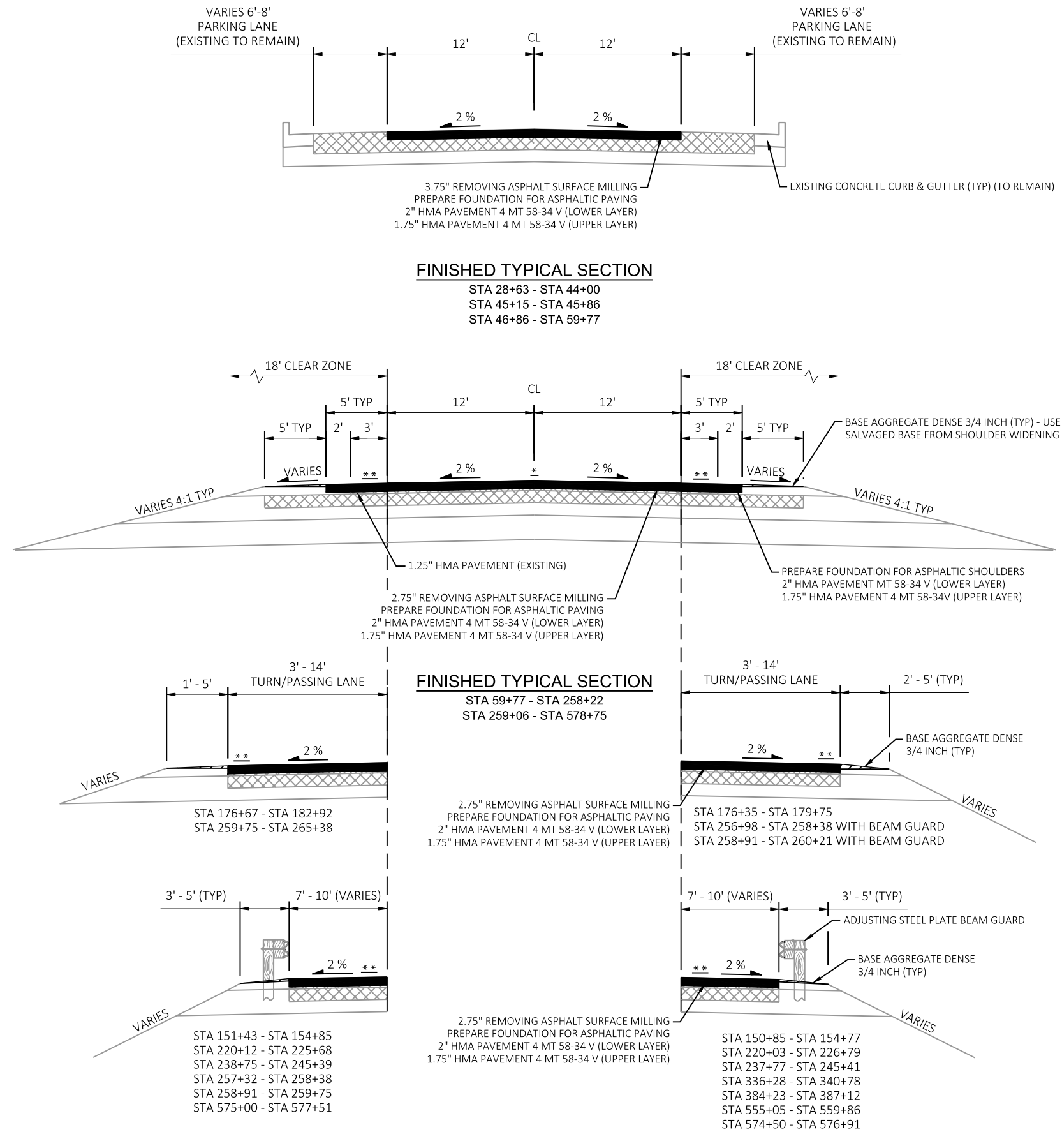
STA 4+99 - STA 28+63

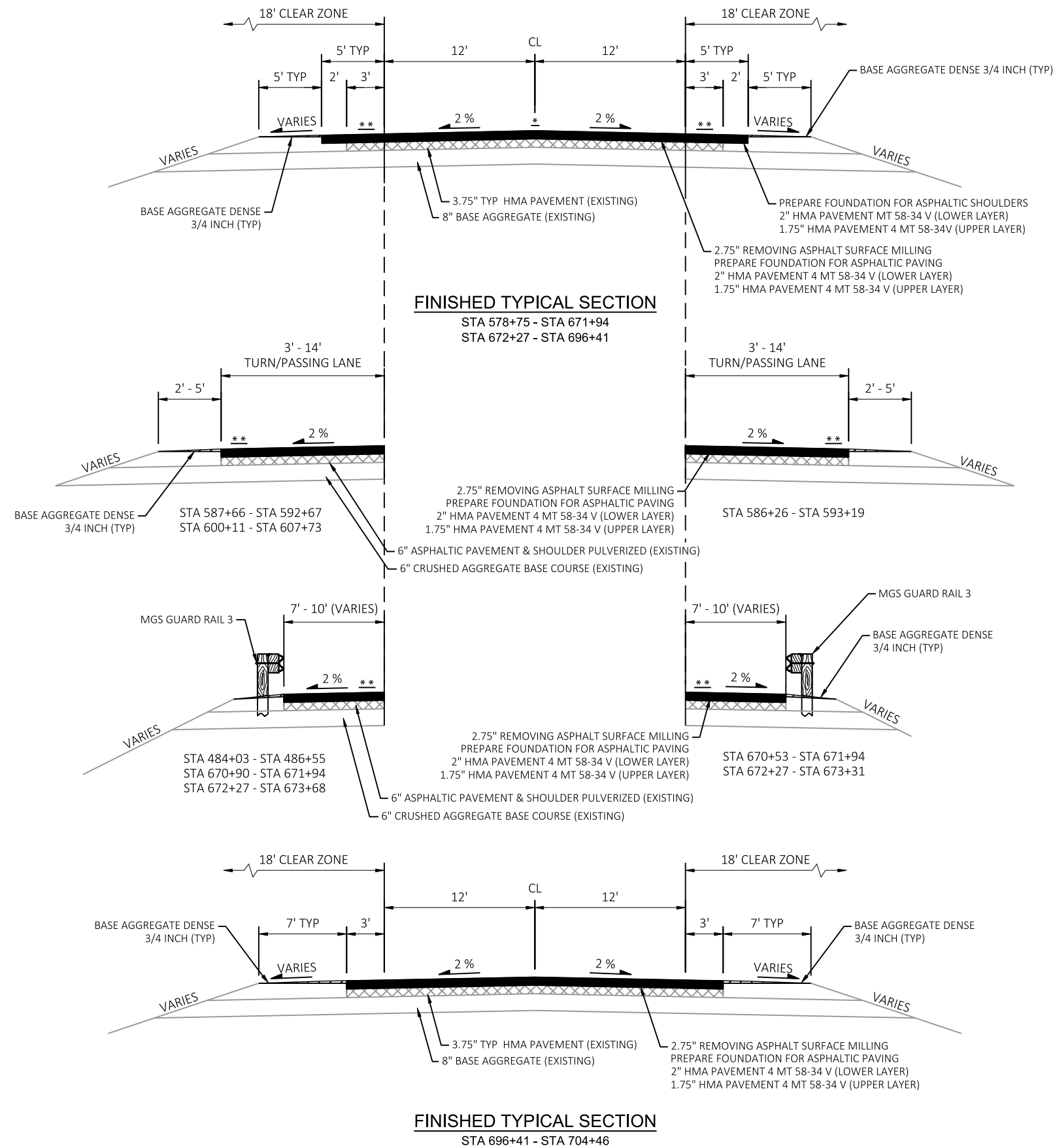
**FINISHED SUPERELEVATION TYPICAL SECTION**

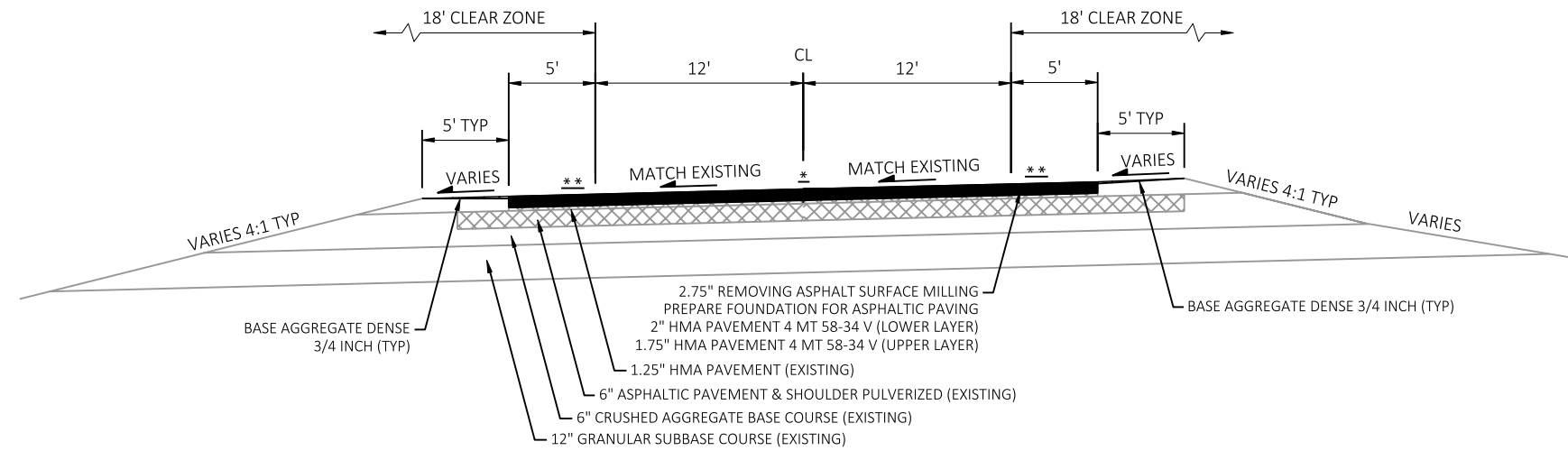
CURVE TO LEFT SHOWN, CURVE TO RIGHT SIMILAR (WEST OF ELEVA)

LEGEND

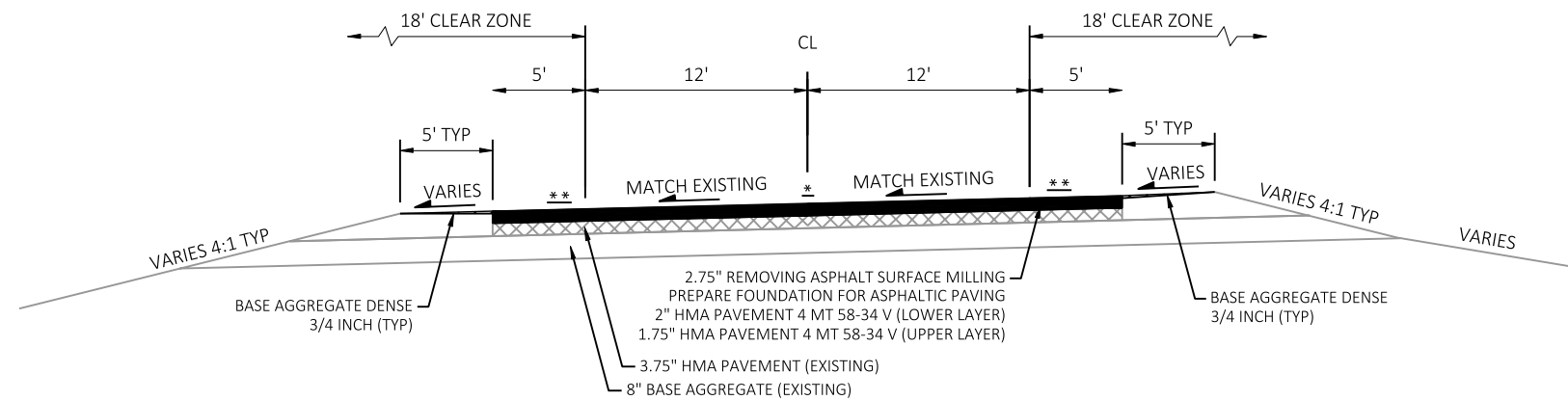
- * ASPHALTIC RUMBLE STRIPS, CENTERLINE
- ** ASPHALTIC RUMBLE STRIPS, SHOULDER



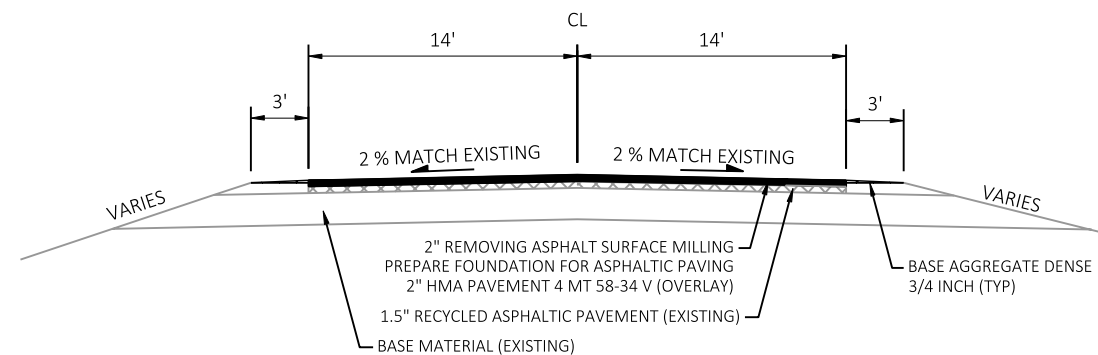




FINISHED TYPICAL SUPERELEVATED SECTION
CURVE TO LEFT SHOWN, CURVE TO RIGHT SIMILAR (EAST OF ELEVA TO USH 53)



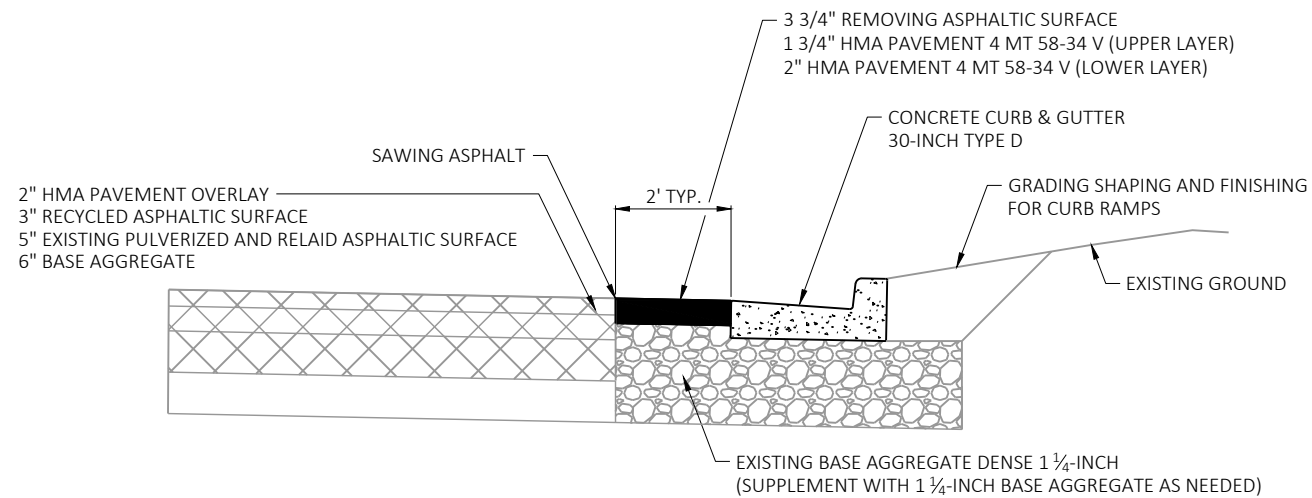
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CURVE TO LEFT SHOWN, CURVE TO RIGHT SIMILAR (EAST OF USH 53)



FINISHED TYPICAL WAYSIDE SECTION

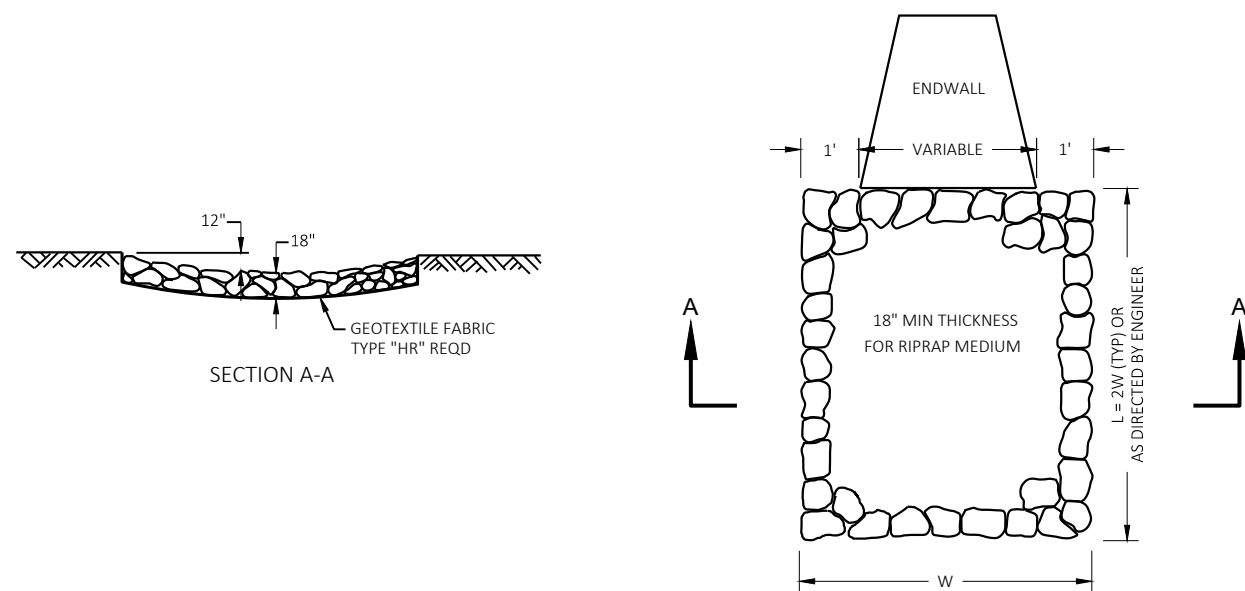
LEGEND

- * ASPHALTIC RUMBLE STRIPS, CENTERLINE
** ASPHALTIC RUMBLE STRIPS, SHOULDER

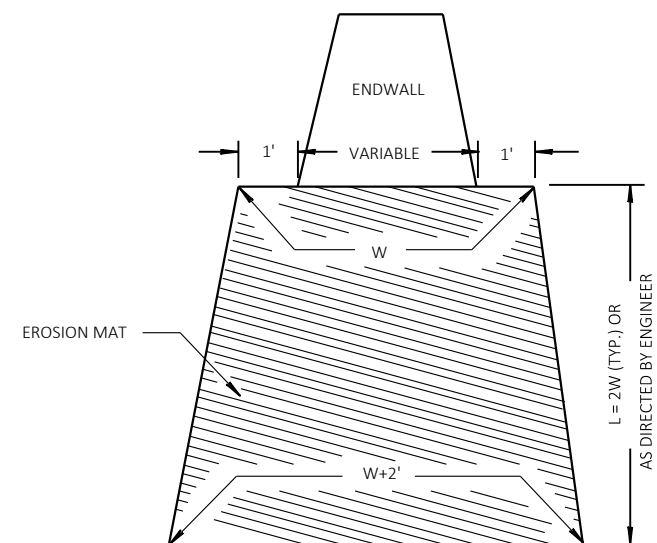


CURB AND GUTTER REPLACEMENT AT CURB RAMPS DETAIL
NOT TO SCALE

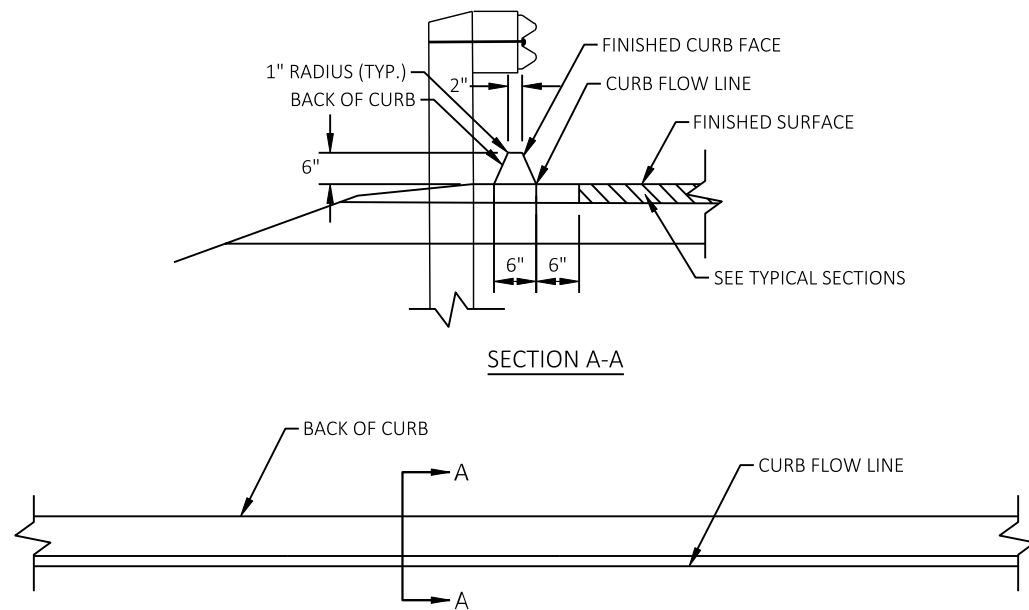
PATCH EXISTING ASPHALT PRIOR TO
MILLING ASPHALTIC SURFACE



RIPRAP MEDIUM TREATMENT AT CULVERTS



EROSION MAT TREATMENT AT CULVERTS

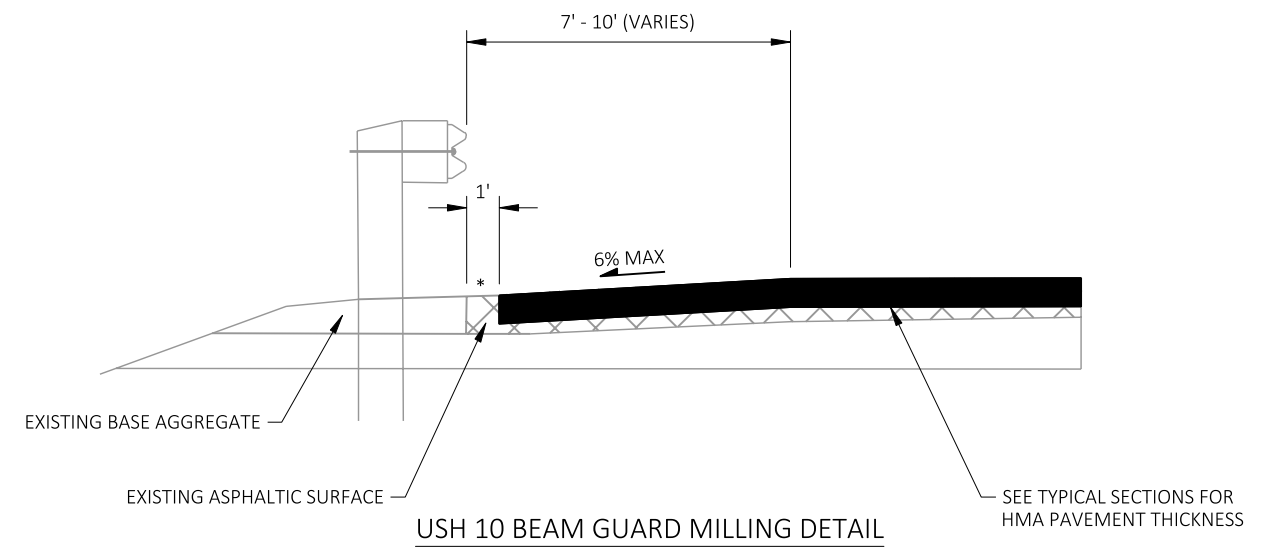


SECTION A-A

PLAN VIEW

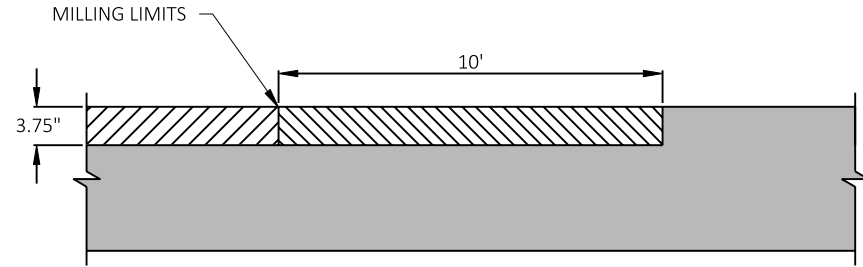
ASPHALT CURB DETAIL

STA 238+79 -STA 240+07
EXACT LOCATIONS TO BE DETERMINED BY ENGINEER
6 INCH ASPHALT AREA IN FRONT OF ASPHALTIC CURB
IS INCIDENTAL TO ASPHALTIC CURB ITEM



USH 10 BEAM GUARD MILLING DETAIL

* MAINTAIN EXISTING PAVEMENT ELEVATION
AT BEAM GUARD FACE OF RAIL

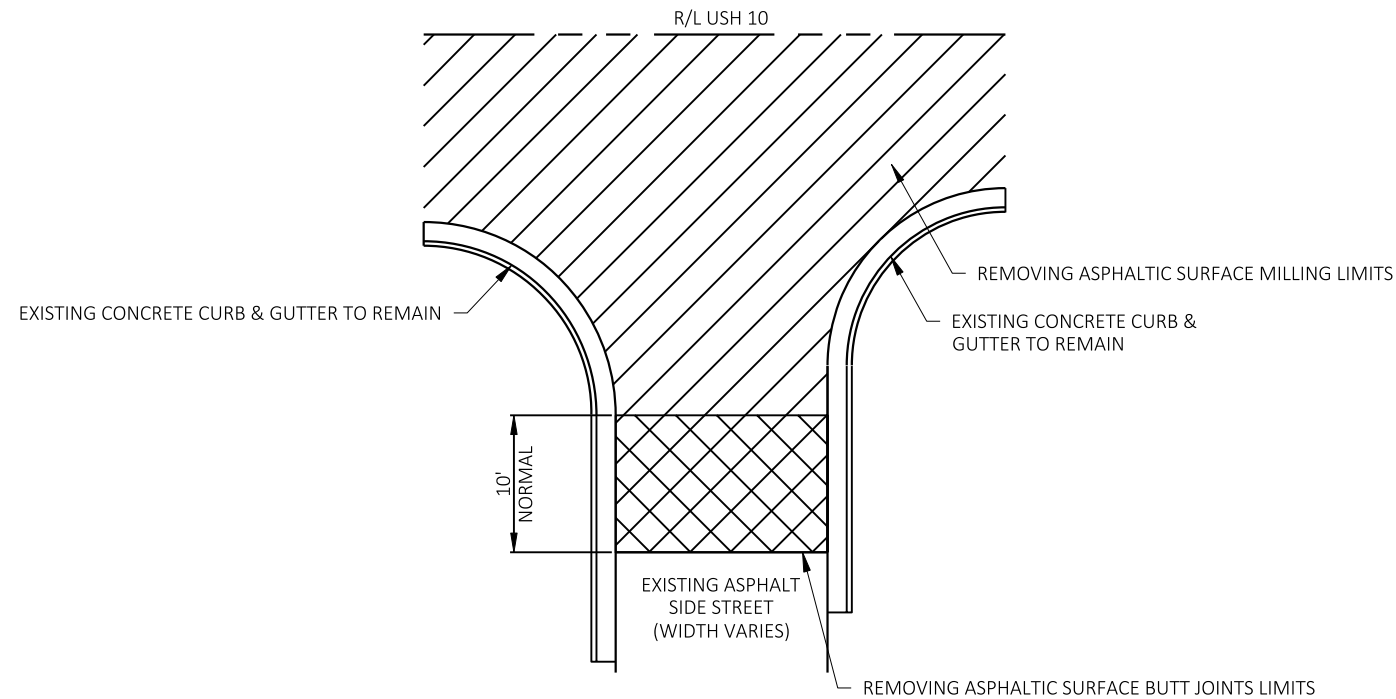


- EXISTING PAVEMENT TO REMAIN
- REMOVING ASPHALTIC SURFACE BUTT JOINT
- REMOVING ASPHALTIC SURFACE MILLING

BUTT JOINT DETAIL

NOT TO SCALE
USE WHERE MILLING ABUTS PAVEMENT TO BE LEFT IN PLACE

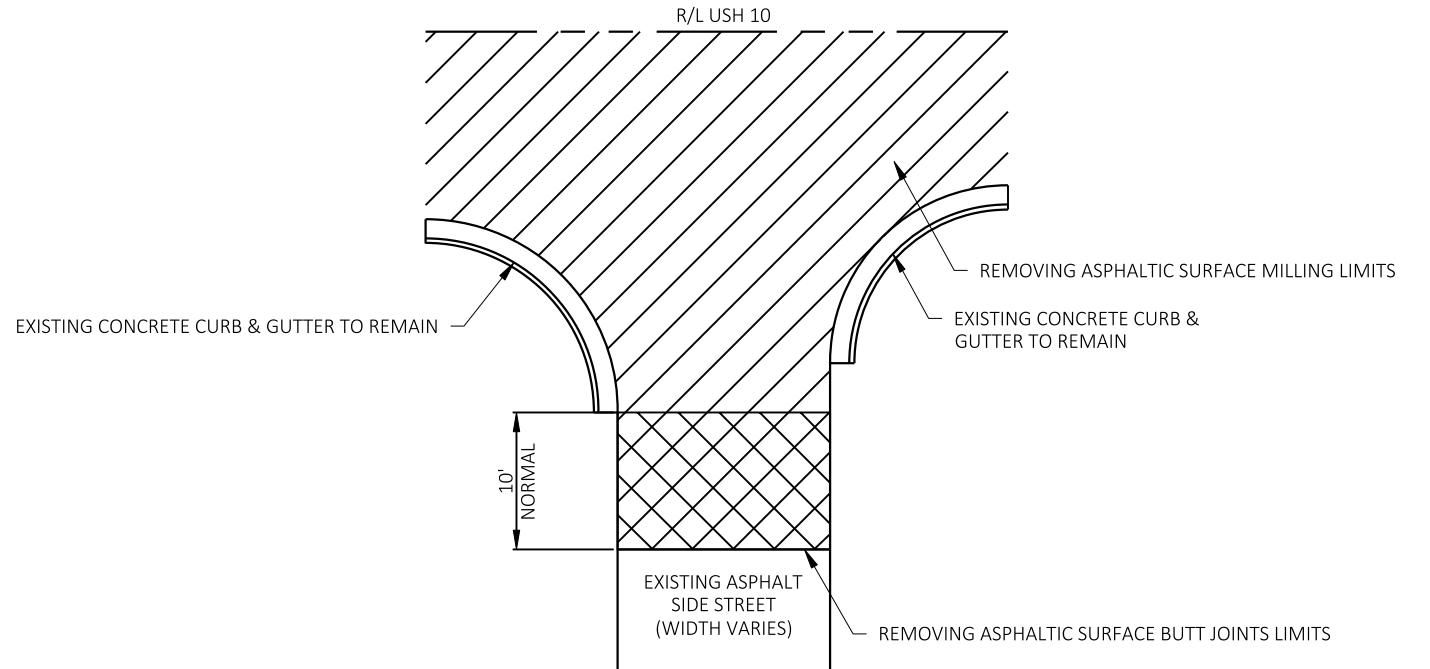
STA 43+91 - STA 44+01
STA 45+15 - STA 45+25
STA 45+76 - STA 45+86
STA 46+86 - STA 46+96



URBAN ASPHALTIC SURFACE SIDE ROAD DETAIL

SIDE ROAD WITH CURB AND GUTTER TO REMAIN

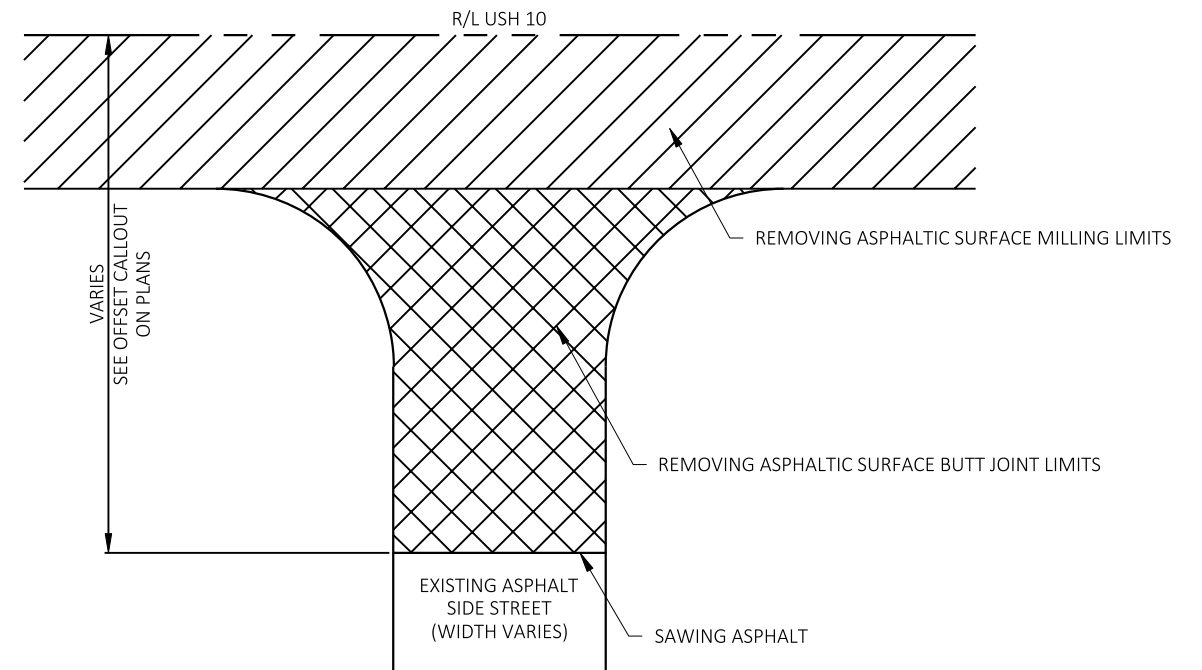
MILLING AND BUTT JOINT ITEMS INCLUDE MILLING OF ASPHALT AND GRAVEL TO ACHIEVE REQUIRED HMA PAVEMENT THICKNESS.
(N 3RD ST, N 2ND ST, BRATBERG ST, N 5TH AVE (CTH D), S 5TH AVE (CTH D))



RURAL ASPHALTIC SURFACE SIDE ROAD DETAIL

SIDE ROAD WITH CURB AND GUTTER TO REMAIN

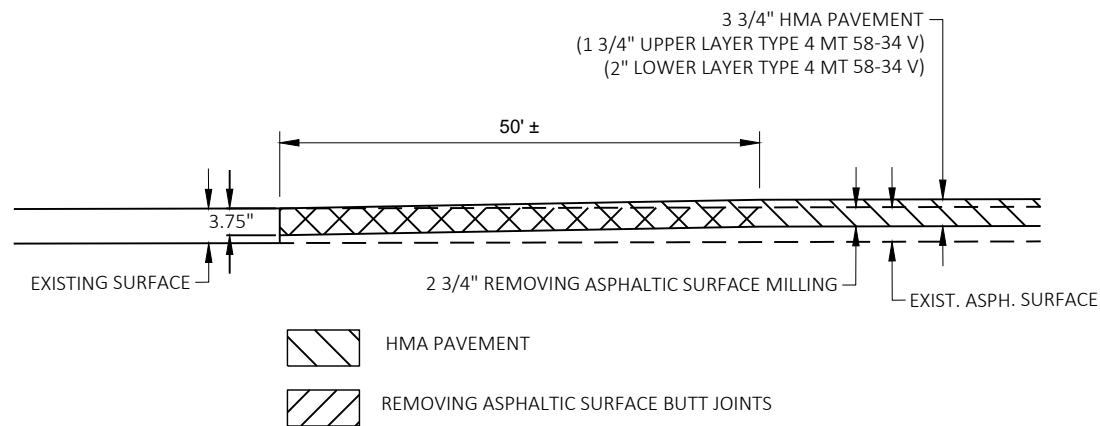
MILLING AND BUTT JOINT ITEMS INCLUDE MILLING OF ASPHALT AND GRAVEL TO ACHIEVE REQUIRED HMA PAVEMENT THICKNESS.
(S 5TH ST, S 3RD ST, S 2ND ST, USH 53, TRACEY VALLEY RD, CTH OOO, CTH KK, CTH K)



RURAL ASPHALTIC SURFACE SIDE ROAD DETAIL

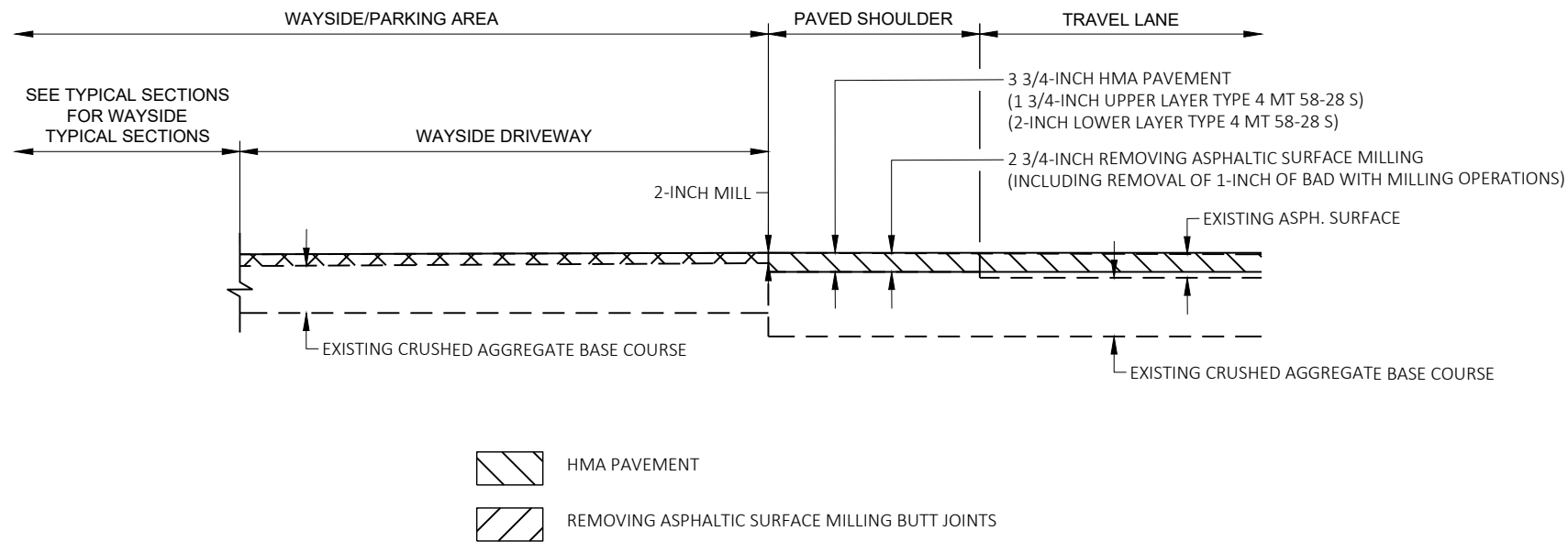
SIDE ROAD WITH NO CURB AND GUTTER

MILLING AND BUTT JOINT ITEMS INCLUDE MILLING OF ASPHALT AND GRAVEL TO ACHIEVE REQUIRED HMA PAVEMENT THICKNESS.
(HUNT LANE, S 7TH ST, S 6TH ST, STERRY RD, MISSEL RD, SKOUG LN, ALITZ LN, ELEVA-STRUM WEST ENTRANCE, ELEVA-STRUM EAST ENTRANCE, JACKS LN, LARCH ST, VETERAN DR, DAVE'S RD, WILLIAMS RD, BOLLING RD, PETERSON RD, FLOYD'S RD, GILBERT RD, NELSON RD)



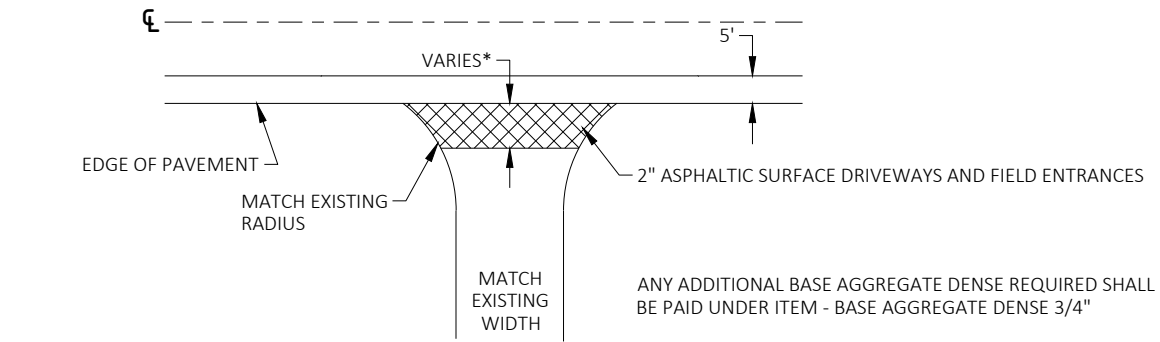
REMOVING ASPHALTIC SURFACE BUTT JOINT DETAIL

STA 4+50 - STA 5+00
STA 59+66 - STA 60+16
STA 257+73 - STA 258+23
STA 259+06 - STA 259+56
STA 671+46 - STA 671+95
STA 672+25 - STA 672+75
STA 703+96 - STA 704+46

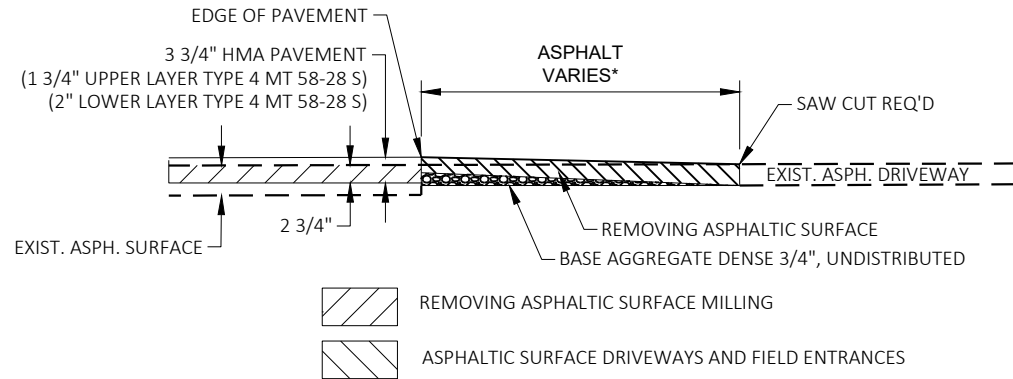


WAYSIDE/PARKING AREA DRIVEWAY JOINT DETAIL

STA 676+75 - STA 677+01
STA 680+32 - STA 680+87



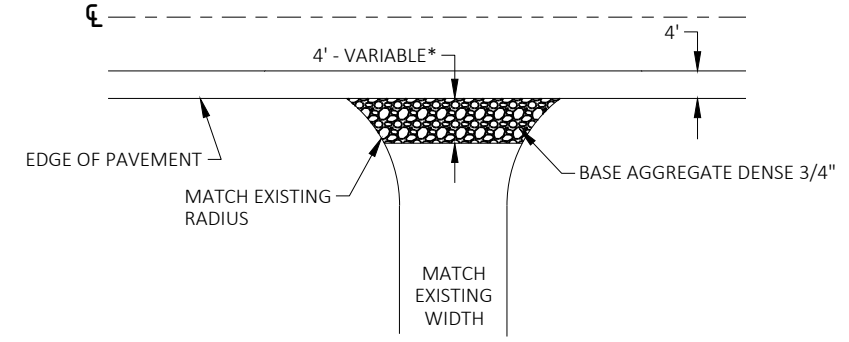
PLAN VIEW



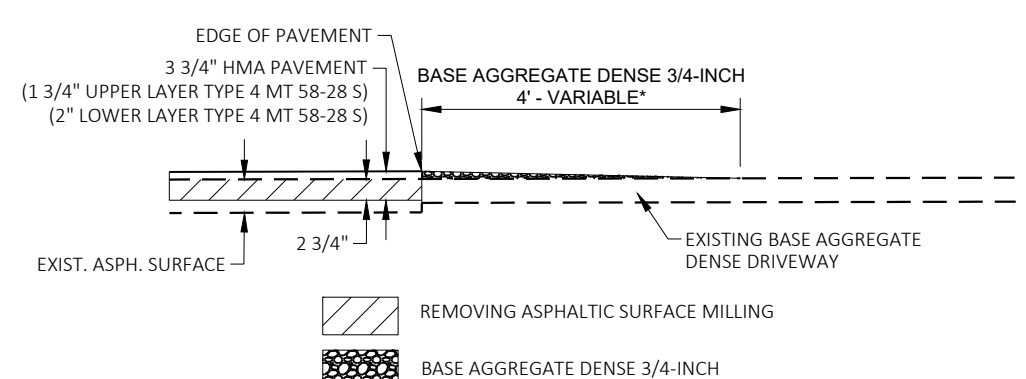
ELEVATION VIEW

ASPHALTIC DRIVEWAY DETAIL

* EXACT DIMENSIONS TO BE DETERMINED BY ENGINEER IN THE FIELD



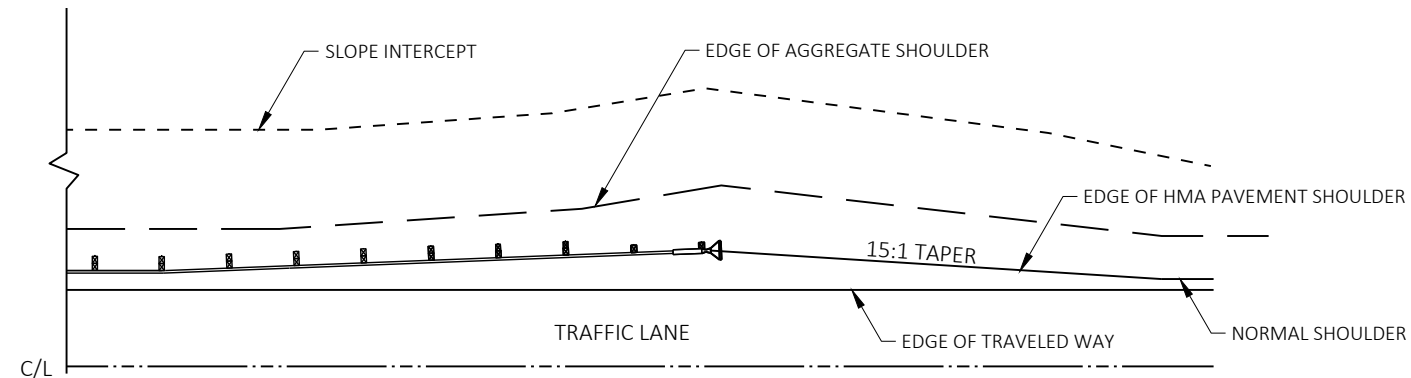
PLAN VIEW



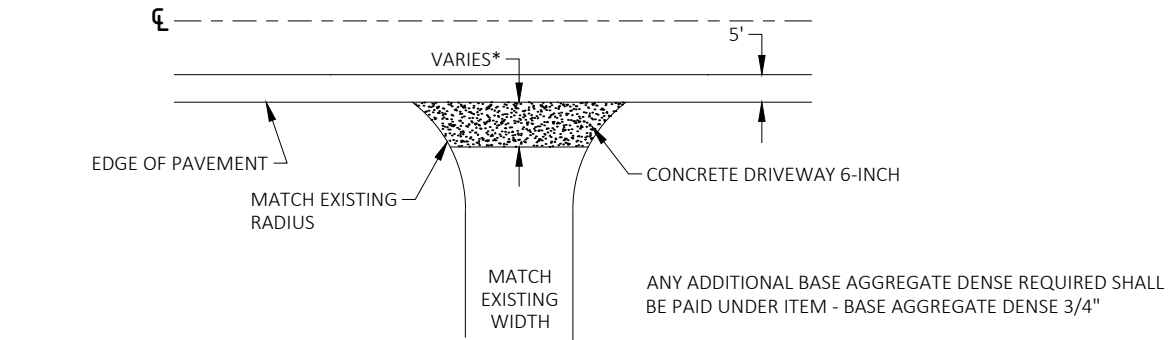
ELEVATION VIEW

BASE AGGREGATE DRIVEWAY & SIDE ROAD DETAIL

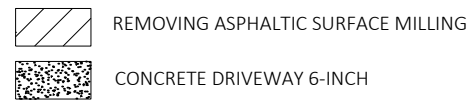
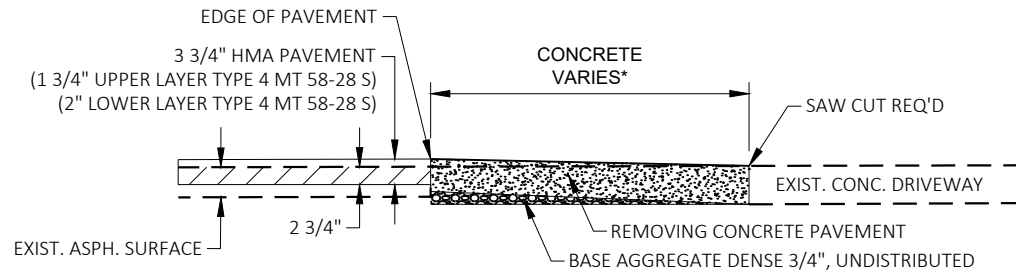
* EXACT DIMENSIONS TO BE DETERMINED BY ENGINEER IN THE FIELD



SHOULDER PAVING FOR GUARDRAIL



PLAN VIEW



ELEVATION VIEW

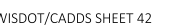
CONCRETE DRIVEWAY DETAIL

* EXACT DIMENSIONS TO BE DETERMINED
BY ENGINEER IN THE FIELD





STA 326+49 - 61010071424
EXISTING 24-INCH CPRC - 140 LF
1 EA - REMOVING SMALL PIPE CULVERTS (42' RT, 14' LT)
16 LF - CULVERT PIPE SALVAGED 24-INCH
2 EA - APRON ENDWALLS FOR CPRC 24-INCH
4 EA - CONCRETE COLLARS
2 EA - MARKERS CULVERT END
STA 326+48.95, 42.11' LT INV (I) = 895.48'
EOP STA 326+48.81, 70.69' RT INV (O) = 890.66'
RIPRAP MEDIUM OVER GEOTEXTILE TYPE HR (RT)





LEGEND

#####

EROSION MAT URBAN CLASS I TYPE B

∞

CULVERT PIPE CHECK

~>

SURFACE WATER FLOW

—●—

SILT FENCE

▨

MITIGATED WETLAND IMPACT AREA

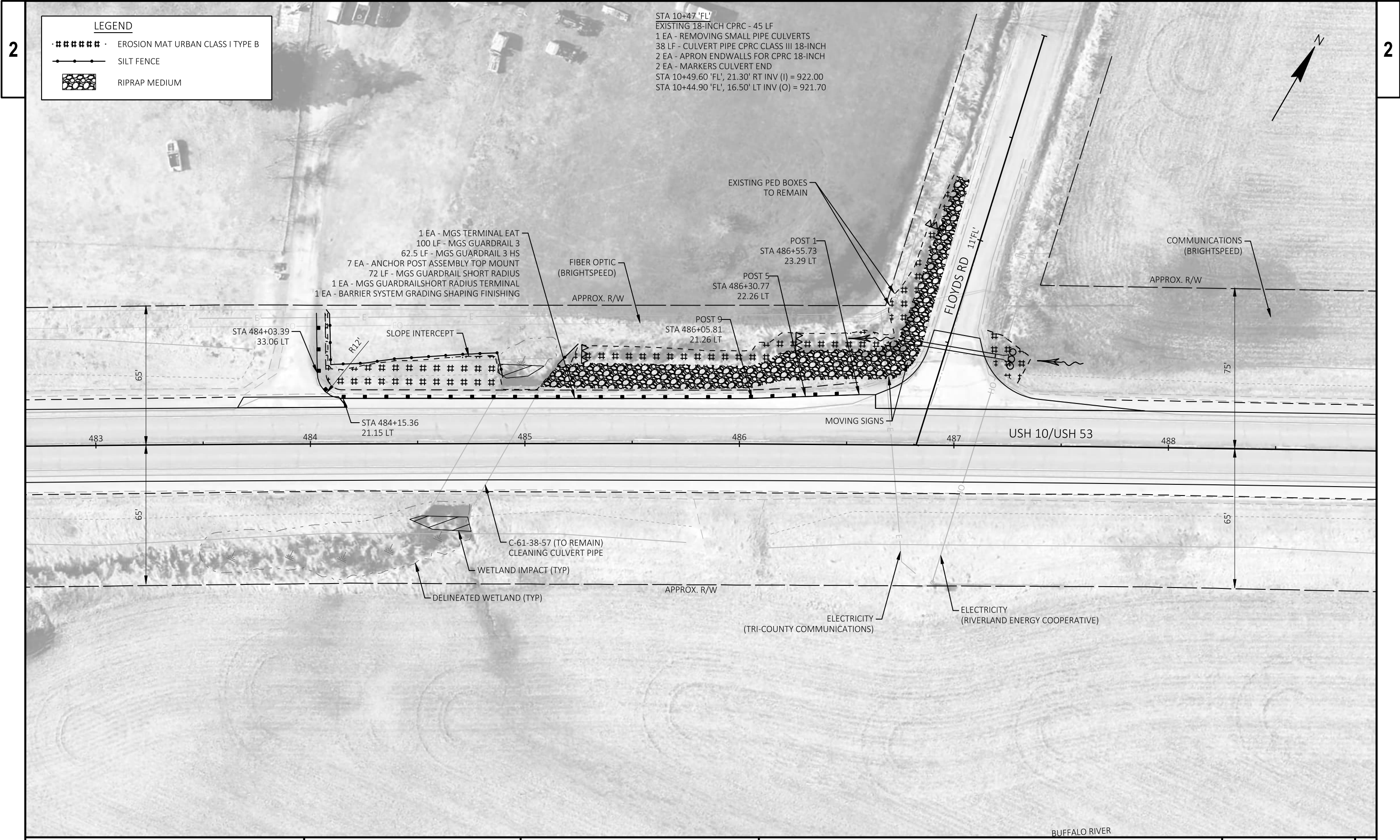
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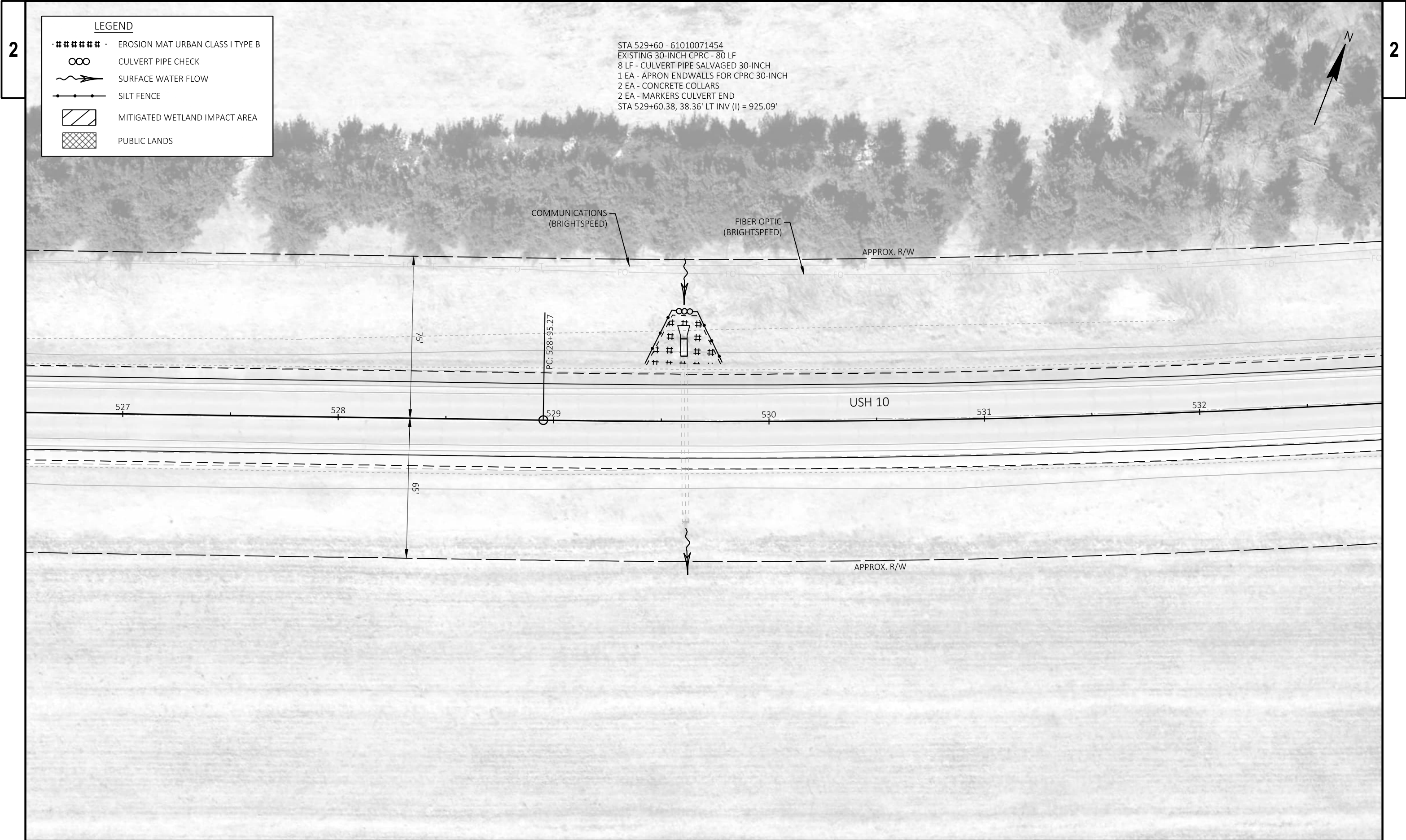
PUBLIC LANDS

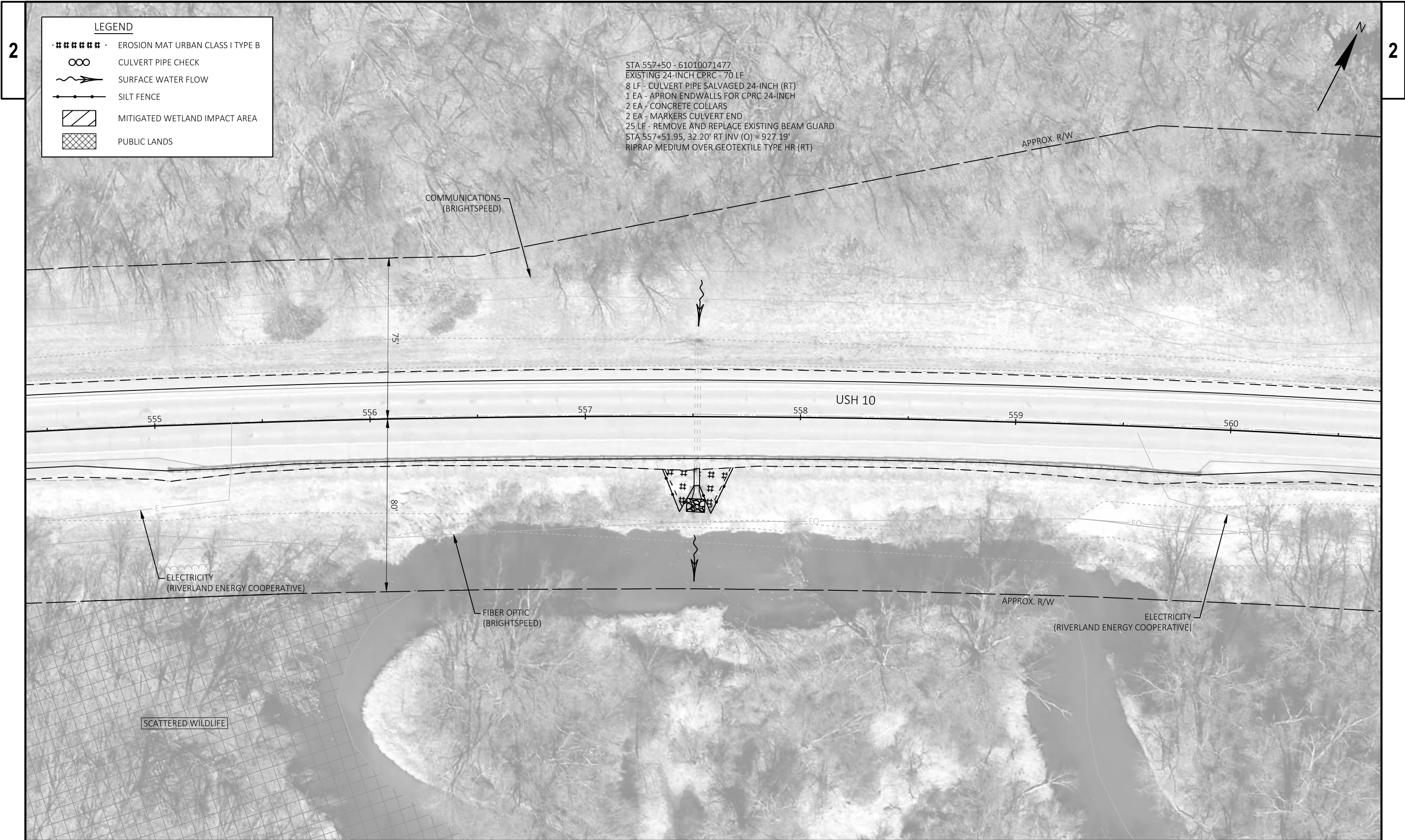
STA 344+15 - 61010071427
EXISTING 24-INCH CPRC - 60 LF
16 LF - CULVERT PIPE SALVAGED 24-INCH
2 EA - APRON ENDWALLS FOR CPRC 24-INCH
4 EA - CONCRETE COLLARS
2 EA - MARKERS CULVERT END
STA 344+14.11, 31.55' LT INV (I) = 895.57'
STA 344+14.03, 35.58' RT INV (O) = 894.59'
RIPRAP MEDIUM OVER GEOTEXTILE TYPE HR (RT)

STA 339+55 - 61010071428
EXISTING 24-INCH CPRC - 110 LF
16 LF - CULVERT PIPE SALVAGED 24-INCH
2 EA - APRON ENDWALLS FOR CPRC 24-INCH
4 EA - CONCRETE COLLARS
2 EA - MARKERS CULVERT END
STA 339+65.93, 45.46' LT INV (I) = 892.84'
STA 339+64.62, 64.19' RT INV (O) = 889.30'
RIPRAP MEDIUM OVER GEOTEXTILE TYPE HR (RT)









LEGEND

- #####· EROSION MAT URBAN CLASS I TYPE B
- ∞ CULVERT PIPE CHECK
- ~> SURFACE WATER FLOW
- SILT FENCE
- [Hatched Box] MITIGATED WETLAND IMPACT AREA
- [Cross-hatched Box] PUBLIC LANDS

STA 557+50 - 61010071477
EXISTING 24-INCH CPRC - 70 LF
8 LF - CULVERT PIPE SALVAGED 24-INCH (RT)
1 EA - APRON ENDWALLS FOR CPRC 24-INCH
2 EA - CONCRETE COLLARS
2 EA - MARKERS CULVERT END
25 LF - REMOVE AND REPLACE EXISTING BEAM GUARD
STA 557+51.95, 32.20' RT INV (O) = 927.19'
RIPRAP MEDIUM OVER GEOTEXTILE TYPE HR (RT)

COMMUNICATIONS
(BRIGHTSPEED)

APPROX. R/W

USH 10

ELECTRICITY
(RIVERLAND ENERGY COOPERATIVE)

FIBER OPTIC
(BRIGHTSPEED)

APPROX. R/W

ELECTRICITY
(RIVERLAND ENERGY COOPERATIVE)

SCATTERED WILDLIFE

PROJECT NO: 1530-06-80

HWY: USH 10

COUNTY: TREMPLEAU

CONSTRUCTION DETAILS

SHEET

26

E

FILE NAME : G:\00\00093\00093730\CADD\SHETSPLAN\021008-CD.DWG
LAYOUT NAME - 021024-cd

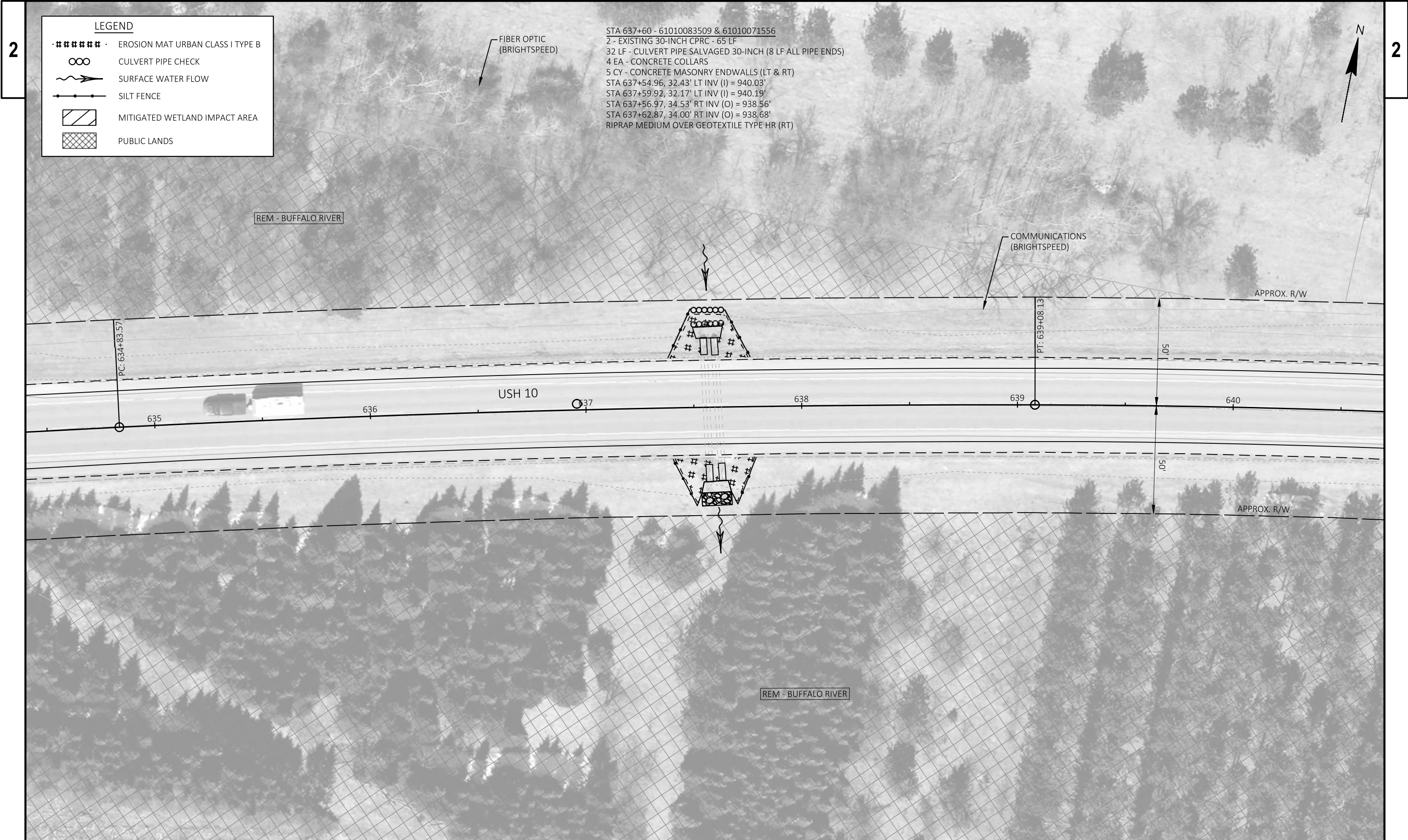
PLOT DATE : 9/6/2024 10:58 AM

PLOT BY : SHAWN DOLENS

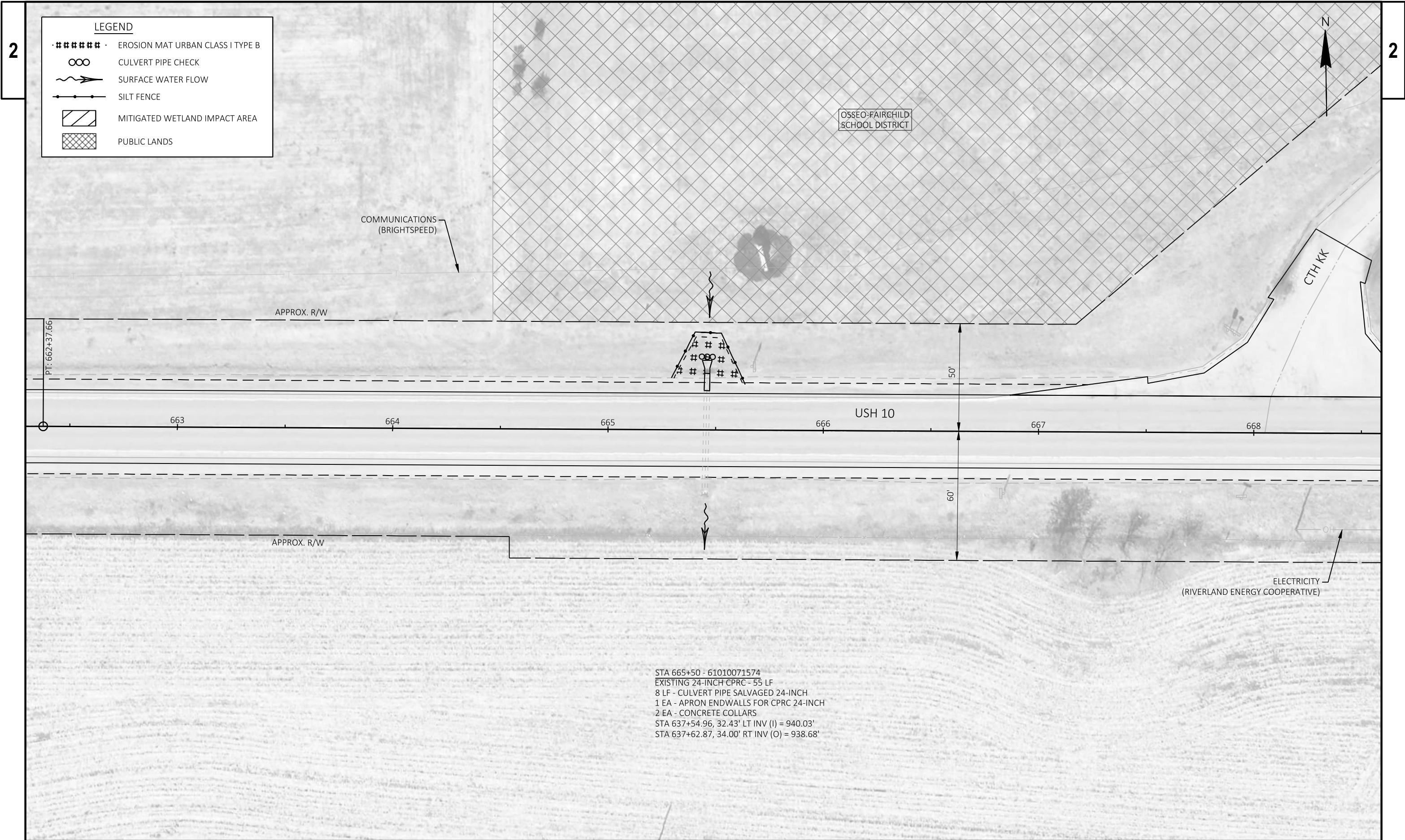
PLOT NAME :

PLOT SCALE : 1 IN=40 FT

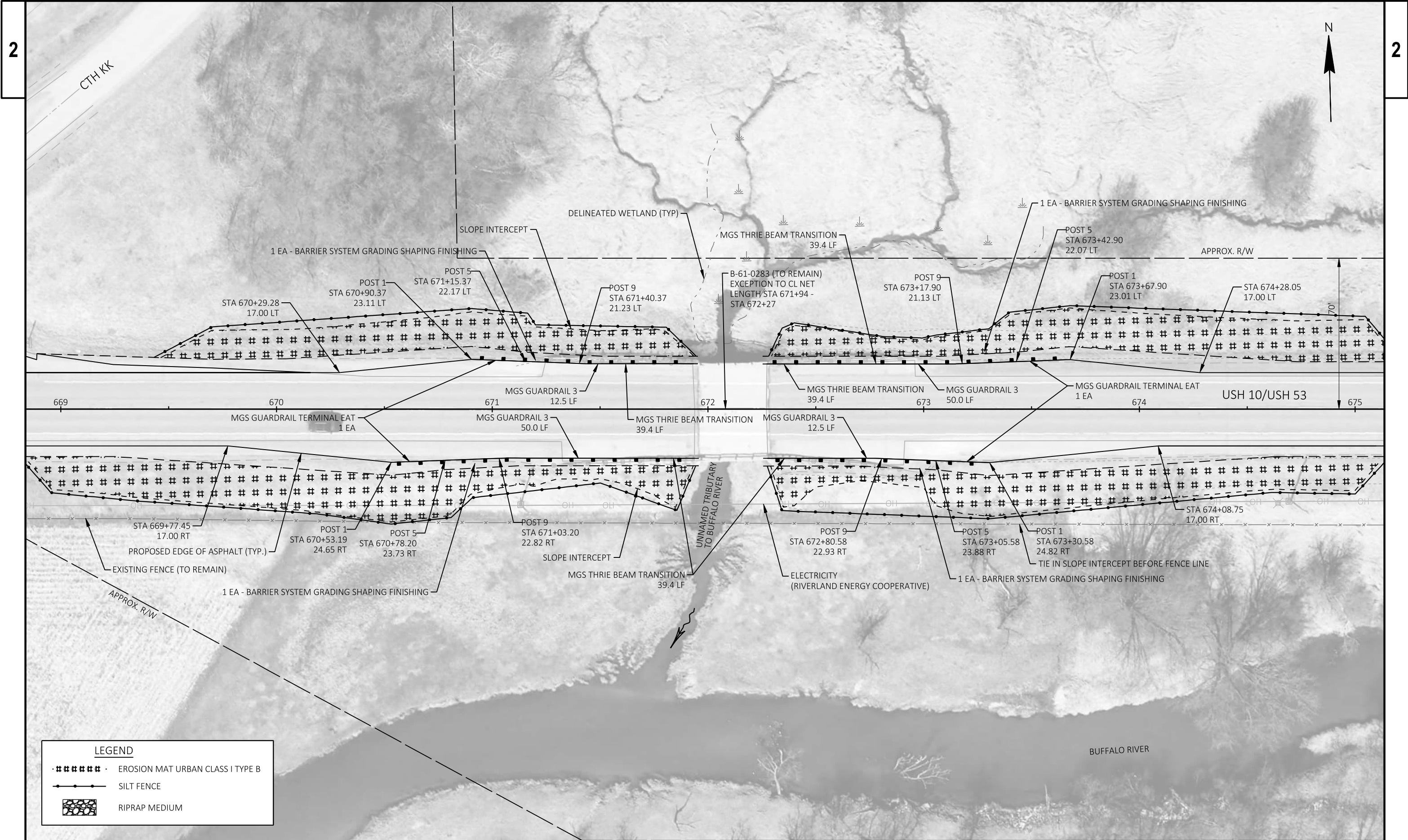
WISDOT/CADD'S SHEET 42



STA 637+60 - 61010083509 & 61010071556
2 - EXISTING 30-INCH CPRC - 65 LF
32 LF - CULVERT PIPE SALVAGED 30-INCH (8 LF ALL PIPE ENDS)
4 EA - CONCRETE COLLARS
5 CY - CONCRETE MASONRY ENDWALLS (LT & RT)
STA 637+54.96, 32.43' LT INV (I) = 940.03'
STA 637+59.92, 32.17' LT INV (I) = 940.19'
STA 637+56.97, 34.53' RT INV (O) = 938.56'
STA 637+62.87, 34.00' RT INV (O) = 938.68'
RIPRAP MEDIUM OVER GEOTEXTILE TYPE HR (RT)



STA 665+50 - 61010071574
EXISTING 24-INCH CPRC - 55 LF
8 LF - CULVERT PIPE SALVAGED 24-INCH
1 EA - APRON ENDWALLS FOR CPRC 24-INCH
2 EA - CONCRETE COLLARS
STA 637+54.96, 32.43' LT INV (I) = 940.03'
STA 637+62.87, 34.00' RT INV (O) = 938.68'



S 5TH ST - SW QUAD						
POINT NUMBER	STATION	OFFSET	ELEVATION	NORTHING	EASTING	LOCATION
100	31+15.37	28.41' RT	871.84	515908.34	814719.94	EOW
101	31+11.37	20.22' RT	871.31	515917.03	814717.15	BOC
102	31+15.38	24.50' RT	871.74	515912.21	814720.50	EOW
103	31+20.39	24.59' RT	871.51	515911.41	814725.45	EOW
104	31+25.39	24.60' RT	871.26	515910.68	814730.39	EOW
105	31+30.39	24.65' RT	871.02	515909.92	814735.34	EOW
106	31+35.39	24.66' RT	870.96	515909.19	814740.28	EOW
107	31+38.93	22.76' RT	871.15	515910.57	814744.06	BOC
108	31+41.37	24.65' RT	870.64	515908.35	814746.20	BOC
109	31+44.78	29.66' RT	870.60	515902.90	814748.87	BOC
110	31+45.65	32.76' RT	871.08	515899.71	814749.29	BOC
111	31+46.22	36.50' RT	870.95	515895.93	814749.32	BOC
112	31+41.37	29.65' RT	870.61	515903.40	814745.49	EOW
113	31+35.37	29.63' RT	871.03	515904.27	814739.56	EOW
114	31+30.37	29.62' RT	871.09	515905.00	814734.61	EOW
115	31+25.37	29.60' RT	871.34	515905.74	814729.66	EOW
116	31+20.37	29.59' RT	871.58	515906.47	814724.72	EOW
117	31+31.35	35.11' RT	-	515899.43	814734.79	14.5' RAD BOC

LEGEND:

- | | |
|---|-----------------------------------|
|  | SAWING ASPHALT/CONCRETE |
|  | DETECTABLE WARNING FIELD (YELLOW) |
|  | LANDING AREA |
| X.XX% | BOC/CONCRETE SLOPE |
| X.XX%* | FLARE SLOPE |
|  | 6:1 GRADED FLARE |
|  | 10:1 CONCRETE FLARE |
|  | POINT NUMBER & ELEVATION |
|  | CONCRETE SIDEWALK 5-INCH |
|  | CONCRETE CURB PEDESTRIAN |

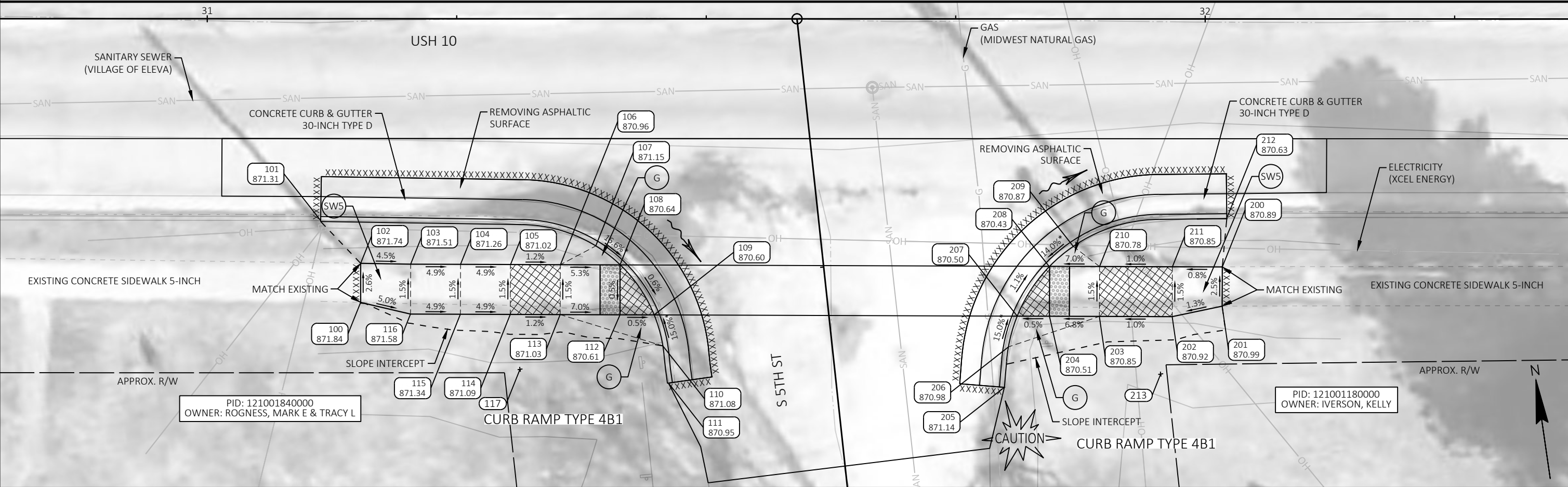
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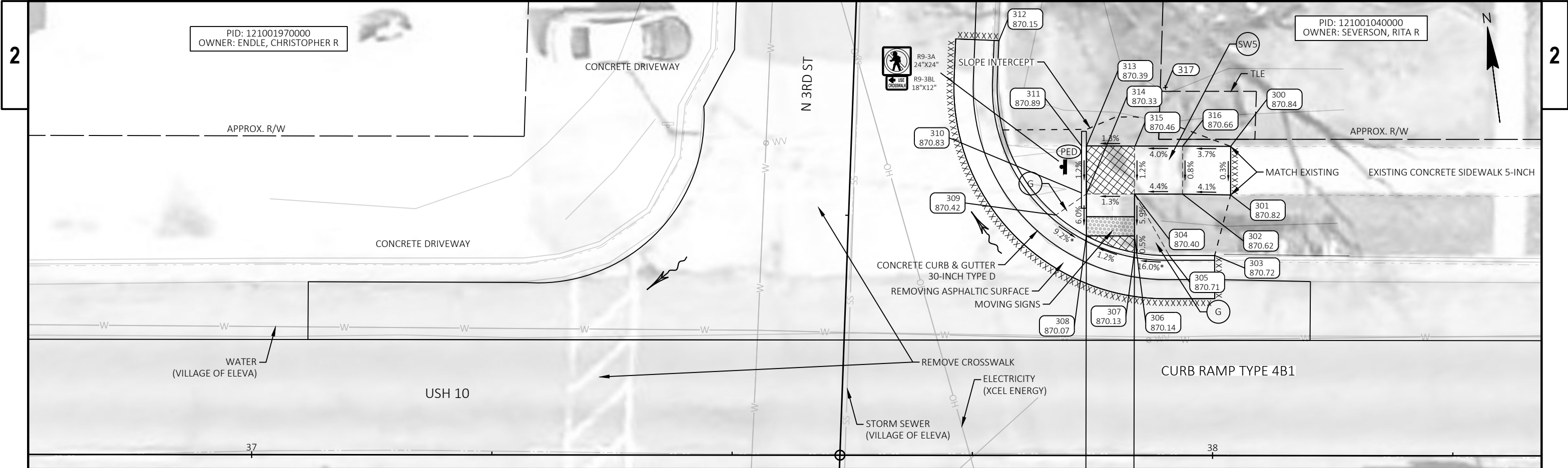
1. FIELD VERIFY ELEVATION GRADES, SLOPES, LENGTHS AND MATCH POINTS, PRIOR TO CURB RAMP AND SIDEWALK CONSTRUCTION.
2. THE ENGINEER MAY ADJUST TO FIT FIELD CONDITIONS.
3. DASHED LINES SHOWN FOR PROPOSED SIDEWALK ARE FOR INFORMATION ONLY AND DO NOT INDICATE JOINT LOCATIONS.
4. SEE THE STANDARD DETAIL DRAWINGS FOR COMPLETE CURB RAMP REQUIREMENTS.

S 5TH ST - SE QUAD						
POINT NUMBER	STATION	OFFSET	ELEVATION	NORTHING	EASTING	LOCATION
200	32+01.72	24.85' RT	870.89	515899.53	814805.91	EOW
201	32+01.71	28.78' RT	870.99	515895.64	814805.33	EOW
202	31+96.70	29.83' RT	870.92	515895.31	814800.23	EOW
203	31+89.40	29.81' RT	870.85	515896.38	814793.01	EOW
204	31+84.40	29.79' RT	870.51	515897.11	814788.06	EOW
205	31+79.87	36.91' RT	871.14	515890.71	814782.56	BOC
206	31+80.29	32.86' RT	870.98	515894.66	814783.55	BOC
207	31+81.18	29.78' RT	870.50	515897.58	814784.87	BOC
208	31+84.39	24.82' RT	870.43	515902.03	814788.76	BOC
209	31+86.79	22.79' RT	870.87	515903.70	814791.42	BOC
210	31+89.42	24.81' RT	870.78	515901.33	814793.74	EOW
211	31+96.72	24.83' RT	870.85	515900.26	814800.96	EOW
212	32+02.17	19.96' RT	870.63	515904.31	814807.05	BOC
213	31+95.55	35.58' RT	-	515889.79	814798.26	15.5' RAD BOC

CONTROL POINTS

NO.	STATION	ELEV.	DESCRIPTION	NORTHING	EASTING
304	33+90.71	867.630	PK NAIL, 17.48' LT	515914.657	814,998.811





CONTROL POINTS					
NO.	STATION	ELEV.	DESCRIPTION	NORTHING	EASTING
305	36+80.23	870.220	PK NAIL, 28.97' RT	515,831.022	815,279.852

LEGEND:	
.XXXX.	SAWING ASPHALT/CONCRETE
XXXX	DETECTABLE WARNING FIELD (YELLOW)
XXXX	LANDING AREA
X.XX%	BOC/CONCRETE SLOPE
X.XX%*	FLARE SLOPE
G	6:1 GRADED FLARE
C	10:1 CONCRETE FLARE
XXXX YYY.YY	POINT NUMBER & ELEVATION
SW 5	CONCRETE SIDEWALK 5-INCH
PED	CONCRETE CURB PEDESTRIAN

- NOTES:
1. FIELD VERIFY ELEVATION GRADES, SLOPES, LENGTHS AND MATCH POINTS, PRIOR TO CURB RAMP AND SIDEWALK CONSTRUCTION.
 2. THE ENGINEER MAY ADJUST TO FIT FIELD CONDITIONS.
 3. DASHED LINES SHOWN FOR PROPOSED SIDEWALK ARE FOR INFORMATION ONLY AND DO NOT INDICATE JOINT LOCATIONS.
 4. SEE THE STANDARD DETAIL DRAWINGS FOR COMPLETE CURB RAMP REQUIREMENTS.

N 3RD ST - NE QUAD						
POINT NUMBER	STATION	OFFSET	ELEVATION	NORTHING	EASTING	LOCATION
300	38+01.85	32.20' LT	870.84	515875.88	815408.39	EOW
301	38+01.85	27.14' LT	870.82	515870.87	815407.72	EOW
302	37+96.85	27.23' LT	870.62	515871.60	815402.78	EOW
303	38+00.19	20.84' LT	870.72	515864.83	815405.26	BOC
304	37+91.85	27.23' LT	870.40	515872.25	815397.82	EOW
305	37+95.47	20.83' LT	870.71	515865.43	815400.58	BOC
306	37+91.84	22.86' LT	870.14	515867.92	815397.25	EOW
307	37+91.84	21.12' LT	870.13	515866.20	815397.02	BOC
308	37+86.84	22.87' LT	870.07	515868.58	815392.29	BOC
309	37+83.67	25.03' LT	870.42	515871.13	815389.42	BOC
310	37+86.33	27.34' LT	870.83	515873.08	815392.36	PED
311	37+86.33	32.23' LT	870.89	515877.93	815393.00	PED
312	37+77.73	43.19' LT	870.15	515889.91	815385.89	BOC
313	37+86.85	32.24' LT	870.39	515877.86	815393.52	EOW
314	37+86.85	27.24' LT	870.33	515872.91	815392.86	EOW
315	37+91.90	32.23' LT	870.46	515877.21	815398.52	EOW
316	37+96.85	32.22' LT	870.66	515876.54	815403.43	EOW
317	37+95.05	38.33' LT	-	515882.84	815402.43	17.5' RAD BOC

S 3RD ST - SW QUAD						
POINT NUMBER	STATION	OFFSET	ELEVATION	NORTHING	EASTING	LOCATION
400	37+12.55	30.81' RT	870.86	515825.00	815311.66	EOW
401	37+12.66	26.90' RT	870.78	515828.86	815312.28	EOW
402	37+17.70	25.83' RT	870.58	515829.27	815317.40	EOW
403	37+12.98	20.08' RT	869.94	515835.58	815313.47	BOC
404	37+22.70	25.85' RT	870.38	515828.60	815322.36	EOW
405	37+22.70	25.32' RT	870.88	515829.13	815322.43	PED
406	37+27.70	25.87' RT	870.33	515827.93	815327.32	EOW
407	37+27.65	25.34' RT	870.83	515828.47	815327.33	PED
408	37+32.70	25.88' RT	870.28	515827.27	815332.27	EOW
409	37+36.64	23.27' RT	870.34	515829.34	815336.52	BOC
410	37+39.26	25.91' RT	869.89	515826.39	815338.78	BOC
411	37+39.22	30.91' RT	869.97	515821.44	815338.09	EOW
412	37+41.85	30.92' RT	869.95	515821.09	815340.70	BOC
413	37+42.47	34.08' RT	870.46	515817.87	815340.90	BOC
414	37+42.47	41.01' RT	870.48	515811.00	815340.00	BOC
415	37+32.56	30.88' RT	870.33	515822.33	815331.49	EOW
416	37+27.56	30.87' RT	870.38	515822.99	815326.53	EOW
417	37+27.47	35.91' RT	870.58	515818.00	815325.79	EOW
418	37+27.38	40.90' RT	870.78	515813.07	815325.05	EOW
419	37+22.31	40.77' RT	870.82	515813.85	815320.04	EOW
420	37+22.28	35.83' RT	870.62	515818.76	815320.65	EOW
421	37+22.56	30.85' RT	870.43	515823.66	815321.57	EOW

S 3RD ST - SW QUAD						
POINT NUMBER	STATION	OFFSET	ELEVATION	NORTHING	EASTING	LOCATION
422	37+17.55	30.76' RT	870.64	515824.39	815316.62	EOW
423	37+27.03	35.43' RT	-	515818.53	815325.42	15.5' RAD BOC

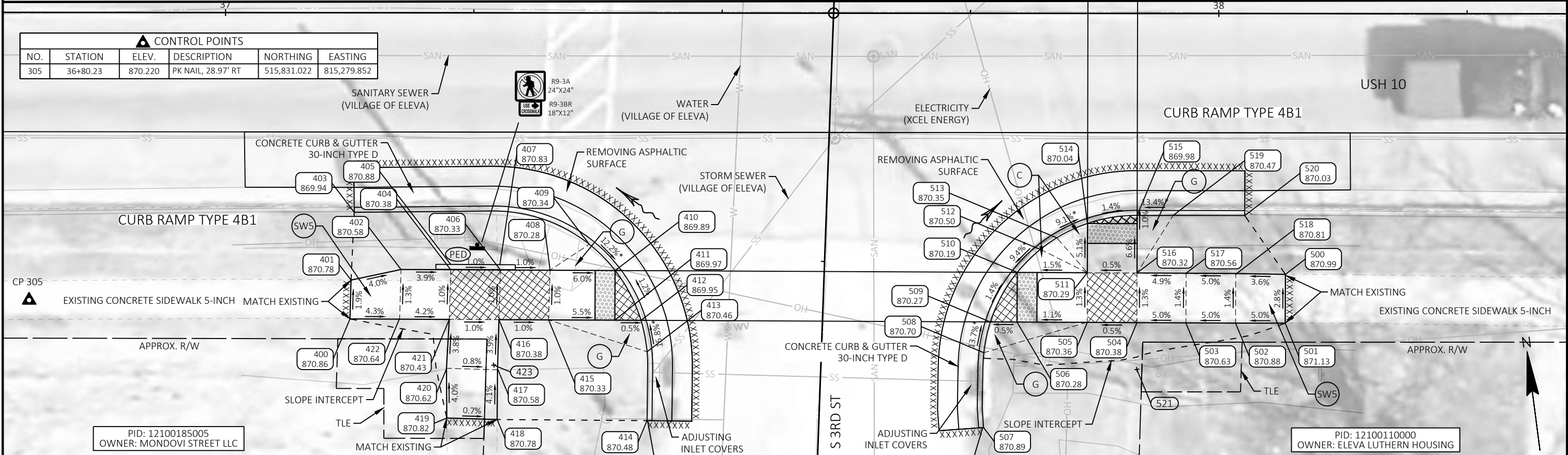
LEGEND:

- .XXXX. SAWING ASPHALT/CONCRETE
- DETECTABLE WARNING FIELD (YELLOW)
- LANDING AREA
- X.XX% BOC/CONCRETE SLOPE
- X.XX%* FLARE SLOPE
- 6:1 GRADED FLARE
- 10:1 CONCRETE FLARE
- POINT NUMBER & ELEVATION
- CONCRETE SIDEWALK 5-INCH
- CONCRETE CURB PEDESTRIAN

NOTES:

- FIELD VERIFY ELEVATION GRADES, SLOPES, LENGTHS AND MATCH POINTS, PRIOR TO CURB RAMP AND SIDEWALK CONSTRUCTION.
- THE ENGINEER MAY ADJUST TO FIT FIELD CONDITIONS.
- DASHED LINES SHOWN FOR PROPOSED SIDEWALK ARE FOR INFORMATION ONLY AND DO NOT INDICATE JOINT LOCATIONS.
- SEE THE STANDARD DETAIL DRAWINGS FOR COMPLETE CURB RAMP REQUIREMENTS.

S 3RD ST - SE QUAD						
POINT NUMBER	STATION	OFFSET	ELEVATION	NORTHING	EASTING	LOCATION
500	38+06.73	26.24' RT	870.99	515817.31	815405.64	EOW
501	38+06.71	31.15' RT	871.13	515812.44	815404.98	EOW
502	38+01.71	31.15' RT	870.88	515813.09	815400.02	EOW
503	37+96.71	31.13' RT	870.63	515813.75	815395.07	EOW
504	37+91.79	31.10' RT	870.38	515814.42	815390.18	EOW
505	37+86.79	31.08' RT	870.36	515815.09	815385.23	EOW
506	37+79.71	31.06' RT	870.28	515816.03	815378.22	EOW
507	37+76.36	41.68' RT	870.89	515805.94	815373.51	BOC
508	37+76.37	34.15' RT	870.70	515813.40	815374.50	BOC
509	37+77.03	31.05' RT	870.27	515816.39	815375.56	BOC
510	37+79.73	26.06' RT	870.19	515820.98	815378.89	BOC
511	37+86.79	26.09' RT	870.29	515820.04	815385.88	EOW
512	37+82.06	23.76' RT	870.50	515822.96	815381.49	BOC
513	37+83.71	22.58' RT	870.35	515823.92	815383.29	BOC
514	37+86.80	21.15' RT	870.04	515824.94	815386.53	BOC
515	37+91.80	20.32' RT	869.98	515825.11	815391.59	BOC
516	37+91.79	26.11' RT	870.32	515819.37	815390.84	EOW
517	37+96.73	26.13' RT	870.56	515818.71	815395.73	EOW
518	38+01.73	26.22' RT	870.81	515817.97	815400.68	EOW
519	37+95.42	20.32' RT	870.47	515824.64	815395.18	BOC
520	38+02.63	20.33' RT	870.03	515823.70	815402.34	BOC
521	37+91.78	35.82' RT	-	515809.75	815389.57	15.5' RAD BOC



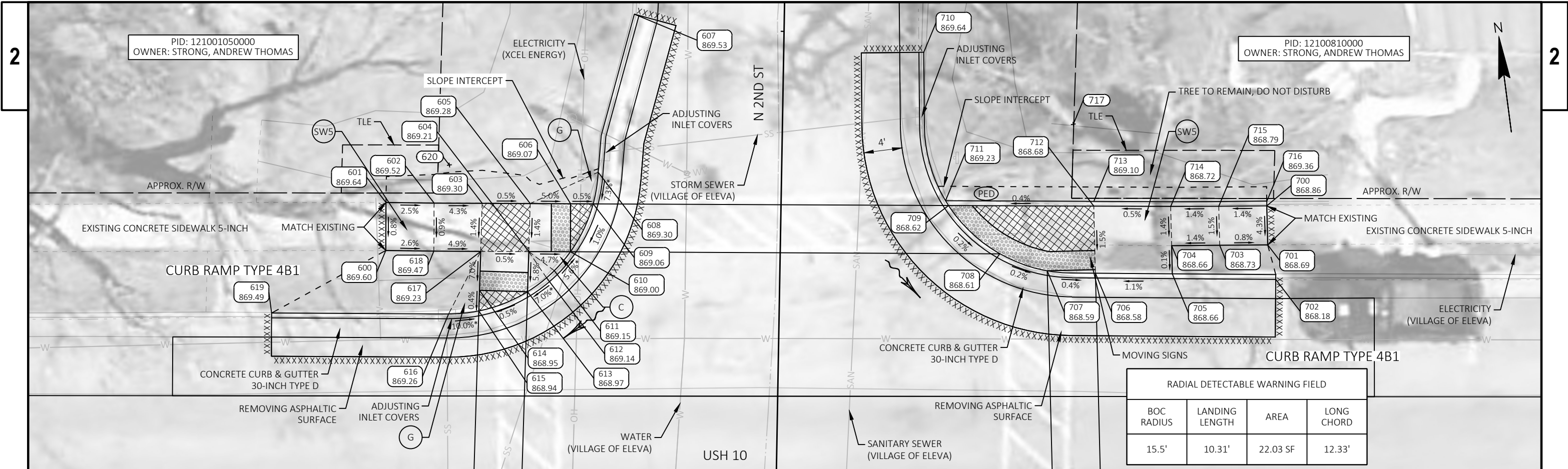
PROJECT NO: 1530-06-80

HWY: USH 10

COUNTY: TREMPLEAU

CURB RAMP DETAILS

SHEET



N 2ND ST - NW QUAD						
POINT NUMBER	STATION	OFFSET	ELEVATION	NORTHING	EASTING	LOCATION
600	40+70.01	27.14' LT	869.60	515836.05	815673.61	EOW
601	40+70.02	32.14' LT	869.64	515841.01	815674.27	EOW
602	40+75.02	32.08' LT	869.52	515840.29	815679.23	EOW
603	40+80.03	32.06' LT	869.30	515839.63	815684.19	EOW
604	40+84.88	27.04' LT	869.21	515834.02	815688.35	EOW
605	40+85.03	32.04' LT	869.28	515838.96	815689.14	EOW
606	40+89.24	32.02' LT	869.07	515838.40	815693.31	EOW
607	40+95.84	51.77' LT	869.53	515857.12	815702.42	BOC
608	40+92.10	35.31' LT	869.30	515841.28	815696.58	BOC
609	40+91.58	32.01' LT	869.06	515838.08	815695.63	BOC
610	40+89.22	27.02' LT	869.00	515833.44	815692.64	BOC
611	40+87.54	25.05' LT	869.15	515831.70	815690.73	BOC
612	40+86.73	24.30' LT	869.14	515831.07	815689.83	BOC
613	40+84.76	22.85' LT	868.97	515829.89	815687.68	BOC
614	40+79.76	23.00' LT	868.95	515830.68	815682.74	EOW
615	40+79.70	20.85' LT	868.94	515828.56	815682.40	BOC
616	40+76.54	20.54' LT	869.26	515828.66	815679.24	BOC
617	40+79.88	27.06' LT	869.23	515834.69	815683.39	EOW
618	40+75.01	27.08' LT	869.47	515835.34	815678.56	EOW
619	40+58.12	20.62' LT	869.49	515831.13	815660.98	BOC

N 2ND ST - NW QUAD						
POINT NUMBER	STATION	OFFSET	ELEVATION	NORTHING	EASTING	LOCATION
620	40+76.61	36.04' LT	-	515844.02	815681.31	15.5' RAD BOC

CONTROL POINTS					
NO.	STATION	ELEV.	DESCRIPTION	NORTHING	EASTING
306	42+27.87	867.480	PK NAIL, 33.78' RT	515,755.147	815,822.23

LEGEND:

.XXXX.

SAWING ASPHALT/CONCRETE

XXXXXX

DETECTABLE WARNING FIELD (YELLOW)

XXXXXX

LANDING AREA

X.XX%

BOC/CONCRETE SLOPE

X.XX%*

FLARE SLOPE

G

6:1 GRADED FLARE

C

10:1 CONCRETE FLARE

XXXX
YYY.YY

POINT NUMBER & ELEVATION

SW 5

CONCRETE SIDEWALK 5-INCH

PED

CONCRETE CURB PEDESTRIAN

NOTES:

1. FIELD VERIFY ELEVATION GRADES, SLOPES, LENGTHS AND MATCH POINTS, PRIOR TO CURB RAMP AND SIDEWALK CONSTRUCTION.

2. THE ENGINEER MAY ADJUST TO FIT FIELD CONDITIONS.

3. DASHED LINES SHOWN FOR PROPOSED SIDEWALK ARE FOR INFORMATION ONLY AND DO NOT INDICATE JOINT LOCATIONS.

4. SEE THE STANDARD DETAIL DRAWINGS FOR COMPLETE CURB RAMP REQUIREMENTS.

N 2ND ST - NE QUAD						
POINT NUMBER	STATION	OFFSET	ELEVATION	NORTHING	EASTING	LOCATION
700	41+61.68	31.87' LT	868.86	515828.84	815765.12	EOW
701	41+61.78	27.80' LT	868.69	515824.79	815764.70	EOW
702	41+62.62	24.21' LT	868.18	515821.12	815765.06	BOC
703	41+56.78	27.76' LT	868.73	515825.40	815759.73	EOW
704	41+51.78	27.72' LT	868.66	515826.01	815754.77	EOW
705	41+51.86	24.78' LT	868.66	515823.08	815754.46	BOC
706	41+43.85	24.85' LT	868.58	515824.19	815746.54	BOC
707	41+38.85	25.09' LT	868.59	515825.08	815741.60	BOC
708	41+33.91	26.86' LT	868.61	515827.47	815736.93	BOC
709	41+28.56	31.88' LT	868.62	515833.15	815732.28	BOC
710	41+25.96	47.83' LT	869.64	515849.30	815731.78	BOC
711	41+28.24	32.38' LT	869.23	515833.68	815732.04	PED
712	41+43.68	31.82' LT	868.68	515831.13	815747.26	EOW
713	41+43.68	32.32' LT	869.10	515831.62	815747.33	PED
714	41+51.68	31.79' LT	868.72	515830.06	815755.20	EOW
715	41+56.68	31.82' LT	868.79	515829.44	815760.16	EOW
716	41+61.68	32.34' LT	869.36	515829.31	815765.18	PED
717	41+41.54	40.35' LT	-	515839.86	815746.25	15.5' RAD BOC

S 2ND ST - SW QUAD						
POINT NUMBER	STATION	OFFSET	ELEVATION	NORTHING	EASTING	LOCATION
800	40+58.11	32.32' RT	870.20	515778.64	815654.10	EOW
801	40+58.26	27.46' RT	870.08	515783.44	815654.87	EOW
802	40+63.26	27.51' RT	869.97	515782.74	815659.82	EOW
803	40+68.26	27.46' RT	869.75	515782.14	815664.79	EOW
804	40+73.27	27.38' RT	869.52	515781.57	815669.76	EOW
805	40+78.27	27.42' RT	869.30	515780.88	815674.72	EOW
806	40+75.33	20.17' RT	869.30	515788.45	815672.75	BOC
807	40+78.40	22.99' RT	868.99	515785.25	815675.42	EOW
808	40+78.46	20.73' RT	868.98	515787.49	815675.78	BOC
809	40+83.37	23.14' RT	869.00	515784.46	815680.34	BOC
810	40+85.53	25.04' RT	869.25	515782.30	815682.23	BOC
811	40+85.92	25.47' RT	869.25	515781.82	815682.56	BOC
812	40+87.41	27.49' RT	869.04	515779.63	815683.77	BOC
813	40+83.12	32.45' RT	869.35	515775.26	815678.88	EOW
814	40+87.37	32.49' RT	869.16	515774.67	815683.09	EOW
815	40+89.40	32.50' RT	869.07	515774.39	815685.10	BOC
816	40+89.75	35.95' RT	869.40	515770.93	815684.99	BOC
817	40+82.79	37.45' RT	869.52	515770.35	815677.90	EOW
818	40+82.45	42.45' RT	869.75	515765.43	815676.92	EOW
819	40+82.28	47.45' RT	869.97	515760.50	815676.10	EOW

S 2ND ST - SW QUAD						
POINT NUMBER	STATION	OFFSET	ELEVATION	NORTHING	EASTING	LOCATION
820	40+82.12	52.45' RT	870.05	515755.56	815675.29	EOW
821	40+77.31	52.41' RT	870.16	515756.22	815670.52	EOW
822	40+77.51	47.41' RT	870.05	515761.15	815671.37	EOW
823	40+77.71	42.41' RT	869.82	515766.08	815672.22	EOW
824	40+77.92	37.41' RT	869.60	515771.02	815673.07	EOW
825	40+78.12	32.42' RT	869.37	515775.94	815673.92	EOW
826	40+83.27	27.46' RT	869.27	515780.20	815679.67	EOW
827	40+73.12	32.38' RT	869.60	515776.63	815668.97	EOW
828	40+68.12	32.34' RT	869.82	515777.32	815664.01	EOW
829	40+63.11	32.35' RT	870.05	515777.96	815659.05	EOW
830	40+74.23	35.64' RT	-	515773.26	815669.64	15.5' RAD BOC

LEGEND:

.XXXX.

SAWING ASPHALT/CONCRETE

XXXXXX

DETECTABLE WARNING FIELD (YELLOW)

XXXXXX

LANDING AREA

X.XX%

BOC/CONCRETE SLOPE

X.XX%*

FLARE SLOPE

G

6:1 GRADED FLARE

C

10:1 CONCRETE FLARE

XXXX
YYY.YY

POINT NUMBER & ELEVATION

SW 5

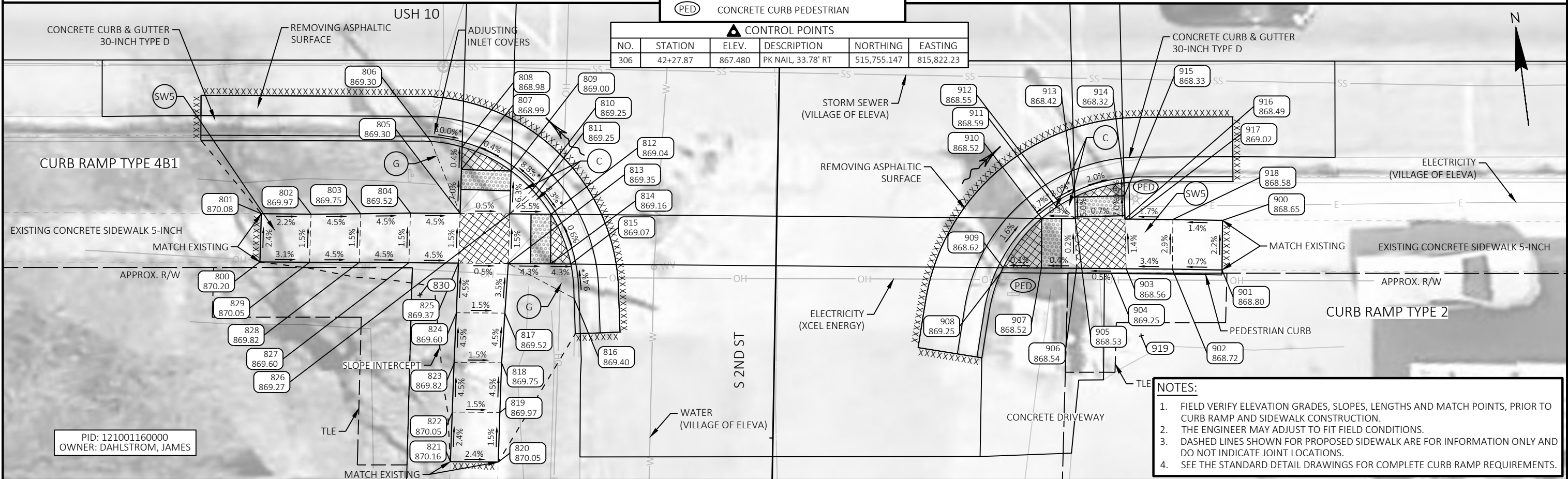
CONCRETE SIDEWALK 5-INCH

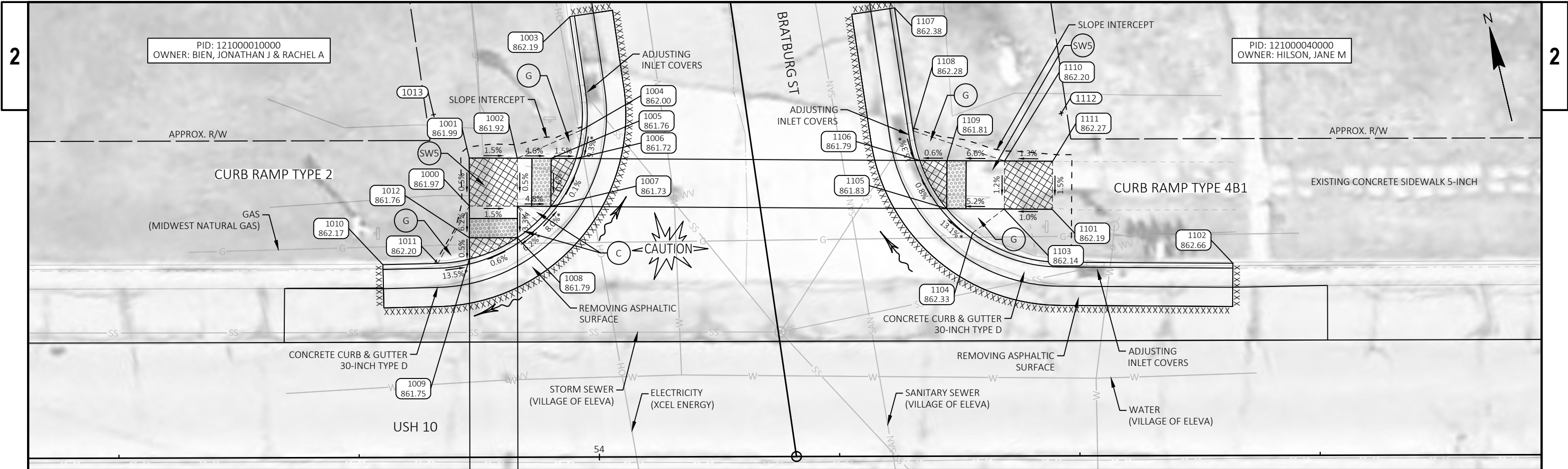
PED

CONCRETE CURB PEDESTRIAN

CONTROL POINTS					
NO.	STATION	ELEV.	DESCRIPTION	NORTHING	EASTING
306	42+27.87	867.480	PK NAIL, 33.78' RT	515,755.147	815,822.23

S 2ND ST - SE QUAD						
POINT NUMBER	STATION	OFFSET	ELEVATION	NORTHING	EASTING	LOCATION
900	41+55.02	28.04' RT	868.65	515770.30	815750.74	EOW
901	41+54.98	33.04' RT	868.80	515765.35	815750.05	EOW
902	41+49.98	32.96' RT	868.72	515766.08	815745.11	EOW
903	41+45.33	32.92' RT	868.56	515766.72	815740.49	EOW
904	41+43.84	33.43' RT	869.25	515766.40	815738.96	PED
905	41+40.20	27.89' RT	868.53	515772.38	815736.06	EOW
906	41+40.32	32.89' RT	868.54	515767.40	815735.54	EOW
907	41+36.79	32.86' RT	868.52	515767.89	815732.04	EOW
908	41+32.71	33.33' RT	869.25	515767.95	815727.94	PED
909	41+32.95	32.83' RT	868.62	515768.42	815728.23	BOC
910	41+36.83	27.86' RT	868.52	515772.84	815732.72	BOC
911	41+38.33	26.74' RT	868.59	515773.76	815734.36	BOC
912	41+38.73	26.48' RT	868.55	515773.96	815734.79	BOC
913	41+40.14	25.71' RT	868.42	515774.54	815736.29	BOC
914	41+45.11	24.28' RT	868.32	515775.32	815741.40	BOC
915	41+45.14	25.58' RT	868.33	515774.02	815741.26	EOW
916	41+45.20	27.92' RT	868.49	515771.69	815741.02	EOW
917	41+45.70	27.92' RT	869.02	515771.63	815741.51	PED
918	41+50.02	27.96' RT	868.58	515771.03	815745.79	EOW
919	41+46.85	39.68' RT	-	515759.82	815741.13	15.5' RAD BOC





BRATBURG ST - NW QUAD						
POINT NUMBER	STATION	OFFSET	ELEVATION	NORTHING	EASTING	LOCATION
1000	53+86.52	26.18' LT	861.97	515581.50	816966.54	EOW
1001	53+86.53	31.18' LT	861.99	515586.37	816967.69	EOW
1002	53+91.53	31.14' LT	861.92	515585.18	816972.55	EOW
1003	53+97.02	45.84' LT	862.19	515598.23	816981.27	BOC
1004	53+98.24	34.06' LT	862.00	515586.49	816979.75	BOC
1005	53+95.04	31.11' LT	861.76	515584.35	816975.97	EOW
1006	53+97.62	31.09' LT	861.72	515583.74	816978.47	BOC
1007	53+95.00	26.11' LT	861.73	515579.49	816974.78	BOC
1008	53+91.52	22.84' LT	861.79	515577.11	816970.64	BOC
1009	53+86.52	20.67' LT	861.75	515576.15	816965.28	BOC
1010	53+77.51	20.08' LT	862.17	515577.64	816956.37	BOC
1011	53+83.24	20.20' LT	862.20	515576.44	816961.97	BOC
1012	53+86.52	22.87' LT	861.76	515578.28	816965.78	EOW
1013	53+82.82	35.69' LT	-	515591.62	816965.12	15.5' RAD BOC

CONTROL POINTS					
NO.	STATION	ELEV.	DESCRIPTION	NORTHING	EASTING
307	52+09.81	861.820	PK NAIL, 15.77' LT	515,611.934	816,792.158
308	57+17.58	867.030	3/4" REBAR, 36.32' RT	515,444.686	817,274.414

LEGEND:

.XXXX.

SAWING ASPHALT/CONCRETE

XXXX

DETECTABLE WARNING FIELD (YELLOW)

XXXX

LANDING AREA

X.XX%

BOC/CONCRETE SLOPE

X.XX%*

FLARE SLOPE

G

6:1 GRADED FLARE

C

10:1 CONCRETE FLARE

XXXX
YYY.YY

POINT NUMBER & ELEVATION

SW 5

CONCRETE SIDEWALK 5-INCH

PED

CONCRETE CURB PEDESTRIAN

- NOTES:
1.

FIELD VERIFY ELEVATION GRADES, SLOPES, LENGTHS AND MATCH POINTS, PRIOR TO CURB RAMP AND SIDEWALK CONSTRUCTION.
2.

THE ENGINEER MAY ADJUST TO FIT FIELD CONDITIONS.
3.

DASHED LINES SHOWN FOR PROPOSED SIDEWALK ARE FOR INFORMATION ONLY AND DO NOT INDICATE JOINT LOCATIONS.
4.

SEE THE STANDARD DETAIL DRAWINGS FOR COMPLETE CURB RAMP REQUIREMENTS.

BRATBURG ST - NE QUAD						
POINT NUMBER	STATION	OFFSET	ELEVATION	NORTHING	EASTING	LOCATION
1101	54+47.19	25.66' LT	862.19	515567.08	817025.47	EOW
1102	54+65.96	20.02' LT	862.66	515557.28	817042.45	BOC
1103	54+42.19	25.70' LT	862.14	515568.26	817020.62	EOW
1104	54+38.88	23.24' LT	862.33	515566.63	817016.83	BOC
1105	54+36.19	25.78' LT	861.83	515569.72	817014.79	BOC
1106	54+33.41	30.80' LT	861.79	515575.24	817013.24	BOC
1107	54+30.82	46.71' LT	862.38	515591.32	817014.37	BOC
1108	54+32.72	33.89' LT	862.28	515578.41	817013.27	EOW
1109	54+36.23	30.78' LT	861.81	515574.57	817015.98	EOW
1110	54+42.23	30.73' LT	862.20	515573.15	817021.81	EOW
1111	54+47.23	30.69' LT	862.27	515571.96	817026.67	EOW
1112	54+48.12	35.67' LT	-	515576.61	817028.68	15.5' RAD BOC

BRATBERG ST - SW QUAD						
POINT NUMBER	STATION	OFFSET	ELEVATION	NORTHING	EASTING	LOCATION
1300	53+99.03	20.88' RT	862.24	515532.83	816967.91	BOC
1301	53+99.00	26.78' RT	862.30	515527.10	816966.53	EOW
1302	53+91.50	26.77' RT	861.77	515528.82	816959.23	EOW
1303	53+91.46	27.24' RT	862.27	515528.38	816959.08	PED
1304	53+86.50	26.77' RT	861.80	515529.97	816954.37	EOW
1305	53+86.52	27.22' RT	862.30	515529.53	816954.29	PED
1306	53+79.00	26.77' RT	862.21	515531.70	816947.07	EOW
1307	53+74.00	25.91' RT	862.20	515533.68	816942.40	EOW
1308	53+74.00	20.77' RT	862.17	515538.69	816943.58	EOW
1309	53+79.00	20.87' RT	862.18	515537.44	816948.43	BOC
1310	53+86.50	20.77' RT	861.74	515535.81	816955.75	BOC
1311	53+91.50	20.77' RT	861.71	515534.66	816960.61	BOC
1312	54+12.30	20.78' RT	862.31	515529.88	816980.85	BOC

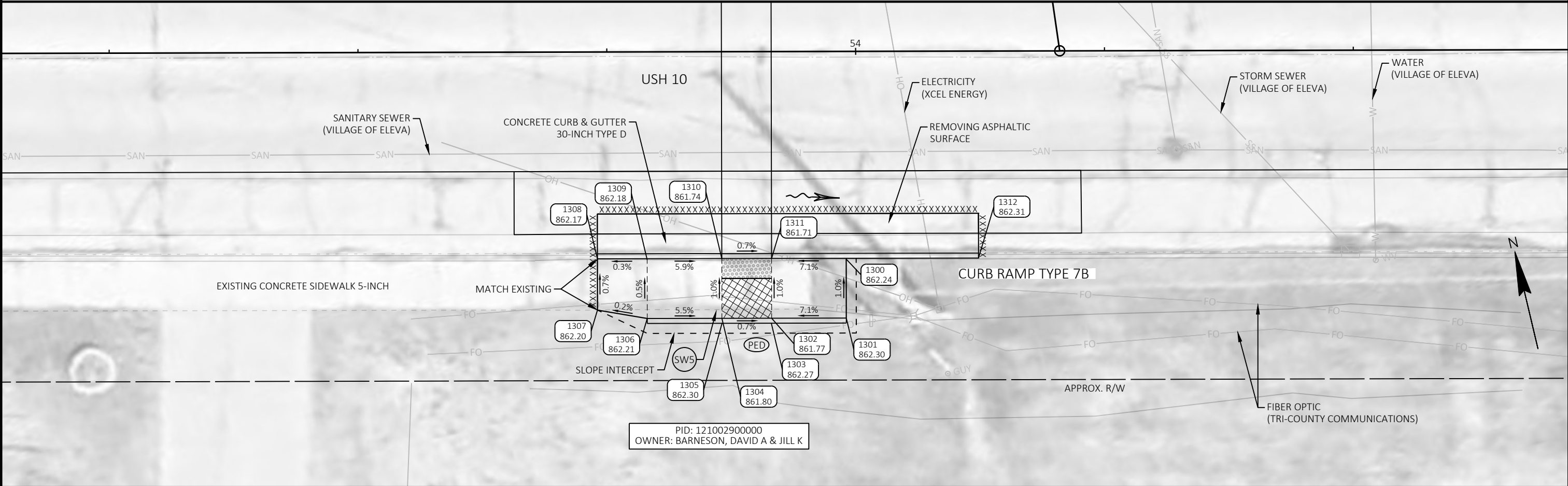
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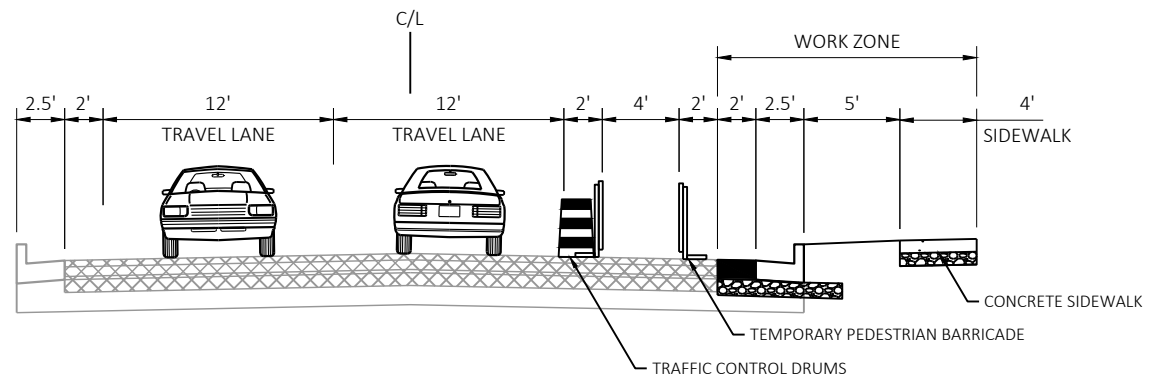
- .XXXX.
- SAWING ASPHALT/CONCRETE
-
- DETECTABLE WARNING FIELD (YELLOW)
-
- LANDING AREA
- X.XX%
- BOC/CONCRETE SLOPE
- X.XX%*
- FLARE SLOPE
- G
- 6:1 GRADED FLARE
- C
- 10:1 CONCRETE FLARE
- XXXX

YYY.YY
- POINT NUMBER & ELEVATION
- SW 5
- CONCRETE SIDEWALK 5-INCH
- PED
- CONCRETE CURB PEDESTRIAN

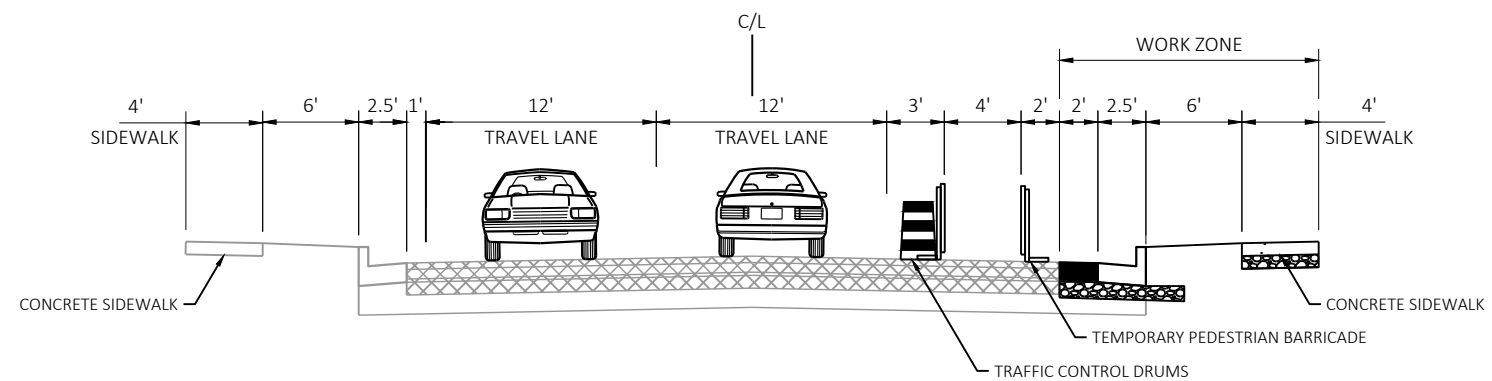
NOTES:

1. FIELD VERIFY ELEVATION GRADES, SLOPES, LENGTHS AND MATCH POINTS, PRIOR TO CURB RAMP AND SIDEWALK CONSTRUCTION.
2. THE ENGINEER MAY ADJUST TO FIT FIELD CONDITIONS.
3. DASHED LINES SHOWN FOR PROPOSED SIDEWALK ARE FOR INFORMATION ONLY AND DO NOT INDICATE JOINT LOCATIONS.
4. SEE THE STANDARD DETAIL DRAWINGS FOR COMPLETE CURB RAMP REQUIREMENTS.

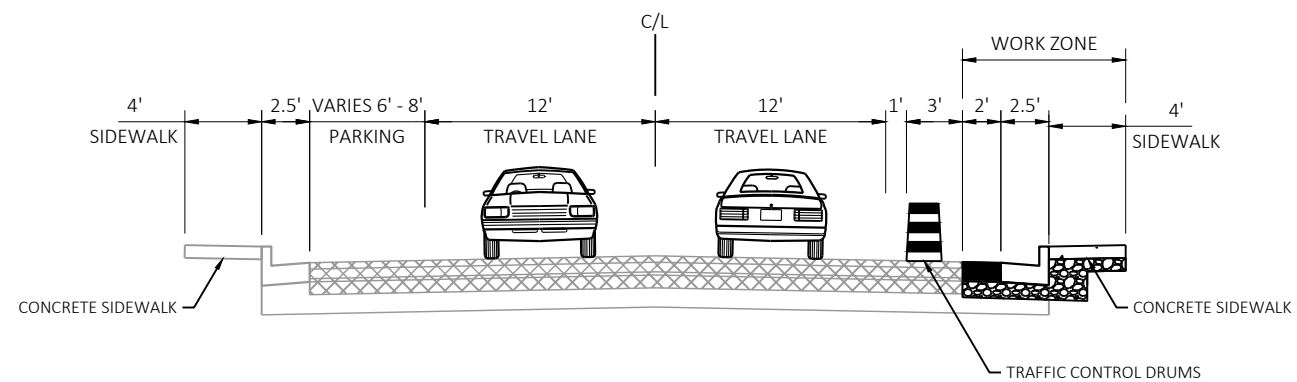




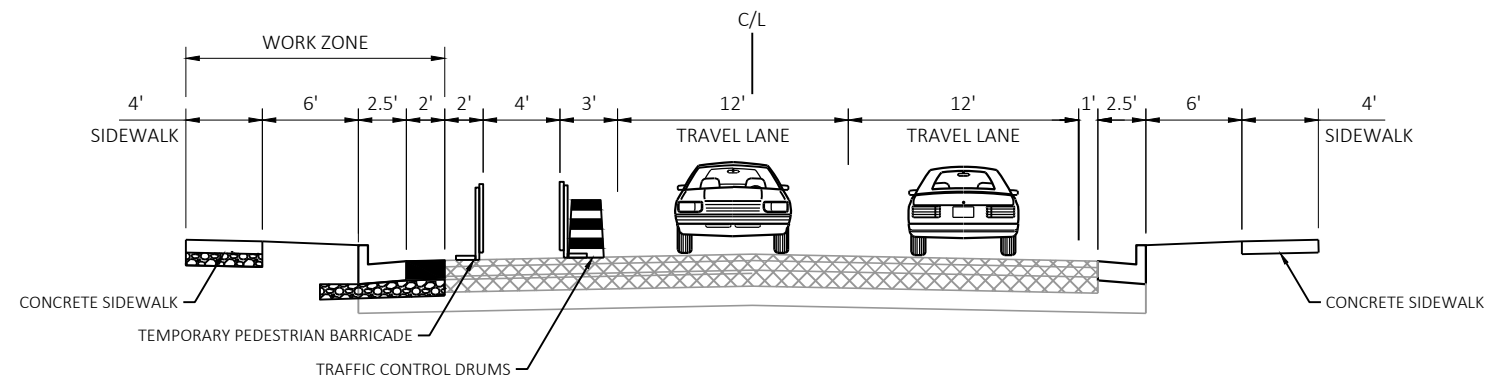
TRAFFIC CONTROL TYPICAL SECTION - STAGE 1
STA 29+88 - STA 32+44



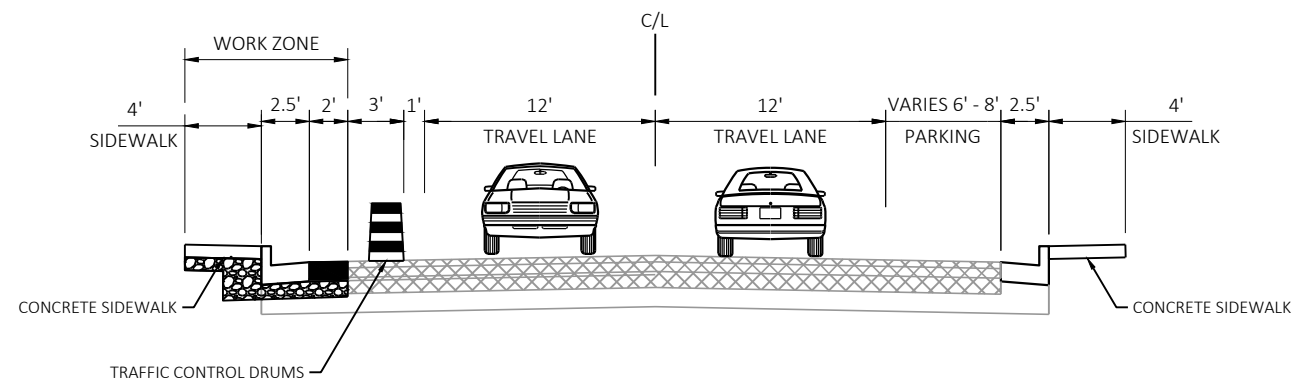
TRAFFIC CONTROL TYPICAL SECTION - STAGE 1
STA 35+75 - STA 42+06



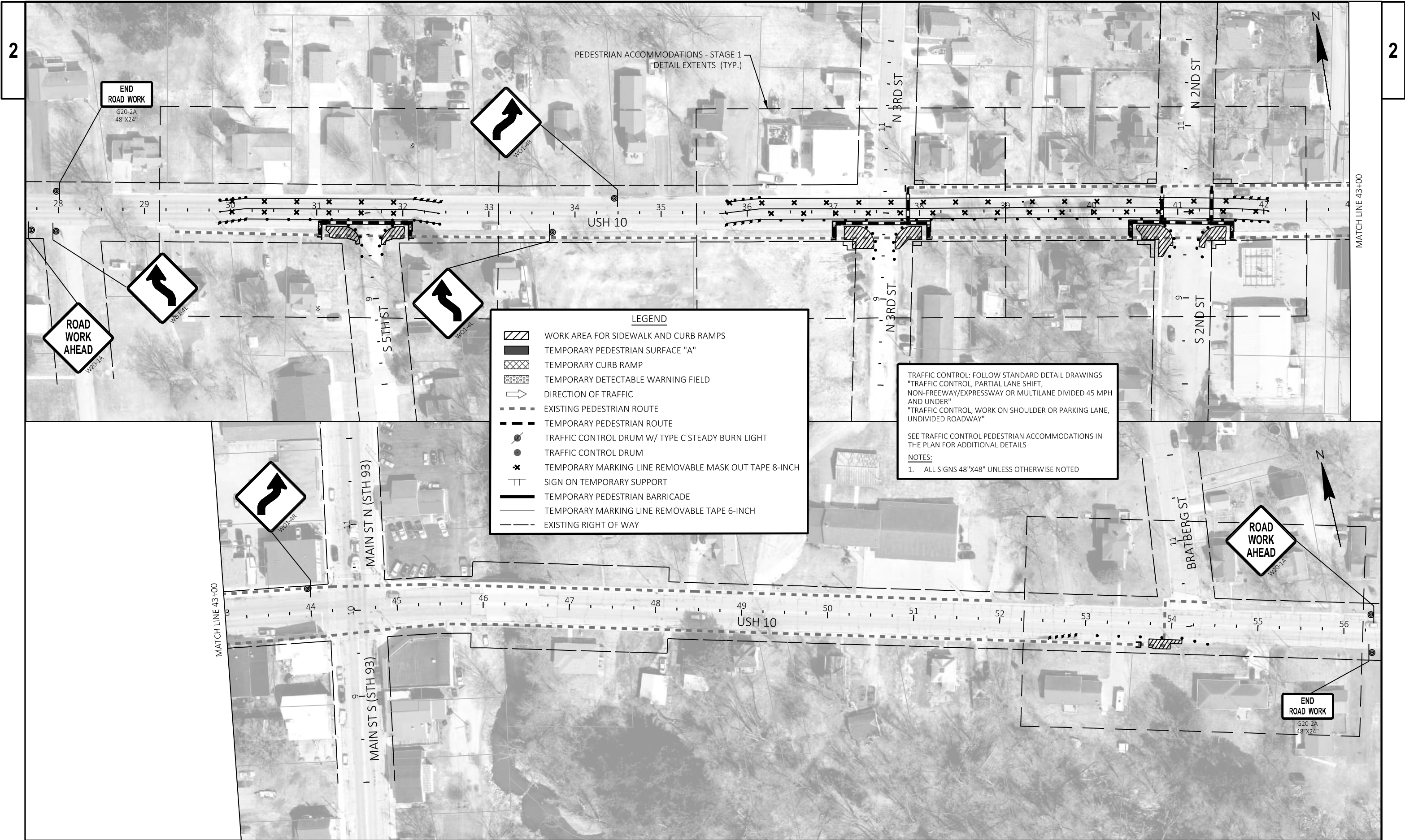
TRAFFIC CONTROL TYPICAL SECTION - STAGE 1
STA 52+57 - STA 54+44

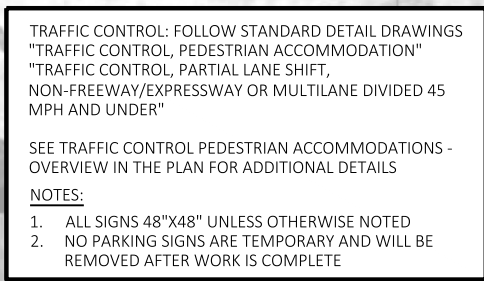


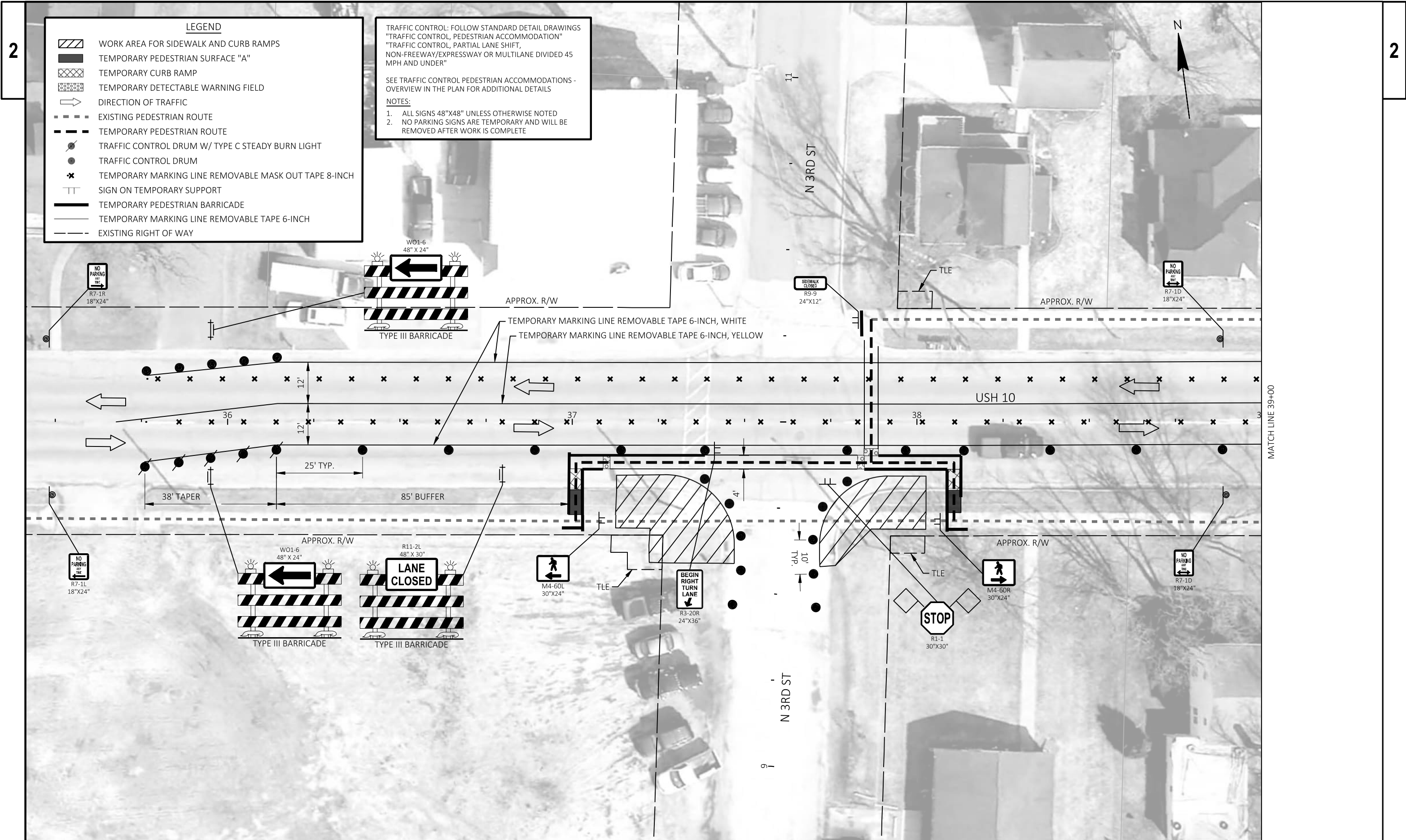
TRAFFIC CONTROL TYPICAL SECTION - STAGE 2
STA 35+75 - STA 42+06

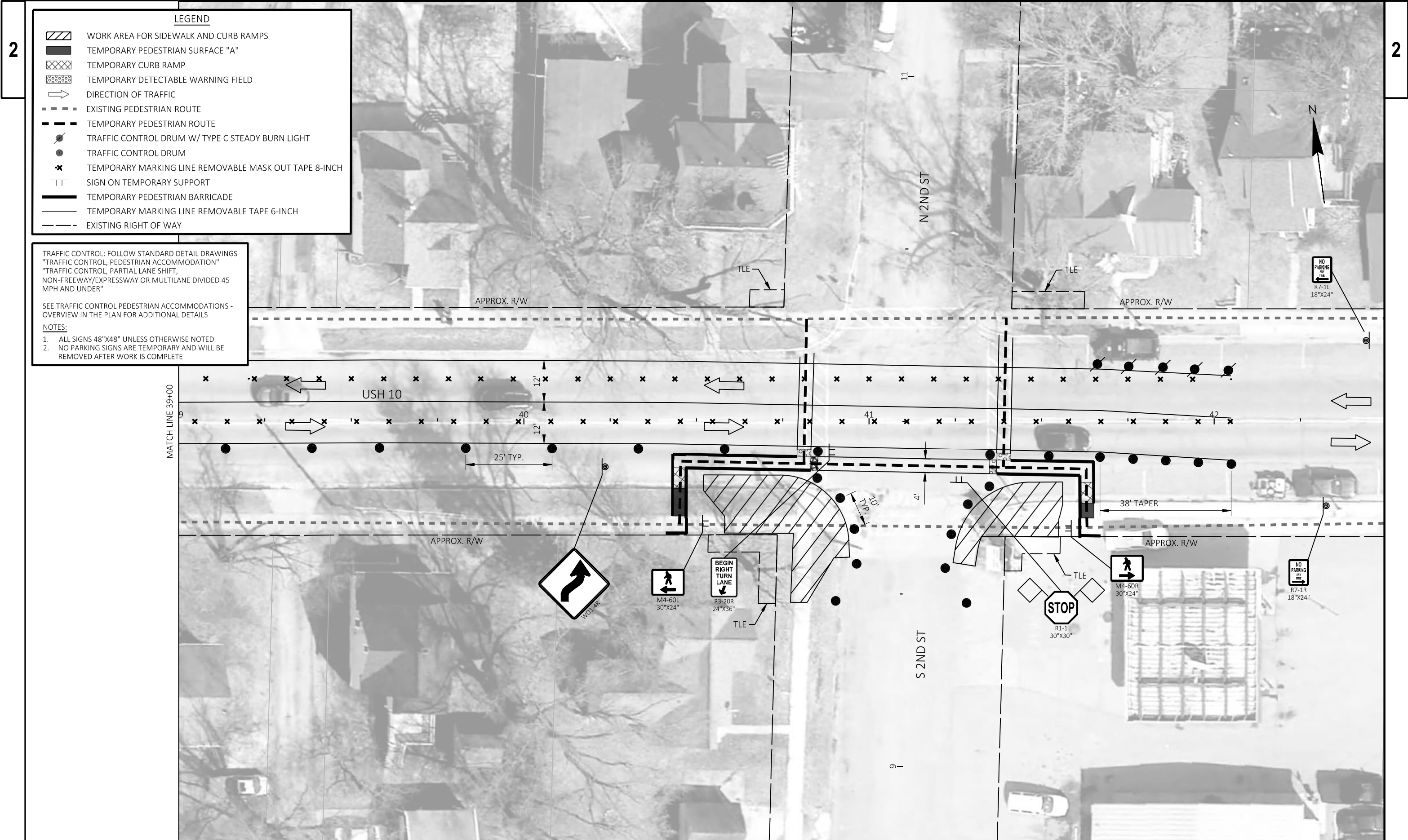


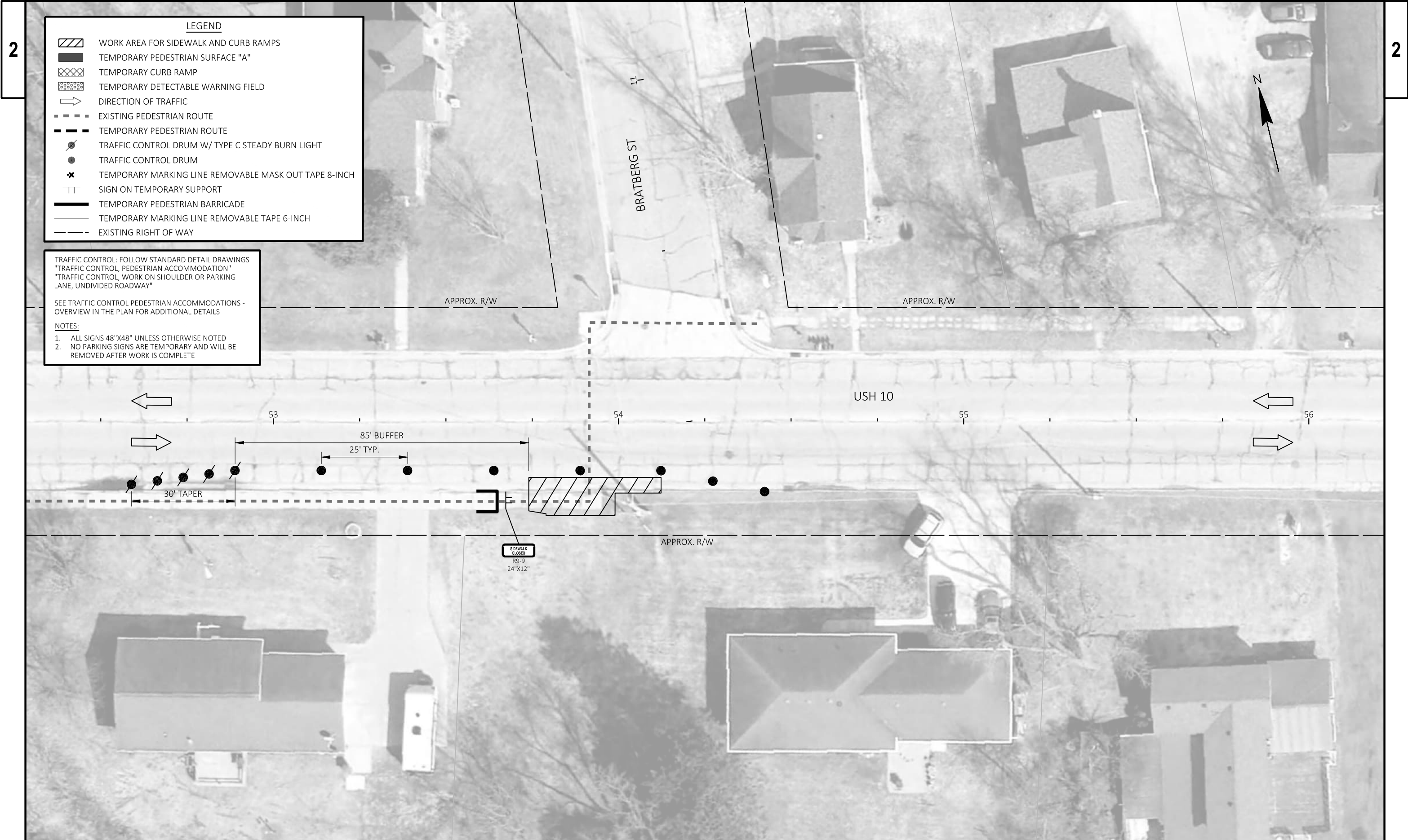
TRAFFIC CONTROL TYPICAL SECTION - STAGE 2
STA 52+57 - STA 54+44



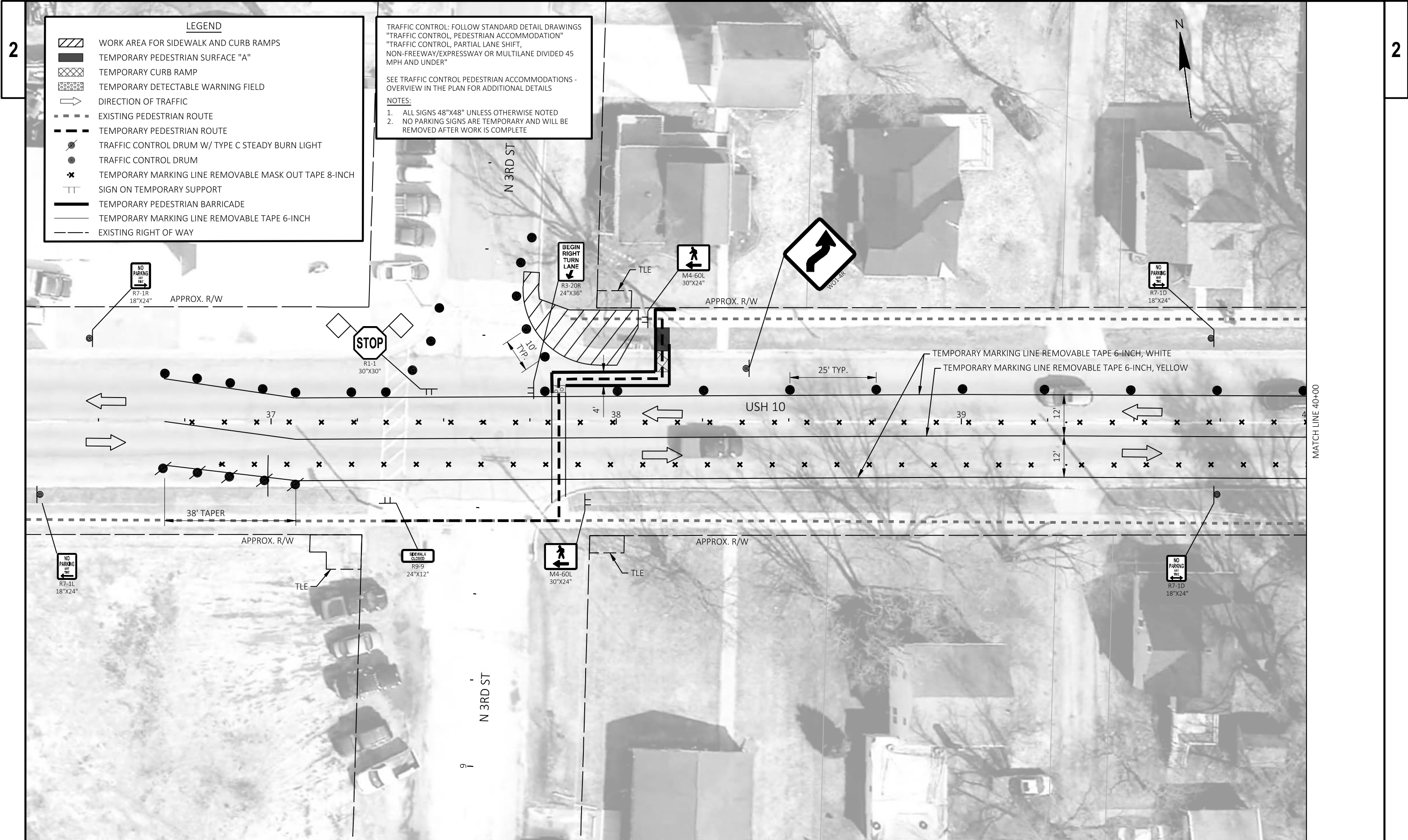


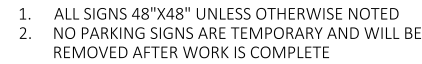


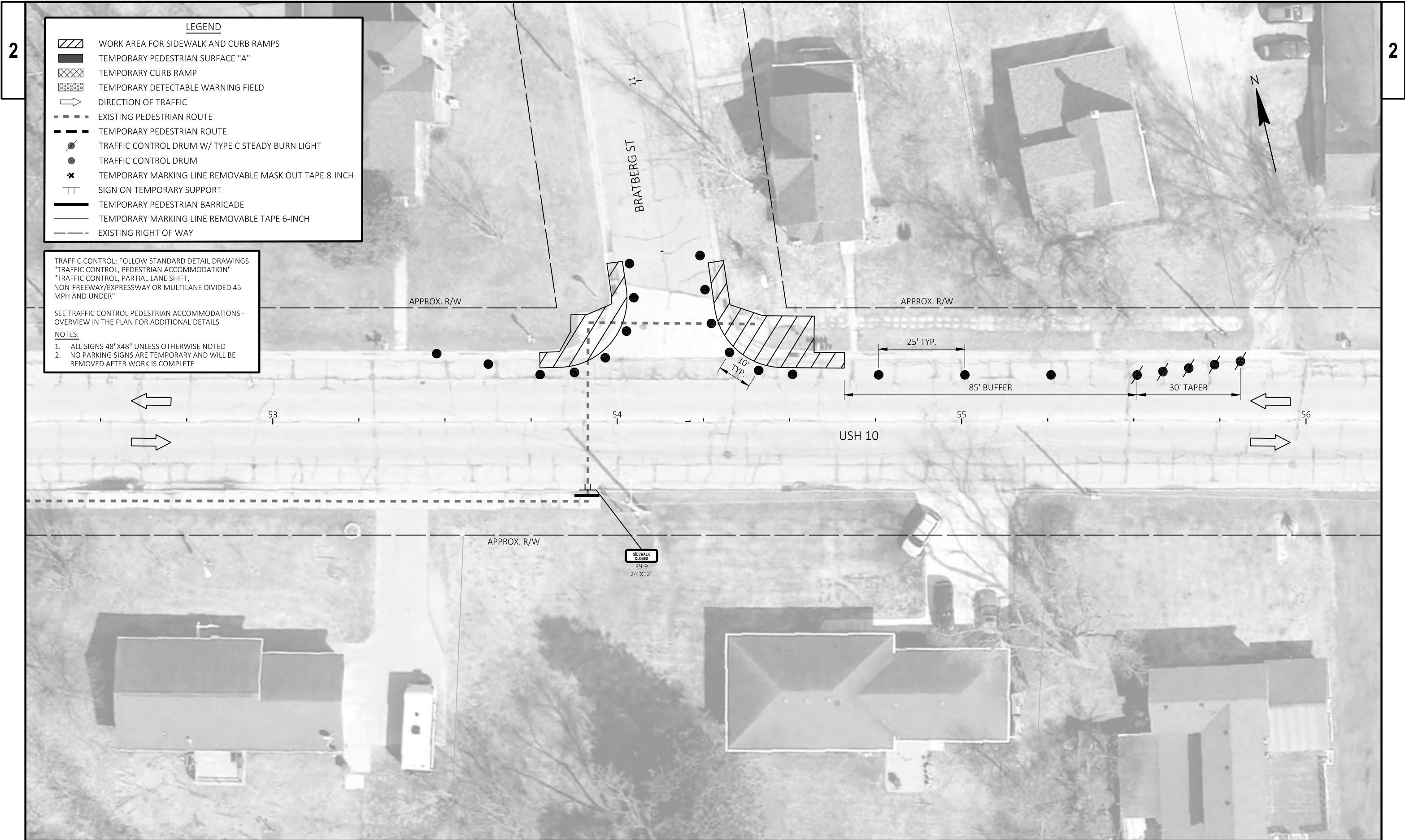






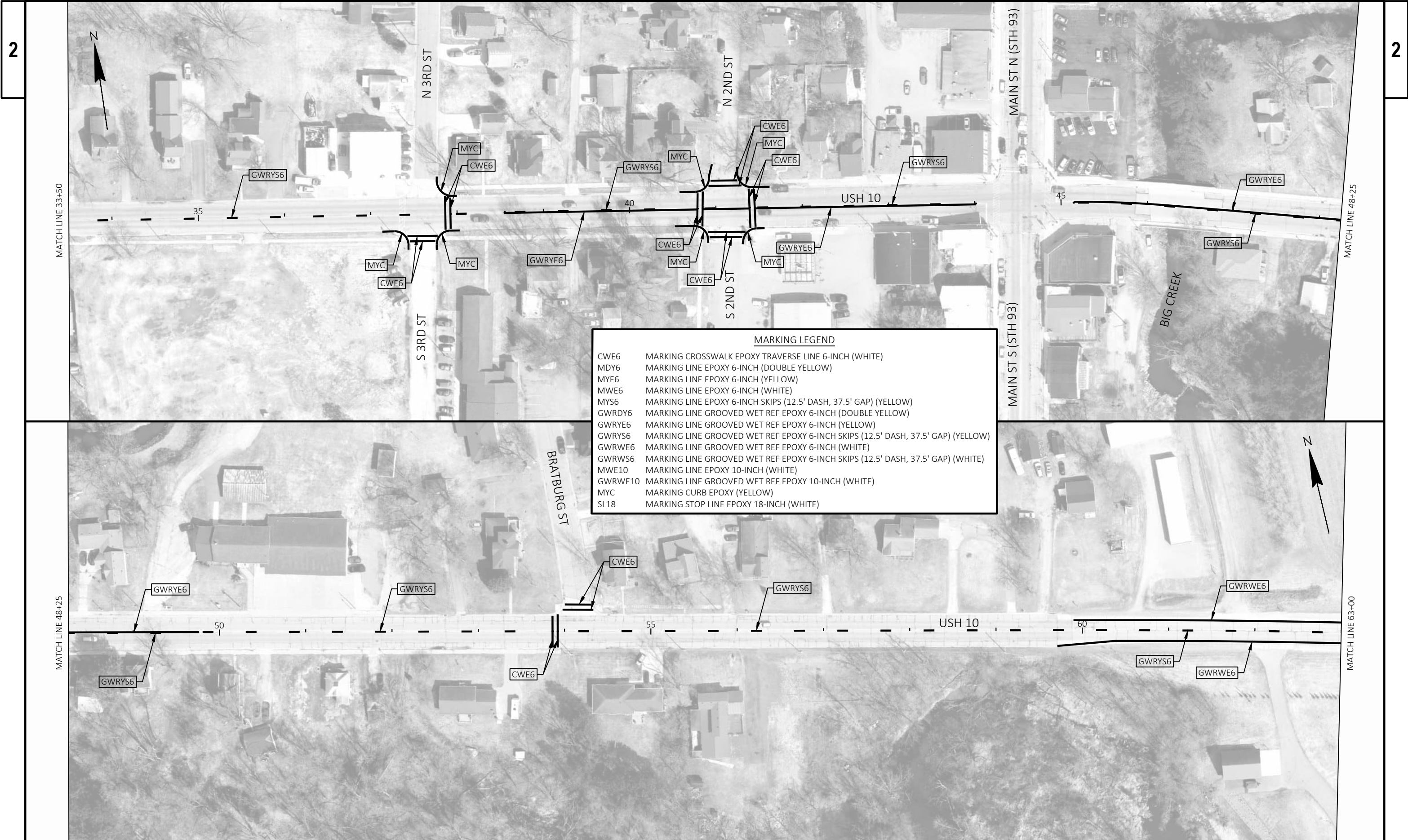








MARKING LEGEND	
CWE6	MARKING CROSSWALK EPOXY TRAVERSE LINE 6-INCH (WHITE)
MDY6	MARKING LINE EPOXY 6-INCH (DOUBLE YELLOW)
MYE6	MARKING LINE EPOXY 6-INCH (YELLOW)
MWE6	MARKING LINE EPOXY 6-INCH (WHITE)
MYS6	MARKING LINE EPOXY 6-INCH SKIPS (12.5' DASH, 37.5' GAP) (YELLOW)
GWRDY6	MARKING LINE GROOVED WET REF EPOXY 6-INCH (DOUBLE YELLOW)
GWRYE6	MARKING LINE GROOVED WET REF EPOXY 6-INCH (YELLOW)
GWRYS6	MARKING LINE GROOVED WET REF EPOXY 6-INCH SKIPS (12.5' DASH, 37.5' GAP) (YELLOW)
GWRWE6	MARKING LINE GROOVED WET REF EPOXY 6-INCH (WHITE)
GWRWS6	MARKING LINE GROOVED WET REF EPOXY 6-INCH SKIPS (12.5' DASH, 37.5' GAP) (WHITE)
MWE10	MARKING LINE EPOXY 10-INCH (WHITE)
GWRWE10	MARKING LINE GROOVED WET REF EPOXY 10-INCH (WHITE)
MYC	MARKING CURB EPOXY (YELLOW)
SL18	MARKING STOP LINE EPOXY 18-INCH (WHITE)



MARKING LEGEND	
CWE6	MARKING CROSSWALK EPOXY TRAVERSE LINE 6-INCH (WHITE)
MDY6	MARKING LINE EPOXY 6-INCH (DOUBLE YELLOW)
MYE6	MARKING LINE EPOXY 6-INCH (YELLOW)
MWE6	MARKING LINE EPOXY 6-INCH (WHITE)
MYS6	MARKING LINE EPOXY 6-INCH SKIPS (12.5' DASH, 37.5' GAP) (YELLOW)
GWRDY6	MARKING LINE GROOVED WET REF EPOXY 6-INCH (DOUBLE YELLOW)
GWRYE6	MARKING LINE GROOVED WET REF EPOXY 6-INCH (YELLOW)
GWRYS6	MARKING LINE GROOVED WET REF EPOXY 6-INCH SKIPS (12.5' DASH, 37.5' GAP) (YELLOW)
GWRWE6	MARKING LINE GROOVED WET REF EPOXY 6-INCH (WHITE)
GWRWS6	MARKING LINE GROOVED WET REF EPOXY 6-INCH SKIPS (12.5' DASH, 37.5' GAP) (WHITE)
MWE10	MARKING LINE EPOXY 10-INCH (WHITE)
GWRWE10	MARKING LINE GROOVED WET REF EPOXY 10-INCH (WHITE)
MYC	MARKING CURB EPOXY (YELLOW)
SL18	MARKING STOP LINE EPOXY 18-INCH (WHITE)



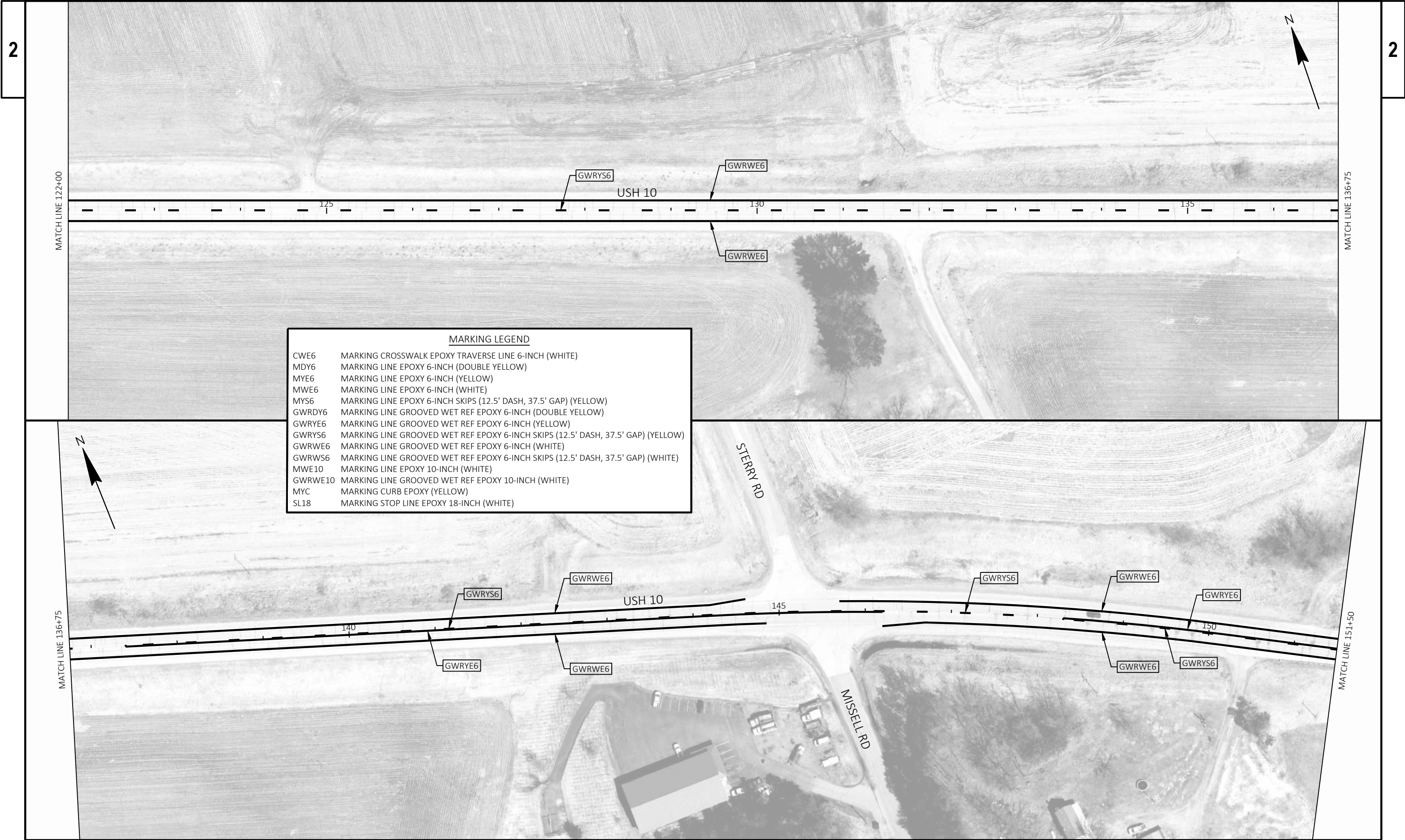
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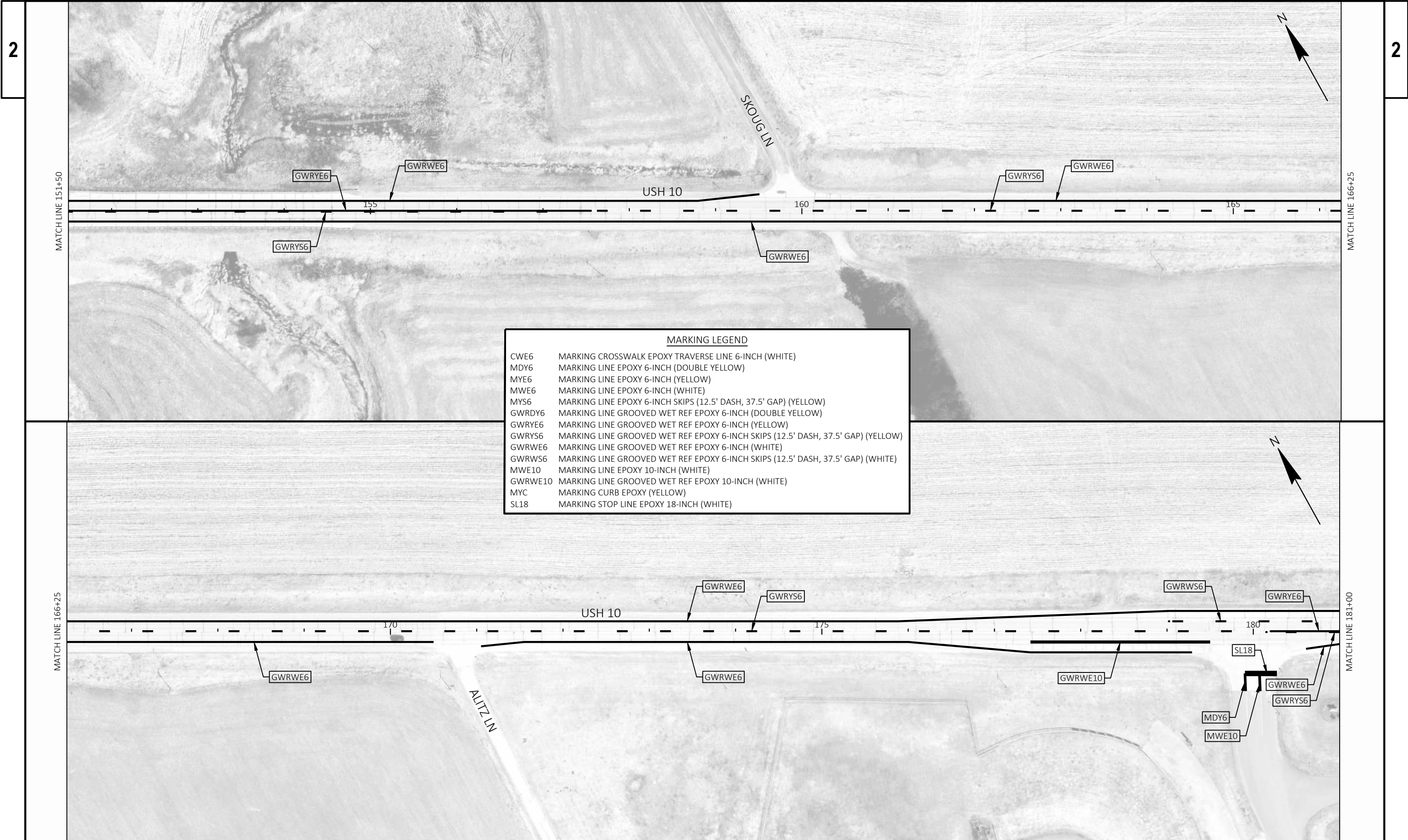
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MARKING LEGEND	
CWE6	MARKING CROSSWALK EPOXY TRAVERSE LINE 6-INCH (WHITE)
MDY6	MARKING LINE EPOXY 6-INCH (DOUBLE YELLOW)
MYE6	MARKING LINE EPOXY 6-INCH (YELLOW)
MWE6	MARKING LINE EPOXY 6-INCH (WHITE)
MYS6	MARKING LINE EPOXY 6-INCH SKIPS (12.5' DASH, 37.5' GAP) (YELLOW)
GWRDY6	MARKING LINE GROOVED WET REF EPOXY 6-INCH (DOUBLE YELLOW)
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GWRWE10	MARKING LINE GROOVED WET REF EPOXY 10-INCH (WHITE)
MYC	MARKING CURB EPOXY (YELLOW)
SL18	MARKING STOP LINE EPOXY 18-INCH (WHITE)

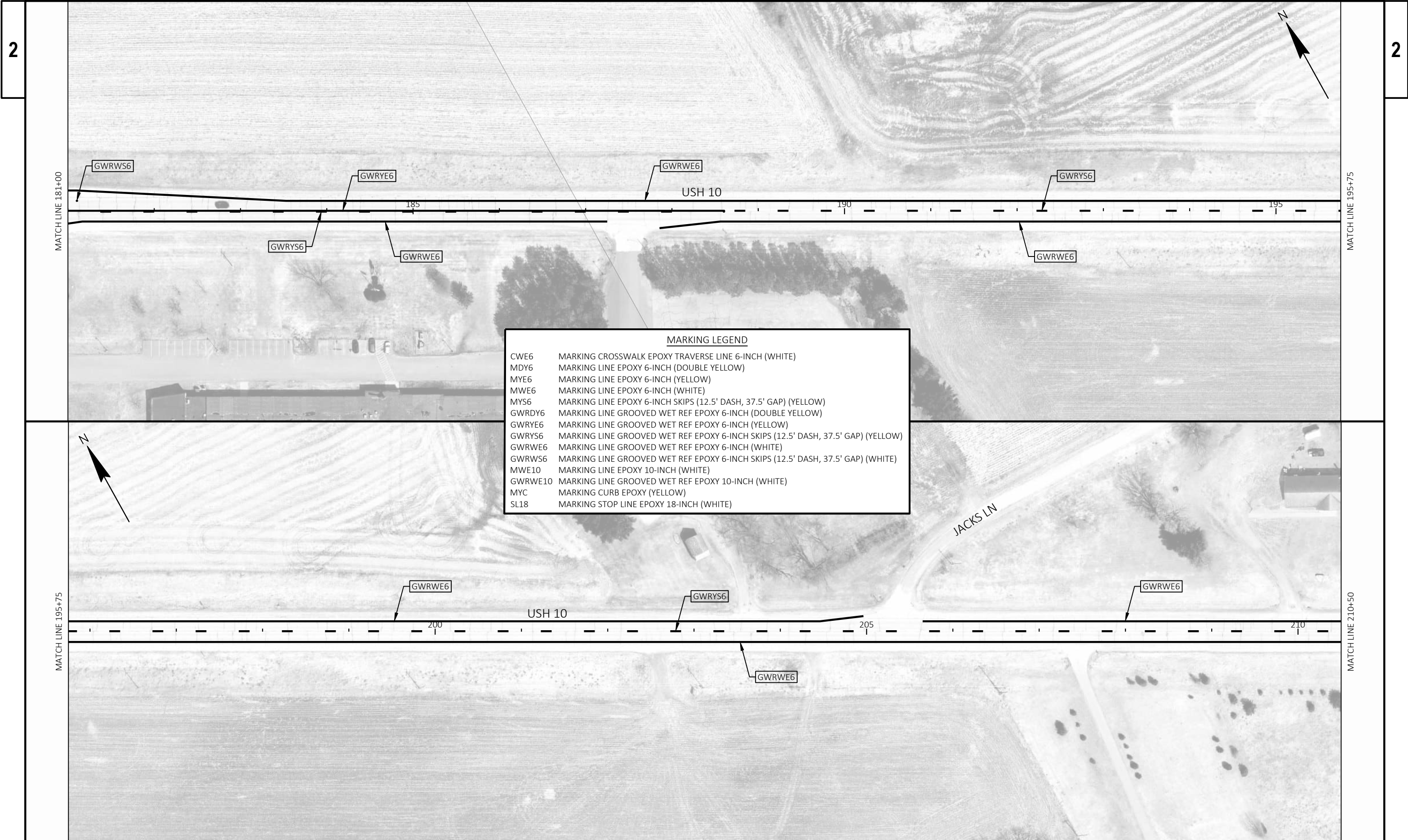


MARKING LEGEND	
CWE6	MARKING CROSSWALK EPOXY TRAVERSE LINE 6-INCH (WHITE)
MDY6	MARKING LINE EPOXY 6-INCH (DOUBLE YELLOW)
MYE6	MARKING LINE EPOXY 6-INCH (YELLOW)
MWE6	MARKING LINE EPOXY 6-INCH (WHITE)
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SL18	MARKING STOP LINE EPOXY 18-INCH (WHITE)

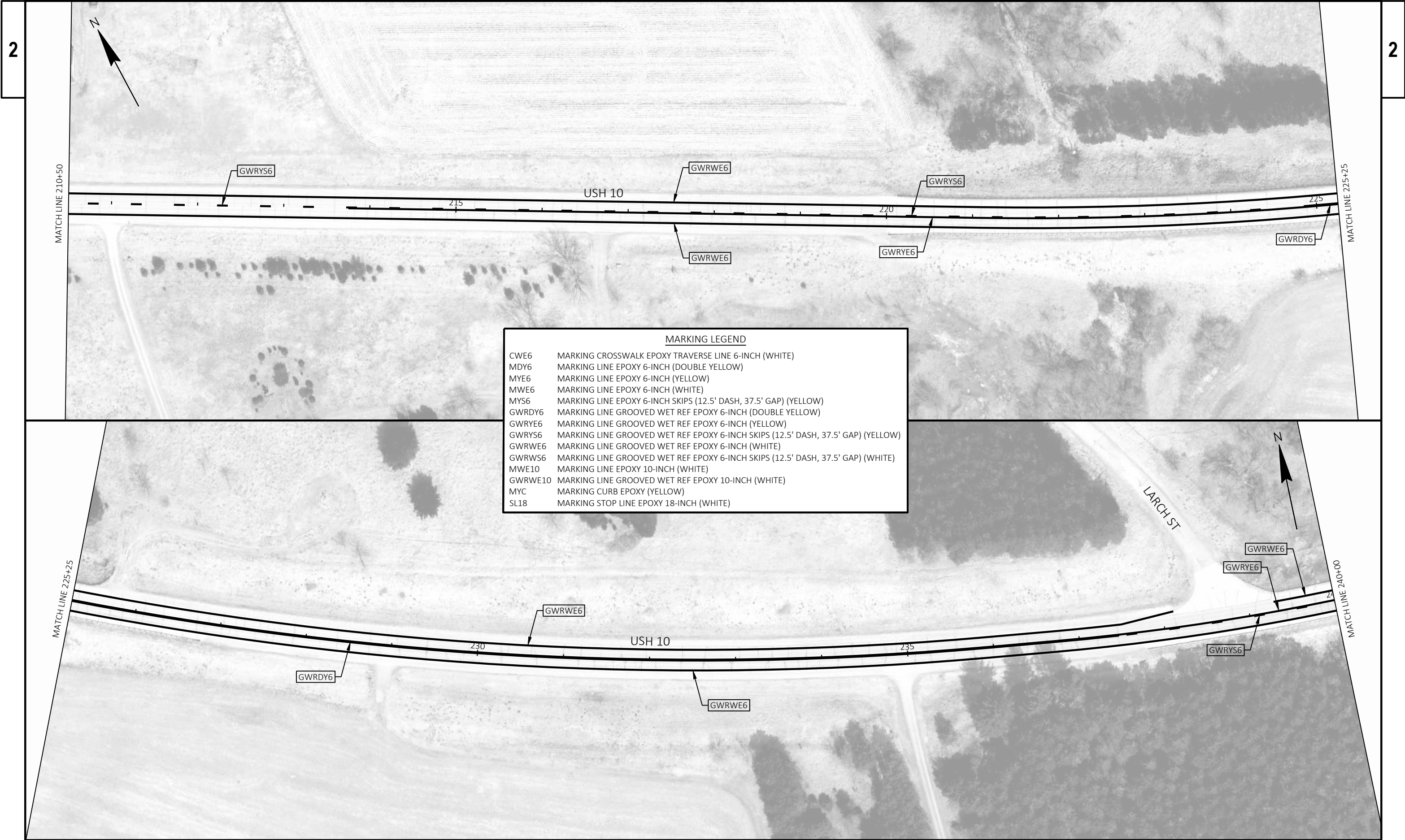




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MDY6	MARKING LINE EPOXY 6-INCH (DOUBLE YELLOW)
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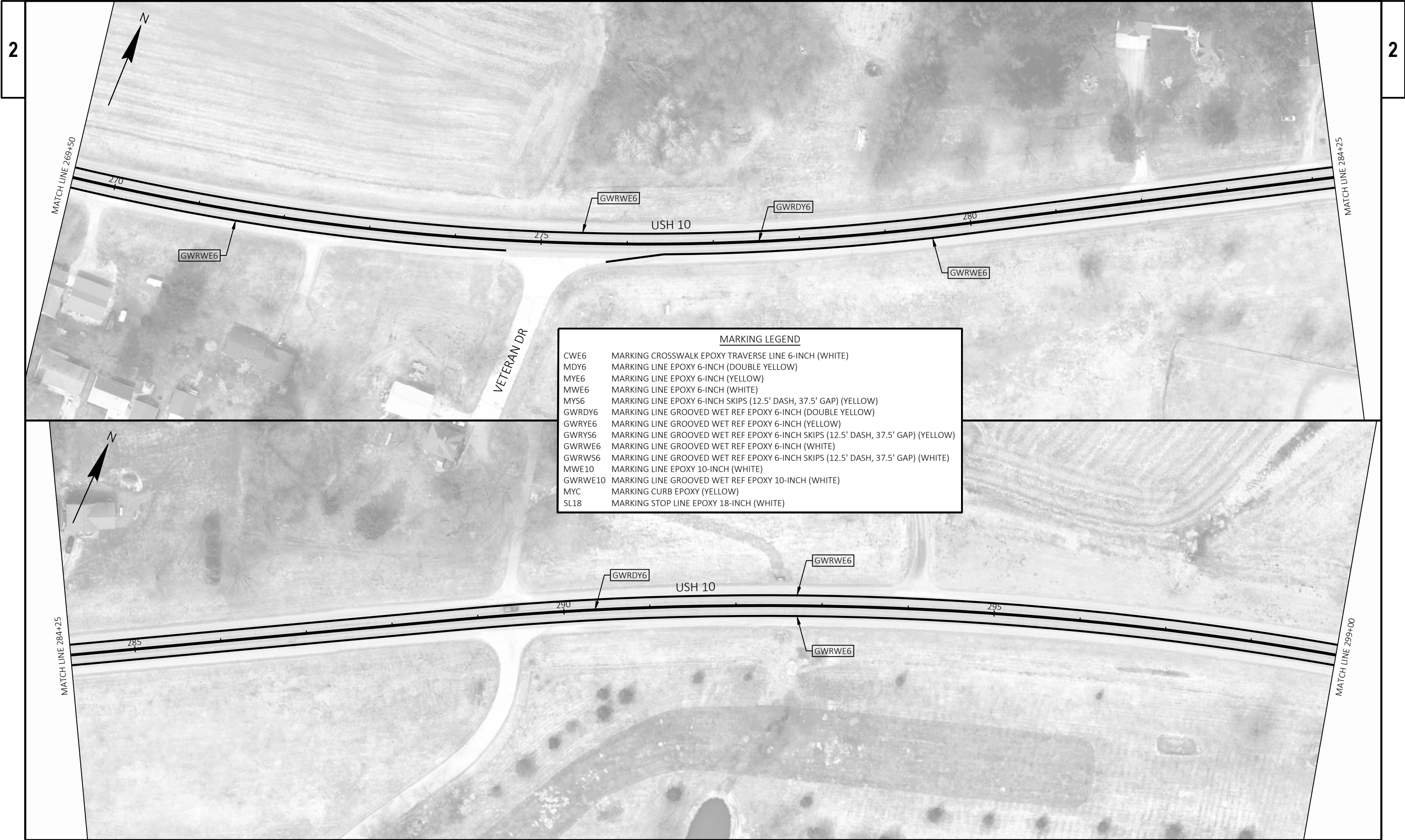


