

STATE PROJECT	FEDERAL PROJECT	
	PROJECT	CONTRACT
1500-71-71	WISC 2023106	1

STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION

PLAN OF PROPOSED IMPROVEMENT

BRILLION - REEDSVILLE

BOX CULVERT C-08-3329 & C-36-0058

USH 10

CALUMET & MANITOWOC COUNTY

STATE PROJECT NUMBER
1500-71-71

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 = **76**



DESIGN DESIGNATION 1500-71-71

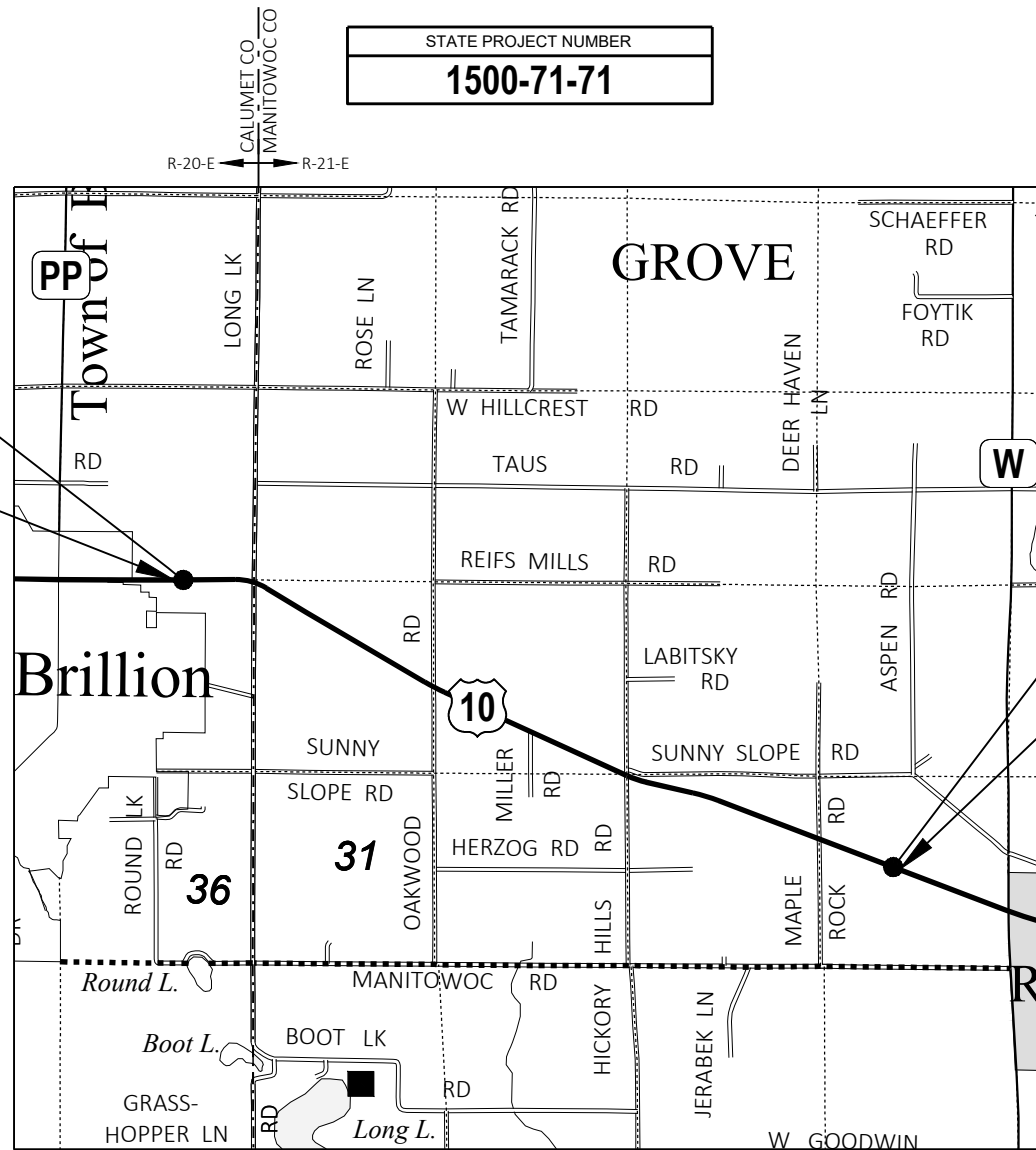
A.A.D.T.	2018	=	6,600
A.A.D.T.	2038	=	7,200
D.H.V.		=	500
D.D.		=	60/40
T.		=	15.0%
DESIGN SPEED		=	60 MPH
ESALS		=	2,800,000

STRUCTURE C-08-3329 (EXISTING)
STRUCTURE C-08-0082 (PROPOSED)

BEGIN PROJECT
STA 306+42.00
Y = 334,195.847
X = 130,28.428

STRUCTURE C-36-0058 (EXISTING)

END PROJECT
STA 523+29.00
Y = 326,233.314
X = 150,213.222



LAYOUT
SCALE 0 1 MI

TOTAL NET LENGTH OF CENTERLINE = 0.15 MI

HORIZONTAL POSITIONS SHOWN ON THIS PLAN ARE WISCONSIN COORDINATE REFERENCE SYSTEM (WISCRS), MANITOWOC 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.

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	

STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
PREPARED BY	NE REGION
Surveyor	T. MAATTA
Designer	B. HAEN
Project Manager	REGIONAL EXAMINER
Regional Examiner	D. SEGERSTROM
Regional Supervisor	
APPROVED FOR THE DEPARTMENT	
DATE: 7/13/22	
	(Signature)

E

PROJECT ID: 1500-71-71

COUNTY: CALUMET & MANITOWOC

GENERAL NOTES

THE LOCATIONS OF EXISTING UTILITY INSTALLATIONS AS SHOWN ON THE PLANS ARE APPROXIMATE. THERE MAY BE OTHER UTILITY INSTALLATIONS WITHIN THE PROJECT AREA THAT ARE NOT SHOWN.

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

EROSION CONTROL FEATURES ARE AT SUGGESTED LOCATIONS AND THE EXACT LOCATION WILL BE DETERMINED BY THE ENGINEER.

STATIONING, DISTANCES AND OFFSETS FOR SIGNS ARE APPROXIMATE AND THE EXACT LOCATIONS OF SIGNS ARE TO BE DETERMINED IN THE FIELD BY THE ENGINEER.

PRIOR TO ORDERING DRAINAGE STRUCTURES, THE CONTRACTOR SHALL VERIFY RELATED DRAINAGE INFORMATION IN THE PLAN WITH THE ENGINEER.

DO NOT FERTILIZE WITHIN 20' OF THE BANKS OF THE TRIBUTARIES TO MUD CREEK AND SPRING CREEK

ORDER OF SECTION 2 DETAIL SHEETS

- GENERAL NOTES
- TYPICAL SECTIONS
- CONSTRUCTION DETAILS
- PLAN DETAILS
- TRAFFIC CONTROL
- DETOUR PLAN
- ALIGNMENT PLAN

DNR LIAISON

MATT SCHAEVE
DNR NORTHEAST REGIONAL HEADQUARTERS
2984 SHAWANO AVE.
GREEN BAY, WI 54313
(920) 366-1544
matthew.schaeve@wisconsin.gov

MANITOWAC COUNTY HIGHWAY COMMISSIONER

GREG GROTEGUT
3500 STATE RD 310
MANITOWOC, WI 54220-2398
920-683-4353

CALUMET COUNTY HIGHWAY COMMISSIONER

BRIAN P. GLAESER
241 E CHESTNUT ST
CHILTON, WI 53014-1554
920-849-1463
GLAESER.BRIAN@CO.CALUMET.WI.US

NE REGION SURVEY COORDINATOR

CORMAC MCINNIS, RLS
944 VANDERPERREN WAY
GREEN BAY, WI 54304
(920)492-5638
cormac.mcinnis@dot.wi.gov

NE REGION DESIGN PROJECT MANAGER

BRIAN HAEN, PE
944 VANDERPERREN WAY
GREEN BAY, WI 54304
(920)366-4788
brian.haen@dot.wi.gov

UTILITIES CONTACTS

COMMUNICATIONS

FRONTIER
BRIAN BEST
208 S MAIN ST
BAILEYVILLE, IL 61007
(815) 541-7576
BBEST@MSCON.COM

SPECTRUM
VINCENT ALBIN
3520 DESTINATION DR
APPLETON, WI 54915
(920) 831-9249
MOBILE (920) 378-0444
VINCE.ALBIN@CHARTER.COM

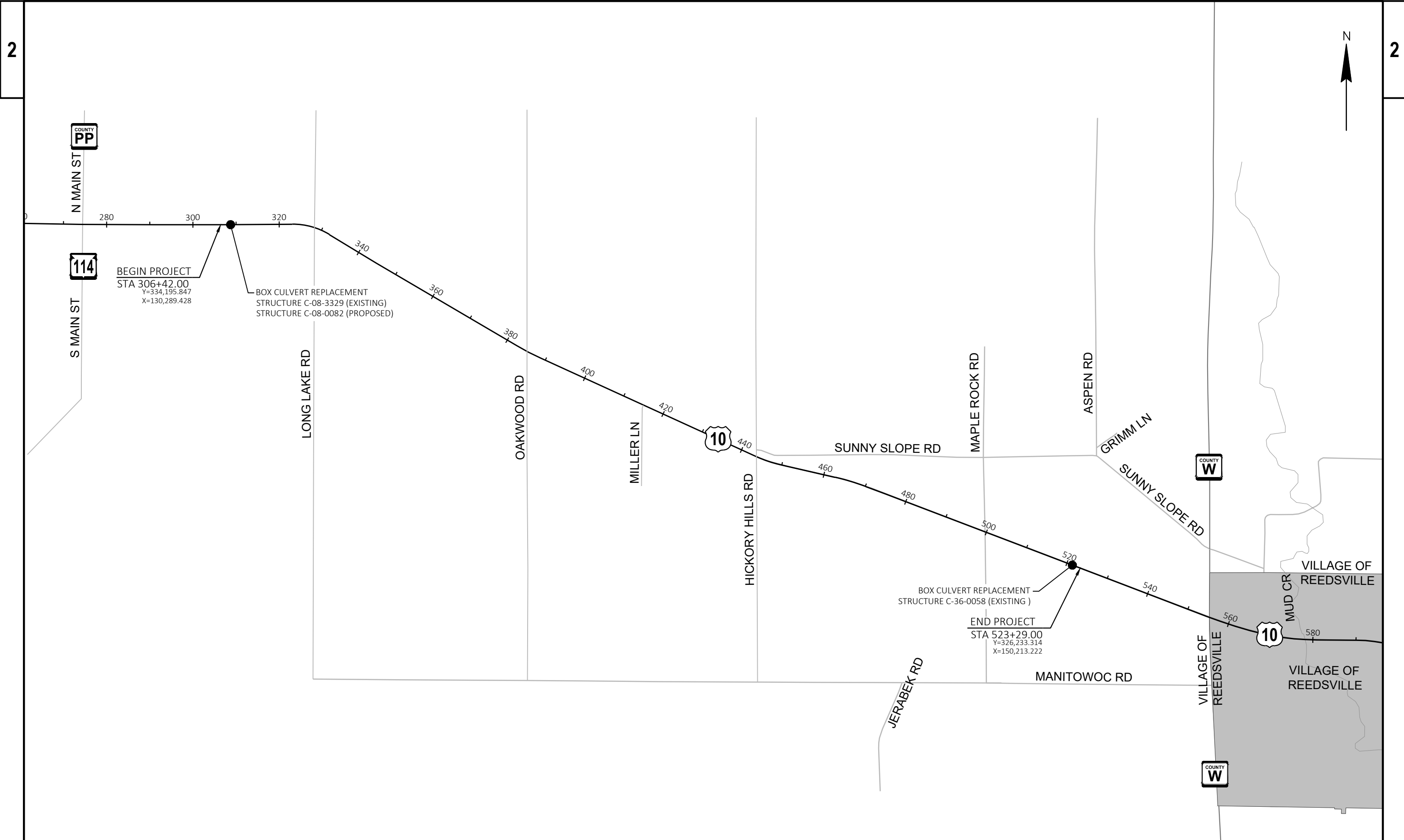
ELECTRICITY
WISCONSIN PUBLIC SERVICE - ELECTRICITY
ROBERT SMITH
P.O. BOX 19001
GREEN BAY, WI 54307-9001
(920) 617-5284
MOBILE (715) 622-0037
ROBERT.SMITH@WISCONSINPUBLICSERVICE.COM

RUNOFF COEFFICIENT TABLE

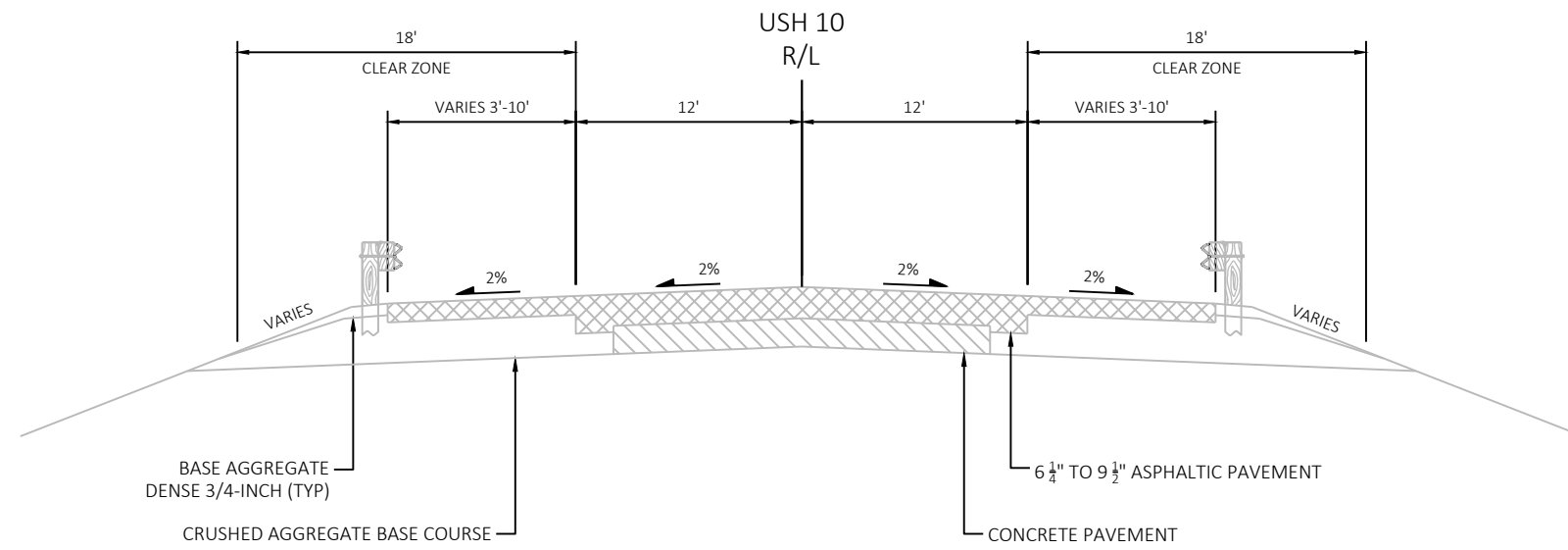
LAND USE:	HYDROLOGIC SOIL GROUP											
	A			B			C			D		
	SLOPE RANGE (PERCENT)			SLOPE RANGE (PERCENT)			SLOPE RANGE (PERCENT)			SLOPE RANGE (PERCENT)		
	0-2	2-6	6 & OVER	0-2	2-6	6 & OVER	0-2	2-6	6 & OVER	0-2	2-6	6 & OVER
ROW CROPS	.08 .22	.16 .30	.22 .38	.12 .26	.20 .34	.27 .44	.15 .30	.24 .37	.33 .50	.19 .34	.28 .41	.38 .56
MEDIAN STRIP-TURF	.19 .24	.20 .26	.24 .30	.19 .25	.22 .28	.26 .33	.20 .26	.23 .30	.30 .37	.20 .27	.25 .32	.30 .40
SIDE SLOPE-TURF			.25 .32			.27 .34			.28 .36			.30 .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 = 1.53 ACRES
TOTAL AREA EXPECTED TO BE DISTURBED BY CONSTRUCTION ACTIVITIES = 0.63 ACRES



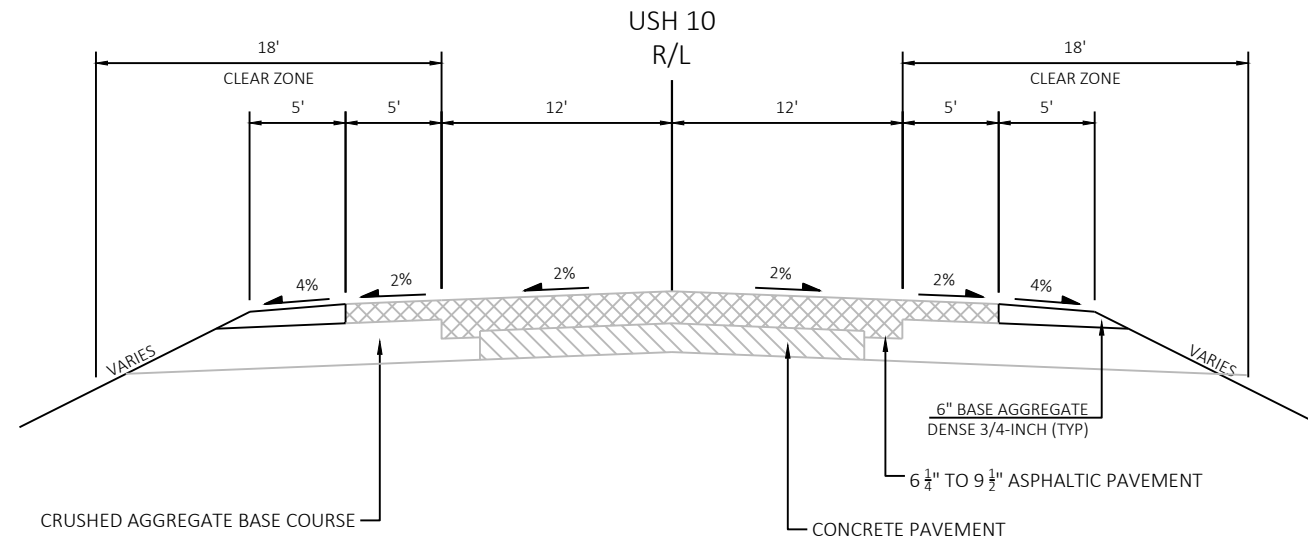


PROJECT NO: 1500-71-71	HWY: USH 10	COUNTY: CALUMET & MANITOWOC	PROJECT OVERVIEW	SHEET	E
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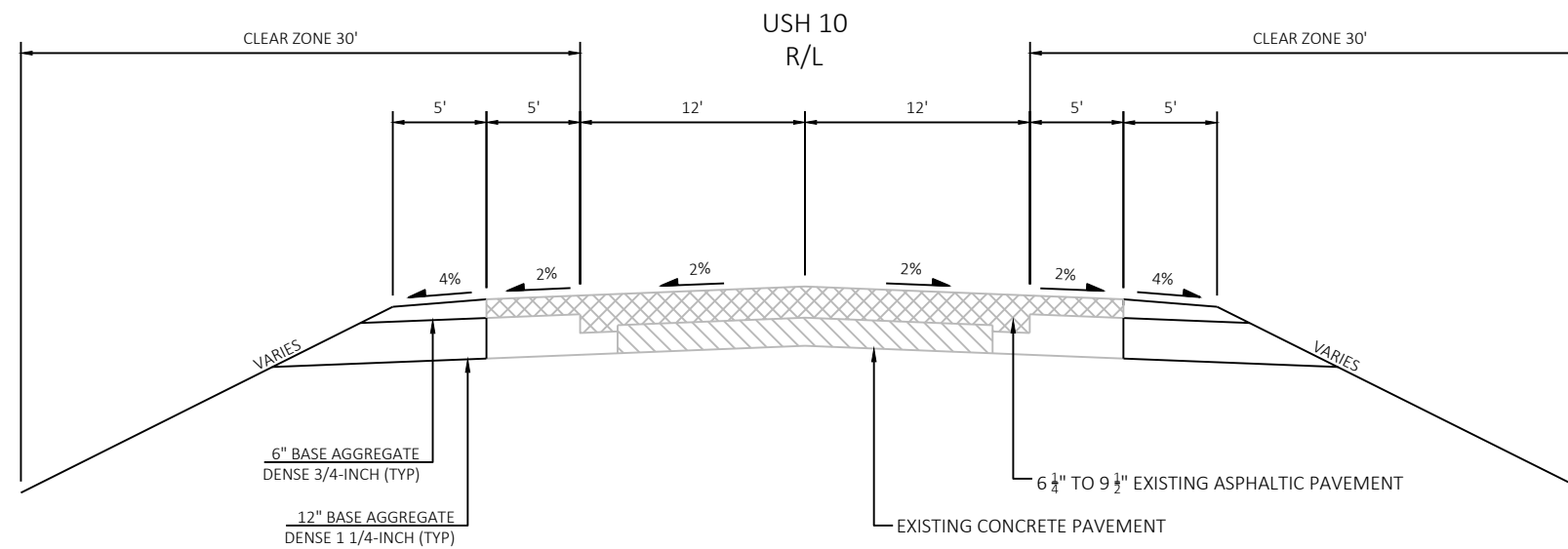
EXISTING TYPICAL SECTION USH 10

STA 306+42 TO STA 310+75
 STA 519+65 TO STA 523+29



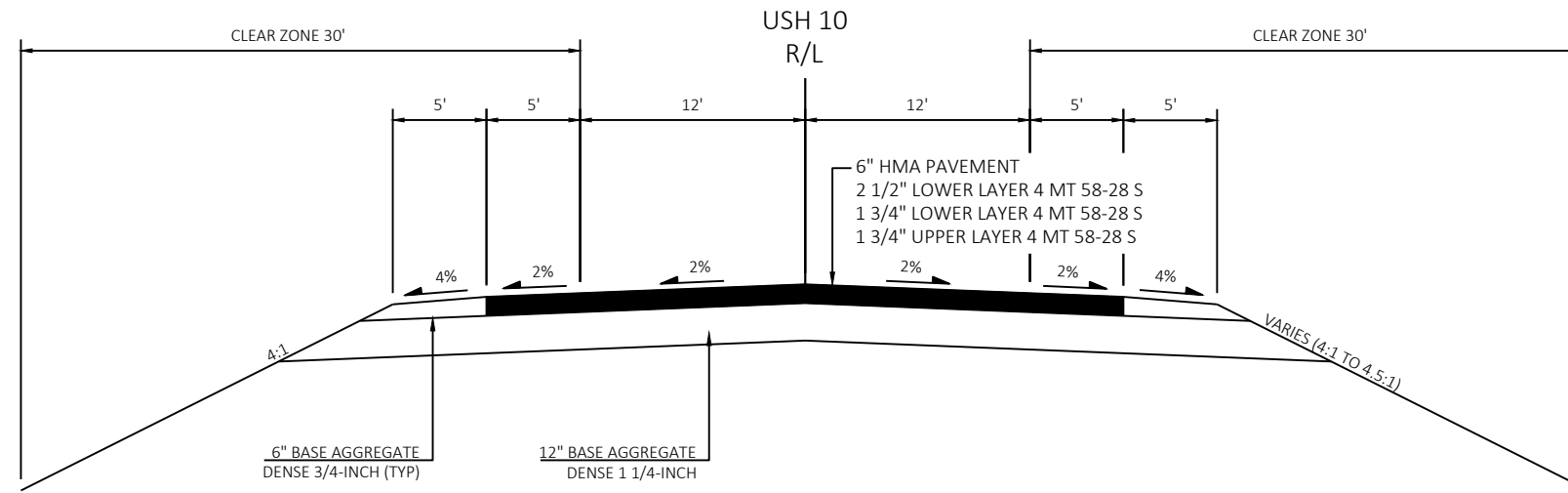
FINISHED TYPICAL SECTION USH 10

STA 306+42 TO STA 307+00
 STA 310+00 TO STA 310+75
 STA 519+65 TO STA 520+50
 STA 523+00 TO STA 523+29

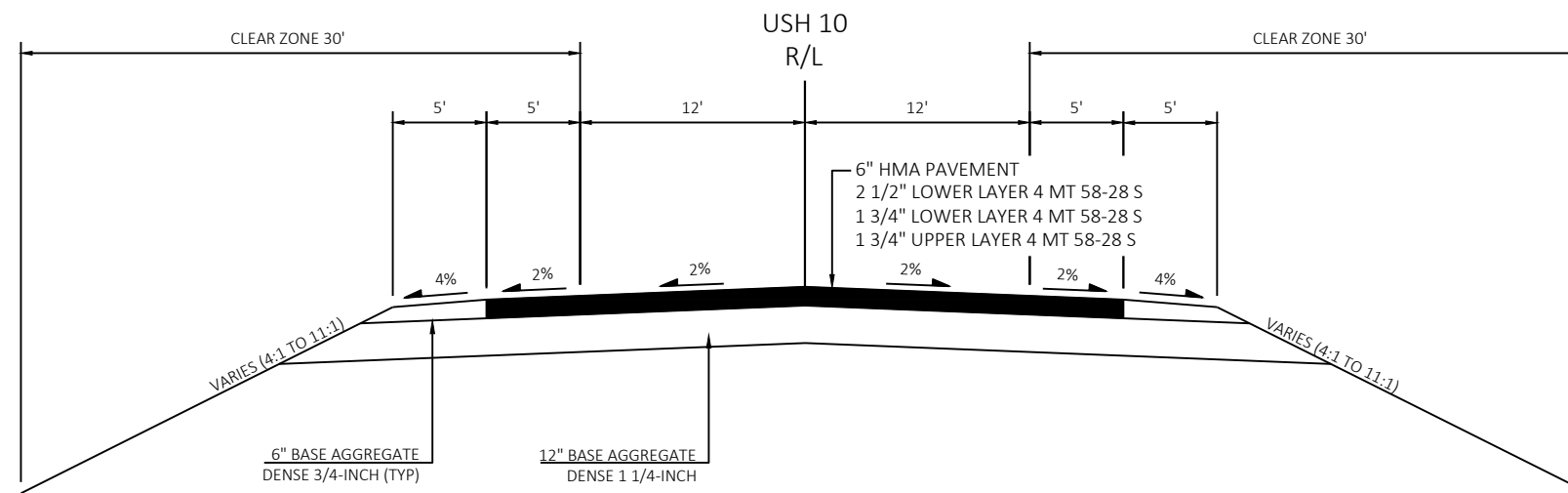


FINISHED TYPICAL SECTION USH 10

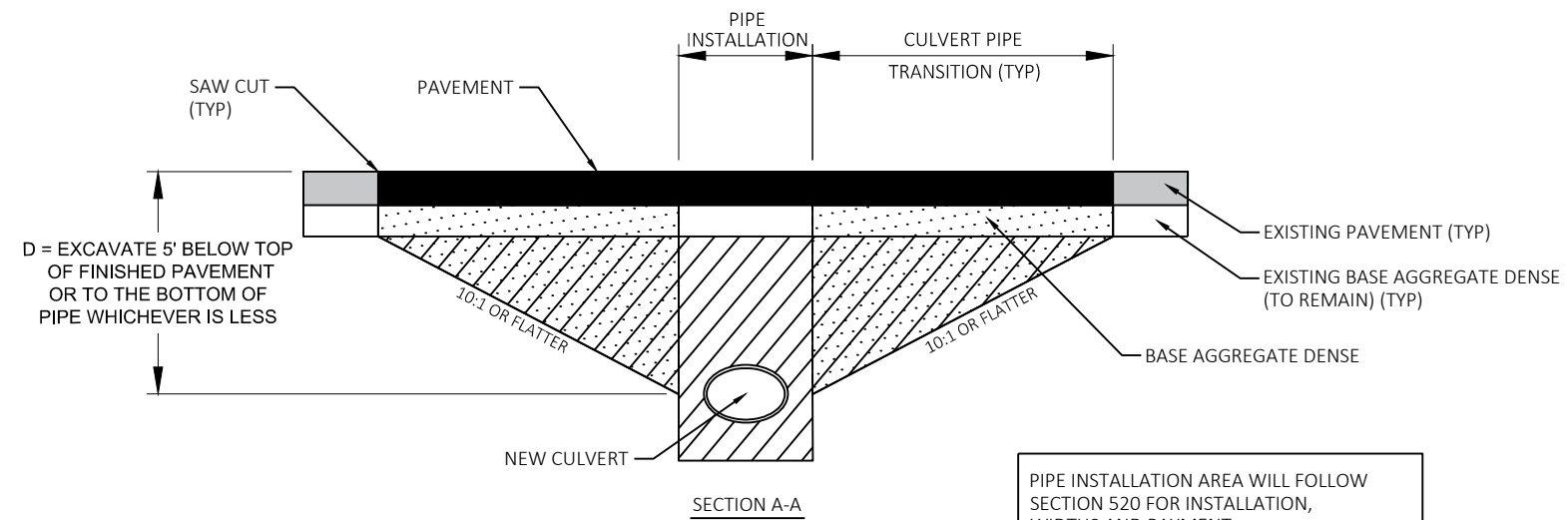
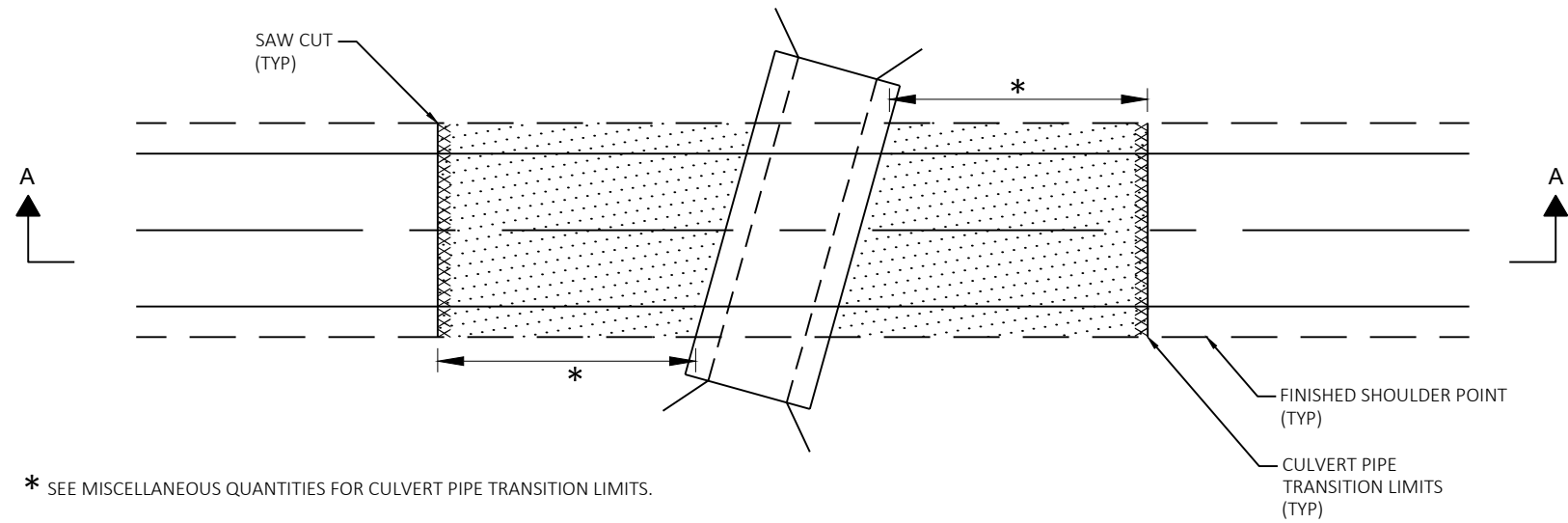
STA 307+00 TO STA 308+10
 STA 309+25 TO STA 310+00
 STA 520+50 TO STA 520+83
 STA 521+83 TO STA 523+00



FINISHED TYPICAL SECTION USH 10
STA 308+10 TO STA 309+25



FINISHED TYPICAL SECTION USH 10
STA 520+83 TO STA 521+83



COMMON EXCAVATION

FOUNDATION BACKFILL

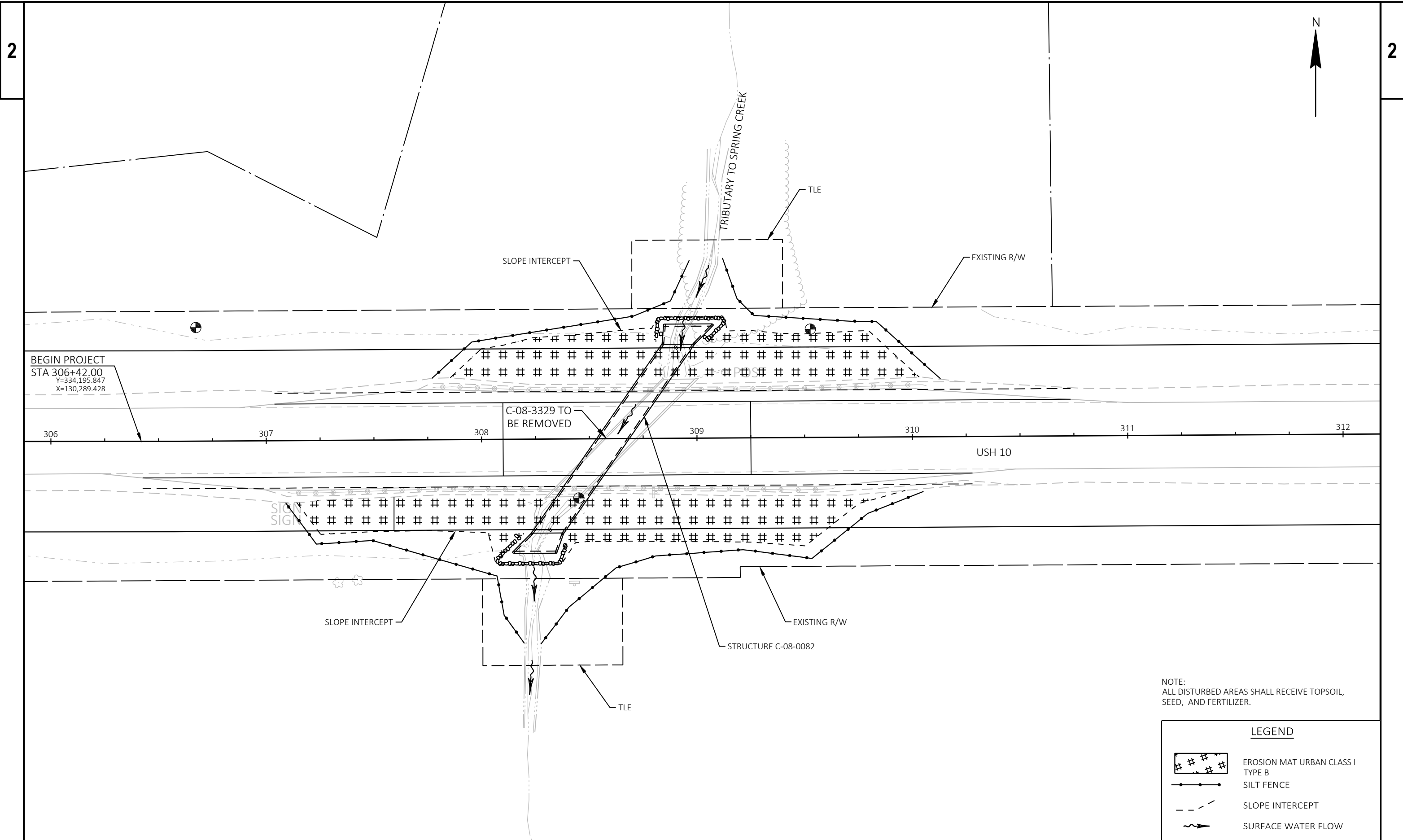
PIPE INSTALLATION AREA WILL FOLLOW SECTION 520 FOR INSTALLATION, WIDTHS AND PAYMENT.

CONSTRUCT TRANSITION PERPENDICULAR TO CULVERT PIPE.

CULVERT PIPE TRANSITION AREAS WILL BE PAID BY COMMON EXCAVATION & SPV FOUNDATION BACKFILL.

PAVEMENT SAW CUT TO BE PERPENDICULAR TO ROADWAY ALIGNMENT.

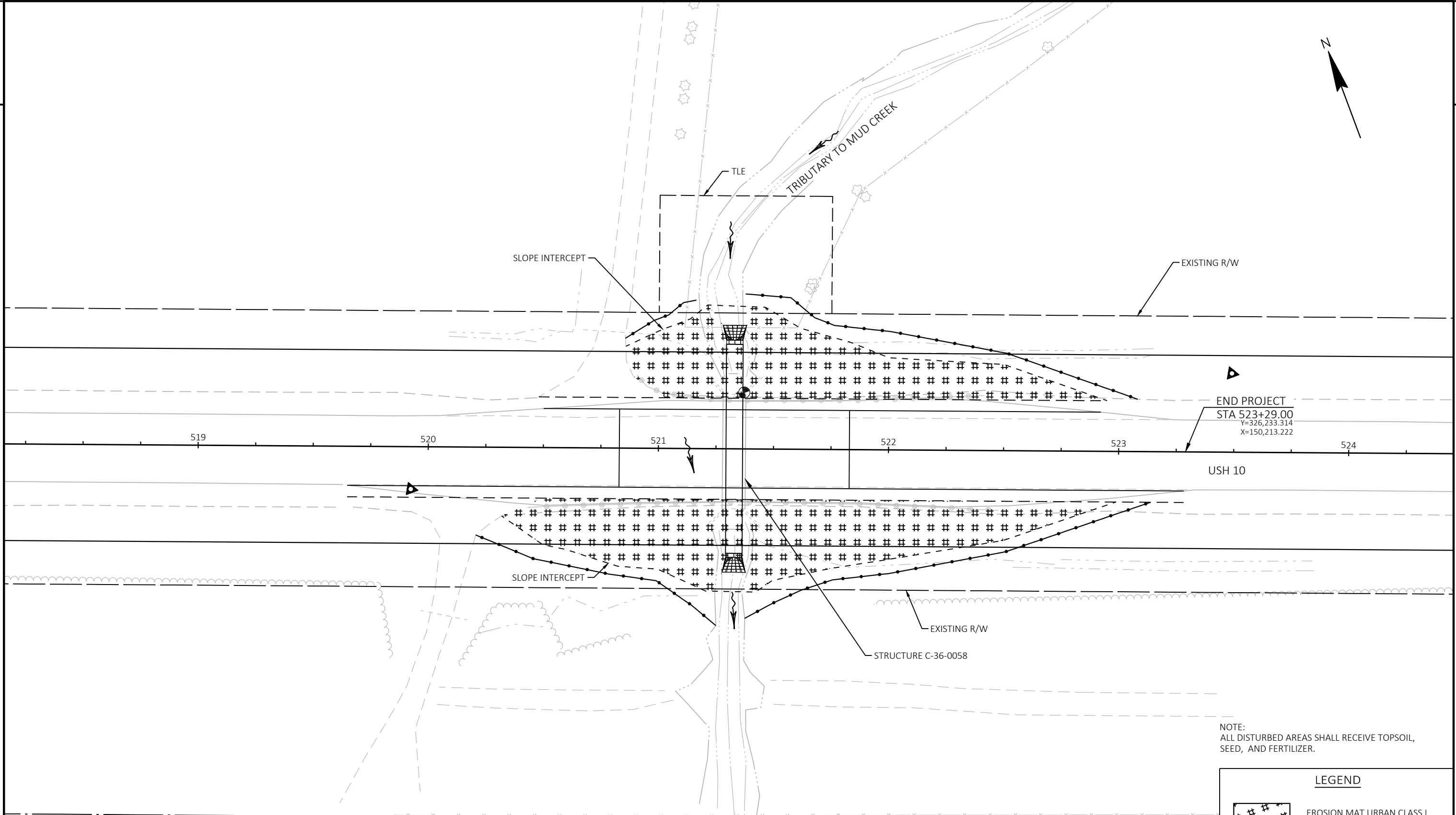
NEW CULVERT PIPES WITH TRANSITION



BEGIN PROJECT
 STA 306+42.00
 Y=334,195.847
 X=130,289.428

NOTE:
 ALL DISTURBED AREAS SHALL RECEIVE TOPSOIL,
 SEED, AND FERTILIZER.

LEGEND	
	EROSION MAT URBAN CLASS I TYPE B
	SILT FENCE
	SLOPE INTERCEPT
	SURFACE WATER FLOW



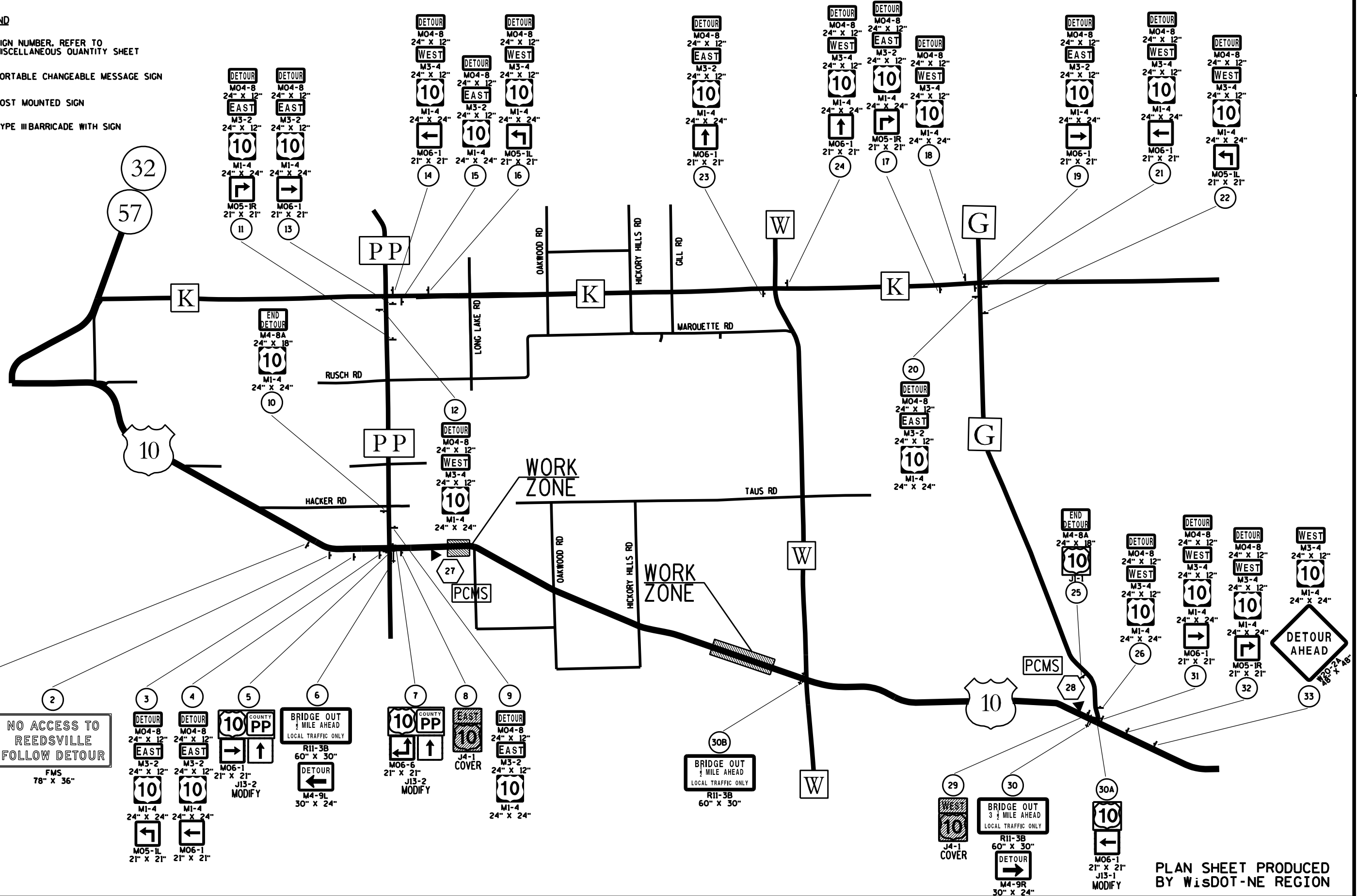
NOTE:
ALL DISTURBED AREAS SHALL RECEIVE TOPSOIL,
SEED, AND FERTILIZER.

