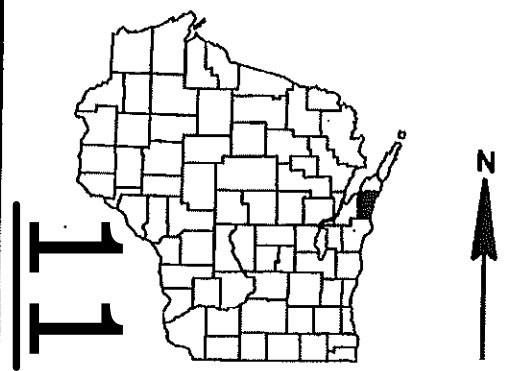


GRE
PROJECT ID: 4386-00-01
WITH: N/A
COUNTY: KEWAUNEE

AUGUST 2025
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 Plot
Section No.	5	Plan and Profile
Section No.	6	Standard Detail Drawings
Section No.	7	Sign Plates
Section No.	8	Structure Plans
Section No.	8	Computer Earthwork Data
Section No.	9	Cross Sections

TOTAL SHEETS = 82



DESIGN DESIGNATION

A.A.D.T. (2026)	=	760
A.A.D.T. (2046)	=	930
D.H.V.	=	.
D.D.	=	50/50
T.	=	5.9
DESIGN SPEED	=	45 MPH
ESALS	=	110,000

CONVENTIONAL SYMBOLS

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

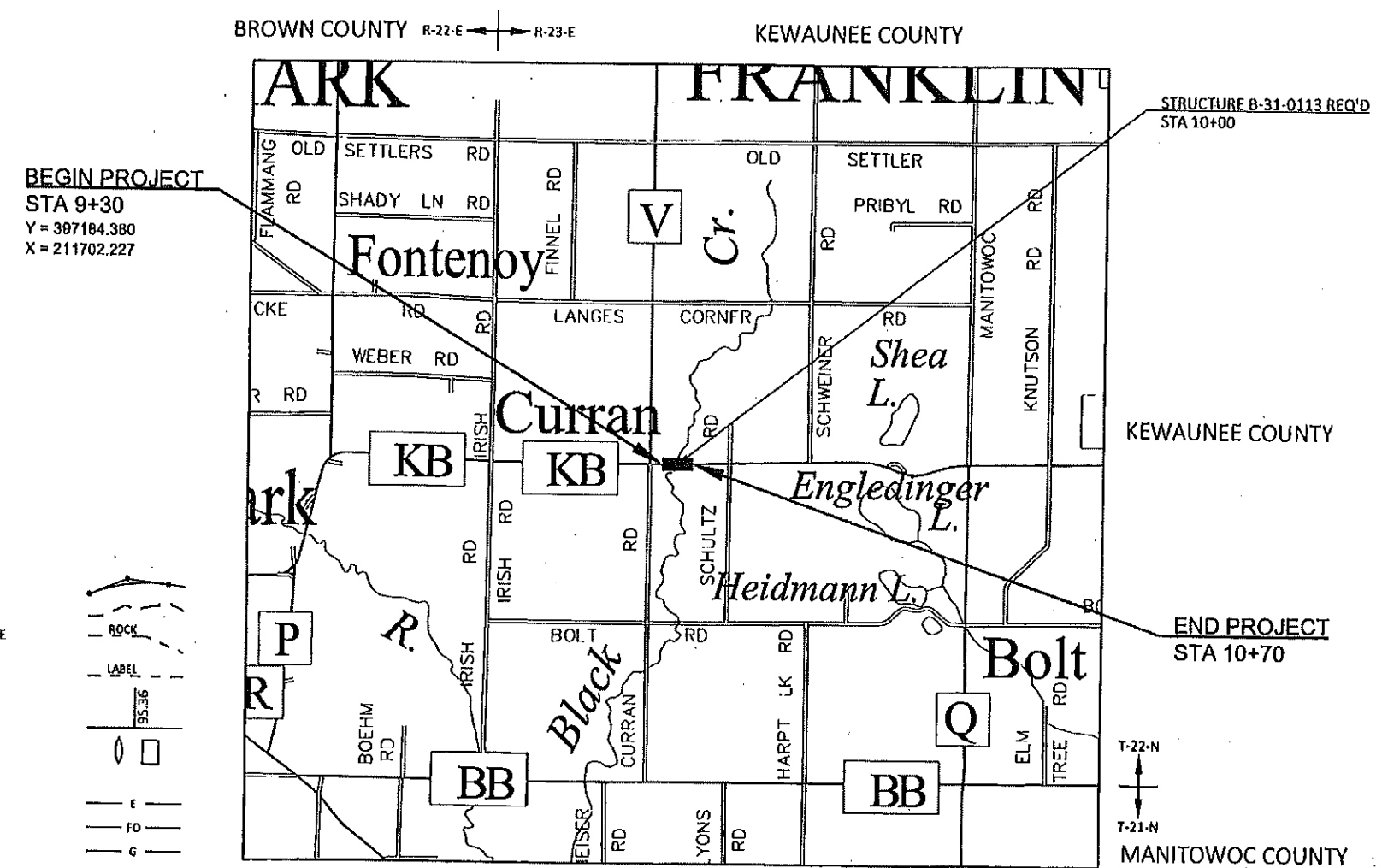
PROFILE	
GRADE LINE	=====
ORIGINAL GROUND	=====
MARSH OR ROCK PROFILE (To be noted as such)	=====
SPECIAL DITCH	=====
GRADE ELEVATION	98.56
CULVERT (Profile View)	=====
UTILITIES	
ELECTRIC	---
FIBER OPTIC	---
GAS	---
SANITARY SEWER	---
STORM SEWER	---
TELEPHONE	---
WATER	---
UTILITY PEDESTAL	---
POWER POLE	---
TELEPHONE POLE	---

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PLAN OF PROPOSED IMPROVEMENT

KEWAUNEE CO, CTH KB
BLACK CREEK BRIDGE
CTH KB
KEWAUNEE COUNTY

STATE PROJECT NUMBER
4386-00-01



LAYOUT
SCALE 0 1 MI
TOTAL NET LENGTH OF CENTERLINE = 0.034 MI

HORIZONTAL POSITIONS SHOWN ON THIS PLAN ARE WISCONSIN COORDINATE REFERENCE SYSTEM (WISCRS), KEWAUNEE 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 10.

STATE PROJECT	FEDERAL PROJECT	
	PROJECT	CONTRACT
4386-00-01	WISC 2025572	1

ACCEPTED FOR
KEWAUNEE COUNTY

4-16-25
DATE
HIGHWAY COMMISSIONER

ORIGINAL PLANS PREPARED BY
AYRES

WISCONSIN
RYAN D. SCHAITEL
4436
GREEN BAY, WI
PROFESSIONAL ENGINEER

3-7-2025
(Date)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PREPARED BY
Surveyor: AYRES
Designer: AYRES
Project Manager: MICHAEL COHEN, PE
Regional Supervisor: KIMBERLY SIEZAK

APPROVED FOR THE DEPARTMENT
DATE: 4/16/25
Signature: Michael Cohen

E

UTILITIES CONTACTS

BRIGHTSPEED
COMMUNICATION
JOESEPH MONFELI
1705 S IL RT 31
MCHENRY, IL 60050
PHONE: 847-732-2905
EMAIL: jmonfeli@congruex.com

WISCONSIN PUBLIC SERVICE
ELECTRICITY
TOM GORAL
2850 S ASHLAND AVENUE
GREEN BAY, WI 54304
PHONE: 920-617-5149
EMAIL: thomas.goral@wisconsinpublicservice.com

ORDER OF SECTION 2 DETAIL SHEETS

- GENERAL NOTES
- TYPICAL SECTIONS
- CONSTRUCTION DETAILS
- PLAN DETAILS
- EROSION CONTROL

COUNTY HIGHWAY COMMISSIONER

MARTY TREML
KEWAUNEE COUNTY
E4280 CTH F
KEWAUNEE, WI 54216
PHONE: 920-388-3707
EMAIL: trembl.marty@kewauneeco.org

WISCONSIN DNR LIAISON

MATT SCHAEVE
NORTHEAST REGION
2984 SHAWANO AVENUE
GREEN BAY, WI 54313
PHONE: 920-366-1544
EMAIL: matthew.schaeve@wisconsin.gov

DESIGN PROJECT MANAGER

RYAN SCHAITEL
AYRES
700 PILGRIM WAY, SUITE 180
GREEN BAY, WI 54304
PHONE: 920-327-7840
EMAIL: schaitelr@ayresassociates.com

GENERAL NOTES

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

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

EROSION CONTROL FEATURES AS SHOWN IN THE PLANS ARE AT APPROXIMATE LOCATIONS.

SAWCUTS, AS SHOWN ON THE PLANS, ARE SUGGESTED LOCATIONS AND MAY BE ADJUSTED AT THE DISCRETION OF THE ENGINEER TO BETTER SUIT FIELD CONDITIONS.

BEARINGS SHOWN ON THE PLAN ARE TRUE BEARINGS.

RUNOFF COEFFICIENT TABLE

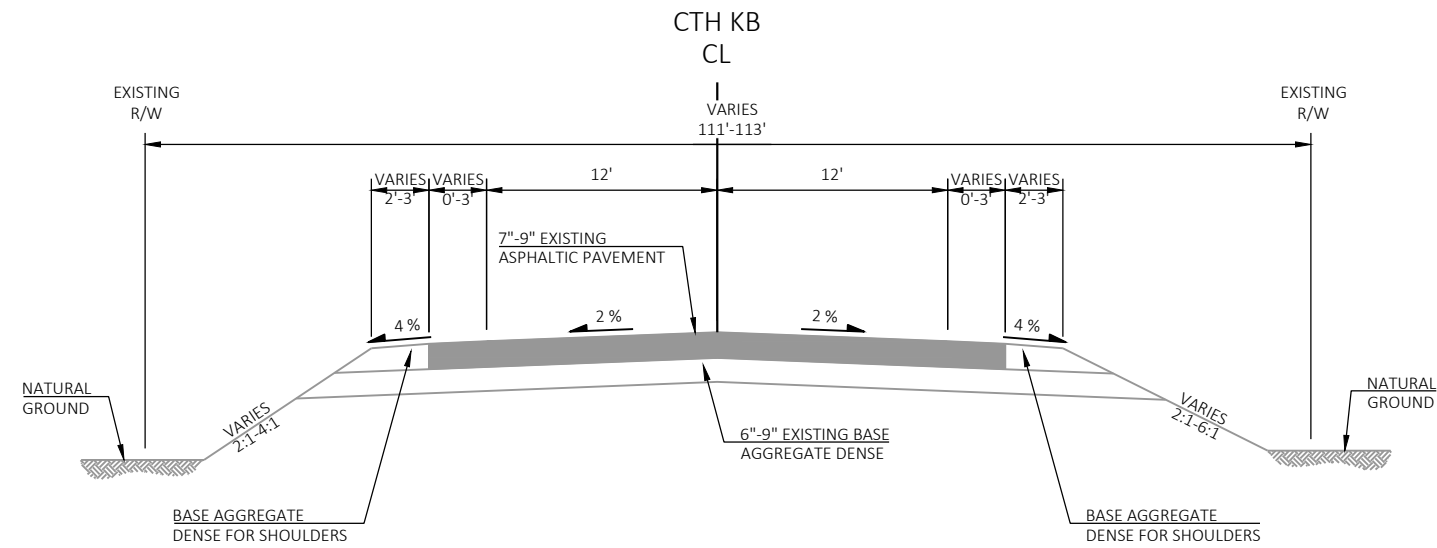
	HYDROLOGIC SOIL GROUP											
	A			B			C			D		
	SLOPE RANGE (PERCENT)			SLOPE RANGE (PERCENT)			SLOPE RANGE (PERCENT)			SLOPE RANGE (PERCENT)		
LAND USE:	0-2	2-6	6 & OVER	0-2	2-6	6 & OVER	0-2	2-6	6 & OVER	0-2	2-6	6 & OVER
ROW CROPS:	.08	.16	.22	.12	.20	.27	.15	.24	.33	.19	.28	.38
	.22	.30	.38	.26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

TOTAL PROJECT AREA = 1.119 ACRES
TOTAL AREA EXPECTED TO BE DISTURBED BY CONSTRUCTION ACTIVITIES = 0.519 ACRES

DIGGERSHOTLINE

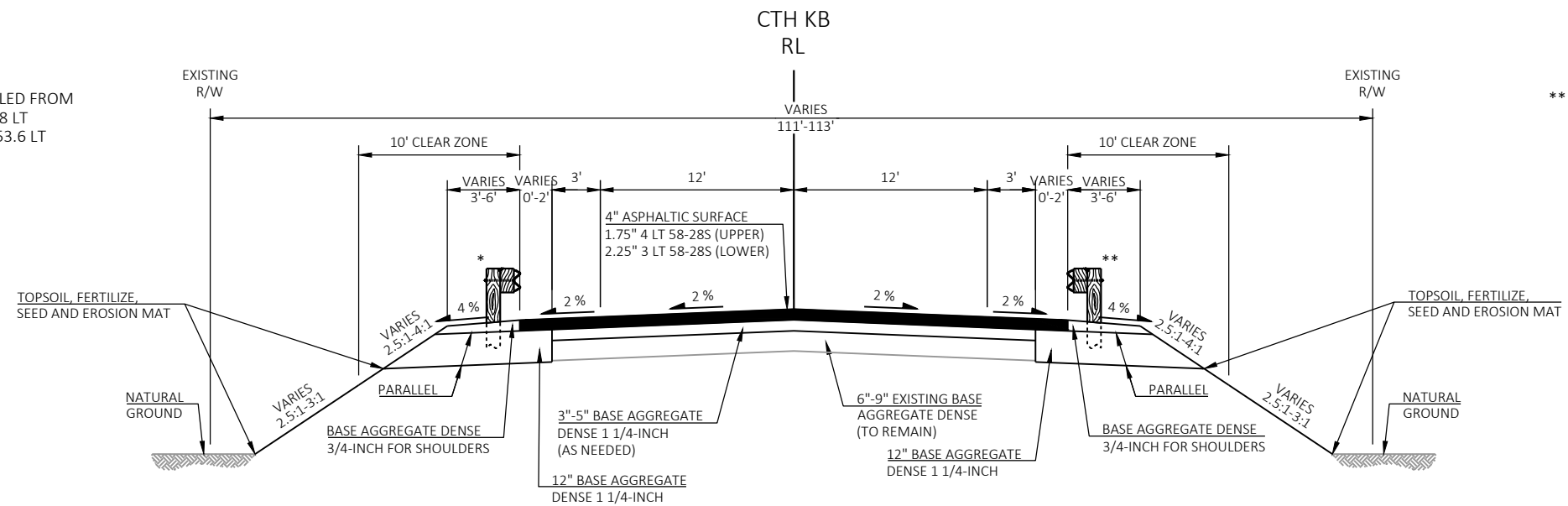
Dial 811 or (800)242-8511

www.DiggersHotline.com



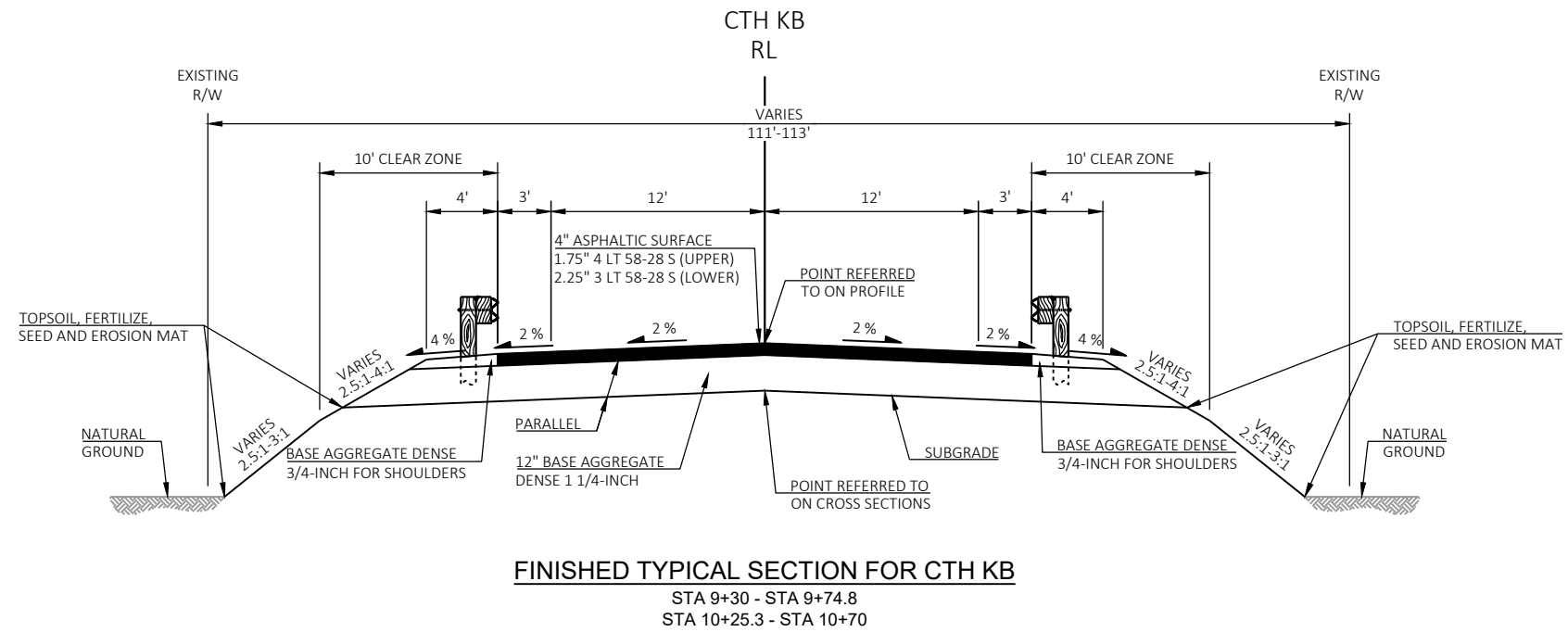
EXISTING TYPICAL SECTION FOR CTH KB
STA 9+30 - STA 10+70

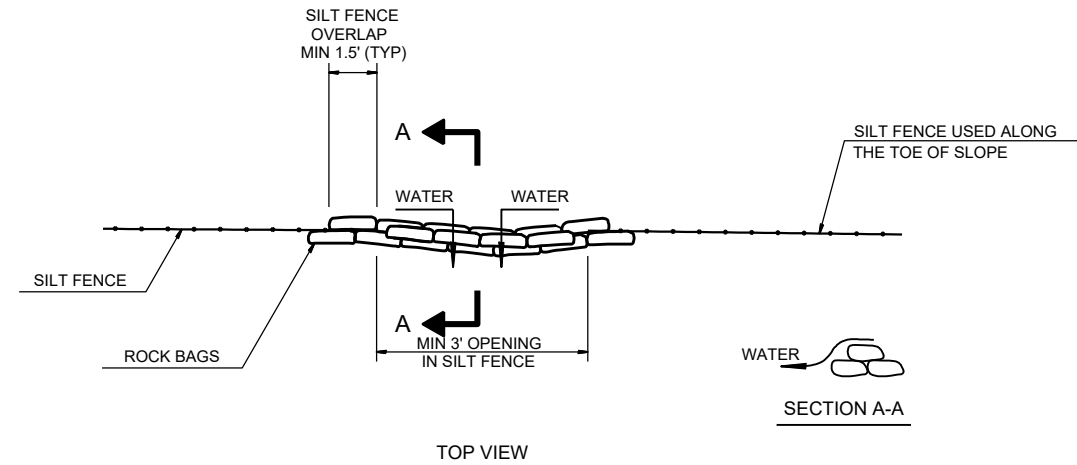
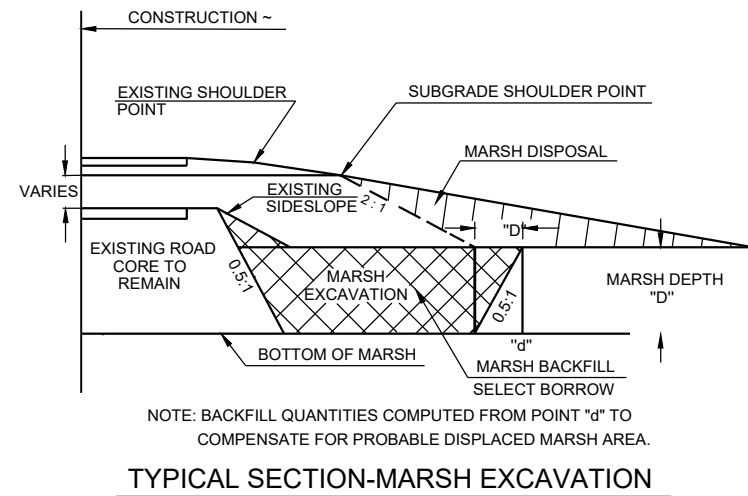
* GUARDRAIL TO BE INSTALLED FROM
STA 8+84.1 LT - STA 9+74.8 LT
STA 10+25.3 LT - STA 11+53.6 LT



** GUARDRAIL TO BE INSTALLED FROM
STA 8+46.6 RT - STA 9+74.8 RT
STA 10+25.3 RT - STA 11+15.9 RT

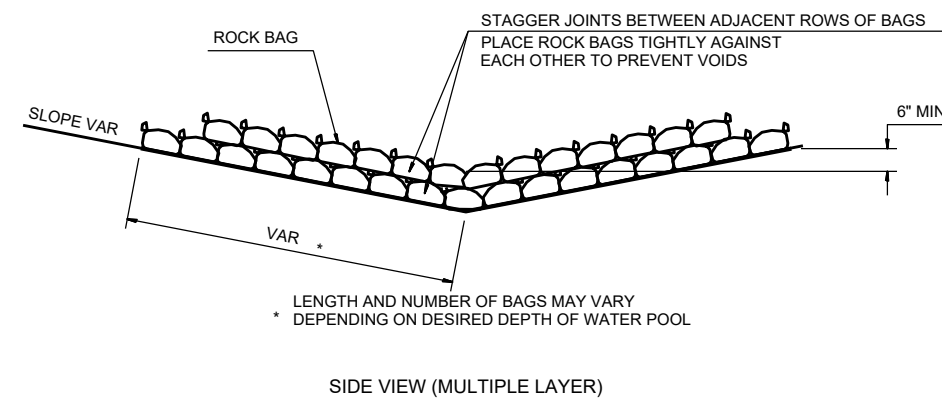
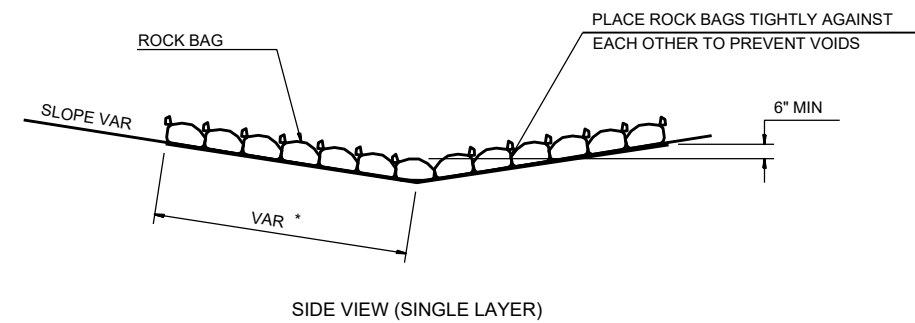
FINISHED TYPICAL SECTION FOR CTH KB
STA 7+81.7 RT - STA 9+30 RT
STA 8+03.1 LT - STA 9+30 LT
STA 10+70 RT - STA 11+90.9 RT
STA 10+70 LT - STA 12+19.5 LT





ROCK BAGS USED FOR SILT FENCE RELIEF DETAIL

PAID AS ROCK BAGS
(SEE MISCELLANEOUS QUANTITIES FOR LOCATIONS)

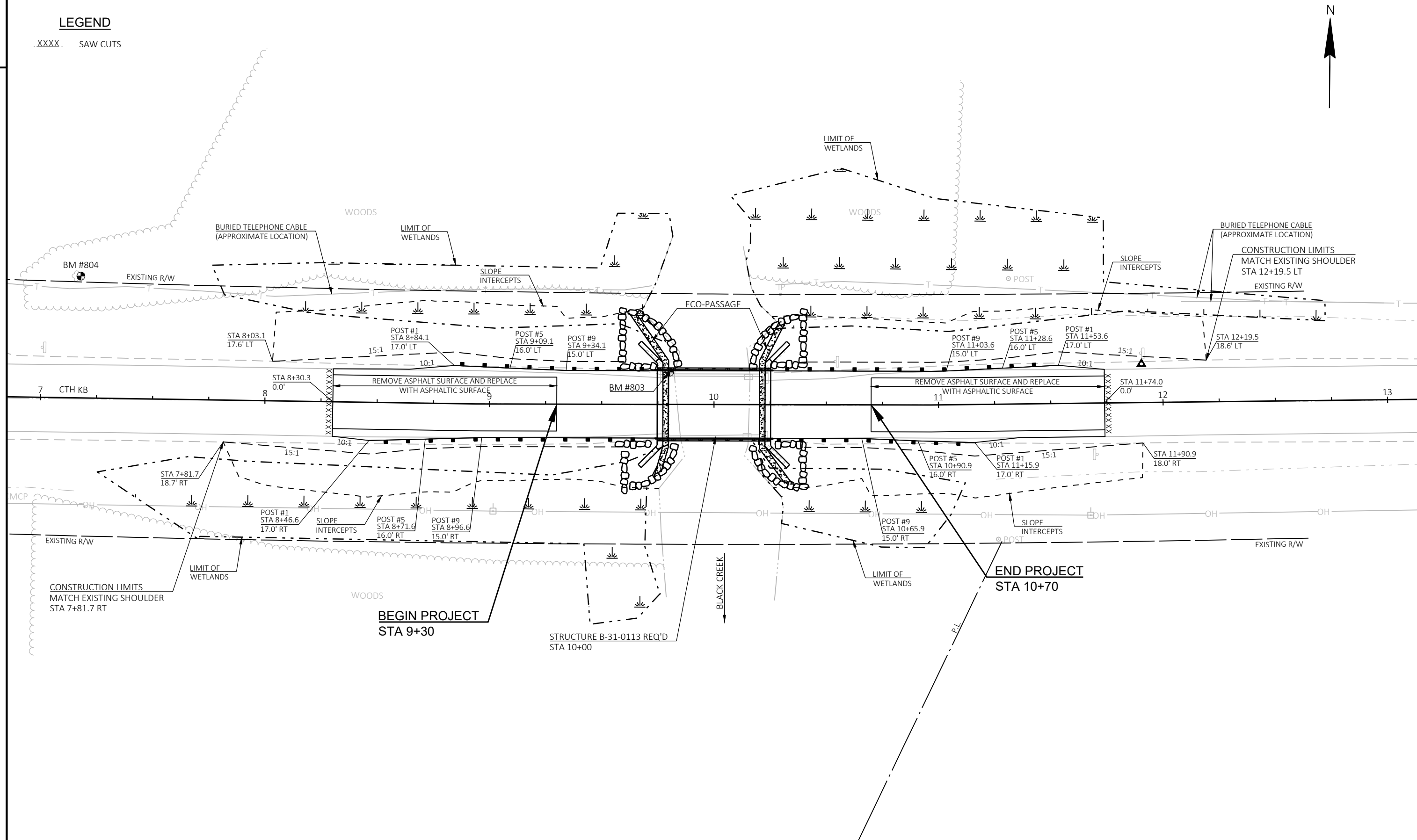


ROCK BAGS DITCH CHECK

PAID AS ROCK BAGS
(SEE MISCELLANEOUS QUANTITIES FOR LOCATIONS)

LEGEND

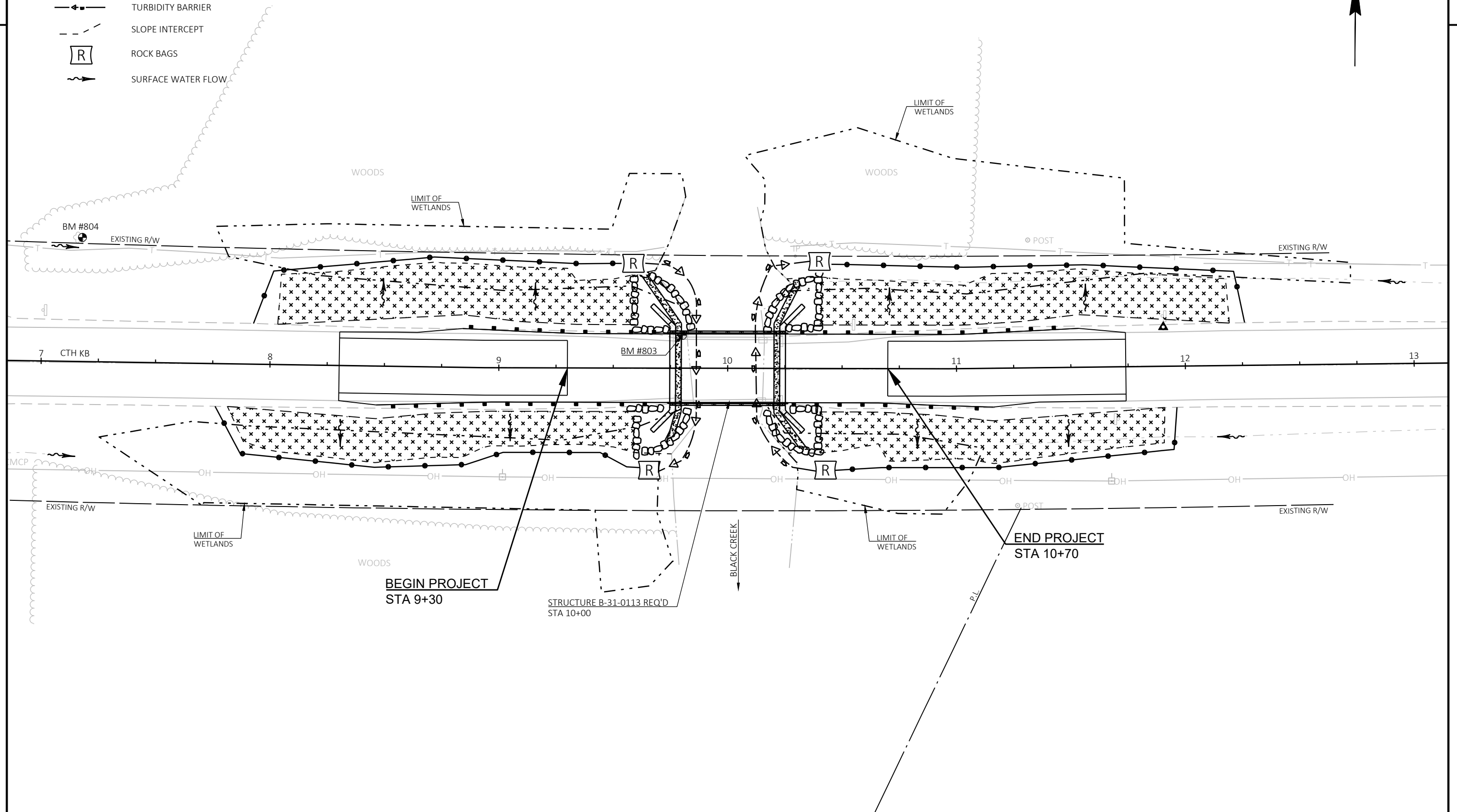
.XXXX. SAW CUTS



PROJECT NO: 4386-00-01	HWY: CTH KB	COUNTY: KEWAUNEE	PLAN DETAILS	SHEET	E
------------------------	-------------	------------------	--------------	-------	---

LEGEND

- EROSION MAT URBAN CLASS I TYPE B
SILT FENCE
TURBIDITY BARRIER
SLOPE INTERCEPT
ROCK BAGS
SURFACE WATER FLOW



PROJECT NO: 4386-00-01

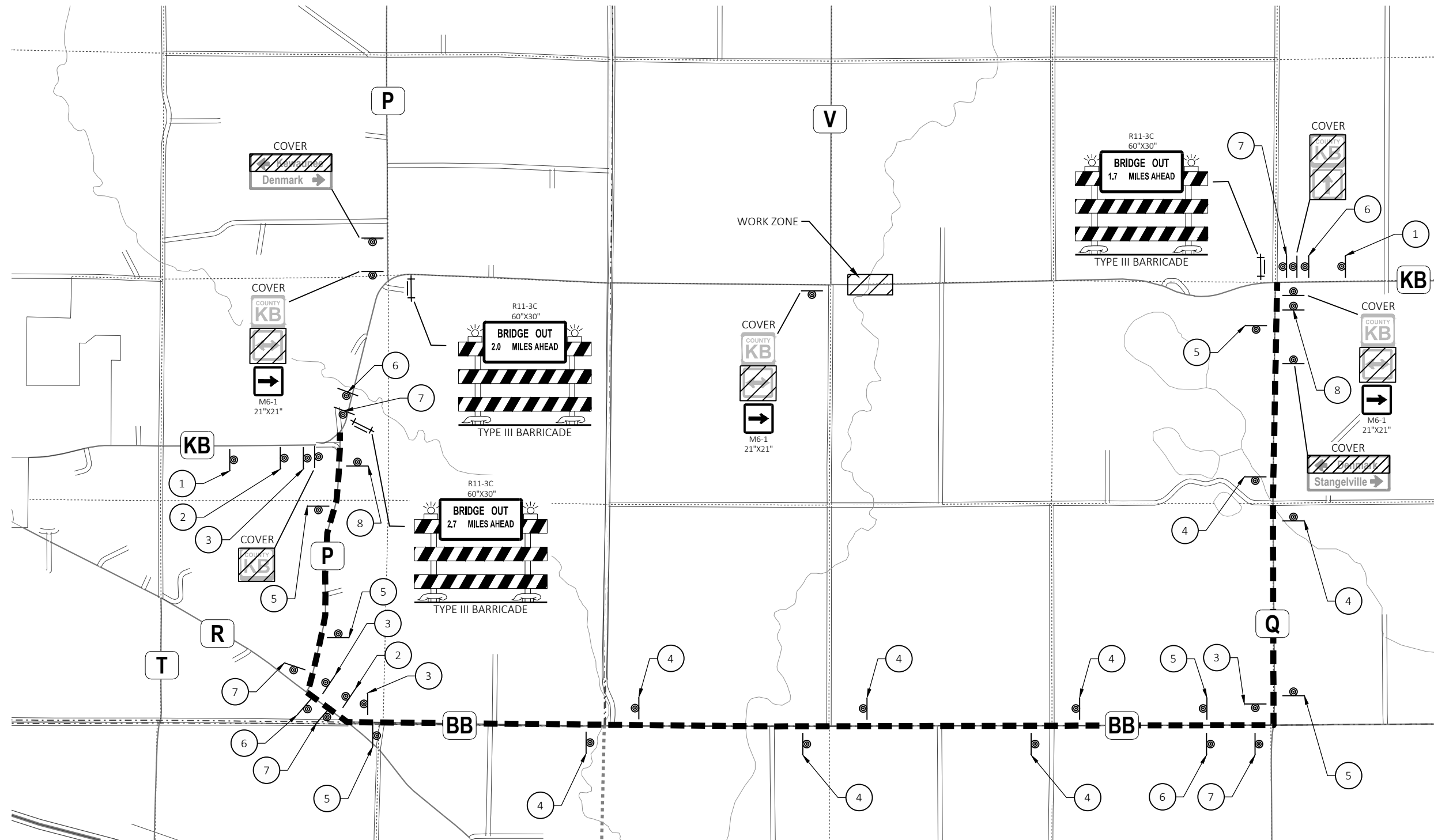
HWY: CTH KB

COUNTY: KEWAUNEE

EROSION CONTROL

SHEET

E



- 1

COUNTY
KB
M1-5A
48"x48"

DETOUR
AHEAD
W20-2A
- 2

DETOUR
M4-8
24"x12"
COUNTY
KB
M1-5A
24"x24"

DETOUR
M4-8
24"x12"
COUNTY
KB
M1-5A
24"x24"
- 3

DETOUR
M4-8
24"x12"
COUNTY
KB
M1-5A
24"x24"

DETOUR
M4-8
24"x12"
COUNTY
KB
M1-5A
24"x24"
- 4

DETOUR
M4-8
24"x12"
COUNTY
KB
M1-5A
24"x24"

DETOUR
M4-8
24"x12"
COUNTY
KB
M1-5A
24"x24"
- 5

DETOUR
M4-8
24"x12"
COUNTY
KB
M1-5A
24"x24"

DETOUR
M4-8
24"x12"
COUNTY
KB
M1-5A
24"x24"
- 6

DETOUR
M4-8
24"x12"
COUNTY
KB
M1-5A
24"x24"

DETOUR
M4-8
24"x12"
COUNTY
KB
M1-5A
24"x24"
- 7

DETOUR
M4-8
24"x12"
COUNTY
KB
M1-5A
24"x24"

DETOUR
M4-8
24"x12"
COUNTY
KB
M1-5A
24"x24"
- 8

DETOUR
M4-8
24"x12"
COUNTY
KB
M1-5A
24"x24"

DETOUR
M4-8
24"x12"
COUNTY
KB
M1-5A
24"x24"

LEGEND

TYPE III BARRICADE WITH ATTACHED SIGN

SIGN ON PERMANENT SUPPORT

WORK AREA

DETOUR ROUTE

Estimate Of Quantities

4386-00-01

Line	Item	Item Description	Unit	Total	Qty
0002	201.0205	Grubbing	STA	4.000	4.000
0004	203.0260	Removing Structure Over Waterway Minimal Debris (structure) 01. B-31-0893	EACH	1.000	1.000
0006	204.0110	Removing Asphaltic Surface	SY	680.000	680.000
0008	205.0100	Excavation Common	CY	340.000	340.000
0010	205.0400	Excavation Marsh	CY	100.000	100.000
0012	206.1001	Excavation for Structures Bridges (structure) 01. B-31-0113	EACH	1.000	1.000
0014	208.0100	Borrow	CY	653.000	653.000
0016	208.1100	Select Borrow	CY	150.000	150.000
0018	210.1500	Backfill Structure Type A	TON	528.000	528.000
0020	305.0110	Base Aggregate Dense 3/4-Inch	TON	90.000	90.000
0022	305.0120	Base Aggregate Dense 1 1/4-Inch	TON	910.000	910.000
0024	455.0605	Tack Coat	GAL	60.000	60.000
0026	465.0105	Asphaltic Surface	TON	240.000	240.000
0028	502.0100	Concrete Masonry Bridges	CY	200.000	200.000
0030	502.3200	Protective Surface Treatment	SY	250.000	250.000
0032	505.0400	Bar Steel Reinforcement HS Structures	LB	4,940.000	4,940.000
0034	505.0600	Bar Steel Reinforcement HS Coated Structures	LB	30,410.000	30,410.000
0036	513.4061	Railing Tubular Type M	LF	105.000	105.000
0038	516.0500	Rubberized Membrane Waterproofing	SY	12.000	12.000
0040	550.0500	Pile Points	EACH	14.000	14.000
0042	550.1100	Piling Steel HP 10-Inch X 42 Lb	LF	700.000	700.000
0044	606.0300	Riprap Heavy	CY	275.000	275.000
0046	612.0406	Pipe Underdrain Wrapped 6-Inch	LF	150.000	150.000
0048	614.2300	MGS Guardrail 3	LF	75.000	75.000
0050	614.2500	MGS Thrie Beam Transition	LF	157.600	157.600
0052	614.2610	MGS Guardrail Terminal EAT	EACH	4.000	4.000
0054	619.1000	Mobilization	EACH	1.000	1.000
0056	624.0100	Water	MGAL	22.000	22.000
0058	625.0100	Topsoil	SY	1,380.000	1,380.000
0060	627.0200	Mulching	SY	640.000	640.000
0062	628.1504	Silt Fence	LF	1,000.000	1,000.000
0064	628.1520	Silt Fence Maintenance	LF	2,000.000	2,000.000
0066	628.1905	Mobilizations Erosion Control	EACH	3.000	3.000
0068	628.1910	Mobilizations Emergency Erosion Control	EACH	5.000	5.000
0070	628.2008	Erosion Mat Urban Class I Type B	SY	1,380.000	1,380.000
0072	628.6005	Turbidity Barriers	SY	224.000	224.000
0074	628.7570	Rock Bags	EACH	75.000	75.000
0076	629.0210	Fertilizer Type B	CWT	1.500	1.500
0078	630.0120	Seeding Mixture No. 20	LB	70.000	70.000
0080	630.0200	Seeding Temporary	LB	40.000	40.000
0082	630.0300	Seeding Borrow Pit	LB	30.000	30.000
0084	630.0500	Seed Water	MGAL	40.000	40.000
0086	634.0612	Posts Wood 4x6-Inch X 12-FT	EACH	4.000	4.000
0088	637.2230	Signs Type II Reflective F	SF	12.000	12.000
0090	638.2102	Moving Signs Type II	EACH	3.000	3.000
0092	638.2602	Removing Signs Type II	EACH	14.000	14.000
0094	638.3000	Removing Small Sign Supports	EACH	14.000	14.000
0096	642.5001	Field Office Type B	EACH	1.000	1.000
0098	643.0420	Traffic Control Barricades Type III	DAY	6,882.000	6,882.000

Estimate Of Quantities

4386-00-01

Line	Item	Item Description	Unit	Total	Qty
0100	643.0705	Traffic Control Warning Lights Type A	DAY	11,988.000	11,988.000
0102	643.0900	Traffic Control Signs	DAY	29,082.000	29,082.000
0104	643.0920	Traffic Control Covering Signs Type II	EACH	8.000	8.000
0106	643.1050	Traffic Control Signs PCMS	DAY	14.000	14.000
0108	643.5000	Traffic Control	EACH	1.000	1.000
0110	645.0111	Geotextile Type DF Schedule A	SY	96.000	96.000
0112	645.0120	Geotextile Type HR	SY	490.000	490.000
0114	646.2020	Marking Line Epoxy 6-Inch	LF	1,380.000	1,380.000
0116	650.4500	Construction Staking Subgrade	LF	89.000	89.000
0118	650.5000	Construction Staking Base	LF	293.000	293.000
0120	650.6501	Construction Staking Structure Layout (structure) 01. B-31-0113	EACH	1.000	1.000
0122	650.9911	Construction Staking Supplemental Control (project) 01. 4386-00-01	EACH	1.000	1.000
0124	650.9920	Construction Staking Slope Stakes	LF	293.000	293.000
0126	652.0215	Conduit Rigid Nonmetallic Schedule 40 1 1/4-Inch	LF	143.000	143.000
0128	690.0150	Sawing Asphalt	LF	60.000	60.000
0130	715.0502	Incentive Strength Concrete Structures	DOL	1,200.000	1,200.000
0132	ASP.1T0A	On-the-Job Training Apprentice at \$5.00/HR	HRS	300.000	300.000
0134	ASP.1T0G	On-the-Job Training Graduate at \$5.00/HR	HRS	600.000	600.000
0136	SPV.0090	Special 01. Flashing Stainless Steel	LF	91.000	91.000
0138	SPV.0090	Special 02. Removing Existing Timber Piling	LF	244.000	244.000
0140	SPV.0195	Special 01. Select Crushed Material for Travel Corridor	TON	22.000	22.000

REMOVING ASPHALTIC SURFACE

HMA PAVEMENT

GRUBBING

				201.0205
				GRUBBING
STATION	TO	STATION	LOCATION	STA
8+00	-	12+00	CTH KB	4
TOTAL				4

				204.0110
				REMOVING
				ASPHALTIC
				SURFACE
STATION	TO	STATION	LOCATION	SY
8+30	-	9+30	CTH KB, LT & RT	334
10+70	-	11+74	CTH KB, LT & RT	346
TOTAL				680

				455.0605	465.0105
				TACK COAT	ASPHALTIC
				GAL	SURFACE
STATION	TO	STATION	LOCATION		TON
8+30	-	9+75	CTH KB, LT & RT	30	118
10+25	-	11+74	CTH KB, LT & RT	30	122
TOTALS				60	240

BASE AGGREGATE DENSE

GUARDRAIL

TURBIDITY BARRIERS

				305.0110	305.0120	624.0100	
				BASE	BASE		
				AGGREGATE	AGGREGATE		
				DENSE 3/4-INCH	DENSE 1 1/4-INCH	WATER	
STATION	TO	STATION	LOCATION	TON	TON	MGAL	REMARKS
7+81	-	9+30	CTH KB, LT & RT	35	303	7	FINE GRADING FOR PAVEMENT REMOVAL AREA
9+30		9+75	CTH KB, LT & RT	10	151	4	
10+25	-	10+70	CTH KB, LT & RT	10	151	4	
10+70	-	12+20	CTH KB, LT & RT	35	305	7	FINE GRADING FOR PAVEMENT REMOVAL AREA
TOTALS				90	910	22	

				614.2300	614.2500	614.2610	
				MGS	MGS THRIE	MGS	
				GUARDRAIL 3	BEAM	GUARDRAIL	
STATION	TO	STATION	LOCATION	LF	LF	TERMINAL EAT	
8+46.6	-	9+76.0	CTH KB, RT	37.5	39.4	1	
8+84.1	-	9+76.0	CTH KB, LT	-	39.4	1	
10+24.0	-	11+15.9	CTH KB, RT	-	39.4	1	
10+24.0	-	11+53.6	CTH KB, LT	37.5	39.4	1	
TOTALS				75	157.6	4	

STATION	LOCATION	SY
9+86	CTH KB, LT & RT	116
10+12	CTH KB, LT & RT	108
TOTAL		224

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 +/- (14)	Borrow (Item #208.0100)	COMMENT:
			CUT (2)			(Item #205.0400)	Factor 1.50		Factor 1.30			
1	7+81.70 - 9+30.00	COUNTY KB (SW SHOULDER)	49	0	49	79	119	143	186	-131	131	
	8+03.10 - 9+30.00	COUNTY KB (NW SHOULDER)	34	0	34	21	32	192	250	-219	219	
	9+30.00 - 10+70.00	COUNTY KB (MAINLINE)	170	36	134	0	0	146	190	-17	17	
	10+70.00 - 12+19.50	COUNTY KB (NE SHOULDER)	50	0	50	0	0	140	182	-137	137	
	10+70.00 - 11+90.50	COUNTY KB (SE SHOULDER)	37	0	37	0	0	139	181	-149	149	
Division 1 Totals			340	36	304	100	150	760	988	-653	653	

Notes:	
2-Cut	Unusable Pavement Material is included in Cut
4-Salvaged/Unusable Pavement Material	This does not show up in cross sections. Unusable Pavement Material = Existing Asphaltic Pavement. Backfill any areas below subgrade with Borrow material. Item Number 208.0100.
5-Available Material	Available Material = Cut - Unusable Pavement Material
6-Excavation Marsh	Excavation Marsh too be backfilled with Select Borrow Material as shown in cross sections.
10-Expanded Marsh Backfill	Expanded Marsh Backfill will be backfilled with Select Borrow material. Marsh Backfill Factor = 1.5. Expanded Marsh Backfill = Excavation Marsh x Marsh Backfill Factor. Item Number 208.1100
13-Expanded Fill	Expanded Fill Factor = 1.3. Expanded Fill = Unexpanded Fill x Expanded Fill Factor.
14-Mass Ordinate	Cut - Unusable Pavement Material - (Unexpanded Fill * Expanded Fill Factor)

ALL ITEMS ARE CATEGORY 0010 UNLESS OTHERWISE STATED.

LANDSCAPING ITEMS

				625.0100	627.0200	628.2008 EROSION MAT URBAN CLASS I	629.0210 FERTILIZER TYPE B	630.0120 SEEDING MIXTURE NO. 20	630.0200 SEEDING TEMPORARY	630.0300 SEEDING BORROW PIT	630.0500 SEED WATER
STATION	TO	STATION	LOCATION	TOPSOIL SY	MULCHING SY	TYPE B SY	CWT	LB	LB	LB	MGAL
7+81	-	9+75	CTH KB, RT	343	-	343	0.3	16	7	-	10
8+03	-	9+75	CTH KB, LT	395	-	395	0.3	18	8	-	12
10+25	-	11+90	CTH KB, RT	304	-	304	0.2	14	6	-	9
10+25	-	12+19	CTH KB, LT	402	-	402	0.3	19	8	-	12
UNDISTRIBUTED				BORROW PIT	-	-	0.5	-	12	30	-
UNDISTRIBUTED				CTH KB	279	-	0.2	19	6	-	7
TOTALS				1,380	640	1,380	1.5	70	40	30	40

SIGNS

EROSION CONTROL DEVICES

			634.0612	637.2230			
			POSTS WOOD				
			4X6-INCH X 12- FT	SIGNS TYPE II REFLECTIVE F			
STATION	LOCATION	EACH		W5-52L	W5-52R		
				SF	SF		
9+60	CTH KB, LT	15					
9+60	CTH KB, RT	15					
10+40	CTH KB, LT	15	9+75	CTH KB, LT	1	3	-
10+40	CTH KB, RT	15	9+75	CTH KB, RT	1	-	3
UNDISTRIBUTED		15	10+25	CTH KB, LT	1	-	3
			10+25	CTH KB, RT	1	3	-
TOTALS		75	TOTALS		4	12	

TRAFFIC CONTROL

											UNDISTRIBUTED		203
			643.0420		643.0705		643.0900		643.1050				
APPROXIMATE			TRAFFIC CONTROL		TRAFFIC CONTROL		TRAFFIC CONTROL		TRAFFIC CONTROL		TOTALS		
SERVICE			BARRICADES TYPE III		WARNING LIGHTS TYPE		SIGNS		SIGNS PCMS				
PERIOD					A								
			NO. IN		NO. IN		NO. IN		NO. IN				
STATION	LOCATION	DAY	SERVICE	DAY	SERVICE	DAY	SERVICE	DAY	SERVICE	DAY	REMARKS		
	CTH KB, CTH P	7	-	-	-	-	-	-	1	7			
	CTH KB, CTH P	222	1	222	2	444	5	1,110	-	-	SEE BARRICADES AND SIGNS FOR MAINLINE CLOSURES DETAIL A		
	CTH KB, IRISH ROAD	222	4	888	8	1,776	6	1,332	-	-	SEE BARRICADES AND SIGNS FOR MAINLINE CLOSURES DETAIL C		
	CTH KB, CTH V	222	4	888	8	1,776	6	1,332	-	-	SEE BARRICADES AND SIGNS FOR MAINLINE CLOSURES DETAIL C		
7+81	CTH KB	222	5	1,110	6	1,332	1	222	-	-	SEE BARRICADES AND SIGNS FOR MAINLINE CLOSURES DETAIL D		
12+19	CTH KB	222	5	1,110	6	1,332	1	222	-	-	SEE BARRICADES AND SIGNS FOR MAINLINE CLOSURES DETAIL D		
	CTH KB, SHULTZ ROAD	222	4	888	8	1,776	6	1,332	-	-	SEE BARRICADES AND SIGNS FOR MAINLINE CLOSURES DETAIL C		
	CTH KB, SCHWEINER ROAD	222	4	888	8	1,776	6	1,332	-	-	SEE BARRICADES AND SIGNS FOR MAINLINE CLOSURES DETAIL C		
	CTH KB,CTH Q	222	1	222	2	444	5	1,110	-	-	SEE BARRICADES AND SIGNS FOR MAINLINE CLOSURES DETAIL A		
	CTH KB,CTH Q	7	-	-	-	-	-	-	1	7			
TOTALS			6,216		10,656		7,992		14				

ALL ITEMS ARE CATEGORY 0010 UNLESS OTHERWISE STATED.