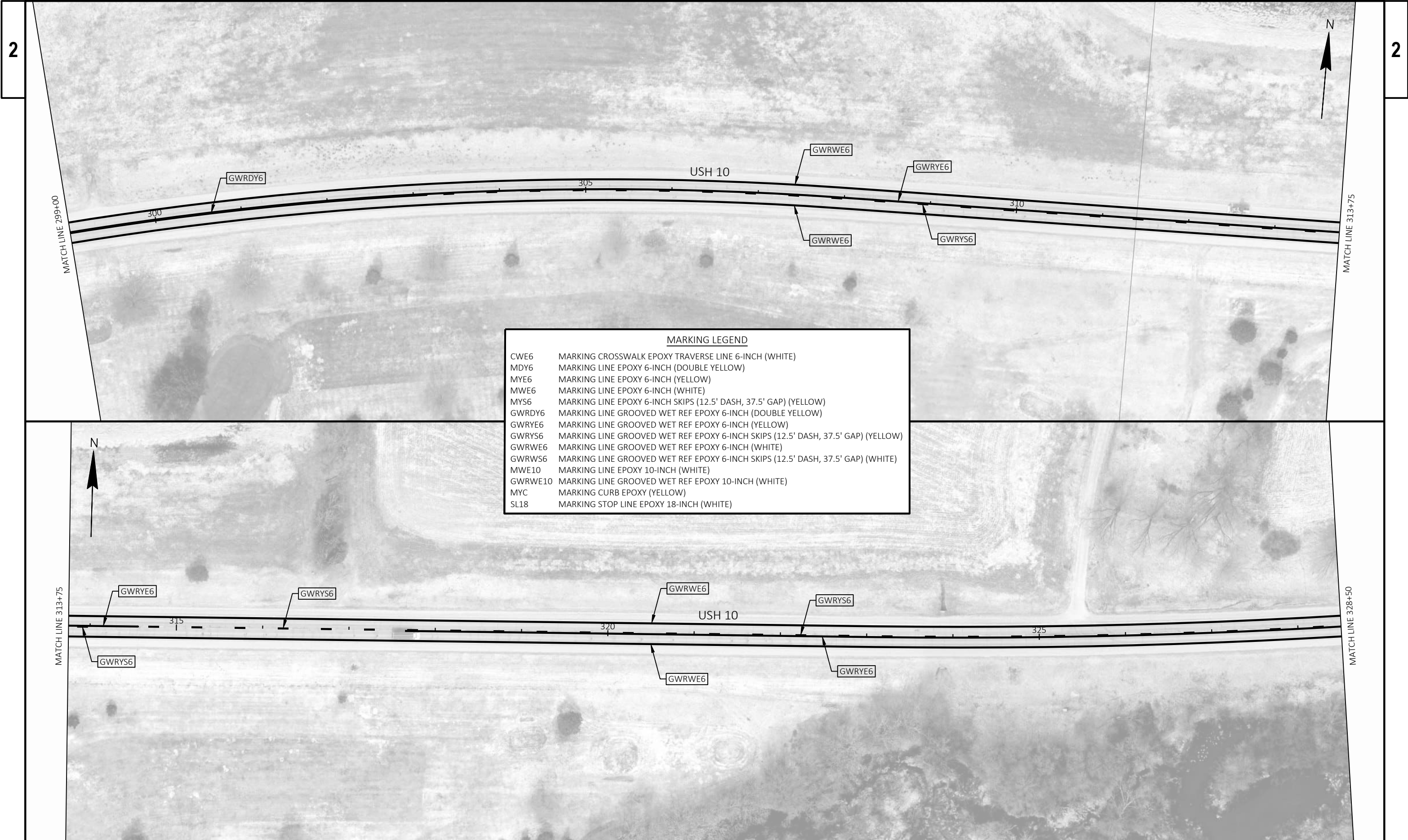
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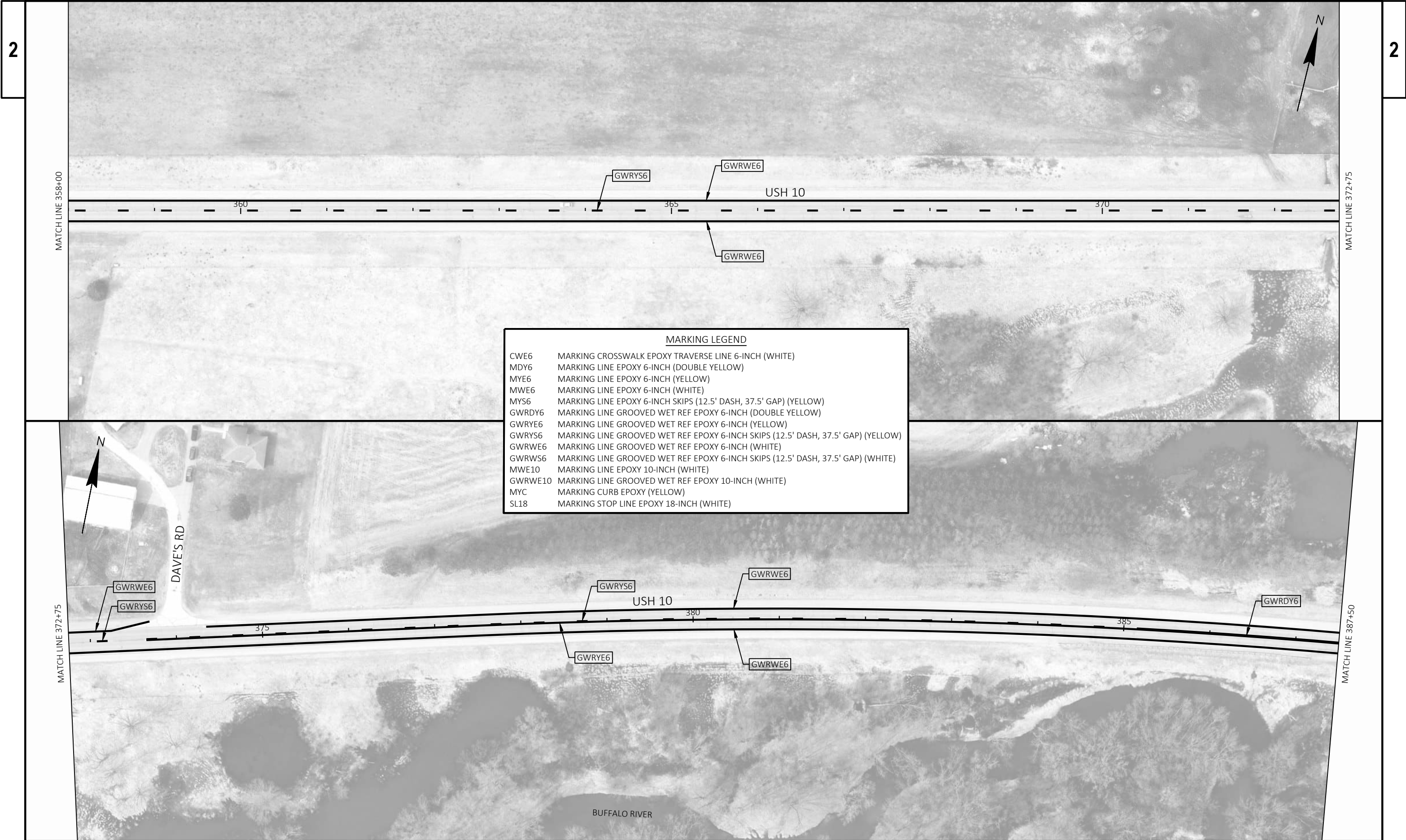




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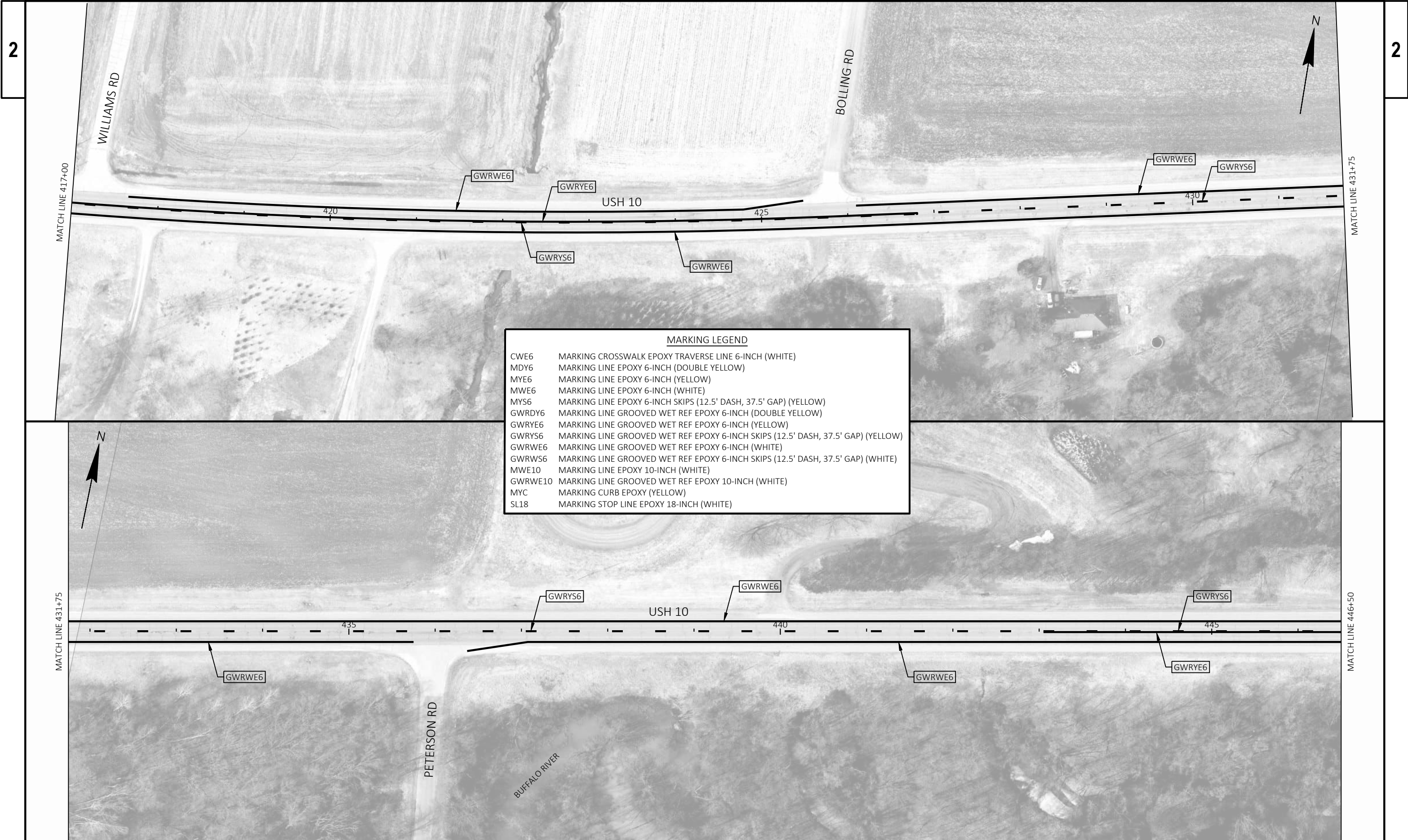
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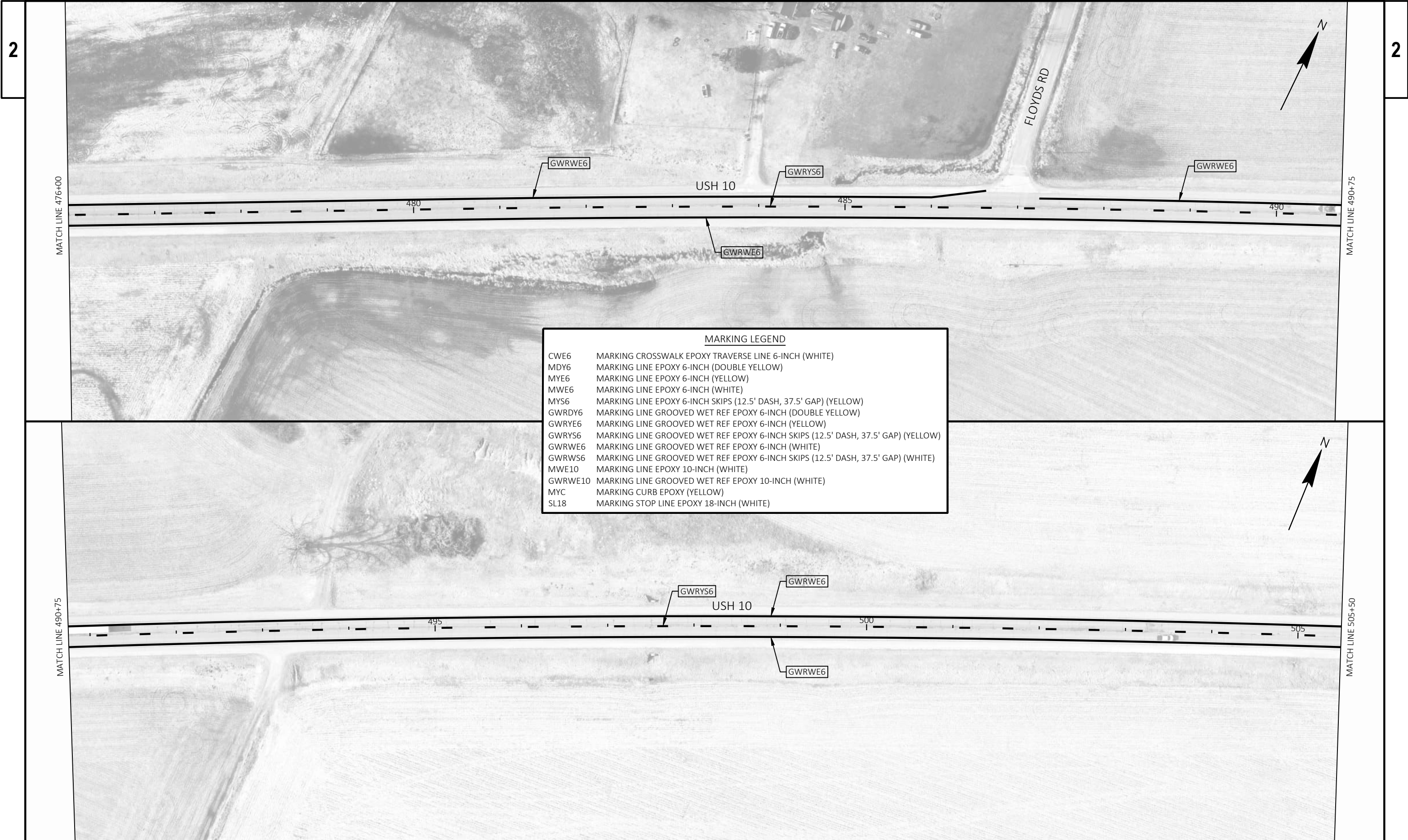
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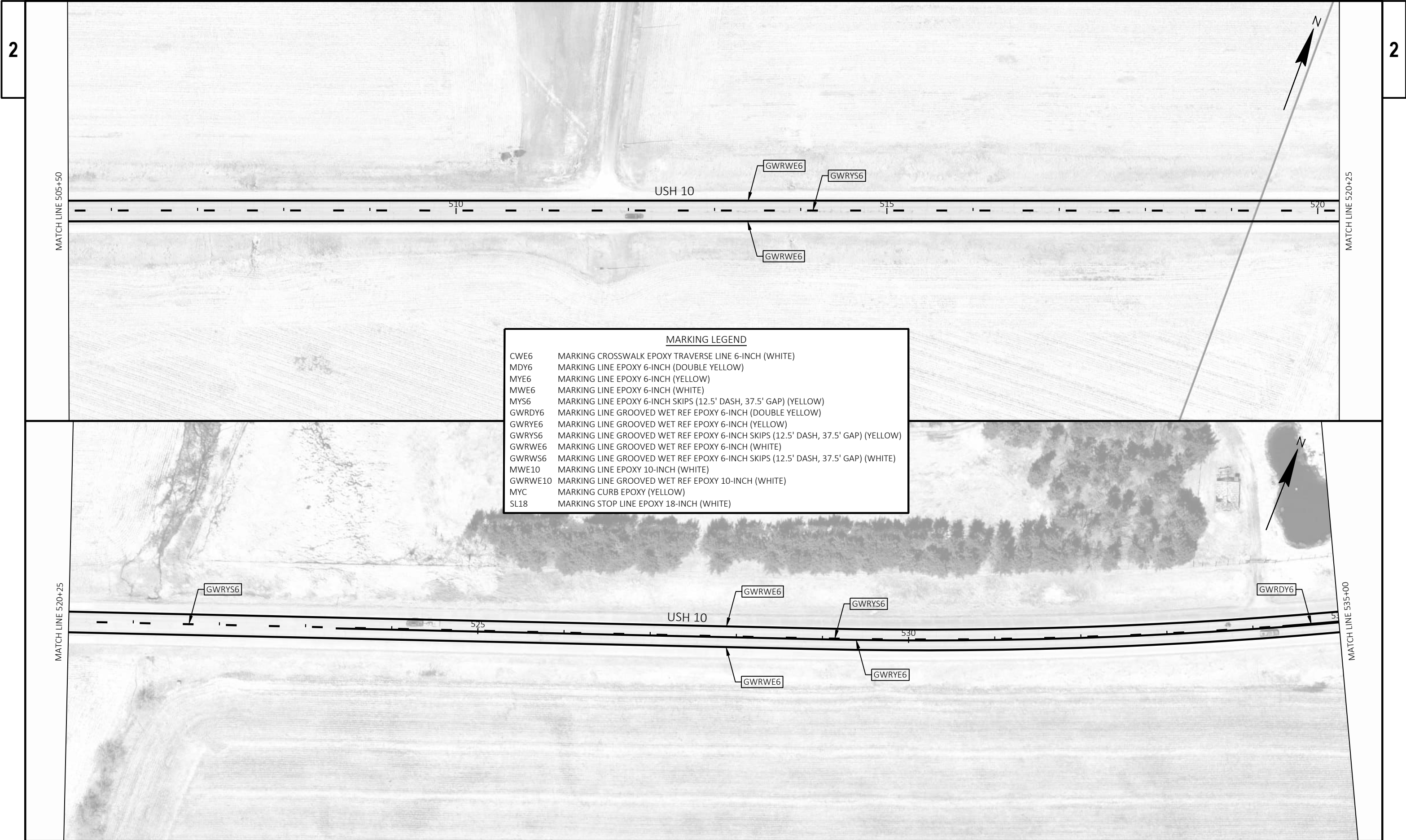


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CWE6	MARKING CROSSWALK EPOXY TRAVERSE LINE 6-INCH (WHITE)
MDY6	MARKING LINE EPOXY 6-INCH (DOUBLE YELLOW)
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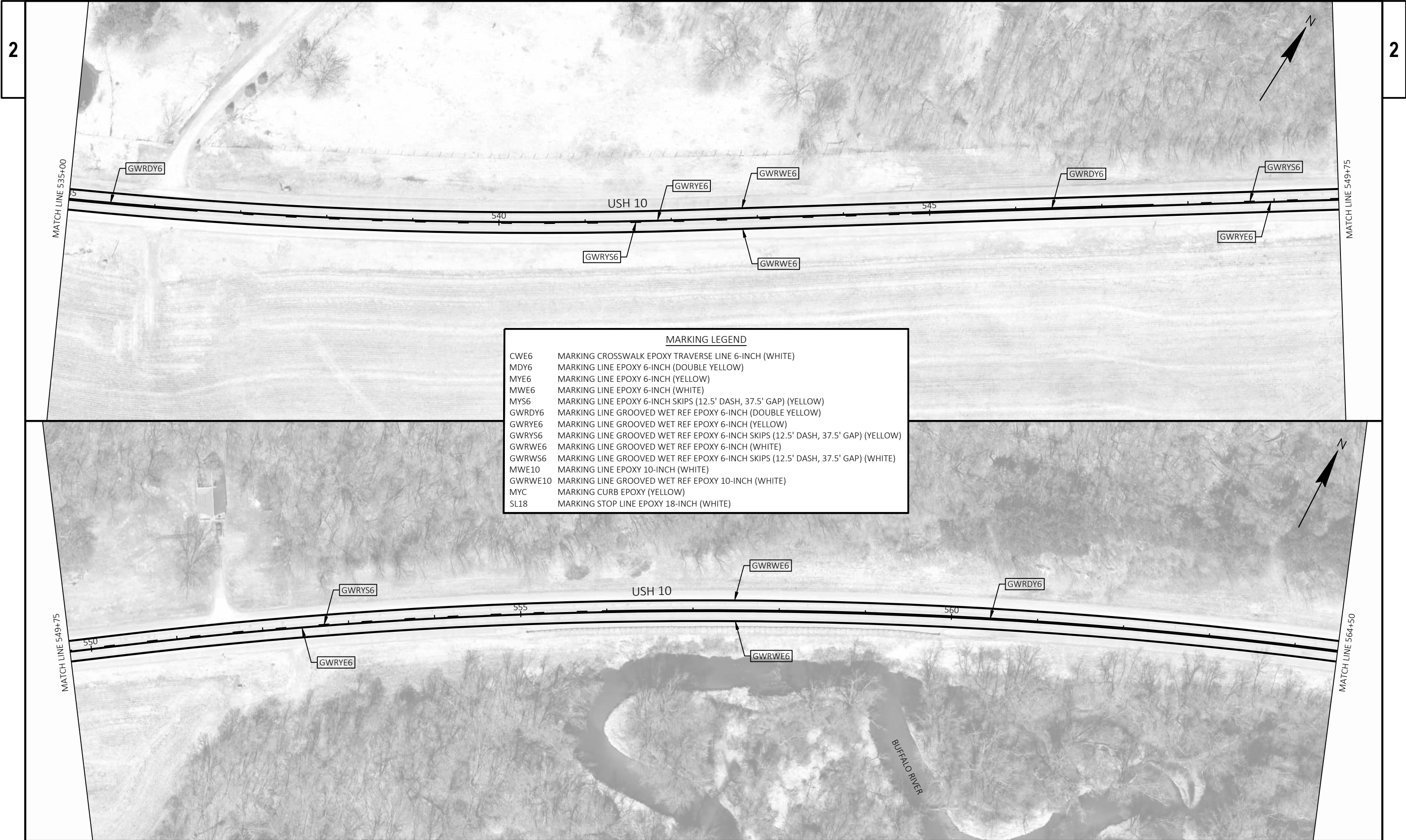
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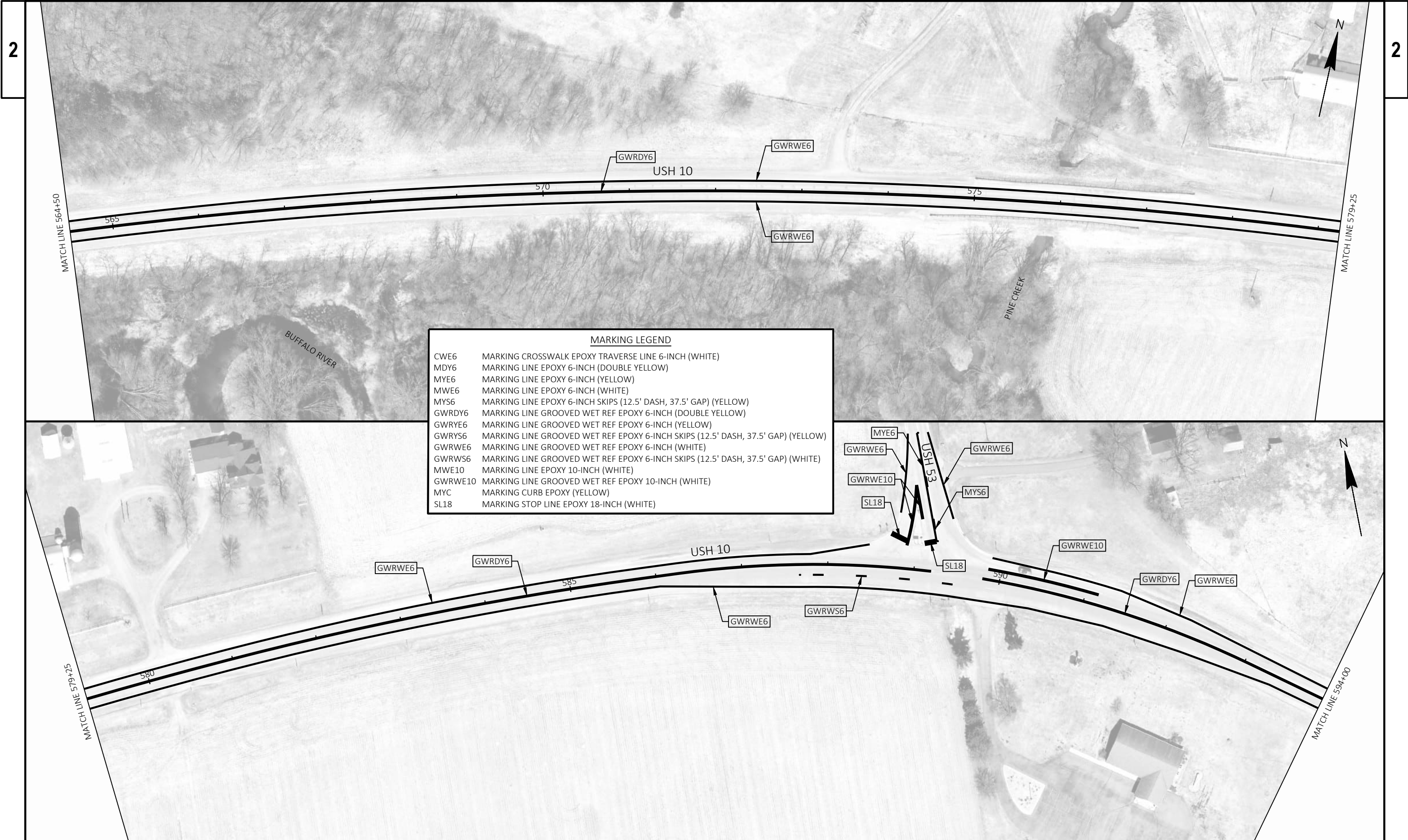
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MARKING LEGEND	
CWE6	MARKING CROSSWALK EPOXY TRAVERSE LINE 6-INCH (WHITE)
MDY6	MARKING LINE EPOXY 6-INCH (DOUBLE YELLOW)
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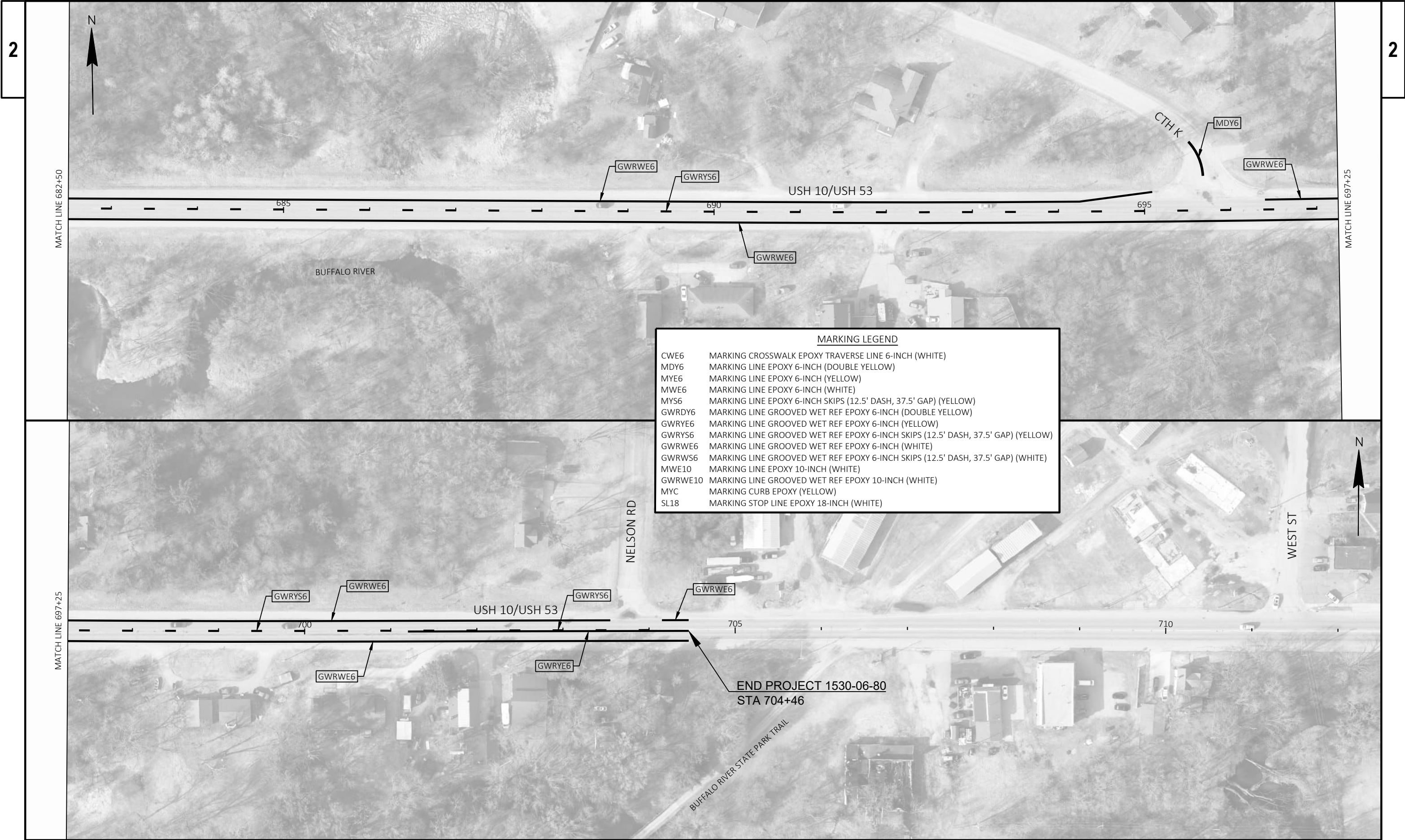
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MARKING LEGEND	
CWE6	MARKING CROSSWALK EPOXY TRAVERSE LINE 6-INCH (WHITE)
MDY6	MARKING LINE EPOXY 6-INCH (DOUBLE YELLOW)
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SL18	MARKING STOP LINE EPOXY 18-INCH (WHITE)



MARKING LEGEND	
CWE6	MARKING CROSSWALK EPOXY TRAVERSE LINE 6-INCH (WHITE)
MDY6	MARKING LINE EPOXY 6-INCH (DOUBLE YELLOW)
MYE6	MARKING LINE EPOXY 6-INCH (YELLOW)
MWE6	MARKING LINE EPOXY 6-INCH (WHITE)
MYS6	MARKING LINE EPOXY 6-INCH SKIPS (12.5' DASH, 37.5' GAP) (YELLOW)
GWRDY6	MARKING LINE GROOVED WET REF EPOXY 6-INCH (DOUBLE YELLOW)
GWRYE6	MARKING LINE GROOVED WET REF EPOXY 6-INCH (YELLOW)
GWRYS6	MARKING LINE GROOVED WET REF EPOXY 6-INCH SKIPS (12.5' DASH, 37.5' GAP) (YELLOW)
GWRWE6	MARKING LINE GROOVED WET REF EPOXY 6-INCH (WHITE)
GWRWS6	MARKING LINE GROOVED WET REF EPOXY 6-INCH SKIPS (12.5' DASH, 37.5' GAP) (WHITE)
MWE10	MARKING LINE EPOXY 10-INCH (WHITE)
GWRWE10	MARKING LINE GROOVED WET REF EPOXY 10-INCH (WHITE)
MYC	MARKING CURB EPOXY (YELLOW)
SL18	MARKING STOP LINE EPOXY 18-INCH (WHITE)

Estimate Of Quantities

1530-06-80

Line	Item	Item Description	Unit	Total	Qty
0002	203.0100	Removing Small Pipe Culverts	EACH	2.000	2.000
0004	204.0100	Removing Concrete Pavement	SY	31.000	31.000
0006	204.0110	Removing Asphaltic Surface	SY	3,255.000	3,255.000
0008	204.0115	Removing Asphaltic Surface Butt Joints	SY	6,385.000	6,385.000
0010	204.0120	Removing Asphaltic Surface Milling	SY	242,155.000	242,155.000
0012	204.0150	Removing Curb & Gutter	LF	522.000	522.000
0014	204.0155	Removing Concrete Sidewalk	SY	185.000	185.000
0016	204.0165	Removing Guardrail	LF	340.000	340.000
0018	211.0101	Prepare Foundation for Asphaltic Paving (project) 01. 1530-06-80	EACH	1.000	1.000
0020	211.0400	Prepare Foundation for Asphaltic Shoulders	STA	1,120.000	1,120.000
0022	213.0100	Finishing Roadway (project) 01. 1530-06-80	EACH	1.000	1.000
0024	305.0110	Base Aggregate Dense 3/4-Inch	TON	3,500.000	3,500.000
0026	305.0120	Base Aggregate Dense 1 1/4-Inch	TON	100.000	100.000
0028	455.0605	Tack Coat	GAL	36,700.000	36,700.000
0030	460.0105.S	HMA Percent Within Limits (PWL) Test Strip Volumetrics	EACH	1.000	1.000
0032	460.0110.S	HMA Percent Within Limits (PWL) Test Strip Density	EACH	2.000	2.000
0034	460.2005	Incentive Density PWL HMA Pavement	DOL	39,550.000	39,550.000
0036	460.2007	Incentive Density HMA Pavement Longitudinal Joints	DOL	27,870.000	27,870.000
0038	460.2010	Incentive Air Voids HMA Pavement	DOL	58,630.000	58,630.000
0040	460.6644	HMA Pavement 4 MT 58-34 V	TON	58,630.000	58,630.000
0042	460.9000.S	Material Transfer Vehicle	EACH	1.000	1.000
0044	465.0105	Asphaltic Surface	TON	1,050.000	1,050.000
0046	465.0110	Asphaltic Surface Patching	TON	400.000	400.000
0048	465.0120	Asphaltic Surface Driveways and Field Entrances	TON	660.000	660.000
0050	465.0310	Asphaltic Curb	LF	150.000	150.000
0052	465.0315	Asphaltic Flumes	SY	51.000	51.000
0054	465.0520	Asphaltic Rumble Strips, Shoulder	LF	107,000.000	107,000.000
0056	465.0560	Asphaltic Rumble Strips, Centerline	LF	54,000.000	54,000.000
0058	504.0900	Concrete Masonry Endwalls	CY	5.000	5.000
0060	520.8000	Concrete Collars for Pipe	EACH	26.000	26.000
0062	520.8700	Cleaning Culvert Pipes	EACH	24.000	24.000
0064	522.0118	Culvert Pipe Reinforced Concrete Class III 18-Inch	LF	38.000	38.000
0066	522.1018	Apron Endwalls for Culvert Pipe Reinforced Concrete 18-Inch	EACH	2.000	2.000
0068	522.1024	Apron Endwalls for Culvert Pipe Reinforced Concrete 24-Inch	EACH	11.000	11.000
0070	522.1030	Apron Endwalls for Culvert Pipe Reinforced Concrete 30-Inch	EACH	1.000	1.000
0072	524.0124	Culvert Pipe Salvaged 24-Inch	LF	80.000	80.000
0074	524.0130	Culvert Pipe Salvaged 30-Inch	LF	40.000	40.000
0076	601.0411	Concrete Curb & Gutter 30-Inch Type D	LF	522.000	522.000
0078	601.0600	Concrete Curb Pedestrian	LF	95.000	95.000
0080	602.0410	Concrete Sidewalk 5-Inch	SF	1,790.000	1,790.000
0082	602.0505	Curb Ramp Detectable Warning Field Yellow	SF	170.000	170.000
0084	602.0605	Curb Ramp Detectable Warning Field Radial Yellow	SF	22.390	22.390
0086	602.0810	Concrete Driveway 6-Inch	SY	31.000	31.000
0088	606.0200	Riprap Medium	CY	95.000	95.000
0090	611.8110	Adjusting Manhole Covers	EACH	9.000	9.000
0092	611.8115	Adjusting Inlet Covers	EACH	9.000	9.000
0094	611.8120.S	Cover Plates Temporary	EACH	18.000	18.000
0096	614.0010	Barrier System Grading Shaping Finishing	EACH	5.000	5.000
0098	614.0400	Adjusting Steel Plate Beam Guard	LF	5,545.000	5,545.000

Estimate Of Quantities

1530-06-80

Line	Item	Item Description	Unit	Total	Qty
0100	614.0950	Replacing Guardrail Posts and Blocks	EACH	200.000	200.000
0102	614.0951	Replacing Guardrail Rail and Hardware	LF	560.000	560.000
0104	614.0952	Replacing Guardrail Reflectors	EACH	200.000	200.000
0106	614.2300	MGS Guardrail 3	LF	225.000	225.000
0108	614.2310	MGS Guardrail 3 HS	LF	62.500	62.500
0110	614.2350	MGS Guardrail Short Radius	LF	72.000	72.000
0112	614.2500	MGS Thrie Beam Transition	LF	157.600	157.600
0114	614.2610	MGS Guardrail Terminal EAT	EACH	5.000	5.000
0116	614.2630	MGS Guardrail Short Radius Terminal	EACH	1.000	1.000
0118	614.8010	Anchor Post Assembly Top Mount	EACH	7.000	7.000
0120	615.0300	Guard Posts Timber	EACH	20.000	20.000
0122	618.0100	Maintenance and Repair of Haul Roads (project) 01. 1530-06-80	EACH	1.000	1.000
0124	619.1000	Mobilization	EACH	1.000	1.000
0126	624.0100	Water	MGAL	55.000	55.000
0128	625.0100	Topsoil	SY	850.000	850.000
0130	628.1504	Silt Fence	LF	2,636.000	2,636.000
0132	628.1520	Silt Fence Maintenance	LF	1,318.000	1,318.000
0134	628.1905	Mobilizations Erosion Control	EACH	6.000	6.000
0136	628.1910	Mobilizations Emergency Erosion Control	EACH	3.000	3.000
0138	628.2008	Erosion Mat Urban Class I Type B	SY	850.000	850.000
0140	628.7005	Inlet Protection Type A	EACH	12.000	12.000
0142	628.7555	Culvert Pipe Checks	EACH	50.000	50.000
0144	629.0210	Fertilizer Type B	CWT	0.600	0.600
0146	630.0120	Seeding Mixture No. 20	LB	25.000	25.000
0148	630.0200	Seeding Temporary	LB	25.000	25.000
0150	630.0500	Seed Water	MGAL	25.000	25.000
0152	633.5200	Markers Culvert End	EACH	18.000	18.000
0154	634.0808	Posts Tubular Steel 2x2-Inch X 8-FT	EACH	2.000	2.000
0156	637.2210	Signs Type II Reflective H	SF	11.000	11.000
0158	638.2102	Moving Signs Type II	EACH	17.000	17.000
0160	638.4000	Moving Small Sign Supports	EACH	15.000	15.000
0162	642.5001	Field Office Type B	EACH	1.000	1.000
0164	643.0300	Traffic Control Drums	DAY	3,500.000	3,500.000
0166	643.0420	Traffic Control Barricades Type III	DAY	200.000	200.000
0168	643.0705	Traffic Control Warning Lights Type A	DAY	400.000	400.000
0170	643.0715	Traffic Control Warning Lights Type C	DAY	700.000	700.000
0172	643.0900	Traffic Control Signs	DAY	12,000.000	12,000.000
0174	643.1000	Traffic Control Signs Fixed Message	SF	32.000	32.000
0176	643.3165	Temporary Marking Line Paint 6-Inch	LF	176,500.000	176,500.000
0178	643.3180	Temporary Marking Line Removable Tape 6-Inch	LF	5,500.000	5,500.000
0180	643.3980	Temporary Marking Removable Mask Out Tape 8-Inch	LF	3,000.000	3,000.000
0182	643.5000	Traffic Control	EACH	1.000	1.000
0184	644.1440	Temporary Pedestrian Surface Matting	SF	400.000	400.000
0186	644.1601	Temporary Pedestrian Curb Ramp	DAY	200.000	200.000
0188	644.1605	Temporary Pedestrian Detectable Warning Field	SF	200.000	200.000
0190	644.1810	Temporary Pedestrian Barricade	LF	1,300.000	1,300.000
0192	645.0120	Geotextile Type HR	SY	175.000	175.000
0194	646.2020	Marking Line Epoxy 6-Inch	LF	630.000	630.000
0196	646.2040	Marking Line Grooved Wet Ref Epoxy 6-Inch	LF	195,800.000	195,800.000

Estimate Of Quantities

1530-06-80

Line	Item	Item Description	Unit	Total	Qty
0198	646.4020	Marking Line Epoxy 10-Inch	LF	20.000	20.000
0200	646.4040	Marking Line Grooved Wet Ref Epoxy 10-Inch	LF	925.000	925.000
0202	646.6120	Marking Stop Line Epoxy 18-Inch	LF	75.000	75.000
0204	646.7420	Marking Crosswalk Epoxy Transverse Line 6-Inch	LF	755.000	755.000
0206	646.8120	Marking Curb Epoxy	LF	330.000	330.000
0208	648.0100	Locating No-Passing Zones	MI	13.300	13.300
0210	650.5500	Construction Staking Curb Gutter and Curb & Gutter	LF	617.000	617.000
0212	650.6000	Construction Staking Pipe Culverts	EACH	17.000	17.000
0214	650.8000	Construction Staking Resurfacing Reference	LF	69,996.000	69,996.000
0216	650.9000	Construction Staking Curb Ramps	EACH	12.000	12.000
0218	650.9500	Construction Staking Sidewalk (project) 01. 1530-06-80	EACH	1.000	1.000
0220	650.9911	Construction Staking Supplemental Control (project) 01. 1530-06-80	EACH	1.000	1.000
0222	690.0150	Sawing Asphalt	LF	4,665.000	4,665.000
0224	690.0250	Sawing Concrete	LF	160.000	160.000
0226	740.0440	Incentive IRI Ride	DOL	52,776.000	52,776.000
0228	ASP.1T0A	On-the-Job Training Apprentice at \$5.00/HR	HRS	2,400.000	2,400.000
0230	ASP.1T0G	On-the-Job Training Graduate at \$5.00/HR	HRS	2,100.000	2,100.000
0232	SPV.0060	Special 01. Ditch Cleaning	EACH	33.000	33.000
0234	SPV.0060	Special 02. Remove Wayside Posts	EACH	20.000	20.000
0236	SPV.0060	Special 03. Adjusting Sanitary Sewer Manhole Covers	EACH	13.000	13.000
0238	SPV.0060	Special 04. Adjusting Water Valve Boxes	EACH	8.000	8.000
0240	SPV.0060	Special 05. Grading Shaping and Finishing for Curb Ramps	EACH	12.000	12.000
0242	SPV.0090	Special 01. Remove and Replace Existing Beam Guard	LF	25.000	25.000
0244	SPV.0180	Special 01. Remove Riprap	SY	18.000	18.000

REMOVING ASPHALTIC SURFACE MILLING

204.0120 REMOVING ASPHALTIC SURFACE MILLING						
CATEGORY	STATION	TO	STATION	LOCATION	SY	REMARKS
0010	5+00	-	43+91	CL	14,180	
0010	45+24	-	45+76	CL	140	
0010	46+96	-	59+66	CL	3,440	
0010	60+16	-	257+72	CL	65,860	
0010	259+56	-	671+46	CL	137,300	
0010	672+76	-	703+96	CL	10,400	
0010	150+64	-	154+83	RT	250	BEAMGUARD WIDENING
0010	151+37	-	154+90	LT	190	BEAMGUARD WIDENING
0010	176+36	-	182+94	LT	420	TURN LANE
0010	176+37	-	179+29	RT	280	TURN LANE
0010	220+00	-	226+86	RT	310	BEAMGUARD WIDENING
0010	220+09	-	225+69	LT	390	BEAMGUARD WIDENING
0010	237+69	-	257+73	RT	1,210	BEAMGUARD WIDENING
0010	239+36	-	245+44	LT	380	BEAMGUARD WIDENING
0010	257+13	-	257+72	LT	50	BEAMGUARD WIDENING
0010	259+56	-	260+28	RT	84	BEAMGUARD WIDENING
0010	261+73	-	265+38	LT	230	TURN LANE
0010	336+17	-	340+90	RT	310	BEAMGUARD WIDENING
0010	384+13	-	287+19	RT	190	BEAMGUARD WIDENING
0010	484+14	-	486+64	LT	51	BEAMGUARD WIDENING
0010	555+00	-	559+90	RT	260	BEAMGUARD WIDENING
0010	574+45	-	576+99	RT	160	BEAMGUARD WIDENING
0010	574+95	-	577+61	LT	170	BEAMGUARD WIDENING
0010	586+11	-	593+17	RT	680	TURN LANE
0010	589+88	-	594+56	LT	280	TURN LANE
0010	598+71	-	608+00	LT	550	TURN LANE
0010	669+78	-	671+45	RT	130	BEAMGUARD WIDENING
0010	670+16	-	671+45	LT	83	BEAMGUARD WIDENING
0010	672+45	-	674+09	RT	98	BEAMGUARD WIDENING
0010	672+75	-	674+27	LT	89	BEAMGUARD WIDENING
0010	S 5TH ST			RT	140	SIDEROAD
0010	N 3RD ST			LT	160	SIDEROAD
0010	S 3RD ST			RT	150	SIDEROAD
0010	S 2ND ST			RT	180	SIDEROAD
0010	N 2ND ST			LT	180	SIDEROAD
0010	BRATBERG ST			LT	160	SIDEROAD
0010	5TH AVE N (CTH D)			LT	520	SIDEROAD
0010	5TH AVE S (CTH D)			RT	480	SIDEROAD
0010	USH 53 NORTH			LT	990	SIDEROAD
0010	TRACEY VALLEY ROAD			RT	480	SIDEROAD
0010	CTH K			LT	550	SIDEROAD
TOTAL 0010					242,155	

REMOVING ASPHALTIC SURFACE BUTT JOINTS

204.0115 REMOVING ASPHALTIC SURFACE BUTT JOINTS						
CATEGORY	STATION	TO	STATION	LOCATION	SY	REMARKS
0010	4+50	-	5+00	CL	190	
0010	43+91	-	44+01	CL	27	
0010	45+15	-	45+25	CL	27	
0010	45+66	-	45+86	CL	62	
0010	46+87	-	47+07	CL	63	
0010	257+72	-	258+37	CL	309	
0010	258+91	-	259+56	CL	299	
0010	671+46	-	691+96	CL	244	
0010	672+25	-	672+75	CL	244	
0010	703+96	-	704+46	CL	167	
0010		HUNT LANE		RT	269	SIDEROAD
0010		7TH STREET		RT	102	SIDEROAD
0010		6TH STREET		RT	84	SIDEROAD
0010		5TH STREET		RT	34	SIDEROAD
0010		S 3RD STREET		RT	36	SIDEROAD
0010		N 3RD STREET		LT	28	SIDEROAD
0010		S 2ND STREET		RT	46	SIDEROAD
0010		N 2ND STREET		LT	28	SIDEROAD
0010		BRATBERG STREET		LT	28	SIDEROAD
0010		STERRY ROAD		LT	264	SIDEROAD
0010		MISSEL ROAD		RT	405	SIDEROAD
0010		SKOUG LANE		LT	138	SIDEROAD
0010		ALITZ LANE		RT	132	SIDEROAD
0010		E-S WEST ENTRANCE		RT	425	SIDEROAD
0010		E-S EAST ENTRANCE		RT	165	SIDEROAD
0010		JACKS LANE		LT	164	SIDEROAD
0010		LARCH ROAD		LT	350	SIDEROAD
0010		5TH AVE N (CTH D)		LT	40	SIDEROAD
0010		5TH AVE S (CTH D)		RT	53	SIDEROAD
0010		VETERANS DRIVE		RT	357	SIDEROAD
0010		DAVES ROAD		LT	132	SIDEROAD
0010		WILLIAMS ROAD		LT	168	SIDEROAD
0010		BOLLING ROAD		LT	139	SIDEROAD
0010		PETERSON ROAD		RT	207	SIDEROAD
0010		FLOYDS ROAD		LT	176	SIDEROAD
0010		USH 53 NORTH		LT	33	SIDEROAD
0010		TRACEY VALLEY ROAD		RT	27	SIDEROAD
0010		GILBERT ROAD		LT	271	SIDEROAD
0010		CTH O		RT	27	SIDEROAD
0010		CTH K WEST		LT	36	SIDEROAD
0010		WAYSIDE RD E SIDE		LT	95	SIDEROAD
0010		WAYSIDE RD W SIDE		LT	90	SIDEROAD
0010		CTH K EAST		LT	32	SIDEROAD
0010		NELSON ROAD		LT	172	SIDEROAD
TOTAL 0010					6,385	

NOTE: ALL ITEMS ON THIS SHEET ARE UNDER PROJECT 1530-06-80 CATEGORY 0010 UNLESS INDICATED OTHERWISE.

REMOVING CONCRETE PAVEMENT AND ASPHALTIC SURFACE

CATEGORY	STATION	TO	STATION	LOCATION	204.0100 REMOVING CONCRETE PAVEMENT SY	204.0110 REMOVING ASPHALTIC SURFACE SY	REMARKS
0010	4+54	-	703+91	LT & RT	31	3,070	DRIVEWAYS
0010	31+11	-	54+66	LT & RT	--	170	CURB RAMP REPLACEMENTS
0010			145+40	LT	--	15	CULVERT REPLACEMENT
TOTAL 0010					31	3,255	

PREPARE FOUNDATION FOR ASPHALTIC PAVING

CATEGORY	STATION	TO	STATION	LOCATION	211.0101.01 PREPARE FOUNDATION FOR ASPHALTIC PAVING (PROJECT) (01. 1530-06-80) EACH	211.0400 PREPARE FOUNDATION FOR ASPHALTIC SHOULDERS STA	REMARKS
0010	4+50	-	704+46	LT & RT	1	--	
TOTAL 0010					1	0	
0020	59+77	-	696+41	LT & RT	--	1,120	SHOULDER WIDENING
TOTAL 0020					0	1,120	
PROJECT TOTAL					1	1,120	

BASE AGGREGATE DENSE

CATEGORY	STATION	TO	STATION	LOCATION	305.0110 BASE AGGREGATE DENSE 3/4-INCH TON	305.0120 BASE AGGREGATE DENSE 1 1/4-INCH TON	624.0100 WATER MGAL	REMARKS
0010	4+50	-	704+46	LT & RT	3,070	--	47	SHOULDERS
0010	4+50	-	704+46	LT & RT	--	80	2	CURB RAMPS & SIDEWALK
0010	4+50	-	704+46	LT & RT	60	--	1	DRIVEWAYS
0010			UNDISTRIBUTED		370	20	5	
TOTAL 0010					3,500	100	55	

NOTE: ALL ITEMS ON THIS SHEET ARE UNDER PROJECT 1530-06-80 CATEGORY 0010 UNLESS INDICATED OTHERWISE.

HMA MIXTURE ACCEPTANCE								
1530-06-80								
						QUALITY MANAGEMENT PROGRAM TO BE USED		
LOCATION	STA - STA	MIXTURE USE	UNDERLYING SURFACE	BID ITEM	TONS	THICKNESS	MIXTURE ACCEPTANCE	DENSITY ACCEPTANCE
12 FOOT DRIVING LANE	4+50 - 704+46	UPPER LAYER	HMA 4 MT 58-34V	4 MT 58-34V	18,458	1.75"	PWL INCENTIVE AIR VOIDS HMA PAVEMENT 460.2010	PWL INCENTIVE DENSITY HMA PAVEMENT 460.2005
SHOULDERS, SIDEROADS, BEAMGUARD WIDENINGS	VARIOUS	UPPER LAYER	HMA 4 MT 58-34V	4 MT 58-34V	8,904	1.75"	PWL INCENTIVE AIR VOIDS HMA PAVEMENT 460.2010	ACCEPTED BY DEPARTMENT TESTING, NOT ELIGBLE FOR INCENTIVE
12 FOOT DRIVING LANE	4+50 - 704+46	LOWER LAYER	MILLED SURFACE	4 MT 58-34V	21,092	2"	PWL INCENTIVE AIR VOIDS HMA PAVEMENT 460.2010	PWL INCENTIVE DENSITY HMA PAVEMENT 460.2005
SHOULDERS, SIDEROADS, BEAMGUARD WIDENINGS	VARIOUS	LOWER LAYER	MILLED SURFACE	4 MT 58-34V	10,176	2"	PWL INCENTIVE AIR VOIDS HMA PAVEMENT 460.2010	ACCEPTED BY DEPARTMENT TESTING, NOT ELIGBLE FOR INCENTIVE
ASPHALTIC SURFACE	VARIOUS	LOWER & UPPER LAYERS	HMA SURFACE OR BASE AGGREGATE	ASPHALTIC SURFACE	1,050	VARIES	QMP as per SS 465	ACCEPTED BY ORDINARY COMPACTION
DRIVEWAYS	VARIOUS	UPPER LAYER	MILLED EXISTING HMA SURFACE OR BASE AGGREGATE	ASPHALTIC SURFACE DRIVEWAYS AND FIELD ENTRANCES	660	VARIES	QMP as per SS 465	ACCEPTED BY ORDINARY COMPACTION
PATCHING	VARIOUS	LOWER LAYER	MILLED SURFACE	ASPHALTIC SURFACE PATCHING	400	VARIES	QMP as per SS 465	ACCEPTED BY ORDINARY COMPACTION

HMA PWL TEST STRIP

					460.0105.S HMA PERCENT WITHIN LIMITS (PWL) TEST STRIP VOLUMETRICS EACH	460.0110.S HMA PERCENT WITHIN LIMITS (PWL) TEST STRIP DENSITY EACH
CATEGORY	STATION	TO	STATION	LOCATION		
0010	4+50	-	704+46	LT & RT	1	2
TOTAL 0010					1	2

MATERIAL TRANSFER VEHICLE

					460.9000.S MATERIAL TRANSFER VEHICLE EACH
CATEGORY	STATION	TO	STATION	LOCATION	
0010	4+50	-	704+46	LT & RT	1
TOTAL 0010					1

NOTE: ALL ITEMS ON THIS SHEET ARE UNDER PROJECT 1530-06-80 CATEGORY 0010 UNLESS INDICATED OTHERWISE.

ASPHALTIC FLUMES AND CURB

		465.0310		465.0315			
		ASPHALTIC CURB		ASPHALTIC FLUMES			
CATEGORY	STATION	TO	STATION	LOCATION	LF	SY	REMARKS
0010	238+79	-	240+07	LT	150	--	ALONG BEAM GUARD
0010	240+07	-	240+14	LT	--	31	ASPHALTIC FLUME BEHIND BEAM GUARD (7' WIDE)
0010			258+27	LT	--	5	BRIDGE BY CTH D BRIDGE (BRIDGE TO RIPRAP)
0010			258+27	RT	--	5	BRIDGE BY CTH D BRIDGE (BRIDGE TO RIPRAP)
0010			259+03	LT	--	5	BRIDGE BY CTH D BRIDGE (BRIDGE TO RIPRAP)
0010			259+02	RT	--	5	BRIDGE BY CTH D BRIDGE (BRIDGE TO RIPRAP)
TOTAL 0010					150	51	

DRIVEWAYS

		602.0810		465.0120			
		CONCRETE DRIVEWAY 6-INCH		ASPHALTIC SURFACE DRIVEWAYS AND FIELD ENTRANCES			
CATEGORY	STATION	TO	STATION	LOCATION	SY	TON	
0010	24+49	-	24+74	RT	11	--	
0010	25+73	-	25+89	LT	8	--	
0010	25+97	-	26+24	RT	12	--	
0010	4+54	-	703+91	LT & RT	--	660	
TOTAL 0010					31	660	
PROJECT TOTAL					31	660	

ASPHALTIC RUMBLE STRIPS

		465.0560 ASPHALTIC RUMBLE STRIPS, CENTERLINE	465.0520 ASPHALTIC RUMBLE STRIPS, SHOULDER	
CATEGORY	LOCATION	LF	LF	REMARKS
0010	MAINLINE	54,000	--	
	TOTAL 0010	54,000	0	
0020	MAINLINE	--	107,000	SHOULDER WIDENING
	TOTAL 0020	0	107,000	
	PROJECT TOTAL	54,000	107,000	

NOTE: ALL ITEMS ON THIS SHEET ARE UNDER PROJECT 1530-06-80 CATEGORY 0010 UNLESS INDICATED OTHERWISE.

HMA PAVEMENT									
				455.0605	460.6644	465.0105	465.0110		
				TACK COAT	HMA PAVEMENT 4	ASPHALTIC	ASPHALTIC		
				GAL	MT 58-34 V	SURFACE	SURFACE		
CATEGORY	STATION	TO	STATION	LOCATION	TON	TON	PATCHING	REMARKS	
0010	4+50	-	44+00	CL	1,730	3,050	--	--	
0010	45+15	-	45+86	CL	26	44	--	--	
0010	46+86	-	258+22	CL	9,710	15,620	--	--	
0010	259+06	-	671+94	CL	19,000	30,000	--	--	
0010	672+27	-	704+46	CL	1,450	2,370	--	--	
0010				SIDEROAD	36	64	--	--	HUNT LANE
0010				SIDEROAD	13	22	--	--	7TH STREET
0010				SIDEROAD	10	18	--	--	6TH STREET
0010				SIDEROAD	23	40	--	--	5TH STREET
0010				SIDEROAD	24	41	--	--	N 3RD STREET
0010				SIDEROAD	24	42	--	--	S 3RD STREET
0010				SIDEROAD	30	53	--	--	N 2ND STREET
0010				SIDEROAD	31	54	--	--	S 2ND STREET
0010				SIDEROAD	26	46	--	--	BRATBERG STREET
0010				SIDEROAD	32	57	10	--	STERRY ROAD
0010				SIDEROAD	49	86	--	--	MISSEL ROAD
0010				SIDEROAD	17	30	--	--	SKOUG LANE
0010				SIDEROAD	16	28	--	--	AUTZ LANE
0010				SIDEROAD	80	141	--	--	ELEVA STRUM SCHOOL DISTRICT WEST ENTRANCE
0010				SIDEROAD	20	35	--	--	ELEVA STRUM SCHOOL DISTRICT EAST ENTRANCE
0010				SIDEROAD	20	35	--	--	JACKS LANE
0010				SIDEROAD	42	75	--	--	LARCH ROAD
0010				SIDEROAD	86	151	--	--	N CTH D
0010				SIDEROAD	58	103	--	--	S CTH D
0010				SIDEROAD	43	76	--	--	VETERN DRIVE
0010				SIDEROAD	16	28	--	--	DAVES ROAD
0010				SIDEROAD	21	37	--	--	WILLIAMS ROAD
0010				SIDEROAD	17	30	--	--	BOLLING ROAD
0010				SIDEROAD	25	44	--	--	PEDERSON ROAD
0010				SIDEROAD	22	39	--	--	FLOYDS ROAD
0010				SIDEROAD	141	248	--	--	USH 53
0010				SIDEROAD	55	97	--	--	TRACEY VALLEY ROAD
0010				SIDEROAD	34	60	--	--	GILBERTS ROAD
0010				SIDEROAD	54	95	--	--	CTH O
0010				SIDEROAD	68	120	--	--	CTH KK WEST
0010				SIDEROAD	163	153	--	--	WAYSIDE
0010				SIDEROAD	57	101	--	--	CTH KK EAST
0010				SIDEROAD	21	37	--	--	NELSON ROAD
0010				SIDEROAD	380	--	--	--	DRIVEWAYS
0010	4+50	-	704+46		--	--	40	--	CURB RAMP REPLACEMENTS
0010	4+50	-	704+46		--	--	1,000	--	WEDGING
0010				UNDISTRIBUTED	--	--	--	400	
				TOTAL 0010	33,670	53,370	1,050	400	

(CONTINUED ON NEXT SHEET)

NOTE: ALL ITEMS ON THIS SHEET ARE UNDER PROJECT 1530-06-80 CATEGORY 0010 UNLESS INDICATED OTHERWISE.

HMA PAVEMENT									
					455.0605	460.6644	465.0105	465.0110	REMARKS
					TACK COAT	HMA PAVEMENT	ASPHALTIC	ASPHALTIC	
CATEGORY	STATION	TO	STATION	LOCATION	GAL	4 MT 58-34 V	SURFACE	SURFACE	
						TON	TON	PATCHING	
0020	59+77	-	144+61	LT	229	400	--	--	SHOULDER WIDENING
0020	60+26	-	144+27	RT	227	396	--	--	SHOULDER WIDENING
0020	146+02	-	150+90	LT	14	23	--	--	SHOULDER WIDENING
0020	146+40	-	150+33	RT	11	19	--	--	SHOULDER WIDENING
0020	155+10	-	159+20	LT	12	19	--	--	SHOULDER WIDENING
0020	155+30	-	169+61	RT	39	67	--	--	SHOULDER WIDENING
0020	160+63	-	176+66	LT	44	75	--	--	SHOULDER WIDENING
0020	171+24	-	176+38	RT	14	24	--	--	SHOULDER WIDENING
0020	180+86	-	186+68	RT	16	27	--	--	SHOULDER WIDENING
0020	182+69	-	204+83	LT	60	104	--	--	SHOULDER WIDENING
0020	188+15	-	219+69	RT	85	149	--	--	SHOULDER WIDENING
0020	205+86	-	219+52	LT	37	64	--	--	SHOULDER WIDENING
0020	225+79	-	237+86	LT	33	57	--	--	SHOULDER WIDENING
0020	227+63	-	237+26	RT	26	45	--	--	SHOULDER WIDENING
0020	245+75	-	256+75	LT	30	52	--	--	SHOULDER WIDENING
0020	262+22	-	274+02	RT	32	56	--	--	SHOULDER WIDENING
0020	276+08	-	335+50	RT	160	280	--	--	SHOULDER WIDENING
0020	264+78	-	373+47	LT	297	514	--	--	SHOULDER WIDENING
0020	341+21	-	383+64	RT	115	200	--	--	SHOULDER WIDENING
0020	374+69	-	416+65	LT	113	198	--	--	SHOULDER WIDENING
0020	387+61	-	434+99	RT	128	223	--	--	SHOULDER WIDENING
0020	418+06	-	425+17	LT	20	33	--	--	SHOULDER WIDENING
0020	426+39	-	486+30	LT	162	282	--	--	SHOULDER WIDENING
0020	436+76	-	554+63	RT	320	557	--	--	SHOULDER WIDENING
0020	487+89	-	574+21	LT	235	406	--	--	SHOULDER WIDENING
0020	560+37	-	575+86	RT	42	73	--	--	SHOULDER WIDENING
0020	577+43	-	586+27	RT	24	42	--	--	SHOULDER WIDENING
0020	578+44	-	587+65	LT	25	43	--	--	SHOULDER WIDENING
0020	592+68	-	600+10	LT	20	35	--	--	SHOULDER WIDENING
0020	592+95	-	603+20	RT	28	48	--	--	SHOULDER WIDENING
0020	605+95	-	657+92	RT	140	245	--	--	SHOULDER WIDENING
0020	607+73	-	632+33	LT	67	116	--	--	SHOULDER WIDENING
0020	634+39	-	666+86	LT	88	153	--	--	SHOULDER WIDENING
0020	660+56	-	670+26	RT	27	46	--	--	SHOULDER WIDENING
0020	673+79	-	676+56	LT	8	13	--	--	SHOULDER WIDENING
0020	677+02	-	680+31	LT	9	15	--	--	SHOULDER WIDENING
0020	680+88	-	694+50	LT	37	64	--	--	SHOULDER WIDENING
0020	673+94	-	694+50	RT	56	97	--	--	SHOULDER WIDENING
TOTAL 0020					3,030	5,260	0	0	
PROJECT TOTAL					36,700	58,630	1,050	400	

NOTE: ALL ITEMS ON THIS SHEET ARE UNDER PROJECT 1530-06-80 CATEGORY 0020 UNLESS INDICATED OTHERWISE.

CULVERT ITEMS																		
			203.0100	504.0900	520.8000	520.8700	522.0118	522.1018	522.1024	522.1030	524.0124	524.0130	633.5200	SPV.0060.01	SPV.0180.01			
			REMOVING SMALL PIPE CULVERTS	CONCRETE MASONRY ENDWALLS	CONCRETE COLLARS FOR PIPE	CLEANING CULVERT PIPES	CULVERT PIPE REINFORCED CONCRETE CLASS III 18-INCH	APRON ENDWALLS FOR CULVERT PIPE REINFORCED CONCRETE 18-INCH	APRON ENDWALLS FOR CULVERT PIPE REINFORCED CONCRETE 24-INCH	APRON ENDWALLS FOR CULVERT PIPE REINFORCED CONCRETE 30-INCH	CULVERT PIPE SALVAGED 24-INCH	CULVERT PIPE SALVAGED 30-INCH	MARKERS CULVERT END	SPECIAL (01. DITCH CLEANING)	SPECIAL (01. REMOVE RIPRAP)	*JOINT TIE		
CATEGORY	STATION	LOCATION	EACH	CY	EACH	EACH	LF	EACH	EACH	EACH	LF	LF	EACH	EACH	SY	EACH	REMARKS	
0010	89+15	RT	--	--	--	1	--	--	--	--	--	--	--	1	--	--		
0010	96+15	LT & RT	--	--	--	1	--	--	--	--	--	--	--	2	--	--		
0010	135+60	LT & RT	--	--	--	1	--	--	--	--	--	--	2	2	--	--		
0010	145+40	LT	--	--	1	--	--	--	1	--	8	--	--	--	--	4		
0010	153+40	LT & RT	--	--	--	--	--	--	--	--	--	--	--	2	--	--		
0010	167+05	LT & RT	--	--	--	1	--	--	--	--	--	--	2	2	--	--		
0010	181+25	LT & RT	--	--	--	1	--	--	--	--	--	--	--	2	--	--		
0010	192+10	RT	--	--	--	1	--	--	--	--	--	--	--	1	--	--		
0010	205+50	LT	--	--	1	--	--	--	1	--	--	--	--	--	--	2		
0010	210+15	RT	--	--	--	--	--	--	--	--	--	--	--	1	--	--		
0010	238+30	LT & RT	--	--	--	1	--	--	--	--	--	--	--	--	--	--		
0010	277+85	RT	--	--	--	1	--	--	--	--	--	--	--	1	--	--		
0010	292+95	LT & RT	--	--	--	1	--	--	--	--	--	--	--	2	--	--		
0010	297+05	RT	--	--	--	1	--	--	--	--	--	--	--	1	--	--		
0010	317+05	RT	--	--	--	1	--	--	--	--	--	--	--	1	--	--		
0010	326+49	LT & RT	1	--	4	--	--	--	2	--	16	--	2	--	--	8	REMOVE 42' RT, 14' LT	
0010	339+55	LT & RT	--	--	4	--	--	--	2	--	16	--	2	--	--	8		
0010	344+15	LT & RT	--	--	4	--	--	--	2	--	16	--	2	--	--	8		
0010	367+75	LT & RT	--	--	--	1	--	--	--	--	--	--	--	2	--	--		
0010	389+00	RT	--	--	2	--	--	--	1	--	8	--	2	--	--	4		
0010	401+00	LT & RT	--	--	--	1	--	--	--	--	--	--	--	2	--	--		
0010	427+50	RT	--	--	--	1	--	--	--	--	--	--	--	1	--	--		
0010	436+95	RT	--	--	--	1	--	--	--	--	--	--	--	1	--	--		
0010	464+63	RT	--	--	--	--	--	--	--	--	--	--	--	--	9	--		
0010	473+60	LT & RT	--	--	--	--	--	--	--	--	--	--	--	2	--	--		
0010	485+00	LT & RT	--	--	--	2	--	--	--	--	--	--	--	--	--	--		
0010	10+47 'FL'	LT	1	--	--	--	38	2	--	--	--	--	2	--	--	--	FLOYDS ROAD	
0010	505+00	LT	--	--	--	--	--	--	--	--	--	--	--	1	--	--		
0010	507+67	RT	--	--	--	--	--	--	--	--	--	--	--	--	9	--		
0010	529+60	LT	--	--	2	--	--	--	1	--	--	8	2	--	--	4		
0010	557+50	RT	--	--	2	--	--	--	1	--	8	--	2	--	--	4		
0010	563+50	RT	--	--	--	1	--	--	--	--	--	--	--	1	--	--		
0010	568+75	RT	--	--	--	1	--	--	--	--	--	--	--	1	--	--		
0010	576+00	LT	--	--	--	1	--	--	--	--	--	--	--	1	--	--		
0010	598+90	LT & RT	--	--	--	1	--	--	--	--	--	--	--	2	--	--		
0010	620+90	LT & RT	--	--	--	2	--	--	--	--	--	--	--	--	--	--		
0010	637+60	LT & RT	--	5	4	--	--	--	--	--	--	32	--	--	--	8		
0010	665+50	LT & RT	--	--	2	--	--	--	1	--	8	--	--	--	--	4		
0010	697+15	RT	--	--	--	1	--	--	--	--	--	--	--	1	--	--		
TOTAL 0010			2	5	26	24	38	2	11	1	80	40	18	33	18	54		

*FOR INFORMATIONAL PURPOSES ONLY (INCIDENTAL TO PIPE ITEMS)

NOTE: ALL ITEMS ON THIS SHEET ARE UNDER PROJECT 1530-06-80 CATEGORY 0010 UNLESS INDICATED OTHERWISE.

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CATEGORY	STATION	TO	STATION	LOCATION	204.0150	204.0155	601.0411	601.0600	602.0410	602.0505	602.0605	REMARKS
					REMOVING	REMOVING	CONCRETE CURB &	CONCRETE	CONCRETE	CURB RAMP	CURB RAMP	
					CURB & GUTTER	CONCRETE	GUTTER 30-INCH	CONCRETE	CONCRETE	DETECTABLE	DETECTABLE	
					LF	SY	TYPE D	PEDESTRIAN	5-INCH	DETECTABLE	DETECTABLE	
					LF	SY	TYPE D	PEDESTRIAN	5-INCH	YELLOW	RADIAL YELLOW	
0010	31+11	-	31+51	RT	45	13	45	--	140	10	--	S 5TH ST AND USH 10 (SW QUAD)
0010	31+80	-	32+02	RT	33	8	33	--	100	10	--	S 5TH ST AND USH 10 (SE QUAD)
0010	37+73	-	38+00	LT	38	15	38	8	110	10	--	N 3RD ST AND USH 10 (NE QUAD)
0010	37+72	-	38+02	LT	42	17	42	--	200	20	--	S 3RD ST AND USH 10 (SE QUAD)
0010	37+13	-	37+47	RT	45	24	45	8	190	10	--	S 3RD ST AND USH 10 (SW QUAD)
0010	41+19	-	41+62	LT	38	17	38	33	180	10	22.39	N 2ND ST AND USH 10 (NE QUAD)
0010	40+58	-	40+97	LT	60	15	60	--	150	20	--	N 2ND ST AND USH 10 (NW QUAD)
0010	41+29	-	41+56	RT	37	13	37	26	130	20	--	S 2ND ST AND USH 10 (SE QUAD)
0010	40+52	-	40+92	RT	51	32	51	--	290	20	--	S 2ND ST AND USH 10 (SW QUAD)
0010	54+29	-	54+66	LT	54	11	54	--	70	10	--	BRATBERG ST AND USH 10 (NE QUAD)
0010	53+78	-	53+98	LT	41	6	41	--	80	20	--	BRATBERG ST AND USH 10 (NW QUAD)
0010	53+74	-	54+12	RT	38	14	38	20	150	10	--	BRATBERG ST AND USH 10 (SW QUAD)
TOTAL 0010					522	185	522	95	1,790	170	22.39	

		* 625.0100	* 628.2008	* 629.0210	* 630.0140	* 630.0500	
			EROSION MAT URBAN CLASS I	FERTILIZER	SEEDING MIXTURE		SPV.0060.05 SPECIAL (05. GRADING SHAPING AND FINISHING FOR CURB RAMPS)
CATEGORY	DESCRIPTION	TOPSOIL SY	TYPE B SY	TYPE B CWT	NO. 40 LB	SEED WATER MGAL	EACH
0010	SOUTHWEST CORNER USH 10 & S 5TH ST	18	18	0.01	0.3	1	1
0010	SOUTHEAST CORNER USH 10 & S 5TH ST	16	16	0.01	0.3	1	1
0010	SOUTHWEST CORNER USH 10 & S 3RD ST	33	33	0.02	0.6	2	1
0010	SOUTHEAST CORNER USH 10 & S 3RD ST	23	23	0.01	0.4	1	1
0010	NORTHEAST CORNER USH 10 & N 3RD ST	21	21	0.01	0.4	1	1
0010	SOUTHWEST CORNER USH 10 & S 2ND ST	36	36	0.02	0.6	2	1
0010	NORTHWEST CORNER USH 10 & N 2ND ST	23	23	0.01	0.4	1	1
0010	NORTHEAST CORNER USH 10 & N 2ND ST	12	12	0.01	0.2	1	1
0010	SOUTHEAST CORNER USH 10 & S 2ND ST	11	11	0.01	0.2	1	1
0010	SOUTHWEST CORNER USH 10 & BRATBURG ST	6	6	0.01	0.1	1	1
0010	NORTHWEST CORNER USH 10 & BRATBURG ST	8	8	0.01	0.1	1	1
0010	NORTHEAST CORNER USH 10 & BRATBURG ST	16	16	0.01	0.3	1	1
TOTAL 0010		223	223	0.15	4.1	14	12

NOTE: ALL ITEMS ON THIS SHEET ARE UNDER PROJECT 1530-06-80 CATEGORY 0010 UNLESS INDICATED OTHERWISE.

ADJUSTMENTS										
					611.8110	611.8115	611.8120.S	SPV.0060.03 SPECIAL (03. ADJUSTING SANITARY SEWER MANHOLE COVERS) EACH	SPV.0060.04 SPECIAL (04. ADJUSTING WATER VALVE BOXES) EACH	REMARKS
CATEGORY	STATION	TO	STATION	LOCATION	ADJUSTING MANHOLE COVERS EACH	ADJUSTING INLET COVERS EACH	COVER PLATES TEMPORARY EACH			
0010	28+63	-	59+77	LT & RT	9	9	18	--	--	CURB RAMP REPLACEMENTS
				TOTAL 0010	9	9	18	0	0	
0030	28+63	-	59+77	LT & RT	--	--	--	11	7	VILLAGE OF ELEVA
				TOTAL 0030	0	0	0	11	7	
0040	238+62	-	261+25	LT & RT	--	--	--	2	1	VILLAGE OF STRUM
				TOTAL 0040	0	0	0	2	1	
				PROJECT TOTAL	9	9	18	13	8	

REMOVE WAYSIDE POSTS							
					615.0300 GUARD POSTS TIMBER EACH	SPV.0060.02 SPECIAL (02. REMOVE WAYSIDE POSTS) EACH	REMARKS
CATEGORY	STATION	TO	STATION	LOCATION			
0010	676+55	-	680+88	LT	20	20	REPLACE BROKEN POSTS
				TOTAL 0010	20	20	

NOTE: ALL ITEMS ON THIS SHEET ARE UNDER PROJECT 1530-06-80 CATEGORY 0010 UNLESS INDICATED OTHERWISE.

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GUARDRAIL

					204.0165	614.0400	614.0950	614.0951	614.0952	614.2300	614.2310	614.2350	614.2500	614.2610	614.8010	SPV.0090.01	614.2630		
					REMOVING	ADJUSTING	REPLACING	REPLACING	REPLACING	MGS	MGS	MGS	MGS		ANCHOR POST	(01. REMOVE AND	MGS GUARDRAIL		
CATEGORY	STATION	TO	STATION	LOCATION	GUARDRAIL	STEEL PLATE	GUARDRAIL	GUARDRAIL RAIL	GUARDRAIL	GUARDRAIL 3	GUARDRAIL 3	GUARDRAIL	THRIE BEAM	GUARDRAIL	ASSEMBLY TOP	REPLACE EXISTING	SHORT RADIUS		
					LF	BEAM GUARD	POSTS AND	AND HARDWARE	REFLECTORS	LF	HS	SHORT RADIUS	TRANSITION	TERMINAL EAT	MOUNT	BEAM GUARD)	TERMINAL		
						LF	BLOCKS	LF	EACH		LF	LF	LF	EACH	EACH	LF	EACH		
0010	150+83	-	154+80	RT	--	392	--	--	--	--	--	--	--	--	--	--	--		
0010	151+41	-	154+85	LT	--	342	--	--	--	--	--	--	--	--	--	--	--		
0010	220+01	-	226+82	RT	--	680	--	--	--	--	--	--	--	--	--	--	--		
0010	220+08	-	225+70	LT	--	565	--	--	--	--	--	--	--	--	--	--	--		
0010	237+76	-	245+41	RT	--	767	--	--	--	--	--	--	--	--	--	--	--		
0010	238+77	-	245+41	LT	--	677	--	--	--	--	--	--	--	--	--	--	--		
0010	257+32	-	258+31	RT	--	98	--	--	--	--	--	--	--	--	--	--	--		
0010	257+32	-	258+31	LT	--	98	--	--	--	--	--	--	--	--	--	--	--		
0010	258+99	-	260+21	RT	--	122	--	--	--	--	--	--	--	--	--	--	--		
0010	259+00	-	259+75	LT	--	84	--	--	--	--	--	--	--	--	--	--	--		
0010	336+21	-	340+78	RT	--	454	--	--	--	--	--	--	--	--	--	--	--		
0010	384+22	-	387+16	RT	--	292	--	--	--	--	--	--	--	--	--	--	--		
0010	484+03	-	486+55	LT	--	--	--	--	--	100.0	62.5	72.0	--	1	7	--	1		
0010	555+03	-	559+86	RT	--	480	--	--	--	--	--	--	--	--	--	--	--		
0010	557+27	-	557+77	RT	--	--	--	--	--	--	--	--	--	--	--	25	--	CULVERT END RELAY AND TIE	
0010	574+47	-	576+92	RT	--	241	--	--	--	--	--	--	--	--	--	--	--		
0010	575+00	-	577+53	LT	--	253	--	--	--	--	--	--	--	--	--	--	--		
0010	670+53	-	671+94	RT	80	--	--	--	--	50.0	--	--	39.4	1	--	--	--		
0010	670+90	-	671+94	LT	90	--	--	--	--	12.5	--	--	39.4	1	--	--	--		
0010	672+27	-	673+30	RT	90	--	--	--	--	12.5	--	--	39.4	1	--	--	--		
0010	672+27	-	673+68	LT	80	--	--	--	--	50.0	--	--	39.4	1	--	--	--		
UNDISTRIBUTED					--	--	200	560	200	--	--	--	--	--	--	--	--		
TOTAL 0010					340	5,545	200	560	200	225.0	62.5	72.0	157.6	5	7	25	1		

BARRIER SYSTEM GRADING SHAPING FINISHING (EARTHWORK)

		*		*		*		*		#		#		*		*		*		*		*			
								614.0010		625.0100		628.1504		628.1520		628.2008		629.0210		630.0120		630.0200		630.0500	
								BARRIER SYSTEM GRADING SHAPING						EROSION MAT URBAN CLASS I				SEEDING MIXTURE		SEEDING TEMPORARY		SEED WATER			
CATEGORY	STATION	TO	STATION	LOCATION	CUT VOLUME CY	FILL VOLUME CY	NET VOLUME CY	FINISHING EACH	TOPSOIL SY	SILT FENCE LF	SILT FENCE MAINTENANCE LF	TYPE B SY	FERTILIZER CWT	TYPE B SY	FERTILIZER CWT	NO. 20 LB	NO. 20 LB	SEEDING TEMPORARY LB	SEEDING TEMPORARY LB	SEED WATER MGAL	SEED WATER MGAL	REMARKS			
0010	484+00	-	487+10	LT	0	60	60	1	290	312	156	290	0.21	8	8	8	8	8	8	8	8	BEAMGUARD			
0010	668+85	-	671+94	RT	61	213	152	1	343	263	132	343	0.22	9	9	9	9	9	9	9	9	BEAMGUARD			
0010	669+46	-	671+94	LT	35	136	101	1	520	338	169	520	0.33	14	14	14	14	14	14	14	12	BEAMGUARD			
0010	672+27	-	675+15	RT	49	136	87	1	475	314	157	475	0.30	13	13	13	13	13	13	11	BEAMGUARD				
0010	672+27	-	675+20	LT	37	172	135	1	450	309	155	450	0.29	12	12	12	12	12	12	11	BEAMGUARD				
TOTAL 0010					182	717	535	5	2,078	1,536	768	2,078	1.35	56	56	56	56	56	56	56	50				

* QUANTITIES ARE INCIDENTAL TO ITEM 614.0100 AND ARE FOR INFORMATION ONLY.
ADDITIONAL QUANTITIES FOUND ELSEWHERE

NOTE: ALL ITEMS ON THIS SHEET ARE UNDER PROJECT 1530-06-80 CATEGORY 0010 UNLESS INDICATED OTHERWISE.

EROSION CONTROL											
				606.0200	625.0100	# 628.1504	# 628.1520	628.1905	628.1910	628.2008	
				RIPRAP MEDIUM	TOPSOIL	SILT FENCE	SILT FENCE	MOBILIZATIONS	MOBILIZATIONS	EROSION MAT	
				CY	SY	LF	MAINTENANCE	EROSION CONTROL	EMERGENCY EROSION	URBAN CLASS I	
CATEGORY	STATION	TO	STATION	LOCATION			LF	EACH	CONTROL	TYPE B	SY
0010	4+50	-	704+46	PROJECT	--	--	--	6	3	--	--
0010			145+40	LT	--	34	42	--	--	34	
0010			326+49	LT & RT	3	230	170	--	--	230	
0010			339+55	LT & RT	--	140	177	--	--	140	
0010			344+15	LT & RT	3	78	116	--	--	78	
0010			389+00	RT	3	51	82	--	--	51	
0010			464+63	RT	3	--	--	--	--	--	
0010	485+05	-	487+36	LT	73	--	--	--	--	--	
0010			507+67	RT	3	--	--	--	--	--	
0010			529+60	LT	--	54	59	--	--	54	
0010			557+50	RT	3	35	104	--	--	35	
0010			637+60	LT & RT	4	98	88	--	--	98	
0010			665+50	LT	--	44	70	--	--	44	
0010				UNDISTRIBUTED	--	87	192	--	--	87	
				TOTAL 0010	95	850	1,100	550	6	3	850
# ADDITIONAL QUANTITIES FOUND ELSEWHERE											

EROSION CONTROL											
				628.7005	628.7555	629.0210	630.0120	630.0200	630.0500	645.0120	
				INLET PROTECTION	CULVERT PIPE	SEEDING MIXTURE NO.		SEEDING TEMPORARY		SEED WATER	GEOTEXTILE TYPE
				TYPE A	CHECKS	FERTILIZER TYPE B	20	LB	LB	MGAL	HR
CATEGORY	STATION	TO	STATION	LOCATION	EACH	CWT	LB				SY
0010	4+50	-	704+46	PROJECT	--	--	--	--	--	--	--
0010			145+40	LT	--	3	0.02	1	1	1	--
0010			326+49	LT & RT	--	3	0.14	6	6	5	6
0010			339+55	LT & RT	--	3	0.09	4	4	3	--
0010			344+15	LT & RT	--	3	0.05	2	2	2	6
0010			389+00	RT	--	3	0.04	1	1	2	6
0010			464+63	RT	--	3	--	--	--	--	6
0010	485+05	-	487+36	LT	--	3	--	--	--	--	131
0010			507+67	RT	--	3	--	--	--	--	6
0010			529+60	LT	--	3	0.04	1	1	2	--
0010			557+50	RT	--	3	0.03	1	1	1	6
0010			637+60	LT & RT	--	3	0.06	2	2	2	8
0010			665+50	LT	--	3	0.04	2	2	2	--
0010				UNDISTRIBUTED	12	14	0.09	5	5	5	--
				TOTAL 0010	12	50	0.60	25	25	25	175

NOTE: ALL ITEMS ON THIS SHEET ARE UNDER PROJECT 1530-06-80 CATEGORY 0010 UNLESS INDICATED OTHERWISE.

PERMANENT SIGNING

						634.0808 POSTS TUBULAR STEEL 2X2-INCH X 8-FT EACH	637.2210 SIGNS TYPE II REFLECTIVE H SF	638.2102 MOVING SIGNS TYPE II EACH	638.4000 MOVING SMALL SIGN SUPPORTS EACH		
CATEGORY	STATION	LOCATION	SIGN CODE	DESCRIPTION	SIZE					REMARKS	
0010	37+25	RT	R9-3A	NO PED CROSSING	24"x24"	1	4.00	--	--		
0010	37+25	RT	R9-3BR	USE CROSSWALK RT	18"x12"	--	1.50	--	--		
0010	37+84	LT	R9-3A	NO PED CROSSING	24"x24"	1	4.00	--	--		
0010	37+84	LT	R9-3BL	USE CROSSWALK LT	18"x12"	--	1.50	--	--		
0010	37+90	LT		STREET NAME		--	--	2	1		
0010	37+92	LT		SCHOOL CROSSING		--	--	2	1		
0010	41+43	LT		SPEED LIMIT		--	--	1	1		
0010	486+70	LT		STREET NAME		--	--	1	1		
0010	486+78	LT		STOP SIGN		--	--	1	1		
				UNDISTRIBUTED				10	10	NO PASSING ZONE SIGNS	
TOTAL 0010						2	11.00	17	15		

TRAFFIC CONTROL

			643.0300	643.0420	643.0705	643.0715	643.0900	*643.1000	643.5000	644.1440	644.1601	644.1605	644.1810
			TRAFFIC CONTROL DRUMS	TRAFFIC CONTROL BARRICADES TYPE III	TRAFFIC CONTROL WARNING LIGHTS TYPE A	TRAFFIC CONTROL WARNING LIGHTS TYPE C	TRAFFIC CONTROL SIGNS	TRAFFIC CONTROL SIGNS FIXED MESSAGE	TRAFFIC CONTROL	TEMPORARY PEDESTRIAN SURFACE MATTING	TEMPORARY PEDESTRIAN CURB RAMP	TEMPORARY PEDESTRIAN DETECTABLE WARNING FIELD	TEMPORARY PEDESTRIAN BARRICADE
CATEGORY	STAGE	DURATION (DAYS)	DAY	DAY	DAY	DAY	DAY	SF	EACH	SF	DAY	SF	LF
0010	PROJET 1530-06-80		--	--	--	--	--	32	1	--	--	--	--
0010	ADVANCED WARNING	135	--	--	--	--	5,940	--	--	--	--	--	--
0010	CULVERT WORK AREAS	15	195	--	--	--	120	--	--	--	--	--	--
0010	CURB RAMP REPLACEMENTS	20	2,880	135	270	600	810	--	--	300	150	150	1,000
0010	BUMP SIGNS	--	--	--	--	--	2,450	--	--	--	--	--	--
0010	GROOVED SURFACE SIGNS	--	--	--	--	--	1,050	--	--	--	--	--	--
0010	UNEVEN LANE SIGNS	--	--	--	--	--	1,050	--	--	--	--	--	--
0010	UNDISTRIBUTED	--	425	65	130	100	580	--	--	100	50	50	300
TOTAL 0010			3,500	200	400	700	12,000	32	1	400	200	200	1,300

* INSTALL ONE G20-57 SIGN READING " HWY 10 ROAD WORK BEGINS XX-XX" AT EACH END OF THE PROJECT 7 DAYS PRIOR TO THE START OF CONSTRUCTION.

NOTE: ALL ITEMS ON THIS SHEET ARE UNDER PROJECT 1530-06-80 CATEGORY 0010 UNLESS INDICATED OTHERWISE.

PAVEMENT MARKINGS											
CATEGORY	STATION	TO	STATION	LOCATION	646.6120	643.3165	646.2020	646.2040	646.4020	646.4040	REMARKS
					MARKING STOP	TEMPORARY	MARKING LINE	MARKING LINE	MARKING LINE	MARKING LINE	
					LINE EPOXY	MARKING LINE	MARKING LINE	REF EPOXY	MARKING LINE	REF EPOXY	
					18-INCH	PAINT 6-INCH	EPOXY 6-INCH	6-INCH	EPOXY 10-INCH	10-INCH	
					LF	LF	LF	LF	LF	LF	
0010	4+50	-	704+46	LT & RT	--	111,300	--	--	--	--	FOR PLACEMENT ON MILLED SURFACE AND LOWER LAYER HMA
0010	4+50	-	704+46	LT & RT	--	65,200	--	--	--	--	FOR PLACEMENT ON CENTERLINE PRIOR TO MILLING RUMBLE STRIPS
0010	4+50	-	704+46	LT & RT	--	--	--	65,180	--	--	FOR PLACEMENT ON CENTERLINE AFTER MILLING RUMBLE STRIPS
0010	4+50	-	704+46	LT & RT	--	--	630	--	--	--	SIDEROADS
0010	4+50	-	704+46	LT & RT	--	--	--	130,400	--	--	EDGELINES
0010	4+50	-	704+46	LT & RT	--	--	--	220	--	--	BYPASS LANES
0010	4+50	-	704+46	LT & RT	--	--	--	--	20	925	TURN LANES
0010	4+50	-	704+46	LT & RT	75	--	--	--	--	--	STOP BARS
TOTAL 0010					75	176,500	630	195,800	20	925	

PAVEMENT MARKINGS								
CATEGORY	STATION	TO	STATION	LOCATION	646.7420	646.8120	643.3180	643.3980
					MARKING		TEMPORARY	TEMPORARY
					CROSSWALK	MARKING CURB	MARKING LINE	MARKING
					EPOXY	EPOXY	REMOVABLE	REMOVABLE
					TRANSVERSE	MARKING CURB	REMOVABLE	REMOVABLE
					LINE 6-INCH	EPOXY	TAPE 6-INCH	MASK OUT TAPE
					LF	LF	LF	LF
0010	4+50	-	704+46	LT & RT	755	--	--	--
0010	4+50	-	704+46	LT & RT	--	330	--	--
0010	4+50	-	704+46	LT & RT	--	--	5,500	3,000
TOTAL 0010					755	330	5,500	3,000

LOCATING NO-PASSING ZONES					
CATEGORY	STATION	TO	STATION	LOCATION	648.0100
					LOCATING
					NO-PASSING
					ZONES
					MI
0010	4+50	-	704+46	PROJECT	13.3
TOTAL 0010					13.3

NOTE: ALL ITEMS ON THIS SHEET ARE UNDER PROJECT 1530-06-80 CATEGORY 0010 UNLESS INDICATED OTHERWISE.

CONSTRUCTION STAKING										
					650.5500	650.6000	650.8000	650.9000	650.9500.01	650.9911.01
					CONSTRUCTION STAKING CURB GUTTER AND CURB & GUTTER LF	CONSTRUCTION STAKING PIPE CULVERTS EACH	CONSTRUCTION STAKING RESURFACING REFERENCE LF	CONSTRUCTION STAKING CURB RAMPS EACH	CONSTRUCTION STAKING SIDEWALK (PROJECT) (01. 1530-06-80) EACH	CONSTRUCTION STAKING SUPPLEMENTAL CONTROL (PROJECT) (01. 1530-06-80) EACH
0010	31+11	-	54+66	LT & RT	617	--	--	12	1	--
0010	4+50	-	704+46	LT & RT	--	17	69,996	--	--	1
TOTAL 0010					617	17	69,996	12	1	1

SAWING								
					690.0150 SAWING ASPHALT LF	690.0250 SAWING CONCRETE LF		
CATEGORY	STATION	TO	STATION	LOCATION			REMARKS	
0010	7+18	-	703+90	LT & RT	3,950	--	ASPHALT DRIVEWAYS	
0010	24+53	-	26+19	LT & RT	--	50	CONCRETE DRIVEWAYS	
0010			145+40	LT	35	--	CULVERT REPLACEMENT	
0010	31+11		54+66	LT & RT	680	110	CURB RAMP REPLACEMENTS	
TOTAL 0010					4,665	160		

NOTE: ALL ITEMS ON THIS SHEET ARE UNDER PROJECT 1530-06-80 CATEGORY 0010 UNLESS INDICATED OTHERWISE.

NOTES:
THIS EXHIBIT IS A GRAPHIC REPRESENTATION AND IS FOR REFERENCE PURPOSES ONLY.
REFER TO THE CONVEYANCE DOCUMENT FOR PARCEL RELATED DETAILS.

POSITIONS SHOWN ON THIS PLAT ARE WISCONSIN COORDINATE REFERENCE SYSTEM COORDINATES (WISCRS), TREMPLEALEU COUNTY, NAD83 (2011) IN US SURVEY FEET.
VALUES SHOWN ARE GRID COORDINATES, GRID BEARINGS, AND GRID DISTANCES. GRID DISTANCES MAY BE USED AS GROUND DISTANCES.

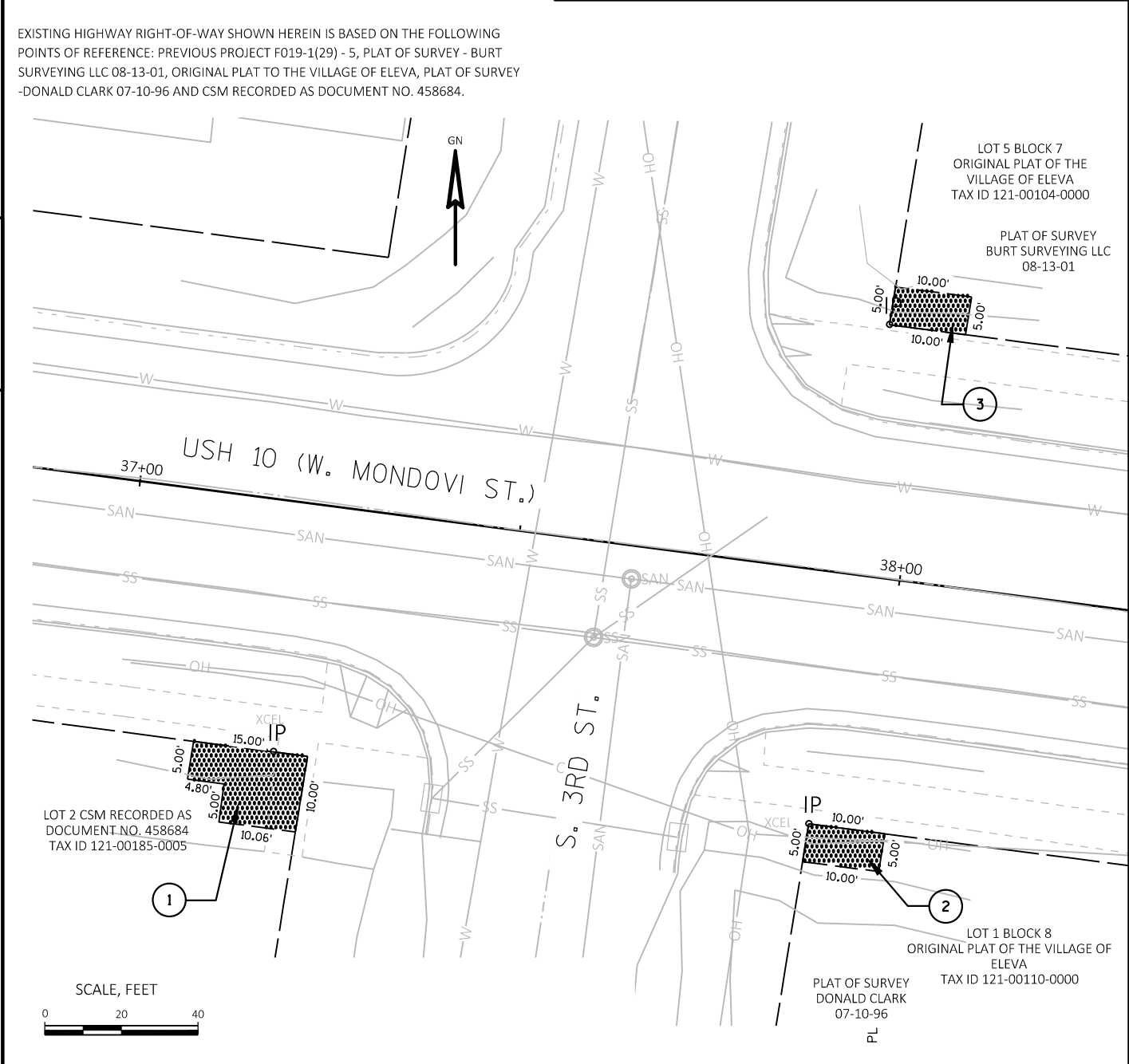
EXISTING HIGHWAY RIGHT-OF-WAY SHOWN HEREIN IS BASED ON THE FOLLOWING POINTS OF REFERENCE: PREVIOUS PROJECT F019-1(29) - 5, PLAT OF SURVEY - BURT SURVEYING LLC 08-13-01, ORIGINAL PLAT TO THE VILLAGE OF ELEVA, PLAT OF SURVEY -DONALD CLARK 07-10-96 AND CSM RECORDED AS DOCUMENT NO. 458684.

R/W PROJECT NUMBER: 1530-06-22

SHEET NUMBER: 4.01

TLE ACQUISITION EXHIBIT
USH 10
MONDOVI TO OSSEO
TREMPLEALEAU COUNTY

PART OF THE SE1/4 OF THE NE1/4 OF SECTION 9, T-24-N, R9-W, VILLAGE OF ELEVA, TREMPLEALEAU COUNTY, WISCONSIN.



SCHEDULE OF LANDS & INTERESTS REQUIRED			
OWNERS NAMES ARE SHOWN FOR REFERENCE PURPOSES ONLY AND ARE SUBJECT TO CHANGE PRIOR TO THE TRANSFER OF LAND INTERESTS TO THE DEPARTMENT			
PARCEL NUMBER	OWNER(S)	INTEREST REQUIRED	TLE S.F.
1	MONDOVI STREET LLC	TLE	126
2	ELEVA LUTHERN HOUSING INCORPORATED	TLE	50
3	RITA SEVERSON	TLE	50

THIS MAP IS APPROVED FOR THE DEPARTMENT OF TRANSPORTATION NORTHWEST REGION, EAU CLAIRE OFFICE

Arron Gustafson

PRINT NAME: ARRON GUSTAFSON

DATE: 7-29-24

SIGNATURE:

NOTES:
THIS EXHIBIT IS A GRAPHIC REPRESENTATION AND IS FOR REFERENCE PURPOSES ONLY.
REFER TO THE CONVEYANCE DOCUMENT FOR PARCEL RELATED DETAILS.

POSITIONS SHOWN ON THIS PLAT ARE WISCONSIN COORDINATE REFERENCE SYSTEM COORDINATES (WISCRS), TREMPLEALEU COUNTY, NAD83 (2011) IN US SURVEY FEET.
VALUES SHOWN ARE GRID COORDINATES, GRID BEARINGS, AND GRID DISTANCES. GRID DISTANCES MAY BE USED AS GROUND DISTANCES.

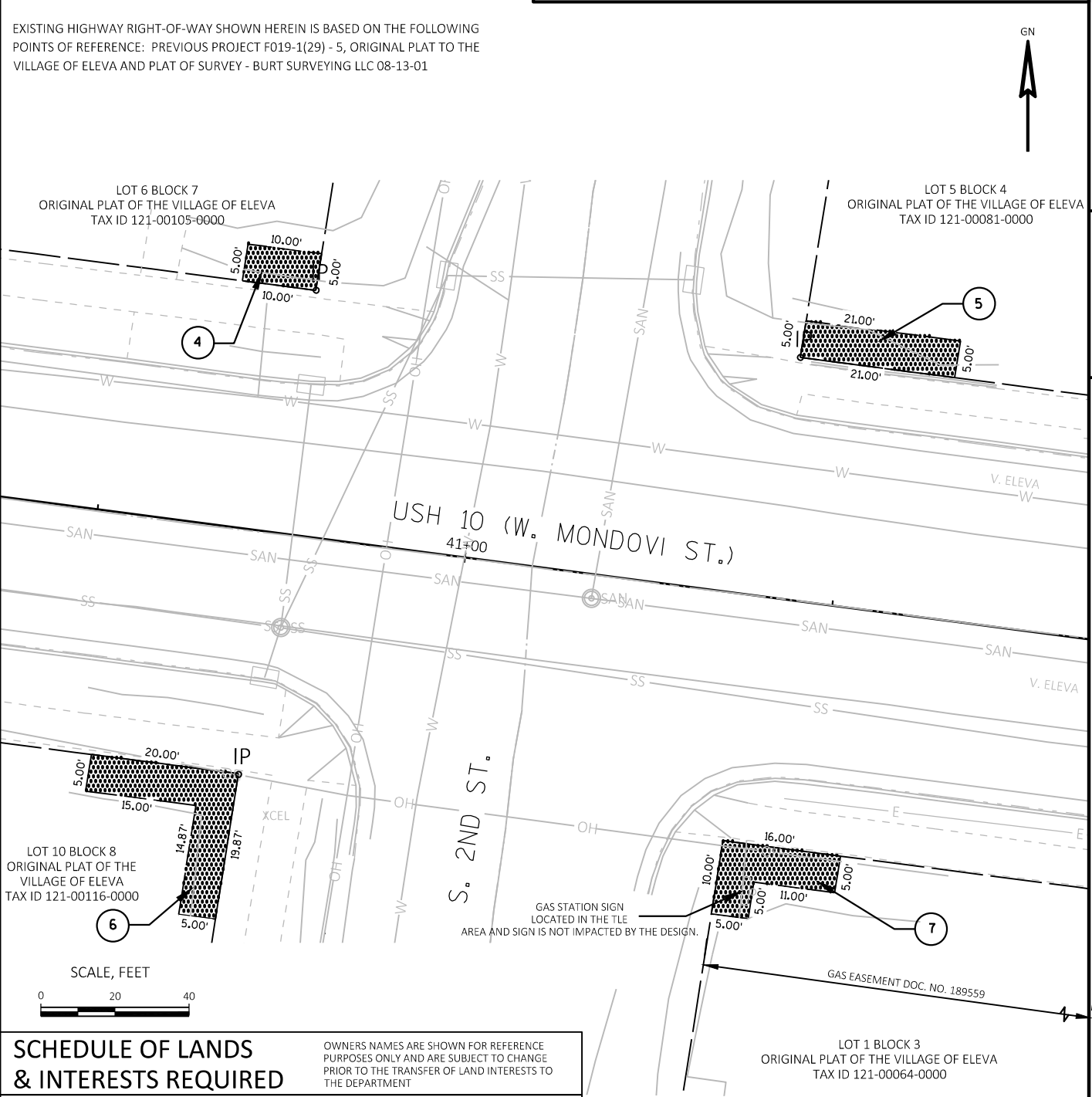
EXISTING HIGHWAY RIGHT-OF-WAY SHOWN HEREIN IS BASED ON THE FOLLOWING POINTS OF REFERENCE: PREVIOUS PROJECT F019-1(29) - 5, ORIGINAL PLAT TO THE VILLAGE OF ELEVA AND PLAT OF SURVEY - BURT SURVEYING LLC 08-13-01

R/W PROJECT NUMBER: 1530-06-22

SHEET NUMBER: 4.02

RW ACQUISITION EXHIBIT
USH 10
MONDOVI TO OSSEO
TREMPLEALEAU COUNTY

PART OF THE SE1/4 OF THE NE1/4 OF SECTION 9, T-24-N, R9-W, VILLAGE OF ELEVA, TREMPLEALEAU COUNTY, WISCONSIN.



SCHEDULE OF LANDS & INTERESTS REQUIRED			
OWNERS NAMES ARE SHOWN FOR REFERENCE PURPOSES ONLY AND ARE SUBJECT TO CHANGE PRIOR TO THE TRANSFER OF LAND INTERESTS TO THE DEPARTMENT			
PARCEL NUMBER	OWNER(S)	INTEREST REQUIRED	TLE S.F.
4	ANDREW THOMAS STRONG	TLE	50
5	ANDREW THOMAS STRONG	TLE	105
6	JAMES DAHLSTROM	TLE	174
7	J & S SALES OF CHIPPEWA FALLS LLC	TLE	105

THIS MAP IS APPROVED FOR THE DEPARTMENT OF TRANSPORTATION NORTHWEST REGION, EAU CLAIRE OFFICE

Arron Gustafson

PRINT NAME: ARRON GUSTAFSON

DATE: 7-29-24

SIGNATURE:

UTILITY INTERESTS REQUIRED

UTILITY #

UTILITY OWNER(S)

INTEREST REQUIRED

81

RIVERLAND ENERGY COOPERATIVE

RELEASE OF RIGHTS

R/W PROJECT NUMBER: 1530-06-22

SHEET NUMBER: 4.03

TLE ACQUISITION EXHIBIT

USH 10

MONDOVI TO OSSEO

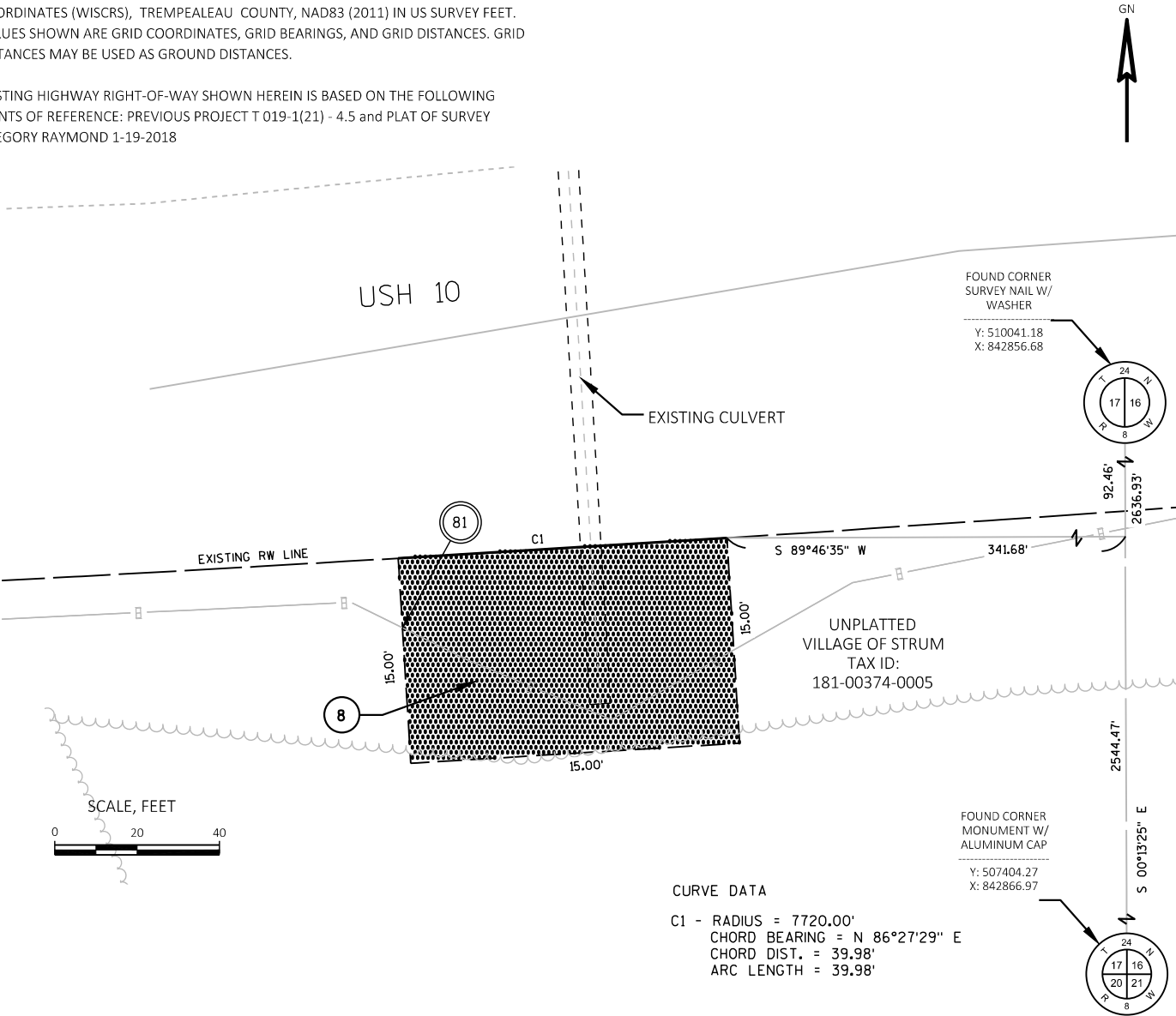
TREMPEALEAU COUNTY

PART OF THE NE 1/4 OF THE SE 1/4 OF SECTION 17, T-24-N, R8-W, VILLAGE OF STRUM, TREMPEALEAU COUNTY, WISCONSIN.

NOTES:
THIS EXHIBIT IS A GRAPHIC REPRESENTATION AND IS FOR REFERENCE PURPOSES ONLY.
REFER TO THE CONVEYANCE DOCUMENT FOR PARCEL RELATED DETAILS.

POSITIONS SHOWN ON THIS PLAT ARE WISCONSIN COORDINATE REFERENCE SYSTEM COORDINATES (WISCRS), TREMPEALEAU COUNTY, NAD83 (2011) IN US SURVEY FEET. VALUES SHOWN ARE GRID COORDINATES, GRID BEARINGS, AND GRID DISTANCES. GRID DISTANCES MAY BE USED AS GROUND DISTANCES.

EXISTING HIGHWAY RIGHT-OF-WAY SHOWN HEREIN IS BASED ON THE FOLLOWING POINTS OF REFERENCE: PREVIOUS PROJECT T 019-1(21) - 4.5 and PLAT OF SURVEY GREGORY RAYMOND 1-19-2018



SCHEDULE OF LANDS & INTERESTS REQUIRED

OWNERS NAMES ARE SHOWN FOR REFERENCE PURPOSES ONLY AND ARE SUBJECT TO CHANGE PRIOR TO THE TRANSFER OF LAND INTERESTS TO THE DEPARTMENT

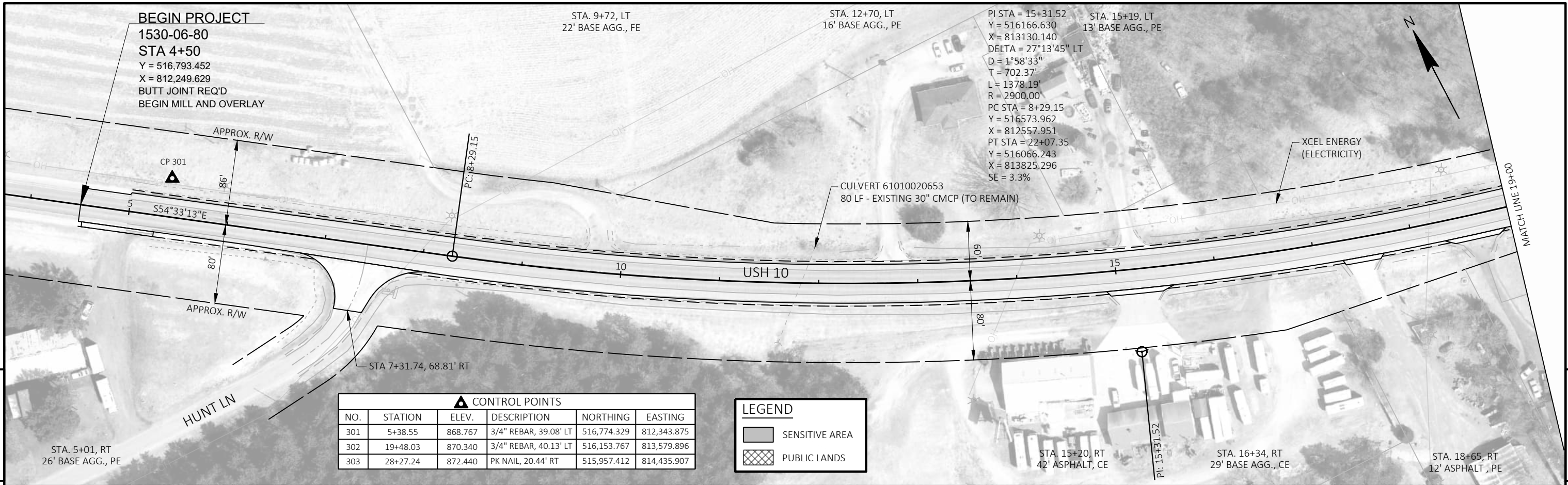
PARCEL NUMBER	OWNER(S)	INTEREST REQUIRED	TLE S.F.
8	VILLAGE OF STRUM	TLE	997

THIS MAP IS APPROVED FOR THE DEPARTMENT OF TRANSPORTATION NORTHWEST REGION, EAU CLAIRE OFFICE

Aaron Gustafson
PRINT NAME: ARRON GUSTAFSON

DATE: 7-29-24

SIGNATURE:

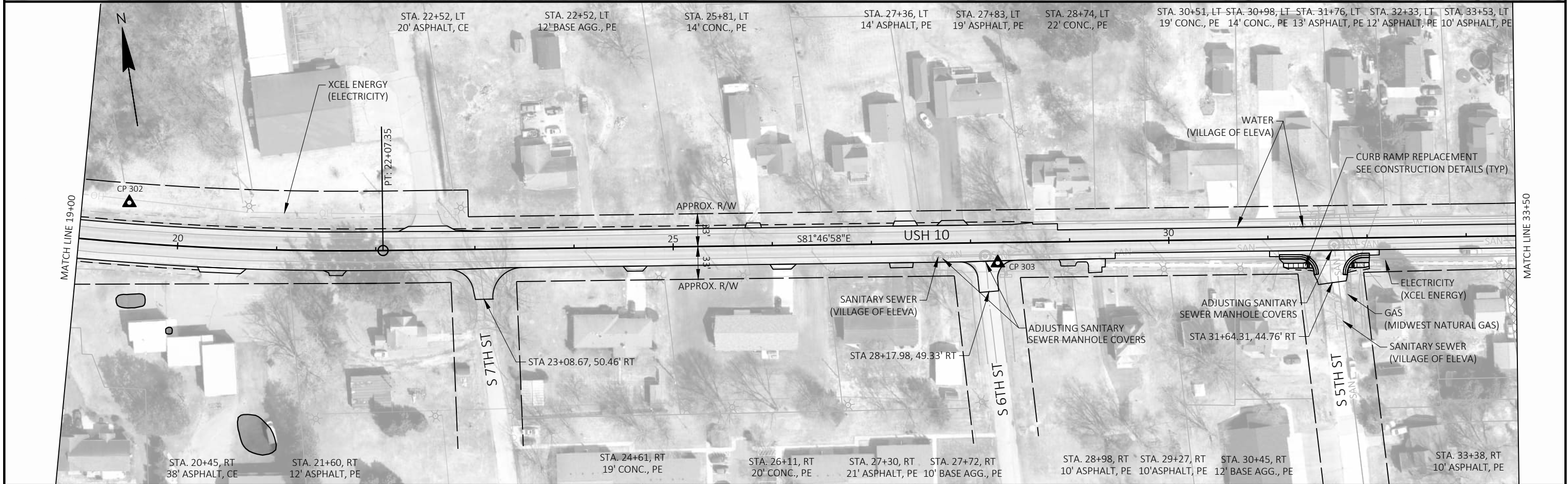


CONTROL POINTS					
NO.	STATION	ELEV.	DESCRIPTION	NORTHING	EASTING
301	5+38.55	868.767	3/4" REBAR, 39.08' LT	516,774.329	812,343.875
302	19+48.03	870.340	3/4" REBAR, 40.13' LT	516,153.767	813,579.896
303	28+27.24	872.440	PK NAIL, 20.44' RT	515,957.412	814,435.907

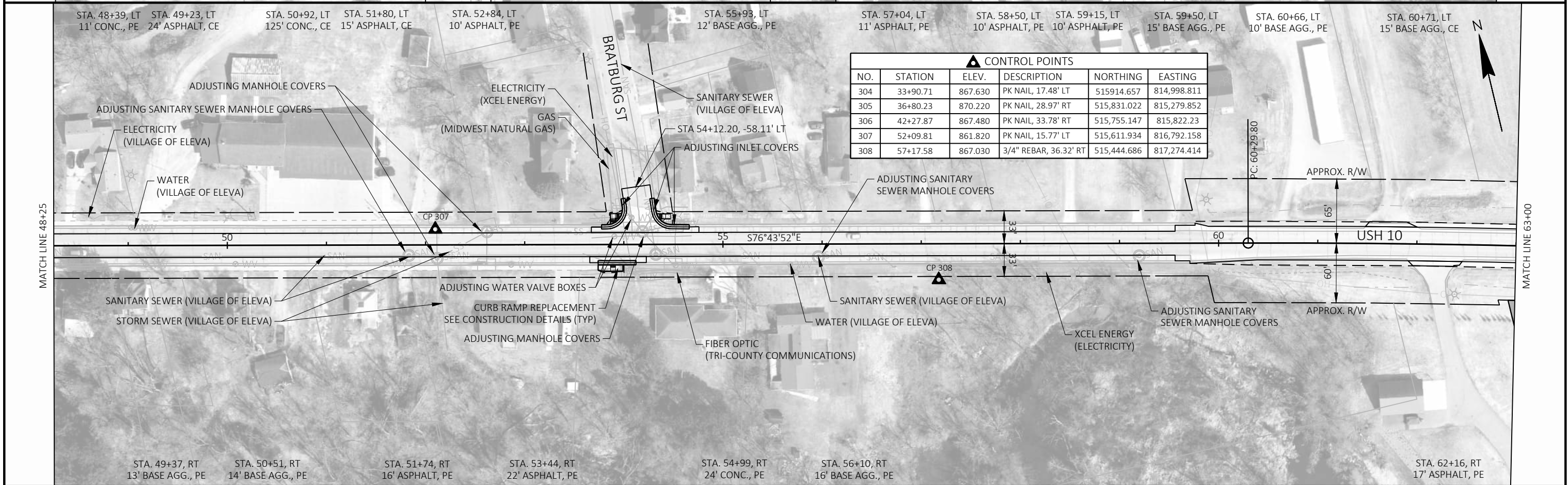
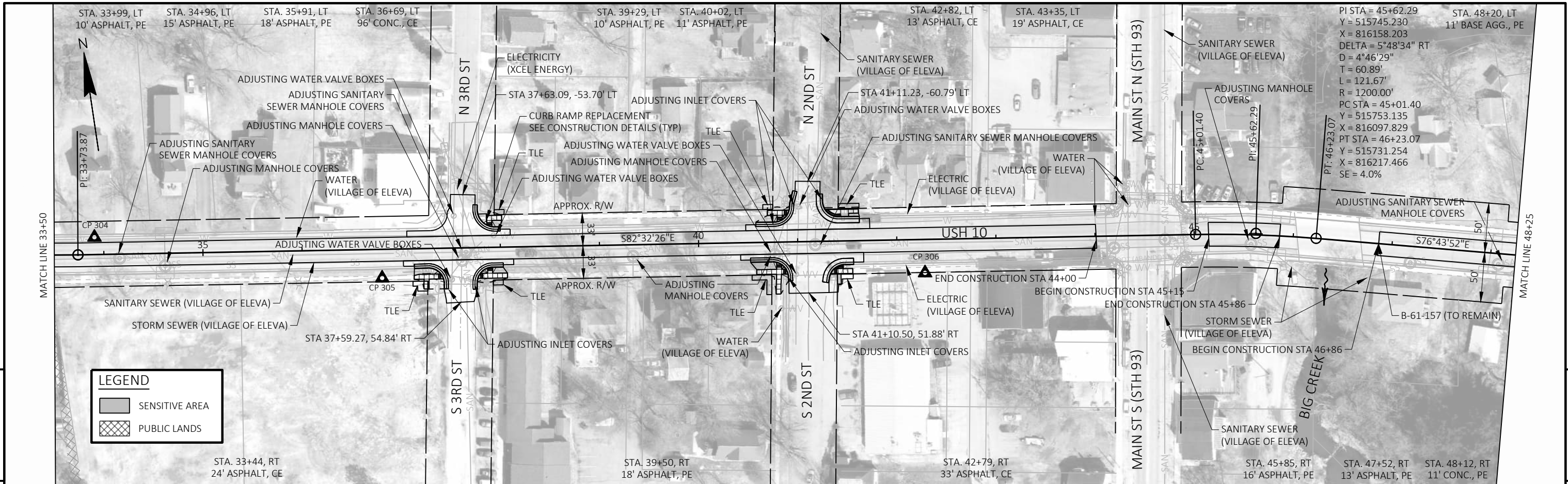
LEGEND

SENSITIVE AREA

PUBLIC LANDS



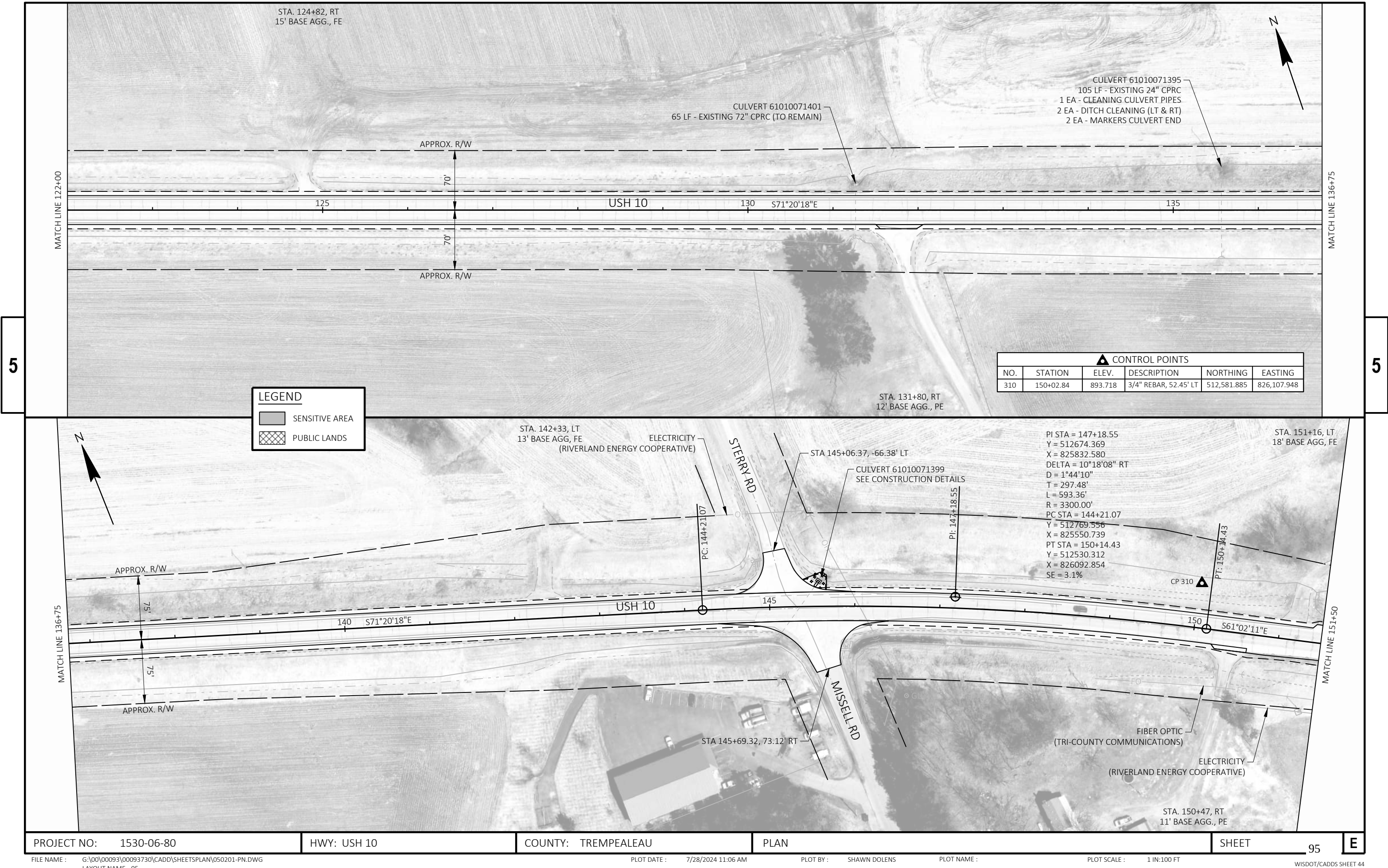
PROJECT NO: 1530-06-80	HWY: USH 10	COUNTY: TREMPLEALEU	PLAN	SHEET 91
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CONTROL POINTS					
NO.	STATION	ELEV.	DESCRIPTION	NORTHING	EASTING
304	33+90.71	867.630	PK NAIL, 17.48' LT	515914.657	814,998.811
305	36+80.23	870.220	PK NAIL, 28.97' RT	515,831.022	815,279.852
306	42+27.87	867.480	PK NAIL, 33.78' RT	515,755.147	815,822.23
307	52+09.81	861.820	PK NAIL, 15.77' LT	515,611.934	816,792.158
308	57+17.58	867.030	3/4" REBAR, 36.32' RT	515,444.686	817,274.414







5

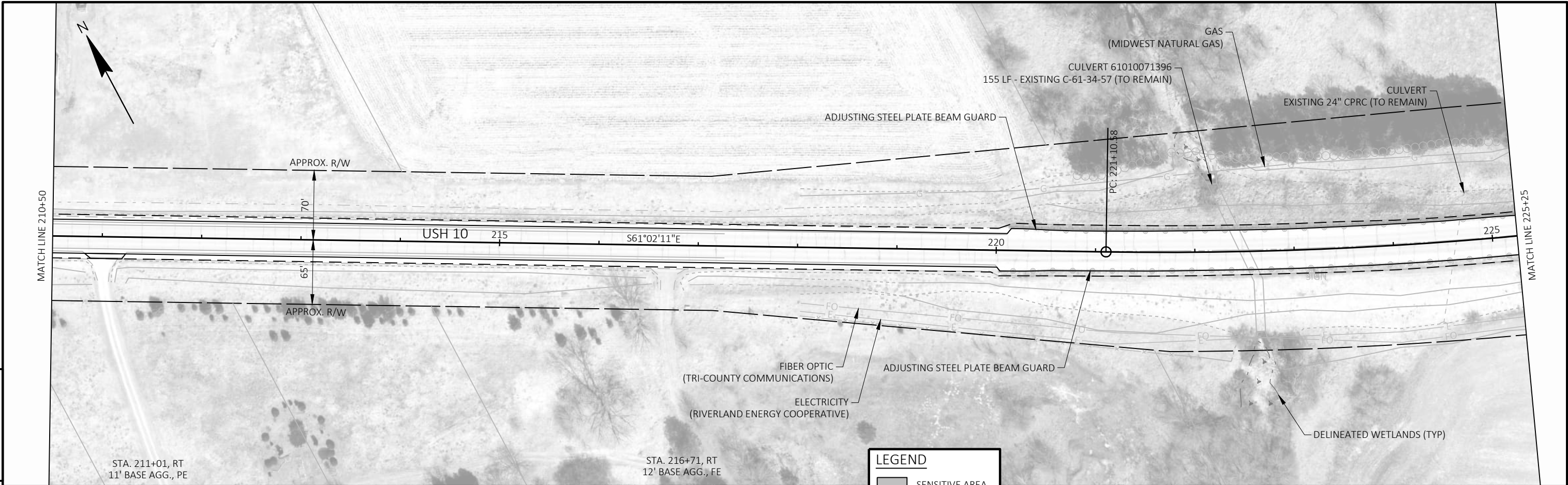
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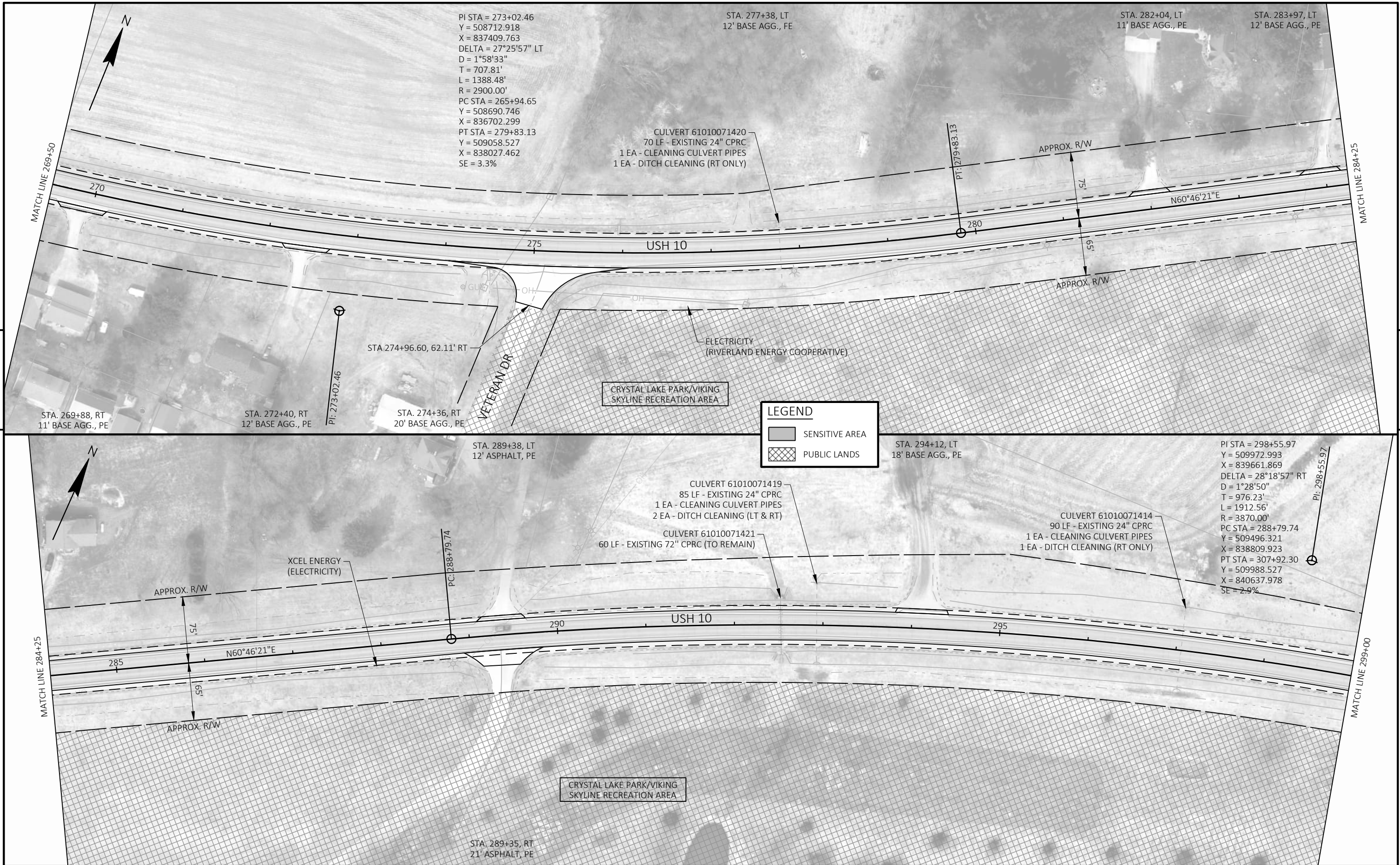
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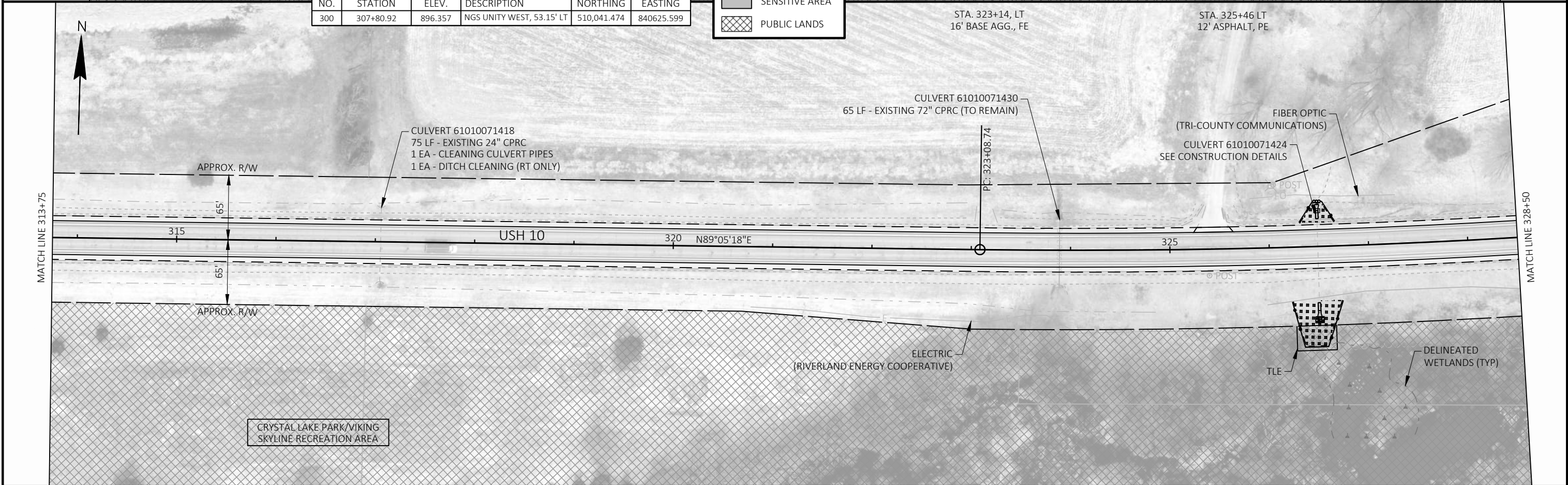
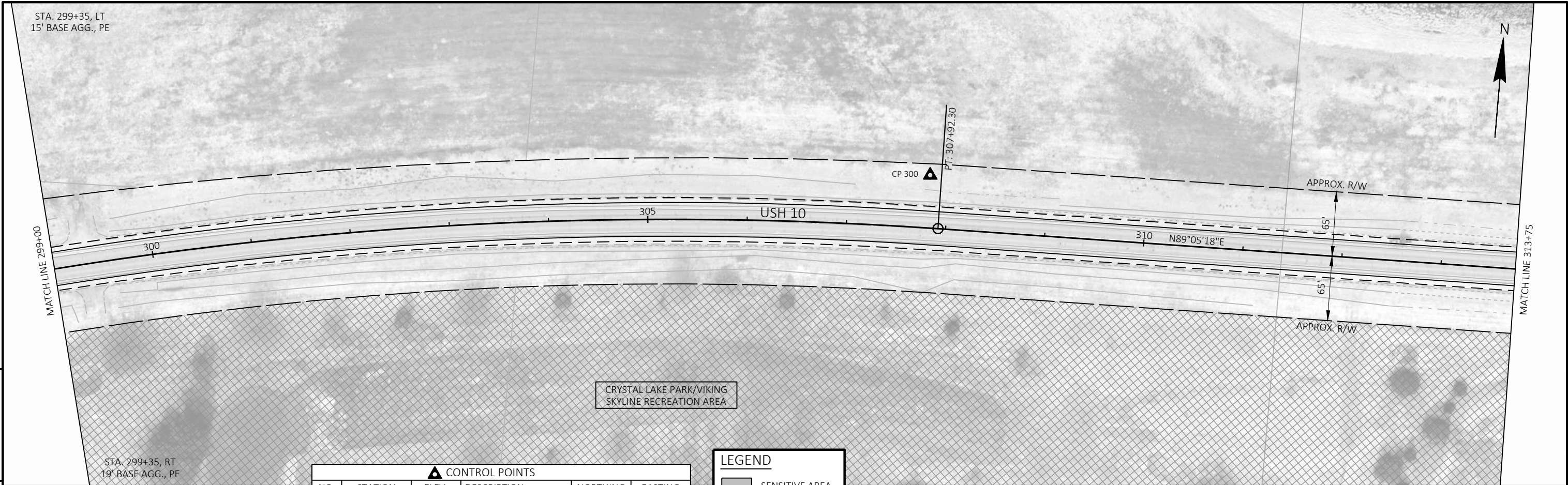
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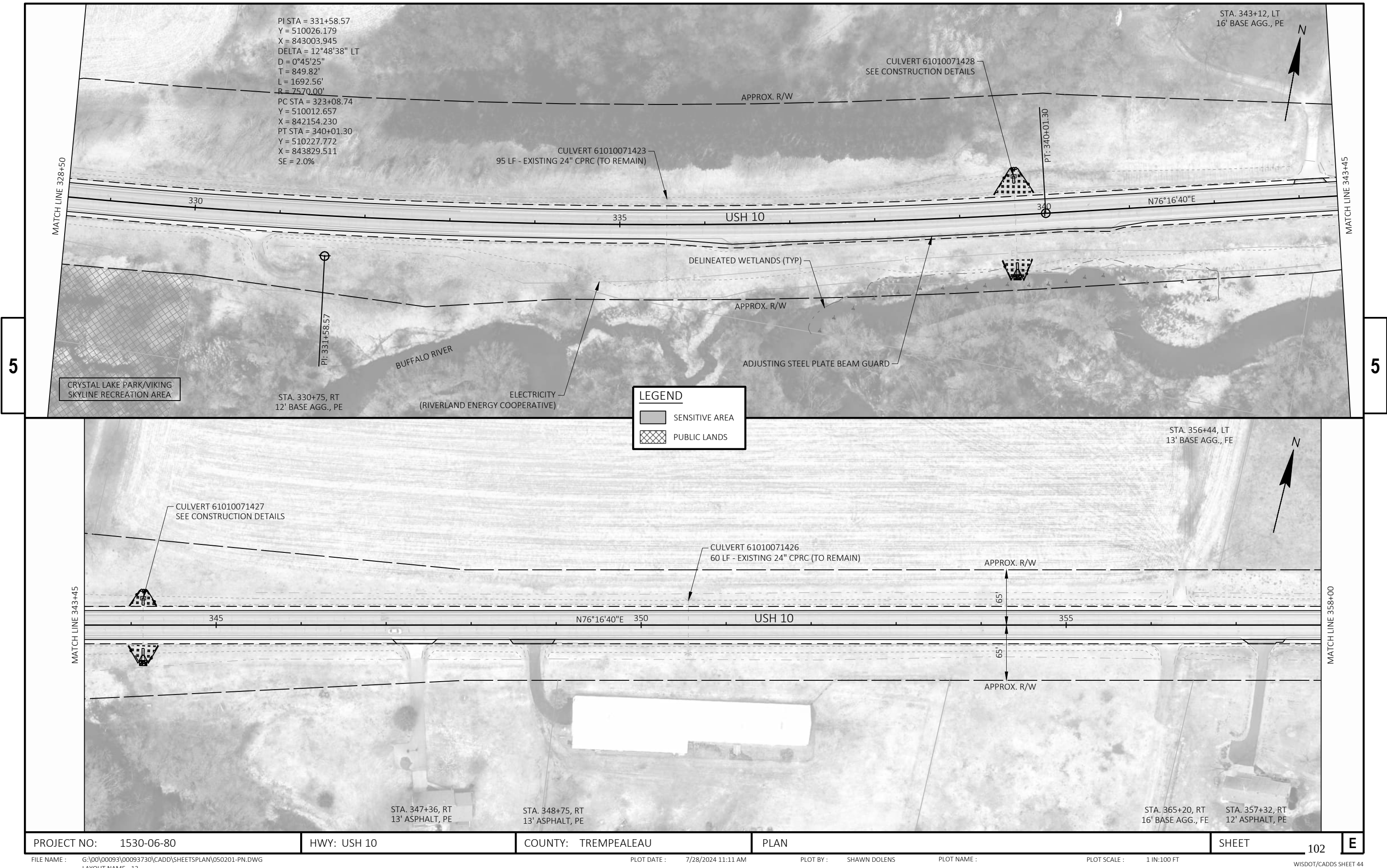
CONTROL POINTS					
NO.	STATION	ELEV.	DESCRIPTION	NORTHING	EASTING
311	202+06.36	890.738	3/4" REBAR, 44.24' RT	509,977.39	830,613.994

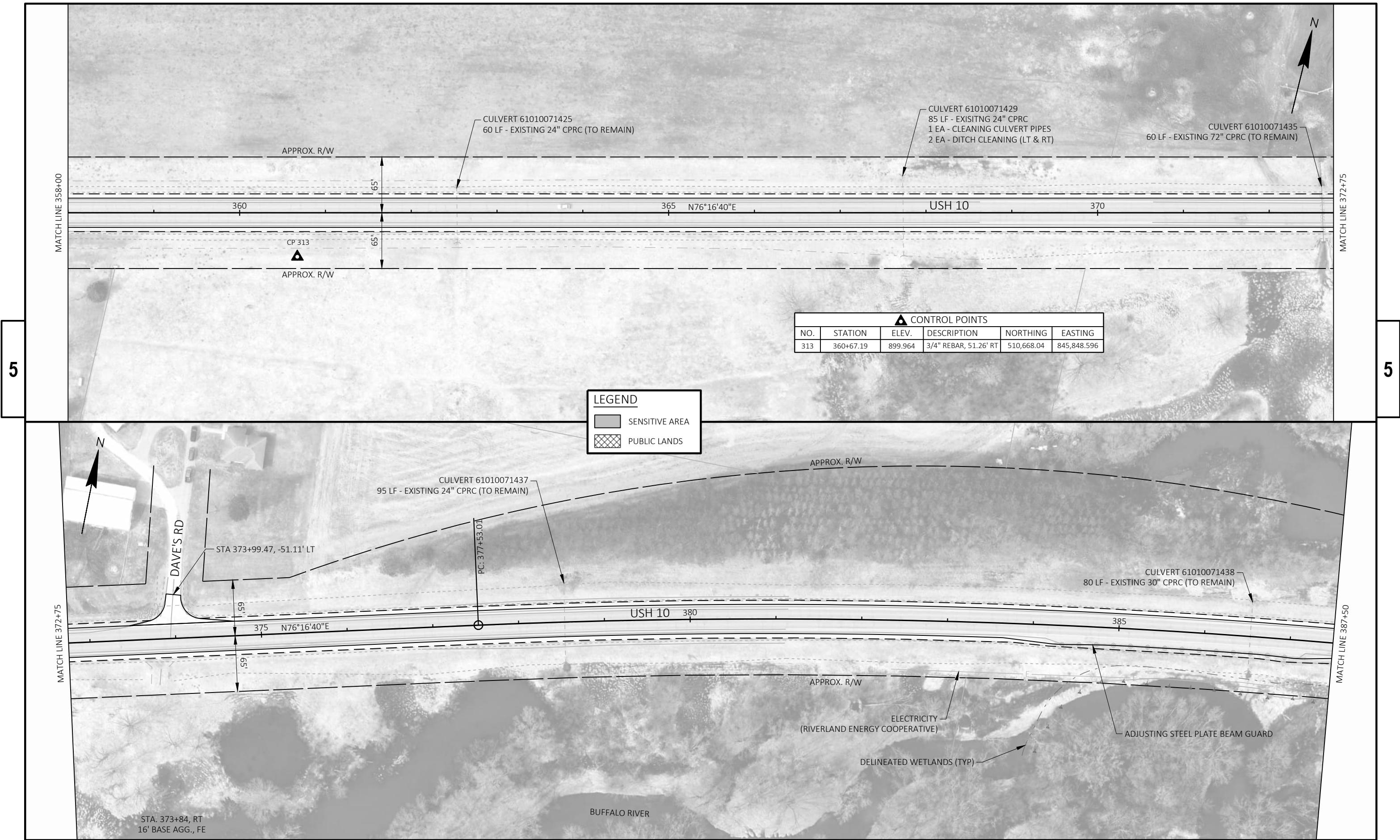










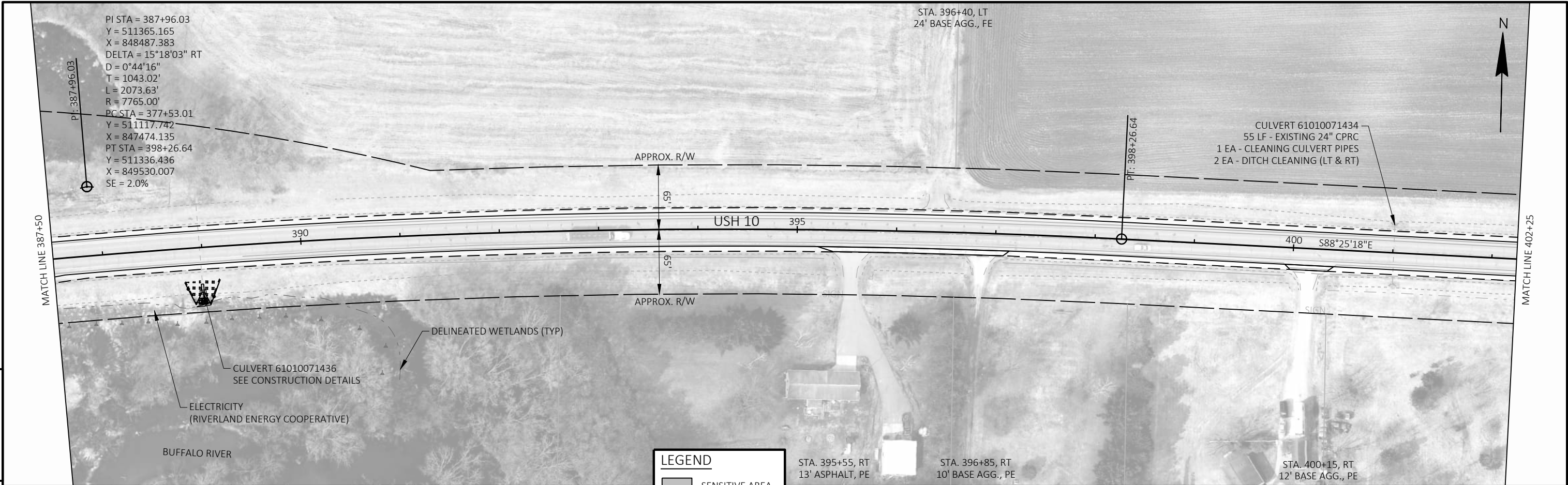


CONTROL POINTS					
NO.	STATION	ELEV.	DESCRIPTION	NORTHING	EASTING
313	360+67.19	899.964	3/4" REBAR, 51.26' RT	510,668.04	845,848.596

LEGEND

SENSITIVE AREA

PUBLIC LANDS



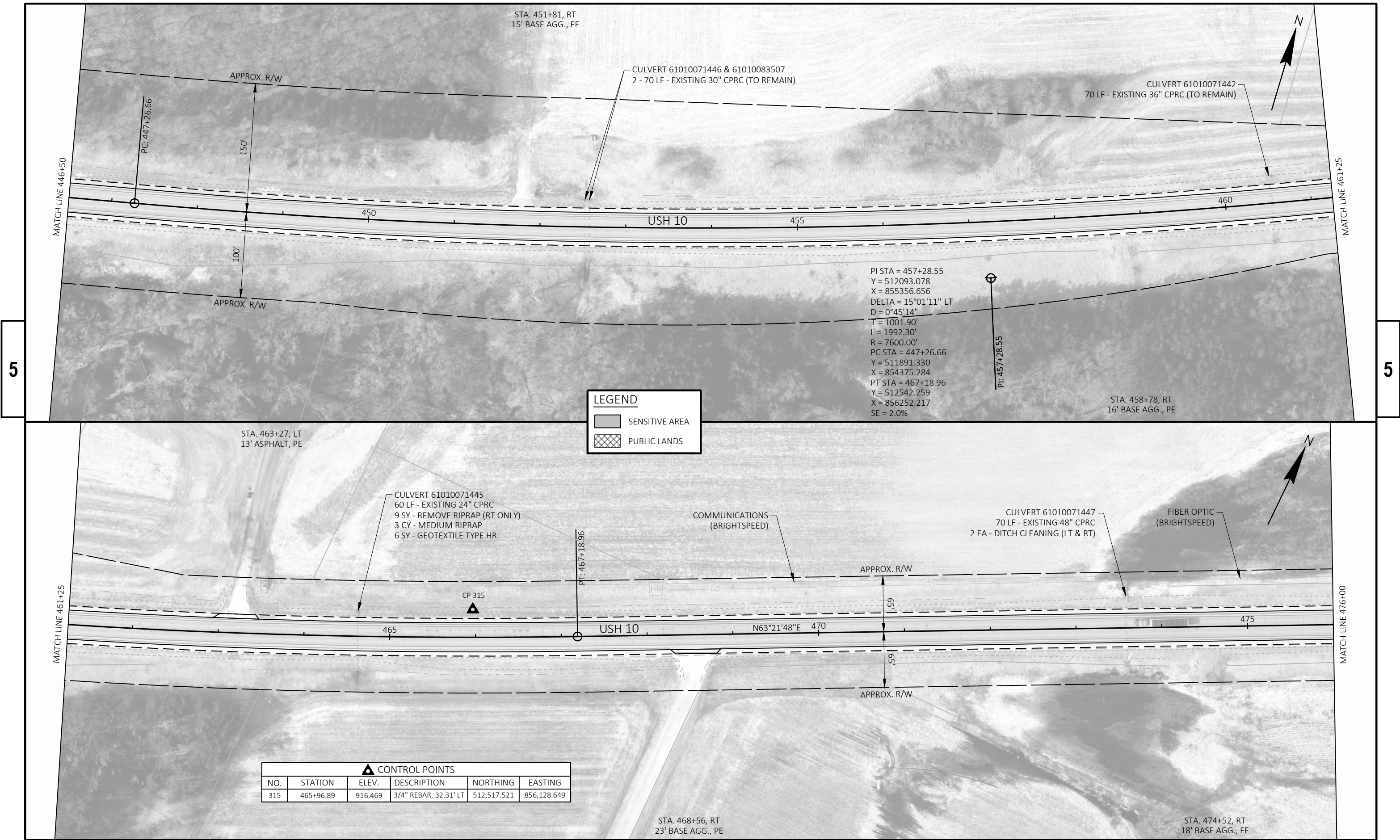
LEGEND

- SENSITIVE AREA
- PUBLIC LANDS

CONTROL POINTS					
NO.	STATION	ELEV.	DESCRIPTION	NORTHING	EASTING
314	412+83.81	908.224	3/4" REBAR, 32.32' LT	511,341.269	850,985.745



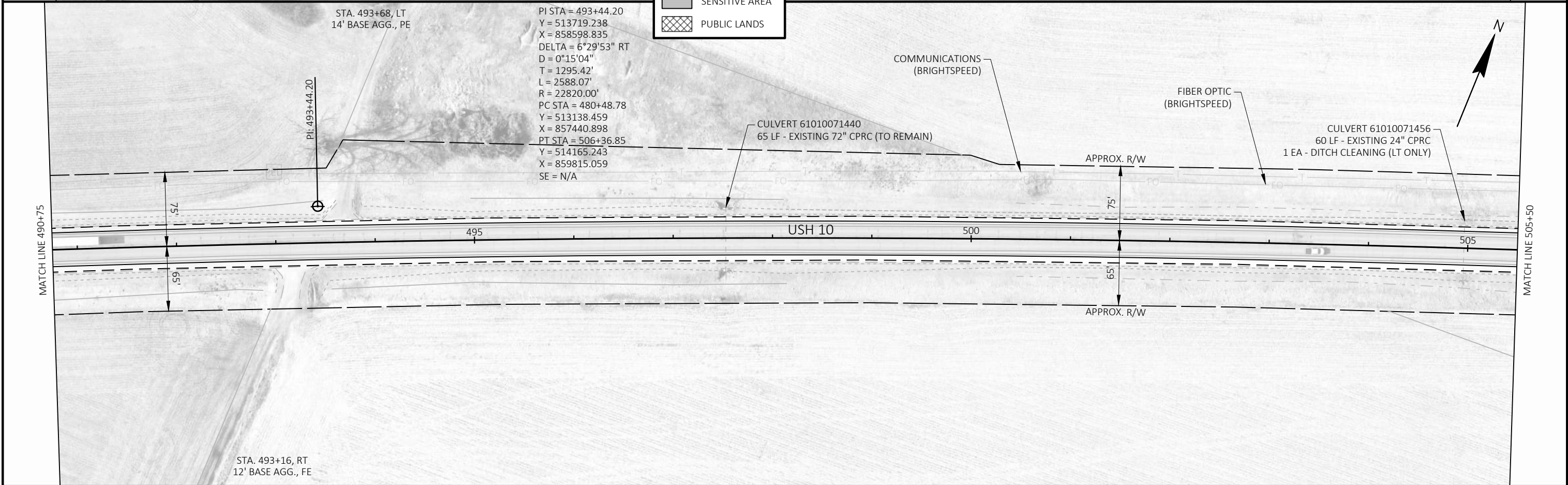
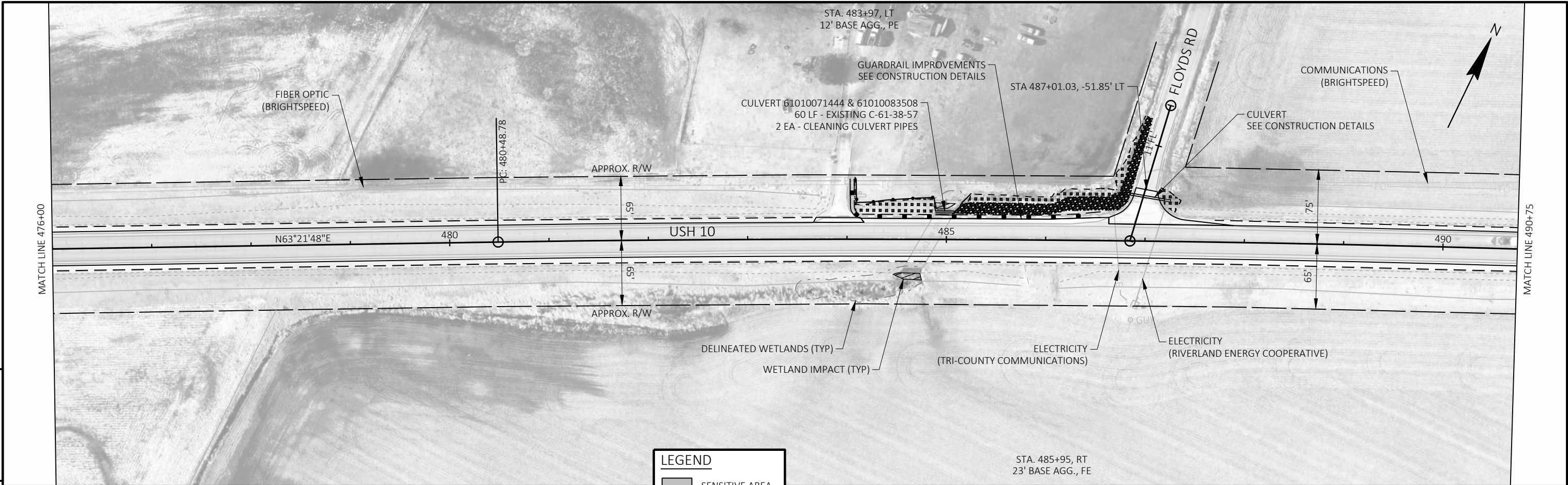


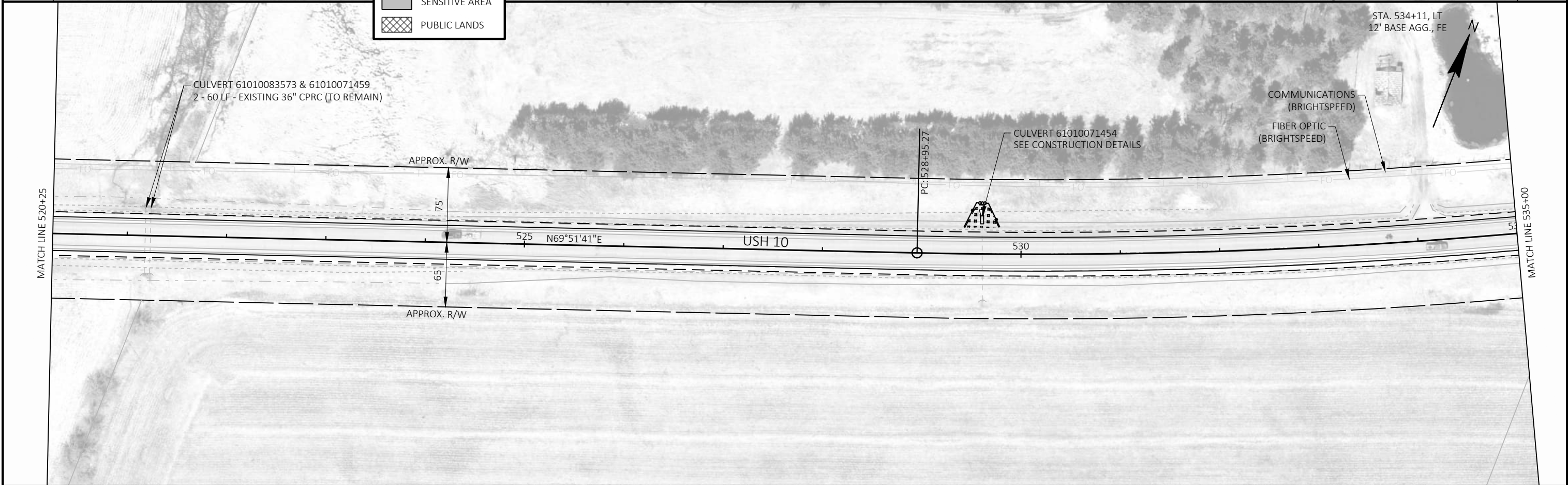
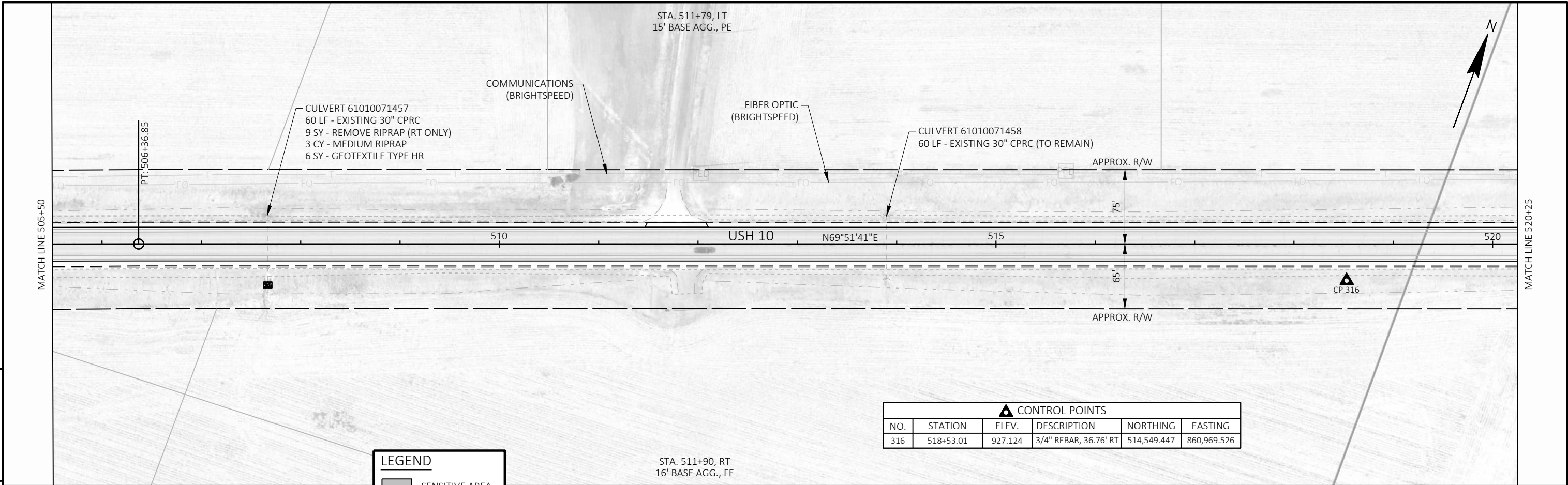


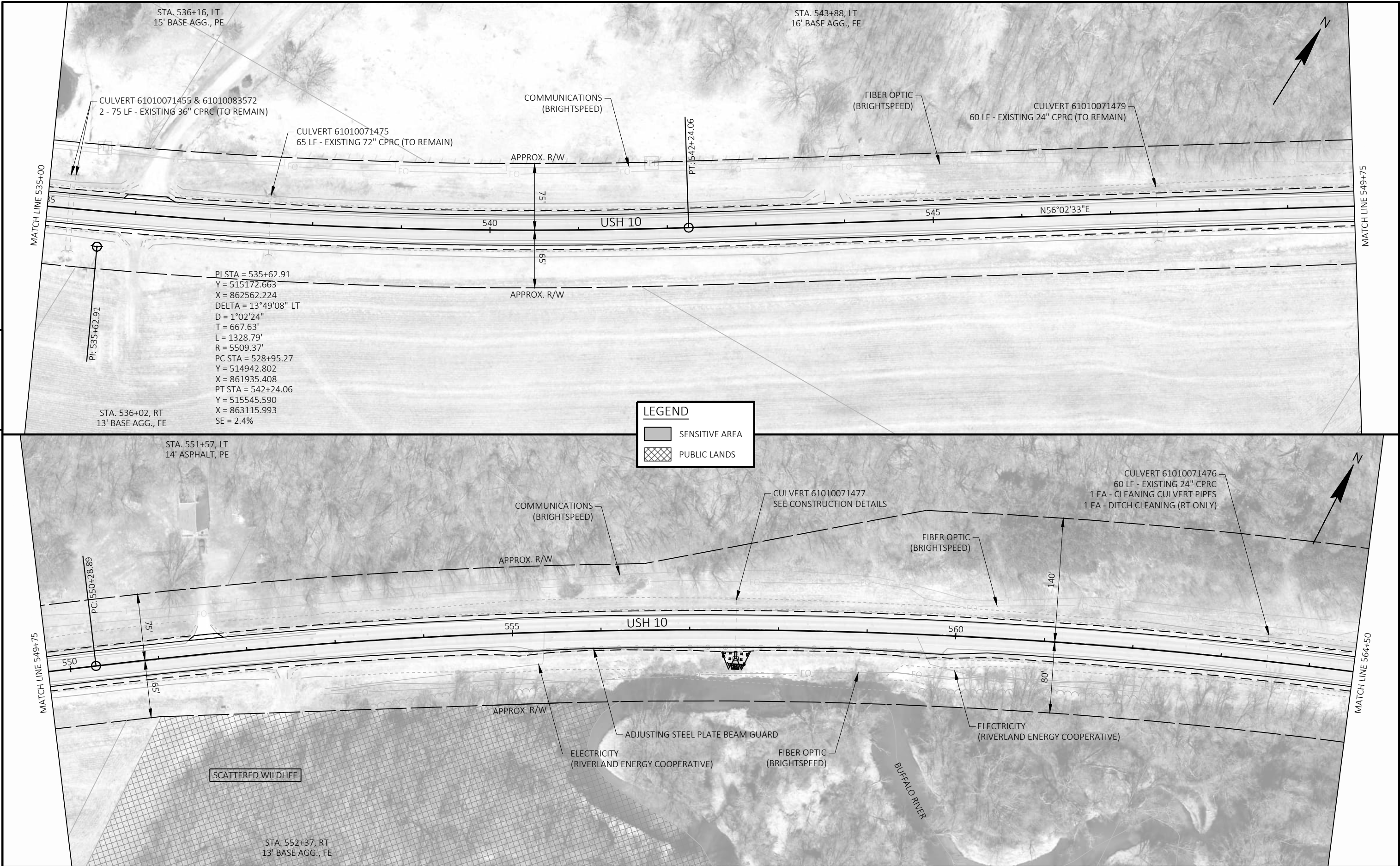
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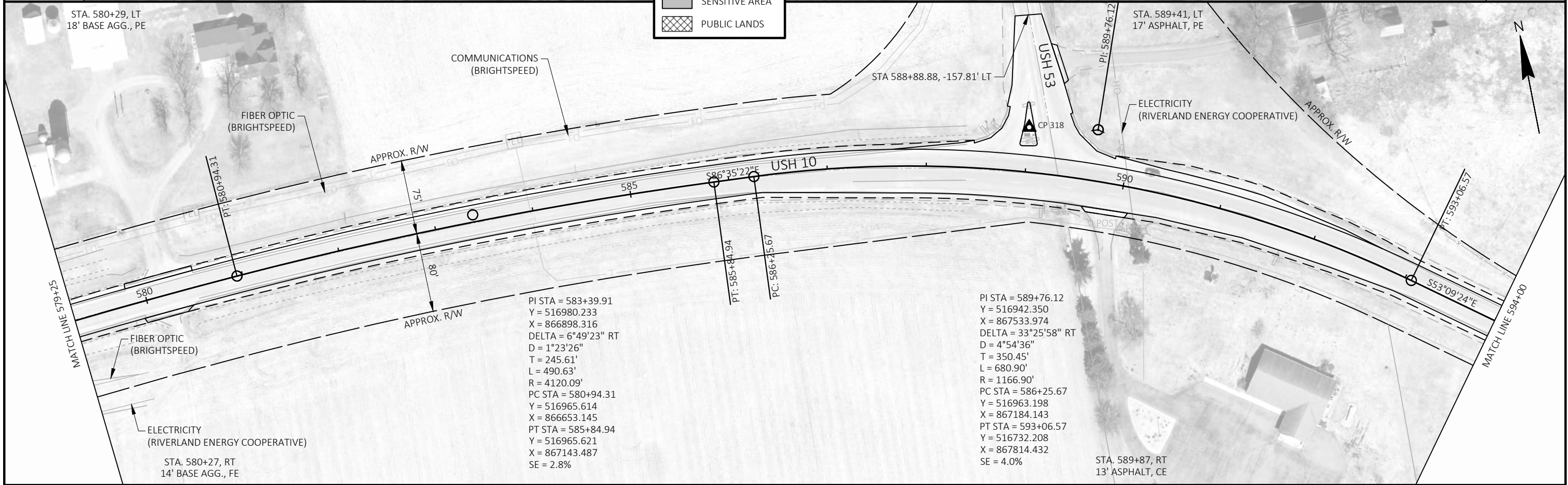
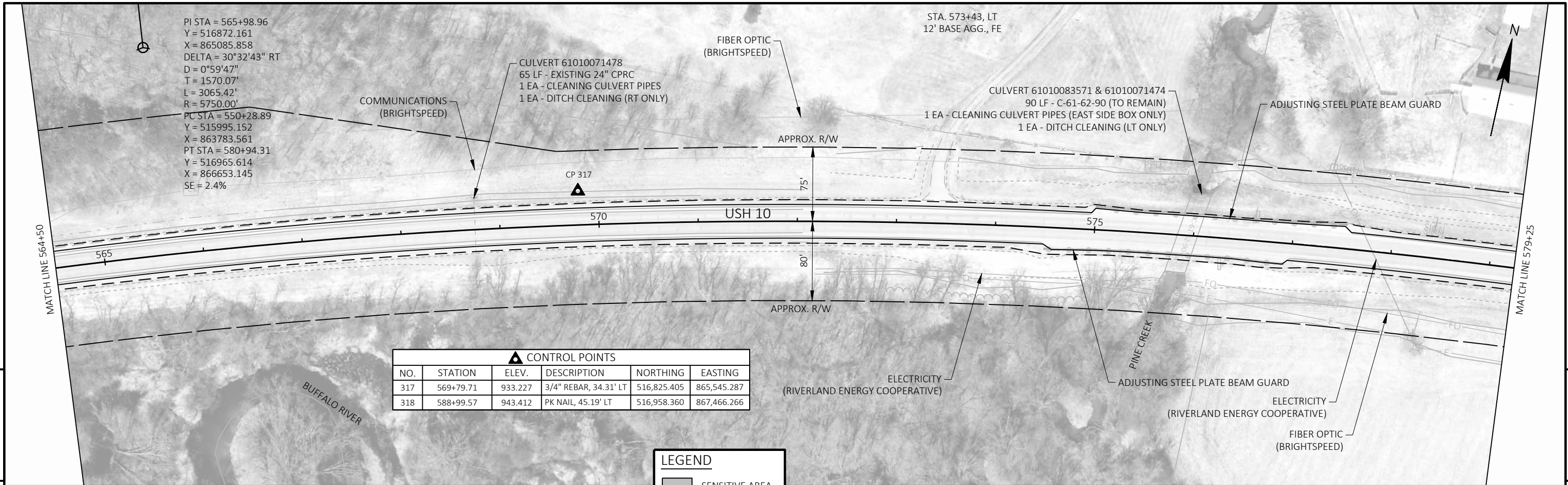
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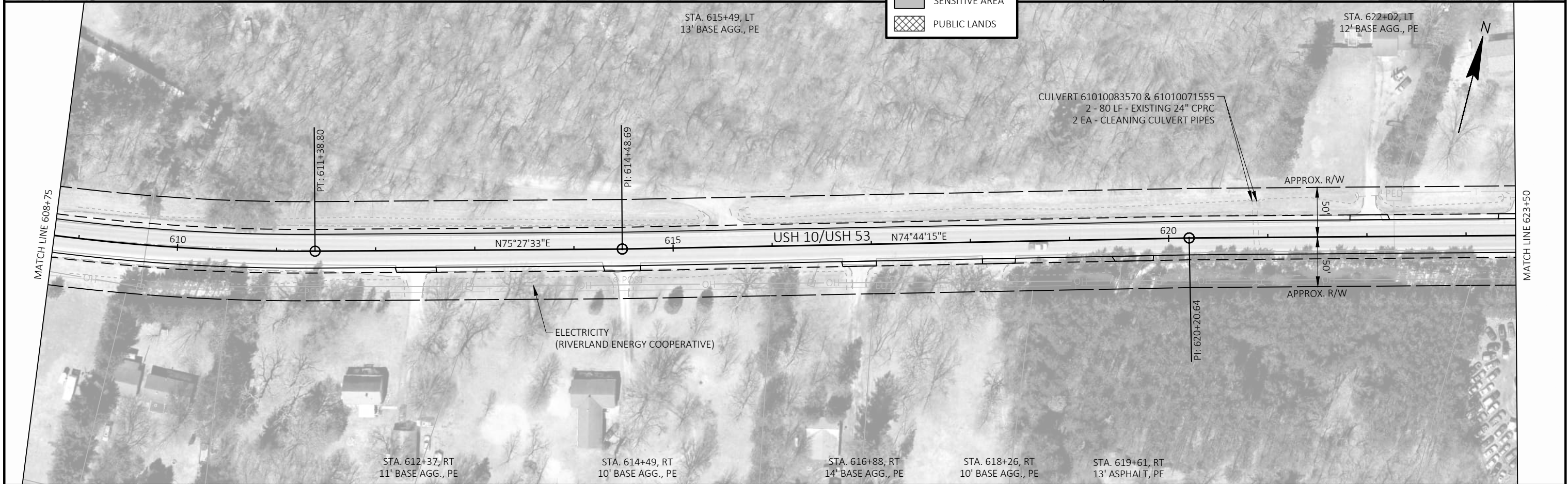
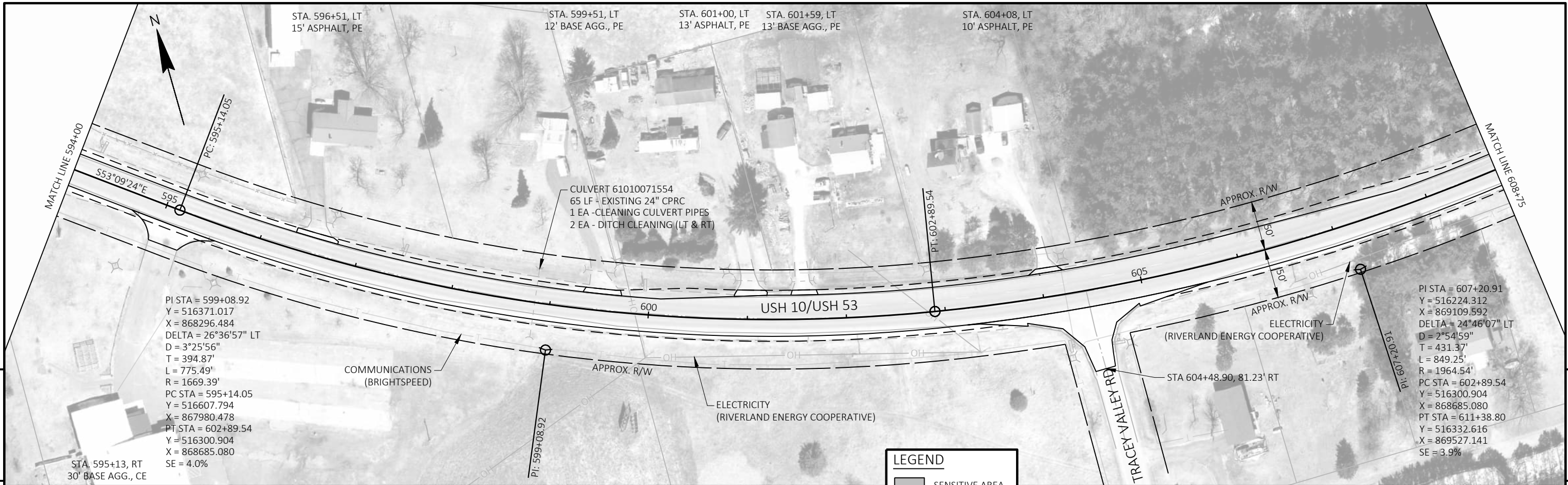
CONTROL POINTS					
NO.	STATION	ELEV.	DESCRIPTION	NORTHING	EASTING
315	465+96.89	916.469	3/4" REBAR, 32.31' LT	512,517.521	856,128.649





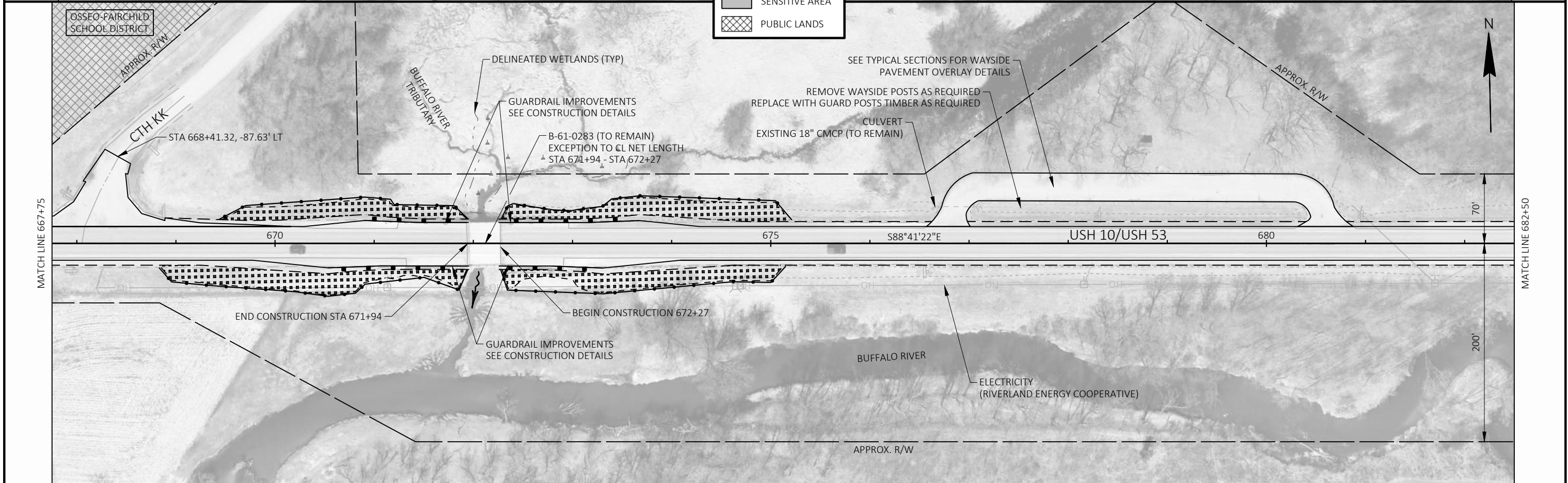


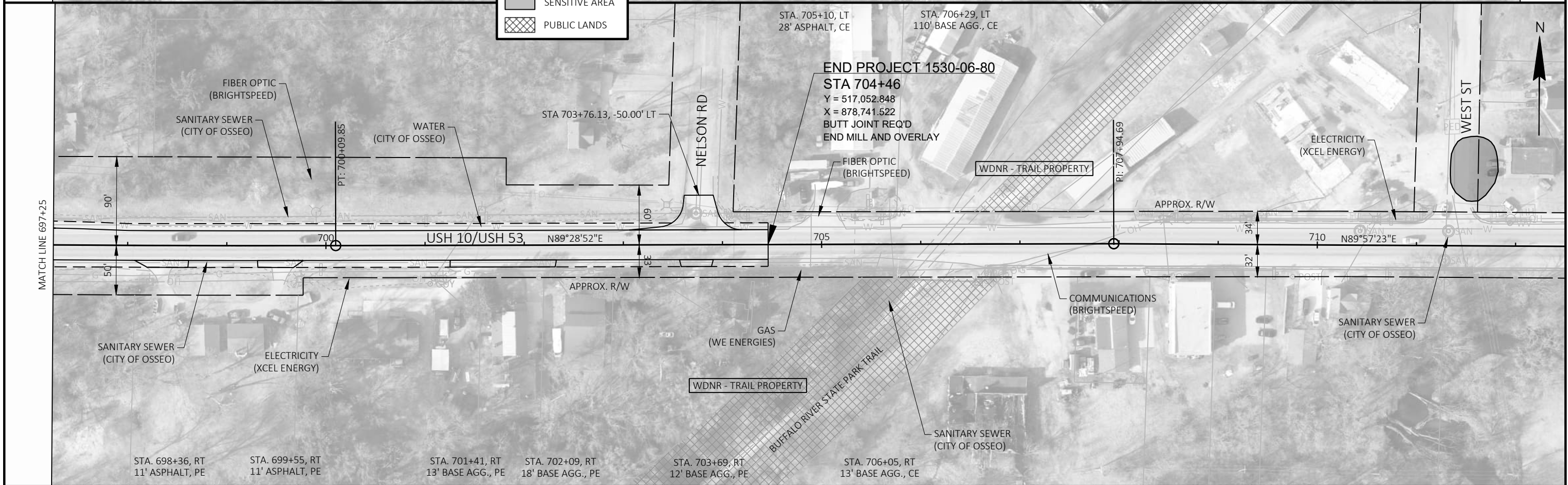
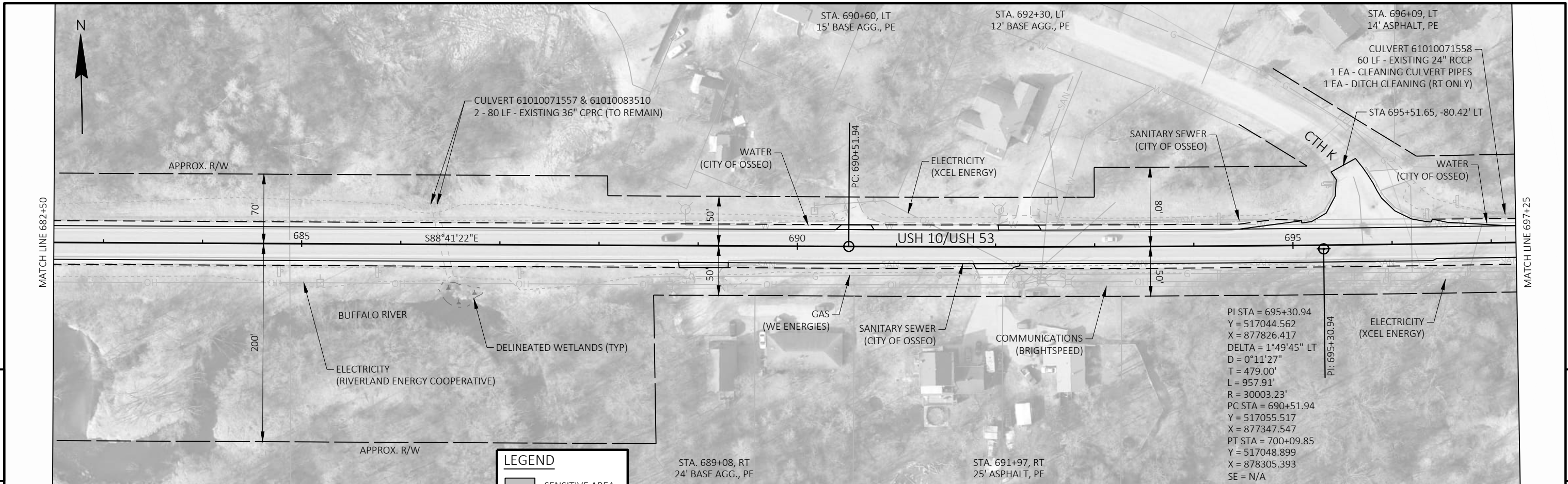




PROJECT NO: 1530-06-80	HWY: USH 10	COUNTY: TREMPLEALEU	PLAN	SHEET 111	E
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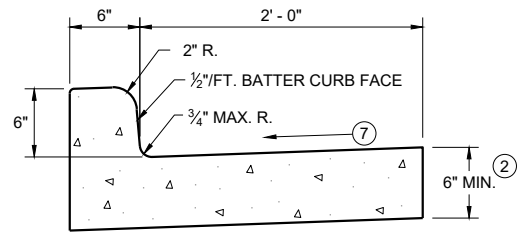
PROJECT NO: 1530-06-80	HWY: USH 10	COUNTY: TREMPLEALEU	PLAN	SHEET 114	E
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Standard Detail Drawing List

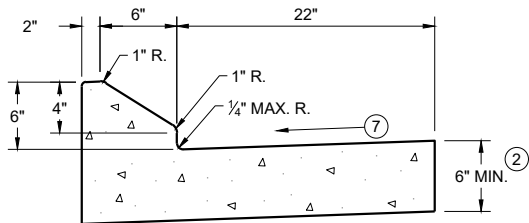
08D01-23A	CONCRETE CURB & GUTTER
08D01-23B	CONCRETE CURB, TIES AND CURB AND GUTTER APPLICATIONS
08D02-08A	CONCRETE SURFACE DRAINS FLUME TYPE AT STRUCTURES
08D02-08B	CONCRETE SURFACE DRAINS FLUME TYPE AT STRUCTURES
08D02-08C	CONCRETE SURFACE DRAINS FLUME TYPE AT STRUCTURES
08D04-07	CONCRETE SURFACE DRAINS & ASPHALTIC FLUMES
08D05-21A	CURB RAMPS TYPES 1 AND 1-A
08D05-21B	CURB RAMPS TYPES 2 AND 3
08D05-21C	CURB RAMPS TYPES 4A AND 4A1
08D05-21D	CURB RAMPS TYPE 4B AND 4B1
08D05-21E	CURB RAMPS TYPES 5, 6, 7A, 7B & 8
08D05-21F	CURB RAMPS RADIAL DETECTABLE WARNING FIELD APPLICATIONS
08D05-21G	CURB RAMPS RECTANGULAR AND RADIAL DETECTABLE WARNING PLATES
08E09-06	SILT FENCE
08E10-02	INLET PROTECTION TYPE A, B, C AND D
08E15-01	CULVERT PIPE CHECK
08F01-11	APRON ENDWALLS FOR CULVERT PIPE
08F02-01	APRON ENDWALLS FOR PIPE ARCH AND ELLIPTICAL PIPE
08F04-08	JOINT TIES FOR CONCRETE PIPE AND CONCRETE COLLAR DETAIL
08F10-02	CONCRETE MASONRY ENDWALLS FOR CULVERT PIPE AND PIPE ARCH
13A05-06A	SHOULDER RUMBLE STRIPS, DIVIDED ROADWAY
13A05-06B	SHOULDER RUMBLE STRIPS, DIVIDED ROADWAY
13A10-03A	SHOULDER RUMBLE STRIPS - ASPHALT
13A10-03B	SHOULDER RUMBLE STRIPS - CONCRETE
13A10-03C	SHOULDER RUMBLE STRIPS - ASPHALT SINUSOIDAL
13A10-03D	SHOULDER RUMBLE STRIPS - CONCRETE SINUSOIDAL
13A10-03E	EDGE LINE RUMBLE STRIPS - ASPHALT
13A10-03F	EDGE LINE RUMBLE STRIPS - CONCRETE
13A10-03G	SHOULDER AND EDGE LINE RUMBLE STRIPS - CROSSINGS, INTERSECTIONS, BRIDGES, DRIVEWAYS
13A10-03H	SHOULDER AND EDGE LINE RUMBLE STRIPS - RAILROAD, PASSING, CLIMBING AND BYPASS LANES
13A11-04A	CENTERLINE RUMBLE STRIPS - ASPHALT
13A11-04B	CENTERLINE RUMBLE STRIPS - CONCRETE
13A11-04C	CENTERLINE RUMBLE STRIPS - ASPHALT SINUSOIDAL
13A11-04D	CENTERLINE RUMBLE STRIPS - INTERSECTIONS, DRIVEWAYS, BRIDGES, RAILROADS
13C19-03	HMA LONGITUDINAL JOINTS
14B15-11A	STEEL PLATE BEAM GUARD, CLASS "A" INSTALLATION & ELEMENTS
14B15-11B	STEEL PLATE BEAM GUARD, CLASS "A" INSTALLATION & ELEMENTS
14B15-11C	STEEL PLATE BEAM GUARD, CLASS "A", INSTALLATION & ELEMENTS
14B24-09A	STEEL PLATE BEAM GUARD ENERGY ABSORBING TERMINAL
14B24-09B	STEEL PLATE BEAM GUARD ENERGY ABSORBING TERMINAL
14B24-09C	STEEL PLATE BEAM GUARD ENERGY ABSORBING TERMINAL
14B27-01A	STEEL PLATE BEAM GUARD SHORT RADIUS TERMINAL
14B27-01B	STEEL PLATE BEAM GUARD SHORT RADIUS TERMINAL
14B27-01C	STEEL PLATE BEAM GUARD SHORT RADIUS TERMINAL
14B29-01	SAFETY EDGE
14B42-07A	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-07B	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-07C	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-07D	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B44-04A	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B44-04B	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B44-04C	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B45-05A	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-05B	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-05C	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-05D	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-05E	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-05F	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-05G	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-05H	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-05I	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-05J	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-05K	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-05L	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B53-02A	SHORT RADIUS BEAM GUARD (MGS) SHORT RADIUS TERMINAL (MGS)
14B53-02B	SHORT RADIUS BEAM GUARD (MGS) SHORT RADIUS TERMINAL (MGS)
14B53-02C	SHORT RADIUS BEAM GUARD (MGS) SHORT RADIUS TERMINAL (MGS)

Standard Detail Drawing List

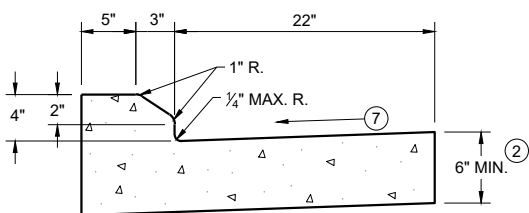
14B53-02D	SHORT RADIUS BEAM GUARD (MGS) SHORT RADIUS TERMINAL (MGS)
14B53-02E	SHORT RADIUS BEAM GUARD (MGS) SHORT RADIUS TERMINAL (MGS)
14B53-02F	SHORT RADIUS BEAM GUARD (MGS) SHORT RADIUS TERMINAL (MGS)
14B53-02G	SHORT RADIUS BEAM GUARD (MGS) SHORT RADIUS TERMINAL (MGS)
14B53-02H	SHORT RADIUS BEAM GUARD (MGS) SHORT RADIUS TERMINAL (MGS)
14B53-02I	SHORT RADIUS BEAM GUARD (MGS) SHORT RADIUS TERMINAL (MGS)
15A03-02A	FLEXIBLE MARKER POST FOR CULVERT END
15A03-02B	FLEXIBLE MARKER POST FOR CULVERT END
15C02-09A	BARRICADES AND SIGNS FOR MAINLINE CLOSURES
15C02-09B	BARRICADES AND SIGNS FOR VARIOUS CLOSURES
15C03-05	BARRICADES AND SIGNS FOR SIDEROAD CLOSURES
15C04-05	TRAFFIC CONTROL, ADVANCE WARNING SIGNS 45 M.P.H. OR GREATER TWO-WAY UNDIVIDED ROAD OPEN TO TRAFFIC
15C05-05	TRAFFIC CONTROL, ADVANCE WARNING SIGNS 40 M.P.H. OR LESS
15C08-23A	PERMANENT LONGITUDINAL PAVEMENT MARKINGS
15C08-23B	TEMPORARY LONGITUDINAL PAVEMENT MARKING
15C08-23C	PAVEMENT MARKING (TURN LANES)
15C08-23D	PAVEMENT MARKING (TURN LANES)
15C11-10B	CHANNELIZING DEVICES DRUMS, CONES, BARRICADES AND VERTICAL PANELS
15C12-09A	TRAFFIC CONTROL FOR LANE CLOSURE WITH FLAGGING OPERATION
15C19-09A	MOVING PAVEMENT MARKING OPERATION TWO-LANE TWO-WAY ROADWAY
15C19-09B	MOVING PAVEMENT MARKING OPERATION MULTI-LANE UNDIVIDED ROADWAY
15C19-09C	MOVING PAVEMENT MARKING OPERATION MULTI-LANE DIVIDED ROADWAY
15C33-05	STOP LINE AND CROSSWALK PAVEMENT MARKING
15C35-06A	PAVEMENT MARKING (INTERSECTIONS)
15D28-04	TRAFFIC CONTROL, WORK ON SHOULDER OR PARKING LANE, UNDIVIDED ROADWAY
15D30-09A	TRAFFIC CONTROL, PEDESTRIAN ACCOMMODATION
15D30-09B	TRAFFIC CONTROL, PEDESTRIAN ACCOMMODATION
15D30-09C	TRAFFIC CONTROL, PEDESTRIAN ACCOMMODATION
15D30-09D	TRAFFIC CONTROL, PEDESTRIAN ACCOMMODATION
15D30-09E	TRAFFIC CONTROL, PEDESTRIAN ACCOMMODATION
15D30-09F	TRAFFIC CONTROL, PEDESTRIAN ACCOMMODATION
15D30-09G	TRAFFIC CONTROL, PEDESTRIAN ACCOMMODATION
15D30-09H	TRAFFIC CONTROL, PEDESTRIAN ACCOMMODATION
15D30-09I	TRAFFIC CONTROL, PEDESTRIAN ACCOMMODATION
15D30-09J	TRAFFIC CONTROL, PEDESTRIAN ACCOMMODATION
15D30-09K	TRAFFIC CONTROL, PEDESTRIAN ACCOMMODATION
15D30-09L	TRAFFIC CONTROL, PEDESTRIAN ACCOMMODATION
15D39-02	TRAFFIC CONTROL, DROP-OFF SIGNING
15D40-05A	TRAFFIC CONTROL, FULL LANE SHIFT NON-FREEWAY OR MULTILANE DIVIDED 45 MPH AND UNDER
15D40-05C	TRAFFIC CONTROL, PARTIAL LANE SHIFT NON-FREEWAY/EXPRESSWAY OR MULTILANE DIVIDED 45 MPH AND UNDER
15D44-02	TRAFFIC CONTROL, SIGNING ON ROADWAYS WITH MILLED SURFACES
15D45-03	TRAFFIC CONTROL, SIGNING ON ROADWAYS WITH LOOSE GRAVEL
15D48-01	TRAFFIC CONTROL, LANE SHIFT IN FLAGGING OPERATION
15D51-01	TRAFFIC CONTROL, MOBILE OPERATIONS ON AN UNDIVIDED ROADWAY



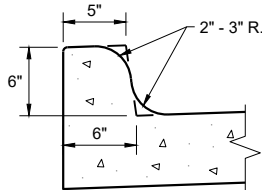
TYPES A^① & D



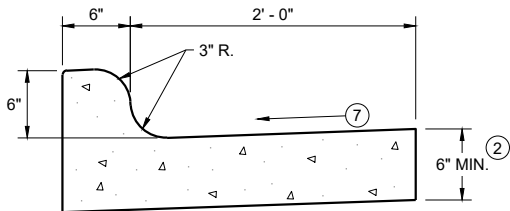
6" SLOPED CURB TYPES G^① & J



4" SLOPED CURB TYPES G^① & J

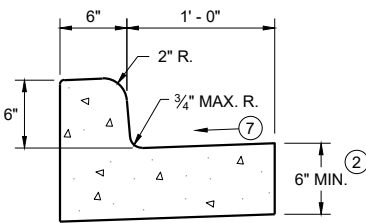


TYPES K^① & L
(OPTIONAL CURB SHAPE)



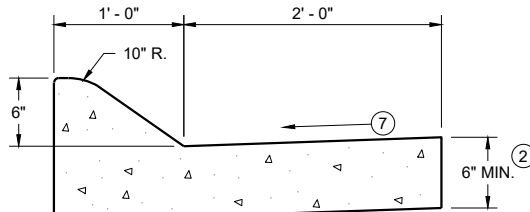
TYPES K^① & L

CONCRETE CURB AND GUTTER 30"

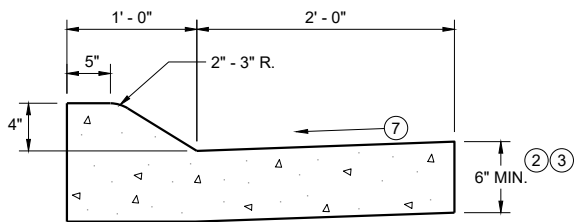


TYPES A^① & D

CONCRETE CURB AND GUTTER 18"

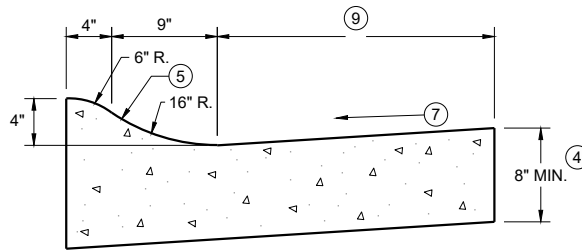


6" SLOPED CURB TYPES A^① & D



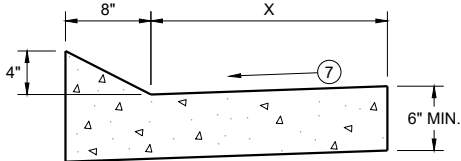
4" SLOPED CURB TYPES A^① & D

CONCRETE CURB AND GUTTER 36"



4" SLOPED CURB TYPES R^① & T

TBT & TBTT	X
30"	22"
36"	28"

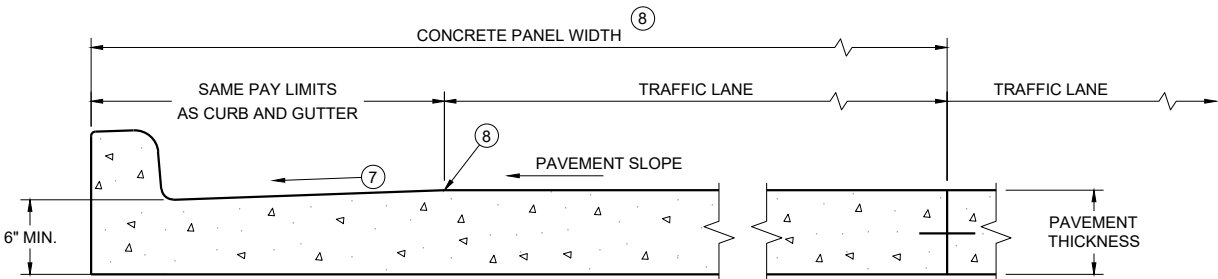


TYPES TBT & TBTT^①

CONCRETE CURB AND GUTTER

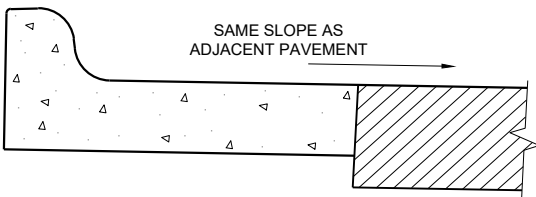
PAVEMENT THICKNESS
AND MAXIMUM CONCRETE
PANEL WIDTH TABLE

PAVEMENT THICKNESS	MAXIMUM PANEL WIDTH
LESS THAN 10"	12'
10" & ABOVE	15'



PARTIAL SECTION OF PAVEMENT
WITH INTEGRAL CURB AND GUTTER

* BIKE LANE IS NOT SHOWN



REVERSE SLOPE GUTTER^⑥
(TYPICAL FOR ALL CURB & GUTTER TYPES)

GENERAL NOTES

DETAILS OF CONSTRUCTION AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE CONTRACT.