LEGEND	
	EROSION MAT URBAN CLASS I TYPE B
	SILT FENCE
	SLOPE INTERCEPT
	SURFACE WATER FLOW

PROJECT NO: 1500-71-71	HWY: USH 10	COUNTY: CALUMET & MANITOWOC	EROSION CONTROL	SHEET	E
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LEGEND

- (X) SIGN NUMBER, REFER TO MISCELLANEOUS QUANTITY SHEET
- PCMS (X) PORTABLE CHANGEABLE MESSAGE SIGN
- POST MOUNTED SIGN
- TYPE III BARRICADE WITH SIGN



PLAN SHEET PRODUCED BY WISDOT-NE REGION

Estimate Of Quantities

1500-71-71

Line	Item	Item Description	Unit	Total	Qty
0002	203.0220	Removing Structure (structure) 01. C-36-0058	EACH	1.000	1.000
0004	203.0220	Removing Structure (structure) 02. C-08-3329	EACH	1.000	1.000
0006	204.0100	Removing Concrete Pavement	SY	478.000	478.000
0008	204.0110	Removing Asphaltic Surface	SY	442.000	442.000
0010	204.0165	Removing Guardrail	LF	844.000	844.000
0012	204.0170	Removing Fence	LF	62.000	62.000
0014	205.0100	Excavation Common	CY	1,100.000	1,100.000
0016	206.2001	Excavation for Structures Culverts (structure) 01. C-08-3329	EACH	1.000	1.000
0018	208.0100	Borrow	CY	849.000	849.000
0020	209.2100	Backfill Granular Grade 2	CY	40.000	40.000
0022	210.2500	Backfill Structure Type B	TON	1,180.000	1,180.000
0024	213.0100	Finishing Roadway (project) 01. 1500-71-71	EACH	1.000	1.000
0026	305.0110	Base Aggregate Dense 3/4-Inch	TON	197.000	197.000
0028	305.0120	Base Aggregate Dense 1 1/4-Inch	TON	1,172.000	1,172.000
0030	311.0115	Breaker Run	CY	90.000	90.000
0032	455.0605	Tack Coat	GAL	82.000	82.000
0034	460.2000	Incentive Density HMA Pavement	DOL	180.000	180.000
0036	460.6224	HMA Pavement 4 MT 58-28 S	TON	281.000	281.000
0038	465.0475	Asphalt Centerline Rumble Strips 2-Lane Rural	LF	215.000	215.000
0040	504.0100	Concrete Masonry Culverts	CY	128.000	128.000
0042	505.0400	Bar Steel Reinforcement HS Structures	LB	19,820.000	19,820.000
0044	505.0600	Bar Steel Reinforcement HS Coated Structures	LB	730.000	730.000
0046	516.0500	Rubberized Membrane Waterproofing	SY	20.000	20.000
0048	606.0100	Riprap Light	CY	24.000	24.000
0050	618.0100	Maintenance And Repair of Haul Roads (project) 01. 1500-71-71	EACH	1.000	1.000
0052	619.1000	Mobilization	EACH	1.000	1.000
0054	624.0100	Water	MGAL	19.000	19.000
0056	625.0500	Salvaged Topsoil	SY	2,773.000	2,773.000
0058	628.1504	Silt Fence	LF	1,569.000	1,569.000
0060	628.1520	Silt Fence Maintenance	LF	1,569.000	1,569.000
0062	628.1905	Mobilizations Erosion Control	EACH	10.000	10.000
0064	628.1910	Mobilizations Emergency Erosion Control	EACH	3.000	3.000
0066	628.2008	Erosion Mat Urban Class I Type B	SY	2,773.000	2,773.000
0068	629.0210	Fertilizer Type B	CWT	2.000	2.000
0070	630.0120	Seeding Mixture No. 20	LB	75.000	75.000
0072	630.0500	Seed Water	MGAL	86.000	86.000
0074	633.5200	Markers Culvert End	EACH	2.000	2.000
0076	634.0616	Posts Wood 4x6-Inch X 16-FT	EACH	3.000	3.000
0078	638.2102	Moving Signs Type II	EACH	2.000	2.000
0080	638.3000	Removing Small Sign Supports	EACH	3.000	3.000
0082	642.5001	Field Office Type B	EACH	1.000	1.000
0084	643.0420	Traffic Control Barricades Type III	DAY	1,200.000	1,200.000
0086	643.0705	Traffic Control Warning Lights Type A	DAY	2,040.000	2,040.000
0088	643.0900	Traffic Control Signs	DAY	6,555.000	6,555.000
0090	643.0920	Traffic Control Covering Signs Type II	EACH	2.000	2.000
0092	643.1000	Traffic Control Signs Fixed Message	SF	19.500	19.500
0094	643.1050	Traffic Control Signs PCMS	DAY	14.000	14.000
0096	643.5000	Traffic Control	EACH	1.000	1.000
0098	645.0105	Geotextile Type C	SY	300.000	300.000

Estimate Of Quantities

1500-71-71

Line	Item	Item Description	Unit	Total	Qty
0100	645.0130	Geotextile Type R	SY	80.000	80.000
0102	646.1020	Marking Line Epoxy 4-Inch	LF	554.000	554.000
0104	650.4500	Construction Staking Subgrade	LF	215.000	215.000
0106	650.5000	Construction Staking Base	LF	215.000	215.000
0108	650.6000	Construction Staking Pipe Culverts	EACH	1.000	1.000
0110	650.6501	Construction Staking Structure Layout (structure) 01. C-08-0082	EACH	1.000	1.000
0112	650.9911	Construction Staking Supplemental Control (project) 01. 1500-71-71	EACH	1.000	1.000
0114	650.9920	Construction Staking Slope Stakes	LF	985.000	985.000
0116	690.0150	Sawing Asphalt	LF	1,106.000	1,106.000
0118	690.0250	Sawing Concrete	LF	80.000	80.000
0120	715.0502	Incentive Strength Concrete Structures	DOL	768.000	768.000
0122	ASP.1T0A	On-the-Job Training Apprentice at \$5.00/HR	HRS	100.000	100.000
0124	ASP.1T0G	On-the-Job Training Graduate at \$5.00/HR	HRS	100.000	100.000
0126	SPV.0035	Special 01. Foundation Backfill	CY	287.000	287.000
0128	SPV.0060	Special 01. Apron Endwalls for Culvert Pipe Reinforced Concrete HE 72x113-Inch	EACH	2.000	2.000
0130	SPV.0060	Special 02. Temporary Water Diversion Tributary to Spring Creek Station 308+65	EACH	1.000	1.000
0132	SPV.0060	Special 03. Temporary Water Diversion Tributary to Mud Creek Station 521+30	EACH	1.000	1.000
0134	SPV.0090	Special 01. Culvert Pipe Reinforced HE Class HE-III 72x113-Inch	LF	86.000	86.000

REMOVING STRUCTURE

203.0220.01
REMOVING
STRUCTURE
(STRUCTURE) (01.
C-36-0058)

CATEGORY	STATION	TO	STATION	LOCATION	EACH	REMARKS
0020	520+83	-	521+83	USH 10	1	STRUCTURE C-36-0058
TOTAL					<u>1</u>	

REMOVING CONCRETE PAVEMENT

204.0100
REMOVING
CONCRETE
PAVEMENT

CATEGORY	STATION	TO	STATION	LOCATION	SY	REMARKS
0010	308+10	-	309+25	USH 10	256	
0010	520+83	-	521+83	USH 10	222	
TOTAL					<u>478</u>	

REMOVING GUARDRAIL

204.0165
REMOVING
GUARDRAIL

CATEGORY	STATION	TO	STATION	LOCATION	LF	REMARKS
0010	307+10	-	309+64	USH 10 RT	255	
0010	307+77	-	310+07	USH 10 LT	230	
0010	520+43	-	522+48	USH 10 RT	205	
0010	520+91	-	522+42	USH 10 LT	154	
TOTAL					<u>844</u>	

REMOVING ASPHALTIC SURFACE

CATEGORY	STATION	TO	STATION	LOCATION	204.0110 REMOVING ASPHALTIC SURFACE SY	REMARKS
0010	306+43	-	308+10	USH 10 RT	84	
0010	307+04	-	308+10	USH 10 LT	49	
0010	309+25	-	310+28	USH 10 RT	44	
0010	309+25	-	310+74	USH 10 LT	64	
0010	519+65	-	520+83	USH 10 RT	81	
0010	520+51	-	520+83	USH 10 LT	10	
0010	521+83	-	523+28	USH 10 RT	74	
0010	521+83	-	522+92	USH 10 LT	37	
TOTAL					442	

REMOVING FENCE

CATEGORY	STATION	TO	STATION	LOCATION	204.0170 REMOVING FENCE LF	REMARKS
0010	521+12	-	521+63	USH 10 LT	62	
TOTAL					62	

TEMPORARY WATER DIVERSION

CATEGORY	STATION	LOCATION	SPV.0060.02 SPECIAL (02. TEMPORARY WATER DIVERSION TRIBUTARY TO SPRING CREEK STATION 308+65)	EACH	SPV.0060.03 SPECIAL (03. TEMPORARY WATER DIVERSION TRIBUTARY TO MUD CREEK STATION 521+30)	EACH	REMARKS
0030	308+65	USH 10		1		--	
0020	521+30	USH 10		--		1	
TOTAL				1		1	

DIVISION	FROM/TO STATION	LOCATION	205.0100 COMMON EXCAVATION (1)	SALVAGED/UNUSABLE PAVEMENT MATERIAL (4)	AVAILABLE MATERIAL (5)	UNEXPANDED FILL	EXPANDED FILL (13)	MASS ORDINATE +/- (14)	WASTE	208.0100 BORROW	209.2100 BACKFILL GRANULAR GRADE 2 (7)	SPV.0035.01 FOUNDATION BACKFILL (8)	COMMENT
			CUT (2)				FACTOR 1.33						
DIVISION 1													
QR-USH10-BOX	307+25/310+00		449	220	229	615	818	-589	0	589	0	0	
DIVISION 1 SUBTOTAL			449	220	229	615	818	-589	0	589	0	0	
							FACTOR						
DIVISION 2							1.15						
QR-USH10-CULVERT	520+50/522+50		406	202	204	533	613	-505	0	260	0	0	
QR-USH10-CULVERT FROST HEAVE EXC	520+83/521+83		245	0	245	0	0	245	0	0	40	287	
DIVISION 2 SUBTOTAL			651	202	449	533	613	-260	0	260	40	287	
GRAND TOTAL			1,100	422	678	1,148	1,431	-849	0	849	40	287	
TOTAL COMMON EXC			1,100										

NOTES:

- (1) SALVAGED/UNUSABLE PAVEMENT MATERIAL IS INCLUDED IN CUT.
- (2) SALVAGED/UNUSABLE PAVEMENT MATERIAL
- (3) AVAILABLE MATERIAL = CUT - SALVAGED/UNUSABLE PAVEMENT MATERIAL
- (4) EXPANDED FILL FACTOR DIVISION 1 = 1.33, DIVISION 2 = 1.15
- (5) THE MASS ORDINATE + OR - QTY CALCULATED FOR THE DIVISION. PLUS QUANTITY INDICATES AN EXCESS OF MATERIAL WITHIN THE DIVISION. MINUS INDICATES A SHORTAGE OF MATERIAL WITHIN THE DIVISION.
- (6) FACTORS USED TO COMPUTE ANTICIPATED WASTE AND THE COMPUTED WASTE VOLUME IDENTIFIED ARE FOR GENERAL INFORMATION ONLY.
- (7) USED TO BACKFILL THE TRENCH FOR THE OLD STRUCTURE WHERE STRUCTURAL BACKFILL AND FOUNDATION BACKFILL ARE NOT PRESENT.
- (8) USED TO BACKFILL CULVERT PIPE TRENCH AND FROST HEAVE EXCAVATION AREAS

BASE AGGREGATE

CATEGORY	STATION	TO	STATION	LOCATION	305.0110	305.0120	624.0100	REMARKS
					BASE AGGREGATE DENSE 3/4-INCH TON	BASE AGGREGATE DENSE 1 1/4- INCH TON	WATER MGAL	
0010	307+25	-	308+00	USH 10	15	50	0.6	RT SHOULDER
0010	308+00	-	308+10	USH 10	4	13	0.2	LT & RT SHOULDER
0010	308+10	-	308+30	USH 10	8	77	0.8	MAINLINE & SHOULDERS
0010	308+30	-	308+50	USH 10	8	78	0.9	MAINLINE & SHOULDERS
0010	308+50	-	309+25	USH 10	30	289	3.2	MAINLINE & SHOULDERS
0010	309+25	-	309+80	USH 10	22	53	0.7	MAINLINE & SHOULDERS
0010	309+80	-	310+00	USH 10	4	12	0.2	LT SHOULDER
0010	520+50	-	520+83	USH 10	7	22	0.3	RT SHOULDER
0010	520+83	-	521+83	USH 10	41	489	5.3	MAINLINE & SHOULDERS
0010	521+83	-	522+50	USH 10	27	89	1.2	LT & RT SHOULDER
0010	306+42	-	307+25	USH 10	33	-	0.3	LT & RT SHOULDER
0010		UNDISTRIBUTED			-	-	5.5	DUST CONTROL
TOTAL					197	1,172	19	

CULVERT ITEMS

CATEGORY	STATION	LOCATION	633.5200	SPV.0060.01	SPV.0090.01	REMARKS
			MARKERS CULVERT END EACH	SPECIAL (01. APRON ENDWALLS FOR CULVERT PIPE REINFORCED CONCRETE HE 72X113-INCH) EACH	SPECIAL (01. CULVERT PIPE REINFORCED CONCRETE HE CLASS HE-III 72X113-INCH) LF	
0010	521+33	USH 10	2	--	--	
0020	521+33	USH 10	--	2	86	
TOTAL			2	2	86	

HMA

CATEGORY	STATION	TO	STATION	LOCATION	455.0605		460.6224		REMARKS
					TACK COAT	GAL	HMA PAVEMENT	4 MT 58-28 S	
0010	308+10	-	309+25	USH 10	44		150		MAINLINE
0010	520+83	-	521+83	USH 10	38		131		MAINLINE
TOTAL					82		281		

ASPHALT CENTERLINE RUMBLE STRIPS 2-LANE RURAL

CATEGORY	STATION	TO	STATION	LOCATION	465.0475		REMARKS
					ASPHALT	CENTERLINE RUMBLE STRIPS 2-LANE RURAL	
0010	308+10	-	309+25	USH 10		115	CENTERLINE
0010	520+83	-	521+83	USH 10		100	CENTERLINE
TOTAL						215	

MARKING LINE EPOXY 4-INCH

CATEGORY	STATION	TO	STATION	LOCATION	646.1020		REMARKS
					MARKING LINE	EPOXY 4-INCH	
0010	308+10	-	308+80	USH 10	88		CENTERLINE 1 DASHED 1 SOLID
0010	308+80	-	309+25	USH 10	11		CENTERLINE 1 DASHED
0010	520+83	-	521+83	USH 10	25		CENTERLINE 1 DASHED
0010	308+10	-	309+25	USH 10	230		LT & RT EDGE LINE
0010	520+83	-	521+83	USH 10	200		LT & RT EDGE LINE
TOTAL						554	

EROSION CONTROL

CATEGORY	STATION	TO	STATION	LOCATION	628.1504	628.1520	628.1905	628.1910	REMARKS
					SILT FENCE LF	SILT FENCE MAINTENANCE LF	MOBILIZATIONS EROSION CONTROL EACH	MOBILIZATIONS EMERGENCY EROSION CONTROL EACH	
0010	307+09	-	310+05	USH 10 RT	348	348	-	-	
0010	307+77	-	310+14	USH 10 LT	268	268	-	-	
0010	520+32	-	523+15	USH 10 RT	332	332	-	-	
0010	520+85	-	523+08	USH 10 LT	307	307	-	-	
0010		UNDISTRIBUTED			314	314	10	3	
TOTAL					1,569	1,569	10	3	

RESTORATION

CATEGORY	STATION	TO	STATION	LOCATION	625.0500	628.2008	629.0210	630.0120	630.0500	REMARKS
					SALVAGED TOPSOIL SY	EROSION MAT URBAN CLASS I TYPE B SY	FERTILIZER TYPE B CWT	SEEDING MIXTURE NO. 20 LB	SEED WATER MGAL	
0010	307+09	-	310+05	USH 10 RT	552	552	0.3	15	12	DO NOT PLACE FERTILIZER WITHIN 20FT OF WATERWAY BANKS
0010	307+77	-	310+14	USH 10 LT	478	478	0.3	13	13	DO NOT PLACE FERTILIZER WITHIN 20FT OF WATERWAY BANKS
0010	520+32	-	523+15	USH 10 RT	691	691	0.4	19	23	DO NOT PLACE FERTILIZER WITHIN 20FT OF WATERWAY BANKS
0010	520+85	-	523+08	USH 10 LT	498	498	0.3	13	20	DO NOT PLACE FERTILIZER WITHIN 20FT OF WATERWAY BANKS
0010	UNDISTRIBUTED	-			555	555	0.5	15	17	DO NOT PLACE FERTILIZER WITHIN 20FT OF WATERWAY BANKS
TOTAL					2,773	2,773	2.0	75	86	

SAWING

CATEGORY	STATION	TO	STATION	LOCATION	690.0150	690.0250	REMARKS
					SAWING ASPHALT LF	SAWING CONCRETE LF	
0010	306+43	-	308+10	USH 10	316	20	
0010	309+25	-	310+74	USH 10	296	20	
0010	519+65	-	520+83	USH 10	229	20	
0010	521+83	-	523+28	USH 10	265	20	
TOTAL					1,106	80	

3

FIELD OFFICE

642.5001
FIELD OFFICE TYPE
B

CATEGORY	LOCATION	EACH	REMARKS
0010	USH 10	1	
TOTAL		1	

FINISHING ROADWAY

213.0100.01
Finishing
Roadway
(project) (01.
1500-71-71)

CATEGORY	LOCATION	EACH	REMARKS
0010	USH 10	1	
TOTAL		1	

MAINTENANCE AND REPAIR OF HAUL ROADS

618.0100.01
Maintenance And
Repair of Haul
Roads (project) (01.
1500-71-71)

CATEGORY	LOCATION	EACH	REMARKS
0010	USH 10	1	
TOTAL		1	

3

SIGNS

634.0616	638.2102	638.3000
POSTS WOOD 4X6-INCH X 16- FT	MOVING SIGNS TYPE II	REMOVING SMALL SIGN SUPPORTS
EACH	EACH	EACH

CATEGORY	STATION	LOCATION	EACH	EACH	EACH	REMARKS
0010	307+15	USH 10	2	1	2	TOWN/CITY SIGN
0010	309+50	USH 10	1	1	1	NO PASSING
TOTAL			3	2	3	

CONSTRUCTION STAKING

650.4500	650.5000	650.6000	650.9920	650.6501.01	650.9911.01
CONSTRUCTION STAKING SUBGRADE LF	CONSTRUCTION STAKING BASE LF	CONSTRUCTION STAKING PIPE CULVERTS EACH	CONSTRUCTION STAKING SLOPE STAKES LF	CONSTRUCTION STAKING STRUCTURE LAYOUT (STRUCTURE) (01. C-08-0082) EACH	CONSTRUCTION STAKING SUPPLEMENTAL CONTROL (PROJECT) (01. 1500-71-71) EACH

CATEGORY	STATION	TO	STATION	LOCATION	CONSTRUCTION STAKING SUBGRADE LF	CONSTRUCTION STAKING BASE LF	CONSTRUCTION STAKING PIPE CULVERTS EACH	CONSTRUCTION STAKING SLOPE STAKES LF	CONSTRUCTION STAKING STRUCTURE LAYOUT (STRUCTURE) (01. C-08-0082) EACH	CONSTRUCTION STAKING SUPPLEMENTAL CONTROL (PROJECT) (01. 1500-71-71) EACH	REMARKS
0010	306+42	-	523+29	USH 10	-	-	-	-	-	1	
0010	308+10	-	309+25	USH 10	115	115	-	505	1	-	
0010	520+83	-	521+83	USH 10	100	100	1	480	-	-	
TOTAL					215	215	1	985	1	1	

TRAFFIC CONTROL

CATEGORY	STATION	TO	STATION	LOCATION	* 643.0420 TRAFFIC CONTROL BARRICADES TYPE III DAY	* 643.0705 TRAFFIC CONTROL WARNING LIGHTS TYPE A DAY	* 643.0900 TRAFFIC CONTROL SIGNS DAY	643.5000 TRAFFIC CONTROL EACH	REMARKS
0010	274+45	-	555+20	USH 10	120	240	180		INTERSECTIONS WITHIN DETOUR
0010	519+00	-	524+00	USH 10	168	240	96		CULVERT C-08-0082 REPLACEMENT AREA
0010	274+45	-	555+20	USH 10	330	660	495		INTERSECTIONS WITHIN DETOUR
0010	305+00	-	312+00	USH 10	462	660	264		CULVERT C-36-0058 REPLACEMENT AREA
0010		PROJECT WIDE		USH 10				1	PROJECT WIDE
TOTAL					1,080	1,800	1,035	1	

*QUANTITIES SHOWN ELSEWHERE

3

3

TRAFFIC CONTROL DETOUR SIGN SUMMARY

SIGN NO.	LOCATION	SIGN CODE	SIZE W X H	NUMBER IN SERVICE	APPROX. SERVICE PERIOD 60 DAYS	643.0900 SIGNS DAYS	643.0420 BARRICADES TYPE III DAYS	643.0705 WARNING LIGHTS TYPE A DAYS	643.1000 FIXED MESSAGE SIGN S.F.	643.1050 SIGNS PORTABLE CHANGEABLE MESSAGE DAYS	NO OF CYCLES	643.0920 COVERING SIGNS TYPE II EACH	REMARKS
1	US 10, W. OF CTH PP, PLACE 1 MILE W. OF CTH PP INTERSECTION	M 3-2	24"x12"	1	60	60							
	"	M 1-4	24"x24"	1	60	60							10
	"	W 20-2A	48"x48"	1	60	60							
2	US 10, W. OF CTH PP, PLACE 1/2 MILE W. OF CTH PP INTERSECTION	FMS	78"x36"	1	60	60			19.5				
3	US 10, W. OF CTH PP, PLACE 1/4 MILE W. OF CTH PP INTERSECTION	MO 4-8	24"x12"	1	60	60							
	"	M 3-2	24"x12"	1	60	60							
	"	M 1-4	24"x24"	1	60	60							10
	"	MO 5-1L	21"x21"	1	60	60							
4	US 10, W. OF CTH PP, PLACE 250' W. OF CTH PP INTERSECTION	MO 4-8	24"x12"	1	60	60							
	"	M 3-2	24"x12"	1	60	60							
	"	M 1-4	24"x24"	1	60	60							10
	"	MO 6-1	21"x21"	1	60	60							LEFT
5	US 10, AT CTH PP INTERSECTION, MODIFY EXISTING J13-2 SIGN AS SHOWN	MO 6-1	21"x21"	1	60	60							RIGHT
6	US 10, AT CTH PP INTERSECTION, PLACE IN SE QUADRANT ON RIGHT SHOULDER	R 11-3B	60"x30"	1	60	60	60	120					1/2 MILE AHEAD
	"	M 4-9L	30"x24"	1	60	60							
	"	MO 6-6	21"x21"	1	60	60							
7	US 10, AT CTH PP INTERSECTION, MODIFY EXISTING J13-2 SIGN AS SHOWN	MO 6-6	21"x21"	1	60	60							
8	US 10, E. OF CTH PP, COVER EXISTING J4-1 SIGN										1	1	COVER ENTIRE SIGN
9	CTH PP, N. OF US 10, PLACE 250' N. OF US 10 INTERSECTION	MO 4-8	24"x12"	1	60	60							
	"	M 3-2	24"x12"	1	60	60							
	"	M 1-4	24"x24"	1	60	60							10
10	CTH PP, N. OF US 10, PLACE 1500' N. OF US 10 INTERSECTION	M 4-8A	24"x18"	1	60	60							
	"	M 1-4	24"x24"	1	60	60							10
11	CTH PP, S. OF CTH K, PLACE 1000' S. OF CTH K INTERSECTION	MO 4-8	24"x12"	1	60	60							
	"	M 3-2	24"x12"	1	60	60							
	"	M 1-4	24"x24"	1	60	60							10
	"	MO 5-1R	21"x21"	1	60	60							
12	CTH PP, S. OF CTH K, PLACE 200' S. OF CTH K INTERSECTION	MO 4-8	24"x12"	1	60	60							
	"	M 3-4	24"x12"	1	60	60							
	"	M 1-4	24"x24"	1	60	60							10
13	CTH PP, S. OF CTH K, PLACE RIGHT OF EXISTING J13-1 SIGN AT CTH K INTERSECTION	MO 4-8	24"x12"	1	60	60							
	"	M 3-2	24"x12"	1	60	60							
	"	M 1-4	24"x24"	1	60	60							10
	"	MO 6-1	21"x21"	1	60	60							RIGHT
14	CTH K, E. OF CTH PP, PLACE RIGHT OF EXISTING J13-2 SIGN AT CTH PP INTERSECTION	MO 4-8	24"x12"	1	60	60							
	"	M 3-4	24"x12"	1	60	60							
	"	M 1-4	24"x24"	1	60	60							10
	"	MO 6-1	21"x21"	1	60	60							LEFT
15	CTH K, E. OF CTH PP, PLACE 200' E. OF CTH PP INTERSECTION	MO 4-8	24"x12"	1	60	60							
	"	M 3-2	24"x12"	1	60	60							
	"	M 1-4	24"x24"	1	60	60							10
16	CTH K, E. OF CTH PP, PLACE 1000' E. OF CTH K INTERSECTION	MO 4-8	24"x12"	1	60	60							
	"	M 3-4	24"x12"	1	60	60							
	"	M 1-4	24"x24"	1	60	60							10
	"	MO 5-1L	21"x21"	1	60	60							
17	CTH K, W. OF CTH G, PLACE 1000' W. OF CTH G INTERSECTION	MO 4-8	24"x12"	1	60	60							
	"	M 3-2	24"x12"	1	60	60							
	"	M 1-4	24"x24"	1	60	60							10
	"	MO 5-1R	21"x21"	1	60	60							
PAGE SUBTOTALS				47		2,820	60	120	19.5	0		1	

*QUANTITIES SHOWN ELSEWHERE

PLAN SHEET PRODUCED
BY WisDOT - NE REGION

3

3

TRAFFIC CONTROL DETOUR SIGN SUMMARY

SIGN NO.	LOCATION	SIGN CODE	SIZE W X H	NUMBER IN SERVICE	APPROX. SERVICE PERIOD 60 DAYS	643.0900 SIGNS DAYS	643.0420 BARRICADES TYPE III DAYS	643.0705 WARNING LIGHTS TYPE A DAYS	643.1000 FIXED MESSAGE SIGN S.F.	643.1050 SIGNS PORTABLE CHANGEABLE MESSAGE DAYS	NO OF CYCLES	643.0920 COVERING SIGNS TYPE II EACH	REMARKS
18	CTH K, W. OF CTH G, PLACE 200' W. OF CTH G INTERSECTION	MO 4-8	24"x12"	1	60	60							
	"	M 3-4	24"x12"	1	60	60							
	"	M 1-4	24"x24"	1	60	60							10
19	CTH K, W. OF CTH G, PLACE RIGHT OF EXISTING J13-2 SIGN AT CTH G INTERSECTION	MO 4-8	24"x12"	1	60	60							
	"	M 3-2	24"x12"	1	60	60							
	"	M 1-4	24"x24"	1	60	60							10
	"	MO 6-1	21"x21"	1	60	60							RIGHT
20	CTH G, S. OF CTH K, PLACE 200' S. OF CTH K INTERSECTION	MO 4-8	24"x12"	1	60	60							
	"	M 3-2	24"x12"	1	60	60							
	"	M 1-4	24"x24"	1	60	60							
21	CTH G, S. OF CTH K, PLACE RIGHT OF EXISTING J13-1 SIGN AT CTH K INTERSECTION	MO 4-8	24"x12"	1	60	60							
	"	M 3-4	24"x12"	1	60	60							
	"	M 1-4	24"x24"	1	60	60							10
	"	MO 6-1	21"x21"	1	60	60							LEFT
22	CTH G, S. OF CTH K, PLACE 500' S. OF CTH K INTERSECTION	MO 4-8	24"x12"	1	60	60							
	"	M 3-4	24"x12"	1	60	60							
	"	M 1-4	24"x24"	1	60	60							10
	"	MO 5-1L	21"x21"	1	60	60							
23	CTH K, W. OF CTH W, PLACE 200' W. OF CTH W INTERSECTION	MO 4-8	24"x12"	1	60	60							
	"	M 3-2	24"x12"	1	60	60							
	"	M 1-4	24"x24"	1	60	60							10
	"	MO 6-1	21"x21"	1	60	60							AHEAD
24	CTH K, E. OF CTH W, PLACE 200' E. OF CTH W INTERSECTION	MO 4-8	24"x12"	1	60	60							
	"	M 3-4	24"x12"	1	60	60							
	"	M 1-4	24"x24"	1	60	60							10
	"	MO 6-1	21"x21"	1	60	60							AHEAD
25	CTH G, N. OF US 10, MODIFY EXISTING J1-1 SIGN AS SHOWN	M 4-8A	24"x18"	1	60	60							
26	CTH G, N. OF US 10, PLACE 200' N. OF US 10 INTERSECTION	MO 4-8	24"x12"	1	60	60							
	"	M 3-4	24"x12"	1	60	60							
	"	M 1-4	24"x24"	1	60	60							
27	US 10, PLACE E. OF CTH PP ON RIGHT SHOULDER, FIELD LOCATION TO BE DETERMINED	PCMS		1						7			
28	US 10, PLACE W. OF CTH G ON RIGHT SHOULDER, FIELD LOCATION TO BE DETERMINED	PCMS		1						7			
29	US 10, W. OF CTH G, COVER EXISTING J4-1 SIGN AS SHOWN										1	1	COVER ENTIRE SIGN
30	US 10, AT CTH G INTERSECTION, PLACE ON RIGHT SHOULDER IN NW QUADRANT OF INTERSECTION	R 11-3B	60"x30"	1	60	60	60	120					1/2 MILE AHEAD
	"	M 4-9R	30"x24"	1	60	60							
30A	CTH G, AT US 10, MODIFY EXISTING J13-1 SIGN AS SHOWN	MO 6-1	21"x21"	1	60	60							LEFT
30B	US 10, AT CTH W, PLACE ON RIGHT SHOULDER IN NW QUADRANT OF INTERSECTION	R 11-3B	60"x30"	1	60	60							1/2 MILE AHEAD
31	US 10, AT CTH G INTERSECTION, PLACE RIGHT OF EXISTING J13-1 SIGN	MO 4-8	24"x12"	1	60	60							
	"	M 3-4	24"x12"	1	60	60							
	"	M 1-4	24"x24"	1	60	60							10
	"	MO 6-1	21"x21"	1	60	60							RIGHT
32	US 10, E. OF CTH G INTERSECTION, PLACE 500' E. OF CTH G INTERSECTION	MO 4-8	24"x12"	1	60	60							
	"	M 3-4	24"x12"	1	60	60							
	"	M 1-4	24"x24"	1	60	60							10
	"	MO 5-1R	21"x21"	1	60	60							
33	US 10, E. OF CTH G INTERSECTION, PLACE 1000' E. OF CTH G INTERSECTION	M 3-4	24"x12"	1	60	60							
	"	M 1-4	24"x24"	1	60	60							10
	"	W 20-2A	48"x48"	1	60	60							

*QUANTITIES SHOWN ELSEWHERE

PAGE SUBTOTALS	47	2,700	60	120	0	14	1
PROJECT TOTALS	94	5,520	120	240	19.5	14	2

PLAN SHEET PRODUCED
BY WisDOT - NE REGION

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

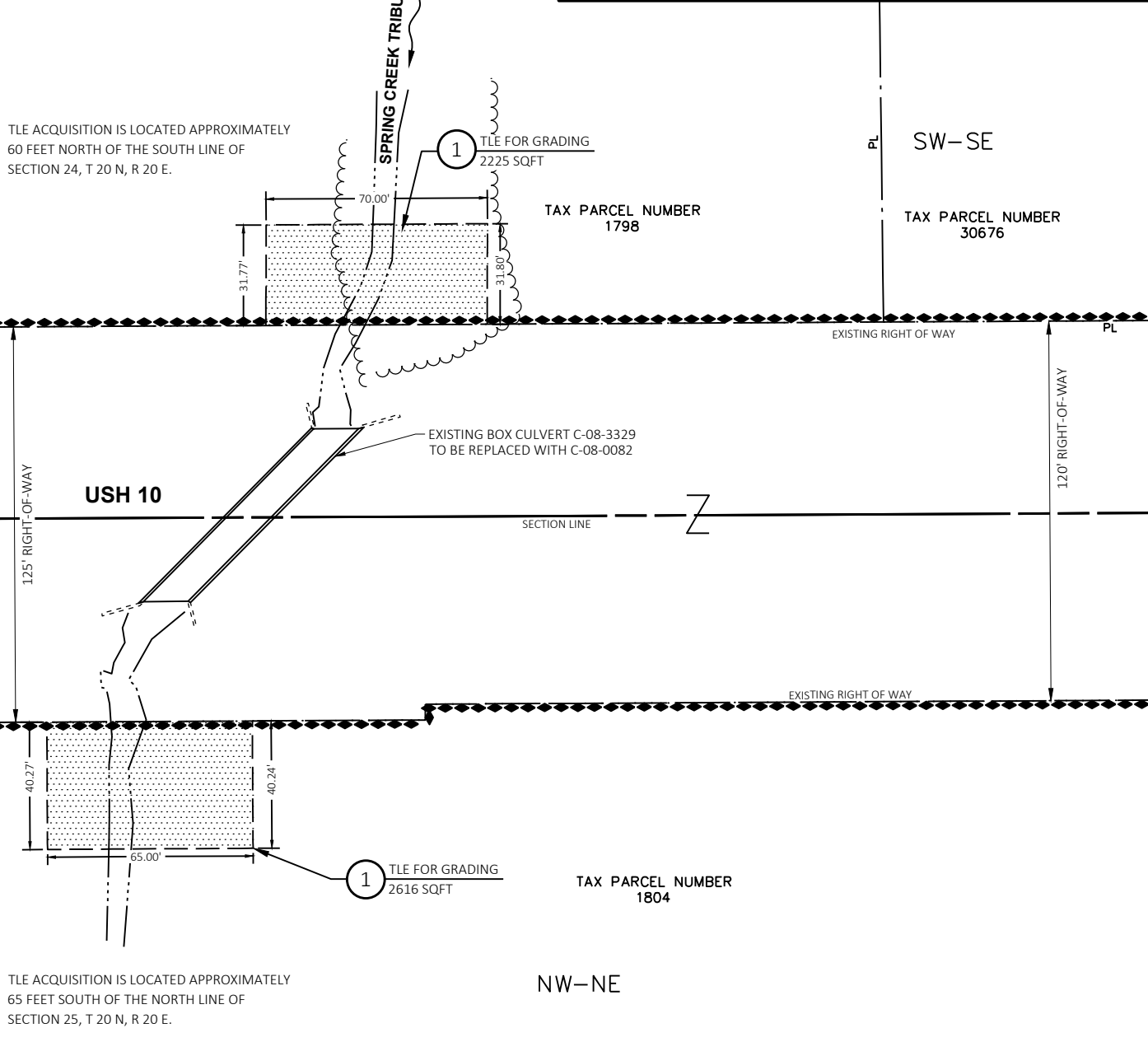
THE PURPOSE OF THE TLE IS FOR GRADING.

R/W PROJECT NUMBER: 1500-71-21 SHEET NUMBER: 1

TLE ACQUISITION EXHIBIT
BRILLION - REEDSVILLE
SPRING CREEK BOX CULVERT C-08-3329 CALUMET COUNTY

USH 10

PART OF THE SW 1/4 OF THE SE 1/4 OF SECTION 24 AND PART OF THE NW 1/4 OF THE NE 1/4 OF SECTION 25, T 20 N, R 20 E TOWN OF BRILLION, CALUMET COUNTY, WISCONSIN



SCHEDULE OF LANDS & INTERESTS REQUIRED

PARCEL NUMBER	OWNER(S)	INTEREST REQUIRED	TLE S.F.
1	CITY OF BRILLION	TLE	4,841

UTILITY INTERESTS REQUIRED

UTILITY NUMBER	UTILITY OWNER(S)	INTEREST REQUIRED



THIS MAP WAS PREPARED BY JT ENGINEERING FOR THE WISCONSIN DEPARTMENT OF TRANSPORTATION.

SCALE, FEET

0 25 50

THIS MAP IS APPROVED FOR THE DEPARTMENT OF TRANSPORTATION NORTHEAST REGION OFFICE IN GREEN BAY.

SIGNATURE: *Curt Van Erem* DATE: 7/12/2021

PRINT NAME: CURT VAN EREM

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

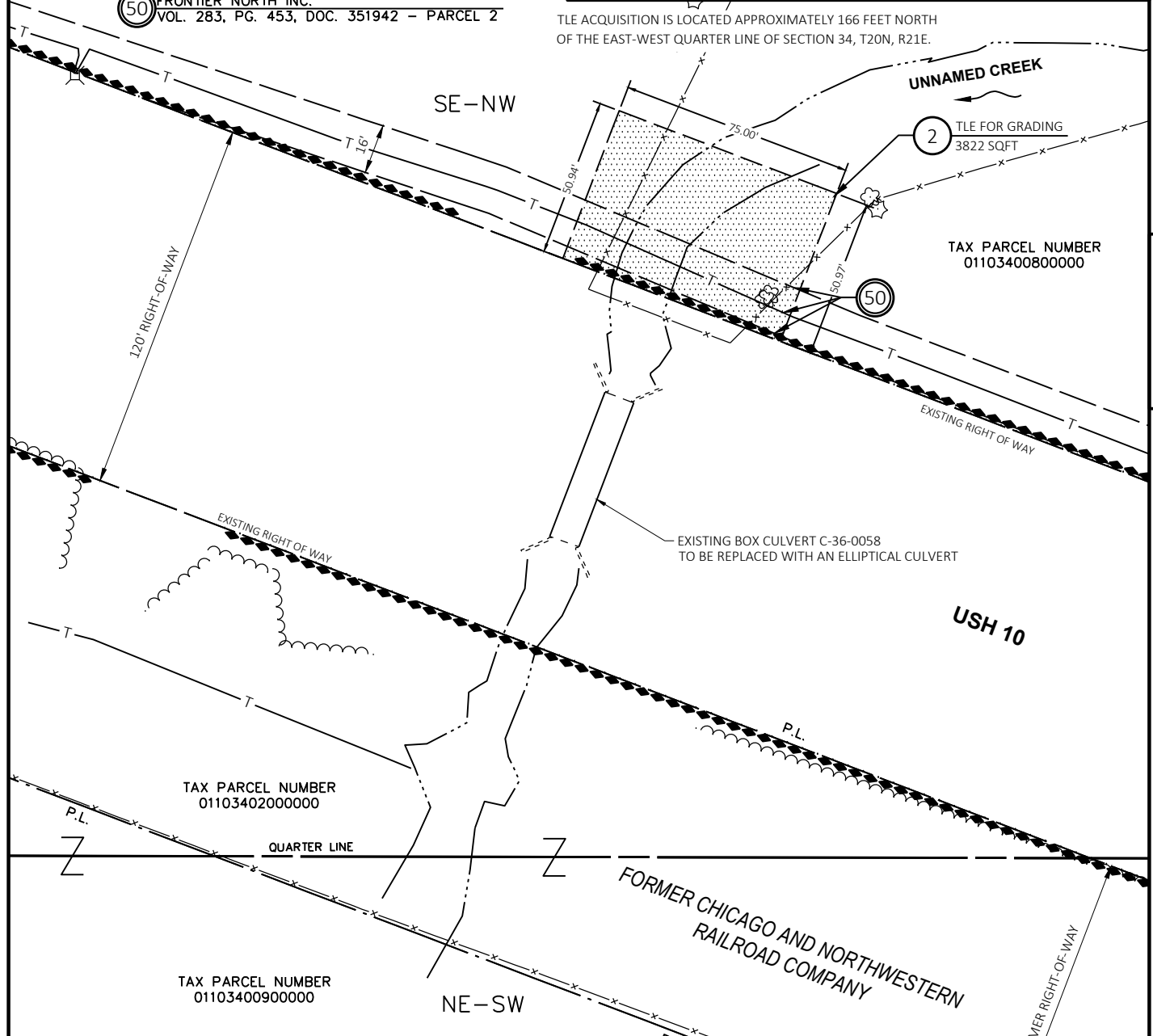
THE PURPOSE OF THE TLE IS FOR GRADING.

R/W PROJECT NUMBER: 1500-71-21 SHEET NUMBER: 2

TLE ACQUISITION EXHIBIT
BRILLION - REEDSVILLE
UNNAMED CREEK BOX CULVERT C-36-0058 MANITOWOC COUNTY

USH 10

PART OF THE SE 1/4 OF THE NW 1/4 OF SECTION 34, T 20 N, R 21 E TOWN OF MAPLE GROVE, MANITOWOC COUNTY, WISCONSIN



SCHEDULE OF LANDS & INTERESTS REQUIRED

PARCEL NUMBER	OWNER(S)	INTEREST REQUIRED	TLE S.F.
2	LEON SCHUH	TLE	3822

UTILITY INTERESTS REQUIRED

UTILITY NUMBER	UTILITY OWNER(S)	INTEREST REQUIRED
50	FRONTIER NORTH INC.	RELEASE OF RIGHTS



THIS MAP WAS PREPARED BY JT ENGINEERING FOR THE WISCONSIN DEPARTMENT OF TRANSPORTATION.

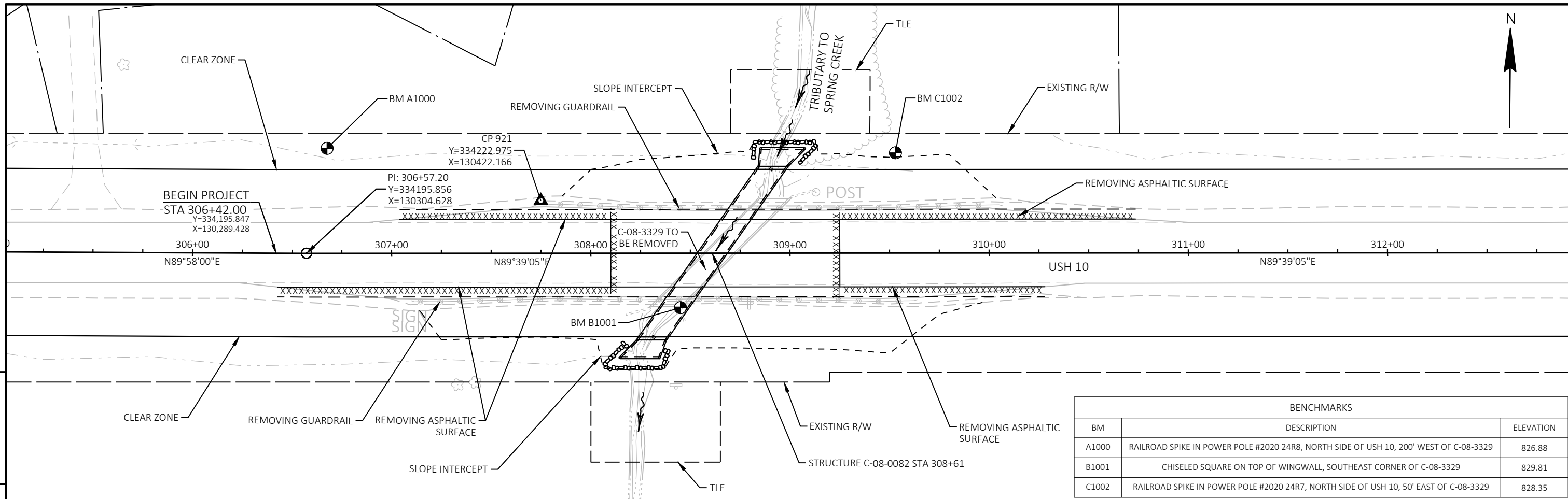
SCALE, FEET

0 25 50

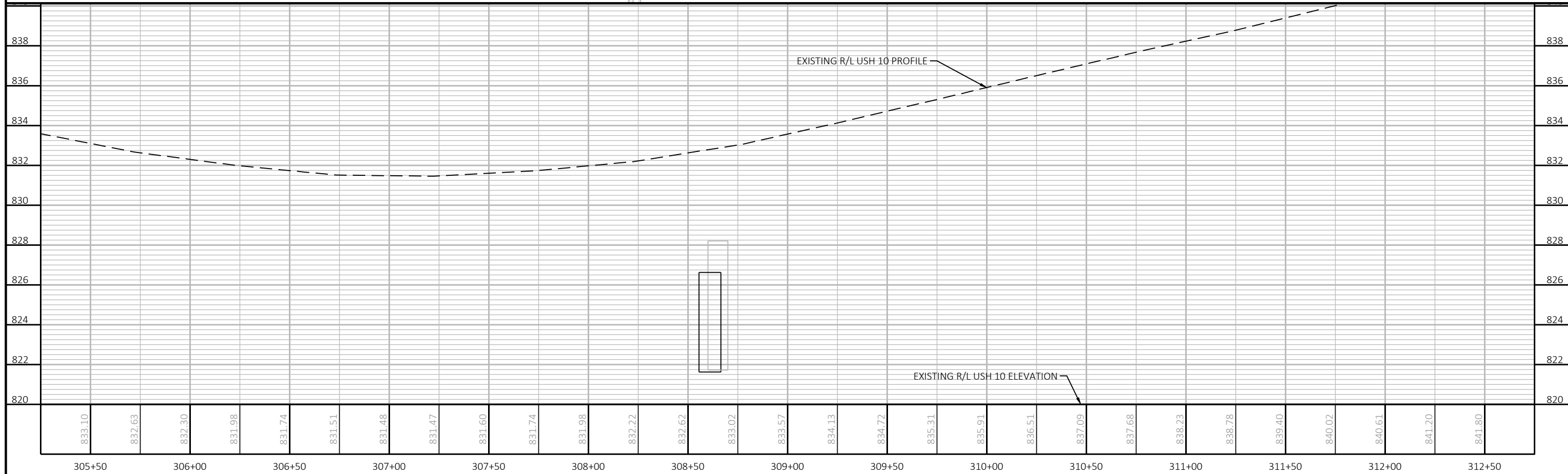
THIS MAP IS APPROVED FOR THE DEPARTMENT OF TRANSPORTATION NORTHEAST REGION OFFICE IN GREEN BAY.

SIGNATURE: *Curt Van Erem* DATE: 7/12/2021

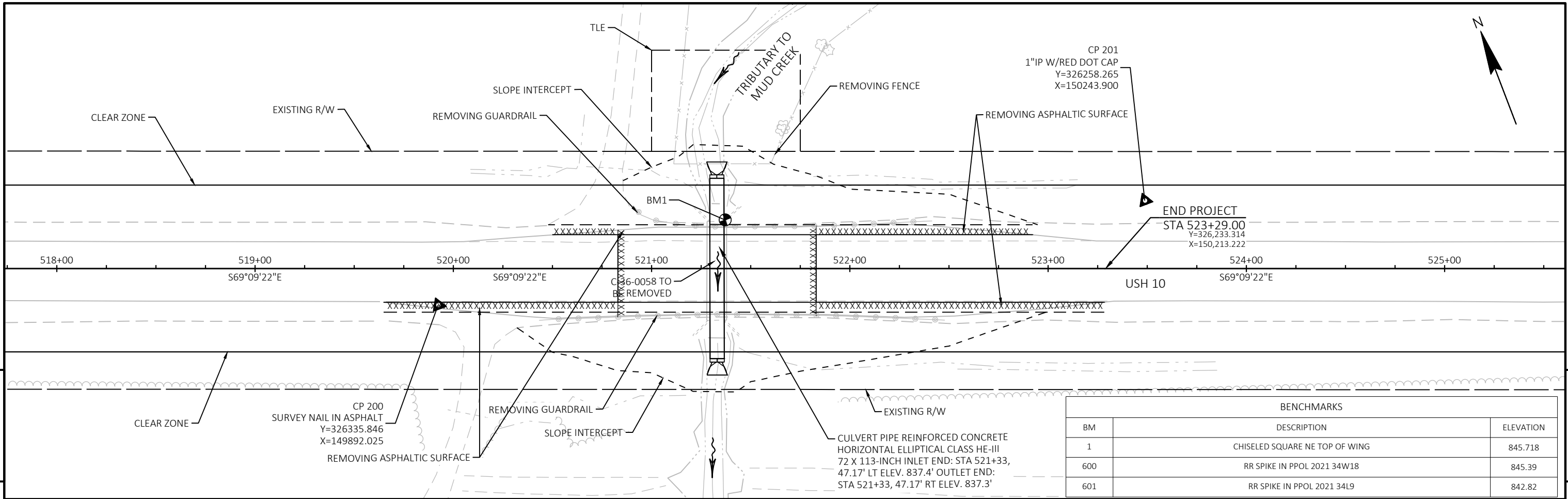
PRINT NAME: CURT VAN EREM



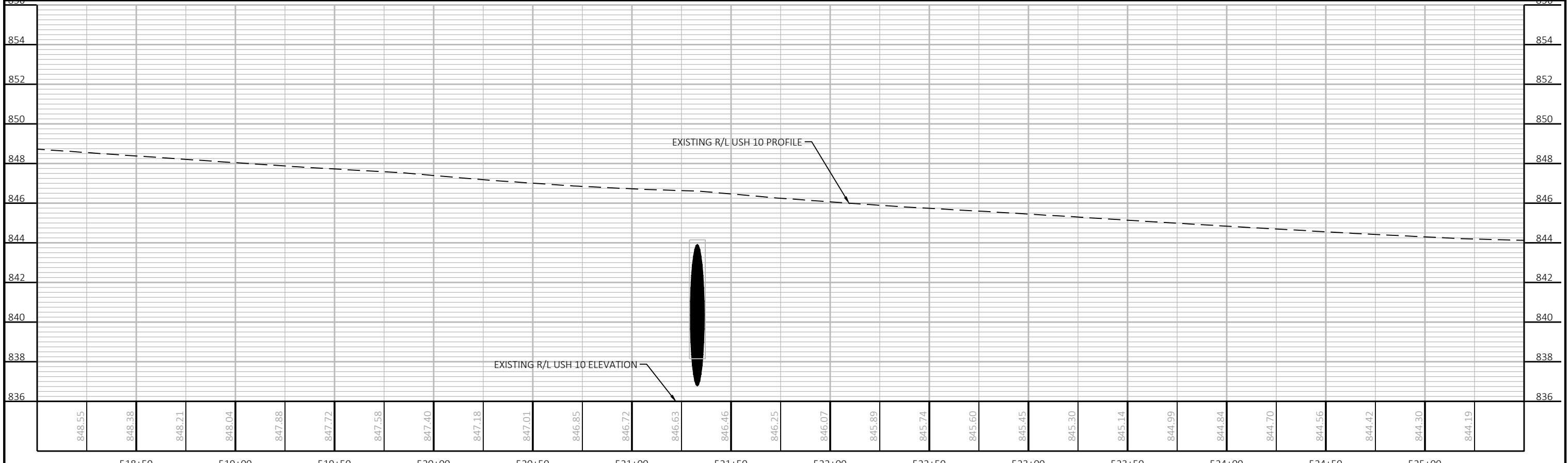
BENCHMARKS		
BM	DESCRIPTION	ELEVATION
A1000	RAILROAD SPIKE IN POWER POLE #2020 24R8, NORTH SIDE OF USH 10, 200' WEST OF C-08-3329	826.88
B1001	CHISELED SQUARE ON TOP OF WINGWALL, SOUTHEAST CORNER OF C-08-3329	829.81
C1002	RAILROAD SPIKE IN POWER POLE #2020 24R7, NORTH SIDE OF USH 10, 50' EAST OF C-08-3329	828.35



PROJECT NO: 1500-71-71 HWY: USH 10 COUNTY: CALUMET & MANITOWOC PLAN AND PROFILE: USH 10 SHEET: E



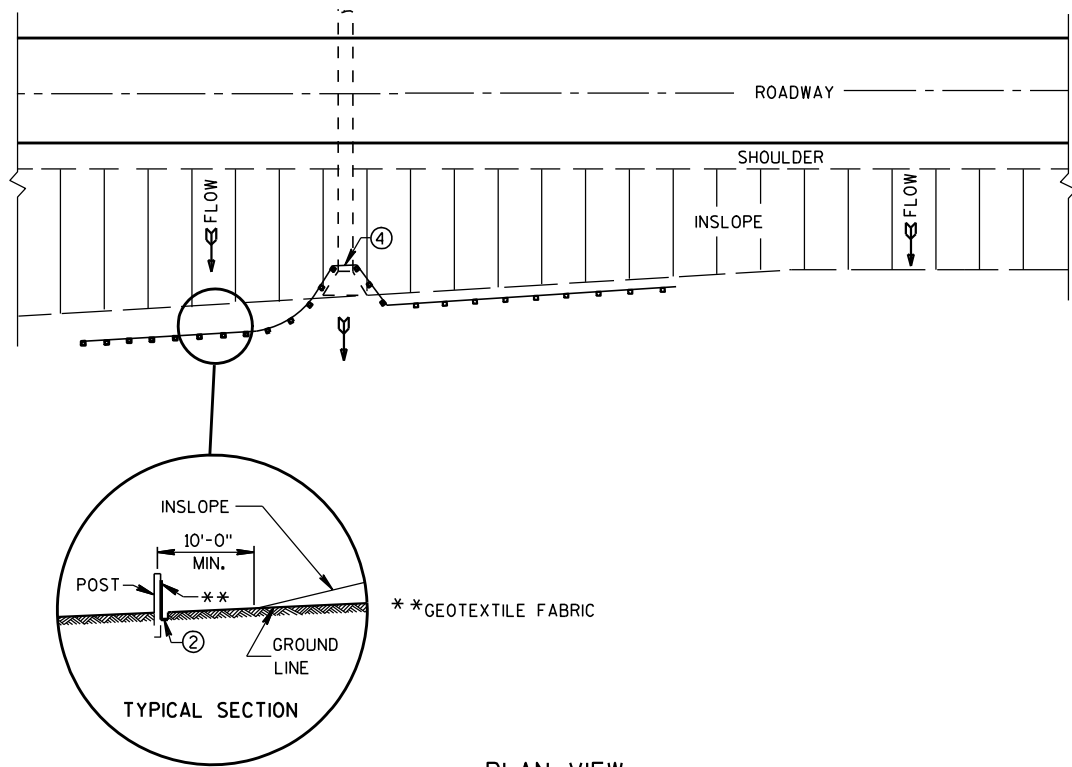
BENCHMARKS		
BM	DESCRIPTION	ELEVATION
1	CHISELED SQUARE NE TOP OF WING	845.718
600	RR SPIKE IN PPOL 2021 34W18	845.39
601	RR SPIKE IN PPOL 2021 34L9	842.82



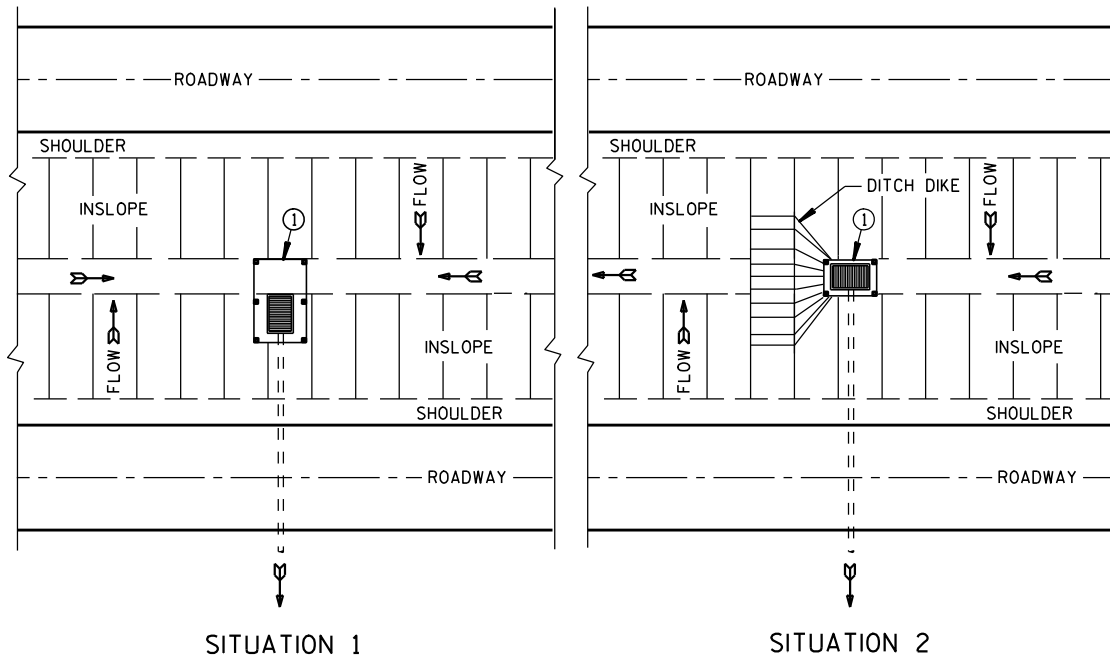
PROJECT NO: 1500-71-71	HWY: USH 10	COUNTY: CALUMET & MANITOWOC	PLAN AND PROFILE: USH 10	SHEET	E
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Standard Detail Drawing List

08E09-06	SILT FENCE
08F02-01	APRON ENDWALLS FOR PIPE ARCH AND ELLIPTICAL PIPE
08F04-08	JOINT TIES FOR CONCRETE PIPE AND CONCRETE COLLAR DETAIL
12A03-10	NAME PLATE (STRUCTURES)
13A11-03A	2-LANE RURAL CENTER LINE RUMBLE STRIP, MILLING
13A11-03B	2-LANE RURAL CENTER LINE RUMBLE STRIP, MILLING
13C19-03	HMA LONGITUDINAL JOINTS
15A03-02A	FLEXIBLE MARKER POST FOR CULVERT END
15A03-02B	FLEXIBLE MARKER POST FOR CULVERT END
15C02-08A	BARRICADES AND SIGNS FOR MAINLINE CLOSURES
15C02-08B	BARRICADES AND SIGNS FOR VARIOUS CLOSURES
15C02-08C	DETOUR SIGNING FOR MAINLINE CLOSURES
15C08-21A	LONGITUDINAL MARKING (MAINLINE)
15C11-09B	CHANNELIZING DEVICES DRUMS, CONES, BARRICADES AND VERTICAL PANELS
15D51-01	TRAFFIC CONTROL, MOBILE OPERATIONS ON AN UNDIVIDED ROADWAY



PLAN VIEW
TYPICAL APPLICATION OF SILT FENCE

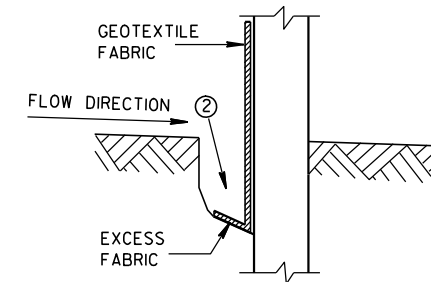


SITUATION 1 SITUATION 2
PLAN VIEW
SILT FENCE AT MEDIAN SURFACE DRAINS

GENERAL NOTES

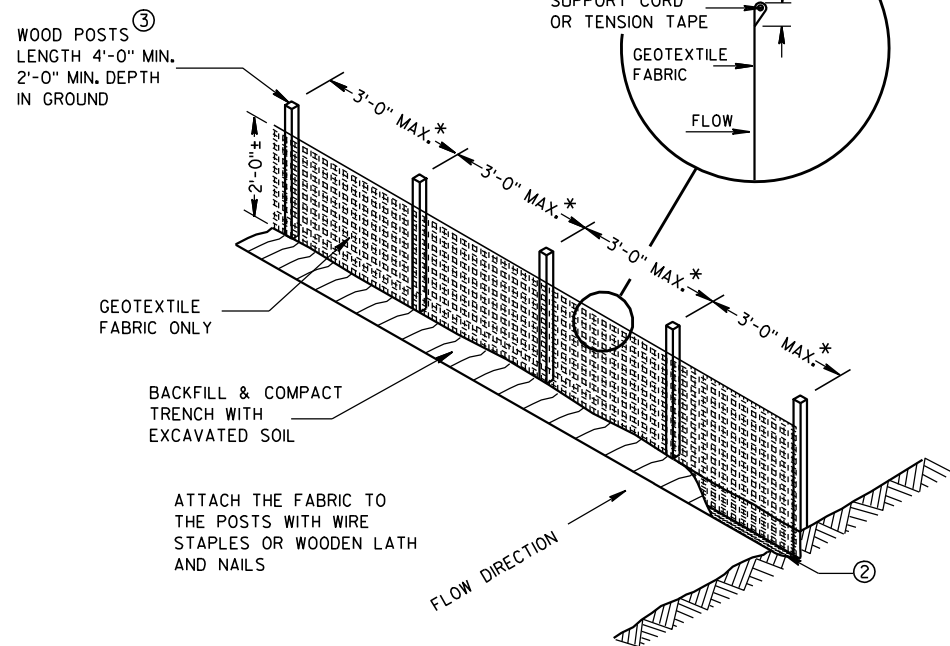
DETAILS OF CONSTRUCTION NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND APPLICABLE SPECIAL PROVISIONS.