MOVING & REMOVING SIGNS

		638.2102	638.2602	638.3000	REMARKS
		MOVING SIGNS	REMOVING	REMOVING	
STATION	LOCATION	TYPE II EACH	SIGNS TYPE II EACH	SMALL SIGN SUPPORTS EACH	
		CTH KB, CTH V	-	1	NARROW BRIDGE
		CTH KB, CTH V	-	4	ADVANCE 15 TON LOAD POSTING
		CTH KB	-	1	15 TON LOAD POSTING
9+76	CTH KB, LT	-	1	1	OBJECT MARKER
9+76	CTH KB, RT	-	1	1	OBJECT MARKER
10+24	CTH KB, LT	-	1	1	OBJECT MARKER
10+24	CTH KB, RT	-	1	1	OBJECT MARKER
		CTH KB	-	1	15 TON LOAD POSTING
10+55	CTH KB, LT	1	-	-	"SPEED LIMIT 45"
11+69	CTH KB, RT	1	-	-	"JCT COUNTY V"
11+91	CTH KB, LT	1	-	-	"SPEED LIMIT 55"
		CTH KB, SCHULTZ ROAD	-	1	NARROW BRIDGE
		CTH KB, CTH Q	-	2	ADVANCE 15 TON LOAD POSTING
TOTALS		3	14	14	

SILT FENCE

				628.1504	628.1520
				SILT FENCE	SILT FENCE
STATION	TO	STATION	LOCATION	LF	MAINTENANCE LF
7+81	-	9+75	CTH KB, LT & RT	400	800
10+25	-	12+19	CTH KB, LT & RT	397	794
UNDISTRIBUTED				203	406
TOTALS				1,000	2,000

MOBILIZATIONS EROSION CONTROL

				628.1905	628.1910
				MOBILIZATIONS	MOBILIZATIONS
				EROSION	EROSION
				CONTROL	CONTROL
STATION	TO	STATION	LOCATION	EACH	EACH
9+30	-	10+70	CTH KB, LT & RT	3	5
TOTALS				3	5

PAVEMENT MARKING

646.1020 MARKING LINE EPOXY 4-INCH						
CATEGORY	STATION	TO	STATION	LOCATION	LF	REMARKS
0010	8+30	-	11+74	CTH KB, LT	344	WHITE EDGELINE
0010	8+30	-	11+74	CTH KB, RT	344	WHITE EDGELINE
0010	8+30	-	11+74	CTH KB, LT & RT	692	DOUBLE YELLOW CENTERLINE
TOTAL					1,380	

SAWING ASPHALT

690.0150 SAWING ASPHALT		
STATION	LOCATION	LF
8+30	CTH KB, LT & RT	30
11+74	CTH KB, LT & RT	30
TOTAL		60

CONSTRUCTION STAKING

					650.4500	650.5000	650.6501.01	650.9911.01	650.9920
					CONSTRUCTION		CONSTRUCTION	CONSTRUCTION	
					STAKING		STAKING	STAKING	
					STAKING	CONSTRUCTION	STRUCTURE	SUPPLEMENTAL	CONSTRUCTION
					SUBGRADE	STAKING BASE	LAYOUT	CONTROL	STAKING SLOPE
CATEGORY	STATION	TO	STATION	LOCATION	LF	LF	(B-31-0113) EACH	(4386-00-71) EACH	STAKES LF
0010	8+30	-	9+30	CTH KB, LT & RT	-	100	-	-	100
0010	9+30	-	9+74	CTH KB, LT & RT	44	44	-	-	44
	PROJECT			CTH KB, LT & RT	-	-	-	1	-
0010	10+25	-	10+70	CTH KB, LT & RT	45	45	-	-	45
0010	10+70	-	11+74	CTH KB, LT & RT	-	104	-	-	104
TOTAL 0010					89	293	0	1	293
0020	PROJECT			B-31-0113	-	-	1	-	-
TOTAL 0020					0	0	1	0	0
PROJECT TOTAL					89	293	1	1	293

ALL ITEMS ARE CATEGORY 0010 UNLESS OTHERWISE STATED.

TRAFFIC CONTROL DETOUR SIGN SUMMARY - PROJECT 4386-00-01

SIGN NO.	APPROXIMATE LOCATION	SIGN CODE	SIZE W X H	NUMBER IN SERVICE	APPROX. SERVICE PERIOD 222 DAYS	* 643.0900 SIGNS DAYS	* 643.0420 BARRICADES TYPE III DAYS	* 643.0705 WARNING LIGHTS TYPE A DAYS	NO OF CYCLES	643.0920 COVERING SIGNS TYPE II EACH	REMARKS
A	CTH KB, 2500 FT WEST OF CTH P	M1-5A	24"x24"	1	222	222					KB
	"	W20-2A	48"x48"	1	222	222					
B	CTH KB, 1000 FT WEST OF CTH P	M4-8	24"x12"	1	222	222					
	"	M1-5A	24"x24"	1	222	222					KB
	"	M5-1R	21"x21"	1	222	222					
C	CTH KB, 100 FT WEST OF CTH P	M4-8	24"x12"	1	222	222					
	"	M1-5A	24"x24"	1	222	222					KB
	"	M6-1R	21"x21"	1	222	222					
D	CTH KB, 500 FT WEST OF CTH P								1	1	COVER "COUNTY KB"
E	CTH P, 1000 FT NORTH OF CTH KB								1	1	COVER "<-KEWAUNEE"
F	CTH P, 150 FT NORTH OF CTH KB								1	1	COVER "<->"
	"	M6-1	21"x21"	1	222	222					
G	CTH KB, 750 FT NORTH OF CTH P	M4-8	24"x12"	1	222	222					
	"	M1-5A	24"x24"	1	222	222					KB
	"	M5-1L	21"x21"	1	222	222					
H	CTH KB, 100 FT NORTH OF CTH P	M4-8	24"x12"	1	222	222					
	"	M1-5A	24"x24"	1	222	222					KB
	"	M6-1L	21"x21"	1	222	222					
I	CTH P, 500 FT SOUTH OF CTH KB	M4-8	24"x12"	1	222	222					
	"	M1-5A	24"x24"	1	222	222					KB
J	CTH P, 50 FT NORTH OF CTH R	M4-8	24"x12"	1	222	222					
	"	M1-5A	24"x24"	1	222	222					KB
	"	M6-1L	21"x21"	1	222	222					
K	CTH R, 750 FT WEST OF CTH BB	M4-8	24"x12"	1	222	222					
	"	M1-5A	24"x24"	1	222	222					KB
	"	M5-1L	21"x21"	1	222	222					
L	CTH R, 150 FT WEST OF CTH BB	M4-8	24"x12"	1	222	222					
	"	M1-5A	24"x24"	1	222	222					KB
	"	M6-1L	21"x21"	1	222	222					
M	CTH BB, 500 FT EAST OF CTH R	M4-8	24"x12"	1	222	222					
	"	M1-5A	24"x24"	1	222	222					KB
N	CTH BB, 500 FT WEST OF IRISH RD	M4-8	24"x12"	1	222	222					
	"	M1-5A	24"x24"	1	222	222					KB
	"	M6-1A	21"x21"	1	222	222					
O	CTH BB, 500 FT WEST OF CTH V	M4-8	24"x12"	1	222	222					
	"	M1-5A	24"x24"	1	222	222					KB
	"	M6-1A	21"x21"	1	222	222					
P	CTH BB, 500 FT WEST OF HARPT LAKE RD	M4-8	24"x12"	1	222	222					
	"	M1-5A	24"x24"	1	222	222					KB
	"	M6-1A	21"x21"	1	222	222					
Q	CTH BB, 750 FT WEST OF CTH Q	M4-8	24"x12"	1	222	222					
	"	M1-5A	24"x24"	1	222	222					KB
	"	M5-1L	21"x21"	1	222	222					
PAGE SUBTOTALS				40		8,880	0	0		3	

TRAFFIC CONTROL DETOUR SIGN SUMMARY - PROJECT 4386-00-01 CONTINUED

SIGN NO.	LOCATION	SIGN CODE	SIZE W X H	NUMBER IN SERVICE	APPROX. SERVICE PERIOD 222 DAYS	* 643.0900 SIGNS DAYS	* 643.0420 BARRICADES TYPE III DAYS	* 643.0705 WARNING LIGHTS TYPE A DAYS	NO OF CYCLES	643.0920 COVERING SIGNS TYPE II EACH	REMARKS
R	CTH BB, 100 FT WEST OF CTH Q	M4-8	24"x12"	1	222	222					
	"	M1-5A	24"x24"	1	222	222					KB
	"	M6-1L	21"x21"	1	222	222					
S	CTH Q, 500 FT NORTH OF CTH BB	M4-8	24"x12"	1	222	222					
	"	M1-5A	24"x24"	1	222	222					KB
T	CTH Q, 500 FT SOUTH OF BOLT RD	M4-8	24"x12"	1	222	222					
	"	M1-5A	24"x24"	1	222	222					KB
	"	M6-1A	21"x21"	1	222	222					
U	CTH Q, 1750 FT SOUTH OF CTH KB								1	1	COVER "<- DENMARK"
V	CTH Q, 800 FT SOUTH OF CTH KB	M4-8A	24"x18"	1	222	222					
	"	M1-5A	24"x24"	1	222	222					KB
W	CTH Q, 100 FT SOUTH OF CTH KB								1	1	COVER "<->"
	"	M6-1R	21"x21"	1	222	222					
AA	CTH KB, 1500 FT EAST OF CTH Q	M1-5A	24"x24"	1	222	222					KB
	"	w20-2A	48"x48"	1	222	222					
AB	CTH KB, 750 FT EAST OF CTH Q	M4-8	24"x12"	1	222	222					
	"	M1-5A	24"x24"	1	222	222					KB
	"	M5-1L	21"x21"	1	222	222					
AC	CTH KB, 500 FT EAST OF CTH Q								1	1	COVER "COUNTY KB"
	"								1	1	COVER "A"
AD	CTH KB, 50 EAST OF CTH Q	M4-8	24"x12"	1	222	222					
	"	M1-5A	24"x24"	1	222	222					KB
	"	M6-1L	21"x21"	1	222	222					
AE	CTH KB, 50 FT WEST OF CTH Q	R11-3	60"x30"	1	222	222	222	444			1.7 MILES AHEAD
AF	CTH Q, 500 FT SOUTH OF CTH KB	M4-8	24"x12"	1	222	222					
	"	M1-5A	24"x24"	1	222	222					KB
AG	CTH Q, 500 FT NORTH OF BOLT RD	M4-8	24"x12"	1	222	222					
	"	M1-5A	24"x24"	1	222	222					KB
	"	M6-1A	21"x21"	1	222	222					
AH	CTH Q, 250 FT NORTH OF CTH BB	M4-8	24"x12"	1	222	222					
	"	M1-5A	24"x24"	1	222	222					KB
	"	M6-1R	21"x21"	1	222	222					
AI	CTH BB, 500 FT WEST OF CTH Q	M4-8	24"x12"	1	222	222					
	"	M1-5A	24"x24"	1	222	222					KB
AJ	CTH BB, 500 FT EAST OF HARPT LAKE RD	M4-8	24"x12"	1	222	222					
	"	M1-5A	24"x24"	1	222	222					KB
	"	M6-1A	21"x21"	1	222	222					
AK	CTH BB, 500 FT EAST OF CTH V	M4-8	24"x12"	1	222	222					
	"	M1-5A	24"x24"	1	222	222					KB
	"	M6-1A	21"x21"	1	222	222					
AL	CTH BB, 500 FT EAST OF IRISH RD	M4-8	24"x12"	1	222	222					
	"	M1-5A	24"x24"	1	222	222					KB
	"	M6-1A	21"x21"	1	222	222					
PAGE SUBTOTALS				39		8,658	222	444		4	

*ADDITIONAL QUANTITIES SHOWN ELSEWHERE

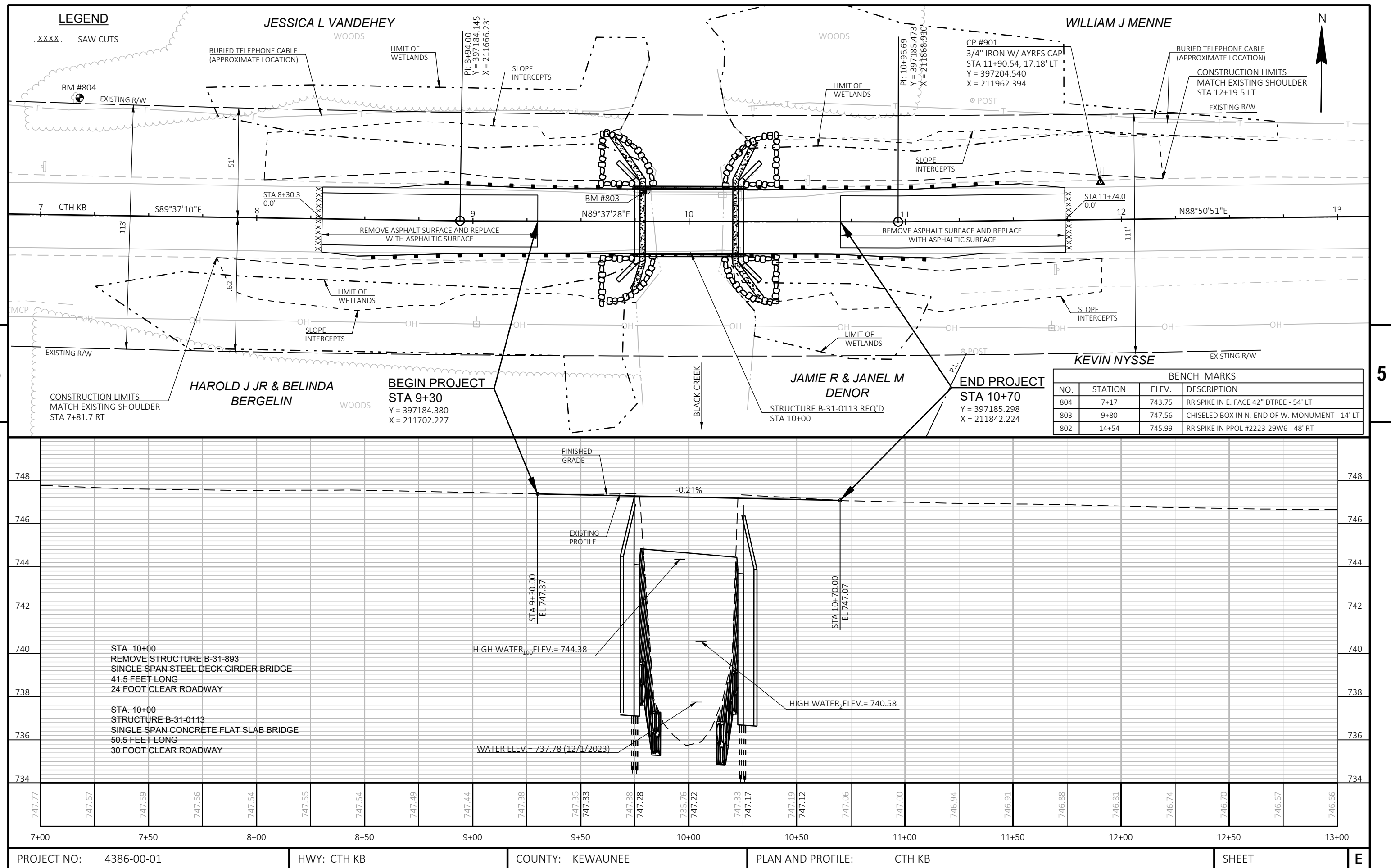
TRAFFIC CONTROL DETOUR SIGN SUMMARY - PROJECT 4386-00-01 CONTINUED

SIGN NO.	LOCATION	SIGN CODE	SIZE W X H	NUMBER IN SERVICE	APPROX. SERVICE PERIOD 222 DAYS	* 643.0900 SIGNS DAYS	* 643.0420 BARRICADES TYPE III DAYS	* 643.0705 WARNING LIGHTS TYPE A DAYS	NO OF CYCLES	643.0920 COVERING SIGNS TYPE II EACH	REMARKS
AM	CTH BB, 50 FT EAST OF CTH R	M4-8	24"x12"	1	222	222					
	"	M1-5A	24"x24"	1	222	222					KB
	"	M6-1R	21"x21"	1	222	222					
AN	CTH R, 750 FT SOUTH OF CTH P	M4-8	24"x12"	1	222	222					
	"	M1-5A	24"x24"	1	222	222					KB
	"	M5-1R	21"x21"	1	222	222					
AO	CTH R, 50 FT SOUTH OF CTH P	M4-8	24"x12"	1	222	222					
	"	M1-5A	24"x24"	1	222	222					KB
	"	M6-1R	21"x21"	1	222	222					
AP	CTH P, 500 FT NORTH OF CTH R	M4-8	24"x12"	1	222	222					
	"	M1-5A	24"x24"	1	222	222					KB
AQ	CTH P, 800 FT SOUTH OF CTH KB	M4-8A	24"x18"	1	222	222					
	"	M1-5A	24"x24"	1	222	222					KB
AR	CTH KB, 500 FT NORTH OF CTH P	R11-3	60"x30"	1	222	222	222	444			2.7 MILES AHEAD
AS	CTH KB, 500 FT WEST OF CTH P	R11-3	60"x30"	1	222	222	222	444			2.0 MILES AHEAD
AT	CTH V, 100 FT SOUTH OF CTH KB								1	1	COVER "<->"
	"	M6-1	21"x21"	1	222	222					

PAGE SUBTOTALS 16 3,552 444 888 1

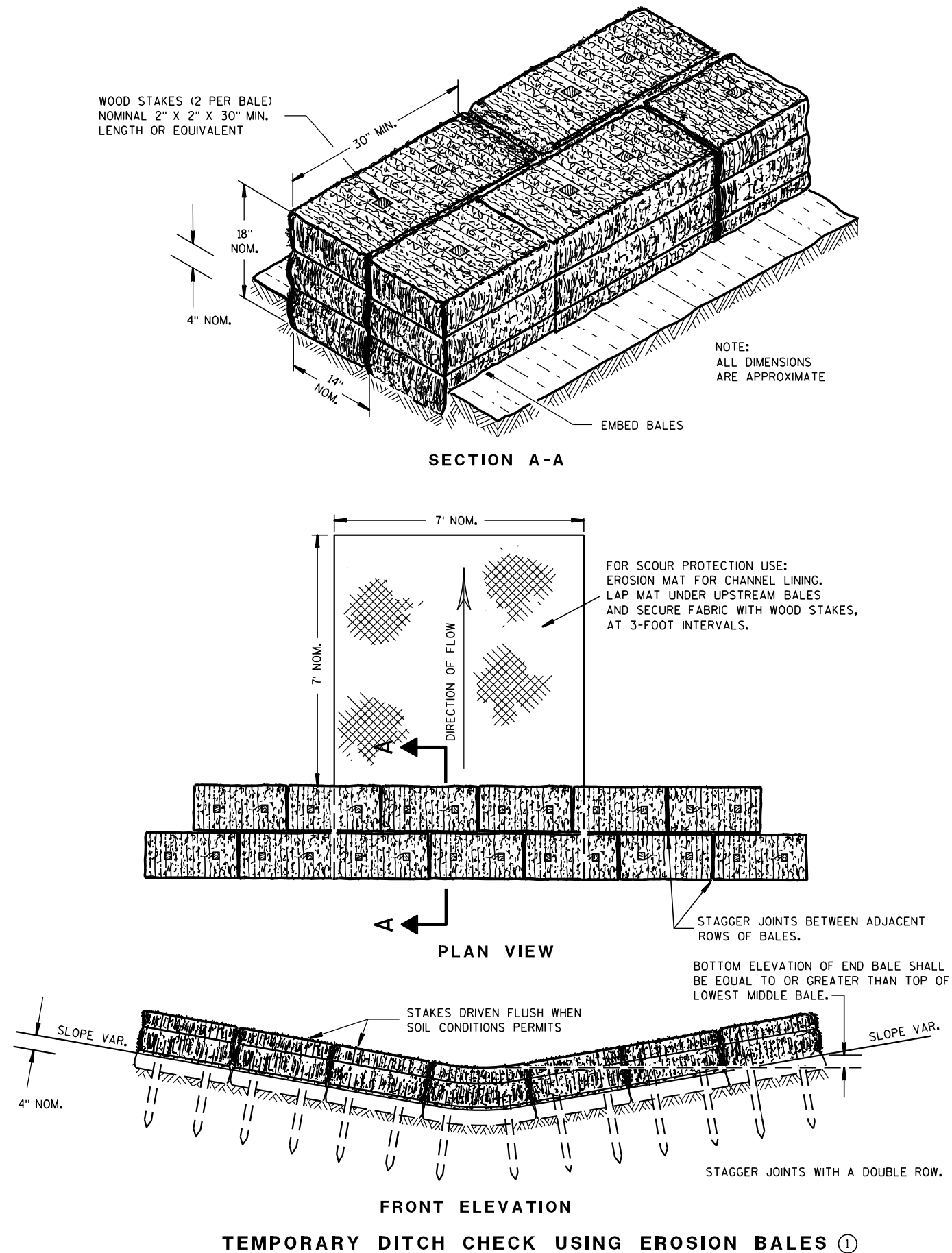
*ADDITIONAL QUANTITIES SHOWN ELSEWHERE

DETOUR 4390-01-74 TOTALS 21,090 666 1,332 8



Standard Detail Drawing List

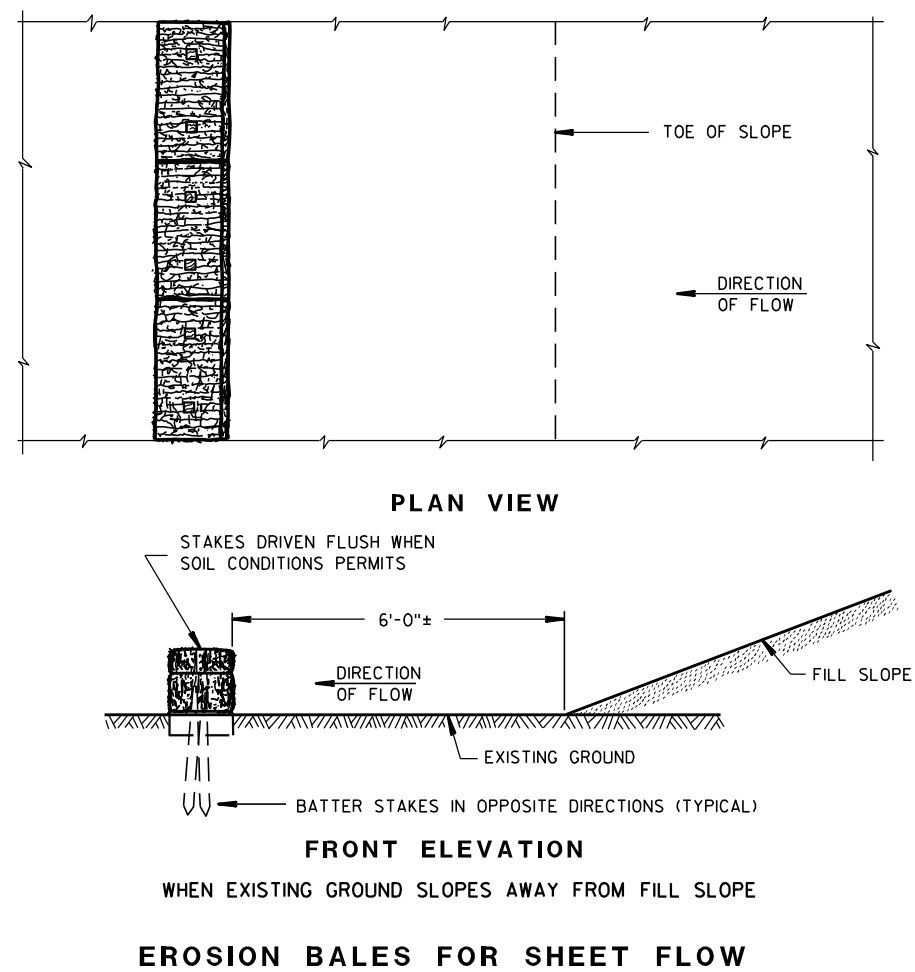
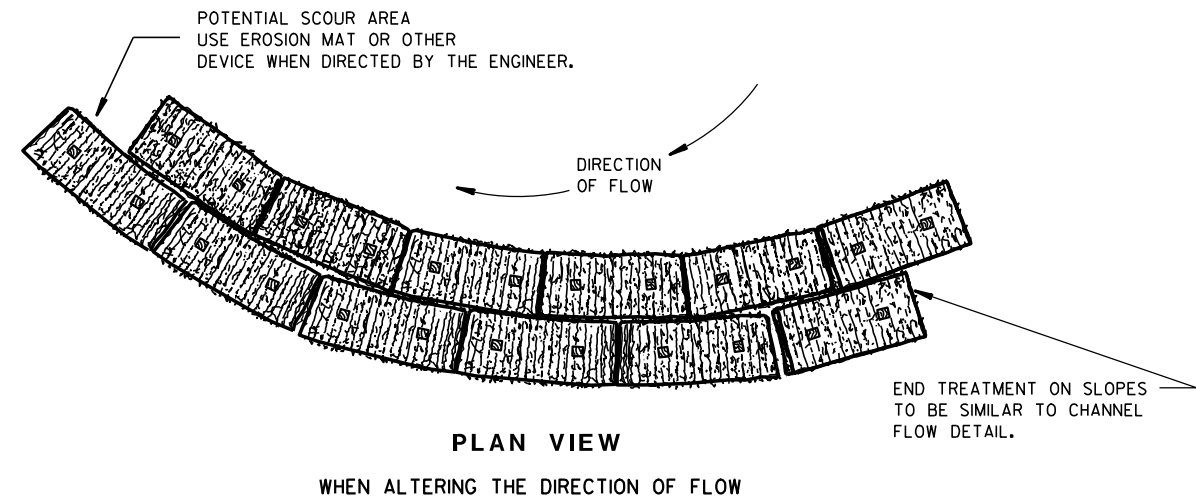
08E08-03	TYPICAL INSTALLATIONS OF EROSION BALES / TEMPORARY DITCH CHECKS
08E09-06	SILT FENCE
08E11-02	TURBIDITY BARRIER
12A03-10	NAME PLATE (STRUCTURES)
13C19-03	HMA LONGITUDINAL JOINTS
14B29-01	SAFETY EDGE
14B42-07A	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-07B	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
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)
14B45-05H	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
15C02-09A	BARRICADES AND SIGNS FOR MAINLINE CLOSURES
15C02-09B	BARRICADES AND SIGNS FOR VARIOUS CLOSURES
15C02-09C	DETOUR SIGNING FOR MAINLINE CLOSURES
15C06-12	SIGNING & MARKING FOR TWO LANE BRIDGES
15C08-23A	PERMANENT LONGITUDINAL PAVEMENT MARKINGS
15C11-10B	CHANNELIZING DEVICES DRUMS, CONES, BARRICADES AND VERTICAL PANELS



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.

- ① TEMPORARY DITCH CHECKS EITHER EROSION BALES OR MANUFACTURED SHALL BE PAID FOR UNDER THE BID ITEM OF TEMPORARY DITCH CHECK. THE DEPARTMENT WILL NOT PAY FOR TEMPORARY DITCH CHECKS CONSTRUCTED OF A SINGLE ROW OF EROSION BALES.



TYPICAL INSTALLATIONS OF EROSION BALES / TEMPORARY DITCH CHECKS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

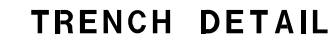
6/04/02
DATE

FHWA

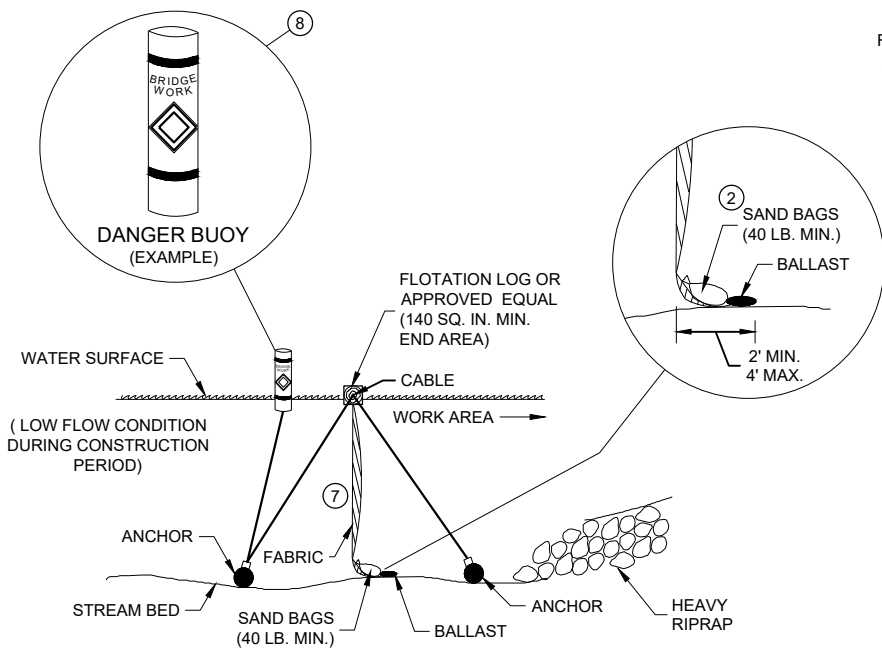
/S/ Beth Canestra
CHIEF ROADWAY DEVELOPMENT ENGINEER



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

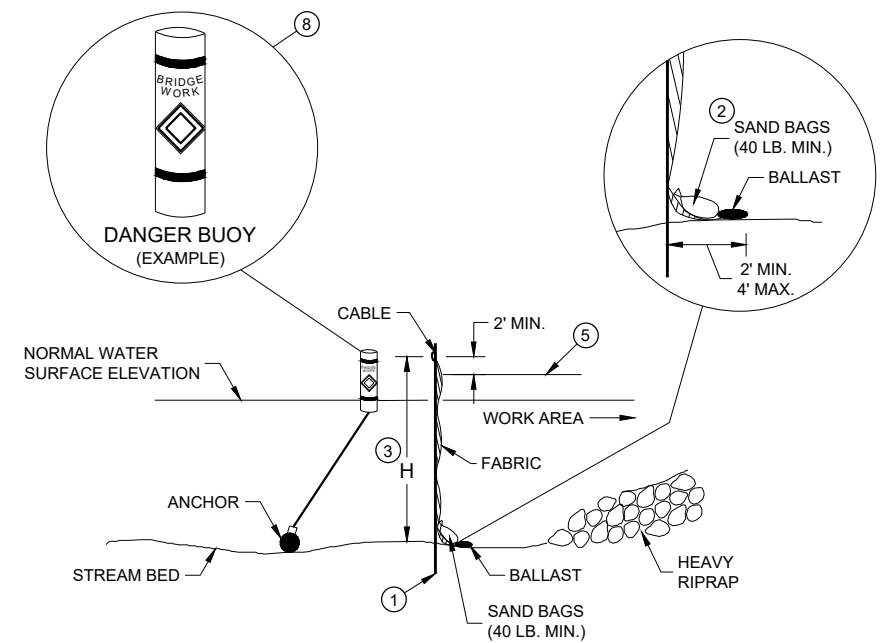


SILT FENCE	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED <u>4-29-05</u> DATE	<u>/S/ Beth Cannestra</u> CHIEF ROADWAY DEVELOPMENT ENGINEER



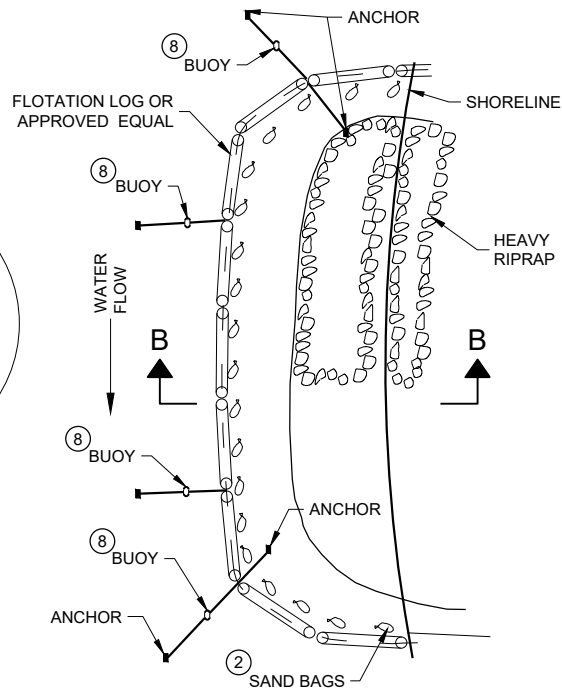
SECTION B - B

TURBIDITY BARRIER - FLOAT ALTERNATIVE
CAUTION - SEE NOTE 6

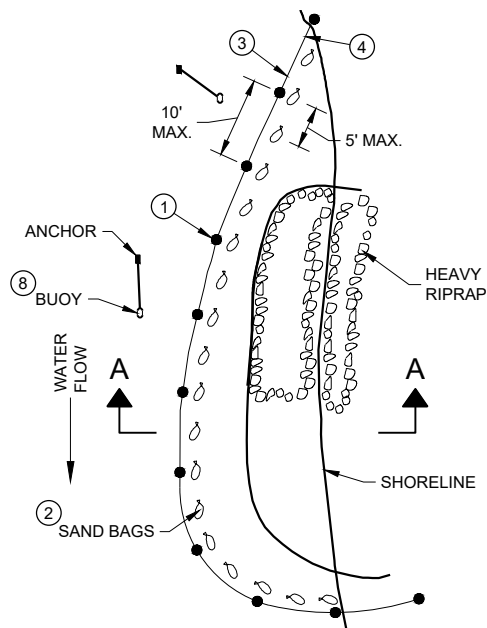


SECTION A - A

TURBIDITY BARRIER - STANDARD POST INSTALLATION



PLAN VIEW



PLAN VIEW

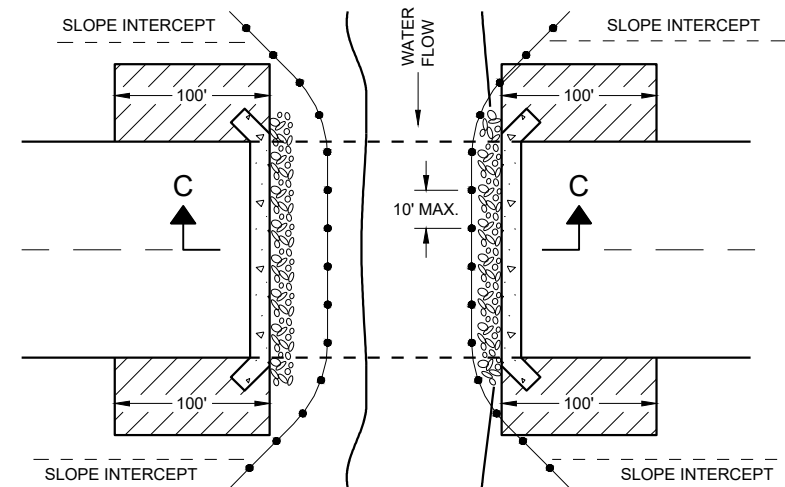
TURBIDITY BARRIER PLACEMENT DETAILS

GENERAL NOTES

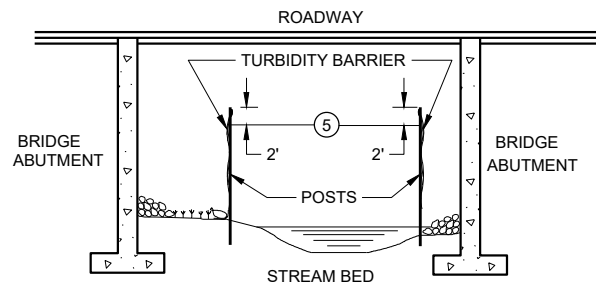
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

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

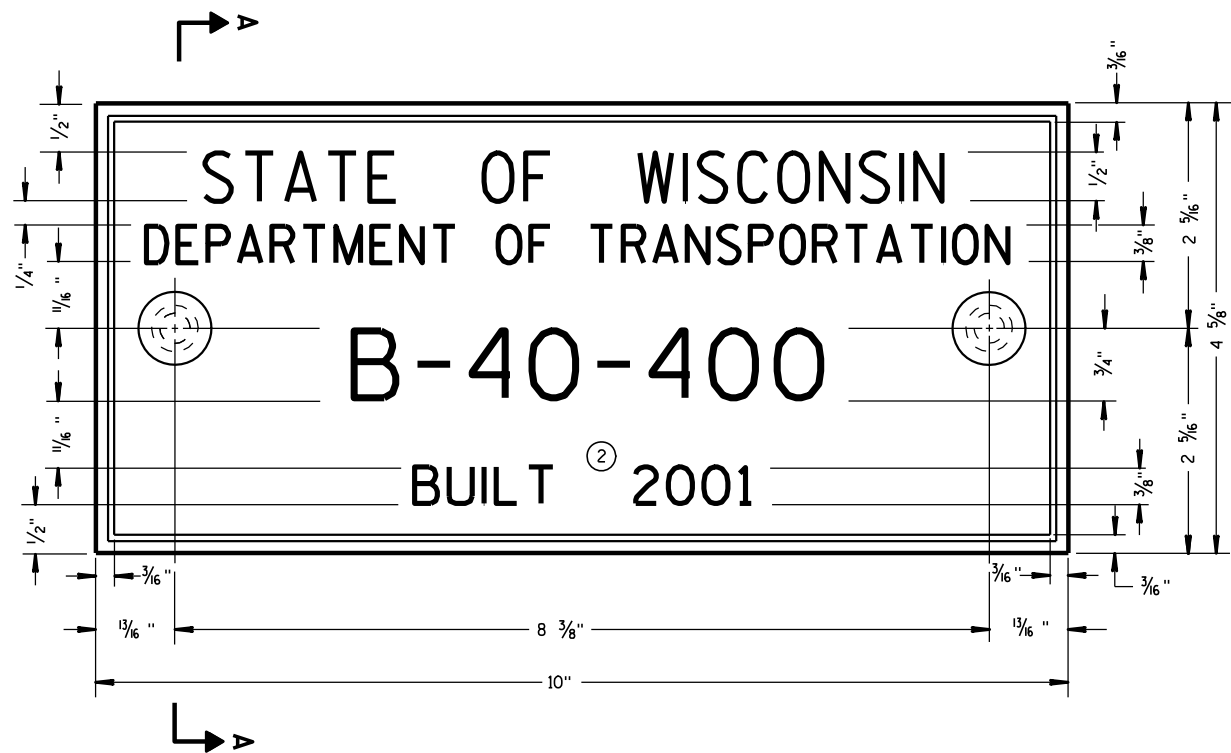
TURBIDITY BARRIER DETAIL SHOWING
TYPICAL PLACEMENT AT STRUCTURES

TURBIDITY BARRIER

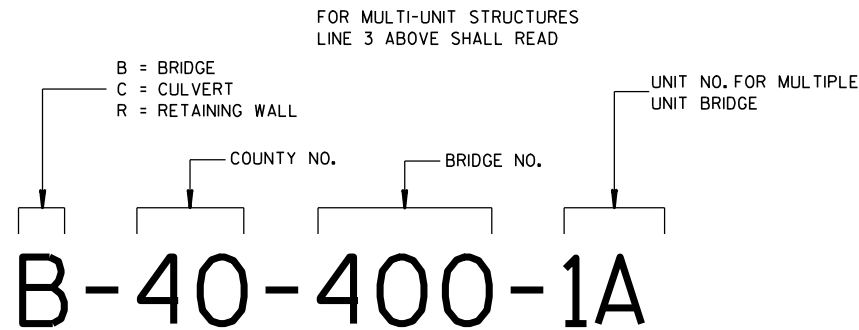
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

FHWA



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



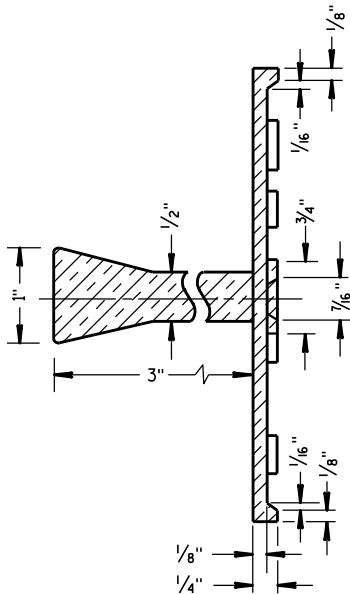
NUMBERING DESIGNATION
MULTI-UNIT STRUCTURES

GENERAL NOTES

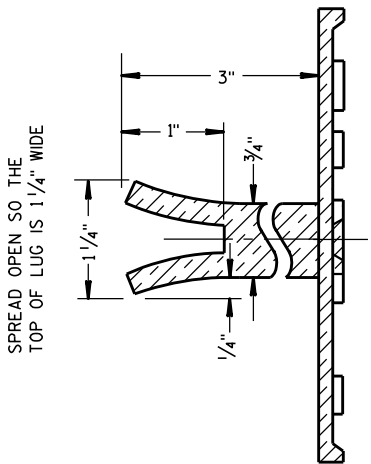
NAME PLATES TO BE INSTALLED ON BRIDGES, CULVERTS, AND RETAINING WALLS SHALL CONFORM TO THE REQUIREMENTS OF SECTION 502.3.11 OF THE STANDARD SPECIFICATIONS.

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.

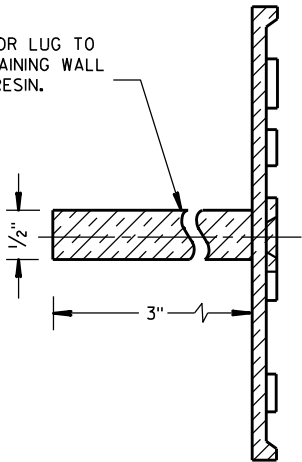


SECTION A-A



ALTERNATE LUG

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

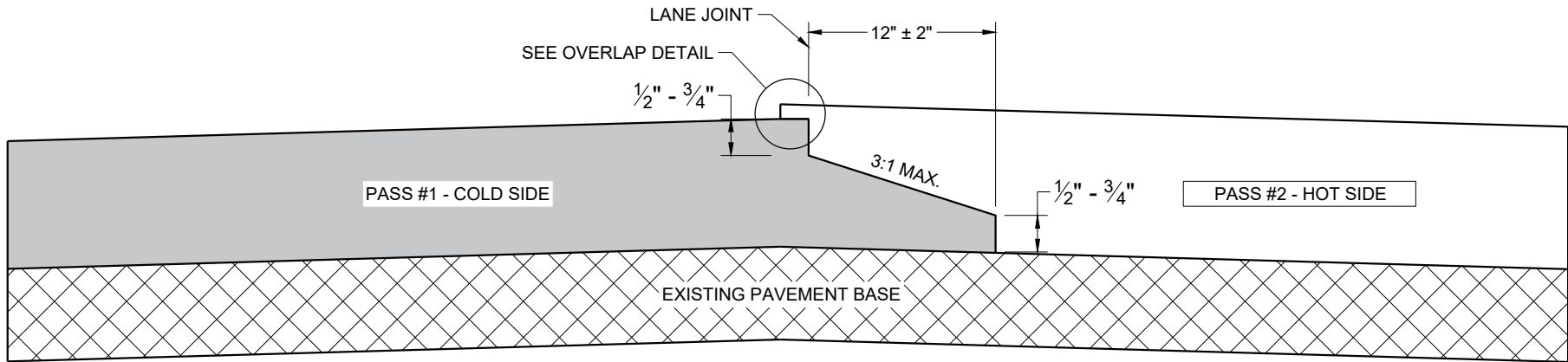


ALTERNATE LUG
(FOR ATTACHMENT TO PRECAST STRUCTURES)

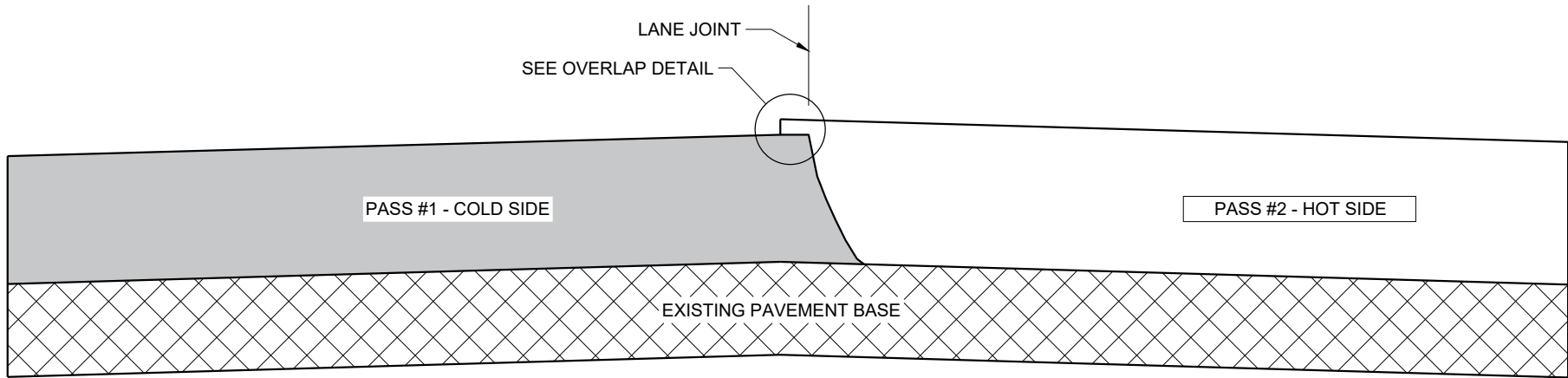
NAME PLATE
(STRUCTURES)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

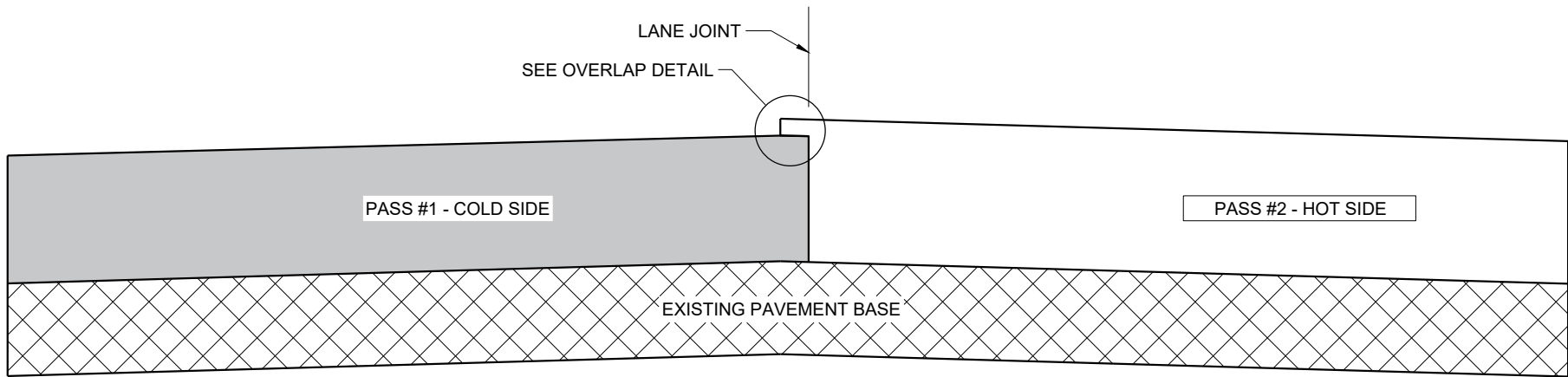
APPROVED
3/26/10
DATE
/S/ Scot Becker
CHIEF STRUCTURAL DEVELOPMENT ENGINEER
FHWA



TYPICAL PAVEMENT CROSS SECTION
NOTCHED WEDGE JOINT



TYPICAL PAVEMENT CROSS SECTION
VERTICAL JOINT



TYPICAL PAVEMENT CROSS SECTION
VERTICAL JOINT (MILLED)

GENERAL NOTES

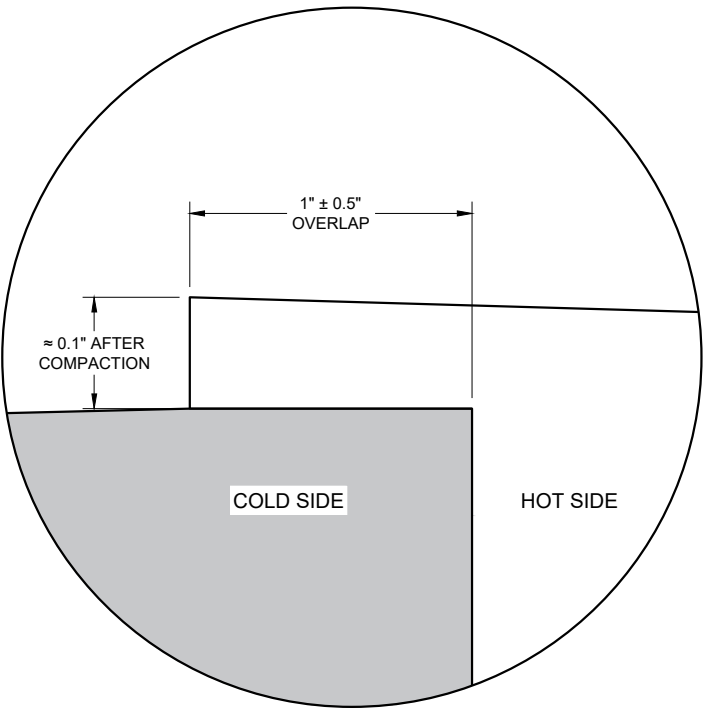
IN ADDITION TO THE DETAILS PROVIDED IN THIS DRAWING, CONFORM TO STANDARD SPECIFICATION 450.3.2.8 FOR WHEN A NOTCHED WEDGE JOINT IS REQUIRED AND FOR GENERAL JOINT CONSTRUCTION REQUIREMENTS.