PAVEMENT TIES AND TIE BARS SHALL BE EPOXY COATED IN CONFORMANCE WITH SUBSECTION 505.2.6.2 OF THE STANDARD SPECIFICATIONS.

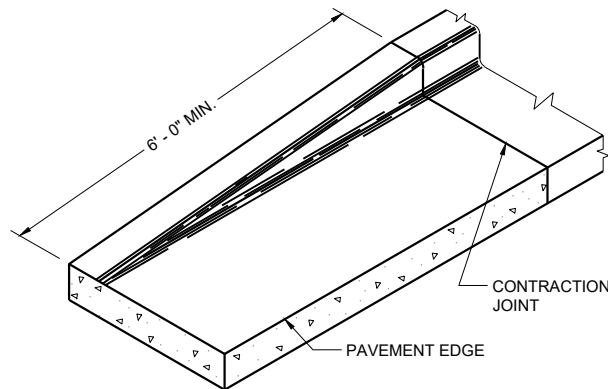
INTEGRAL CURB AND GUTTER SHALL CONFORM TO THE DETAILS SHOWN FOR CONCRETE CURB AND GUTTER INCLUDING THE TRANSVERSE GUTTER SLOPE.

UNLESS OTHERWISE SHOWN ON THE TYPICAL CROSS SECTIONS, THE BASE AGGREGATE AND COMMON EXCAVATION LIMITS ARE 2' - 0" BEHIND THE BACK OF CURBS.

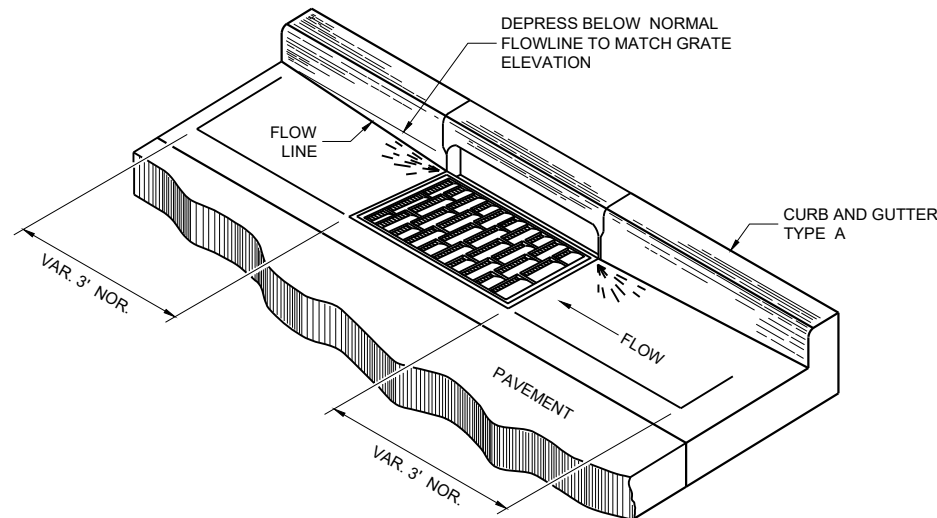
- ① TIE BARS ARE REQUIRED FOR CURB AND GUTTERS TYPES A, G, K, R, AND TBTT.
- ② THE BOTTOM OF CURB AND GUTTER MAY BE CONSTRUCTED EITHER LEVEL OR PARALLEL TO THE SLOPE OF THE SUBGRADE OR BASE AGGREGATE PROVIDED A 6" MINIMUM GUTTER THICKNESS IS MAINTAINED.
- ③ USE 8" MINIMUM GUTTER THICKNESS WHEN USED WITH AN ADJACENT CONCRETE TRUCK APRON PLACED BEHIND BACK OF CURB.
- ④ THE BOTTOM OF CURB AND GUTTER MAY BE CONSTRUCTED EITHER LEVEL OR PARALLEL TO THE SLOPE OF THE SUBGRADE OR BASE AGGREGATE PROVIDED A 8" MINIMUM GUTTER THICKNESS IS MAINTAINED.
- ⑤ UNLESS OTHERWISE NOTED, FOR STAKING PURPOSES THE FACE OF CURB IS 6" FROM THE BACK OF CURB.
- ⑥ WHEN REVERSE SLOPE GUTTER IS REQUIRED, THE LOCATION(S) WILL BE SHOWN ELSEWHERE IN THE PLAN.
- ⑦ USE 4% GUTTER CROSS SLOPE UNLESS OTHERWISE NOTED IN THE PLANS.
- ⑧ INCLUDE LONGITUDINAL JOINT AND TIE BARS ALONG LANE EDGE WHEN CONCRETE PANEL WIDTH EXCEEDS THE MAXIMUM WIDTH PER TABLE BELOW. LONGITUDINAL JOINT(S) ARE NOT ALLOWED WITHIN TRAFFIC LANES AND BIKE LANES. LONGITUDINAL JOINT MAY BE SAWED.
- ⑨ CONCRETE CURB AND GUTTER 4-INCH SLOPED 30-INCH TYPE "R" AND "T" = 17 INCHES
CONCRETE CURB AND GUTTER 4-INCH SLOPED 36-INCH TYPE "R" AND "T" = 23 INCHES

CONCRETE CURB AND GUTTER

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

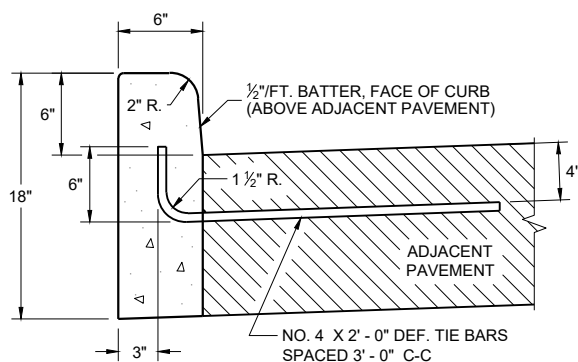


END SECTION CURB AND GUTTER

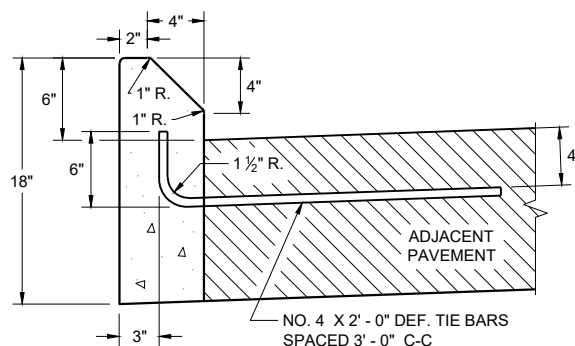


DETAIL OF CURB AND GUTTER AT INLETS

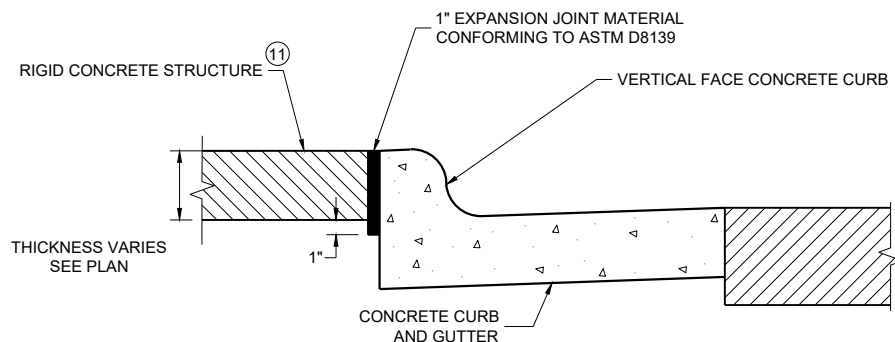
(TYPICAL H INLET COVER SHOWN)



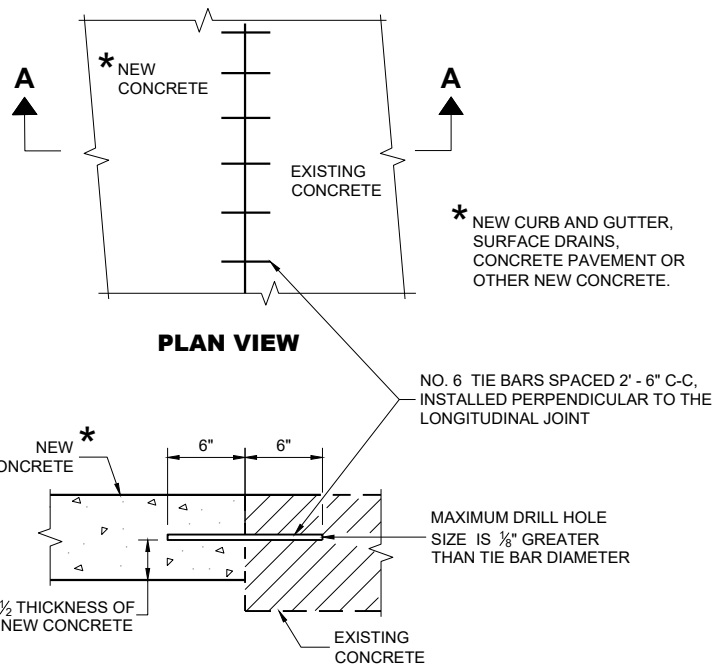
TYPES A^① & D



**TYPES G^① & J
CONCRETE CURB**



EXPANSION JOINT DETAIL FOR VERTICAL CURB ABUTTING A RIGID STRUCTURE^⑪



**SECTION A - A
TIE BARS DRILLED INTO EXISTING PAVEMENT**

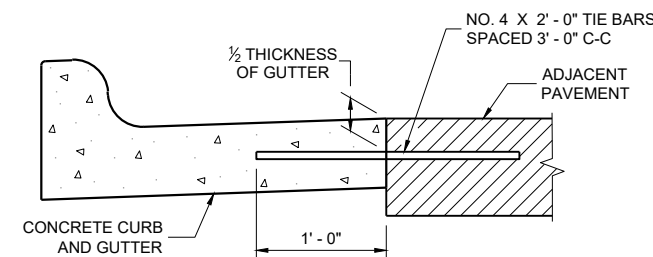
GENERAL NOTES

DETAILS OF CONSTRUCTION AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE CONTRACT.

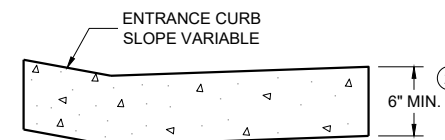
PAVEMENT TIES AND TIE BARS SHALL BE EPOXY COATED IN CONFORMANCE WITH SUBSECTION 505.2.6.2 OF THE STANDARD SPECIFICATIONS.

UNLESS OTHERWISE SHOWN ON THE TYPICAL CROSS SECTIONS, THE BASE AGGREGATE AND COMMON EXCAVATION LIMITS ARE 2' - 0" BEHIND THE BACK OF CURBS.

- ① TIE BARS ARE REQUIRED FOR CURB AND GUTTERS TYPES A, G, K, R, AND TBTT.
- ② THE BOTTOM OF CURB AND GUTTER MAY BE CONSTRUCTED EITHER LEVEL OR PARALLEL TO THE SLOPE OF THE SUBGRADE OR BASE AGGREGATE PROVIDED A 6" MINIMUM GUTTER THICKNESS IS MAINTAINED.
- ⑩ REFER TO SDD 08D18 AND 08D19 FOR ADDITIONAL DRIVEWAY ENTRANCE CURB DETAILS.
- ⑪ PLACE 1" THICK EXPANSION JOINT MATERIAL BETWEEN VERTICAL FACE CURB TYPES EXTENDING FROM THE TOP OF CURB TO 1 INCH BELOW THE ADJOINING CONCRETE SURFACE. RIGID CONCRETE STRUCTURES INCLUDE RAISED CONCRETE MEDIANS, CONCRETE SAFETY ISLANDS, SPLITTER ISLANDS, OR LOCATIONS IDENTIFIED ON THE PLANS.



TYPICAL TIE BAR LOCATION^①



**DRIVEWAY ENTRANCE CURB^⑩
(WHEN DIRECTED BY THE ENGINEER)**

**CONCRETE CURB, TIES
AND CURB AND GUTTER
APPLICATIONS**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
May 2023 /S/ Rodney Taylor
DATE ROADWAY STANDARDS DEVELOPMENT
FHWA UNIT SUPERVISOR

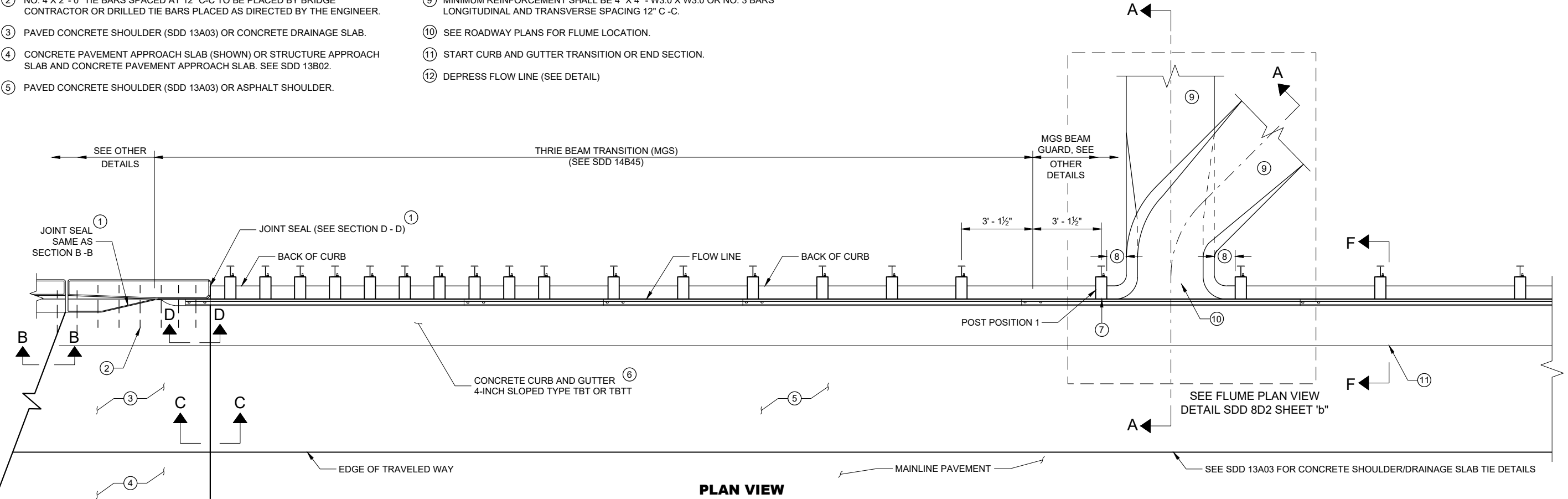
GENERAL NOTES

DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

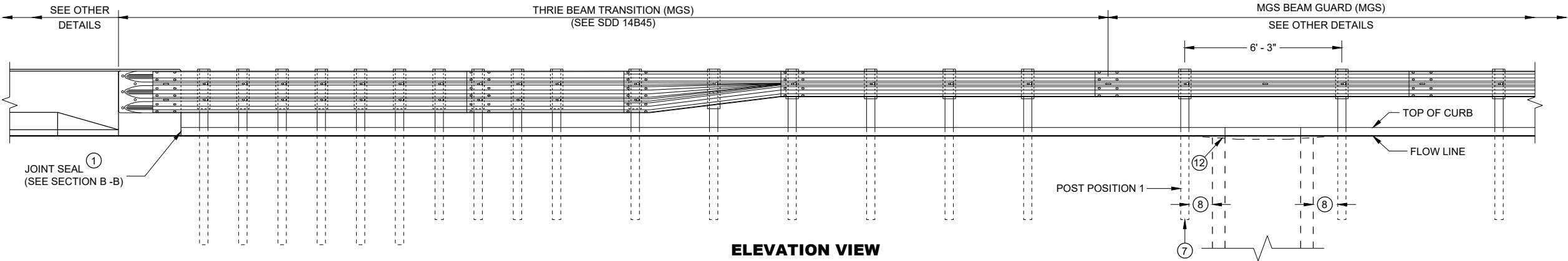
ALL STEEL REINFORCEMENT SHALL BE EMBEDDED 2 INCHES CLEAR UNLESS OTHERWISE SHOWN OR NOTED.

- 1 USE A JOINT SEALANT CONFORMING TO STANDARD SPECIFICATION 415.2.6.
- 2 NO. 4 X 2' - 0" TIE BARS SPACED AT 12" C-C TO BE PLACED BY BRIDGE CONTRACTOR OR DRILLED TIE BARS PLACED AS DIRECTED BY THE ENGINEER.
- 3 PAVED CONCRETE SHOULDER (SDD 13A03) OR CONCRETE DRAINAGE SLAB.
- 4 CONCRETE PAVEMENT APPROACH SLAB (SHOWN) OR STRUCTURE APPROACH SLAB AND CONCRETE PAVEMENT APPROACH SLAB. SEE SDD 13B02.
- 5 PAVED CONCRETE SHOULDER (SDD 13A03) OR ASPHALT SHOULDER.

- 6 CONCRETE CURB AND GUTTER 4-INCH SLOPED 36-INCH TYPE TBT OR TBTT. USE TYPE TBTT CURB WITH NO. 4 X 2' -0" TIE BARS SPACED AT 3' - 0" C-C ONLY WHEN ADJACENT TO CONCRETE PAVEMENTS.
- 7 PLACE FLUME BEFORE MSG THRIE BEAM TRANSITION POST 1 (SEE SDD 14B45)
- 8 CENTER FLUME BETWEEN POSTS. 6-INCH MINIMUM SEPARATION FROM OUTSIDE EDGE OF FLUME TO POSTS.
- 9 MINIMUM REINFORCEMENT SHALL BE 4" X 4" - W3.0 X W3.0 OR NO. 3 BARS LONGITUDINAL AND TRANSVERSE SPACING 12" C-C.
- 10 SEE ROADWAY PLANS FOR FLUME LOCATION.
- 11 START CURB AND GUTTER TRANSITION OR END SECTION.
- 12 DEPRESS FLOW LINE (SEE DETAIL)



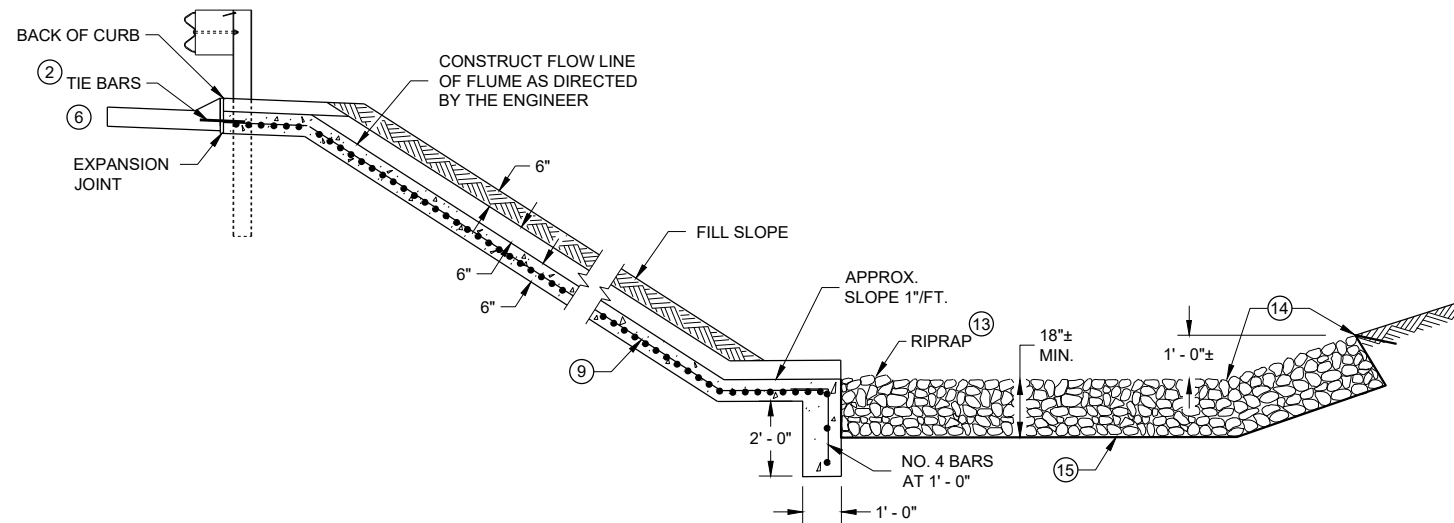
PLAN VIEW



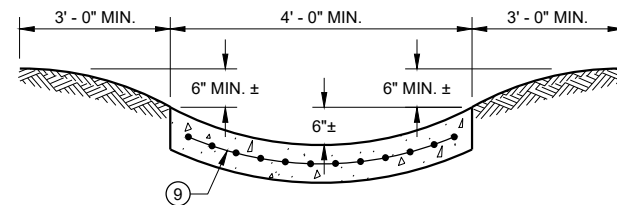
ELEVATION VIEW

CONCRETE SURFACE
DRAINS FLUME TYPE
AT STRUCTURES

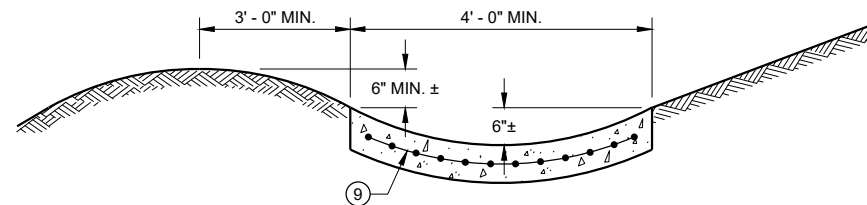
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



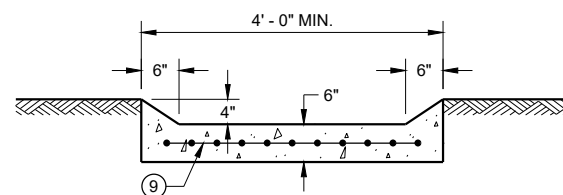
SECTION A - A



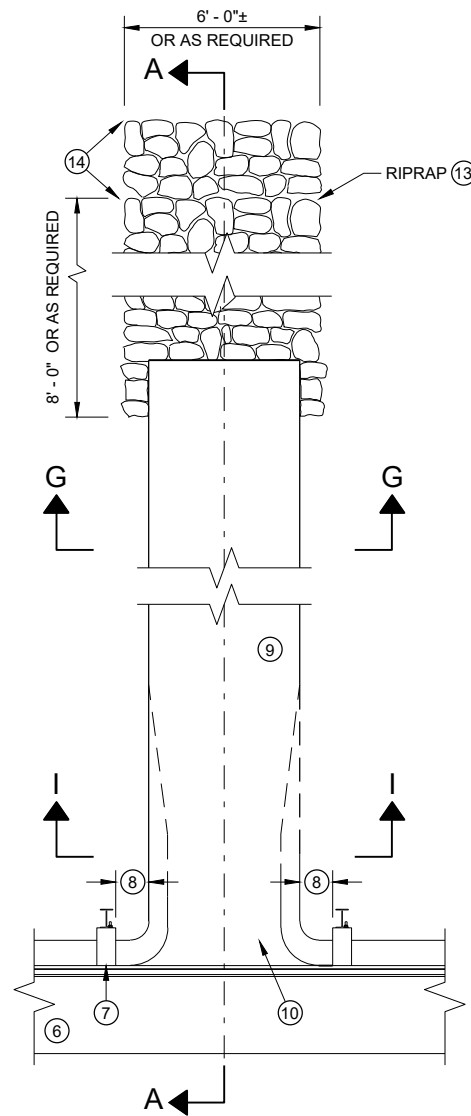
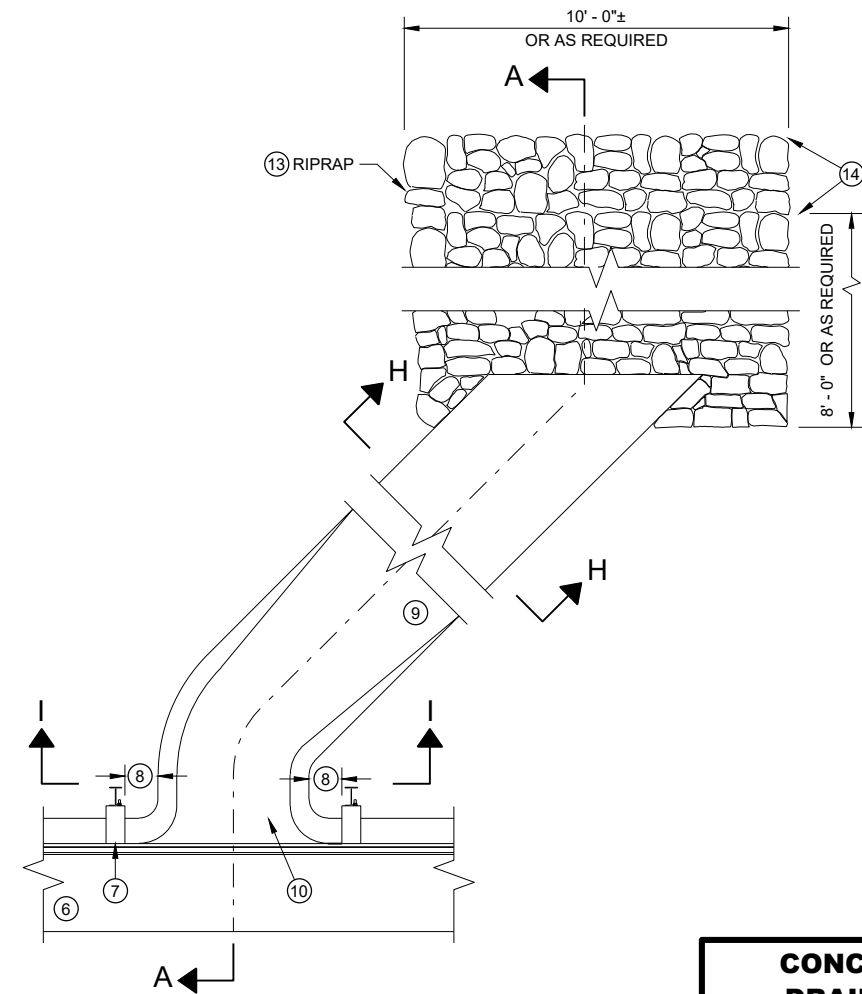
SECTION G - G



SECTION H - H



SECTION I - I

PLAN VIEW
PERPENDICULAR FLUMEPLAN VIEW
SKEWED FLUME

GENERAL NOTES

DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

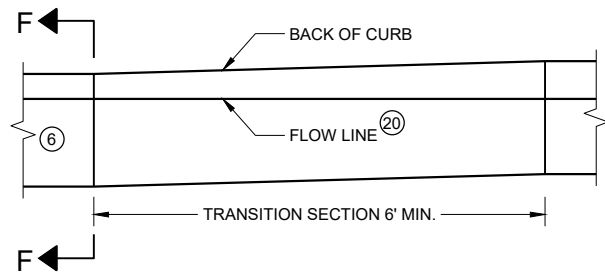
ALL STEEL REINFORCEMENT SHALL BE EMBEDDED 2 INCHES CLEAR UNLESS OTHERWISE SHOWN OR NOTED.

- ① USE A JOINT SEALANT CONFORMING TO STANDARD SPECIFICATION 415.2.6.
- ② NO. 4 X 2' - 0" TIE BARS SPACED AT 12" C-C TO BE PLACED BY BRIDGE CONTRACTOR OR DRILLED TIE BARS PLACED AS DIRECTED BY THE ENGINEER.
- ③ PAVED CONCRETE SHOULDER (SDD 13A03) OR CONCRETE DRAINAGE SLAB.
- ④ CONCRETE PAVEMENT APPROACH SLAB (SHOWN) OR STRUCTURE APPROACH SLAB AND CONCRETE PAVEMENT APPROACH SLAB. SEE SDD 13B02 AND STRUCTURE PLANS.
- ⑤ PAVED CONCRETE SHOULDER (SDD 13A03) OR ASPHALT SHOULDER.
- ⑥ CONCRETE CURB AND GUTTER 4-INCH SLOPED 36-INCH TYPE TBT OR TBT. USE TYPE TBT CURB WITH NO. 4 X 2' - 0" TIE BARS SPACED AT 3' - 0" C-C ONLY WHEN ADJACENT TO CONCRETE PAVEMENTS.

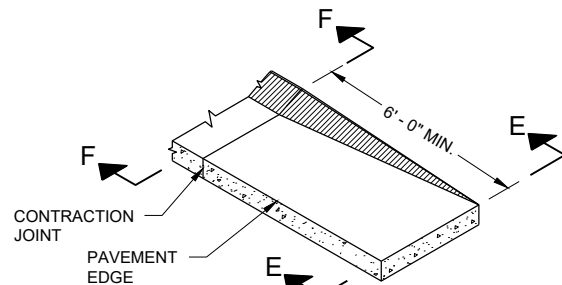
- ⑦ PLACE FLUME BEFORE MSG THRIE BEAM TRANSITION POST 1 (SEE SDD 14B45)
- ⑧ CENTER FLUME BETWEEN POSTS. 6-INCH MINIMUM SEPARATION FROM OUTSIDE EDGE OF FLUME TO POSTS.
- ⑨ MINIMUM REINFORCEMENT SHALL BE 4" X 4" - W3.0 X W3.0 OR NO. 3 BARS LONGITUDINAL AND TRANSVERSE SPACING 12" C - C.
- ⑩ SEE ROADWAY PLANS FOR FLUME LOCATION.
- ⑪ START CURB AND GUTTER TRANSITION OR END SECTION.
- ⑫ DEPRESS FLOW LINE (SEE DETAIL)
- ⑬ MEDIUM RIPRAP UNLESS OTHERWISE SPECIFIED.
- ⑭ LIMITS OF ADDITIONAL RIPRAP WHEN SPECIAL DITCH AS REQUIRED.
- ⑮ GEOTEXTILE TYPE HR.

**CONCRETE SURFACE
DRAINS FLUME TYPE
AT STRUCTURES**

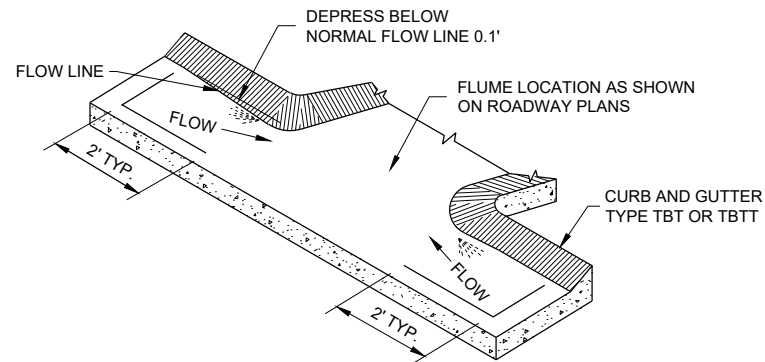
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION 120



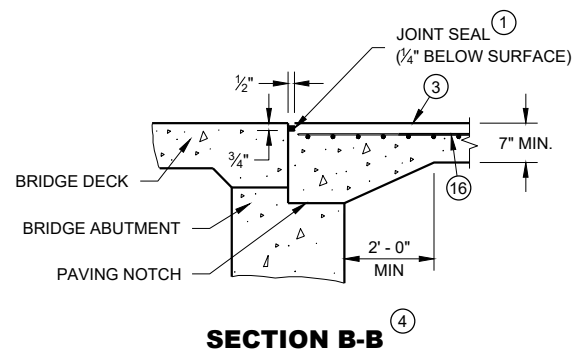
**CURB AND GUTTER TRANSITION SECTION
CONCRETE CURB AND GUTTER 4-INCH SLOPED
36 INCH TYPE TBT OR TBTT**



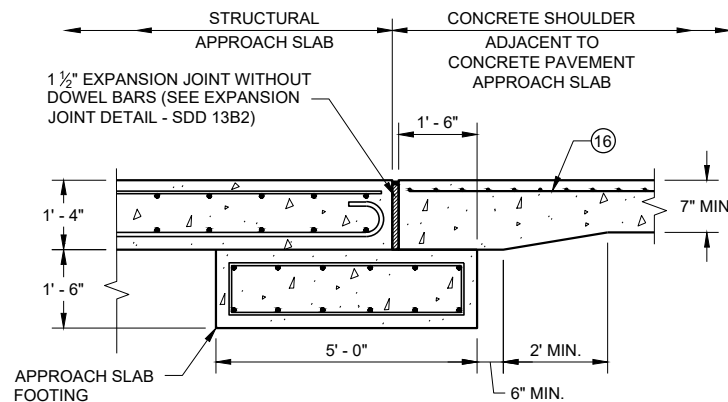
**CURB AND GUTTER END SECTION
CONCRETE CURB AND GUTTER 4-INCH SLOPED
36 INCH TYPE TBT OR TBTT**



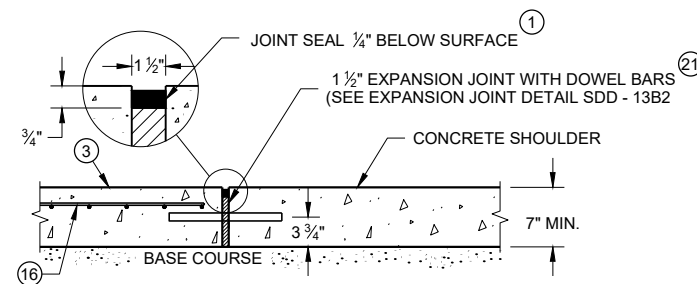
**CURB AND GUTTER FLOW LINE DEPRESSION
AT FLUMES CONCRETE CURB AND GUTTER
4-INCH SLOPED 36 INCH TYPE TBT OR TBTT**



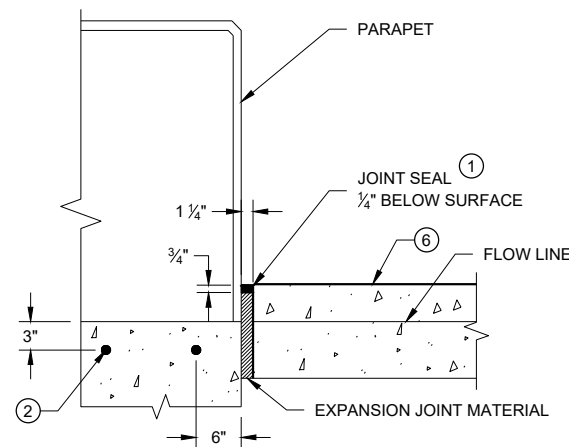
SECTION B-B



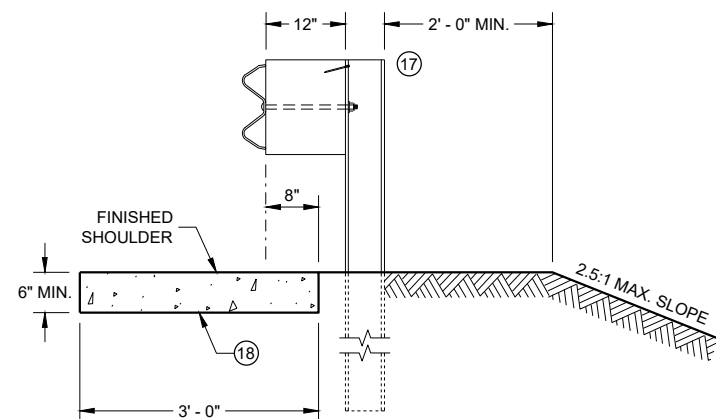
**SECTION C - C
JOINT DETAIL FOR BRIDGE WITH STRUCTURAL
APPROACH SLAB AND CONCRETE APPROACH SLAB**



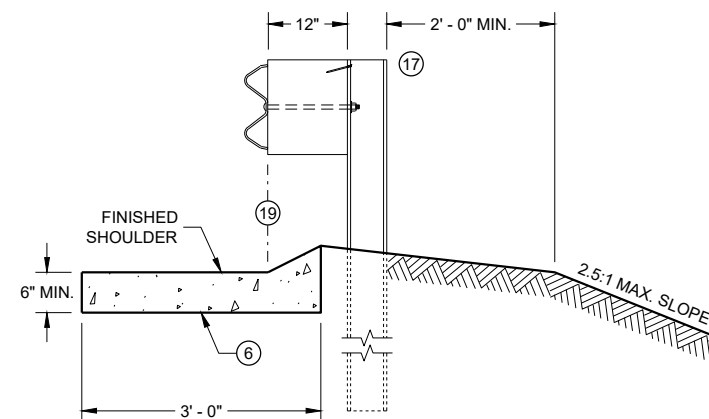
**SECTION C - C
JOINT DETAIL FOR BRIDGE APPROACH
WITH CONCRETE SHOULDERS**



SECTION D - D



SECTION E - E



SECTION F - F

GENERAL NOTES

DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

ALL STEEL REINFORCEMENT SHALL BE EMBEDDED 2 INCHES CLEAR UNLESS OTHERWISE SHOWN OR NOTED.

- ① USE A JOINT SEALANT CONFORMING TO STANDARD SPECIFICATION 415.2.6.
- ② NO. 4 X 2' - 0" TIE BARS SPACED AT 12" C-C TO BE PLACED BY BRIDGE CONTRACTOR OR DRILLED TIE BARS PLACED AS DIRECTED BY THE ENGINEER.
- ③ PAVED CONCRETE SHOULDER (SDD 13A03) OR CONCRETE DRAINAGE SLAB.
- ④ CONCRETE PAVEMENT APPROACH SLAB (SHOWN) OR STRUCTURE APPROACH SLAB AND CONCRETE PAVEMENT APPROACH SLAB. SEE SDD 13B02 AND STRUCTURE PLANS.
- ⑤ PAVED CONCRETE SHOULDER (SDD 13A03) OR ASPHALT SHOULDER.
- ⑥ CONCRETE CURB AND GUTTER 4-INCH SLOPED 36-INCH TYPE TBT OR TBTT. USE TYPE TBTT CURB WITH NO. 4 X 2' - 0" TIE BARS SPACED AT 3' - 0" C-C ONLY WHEN ADJACENT TO CONCRETE PAVEMENTS.
- ⑦ PLACE FLUME BEFORE MSG THRIE BEAM TRANSITION POST 1 (SEE SDD 14B45)
- ⑧ CENTER FLUME BETWEEN POSTS. 6-INCH MINIMUM SEPARATION FROM OUTSIDE EDGE OF FLUME TO POSTS.
- ⑨ MINIMUM REINFORCEMENT SHALL BE 4" X 4" - W3.0 X W3.0 OR NO. 3 BARS LONGITUDINAL AND TRANSVERSE SPACING 12" C-C.
- ⑩ SEE ROADWAY PLANS FOR FLUME LOCATION.
- ⑪ START CURB AND GUTTER TRANSITION OR END SECTION.
- ⑫ DEPRESS FLOW LINE (SEE DETAIL)
- ⑬ MEDIUM RIPRAP UNLESS OTHERWISE SPECIFIED.
- ⑭ LIMITS OF ADDITIONAL RIPRAP WHEN SPECIAL DITCH IS REQUIRED.
- ⑮ GEOTEXTILE TYPE HR.
- ⑯ MINIMUM REINFORCEMENT SHALL BE 6" X 6" - W4.0 X W4.0 OR NO. 3 BARS LONGITUDINAL AND TRANSVERSE SPACING 12" C-C.
- ⑰ MSG THRIE BEAM TRANSITION POST 1. SEE SDD 14B45 FOR ADDITIONAL CONSTRUCTION DETAILS AND ACCEPTABLE MATERIALS.
- ⑱ MAINTAIN WIDTH, THICKNESS AND CROSS SLOPE OF ADJACENT TYPE TBT OR TBTT CURB. SEE NOTE 6 FOR TIE BAR SPACING.
- ⑲ ALIGN FACE OF POST BLOCK WITH FLOW LINE.
- ⑳ MAINTAIN FLOW LINE AT EDGE OF PAVEMENT/FACE OF BEAM GUARD AS APPLICABLE.
- ㉑ DO NOT CONSTRUCT AN EXPANSION JOINT OR INSTALL DOWEL BARS WHEN ABUTTING HMA PAVEMENTS.

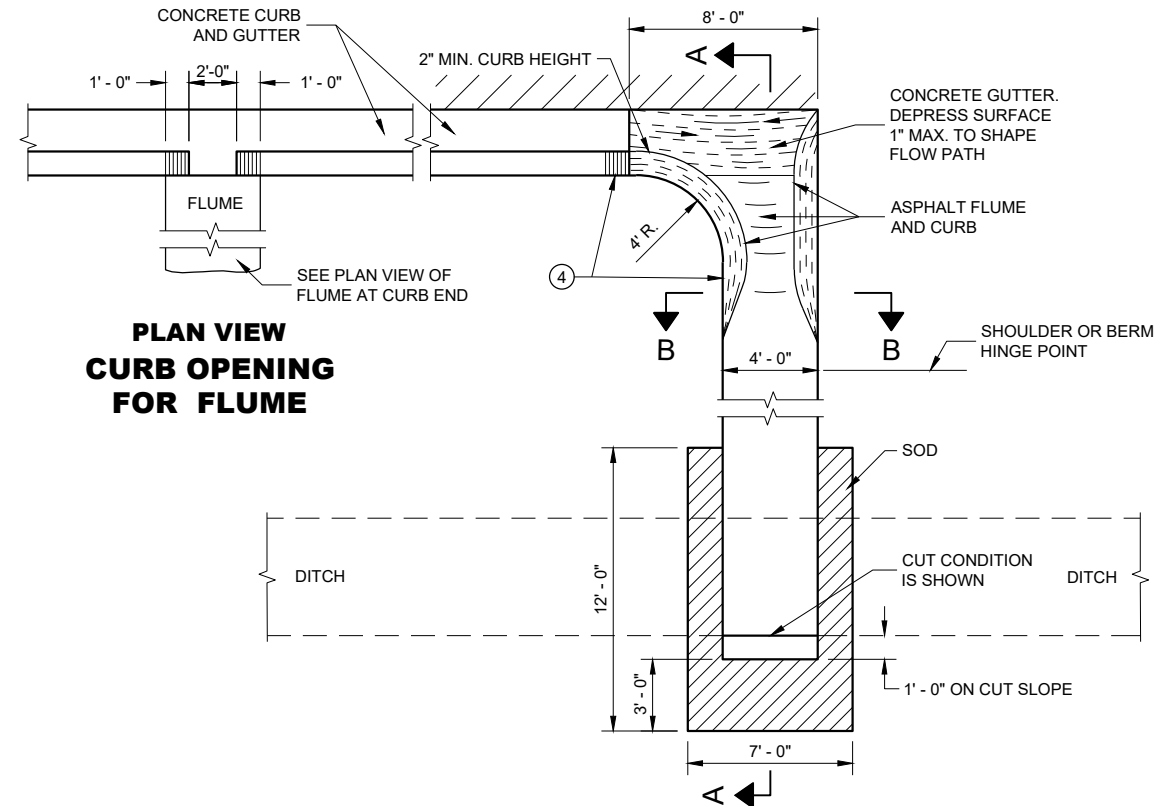
CONCRETE SURFACE DRAINS FLUME TYPE AT STRUCTURES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
May 2023 /S/ Rodney Taylor
DATE ROADWAY STANDARDS DEVE ENGINEER 121
FHWA

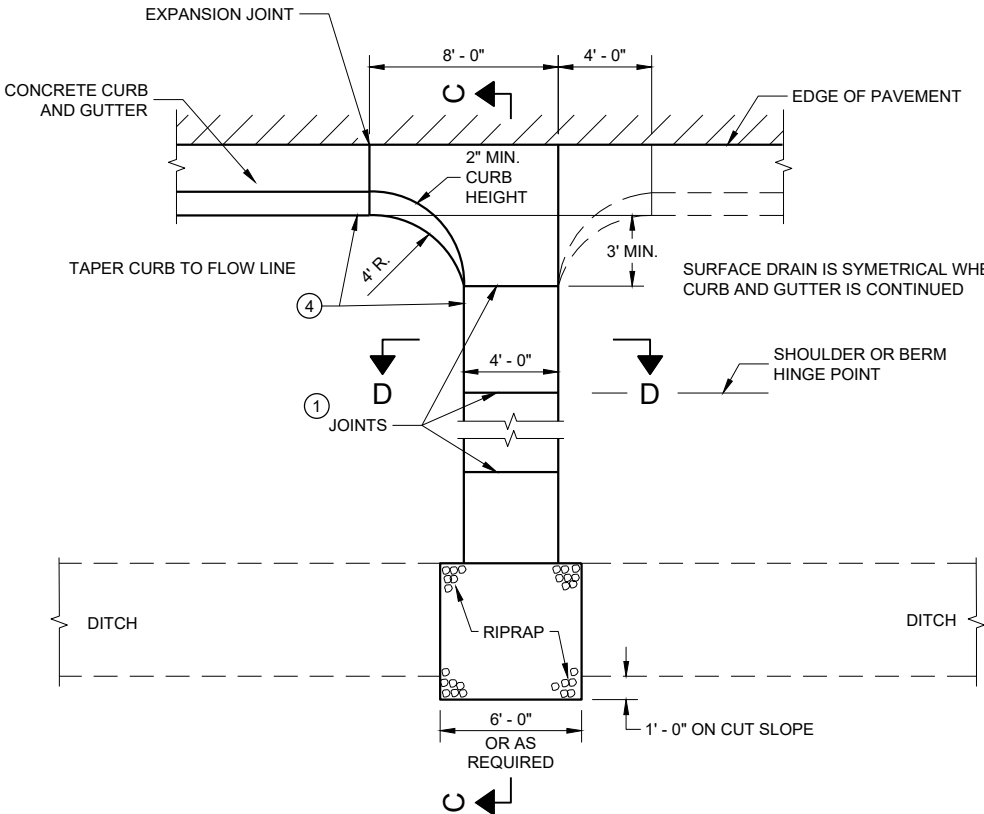
NOTE: TAPER CURB ENDS TO GUTTER IN 1' - 0"

ASPHALTIC FLUME



PLAN VIEW
CURB OPENING
FOR FLUME

PLAN VIEW
FLUME AT CURB END



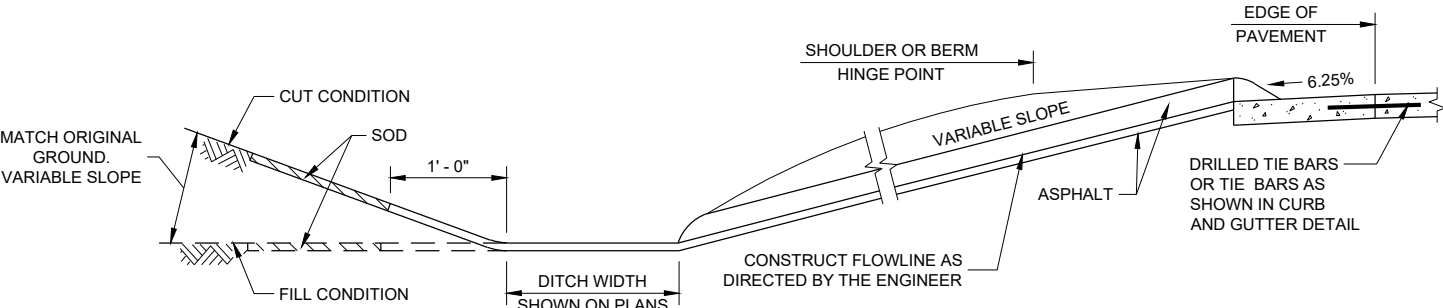
PLAN VIEW
CONCRETE SURFACE DRAIN

GENERAL NOTES

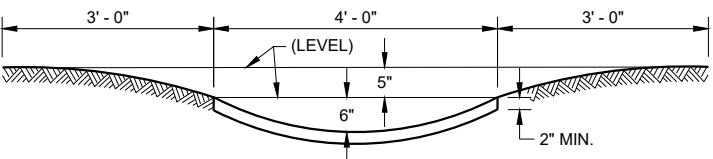
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND APPLICABLE SPECIAL PROVISIONS.

4" X 4" - W3.0 X W3.0 CONCRETE REINFORCEMENT SHALL BE IN ACCORDANCE WITH AASHTO SPECIFICATION M55.

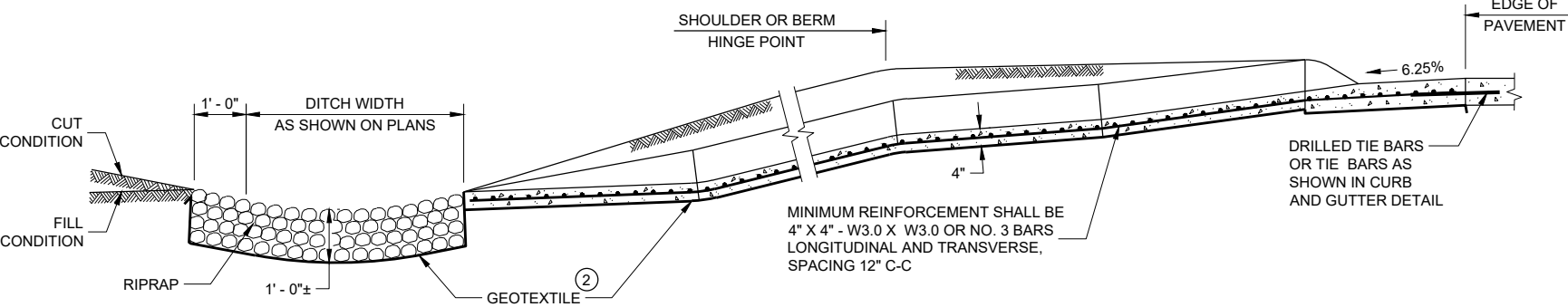
- JOINTS SHALL BE 1/8" TO 1/4" WIDE BY 1 1/2" DEEP AND SPACED AT UNIFORM INTERVALS OF APPROXIMATELY 4 FEET.
- GEOTEXTILE TYPE "R" SHALL UNDERLAY THE FULL LENGTH AND WIDTH OF THE CONCRETE SURFACE DRAIN AND RIPRAP.
- CONCRETE SURFACE DRAIN WITHOUT CURB AND GUTTER MAY BE USED ON BACKSLOPES WHEN SPECIFIED.
- ANGLE OF FLUME IN RELATION TO BACK OF CURB TO BE CONSTRUCTED PER THE PLAN DETAILS OR AS DIRECTED BY THE ENGINEER. ANGLE OF FLUME MAY BE OTHER THAN 90 DEGREES AS SHOWN.



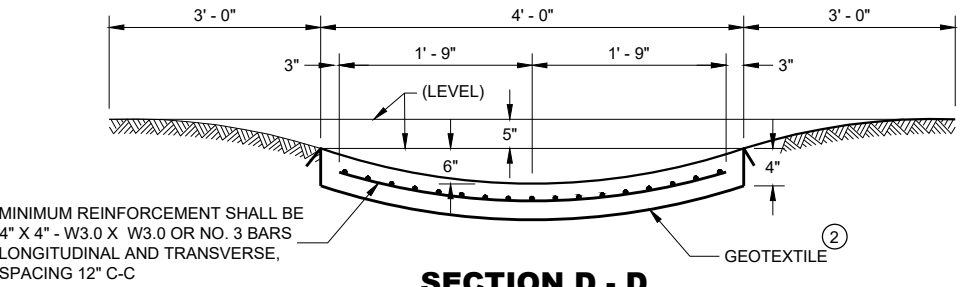
SECTION A - A



SECTION B - B



SECTION C - C

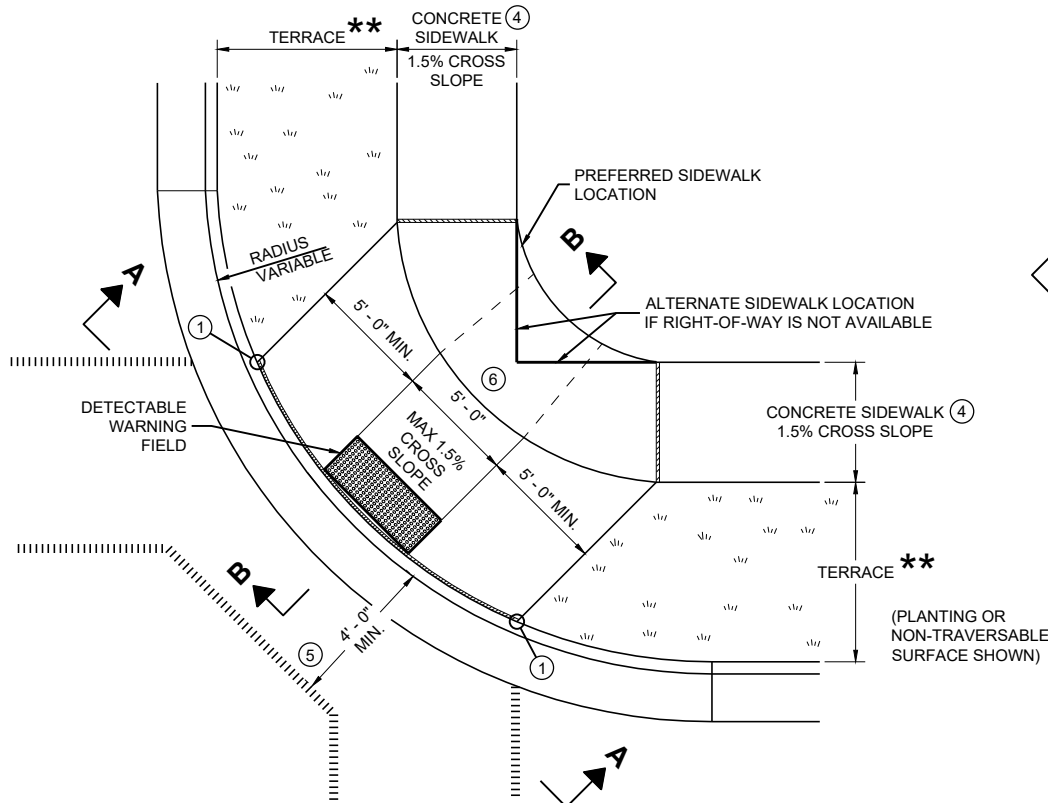


SECTION D - D

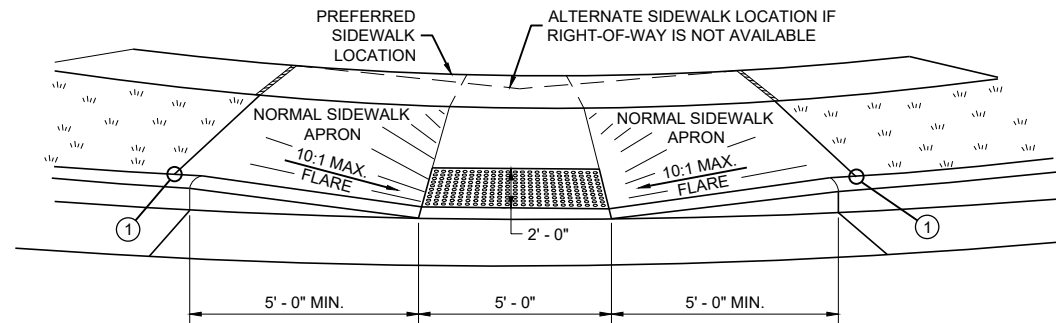
CONCRETE SURFACE
DRAINS AND
ASPHALTIC FLUMES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
May 2023
DATE
/S/ Rodney Taylor
ROADWAY STANDARDS DEVELOPMENT ENGINEER
122
FHWA

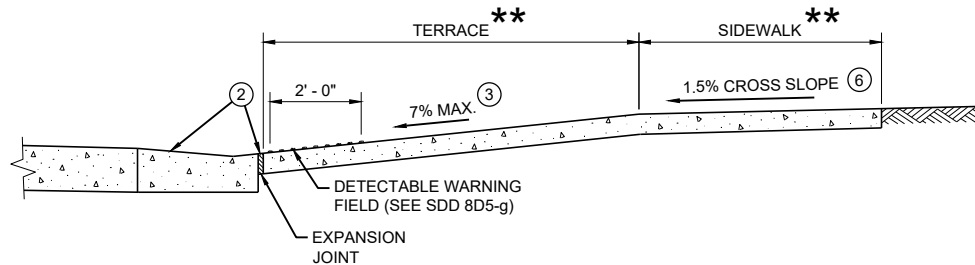


PLAN VIEW
CURB RAMP TYPE 1
(CENTER OF CORNER RADIUS)

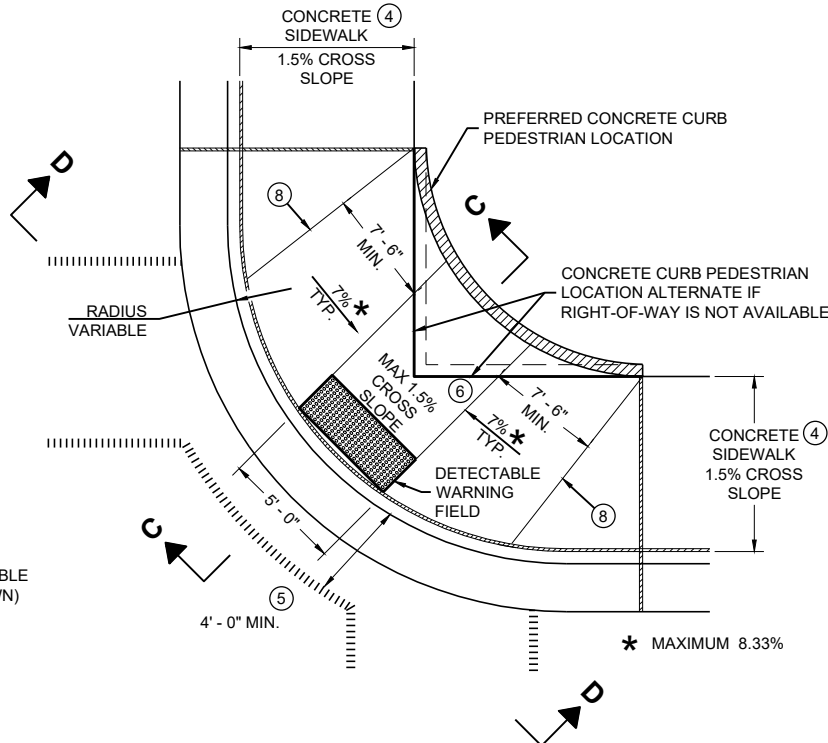


VIEW A - A FOR TYPE 1

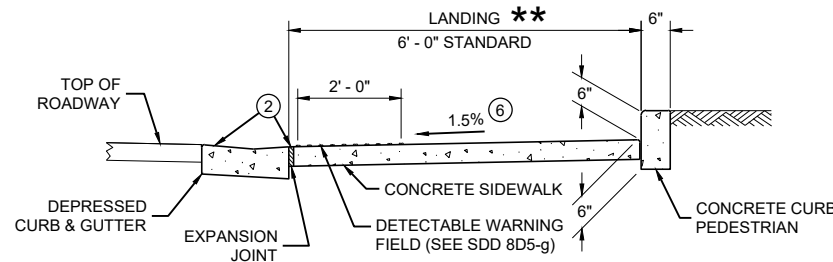
** WIDTH SHOWN ELSEWHERE
IN THE PLANS



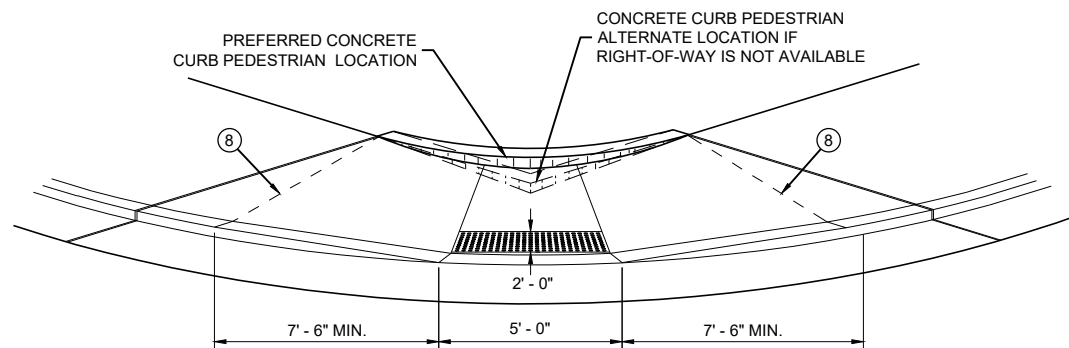
SECTION B - B FOR TYPE 1



PLAN VIEW
CURB RAMP TYPE 1 - A
(NO TERRACE)



SECTION C - C FOR TYPE 1 - A



VIEW D - D FOR TYPE 1 - A

GENERAL NOTES

AVOID PLACING DRAINAGE STRUCTURES, JUNCTION BOXES OR OTHER OBSTRUCTIONS IN FRONT OF RAMP ACCESS AREAS.

DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

WHEN NECESSARY, THE SIDEWALK ELEVATION MAY BE LOWERED TO MEET THE HIGH POINT ON THE RAMP.

TYPE 1 CURB RAMPS SHALL HAVE A NORMAL SIDEWALK APRON AND CURB ON BOTH SIDES OF RAMP.

DETECTABLE WARNING FIELD SHALL BE MEASURED AND PAID BY THE SQUARE FOOT AS "CURB RAMP DETECTABLE WARNING FIELD". THE CONCRETE PEDESTRIAN CURB, IF NEEDED, SHALL BE MEASURED AND PAID BY THE LINEAR FOOT AS "CONCRETE CURB PEDESTRIAN". CONCRETE SIDEWALK IN THE CURB RAMP AREA SHALL BE MEASURED AND PAID BY THE SQUARE FOOT AS CONCRETE SIDEWALK, INCLUDING THE AREA UNDER THE DETECTABLE WARNING FIELD.

SELECT CURB RAMP DETECTABLE WARNING FIELD MATERIALS AND DEVICES FROM THE DEPARTMENT'S APPROVED MATERIALS LIST. THE COLOR OF THE DETECTABLE WARNING FIELD IS SPECIFIED ELSEWHERE AND IS INCIDENTAL TO THE BID ITEM OF "CURB RAMP DETECTABLE WARNING FIELD"

DETECTABLE WARNING FIELDS THAT ARE INSTALLED AS A GROUP OR SIDE BY SIDE, SHALL BE FROM THE SAME MANUFACTURER.

SURFACE TEXTURE OF THE RAMP SHALL BE OBTAINED BY COARSE BROOMING TRANSVERSE TO THE SLOPE OF THE RAMP.

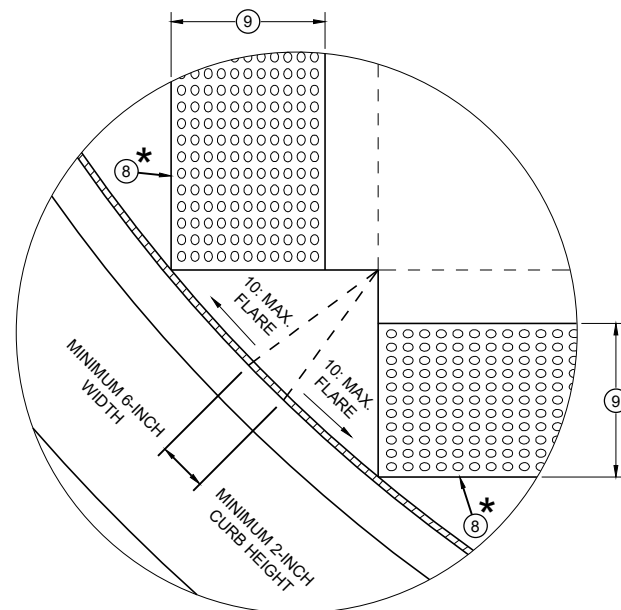
- ① THIS POINT IS AN EXTENSION OF OUTSIDE EDGE OF APPROACHING SIDEWALK WHERE IT MEETS THE BACK OF CONCRETE CURB. POINT LOCATION MAY BE ADJUSTED TO ALIGN WITH BEGINNING OF FULL-HEIGHT CURB IF THIS DISTANCE IS SHORT.
- ② GRADE CHANGE BETWEEN GUTTER FLAG SLOPE AND THE CURB RAMP SLOPE SHALL NOT EXCEED 11%. MAXIMUM GUTTER FLAG SLOPE IS 4%. PROVIDE LONGITUDINAL DRAINAGE AROUND CURB AND AWAY FROM CURB RAMP. NO VERTICAL LIPS OR DISCONTINUITIES GREATER THAN 1/4 - INCH ARE ALLOWED. SLOPE OF CURB HEAD OPENING SHALL MATCH THE RAMP SLOPE, MINIMALLY 1.5% AND NOT TO EXCEED 7%. WHEN ADJACENT TO 1.5% LANDING, CONSTRUCT CURB HEAD OPENING AT 1.5% IN THE DIRECTION OF PEDESTRIAN TRAVEL.
- ③ MAXIMUM 8.33% CURB RAMP SLOPE IS ALLOWABLE WITH FLATTENED GUTTER FLAG SLOPE AND NOT TO EXCEED 11% GRADE CHANGE.
- ④ ±0.5% CONSTRUCTION TOLERANCE IN SIDEWALK CROSS SLOPE. THE SIDEWALK CROSS SLOPE SHALL NOT EXCEED 2% WITHOUT PRIOR APPROVAL FROM THE ENGINEER.
- ⑤ PROVIDE A LEVEL LANDING IN THE STREET AND GUTTER AREA (2% MAXIMUM SLOPE IN ANY DIRECTION). WHEN THE GUTTER SLOPE EXCEEDS 2%, CONSTRUCT THE LEVEL LANDING IN THE STREET AREA. 4 FOOT WIDTH IS MEASURED FROM THE FLANGE LINE
- ⑥ PROVIDE A LEVEL LANDING (MAXIMUM 2% SLOPE) IN ANY DIRECTION OF PEDESTRIAN TRAVEL. STANDARD LEVEL LANDING SIZE IS 5 FEET BY 5 FEET.
- ⑧ PROVIDE GRADE BREAK PERPENDICULAR TO DIRECTION OF WHEELCHAIR TRAVEL.

LEGEND

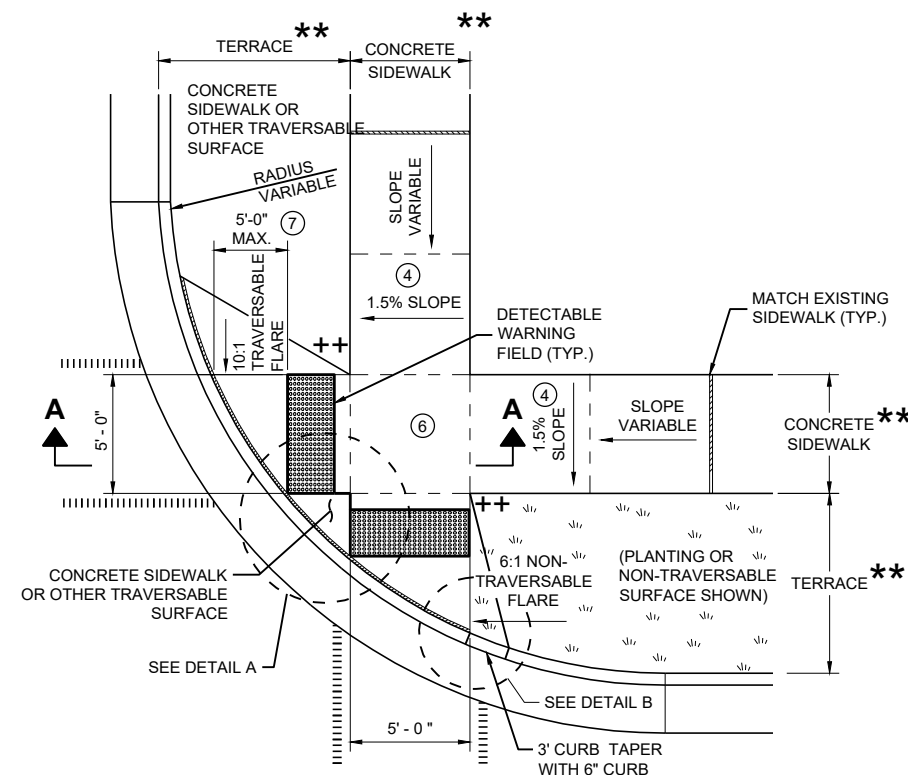
- 1/2" EXPANSION JOINT SIDEWALK
- CONTRACTION JOINT FIELD LOCATED
- PAVEMENT MARKING CROSSWALK (WHITE)

CURB RAMPS
TYPE 1 AND 1-A

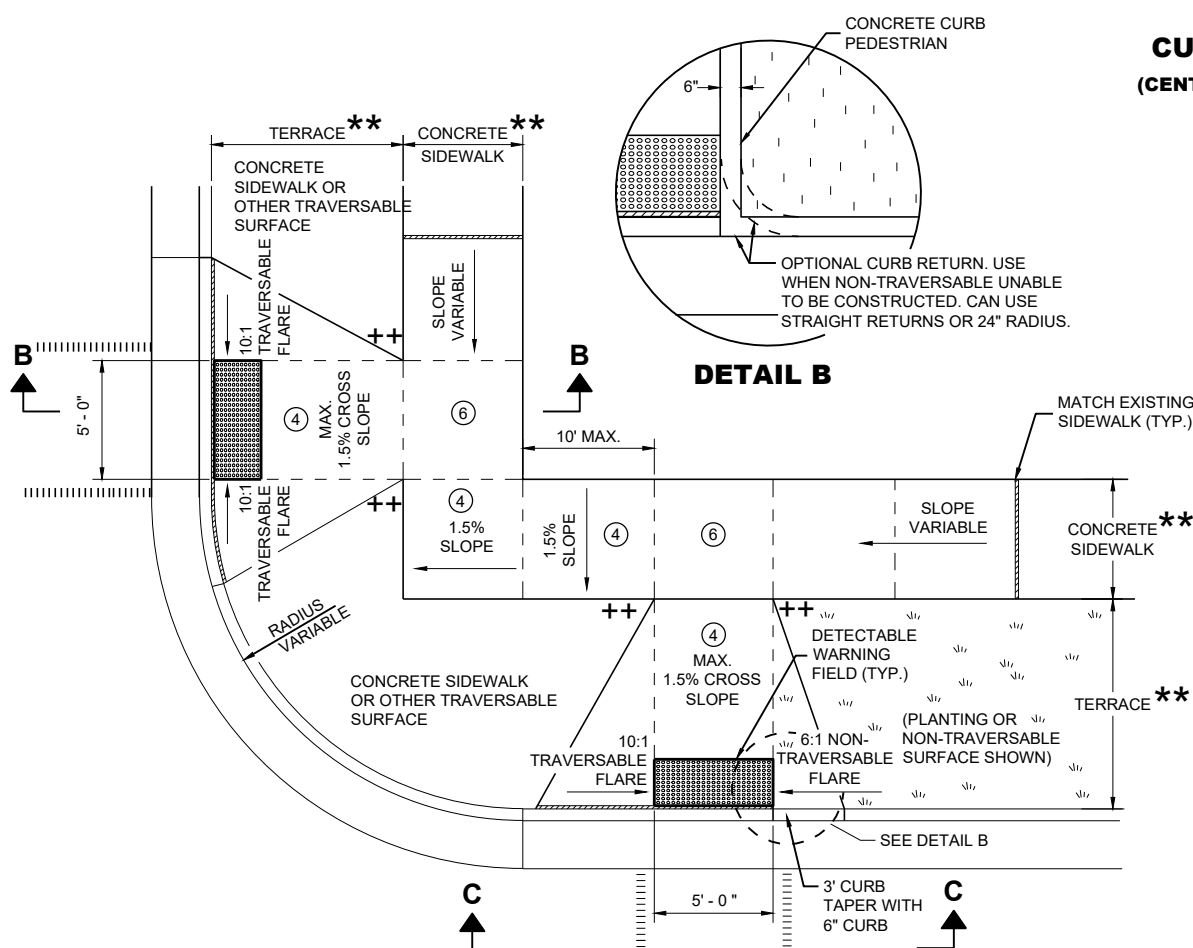
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



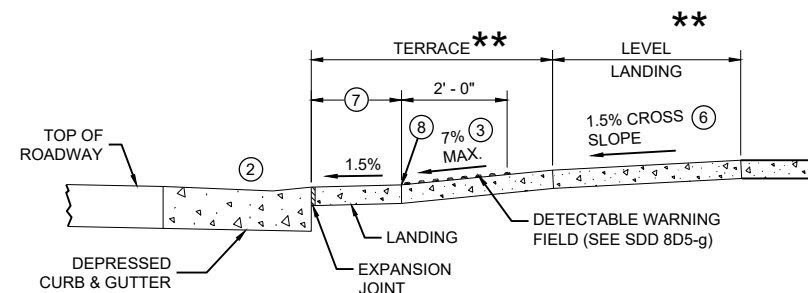
DETAIL A



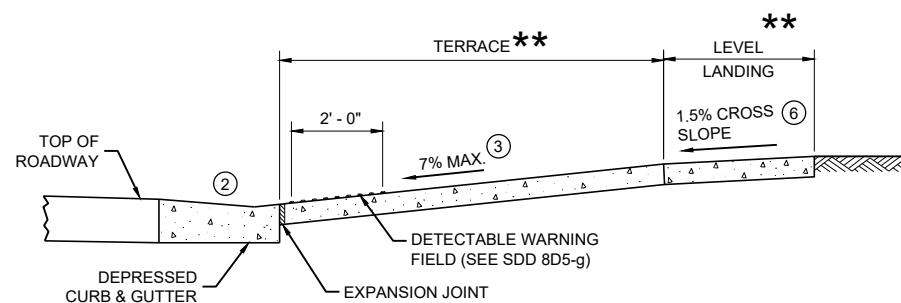
**PLAN VIEW
CURB RAMP TYPE 2
(CENTER OF CORNER RADIUS)**



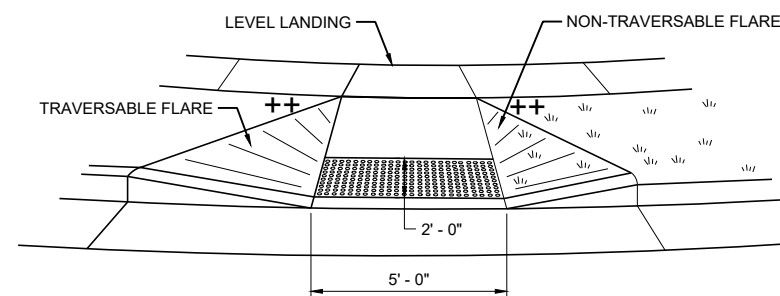
**PLAN VIEW
CURB RAMP TYPE 3
(OUTSIDE OF CROSSWALK AREA)**



SECTION A - A FOR TYPE 2



SECTION B - B FOR TYPE 3



VIEW C - C FOR TYPE 3

GENERAL NOTES

AVOID PLACING DRAINAGE STRUCTURES, JUNCTION BOXES OR OTHER OBSTRUCTIONS IN FRONT OF RAMP ACCESS AREAS.

DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

DETECTABLE WARNING FIELDS THAT ARE INSTALLED AS A GROUP OR SIDE BY SIDE SHALL BE FROM THE SAME MANUFACTURER.

- ② GRADE CHANGE BETWEEN GUTTER FLAG SLOPE AND THE CURB RAMP SLOPE SHALL NOT EXCEED 11%. MAXIMUM GUTTER FLAG SLOPE IS 4%. PROVIDE LONGITUDINAL DRAINAGE AROUND CURB AND AWAY FROM CURB RAMP. NO VERTICAL LIPS OR DISCONTINUITIES GREATER THAN 1/4 - INCH ARE ALLOWED. SLOPE OF CURB HEAD OPENING SHALL MATCH THE RAMP SLOPE, MINIMALLY 1.5% AND NOT TO EXCEED 7%. WHEN ADJACENT TO 1.5% LANDING, CONSTRUCT CURB HEAD OPENING AT 1.5% IN THE DIRECTION OF PEDESTRIAN TRAVEL.
- ③ AN 8.33% CURB RAMP SLOPE IS ALLOWABLE WITH FLATTENED GUTTER FLAG SLOPE (2.67% OR LESS) AND NOT TO EXCEED 11% GRADE CHANGE.
- ④ ±0.5% CONSTRUCTION TOLERANCE IN SIDEWALK CROSS SLOPE. THE SIDEWALK CROSS SLOPE SHALL NOT EXCEED 2% WITHOUT PRIOR APPROVAL FROM THE ENGINEER.
- ⑥ PROVIDE A LEVEL LANDING (MAXIMUM 2% SLOPE) IN ANY DIRECTION OF PEDESTRIAN TRAVEL. STANDARD LEVEL LANDING SIZE IS 5 FEET X 5 FEET.
- ⑦ WHEN GRADE BREAK DISTANCE EXCEEDS 5 FEET, USE RADIAL DETECTABLE WARNING FIELD PER SDD 8D5-f.
- ⑧ PROVIDE GRADE BREAK PERPENDICULAR TO DIRECTION OF WHEELCHAIR TRAVEL.
- ⑨ WHEN DISTANCE IS LESS THAN 6' - 0", IT MAY BE DIFFICULT TO ACHIEVE A 7% SLOPE OR FLATTER ALONG THE RAMP. REDUCE CURB HEIGHT IN TRIANGLE AREA TO ACHIEVE 7% SLOPE OR FLATTER ON RAMP. CONSTRUCT 2-INCH MINIMUM CURB HEIGHT BETWEEN 10:1 FLARES.

★ MAXIMUM 2.0% SLOPE
IN ALL DIRECTIONS IN
FRONT OF GRADE BREAK

★★ WIDTH SHOWN ELSEWHERE
IN THE PLANS

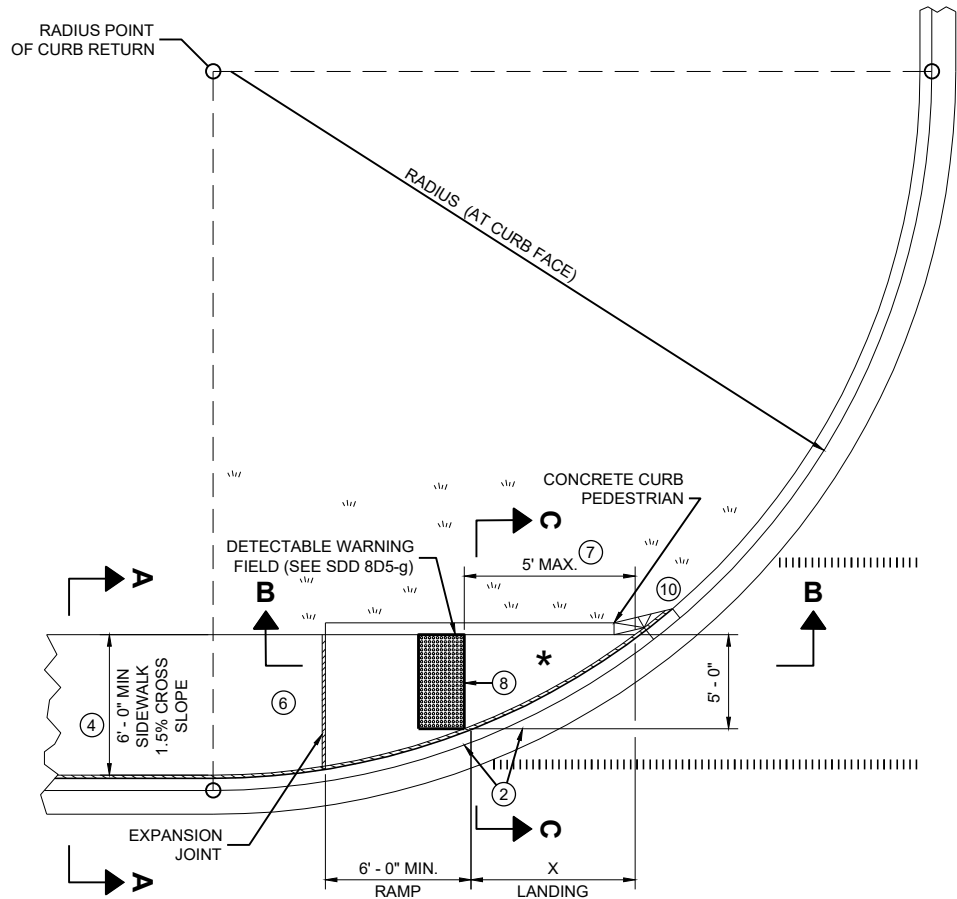
++ CONSTRUCT 6" WEDGE TO
AVOID CONCRETE BREAKAGE

LEGEND

- 1/2" EXPANSION JOINT SIDEWALK
- - - - CONTRACTION JOINT SIDEWALK
- ||||||| PAVEMENT MARKING CROSSWALK (WHITE)

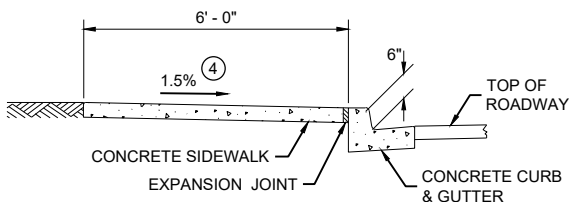
**CURB RAMPS
TYPE 2 AND 3**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

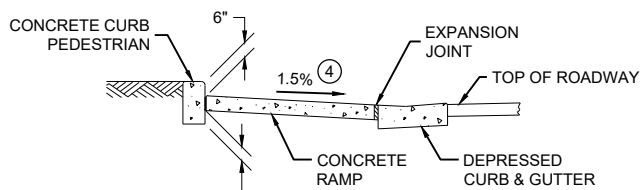


RADIUS (AT CURB FACE)	X
10 FEET	4' - 7"

INTERMEDIATE RADII CAN BE INTERPOLATED

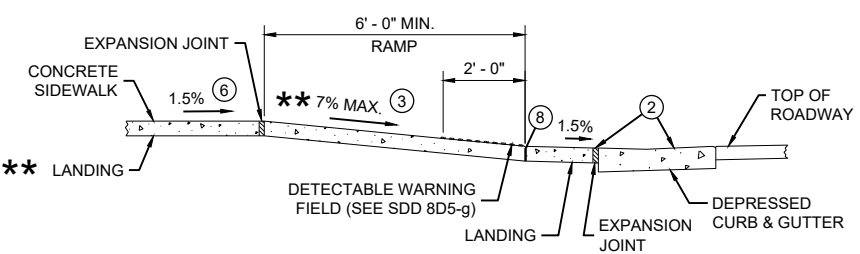


SECTION A - A FOR TYPE 4A



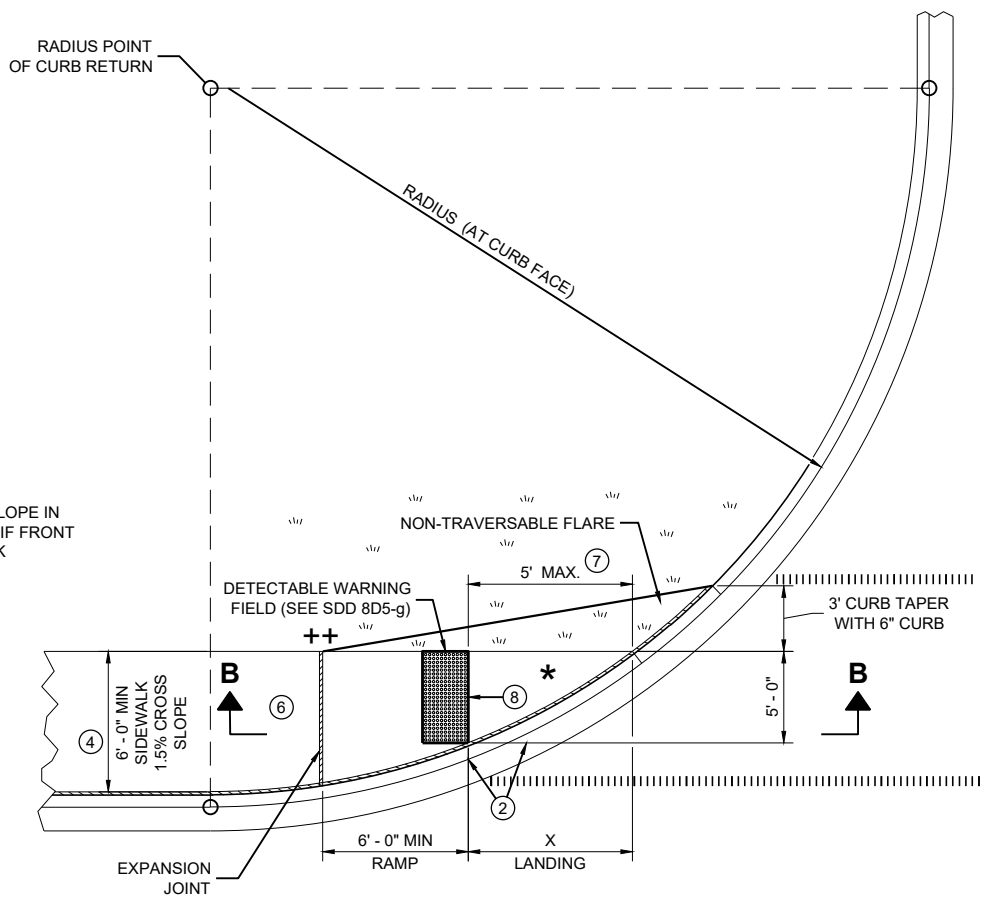
SECTION C - C FOR TYPE 4A

* MAXIMUM 2.0% SLOPE IN ALL DIRECTIONS IF FRONT OF GRADE BREAK



** IF RAMP SLOPE IS LESS THAN 5.0%, THEN NO ADJACENT UPHILL LANDING IS REQUIRED

SECTION B - B FOR TYPE 4A AND TYPE 4A1



PLAN VIEW
CURB RAMP TYPE 4A1

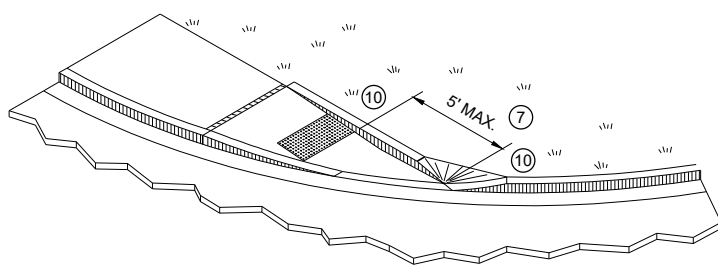
++ CONSTRUCT 6" WEDGE TO AVOID CONCRETE BREAKAGE

GENERAL NOTES

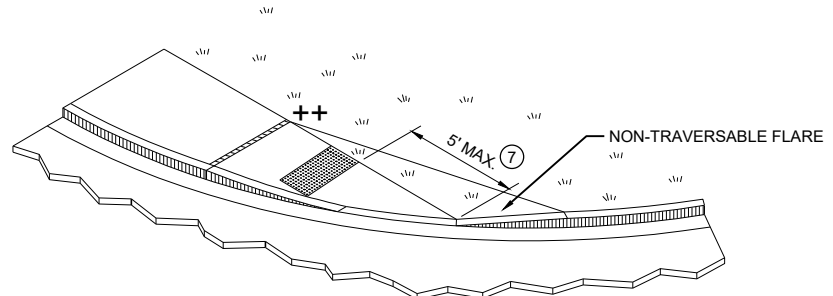
- AVOID PLACING DRAINAGE STRUCTURES, JUNCTION BOXES OR OTHER OBSTRUCTIONS IN FRONT OF RAMP ACCESS AREAS.
- DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.
- DETECTABLE WARNING FIELDS THAT ARE INSTALLED AS A GROUP OR SIDE BY SIDE, SHALL BE FROM THE SAME MANUFACTURER.
- GRADE CHANGE BETWEEN GUTTER FLAG SLOPE AND THE CURB RAMP SLOPE SHALL NOT EXCEED 11%. MAXIMUM GUTTER FLAG SLOPE IS 4%. PROVIDE LONGITUDINAL DRAINAGE AROUND CURB AND AWAY FROM CURB RAMP. NO VERTICAL LIPS OR DISCONTINUITIES GREATER THAN 1/4 - INCH ARE ALLOWED. SLOPE OF CURB HEAD OPENING SHALL MATCH THE RAMP SLOPE, MINIMALLY 1.5% AND NOT TO EXCEED 7%. WHEN ADJACENT TO 1.5% LANDING, CONSTRUCT CURB HEAD OPENING AT 1.5% IN THE DIRECTION OF PEDESTRIAN TRAVEL.
- AN 8.33% CURB RAMP SLOPE IS ALLOWABLE WITH FLATTENED GUTTER FLAG SLOPE AND NOT TO EXCEED 11% GRADE CHANGE.
- ±0.5% CONSTRUCTION TOLERANCE IN SIDEWALK CROSS SLOPE. THE SIDEWALK CROSS SLOPE SHALL NOT EXCEED 2% WITHOUT PRIOR APPROVAL FROM THE ENGINEER.
- PROVIDE A LEVEL LANDING (MAXIMUM 2% SLOPE) IN ANY DIRECTION OF PEDESTRIAN TRAVEL. STANDARD LEVEL LANDING SIZE IS 5 FEET BY 5 FEET.
- WHEN THIS GRADE BREAK DISTANCE EXCEEDS 5 FEET, USE RADIAL DETECTABLE WARNING FIELD PER SDD 8D5-f.
- PROVIDE GRADE BREAK PERPENDICULAR TO DIRECTION OF WHEELCHAIR TRAVEL.
- INSTALL TRANSITION NOSE (INCIDENTAL TO OTHER PAY ITEMS). DO NOT MARK TRANSITION NOSE.

LEGEND

- 1/2" EXPANSION JOINT SIDEWALK
- CONTRACTION JOINT SIDEWALK
- PAVEMENT MARKING CROSSWALK (WHITE)



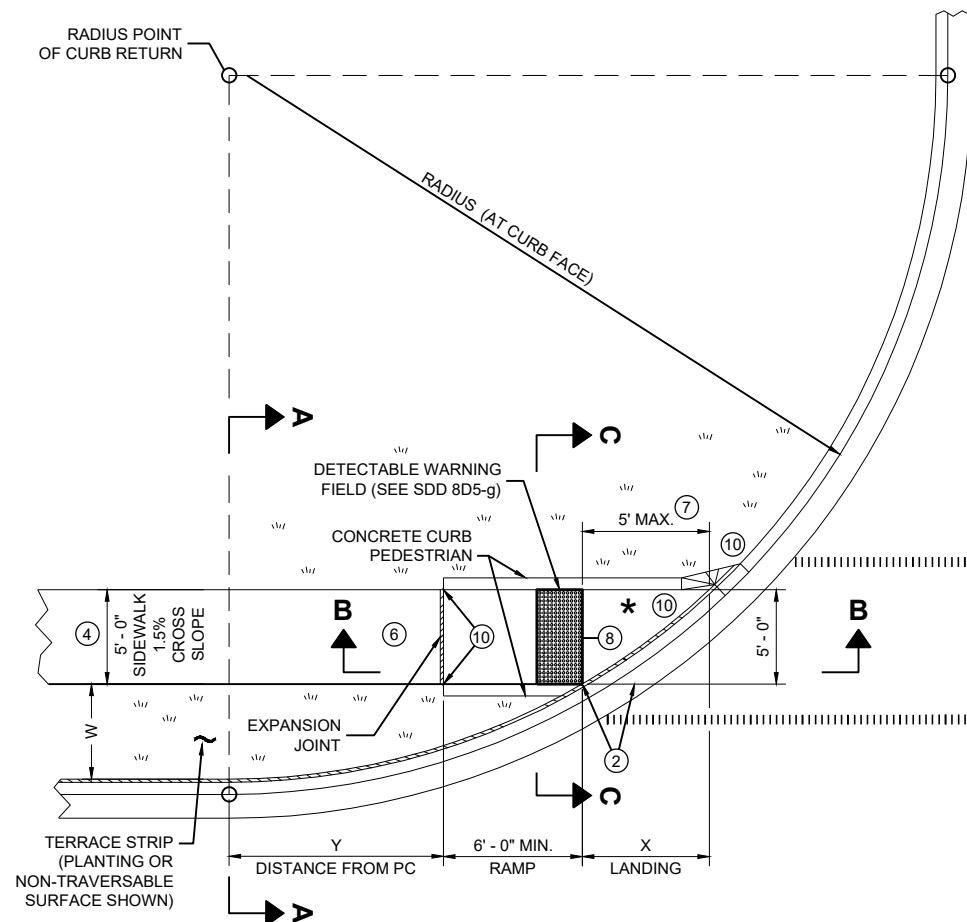
ISOMETRIC VIEW FOR TYPE 4A



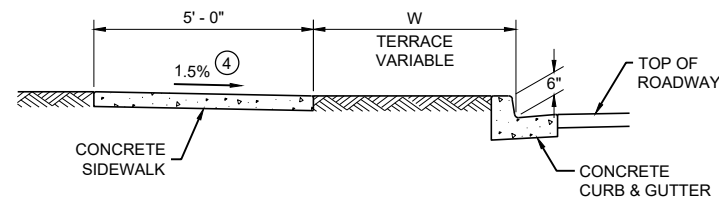
ISOMETRIC VIEW FOR TYPE 4A1

CURB RAMPS TYPE 4A AND 4A1

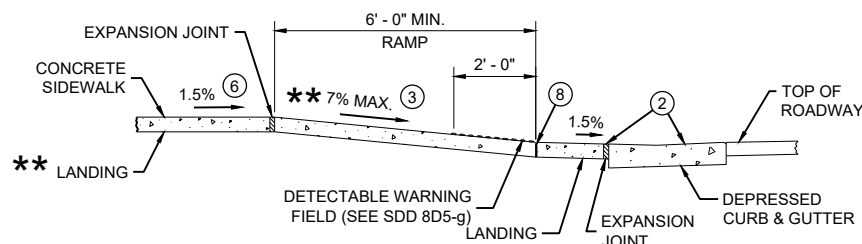
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



**PLAN VIEW
CURB RAMP TYPE 4B**



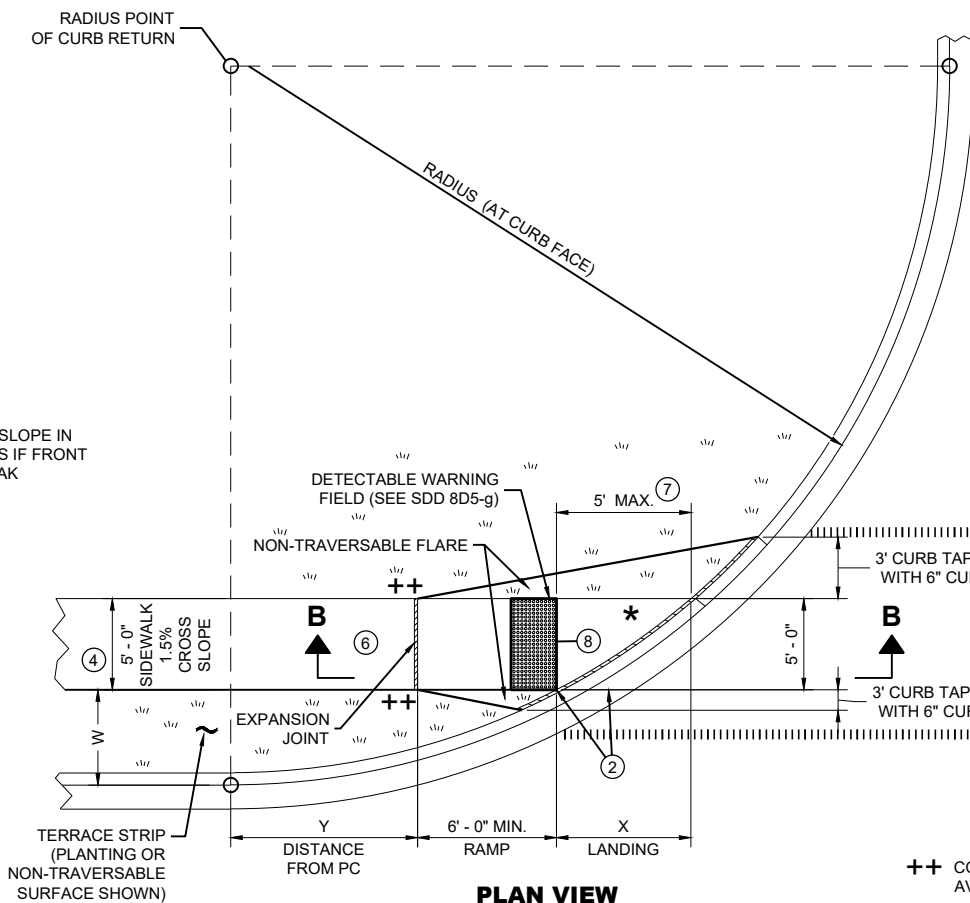
SECTION A - A FOR TYPE 4B



** IF RAMP SLOPE IS LESS THAN 5.0%, THEN NO ADJACENT UPHILL LANDING IS REQUIRED

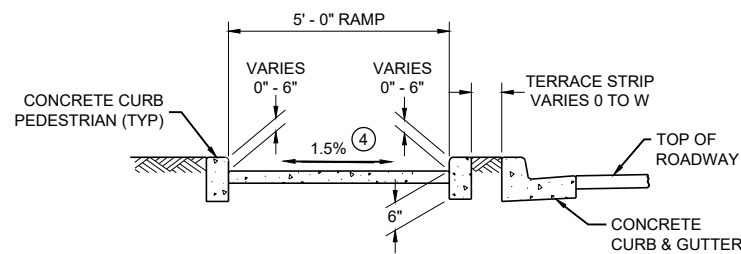
**SECTION B - B FOR
TYPE 4B AND TYPE 4B1**

* MAXIMUM 2.0% SLOPE IN ALL DIRECTIONS IF FRONT OF GRADE BREAK



**PLAN VIEW
CURB RAMP TYPE 4B1**

++ CONSTRUCT 6" WEDGE TO AVOID CONCRETE BREAKAGE



SECTION C - C FOR TYPE 4B

RADIUS (AT CURB FACE)	W = 3' - 0"		W = 4' - 0"		W = 5' - 0"		W = 6' - 0"		W = 7' - 0"		W = 8' - 0"		W = 9' - 0"		W = 10' - 0"	
	X	Y	X	Y	X	Y	X	Y	X	Y	X	Y	X	Y	X	Y
10 FEET	2' - 10 1/4"	0' - 5"	2' - 1"	1' - 4 1/2"	1' - 5"	2' - 1"	0' - 10"	2' - 7 1/2"	0' - 3 1/4"	3' - 0 1/4"						
15 FEET	4' - 6 3/4"	2' - 1 3/4"	3' - 9"	3' - 5 3/4"	3' - 1 1/4"	4' - 6"	2' - 6 3/4"	5' - 4 1/2"	2' - 1"	6' - 1"	1' - 8"	6' - 8 1/2"	1' - 3 1/4"	7' - 2 1/2"	0' - 10 3/4"	7' - 7 1/4"
20 FEET			4' - 11 1/2"	5' - 1 3/4"	4' - 3 1/4"	6' - 5 1/2"	3' - 8 3/4"	7' - 7"	3' - 3"	8' - 6 1/2"	2' - 10"	9' - 4 1/2"	2' - 5 1/2"	10' - 1 1/4"	2' - 1 1/4"	10' - 9"
30 FEET									4' - 10 3/4"	12' - 5 3/4"	4' - 5 1/2"	13' - 7 3/4"	4' - 0 3/4"	14' - 8 1/2"	3' - 8 1/2"	15' - 8 1/4"
40 FEET															4' - 10 3/4"	19' - 8 1/4"

INTERMEDIATE RADII CAN BE INTERPOLATED
DIMENSION "Y" IS CALCULATED BASED ON 6'-0" RAMP LENGTH
DIMENSION "X" IS CALCULATED BASED ON 5'-0" SIDEWALK WIDTH

LEGEND

- 1/2" EXPANSION JOINT SIDEWALK
- CONTRACTION JOINT SIDEWALK
- PAVEMENT MARKING CROSSWALK (WHITE)

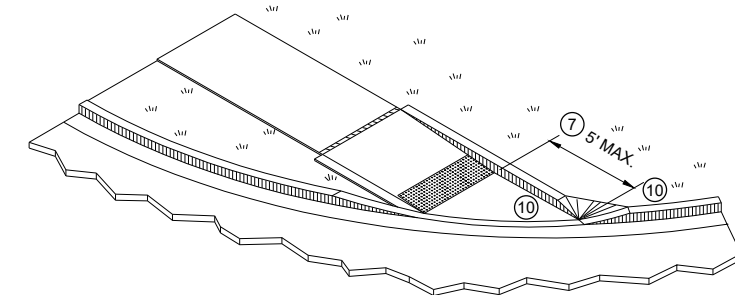
GENERAL NOTES

AVOID PLACING DRAINAGE STRUCTURES, JUNCTION BOXES OR OTHER OBSTRUCTIONS IN FRONT OF RAMP ACCESS AREAS.

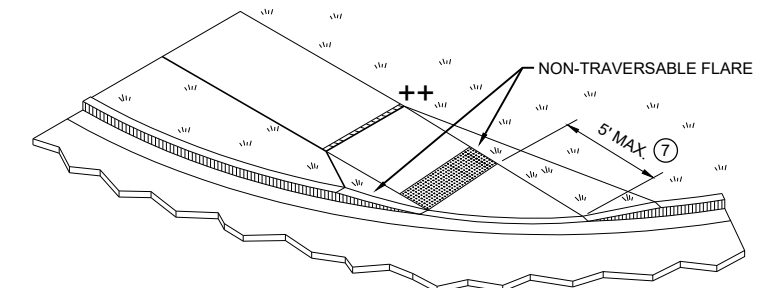
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

DETECTABLE WARNING FIELDS THAT ARE INSTALLED AS A GROUP OR SIDE BY SIDE, SHALL BE FROM THE SAME MANUFACTURER.

- 2 GRADE CHANGE BETWEEN GUTTER FLAG SLOPE AND THE CURB RAMP SLOPE SHALL NOT EXCEED 11%. MAXIMUM GUTTER FLAG SLOPE IS 4%. PROVIDE LONGITUDINAL DRAINAGE AROUND CURB AND AWAY FROM CURB RAMP. NO VERTICAL LIPS OR DISCONTINUITIES GREATER THAN 1/2" INCH ARE ALLOWED. SLOPE OF CURB HEAD OPENING SHALL MATCH THE RAMP SLOPE, MINIMALLY 1.5% AND NOT TO EXCEED 7%. WHEN ADJACENT TO 1.5% LANDING, CONSTRUCT CURB HEAD OPENING AT 1.5% IN THE DIRECTION OF PEDESTRIAN TRAVEL.
- 3 AN 8.33% CURB RAMP SLOPE IS ALLOWABLE WITH FLATTENED GUTTER FLAG SLOPE AND NOT TO EXCEED 11% GRADE CHANGE.
- 4 ±0.5% CONSTRUCTION TOLERANCE IN SIDEWALK CROSS SLOPE. THE SIDEWALK CROSS SLOPE SHALL NOT EXCEED 2% WITHOUT PRIOR APPROVAL FROM THE ENGINEER.
- 6 PROVIDE A LEVEL LANDING (MAXIMUM 2% SLOPE) IN ANY DIRECTION OF PEDESTRIAN TRAVEL. STANDARD LEVEL LANDING SIZE IS 5 FEET BY 5 FEET.
- 7 WHEN THIS GRADE BREAK DISTANCE EXCEEDS 5 FEET, USE RADIAL DETECTABLE WARNING FIELD PER SDD 8D5-f.
- 8 PROVIDE GRADE BREAK PERPENDICULAR TO DIRECTION OF WHEELCHAIR TRAVEL.
- 10 INSTALL TRANSITION NOSE (INCIDENTAL TO OTHER PAY ITEMS). DO NOT MARK TRANSITION NOSE.



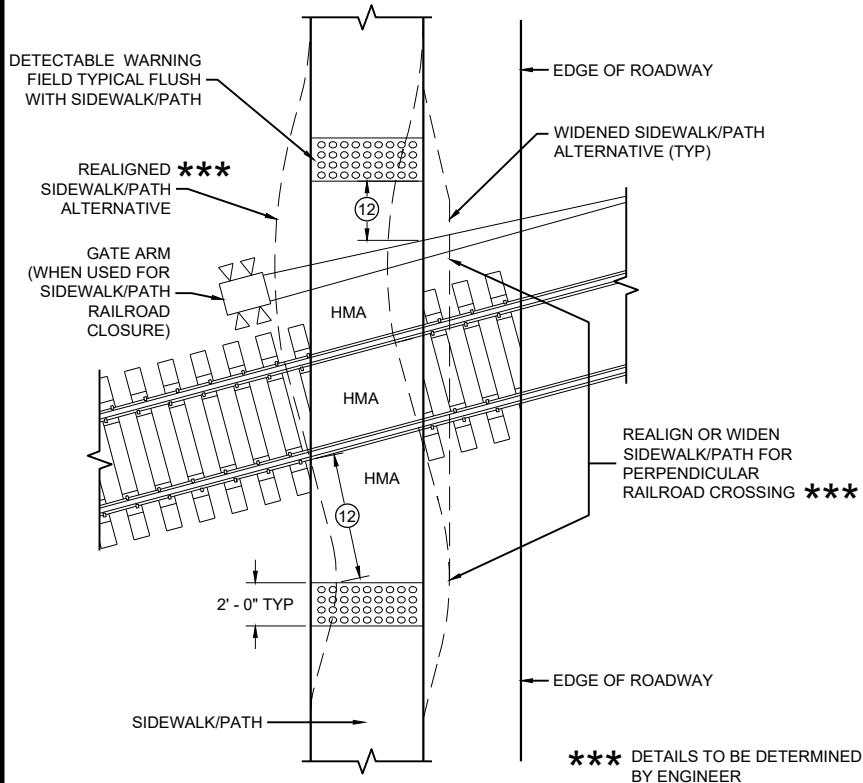
ISOMETRIC VIEW FOR TYPE 4B



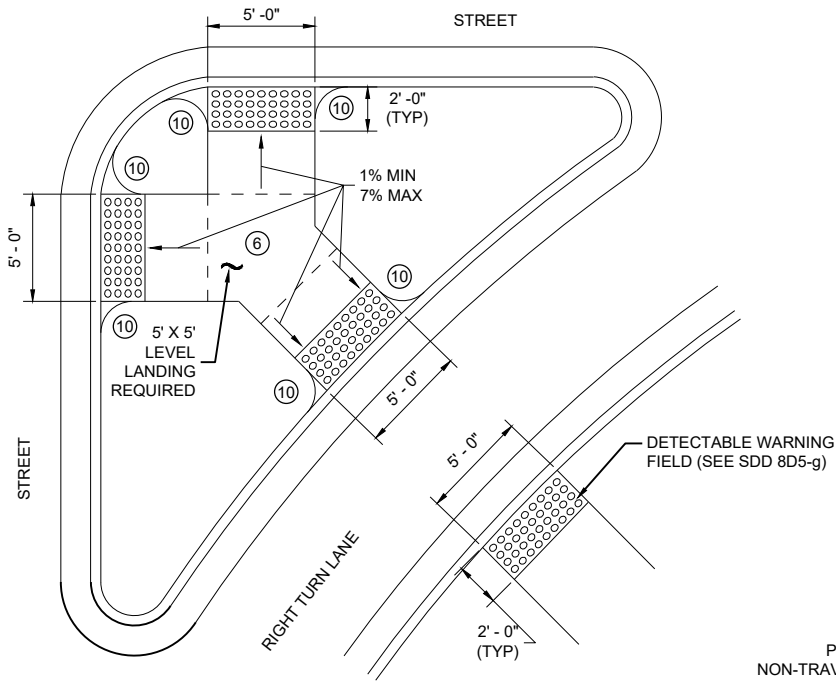
ISOMETRIC VIEW FOR TYPE 4B1

CURB RAMPS TYPE 4B AND 4B1

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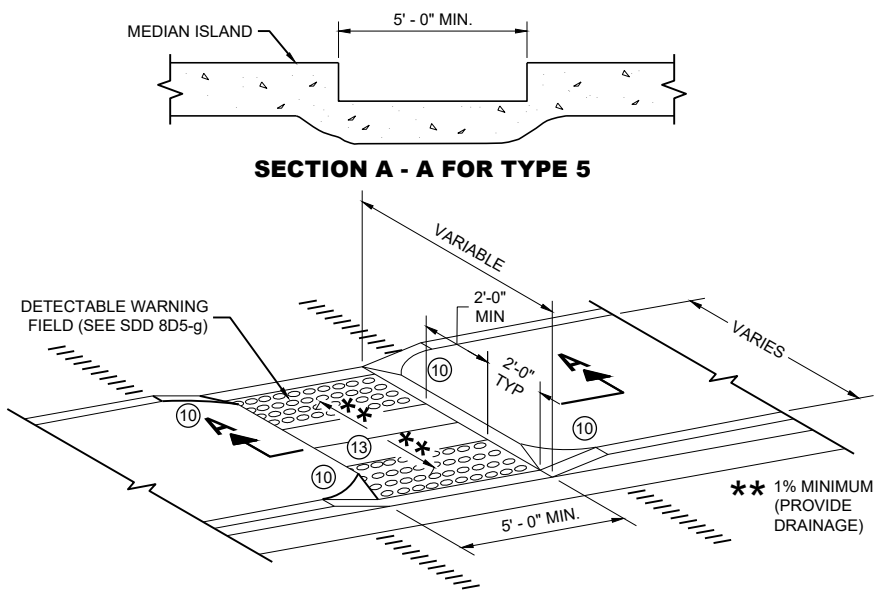


CURB RAMP TYPE 8
DETECTABLE WARNINGS
FOR SIDEWALKS OR SHARED USE PATHS
AT RAILROAD CROSSINGS

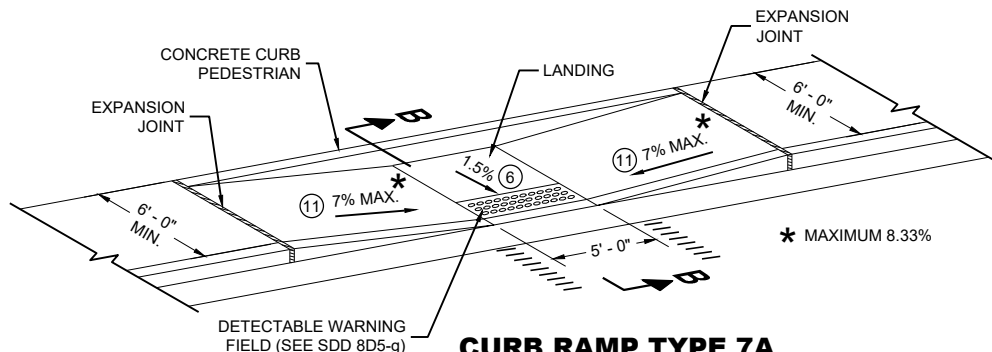


CURB RAMP TYPE 6
DETECTABLE WARNING AT ISLANDS

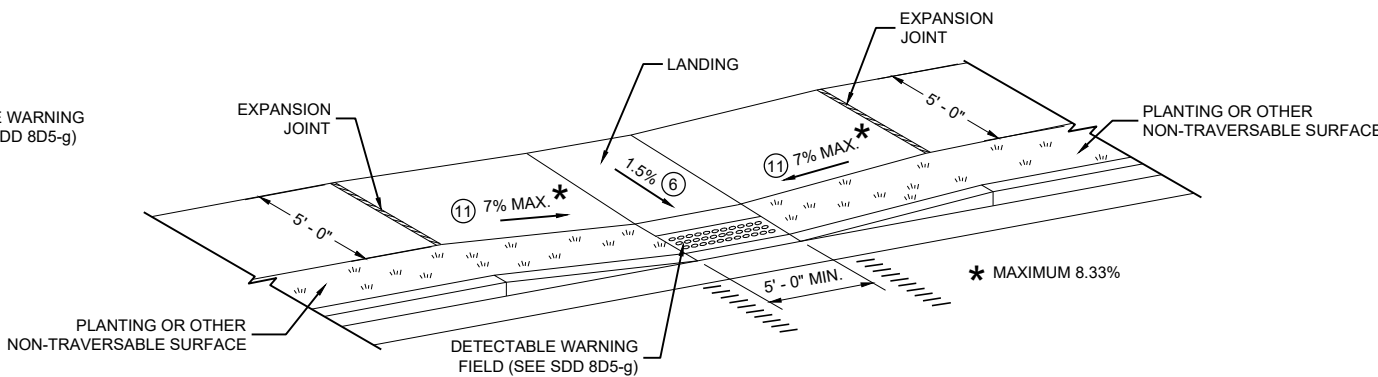
REFER TO GENERAL NOTES ② AND ③
FOR ALL ISLAND CURB RAMPS



CURB RAMP TYPE 5
MEDIAN ISLAND
NON-ELEVATED PEDESTRIAN CROSSING



CURB RAMP TYPE 7A
FOR INTERSECTIONS AND
MID BLOCK CROSSINGS



CURB RAMP TYPE 7B
FOR INTERSECTIONS AND
MID BLOCK CROSSINGS

GENERAL NOTES

AVOID PLACING DRAINAGE STRUCTURES, JUNCTION BOXES OR OTHER OBSTRUCTIONS IN FRONT OF RAMP ACCESS AREAS.

DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

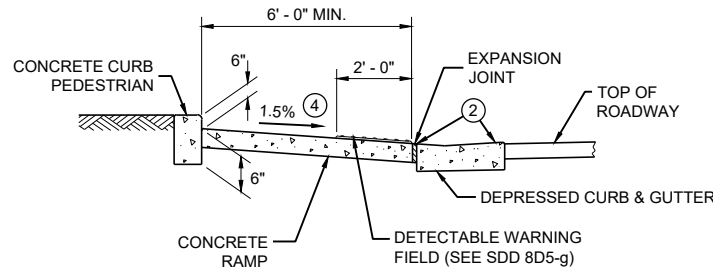
SIDEWALK CROSS SLOPE SHALL NOT EXCEED 2%.

DETECTABLE WARNING FIELDS THAT ARE INSTALLED AS A GROUP OR SIDE BY SIDE, SHALL BE FROM THE SAME MANUFACTURER.

- ② GRADE CHANGE BETWEEN GUTTER FLAG SLOPE AND THE CURB RAMP SLOPE SHALL NOT EXCEED 11%. MAXIMUM GUTTER FLAG SLOPE IS 4%. PROVIDE LONGITUDINAL DRAINAGE AROUND CURB AND AWAY FROM CURB RAMP. NO VERTICAL LIPS OR DISCONTINUITIES GREATER THAN 1/8 - INCH ARE ALLOWED. SLOPE OF CURB HEAD OPENING SHALL MATCH THE RAMP SLOPE, MINIMALLY 1.5% AND NOT TO EXCEED 7%. WHEN ADJACENT TO 1.5% LANDING, CONSTRUCT CURB HEAD OPENING AT 1.5% IN THE DIRECTION OF PEDESTRIAN TRAVEL.
- ③ AN 8.33% CURB RAMP SLOPE IS ALLOWABLE WITH FLATTENED GUTTER FLAG SLOPE AND NOT TO EXCEED 11% GRADE CHANGE.
- ④ ±0.5% CONSTRUCTION TOLERANCE IN SIDEWALK CROSS SLOPE. THE SIDEWALK CROSS SLOPE SHALL NOT EXCEED 2% WITHOUT PRIOR APPROVAL FROM THE ENGINEER.
- ⑥ PROVIDE A LEVEL LANDING (MAXIMUM 2% SLOPE) IN ANY DIRECTION OF PEDESTRIAN TRAVEL. STANDARD LEVEL LANDING SIZE IS 5 FEET BY 5 FEET.
- ⑩ INSTALL TRANSITION NOSE (INCIDENTAL TO OTHER PAY ITEMS). DO NOT MARK TRANSITION NOSE.
- ⑪ SLOPE SIDEWALK TOWARD LANDING AS SHOWN WHERE THERE IS NO TERRACE OR WHERE THE TERRACE WIDTH IS LESS THAN 6 FEET WIDE.
- ⑫ THE EDGE OF THE DETECTABLE WARNING FIELD NEAREST TO A RAILROAD CROSSING SHALL BE 1.5 FEET ±0.1' FROM THE FACE OF THE GATE ARM IF THE GATE ARM EXTENDS ACROSS THE SIDEWALK/PATH. WHERE THERE IS NO PEDESTRIAN GATE, THE EDGE OF THE DETECTABLE WARNING FIELD NEAREST TO THE RAILROAD TRACK IS 15 FEET MAXIMUM AND 12 FEET MINIMUM, 15 FEET TYPICAL FROM THE NEAREST RAIL.
- ⑬ DO NOT INSTALL DETECTABLE WARNING FIELDS AT THE EDGES OF STEET-LEVEL PEDESTRIAN REFUGE ISLANDS IF A MINIMUM 2 FOOT CONCRETE SURFACE WITHOUT DETECTABLE WARNINGS (MEASURED IN THE DIRECTION OF PEDESTRIAN TRAVEL) CANNOT BE ACHIEVED.

LEGEND

- ===== 1/2" EXPANSION JOINT SIDEWALK
- - - - - CONTRACTION JOINT FIELD LOCATED
- ||||||| PAVEMENT MARKING CROSSWALK (WHITE)

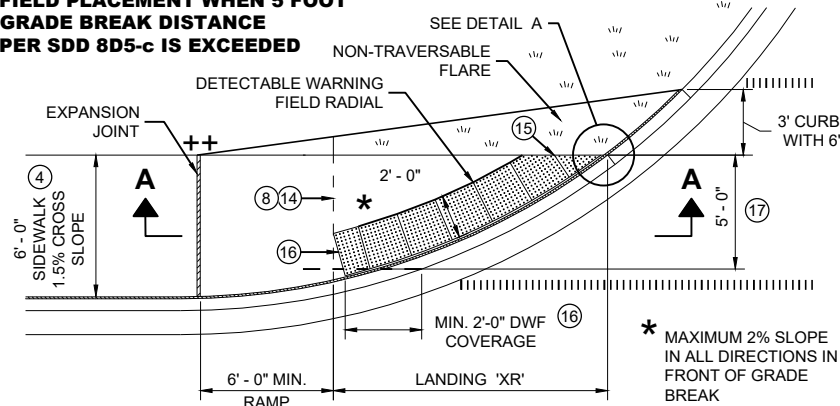


SECTION B - B FOR TYPE 7A

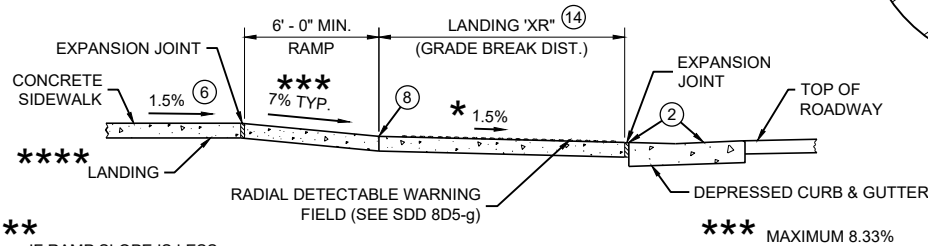
CURB RAMPS
TYPE 5, 6, 7A, 7B & 8

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

**RADIAL DETECTABLE WARNING
FIELD PLACEMENT WHEN 5 FOOT
GRADE BREAK DISTANCE
PER SDD 8D5-c IS EXCEEDED**



**PLAN VIEW
CURB RAMP TYPE 4A1
(GRADE BREAK DISTANCE GREATER THAN 5 FEET)**

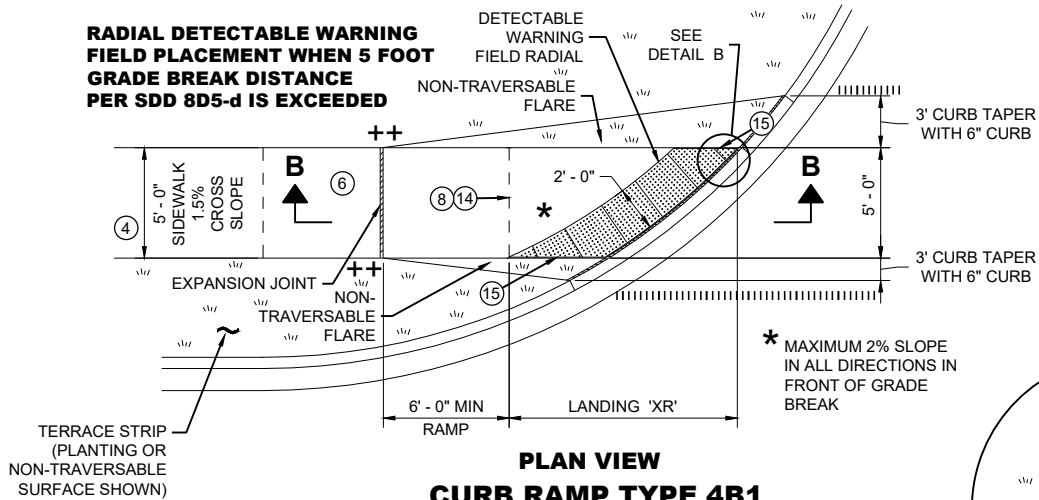


SECTION A - A FOR TYPE 4A1

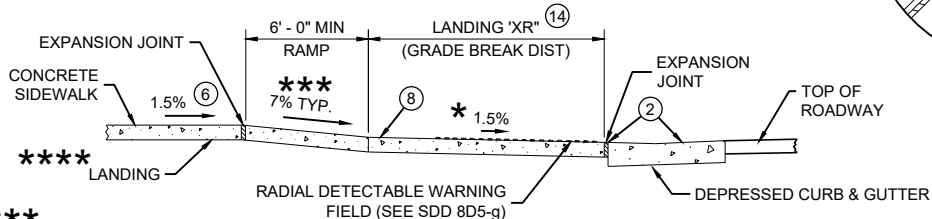
IF RAMP SLOPE IS LESS
THAN 5.0%, THEN NO
ADJACENT UPHILL
LANDING IS REQUIRED

*** MAXIMUM 8.33%

**RADIAL DETECTABLE WARNING
FIELD PLACEMENT WHEN 5 FOOT
GRADE BREAK DISTANCE
PER SDD 8D5-d IS EXCEEDED**



**PLAN VIEW
CURB RAMP TYPE 4B1
(GRADE BREAK DISTANCE GREATER THAN 5 FEET)**



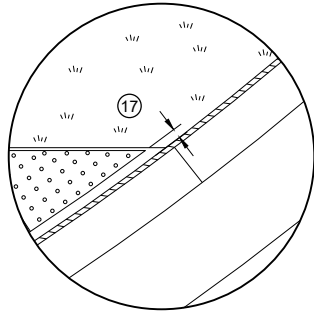
SECTION B - B FOR TYPE 4B1

IF RAMP SLOPE IS LESS
THAN 5.0%, THEN NO
ADJACENT UPHILL
LANDING IS REQUIRED

*** MAXIMUM 8.33%

LEGEND

- 1/2" EXPANSION JOINT SIDEWALK
- CONTRACTION JOINT SIDEWALK
- PAVEMENT MARKING CROSSWALK (WHITE)



DETAIL A

GENERAL NOTES

AVOID PLACING DRAINAGE STRUCTURES, JUNCTION BOXES OR OTHER OBSTRUCTIONS IN FRONT OF RAMP ACCESS AREAS.

DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

DETECTABLE WARNING FIELDS THAT ARE INSTALLED AS A GROUP OR SIDE BY SIDE, SHALL BE FROM THE SAME MANUFACTURER.

APPLY RADIAL DETECTABLE WARNING PLACEMENT SIMILARLY FOR TYPE 4A AND 4A1 CURB RAMPS AND SIMILARLY FOR TYPE 4B AND 4B1 CURB RAMPS. TYPE 4A AND 4B CURB RAMPS ARE NOT SHOWN.

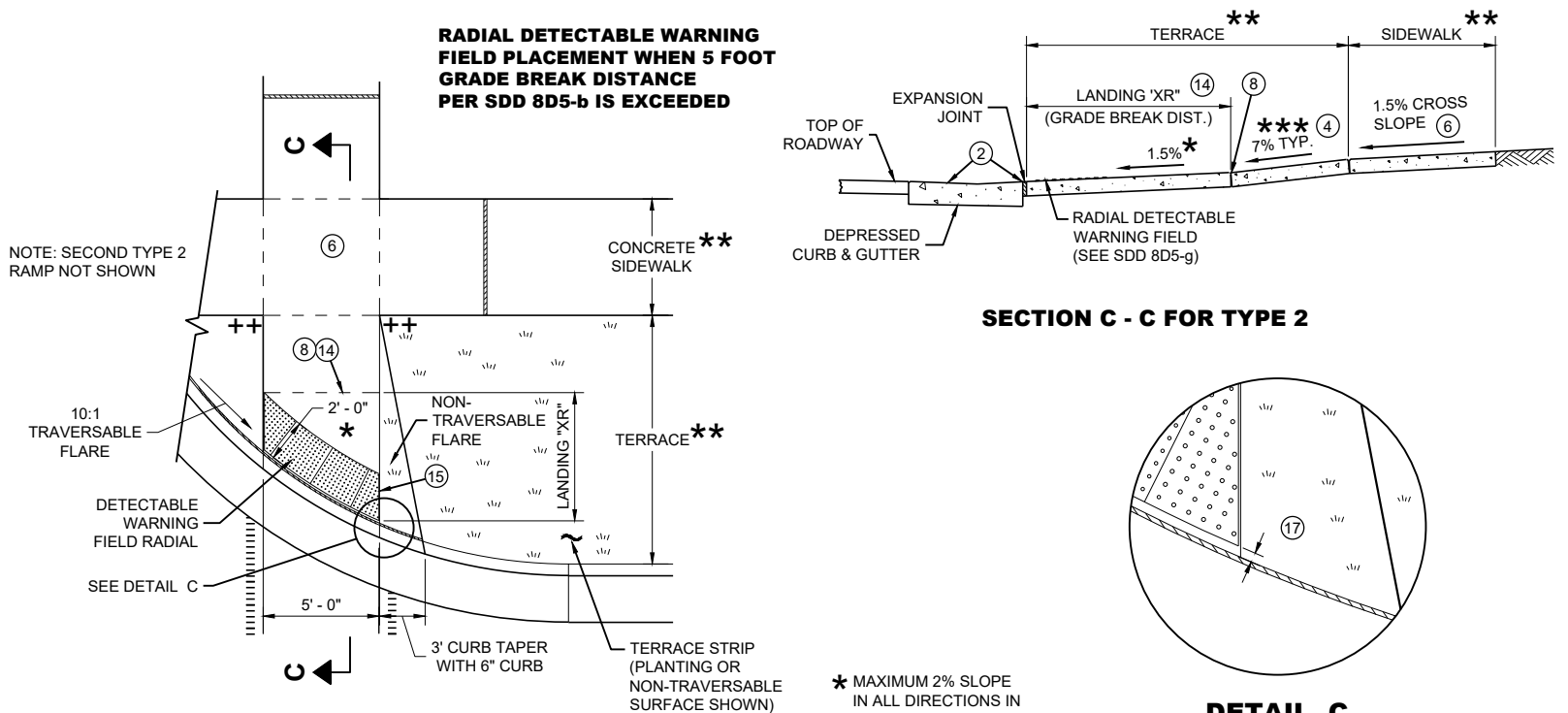
REFER TO SDD 8D5-g FOR ADDITIONAL RADIAL PLATE REQUIREMENTS.

FIELD CUTS AT INTERMEDIATE JOINTS WITHIN THE RADIAL DETECTABLE WARNING FIELD ARE PROHIBITED.

DETERMINE FINAL RADIAL WARNING FIELD CONFIGURATION AND ITS INDIVIDUAL PLATE LOCATIONS. PERFORM PRE-LAYOUT PRIOR TO PLACEMENT IN PLASTIC CONCRETE. FOLLOW MANUFACTURER'S PRODUCT LIST AND INSTALLATION RECOMMENDATIONS.

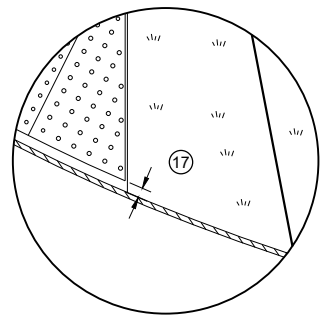
- 2 GRADE CHANGE BETWEEN GUTTER FLAG SLOPE AND THE CURB RAMP SLOPE SHALL NOT EXCEED 11%. MAXIMUM GUTTER FLAG SLOPE IS 4%. PROVIDE LONGITUDINAL DRAINAGE AROUND CURB AND AWAY FROM CURB RAMP. NO VERTICAL LIPS OR DISCONTINUITIES GREATER THAN 1/4" INCH ARE ALLOWED. SLOPE OF CURB HEAD OPENING SHALL MATCH THE RAMP SLOPE, MINIMALLY 1.5% AND NOT TO EXCEED 7%. WHEN ADJACENT TO 1.5% LANDING, CONSTRUCT CURB HEAD OPENING AT 1.5% IN THE DIRECTION OF PEDESTRIAN TRAVEL.
- 3 AN 8.33% CURB RAMP SLOPE IS ALLOWABLE WITH FLATTENED GUTTER FLAG SLOPE AND NOT TO EXCEED 11% GRADE CHANGE.
- 4 ±0.5% CONSTRUCTION TOLERANCE IN SIDEWALK CROSS SLOPE. THE SIDEWALK CROSS SLOPE SHALL NOT EXCEED 2% WITHOUT PRIOR APPROVAL FROM THE ENGINEER.
- 6 PROVIDE A LEVEL LANDING (MAXIMUM 2% SLOPE) IN ANY DIRECTION OF PEDESTRIAN TRAVEL. STANDARD LANDING SIZE IS 5 FEET BY 5 FEET.
- 8 PROVIDE GRADE BREAK PERPENDICULAR TO DIRECTION OF WHEELCHAIR TRAVEL.
- 14 CONSULT ENGINEER IF GRADE BREAK LOCATION (END OF LANDING DIMENSION "XR") REQUIRES FIELD ADJUSTMENT WHEN ESTABLISHING FINAL RADIAL DETECTABLE WARNING FIELD LOCATION.
- 15 FIELD SAW CUTS ALONG RADIAL DETECTABLE WARNING PLATES WILL BE NECESSARY TO MATCH EACH CURB RAMP EDGE. AVOID CUTTING THROUGH DOMES WHENEVER POSSIBLE. MAKE FIELD CUTS TRUE TO LINE AND WITHIN 1/2" DEVIATION. SMOOTH EDGES OF FIELD CUT PLATES.
- 16 USE 1' X 2" RECTANGULAR END PLATE AT END OF TYPE 4A1 RAMP AND PROVIDE MINIMUM 2' - 0" DETECTABLE WARNING FIELD COVERAGE (IN DIRECTION OF PEDESTRIAN TRAVEL) ALONG THE ENTIRE CURB RAMP WIDTH.
- 17 A MAXIMUM 3 INCH CONCRETE BORDER WIDTH IS ALLOWABLE IN FRONT OF RADIAL DETECTABLE WARNING FIELD FOR CONSTRUCTABILITY PURPOSES. CONCRETE BORDER WIDTH MAY VARY UP TO 1 INCH.

**RADIAL DETECTABLE WARNING
FIELD PLACEMENT WHEN 5 FOOT
GRADE BREAK DISTANCE
PER SDD 8D5-b IS EXCEEDED**



**PLAN VIEW
CURB RAMP TYPE 2
(GRADE BREAK DISTANCE GREATER THAN 5 FEET)
(ON LINE WITH SIDEWALK)**

SECTION C - C FOR TYPE 2



DETAIL C

*** MAXIMUM 2% SLOPE
IN ALL DIRECTIONS IN
FRONT OF GRADE
BREAK

** WIDTH SHOWN ELSEWHERE
IN THE PLANS

*** MAXIMUM 8.33%

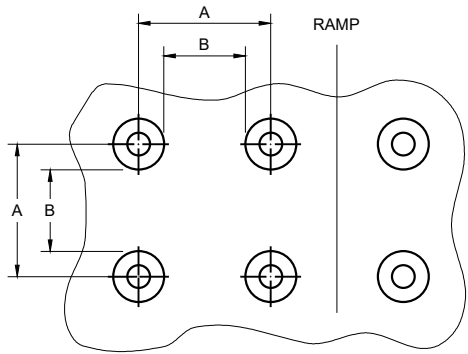
++ CONSTRUCT 6" WEDGE TO
AVOID CONCRETE BREAKAGE

**CURB RAMPS
RADIAL DETECTABLE WARNING**

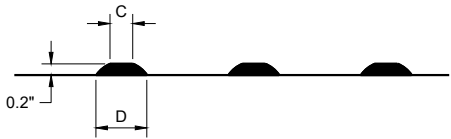
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

	MIN.	MAX.
A	1.6"	2.4"
B	0.65"	1.5"
C	*	*
D	0.9"	1.4"

* THE C DIMENSION IS 50% TO 65% OF THE D DIMENSION.

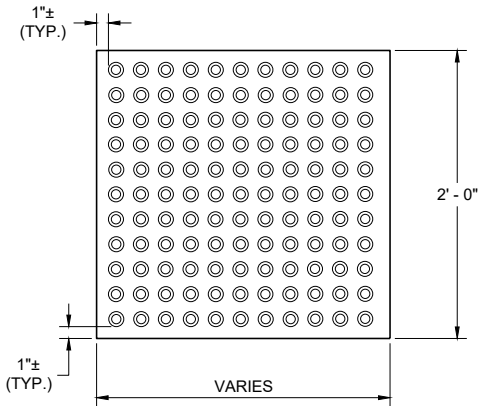


PLAN VIEW

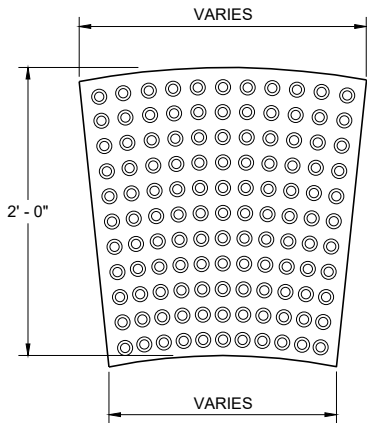


ELEVATION VIEW

TRUNCATED DOMES
DETECTABLE WARNING PATTERN DETAIL

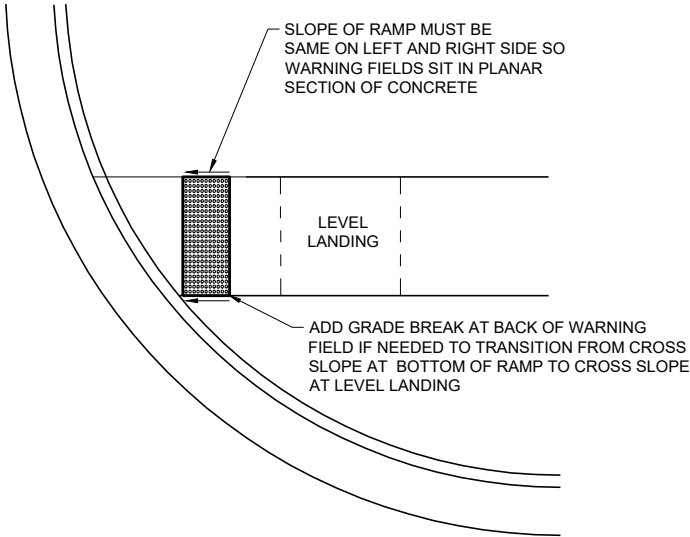


RECTANGULAR
PLATES

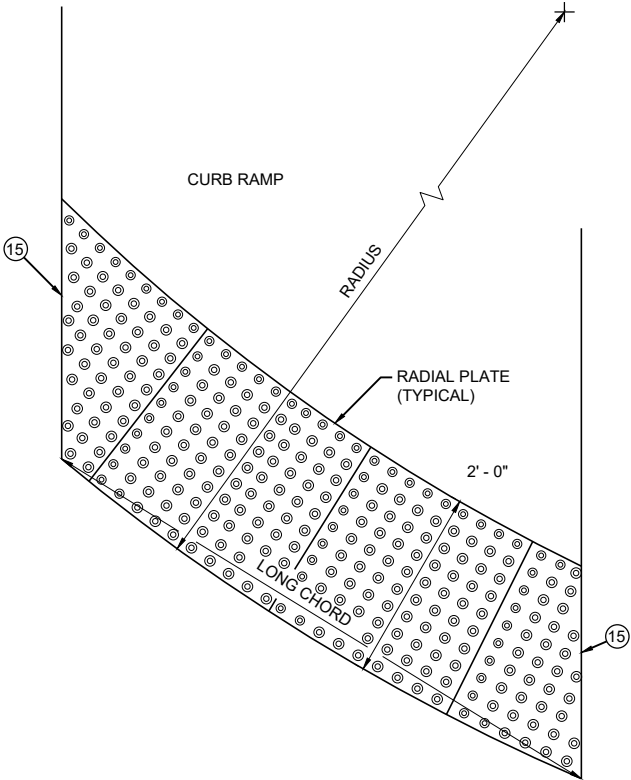


RADIAL
PLATES

PLAN VIEW
DETECTABLE WARNING FIELDS (TYPICAL)



DETECTABLE WARNING FIELD
PLANAR INSTALLATION



PLAN VIEW
RADIAL DETECTABLE
WARNING FIELD ATTRIBUTES

GENERAL NOTES

DETECTABLE WARNING FIELDS THAT ARE INSTALLED AT A CURB RAMP SHALL BE FROM THE SAME MANUFACTURER.

PLACE ALL DETECTABLE WARNING FIELD SYSTEMS IN ACCORDANCE TO THE MANUFACTURER'S RECOMMENDATION.

FIELD CUTS AT INTERMEDIATE JOINTS WITHIN THE RADIAL DETECTABLE WARNING FILED ARE PROHIBITED.

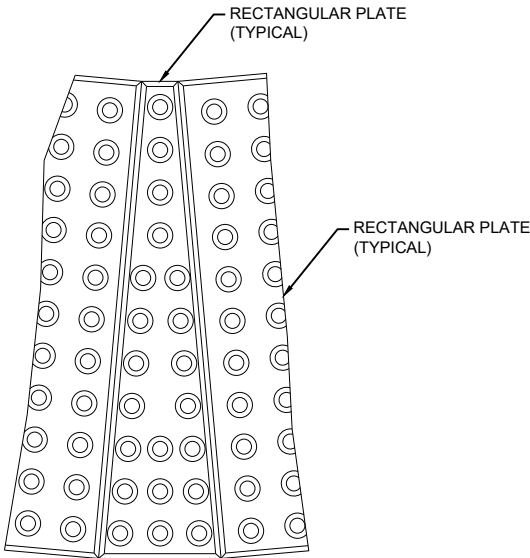
DETERMINE FINAL RADIAL WARNING FIELD CONFIGURATION AND ITS INDIVIDUAL PLATE LOCATIONS. PERFORM PRE-LAYOUT PRIOR TO PLACEMENT IN PLASTIC CONCRETE. FOLLOW MANUFACTURER'S PRODUCT LIST AND INSTALLATION RECOMMENDATIONS.

FOR RADIAL DETECTABLE WARNING FIELD APPLICATIONS WHERE STANDARD RADIAL PLATES ARE NOT AVAILABLE AT AN INTERSECTION CURB RADIUS, A COMBINATION OF SQUARE OR RECTANGULAR PLATES AND RADIAL PLATES MAY BE USED TO FORM RADIAL CONFIGURATION. RADIAL WEDGE PLATES IN COMBINATION WITH SQUARE PLATES ARE ALSO ACCEPTABLE. FOLLOW MANUFACTURER'S RECOMMENDATIONS.

REFER TO CONTRACT AND STANDARD SPECIFICATIONS FOR FIELD CUTTING REQUIREMENTS.

DO NOT EMBED IN CONCRETE ANY FIELD-CUT PLATES WITH CUT EDGES SHORTER THAN 6 INCHES. CONSULT WITH MANUFACTURER FOR RE-DRILLING AND ANCHORING REQUIREMENTS OF FIELD-CUT PLATES.

15 FIELD SAW CUTS ALONG RADIAL DETECTABLE WARNING PLATES WILL BE NECESSARY TO MATCH EACH CURB RAMP EDGE. AVOID CUTTING THROUGH DOMES WHENEVER POSSIBLE. MAKE FIELD CUTS TRUE TO LINE AND WITHIN 1/8\"/>



PLAN VIEW
RADIAL WEDGE PLATE
CONNECTION DETAIL

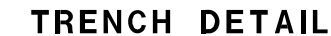
CURB RAMPS
RECTANGULAR AND RADIAL
DETECTABLE WARNING PLATES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
July 2023 /S/ Rodney Taylor
DATE ROADWAY STANDARDS DEVELOPMENT
FHWA UNIT SUPERVISOR



- ① HORIZONTAL BRACE REQUIRED WITH 2" X 4" WOODEN FRAME OR EQUIVALENT AT TOP OF POSTS.
- ② FOR MANUAL INSTALLATIONS THE TRENCH SHALL BE A MINIMUM OF 4" WIDE & 6" DEEP TO BURY AND ANCHOR THE GEOTEXTILE FABRIC. FOLD MATERIAL TO FIT TRENCH AND BACKFILL & COMPACT TRENCH WITH EXCAVATED SOIL.
- ③ WOOD POSTS SHALL BE A MINIMUM SIZE OF 1½" X 1½" OF OAK OR HICKORY.
- ④ SILT FENCE TO EXTEND ACROSS THE TOP OF THE PIPE.
- ⑤ CONSTRUCT SILT FENCE FROM A CONTINUOUS ROLL IF POSSIBLE BY CUTTING LENGTHS TO AVOID JOINTS. IF A JOINT IS NECESSARY USE ONE OF THE FOLLOWING TWO METHODS; A) OVERLAP THE END POSTS AND TWIST, OR ROTATE, AT LEAST 180 DEGREES, B) HOOK THE END OF EACH SILT FENCE LENGTH.

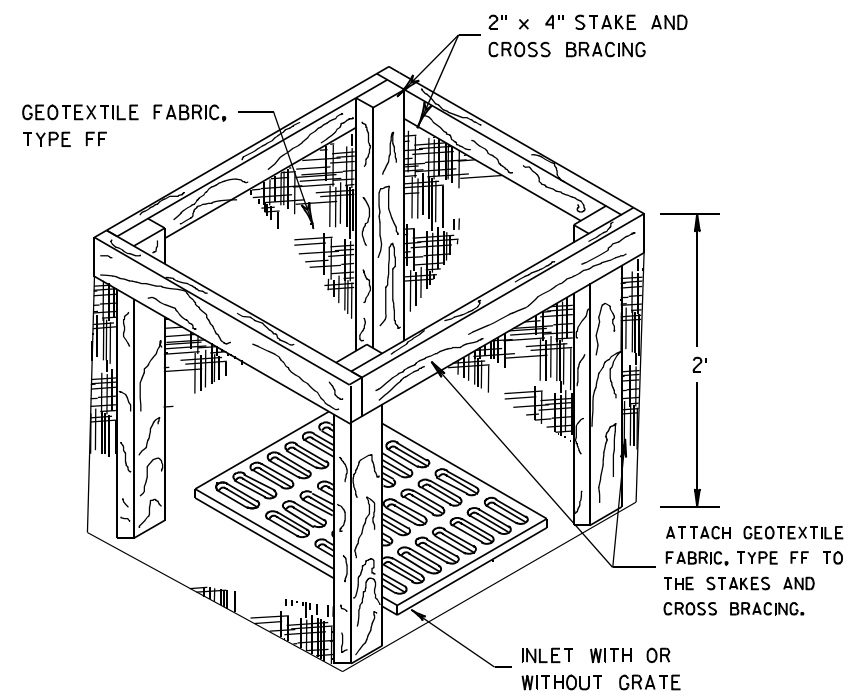
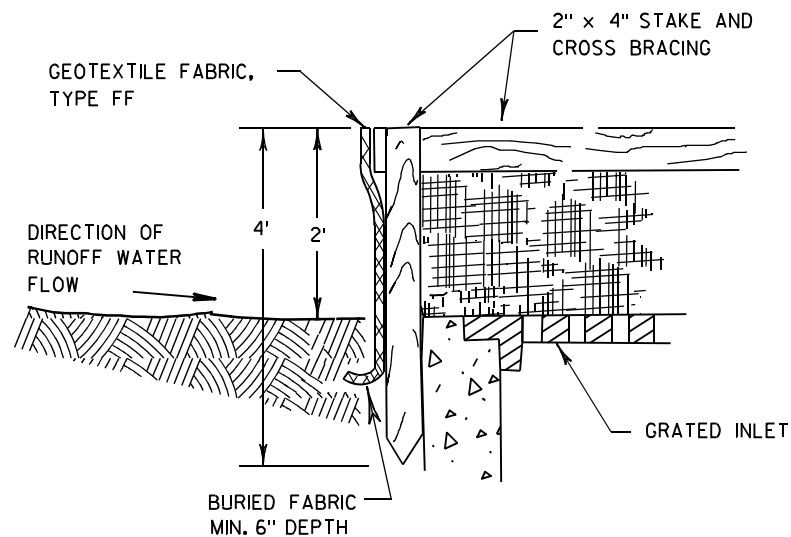


SILT FENCE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
4-29-05
DATE /S/ Beth Connolly
CHIEF ROADWAY DEVELOPMENT **130** **SINEE**

FHWA



INLET PROTECTION, TYPE A

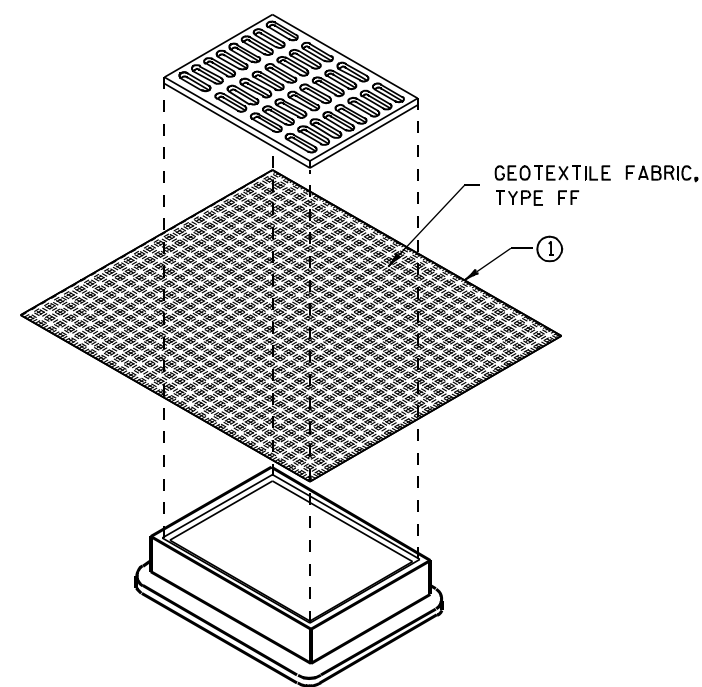
GENERAL NOTES

INLET PROTECTION DEVICES SHALL BE MAINTAINED OR REPLACED AT THE DIRECTION OF THE ENGINEER.

MANUFACTURED ALTERNATIVES APPROVED AND LISTED ON THE DEPARTMENT'S EROSION CONTROL PRODUCT ACCEPTABILITY LIST MAY BE SUBSTITUTED.

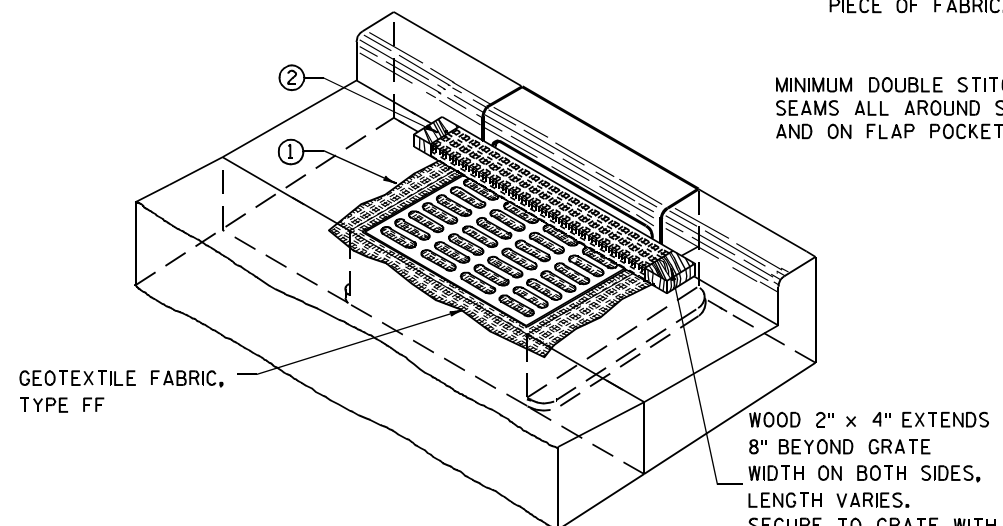
WHEN REMOVING OR MAINTAINING INLET PROTECTION, CARE SHALL BE TAKEN SO THAT THE SEDIMENT TRAPPED ON THE GEOTEXTILE FABRIC DOES NOT FALL INTO THE INLET. ANY MATERIAL FALLING INTO THE INLET SHALL BE REMOVED IMMEDIATELY.

- ① FINISHED SIZE, INCLUDING FLAP POCKETS WHERE REQUIRED, SHALL EXTEND A MINIMUM OF 10" AROUND THE PERIMETER TO FACILITATE MAINTENANCE OR REMOVAL.
- ② FOR INLET PROTECTION, TYPE C (WITH CURB BOX), AN ADDITIONAL 18" OF FABRIC IS WRAPPED AROUND THE WOOD AND SECURED WITH STAPLES. THE WOOD SHALL NOT BLOCK THE ENTIRE HEIGHT OF THE CURB BOX OPENING.
- ③ FLAP POCKETS SHALL BE LARGE ENOUGH TO ACCEPT WOOD 2X4.



**INLET PROTECTION, TYPE B
(WITHOUT CURB BOX)**

(CAN BE INSTALLED IN ANY INLET WITHOUT A CURB BOX)



INLET PROTECTION, TYPE C (WITH CURB BOX)

INSTALLATION NOTES

TYPE B & C

TRIM EXCESS FABRIC IN THE FLOW LINE TO WITHIN 3" OF THE GRATE.

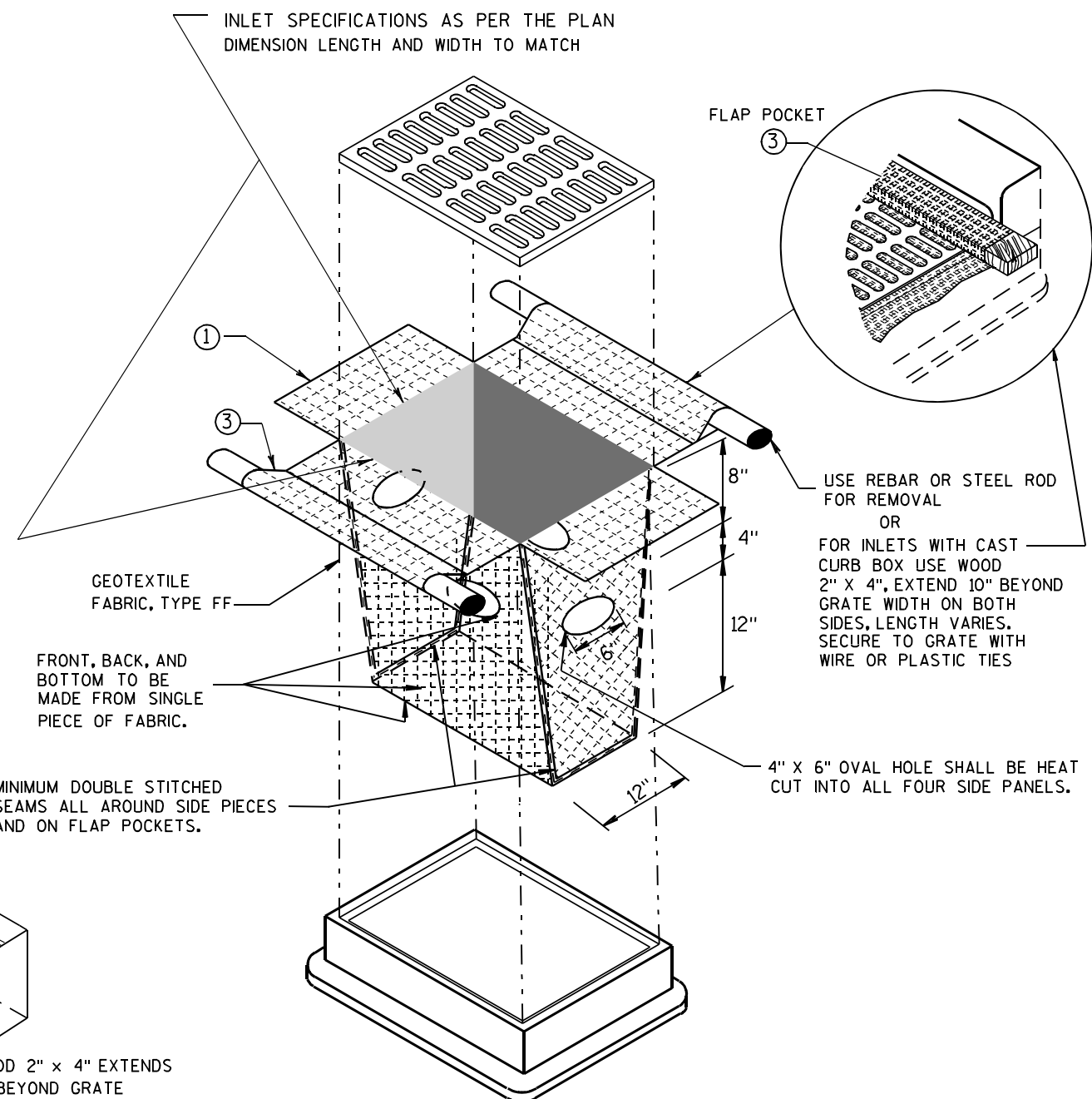
THE CONTRACTOR SHALL DEMONSTRATE A METHOD OF MAINTENANCE, USING A SEWN FLAP, HAND HOLDS OR OTHER METHOD TO PREVENT ACCUMULATED SEDIMENT FROM ENTERING THE INLET.

TYPE D

DO NOT INSTALL INLET PROTECTION TYPE D IN INLETS SHALLower THAN 30", MEASURED FROM THE BOTTOM OF THE INLET TO THE TOP OF THE GRATE.

TRIM EXCESS FABRIC IN THE FLOW LINE TO WITHIN 3" OF THE GRATE.

THE INSTALLED BAG SHALL HAVE A MINIMUM SIDE CLEARANCE, BETWEEN THE INLET WALLS AND THE BAG, MEASURED AT THE BOTTOM OF THE OVERFLOW HOLES, OF 3". WHERE NECESSARY THE CONTRACTOR SHALL CINCH THE BAG, USING PLASTIC ZIP TIES, TO ACHIEVE THE 3" CLEARANCE. THE TIES SHALL BE PLACED AT A MAXIMUM OF 4" FROM THE BOTTOM OF THE BAG.



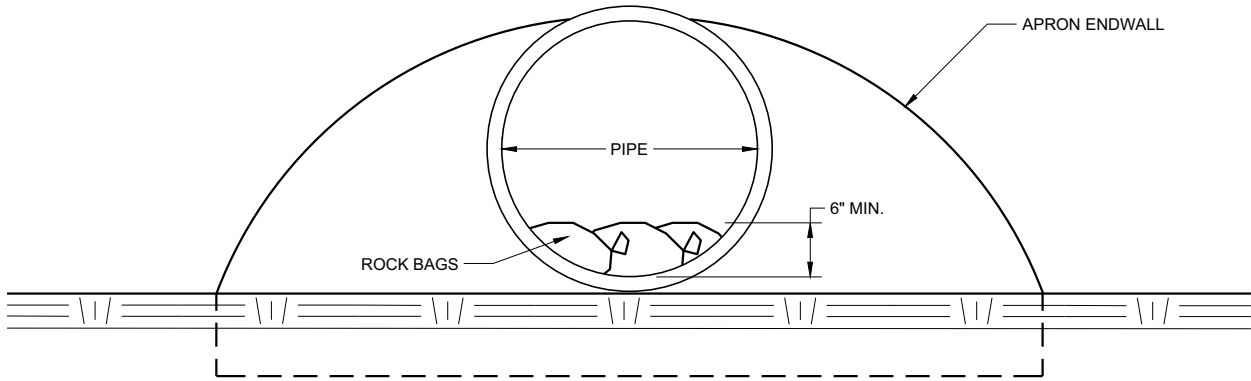
INLET PROTECTION, TYPE D

(CAN BE INSTALLED IN ANY INLET TYPE WITH OR WITHOUT A CURB BOX AS PER NOTE ②)

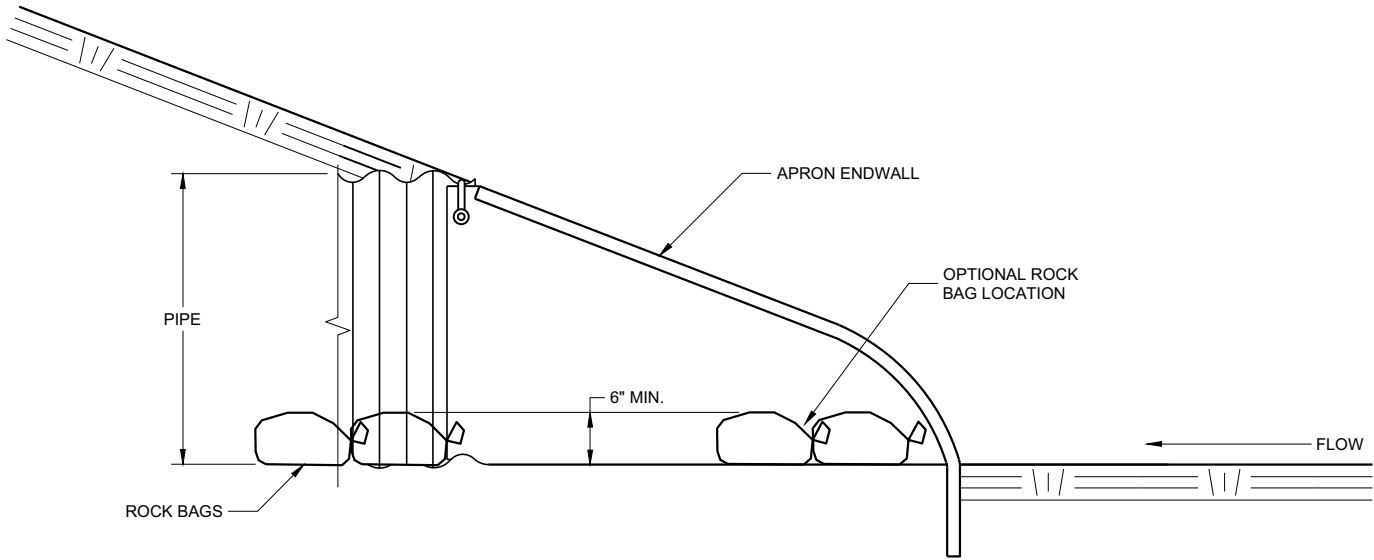
**INLET PROTECTION
TYPE A, B, C, AND D**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
10/16/02 /S/ Beth Connolly
DATE 131
FHWA CHIEF ROADWAY DEVELOPMENT ENGINEER



END VIEW



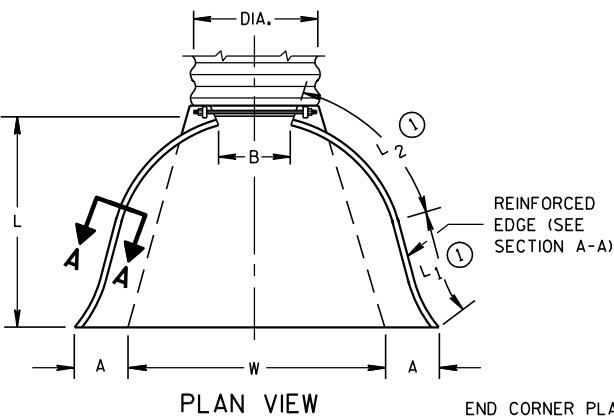
SIDE VIEW

CULVERT PIPE CHECK
(INSTALL ON INLET END ONLY)

CULVERT PIPE CHECK	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED May 2019 DATE	/S/ Daniel Schave EROSION CONTROL ENGI 132
FHWA	

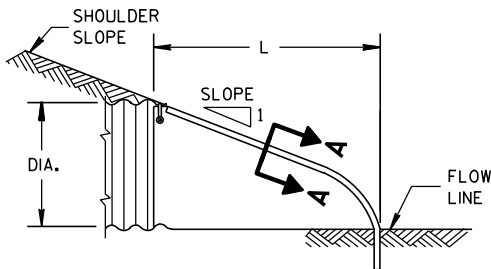
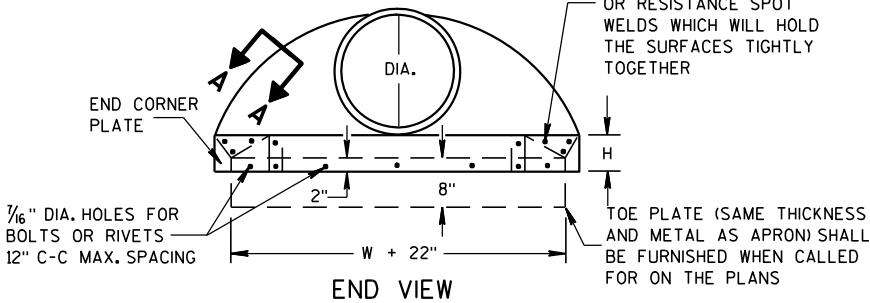
METAL APRON ENDWALLS												
PIPE DIA. (IN.)	MIN. THICK. (Inches)		DIMENSIONS (Inches)							APPROX. SLOPE		BODY
	STEEL	ALUM.	A (±1")	B (MAX.)	H (±1")	L (±1 1/2")	L1 ①	L2 ①	W (±2")			
12	.064	.060	6	6	6	21	12	17 1/2	24	2 1/2 to 1	1	1 Pc.
15	.064	.060	7	8	6	26	14	21 3/4	30	2 1/2 to 1	1	1 Pc.
18	.064	.060	8	10	6	31	15	28 1/4	36	2 1/2 to 1	1	1 Pc.
21	.064	.060	9	12	6	36	18	29 5/8	42	2 1/2 to 1	1	1 Pc.
24	.064	.075	10	13	6	41	18	37 1/4	48	2 1/2 to 1	1	1 Pc.
30	.079	.075	12	16	8	51	18	52 1/4	60	2 1/2 to 1	1	1 Pc.
36	.079	.105	14	19	9	60	24	59 3/4	72	2 1/2 to 1	2	2 Pc.
42	.109	.105	16	22	11	69	24	75 5/8	84	2 1/2 to 1	2	2 Pc.
48	.109	.105	18	27	12	78	24	81	90	2 1/4 to 1	3	3 Pc.
54	.109	.105	18	30	12	84	30	85 1/2	102	2 1/4 to 1	3	3 Pc.
60	.109x	.105x	18	33	12	87	—	—	114	2 to 1	3	3 Pc.
66	.109x	.105x	18	36	12	87	—	—	120	2 to 1	3	3 Pc.
72	.109x	.105x	18	39	12	87	—	—	126	2 to 1	3	3 Pc.
78	.109x	.105x	18	42	12	87	—	—	132	1 1/2 to 1	3	3 Pc.
84	.109x	.105x	18	45	12	87	—	—	138	1 1/2 to 1	3	3 Pc.
90	.109x	.105x	18	37	12	87	—	—	144	1 1/2 to 1	3	3 Pc.
96	.109x	.105x	18	35	12	87	—	—	150	1 1/2 to 1	3	3 Pc.