- 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 1 1/8" X 1 1/8" 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.

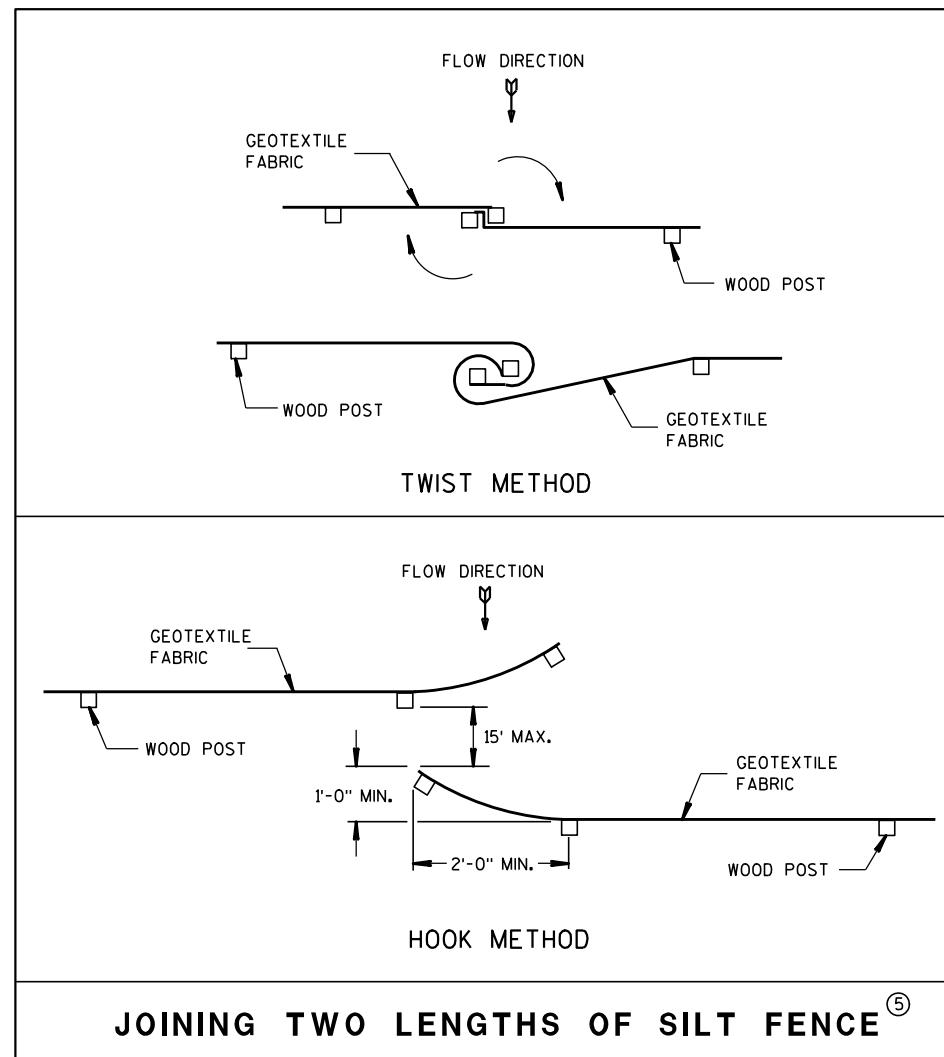


TRENCH DETAIL

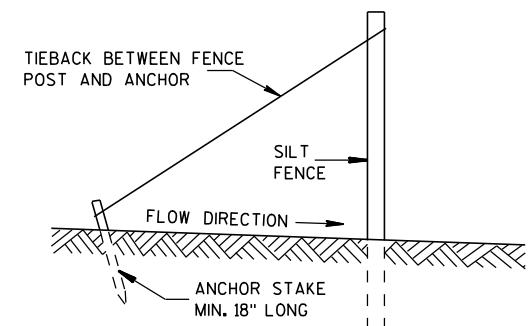
NOTE: ADDITIONAL POST DEPTH OR TIE BACKS MAY BE REQUIRED IN UNSTABLE SOILS



SILT FENCE



JOINING TWO LENGTHS OF SILT FENCE ⑤

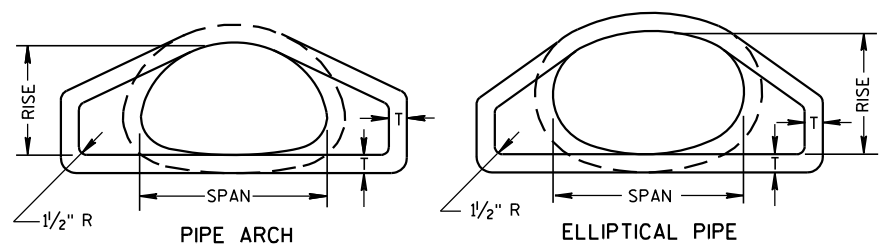


SILT FENCE TIE BACK
(WHEN REQUIRED BY THE ENGINEER)

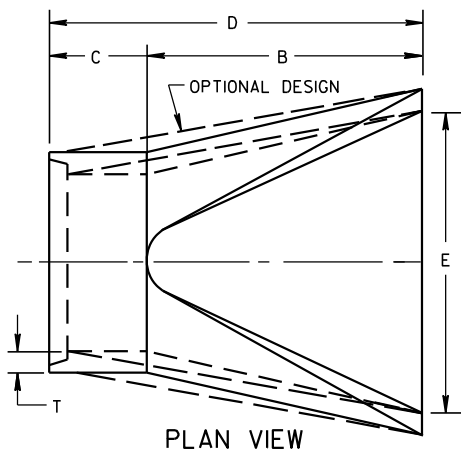
SILT FENCE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

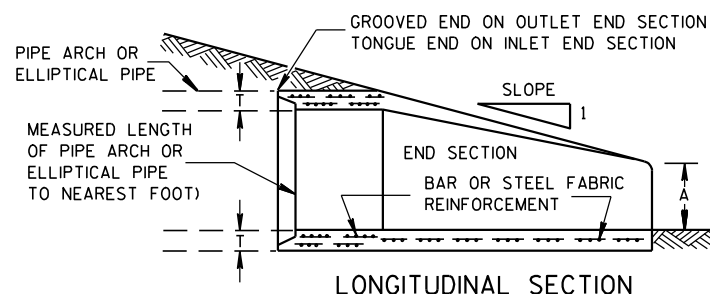
APPROVED
4-29-05 /S/ Beth Canestra
DATE CHIEF ROADWAY DEVELOPMENT ENGINEER
FHWA



END VIEW

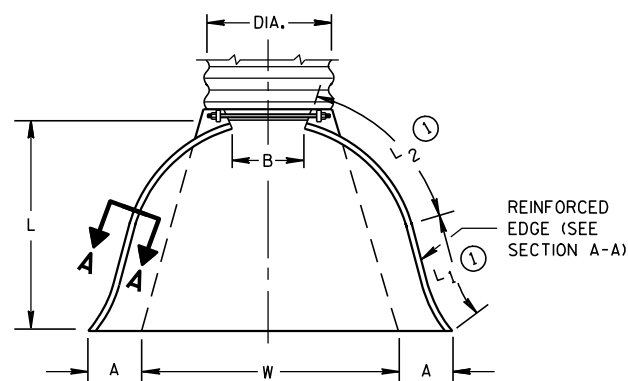


PLAN VIEW



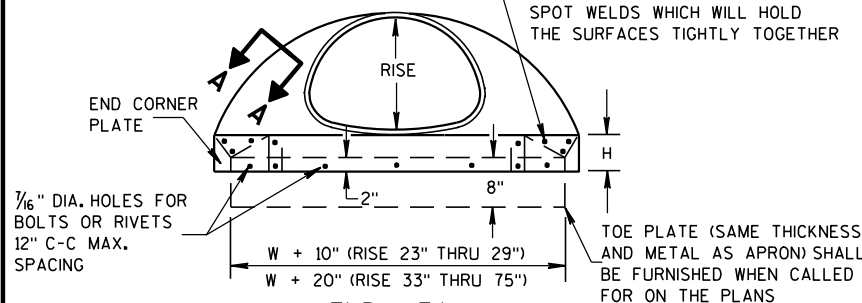
LONGITUDINAL SECTION

CONCRETE ENDWALLS



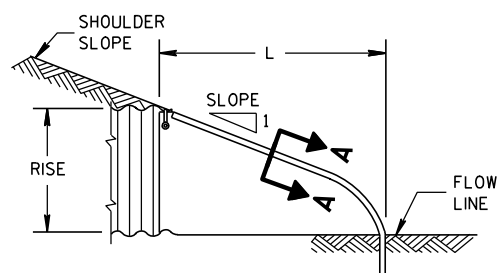
PLAN VIEW

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

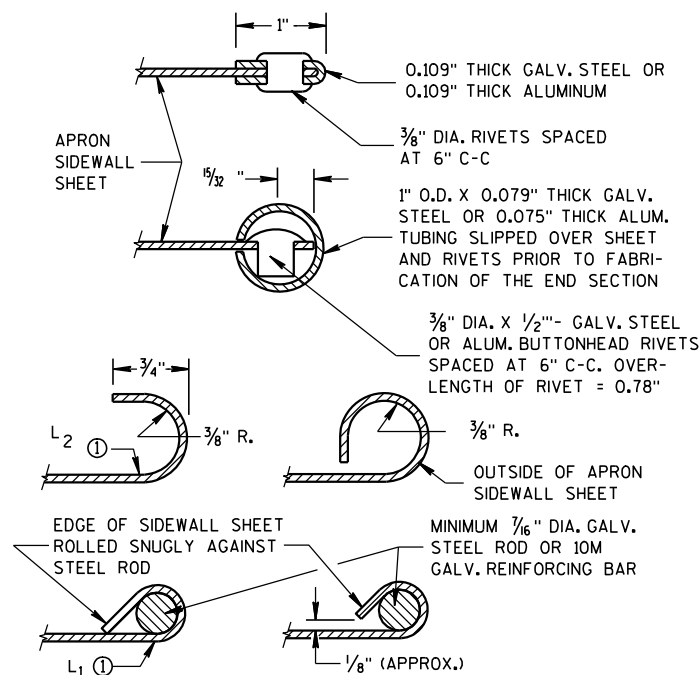


END VIEW

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



SIDE ELEVATION
METAL ENDWALLS



SECTION A-A

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")		
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")		
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

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 3/4	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.

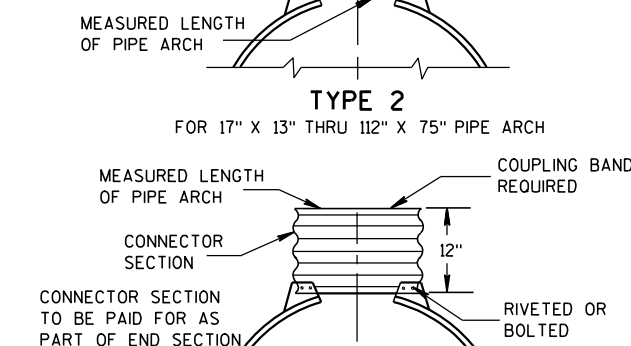
WHERE TWO OR MORE PIPES WITH APRON ENDWALLS ARE LAID ADJACENT TO EACH OTHER, THEY SHALL BE SEPARATED BY A DISTANCE SUFFICIENT TO PROVIDE A MINIMUM CLEARANCE OF 6 INCHES BETWEEN APRON ENDWALLS.

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.



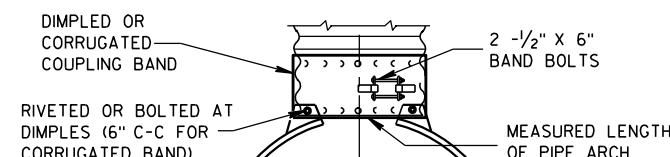
TYPE 2

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

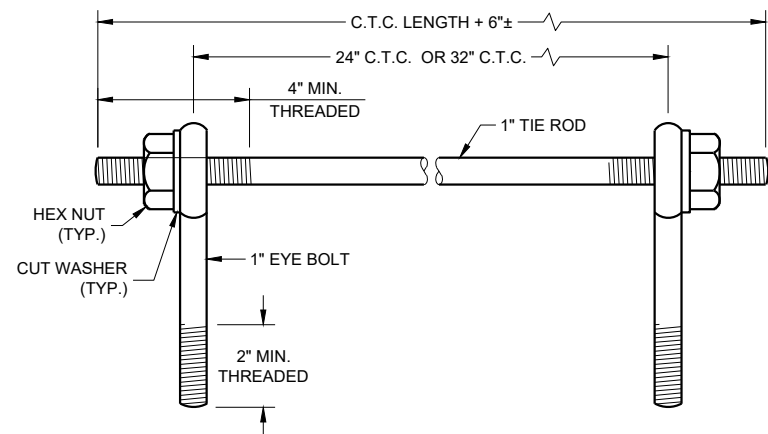
NOTE: DIMPLED BAND FITS OVER OUTSIDE OF ENDWALL, AND CORRUGATED BAND FITS INSIDE ENDWALL.

CONNECTION DETAILS

**APRON ENDWALLS FOR
PIPE ARCH AND
ELLIPTICAL PIPE**

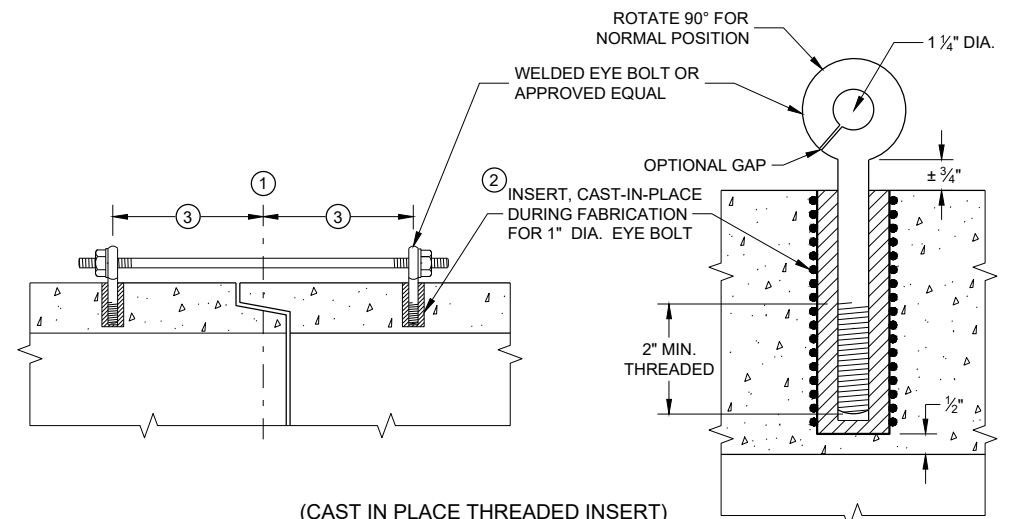
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
11/30/94 /S/ Rory L. Rhinesmith
DATE CHIEF ROADWAY DEVELOPMENT ENGINEER
FHWA



EYE BOLTS AND TIE ROD

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



(CAST IN PLACE THREADED INSERT)
LONGITUDINAL SECTIONS

GENERAL NOTES

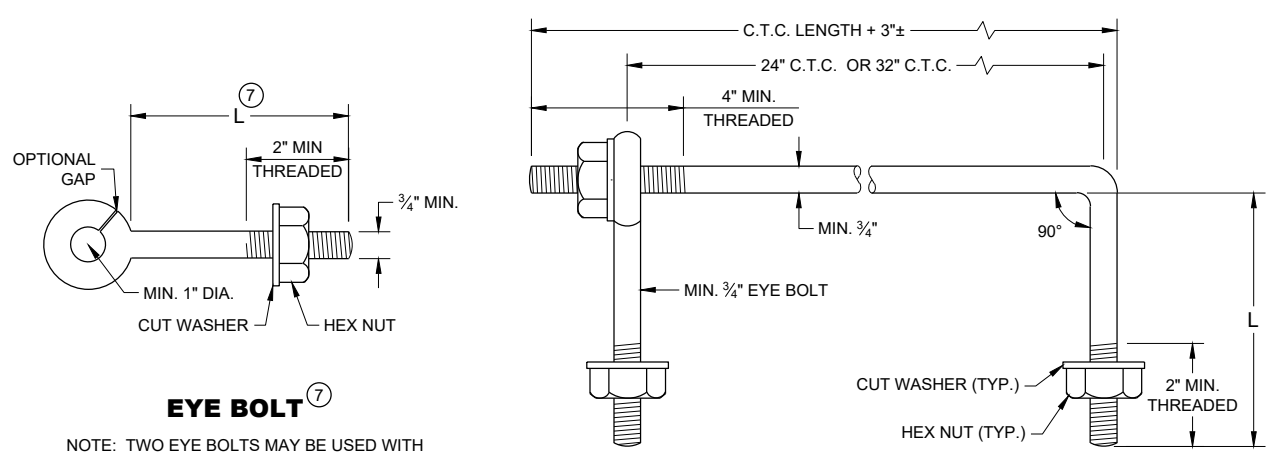
DETAILS OF CONSTRUCTION, MATERIALS, AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND APPLICABLE SPECIAL PROVISIONS.

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.

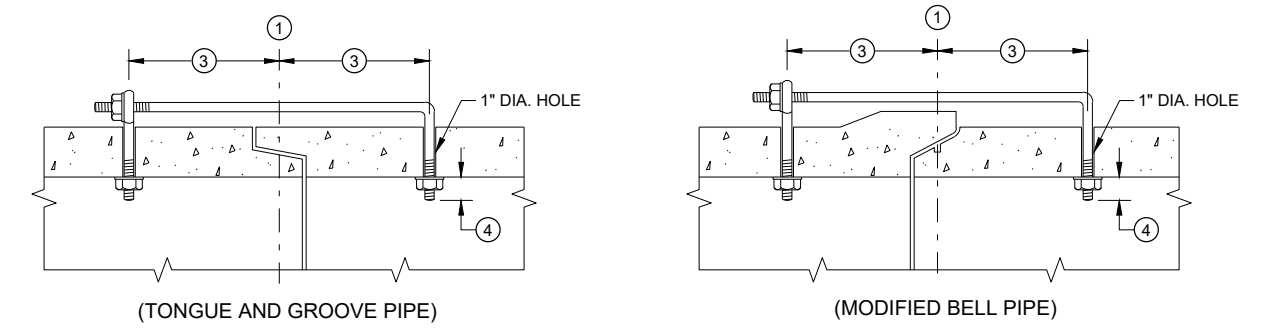
- ① CENTER LINE OF TONGUE AND GROOVE OR BELL AND SPIGOT JOINTS.
- ② THE INSIDE OF THE THREADED INSERTS SHALL BE CLEAN TO ALLOW THE INSERTION OF THREADED EYE BOLTS.
- ③ HOLES SHALL BE CAST-IN-PLACE OR DRILLED PER THE APPLICABLE DETAIL, AND EQUAL DISTANCE FROM THE CENTERLINE OF THE JOINT.
- ④ BOLT PROJECTION 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 AND TIE ROD

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.



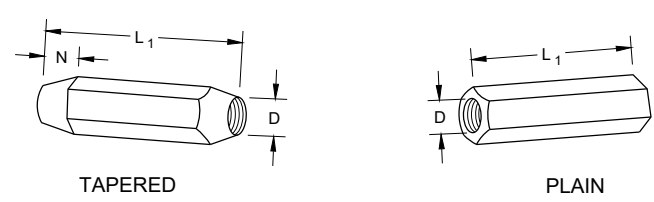
LONGITUDINAL SECTION
(JOINT TIES FOR 18" TO 66" DIA. CONCRETE PIPE)

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

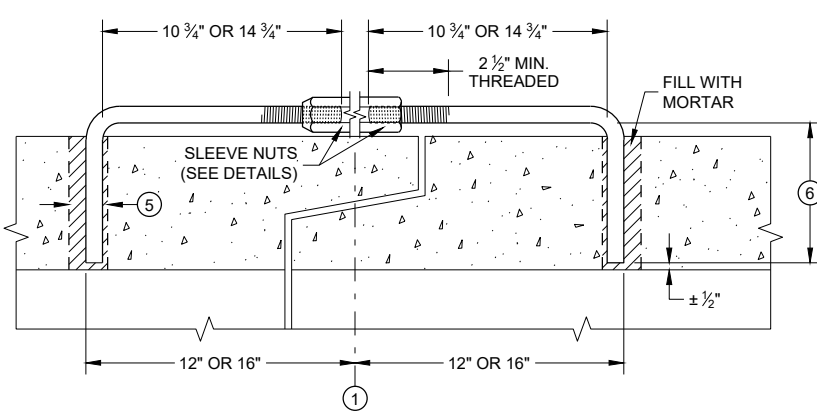
ADJUSTABLE TIE ROD TABLE

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

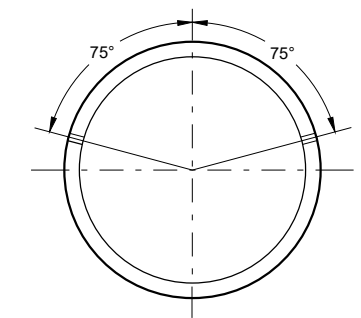
DIMENSIONS SHOWN ARE IN INCHES



RIGHT AND LEFT THREADS SLEEVE NUTS

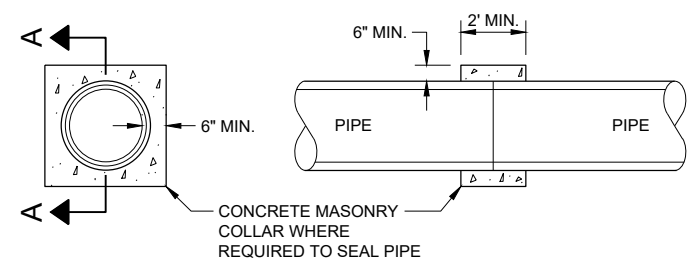


LONGITUDINAL SECTION
ADJUSTABLE TIE ROD (ALTERNATE NO. 3)



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

TRANSVERSE SECTION

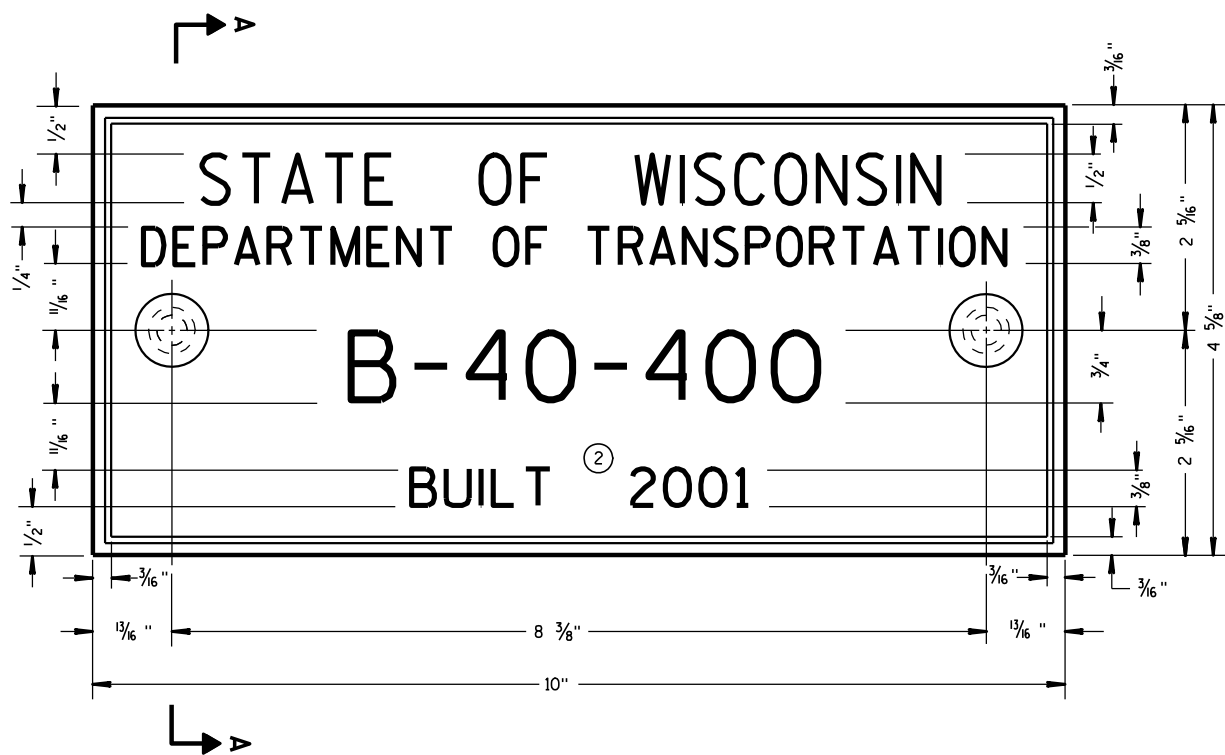


SECTION A - A
CONCRETE COLLAR DETAIL

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
FHWA



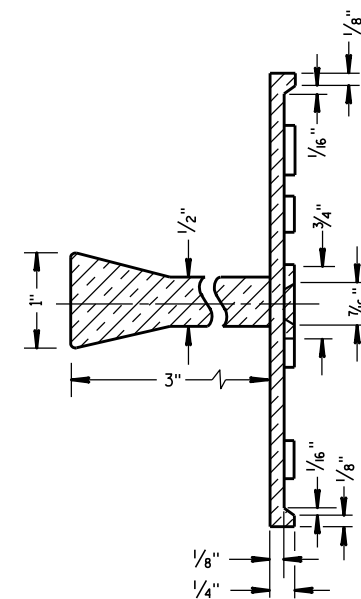
TYPICAL NAME PLATE
(BRIDGES, CULVERTS, AND RETAINING WALLS)

GENERAL NOTES

NAME PLATES TO BE INSTALLED ON BRIDGES, CULVERTS, AND RETAINING WALLS SHALL CONFORM TO THE REQUIREMENTS OF SECTION 502.3.11 OF THE STANDARD SPECIFICATIONS.

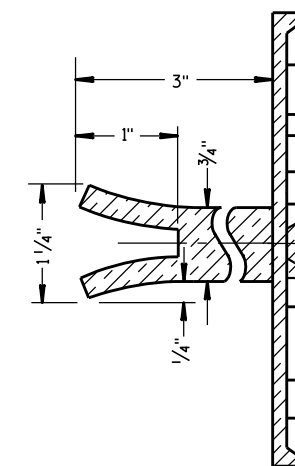
THE BRIDGE NUMBER AND YEAR BUILT SHOWN ON THIS DRAWING ARE EXAMPLES ONLY. SEE CONSTRUCTION PLANS FOR INDIVIDUAL NUMBERING AND YEAR BUILT.

- ① EPOXY RESIN SHALL BE FROM AN APPROVED MANUFACTURER AND USED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.
- ② REHABILITATION OF AN EXISTING STRUCTURE SHOULD USE THE DATE OF ORIGINAL STRUCTURE CONSTRUCTION.

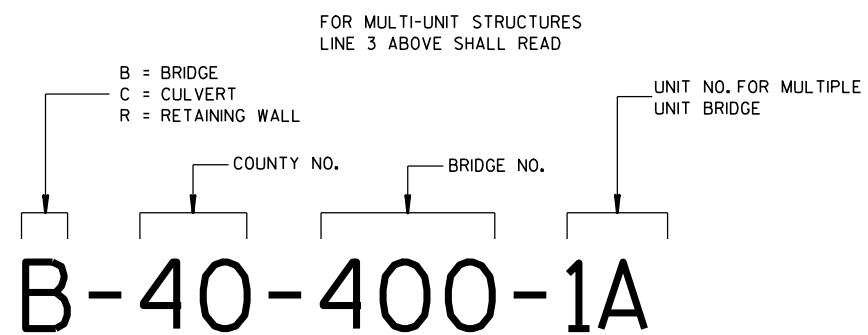


SECTION A-A

SPREAD OPEN SO THE TOP OF LUG IS 1 1/4" WIDE

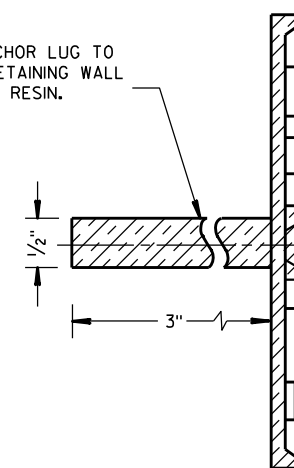


ALTERNATE LUG



**NUMBERING DESIGNATION
MULTI-UNIT STRUCTURES**

- ① ADHERE ANCHOR LUG TO PRECAST RETAINING WALL WITH EPOXY RESIN.



ALTERNATE LUG
(FOR ATTACHMENT TO PRECAST STRUCTURES)

**NAME PLATE
(STRUCTURES)**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
DATE 3/26/10 /S/ Scot Becker
CHIEF STRUCTURAL DEVELOPMENT ENGINEER
FHWA

GENERAL NOTES

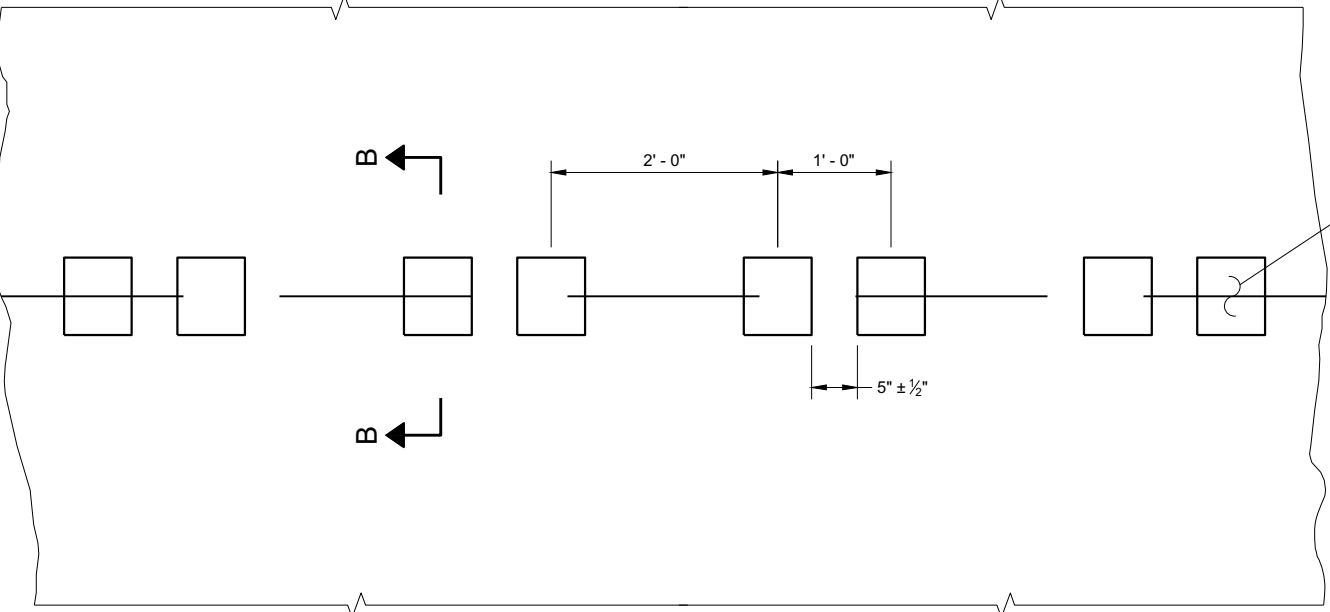
DETAILS OF CONSTRUCTION NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND APPLICABLE SPECIAL PROVISIONS.

DO NOT MILL CENTERLINE GROOVES THROUGH ANY INTERSECTION, MARKED CROSSWALK, NON-MOTORIZED PATH CROSSING, OR SNOWMOBILE CROSSING.

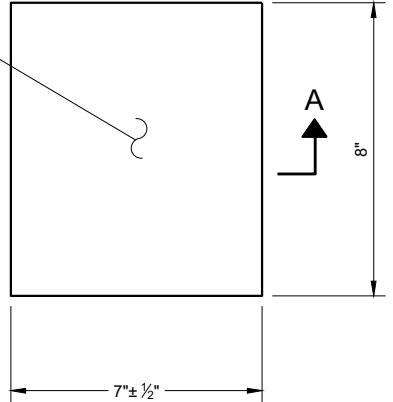
INSTALL PAVEMENT MARKING AFTER THE GROOVES ARE INSTALLED.

SEE SIGNING PLAN FOR SIGN REQUIREMENTS THAT MAY BE NEEDED.

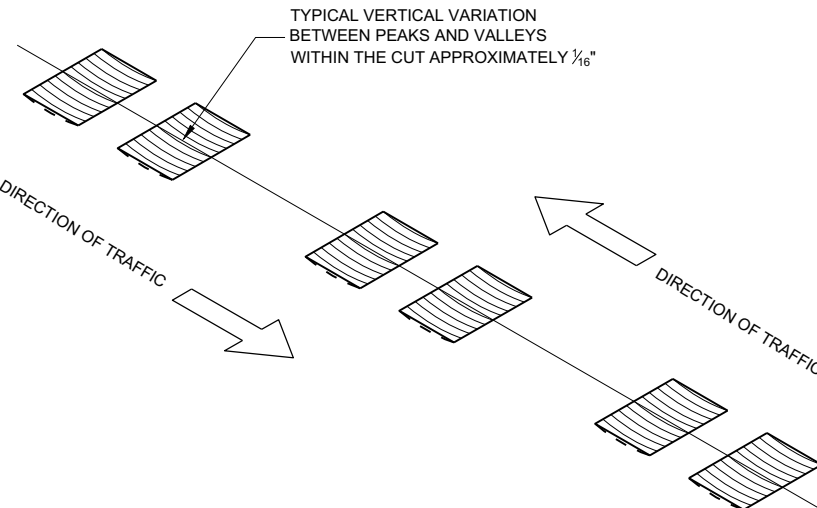
- ① CENTERLINE GROOVES MAY BE OMITTED IN AREAS WITH HIGH CONCENTRATIONS OF DRIVEWAYS. WHEN DIRECTED BY THE ENGINEER.



**PLAN VIEW
SHOULDER WITH GROOVES**

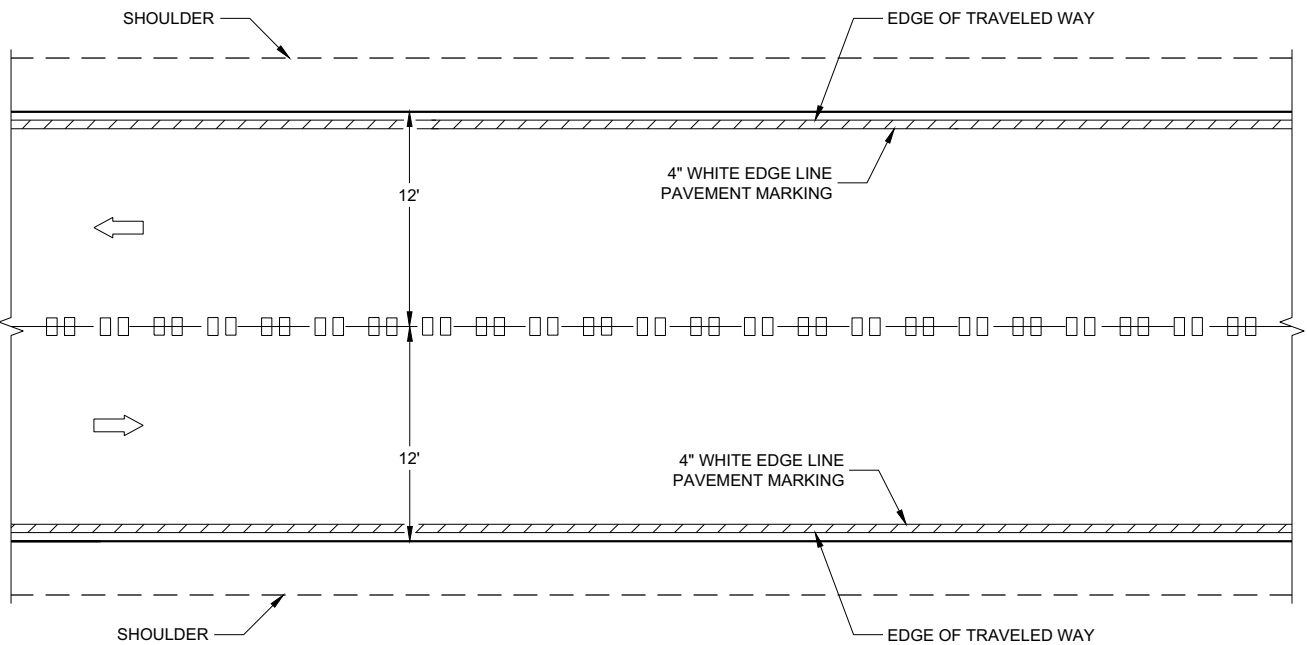


**PLAN VIEW
(SINGLE GROOVE)**

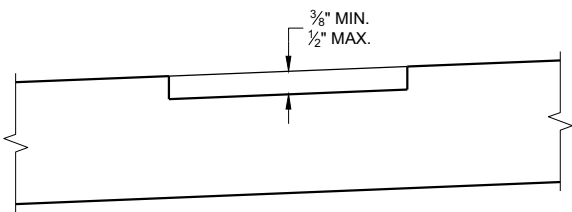


ISOMETRIC

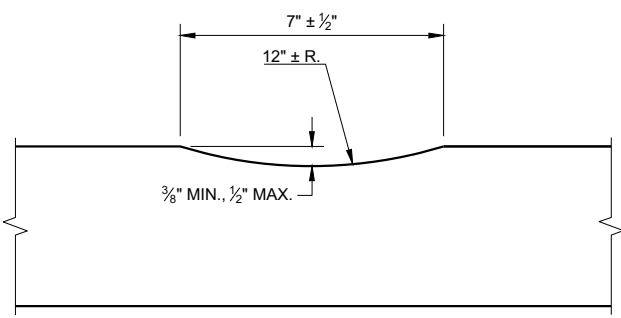
PLACEMENT DETAIL FOR TYPE 1 MILLED RUMBLE STRIP



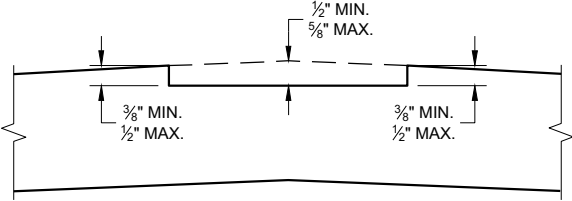
CENTERLINE GROOVES ON TWO-WAY ROADWAYS



**SECTION B - B
SUPERELEVATED ROADWAY**



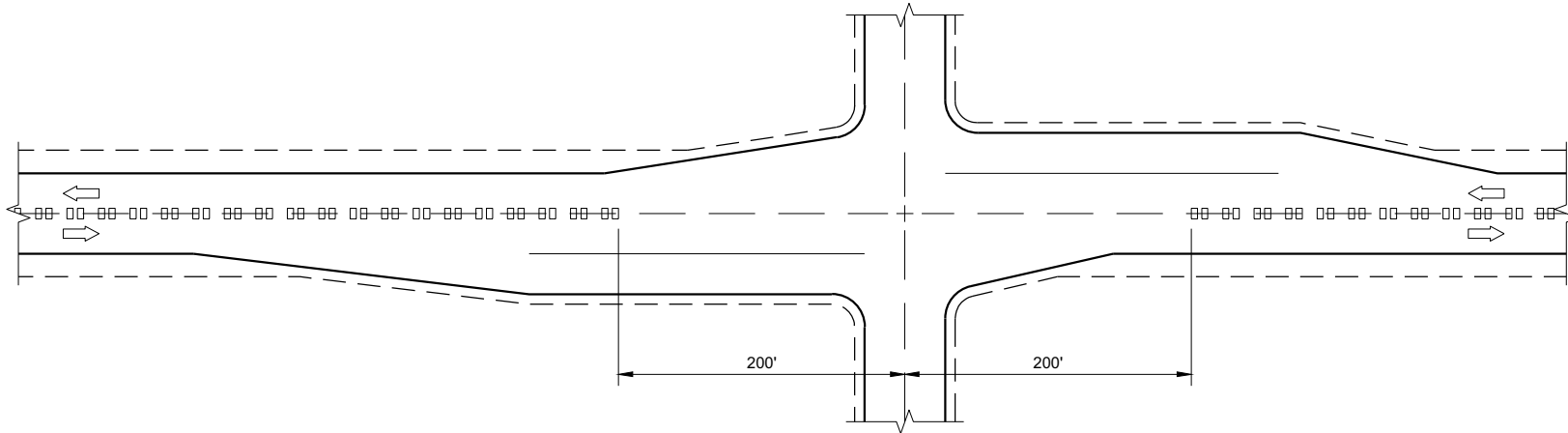
SECTION A - A



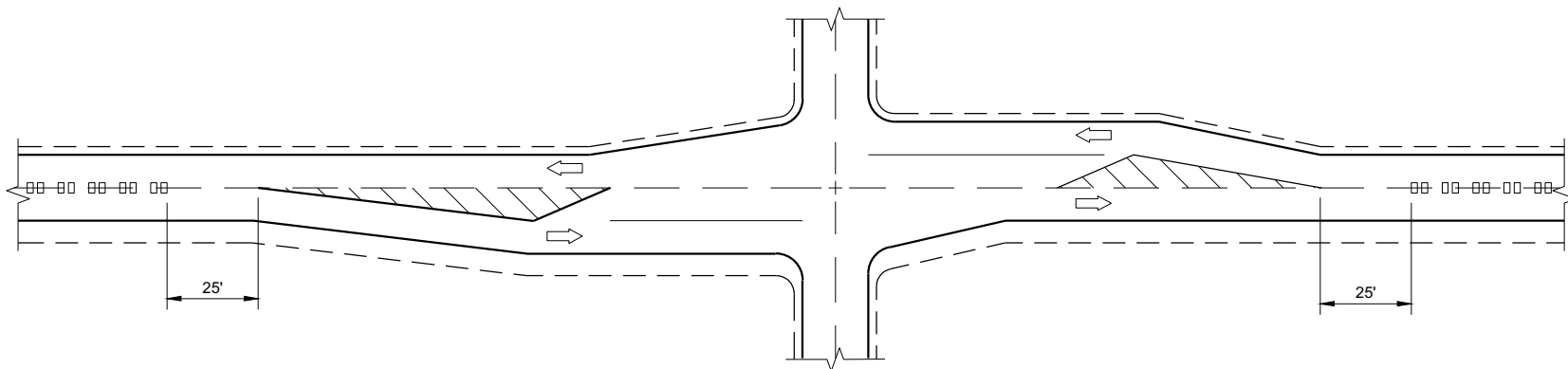
**SECTION B - B
CROWNED ROADWAY**

**2-LANE RURAL
CENTER LINE RUMBLE STRIP,
MILLING**

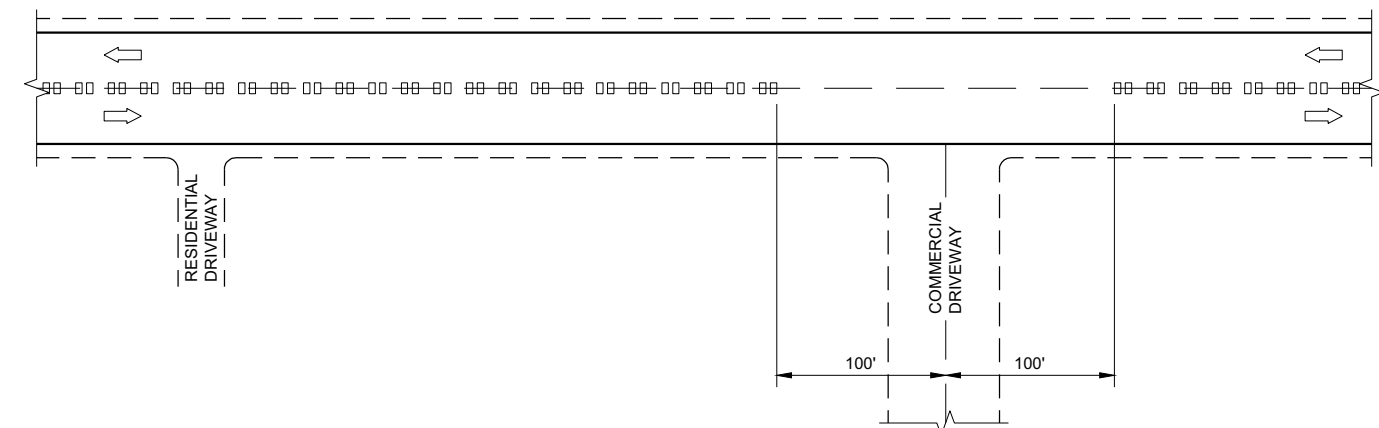
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



