

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 = 82

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PLAN OF PROPOSED IMPROVEMENT

T BRILLION, NORTH COUNTY LINE ROAD

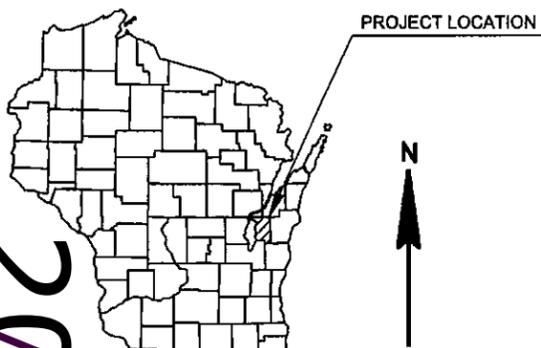
EAST RIVER BRIDGE

LOC STR

CALUMET COUNTY

STATE PROJECT NUMBER
4474-03-71

STATE PROJECT	FEDERAL PROJECT	
	PROJECT	CONTRACT
4474-03-71	WISC 2023156	1



20

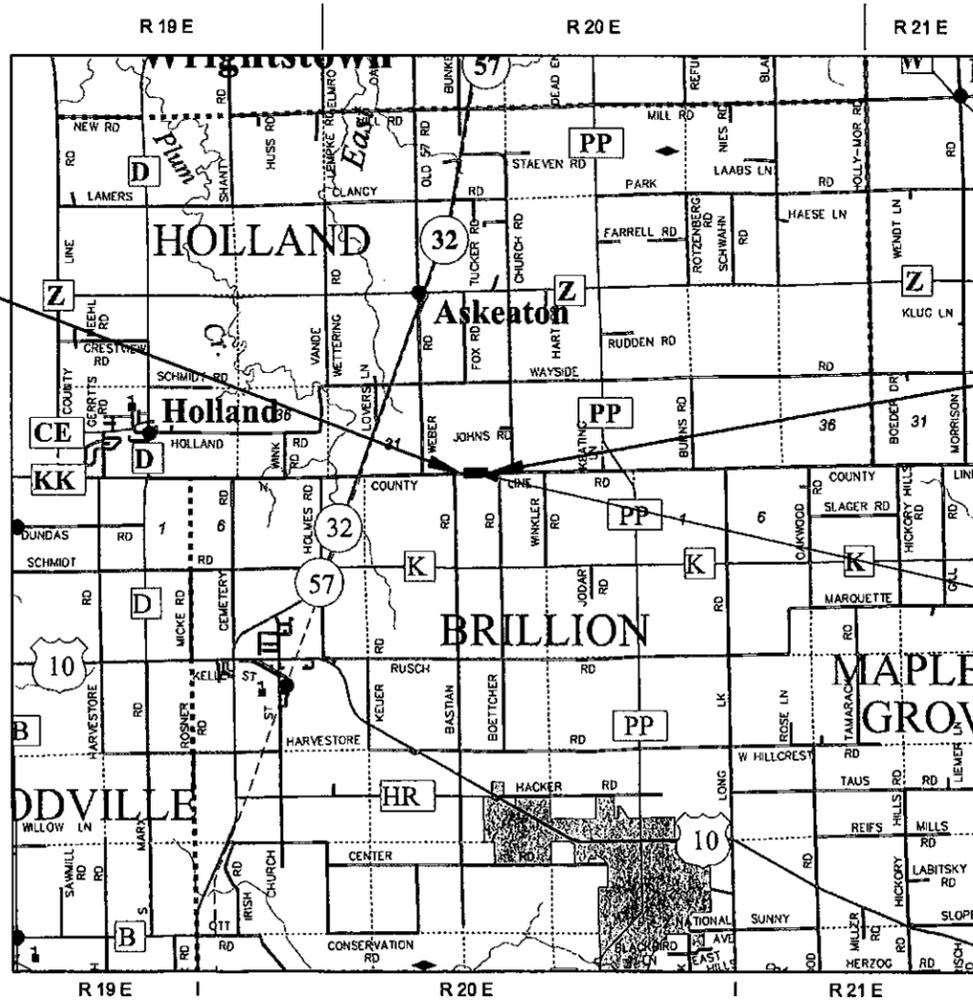
DESIGN DESIGNATION

A.A.D.T. (2023)	=	864
A.A.D.T. (2043)	=	954
D.H.V.	=	-
D.D.	=	50/50
T.	=	4.6%
DESIGN SPEED	=	55 MPH
ESALS	=	66,000

BEGIN PROJECT
STA 47+50
Y= 554926.570
X= 907071.054

END PROJECT
STA 50+50

STRUCTURE B-08-0119
STA 50+00



CONVENTIONAL SYMBOLS

PLAN	PROFILE
CORPORATE LIMITS	GRADE LINE
PROPERTY LINE	ORIGINAL GROUND
LOT LINE	MARSH OR ROCK PROFILE (To be noted as such)
LIMITED HIGHWAY EASEMENT	SPECIAL DITCH
EXISTING RIGHT OF WAY	GRADE ELEVATION
PROPOSED OR NEW R/W LINE	CULVERT (Profile View)
SLOPE INTERCEPT	UTILITIES
REFERENCE LINE	ELECTRIC
EXISTING CULVERT	FIBER OPTIC
PROPOSED CULVERT (Box or Pipe)	GAS
COMBUSTIBLE FLUIDS	SANITARY SEWER
MARSH AREA	STORM SEWER
WOODED OR SHRUB AREA	TELEPHONE
	WATER
	UTILITY PEDESTAL
	POWER POLE
	TELEPHONE POLE

SCALE 0 2 MI

TOTAL NET LENGTH OF CENTERLINE = 0.057 MI

HORIZONTAL POSITIONS SHOWN ON THIS PLAN ARE WISCONSIN COORDINATE REFERENCE SYSTEM (WISCRS), CALUMET 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 18.

ACCEPTED FOR
TOWN OF BRILLION
7/22/2022 Kevin Fischer
DATE TOWN CHAIRMAN

ORIGINAL PLANS PREPARED BY
AYRES
WISCONSIN PROFESSIONAL ENGINEER
RYAN D. SCHAITEL
GREEN BAY, WI
7-19-22 (Date)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
PREPARED BY
Surveyor AYRES
Designer AYRES
Project Manager DOUGLAS KIRST
Regional Supervisor BRIAN EDWARDS

APPROVED FOR THE DEPARTMENT
DATE: 7/27/2022 [Signature]
(Signature)

GENERAL NOTES

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

CONSTRUCT ASPHALTIC SURFACE WITH A 1 3/4" UPPER LAYER AND A 2 1/4" LOWER LAYER.

PROPERTY LINES AS SHOWN ARE APPROXIMATE.

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

BEARINGS SHOWN ON THIS PLAN ARE TRUE BEARINGS TO THE NEAREST SECOND.

ALL TIES ON THIS PLAN ARE HORIZONTAL UNLESS DESCRIBED OTHERWISE.

EROSION CONTROL LOCATIONS AS SHOWN ON THE EROSION CONTROL PLAN ARE APPROXIMATE. THE EXACT LOCATIONS WILL BE DETERMINED BY THE ENGINEER IN THE FIELD.

DISTURBED AREAS WITHIN THE RIGHT OF WAY, EXCEPT THE AREAS WITHIN THE FINISHED SUBGRADE SHOULDER POINTS, ARE TO BE SEEDED AND EROSION MAT AS DIRECTED BY THE ENGINEER.

WISDOT WILL FURNISH A BENCHMARK MONUMENT TO BE SET BY THE CONTRACTOR.

SAW CUT LOCATIONS SHOWN ON THE PLAN ARE SUBJECT TO ADJUSTMENT BY THE ENGINEER IN THE FIELD. THE LINE OF SUCH SAW CUTS WILL BE NEATLY DELINEATED THROUGH THE ASPHALT WITHOUT ANY DAMAGE TO THE REMAINING PORTION OF THE EXISTING PAVEMENT.

UTILITIES

* AT&T DISTRIBUTION
205 S. JEFFERSON STREET
GREEN BAY, WI 54301
ATTENTION: KYLE WEBER
E-MAIL: kw715w@att.com

TELEPHONE 920-221-5969

* WISCONSIN PUBLIC SERVICE (ELECTRIC)
2850 S. ASHLAND AVENUE
GREEN BAY, WI 54304
ATTENTION: CHARLES WINDUS
E-MAIL: charles.windus@wisconsinpublicservice.com

TELEPHONE 920-617-5281
CELL 920-606-1141

*-MEMBER OF DIGGERS HOTLINE



Dial 811 or (800)242-8511

www.DiggersHotline.com

DEPARTMENT OF NATURAL RESOURCES

WDNR

TELEPHONE 920-366-1544

2984 SHAWANO AVENUE
GREEN BAY, WISCONSIN 54313
ATTENTION: MATT SCHAEVE
E-MAIL: MATTHEW.SCHAEVE@WISCONSIN.GOV

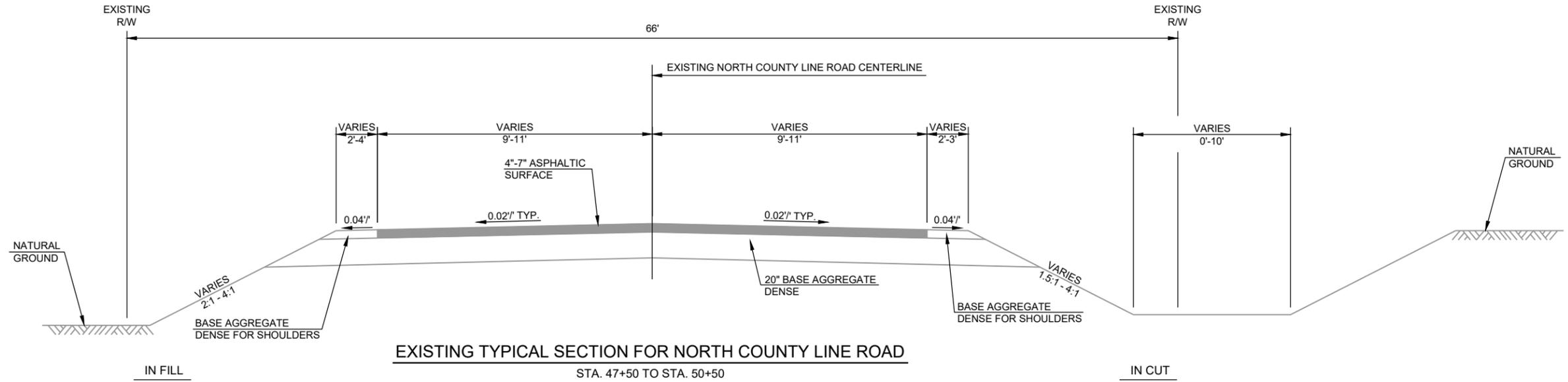
RUNOFF COEFFICIENT TABLE

	HYDROLOGIC SOIL GROUP											
	A			B			C			D		
	SLOPE RANGE (PERCENT)			SLOPE RANGE (PERCENT)			SLOPE RANGE (PERCENT)			SLOPE RANGE (PERCENT)		
LAND USE:	0-2	2-6	6 & OVER									
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 = 1.42 ACRES
TOTAL AREA EXPECTED TO BE DISTURBED BY CONSTRUCTION ACTIVITIES = 1.01 ACRES
SOIL GROUP C/D.

STANDARD ABBREVIATIONS

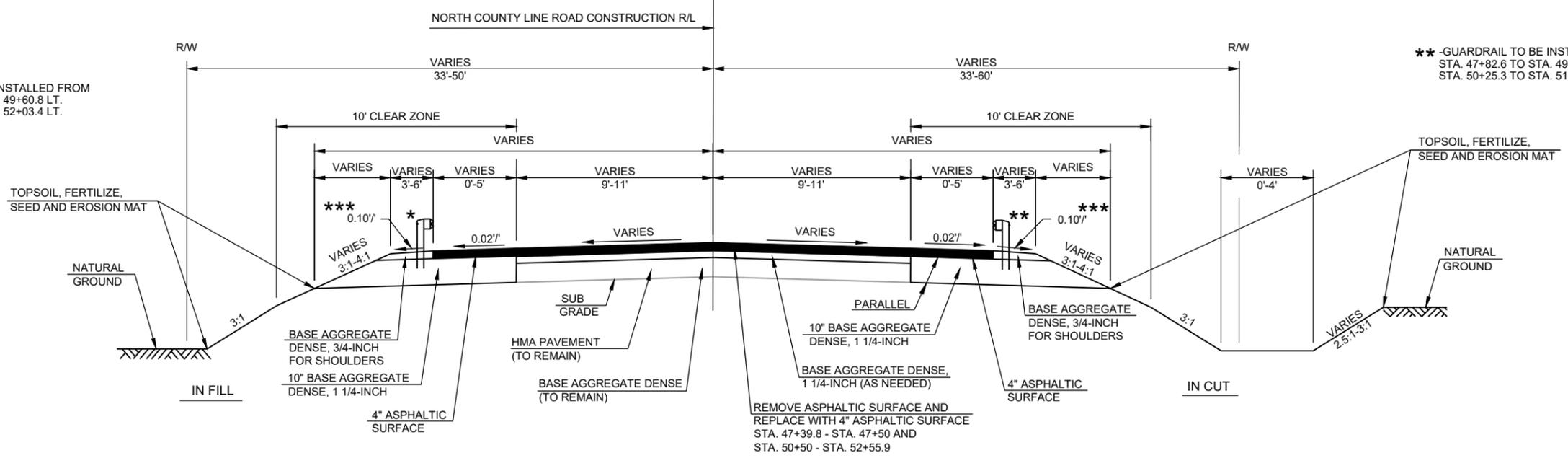
ADT	AVERAGE DAILY TRAFFIC	NC	NORMAL CROWN
AC	ASPHALT CEMENT	PT	POINT OF TANGENCY
AGG	AGGREGATE	PC	POINT OF CURVATURE
ASPH	ASPHALT	PI	POINT OF INTERSECTION
BM	BENCH MARK	PE	PRIVATE ENTRANCE
C/L	CENTERLINE	R	RADIUS
CONC	CONCRETE	REM	REMOVE
CMP	CORRUGATED METAL PIPE	R/L OR RL	REFERENCE LINE
CR.	CREEK	RCCP	REINFORCED CONCRETE CULVERT PIPE
D	DEGREE OF CURVE	RCPSS	REINFORCED CONCRETE PIPE STORM SEWER
DHV	DESIGN HOUR VOLUME	R.O.	RUNOUT
ESALS	EQUIVALENT SINGLE AXIS LOADS	R/W	RIGHT-OF-WAY
EXIST	EXISTING	STA	STATION
FE	FIELD ENTRANCE	SE	SUPER ELEVATION
HYD	HYDRANT	SS	STORM SEWER
IP	IRON PIPE OR PIN	T	TANGENT
L	LENGTH OF CURVE	TEL	TELEPHONE
LC	LONG CHORD OF CURVE	TLE	TEMPORARY LIMITED EASEMENT
LR	LENGTH OF RUNOFF	T	TRUCKS
MH	MANHOLE	VC	VERTICAL CURVE
		W	WELL



EXISTING TYPICAL SECTION FOR NORTH COUNTY LINE ROAD
STA. 47+50 TO STA. 50+50

* -GUARDRAIL TO BE INSTALLED FROM
STA. 48+57.6 TO STA. 49+60.8 LT.
STA. 50+25.3 TO STA. 52+03.4 LT.

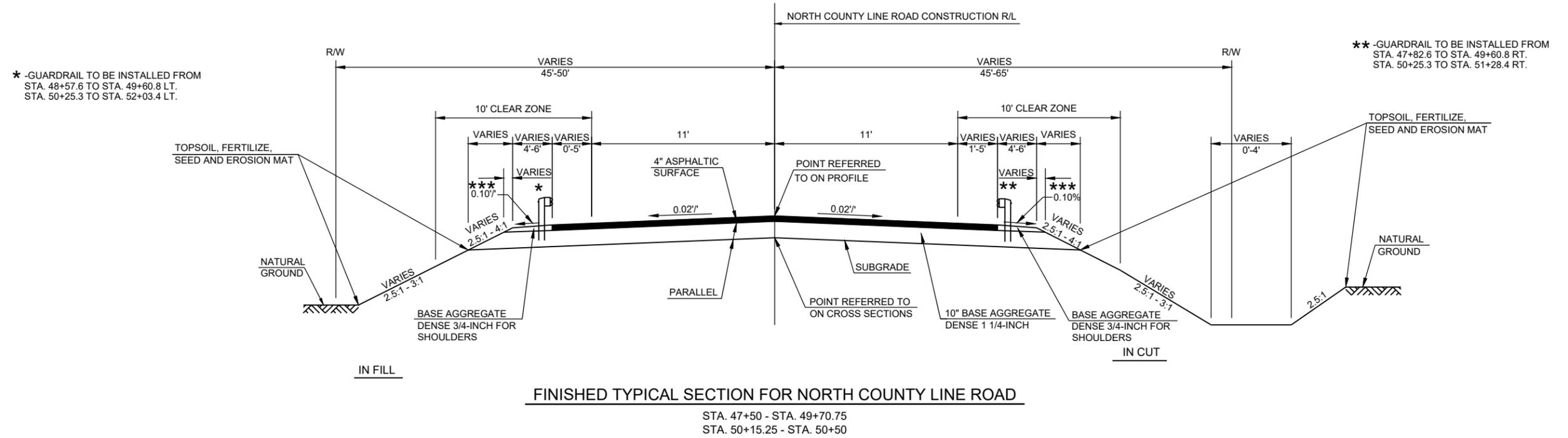
** -GUARDRAIL TO BE INSTALLED FROM
STA. 47+82.6 TO STA. 49+60.8 RT.
STA. 50+25.3 TO STA. 51+28.4 RT.

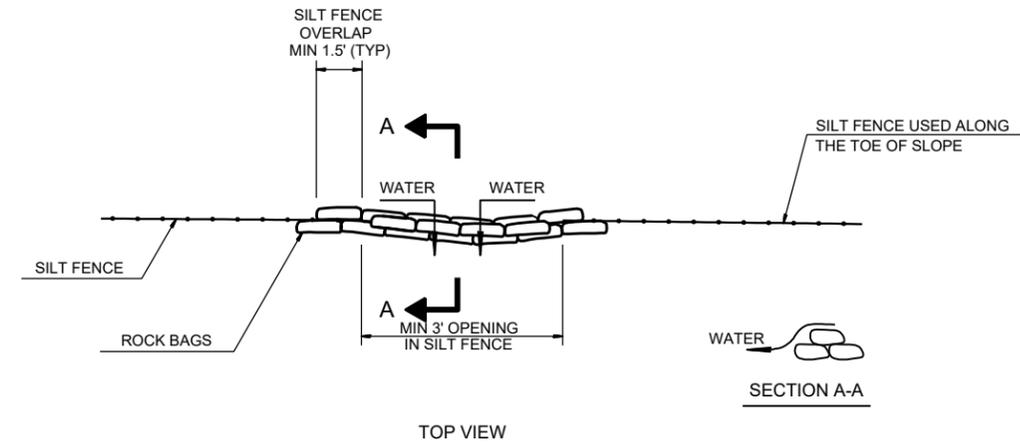
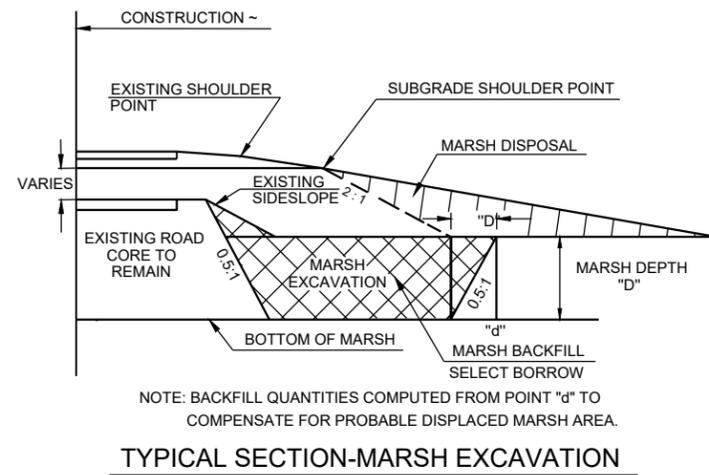


FINISHED TYPICAL SECTION FOR NORTH COUNTY LINE ROAD

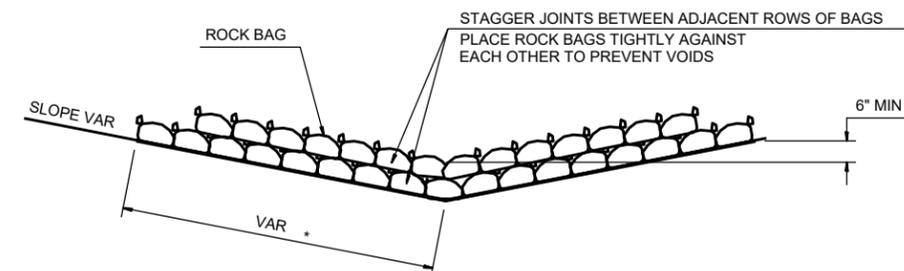
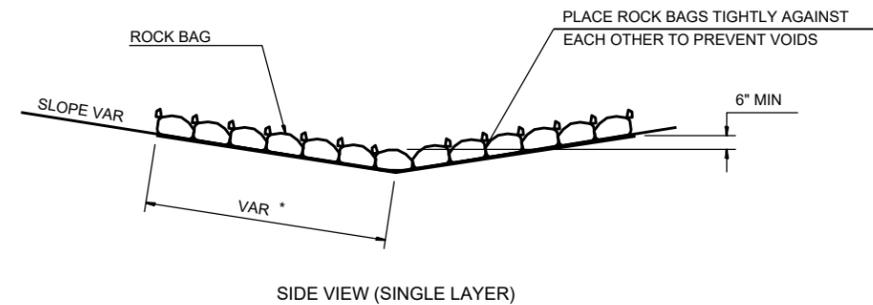
STA. 46+66.6 - STA. 47+50 RT.
STA. 47+38.9 - STA. 47+50 LT.
STA. 50+50 - STA. 52+44.3 RT.
STA. 50+50 - STA. 53+16.3 LT.

*** -NOTE: UNPAVED SHOULDER CROSS SLOPE IS 0.04"/ TYPICAL.
0.10" ONLY AT AN OFFSET GREATER THAN 14-FOOT FROM CL.





ROCK BAGS USED FOR SILT FENCE RELIEF DETAIL
 PAID AS ROCK BAGS
 (SEE MISCELLANEOUS QUANTITIES FOR LOCATIONS)

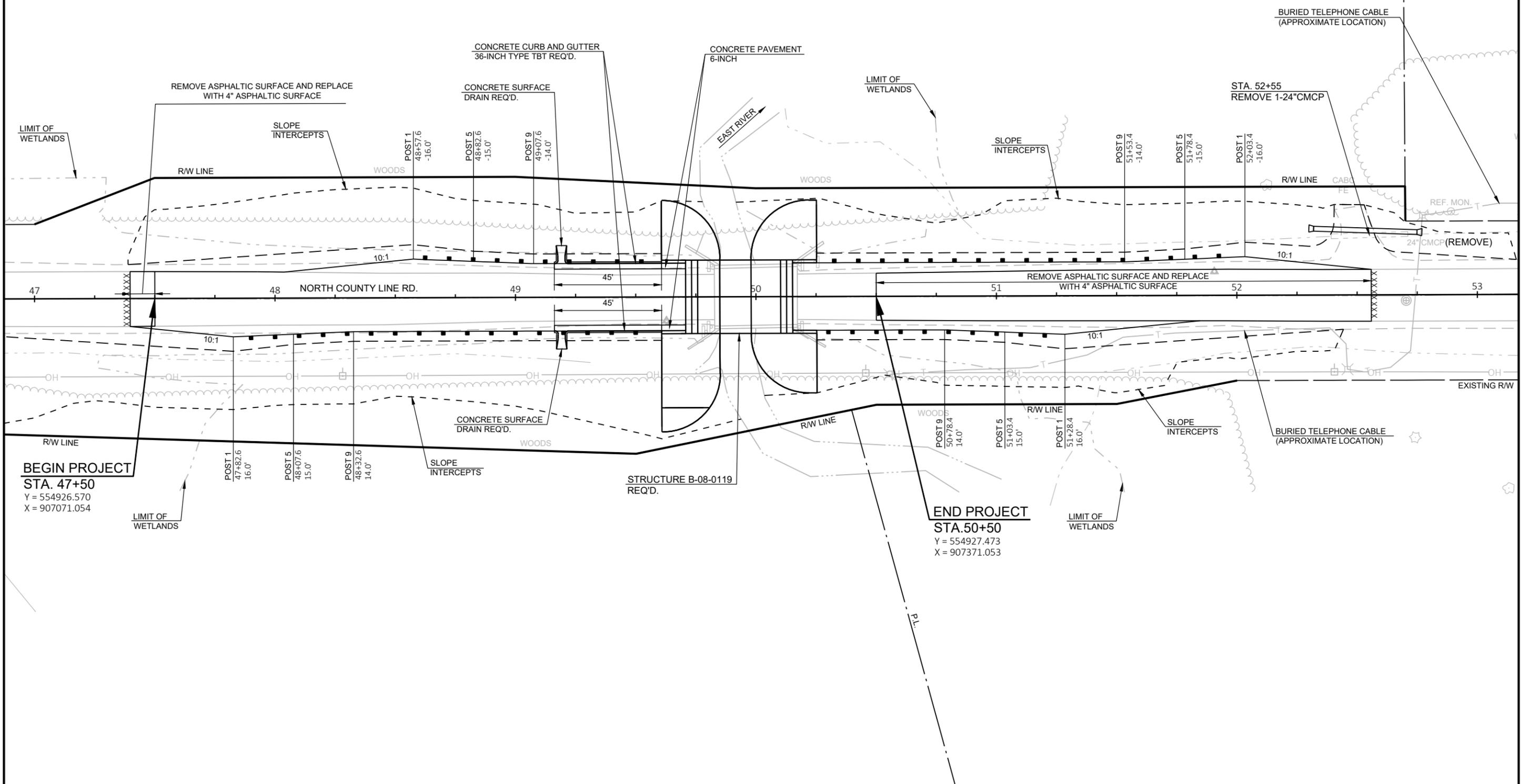


LENGTH AND NUMBER OF BAGS MAY VARY
 * DEPENDING ON DESIRED DEPTH OF WATER POOL

ROCK BAGS DITCH CHECK
 PAID AS ROCK BAGS
 (SEE MISCELLANEOUS QUANTITIES FOR LOCATIONS)

LEGEND

.XXXX. SAW CUTS



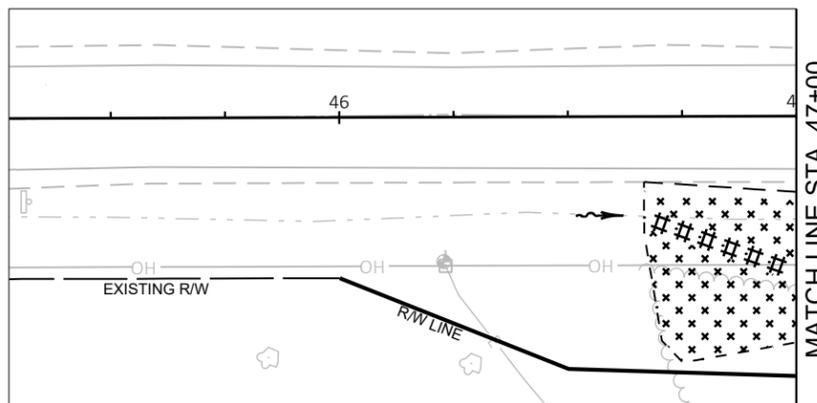
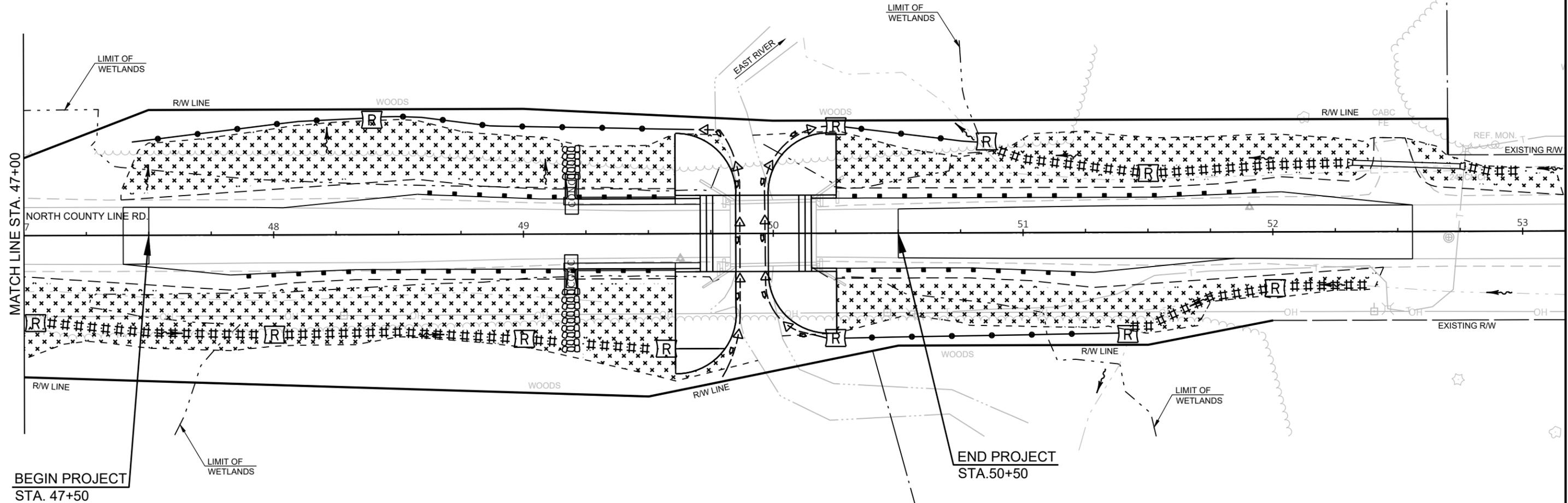
BEGIN PROJECT
STA. 47+50
 Y = 554926.570
 X = 907071.054

END PROJECT
STA. 50+50
 Y = 554927.473
 X = 907371.053

PROJECT NO: 4474-03-71	HWY: COUNTY LINE ROAD	COUNTY: CALUMET	PLAN DETAILS	SHEET	E
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LEGEND

- ***** EROSION MAT URBAN CLASS I, TYPE B
- ##### EROSION MAT CLASS II, TYPE C
- SILT FENCE
- ◄— TURBIDITY BARRIER
- - - SLOPE INTERCEPT
- ~> SURFACE WATER FLOW
- [R] ROCK BAGS
- [CONC] CONCRETE SURFACE DRAIN
- ⊖ RIP RAP



NOTE:
 INSTALL SILT FENCE AND ROCK BAGS AT SILT FENCE RELIEF AREAS AS SHOWN PRIOR TO SPRING TREE CLEARING OPERATIONS. ANY RUTS OR DISTURBED AREAS WILL BE RESTORED WITH SEED, FERTILIZER, AND MULCH.

Estimate Of Quantities

4474-03-71

Line	Item	Item Description	Unit	Total	Qty
0002	201.0105	Clearing	STA	6.000	6.000
0004	201.0205	Grubbing	STA	6.000	6.000
0006	203.0100	Removing Small Pipe Culverts	EACH	1.000	1.000
0008	203.0260	Removing Structure Over Waterway Minimal Debris (structure) 01. P-8-914	EACH	1.000	1.000
0010	204.0110	Removing Asphaltic Surface	SY	500.000	500.000
0012	205.0100	Excavation Common	CY	583.000	583.000
0014	205.0400	Excavation Marsh	CY	585.000	585.000
0016	206.1001	Excavation for Structures Bridges (structure) 01. B-8-119	EACH	1.000	1.000
0018	208.0100	Borrow	CY	1,114.000	1,114.000
0020	208.1100	Select Borrow	CY	878.000	878.000
0022	210.1500	Backfill Structure Type A	TON	250.000	250.000
0024	213.0100	Finishing Roadway (project) 01. 4474-03-71	EACH	1.000	1.000
0026	305.0110	Base Aggregate Dense 3/4-Inch	TON	110.000	110.000
0028	305.0120	Base Aggregate Dense 1 1/4-Inch	TON	1,110.000	1,110.000
0030	415.0060	Concrete Pavement 6-Inch	SY	5.000	5.000
0032	416.1010	Concrete Surface Drains	CY	2.000	2.000
0034	455.0605	Tack Coat	GAL	20.000	20.000
0036	465.0105	Asphaltic Surface	TON	330.000	330.000
0038	502.0100	Concrete Masonry Bridges	CY	178.000	178.000
0040	502.3200	Protective Surface Treatment	SY	140.000	140.000
0042	502.3210	Pigmented Surface Sealer	SY	65.000	65.000
0044	505.0400	Bar Steel Reinforcement HS Structures	LB	3,480.000	3,480.000
0046	505.0600	Bar Steel Reinforcement HS Coated Structures	LB	23,310.000	23,310.000
0048	516.0500	Rubberized Membrane Waterproofing	SY	18.000	18.000
0050	520.1024	Apron Endwalls for Culvert Pipe 24-Inch	EACH	2.000	2.000
0052	520.3324	Culvert Pipe Class III-A 24-Inch	LF	42.000	42.000
0054	550.1100	Piling Steel HP 10-Inch X 42 Lb	LF	1,225.000	1,225.000
0056	601.0588	Concrete Curb & Gutter 4-Inch Sloped 36-Inch Type TBT	LF	80.000	80.000
0058	606.0200	Riprap Medium	CY	14.000	14.000
0060	606.0300	Riprap Heavy	CY	310.000	310.000
0062	612.0406	Pipe Underdrain Wrapped 6-Inch	LF	150.000	150.000
0064	614.0150	Anchor Assemblies for Steel Plate Beam Guard	EACH	4.000	4.000
0066	614.2300	MGS Guardrail 3	LF	200.000	200.000
0068	614.2500	MGS Thrie Beam Transition	LF	157.600	157.600
0070	614.2610	MGS Guardrail Terminal EAT	EACH	4.000	4.000
0072	619.1000	Mobilization	EACH	1.000	1.000
0074	624.0100	Water	MGAL	12.000	12.000
0076	625.0100	Topsoil	SY	2,730.000	2,730.000
0078	627.0200	Mulching	SY	2,230.000	2,230.000
0080	628.1504	Silt Fence	LF	380.000	380.000
0082	628.1520	Silt Fence Maintenance	LF	760.000	760.000
0084	628.1905	Mobilizations Erosion Control	EACH	6.000	6.000
0086	628.1910	Mobilizations Emergency Erosion Control	EACH	4.000	4.000
0088	628.2008	Erosion Mat Urban Class I Type B	SY	2,100.000	2,100.000
0090	628.2027	Erosion Mat Class II Type C	SY	635.000	635.000
0092	628.6005	Turbidity Barriers	SY	130.000	130.000
0094	628.7570	Rock Bags	EACH	165.000	165.000
0096	629.0210	Fertilizer Type B	CWT	3.500	3.500
0098	630.0120	Seeding Mixture No. 20	LB	90.000	90.000

Estimate Of Quantities

4474-03-71

Line	Item	Item Description	Unit	Total	Qty
0100	630.0200	Seeding Temporary	LB	150.000	150.000
0102	630.0300	Seeding Borrow Pit	LB	30.000	30.000
0104	630.0500	Seed Water	MGAL	115.000	115.000
0106	634.0612	Posts Wood 4x6-Inch X 12-FT	EACH	4.000	4.000
0108	637.2230	Signs Type II Reflective F	SF	12.000	12.000
0110	638.2602	Removing Signs Type II	EACH	8.000	8.000
0112	638.3000	Removing Small Sign Supports	EACH	8.000	8.000
0114	642.5001	Field Office Type B	EACH	1.000	1.000
0116	643.0420	Traffic Control Barricades Type III	DAY	1,672.000	1,672.000
0118	643.0705	Traffic Control Warning Lights Type A	DAY	2,584.000	2,584.000
0120	643.0900	Traffic Control Signs	DAY	1,672.000	1,672.000
0122	643.5000	Traffic Control	EACH	1.000	1.000
0124	645.0111	Geotextile Type DF Schedule A	SY	90.000	90.000
0126	645.0120	Geotextile Type HR	SY	598.000	598.000
0128	646.1020	Marking Line Epoxy 4-Inch	LF	1,040.000	1,040.000
0130	650.4500	Construction Staking Subgrade	LF	605.000	605.000
0132	650.5000	Construction Staking Base	LF	605.000	605.000
0134	650.5500	Construction Staking Curb Gutter and Curb & Gutter	LF	80.000	80.000
0136	650.6501	Construction Staking Structure Layout (structure) 01. B-08-0119	EACH	1.000	1.000
0138	650.9911	Construction Staking Supplemental Control (project) 01. 4474-03-71	EACH	1.000	1.000
0140	650.9920	Construction Staking Slope Stakes	LF	605.000	605.000
0142	690.0150	Sawing Asphalt	LF	44.000	44.000
0144	715.0502	Incentive Strength Concrete Structures	DOL	1,068.000	1,068.000
0146	999.2000.S	Installing and Maintaining Bird Deterrent System (station) 01. 49+93	EACH	1.000	1.000
0148	ASP.1T0A	On-the-Job Training Apprentice at \$5.00/HR	HRS	300.000	300.000
0150	ASP.1T0G	On-the-Job Training Graduate at \$5.00/HR	HRS	600.000	600.000

EARTHWORK SUMMARY

Division	From/To Station	Location	Common (Item #205.0100)	Unusable Pavement (4)	Available Material (5)	Excavation Marsh (6)	Expanded Marsh Backfill (10) (Item #208.1100)	Unexpanded Fill	Expanded Fill (13)	Mass Ordinate +/-	Borrow (Item #208.0100)	COMMENT:
			CUT (2)			(Item #205.0400)	Factor 1.50		Factor 1.30			
1	46+66.6 - 47+50	NORTH COUNTY LINE ROAD (SW SHOULDER)	92	0	92	38	57	96	125	-33	33	
	47+38.9 - 47+50	NORTH COUNTY LINE ROAD (NW SHOULDER)	2	0	2	0	0	6	8	-6	6	
	47+50 - 50+50	NORTH COUNTY LINE ROAD (MAINLINE)	266	80	186	506	759	969	1,260	-1,074	1,074	
	50+50 - 53+16.3	NORTH COUNTY LINE ROAD (NE SHOULDER)	183	0	183	31	47	56	73	110	-110	
	50+50 - 52+44.3	NORTH COUNTY LINE ROAD (SE SHOULDER)	40	0	40	10	15	117	152	-112	112	
Division 1 Totals			583	80	503	585	878	1,244	1,617	-1,114	1,114	

3

Notes:
 2) Unusable Pavement Material is included in Cut
 4) Unusable Pavement Material = Existing Asphaltic Pavement. Backfill any areas below subgrade with borrow.
 5) Available Material = Cut - Unusable Pavement Material
 6) Marsh Excavation. To be backfilled with Select Borrow Material as shown in cross sections.
 10) Expanded Marsh Backfill - This is to be filled with Select Borrow material. Marsh Backfill Factor = 1.5. Item Number 208.1100
 13) Expanded Fill. Factor = 1.3 Expanded Fill = Unexpanded Fill * Fill Factor
 14) 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.

CLEARING AND GRUBBING

CATEGORY	STATION	TO	STATION	LOCATION	201.0105	201.0205
					CLEARING STA	GRUBBING STA
0010	46+00	-	52+00	NORTH COUNTY LINE ROAD	6	6
TOTAL 0010					6	6

NOTE: TREE CLEARING TO BE COMPLETED BY MARCH 31. CLEAR AND GRUB TO 5 FEET OUTSIDE SLOPE INTERCEPTS.

CONCRETE SURFACE DRAIN ITEMS

CATEGORY	STATION	LOCATION	416.1010	606.0200	645.0120
			CONCRETE SURFACE DRAINS CY	RIPRAP MEDIUM CY	GEOTEXTILE TYPE HR SY
0010	49+18	NORTH COUNTY LINE ROAD, LT & RT	2	14	28
TOTAL 0010			2	14	28

NOTE: FINAL PLACEMENT OF FLUME MUST MAINTAIN THE MINIMUM POST SEPARATION DISTANCES

REMOVING SMALL PIPE CULVERTS

CATEGORY	STATION	LOCATION	203.0100	REMARKS
			EACH	
0010	52+50	NORTH COUNTY LINE ROAD, LT	1	24"X32' CMCP
TOTAL 0010			1	

HMA PAVEMENT

CATEGORY	STATION	TO	STATION	LOCATION	455.0605	465.0105
					TACK COAT GAL	ASPHALTIC SURFACE TON
0010	47+40	-	49+71	NORTH COUNTY LINE ROAD	10	163
0010	50+15	-	52+56	NORTH COUNTY LINE ROAD	10	167
TOTAL 0010					20	330

REMOVING ASPHALTIC SURFACE

CATEGORY	STATION TO	STATION	LOCATION	204.0110 SY
0010	47+40 -	47+50	NORTH COUNTY LINE ROAD	26
0010	50+50 -	52+56	NORTH COUNTY LINE ROAD	474
TOTAL 0010				500

CULVERT PIPE

CATEGORY	STATION TO	STATION	LOCATION	520.1024 APRON ENDWALLS FOR CULVERT PIPE 24-INCH EACH	520.3324 CULVERT PIPE CLASS III-A 24- INCH LF	THICKNESS STEEL INCH
0010	52+30 -	52+77	NORTH COUNTY LINE ROAD, LT	2	42	0.064
TOTAL 0010				2	42	

BASE AGGREGATE DENSE & WATER

CATEGORY	STATION TO	STATION	LOCATION	305.0110 BASE AGGREGATE DENSE 3/4-INCH TON	305.0120 BASE AGGREGATE DENSE 1 1/4- INCH TON	624.0100 WATER MGAL	REMARKS
0010	49+06 -	49+71	NORTH COUNTY LINE ROAD	65	415	4.7	
0010	50+15 -	50+50	NORTH COUNTY LINE ROAD	45	403	4.4	
0010	47+40 -	47+50	NORTH COUNTY LINE ROAD	-	4	0.1	FINE GRADING FOR PAVEMENT REMOVAL AREA
0010	50+50 -	52+56	NORTH COUNTY LINE ROAD	-	78	0.8	FINE GRADING FOR PAVEMENT REMOVAL AREA
TOTAL 0010				110	900	10.0	
0030	47+50 -	49+06	NORTH COUNTY LINE ROAD	-	210	2.0	BASE COURSE LIMITS FOR CAT 0030 AT +/-11' OFFSET FROM CL
TOTAL 0030				0	210	2.0	
PROJECT TOTAL				110	1,110	12.0	

CONCRETE CURB AND GUTTER AND CONCRETE PAVEMENT

CATEGORY	STATION TO	STATION	LOCATION	415.0060 CONCRETE PAVEMENT 6-INCH SY	601.0588 CONCRETE CURB & GUTTER 4-INCH SLOPED 36-INCH TYPE TBT LF
0010	49+21 -	49+61	NORTH COUNTY LINE ROAD, LT & RT	-	80
0010	49+61 -	49+71	NORTH COUNTY LINE ROAD, LT & RT	5	-
TOTAL 0010				5	80

MGS GUARDRAIL

CATEGORY	STATION	TO	STATION	LOCATION	614.2300 MGS GUARDRAIL 3 LF	614.2500 MGS THRIE BEAM TRANSITION LF	614.2610 MGS GUARDRAIL TERMINAL EAT EACH
0010	47+82.6	-	49+60.8	NORTH COUNTY LINE ROAD, RT	87.5	39.4	1
0010	48+57.6	-	49+60.8	NORTH COUNTY LINE ROAD, LT	12.5	39.4	1
0010	50+25.3	-	51+28.4	NORTH COUNTY LINE ROAD, RT	12.5	39.4	1
0010	50+25.3	-	52+03.4	NORTH COUNTY LINE ROAD, LT	87.5	39.4	1
TOTAL 0010					200	157.6	4

EROSION MAT

CATEGORY	STATION	TO	STATION	LOCATION	628.2008 EROSION MAT URBAN CLASS I TYPE B SY	628.2027 EROSION MAT CLASS II TYPE C SY
0010	46+67	-	49+95	NORTH COUNTY LINE ROAD	1,181	262
0010	50+25	-	53+16	NORTH COUNTY LINE ROAD	499	245
UNDISTRIBUTED					420	128
TOTAL 0010					2,100	635

SILT FENCE

CATEGORY	STATION	TO	STATION	LOCATION	628.1504 SILT FENCE LF	628.1520 SILT FENCE MAINTENANCE LF
0010	47+43	-	49+64	NORTH COUNTY LINE ROAD	216	432
0010	50+28	-	51+38	NORTH COUNTY LINE ROAD	164	328
TOTAL 0010					380	760

TURBIDITY BARRIERS

CATEGORY	STATION	LOCATION	628.6005 TURBIDITY BARRIERS SY
0010	49+93	NORTH COUNTY LINE ROAD	130
TOTAL 0010			130

ROCK BAGS

CATEGORY	STATION	LOCATION	628.7570 ROCK BAGS EACH
0010	47+04	NORTH COUNTY LINE ROAD, LT	15
0010	48+00	NORTH COUNTY LINE ROAD, LT	15
0010	48+40	NORTH COUNTY LINE ROAD, RT	15
0010	49+00	NORTH COUNTY LINE ROAD, LT	15
0010	49+57	NORTH COUNTY LINE ROAD, LT	15
0010	50+25	NORTH COUNTY LINE ROAD, LT & RT	30
0010	50+85	NORTH COUNTY LINE ROAD, LT	15
0010	51+42	NORTH COUNTY LINE ROAD, RT	15
0010	51+50	NORTH COUNTY LINE ROAD, LT	15
0010	52+00	NORTH COUNTY LINE ROAD, RT	15
TOTAL 0010			165

MOBILIZATIONS EROSION CONTROL

CATEGORY	STATION	TO	STATION	LOCATION	628.1905 MOBILIZATIONS EROSION CONTROL EACH	628.1910 MOBILIZATIONS EMERGENCY EROSION CONTROL EACH
0010	46+67	-	53+16	NORTH COUNTY LINE ROAD	6	4
TOTAL 0010					6	4

LANDSCAPING ITEMS

CATEGORY	STATION	TO	STATION	LOCATION	625.0100 TOPSOIL SY	627.0200 MULCHING SY	629.0210 FERTILIZER TYPE B CWT	630.0120 SEEDING MIXTURE NO. 20 LB	630.0200 SEEDING TEMPORARY LB	630.0300 SEEDING BORROW PIT LB	630.0500 SEED WATER MGAL	REMARKS
0010	46+67	-	49+93	NORTH COUNTY LINE ROAD	1,443	-	0.9	39	39	-	40	
0010	49+93	-	53+16	NORTH COUNTY LINE ROAD	744	-	0.5	20	20	-	21	
0010	UNDISTRIBUTED			NORTH COUNTY LINE ROAD	-	1,110	0.7	-	30	-	31	SPRING TREE CLEARING
0010	UNDISTRIBUTED			BORROW PIT	-	1,120	0.7	-	30	30	-	
0010	UNDISTRIBUTED			ENTIRE PROJECT	543	-	0.7	31	31	-	23	
TOTAL 0010					2,730	2,230	3.5	90	150	30	115	

SIGNS

CATEGORY	STATION	LOCATION	EACH	POSTS WOOD 4X6- INCH X 12-FT		SIGNS TYPE II REFLECTIVE F	
				W5-52L SF	W5-52R SF	W5-52L SF	W5-52R SF
0010	SW QUADRANT	NORTH COUNTY LINE ROAD	1	-	3		
0010	NW QUADRANT	NORTH COUNTY LINE ROAD	1	3	-		
0010	SE QUADRANT	NORTH COUNTY LINE ROAD	1	3	-		
0010	NE QUADRANT	NORTH COUNTY LINE ROAD	1	-	3		
SUBTOTALS			4	6	6		
TOTAL 0010			4	6	6		

REMOVING SIGNS

CATEGORY	STATION	LOCATION	EACH	EACH	REMARKS
0010		BOETTCHER ROAD/ NORTH COUNTY LINE ROAD, RT	1	1	"5 TON BRIDGE AHEAD"
0010	49+61	NORTH COUNTY LINE ROAD, RT	1	1	"BRIDGE WEIGHT LIMIT 5 TONS"
0010	49+61	NORTH COUNTY LINE ROAD, LT & RT	2	2	OBJECT MARKER
0010	50+25	NORTH COUNTY LINE ROAD, RT	1	1	"BRIDGE WEIGHT LIMIT 5 TONS"
0010	50+25	NORTH COUNTY LINE ROAD, LT & RT	2	2	OBJECT MARKER
0010		BASTON ROAD/NORTH COUNTY LINE ROAD, RT	1	1	"BRIDGE WEIGHT LIMIT 5 TONS"
TOTAL 0010			8	8	

SAWING

CATEGORY	STATION	LOCATION	690.0150
			SAWING ASPHALT LF
0010	47+40	NORTH COUNTY LINE ROAD	22
0010	52+56	NORTH COUNTY LINE ROAD	22
TOTAL 0010			44

TRAFFIC CONTROL

CATEGORY	LOCATION	APPROXIMATE SERVICE DAYS	643.0420 TRAFFIC CONTROL BARRICADES TYPE III		643.0705 TRAFFIC CONTROL WARNING LIGHTS TYPE A		643.0900 TRAFFIC CONTROL SIGNS		REMARKS
			NO. IN SERVICE EACH	DAYS	NO. IN SERVICE EACH	DAYS	NO. IN SERVICE EACH	DAYS	
0010	STH 32	76	152	2	304	4	152	2	BRIDGE OUT 1 MILE AHEAD
0010	WEST OF WORK ZONE LIMITS	76	304	4	532	7	608	8	SEE BARRICADES AND SIGNS FOR MAINLINE CLOSURES DETAIL C
0010	WEST WORK ZONE LIMITS	76	380	5	456	6	76	1	SEE BARRICADES AND SIGNS FOR MAINLINE CLOSURES DETAIL D
0010	EAST WORK ZONE LIMITS	76	380	5	456	6	76	1	SEE BARRICADES AND SIGNS FOR MAINLINE CLOSURES DETAIL D
0010	EAST OF WORK ZONE LIMITS	76	304	4	532	7	608	8	SEE BARRICADES AND SIGNS FOR MAINLINE CLOSURES DETAIL C
0010	CTH PP	76	152	2	304	4	152	2	BRIDGE OUT 2 MILES AHEAD
TOTAL 0010			1,672	1,672	2,584	2,584	1,672	1,672	

MARKING

CATEGORY	STATION	TO	STATION	LOCATION	646.1020	REMARKS
					MARKING LINE EPOXY 4-INCH LF	
0010	47+40	-	52+56	NORTH COUNTY LINE ROAD	1,040	CENTERLINE DOUBLE YELLOW
TOTAL 0010					1,040	

CONSTRUCTION STAKING

CATEGORY	STATION	TO	STATION	LOCATION	650.4500	650.5000	650.5500	650.6501.01	650.9911.01	650.9920
					CONSTRUCTION STAKING SUBGRADE LF	CONSTRUCTION STAKING BASE LF	CONSTRUCTION STAKING CURB GUTTER AND CURB & GUTTER LF	CONSTRUCTION STAKING STRUCTURE LAYOUT (B-08-0119) EACH	CONSTRUCTION STAKING SUPPLEMENTAL CONTROL (4474-03-71) EACH	CONSTRUCTION STAKING SLOPE STAKES LF
0010	46+67	-	49+71	NORTH COUNTY LINE ROAD	304	304	80	-	1	304
0010	50+15	-	53+16	NORTH COUNTY LINE ROAD	301	301	-	-	-	301
TOTAL 0010					605	605	80	0	1	605
0020		49+93		B-08-0119	-	-	-	1	-	-
TOTAL 0020					0	0	0	1	0	0
PROJECT TOTAL					605	605	80	1	1	605

CONVENTIONAL SYMBOLS

SECTION LINE	PARCEL NUMBER (25)	UTILITY NUMBER (40)
QUARTER LINE	PRW POINT NUMBER (100)	TLE POINT NUMBER (150)
SIXTEENTH LINE	SECTION CORNER	RAW MONUMENT
NEW REFERENCE LINE	NOTATION FOR COMBUSTIBLE FLUIDS	NON-MONUMENTED RAW POINT
NEW R/W LINE	NOTATION FOR HIGH VOLTAGE TRANSMISSION LINES	FOUND IRON PIN
EXISTING R/W LINE	CAUTION	VALVE (GAS, WATER, ETC.)
PROPERTY LINE	NOTATION FOR OFF-PREMISE SIGN	SIGN
LOT, TIE, AND OTHER MINOR LINES		
SLOPE INTERCEPT		
CORPORATE LIMITS		
UNDERGROUND FACILITY (COMMUNICATIONS, ELECTRIC, ETC.)		
FEE ACQUISITION AREA (HATCHING VARIES BY OWNER)		
TEMP. LIMITED EASEMENT AREA		
EASEMENT AREA (HIGHWAY, PERMANENT LIMITED, OR RESTRICTED DEVELOPMENT)		
TRANSMISSION STRUCTURES		
BUILDING		
BUILDING (TO BE REMOVED)		
BRIDGE		

CONVENTIONAL UTILITY SYMBOLS

WATER	NON-COMPENSABLE	COMPENSABLE
GAS		
TELEPHONE		
OVERHEAD TRANSMISSION LINES		
ELECTRIC		
CABLE TELEVISION		
FIBER OPTIC		
SANITARY SEWER		
STORM SEWER		
ELECTRIC TOWER		
POWER POLE		
TELEPHONE POLE		
TELEPHONE PEDESTAL		

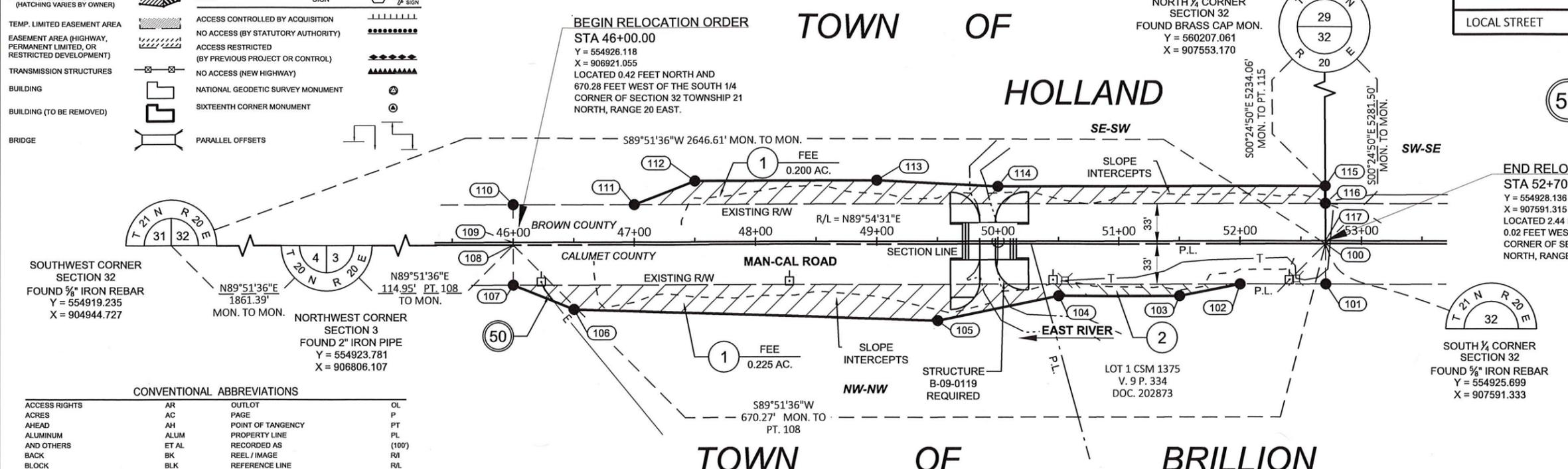
CURVE DATA ABBREVIATIONS

LONG CHORD	LCH
LONG CHORD BEARING	LCB
RADIUS	R
DEGREE OF CURVE	D
CENTRAL ANGLE	A / DELTA
LENGTH OF CURVE	L
TANGENT	T
DIRECTION AHEAD	DA
DIRECTION BACK	DB

SCHEDULE OF LANDS AND INTERESTS REQUIRED

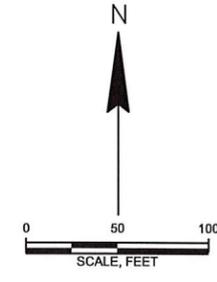
PARCEL NO.	OWNER(S)	INTEREST REQUIRED	R/W (ACRES)		
			NEW	EXISTING	TOTAL
1	PATRICK L. GEIGER AND BERNARD G. GEIGER, JR.	FEE	0.425	0.835	1.260
2	MARK C. FARRELL AND THERESA J. FARRELL	FEE	0.031	0.000	0.031
50	WISCONSIN PUBLIC SERVICE	RELEASE OF RIGHTS			

R/W PROJECT NUMBER 4474-03-21	SHEET NUMBER 4.01	TOTAL SHEETS 1
CONSTRUCTION PROJECT NUMBER 4474-03-71		
PLAT OF RIGHT OF WAY REQUIRED FOR T BRILLION, MAN-CAL ROAD EAST RIVER BRIDGE B-09-0119		
LOCAL STREET	CALUMET COUNTY	



CONVENTIONAL ABBREVIATIONS

ACCESS RIGHTS	AR	OUTLOT	OL
ACRES	AC	PAGE	P
AHEAD	AH	POINT OF TANGENCY	PT
ALUMINUM	ALUM	PROPERTY LINE	PL
AND OTHERS	ET AL	RECORDED AS	(100)
BACK	BK	REEL / IMAGE	RI
BLOCK	BLK	REFERENCE LINE	RL
CENTERLINE	CL	PERMANENT LIMITED EASEMENT	PLE
CERTIFIED SURVEY MAP	CSM	POINT OF BEGINNING	POB
CONCRETE	CONC	POINT OF CURVATURE	PC
COUNTY	CO	POINT OF COMPOUND CURVE	PCC
CITY TRUNK HIGHWAY	CTH	POINT OF INTERSECTION	PI
DISTANCE	DIST	REMAINING	REM
CORNER	COR	RESTRICTIVE DEVELOPMENT EASEMENT	RDE
DOCUMENT NUMBER	DOC	RIGHT	RT
EASEMENT	EASE	RIGHT OF WAY	R/W
EXISTING	EX	SECTION	SEC
GAS VALVE	GV	SEPTIC VENT	SEPV
GRID NORTH	GN	SQUARE FEET	SF
HIGHWAY EASEMENT	HE	STATE TRUNK HIGHWAY	STH
IDENTIFICATION	ID	STATION	STA
LAND CONTRACT	LC	TELEPHONE PEDESTAL	TP
LEFT	LT	TEMPORARY LIMITED EASEMENT	TLE
MONUMENT	MON	TRANSPORTATION PROJECT PLAT	TTP
NATIONAL GEODETIC SURVEY NUMBER	NGS	UNITED STATES HIGHWAY	USH
	NO	VOLUME	V

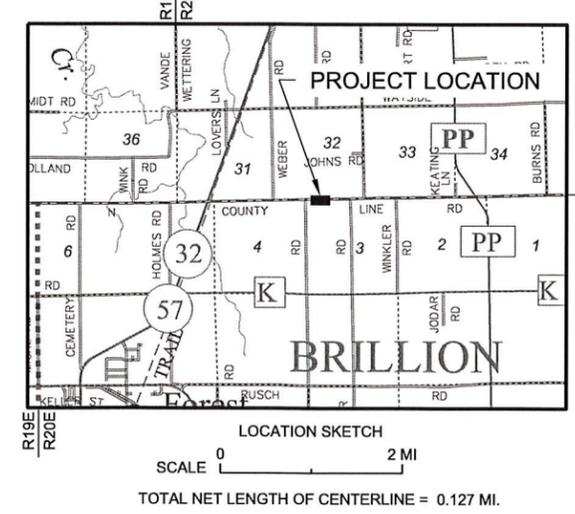


R/W STATION & OFFSET TABLE

POINT	STATION	OFFSET
100	52+70.27	2.44' RT
101	52+70.41	35.44' RT
102	52+00.00	35.40' RT
103	51+50.00	45.00' RT
104	50+50.00	45.00' RT
105	49+50.00	65.00' RT
106	46+50.00	55.00' RT
107	46+00.00	35.06' RT
108	46+00.00	2.06' RT
109	46+00.00	0.00' RT
110	46+00.00	30.94' LT
111	47+00.00	30.89' LT
112	47+50.00	50.00' LT
113	49+00.00	50.00' LT
114	50+00.00	45.00' LT
115	52+70.07	45.00' LT
116	52+70.13	30.56' LT
117	52+70.26	0.00' RT

R/W COURSE TABLE

COURSE	BEARING	DISTANCE
100-101	S00°24'50"E	33.00'
101-102	S89°51'36"W	70.41'
102-103	S78°57'20"W	50.91'
103-104	S89°49'39"W	100.00'
104-105	S78°31'03"W	101.98'
105-106	N88°15'48"W	300.17'
106-107	N68°25'37"W	53.83'
107-108	N00°10'21"W	33.00'
108-109	N00°10'21"W	2.06'
109-110	N00°10'21"W	30.94'
110-111	N89°51'36"E	100.00'
111-112	N68°54'27"E	53.53'
112-113	N89°49'39"E	150.00'
113-114	S87°18'36"E	100.12'
114-115	N89°49'39"E	270.07'
115-116	S00°24'50"E	14.44'
116-117	S00°24'50"E	30.56'
117-100	S00°24'50"E	2.44'



NOTES:

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

THIS PLAT IS A GRAPHIC REPRESENTATION AND IS FOR REFERENCE PURPOSE ONLY. DEEDS MUST BE CHECKED TO DETERMINE PROPERTY BOUNDARIES AND ACCESS RIGHTS

RIGHT-OF-WAY MONUMENTS ARE TYPE 2 (3/4"x24" CAPPED IRON REBAR WEIGHING 1.50 LBS./LIN. FT.) AND ARE PLACED PRIOR TO OR AT THE TIME OF LAND TITLE TRANSFER.