* EXCEPT CENTER PANEL
SEE GENERAL NOTES



END CORNER PLATES MAY BE FASTENED TO APRON PROPER BY BOLTS, RIVETS, OR RESISTANCE SPOT WELDS WHICH WILL HOLD THE SURFACES TIGHTLY TOGETHER

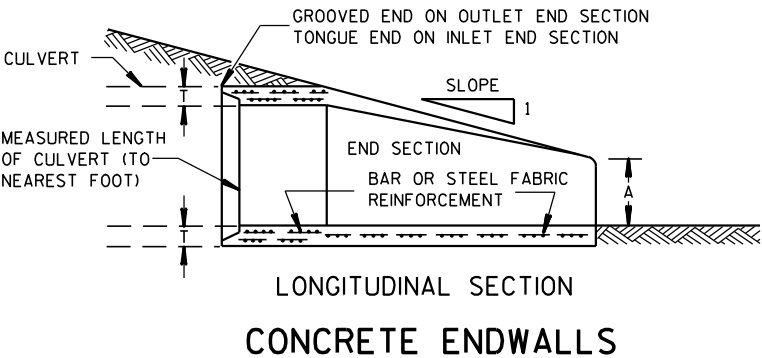
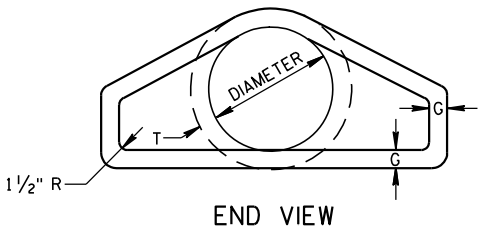
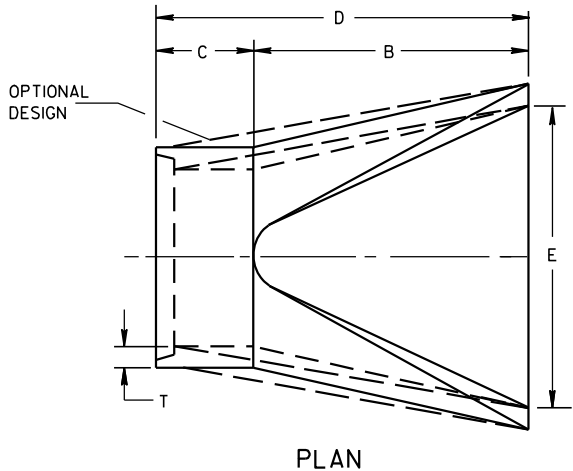
TOE PLATE (SAME THICKNESS AND METAL AS APRON) SHALL BE FURNISHED WHEN CALLED FOR ON THE PLANS



SIDE ELEVATION
METAL ENDWALLS

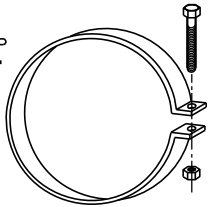
REINFORCED CONCRETE APRON ENDWALLS												
PIPE DIA. (IN.)	DIMENSIONS (Inches)							APPROX. SLOPE				
	T	A	B	C	D	E	G					
12	2	4	24	48 7/8	72 7/8	24	2	3 to 1				
15	2 1/4	6	27	46	73	30	2 1/4	3 to 1				
18	2 1/2	9	27	46	73	36	2 1/2	3 to 1				
21	2 3/4	9	36	37 1/2	73 1/2	42	2 3/4	3 to 1				
24	3	9 1/2	43 1/2	30	73 1/2	48	3	3 to 1				
27	3 1/4	10 1/2	49 1/2	24	73 1/2	54	3 1/4	3 to 1				
30	3 1/2	12	54	19 3/4	73 1/2	60	3 1/2	3 to 1				
36	4	15	63	34 3/4	97 3/4	72	4	3 to 1				
42	4 1/2	21	63	35	98	78	4 1/2	3 to 1				
48	5	24	72	26	98	84	5	3 to 1				
54	5 1/2	27	65	33 1/4-35	98 1/4-100	90	5 1/2	2 1/2 to 1				
60	6	30-35	60	39	99	96	5	2 to 1				
66	6 1/2	24-30	72-78	21-27	99	102	5 1/2	2 to 1				
72	7	24-36	78	21	99	108	6	2 to 1				
78	7 1/2	24-36	78	21	99	114	6 1/2	2 to 1				
84	8	36	90 1/2	21	111 1/2	120	6 1/2	1 1/2 to 1				
90	8 1/2	41	87 1/2	24	111 1/2	132	6 1/2	1 1/2 to 1				

* MINIMUM
** MAXIMUM

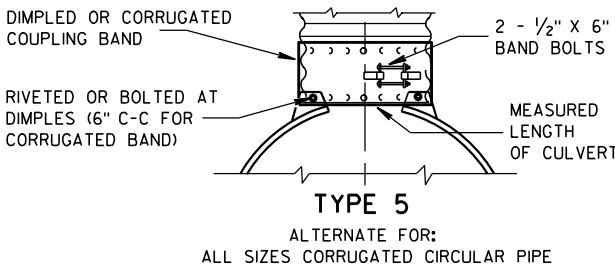
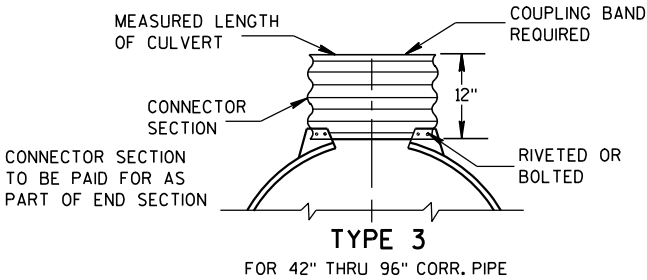
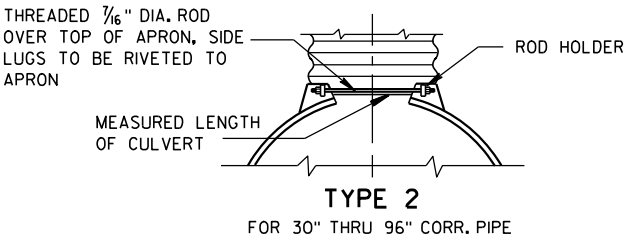
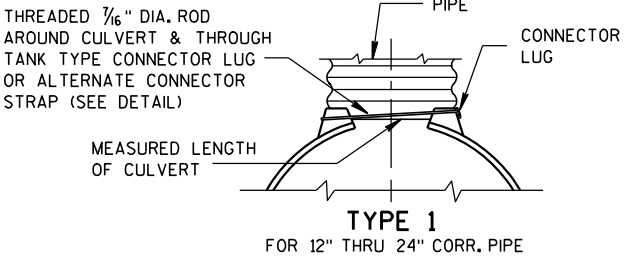


LONGITUDINAL SECTION
CONCRETE ENDWALLS

1" WIDE, 12 GA. (0.109" THICK) GALVANIZED STRAP WITH STANDARD 6" X 1/2" BAND BOLT AND NUT



ALTERNATE FOR TYPE 1 CONNECTION
END SECTION CONNECTOR STRAP



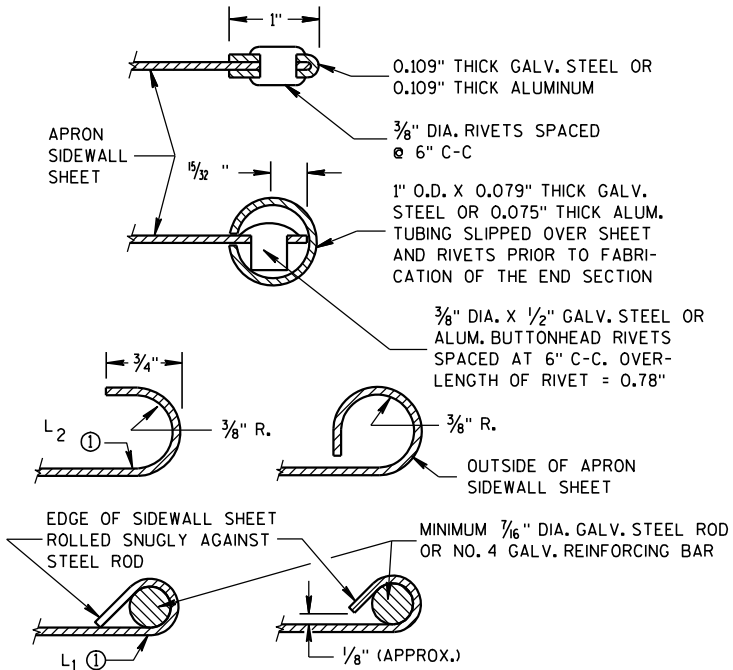
NOTE: DIMPLED BAND FITS OVER OUTSIDE OF ENDWALL, AND CORRUGATED BAND FITS INSIDE ENDWALL. DIMPLED BAND MAY BE USED WITH HELICALLY CORRUGATED PIPE.

FOR CIRCUMFERENTIALLY CORRUGATED PIPE USE ENDWALL CONNECTION DETAILS 1, 2, 3 OR 5 AS APPLICABLE.

FOR HELICALLY CORRUGATED PIPE USE ENDWALL CONNECTION DETAILS 1, 2 OR 5.

FOR HELICALLY CORRUGATED PIPES WITH TWO CIRCUMFERENTIAL CORRUGATIONS AT EACH END USE ENDWALL CONNECTION DETAILS 1, 2 OR 3.

CONNECTION DETAILS



SECTION A-A

GENERAL NOTES

DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

CONCRETE CULVERT ENDWALLS MAY NOT BE USED WITH GALVANIZED STEEL OR ALUMINUM CULVERT PIPE OR VISE VERSA. GALVANIZED STEEL OR ALUMINUM ENDWALLS SHALL NORMALLY BE INSTALLED ON CULVERT PIPE OF THE SAME METAL.

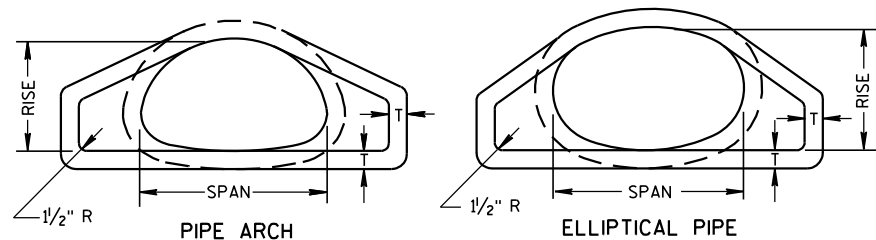
ALL THREE PIECE STEEL APRON ENDWALLS FOR 60" DIAMETER PIPE AND LARGER SHALL HAVE 0.109" SIDES AND 0.138" CENTER PANELS. ALL THREE PIECE ALUMINUM APRON ENDWALLS FOR 60" DIAMETER PIPE AND LARGER SHALL HAVE 0.105" SIDES AND 0.134" CENTER PANELS. THE WIDTH OF CENTER PANELS SHALL BE GREATER THAN 20 PERCENT OF THE PIPE PERIMETER.

LAP SEAMS SHALL BE TIGHTLY JOINED BY GALVANIZED RIVETS OR BOLTS FOR STEEL UNITS AND ALUMINUM RIVETS AND BOLTS FOR ALUMINUM UNITS. FOR THE 60" THROUGH 96" DIAMETER APRON ENDWALL SIZES, THE REINFORCED EDGES AND CENTER PANEL SEAMS SHALL BE FURTHER REINFORCED WITH GALVANIZED STEEL OR ALUMINUM STIFFENER ANGLES. THE ANGLES SHALL BE ATTACHED BY GALVANIZED NUTS AND BOLTS FOR STEEL UNITS AND ALUMINUM NUTS AND BOLTS FOR ALUMINUM UNITS.

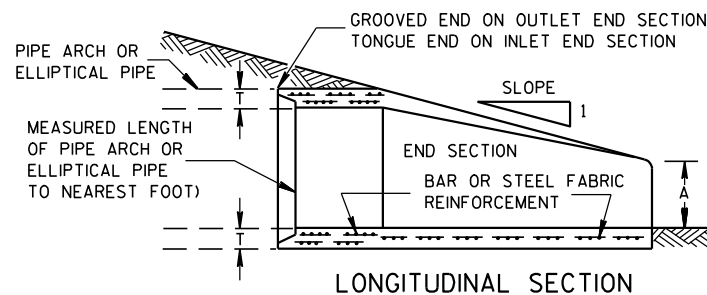
WHERE TWO OR MORE PIPES WITH APRON ENDWALLS ARE LAID ADJACENT TO EACH OTHER, THEY SHALL BE SEPARATED BY A DISTANCE SUFFICIENT TO PROVIDE A MINIMUM CLEARANCE OF 6 INCHES BETWEEN APRON ENDWALLS.

① FOR PIPE SIZES UP TO 60" DIAMETER, A 180° ROLLED EDGE MAY BE USED INSTEAD OF STEEL ROD REINFORCEMENT. SEE SECTION A-A.

APRON ENDWALLS FOR CULVERT PIPE			
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
APPROVED 11/30/94 DATE	/S/ Rory L. Rhin... CHIEF ROADWAY DEVELOP	133	NEER
FHWA			

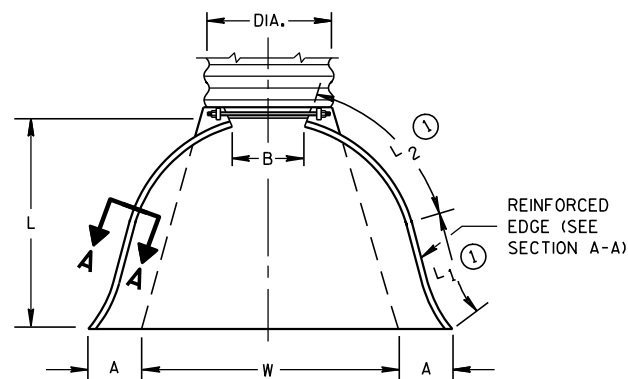


END VIEW



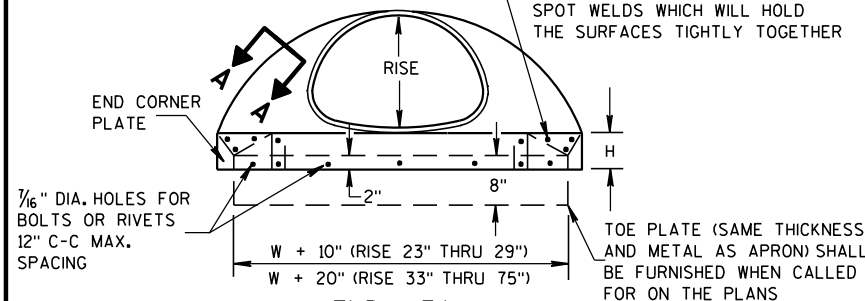
LONGITUDINAL SECTION

CONCRETE ENDWALLS

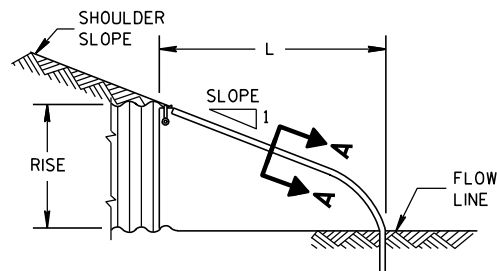


PLAN VIEW

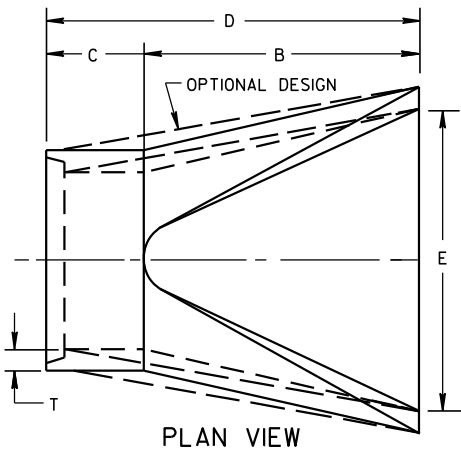
END CORNER PLATES MAY BE FASTENED TO APRON PROPER BY BOLTS, RIVETS, OR RESISTANCE SPOT WELDS WHICH WILL HOLD THE SURFACES TIGHTLY TOGETHER



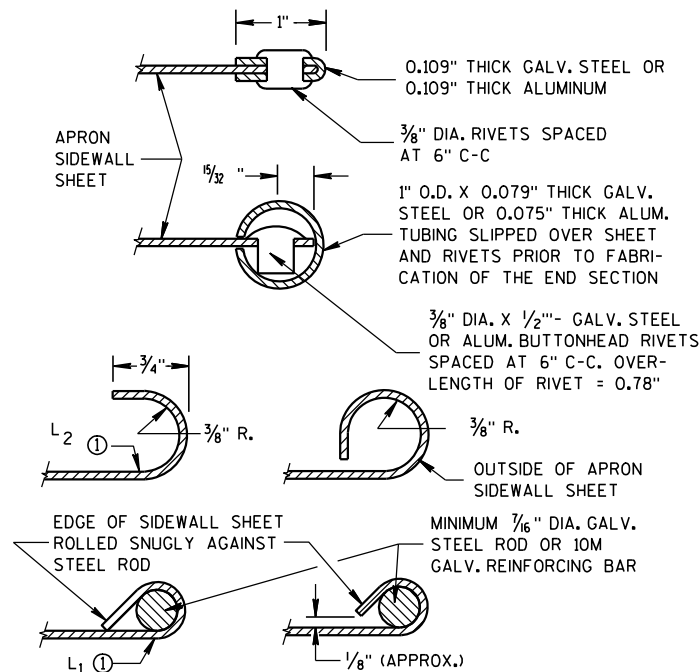
END VIEW



METAL ENDWALLS



PLAN VIEW



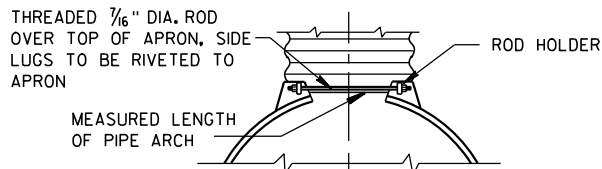
SECTION A-A

2- 2 2/3" X 1/2" CORRUGATIONS													
EQUIV. DIA. (Inches)	(Inches)		MIN. THICK. (Inches)		DIMENSIONS (Inches)							APPROX. SLOPE	BODY
	SPAN	RISE	STEEL	ALUM.	A (±1")	B (MAX.)	H (±1")	L (±1 1/2")	L1 ①	L2 ①	W (±2")		
					(±1")	(MAX.)	(±1")	(±1 1/2")	①	①	(±2")		
15	17	13	.064	.060	7	9	6	19	14	16	30	2 1/2 to 1	1 Pc.
18	21	15	.064	.060	7	10	6	23	14	19 3/8	36	2 1/2 to 1	1 Pc.
21	24	18	.064	.060	8	12	6	28	18	21 3/4	42	2 1/2 to 1	1 Pc.
24	28	20	.064	.060	9	14	6	32	18	27 1/2	48	2 1/2 to 1	1 Pc.
30	35	24	.079	.075	10	16	6	39	18	37 5/8	60	2 1/2 to 1	1 Pc.
36	42	29	.079	.075	12	18	8	46	24	45 3/8	75	2 1/2 to 1	1 Pc.
42	49	33	.109	.105	13	21	9	53	24	54 3/4	85	2 1/2 to 1	2 Pc.
48	57	38	.109	.105	18	26	12	63	24	68	90	2 1/2 to 1	3 Pc.
54	64	43	.109	.105	18	30	12	70	24	72 3/4	102	2 1/4 to 1	3 Pc.
60	71	47	.109*	.105*	18	33	12	77	30	82 1/4	114	2 1/4 to 1	3 Pc.
66	77	52	.109*	.105*	18	36	12	77	—	—	126	2 to 1	3 Pc.
72	83	57	.109*	.105*	18	39	12	77	—	—	138	2 to 1	3 Pc.

3" X 1" CORRUGATIONS													
EQUIV. DIA. (Inches)	(Inches)		MIN. THICK. (Inches)		DIMENSIONS (Inches)							APPROX. SLOPE	BODY
	SPAN	RISE	STEEL	ALUM.	A (±1")	B (MAX.)	H (±1")	L (±1 1/2")	L1 ①	L2 ①	W (±2")		
					(±1")	(MAX.)	(±1")	(±1 1/2")	①	①	(±2")		
48	53	41	.109	.105	18	26	12	63	24	72 3/4	90	2 1/2 to 1	2 Pc.
54	60	46	.109	.105	18	30	12	70	30	82 1/4	102	2 to 1	2 Pc.
60	66	51	.109*	.105*	18	33	12	77	—	—	114	1 1/2 to 1	3 Pc.
66	73	55	.109*	.105*	18	36	12	77	—	—	126	1 1/2 to 1	3 Pc.
72	81	59	.109*	.105*	18	39	12	77	—	—	138	2 to 1	3 Pc.
78	87	63	.109*	.105*	22	38	12	77	—	—	148	1 1/2 to 1	3 Pc.
84	95	67	.109*	.105*	22	34	12	77	—	—	162	1 1/2 to 1	3 Pc.
90	103	71	.109*	.105*	22	38	12	77	—	—	174	1 1/2 to 1	3 Pc.
96	112	75	.109*	.105*	24	40	12	77	—	—	174	1 1/2 to 1	3 Pc.

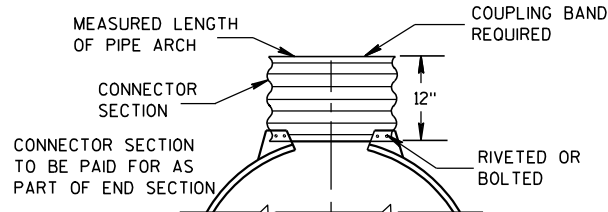
NOTE: ALL SPLICES TO BE LAP RIVETED OR BOLTED.

* EXCEPT CENTER PANEL SEE GENERAL NOTES



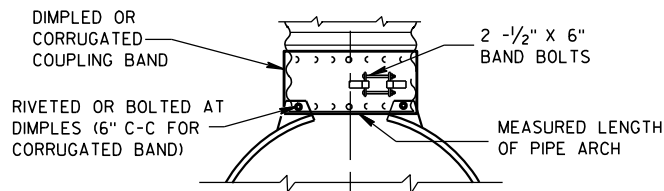
TYPE 2

FOR 17" X 13" THRU 112" X 75" PIPE ARCH



TYPE 3

FOR 64" X 43" THRU 112" X 75" PIPE ARCH



TYPE 5

ALTERNATE FOR: ALL SIZES CORRUGATED PIPE ARCHES

NOTE: DIMPLED BAND FITS OVER OUTSIDE OF ENDWALL, AND CORRUGATED BAND FITS INSIDE ENDWALL.

CONNECTION DETAILS

REINFORCED CONCRETE PIPE ARCH										
EQUIV. DIA. (Inches)	DIMENSIONS (Inches)								APPROX. SLOPE	
	** SPAN	** RISE	T	A	B	C	D	E		
24	29	18	3	8 1/2	39	33	72	48	3 to 1	
30	36	22	3 1/2	9 1/2	50	46	96	60	3 to 1	
36	44	27	4	11 1/8	60	36	96	72	3 to 1	
42	51	31	4 1/2	15 1/8	60	36	96	78	3 to 1	
48	58	36	5	21	60	36	96	84	3 to 1	
54	65	40	5 1/2	25 1/2	60	36	96	90	3 to 1	
60	73	45	6	31	60	36	96	96	3 to 1	
72	88	54	7	31	60	39	99	120	2 to 1	
84	102	62	8	28 1/2	83	19	102	144	2 to 1	

REINFORCED CONCRETE ELLIPTICAL PIPE										
EQUIV. DIA. (Inches)	DIMENSIONS (Inches)								APPROX. SLOPE	
	** SPAN	** RISE	T	A	B	C	D	E		
24	30	19	3 1/4	8 1/2	39	33	72	48	3 to 1	
30	38	24	3 3/4	9 1/2	54	18	72	60	3 to 1	
36	45	29	4 1/2	11 1/8	60	24	84	72	2 1/2 to 1	
42	53	34	5	15 1/4	60	36	96	78	2 1/2 to 1	
48	60	38	5 1/2	21	60	36	96	84	2 1/2 to 1	
54	68	43	6	25 1/2	60	36	96	90	2 1/2 to 1	
60	76	48	6 1/2	30	60	36	96	96	2 1/2 to 1	

**NOMINAL SIZE

GENERAL NOTES

DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

CONCRETE APRON ENDWALLS MAY NOT BE USED WITH GALVANIZED STEEL OR ALUMINUM CULVERT PIPE OR VISE VERSA. GALVANIZED STEEL OR ALUMINUM APRON ENDWALLS SHALL NORMALLY BE INSTALLED ON CULVERT PIPE OF THE SAME METAL.

ALL THREE PIECE STEEL APRON ENDWALLS FOR 66" X 51" PIPE ARCH AND LARGER SHALL HAVE 0.109" SIDES AND 0.138" CENTER PANELS. ALL THREE PIECE ALUMINUM APRON ENDWALLS FOR 66" X 51" PIPE ARCH AND LARGER SHALL HAVE 0.105" SIDES AND 0.134" CENTER PANELS. THE WIDTH OF CENTER PANELS SHALL BE GREATER THAN 20 PERCENT OF THE PIPE ARCH PERIMETER.

LAP SEAMS SHALL BE TIGHTLY JOINED BY GALVANIZED RIVETS OR BOLTS FOR STEEL UNITS AND ALUMINUM RIVETS AND BOLTS FOR ALUMINUM UNITS. FOR THE 77" X 52" THROUGH 112" X 75" APRON ENDWALL SIZES, THE REINFORCED EDGES AND CENTER PANEL SEAMS SHALL BE FURTHER REINFORCED WITH GALVANIZED STEEL OR ALUMINUM STIFFENER ANGLES. THE ANGLES SHALL BE ATTACHED BY GALVANIZED NUTS AND BOLTS FOR STEEL UNITS AND ALUMINUM NUTS AND BOLTS FOR ALUMINUM UNITS.

WHERE TWO OR MORE PIPES WITH APRON ENDWALLS ARE LAID ADJACENT TO EACH OTHER, THEY SHALL BE SEPARATED BY A DISTANCE SUFFICIENT TO PROVIDE A MINIMUM CLEARANCE OF 6 INCHES BETWEEN APRON ENDWALLS.

① FOR PIPE ARCH SIZES UP TO 73" X 55" A 180° ROLLED EDGE MAY BE USED INSTEAD OF STEEL ROD REINFORCEMENT. SEE SECTION A-A.

APRON ENDWALLS FOR PIPE ARCH AND ELLIPTICAL PIPE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

11/30/94

DATE

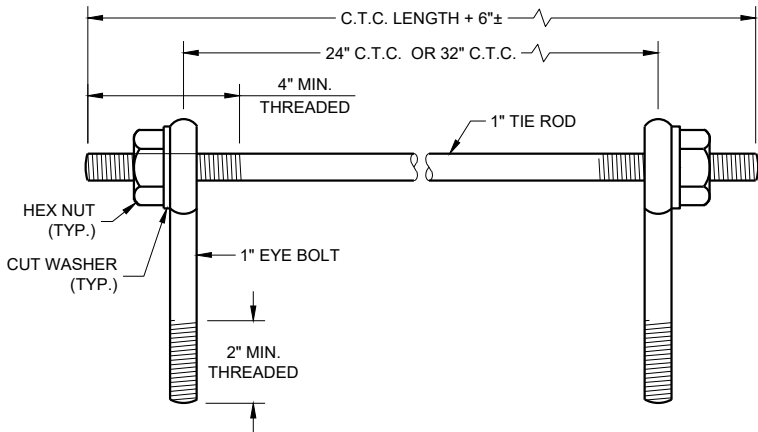
FHWA

/S/ Rory L. Rhinehart

CHIEF ROADWAY DEVELOPER

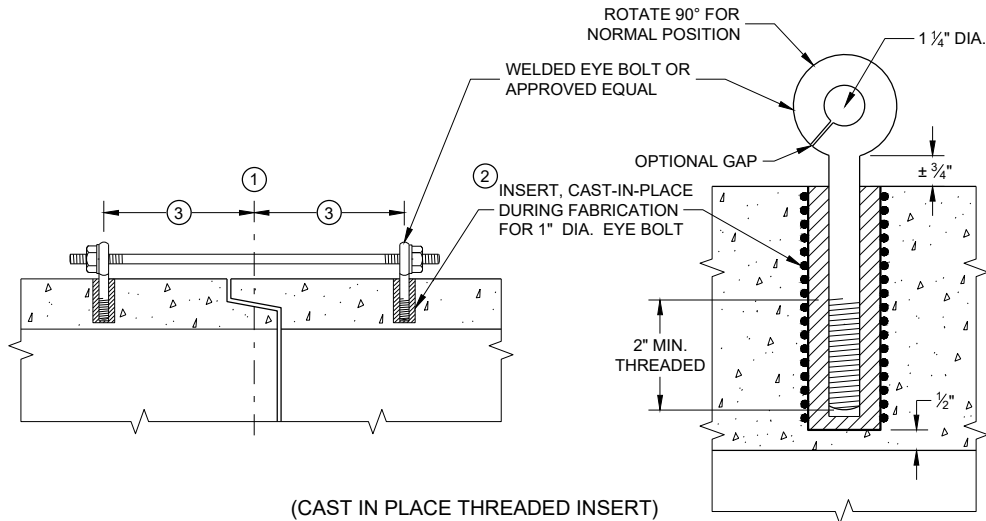
134

ENGINEER



EYE BOLTS AND TIE ROD

EYE BOLT AND TIE ROD ASSEMBLY (ALTERNATE NO. 1)



(CAST IN PLACE THREADED INSERT)

LONGITUDINAL SECTIONS

GENERAL NOTES

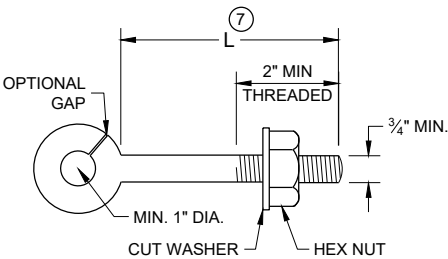
DETAILS OF CONSTRUCTION, MATERIALS, AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND APPLICABLE SPECIAL PROVISIONS.

CONCRETE CULVERT AND STORM SEWER PIPE SHALL BE TIED TOGETHER IN THE MANNER ILLUSTRATED BY THIS DETAIL AT LOCATIONS DESIGNATED IN THE STANDARD SPECIFICATIONS AND THE PLAN. THE CONTRACTOR MAY USE EITHER ALTERNATE 1, 2 OR 3 FOR DRAINAGE STRUCTURES. ONLY ALTERNATE 1 AND 3 MAY BE USED FOR CATTLE PASSES, UNLESS OTHERWISE STATED IN THE CONTRACT. THE MATERIALS, FABRICATION AND WORK NECESSARY TO TIE THE PIPE BY THIS DETAIL WILL BE CONSIDERED INCIDENTAL TO THE PIPE AND APRON ENDWALLS IF REQUIRED.

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

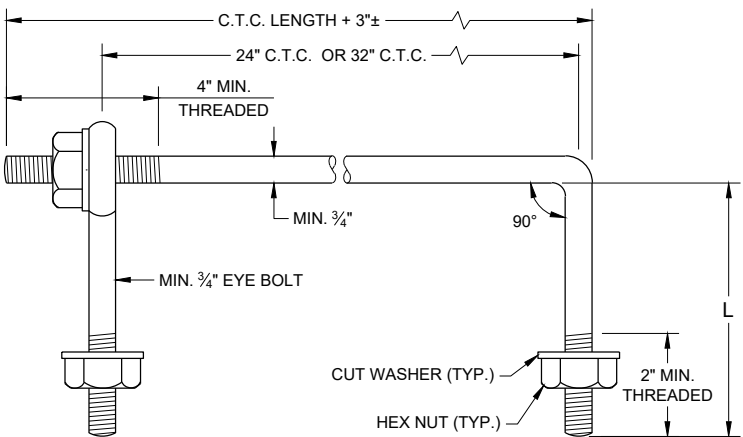
JOINT TIES TO BE HOT-DIP GALVANIZED PER ASTM A 153.

- 1 CENTER LINE OF TONGUE AND GROOVE OR BELL AND SPIGOT JOINTS.
- 2 THE INSIDE OF THE THREADED INSERTS SHALL BE CLEAN TO ALLOW THE INSERTION OF THREADED EYE BOLTS.
- 3 HOLES SHALL BE CAST-IN-PLACE OR DRILLED PER THE APPLICABLE DETAIL, AND EQUAL DISTANCE FROM THE CENTERLINE OF THE JOINT.
- 4 BOLT PROJECTION INSIDE OF PIPE SHALL NOT EXCEED 2 INCHES.
- 5 OPENING TO BE ROD DIAMETER PLUS 1 INCH.
- 6 LENGTH ADEQUATE TO EXTEND TO WITHIN 1/2 INCH OF THE INNER SURFACE OF THE PIPE.
- 7 EYE BOLT LENGTH DETERMINED BY WALL THICKNESS, BELL THICKNESS AND BOLT PROJECTION INSIDE PIPE.

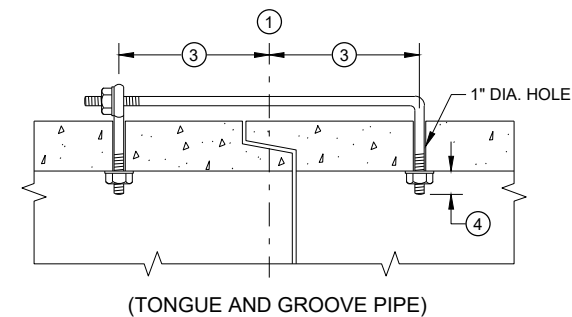


EYE BOLT 7

NOTE: TWO EYE BOLTS MAY BE USED WITH A 30" OR 38" LONG THREADED ROD IN LIEU OF THE 90° BENT TIE ROD.



EYE BOLT AND TIE ROD

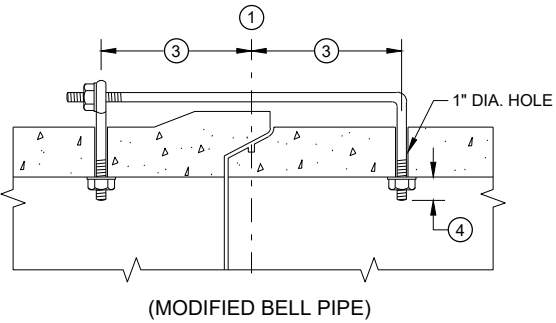


(TONGUE AND GROOVE PIPE)

LONGITUDINAL SECTION

(JOINT TIES FOR 18" TO 66" DIA. CONCRETE PIPE)

EYE BOLT AND TIE ROD ASSEMBLY (ALTERNATE NO. 2)

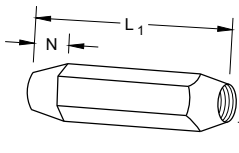


(MODIFIED BELL PIPE)

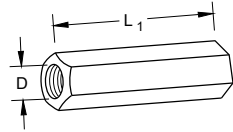
ADJUSTABLE TIE ROD TABLE

PIPE DIAMETER	TIE ROD DIAMETER	D	L ₁	N
12 - 60	5/8	5/8	5	1/2
66 - 84	3/4	3/4	5	1/2
90 - 144	1	1	7	1 1/16

DIMENSIONS SHOWN ARE IN INCHES

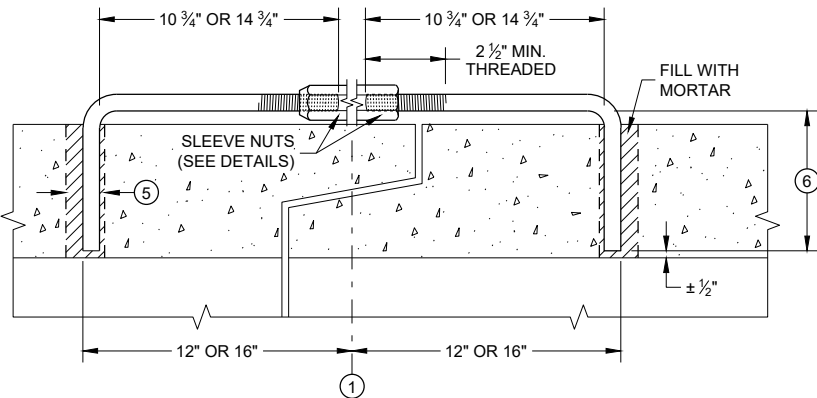


TAPERED



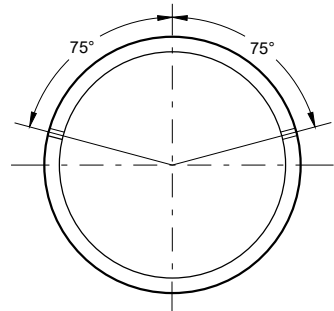
PLAIN

RIGHT AND LEFT THREADS
SLEEVE NUTS



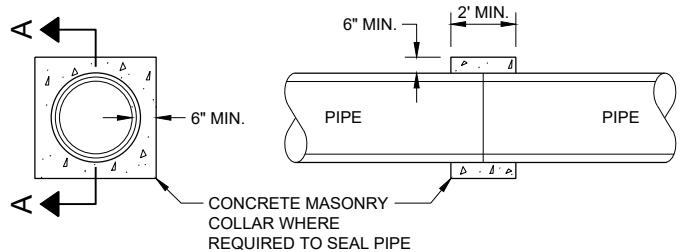
LONGITUDINAL SECTION

ADJUSTABLE TIE ROD (ALTERNATE NO. 3)



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

TRANSVERSE SECTION



SECTION A - A

CONCRETE COLLAR DETAIL

JOINT TIES FOR CONCRETE
PIPE AND CONCRETE
COLLAR DETAIL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
November 2021 /S/ Rodney Taylor
DATE ROADWAY STANDARDS DEVELOPMENT ENGINEER 135
FHWA

GENERAL NOTES

DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

FILL SLOPES FLATTER THAN 2 ½:1 SHALL BE WARPED TO MEET THE TOP OF THE WINGWALLS.

ALL STEEL REINFORCEMENT AND WELDED STEEL WIRE FABRIC SHALL BE EMBEDDED 2 INCHES CLEAR UNLESS OTHERWISE NOTED.

1 MINIMUM REINFORCEMENT SHALL BE 6" X 6" - W4.0 X W4.0 OR NO. 3 BARS SPACED 12" C-C IN BOTH DIRECTIONS.

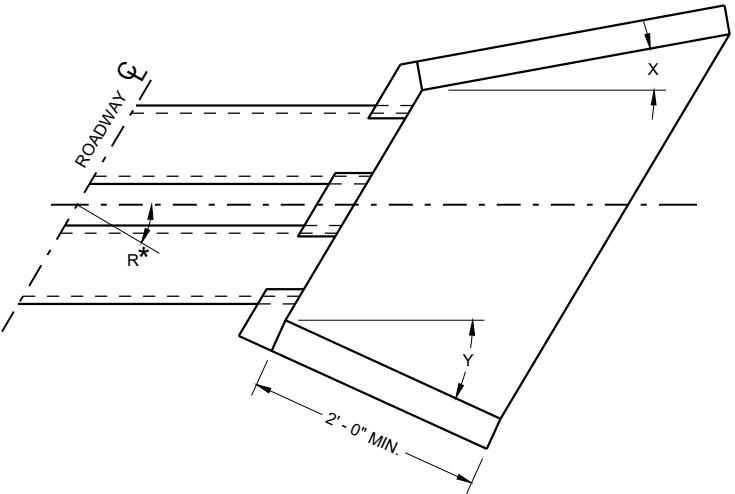
2 THE SPACE BETWEEN PIPES SHALL BE AS FOLLOWS:

DIAMETER OR SPAN	SPACE
UP TO AND INCLUDING 48"	2' - 0"
OVER 48" TO 72"	½ DIA. OR SPAN
OVER 72"	3' - 0"

- 3 LIMITS OF TRENCH BACKFILL
- 4 LIMITS OF FOUNDATION BACKFILL
- 5 FOUNDATION AND TRENCH BACKFILL ARE MATERIALS INCLUDED IN PAYMENT FOR CULVERT PIPE, PIPE ARCH, CULVERT PIPE REINFORCED CONCRETE HORIZONTAL ELLIPSE OR CONCRETE MASONRY ENDWALLS.
- 6 DO NOT PLACE FOUNDATION BACK FILL OR ANY OTHER GRANULAR BACKFILL AROUND OR BELOW CUT OFF WALL. POUR CUT OFF WALL AGAINST NATIVE SOIL
- 7 MINIMUM HEIGHT SHALL BE THE GREATER OF 1'- 0" OR ¼ HEIGHT OF CULVERT PIPE.

TRENCH BACKFILL

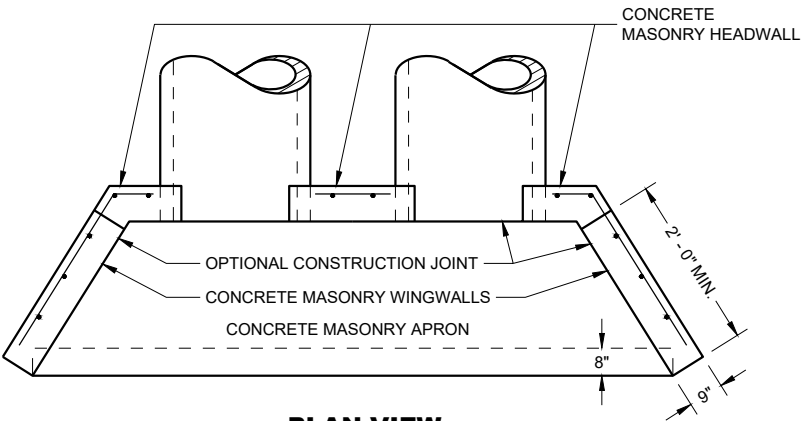
FOUNDATION BACKFILL



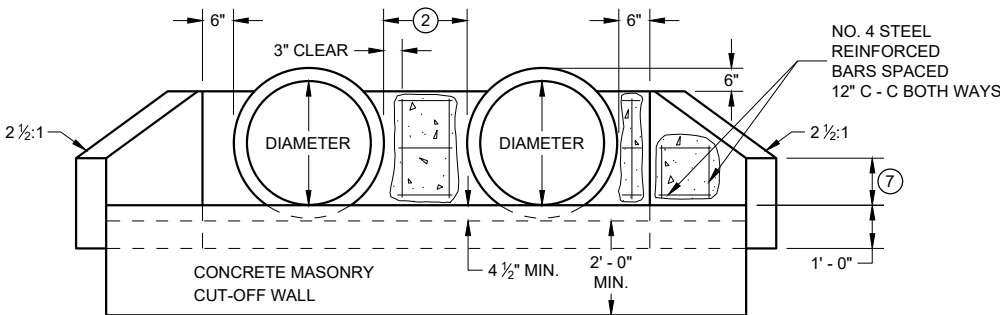
INLET			OUTLET		
R*	X	Y	R*	X	Y
0 - 7°	30°	30°	0 - 15°	15°	15°
8 - 22°	25°	30°	16 - 45°	10°	15°
23 - 37°	20°	30°	46 - 75°	5°	15°
38 - 52°	15°	30°	OVER 75°	0°	15°
53 - 67°	10°	30°			
68 - 82°	5°	30°			
OVER 82°	0°	30°			

R* = NUMBER OF DEGREES RIGHT OR LEFT HAND FORWARD

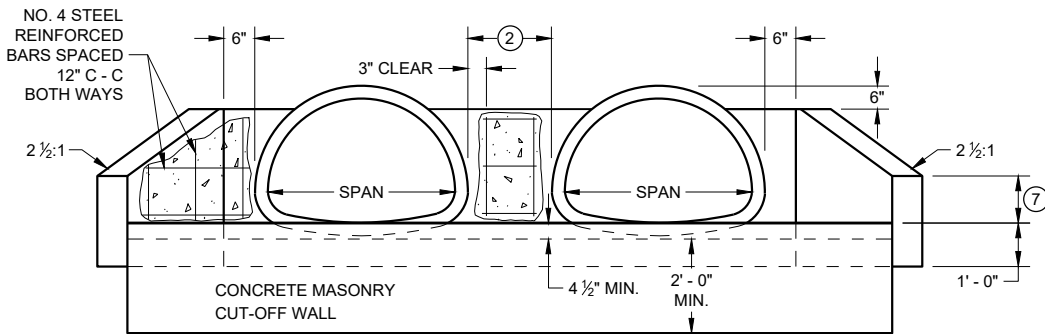
WINGWALL ANGLE DETAILS



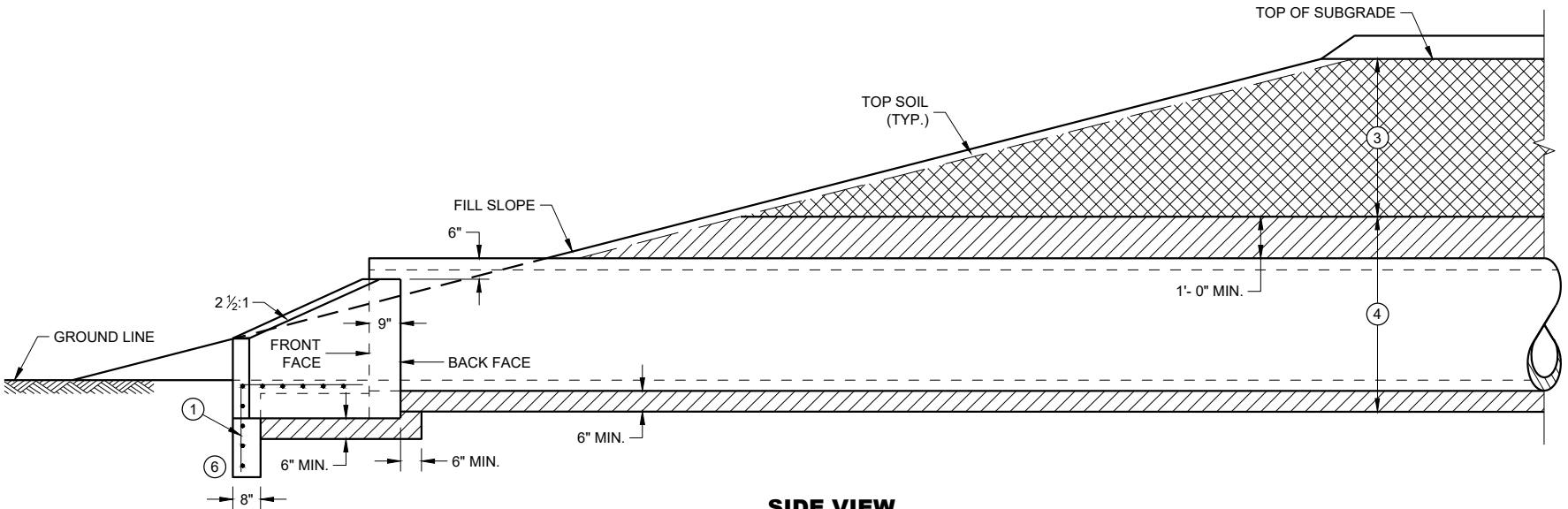
PLAN VIEW



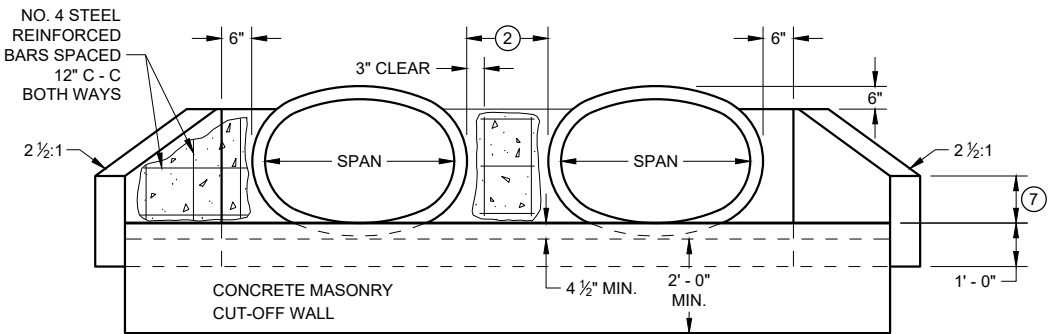
END VIEW
CIRCULAR PIPE



END VIEW
PIPE ARCH



SIDE VIEW
CIRCULAR PIPE, PIPE ARCH OR HORIZONTAL ELLIPSE

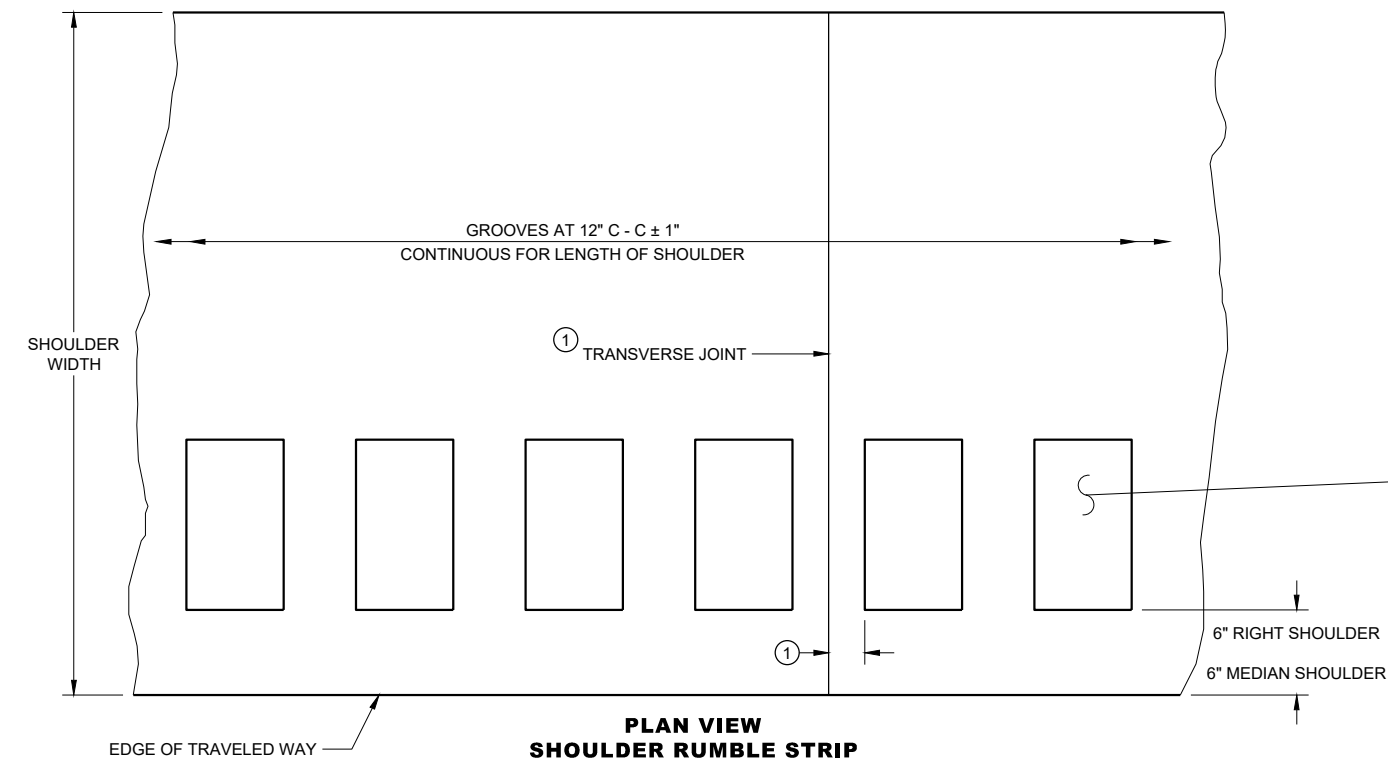


END VIEW
HORIZONTAL ELLIPSE

CONCRETE MASONRY
ENDWALLS FOR CULVERT
PIPE AND PIPE ARCH

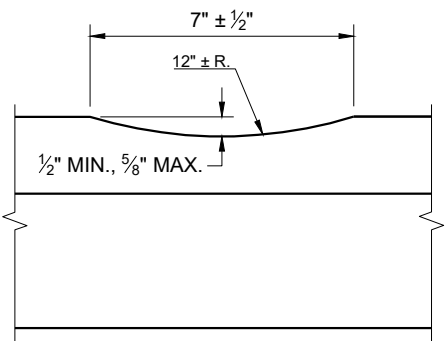
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
May 2022 /S/ Rodney Taylor
DATE ROADWAY STANDARDS DEVELOPMENT ENGINEER
FHWA 136

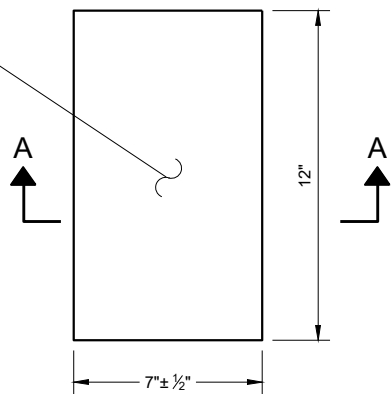


6

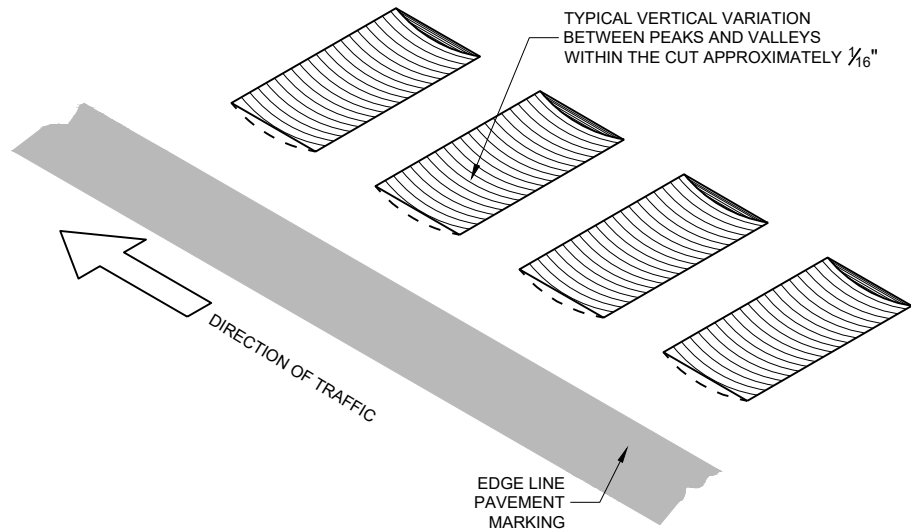
PLACEMENT DETAIL FOR RUMBLE STRIP



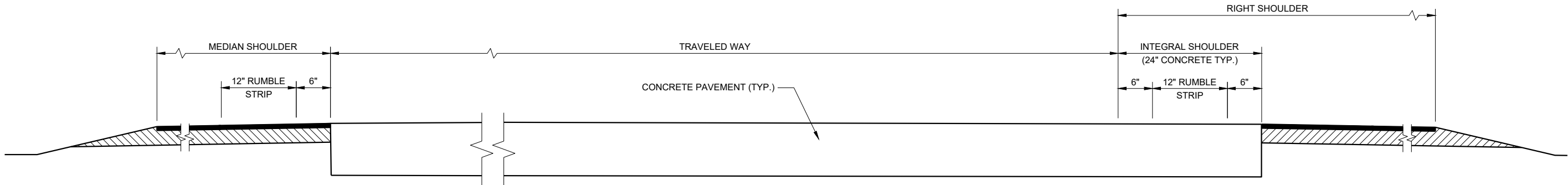
SECTION A - A



PLAN VIEW
(SINGLE GROOVE)



ISOMETRIC



SECTION VIEW

TYPICAL SHOULDER RUMBLE STRIPS
(ONE ROADWAY IS SHOWN)

GENERAL NOTES

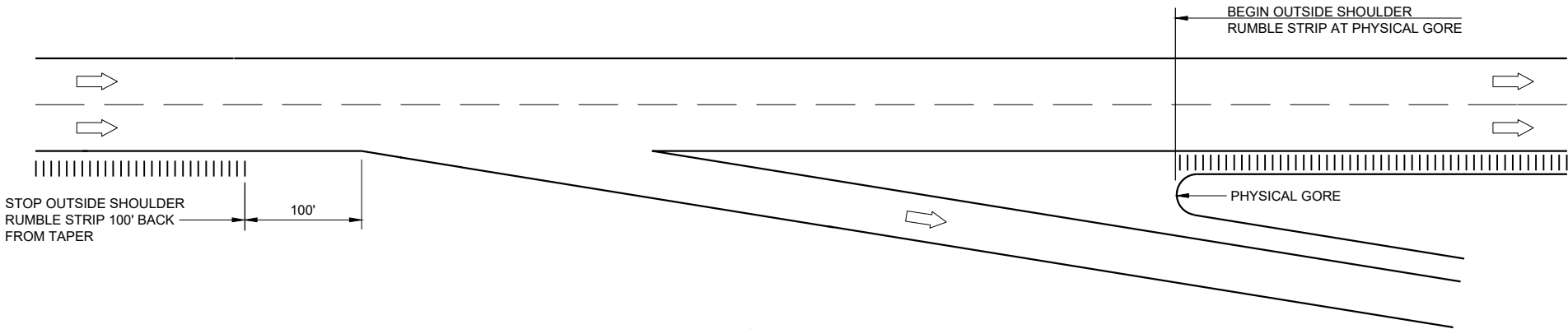
SDD 13A5, SHEET "b" SHOWS THE LOCATION OF THE RUMBLE STRIPS AT RAMP AND GORE LOCATIONS.

RUMBLE STRIPS ON EXPRESSWAYS:
DO NOT INSTALL SHOULDER RUMBLE STRIPS ACROSS SIDE ROAD INTERSECTIONS, COMMERCIAL AND PRIVATE DRIVEWAYS, ADJACENT TO RIGHT TURN LANES, LEFT TURN LANES, TURN LANE TAPERS, 25' IN ADVANCE OF BRIDGE DECKS, 25' IN ADVANCE OF BRIDGE APPROACHES, OR 100 FEET IN ADVANCE OF RAILROAD CROSSINGS.

- ① CONCRETE PAVEMENT - RUMBLE STRIPS SHALL BE A MINIMUM OF 6 INCHES AWAY FROM TRANSVERSE JOINTS.

SHOULDER RUMBLE STRIPS,
DIVIDED ROADWAY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION 137



TYPICAL EXIT RAMP

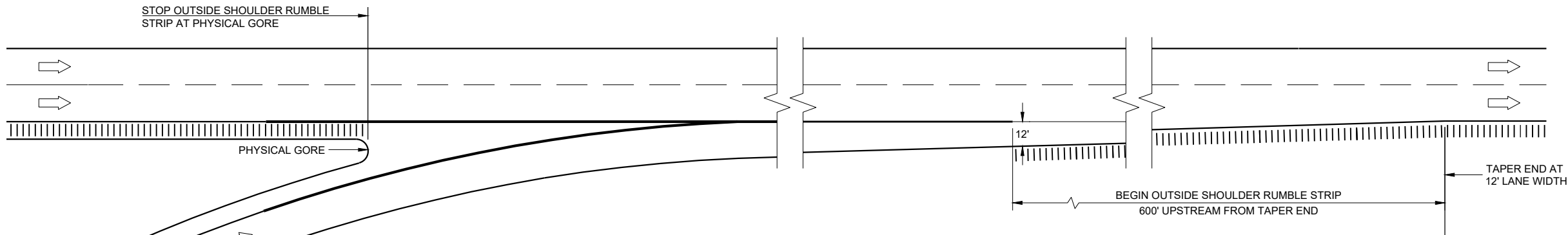
GENERAL NOTES

NO RUMBLE STRIP ON EXIT, DIRECTIONAL OR ENTRANCE RAMP, EXCEPT NEAR THE ENTRANCE TAPER END AND ALONG THE PARALLEL RAMP AREA AS SHOWN.

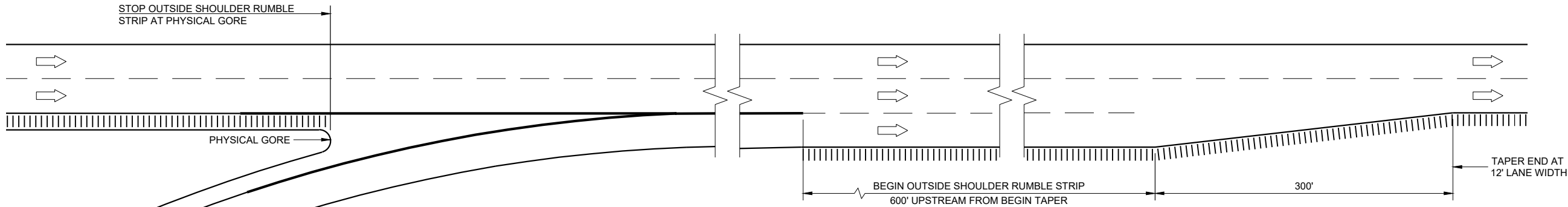
RUMBLE STRIPS ON EXPRESSWAYS:
DO NOT INSTALL SHOULDER RUMBLE STRIPS ACROSS SIDE ROAD INTERSECTIONS, COMMERCIAL AND PRIVATE DRIVEWAYS, ADJACENT TO RIGHT TURN LANES, LEFT TURN LANES, TURN LANE TAPERS, 25' IN ADVANCE OF BRIDGE DECKS, 25' IN ADVANCE OF BRIDGE APPROACHES, OR 100 FEET IN ADVANCE OF RAILROAD CROSSINGS.

LEGEND

➡ DIRECTION OF TRAFFIC



TYPICAL TAPERED ENTRANCE RAMP
RAMP AND GORE SHOULDER RUMBLE STRIP LOCATIONS

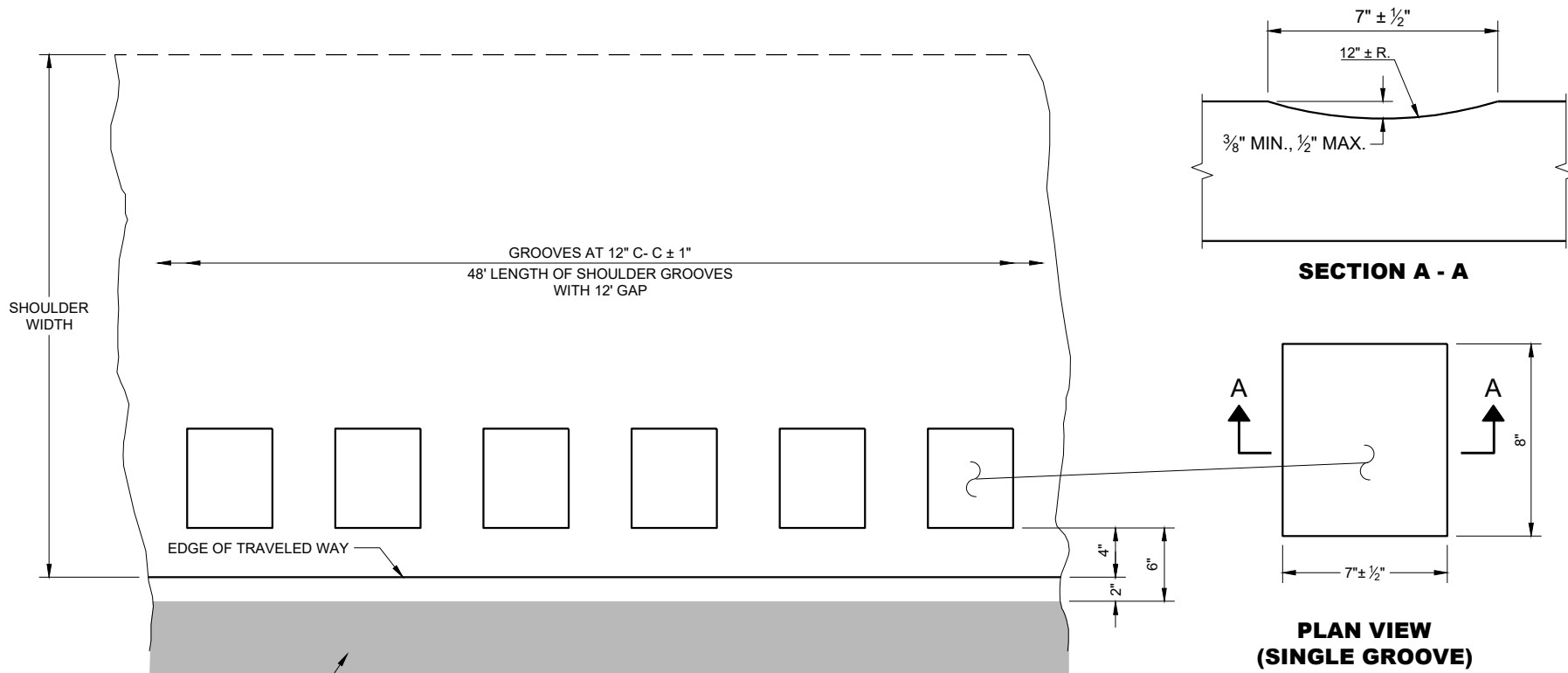


TYPICAL PARALLEL ENTRANCE RAMP
RAMP AND GORE SHOULDER RUMBLE STRIP LOCATIONS

SHOULDER RUMBLE STRIPS,
DIVIDED ROADWAY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
May 2023
DATE
/S/ Rodney Taylor
ROADWAY DESIGN STAFF
UNIT SUPERVISOR
138
FHWA

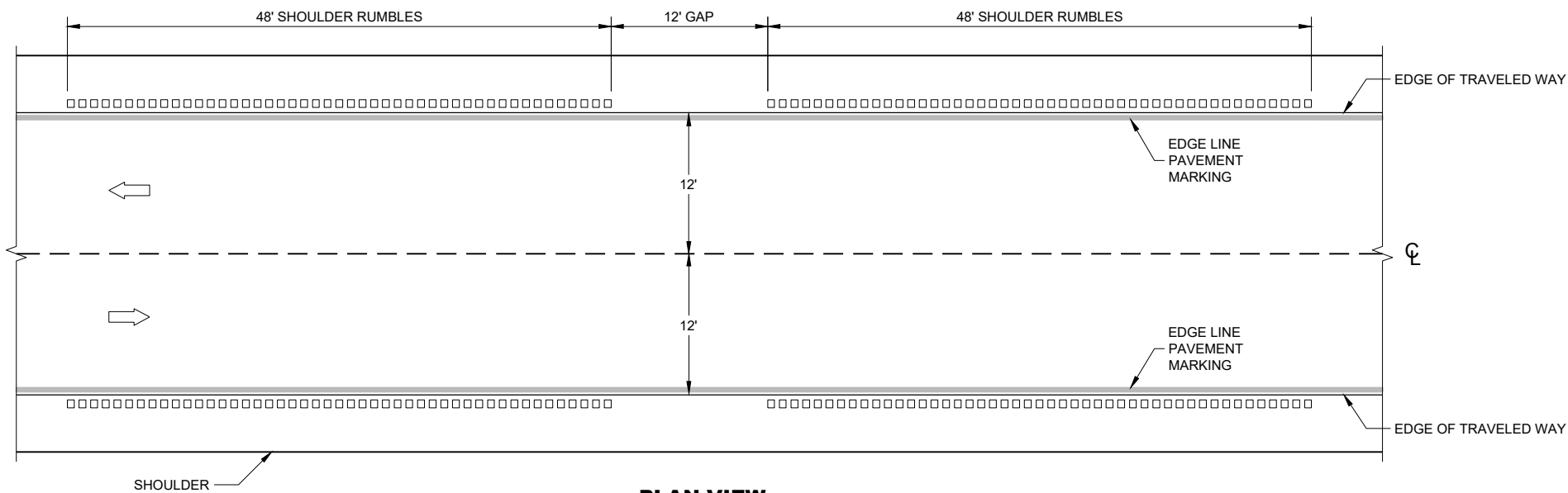
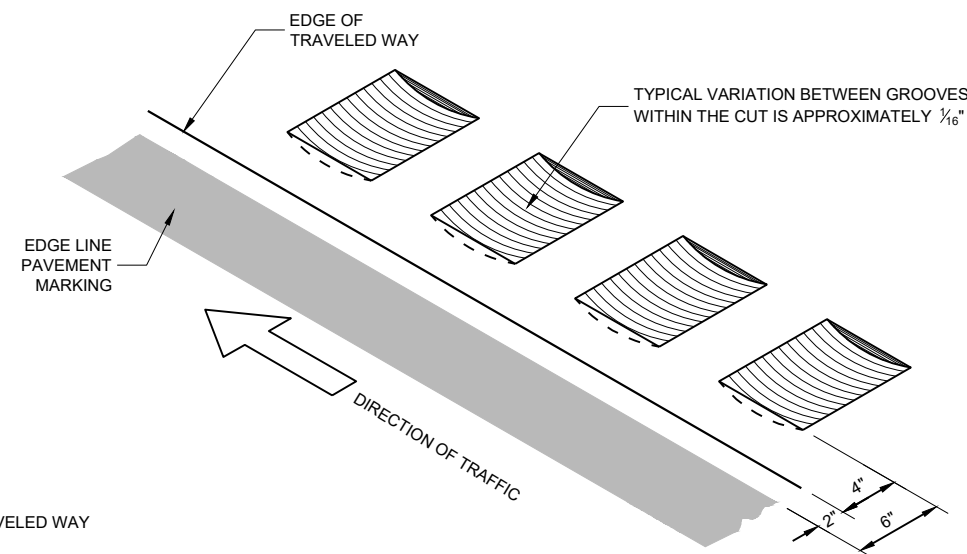


PLAN DETAIL VIEW
SHOULDER WITH GROOVES

GENERAL NOTES

DO NOT MILL SHOULDER GROOVES THROUGH INTERSECTIONS, MARKED CROSSWALKS, NON-MOTORIZED PATH CROSSINGS, ETC. REFER TO SDD 13A10 SHEETS "g" AND "h".

SHOULDER GROOVES MAY BE OMITTED IN AREAS WITH HIGH CONCENTRATIONS OF DRIVEWAYS WHEN DIRECTED BY THE ENGINEER.

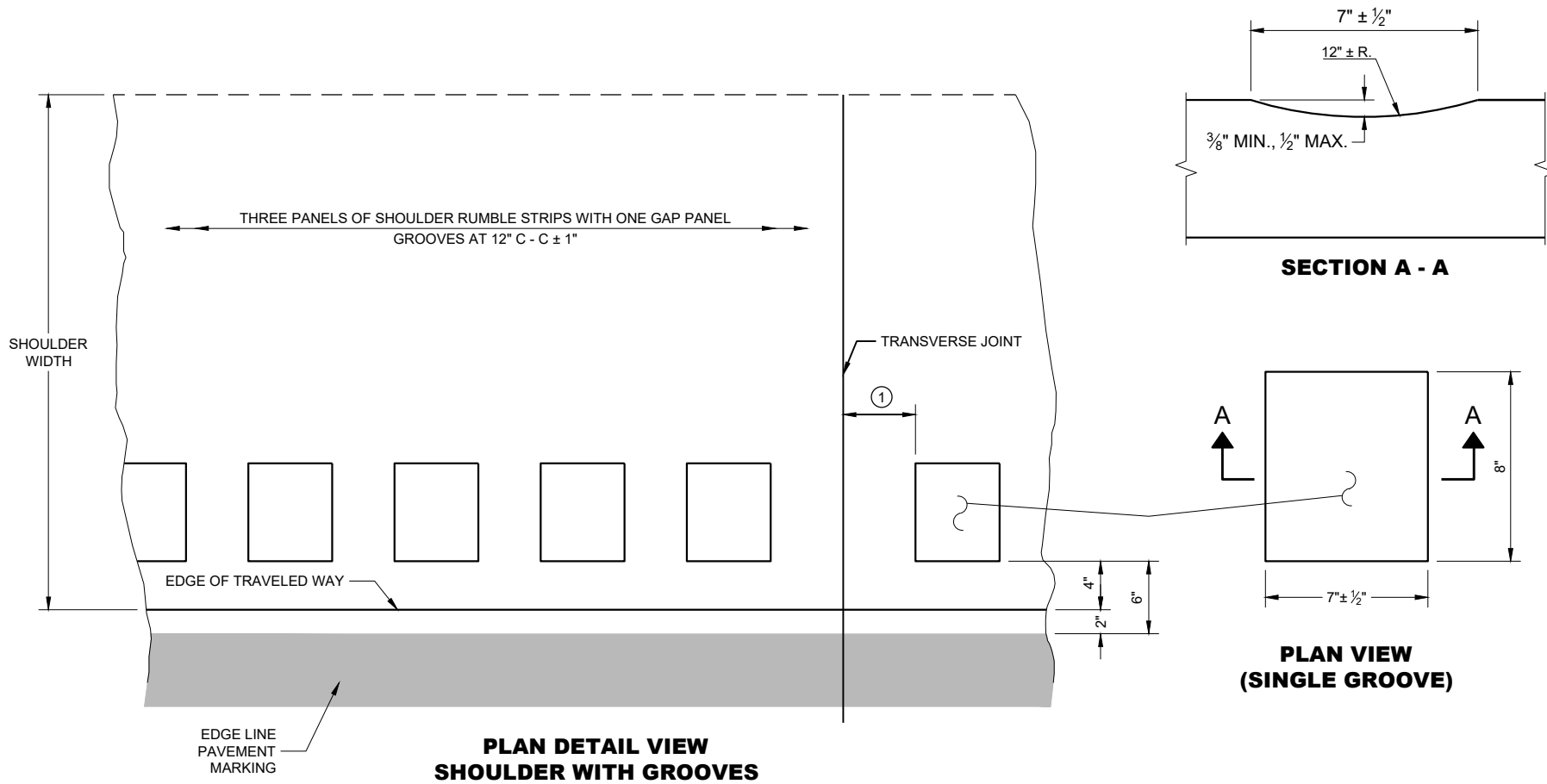


PLAN VIEW

SHOULDER RUMBLE STRIPS - ASPHALT

**SHOULDER RUMBLE
STRIPS ASPHALT**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION 139

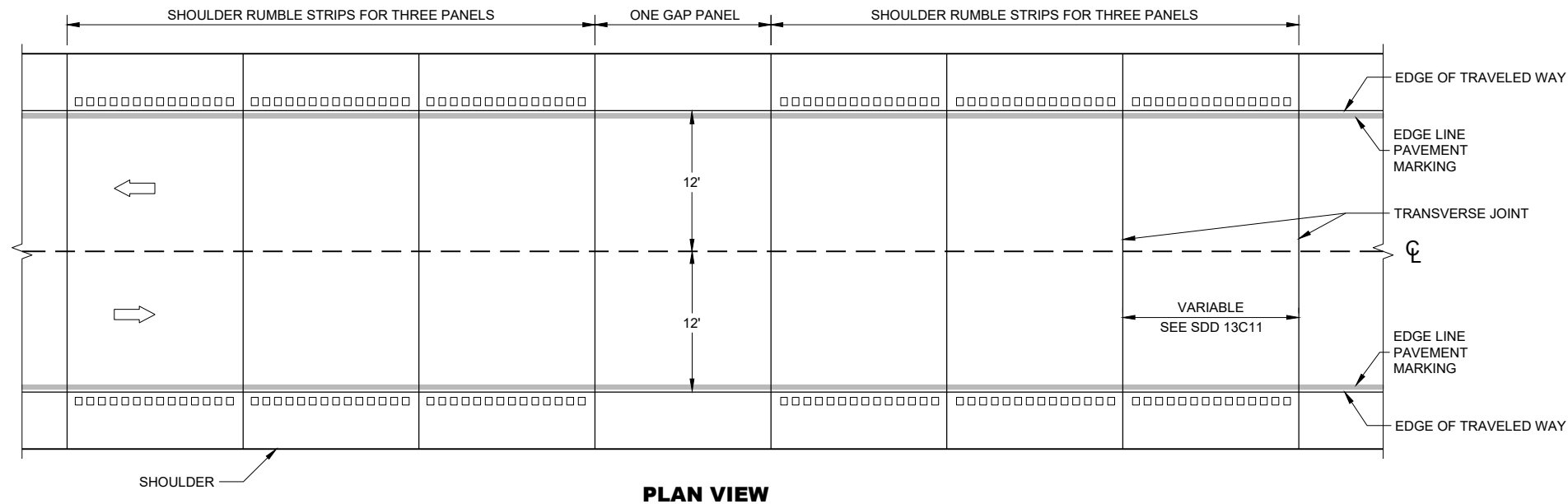
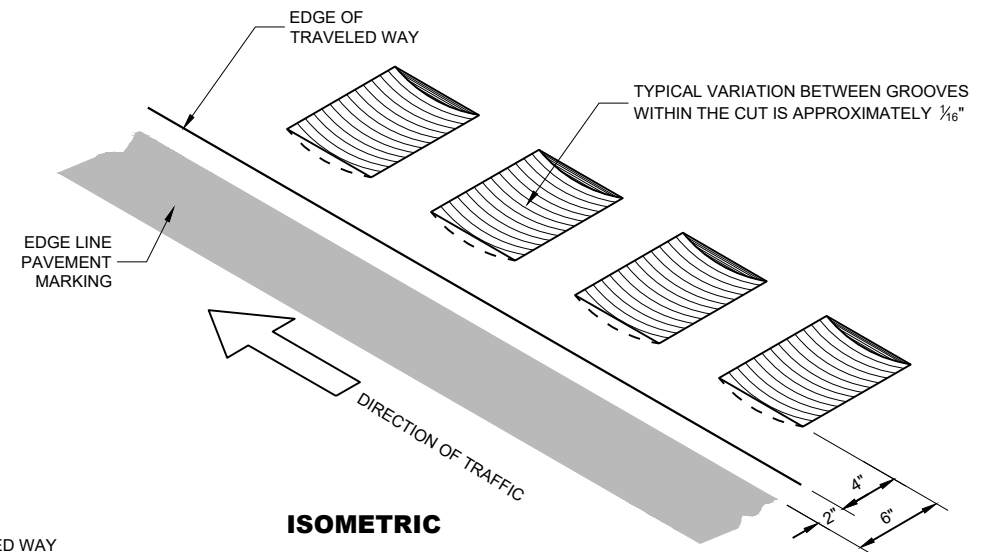


GENERAL NOTES

DO NOT MILL SHOULDER GROOVES THROUGH INTERSECTIONS, MARKED CROSSWALKS, NON-MOTORIZED PATH CROSSINGS, ETC. REFER TO SDD 13A10 SHEETS "g" AND "h".

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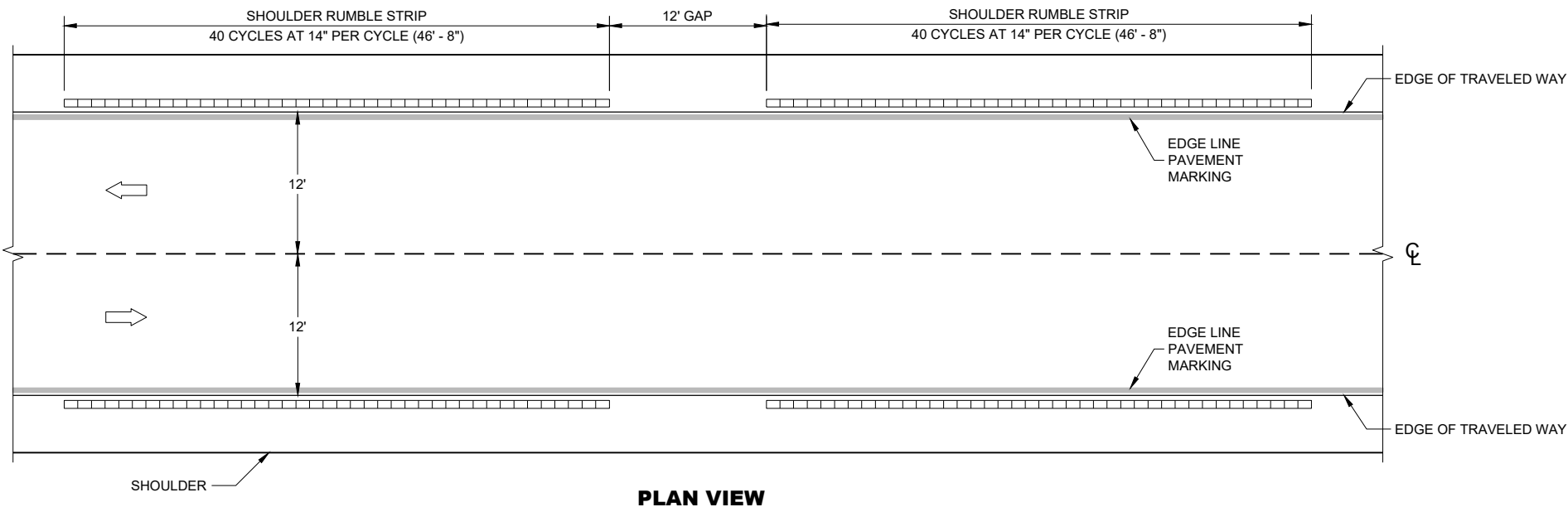
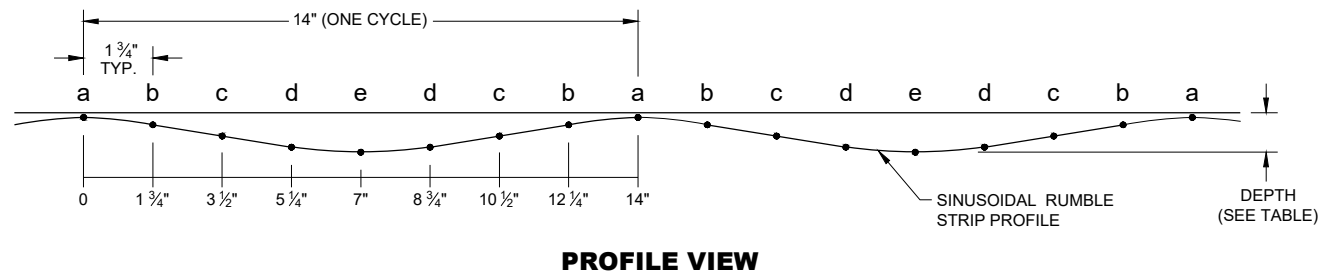
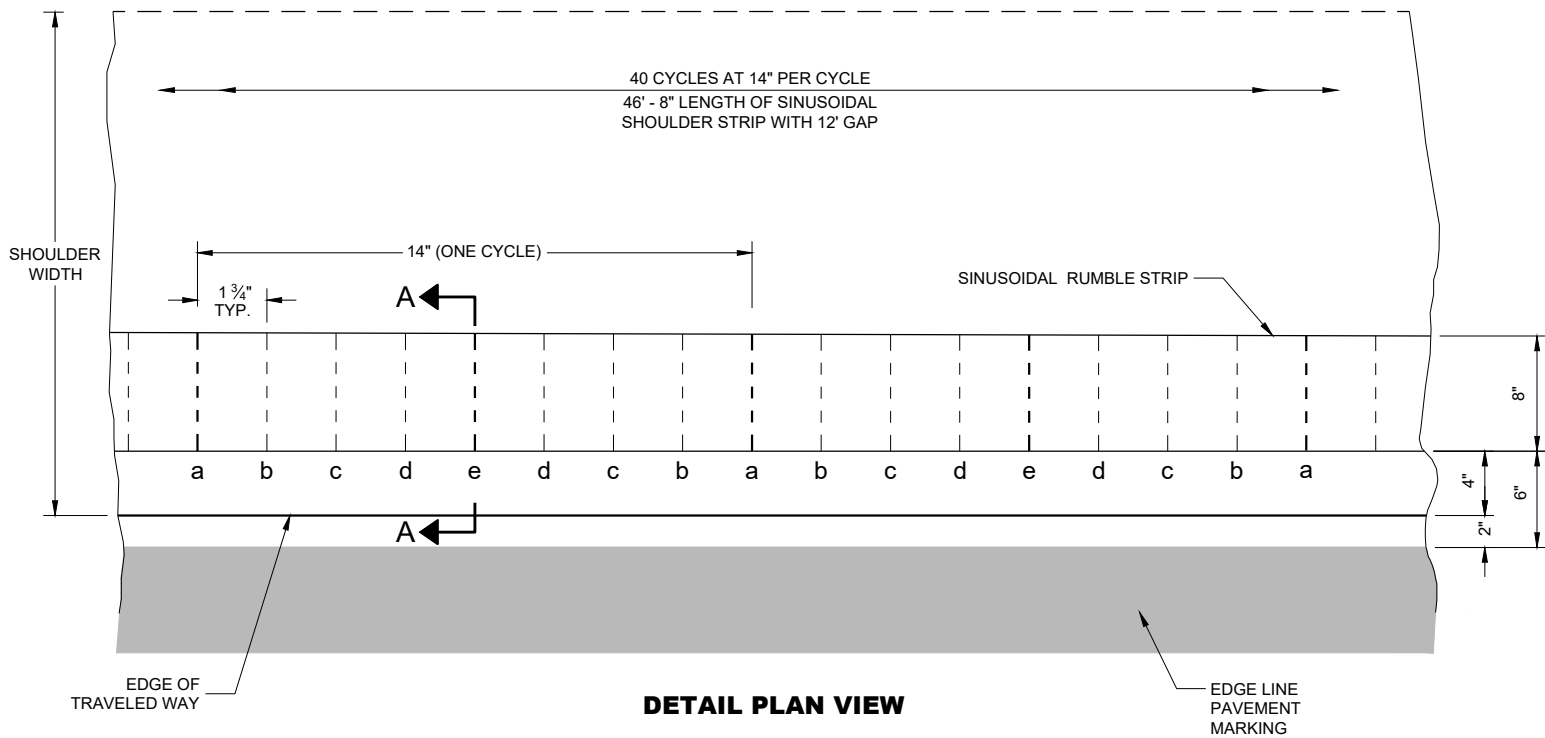
- ① FOR CONCRETE PAVEMENTS, RUMBLE STRIPS SHALL BE A MINIMUM OF 6 INCHES FROM TRANSVERSE JOINTS.



SHOULDER RUMBLE STRIPS - CONCRETE

SHOULDER RUMBLE STRIPS - CONCRETE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION 140

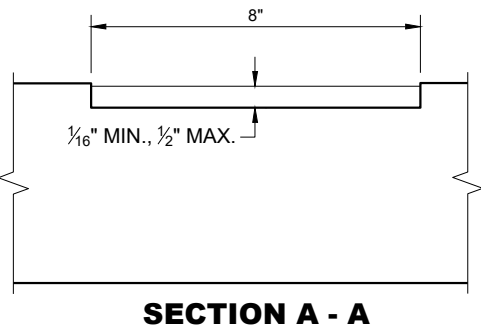
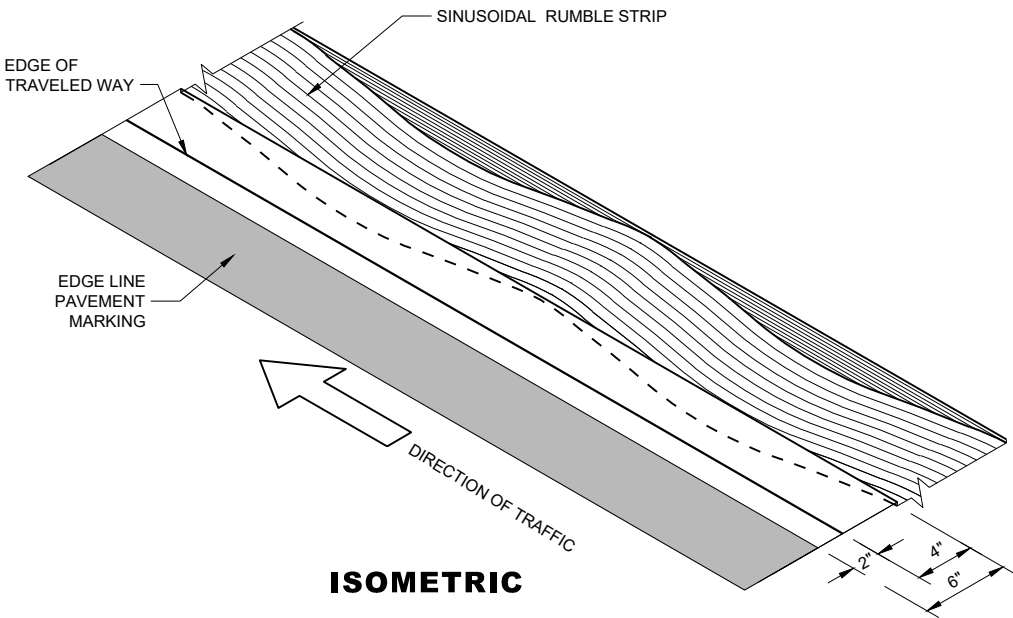


SHOULDER RUMBLE STRIPS - ASPHALT, SINUSOIDAL

GENERAL NOTES

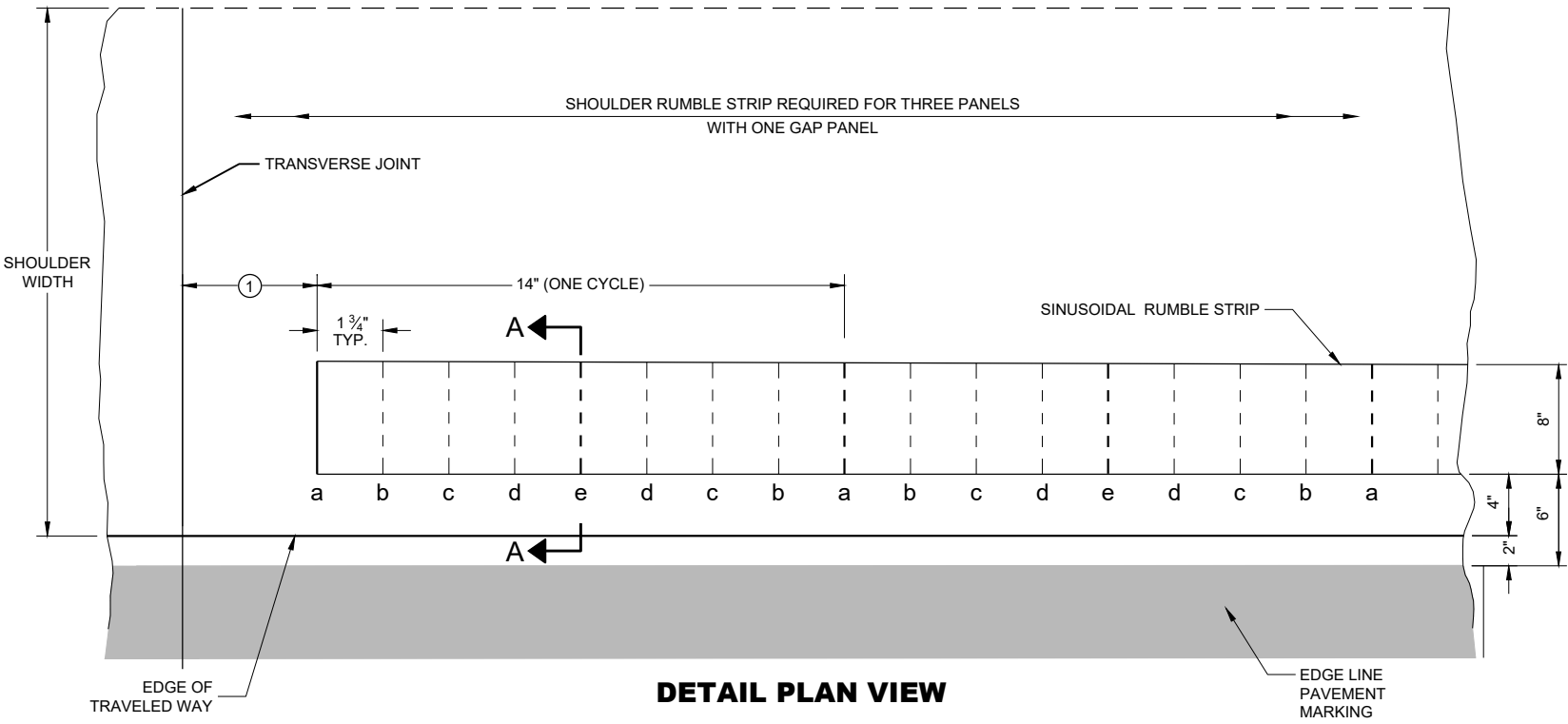
DO NOT MILL SHOULDER GROOVES THROUGH INTERSECTIONS, MARKED CROSSWALKS, NON-MOTORIZED PATH CROSSINGS, ETC. REFER TO SDD 13A10 SHEETS "g" AND "h".

SHOULDER RUMBLE STRIPS MAY BE OMITTED IN AREAS WITH HIGH CONCENTRATIONS OF DRIVEWAYS WHEN DIRECTED BY THE ENGINEER.

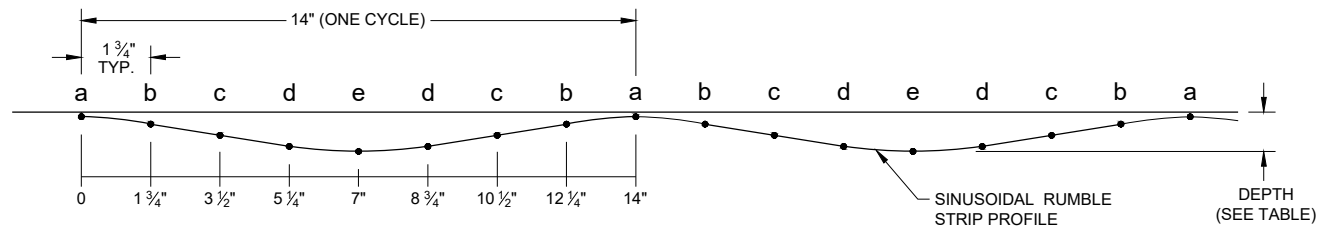


SHOULDER
RUMBLE STRIPS - ASPHALT,
SINUSOIDAL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

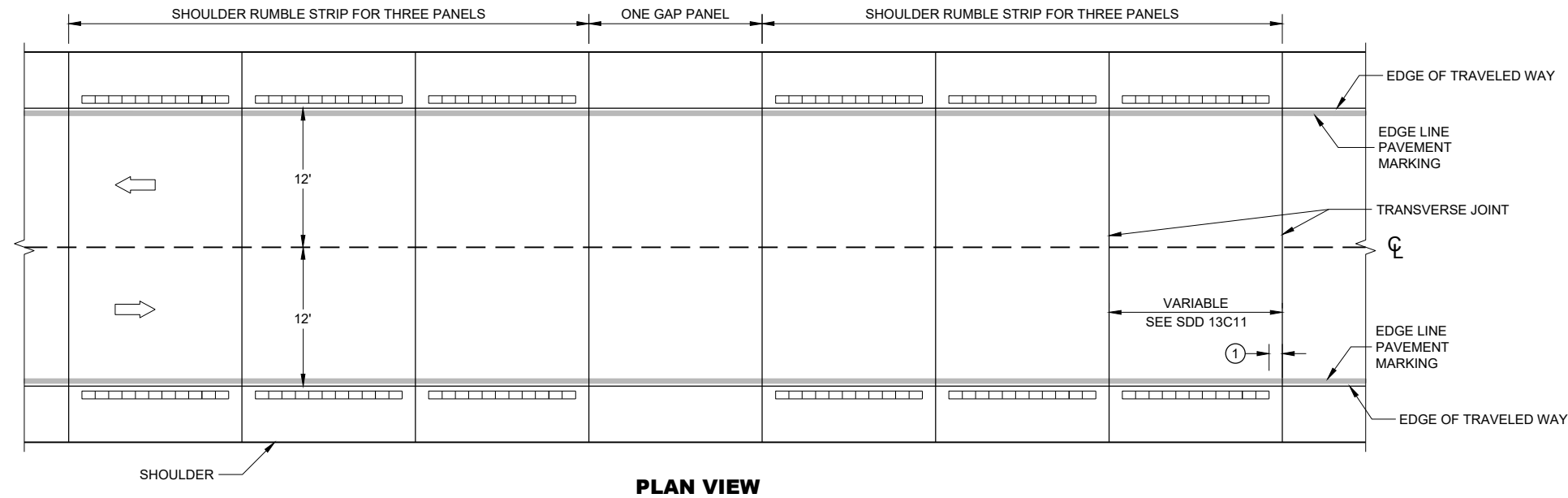


DETAIL PLAN VIEW



DETAIL PROFILE VIEW

LOCATION	DEPTH (INCHES)
a	1/16"
b	5/32"
c	9/32"
d	7/16"
e	1/2"



PLAN VIEW

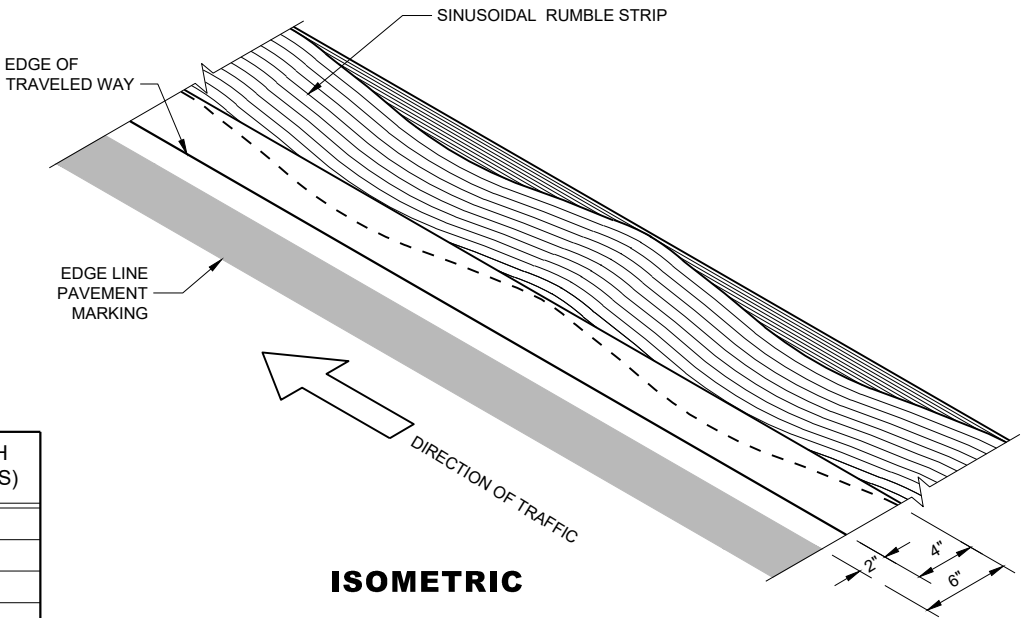
SHOULDER RUMBLE STRIPS - CONCRETE, SINUSOIDAL

GENERAL NOTES

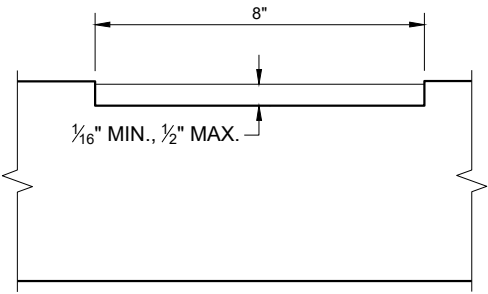
DO NOT MILL SHOULDER GROOVES THROUGH INTERSECTIONS, MARKED CROSSWALKS, NON-MOTORIZED PATH CROSSINGS, ETC. REFER TO SDD 13A10 SHEETS "g" AND "h".

SHOULDER RUMBLE STRIPS MAY BE OMITTED IN AREAS WITH HIGH CONCENTRATIONS OF DRIVEWAYS WHEN DIRECTED BY THE ENGINEER.

① FOR CONCRETE PAVEMENTS, RUMBLE STRIPS SHALL BE A MINIMUM OF 6 INCHES AWAY FROM A TRANSVERSE JOINT.



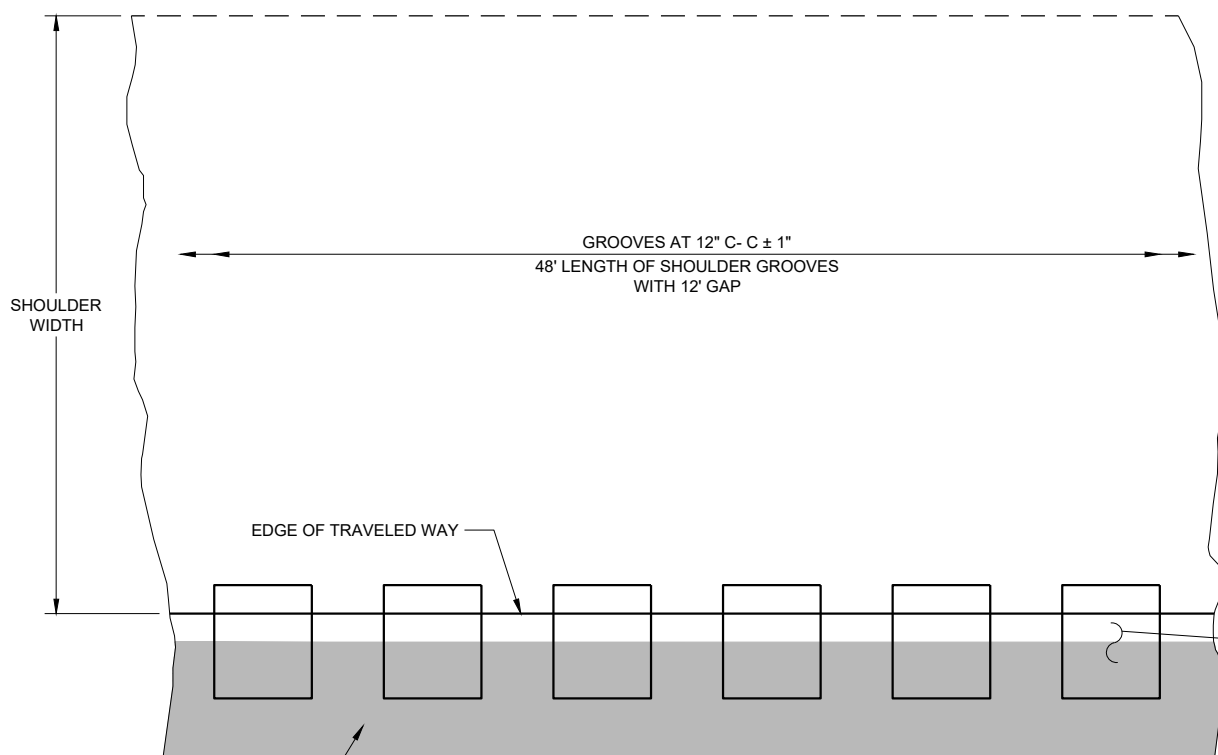
ISOMETRIC



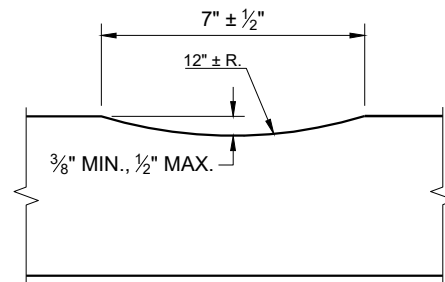
SECTION A - A

SHOULDER RUMBLE STRIPS - CONCRETE, SINUSOIDAL

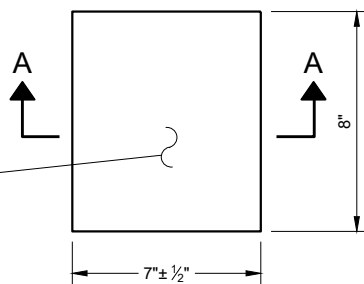
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION 142



PLAN DETAIL VIEW
SHOULDER WITH GROOVES



SECTION A - A

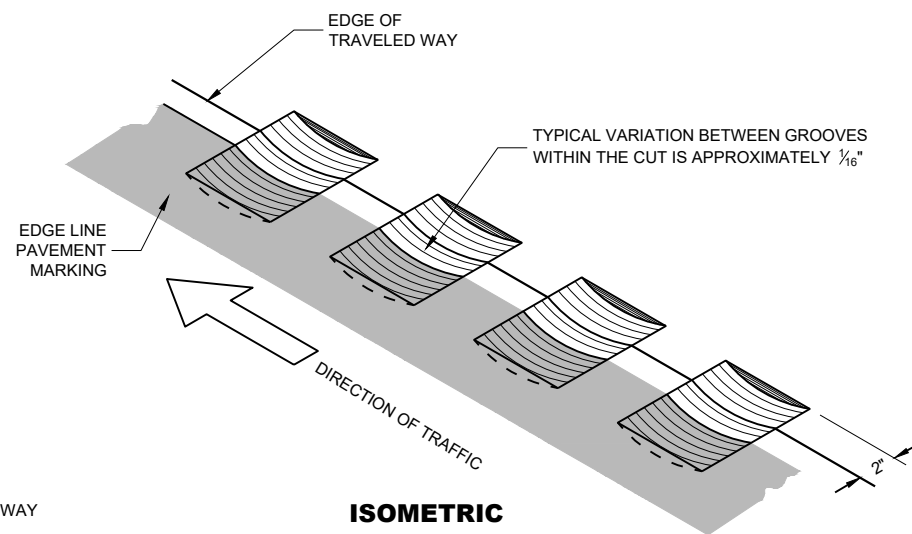


PLAN VIEW
(SINGLE GROOVE)

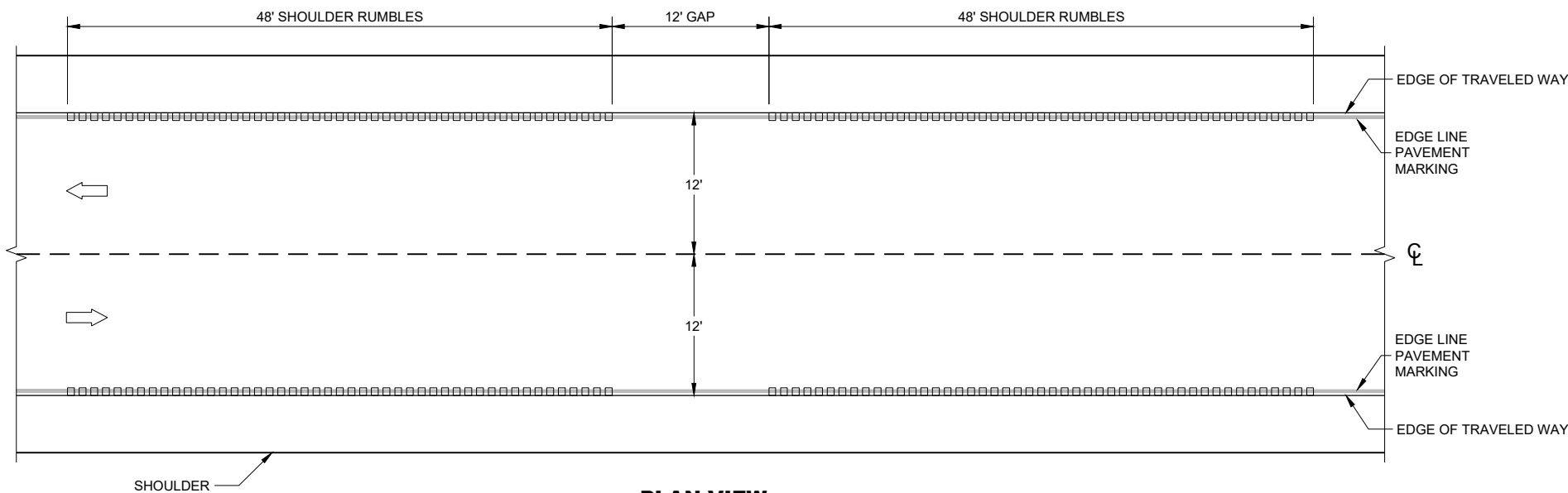
GENERAL NOTES

DO NOT MILL SHOULDER GROOVES THROUGH INTERSECTIONS, MARKED CROSSWALKS, NON-MOTORIZED PATH CROSSINGS, ETC. REFER TO SDD 13A10 SHEETS "g" AND "h".

SHOULDER GROOVES MAY BE OMITTED IN AREAS WITH HIGH CONCENTRATIONS OF DRIVEWAYS WHEN DIRECTED BY THE ENGINEER.



ISOMETRIC

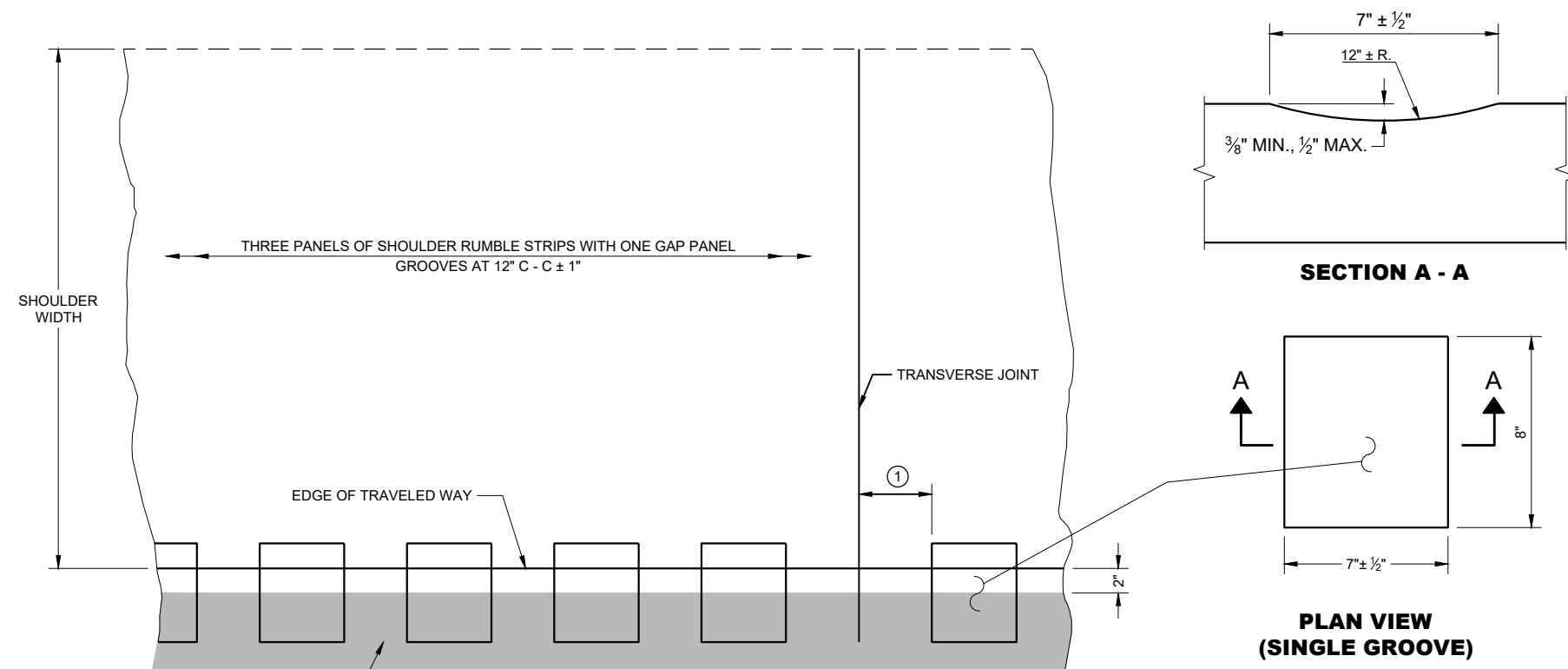


PLAN VIEW

EDGE LINE RUMBLE STRIPS - ASPHALT

EDGE LINE RUMBLE
STRIPS - ASPHALT

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION 143



SECTION A - A

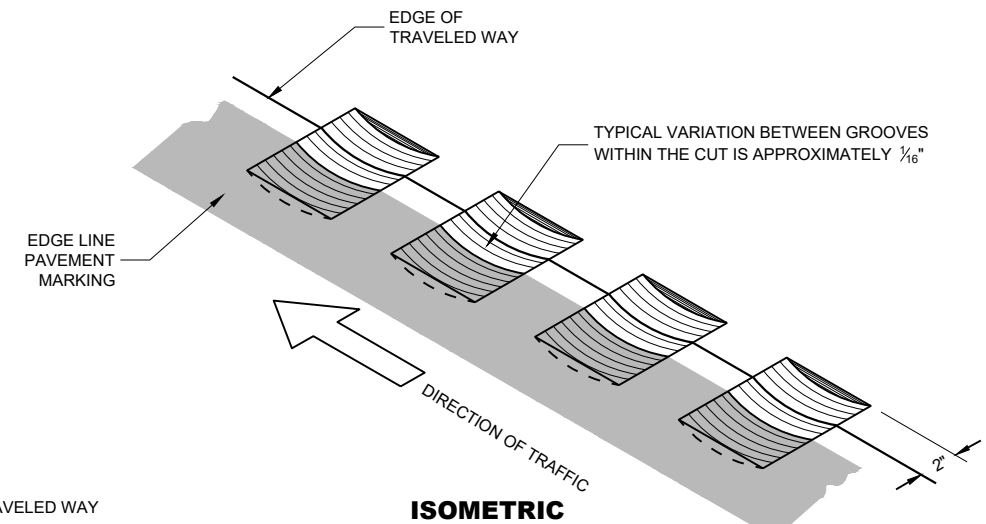
PLAN VIEW
(SINGLE GROOVE)

GENERAL NOTES

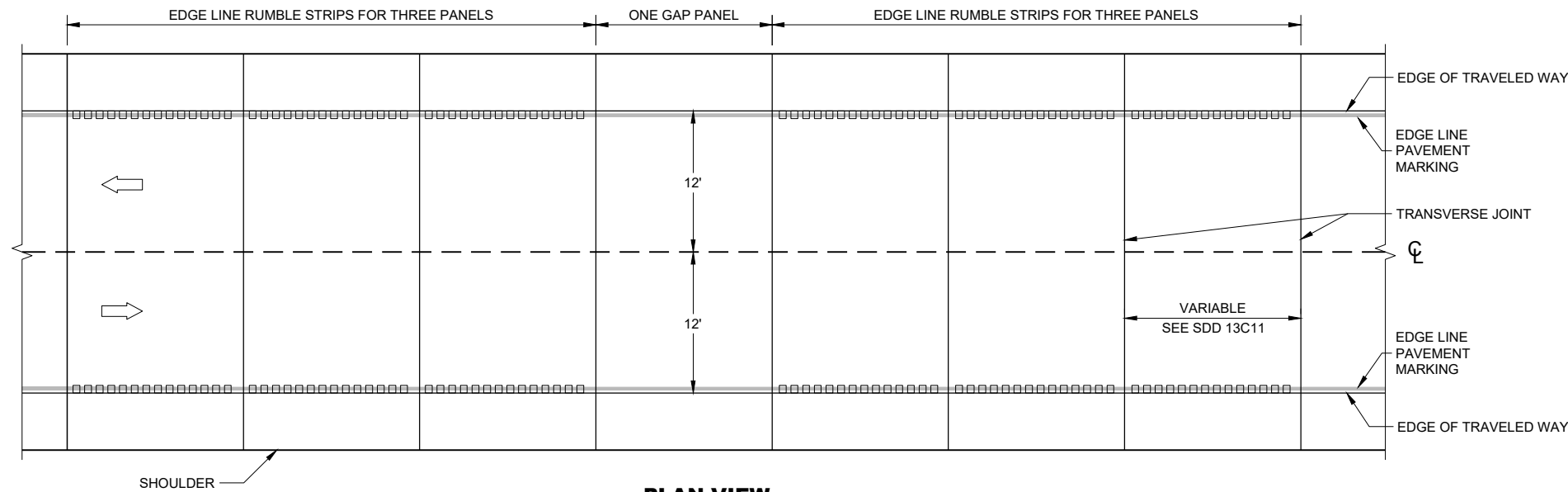
DO NOT MILL SHOULDER GROOVES THROUGH INTERSECTIONS, MARKED CROSSWALKS, NON-MOTORIZED PATH CROSSINGS, ETC. REFER TO SDD 13A10 SHEETS "g" AND "h".

SHOULDER GROOVES MAY BE OMITTED IN AREAS WITH HIGH CONCENTRATIONS OF DRIVEWAYS WHEN DIRECTED BY THE ENGINEER.

- ① FOR CONCRETE PAVEMENTS, RUMBLE STRIPS SHALL BE A MINIMUM OF 6 INCHES AWAY FROM A TRANSVERSE JOINT.



ISOMETRIC

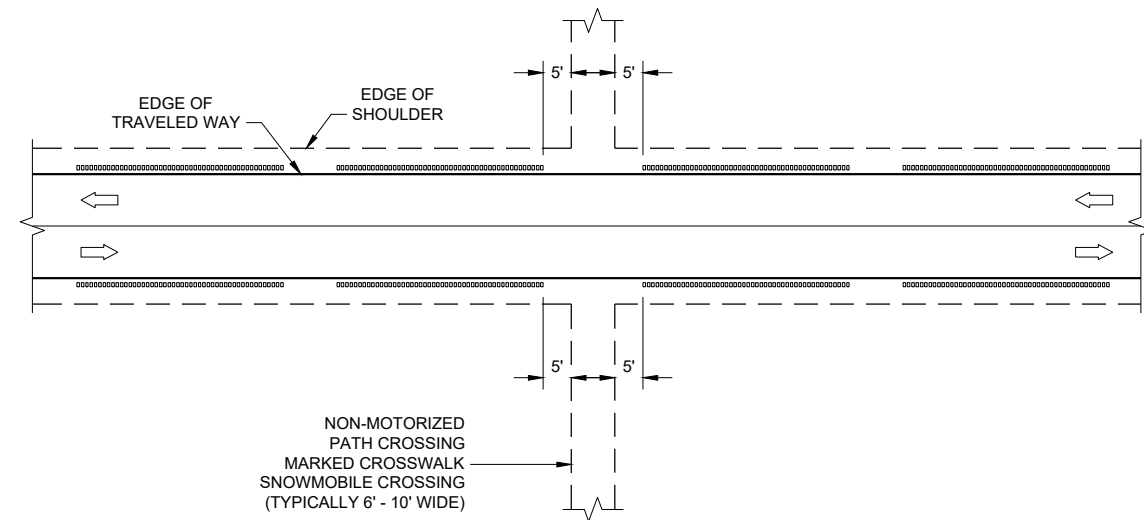


PLAN VIEW

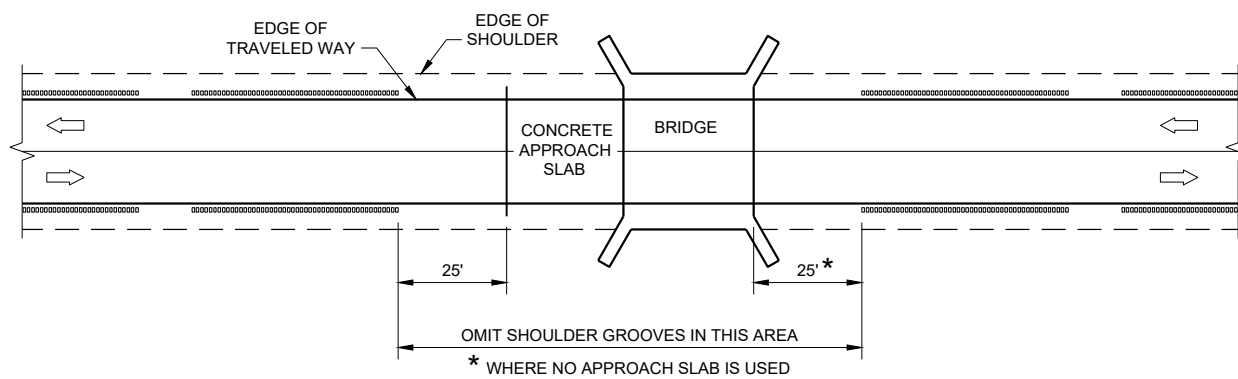
EDGE LINE RUMBLE STRIPS - CONCRETE

EDGE LINE RUMBLE STRIPS - CONCRETE

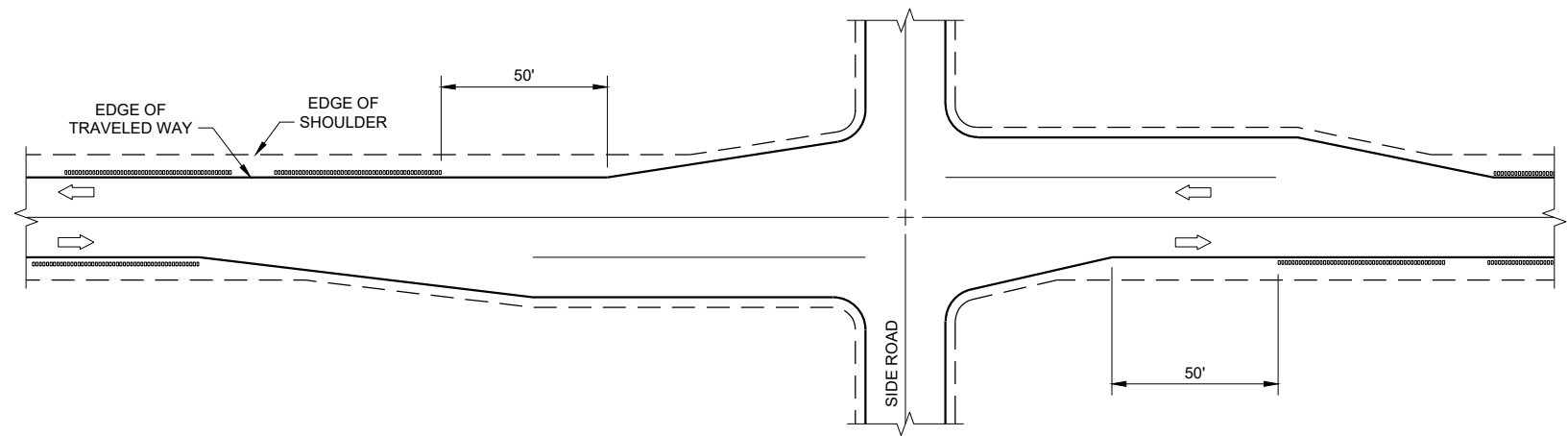
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION 144



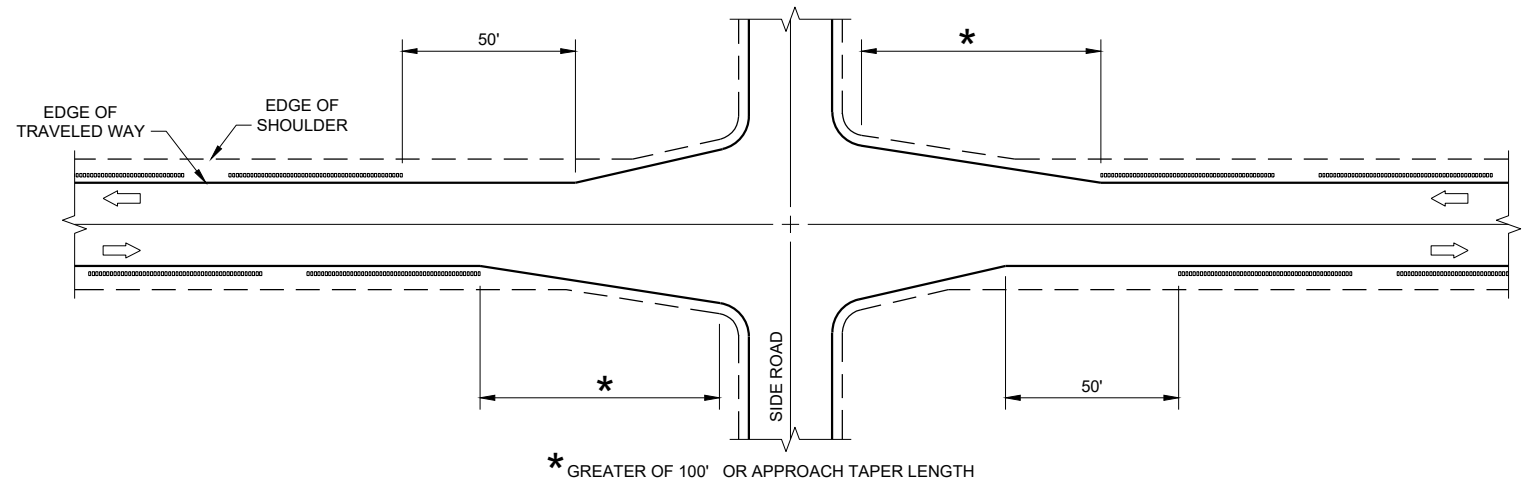
GROOVES AT MISCELLANEOUS CROSSINGS



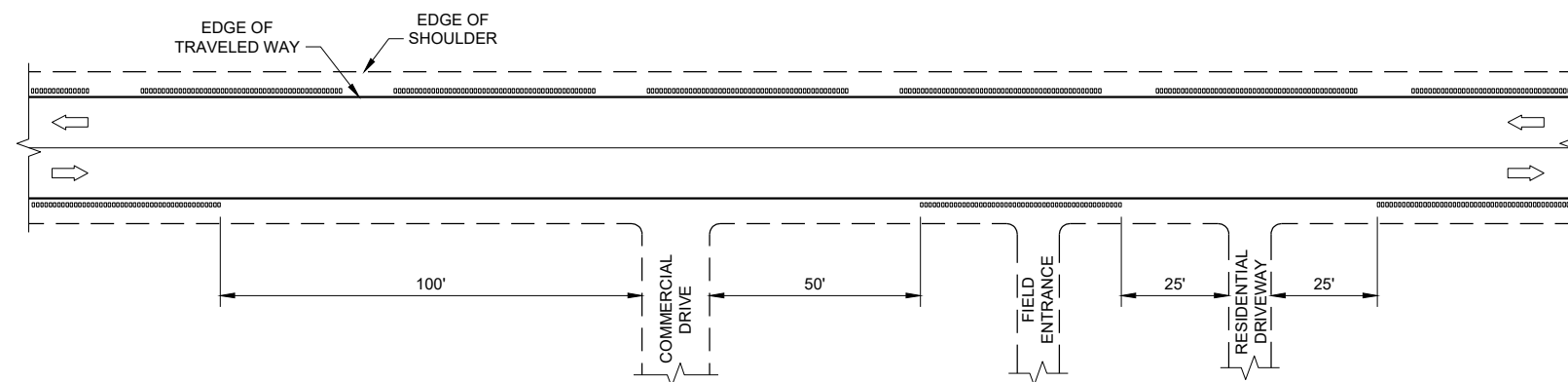
GROOVES AT BRIDGES



GROOVES AT RIGHT TURN LANE



GROOVES AT INTERSECTIONS WITH APPROACH TAPER



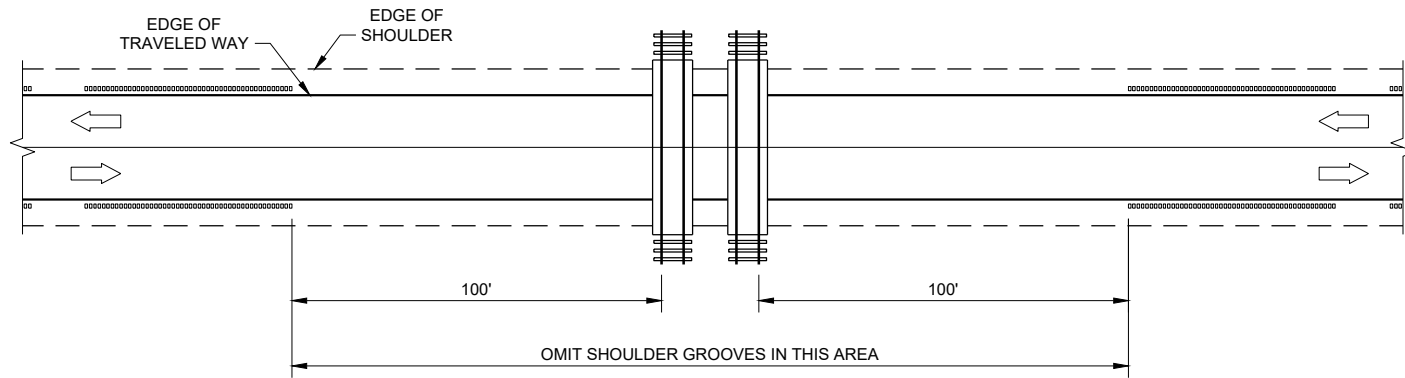
GROOVES AT DRIVEWAYS

GENERAL NOTES

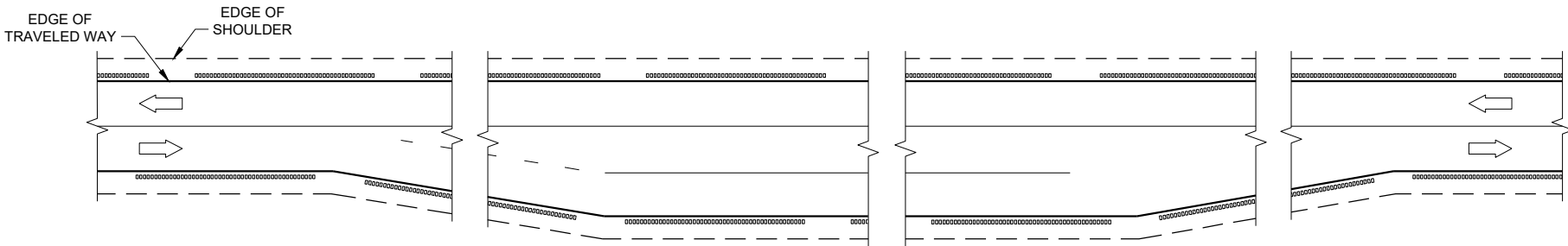
- ① SHOULDER GROOVES MAY BE OMITTED IN AREAS WITH HIGH CONCENTRATIONS OF DRIVEWAYS. WHEN DIRECTED BY THE ENGINEER.

**SHOULDER AND EDGE LINE
RUMBLE STRIPS
CROSSINGS, INTERSECTIONS,
BRIDGES, DRIVEWAYS**

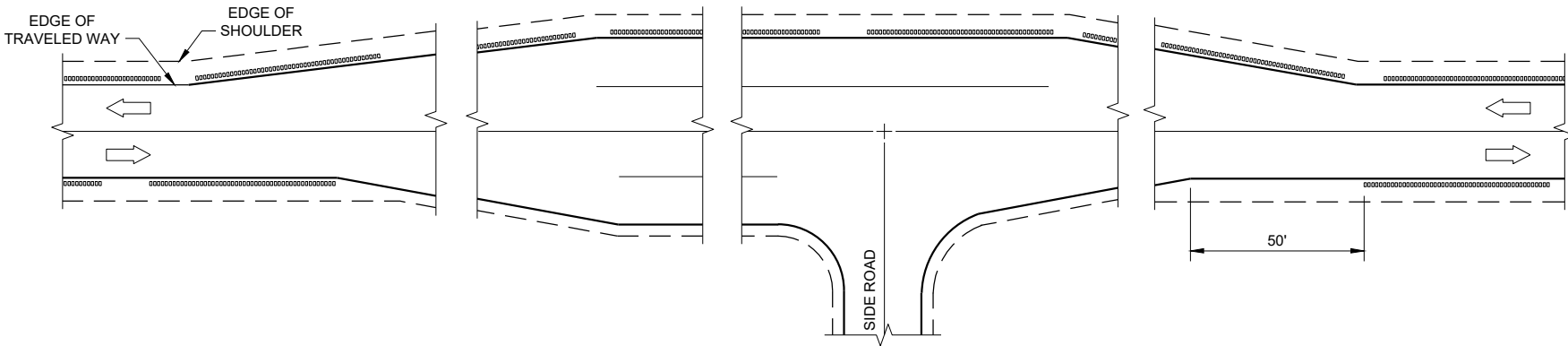
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION 145



GROOVES AT RAILROADS



GROOVES AT PASSING AND CLIMBING LANES



GROOVES AT BYPASS LANES

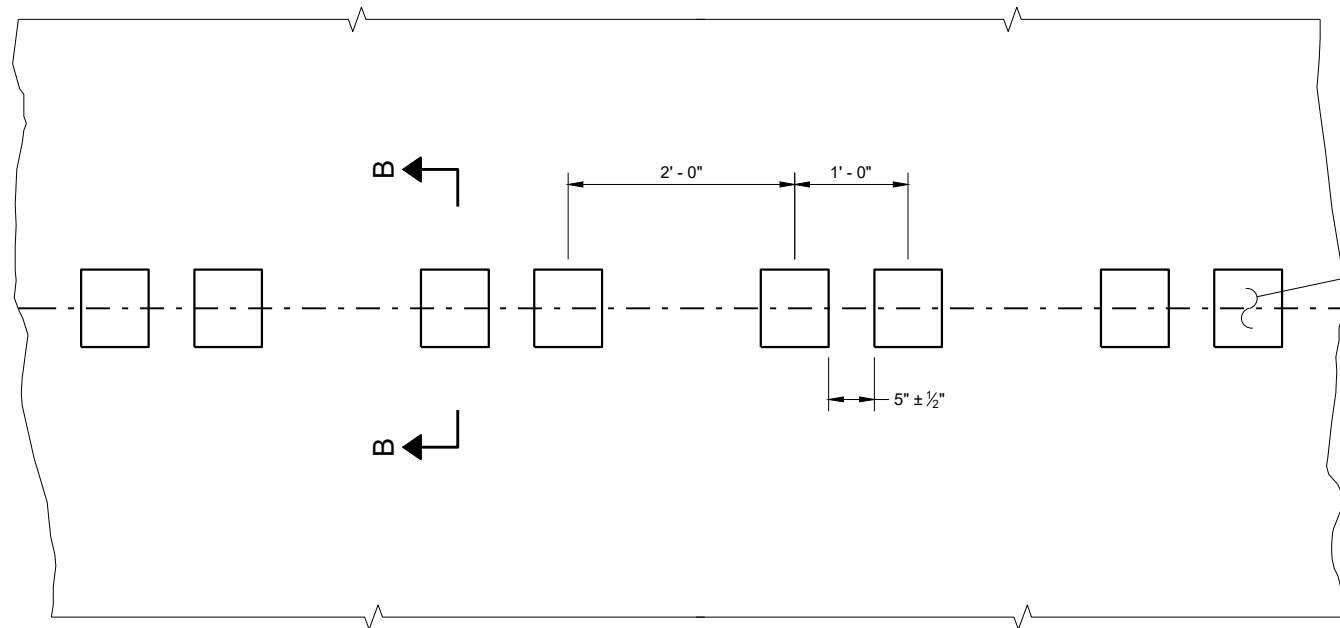
**SHOULDER AND EDGE LINE
RUMBLE STRIPS -
RAILROAD, PASSING,
CLIMBING AND BYPASS LANES**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

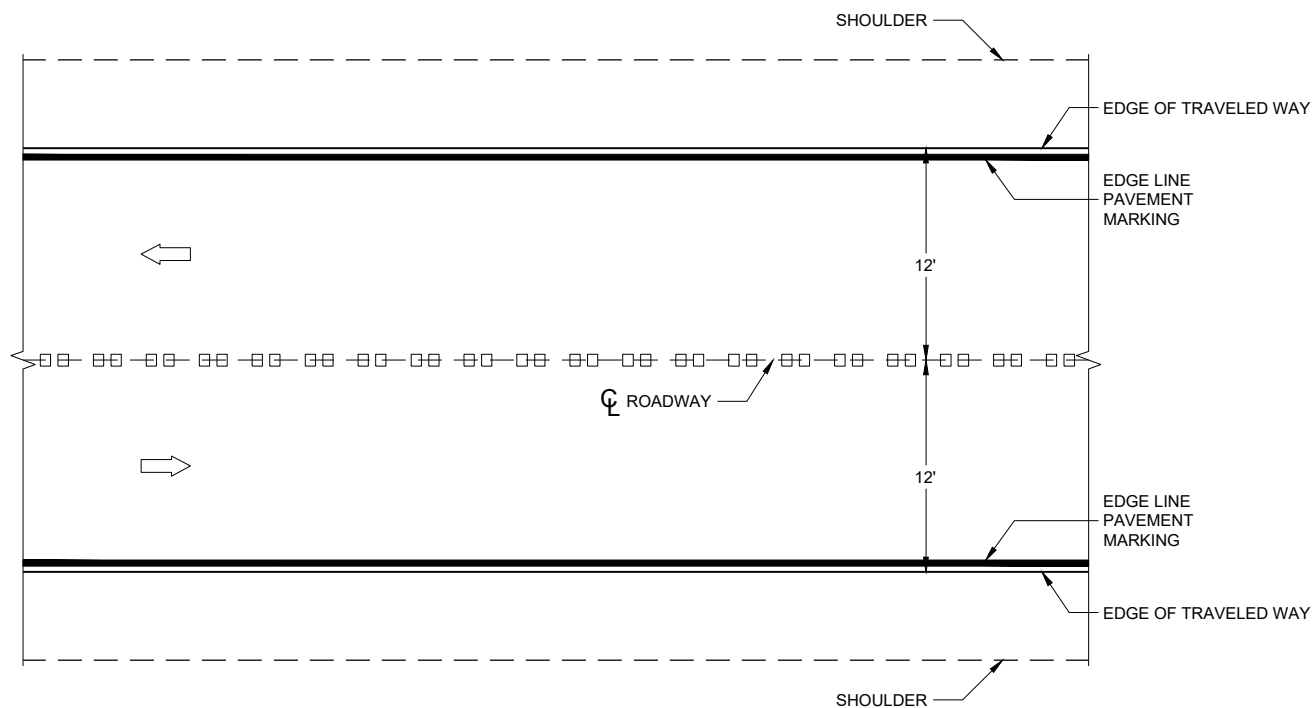
APPROVED
May 2023 /S/ John Jenkins
DATE ROADWAY STANDARDS DEVELOPMENT ENGINEER

FHWA

146

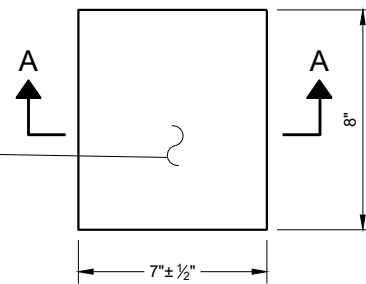


PLAN DETAIL VIEW

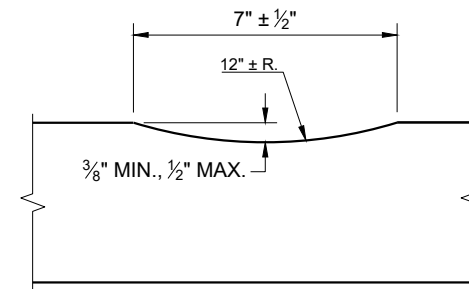


PLAN VIEW

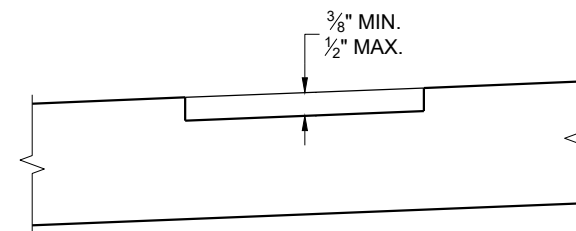
CENTERLINE RUMBLE STRIPS - ASPHALT



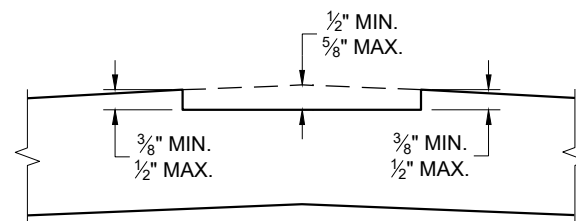
PLAN VIEW
(SINGLE GROOVE)



SECTION A - A



SECTION B - B
SUPERELEVATED ROADWAY

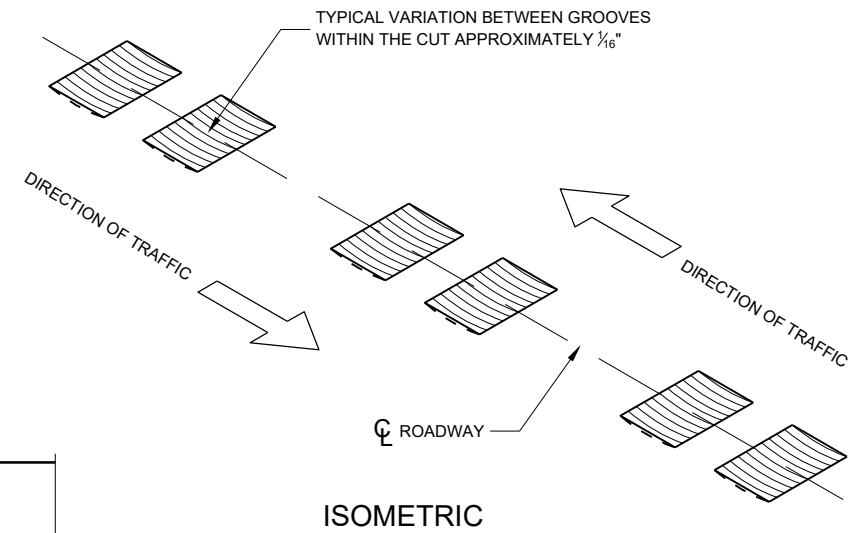


SECTION B - B
CROWNED ROADWAY

GENERAL NOTES

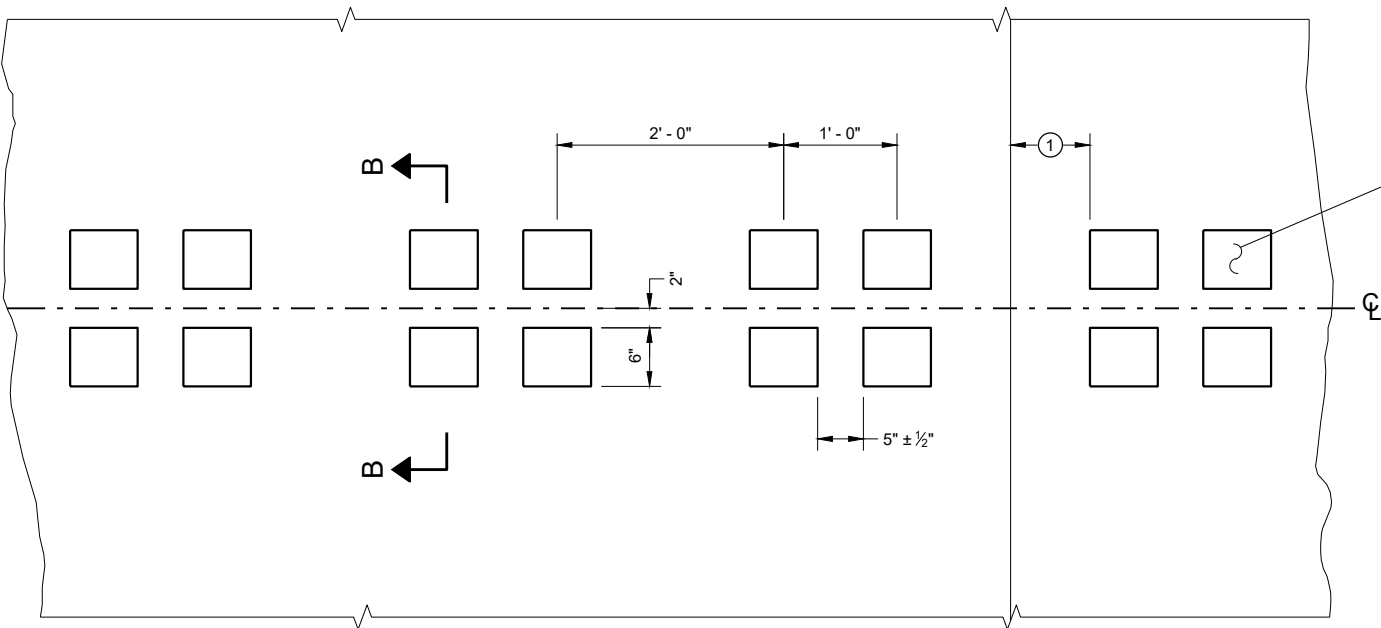
DO NOT MILL SHOULDER GROOVES THROUGH INTERSECTIONS, MARKED CROSSWALKS, NON-MOTORIZED PATH CROSSINGS, ETC. REFER TO SDD 13A11 SHEETS "d" AND "e".

CENTERLINE GROOVES MAY BE OMITTED IN AREAS WITH HIGH CONCENTRATIONS OF DRIVEWAYS WHEN DIRECTED BY THE ENGINEER.



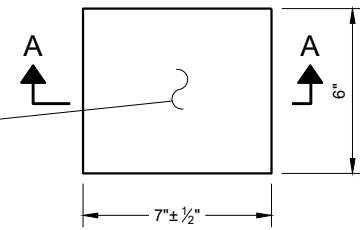
CENTERLINE RUMBLE STRIPS - ASPHALT

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION 147



PLAN DETAIL VIEW

PLAN VIEW
(SINGLE GROOVE)



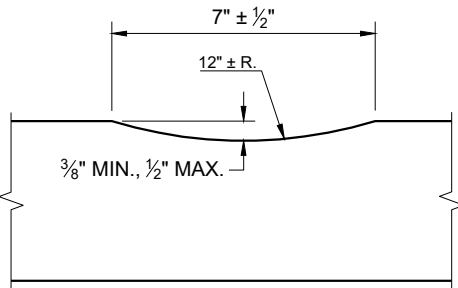
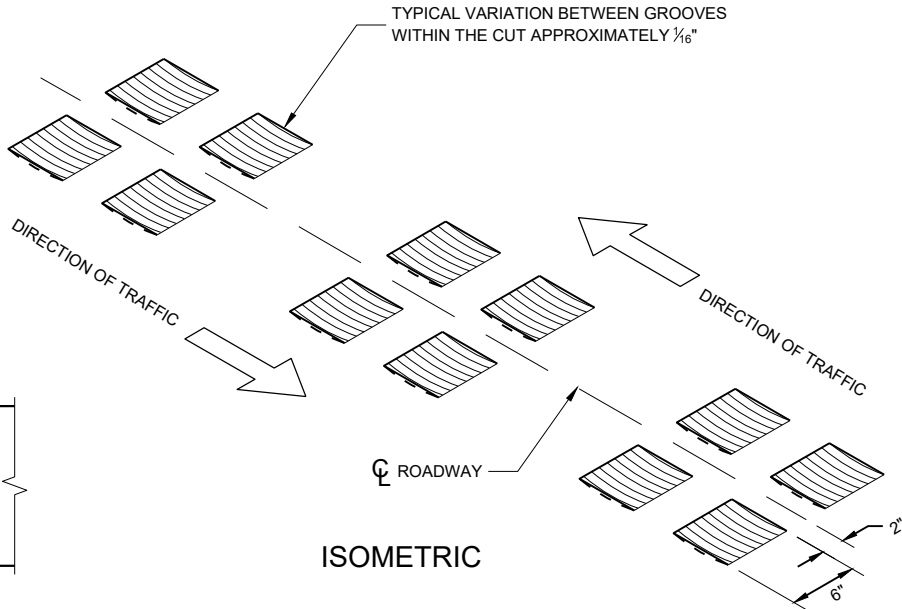
GENERAL NOTES

SDD 13A11, SHEET "d" SHOWS THE LOCATION OF RUMBLE STRIPS AT INTERSECTIONS, INTERSECTIONS WITH LEFT TURN LANES, BRIDGES, COMMERCIAL AND RESIDENTIAL DRIVEWAYS AND RAILROAD CROSSINGS.

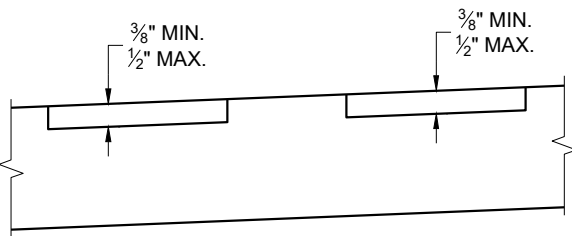
TEMPORARY PAVEMENT MARKINGS ARE TYPICALLY PLACED PRIOR TO RUMBLE STRIP INSTALLATION. PERMANENT MARKINGS ARE INSTALLED AFTER RUMBLE STRIP INSTALLATION.

CENTERLINE GROOVES MAY BE OMITTED IN AREAS WITH HIGH CONCENTRATIONS OF DRIVEWAYS WHEN DIRECTED BY THE ENGINEER.

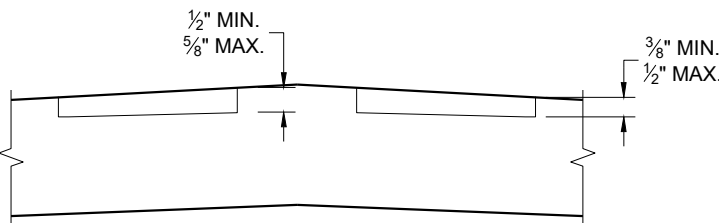
(1) CONCRETE PAVEMENT RUMBLE STRIPS SHALL BE A MINIMUM OF 6 INCHES FROM TRANSVERSE JOINTS.



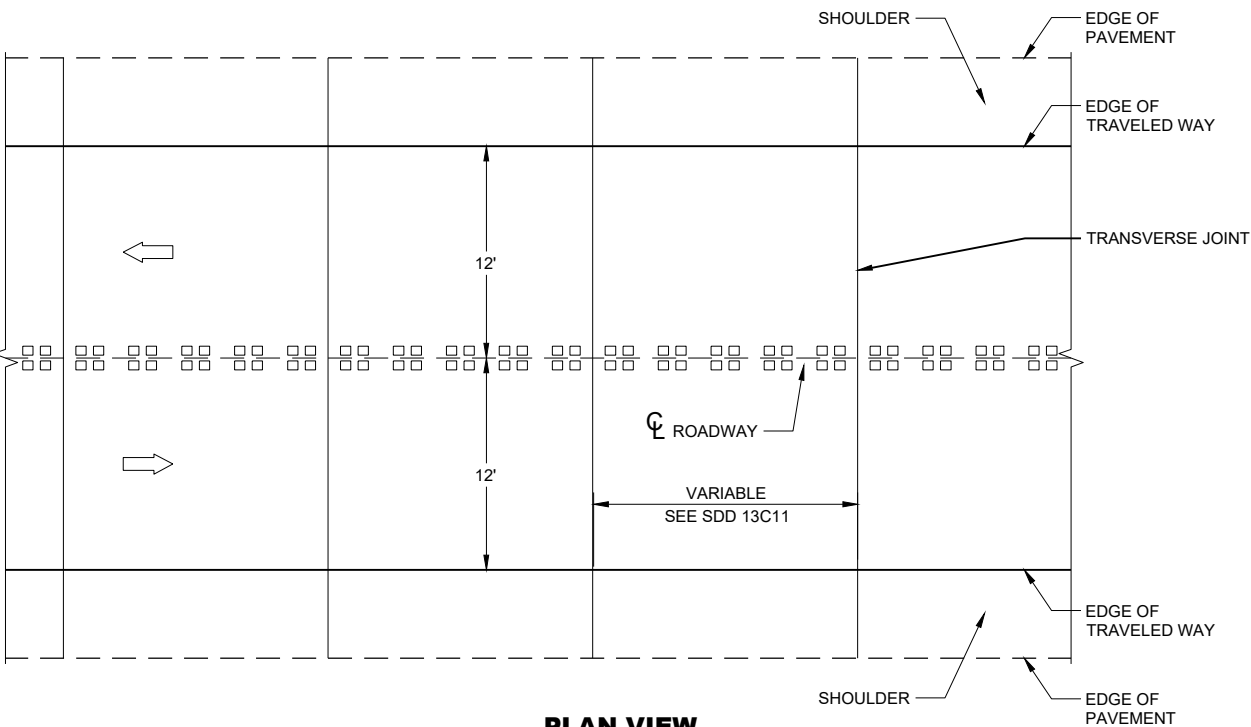
SECTION A - A



SECTION B - B
SUPERELEVATED ROADWAY



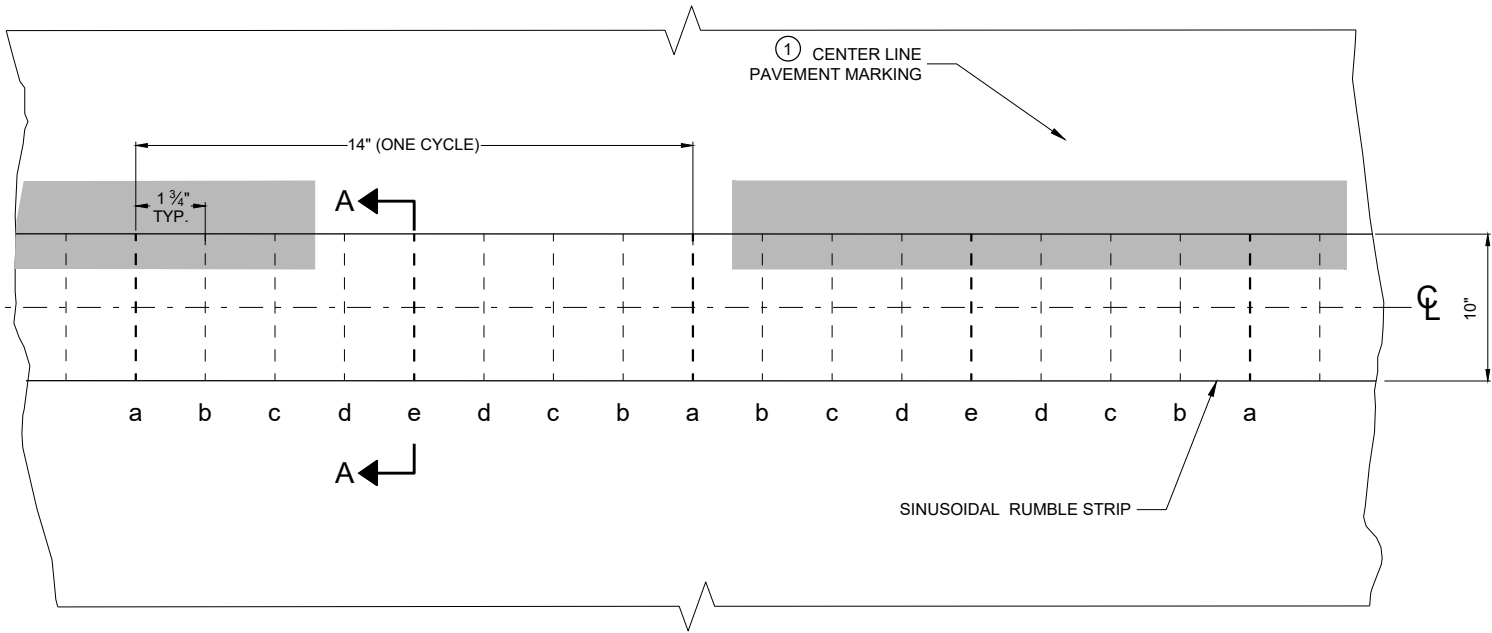
SECTION B - B
CROWNED ROADWAY



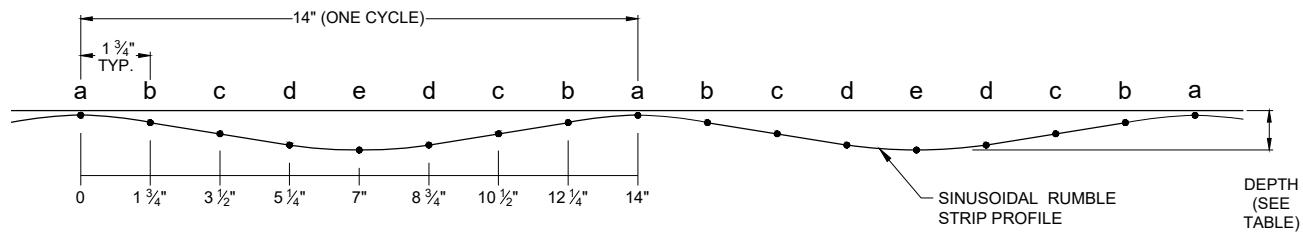
CENTERLINE RUMBLE STRIPS - CONCRETE

CENTERLINE RUMBLE STRIPS - CONCRETE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

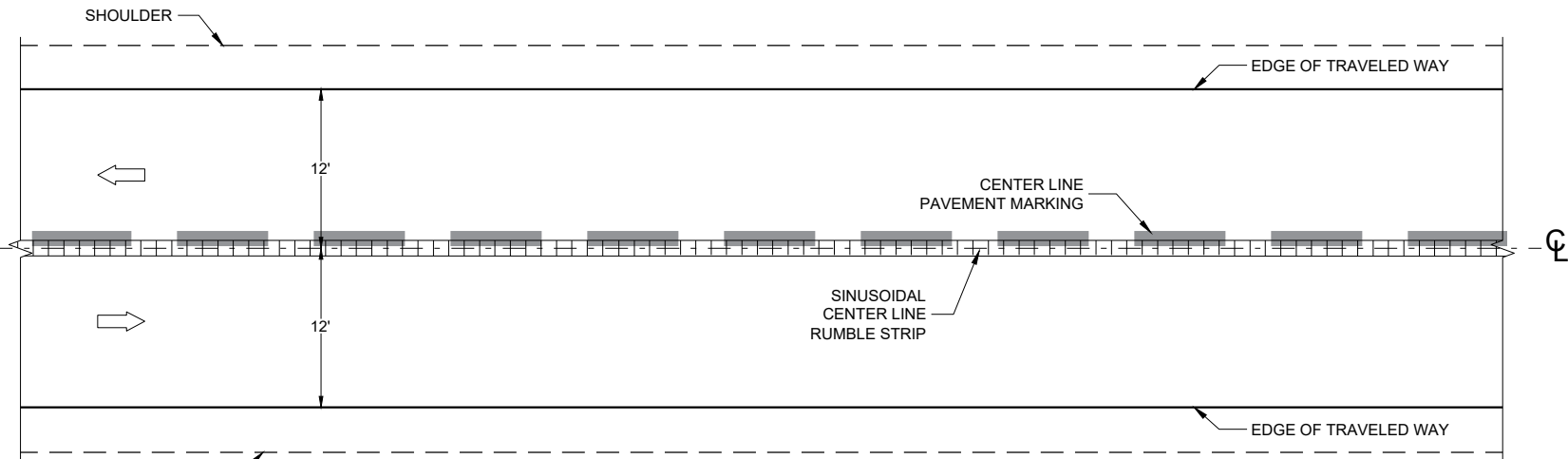


PLAN DETAIL VIEW



PROFILE VIEW
SINUSOIDAL CENTERLINE RUMBLE STRIPS

LOCATION	DEPTH (INCHES)
a	1/16"
b	5/32"
c	9/32"
d	7/16"
e	1/2"



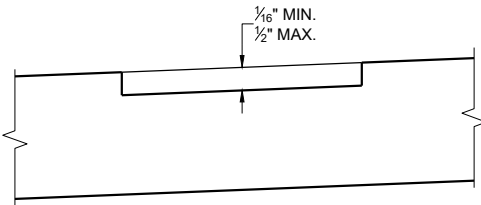
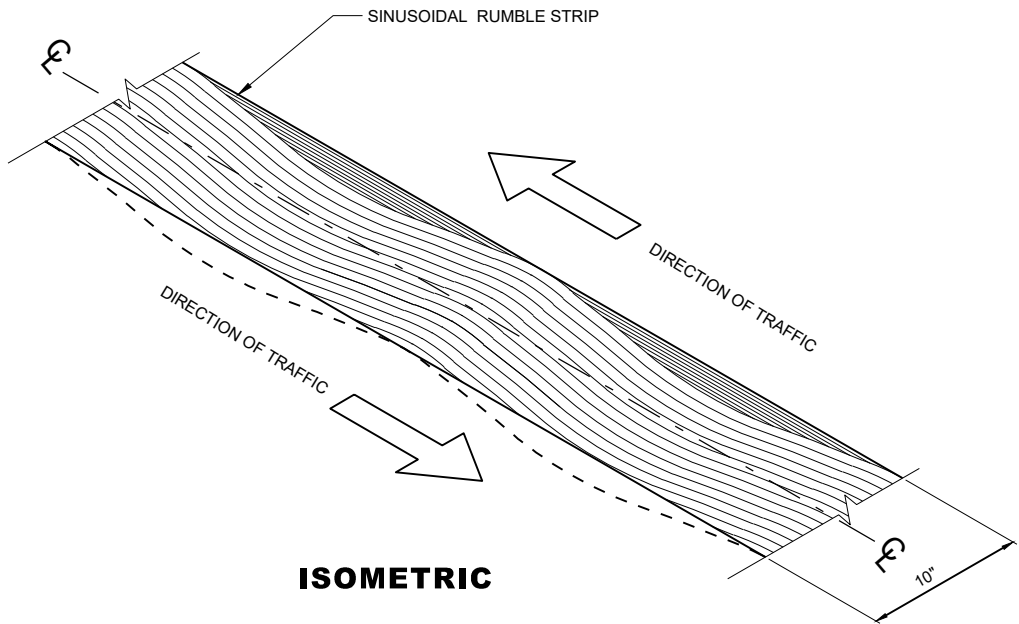
CENTERLINE RUMBLE STRIPS - ASPHALT,
SINUSOIDAL

GENERAL NOTES

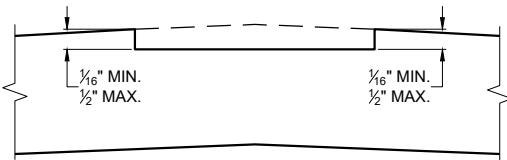
SDD 13A11, SHEET "d" SHOWS THE LOCATIONS OF RUMBLE STRIPS AT INTERSECTIONS, INTERSECTIONS WITH LEFT TURN LANES, BRIDGES, COMMERCIAL AND RESIDENTIAL DRIVEWAYS AND RAILROAD CROSSINGS.

SHOULDER RUMBLE STRIPS MAY BE OMITTED IN AREAS WITH HIGH CONCENTRATIONS OF DRIVEWAYS WHEN DIRECTED BY THE ENGINEER.

① CENTERLINE PAVEMENT MARKINGS SHALL BE PLACED PARTIALLY IN RUMBLE STRIP GROOVE AND PARTIALLY OUT OF THE RUMBLE STRIP GROOVE.



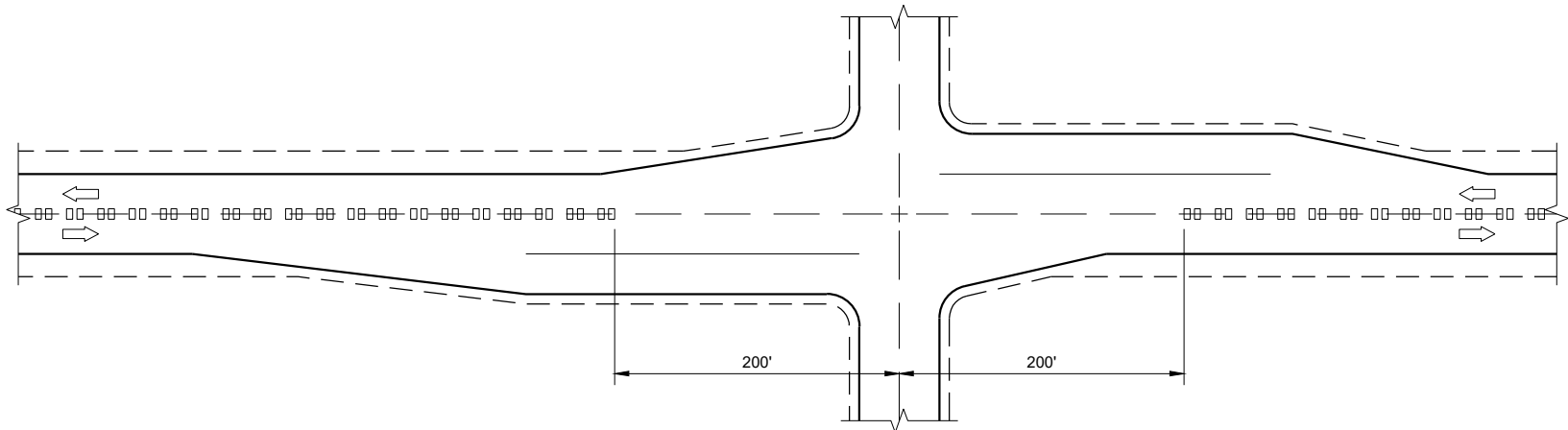
SECTION A - A
SUPERELEVATED ROADWAY



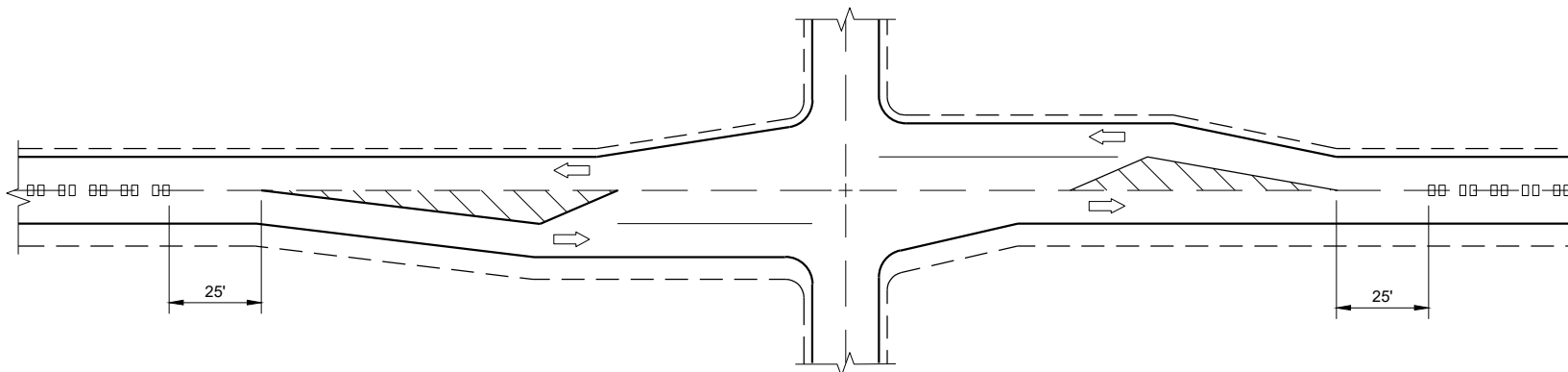
SECTION A - A
CROWNED ROADWAY

CENTERLINE
RUMBLE STRIPS - ASPHALT,
SINUSOIDAL

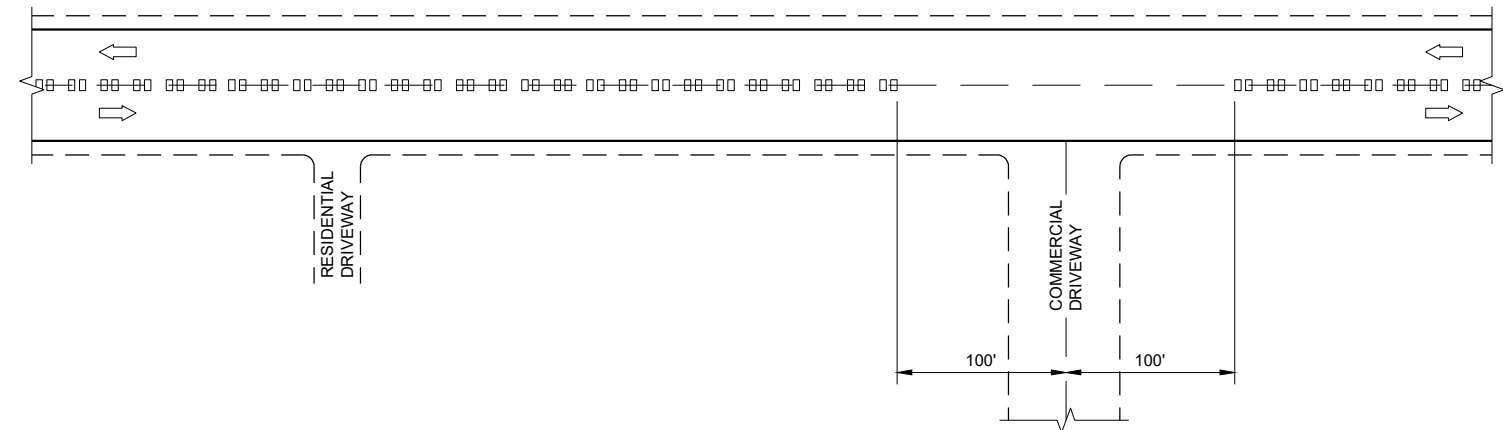
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION 149



CENTERLINE GROOVES AT INTERSECTIONS



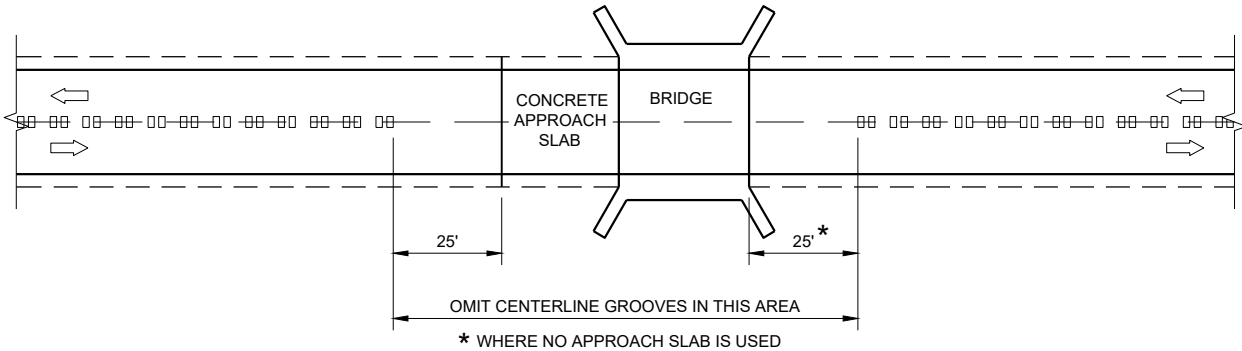
CENTERLINE GROOVES AT INTERSECTIONS
(WITH LEFT TURN LANES)



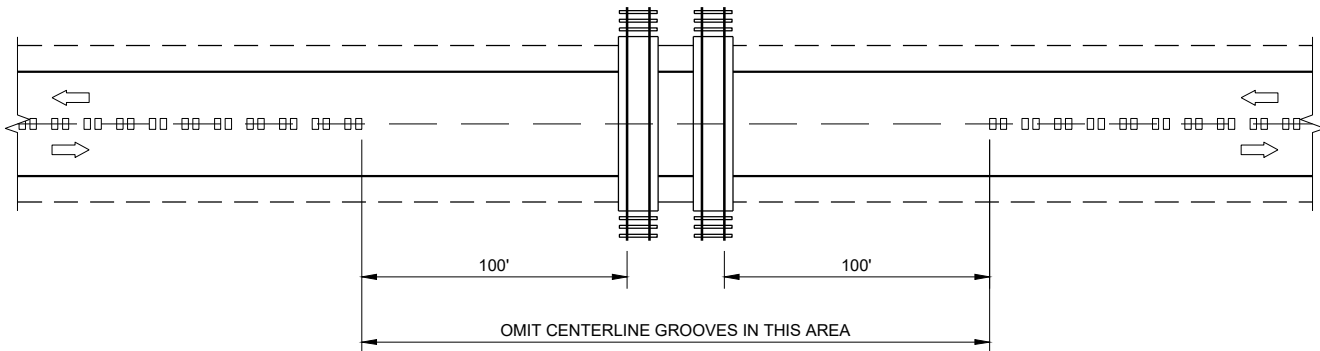
CENTERLINE GROOVES AT DRIVEWAYS^①

GENERAL NOTES

- ① CENTERLINE GROOVES MAY BE OMITTED IN AREAS WITH HIGH CONCENTRATIONS OF DRIVEWAYS WHEN DIRECTED BY THE ENGINEER.



CENTERLINE GROOVES AT BRIDGES



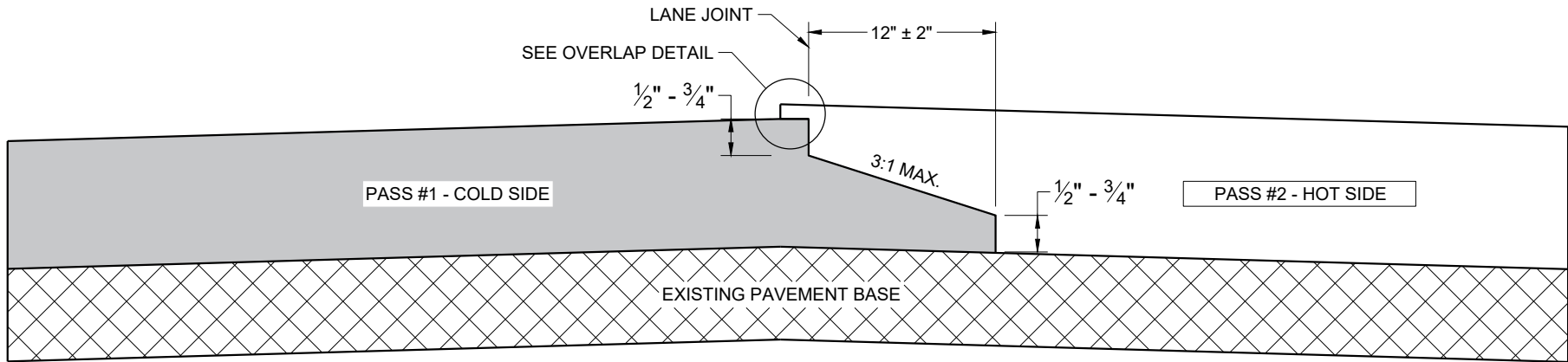
CENTERLINE GROOVES AT RAILROADS

CENTER LINE
RUMBLE STRIPS -
INTERSECTIONS, DRIVEWAYS,
BRIDGES, RAIL ROADS

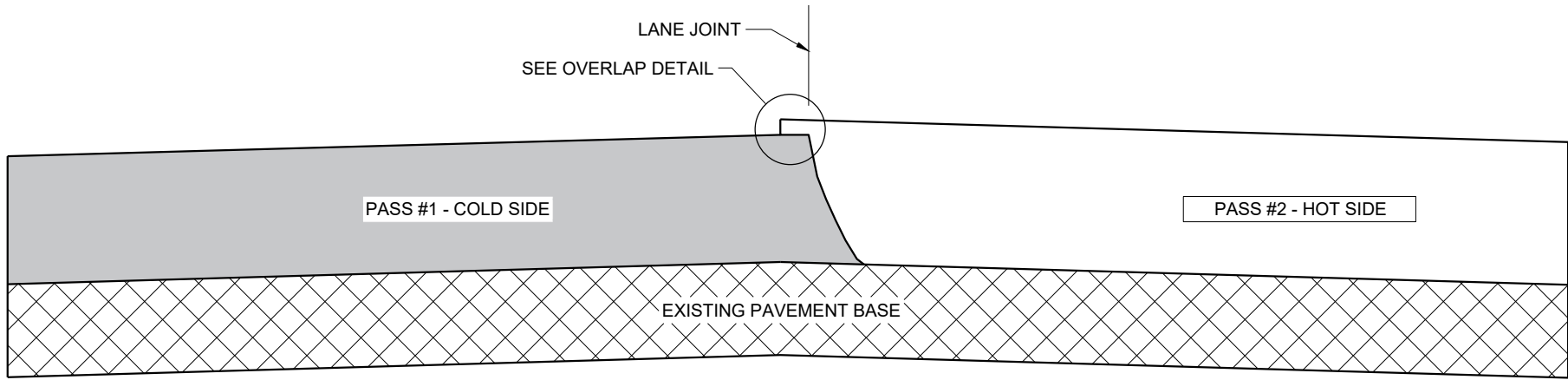
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
May 2023
DATE
/S/ John Jenkins
ROADWAY STANDARDS DEVELOPMENT
ENGINEER
150

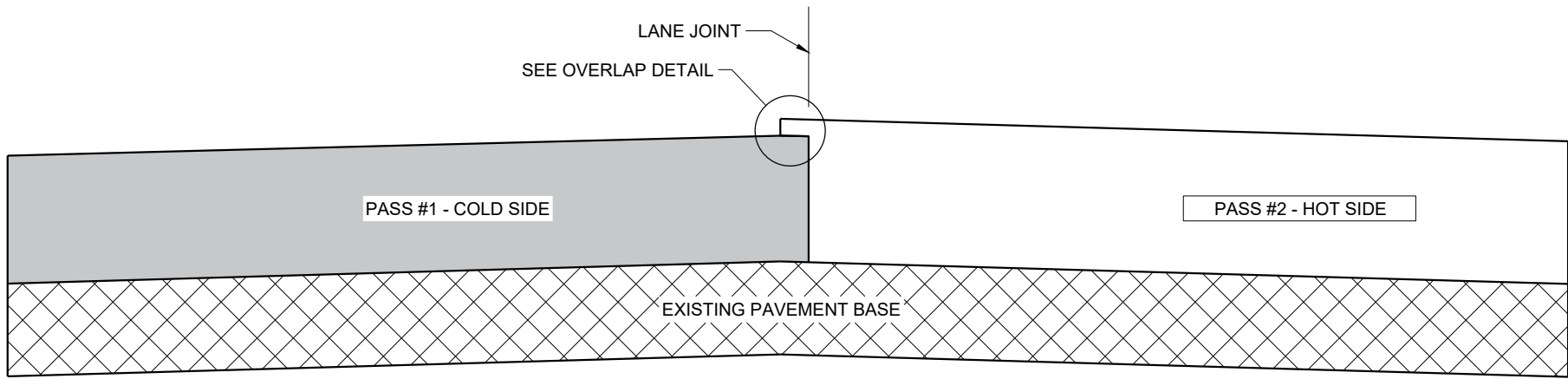
FHWA



**TYPICAL PAVEMENT CROSS SECTION
NOTCHED WEDGE JOINT**



**TYPICAL PAVEMENT CROSS SECTION
VERTICAL JOINT**



**TYPICAL PAVEMENT CROSS SECTION
VERTICAL JOINT (MILLED)**

GENERAL NOTES

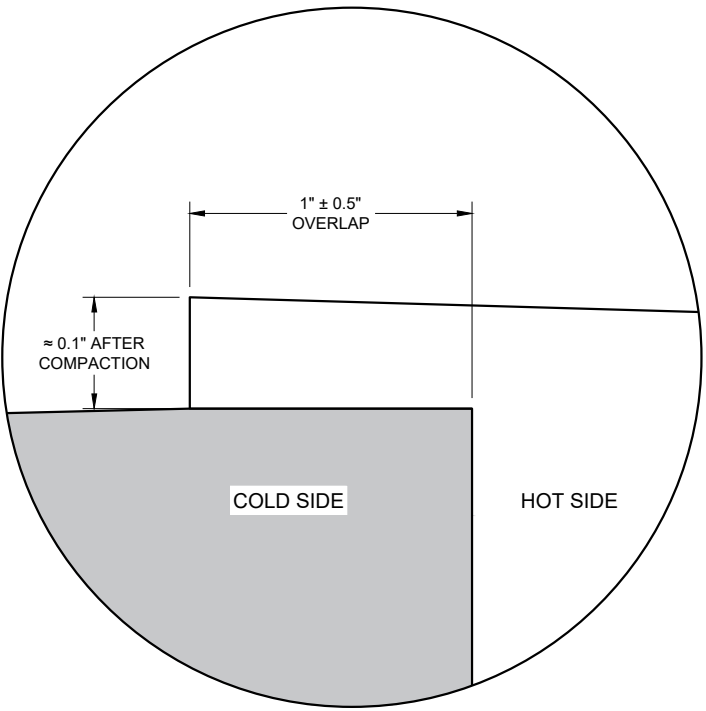
IN ADDITION TO THE DETAILS PROVIDED IN THIS DRAWING, CONFORM TO STANDARD SPECIFICATION 450.3.2.8 FOR WHEN A NOTCHED WEDGE JOINT IS REQUIRED AND FOR GENERAL JOINT CONSTRUCTION REQUIREMENTS.