CENTERLINE GROOVES AT INTERSECTIONS



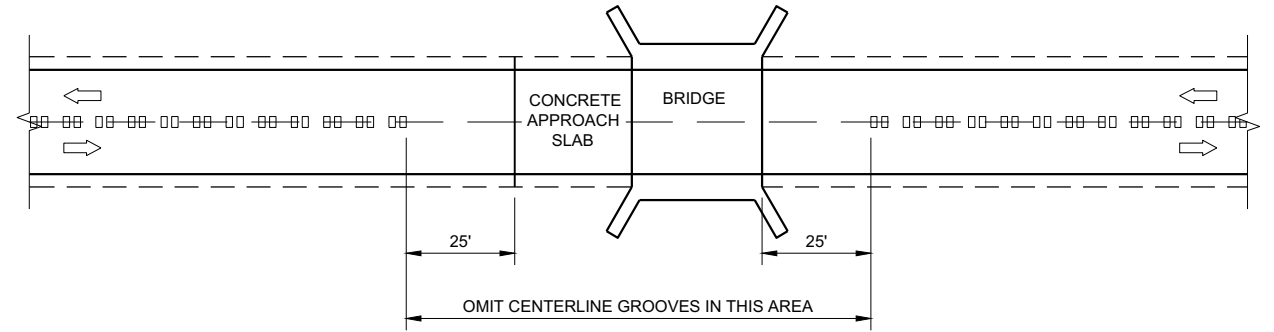
**CENTERLINE GROOVES AT INTERSECTIONS
(WITH LEFT TURN LANES)**



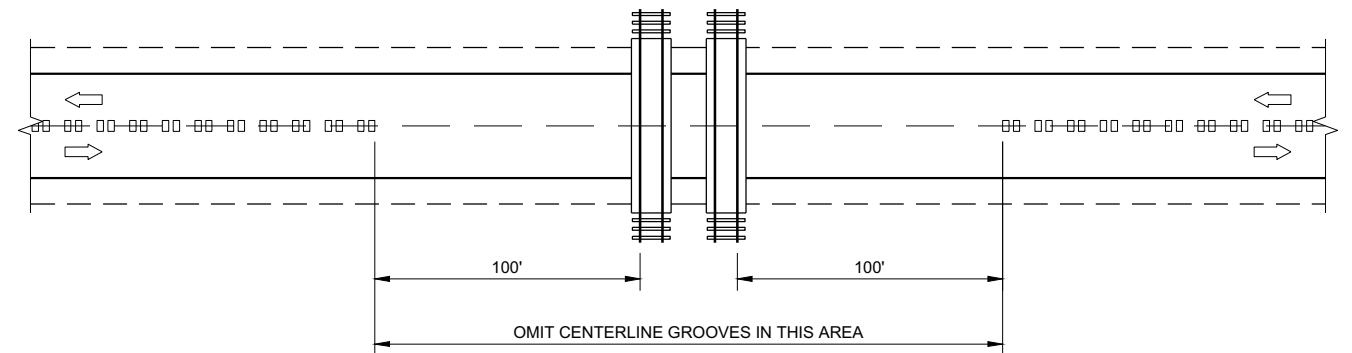
CENTERLINE GROOVES AT DRIVEWAYS^①

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

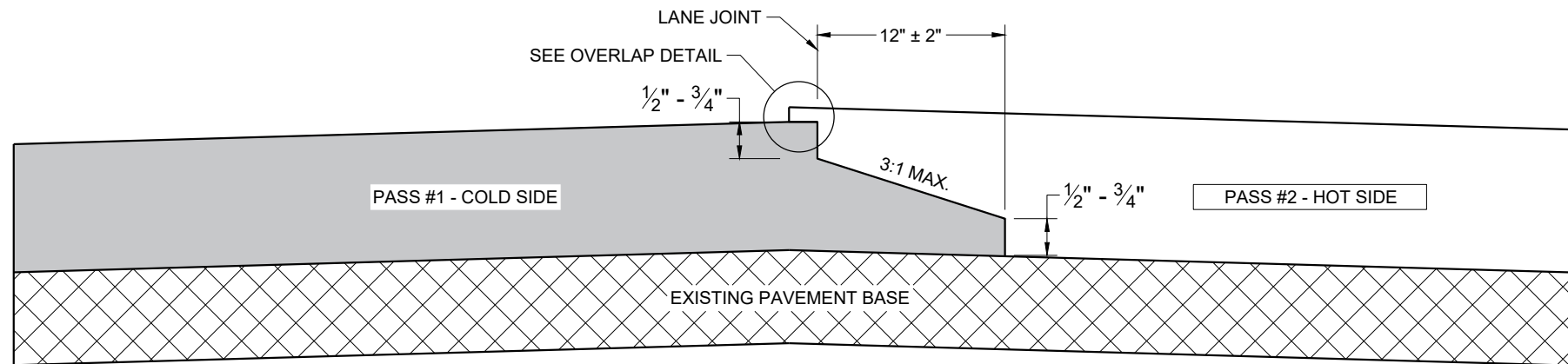
6

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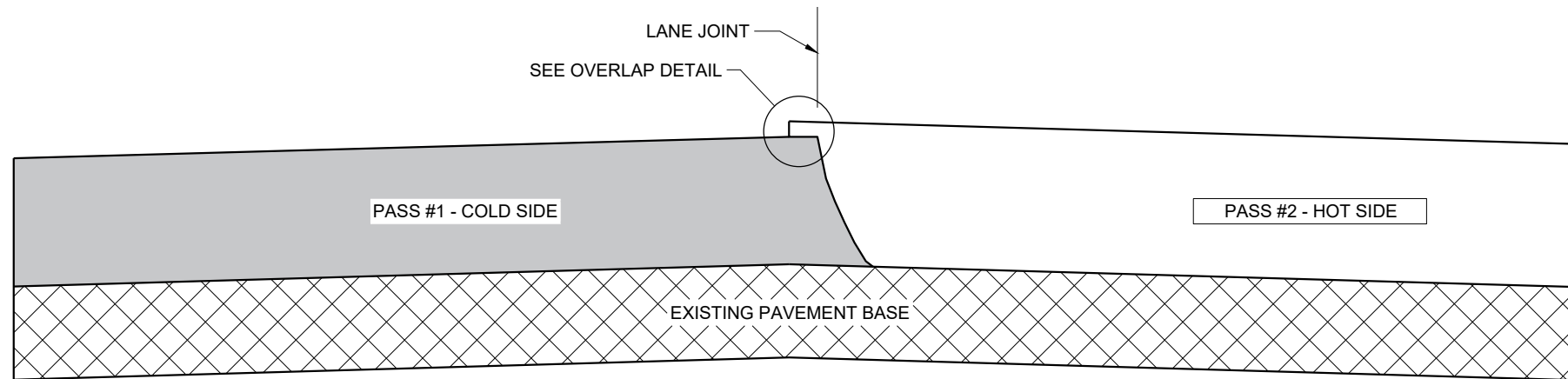
SDD 13A11 - 03b

SDD 13A11 - 03b

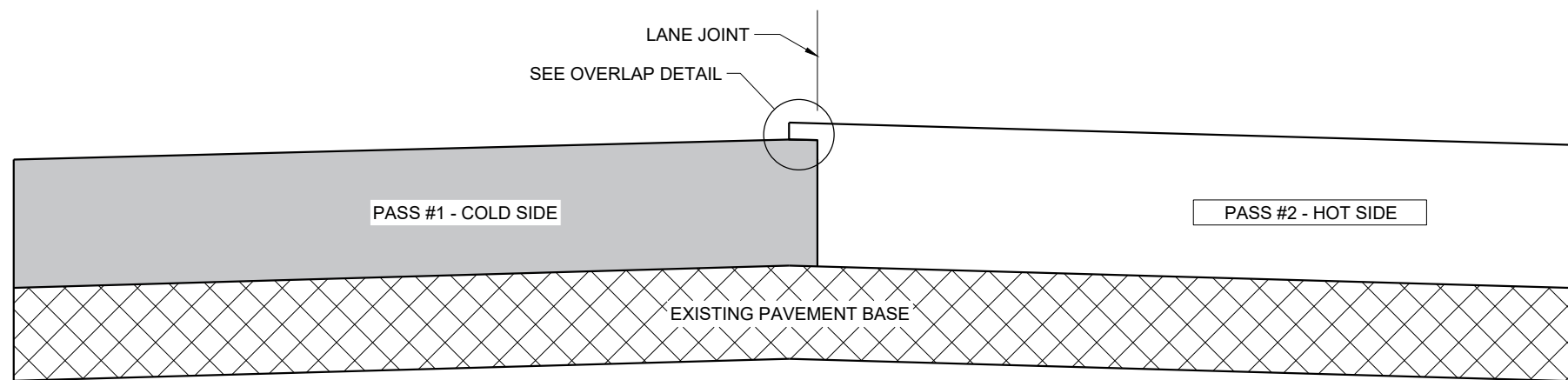
2-LANE RURAL CENTERLINE RUMBLE STRIP, MILLING	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED DATE 7/2018	/S/ Rodney Taylor ROADWAY STANDARDS DEVELOPMENT ENGINEER
FHWA	



**TYPICAL PAVEMENT CROSS SECTION
NOTCHED WEDGE JOINT**



**TYPICAL PAVEMENT CROSS SECTION
VERTICAL JOINT**



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

GENERAL NOTES

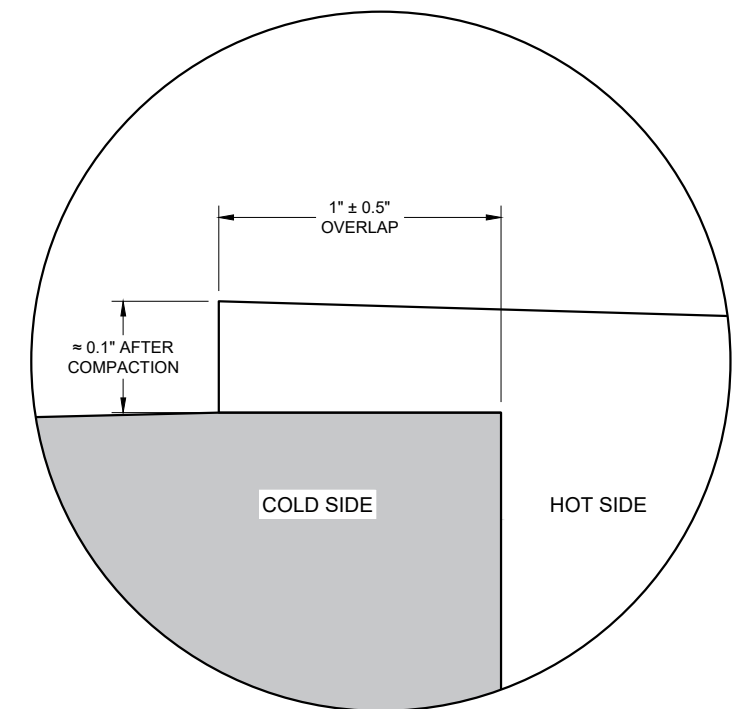
IN ADDITION TO THE DETAILS PROVIDED IN THIS DRAWING, CONFORM TO STANDARD SPECIFICATION 450.3.2.8 FOR WHEN A NOTCHED WEDGE JOINT IS REQUIRED AND FOR GENERAL JOINT CONSTRUCTION REQUIREMENTS.

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)

6

6

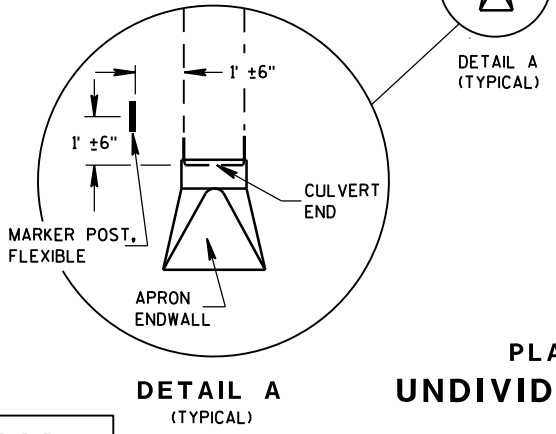
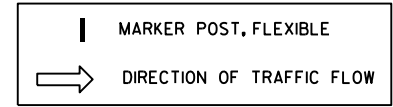
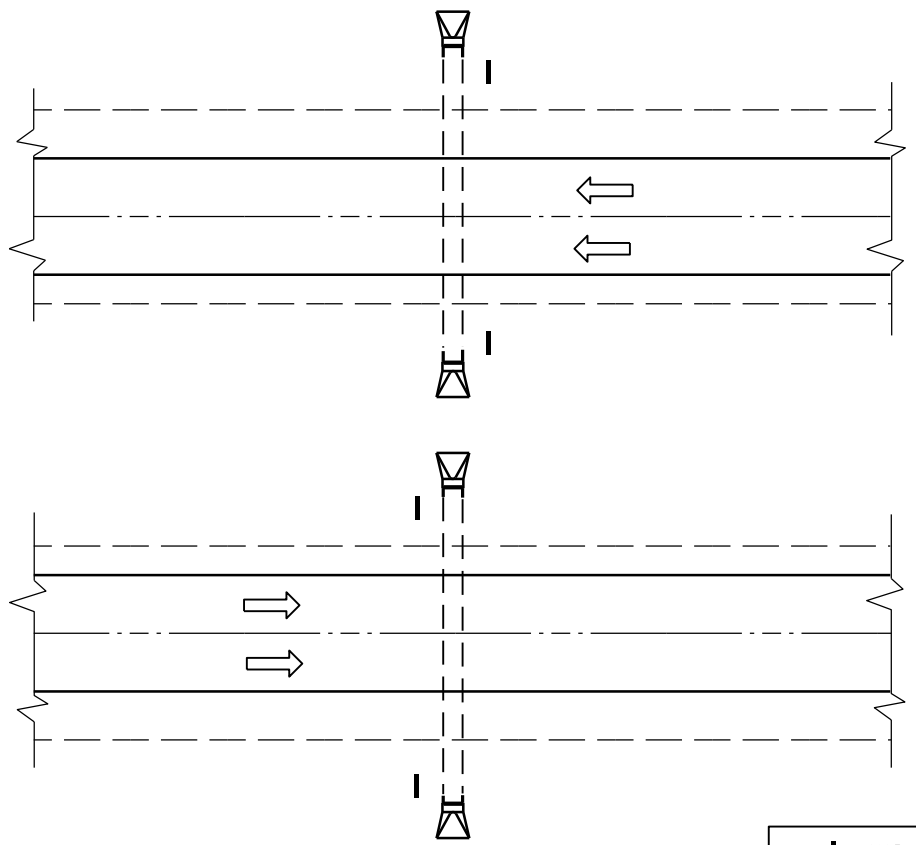
SDD 13C19 - 03

SDD 13C19 - 03

HMA LONGITUDINAL JOINTS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
November 2020 DATE /S/ Steven Hefel
HMA PAVEMENT ENGINEER
FHWA

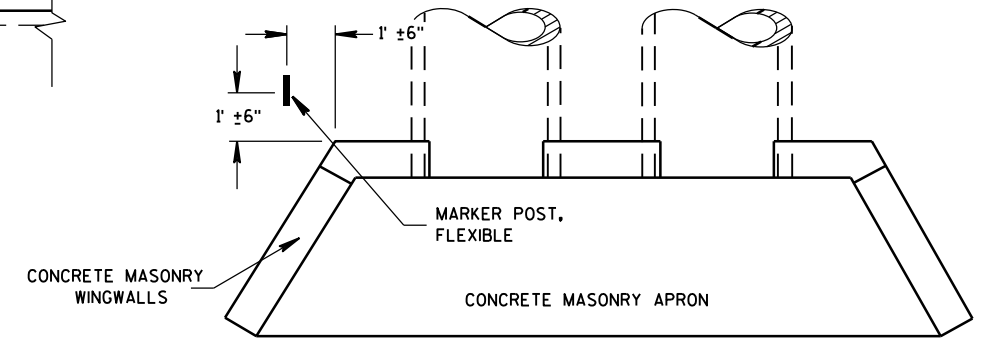


PLAN VIEW UNDIVIDED HIGHWAY

FLEXIBLE MARKER POST LOCATION

GENERAL NOTES

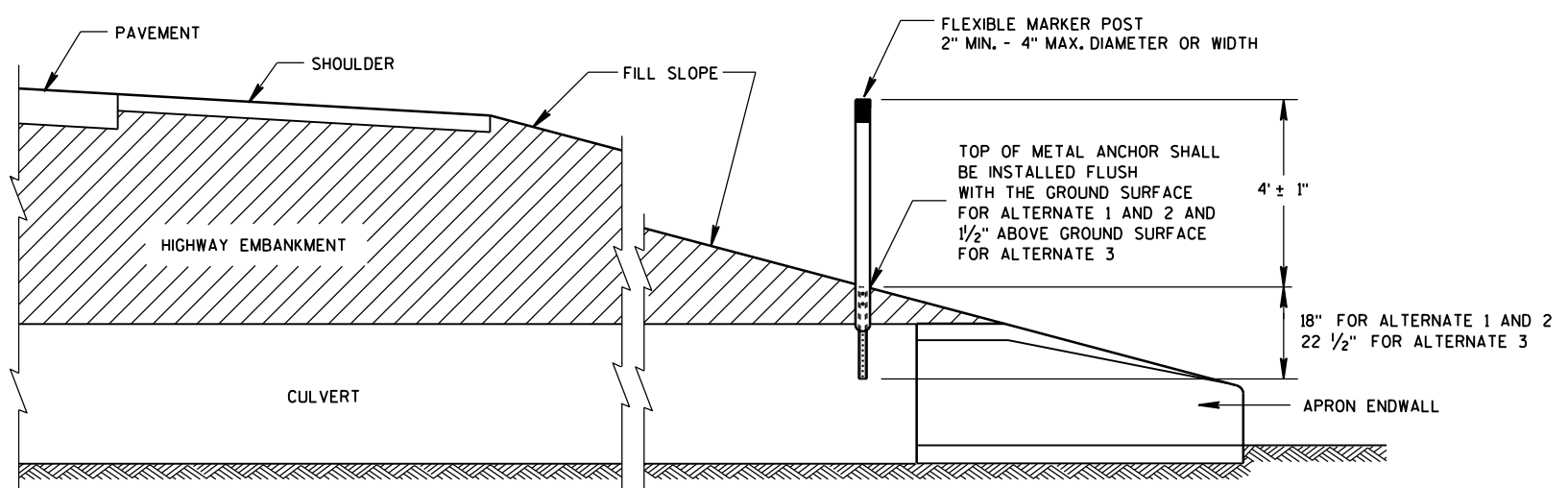
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.



PLAN VIEW CONCRETE MASONRY ENDWALLS FOR CULVERT PIPE AND PIPE ARCH

6

6



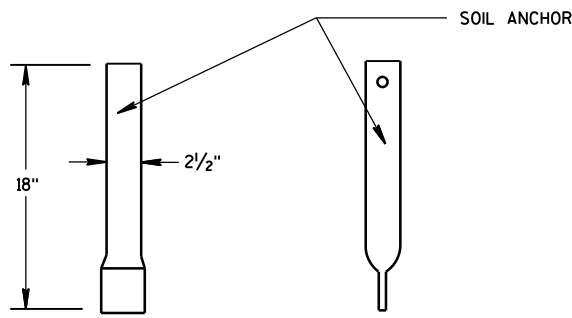
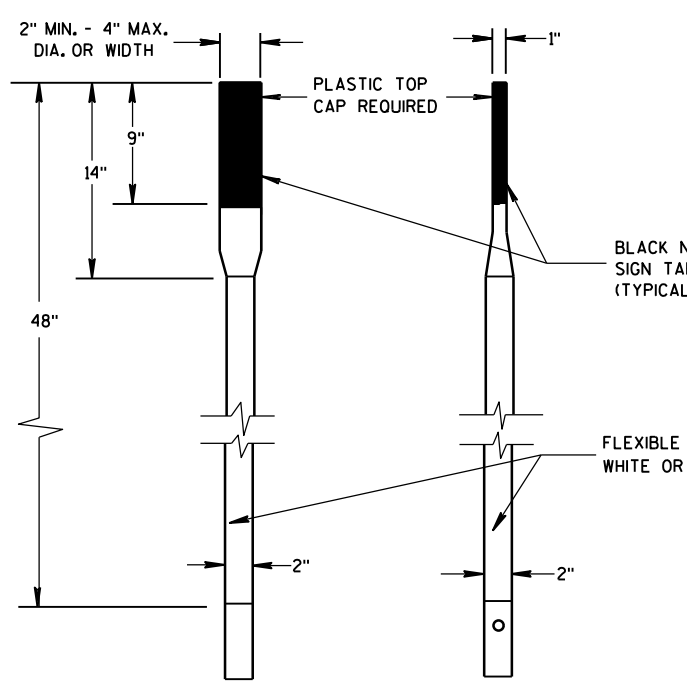
CROSS SECTION FLEXIBLE MARKER POST

FLEXIBLE MARKER POST FOR CULVERT END

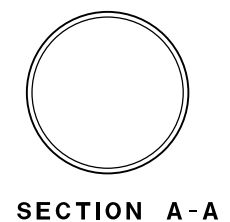
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION

S.D.D. 15 A 3-2a

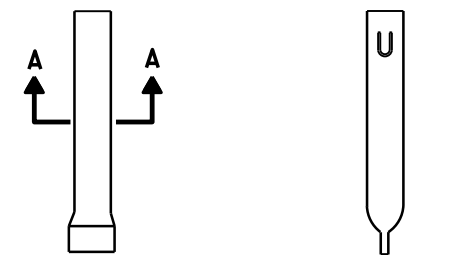
S.D.D. 15 A 3-2a



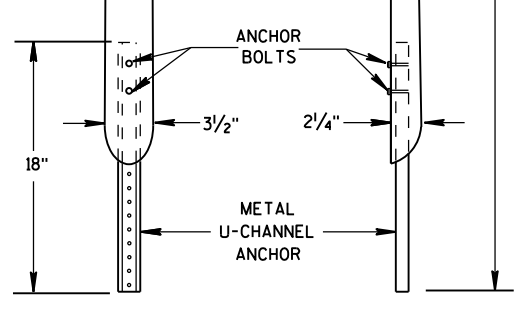
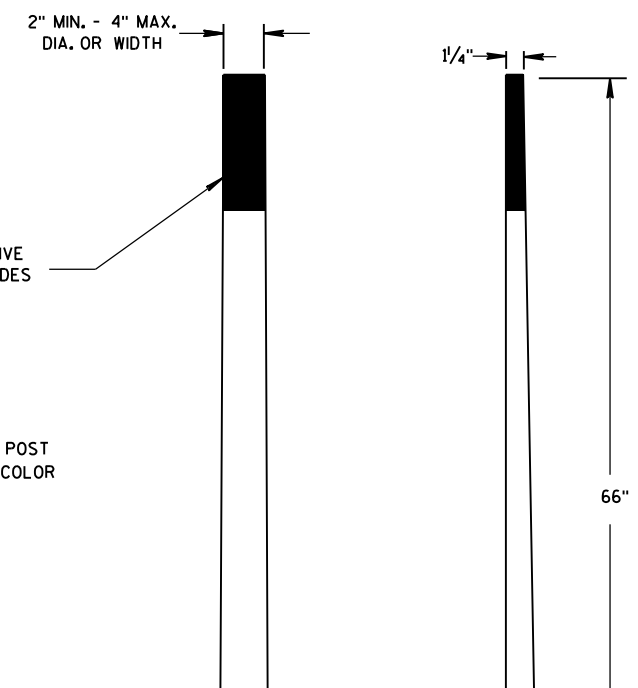
FRONT VIEW SIDE VIEW
ALTERNATE 1



SECTION A-A

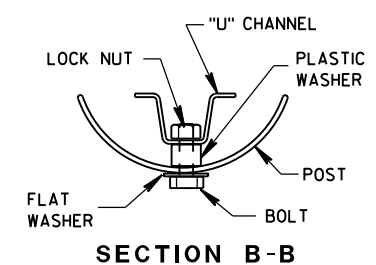


FRONT VIEW SIDE VIEW
ALTERNATE 1

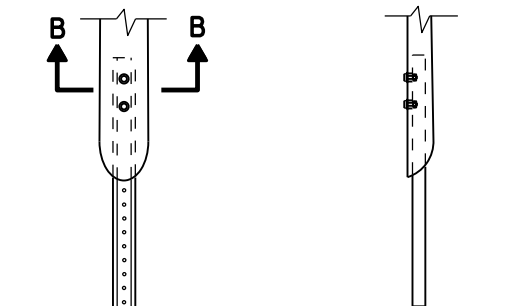


FRONT VIEW SIDE VIEW
ALTERNATE 2

FLEXIBLE MARKER POSTS

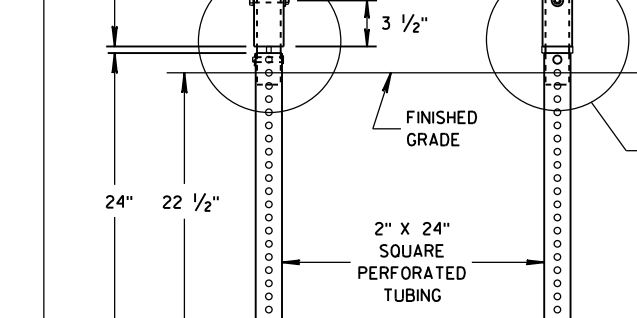
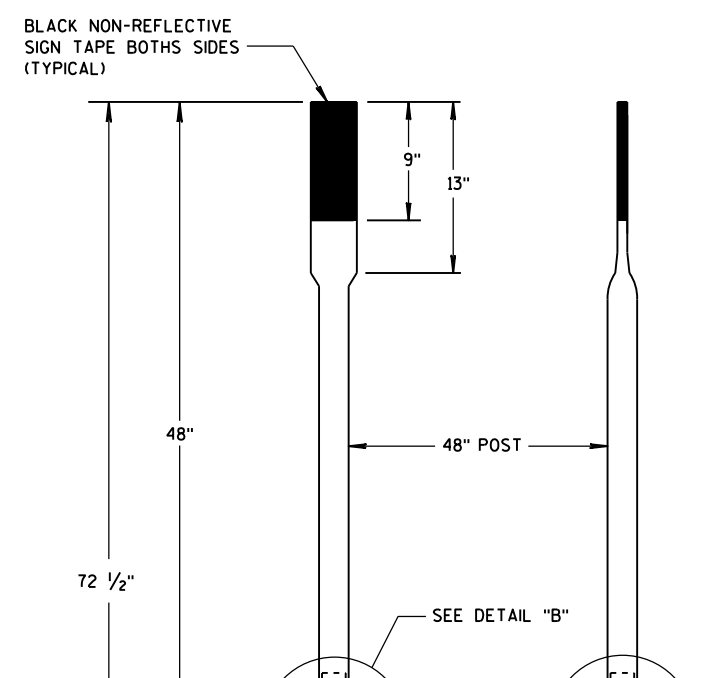


SECTION B-B

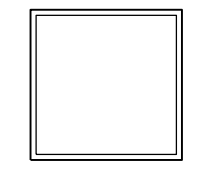


FRONT VIEW SIDE VIEW
ALTERNATE 2

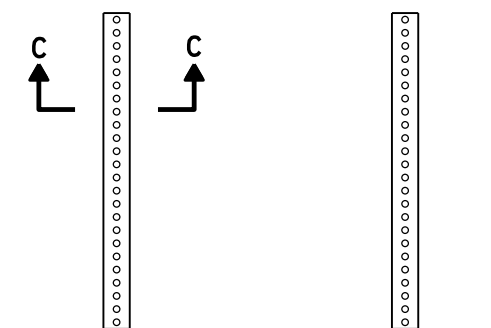
FLEXIBLE MARKER POST ANCHORS



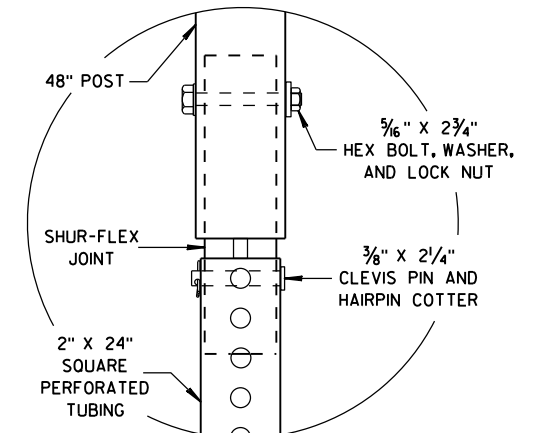
FRONT VIEW SIDE VIEW
ALTERNATE 3



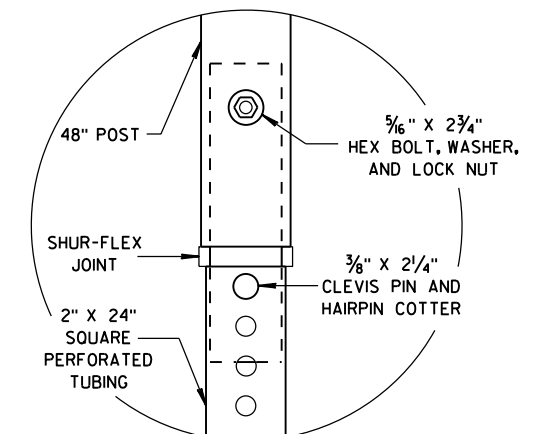
SECTION C-C



FRONT VIEW SIDE VIEW
ALTERNATE 3



DETAIL B

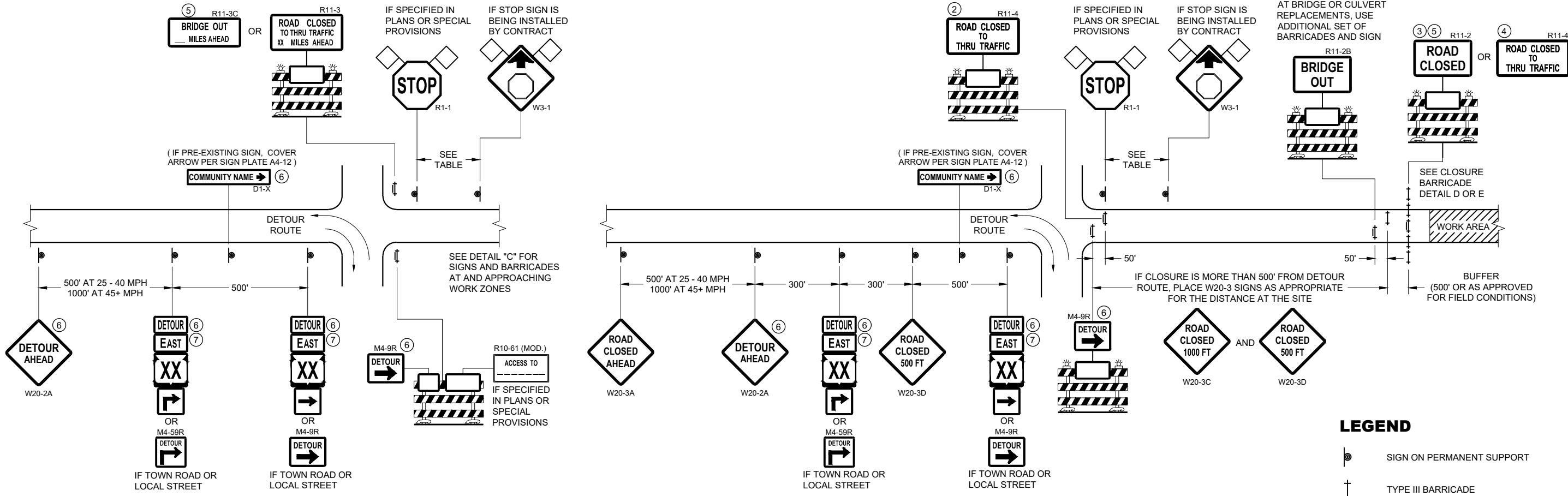


DETAIL C

FLEXIBLE MARKER POST FOR CULVERT END

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
10/1/2012 DATE /S/ Travis Feltes
STATE TRAFFIC ENGINEER OF DESIGN
FHWA



**DETAIL A
MAINLINE CLOSURE WITH POSTED DETOUR**

WORK ZONE GREATER THAN OR EQUAL TO 1/2 MILE FROM
DETOUR ROUTE (1000 FEET IF URBAN)

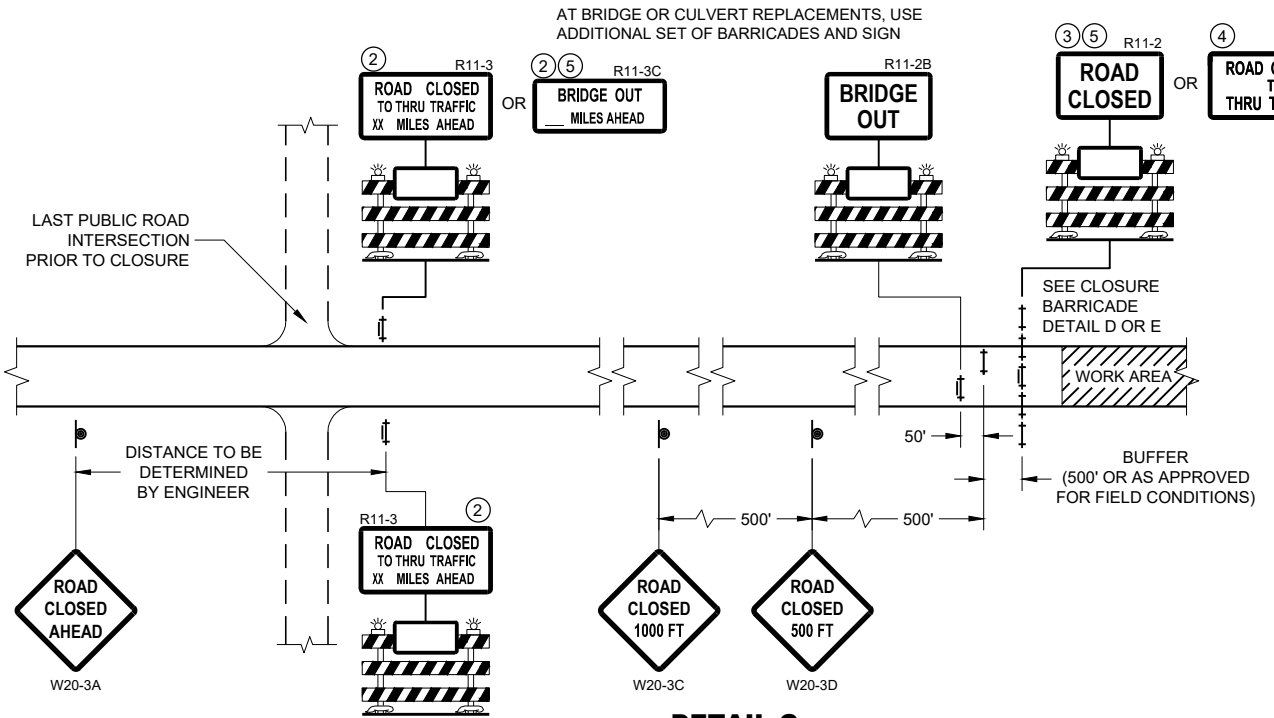
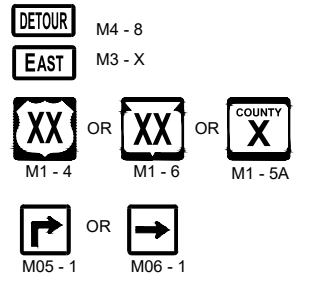
**DETAIL B
MAINLINE CLOSURE WITH POSTED DETOUR**

WORK ZONE LESS THAN 1/2 MILE FROM
DETOUR ROUTE (1000 FEET IF URBAN)

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)

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



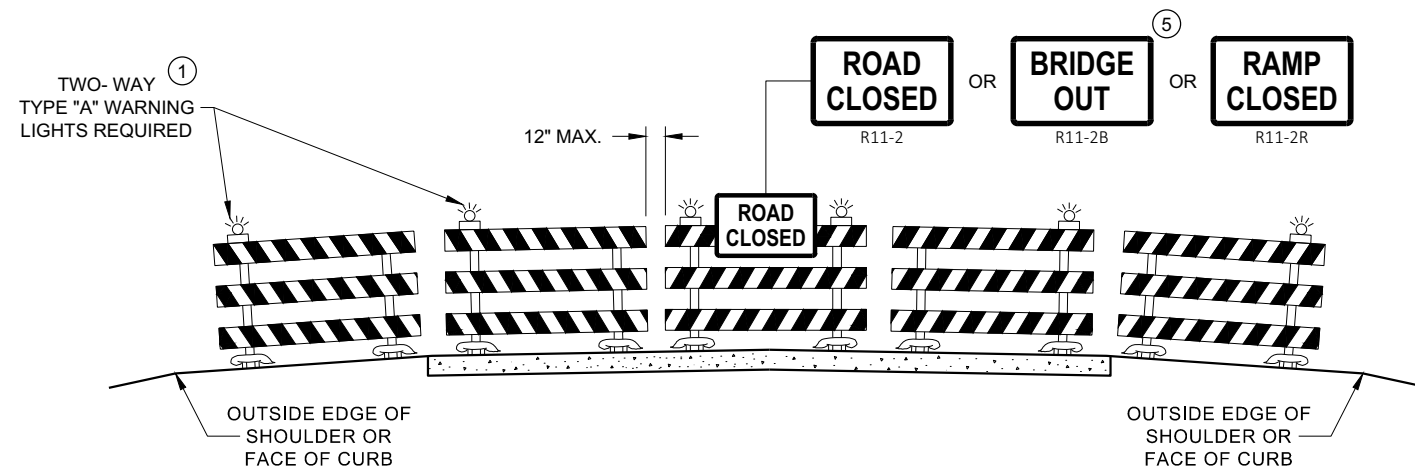
**DETAIL C
MAINLINE CLOSURE, NO POSTED DETOUR**

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

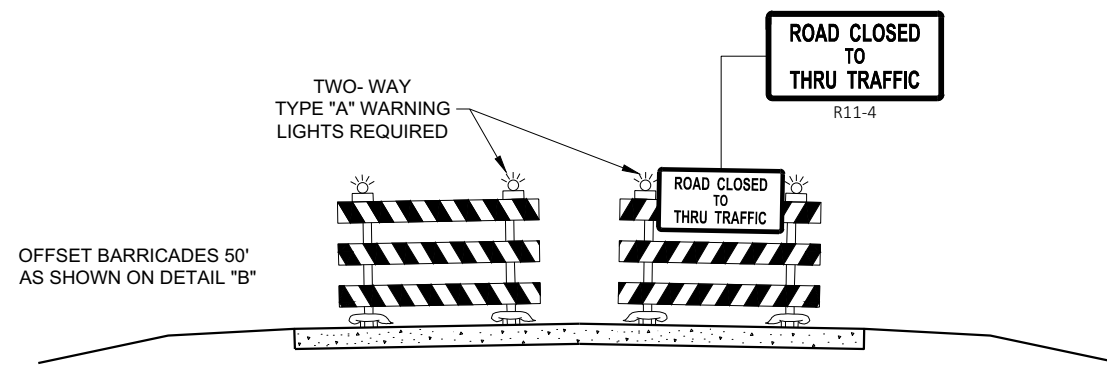
**BARRICADES AND SIGNS
FOR MAINLINE CLOSURES**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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



**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

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

LEGEND

- SIGN ON PERMANENT SUPPORT
- WORK AREA
- M4 - 8
- M3 - X
- M1 - 4
- M1 - 6
- M1 - 5A
- M05 - 1
- M06 - 1
- M06 - 1

GENERAL NOTES

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

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. SEE SPECIFIC PROJECT DETOUR SIGNING DETAIL SHEETS. MODIFY EXISTING SIGNS WHERE POSSIBLE.

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

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.

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

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

SIGN SIZES SHALL BE AS FOLLOWS:

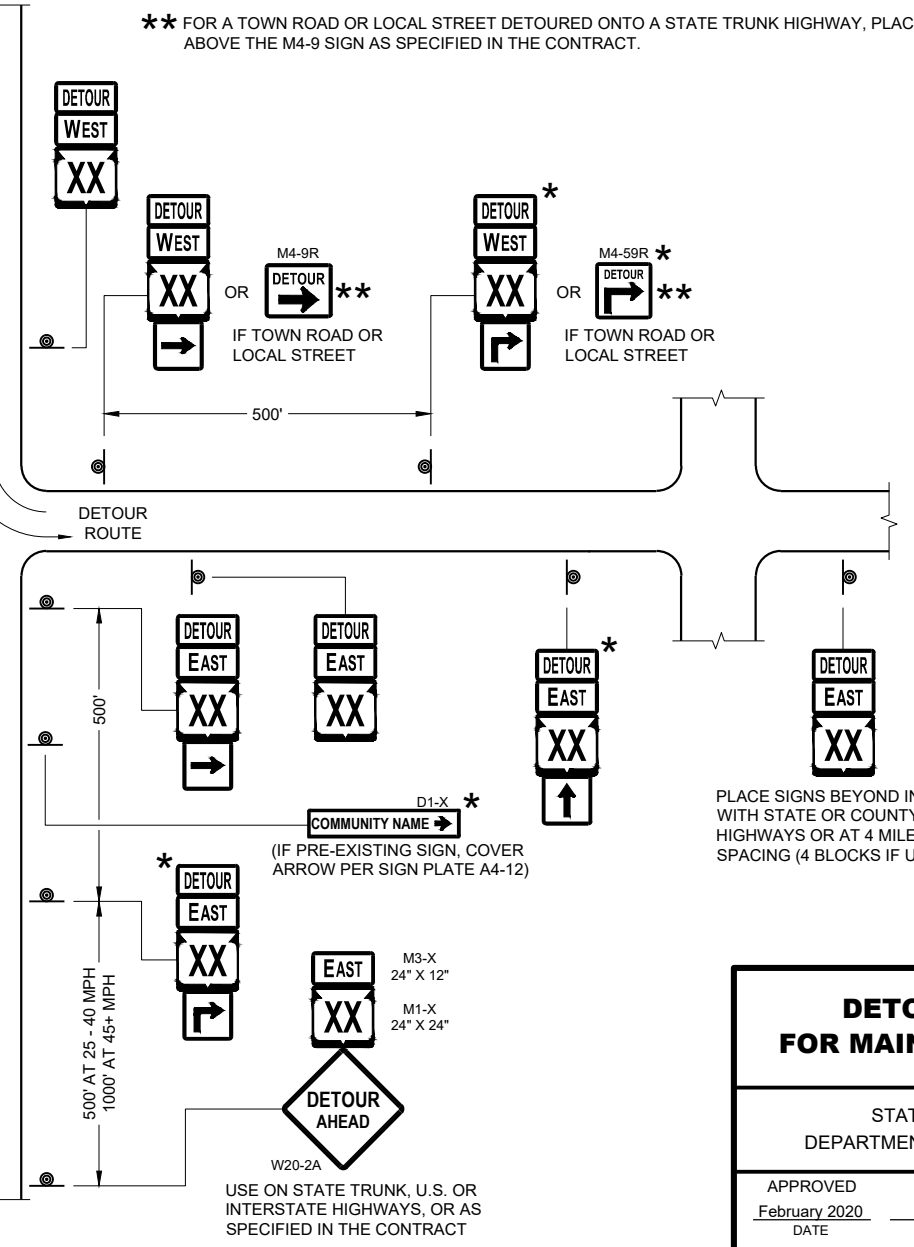
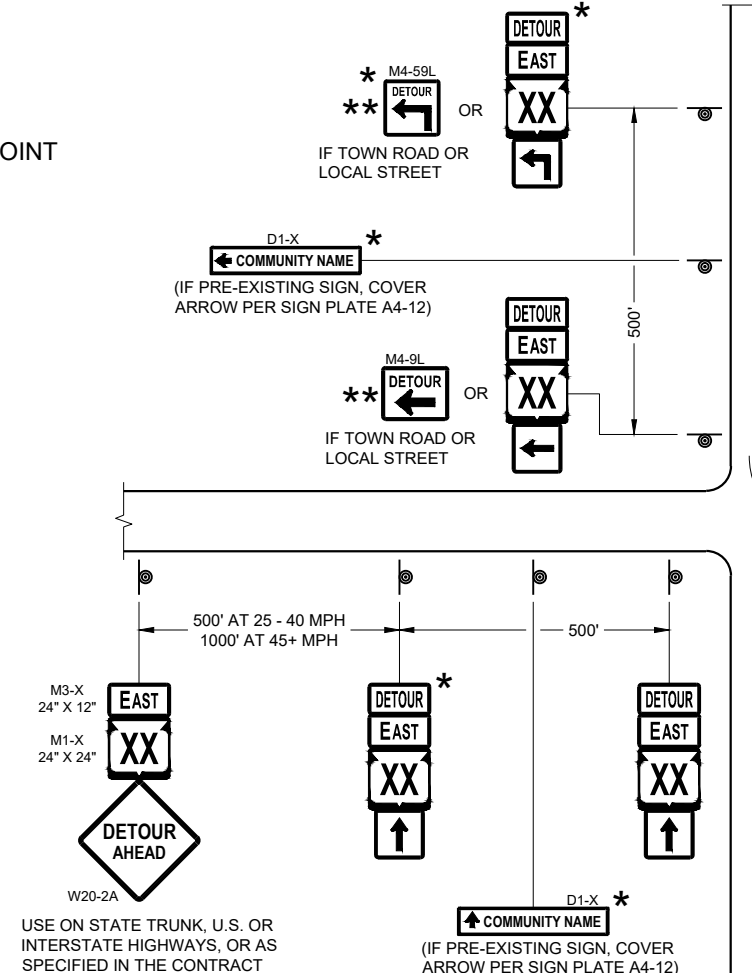
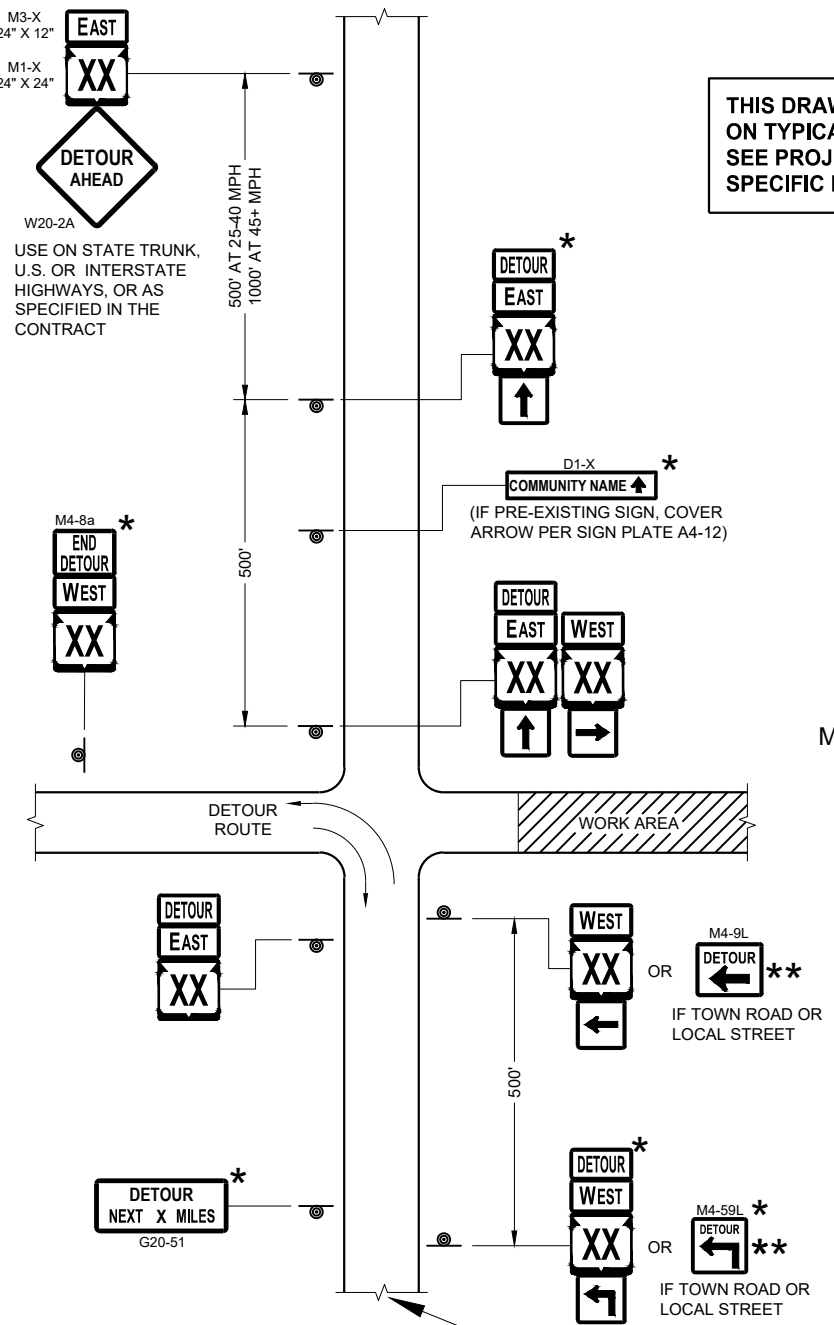
- M3-X SHALL BE 24" X 12" (36" X 18" IF NEEDED TO MATCH EXISTING SIGNS)
- M4-8 SHALL BE 24" X 12" (36" X 18" IF NEEDED TO MATCH EXISTING SIGNS)
- M1-4, M1-5A AND M1-6 SHALL BE 24" X 24" (36" X 36" IF NEEDED TO MATCH EXISTING SIGNS)
- M05-1 AND M06-1 SHALL BE 21" X 21" (30" X 30" IF NEEDED TO MATCH EXISTING SIGNS)
- M4-9 AND M4-59 SHALL BE 30" X 24"
- M4-8a SHALL BE 24" X 18"
- G20-51 SHALL BE 60" X 24"
- W20-2A SHALL BE 48" X 48"
- D1-X SHALL BE AS SHOWN ON SPECIFIC PROJECT SIGNING DETAIL SHEETS.

- * OPTIONAL SIGNS. SEE SPECIFIC PROJECT DETOUR SIGNING DETAIL SHEETS.
- ** FOR A TOWN ROAD OR LOCAL STREET DETOURED ONTO A STATE TRUNK HIGHWAY, PLACE A ROAD NAME PLAQUE ABOVE THE M4-9 SIGN AS SPECIFIED IN THE CONTRACT.

THIS DRAWING PROVIDES GENERAL GUIDANCE ON TYPICAL DETOUR SIGN LAYOUT AND SPACING. SEE PROJECT DETOUR SIGNING SHEETS FOR SPECIFIC DETAILS FOR EACH PROJECT.

MATCH POINT

DETAIL F DETOUR SIGNING



SEE SPECIFIC PROJECT DETOUR SIGNING DETAIL SHEETS AND DETAIL A OR B ON SDD SHEET 15C02 - SHEET "a"




DETOUR SIGNING FOR MAINLINE CLOSURES	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED February 2020 DATE	/S/ Andrew Heidtke WORK ZONE ENGINEER
FHWA	

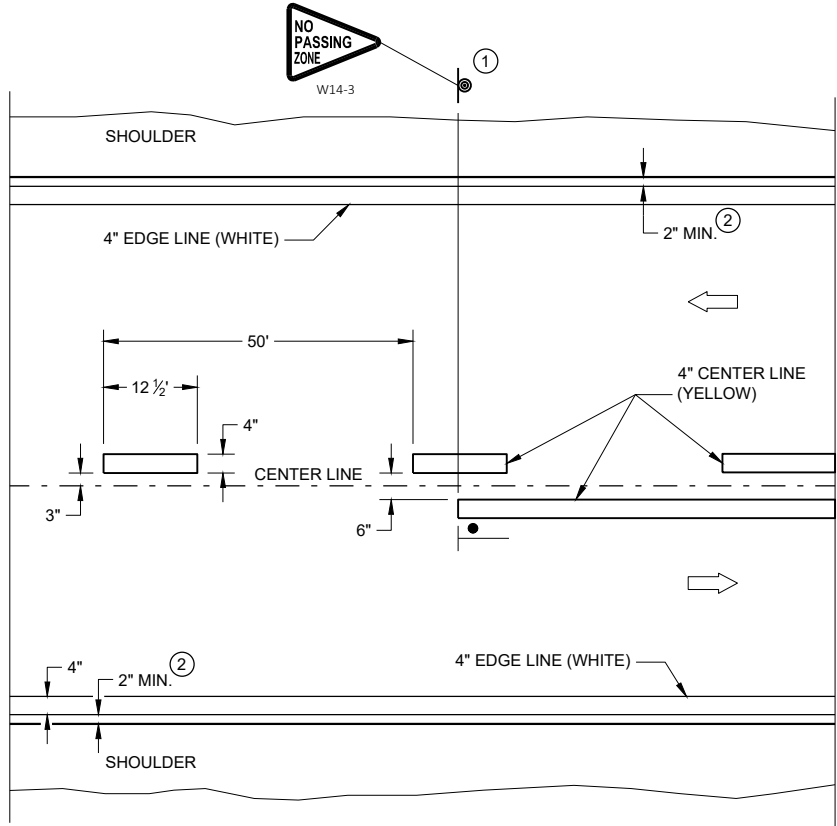
GENERAL NOTES

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

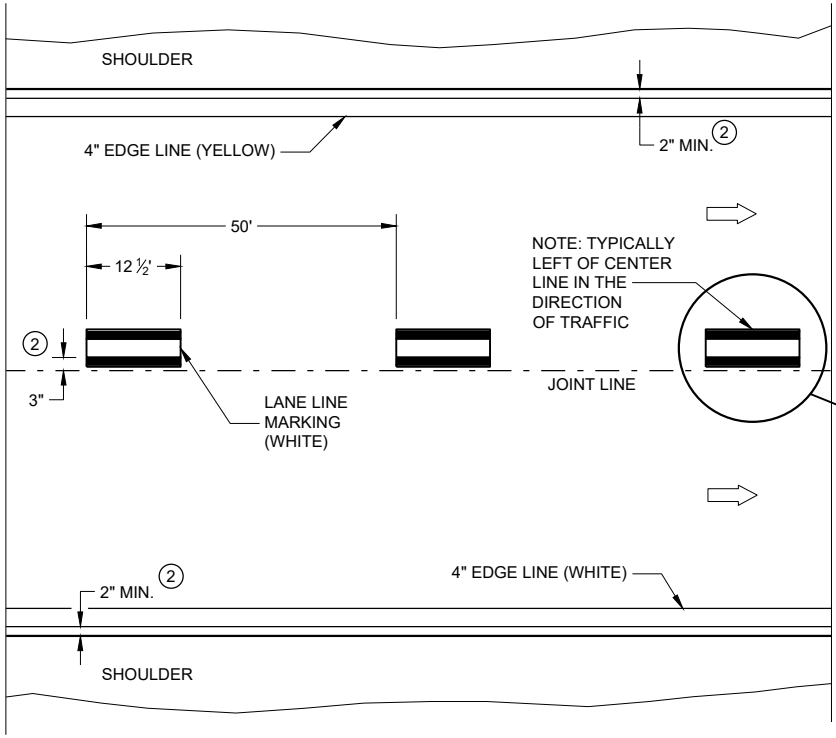
- ① LOCATE THE NO PASSING ZONE W14-3 SIGN WITHIN 50 FEET OF THE "T" MARKING
- ② MEASURE FROM EDGE OF MARKING TO JOINT LINE. THIS DOES NOT INCLUDE SPACE NEEDED FOR GROOVING OPERATIONS.