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

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

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

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

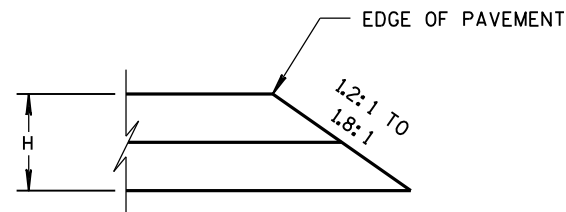


OVERLAP DETAIL (TYPICAL)

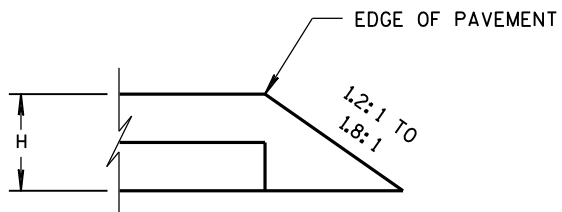
HMA LONGITUDINAL JOINTS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

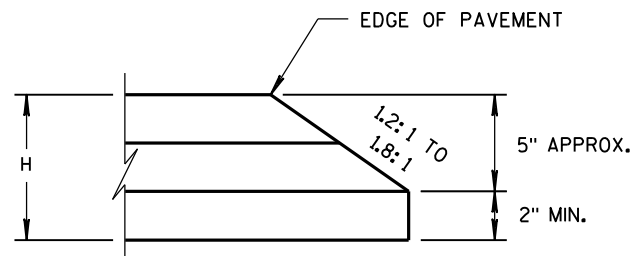
APPROVED
November 2020 DATE /S/ Steven Hefel
HMA PAVEMENT ENGINEER
FHWA



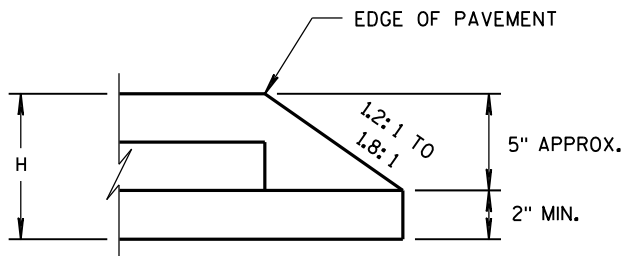
CONSTRUCTED WITH FINAL TWO LAYERS
FOR H 5" OR LESS



CONSTRUCTED WITH FINAL LAYER
FOR H 5" OR LESS

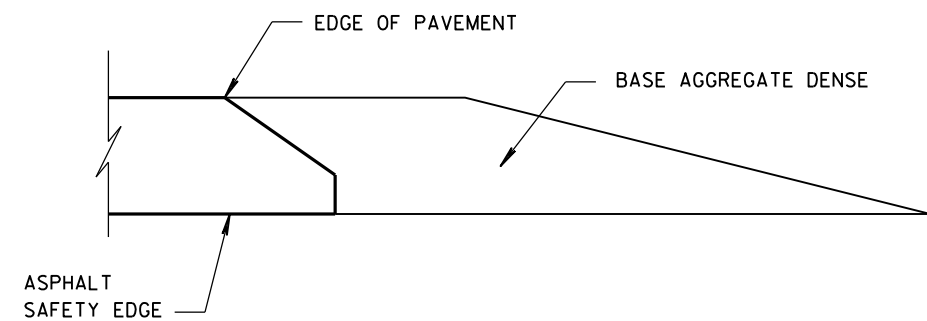


CONSTRUCTED WITH FINAL TWO LAYERS
FOR H GREATER THAN 5"



CONSTRUCTED WITH FINAL LAYER
FOR H GREATER THAN 5"

HMA PAVEMENT AND HMA OVERLAYS



FINISHED SHOULDER AGGREGATE PLACEMENT

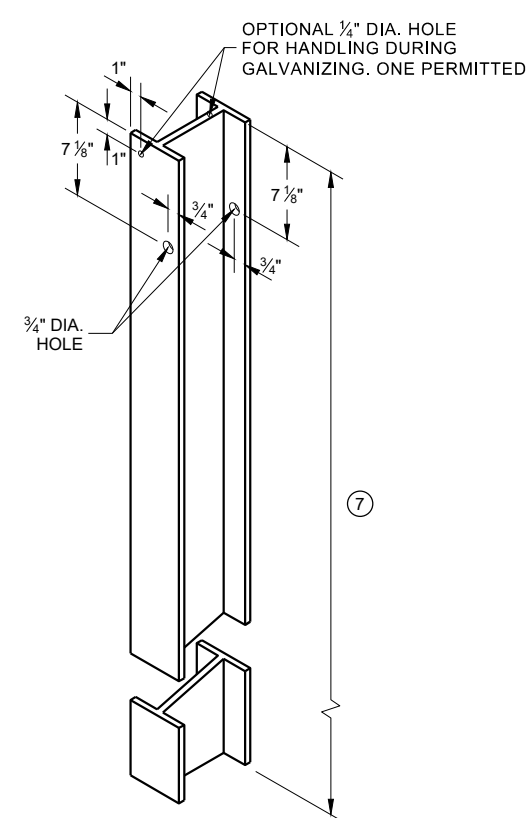
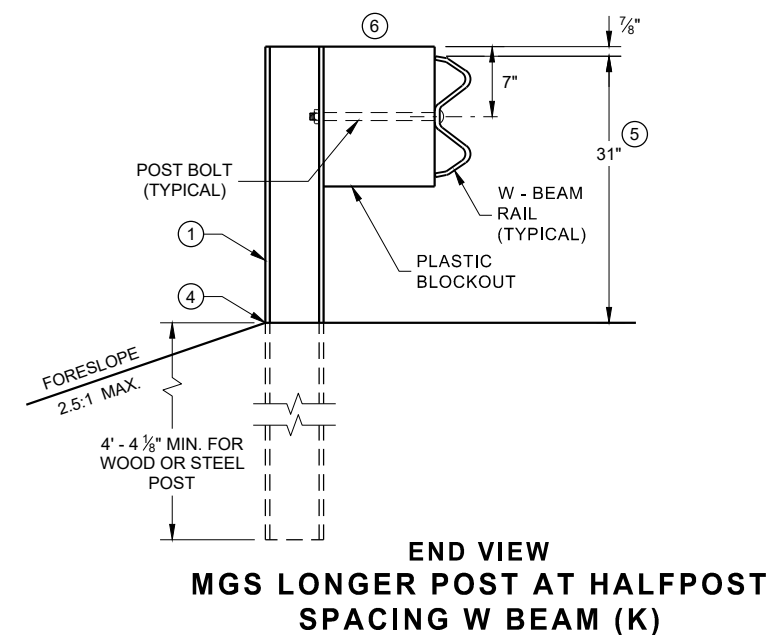
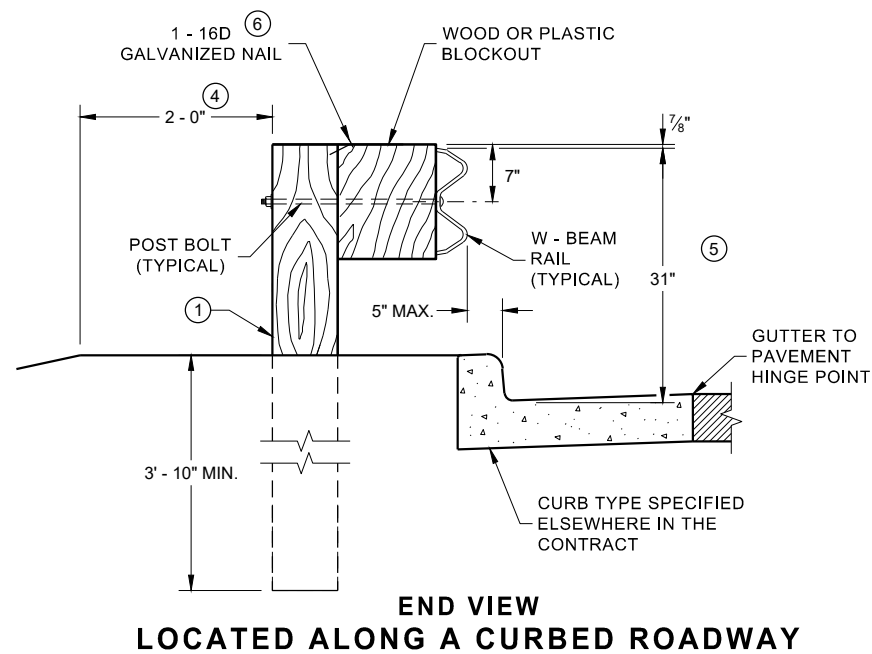
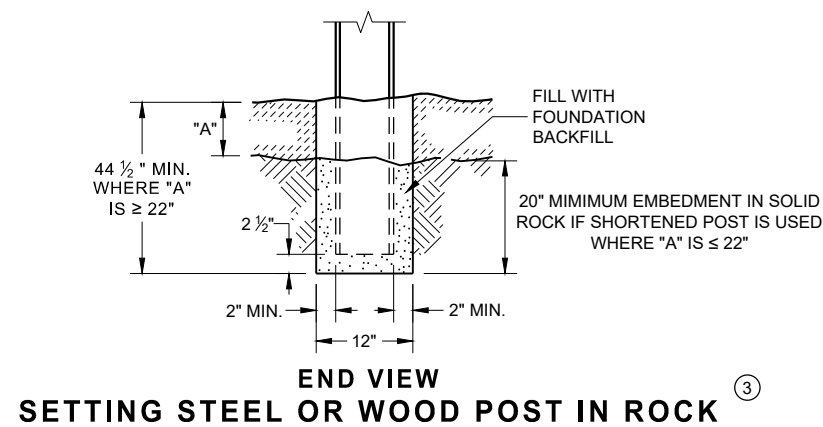
SAFETY EDGE_{SM}

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

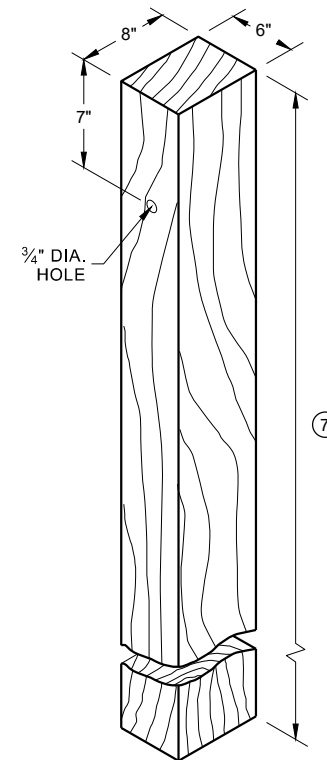
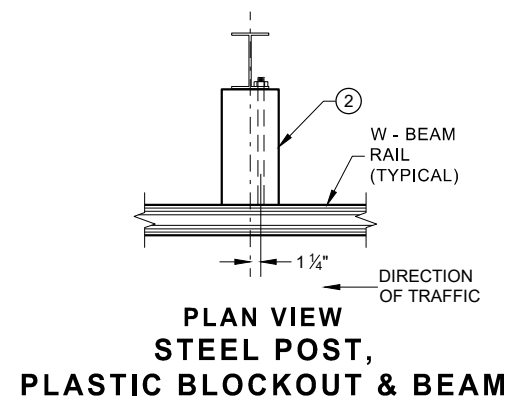
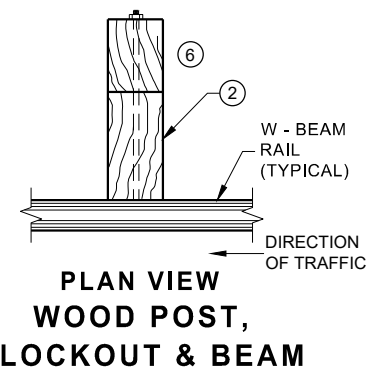
APPROVED
11/30/2012
DATE
FHWA

/s/ Jerry H. Zogg
ROADWAY STANDARDS DEVELOPMENT
ENGINEER

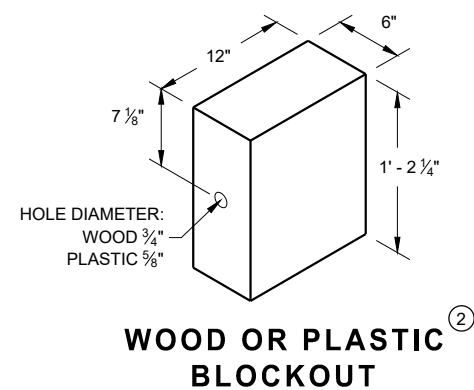
- WOOD OR STEEL POSTS (w6X9 OR w6X8.5) MAY BE USED. DO NOT INTERMIX WOOD AND STEEL POSTS. INSTALL STEEL POSTS WITH HOLES ON APPROACHING TRAFFIC SIDE.
- USE WOOD OR APPROVED PLASTIC BLOCKOUTS. WOOD BLOCKOUTS MAY BE CONSTRUCTED OUT OF TWO OR MORE WOOD BLOCKOUTS. SEE ALTERNATE WOOD BLOCKOUT DETAIL. DIMENSIONS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



STEEL POST & HOLE
PUNCHING DETAIL
(W 6 X 9)



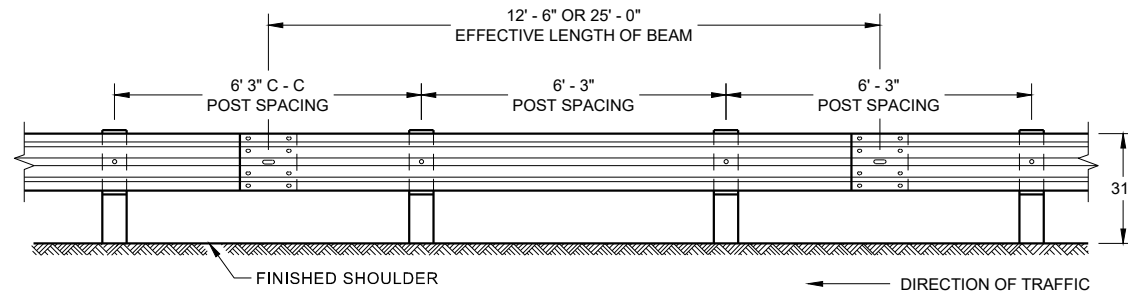
WOOD POST
(6" X 8") NOMINAL



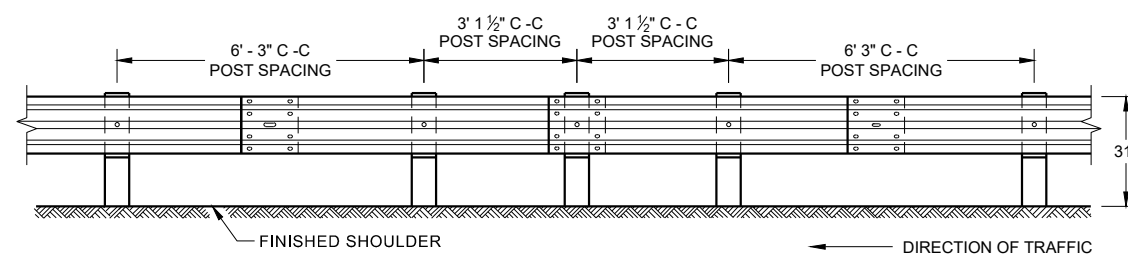
WOOD OR PLASTIC
BLOCKOUT

MIDWEST GUARDRAIL SYSTEM
(MGS) GUARDRAIL

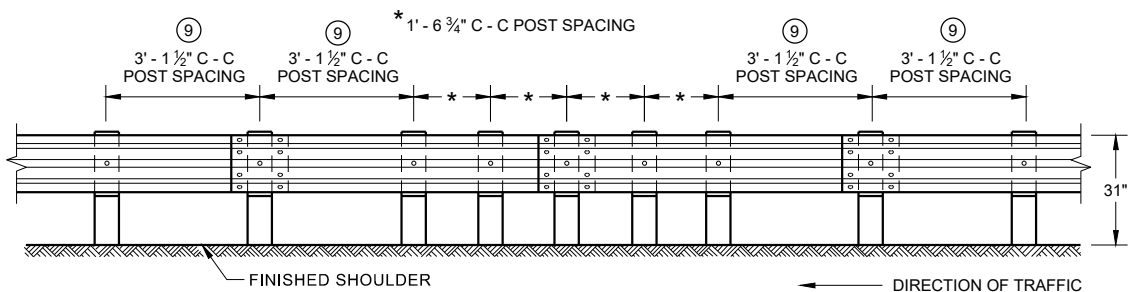
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



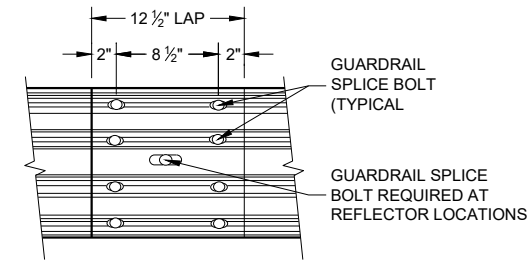
**FRONT VIEW
POST SPACING STANDARD INSTALLATION**



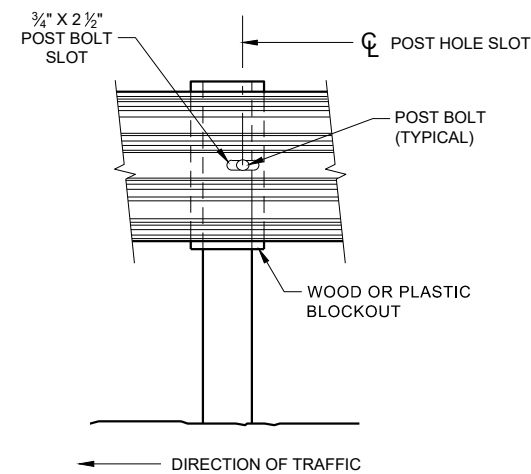
**FRONT VIEW
HALF POST SPACING (HS) AND
HALF POST SPACING WITH LONGER POSTS (K)**



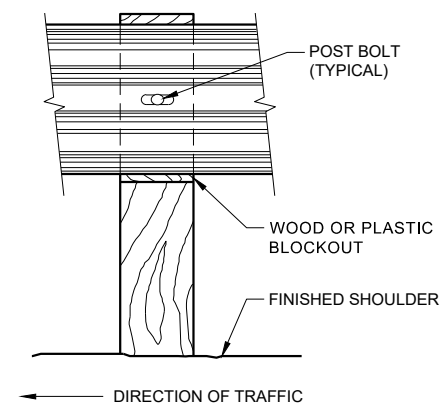
**FRONT VIEW
QUARTER POST SPACING (QS)**



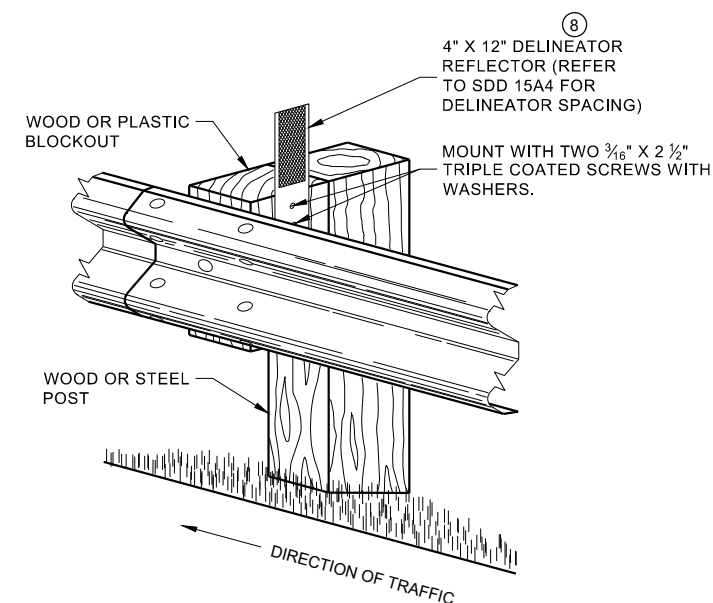
**FRONT VIEW
MID-SPAN BEAM SPLICE**



FRONT VIEW AT STEEL POST



FRONT VIEW AT WOOD POST



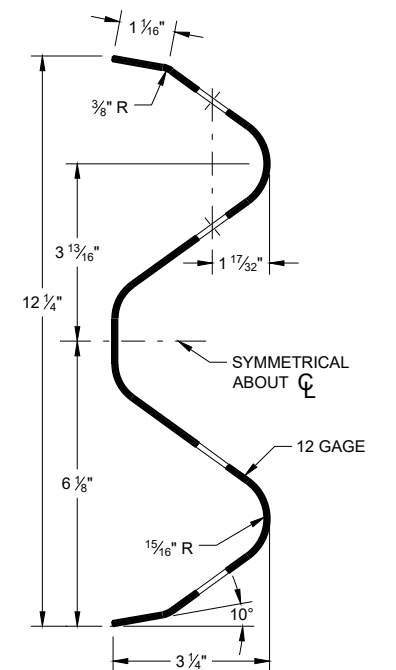
**ONE SIDED REFLECTOR DETAIL
AND TYPICAL INSTALLATION**

GENERAL NOTES

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

POST BOLTS ARE A 3/8" DIAMETER ASTM A307 GUARDRAIL BOLT. A POST BOLT REQUIRES 3/4" DIAMETER A563A DOUBLE RECESSED (DR) HEAVY HEX NUT AND 3/8" DIAMETER F844 FLAT WASHER. POST BOLTS MAY BE LONGER IF MULTIPLE BLOCKOUTS ARE BEING USED.

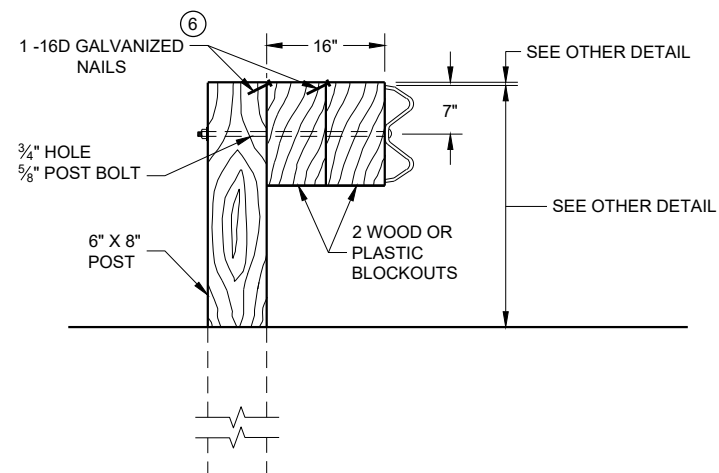
GUARD RAIL SPLICE BOLTS ARE A 3/8" DIAMETER ASTM A307 GUARDRAIL HEAD BOLT. A GUARDRAIL SPLICE BOLT REQUIRES 3/4" DIAMETER A563A DOUBLE RECESSED (DR) HEAVY HEX NUT.



SECTION THRU W-BEAM RAIL

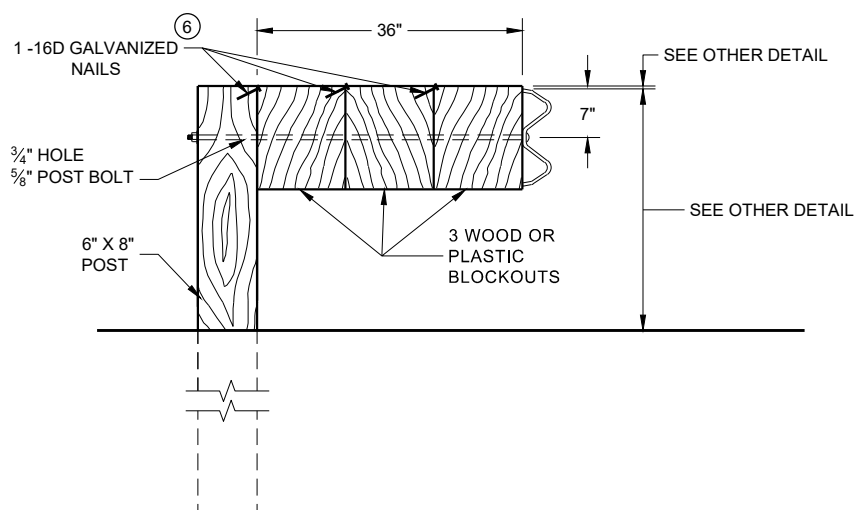
**MIDWEST GUARDRAIL SYSTEM
(MGS) GUARDRAIL**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



DETAIL FOR 16" BLOCKOUT DEPTH

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



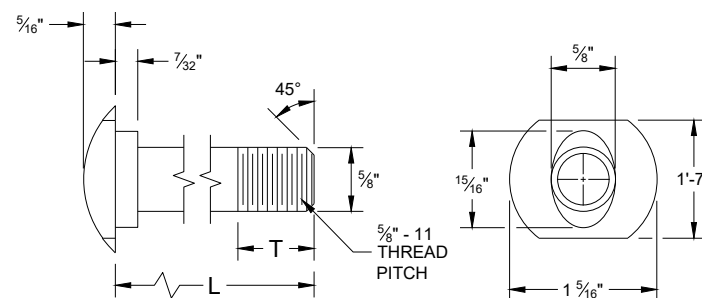
DETAIL FOR 36" BLOCKOUT DEPTH

NOTES: UNDER SPECIAL CIRCUMSTANCES, SUCH AS AVOIDING OBSTACLES THAT ARE NOT RELOCATED, IT IS ACCEPTABLE TO INSTALL ADDITIONAL BLOCKOUTS TO OBTAIN UP TO 36" DEPTH FOR ONE OR TWO POSTS IN A SECTION OF GUARDRAIL.

DO NOT USE 16" OR 36" BLOCKOUTS IF IT CAUSES THE POST TO BE DRIVEN BEYOND SHOULDER HINGE POINT OR CAUSES A FIXED OBJECT TO BE WITHIN THE DEFLECTION DISTANCE OF THE BARRIER.

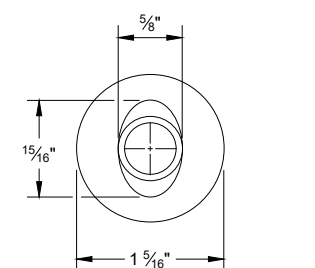
NOTE:

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

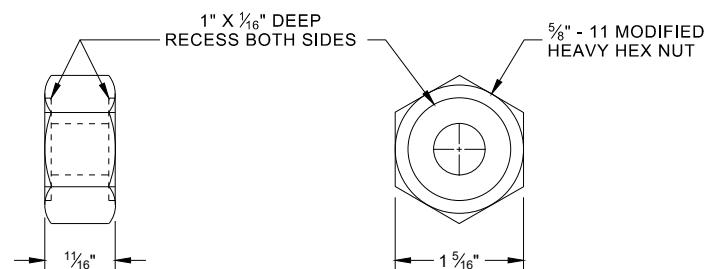


POST BOLT TABLE

L	T (MIN.)
1 ¼"	1 ⅛"
2"	1 ¾"
10"	4"
14"	4 ⅙"
18"	4"
21"	4 ⅙"
25"	4"

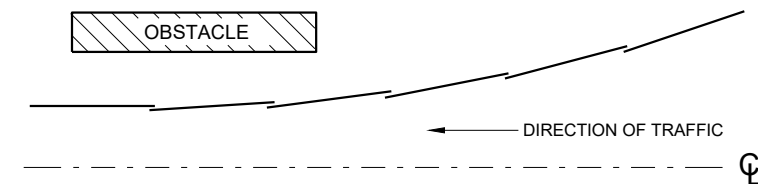


ALTERNATE BOLT HEAD

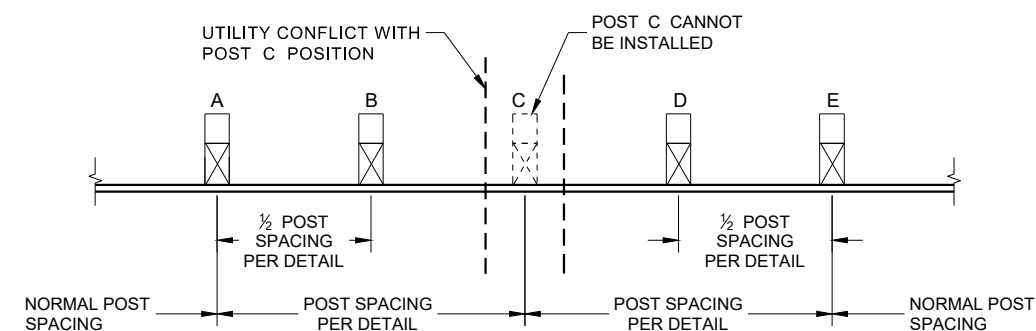


POST BOLT, SPLICE BOLT AND RECESS NUT

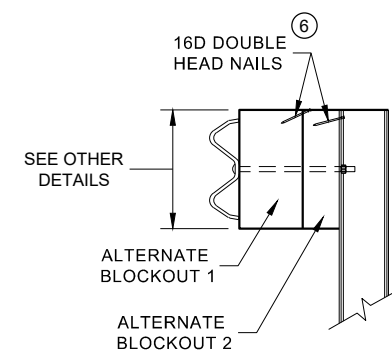
⑥ WHEN USING STEEL POST AD WOOD BLOCKOUTS, INSTALL FOUR 16D GALVANIZED NAILS. INSTALL NAILS AT THE BACK CORNERS OF THE BLOCK AND BEND THE NAILS OVER THE FLANGE OF THE STEEL POST.



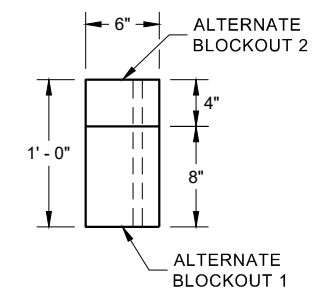
PLAN VIEW
BEAM LAPPING DETAIL



POST DRIVING FOR CONTINUOUS UNDERGROUND OBSTRUCTION



SIDE VIEW

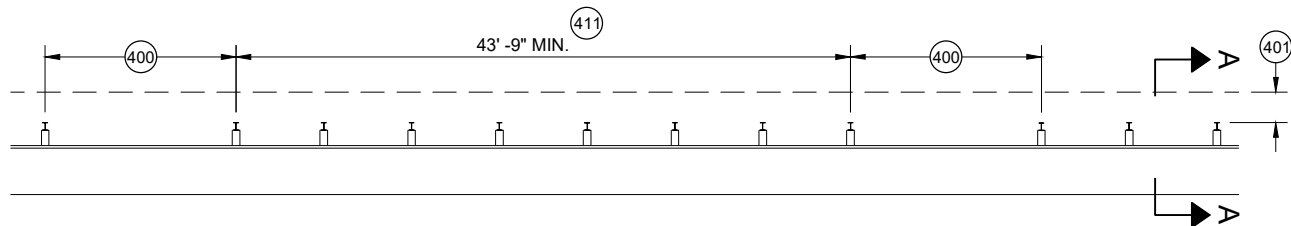


PLAN VIEW

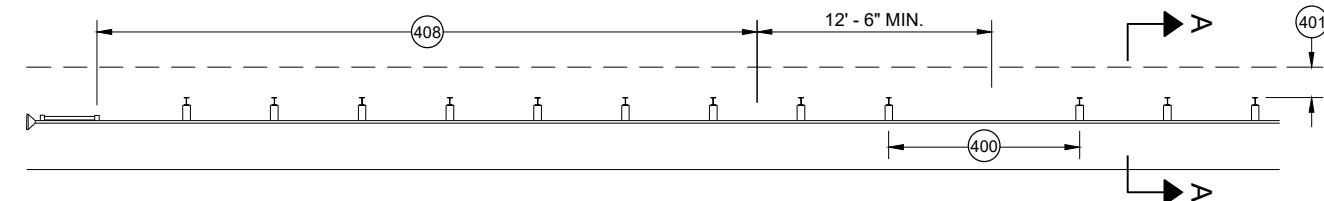
ALTERNATE WOOD BLOCKOUT DETAIL

MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL

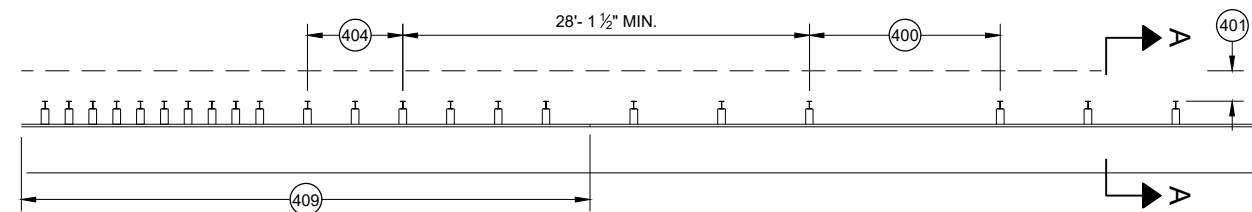
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



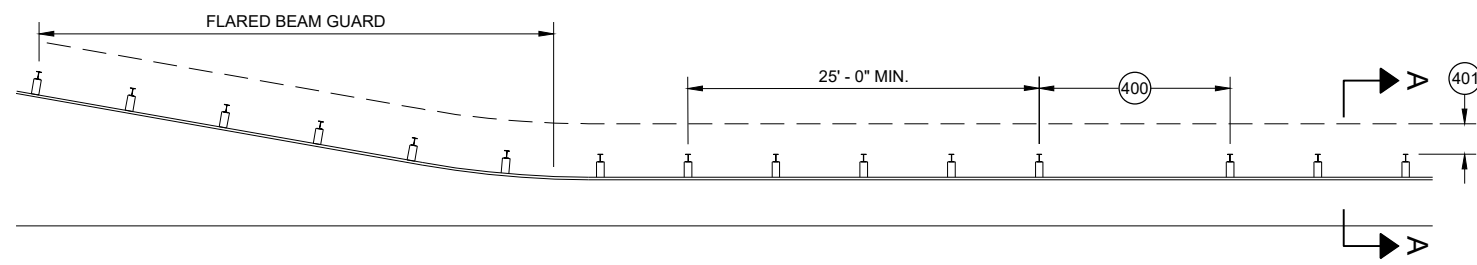
MISSING POST IN MGS GUARDRAIL



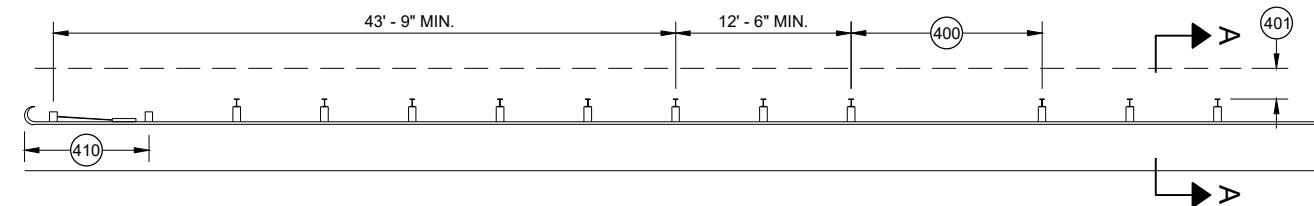
MISSING POST IN MGS GUARDRAIL NEAR EAT



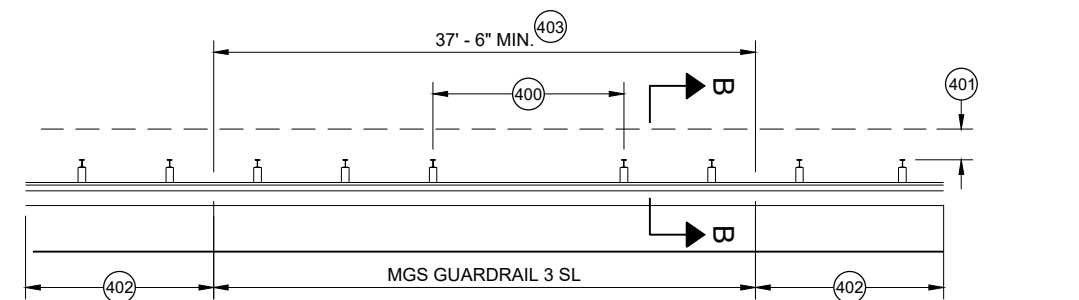
MISSING POST IN MGS GUARDRAIL NEAR AN APPROACH TRANSITION



MISSING POST IN MGS GUARDRAIL NEAR FLARED BEAM GUARD

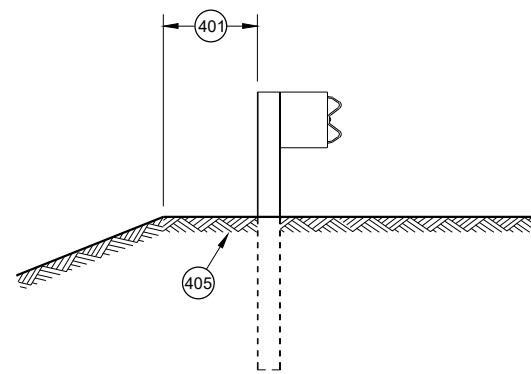


MISSING POST IN MGS GUARDRAIL NEAR A TYPE 2 END TERMINAL

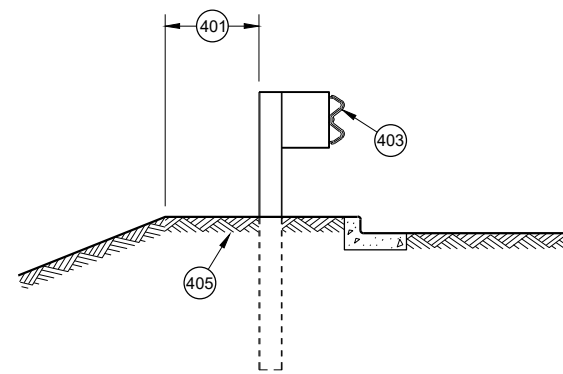


MISSING POST IN SHORT SPAN MGS GUARDRAIL NEAR CURB (SL)

- (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

FHWA

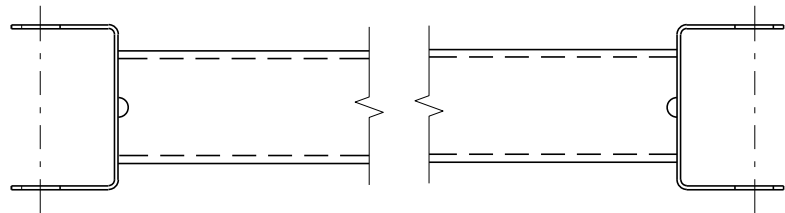
- (A) THE SLOPE IN THE AREA BOUNDED BY THE GRADELINE, THE HINGE POINT LINE (HPL) AND THE CLEAR ZONE LIMITS (CZL) SHALL BE 4:1 OR FLATTER.
- (B) AFTER FINAL ASSEMBLY, RECHECK CABLE TO BE SURE IT IS TAUT AND HAS NOT RELAXED
- (C) DIFFERENT MANUFACTURERS REQUIRE DIFFERENT PERFORATED W - BEAM RAIL END PANELS.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

DIMENSIONS MAY VARY, MANUFACTURER'S INFORMATION.

THE CENTER OF THE UPPER 3½" DIAMETER HOLE ON POST NUMBER 3 THROUGH POST 9 IS TO BE FLUSH WITH THE GROUND LINE UP TO A MAXIMUM OF 2" ABOVE GROUND LINE. WOOD BLOCKS ON POSTS NUMBERED 3 THROUGH 9 MAY BE ADJUSTED UP TO 3" ABOVE THE TOP OF POST.

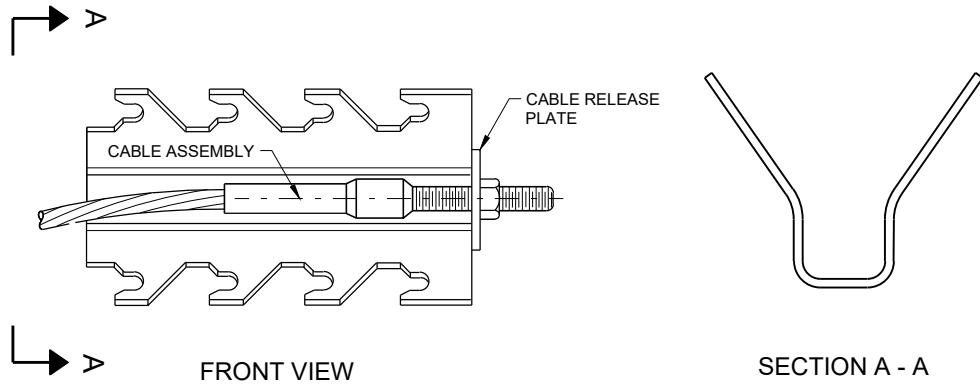


STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

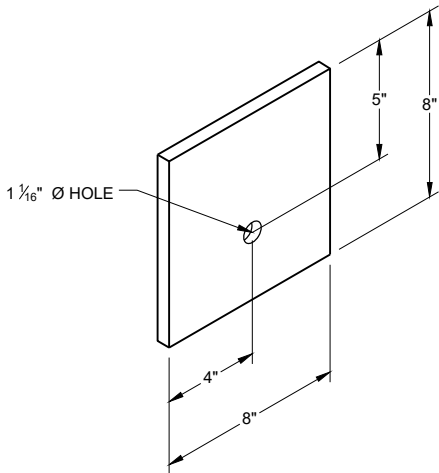


GENERIC GROUND STRUT ⁹ ^E

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



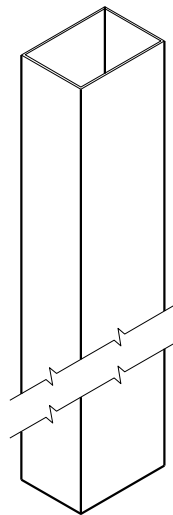
GENERIC ANCHOR CABLE BOX ⁹ ^E



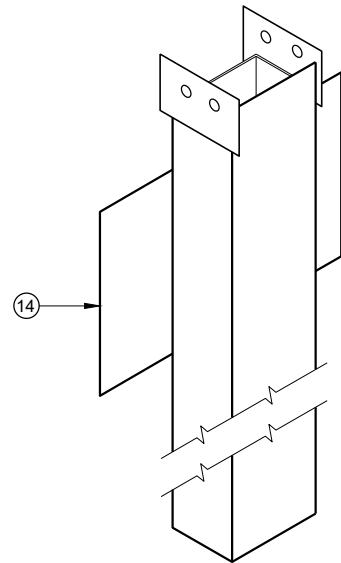
BEARING PLATE ⁶ ^E

MIDWEST GUARDRAIL SYSTEM
ENERGY ABSORBING TERMINAL
(MGS)

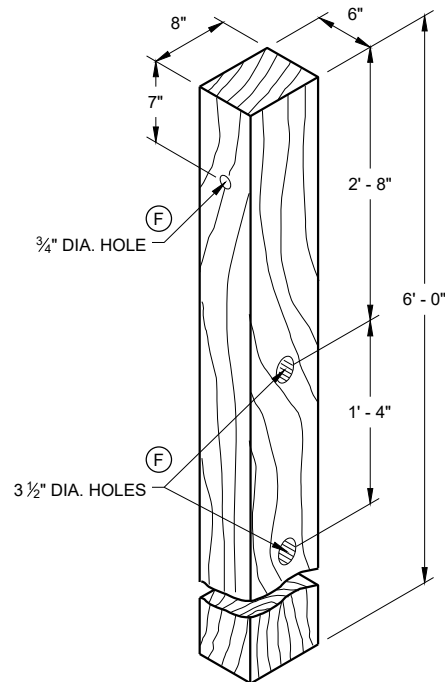
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



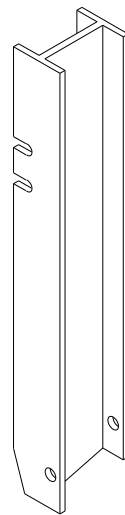
UPPER POST NO. 1 ⁽¹⁾ (E)



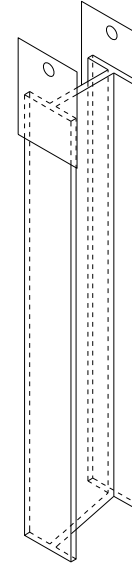
LOWER POST NO. 1 ⁽²⁾ (E)



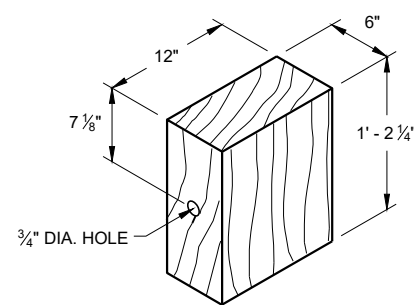
WOOD CRT POST ⁽³⁾ (E)
POSTS NUMBER 3-9



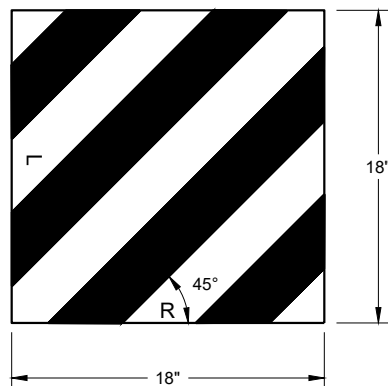
UPPER POST NO. 2 ⁽¹⁵⁾ (E)



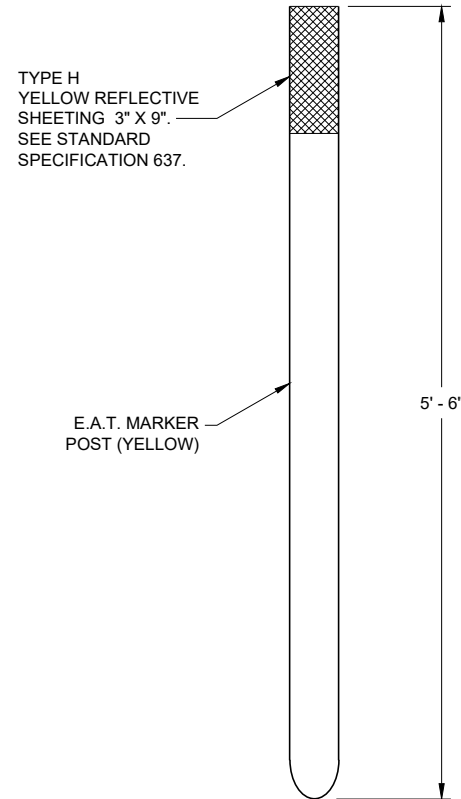
LOWER POST NO. 2 ⁽¹⁶⁾ (E)



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



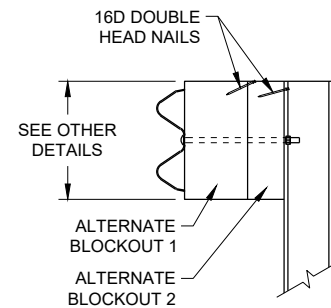
REFLECTIVE SHEETING DETAIL ^(E)



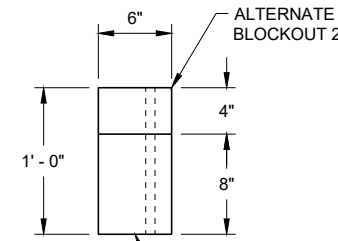
FRONT VIEW

SIDE VIEW

E.A.T. MARKER POST ⁽¹³⁾



SIDE VIEW



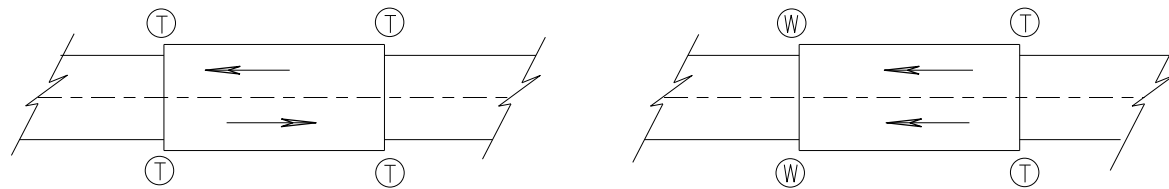
TOP VIEW

ALTERNATE WOOD
BLOCKOUT DETAIL

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

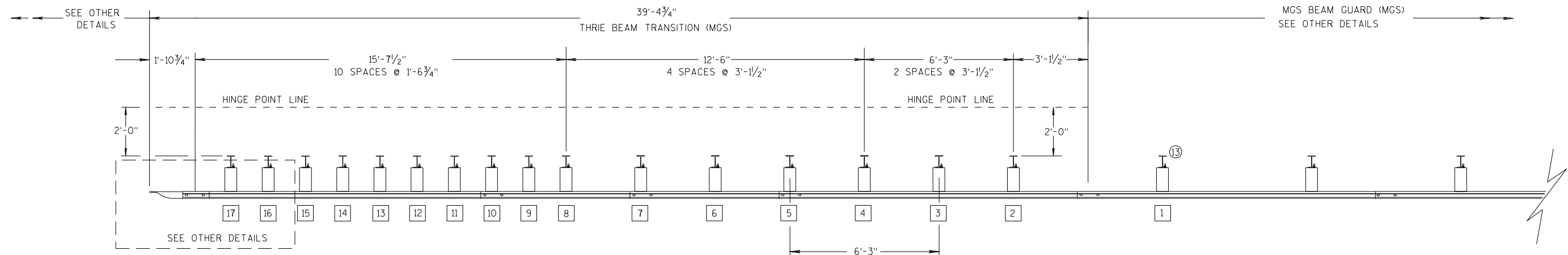
IF ROCK IS ENCOUNTERED, REMOVE ROCK TO FULL DEPTH OF POST PLUS 2 1/2", AND 12" DIAMETER AROUND POST. SEE 14B42 FOR MORE DETAILS.

TRANSITION USES STEEL POSTS ONLY.

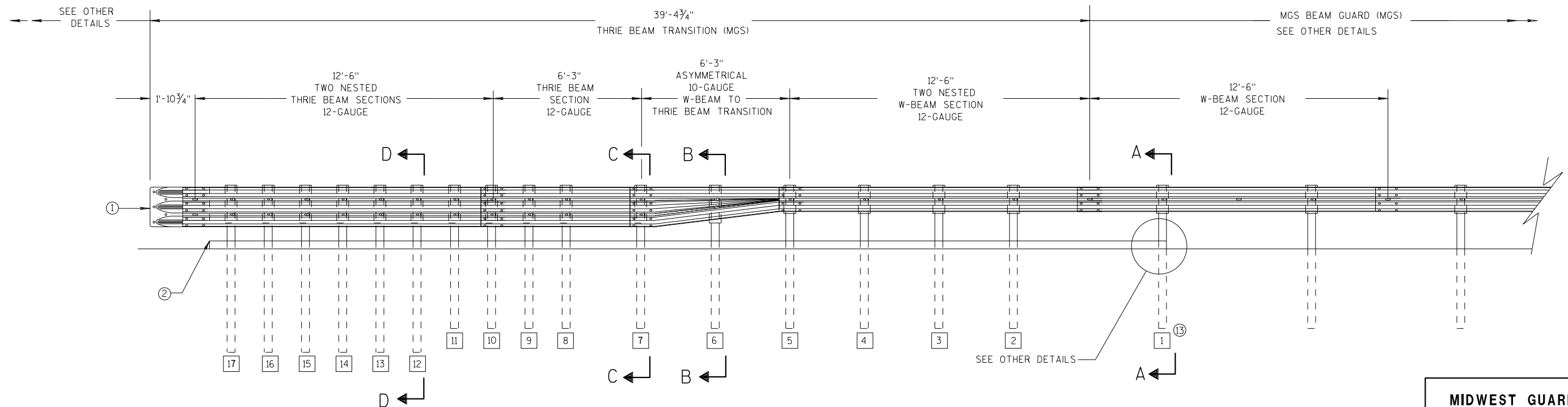
SEE STANDARD DETAIL DRAWING 14 B 42 FOR MORE INFORMATION.