FOR ALL LONGITUDINAL JOINTS, ENSURE THE PAVER SCREED OVERLAPS THE PREVIOUSLY PLACED PAVEMENT BY $1" \pm 0.5"$ AND THE HOT SIDE OF THE JOINT REMAINS HIGHER THAN THE COLD SIDE BY APPROXIMATELY $0.1"$ AFTER FINAL COMPACTION. (IT WILL BE FLUSH WHEN PAVING IN ECHELON.)

ONLY REMOVE THE LONGITUDINAL NOTCHED WEDGE JOINT FOR SMA PAVEMENT OR AS DIRECTED BY THE ENGINEER TO ADDRESS SPECIFIC LENGTHS OF JOINT DAMAGED BY TRAFFIC.

WHEN MILLING BACK OR REMOVING ANY LONGITUDINAL JOINT, LIMIT THE MATERIAL REMOVED TO $2"$ FROM THE TOP NOTCH OR FROM THE VERTICAL JOINT EDGE ON THE COLD SIDE OF THE JOINT.

USE LONGITUDINAL MILLED JOINT AS PLANS SHOW OR THE AS THE ENGINEER DIRECTS.



OVERLAP DETAIL (TYPICAL)

HMA LONGITUDINAL JOINTS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
November 2020 /S/ Steven Hefel
DATE HMA PAVEMENT ENGIN 151

FHWA

6

- S.D.D. 14 B 15-11a**

S.D.D. 14 B 15-11a



S.D.D. 14 B 15-11a



S.D.D. 14 B 15-11a



S.D.D. 14 B 15-11a



S.D.D. 14 B 15-11a



S.D.D. 14 B 15-11a



S.D.D. 14 B 15-11a

S.D.D. 14 B 15-11a



S.D.D. 14 B 15-11a



S.D.D. 14 B 15-11a



S.D.D. 14 B 15-11a



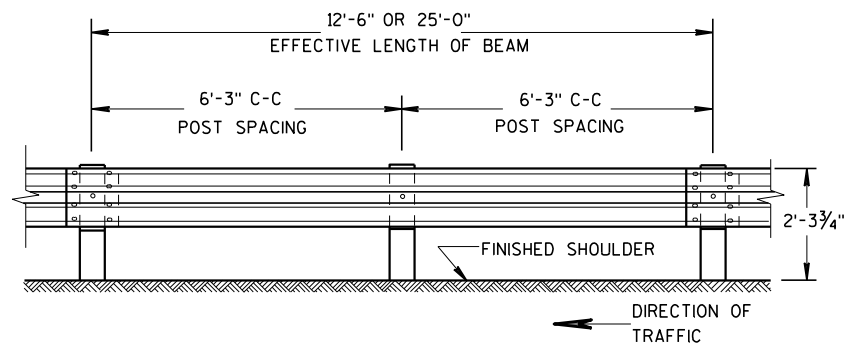
S.D.D. 14 B 15-11a



S.D.D. 14 B 15-11a

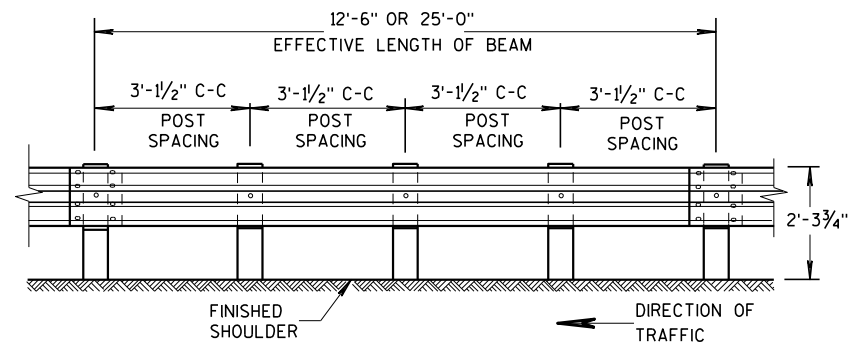
S.D.D. 14 B 15-11a

S.D.D. 14 B 15-11a



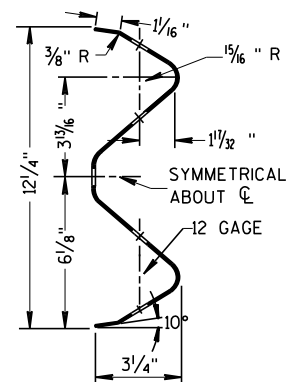
FRONT VIEW

POST SPACING STANDARD INSTALLATION

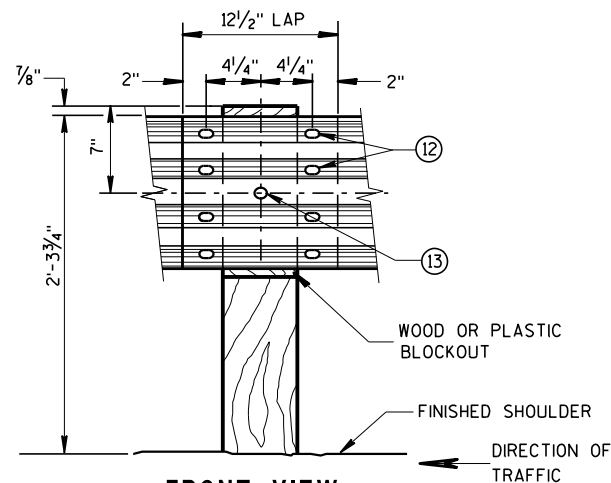


FRONT VIEW

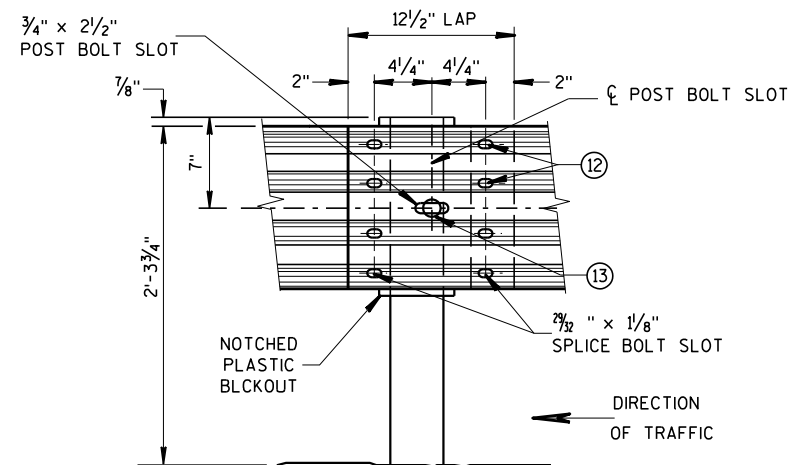
POST SPACING FOR LONGER POST
AT HALF POST SPACING W BEAM (LHW)



SECTION THRU W BEAM



FRONT VIEW
BEAM SPLICE AT WOOD POST
AND POST MOUNTING DETAIL

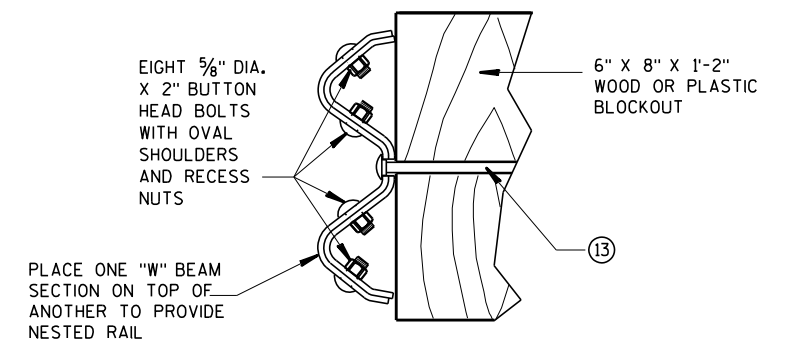


FRONT VIEW
BEAM SPLICE AT STEEL POST
TYPICAL SPlicing DETAILS
OF STEEL PLATE BEAM GUARD

GENERAL NOTES

FURNISH GUARDRAIL DEFLECTORS FROM APPROVED PRODUCTS LIST.

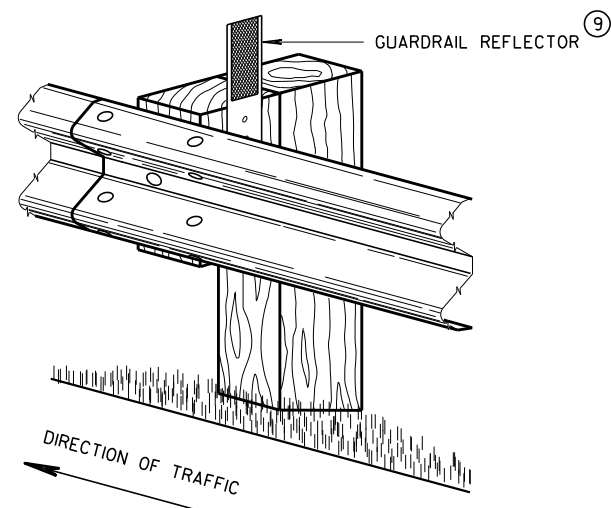
- ⑨ DO NOT INSTALL REFLECTORS ON THE FIRST 50 FEET OF THE APPROACH END OF THE ENERGY ABSORBING TERMINA. START REFLECTORS AT POST #9 AND SPACE EVENLY EVERY 100 FEET (MAX.) TO THE END OF GUARDRAIL RUN, USING A MINIMUM OF 3 REFLECTORS.
- ⑫ 8 - 5/8" ϕ X 2" BUTTON HEAD BOLTS WITH OVAL SHOULDERS & RECESS NUTS.
- ⑬ 5/8" DIA. BUTTON HEAD BOLT AND RECESS NUT WITH 5/8" DIA. F844 FLAT WASHER UNDER NUT.



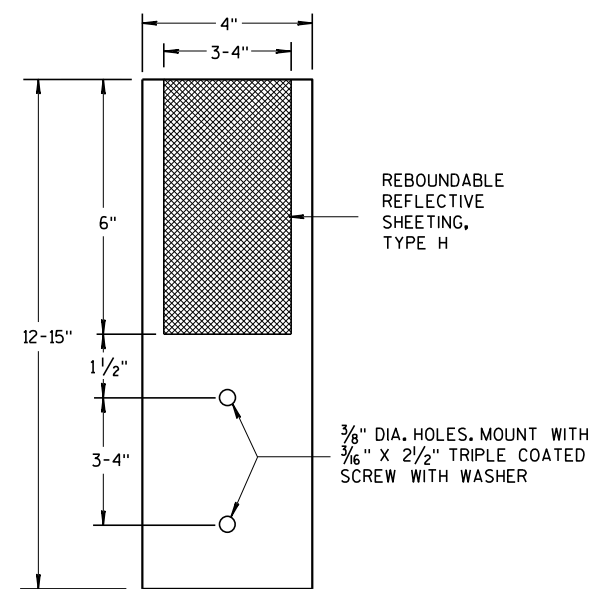
NESTED W BEAM (NW)

USE ALL OTHER STANDARD BEAM GUARD DETAILS FOR
CONSTRUCTING NESTED W BEAM (NW)

* USE DOUBLE SIDED WHITE GUARDRAIL REFLECTORS ON ROADWAYS WITH BI-DIRECTIONAL TRAFFIC (NO MEDIAN). USE SINGLE SIDED WHITE (RIGHT SIDE) AND SINGLE SIDED YELLOW (LEFT SIDE) ON ROADWAYS WITH MEDIAN SEPARATION.



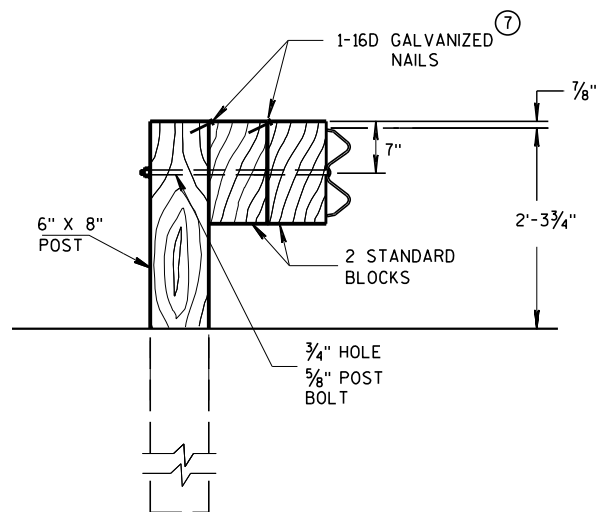
4" X 12" GUARDRAIL REFLECTOR DETAIL
AND TYPICAL INSTALLATION *



4"x 12" GUARDRAIL REFLECTOR

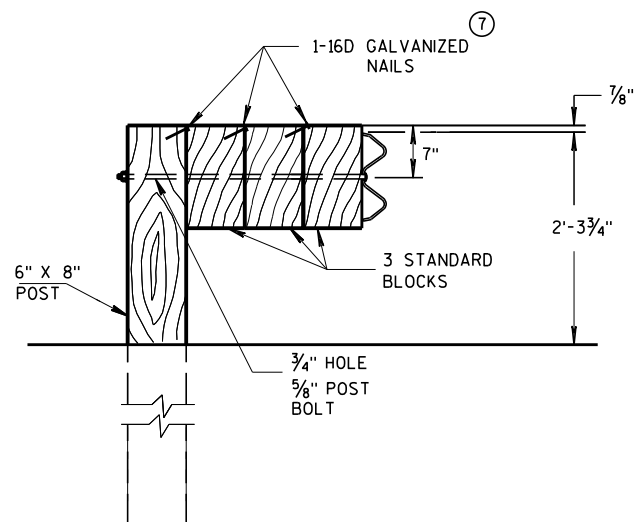
STEEL PLATE BEAM GUARD,
CLASS "A",
INSTALLATION & ELEMENTS

STATE OF WISCO 153
DEPARTMENT OF TRANSPORTATION



DETAIL FOR DOUBLE BLOCKS

THE NUMBER OF DOUBLE BLOCK POSTS
WITHIN A BARRIER RUN IS UNLIMITED

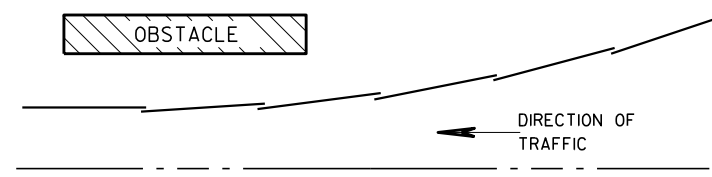


DETAIL FOR TRIPLE BLOCKS

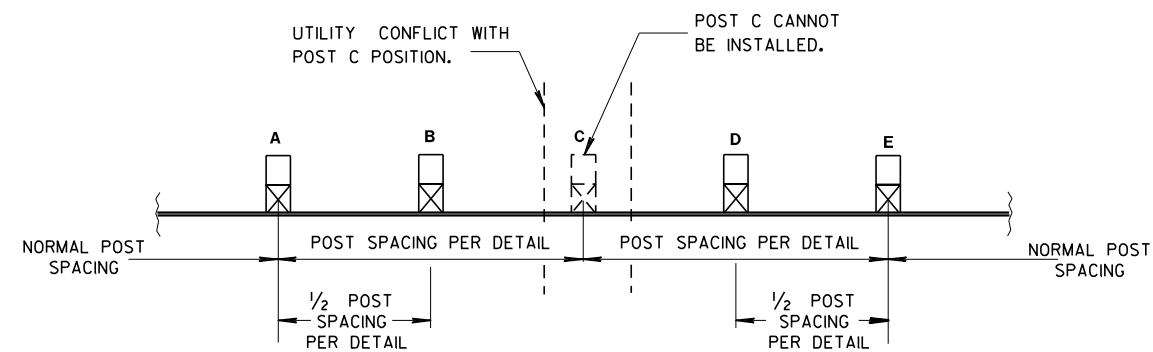
TRIPLE BLOCK DETAIL IS LIMITED TO ONE
LOCATION WITHIN A BEAM GUARD RUN.

NOTES: USE DOUBLE OR TRIPLE BLOCKS WHEN UNDERGROUND OBSTACLES
PREVENT THE POST FROM BEING INSTALLED.

DO NOT USE EXTRA BLOCKOUTS IF IT CAUSES THE POST TO BE DRIVEN BEYOND
SHOULDER HINGE POINT OR CAUSES A FIXED OBJECT TO BE WITHIN THE DEFLECTION
DISTANCE OF THE BARRIER.



PLAN VIEW BEAM LAPPING DETAIL



POST DRIVING FOR CONTINUOUS UNDERGROUND OBSTRUCTION

STEEL PLATE BEAM GUARD,
CLASS "A",
INSTALLATION & ELEMENTS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
June 2017 /S/ Rodney Taylor
DATE ROADWAY STANDARDS 154 UNIT SUPERVISOR
FHWA

BILL OF MATERIALS

NOTE NO.	DESCRIPTION
①	WOOD BREAKAWAY TERMINAL POST: 5 1/2" X 7 1/2" X 3'-9"
②	STEEL TUBE TS 8" X 6" X 0.188", 6'-0"
④	WOOD BREAKAWAY CRT POST: 6" X 8" X 6'-0"
⑤	WOOD OFFSET BLOCKS: 6' X 8" X 1'-2"
⑥	PIPE SLEEVE: 2" X 5 1/2" STANDARD PIPE
⑦	BEARING PLATE
⑧	BCT CABLE ASSEMBLY
⑨	CABLE ANCHOR BOX
⑩	STRUT & YOKE
⑪	STEEL PLATE BEAM, END PANEL 12 GA.
⑫	STEEL PLATE BEAM: 12 GA. 13'-6 1/2"
⑬	IMPACT HEAD
⑭	0.040" ALUMINUM SHEET WITH REFLECTIVE SHEETING TYPE F PER SECTION 637 OF THE STANDARD SPECIFICATIONS

GENERAL NOTES

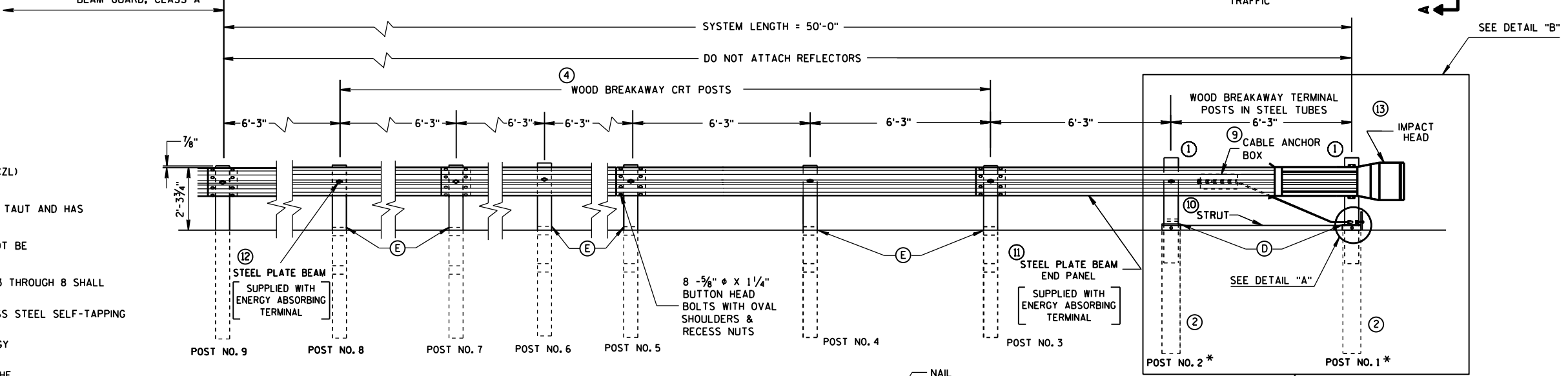
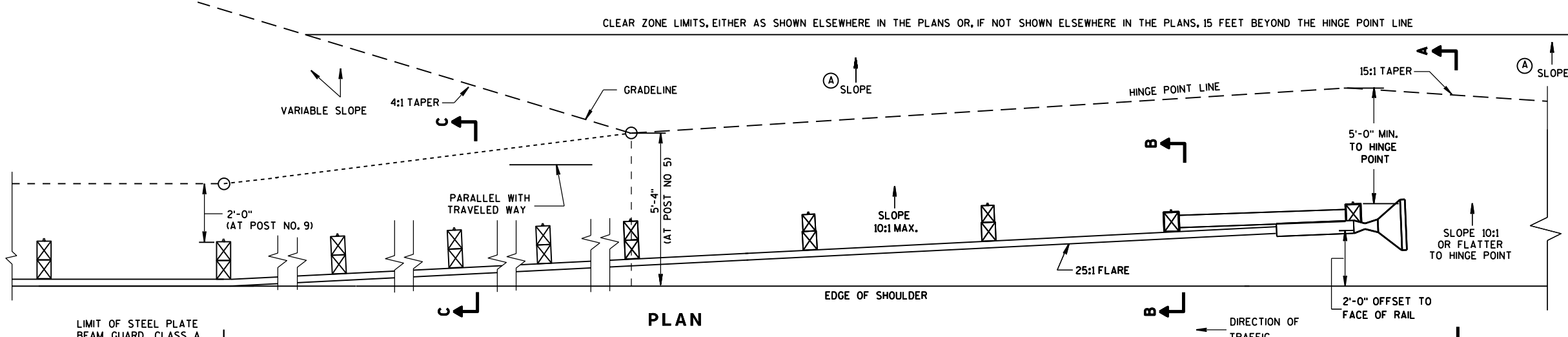
FOLLOW MANUFACTURE'S BOLTING RECOMMENDATIONS.

- (A) THE SLOPE IN THE AREA BOUNDED BY THE GRADELINE, THE HINGE POINT LINE (HPL), AND THE CLEAR ZONE LIMITS (CZL) SHALL BE 4:1 OR FLATTER.
- (B) AFTER FINAL ASSEMBLY, RECHECK CABLE TO BE SURE IT IS TAUT AND HAS NOT RELAXED.
- (D) THE TOP OF THE STEEL TUBE ON POSTS 1 AND 2 SHALL NOT BE MORE THAN 3" ABOVE THE FINISH GROUND ELEVATION.
- (E) THE CENTER OF THE UPPER 3 1/2" DIAMETER HOLE ON POST 3 THROUGH 8 SHALL BE 3/4" ABOVE THE FINISHED GROUND LINE.
- (F) ATTACH ALUMINUM SHEET TO E.A.T. HEAD USING 4 STAINLESS STEEL SELF-TAPPING SCREWS, ONE SCREW PER CORNER.

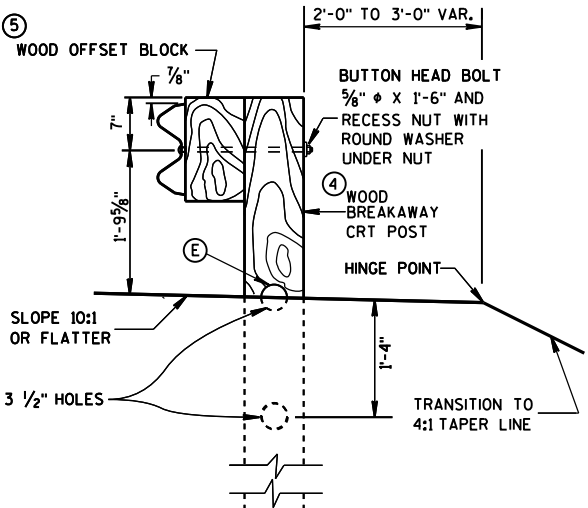
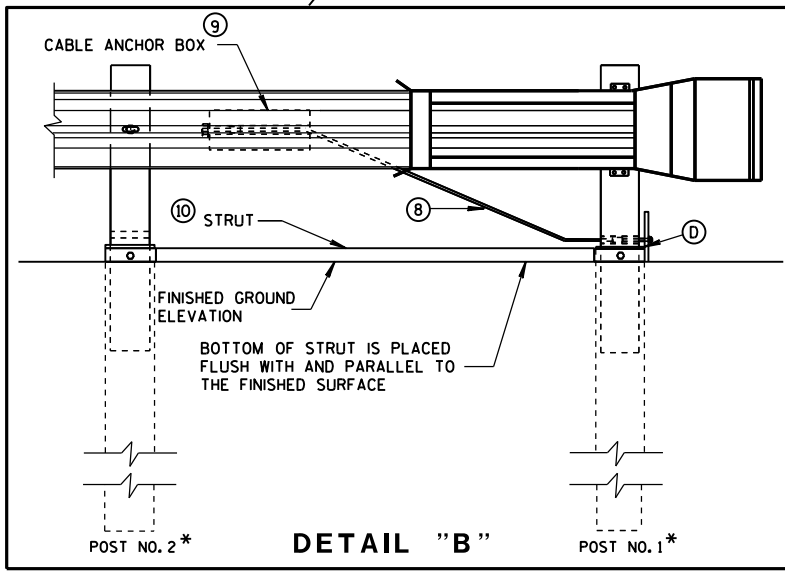
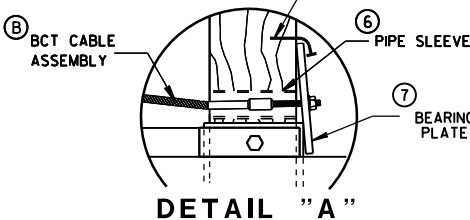
STEEL POSTS SHALL NOT BE ALLOWED FOR USE WITH ENERGY ABSORBING TERMINALS.

DO NOT INSTALL REFLECTORS ON THE FIRST 50 FEET OF THE APPROACH END OF THE ENERGY ABSORBING TERMINAL.

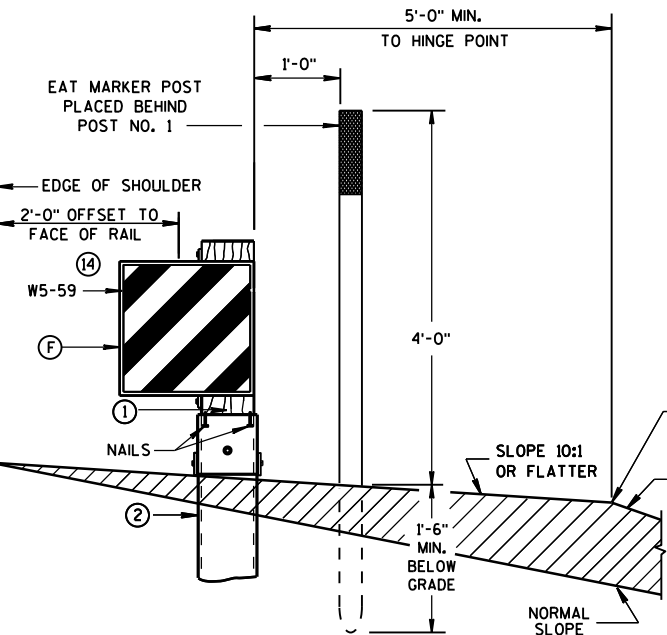
* DO NOT ATTACH BLOCKOUTS TO POSTS 1 AND 2.



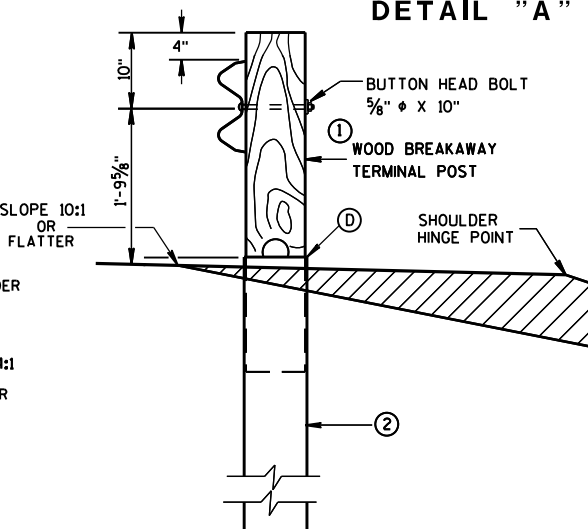
ELEVATION



SECTION C-C
TYPICAL AT POST NOS. 6, 8



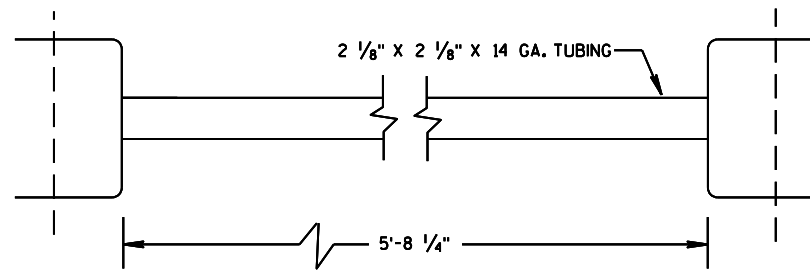
SECTION A-A
TYPICAL AT POST NO. 1*



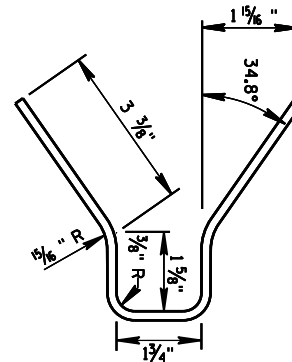
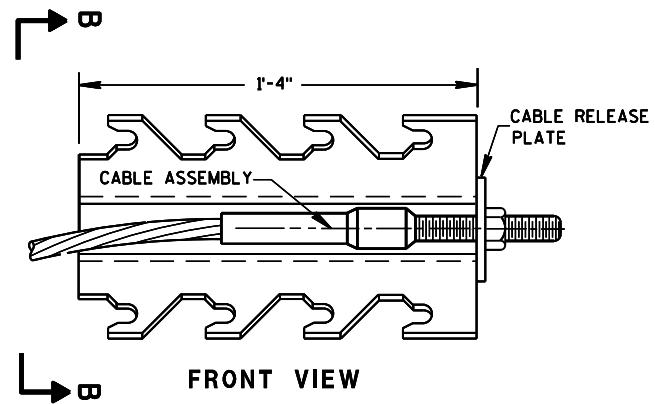
SECTION B-B
TYPICAL AT POST NO. 2*

STEEL PLATE BEAM GUARD
ENERGY ABSORBING TERMINAL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

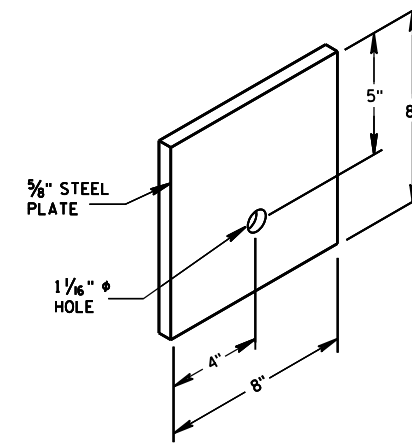


⑩ STRUT DETAIL



SECTION B-B

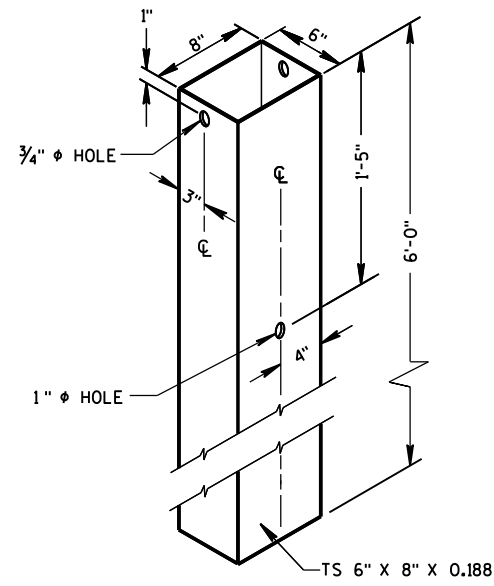
⑨ CABLE ANCHOR BOX



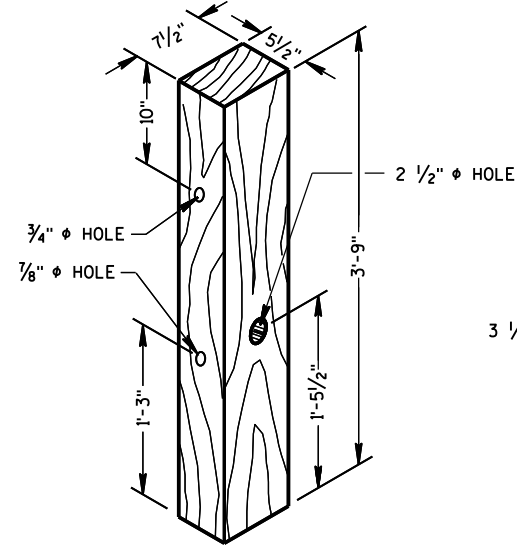
⑦ STEEL BEARING PLATE

STEEL PLATE BEAM GUARD
ENERGY ABSORBING TERMINAL

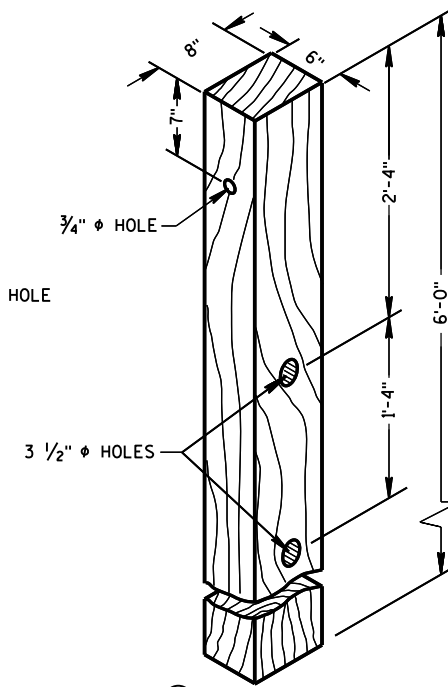
STATE OF WISCONSIN
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② **72" STEEL TUBE**
(POSTS NO. 1-2)

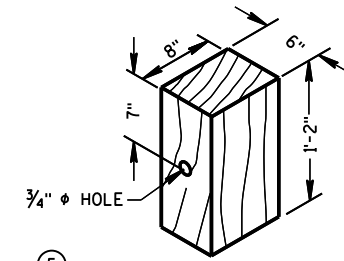


① **TERMINAL POST**



④ **CRT POST**
(POSTS NO'S 5-8)

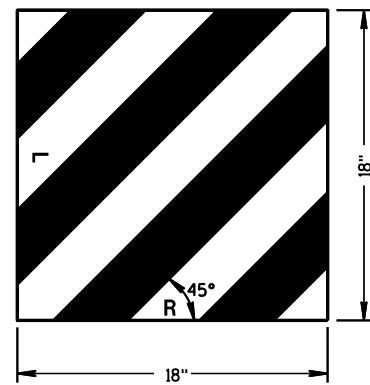
WOOD BREAKAWAY POSTS



⑤ **WOOD OFFSET BLOCK**
REQ'D. AT ALL POSTS EXCEPT POST NO'S 1 & 2

GENERAL NOTES

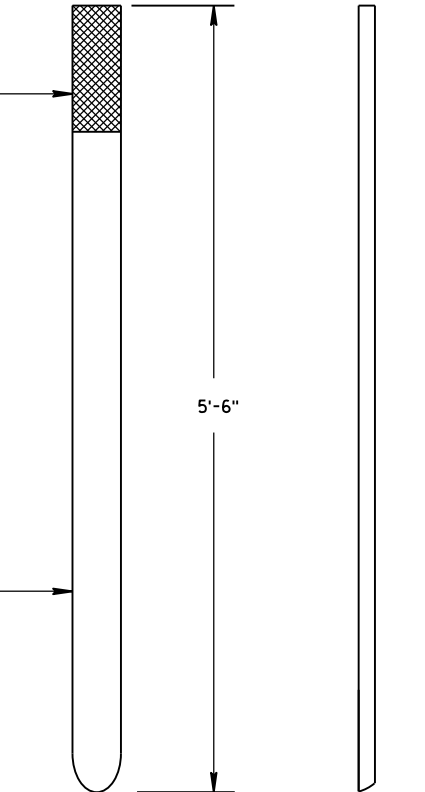
WHEN ROCK IS ENCOUNTERED DURING EXCAVATION, A 12 INCH DIA. POST HOLE EXTENDING 20 INCHES DEEP INTO THE ROCK MAY BE USED IF APPROVED BY THE ENGINEER. GRANULAR MATERIAL SHALL BE PLACED IN THE BOTTOM OF THE HOLE APPROXIMATELY 2 1/2" INCHES DEEP TO PROVIDE DRAINAGE. THE SOIL TUBES SHALL BE FIELD CUT TO LENGTH, PLACED IN THE HOLE AND BACKFILLED WITH ADEQUATELY COMPACTED MATERIAL EXCAVATED FROM THE HOLE.



⑭ **REFLECTIVE SHEETING DETAILS**

TYPE H
YELLOW REFLECTIVE
SHEETING 3" X 9".
SEE STANDARD
SPECIFICATION 637.

E.A.T. MARKER
POST (YELLOW)
SEE APPROVED
PRODUCTS LIST

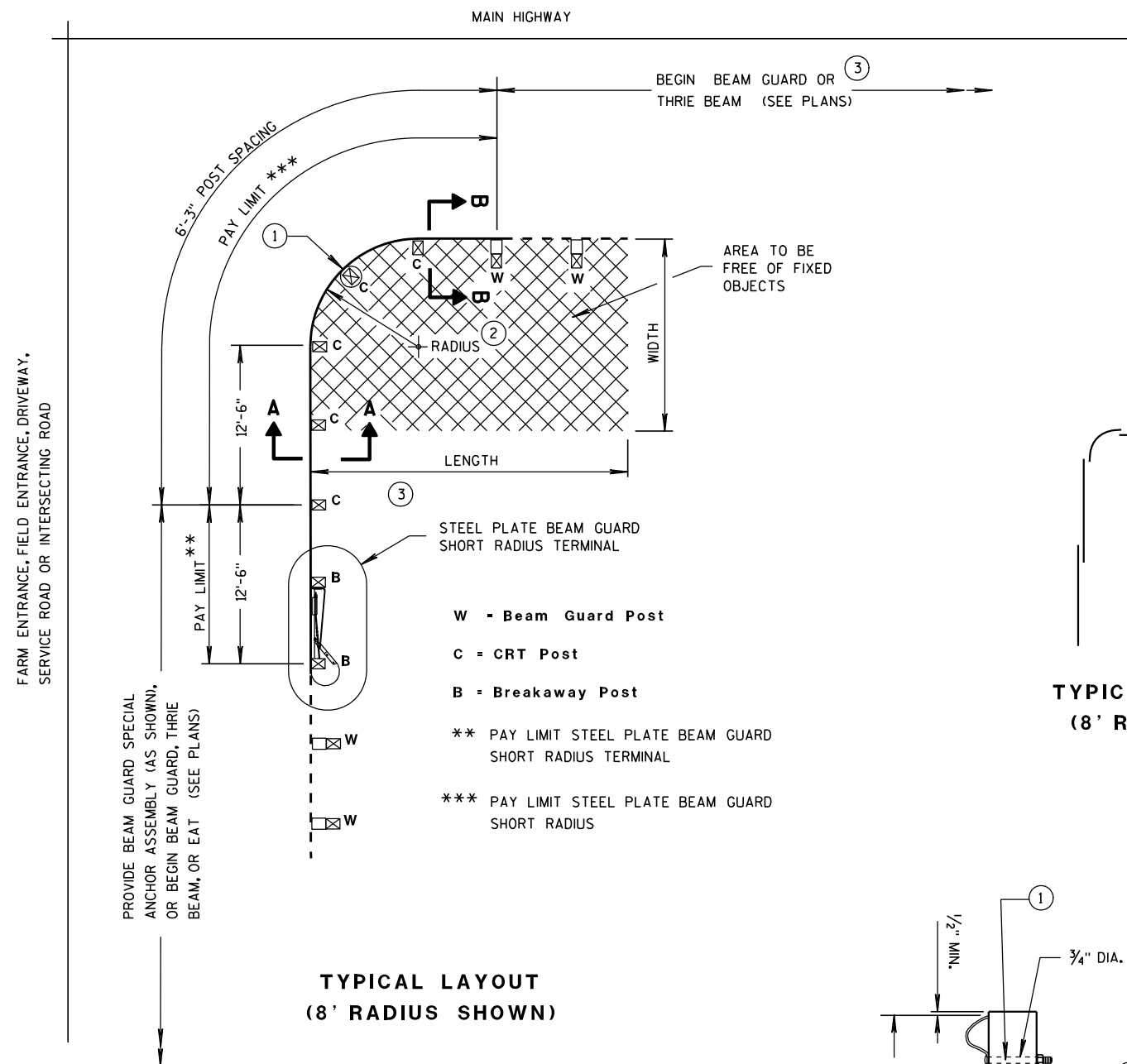


E.A.T. MARKER POST

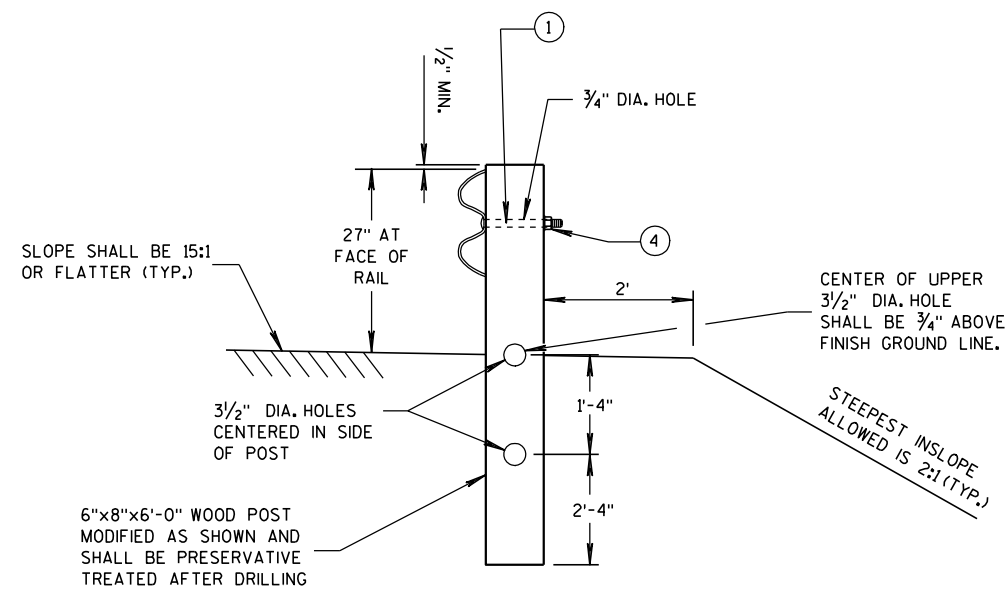
**STEEL PLATE BEAM GUARD
ENERGY ABSORBING TERMINAL**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
June 2017 /S/ Rodney Taylor
DATE ROADWAY STANDARDS 157 ENT
FHWA UNIT SUPERVISOR



**TYPICAL LAYOUT
(8' RADIUS SHOWN)**



**SECTION A-A
(CRT POST)**

STEEL PLATE BEAM GUARD SHORT RADIUS TERMINAL

GENERAL NOTES

ALL ANGLES, CHANNELS, AND PLATES SHALL CONFORM TO THE REQUIREMENTS OF ASTM A36 AND THE STRUCTURAL TUBING SHALL CONFORM TO ASTM A 500. WELDING SHALL MEET THE CURRENT REQUIREMENTS OF THE AMERICAN WELDING SOCIETY STRUCTURAL WELDING CODE ANSI/AWS D1.1. ALL STRUCTURAL STEEL SHALL BE GALVANIZED IN ACCORDANCE WITH ASTM A 123. PUNCHING, DRILLING, CUTTING, OR WELDING WILL NOT BE PERMITTED AFTER GALVANIZING. FURNISH AND INSTALL HARDWARE PER STANDARD SPECIFICATION 614.2, UNLESS NOTED OTHERWISE.

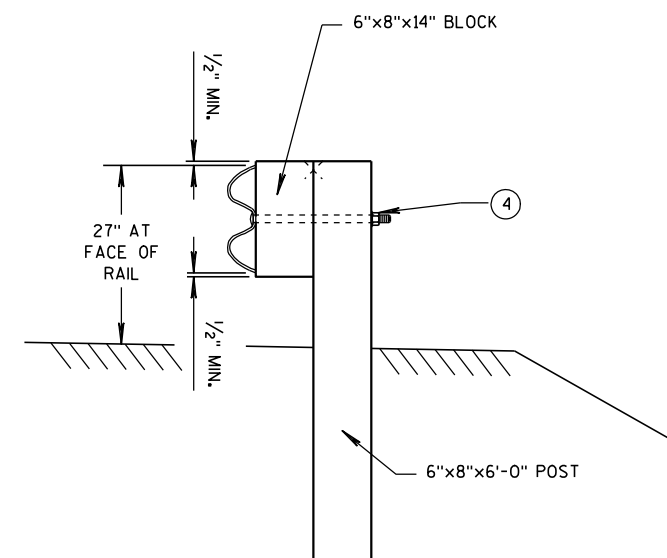
SHOP BEND CURVED RAIL SECTIONS.

SEE STANDARD DETAIL DRAWING 14 B 15 FOR OTHER DETAIL.

- ① ON THE 8 FOOT RADIUS INSTALLATION, DO NOT INSTALL BUTTON HEAD BOLT AT CENTER CRT POST.
- ② RADIUS FROM 8' - 36'. SEE PLAN.
- ③ HEIGHT TRANSITION MAY BE REQUIRED. SEE PLAN OR PROJECT ENGINEER.
- ④ 5/8" ϕ X 1'-6" BUTTON HEAD BOLT AND RECESS NUT WITH ROUND WASHER UNDER NUT.

RADIUS	NUMBER OF CRT POSTS	*NUMBER AND LENGTH OF CURVED RAILS	REQUIRED AREA FREE OF FIXED OBJECTS (LENGTH x WIDTH)
8'	5	1 at 12.5'	25' x 15'
16'	7	1 at 25'	30' x 15'
24'	9	1 at 25' and 1 at 12.5'	40' x 20'
32'	11	2 at 25'	50' x 20'

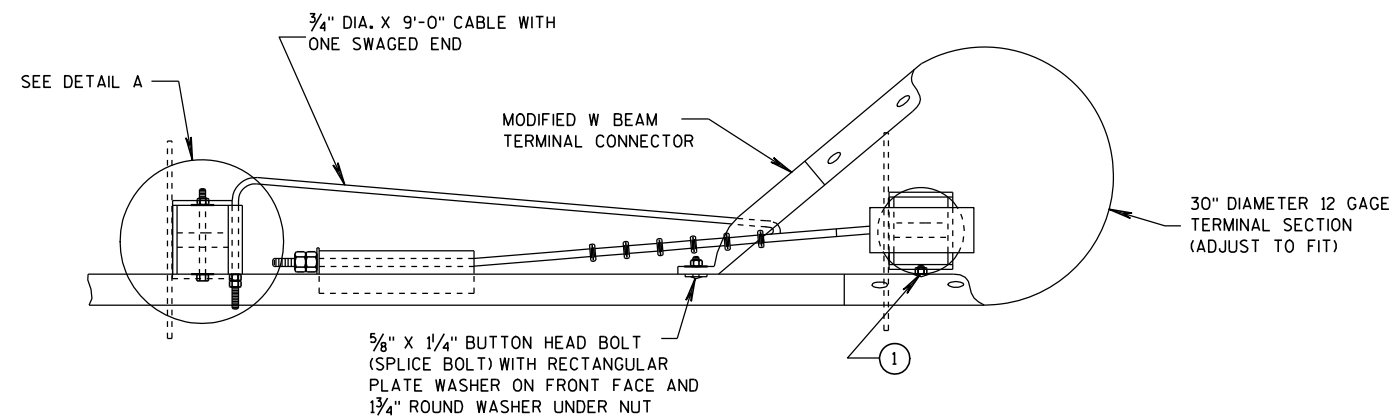
* THE NUMBER OF RAILS IS BASED ON A 90° INTERSECTION. SEE PLAN FOR NON 90° INSTALLATIONS.



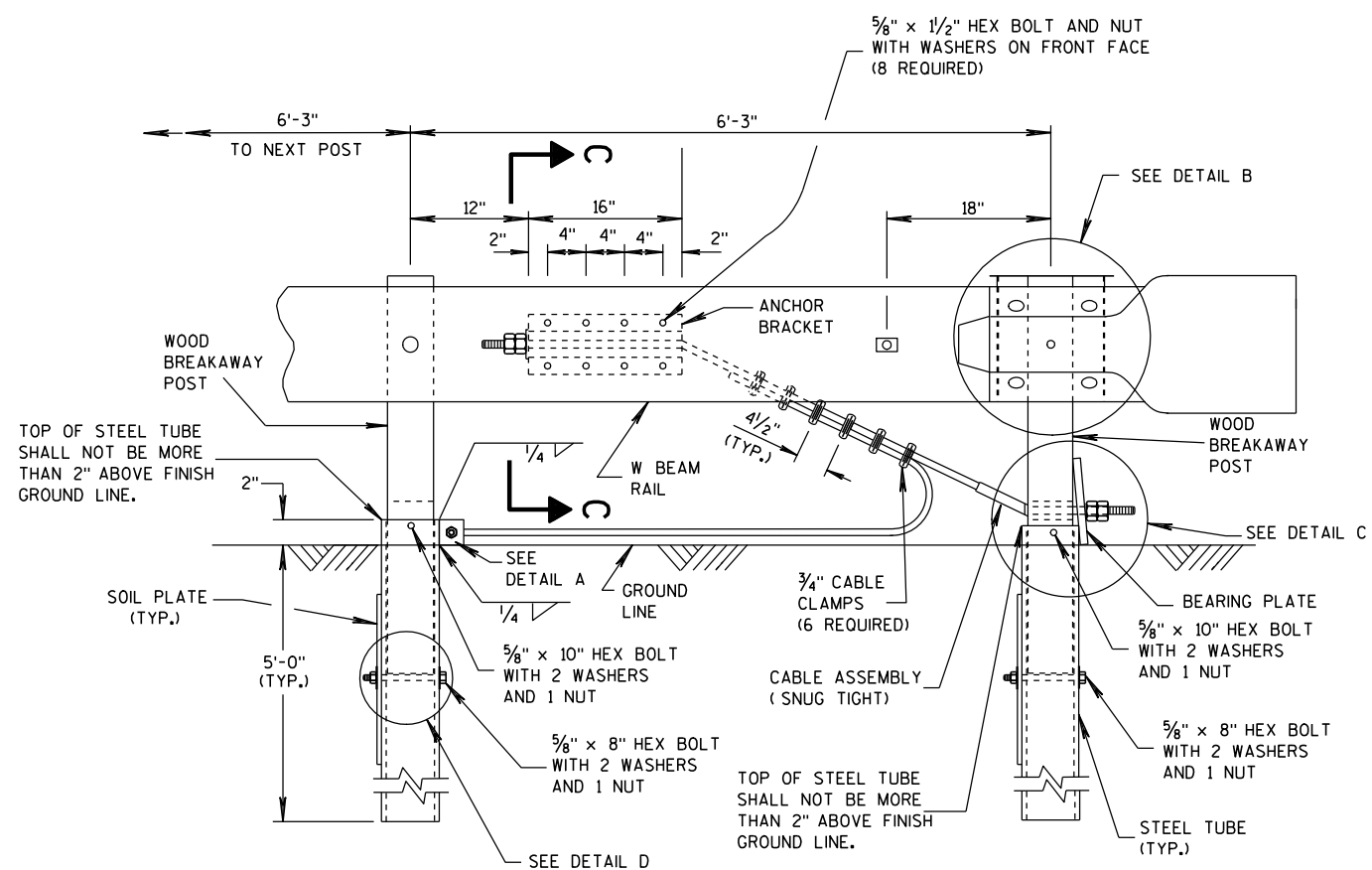
**SECTION B-B
(BEAM GUARD POST)**

**STEEL PLATE BEAM GUARD
SHORT RADIUS TERMINAL**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



PLAN VIEW

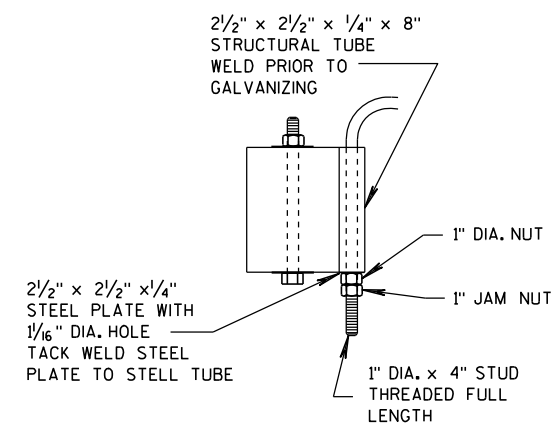


ELEVATION VIEW

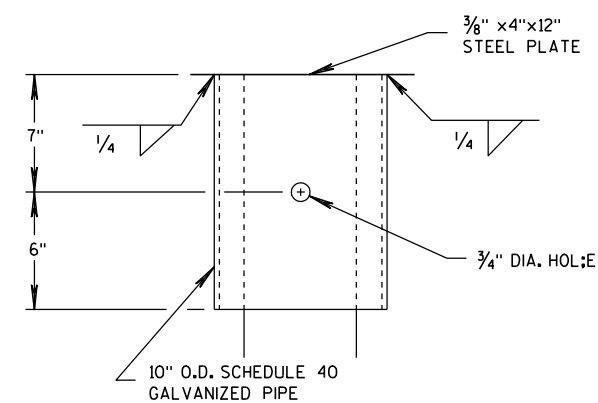
STEEL PLATE BEAM GUARD SHORT RADIUS TERMINAL

GENERAL NOTES

- ① ATTACH W BEAM RAIL TO THE STEEL PIPE WITH A $\frac{5}{8}$ " X 2" BUTTON HEAD BOLT WITH NO WASHER. CONNECTION TO THE POST IS NOT REQUIRED.
- INSTALL GALVANIZED $\frac{3}{4}$ " (6X19) PREFORMED WIRE OR INDEPENDENT WIRE ROPE CORE CONFORMING TO AASHTO M 30. MANUFACTURE WIRE ROPE OUT OF IMPROVED PLOW STEEL WITH A MINIMUM BREAKING STRENGTH OF 42,800 PSI.



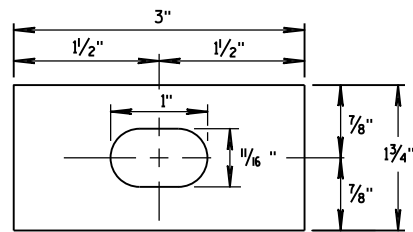
DETAIL A



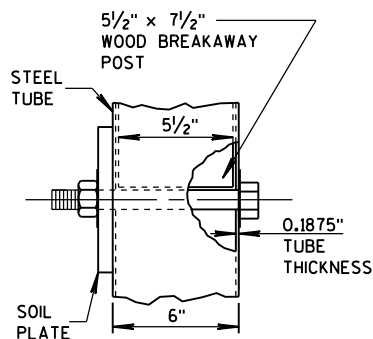
DETAIL B

(BEAM GUARD AND TERMINAL SECTION NOT SHOWN)

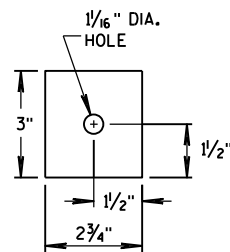
STEEL PLATE BEAM GUARD
SHORT RADIUS TERMINALSTATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



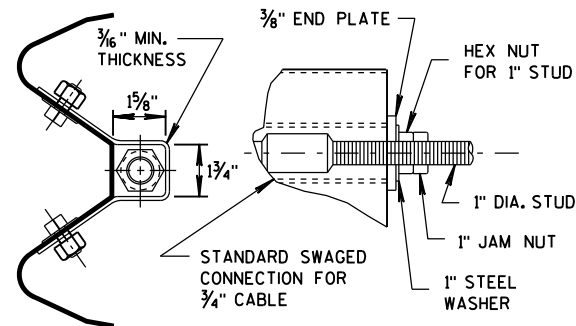
**RECTANGULAR
PLATE WASHER**



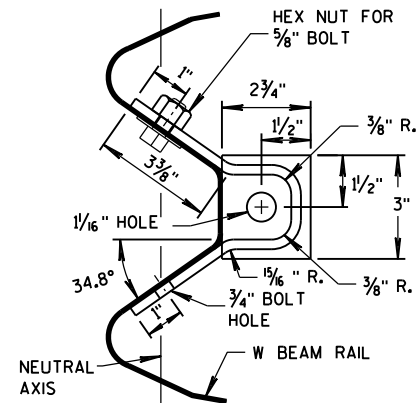
DETAIL D



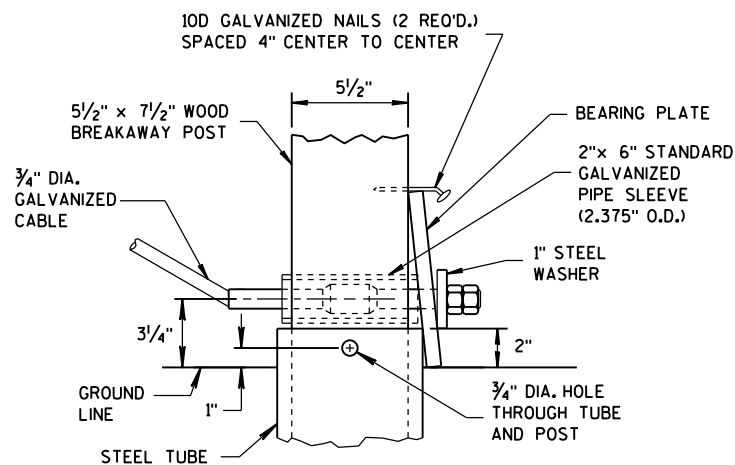
END PLATE



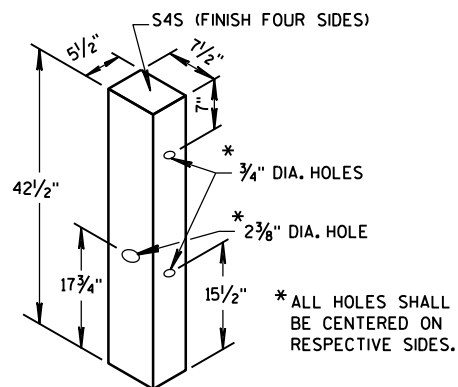
**SECTION C-C
(END PLATE REMOVED)**



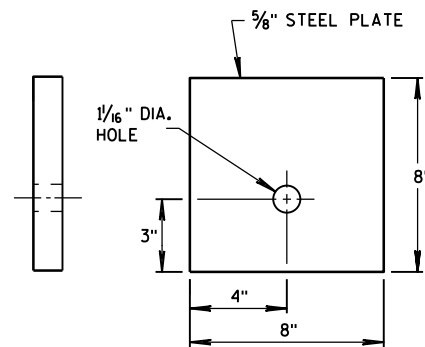
ANCHOR BRACKET



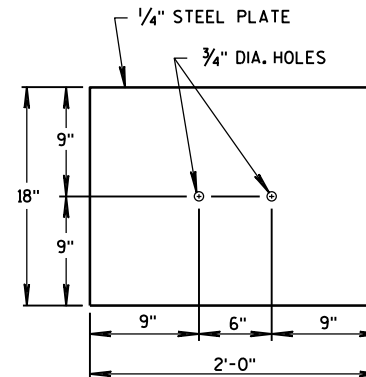
DETAIL C



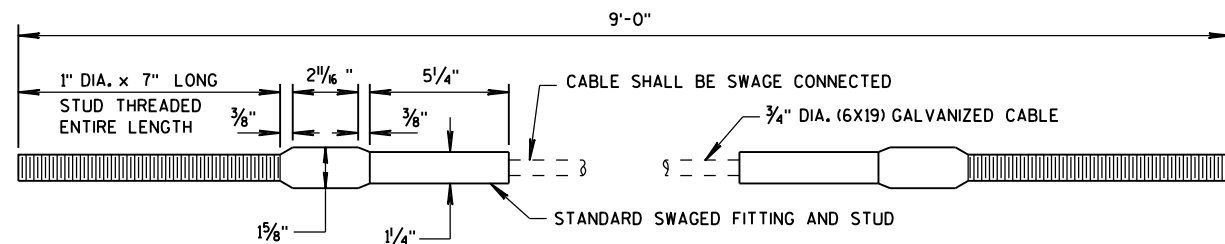
WOOD BREAKAWAY POST



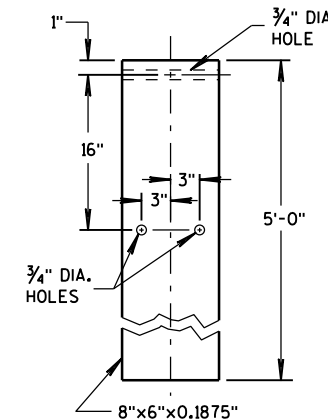
BEARING PLATE



SOIL PLATE



CABLE ASSEMBLY



STEEL TUBE

**STEEL PLATE BEAM GUARD
SHORT RADIUS TERMINAL**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

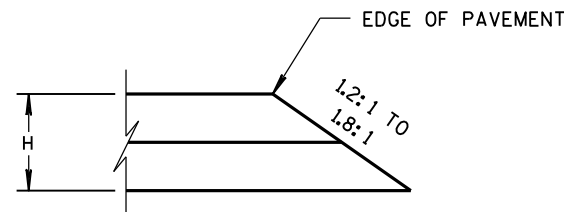
APPROVED

12/18/08
DATE

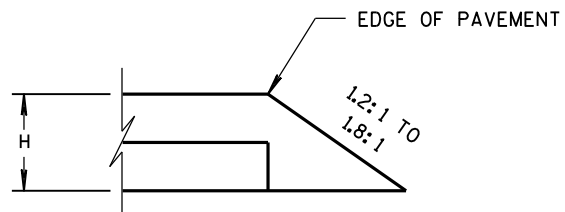
FHWA

/S/ Jerry H. Zogg
ROADWAY STANDARDS ENGINEER

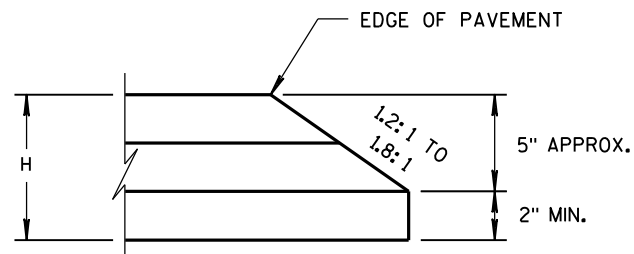
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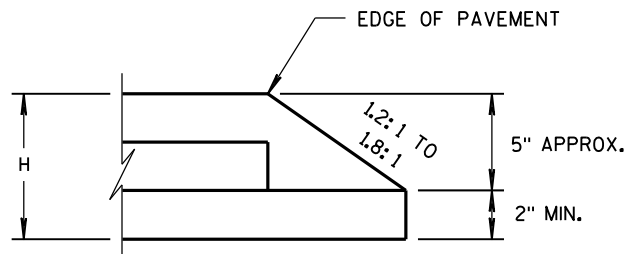
CONSTRUCTED WITH FINAL TWO LAYERS
FOR H 5" OR LESS



CONSTRUCTED WITH FINAL LAYER
FOR H 5" OR LESS

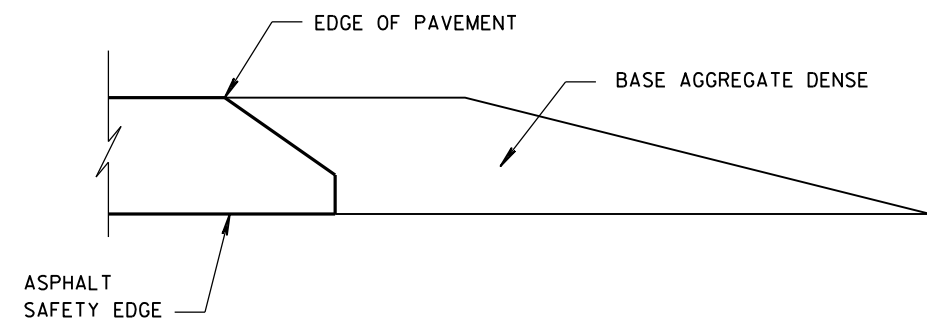


CONSTRUCTED WITH FINAL TWO LAYERS
FOR H GREATER THAN 5"



CONSTRUCTED WITH FINAL LAYER
FOR H GREATER THAN 5"

HMA PAVEMENT AND HMA OVERLAYS



FINISHED SHOULDER AGGREGATE PLACEMENT

SAFETY EDGE_{SM}

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

11/30/2012
DATE

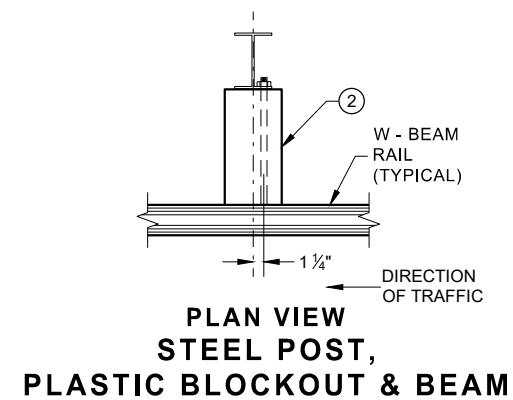
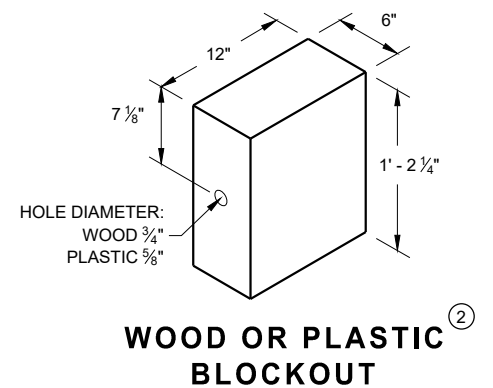
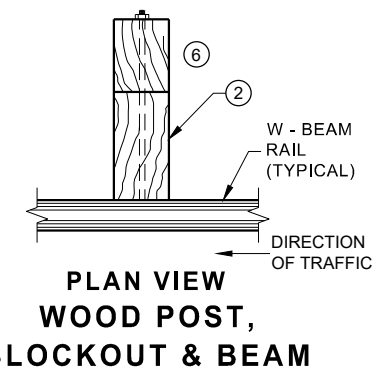
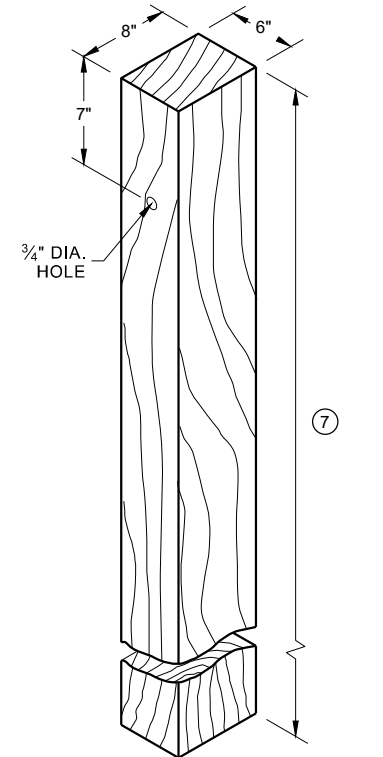
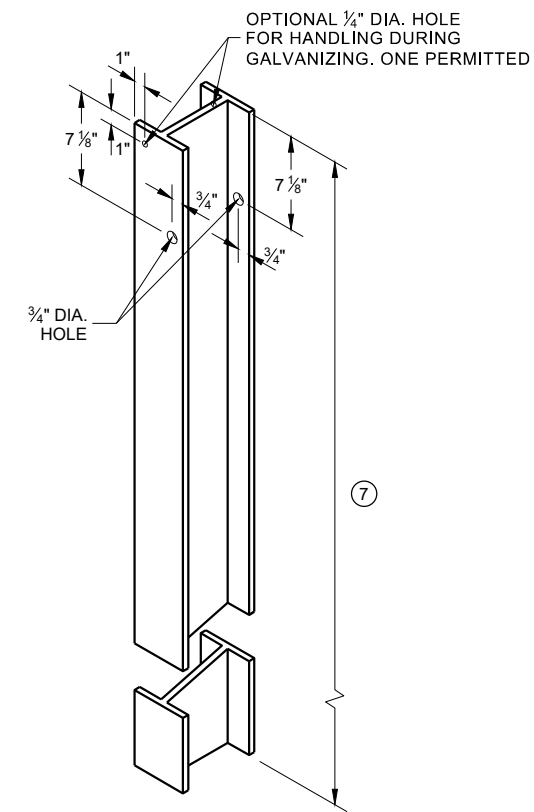
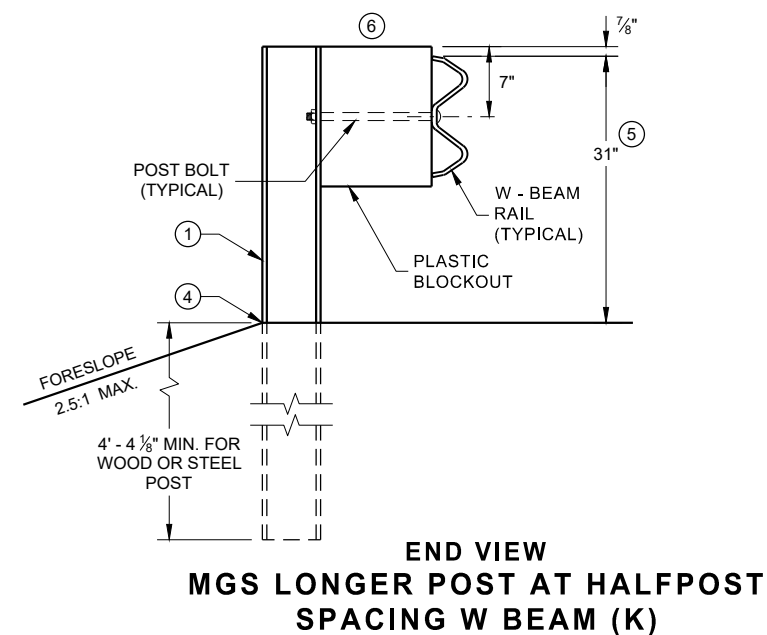
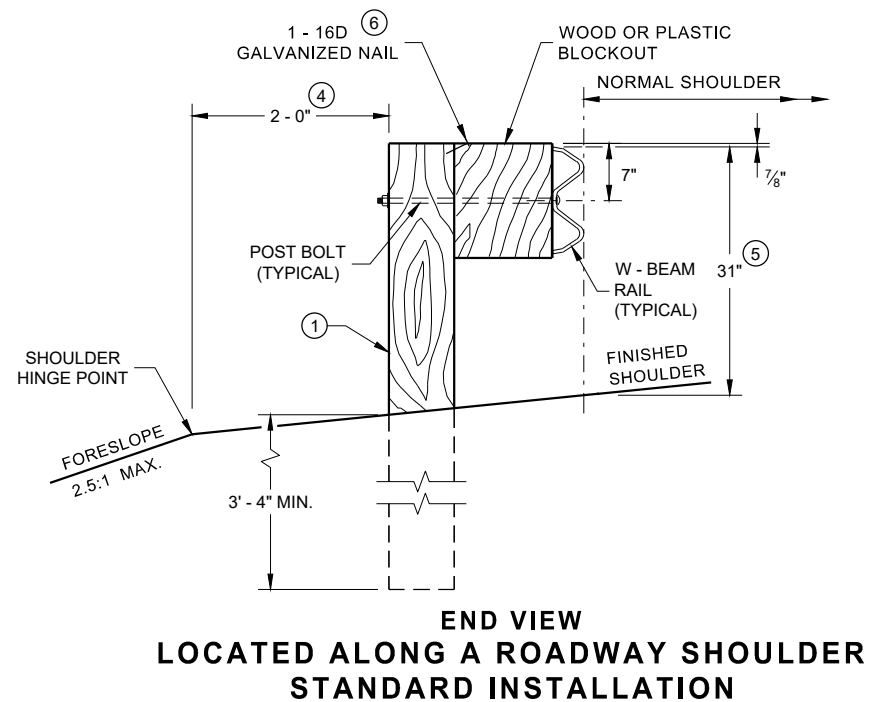
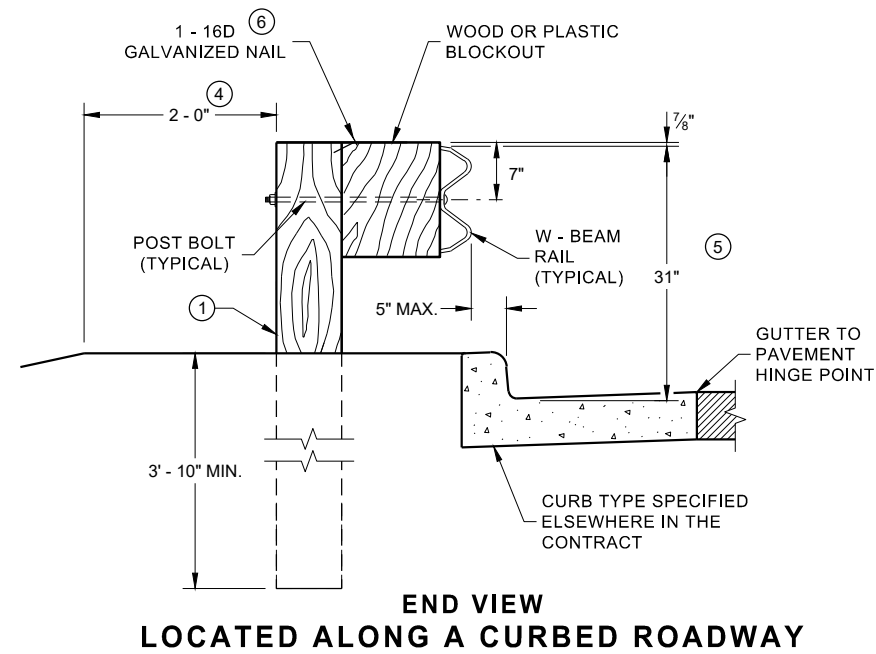
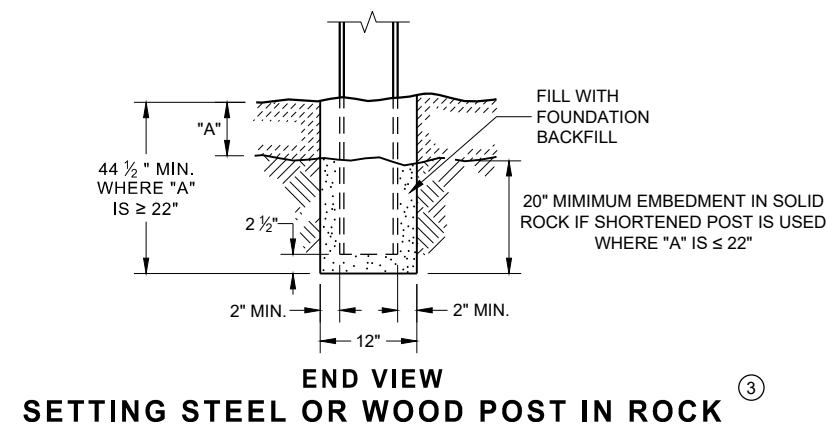
FHWA

/s/ Jerry H. Zoaga
ROADWAY STANDARDS
ENGINEER

161

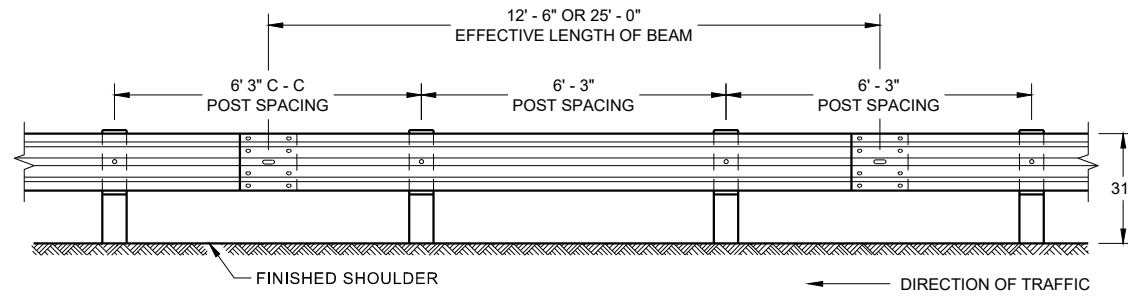
ENT

- ① WOOD OR STEEL POSTS (w6X9 OR w6X8.5) MAY BE USED. DO NOT INTERMIX WOOD AND STEEL POSTS. INSTALL STEEL POSTS WITH HOLES ON APPROACHING TRAFFIC SIDE.
- ② USE WOOD OR APPROVED PLASTIC BLOCKOUTS. WOOD BLOCKOUTS MAY BE CONSTRUCTED OUT OF TWO OR MORE WOOD BLOCKOUTS. SEE ALTERNATE WOOD BLOCKOUT DETAIL. DIMENSIONS OF APPROVED PLASTIC BLOCKOUTS MAY VARY.
- ③ IF ROCK IS ENCOUNTERED DURING EXCAVATION, PROVIDE A HOLE 12 INCHES IN DIAMETER EXTENDING 20 INCHES DEEP INTO THE ROCK. PLACE APPROXIMATELY 2 1/2" INCHES OF GRANULAR MATERIAL IN THE BOTTOM OF THE HOLE. CUT THE POSTS THE TO LENGTH AND INSTALL. BACKFILL WITH EXCAVATED MATERIAL AND COMPACT. BACKFILL IS TO BE FREE OF LARGE ROCKS.
- ④ WHEN THE DISTANCE FROM BACK OF POST TO SHOULDER HINGE POINT IS LESS THAN 2 FEET INSTALL LONGER POST AT HALF POST SPACING (K).
- ⑤ FOR NEW MGS INSTALLATION TOP OF W-BEAM RAIL TOLERANCE IS $\pm 1"$. FOR EXISTING MGS INSTALLATION TOP OF W-BEAM IS BETWEEN 27 3/4" TO 32".
- ⑥ WHEN USING STEEL POST AND WOOD BLOCKOUTS INSTALL FOUR 16D GALVANIZED NAILS. INSTALL NAILS AT THE BACK CORNERS OF THE BLOCK AND BEND THE NAILS OVER THE FLANGE OF THE STEEL POST.
- ⑦ TOTAL POST LENGTH FOR TYPE K IS 7' - 0". TOTAL POST LENGTH FOR OTHER MGS TYPES IS 6' - 0".

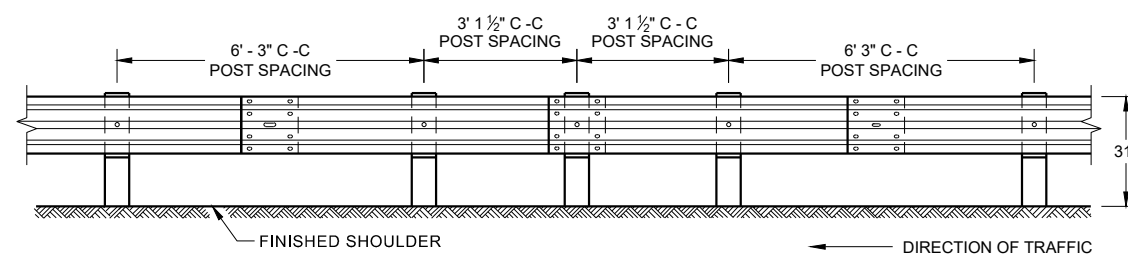


**MIDWEST GUARDRAIL SYSTEM
(MGS) GUARDRAIL**

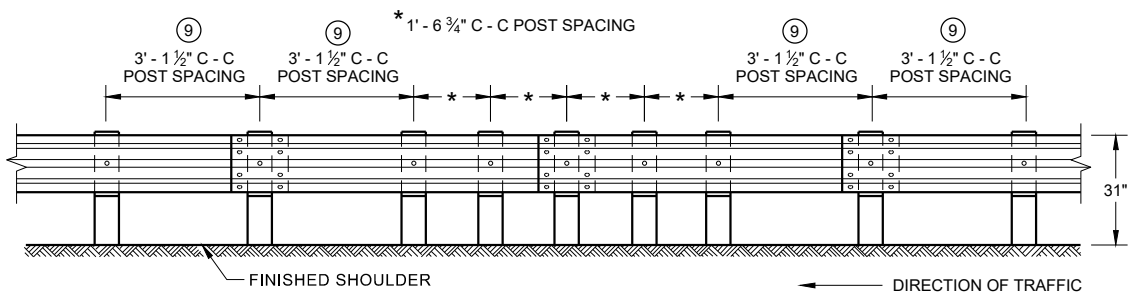
STATE OF WISCONSIN
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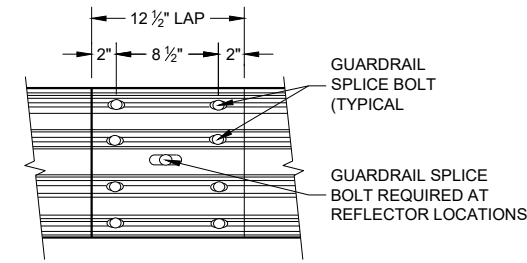
**FRONT VIEW
POST SPACING STANDARD INSTALLATION**



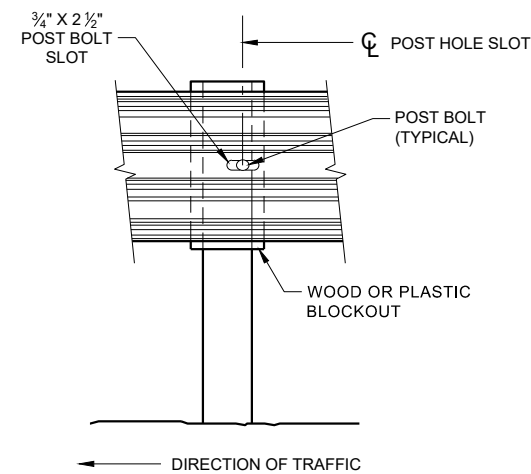
**FRONT VIEW
HALF POST SPACING (HS) AND
HALF POST SPACING WITH LONGER POSTS (K)**



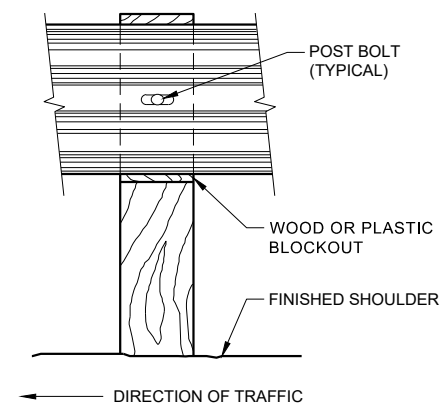
**FRONT VIEW
QUARTER POST SPACING (QS)**



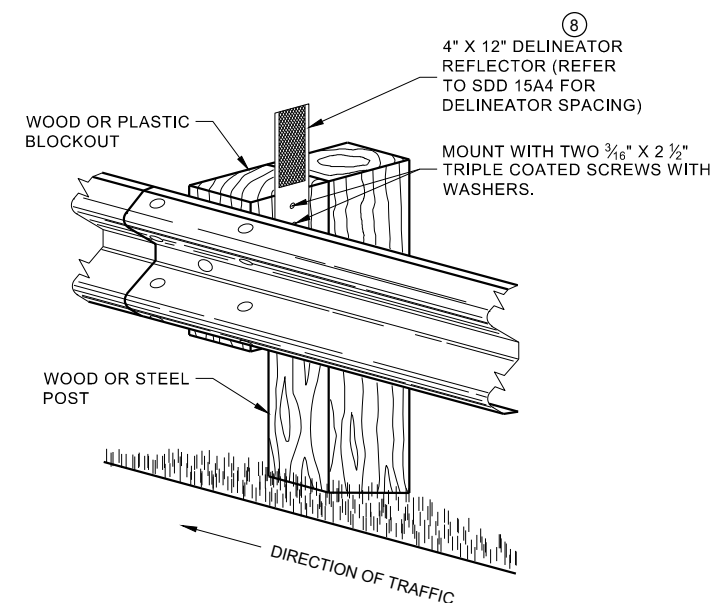
**FRONT VIEW
MID-SPAN BEAM SPLICE**



FRONT VIEW AT STEEL POST



FRONT VIEW AT WOOD POST



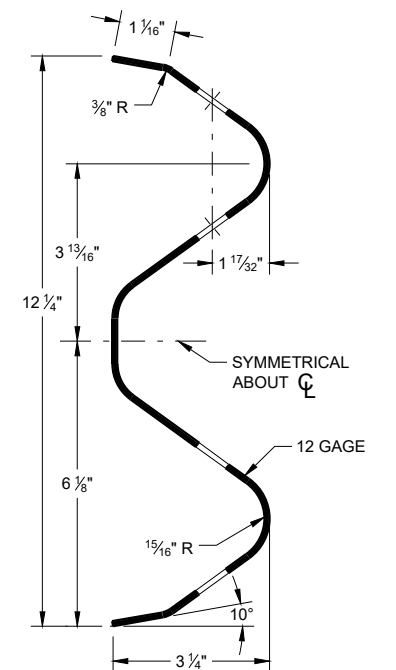
**ONE SIDED REFLECTOR DETAIL
AND TYPICAL INSTALLATION**

GENERAL NOTES

- 8 DO NOT INSTALL REFLECTORS ON THE FIRST 50 FEET OF THE APPROACH END OF THE ENERGY ABSORBING TERMINAL.
- 9 25 FEET OF HALF POST SPACING IS REQUIRED ON APPROACH AND DEPARTURE ENDS OF QUARTER POST SPACING.

POST BOLTS ARE A 3/8" DIAMETER ASTM A307 GUARDRAIL BOLT. A POST BOLT REQUIRES 3/8" DIAMETER A563A DOUBLE RECESSED (DR) HEAVY HEX NUT AND 3/8" DIAMETER F844 FLAT WASHER. POST BOLTS MAY BE LONGER IF MULTIPLE BLOCKOUTS ARE BEING USED.

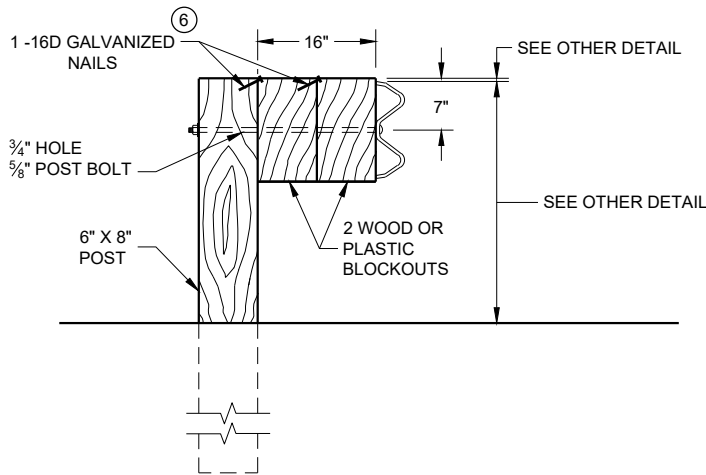
GUARD RAIL SPLICE BOLTS ARE A 3/8" DIAMETER ASTM A307 GUARDRAIL HEAD BOLT. A GUARDRAIL SPLICE BOLT REQUIRES 3/8" DIAMETER A563A DOUBLE RECESSED (DR) HEAVY HEX NUT.



SECTION THRU W-BEAM RAIL

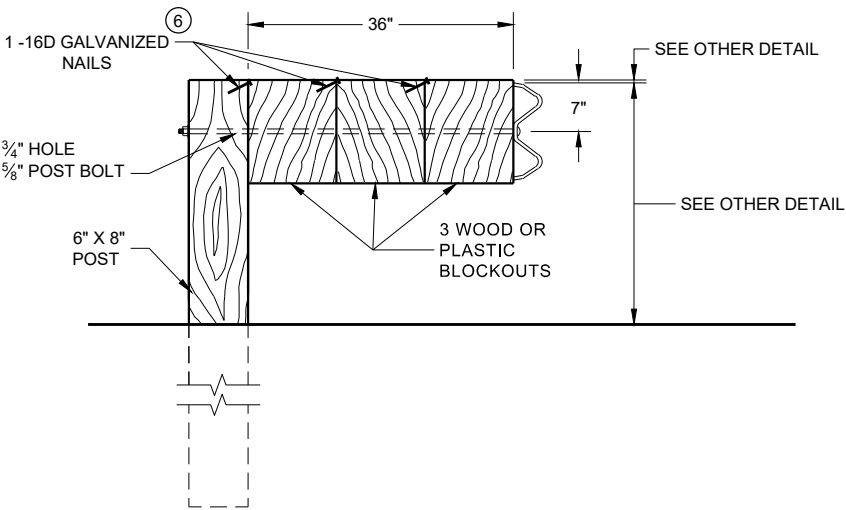
**MIDWEST GUARDRAIL SYSTEM
(MGS) GUARDRAIL**

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DETAIL FOR 16" BLOCKOUT DEPTH

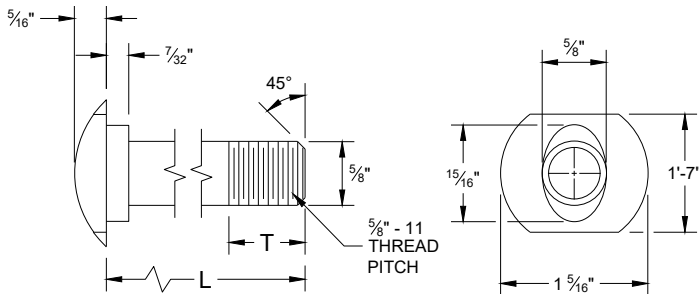
IT IS ACCEPTABLE TO USE BLOCKOUTS UP TO 16" DEEP TO INCREASE THE POST OFFSET TO AVOID UNDERGROUND OBSTACLES. THERE IS NO LIMIT TO THE NUMBER OF POSTS THAT CAN HAVE ADDITIONAL BLOCKOUTS UP TO 16" DEEP.



DETAIL FOR 36" BLOCKOUT DEPTH

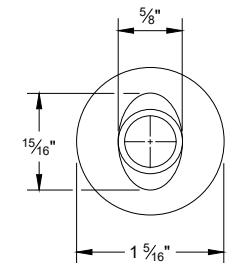
NOTES: UNDER SPECIAL CIRCUMSTANCES, SUCH AS AVOIDING OBSTACLES THAT ARE NOT RELOCATED, IT IS ACCEPTABLE TO INSTALL ADDITIONAL BLOCKOUTS TO OBTAIN UP TO 36" DEPTH FOR ONE OR TWO POSTS IN A SECTION OF GUARDRAIL.
DO NOT USE 16" OR 36" BLOCKOUTS IF IT CAUSES THE POST TO BE DRIVEN BEYOND SHOULDER HINGE POINT OR CAUSES A FIXED OBJECT TO BE WITHIN THE DEFLECTION DISTANCE OF THE BARRIER.

- NOTE:
- 1. ALL FILLETS SHALL HAVE A MINIMUM RADIUS OF 3/16".
 - 2. IF THE BOLT EXTENDS MORE THAN 1/4" FROM THE NUT THE BOLT SHOULD BE TRIMMED BACK.

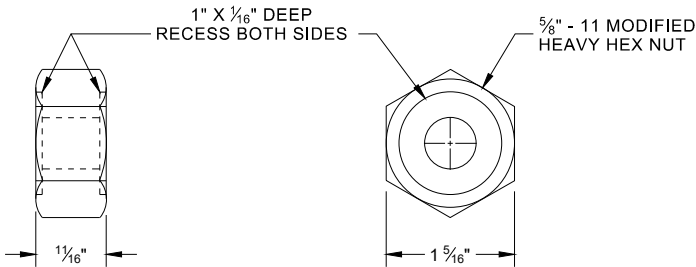


POST BOLT TABLE

L	T (MIN.)
1 1/4"	1 1/8"
2"	1 3/4"
10"	4"
14"	4 1/16"
18"	4"
21"	4 1/16"
25"	4"

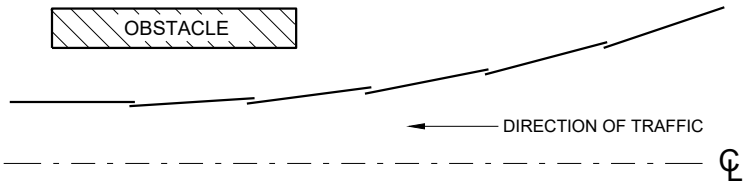


ALTERNATE BOLT HEAD

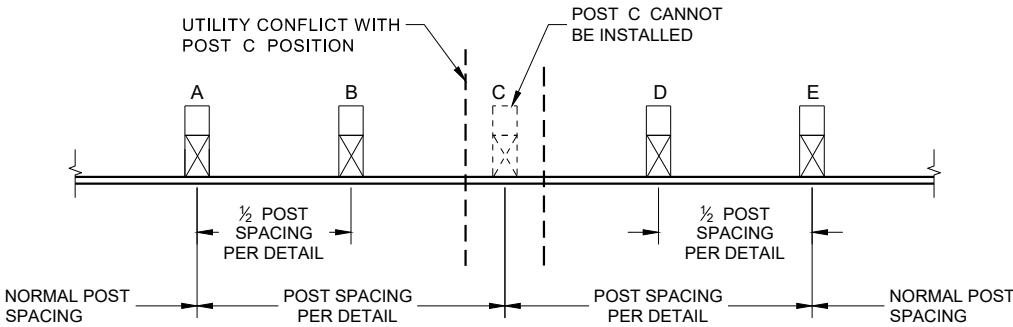


POST BOLT, SPLICE BOLT AND RECESS NUT

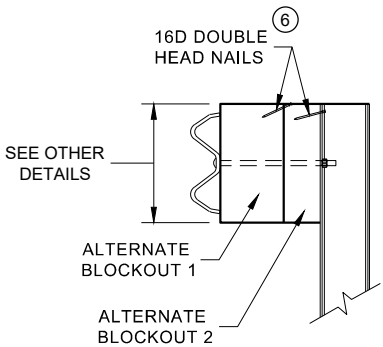
- 6 WHEN USING STEEL POST AD WOOD BLOCKOUTS, INSTALL FOUR 16D GALVANIZED NAILS. INSTALL NAILS AT THE BACK CORNERS OF THE BLOCK AND BEND THE NAILS OVER THE FLANGE OF THE STEEL POST.



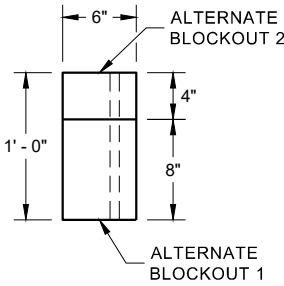
PLAN VIEW
BEAM LAPPING DETAIL



POST DRIVING FOR CONTINUOUS
UNDERGROUND OBSTRUCTION



SIDE VIEW

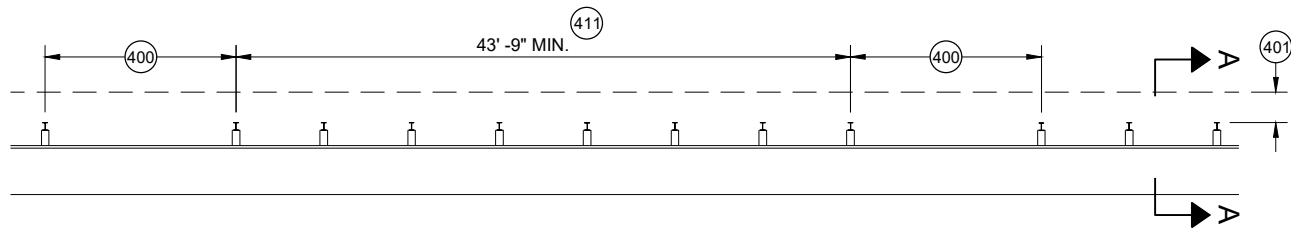


PLAN VIEW

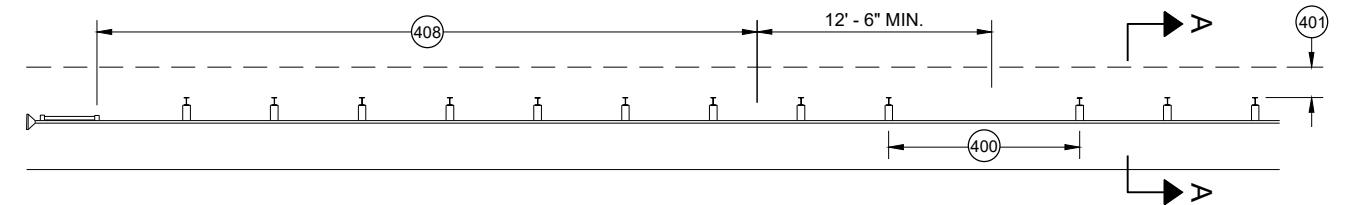
ALTERNATE WOOD
BLOCKOUT DETAIL

MIDWEST GUARDRAIL SYSTEM
(MGS) GUARDRAIL

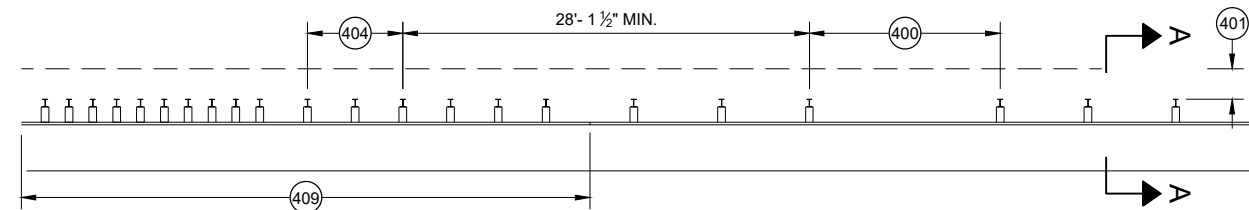
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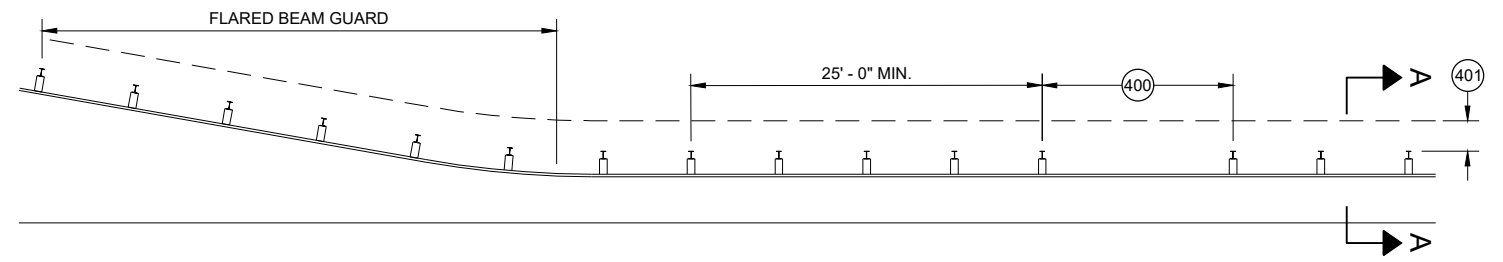
MISSING POST IN MGS GUARDRAIL



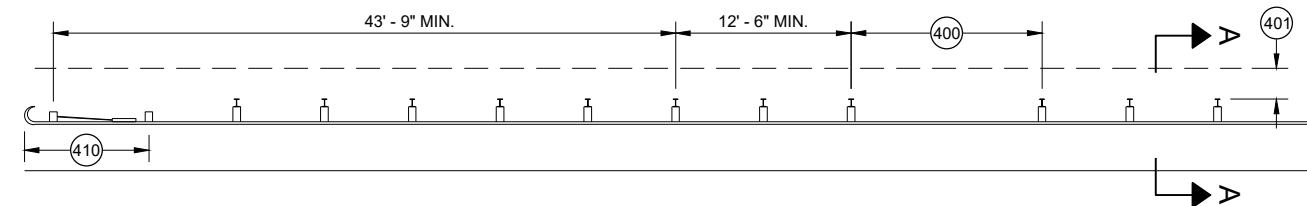
MISSING POST IN MGS GUARDRAIL NEAR EAT



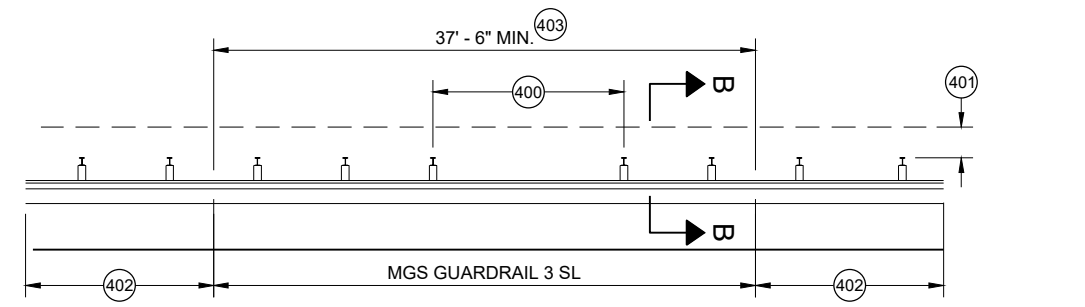
MISSING POST IN MGS GUARDRAIL NEAR AN APPROACH TRANSITION



MISSING POST IN MGS GUARDRAIL NEAR FLARED BEAM GUARD

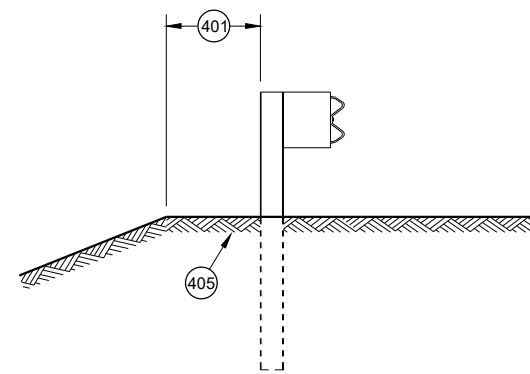


MISSING POST IN MGS GUARDRAIL NEAR A TYPE 2 END TERMINAL

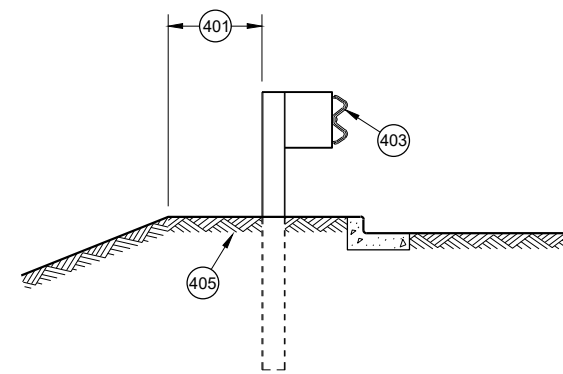


MISSING POST IN SHORT SPAN MGS GUARDRAIL NEAR CURB (SL)

- (400) MAX SPAN 12' - 6"
- (401) 2' MIN.
- (402) MGS GUARDRAIL 3
- (403) NESTING BEAM GUARD
- (404) ASYMMETRIC TRANSITION
- (405) SOIL WELL DRAINED AND COMPACTED
- (406) SEE OTHER DRAWINGS IN THIS SDD
- (407) SEE OTHER DRAWINGS FOR MIN. SPACING BETWEEN SPANS
- (408) SEE SDD 14B44
- (409) SEE SDD 14B45
- (410) SEE SDD 14B47
- (411) MINIMUM DISTANCE BETWEEN MISSING POST SPANS.



SECTION A - A



SECTION B - B

**MIDWEST GUARDRAIL SYSTEM
(MGS) GUARDRAIL**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
May 2021
DATE
/S/ Rodney Taylor
ROADWAY STANDARDS DEVELOPMENT
UNIT SUPERVISOR

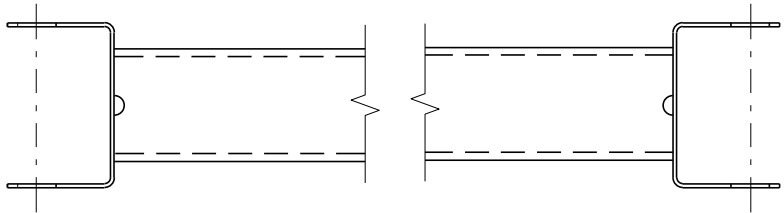
FHWA

- (A) THE SLOPE IN THE AREA BOUNDED BY THE GRADELINE, THE HINGE POINT LINE (HPL) AND THE CLEAR ZONE LIMITS (CZL) SHALL BE 4:1 OR FLATTER.
- (B) AFTER FINAL ASSEMBLY, RECHECK CABLE TO BE SURE IT IS TAUT AND HAS NOT RELAXED
- (C) DIFFERENT MANUFACTURERS REQUIRE DIFFERENT PERFORATED W - BEAM RAIL END PANELS. SEE MANUFACTURER'S INFORMATION.
- (D) ATTACH ALUMINUM SHEET TO E.A.T. HEAD USING 4 STAINLESS STEEL SELF - TAPPING SCREWS, ONE SCREW PER CORNER.
- (E) HARDWARE MAY VARY BETWEEN MANUFACTURER. SEE MANUFACTURER'S DRAWING FOR INFORMATION.

DIMENSIONS MAY VARY, MANUFACTURER'S INFORMATION.

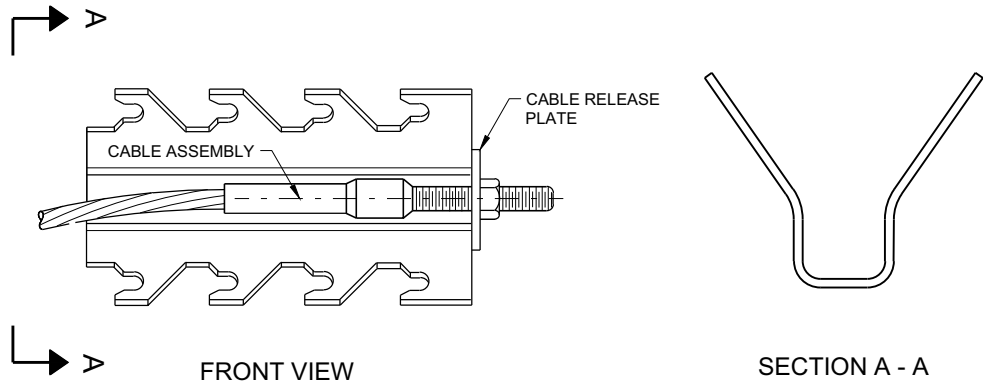
THE CENTER OF THE UPPER 3 1/2" DIAMETER HOLE ON POST NUMBER 3 THROUGH POST 9 IS TO BE FLUSH WITH THE GROUND LINE UP TO A MAXIMUM OF 2" ABOVE GROUND LINE. WOOD BLOCKS ON POSTS NUMBERED 3 THROUGH 9 MAY BE ADJUSTED UP TO 3" ABOVE THE TOP OF POST.

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION 166

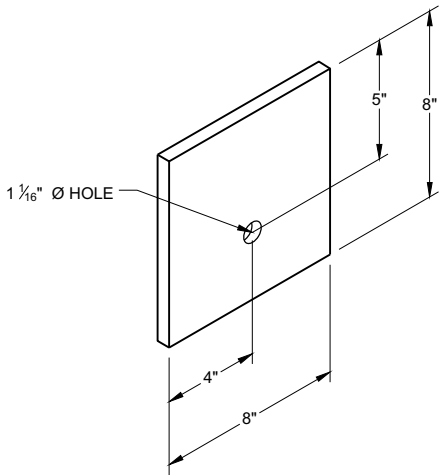


GENERIC GROUND STRUT⁹ ^E

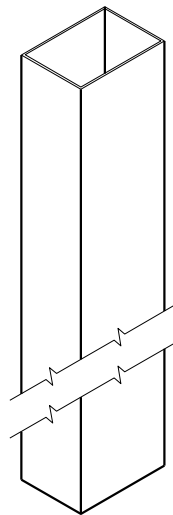
BILL OF MATERIALS	
PART NO.	DESCRIPTION MATERIALS PROVIDED BY MGS EAT MANUFACTURER. SEE MANUFACTURER'S DETAILS FOR MORE INFORMATION.
①	UPPER POST NO. 1 6" X 6" TUBE
②	LOWER POST NO. 1
③	WOOD CRT
④	WOOD BLOCKOUT
⑤	PIPE SLEEVE
⑥	BEARING PLATE
⑦	BCT CABLE ASSEMBLY
⑧	ANCHOR CABLE BOX
⑨	GROUND STRUT
⑩	PERFORATED W-BEAM RAIL END PANEL, 12'-6" LONG.
⑪	STANDARD W-BEAM RAIL. MULTIPLE SECTIONS REQUIRED. SECTIONS VARY IN LENGTH.
⑫	IMPACT HEAD
⑬	EAT MARKER POST - YELLOW (SEE APPROVED PRODUCTS LIST)
⑭	SOIL PLATE
⑮	UPPER POST NO. 2
⑯	LOWER POST NO. 2



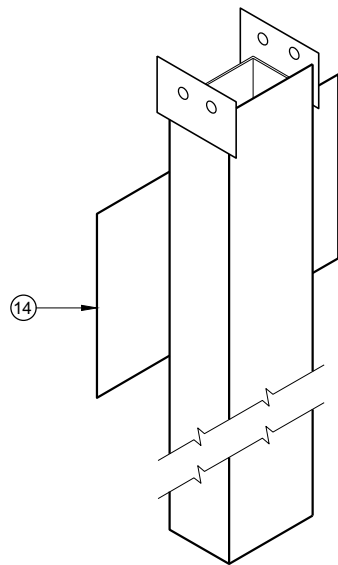
GENERIC ANCHOR CABLE BOX⁹ ^E



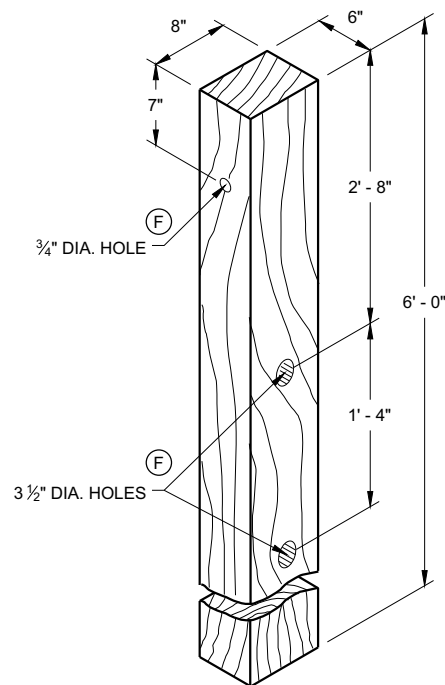
BEARING PLATE⁶ ^E



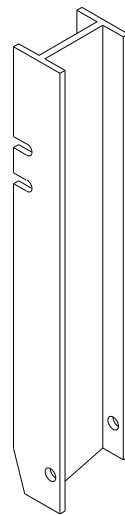
UPPER POST NO. 1 ⁽¹⁾ (E)



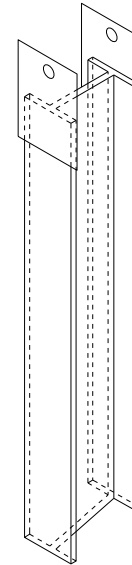
LOWER POST NO. 1 ⁽²⁾ (E)



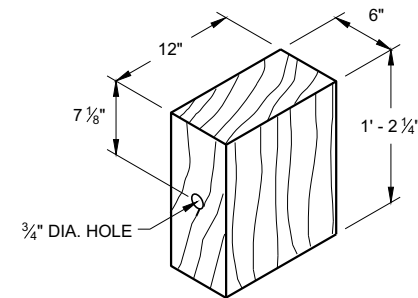
WOOD CRT POST ⁽³⁾ (E)
POSTS NUMBER 3-9



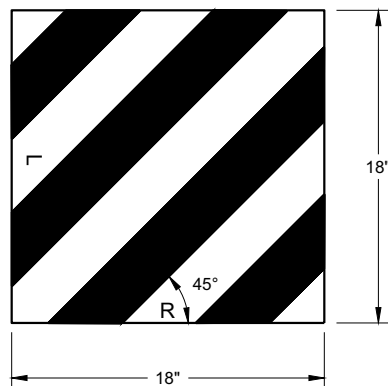
UPPER POST NO. 2 ⁽¹⁵⁾ (E)



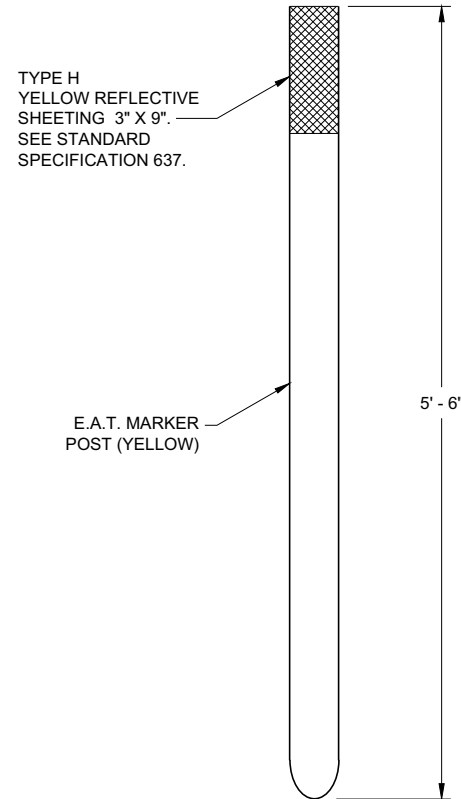
LOWER POST NO. 2 ⁽¹⁶⁾ (E)



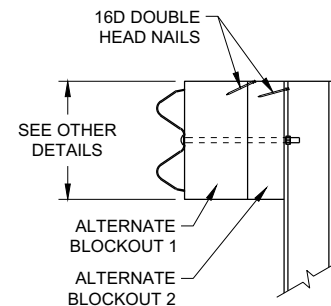
WOOD BLOCKOUT ⁽⁴⁾
REQ'D. AT ALL POSTS EXCEPT POST NO'S 1 & 2



REFLECTIVE SHEETING DETAIL ^(E)

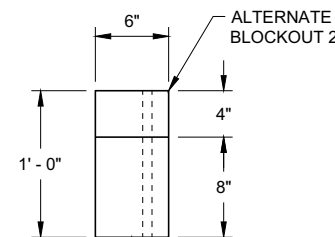


E.A.T. MARKER POST ⁽¹³⁾



SIDE VIEW

ALTERNATE WOOD
BLOCKOUT DETAIL

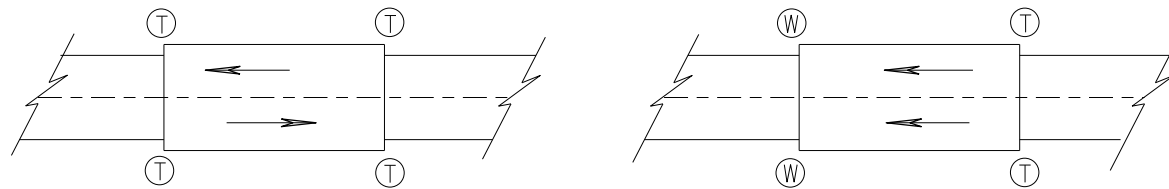


TOP VIEW

**MIDWEST GUARDRAIL SYSTEM
ENERGY ABSORBING TERMINAL
(MGS)**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
7/2018
DATE
/S/ Rodney Taylor
ROADWAY STANDARDS DEVELOPMENT
UNIT SUPERVISOR 168
FHWA



TWO WAY TRAFFIC

ONE WAY TRAFFIC

(T) THRIE BEAM CONNECTION

(W) W-BEAM CONNECTION WHEN REQUIRED

TYPICAL LOCATIONS OF THRIE BEAM AND W-BEAM CONNECTIONS TO BRIDGE

GENERAL NOTES

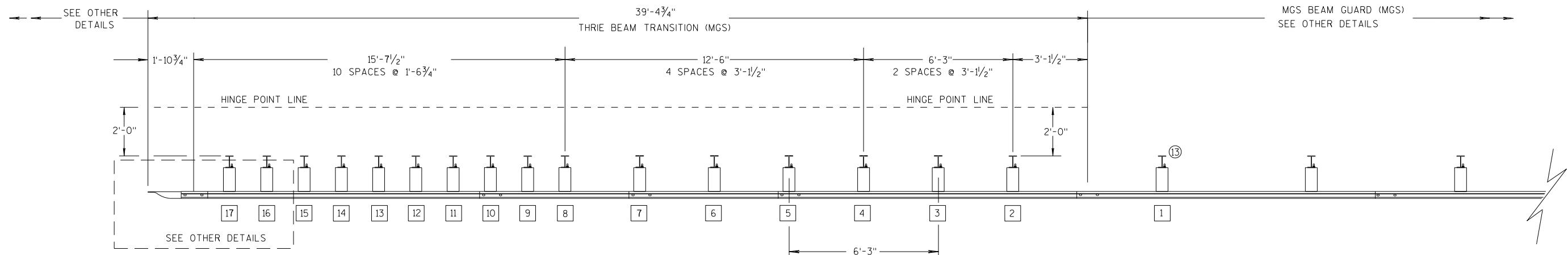
IF ROCK IS ENCOUNTERED, REMOVE ROCK TO FULL DEPTH OF POST PLUS 2 1/2", AND 12" DIAMETER AROUND POST. SEE 14B42 FOR MORE DETAILS.

TRANSITION USES STEEL POSTS ONLY.

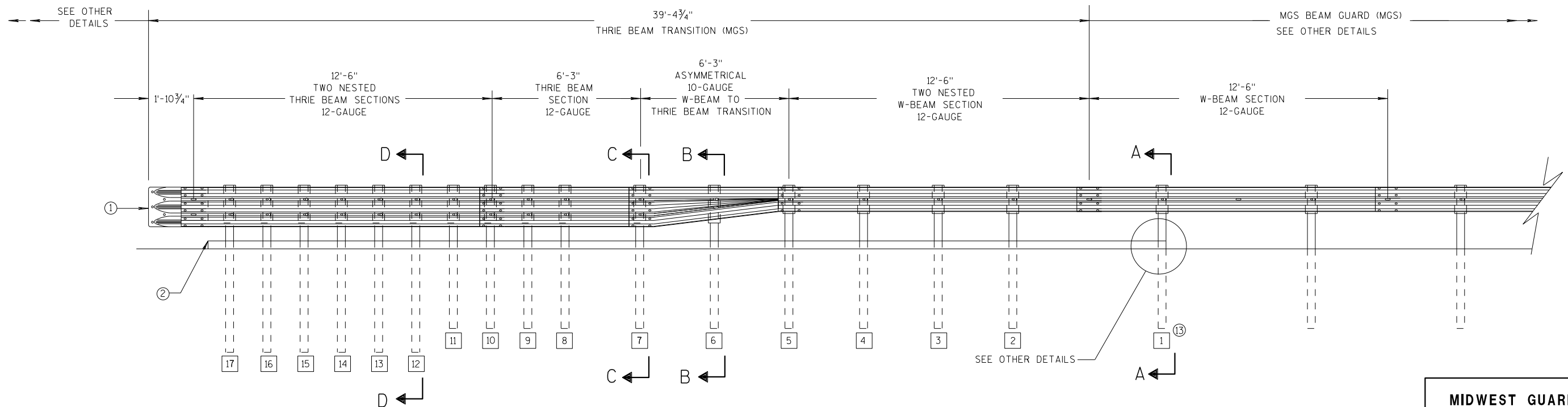
SEE STANDARD DETAIL DRAWING 14 B 42 FOR MORE INFORMATION.

POST 2 THROUGH 17 USES STEEL POST ONLY

- ① BRIDGE RAILING TYPE "W" DOES NOT REQUIRE A TERMINAL CONNECTOR.
- ② OPTIONAL CURB AND GUTTER OR DRAINAGE FEATURE SEE PLAN FOR INFORMATION.
- ⑬ STEEL OR WOOD POST IS ACCEPTABLE AT POST 1. SEE SDD14B42



PLAN VIEW



ELEVATION VIEW

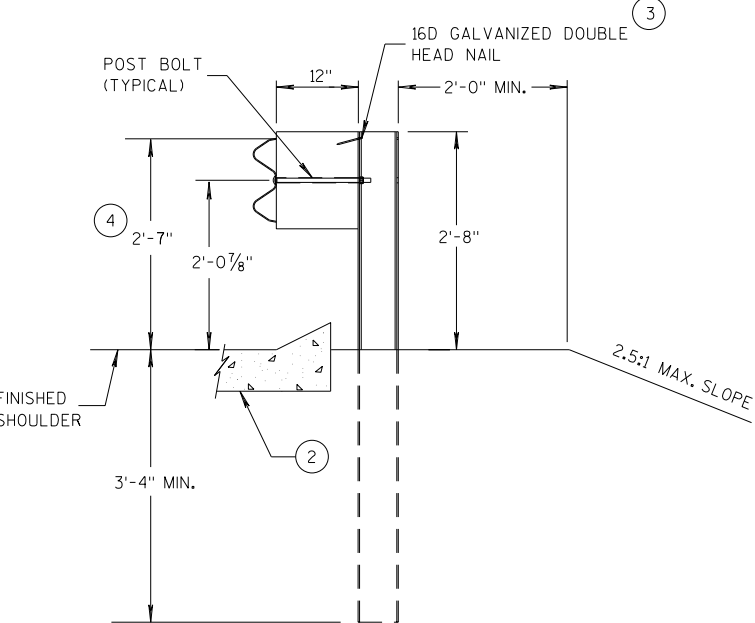
MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION

**MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)**

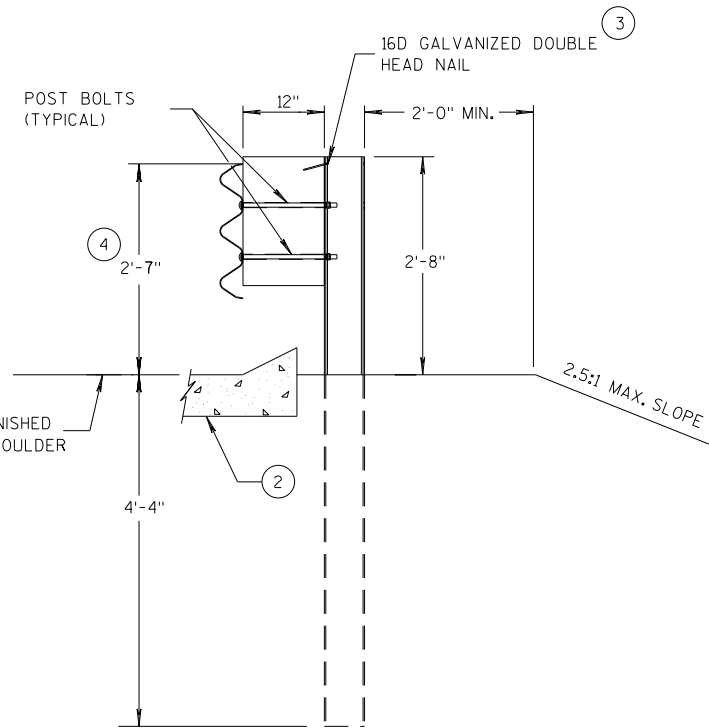
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION 169

GENERAL NOTES

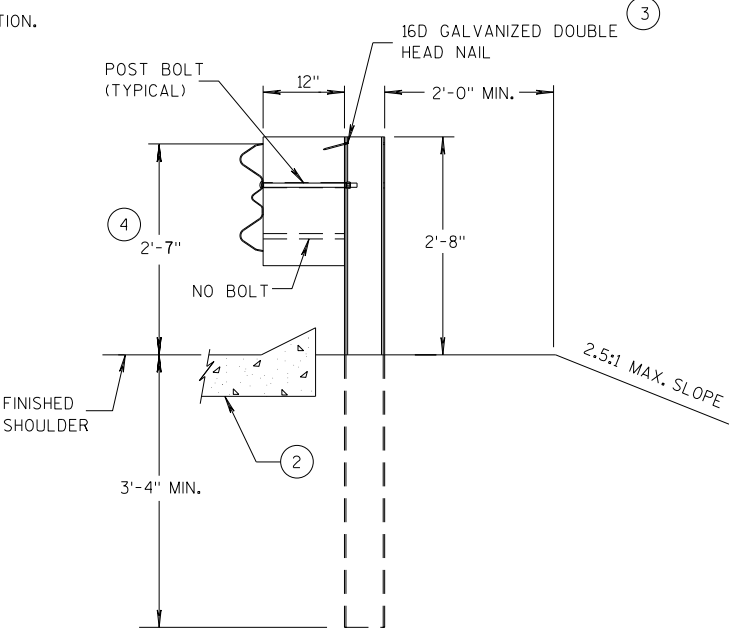
- 2 OPTIONAL CURB AND GUTTER OR DRAINAGE FEATURE SEE PLAN FOR INFORMATION.
- 3 WHEN USING STEEL POSTS AND WOOD BLOCKOUTS INSTALL FOUR 10D GALVANIZED NAILS. INSTALL NAILS AT THE BACK CORNERS OF THE BLOCK AND BEND THE NAILS OVER THE FLANGE OF THE STEEL POST.
- 4 TOLERANCE FOR TOP OF W-BEAM RAIL IS ± 1".
- 13 STEEL OR WOOD POST IS ACCEPTABLE AT POST 1. SEE SDD 14B42



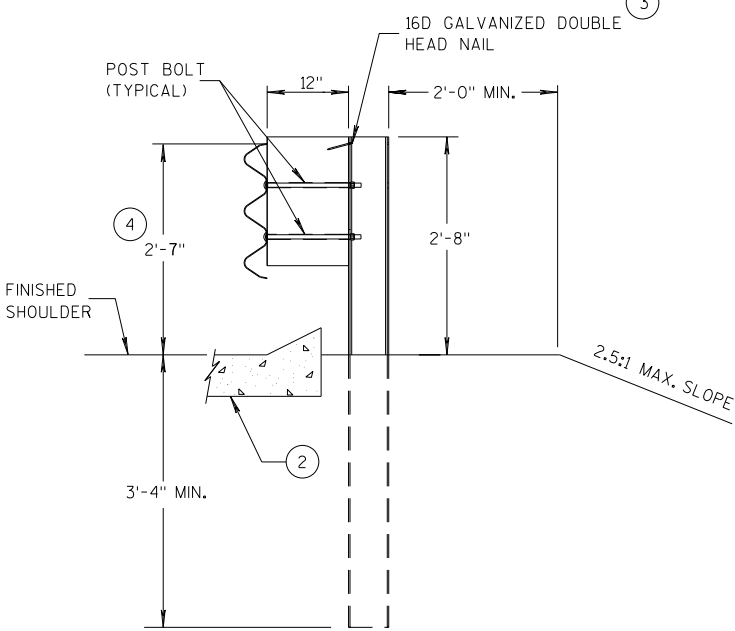
SECTION A-A
POSTS 1-5



SECTION D-D
POSTS 12-17



SECTION B-B
POST 6



SECTION C-C
POSTS 7-11

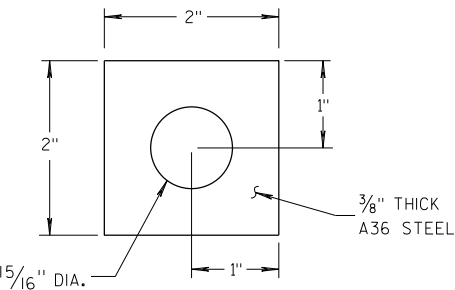
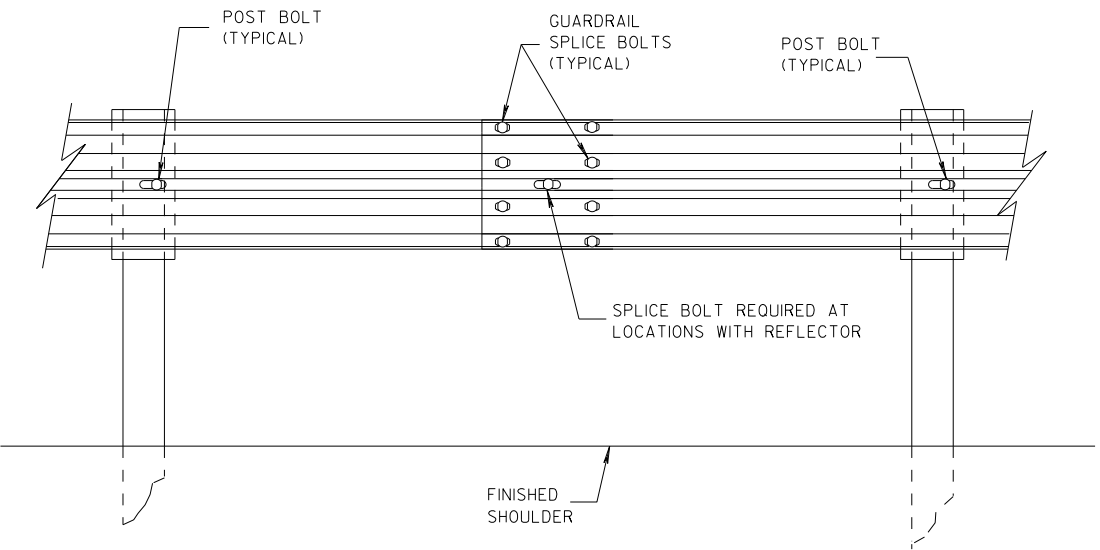
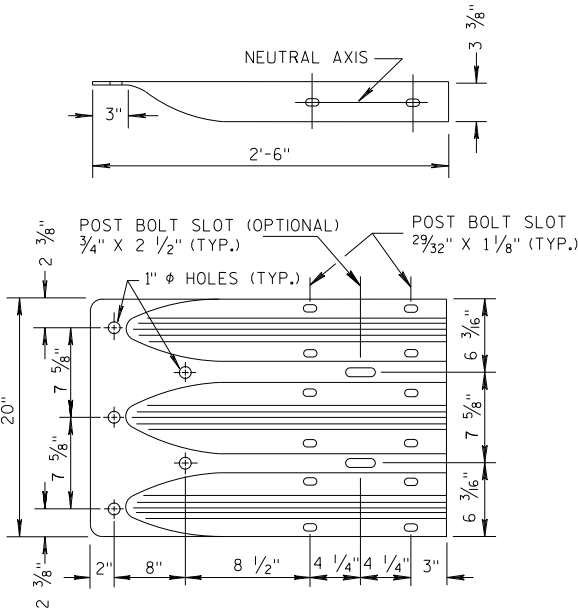


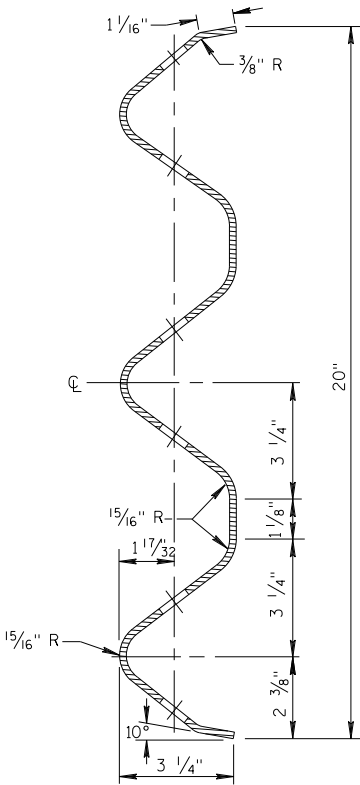
PLATE WASHER DETAIL



SPlice DETAIL



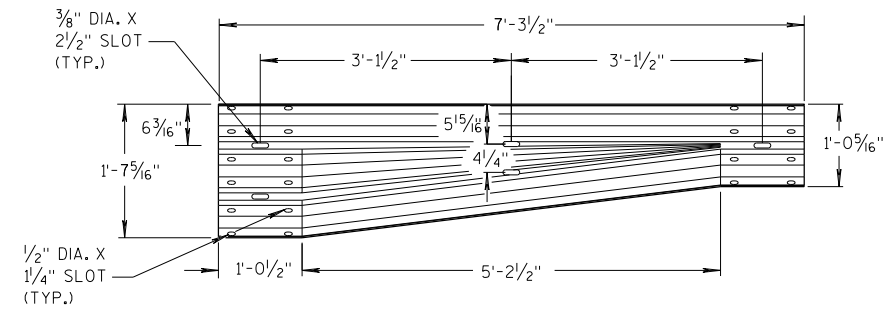
THRIE BEAM
TERMINAL CONNECTOR



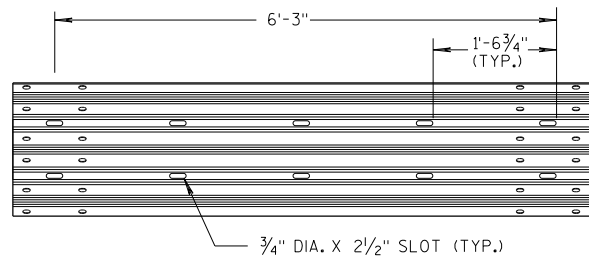
SECTION THRU THRIE
BEAM RAIL ELEMENT

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

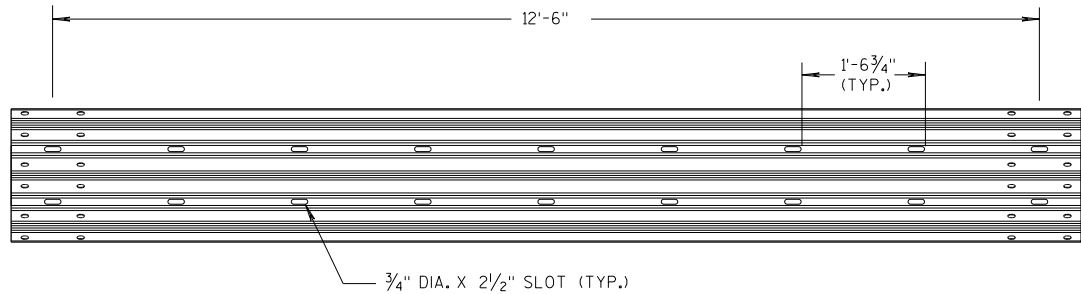
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



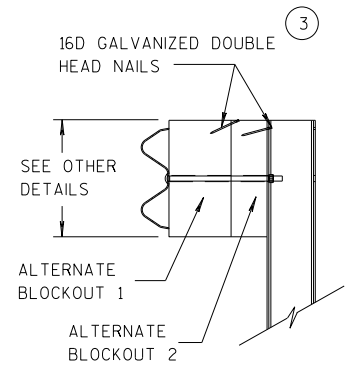
W-BEAM TO THRIE BEAM TRANSITION SECTION



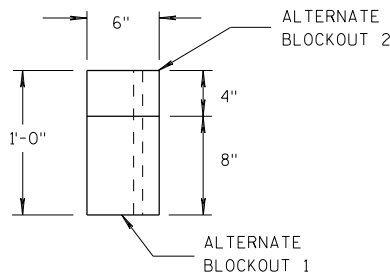
6'-3" THRIE BEAM SECTION



12'-6" THRIE BEAM SECTION

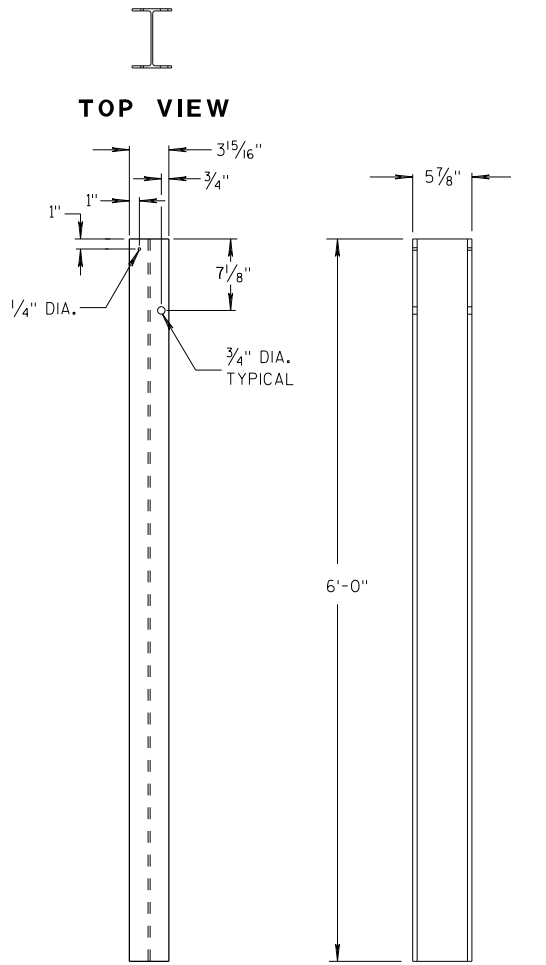


SIDE VIEW



TOP VIEW

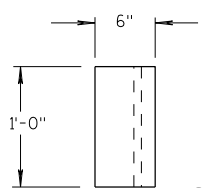
ALTERNATE WOOD BLOCKOUT DETAIL



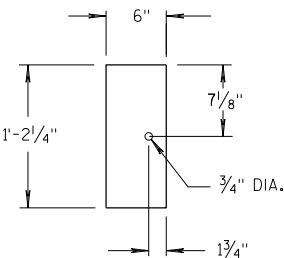
FRONT VIEW

SIDE VIEW

STEEL POSTS 1-5

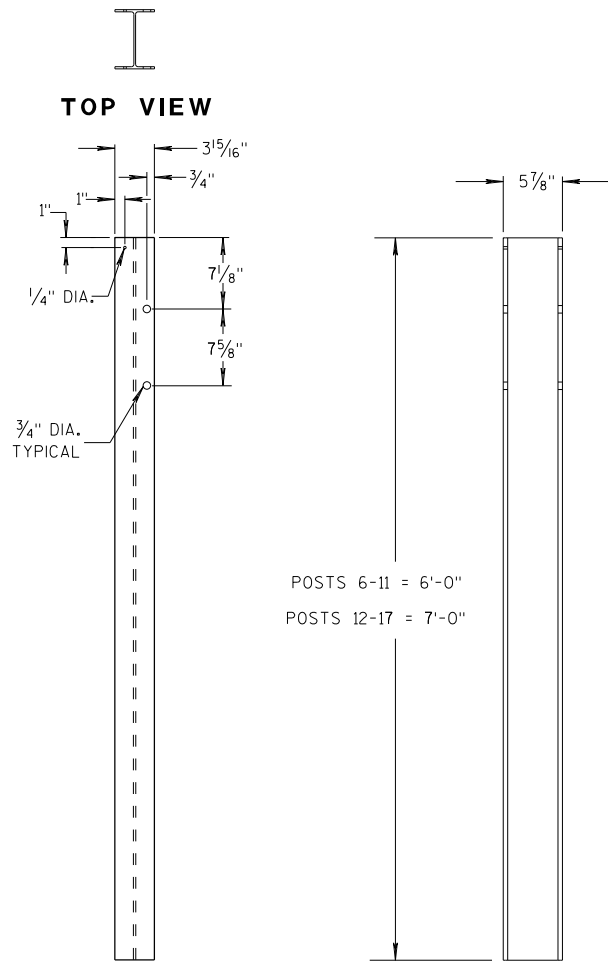


TOP VIEW



FRONT VIEW

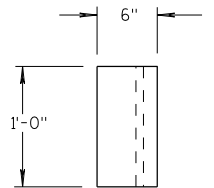
BLOCKOUT POSTS 1-5



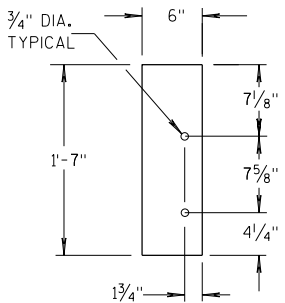
FRONT VIEW

SIDE VIEW

STEEL POSTS 6-17



TOP VIEW



FRONT VIEW

BLOCKOUT POSTS 6-17

GENERAL NOTES

STEEL POSTS ARE W6X9 OR W6X8.5.

BOLT HOLES FOR POST ARE ON FRONT AND OF SIDE OF POST.

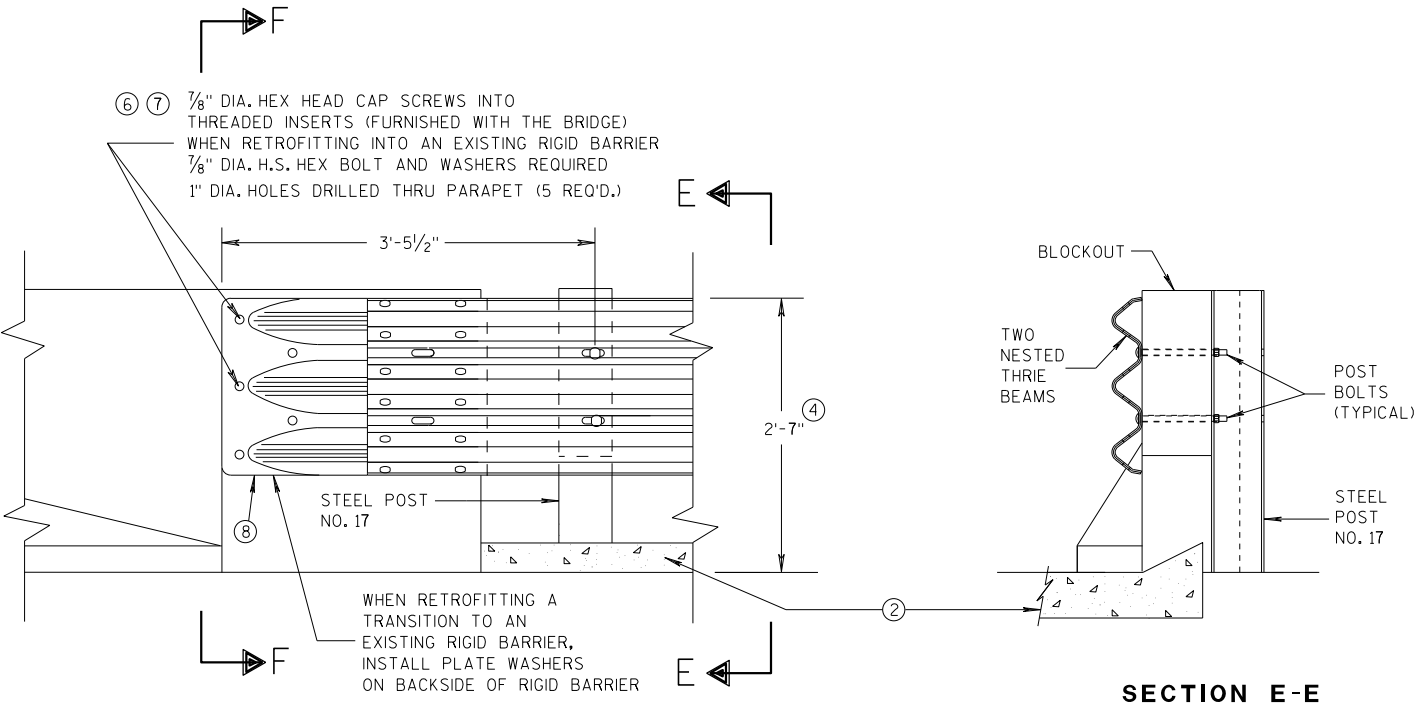
③ WHEN USING STEEL POSTS AND WOOD BLOCKOUTS INSTALL FOUR 16D GALVANIZED NAILS. INSTALL NAILS AT THE BACK CORNERS OF THE BLOCK AND BEND THE NAILS OVER THE FLANGE OF THE STEEL POST.

⑤ WOOD BLOCKS MAY BE CONSTRUCTED OUT OF 2 WOOD BLOCKS. SEE ALTERNATE WOOD BLOCK DETAIL.

⑬ STEEL OR WOOD POST IS ACCEPTABLE AT POST 1. SEE SDD 14B42.

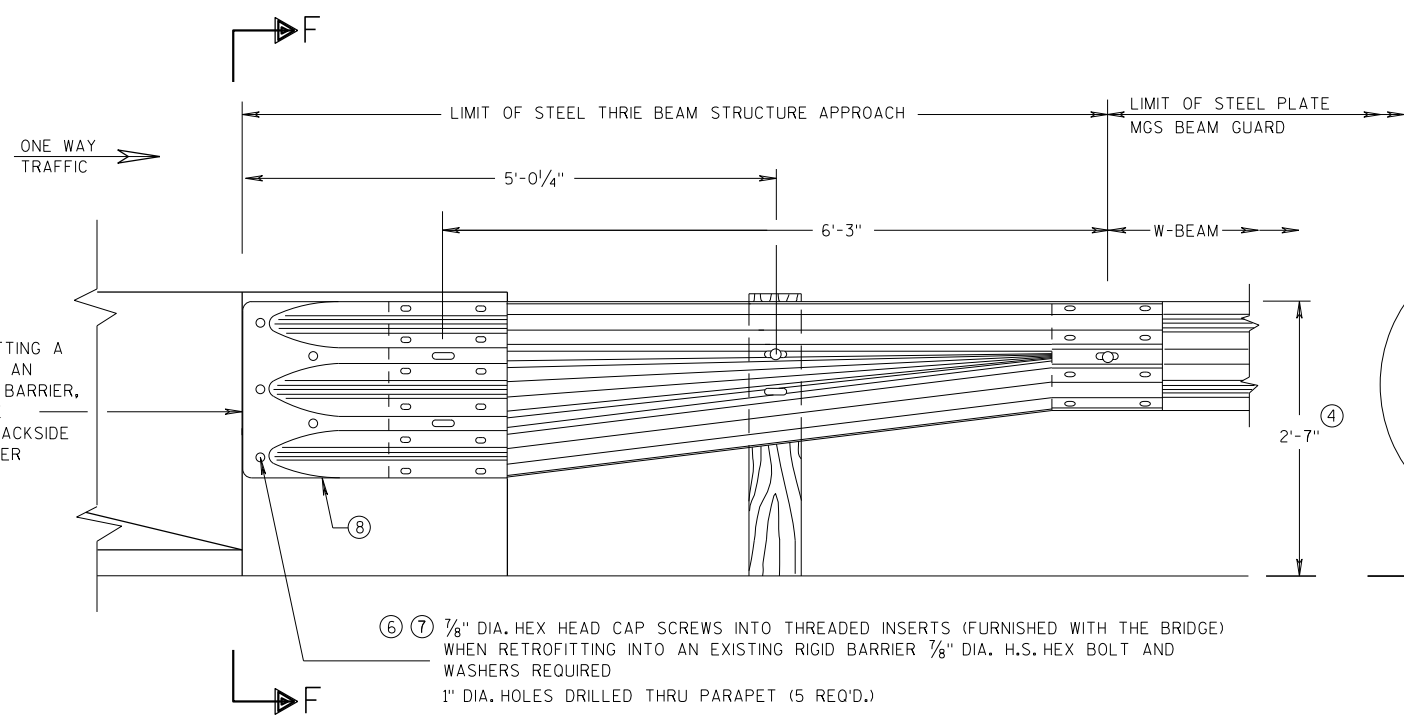
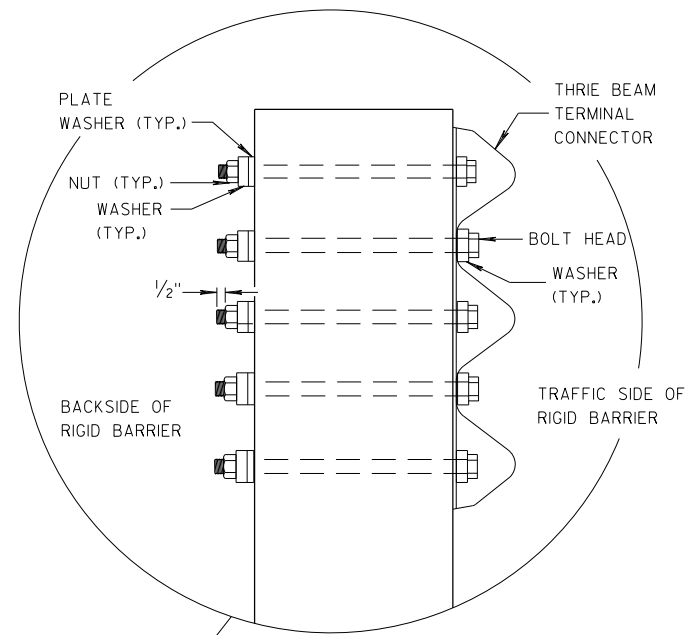
MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION 171

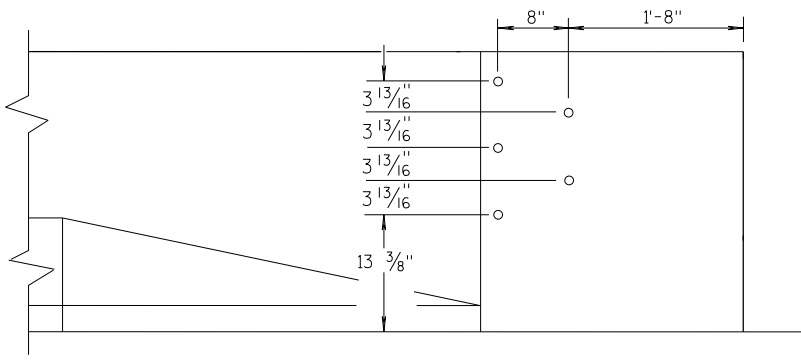


GENERAL NOTES

- THESE ARE TYPICAL CONNECTION DETAILS. ADJUST THE POSTION OF CONNECTIONS TO EXISTING BRIDGES TO FIT THE ACTUAL BRIDGE AND SITE DIMENSIONS.
- ② OPTIONAL CURB AND GUTTER OR DRAINAGE FEATURE SEE PLAN FOR INFORMATION.
- ④ TOLERANCE FOR TOP OF BEAM IS $\pm 1"$.
- ⑥ DRILLING BOLT HOLES THROUGH THE PARAPET, BOLTS, NUTS, WASHERS AND REPAIRING DAMAGED CONCRETE ARE INCIDENTAL TO THE CONTRACT.
- ⑦ BOLTS MAY BE A325 BOLTS OR A449 BOLTS. BOLT LENGTH AND THREADING LENGTH ARE TO ALLOW FOR A TIGHT CONNECTION BETWEEN RIGID BARRIER AND THRIE BEAM CONNECTION PLATE. CONTRACTOR IS TO FIELD VERIFY BOLT LENGTH AND THREAD LENGTH. ONE ROUND WASHER REQUIRED BETWEEN BOLT HEAD AND THRIE BEAM CONNECTOR PLATE. BOLTS THAT EXTEND THROUGH THE PARAPET AND OUT THE BACK FACE REQUIRE A HARDENED ROUND STEEL WASHER THAT IS 2" O.D. X 5/32" THICK AND ONE PLATE WASHER. REPAIR ANY DAMAGED CONCRETE FROM BOLT INSTALLATION.
- ⑧ THE RECESS FOR A W-BEAM CONNECTION, WHICH EXISTS ON SOME PARAPETS OF THIS TYPE, SHALL BE FILLED WITH A TREATED TIMBER BLOCKOUT. BLOCKOUT SIZE IS 1'-6" X 2'-0" X 3 1/2".



SECTION F-F

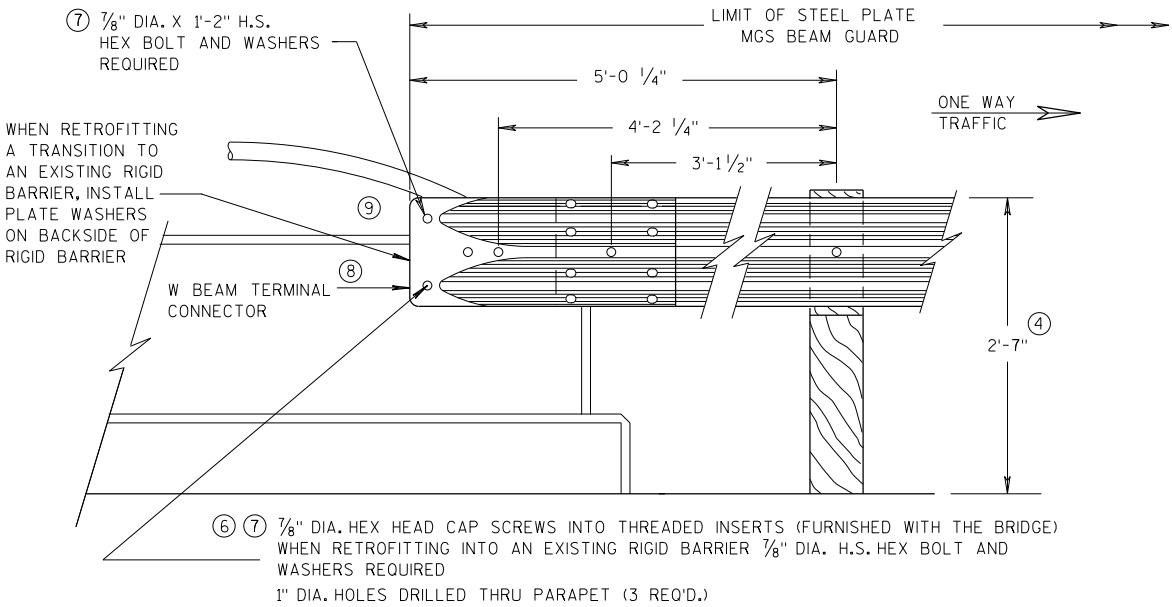


MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)			
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
APPROVED 07/2018 DATE	/S/ Rodney Taylor ROADWAY STANDARDS UNIT SUPERVISOR		
FHWA		172	NT

GENERAL NOTES

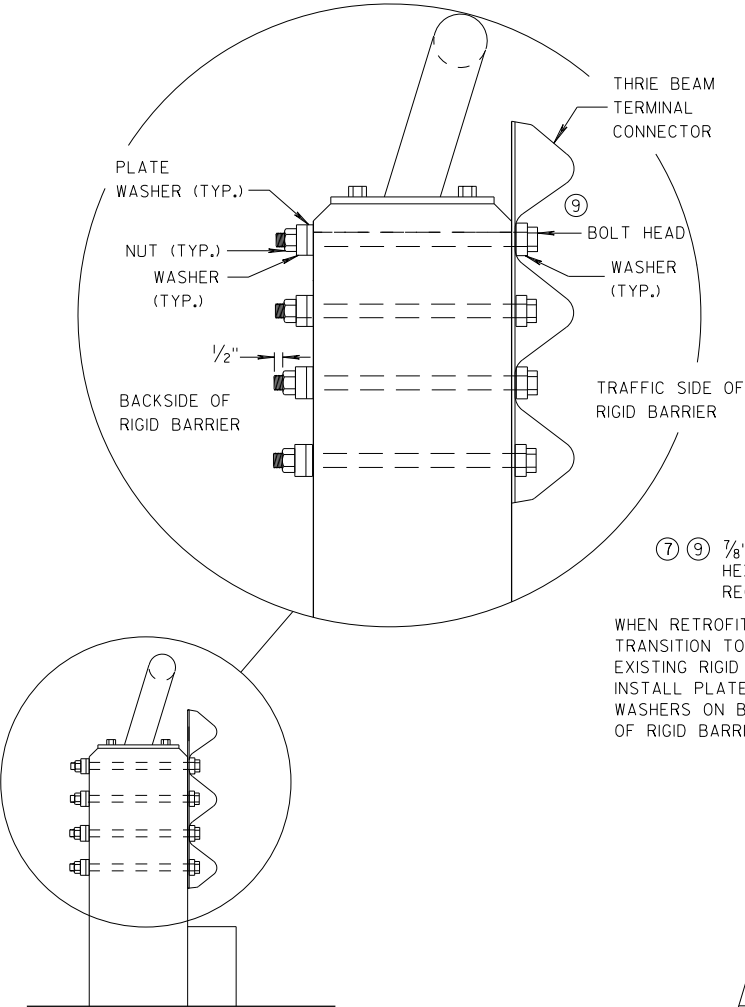
THESE ARE TYPICAL CONNECTION DETAILS. ADJUST THE POSTION OF CONNECTIONS TO EXISTING BRIDGES TO FIT THE ACTUAL BRIDGE AND SITE DIMENSIONS.

- OPTIONAL CURB AND GUTTER OR DRAINAGE FEATURE SEE PLAN FOR INFORMATION.
- TOLERANCE FOR TOP OF BEAM IS $\pm 1"$.
- DRILLING BOLT HOLES THROUGH THE PARAPET, BOLTS, NUTS, WASHERS AND REPAIRING DAMAGED CONCRETE ARE INCIDENTAL TO THE CONTRACT.
- BOLTS MAY BE A325 BOLTS OR A449 BOLTS. BOLT LENGTH AND THREADING LENGTH ARE TO ALLOW FOR A TIGHT CONNECTION BETWEEN RIGID BARRIER AND THRIE BEAM CONNECTION PLATE. CONTRACTOR IS TO FIELD VERIFY BOLT LENGTH AND THREAD LENGTH. ONE ROUND WASHER REQUIRED BETWEEN BOLT HEAD AND THRIE BEAM CONNECTOR PLATE. BOLTS THAT EXTEND THROUGH THE PARAPET AND OUT THE BACK FACE REQUIRE A HARDENED ROUND STEEL WASHER THAT IS 2" O.D. X 5/32" THICK AND ONE PLATE WASHER. REPAIR ANY DAMAGED CONCRETE FROM BOLT INSTALLATION.
- THE RECESS FOR A W-BEAM CONNECTION, WHICH EXISTS ON SOME PARAPETS OF THIS TYPE, SHALL BE FILLED WITH A TREATED TIMBER BLOCKOUT. BLOCKOUT SIZE IS 1'-6" X 2'-0" X 3 1/2".
- BOLT, NUT AND WASHERS NOT REQUIRED FOR THIS LOCATION WHEN RETROFITTING AN EXISTING PAPAPET AND THE HOLE IS EITHER ABOVE PARAPET OR WITHIN 4 INCHES OF THE EDGE OF PARAPET.

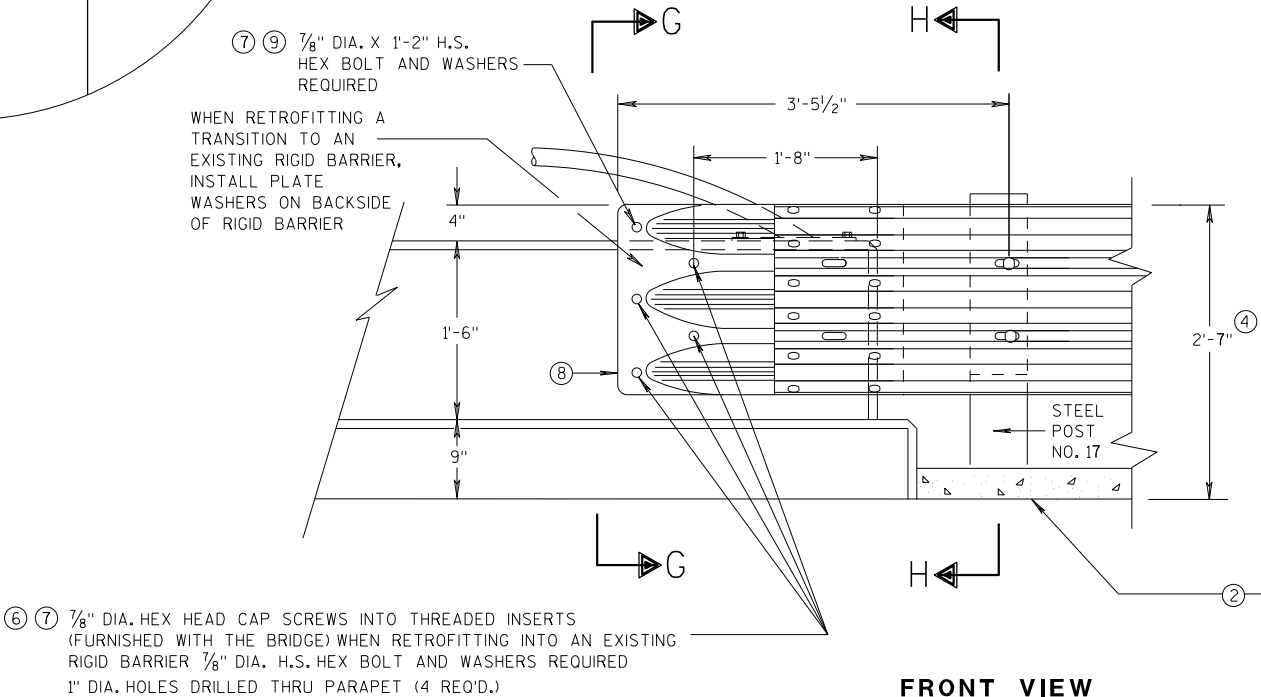


FRONT VIEW

W BEAM CONNECTION TO VERTICAL FACE PARAPET
(USE ONLY ON THE TRAFFIC EXIT END OF ONE WAY BRIDGES)

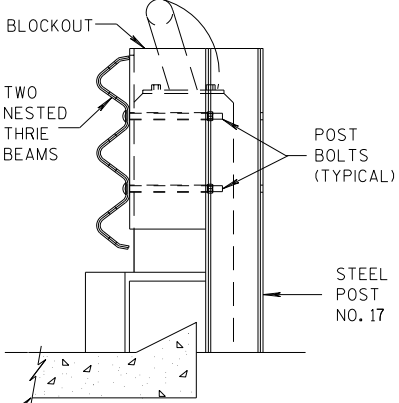


SECTION G-G



FRONT VIEW

THRIE BEAM CONNECTION TO VERTICAL FACED PARAPETS

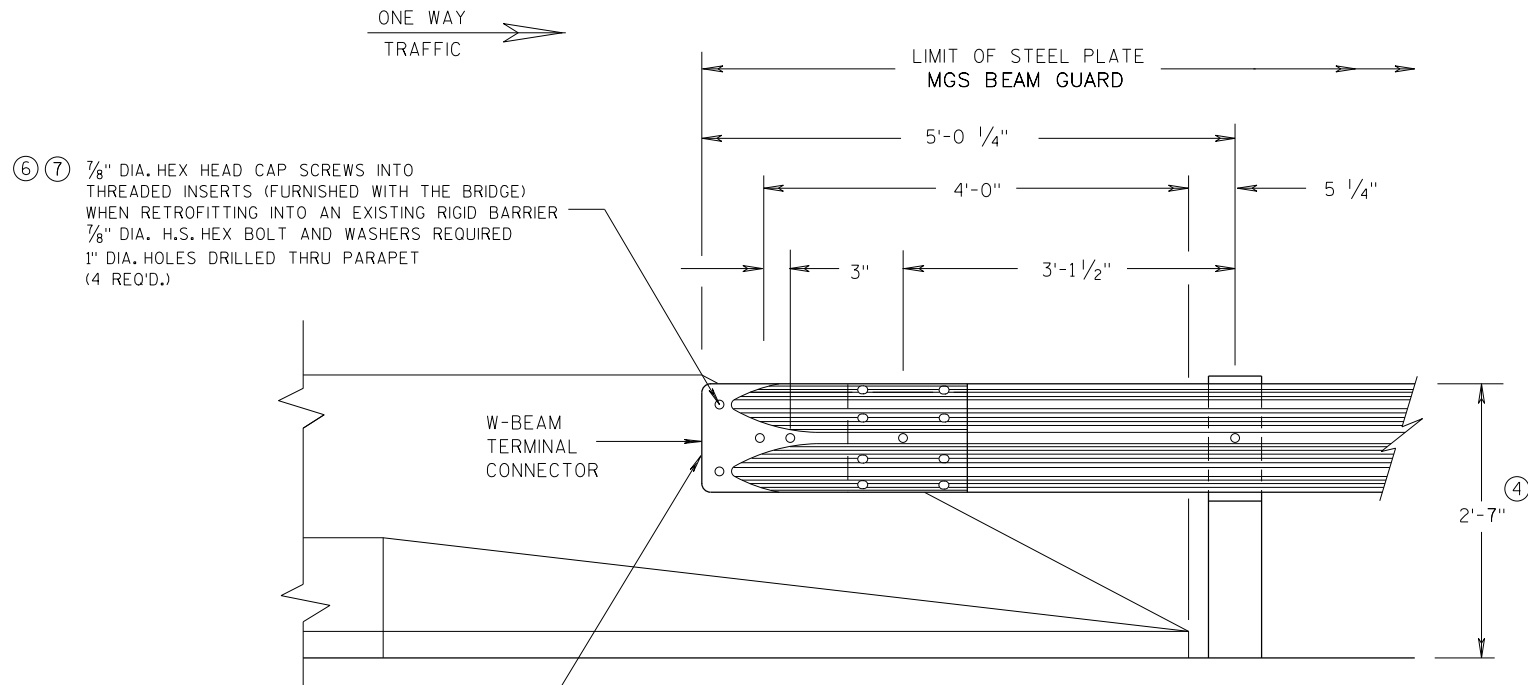


SECTION H-H

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

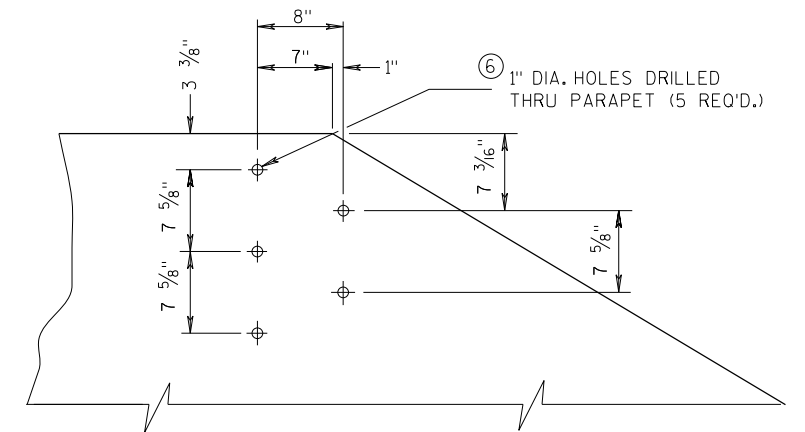
APPROVED
07/2018
DATE
/S/ Rodney Taylor
ROADWAY STANDARDS UNIT SUPERVISOR
173
FHWA



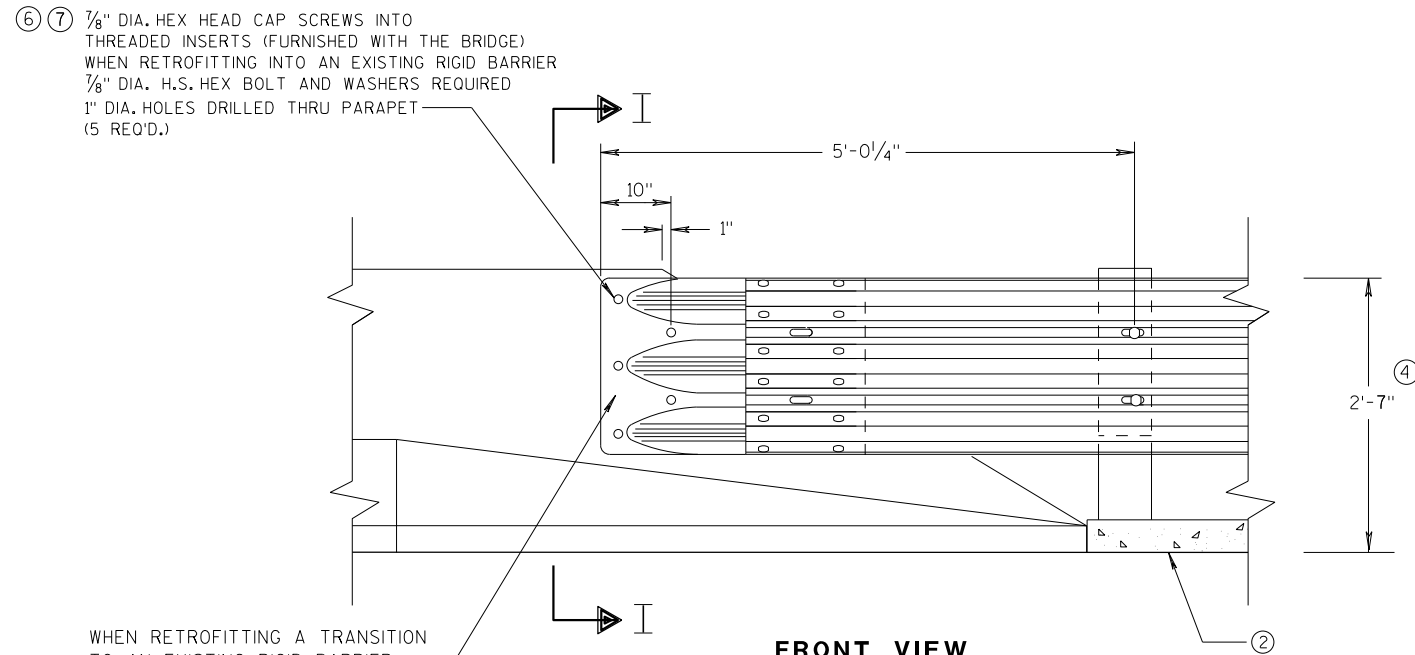
FRONT VIEW
W BEAM CONNECTION TO
PARAPETS WITH SLOPED ENDS
(USE ONLY AT TRAFFIC EXIT END OF ONE WAY BRIDGE)

GENERAL NOTES

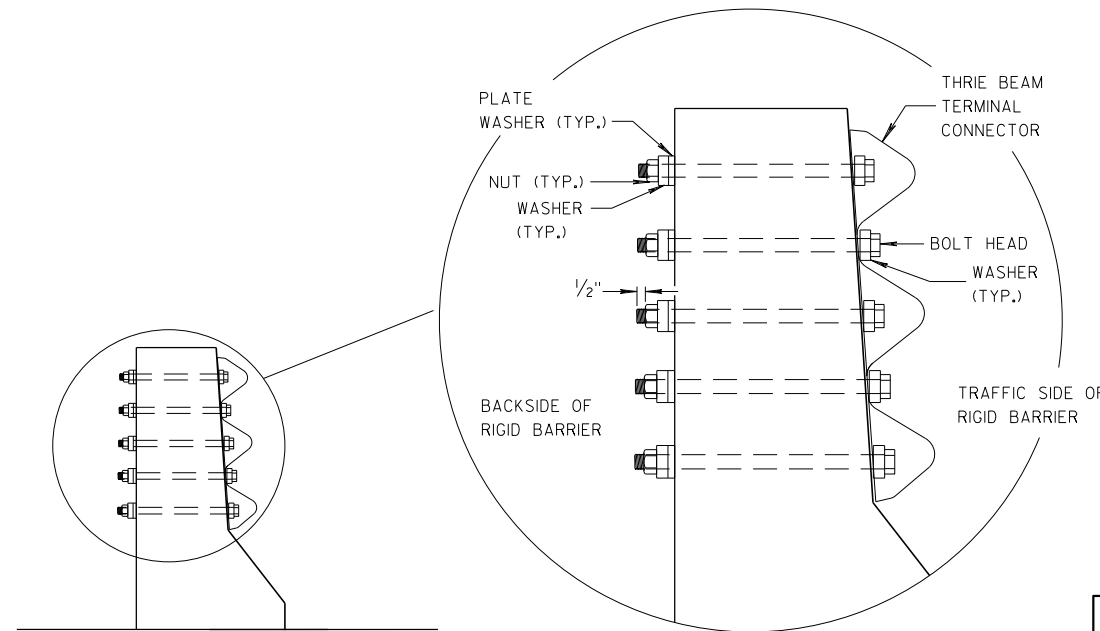
- ② OPTIONAL CURB AND GUTTER OR DRAINAGE FEATURE SEE PLAN FOR INFORMATION.
- ④ TOLERANCE FOR TOP OF BEAM IS $\pm 1"$.
- ⑥ DRILLING BOLT HOLES THROUGH THE PARAPET, BOLTS, NUTS, WASHERS AND REPAIRING DAMAGED CONCRETE ARE INCIDENTAL TO THE CONTRACT.
- ⑦ BOLTS MAY BE A325 BOLTS OR A449 BOLTS. BOLT LENGTH AND THREADING LENGTH ARE TO ALLOW FOR A TIGHT CONNECTION BETWEEN RIGID BARRIER AND THRIE BEAM CONNECTION PLATE. CONTRACTOR IS TO FIELD VERIFY BOLT LENGTH AND THREAD LENGTH. ONE ROUND WASHER REQUIRED BETWEEN BOLT HEAD AND THRIE BEAM CONNECTOR PLATE. BOLTS THAT EXTEND THROUGH THE PARAPET AND OUT THE BACK FACE REQUIRE A HARDENED ROUND STEEL WASHER THAT IS 2" O.D. X 5/32" THICK AND ONE PLATE WASHER. REPAIR ANY DAMAGED CONCRETE FROM BOLT INSTALLATION.



DRILL HOLE LOCATION AND PATTERN
FOR THRIE BEAM CONNECTION

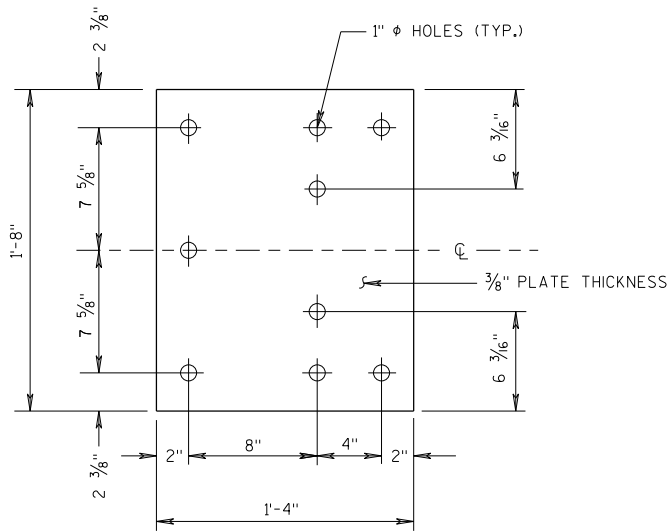


FRONT VIEW
THRIE BEAM CONNECTION TO BRIDGE
PARAPETS WITH SLOPED ENDS

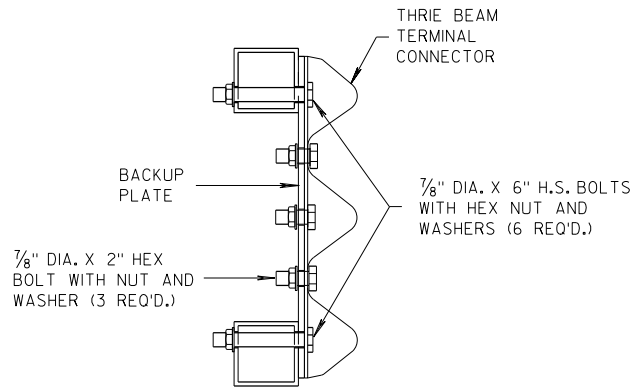


SECTION I-I

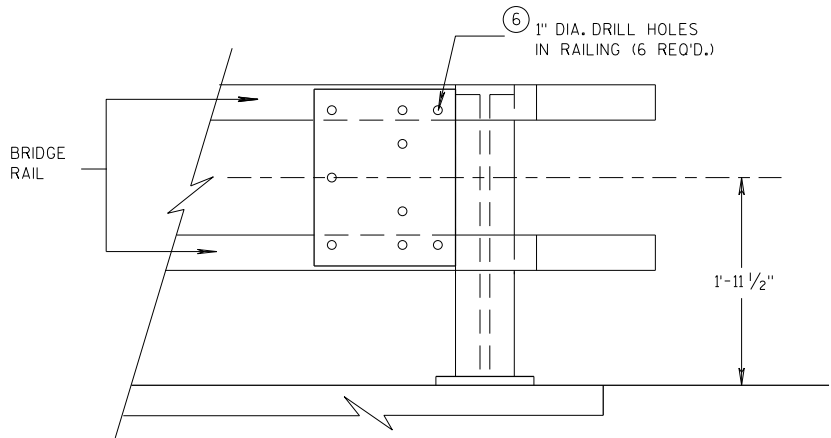
MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)			
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
APPROVED 07/2018 DATE	/S/ Rodney Taylor ROADWAY STANDARDS UNIT SUPERVISOR		
FHWA	174		



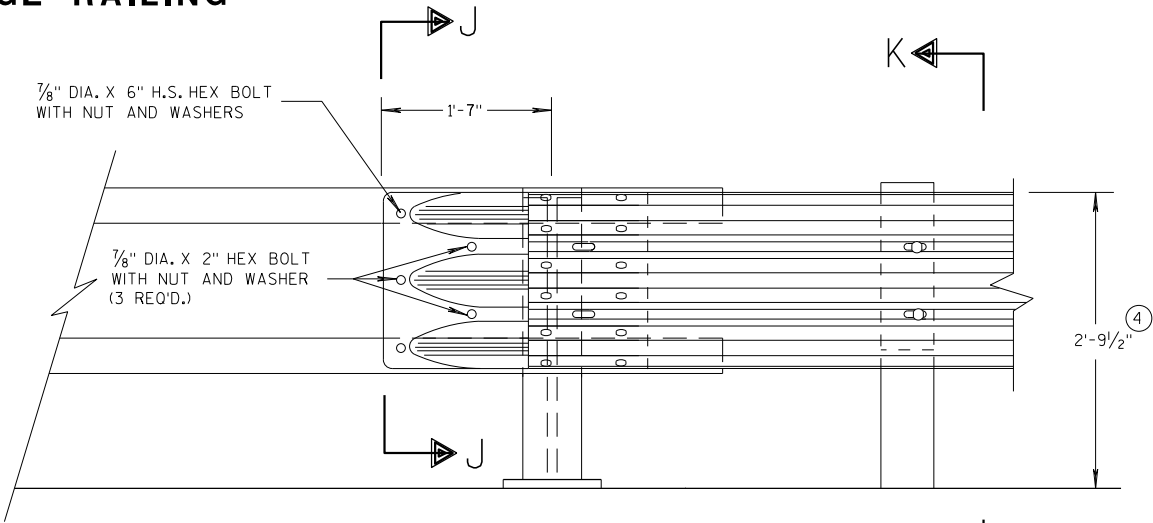
BACK-UP PLATE DETAIL



SECTION J-J

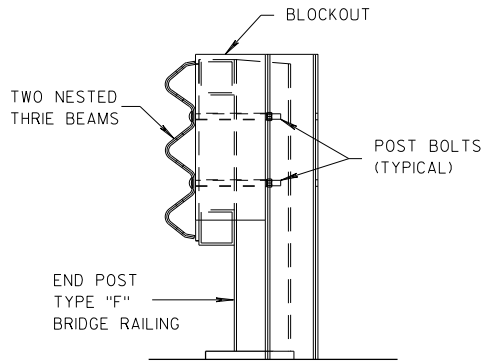


BACK-UP PLATE MOUNTING ONTO BRIDGE RAILING



FRONT VIEW

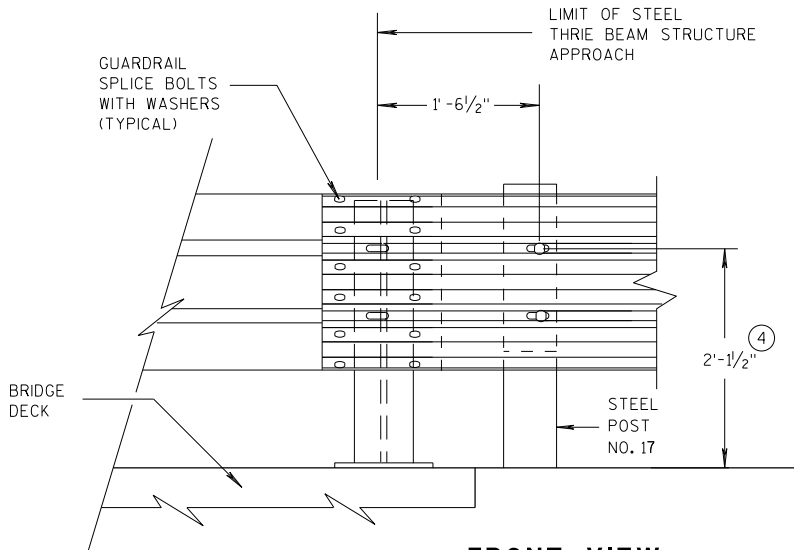
THRIE BEAM CONNECTION TO TUBULAR RAILING TYPE "F"



SECTION K-K

GENERAL NOTES

- ④ TOLERANCE FOR TOP OF BEAM IS $\pm 1"$.
- ⑥ DRILLING HOLES THROUGH THE PAPER, BOLTS, NUTS, WASHERS AND REPAIRING DAMAGED CONCRETE ARE INCIDENTAL TO THE CONTRACT.