LEGEND

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

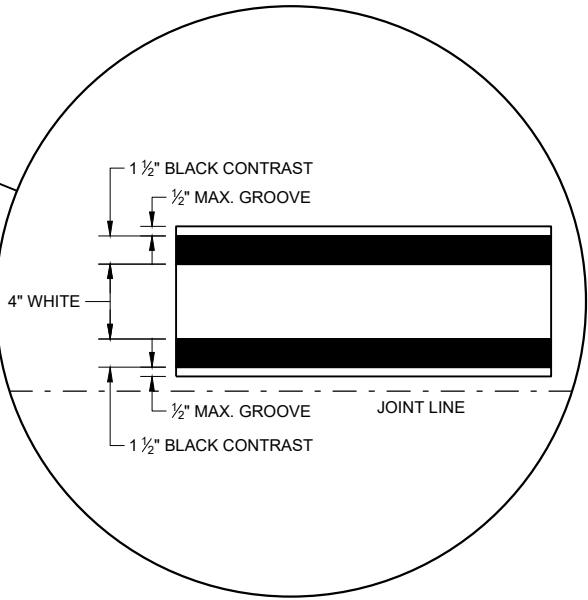


TWO WAY TRAFFIC



ONE WAY TRAFFIC

PERMANENT PAVEMENT MARKING



6

6

SDD 15C08 - 21a

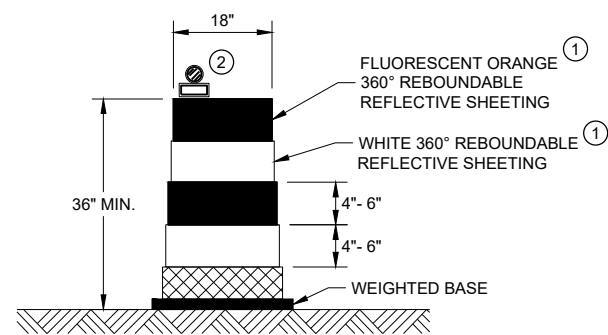
SDD 15C08 - 21a

PERMANENT LONGITUDINAL PAVEMENT MARKINGS

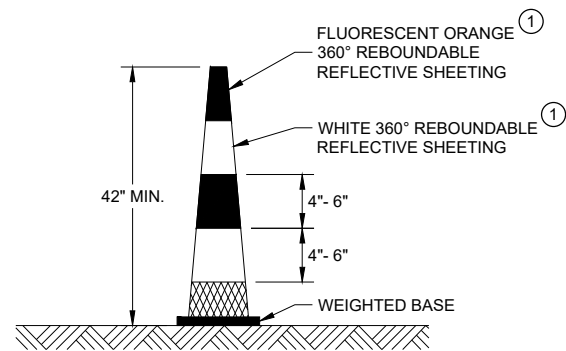
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
DATE: May 2022 /S/ Jeannie Silver
STATEWIDE SIGNING AND MARKING ENGINEER

FHWA

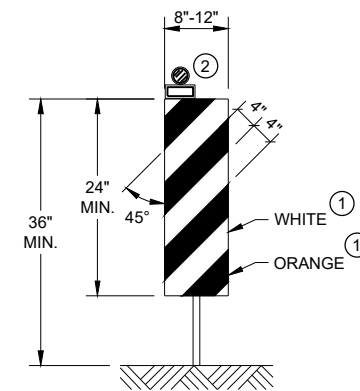


DRUM



42" CONE

DO NOT USE IN TAPERS
 1/2 SPACING OF DRUMS

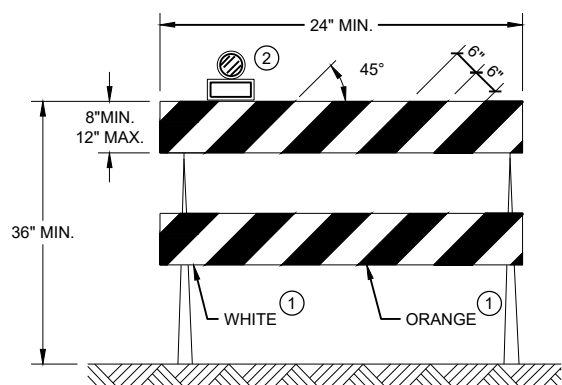


VERTICAL PANEL

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

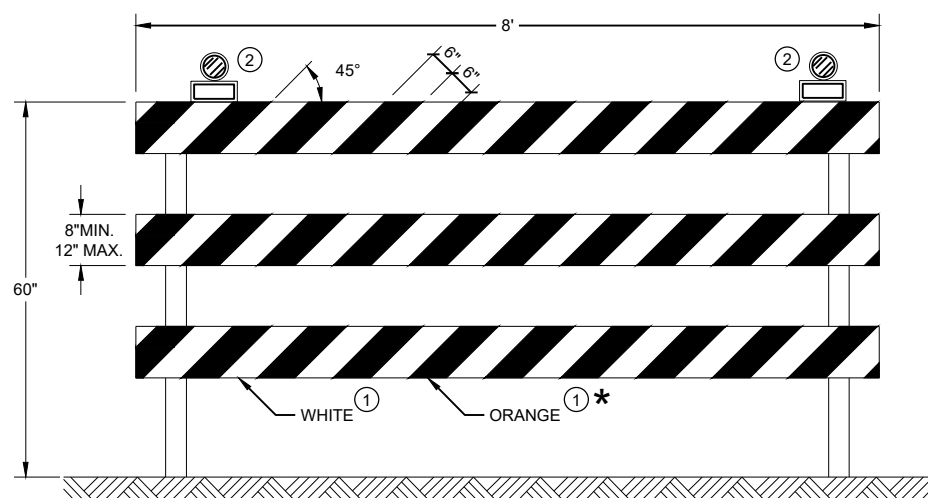
GENERAL NOTES

- 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.



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.

CHANNELIZING DEVICES DRUMS, CONES, BARRICADES AND VERTICAL PANELS	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED May 2021 DATE	/S/ Andrew Heidtke WORK ZONE ENGINEER
<small>FHWA</small>	

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.

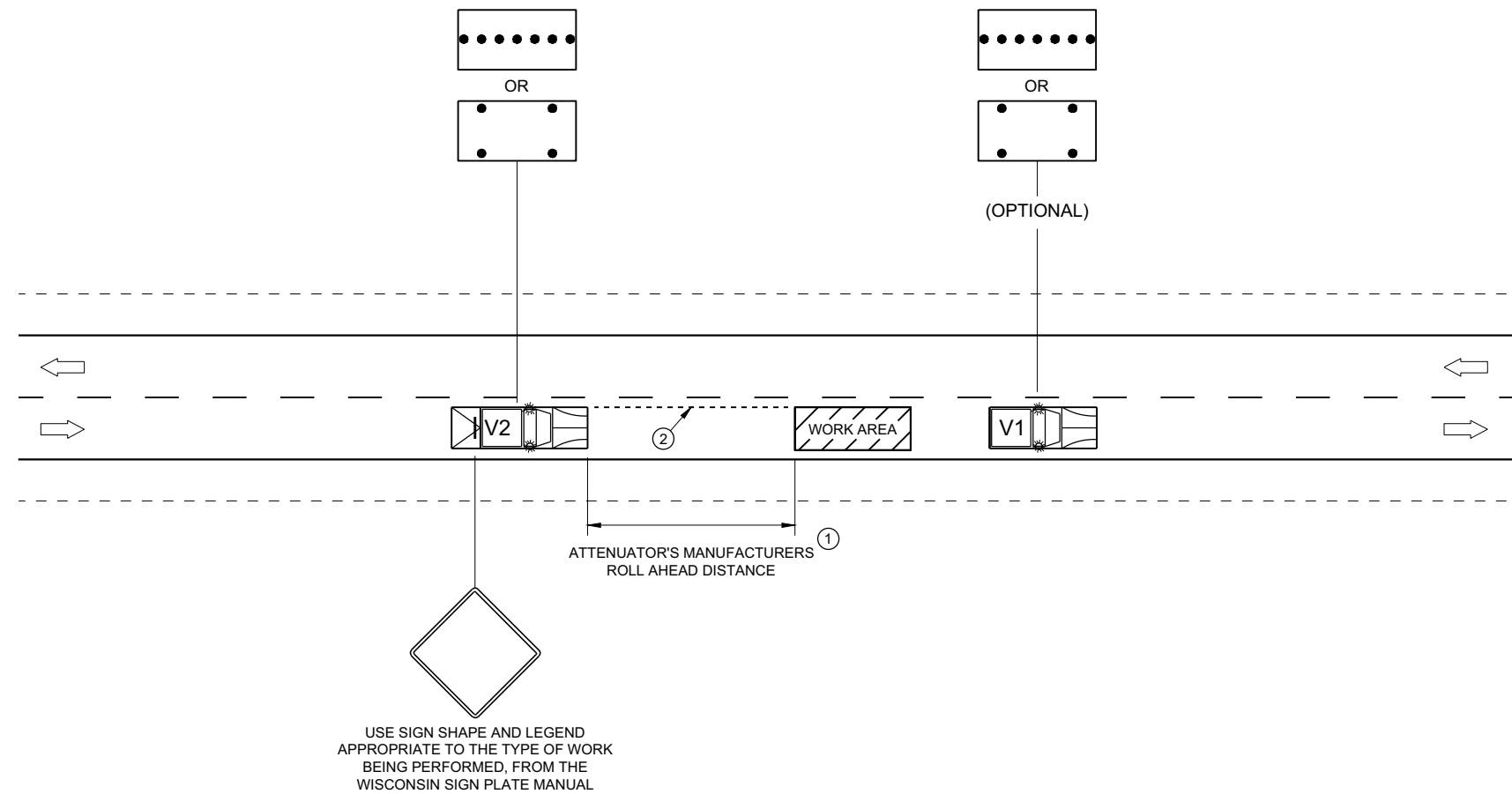
MOBILE IS WORK THAT MOVES CONTINUOUSLY OR MOVES AT LEAST THE DECISION SIGHT DISTANCE EVERY 15 MINUTES.

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.



6

6

SDD 15D51 - 01

SDD 15D51 - 01

**TRAFFIC CONTROL,
MOBILE OPERATIONS ON
AN UNDIVIDED ROADWAY**

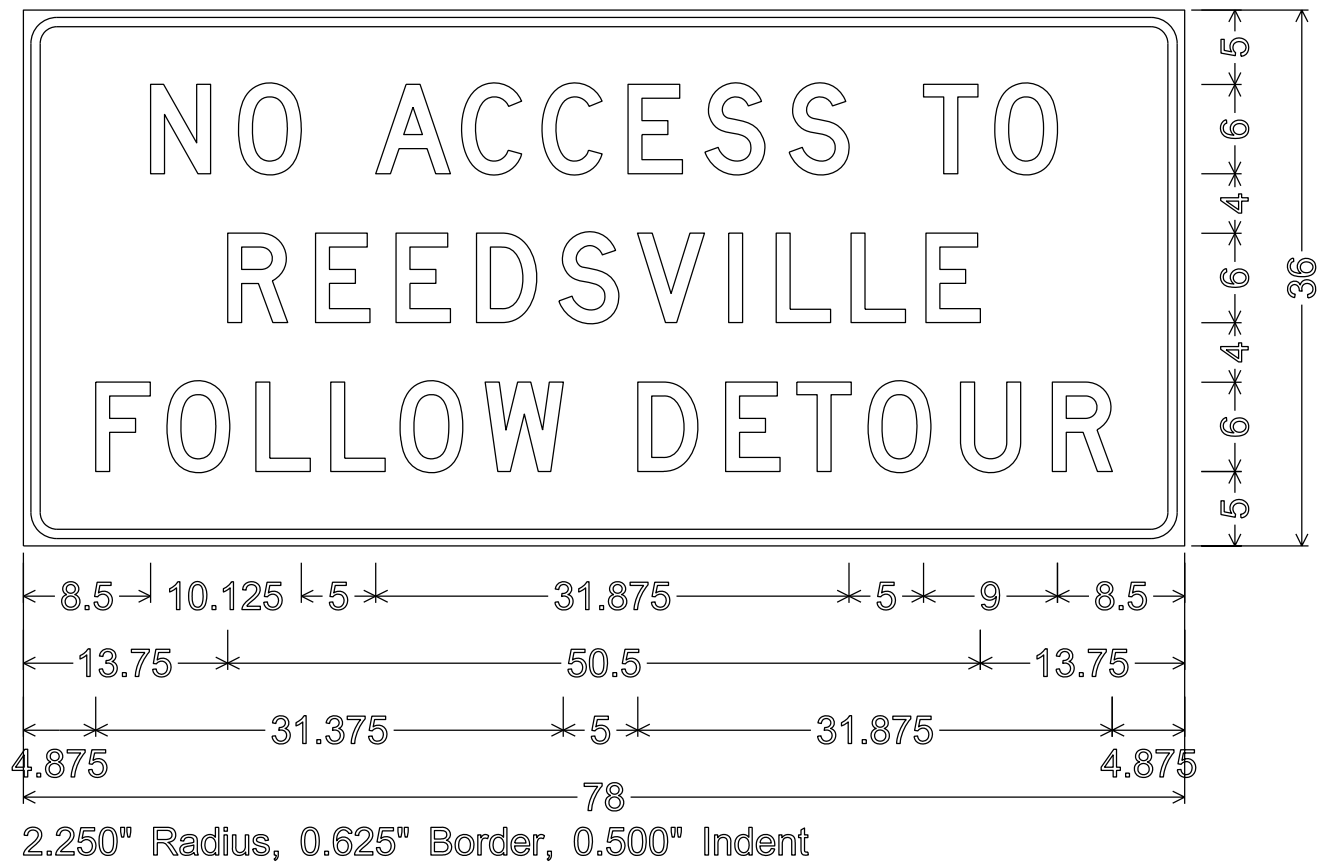
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
February 2021 DATE /S/ Andrew Heidtke
STATEWIDE WORK ZONE TRAFFIC SAFETY ENGINEER

FHWA

NOTES

1. Fixed Message Type II Signs - Type F Reflective
2. Color:
Background - Orange
Message - Black
3. Message Series - D

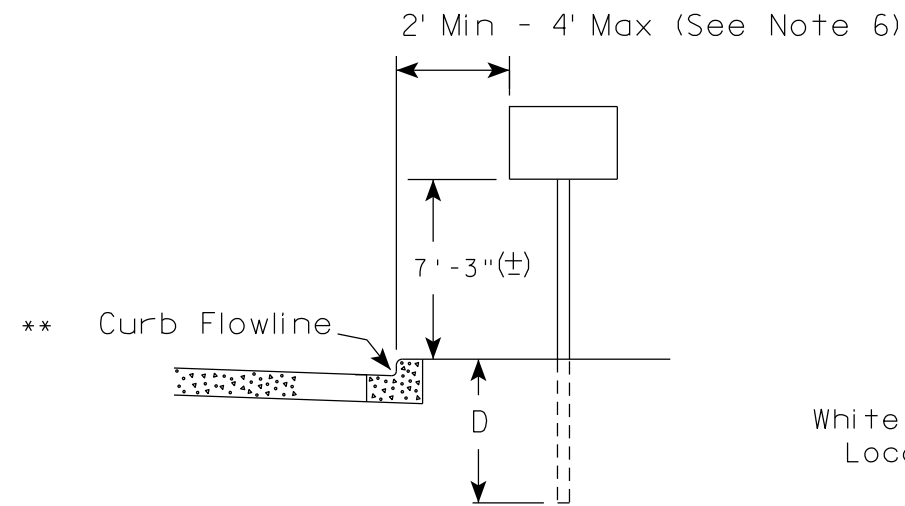


7

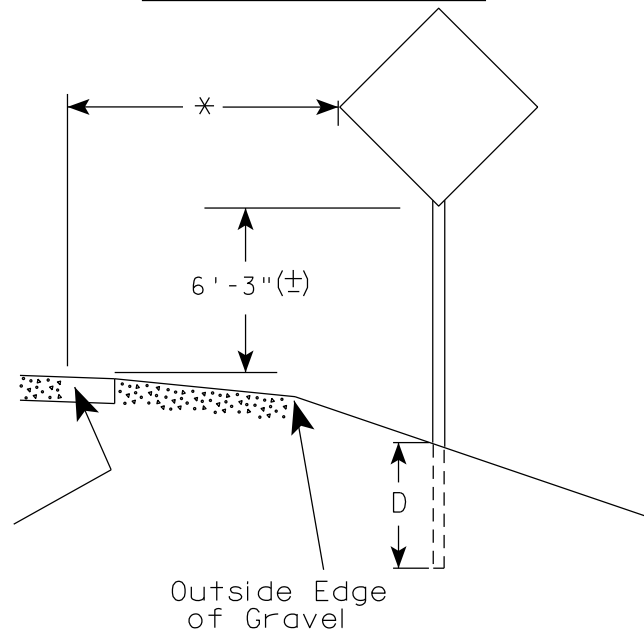
7

URBAN AREA

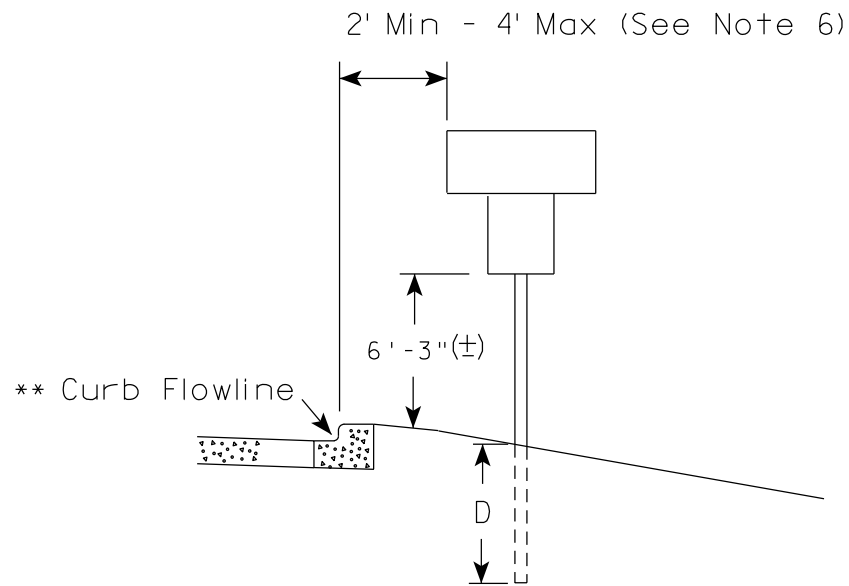
RURAL AREA (See Note 2)



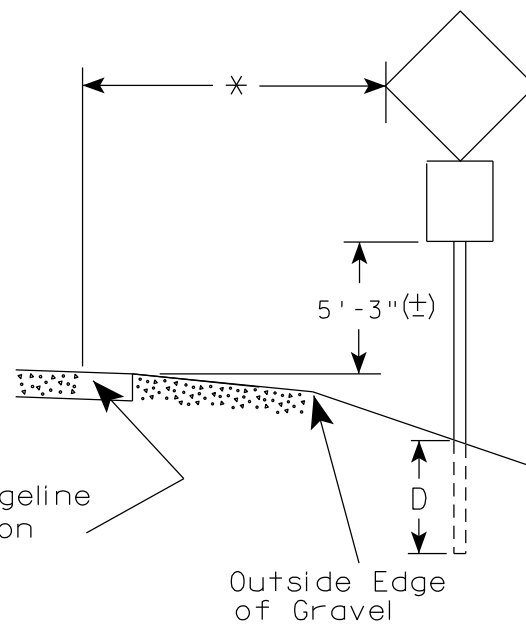
White Edgeline Location



Outside Edge of Gravel



White Edgeline Location



Outside Edge of Gravel

POST EMBEDMENT DEPTH

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

GENERAL NOTES

1. Signs wider than 4 feet or 20 sq.ft or larger, shall be mounted on multiple posts. Refer to plate A4-4.
2. 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" (±). 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" (±) or 6'-3" (±) depending upon existence of a sub-sign.
4. Minimum mounting height for signs mounted on traffic signal poles is 5'- 3" (±).
5. Offset distance shall be consistent with existing signs or consistent throughout length of project.
6. The (±) tolerance for mounting height is 3 inches.
7. Folding signs shall be mounted at a height of 5'-3" (±) or as directed by the Engineer.

* * 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.

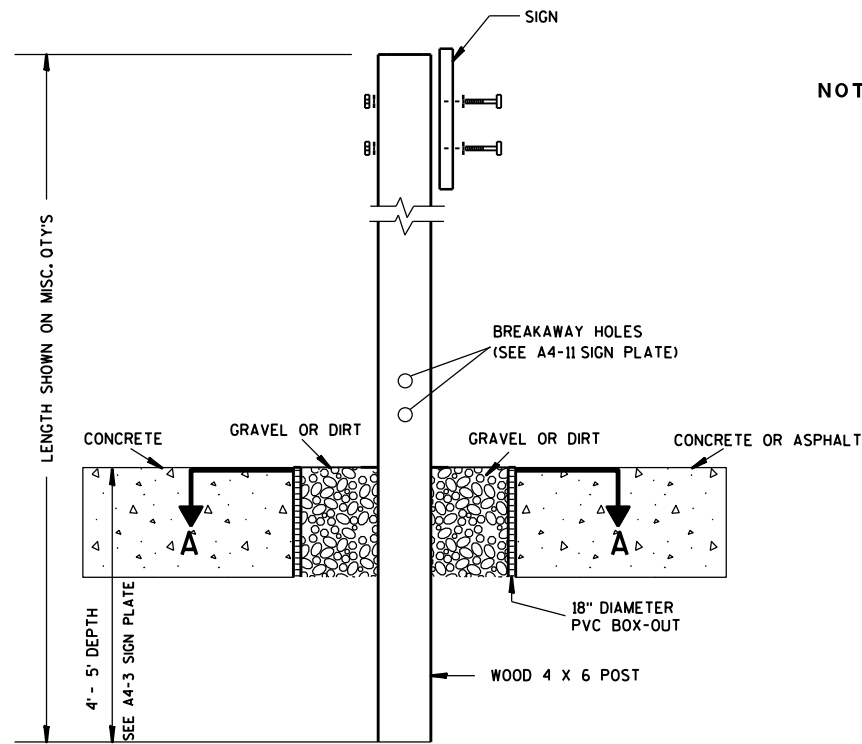
* 6 feet from edge of a paved shoulder or 12 feet from the edge of pavement (edge line location) or 2 feet from outside edge of gravel, whichever is greater unless directed by project engineer.

TYPICAL INSTALLATION OF PERMANENT TYPE II SIGNS ON SINGLE POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

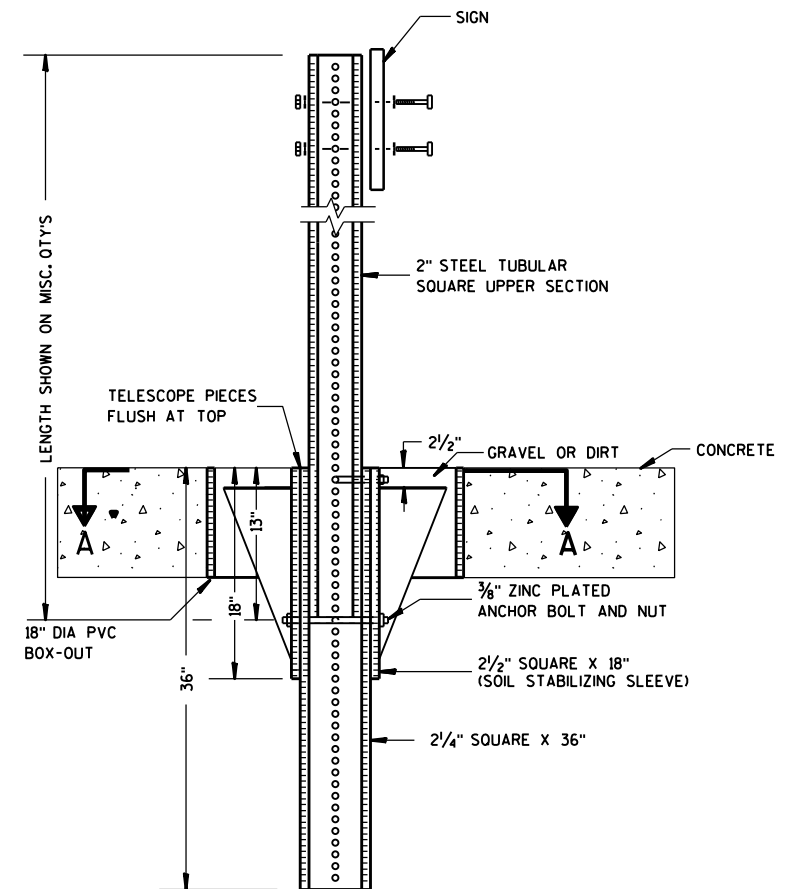
DATE 5/13/2020 PLATE NO. A4-3.22



ELEVATION VIEW

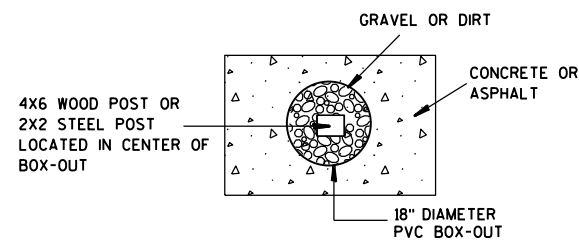
DETAIL OF WOOD 4 X 6 SIGN POST IN BOX-OUT

- 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

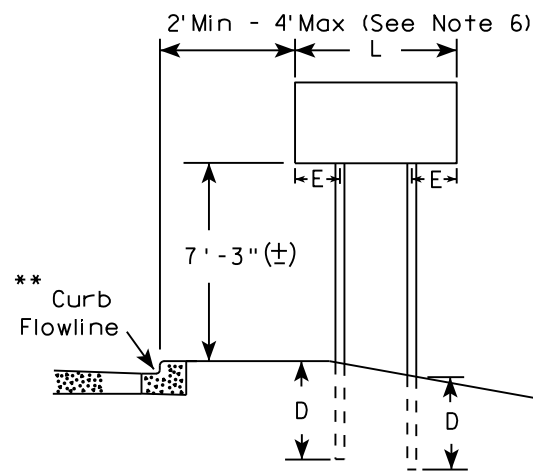
FOR NEW CONCRETE/ ASPHALT INSTALLATIONS

SIGN POST BOX-OUTS A4-3B	
<small>WISCONSIN DEPT OF TRANSPORTATION</small>	
APPROVED <i>Matthew R. Rauch</i> <small>for State Traffic Engineer</small>	
<small>DATE 1/27/14</small>	<small>PLATE NO. A4-3B.1</small>

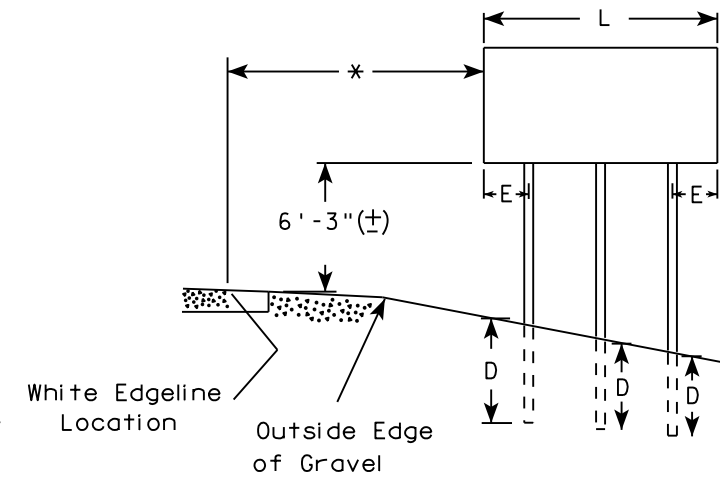
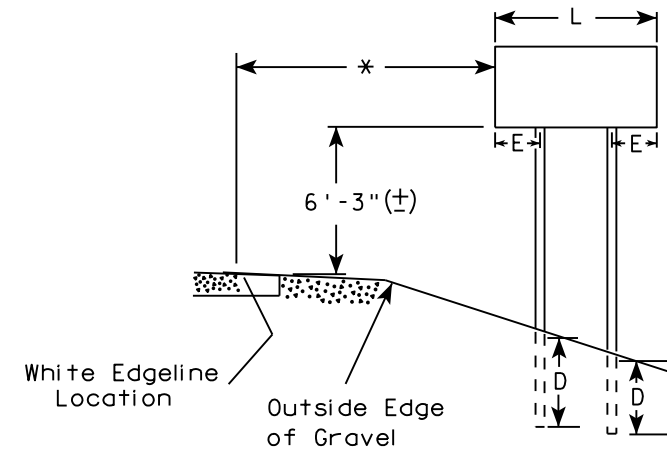
GENERAL NOTES

1. For 3 or 4 post installations, individual post spacing shall be greater than 3'-6".
2. See tables below for required number of posts.
3. For expressways and freeways, mounting height is 7'-3" (±) or 6'-3" (±) depending upon existence of sub-sign.
4. The (±) tolerance for mounting height is 3 inches.
5. J-Assemblies are considered to be one sign for mounting height.
6. Offset distance shall be consistent with existing signs or consistent throughout length of project.
7. Folding signs shall be mounted at a height of 5'-3" (±) or as directed by the engineer.
8. The Double Arrow sign (W12-1) shall be mounted at a height of 2'-3" (±). The Chevron sign (W1-8), Roundabout Chevron panel (R6-4B), 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" (±).

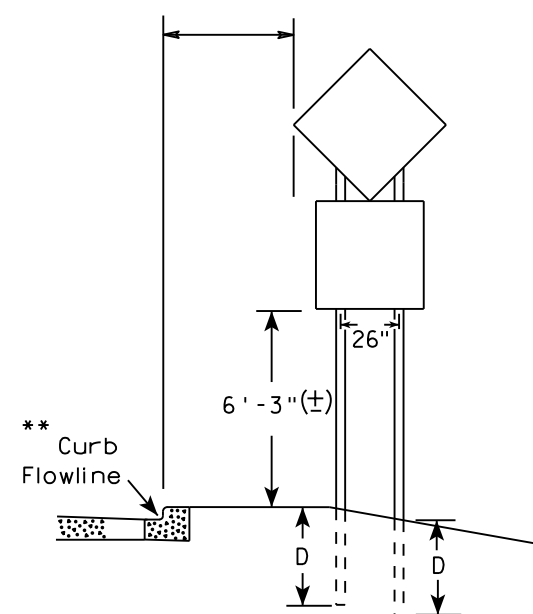
URBAN AREA



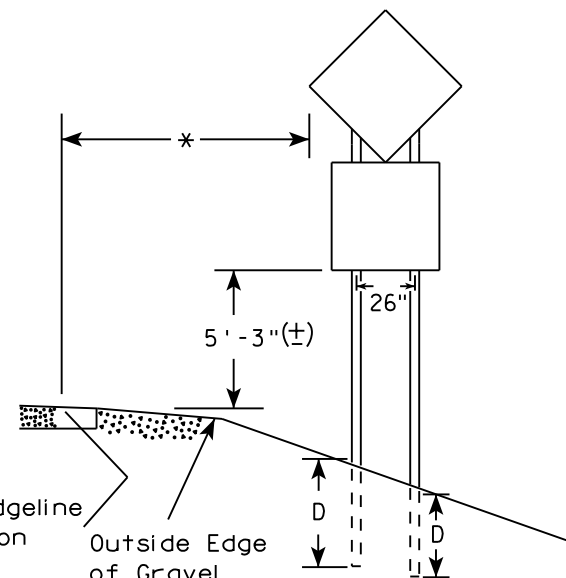
RURAL AREA (See Note 3)



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



48" DIAMOND WARNING SIGN



48" DIAMOND WARNING SIGN

* 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.

** 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.

*** See A4-3 sign plate for signs 4' or less in width and less than 20 S.F. in area.

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

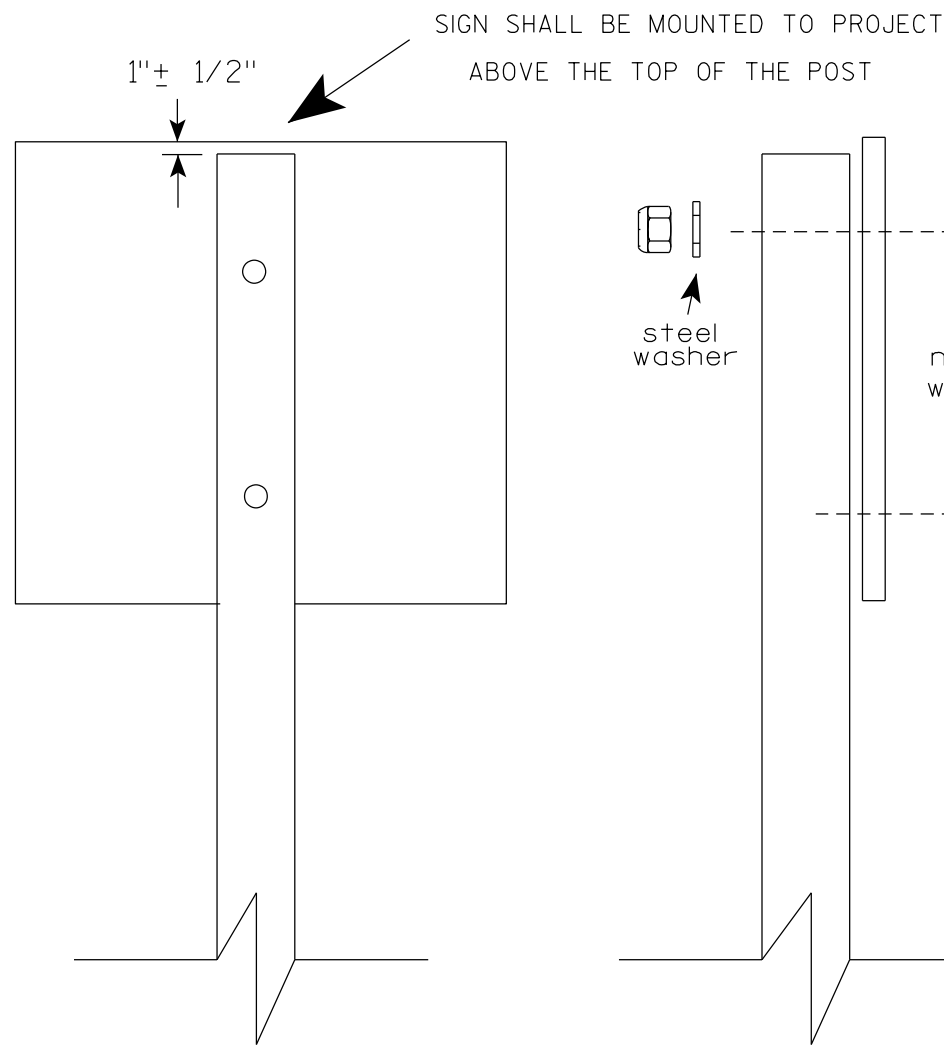
Area of Sign Installation (Sq. Ft.)	D (Min)
20 or Less	4'
Greater than 20	5'

TYPICAL INSTALLATION OF TYPE II SIGNS ON MULTIPLE POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 8/21/17 PLATE NO. A4-4.15



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

- Hot dip galvanized in accordance with ASTM Designation: A 153, Class D, or SC 3
- 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.

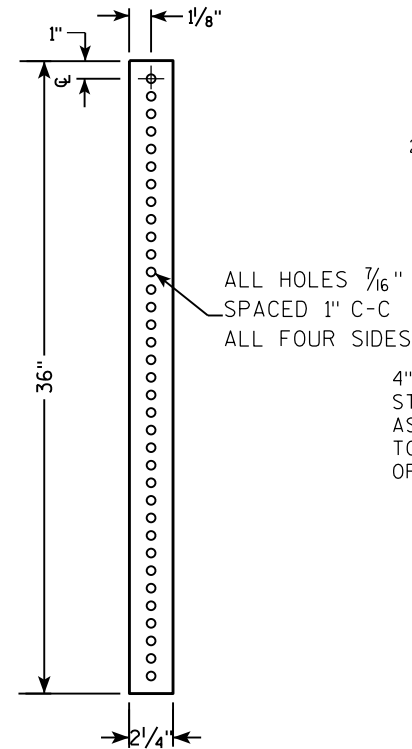
- STRINGER BOLTING TO ALUMINUM SIGNS (SEE SIGN PLATE A4-18)
- MACHINE BOLTS - $\frac{5}{16}$ " X 1-3/4" Length w/ lock nuts
- WOOD POSTS (4" x 6")
- LAG SCREWS - $\frac{3}{8}$ " X 3" (NO STRINGERS ON BACK OF SIGN)
 - $\frac{3}{8}$ " X 4" (STRINGERS ON BACK OF SIGN)
- SQUARE STEEL POSTS (2" x 2")
- MACHINE 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.

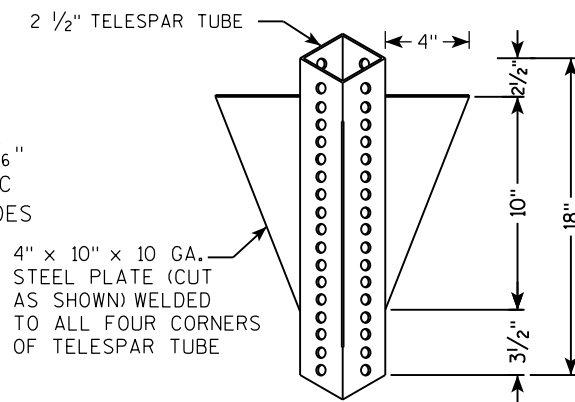
ATTACHMENT OF SIGNS TO POSTS	
WISCONSIN DEPT OF TRANSPORTATION	
APPROVED	<i>Matthew R Rauch</i> For State Traffic Engineer
DATE 4/1/2020	PLATE NO. A4-8.9

**TELESCOPIC TUBING ANCHORS
TWO PIECE SYSTEM**

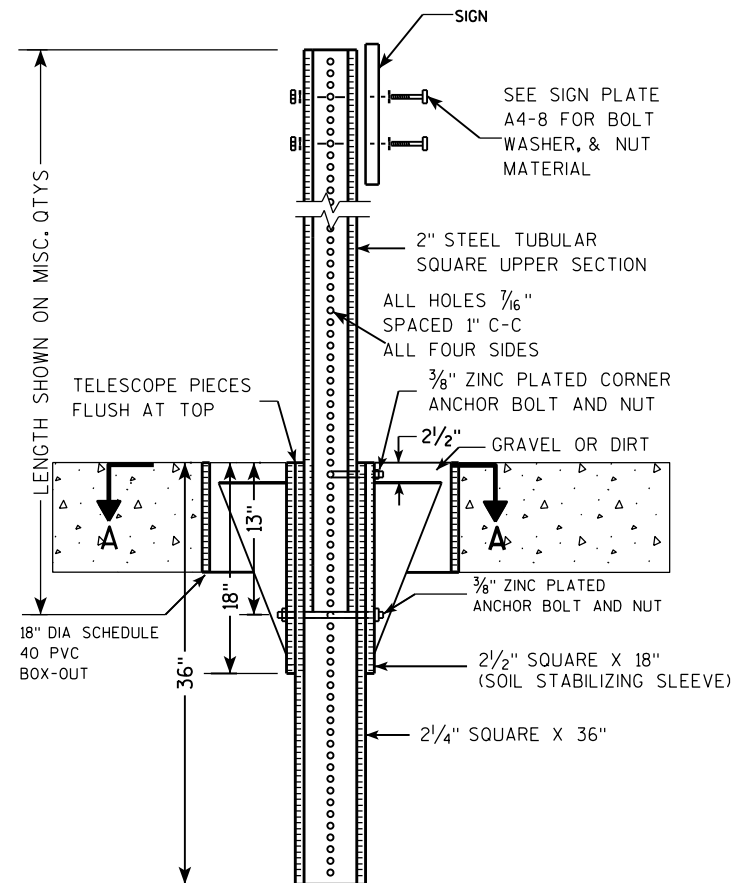
2 1/4" SQUARE
12 GAUGE
PERFORATED
GALVANIZED FINISH



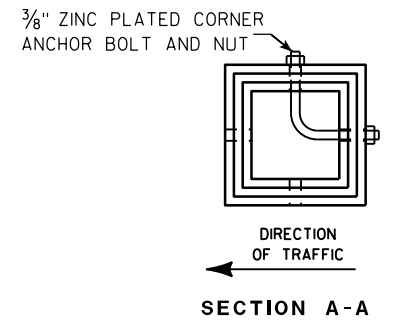
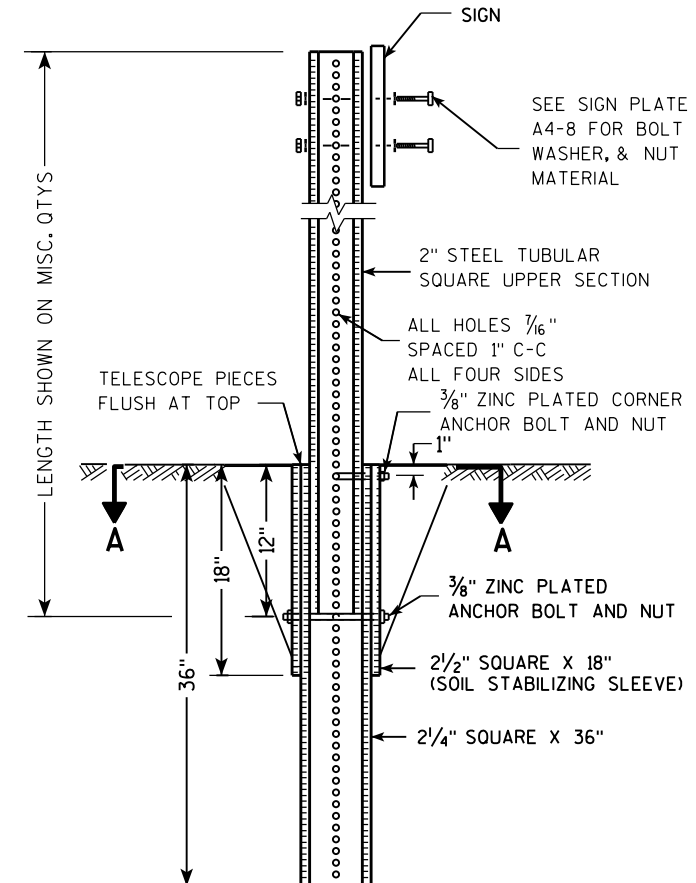
2 1/2" SQUARE
12 GAUGE
OMNI-DIRECTIONAL
PERFORATED
SOIL STABILIZING SLEEVE
GALVANIZED FINISH



**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 PLATE NO. A4-9.9

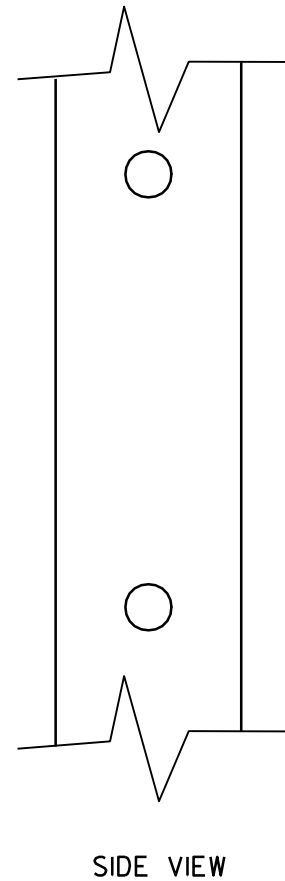
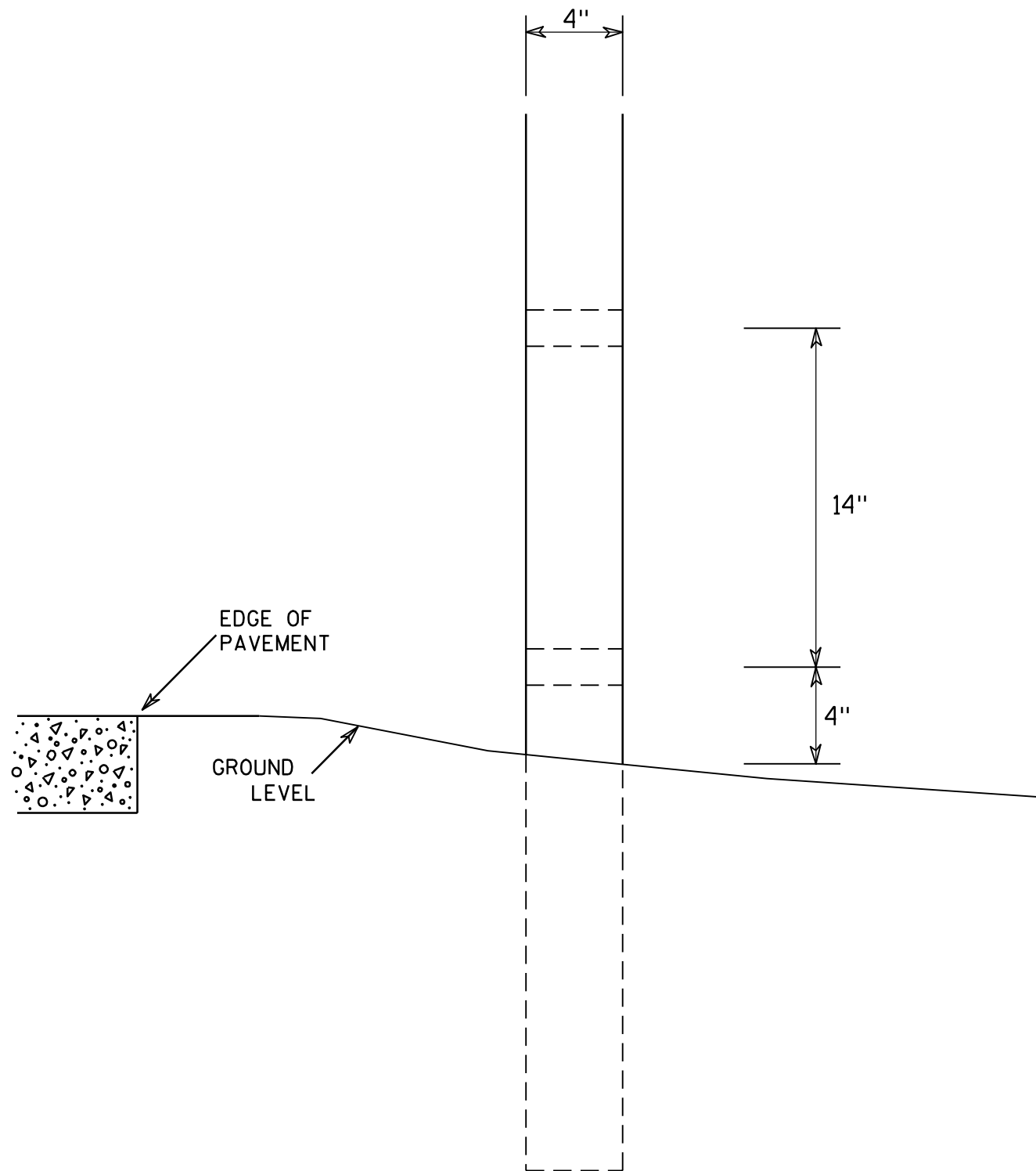
PROJECT NO:

HWY:

COUNTY:

SHEET NO:

E



GENERAL NOTES

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

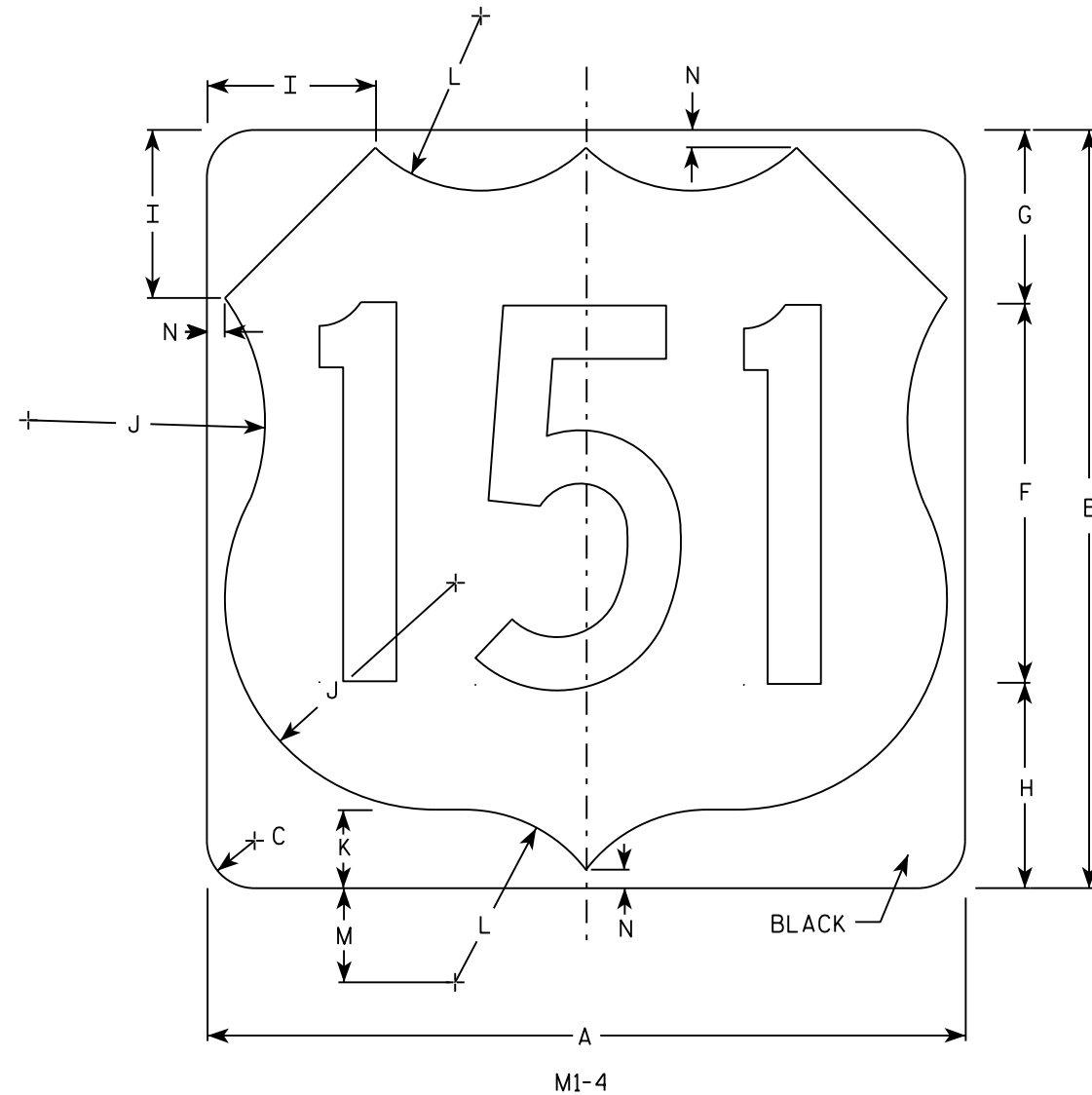
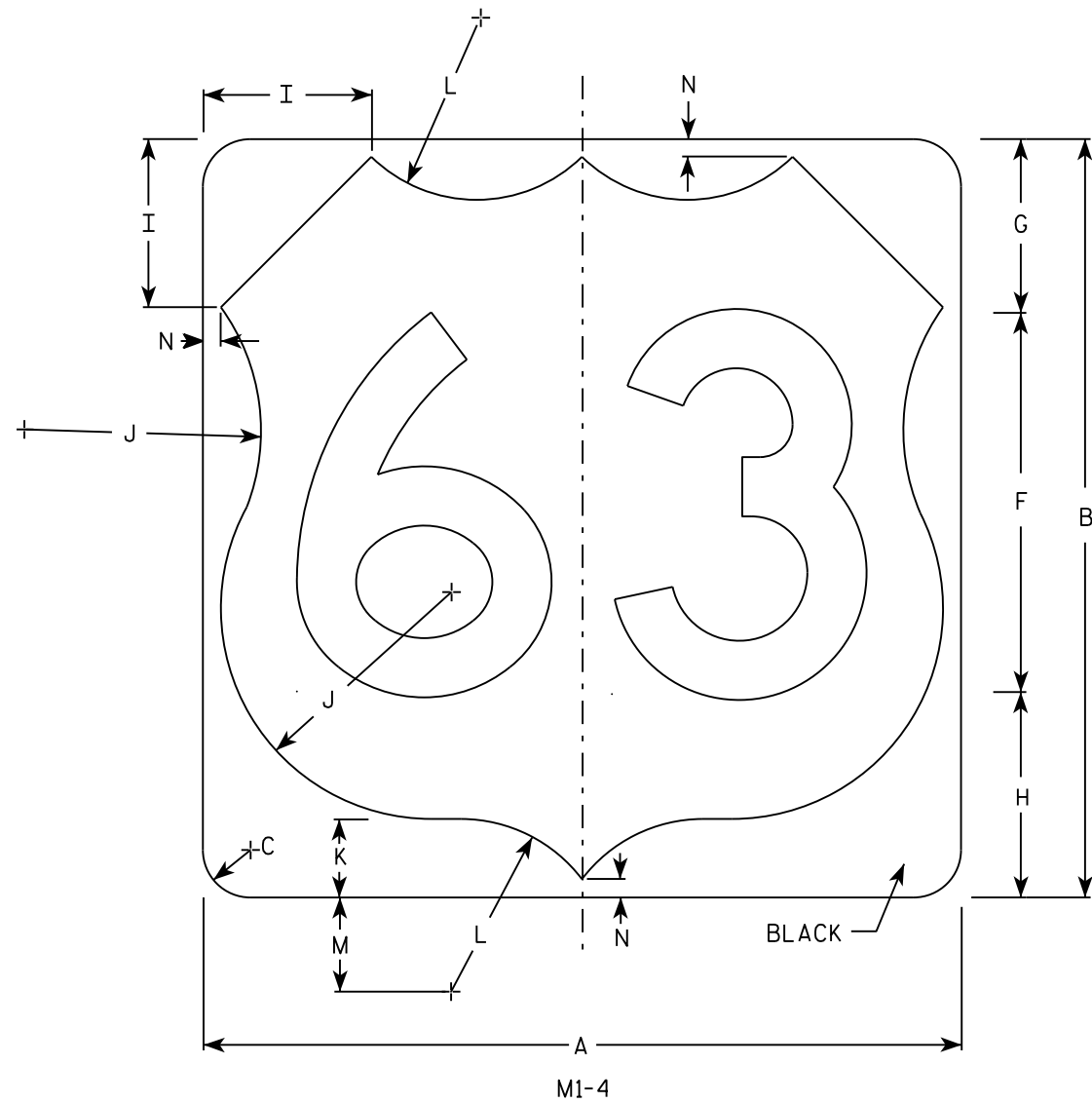
7

7

4 X 6 WOOD POST MODIFICATIONS	
<i>WISCONSIN DEPT OF TRANSPORTATION</i>	
APPROVED	<i>Chester J Spang</i> for State Traffic Engineer
DATE <u>3/27/97</u>	PLATE NO. <u>A4-11.2</u>

NOTES

1. Sign is Type II - Type H Reflective
2. Color:
Background - White
Message - Black
3. Message Series - D except 3 number signs 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.



