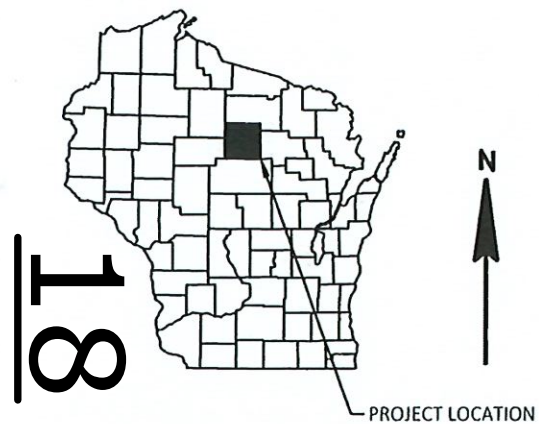


RHI SEPTEMBER 2022
PROJECT ID: 9305-09-61,62
WITH: N/A
COUNTY: LINCOLN

ORDER OF SHEETS

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

TOTAL SHEETS = 128



DESIGN DESIGNATION

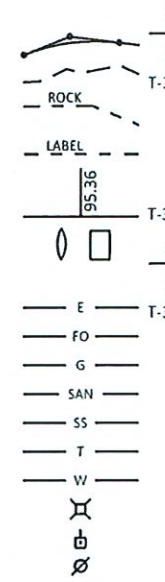
A.A.D.T.	(2023)	=	230
A.A.D.T.	(2043)	=	230
D.H.V.		=	6.8
D.D.		=	60/40
T.		=	8.1%
DESIGN SPEED		=	60 M.P.H.
ESALS		=	

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	---
CULVERT (Profile View)	---
UTILITIES	---
ELECTRIC	---
FIBER OPTIC	---
GAS	---
SANITARY SEWER	---
STORM SEWER	---
TELEPHONE	---
WATER	---
UTILITY PEDESTAL	---
POWER POLE	---
TELEPHONE POLE	---



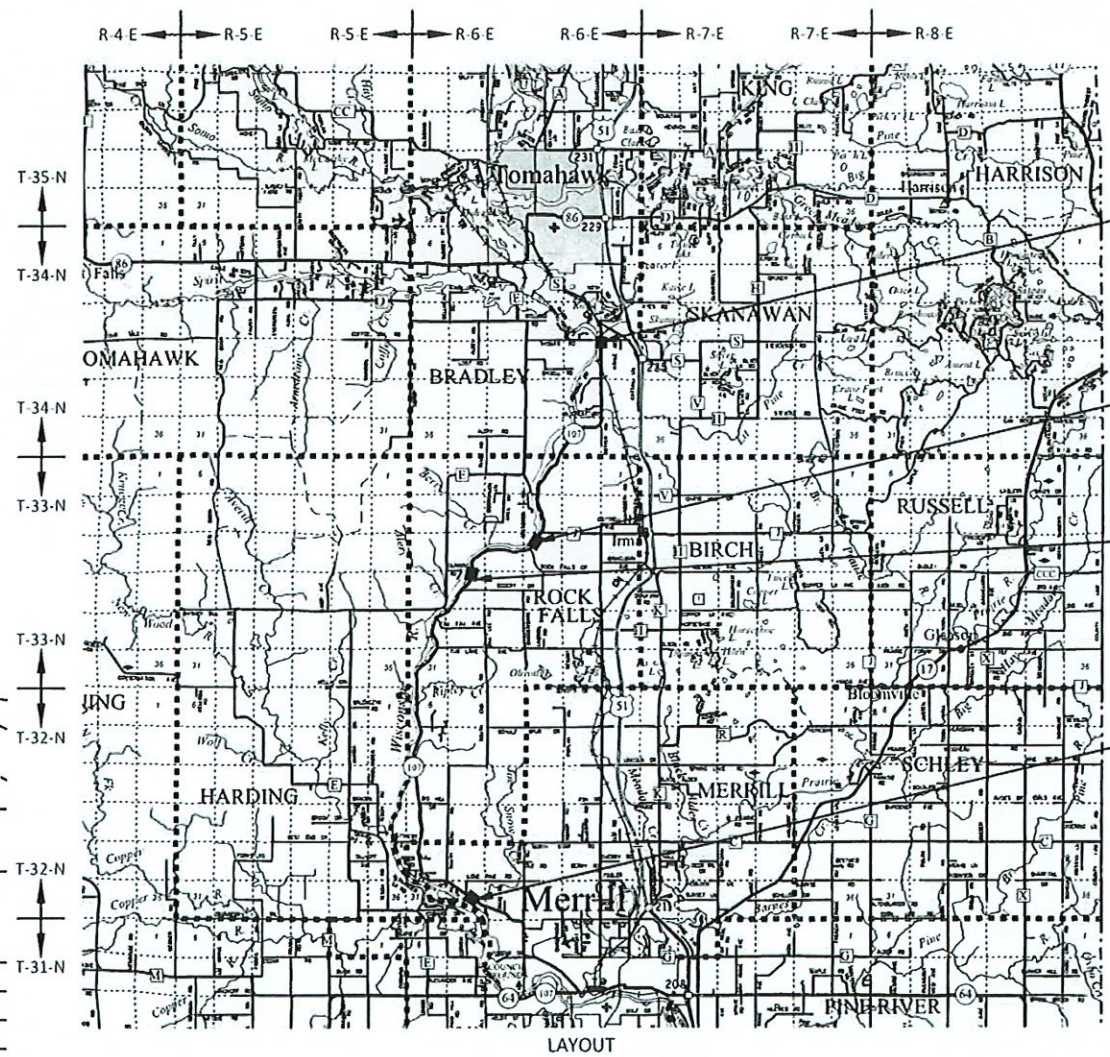
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
PLAN OF PROPOSED IMPROVEMENT