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

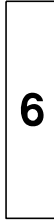
MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

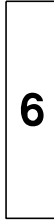
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

- S.D.D. 14 B 45-5b**

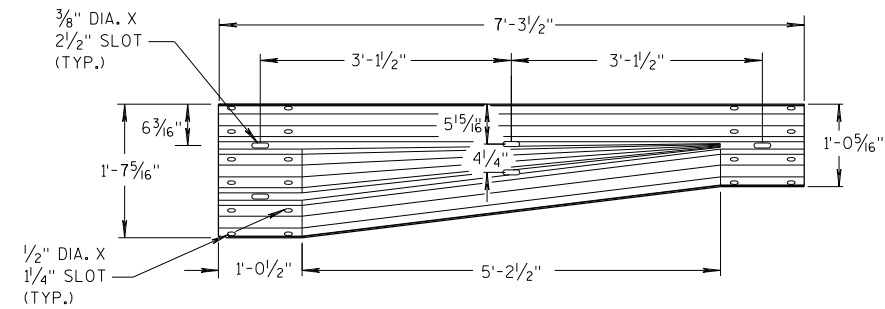


S.D.D. 14 B 45-5b

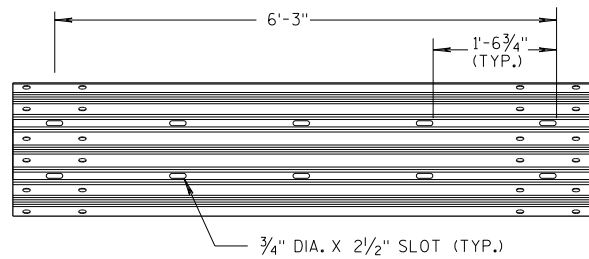


S.D.D. 14 B 45-5b

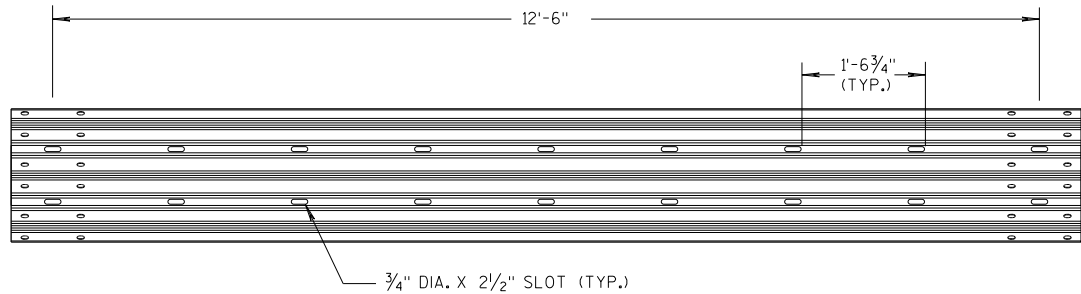




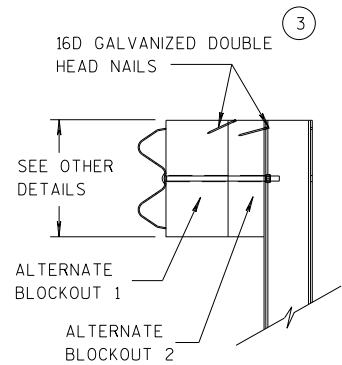
W-BEAM TO THRIE BEAM TRANSITION SECTION



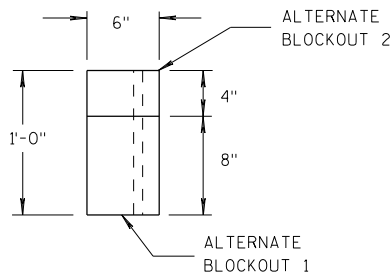
6'-3" THRIE BEAM SECTION



12'-6" THRIE BEAM SECTION

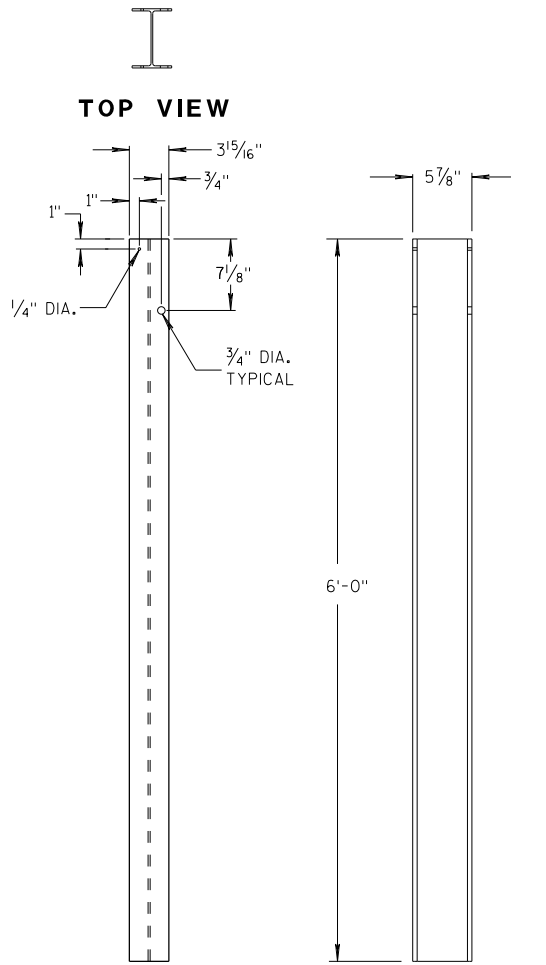


SIDE VIEW



TOP VIEW

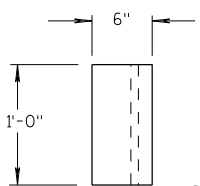
ALTERNATE WOOD BLOCKOUT DETAIL



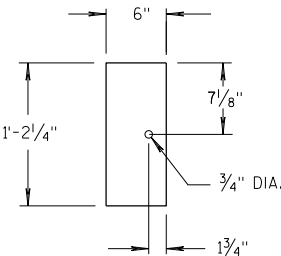
FRONT VIEW

SIDE VIEW

STEEL POSTS 1-5

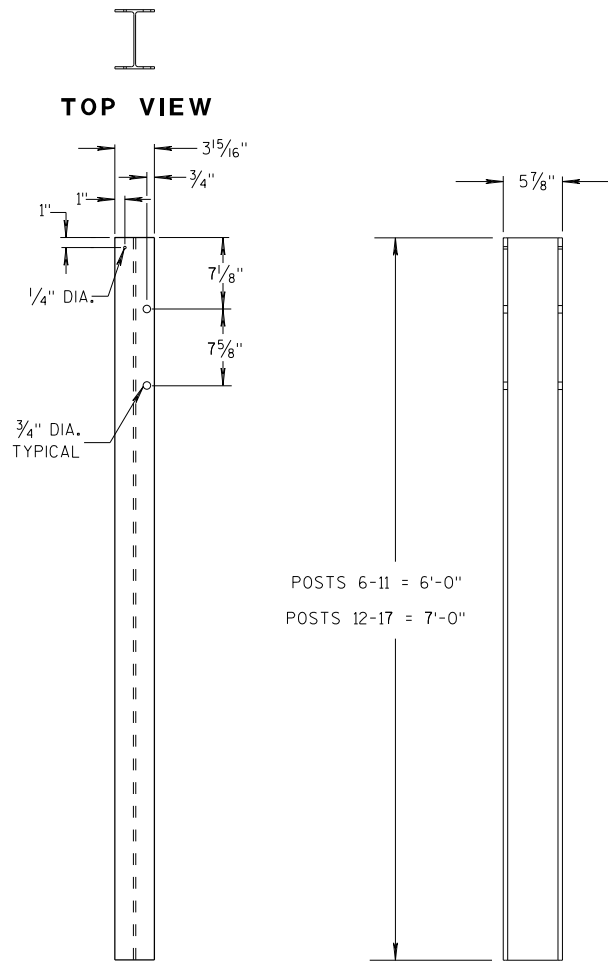


TOP VIEW



FRONT VIEW

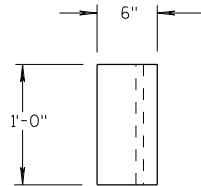
BLOCKOUT POSTS 1-5



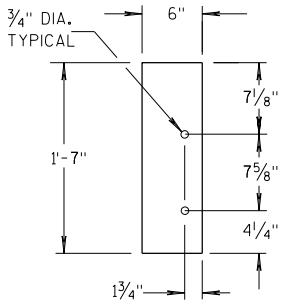
FRONT VIEW

SIDE VIEW

STEEL POSTS 6-17



TOP VIEW



FRONT VIEW

BLOCKOUT POSTS 6-17

GENERAL NOTES

STEEL POSTS ARE W6X9 OR W6X8.5.

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

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

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

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

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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



6



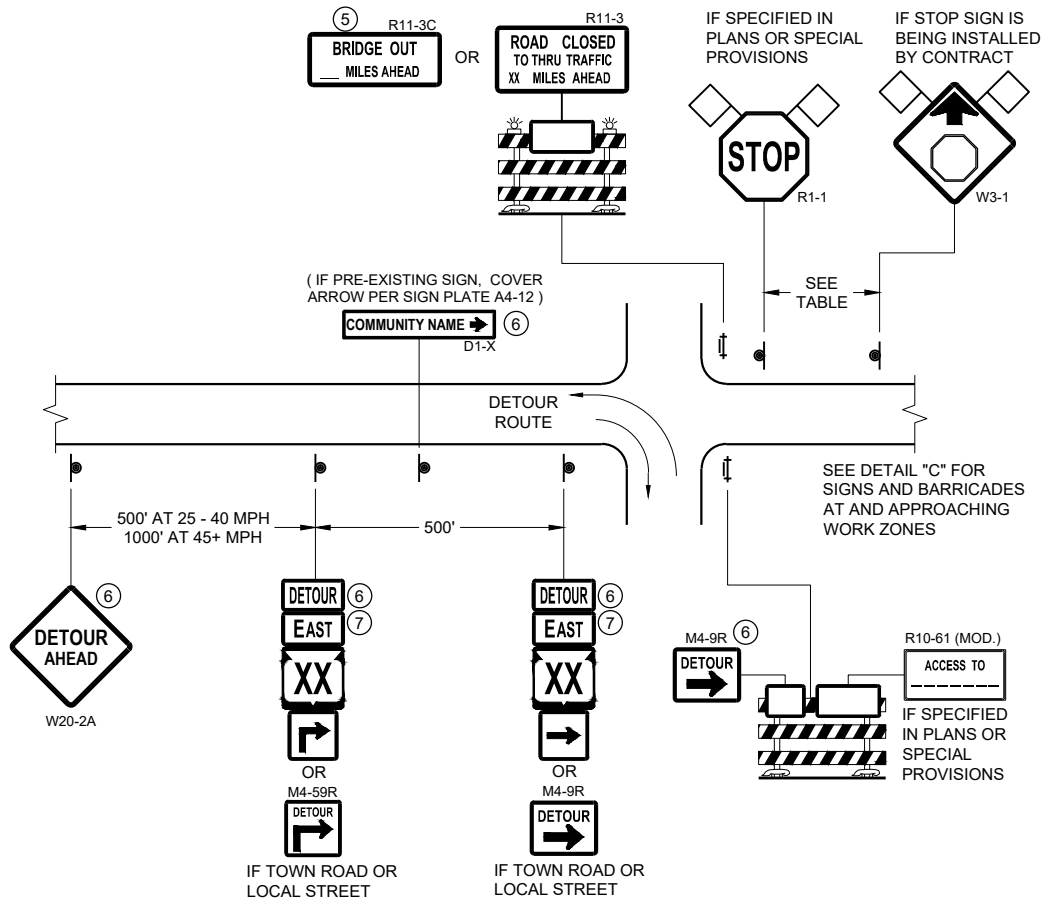
SECTION M-M



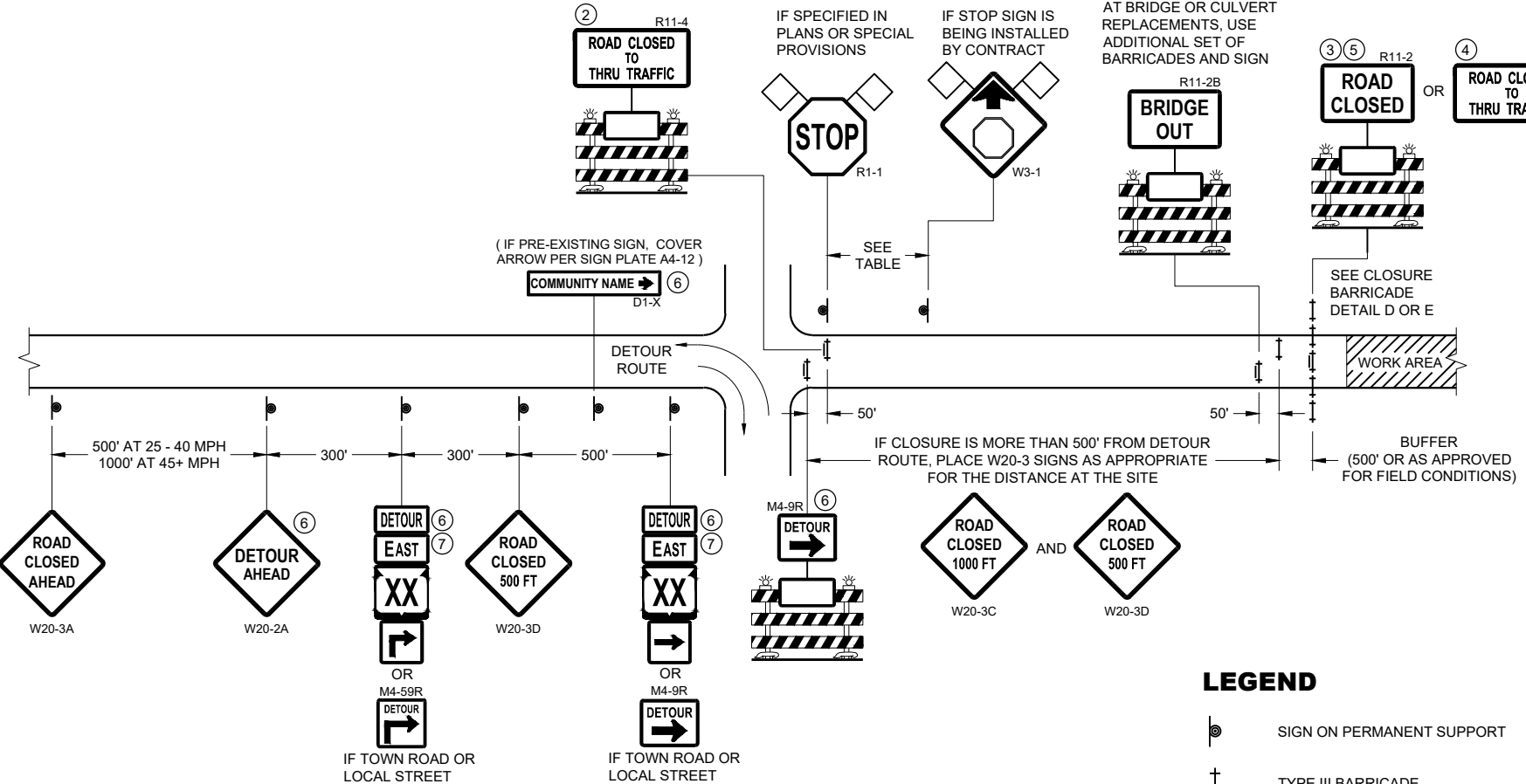
FRONT VIEW



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



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



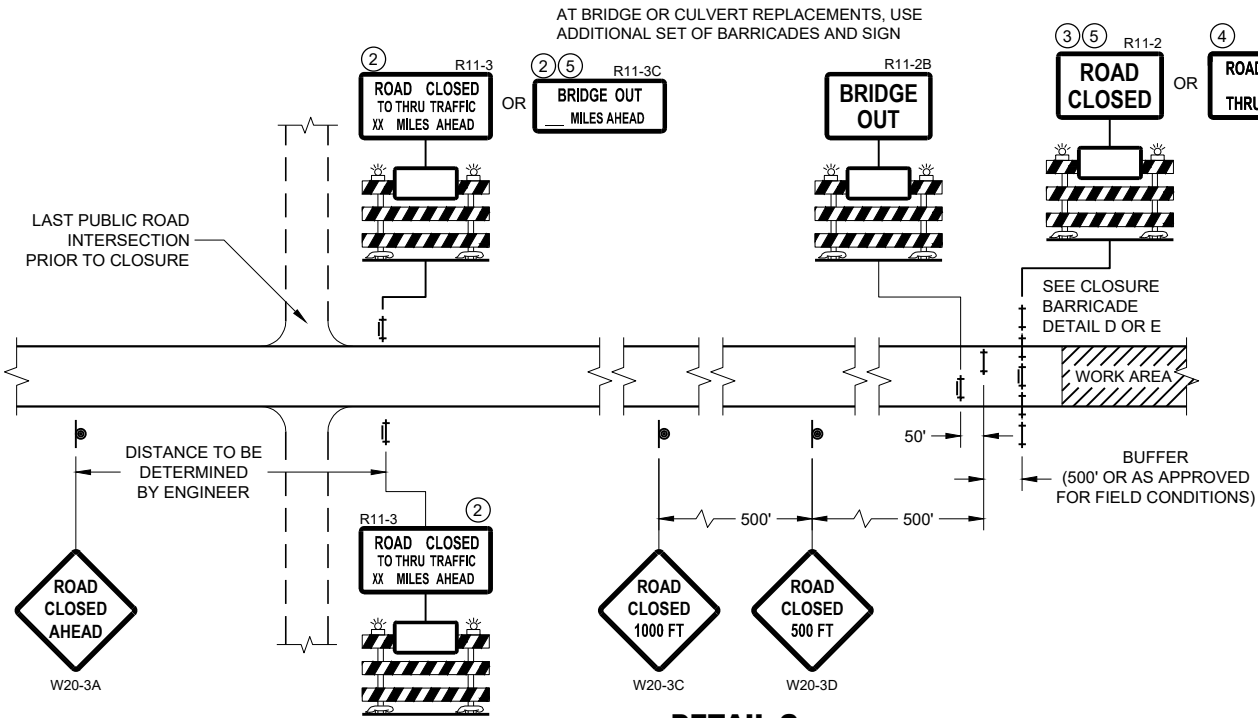
DETAIL B
MAINLINE CLOSURE WITH POSTED DETOUR
WORK ZONE LESS THAN ½ MILE FROM
DETOUR ROUTE (1000 FEET IF URBAN)

- LEGEND**
- SIGN ON PERMANENT SUPPORT
 - TYPE III BARRICADE
 - TYPE III BARRICADE WITH ATTACHED SIGN
 - TYPE "A" WARNING LIGHT (FLASHING)
 - WORK AREA
 - FLAGS, 16" X 16" MIN. (ORANGE)

- DETOUR M4 - 8
- EAST M3 - X
- XX M1 - 4 OR XX M1 - 6 OR COUNTY M1 - 5A
- OR M05 - 1 OR M06 - 1

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



DETAIL C
MAINLINE CLOSURE, NO POSTED DETOUR

**BARRICADES AND SIGNS
FOR MAINLINE CLOSURES**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

FHWA



SEE SDD 15C2 - SHEET "a" FOR LEGEND

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.

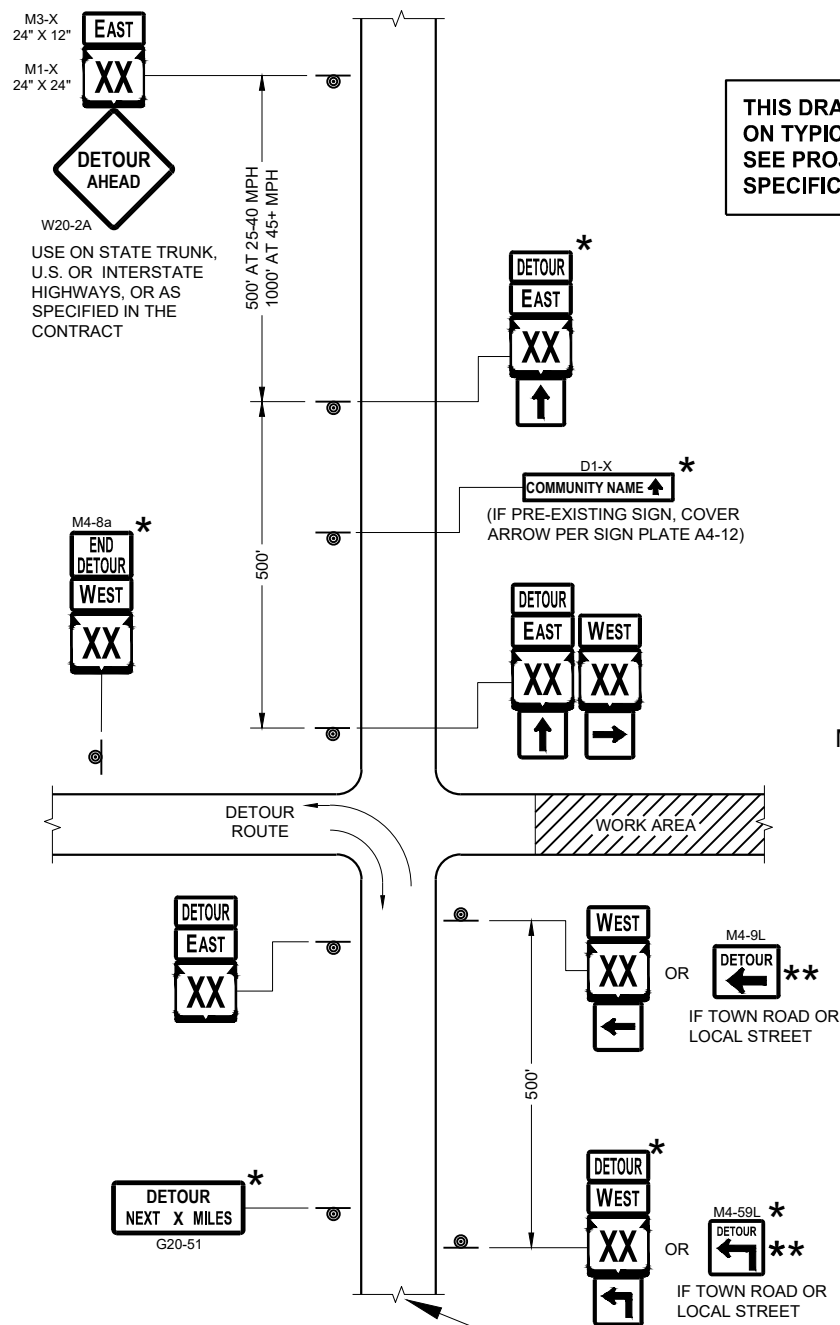
THE R11 - 2, R11 - 3, M4 - 9, R11 - 4, AND R10 - 61 SIGNS PLACED ON THE BARRICADES SHALL COVER NO MORE THAN THE TOP RAIL. THE SIGNS SHALL NOT COVER ANY PORTION OF THE MIDDLE RAIL OR BOTTOM RAILS.

"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"

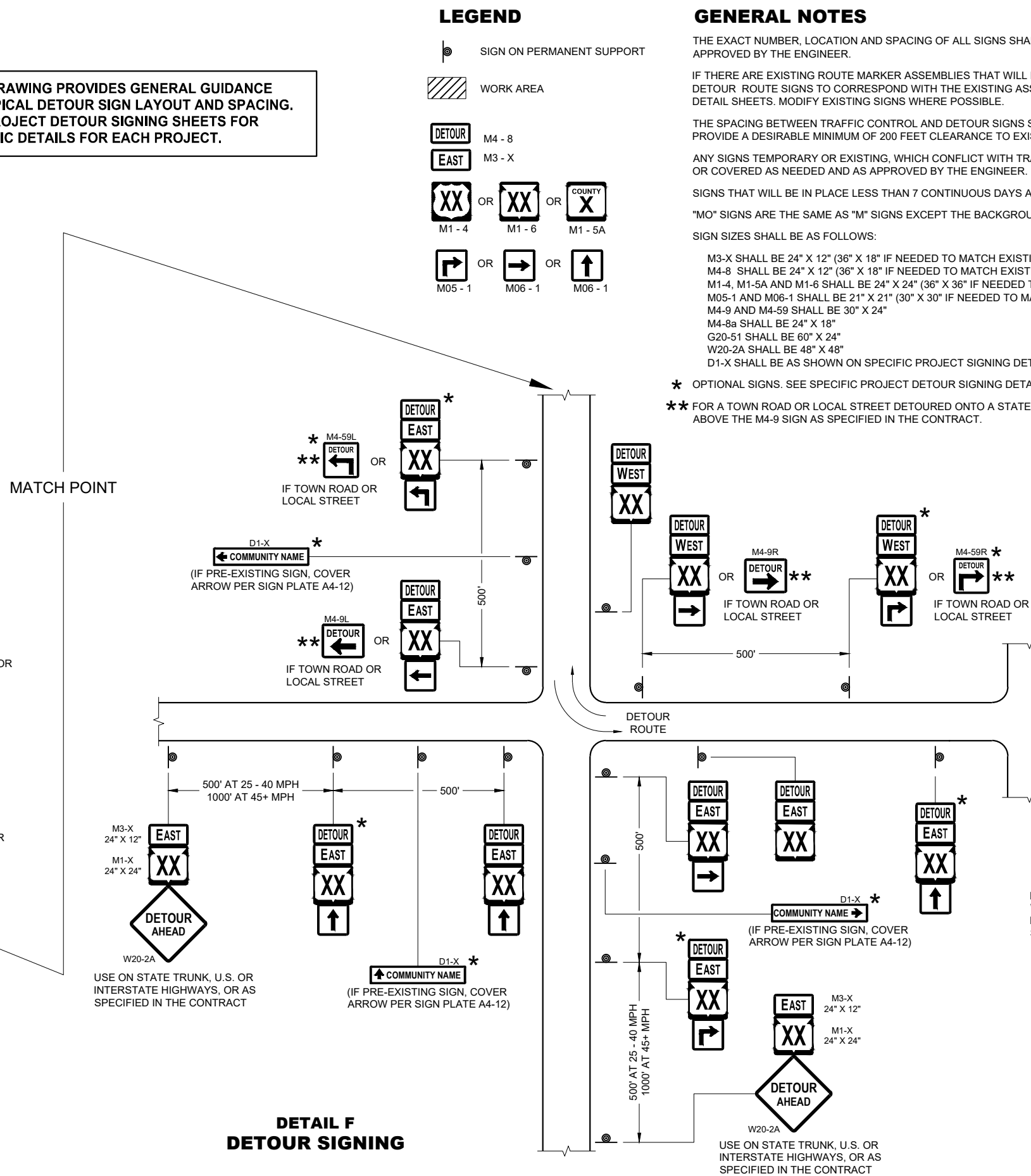
- ① TWO WARNING LIGHTS SHALL BE PROVIDED ON THE CENTER BARRICADE AND A MINIMUM OF ONE WARNING LIGHT SHALL BE PROVIDED ON EACH OF THE OTHER BARRICADES WITHIN THE ROADWAY LIMITS. SPACING OF THE WARNING LIGHTS SHALL BE UNIFORM TO THE EDGE OF ROADWAY AS SHOWN (APPROX. 8 FOOT LIGHT SPACING).
- ② THESE SIGNS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



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

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

SDD 15C02 - 09c



DETAIL F DETOUR SIGNING

GENERAL NOTES

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

IF THERE ARE EXISTING ROUTE MARKER ASSEMBLIES THAT WILL REMAIN IN PLACE, ADJUST THE LOCATION OF THE DETOUR ROUTE SIGNS TO CORRESPOND WITH THE EXISTING ASSEMBLIES. SEE SPECIFIC PROJECT DETOUR SIGNING DETAIL SHEETS. MODIFY EXISTING SIGNS WHERE POSSIBLE.

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

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

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

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

SIGN SIZES SHALL BE AS FOLLOWS:

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

* OPTIONAL SIGNS. SEE SPECIFIC PROJECT DETOUR SIGNING DETAIL SHEETS.

**** FOR A TOWN ROAD OR LOCAL STREET DETOURED ONTO A STATE TRUNK HIGHWAY, PLACE A ROAD NAME PLAQUE ABOVE THE M4-9 SIGN AS SPECIFIED IN THE CONTRACT.**

PLACE SIGNS BEYOND INTERSECTIONS
WITH STATE OR COUNTY TRUNK
HIGHWAYS OR AT 4 MILE MAXIMUM
SPACING (4 BLOCKS IF URBAN AREA)

DETOUR SIGNING FOR MAINLINE CLOSURES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

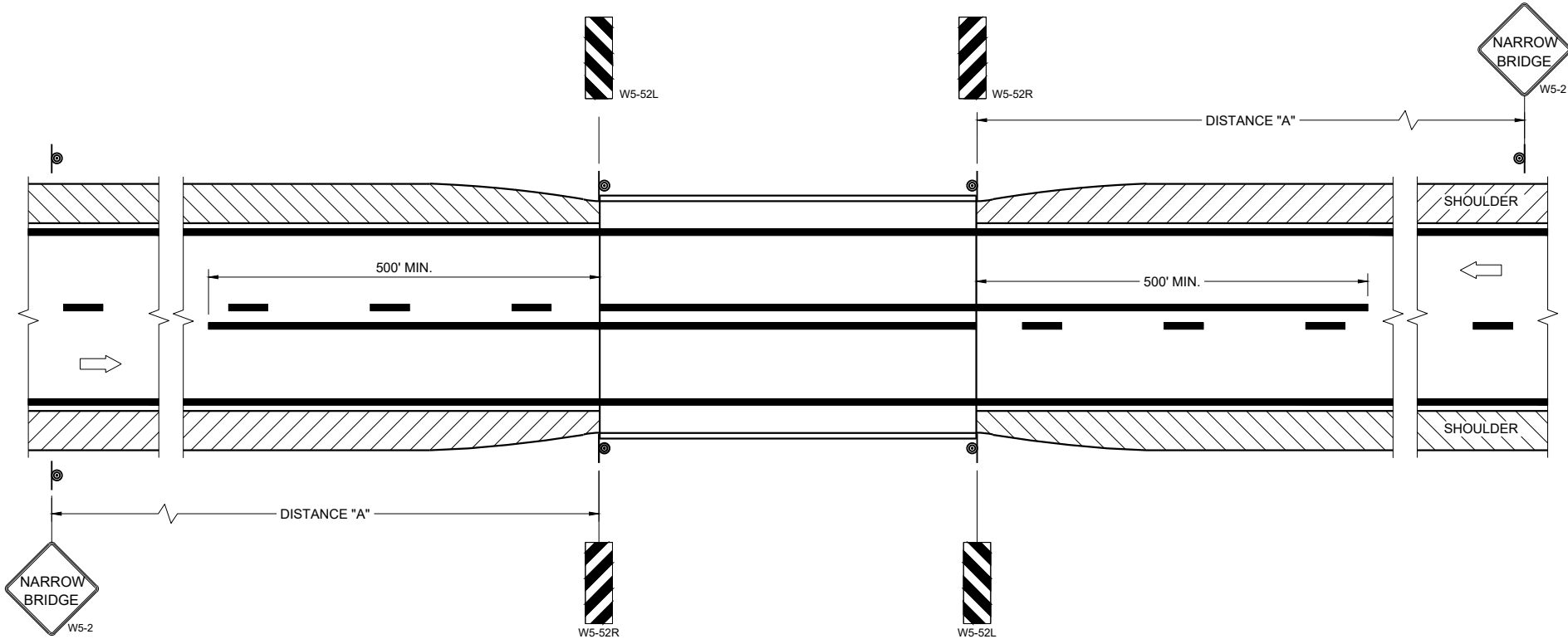
APPROVED
May 2023
DATE

/S/ Andrew Heidtke
WORK ZONE ENGINEER

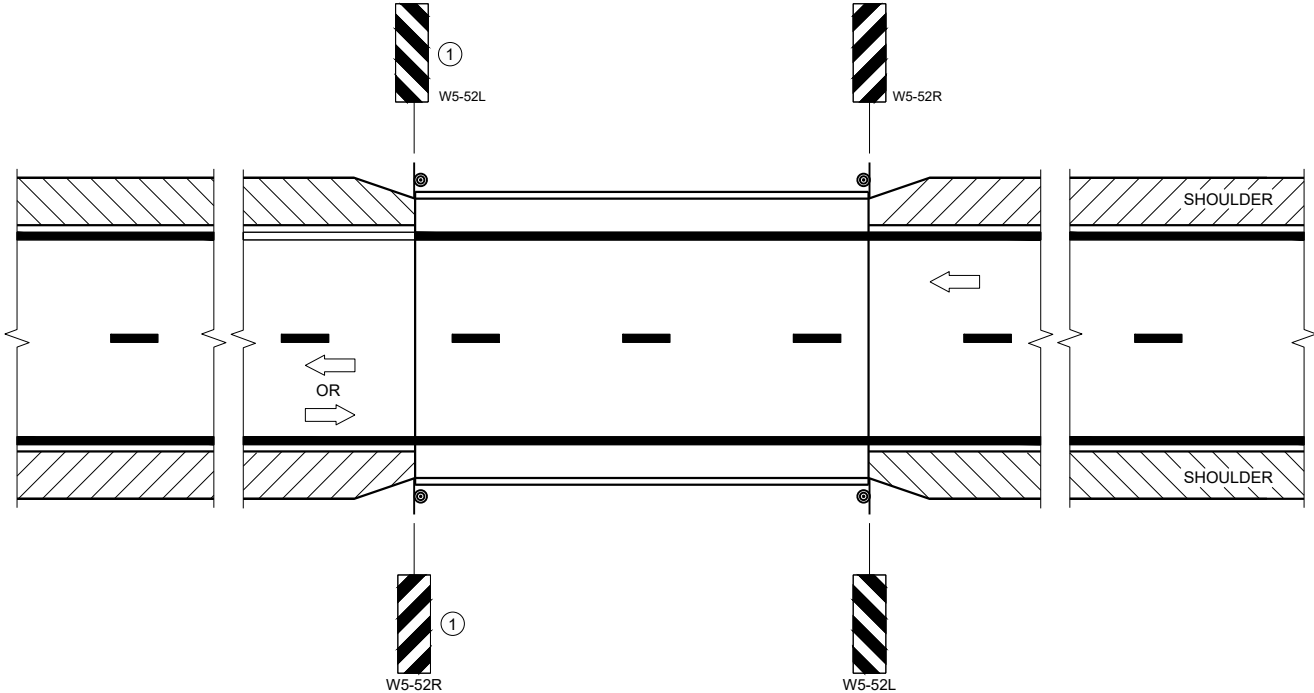
FHWA

WORK ZONE ENGINEER

SDD15C02 - 09c



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'

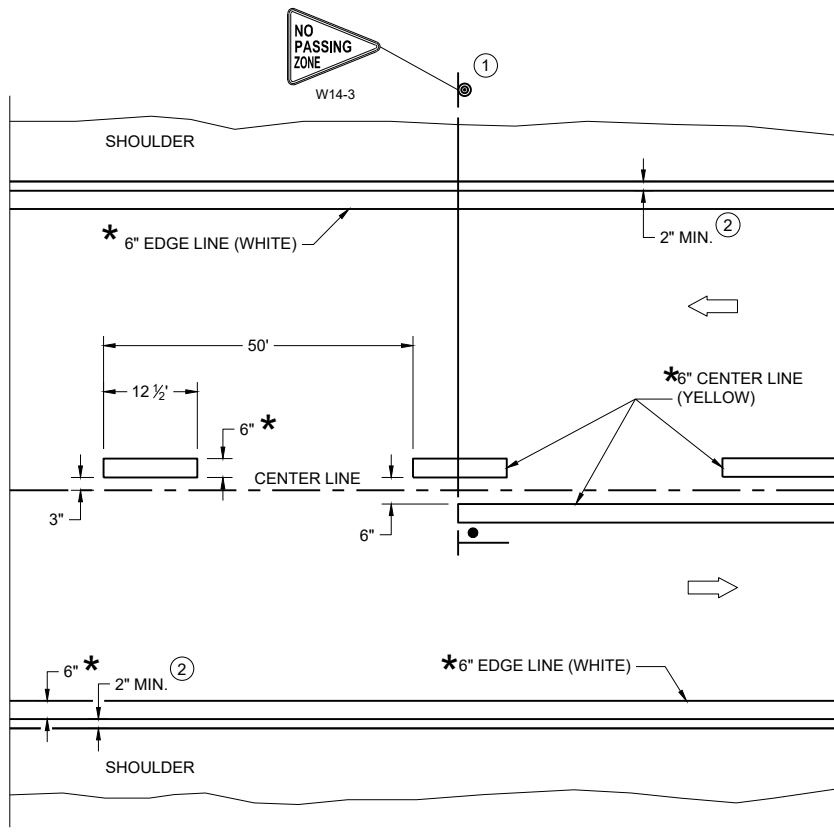
**SIGNING AND MARKING
FOR TWO LANE BRIDGES**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

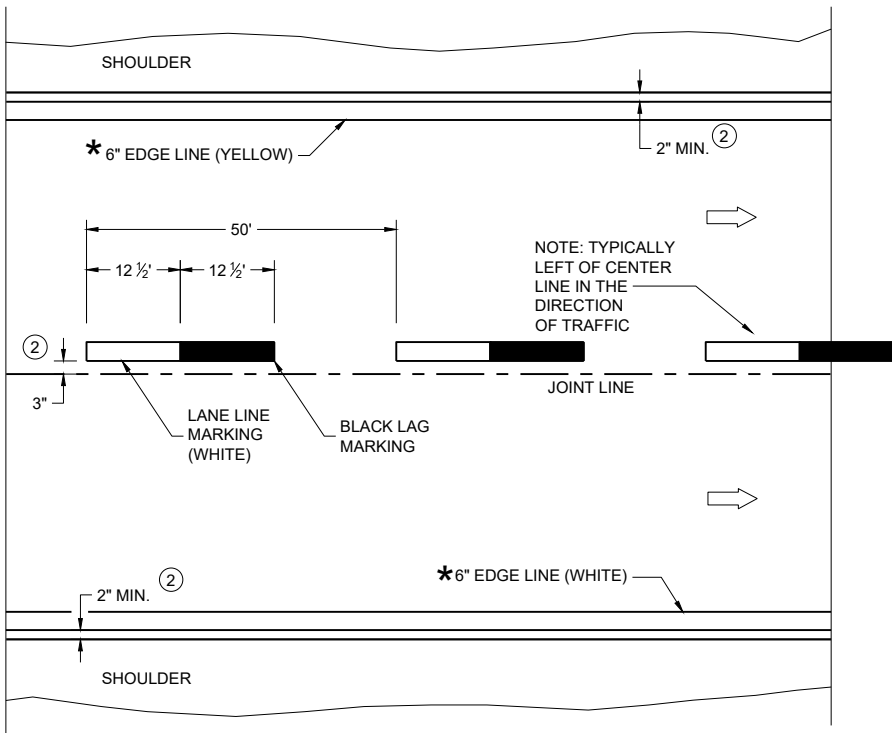
APPROVED
May 2023
DATE

/S/ Jeannie Silver
Statewide Pavement Marking Engineer

FHWA



TWO WAY TRAFFIC



ONE WAY TRAFFIC

PERMANENT PAVEMENT MARKING

* CONFIRM MARKING LINE WIDTH WITH THE MISCELLANEOUS QUANTITIES

GENERAL NOTES

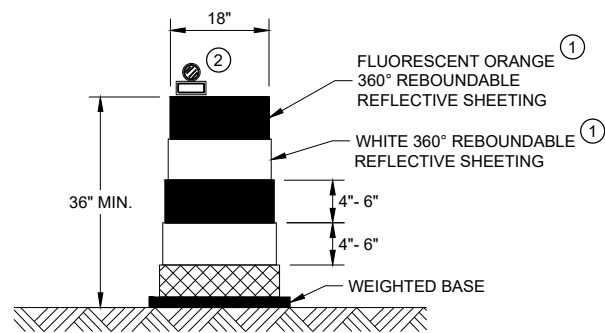
DETAILS OF CONSTRUCTION NOT SHOWN ON THIS DRAWING SHALL CONFORM TO STANDARD SPECIFICATIONS AND SPECIAL PROVISIONS.

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

LEGEND

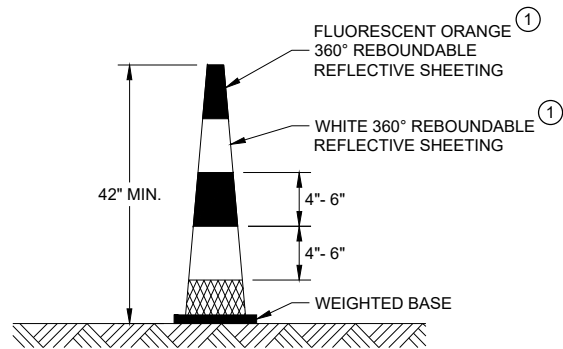
- "T" MARKING
- SIGN ON PERMANENT SUPPORT
- DIRECTION OF TRAFFIC

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



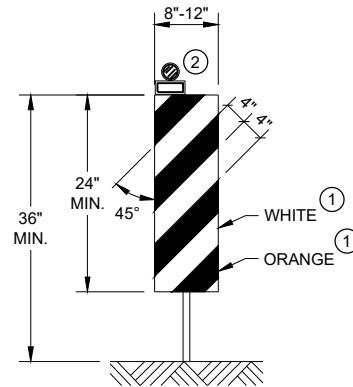
DRUM

BALLAST WIDTHS
RANGE FROM 24"-36"



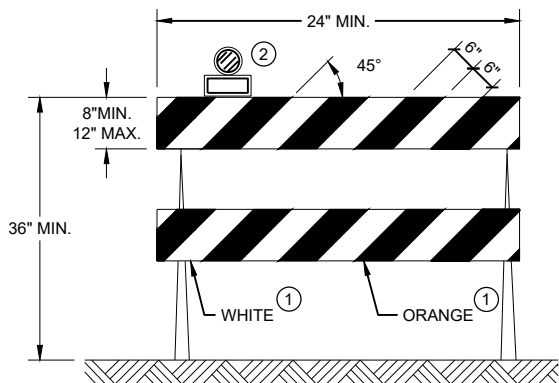
42" CONE

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



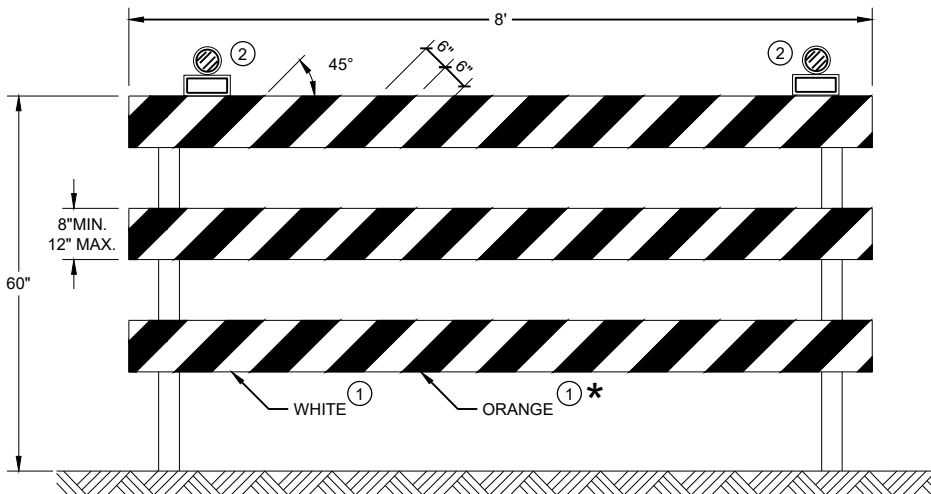
VERTICAL PANEL

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



TYPE II BARRICADE

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



TYPE III BARRICADE

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

* IF USED FOR A PERMANENT APPLICATION USE RED SHEETING.

GENERAL NOTES

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

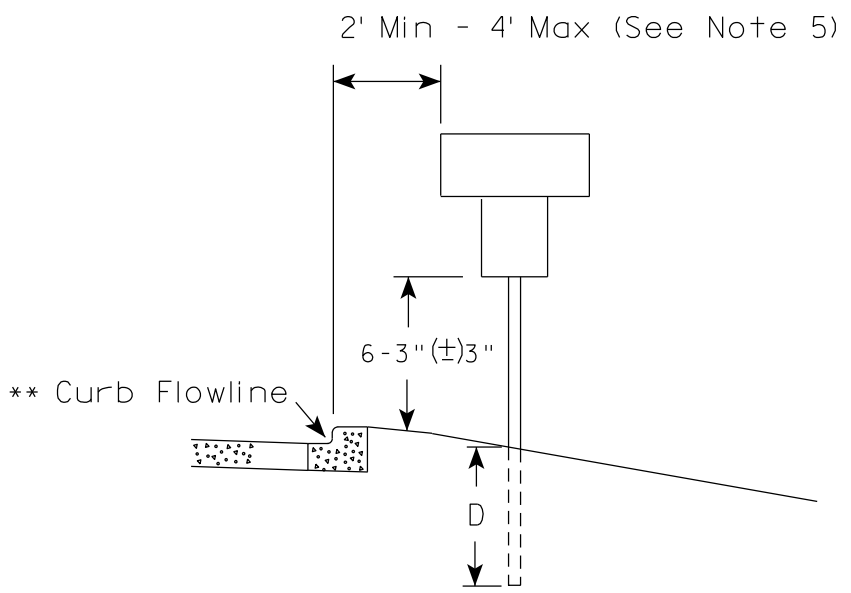
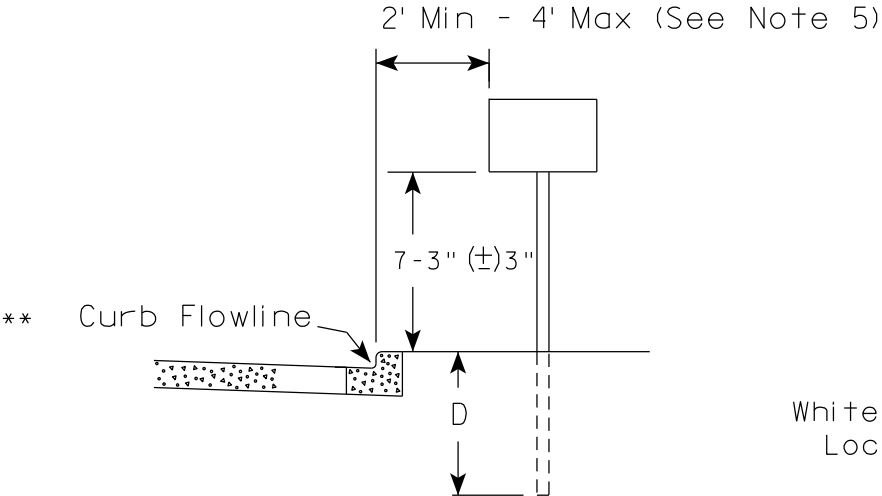
**CHANNELIZING DEVICES
DRUMS, CONES, BARRICADES
AND VERTICAL PANELS**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

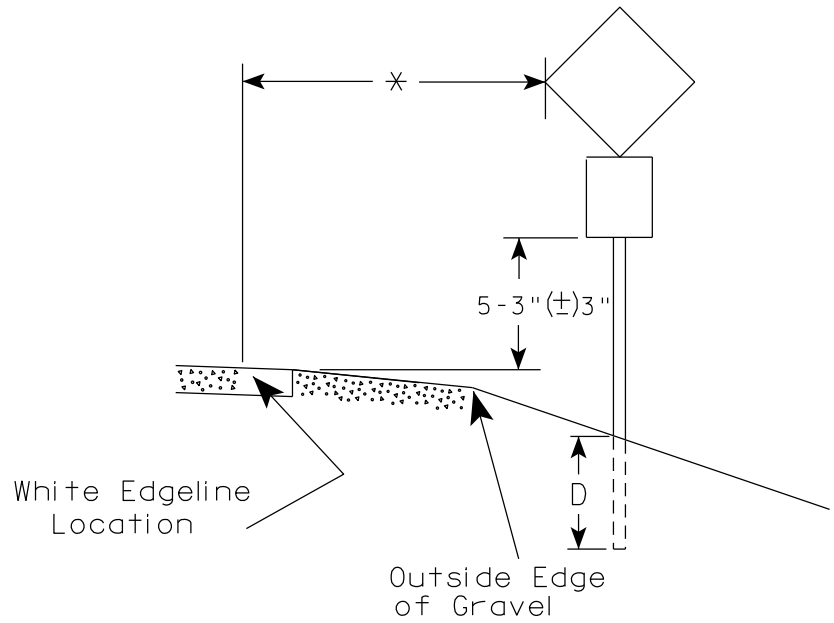
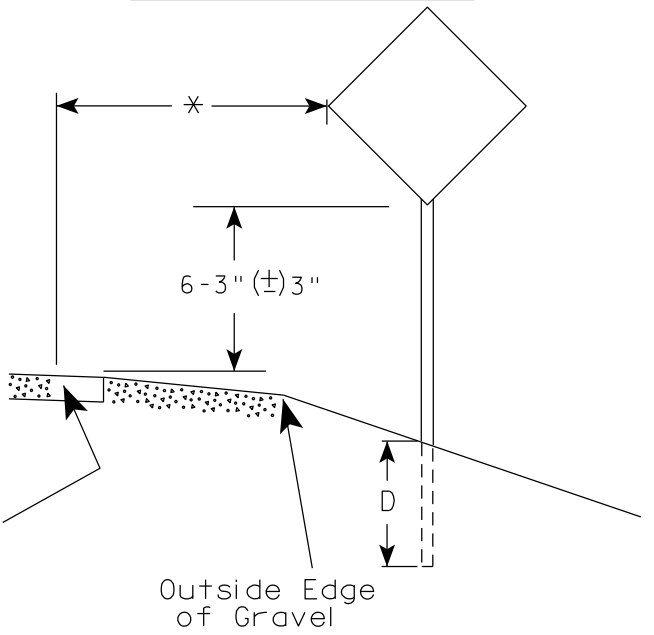
APPROVED
November 2022 /S/ Andrew Heidtke
DATE WORK ZONE ENGINEER

FHWA

URBAN AREA



RURAL AREA (See Note 2)



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" (±) 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".
3. For expressways and freeways, mounting height is 7'- 3" (±) 3" or 6'-3" (±) 3" depending upon existence of a sub-sign.
4. Minimum mounting height for signs mounted on traffic signal poles is 5'- 3" (±) 3".
5. Offset distance shall be consistent with existing signs or consistent throughout length of project.
6. Folding signs shall be mounted at a height of 5'-3" (±) 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.