7

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																											
2	24	24	1 1/2			12	5 1/2	6 1/2	5	7 1/2	2 1/2	5 1/2	3	1/2													4.0
3	36	36	2 1/4			18	8 1/4	9 1/4	7 1/4	11 1/4	3 3/4	8 1/4	4 1/2	3/4													9.0
4	36	36	2 1/4			18	8 1/4	9 1/4	7 1/4	11 1/4	3 3/4	8 1/4	4 1/2	3/4													9.0
5	36	36	2 1/4			18	8 1/4	9 1/4	7 1/4	11 1/4	3 3/4	8 1/4	4 1/2	3/4													9.0

USH MARKER
M1-4 FOR ASSEMBLIES

WISCONSIN DEPT OF TRANSPORTATION

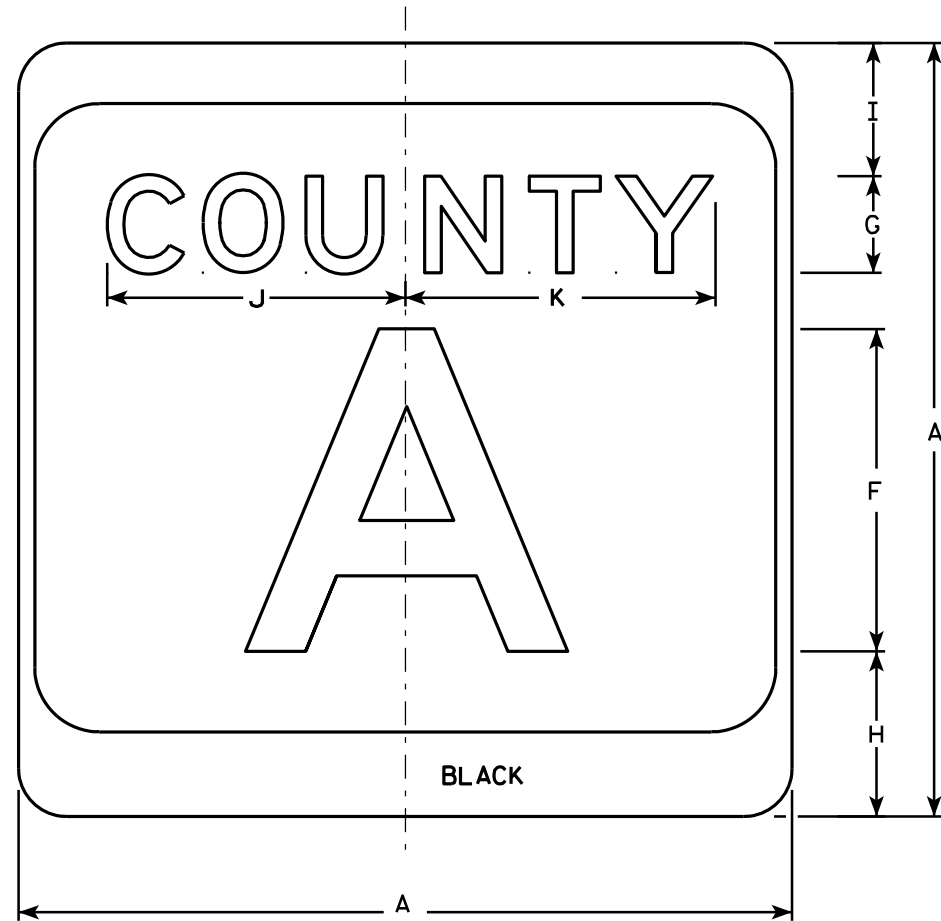
APPROVED *Matthew R Rauch*
For State Traffic Engineer

DATE 3/16/18 PLATE NO. M1-4.10

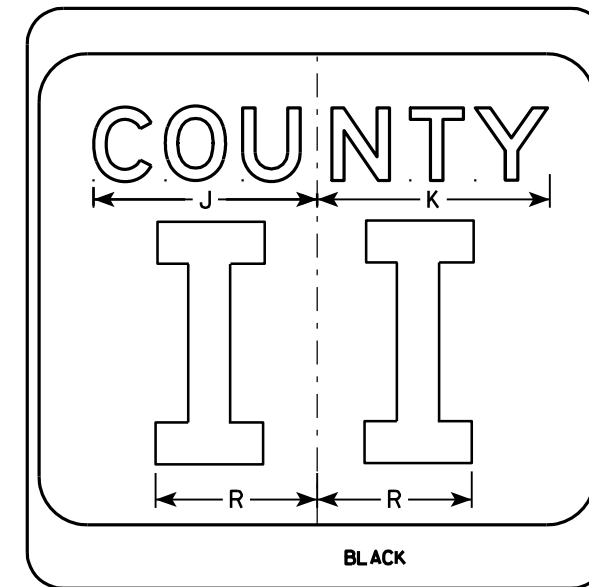
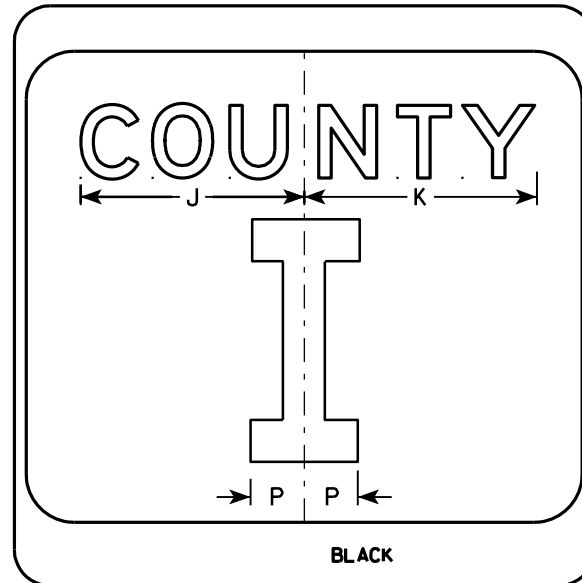
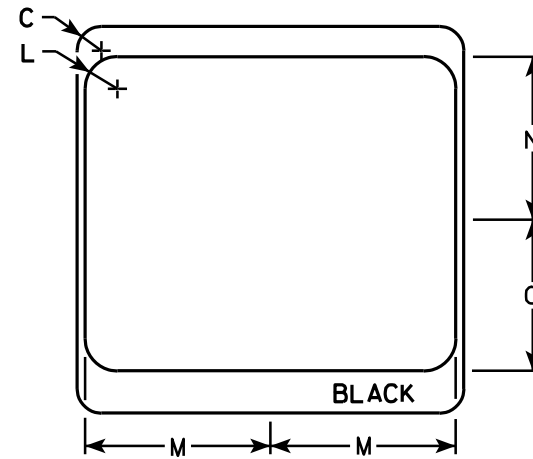
PROJECT NO: _____ HWY: _____ COUNTY: _____ SHEET NO: _____ **E**

NOTES

1. Sign is Type II - see Note 7 - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
Background - White & Black - See Note 7
Message - Black
3. Message Series - see Note 5
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. Message Series E for 1 letter.
Message Series D for 2 letters unless message is too big then Series C.
Message Series C for 3 letters unless message is too big then Series B.
6. Substitute appropriate letters & optically center to achieve proper balance.
7. Permanent Signs
Background - Type H Reflective
Detour or temporary Signs
Background - Reflective



M1-5A



7

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																											
2	24		1 1/2			10	3	5 1/8	4 1/8	9 1/4	9 5/8	2	11 1/2	10 1/8	9 3/8	2 1/4		6 5/8									4.0
3	36		2 1/4			16	4	7 5/8	5 5/8	12 1/4	12 7/8	3	17 1/8	15 1/4	14	3 3/8		10									9.0
4	36		2 1/4			16	4	7 5/8	5 5/8	12 1/4	12 7/8	3	17 1/8	15 1/4	14	3 3/8		10									9.0
5	36		2 1/4			16	4	7 5/8	5 5/8	12 1/4	12 7/8	3	17 1/8	15 1/4	14	3 3/8		10									9.0

CTH MARKER
M1-5A FOR ASSEMBLIES

WISCONSIN DEPT OF TRANSPORTATION

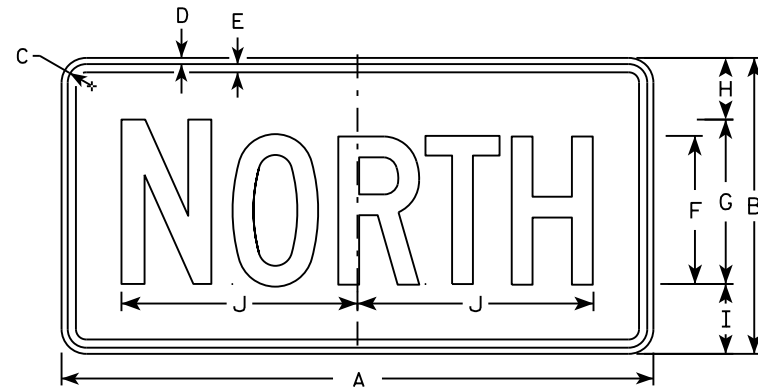
APPROVED *Matthew R. Raub*
For State Traffic Engineer

DATE 9/27/11 PLATE NO. MI-5A.8

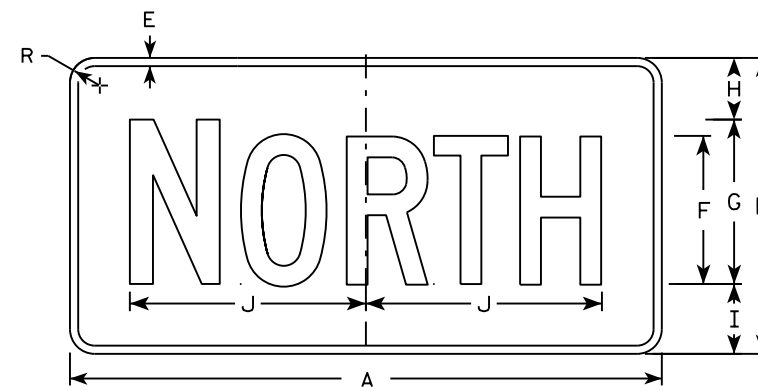
PROJECT NO: _____ HWY: _____ COUNTY: _____ SHEET NO: **E**

NOTES

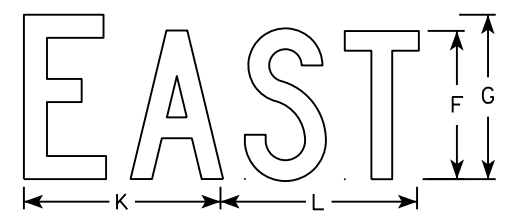
- All Signs Type II - Type H
- Color:
 - Background - See note 5
 - Message - See note 5
- Message Series - C
- Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
- M3-1 thru M3-4 Background - White
 Message - Black
 MB3-1 thru MB3-4 Background - Blue
 Message - White
 MK3-1 thru MK3-4 Background - Green
 Message - White
 MM3-1 thru MM3-4 Background - White
 Message - Green
 MN3-1 thru MN3-4 Background - Brown
 Message - White
 MP3-1 thru MP3-4 Background - White
 Message - Blue
- Note the first letter of each direction is larger than the remainder of the message.



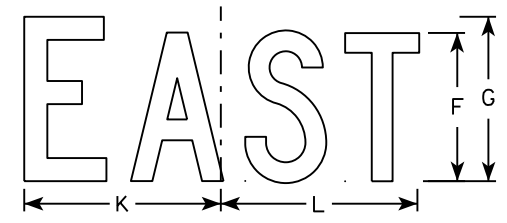
M3-1
MM3-1
MP3-1



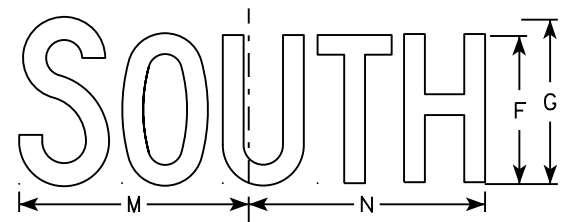
MB3-1
MK3-1
MN3-1



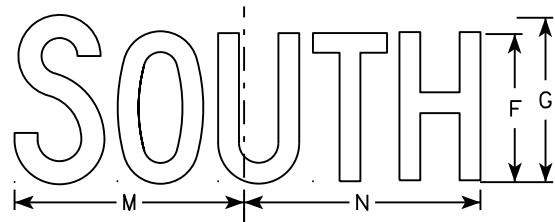
M3-2
MM3-2
MP3-2



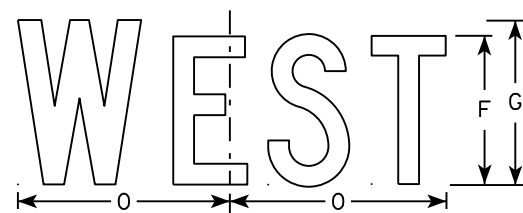
MB3-2
MK3-2
MN3-2



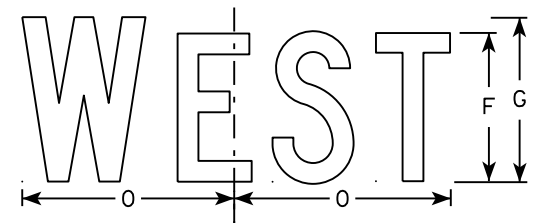
M3-3
MM3-3
MP3-3



MB3-3
MK3-3
MN3-3



M3-4
MM3-4
MP3-4



MB3-4
MK3-4
MN3-4

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																											
2	24	12	1 1/8	3/8	3/8	6	7	2 1/4	2 3/4	10 1/4	7 7/8	8 3/8	10 1/4	9 3/4	8 3/4			1 1/2									2.00
3	36	18	1 1/8	3/8	1/2	9	10	3 3/4	4 1/4	14 3/8	12	12 1/8	14	14 1/8	13			1 1/2									4.5
4	36	18	1 1/8	3/8	1/2	9	10	3 3/4	4 1/4	14 3/8	12	12 1/8	14	14 1/8	13			1 1/2									4.5
5	36	18	1 1/8	3/8	1/2	9	10	3 3/4	4 1/4	14 3/8	12	12 1/8	14	14 1/8	13			1 1/2									4.5

STANDARD SIGNS
M3-1 thru M3-4
SERIES

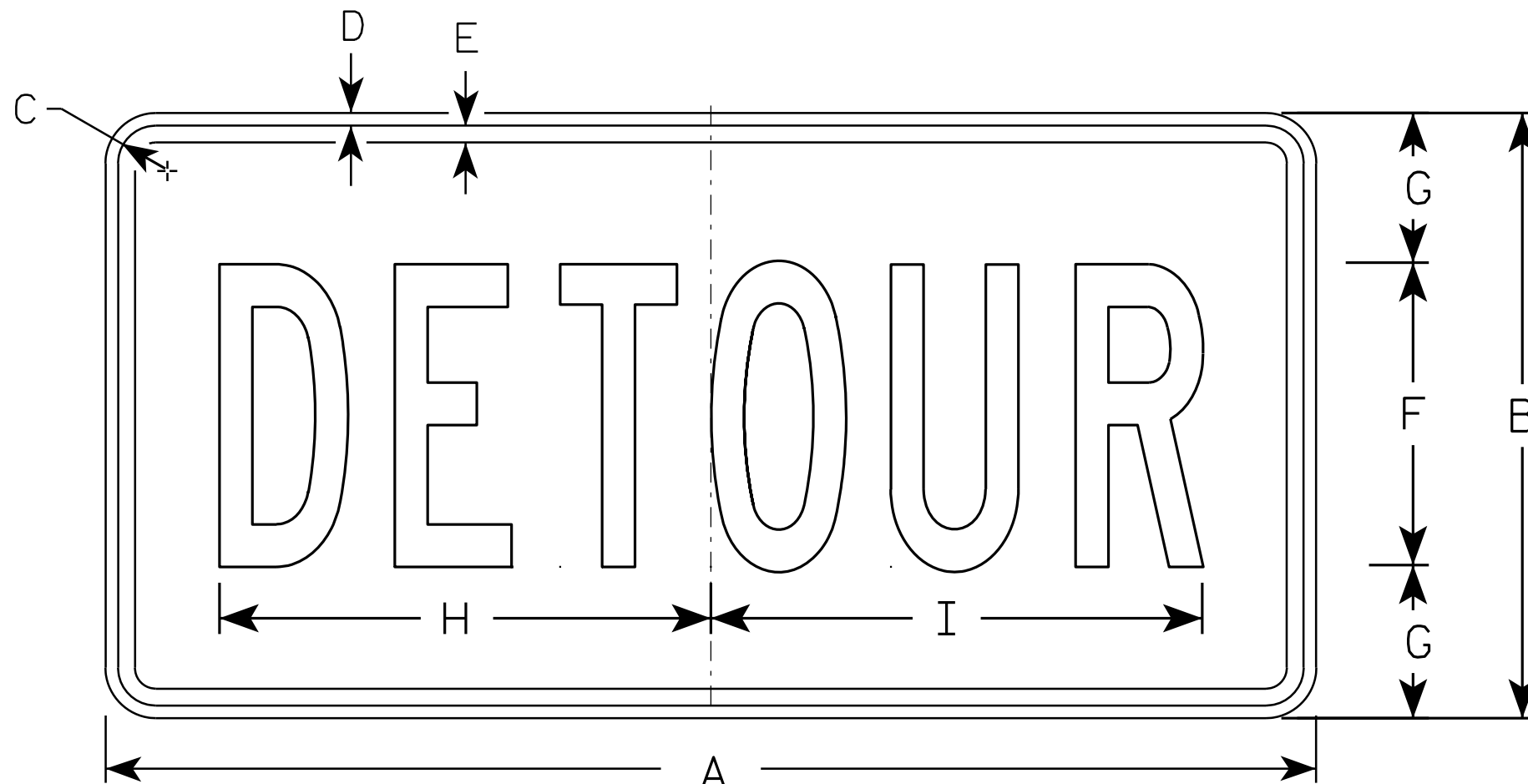
WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 10/15/15 PLATE NO. M3-1.14

NOTES

1. Sign is Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
Background - Orange
Message - Black
3. Message Series - B
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.



M4-8

7

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																											
2	24	12	1 1/8	3/8	3/8	6	3	10	10 1/4																		2.0
3	36	18	1 1/8	3/8	1/2	9	4 1/2	14 5/8	14 1/2																		4.5
4																											
5																											

STANDARD SIGN
M4-8

WISCONSIN DEPT OF TRANSPORTATION

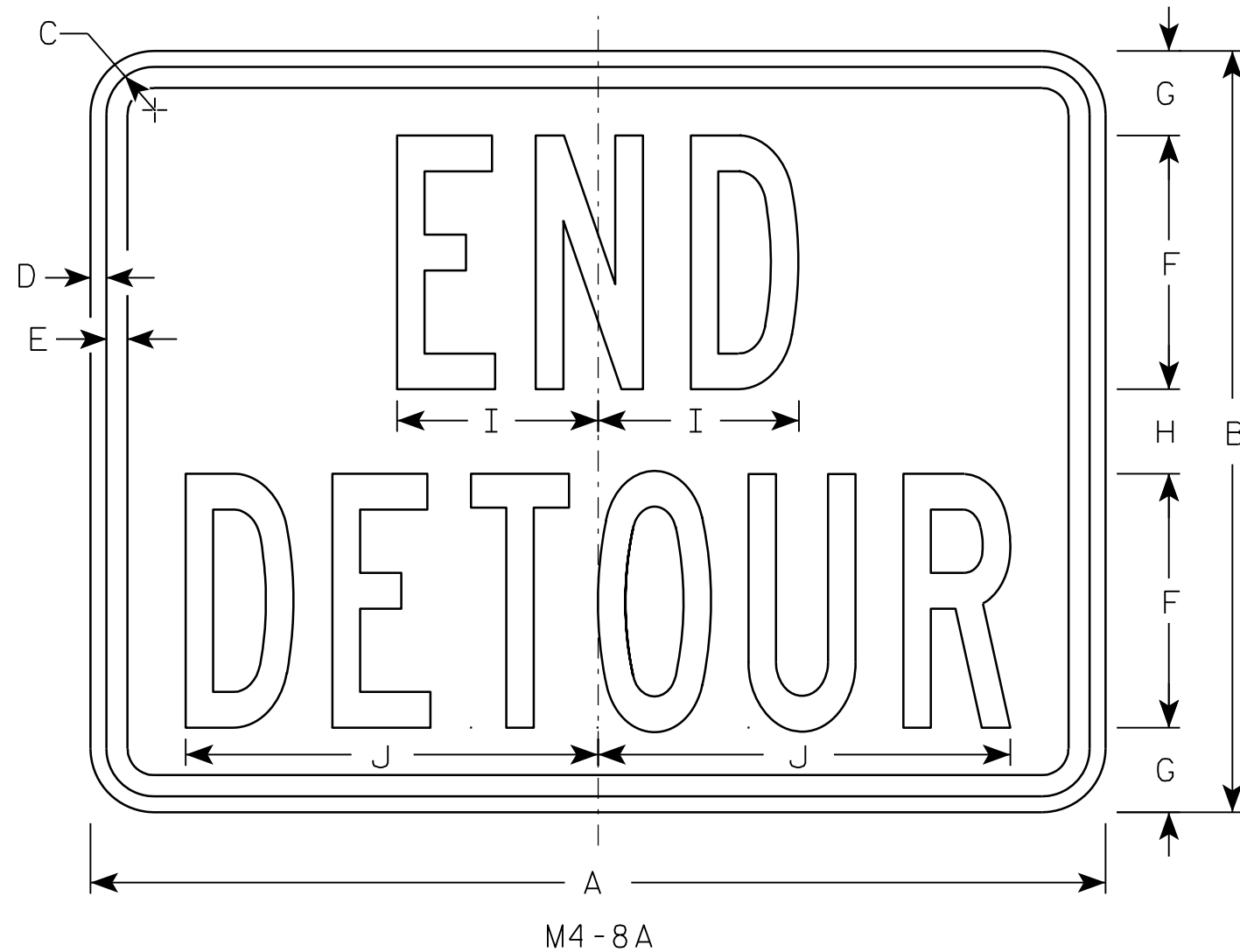
APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 11/10/10 PLATE NO. M4-8.2

PROJECT NO: _____ HWY: _____ COUNTY: _____ SHEET NO: **E**

NOTES

1. Sign is Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
Background - Orange
Message - Black
3. Message Series - B
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.



7

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																											
2	24	18	1 1/8	3/8	1/2	6	2	2	4 3/4	9 3/4																	3.0
3	30	24	1 1/8	3/8	1/2	8	2 1/2	3	6 3/4	13																	5.0
4																											
5																											

STANDARD SIGN
M4-8A

WISCONSIN DEPT OF TRANSPORTATION

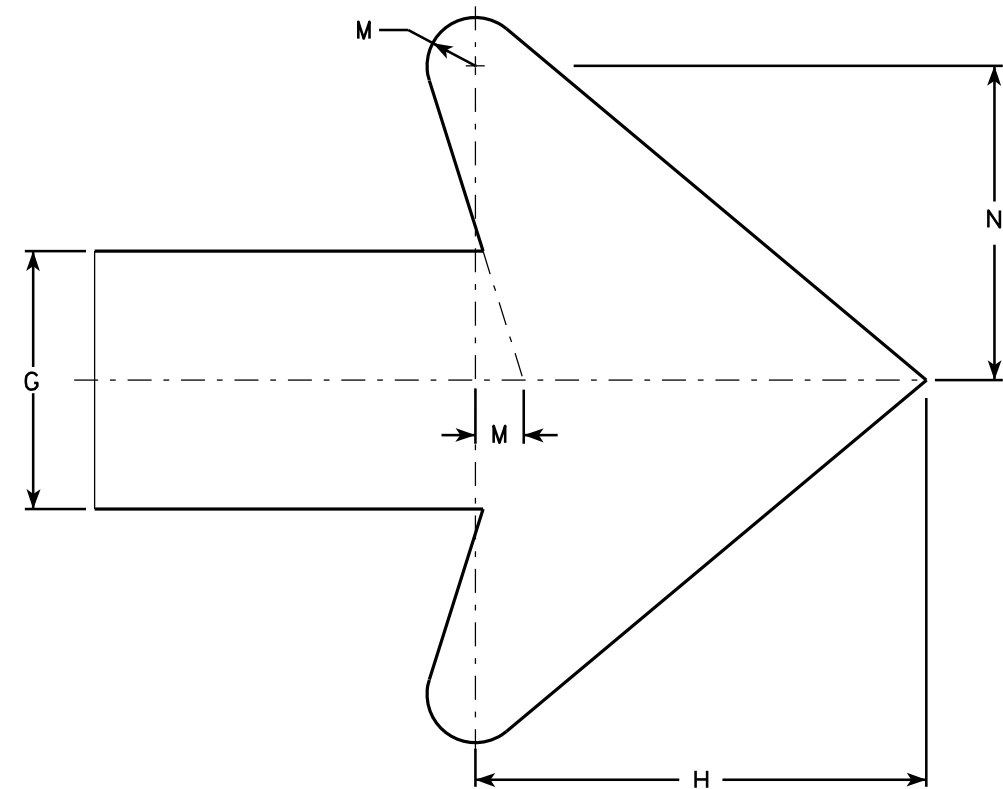
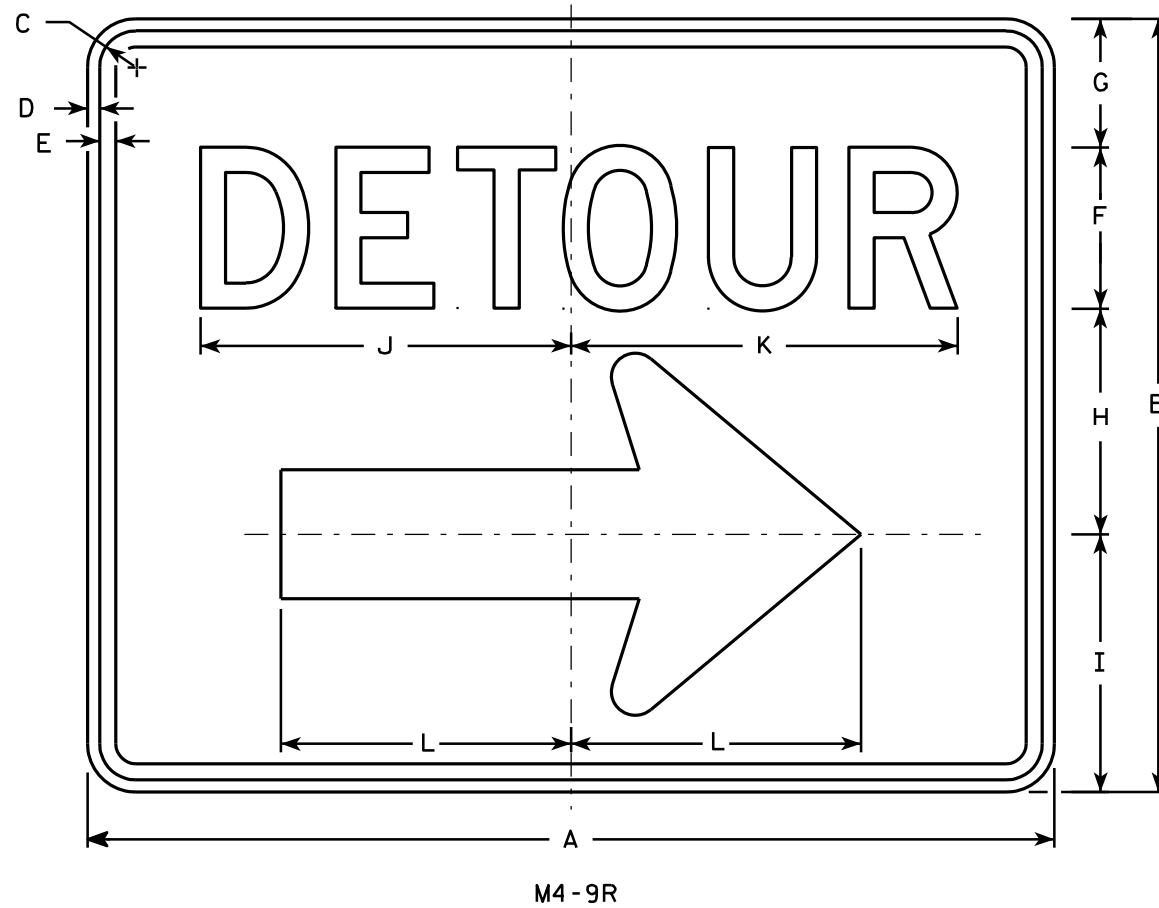
APPROVED *Matthew R Rauch*
for State Traffic Engineer

DATE 3/9/11 PLATE NO. M4-8A.2

PROJECT NO: _____ HWY: _____ COUNTY: _____ SHEET NO: **E**

NOTES

1. Sign is Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
Background - Orange
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. M4-9L is the same as M4-9R except the arrow is reversed.



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																											
2	30	24	1 1/8	3/8	1/2	5	4	7	8	11 1/2	12	9	3/4	4 7/8													5.00
3	30	24	1 1/8	3/8	1/2	5	4	7	8	11 1/2	12	9	3/4	4 7/8													5.00
4	48	36	1 3/8	1/2	5/8	8	6	10 1/2	11 5/8	20 5/8	20 1/2	13 1/4	1 1/8	6 7/8													12.0
5	48	36	1 3/8	1/2	5/8	8	6	10 1/2	11 5/8	20 5/8	20 1/2	13 1/4	1 1/8	6 7/8													12.0

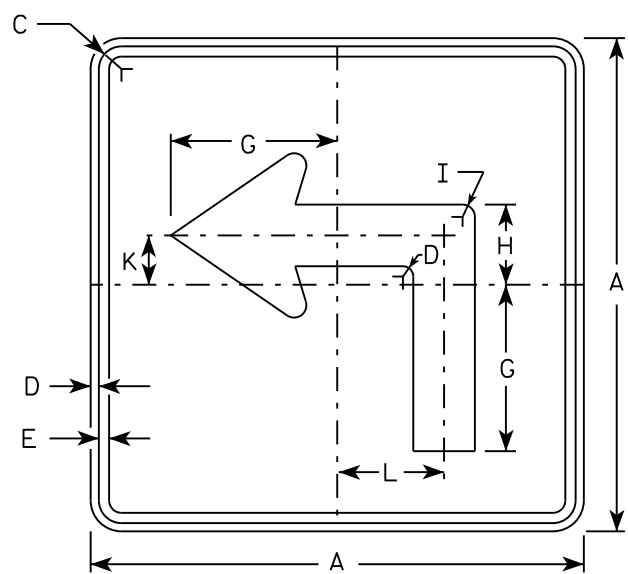
STANDARD SIGN
M4-9 R & L

WISCONSIN DEPT OF TRANSPORTATION

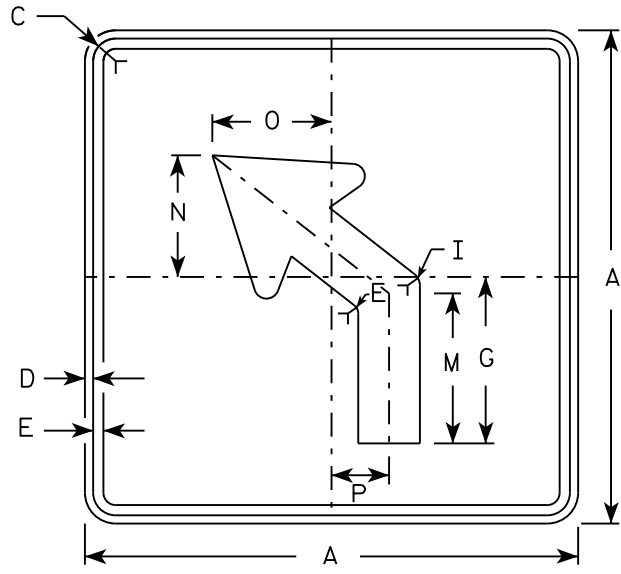
APPROVED *Matthew R. Rauch*
For State Traffic Engineer

DATE 3/9/11 PLATE NO. M4-9R.4

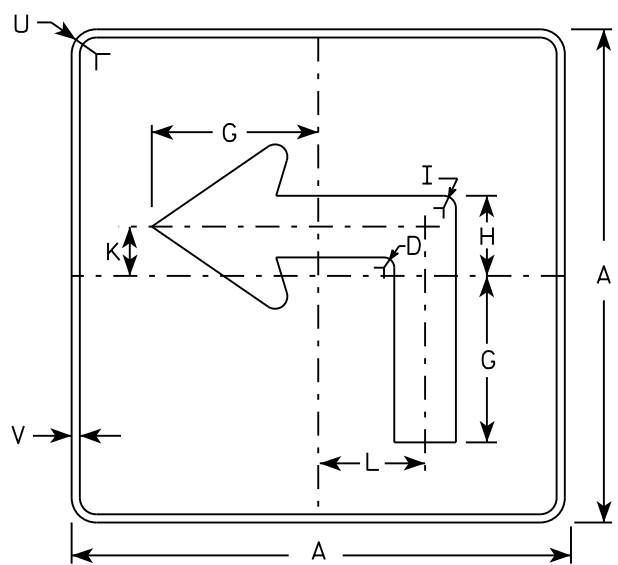
PROJECT NO: _____ HWY: _____ COUNTY: _____ SHEET NO: **E**



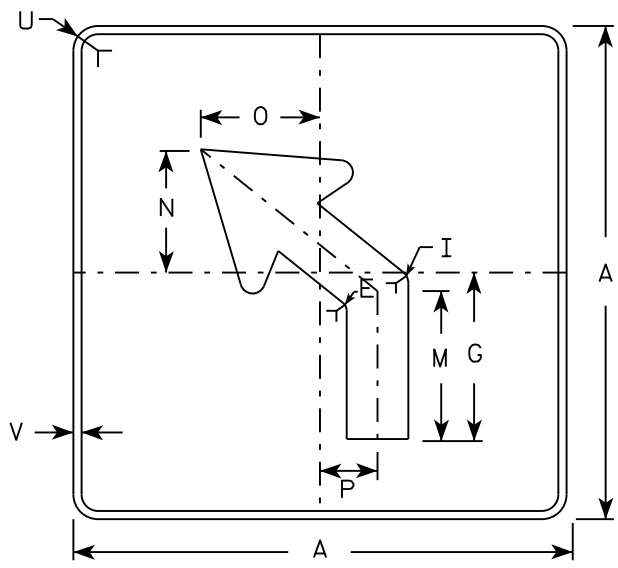
M5-1L
MM5-1L
M05-1L
MP5-1L



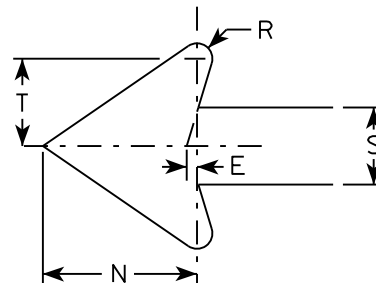
M5-2L
MM5-2L
M05-2L
MP5-2L



MB5-1L
MK5-1L
MN5-1L
MR5-1L



MB5-2L
MK5-2L
MN5-2L
MR5-2L



NOTES

- Signs are Type II - Type H reflective except as shown
- Color:
 - Background - See note 4
 - Message - See note 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.
- M5-1 and M5-2 Background - White
Message - Black
 - MB5-1 and MB5-2 Background - Blue
Message - White
 - MK5-1 and MK5-2 Background - Green
Message - White
 - MM5-1 and MM5-2 Background - White
Message - Green
 - MN5-1 and MN5-2 Background - Brown
Message - White
 - M05-1 and M05-2 Background - Orange - Type F Reflective
Message - Black
 - MP5-1 and MP5-2 Background - White - Type H Reflective
Message - Blue
 - MR5-1 and MR5-2 Background - Brown
Message - Yellow
- M5-1R same as M5-1L except arrow points right.
- M5-2R same as M5-2L except arrow tilts right.

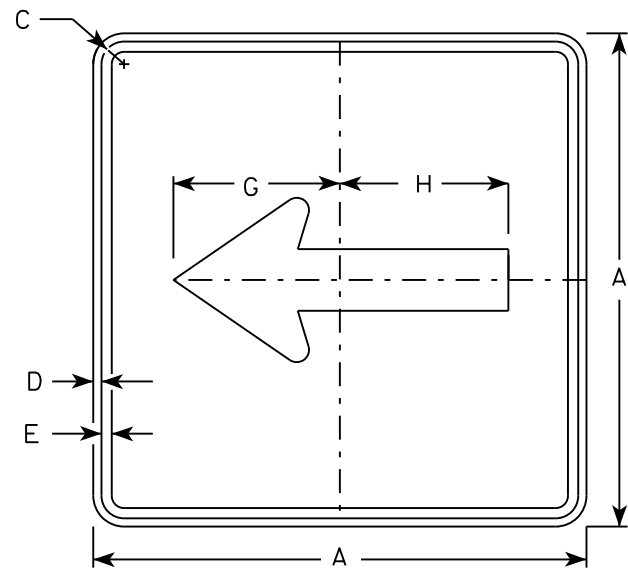
SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2	21		1 1/8	3/8	3/8		7	3 3/8	5/8		2 1/8	4 1/2	6 3/8	5 1/4	5	2 1/2		1/2	2 5/8	3	1 1/2	1/2					3.06
3	30		1 3/8	1/2	5/8		10 1/8	4 7/8	7/8		3	6 1/2	9 1/8	7 1/2	7 1/4	3 1/2		3/4	3 3/4	4 1/4	1 7/8	1/2					6.25
4	30		1 3/8	1/2	5/8		10 1/8	4 7/8	7/8		3	6 1/2	9 1/8	7 1/2	7 1/4	3 1/2		3/4	3 3/4	4 1/4	1 7/8	1/2					6.25
5	30		1 3/8	1/2	5/8		10 1/8	4 7/8	7/8		3	6 1/2	9 1/8	7 1/2	7 1/4	3 1/2		3/4	3 3/4	4 1/4	1 7/8	1/2					6.25

STANDARD SIGN
M5-1 & M5-2

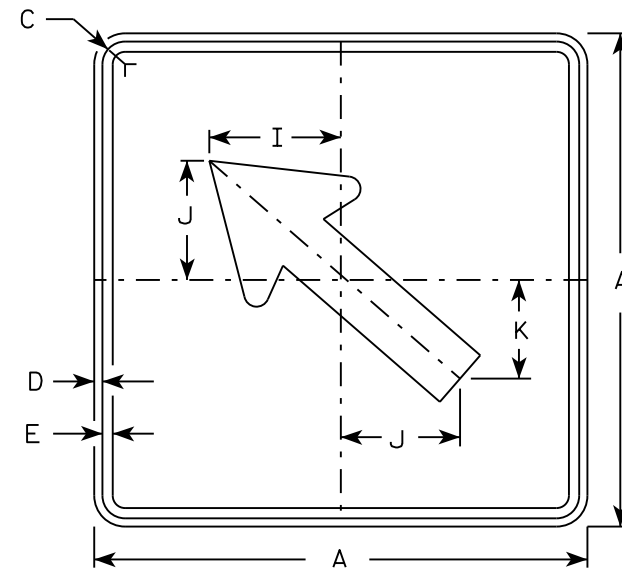
WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

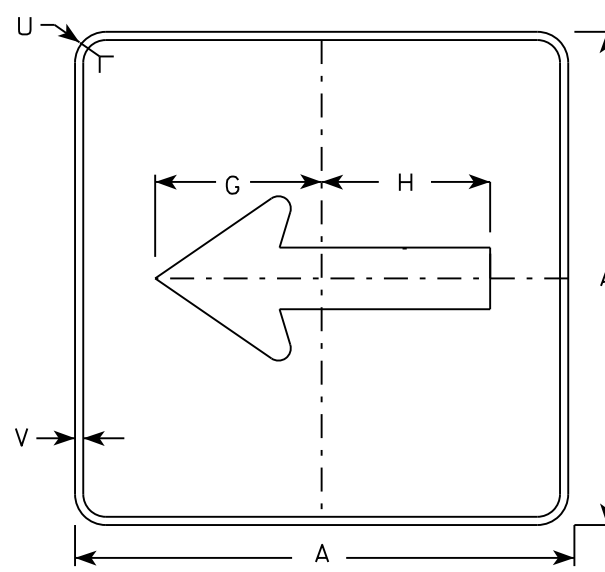
DATE 10/15/15 PLATE NO. M5-1.13



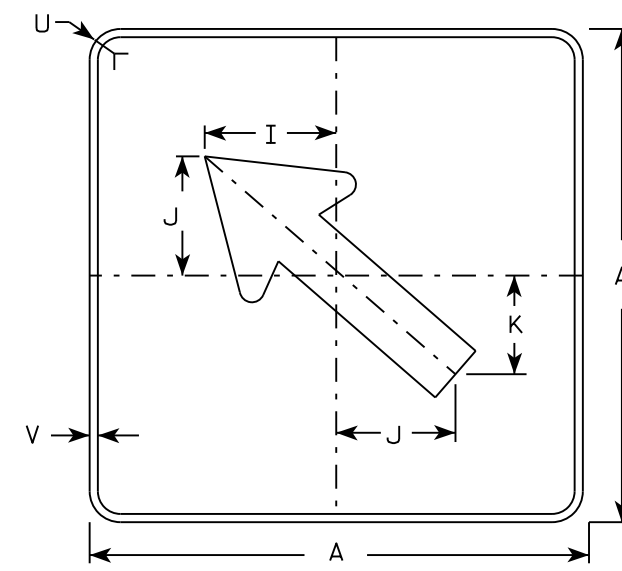
M6-1
MM6-1
M06-1
MP6-1



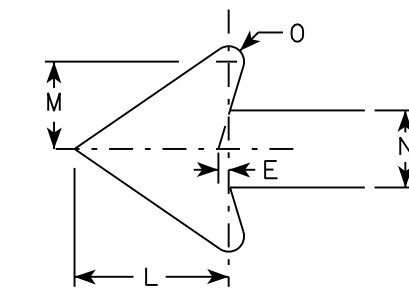
M6-2
MM6-2
M06-2
MP6-2



MB6-1
MK6-1
MN6-1
MR6-1



MB6-2
MK6-2
MN6-2
MR6-2



NOTES

- Signs are Type II - Type H except as Shown
- Color:
Background - See note 4
Message - See note 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.
- M6-1 and M6-2 Background - White
Message - Black
MB6-1 and MB6-2 Background - Blue
Message - White
MK6-1 and MK6-2 Background - Green
Message - White
MM6-1 and MM6-2 Background - White
Message - Green
MN6-1 and MN6-2 Background - Brown
Message - White
M06-1 and M06-2 Background - Orange - Type F Reflective
Message - Black
MP6-1 and MP6-2 Background - White
Message - Blue
MR6-1 and MR6-2 Background - Brown
Message - Yellow

7

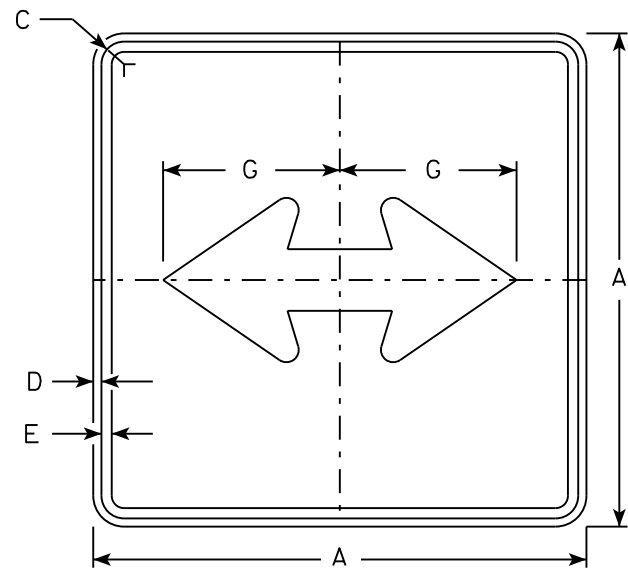
SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2	21		1 1/8	3/8	3/8		7 1/2	7 1/8	5 5/8	5	4 1/4	5 1/4	3	2 5/8	1/2						1 1/2	1/2					3.06
3	30		1 3/8	1/2	5/8		10 3/4	10 1/4	8	7 1/4	6	7 1/2	4 1/4	3 3/4	3/4						1 7/8	1/2					6.25
4	30		1 3/8	1/2	5/8		10 3/4	10 1/4	8	7 1/4	6	7 1/2	4 1/4	3 3/4	3/4						1 7/8	1/2					6.25
5	30		1 3/8	1/2	5/8		10 3/4	10 1/4	8	7 1/4	6	7 1/2	4 1/4	3 3/4	3/4						1 7/8	1/2					6.25

STANDARD SIGN
M6-1 & M6-2
SERIES

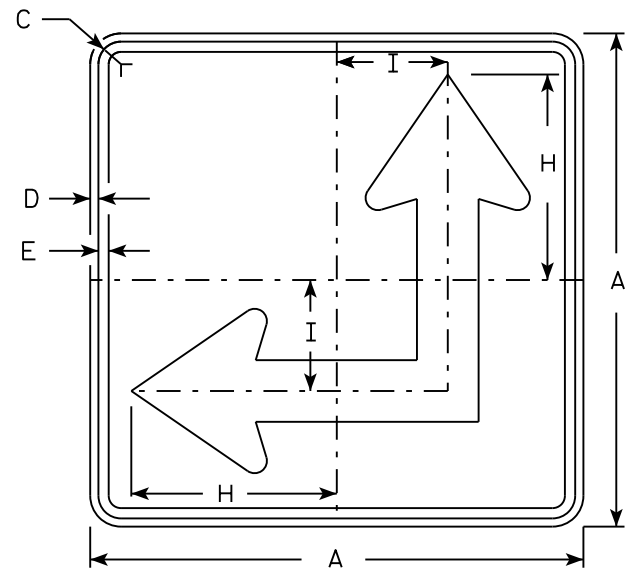
WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

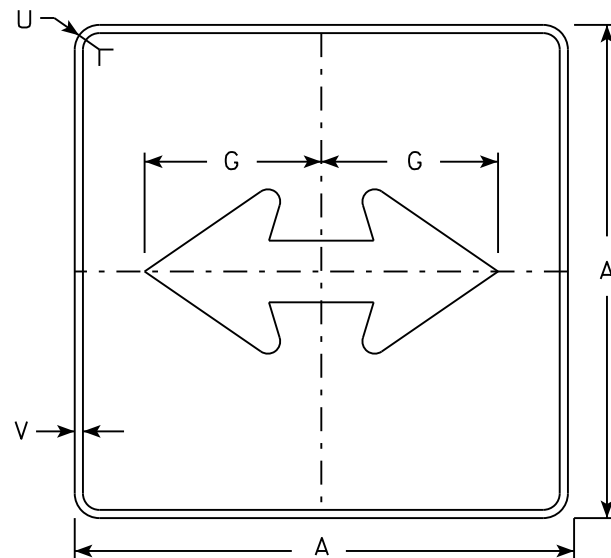
DATE 10/15/15 PLATE NO. M6-1.15



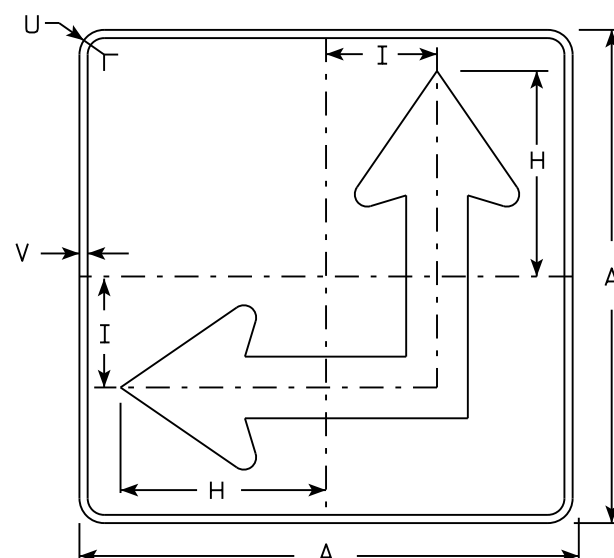
M6-4
MM6-4
M06-4
MP6-4



M6-6
MM6-6
M06-6
MP6-6



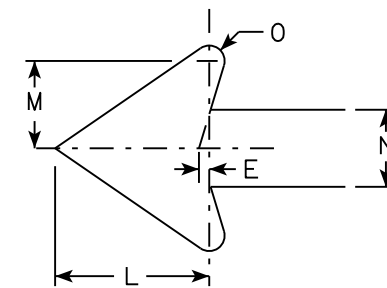
MB6-4
MK6-4
MN6-4
MR6-4



MB6-6
MK6-6
MN6-6
MR6-6

NOTES

- Signs are Type II - Type H except as Shown
- Color:
Background - See Note 4
Message - See Note 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.
- M6-4 and M6-6 Background - White
Message - Black
MB6-4 and MB6-6 Background - Blue
Message - White
MK6-4 and MK6-6 Background - Green
Message - White
MM6-4 and MM6-6 Background - White
Message - Green
MN6-4 and MN6-6 Background - Brown
Message - White
M06-4 and M06-6 Background - Orange - Type F Reflective
Message - Black
MP6-4 and MP6-6 Background - White
Message - Blue
MR6-4 and MR6-6 Background - Brown
Message - Yellow
- M6-6R same as M6-6L except arrow points ahead and right.