MERRILL - TOMAHAWK
CULVERT REPLACEMENT & REPAIR
STH 107
LINCOLN COUNTY

MERRILL - TOMAHAWK
SMALL CULVERT REPLACEMENTS
STH 107
LINCOLN COUNTY

STATE PROJECT NUMBER
9305-09-61

STATE PROJECT NUMBER
9305-09-62



9305-09-61 TOTAL NET LENGTH OF CENTERLINE = 0.132 MILES
9305 09 62 TOTAL NET LENGTH OF CENTERLINE = 0.052 MILES

HORIZONTAL POSITIONS SHOWN ON THIS PLAN ARE WISCONSIN COORDINATE REFERENCE SYSTEM (WISCRS), LINCOLN 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 (2011). GPS DERIVED ELEVATIONS ARE BASED ON GEOID 12A.

STATE PROJECT	FEDERAL PROJECT	
	PROJECT	CONTRACT
9305-09-61		
9305-09-62		

9305-09-61
STRUCTURE B-35-00S4 (EXISTING STRUCTURE C-35-13)
STA 1218+00.00 - STA 1223+80.00

9305-09-62
CULVERT 3510700190S
STA 878+35.00 - STA 880+10.00

9305-09-62
CULVERT 3510700189S
STA 772+25.00 - STA 773+25.00

9305-09-61
STRUCTURE C-35-10
STA 231+04.50 - STA 232+19.30

ORIGINAL PLANS PREPARED BY
Westwood

WISCONSIN PROFESSIONAL ENGINEER
KRISTOFER R. OLSON
E-35236
APPLETON, WI
4/19/22

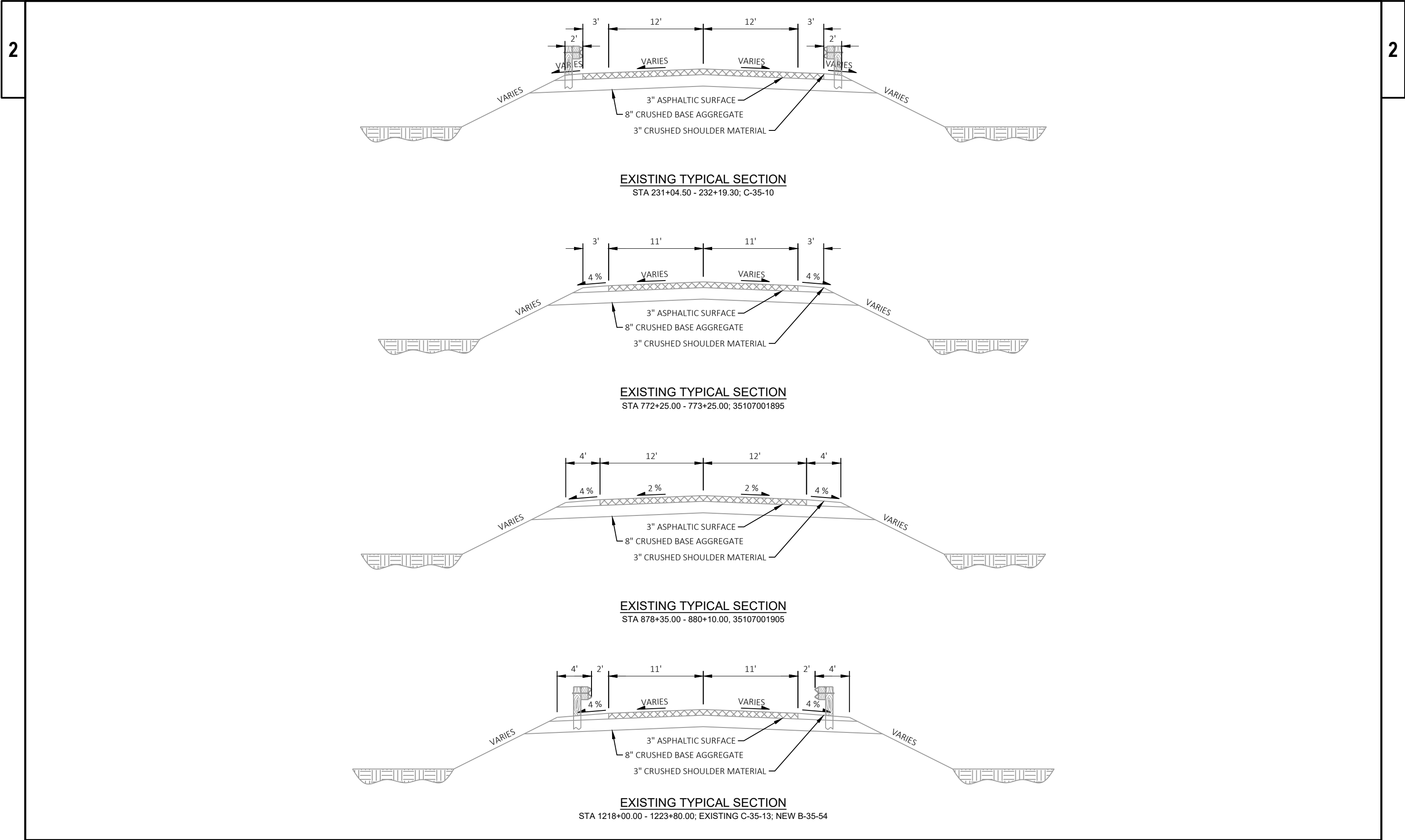
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PREPARED BY

Surveyor	WISDOT
Designer	WESTWOOD
Project Manager	KOREY BOEHM
Regional Examiner	ZACH GRULING
Regional Supervisor	KAI KILEN

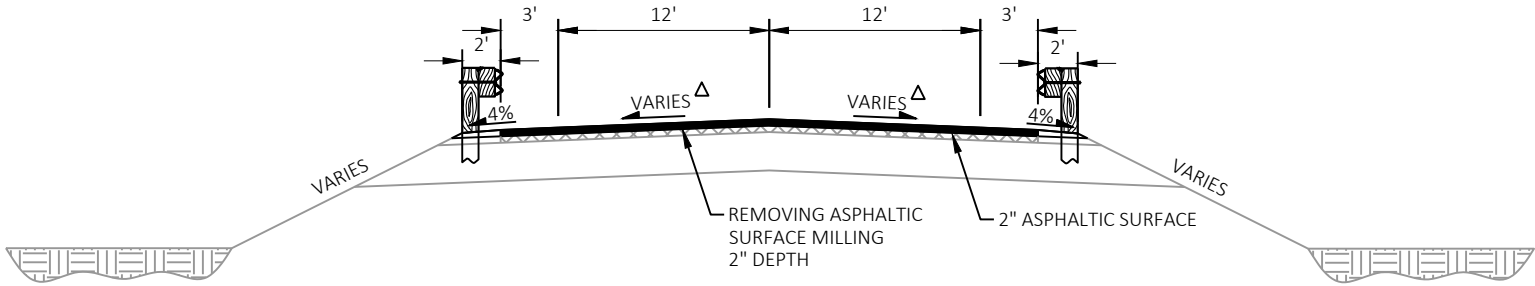
APPROVED FOR THE DEPARTMENT
DATE: 4-25-22 *Thuy Bui*
(Signature)