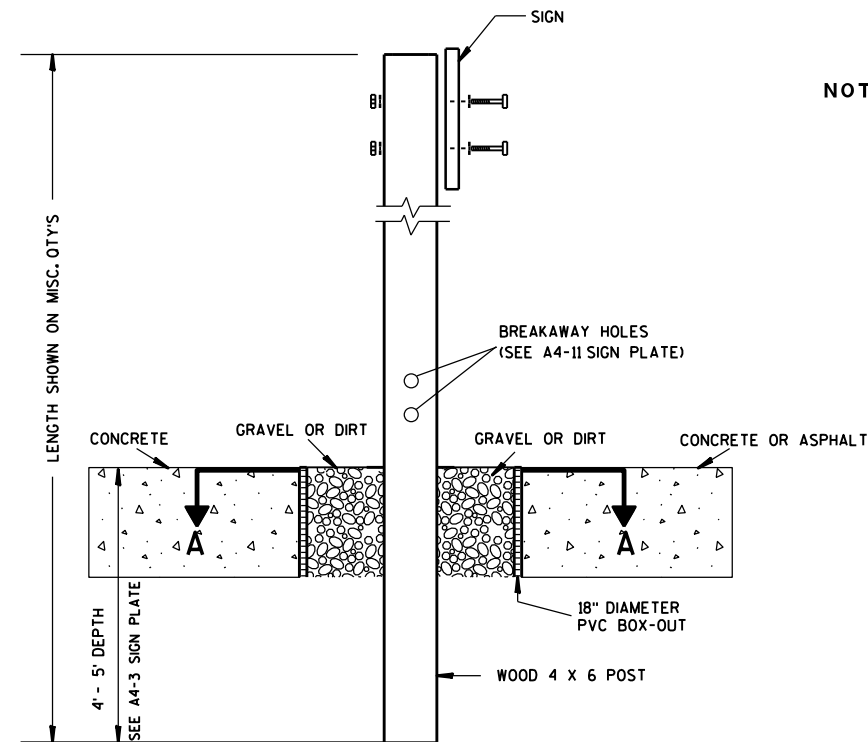
* 6 feet from edge of a paved shoulder or 12 feet from the edge of pavement (edge line location) or 2 feet from outside edge of gravel, whichever is greater unless directed by project engineer.

TYPICAL INSTALLATION
OF PERMANENT TYPE II
SIGNS ON SINGLE POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED 
for State Traffic Engineer

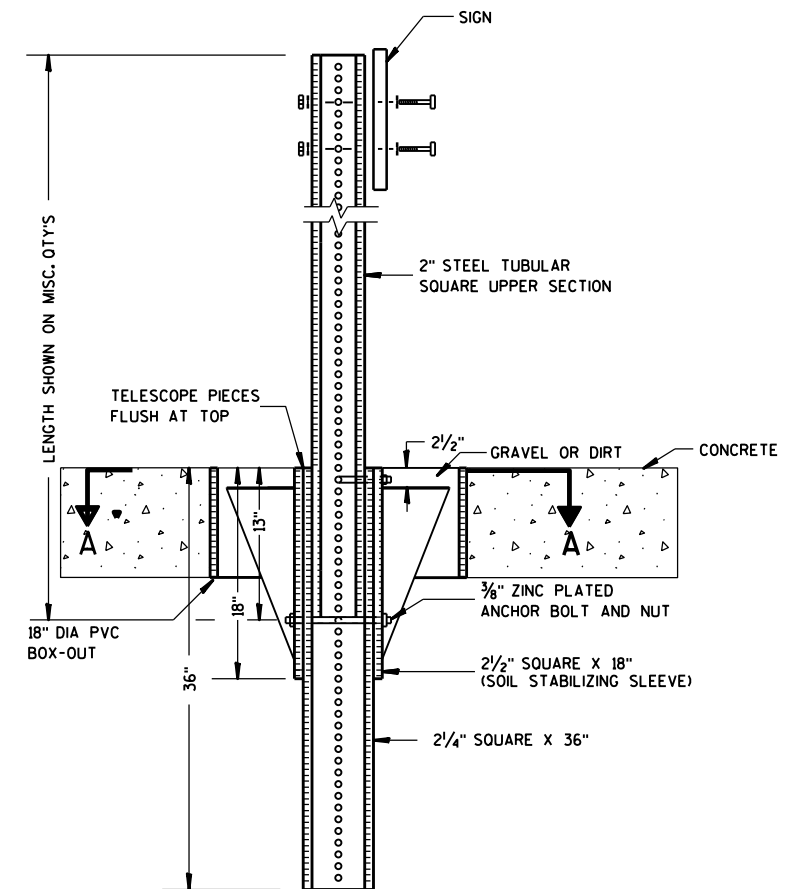
DATE 12/6/23 PLATE NO. A4-3.23



ELEVATION VIEW

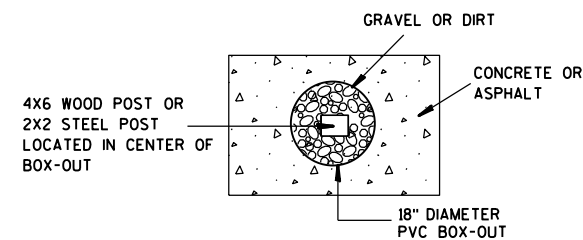
DETAIL OF WOOD 4 X 6 SIGN POST IN BOX-OUT

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



ELEVATION VIEW

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



PLAN VIEW

FOR NEW CONCRETE/ASPHALT INSTALLATIONS

SIGN POST
BOX-OUTS
A4-3B

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

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

PROJECT NO:

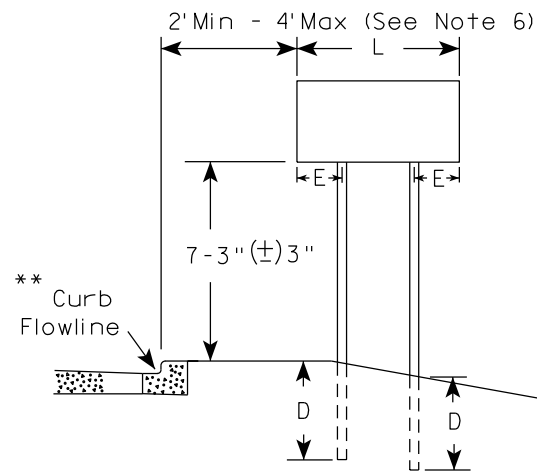
HWY:

COUNTY:

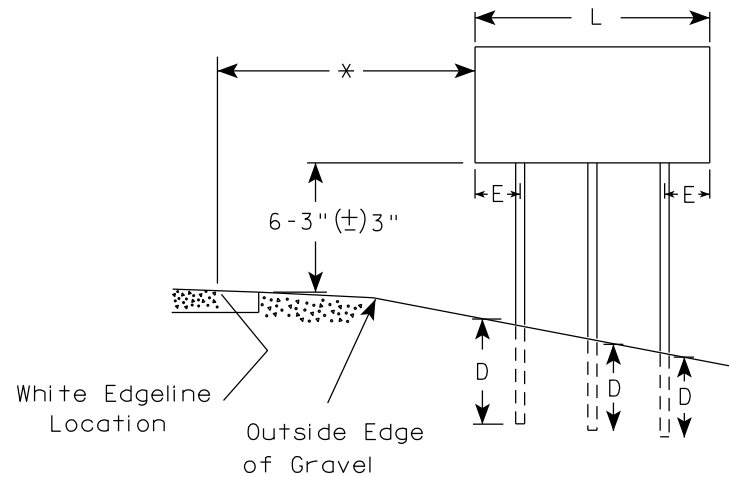
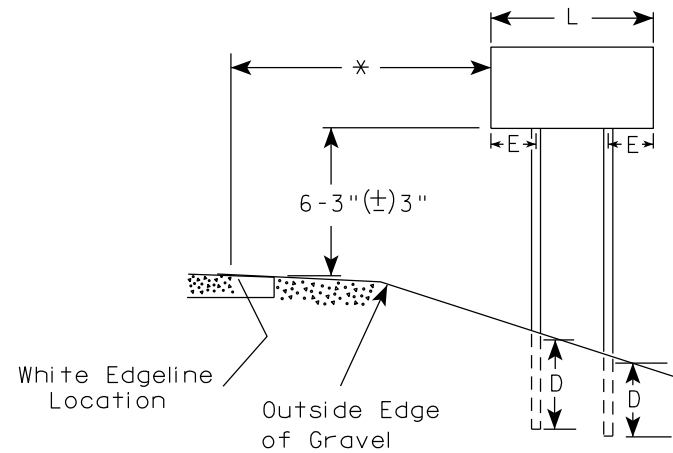
SHEET NO:

E

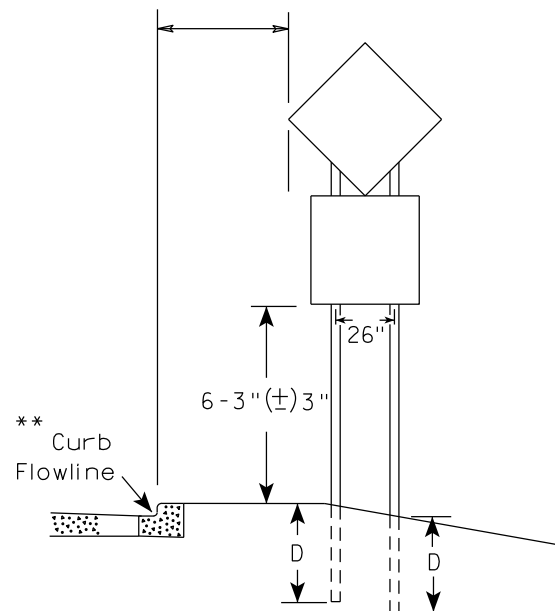
URBAN AREA



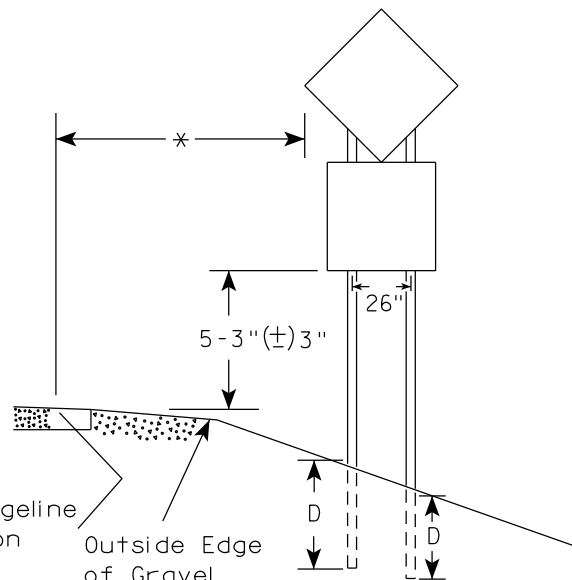
RURAL AREA (See Note 3)



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



48" DIAMOND WARNING SIGN



48" DIAMOND WARNING SIGN

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" (±) 3" or 6'-3" (±) 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" (±) 3" or as directed by the engineer.
8. The Double Arrow sign (W12-1) shall be mounted at a height of 2'-3" (±) 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" (±) 3".

* 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

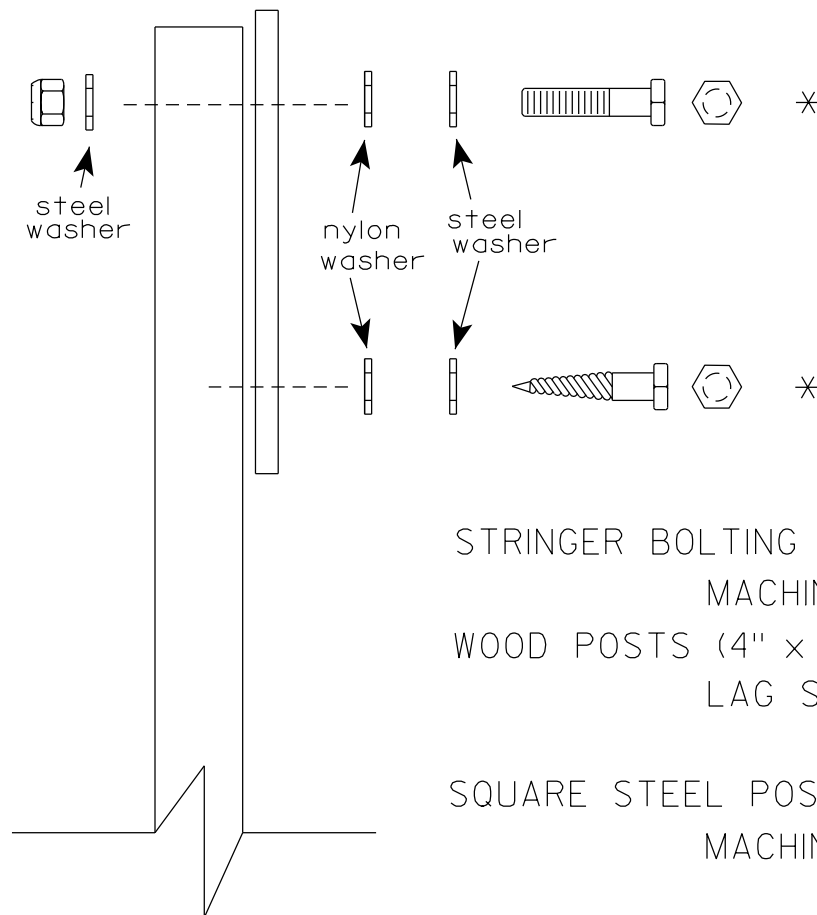
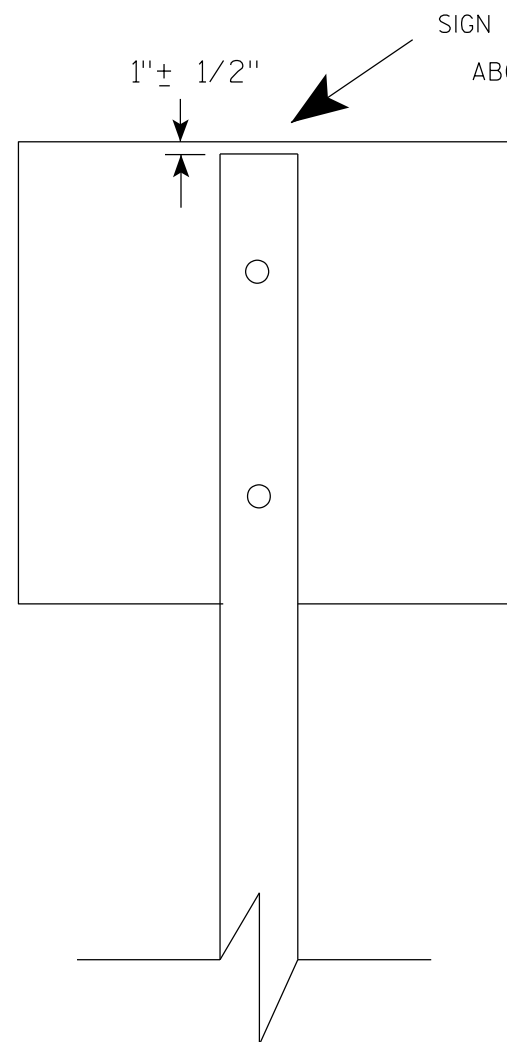
Area of Sign Installation (Sq.Ft.)	D (Min)
20 or Less	4'
Greater than 20	5'

TYPICAL INSTALLATION
OF TYPE II SIGNS
ON MULTIPLE POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 12/6/23 PLATE NO. A4-4.16



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

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

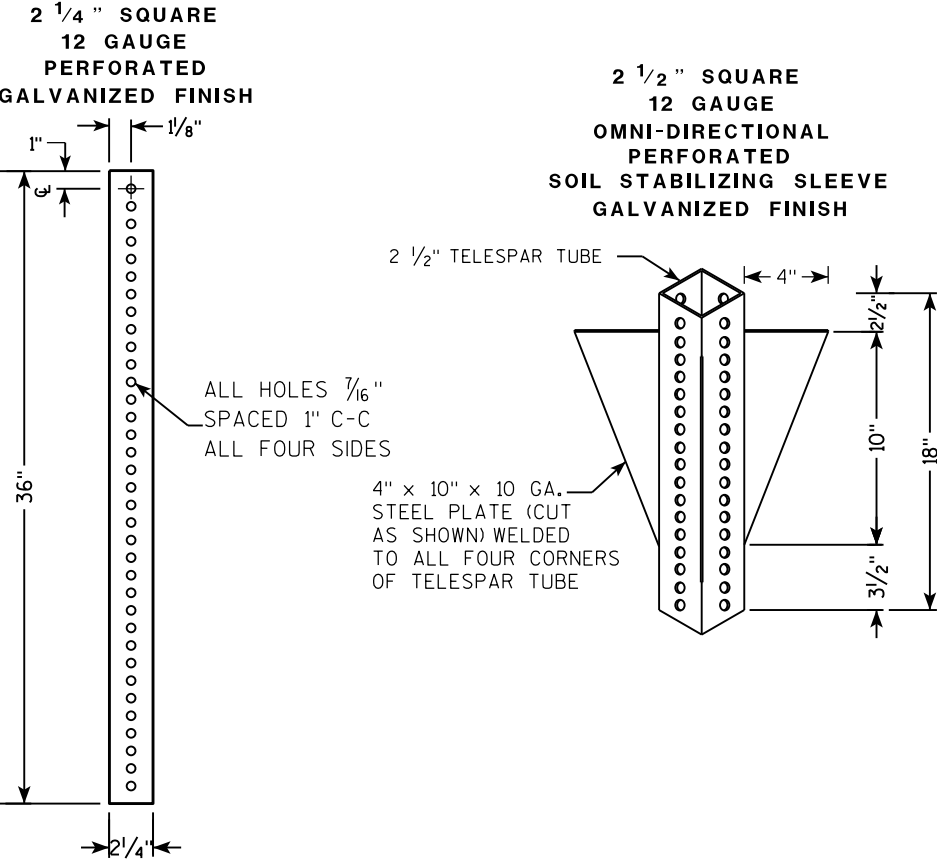
Threads on bolts and nuts shall be manufactured with sufficient allowance for the cadmium plate or galvanized coating to permit the nuts to run freely on the bolts.

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

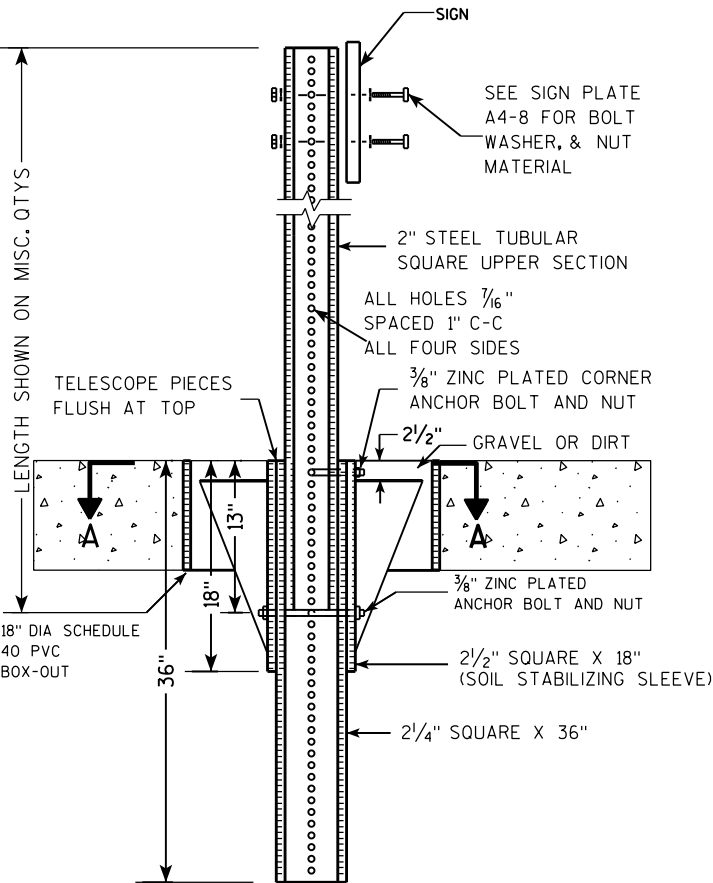
* Two different fastening systems are shown for illustration purposes. On any individual sign, either one or the other system shall be used. Actual number of fasteners per sign varies with the sign area, but normally there are two. For a single post installation, all signs greater than 9 sq. ft. require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

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

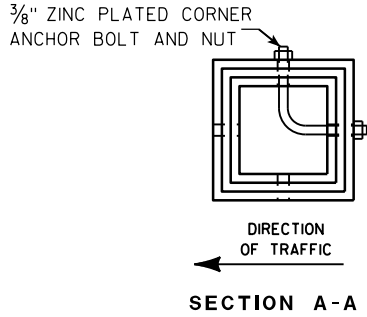
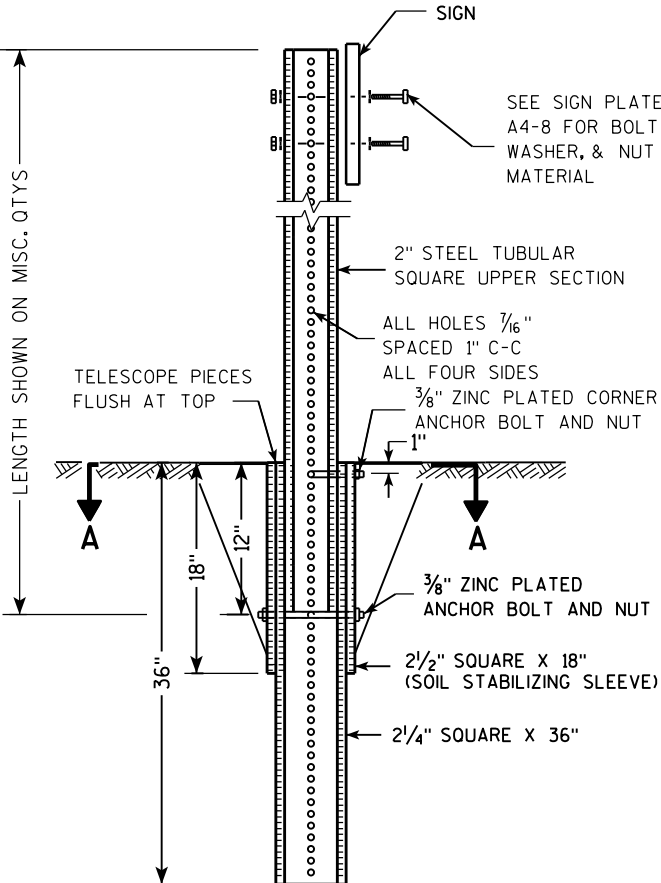
TELESCOPIC TUBING ANCHORS
TWO PIECE SYSTEM



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



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



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

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

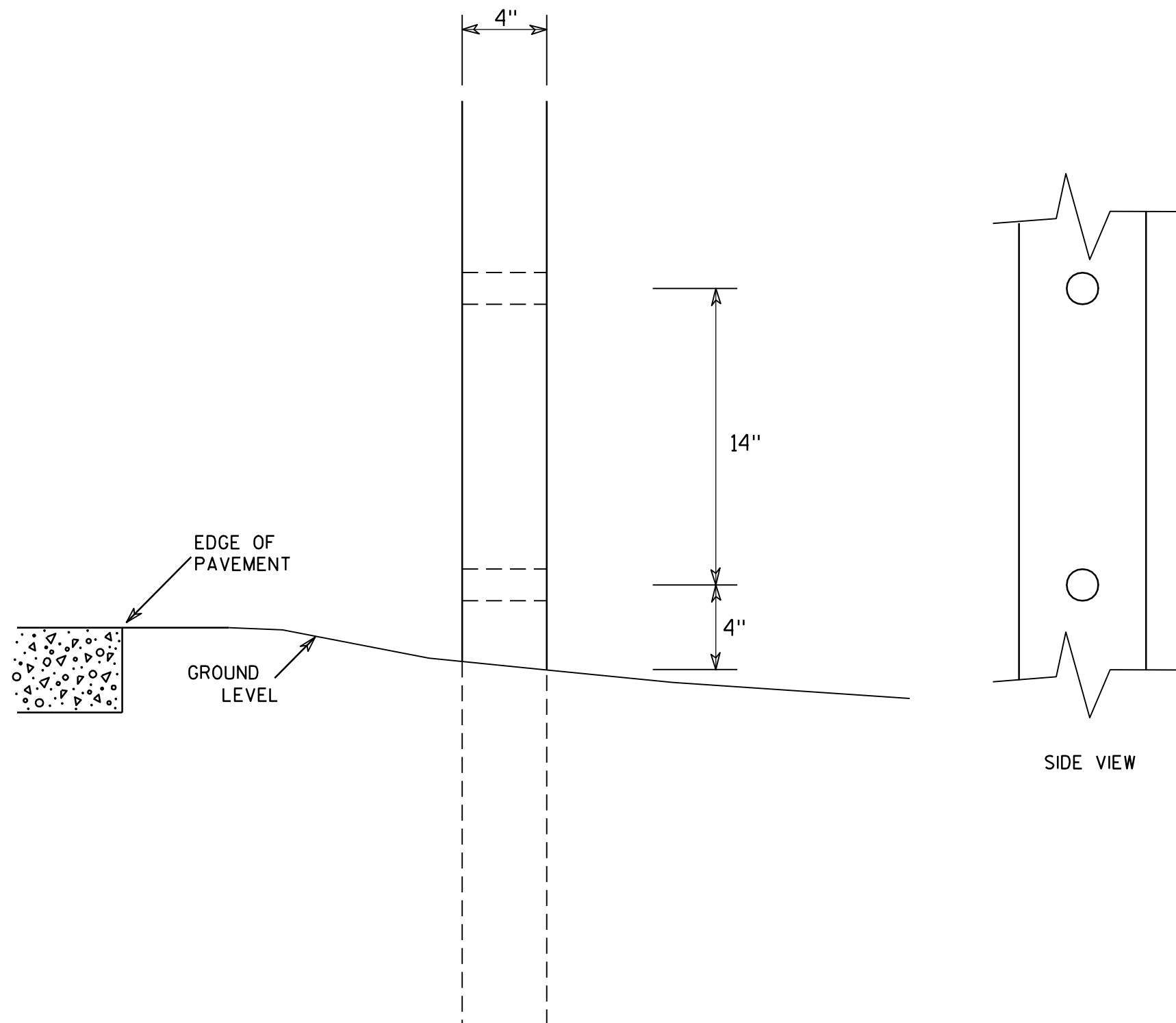
TUBULAR STEEL
SIGN POST
A4-9

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 2/05/15 PLATE NO. A4-9.9

7



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

4 X 6 WOOD POST MODIFICATIONS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED

Chester J. Spang
for State Traffic Engineer

DATE 3/27/97

PLATE NO. A4-11.2

PROJECT NO:

HWY:

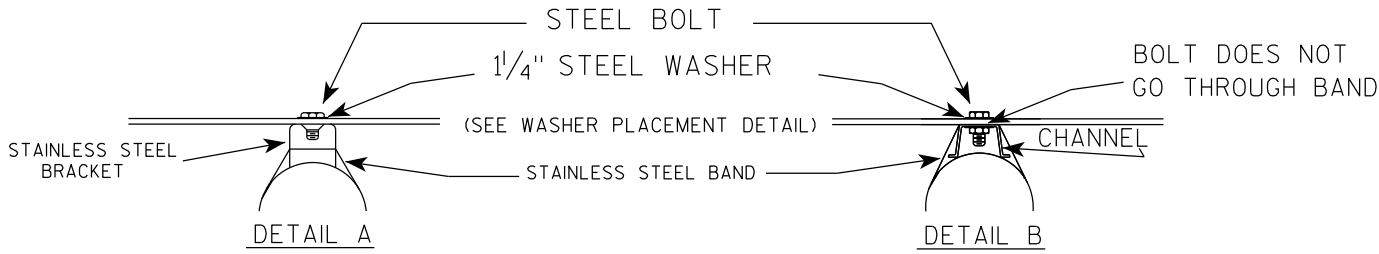
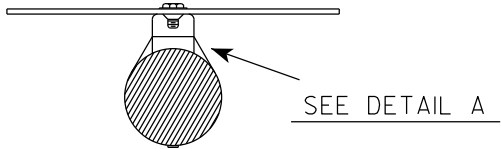
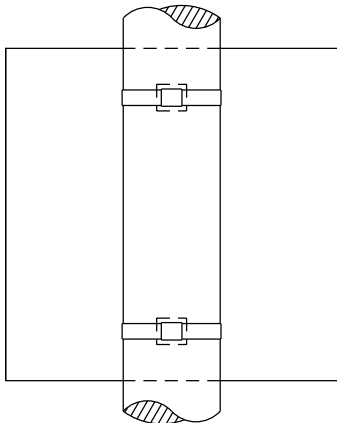
COUNTY:

SHEET NO:

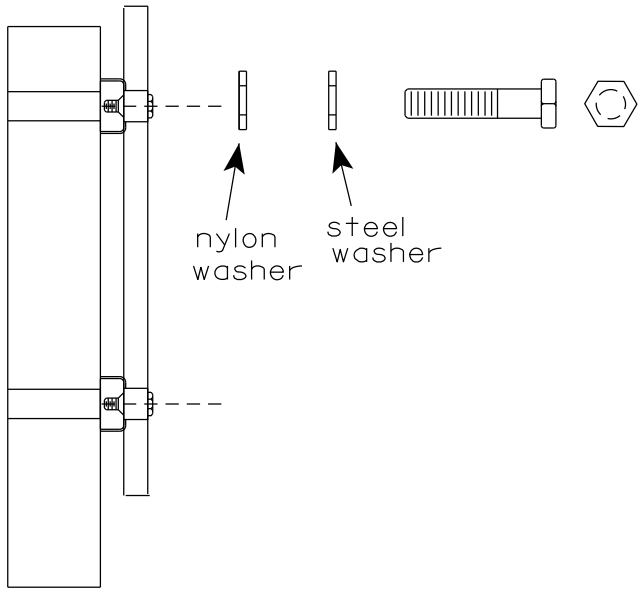
E

BANDING

SINGLE SIGN



WASHER PLACEMENT

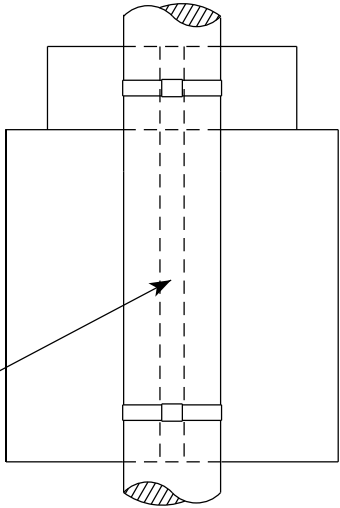


WASHERS (ALL POSTS) -
1-1/4" O.D. X 3/8" I.D. X 1/16" STEEL
1-1/4" O.D. X 3/8" I.D. X .080 NYLON
FOR ALL TYPE H SIGNS

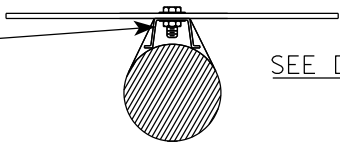
GENERAL NOTES

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

"J" ASSEMBLY



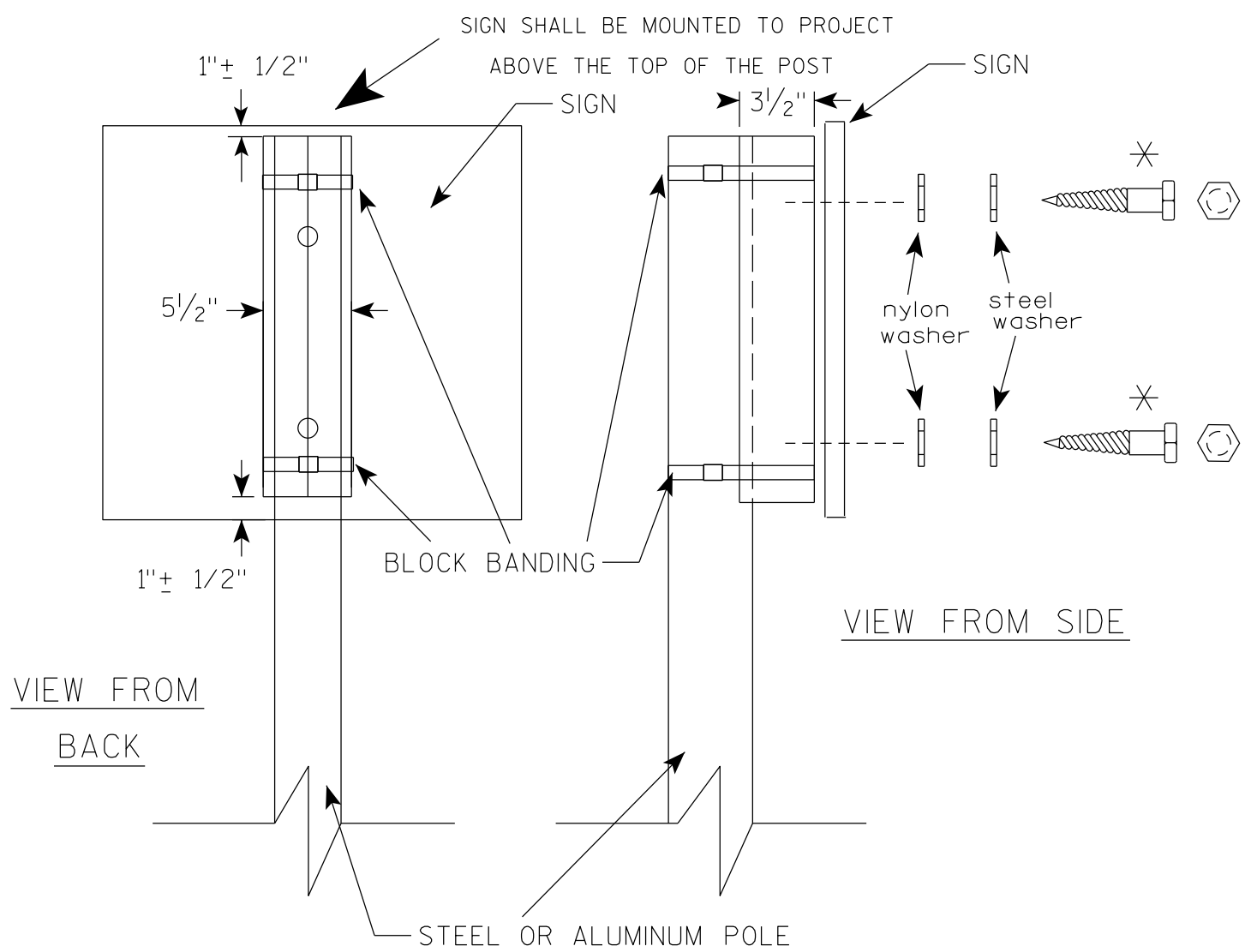
CHANNEL
SEE TYPICAL PANEL
INSTALLATION SHEET



STANDARD SIGN
SIGN BANDING DETAILS

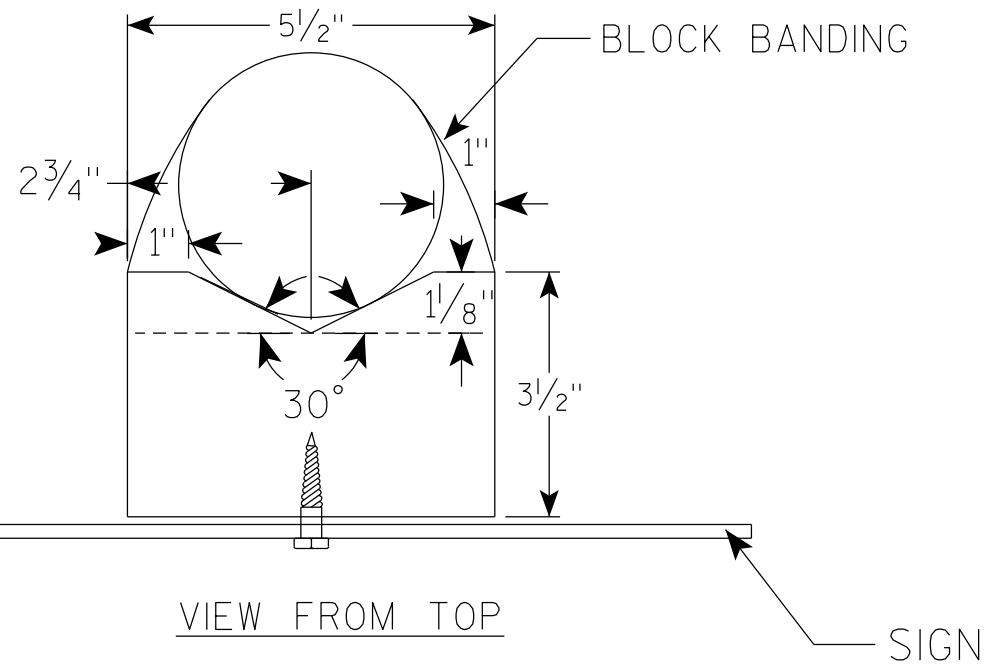
WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer
DATE 6/10/19 PLATE NO. A5-9.4



VIEW FROM
BACK

VIEW FROM SIDE



VIEW FROM TOP

GENERAL NOTES

1. WOOD 4"X6" POST MATERIAL SHALL CONFORM TO 507.2.2 OF THE WISDOT STANDARD SPECIFICATIONS
2. BLOCK BANDING AND CLIPS SHALL BE STAINLESS STEEL, $\frac{3}{4}$ " WIDTH AND 0.025" THICKNESS
3. SIGNS 3' OR GREATER IN HEIGHT SHALL UTILIZE 3 BLOCK BANDS. SIGNS UNDER 3' IN HEIGHT SHALL UTILIZE 2 BLOCK BANDS
4. ACTUAL NUMBER OF FASTENERS PER SIGN VARIES WITH THE SIGN AREA, BUT NORMALLY THERE ARE TWO. FOR SIGNS GREATER THAN 9 S.F. 3 FASTENERS SHALL BE USED.
5. ALL SIGN MOUNTING BOLTS AND WASHERS SHALL BE EITHER:
 - a. Hot dip or mechanically galvanized in accordance with ASTM Designation: A 153, Class D
 - b. Electro-galvanized in accordance with ASTM Designation : B 633, TYPE III, SC 3
6. ALL BOLTS SHALL HAVE HEXAGONAL HEADS.
7. STEEL WASHERS SHALL BE $\frac{1}{4}$ " O.D. X $\frac{3}{8}$ " I.D. X $\frac{1}{16}$ "
8. NYLON WASHERS SHALL BE $\frac{1}{4}$ " O.D. X $\frac{3}{8}$ " I.D. X .080 FOR TYPE H OR TYPE F FACE SIGN

✱ LAG BOLTS SHALL BE $\frac{3}{8}$ " X $2\frac{1}{2}$ "

BLOCK BANDING DETAIL
(V-BLOCK OPTION)

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

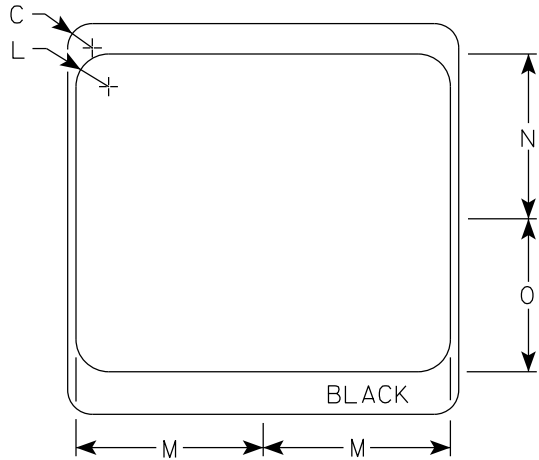
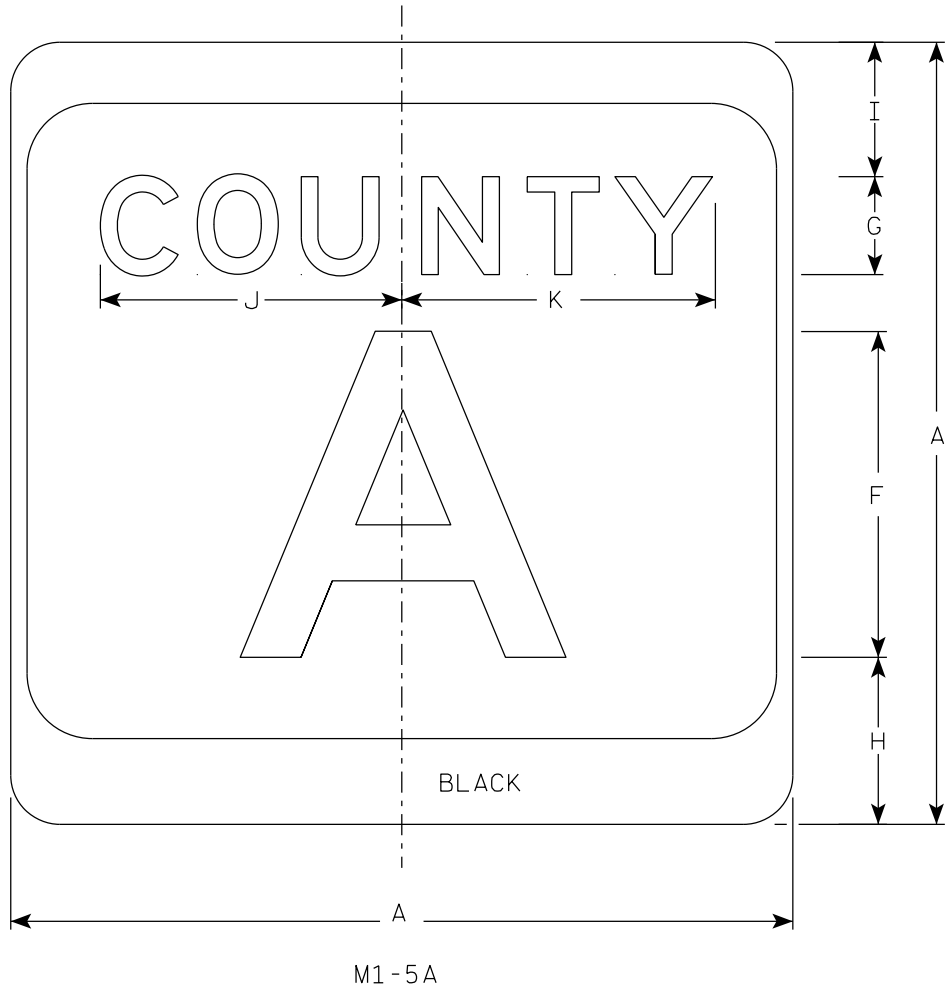
DATE 4/19/2022 PLATE NO. A5-10.3

PROJECT NO:

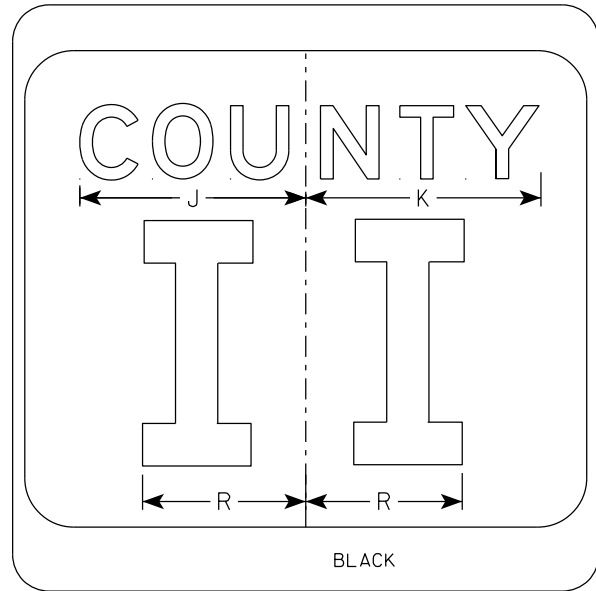
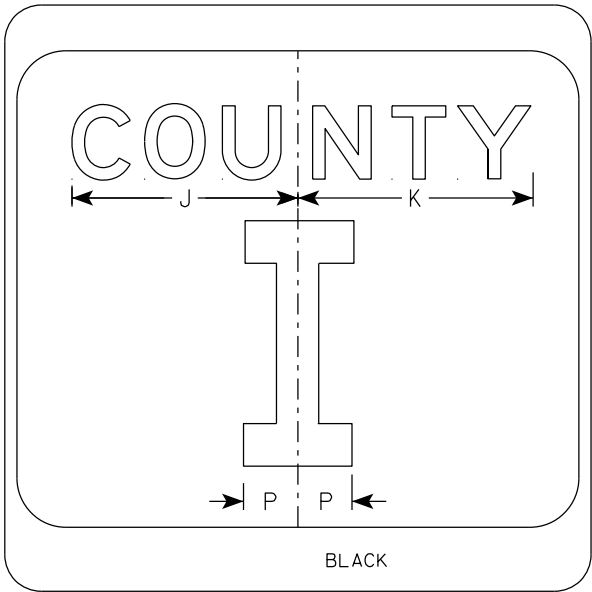
SHEET NO:

E

7



- NOTES
1. Sign is Type II - Type H Reflective
 2. Color:
Background - White & Black
Message - Black
 3. Message Series - see Note 4
 4. Message Series E for 1 letter.
Message Series D for 2 letters unless
message is too big then Series C.
Message Series C for 3 letters unless
message is too big then Series B.
 5. Substitute appropriate letters & optically
center to achieve proper balance.



SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2	24		1 1/2			10	3	5 1/8	4 1/8	9 1/4	9 5/8	2	11 1/2	10 1/8	9 3/8	2 1/4		6 5/8									4.0
2M	24		1 1/2			10	3	5 1/8	4 1/8	9 1/4	9 5/8	2	11 1/2	10 1/8	9 3/8	2 1/4		6 5/8									4.0
3	36		2 1/4			16	4	7 5/8	5 5/8	12 1/4	12 7/8	3	17 1/8	15 1/4	14	3 3/8		10									9.0
4	36		2 1/4			16	4	7 5/8	5 5/8	12 1/4	12 7/8	3	17 1/8	15 1/4	14	3 3/8		10									9.0
5	36		2 1/4			16	4	7 5/8	5 5/8	12 1/4	12 7/8	3	17 1/8	15 1/4	14	3 3/8		10									9.0

CTH MARKER

M1-5A FOR ASSEMBLIES

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 11/8/2022 PLATE NO. M1-5A.9

PROJECT NO:

HWY:

COUNTY:

SHEET NO: E

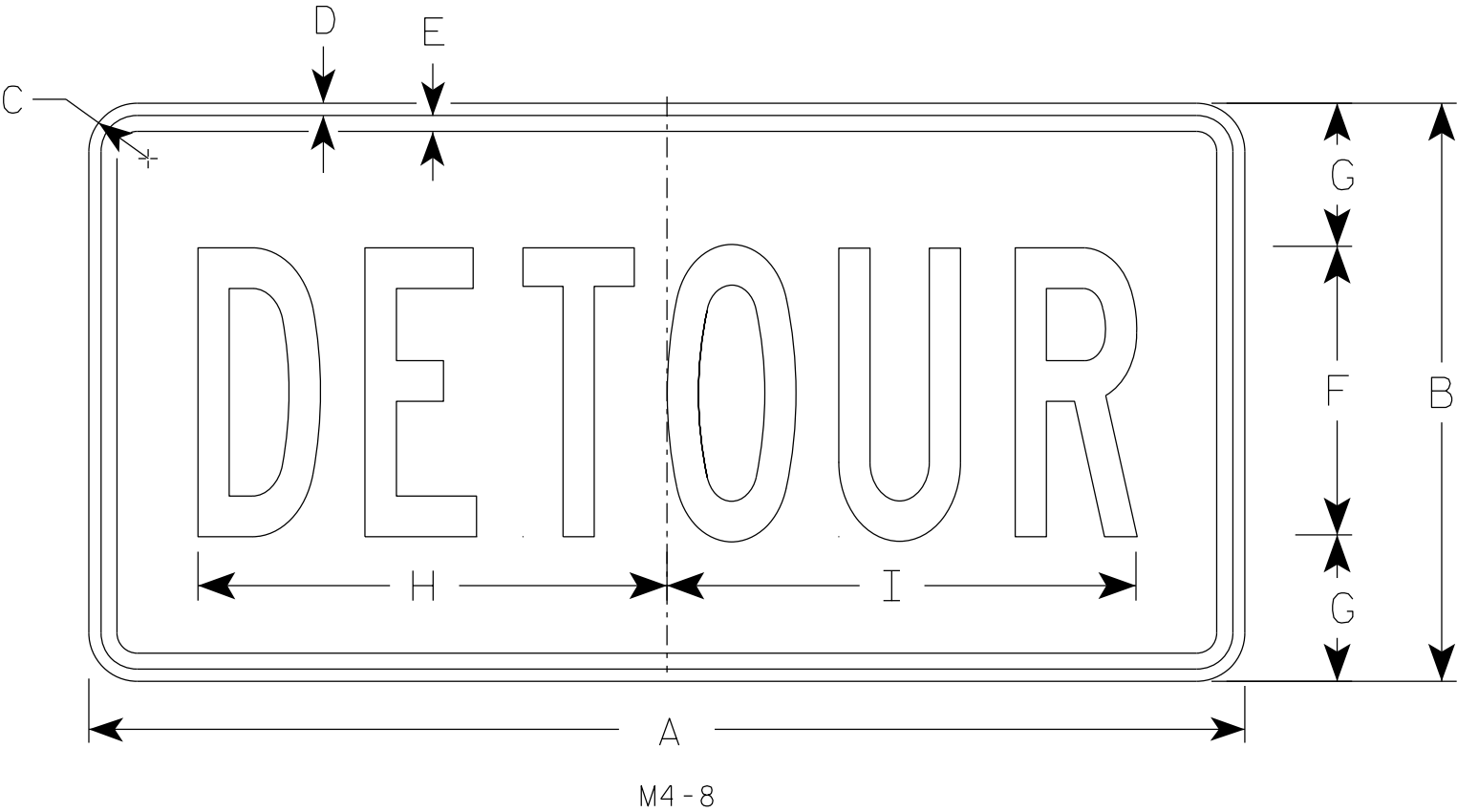
7

7

7

NOTES

- 1. Sign is Type II - Type F Reflective
- 2. Color:
Background - Orange
Message - Black
- 3. Message Series - B
- 4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.



SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2	24	12	1 1/2	3/8	3/8	6	3	10	10 1/4																		2.0
2M	24	12	1 1/2	3/8	3/8	6	3	10	10 1/4																		2.0
3	36	18	1 1/2	3/8	1/2	9	4 1/2	14 5/8	14 1/2																		4.5
4	36	18	1 1/2	3/8	1/2	9	4 1/2	14 5/8	14 1/2																		4.5
5	36	18	1 1/2	3/8	1/2	9	4 1/2	14 5/8	14 1/2																		4.5

STANDARD SIGN

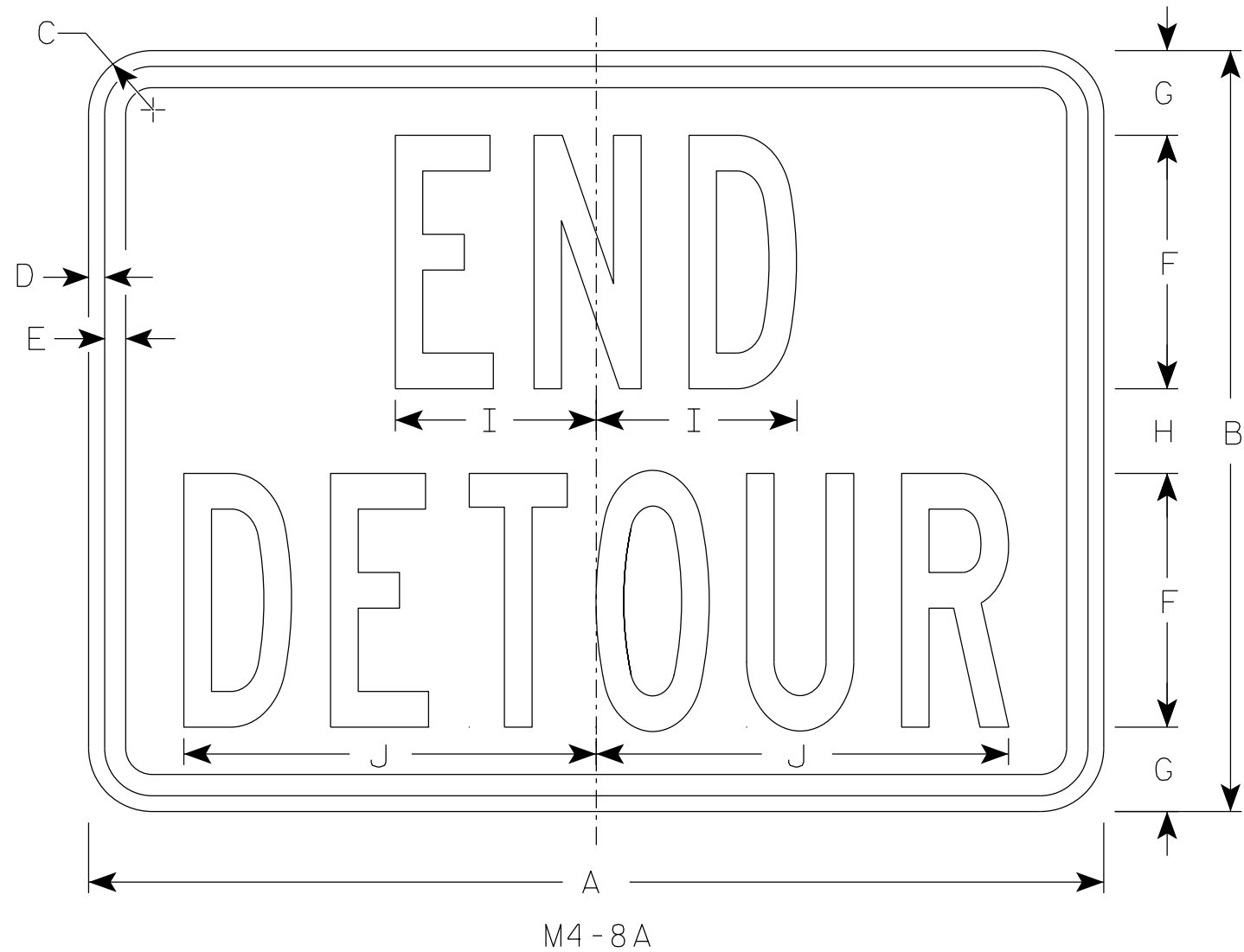
M4-8

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 2/9/2023 PLATE NO. M4-8.4

7



NOTES

1. Sign is Type II - Type F Reflective
2. Color:
Background - Orange
Message - Black
3. Message Series - B
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.

7

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	v	W	X	Y	Z	Area sq. ft.
1																											
2	24	18	1 1/2	3/8	1/2	6	2	2	4 3/4	9 3/4																	3.0
2M	24	18	1 1/2	3/8	1/2	6	2	2	4 3/4	9 3/4																	3.0
3	30	24	1 1/2	3/8	1/2	8	2 1/2	3	6 3/4	13																	5.0
4	30	24	1 1/2	3/8	1/2	8	2 1/2	3	6 3/4	13																	5.0
5	30	24	1 1/2	3/8	1/2	8	2 1/2	3	6 3/4	13																	5.0

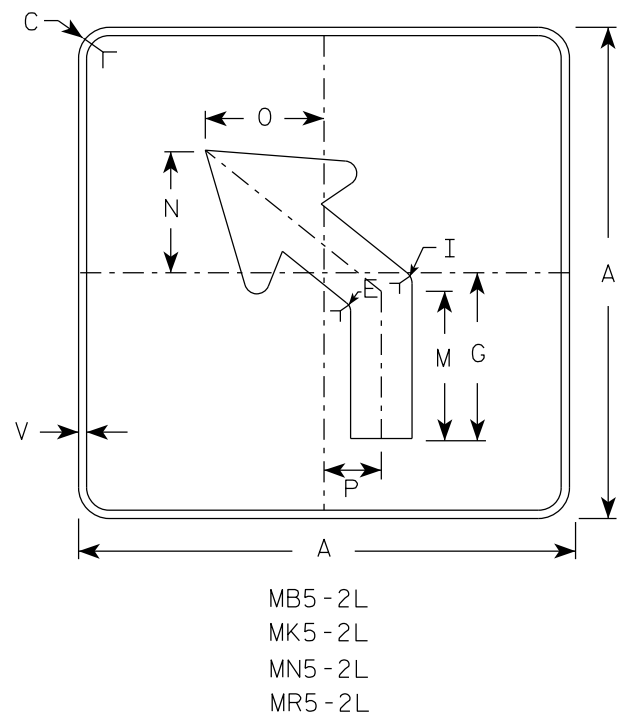
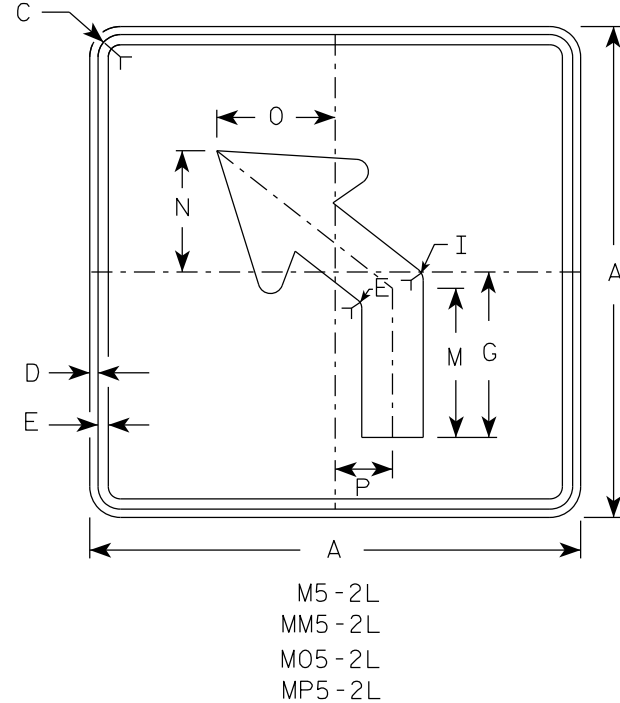
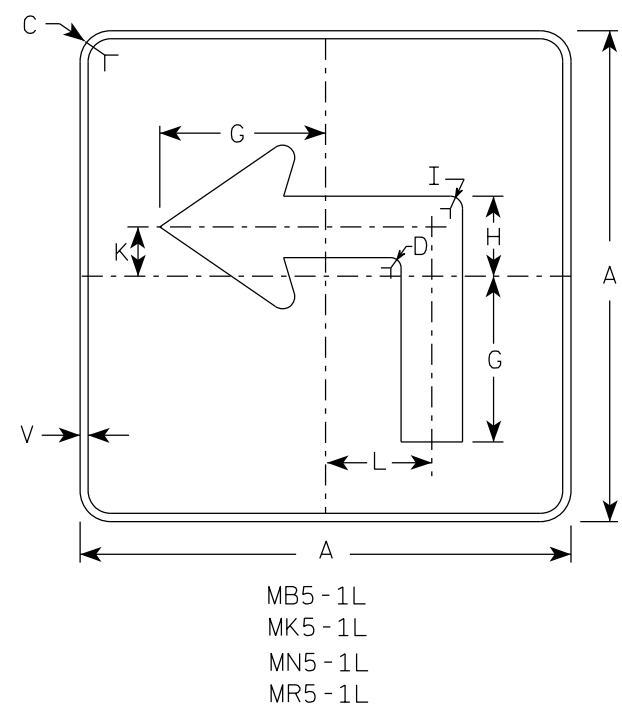
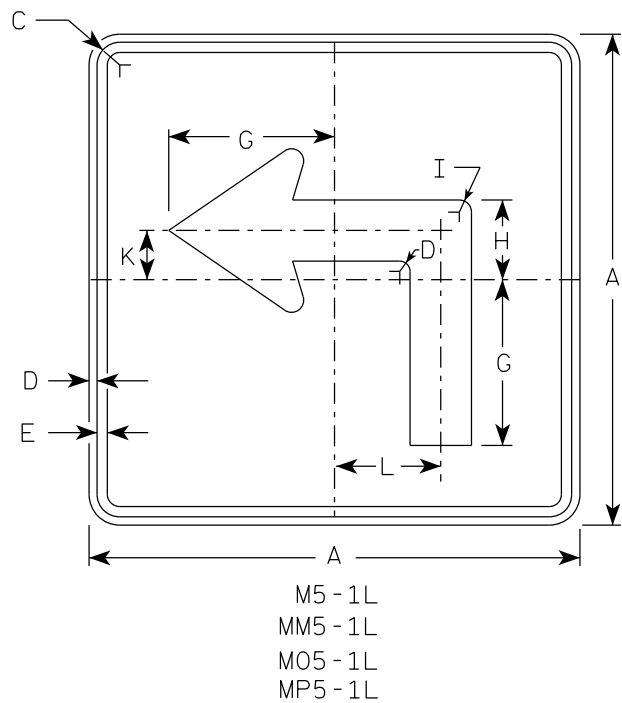
STANDARD SIGN

M4-8A

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
For State Traffic Engineer

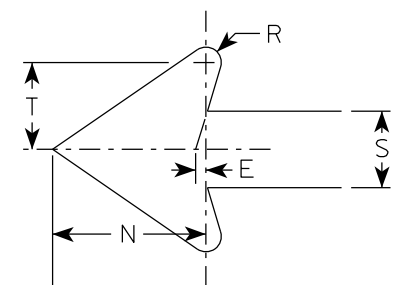
DATE 2/9/2023 PLATE NO. M4-8A.4



NOTES

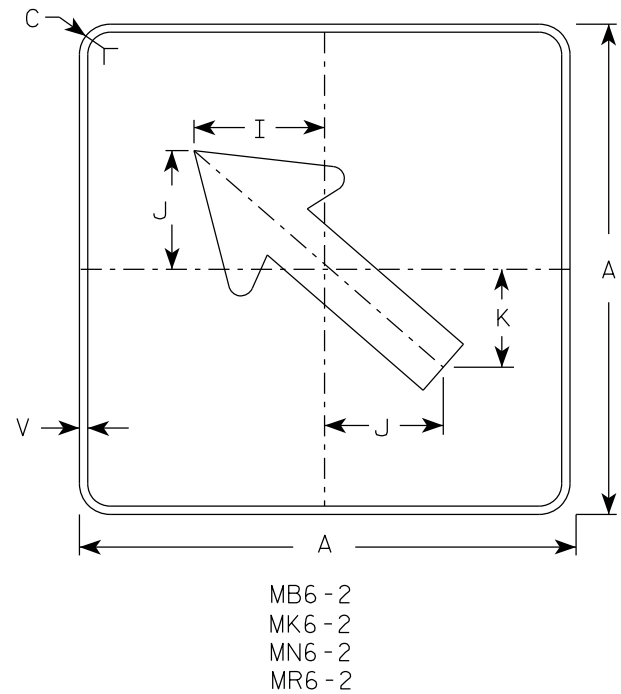
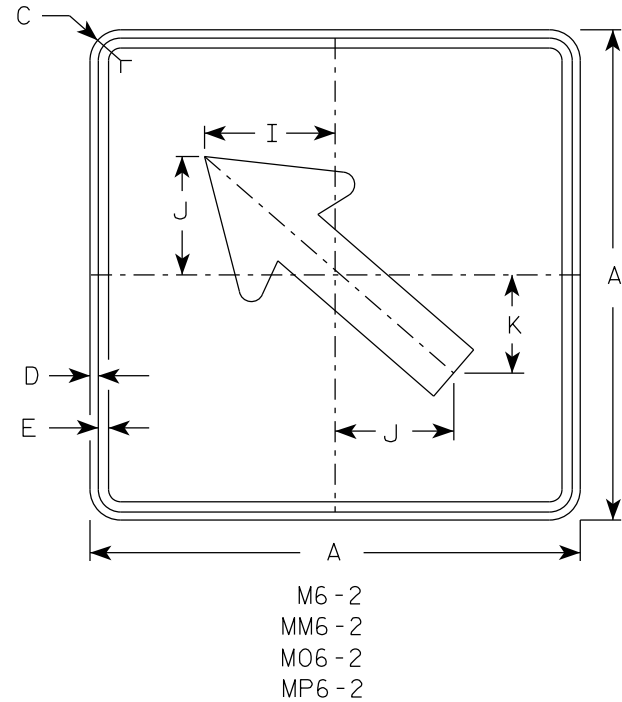
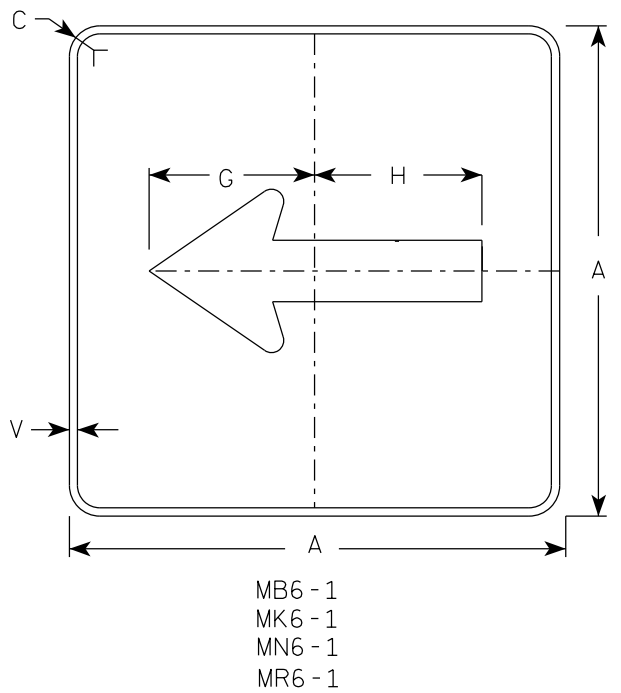
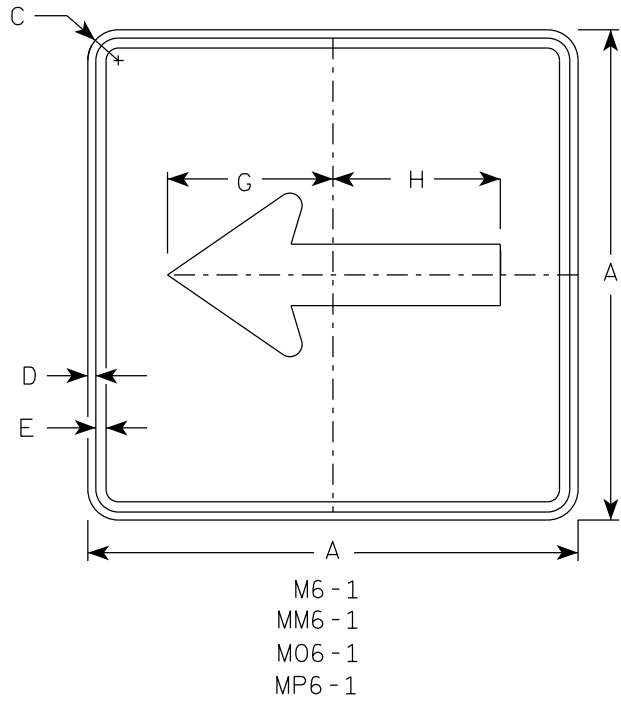
- Signs are Type II - Type H reflective except as shown
- Color:
Background - See note 4
Message - See note 4
- Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
- | | | |
|-----------|-------|---|
| M5-1 and | M5-2 | Background - White |
| | | Message - Black |
| MB5-1 and | MB5-2 | Background - Blue |
| | | Message - White |
| MK5-1 and | MK5-2 | Background - Green |
| | | Message - White |
| MM5-1 and | MM5-2 | Background - White |
| | | Message - Green |
| MN5-1 and | MN5-2 | Background - Brown |
| | | Message - White |
| M05-1 and | M05-2 | Background - Orange - Type F Reflective |
| | | Message - Black |
| MP5-1 and | MP5-2 | Background - White |
| | | Message - Blue |
| MR5-1 and | MR5-2 | Background - Brown |
| | | Message - Yellow |
- M5-1R same as M5-1L except arrow points right.
- M5-2R same as M5-2L except arrow tilts right.

ARROW DETAIL



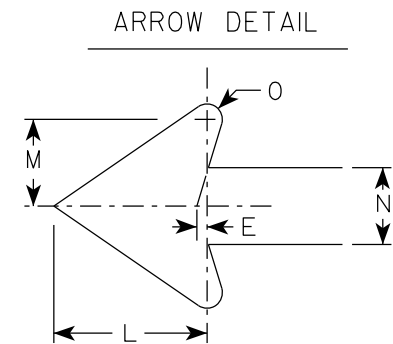
SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2S	21		1 1/2	3/8	3/8		7	3 3/8	5/8		2 1/8	4 1/2	6 3/8	5 1/4	5	2 1/2		1/2	2 5/8	3		1/2					3.06
2M	21		1 1/2	3/8	3/8		7	3 3/8	5/8		2 1/8	4 1/2	6 3/8	5 1/4	5	2 1/2		1/2	2 5/8	3		1/2					3.06
3	30		1 7/8	1/2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

PROJECT NO:	HWY:	COUNTY:	SHEET NO:	E
-------------	------	---------	-----------	---



NOTES

- Signs are Type II - Type H Reflective except as Shown
- Color:
Background - See note 4
Message - See note 4
- Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
- M6-1 and M6-2 Background - White
Message - Black
MB6-1 and MB6-2 Background - Blue
Message - White
MK6-1 and MK6-2 Background - Green
Message - White
MM6-1 and MM6-2 Background - White
Message - Green
MN6-1 and MN6-2 Background - Brown
Message - White
M06-1 and M06-2 Background - Orange - Type F Reflective
Message - Black
MP6-1 and MP6-2 Background - White
Message - Blue
MR6-1 and MR6-2 Background - Brown
Message - Yellow



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

PROJECT NO:

HWY:

COUNTY:

SHEET NO:

E

STANDARD SIGN
M6 - 1 & M6 - 2
SERIES

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

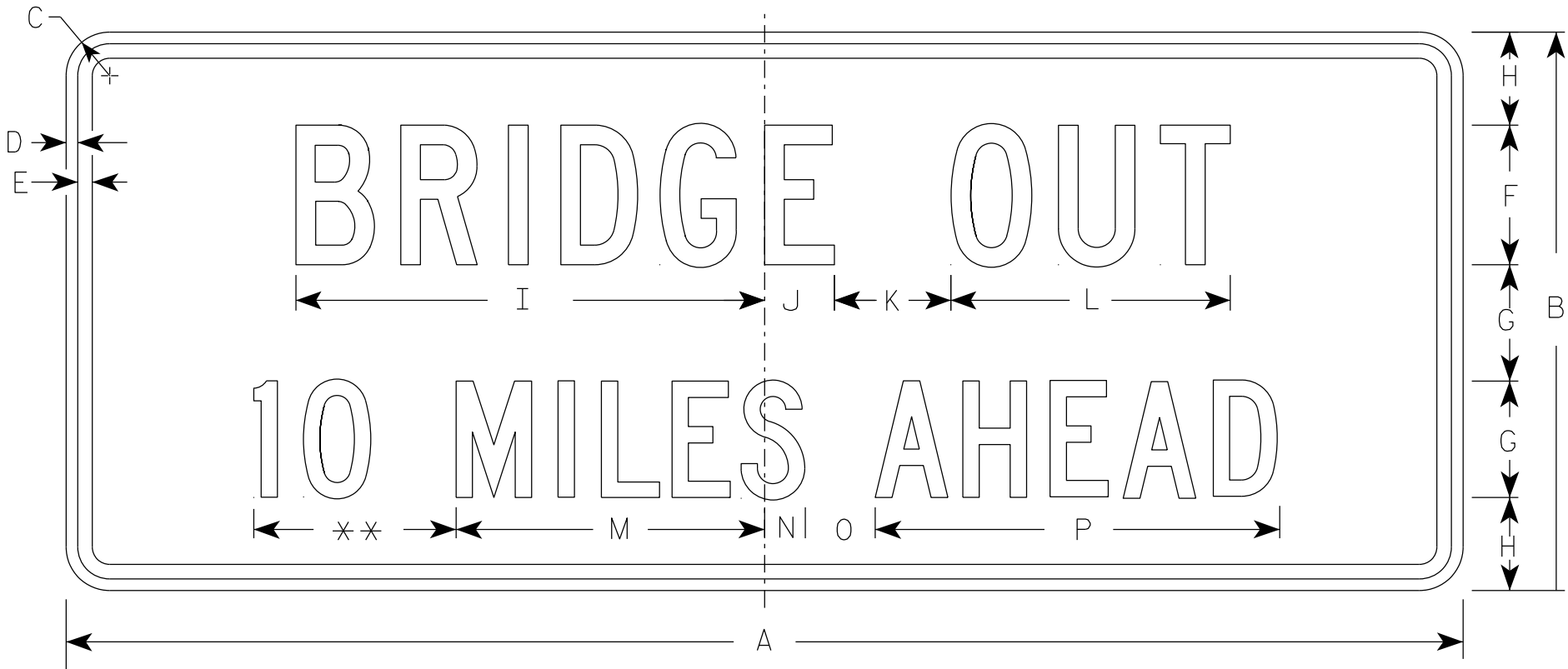
DATE 2/13/2023 PLATE NO. M6-1.16

NOTES

1. Sign is Type II - Type H Reflective
2. Color:

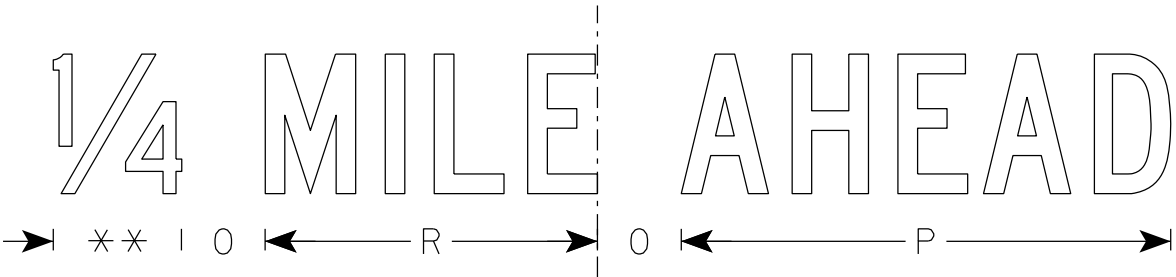
Background - White

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 1/2	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 7/8	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 7/8	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

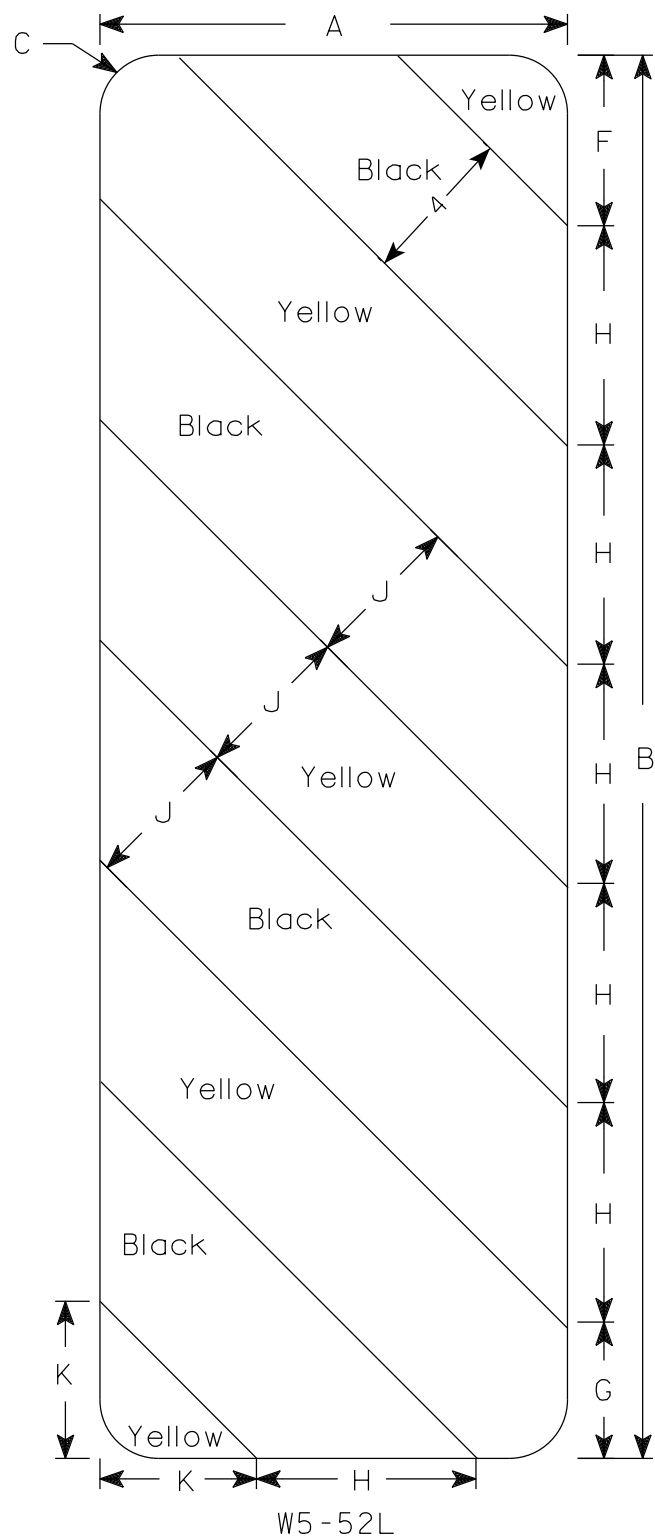
APPROVED
Matthew R. Rauch
for State Traffic Engineer

DATE 2/5/24 PLATE NO. R11-3C.4

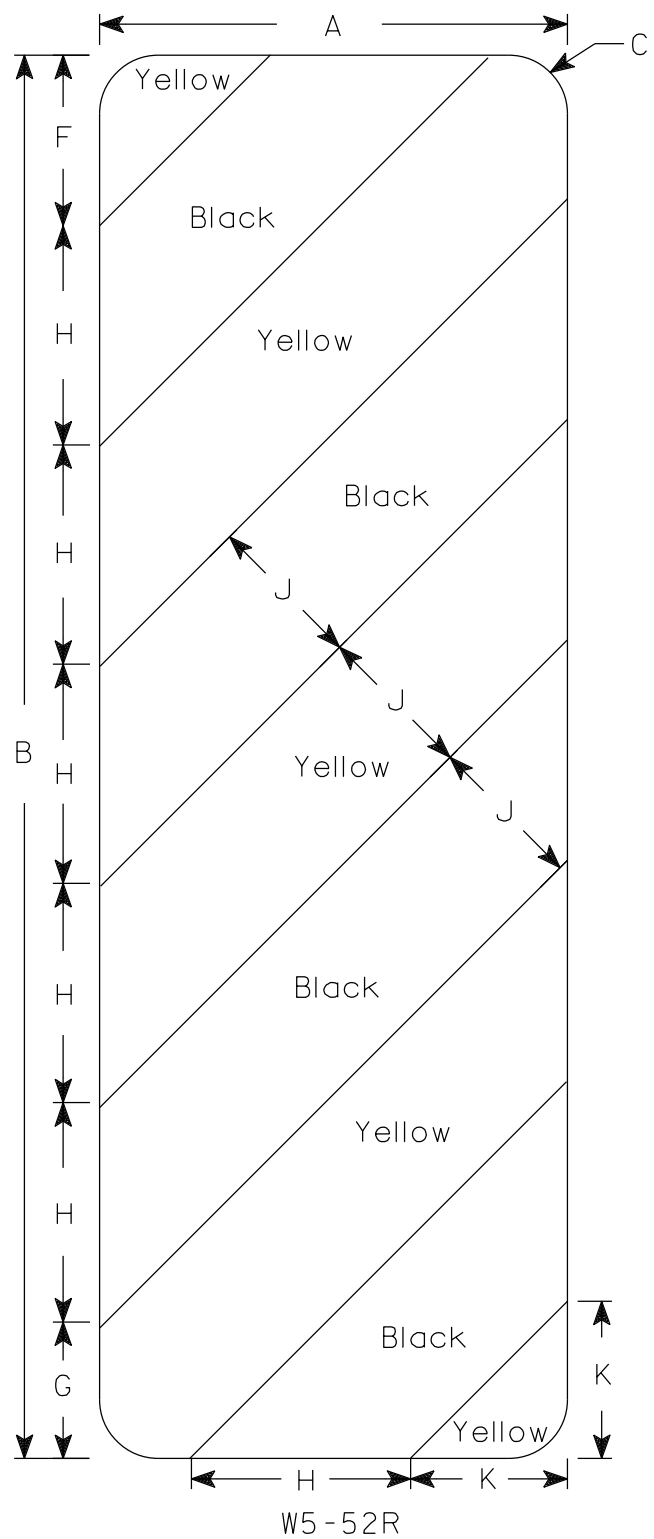
PROJECT NO:

SHEET NO:

E



W5-52L



W5-52R

NOTES

- 1. Sign is Type II - Type F Reflective
- 2. Color:
 - Background - Yellow
 - Message - Black
- 3. Alternate colors of stripes as shown.

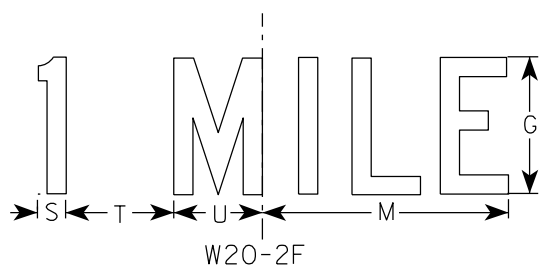
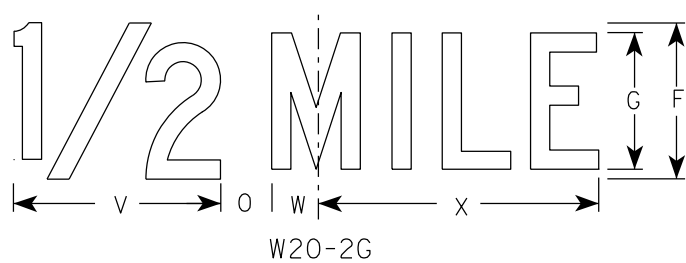
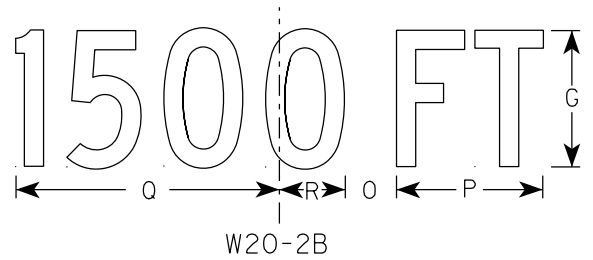
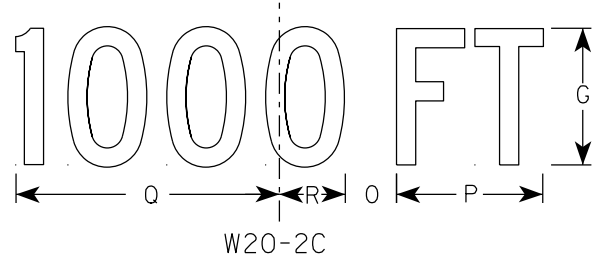
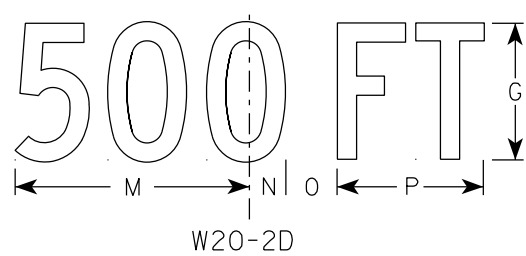
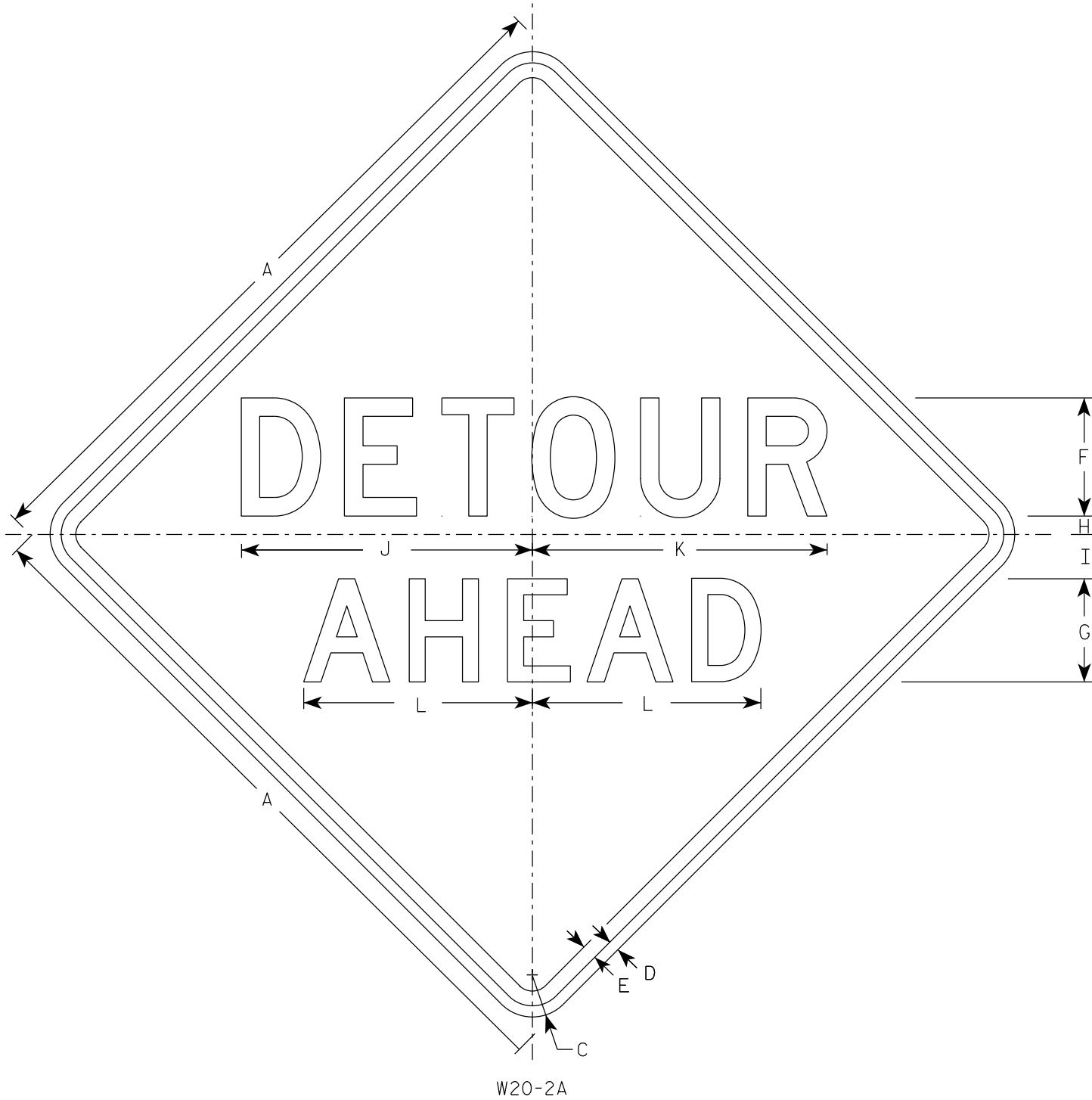
SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	v	W	X	Y	Z	Area sq. ft.
1																											
2S	12	36	1 1/2			4 3/8	3 1/2	5 5/8	45°	4	4																3.0
2M	12	36	1 1/2			4 3/8	3 1/2	5 5/8	45°	4	4																3.0
3	18	54	1 1/2			6	5 1/2	8 1/2	45°	6	6 9/16																6.75
4																											
5																											

STANDARD SIGN
W5-52L & W5-52R

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
For State Traffic Engineer

DATE 3/4/2024 PLATE NO. W5-52.10



NOTES

- Sign is Type II - Type F Reflective
- Color:
Background - Orange
Message - Black
- Message Series - See note 5
- 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.
- Line 1 is Series D.
Line 2 is Series D for AHEAD and Series C for all other distances.

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	v	w	X	Y	Z	Area sq. ft.
1	36		2 1/4	5/8	3/4	6	5	1	2 1/4	14 3/4	15	11 5/8	9	1 3/8	1 7/8	5 5/8	10 1/8	2 1/2	1 1/8	4 1/2	3 1/2	8	1 3/4	10 3/4			9.0
2S	48		3	3/4	1	8	7	1 1/4	3	19 3/4	20	15 1/2	12	1 7/8	2 5/8	7 1/2	13 1/2	3 3/8	1 1/2	6	4 5/8	10 5/8	2 3/8	14 3/8			16.0
2M	48		3	3/4	1	8	7	1 1/4	3	19 3/4	20	15 1/2	12	1 7/8	2 5/8	7 1/2	13 1/2	3 3/8	1 1/2	6	4 5/8	10 5/8	2 3/8	14 3/8			16.0
3	48		3	3/4	1	8	7	1 1/4	3	19 3/4	20	15 1/2	12	1 7/8	2 5/8	7 1/2	13 1/2	3 3/8	1 1/2	6	4 5/8	10 5/8	2 3/8	14 3/8			16.0
4	48		3	3/4	1	8	7	1 1/4	3	19 3/4	20	15 1/2	12	1 7/8	2 5/8	7 1/2	13 1/2	3 3/8	1 1/2	6	4 5/8	10 5/8	2 3/8	14 3/8			16.0
5	48		3	3/4	1	8	7	1 1/4	3	19 3/4	20	15 1/2	12	1 7/8	2 5/8	7 1/2	13 1/2	3 3/8	1 1/2	6	4 5/8	10 5/8	2 3/8	14 3/8			16.0

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

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
For State Traffic Engineer

DATE 1/10/2024 PLATE NO. W20-2.7

PROJECT NO:

HWY:

COUNTY:

SHEET NO:

E

GENERAL NOTES

DRAWINGS SHALL NOT BE SCALED.

BAR STEEL REINFORCEMENT SHALL BE EMBEDDED 2" CLEAR UNLESS OTHERWISE SHOWN OR NOTED.

THE FIRST OR FIRST TWO DIGITS OF THE BAR MARK SIGNIFIES THE BAR SIZE.

BEVEL EXPOSED EDGES OF CONCRETE $\frac{3}{4}$ " UNLESS OTHERWISE NOTED.

THE UPPER LIMITS OF "EXCAVATION FOR STRUCTURES B-31-113" SHALL BE THE EXISTING GROUNDLINE.

AT THE BACK FACE OF ABUTMENT ALL VOLUME WHICH CANNOT BE PLACED BEFORE ABUTMENT CONSTRUCTION AND IS NOT OCCUPIED BY THE NEW STRUCTURE SHALL BE BACKFILLED WITH STRUCTURE BACKFILL TYPE A.

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.

THE QUANTITY FOR BACKFILL STRUCTURE IS CALCULATED BASED ON THE DETAIL SHOWN IN THE PLANS.

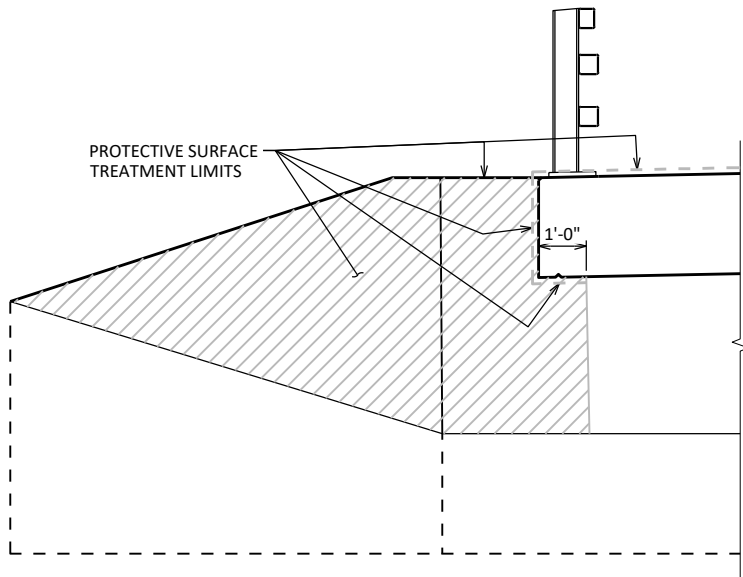
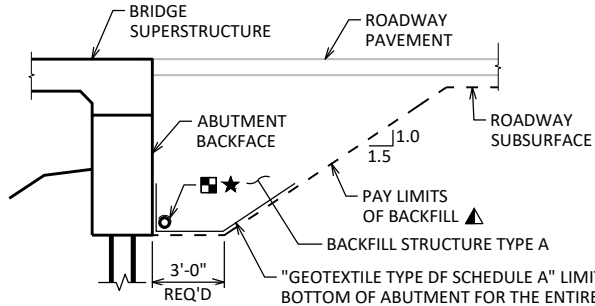
THE SLOPE OF THE FILL IN FRONT OF THE ABUTMENTS SHALL BE COVERED WITH HEAVY RIPRAP AND GEOTEXTILE TYPE HR TO THE EXTENT SHOWN ON SHEET 1 AND THE ABUTMENT DETAILS.

AT ABUTMENTS, CONCRETE POURED UNDER WATER WILL BE ALLOWED AND SHALL BE DONE IN ACCORDANCE WITH SECTION 502.3.5.3 OF THE STANDARD SPECIFICATIONS.

SLAB FALSEWORK SHALL BE SUPPORTED ON PILES OR THE SUBSTRUCTURE UNLESS AN ALTERNATE METHOD IS APPROVED BY THE ENGINEER.

PROTECTIVE SURFACE TREATMENT TO BE APPLIED TO ENTIRE EXPOSED TOP OF SLAB, INCLUDING THE SLAB EDGE AND 1'-0" UNDER THE SLAB, THE TOP AND EXTERIOR EXPOSED FACE OF WINGS AND FRONT FACE OF ABUTMENT TO 1'-0" PAST THE EDGE OF SLAB.

THE EXISTING SUBSTRUCTURE LOCATIONS ARE BASED ON SURVEY AND EXISTING PLANS. REMOVE EXISTING SUBSTRUCTURE AS NEEDED TO BUILD NEW SUBSTRUCTURE. COST OF SUBSTRUCTURE REMOVAL IS CONSIDERED INCIDENTAL TO "REMOVING STRUCTURE OVER WATERWAY MINIMAL DEBRIS B-31-893" BID ITEM.

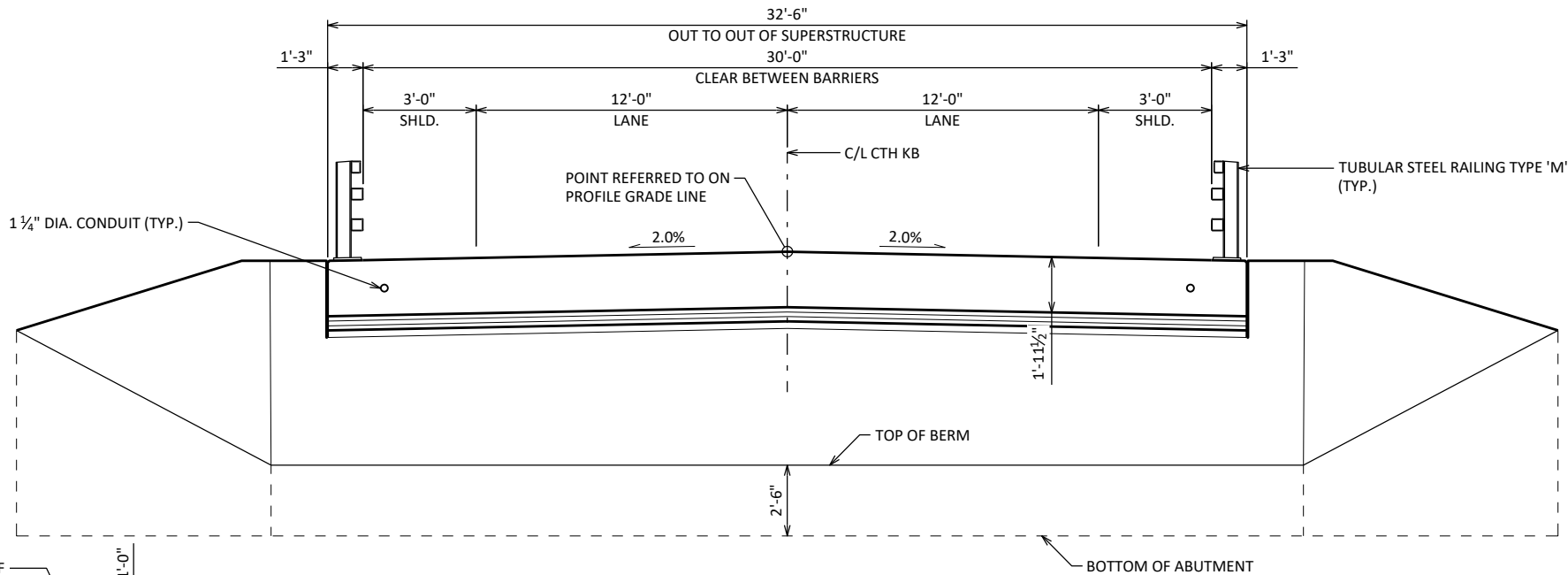
PROTECTIVE SURFACE
TREATMENT DETAILS

TYPICAL SECTION THRU ABUTMENT

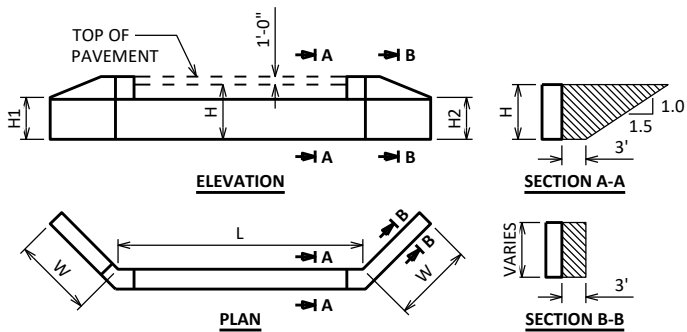
▲ BACKFILL PAY LIMITS. BACKFILL BEYOND PAY LIMITS SHALL BE INCIDENTAL TO EXCAVATION FOR STRUCTURES. LIMITS OF EXCAVATION SHALL BE DETERMINED BY THE CONTRACTOR.

■ PIPE UNDERDRAIN WRAPPED (6-INCH). SLOPE 0.5% MIN. TO SUITABLE DRAINAGE. ATTACH RODENT SHIELD AT ENDS OF PIPE UNDERDRAIN.

★ FOR BOTTOM OF ABUTMENTS LOCATED BELOW NORMAL WATER, PLACE DRAIN ABOVE NORMAL WATER. SEE BRIDGE MANUAL 12.6.1 FOR ADDITIONAL GUIDANCE.



CROSS SECTION THRU ROADWAY

LOOKING UPSTATION
(PILING NOT SHOWN FOR CLARITY)

ABUTMENT BACKFILL DIAGRAM

L = ABUTMENT BODY LENGTH AT BACKFACE (FT)
H = AVERAGE ABUTMENT FILL HEIGHT (FT)
H1 = WING 1 HEIGHT AT TIP (FT)
H2 = WING 2 HEIGHT AT TIP (FT)
W = WING LENGTH (FT)
EF = EXPANSION FACTOR (1.20 FOR CY BID ITEMS AND 1.00 FOR TON BID ITEMS)
 $V_{CF} = (L)(3.0')(H) + (L)(0.5)(1.5H)(H) + (3')(0.5)(H1+H2+H+H)(W)$
 $V_{CY} = V_{CF}(EF)/27$
 $V_{TON} = V_{CY}(2.0)$

TOTAL ESTIMATED QUANTITIES

BID ITEM NUMBER	BID ITEMS	UNIT	SUPER	W. ABUT.	E. ABUT.	TOTALS
203.0260	REMOVING STRUCTURE OVER WATERWAY WITH MINIMAL DEBRIS B-31-893	EACH	---	---	---	1
206.1001	EXCAVATION FOR STRUCTURES BRIDGES B-31-113	EACH	---	---	---	1
210.1500	BACKFILL STRUCTURE TYPE A	TON	---	264	264	528
502.0100	CONCRETE MASONRY BRIDGES	CY	124	38	38	200
502.3200	PROTECTIVE SURFACE TREATMENT	SY	212	19	19	250
505.0400	BAR STEEL REINFORCEMENT HS STRUCTURES	LB	---	2,470	2470	4,940
505.0600	BAR STEEL REINFORCEMENT HS COATED STRUCTURES	LB	27,230	1,590	1590	30,410
513.4061	RAILING TUBULAR TYPE M	LF	105	---	---	105
516.0500	RUBBERIZED MEMBRANE WATERPROOFING	SY	---	6	6	12
550.0500	PILE POINTS	EACH	---	7	7	14
550.1100	PILING STEEL HP 10-INCH X 42 LB	LF	---	350	350	700
606.0300	RIPRAP HEAVY	CY	---	135	140	275
612.0406	PIPE UNDERDRAIN WRAPPED 6-INCH	LF	---	75	75	150
645.0111	GEOTEXTILE TYPE DF SCHEDULE A	SY	---	48	48	96
645.0120	GEOTEXTILE TYPE HR	SY	---	240	250	490
652.0215	CONDUIT RIGID NONMETALLIC SCHEDULE 40 1 1/4-INCH	LF	143	---	---	143
SPV.0090.01	FLASHING STAINLESS STEEL	LF	91	---	---	91
SPV.0090.02	REMOVING EXISTING TIMBER PILING	LF	---	80	144	244
SPV.0195.01	SELECT CRUSHED MATERIAL FOR TRAVEL CORRIDOR	TON	---	11	11	22
	NON-BID ITEMS					
	FILLER	SIZE	---	---	---	1/2", 3/4"

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-31-113			
		DRAWN BY JMC	PLANS CK'D
CROSS SECTION & QUANTITIES		SHEET 2 OF 13	



THE FLASHING IS TO BE A CONSTANT HEIGHT BASED ON THE THINNEST SLAB DEPTH OVER THE BRIDGE LENGTH.



THE RODENT SHIELD SHALL BE A 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 STAINLESS STEEL SHEET METAL SCREWS.