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																											
2	21		1 1/8	3/8	3/8		7 1/2	8 3/4	4 1/4			5 1/4	3	2 5/8	1/2						1 1/2	1/2					3.06
3	30		1 3/8	1/2	5/8		10 3/4	12 1/2	6 3/4			7 1/2	4 1/4	3 3/4	3/4						1 7/8	1/2					6.25
4	30		1 3/8	1/2	5/8		10 3/4	12 1/2	6 3/4			7 1/2	4 1/4	3 3/4	3/4						1 7/8	1/2					6.25
5	30		1 3/8	1/2	5/8		10 3/4	12 1/2	6 3/4			7 1/2	4 1/4	3 3/4	3/4						1 7/8	1/2					6.25

STANDARD SIGN
M6-4 & M6-6
SERIES

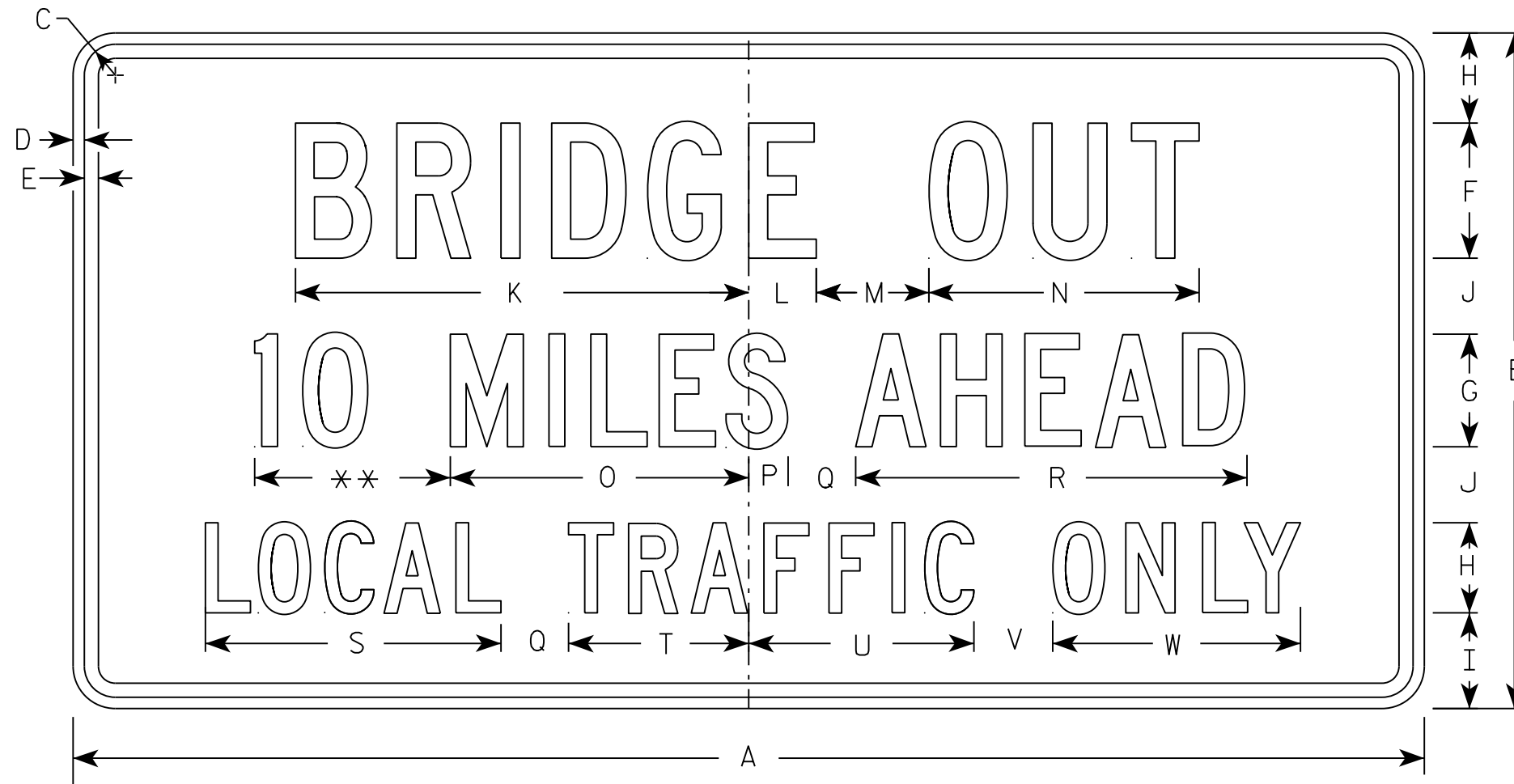
WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 10/15/15 PLATE NO. M6-4.10

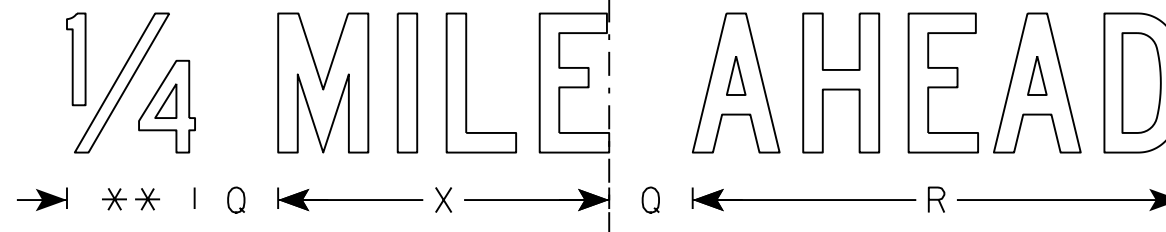
NOTES

1. Sign is Type II - Type H Reflective
2. Color:
Background - White
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.
5. Substitute appropriate numerals to nearest quarter mile and optically adjust spacing to achieve proper balance.



** See Note 5

R11-3B



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 3/8	1/2	5/8	4	3	2 1/2	2	2	13 1/4	2 1/4	3	8	8	1 1/2	2	10 3/4	8 3/8	4 3/4	6 1/2	2	6 3/4	7 1/8		4.5	
2S	60	30	1 3/8	1/2	5/8	6	5	4	4 1/4	3 3/8	20 1/8	3	5	12	13 1/4	1 3/4	3	17 3/8	13 1/8	8	10	3 1/2	11	11 7/8		12.5	
2M	60	30	1 3/8	1/2	5/8	6	5	4	4 1/4	3 3/8	20 1/8	3	5	12	13 1/4	1 3/4	3	17 3/8	13 1/8	8	10	3 1/2	11	11 7/8		12.5	
3																											
4																											
5																											

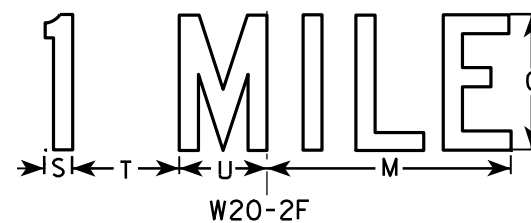
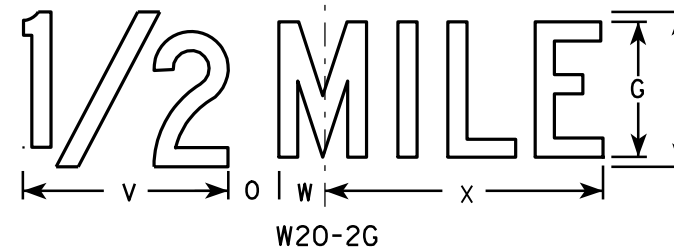
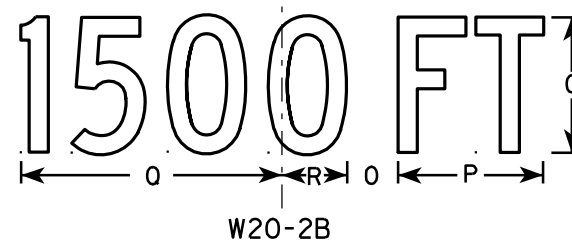
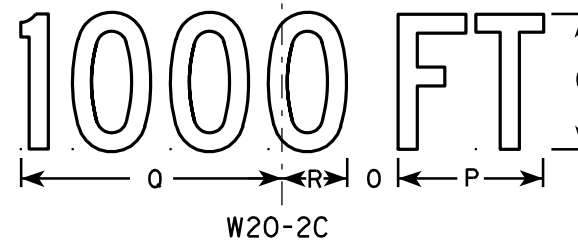
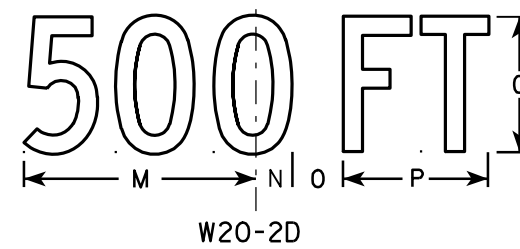
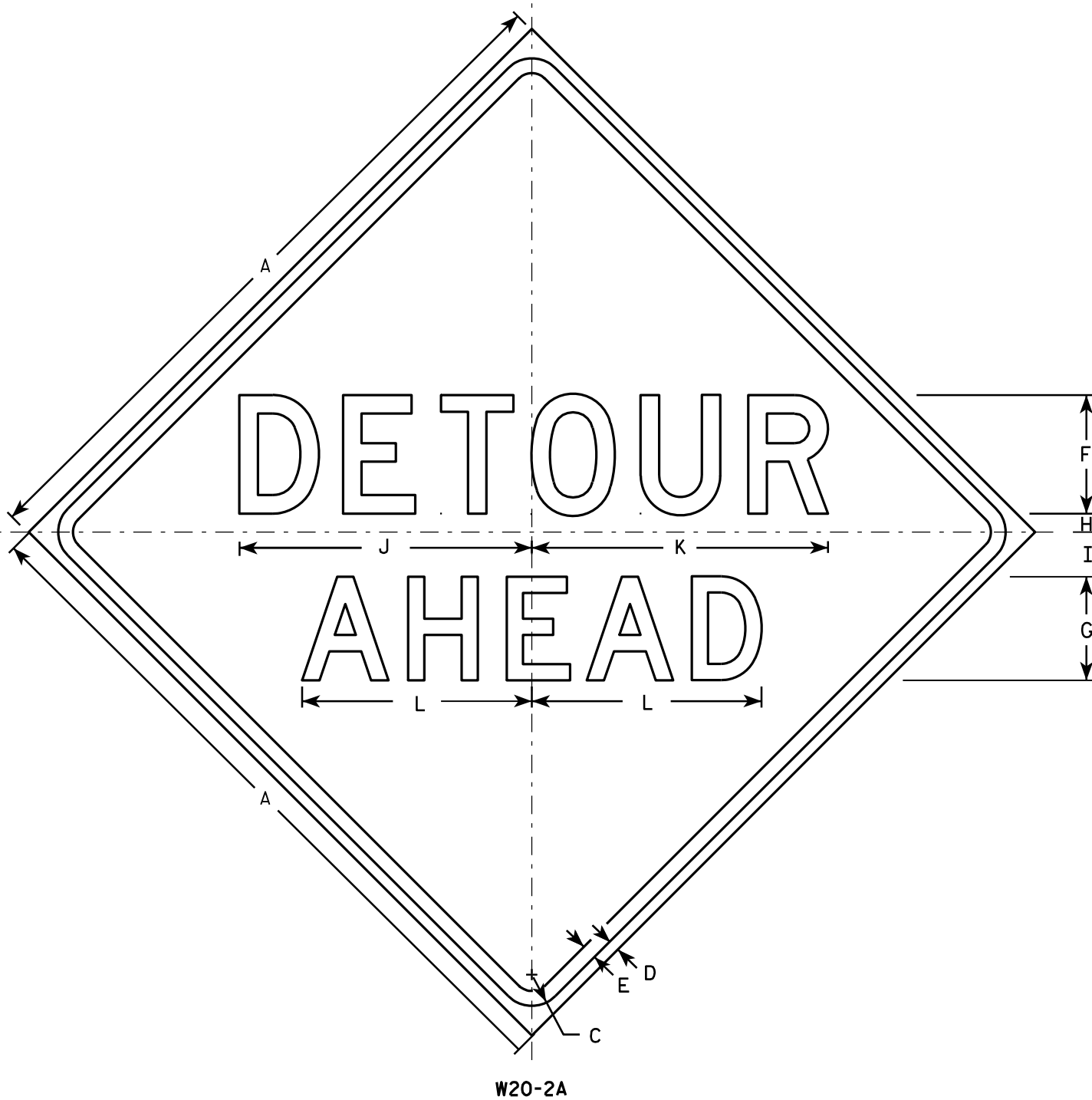
STANDARD SIGN
R11-3B

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 3/21/17 PLATE NO. R11-3B.3

PROJECT NO: _____ HWY: _____ COUNTY: _____ SHEET NO: **E**



NOTES

1. Sign is Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
Background - Orange
Message - Black
3. Message Series - See note 5
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. Line 1 is Series D.
Line 2 is Series D for AHEAD and Series C for all other distances.

7

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	36		1 5/8	5/8	3/4	6	5	1	2 1/4	14 3/4	15	11 5/8	9	1 3/8	1 7/8	5 5/8	10 1/8	2 1/2	1 1/8	4 1/2	3 1/2	8	1 3/4	10 3/4			9.0
2S	48		2 1/4	3/4	1	8	7	1 1/4	3	19 3/4	20	15 1/2	12	1 7/8	2 5/8	7 1/2	13 1/2	3 3/8	1 1/2	6	4 5/8	10 5/8	2 3/8	14 3/8			16.0
2M	48		2 1/4	3/4	1	8	7	1 1/4	3	19 3/4	20	15 1/2	12	1 7/8	2 5/8	7 1/2	13 1/2	3 3/8	1 1/2	6	4 5/8	10 5/8	2 3/8	14 3/8			16.0
3	48		2 1/4	3/4	1	8	7	1 1/4	3	19 3/4	20	15 1/2	12	1 7/8	2 5/8	7 1/2	13 1/2	3 3/8	1 1/2	6	4 5/8	10 5/8	2 3/8	14 3/8			16.0
4	48		2 1/4	3/4	1	8	7	1 1/4	3	19 3/4	20	15 1/2	12	1 7/8	2 5/8	7 1/2	13 1/2	3 3/8	1 1/2	6	4 5/8	10 5/8	2 3/8	14 3/8			16.0
5	48		2 1/4	3/4	1	8	7	1 1/4	3	19 3/4	20	15 1/2	12	1 7/8	2 5/8	7 1/2	13 1/2	3 3/8	1 1/2	6	4 5/8	10 5/8	2 3/8	14 3/8			16.0

STANDARD SIGN
W20-2A, B, C, D, F & G

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Raub*
for State Traffic Engineer

DATE 3/18/11 PLATE NO. W20-2.6

PROJECT NO: _____ HWY: _____ COUNTY: _____ SHEET NO: _____ E

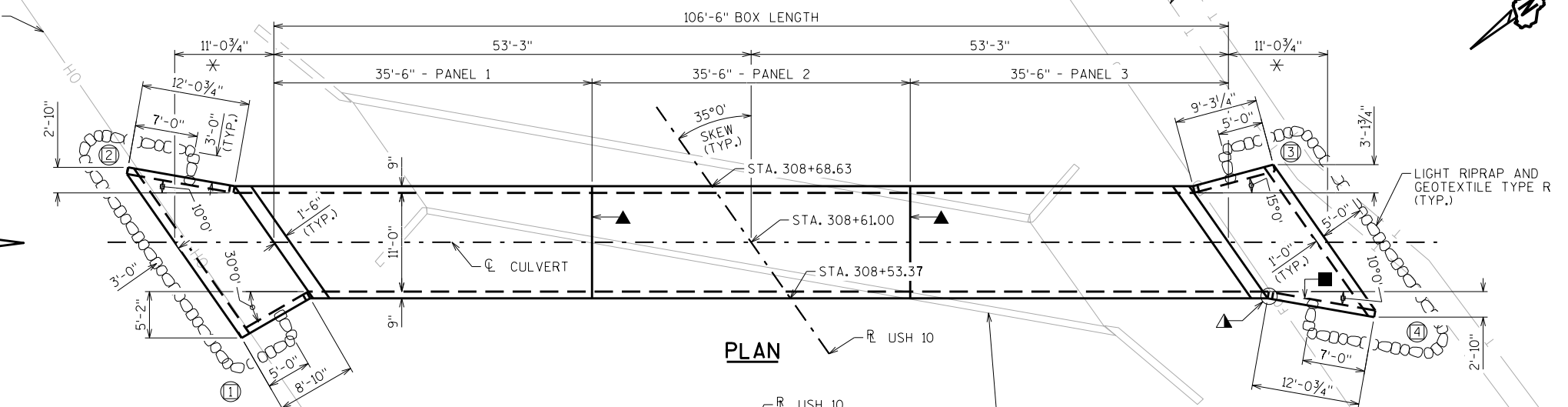
NOTE: STRUCTURE BACKFILL REQUIRED BEHIND ALL WING WALLS.

EXISTING UNDERGROUND FIBER OPTIC LINE. SEE ROADWAY PLANS FOR UTILITY COORDINATION.

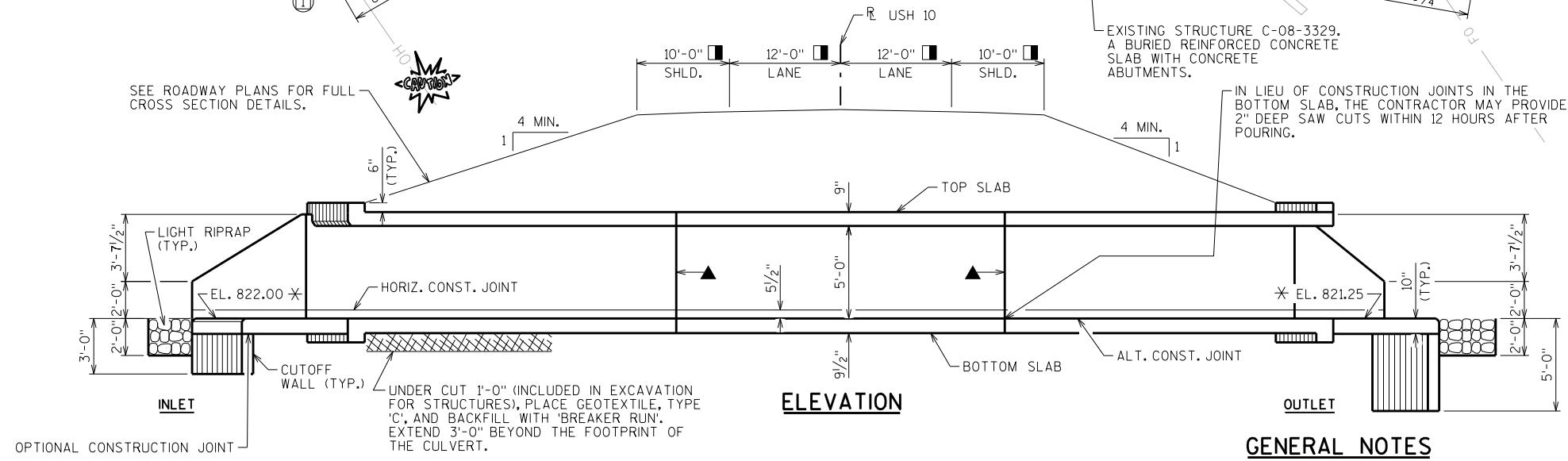
EXISTING TELEPHONE LINE. SEE ROADWAY PLANS FOR UTILITY COORDINATION.

EXISTING OVERHEAD UTILITY. SEE ROADWAY PLANS FOR UTILITY COORDINATION.

UNNAMED TRIB. TO SPRING CREEK



PLAN



ELEVATION

GENERAL NOTES

- DRAWINGS SHALL NOT BE SCALED.
- BAR STEEL REINFORCEMENT SHALL BE EMBEDDED 2" CLEAR UNLESS OTHERWISE SHOWN OR NOTED.
- THE FIRST OR FIRST TWO DIGITS OF THE BAR MARK SIGNIFIES THE BAR SIZE.
- BEVEL EXPOSED EDGES OF CONCRETE 3/4" UNLESS OTHERWISE NOTED.
- THE UPPER LIMITS OF "EXCAVATION FOR STRUCTURES CULVERTS C-08-82" SHALL BE THE EXISTING GROUNDLINE.
- ALL VOLUME WHICH CANNOT BE PLACED BEFORE CULVERT CONSTRUCTION AND NOT OCCUPIED BY THE NEW STRUCTURE SHALL BE BACKFILLED WITH STRUCTURE BACKFILL WITHIN THE LENGTH OF THE CULVERT INCLUDING THE APRON WING WALLS.
- THE QUANTITY FOR BACKFILL STRUCTURE IS CALCULATED BASED ON THE DETAIL SHOWN IN THE PLANS.
- THE CONCRETE IN THE CUTOFF WALLS MAY BE PLACED UNDERWATER IF THE EXCAVATION CANNOT BE DEWATERED.
- PLACE 18" (MIN.) WIDE SHEET OF "RUBBERIZED MEMBRANE WATERPROOFING" ON TOP SLAB OVER ALL CONSTRUCTION JOINTS AND EXTEND DOWN TO 6" BELOW TOP OF BOTTOM SLAB.
- THE CONTRACTOR MAY FURNISH A PRECAST CONCRETE BOX CULVERT IN LIEU OF THE CAST-IN-PLACE BOX CULVERT WITH THE ACCEPTANCE OF THE SHOP DRAWINGS BY THE STRUCTURES MAINTENANCE SECTION. THE PRECAST CONCRETE BOX CULVERT SHALL CONFORM TO PRECAST DETAILS ON CHAPTER 36 STANDARDS OF THE CURRENT WISC. DOT BRIDGE MANUAL. PAYMENT FOR THE PRECAST CULVERT SHALL BE BASED ON THE QUANTITIES AND PRICES BID FOR THE ITEMS LISTED IN THE "TOTAL ESTIMATED QUANTITIES".
- THE CONTRACTOR MAY ELECT TO SUBSTITUTE #1 OR #2 CONCRETE COARSE AGGREGATE, SELECT CRUSHED MATERIAL OR OTHER GRANULAR MATERIAL AS APPROVED BY THE FIELD ENGINEER, IN LIEU OF THE BREAKER RUN, TO BE UTILIZED AS A CONSTRUCTION PLATFORM FOR THE BOX. THE CONTRACTOR IS RESPONSIBLE FOR BASE STABILITY WITH ANY SUBSTITUTED MATERIAL.

- ▲ SEE CORNER DETAILS ON "DETAILS" SHEET
- NAME PLATE LOCATION (SEE "DETAILS" SHEET)
- * BUILD APRON AND END OF BOX LEVEL
- INDICATES WING NUMBER
- ▲ VERT. CONST. JOINT (TYP.)
- ▣ DIMENSIONS PERPENDICULAR TO R

LIST OF DRAWINGS

- LAYOUT
- BOX DETAILS
- APRON DETAILS
- DETAILS
- SUBSURFACE EXPLORATION

DESIGN DATA

LIVE LOAD:
DESIGN LOADING: HL-93
INVENTORY RATING FACTOR: RF = 1.05
OPERATING RATING FACTOR: RF = 1.35
WISCONSIN STANDARD PERMIT VEHICLE (WIS.-SPV): 255(KIPS)

EARTHLOAD:
DESIGNED FOR 4 TO 6 FT. OF FILL.

MATERIAL PROPERTIES:
CONCRETE MASONRY: f'c = 3,500 P.S.I.
BAR STEEL REINFORCEMENT: fy = 60,000 P.S.I.

HYDRAULIC DATA

100 YEAR FREQUENCY
Q₁₀₀ = 200 C.F.S.
VEL₁₀₀ = 3.6 F.P.S.
HW₁₀₀ = EL. 829.62
WATERWAY AREA = 55 SQ. FT.
DRAINAGE AREA = 1.1 SQ. MI.
ROADWAY OVERTOPPING = N/A
SCOUR CRITICAL CODE = 8

TRAFFIC VOLUME

USH 10
ADT = 7950 (2044)
R.D.S. = 60 M.P.H.

TOTAL ESTIMATED QUANTITIES

BID ITEM NUMBER	BID ITEMS	UNIT	TOTAL
203.0220	REMOVING STRUCTURE C-08-3329	EACH	1
206.2001	EXCAVATION FOR STRUCTURES CULVERTS C-08-82	EACH	1
210.2500	BACKFILL STRUCTURE TYPE B	TON	1,180
311.0115	BREAKER RUN	CY	90
504.0100	CONCRETE MASONRY CULVERTS	CY	128
505.0400	BAR STEEL REINFORCEMENT HS STRUCTURES	LB	19,820
505.0600	BAR STEEL REINFORCEMENT HS COATED STRUCTURES	LB	730
516.0500	RUBBERIZED MEMBRANE WATERPROOFING	SY	20
606.0100	RIPRAP LIGHT	CY	24
645.0105	GEOTEXTILE TYPE C	SY	300
645.0130	GEOTEXTILE TYPE R	SY	80
NON-BID ITEMS			
	FILLER	SIZE	3/4

8

NO.	DATE	REVISION	BY
ACCEPTED		10/24/22	
CHIEF STRUCTURES DESIGN ENGINEER		DATE	
STRUCTURE C-08-82			
USH 10 OVER UNNAMED TRIB. TO SPRING CREEK			
COUNTY	CALUMET	TOWN	BRILLION
DESIGN SPEC. AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS			
DESIGNED BY	DESIGNED CK'D.	DRAWN BY	PLANS CK'D.
IFC	AA	IFC	AA
LAYOUT			SHEET 1 OF 5

SCALE = 8:00

BILL OF BARS

NOTE: THE FIRST OR FIRST TWO DIGITS OF THE BAR MARK SIGNIFIES THE BAR SIZE

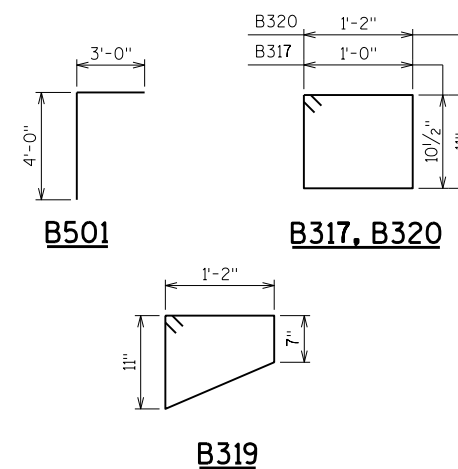
BAR MARK	CO. 1/2	NO. REQ'D.	LENGTH	BENT	BAR SERIES	LOCATION
B501		792	6'-11"	X		CORNERS
B402		28	35'-2"		▲	TOP & BOT. SLAB - LONGIT.- PANEL 1 & 3
B403		9	31'-3"			WALLS - LONGIT.- PANEL 1 - N. WALL
B404		9	39'-7"			WALLS - LONGIT.- PANEL 1 - S. WALL
B405		9	39'-7"			WALLS - LONGIT.- PANEL 3 - N. WALL
B406		9	31'-3"			WALLS - LONGIT.- PANEL 3 - S. WALL
B407		4	38'-4"			TOP & BOT. SLAB - LONGIT.- PANEL 1 & 3
B408		4	37'-4"			TOP & BOT. SLAB - LONGIT.- PANEL 1 & 3
B409		4	32'-11"			TOP & BOT. SLAB - LONGIT.- PANEL 1 & 3
B410		4	31'-11"			TOP & BOT. SLAB - LONGIT.- PANEL 1 & 3
B411		38	35'-2"			TOP & BOT. SLAB & WALLS - LONGIT.- PANEL 2
B612		56	6'-10"		▲	TOP & BOTTOM SLAB - TRANSVERSE - PANEL 1 & 3
B613		396	12'-2"			TOP & BOTTOM SLAB - TRANSVERSE - ALL PANELS
B414		220	2'-2"			WALL - DOWELS
B415		220	4'-11"			WALL - VERTICAL
B516		76	4'-0"			VERT. CONST. JOINT
B317		42	4'-1"	X		BOTTOM SLAB HEADERS - STIRRUP
B918		24	14'-10"			TOP & BOT. SLAB HEADERS - TRANSVERSE
B319		21	4'-4"	X		TOP SLAB INLET HEADER - STIRRUP
B320		21	4'-7"	X		TOP SLAB OUTLET HEADER - STIRRUP

▲ LENGTH SHOWN FOR BAR IS AN AVERAGE LENGTH AND SHOULD ONLY BE USED FOR BAR WEIGHT CALCULATIONS. SEE BAR SERIES TABLE FOR ACTUAL LENGTHS.

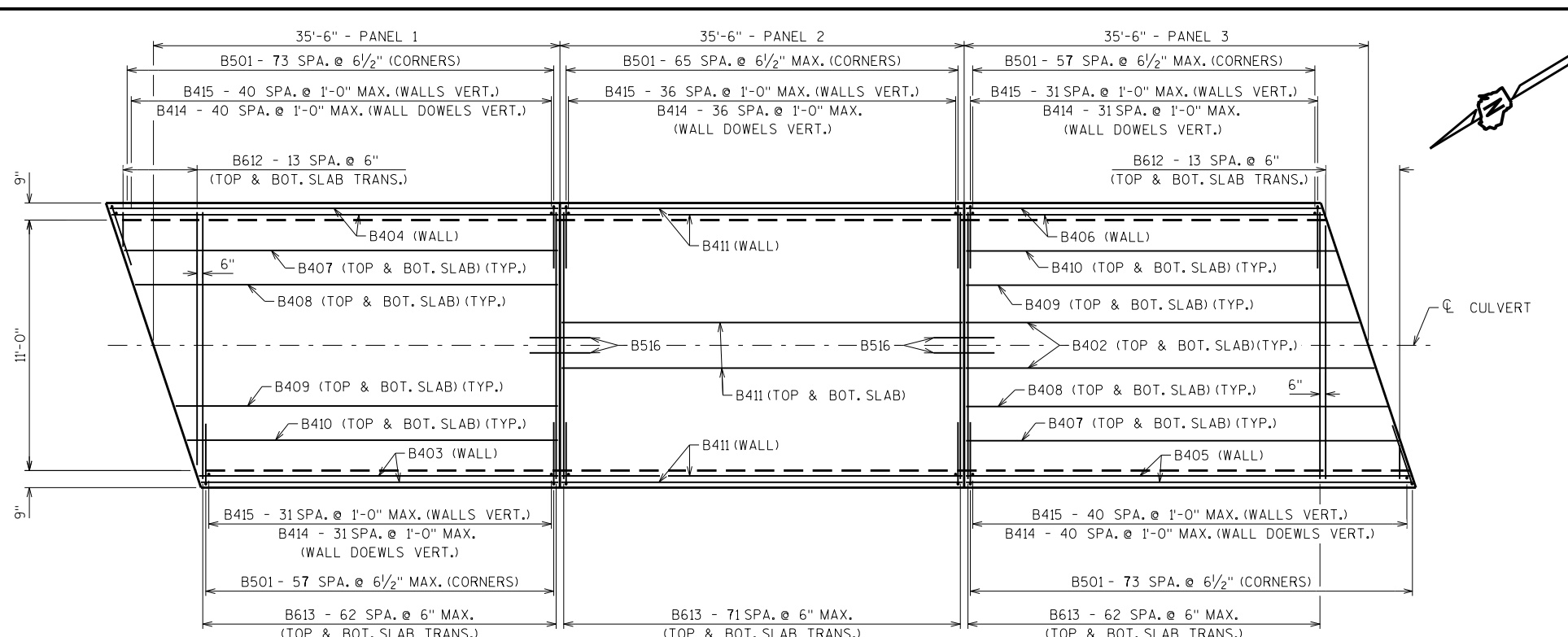
BAR SERIES TABLE

BAR MARK	NO. REQ'D.	LENGTH
B402	4 SERIES OF 7	32'-2" TO 38'-1"
B612	4 SERIES OF 14	2'-2" TO 11'-5"

BUNDLE AND TAG EACH SERIES SEPARATELY.



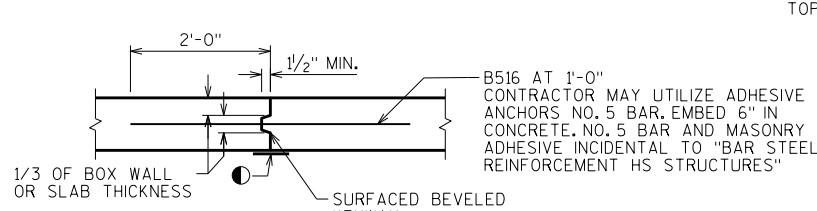
NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE C-08-82			
DRAWN BY		IFC	PLANS CK'D. AA
BOX DETAILS		SHEET 2	



PLAN VIEW OF ALL PANELS

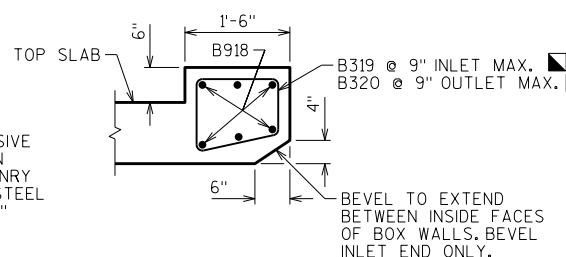
APRONS AND HEADERS NOT SHOWN
PANELS 1 & 3 SIMILAR

- STIRRUP PERPENDICULAR TO HEADER, SPACED AT 9" ALONG THE SKEW
- ◆ OPTIONAL CONSTRUCTION JOINT. OMIT 1" FILLET IF OPTIONAL CONST. JOINT IS USED.
- 18" MIN. WIDTH RUBBERIZED MEMBRANE WATERPROOFING UP WALLS & ACROSS TOP SLAB AT VERTICAL CONST. JOINTS, EXTEND 6" MIN. BELOW TOP OF BOTTOM SLAB.

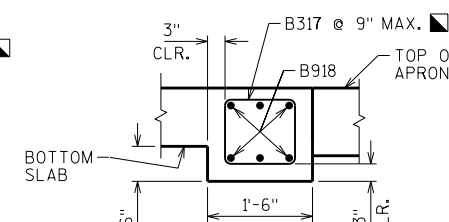


VERTICAL CONSTRUCTION JOINT

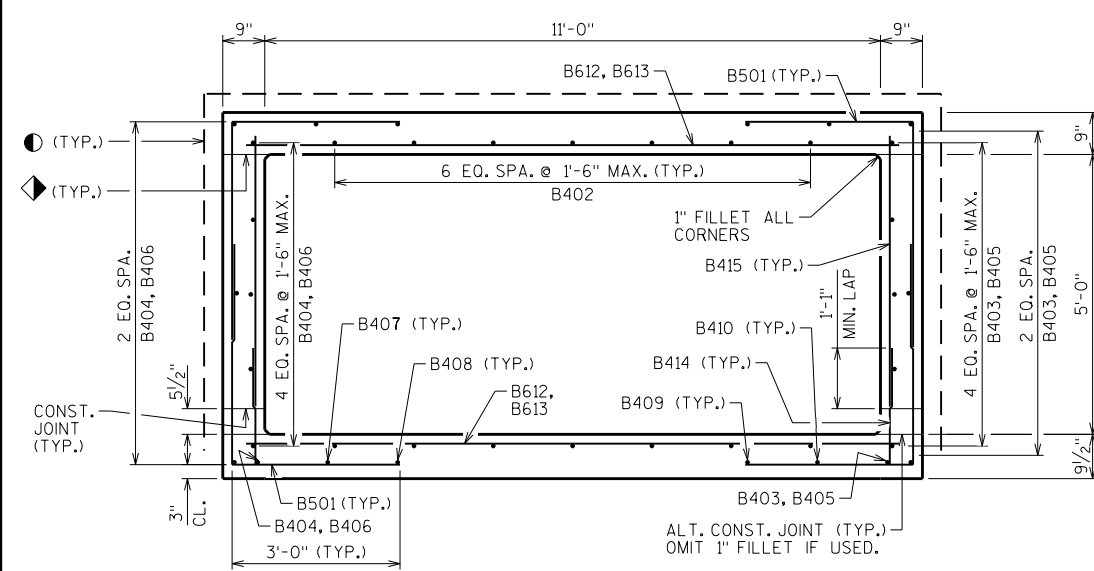
2" DEEP SAW CUT WITHIN 12 HOURS AFTER POURING MAY BE USED IN LIEU OF CONST. JT. IN BOTTOM SLAB.



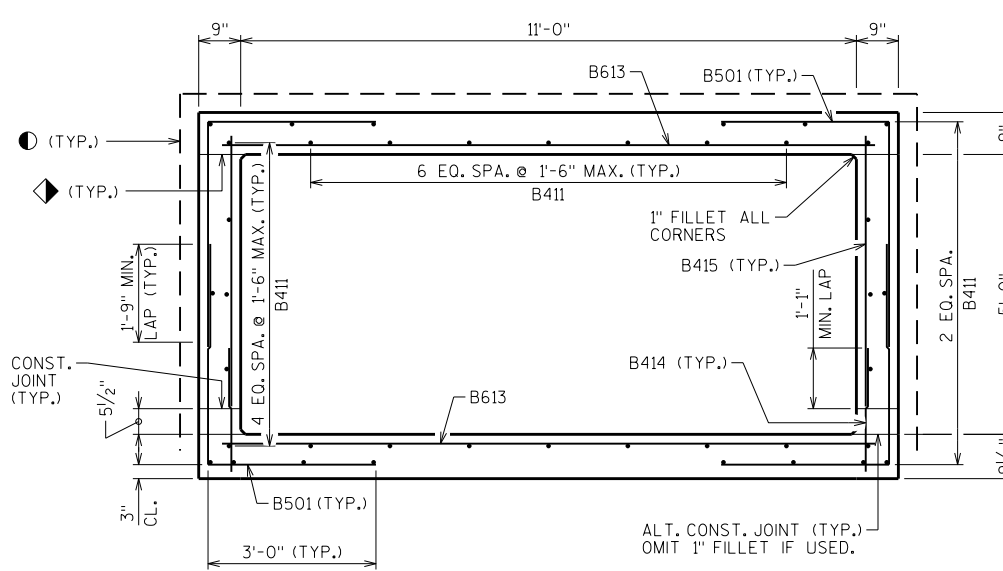
SECTION THRU TOP SLAB HEADER



SECTION THRU BOTTOM SLAB HEADER



SECTION THRU PANELS 1 & 3

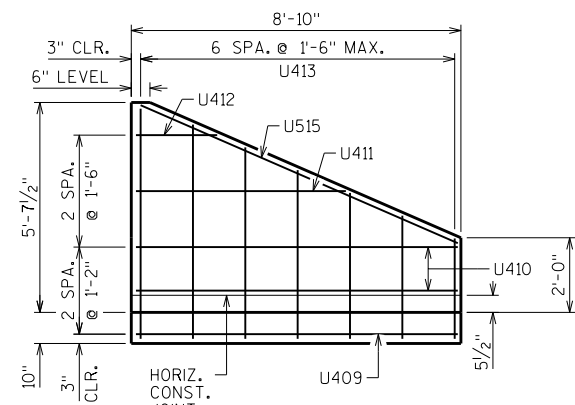


SECTION THRU PANEL 2

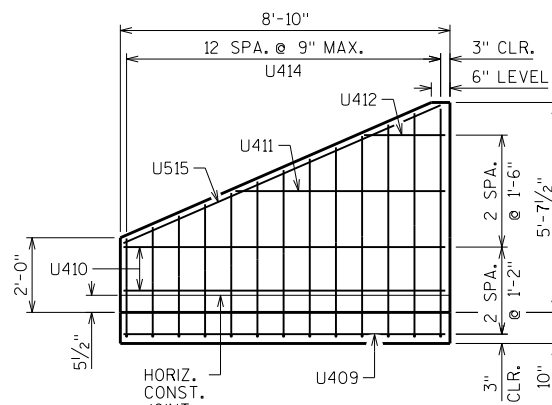
ALL LONGITUDINAL BARS NOT LABELED ARE B411 AS SHOWN

8

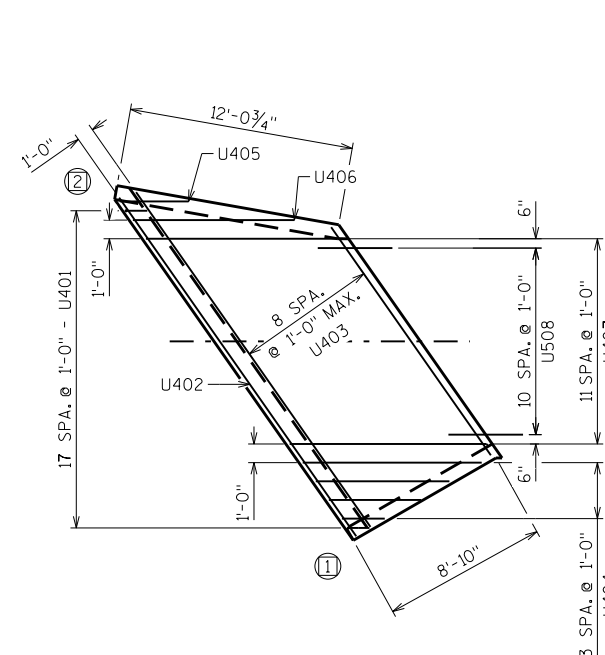
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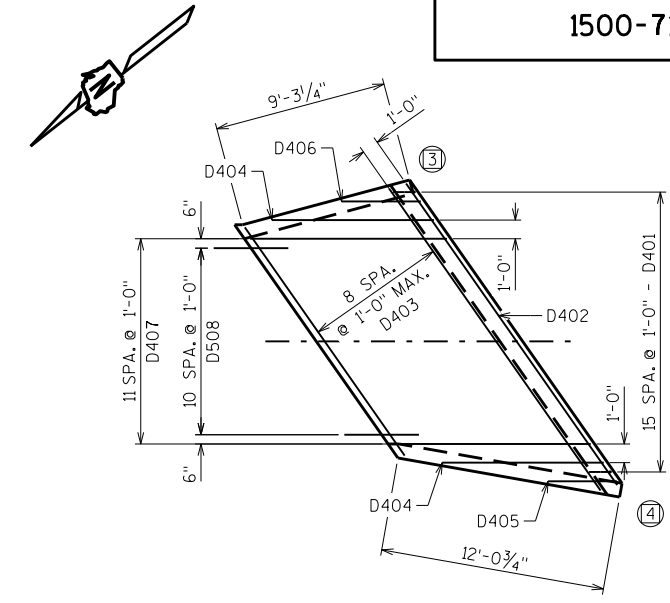
WING 1
SHOWING F.F. REINFORCEMENT



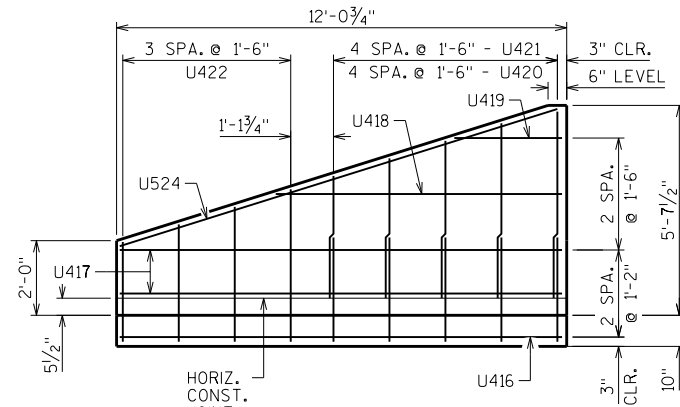
WING 1
SHOWING B.F. REINFORCEMENT



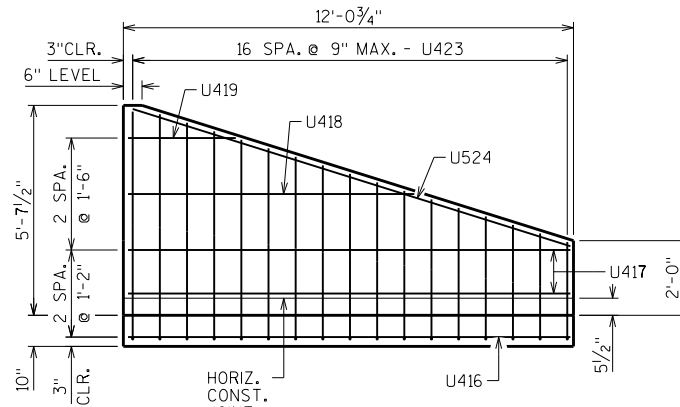
INLET APRON PLAN



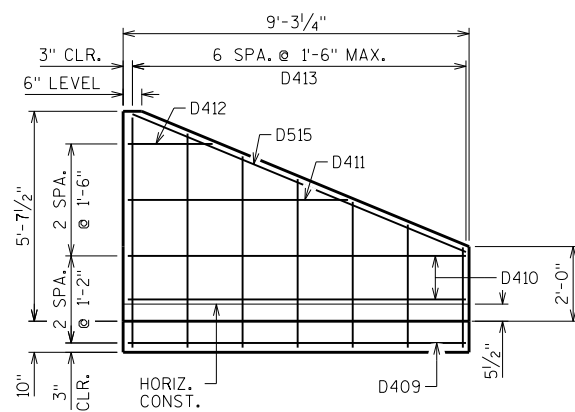
OUTLET APRON PLAN



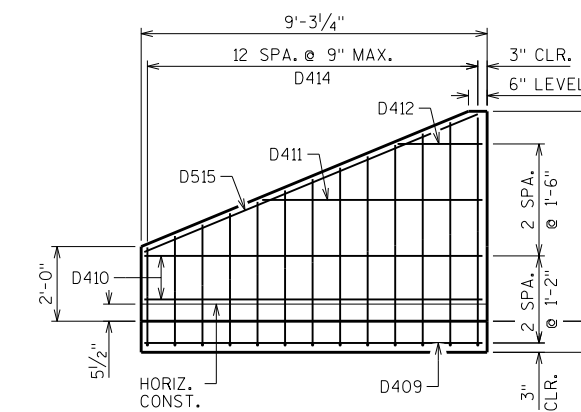
WING 2
SHOWING F.F. REINFORCEMENT



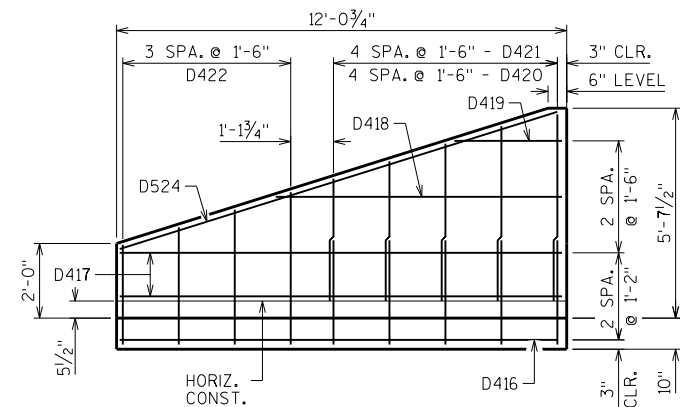
WING 2
SHOWING B.F. REINFORCEMENT



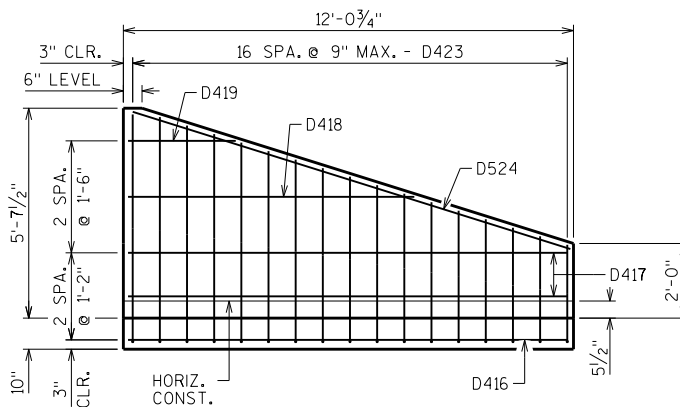
WING 3
SHOWING F.F. REINFORCEMENT



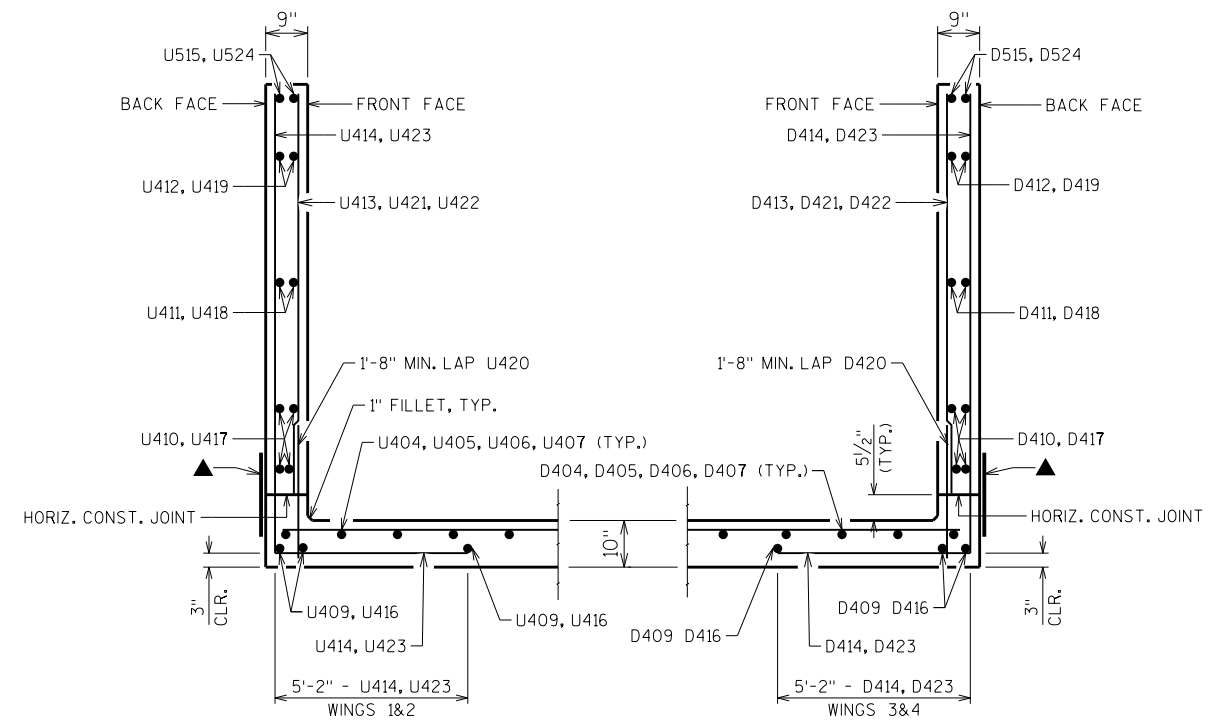
WING 3
SHOWING B.F. REINFORCEMENT



WING 4
SHOWING F.F. REINFORCEMENT



WING 4
SHOWING B.F. REINFORCEMENT



SECTION THRU WINGS
AT RIGHT ANGLE TO WING WALLS

▲ 18" WIDE RUBBERIZED MEMBRANE WATERPROOFING. PLACE ALONG HORIZ. CONST. JOINT FOR ENTIRE LENGTH OF WING.