RIGHT-OF-WAY BOUNDARIES ARE DEFINED WITH COURSES OF THE PERIMETER OF THE HIGHWAY LANDS REFERENCED TO THE U.S. PUBLIC LAND SURVEY SYSTEM OR OTHER "SURVEYS" OF PUBLIC RECORD.

DIMENSIONING FOR THE NEW RIGHT-OF-WAY IS MEASURED ALONG AND PERPENDICULAR TO THE NEW REFERENCE LINES.

PROPERTY LINES SHOWN ON THIS PLAT ARE DRAWN FROM DATA DERIVED FROM MAPS AND DOCUMENTS OF PUBLIC RECORD AND/OR EXISTING OCCUPATIONAL LINES. THIS PLAT MAY NOT BE A TRUE REPRESENTATION OF EXISTING PROPERTY LINES, EXCLUDING RIGHT-OF-WAY, AND SHOULD NOT BE USED AS A SUBSTITUTE FOR AN ACCURATE FIELD SURVEY.

EXISTING ROAD RIGHT-OF-WAY SHOWN HEREIN IS BASED ON THE FOLLOWING POINT OF REFERENCE:

EXISTING RIGHT OF WAY OF MAN-CAL ROAD WAS DETERMINED FROM CSM 1375 AND CENTERED ON THE EXISTING SOUTH SECTION LINE OF SECTION 32, T21N, R20E WITH A PRESUMED WIDTH OF 66 FEET PER STATE STATUTE 82.31(2).

APPROVED FOR TOWN OF BRILLION
 DATE: 1/27/22
 TOWN CHAIRMAN: Kevin Fisher

APPROVED FOR TOWN OF HOLLAND
 DATE: 1-27-22
 TOWN CHAIRMAN: Michael Ant

PLAT PREPARED BY
AYRES

THE SURVEY IS PREPARED AT THE REQUEST OF TOWN OF BRILLION.
 THE FIELD SURVEY WAS PERFORMED IN DECEMBER 2020.
 THIS SURVEY IS ACCURATE TO THE BEST OF MY KNOWLEDGE AND BELIEF.



REVISION DATE: _____
 DATE: JANUARY 25, 2022
 JACOB S. JENSEN, P.L.S. S-2961

LEGEND

xxxxxx. SAW CUTS

CONSTRUCTION LIMITS
MATCH EXISTING SHOULDER
STA. 46+66.6 RT

CP #900
5/8" REBAR WITH CAP
STA. 44+99.36-17.10' LT.
Y=554942.913
X=906820.368

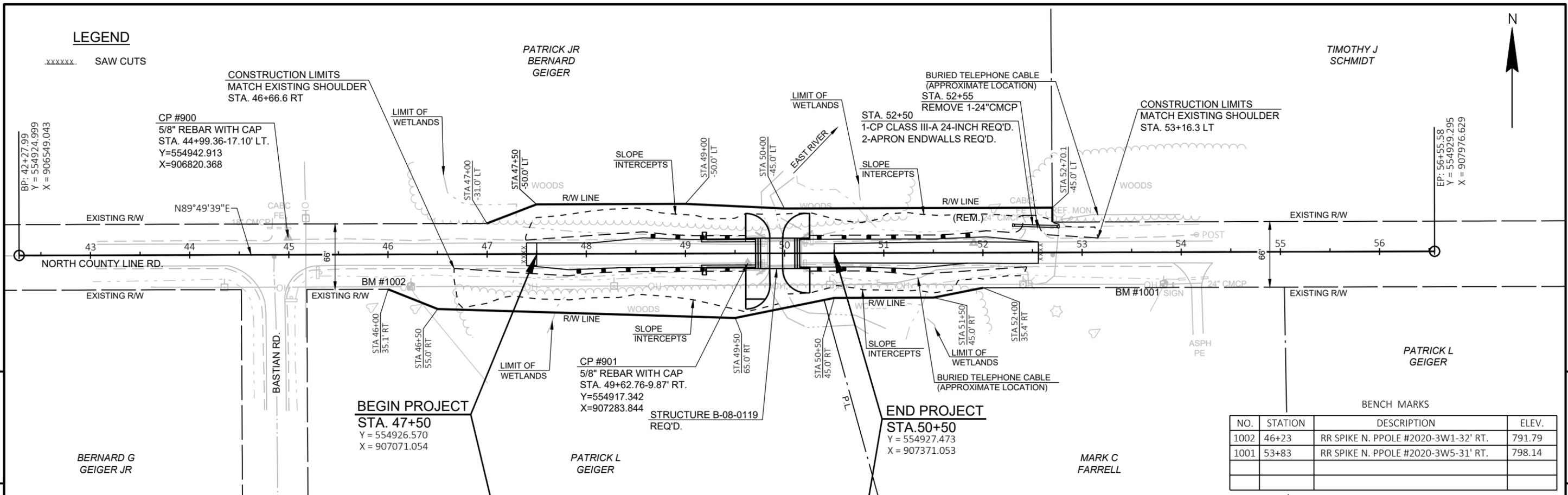
PATRICK JR
BERNARD
GEIGER

TIMOTHY J
SCHMIDT

BURIED TELEPHONE CABLE
(APPROXIMATE LOCATION)
STA. 52+55
REMOVE 1-24"CMCP
STA. 52+50
1-CP CLASS III-A 24-INCH REQ'D.
2-APRON ENDWALLS REQ'D.

CONSTRUCTION LIMITS
MATCH EXISTING SHOULDER
STA. 53+16.3 LT

EP: 56+55.58
Y = 554929.295
X = 907976.629

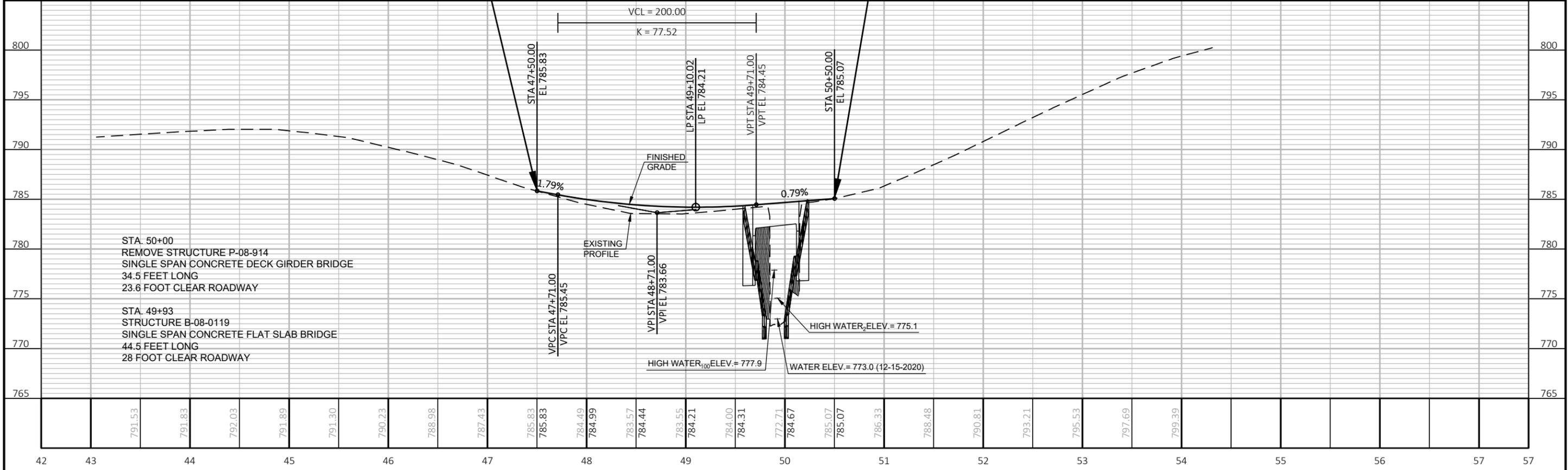


BEGIN PROJECT
STA. 47+50
Y = 554926.570
X = 907071.054

END PROJECT
STA. 50+50
Y = 554927.473
X = 907371.053

BENCH MARKS

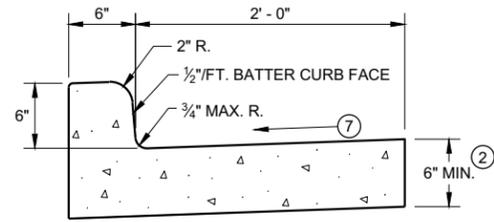
NO.	STATION	DESCRIPTION	ELEV.
1002	46+23	RR SPIKE N. PPOLE #2020-3W1-32' RT.	791.79
1001	53+83	RR SPIKE N. PPOLE #2020-3W5-31' RT.	798.14



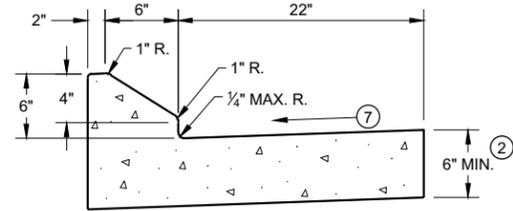
PROJECT NO: 4474-03-71	HWY: COUNTY LINE ROAD	COUNTY: CALUMET	PLAN AND PROFILE:	SHEET	E
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Standard Detail Drawing List

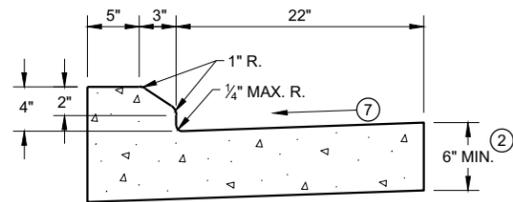
08D01-22A	CONCRETE CURB & GUTTER
08D01-22B	CONCRETE CURB, TIES AND CURB AND GUTTER APPLICATIONS
08D02-07A	CONCRETE SURFACE DRAINS FLUME TYPE AT STRUCTURES
08D02-07B	CONCRETE SURFACE DRAINS FLUME TYPE AT STRUCTURES
08D02-07C	CONCRETE SURFACE DRAINS FLUME TYPE AT STRUCTURES
08D21-01	DRIVEWAYS WITHOUT CURB & GUTTER
08E09-06	SILT FENCE
08E11-02	TURBIDITY BARRIER
08F01-11	APRON ENDWALLS FOR CULVERT PIPE
08F04-08	JOINT TIES FOR CONCRETE PIPE AND CONCRETE COLLAR DETAIL
12A03-10	NAME PLATE (STRUCTURES)
13A03-06	CONCRETE PAVEMENT SHOULDERS
13C19-03	HMA LONGITUDINAL JOINTS
14B29-01	SAFETY EDGE
14B42-07A	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-07B	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-07C	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-07D	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B44-04A	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B44-04B	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B44-04C	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B45-05A	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-05B	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-05C	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-05D	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
15C02-08A	BARRICADES AND SIGNS FOR MAINLINE CLOSURES
15C02-08B	BARRICADES AND SIGNS FOR VARIOUS CLOSURES
15C06-10	SIGNING & MARKING FOR TWO LANE BRIDGES
15C08-21A	LONGITUDINAL MARKING (MAINLINE)
15C11-09B	CHANNELIZING DEVICES DRUMS, CONES, BARRICADES AND VERTICAL PANELS



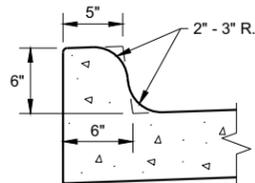
TYPES A^① & D



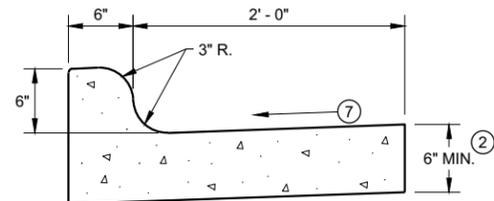
6" SLOPED CURB TYPES G^① & J



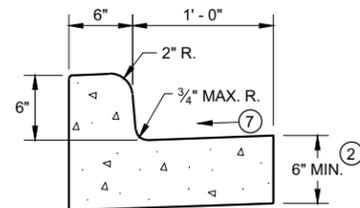
4" SLOPED CURB TYPES G^① & J



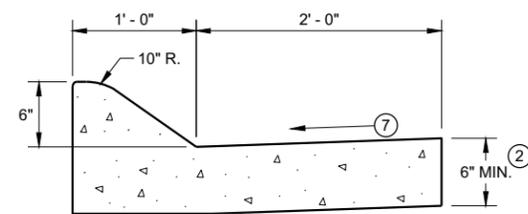
TYPES K^① & L
(OPTIONAL CURB SHAPE)



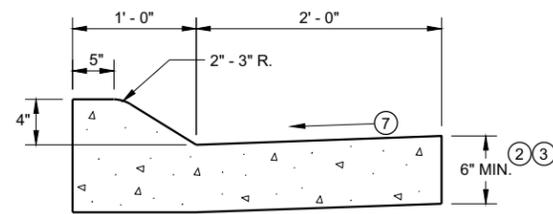
TYPES K^① & L
CONCRETE CURB AND GUTTER 30"



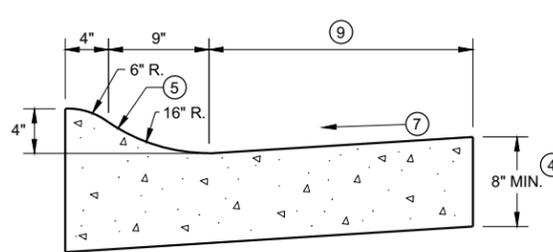
TYPES A^① & D
CONCRETE CURB AND GUTTER 18"



6" SLOPED CURB TYPES A^① & D

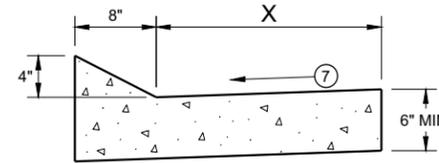


4" SLOPED CURB TYPES A^① & D
CONCRETE CURB AND GUTTER 36"



4" SLOPED CURB TYPES R^① & T

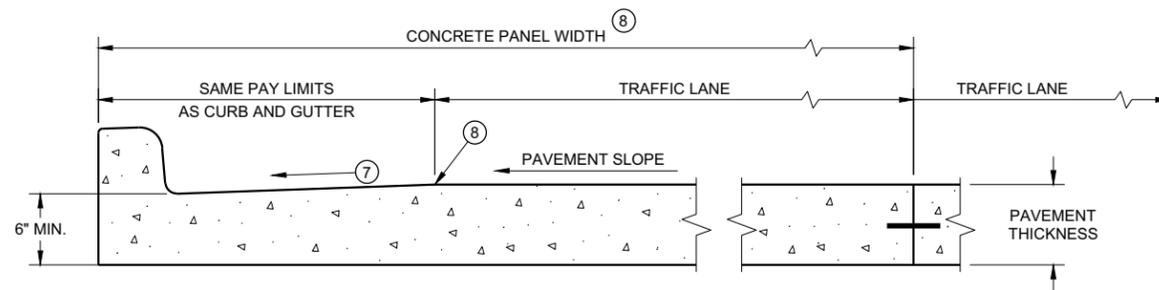
TBT & TBTT	X
30"	22"
36"	28"



TYPES TBT & TBTT^①
CONCRETE CURB AND GUTTER

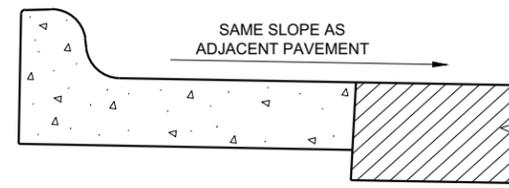
PAVEMENT THICKNESS
AND MAXIMUM CONCRETE
PANEL WIDTH TABLE

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



PARTIAL SECTION OF PAVEMENT *
WITH INTEGRAL CURB AND GUTTER

* BIKE LANE IS NOT SHOWN



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

GENERAL NOTES

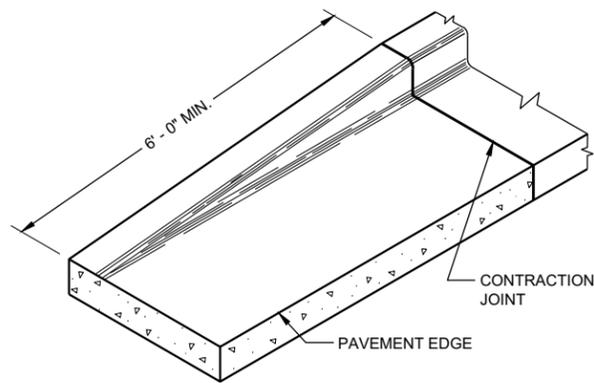
DETAILS OF CONSTRUCTION AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE CONTRACT.

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

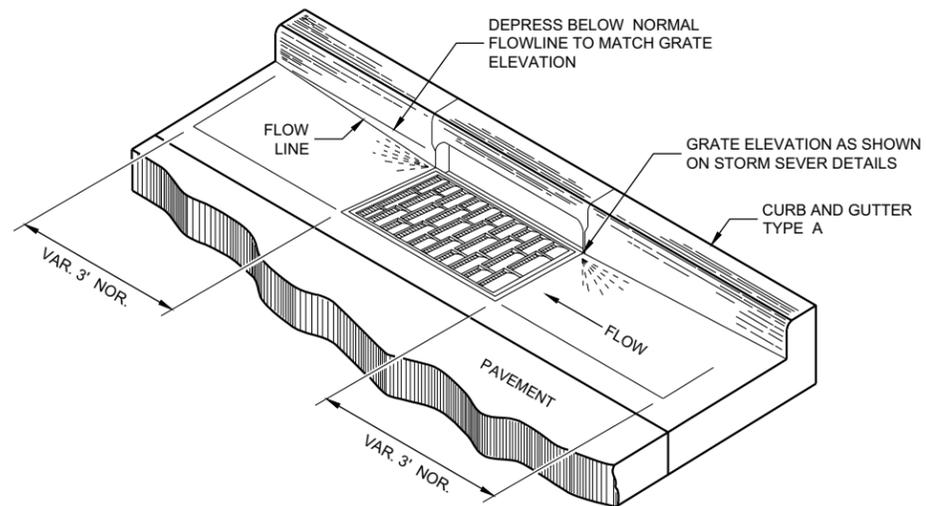
INTEGRAL CURB AND GUTTER SHALL CONFORM TO THE DETAILS SHOWN FOR CONCRETE CURB AND GUTTER INCLUDING THE TRANSVERSE GUTTER SLOPE.

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

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



END SECTION CURB AND GUTTER



DETAIL OF CURB AND GUTTER AT INLETS
(TYPICAL H INLET COVER SHOWN)

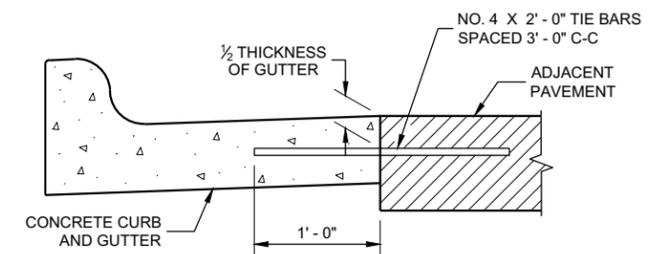
GENERAL NOTES

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

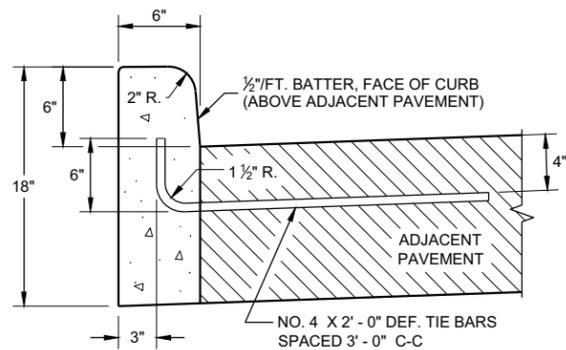
PAVEMENT TIES AND TIE BARS SHALL BE EPOXY COATED IN CONFORMANCE WITH SUBSECTION 505.2.6.2 OF THE STANDARD SPECIFICATIONS.

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

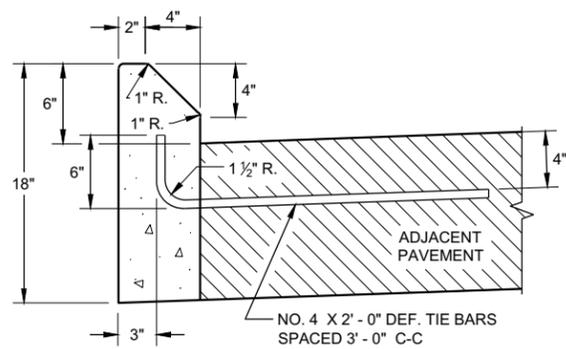
- ① TIE BARS ARE REQUIRED FOR CURB AND GUTTERS TYPES A, G, K, R, AND TBTT.
- ② THE BOTTOM OF CURB AND GUTTER MAY BE CONSTRUCTED EITHER LEVEL OR PARALLEL TO THE SLOPE OF THE SUBGRADE OR BASE AGGREGATE PROVIDED A 6" MINIMUM GUTTER THICKNESS IS MAINTAINED.
- ⑨ REFER TO SDD 08D18 AND 08D19 FOR ADDITIONAL DRIVEWAY ENTRANCE CURB DETAILS.



TYPICAL TIE BAR LOCATION ①

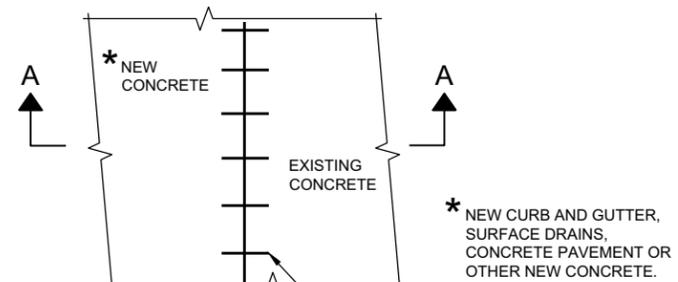


TYPES A ① & D

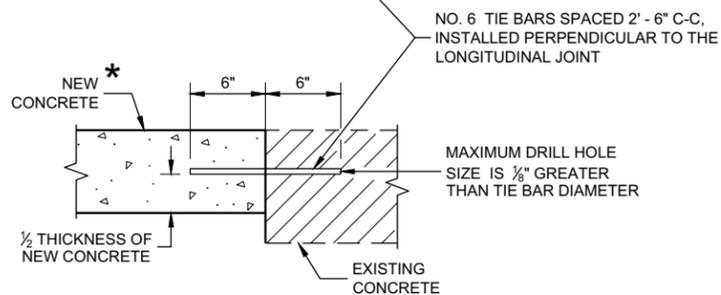


TYPES G ① & J

CONCRETE CURB

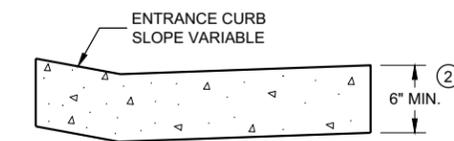


PLAN VIEW



SECTION A - A

TIE BARS DRILLED INTO EXISTING PAVEMENT



DRIVEWAY ENTRANCE CURB ⑨
(WHEN DIRECTED BY THE ENGINEER)

CONCRETE CURB, TIES AND CURB AND GUTTER APPLICATIONS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
February 2021 /S/ Rodney Taylor
DATE ROADWAY STANDARDS DEVELOPMENT ENGINEER

FHWA

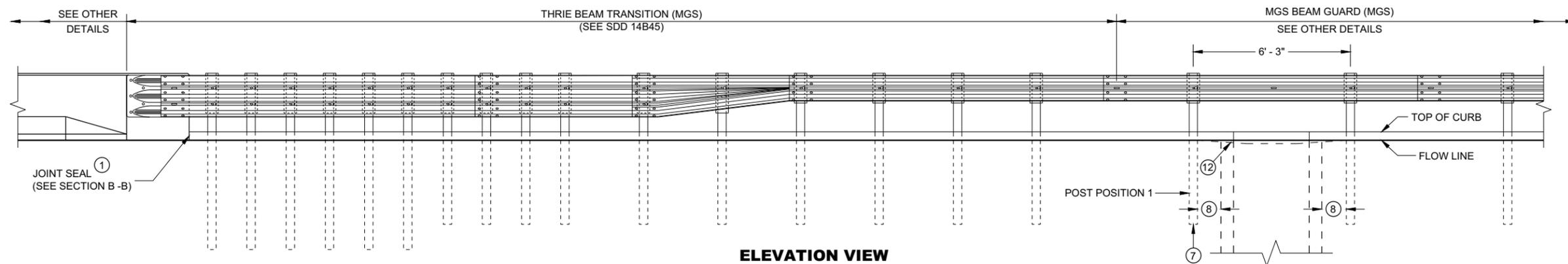
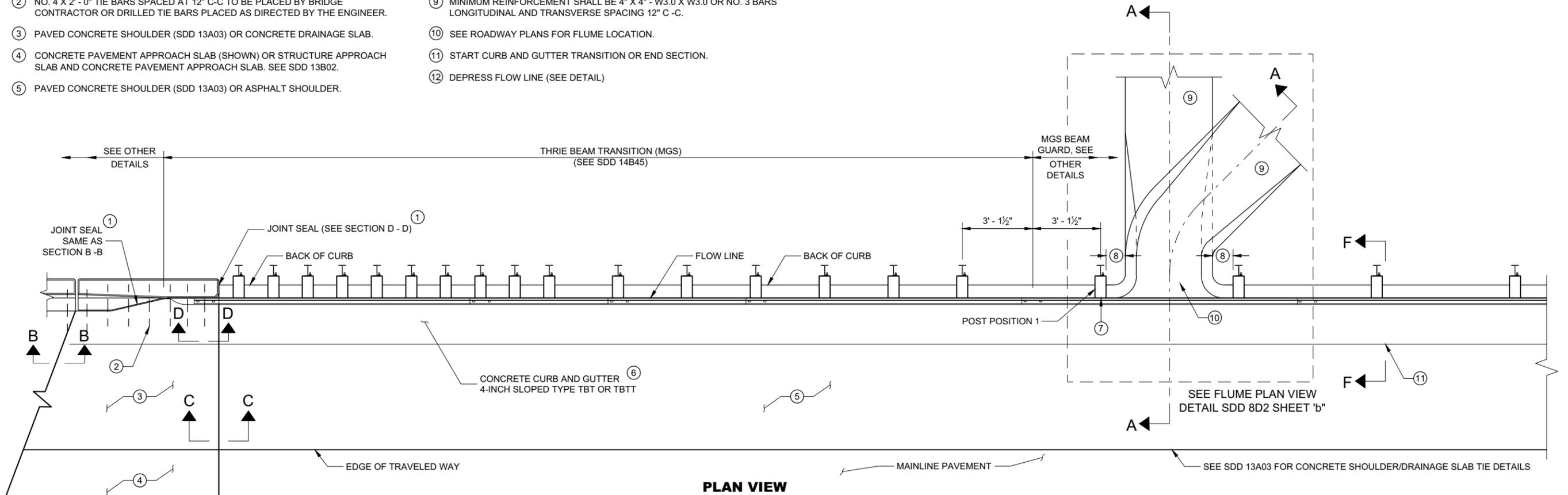
GENERAL NOTES

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

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

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

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



**CONCRETE SURFACE
DRAINS FLUME TYPE
AT STRUCTURES**

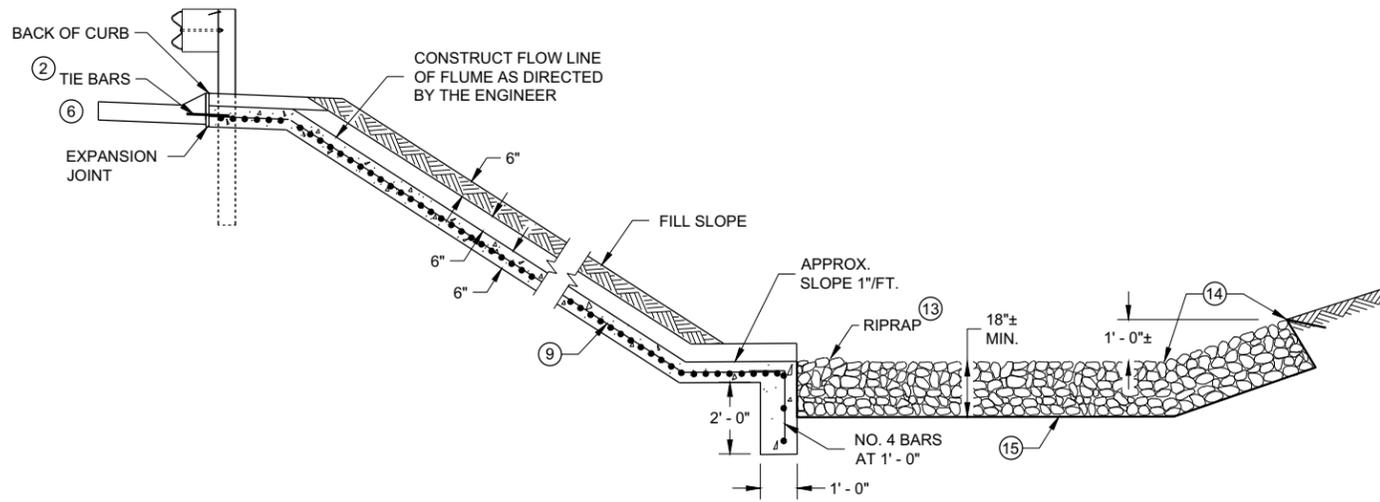
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

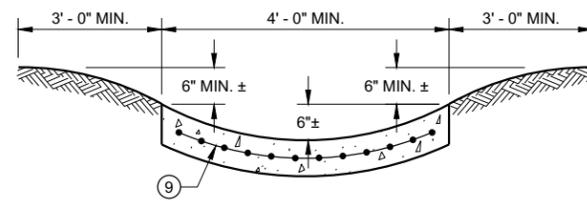
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SDD 08D02 - 07a

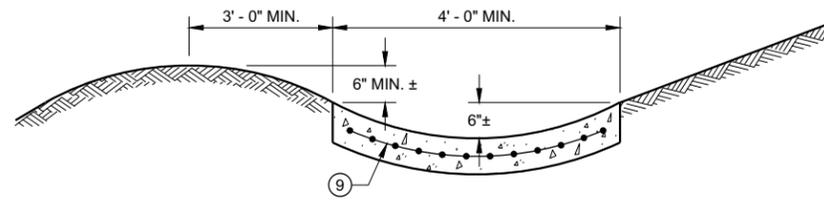
SDD 08D02 - 07a



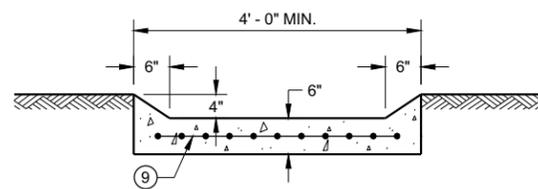
SECTION A - A



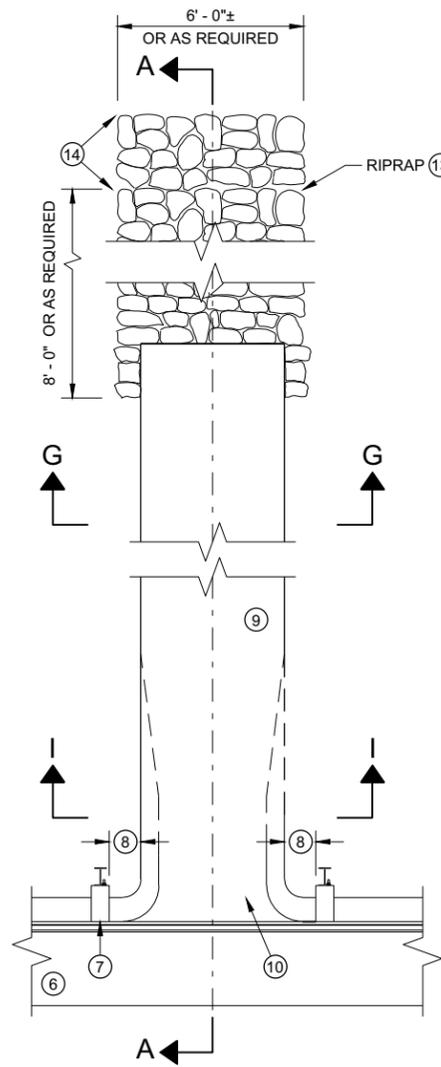
SECTION G - G



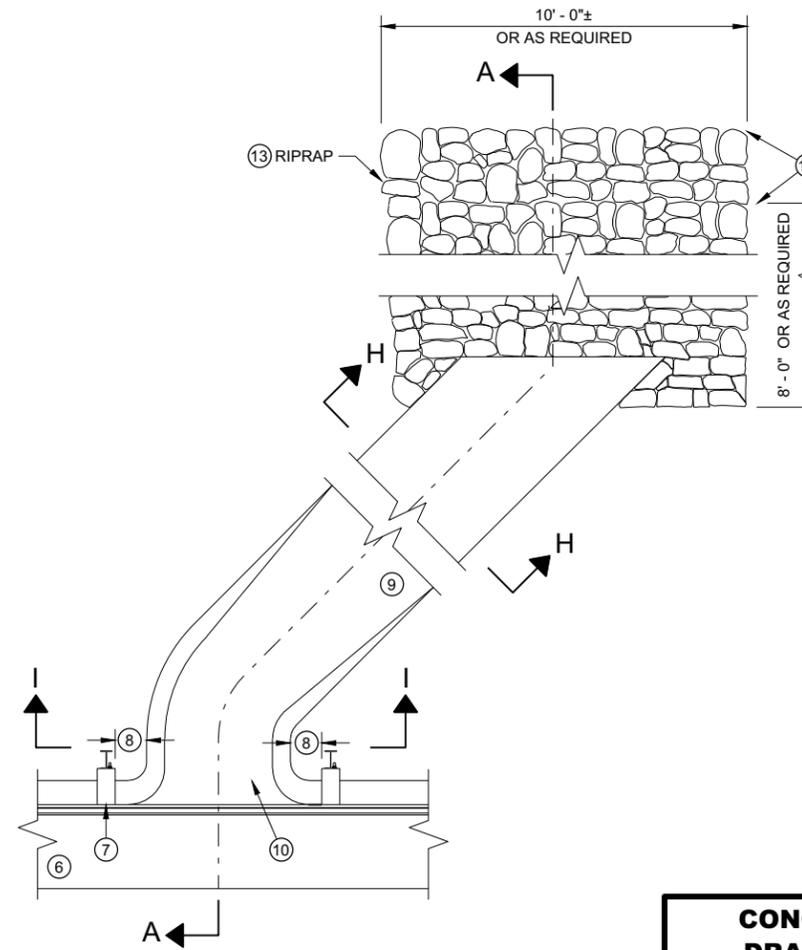
SECTION H - H



SECTION I - I



**PLAN VIEW
PERPENDICULAR FLUME**



**PLAN VIEW
SKEWED FLUME**

GENERAL NOTES

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

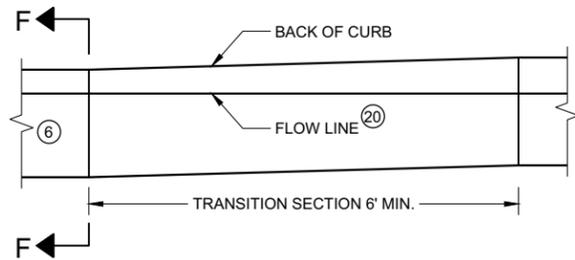
ALL STEEL REINFORCEMENT SHALL BE EMBEDDED 2 INCHES CLEAR UNLESS OTHERWISE SHOWN OR NOTED.

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

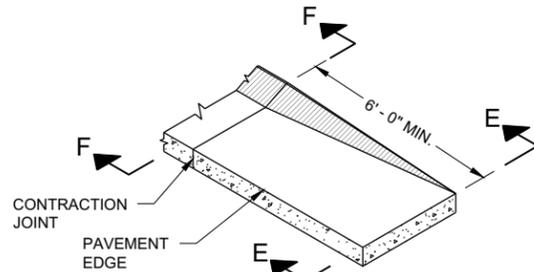
- ⑦ PLACE FLUME BEFORE MSG THRIE BEAM TRANSITION POST 1 (SEE SDD 14B45)
- ⑧ CENTER FLUME BETWEEN POSTS. 6-INCH MINIMUM SEPARATION FROM OUTSIDE EDGE OF FLUME TO POSTS.
- ⑨ MINIMUM REINFORCEMENT SHALL BE 4" X 4" - W3.0 X W3.0 OR NO. 3 BARS LONGITUDINAL AND TRANSVERSE SPACING 12" C-C.
- ⑩ SEE ROADWAY PLANS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

**CONCRETE SURFACE
DRAINS FLUME TYPE
AT STRUCTURES**

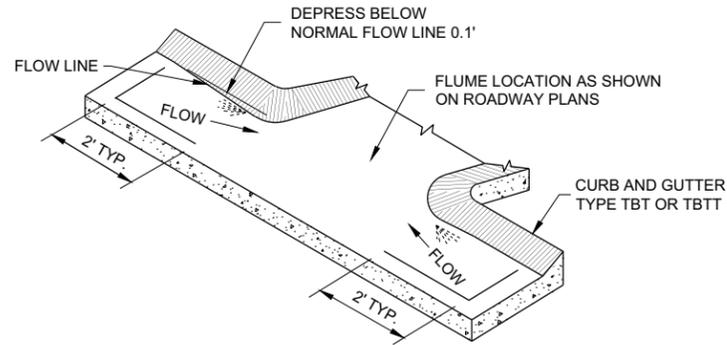
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



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



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



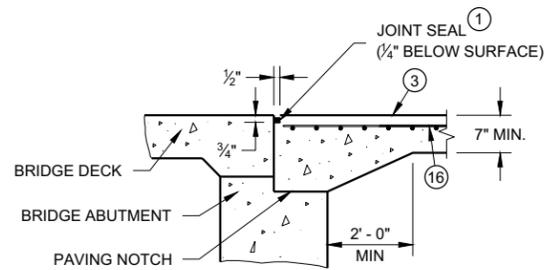
**CURB AND GUTTER FLOW LINE DEPRESSION
AT FLUMES CONCRETE CURB AND GUTTER
4-INCH SLOPED 36 INCH TYPE TBT OR TBTT**

GENERAL NOTES

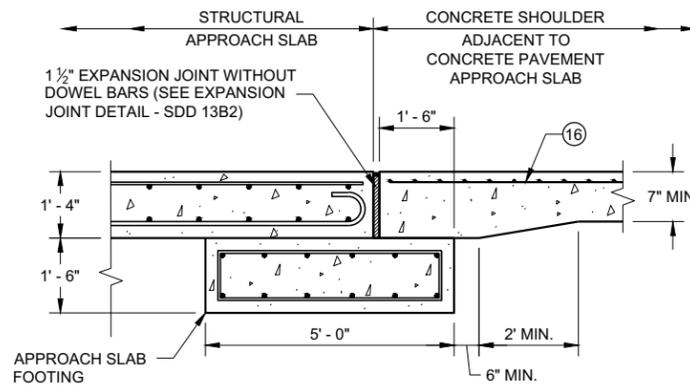
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

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

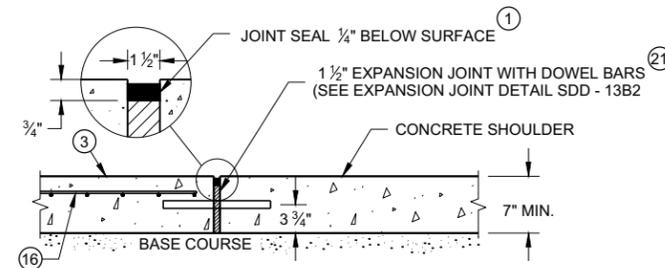
- ① USE A JOINT SEALANT CONFORMING TO STANDARD SPECIFICATION 415.2.6.
- ② NO. 4 X 2' - 0" TIE BARS SPACED AT 12" C-C TO BE PLACED BY BRIDGE CONTRACTOR OR DRILLED TIE BARS PLACED AS DIRECTED BY THE ENGINEER.
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- ④ CONCRETE PAVEMENT APPROACH SLAB (SHOWN)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



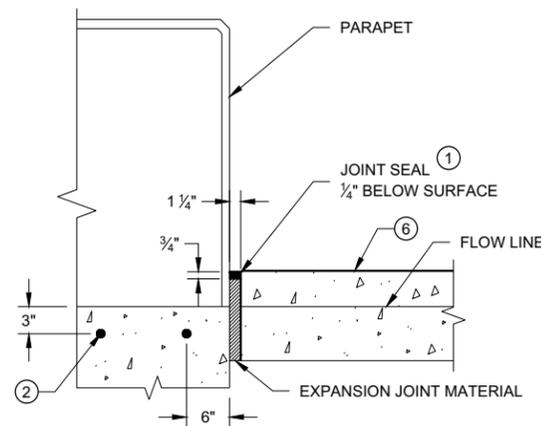
SECTION B-B



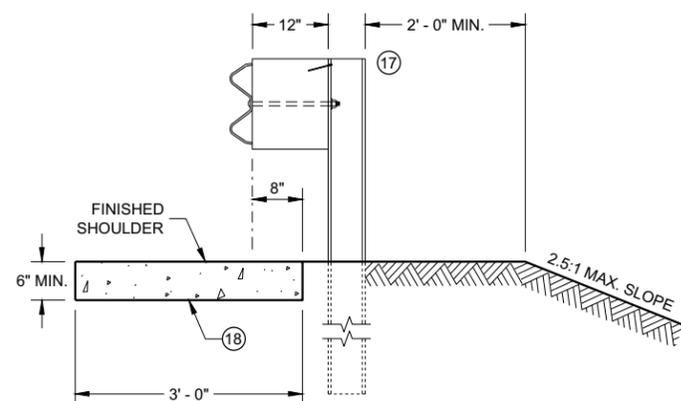
**SECTION C - C
JOINT DETAIL FOR BRIDGE WITH STRUCTURAL
APPROACH SLAB AND CONCRETE APPROACH SLAB**



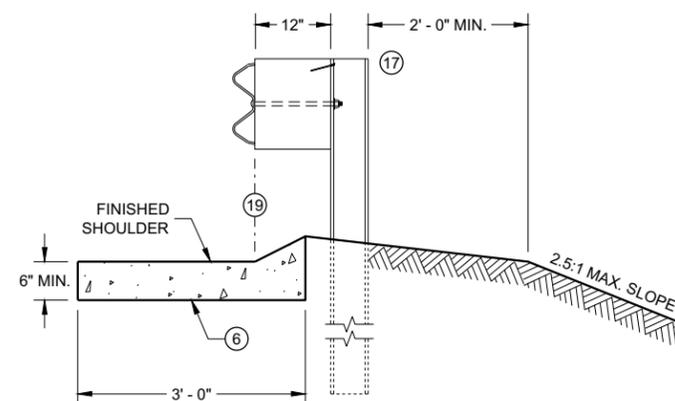
**SECTION C - C
JOINT DETAIL FOR BRIDGE APPROACH
WITH CONCRETE SHOULDERS**



SECTION D - D



SECTION E - E



SECTION F - F

6

6

SDD08D02 - 07C

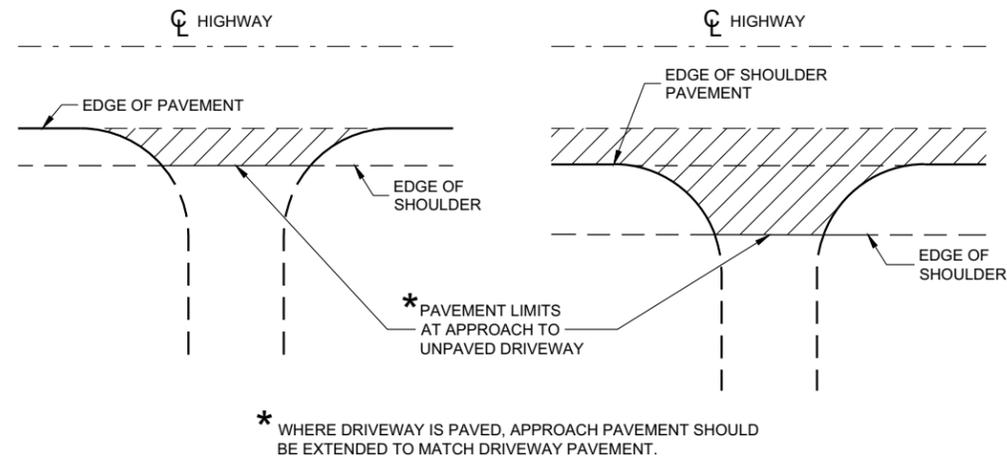
SDD08D02 - 07C

**CONCRETE SURFACE
DRAINS FLUME TYPE
AT STRUCTURES**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
February 2020 /S/ Rodney Taylor
DATE ROADWAY STANDARDS DEVELOPMENT
ENGINEER

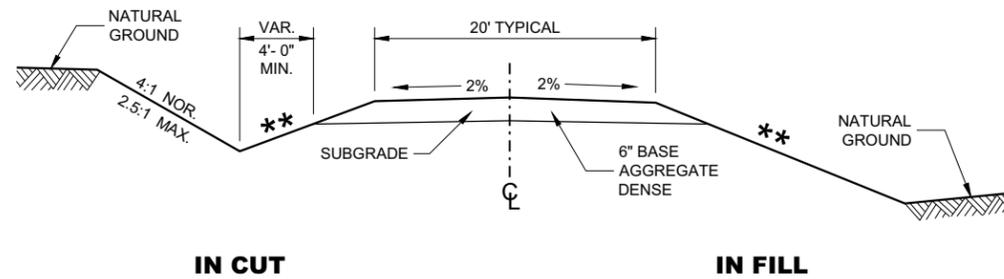
FHWA



PLAN VIEW
(UNPAVED SHOULDER ON HIGHWAY)

PLAN VIEW
(PAVED SHOULDER ON HIGHWAY)

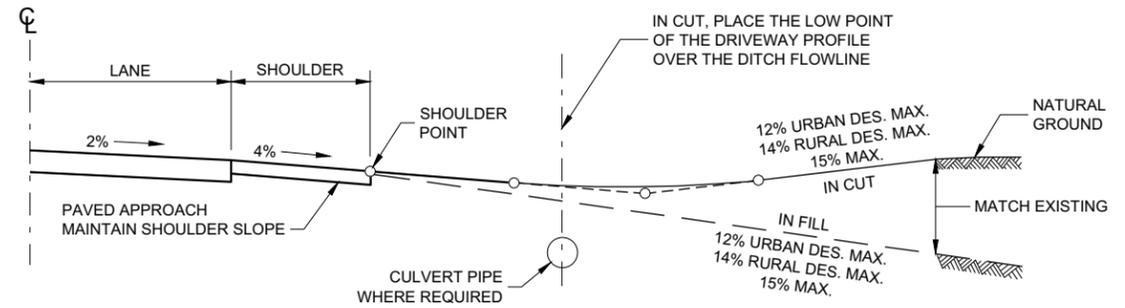
**RURAL DRIVEWAY INTERSECTION DETAIL
(NO CURB AND GUTTER OR SIDEWALK)**



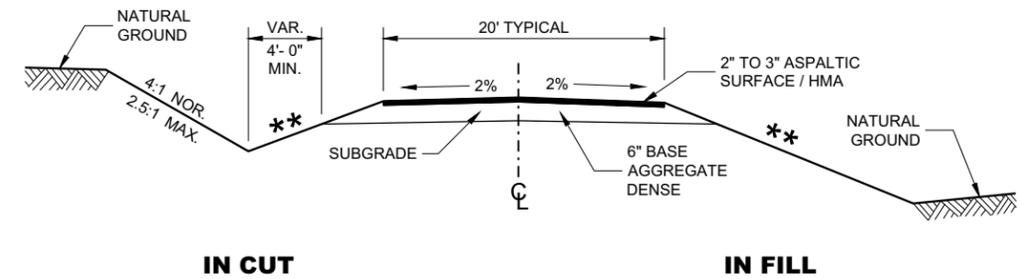
**TYPICAL CROSS SECTION FOR
PRIVATE DRIVE OR FIELD ENTRANCE
AGGREGATE SURFACE**

** SLOPE CAN VARY WITH SPEED. SEE 11-45-30.6.2

POSTED SPEED MPH	MAX. SLOPE
<35	4:1
≥ 35 TO < 60	6:1
≥60	10:1



TYPICAL DRIVEWAY PROFILES



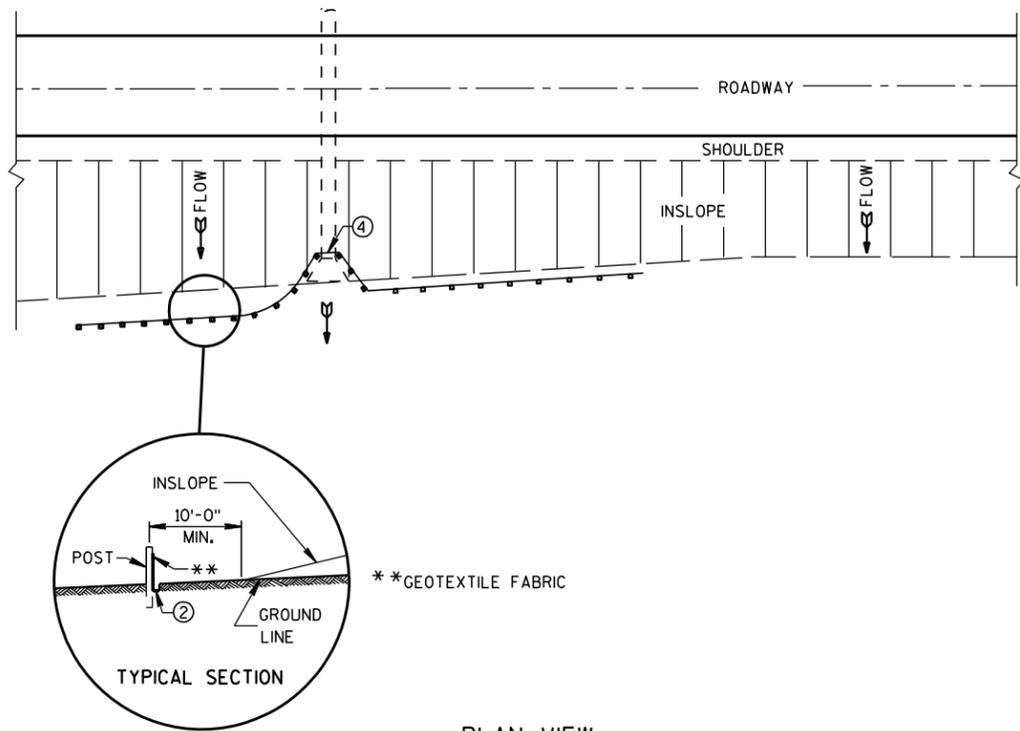
**TYPICAL CROSS SECTION FOR
PRIVATE DRIVE OR FIELD ENTRANCE
ASPHALTIC SURFACE**

DRIVEWAYS WITHOUT CURB AND GUTTER

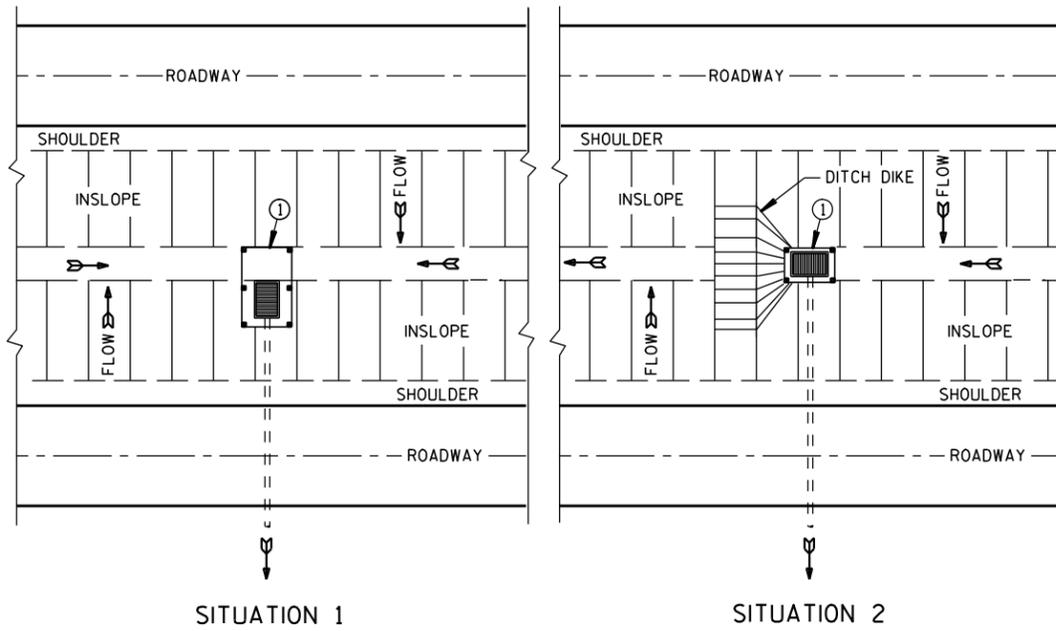
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
December 2017 /S/ Rodney Taylor
DATE ROADWAY STANDARDS DEVELOPMENT UNIT SUPERVISOR

FHWA



PLAN VIEW
TYPICAL APPLICATION OF SILT FENCE

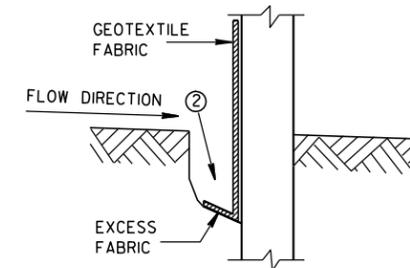


SITUATION 1 SITUATION 2
PLAN VIEW
SILT FENCE AT MEDIAN SURFACE DRAINS

GENERAL NOTES

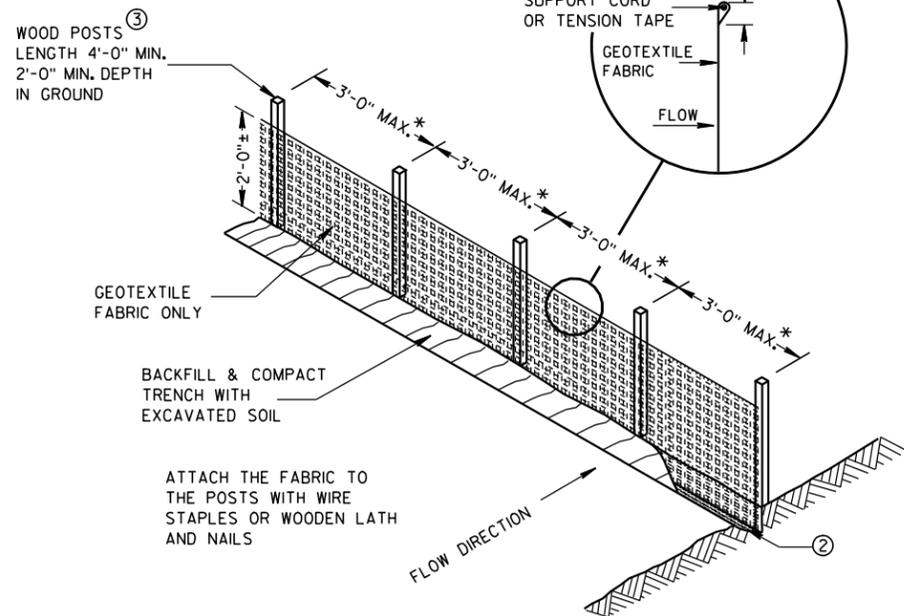
DETAILS OF CONSTRUCTION NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND APPLICABLE SPECIAL PROVISIONS.

- 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.