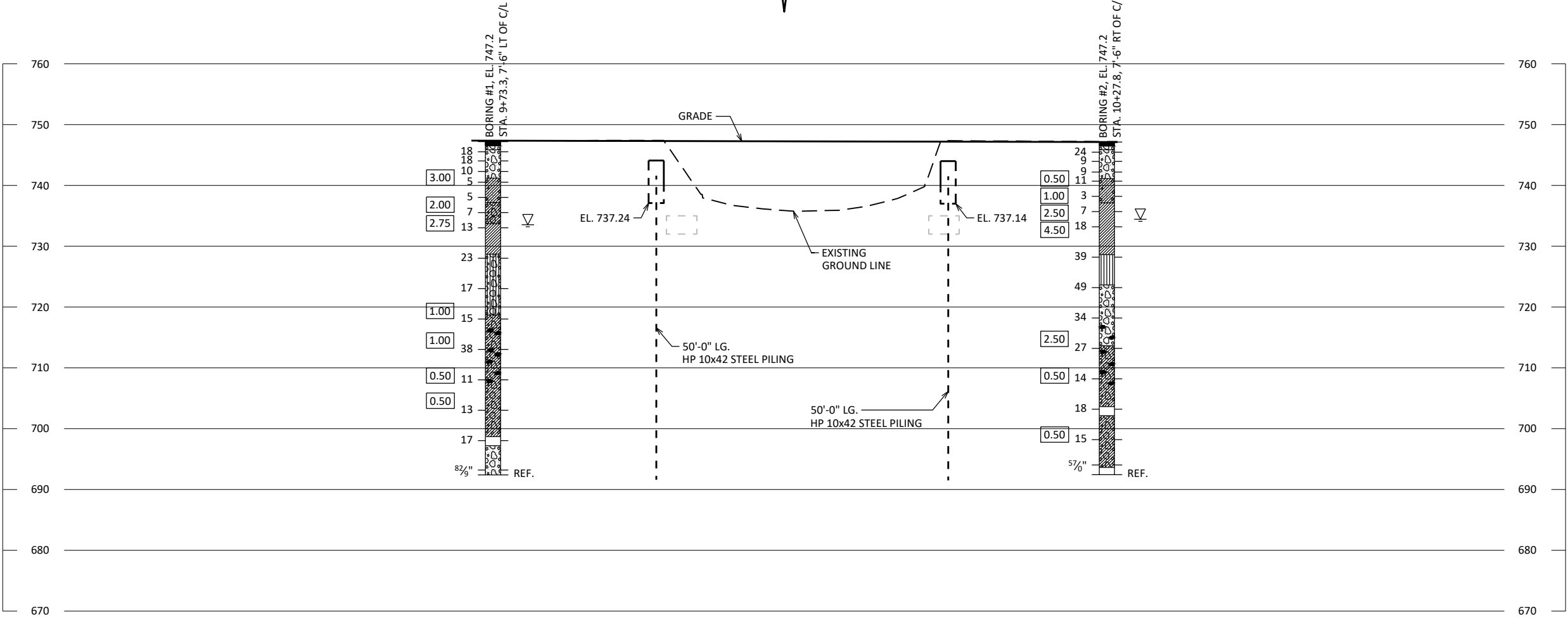
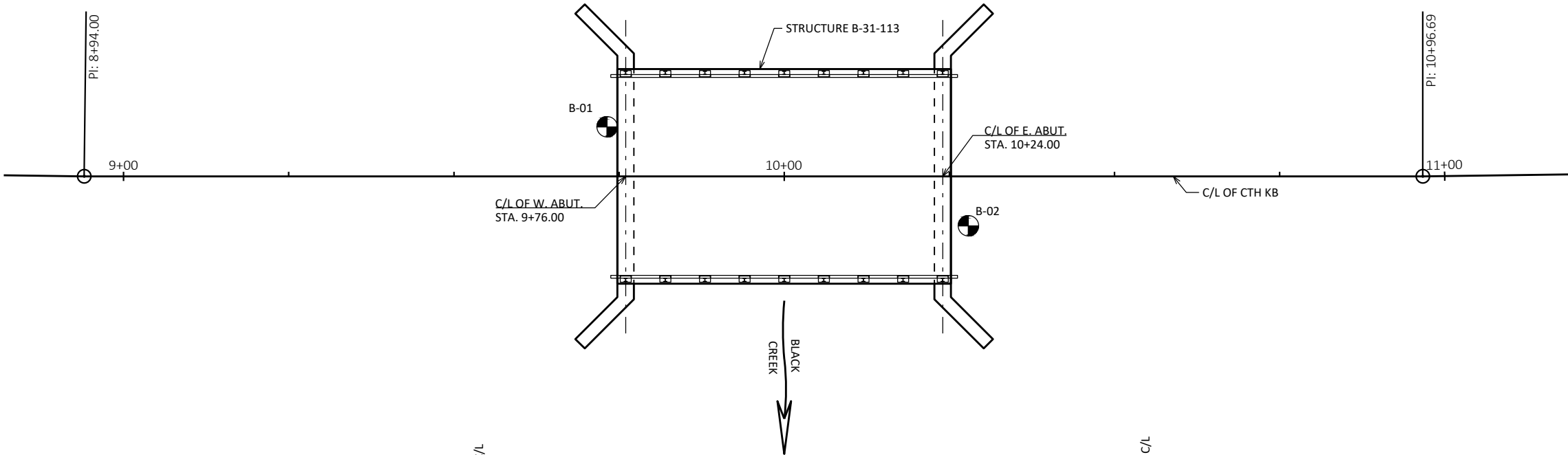


'HP' PILE DETAILS

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-31-113			
		DRAWN BY	PLANS CK'D
STRUCTURE DETAILS		SHEET 3 OF 13	

SCALE =

BORING #	DATE COMPLETED	NORTHING (Y)	EASTING (X)
B-01	JUNE 11, 2024	397192.16	211745.54
B-02	JUNE 12, 2024	397177.52	211800.14
BORINGS COMPLETED BY: ECS MIDWEST, LLC			
REPORT COMPLETED BY: ECS MIDWEST, LLC			
ALL COORDINATES REFERENCED TO WCCS NAD 83(91) KEWAUNEE COUNTY			



STATE PROJECT NUMBER

4386-00-01

MATERIAL SYMBOLS

ASPHALT

CONCRETE

SAND

BOULDERS OR COBBLES

SHALE

TOPSOIL

FILL

CLAY

LIMESTONE

SANDSTONE

PEAT

GRAVEL

SILT

BEDROCK (UNKNOWN)

IGNEOUS/META

LEGEND OF BORING

BORING #/EL. STA./OFFSET

ST

0.25

17

F-C

COBBLE OR BOULDER

WEATHERED LIMESTONE

CORE RUN #1 - 24'-29'

REC=80%, RQD=72%

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

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

GROUND WATER ELEVATION

▽ AT TIME OF DRILLING

▼ END OF DRILLING

▼ AFTER DRILLING

ABBREVIATIONS

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

SUBSURFACE EXPLORATION FOR FOUNDATION DESIGN AND BIDDERS INFORMATION

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

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-31-113

DRAWN BY JMC

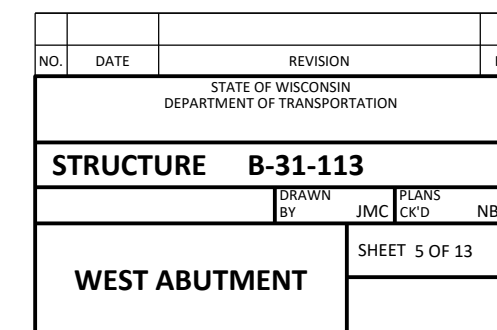
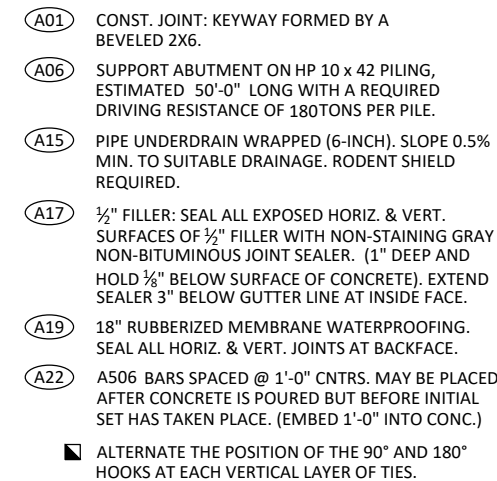
PLANS CK'D XXX

SUBSTRUCTURE EXPLORATION

SHEET 4 OF 13

8

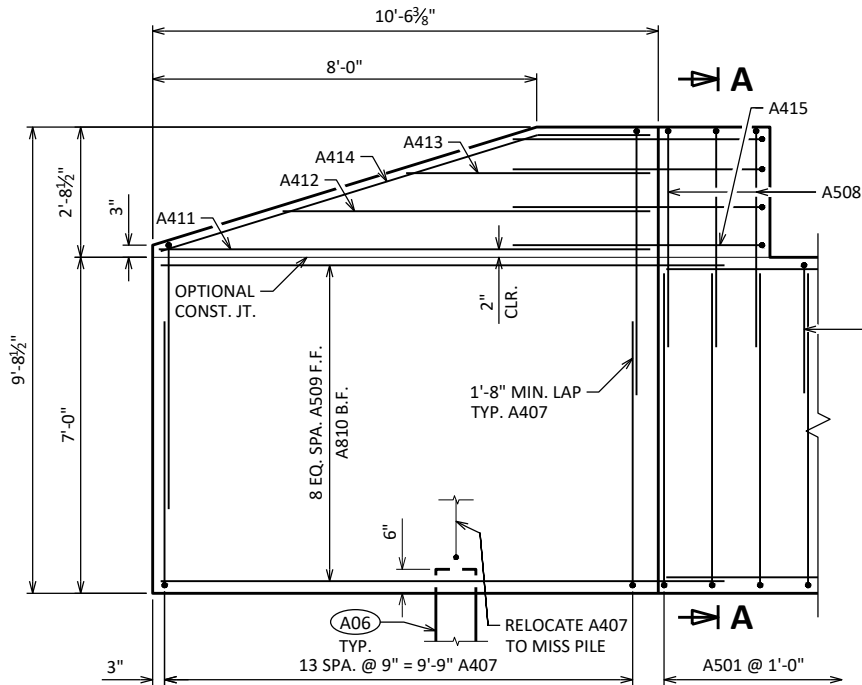
8



BILL OF BARS

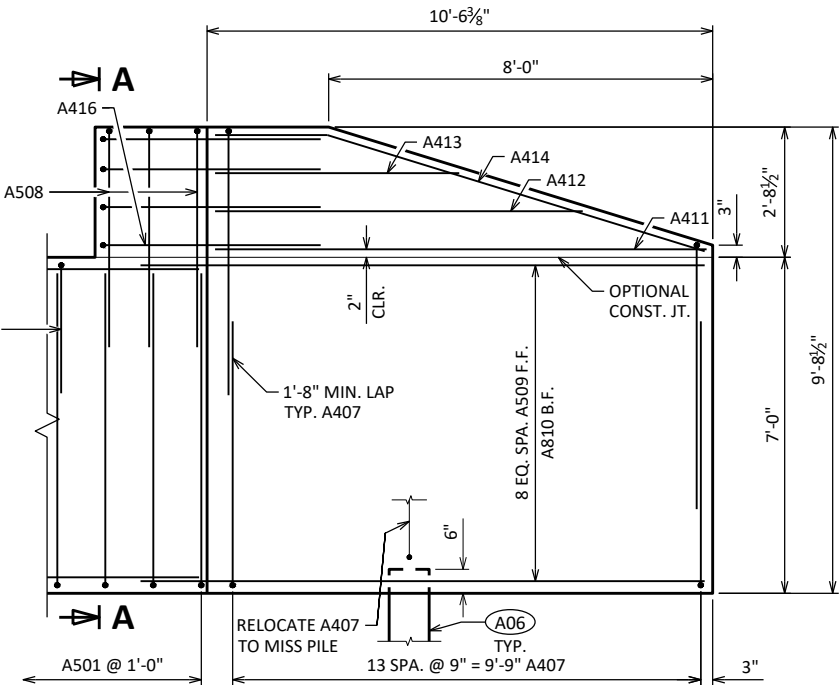
NOTE: THE FIRST OR FIRST TWO DIGITS OF THE BAR MARK SIGNIFIES THE BAR SIZE.

BAR MARK	COAT	NO. REQ'D.	LENGTH	BENT	BAR SERIES	LOCATION
A501		76	8'-0"	X		ABUT BODY STIRRUPS
A502		32	7'-3"	X		ABUT BODY STIRRUPS - TOP U-BAR
A503		9	37'-3"			ABUT BODY HORIZ. - F.F.
A804		18	24'-7"	X		ABUT BODY HORIZ. - B.F.
A405		30	3'-0"	X		ABUT BODY TIE BARS
A506	X	31	2'-0"			ABUT BODY DOWEL BARS
A407	X	56	12'-6"	X		WING STIRRUPS
A508	X	6	10'-11"	X		WING CORNER STIRRUPS
A509	X	18	11'-9"	X		WING LOWER HORIZ. - F.F.
A810	X	18	13'-3"	X		WING LOWER HORIZ. - B.F.
A411	X	4	10'-2"			WING UPPER HORIZ.
A412	X	4	7'-7"			WING UPPER HORIZ.
A413	X	4	5'-0"			WING UPPER HORIZ.
A414	X	4	9'-9"	X		WING TOP HORIZ.
A415	X	4	8'-3"	X		WING 1 UPPER HORIZ. CORNER
A416	X	4	8'-4"	X		WING 2 UPPER HORIZ. CORNER



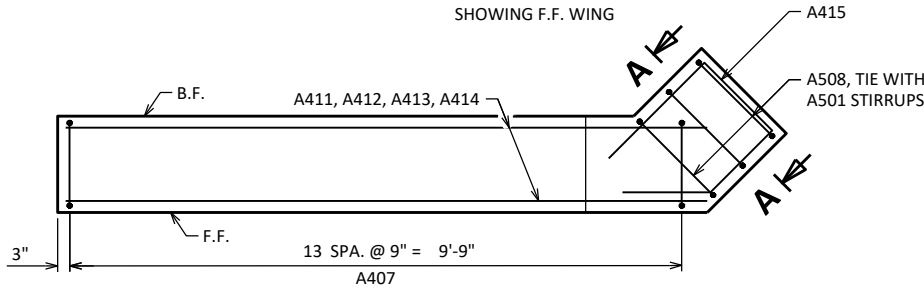
WING 1 ELEVATION

SHOWING F.F. WING



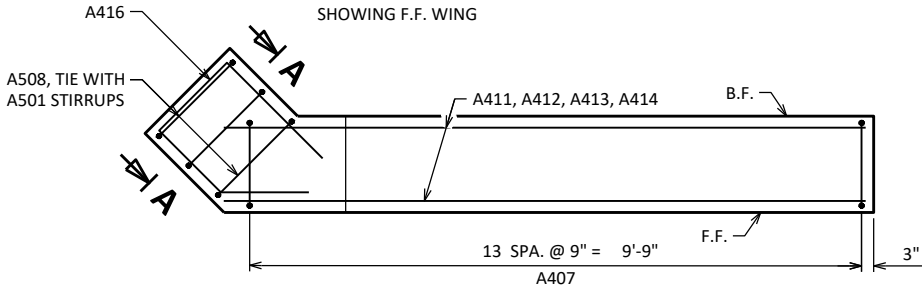
WING 2 ELEVATION

SHOWING F.F. WING



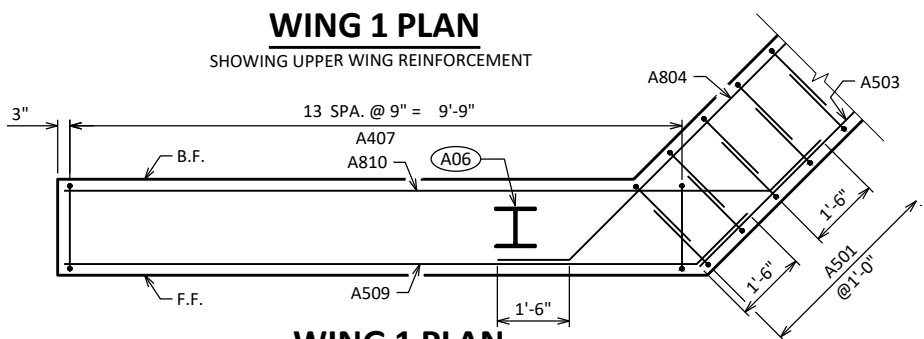
WING 1 PLAN

SHOWING UPPER WING REINFORCEMENT



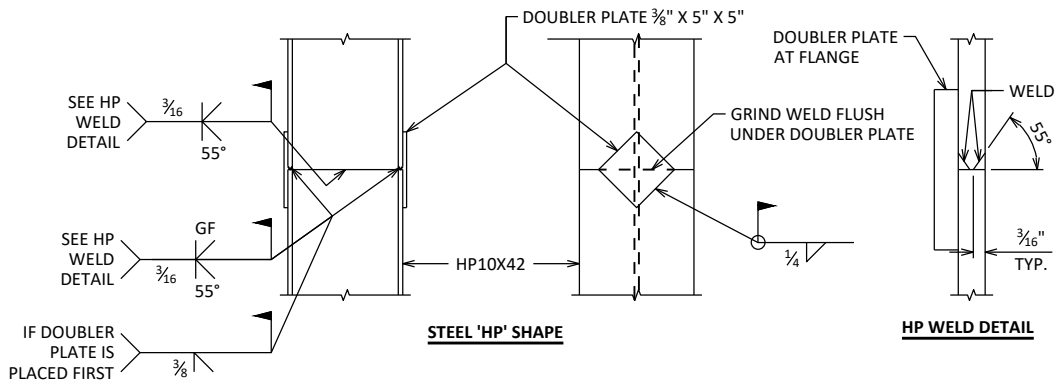
WING 2 PLAN

SHOWING UPPER WING REINFORCEMENT



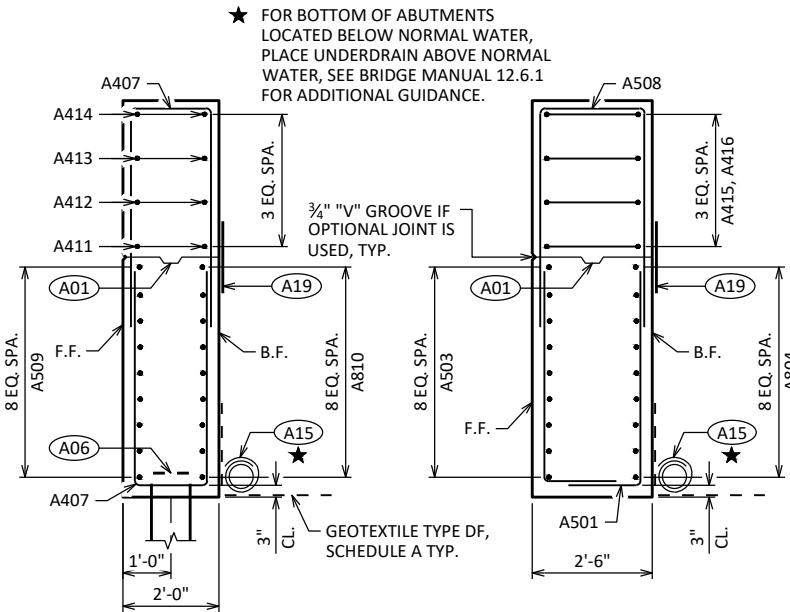
WING 1 PLAN

SHOWING LOWER WING REINFORCEMENT
WING 2 SIMILAR



'HP' PILE DETAILS

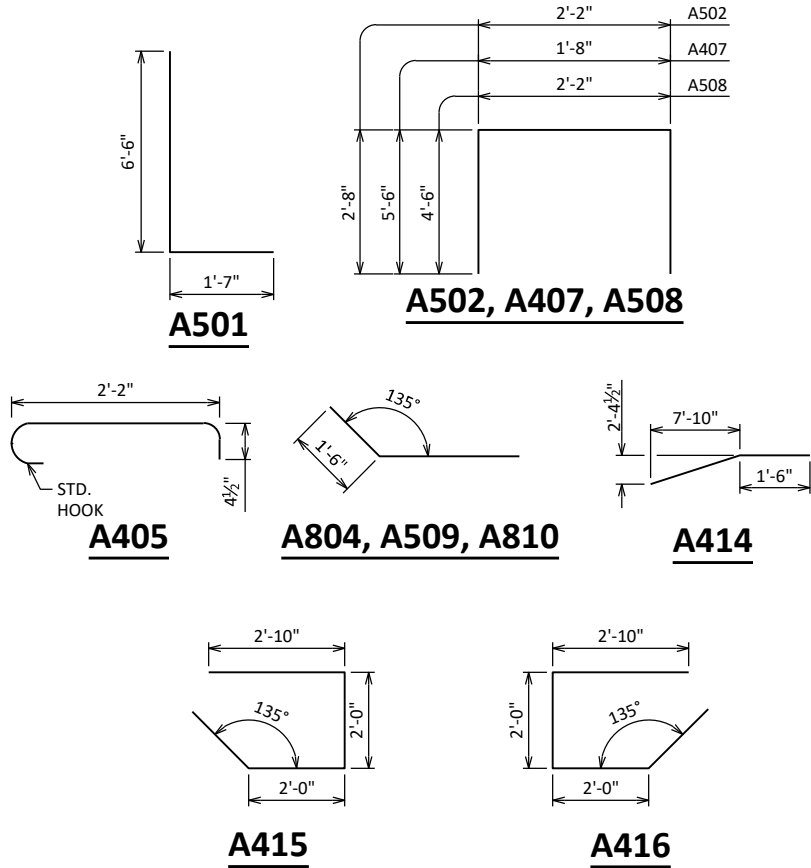
THIS SHEET WAS CREATED BY THE WISDOT BUREAU OF STRUCTURES STANDARD BRIDGE DESIGN TOOL VERSION 1.1.0.0



SECTION THRU WING 1

TYPICAL BOTH WINGS

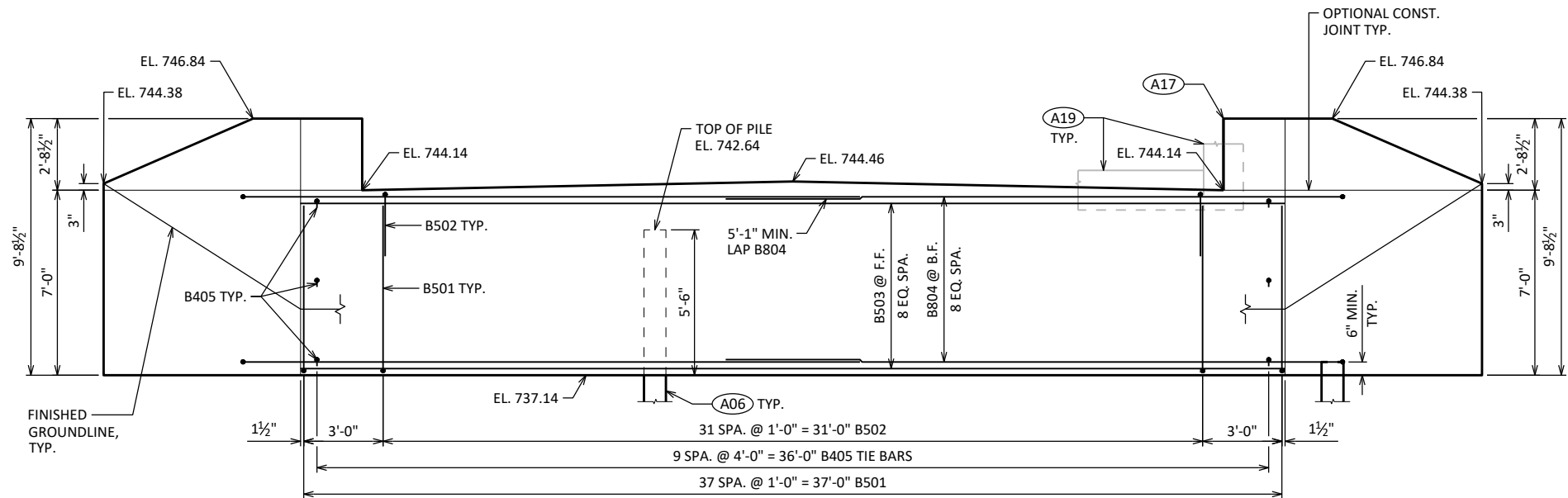
SECTION A-A



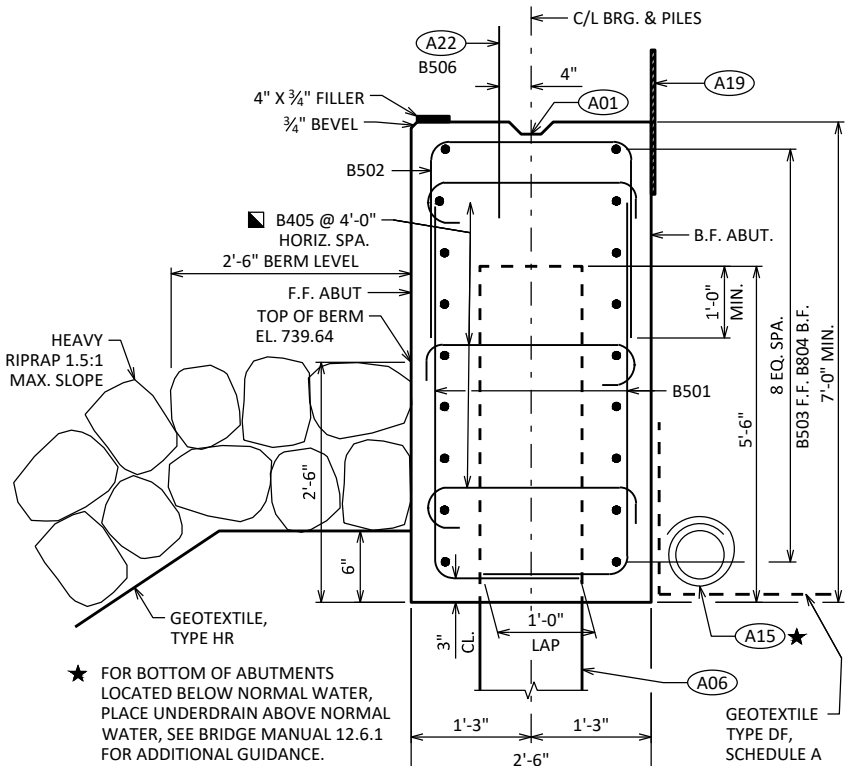
- A01 OPTIONAL CONST. JOINT: KEYWAY FORMED BY A BEVELED 2X6. PROVIDE 3/4" "V" GROOVE ON F.F. OF WINGWALL IF JOINT IS USED.
- A06 SUPPORT ABUTMENT ON HP 10 x 42 PILING, ESTIMATED 50'-0" LONG WITH A REQUIRED DRIVING RESISTANCE OF 180TONS PER PILE.
- A15 PIPE UNDERDRAIN WRAPPED (6-INCH). SLOPE 0.5% MIN. TO SUITABLE DRAINAGE. RODENT SHIELD REQUIRED.
- A19 18" RUBBERIZED MEMBRANE WATERPROOFING, ONLY IF OPTIONAL CONSTRUCTION JOINT IS USED. COST INCIDENTAL TO BID ITEM "CONCRETE MASONRY STRUCTURES".

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-31-113			
DRAWN BY JMC		PLANS CK'D NBE	
WEST ABUTMENT DETAILS		SHEET 6 OF 13	

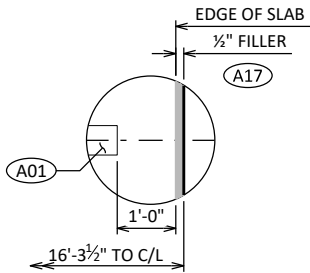
SCALE =



ELEVATION
LOOKING UPSTATION

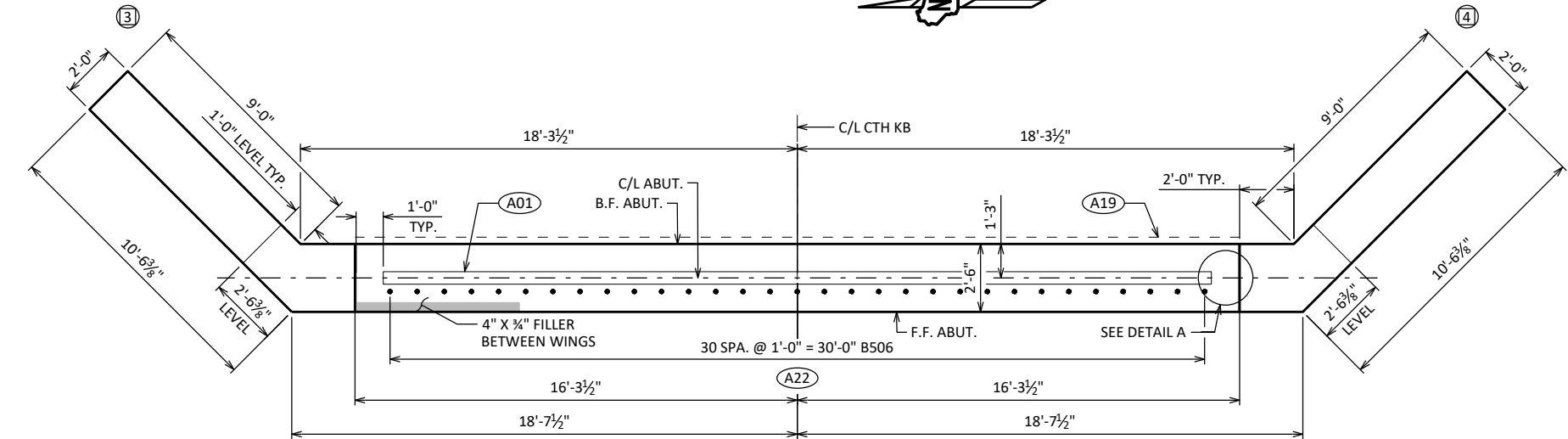


SECTION THRU BODY

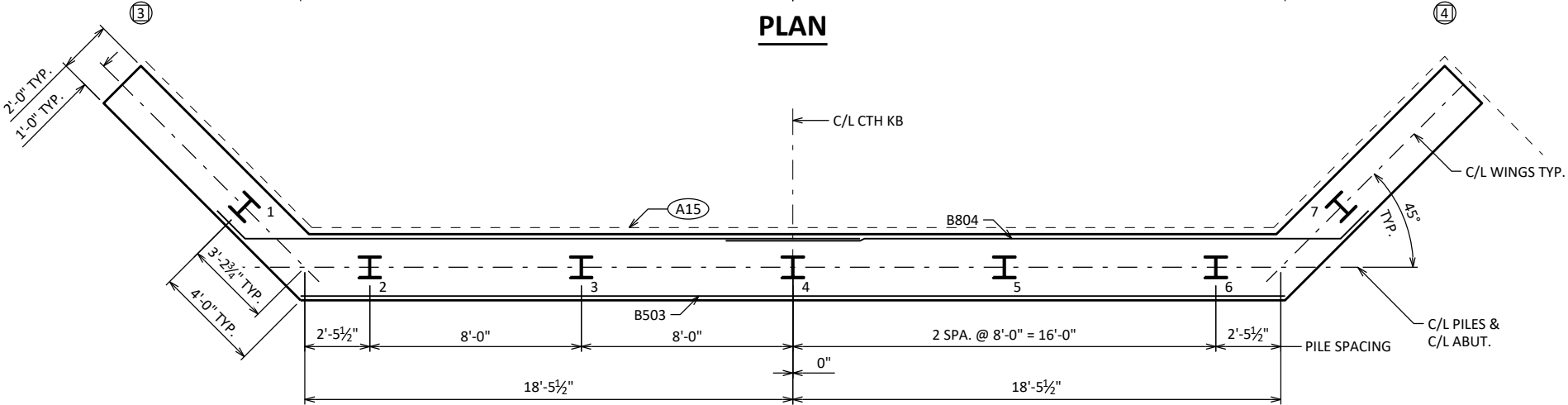


DETAIL A

- (A01) CONST. JOINT: KEYWAY FORMED BY A BEVELED 2X6.
 - (A06) SUPPORT ABUTMENT ON HP 10 x 42 PILING, ESTIMATED 50'-0" LONG WITH A REQUIRED DRIVING RESISTANCE OF 180TONS PER PILE.
 - (A15) PIPE UNDERDRAIN WRAPPED (6-INCH). SLOPE 0.5% MIN. TO SUITABLE DRAINAGE. RODENT SHIELD REQUIRED.
 - (A17) 1/2" FILLER: SEAL ALL EXPOSED HORIZ. & VERT. SURFACES OF 1/2" FILLER WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER. (1" DEEP AND HOLD 3/8" BELOW SURFACE OF CONCRETE). EXTEND SEALER 3" BELOW GUTTER LINE AT INSIDE FACE.
 - (A19) 18" RUBBERIZED MEMBRANE WATERPROOFING. SEAL ALL HORIZ. & VERT. JOINTS AT BACKFACE.
 - (A22) B506 BARS SPACED @ 1'-0" CNTRS. MAY BE PLACED AFTER CONCRETE IS POURED BUT BEFORE INITIAL SET HAS TAKEN PLACE. (EMBED 1'-0" INTO CONC.)
- ALTERNATE THE POSITION OF THE 90° AND 180° HOOKS AT EACH VERTICAL LAYER OF TIES.



PLAN



PILE PLAN

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-31-113			
DRAWN BY JMC		PLANS CK'D NBE	
EAST ABUTMENT		SHEET 7 OF 13	

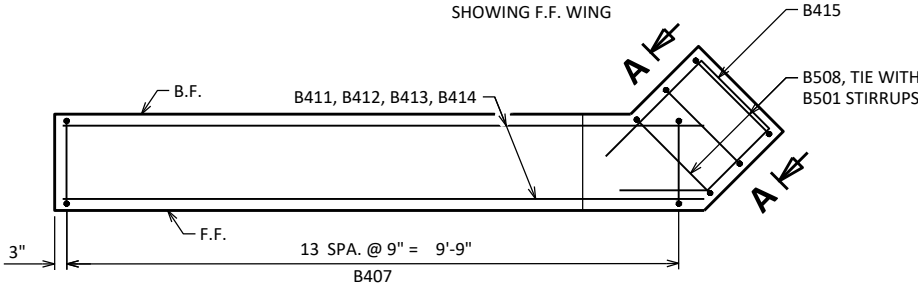
BILL OF BARS

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

BAR MARK	COAT	NO. REQ'D.	LENGTH	BENT	BAR SERIES	LOCATION
B501		76	8'-0"	X		ABUT BODY STIRRUPS
B502		32	7'-3"	X		ABUT BODY STIRRUPS - TOP U-BAR
B503		9	37'-3"			ABUT BODY HORIZ. - F.F.
B804		18	24'-7"	X		ABUT BODY HORIZ. - B.F.
B405		30	3'-0"	X		ABUT BODY TIE BARS
B506	X	31	2'-0"			ABUT BODY DOWEL BARS
B407	X	56	12'-6"	X		WING STIRRUPS
B508	X	6	10'-11"	X		WING CORNER STIRRUPS
B509	X	18	11'-9"	X		WING LOWER HORIZ. - F.F.
B810	X	18	13'-3"	X		WING LOWER HORIZ. - B.F.
B411	X	4	10'-2"			WING UPPER HORIZ.
B412	X	4	7'-7"			WING UPPER HORIZ.
B413	X	4	5'-0"			WING UPPER HORIZ.
B414	X	4	9'-9"	X		WING TOP HORIZ.
B415	X	4	8'-3"	X		WING 3 UPPER HORIZ. CORNER
B416	X	4	8'-4"	X		WING 4 UPPER HORIZ. CORNER

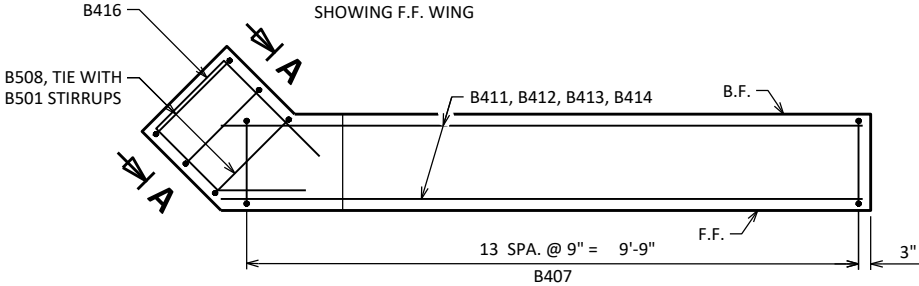
WING 3 ELEVATION

SHOWING F.F. WING



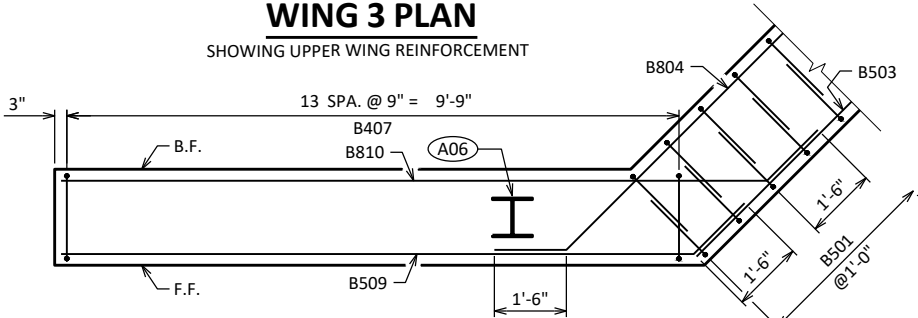
WING 4 ELEVATION

SHOWING F.F. WING



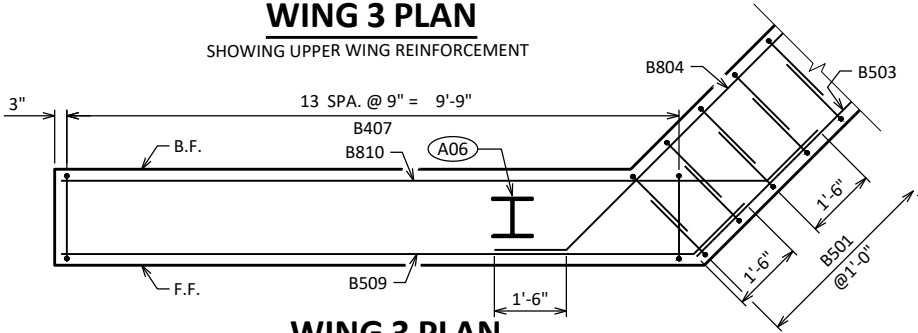
WING 3 PLAN

SHOWING UPPER WING REINFORCEMENT

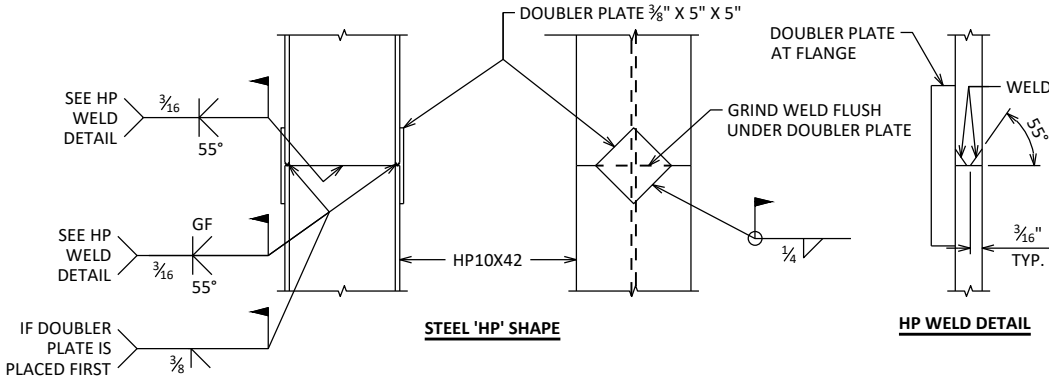


WING 3 PLAN

SHOWING LOWER WING REINFORCEMENT
WING 4 SIMILAR

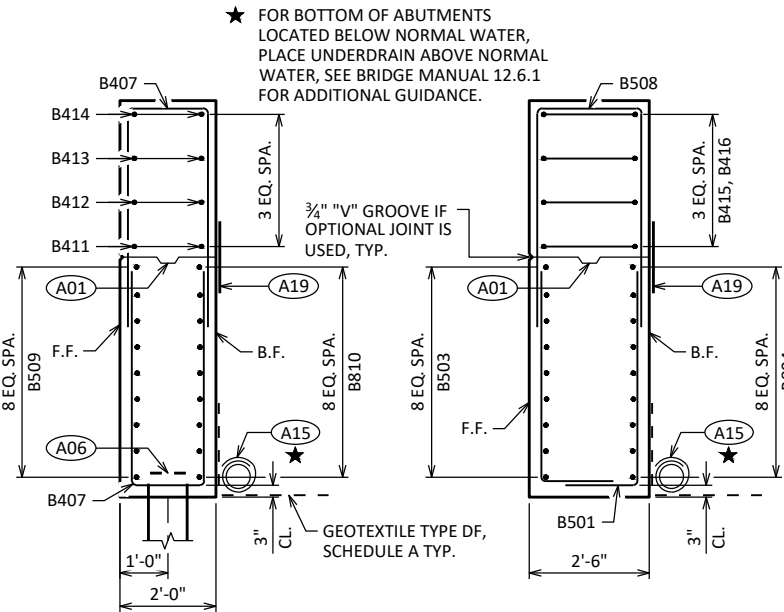


'HP' PILE DETAILS

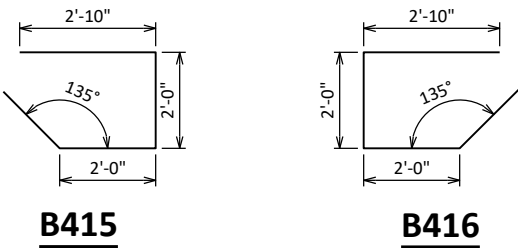
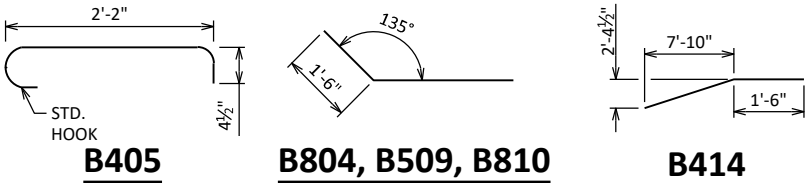
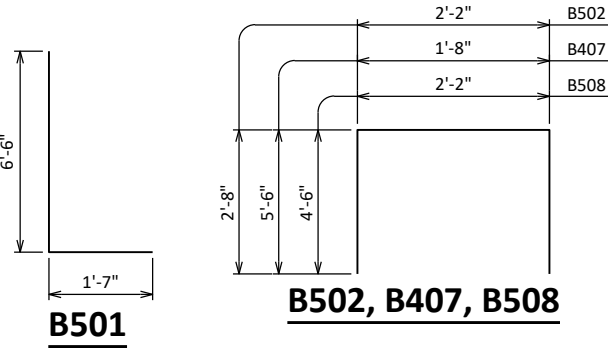
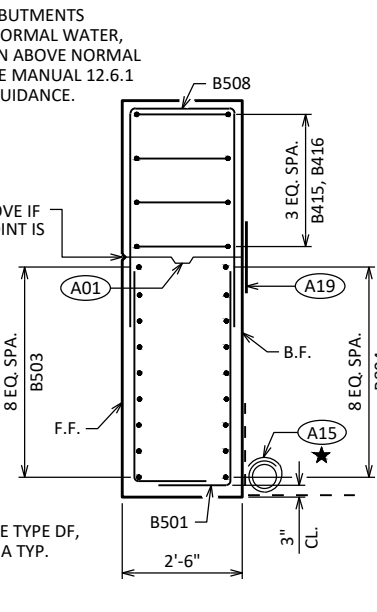


SECTION THRU WING 3

TYPICAL BOTH WINGS

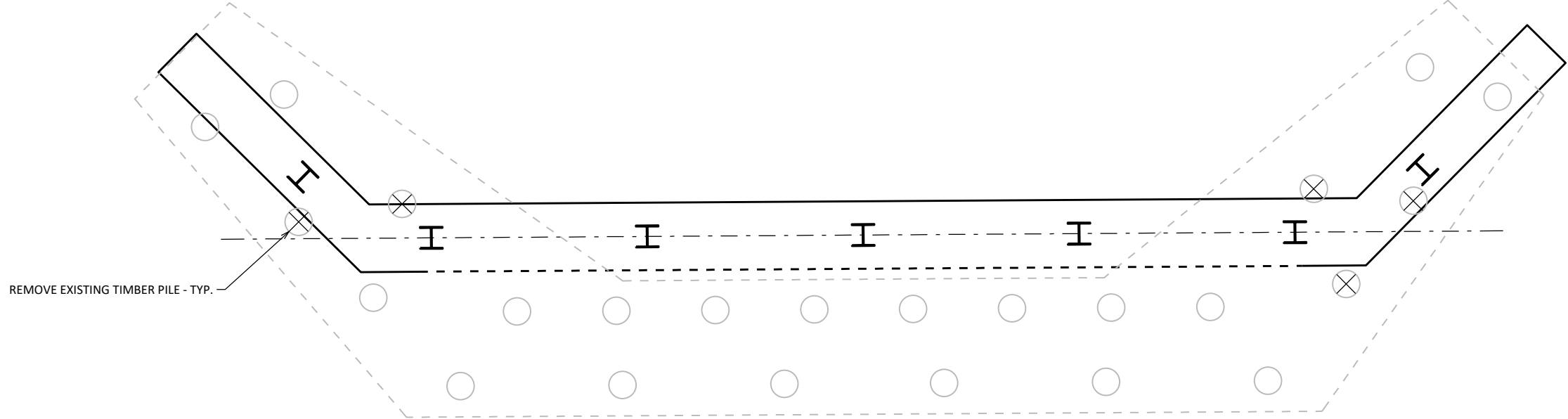


SECTION A-A



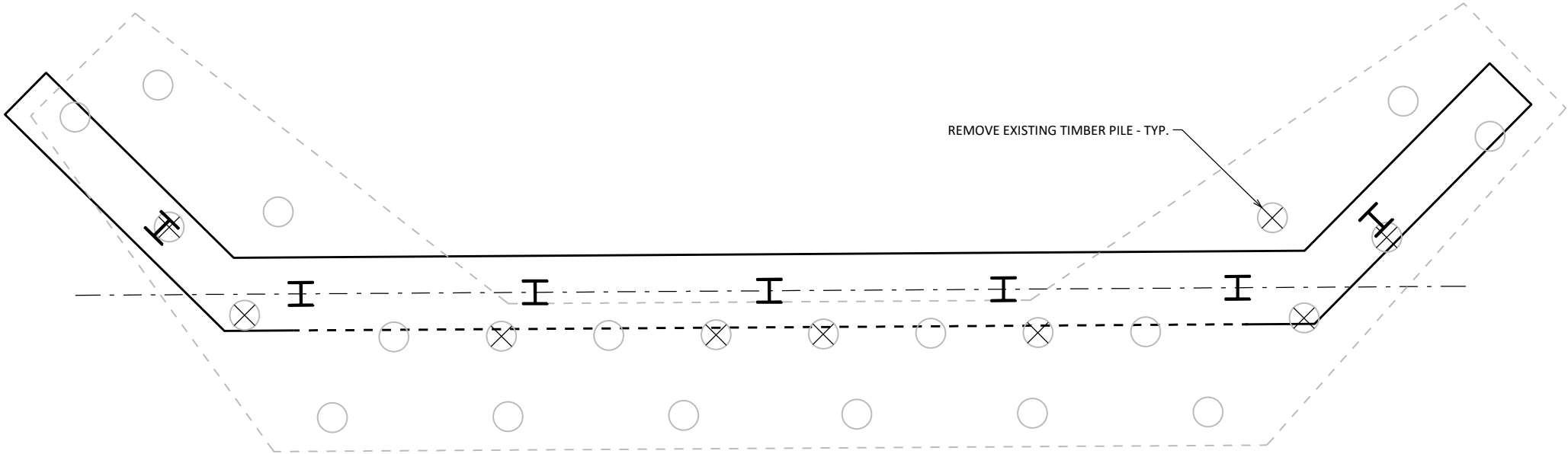
- A01 OPTIONAL CONST. JOINT: KEYWAY FORMED BY A BEVELED 2X6. PROVIDE 3/4" "V" GROOVE ON F.F. OF WINGWALL IF JOINT IS USED.
- A06 SUPPORT ABUTMENT ON HP 10 x 42 PILING, ESTIMATED 50'-0" LONG WITH A REQUIRED DRIVING RESISTANCE OF 180TONS PER PILE.
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- A19 18" RUBBERIZED MEMBRANE WATERPROOFING, ONLY IF OPTIONAL CONSTRUCTION JOINT IS USED. COST INCIDENTAL TO BID ITEM "CONCRETE MASONRY STRUCTURES".

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-31-113			
DRAWN BY JMC		PLANS CK'D NBE	
EAST ABUTMENT DETAILS		SHEET 8 OF 13	



WEST ABUTMENT PILE REMOVAL

SPECIAL NOTE:
LOCATIONS OF EXISTING TIMBER PILES ARE APPROXIMATE AND BASED ON ORIGINAL PLANS AS SHOWN AFTER THE EXISTING FOOTING IS REMOVED BASED ON SPACING CRITERIA GIVEN IN THE SPECIAL PROVISIONS AND AS DIRECTED BY THE ENGINEER. REMOVE EXISTING TIMBER PILES THAT CONFLICT WITH NEW PILES IN ACCORDANCE WITH THE SPECIAL PROVISIONS. CUT OFF ALL REMAINING EXISTING TIMBER PILES 6" BELOW BOTTOM OF PROPOSED FOOTING.

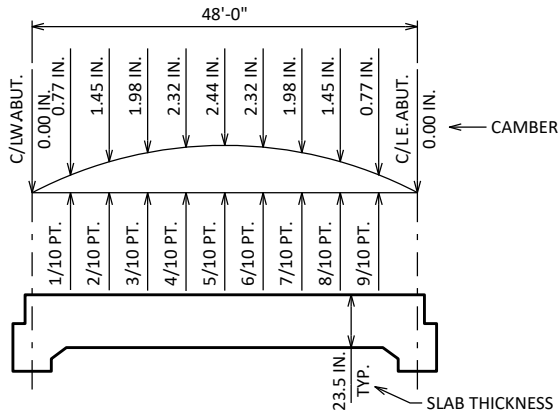


EAST ABUTMENT PILE REMOVAL

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-31-113			
DRAWN BY		JMC	PLANS CK'D XXX
EXISTING PILE REMOVAL DETAILS		SHEET 9 OF 13	



NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE		B-31-113	
		DRAWN BY	PLANS CK'D
		JMC	NBE
SUPERSTRUCTURE		SHEET 10 OF 13	



CAMBER AND SLAB THICKNESS DIAGRAM

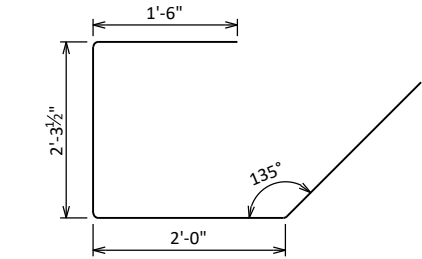
CAMBER SHOWN IS BASED ON 3 TIMES DEAD LOAD DEFLECTIONS. CAMBER SPANS AS SHOWN TO PROVIDE FOR DEAD LOAD DEFLECTION AND FUTURE CREEP. CAMBER DOES NOT INCLUDE ALLOWANCE FOR FORM SETTLEMENT. PARAPETS PLACED ON TOP OF THE SLAB SHALL BE POURED AFTER FALSEWORK HAS BEEN RELEASED, EXCEPT FOR STAGED CONSTRUCTION.