E

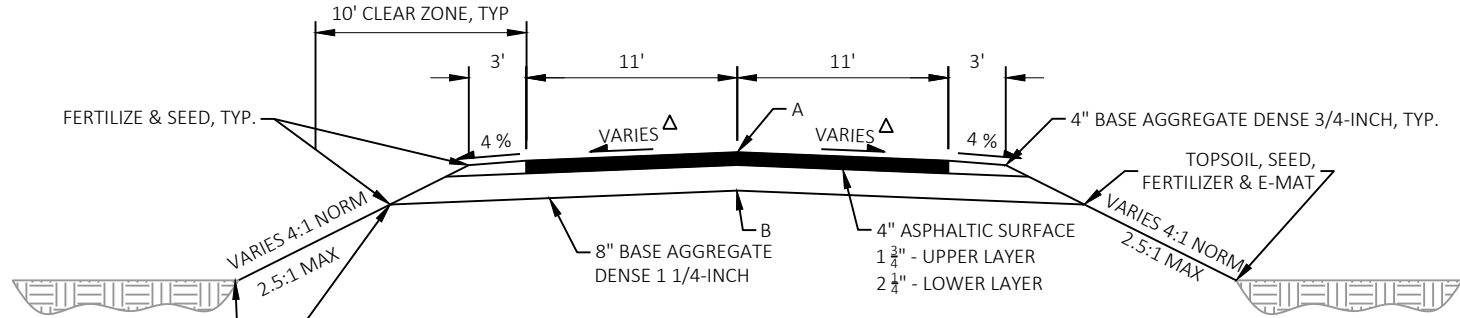


2

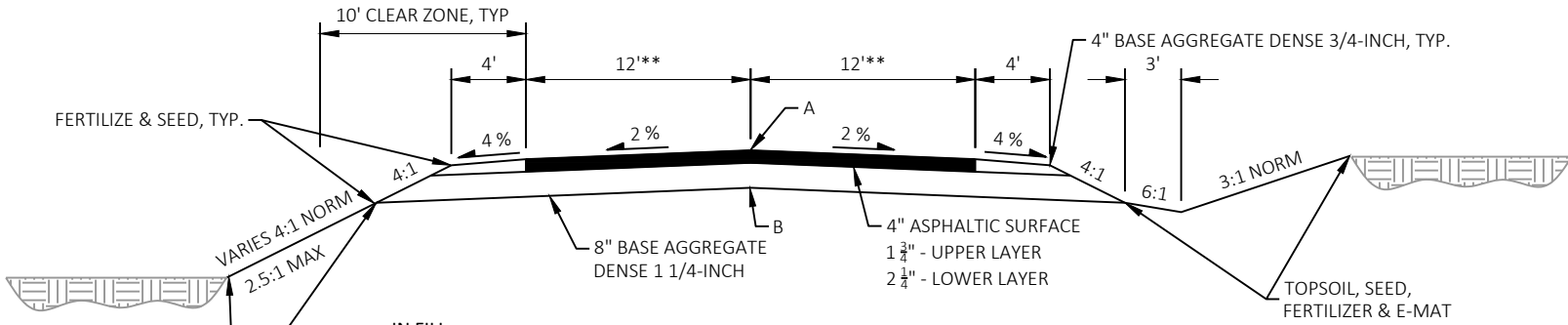
2



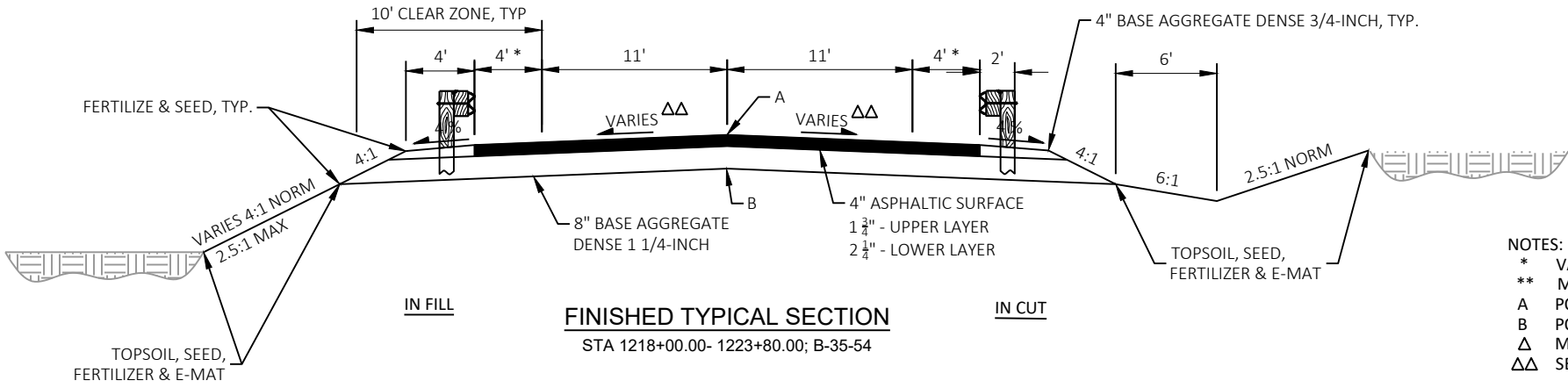
FINISHED TYPICAL SECTION
STA 231+04.50 - 232+19.30; C-35-10