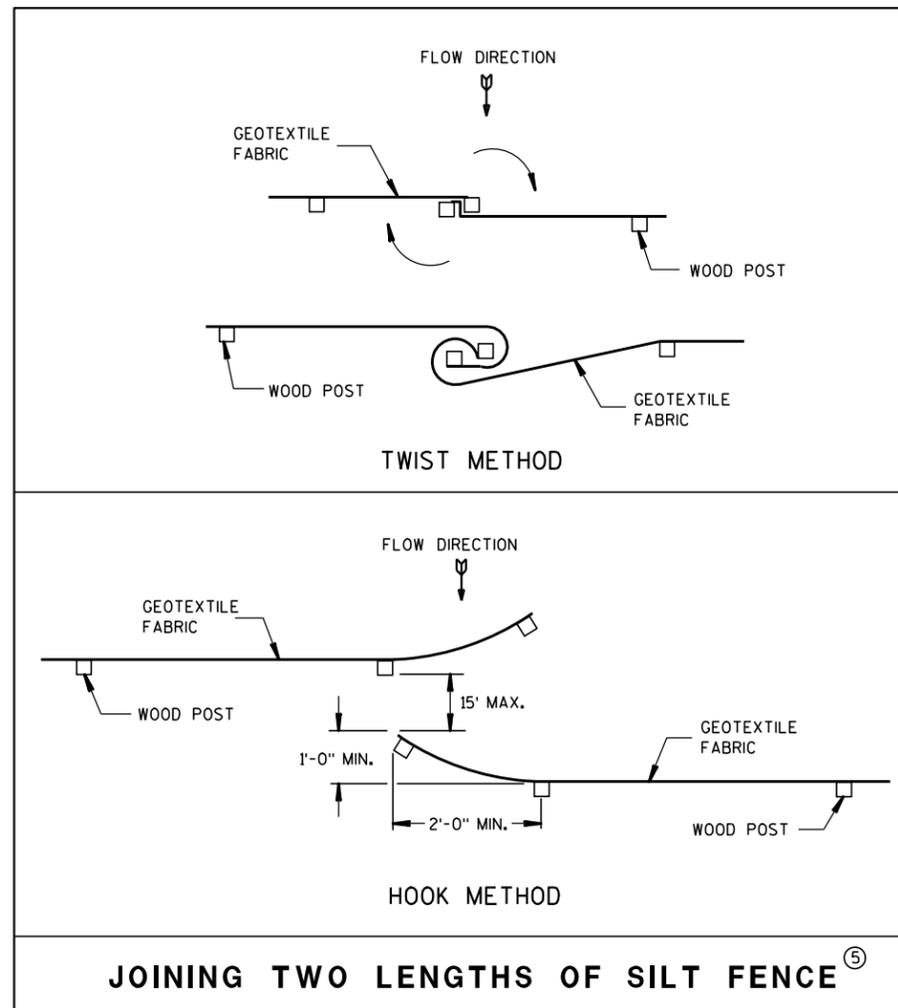


TRENCH DETAIL

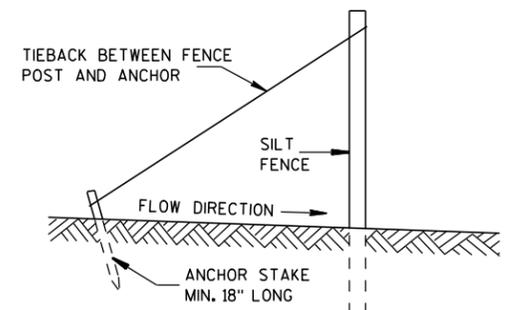
NOTE: ADDITIONAL POST DEPTH OR TIE BACKS MAY BE REQUIRED IN UNSTABLE SOILS



SILT FENCE



JOINING TWO LENGTHS OF SILT FENCE ⑤

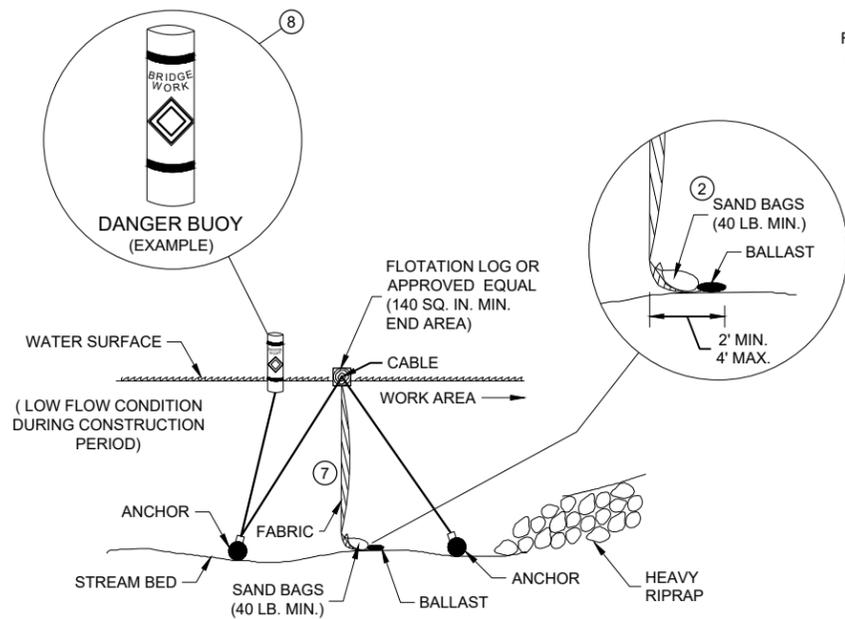


SILT FENCE TIE BACK
(WHEN REQUIRED BY THE ENGINEER)

SILT FENCE

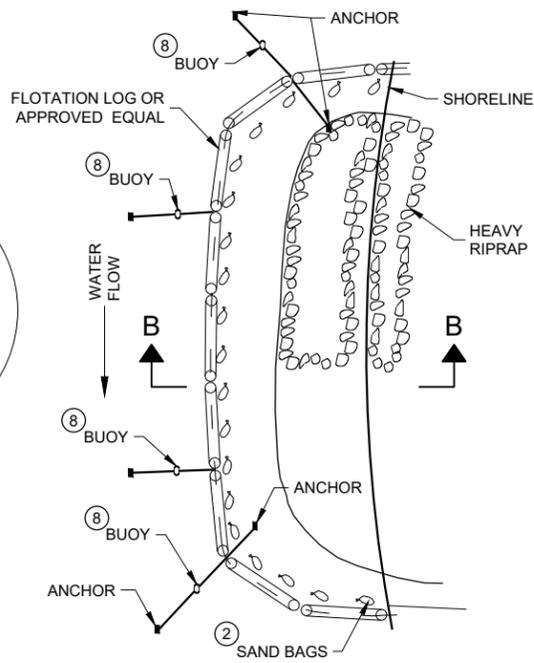
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

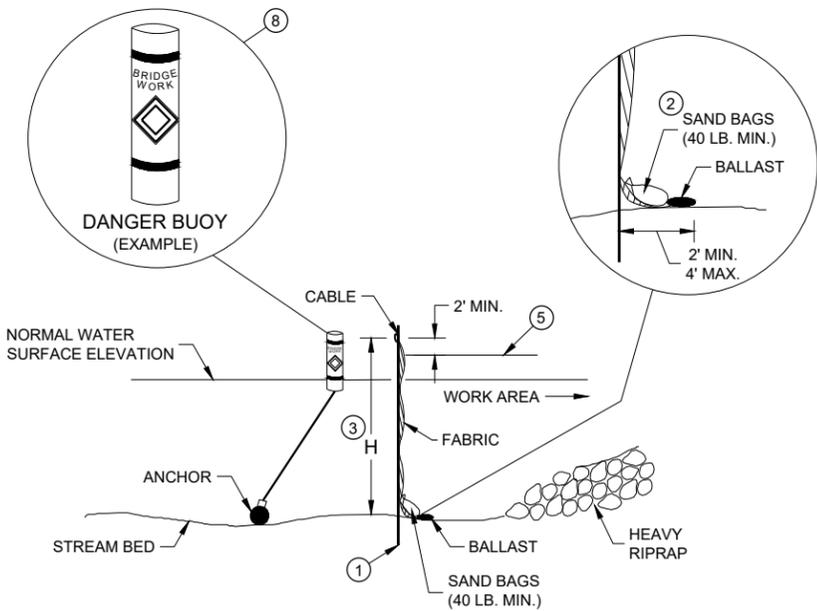


SECTION B - B

**TURBIDITY BARRIER - FLOAT ALTERNATIVE
CAUTION - SEE NOTE 6**

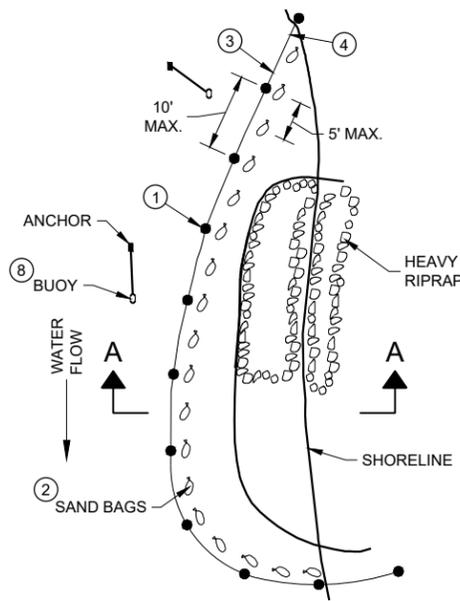


PLAN VIEW



SECTION A - A

TURBIDITY BARRIER - STANDARD POST INSTALLATION



PLAN VIEW

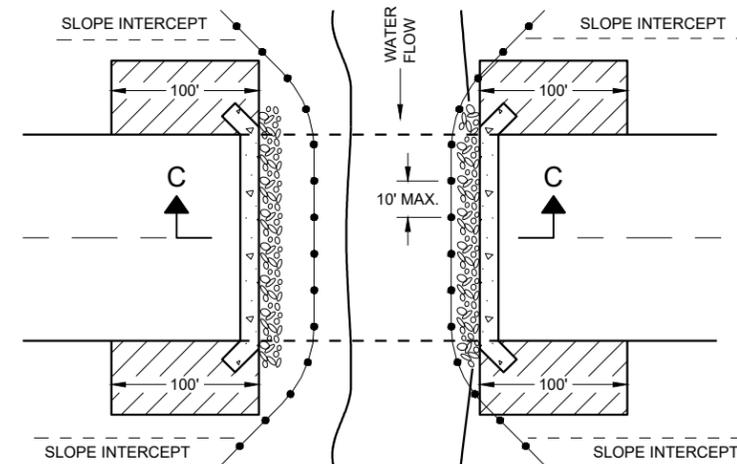
TURBIDITY BARRIER PLACEMENT DETAILS

GENERAL NOTES

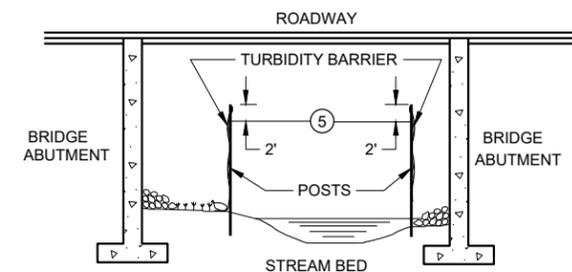
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

TURBIDITY BARRIER MAY BE REMOVED AT THE ENGINEERS DISCRETION, WHEN PERMANENT EROSION CONTROL MEASURES HAVE BEEN ESTABLISHED.

- ① DRIVEN STEEL POSTS, PIPES, OR CHANNELS. LENGTH SHALL BE SUFFICIENT TO SECURELY SUPPORT BARRIER AT HIGH WATER ELEVATIONS.
- ② SAND BAGS TO BE USED AS ADDITIONAL BALLAST WHEN ORDERED BY THE ENGINEER TO MEET ADVERSE FIELD CONDITIONS. SPACE AS APPROPRIATE FOR SITE CONDITIONS.
- ③ WHEN BARRIER HEIGHT "H" EXCEEDS 8 FEET, POST SPACING MAY NEED TO BE DECREASED.
- ④ IN WATERWAYS SUBJECT TO FLUCTUATING WATER ELEVATIONS, PROVISIONS SHOULD BE MADE TO ALLOW THE WATER TO EQUALIZE ON EACH SIDE OF THE BARRIER. THIS MAY BE ACCOMPLISHED BY LEAVING A PORTION OF THE BARRIER OPEN ON THE UPSTREAM END.
- ⑤ ESTIMATED HIGH WATER ELEVATION DURING CONSTRUCTION PERIOD. MINIMUM BARRIER HEIGHT SHALL BE 2' GREATER THAN EITHER THE Q2 ELEVATION OR THE ESTIMATED HIGH WATER ELEVATION DURING CONSTRUCTION, WHICHEVER IS GREATER.
- ⑥ FLOAT ALTERNATIVE WILL ONLY BE ALLOWED WITH WRITTEN APPROVAL OF THE ENGINEER, AND IS MEANT FOR LOCATIONS WHERE BEDROCK PREVENTS THE INSTALLATION OF POSTS.
- ⑦ ALLOW SUFFICIENT SLACK VERTICALLY AND HORIZONTALLY SO THAT SEDIMENT BUILD UP WILL NOT SEPARATE OR LOWER THE TURBIDITY BARRIER.
- ⑧ USE AS DIRECTED BY COAST GUARD OR DNR PERMIT WHEN WORKING IN NAVIGABLE WATERWAYS.



PLAN VIEW



SECTION C - C

**TURBIDITY BARRIER DETAIL SHOWING
TYPICAL PLACEMENT AT STRUCTURES**

TURBIDITY BARRIER

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
6/4/02 DATE /S/ Beth Cannestra
DATE CHIEF ROADWAY DEVELOPMENT
ENGINEER

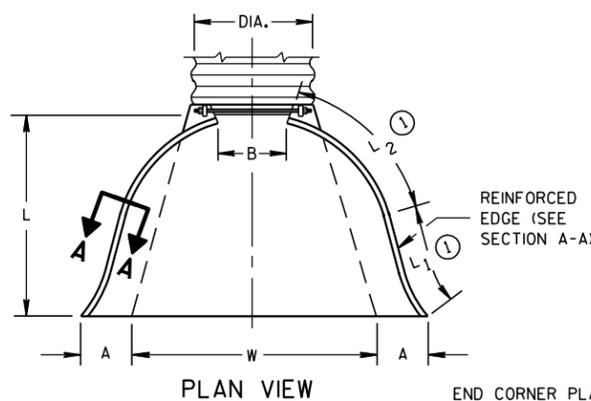
FHWA

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

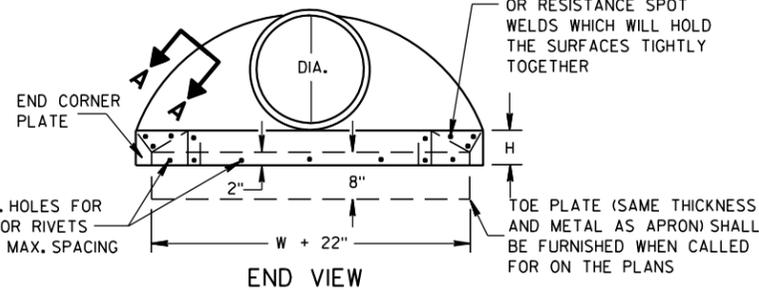
* EXCEPT CENTER PANEL SEE GENERAL NOTES

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

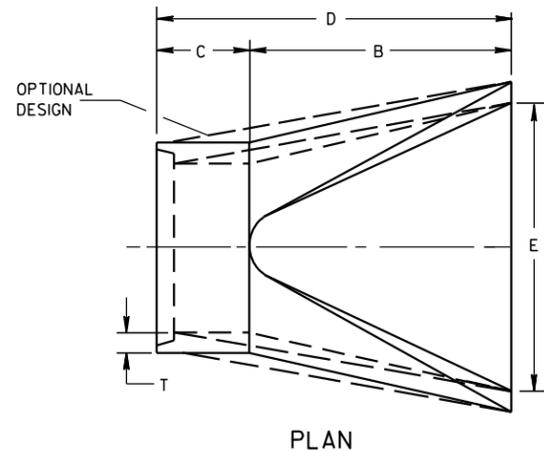
* MINIMUM
** MAXIMUM



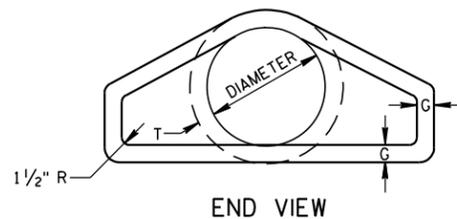
END CORNER PLATES MAY BE FASTENED TO APRON PROPER BY BOLTS, RIVETS, OR RESISTANCE SPOT WELDS WHICH WILL HOLD THE SURFACES TIGHTLY TOGETHER



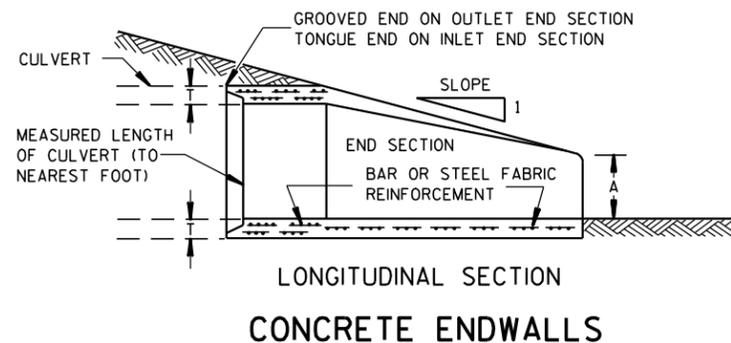
SIDE ELEVATION
METAL ENDWALLS



PLAN

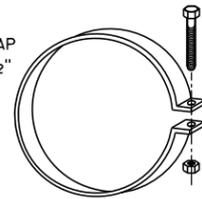


END VIEW

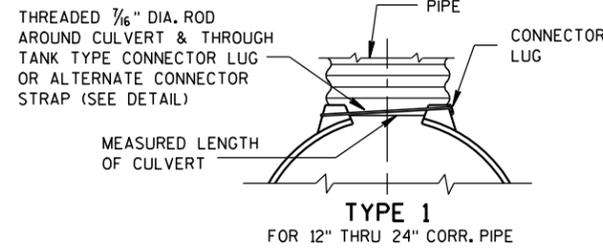


LONGITUDINAL SECTION
CONCRETE ENDWALLS

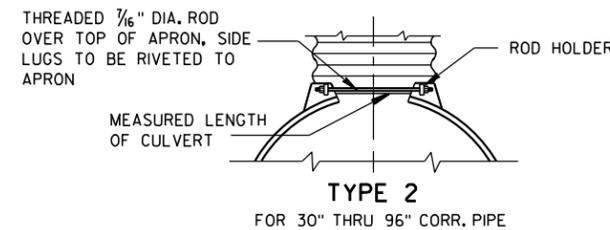
1" WIDE, 12 GA. (0.109" THICK) GALVANIZED STRAP WITH STANDARD 6" X 1/2" BAND BOLT AND NUT



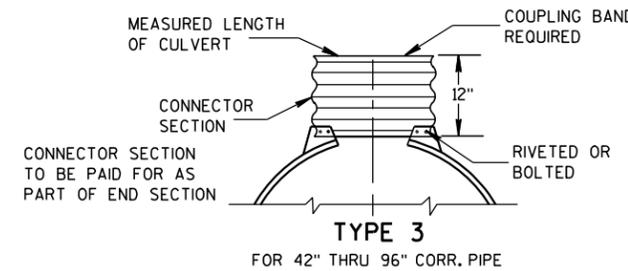
ALTERNATE FOR TYPE 1 CONNECTION
END SECTION CONNECTOR STRAP



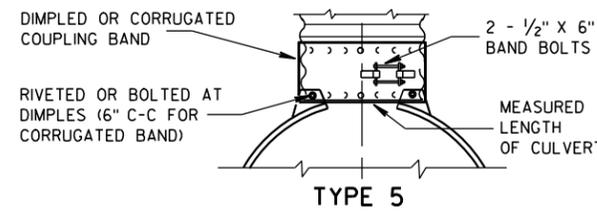
TYPE 1
FOR 12" THRU 24" CORR. PIPE



TYPE 2
FOR 30" THRU 96" CORR. PIPE



TYPE 3
FOR 42" THRU 96" CORR. PIPE



TYPE 5
ALTERNATE FOR:
ALL SIZES CORRUGATED CIRCULAR PIPE

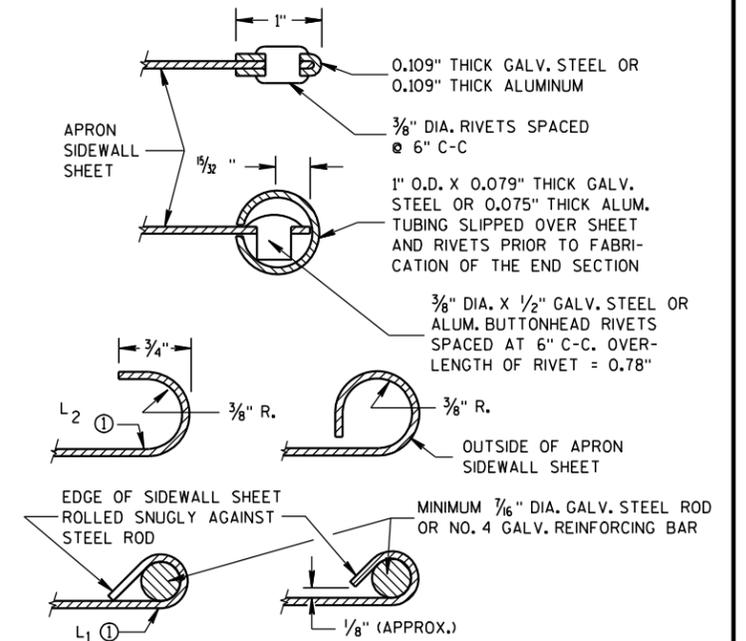
NOTE: DIMPLED BAND FITS OVER OUTSIDE OF ENDWALL, AND CORRUGATED BAND FITS INSIDE ENDWALL. DIMPLED BAND MAY BE USED WITH HELICALLY CORRUGATED PIPE.

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

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

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

CONNECTION DETAILS



SECTION A-A

GENERAL NOTES

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

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

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

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

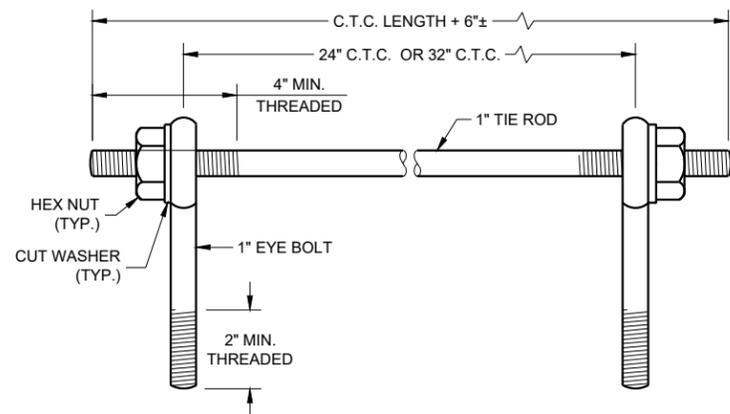
WHERE TWO OR MORE PIPES WITH APRON ENDWALLS ARE LAID ADJACENT TO EACH OTHER, THEY SHALL BE SEPARATED BY A DISTANCE SUFFICIENT TO PROVIDE A MINIMUM CLEARANCE OF 6 INCHES BETWEEN APRON ENDWALLS.

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

APRON ENDWALLS FOR
CULVERT PIPE

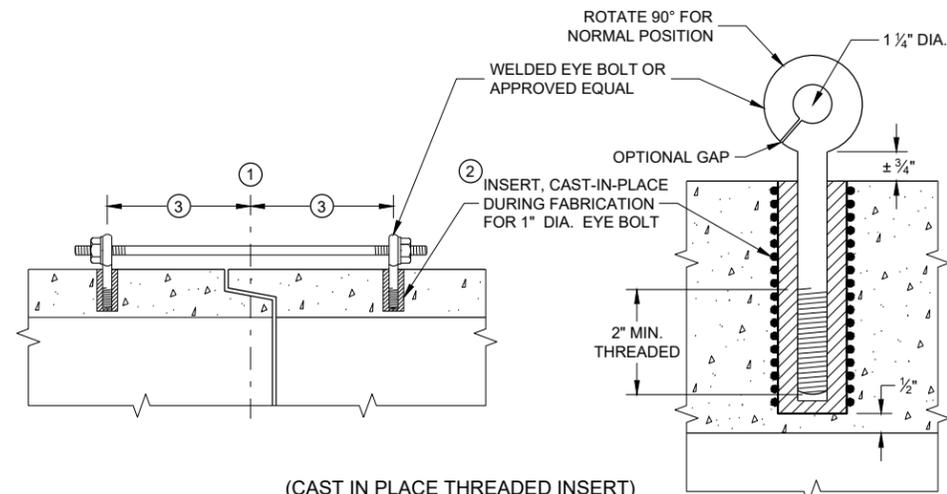
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
11/30/94 DATE /S/ Rory L. 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

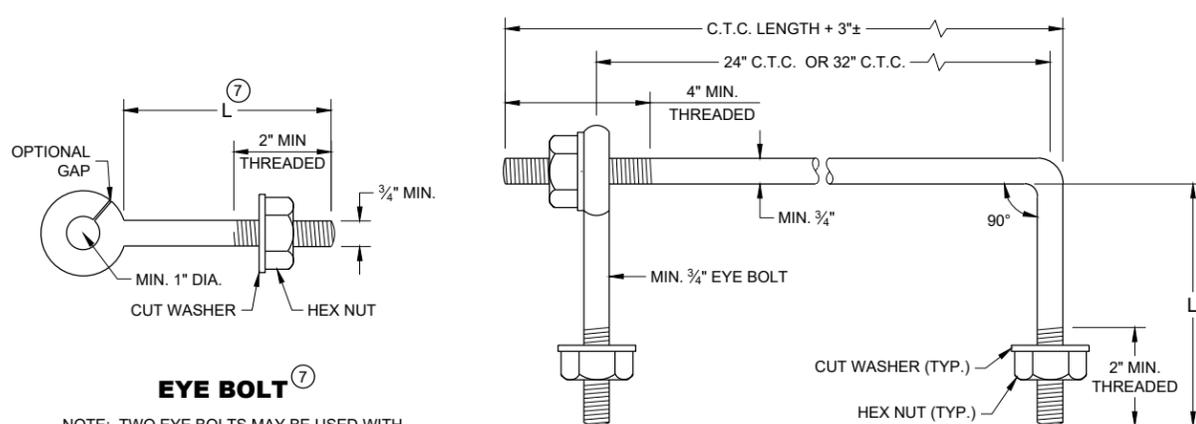
DETAILS OF CONSTRUCTION, MATERIALS, AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND APPLICABLE SPECIAL PROVISIONS.

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.

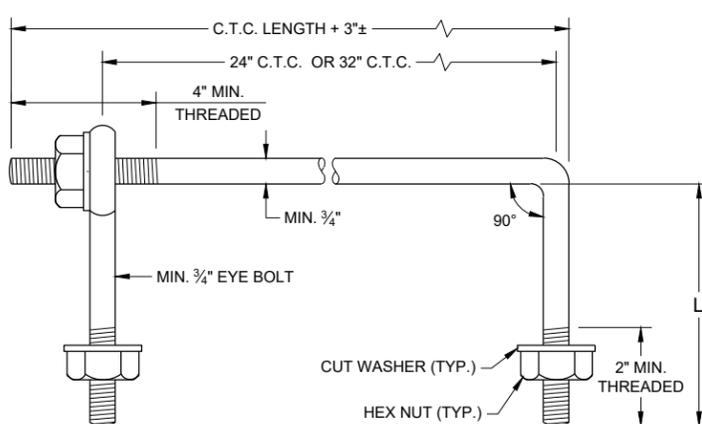
JOINT TIES TO BE HOT-DIP GALVANIZED PER ASTM A 153.

- 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.

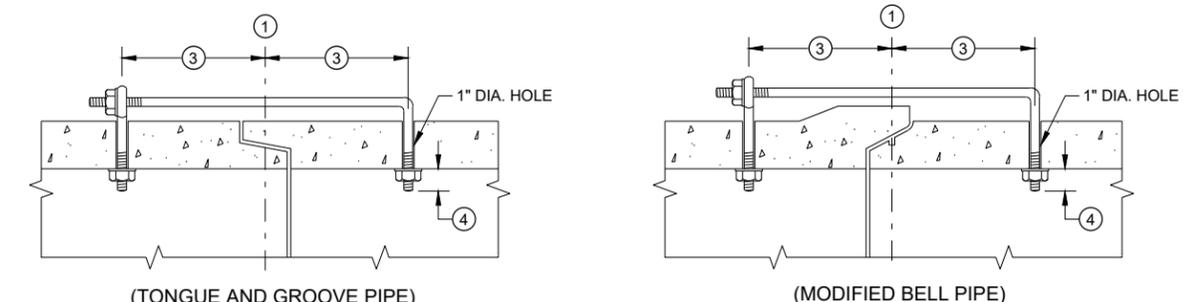


EYE BOLT ⑦

NOTE: TWO EYE BOLTS MAY BE USED WITH A 30\"/>



EYE BOLT AND TIE ROD



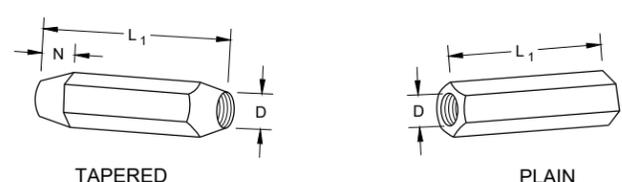
LONGITUDINAL SECTION
(JOINT TIES FOR 18\"/>

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

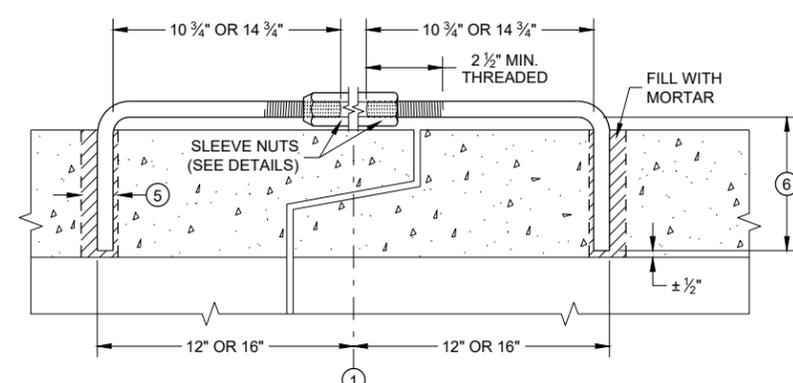
ADJUSTABLE TIE ROD TABLE

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 7/16

DIMENSIONS SHOWN ARE IN INCHES

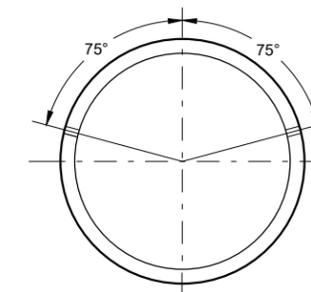


RIGHT AND LEFT THREADS SLEEVE NUTS



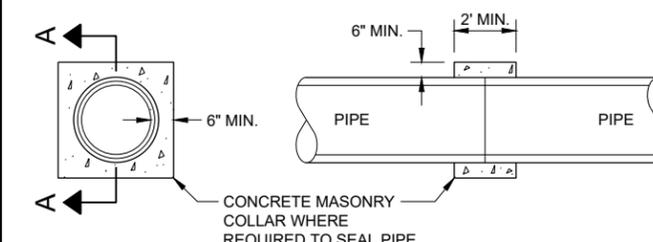
LONGITUDINAL SECTION

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



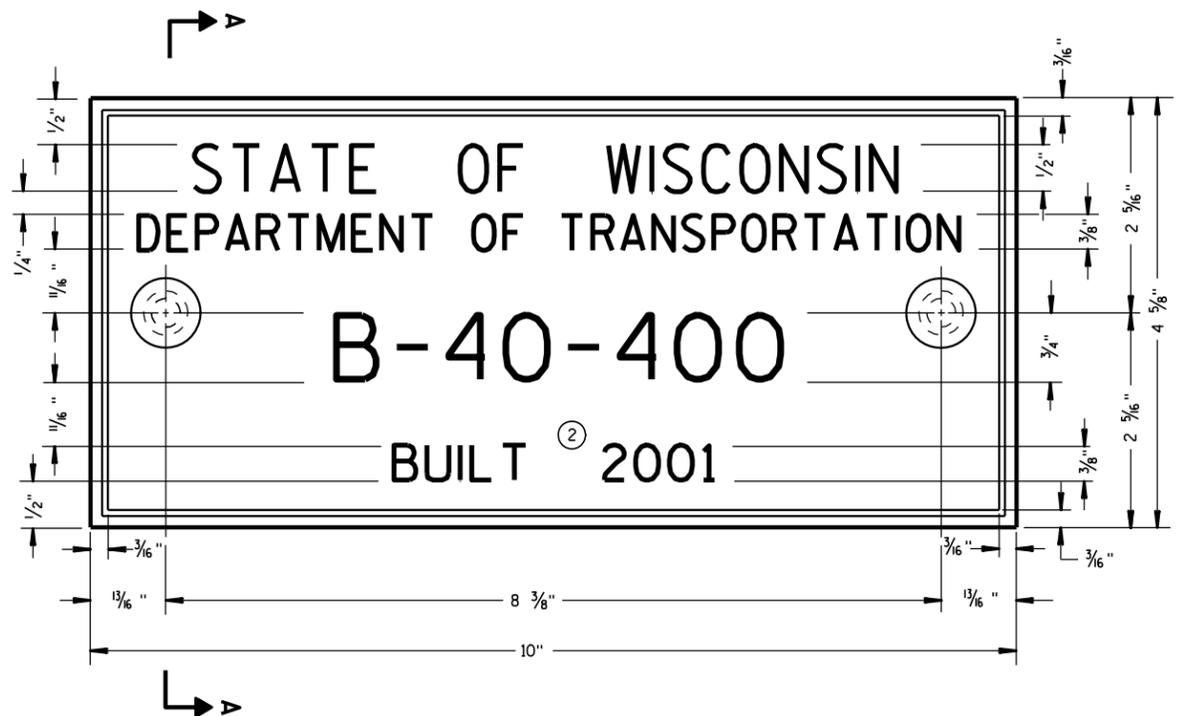
SECTION A - A
CONCRETE COLLAR DETAIL

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



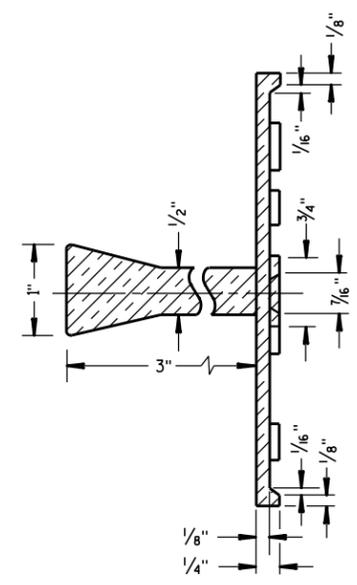
TYPICAL NAME PLATE
(BRIDGES, CULVERTS, AND RETAINING WALLS)

GENERAL NOTES

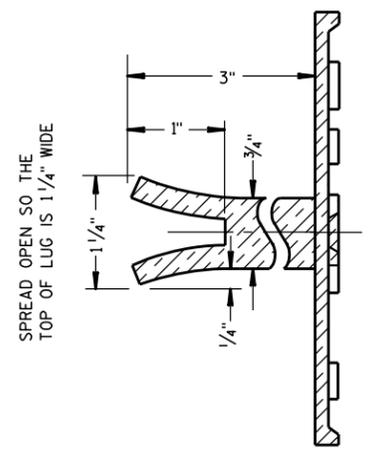
NAME PLATES TO BE INSTALLED ON BRIDGES, CULVERTS, AND RETAINING WALLS SHALL CONFORM TO THE REQUIREMENTS OF SECTION 502.3.11 OF THE STANDARD SPECIFICATIONS.

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

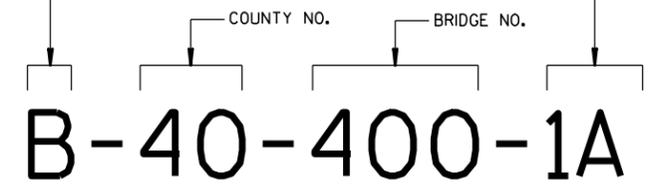
6

6

FOR MULTI-UNIT STRUCTURES
LINE 3 ABOVE SHALL READ

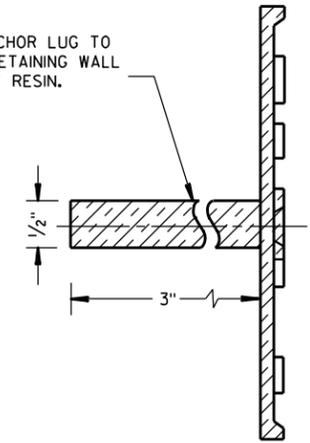
B = BRIDGE
C = CULVERT
R = RETAINING WALL

UNIT NO. FOR MULTIPLE
UNIT BRIDGE



**NUMBERING DESIGNATION
MULTI-UNIT STRUCTURES**

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

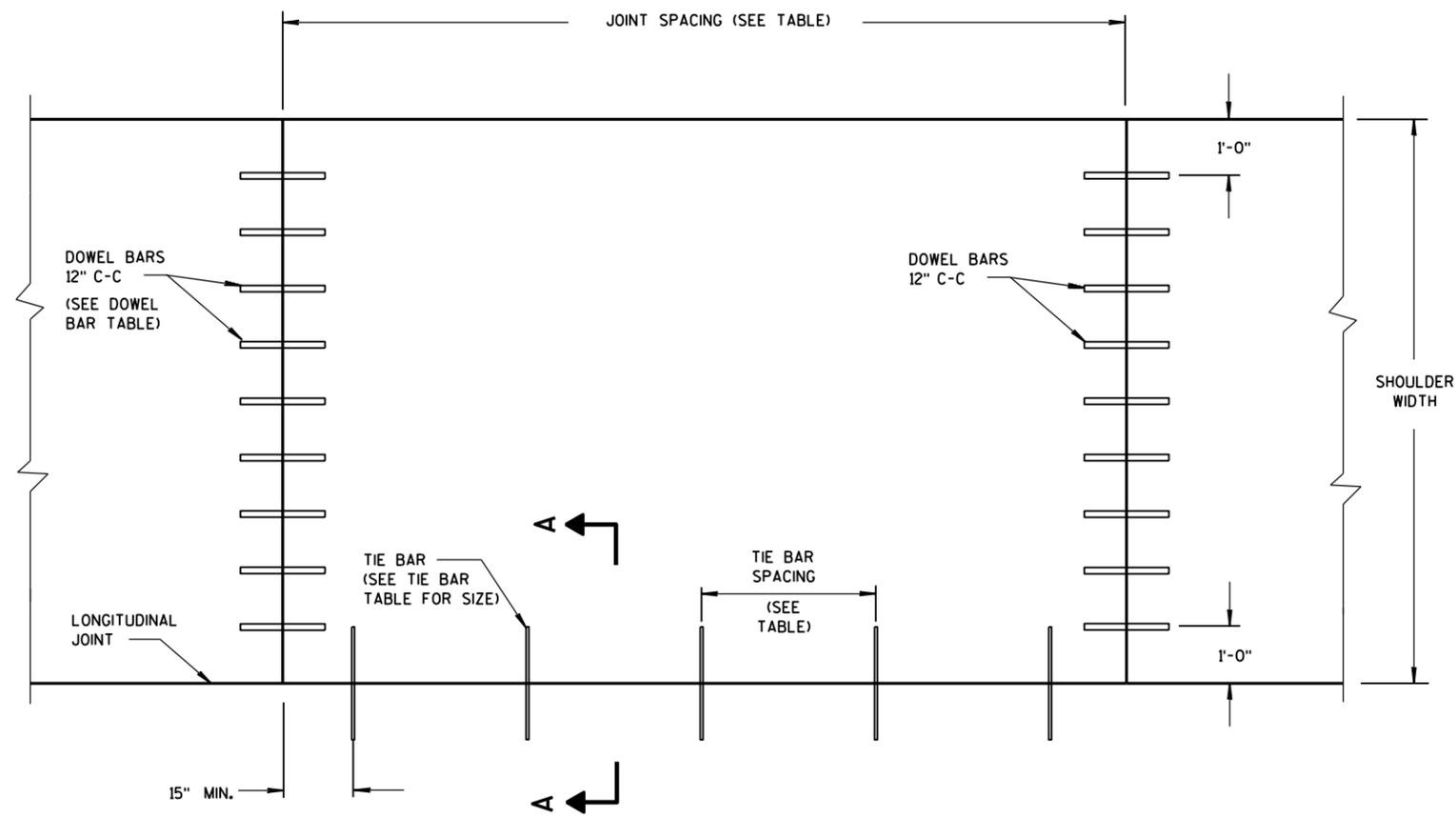


ALTERNATE LUG
(FOR ATTACHMENT TO PRECAST STRUCTURES)

S.D.D. 12 A 3-10

S.D.D. 12 A 3-10

NAME PLATE (STRUCTURES)	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED DATE 3/26/10	/S/ Scot Becker CHIEF STRUCTURAL DEVELOPMENT ENGINEER
FHWA	



PLAN VIEW
CONCRETE PAVEMENT SHOULDER

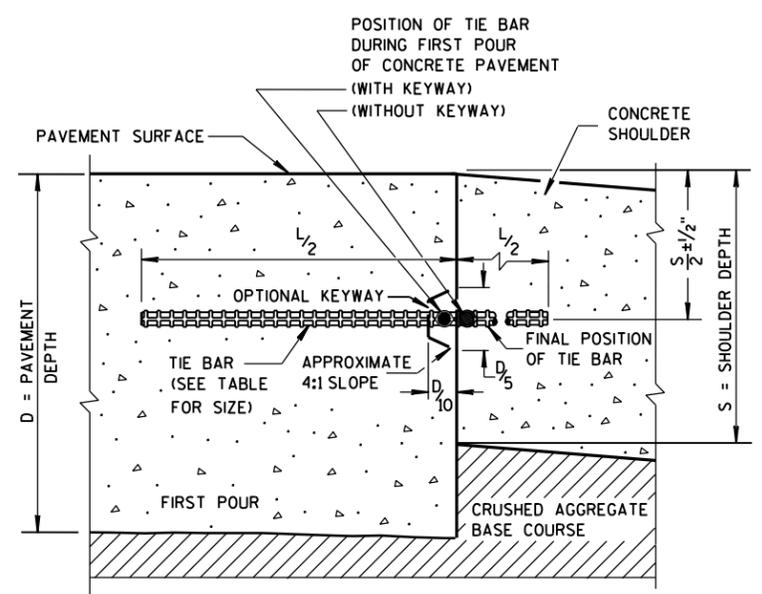
GENERAL NOTES

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.

TRANSVERSE JOINT DETAILS ARE SHOWN ELSEWHERE IN THE PLAN.

FINISH THE SHOULDER PAVEMENT CONFORMING TO SUBSECTION 415.3.8 OF THE STANDARD SPECIFICATIONS.

TIE BARS SHALL CONFORM TO SUBSECTION 505.2.4 OF THE STANDARD SPECIFICATIONS.



SECTION A-A
LONGITUDINAL CONSTRUCTION JOINT

TIE BAR TABLE

PAVEMENT DEPTH (D)	TIE BAR SIZE	TIE BAR LENGTH (L)	MAX. TIE BAR SPACING
< 10 1/2"	NO. 4	30"	36"
≥ 10 1/2"	NO. 5	36"	36"
	NO. 4*	30"	24" **

* SUBSTITUTE BENT BARS AT LONGITUDINAL JOINTS WHEN EQUIPMENT LIMITATIONS DURING CONSTRUCTION WARRANT (e.g. AUXILIARY LANES OR TURN LANES)

** CONFORM TO 15" MINIMUM SPACING FROM TRANSVERSE JOINTS; SPACING BETWEEN TIE BARS WILL BE 30" AT TRANSVERSE JOINTS.

PAVEMENT DEPTH, DOWEL BAR SIZE AND JOINT SPACING TABLE

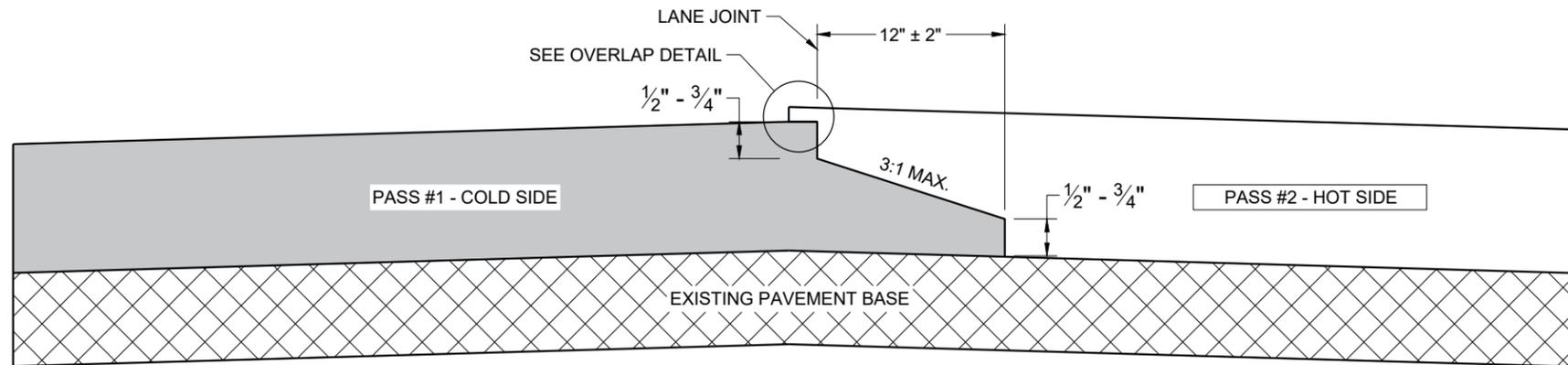
PAVEMENT DEPTH (D)	DOWEL BAR DIAMETER***	CONTRACTION JOINT SPACING
5 1/2", 6", 6 1/2"	NONE	12'
7", 7 1/2"	1"	14'
8", 8 1/2"	1 1/4"	15'
9", 9 1/2"	1 1/4"	15'
10" & ABOVE	1 1/2"	15'

*** FOR DOWELED CONCRETE SHOULDERS WITH TRAPEZOIDAL CROSS SECTIONS, CHOSE THE APPROPRIATE DOWEL BAR DIAMETER BASED ON THE SMALLER PAVEMENT DEPTH (LIKELY THE OUTSIDE EDGE OF THE SHOULDER). IF USING BASKETS, USE BASKETS FOR THE AVERAGE THICKNESS OF THE CROSS SECTION.

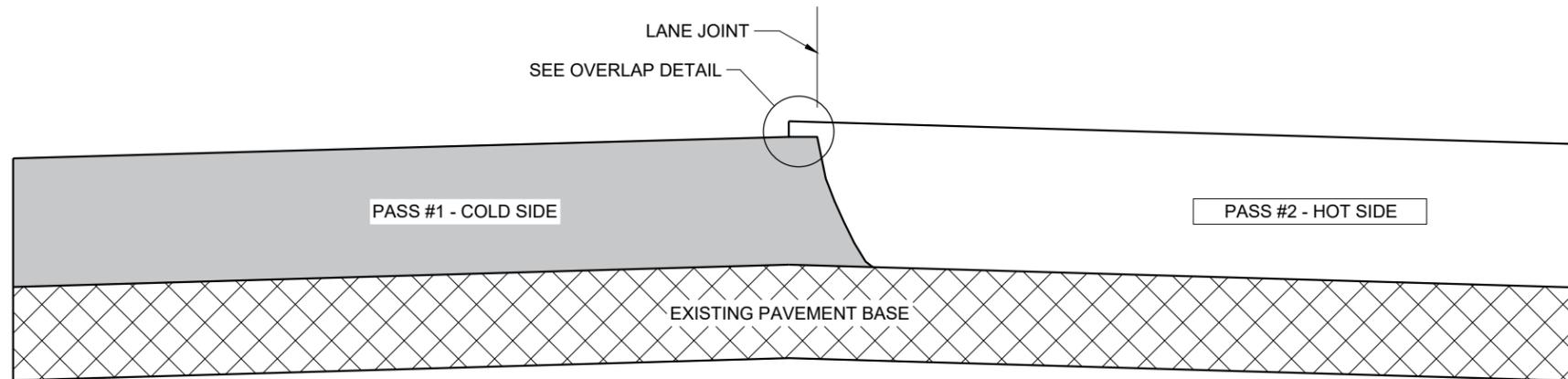
CONCRETE PAVEMENT SHOULDERS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

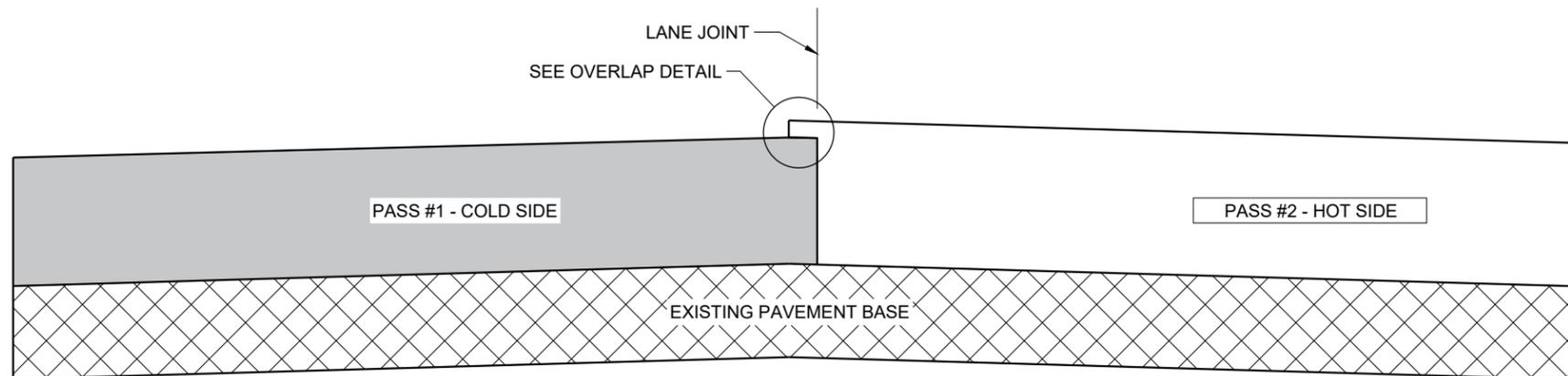
APPROVED
June, 2015 /S/ Peter Kemp, P.E.
DATE PAVEMENT SUPERVISOR
FHWA



**TYPICAL PAVEMENT CROSS SECTION
NOTCHED WEDGE JOINT**



**TYPICAL PAVEMENT CROSS SECTION
VERTICAL JOINT**



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

GENERAL NOTES

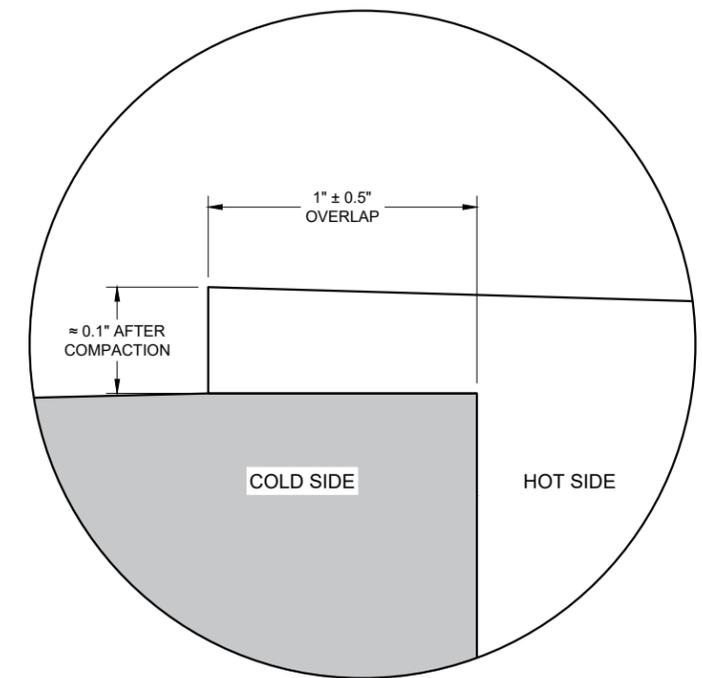
IN ADDITION TO THE DETAILS PROVIDED IN THIS DRAWING, CONFORM TO STANDARD SPECIFICATION 450.3.2.8 FOR WHEN A NOTCHED WEDGE JOINT IS REQUIRED AND FOR GENERAL JOINT CONSTRUCTION REQUIREMENTS.

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)

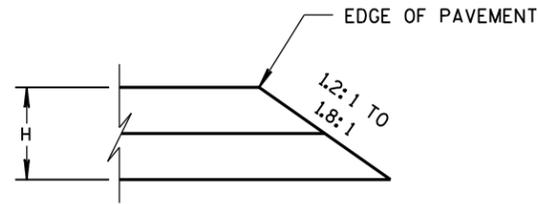
6

6

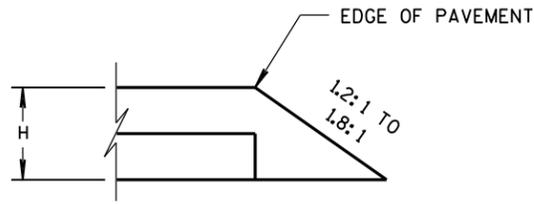
SDD 13C19 - 03

SDD 13C19 - 03

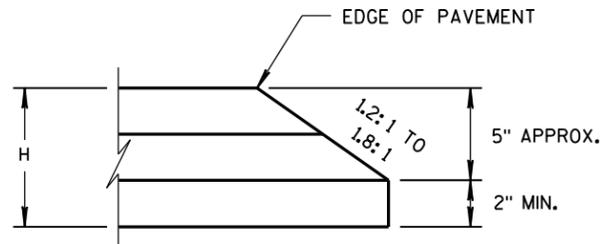
HMA LONGITUDINAL JOINTS	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED November 2020 DATE	/S/ Steven Hefel HMA PAVEMENT ENGINEER
FHWA	



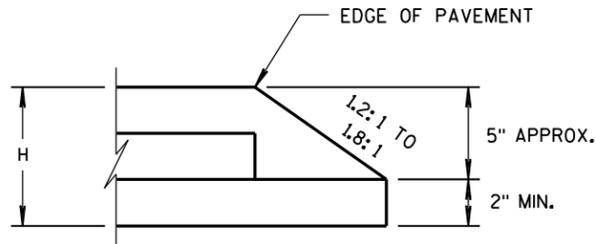
CONSTRUCTED WITH FINAL TWO LAYERS
FOR H 5" OR LESS



CONSTRUCTED WITH FINAL LAYER
FOR H 5" OR LESS

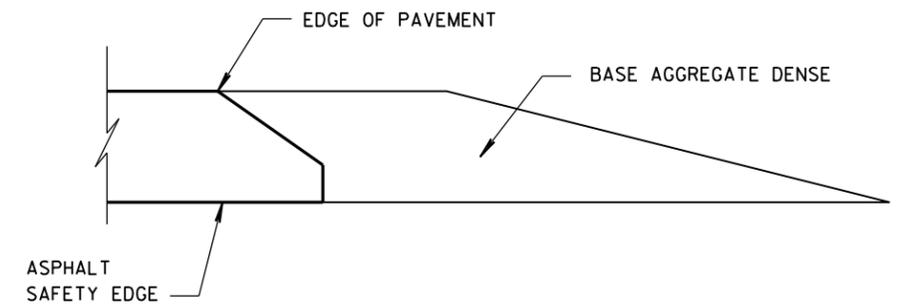


CONSTRUCTED WITH FINAL TWO LAYERS
FOR H GREATER THAN 5"



CONSTRUCTED WITH FINAL LAYER
FOR H GREATER THAN 5"

HMA PAVEMENT AND HMA OVERLAYS



FINISHED SHOULDER AGGREGATE PLACEMENT

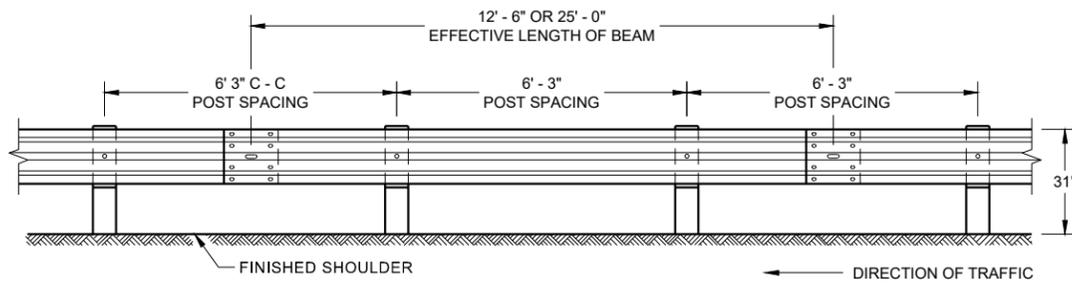
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6

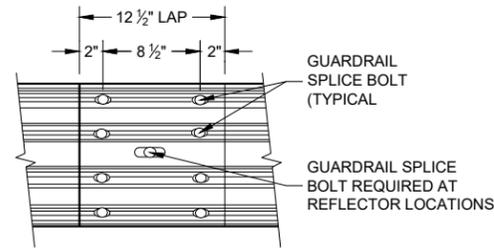
S.D.D. 14 B 29-1

S.D.D. 14 B 29-1

SAFETY EDGE _{SM}	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED DATE 11/30/2012	/s/ Jerry H. Zogg ROADWAY STANDARDS DEVELOPMENT ENGINEER
FHWA	



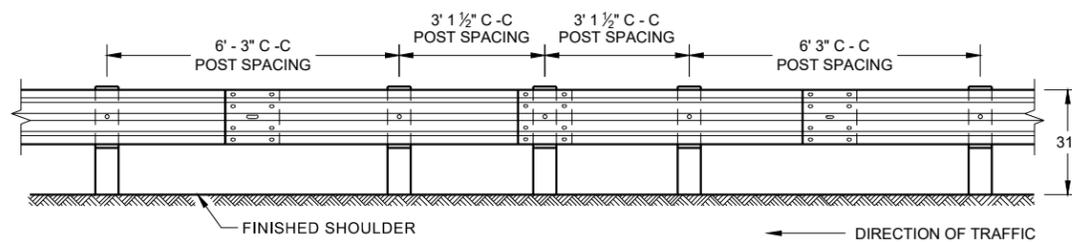
**FRONT VIEW
POST SPACING STANDARD INSTALLATION**



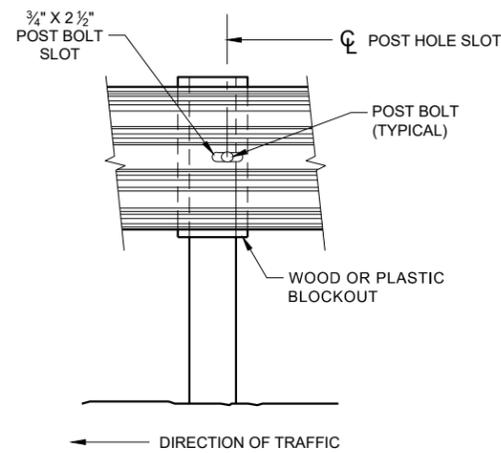
**FRONT VIEW
MID-SPAN BEAM SPLICE**

GENERAL NOTES

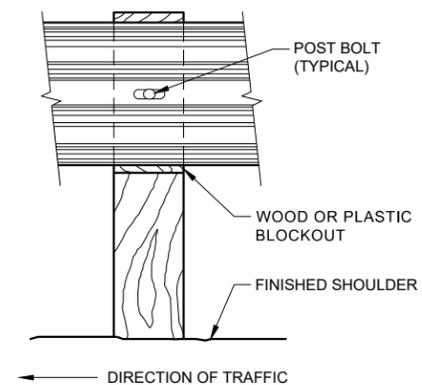
- ⑧ DO NOT INSTALL REFLECTORS ON THE FIRST 50 FEET OF THE APPROACH END OF THE ENERGY ABSORBING TERMINAL.
 - ⑨ 25 FEET OF HALF POST SPACING IS REQUIRED ON APPROACH AND DEPARTURE ENDS OF QUARTER POST SPACING.
- POST BOLTS ARE A 5/8" DIAMETER ASTM A307 GUARDRAIL BOLT. A POST BOLT REQUIRES 3/4" DIAMETER A563A DOUBLE RECESSED (DR) HEAVY HEX NUT AND 5/8" DIAMETER F844 FLAT WASHER. POST BOLTS MAY BE LONGER IF MULTIPLE BLOCKOUTS ARE BEING USED.
- GUARD RAIL SPLICE BOLTS ARE A 5/8" DIAMETER ASTM A307 GUARDRAIL HEAD BOLT. A GUARDRAIL SPLICE BOLT REQUIRES 3/4" DIAMETER A563A DOUBLE RECESSED (DR) HEAVY HEX NUT.