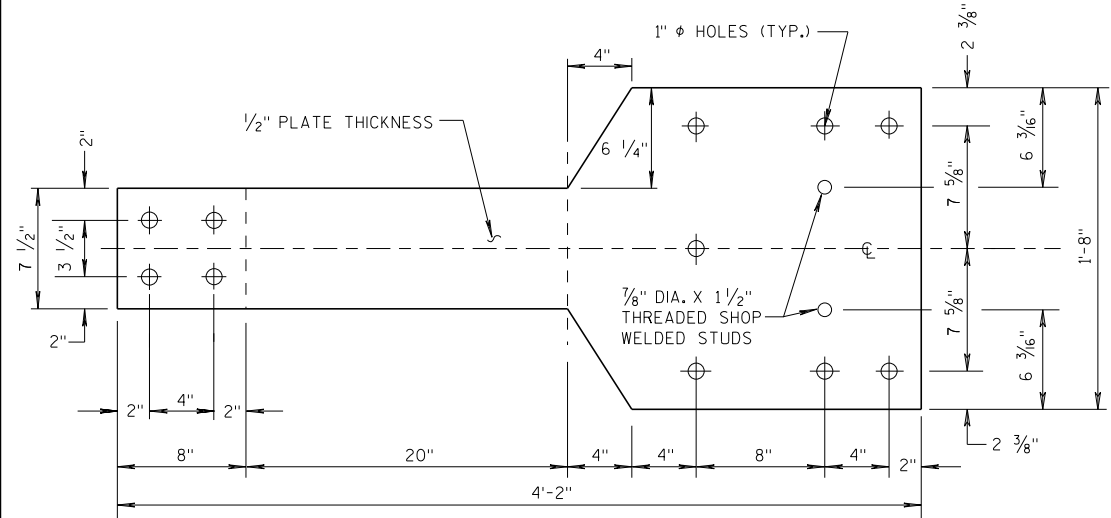
FRONT VIEW

THRIE BEAM CONNECTION TO STEEL RAILING TYPE "W"

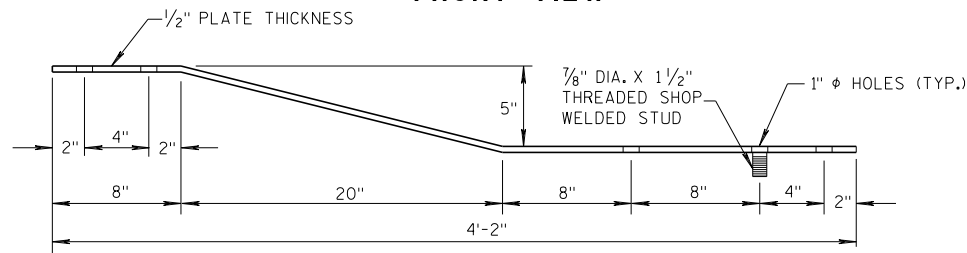
MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)		
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION		
APPROVED 07/2018	/S/ Rodney Taylor	175
DATE	ROADWAY STANDARDS DEVELOPMENT	UNIT SUPERVISOR
FHWA		

GENERAL NOTES

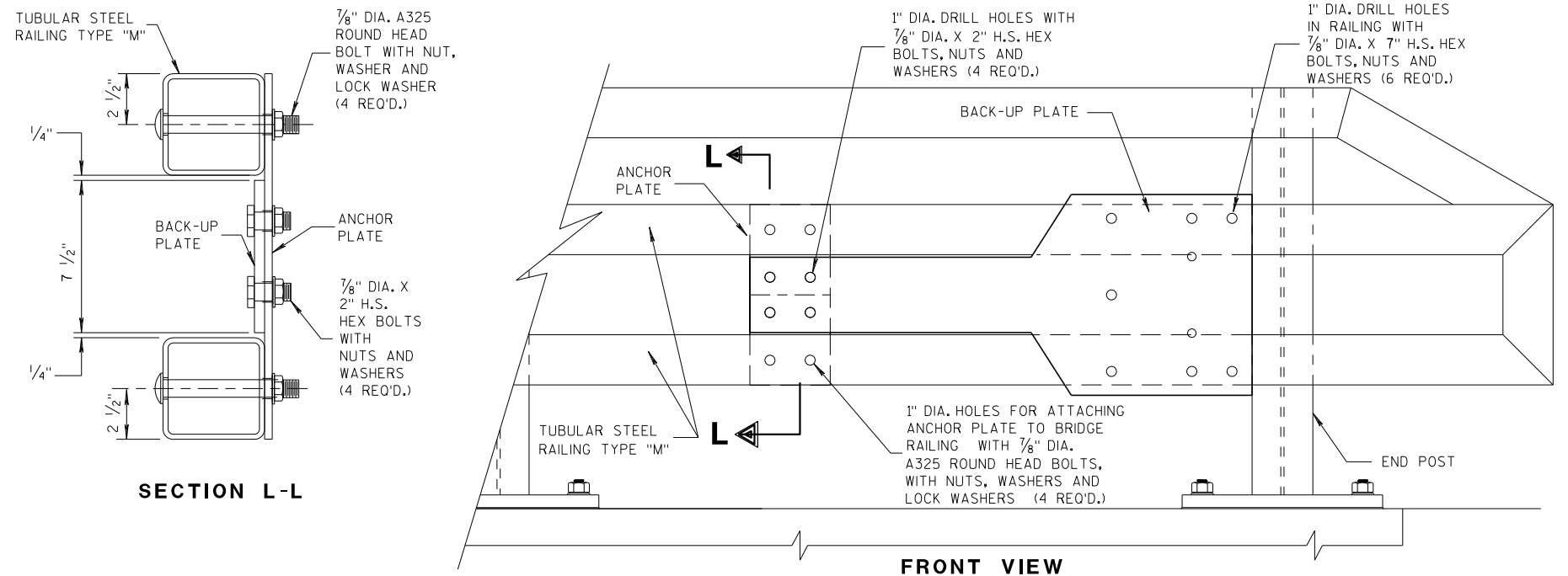
④ TOLERANCE FOR TOP OF W-BEAM RAIL IS $\pm 1"$.



FRONT VIEW



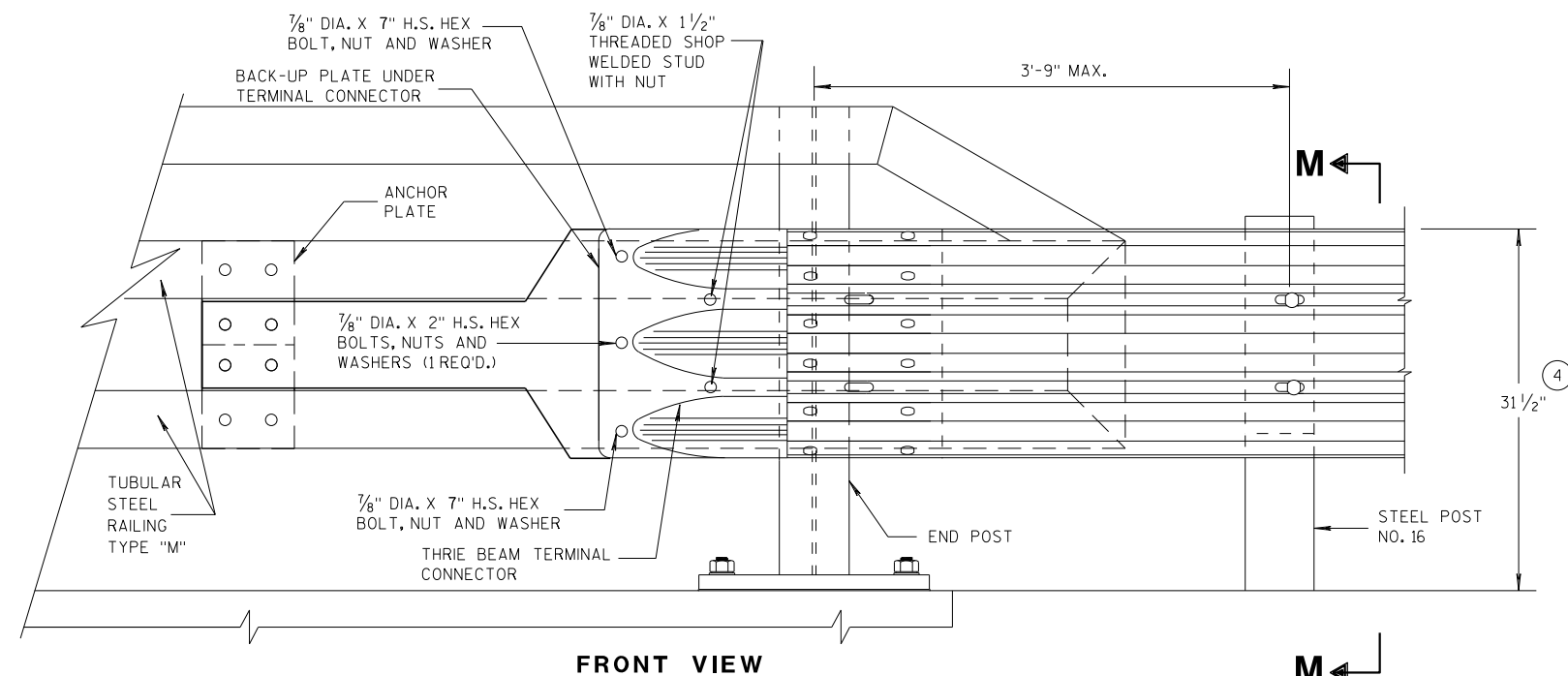
**PLAN VIEW
BACK-UP PLATE DETAIL, TYPE "M"**



SECTION L-L

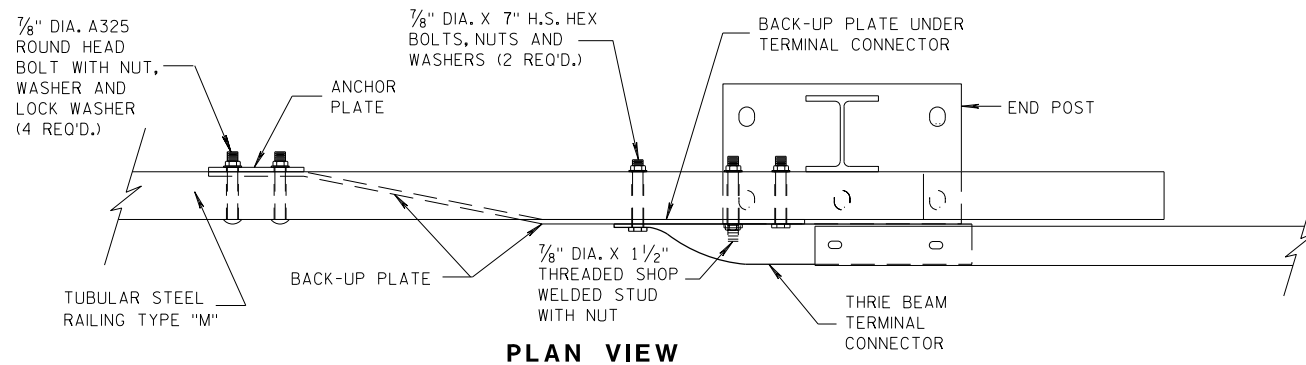
FRONT VIEW

ANCHOR AND BACK-UP PLATE MOUNTING TO BRIDGE RAILING, TYPE "M"



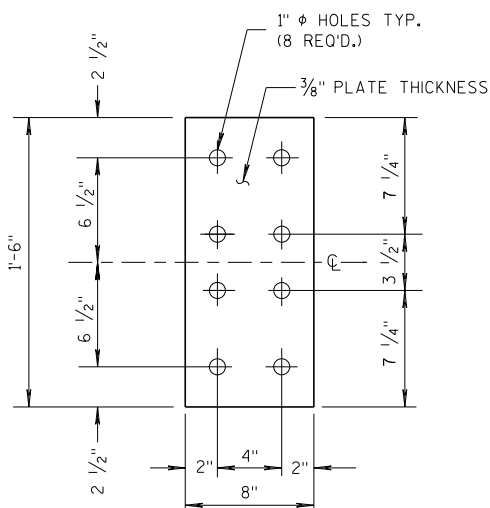
FRONT VIEW

M



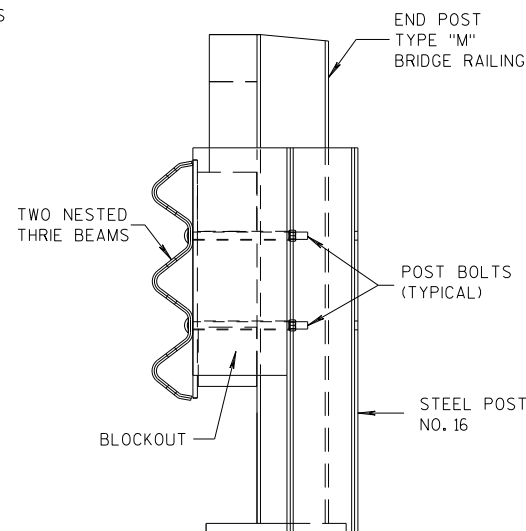
PLAN VIEW

THRIE BEAM CONNECTION TO TUBULAR RAILING, TYPE "M"



FRONT VIEW

**ANCHOR
PLATE DETAIL,
TYPE "M"**

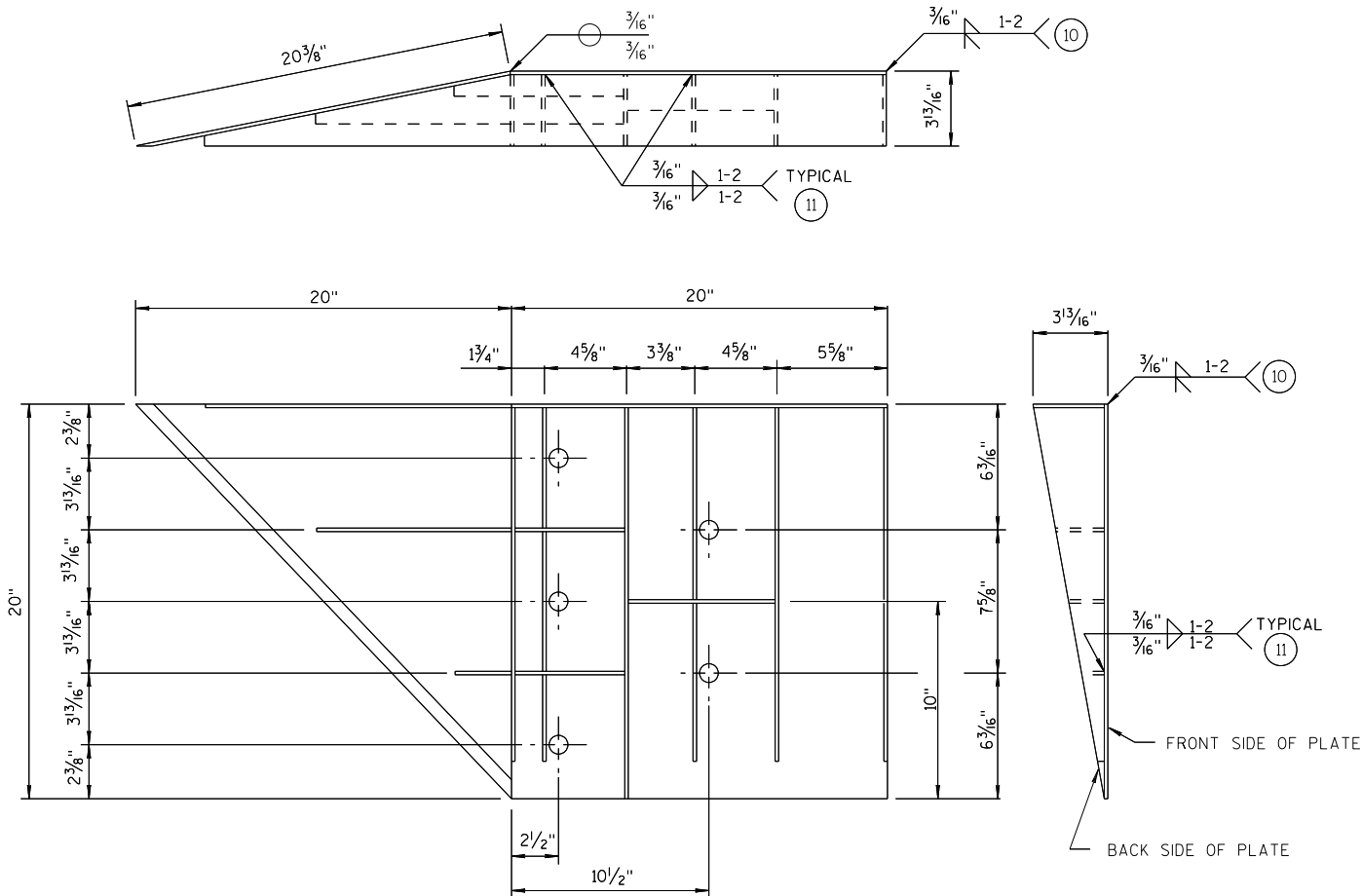


SECTION M-M

**MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
07/2018 /S/ Rodney Taylor
DATE ROADWAY STANDARDS UNIT SUPERVISOR
FHWA 176 ENT



WELDING INSTRUCTION
(VIEWED FROM BACK SIDE OF PLATE)

CONNECTOR PLATE DIMENSION (PER ASSEMBLY)				
PLATE	QUANTITY	SHAPE	SIZE (A x B x C x D)	THICKNESS
P1	1		20" x 20"	3/16"
P2	1		20" x 20" x 28 3/16"	3/16"
P3	1		39" x 3 5/8" x 20" x 19 5/16"	3/16"
S1	4		18 7/16" x 3 5/8" x 18 3/4"	1/4"
S2	1		10 1/4" x 2 1/16" x 10 3/8" x 1/2"	1/4"
S3	1		3" x 1 1/16" x 3 3/8" x 1/2"	1/4"
S4	1		6 1/8" x 2 7/16"	1/4"
S5	1		6 1/8" x 1 1/16"	1/4"
S6	1		7 3/4" x 1 3/4"	1/4"
S7	1		2 3/16" x 6" x 3 5/8" x 5 7/8"	1/4"
S8	1		1 5/32" x 7 1/2" x 2 1/2" x 7 3/8"	1/4"
S9	1		6 1/16" x 6 3/16" x 1 3/32"	1/4"
S10	1		1 7/8" x 9 7/8" x 3 5/8" x 9 11/16"	1/4"
S11	1		8 1/2" x 8 3/4" x 1 3/16"	1/4"

SINGLE SLOPE CONNECTION PLATE

GENERAL NOTES

- COVER PLATE PANELS ARE 3/16" THICK.
- ALL STIFFENERS ARE 1/4" THICK.
- CONNECTOR PLATE SHALL BE FABRICATED FROM ASTM GRADE A36 STEEL AND GALVANIZED.
- FOR GALVANIZED REQUIREMENTS, SEE SECTION 614 OF THE STANDARD SPECIFICATIONS.
- ALL HOLE DIAMETERS SHALL BE 1".
- FOR OPPOSITE SIDE INSTALLATION MIRROR DRAWINGS.

- 10 STIFFENERS LOCATED AT THE OUTSIDE EDGES OF THE COVER PLATES SHALL BE WELDED AS FOLLOWS:
SINGLE BEVEL GROOVE WELD ON EXTERNAL SIDES AND 3/16" FILLET WELD BY 1" LONG SPACED AT 2" ON INTERNAL SIDES.
- 11 STIFFENERS LOCATED ON THE INSIDE OF THE COVER PLATE SHALL BE WELDED AS FOLLOWS:
3/16" FILLET WELD BY 1" LONG SPACED AT 2".

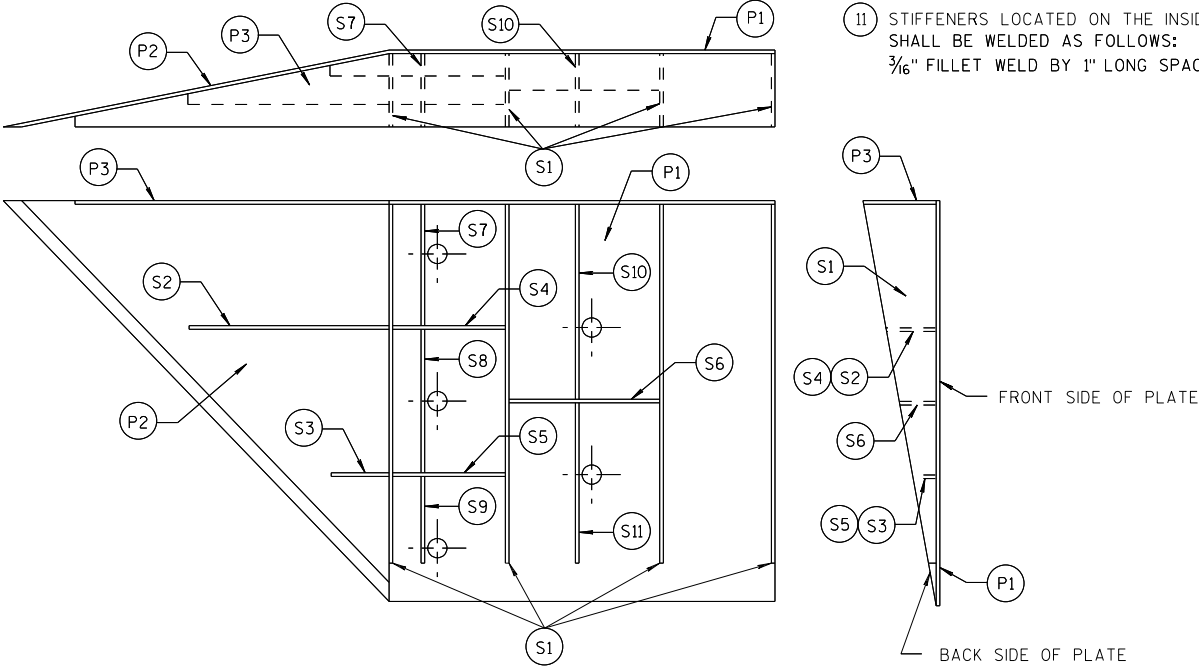


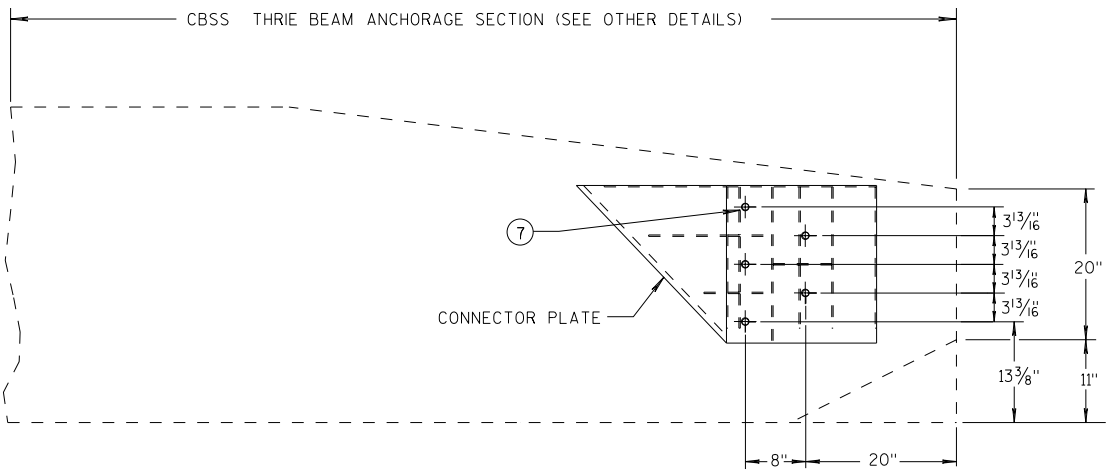
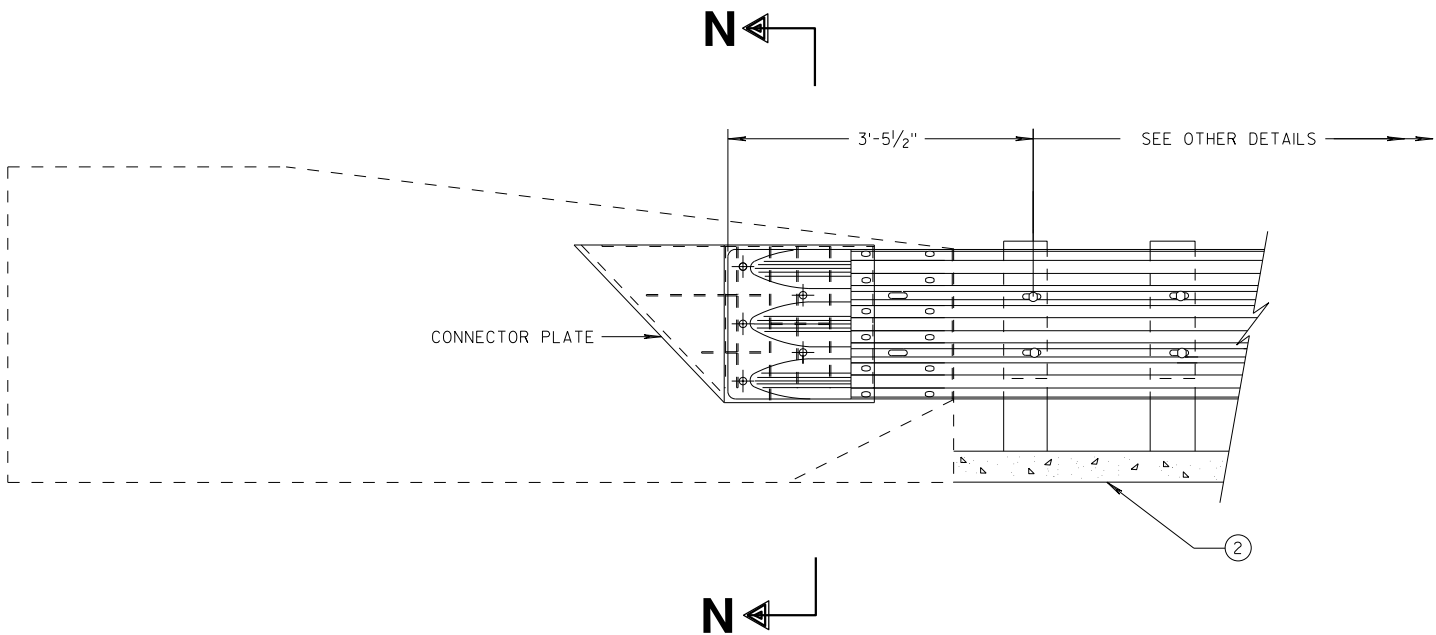
PLATE AND STIFFENER IDENTIFICATION
(VIEWED FROM BACK SIDE OF PLATE)

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
7/2018 /S/ Rodney Taylor
DATE ROADWAY STANDARDS UNIT SUPERVISOR
FHWA 177 ENT

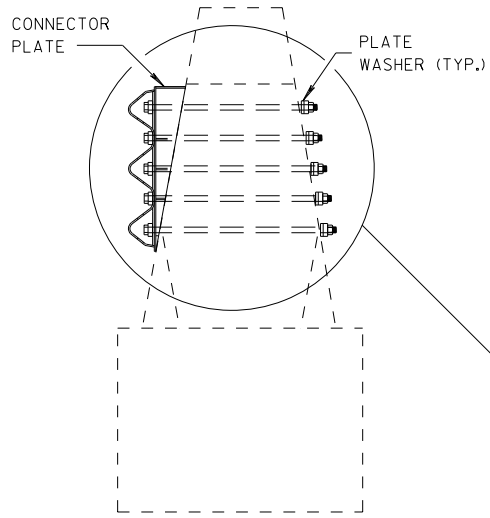
THRIE BEAM CONNECTION TO SINGLE SLOPE BARRIER



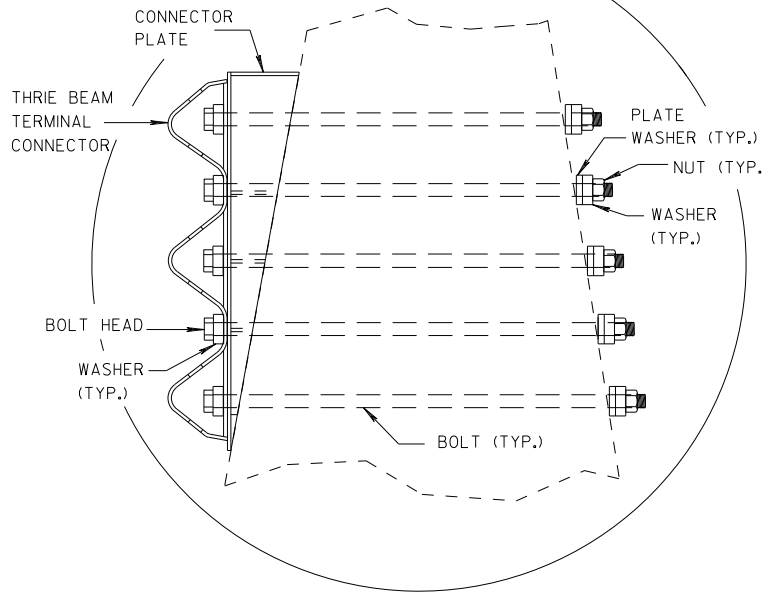
SINGLE SLOPE CONNECTION PLATE PLACEMENT

GENERAL NOTES

- CONNECTOR PLATE, DRILLING BOLT HOLES THROUGH THE PARAPET, BOLTS, NUTS, WASHERS AND REPAIRING DAMAGED CONCRETE ARE INCIDENTAL TO THE CONTRACT.
- (2) OPTIONAL CURB AND GUTTER OR DRAINAGE FEATURE SEE PLAN FOR INFORMATION.
- (7) BOLTS MAY BE A325 BOLTS OR A449 BOLTS. BOLT LENGTH AND THREADING LENGTH ARE TO ALLOW FOR A TIGHT CONNECTION BETWEEN RIGID BARRIER AND THRIE BEAM CONNECTION PLATE. CONTRACTOR IS TO FIELD VERIFY BOLT LENGTH AND THREAD LENGTH. ONE ROUND WASHER REQUIRED BETWEEN BOLT HEAD AND THRIE BEAM CONNECTOR PLATE. BOLTS THAT EXTEND THROUGH THE PARAPET AND OUT THE BACK FACE REQUIRE A HARDENED ROUND STEEL WASHER THAT IS 2" O.D. X 5/32" THICK AND ONE PLATE WASHER. REPAIR ANY DAMAGED CONCRETE FROM BOLT INSTALLATION.



SECTION N-N



MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

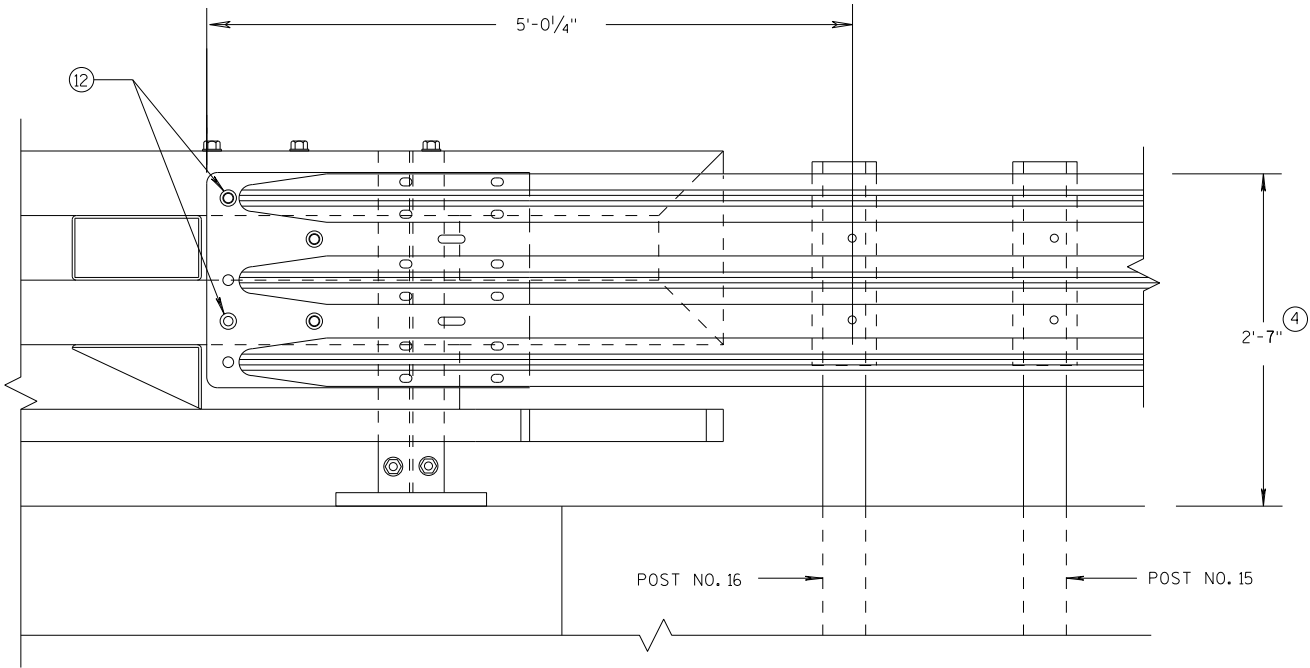
APPROVED
DATE 7/2018
FHWA

/S/ Rodney Taylor
ROADWAY STANDARDS DESIGN
UNIT SUPERVISOR 178

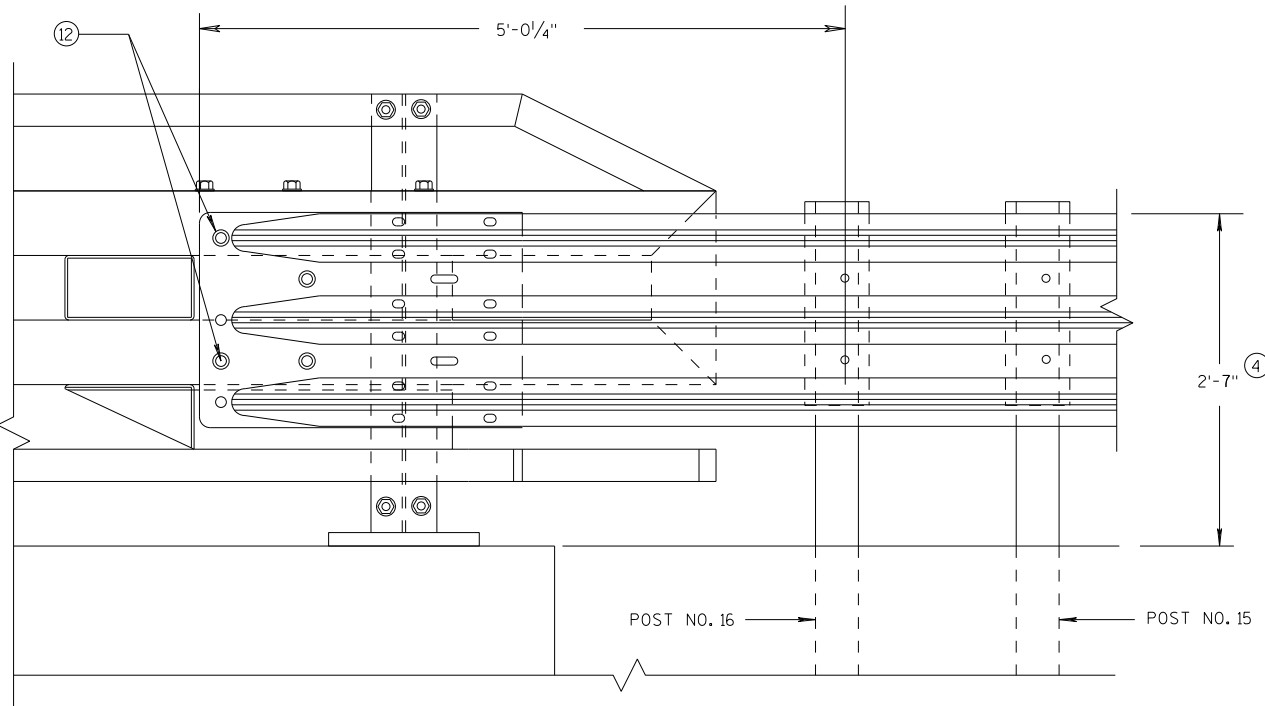
VT

GENERAL NOTES

- ④ TOLERANCE FOR TOP OF BEAM IS $\pm 1"$.
- ⑫ BOLTS MAY BE A325 BOLTS OR A449 BOLTS. BOLT LENGTH AND THREADING LENGTH ARE TO ALLOW FOR A TIGHT CONNECTION BETWEEN RIGID BARRIER AND THRIE BEAM CONNECTION PLATE. CONTRACTOR IS TO FIELD VERIFY BOLT LENGTH AND THREAD LENGTH. ONE ROUND WASHER REQUIRED BETWEEN BOLT HEAD AND THRIE BEAM CONNECTOR PLATE. ON BACKSIDE OF PARAPET ONE ROUND WASHER, AND NUT REQUIRED. BOLT THREAD IS TO EXTEND $\frac{1}{2}$ -INCH BEYOND NUT.



ELEVATION OF DETAIL AT NY3 END POST
THRIE BEAM RAIL ATTACHMENT

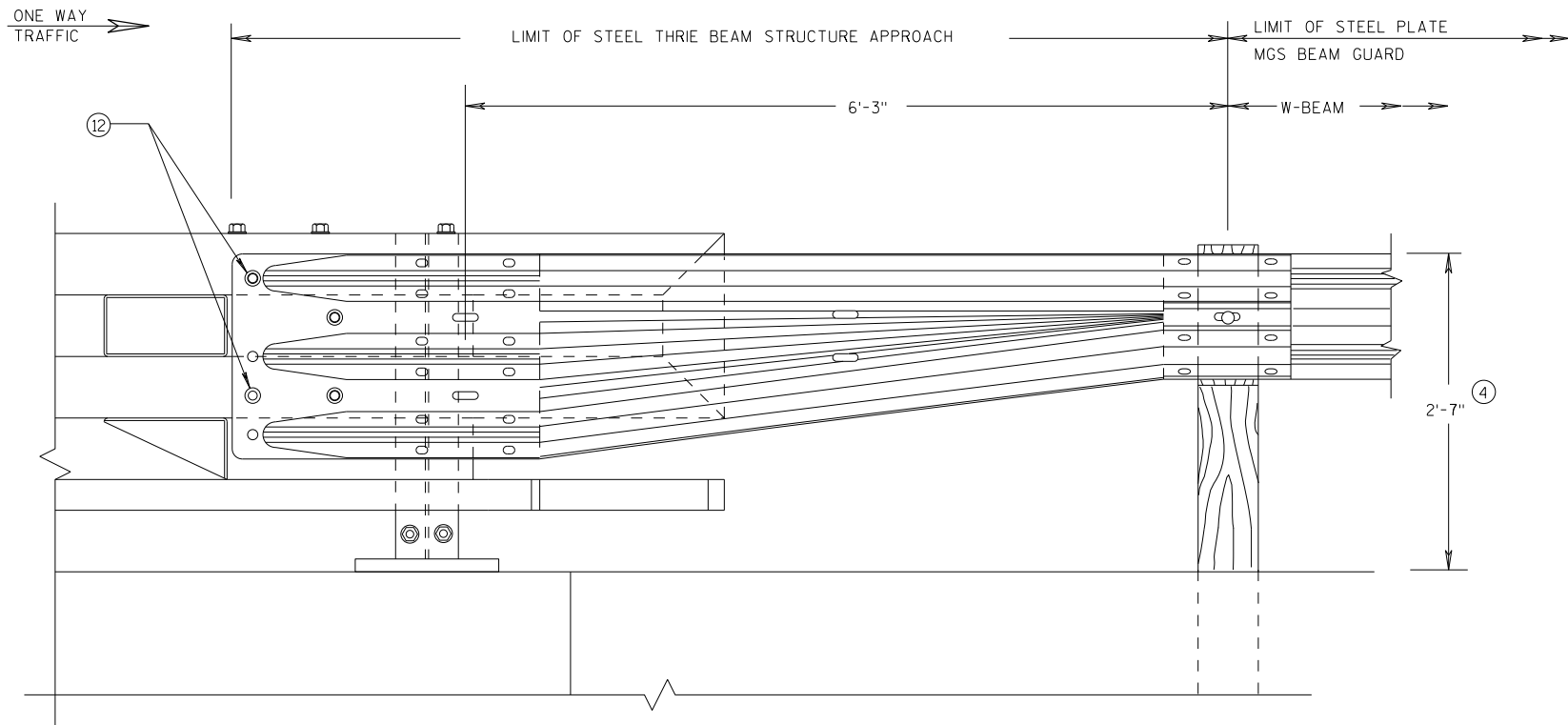


ELEVATION OF DETAIL AT NY4 END POST
THRIE BEAM RAIL ATTACHMENT

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED	/S/ Rodney Taylor	
DATE	7/2018	179
FHWA	ROADWAY STANDARDS C	UNIT SUPERVISOR

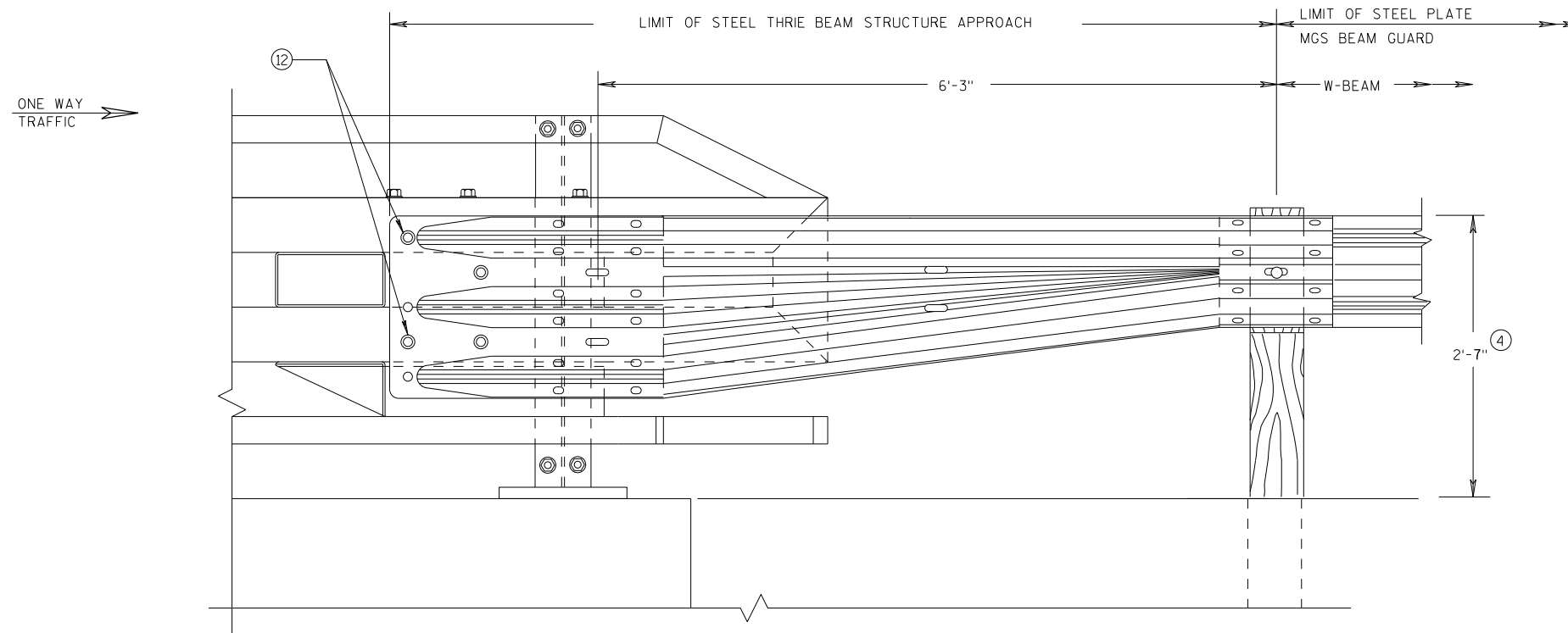


GENERAL NOTES

- (4) TOLERANCE FOR TOP OF BEAM IS $\pm 1"$.
- (12) BOLTS MAY BE A325 BOLTS OR A449 BOLTS. BOLT LENGTH AND THREADING LENGTH ARE TO ALLOW FOR A TIGHT CONNECTION BETWEEN RIGID BARRIER AND THRIE BEAM CONNECTION PLATE. CONTRACTOR IS TO FIELD VERIFY BOLT LENGTH AND THREAD LENGTH. ONE ROUND WASHER REQUIRED BETWEEN BOLT HEAD AND THRIE BEAM CONNECTOR PLATE. ON BACKSIDE OF PARAPET ONE ROUND WASHER, AND NUT REQUIRED. BOLT THREAD IS TO EXTEND $\frac{1}{2}$ -INCH BEYOND NUT.

FRONT VIEW

W BEAM TRANSITION AND CONNECTION TO BRIDGE RAILING TYPE "NY3" (USE ONLY ON THE TRAFFIC EXIT END OF ONE WAY BRIDGES)



FRONT VIEW

W BEAM TRANSITION AND CONNECTION TO BRIDGE RAILING TYPE "NY4" (USE ONLY ON THE TRAFFIC EXIT END OF ONE WAY BRIDGES)

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

7/2018

DATE

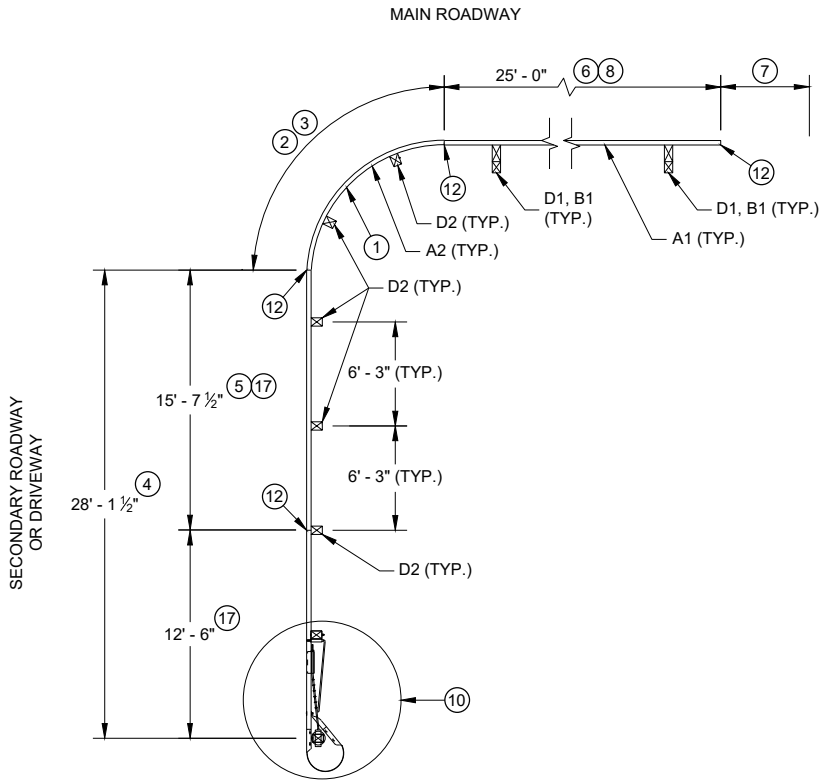
FHWA

/S/ Rodney Taylor

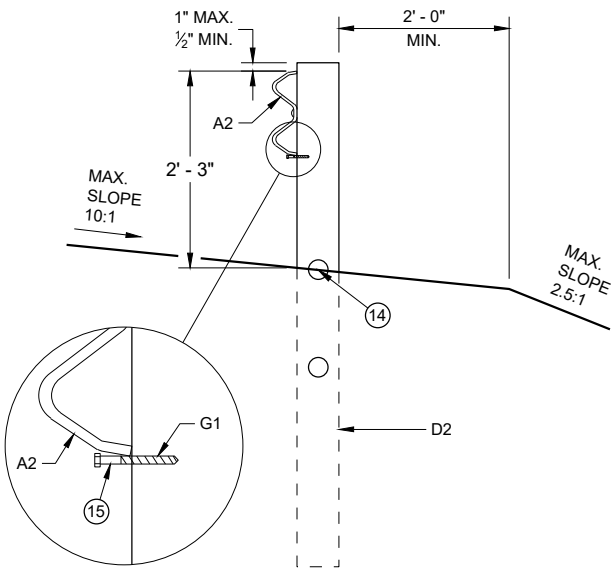
ROADWAY STANDARDS C 180

UNIT SUPERVISOR

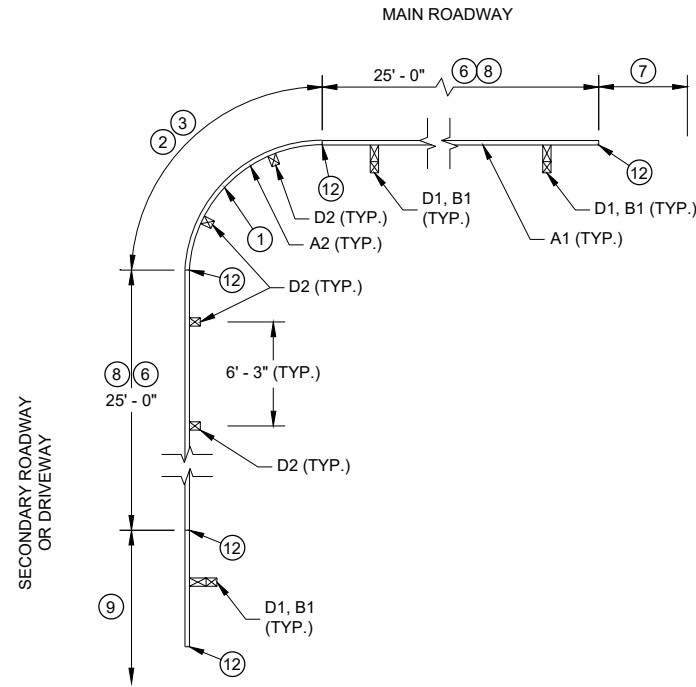
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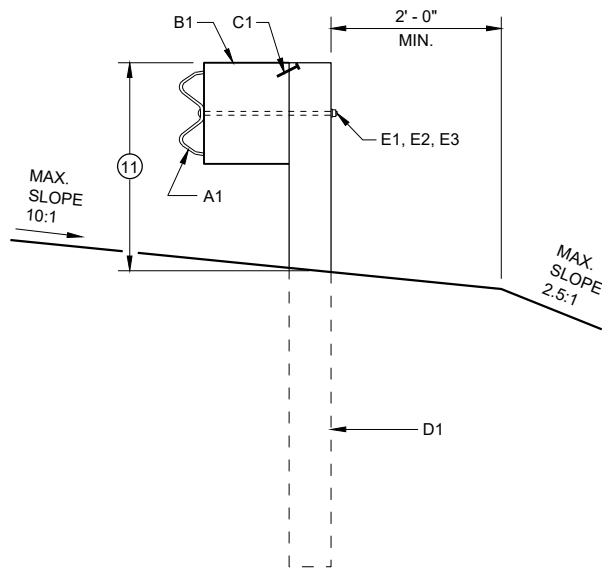
PLAN VIEW
SHORT RADIUS BEAM GUARD WITH
SHORT RADIUS TERMINAL ON
SECONDARY ROAD OR DRIVEWAY



CONTROLLED RELEASE
TERMINAL POST (CRT) IN RADIUS



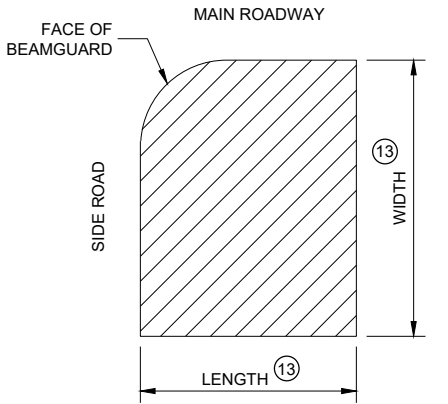
PLAN VIEW
SHORT RADIUS BEAM GUARD WITH
EAT, ADDITIONAL BEAM GUARD
OR
TRANSITION TO RIGID BARRIER ON
SECONDARY ROAD OR DRIVEWAY



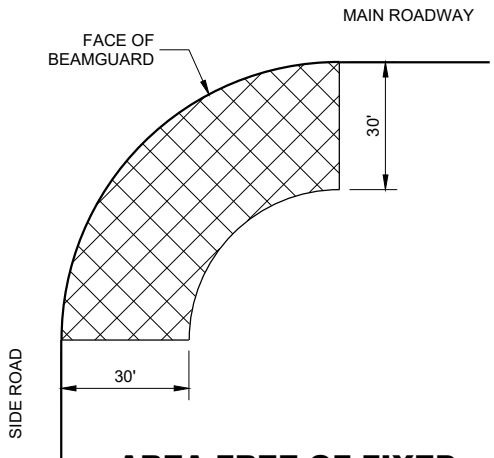
BEAM GUARD POSTS
IN HEIGHT TRANSITION

TABLE FOR RADIUS OF 32' AND LESS

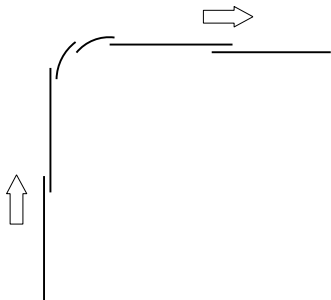
RADIUS (FT)	LENGTH (FT)	WIDTH (FT)
8	25	15
16	30	15
24	40	20
32	50	30



AREA FREE OF FIXED
OBJECTS FOR RADIUS
32' AND LESS



AREA FREE OF FIXED
OBJECTS FOR RADIUS
GREATER THAN 32'



LAP SPLICE DETAIL

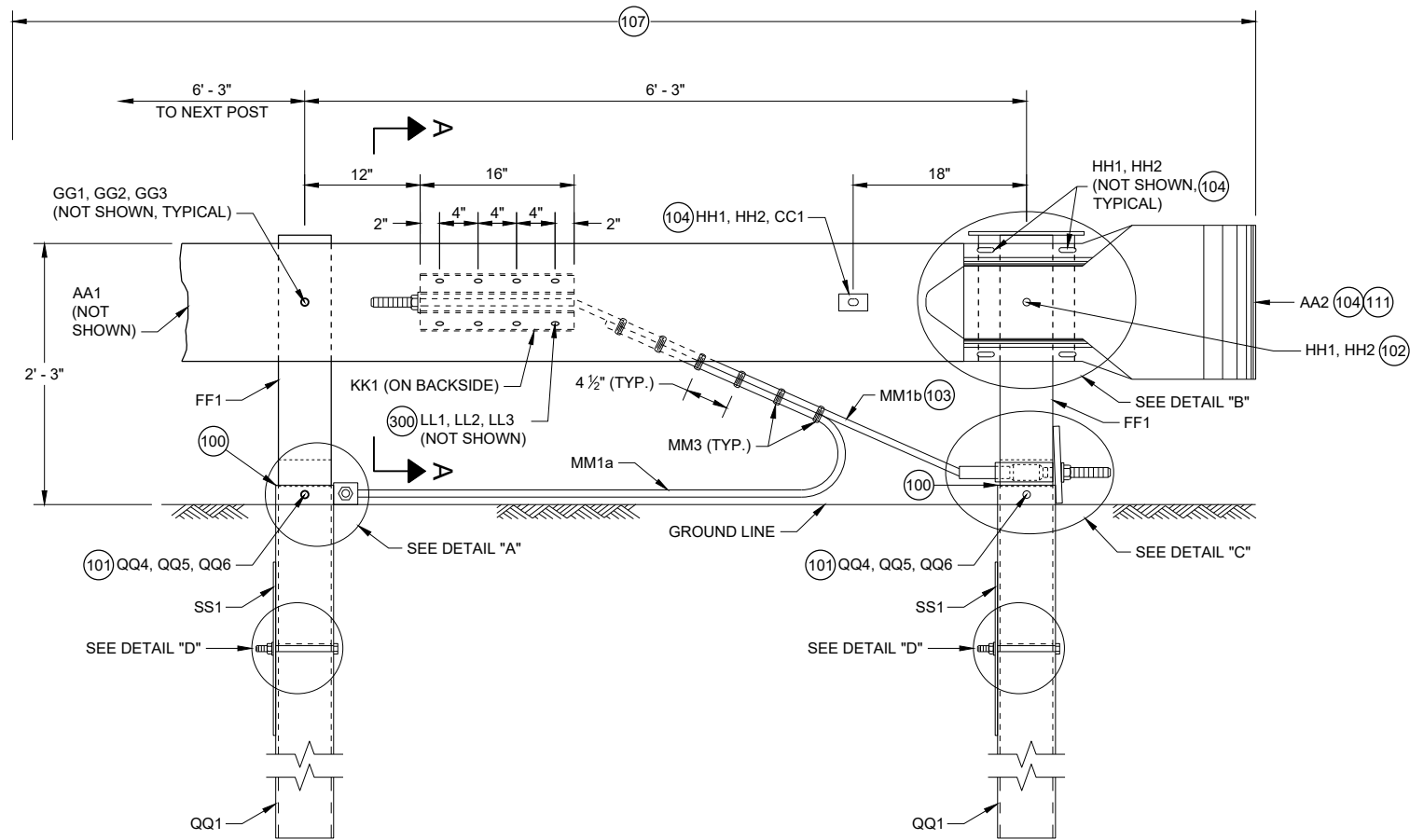
GENERAL NOTES

- SEE PLANS FOR OTHER BARRIER SYSTEM AND LOCATION SPECIFICS.
- SEE SDD 14B42 FOR MORE INFORMATION ON BEAM GUARD INSTALLATION, PARTS, MATERIALS, AND INSTALLATION INFORMATION.
- GALVANIZE PARTS AFTER FABRICATION.
- WELDING TO FOLLOW CURRENT REQUIREMENTS OF THE AMERICAN WELDING SOCIETY STRUCTURAL WELDING CODE ANSI / AWS D1.1.
- UNLESS NOTED OTHERWISE, ALL PLATES ARE FLAT AND FREE OF WARP.
- UNLESS NOTED OTHERWISE, ALL EDGES ARE SMOOTH, STRAIGHT AND VERTICAL.
- ALL CUTS AND HOLES, EXCEPT IN BEAM GUARD RAIL ARE TO BE MACHINED OR MACHINE FLAME CUT.
- UNLESS NOTED OTHERWISE, CUT OR PROVIDE BOLTS THAT ARE 1/4" TO 1/2" BEYOND THE NUT.
- DRAWINGS ARE NOT TO SCALE.

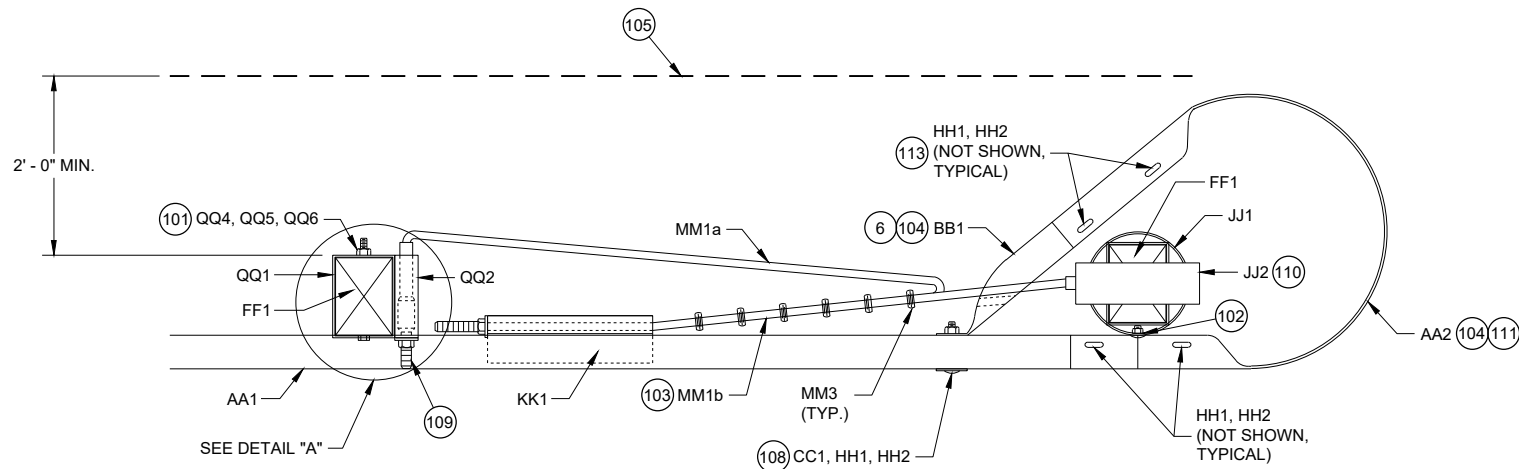
- (1) RADIUS MEASURE FROM INSIDE OF RAIL. LENGTH OF BEAM GUARD SHORT RADIUS GUARD MEASURED ALONG TRAFFIC SIDE OF RAIL. RADIUS BETWEEN 8 FEET TO 150 FEET. SEE PLAN FOR REQUIRED RADIUS. BEAM GUARD RAIL IN RADIUS IS SHOP BENT. ODD RAIL LENGTH OR FIELD CUTS MAY BE REQUIRED.
- (2) CONTROLLED RELEASE TERMINAL (CRT) POSTS ARE USED IN THE RADIUS. CONTROLLED RELEASE TERMINAL (CRT) POSTS ARE SPACED 6' - 3". SEE PLAN FOR NUMBER OF CONTROLLED RELEASE (CRT) POSTS.
- (3) WITHIN RADIUS BEAM GUARD RAILS ARE NOT BOLTED TO POSTS. BEAM GUARD RAIL IS RESTED ON TOP OF LAG SCREW.
- (4) MINIMUM LENGTH OF BEAM GUARD ALONG SIDE ROAD OR DRIVEWAY TO INSTALL SHORT RADIUS TERMINAL. BEAM GUARD IS PAID WITH BEAM GUARD ITEM.
- (5) ODD LENGTH OF BEAM GUARD REQUIRED TO INSTALL SHORT RADIUS TERMINAL.
- (6) MINIMUM AMOUNT OF BEAM GUARD TO BE INSTALLED PRIOR TO TRANSITION TO RIGID BARRIER. ADDITIONAL BEAM GUARD, OR EAT. BEAM GUARD PAID FOR WITH BEAM GUARD ITEM. SEE PLANS FOR MORE DETAIL.
- (7) BEAM GUARD, EAT, OR TRANSITION TO RIGID BARRIER. SEE PLAN.
- (8) TOP OF BEAM GUARD BY THE RADIUS IS 27". HEIGHT OF BEAM GUARD IS 31" BY TRANSITION TO RIGID BARRIER, ADDITIONAL BEAM GUARD OR EAT.
- (9) ADDITIONAL BEAM GUARD, EAT OR TRANSITION TO RIGID BARRIER. BEAM GUARD SHOWN. SEE PLAN FOR DETAILS.
- (10) SHORT RADIUS TERMINAL (SEE OTHER DETAILS).
- (11) HEIGHT VARIES. SEE NOTE (8) AND (8).
- (12) BEAM GUARD RAIL SPLICE LOCATION. SPLICE LOCATION REQUIRES PART F1 AND F2. SEE SDD 14B42 FOR DETAILS.
- (13) SEE TABLE FOR VALUES.
- (14) MAXIMUM HEIGHT FOR CENTER OF HOLE IS 3/4" ABOVE FINISHED GROUND ±1".
- (15) DRILL POST 1 5/8" DIA. PILOT HOLE. DO NOT HAMMER LAG SCREW INTO POST.
- (16) SMALL SIGNS ON BREAKAWAY HARDWARE ARE ACCEPTABLE.
- (17) TOP OF RAIL HEIGHT IS 27" WHEN USING A SHORT RADIUS TERMINAL (CRT).

SHORT RADIUS BEAM
GUARD (MGS) SHORT
RADIUS TERMINAL (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION 181



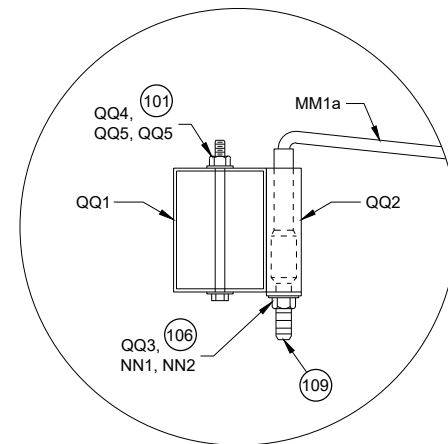
PROFILE VIEW
SHORT RADIUS TERMINAL



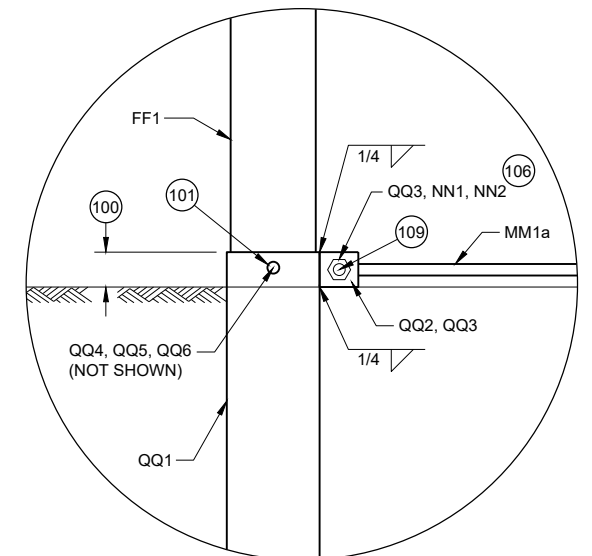
TOP VIEW
SHORT RADIUS TERMINAL

GENERAL NOTES

- (100) TOP OF FOUNDATION TUBE 2 INCHES MAXIMUM ABOVE FINISHED GROUND.
- (101) WASHERS REQUIRED BETWEEN BOLT HEAD AND FOUNDATION TUBE AND BETWEEN NUT AND FOUNDATION TUBE.
- (102) SPLICE BOLT AND NUT CONNECTS BEAM GUARD RAIL, W-BEAM SECTION BUFFER, AND STEEL PIPE ASSEMBLY. NO WASHER REQUIRED. SEE DETAIL "B".
- (103) CABLE IS TAUT.
- (104) ADJUST AA2 AND BB1 TO FIT.
- (105) BREAK POINT OF SHOULDER.
- (106) TACK WELD CABLE CONNECTOR TUBE PLATE TO CABLE CONNECTION TUBE. SEE DETAIL "A" PROFILE VIEW.
- (107) PAY LIMIT FOR BEAM GUARD.
- (108) SQUARE WASHER BETWEEN HEAD OF BOLT AND TRAFFIC FACE OF BEAM GUARD. ROUND WASHER REQUIRED BETWEEN NUT AND BB1.
- (109) CUT OR PROVIDE THREADED STUD THAT IS FLUSH WITH FACE OF BEAM GUARD RAIL KK1 (PLUS OR MINUS 1/2" TOLERANCE). DEBURR AFTER CUTTING.
- (110) SEE STEEL PIPE ASSEMBLY DETAILS.
- (111) ATTACH UU2 WITH UU3. SHOP APPLY UU1 TO UU2.
- (112) FOUR (4) HH1 AND HH2 REQUIRED TO ATTACH AA1 TO AA2.
- (113) FOUR (4) HH1 AND HH2 REQUIRED TO ATTACH AA2 TO BB1.



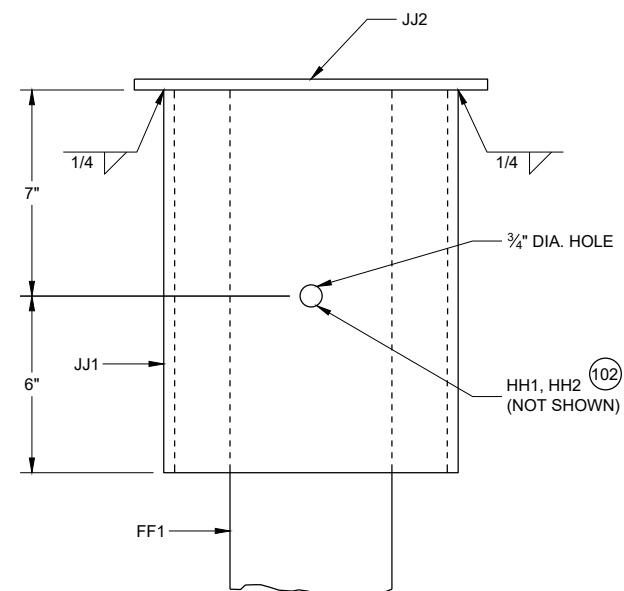
TOP VIEW
DETAIL "A"
(WOOD BREAKAWAY AND BEAM
GUARD RAIL POSTS NOT SHOWN)



PROFILE VIEW
DETAIL "A"

SHORT RADIUS BEAM
GUARD (MGS) SHORT
RADIUS TERMINAL (MGS)

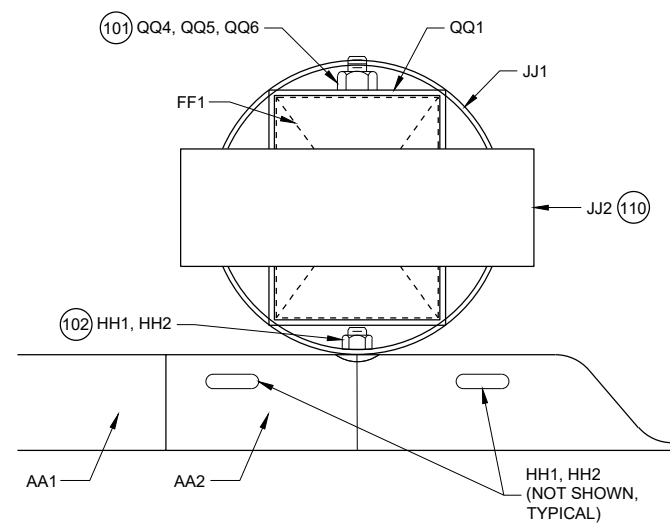
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION 182



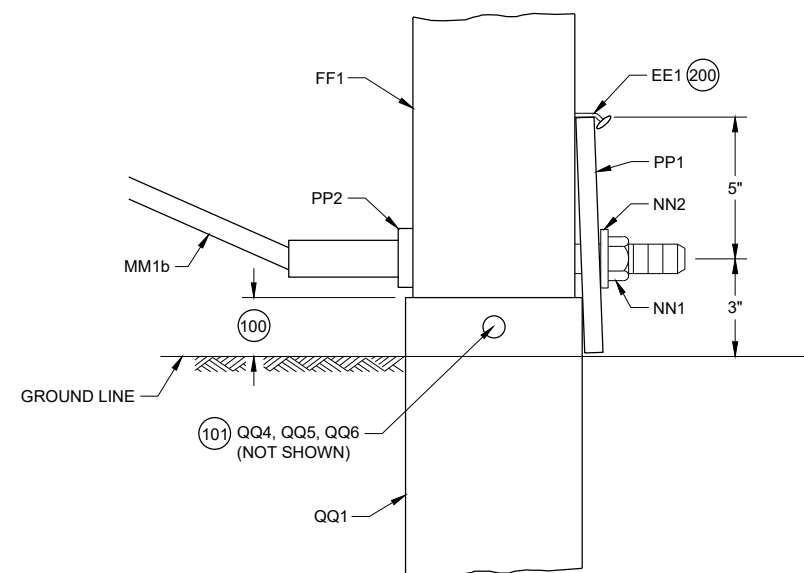
PROFILE VIEW

DETAIL "B"

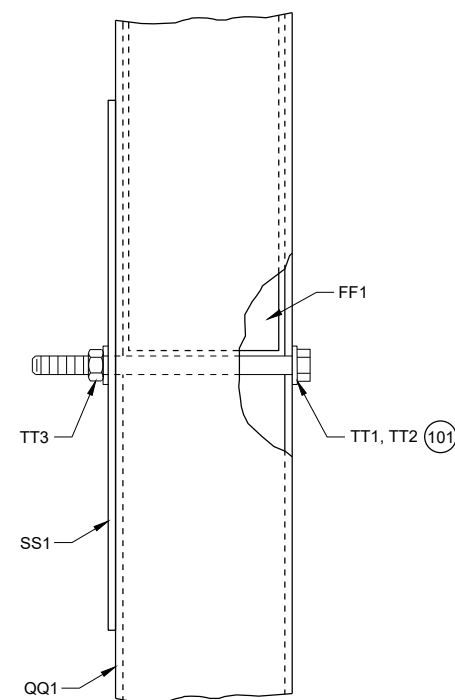
STEEL PIPE ASSEMBLY
(BEAM GUARD AND W BEAM
END SECTION NOT SHOWN)



PLAN VIEW
DETAIL "B"
STEEL PIPE ASSEMBLY



**PROFILE VIEW
DETAIL "C"**



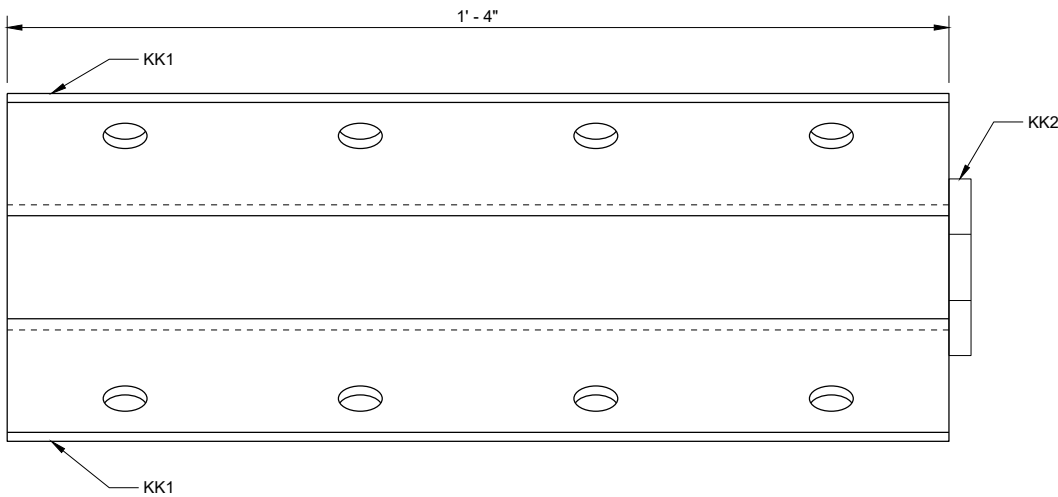
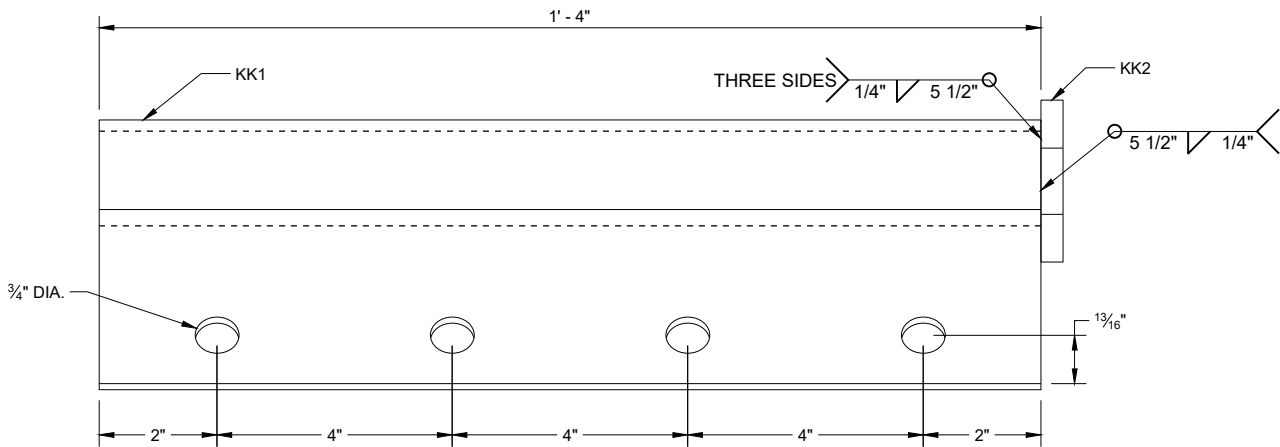
PROFILE VIEW
DETAIL "D"

GENERAL NOTES

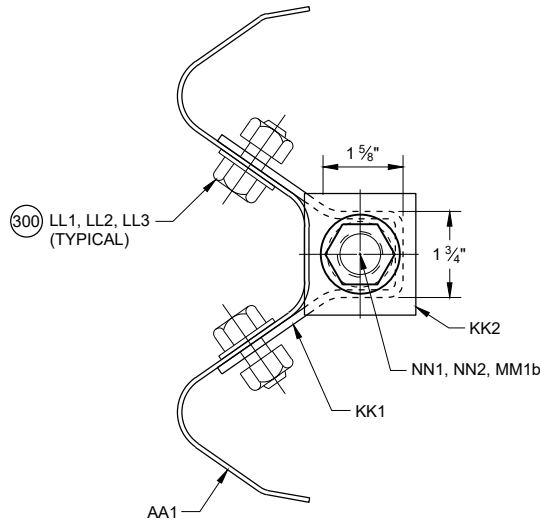
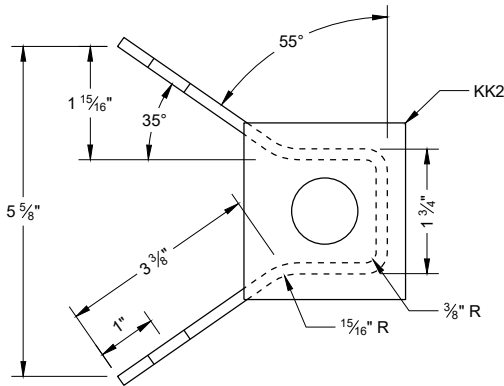
(200) TWO (2) NAILS SPACED 4 INCHES CENTER TO CENTER.

**SHORT RADIUS BEAM
GUARD (MGS) SHORT
RADIUS TERMINAL (MGS)**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION 183

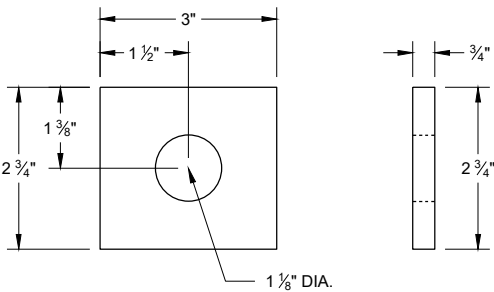


ANCHOR BRACKET (KK1, KK2)



SECTION A - A

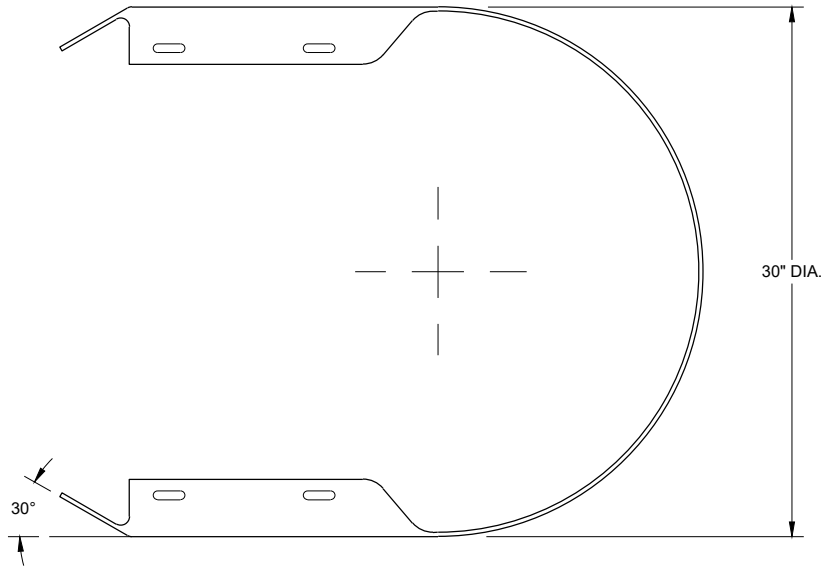
300 WASHERS REQUIRED BETWEEN BOLT HEAD AND BEAM GUARD RAIL AND BETWEEN NUT AND ANCHOR BRACKET. EIGHT (8) LL1 AND LL3 REQUIRED. SIXTEEN (16) LL2 REQUIRED.



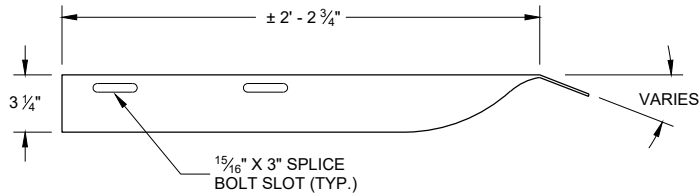
ANCHOR BRACKET BEARING PLATE (KK2)

SHORT RADIUS BEAM
GUARD (MGS) SHORT
RADIUS TERMINAL (MGS)

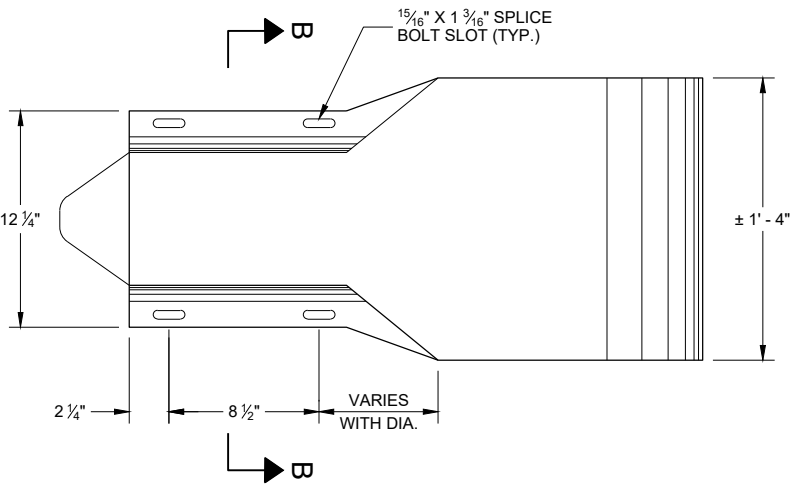
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



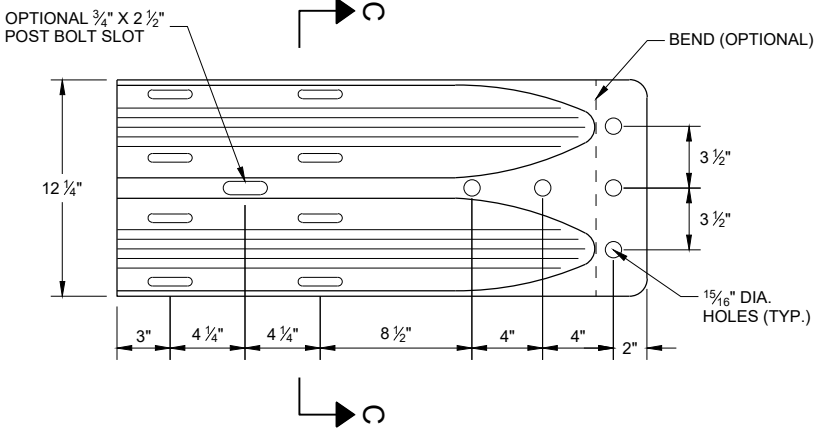
TOP VIEW



TOP VIEW



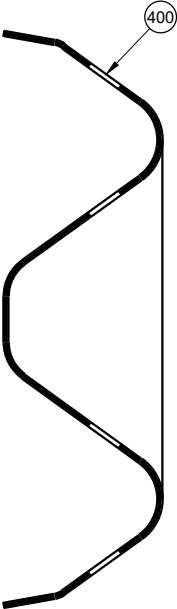
PROFILE VIEW
W BEAM
END SECTION BUFFER (AA2)



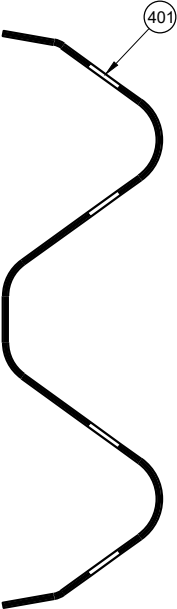
PROFILE VIEW
W BEAM
TERMINAL CONNECTOR (BB1)

GENERAL NOTES

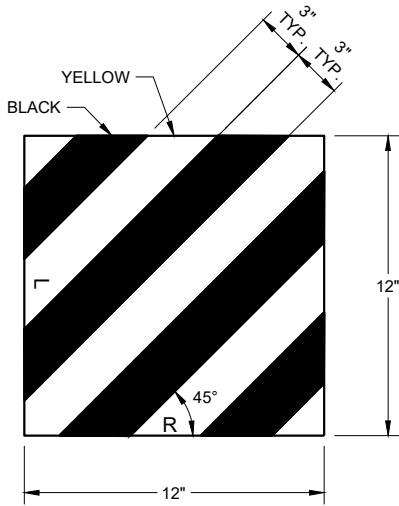
- (400) CROSS SECTION OF PART IS TO FIT OVER AA1 .
- (401) CROSS SECTION OF PART IS TO FIT OVER OR UNDER AA1 .



SECTION B -B



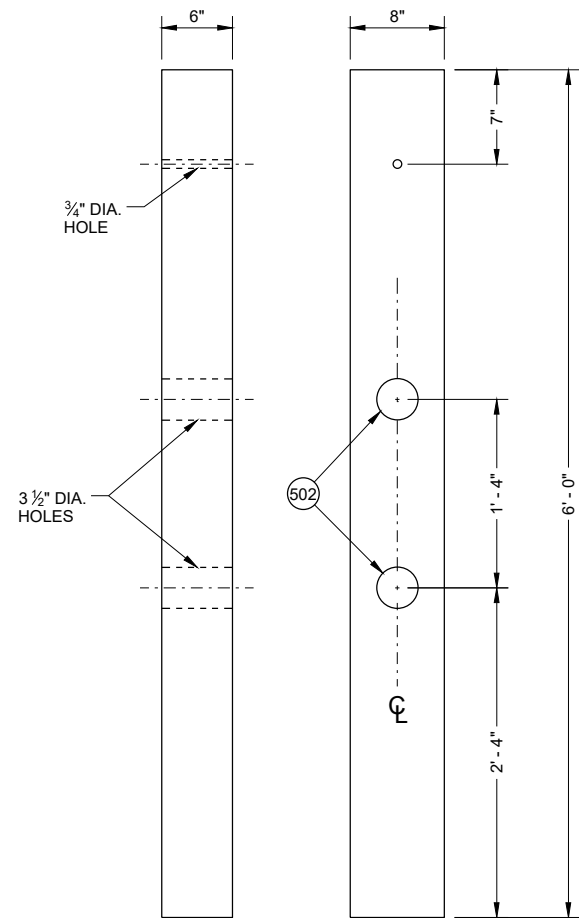
SECTION C -C



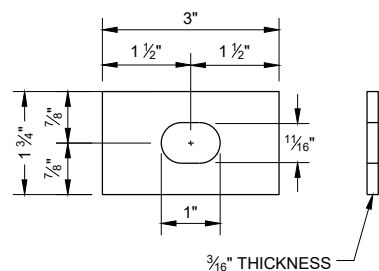
REFLECTIVE SHEETING (UU1, UU2)

SHORT RADIUS BEAM
GUARD (MGS) SHORT
RADIUS TERMINAL (MGS)

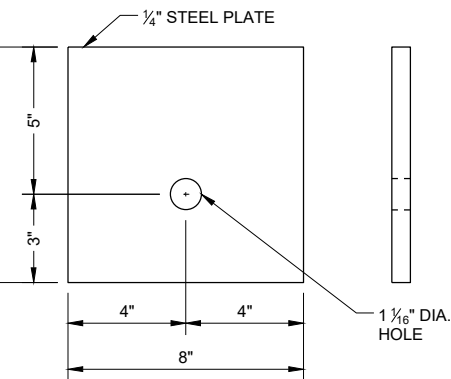
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION 185



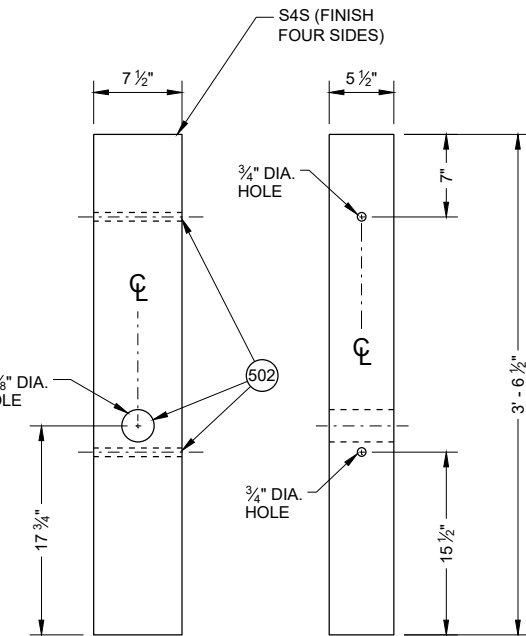
FRONT VIEW SIDE VIEW
CONTROLLED RELEASE POST (CRT) (DD2)



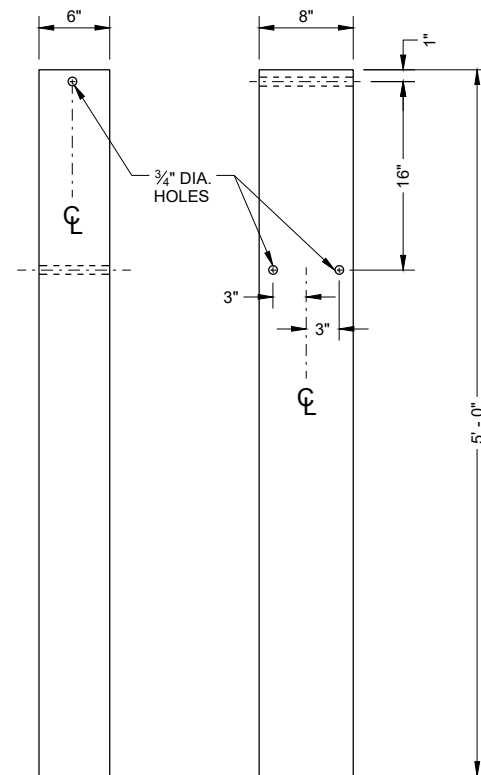
RECTANGULAR PLATE WASHER (CC1)



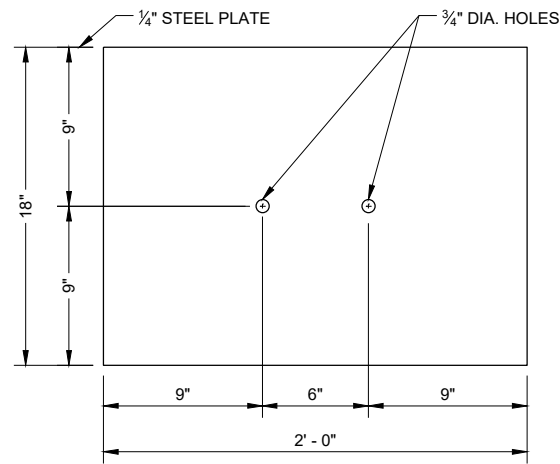
BEARING PLATE (PP1)



FRONT VIEW SIDE VIEW
WOOD BREAKAWAY POST (FF1)



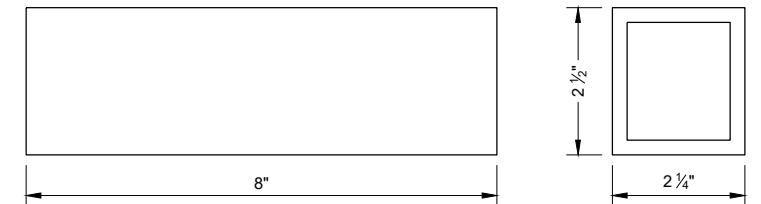
FRONT VIEW SIDE VIEW
FOUNDATION TUBE (QQ1)



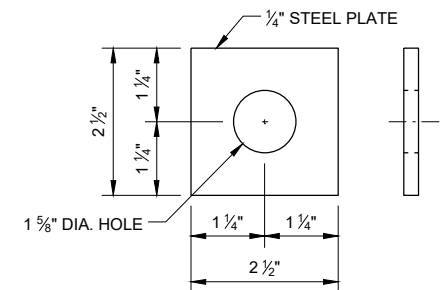
SOIL PLATE (SS1)

GENERAL NOTES

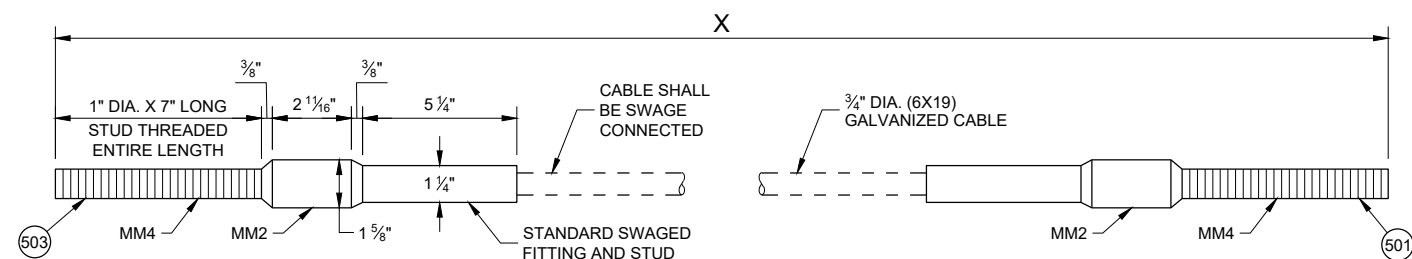
- (500) SEE DETAIL "D" FOR LOCATION AND ATTACHMENT OF SS1.
- (501) FOR MM1a THREADED STUD ONLY REQUIRED ON ONE END. SWAGED FITTING REQUIRED.
- (502) LOCATE HOLES ON THE CENTERLINE OF THE SIDE OF THE POST.
- (503) MM1a MAY HAVE ONE THREADED STUD 4 INCHES LONG. SEE NOTE (109).



FOUNDATION TUBE - ANCHOR CABLE TUBE (QQ2)



ANCHOR CABLE TUBE END PLATE (QQ3)



CABLE ASSEMBLY (MM1a, MM1b)

"X" LENGTH

MM1b	9' - 0"
MM1b	6' - 8"

SHORT RADIUS BEAM GUARD (MGS) SHORT RADIUS TERMINAL (MGS)

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DEPARTMENT OF TRANSPORTATION 186

BILL OF MATERIALS - SHORT RADIUS BEAM GUARD (MGS)

PART	DESCRIPTION	MATERIALS SPECIFICATIONS	NOTES
A1	BEAM GUARD RAIL	AASHTO M180, CLASS A, TYPE 2	
		APPROVED PRODUCER	
A2	BEAM GUARD RAIL - SHOP BENT	INDICATE ON BACK OF RAIL THE RADIUS THAT RAIL WAS BENT TO. SHOP BEND RADIUS IS TO THE NEAREST FOOT. FOLLOW AASHTO M180 ON HOW TO MARK RADIUS INFORMATION.	
		AASHTO M180, CLASS A, TYPE 2	
		APPROVED PRODUCER	
B1	BLOCK - WOOD	WISDOT SPEC. 614	SEE SDD 14B42
C1	NAIL	ASTM A153 HOT DIP CLASS D	
		ASTM F1667 TYPE 1 STYLE 12 (16 DOUBLE HEAD)	
D1	POST-STRONG POST-WOOD	WISDOT SPEC. 614	SEE SDD 14B42
D2	POST-CRT-WOOD	WISDOT SPEC. 614	
E1	POST BOLT	ASTM A307 GRADE A OR SAE J429 GRADE 2	5/8" DIA. SEE SDD 14B42 FOR BOLT GEOMETRY
		AASHTO M180	
		GALV. HOT DIP TO AASHTO M232 CLASS C / ASTM A153 CLASS C / ASTM F2329 OR GALV. MECHANICALLY TO AASHTO M298 CLASS 50, TYPE 1 / ASTM B695 CLASS 50, TYPE 1	
		UNC	
E2	POST BOLT - WASHER	ASTM F436 TYPE 1 (HARDEN TYPICALLY USED WITH STEEL) OR ASTM F844 (UNHARDENED TYPICALLY WITH WOOD)	5/8" DIA.
		GALV. AASHTO M111 / ASTM A 123 OR GALV. HOT DIP. TO AASHTO M232 CLASS C / ASTM A153 CLASS C / ASTM F2329	
E3	POST BOLT - NUT	AASHTO M180 DOUBLE RECESSED HEAVY HEX HEAD	5/8" DIA. SEE SDD 14B42 FOR BOLT GEOMETRY
		GALV. HOT DIP TO AASHTO M232 CLASS C / ASTM A153 CLASS C / ASTM F2329 OR GALV. MECHANICALLY TO AASHTO M298 CLASS 50, TYPE 1 / ASTM B695 CLASS 50, TYPE 1	
		UNC	
		OVER TAPPED NUTS OVER-SIZE AS SPECIFIED IN AASHTO 291 / ASTM A 563	
		ASTM A563 GRADE A HEAVY HEX HEAD	
F1	SPlice BOLT	GALV. HOT DIP TO AASHTO M232 CLASS C / ASTM A153 CLASS C / ASTM F2329 OR GALV. MECHANICALLY TO AASHTO M298 CLASS 50, TYPE 1 / ASTM B695 CLASS 50, TYPE 1	5/8" DIA. SEE SDD 14B42 FOR BOLT GEOMETRY
		ASTM A307 GRADE A OR SAE J429 GRADE 2	
		UNC	
		AASHTO M180	

PART	DESCRIPTION	MATERIALS SPECIFICATIONS	NOTES
F2	SPlice BOLT - NUT	ASTM A563 GRADE A	5/8" DIA. SEE SDD 14B42 FOR BOLT GEOMETRY
		AASHTO M180 DOUBLE RECESSED HEAVY HEX HEAD	
		GALV. HOT DIP TO AASHTO M232 CLASS C/ASTM A153 CLASS C/ASTM F2329 OR GALV. MECHANICALLY TO AASHTO M298 CLASS 50, TYPE 1/ASTM B695 CLASS 50, TYPE 1	
		OVER TAPPED NUTS OVER-SIZE AS SPECIFIED IN AASHTO 291 / ASTM A 563	
		UNC	
G1	LAG SCREW	ASTM A308 GRADE A ASTM A153 CLASS D	1/2" DIA. 6" LONG
H1	DELINEATOR - BEAM GUARD		SEE SDD 14B42 FOR MORE INFORMATION
H2	DELINEATION - SHEETING	YELLOW OR WHITE	
		WISDOT SPEC 637 TYPE SH	
		APPROVED PRODUCT LIST	
J1	FOUNDATION BACKFILL	STANDARD SPEC. 614	
AA1	BEAM GUARD RAIL - PUNCHED	AASHTO M180, CLASS A, TYPE 2	
		APPROVED PRODUCER	
AA2	BEAM GUARD RAIL - END SECTION BUFFER	AASHTO M180, CLASS A, TYPE 2	
		APPROVED PRODUCER	
BB1	BEAM GUARD RAIL - TERMINAL CONNECTOR MODIFIED	AASHTO M180, CLASS A, TYPE 2	
		APPROVED PRODUCER	
CC1	SHORT RADIUS - SQUARE WASHER	AASHTO M180	
		GALV. AASHTO M111 / ASTM A123	
EE1	NAIL	ASTM A153 HOT DIP CLASS D	
		ASTM F1667 TYPE 1 STYLE 12 (16 DOUBLE HEADED)	
FF1	POST - BCT - WOOD	S4S FINISH ON 4 SIDES	
		WISDOT SPEC. 614	
GG1	POST BOLT	ASTM A307 GRADE A OR SAE J429 GRADE 2	3/8" DIA. SEE SDD 14B42 FOR BOLT GEOMETRY
		AASHTO M180	
		GALV. HOT DIP TO AASHTO M232 CLASS C/ASTM A153 CLASS C/ASTM F2329 OR GALV. MECHANICALLY TO AASHTO M298 CLASS 50, TYPE 1/ASTM B695 CLASS 50, TYPE 1	
		UNC	
GG2	POST BOLT - WASHER	ASTM F436 TYPE 1 (HARDEN TYPICALLY USED WITH STEEL) OR ASTM F844 (UNHARDENED TYPICALLY WITH WOOD)	3/8" DIA.
		GALV. AASHTO M111 / ASTM A 123 OR GALV. HOT DIP. TO AASHTO M232 CLASS C/ASTM A153 CLASS C / ASTM F2329	

SHORT RADIUS BEAM GUARD (MGS) SHORT RADIUS TERMINAL (MGS)

STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION 187

BILL OF MATERIALS - SHORT RADIUS BEAM GUARD (MGS)

PART	DESCRIPTION	MATERIALS SPECIFICATIONS	NOTES
GG3	POST BOLT - NUT	ASTM A563 GRADE A	3⁄8" DIA. SEE 14B42 FOR GEOMETRY
		AASHTO M180 DOUBLE RECESSED HEAVY HEX HEAD	
		GALV. HOT DIP TO AASHTO M232 CLASS C / ASTM A153 CLASS C / ASTM F2329 OR GALV. MECHANICALLY TO AASHTO M298 CLASS 50, TYPE 1 / ASTM B695 CLASS 50, TYPE 1	
		UNC	
		OVER TAPPED NUTS OVER-SIZE AS SPECIFIED IN AASHTO 291 / ASTM A 563	
		ASTM A563 GRADE A HEAVY HEX HEAD	
HH1	SPLICE BOLT	GALV. HOT DIP TO AASHTO M232 CLASS C / ASTM A153 CLASS C / ASTM F2329 OR GALV. MECHANICALLY TO AASHTO M298 CLASS 50, TYPE 1 / ASTM B695 CLASS 50, TYPE 1	3⁄8" DIA. SEE SDD 14B42 FOR BOLT GEOMETRY
		ASTM A307 GRADE A OR SAE J429 GRADE 2	
		UNC	
		AASHTO M180 HEAD GEOMETRY	
HH2	SPLICE BOLT - NUT	ASTM A563 GRADE A	3⁄8" DIA. SEE SDD 14B42 FOR BOLT GEOMETRY
		AASHTO M180 DOUBLE RECESSED HEAVY HEX HEAD	
		GALV. HOT DIP TO AASHTO M232 CLASS C / ASTM A153 CLASS C / ASTM F2329 OR GALV. MECHANICALLY TO AASHTO M298 CLASS 50, TYPE 1 / ASTM B695 CLASS 50, TYPE 1	
		OVER TAPPED NUTS OVER-SIZE AS SPECIFIED IN AASHTO 291 / ASTM A 563	
		UNC	
JJ1	PIPE - STEEL	ASTM A53 GALVANIZED GRADE B SCHEDULE 40	10" O.D.
JJ2	TOP PLATE	ASTM A36 MIN. STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX STRENGTH 50 KSI OR ASTM A709 MAX STRENGTH 50 KSI OR ASTM A992 MAX STRENGTH 50 KSI	DIMENSIONS 3⁄8" X 4" X 1' - 0"
		GALV. AASHTO M111 / ASTM A123	
KK1	ANCHOR BRACKET	ASTM A36 MIN. STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX STRENGTH 50 KSI OR ASTM A709 MAX STRENGTH 50 KSI OR ASTM A992 MAX STRENGTH 50 KSI	
		GALV. AASHTO M111 / ASTM A123	
KK2	ANCHOR BRACKET - BEARING PLATE	ASTM A36 MIN. STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX STRENGTH 50 KSI OR ASTM A709 MAX STRENGTH 50 KSI OR ASTM A992 MAX STRENGTH 50 KSI	
		GALV. AASHTO M111 / ASTM A123	
LL1	ANCHOR BRACKET - BOLT	ASTM A307 GRADE B HEAVY HEX HEAD OR SAE J429 GRADE 2 HEAVY HEX HEAD	3⁄8" DIA.
		GALV. HOT DIP TO AASHTO M232 CLASS C / ASTM A153 CLASS C / ASTM F2329 OR GALV. MECHANICALLY TO AASHTO M298 CLASS 50, TYPE 1 / ASTM B695 CLASS 50, TYPE 1	
		UNC	

PART	DESCRIPTION	MATERIALS SPECIFICATIONS	NOTES
LL2	ANCHOR BRACKET - WASHER	ASTM F436 TYPE 1 (HARDEN WASHER ONLY)	3⁄8" DIA.
		GALV. AASHTO M111 / ASTM A123 OR GALV. HOT DIP TO AASHTO M232 CLASS C / ASTM A153 CLASS C / ASTM F2329	
LL3	ANCHOR BRACKET - NUT	ASTM A563 GRADE A	3⁄8" DIA.
		GALV. HOT DIP TO AASHTO M232 CLASS C / ASTM A153 CLASS C / ASTM F2329 OR GALV. MECHANICALLY TO AASHTO M298 CLASS 50, TYPE 1 / ASTM B695 CLASS 50, TYPE 1	
		OVER TAPPED NUTS OVER-SIZE AS SPECIFIED IN AASHTO 291 / ASTM A 563	
		UNC	
MM1a	ANCHOR CABLE	AASHTO M30 / ASTM A741 INDEPENDENT WIRE CORE (IWRC) OR WIRE STRAND CORE (WCS), IMPROVED PLOW STEEL (IPS), 6X19, TYPE II OR IIc CLASS C ZINC COATED	
MM1b	ANCHOR CABLE	AASHTO M30 / ASTM A741 INDEPENDENT WIRE CORE (IWRC) OR WIRE STRAND CORE (WCS), IMPROVED PLOW STEEL (IPS), 6X19, TYPE II OR IIc CLASS C ZINC COATED	
MM2	ANCHOR CABLE - SWAGE FITTING	ASTM A576 GRADE 1035	
		SWAGE FITTINGS ARE TO BE FACTORY SWEDGED. WITH A BREAKING STRENGTH 40,000 LBS.	
		GALV. AASHTO M111 / ASTM A123	
		ASME B30.26 FORGED, CAST, OR DIE STAMPED WITH THE FOLLOWING INTO CONNECTION: NAME OF MANUFACTURER OR TRADEMARK OF CONNECTION'S MANUFACTURER, SIZE OR RATED LOAD, GRADE.	
MM3	WIRE ROPE CABLE CLAMPS	FF-C-450D TYPE 1 CLASS 1	3⁄4"
		ASTM A153 HOT DIP CLASS D	
MM4	ANCHOR CABLE - SWAGE FITTING - STUD	ASTM F3125 GRADE A325 TYPE 1 OR SAE GRADE 5 OR ASTM A449 TYPE 1 HEAVY HEX HEAD	
		GALV. HOT DIP TO AASHTO M232 CLASS C / ASTM A153 CLASS C / ASTM F2329 OR GALV. MECHANICALLY TO AASHTO M298 CLASS 50, TYPE 1 / ASTM B695 CLASS 50, TYPE 1	
		UNC	
NN1	ANCHOR CABLE - NUT	ASTM A563 GRADE A	1" DIA.
		AASHTO M180 DOUBLE RECESSED HEAVY HEX HEAD	
		GALV. HOT DIP TO AASHTO M232 CLASS C / ASTM A153 CLASS C / ASTM F2329 OR GALV. MECHANICALLY TO AASHTO M298 CLASS 50, TYPE 1 / ASTM B695 CLASS 50, TYPE 1	
		OVER TAPPED NUTS OVER-SIZE AS SPECIFIED IN AASHTO 291 / ASTM A 563	
NN2	ANCHOR CABLE - NUT - WASHER	UNC	1" DIA.
		ASTM F436 TYPE 1 (HARDEN WASHER ONLY)	
		ASTM F436 TYPE 1 (HARDEN WASHER ONLY)	1" DIA.
		GALV. AASHTO M111 / ASTM A123 OR GALV. HOT DIP TO AASHTO M232 CLASS C / ASTM A153 CLASS C / ASTM F2329	

SHORT RADIUS BEAM
GUARD (MGS) SHORT
RADIUS TERMINAL (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

BILL OF MATERIALS - SHORT RADIUS BEAM GUARD (MGS)

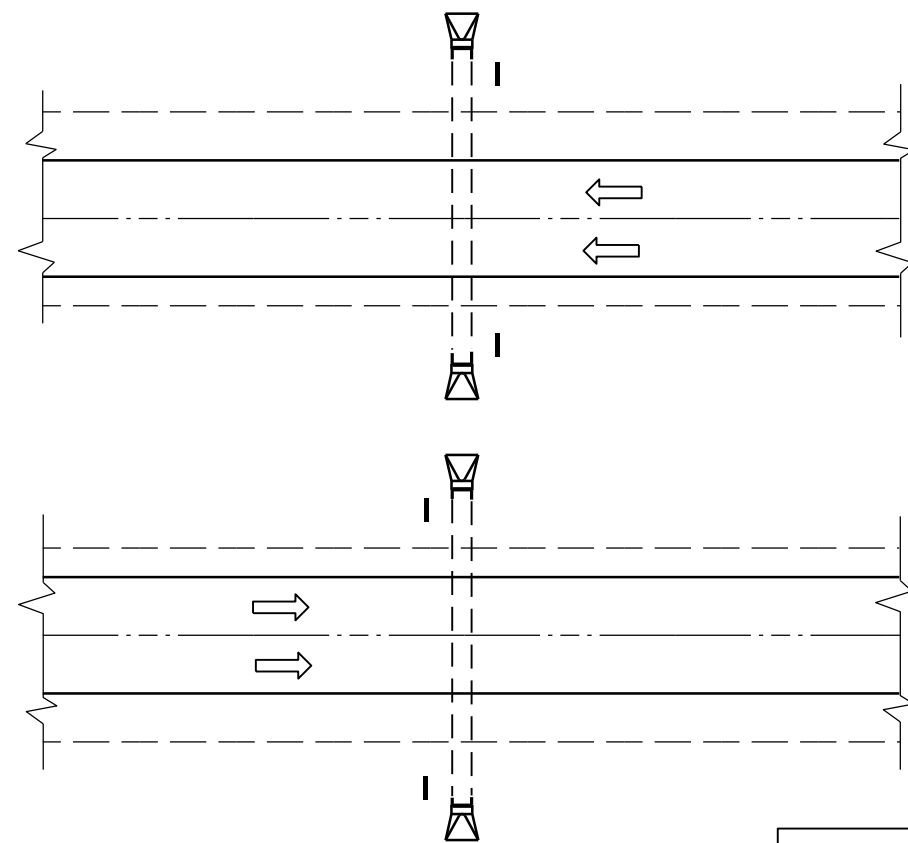
PART	DESCRIPTION	MATERIALS SPECIFICATIONS	NOTES
PP1	BEARING PLATE AT POST	ASTM A36 MIN. STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX STRENGTH 50 KSI OR ASTM A709 MAX STRENGTH 50 KSI OR ASTM A992 MAX STRENGTH 50 KSI	
		GALV. AASHTO M111 / ASTM A123	
PP2	PIPE - STEEL	ASTM A53 GALVANIZED GRADE B SCHEDULE 40	2" DIA. x 6" LONG
QQ1	FOUNDATION TUBE	ASTM A500 GRADE B	8" X 6" X $\frac{3}{16}$ "
		GALV. AASHTO M111 / ASTM A123	
QQ2	SHORT RADIUS - FOUNDATION TUBE - ANCHOR CABLE - TUBE	ASTM A500 GRADE B	DIMENSIONS 2 $\frac{1}{2}$ " X 2 $\frac{1}{4}$ " X $\frac{1}{4}$ " X 8"
		GALV. AASHTO M111 / ASTM A123	
QQ3	SHORT RADIUS - SOIL TUBE - ANCHOR CABLE - TUBE - END PLATE	ASTM A36 MIN. STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX STRENGTH 50 KSI OR ASTM A709 MAX STRENGTH 50 KSI OR ASTM A992 MAX STRENGTH 50 KSI	DIMENSIONS 2 $\frac{1}{2}$ " X 2 $\frac{1}{2}$ " X $\frac{1}{4}$ "
		GALV. AASHTO M111 / ASTM A123	
QQ4	GROUND STRUT AND YOKE - BOLT	GALV. HOT DIP TO AASHTO M232 CLASS C / ASTM A153 CLASS C / ASTM F2329 OR GALV. MECHANICALLY TO AASHTO M298 CLASS 50, TYPE 1 / ASTM B695 CLASS 50, TYPE 1	$\frac{5}{8}$ DIA.
		ASTM A307 GRADE B HEAVY HEX HEAD OR SAE J429 GRADE 2 HEAVY HEX HEAD	
		UNC	
QQ5	GROUND PLATE AND YOKE - WASHER	ASTM F436 TYPE 1 (HARDEN WASHER ONLY)	$\frac{5}{8}$ DIA.
		GALV. AASHTO M111 / ASTM A123 OR GALV. HOT DIP TO AASHTO M232 CLASS C / ASTM A153 CLASS C / ASTM F2329	
QQ6	GROUND STRUT AND YOKE - NUT	HEAVY HEX	$\frac{5}{8}$ DIA.
		UNC	
		ASTM A563 GRADE A	
		OVER TAPPED NUTS AS SPECIFIED IN AASHTO 291 / ASTM A 563	
		GALV. HOT DIP TO AASHTO M232 CLASS C / ASTM A153 CLASS C / ASTM F2329 OR GALV. MECHANICALLY TO AASHTO M298 CLASS 50, TYPE 1 / ASTM B695 CLASS 50, TYPE 1	

PART	DESCRIPTION	MATERIALS SPECIFICATIONS	NOTES
SS1	SOIL PLATE	ASTM A36 MIN. STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX STRENGTH 50 KSI OR ASTM A709 MAX STRENGTH 50 KSI OR ASTM A992 MAX STRENGTH 50 KSI	
		GALV. AASHTO M111 / A123	
TT1	SOIL PLATE - BOLT	ASTM A307 GRADE B HEAVY HEX HEAD OR SAE J429 GRADE 2 HEAVY HEX HEAD	$\frac{5}{8}$ DIA.
		GALV. HOT DIP TO AASHTO M232 CLASS C / ASTM A153 CLASS C / ASTM F2329 OR GALV. MECHANICALLY TO AASHTO M298 CLASS 50, TYPE 1 / ASTM B695 CLASS 50, TYPE 1	
		UNC	
TT2	SOIL PLATE - WASHER	ASTM F436 TYPE 1 (HARDEN WASHER ONLY)	$\frac{5}{8}$ DIA.
		GALV. AASHTO M111 / ASTM A123 OR GALV. HOT DIP TO AASHTO M232 CLASS C / ASTM A153 CLASS C / ASTM F2329	
TT3	SOIL PLATE - NUT	GALV. HOT DIP TO AASHTO M232 CLASS C / ASTM A153 CLASS C / ASTM F2329 OR GALV. MECHANICALLY TO AASHTO M298 CLASS 50, TYPE 1 / ASTM B695 CLASS 50, TYPE 1	$\frac{5}{8}$ DIA.
UU1	OBJECT MARKER - SHEETING	MUTCD / WISDOT OBJECT MARKER TYPE 3	PATTERN AND COLOR FOR SHEETING. SHEETING TYPE FOR MARKER.
		WISDOT SPEC 637 TYPE F	
		APPROVED PRODUCT LIST	
UU2	OBJECT MARKER - ALUMINUM PLATE	WISDOT SPEC 637 ALUMINUM PLATE	MATERIAL AND THICKNESS OF MATERIALS
UU3	OBJECT MARKER - SCREWS	STAINLESS SELF-TAPPING SCREWS	
VV1	FOUNDATION BACKFILL	WISDOT SPEC 614	

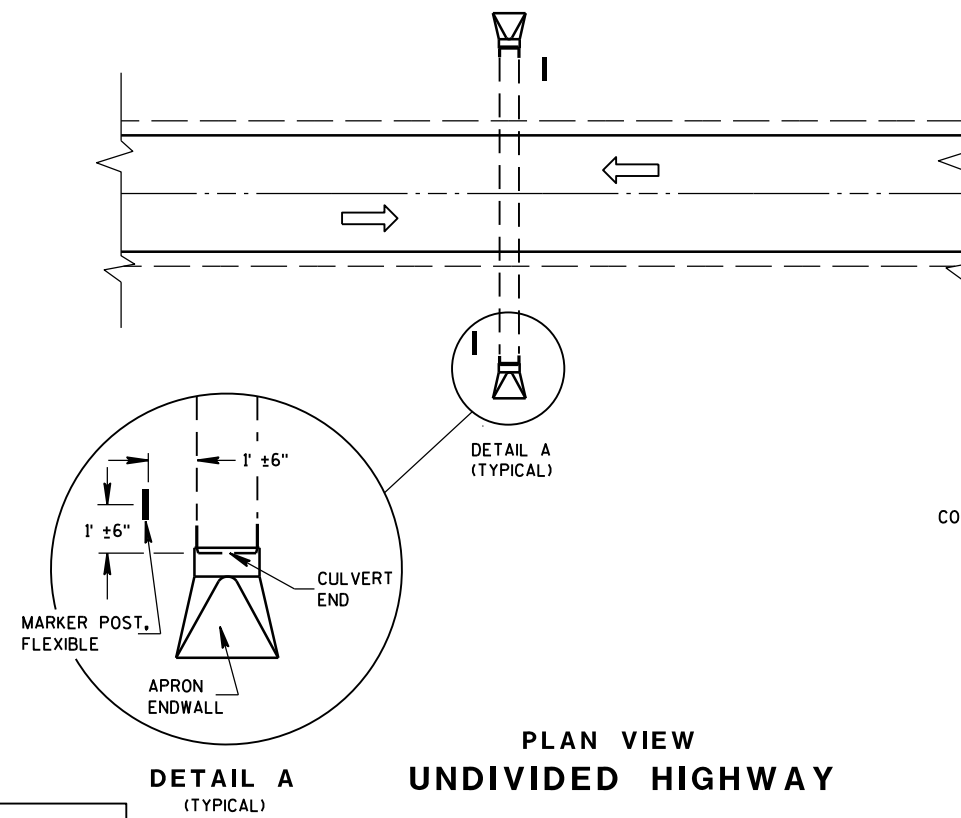
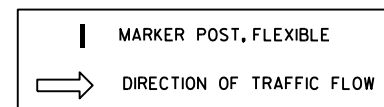
SHORT RADIUS BEAM
GUARD (MGS) SHORT
RADIUS TERMINAL (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
May 2022 /S/ Rodney Taylor
DATE ROADWAY STANDARDS DEVE ENGINEER 189
FHWA



PLAN VIEW
DIVIDED HIGHWAY

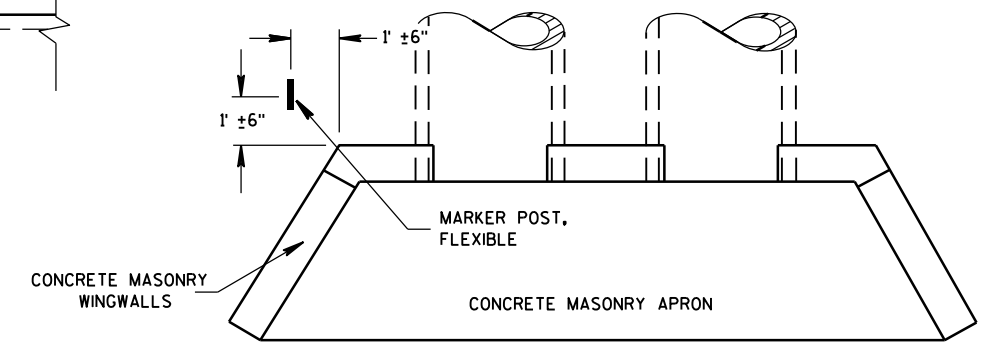


PLAN VIEW
UNDIVIDED HIGHWAY

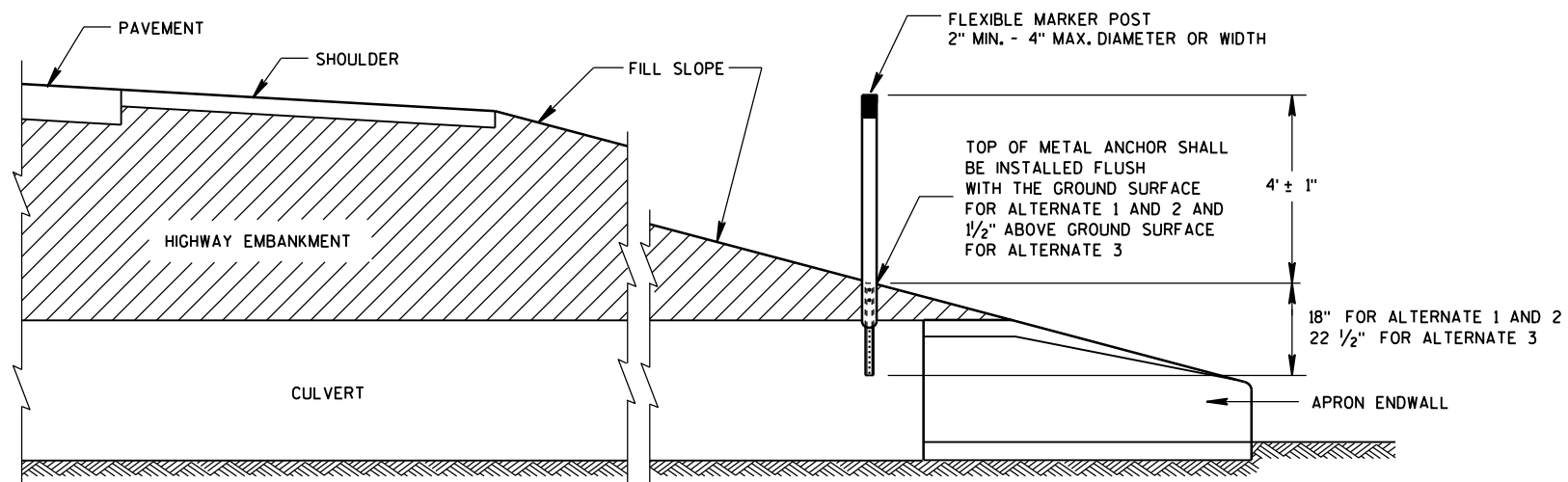
FLEXIBLE MARKER POST LOCATION

GENERAL NOTES

DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.



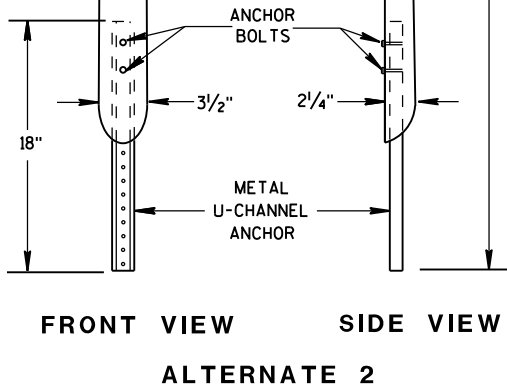
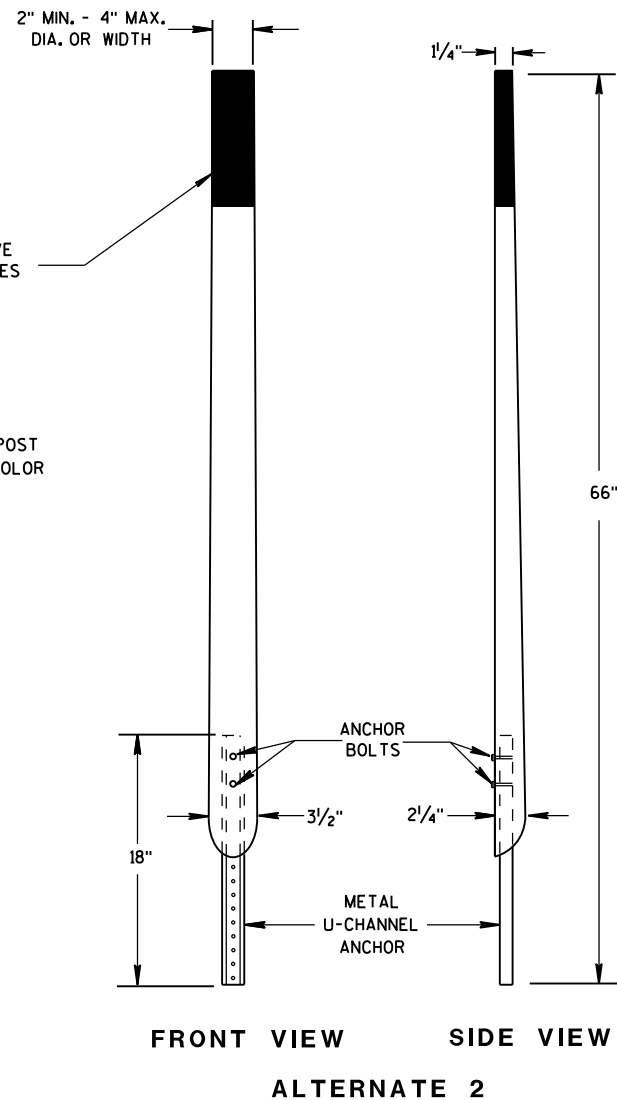
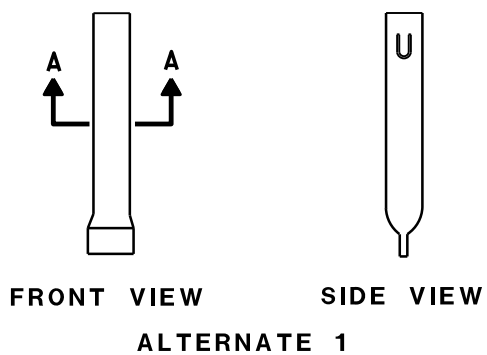
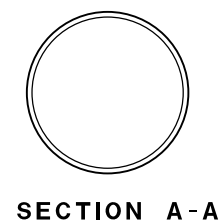
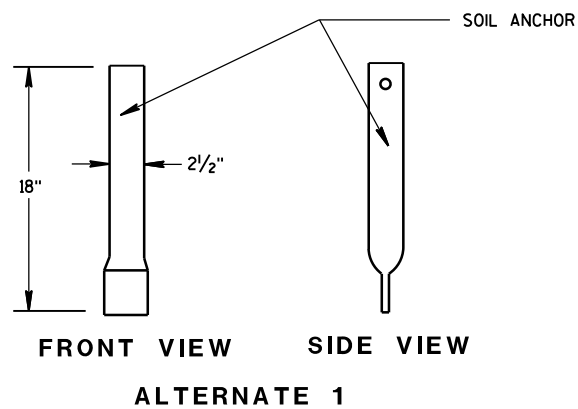
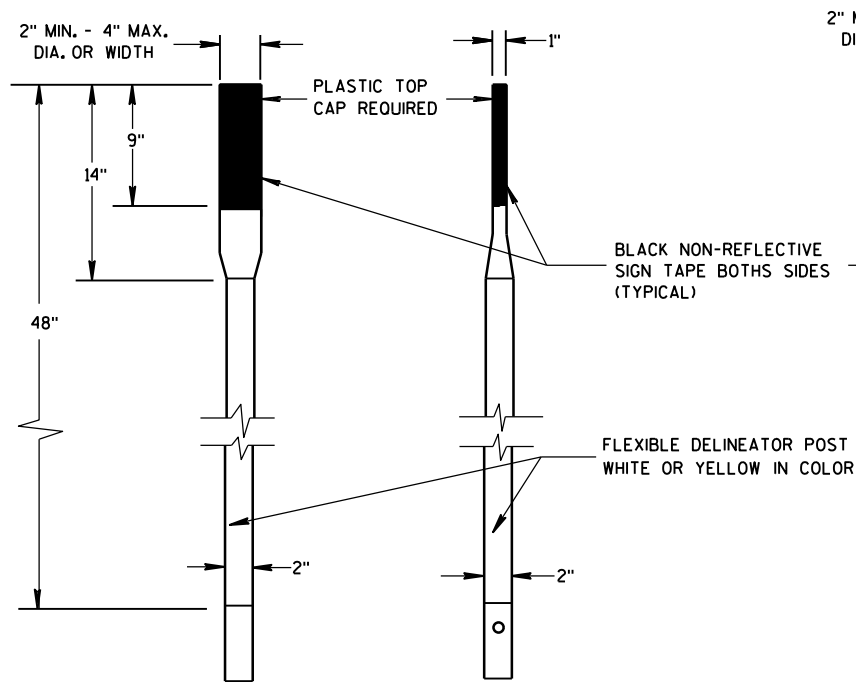
PLAN VIEW
CONCRETE MASONRY ENDWALLS FOR
CULVERT PIPE AND PIPE ARCH



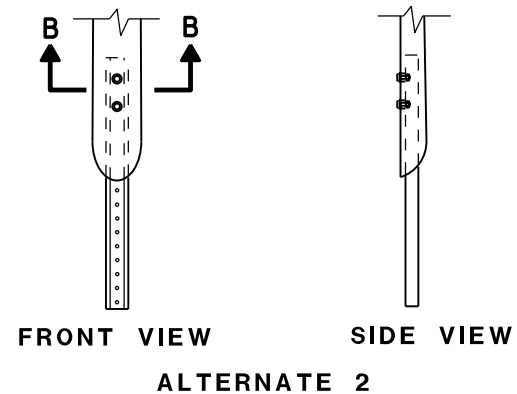
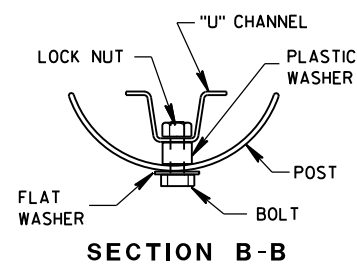
CROSS SECTION
FLEXIBLE MARKER POST

FLEXIBLE MARKER POST
FOR CULVERT END

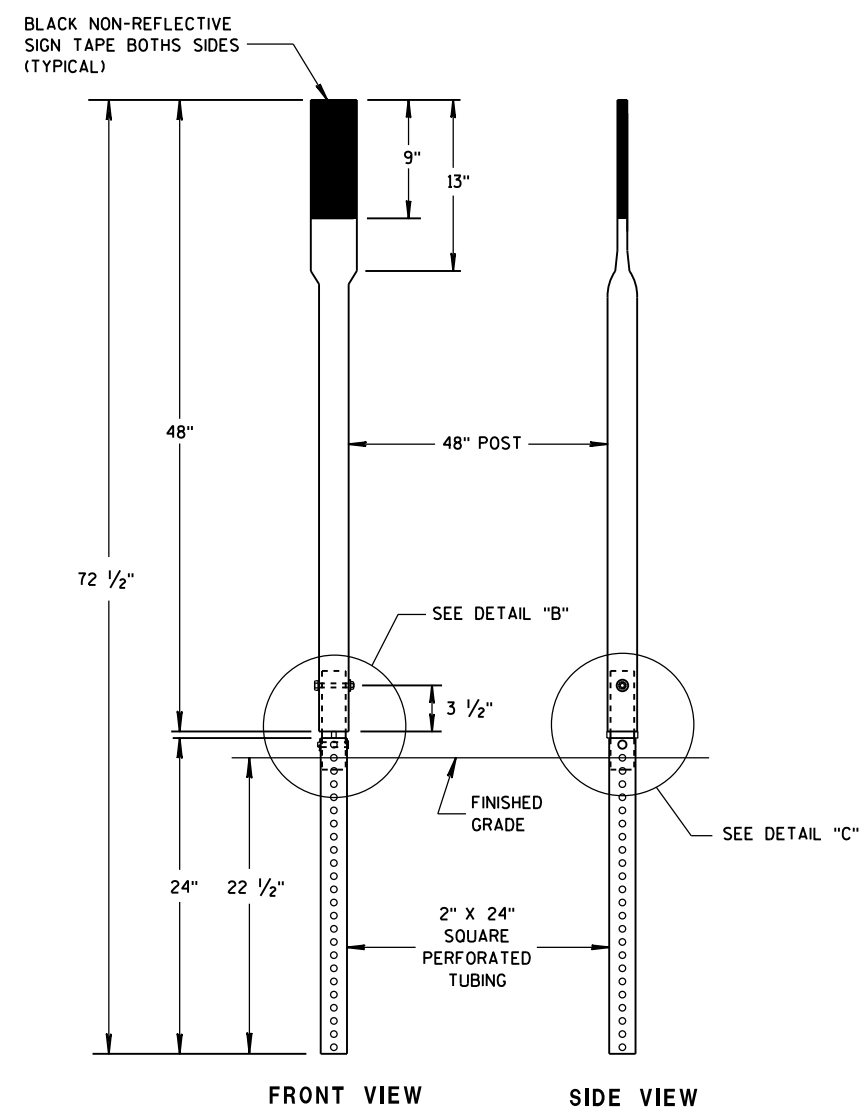
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION 190



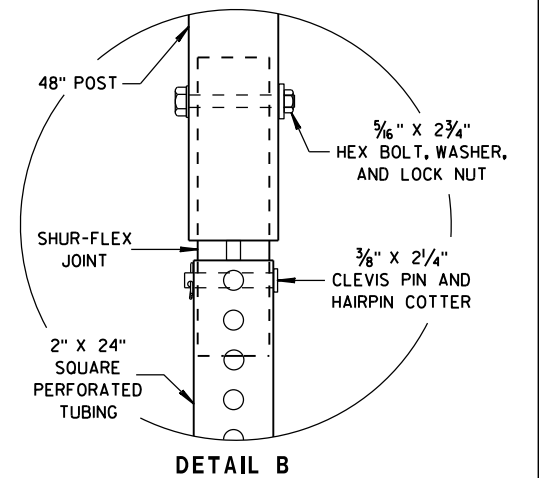
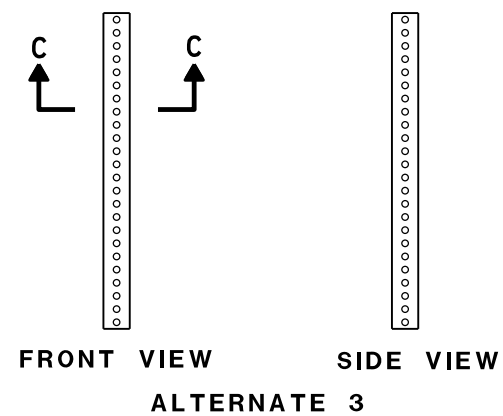
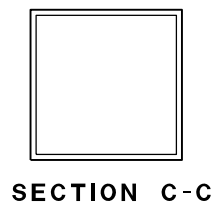
FLEXIBLE MARKER POSTS



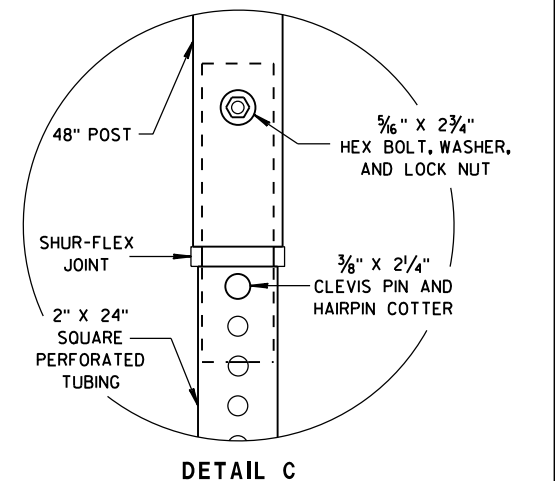
FLEXIBLE MARKER POST ANCHORS



FRONT VIEW SIDE VIEW
ALTERNATE 3



DETAIL B



DETAIL C

FLEXIBLE MARKER POST FOR CULVERT END

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

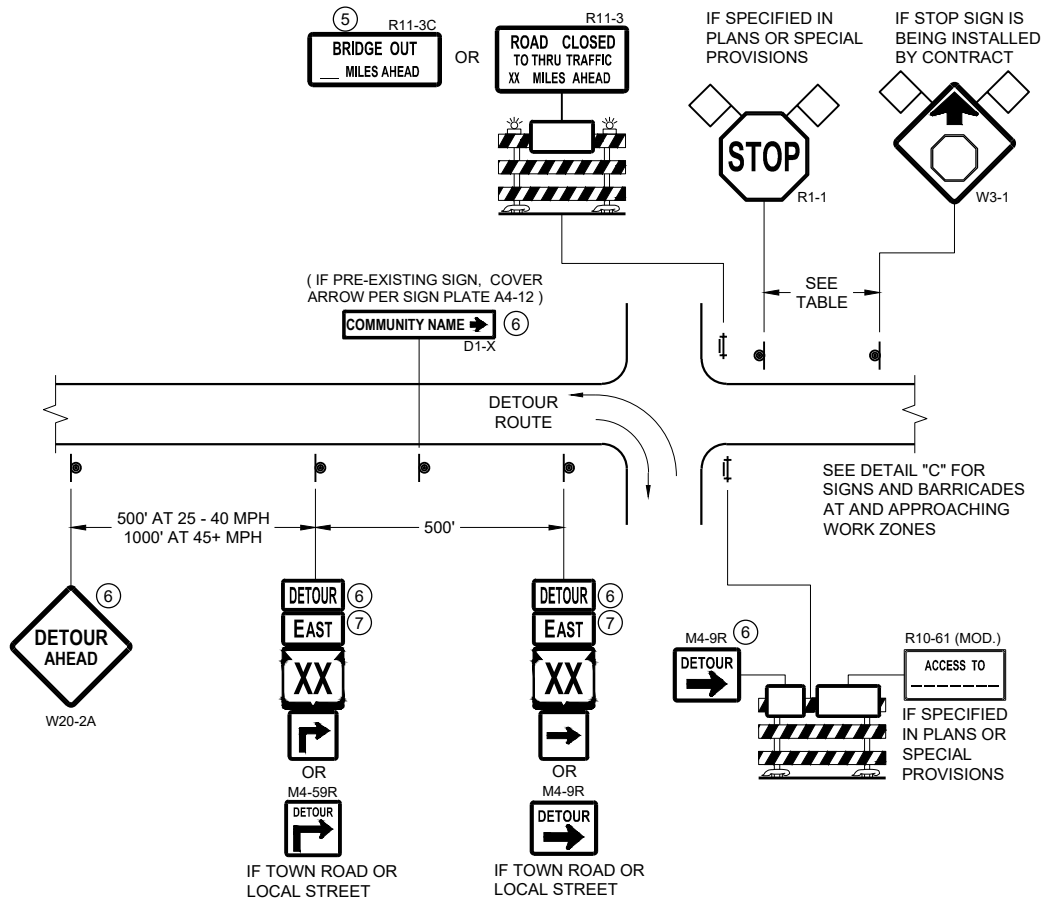
10/1/2012

DATE

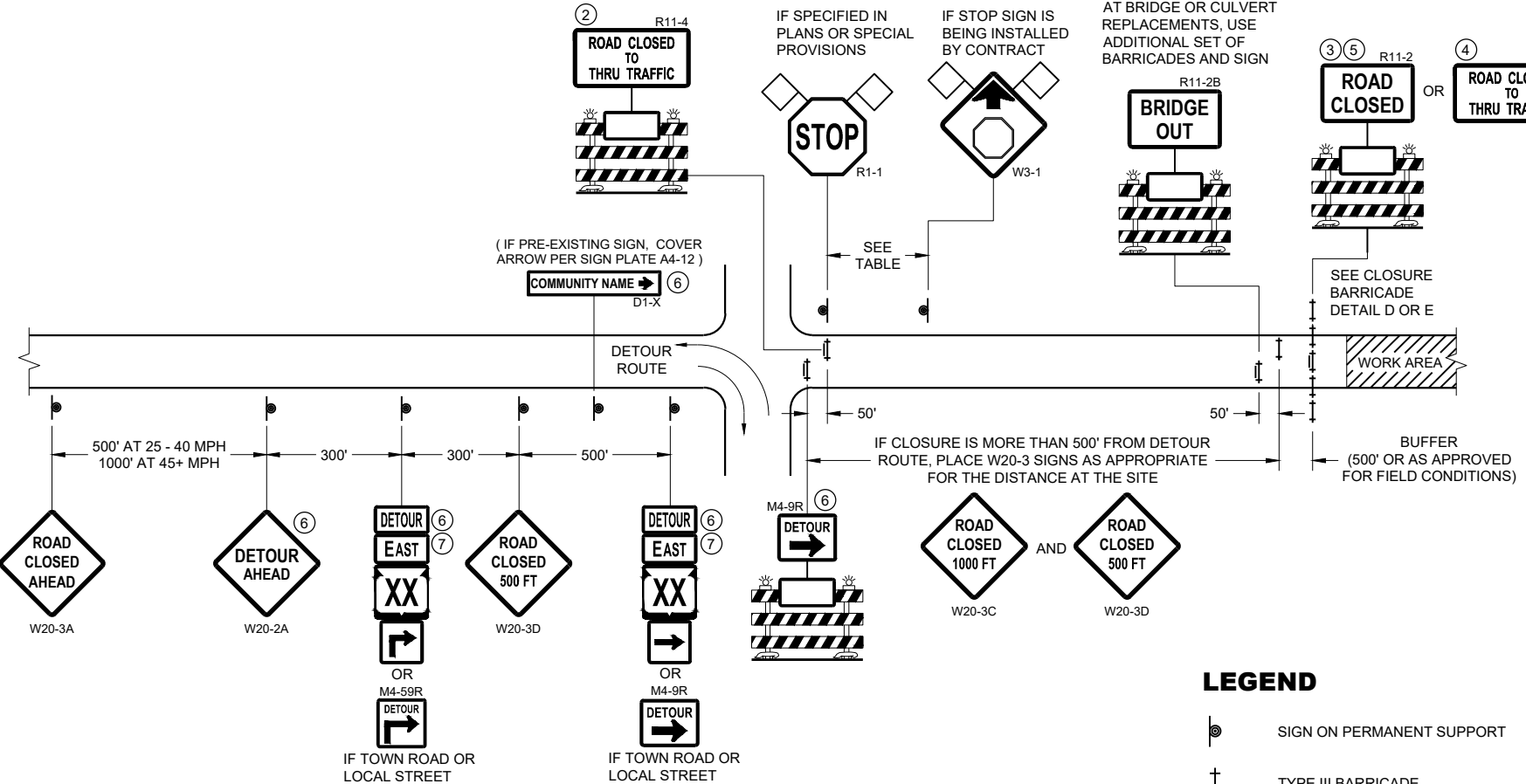
FHWA

/S/ Travis Feltes
STATE TRAFFIC ENGINEER 191

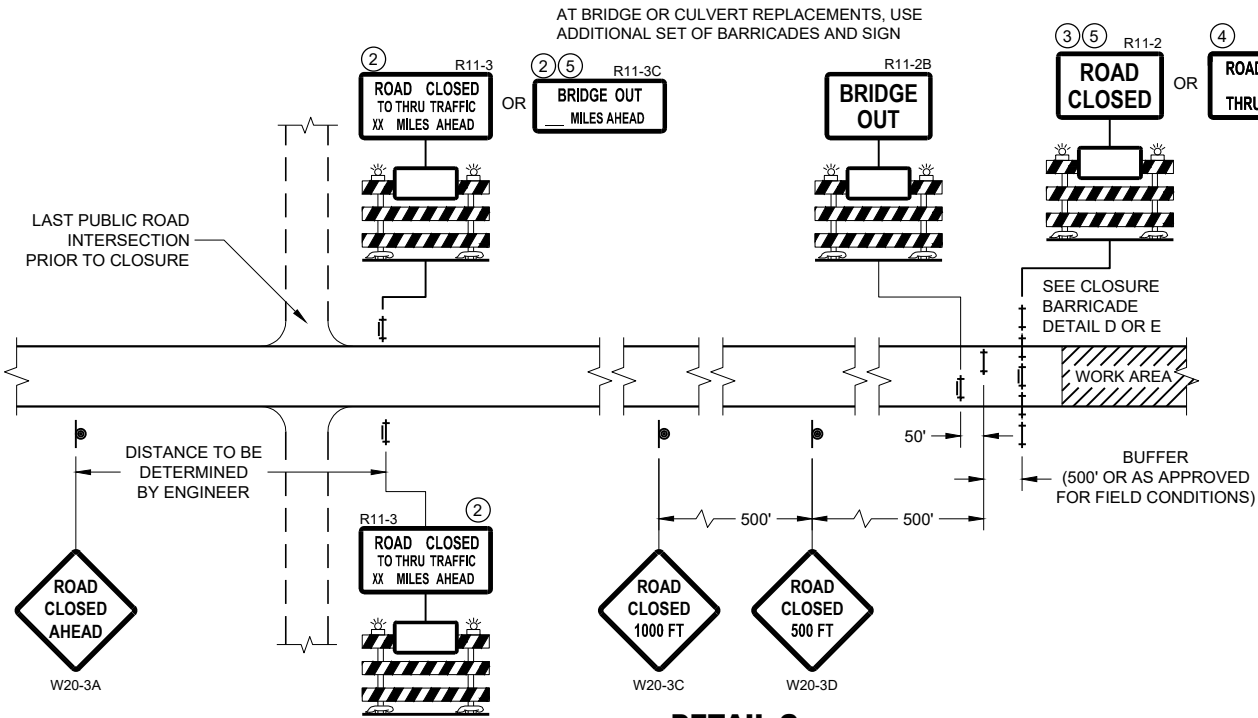
IGN



DETAIL A
MAINLINE CLOSURE WITH POSTED DETOUR
WORK ZONE GREATER THAN OR EQUAL TO ½ MILE FROM
DETOUR ROUTE (1000 FEET IF URBAN)



DETAIL B
MAINLINE CLOSURE WITH POSTED DETOUR
WORK ZONE LESS THAN ½ MILE FROM
DETOUR ROUTE (1000 FEET IF URBAN)



DETAIL C
MAINLINE CLOSURE, NO POSTED DETOUR

SPEED LIMIT (MPH)	"STOP AHEAD" ADVANCE WARNING DISTANCE (FT)
25	200
30	200
35	350
40	350
45	500
50	550
55	750

SEE SDD 15C2-SHEET "b"
FOR GENERAL NOTES
AND FOOTNOTES ① THROUGH ⑦

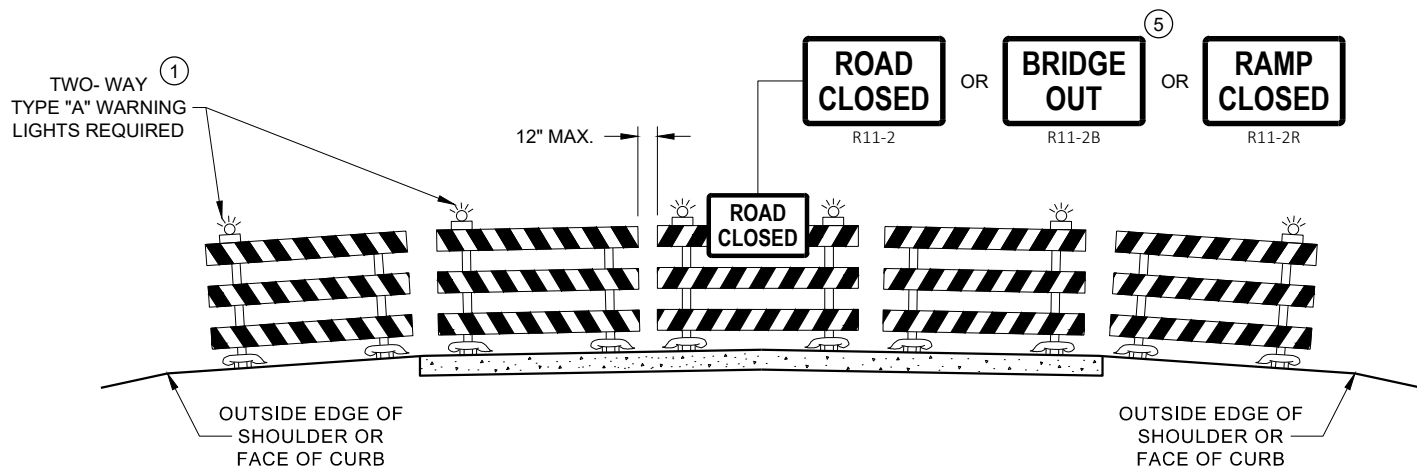
LEGEND

- SIGN ON PERMANENT SUPPORT
- TYPE III BARRICADE
- TYPE III BARRICADE WITH ATTACHED SIGN
- TYPE "A" WARNING LIGHT (FLASHING)
- WORK AREA
- FLAGS, 16" X 16" MIN. (ORANGE)
- DETOUR M4 - 8
- EAST M3 - X
- XX M1 - 4 OR XX M1 - 6 OR COUNTY M1 - 5A
- OR M05 - 1 OR M06 - 1

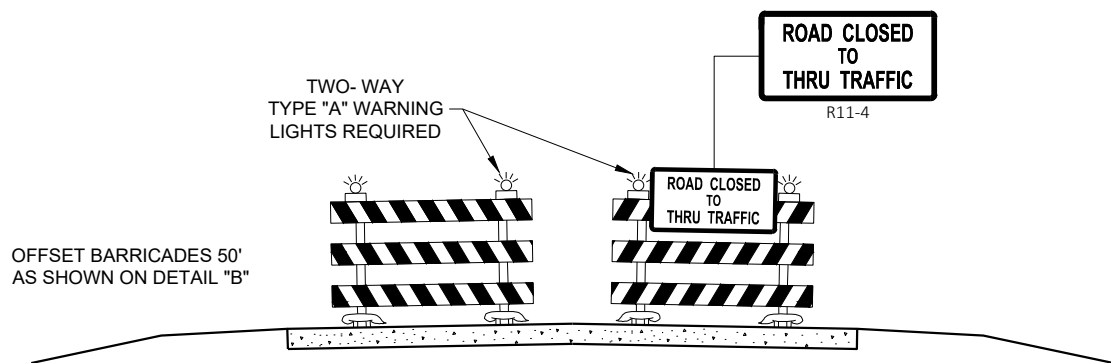
**BARRICADES AND SIGNS
FOR MAINLINE CLOSURES**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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DETAIL D
ROAD CLOSURE BARRICADE DETAIL
APPROACH VIEW



DETAIL E
LANE CLOSURE BARRICADE DETAIL
APPROACH VIEW

SEE SDD 15C2 - SHEET "a" FOR LEGEND

GENERAL NOTES

THE EXACT NUMBER, LOCATION, AND SPACING OF ALL SIGNS AND BARRICADES SHALL BE ADJUSTED TO FIT FIELD CONDITIONS AS APPROVED BY THE ENGINEER.

ANY SIGNS TEMPORARY OR EXISTING, WHICH CONFLICT WITH TRAFFIC CONTROL "IN USE", SHALL BE REMOVED OR COVERED AS NEEDED AND AS APPROVED BY THE ENGINEER.

THE SPACING BETWEEN TRAFFIC CONTROL SIGNS SHOULD BE ADJUSTED TO NOT CONFLICT WITH AND SHOULD PROVIDE A DESIRABLE MINIMUM OF 200 FEET CLEARANCE TO EXISTING SIGNS THAT WILL REMAIN IN PLACE.

BARRICADES THAT MUST BE MOVED FOR A WORK OPERATION SHALL BE IMMEDIATELY RE-ESTABLISHED UPON COMPLETION OF THE OPERATION, OR FOR CONTINUING OPERATIONS, AT THE END OF EACH WORKING DAY.

SIGNS THAT WILL BE IN PLACE LESS THAN 7 CONTINUOUS DAYS AND NIGHTS MAY BE MOUNTED ON PORTABLE SUPPORTS.

ALL TYPE III BARRICADES SHALL HAVE RAILS REFLECTORIZED ON BOTH FACES. STRIPES SHALL BE PROPERLY SLOPED DOWN TOWARD THE TRAFFIC SIDE OR AS SHOWN IN THE ROAD CLOSURE BARRICADE DETAIL "D" FOR FULL ROAD CLOSURES.

TYPE "A" LOW - INTENSITY FLASHING WARNING LIGHTS SHALL BE VISIBLE ON BOTH SIDES OF THE BARRICADE.

THE R11 - 2, R11 - 3, M4 - 9, R11 - 4, AND R10 - 61 SIGNS PLACED ON THE BARRICADES SHALL COVER NO MORE THAN THE TOP RAIL. THE SIGNS SHALL NOT COVER ANY PORTION OF THE MIDDLE RAIL OR BOTTOM RAILS.

"WO" AND "MO" SIGNS ARE THE SAME AS "W" AND "M" SIGNS EXCEPT THE BACKGROUND IS ORANGE.

ALL SIGNS SHALL BE 48" X 48" UNLESS OTHERWISE NOTED BELOW:

- R11 - 2 SHALL BE 48" X 30"
- R11 - 3 SHALL, R11 - 4 AND R10 - 61 SHALL BE 60 " X 30"
- M4 - 9 SHALL BE 30" X 24"
- M3 - X SHALL BE 24" X 12" (36" X 18" IF NEEDED TO MATCH EXISTING SIGNS)
- M4 - 8 SHALL BE 24" X 12" (36" X 18" IF NEEDED TO MATCH EXISTING SIGNS)
- M1 - 4, M1 - 5A AND M1 - 6 SHALL BE 24" X 24" (36" X 36" IF NEEDED TO MATCH EXISTING SIGNS)
- MO5 - 1 AND MO6 - 1 SHALL BE 21" X 21" (30" X 30" IF NEEDED TO MATCH EXISTING SIGNS)
- D1 - X SHALL BE AS SHOWN ON SPECIFIC PROJECT SIGNING DETAIL SHEETS.
- R1 - 1 SHALL BE 36" X 36"

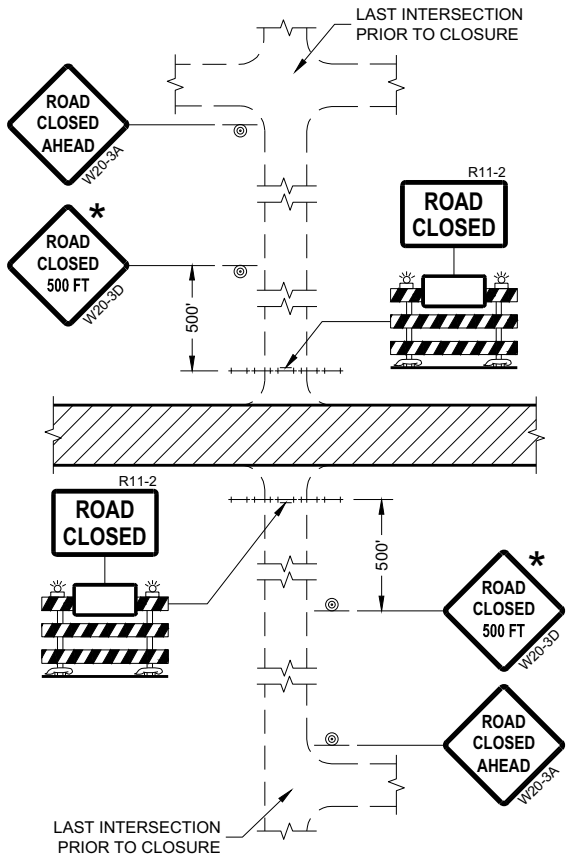
- 1 TWO WARNING LIGHTS SHALL BE PROVIDED ON THE CENTER BARRICADE AND A MINIMUM OF ONE WARNING LIGHT SHALL BE PROVIDED ON EACH OF THE OTHER BARRICADES WITHIN THE ROADWAY LIMITS. SPACING OF THE WARNING LIGHTS SHALL BE UNIFORM TO THE EDGE OF ROADWAY AS SHOWN (APPROX. 8 FOOT LIGHT SPACING).
- 2 THESE SIGNS AND BARRICADES ARE NOT REQUIRED IF ROAD CLOSURE BEGINS AT AN INTERSECTION.
- 3 FOR ROAD CLOSURE WITHOUT LOCAL ACCESS TO PROJECT, SEE ROAD CLOSURE BARRICADE DETAIL "D".
- 4 FOR ROAD CLOSURE WITH LOCAL ACCESS TO PROJECT, SEE ROAD CLOSURE BARRICADE DETAIL "E".
- 5 FOR BRIDGE OR CULVERT REPLACEMENTS, SUBSTITUTE "BRIDGE OUT" INSTEAD OF "ROAD CLOSED" ON R11 - 2 AND R11 - 3 SIGNS.
- 6 INSTALL DETOUR AND COMMUNITY GUIDE SIGNS AND ARROWS ONLY IF SPECIFIED IN THE CONTRACT. IF THERE ARE EXISTING ROUTE MARKER ASSEMBLIES THAT WILL REMAIN IN PLACE, ADJUST THE LOCATION OF THE DETOUR ROUTE SIGNS TO CORRESPOND WITH THE EXISTING ASSEMBLIES. MODIFY EXISTING SIGNS WHERE POSSIBLE. SEE SPECIFIC PROJECT DETOUR SIGNING DETAIL SHEETS. IF DETOUR SIGNS ARE BEING INSTALLED BY OTHERS, PLACE THE CONTRACTED TRAFFIC CONTROL SIGNS TO ALLOW FOR PLACEMENT OF ALL WARNING, DETOUR AND GUIDE SIGNS AS SHOWN.
- 7 "EAST" CARDINAL DIRECTION MARKERS AND RIGHT TURN ARROWS ARE SHOWN. USE OTHER CARDINAL DIRECTIONS AND ARROWS AS APPROPRIATE.

BARRICADES AND SIGNS FOR VARIOUS CLOSURES

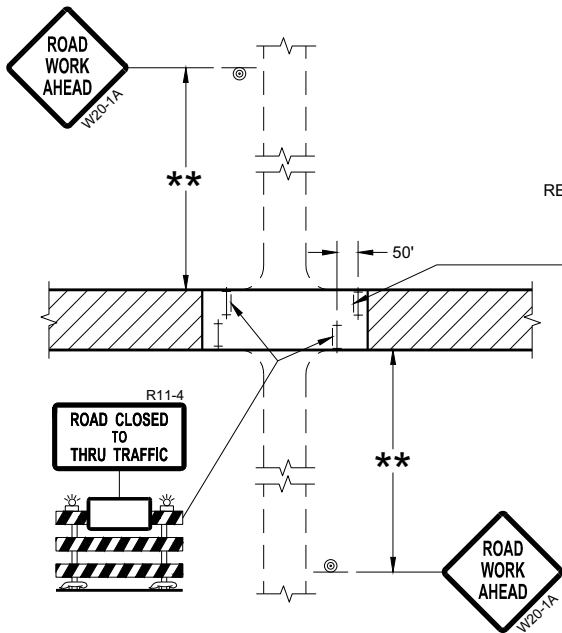
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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May 2023 /S/ Andrew Heidtke
DATE WORK ZONE ENGINEER 193

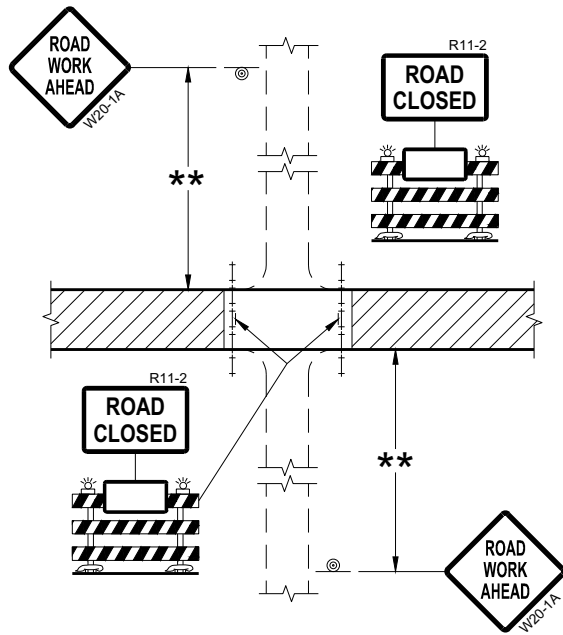
FHWA



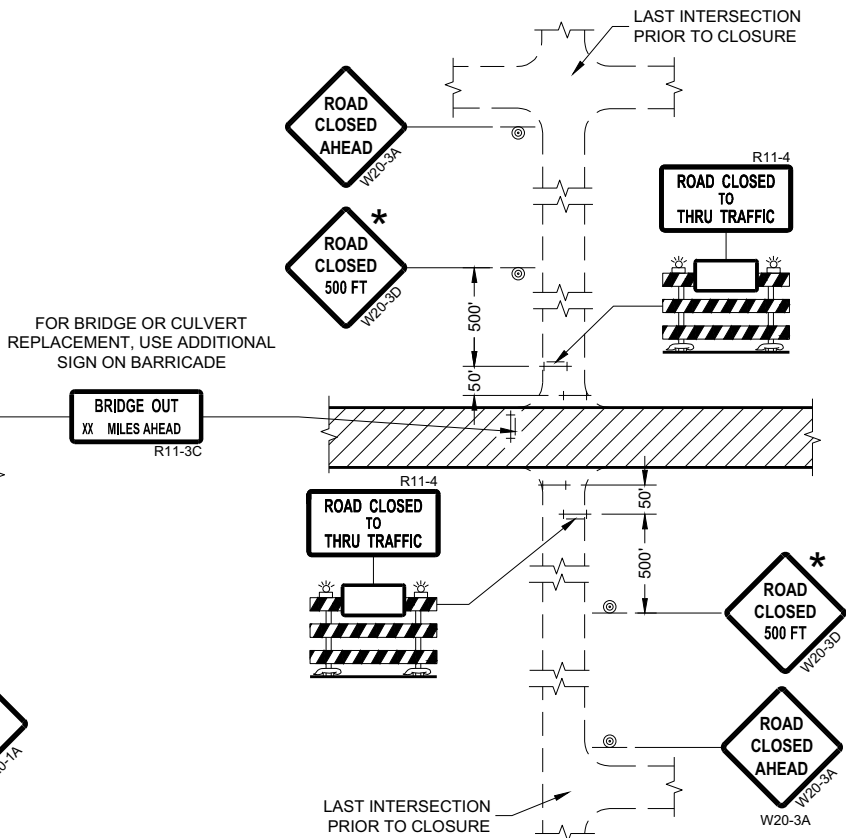
DETAIL 1
(NO ACCESS TO PROJECT)



DETAIL 3
(PUBLIC CROSS-TRAFFIC MAINTAINED.
CONTRACTOR, LOCAL BUSINESS AND
RESIDENT ACCESS TO PROJECT)



DETAIL 2
(PUBLIC CROSS-TRAFFIC MAINTAINED.
NO ACCESS TO PROJECT)



DETAIL 4
(CONTRACTOR, LOCAL BUSINESS AND
RESIDENT ACCESS TO PROJECT)

GENERAL NOTES

THE EXACT NUMBER, LOCATION, AND SPACING OF ALL SIGNS AND BARRICADES SHALL BE ADJUSTED TO FIT FIELD CONDITIONS AS APPROVED BY THE ENGINEER.

ANY SIGNS TEMPORARY OR EXISTING, WHICH CONFLICT WITH TRAFFIC CONTROL "IN USE" SHALL BE REMOVED OR COVERED AS NEEDED AND AS APPROVED BY THE ENGINEER.

THE SPACING BETWEEN TRAFFIC CONTROL SIGNS SHOULD BE ADJUSTED TO NOT CONFLICT WITH AND SHOULD PROVIDE A DESIRABLE MINIMUM OF 200 FEET CLEARANCE (500 FEET DESIRABLE) TO EXISTING SIGNS THAT WILL REMAIN IN PLACE.

IF A "STOP" SIGN MUST BE REMOVED FOR A WORK OPERATION, A TEMPORARY "STOP" SIGN SHALL BE PLACED PRIOR TO THE SIGN REMOVAL, OR A FLAGGER SHALL BE PROVIDED UNTIL THE SIGN IS REESTABLISHED.

BARRICADES THAT MUST BE MOVED FOR A WORK OPERATION SHALL BE IMMEDIATELY REESTABLISHED UPON COMPLETION OF THE OPERATION OR FOR CONTINUING OPERATIONS, AT THE END OF EACH WORKING DAY.

SIGNS THAT WILL BE IN PLACE LESS THAN SEVEN CONTINUOUS DAYS AND NIGHTS MAY BE MOUNTED ON PORTABLE SUPPORTS.

ALL TYPE III BARRICADES SHALL HAVE RAILS REFLECTORIZED ON BOTH FACES. STRIPES SHALL BE PROPERLY SLOPED DOWN TOWARD THE TRAFFIC SIDE OR AS SHOWN IN THE ROAD CLOSURE BARRICADE DETAIL "D" FOR FULL ROAD CLOSURES.

TYPE "A" LOW-INTENSITY FLASHING WARNING LIGHTS SHALL BE VISIBLE ON BOTH SIDES OF THE BARRICADE.

THE R11-2, R11-3, AND R11-4 SIGNS PLACED ON BARRICADES SHALL COVER NO MORE THAN THE TOP RAIL. THE SIGNS SHALL NOT COVER ANY PORTION OF THE MIDDLE OR BOTTOM RAILS.

ALL SIGNS SHALL BE 48" X 48" UNLESS OTHERWISE NOTED BELOW:
R11-2 SHALL BE 48" X 30".
R11-4 AND R11-3 SHALL BE 60" X 30".

- * OMIT THE "ROAD CLOSED 500 FT." SIGN IF THE LAST INTERSECTION IS 500 FEET OR LESS FROM THE WORK ZONE.
- ** 500' MAX. OR AT LAST INTERSECTION, WHICHEVER IS CLOSEST.

LEGEND

- SIGN ON PERMANENT SUPPORT
- TYPE III BARRICADE
- TYPE III BARRICADE WITH ATTACHED SIGN
- TYPE "A" WARNING LIGHT (FLASHING)
- WORK AREA

**BARRICADES AND SIGNS
FOR
SIDEROAD CLOSURES**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
July 2018 /S/ Andrew Heidtke
DATE WORK ZONE ENGINEER 194

FHWA

GENERAL NOTES

THE EXACT NUMBER, LOCATION, AND SPACING OF ALL SIGNS AND DEVICES SHALL BE ADJUSTED TO FIT FIELD CONDITIONS.

THE SPACING BETWEEN TRAFFIC CONTROL SIGNS SHOULD BE ADJUSTED TO NOT CONFLICT WITH AND SHOULD PROVIDE A MINIMUM OF 200 FEET (500 FEET DESIRABLE) CLEARANCE TO EXISTING SIGNS THAT WILL REMAIN IN PLACE.

ALL SIGNS ARE 48" X 48" UNLESS OTHERWISE NOTED.

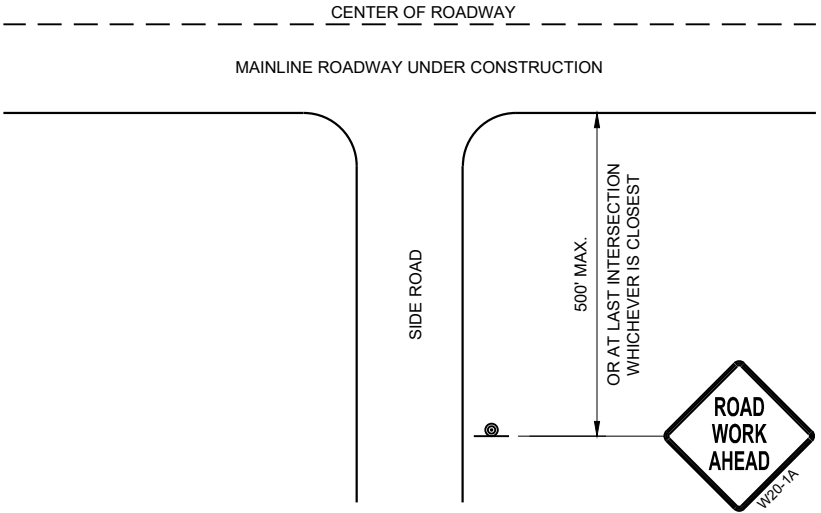
SIGNS THAT WILL BE IN PLACE LESS THAN SEVEN CONTINUOUS DAYS AND NIGHTS MAY BE MOUNTED ON PORTABLE SUPPORTS.

IF A "STOP" SIGN MUST BE REMOVED FOR A WORK OPERATION, A TEMPORARY "STOP" SIGN SHALL BE PLACED PRIOR TO THE SIGN REMOVAL, OR A FLAGGER SHALL BE PROVIDED UNTIL THE SIGN IS REESTABLISHED.

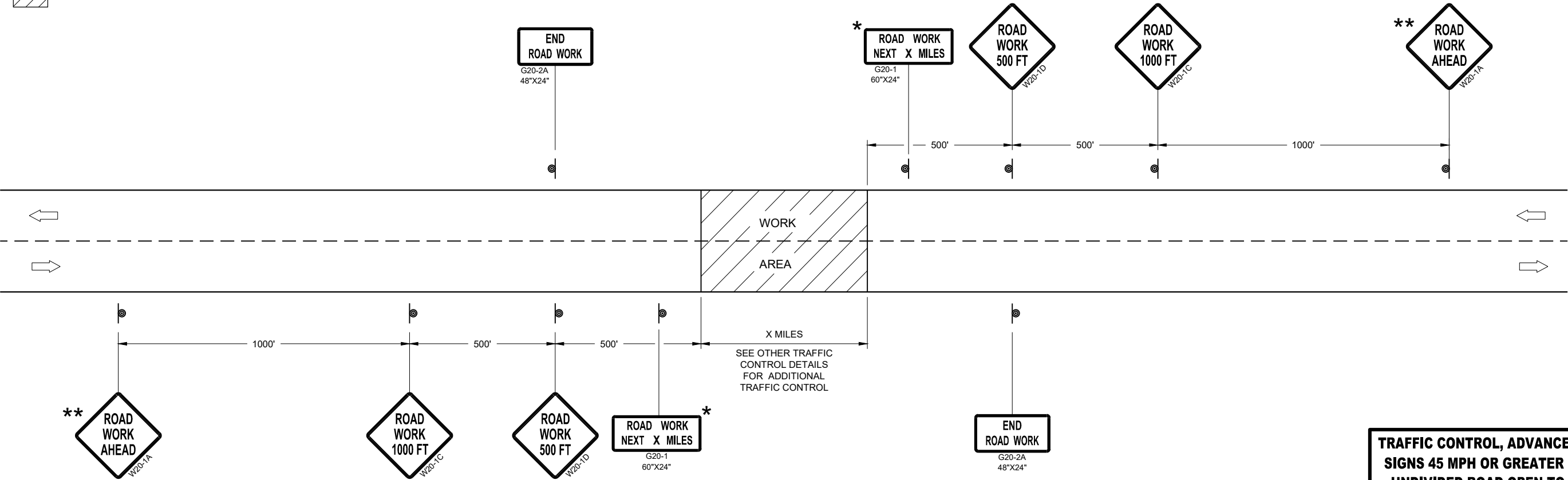
- * OMIT G20-1 SIGNS IF LENGTH OF WORK AREA IS 2 MILES OR LESS
- ** PLACE AN ADDITIONAL W20-1A "ROAD WORK AHEAD" SIGN IF WORK AREA WITHIN THE PROJECT IS SEPARATED BY MORE THAN 2 MILES FROM PREVIOUS WORK AREA.

LEGEND

-  SIGN ON PERMANENT SUPPORT
-  DIRECTION OF TRAFFIC
-  WORK AREA



TYPICAL SIDE ROAD APPROACH
WARNING SIGN DETAIL



TRAFFIC CONTROL, ADVANCE WARNING SIGNS 45MPH OR GREATER

TRAFFIC CONTROL, ADVANCE WARNING
SIGNS 45 MPH OR GREATER TWO-WAY
UNDIVIDED ROAD OPEN TO TRAFFIC

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APPROVED
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GENERAL NOTES

THE EXACT NUMBER, LOCATION, AND SPACING OF ALL SIGNS AND DEVICES SHALL BE ADJUSTED TO FIT FIELD CONDITIONS.

THE SPACING BETWEEN TRAFFIC CONTROL SIGNS SHOULD BE ADJUSTED TO NOT CONFLICT WITH AND SHOULD PROVIDE A MINIMUM OF 200 FEET (500 FEET DESIRABLE) CLEARANCE TO EXISTING SIGNS THAT WILL REMAIN IN PLACE.

ALL SIGNS ARE 48" X 48" UNLESS OTHERWISE NOTED. IF NECESSARY DUE TO SPACE CONSTRAINTS, 36"X36" SIGNS MAY BE USED INSTEAD OF 48" X 48" SIGNS.

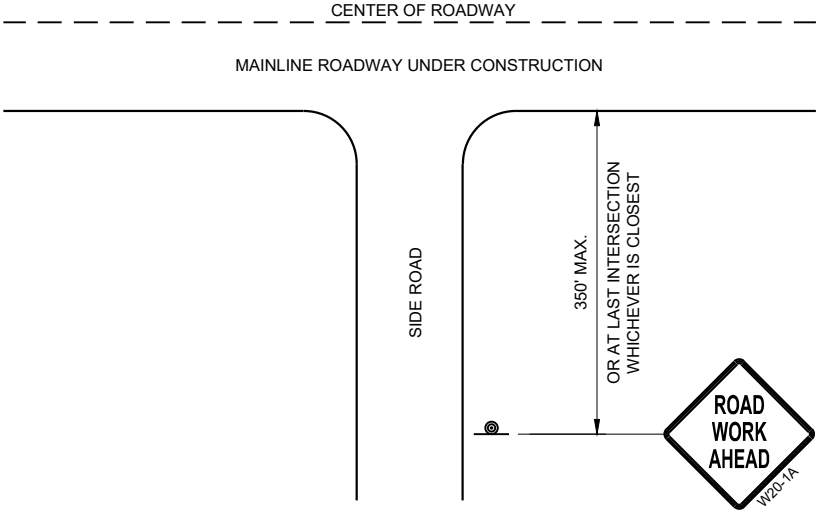
SIGNS THAT WILL BE IN PLACE LESS THAN SEVEN CONTINUOUS DAYS AND NIGHTS MAY BE MOUNTED ON PORTABLE SUPPORTS.

IF A "STOP" SIGN MUST BE REMOVED FOR A WORK OPERATION, A TEMPORARY "STOP" SIGN SHALL BE PLACED PRIOR TO THE SIGN REMOVAL, OR A FLAGGER SHALL BE PROVIDED UNTIL THE SIGN IS REESTABLISHED.

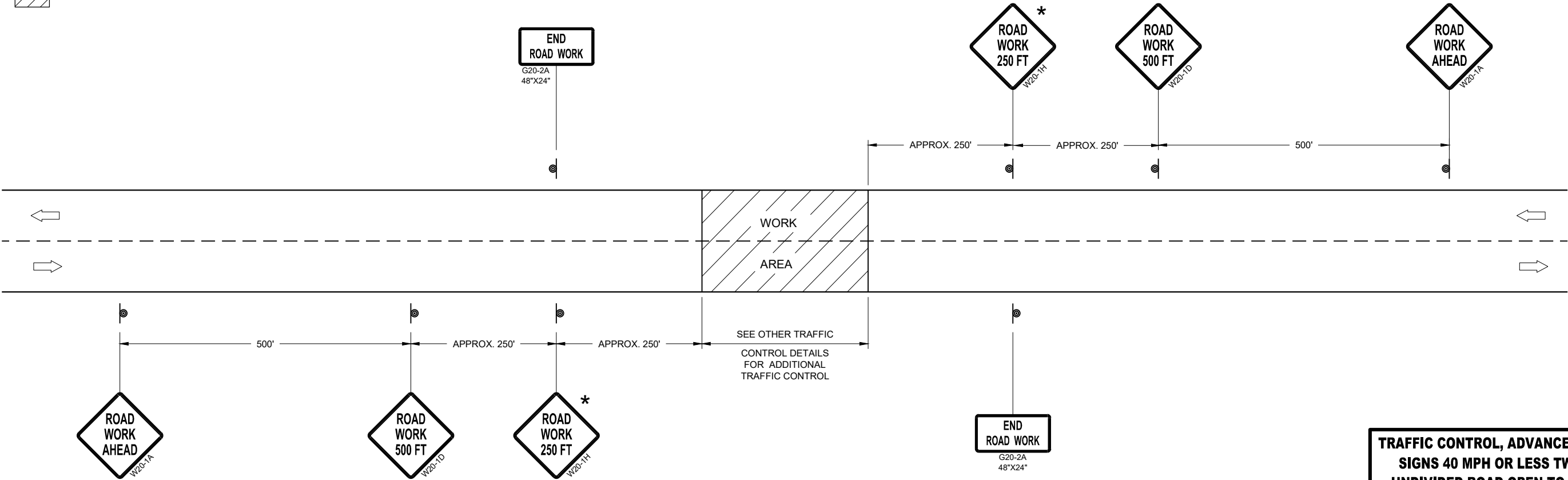
* THE THIRD W20-1 SIGN IS REQUIRED ONLY IF THERE IS AN INTERSECTION BETWEEN THE "ROAD WORK 500 FEET" SIGN AND THE WORK ZONE. ADJUST THE PLACEMENT OF THIS SIGN BASED ON INTERSECTION LOCATION AND OTHER FIELD CONDITIONS.