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE C-08-82			
DRAWN BY		IFC	PLANS AA
APRON DETAILS		SHEET 3	

BORING #	DATE COMPLETED	NORTHING (Y)	EASTING (X)
1	11/15/2021	334144	130489
2	11/16/2021	334250	130532

BORINGS COMPLETED BY: GESTRA
 REPORT COMPLETED BY: WISDOT
 ALL COORDINATES REFERENCED TO WCCS NAD 83 (91) CALUMET COUNTY
 COORDINATES COLLECTED USING NON-SURVEY GRADE EQUIPMENT

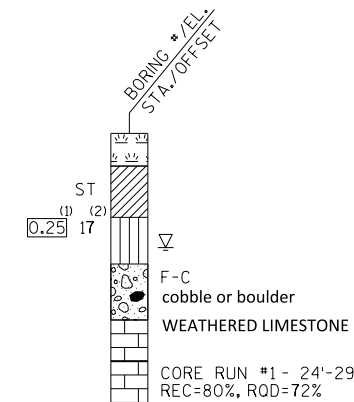
STATE PROJECT NUMBER

1500-71-71

MATERIAL SYMBOLS

	ASPHALT		TOPSOIL		PEAT
	CONCRETE		FILL		GRAVEL
	SAND		CLAY		SILT
	BOULDERS OR COBBLES		LIMESTONE		BEDROCK (UNKNOWN)
	SHALE		SANDSTONE		IGNEOUS/META

LEGEND OF BORING



(1) UNCONFINED STRENGTH, AS DETERMINED BY A POCKET PENETROMETER (TSF)

(2) UNLESS OTHERWISE, SPECIFIED THE SPT 'N' VALUE IS BASED ON AASHTO T-206, STANDARD PENETRATION TEST. THE SPT 'N' VALUE PRESENTED HAS NOT BEEN CORRECTED FOR OVERBURDEN PRESSURE OR HAMMER EFFICIENCY.

GROUND WATER ELEVATION

- AT TIME OF DRILLING
- END OF DRILLING
- AFTER DRILLING

ABBREVIATIONS

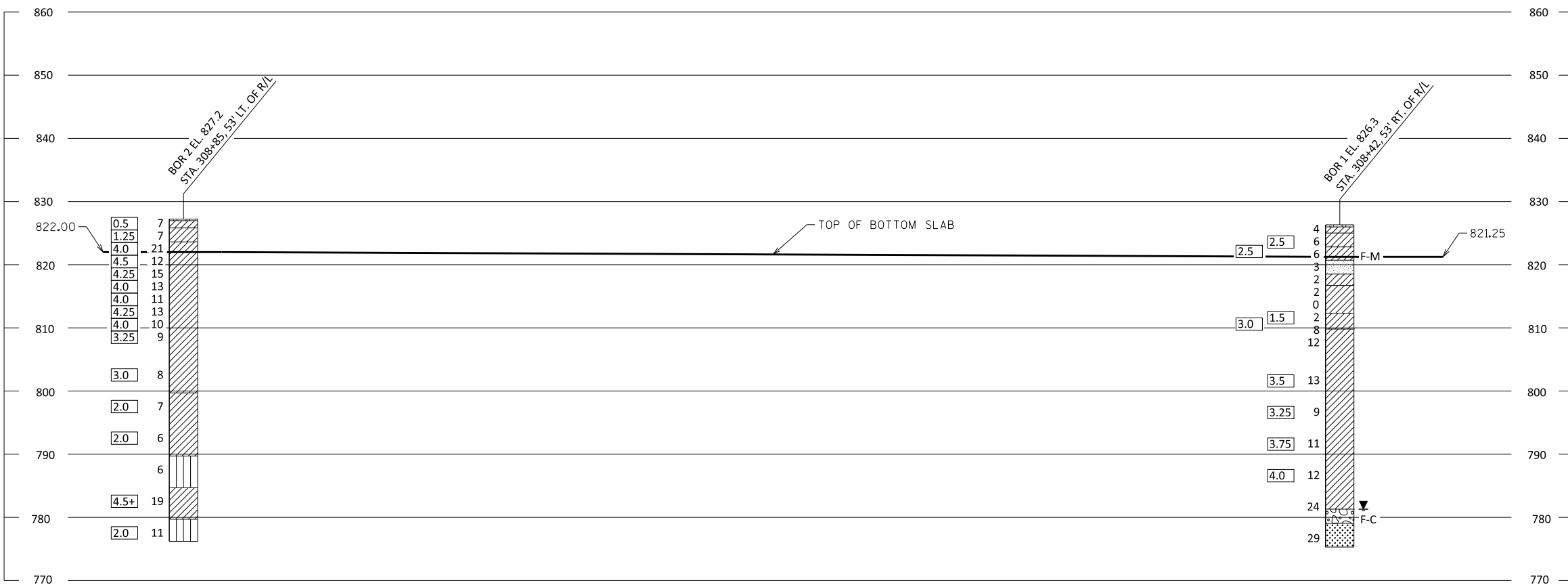
F-FINE M-MEDIUM C-COARSE ST-SHELBY TUBE

SUBSURFACE EXPLORATION FOR FOUNDATION DESIGN AND BIDDERS INFORMATION

BORINGS WERE COMPLETED AT POINTS APPROXIMATELY AS INDICATED ON THIS DRAWING TO OBTAIN INFORMATION CONCERNING THE CHARACTER OF SUBSURFACE MATERIALS FOUND AT THE SITE. BECAUSE THE INVESTIGATED DEPTHS ARE LIMITED AND THE AREA OF THE BORINGS IS VERY SMALL IN RELATION TO THE ENTIRE SITE, THE WISCONSIN DEPARTMENT OF TRANSPORTATION DOES NOT WARRANT SIMILAR SUBSURFACE CONDITIONS BELOW, BETWEEN, OR BEYOND THESE BORINGS. VARIATIONS IN SOIL CONDITIONS SHOULD BE EXPECTED AND FLUCTUATIONS IN GROUNDWATER LEVELS MAY OCCUR.

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE C-08-82			
DRAWN BY JJ, TLP & IFC		PLANS CK'D. AA	
SUBSURFACE EXPLORATION			SHEET 5

SCALE = 20:00

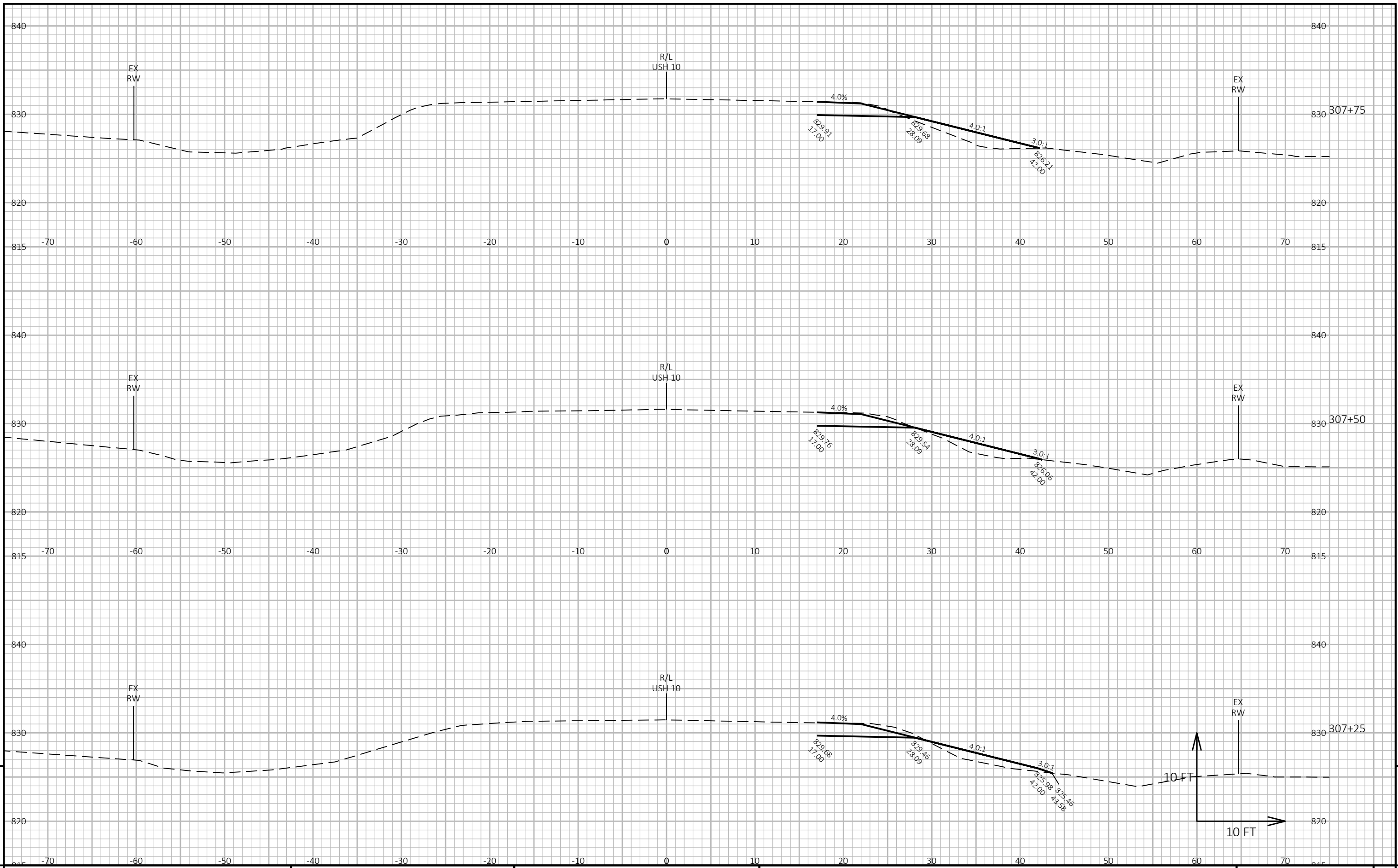


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DIVISION 1 - USH 10 - 2020-06-16											
STATION	REAL STATION	DISTANCE	AREA (SF)			INCREMENTAL VOL (CY) (UNADJUSTED)			CUMULATIVE VOL (CY)		
			CUT	SALVAGED/UNUSABLE PAVEMENT MATERIAL	FILL	CUT	SALVAGED/UNUSABLE PAVEMENT MATERIAL	FILL	CUT	EXPANDED FILL	MASS ORDINATE
			NOTE 1	NOTE 2	NOTE 3	NOTE 1					
307+25	30725.00	0.00	14.51	2.50	9.19	0	0	0	0	0	0
307+50	30750.00	25.00	13.64	2.50	9.40	13	2	9	13	12	-1
307+75	30775.00	25.00	11.82	2.50	12.87	12	2	10	25	25	-4
308+00	30800.00	25.00	26.36	5.00	17.24	18	3	14	43	44	-8
308+10	30810.00	10.00	74.80	41.00	19.79	19	9	7	62	53	-7
308+30	30830.00	20.00	72.41	41.00	125.88	55	30	54	117	125	-54
308+50	30850.00	20.00	71.48	41.00	66.77	53	30	71	170	219	-125
308+75	30875.00	25.00	69.85	41.00	65.78	65	38	61	235	301	-180
308+92	30892.00	17.00	70.86	41.00	188.99	44	26	80	279	407	-268
309+00	30900.00	8.00	70.99	41.00	124.43	21	12	46	300	468	-320
309+17	30917.00	17.00	70.08	41.00	94.16	44	26	69	344	560	-394
309+25	30925.00	8.00	69.83	41.00	87.62	21	12	27	365	596	-421
309+50	30950.00	25.00	22.37	5.00	86.24	43	21	80	408	702	-505
309+80	30980.00	30.00	24.35	5.00	42.20	26	6	71	434	797	-580
310+00	31000.00	20.00	15.29	2.50	0.00	15	3	16	449	818	-589
Notes:											
1 - CUT		CUT INCLUDES SALVAGED/UNUSABLE PAVEMENT MATERIAL									
2 - SALVAGED/UNUSABLE PAVEMENT MATERIAL		THIS DOES NOT SHOW UP IN CROSS SECTIONS									
3 - FILL		DOES NOT INCLUDE UNUSABLE PAVEMENT EXC VOLUME									
4 - MASS ORDINATE		PLUS QUANTITY INDICATES AN EXCESS OF MATERIAL WITHIN THE DIVISION. MINUS INDICATES A SHORTAGE OF MATERIAL WITHIN THE DIVISION.									

DIVISION 2 - USH 10 - 2020-06-16											
STATION	REAL STATION	DISTANCE	AREA (SF)			INCREMENTAL VOL (CY) (UNADJUSTED)			CUMULATIVE VOL (CY)		
			CUT	SALVAGED/UNUSABLE PAVEMENT MATERIAL	FILL	CUT	SALVAGED/UNUSABLE PAVEMENT MATERIAL	FILL	CUT	EXPANDED FILL	MASS ORDINATE
			NOTE 1	NOTE 2	NOTE 3	NOTE 1					
520+50	52050.00	0.00	20.78	2.50	1.52	0	0	0	0	0	0
520+83	52083.00	33.00	27.37	41.00	33.94	29	27	22	29	25	-23
521+00	52100.00	17.00	82.92	41.00	71.35	35	26	33	64	63	-52
521+25	52125.00	25.00	79.80	41.00	202.31	75	38	127	139	209	-161
521+33	52133.00	8.00	79.47	41.00	319.66	24	12	77	163	298	-238
521+50	52150.00	17.00	85.32	41.00	116.61	52	26	137	215	455	-369
521+75	52175.00	25.00	78.63	41.00	61.55	76	38	82	291	550	-426
521+83	52183.00	8.00	78.06	41.00	51.05	23	12	17	314	569	-434
522+00	52200.00	17.00	28.72	5.00	14.41	34	14	21	348	593	-438
522+50	52250.00	50.00	34.17	5.00	3.42	58	9	17	406	613	-409
Notes:											
1 - CUT		CUT INCLUDES SALVAGED/UNUSABLE PAVEMENT MATERIAL									
2 - SALVAGED/UNUSABLE PAVEMENT MATERIAL		THIS DOES NOT SHOW UP IN CROSS SECTIONS									
3 - FILL		DOES NOT INCLUDE UNUSABLE PAVEMENT EXC VOLUME									
4 - MASS ORDINATE		PLUS QUANTITY INDICATES AN EXCESS OF MATERIAL WITHIN THE DIVISION. MINUS INDICATES A SHORTAGE OF MATERIAL WITHIN THE DIVISION.									

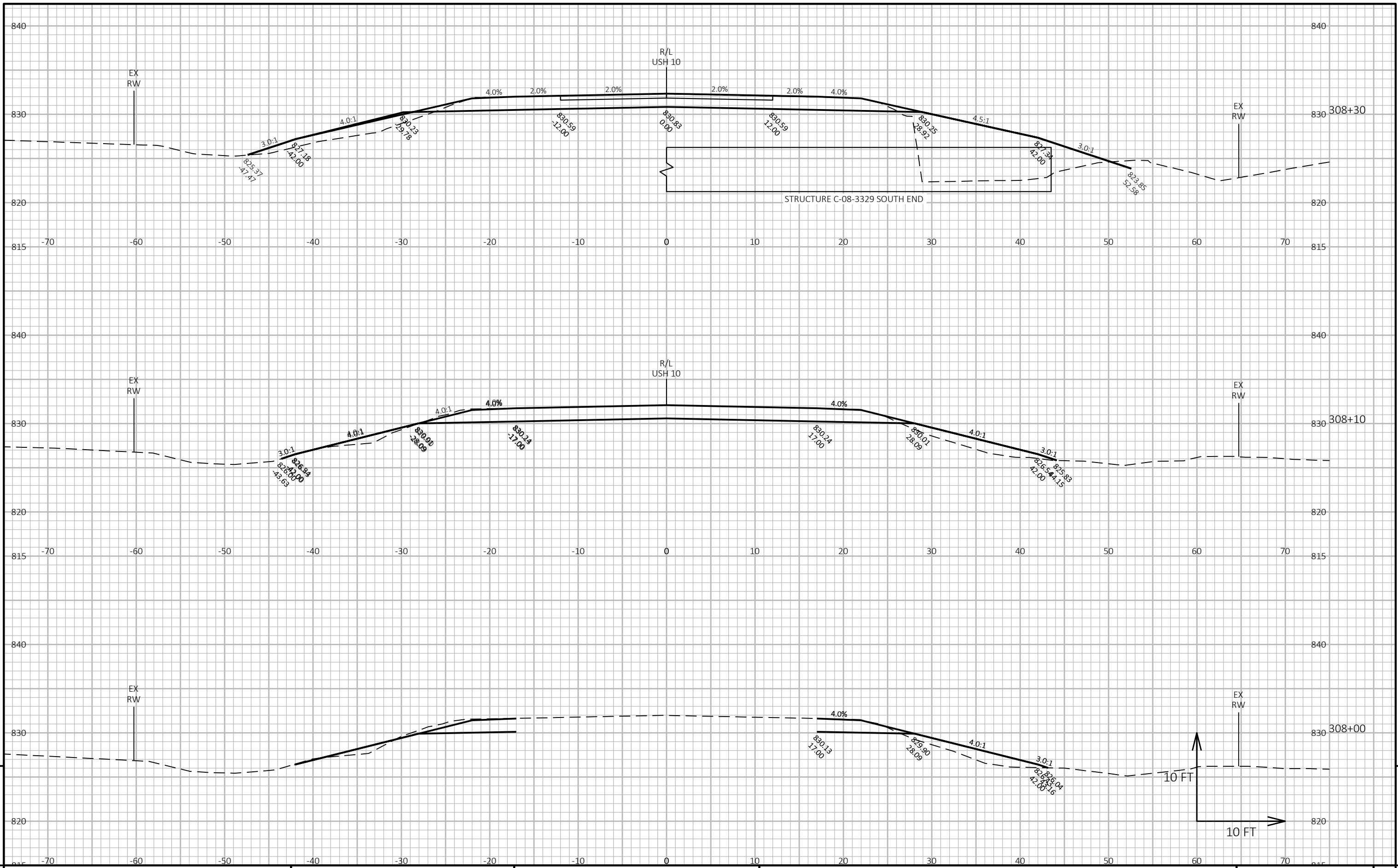


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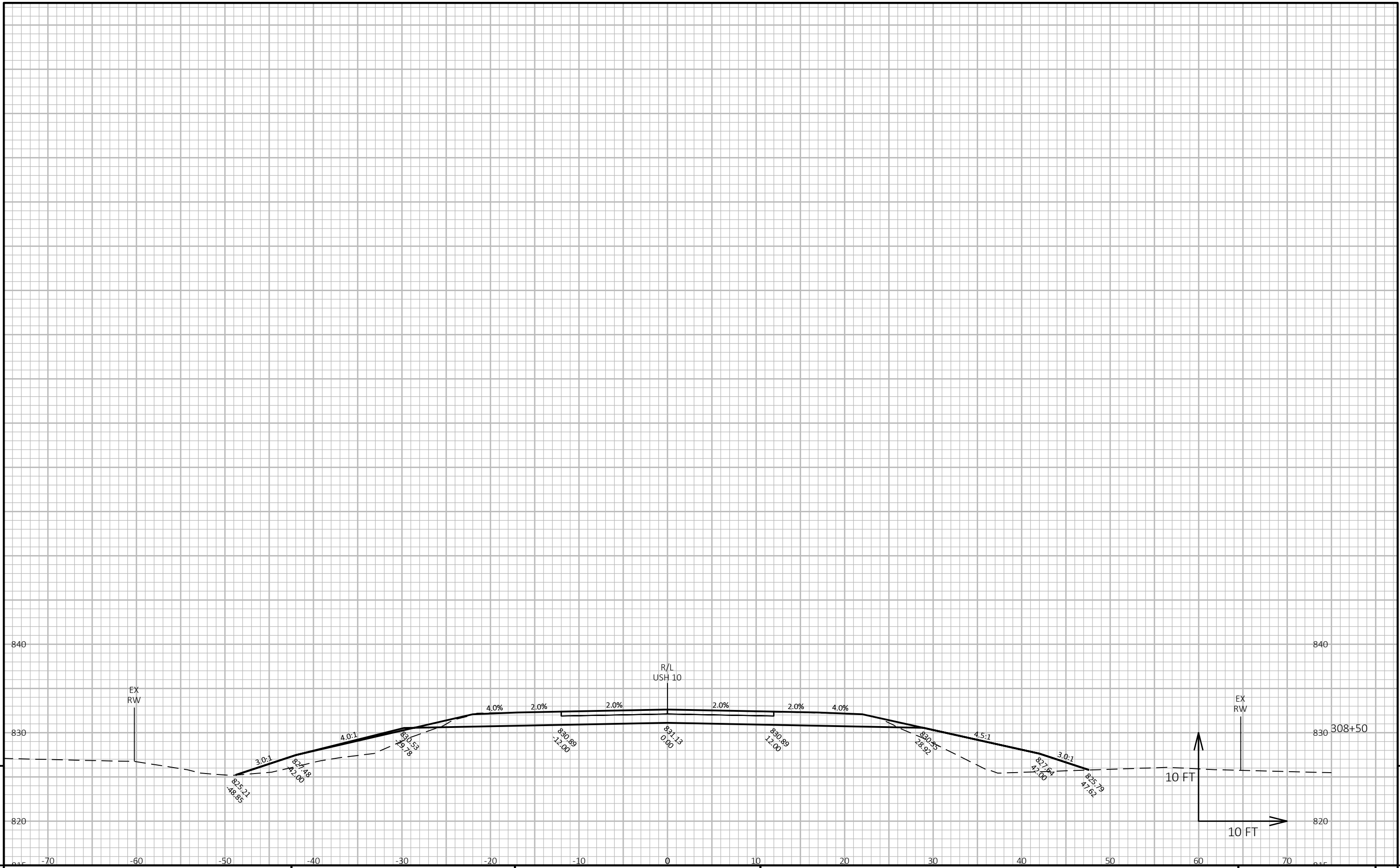
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PROJECT NO: 1500-71-71 HWY: USH 10 COUNTY: CALUMET & MANITOWOC CROSS SECTIONS: USH 10 SHEET E

FILE NAME : N:\PDS\C3D\15007100\SHEETSPLAN\090201-XS.DWG PLOT DATE : 7/25/2022 12:47 PM PLOT BY : MAATTA, TRAVIS SHANE PLOT NAME : PLOT SCALE : 1 IN:10 FT HORZ. / 1 IN:10 FT VERT. WISDOT/CADD SHEET 49



PROJECT NO: 1500-71-71 HWY: USH 10 COUNTY: CALUMET & MANITOWOC CROSS SECTIONS: USH 10 SHEET E

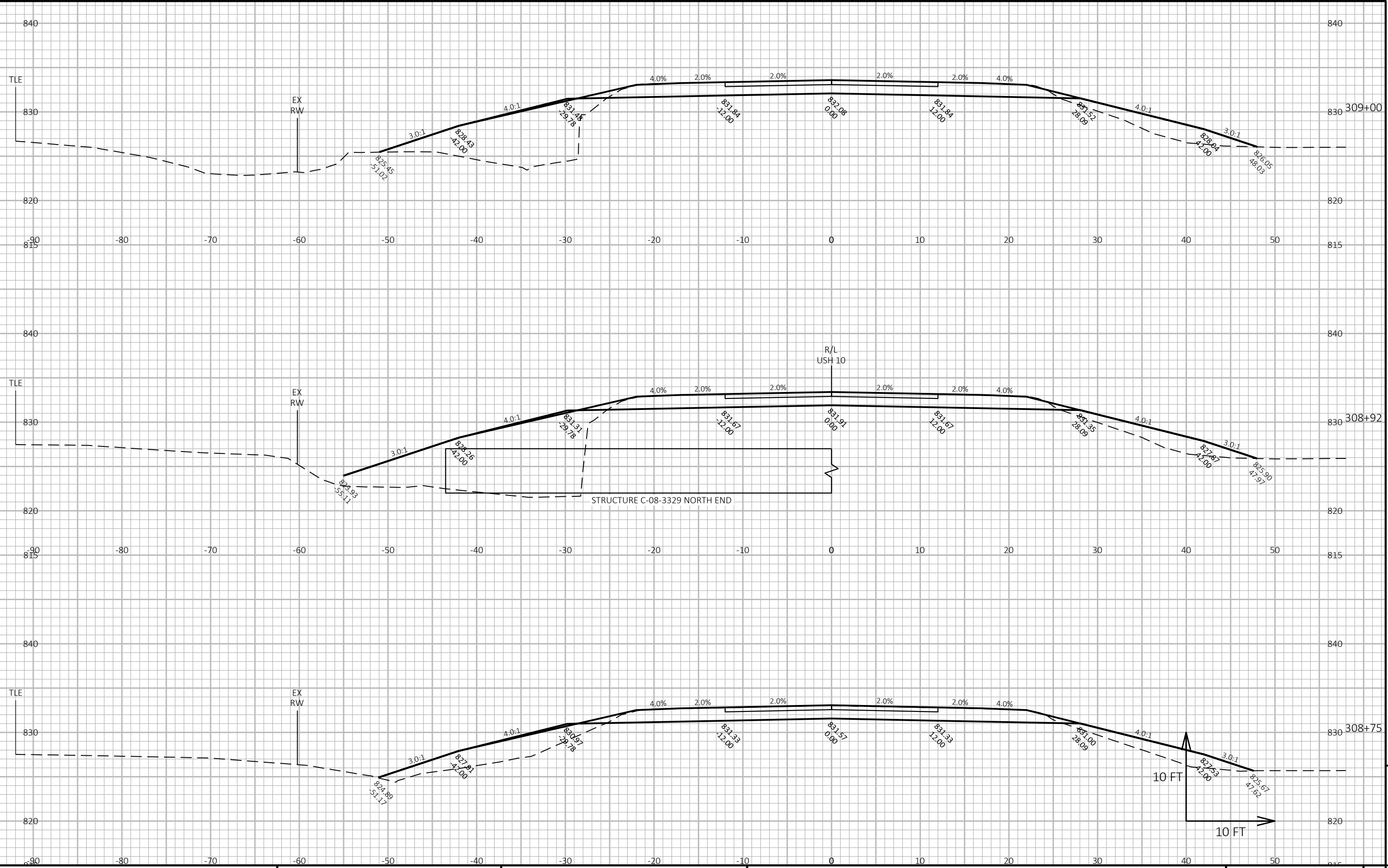


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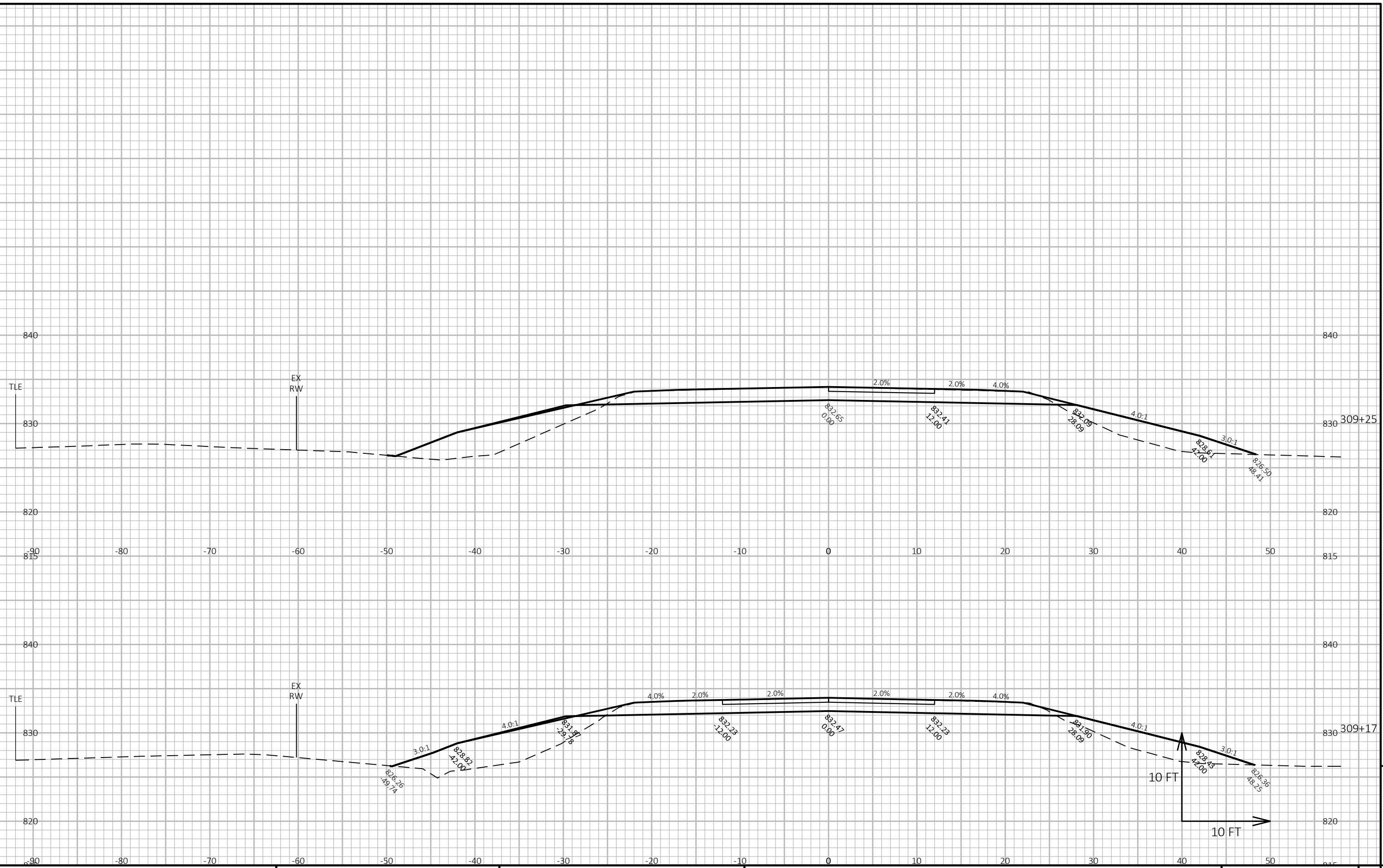
PROJECT NO: 1500-71-71	HWY: USH 10	COUNTY: CALUMET & MANITOWOC	CROSS SECTIONS: USH 10	SHEET	E
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FILE NAME : N:\PDS\C3D\15007100\SHEETSPLAN\090201-XS.DWG PLOT DATE : 7/25/2022 12:47 PM PLOT BY : MAATTA, TRAVIS SHANE PLOT NAME : PLOT SCALE : 1 IN:10 FT HORZ. / 1 IN:10 FT VERT. WISDOT/CADD SHEET 49



9

PROJECT NO: 1500-71-71 HWY: USH 10 COUNTY: CALUMET & MANITOWOC CROSS SECTIONS: USH 10 SHEET E

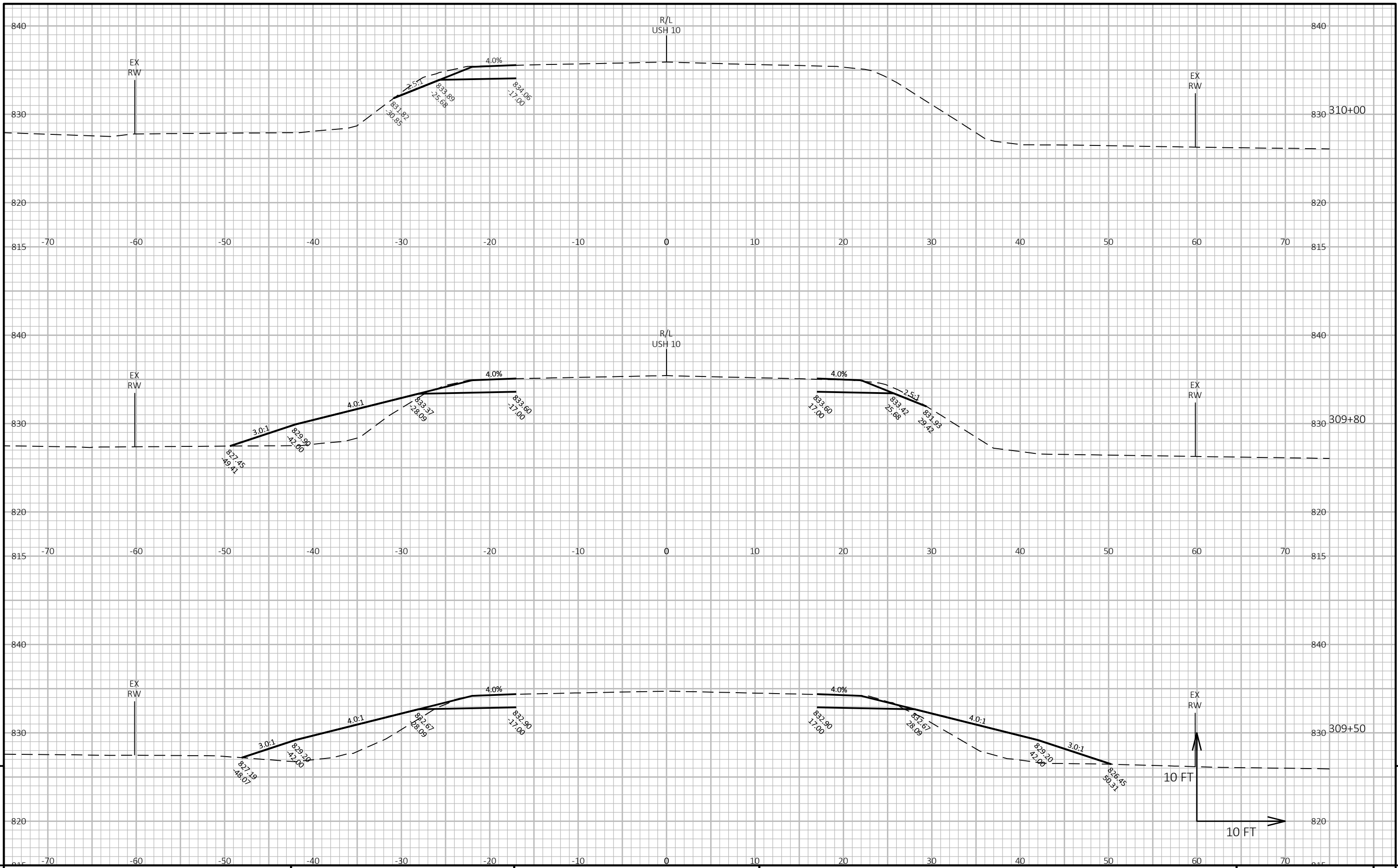


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9

PROJECT NO: 1500-71-71	HWY: USH 10	COUNTY: CALUMET & MANITOWOC	CROSS SECTIONS: USH 10	SHEET	E
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FILE NAME : N:\PDS\C3D\15007100\SHEETSPLAN\090201-XS.DWG
 LAYOUT NAME - 090205-xs
 PLOT DATE : 7/25/2022 12:47 PM
 PLOT BY : MAATTA, TRAVIS SHANE
 PLOT NAME :
 PLOT SCALE : 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.
 WISDOT/CADDs SHEET 49



PROJECT NO: 1500-71-71

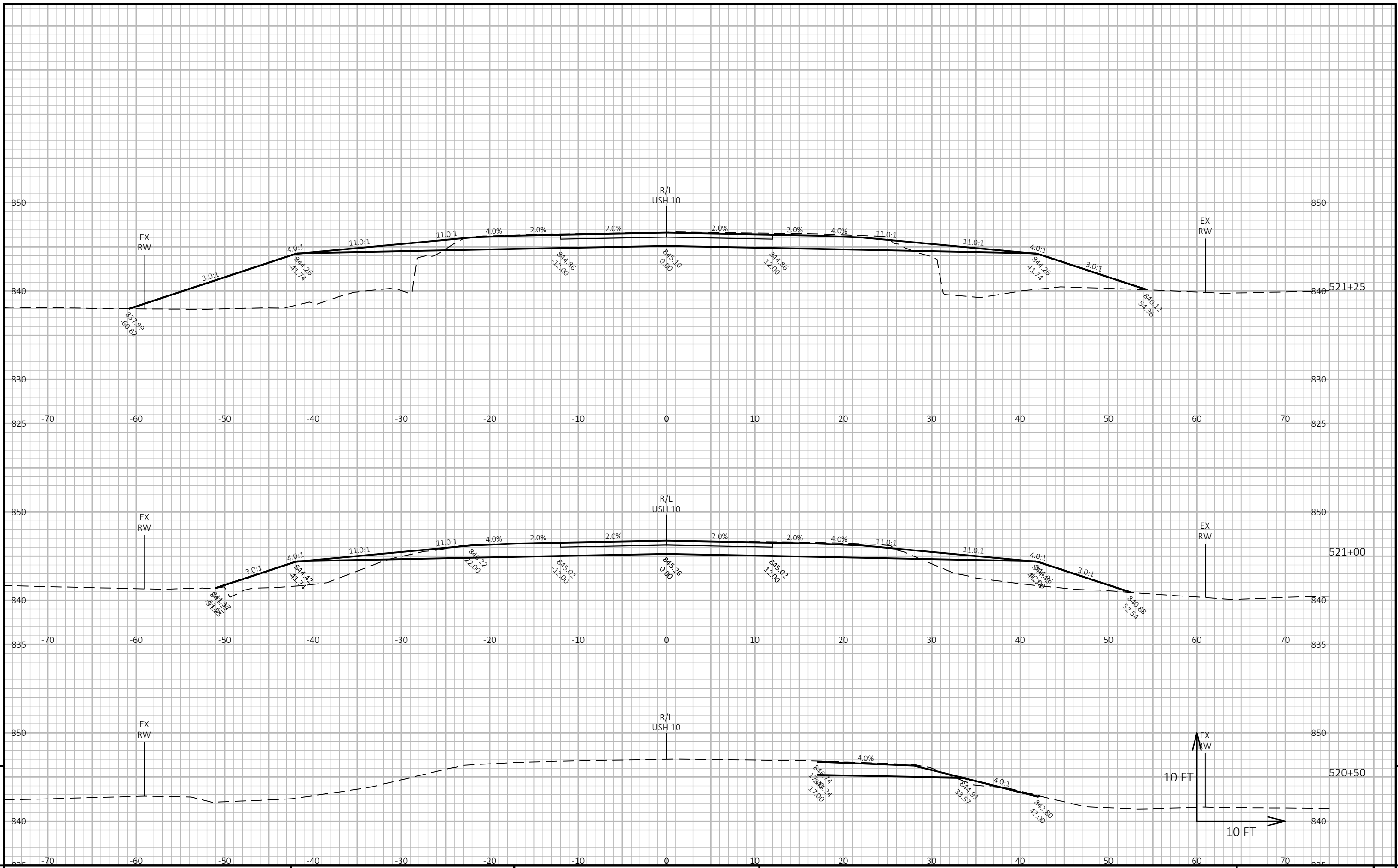
HWY: USH 10

COUNTY: CALUMET & MANITOWOC

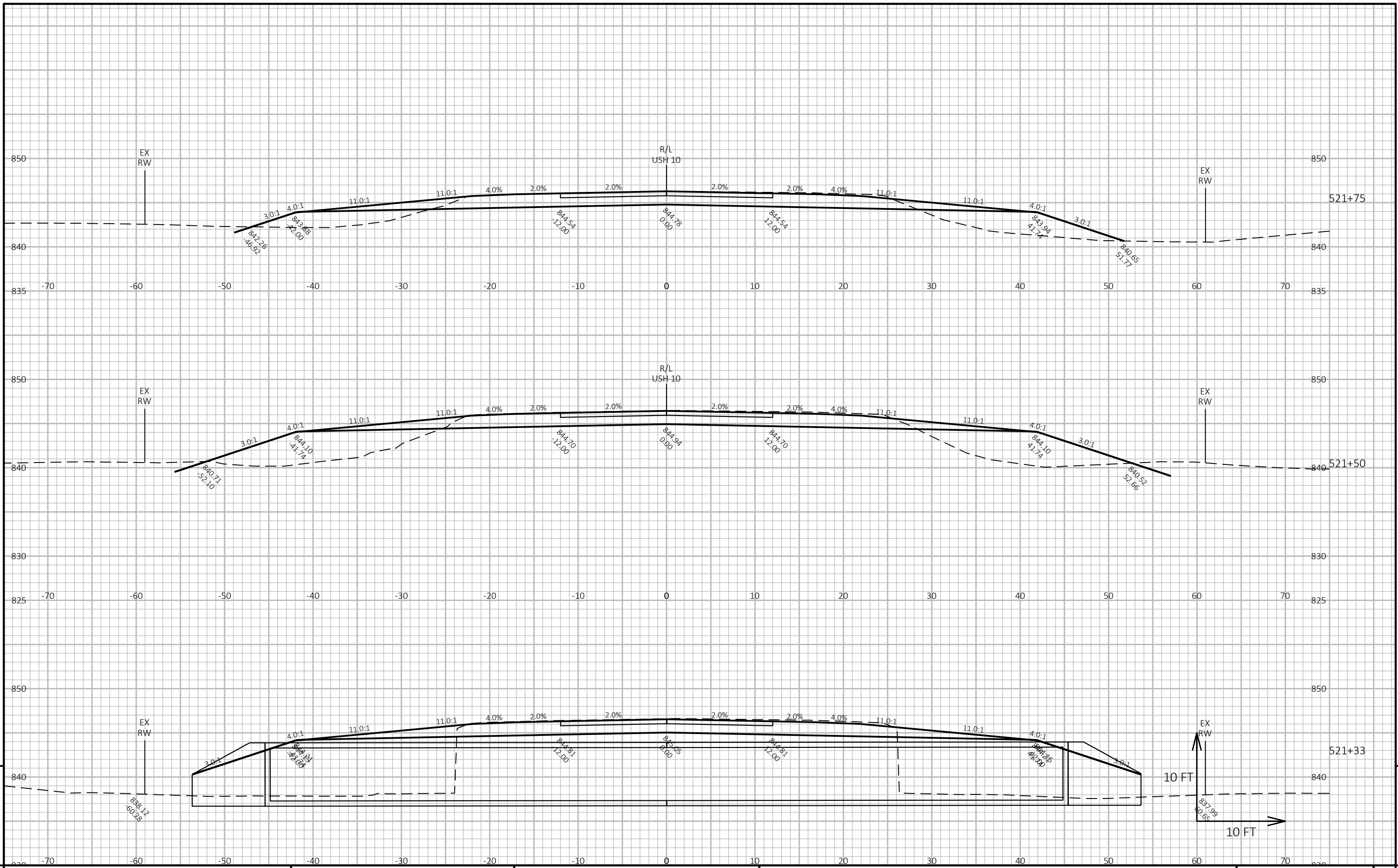
CROSS SECTIONS: USH 10

SHEET

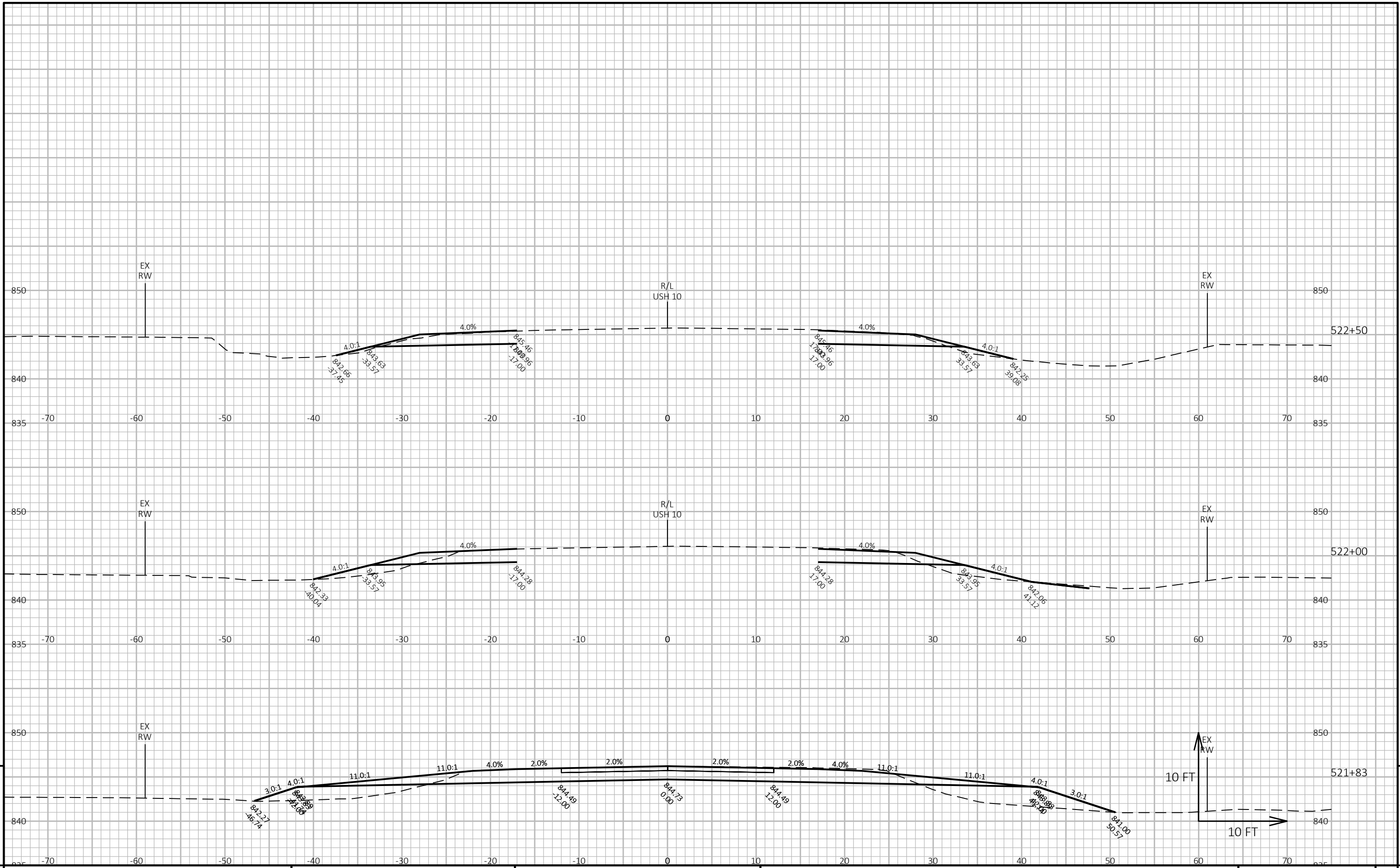
E



PROJECT NO: 1500-71-71 HWY: USH 10 COUNTY: CALUMET & MANITOWOC CROSS SECTIONS: USH 10 SHEET E



PROJECT NO: 1500-71-71 HWY: USH 10 COUNTY: CALUMET & MANITOWOC CROSS SECTIONS: USH 10 SHEET E

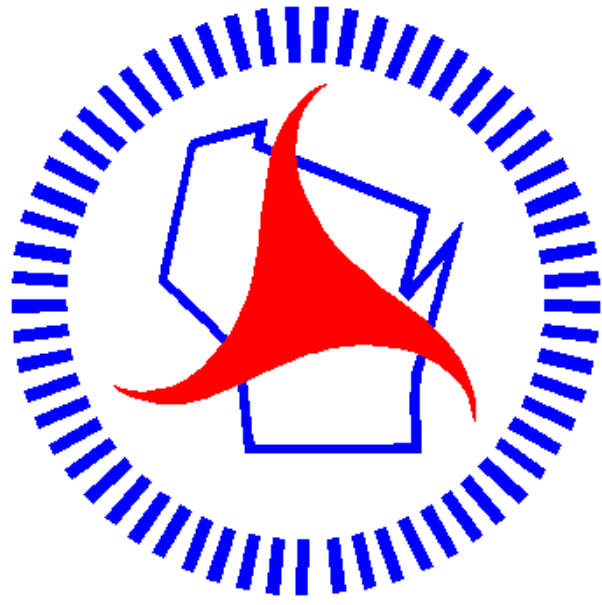


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PROJECT NO: 1500-71-71 HWY: USH 10 COUNTY: CALUMET & MANITOWOC CROSS SECTIONS: USH 10 SHEET E

FILE NAME : N:\PDS\C3D\15007100\SHEETSPLAN\090201-XS.DWG PLOT DATE : 7/25/2022 12:47 PM PLOT BY : MAATTA, TRAVIS SHANE PLOT NAME : PLOT SCALE : 1 IN:10 FT HORZ. / 1 IN:10 FT VERT. WISDOT/CADD SHEET 49



Wisconsin Department of Transportation

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