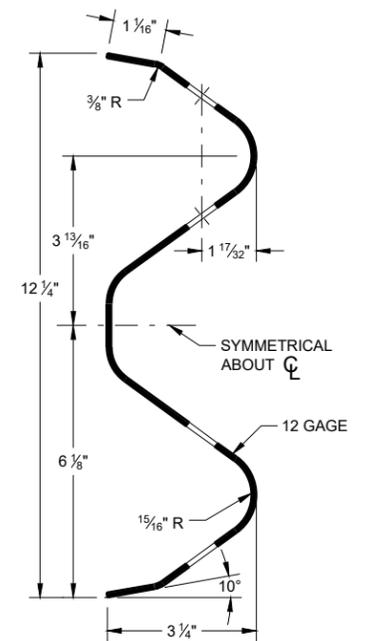
**FRONT VIEW
HALF POST SPACING (HS) AND
HALF POST SPACING WITH LONGER POSTS (K)**



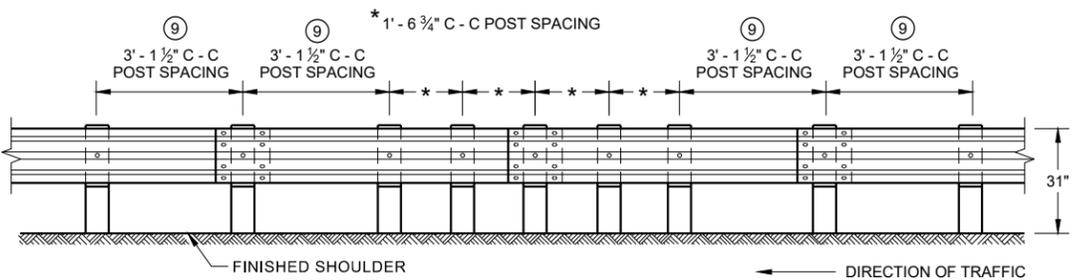
FRONT VIEW AT STEEL POST



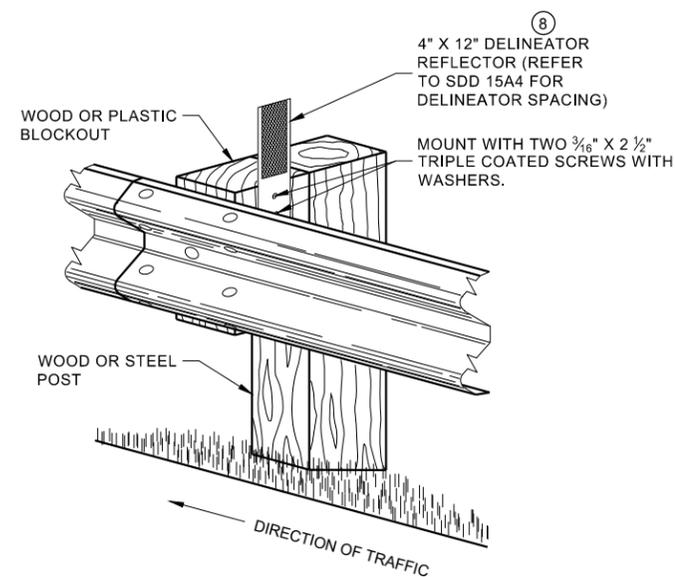
FRONT VIEW AT WOOD POST



SECTION THRU W-BEAM RAIL



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



**ONE SIDED REFLECTOR DETAIL
AND TYPICAL INSTALLATION**

**MIDWEST GUARDRAIL SYSTEM
(MGS) GUARDRAIL**

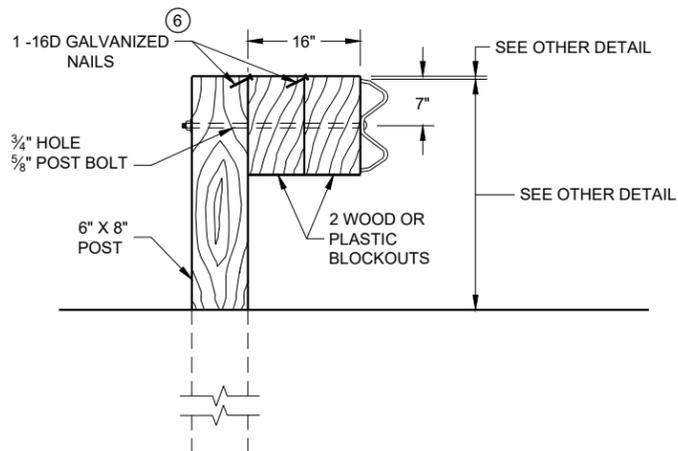
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

6

SDD 14B42 - 07b

SDD 14B42 - 07b

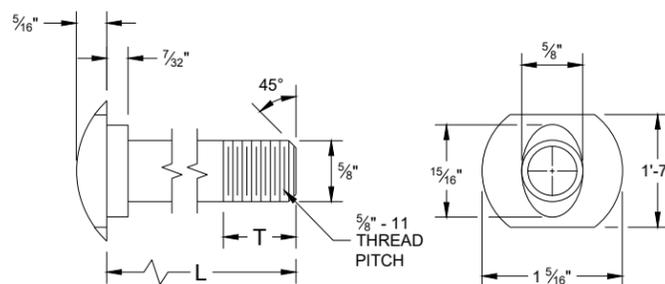


DETAIL FOR 16" BLOCKOUT DEPTH

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

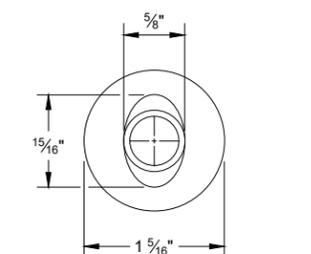
NOTE:

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

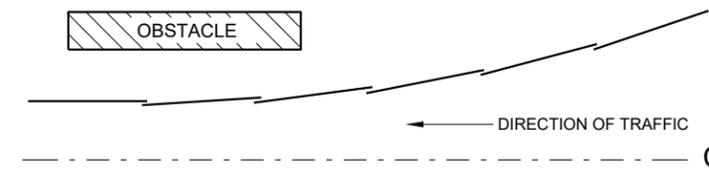


POST BOLT TABLE

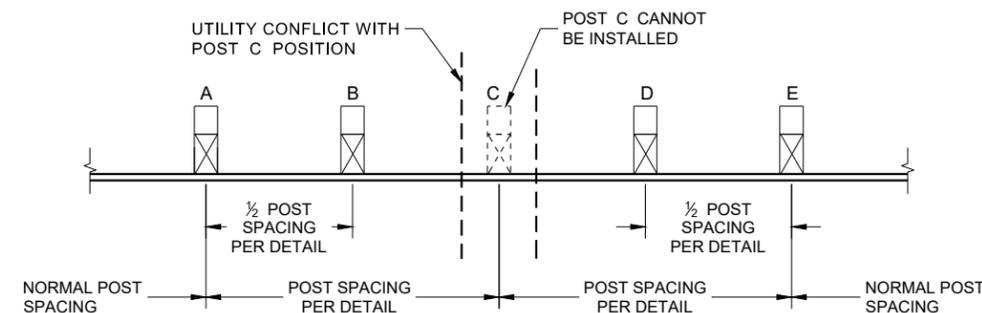
L	T (MIN.)
1 1/4"	1 1/8"
2"	1 3/4"
10"	4"
14"	4 1/16"
18"	4"
21"	4 1/16"
25"	4"



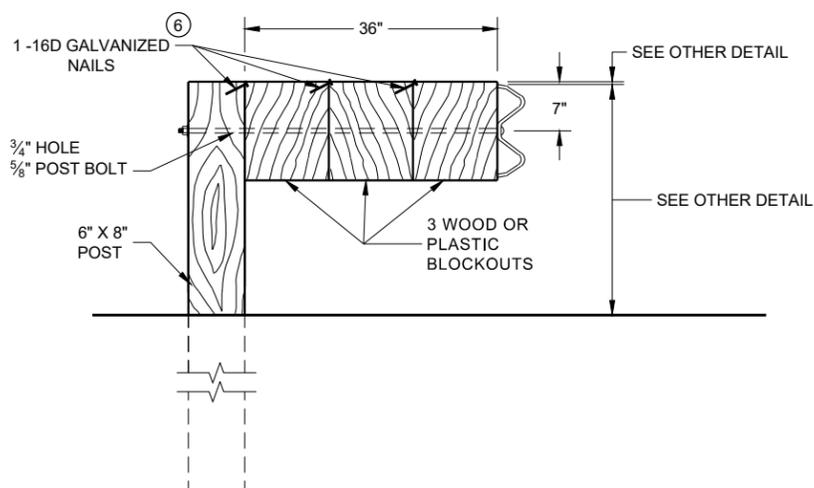
ALTERNATE BOLT HEAD



**PLAN VIEW
BEAM LAPPING DETAIL**

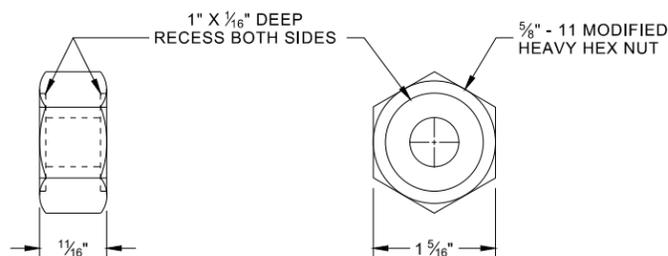


**POST DRIVING FOR CONTINUOUS
UNDERGROUND OBSTRUCTION**

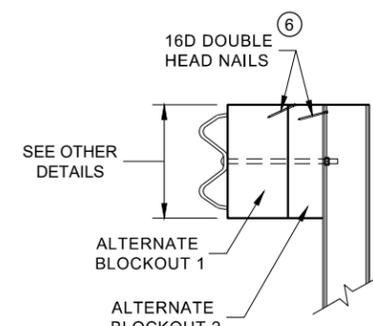


DETAIL FOR 36" BLOCKOUT DEPTH

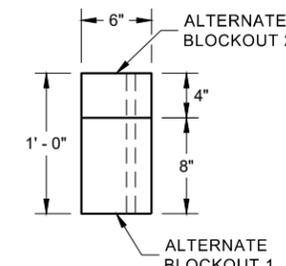
NOTES: UNDER SPECIAL CIRCUMSTANCES, SUCH AS AVOIDING OBSTACLES THAT ARE NOT RELOCATED, IT IS ACCEPTABLE TO INSTALL ADDITIONAL BLOCKOUTS TO OBTAIN UP TO 36" DEPTH FOR ONE OR TWO POSTS IN A SECTION OF GUARDRAIL.
DO NOT USE 16" OR 36" BLOCKOUTS IF IT CAUSES THE POST TO BE DRIVEN BEYOND SHOULDER HINGE POINT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



**POST BOLT, SPLICE BOLT
AND RECESS NUT**



SIDE VIEW



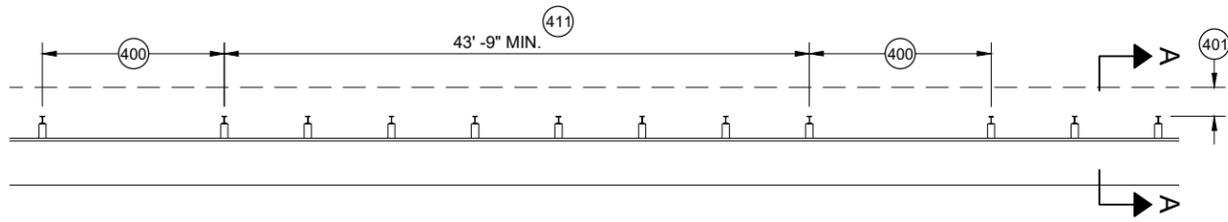
PLAN VIEW

**ALTERNATE WOOD
BLOCKOUT DETAIL**

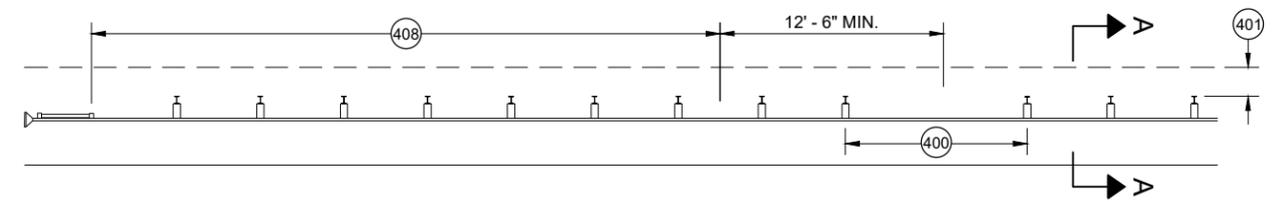
6 WHEN USING STEEL POST AND WOOD BLOCKOUTS, INSTALL FOUR 16D GALVANIZED NAILS. INSTALL NAILS AT THE BACK CORNERS OF THE BLOCK AND BEND THE NAILS OVER THE FLANGE OF THE STEEL POST.

**MIDWEST GUARDRAIL SYSTEM
(MGS) GUARDRAIL**

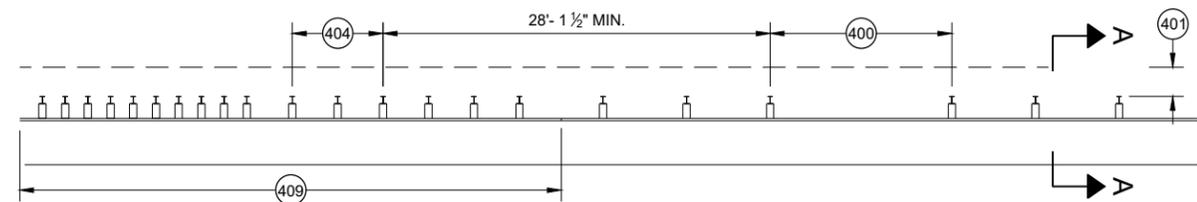
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



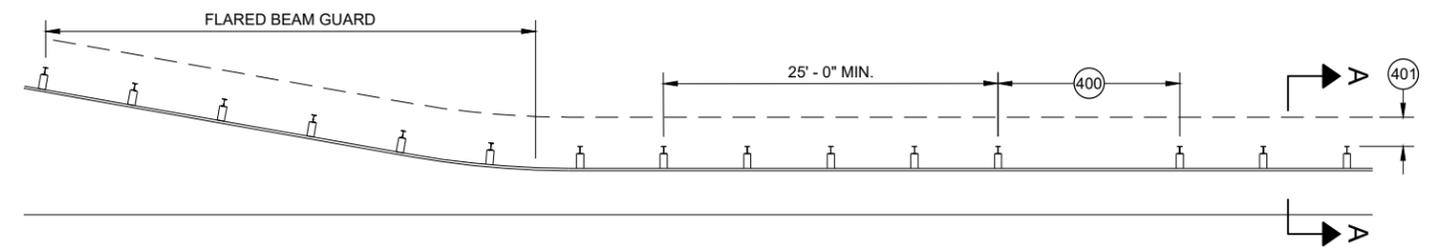
MISSING POST IN MGS GUARDRAIL



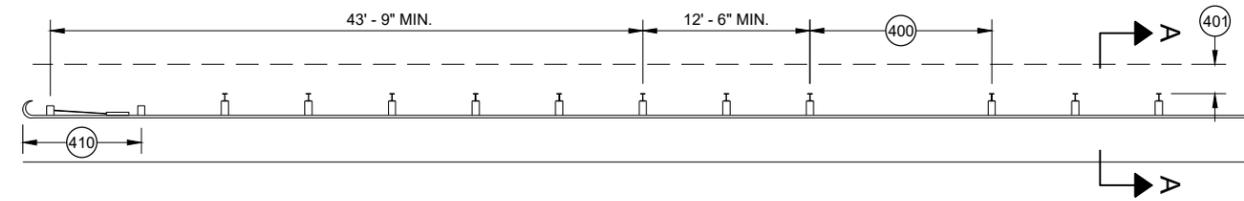
MISSING POST IN MGS GUARDRAIL NEAR EAT



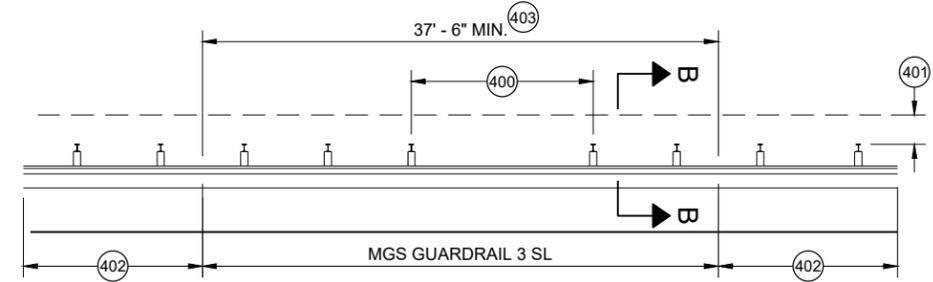
MISSING POST IN MGS GUARDRAIL NEAR AN APPROACH TRANSITION



MISSING POST IN MGS GUARDRAIL NEAR FLARED BEAM GUARD

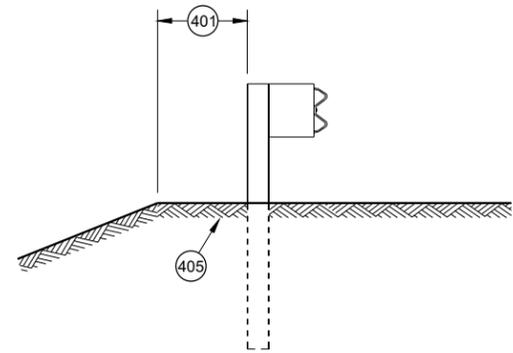


MISSING POST IN MGS GUARDRAIL NEAR A TYPE 2 END TERMINAL

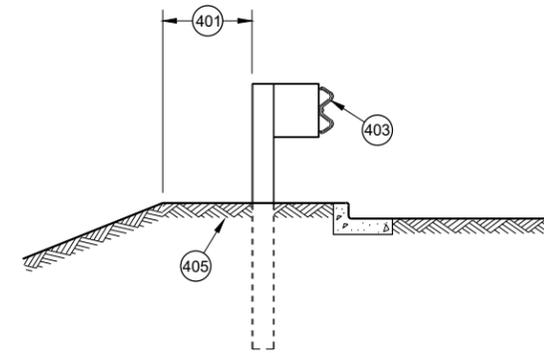


MISSING POST IN SHORT SPAN MGS GUARDRAIL NEAR CURB (SL)

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



SECTION A - A



SECTION B - B

MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED May 2021 DATE	/S/ Rodney Taylor ROADWAY STANDARDS DEVELOPMENT UNIT SUPERVISOR
<small>FHWA</small>	

GENERAL NOTES

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

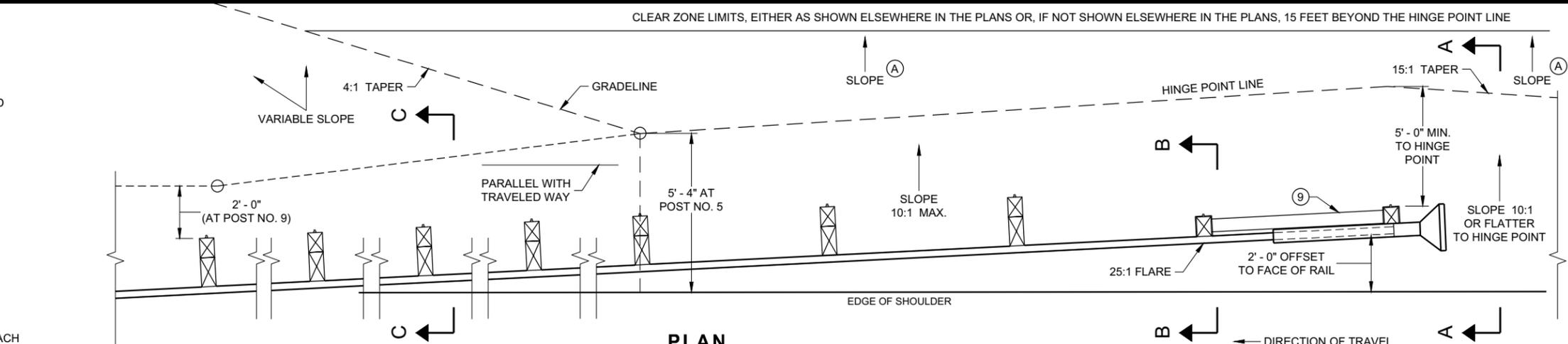
SEE SDD 14B42 FOR MORE INFORMATION.

* DO NOT ATTACH BLOCKOUTS TO POST 1 AND 2.

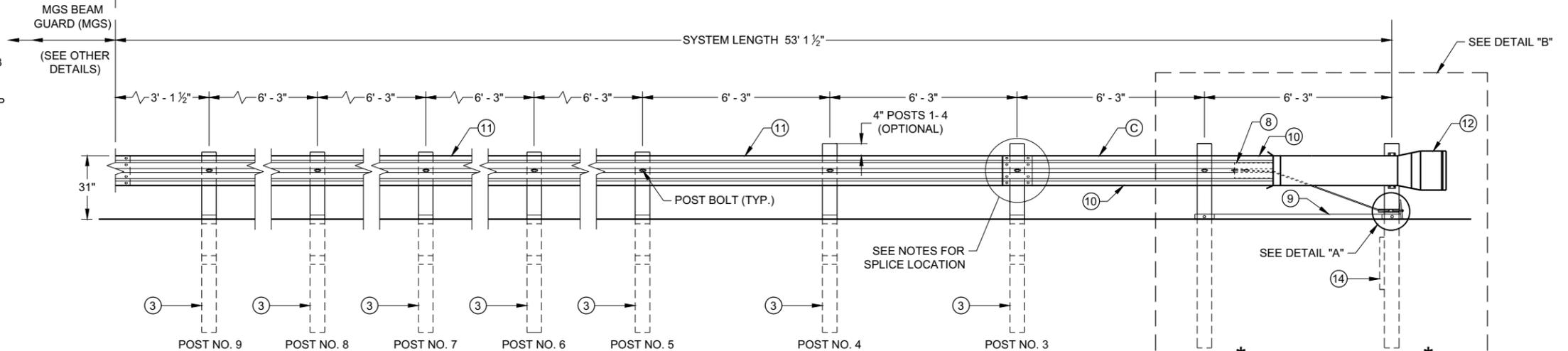
DO NOT INSTALL REFLECTORS ON THE FIRST 50 FEET OF THE APPROACH END OF THE ENERGY ABSORBING TERMINAL.

SEE MANUFACTURER'S DRAWING FOR SPLICE LOCATION, HARDWARE DIMENSIONS AND INSTALLATION INSTRUCTIONS.

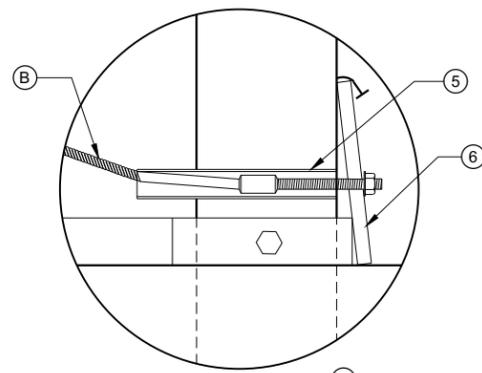
THE CENTER OF THE UPPER 3 1/2" DIAMETER HOLE ON POST NUMBER 3 THROUGH POST 9 IS TO BE FLUSH WITH THE GROUND LINE UP TO A MAXIMUM OF 2" ABOVE GROUND LINE. WOOD BLOCKS ON POSTS NUMBERED 3 THROUGH 9 MAY BE ADJUSTED UP TO 3" ABOVE THE TOP OF POST.



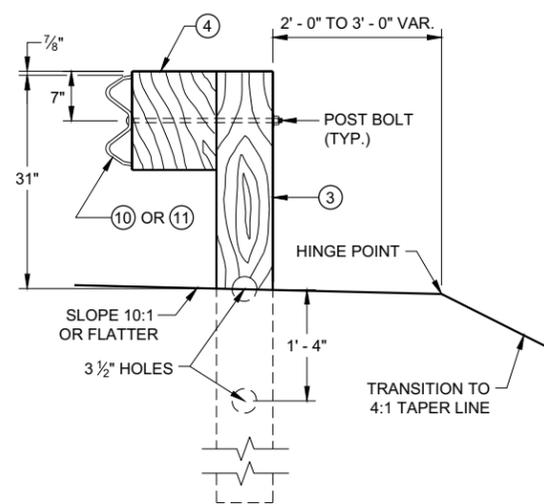
PLAN



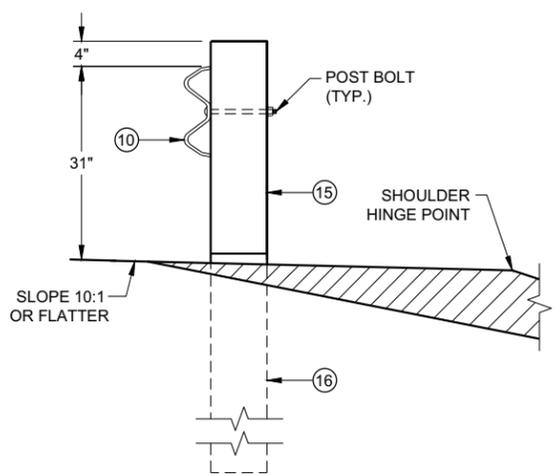
ELEVATION



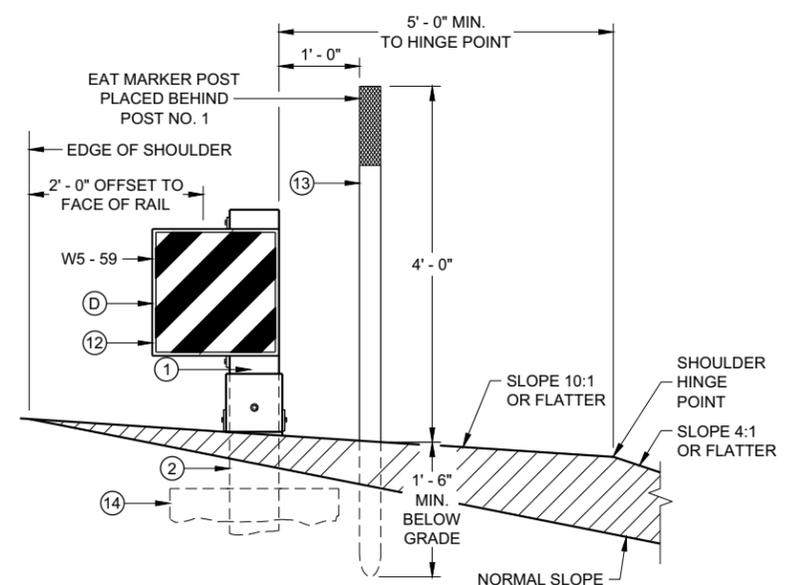
DETAIL "A"



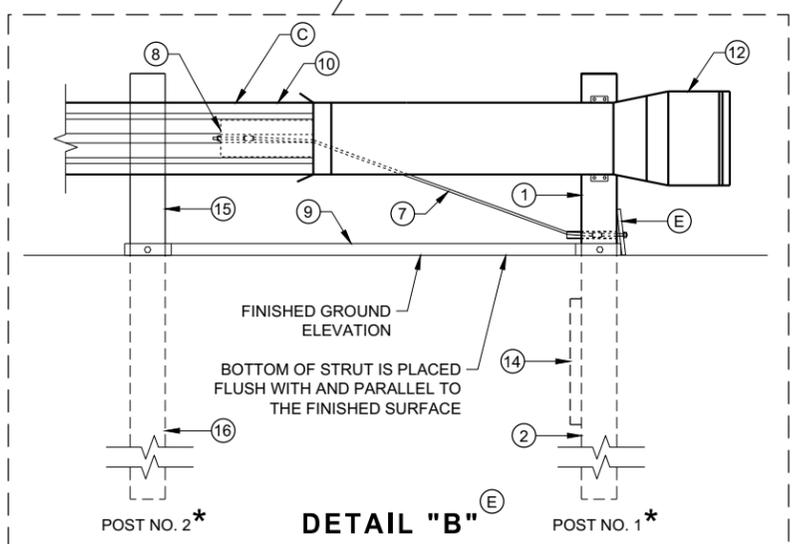
**SECTION C - C
TYPICAL AT POST NOS. 3 - 9**



**SECTION B - B
TYPICAL AT POST NO. 2***



**SECTION A - A
TYPICAL AT POST NO. 1***



DETAIL "B"

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

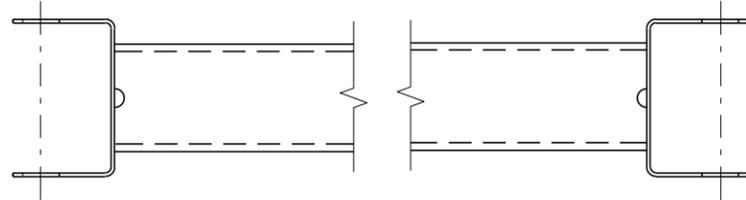
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SDD 14B44 - 04a

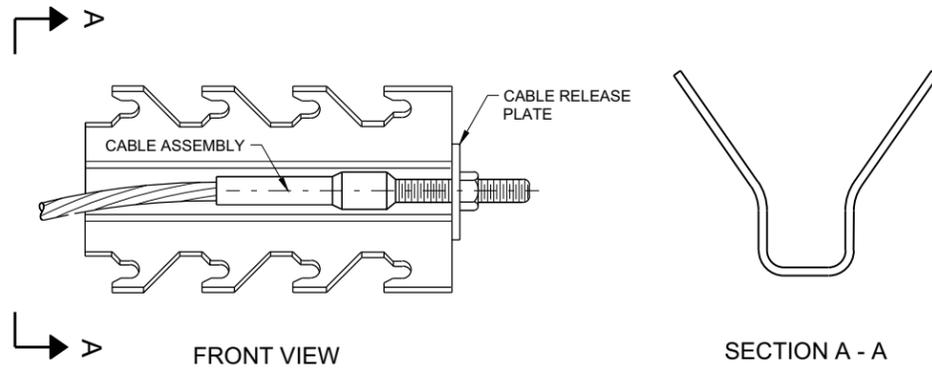
SDD 14B44 - 04a

BILL OF MATERIALS

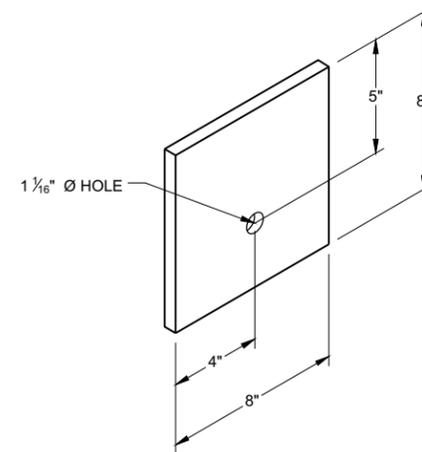
PART NO.	DESCRIPTION MATERIALS PROVIDED BY MGS EAT MANUFACTURER. SEE MANUFACTURER'S DETAILS FOR MORE INFORMATION.
①	UPPER POST NO. 1 6" X 6" TUBE
②	LOWER POST NO. 1
③	WOOD CRT
④	WOOD BLOCKOUT
⑤	PIPE SLEEVE
⑥	BEARING PLATE
⑦	BCT CABLE ASSEMBLY
⑧	ANCHOR CABLE BOX
⑨	GROUND STRUT
⑩	PERFORATED W-BEAM RAIL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



GENERIC GROUND STRUT ⑨ ⑤



GENERIC ANCHOR CABLE BOX ⑨ ⑤



BEARING PLATE ⑥ ⑤

6

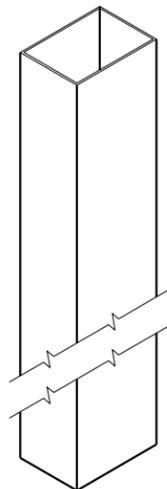
6

SDD 14B44 - 04b

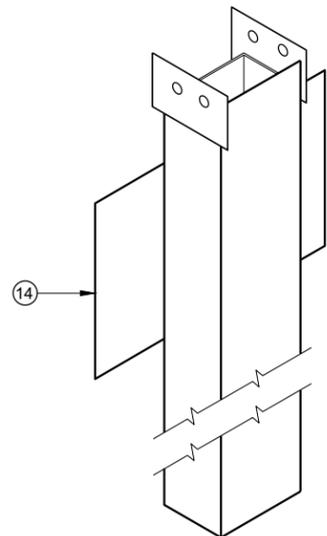
SDD 14B44 - 04b

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

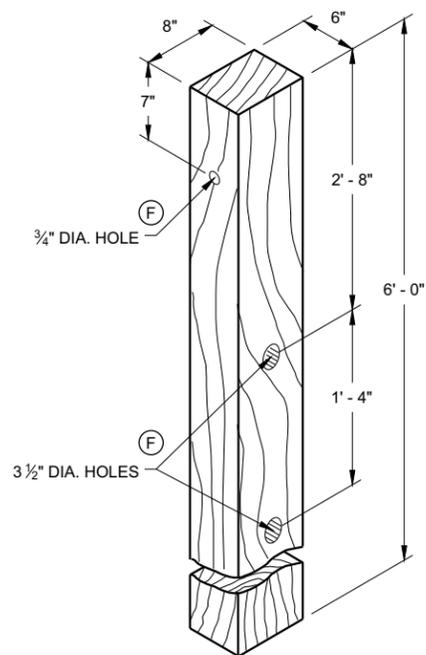
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



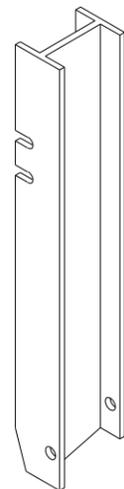
UPPER POST NO. 1 ⁽¹⁾ (E)



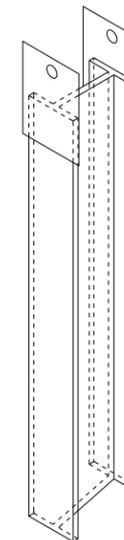
LOWER POST NO. 1 ⁽²⁾ (E)



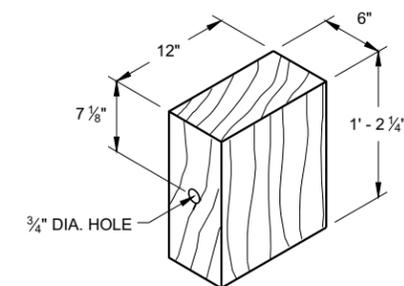
WOOD CRT POST ⁽³⁾ (E)
POSTS NUMBER 3-9



UPPER POST NO. 2 ⁽¹⁵⁾ (E)

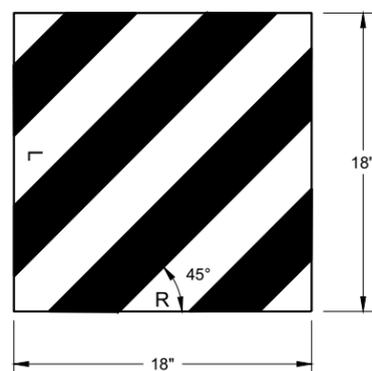


LOWER POST NO. 2 ⁽¹⁶⁾ (E)



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

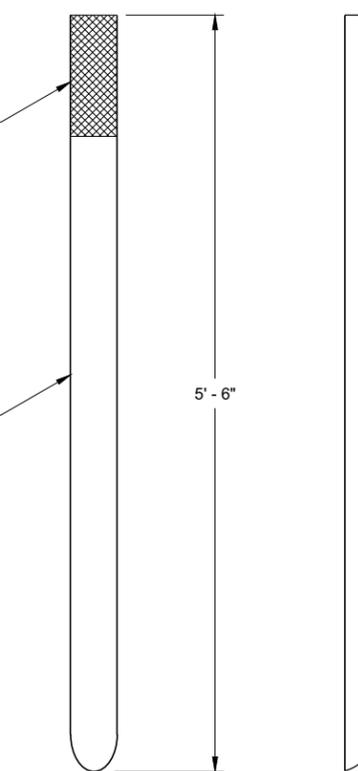
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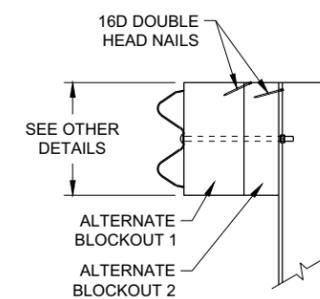
W5 - 59
REFLECTIVE SHEETING DETAIL ^(E)

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

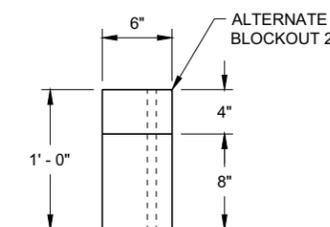
E.A.T. MARKER
POST (YELLOW)



FRONT VIEW SIDE VIEW
E.A.T. MARKER POST ⁽¹³⁾



SIDE VIEW



TOP VIEW

ALTERNATE WOOD
BLOCKOUT DETAIL

6

SDD 14B44 - 04c

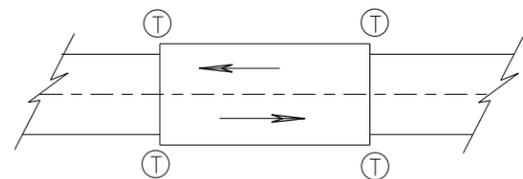
SDD 14B44 - 04c

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

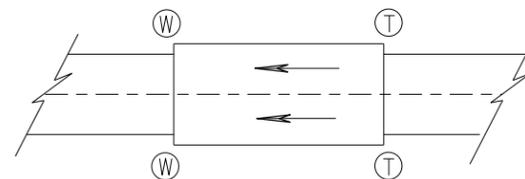
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

FHWA



TWO WAY TRAFFIC



ONE WAY TRAFFIC

(T) THRIE BEAM CONNECTION

(W) W-BEAM CONNECTION WHEN REQUIRED

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

GENERAL NOTES

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

TRANSITION USES STEEL POSTS ONLY.

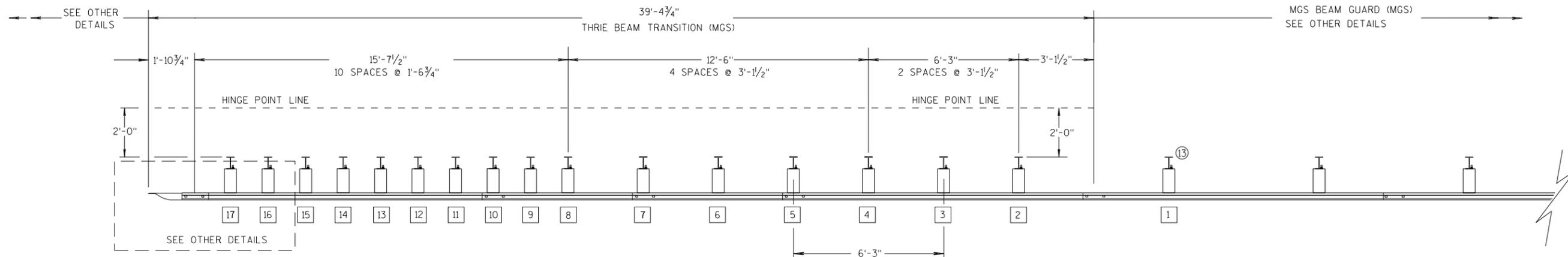
SEE STANDARD DETAIL DRAWING 14 B 42 FOR MORE INFORMATION.

POST 2 THROUGH 17 USES STEEL POST ONLY

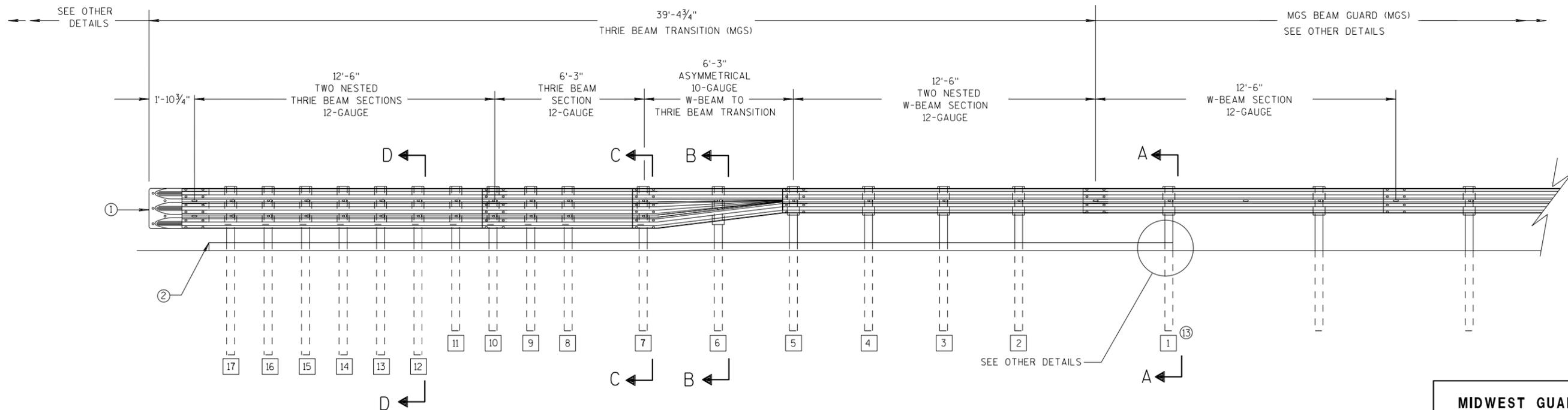
① BRIDGE RAILING TYPE "W" DOES NOT REQUIRE A TERMINAL CONNECTOR.

② OPTIONAL CURB AND GUTTER OR DRAINAGE FEATURE SEE PLAN FOR INFORMATION.

⑬ STEEL OR WOOD POST IS ACCEPTABLE AT POST 1. SEE SDD14B42



PLAN VIEW



ELEVATION VIEW

MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

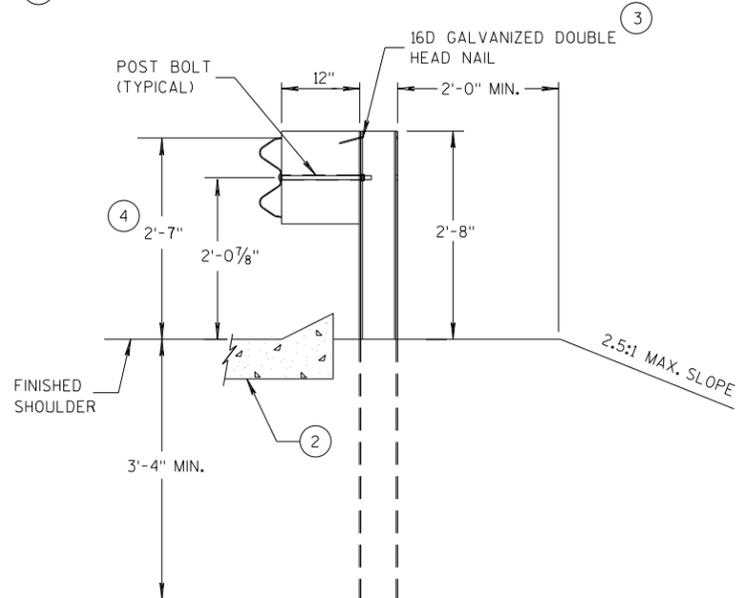
6

S.D.D. 14 B 45-5a

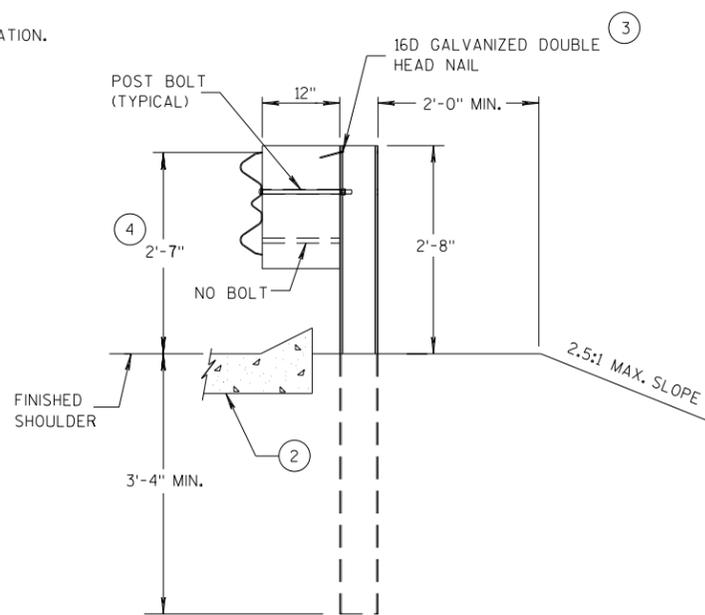
S.D.D. 14 B 45-5a

GENERAL NOTES

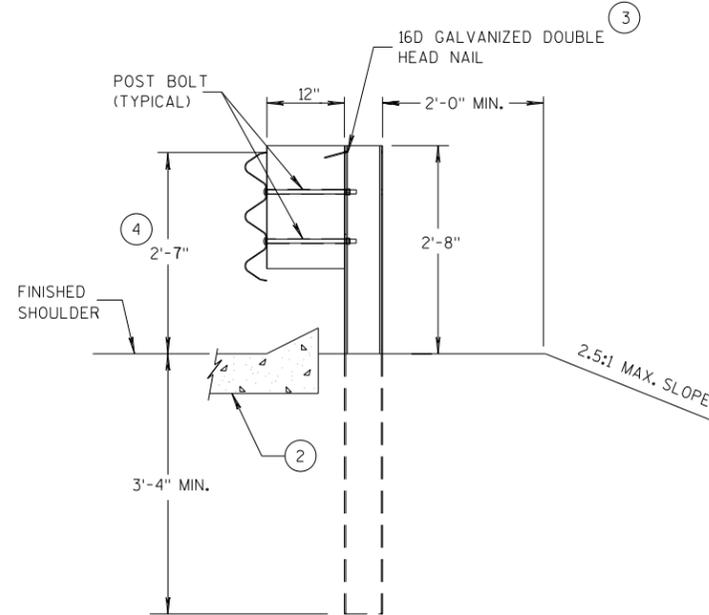
- ② OPTIONAL CURB AND GUTTER OR DRAINAGE FEATURE SEE PLAN FOR INFORMATION.
- ③ WHEN USING STEEL POSTS AND WOOD BLOCKOUTS INSTALL FOUR 10D GALVANIZED NAILS. INSTALL NAILS AT THE BACK CORNERS OF THE BLOCK AND BEND THE NAILS OVER THE FLANGE OF THE STEEL POST.
- ④ TOLERANCE FOR TOP OF W-BEAM RAIL IS ± 1".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



**SECTION A-A
POSTS 1-5**



**SECTION B-B
POST 6**



**SECTION C-C
POSTS 7-11**

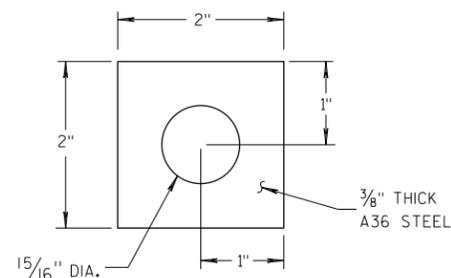
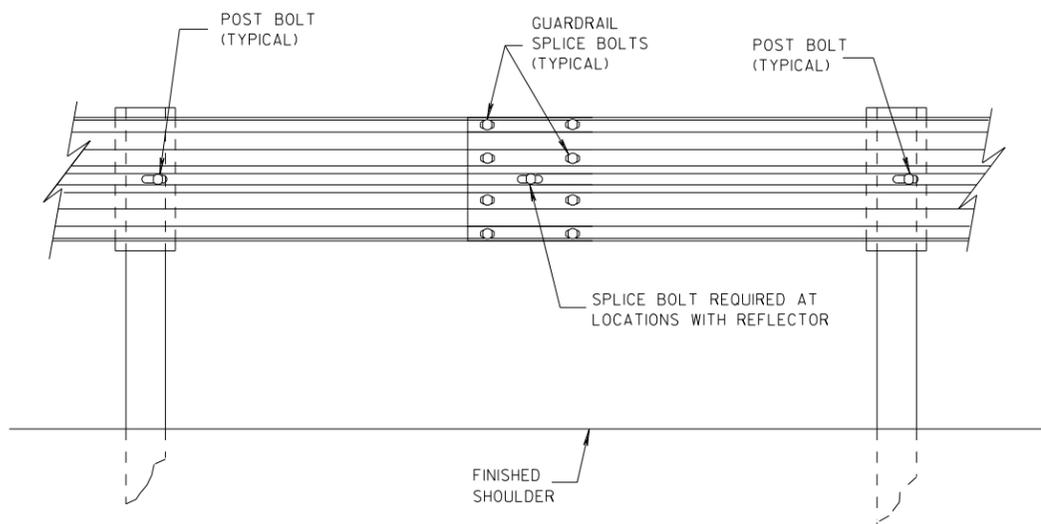
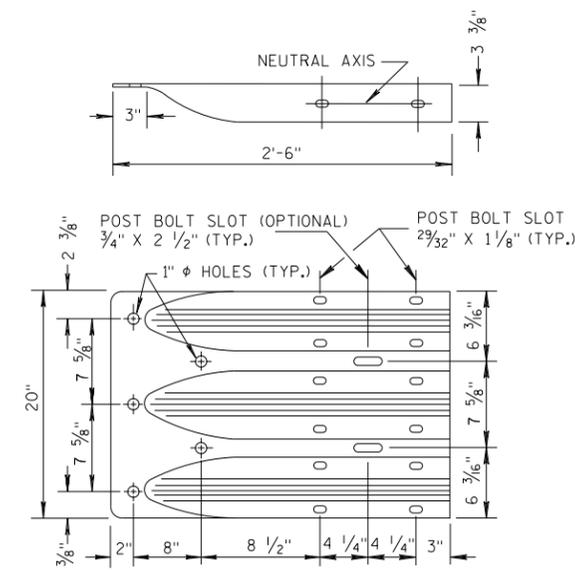


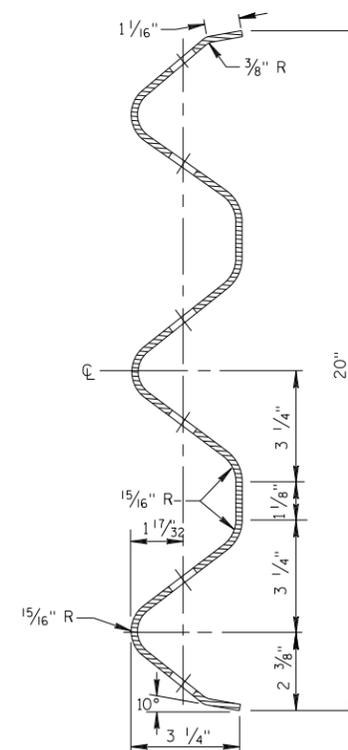
PLATE WASHER DETAIL



SPLICE DETAIL



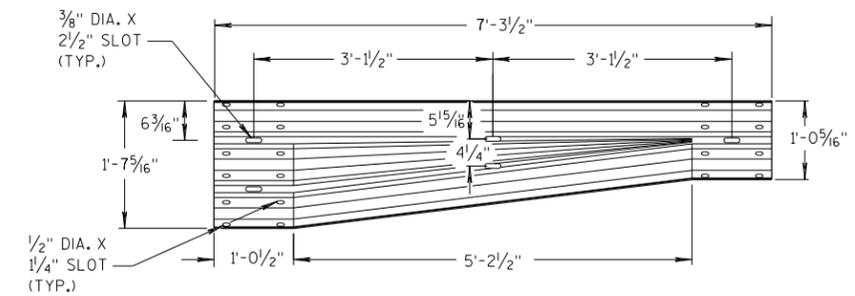
**THRIE BEAM
TERMINAL CONNECTOR**



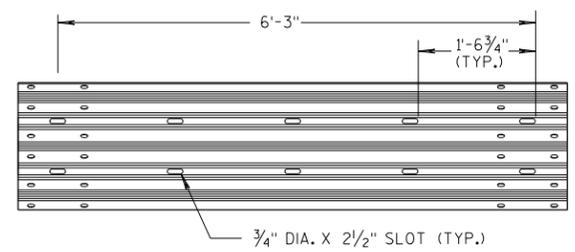
**SECTION THRU THRIE
BEAM RAIL ELEMENT**

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

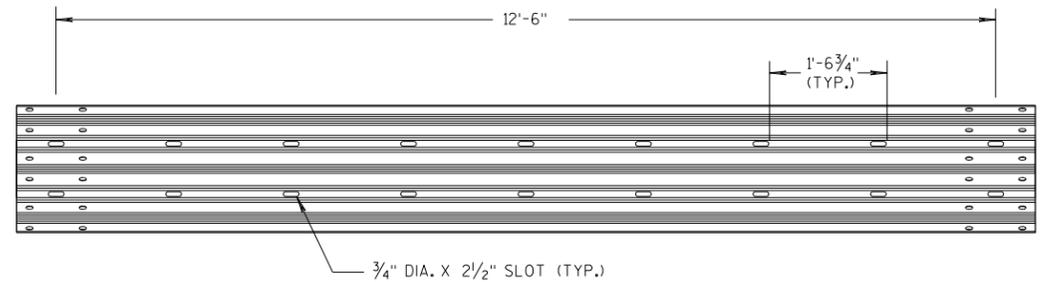
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



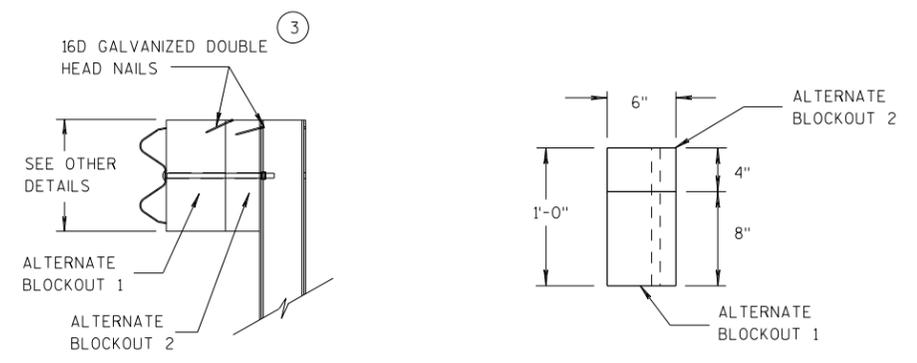
W-BEAM TO THRIE BEAM TRANSITION SECTION



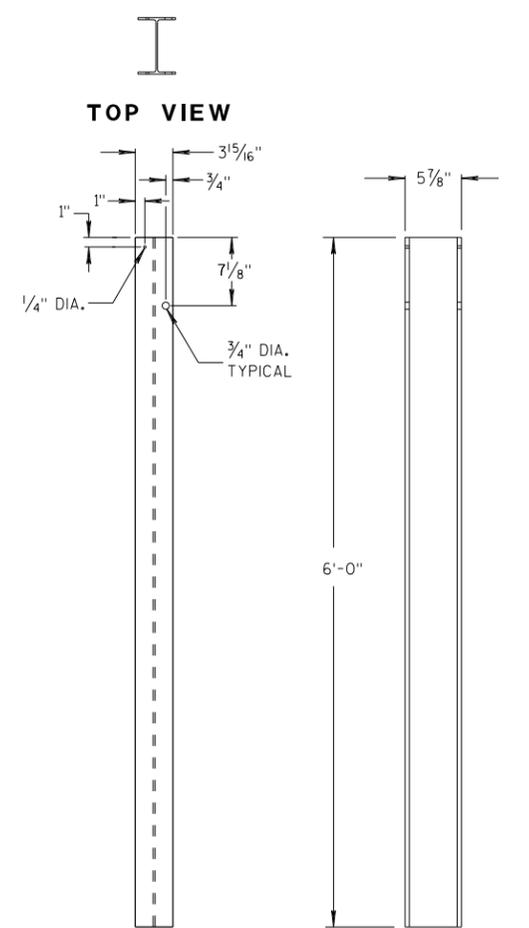
6'-3\"/>



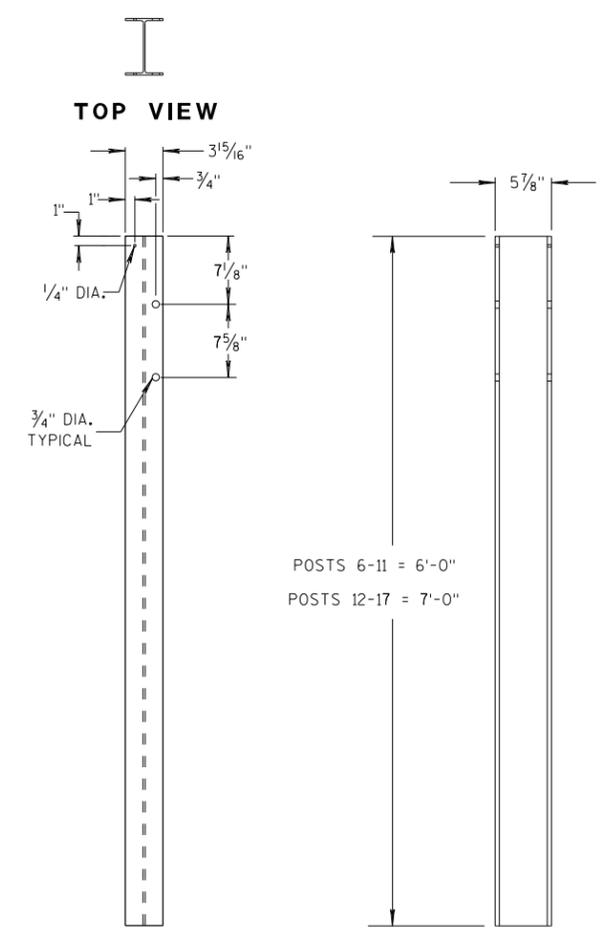
12'-6\"/>



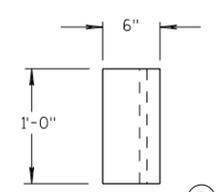
ALTERNATE WOOD BLOCKOUT DETAIL



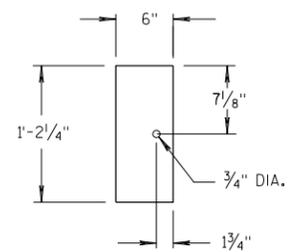
STEEL POSTS 1-5



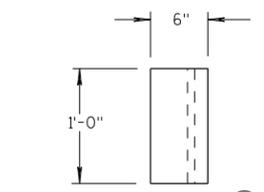
STEEL POSTS 6-17



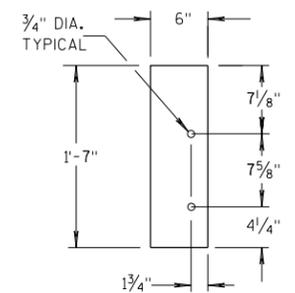
BLOCKOUT POSTS 1-5 TOP VIEW



BLOCKOUT POSTS 1-5 FRONT VIEW



BLOCKOUT POSTS 6-17 TOP VIEW



BLOCKOUT POSTS 6-17 FRONT VIEW

GENERAL NOTES

- STEEL POSTS ARE W6X9 OR W6X8.5.
- BOLT HOLES FOR POST ARE ON FRONT AND OF SIDE OF POST.
- (3) WHEN USING STEEL POSTS AND WOOD BLOCKOUTS INSTALL FOUR 16D GALVANIZED NAILS. INSTALL NAILS AT THE BACK CORNERS OF THE BLOCK AND BEND THE NAILS OVER THE FLANGE OF THE STEEL POST.
- (5) WOOD BLOCKS MAY BE CONSTRUCTED OUT OF 2 WOOD BLOCKS. SEE ALTERNATE WOOD BLOCK DETAIL.
- (13) STEEL OR WOOD POST IS ACCEPTABLE AT POST 1. SEE SDD 14B42.