FINISHED TYPICAL SECTION
STA 772+25.00 - 773+25.00;3510700189

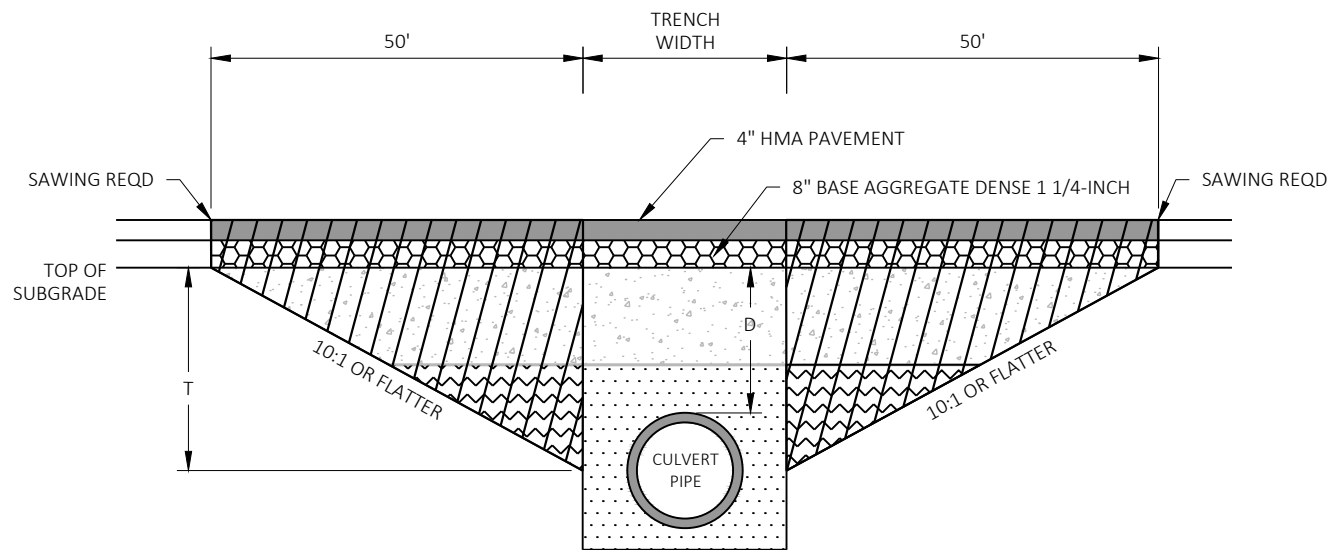


FINISHED TYPICAL SECTION



NOTES:

- * VARIES TO 6' AT POST 1 OF ENERGY ABSORBING TERMINAL
- ** MATCH EXISTING PAVEMENT WIDTH
- A POINT REFERENCED TO ON PLAN & PROFILE
- B POINT REFERENCED TO ON CROSS SECTIONS
- △ MATCH EXISTING; SEE CROSS SECTIONS
- △△ SEE CROSS SECTIONS



CULVERT PIPE TRANSITION
DEPTH D < 6 FT

ROUTE	STA (CL)	DEPTH D (FT)	PIPE DIA (IN)	REMARKS
STH 107	772+76	1.0	48	#35107001895
STH 107	879+48	+/-4.5	36	#35107001905

TRANSITION CUT DEPTH (T) = THE LESSER OF DEPTH TO CENTER OF PIPE OR 5 FT.
DO NOT EXTEND TRANSITION CUT BELOW HORIZONTAL CENTER OF PIPE.

NOTES

TRANSITION CUT IS PAID AS EXCAVATION COMMON.
TRANSITION CUT WIDTH IS FROM SUBGRADE SHOULDER POINT TO SUBGRADE SHOULDER POINT.
BACKFILL THE TRANSITION CUT AREAS WITH FOUNDATION AND TRENCH BACKFILL AS SPECIFIED IN STANDARD SPEC 520.