LEGEND

-  SIGN ON PERMANENT SUPPORT
-  DIRECTION OF TRAFFIC
-  WORK AREA



TYPICAL SIDE ROAD APPROACH
WARNING SIGN DETAIL



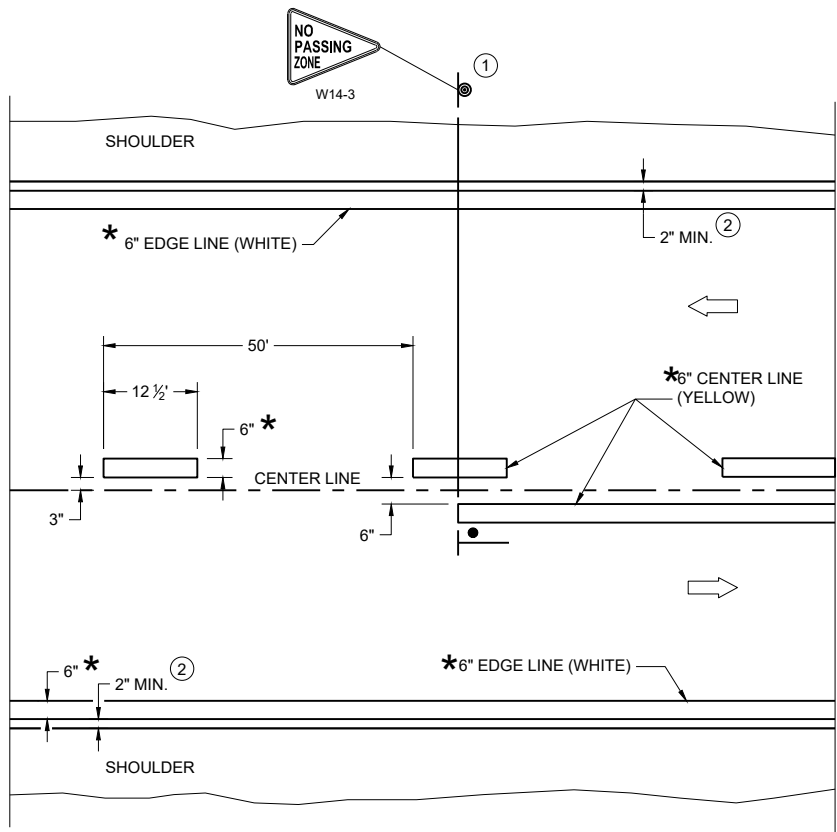
TRAFFIC CONTROL, ADVANCE WARNING SIGNS 40MPH OR LESS

TRAFFIC CONTROL, ADVANCE WARNING
SIGNS 40 MPH OR LESS TWO-WAY
UNDIVIDED ROAD OPEN TO TRAFFIC

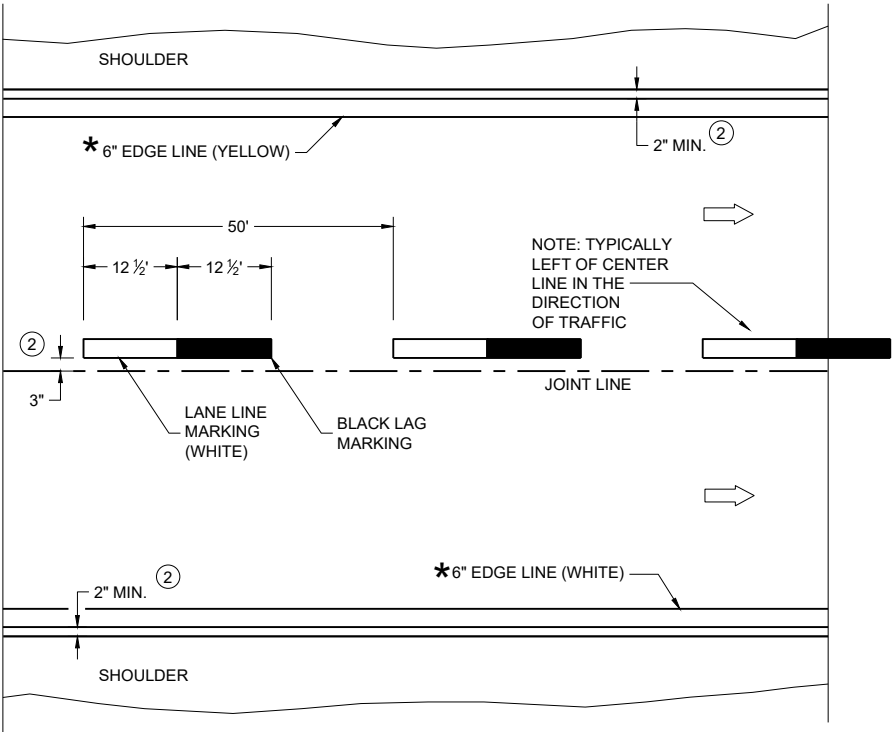
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July 2018 /S/ Andrew Heidtke
DATE WORK ZONE ENGINEER 196

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TWO WAY TRAFFIC



ONE WAY TRAFFIC

PERMANENT PAVEMENT MARKING

*CONFIRM MARKING LINE WIDTH WITH THE MISCELLANEOUS QUANTITIES

GENERAL NOTES

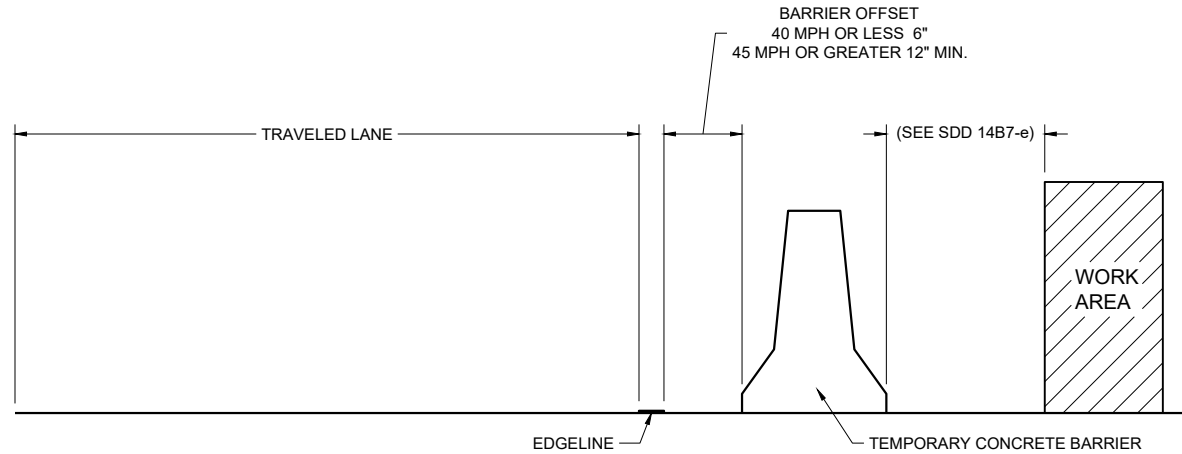
DETAILS OF CONSTRUCTION NOT SHOWN ON THIS DRAWING SHALL CONFORM TO STANDARD SPECIFICATIONS AND SPECIAL PROVISIONS.

- ① LOCATE THE NO PASSING ZONE W14-3 SIGN WITHIN 50 FEET OF THE "T" MARKING
- ② MEASURE FROM EDGE OF MARKING TO JOINT LINE. THIS DOES NOT INCLUDE SPACE NEEDED FOR GROOVING OPERATIONS.

LEGEND

- "T" MARKING
- SIGN ON PERMANENT SUPPORT
- DIRECTION OF TRAFFIC

PERMANENT LONGITUDINAL PAVEMENT MARKINGS	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED May 2023 DATE	/S/ Jeannie Silver Statewide Pavement Marking Engineer
FHWA 197	



TEMPORARY BARRIER OFFSET FROM EDGE LINE

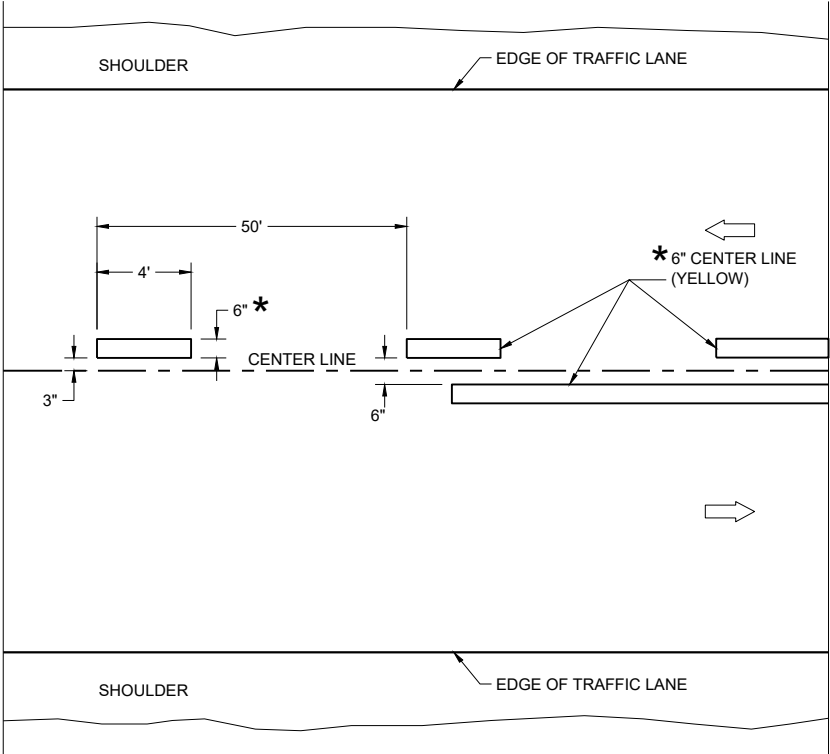
GENERAL NOTES

DETAILS OF CONSTRUCTION NOT SHOWN ON THIS DRAWING SHALL CONFORM TO STANDARD SPECIFICATIONS AND SPECIAL PROVISIONS.

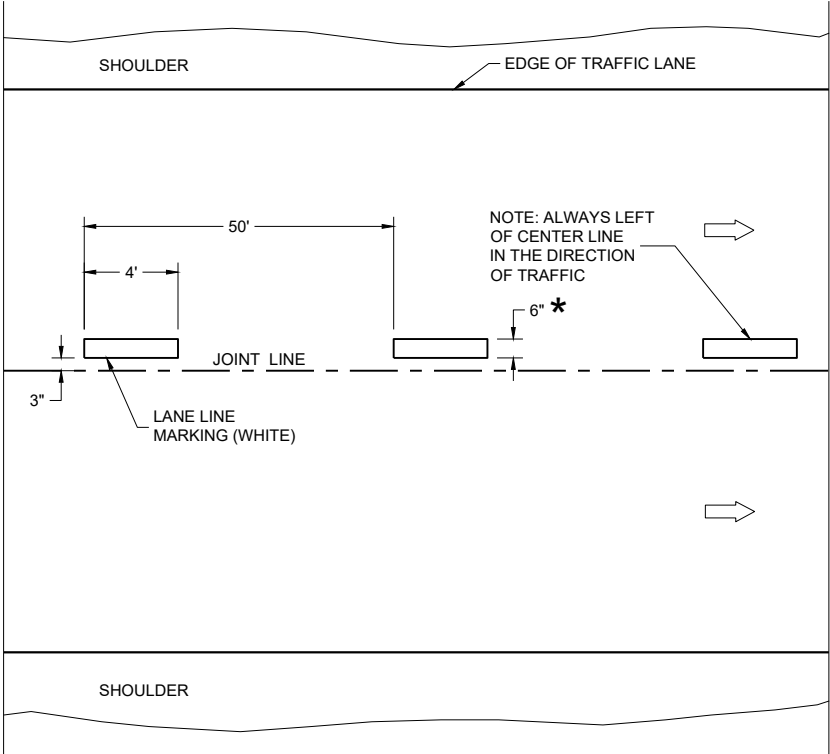
LEGEND

DIRECTION OF TRAFFIC

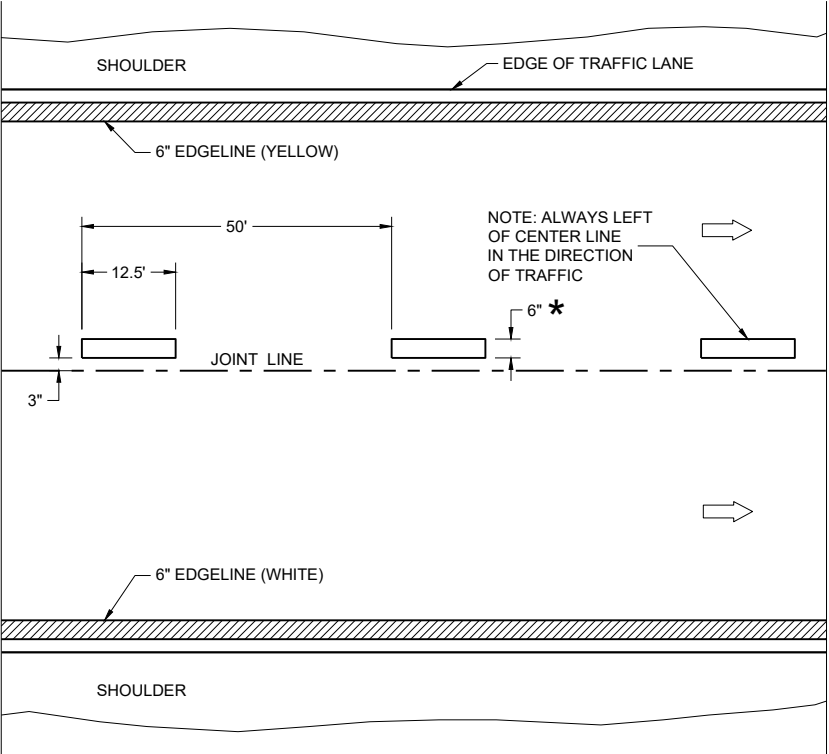
* CONFIRM MARKING LINE WIDTH WITH THE MISCELLANEOUS QUANTITIES



TWO WAY TRAFFIC



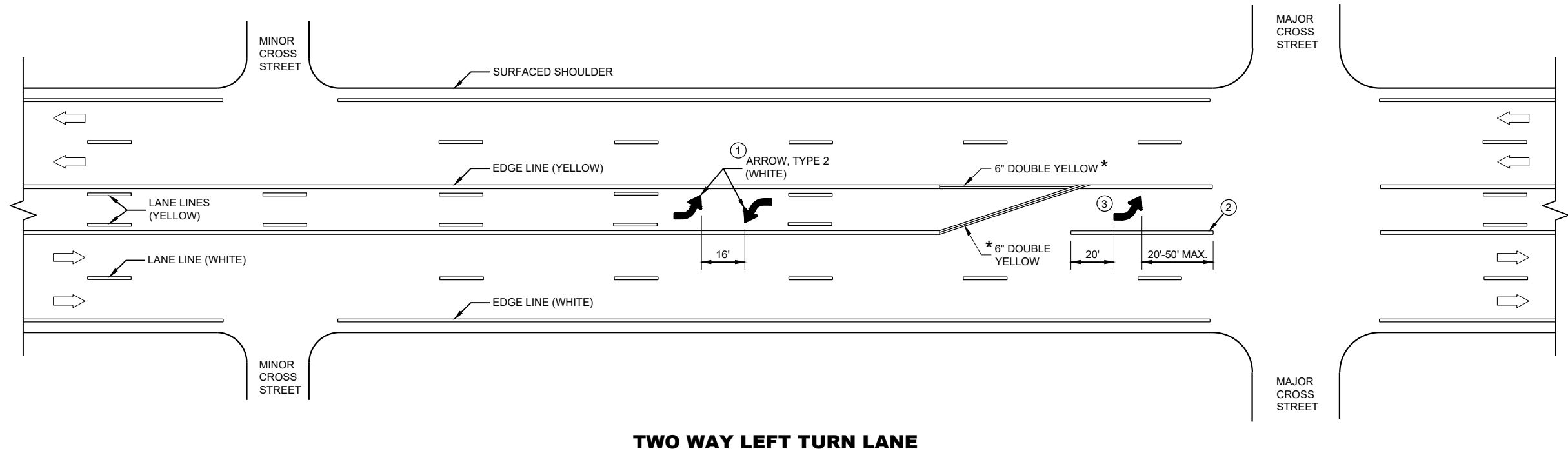
ONE WAY TRAFFIC



FREEWAYS AND EXPRESSWAYS

TEMPORARY PAVEMENT MARKING

TEMPORARY LONGITUDINAL PAVEMENT MARKING	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED May 2023 DATE	/S/ Jeannie Silver Statewide Pavement Marking Engineer
FHWA	

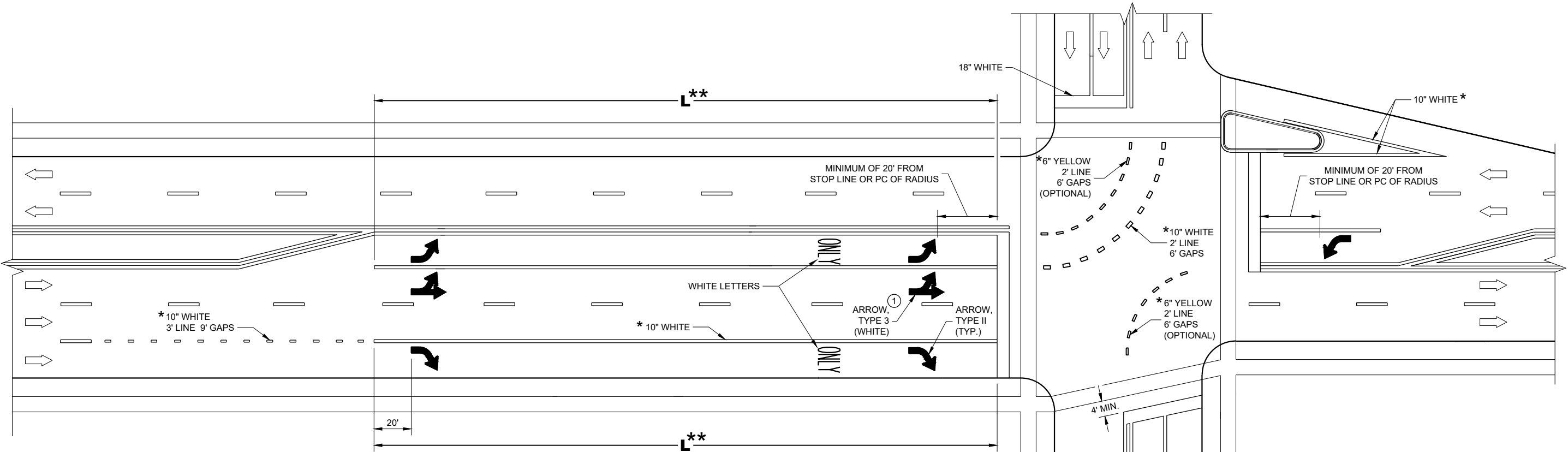


GENERAL NOTES

- ① A SET OF ARROWS IS REQUIRED EVERY 400 FEET OR NEAR INTERSECTIONS OR DRIVEWAYS WITH TURNING TRAFFIC.
- ② 10" WHITE
- ③ TURN BAY LENGTH OF LESS THAN 48' DOES NOT REQUIRE PAVEMENT ARROWS OR TEXT.

➡ DIRECTION OF TRAFFIC

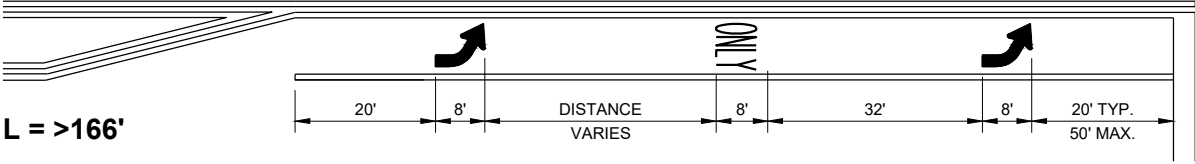
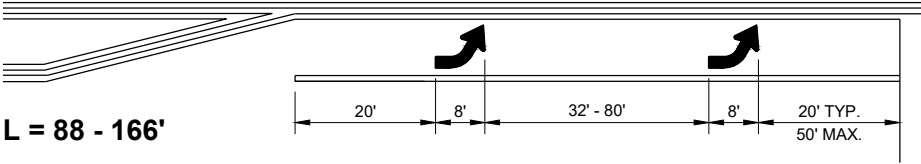
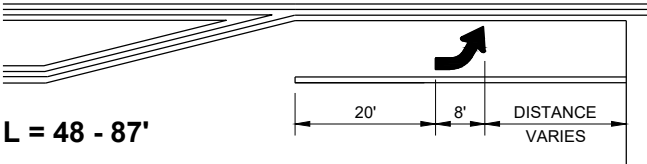
* CONFIRM MARKING LINE WIDTH WITH THE MISCELLANEOUS QUANTITIES



** (SEE TURN LANE OPTIONS FOR PLACEMENT OF PAVEMENT MARKING ARROWS AND WORDS)

TURN LANE OPTIONS

LENGTH OF TURN BAY (L) OF 0 - 47' DOES NOT REQUIRE PAVEMENT MARKING ARROWS OR WORDS



GENERAL NOTES

① QUANTITY AND LOCATION OF TYPE 3 ARROWS ARE THE SAME AS THE TYPE II ARROWS IN THE ADJACENT TURN LANE. FOR TURN LANES WITH A PHYSICAL SEPARATION IN THE SAME DIRECTION OF TRAVEL, THE ARROWS AND "ONLY" MARKING MAY BE ELIMINATED.

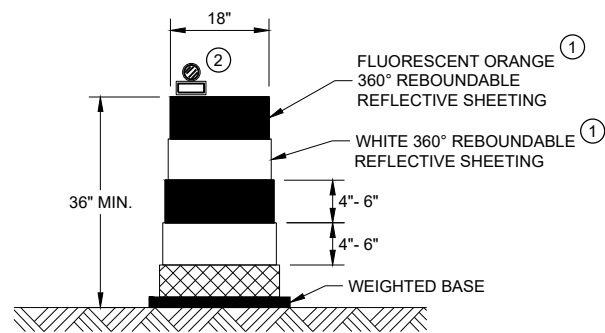
➡ DIRECTION OF TRAFFIC

L = LENGTH OF TURN BAY

* CONFIRM MARKING LINE WIDTH WITH THE MISCELLANEOUS QUANTITIES

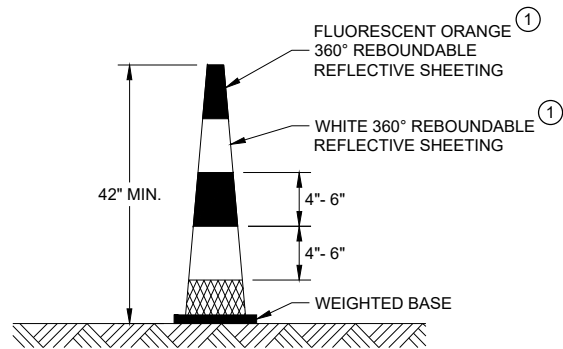
PAVEMENT MARKING
(TURN LANES)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



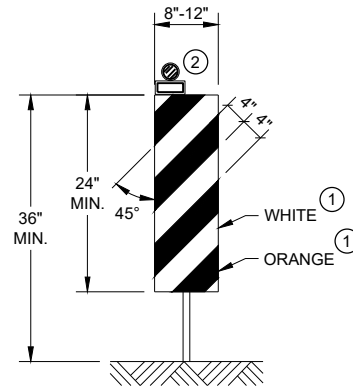
DRUM

BALLAST WIDTHS
RANGE FROM 24"-36"



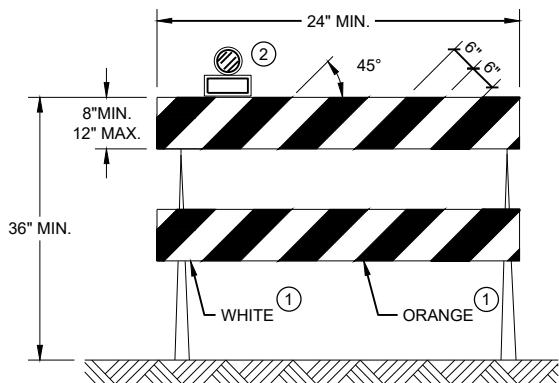
42" CONE

DO NOT USE IN TAPERS
½ SPACING OF DRUMS
BALLAST WIDTHS
RANGE FROM 14"-20"



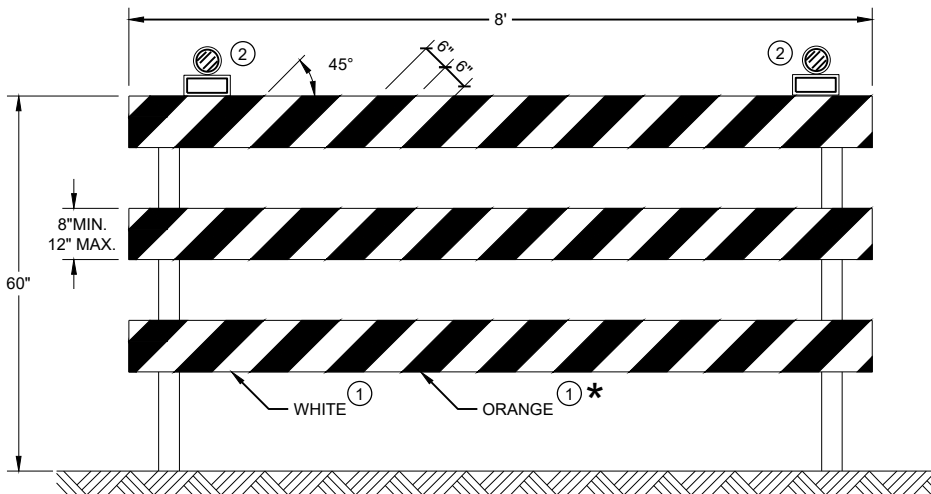
VERTICAL PANEL

THE STRIPES SHALL SLOPE DOWNWARD TO
THE TRAFFIC SIDE FOR CHANNELIZATION.



TYPE II BARRICADE

FOR RAILS LESS THAN 36" LONG, 4" WIDE STRIPES
MAY BE USED. ALL STRIPES SHALL SLOPE DOWNWARD
TO THE TRAFFIC SIDE FOR CHANNELIZATION.



TYPE III BARRICADE

IF SIGN MOUNTED, DO NOT COVER MORE THAN 50% OF THE TOP
TWO RAILS OR 33% OF THE TOTAL AREA OF THE THREE RAILS.

* IF USED FOR A PERMANENT APPLICATION USE RED SHEETING.

GENERAL NOTES

- ① REFLECTIVE SHEETING SHALL FOLLOW THE REQUIREMENTS IN THE APPROVED PRODUCTS LISTING FOR SIGN SHEETING.
- ② LOCATION OF WARNING LIGHTS WHEN SHOWN ON THE PLAN.

**CHANNELIZING DEVICES
DRUMS, CONES, BARRICADES
AND VERTICAL PANELS**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
November 2022 /S/ Andrew Heidtke
DATE WORK ZONE ENGINEER 201

FHWA

LEGEND

-  SIGN ON PORTABLE OR PERMANENT SUPPORT
-  TEMPORARY PORTABLE RUMBLE STRIP ARRAY
-  DIRECTION OF TRAFFIC
-  WORK AREA
-  FLAGGER, EQUIPPED WITH STOP/SLOW PADDLE FASTENED ON SUPPORT STAFF

GENERAL NOTES

DETAILS OF TRAFFIC CONTROL DEVICES AND INSTALLATION NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS, THE SPECIAL PROVISIONS, AND THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.

ALL SIGNS ARE 48" X 48" UNLESS OTHERWISE NOTED.

"WO" SIGNS ARE THE SAME AS "W" SIGNS EXCEPT THE BACKGROUND IS ORANGE.

THE EXACT NUMBER, LOCATION AND SPACING OF ALL SIGNS, DEVICES, AND LOCATION OF ALL FLAGGERS SHALL BE ADJUSTED TO FIT FIELD CONDITIONS AS APPROVED BY THE ENGINEER.

THE FIRST ADVANCE WARNING SIGN SHOULD TYPICALLY BE LOCATED IN ADVANCE OF THE ANTICIPATED TRAFFIC BACKUP OR QUEUE.

WHEN A SIDE ROAD OR RAMP INTERSECTS THE FACILITY ON WHICH THE WORK IS BEING PERFORMED, ADDITIONAL TRAFFIC CONTROLS SHALL BE PROVIDED AS SPECIFIED IN THE PLANS AND/OR THE SPECIAL PROVISIONS OR AS APPROVED BY THE ENGINEER.

FLAGGING

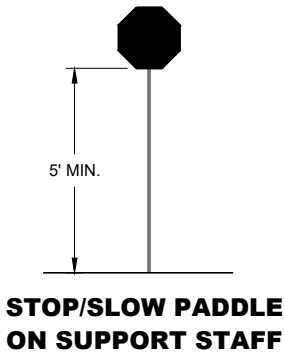
FLAGGERS SHALL BE IN SIGHT OF EACH OTHER OR IN DIRECT COMMUNICATION AT ALL TIMES. THEY SHALL BE EQUIPPED WITH STOP/SLOW PADDLES FASTENED ON SUPPORT STAFFS. WHEN THE FLAGGING OPERATION IS NOT IN EFFECT REMOVE TEMPORARY PORTABLE RUMBLE STRIPS PRIOR TO COVERING OR REMOVING ALL ADVANCE SIGNING.

- ① FOR MOVING WORK OPERATIONS, POST ADDITIONAL W20-7A FLAGGER SIGNS AT APPROXIMATELY 3,500' INTERVALS IN THE MOVING WORK OPERATION OR AS APPROVED BY THE ENGINEER.
- ② SIGN NOT REQUIRED IF FLAGGING OPERATION OCCURS WITHIN A SIGNED ROAD WORK ZONE AREA.

WHEN THE DISTANCE BETWEEN FLAGGERS EXCEEDS 2 MILES, A PILOT CAR IS REQUIRED. WHEN CURVES REDUCE SIGHT DISTANCE BELOW 400', A PILOT CAR IS REQUIRED.

TEMPORARY PORTABLE RUMBLE STRIPS

- UTILIZE TEMPORARY PORTABLE RUMBLE STRIPS ON ALL FLAGGING OPERATIONS.
- ③ EACH TEMPORARY PORTABLE RUMBLE STRIP ARRAY CONSISTS OF THREE RUMBLE STRIPS PLACED TRANSVERSE ACROSS THE LANE AT THE LOCATIONS SHOWN. WITHIN EACH ARRAY, SPACING BETWEEN RUMBLE STRIPS SHALL BE 15 FEET ON CENTER
- ONLY USE TEMPORARY PORTABLE RUMBLE STRIPS FROM THE APPROVED PRODUCTS LIST.
- INSTALL TEMPORARY RUMBLE STRIPS PER MANUFACTURER'S RECOMMENDATIONS.
- PLACE ADVANCE SIGNING PRIOR TO INSTALLING TEMPORARY RUMBLE STRIPS.
- DO NOT INSTALL TEMPORARY PORTABLE RUMBLE STRIPS ON GRAVEL, MILLED SURFACES, OR ASPHALT THAT HAS BEEN PAVED LESS THAN 12 HOURS.

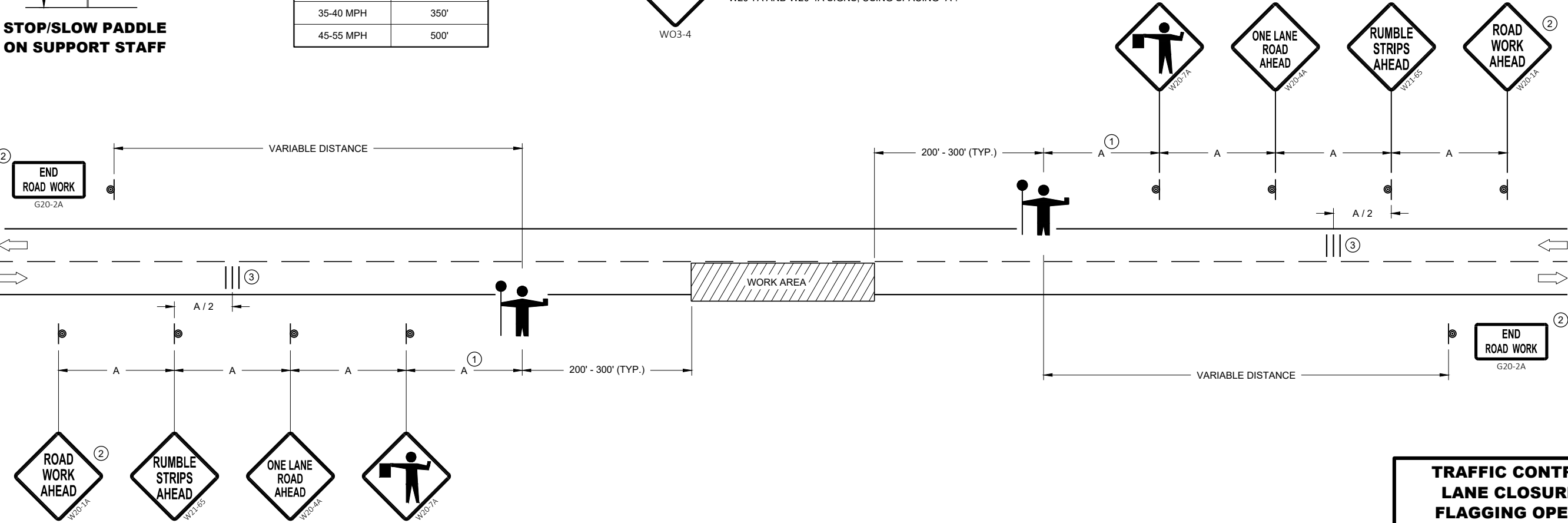


SIGN AND TEMPORARY RUMBLE STRIP ARRAY SPACING TABLE

SPEED LIMIT	SPACING "A"
25-30 MPH	200'
35-40 MPH	350'
45-55 MPH	500'



USE OF W03-4 SIGN IS OPTIONAL. WHEN USED, THIS SIGN SHALL BE LOCATED BETWEEN THE W20-7A AND W20-4A SIGNS, USING SPACING "A".



**TRAFFIC CONTROL FOR
LANE CLOSURE WITH
FLAGGING OPERATION**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
May 2022 /S/ Andrew Heidtke
DATE WORK ZONE ENGINEER 202

FHWA

LEGEND

- V1

LEAD VEHICLE
- V2

MARKING VEHICLE
- V3

SHADOW VEHICLE
- TRUCK MOUNTED ATTENUATOR (TMA)
- SIGN ON TEMPORARY SUPPORT
- DIRECTION OF TRAFFIC

GENERAL NOTES

ALL VEHICLES SHALL BE EQUIPPED WITH TWO 360 DEGREE HIGH INTENSITY YELLOW FLASHING LIGHTS OR STROBE LIGHTS AND OPERATED WITH HEADLIGHTS TURNED ON.

ALL VEHICLES SHALL BE EQUIPPED WITH REAR FACING TYPE B OR C FLASHING ARROW PANEL OPERATING IN CAUTION MODE. SIGNS PLACED ON VEHICLES MUST NOT OBSCURE THE ARROW PANEL.

ALL SIGNS ARE 48" X 48" UNLESS OTHERWISE SPECIFIED.

DISTANCE BETWEEN VEHICLES MAY VARY ACCORDING TO TERRAIN, SIGHT DISTANCE, PAINT DRYING TIME, AND OTHER FACTORS. WHENEVER ADEQUATE STOPPING SIGHT DISTANCE EXISTS TO THE REAR, SHADOW VEHICLES SHOULD MAINTAIN THE MINIMUM DISTANCE FROM THE WORK VEHICLE AND PROCEED AT THE SAME SPEED AS THE WORK VEHICLE. SHADOW VEHICLES SHOULD SLOW DOWN IN ADVANCE OF VERTICAL AND HORIZONTAL CURVES THAT RESTRICT SIGHT DISTANCE.

THE WORK AND SHADOW VEHICLES SHOULD PULL OVER PERIODICALLY TO ALLOW TRAFFIC TO PASS.

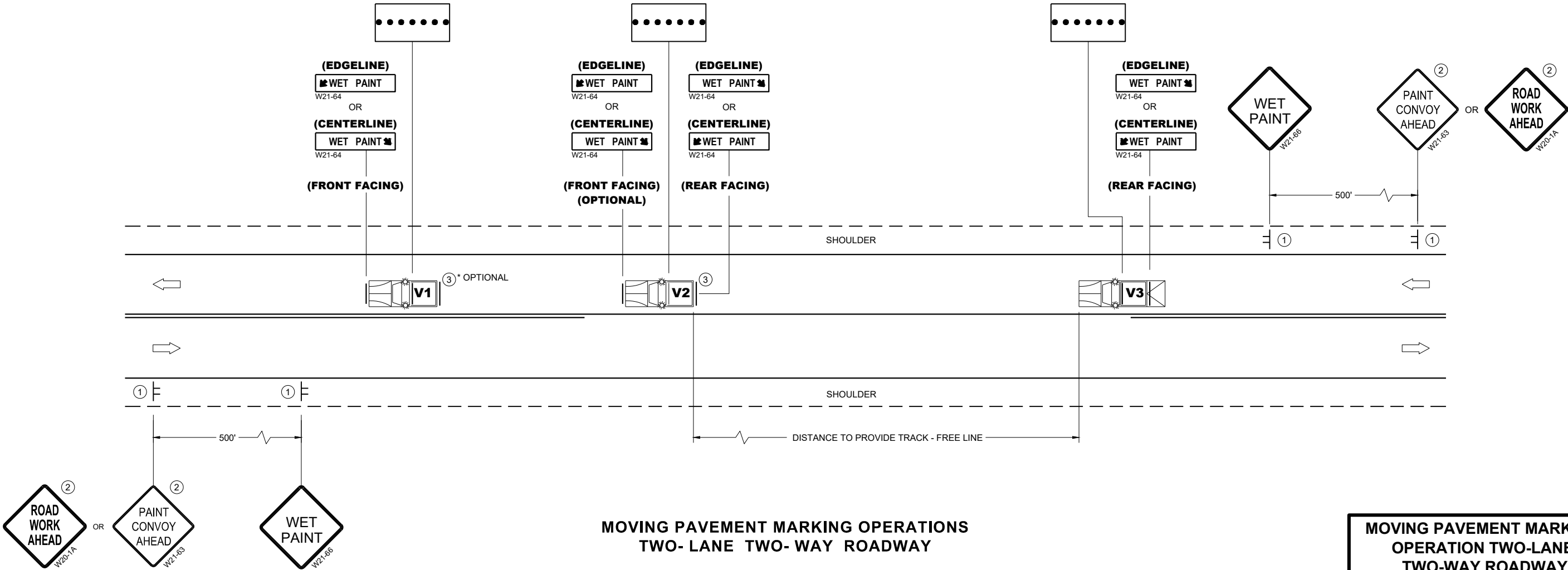
WHEN NO WORK ACTIVITY IS TAKING PLACE, REMOVE OR LAY STATIONARY SIGNS AND SUPPORTS FLAT ON THE GRADE WITH

UPRIGHTS ORIENTED PARALLEL TO AND DOWNSTREAM FROM TRAFFIC.

CONES SHOULD BE USED BETWEEN THE MARKING AND SHADOW VEHICLE AT 100 FOOT SPACING. CONES MAY BE OMITTED ON PAINTED LINE IF APPROVED BY THE ENGINEER. CONSIDER PAVEMENT MARKING DRY OR CURE TIMES AND TRAFFIC VOLUME.

CONES SHALL BE A MINIMUM OF 28" FOR WET PAVEMENT MARKING .

- ① SIGNS SHALL BE REPEATED APPROXIMATELY EVERY THREE MILES AND AFTER EVERY MAJOR INTERSECTION.
- ② IF CONSTRUCTION WORK ZONE SIGNS ARE IN PLACE, W20-1A OR W21-63 ARE NOT REQUIRED.
- ③ V1 AND V2 CAN BE SWITCHED SO THAT THE MARKER IS THE LEAD VEHICLE.



MOVING PAVEMENT MARKING
OPERATION TWO-LANE
TWO-WAY ROADWAY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
March 2024 /S/ Andrew Heidtke
DATE WORK ZONE ENGINEER

FHWA

LEGEND

- V1

LEAD VEHICLE
- V2

MARKING VEHICLE
- V3

SHADOW VEHICLE
- 

TRUCK MOUNTED ATTENUATOR (TMA)
- 

SIGN ON TEMPORARY SUPPORT
- 

DIRECTION OF TRAFFIC
- 

FLASHING ARROW PANEL (MERGE)

GENERAL NOTES

ALL VEHICLES SHALL BE EQUIPPED WITH TWO 360 DEGREE HIGH INTENSITY YELLOW FLASHING LIGHTS OR STROBE LIGHTS AND OPERATED WITH HEADLIGHTS TURNED ON.

ALL VEHICLES SHALL BE EQUIPPED WITH REAR FACING TYPE B OR C FLASHING ARROW PANEL. SIGNS PLACED ON VEHICLES MUST NOT OBSCURE THE ARROW PANEL.

ALL SIGNS ARE 48" X 48" UNLESS OTHERWISE SPECIFIED.

DISTANCE BETWEEN VEHICLES MAY VARY ACCORDING TO TERRAIN, SIGHT DISTANCE, PAINT DRYING TIME, AND OTHER FACTORS. WHENEVER ADEQUATE STOPPING SIGHT DISTANCE EXISTS TO THE REAR, SHADOW VEHICLES SHOULD MAINTAIN THE MINIMUM DISTANCE FROM THE WORK VEHICLE AND PROCEED AT THE SAME SPEED AS THE WORK VEHICLE. SHADOW VEHICLES SHOULD SLOW DOWN IN ADVANCE OF VERTICAL AND HORIZONTAL CURVES THAT RESTRICT SIGHT DISTANCE.

WHEN WORK ACTIVITY BLOCKS THE LEFT LANE, REVERSE TRAFFIC CONTROL.

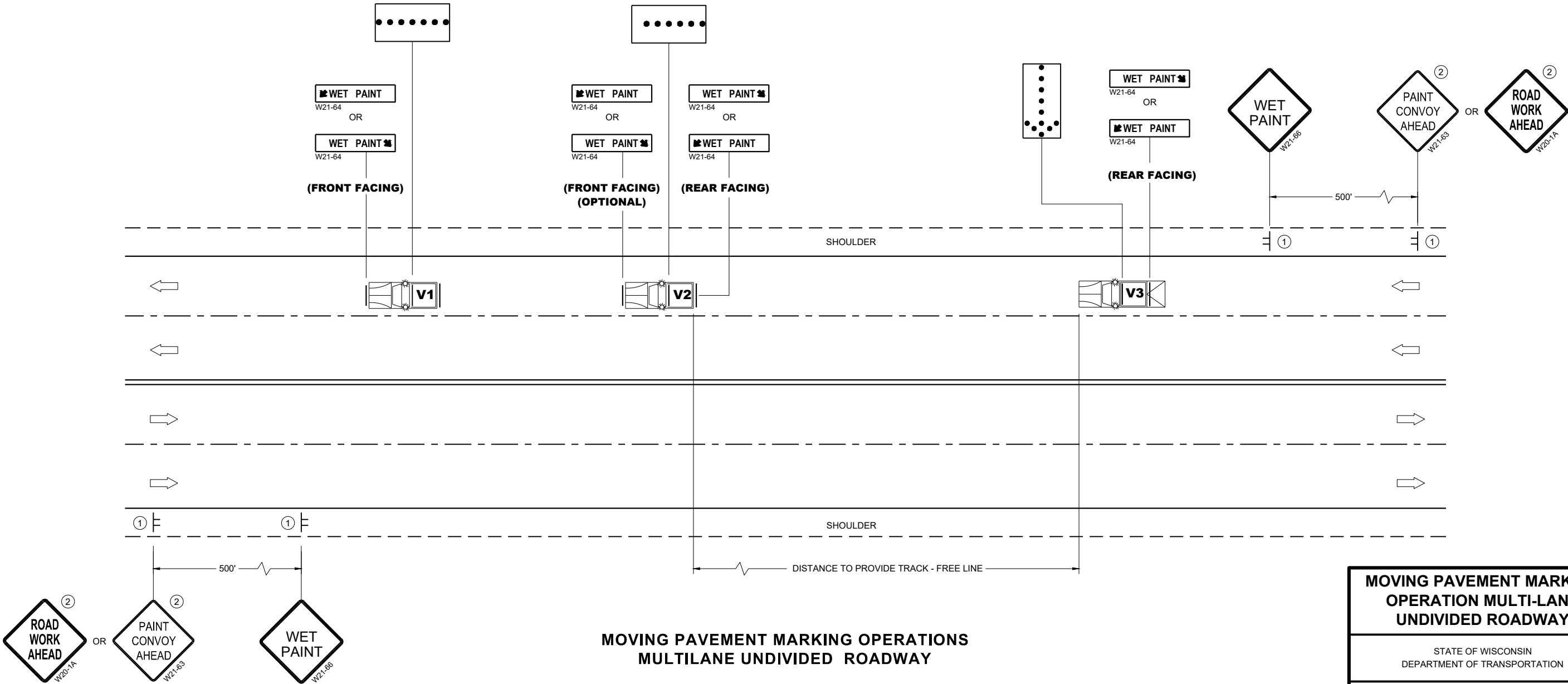
WHEN A RAMP INTERSECTS THE FACILITY ON WHICH THE WORK IS BEING PERFORMED, PROVIDE ADDITIONAL TRAFFIC CONTROLS AS SPECIFIED IN THE CONTRACT OR AS APPROVED BY THE ENGINEER.

WHEN NO WORK ACTIVITY IS TAKING PLACE, REMOVE OR LAY STATIONARY SIGNS AND SUPPORTS FLAT ON THE GRADE WITH UPRIGHTS ORIENTED PARALLEL TO AND DOWNSTREAM FROM TRAFFIC.

CONES SHOULD BE USED BETWEEN THE MARKING AND SHADOW VEHICLES AT 100 FOOT SPACING. CONES MAY BE OMITTED ON PAINTED LINE IF APPROVED BY THE ENGINEER. CONSIDER PAVEMENT MARKING DRY OR CURE TIMES AND TRAFFIC VOLUME.

CONES SHALL HAVE A MINIMUM HEIGHT OF 28" FOR WET PAVEMENT MARKINGS.

- ① SIGNS SHALL BE REPEATED APPROXIMATELY EVERY THREE MILES AND AFTER EVERY MAJOR INTERSECTION.
- ② IF CONSTRUCTION WORK ZONE SIGNS ARE IN PLACE, W20-1A OR W21-63 ARE NOT REQUIRED.



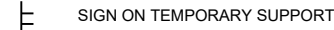
MOVING PAVEMENT MARKING
OPERATION MULTI-LANE
UNDIVIDED ROADWAY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
March 2024 /S/ Andrew Heidtke
DATE WORK ZONE ENGINEER
FHWA

204

V1	MARKING VEHICLE
V2	SHADOW VEHICLE
V3	TRAIL VEHICLE



ALL VEHICLES SHALL BE EQUIPPED WITH TWO 360 DEGREE HIGH INTENSITY YELLOW FLASHING LIGHTS OR STROBE LIGHTS AND OPERATED WITH HEADLIGHTS TURNED ON.

ALL SIGNS ARE 48" X 48" UNLESS OTHERWISE SPECIFIED.

WHEN WORK ACTIVITY BLOCKS THE LEFT LANE, REVERSE TRAFFIC CONTROL.

USE AN ATTENUATOR ON THE REARMOST VEHICLE THAT BLOCKS ALL OR PART OF THE TRAFFIC LANE.

WHEN NO WORK ACTIVITY IS TAKING PLACE, REMOVE OR LAY STATIONARY SIGNS AND SUPPORTS FLAT ON THE GRADE WITH UPRIGHTS ORIENTED PARALLEL TO AND DOWNSTREAM FROM TRAFFIC

CONES SHALL BE A MINIMUM HEIGHT OF 28" FOR WET PAVEMENT MARKINGS

- ① SIGNS SHALL BE REPEATED APPROXIMATELY EVERY THREE MILES AND AFTER EVERY ON RAMP.

- ② IF CONSTRUCTION WORK ZONE SIGNS ARE IN PLACE, W20-1A OR W21-63 ARE NOT REQUIRED.

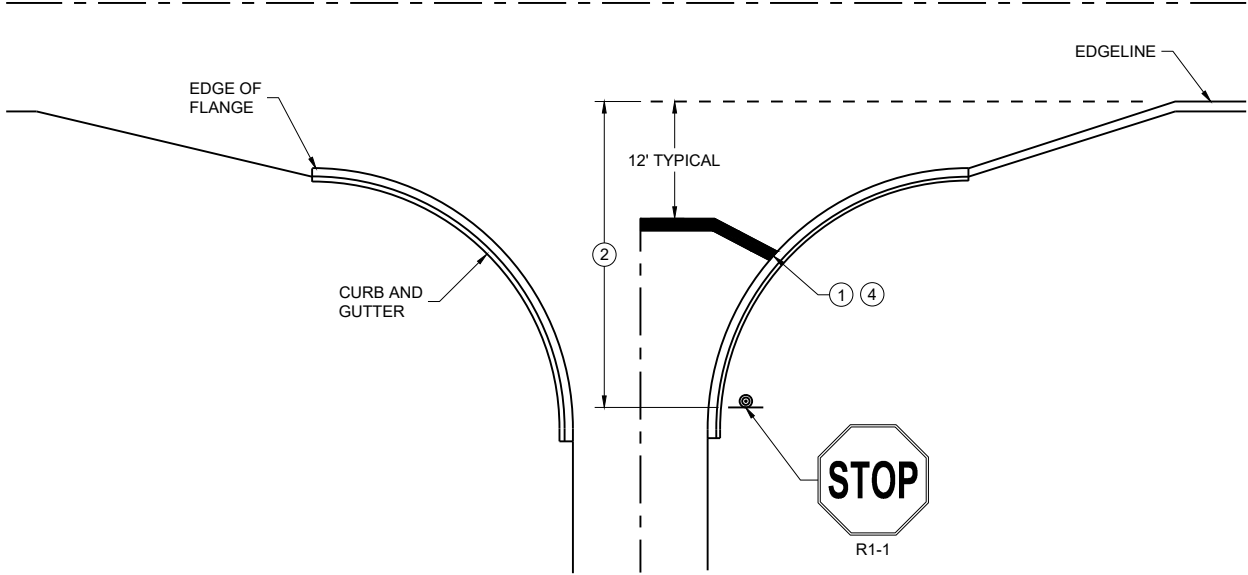


SHOULDER

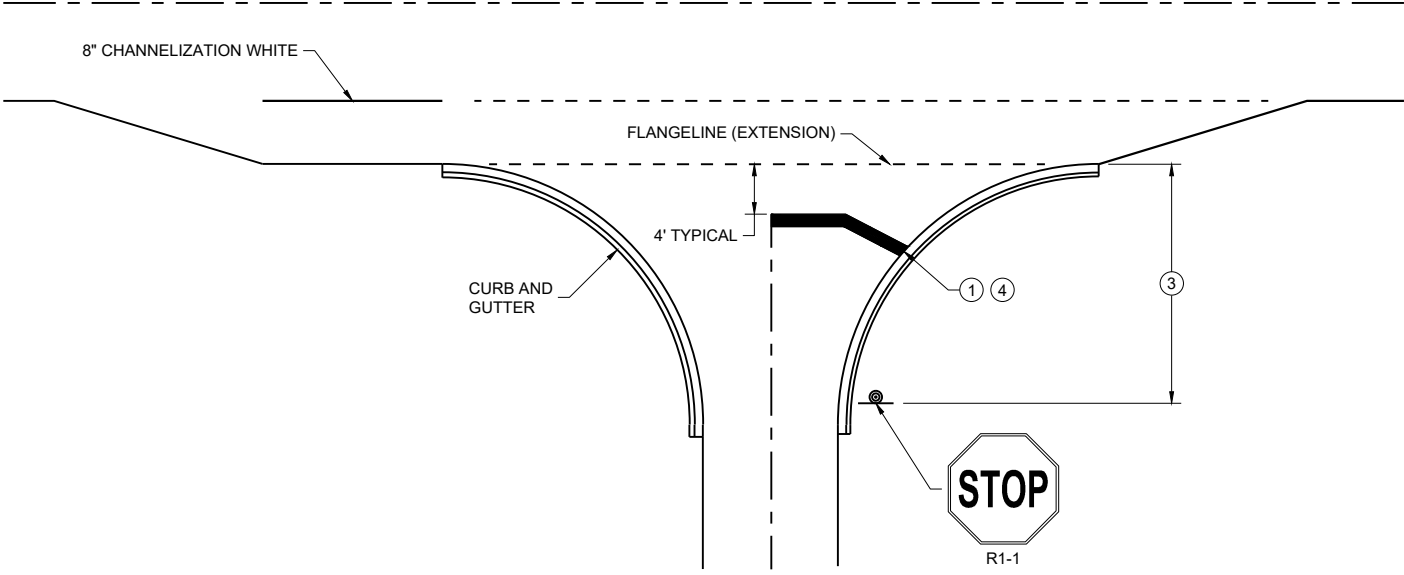
DISTANCE TO PROVIDE
TRACK-FREE LINE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

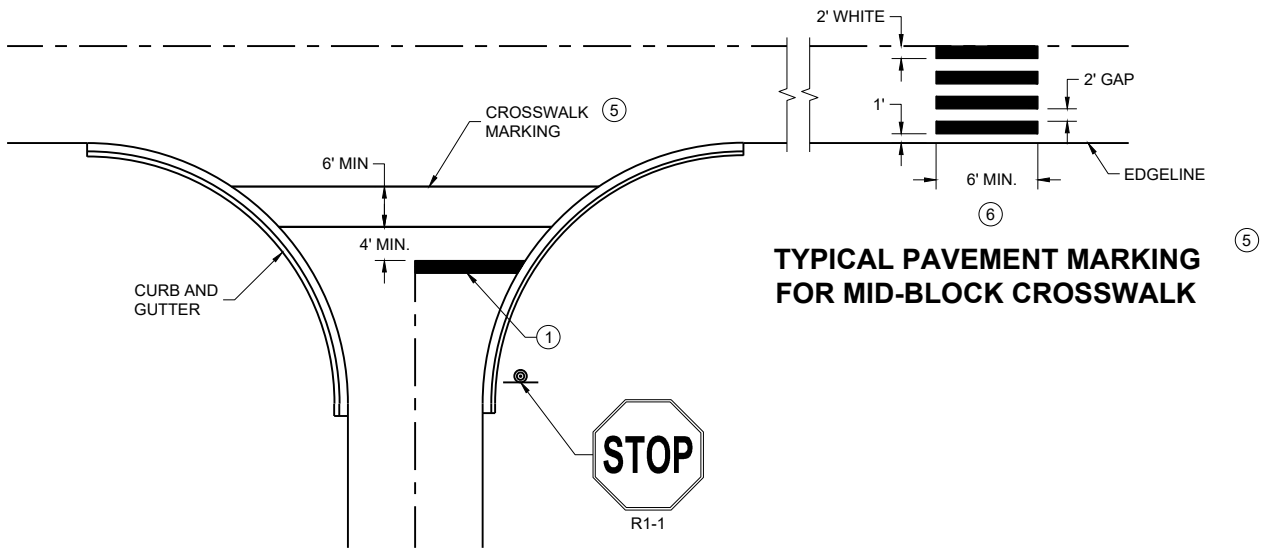
FHWA



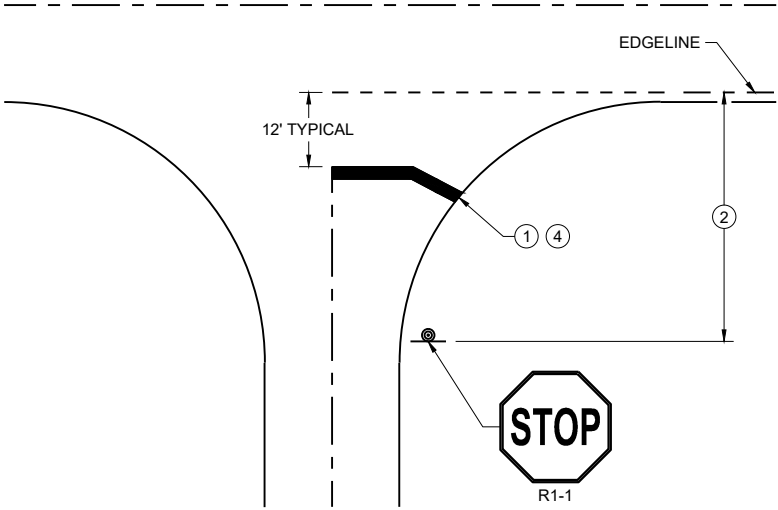
TYPICAL STOP LINE PAVEMENT MARKING WITH CURB AND GUTTER



TYPICAL STOP LINE PAVEMENT MARKING FOR SIDE ROADS WITH RIGHT TURN LANE



TYPICAL STOP LINE PAVEMENT MARKING FOR SIDE ROADS WITH CROSSWALK MARKING



TYPICAL STOP LINE PAVEMENT MARKING WITHOUT CURB AND GUTTER

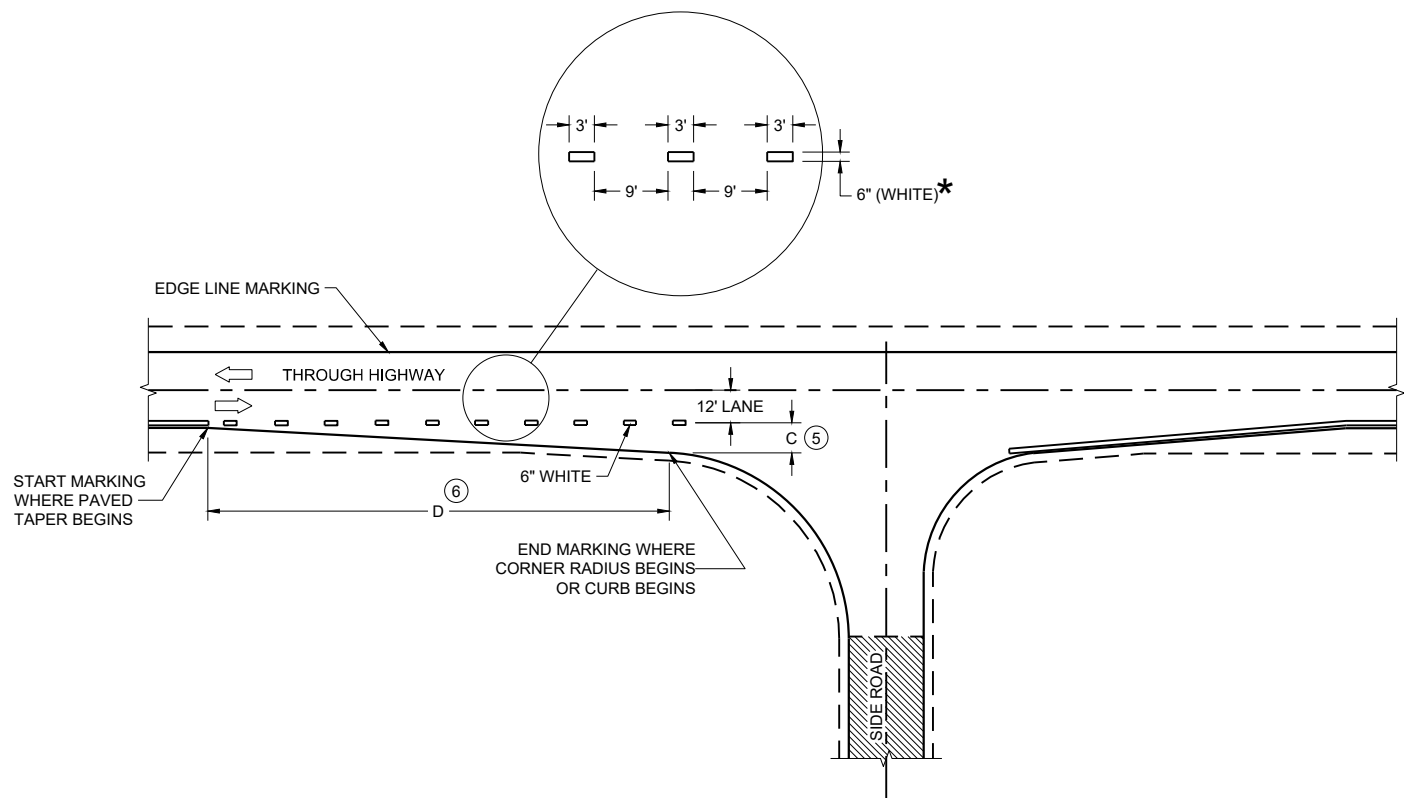
GENERAL NOTES

STOP SIGN SHALL BE PLACED A MINIMUM OF 6 FEET TO A MAXIMUM OF 50 FEET FROM THE EDGELINE LOCATION.

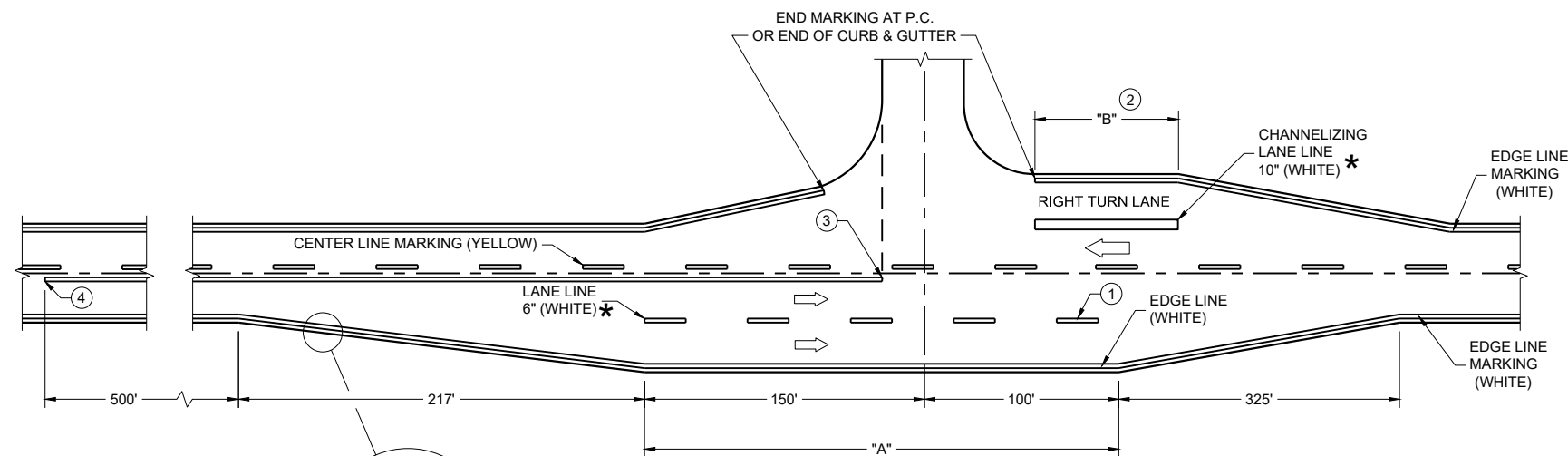
- 1 18-INCH STOP LINES MAY BE DELETED OR ADDED BY THE REGION MARKING ENGINEER BASED ON VISIBILITY AND SIGHT LINES.
- 2 NO STOP LINE IS REQUIRED IF STOP SIGN IS LESS THAN OR EQUAL TO 40 FEET FROM THE EDGELINE.
- 3 NO STOP LINE IS REQUIRED IF STOP SIGN IS LESS THAN OR EQUAL TO 30 FEET FROM THE FLANGE LINE EXTENSION.
- 4 MOVE CLOSER TO THE EDGE OF TRAVEL LINE AS NEEDED FOR VISIBILITY AND SIGHT LINES (NO CLOSER THAN 4 FEET).
- 5 LADDER BAR CROSSWALKS SHOULD ONLY BE USED FOR MID BLOCK CROSSINGS. USE 2 - 6" TRANSVERSE LINES.
- 6 POSTED SPEED LIMITS OF 40 MPH OR GREATER USE A MINIMUM WIDTH OF 8' FOR MIDBLOCK CROSSWALKS

STOP LINE AND CROSSWALK PAVEMENT MARKING	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED March 2024 DATE	/S/ Matthew Rauch STATE SIGNING AND MARKING ENGINEER

FHWA 206



MINOR INTERSECTION



MAJOR INTERSECTIONS
(INTERSECTION WITH FULL RIGHT TURN LANE OR BYPASS LANE)

*CONFIRM MARKING LINE WIDTH WITH THE MISCELLANEOUS QUANTITIES

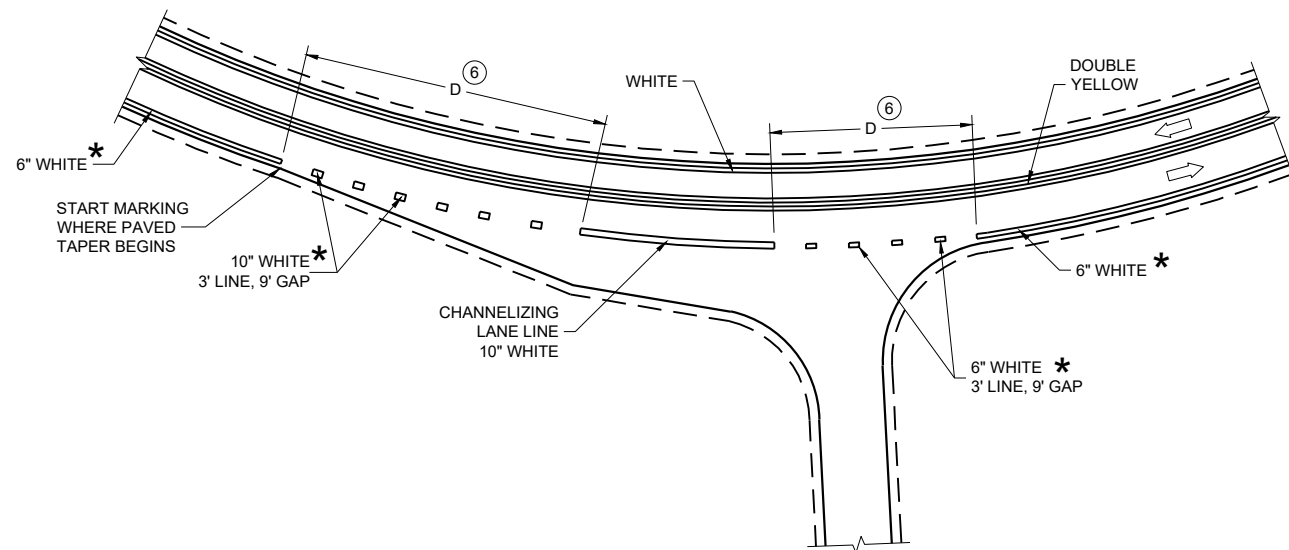
GENERAL NOTES

OMIT EDGE LINES THROUGH INTERSECTIONS. CONTINUE EDGE LINES THROUGH DRIVEWAYS.

- ① WHEN DISTANCE "A" IS LESS THAN 250 FEET, OMIT LANE LINE.
- ② WHEN DISTANCE "B" IS LESS THAN 100 FEET, OMIT CHANNELIZING LANE LINE.
- ③ BARRIER LINE ENDS AT SIDE ROAD PAVEMENT / SURFACE EDGE EXTENSION.
- ④ BARRIER LINE STARTS 500 FEET PRIOR TO THE BYPASS TAPER.
- ⑤ WHEN DISTANCE "C" IS LESS THAN 4 FEET, OMIT DOTTED EXTENSION.
- ⑥ WHEN DISTANCE "D" IS LESS THAN 50 FEET, OMIT DOTTED EXTENSION.

LEGEND

➡ DIRECTION OF TRAVEL



INTERSECTION ON OUTSIDE OF CURVE

PAVEMENT MARKING
(INTERSECTIONS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

LEGEND

-  SIGN ON PERMANENT SUPPORT
-  TRAFFIC CONTROL DRUM
-  DIRECTION OF TRAFFIC
-  WORK ZONE

GENERAL NOTES

ALL SIGNS ARE 48"X48" UNLESS OTHERWISE NOTED. IF NECESSARY DUE TO SPACE CONSTRAINTS IN URBAN AREAS, 36" X 36" SIGNS MAY BE USED IF APPROVED BY THE REGIONAL TRAFFIC UNIT.

"WO" SIGN IS THE SAME AS "W" SIGN EXCEPT THE BACKGROUND IS ORANGE.

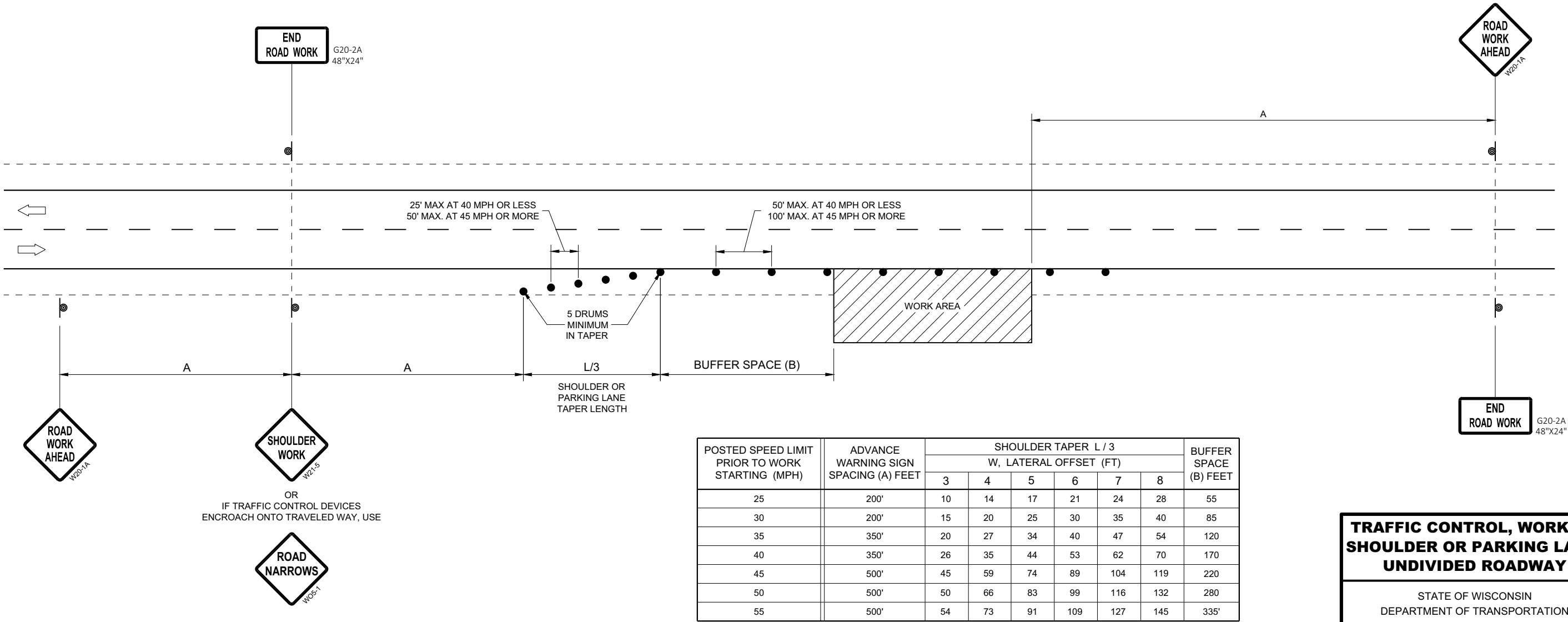
ANY SIGNS TEMPORARY OR EXISTING, WHICH CONFLICT WITH THE TRAFFIC CONTROL "IN USE" SHALL BE REMOVED OR COVERED AS NEEDED AND AS APPROVED BY THE ENGINEER.

THE EXACT NUMBER, LOCATION, AND SPACING OF ALL SIGNS AND DEVICES SHALL BE ADJUSTED TO FIT FIELD CONDITIONS AS APPROVED BY THE ENGINEER.

CHANNELIZING DEVICES PLACED ADJACENT TO WORK AREA SHALL BE PULLED BACK FROM THE TRAVEL LANE WHEN WORK IS NOT IN PROGRESS.

SIGNS THAT WILL BE IN PLACE LESS THAN 7 CONTINUOUS DAYS AND NIGHTS MAY BE MOUNTED ON PORTABLE SUPPORTS.

W20-1A AND G20-2A SIGNS ARE NOT REQUIRED IF THE WORK AREA IS WITHIN A LARGER WORK ZONE WHERE THESE SIGNS ARE ALREADY PRESENT. G20-2A SIGNS MAY ALSO BE OMITTED IF DURATION OF WORK IS LESS THAN 7 CONTINUOUS DAYS AND NIGHTS.

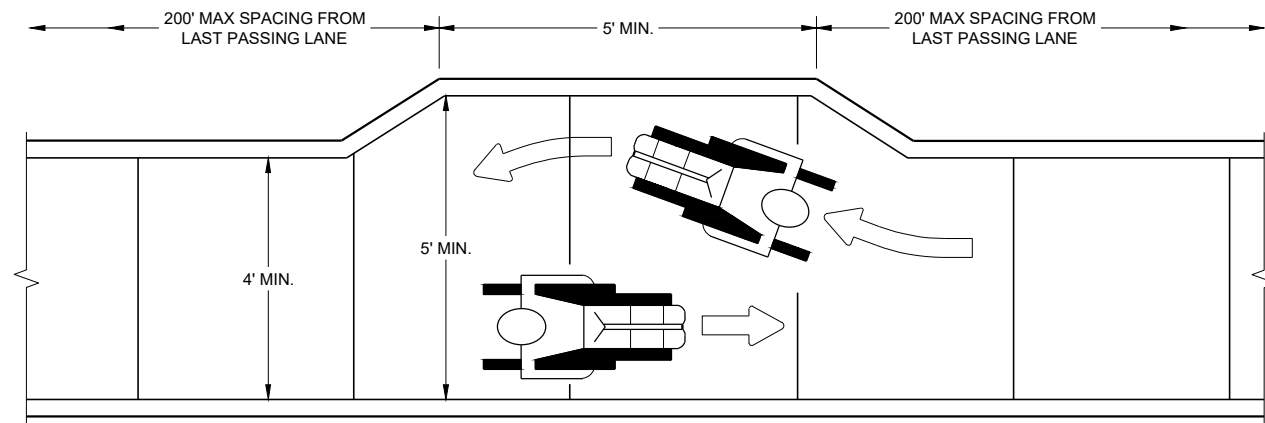


POSTED SPEED LIMIT PRIOR TO WORK STARTING (MPH)	ADVANCE WARNING SIGN SPACING (A) FEET	SHOULDER TAPER L / 3 W, LATERAL OFFSET (FT)						BUFFER SPACE (B) FEET
		3	4	5	6	7	8	
25	200'	10	14	17	21	24	28	55
30	200'	15	20	25	30	35	40	85
35	350'	20	27	34	40	47	54	120
40	350'	26	35	44	53	62	70	170
45	500'	45	59	74	89	104	119	220
50	500'	50	66	83	99	116	132	280
55	500'	54	73	91	109	127	145	335'

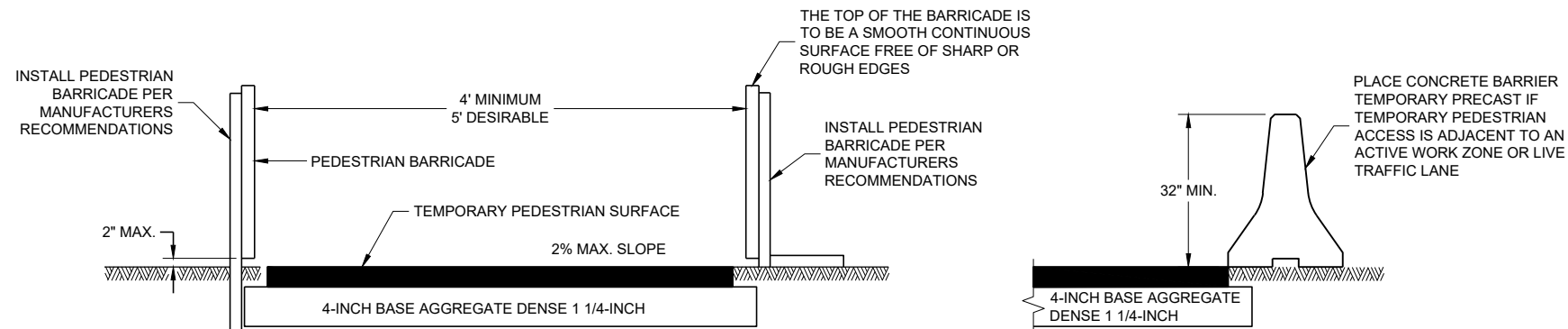
TRAFFIC CONTROL, WORK ON
SHOULDER OR PARKING LANE,
UNDIVIDED ROADWAY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
May 2020 /S/ Andrew Heidtke
DATE STATEWIDE WORK ZONE T SAFETY ENGINEER 208
FHWA



NARROW SIDEWALK PASSING DETAIL



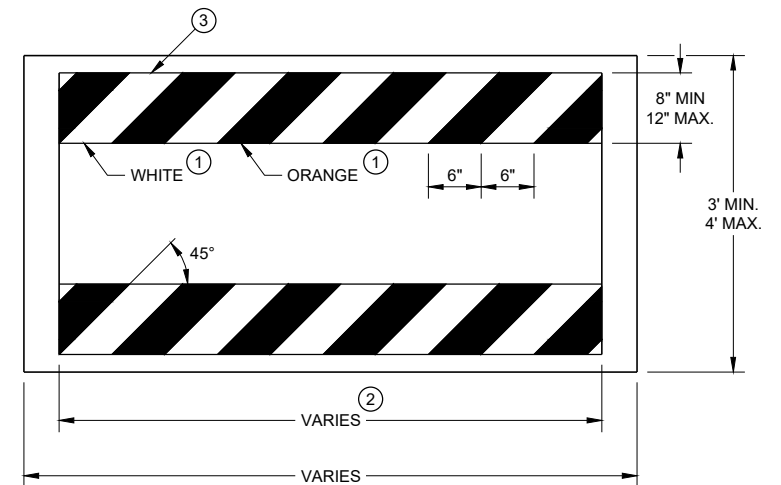
TEMPORARY PEDESTRIAN ACCESS

GENERAL NOTES

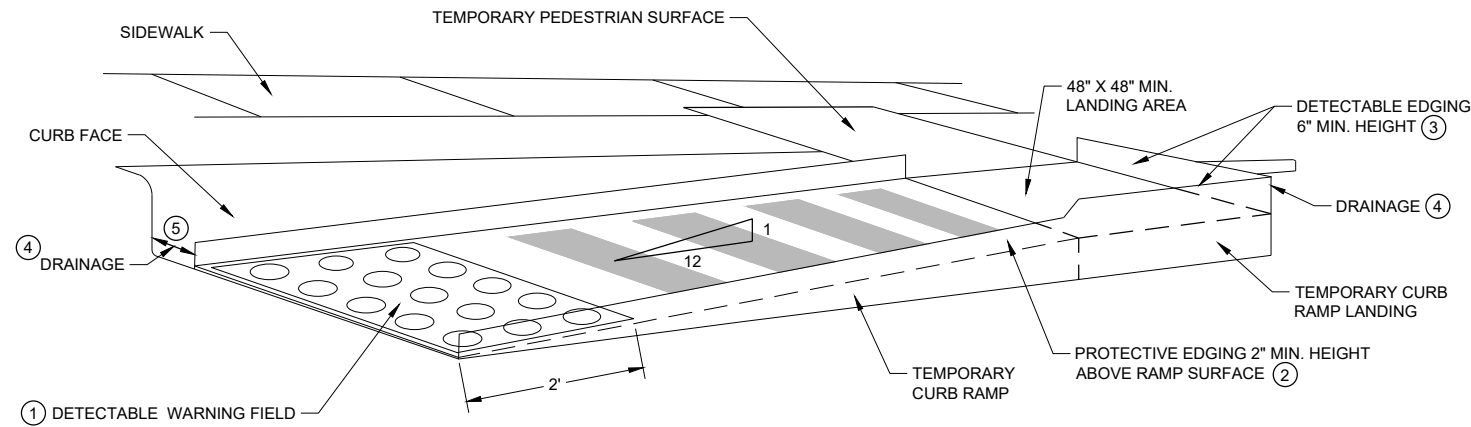
BARRICADE DEVICE SELECTED FROM APPROVED PRODUCT LIST

- ① REFLECTIVE SHEETING SHALL FOLLOW THE REQUIREMENTS IN THE APPROVED PRODUCTS LISTING FOR SIGN SHEETING.
- ② SHEETING REQUIRED ON MORE THAN 50% OF BARRICADE WIDTH.
- ③ PLACE SHEETING ON BOTH SIDES OF THE BARRICADE.

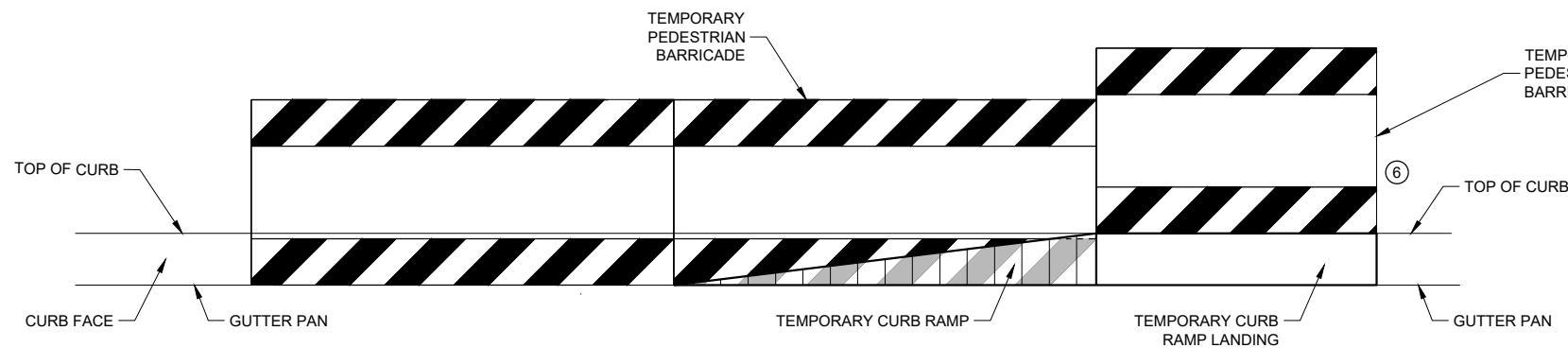
★ USE THIS DETAIL FOR SHEETING PLACEMENT REFERENCE.



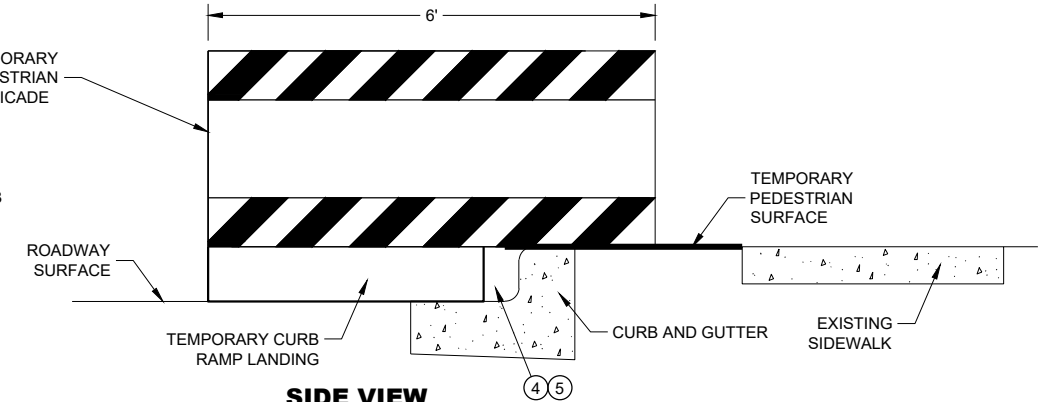
TEMPORARY PEDESTRIAN BARRICADE*



PERSPECTIVE VIEW



FRONT VIEW



SIDE VIEW

TEMPORARY CURB RAMP PARALLEL TO CURB

GENERAL NOTES

CURB RAMPS SHALL BE 48" MIN. WIDTH WITH A FIRM, STABLE AND SLIP RESISTANT SURFACE.

CURB RAMPS AND LANDINGS SHALL HAVE A 1:50 (2%) MAX. CROSS-SLOPE.

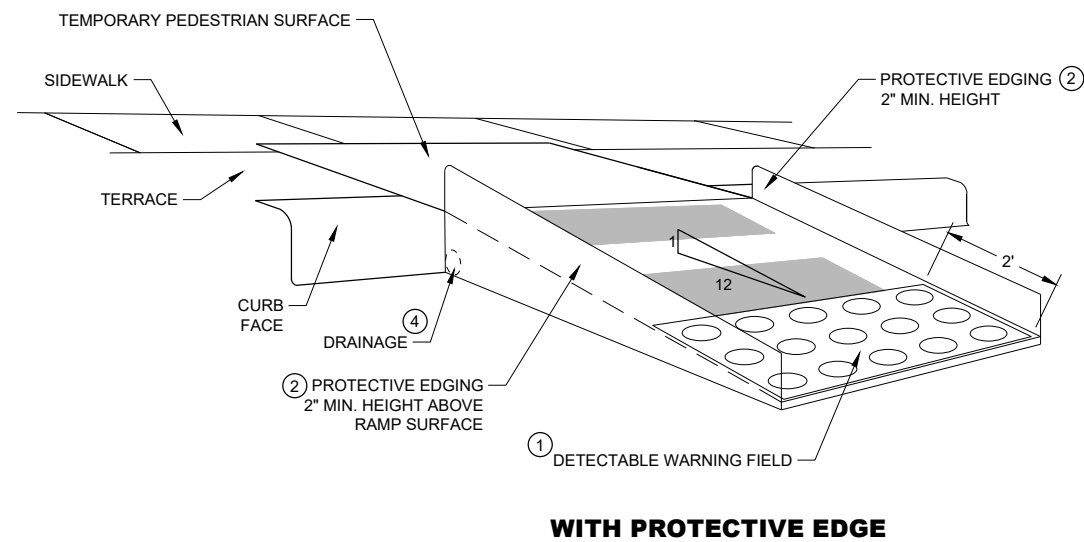
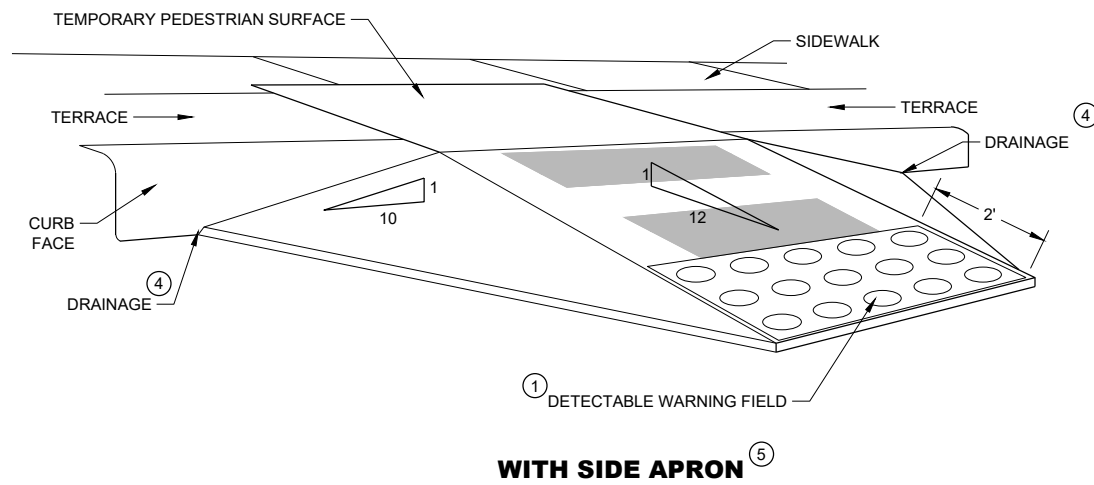
CLEAR SPACE OF 48" X 48" SHALL BE PROVIDED ABOVE AND BELOW THE CURB RAMP. LATERAL JOINTS OR GAPS BETWEEN SURFACES SHALL BE LESS THAN 1/2" WIDTH.

CHANGES BETWEEN SURFACE HEIGHTS SHALL NOT EXCEED 1/2". LATERAL EDGES MAY BE VERTICAL UP TO 1/4" HIGH AND SHALL BE BEVELED AT 1:2 BETWEEN 1/4" AND 1/2".

1. INSTALL CONTRASTING TEMPORARY DETECTABLE WARNING FIELD AT PEDESTRIAN STREET CROSSINGS, AS SHOWN IN THE PLANS.
2. PROTECTIVE EDGING WITH A 2" MIN. HEIGHT SHALL BE INSTALLED WHEN A CURB RAMP OR LANDING PLATFORM HAS A VERTICAL DROP OF 6" OR GREATER OR HAS A SIDE APRON SLOPE STEEPER THAN 1:3 (33%). PROTECTIVE EDGING SHOULD BE CONSIDERED WHEN CURB RAMPS OR LANDING PLATFORMS HAVE A VERTICAL DROP OF 3" OR MORE.
3. DETECTABLE EDGING WITH 6" MIN. HEIGHT AND CONTRASTING COLOR SHALL BE INSTALLED ON ALL CURB RAMP LANDINGS WHERE THE WALKWAY CHANGES DIRECTION (TURNS).
4. DO NOT RESTRICT WATER FLOW IN THE GUTTER SYSTEM.
5. ENSURE CURB RAMP IS OUT OF THE GUTTER PAN.
6. IF ONLY PART OF THE END PANEL OF TEMPORARY PEDESTRIAN BARRICADE PANEL IS NEEDED, EXTEND EXCESS PORTION OF TEMPORARY PEDESTRIAN BARRICADE PANEL HERE.

TRAFFIC CONTROL,
PEDESTRIAN
ACCOMMODATION

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



TEMPORARY CURB RAMP PERPENDICULAR TO CURB

GENERAL NOTES

CURB RAMPS SHALL BE 48" MINIMUM WIDTH WITH A FIRM, STABLE AND SLIP RESISTANT SURFACE.

ALTERNATE SIDEWALK WORK BETWEEN LEFT AND RIGHT SIDE OF ROADWAY TO MAINTAIN PEDESTRIAN ACCESS.

CURB RAMPS AND LANDINGS SHALL HAVE A 1:50 (2%) MAX. CROSS-SLOPE.

CLEAR SPACE OF 48" X 48" SHALL BE PROVIDED ABOVE AND BELOW THE CURB RAMP.

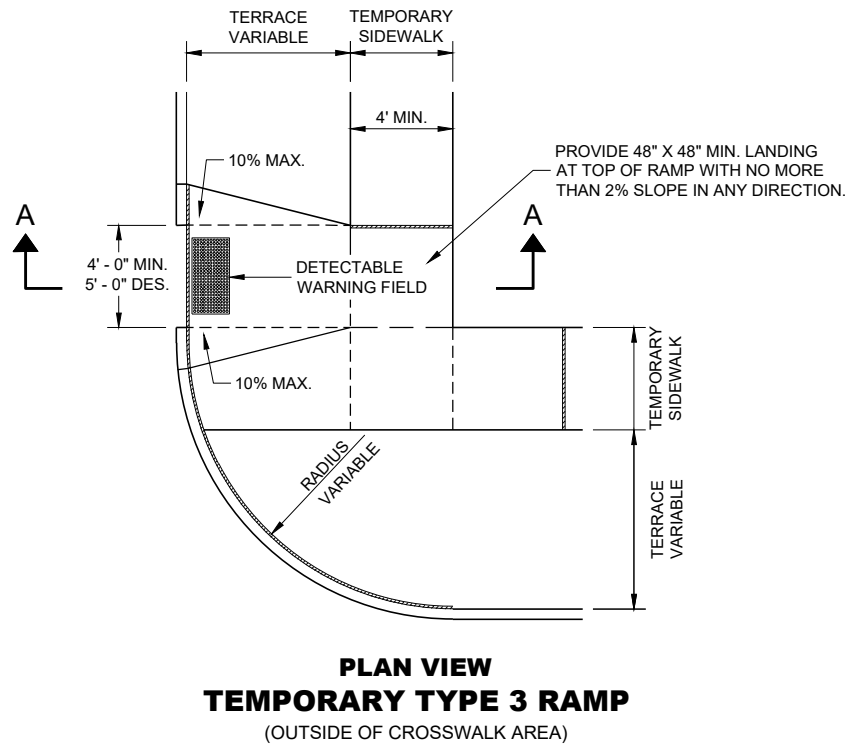
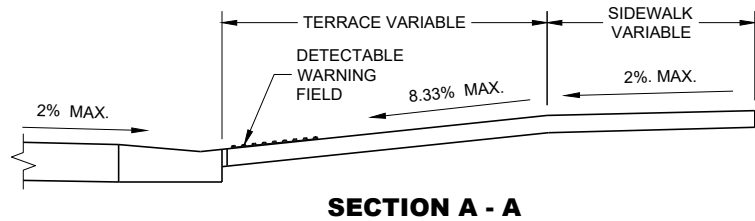
LATERAL JOINTS OR GAPS BETWEEN SURFACES SHALL BE LESS THAN ½" WIDTH.

CHANGES BETWEEN SURFACE HEIGHTS SHALL NOT EXCEED ½". LATERAL EDGES MAY BE VERTICAL UP TO ¼" HIGH AND SHALL BE BEVELED AT 1:2 BETWEEN ¼" AND ½".

- ① INSTALL CONTRASTING TEMPORARY DETECTABLE WARNING FIELD AT PEDESTRIAN STREET CROSSINGS, AS SHOWN IN THE PLANS
- ② PROTECTIVE EDGING WITH A 2" MIN. HEIGHT SHALL BE INSTALLED WHEN A CURB RAMP OR LANDING PLATFORM HAS A VERTICAL DROP OF 6" OR GREATER OR HAS A SIDE APRON SLOPE STEEPER THAN 1:3 (33%). PROTECTIVE EDGING SHOULD BE CONSIDERED WHEN CURB RAMPS OR LANDING PLATFORMS HAVE A VERTICAL DROP OF 3" OR MORE.
- ③ DETECTABLE EDGING WITH 6" MIN. HEIGHT AND CONTRASTING COLOR SHALL BE INSTALLED ON ALL CURB RAMP LANDINGS WHERE THE WALKWAY CHANGES DIRECTION (TURNS).
- ④ DO NOT RESTRICT WATER FLOW IN THE GUTTER SYSTEM.
- ⑤ CAN ONLY BE USED FOR RAMPS WITH 6" OR LESS OF VERTICAL CHANGE.

**TRAFFIC CONTROL,
PEDESTRIAN ACCOMMODATION**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION 211



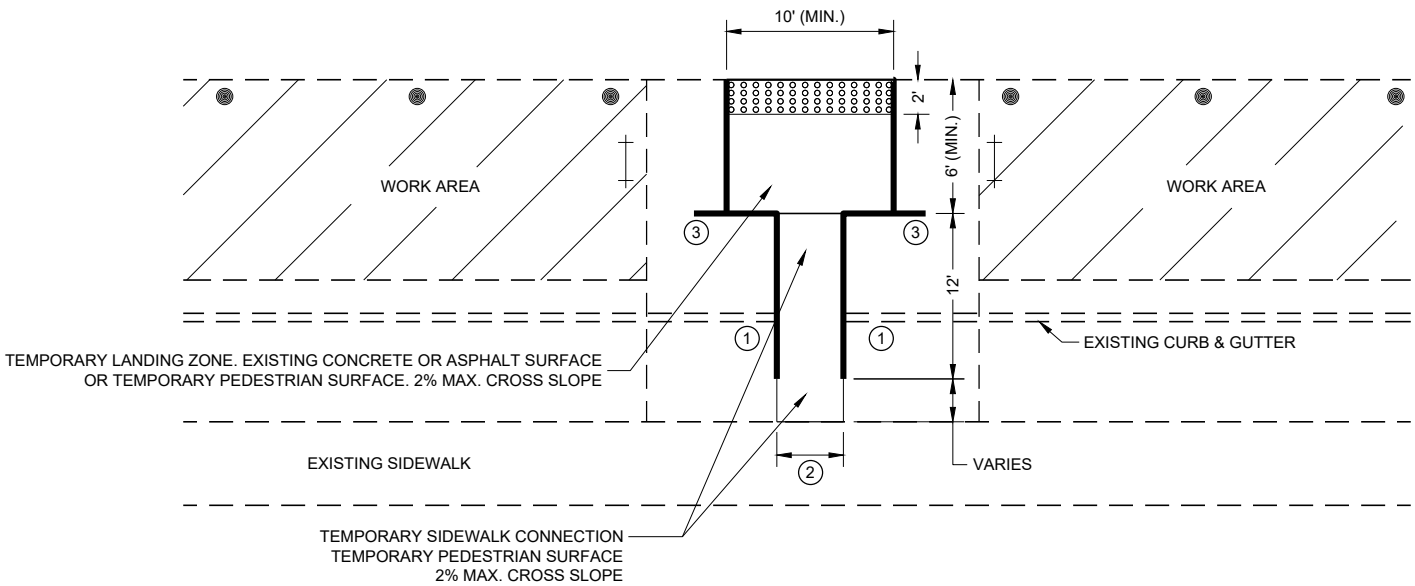
GENERAL NOTES

- BARRICADE DEVICE SELECTED FROM APPROVED PRODUCT LIST
- ① REFLECTIVE SHEETING SHALL FOLLOW THE REQUIREMENTS IN THE APPROVED PRODUCTS LISTING FOR SIGN SHEETING.
 - ② SHEETING REQUIRED ON MORE THAN 50% OF BARRICADE WIDTH.
 - ③ PLACE SHEETING ON BOTH SIDES OF THE BARRICADE.
- ★ USE THIS DETAIL FOR SHEETING PLACEMENT REFERENCE.

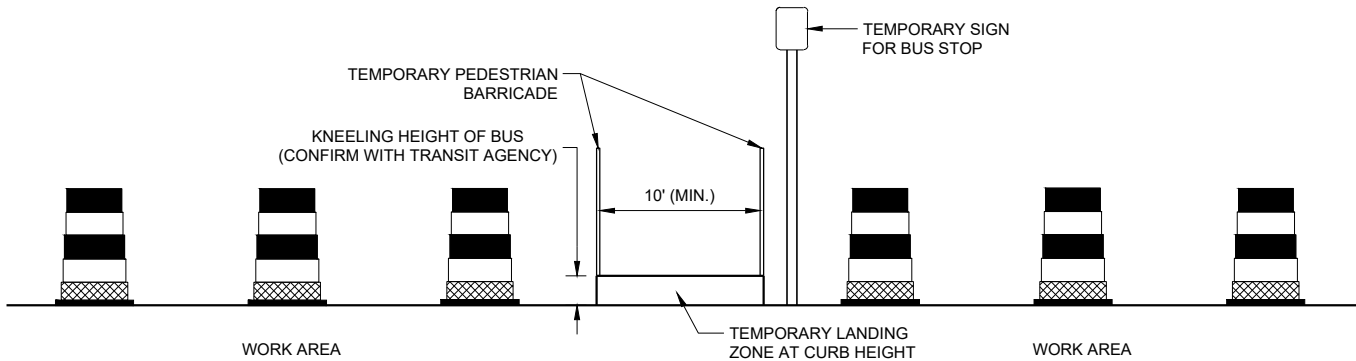
TRAFFIC CONTROL,
PEDESTRIAN ACCOMMODATION

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
May 2023 /S/ Andrew Heidtke
DATE WORK ZONE ENGINEER 212
FHWA



PLAN VIEW



PROFILE VIEW
TEMPORARY BUS STOP PAD

GENERAL NOTES

- TYPICAL TEMPORARY PEDESTRIAN BARRICADE PANEL IS 6 FEET LONG.
- NOTIFY THE BUS COMPANY 7 DAYS IN ADVANCE OF THE BUS STOP RELOCATION.
- PROTECTIVE EDGING WITH A 2" MIN. HEIGHT SHALL BE INSTALLED WHEN A CURB RAMP OR LANDING PLATFORM HAS A VERTICAL DROP OF 6" OR GREATER OR HAS A SIDE APRON SLOPE STEEPER THAN 1:3 (33%). PROTECTIVE EDGING SHOULD BE CONSIDERED WHEN CURB RAMP OR LANDING PLATFORMS HAVE A VERTICAL DROP OF 3" OR MORE.
- DETECTABLE EDGING WITH 6" MIN. HEIGHT AND CONTRASTING COLOR SHALL BE INSTALLED ON ALL CURB RAMP LANDINGS WHERE THE WALKWAY CHANGES DIRECTION (TURNS).
- LATERAL JOINTS OR GAPS BETWEEN SURFACES SHALL BE LESS THAN ½" WIDTH.
- CHANGES BETWEEN SURFACE HEIGHTS SHALL NOT EXCEED ½". LATERAL EDGES MAY BE VERTICAL UP TO ¼" HIGH AND SHALL BE BEVELED AT 1:2 BETWEEN ¼" AND ½".
- CURB RAMP AND LANDINGS SHALL HAVE A 1:50 (2%) MAX. CROSS-SLOPE.

- ① DO NOT RESTRICT WATER FLOW IN THE GUTTER SYSTEM.
- ② 5' WIDE MIN. WITH TEMPORARY PEDESTRIAN BARRICADE, 10' WIDE MIN. WITHOUT TEMPORARY PEDESTRIAN BARRICADE.
- ③ PLACE EXCESS PORTION OF TEMPORARY PEDESTRIAN BARRICADE INTO THIS SPACE.

LEGEND

- TRAFFIC CONTROL DRUM
- ⊥ TYPE III BARRICADE
- TEMPORARY PEDESTRIAN BARRICADE
- ⊞ TEMPORARY DETECTABLE WARNING FIELD
- ▨ WORK AREA

LEGEND

- SIGN ON PERMANENT SUPPORT
- SIGN ON TEMPORARY SUPPORT
- UNDER PEDESTRIAN TRAFFIC
- WORK AREA
- TEMPORARY PEDESTRIAN BARRICADE
- DIRECTION OF TRAFFIC

GENERAL NOTES

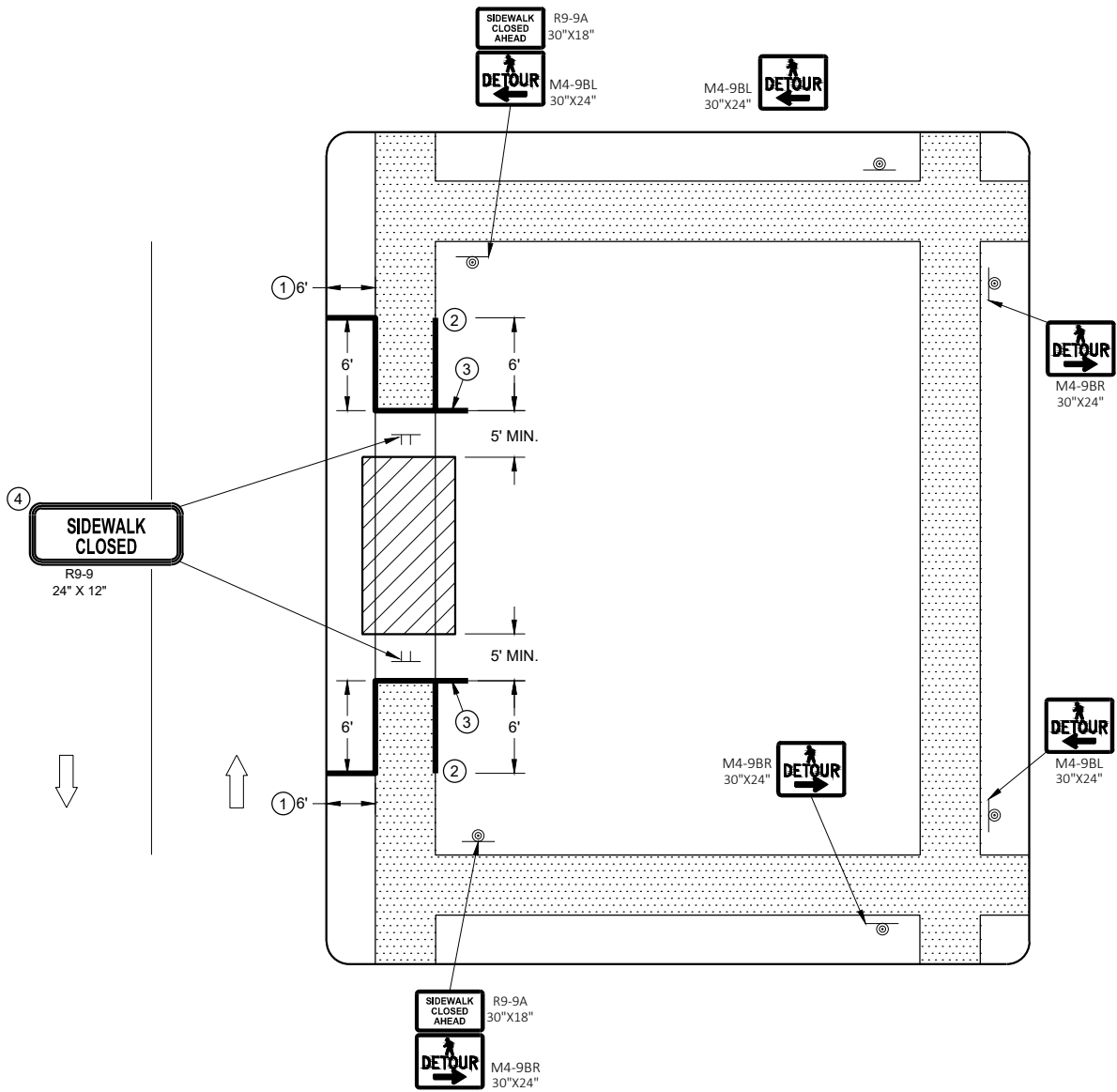
SIGN LAYOUTS SHALL BE IN ACCORDANCE WITH THE WISCONSIN STANDARD SIGN PLATES.

WHERE TEMPORARY BARRICADE RUNS PARALLEL ALONG SIDEWALK, PLACE THE FACE OF THE BARRICADE AT THE EDGE OF THE SIDEWALK.

SIGNS THAT REMAIN IN PLACE LESS THAN SEVEN CONTINUOUS DAYS AND NIGHTS MAY BE MOUNTED ON PORTABLE SUPPORTS.

PLACE TEMPORARY PEDESTRIAN BARRICADE TO FIT FIELD CONDITIONS, AVOIDING CONFLICTS WITH DRIVEWAYS AND OTHER EXISTING FEATURES.

- IF TERRACE IS LESS THAN 6 FEET WIDE, OMIT TEMPORARY PEDESTRIAN BARRICADE FROM THE SIDEWALK TO THE CURB.
- PLACE BARRICADE CLOSURE SO THAT THE TEMPORARY PEDESTRIAN BARRICADE END IS AT THE LAST OPEN SIDEWALK ACCESS TO RESIDENCES OR BUSINESSES BEFORE THE SIDEWALK CLOSURE.
- IF TEMPORARY PEDESTRIAN BARRICADE PANEL IS WIDER THAN THE SIDEWALK WIDTH, THE PORTION OF EXCESS PANEL SHOULD EXTEND INTO THE TERRACE.
- MOUNTING HEIGHT OF 5 FEET FROM THE SURFACE TO THE BOTTOM OF SIGN.



SIDEWALK DETOUR, SIDEWALK ONLY ON ONE SIDE

LEGEND

- SIGN ON TEMPORARY SUPPORT
- WORK AREA
- UNDER PEDESTRIAN TRAFFIC
- TEMPORARY PEDESTRIAN SURFACE
- TEMPORARY PEDESTRIAN BARRICADE
- OPTIONAL TEMPORARY PEDESTRIAN BARRICADE
- DIRECTION OF TRAFFIC

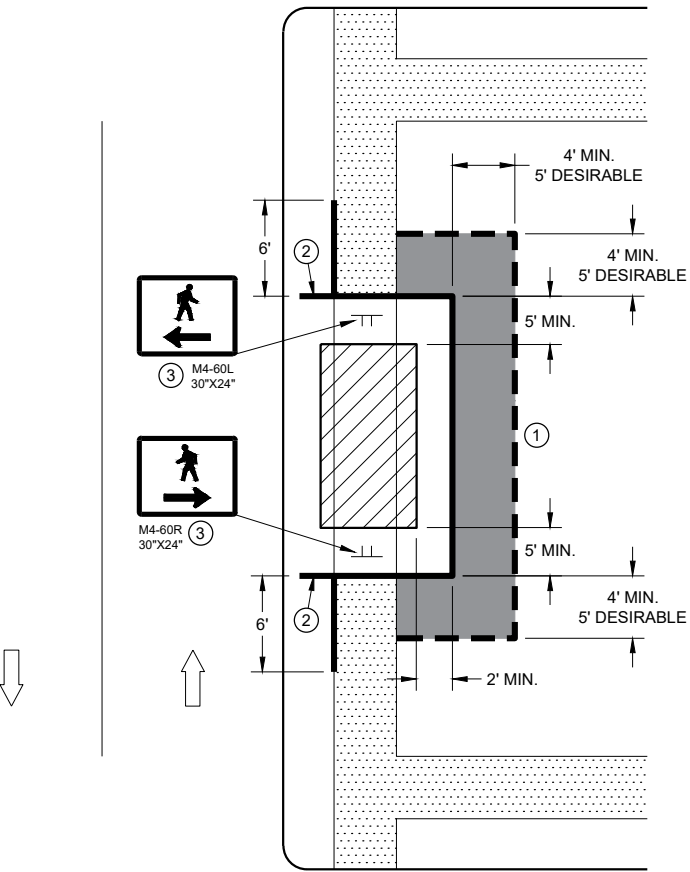
GENERAL NOTES

- TYPICAL TEMPORARY PEDESTRIAN BARRICADE PANEL IS 6 FEET LONG.
- SIGN LAYOUTS SHALL BE IN ACCORDANCE WITH THE WISCONSIN STANDARD SIGN PLATES.
- WHERE TEMPORARY BARRICADE RUNS PARALLEL ALONG SIDEWALK, PLACE THE FACE OF THE BARRICADE AT THE EDGE OF THE SIDEWALK.
- SIGNS THAT REMAIN IN PLACE LESS THAN SEVEN CONTINUOUS DAYS AND NIGHTS MAY BE MOUNTED ON PORTABLE SUPPORTS.
- ①

USE TEMPORARY PEDESTRIAN BARRICADE TO SEPARATE PEDESTRIANS FROM DROP OFFS OR FOR ADDITIONAL PEDESTRIAN CHANNELIZATION.
- ②

IF TEMPORARY PEDESTRIAN BARRICADE PANEL IS WIDER THAN THE SIDEWALK WIDTH, THE PORTION OF EXCESS PANEL SHOULD EXTEND INTO THE TERRACE.
- ③

MOUNTING HEIGHT OF 5 FEET FROM THE SURFACE TO THE BOTTOM OF SIGN.



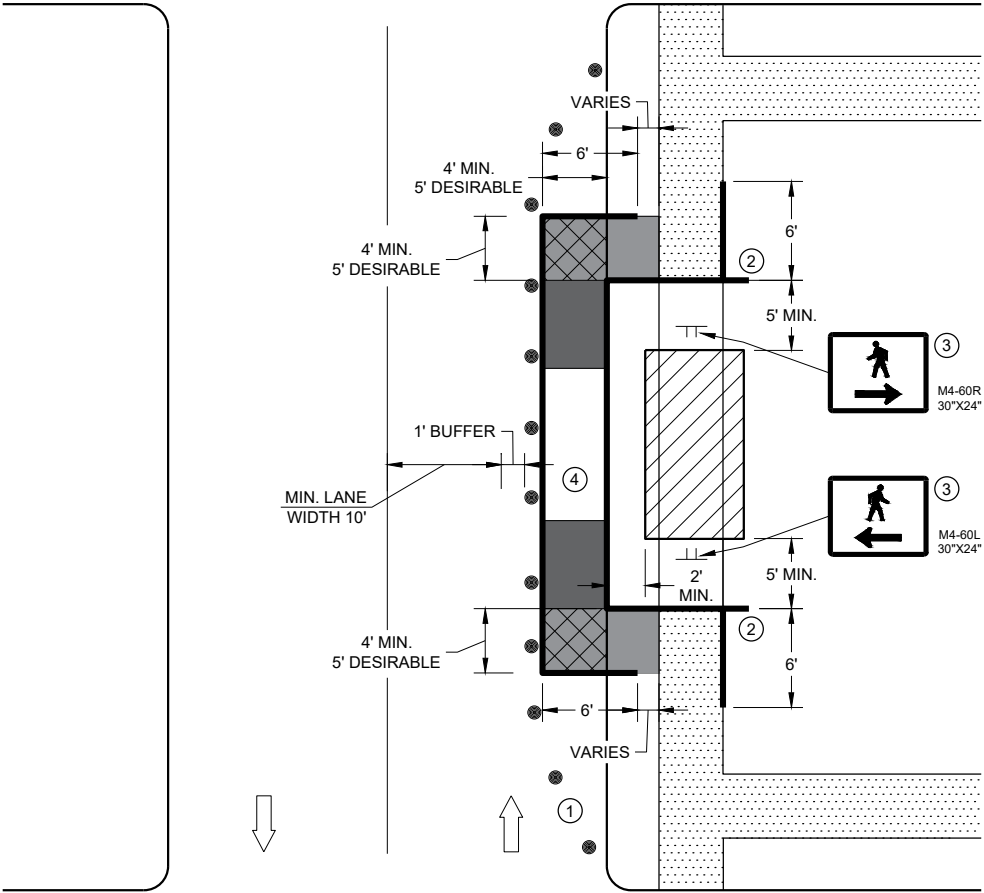
SIDEWALK DIVERSION
SINGLE SIDE

LEGEND

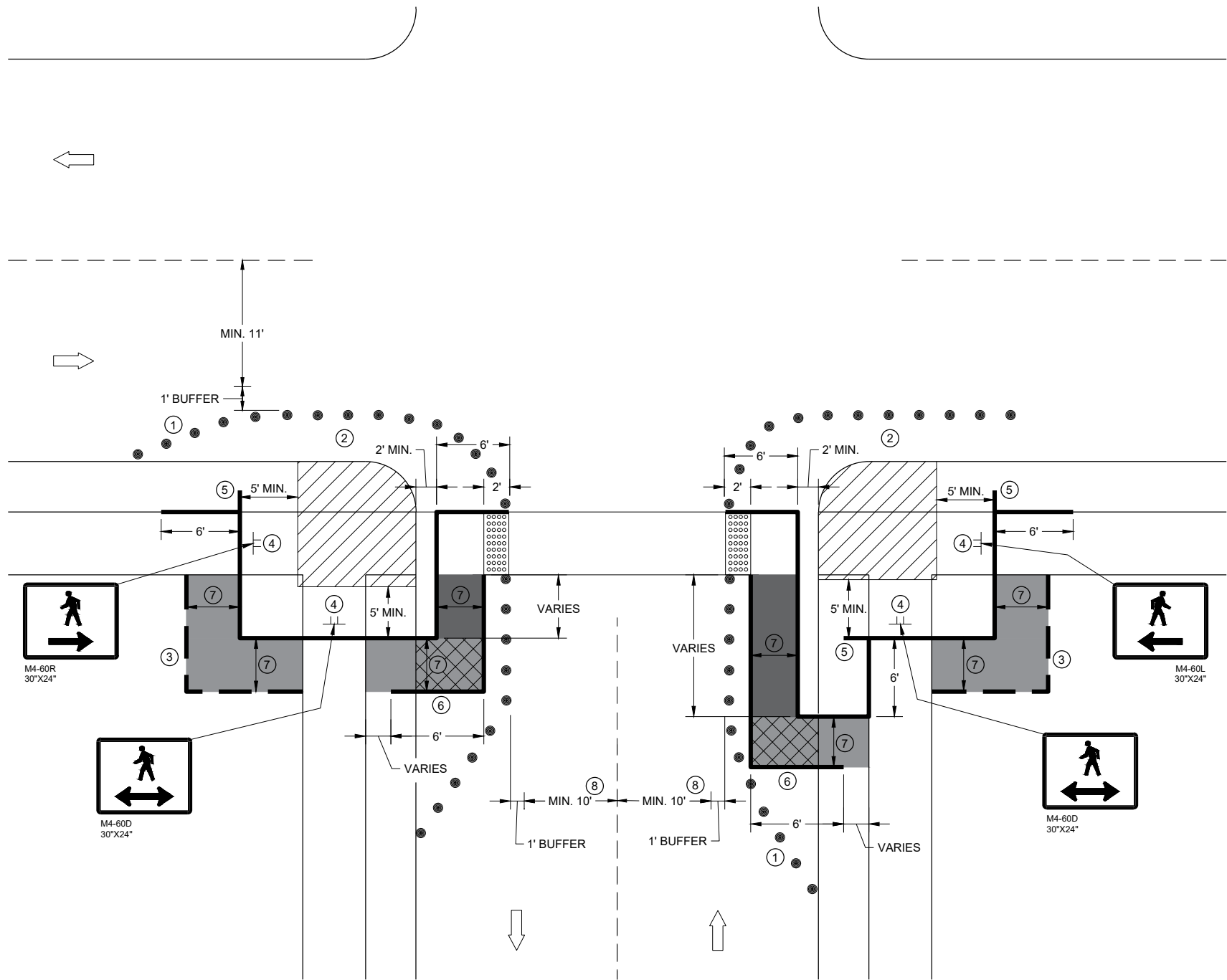
- SIGN ON TEMPORARY SUPPORT
- TRAFFIC CONTROL DRUM
- WORK AREA
- UNDER PEDESTRIAN TRAFFIC
- TEMPORARY CURB RAMP
- TEMPORARY PEDESTRIAN SURFACE "A"
- TEMPORARY PEDESTRIAN SURFACE "B"
- TEMPORARY PEDESTRIAN BARRICADE
- DIRECTION OF TRAFFIC

GENERAL NOTES

- TYPICAL TEMPORARY PEDESTRIAN BARRICADE PANEL IS 6 FEET LONG.
- SIGN LAYOUTS SHALL BE IN ACCORDANCE WITH THE WISCONSIN STANDARD SIGN PLATES.
- WHERE TEMPORARY BARRICADE RUNS PARALLEL ALONG SIDEWALK, PLACE THE FACE OF THE BARRICADE AT THE EDGE OF THE SIDEWALK.
- ① SHOULDER OR LANE CLOSURE ADVANCE WARNING AND BUFFER SPACE REQUIRED.
 - ② PLACE EXCESS PORTION OF TEMPORARY PEDESTRIAN BARRICADE PANEL PAST THE SIDEWALK ON THE SIDE AWAY FROM THE ROAD.
 - ③ MOUNTING HEIGHT OF 5 FEET FROM THE SURFACE TO THE BOTTOM OF SIGN.
 - ④ USE EXISTING PAVEMENT SURFACE. IF EXISTING PAVEMENT SURACE HAS BEEN REMOVED, USE A TEMPORARY PEDESTRIAN SURFACE.



SIDEWALK DIVERSION, SINGLE SIDE



**CURB RAMP PEDESTRIAN TRAFFIC CONTROL
SIDEWALK ON SINGLE SIDE**

GENERAL NOTES

IF PEDESTRIAN PUSH BUTTONS ARE PRESENT ON THE EXISTING FACILITY, ENSURE THEY ARE MAINTAINED/ACCESSIBLE FOR PEDESTRIAN USE THROUGHOUT THE TEMPORARY PEDESTRIAN ACCOMMODATIONS.

SIGN LAYOUTS SHALL BE IN ACCORDANCE WITH THE WISCONSIN STANDARD SIGN PLATES.

TYPICAL TEMPORARY PEDESTRIAN BARRICADE PANEL IS 6 FEET LONG

WHEN TEMPORARY PEDESTRIAN BARRICADE RUNS PARALLEL ALONG THE SIDEWALK, PLACE THE FACE OF THE BARRICADE AT THE EDGE OF THE SIDEWALK.

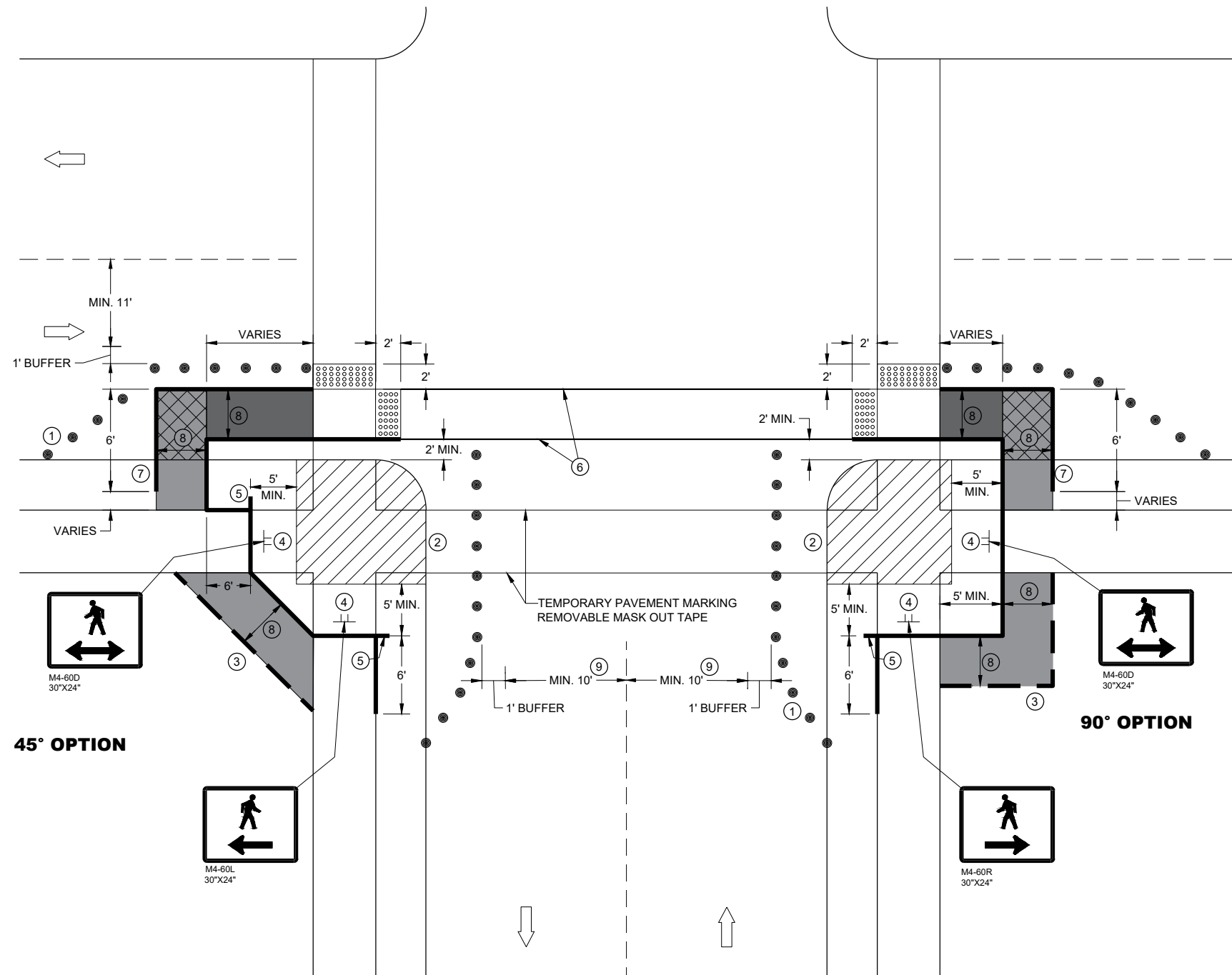
- ① SHOULDER OR LANE CLOSURE ADVANCE WARNING AND PROPER BUFFER SPACE REQUIRED.
- ② PROVIDE ADEQUATE SPACE FOR CONTRACTOR OPERATIONS
- ③ USE TEMPORARY PEDESTRIAN BARRICADE TO SEPARATE PEDESTRIANS FROM DROP OFFS OR FOR ADDITIONAL PEDESTRIAN CHANNELIZATION.
- ④ MOUNTING HEIGHT OF 5 FEET FROM SIDEWALK SURFACE TO BOTTOM OF SIGN.
- ⑤ PLACE EXCESS PORTION OF TEMPORARY PEDESTRIAN BARRICADE PANEL IN THE SIDEWALK TERRACE.
- ⑥ IF TEMPORARY PEDESTRIAN BARRICADE DOES NOT REACH THE FACE OF THE CURB, USE AN ADDITIONAL PANEL AND EXTEND INTO THE TERRACE.
- ⑦ 4 FEET MINIMUM, 5 FEET DESIRABLE
- ⑧ IF MINIMUM LANE WIDTHS CAN'T BE ATTAINED, CURB RAMP MAY NEED TO BE CONSTRUCTED AT SEPARATE TIMES.

LEGEND

-  SIGN ON TEMPORARY SUPPORT
-  TRAFFIC CONTROL DRUM
-  WORK AREA
-  TEMPORARY CURB RAMP
-  TEMPORARY PEDESTRIAN SURFACE "A"
-  TEMPORARY PEDESTRIAN SURFACE "B"
-  TEMPORARY DETECTABLE WARNING FIELD
-  TEMPORARY PEDESTRIAN BARRICADE
-  OPTIONAL TEMPORARY PEDESTRIAN BARRICADE
-  DIRECTION OF TRAFFIC

**TRAFFIC CONTROL,
PEDESTRIAN ACCOMMODATION**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



GENERAL NOTES

IF PEDESTRIAN PUSH BUTTONS ARE PRESENT ON THE EXISTING FACILITY, ENSURE THEY ARE MAINTAINED/ACCESSIBLE FOR PEDESTRIAN USE THROUGHOUT THE TEMPORARY PEDESTRIAN ACCOMMODATIONS.

SIGN LAYOUTS SHALL BE IN ACCORDANCE WITH THE WISCONSIN STANDARD SIGN PLATES.

TYPICAL TEMPORARY PEDESTRIAN BARRICADE PANEL IS 6 FEET LONG

WHEN TEMPORARY PEDESTRIAN BARRICADE RUNS PARALLEL ALONG THE SIDEWALK, PLACE THE FACE OF THE BARRICADE AT THE EDGE OF THE SIDEWALK.

- ① SHOULDER OR LANE CLOSURE ADVANCE WARNING AND PROPER BUFFER SPACE REQUIRED.
- ② PROVIDE ADEQUATE SPACE FOR CONTRACTOR OPERATIONS
- ③ USE TEMPORARY PEDESTRIAN BARRICADE TO SEPARATE PEDESTRIANS FROM DROP OFFS OR FOR ADDITIONAL PEDESTRIAN CHANNELIZATION.
- ④ MOUNTING HEIGHT OF 5 FEET FROM SIDEWALK SURFACE TO BOTTOM OF SIGN.
- ⑤ PLACE EXCESS PORTION OF TEMPORARY PEDESTRIAN BARRICADE PANEL IN THE SIDEWALK TERRACE.
- ⑥ WHITE 6" TEMPORARY PAVEMENT MARKING
- ⑦ IF TEMPORARY PEDESTRIAN BARRICADE DOES NOT REACH THE FACE OF THE CURB, USE AN ADDITIONAL PANEL AND EXTEND INTO THE TERRACE.
- ⑧ 4 FEET MINIMUM, 5 FEET DESIRABLE
- ⑨ IF MINIMUM LANE WIDTHS CAN'T BE ATTAINED, CURB RAMPS MAY NEED TO BE CONSTRUCTED AT SEPARATE TIMES.

LEGEND

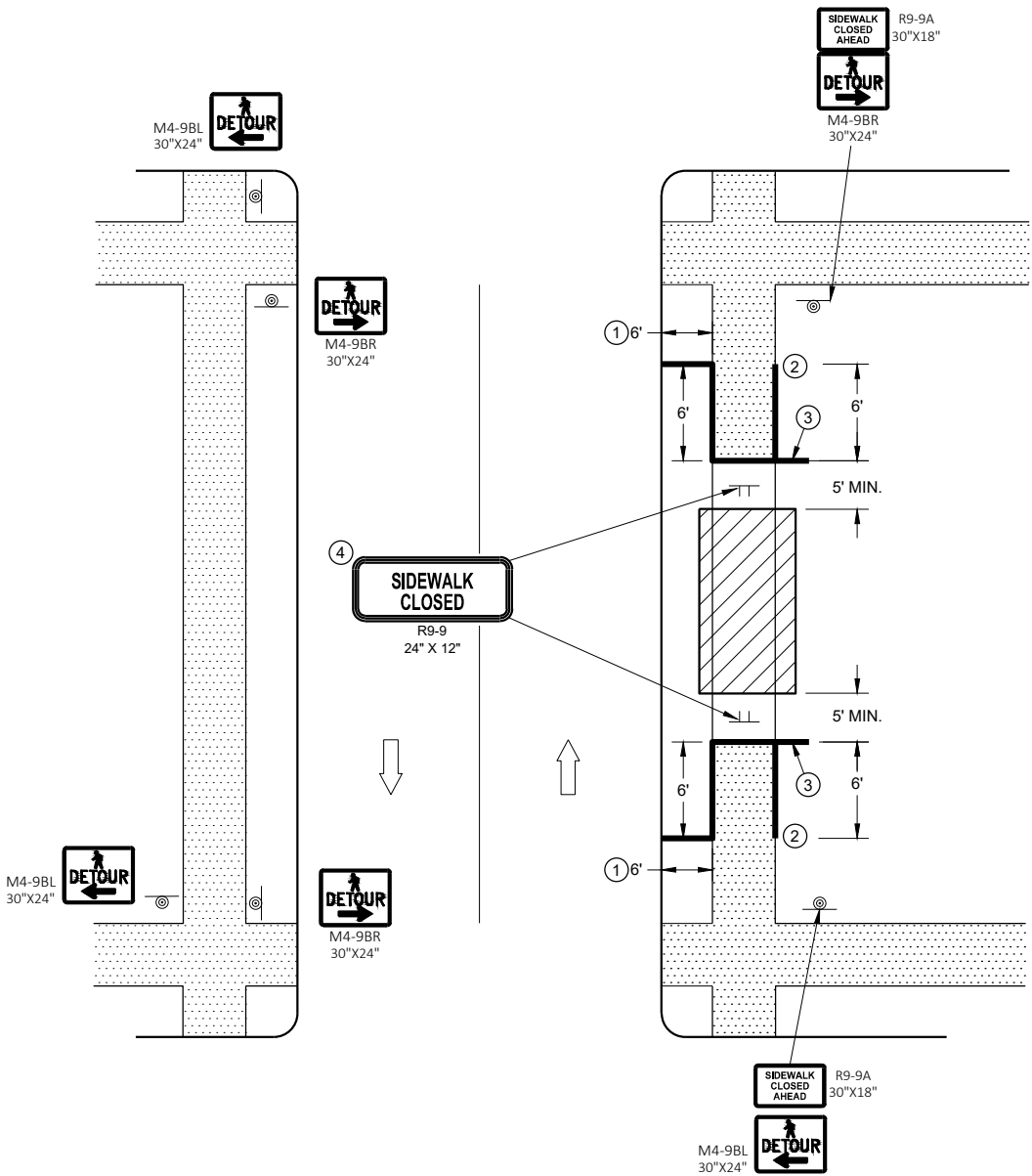
- SIGN ON TEMPORARY SUPPORT
- TRAFFIC CONTROL DRUM
- WORK AREA
- TEMPORARY CURB RAMP
- TEMPORARY PEDESTRIAN SURFACE "A"
- TEMPORARY PEDESTRIAN SURFACE "B"
- TEMPORARY DETECTABLE WARNING FIELD
- TEMPORARY PEDESTRIAN BARRICADE
- OPTIONAL TEMPORARY PEDESTRIAN BARRICADE
- DIRECTION OF TRAFFIC

**TRAFFIC CONTROL,
PEDESTRIAN ACCOMMODATION**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

LEGEND

-  SIGN ON PERMANENT SUPPORT
-  SIGN ON TEMPORARY SUPPORT
-  UNDER PEDESTRIAN TRAFFIC
-  WORK AREA
-  TEMPORARY PEDESTRIAN BARRICADE
-  DIRECTION OF TRAFFIC



SIDEWALK DETOUR, SIDEWALK ON BOTH SIDES

GENERAL NOTES

SIGN LAYOUTS SHALL BE IN ACCORDANCE WITH THE WISCONSIN STANDARD SIGN PLATES.

WHERE TEMPORARY BARRICADE RUNS PARALLEL ALONG SIDEWALK, PLACE THE FACE OF THE BARRICADE AT THE EDGE OF THE SIDEWALK.

SIGNS THAT REMAIN IN PLACE LESS THAN SEVEN CONTINUOUS DAYS AND NIGHTS MAY BE MOUNTED ON PORTABLE SUPPORTS.

PLACE TEMPORARY PEDESTRIAN BARRICADE TO FIT FIELD CONDITIONS, AVOIDING CONFLICT WITH DRIVEWAYS AND OTHER EXISTING FEATURES.

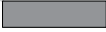
- ① IF TERRACE IS LESS THAN 6 FEET WIDE, OMIT TEMPORARY PEDESTRIAN BARRICADE FROM THE SIDEWALK TO THE CURB.
- ② PLACE BARRICADE CLOSURE SO THAT THE TEMPORARY PEDESTRIAN BARRICADE END IS AT THE LAST OPEN SIDEWALK ACCESS TO RESIDENCES OR BUSINESSES BEFORE THE SIDEWALK CLOSURE.
- ③ IF TEMPORARY PEDESTRIAN BARRICADE PANEL IS WIDER THAN THE SIDEWALK WIDTH, THE PORTION OF EXCESS PANEL SHOULD EXTEND INTO THE TERRACE.
- ④ MOUNTING HEIGHT OF 5 FEET FROM THE SURFACE TO THE BOTTOM OF SIGN.

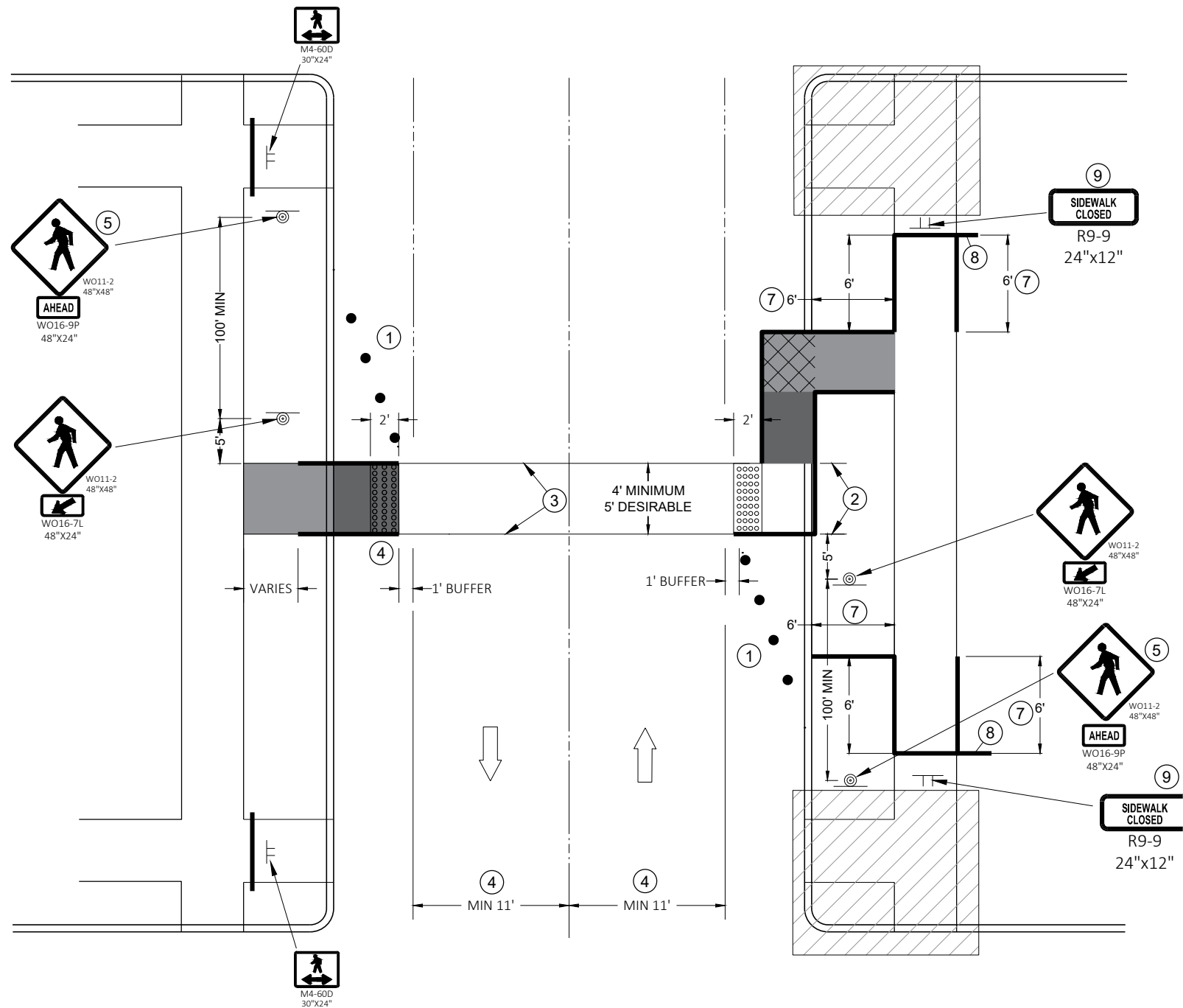
TYPICAL TEMPORARY PEDESTRIAN BARRICADE PANEL IS 6 FEET LONG.

SIGN LAYOUTS SHALL BE IN ACCORDANCE WITH THE WISCONSIN STANDARD SIGN PLATES.

SEE OTHER PEDESTRIAN ACCOMMODATION DETAILS FOR SIGNING AND DEVICES FOR DIFFERENT PEDESTRIAN FACILITIES CLOSURES.

- ## LEGEND

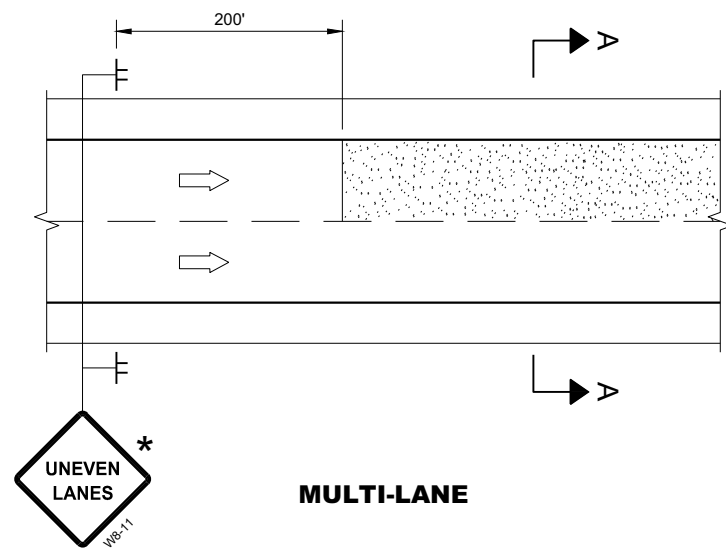
- | | |
|---|------------------------------------|
|  | TRAFFIC CONTROL DRUM |
|  | SIGN ON TEMPORARY SUPPORT |
|  | TEMPORARY CURB RAMP |
|  | TEMPORARY DETECTABLE WARNING FIELD |
|  | TEMPORARY PEDESTRIAN SURFACE "A" |
|  | TEMPORARY PEDESTRIAN SURFACE "B" |
|  | WORK AREA |
|  | TEMPORARY PEDESTRIAN BARRICADE |
|  | DIRECTION OF TRAFFIC |



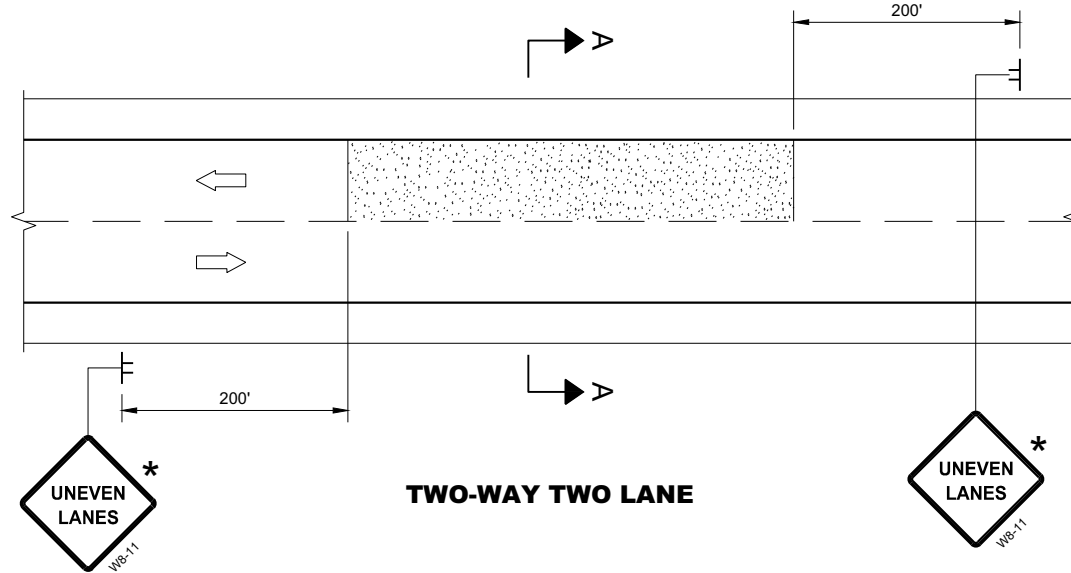
TEMPORARY PEDESTRIAN CROSSING

**TRAFFIC CONTROL,
PEDESTRIAN ACCOMMODATION**

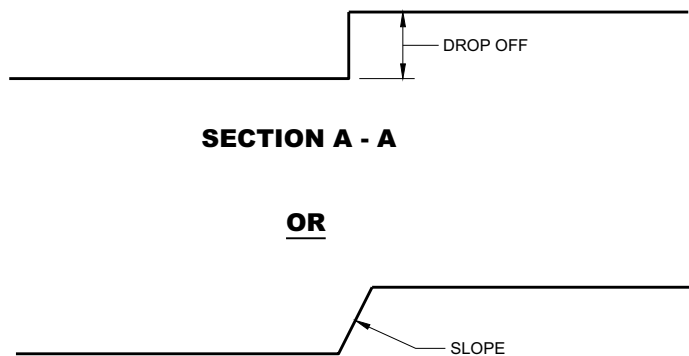
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION 220



MULTI-LANE



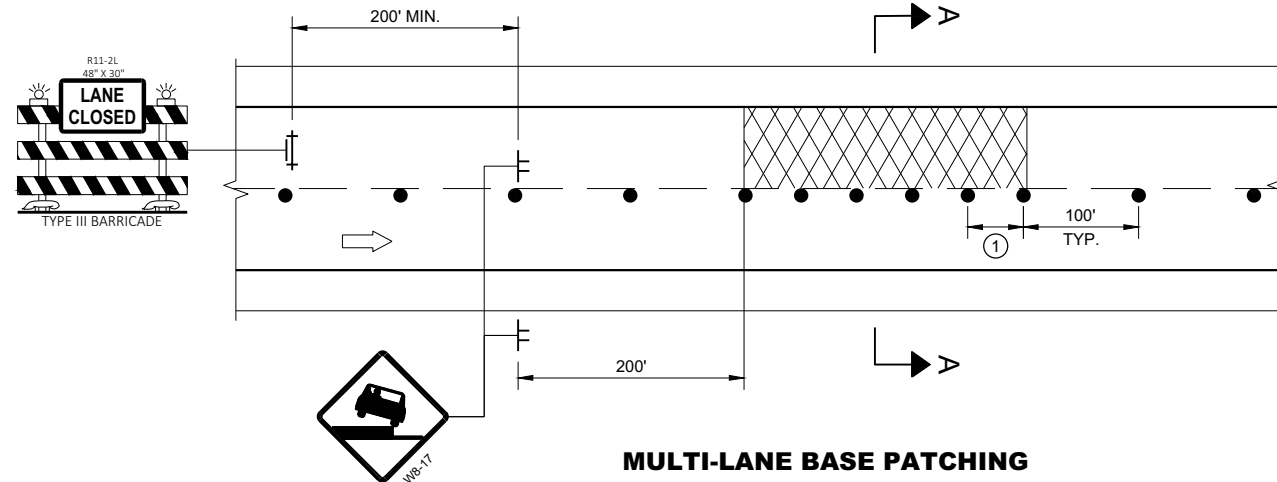
TWO-WAY TWO LANE



SECTION A - A

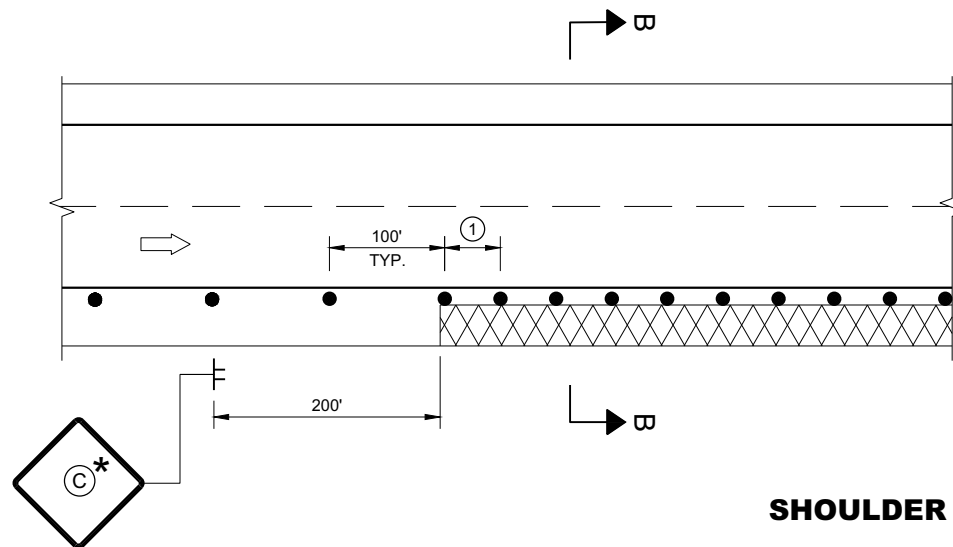
OR

SECTION A - A

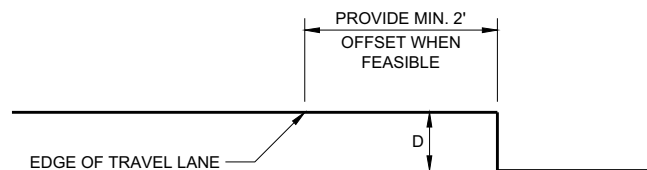


MULTI-LANE BASE PATCHING

ADJACENT LANE DROP-OFFS



SHOULDER DROP-OFFS



SECTION B - B

D	SIGN C
< 2" WITH A SLOPE STEEPER THAN 3:1	 WO8-9
2" < 6" WITH A SLOPE STEEPER THAN 3:1	 WB-9A PROVIDE A 3:1 OR FLATTER SLOPE OF MATERIAL ADJACENT TO THE PAVEMENT

**TRAFFIC CONTROL,
DROP-OFF SIGNING**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
March 2018 /S/ Andrew Heidtke
DATE WORK ZONE ENGINEER 221

FHWA

GENERAL NOTES

FOR SPOT LOCATIONS USE ENGINEERING JUDGEMENT WHEN PLACING ADDITIONAL SIGNS.

ALL SIGNS ARE 48" X 48" UNLESS OTHERWISE NOTED.

"WO" SIGNS ARE THE SAME AS "W" SIGNS EXCEPT THE BACKGROUND IS ORANGE.

WARNING LIGHTS ARE NOT REQUIRED IF THE LANE CLOSURE IS A DAYTIME ONLY OPERATION.

* IF THE DROP-OFF IS CONTINUOUS ALONG THE PROJECT, PLACE ADDITIONAL SIGNS EVERY 1 MILE AND AFTER EVERY ENTRANCE RAMP.

① USE CLOSER SPACING WHEN DELINEATING DROP-OFF.

LEGEND

-  SIGN ON TEMPORARY SUPPORT
-  TRAFFIC CONTROL DRUM
-  TYPE III BARRICADE WITH ATTACHED SIGN
-  TYPE "A" WARNING LIGHT (FLASHING)
-  DIRECTION OF TRAFFIC
-  WORK AREA WITH DROP-OFF
-  MILLED SURFACE

LEGEND

- TYPE III BARRICADE WITH ATTACHED SIGN
- SIGN ON PERMANENT SUPPORT
- TRAFFIC CONTROL DRUM
- TRAFFIC CONTROL DRUM WITH TYPE "C" STEADY BURN LIGHT
- TYPE "A" WARNING LIGHT (FLASHING)
- DIRECTION OF TRAFFIC
- WORK AREA
- REMOVING PAVEMENT MARKING (SEE GENERAL NOTES)
- CONCRETE BARRIER TEMPORARY PRECAST

GENERAL NOTES

THE EXACT NUMBER, LOCATION, AND SPACING OF ALL SIGNS AND DEVICES SHALL BE ADJUSTED TO FIT FIELD CONDITIONS AS APPROVED BY THE ENGINEER.

THE SPACING BETWEEN SIGNS SHOULD BE ADJUSTED TO NOT CONFLICT WITH AND TO PROVIDE A MINIMUM OF 200 FEET, (500 FEET DESIRABLE) DISTANCE TO EXISTING SIGNS.

THIS LANE CLOSURE IS TYPICAL FOR LANE SHIFT LEFT - REVERSE FOR SHIFTING RIGHT.

ALL SIGNS ARE 48"x48" UNLESS OTHERWISE NOTED.

"WO" IS THE SAME AS "W" EXCEPT THE BACKGROUND IS ORANGE.

ANY SIGNS TEMPORARY OR EXISTING, WHICH CONFLICT WITH TRAFFIC CONTROL "IN USE" SHALL BE REMOVED OR COVERED AS NEEDED AND AS APPROVED BY THE ENGINEER. NO WARNING LIGHTS SHALL BE WORKING ON ANY "COVERED" OR "DOWNED" SIGNS.

CONSIDER GEOMETRICS WHEN LOCATING SIGNS AND ARROW BOARDS SO THE DRIVER HAS A CLEAR VIEW OF THE ARROW BOARD AND LANE CLOSURE DRUMS FOR A MINIMUM 1500 FEET IN FRONT OF DRUMS.

FOR A LANE CLOSURE THAT IS IN PLACE LESS THAN 7 CONTINUOUS DAYS AND NIGHTS, THE ADVANCED WARNING SIGNS MAY BE MOUNTED ON PORTABLE SUPPORTS.

REMOVE PAVEMENT MARKINGS AND PLACE TEMPORARY PAVEMENT MARKING LINES IF LANE CLOSURE IS TO BE IN PLACE FOR 4 OR MORE CONTINUOUS DAYS AND NIGHTS.

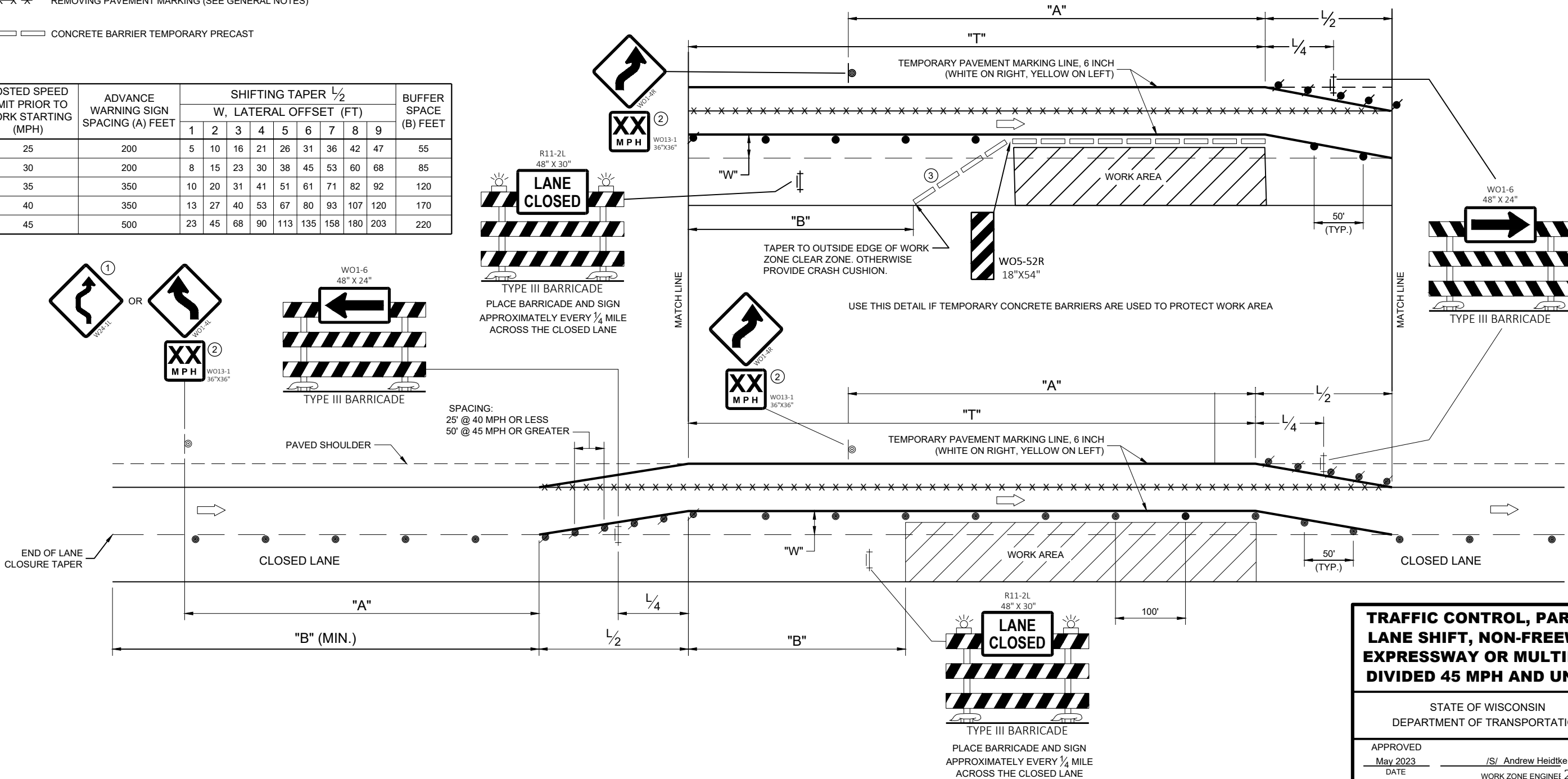
WARNING LIGHTS ARE NOT REQUIRED IF THE LANE CLOSURE IS A DAYTIME ONLY OPERATION.

IF THE HORIZONTAL ALIGNMENT IS SUCH THAT A CURVE MAY REQUIRE ADDITIONAL DELINEATION, THE DEVICE SPACING MAY BE DECREASED TO 50 FEET.

ADJUSTMENTS IN BUFFER SPACE NEED TO BE INCORPORATED WHEN THE LANE SHIFT OCCURS NEAR AN INTERCHANGE EXIT OR ENTRANCE RAMP. THE LANE SHIFT MUST TAKE PLACE FAR ENOUGH IN ADVANCE OF AN EXIT OR ENTRANCE RAMP TO STILL ALLOW FOR ADEQUATE BUFFER SPACE. THE MINIMUM LENGTH OF THE BUFFER SPACE BEFORE AN EXIT RAMP SHOULD BE 1/2 THE LENGTH OF THE TRANSITION AREA. THE ENTRANCE RAMP SHOULD BE FOLLOWED BY THE ORIGINAL BUFFER SPACE LENGTH OF 800 FEET DESIRABLE PRIOR TO ANOTHER TRAFFIC CONTROL CHANGE SUCH AS A CROSSOVER MANEUVER.

- 1 USE ONLY WHEN T<600', OMIT WO1-4R.
- 2 IF NEEDED, USE ONLY IF DESIGN SPEED IS 10 MPH BELOW POSTED SPEED.
- 3 BARRIER FLARE RATE: 6:1 @ 40 MPH OR LESS
8:1 @ 45 MPH OR GREATER

POSTED SPEED LIMIT PRIOR TO WORK STARTING (MPH)	ADVANCE WARNING SIGN SPACING (A) FEET	SHIFTING TAPER $\frac{L}{2}$ W, LATERAL OFFSET (FT)									BUFFER SPACE (B) FEET
		1	2	3	4	5	6	7	8	9	
25	200	5	10	16	21	26	31	36	42	47	55
30	200	8	15	23	30	38	45	53	60	68	85
35	350	10	20	31	41	51	61	71	82	92	120
40	350	13	27	40	53	67	80	93	107	120	170
45	500	23	45	68	90	113	135	158	180	203	220



TRAFFIC CONTROL, PARTIAL
LANE SHIFT, NON-FREEWAY/
EXPRESSWAY OR MULTILANE
DIVIDED 45 MPH AND UNDER

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
May 2023 /S/ Andrew Heidtke
DATE WORK ZONE ENGINEER 223
FHWA

GENERAL NOTES

DRAWING NOT TO SCALE. ALL SIGNS AND POSTS ON THIS SHEET SHALL BE PAID FOR WITH 'TRAFFIC CONTROL SIGNS' BID ITEM. ALL SIDE ROADS WHICH ARE UNDER CONSTRUCTION OF CURB AND GUTTER AND/OR GRADING SHALL BE ADEQUATELY SIGNED.

ALL SIGNS AND DEVICES SHALL BE IN CONFORMANCE WITH THE WISCONSIN MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (WMUTCD). SIGN LAYOUTS SHALL BE IN ACCORDANCE WITH THE WISDOT STANDARD SIGN PLATES.

"WO" SIGNS ARE THE SAME AS "W" SIGNS EXCEPT THAT THE BACKGROUND IS ORANGE.

ALL SIGNS ARE 48" X 48" UNLESS OTHERWISE NOTED.

THE EXACT NUMBER, LOCATION AND SPACING OF ALL SIGNS AND DEVICES SHALL BE ADJUSTED TO FIT FIELD CONDITIONS AS DIRECTED BY THE ENGINEER.

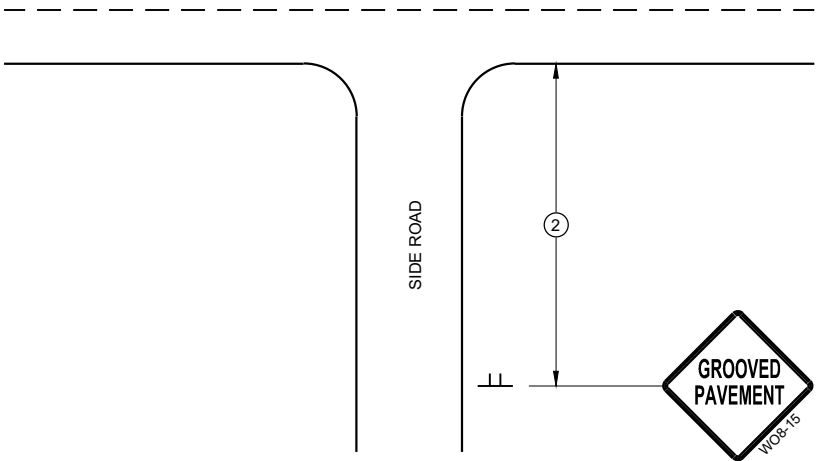
ALL SIGNS INAPPROPRIATE TO THE STATUS OF THE CONTROL ZONE, INCLUDING PRE-EXISTING SIGNS IN THE VICINITY, SHALL BE COVERED OR REMOVED AS DIRECTED BY THE ENGINEER.

SEE 15C34 FOR ADDITIONAL TRAFFIC CONTROL SIGNING WHEN CENTERLINE PAVEMENT MAKINGS ARE MISSING. 'DO NOT PASS' SIGNS MUST BE INSTALLED ON THE SAME DAY AS MILLING OPERATIONS.

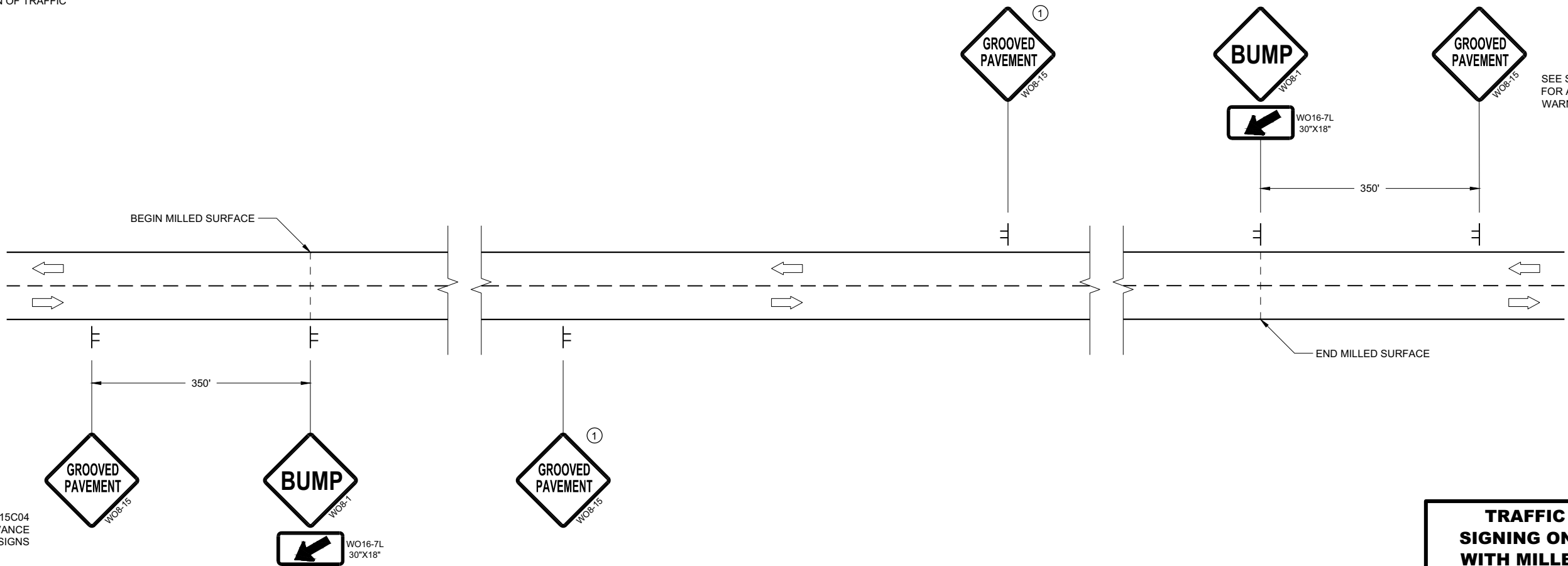
- ① PLACE SIGNS 350' IN ADVANCE OF MILLED SURFACES AND AT 1 MILE INTERVALS, OR AS DIRECTED BY THE ENGINEER.
- ② PLACE SIGN 200' MIN. FROM INTERSECTION AND 200' MIN. AFTER ADVANCE WARNING SIGN SHOWN IN SDD 15C04.

LEGEND

-  SIGN ON TEMPORARY SUPPORT
-  DIRECTION OF TRAFFIC



TYPICAL SIDE ROAD APPROACH
SIGN DETAIL



SEE SDD15C04
FOR ADVANCE
WARNING SIGNS

SEE SDD15C04
FOR ADVANCE
WARNING SIGNS

DETAIL FOR SIGNING ON MILLED SURFACES

TRAFFIC CONTROL,
SIGNING ON ROADWAYS
WITH MILLED SURFACES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
February 2020 /S/ Andrew Heidtke
DATE WORK ZONE ENGINEER 224

FHWA

GENERAL NOTES

DRAWING NOT TO SCALE. ALL SIGNS AND POSTS ON THIS SHEET SHALL BE PAID FOR WITH 'TRAFFIC CONTROL SIGNS' BID ITEM. ALL SIDE ROADS WHICH ARE UNDER CONSTRUCTION OF CURB AND GUTTER AND/OR GRADING SHALL BE ADEQUATELY SIGNED.

ALL SIGNS AND DEVICES SHALL BE IN CONFORMANCE WITH THE WISCONSIN MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (WMUTCD). SIGN LAYOUTS SHALL BE IN ACCORDANCE WITH THE WISDOT STANDARD SIGN PLATES.

"WO" SIGNS ARE THE SAME AS "W" SIGNS EXCEPT THAT THE BACKGROUND IS ORANGE.

ALL SIGNS ARE 48" X 48" UNLESS OTHERWISE NOTED.

THE EXACT NUMBER, LOCATION AND SPACING OF ALL SIGNS AND DEVICES SHALL BE ADJUSTED TO FIT FIELD CONDITIONS AS DIRECTED BY THE ENGINEER.

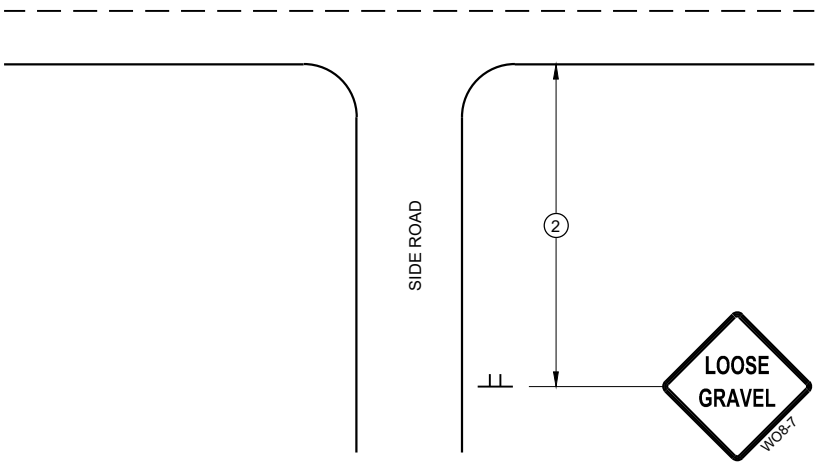
ALL SIGNS INAPPROPRIATE TO THE STATUS OF THE CONTROL ZONE, INCLUDING PRE-EXISTING SIGNS IN THE VICINITY, SHALL BE COVERED OR REMOVED AS DIRECTED BY THE ENGINEER.

SEE 15C34 FOR ADDITIONAL TRAFFIC CONTROL SIGNING WHEN CENTERLINE PAVEMENT MAKINGS ARE MISSING. 'DO NOT PASS' SIGNS MUST BE INSTALLED ON THE SAME DAY AS MILLING OPERATIONS.

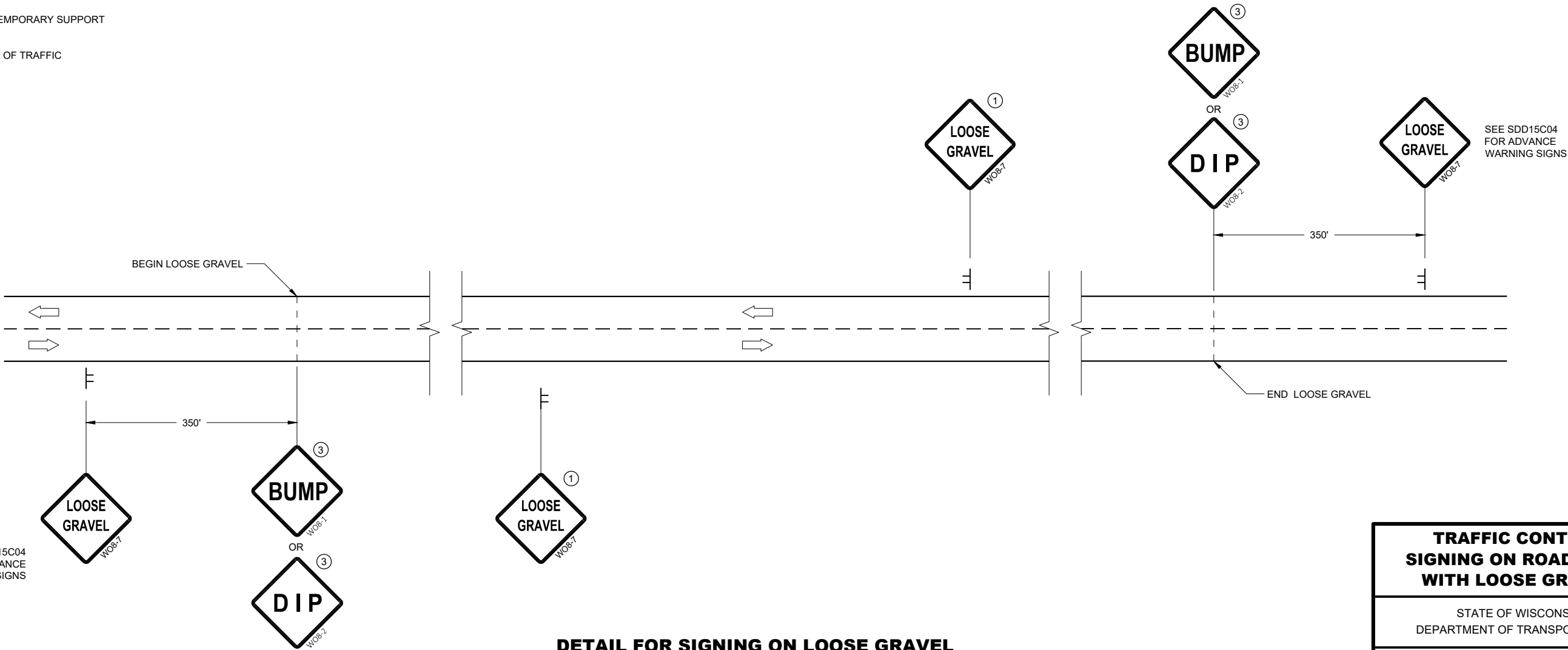
- ① PLACE SIGNS 350' IN ADVANCE OF CHIP SEALED OR LOOSE GRAVEL SURFACES AND AT 1 MILE INTERVALS, OR AS DIRECTED BY THE ENGINEER.
- ② PLACE SIGN 200' MIN. FROM INTERSECTION AND 200' MIN. AFTER ADVANCE WARNING SIGN SHOWN IN SDD 15C04.
- ③ ADD WO8-1 OR WO8-2 SIGN WHEN THE CONDITION IS PRESENT.

LEGEND

-  SIGN ON TEMPORARY SUPPORT
-  DIRECTION OF TRAFFIC



TYPICAL SIDE ROAD APPROACH
SIGN DETAIL

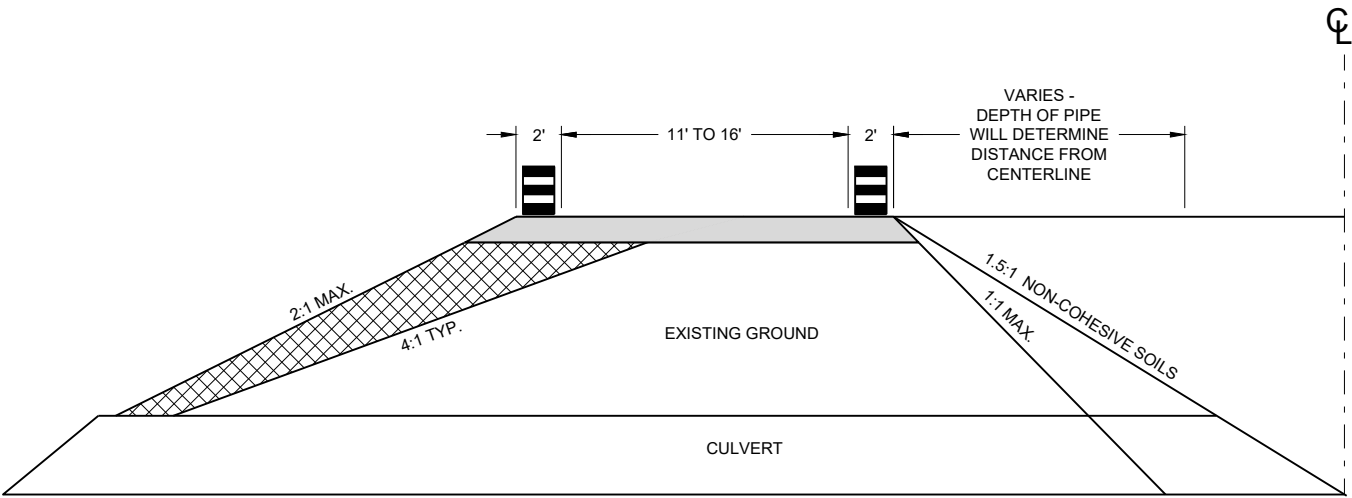


DETAIL FOR SIGNING ON LOOSE GRAVEL
OR CHIP SEALED SURFACES

TRAFFIC CONTROL
SIGNING ON ROADWAYS
WITH LOOSE GRAVEL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
February 2021 /S/ Andrew Heidtke
DATE WORK ZONE ENGINEER 225
FHWA



CROSS SECTION

GENERAL NOTES

USE 1:1 FOR COHESIVE CLAYS AND SILTS, LOAMS, SANDY CLAYS AND ANGULAR GRAVEL SOILS.
USE 1.5:1 FOR NON-COHESIVE SOILS.

THE TAPER SHOULD EXTEND ACROSS THE SHOULDER UNLESS DOING SO WOULD GREATLY CONFLICT WITH THE WORK OPERATION.

ALL LANE CLOSURE SIGNS SHALL BE REMOVED OR COVERED AND ALL DEVICES REMOVED BEYOND THE SHOULDER WHEN WORK IS NOT IN PROGRESS AND THE LANE IS RESTORED TO A SAFE OPERATING CONDITION.

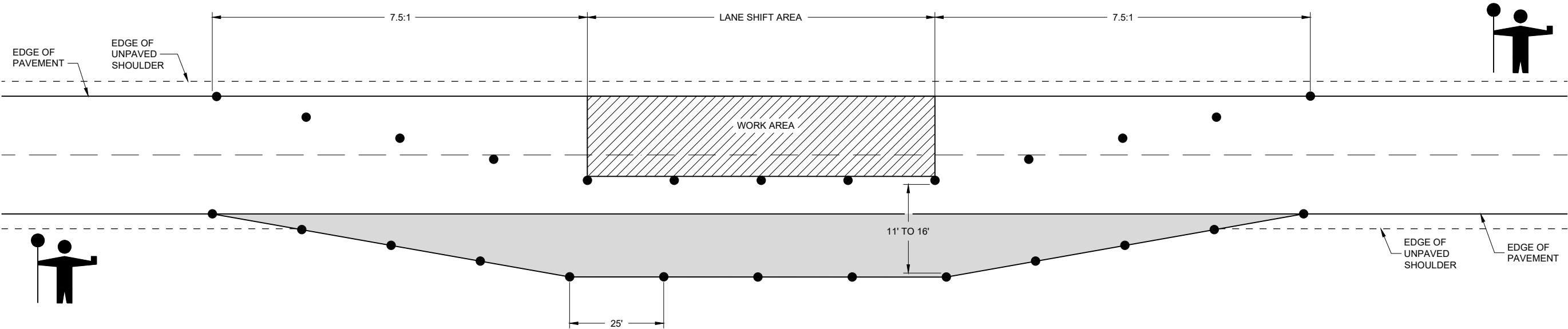
CHANNELIZING DEVICES PLACED ADJACENT TO WORK AREA SHALL BE PULLED BACK FROM TRAVEL LANE WHEN WORK IS NOT IN PROGRESS.