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

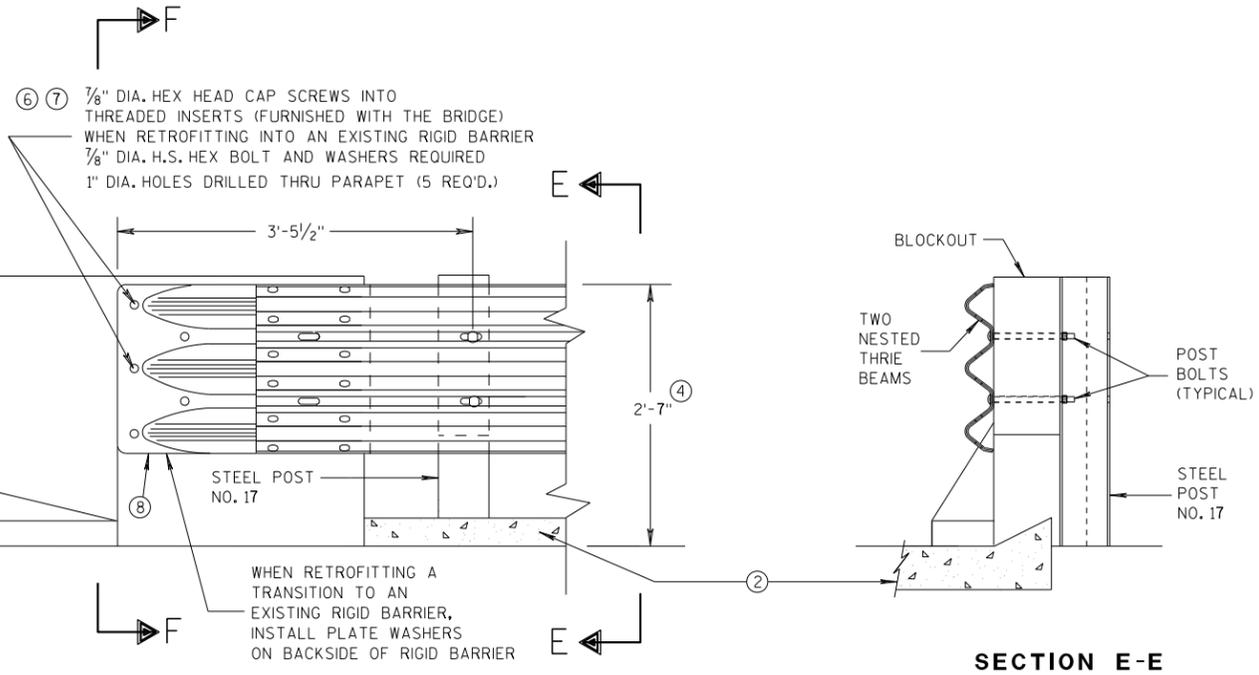
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

6

S.D.D. 14 B 45-5c

S.D.D. 14 B 45-5c



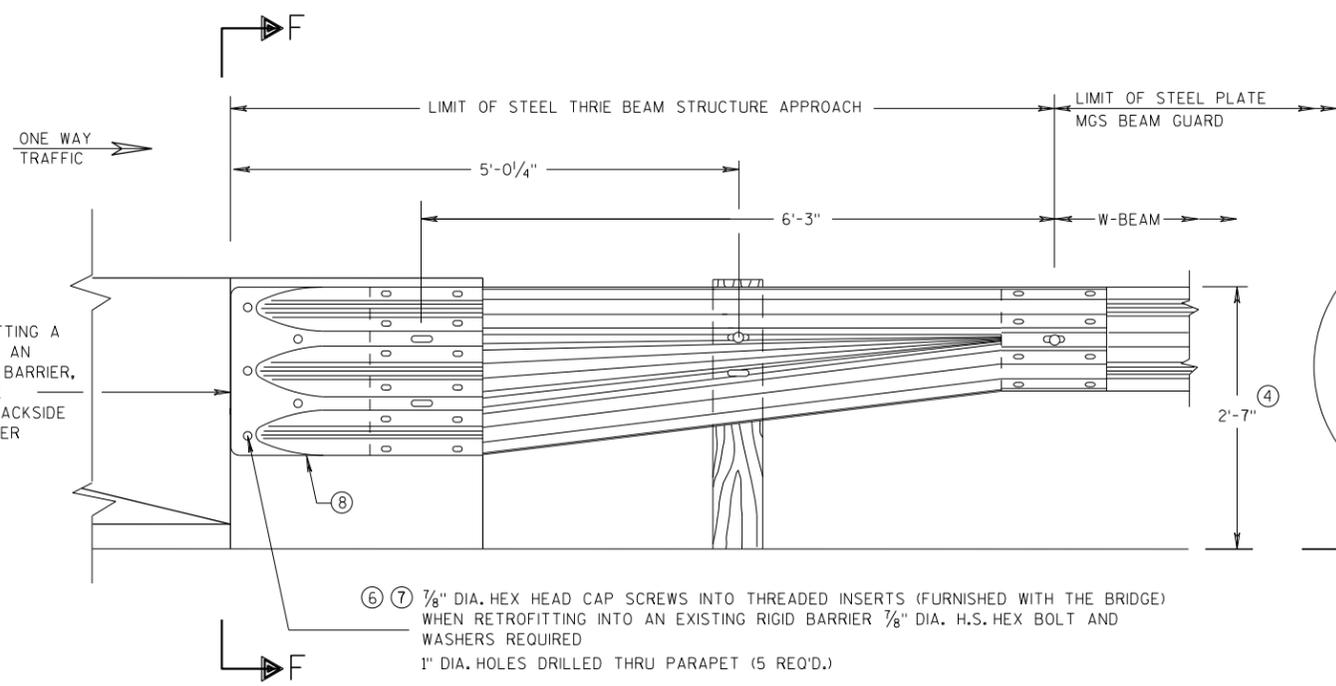
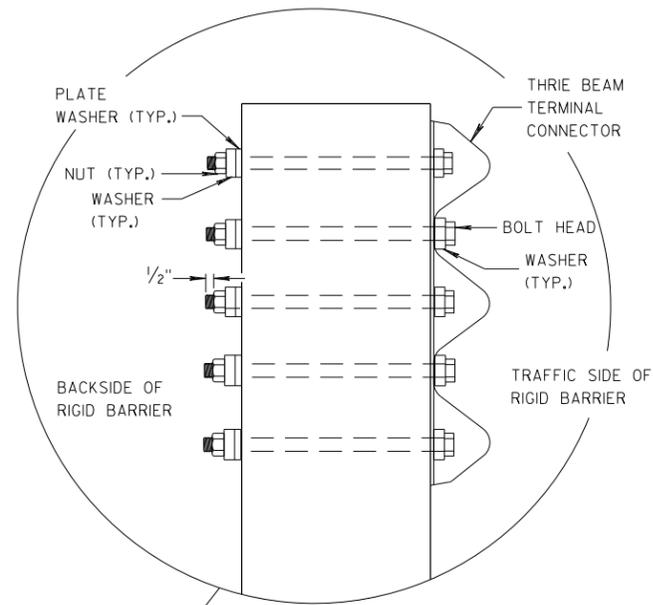
FRONT VIEW

THRIE BEAM CONNECTION TO BRIDGE PARAPET WITH SQUARE ENDS

SECTION E-E

GENERAL NOTES

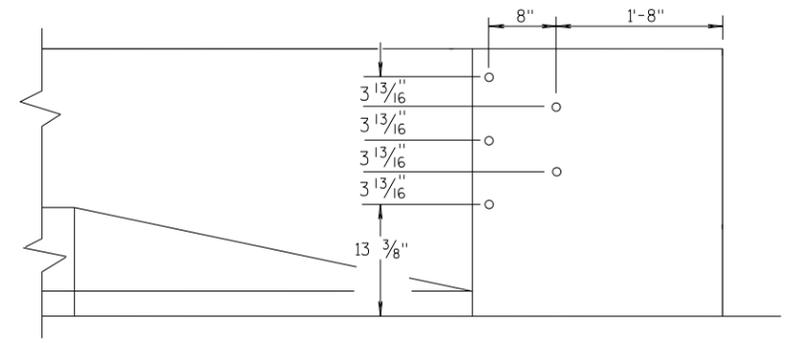
- THESE ARE TYPICAL CONNECTION DETAILS. ADJUST THE POSITION OF CONNECTIONS TO EXISTING BRIDGES TO FIT THE ACTUAL BRIDGE AND SITE DIMENSIONS.
- (2) OPTIONAL CURB AND GUTTER OR DRAINAGE FEATURE SEE PLAN FOR INFORMATION.
 - (4) TOLERANCE FOR TOP OF BEAM IS $\pm 1"$.
 - (6) DRILLING BOLT HOLES THROUGH THE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



FRONT VIEW

**W BEAM TRANSITION AND CONNECTION TO BRIDGE PARAPETS WITH SQUARE ENDS
(USE ONLY ON THE TRAFFIC EXIT END OF ONE WAY BRIDGES)**

SECTION F-F



DRILL HOLE LOCATION

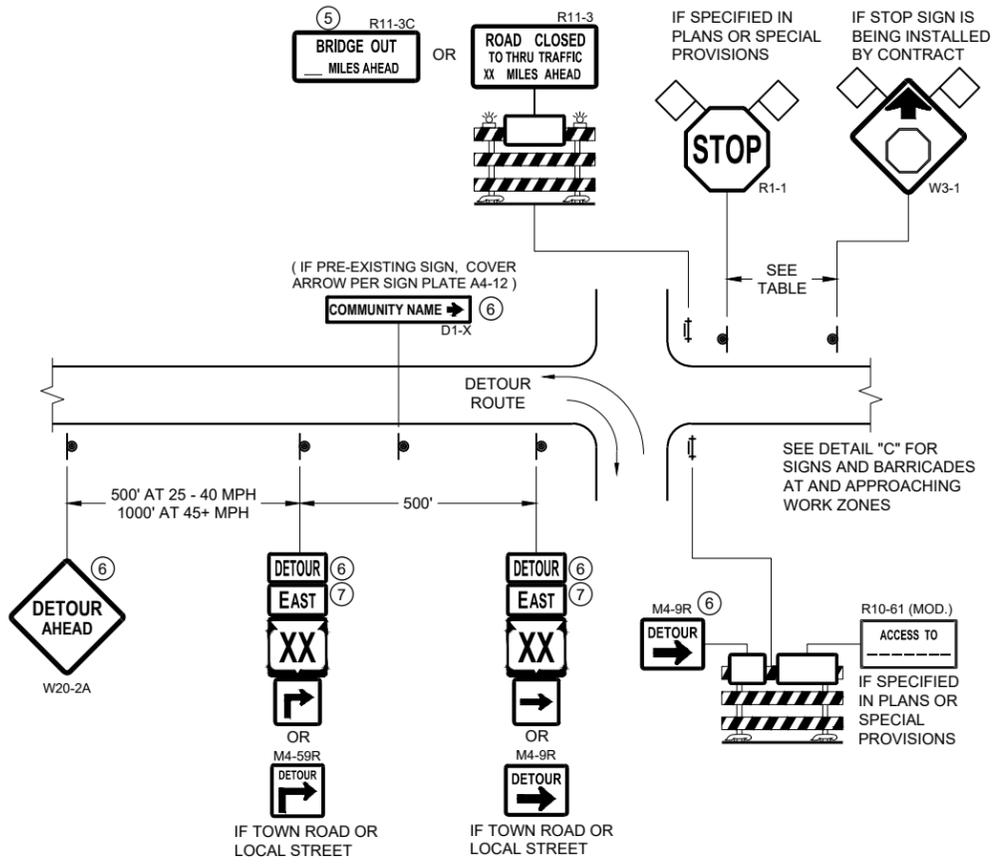
MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED 07/2018 DATE	/S/ Rodney Taylor ROADWAY STANDARDS DEVELOPMENT UNIT SUPERVISOR
FHWA	

6

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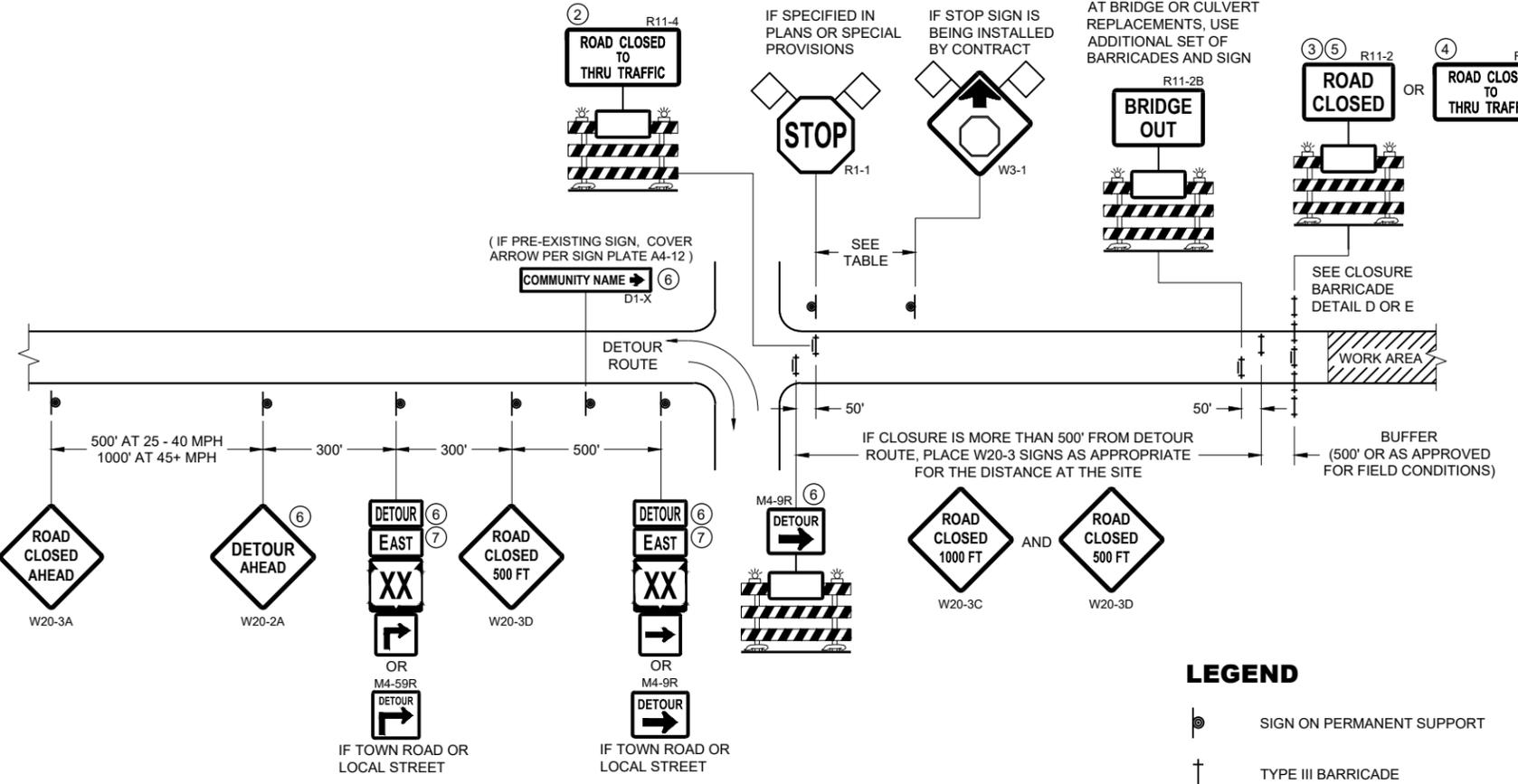
S.D.D. 14 B 45-5d

S.D.D. 14 B 45-5d



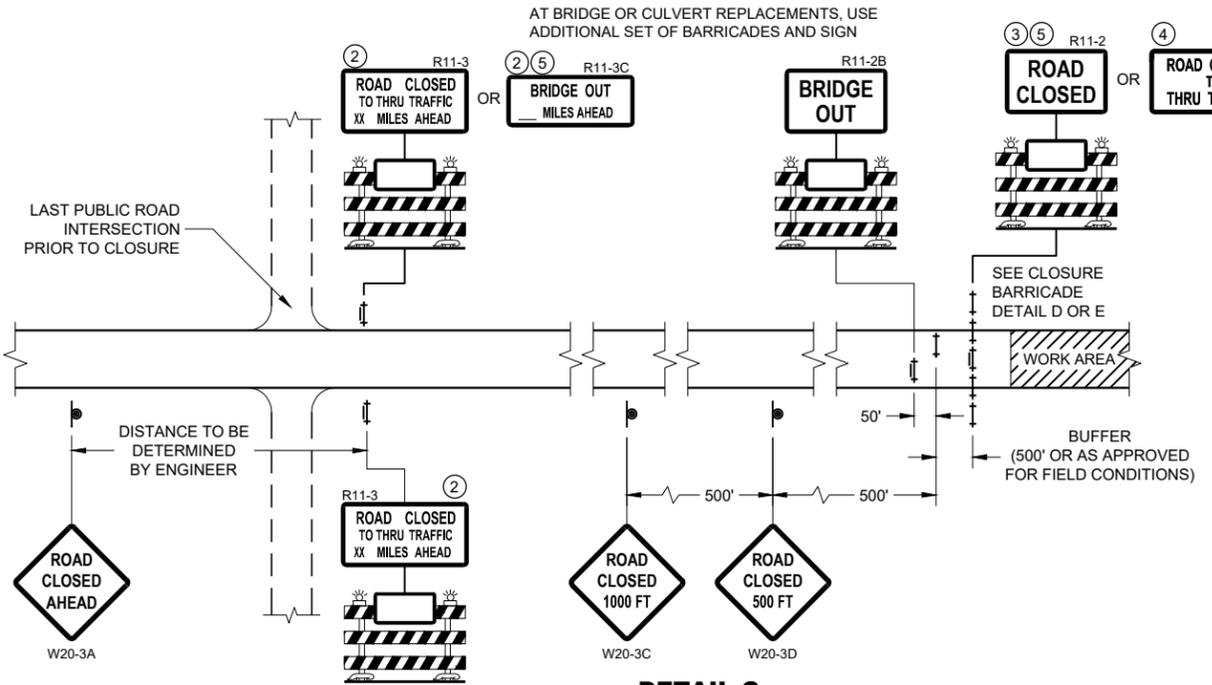
**DETAIL A
MAINLINE CLOSURE WITH POSTED DETOUR**

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)



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

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)
- M4 - 8
- M3 - X
- M1 - 4 OR M1 - 6 OR M1 - 5A
- M05 - 1 OR M06 - 1

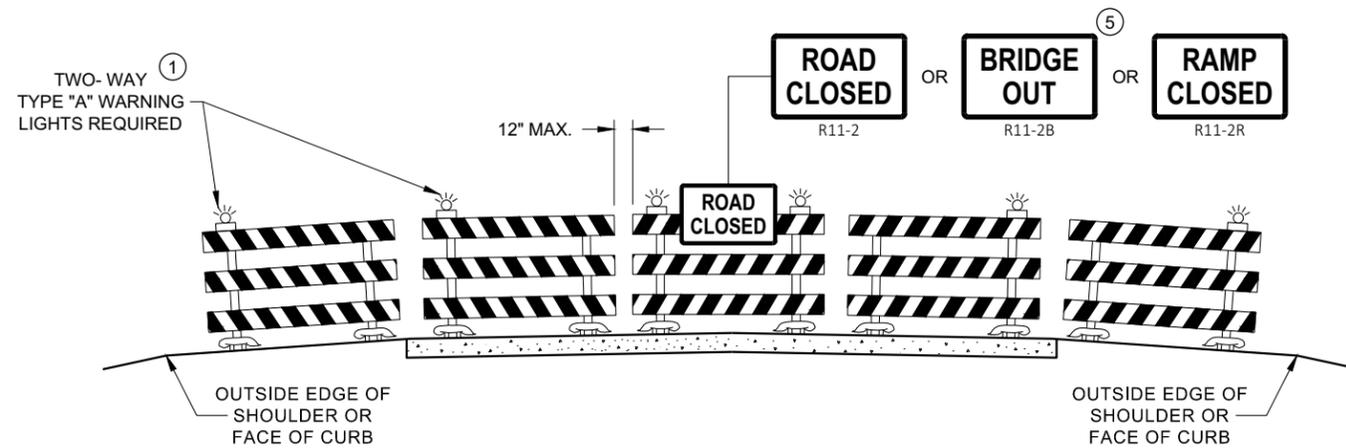
SPEED LIMIT (MPH)	"STOP AHEAD" ADVANCE WARNING DISTANCE (FT)
25	200
30	200
35	350
40	350
45	500
50	550
55	750

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

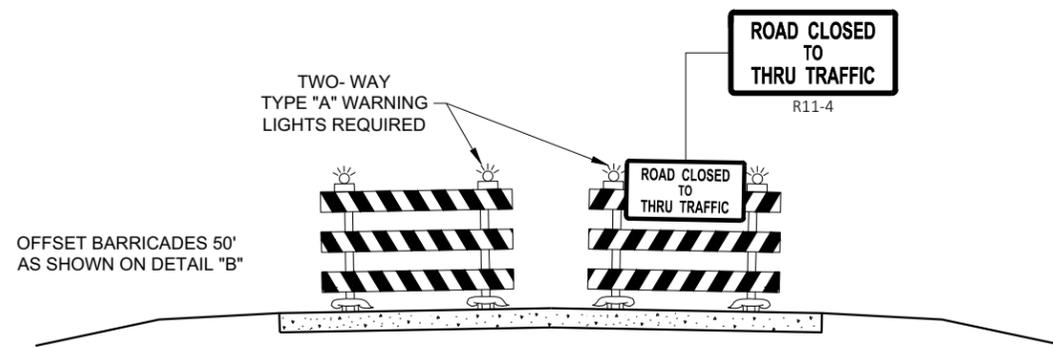
**BARRICADES AND SIGNS
FOR MAINLINE CLOSURES**

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"

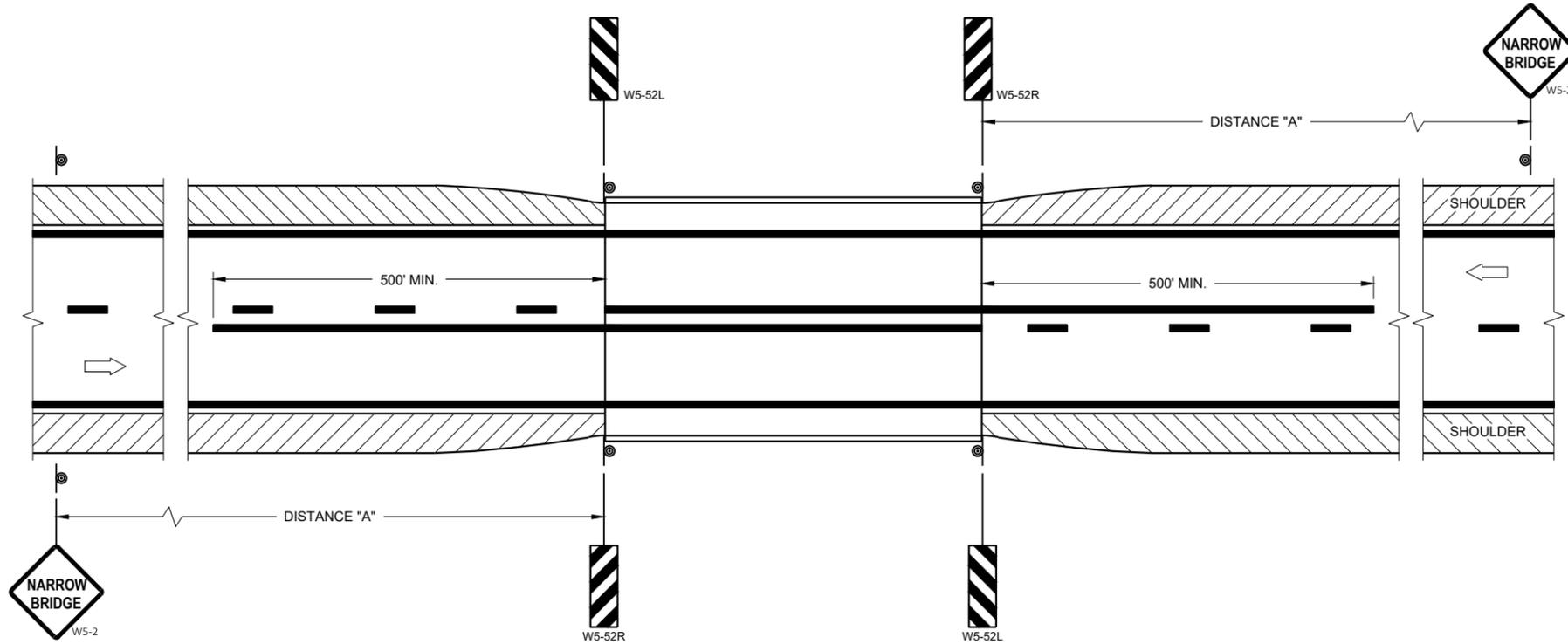
- ① TWO WARNING LIGHTS SHALL BE PROVIDED ON THE CENTER BARRICADE AND A MINIMUM OF ONE WARNING LIGHT SHALL BE PROVIDED ON EACH OF THE OTHER BARRICADES WITHIN THE ROADWAY LIMITS. SPACING OF THE WARNING LIGHTS SHALL BE UNIFORM TO THE EDGE OF ROADWAY AS SHOWN (APPROX. 8 FOOT LIGHT SPACING).
- ② THESE SIGNS 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**

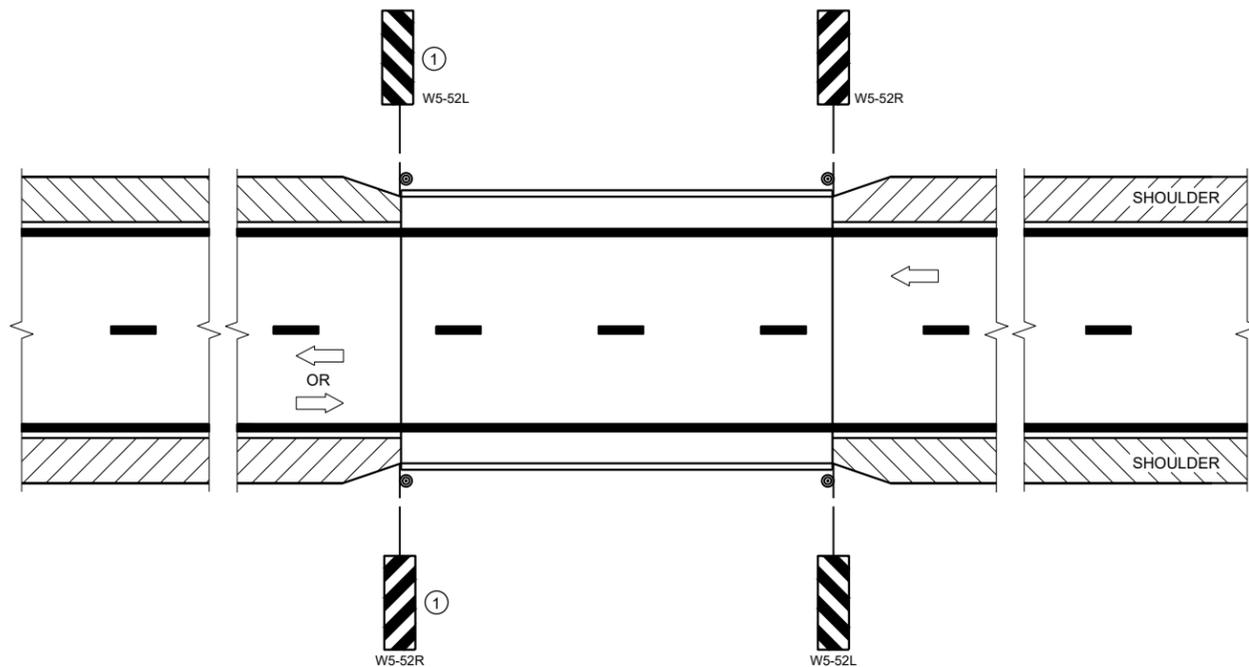
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

FHWA



SITUATION 1
 WARRANTING CRITERIA:
 BRIDGE WIDTH IS AT LEAST 16 FEET BUT LESS THAN 24 FEET.



SITUATION 2
 WARRANTING CRITERIA:
 1. BRIDGE WIDTH IS AT LEAST 24 FEET AND
 2. BRIDGE SHOULDER WIDTH IS LESS THAN 6 FEET

GENERAL NOTES

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

LOCATE W5-52 SIGN POST(S) BEHIND GUARDRAIL WHEN PRESENT.

PLACE THE EDGE OF THE W5-52 SIGN IN LINE WITH FACE OF CURB OR PARAPET.

ON BRIDGE ONLY PROJECTS, PLACE 300 FEET OF EDGELINE.

OMIT EDGELINES ON ROADWAYS WITHOUT EXISTING EDGELINES.

① OMIT ON ONE-WAY TRAVELED WAYS.

LEGEND

⊙ SIGN ON PERMANENT SUPPORT

➡ DIRECTION OF TRAFFIC

DISTANCE TABLE

POSTED OR 85TH PERCENTILE SPEED	DISTANCE "A"
25	150'
30	200'
35	250'
40	300'
45	400'
50	550'
55	700'

SIGNING AND MARKING FOR TWO LANE BRIDGES

STATE OF WISCONSIN
 DEPARTMENT OF TRANSPORTATION

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

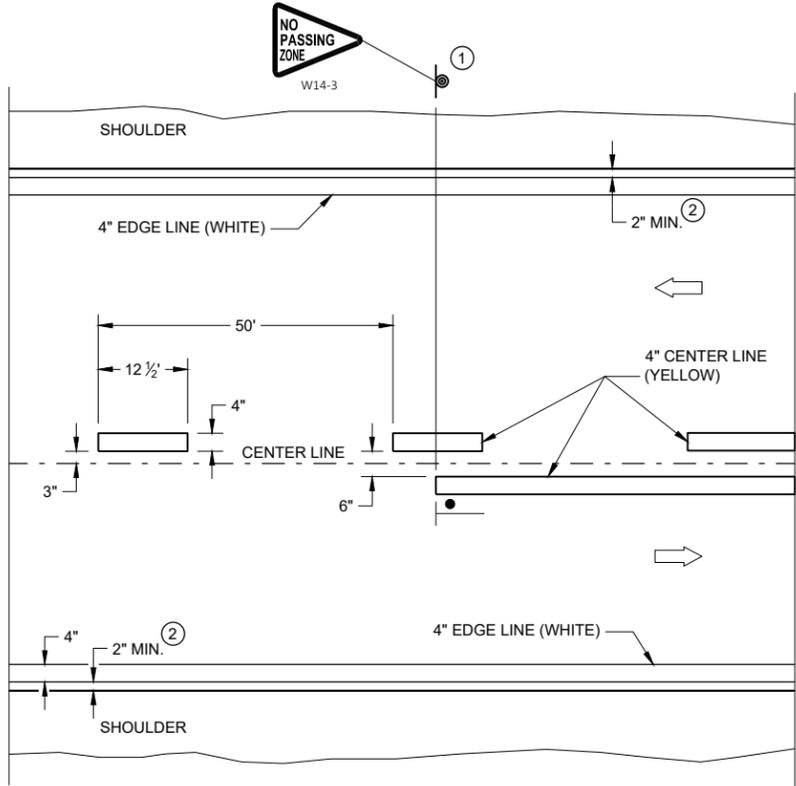
GENERAL NOTES

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

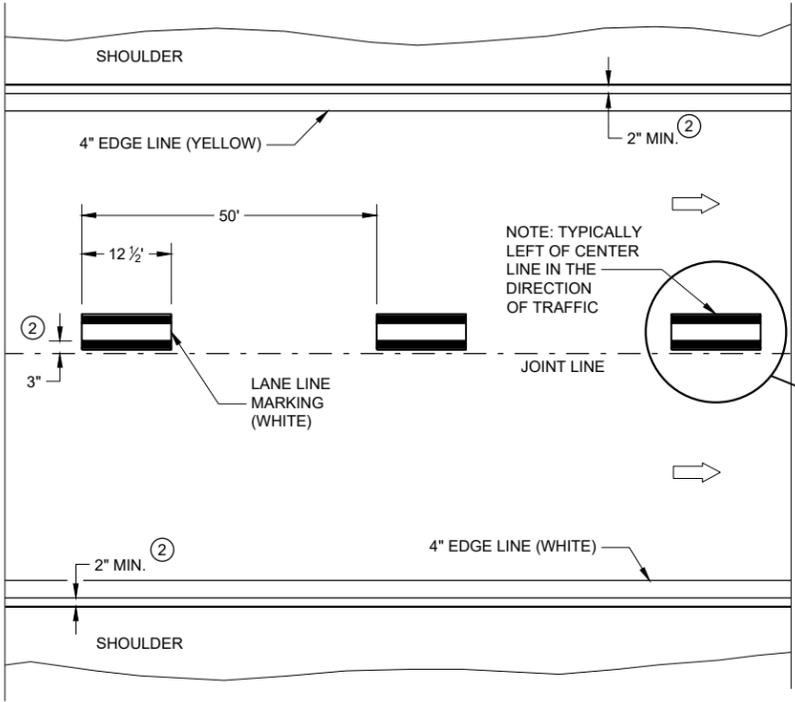
- ① LOCATE THE NO PASSING ZONE W14-3 SIGN WITHIN 50 FEET OF THE "T" MARKING
- ② MEASURE FROM EDGE OF MARKING TO JOINT LINE. THIS DOES NOT INCLUDE SPACE NEEDED FOR GROOVING OPERATIONS.

LEGEND

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

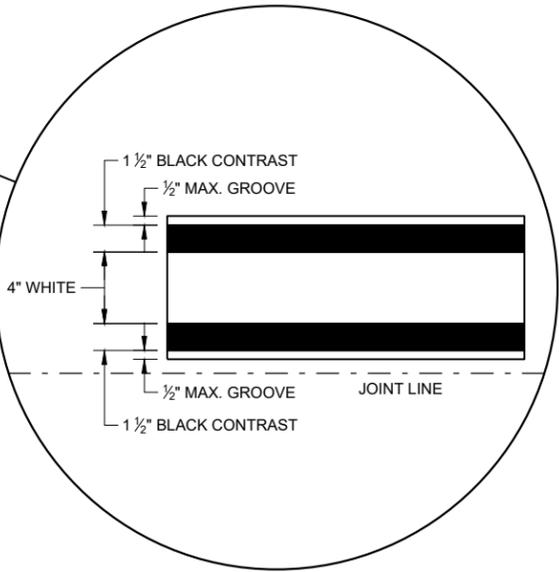


TWO WAY TRAFFIC



ONE WAY TRAFFIC

PERMANENT PAVEMENT MARKING



6

6

SDD 15C08 - 21a

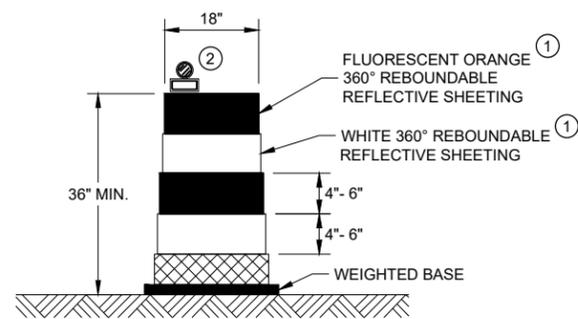
SDD 15C08 - 21a

PERMANENT LONGITUDINAL PAVEMENT MARKINGS

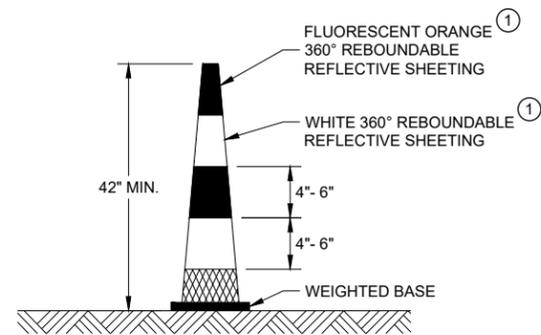
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

FHWA

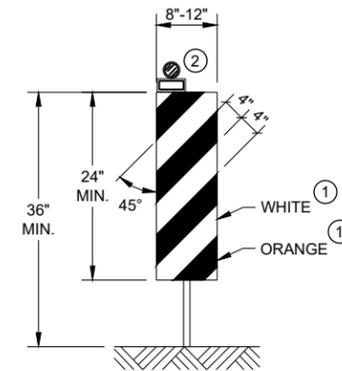


DRUM



42" CONE

DO NOT USE IN TAPERS
 1/2 SPACING OF DRUMS

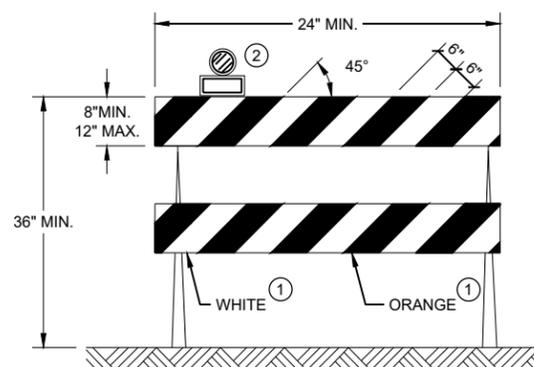


VERTICAL PANEL

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

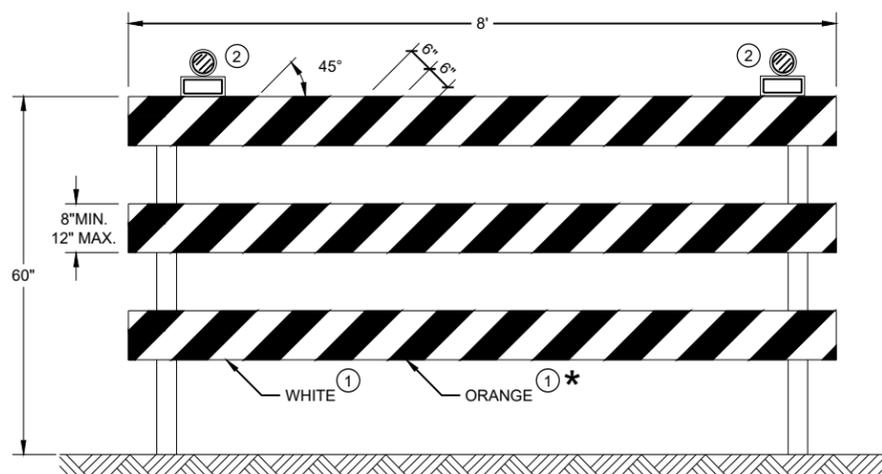
GENERAL NOTES

- 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

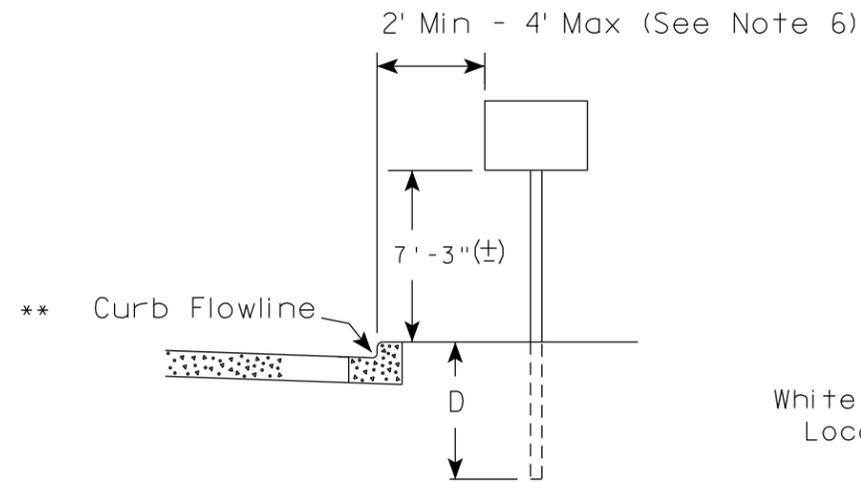
IF SIGN MOUNTED, DO NOT COVER MORE THAN 50% OF THE TOP TWO RAILS OR 33% OF THE TOTAL AREA OF THE THREE RAILS.

* IF USED FOR A PERMANENT APPLICATION USE RED SHEETING.

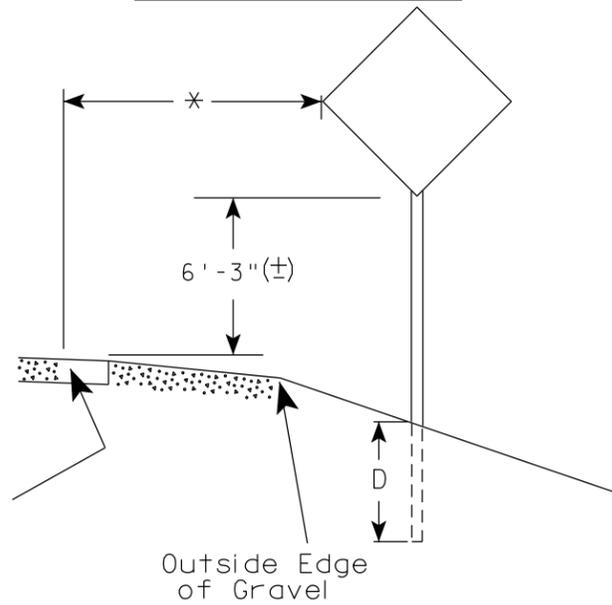
CHANNELIZING DEVICES DRUMS, CONES, BARRICADES AND VERTICAL PANELS	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED May 2021 DATE	/S/ Andrew Heidtke WORK ZONE ENGINEER
<small>FHWA</small>	

URBAN AREA

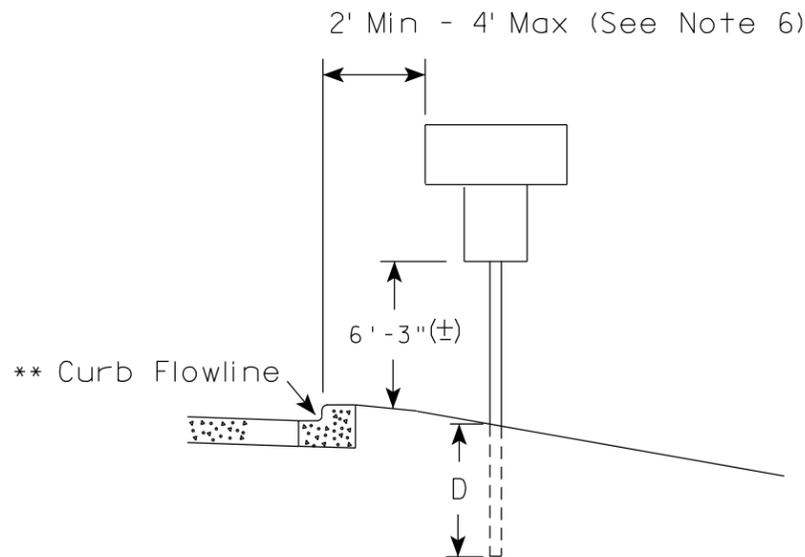
RURAL AREA (See Note 2)



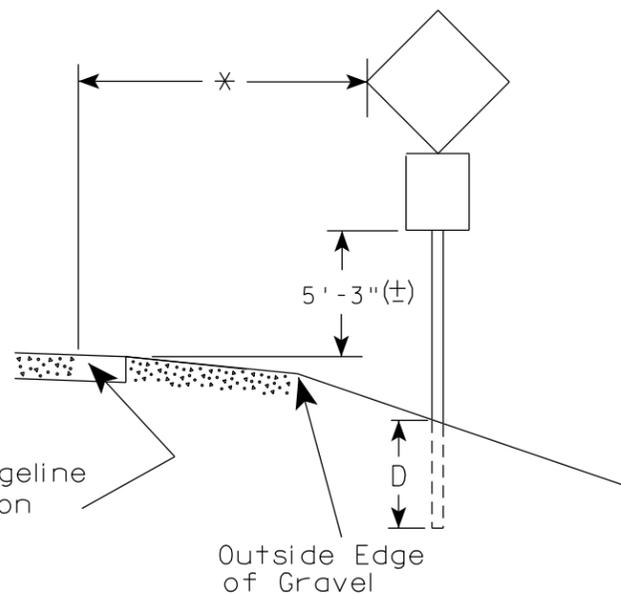
White Edgeline Location



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.

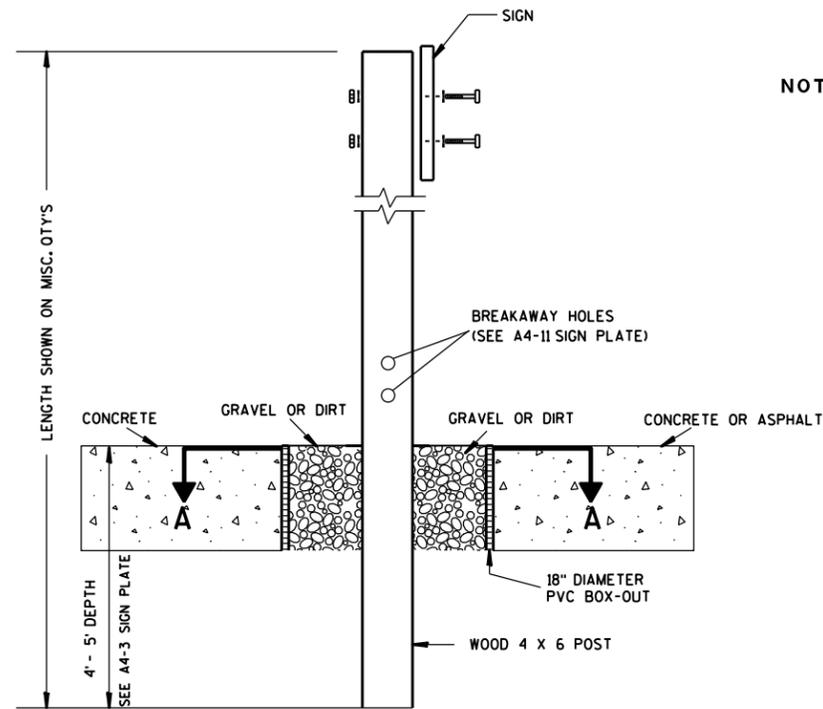
* 6 feet from edge of a paved shoulder or 12 feet from the edge of pavement (edge line location) or 2 feet from outside edge of gravel, whichever is greater unless directed by project engineer.

TYPICAL INSTALLATION OF PERMANENT TYPE II SIGNS ON SINGLE POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

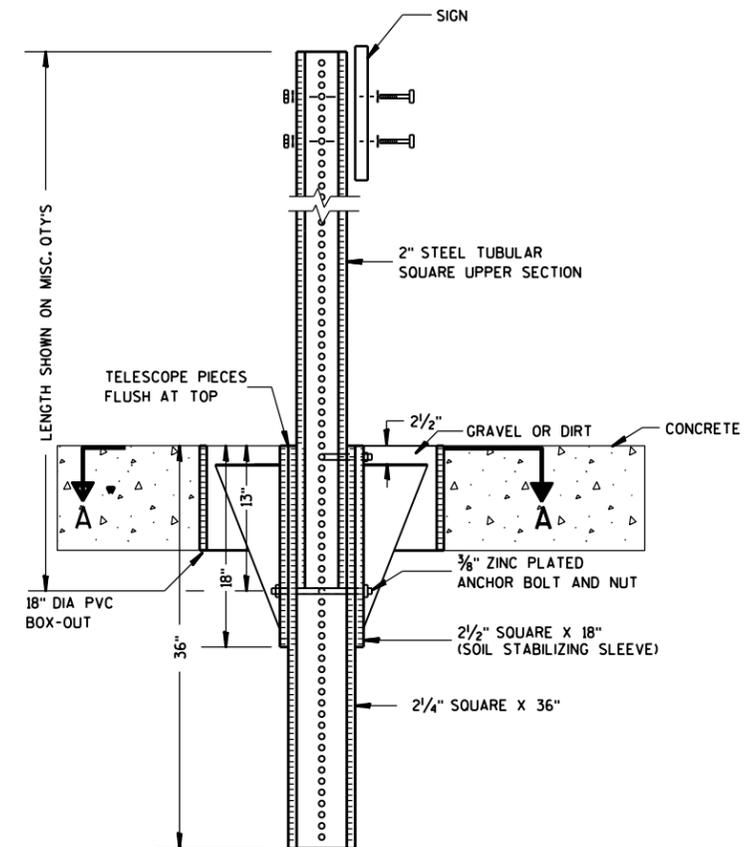
DATE 5/13/2020 PLATE NO. A4-3.22



ELEVATION VIEW

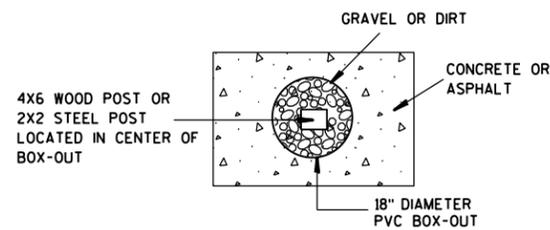
DETAIL OF WOOD 4 X 6 SIGN POST IN BOX-OUT

- 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**

WISCONSIN DEPT OF TRANSPORTATION

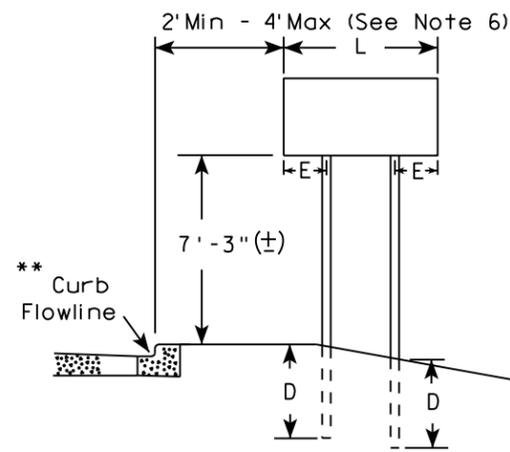
APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 1/27/14 PLATE NO. A4-3B.1

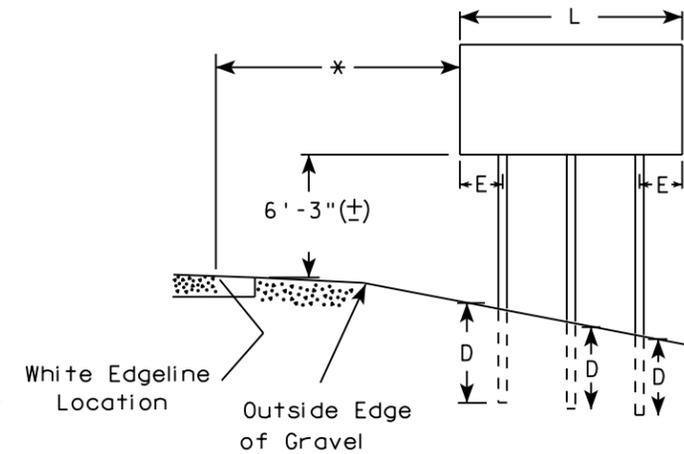
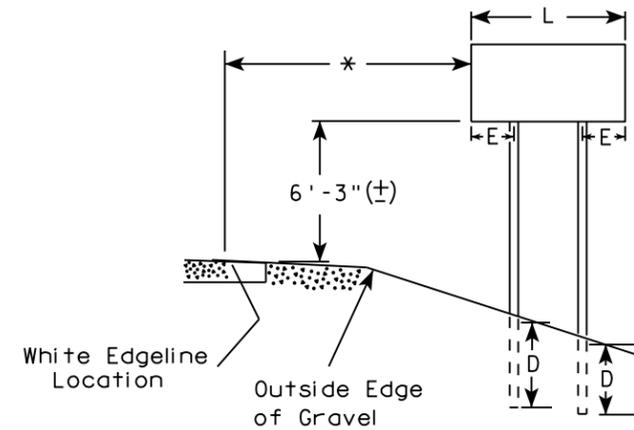
GENERAL NOTES

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" (±).

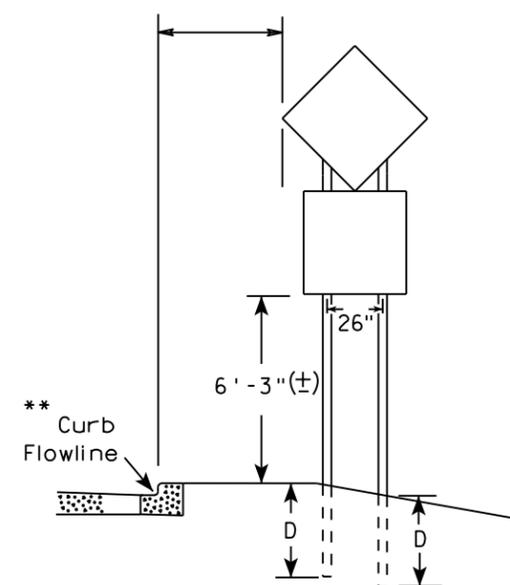
URBAN AREA



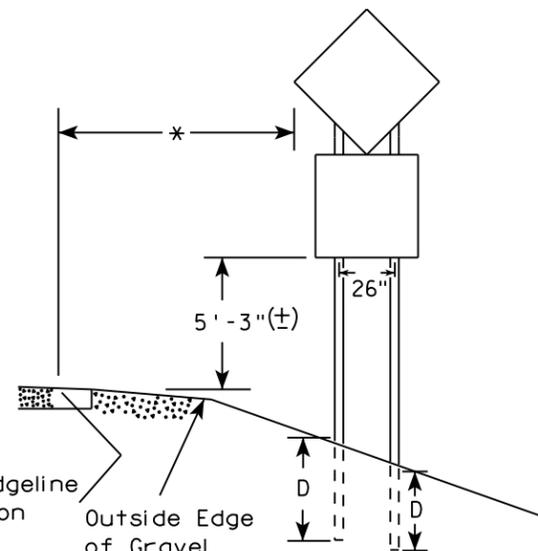
RURAL AREA (See Note 3)



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

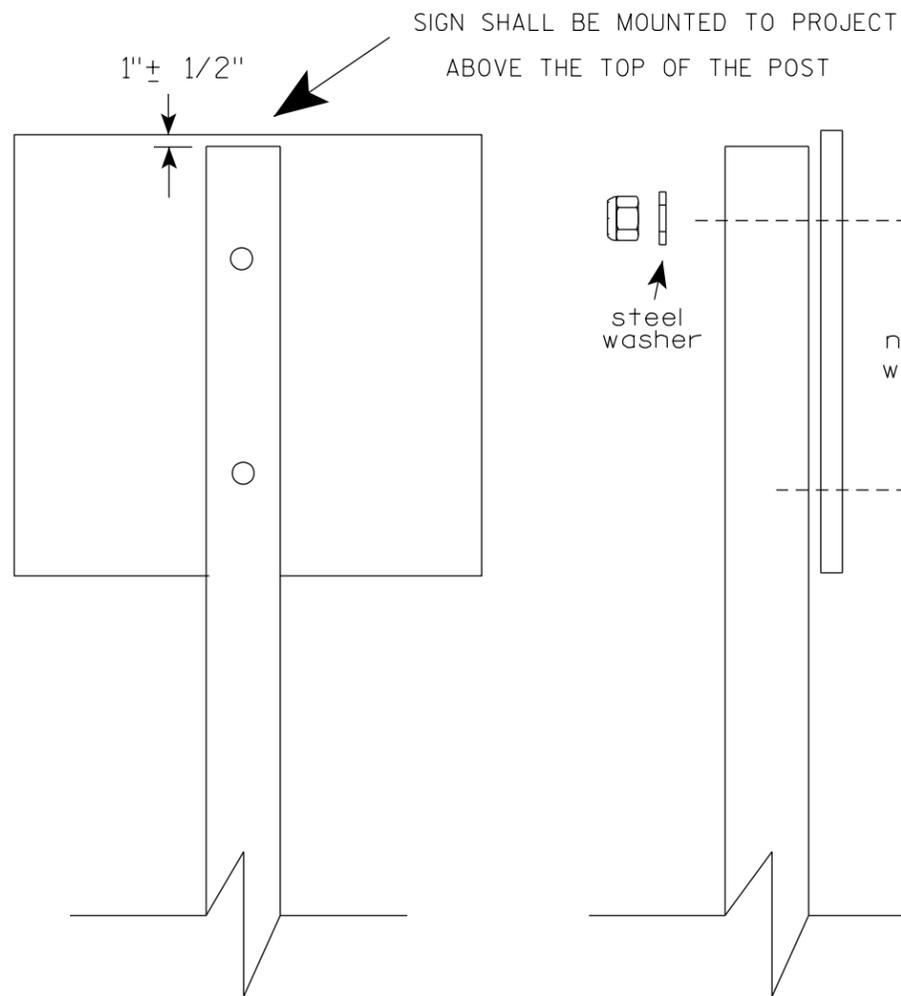
SIGN SHAPE OTHER THAN DIAMOND (THREE POSTS REQUIRED)	
L	E
Greater than 108" to 144"	12"

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.