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

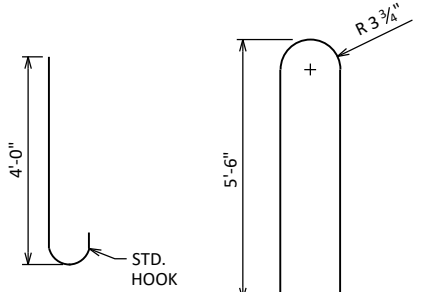
LESS	TOP OF SLAB ELEVATION AT FINAL GRADE
PLUS	SLAB THICKNESS
PLUS	CAMBER
PLUS	FORM SETTLEMENT/DEFLECTION DUE TO PLACEMENT OF SLAB CONCRETE (TO BE COMPUTED BY THE CONTRACTOR)
EQUALS	TOP OF SLAB FALSEWORK ELEVATION

TOP OF SLAB ELEVATIONS

LOCATION	C/L BRG. W. ABUT.	1/10 PT.	2/10 PT.	3/10 PT.	4/10 PT.	5/10 PT.	6/10 PT.	7/10 PT.	8/10 PT.	9/10 PT.	C/L BRG. E. ABUT.
N. EDGE OF DECK	746.95	746.94	746.93	746.92	746.91	746.90	746.88	746.87	746.86	746.85	746.84
CROWN OR R/L	747.27	747.26	747.25	747.24	747.23	747.22	747.21	747.20	747.19	747.18	747.17
S. EDGE OF DECK	746.95	746.94	746.93	746.92	746.91	746.90	746.88	746.87	746.86	746.85	746.84



S505



S608

S609

BILL OF BARS

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

BAR MARK	COAT	NO. REQ'D.	LENGTH	BENT	BAR SERIES	LOCATION
S1101	X	71	50'-2"			SLAB BOTTOM LONGITUDINAL
S702	X	51	32'-2"			SLAB BOTTOM TRANSVERSE
S503	X	51	32'-2"			SLAB TOP TRANSVERSE
S504	X	26	50'-2"			SLAB TOP LONGITUDINAL
S505	X	66	7'-7"	X		ABUTMENT DIAPHRAGM STIRRUPS
S506	X	4	32'-2"			ABUTMENT DIAPHRAGM LONGITUDINAL
S607	X	56	6'-0"			SLAB TOP LONGIT. UNDER RAIL POSTS
S608	X	16	4'-8"	X		SLAB TOP LONGIT. UNDER RAIL END POSTS
S609	X	36	11'-3"	X		SLAB TOP HOOKS UNDER RAIL POSTS

SURVEY TOP OF SLAB ELEVATIONS

LOCATION	ABUTMENT	5/10 PT.	ABUTMENT
W. GUTTER			
CROWN OR R/L			
E. GUTTER			

PRIOR TO RELEASING SLAB FALSEWORK, TAKE TOP OF SLAB ELEVATIONS AT THE C/L OF ABUTMENTS, THE C/L OF PIERS AND AT 5/10 PTS. TO VERIFY CAMBER. TAKE ELEVATIONS ALONG GUTTER LINES AND CROWN OR R/L. RECORD THE ELEVATIONS IN THE ABOVE TABLE FOR THE "AS BUILT" PLANS.

NOTES

FILL IN THE TABLE OF "SURVEY TOP OF SLAB ELEVATIONS" FOR EACH SPAN ON AS BUILT PLANS.

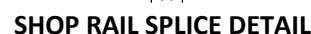
TOP TRANSVERSE BARS IN SLAB SHALL BE SUPPORTED BY INDIVIDUAL BAR CHAIRS AT APPROXIMATELY 3'-0" CENTERS EACH WAY. BOTTOM LONGITUDINAL BARS SHALL BE SUPPORTED BY CONTINUOUS BAR CHAIRS AT APPROXIMATELY 4'-0" CENTERS.

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



NOTE: CONNECTIONS AT LOWER RAILS SHOWN.
CONNECTIONS AT TOP RAIL SIMILAR.

TYPICAL RAIL TO POST CONNECTIONS



LOCATION MUST BE
SHOWN ON SHOP DRAWINGS



✱ ANCHOR BOLT ASSEMBLY MAY BE TACK WELDED, EITHER IN THE SHOP, OR IN THE FIELD AFTER THE ANCHOR PLATE IS PLACED



THREE BEAM RAIL ATTACHMENT



AT BEAM GUARD ATTACHMENT



THREE BEAM RAIL ATTACHMENT



AT RAIL TO DECK CONNECTION

POST SHIM DETAIL



AT BEAM GUARD ATTACHMENT

- ## LEGEND

- (1) W6 x 25 WITH 1 3/8" X 1 1/2" HORIZ. SLOTS ON EACH SIDE OF POST FOR BOLT NO. 6. CUT BOTTOM OF POST TO MATCH CROSS SLOPE OF ROADWAY. PLACE POST VERTICAL. PLACE POSTS NORMAL TO GRADE LINE.
- (2) PLATE 1 1/4" x 11 3/4" x 1'-8" WITH 1 7/16" OVERSIZED HOLES FOR ANCHOR BOLTS NO. 3. WELD TO NO. 1 AS SHOWN.
- (3) ASTM A449 - 1 3/8" DIA. ANCHOR BOLTS WITH NUT AND HARDENED WASHER (ALL GALVANIZED). 5 REQ'D. PER POST. THREAD 3" AND PLACE NORMAL TO PLATE NO. 2. CHAMFER TOP OF BOLTS BEFORE THREADING. USE 1'-9" LONG IN ABUTMENT WINGS. AT POSTS ON CONCRETE SLAB SUPERSTRUCTURES WHERE THE SLAB THICKNESS IS > 16" USE 1'-3" LONG. USE 10 3/4" LONG AT ALL OTHER LOCATIONS. (AN EQUIVALENT THREADED ROD WITH NUTS AND HARDENED WASHERS MAY BE SUBSTITUTED FOR ANCHOR BOLTS IN WINGS IF REQ'D. FOR CONSTRUCTIBILITY.)
- (4) 5/8" x 11" x 1'-8" ANCHOR PLATE (GALVANIZED) WITH 1 3/16" DIA. HOLES FOR ANCHOR BOLTS NO. 3.
- (5) TS 5 x 4 x 0.25 STRUCTURAL TUBING. ATTACH TO NO. 1 WITH NO. 6.
- (5A) TS 5 x 5 x 0.25 STRUCTURAL TUBING. ATTACH TO NO. 1 WITH NO. 6.
- (6) 7/8" DIA. A325 SLOTTED ROUND HEAD BOLT WITH NUT, 3/16" X 1 5/8" X 1 5/8" MIN. WASHER, AND LOCK WASHER (2 REQ'D. AT EACH RAIL TO POST LOCATION).
- (7) SPLICE SLEEVE FABRICATED FROM 1/4" PLATE. PROVIDE "SLIDING FIT".
- (8) 3/8" X 3 5/8" X 2'-4" PLATE. 2 PER RAIL. USED IN NO. 5 & 5A.
- (8A) 3/8" X 2 5/8" X 2'-4" PLATE USED IN NO. 5, 3/8" X 3 5/8" X 2'-4" PLATE USED IN NO. 5A. 2 PER RAIL.
- (9) 7/8" DIA. A325 ROUND HEAD BOLT WITH NUT, WASHER, AND LOCK WASHER. USE 1 5/16" x 1 1/2" LONGIT. SLOTTED HOLES IN PLATE NO. 10A AT FIELD JOINTS AND 1 3/16" X 2 1/4" MIN. LONGIT. SLOTTED HOLES AT EXP. JOINTS IN PLATE NO. 8A. PROVIDE 1 3/16" DIA. ROUND HOLES IN TUBES NO. 5 AND NO. 5A.
- (10) 1/2" THK. BACK-UP PLATE WITH 2 - 7/8" X 1 1/2" THREADED SHOP WELDED STUDS (NO. 12). BOLT TO RAIL AS SHOWN IN DETAIL. REQUIRED AT THREE BEAM GUARD RAIL ATTACHMENTS ONLY. PLACE SYMMETRICALLY ABOUT TUBES NO. 5A.
- (11) 1" DIA. HOLES IN PLATE NO. 10 & TUBES NO. 5A FOR 7/8" DIA. A325 BOLTS WITH HEX NUTS AND WASHERS. 6 HOLES IN TUBES AND PLATE NO. 10.
- (12) 7/8" DIA. X 1 1/2" LONG THREADED SHOP WELDED STUDS (2 REQ'D).
- (13) 3/8" X 8" X 1'-6" PLATE. BOLT TO RAIL AS SHOWN IN DETAIL. REQ'D. AT THREE BEAM GUARD RAIL ATTACHMENTS ONLY. PLACE SYM. ABOUT TUBES NO. 5A.
- (14) 7/8" DIA. X 2" LONG A325 HEX BOLT WITH NUT AND WASHER (5 REQ'D.).
- (15) 1" DIA. HOLES IN TUBES NO. 5A FOR 7/8" DIA. A325 ROUND HEAD BOLT WITH NUT, WASHER AND LOCK WASHER (4 REQ'D.). 4 HOLES IN TUBES.

GENERAL NOTES

1. BID ITEM SHALL BE "RAILING TUBULAR TYPE M" WHICH INCLUDES ALL ITEMS SHOWN.
2. RAIL POST AND BASE PLATES SHALL CONFORM TO THE REQUIREMENTS OF ASTM A709 GRADE 50. HOLLOW RAILING STRUCTURAL TUBING SHALL CONFORM TO THE REQUIREMENTS OF ASTM A500 GRADE B OR C WITH A CERTIFIED FY = 50 KSI. ANCHOR PLATES, AND SPLICE TUBE PLATES SHALL CONFORM TO THE REQUIREMENTS OF ASTM A709 GRADE 36.
3. THE NUT SECURING THE POST BASE PLATE TO THE CONCRETE SHALL BE TIGHTENED TO A SNUG FIT AND GIVEN AN ADDITIONAL ½ TURN.
4. RAILS SHALL BE CONTINUOUS OVER A MINIMUM OF THREE (3) POSTS WITHOUT SPLICES WHERE POSSIBLE.
5. ENDS OF TUBE SECTIONS SHALL BE SAWED. GRIND SMOOTH EXPOSED EDGES. ALL CUT ENDS SHALL BE TRUE AND SMOOTH.
6. WELD IS THE SAME ON BOTH FLANGES. FLANGE WELD DOES NOT REQUIRE MAGNETIC PARTICLE TESTING.
7. FILL BOLT SLOT OPENINGS IN POST SHIMS AND PLATE NO. 2 AND CAULK AROUND PERIMETER OF PLATE NO. 2 WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER. STEEL POST SHIMS MAY BE USED UNDER POSTS WHERE REQ'D. FOR ALIGNMENT.
8. POST BASE PLATES SHALL BE FLAT WITH ALL SURFACES SMOOTH AND FREE FROM WARP AND ALL EDGES SMOOTH, STRAIGHT AND VERTICAL. ALL PLATE CUTS SHALL BE MACHINE OR MACHINE FLAME CUT.
9. ALL MATERIAL SHALL BE GALVANIZED AFTER FABRICATION. PRIOR TO GALVANIZING, ALL STEEL RAILING POSTS & STEEL TUBING SHALL BE GIVEN A NO. 6 BLAST CLEANING BY SSPC SPECIFICATIONS.

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-31-113			
DRAWN BY		JMC	PLANS CK'D NBE
TUBULAR STEEL RAILING TYPE 'M'		SHEET 12 OF 13	

NOTES

CONDUIT SHALL BE EMBEDDED 2" CLEAR.

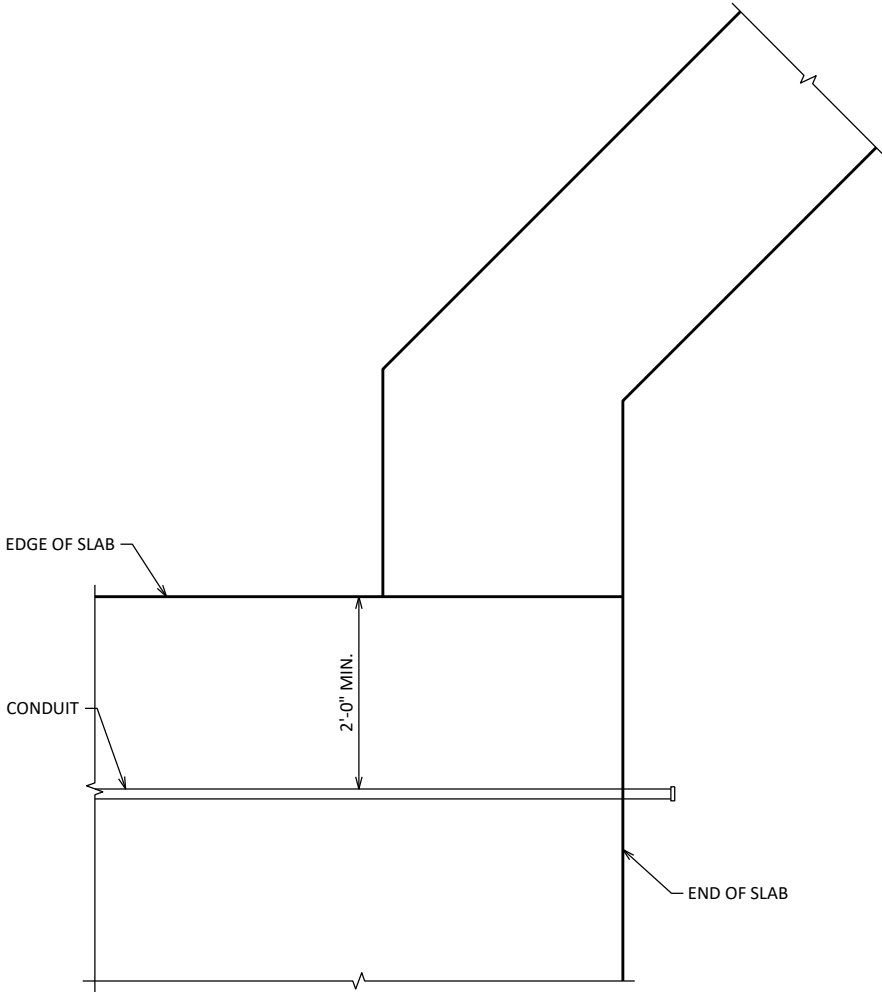
USE 1 1/4" DIA. RIGID NONMETALLIC CONDUIT (PVC) UNLESS NOTED OTHERWISE.

CONDUIT FITTINGS, CONDUIT BENDS, AND ADAPTER FITTINGS INCIDENTAL TO CONDUIT WORK.

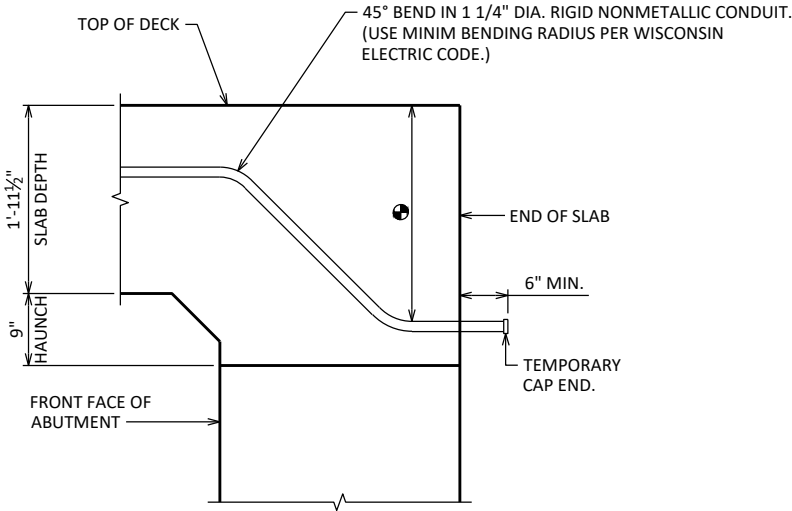
CONDUIT BENDS SHALL CONFORM TO THE NATIONAL ELECTRIC CODE.

- 2'-0" MIN. CONDUIT COVER UNDER ROADWAYS, 1'-6" OTHERWISE CONDUIT COVER SHOULD NOT EXCEED 3'-0".

PROVIDE JUNCTION BOXES FROM THE APPROVED PRODUCTS LIST.



PLAN AT END OF SLAB



OUTSIDE ELEVATION AT END OF SLAB

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-31-113			
DRAWN BY		JMC	PLANS CK'D NBE
CONDUIT DETAIL		SHEET 13 OF 13	

SCALE =

COUNTY KB (SW SHOULDER)											
STATION	AREA (SF)				INCREMENTAL VOL (CY) (UNADJUSTED)				CUMULATIVE VOL (CY)		
	CUT	SALVAGED/UNUSABLE PAVEMENT MATERIAL	FILL	MARSH EXC	CUT	SALVAGED/UNUSABLE PAVEMENT MATERIAL	FILL	MARSH EXC	CUT	EXPANDED FILL	EXPANDED MARSH BACKFILL
					NOTE 1	NOTE 2	NOTE 3		1.00 NOTE 1	1.30	1.50 NOTE 4
7+81.70	5.05	0.00	3.00	0.00	0	0	0	0	0	0	0
8+00.00	4.69	0.00	25.66	17.78	4	0	10	7	4	13	11
8+03.10	4.69	0.00	25.66	17.78	1	0	3	2	1	4	3
8+46.60	8.99	0.00	41.53	27.80	12	0	55	37	13	76	59
8+50.00	8.99	0.00	40.01	26.24	2	0	6	4	15	84	65
8+71.60	8.99	0.00	30.51	16.31	8	0	29	18	23	122	92
8+84.10	8.99	0.00	28.71	13.68	5	0	14	7	28	141	103
8+96.60	8.99	0.00	11.66	0.00	5	0	10	4	33	154	109
9+00.00	8.71	0.00	11.44	0.00	2	0	2	0	35	157	109
9+09.10	8.71	0.00	11.60	0.00	3	0	4	0	38	163	109
9+30.00	8.71	0.00	12.66	0.00	7	0	10	0	45	176	109
					49	0	143	79			

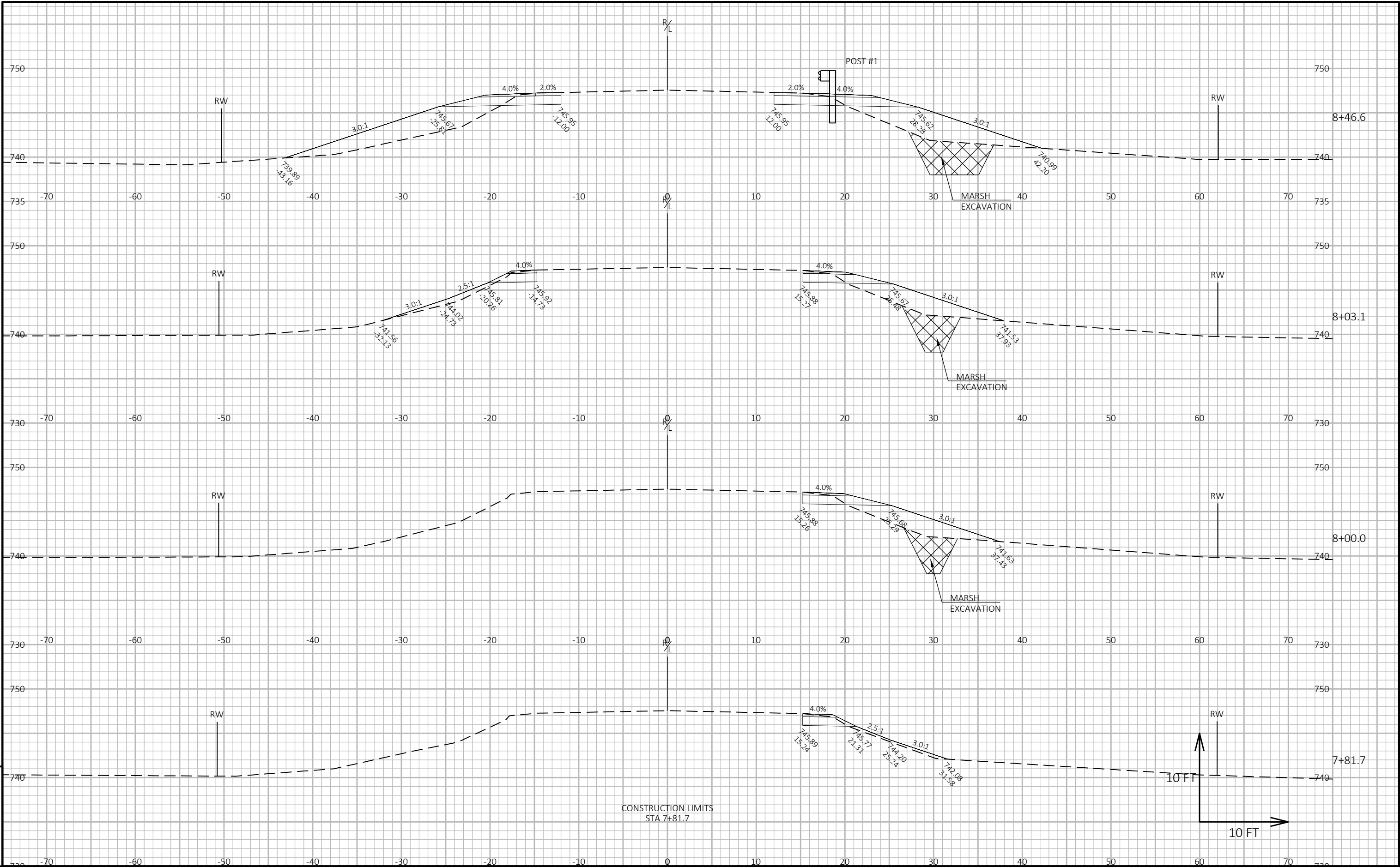
COUNTY KB (NW SHOULDER)											
STATION	AREA (SF)				INCREMENTAL VOL (CY) (UNADJUSTED)				CUMULATIVE VOL (CY)		
	CUT	SALVAGED/UNUSABLE PAVEMENT MATERIAL	FILL	MARSH EXC	CUT	SALVAGED/UNUSABLE PAVEMENT MATERIAL	FILL	MARSH EXC	CUT	EXPANDED FILL	EXPANDED MARSH BACKFILL
					NOTE 1	NOTE 2	NOTE 3		1.00 NOTE 1	1.30	1.50 NOTE 4
8+03.10	4.61	0.00	4.95	0.00	0	0	0	0	0	0	0
8+46.60	7.33	0.00	41.31	0.00	10	0	38	0	10	50	0
8+50.00	7.31	0.00	42.84	0.00	1	0	6	0	11	58	0
8+71.60	7.10	0.00	52.33	13.37	6	0	39	6	17	109	9
8+84.10	6.26	0.00	57.18	16.35	4	0	26	7	21	143	20
8+96.60	6.72	0.00	52.41	12.44	4	0	26	7	25	177	31
9+00.00	6.64	0.00	51.02	0.00	1	0	7	1	26	187	33
9+09.10	6.44	0.00	47.86	0.00	3	0	17	0	29	210	33
9+30.00	5.93	0.00	36.62	0.00	5	0	33	0	34	253	33
					34	0	192	21			

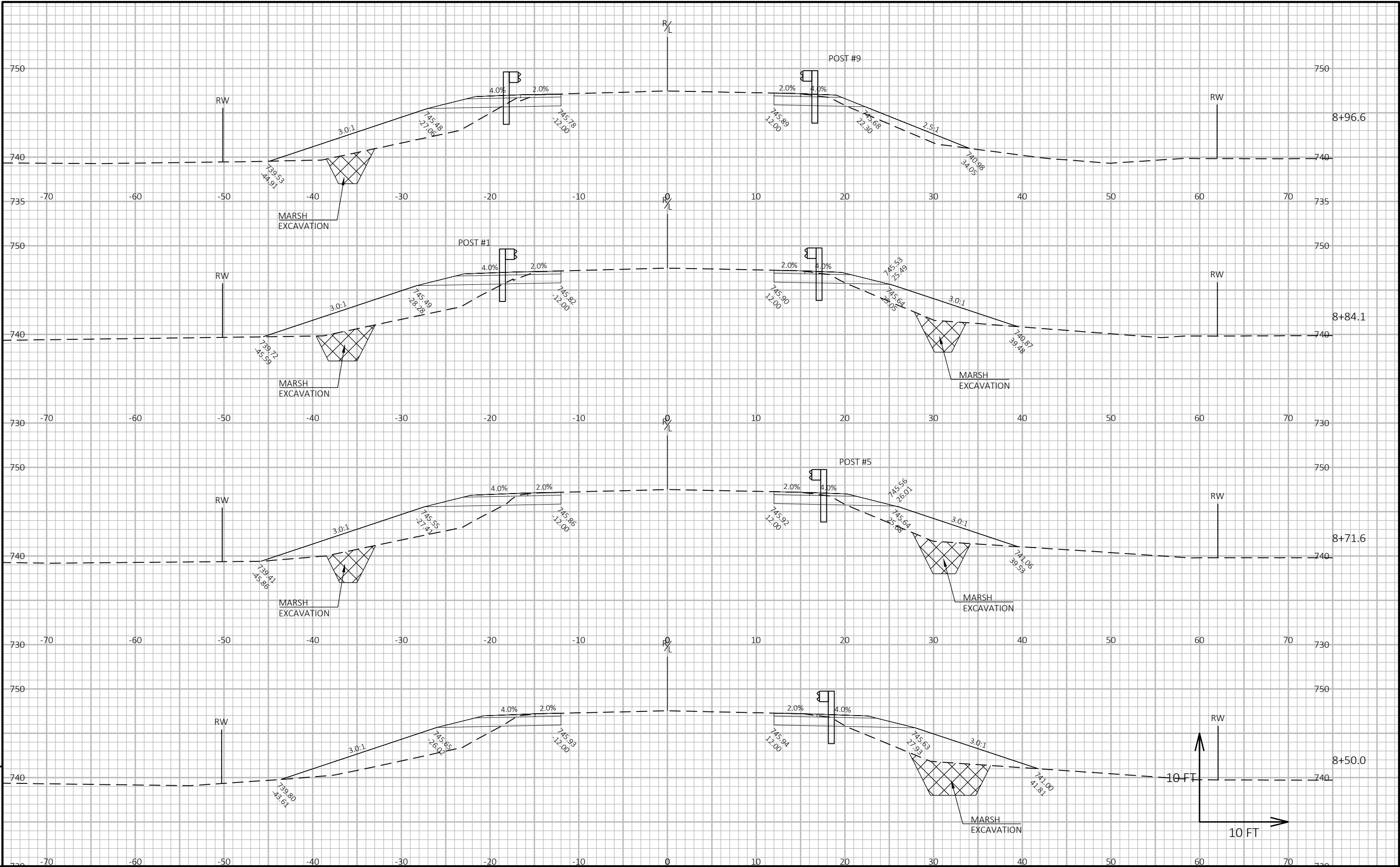
Notes:	
1 - Cut	Cut includes Salvaged/Unusable Pavement material
2 - Salvaged/Unusable Pavement Material	This does not show up in cross sections
3 - Fill	Does not include Unusable Pavement Exc volume
4 - Expanded Marsh Backfill	Will be backfilled with Select Borrow
8 - Mass Ordinate	Cut - Unusable Pavement Material - (Fill * Fill Factor)

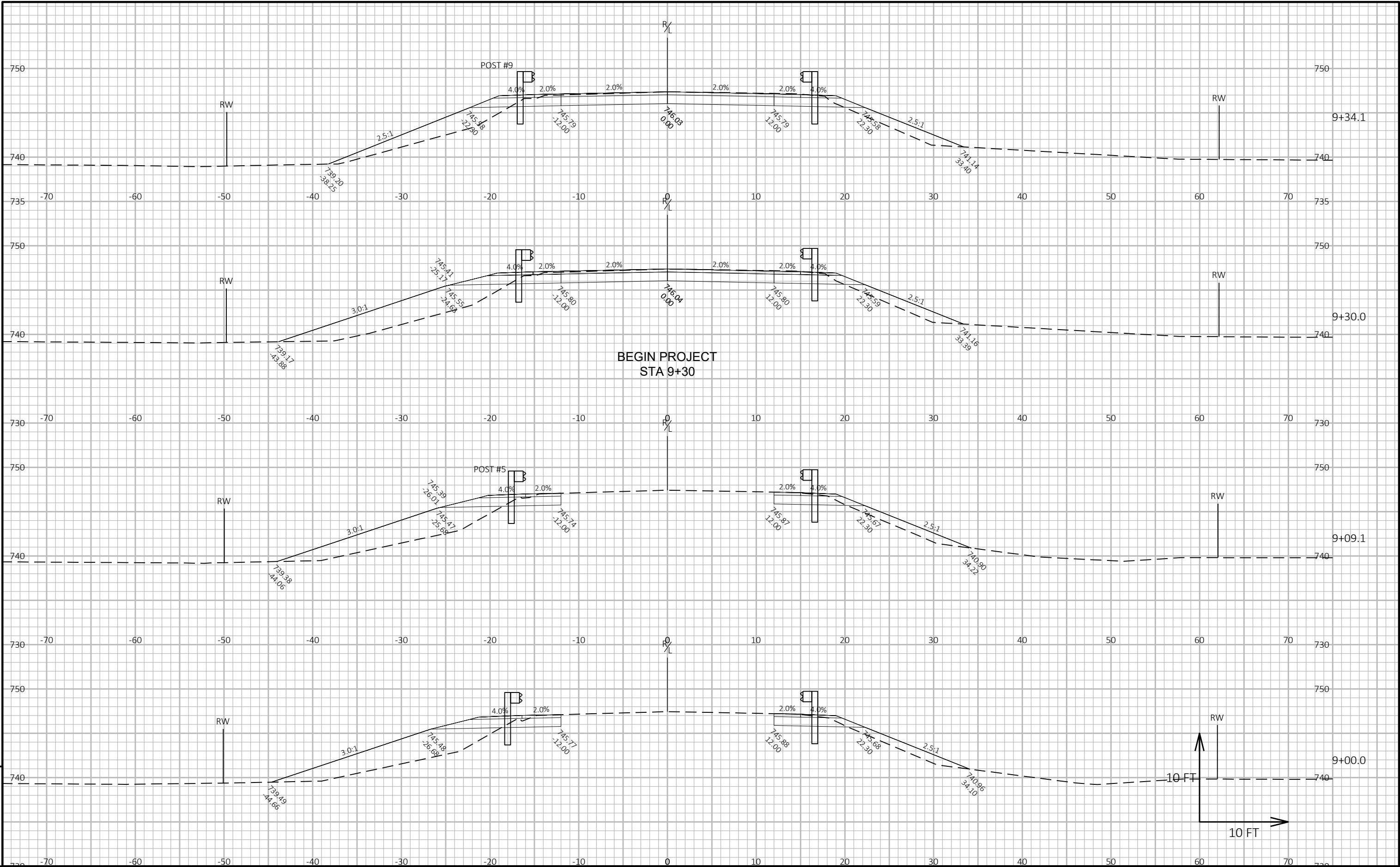
COUNTY KB (NE SHOULDER)												
STATION	AREA (SF)				INCREMENTAL VOL (CY) (UNADJUSTED)				CUMULATIVE VOL (CY)			
	CUT	SALVAGED/UNUSABLE PAVEMENT MATERIAL	FILL	MARSH EXC	CUT	SALVAGED/UNUSABLE PAVEMENT MATERIAL	FILL	MARSH EXC	CUT	EXPANDED FILL	EXPANDED MARSH BACKFILL	MASS ORDINATE
				NOTE 1	NOTE 2	NOTE 3		1.00 NOTE 1	1.30	1.50 NOTE 4	NOTE 8	
10+70.00	8.01	0.00	14.50	0.00	0	0	0	0	0	0	0	0
10+90.90	8.01	0.00	14.50	0.00	7	0	12	0	7	16	0	-9
11+00.00	8.34	0.00	12.59	0.00	3	0	5	0	10	23	0	-13
11+03.60	8.43	0.00	11.93	0.00	2	0	2	0	12	26	0	-14
11+15.90	8.70	0.00	33.03	0.00	4	0	11	0	16	41	0	-25
11+28.60	9.03	0.00	30.89	0.00	5	0	16	0	21	62	0	-41
11+50.00	9.34	0.00	35.82	0.00	8	0	27	0	29	98	0	-69
11+53.60	9.38	0.00	36.23	0.00	2	0	5	0	31	105	0	-74
11+90.50	5.45	0.00	27.12	0.00	11	0	44	0	42	163	0	-121
12+00.00	5.92	0.00	18.83	0.00	3	0	9	0	45	175	0	-130
12+19.50	6.09	0.00	3.48	0.00	5	0	9	0	50	187	0	-137
					50	0	140	0				

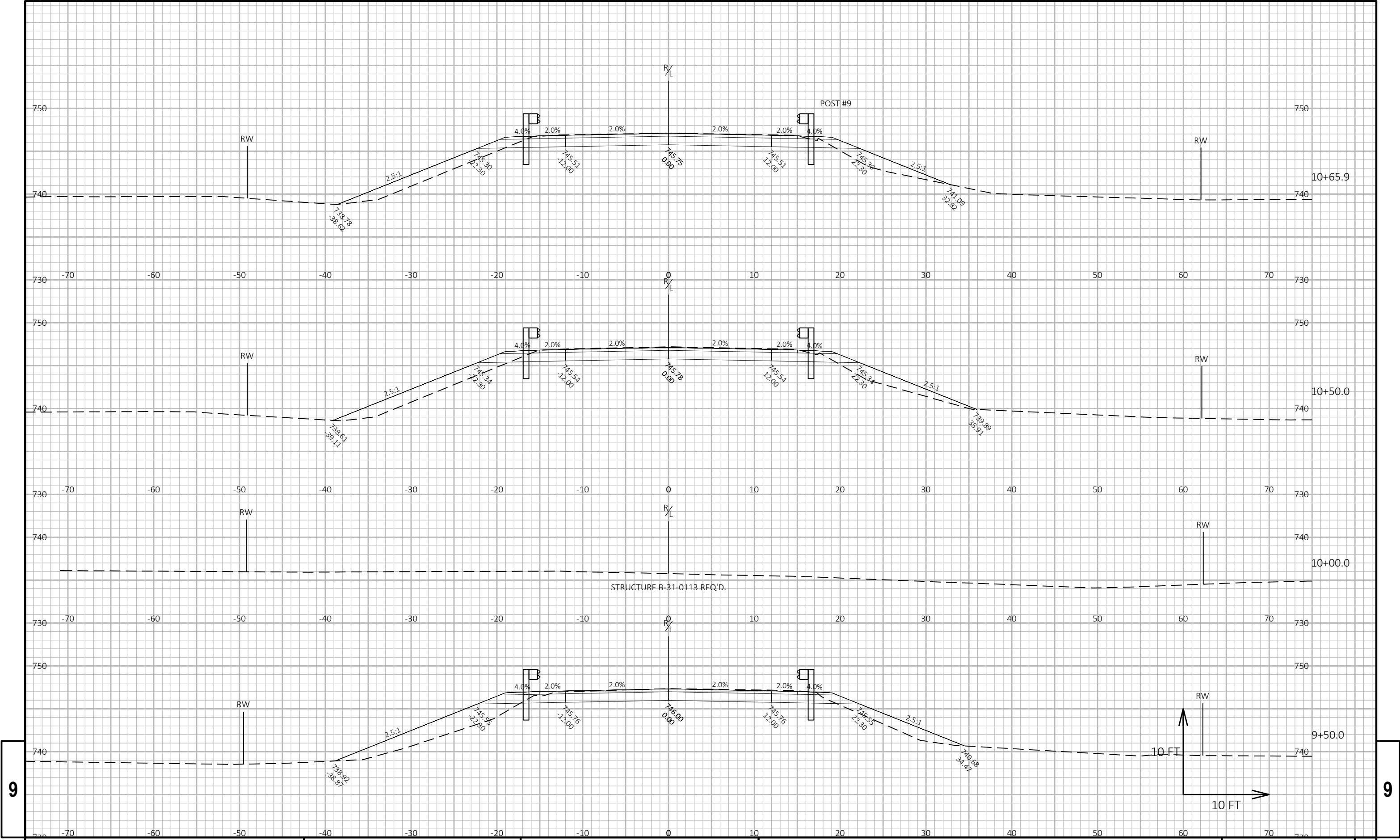
COUNTY KB (SE SHOULDER)												
STATION	AREA (SF)				INCREMENTAL VOL (CY) (UNADJUSTED)				CUMULATIVE VOL (CY)			
	CUT	SALVAGED/UNUSABLE PAVEMENT MATERIAL	FILL	MARSH EXC	CUT	SALVAGED/UNUSABLE PAVEMENT MATERIAL	FILL	MARSH EXC	CUT	EXPANDED FILL	EXPANDED MARSH BACKFILL	MASS ORDINATE
NOTE 1	NOTE 2	NOTE 3	NOTE 1	1.30	1.50	NOTE 4	NOTE 8					
10+70.00	7.23	0.00	20.24	0.00	0	0	0	0	0	0	0	0
10+90.90	7.23	0.00	31.43	0.00	6	0	20	0	6	26	0	-20
11+00.00	7.31	0.00	33.70	0.00	3	0	11	0	9	41	0	-32
11+03.58	7.42	0.00	33.88	0.00	1	0	5	0	10	48	0	-38
11+15.88	7.54	0.00	44.71	0.00	4	0	18	0	14	72	0	-58
11+28.58	7.79	0.00	40.90	0.00	4	0	21	0	18	100	0	-82
11+35.88	7.79	0.00	36.98	0.00	3	0	11	0	21	115	0	-94
11+50.00	7.98	0.00	30.58	0.00	5	0	18	0	26	139	0	-113
11+53.58	7.98	0.00	28.97	0.00	2	0	4	0	28	145	0	-117
11+90.50	4.68	0.00	16.26	0.00	9	0	31	0	37	186	0	-149
					37	0	139	0				

Notes:	
1 - Cut	Cut includes Salvaged/Unusable Pavement material
2 - Salvaged/Unusable Pavement Material	This does not show up in cross sections
3 - Fill	Does not include Unusable Pavement Exc volume
4 - Expanded Marsh Backfill	Will be backfilled with Select Borrow
8 - Mass Ordinate	Cut - Unusable Pavement Material - (Fill * Fill Factor)





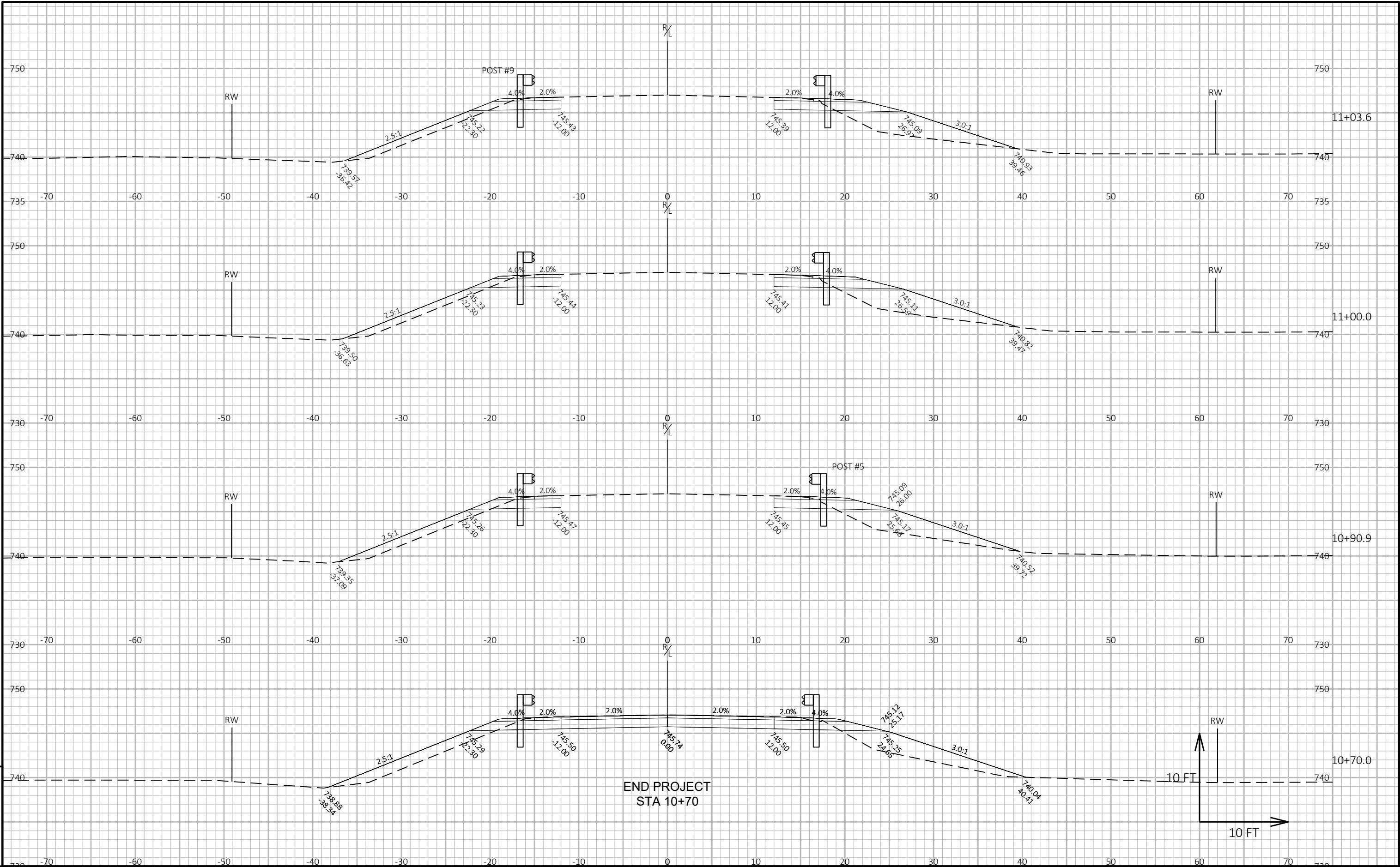


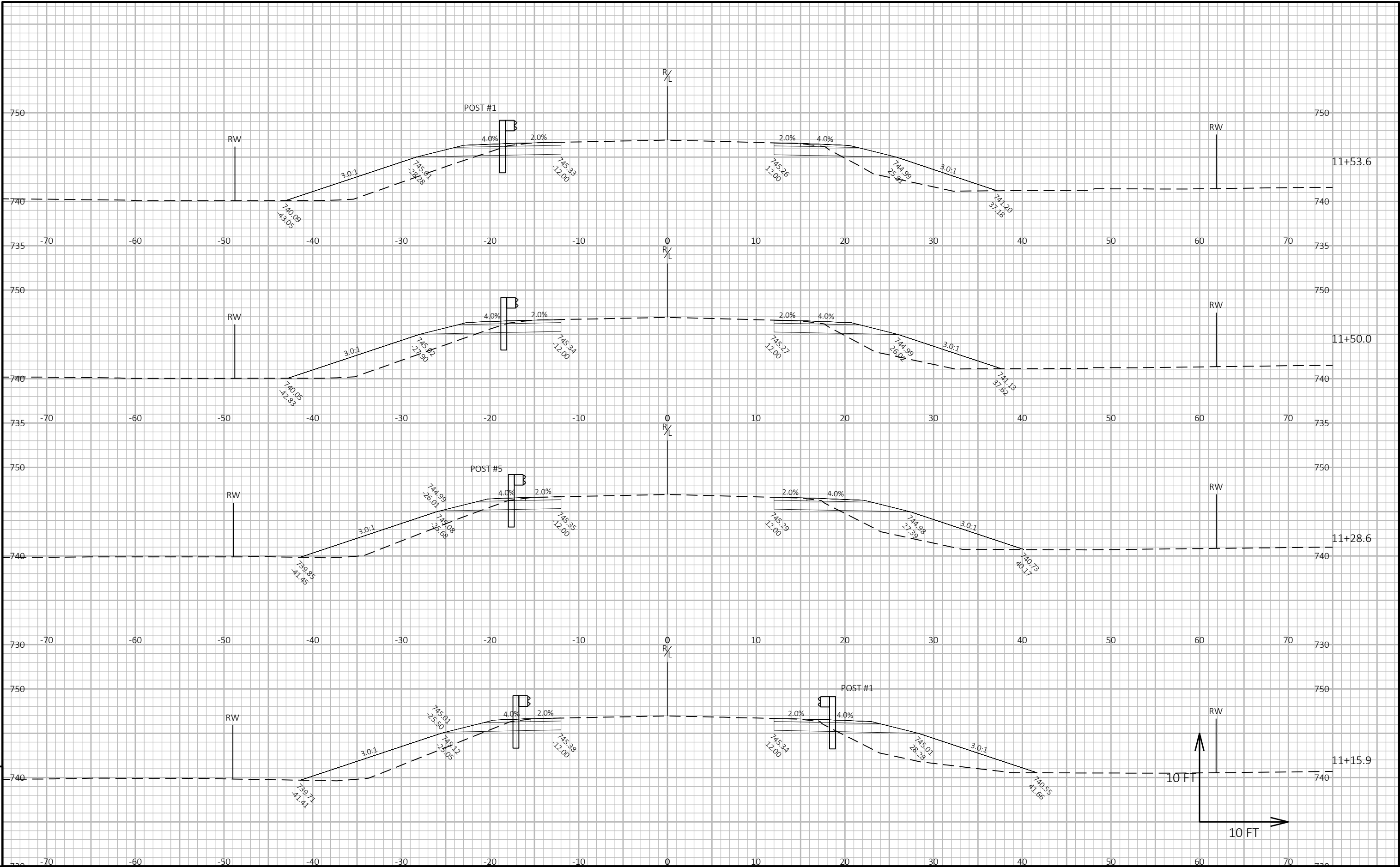


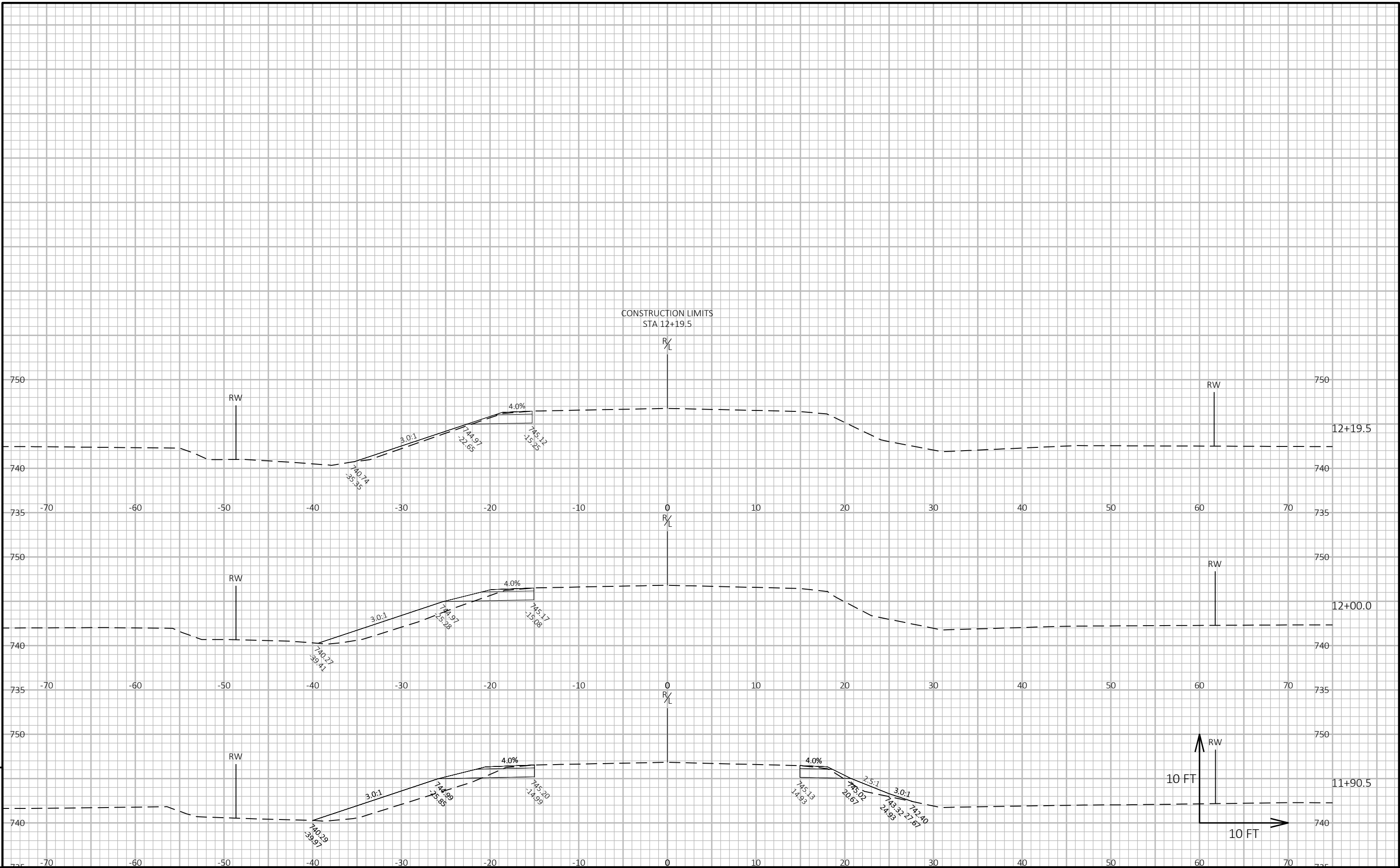
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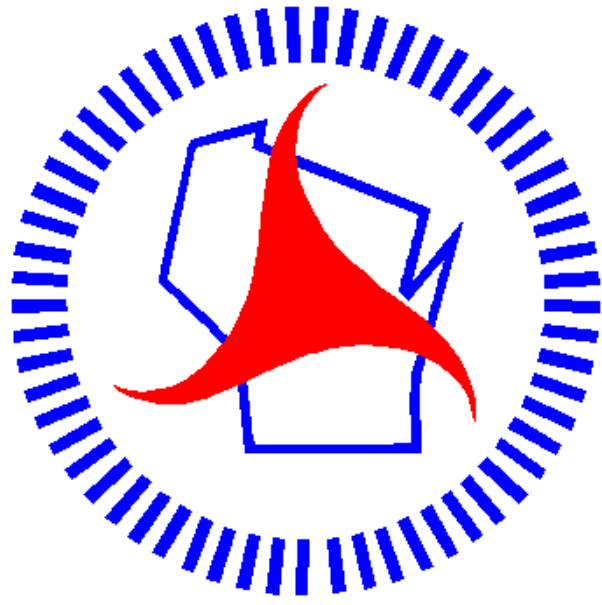
PROJECT NO: 4386-00-01	HWY: CTH KB	COUNTY: KEWAUNEE	CROSS SECTIONS: CTH KB	SHEET	E
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Notes



Wisconsin Department of Transportation

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