USE WITH SDD 15C12 "TRAFFIC CONTROL FOR LANE CLOSURE WITH FLAGGING OPERATIONS"

USE WITH SDD 15D45 "SIGNING ON ROADWAYS WITH LOOSE GRAVEL"

LEGEND

- DRUM WITHOUT WARNING LIGHT
- 6" BASE AGGREGATE DENSE 1 1/4" - INCIDENTAL TO LANE SHIFT ITEM
- FILL - INCIDENTAL TO LANE SHIFT ITEM
- WORK AREA
- FLAGGER, EQUIPPED WITH STOP/SLOW PADDLE FASTENED ON SUPPORT STAFF



LANE SHIFT IN FLAGGING OPERATION

TRAFFIC CONTROL,
TEMPORARY LANE SHIFT
DURING CULVERT WORK

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
February 2021 /S/ Andrew Heidtke
DATE WORK ZONE ENGINEER 226

FHWA

LEGEND

- V1

WORK VEHICLE
- V2

SHADOW VEHICLE
- 

TRUCK MOUNTED ATTENUATOR (TMA)
- 

FLASHING ARROW PANEL (CAUTION)
- 

WORK AREA
- 

DIRECTION OF TRAFFIC

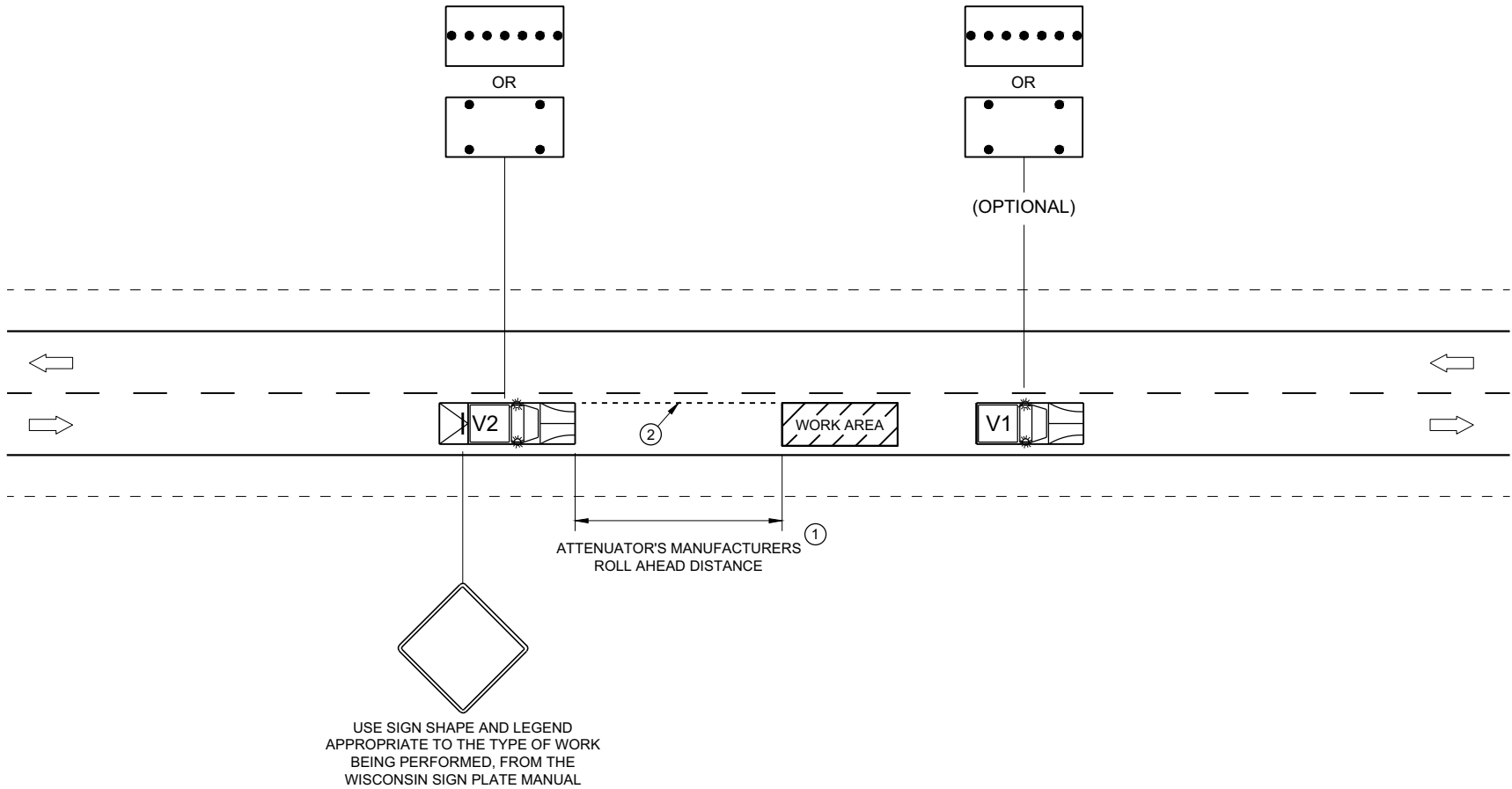
POSTED SPEED PRIOR TO WORK STARTING (MPH)	DECISION SIGHT DISTANCE (D)
0 - 25	550'
30	550'
35	700'
40	700'
45	900'
50	900'
55	1200'

GENERAL NOTES

- ALL SIGNS ARE 48"X48" UNLESS OTHERWISE NOTED.
- MOBILE IS WORK THAT MOVES CONTINUOUSLY OR MOVES AT LEAST THE DECISION SIGHT DISTANCE EVERY 15 MINUTES.
- ALL VEHICLES SHALL BE EQUIPPED WITH TWO 360 DEGREE HIGH INTENSITY YELLOW FLASHING LIGHTS OR STROBE LIGHTS AND OPERATED WITH HEADLIGHTS TURNED ON.
- ALL ARROW PANELS SHALL BE REAR FACING, TYPE "B" OR "C", AND DISPLAYING THE FLASHING CAUTION MODE. SIGNS PLACED ON VEHICLES MUST NOT OBSCURE THE ARROW PANEL.
- USE AN ATTENUATOR ON THE REARMOST VEHICLE THAT BLOCKS ALL OR PART OF THE TRAFFIC LANE.
- ①

DISTANCE BETWEEN VEHICLES MAY INCREASE FROM THE ATTENUATOR'S ROLL AHEAD BASED ON TERRAIN, SIGHT DISTANCE, AND OTHER FACTORS. WHENEVER ADEQUATE STOPPING SIGHT DISTANCE EXISTS TO THE REAR, SHADOW VEHICLES SHOULD MAINTAIN THE MINIMUM DISTANCE FROM THE WORK VEHICLE AND PROCEED AT THE SAME SPEED AS THE WORK VEHICLE. SHADOW VEHICLES SHOULD SLOW DOWN IN ADVANCE OF VERTICAL OR HORIZONTAL CURVES THAT RESTRICT SIGHT DISTANCE.
- ②

ALIGN LEFT SIDE OF SHADOW VEHICLE WITH EDGE OF WORK AREA.

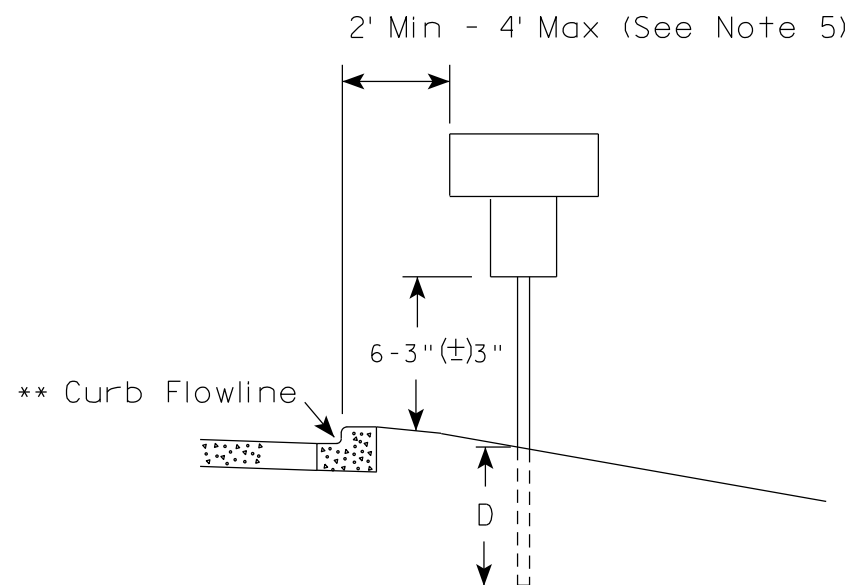
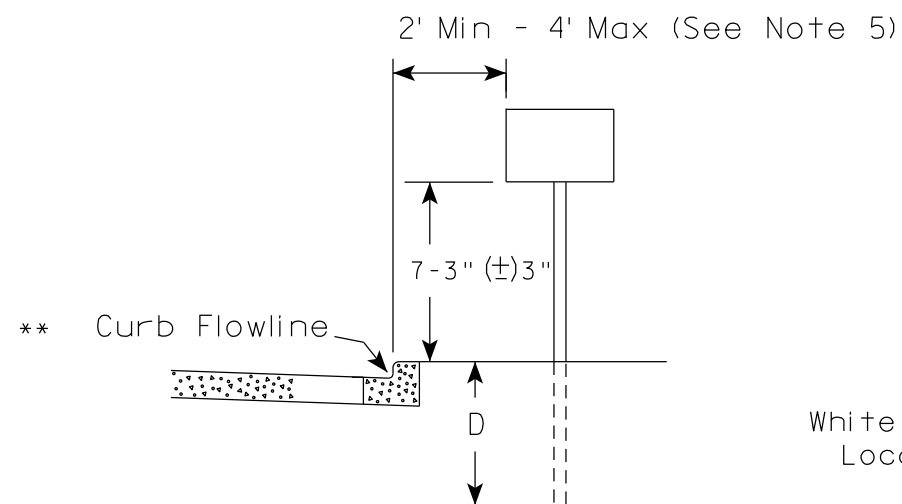


TRAFFIC CONTROL,
MOBILE OPERATIONS ON
AN UNDIVIDED ROADWAY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

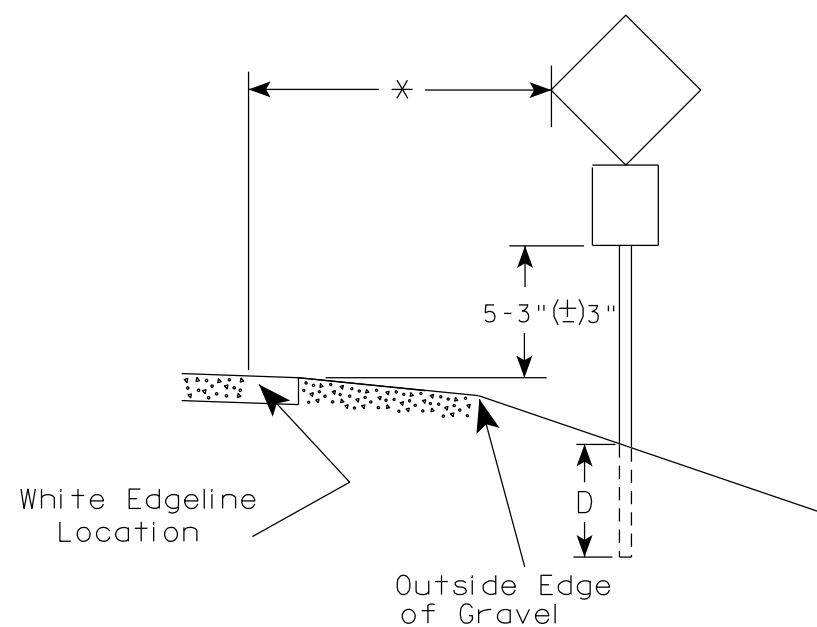
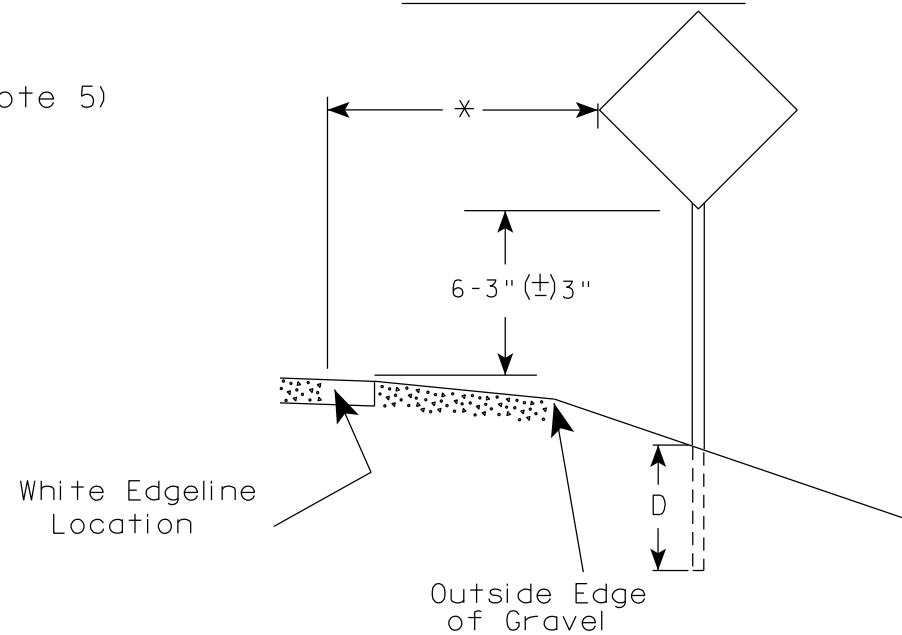
APPROVED
February 2021 /S/ Andrew Heidtke
DATE STATEWIDE WORK ZONE T SAFETY ENGINEER 227
FHWA

URBAN AREA



* * The existence of curb and gutter does not in itself mandate the vertical clearance illustrated. That height is typically measured where there is sidewalk adjacent to the roadway or parking is permitted. In the absence of sidewalk vertical clearance is measured from the top of the curb. Offset of signs is measured from the flow line.

RURAL AREA (See Note 2)



* 6 feet from edge of a paved shoulder or 12 feet from the edge of pavement (edge line location) or 2 feet from outside edge of gravel, whichever is greater unless directed by project engineer.

POST EMBEDMENT DEPTH

Area of Sign Installation (Sq. Ft.)	D (Min)
20 or Less	4'
Greater than 20	5'

GENERAL NOTES

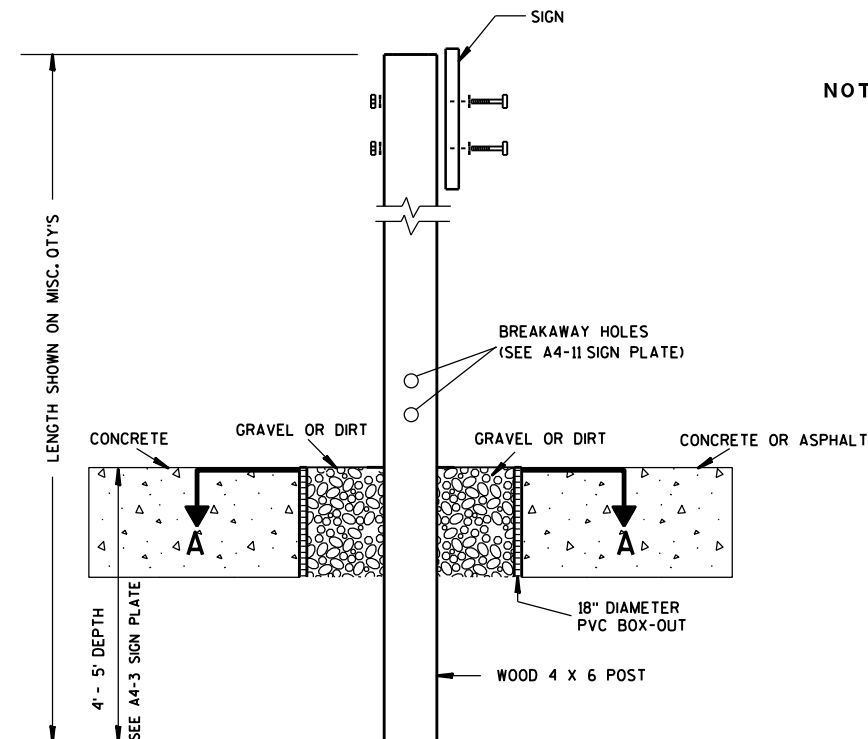
- Signs wider than 4 feet or 20 sq.ft or larger, shall be mounted on multiple posts. Refer to plate A4-4.
- If signs are mounted on or behind barrier wall, see A4-10 sign plate.
The Double Arrow sign (W12-1D) shall be mounted at a height of 2'-3" (±) 3". The Chevron sign (W1-8), Roundabout Chevron panel (R6-4B), Enhanced Reference Markers, Clearance Markers (W5-52), Mile Markers (D10 series), In Road Object Markers (W5-54) & End of Road Markers (W5-56) shall be mounted at a height of 4'-3" (±) 3".
- For expressways and freeways, mounting height is 7'- 3" (±) 3" or 6'-3" (±) 3" depending upon existence of a sub-sign.
- Minimum mounting height for signs mounted on traffic signal poles is 5'- 3" (±) 3".
- Offset distance shall be consistent with existing signs or consistent throughout length of project.
- Folding signs shall be mounted at a height of 5'-3" (±) 3" or as directed by the Engineer.

TYPICAL INSTALLATION
OF PERMANENT TYPE II
SIGNS ON SINGLE POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

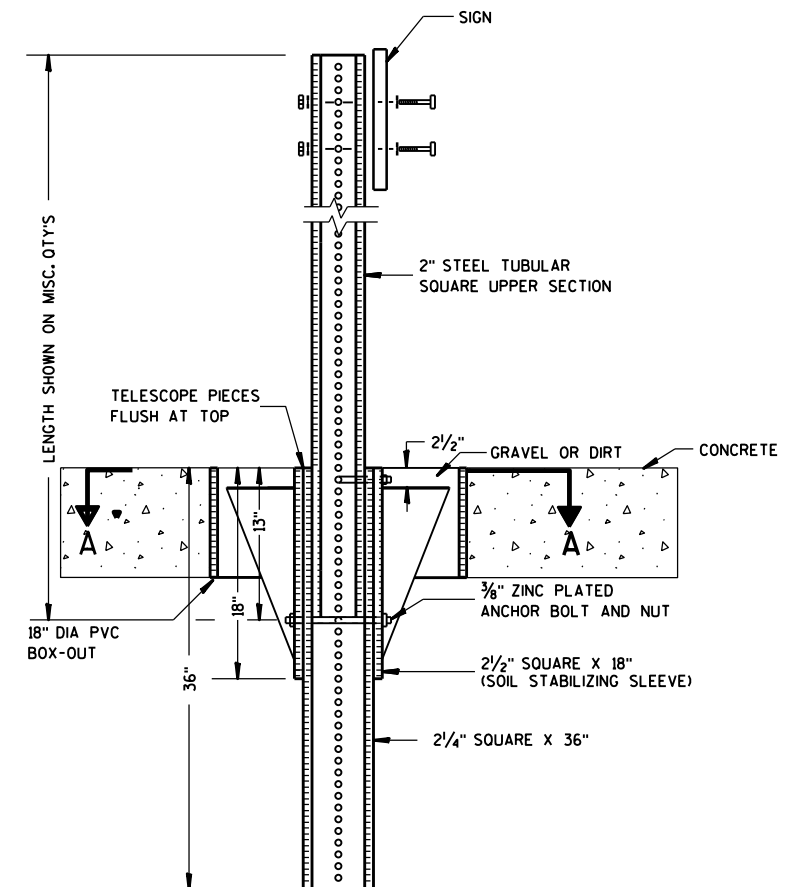
DATE 12/6/23 PLATE NO. A4-3.23



ELEVATION VIEW

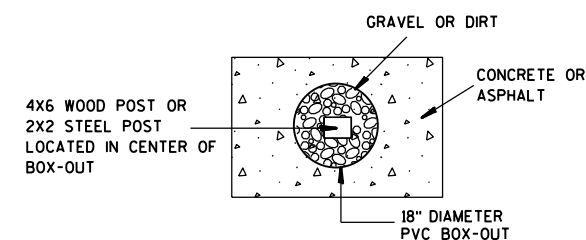
DETAIL OF WOOD 4 X 6 SIGN POST IN BOX-OUT

- NOTES: 1. ALL MATERIAL TO BE APPROVED BY ENGINEER PRIOR TO INSTALLATION
2. SEE SIGN PLATE A4-8 FOR SIGN HARDWARE REQUIREMENTS
3. 18 INCH X 18 INCH SQUARE BOX-OUTS MAY BE USED FOR INSTALLATIONS IN EXISTING CONCRETE OR ASPHALT LOCATIONS.



ELEVATION VIEW

DETAIL OF STEEL 2 X 2 SIGN POST IN BOX-OUT



PLAN VIEW

FOR NEW CONCRETE/ASPHALT INSTALLATIONS

SIGN POST
BOX-OUTS
A4-3B

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 1/27/14 PLAT 229 A4-3B.1

PROJECT NO:

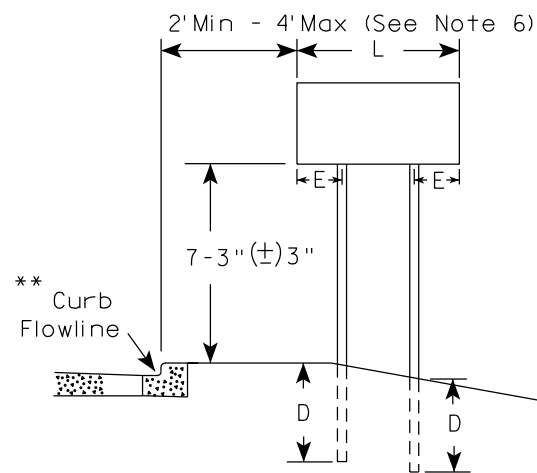
HWY:

COUNTY:

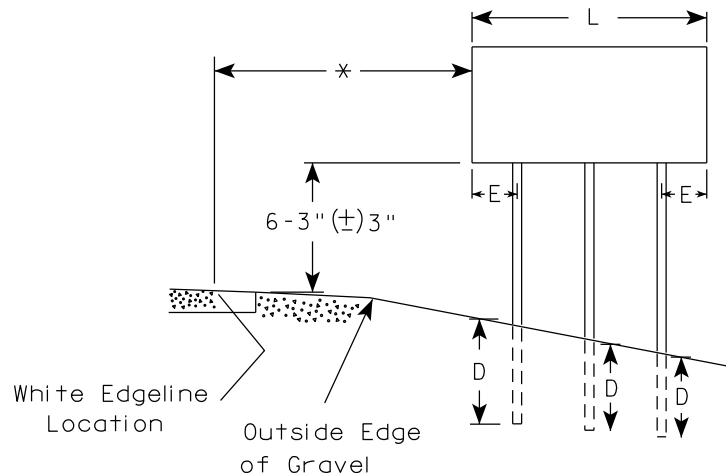
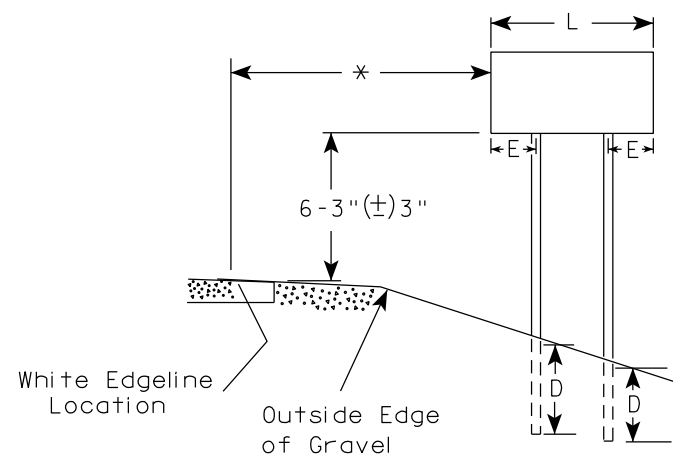
SHEET NO:

E

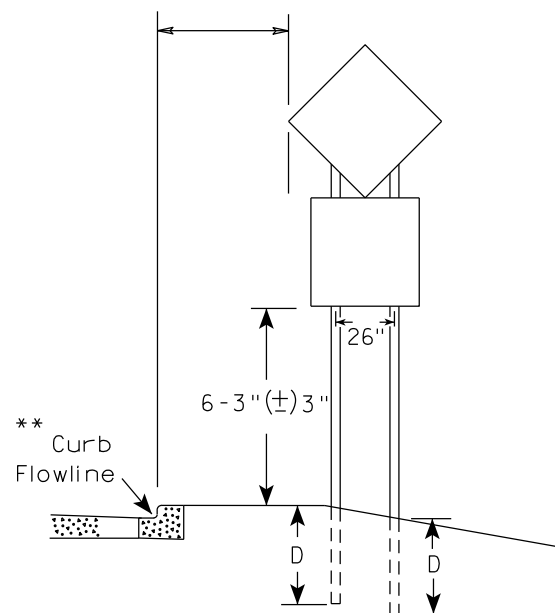
URBAN AREA



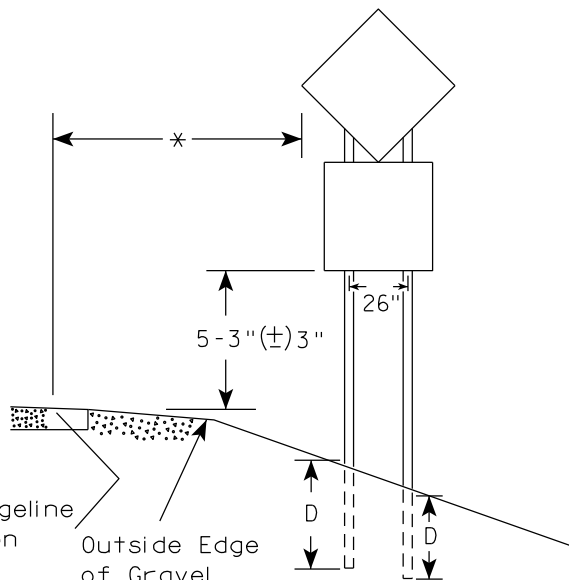
RURAL AREA (See Note 3)



2' Min - 4' Max (See Note 6)



48" DIAMOND WARNING SIGN



48" DIAMOND WARNING SIGN

SIGN SHAPE OTHER THAN DIAMOND (TWO POSTS REQUIRED)	
L	E
Greater than 48" Less than 60"	12"
60" to 108"	L/5

SIGN SHAPE OTHER THAN DIAMOND (THREE POSTS REQUIRED)	
L	E
Greater than 108" to 144"	12"

POST EMBEDMENT DEPTH

Area of Sign Installation (Sq.Ft.)	D (Min)
20 or Less	4'
Greater than 20	5'

TYPICAL INSTALLATION
OF TYPE II SIGNS
ON MULTIPLE POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED

Matthew R. Rauch
for State Traffic Engineer

DATE 12/6/23

PLATE NO. A4-4.16

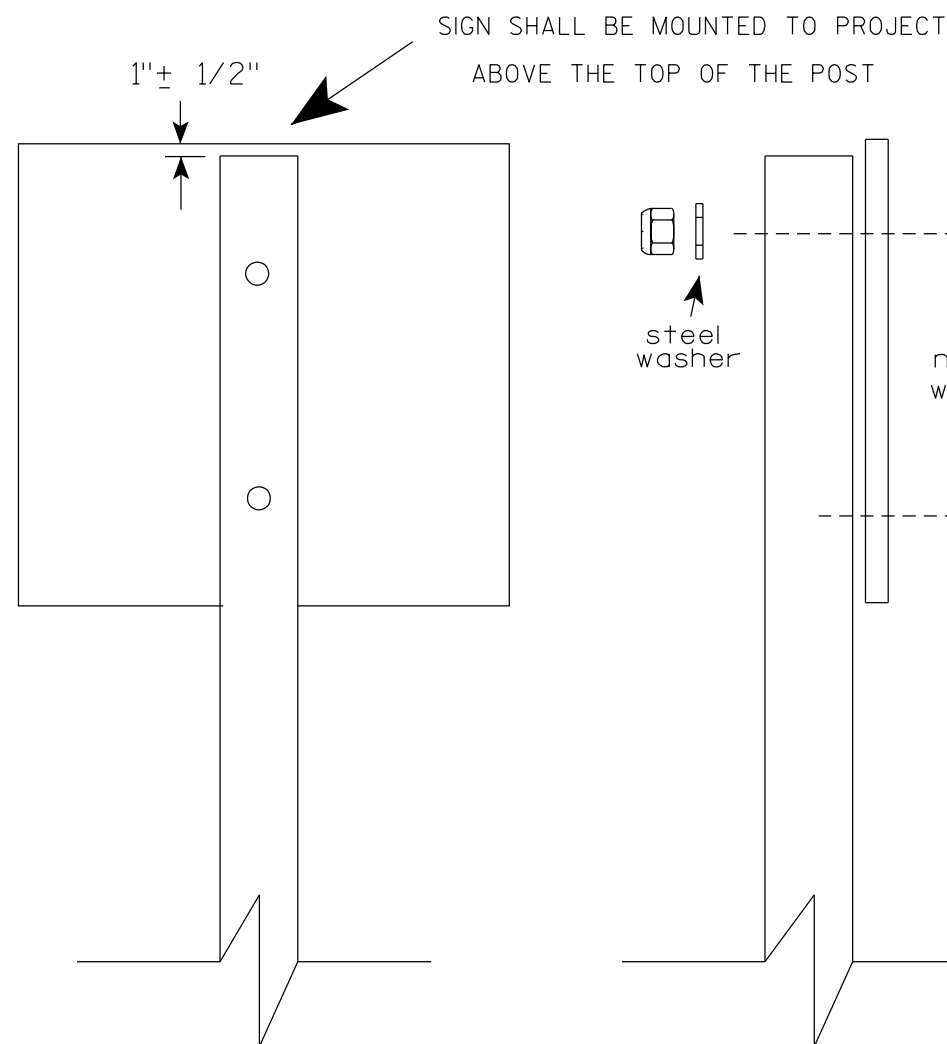
PROJECT NO:

HWY:

COUNTY:

SHEET NO: 230

E



Nuts, bolts and lags used for mounting signs shall have hexagonal heads and shall be either :

- a. Hot dip galvanized in accordance with ASTM Designation: A 153, Class D, or SC 3
- b. Electro-galvanized in accordance with ASTM Designation : B 633, TYPE III, SC 3.

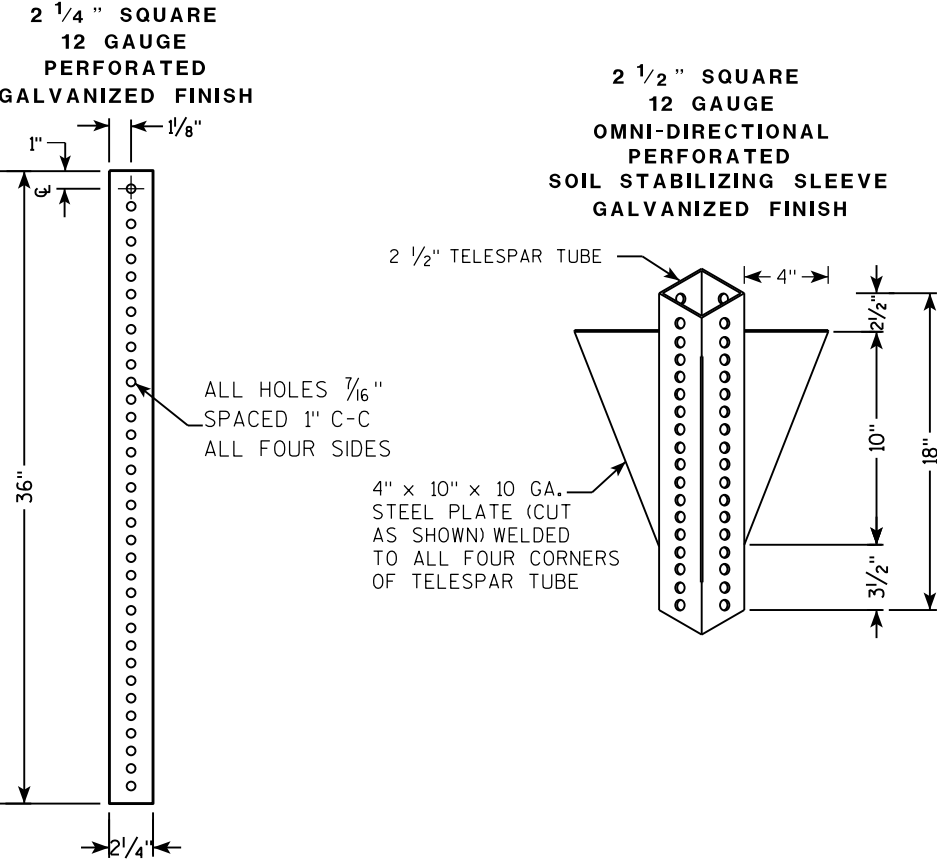
Threads on bolts and nuts shall be manufactured with sufficient allowance for the cadmium plate or galvanized coating to permit the nuts to run freely on the bolts.

- STRINGER BOLTING TO ALUMINUM SIGNS (SEE SIGN PLATE A4-18)
- MACHINE BOLTS - $\frac{5}{16}$ " X 1-3/4" Length w/ lock nuts
- WOOD POSTS (4" x 6")
- LAG SCREWS - $\frac{3}{8}$ " X 3" (NO STRINGERS ON BACK OF SIGN)
 $\frac{3}{8}$ " X 4" (STRINGERS ON BACK OF SIGN)
- SQUARE STEEL POSTS (2" x 2")
- MACHINE BOLTS - $\frac{3}{8}$ " X 3-1/4" Length w/ nuts (NO STRINGER ON BACK OF SIGN)
 $\frac{3}{8}$ " X 5" Length w/ nuts (STRINGERS ON BACK OF SIGN)
- RIVETS - $\frac{9}{32}$ " (6605-9-6) BULB-TITE, TRI-FOLD, ALUMINUM BODY/MANDREL
O.D. FLANGE .720-.765 INCH, GRIP RANGE .042-.375 INCH
- WASHERS (ALL POSTS) -
- 1-1/4" O.D. X $\frac{3}{8}$ " I.D. X $\frac{1}{16}$ " STEEL
- 1-1/4" O.D. X $\frac{3}{8}$ " I.D. X .080 NYLON

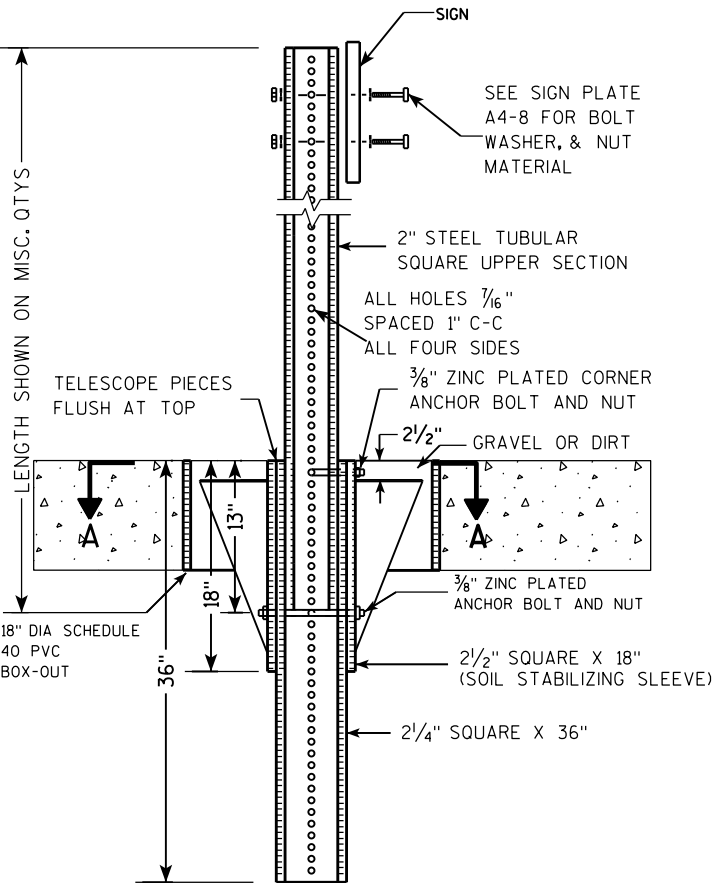
* Two different fastening systems are shown for illustration purposes. On any individual sign, either one or the other system shall be used. Actual number of fasteners per sign varies with the sign area, but normally there are two. For a single post installation, all signs greater than 9 sq. ft. require the use of 3 fasteners.

ATTACHMENT OF SIGNS TO POSTS	
WISCONSIN DEPT OF TRANSPORTATION	
APPROVED	<i>Matthew R. Rauch</i> For State Traffic Engineer
DATE 4/1/2020	PLATE NO. A4-8.9

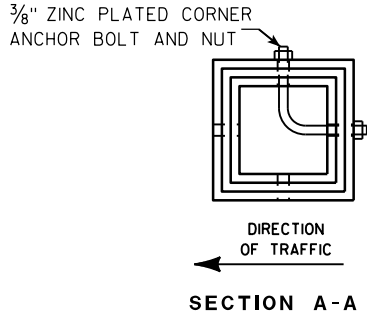
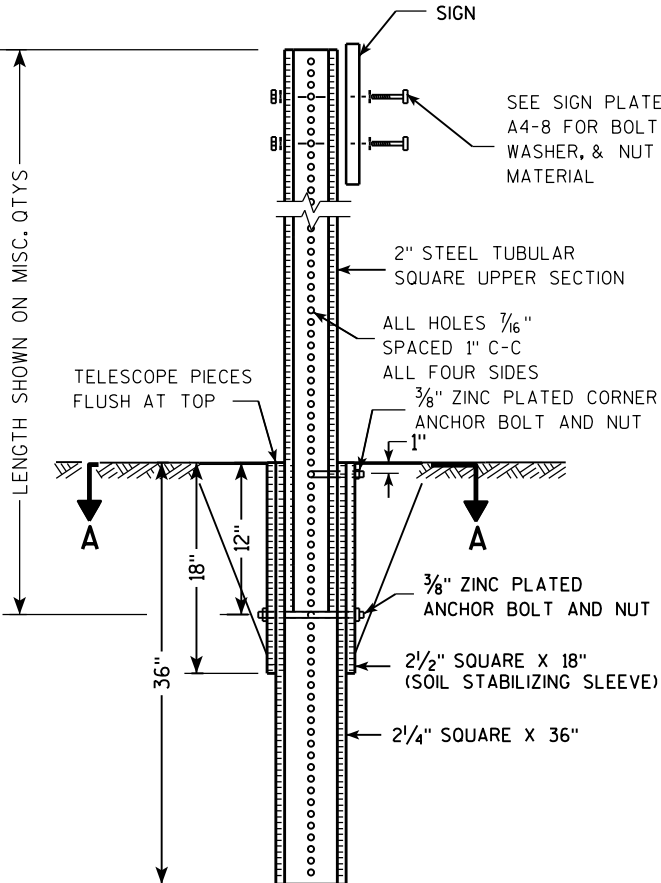
TELESCOPIC TUBING ANCHORS
TWO PIECE SYSTEM



DETAIL OF TUBULAR STEEL SIGN POST
(IN POURED CONCRETE OR ASPHALT)



DETAIL OF TUBULAR STEEL SIGN POST
(IN LOCATIONS OTHER THAN POURED CONCRETE OR ASPHALT)



Area of Sign Installation (Sq. Ft.)	Number of Required Posts
9 or less	1
Greater than 9 less than or equal to 18	2
Greater than 18 less than or equal to 27	3

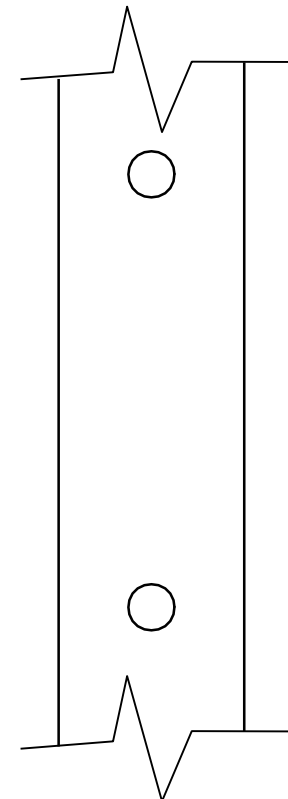
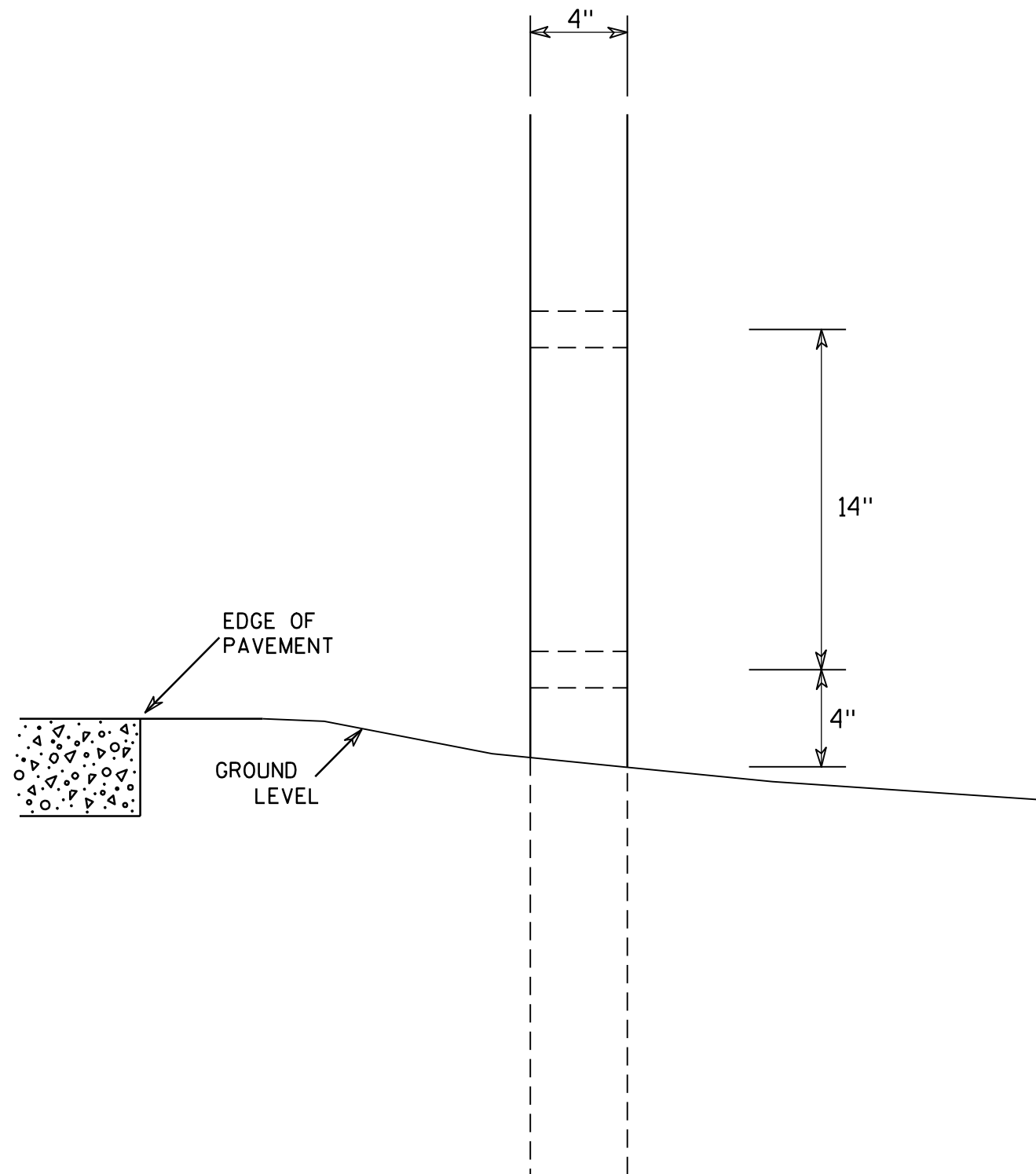
Signs wider than 3 feet or larger than 9 sq. ft shall be mounted on multiple posts (see above table).

TUBULAR STEEL
SIGN POST
A4-9

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 2/05/15 PLAT 232 14-9.9



SIDE VIEW

GENERAL NOTES

1. All 4 x 6 Wood Posts shall be modified by having two 1½" diameter holes drilled perpendicular to the roadway centerline.

4 X 6 WOOD POST MODIFICATIONS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED

Chester J. Spang
for State Traffic Engineer

DATE 3/27/97

PLATE NO. A4-11.2

PROJECT NO:

HWY:

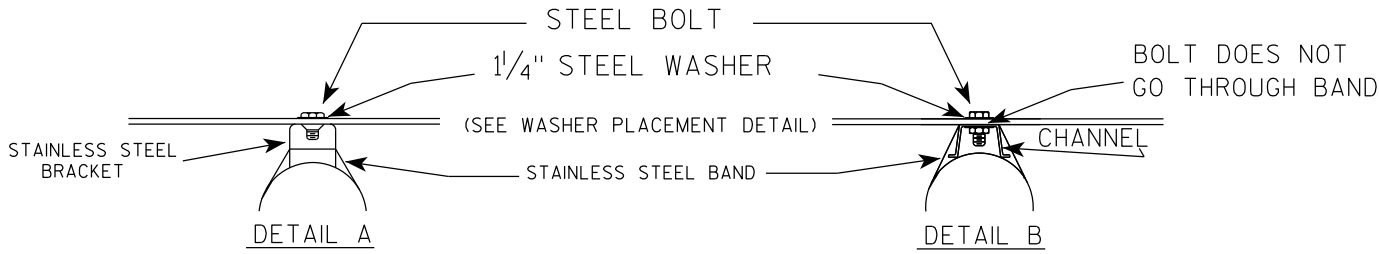
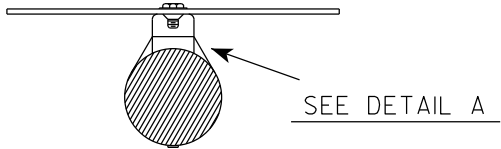
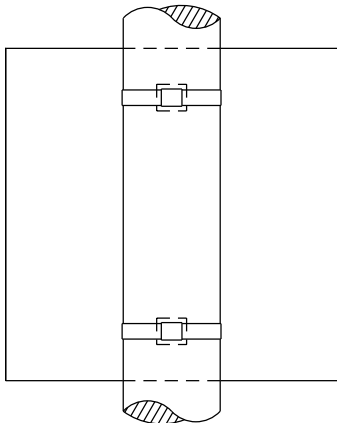
COUNTY:

SHEET NO: 233

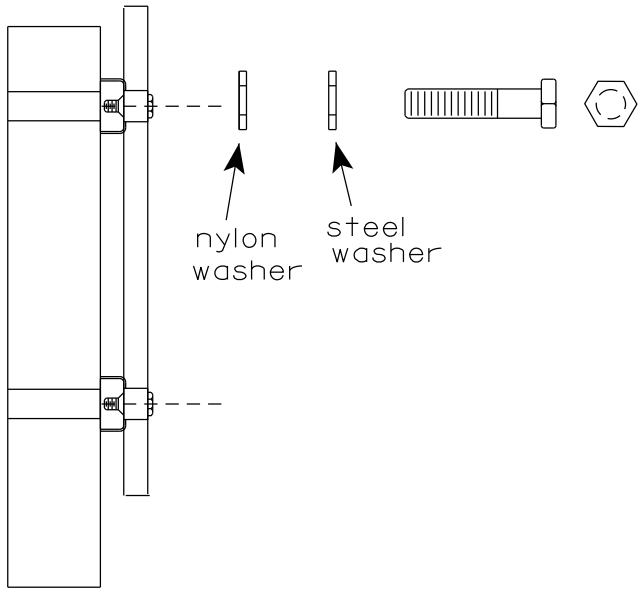
E

BANDING

SINGLE SIGN



WASHER PLACEMENT

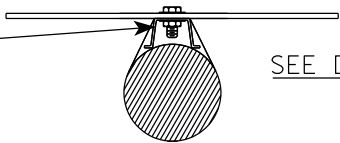
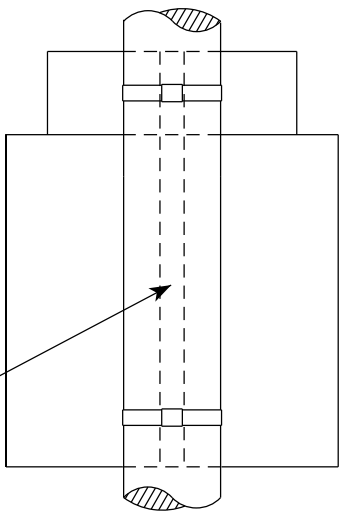


WASHERS (ALL POSTS) -
1-1/4" O.D. X 3/8" I.D. X 1/16" STEEL
1-1/4" O.D. X 3/8" I.D. X .080 NYLON
FOR ALL TYPE H SIGNS

GENERAL NOTES

1. Any sign over 3 feet in width shall use the V-Block banding method. See A5-10 standard plate.
2. Signs 3 feet or greater in height shall have three bracket bands installed. Signs less than 3 feet in height shall have two bracket bands installed.
3. Banding and assembly bracket shall be stainless steel. All bands shall be 3/4" in width and 0.025" thickness.
4. ALL SIGN MOUNTING BOLTS AND WASHERS SHALL BE EITHER:
 - a. Hot dip or mechanically galvanized in accordance with ASTM Designation: A 153, Class D
 - b. Electro-galvanized in accordance with ASTM designation: B 633, Type III, SC 3

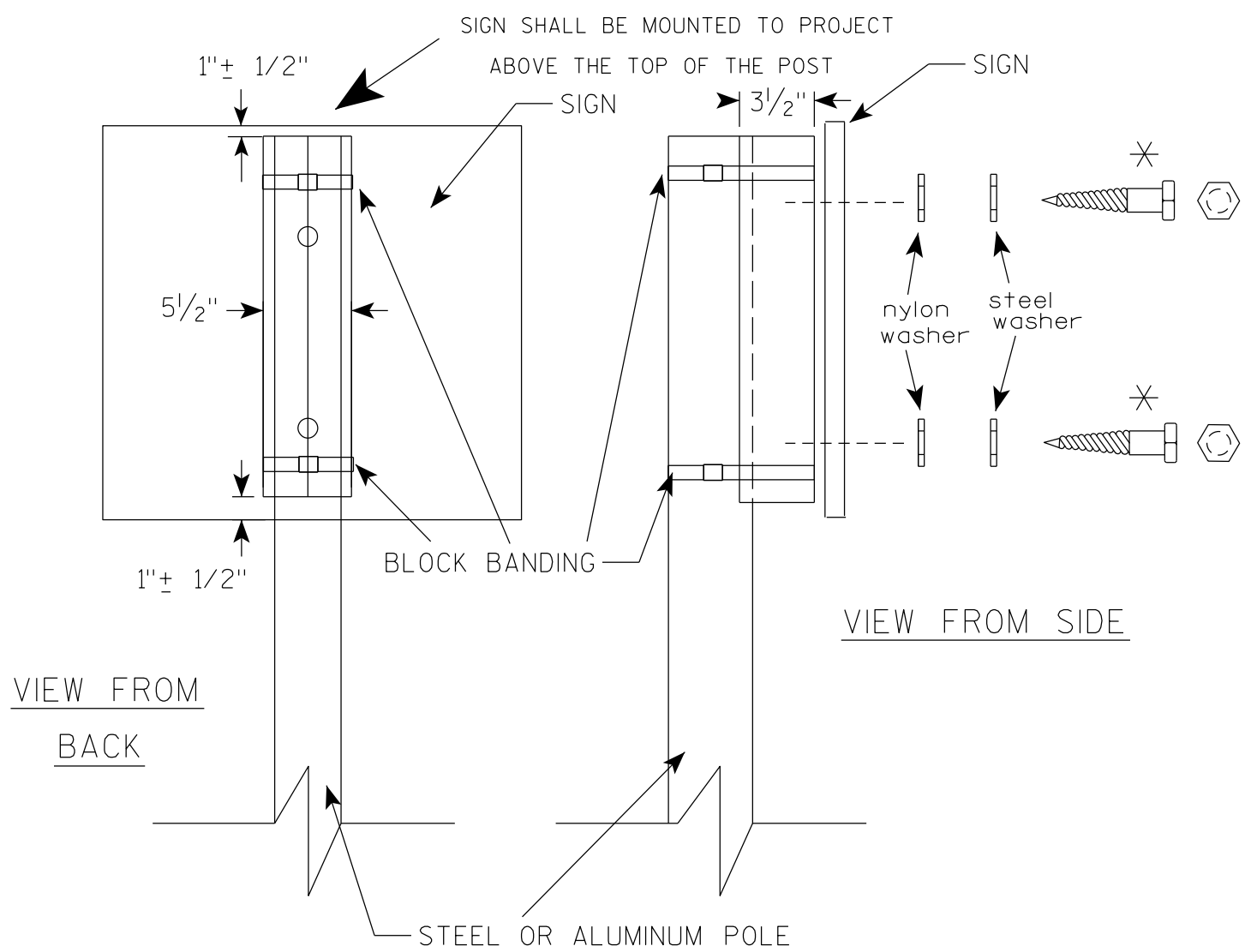
"J" ASSEMBLY



STANDARD SIGN
SIGN BANDING DETAILS

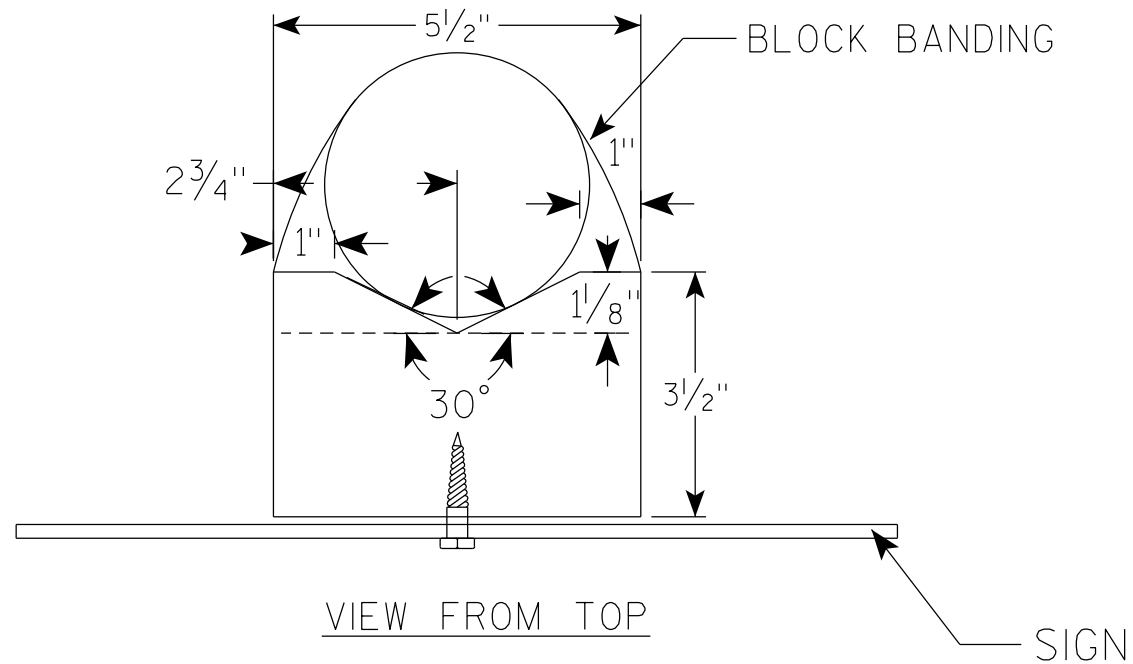
WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer
DATE 6/10/19 PLATE NO. A5-9.4



VIEW FROM
BACK

VIEW FROM SIDE



VIEW FROM TOP

GENERAL NOTES

1. WOOD 4"X6" POST MATERIAL SHALL CONFORM TO 507.2.2 OF THE WISDOT STANDARD SPECIFICATIONS
2. BLOCK BANDING AND CLIPS SHALL BE STAINLESS STEEL, $\frac{3}{4}$ " WIDTH AND 0.025" THICKNESS
3. SIGNS 3' OR GREATER IN HEIGHT SHALL UTILIZE 3 BLOCK BANDS. SIGNS UNDER 3' IN HEIGHT SHALL UTILIZE 2 BLOCK BANDS
4. ACTUAL NUMBER OF FASTENERS PER SIGN VARIES WITH THE SIGN AREA, BUT NORMALLY THERE ARE TWO. FOR SIGNS GREATER THAN 9 S.F. 3 FASTENERS SHALL BE USED.
5. ALL SIGN MOUNTING BOLTS AND WASHERS SHALL BE EITHER:
 - a. Hot dip or mechanically galvanized in accordance with ASTM Designation: A 153, Class D
 - b. Electro-galvanized in accordance with ASTM Designation : B 633, TYPE III, SC 3
6. ALL BOLTS SHALL HAVE HEXAGONAL HEADS.
7. STEEL WASHERS SHALL BE $\frac{1}{4}$ " O.D. X $\frac{3}{8}$ " I.D. X $\frac{1}{16}$ "
8. NYLON WASHERS SHALL BE $\frac{1}{4}$ " O.D. X $\frac{3}{8}$ " I.D. X .080 FOR TYPE H OR TYPE F FACE SIGN

✱ LAG BOLTS SHALL BE $\frac{3}{8}$ " X $2\frac{1}{2}$ "

BLOCK BANDING DETAIL
(V-BLOCK OPTION)

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 4/19/2022 PLATE NO. A5-10.3

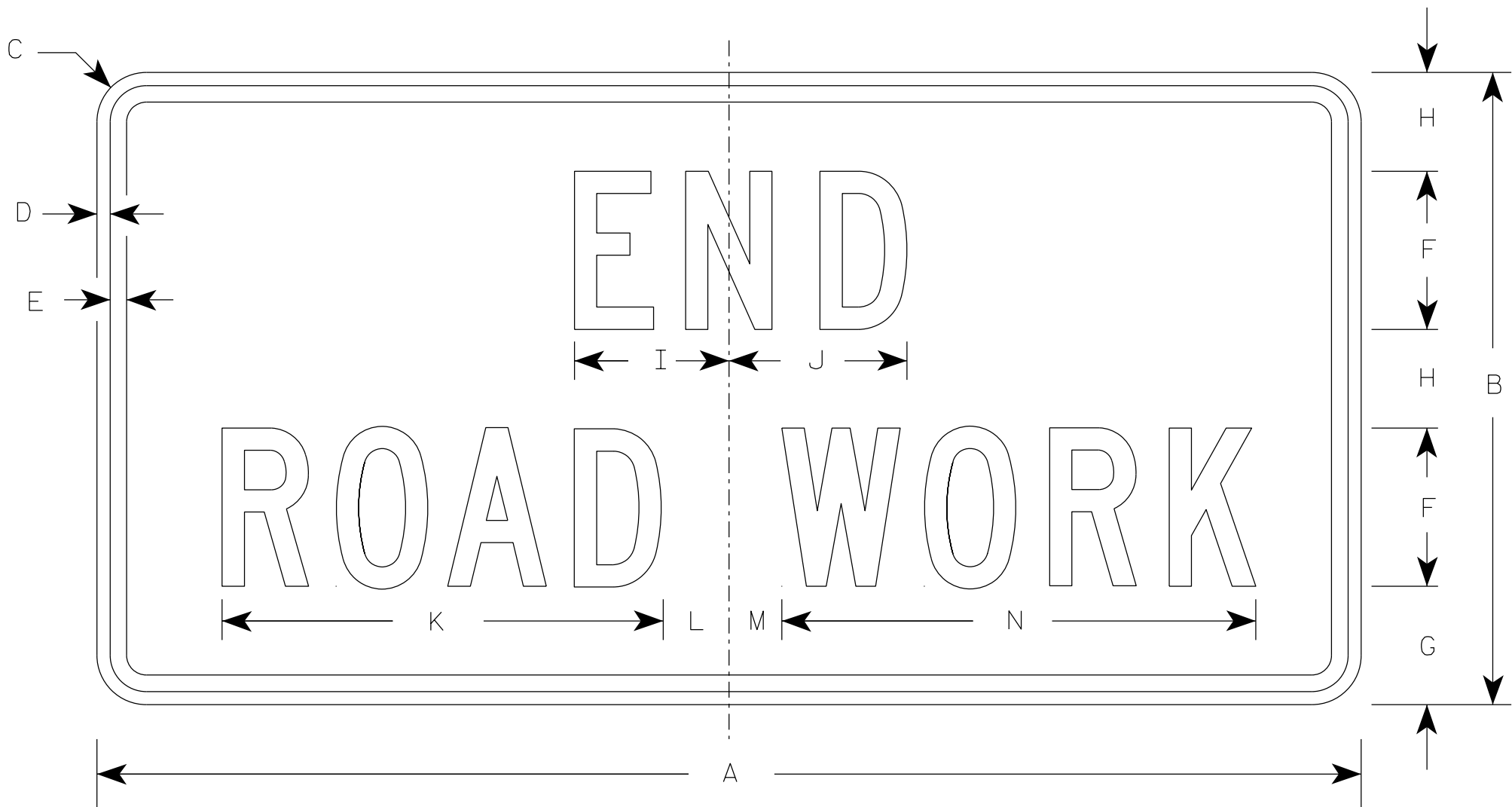
PROJECT NO:

SHEET NO: 235

E

NOTES

- 1. Sign is Type II - Type F Reflective
- 2. Color:
 - Background - Orange
 - Message - Black
- 3. Message Series - C
- 4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.



G20-2A

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	36	18	1 1/2	3/8	1/2	4	3 3/4	2 1/2	4 1/8	4 1/8	11 1/8	2	1	12 1/8													4.5
2	48	24	1 7/8	1/2	5/8	6	4 1/2	3 3/4	5 7/8	6 3/4	16 3/4	2 1/2	1 3/4	18 1/2													8.0
2M	48	24	1 7/8	1/2	5/8	6	4 1/2	3 3/4	5 7/8	6 3/4	16 3/4	2 1/2	1 3/4	18 1/2													8.0
3	48	24	1 7/8	1/2	5/8	6	4 1/2	3 3/4	5 7/8	6 3/4	16 3/4	2 1/2	1 3/4	18 1/2													8.0
4	48	24	1 7/8	1/2	5/8	6	4 1/2	3 3/4	5 7/8	6 3/4	16 3/4	2 1/2	1 3/4	18 1/2													8.0
5	48	24	1 7/8	1/2	5/8	6	4 1/2	3 3/4	5 7/8	6 3/4	16 3/4	2 1/2	1 3/4	18 1/2													8.0

STANDARD SIGN

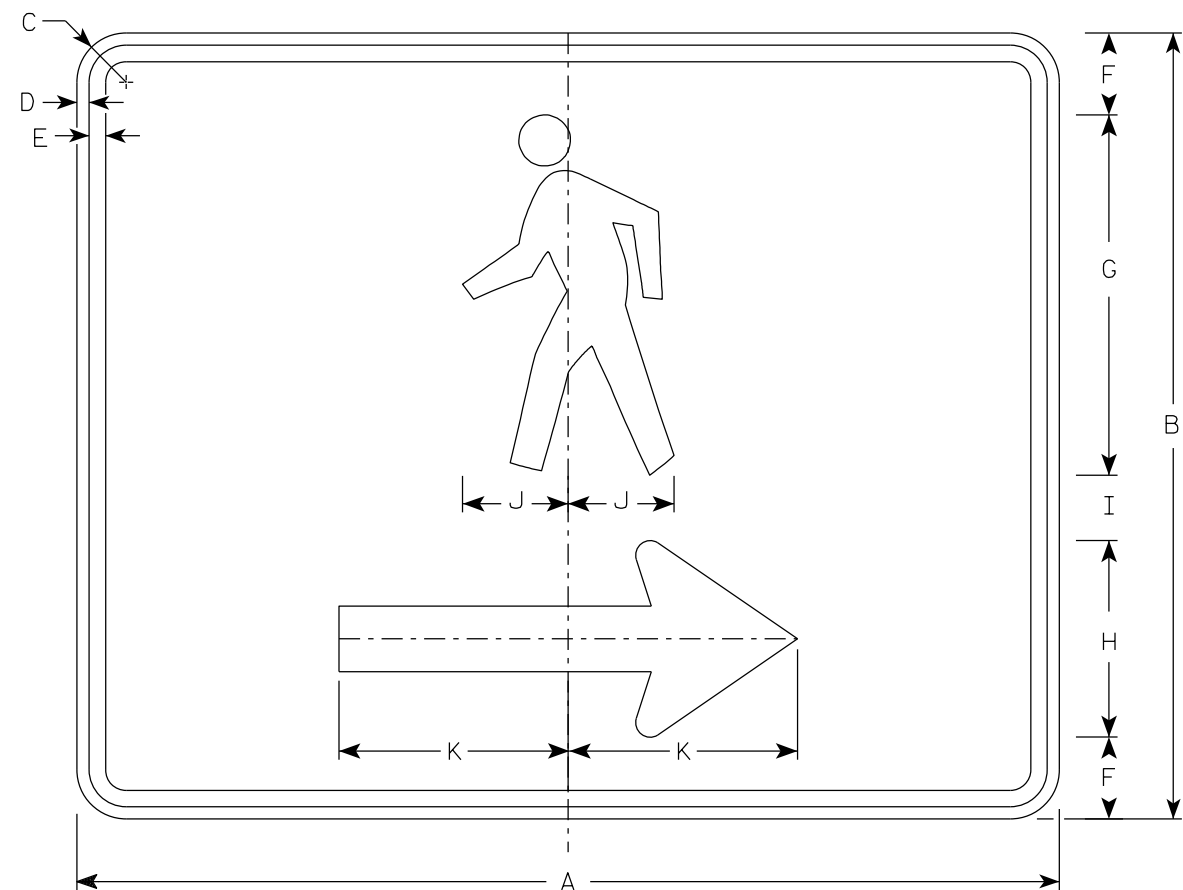
G20-2A

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 1/26/2023 PLATE NO. G20-2A.10

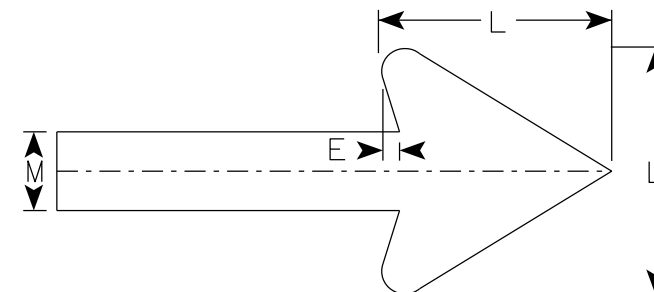
7



M4-60R

NOTES

1. Sign is Type II- Type F Reflective
2. Color:
Background - Orange
Message - Black
3. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
4. M4-60L is the same as M4-60R except the arrow is reversed.



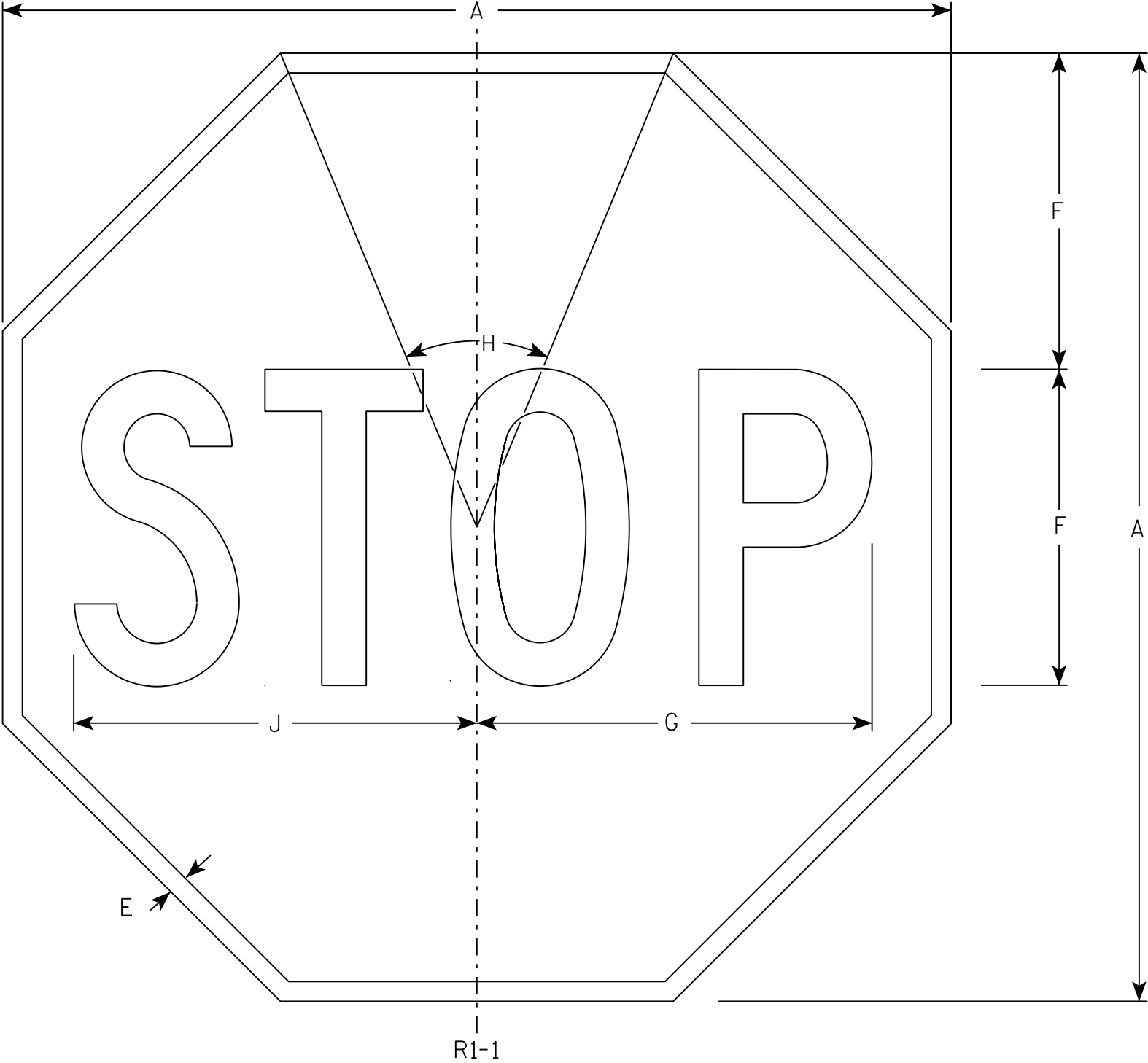
Arrow Detail

7

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2S	30	24	1 1/2	3/8	1/2	2 1/2	11	6	2	3 1/4	7	6	2														5.00
2M	30	24	1 1/2	3/8	1/2	2 1/2	11	6	2	3 1/4	7	6	2														5.00
3																											
4																											
5																											

PROJECT NO:	HWY:	COUNTY:	SHEET NO: 237										E
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7



NOTES

- 1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
- 2. Color:
Background - Red
Message - White
- 3. Message Series - C

7

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	30				5/8	10	12 1/2	45°		12 3/4																	5.18
2S	30				5/8	10	12 1/2	45°		12 3/4																	5.18
2M	36				3/4	12	15	45°		15 3/8																	7.46
3	36				3/4	12	15	45°		15 3/8																	7.46
4	48				1	16	20	45°		20 1/2																	13.25
5	48				1	16	20	45°		20 1/2																	13.25
6	18				3/8	6	7 3/4	45°		7 3/4																	1.86
7	12				1/4	4	5	45°		5 1/8																	0.78

PROJECT NO:

HWY:

COUNTY:

SHEET NO: 238

E

STANDARD SIGN

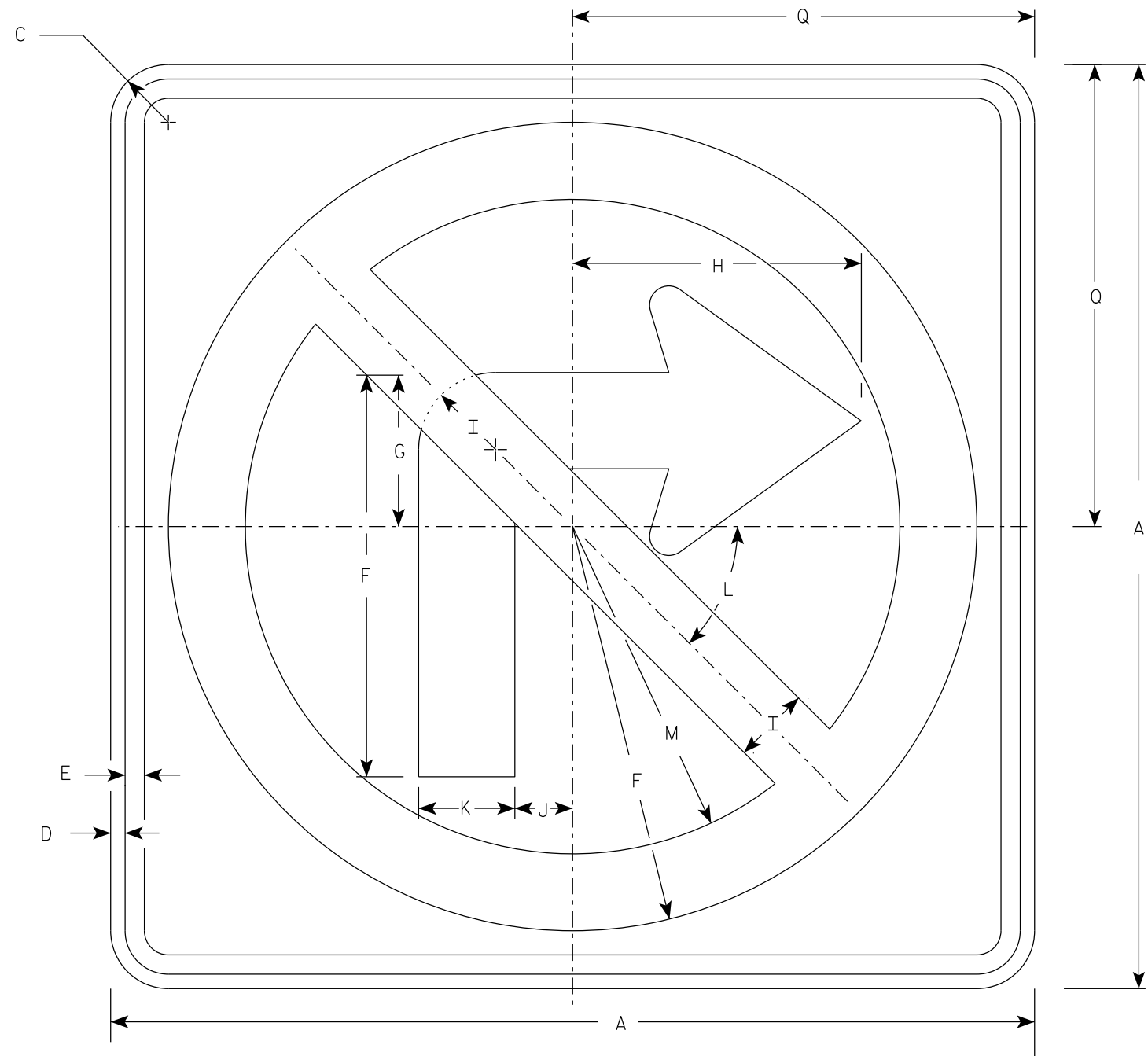
R1 - 1

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 11/12/15 PLATE NO. R1-1.13

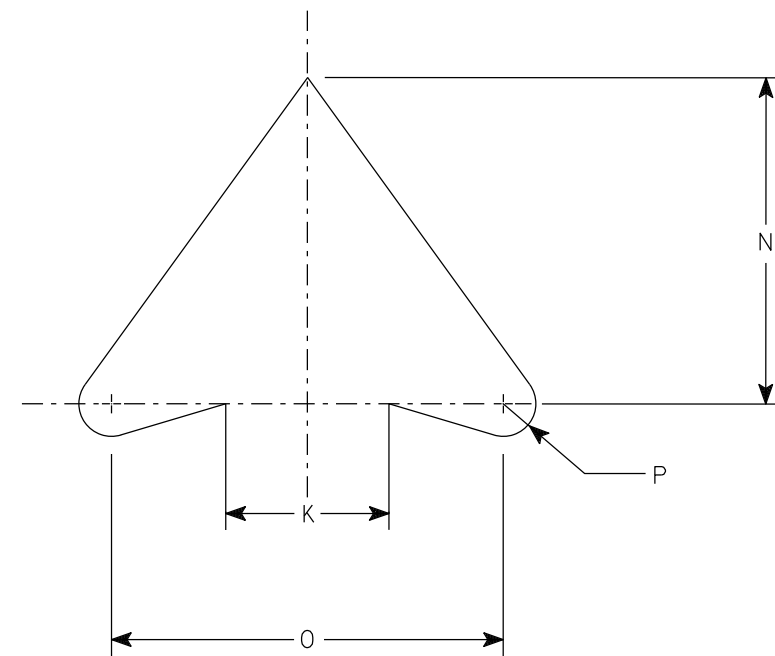
7



R3-1

NOTES

1. Sign is Type II - Type H Reflective
2. Color:
Background - White
Message - See note 3
3. Border & Arrow are non reflective black, the circle with diagonal bar is reflective red.



ARROW DETAIL

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	24		1 1/2	3/8	1/2	10 1/2	4	7 1/2	2	1 1/2	2 1/2	45	8 1/2	5	6	1/2	12										4.0
2S	24		1 1/2	3/8	1/2	10 1/2	4	7 1/2	2	1 1/2	2 1/2	45°	8 1/2	5	6	1/2	12										4.0
2M	36		2 1/4	5/8	3/4	15 3/4	6	11 1/4	3	2 1/4	3 3/4	45	12 3/4	7 1/2	9	3/4	18										9.0
3	36		2 1/4	5/8	3/4	15 3/4	6	11 1/4	3	2 1/4	3 3/4	45	12 3/4	7 1/2	9	3/4	18										9.0
4	36		2 1/4	5/8	3/4	15 3/4	6	11 1/4	3	2 1/4	3 3/4	45°	12 3/4	7 1/2	9	3/4	18										9.0
5	48		2 1/4	3/4	1	21	8	15	4	3	5	45°	17	10	12	1	24										16.0

PROJECT NO:

HWY:

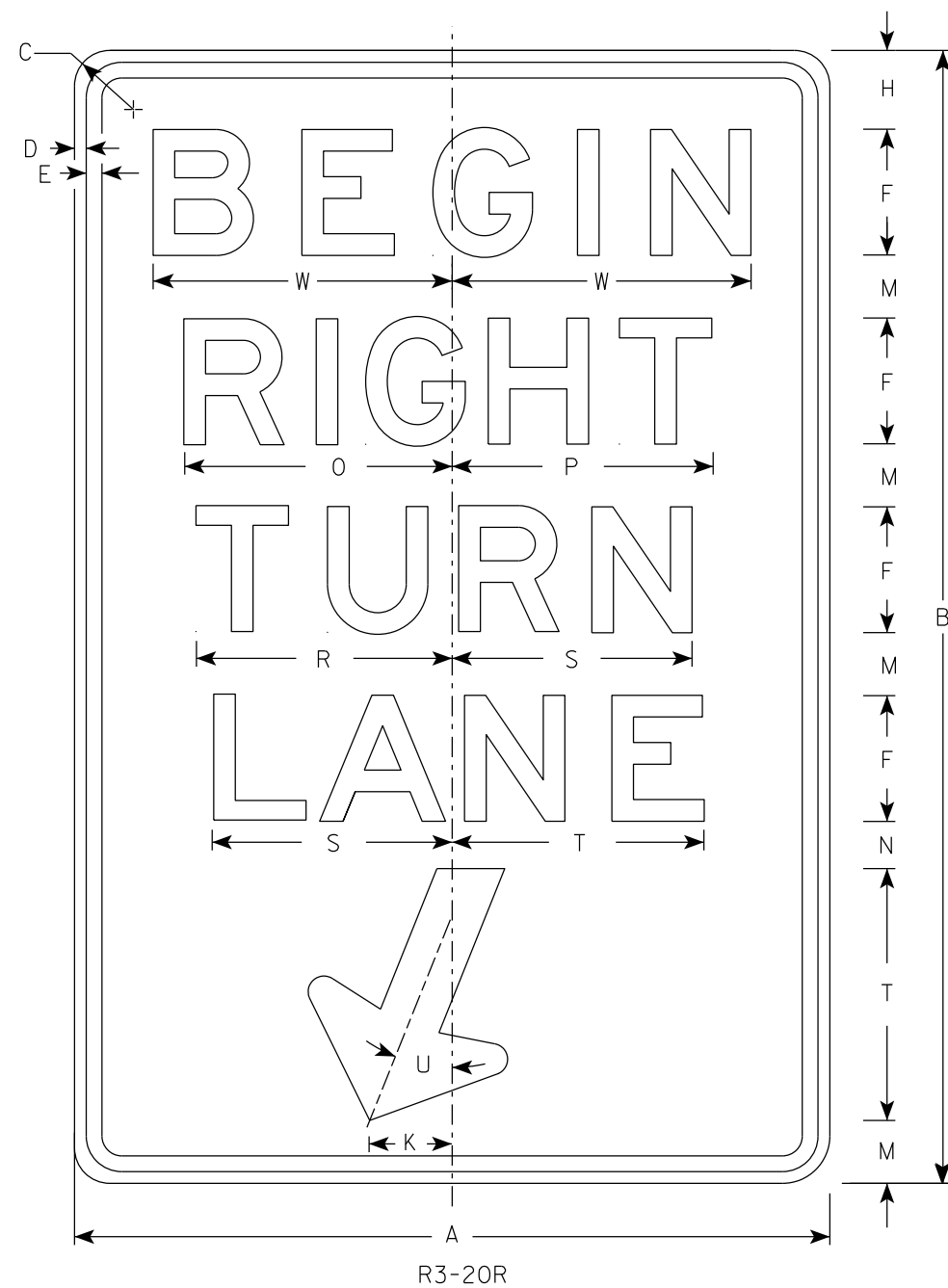
COUNTY:

SHEET NO: 239

E

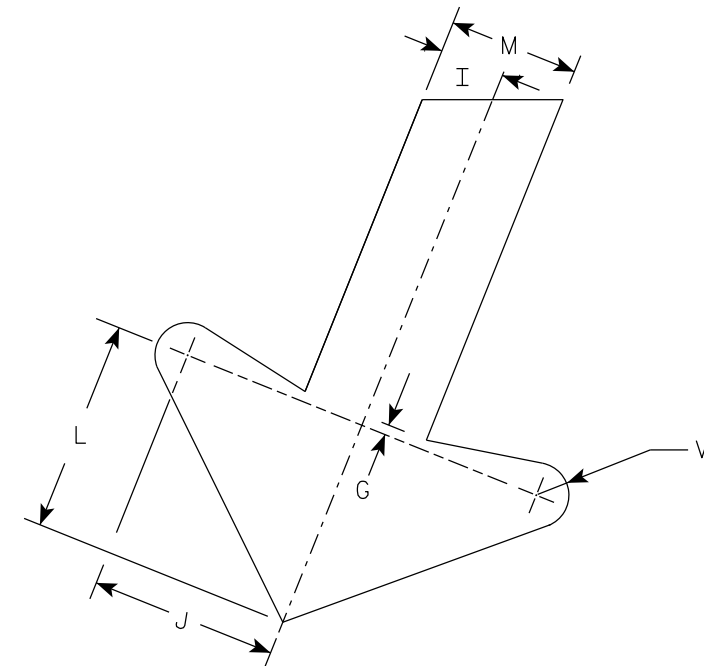
7

7



NOTES

1. Sign is Type II - Type H Reflective
2. Color:
Background - White
Message - Black
3. Message Series - E



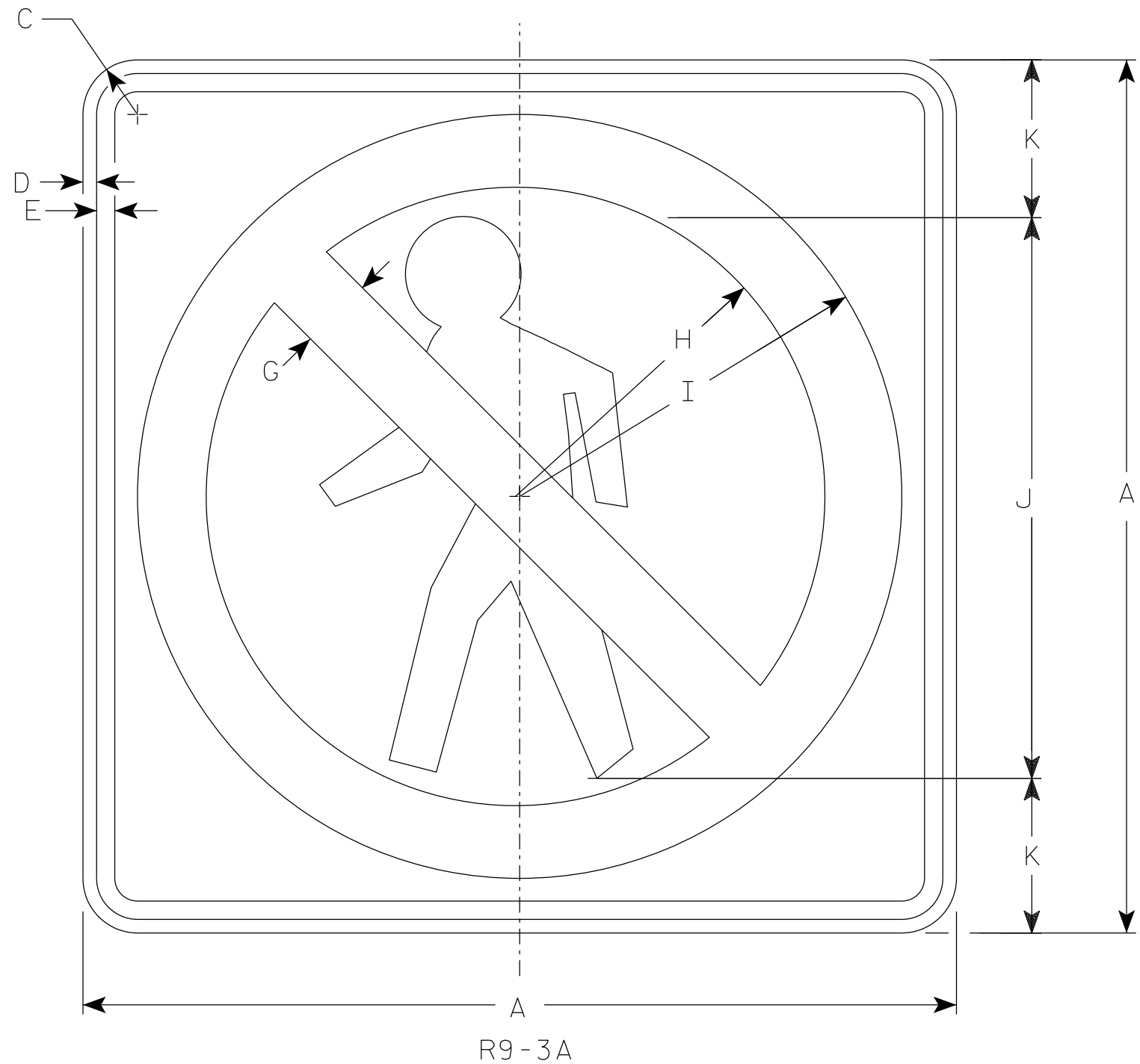
ARROW DETAIL

7

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2S	24	36	1 1/2	3/8	1/2	4	1/4	2 1/2	1	2 7/8	2 5/8	3 1/4	2	1 1/2	8 1/2	8 1/4		8 1/8	7 5/8	8	22°	1/2	9 1/2				6.0
2M	24	36	1 1/2	3/8	1/2	4	1/4	2 1/2	1	2 7/8	2 5/8	3 1/4	2	1 1/2	8 1/2	8 1/4		8 1/8	7 5/8	8	22°	1/2	9 1/2				6.0
3	36	54	1 7/8	1/2	5/8	6	3/8	3 3/4	1 1/2	4 1/4	4	4 7/8	3	2 1/4	12 3/4	12 1/2		12 1/4	11 1/2	12	22°	3/4	13 1/4				13.5
4																											
5																											

PROJECT NO:		HWY:		COUNTY:		SHEET NO: 240		E
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7



NOTES

- 1. Sign is Type II - Type H Reflective
- 2. Color:
 - Background - White
 - Message - See note 3
- 3. Border & Pedestrian are non-reflective black.
Circle with diagonal bar is reflective red.

7

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	18		1 1/2	3/8	3/8		1 1/2	6 1/4	7 7/8	12	3																2.25
2S	24		1 1/2	3/8	1/2		2	8 1/2	10 1/2	15	4																4.00
2M	24		1 1/2	3/8	1/2		2	8 1/2	10 1/2	15	4																4.00
3																											
4																											
5																											

PROJECT NO:

HWY:

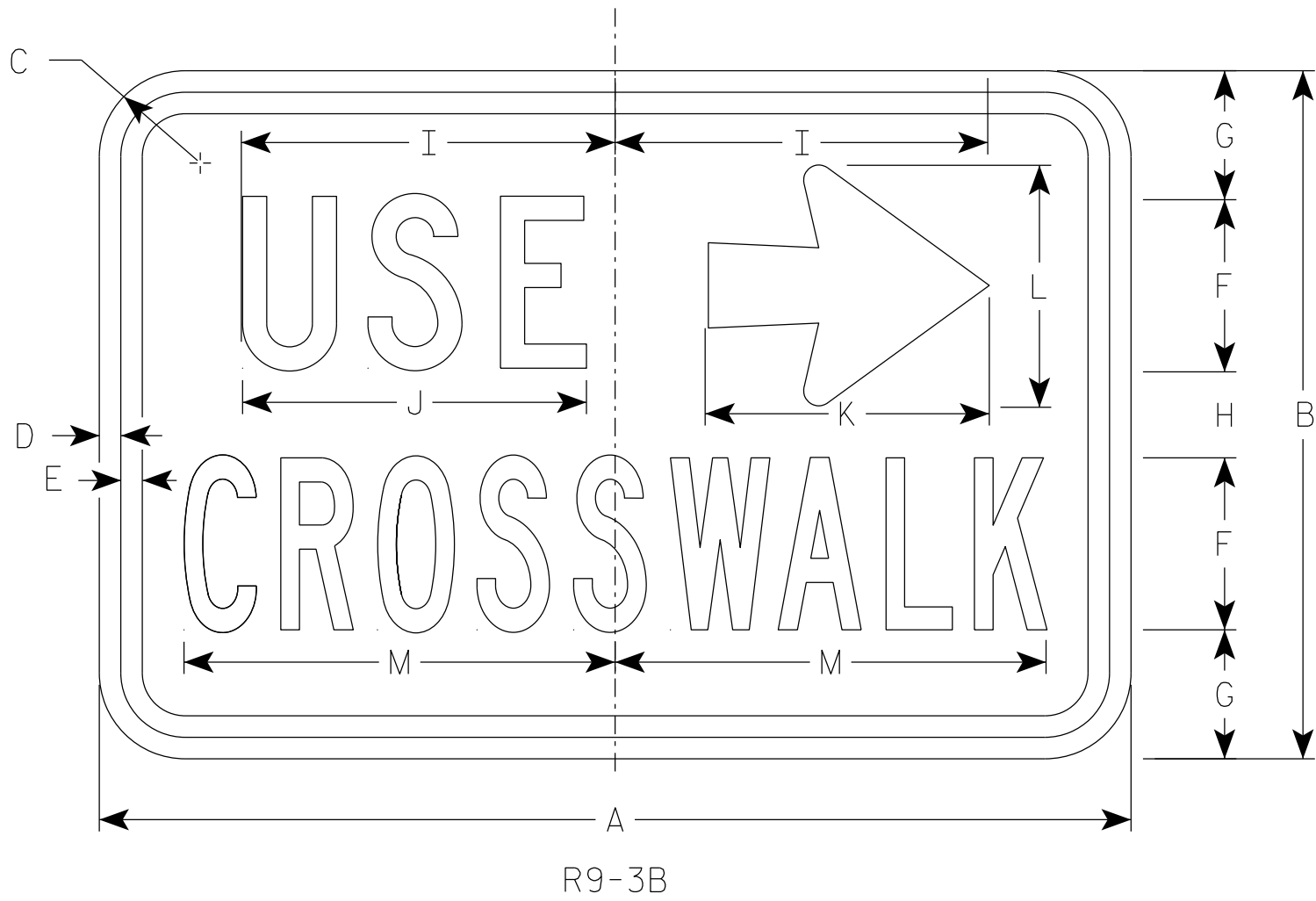
COUNTY:

SHEET NO: 241

E

NOTES

- 1. Sign is Type II - Type H Reflective
- 2. Color:
Background - White
Message - Black
- 3. Message Series - C Line 1, Series B Line 2



SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2S	18	12	1 1/2	3/8	3/8	3	2 1/4	1 1/2	6 1/2	6	5	4 1/4	7 1/2														1.5
2M	18	12	1 1/2	3/8	3/8	3	2 1/4	1 1/2	6 1/2	6	5	4 1/4	7 1/2														1.5
3																											
4																											
5																											

PROJECT NO:

HWY:

COUNTY:

SHEET NO: 242

E

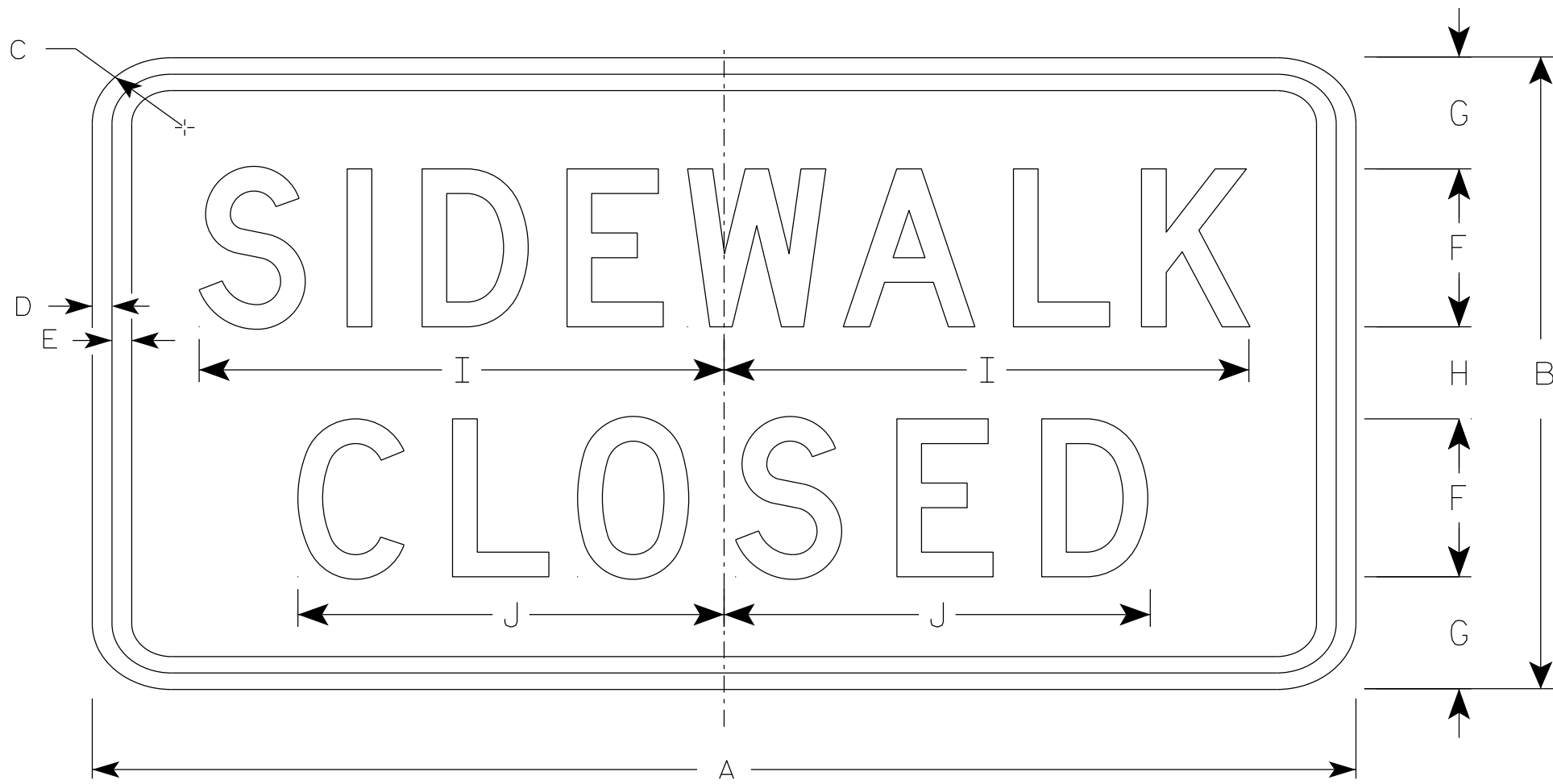
STANDARD SIGN
R9-3B

WISCONSIN DEPT OF TRANSPORTATION

APPROVED
Matthew R. Rauch
for State Traffic Engineer

DATE 1/23/24 PLATE NO. R9-3B.3

7



R9-9

NOTES

- 1. Sign is Type II - Type H Reflective
- 2. Color:
 - Background - White
 - Message - Black
- 3. Message Series - C
- 4. Use Size 2 for Sidewalks. Use Size 3 for Paths and Trails.

7

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2S	24	12	1 1/2	1/2	1/2	3	2 1/8	1 3/4	10	8 1/8																	2.0
2M	24	12	1 1/2	1/2	1/2	3	2 1/8	1 3/4	10	8 1/8																	2.0
3	30	18	1 1/2	1/2	1/2	4	3 1/2	3	12 1/2	10 1/4																	3.75
4																											
5																											

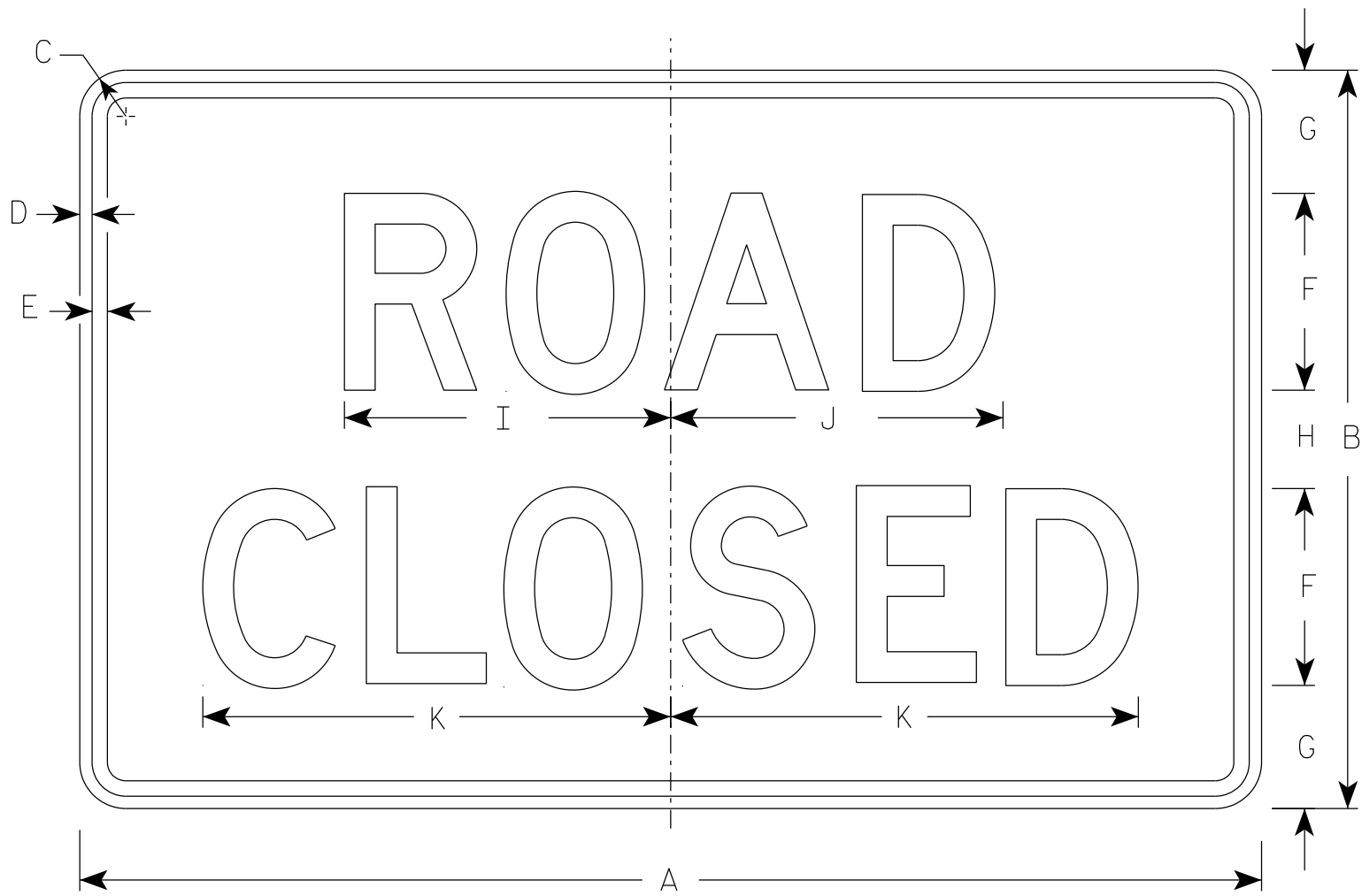
PROJECT NO:

HWY:

COUNTY:

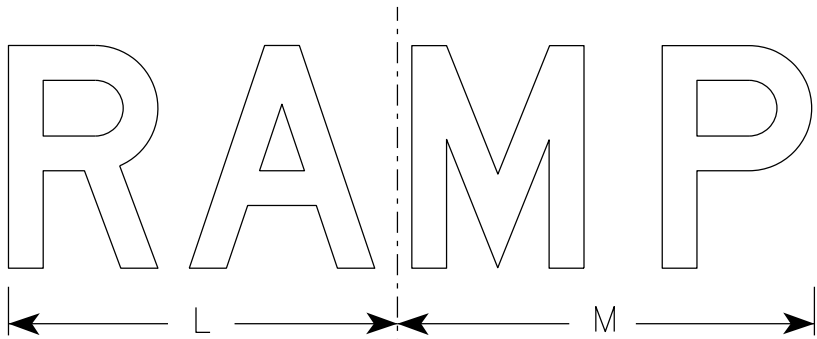
SHEET NO: 243

E

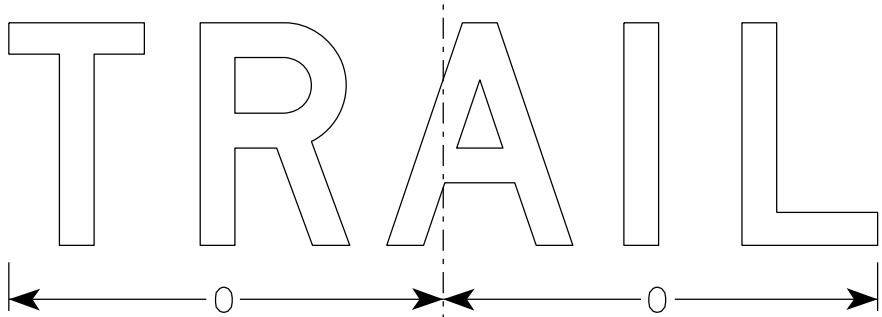


R11-2

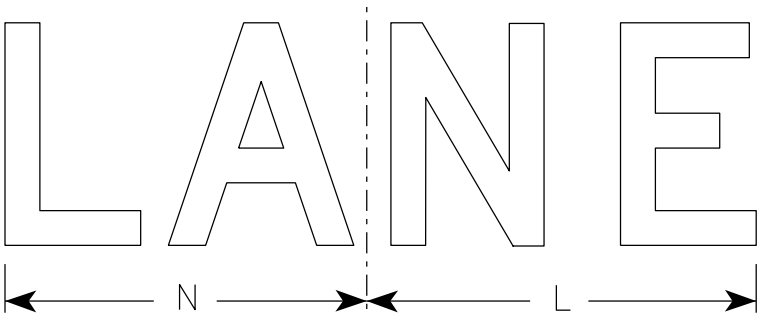
- NOTES
1. Sign is Type II - Type H Reflective
 2. Color:
Background - White
Message - Black
 3. Message Series - D
 4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
 5. Modify the message as required.



R11-2R



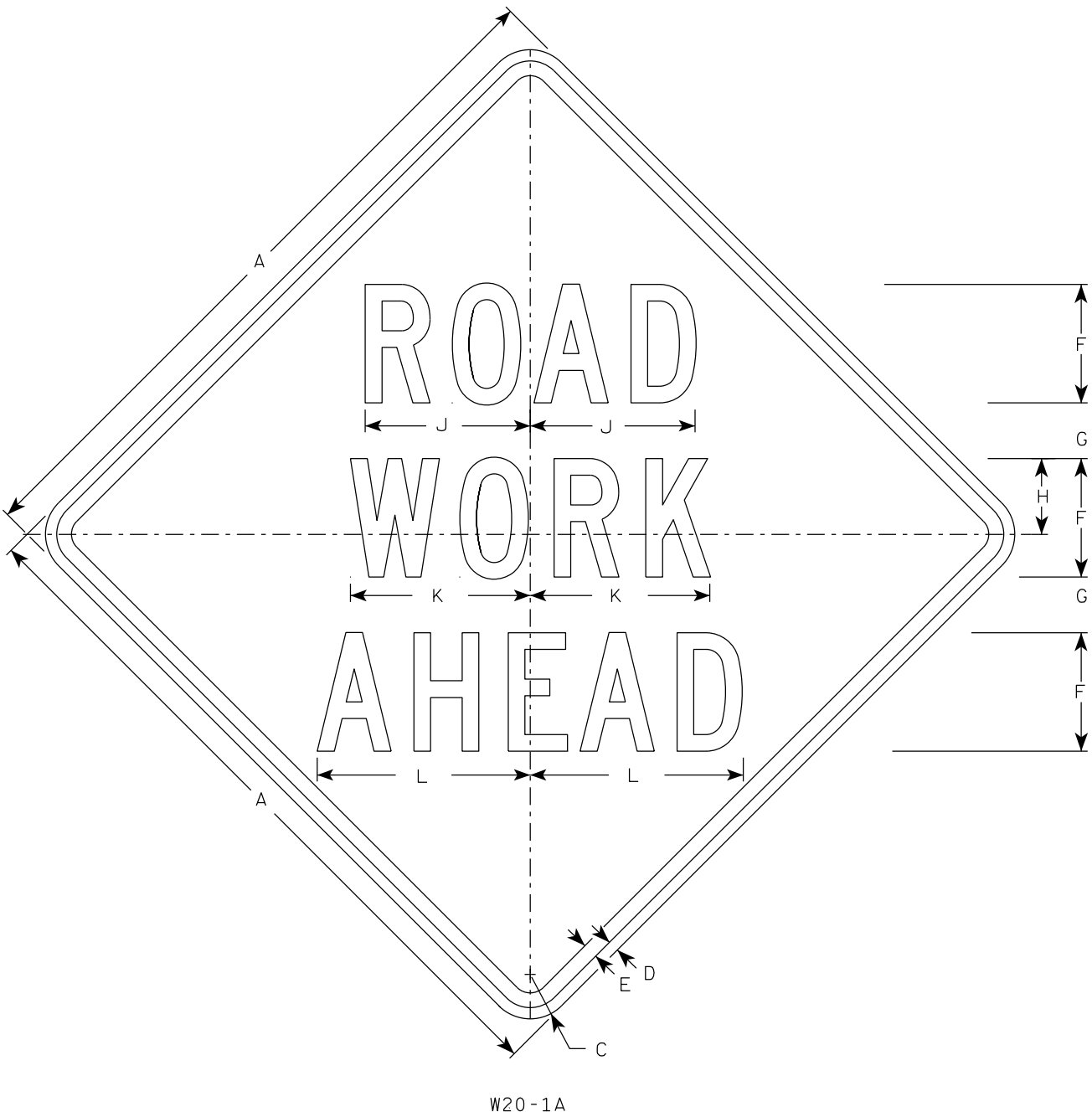
R11-2T



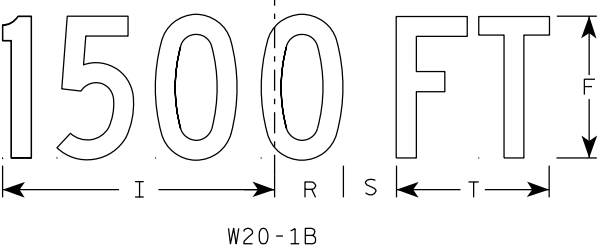
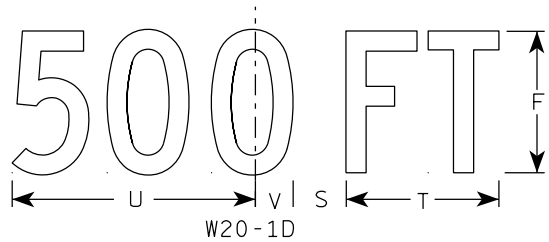
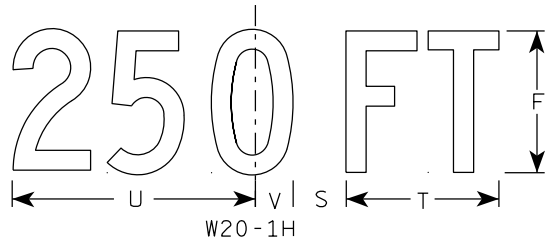
R11-2L

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2S	48	30	1 7/8	1/2	5/8	8	5	4	13 1/4	13 1/2	19	14	15	13	15 5/8												10.0
2M	48	30	1 7/8	1/2	5/8	8	5	4	13 1/4	13 1/2	19	14	15	13	15 5/8												10.0
3	48	30	1 7/8	1/2	5/8	8	5	4	13 1/4	13 1/2	19	14	15	13	15 5/8												10.0
4	48	30	1 7/8	1/2	5/8	8	5	4	13 1/4	13 1/2	19	14	15	13	15 5/8												10.0
5	48	30	1 7/8	1/2	5/8	8	5	4	13 1/4	13 1/2	19	14	15	13	15 5/8												10.0

STANDARD SIGN R11-2	
WISCONSIN DEPT OF TRANSPORTATION	
APPROVED	<i>Matthew R. Rauch</i> For State Traffic Engineer
DATE 2/5/24	PLATE NO. R11-2.12

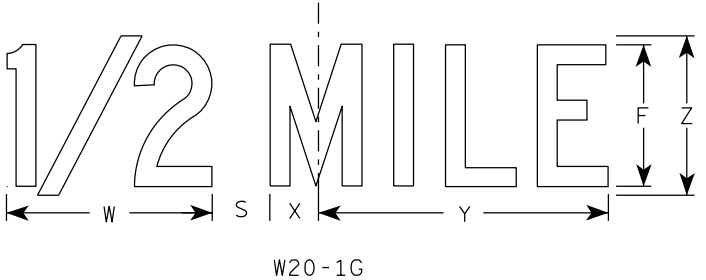


W20-1A

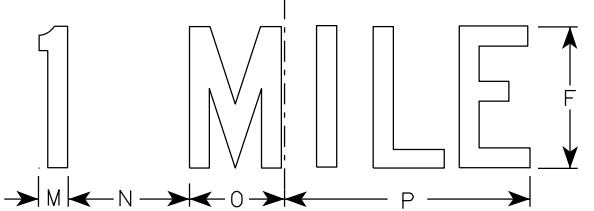


W20-1B

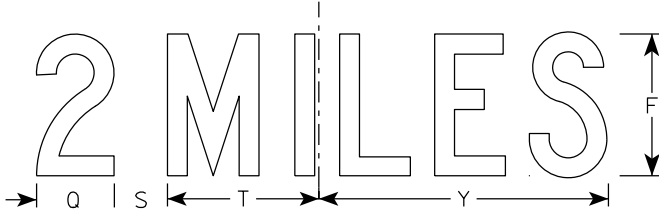
- NOTES
1. Sign is Type II - Type F Reflective
 2. Color:
Background - Orange
Message - Black
 3. Message Series - C
 4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.



W20-1G



W20-1F



W20-1E

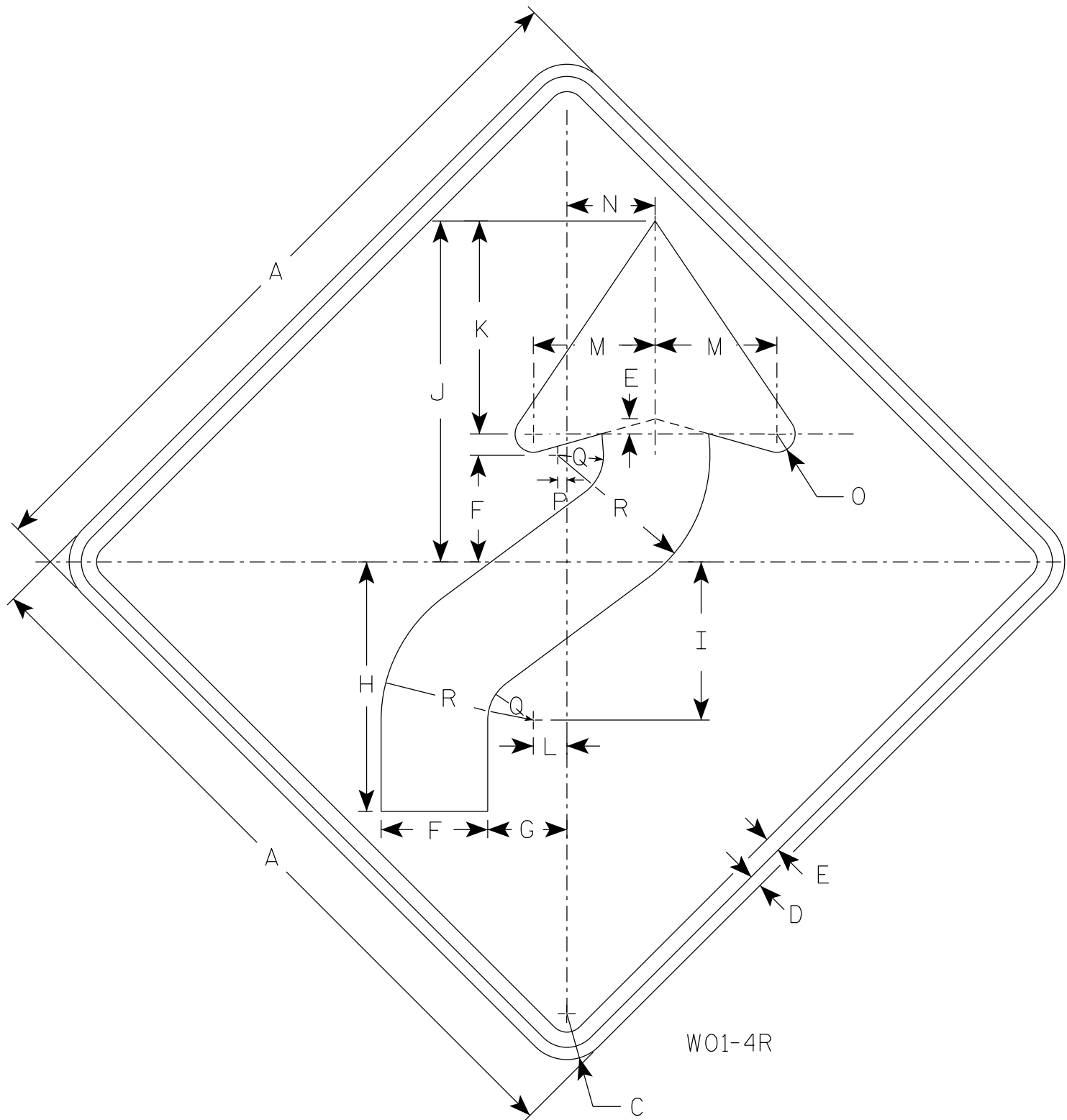
SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	v	W	X	Y	Z	Area sq. ft.
1	36		2 1/4	5/8	3/4	5	2 5/8	3 1/4	10 1/8	7	7 5/8	8 7/8	1 1/8	4 1/2	3 1/2	9	3 1/4	2 1/2	2 1/4	5 5/8	9	1 3/8	8	1 3/4	10 3/4	6	9.0
2S	48		3	3/4	1	8	3 3/4	5 1/8	15 3/8	11 1/8	12 1/8	14 3/8	1 5/8	6 7/8	5 3/8	13 7/8	4 3/8	3 7/8	3	8 5/8	13 3/4	2 1/8	11 7/8	2 3/4	16 3/8	9	16.0
2M	48		3	3/4	1	8	3 3/4	5 1/8	15 3/8	11 1/8	12 1/8	14 3/8	1 5/8	6 7/8	5 3/8	13 7/8	4 3/8	3 7/8	3	8 5/8	13 3/4	2 1/8	11 7/8	2 3/4	16 3/8	9	16.0
3	48		3	3/4	1	8	3 3/4	5 1/8	15 3/8	11 1/8	12 1/8	14 3/8	1 5/8	6 7/8	5 3/8	13 7/8	4 3/8	3 7/8	3	8 5/8	13 3/4	2 1/8	11 7/8	2 3/4	16 3/8	9	16.0
4	48		3	3/4	1	8	3 3/4	5 1/8	15 3/8	11 1/8	12 1/8	14 3/8	1 5/8	6 7/8	5 3/8	13 7/8	4 3/8	3 7/8	3	8 5/8	13 3/4	2 1/8	11 7/8	2 3/4	16 3/8	9	16.0
5	48		3	3/4	1	8	3 3/4	5 1/8	15 3/8	11 1/8	12 1/8	14 3/8	1 5/8	6 7/8	5 3/8	13 7/8	4 3/8	3 7/8	3	8 5/8	13 3/4	2 1/8	11 7/8	2 3/4	16 3/8	9	16.0

STANDARD SIGN
W20-1A, B, C, D, E, F, G & H

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 1/10/2024 PLATE NO. W20-1.12



NOTES

- 1. Sign is Type II - Type F Reflective
- 2. Color:
Background - Orange
Message - Black
- 3. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
- 4. W01-4L is the same as W01-4R except the arrow is reversed along the vertical centerline.

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	36		2 1/4	5/8	3/4	5 1/4	4	12 3/8	7 7/8	16 7/8	10 1/2	1 5/8	6	4 1/2	1	1/2	2 1/4	7 1/2									9.0
2S	48		3	3/4	1	7	5 1/4	16 1/2	10 1/2	22 1/2	14	2 1/4	8	6	1 1/4	5/8	3	10									16.0
2M	48		3	3/4	1	7	5 1/4	16 1/2	10 1/2	22 1/2	14	2 1/4	8	6	1 1/4	5/8	3	10									16.0
3	48		3	3/4	1	7	5 1/4	16 1/2	10 1/2	22 1/2	14	2 1/4	8	6	1 1/4	5/8	3	10									16.0
4	48		3	3/4	1	7	5 1/4	16 1/2	10 1/2	22 1/2	14	2 1/4	8	6	1 1/4	5/8	3	10									16.0
5	48		3	3/4	1	7	5 1/4	16 1/2	10 1/2	22 1/2	14	2 1/4	8	6	1 1/4	5/8	3	10									16.0

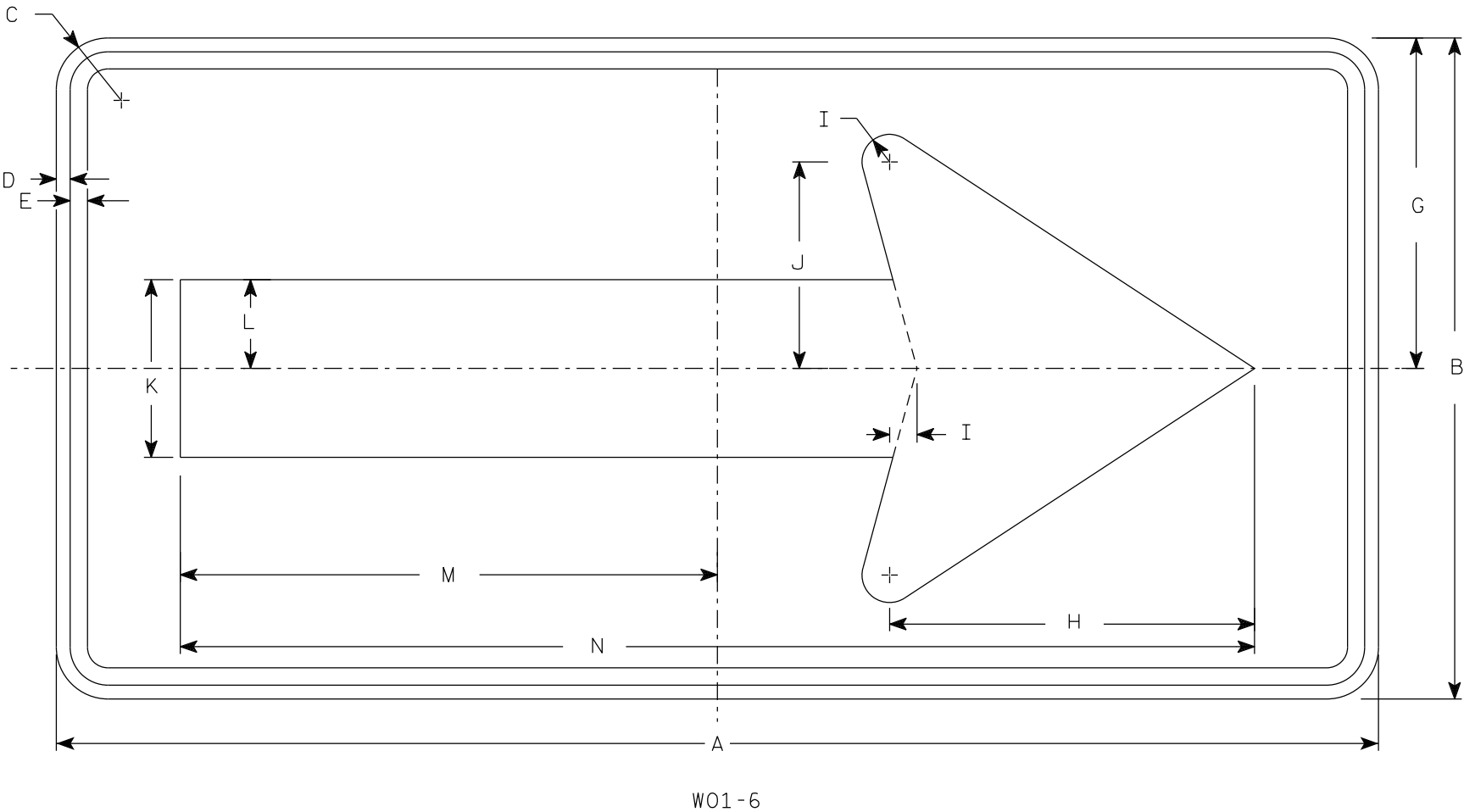
STANDARD SIGN
W01-4

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 1/24/2024 PLATE NO. W01-4.2

7



NOTES

1. Sign is Type II - Type F Reflective
2. Color:
Background - Orange
Message - Black
3. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.

7

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2S	48	24	1 7/8	1/2	5/8		12	13 1/4	1	7 1/2	6 1/2	3 1/4	19 1/2	39													8.0
2M	48	24	1 7/8	1/2	5/8		12	13 1/4	1	7 1/2	6 1/2	3 1/4	19 1/2	39													8.0
3	60	30	1 7/8	1/2	5/8		15	16 1/4	1 1/4	9 1/4	8	4	24 3/8	48 3/4													12.5
4	60	30	1 7/8	1/2	5/8		15	16 1/4	1 1/4	9 1/4	8	4	24 3/8	48 3/4													12.5
5	60	30	1 7/8	1/2	5/8		15	16 1/4	1 1/4	9 1/4	8	4	24 3/8	48 3/4													12.5

STANDARD SIGN

W01-6

WISCONSIN DEPT OF TRANSPORTATION

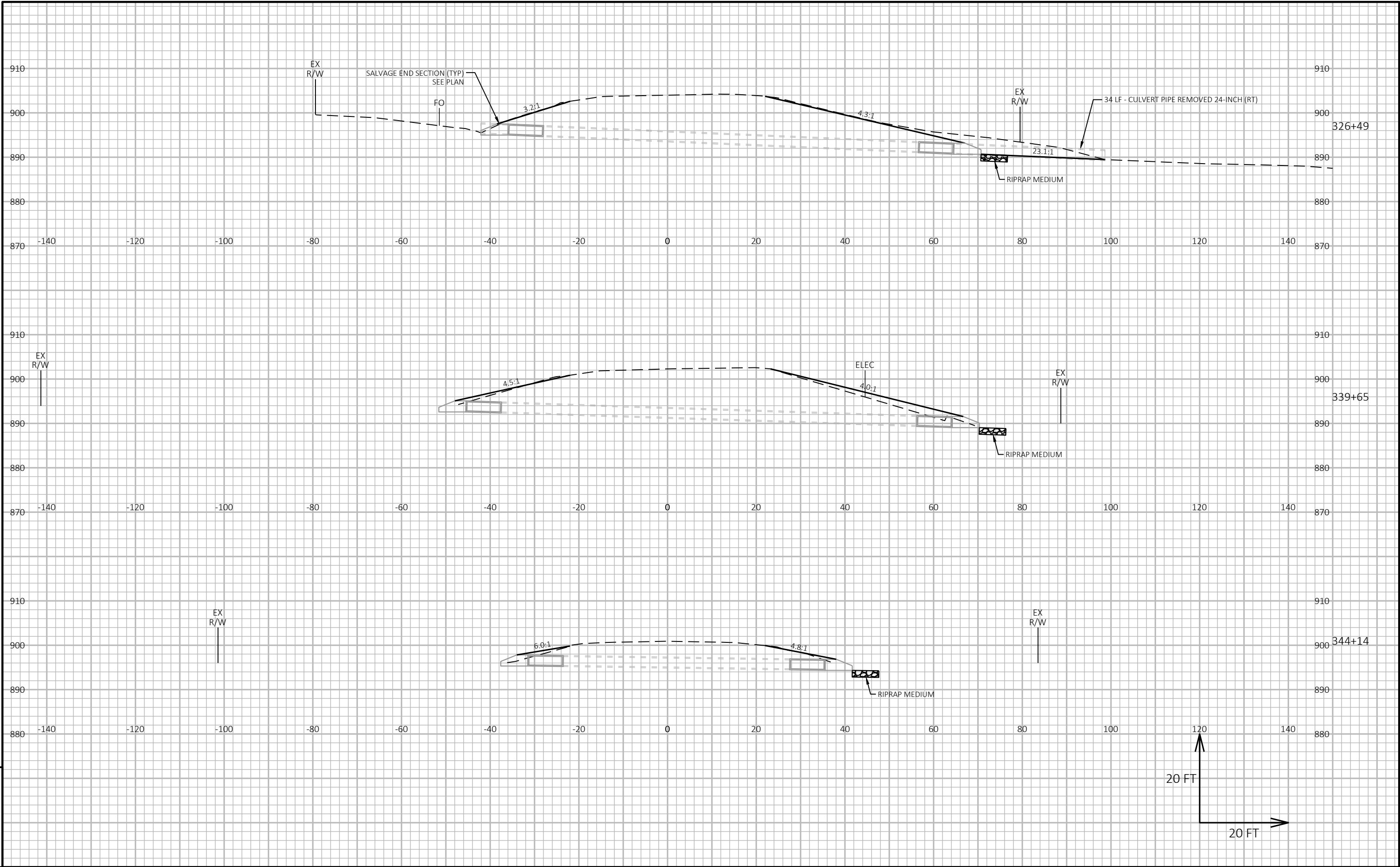
APPROVED

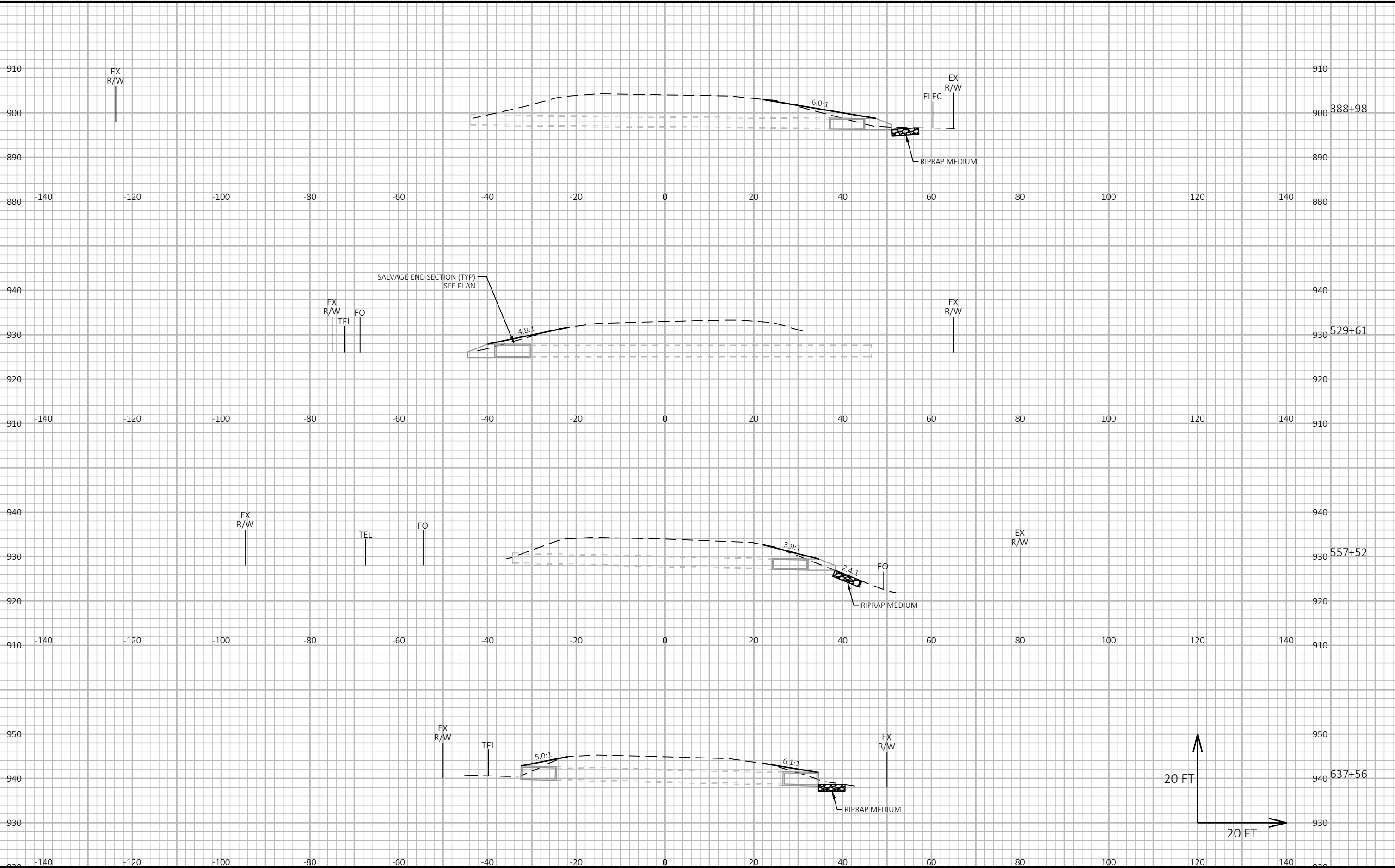
Matthew R. Rauch

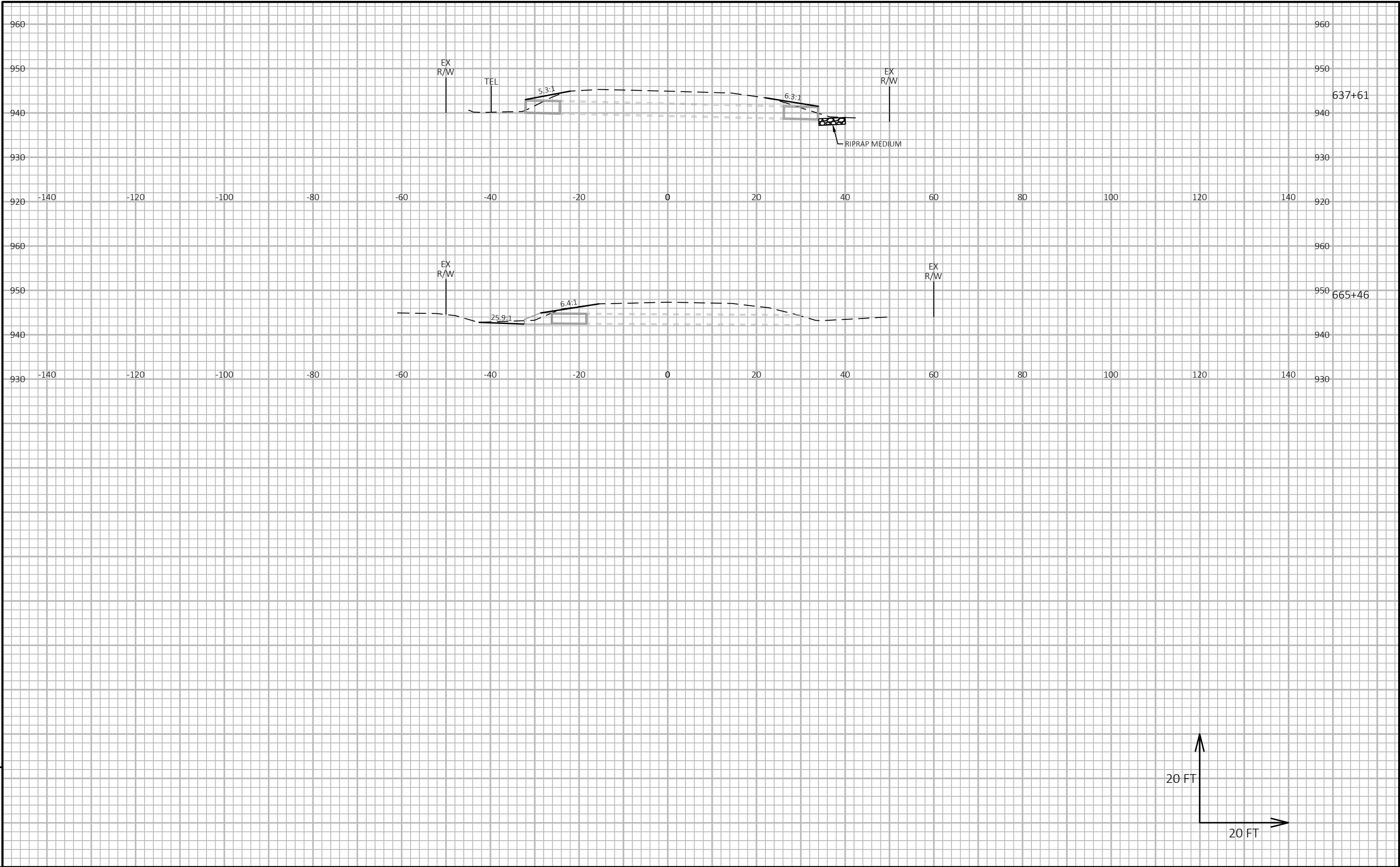
for State Traffic Engineer

DATE 1/24/2024

PLATE NO. W01-6.2

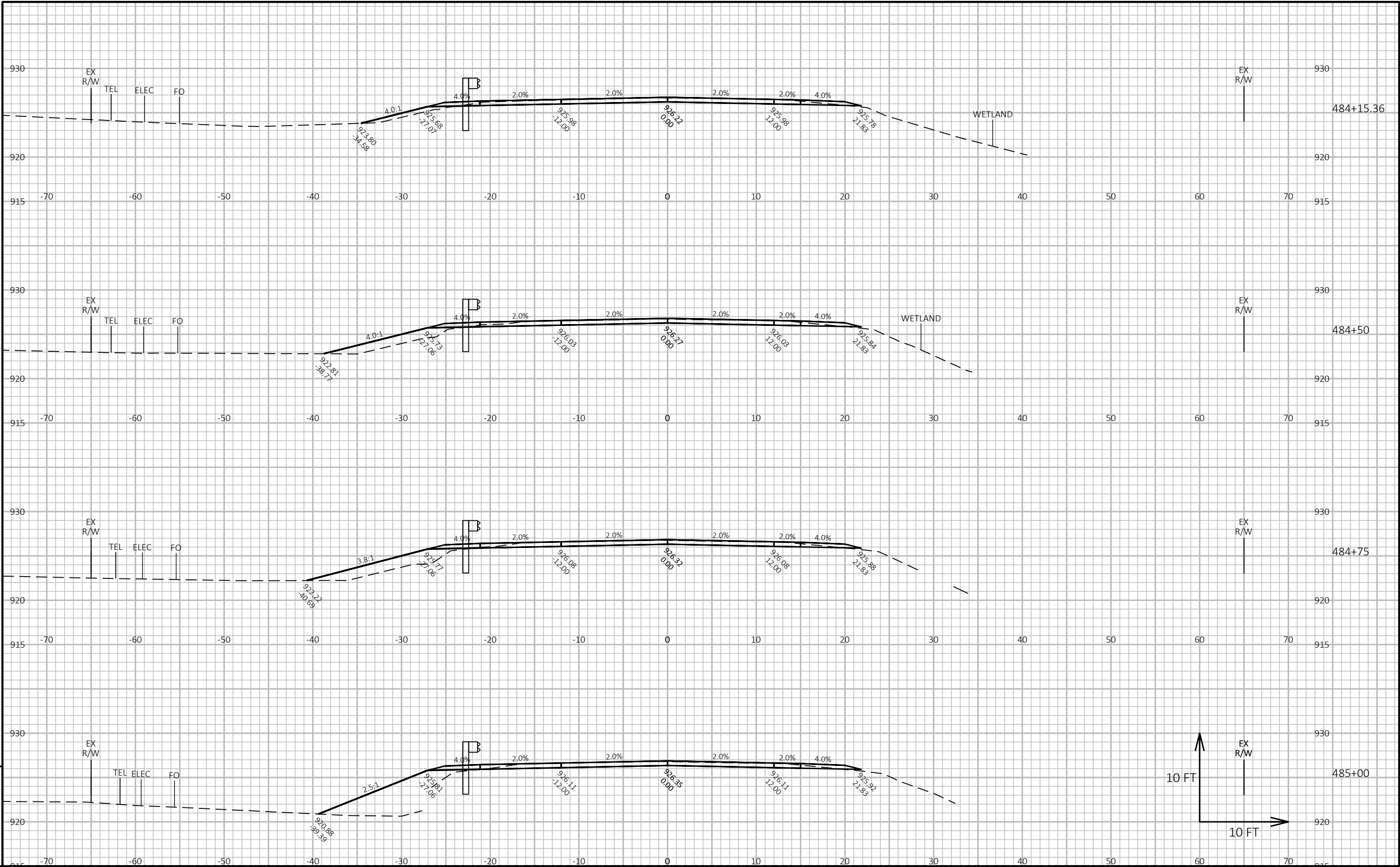


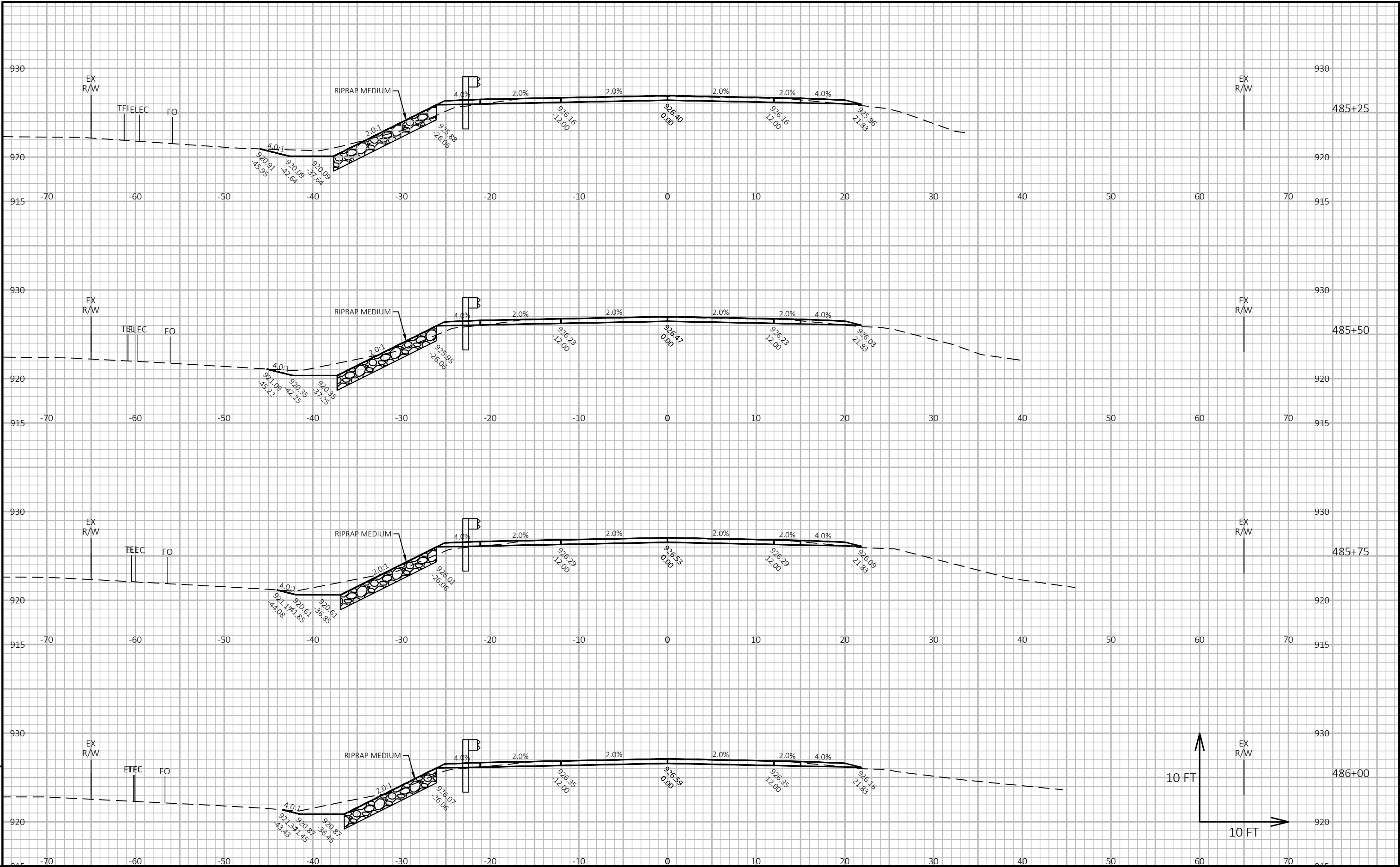


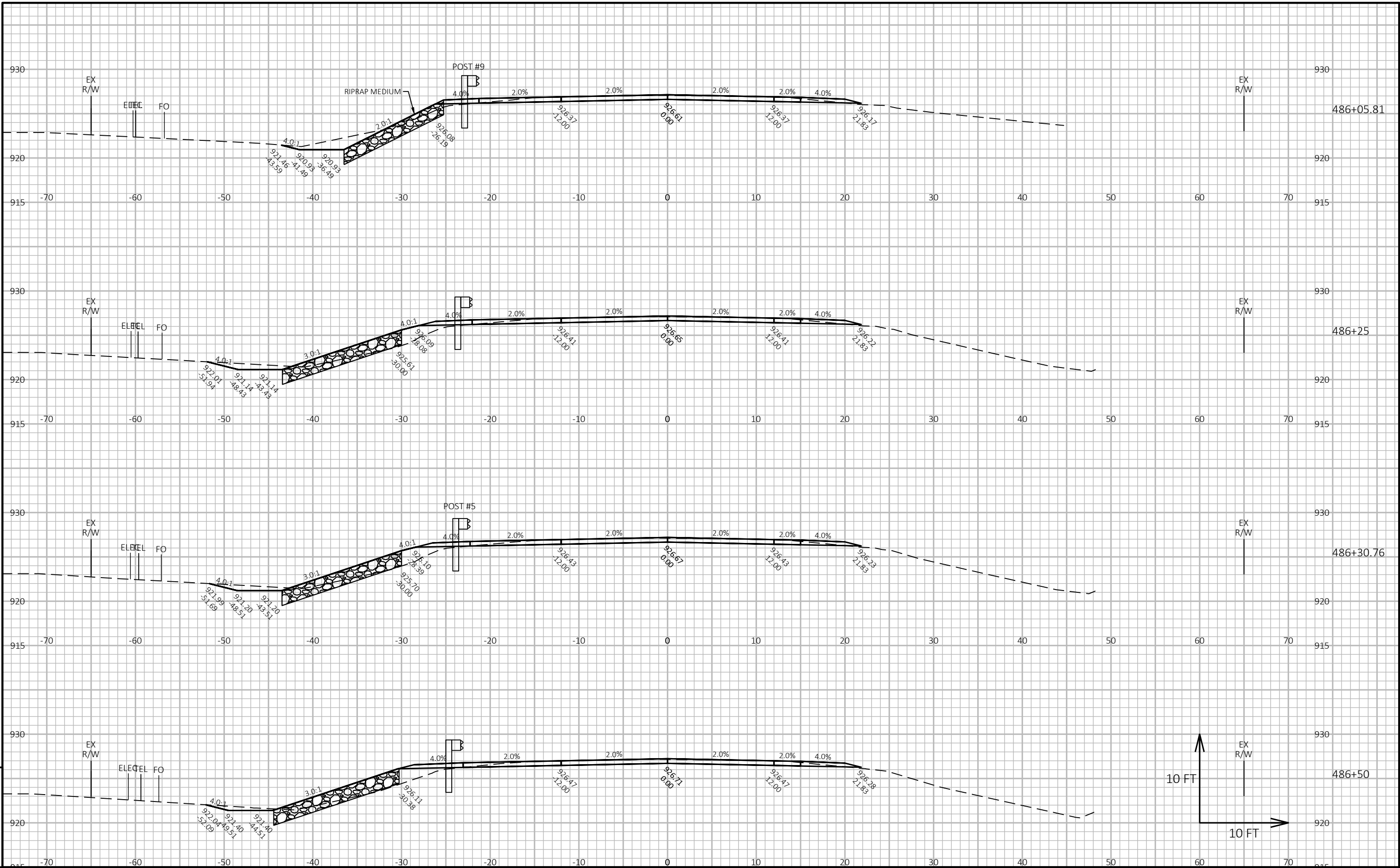


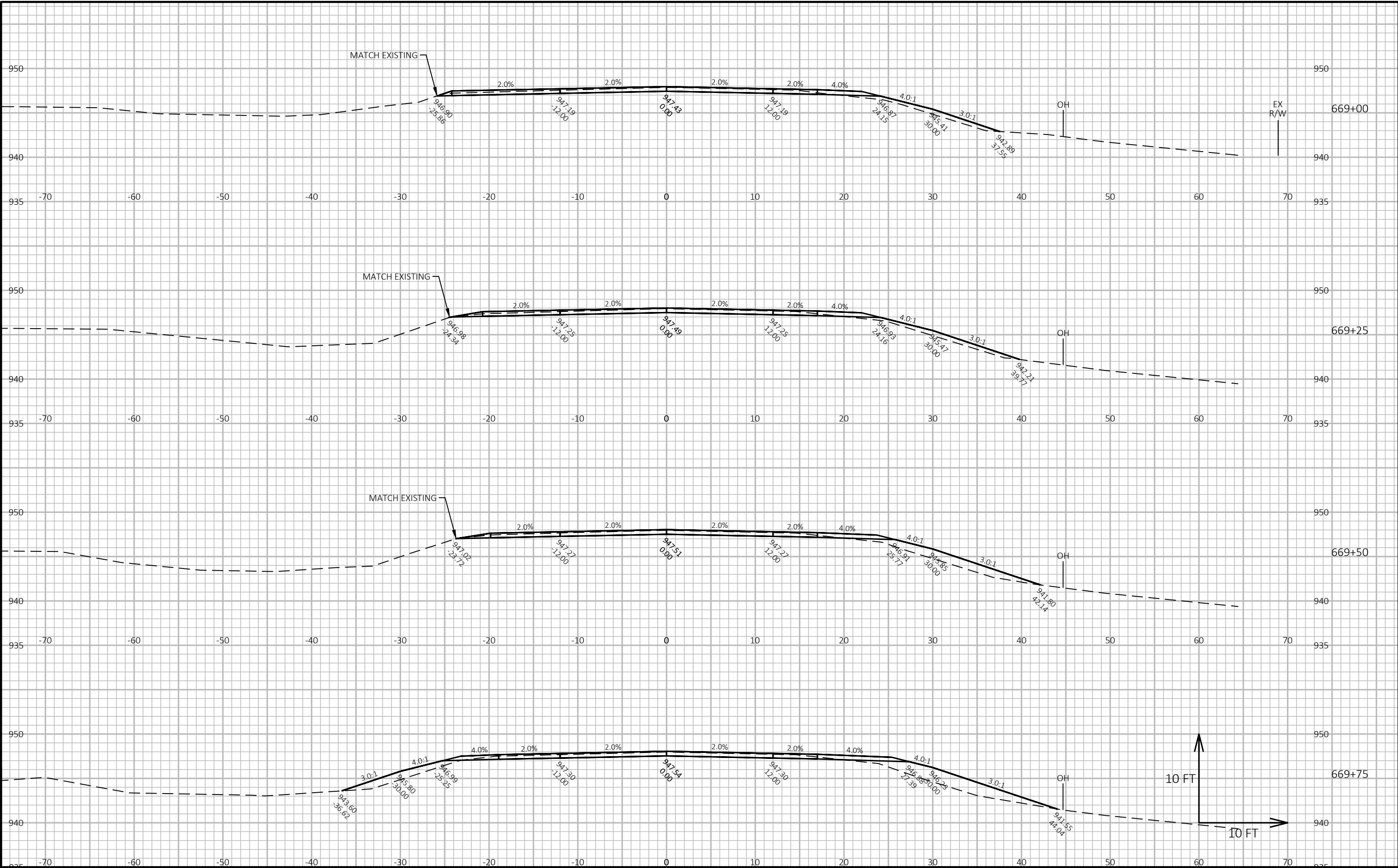
9

9



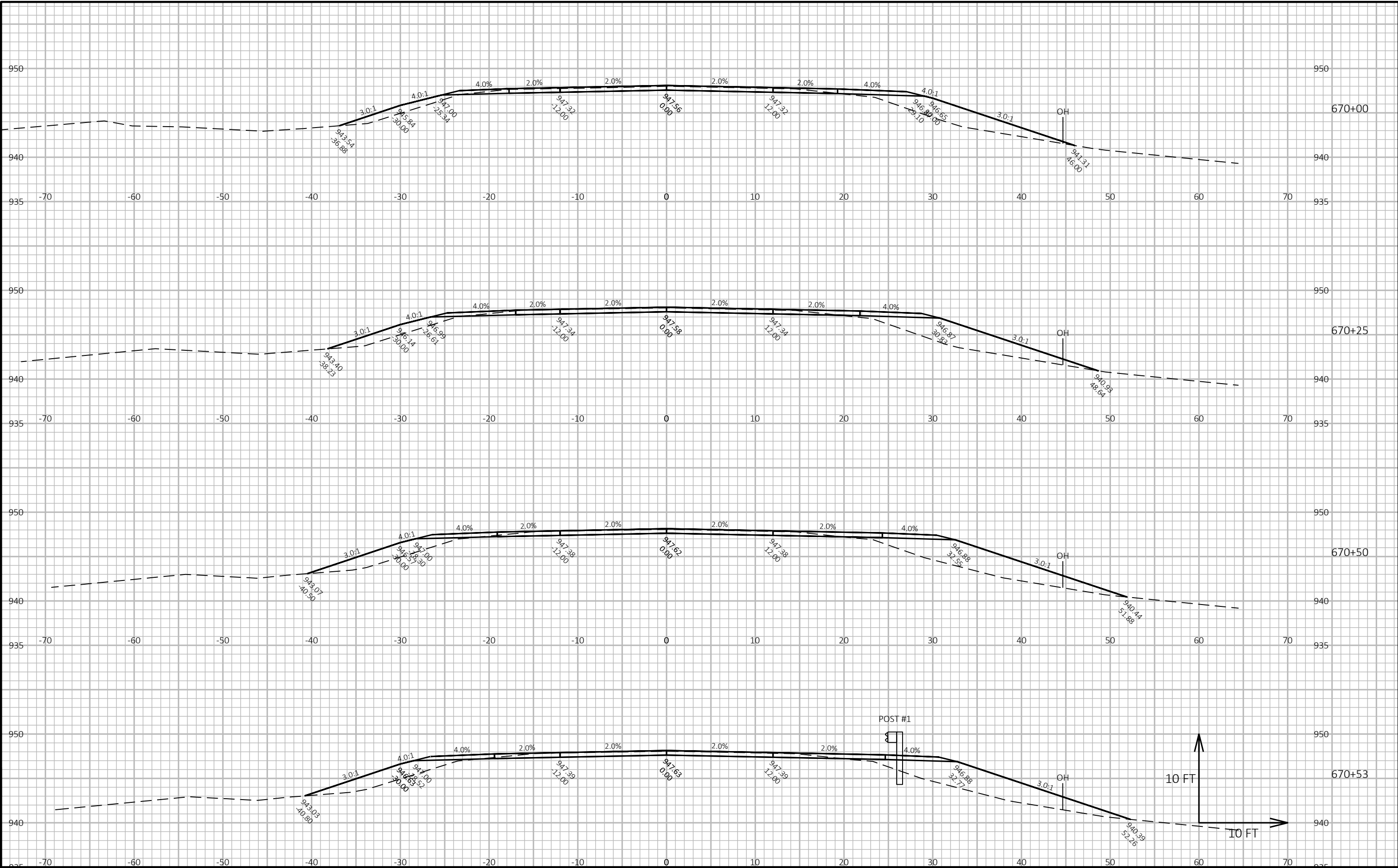


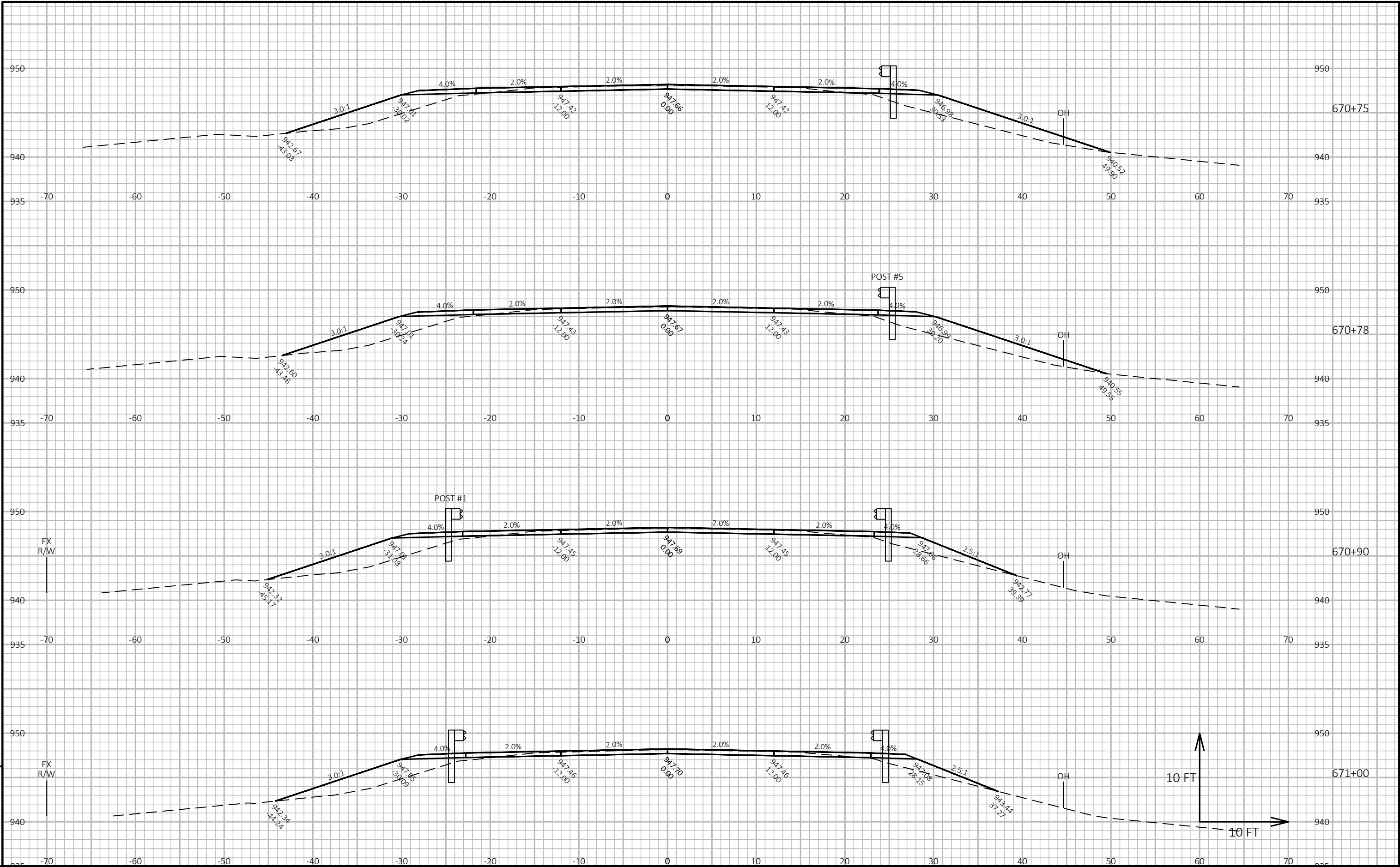


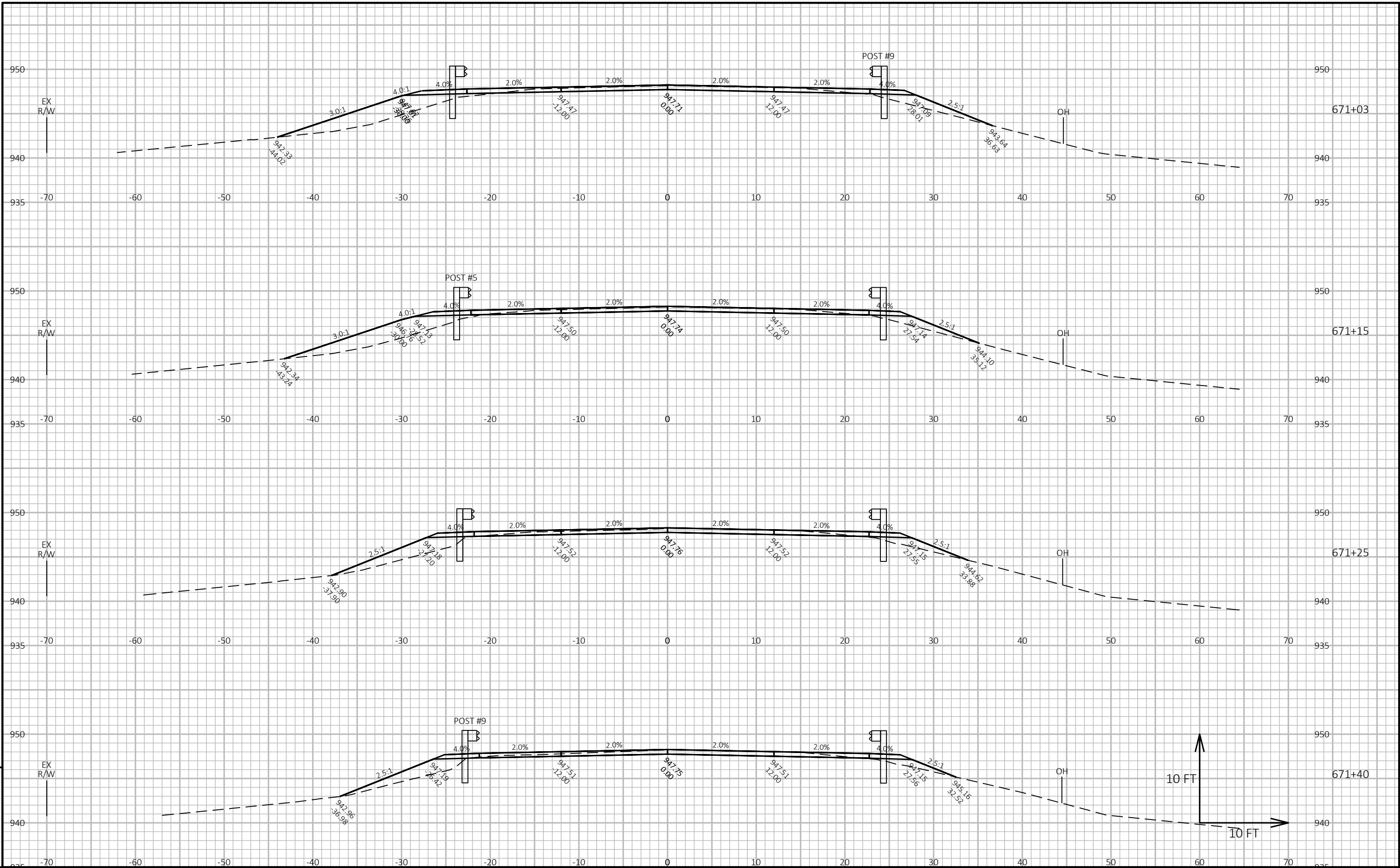


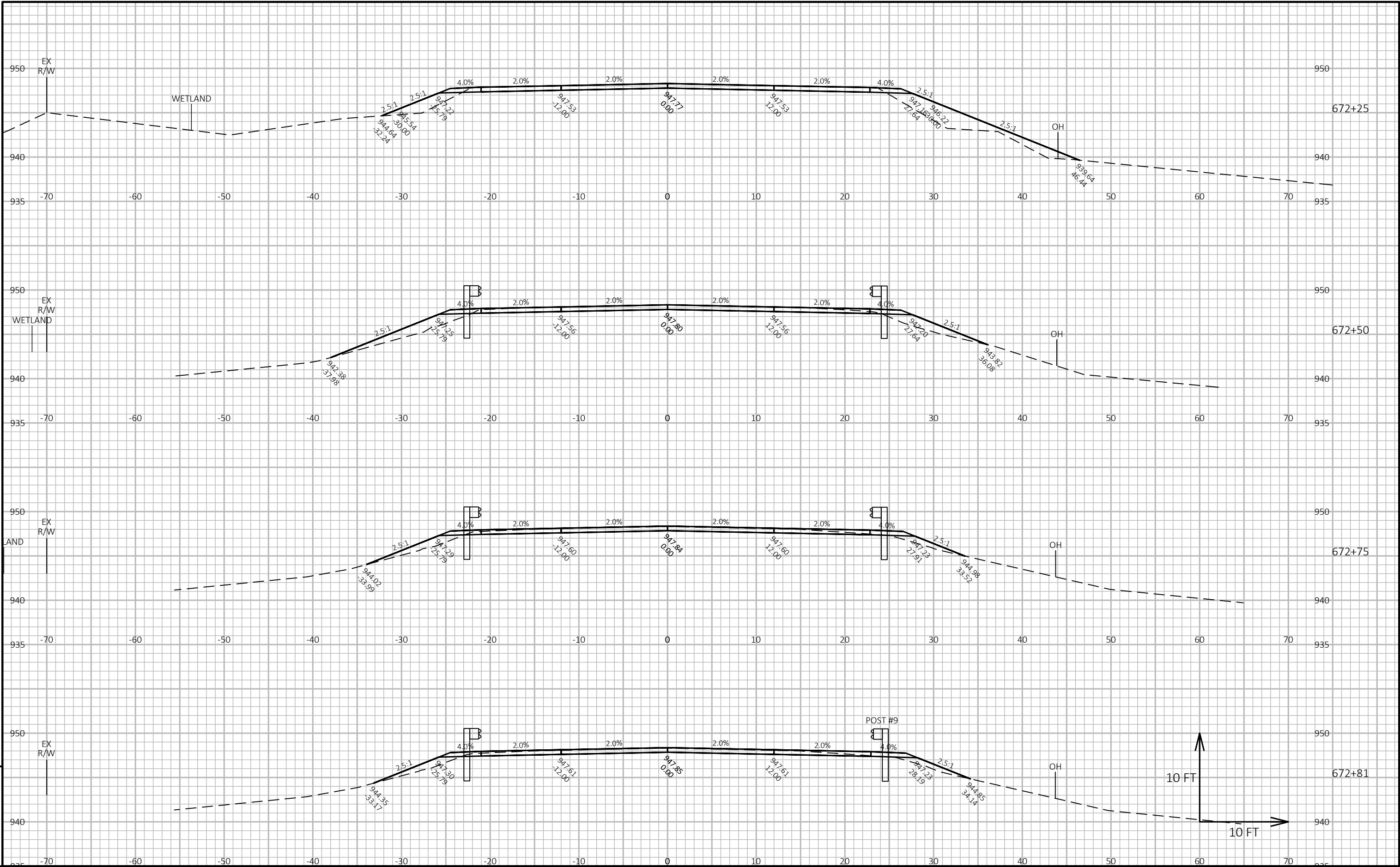
9

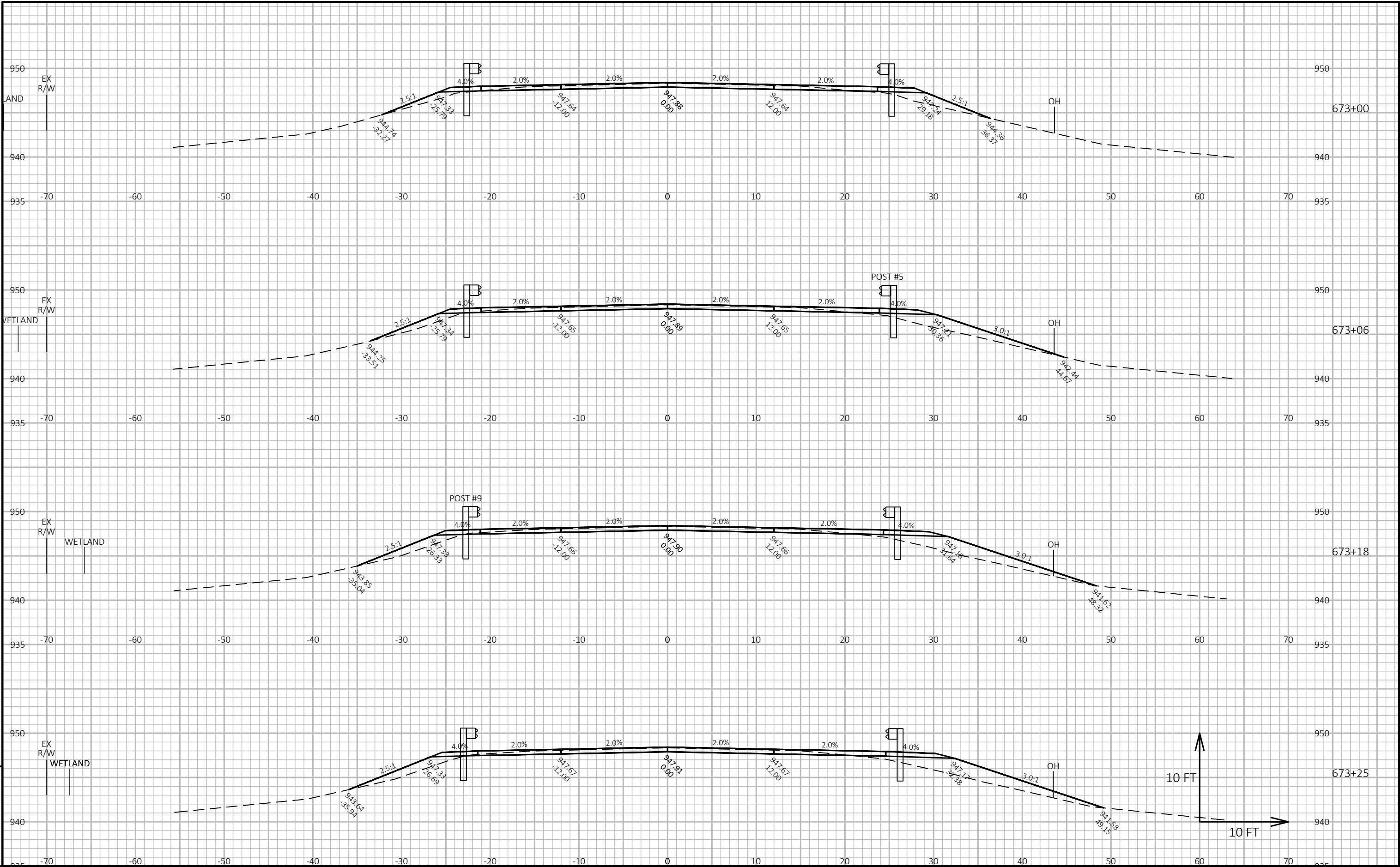
9

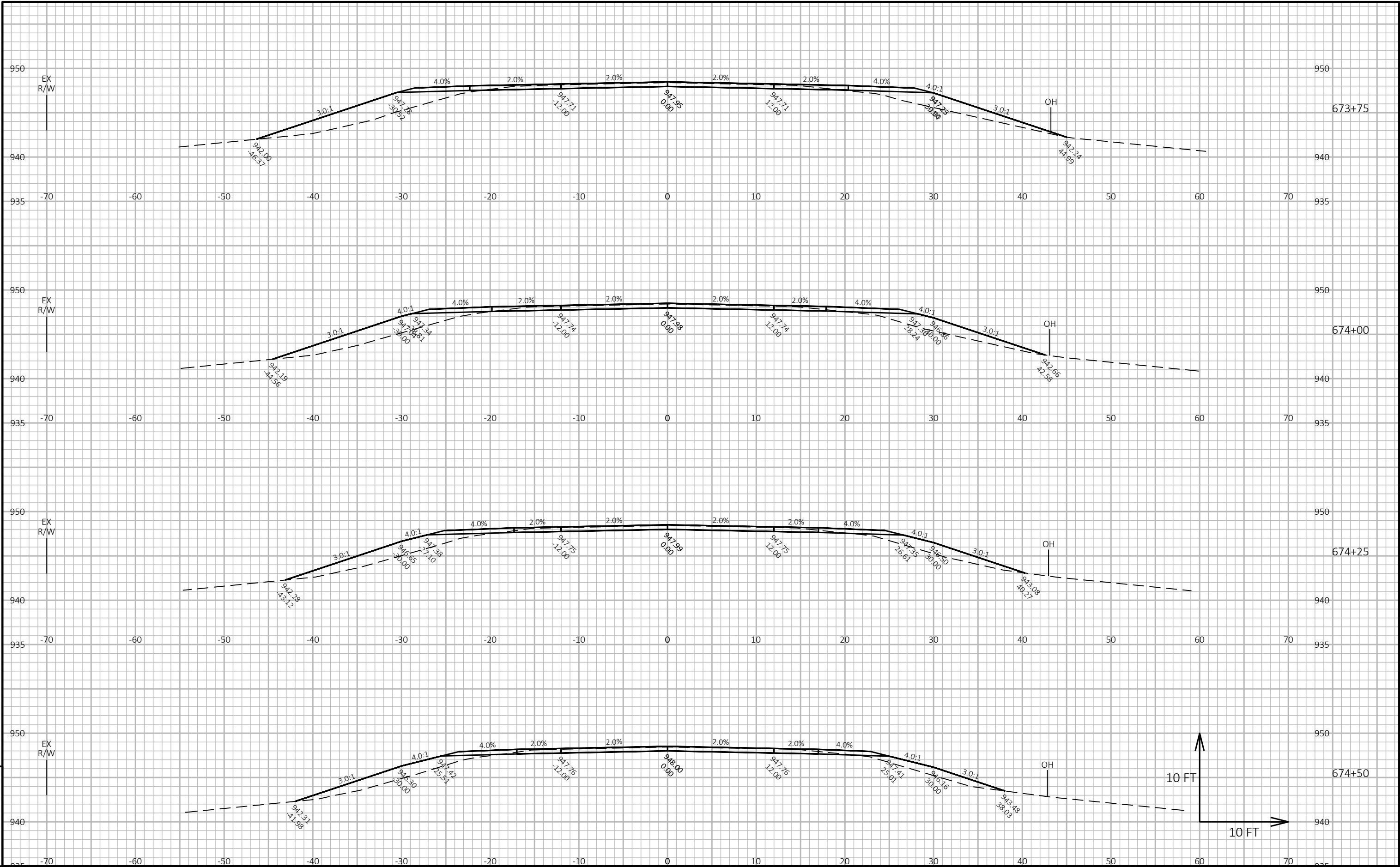


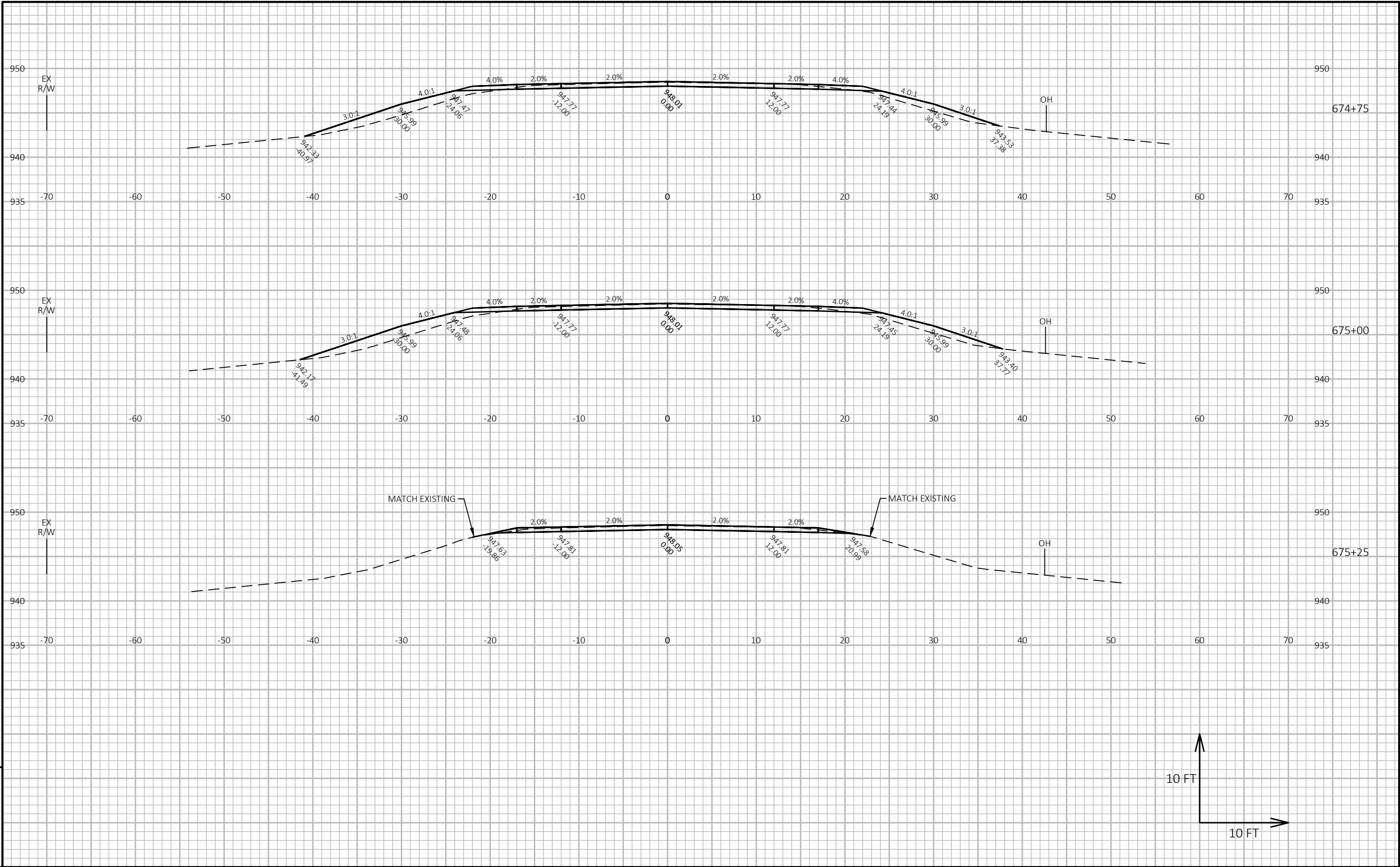


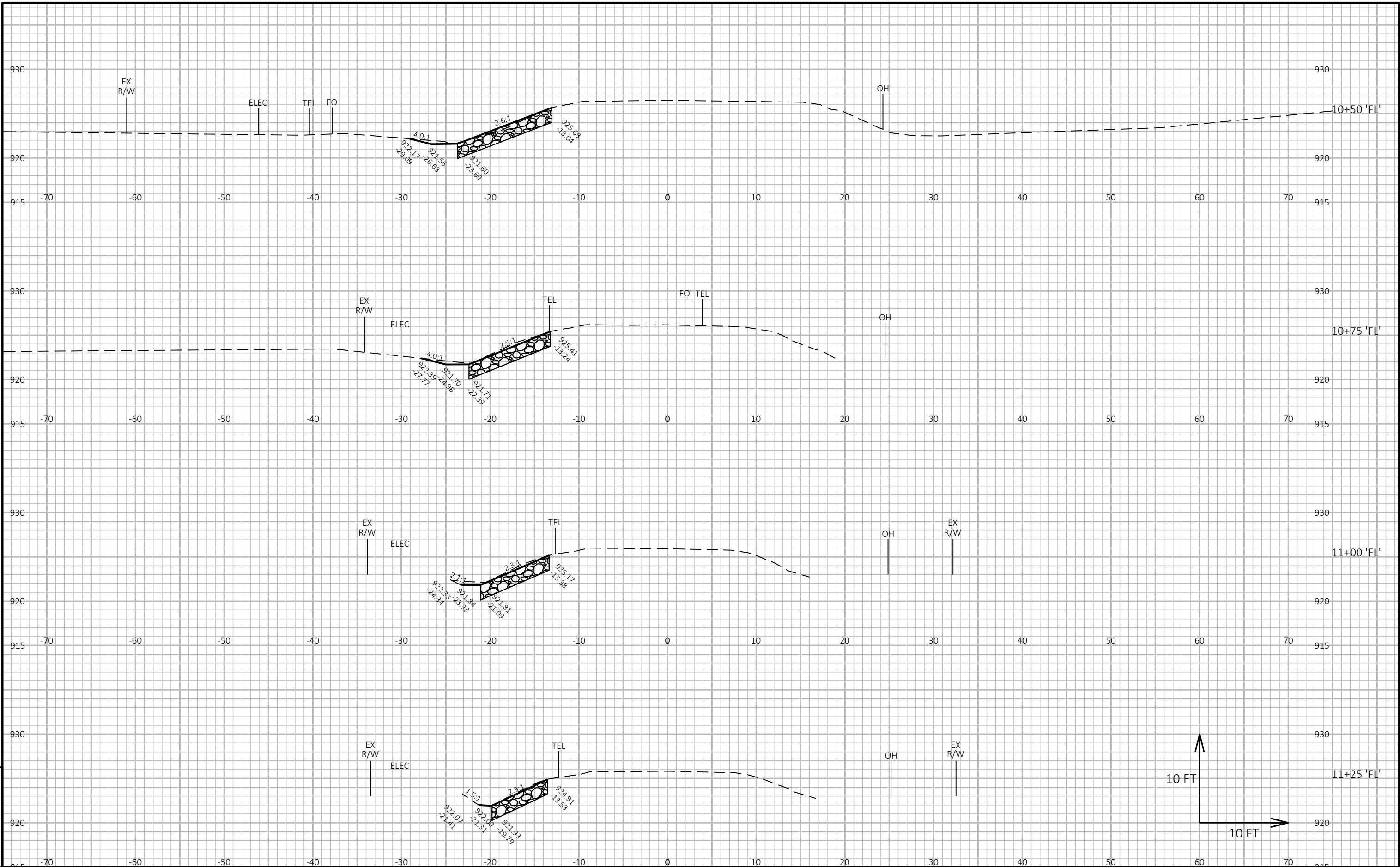


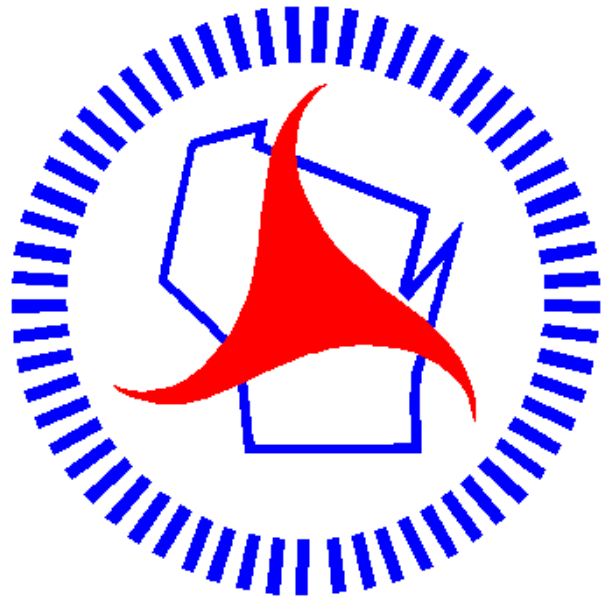












Wisconsin Department of Transportation

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