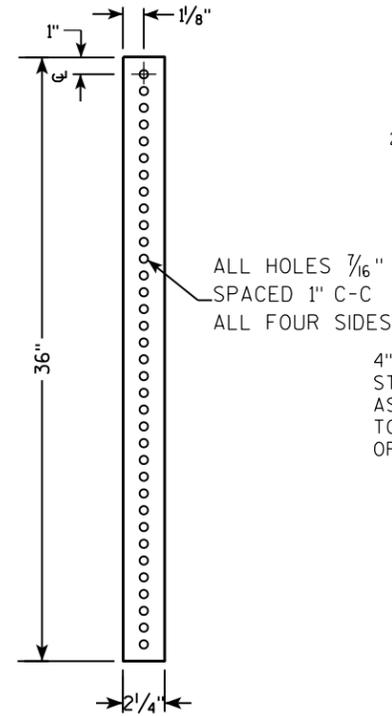
- STRINGER BOLTING TO ALUMINUM SIGNS (SEE SIGN PLATE A4-18)
- MACHINE BOLTS - 5/16" X 1-3/4" Length w/ lock nuts
- WOOD POSTS (4" x 6")
- LAG SCREWS - 3/8" X 3" (NO STRINGERS ON BACK OF SIGN)
 - 3/8" X 4" (STRINGERS ON BACK OF SIGN)
- SQUARE STEEL POSTS (2" x 2")
- MACHINE BOLTS - 3/8" X 3-1/4" Length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

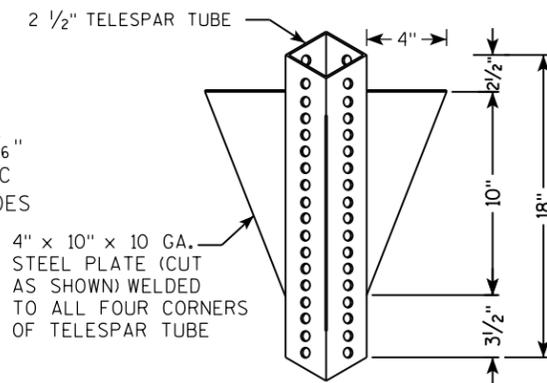
ATTACHMENT OF SIGNS TO POSTS	
WISCONSIN DEPT OF TRANSPORTATION	
APPROVED	<i>Matthew R Rauch</i> For State Traffic Engineer
DATE 4/1/2020	PLATE NO. A4-8.9

**TELESCOPIC TUBING ANCHORS
TWO PIECE SYSTEM**

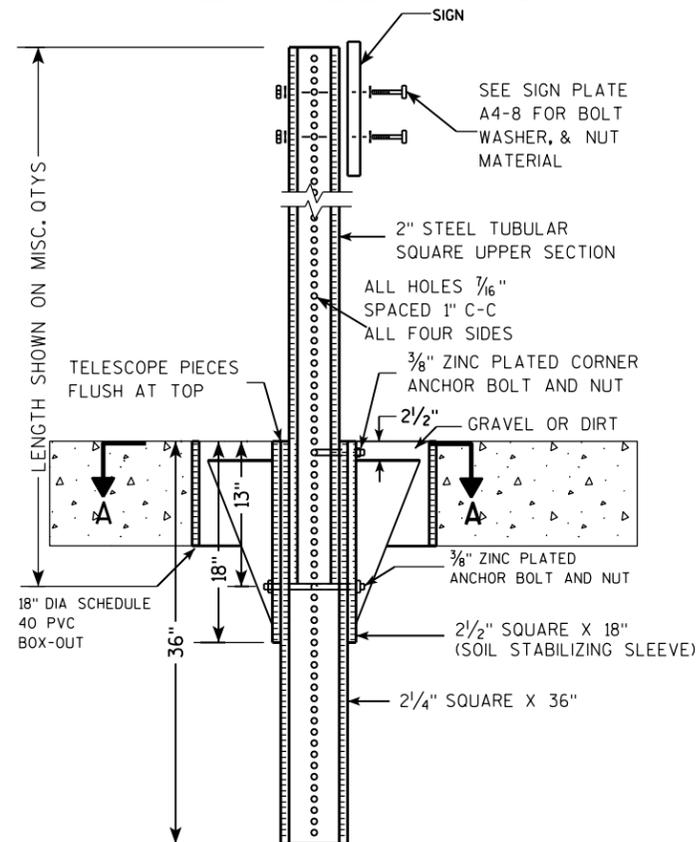
2 1/4" SQUARE
12 GAUGE
PERFORATED
GALVANIZED FINISH



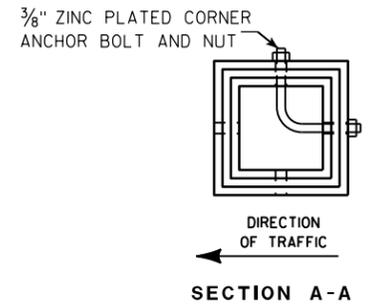
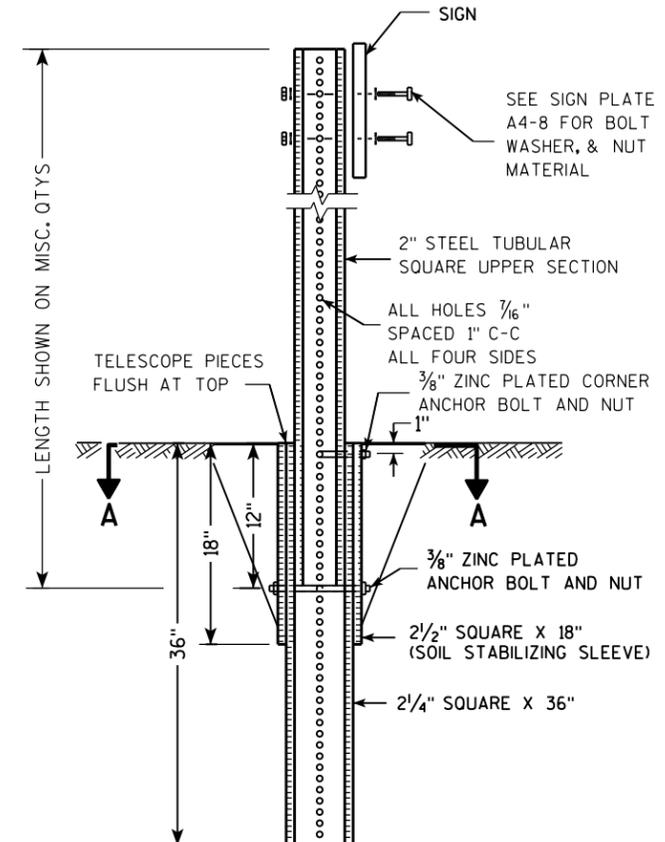
2 1/2" SQUARE
12 GAUGE
OMNI-DIRECTIONAL
PERFORATED
SOIL STABILIZING SLEEVE
GALVANIZED FINISH



**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

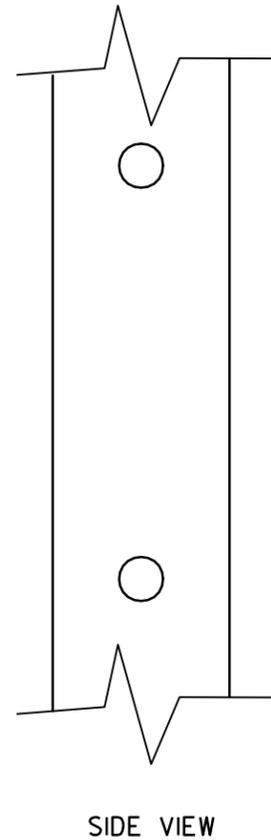
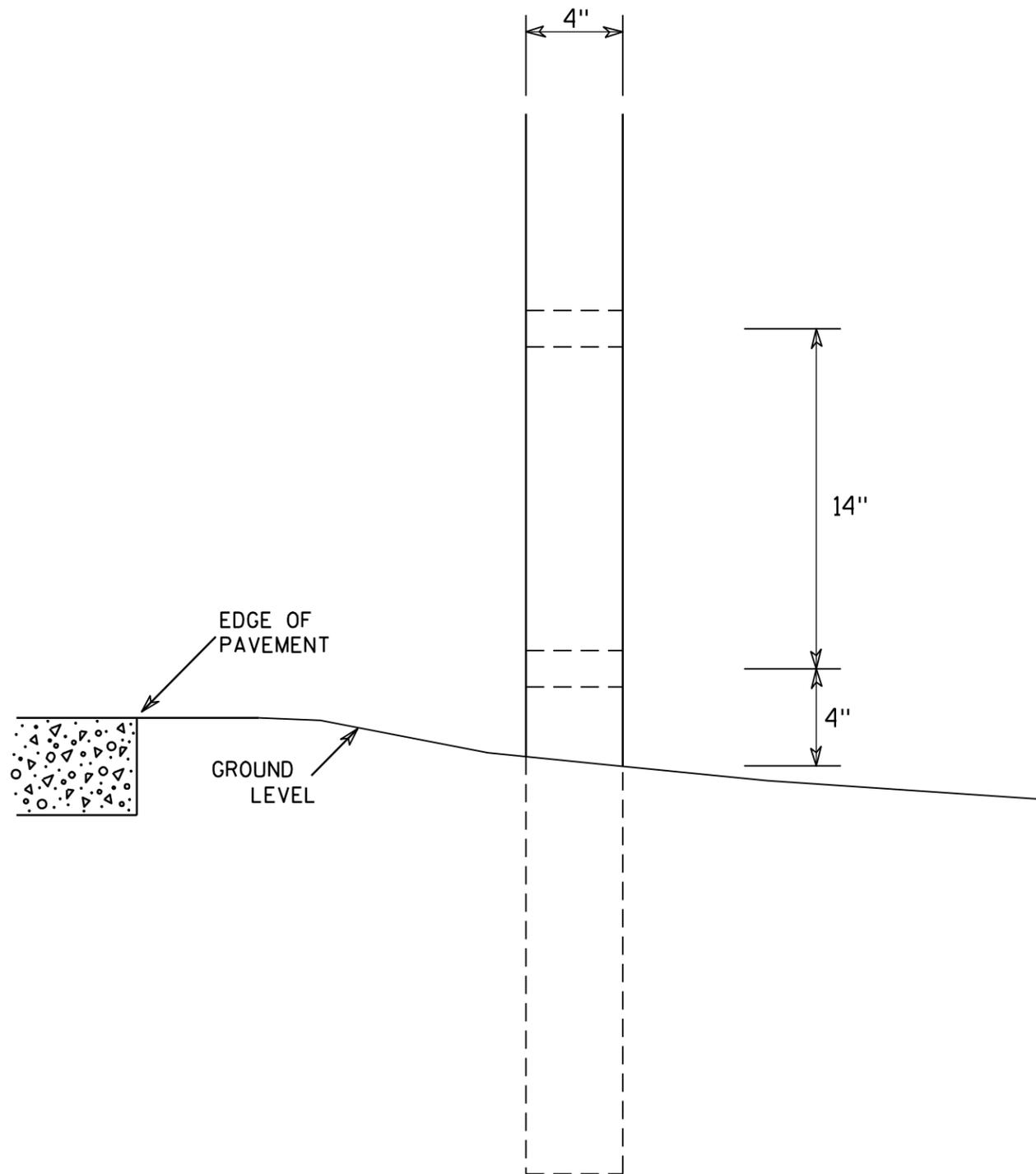
PROJECT NO:

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.

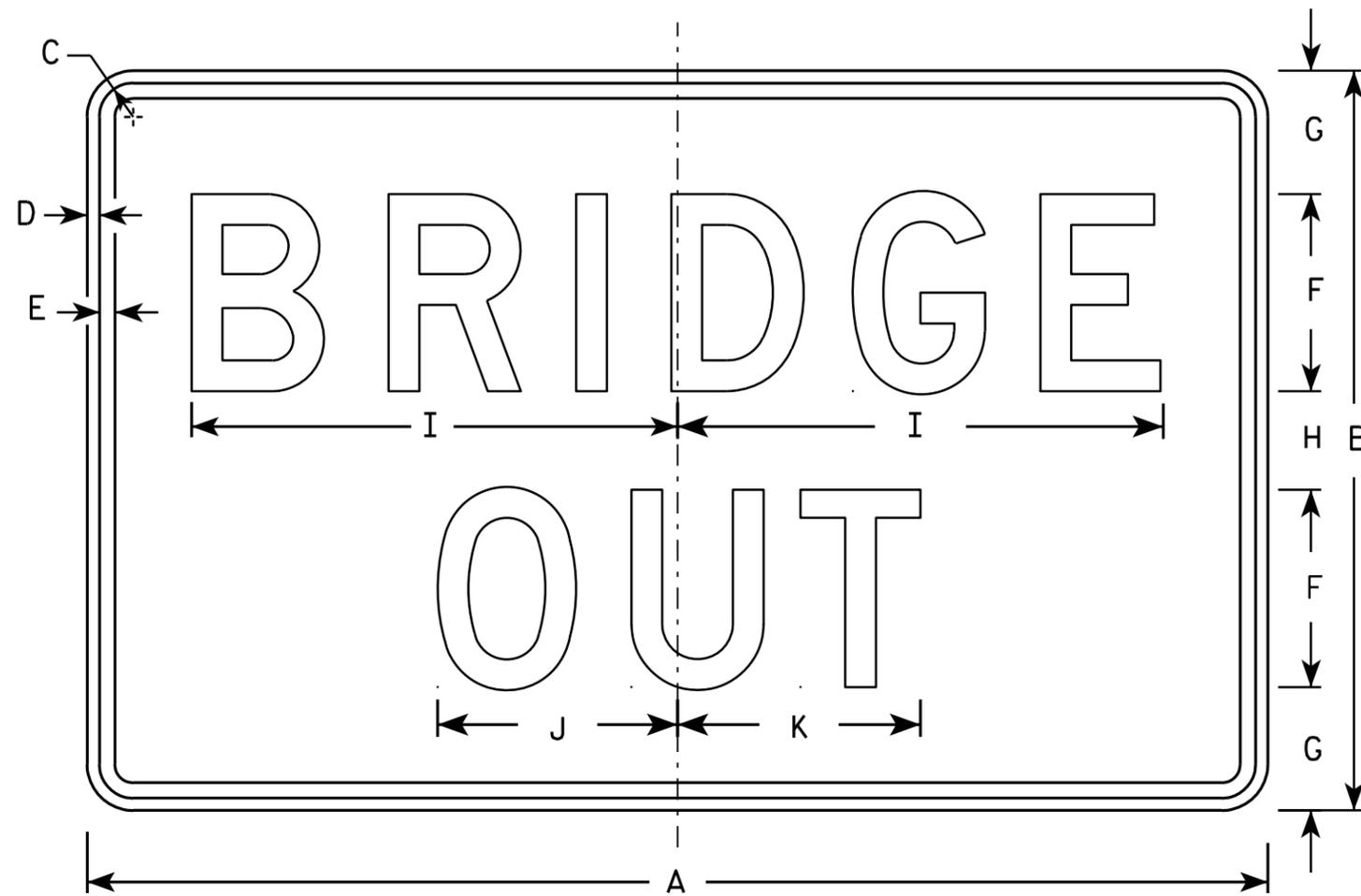
7

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 - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
Background - White
Message - Black
3. Message Series - D
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.



R11-2B

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																											
2S	48	30	1 3/8	1/2	5/8	8	5	4	19 3/4	9 3/4	9 7/8																10.0
2M	48	30	1 3/8	1/2	5/8	8	5	4	19 3/4	9 3/4	9 7/8																10.0
3	48	30	1 3/8	1/2	5/8	8	5	4	19 3/4	9 3/4	9 7/8																10.0
4	48	30	1 3/8	1/2	5/8	8	5	4	19 3/4	9 3/4	9 7/8																10.0
5	48	30	1 3/8	1/2	5/8	8	5	4	19 3/4	9 3/4	9 7/8																10.0

STANDARD SIGN
R11-2B

WISCONSIN DEPT OF TRANSPORTATION

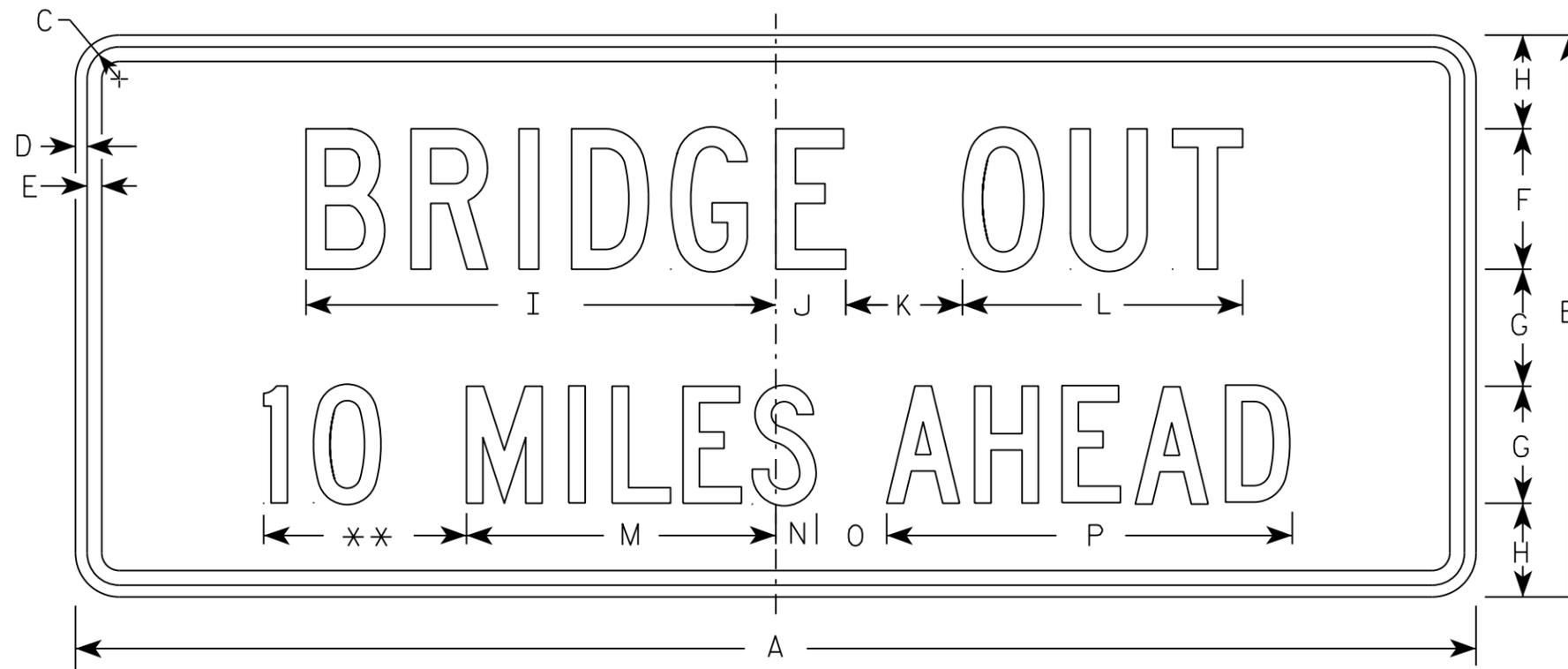
APPROVED *Matthew R. Rauch*
For State Traffic Engineer

DATE 4/1/11 PLATE NO. R11-2B.2

PROJECT NO: _____ SHEET NO: _____ E

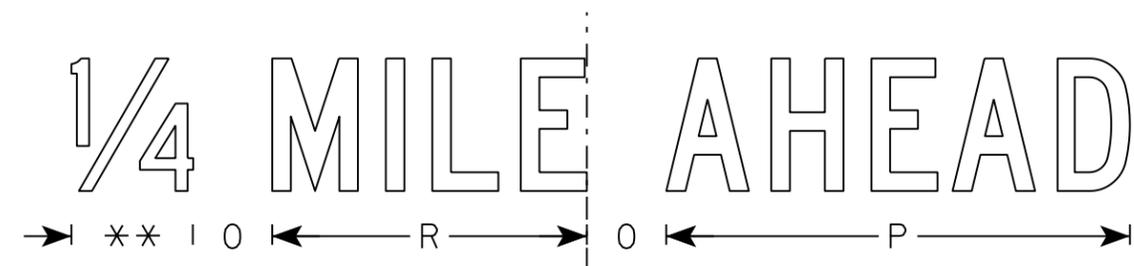
NOTES

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.



R11-3C

** See Note 5



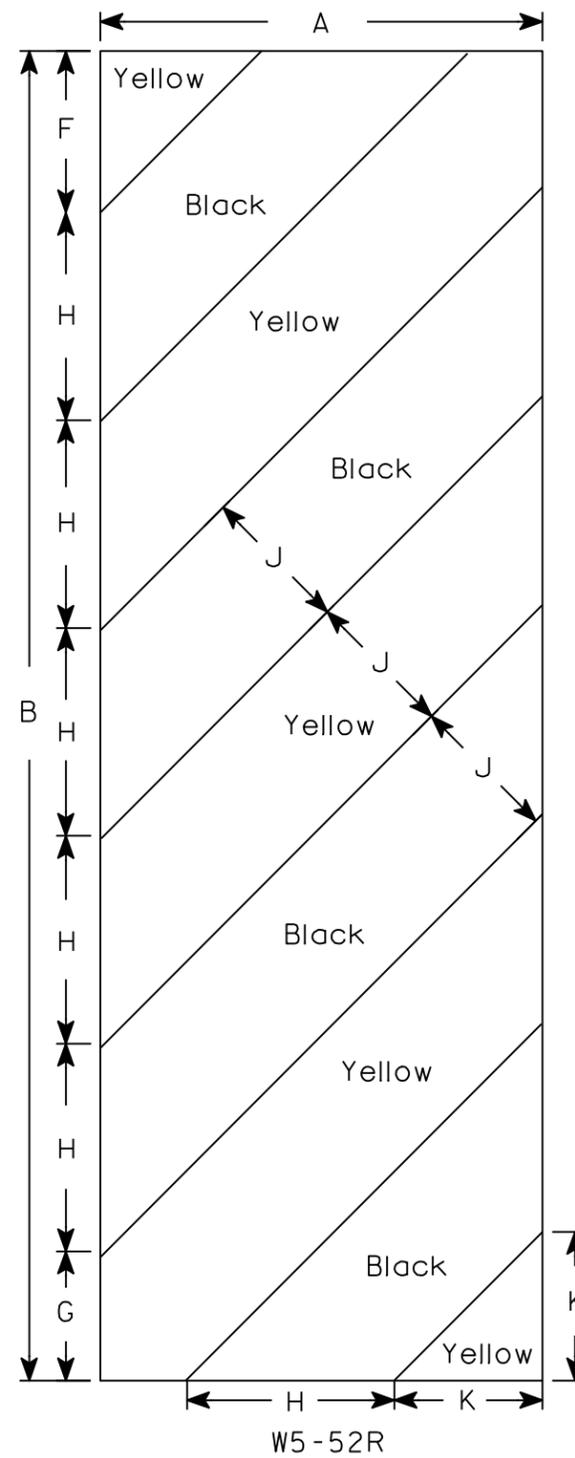
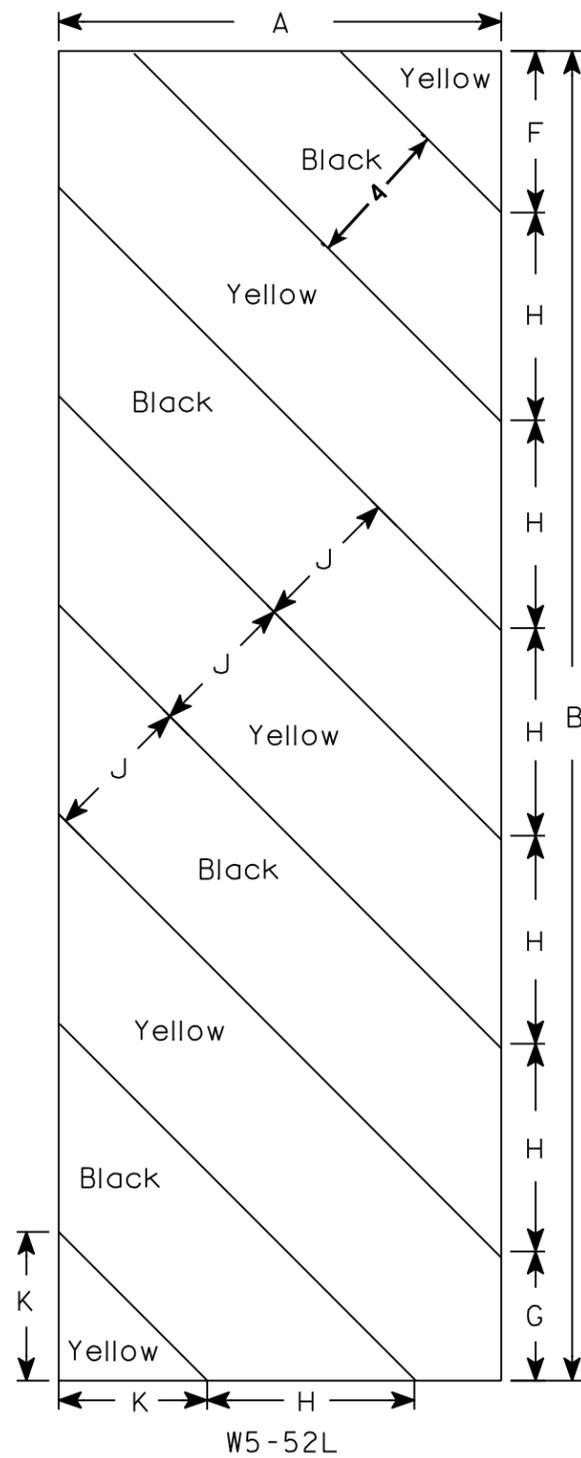
SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	36	15	1 3/8	1/2	5/8	4	3	2 1/2	13 1/4	2 1/4	3	8	8	1 1/2	2	10 3/4		7 1/8									3.75
2S	60	24	1 3/8	1/2	5/8	6	5	4	20 1/8	3	5	12	13 1/4	1 3/4	3	17 3/8		11 7/8									10.0
2M	60	24	1 3/8	1/2	5/8	6	5	4	20 1/8	3	5	12	13 1/4	1 3/4	3	17 3/8		11 7/8									10.0
3																											
4																											
5																											

STANDARD SIGN
R11-3C

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
For State Traffic Engineer

DATE 7/28/16 PLATE NO. R11-3C.3



NOTES

1. Sign is Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
Background - Yellow
Message - Black
3. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
4. Alternate colors of stripes as shown.

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																											
2S	12	36				4 3/8	3 1/2	5 5/8	45°	4	4																3.0
2M	12	36				4 3/8	3 1/2	5 5/8	45°	4	4																3.0
3	18	54				6	5 1/2	8 1/2	45°	6	6 9/16																6.75
4																											
5																											

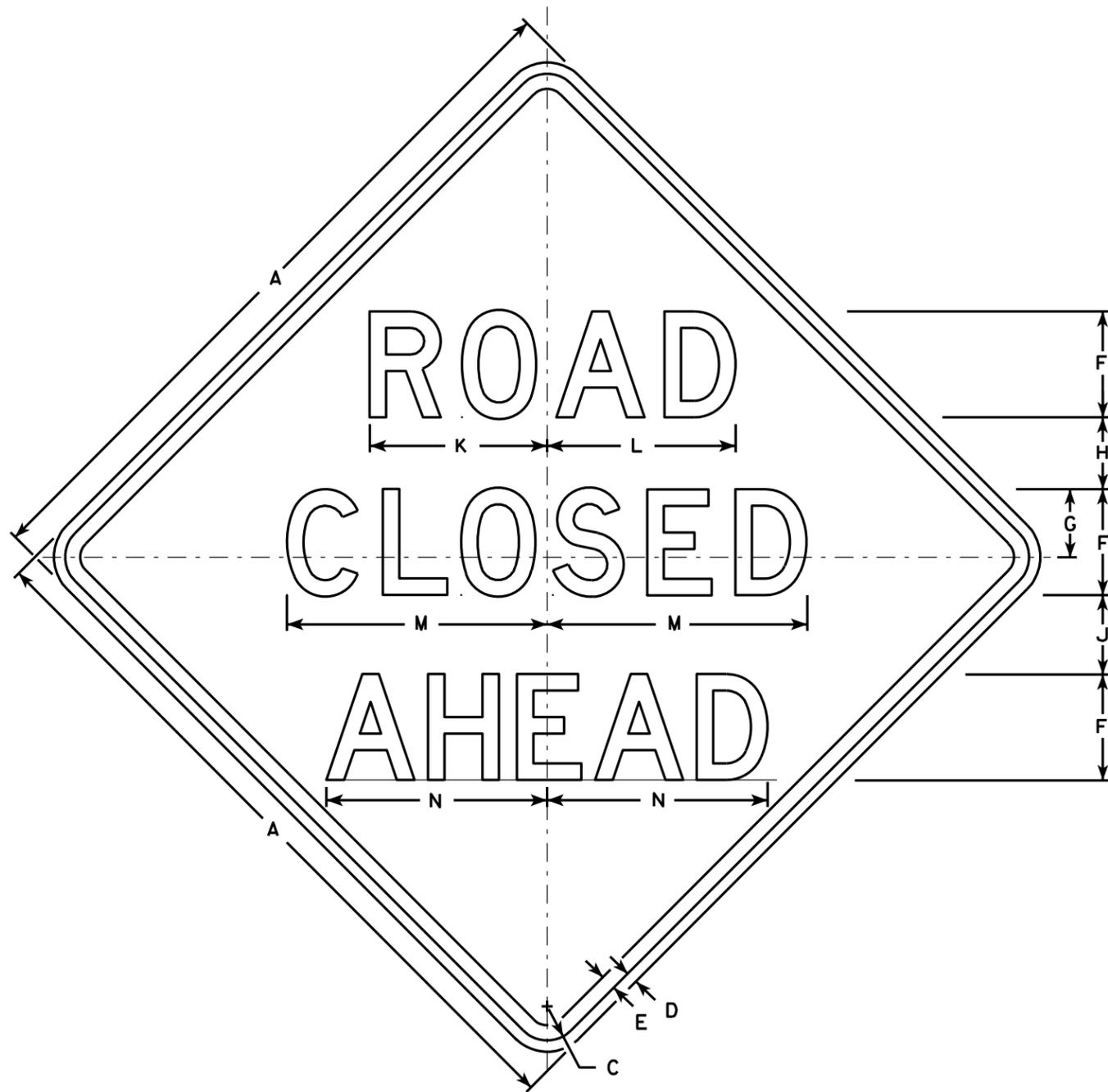
STANDARD SIGN
W5-52L & W5-52R

WISCONSIN DEPT OF TRANSPORTATION

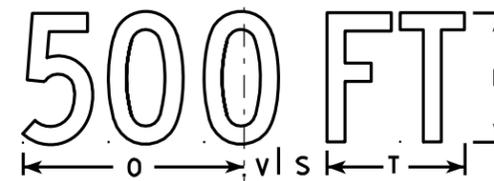
APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 5/29/12 PLATE NO. W5-52.9

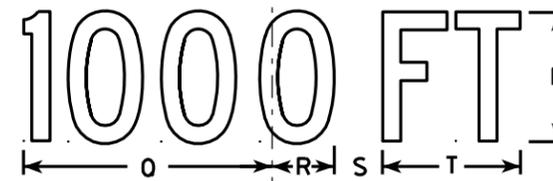
PROJECT NO: _____ HWY: _____ COUNTY: _____ SHEET NO: _____ E



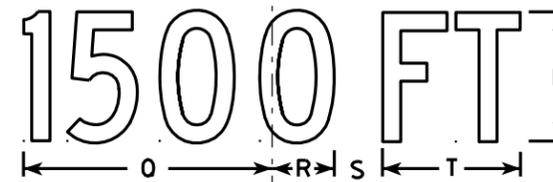
W20-3A



W20-3D



W20-3C



W20-3B



W20-3G



W20-3F

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. Lines 1 and 2 are Series D.
Line 3 is Series D for AHEAD and Series C for all other distances.

7

7

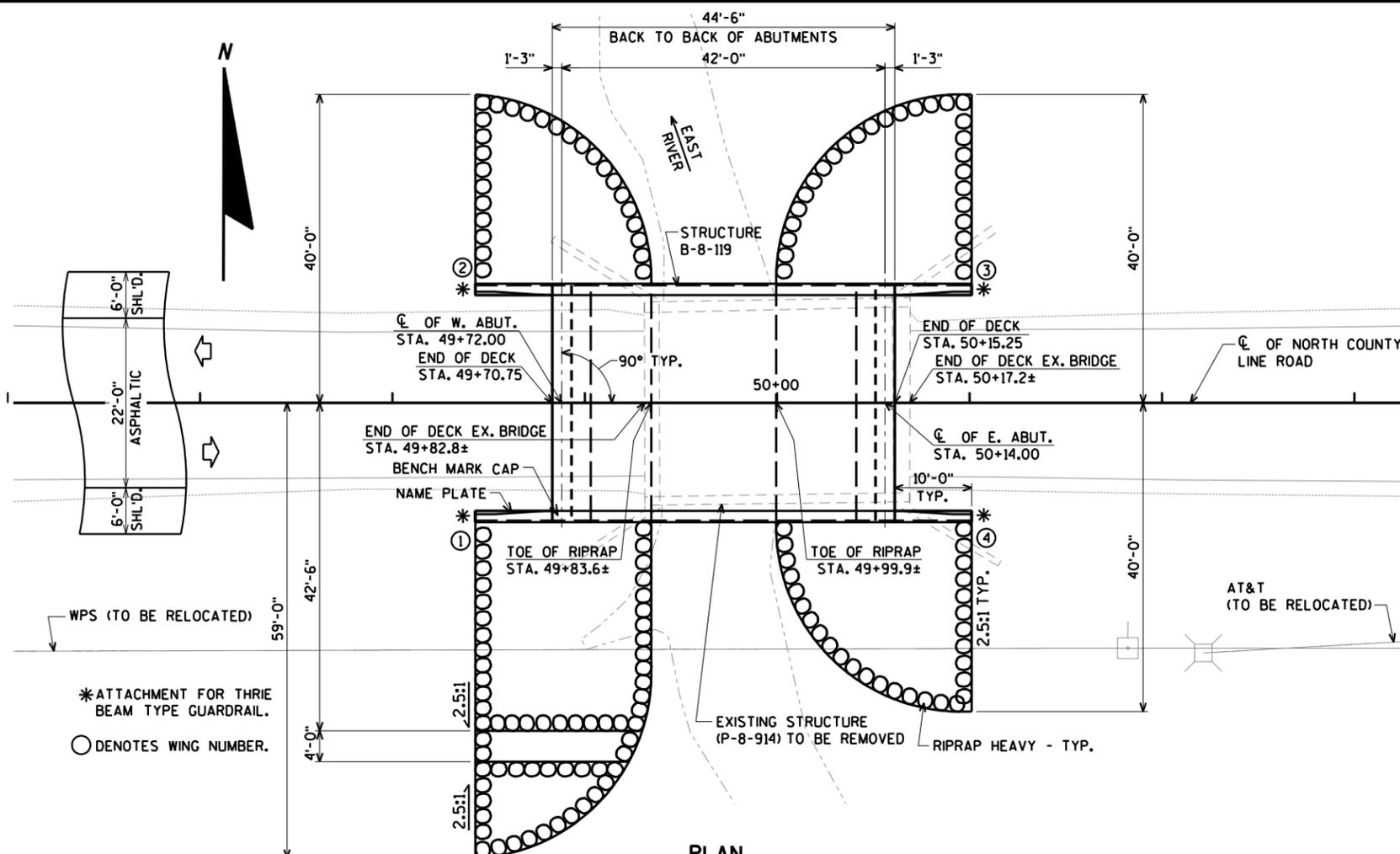
SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	36		1 5/8	5/8	3/4	5	3 3/8	3 1/2	1 1/8	4	8 3/8	8 7/8	12 1/2	11	9	6	10 1/8	2 1/2	1 7/8	5 5/8	8	1 3/8	4 1/2	3 1/2	10 3/4	1 3/4	9.0
2S	48		2 1/4	3/4	1	7	4 1/2	4 3/4	1 1/2	5 1/4	11 3/4	12 1/2	17 1/4	14 5/8	12	8	13 1/2	3 3/8	2 5/8	7 1/2	10 5/8	1 7/8	6	4 5/8	14 3/8	2 3/8	16.0
2M	48		2 1/4	3/4	1	7	4 1/2	4 3/4	1 1/2	5 1/4	11 3/4	12 1/2	17 1/4	14 5/8	12	8	13 1/2	3 3/8	2 5/8	7 1/2	10 5/8	1 7/8	6	4 5/8	14 3/8	2 3/8	16.0
3	48		2 1/4	3/4	1	7	4 1/2	4 3/4	1 1/2	5 1/4	11 3/4	12 1/2	17 1/4	14 5/8	12	8	13 1/2	3 3/8	2 5/8	7 1/2	10 5/8	1 7/8	6	4 5/8	14 3/8	2 3/8	16.0
4	48		2 1/4	3/4	1	7	4 1/2	4 3/4	1 1/2	5 1/4	11 3/4	12 1/2	17 1/4	14 5/8	12	8	13 1/2	3 3/8	2 5/8	7 1/2	10 5/8	1 7/8	6	4 5/8	14 3/8	2 3/8	16.0
5	48		2 1/4	3/4	1	7	4 1/2	4 3/4	1 1/2	5 1/4	11 3/4	12 1/2	17 1/4	14 5/8	12	8	13 1/2	3 3/8	2 5/8	7 1/2	10 5/8	1 7/8	6	4 5/8	14 3/8	2 3/8	16.0

STANDARD SIGN
W20-3A, B, C, D, F & G

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
For State Traffic Engineer

DATE 3/18/11 PLATE NO. W20-3.7

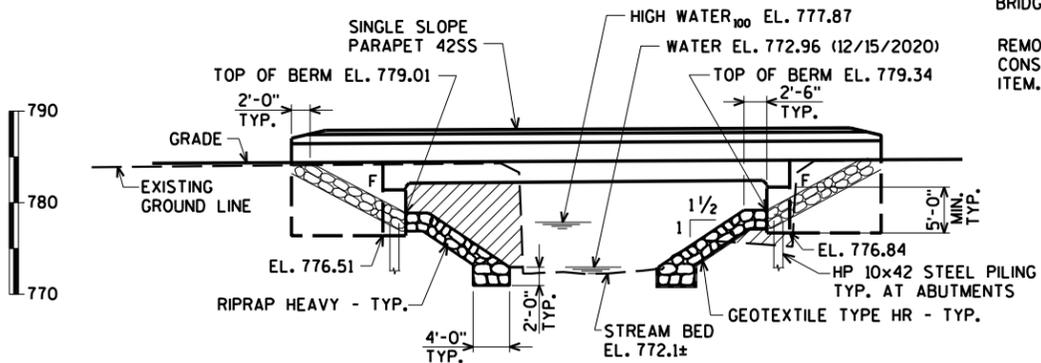


PLAN
SINGLE SPAN CONCRETE FLAT SLAB BRIDGE

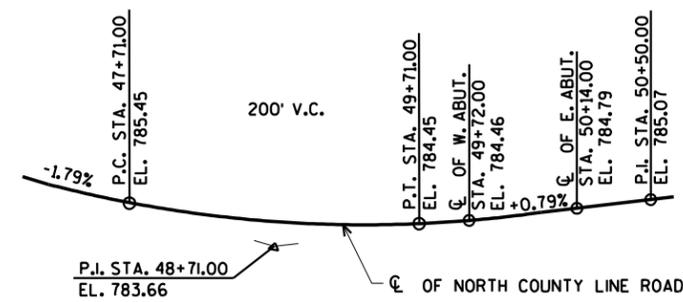
* ATTACHMENT FOR THRIE BEAM TYPE GUARDRAIL.
○ DENOTES WING NUMBER.

COST OF EXCAVATION OR FILL IN THE HATCHED AREAS SHALL BE INCLUDED IN THE CONTRACT LUMP SUM PRICE FOR "EXCAVATION FOR STRUCTURES BRIDGES B-8-119".

REMOVE EXISTING SUBSTRUCTURE AS NEEDED. COST CONSIDERED INCIDENTAL TO "REMOVING STRUCTURE" ITEM. TYPICAL AT ALL SUBSTRUCTURES.



ELEVATION

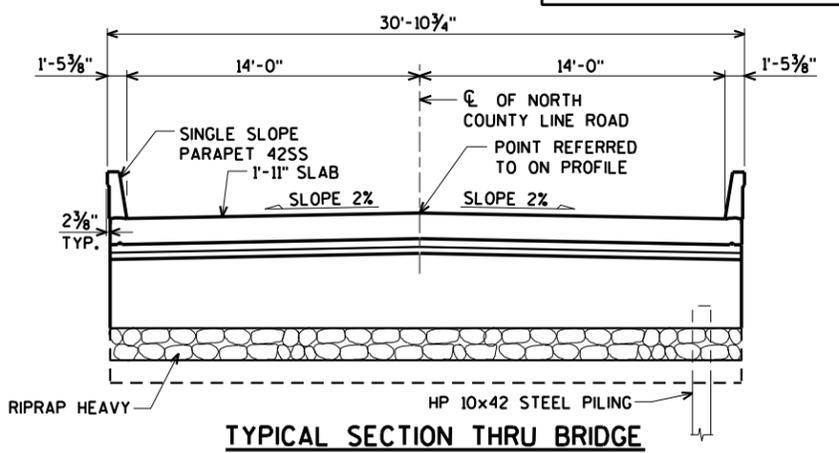


PROFILE GRADE LINE
(NORTH COUNTY LINE ROAD)

BENCH MARK:
RR SPIKE N. PPOLE #2020-3WS
STA. 53+83, 31' RT
EL. 798.14

LIST OF DRAWINGS

1. GENERAL PLAN
2. QUANTITIES AND NOTES
3. SUBSURFACE EXPLORATION
4. WEST ABUTMENT
5. WEST ABUTMENT WING DETAILS
6. WEST ABUTMENT PILE LAYOUT & BILL OF BARS
7. EAST ABUTMENT
8. EAST ABUTMENT WING DETAILS
9. EAST ABUTMENT PILE LAYOUT & BILL OF BARS
10. SUPERSTRUCTURE
11. SUPERSTRUCTURE DETAILS
12. SINGLE SLOPE PARAPET 42SS



TYPICAL SECTION THRU BRIDGE

DESIGN DATA

LIVE LOAD:
DESIGN LOADING: HL-93
INVENTORY RATING FACTOR: 1.16
OPERATING RATING FACTOR: 1.50
WISCONSIN STANDARD PERMIT VEHICLE (WIS-SPV) = 250 KIPS

STRUCTURE IS DESIGNED FOR A FUTURE WEARING SURFACE OF 20 #/S.F.

MATERIAL PROPERTIES:

CONCRETE MASONRY { SUPERSTRUCTURE f'c = 4,000 p.s.i.
ALL OTHER f'c = 3,500 p.s.i.
HIGH STRENGTH BAR STEEL REINFORCEMENT (GRADE 60) fy = 60,000 p.s.i.

HYDRAULIC DATA:

100 YEAR FREQUENCY

Q₁₀₀ = 560 c.f.s.
VEL. = 5.6 f.p.s.
HW₁₀₀ = EL. 777.87
WATERWAY AREA = 101 sq. ft.
DRAINAGE AREA = 10.7 sq. mi.
SCOUR CRITICAL CODE = 8
DATUM = NAVD88 (2012)

2 YEAR FREQUENCY

Q₂ = 140 c.f.s.
VEL. = 4.3 f.p.s.
HW₂ = EL. 775.08

FOUNDATION DATA:

ABUTMENTS TO BE SUPPORTED ON HP 10 x 42 STEEL PILING DRIVEN TO A REQUIRED DRIVING RESISTANCE OF 140 TONS # PER PILE AS DETERMINED BY THE MODIFIED GATES DYNAMIC FORMULA. ESTIMATED LENGTH 125'-0" FOR WEST ABUTMENT, 120'-0" FOR EAST ABUTMENT.

* THE FACTORED AXIAL RESISTANCE OF PILES IN COMPRESSION USED FOR DESIGN IS THE REQUIRED DRIVING RESISTANCE MULTIPLIED BY A RESISTANCE FACTOR OF 0.5 USING MODIFIED GATES TO DETERMINE DRIVEN PILE CAPACITY.

TRAFFIC DATA:

A.A.D.T. = 864 (2023)
A.A.D.T. = 954 (2043)
R.D.S. = 40 M.P.H.

NO.	DATE	REVISION	BY
ORIGINAL PLANS PREPARED BY			
3433 Oakwood Hills Parkway Eau Claire, WI 54701 www.AyresAssociates.com			
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
ACCEPTED	SDR 08/15/22 CHIEF STRUCTURES DESIGN ENGINEER DATE		
STRUCTURE B-8-119			
NORTH COUNTY LINE ROAD OVER EAST RIVER			
COUNTY	CALUMET	TOWN/CITY/VILLAGE	BRILLION
DESIGN SPEC. AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS			
DESIGNED BY	BMS	DESIGN CKD.	JCK
DRAWN BY	ZSS/CLP	PLANS CKD.	AEB
GENERAL PLAN			SHEET 1 OF 12



05/31/2022

BRIDGE OFFICE CONTACT:
AARON BONK
(608)-261-0261
CONSULTANT CONTACT:
ARLEN BEAUDETTE
(715)-834-3161

5/23/2022
PENTABLE:BRRequ...shd_util.tbl

DATE: DATE:
CHECKED BY: BACK CHECKED BY:
CORRECTED BY:

8

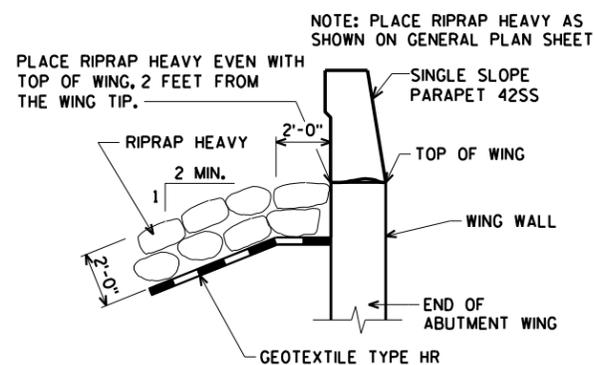
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TOTAL ESTIMATED QUANTITIES

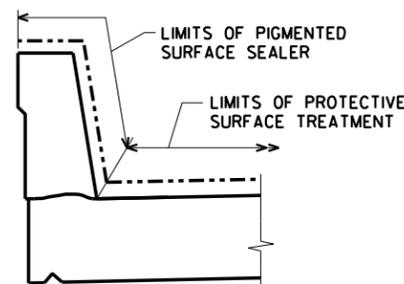
BID ITEM NUMBER	BID ITEMS	UNIT	W. ABUT.	E. ABUT.	SUPER.	TOTAL
203.0260	REMOVING STRUCTURE OVER WATERWAY MINIMAL DEBRIS (P-8-914)	EACH	-----	-----	-----	1
206.1001	EXCAVATION FOR STRUCTURES BRIDGES B-8-119	EACH	-----	-----	-----	1
210.1500	BACKFILL STRUCTURE TYPE A	TON	125	125	-----	250
502.0100	CONCRETE MASONRY BRIDGES	CY	29.0	29.5	118.8	178
502.3200	PROTECTIVE SURFACE TREATMENT	SY	-----	-----	140	140
502.3210	PIGMENTED SURFACE SEALER	SY	-----	-----	65	65
505.0400	BAR STEEL REINFORCEMENT HS STRUCTURES	LB	1,740	1,740	-----	3,480
505.0600	BAR STEEL REINFORCEMENT HS COATED STRUCTURES	LB	1,990	2,010	19,310	23,310
516.0500	RUBBERIZED MEMBRANE WATERPROOFING	SY	9	9	-----	18
550.1100	PILING STEEL HP 10-INCH x 42 LB	LF	625	600	-----	1,225
606.0300	RIPRAP HEAVY	CY	160	150	-----	310
612.0406	PIPE UNDERDRAIN WRAPPED 6-INCH	LF	75	75	-----	150
614.0150	ANCHOR ASSEMBLIES FOR STEEL PLATE BEAM GUARD	EACH	-----	-----	4	4
645.0111	GEOTEXTILE TYPE DF SCHEDULE A	SY	45	45	-----	90
645.0120	GEOTEXTILE TYPE HR	SY	300	270	-----	570
	NON-BID ITEMS					
	FILLER	SIZE	-----	-----	-----	1/2" & 3/4"

GENERAL NOTES

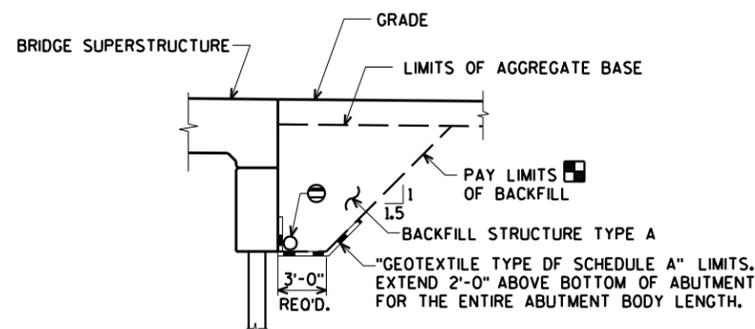
DRAWINGS SHALL NOT BE SCALED.
 BAR STEEL REINFORCEMENT SHALL BE EMBEDDED 2" CLEAR UNLESS SHOWN OR NOTED OTHERWISE.
 THE FIRST DIGIT OF A THREE DIGIT BAR NO. AND THE FIRST TWO DIGITS OF A FOUR DIGIT BAR NO. SIGNIFIES THE BAR SIZE. JOINT FILLER SHALL CONFORM TO THE REQUIREMENTS OF A.A.S.H.T.O. DESIGNATION M 153, TYPE I, II OR III OR A.A.S.H.T.O. DESIGNATION M 213.
 THE SLOPE OF THE FILL IN FRONT OF THE ABUTMENTS SHALL BE COVERED WITH RIPRAP HEAVY AND GEOTEXTILE TYPE HR TO THE EXTENT SHOWN ON THE GENERAL PLAN SHEET AND IN THE ABUTMENT DETAILS.
 SLAB FALSEWORK SHALL BE SUPPORTED ON PILES OR THE SUBSTRUCTURE UNLESS AN ALTERNATE METHOD IS APPROVED BY THE ENGINEER.
 THE UPPER LIMITS OF "EXCAVATION FOR STRUCTURES BRIDGES B-8-119" SHALL BE THE EXISTING GROUNDLINE.
 THE EXISTING STRUCTURE, P-8-914, TO BE REMOVED, IS A 30.25-FT. LONG SINGLE-SPAN CONCRETE DECK GIRDER BRIDGE ON CONCRETE ABUTMENTS WITH A 23.6-FT. CLEAR ROADWAY WIDTH.
 THE BACKFILL QUANTITIES ARE BASED ON THE PAY LIMITS SHOWN ON THE PLANS AND MAY NOT REFLECT ACTUAL PLACED QUANTITIES. "BACKFILL STRUCTURE TYPE A" REQUIRED DIRECTLY BEHIND ABUTMENTS AND ABUTMENTS WINGS FOR 3 FEET. BACKFILL PLACED BEYOND PAY LIMITS OR EXCEEDING PLAN QUANTITIES SHALL BE INCIDENTAL TO EXCAVATION FOR STRUCTURES.
 PROTECTIVE SURFACE TREATMENT AND PIGMENTED SURFACE SEALER IS TO BE APPLIED AS SHOWN IN DETAIL ON THIS SHEET.
 BEVEL EXPPOSED EDGES OF CONCRETE 3/4" UNLESS NOTED OTHERWISE.
 EXCAVATION BELOW THE ABUTMENT AND ABUTMENT BEDDING MATERIALS REQUIRES ENGINEER APPROVAL. GEOTEXTILE SHALL BE SET AT THE BOTTOM OF EXCAVATION AND EXTEND 2'-0" ABOVE BOTTOM OF ABUTMENT.
 EXTENT OF BELOW GRADE SUBSTRUCTURES ARE NOT KNOWN. REMOVE EXISTING SUBSTRUCTURES AS NEEDED TO BUILD NEW SUBSTRUCTURES. COST OF SUBSTRUCTURE REMOVAL IS CONSIDERED INCIDENTAL TO "REMOVING STRUCTURE" BID ITEM.
 AT THE BACK FACE OF ABUTMENTS AND AT EXISTING ABUTMENT REMOVALS, ALL VOLUME WHICH CANNOT BE PLACED BEFORE ABUTMENT CONSTRUCTION AND IS NOT OCCUPIED BY THE NEW STRUCTURE SHALL BE BACKFILLED WITH BACKFILL STRUCTURE TYPE A.
 AT ABUTMENTS, CONCRETE POURED UNDERWATER WILL BE ALLOWED AND SHALL BE DONE IN ACCORDANCE WITH SECTION 502.3.5.3 OF THE STANDARD SPECIFICATIONS.



TYPICAL FILL SECTION AT WING TIPS

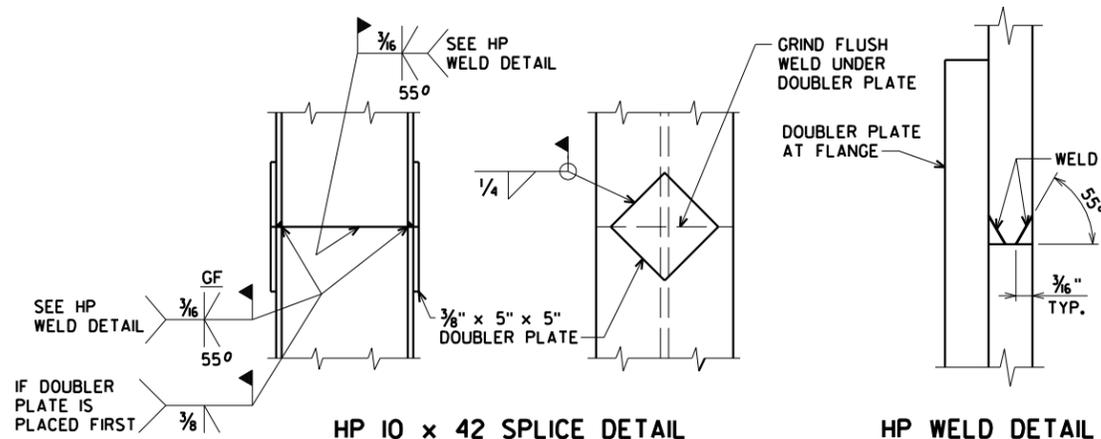


PROTECTIVE SURFACE TREATMENT AND PIGMENTED SURFACE SEALER DETAIL



BACKFILL STRUCTURE LIMITS THRU ABUTMENT

- ☐ BACKFILL PAY LIMITS. BACKFILL BEYOND BACKFILL PAY LIMITS SHALL BE INCIDENTAL TO EXCAVATION FOR STRUCTURES. LIMITS OF EXCAVATION SHALL BE DETERMINED BY THE CONTRACTOR.
- ⊖ PIPE UNDERDRAIN WRAPPED 6-INCH. SLOPE 0.5% MIN. TO SUITABLE DRAINAGE. ATTACH RODENT SHIELD AT ENDS OF PIPE UNDERDRAIN AS DETAILED ON SHEET 6.



HP WELD DETAIL
FLANGE SHOWN, WEB SIMILAR

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-8-119			
DRAWN BY		ZSS	PLANS CK'D. JCK
QUANTITIES AND NOTES			SHEET 2 OF 12

ORIGINAL PLANS PREPARED BY
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BORING #	DATE COMPLETED	NORTHING (Y)	EASTING (X)
1	JUNE 22, 2021	554934.23	907291.80
2/2A	JUNE 15 & 22, 2021	554920.39	907343.30

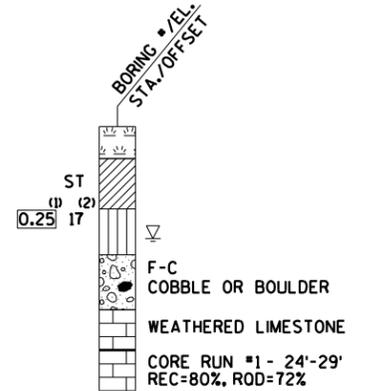
BORINGS COMPLETED BY: ECS MIDWEST, LLC
 REPORT COMPLETED BY: ECS MIDWEST, LLC
 ALL COORDINATES REFERENCED TO WCCS NAD 83(9) CALUMET COUNTY



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

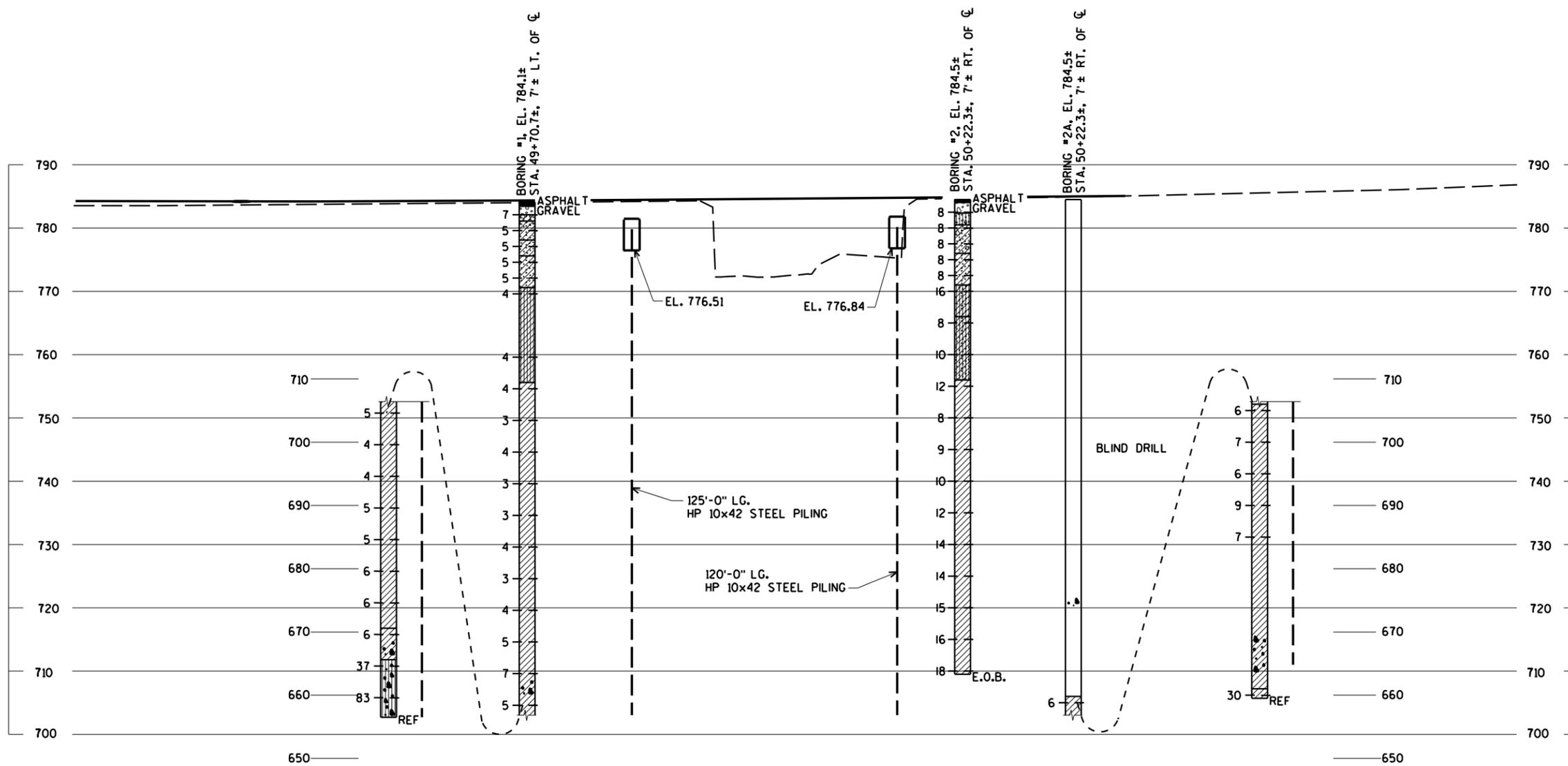
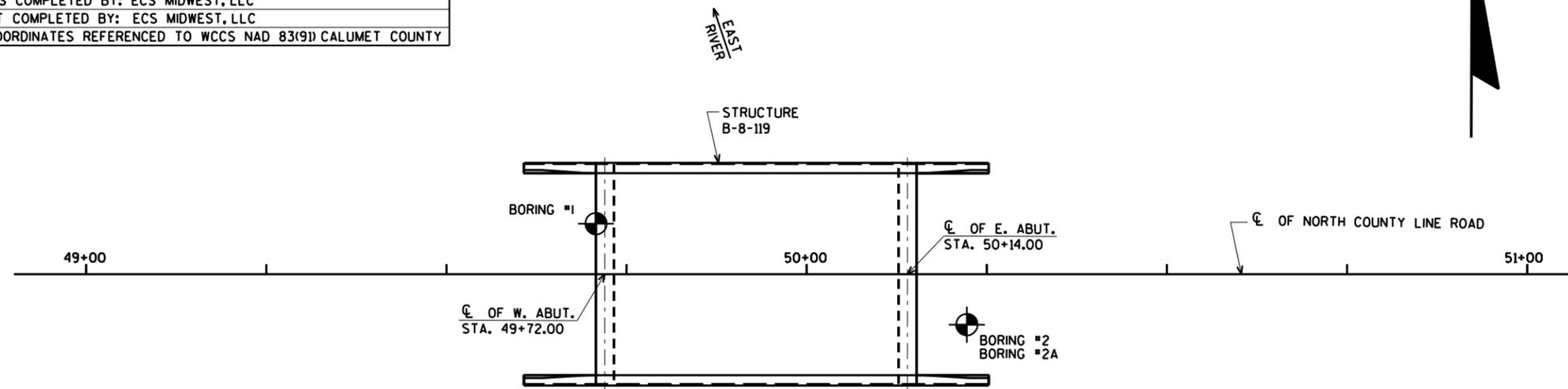
- AT TIME OF DRILLING
- END OF DRILLING
- AFTER DRILLING

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.