KEY

PROPOSED SURFACE

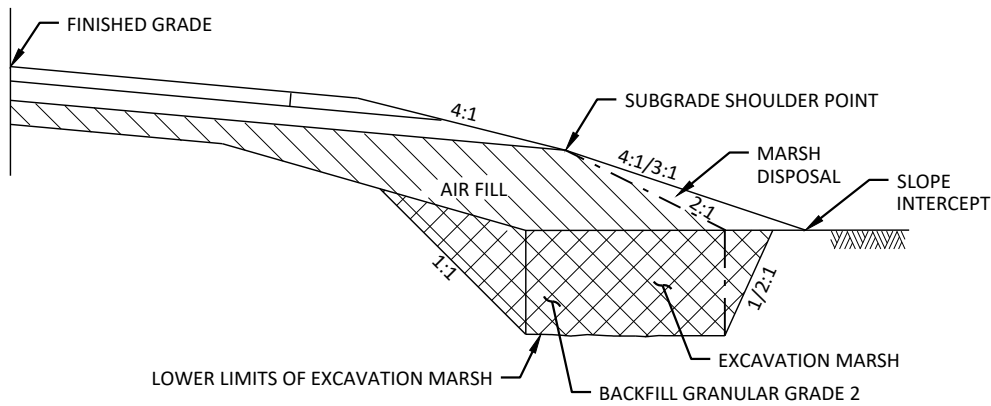
PROPOSED BASE

TRENCH BACKFILL

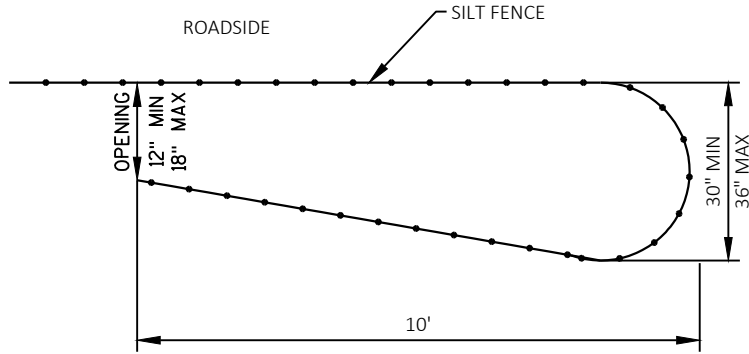
TRENCH OR FOUNDATION BACKFILL

FOUNDATION BACKFILL

TRANSITION CUT

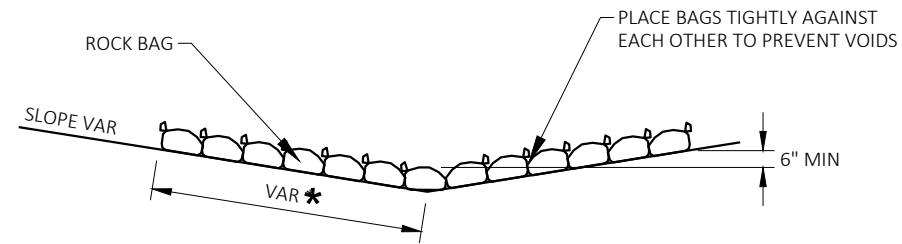


TYPICAL MARSH EXCAVATION



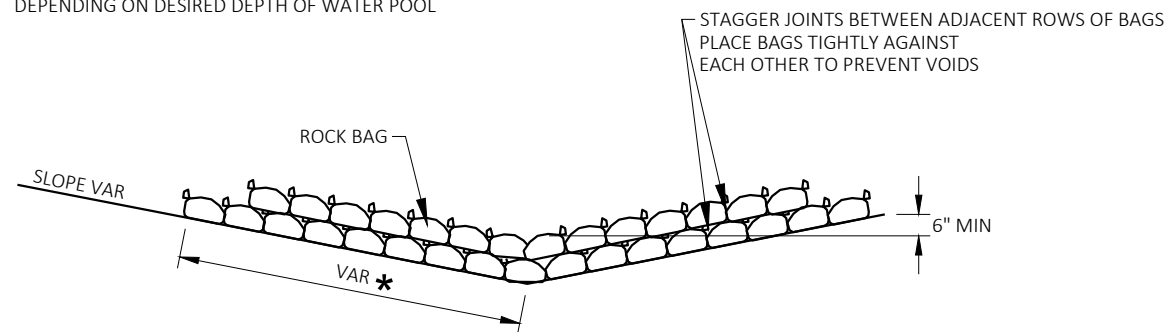
TEMPORARY SMALL ANIMAL BARRIER

NOTES:
SILT FENCE POSTS FOR THE TURN-AROUND SHOULD BE ON THE OUTSIDE OF THE TURN-AROUND
AND TRENCHED IN ACCORDING TO SILT FENCE REQUIREMENTS.