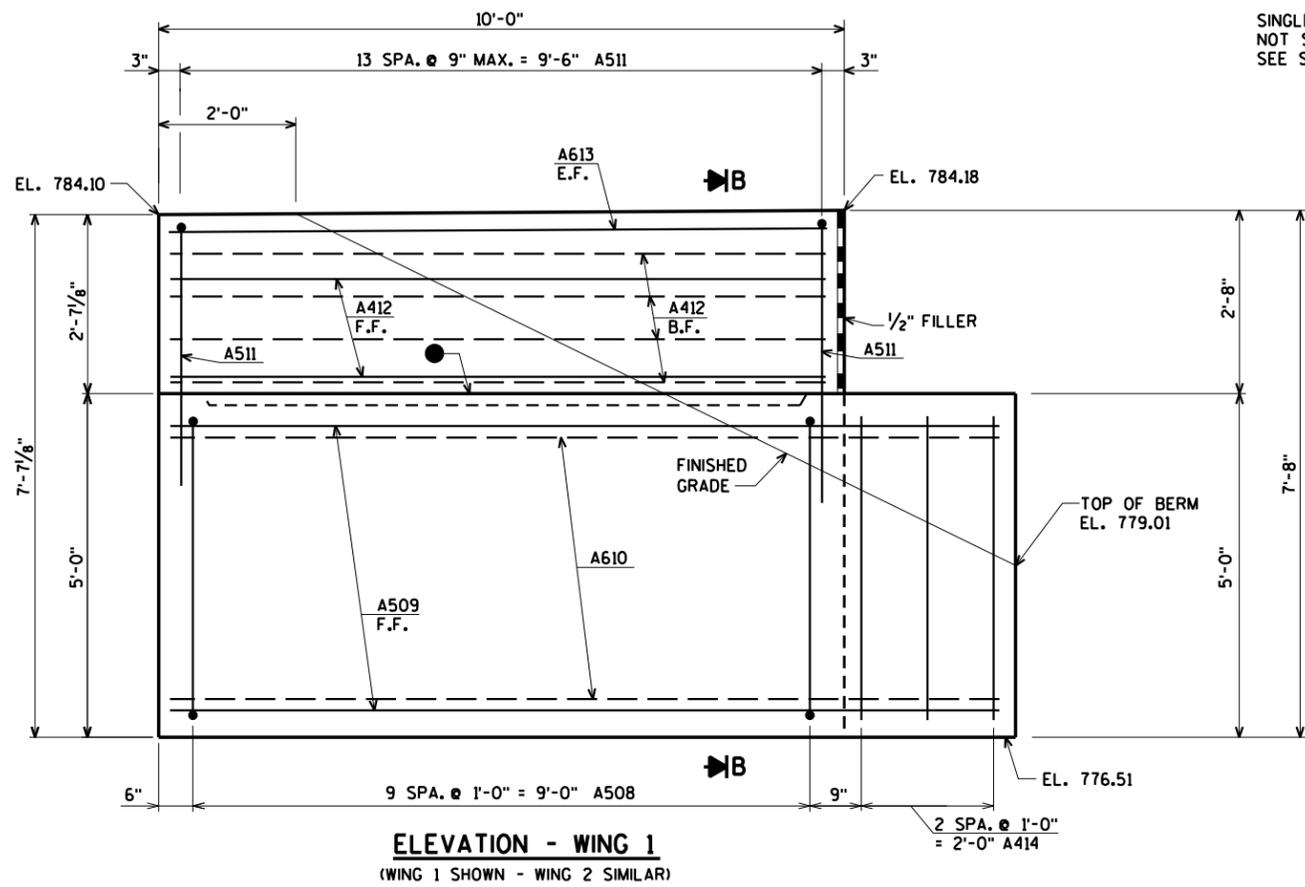


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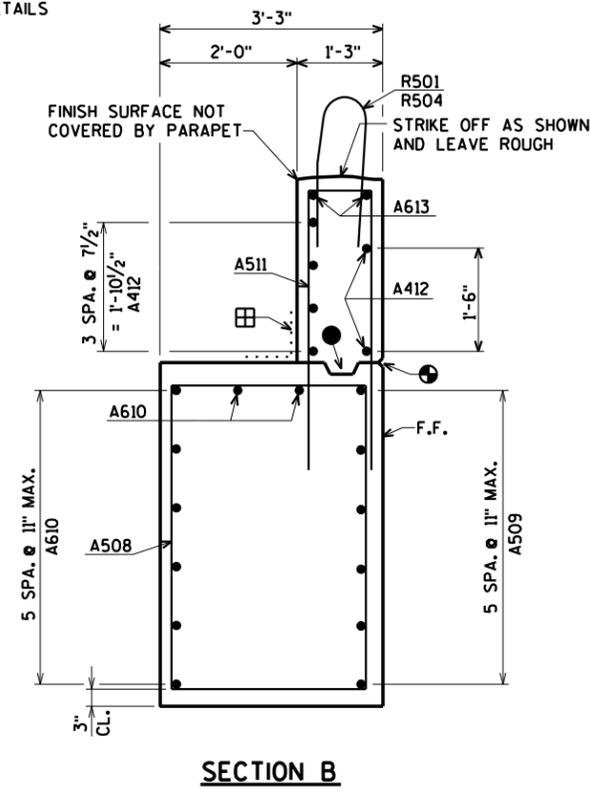
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NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-8-119			
DRAWN BY		ZSS	PLANS CKD. JCK
SUBSURFACE EXPLORATION			SHEET 3 OF 12



SINGLE SLOPE 42SS PARAPET
NOT SHOWN, FOR DETAILS
SEE SHEET 12



- ⊕ 3/4" "V" GROOVE ON FRONT FACE OF WINGWALL. ONLY REQUIRED IF OPTIONAL CONSTRUCTION JOINT IS USED.
- OPT. CONST. JOINT FORMED BY A BEVELED 2" x 6" KEYWAY WITH MEMBRANE ON BACKFACE.
- ⊠ 18" RUBBERIZED MEMBRANE WATERPROOFING. SEAL ALL HOIRZONTAL AND VERTICAL JOINTS ON BACKFACE.

2/2/2022 PENTABLE:BRRedu_shd_util.tbl

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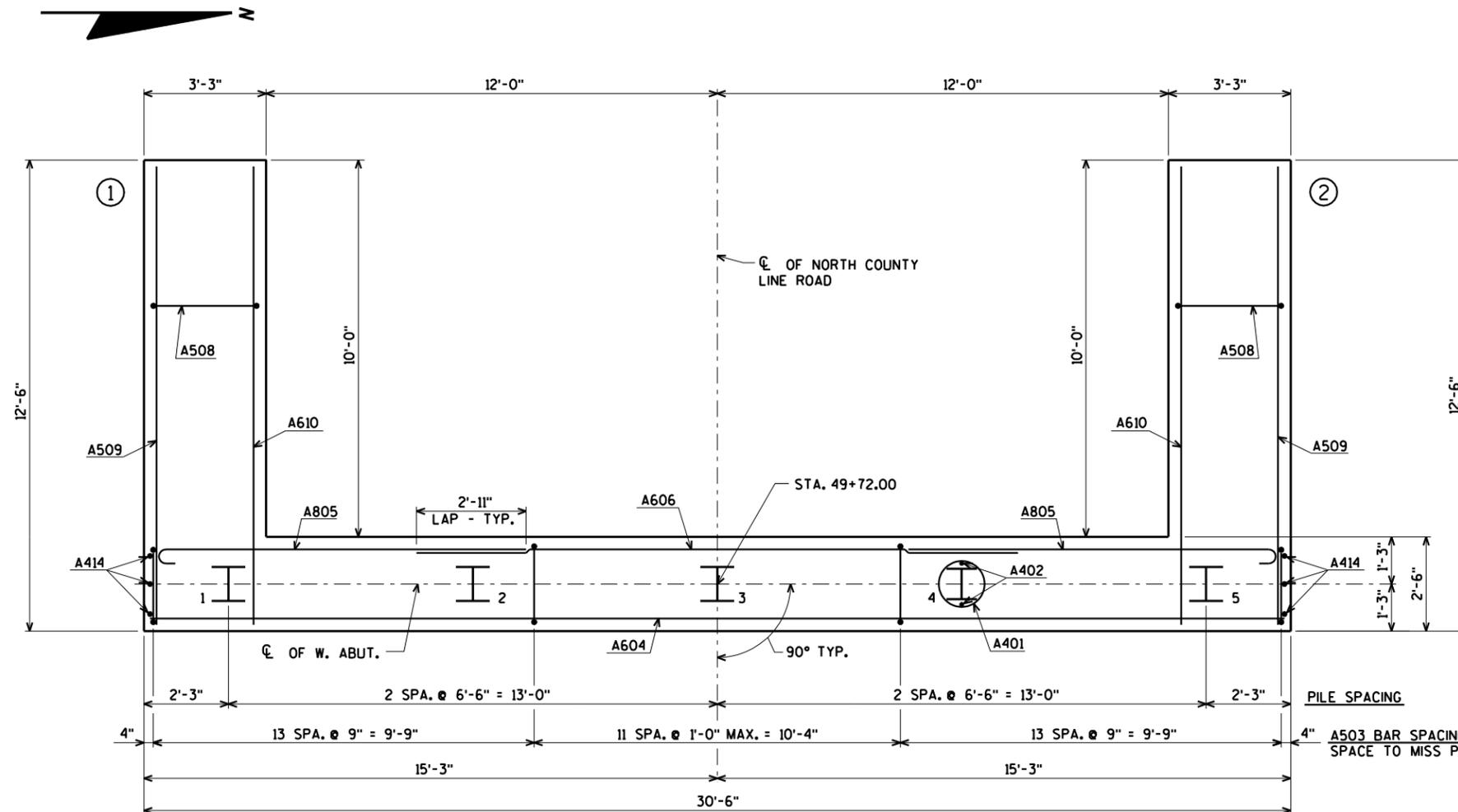
NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-8-119			
DRAWN BY	CLP	PLANS CK'D.	JCK
WEST ABUTMENT WING DETAILS			SHEET 5 OF 12

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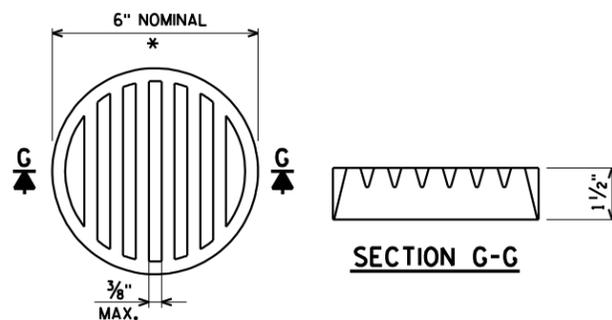
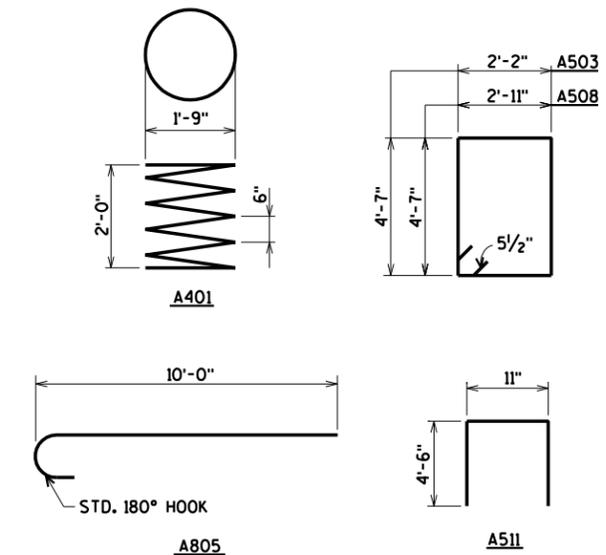
BILL OF BARS

BAR NO.	COATED BAR	NO. REQ'D.	LENGTH	BENT BAR	BUNDLED	BAR SERIES	1,990' COATED	1,740' UNCOATED	LOCATION
A401		5	28-0	X					BODY @ PILES
A402		10	2-3						BODY @ PILES
A503		38	14-2	X					BODY VERT.
A604		11	30-2						BODY HORIZ.
A805		14	10-11	X					BODY HORIZ. @ WING B.F.
A606		7	16-0						BODY HORIZ. BETW. WINGS B.F.
A507	X	29	2-0						BODY DOWELS
A508	X	20	15-8	X					WINGS 1 & 2 VERT.
A509	X	12	12-2						WINGS 1 & 2 HORIZ. F.F.
A610	X	16	12-2						WINGS 1 & 2 HORIZ. B.F. & TOP
A511	X	28	9-8	X					WINGS 1 & 2 VERT.
A412	X	12	9-7						WINGS 1 & 2 HORIZ. E.F.
A613	X	4	9-7						WINGS 1 & 2 HORIZ. E.F.
A414	X	6	4-7						BODY VERT. END @ WINGS 1 & 2

BENDING DIMENSIONS ARE OUT TO OUT OF BARS.



PILE LAYOUT



* DIMENSIONS ARE APPROXIMATE. THE GRATE IS SIZED TO FIT INTO A PIPE COUPLING. ORIENT SO SLOTS ARE VERTICAL.

THE RODENT SHIELD, PIPE COUPLING AND SCREWS SHALL BE CONSIDERED INCIDENTAL TO THE BID ITEM "PIPE UNDERDRAIN WRAPPED 6-INCH".

THE RODENT SHIELD SHALL BE PVC GRATE SIMILAR TO THIS DETAIL. THE GRATE IS COMMERCIALY AVAILABLE AS A FLOOR STRAINER. A PIPE COUPLING IS REQUIRED FOR THE ATTACHMENT OF THIS SHIELD TO THE EXPOSED END OF THE PIPE UNDERDRAIN. THE SHIELD SHALL BE FASTENED TO THE PIPE COUPLING WITH TWO OR MORE NO. 10 x 1-INCH SHEET METAL SCREWS.

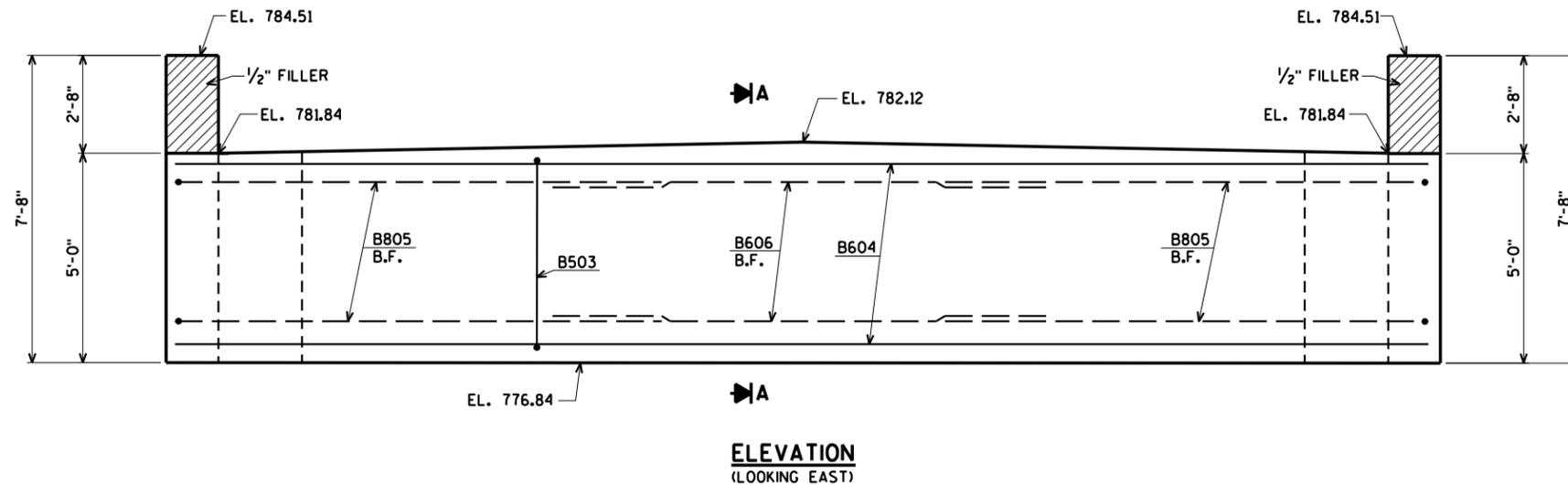
RODENT SHIELD DETAIL

FOR PILE SPLICE DETAIL SEE SHEET 2.

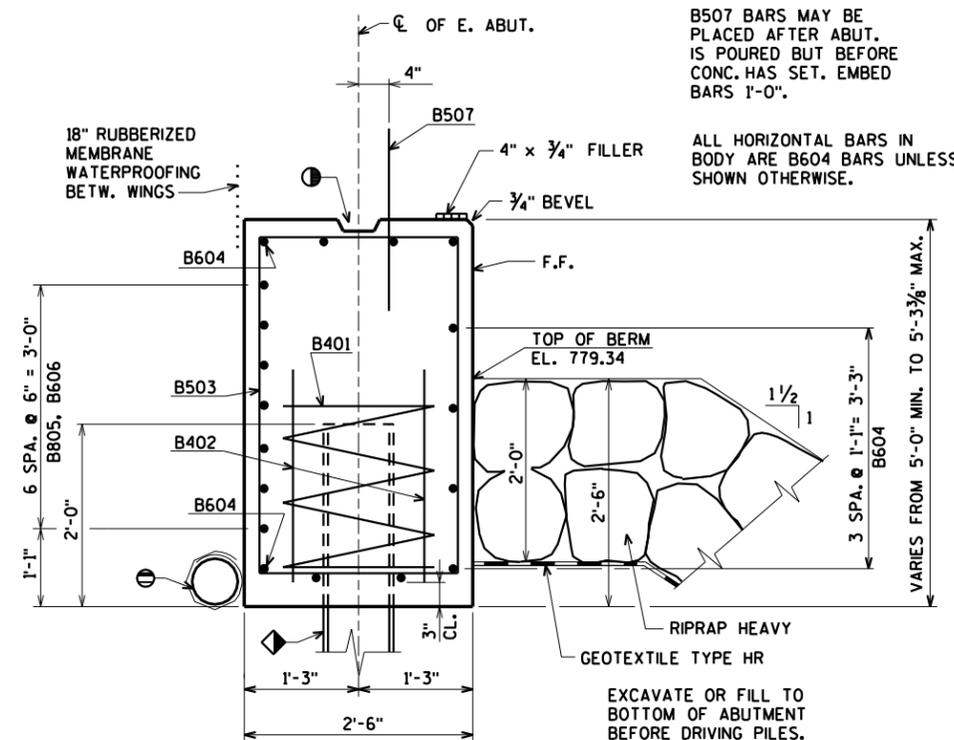
NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-8-119			
DRAWN BY CLP		PLANS CK'D. JCK	
WEST ABUTMENT PILE LAYOUT & BILL OF BARS			SHEET 6 OF 12

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NOTE:
SEAL ALL EXPOSED HORIZONTAL AND VERTICAL SURFACES OF
1/2" FILLER WITH NON-STAINING GRAY NON-BITUMINOUS JOINT
SEALER. (1" DEEP AND HOLD 1/8" BELOW SURFACE OF CONCRETE).

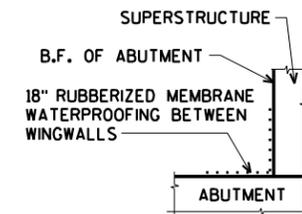


ELEVATION
(LOOKING EAST)



SECTION A

ABUTMENT TO BE SUPPORTED ON
HP 10 x 42 STEEL PILING DRIVEN
TO A REQUIRED DRIVING RESISTANCE
OF 140 TONS PER PILE.
ESTIMATED LENGTH 120'-0".



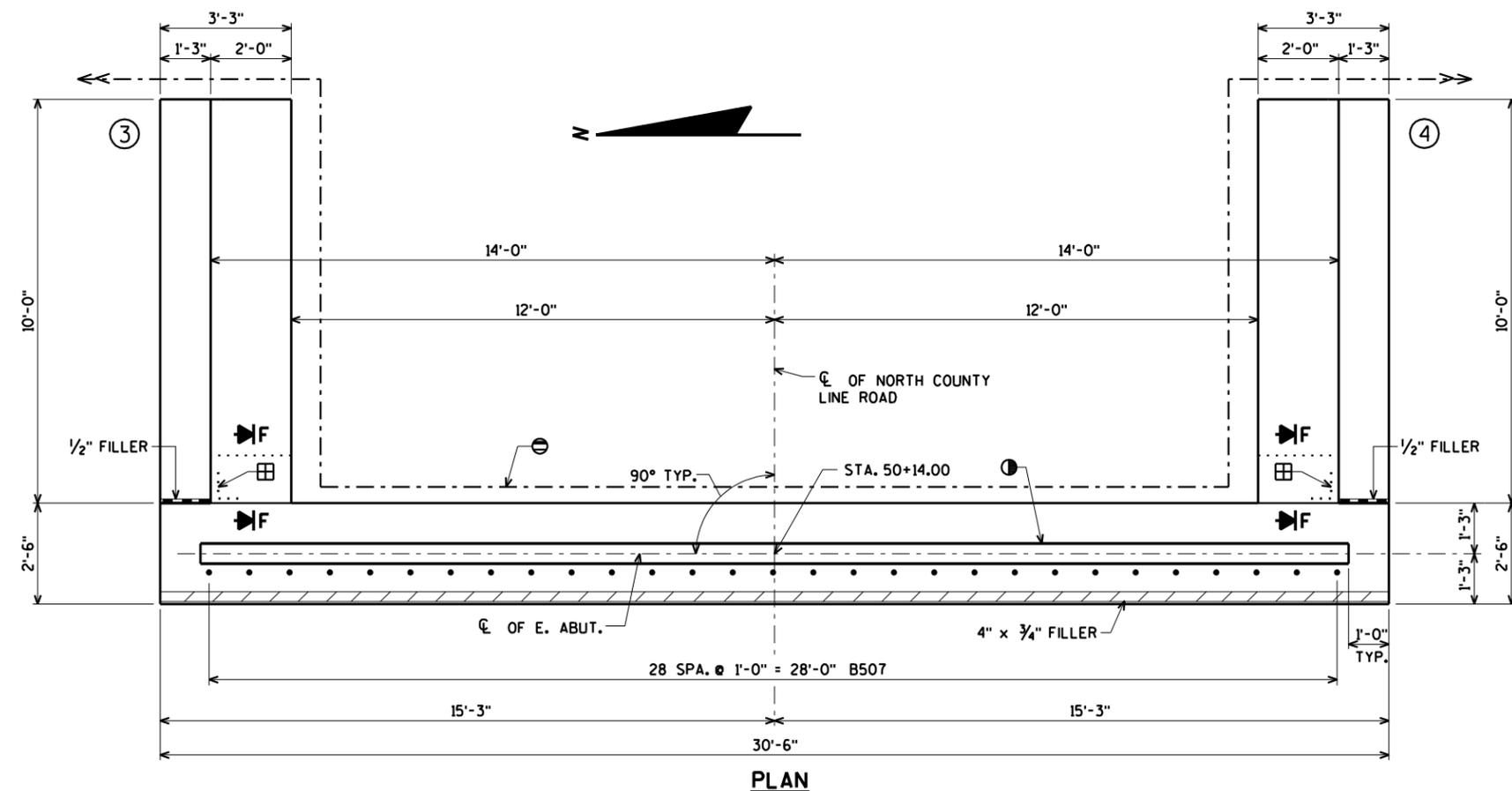
SECTION F

PIPE UNDERDRAIN WRAPPED 6-INCH. SLOPE 0.5%
MIN. TO SUITABLE DRAINAGE. ATTACH RODENT
SHIELD AT ENDS OF PIPE UNDERDRAIN AS DETAILED
ON SHEET 6. RODENT SHIELD TO BE INCIDENTAL TO
BID PRICE OF "PIPE UNDERDRAIN WRAPPED 6-INCH".

KEYED CONST. JOINT - FORMED
BY A BEVELED 2" x 6".

VERTICAL 18" RUBBERIZED MEMBRANE
WATERPROOFING TO EXTEND FROM
BRIDGE SEAT TO TOP OF WINGWALL.

FOR PILE SPLICE DETAIL SEE SHEET 2.



PLAN

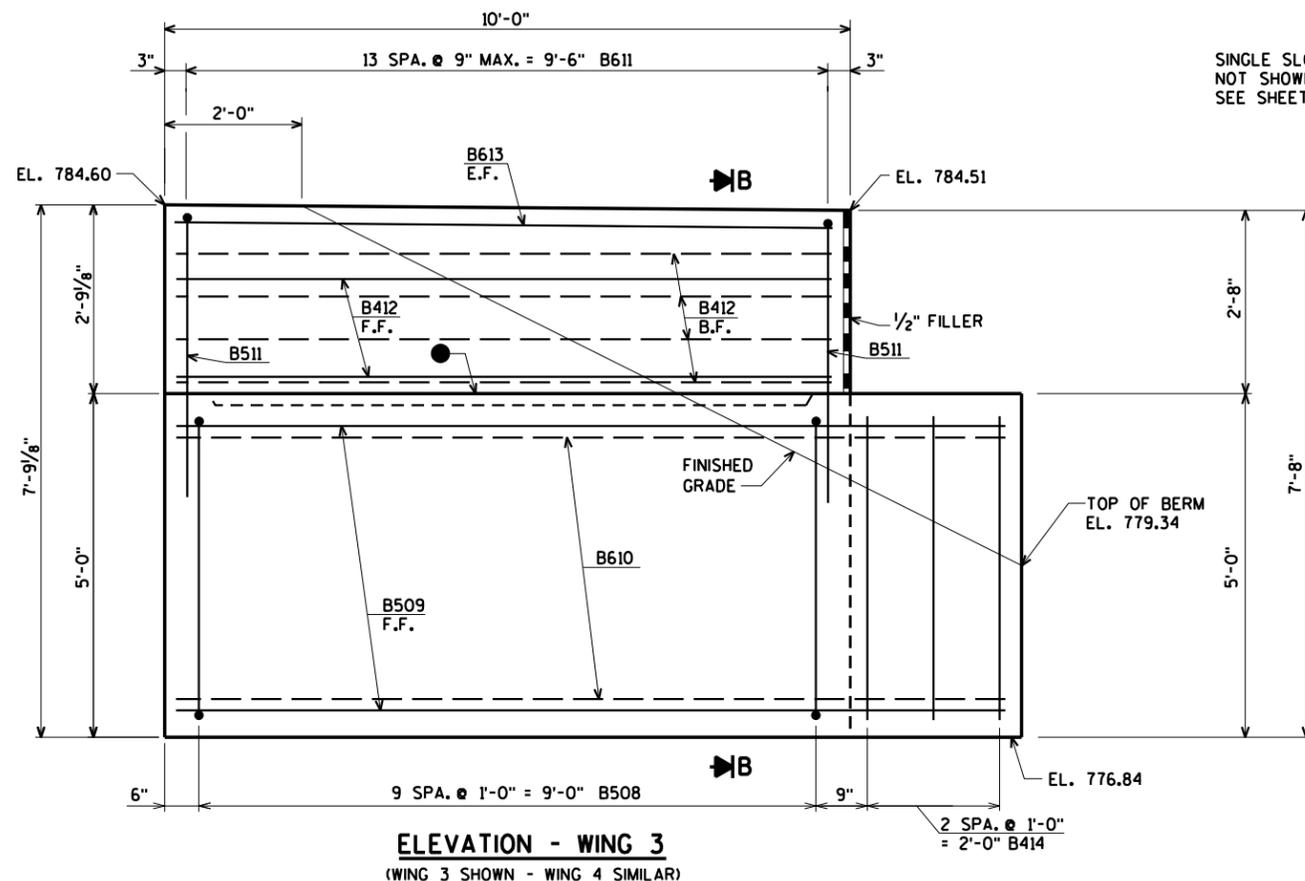
2/2/2022
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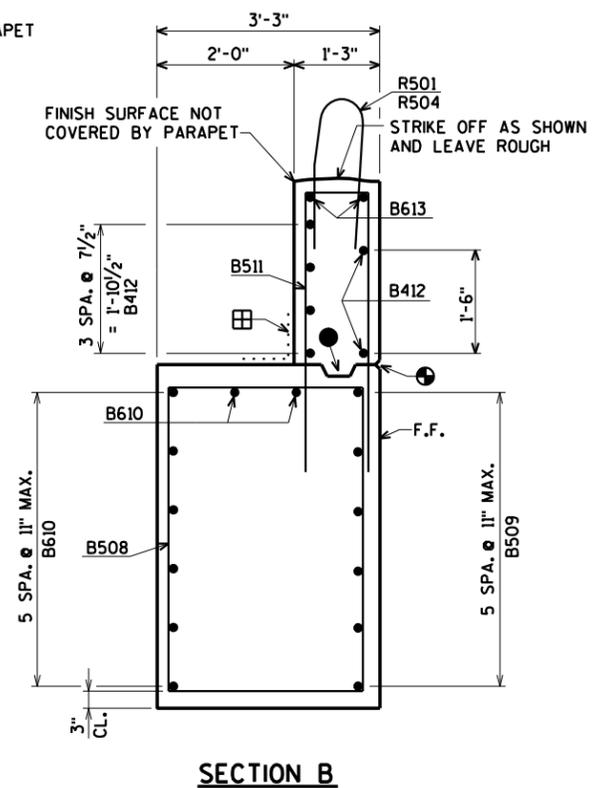
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STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-8-119			
DRAWN BY CLP		PLANS CK'D. JCK	
EAST ABUTMENT			SHEET 7 OF 12



SINGLE SLOPE 42SS PARAPET
NOT SHOWN, FOR DETAILS
SEE SHEET 12

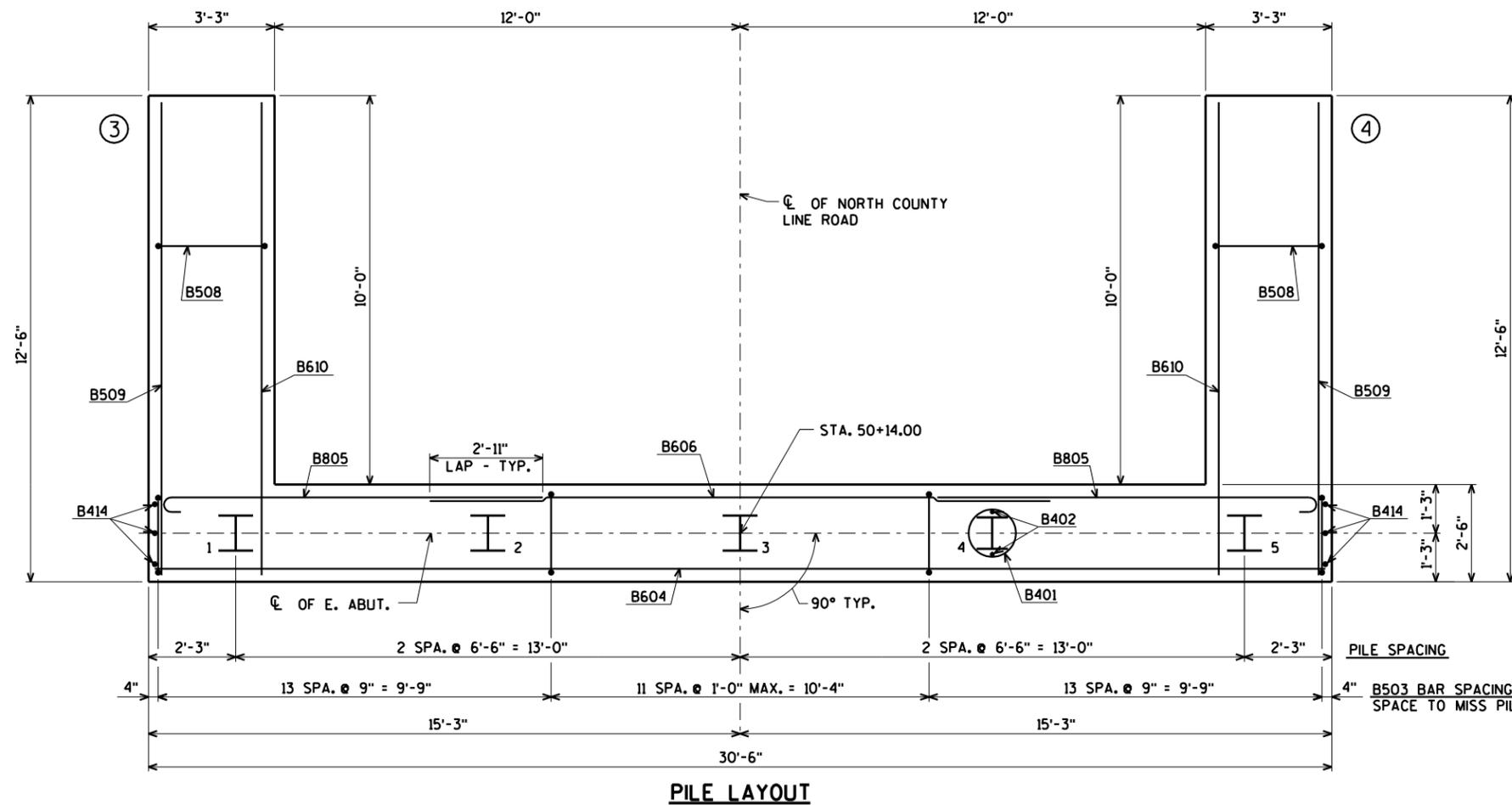


- ⊕ 3/4" "V" GROOVE ON FRONT FACE OF WINGWALL. ONLY REQUIRED IF OPTIONAL CONSTRUCTION JOINT IS USED.
- OPT. CONST. JOINT FORMED BY A BEVELED 2" x 6" KEYWAY WITH MEMBRANE ON BACKFACE.
- ⊠ 18" RUBBERIZED MEMBRANE WATERPROOFING. SEAL ALL HOIRZONTAL AND VERTICAL JOINTS ON BACKFACE.

2/2/2022
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NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-8-119			
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EAST ABUTMENT WING DETAILS			SHEET 8 OF 12

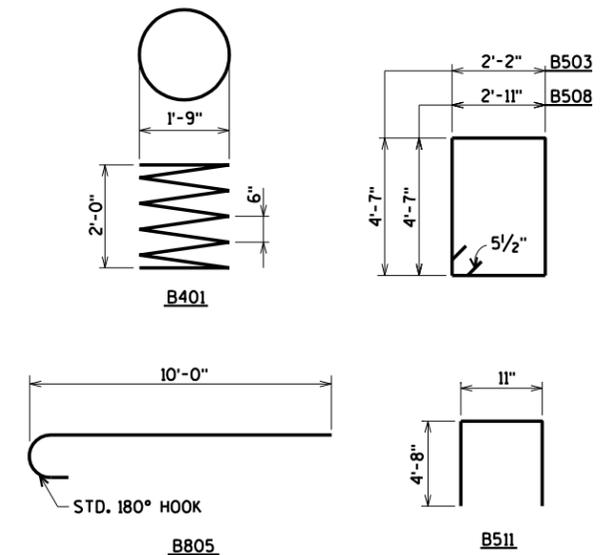
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BILL OF BARS

BAR NO.	COATED BAR	NO. REQ'D.	LENGTH	BENT BAR	BUNDLED	BAR SERIES	2,010# COATED 1,740# UNCOATED	
								LOCATION
B401		5	28-0	X				BODY @ PILES
B402		10	2-3					BODY @ PILES
B503		38	14-2	X				BODY VERT.
B604		11	30-2					BODY HORIZ.
B805		14	10-11	X				BODY HORIZ. @ WING B.F.
B606		7	16-0					BODY HORIZ. BETW. WINGS B.F.
B507	X	29	2-0					BODY DOWELS
B508	X	20	15-8	X				WINGS 3 & 4 VERT.
B509	X	12	12-2					WINGS 3 & 4 HORIZ. F.F.
B610	X	16	12-2					WINGS 3 & 4 HORIZ. B.F. & TOP
B511	X	28	10-1	X				WINGS 3 & 4 VERT.
B412	X	12	9-7					WINGS 3 & 4 HORIZ. E.F.
B613	X	4	9-7					WINGS 3 & 4 HORIZ. E.F.
B414	X	6	4-7					BODY VERT. END @ WINGS 3 & 4

BENDING DIMENSIONS ARE OUT TO OUT OF BARS.



FOR PILE SPLICE DETAIL SEE SHEET 2.

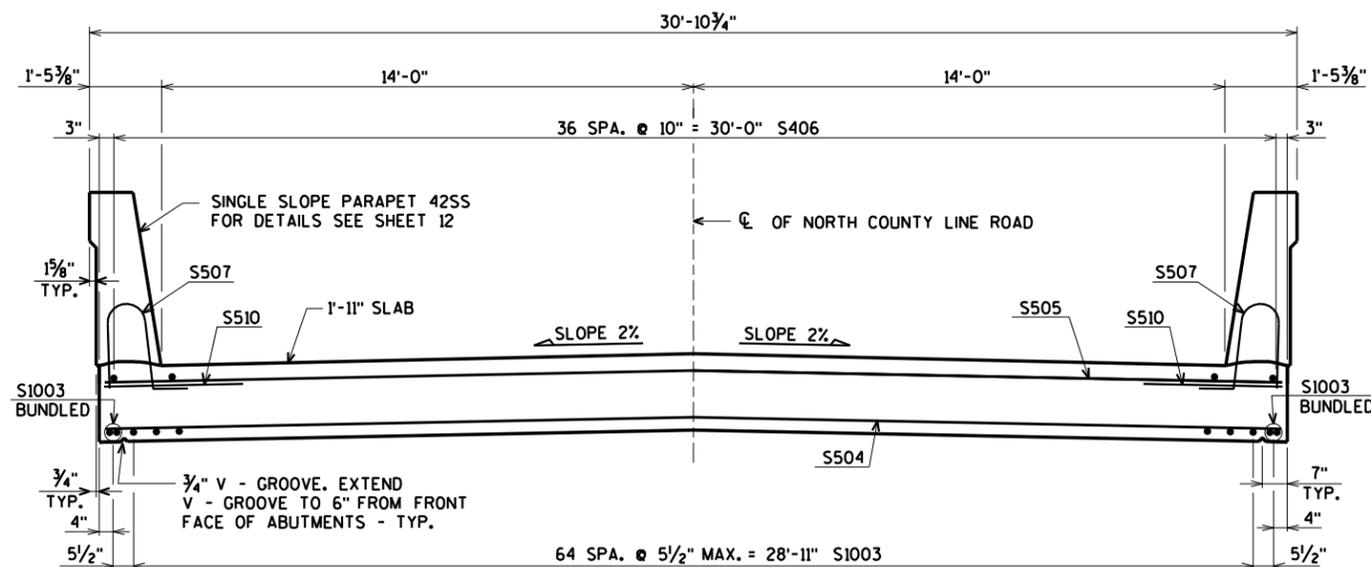
NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-8-119			
DRAWN BY CLP		PLANS CK'D. JCK	
EAST ABUTMENT PILE LAYOUT & BILL OF BARS			SHEET 9 OF 12

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TYPICAL SECTION THRU BRIDGE

TOP TRANSVERSE BARS IN SLAB SHALL BE SUPPORTED BY INDIVIDUAL BAR CHAIRS AT APPROXIMATELY 3'-0" CENTERS EACH WAY. BOTTOM LONGITUDINAL BARS SHALL BE SUPPORTED BY CONTINUOUS BAR CHAIRS AT APPROXIMATELY 4'-0" CENTERS.

ALL SLAB THICKNESS DIMENSIONS ARE MINIMUM. ANY TOLERANCES NECESSARY TO CORRECT CONSTRUCTION DISCREPANCIES ARE TO BE PLUS (+).

WIRE BARS TOGETHER @ 2'-0" CENTERS

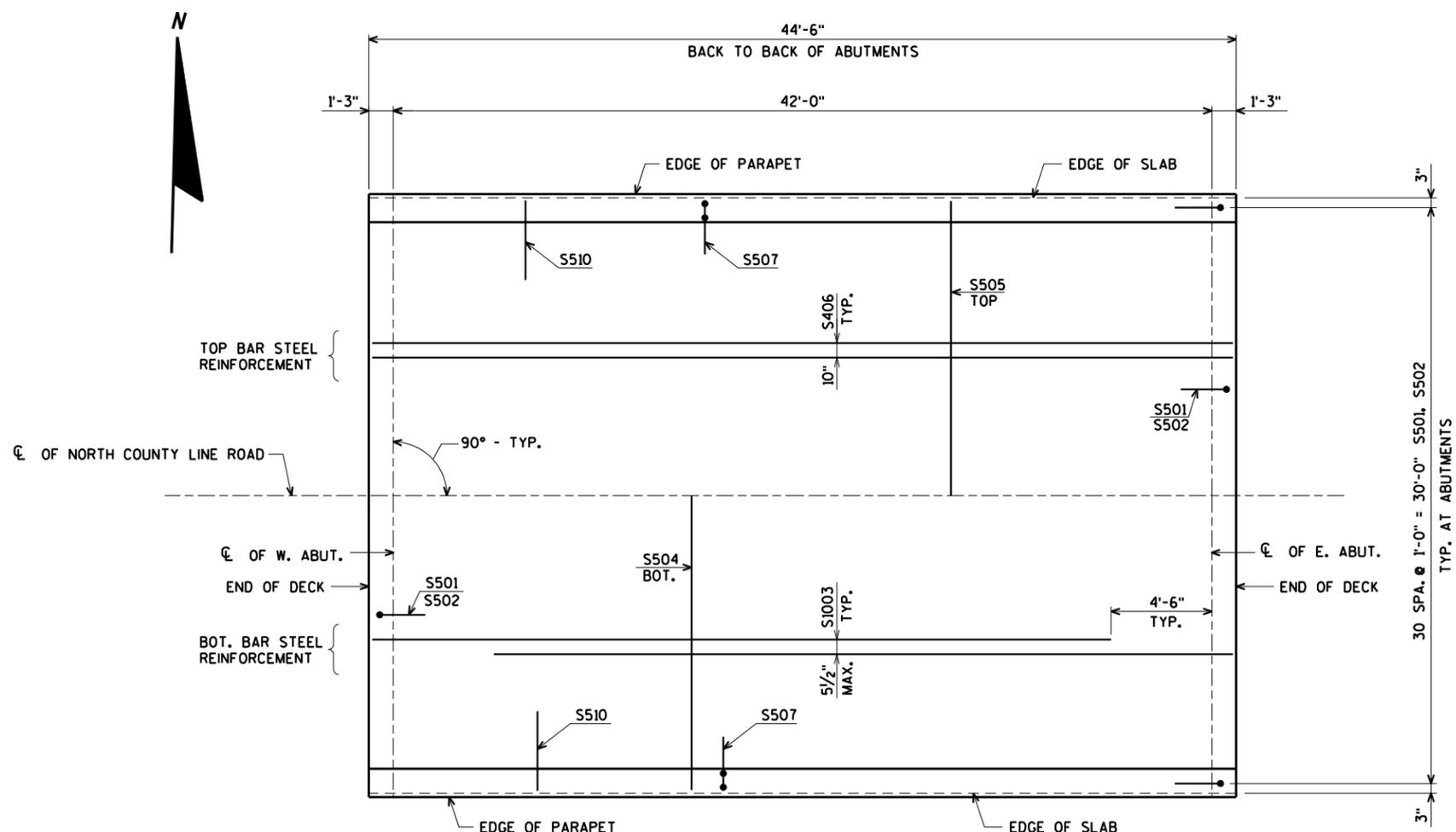


BUNDLING DETAIL

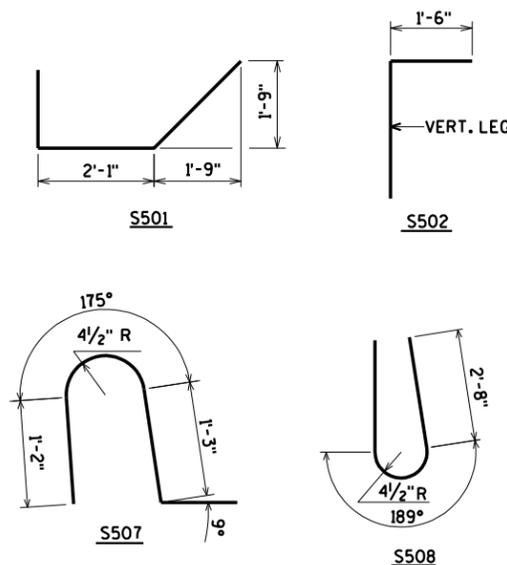
BILL OF BARS

BAR NO.	COATED BAR	NO. REQ'D.	LENGTH	BENT BAR	BUNDLED	BAR SERIES	19,310* COATED
							LOCATION
S501	X	62	6-3	X			SLAB @ ABUT.
S502	X	62	3-7	X			SLAB @ ABUT.
S1003	X	69	38-7	X			SLAB LONG. BOT.
S504	X	70	30-2				SLAB TRANS. BOT.
S505	X	45	30-2				SLAB TRANS. TOP
S406	X	37	44-2				SLAB LONG. TOP
S507	X	134	4-5	X			SLAB @ PARAPET VERT.
S508	X	134	6-8	X			PARAPET VERT.
S509	X	16	44-2				PARAPET HORIZ.
S510	X	42	5-0				SLAB TRANS. TOP @ EDGES

BENDING DIMENSIONS ARE OUT TO OUT OF BARS.



PLAN



3/10/2022 PENTABLE:BRedu_shd_util.tbl

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NO.	DATE	REVISION	BY
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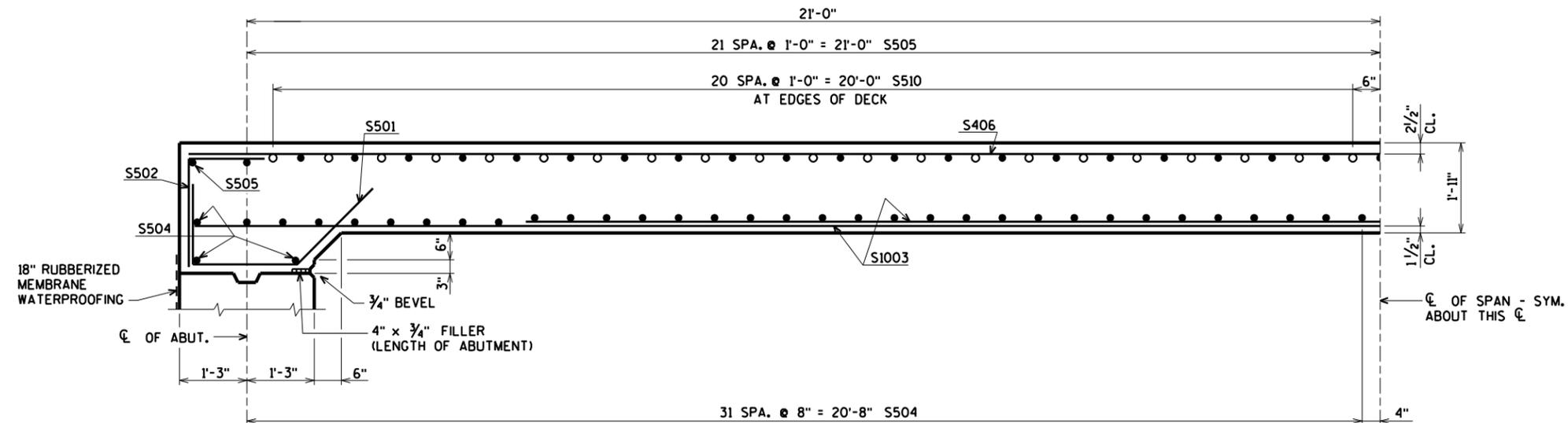
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-8-119

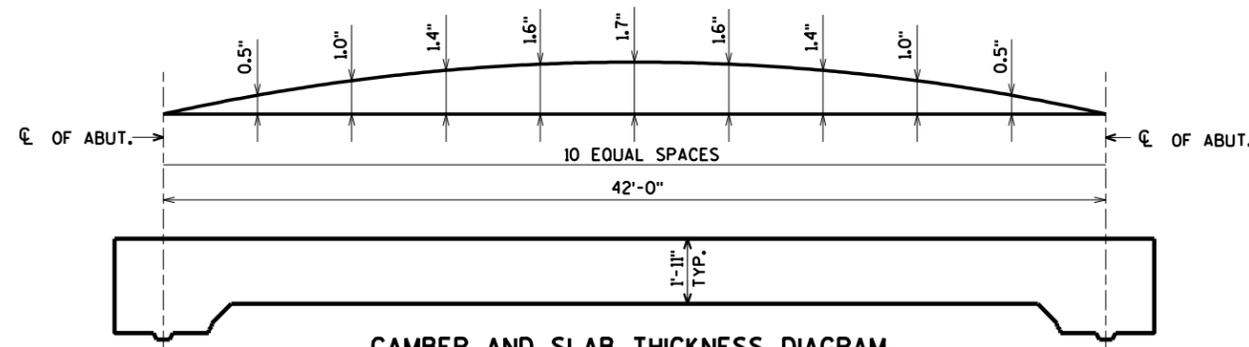
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SUPERSTRUCTURE SHEET 10 OF 12

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PART LONGITUDINAL SECTION



CAMBER AND SLAB THICKNESS DIAGRAM

CAMBER SHOWN IS BASED ON 3 TIMES DEAD LOAD DEFLECTION.

CAMBER SPANS AS SHOWN TO PROVIDE FOR DEAD LOAD DEFLECTION AND FUTURE CREEP. CAMBER DOES NOT INCLUDE ALLOWANCE FOR FORM SETTLEMENT.

PARAPETS PLACED ON TOP OF THE SLAB SHALL BE POURED AFTER FALSEWORK HAS BEEN RELEASED.

TOP OF DECK ELEVATIONS

LOCATION	€ OF W. ABUT.	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	€ OF E. ABUT.
N. EDGE OF SLAB	784.17	784.21	784.24	784.28	784.31	784.34	784.38	784.41	784.44	784.48	784.51
€ OF STRUCTURE	784.46	784.49	784.52	784.56	784.59	784.62	784.66	784.69	784.72	784.75	784.79
S. EDGE OF SLAB	784.17	784.21	784.24	784.28	784.31	784.34	784.38	784.41	784.44	784.48	784.51

ELEVATIONS SHOWN ARE FINISHED DECK AND DO NOT INCLUDE ALLOWANCES OF DEAD LOAD DEFLECTION AND FUTURE CREEP.

TO DETERMINE FALSEWORK ELEVATION AT EDGE OF SLAB, CROWN OR REFERENCE LINE, FOLLOW THIS PROCEDURE:

- TOP OF SLAB ELEVATION AT FINAL GRADE
- MINUS..... SLAB THICKNESS
- PLUS..... CAMBER
- PLUS..... FORM SETTLEMENT/DEFLECTION DUE TO PLACEMENT OF SLAB CONCRETE (TO BE COMPUTED BY THE CONTRACTOR)
- EQUALS = TOP OF SLAB FALSEWORK ELEVATION

SURVEY TOP OF SLAB ELEVATIONS

LOCATION	€ OF W. ABUT.	5/10 PTS.	€ OF E. ABUT.
N. EDGE OF SLAB			
€ OF STRUCTURE			
S. EDGE OF SLAB			

PRIOR TO RELEASING SLAB FALSEWORK, TAKE TOP OF DECK ELEVATIONS AT THE € OF ABUTMENTS AND AT 5/10 PTS. TO VERIFY CAMBER. TAKE ELEVATIONS ALONG EDGE OF SLAB AND CROWN OR €. RECORD THE ELEVATIONS IN THE ABOVE TABLE FOR THE "AS BUILT" PLANS.

3/10/2022 PENTABLE:BRedu_shd_util.tbl

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-8-119			
DRAWN BY	CLP	PLANS CK'D.	JCK
SUPERSTRUCTURE DETAILS			SHEET 11 OF 12

ORIGINAL PLANS PREPARED BY
AYRES 3433 Oakwood Hills Parkway
Eau Claire, WI 54701
www.AyresAssociates.com

BILL OF BARS NOTE: REINFORCEMENT WEIGHT INCLUDED IN ABUTMENT QUANTITIES.

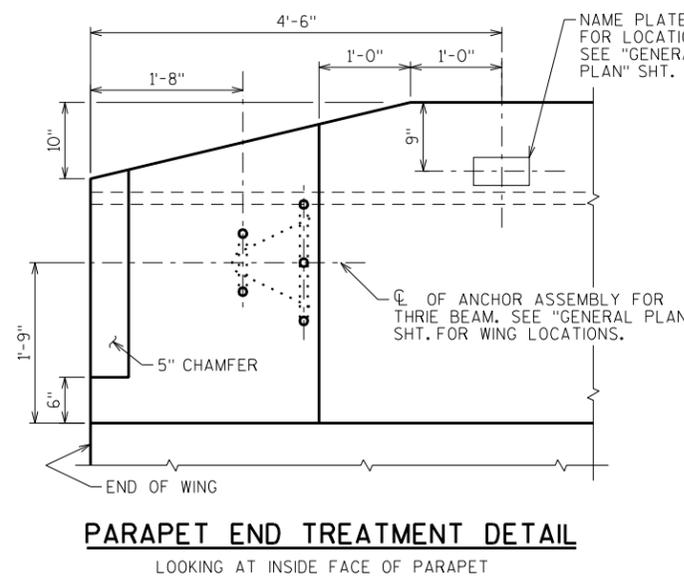
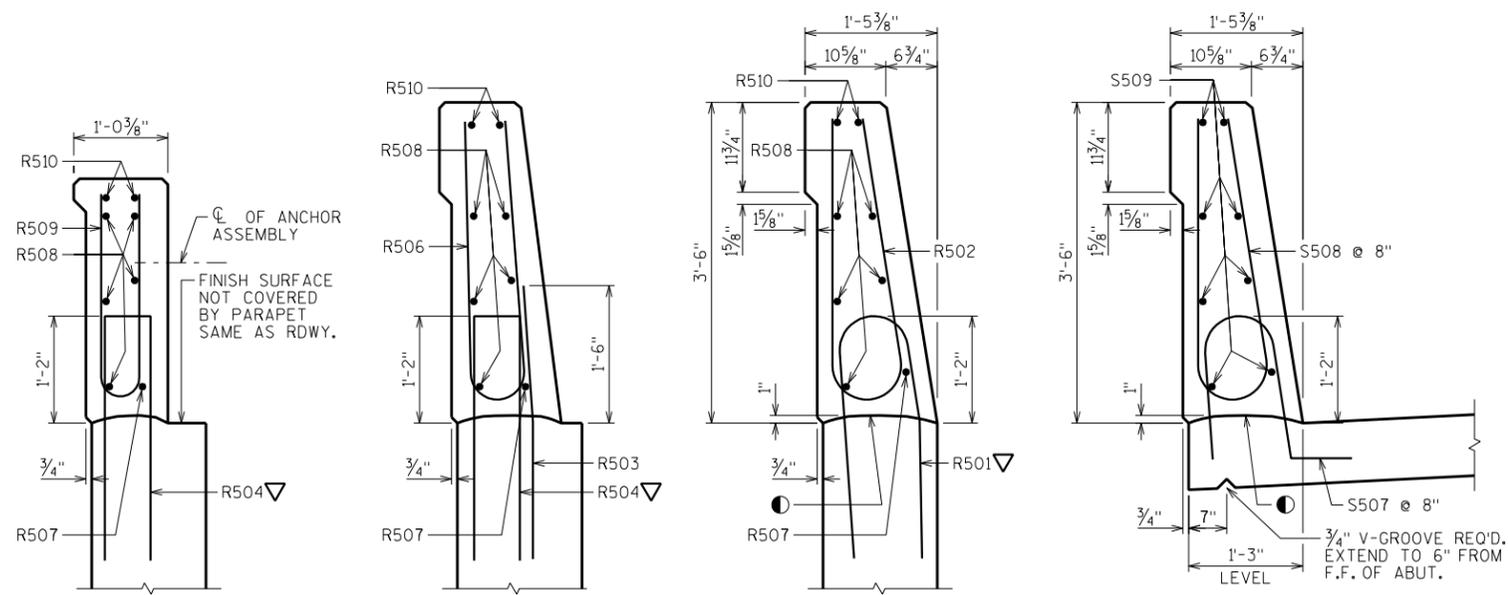
BAR MARK	COAT	WEST ABUT.	EAST ABUT.	LENGTH	BENT	BAR SERIES	LOCATION
R501	X	6	6	5'-10"	X		PARAPET VERT.
R502	X	6	6	6'-8"	X		PARAPET VERT.
R503	X	24	24	3'-0"	X		PARAPET VERT.
R504	X	34	34	5'-7"	X		PARAPET VERT.
R505	X	10	10	6'-5"	X		PARAPET VERT.
R506	X	12	12	6'-6"	X		PARAPET VERT.
R507	X	2	2	9'-7"	X		PARAPET HORIZ.
R508	X	10	10	9'-7"			PARAPET HORIZ.
R509	X	12	12	5'-5"	X	▲	PARAPET VERT.
R510	X	4	4	9'-7"	X		PARAPET HORIZ.

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

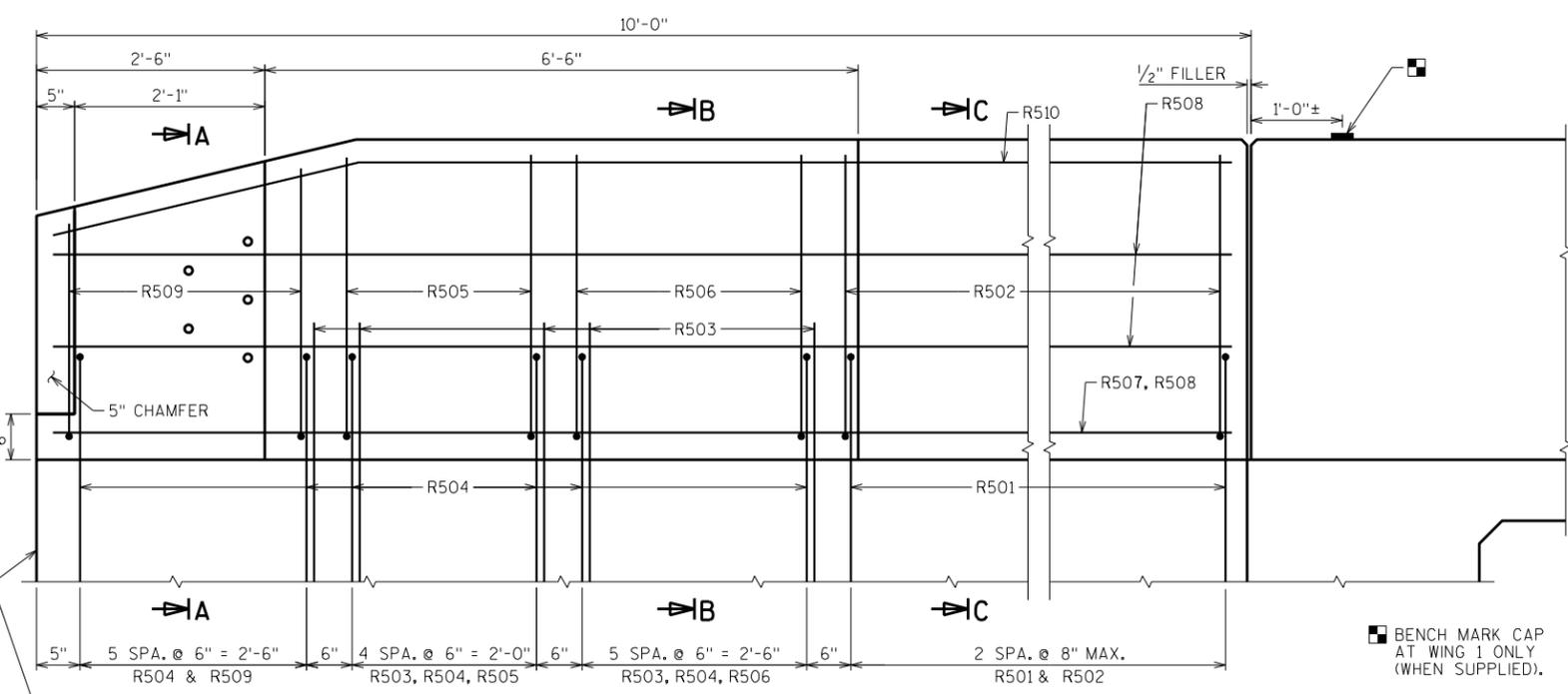
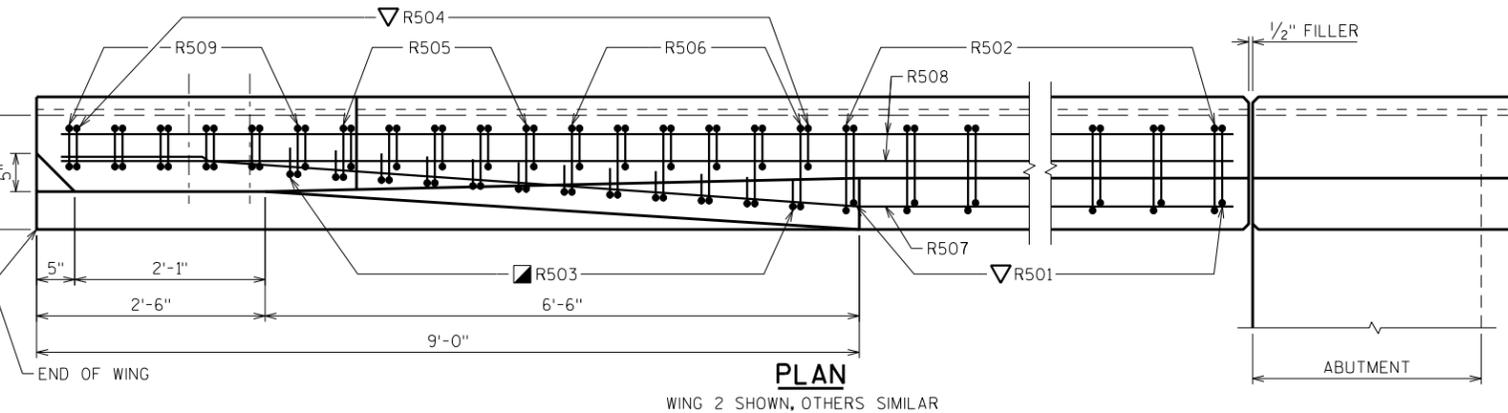
BAR SERIES TABLE

BAR MARK	NO. REQ'D	LENGTH
R509	4 SERIES OF 6	4'-9" TO 6'-1"

BUNDLE AND TAG EACH SERIES SEPARATELY.

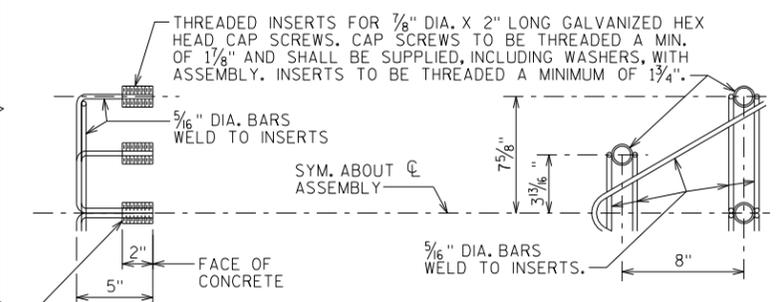
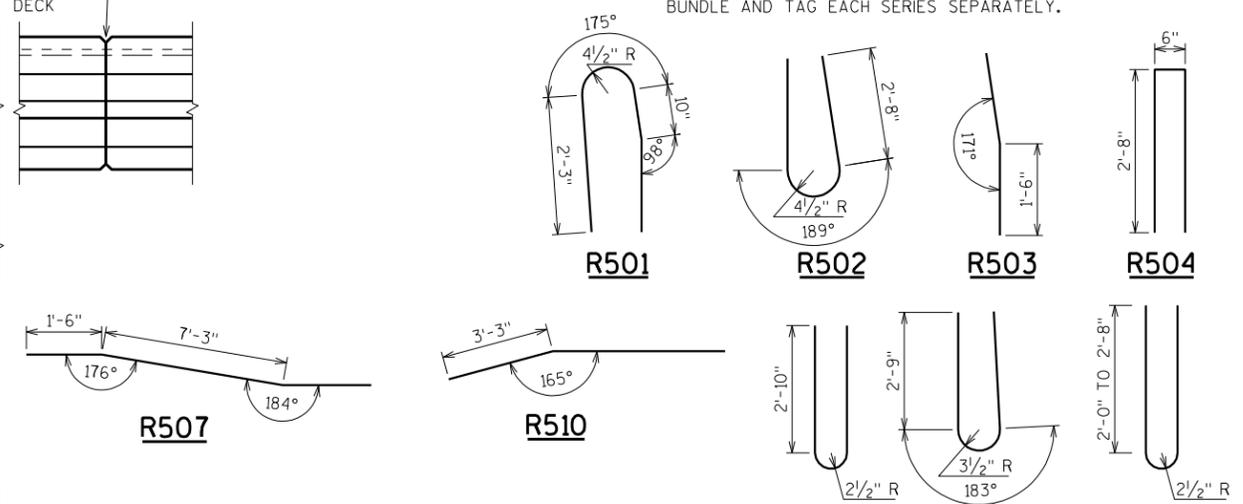


SECTION A-A SECTION B-B SECTION C-C SECTION THRU PARAPET ON BRIDGE



INSIDE ELEVATION WING 2 SHOWN, OTHERS SIMILAR

OPTIONAL CONSTRUCTION JOINTS IN THE PARAPETS MAY BE USED. RUN BAR REINF. THRU THE JOINT. LAP LONGIT. BARS A MIN. OF 1'-9". MIN. JOINT SPACING OF 80'-0". DEFINE CONST. JOINT WITH A 3/4" - V GROOVE.



DETAIL OF ANCHOR ASSEMBLY
 NOTE: HEX HEAD CAP SCREWS & WASHERS TO BE GALVANIZED IN ACCORDANCE WITH AASHTO M232 CLASS C.
 ASSEMBLY SHALL BE BID ITEM "ANCHOR ASSEMBLIES FOR STEEL PLATE BEAM GUARD", EACH.

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-8-119			
DRAWN BY CLP		PLANS CK'D. JCK	
SINGLE SLOPE PARAPET 42SS			SHEET 12 OF 12

ORIGINAL PLANS PREPARED BY
AYRES 3433 Oakwood Hills Parkway
 Eau Claire, WI 54701
 www.AyresAssociates.com

EARTHWORK - NORTH COUNTY LINE ROAD - SW SHOULDER

STATION	AREA (SF)				INCREMENTAL VOL (CY) (UNADJUSTED)				CUMULATIVE VOL (CY)			MASS ORDINATE
	CUT	UNUSABLE PAVEMENT MATERIAL	FILL	MARSH EXC	CUT	UNUSABLE PAVEMENT MATERIAL	FILL	MARSH EXC	CUT	EXPANDED FILL	EXPANDED MARSH BACKFILL	
46+66.6	4.21	0.00	0.48	0.00	0	0	0	0	0	0	0	0
47+00.0	52.91	0.00	34.68	0.00	35	0	22	0	35	29	0	6
47+38.9	13.70	0.00	42.68	34.55	48	0	56	25	83	69	38	-18
47+50.0	28.62	0.00	44.28	30.77	9	0	18	13	92	75	57	-33
					92	0	96	38				

EARTHWORK - NORTH COUNTY LINE ROAD - NW SHOULDER

STATION	AREA (SF)				INCREMENTAL VOL (CY) (UNADJUSTED)				CUMULATIVE VOL (CY)			MASS ORDINATE
	CUT	UNUSABLE PAVEMENT MATERIAL	FILL	MARSH EXC	CUT	UNUSABLE PAVEMENT MATERIAL	FILL	MARSH EXC	CUT	EXPANDED FILL	EXPANDED MARSH BACKFILL	
47+38.9	4.16	0.00	0.55	0.00	0	0	0	0	0	0	0	0
47+50.0	5.21	0.00	27.08	0.00	2	0	6	0	2	8	0	-6
					2	0	6	0				

EARTHWORK - NORTH COUNTY LINE ROAD - MAINLINE

STATION	AREA (SF)				INCREMENTAL VOL (CY) (UNADJUSTED)				CUMULATIVE VOL (CY)			MASS ORDINATE
	CUT	UNUSABLE PAVEMENT MATERIAL	FILL	MARSH EXC	CUT	UNUSABLE PAVEMENT MATERIAL	FILL	MARSH EXC	CUT	EXPANDED FILL	EXPANDED MARSH BACKFILL	
47+50.0	45.52	9.17	71.36	30.77	0	0	0	0	0	0	0	0
47+82.6	32.71	9.17	101.08	56.70	47	11	104	53	47	66	80	-99
48+00.0	26.24	9.17	103.55	62.57	19	6	66	38	66	103	137	-172
48+07.6	24.15	9.17	104.10	57.41	7	3	29	17	73	118	162	-206
48+32.6	16.41	9.17	109.83	55.67	19	8	99	52	92	179	240	-323
48+50.0	13.03	9.17	112.39	56.72	9	6	72	36	101	226	294	-414
48+57.6	13.80	9.17	115.23	61.13	4	3	32	17	105	246	320	-455
48+82.6	17.99	9.17	111.09	61.53	15	8	105	57	120	308	405	-584
49+00.0	23.72	9.17	123.82	67.72	13	6	76	42	133	352	468	-676
49+07.6	29.21	9.17	129.48	61.99	7	3	36	18	140	376	495	-719
49+50.0	66.11	9.17	151.07	74.65	75	14	220	107	215	523	656	-944
49+60.8	66.11	9.17	151.07	74.65	26	4	60	30	241	562	701	-1,000
B-08-0119												
50+25.3	27.23	9.17	76.77	42.57	0	0	0	0	241	562	701	-1,000
50+50.0	27.23	9.17	76.77	42.57	25	8	70	39	266	602	759	-1,074
					266	80	969	506				

Notes:

- | | |
|--------------------------------|--|
| 1 - CUT | CUT INCLUDES UNUSABLE PAVEMENT MATERIAL |
| 2 - UNSUABLE PAVEMENT MATERIAL | THIS DOES NOT SHOW UP IN CROSS SECTIONS |
| 3 - FILL | THIS DOES NOT INCLUDE UNUSABLE PAVEMENT EXC VOLUME |
| 4 - EXPANDED MARSH BACKFILL | WILL BE BACKFILLD WITH GRANULAR BACKFILL |
| 8 - MASS ORDINATE | CUT - UNUSABLE PAVEMENT - (FILL * FILL FACTOR) |
| 8 - MASS ORDINATE | MASS ORDINATE DOES NOT INCLUDE MARSH EXCAVATION |

9

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EARTHWORK - NORTH COUNTY LINE ROAD - SE SHOULDER

STATION	AREA (SF)				INCREMENTAL VOL (CY) (UNADJUSTED)				CUMULATIVE VOL (CY)			MASS ORDINATE
	CUT	UNUSABLE PAVEMENT MATERIAL	FILL	MARSH EXC	CUT	UNUSABLE PAVEMENT MATERIAL	FILL	MARSH EXC	CUT	EXPANDED FILL	EXPANDED MARSH BACKFILL	
50+50.0	1.43	0.00	33.44	18.18	0	0	0	0	0	0	0	0
50+78.4	3.26	0.00	31.12	0.00	2	0	34	10	2	31	15	-42
51+00.0	3.79	0.00	30.10	0.00	3	0	24	0	5	62	15	-70
51+03.4	3.83	0.00	29.78	0.00	0	0	4	0	5	68	15	-76
51+28.4	4.12	0.00	27.58	0.00	4	0	27	0	9	103	15	-107
51+50.0	11.29	0.00	15.05	0.00	6	0	17	0	15	125	15	-123
51+53.4	12.61	0.00	12.32	0.00	2	0	2	0	17	127	15	-123
51+78.4	5.31	0.00	2.67	0.00	8	0	7	0	25	137	15	-125
52+00.0	6.00	0.00	1.05	0.00	5	0	1	0	30	138	15	-121
52+03.4	6.05	0.00	1.10	0.00	1	0	0	0	31	138	15	-120
52+44.3	6.27	0.00	0.77	0.00	9	0	1	0	40	139	15	-112
					40	0	117	10				

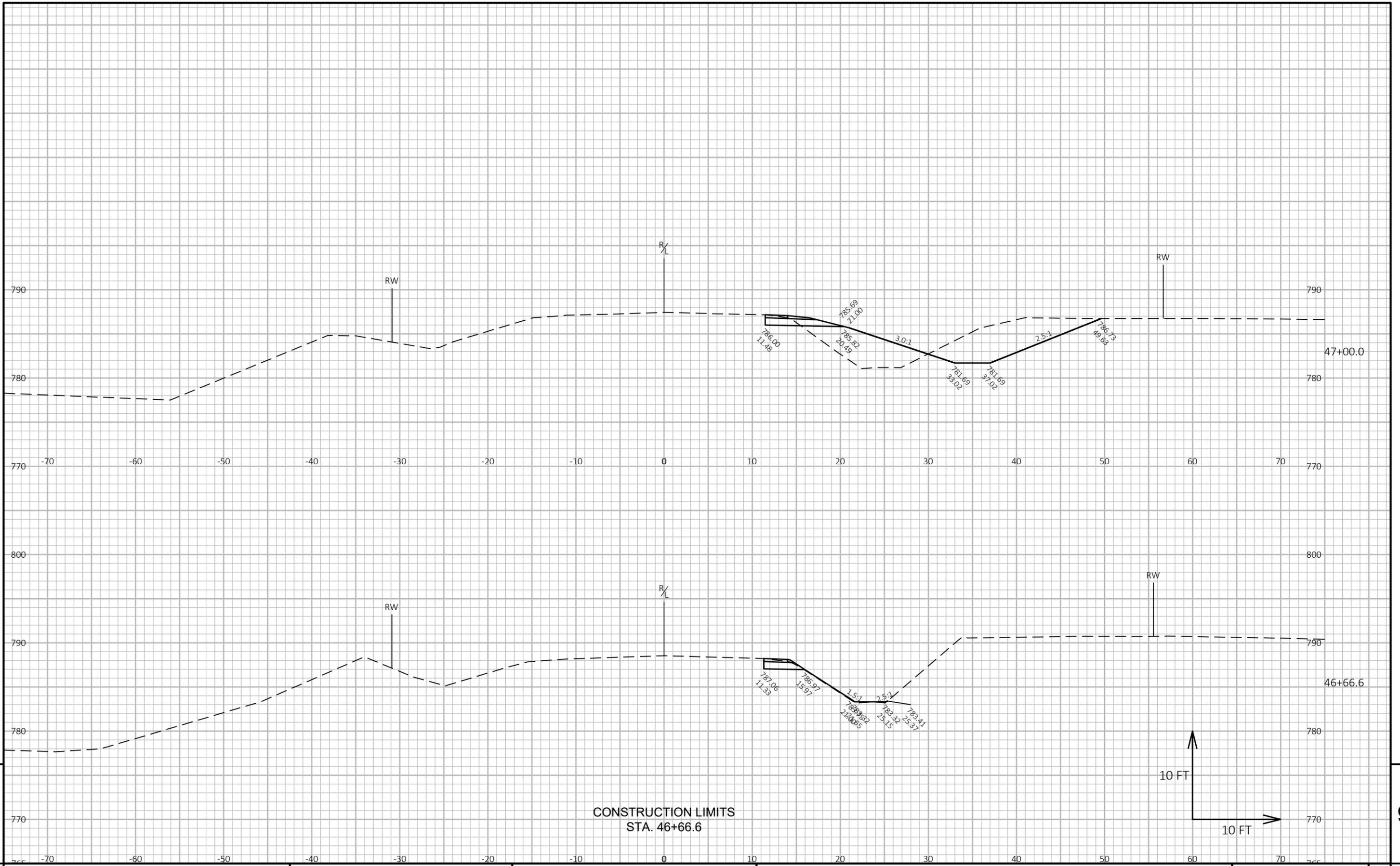
EARTHWORK - NORTH COUNTY LINE ROAD - NE SHOULDER

STATION	AREA (SF)				INCREMENTAL VOL (CY) (UNADJUSTED)				CUMULATIVE VOL (CY)			MASS ORDINATE
	CUT	UNUSABLE PAVEMENT MATERIAL	FILL	MARSH EXC	CUT	UNUSABLE PAVEMENT MATERIAL	FILL	MARSH EXC	CUT	EXPANDED FILL	EXPANDED MARSH BACKFILL	
50+50.0	2.39	0.00	43.33	24.39	0	0	0	0	0	0	0	0
50+78.4	3.87	0.00	17.92	19.32	3	0	32	23	3	12	35	-39
51+00.0	14.50	0.00	9.82	0.00	7	0	11	8	10	16	47	-46
51+03.4	19.17	0.00	8.77	0.00	2	0	1	0	12	17	47	-45
51+28.4	23.02	0.00	1.70	0.00	20	0	5	0	32	23	47	-32
51+50.0	14.06	0.00	1.38	0.00	15	0	1	0	47	25	47	-18
51+53.4	16.44	0.00	1.65	0.00	2	0	0	0	49	25	47	-16
51+78.4	19.49	0.00	2.18	0.00	17	0	2	0	66	27	47	-2
52+00.0	25.20	0.00	1.96	0.00	18	0	2	0	84	30	47	14
52+03.4	26.12	0.00	1.95	0.00	3	0	0	0	87	30	47	17
52+44.3	34.94	0.00	0.00	0.00	46	0	1	0	133	31	47	62
52+50.0	35.54	0.00	0.00	0.00	7	0	0	0	140	31	47	69
53+00.0	6.37	0.00	1.21	0.00	39	0	1	0	179	33	47	106
53+16.3	6.64	0.00	0.21	0.00	4	0	0	0	183	33	47	110
					183	0	56	31				

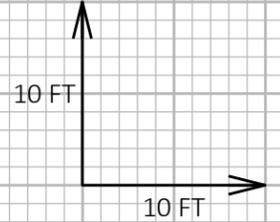
Notes:	
1 - CUT	CUT INCLUDES UNUSABLE PAVEMENT MATERIAL
2 - UNSUABLE PAVEMENT MATERIAL	THIS DOES NOT SHOW UP IN CROSS SECTIONS
3 - FILL	THIS DOES NOT INCLUDE UNUSABLE PAVEMENT EXC VOLUME
4 - EXPANDED MARSH BACKFILL	WILL BE BACKFILLD WITH GRANULAR BACKFILL
8 - MASS ORDINATE	CUT - UNUSABLE PAVEMENT - (FILL * FILL FACTOR)
8 - MASS ORDINATE	MASS ORDINATE DOES NOT INCLUDE MARSH EXCAVATION

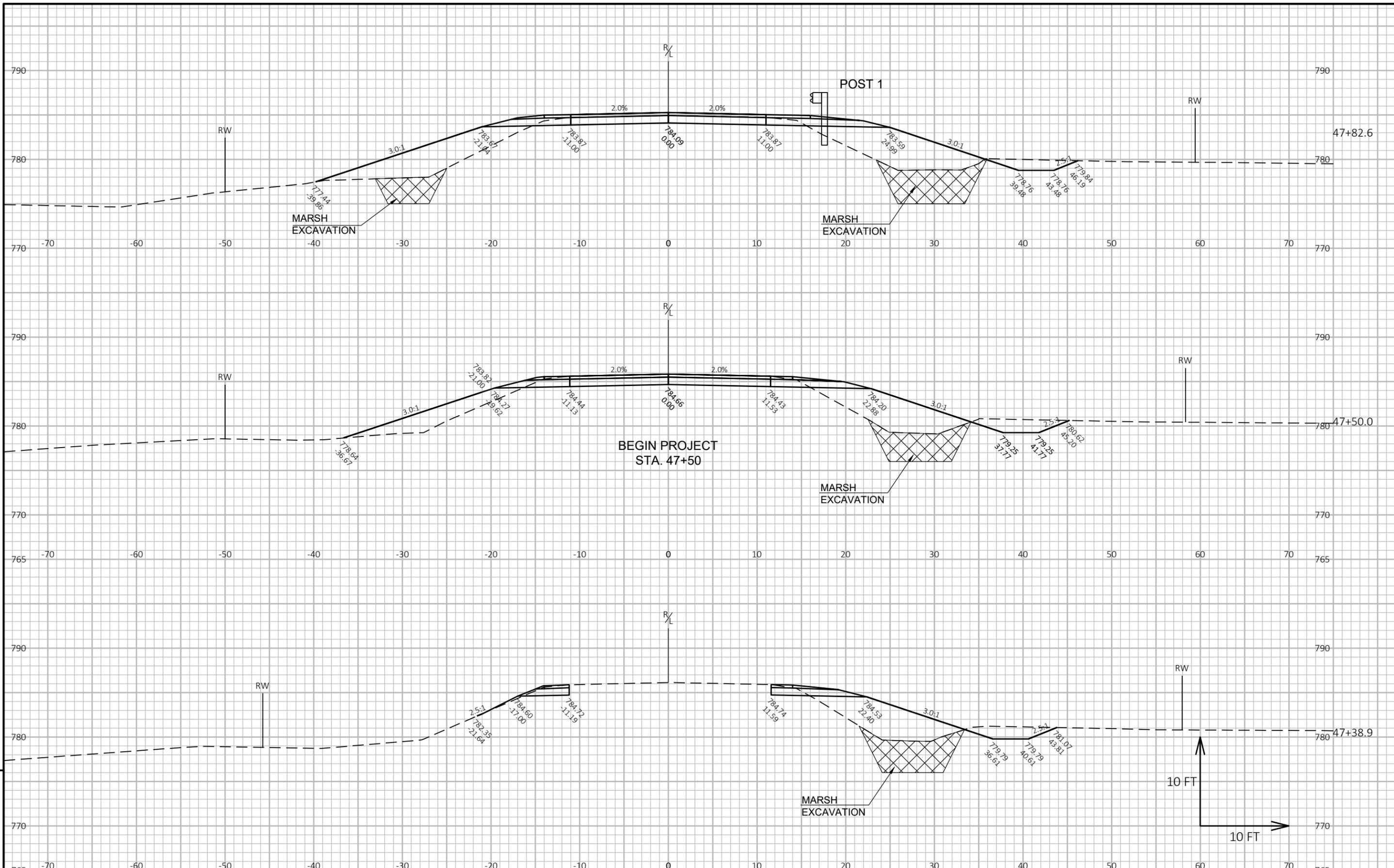
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CONSTRUCTION LIMITS
STA. 46+66.6





PROJECT NO: 4474-03-71

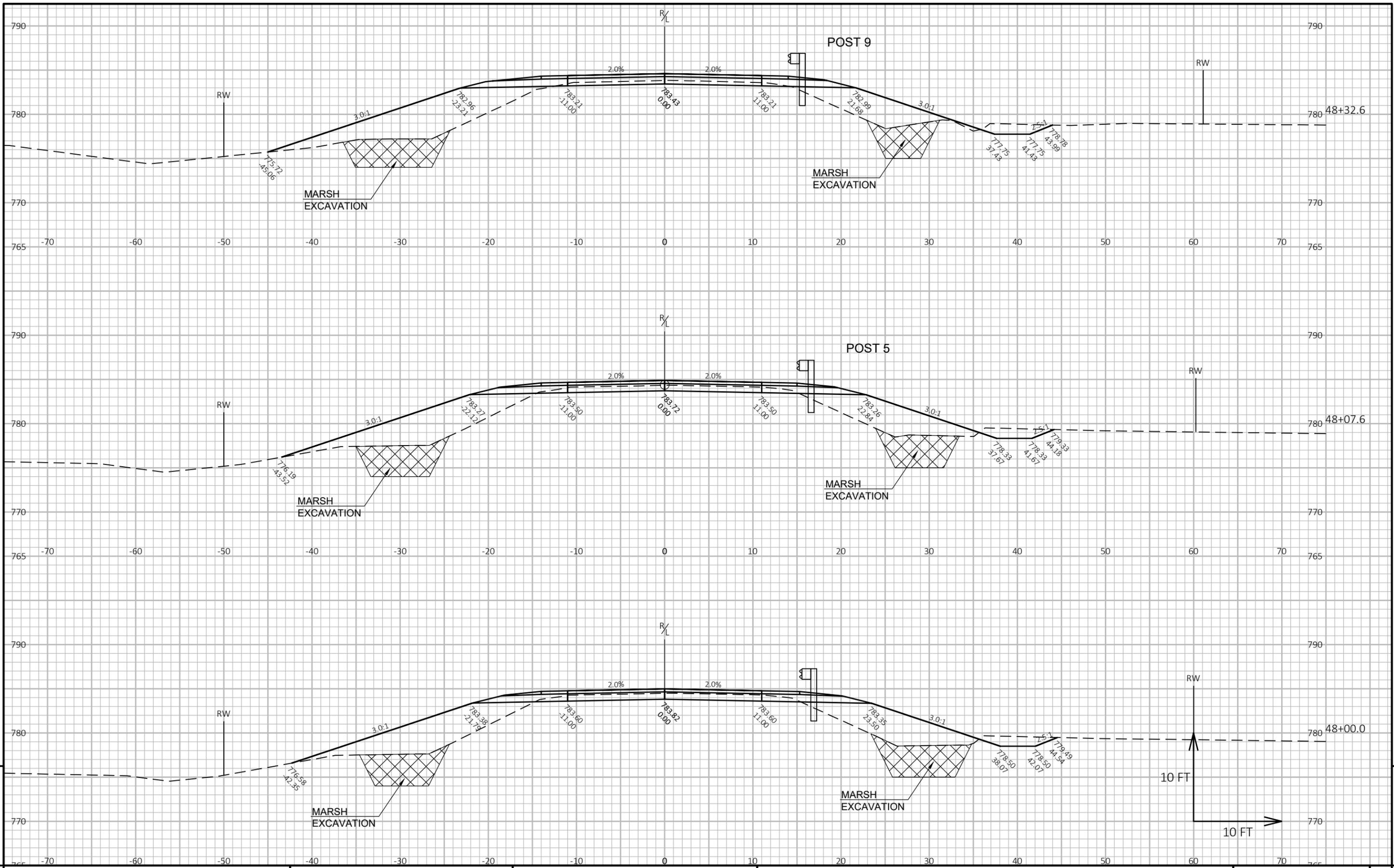
HWY: COUNTY LINE ROAD

COUNTY: CALUMET

CROSS SECTIONS: COUNTY LINE ROAD

SHEET

E



PROJECT NO: 4474-03-71

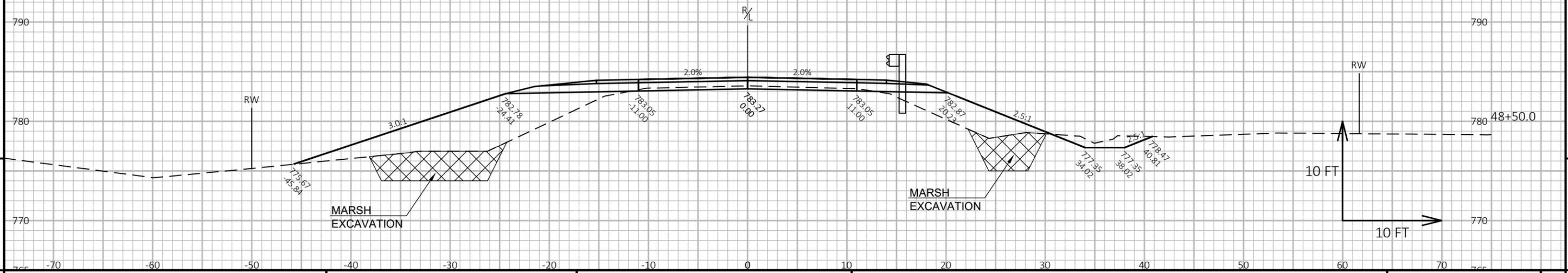
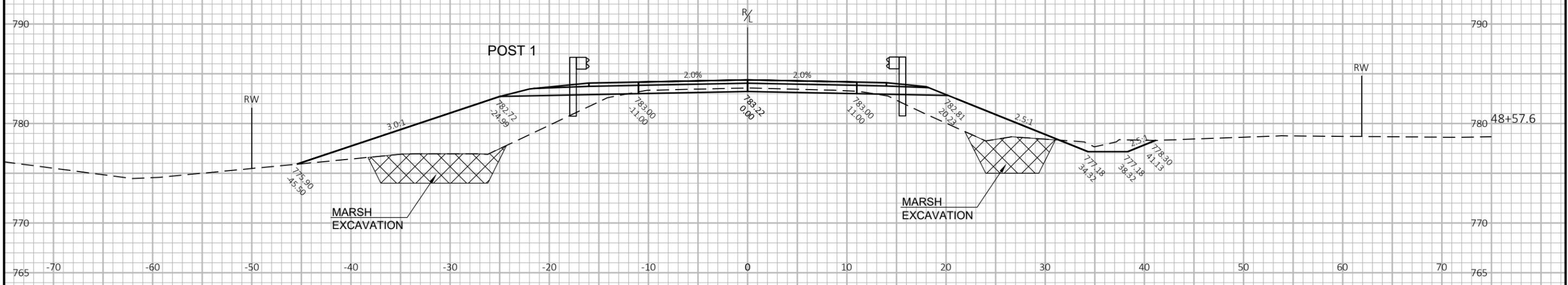
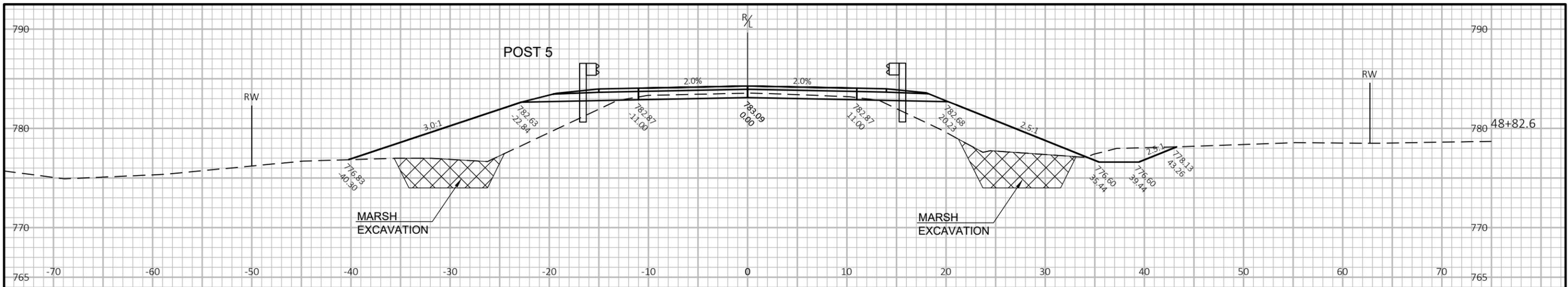
HWY: COUNTY LINE ROAD

COUNTY: CALUMET

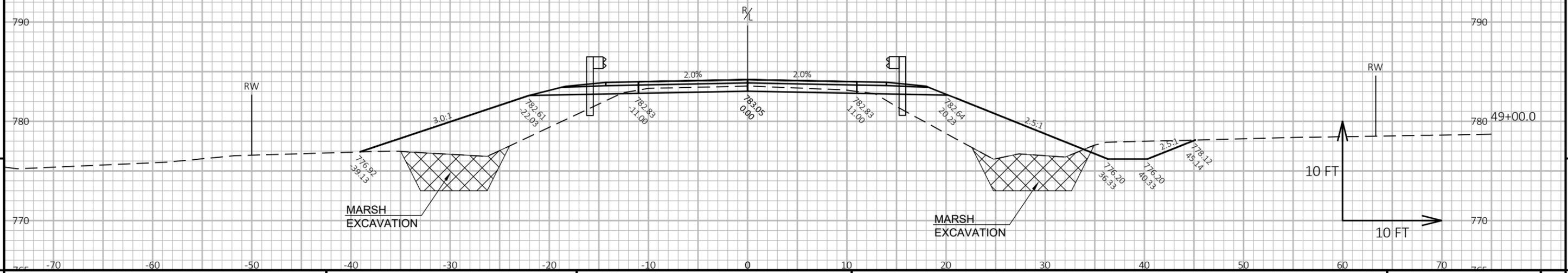
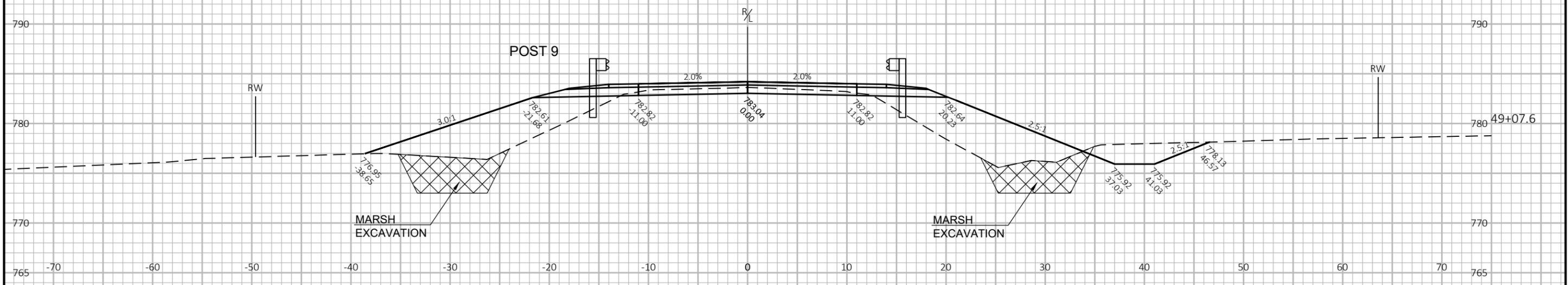
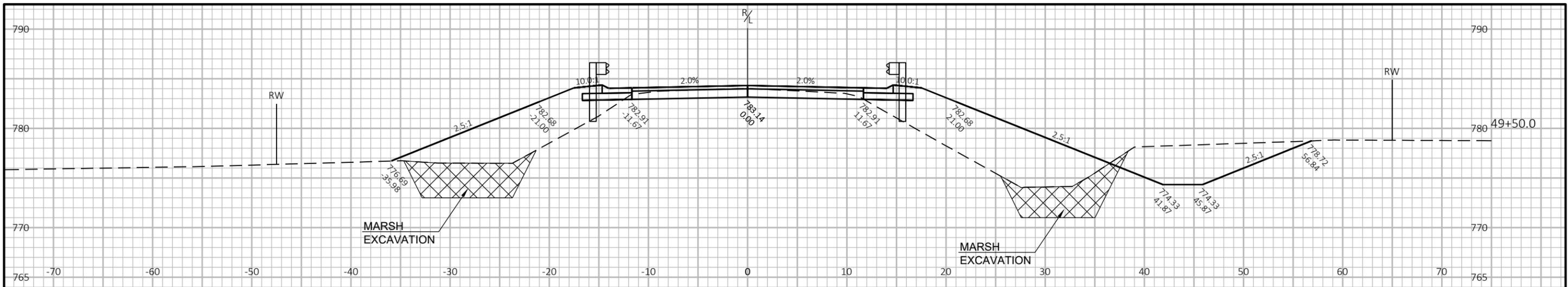
CROSS SECTIONS: COUNTY LINE ROAD

SHEET

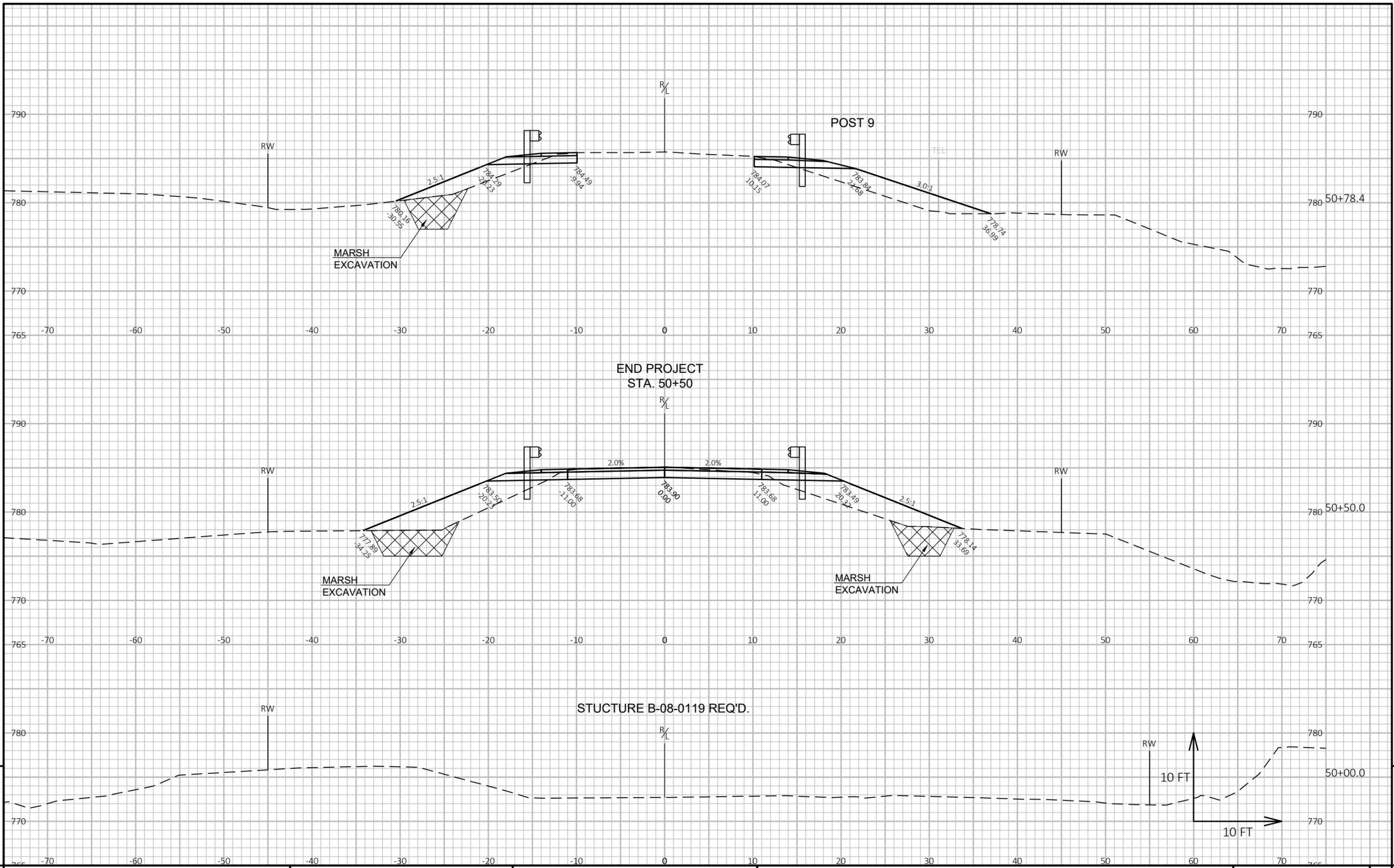
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PROJECT NO: 4474-03-71 HWY: COUNTY LINE ROAD COUNTY: CALUMET CROSS SECTIONS: COUNTY LINE ROAD SHEET 9



PROJECT NO: 4474-03-71	HWY: COUNTY LINE ROAD	COUNTY: CALUMET	CROSS SECTIONS: COUNTY LINE ROAD	SHEET	9
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PROJECT NO: 4474-03-71

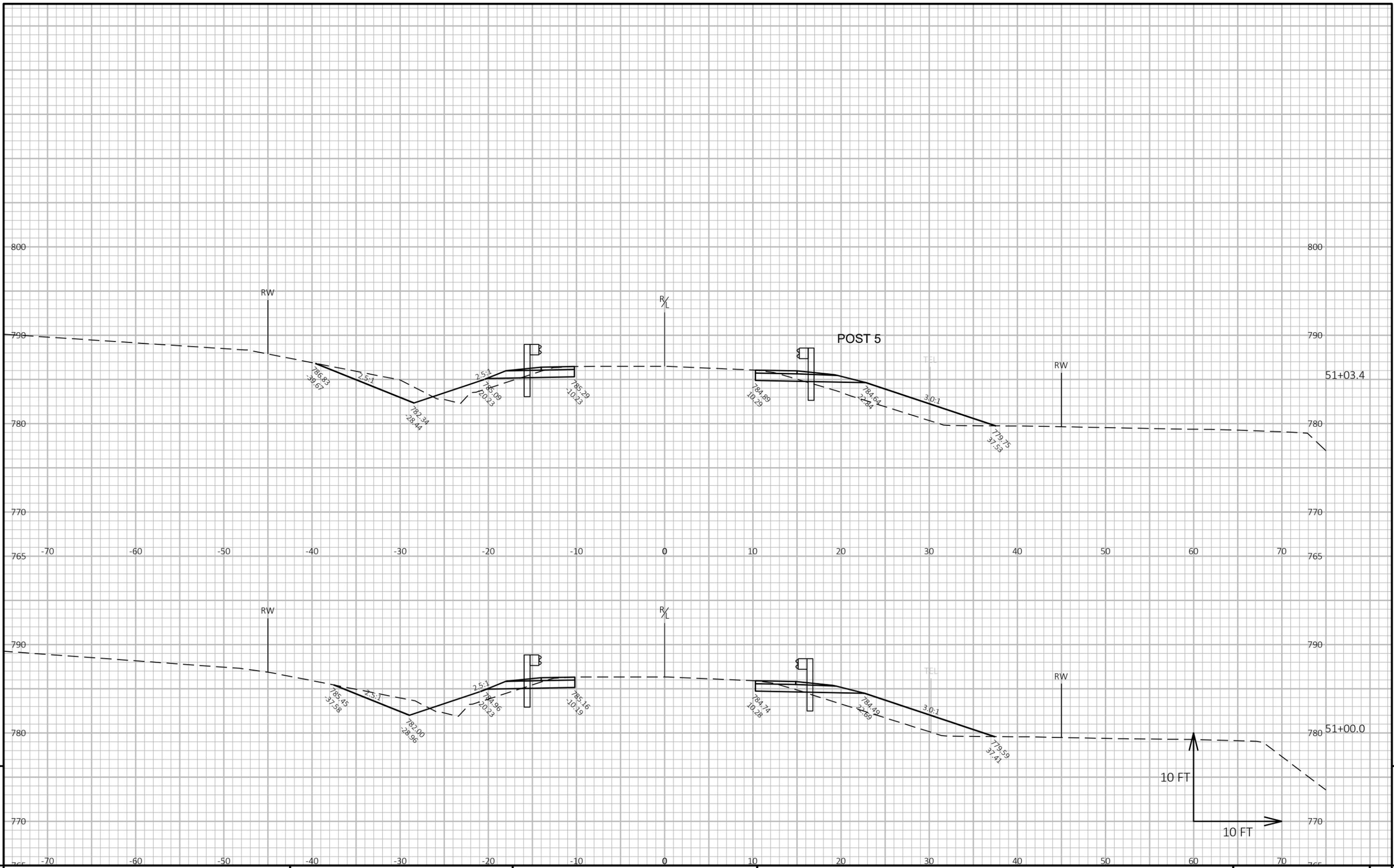
HWY: COUNTY LINE ROAD

COUNTY: CALUMET

CROSS SECTIONS: COUNTY LINE ROAD

SHEET

E

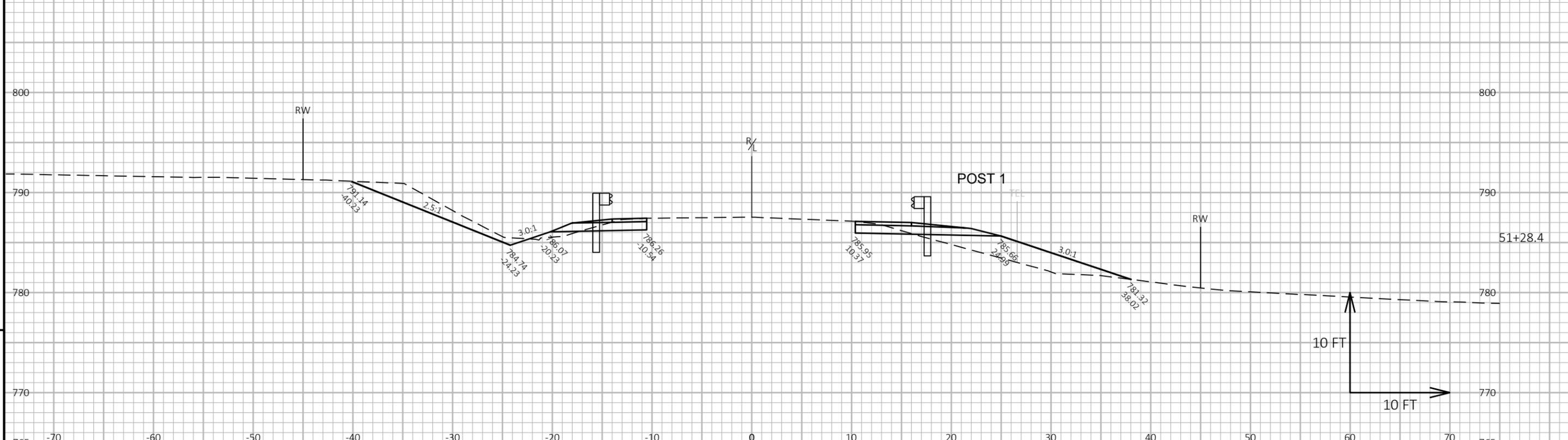
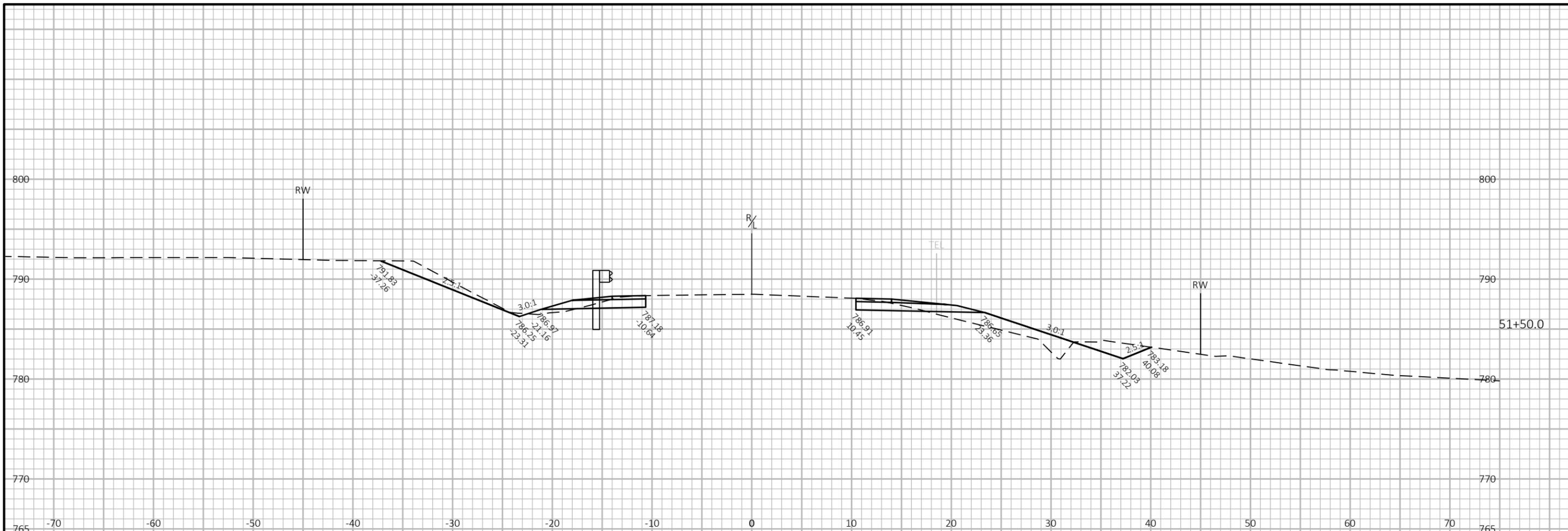


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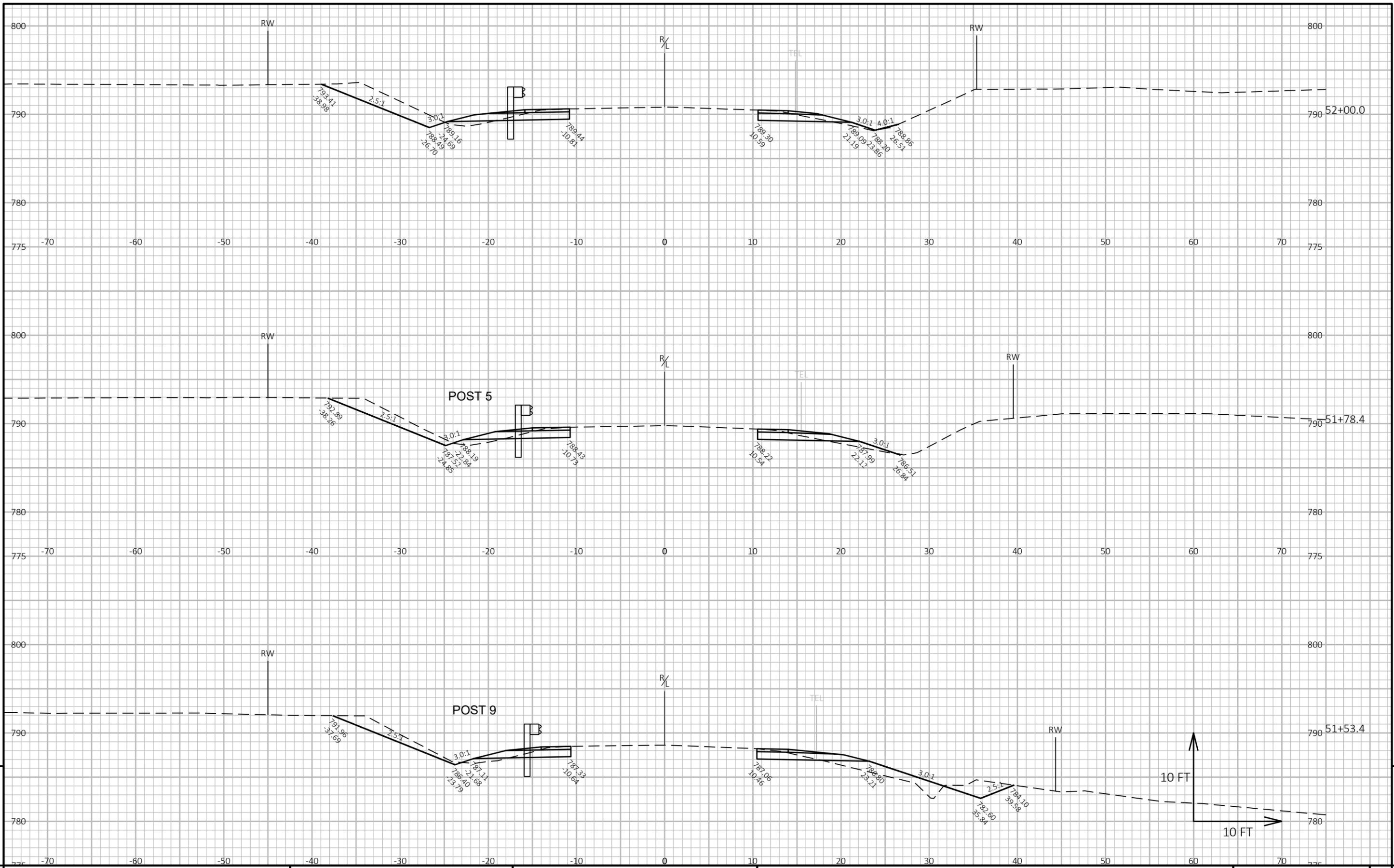
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PROJECT NO: 4474-03-71 HWY: COUNTY LINE ROAD COUNTY: CALUMET CROSS SECTIONS: COUNTY LINE ROAD SHEET E

FILE NAME : I:\45\450510 CALUMET CTY LINE RD\C3D\SHEETSP\090201-XS.DWG PLOT DATE : 7/21/2022 1:50 PM PLOT BY : GARNICA, BRANDON PLOT NAME : PLOT SCALE : 1 IN:10 FT HORZ. / 1 IN:10 FT VERT. WISDOT/CADD SHEET 49



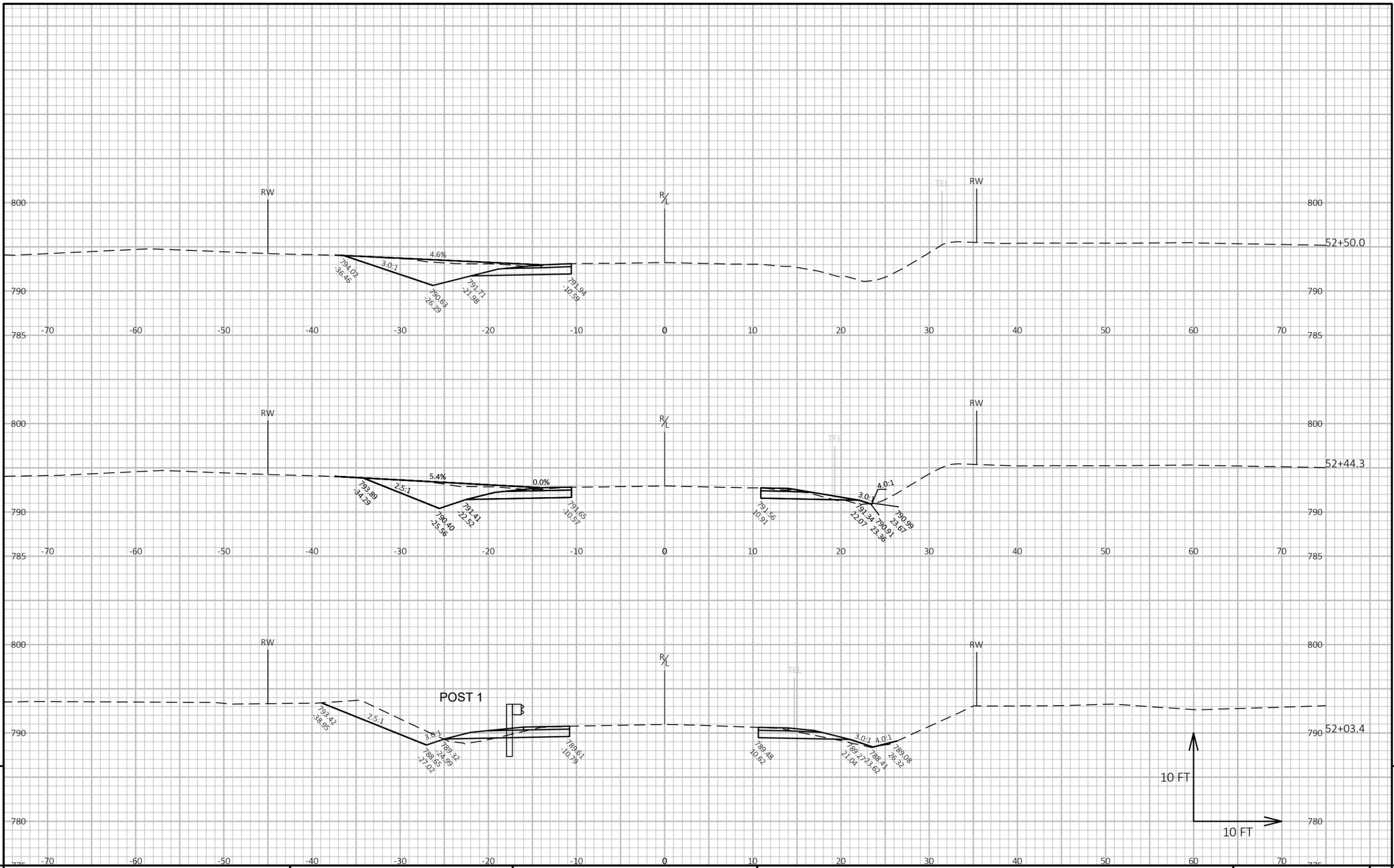
PROJECT NO: 4474-03-71 HWY: COUNTY LINE ROAD COUNTY: CALUMET CROSS SECTIONS: COUNTY LINE ROAD SHEET 9



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PROJECT NO: 4474-03-71	HWY: COUNTY LINE ROAD	COUNTY: CALUMET	CROSS SECTIONS: COUNTY LINE ROAD	SHEET	E
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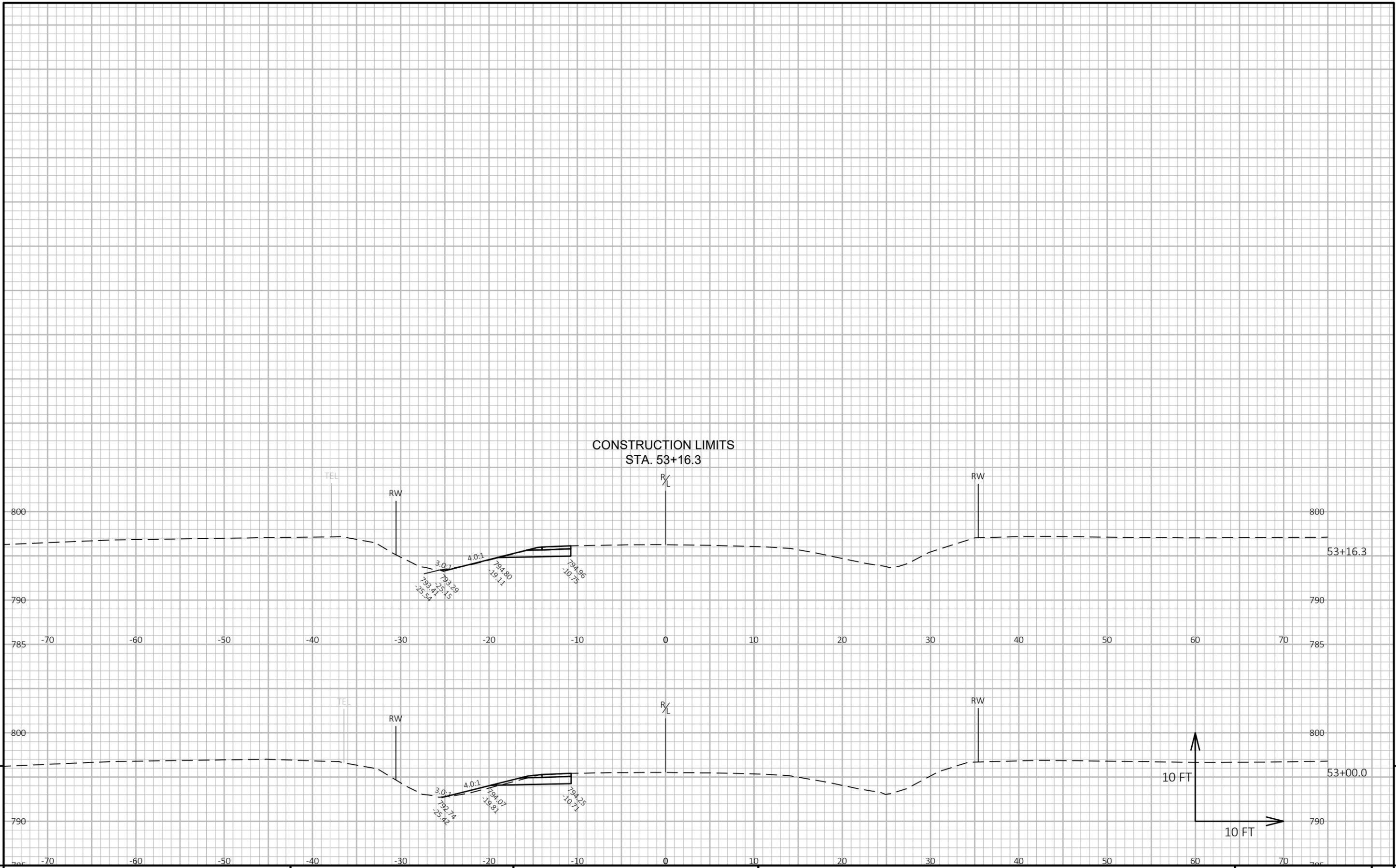


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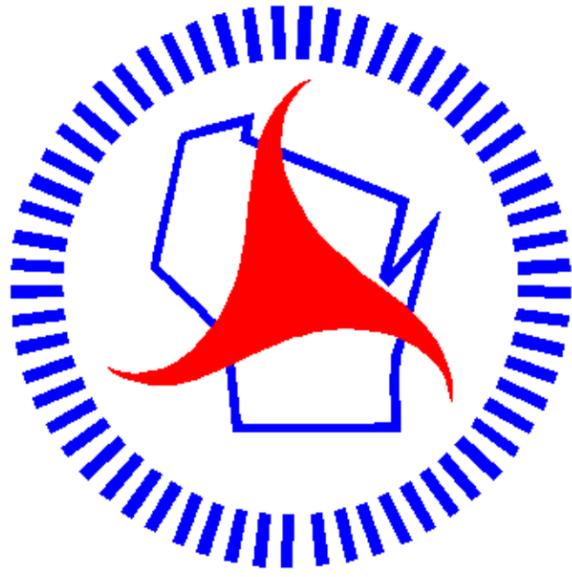
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PROJECT NO: 4474-03-71 HWY: COUNTY LINE ROAD COUNTY: CALUMET CROSS SECTIONS: COUNTY LINE ROAD SHEET E

FILE NAME: I:\45\450510 CALUMET CTY LINE RD\C3D\SHEETSP\090201-XS.DWG PLOT DATE: 7/21/2022 1:50 PM PLOT BY: GARNICA, BRANDON PLOT NAME: PLOT SCALE: 1 IN:10 FT HORZ. / 1 IN:10 FT VERT. WISDOT/CADD SHEET 49



PROJECT NO: 4474-03-71	HWY: COUNTY LINE ROAD	COUNTY: CALUMET	CROSS SECTIONS: COUNTY LINE ROAD	SHEET	E
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