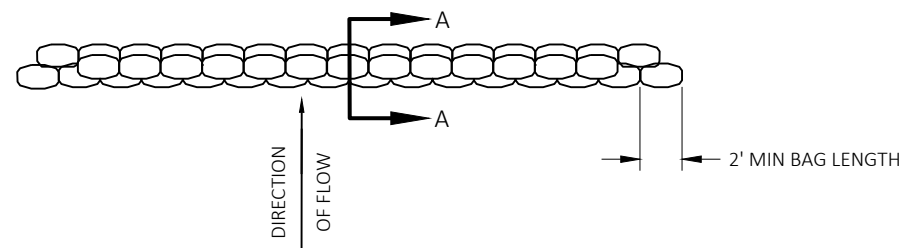


SIDE VIEW (SINGLE LAYER)

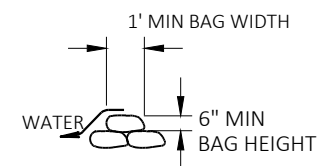
* LENGTH AND NUMBER OF BAGS MAY VARY
DEPENDING ON DESIRED DEPTH OF WATER POOL



SIDE VIEW (MULTIPLE LAYER)

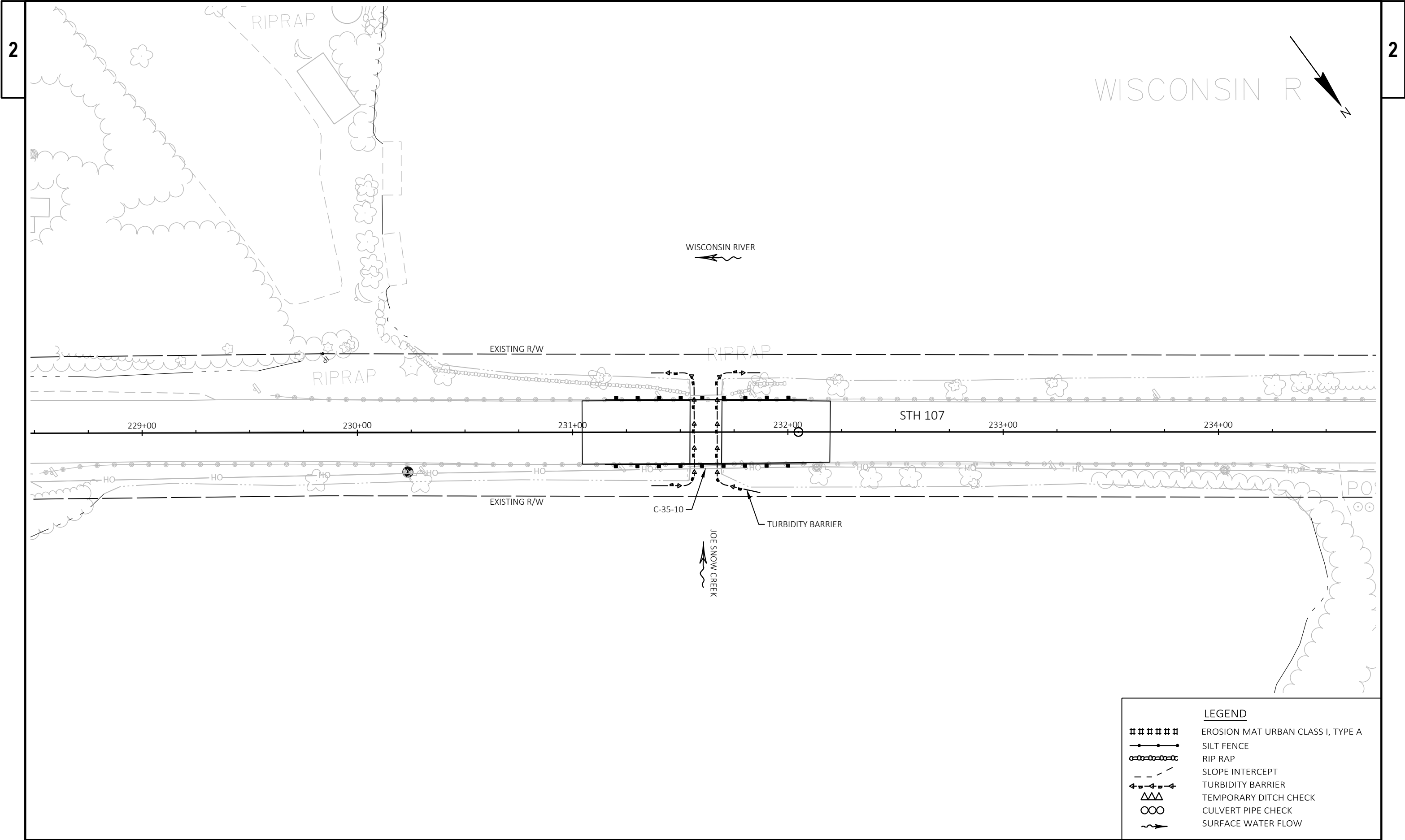


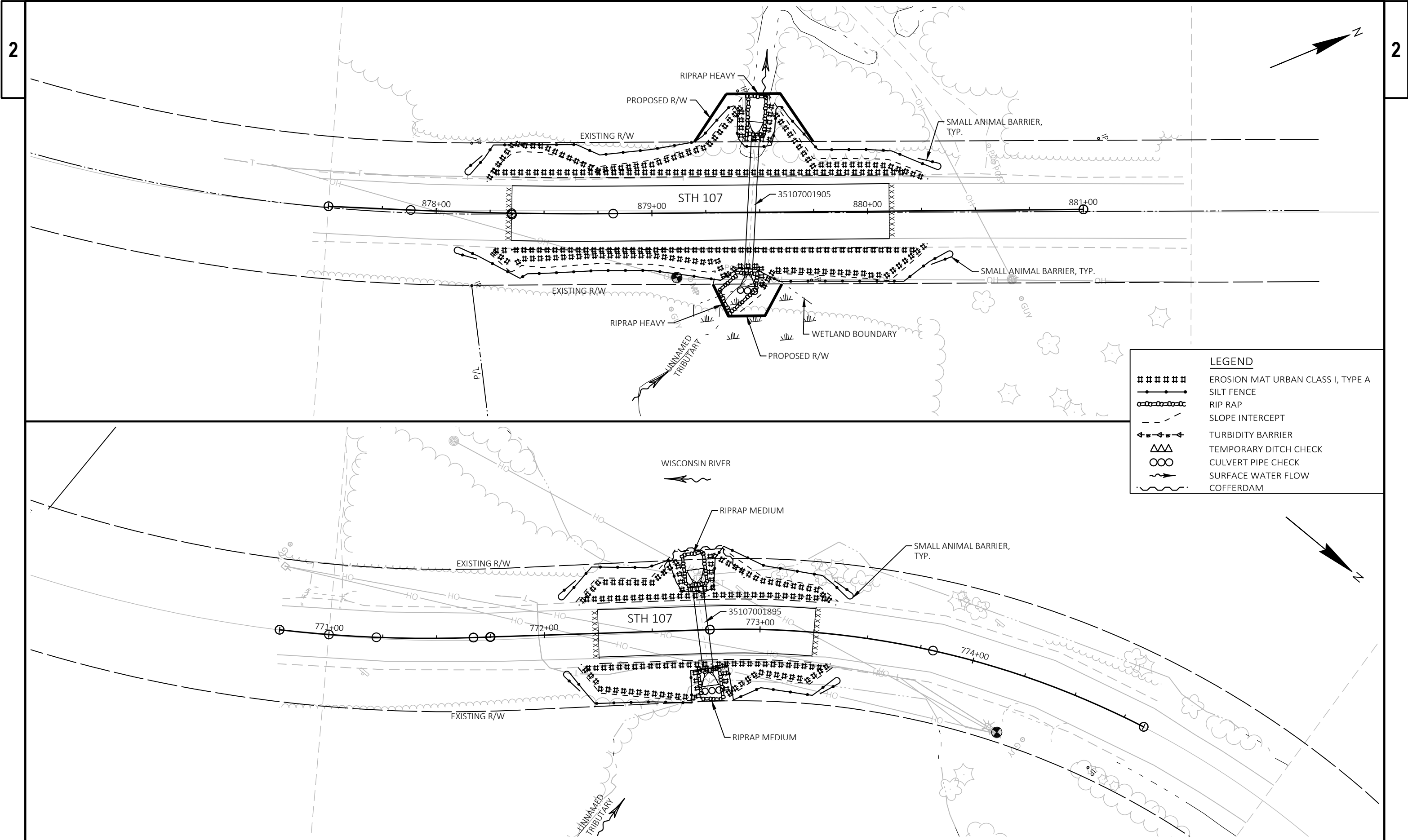
TOP VIEW (MULTIPLE LAYER)

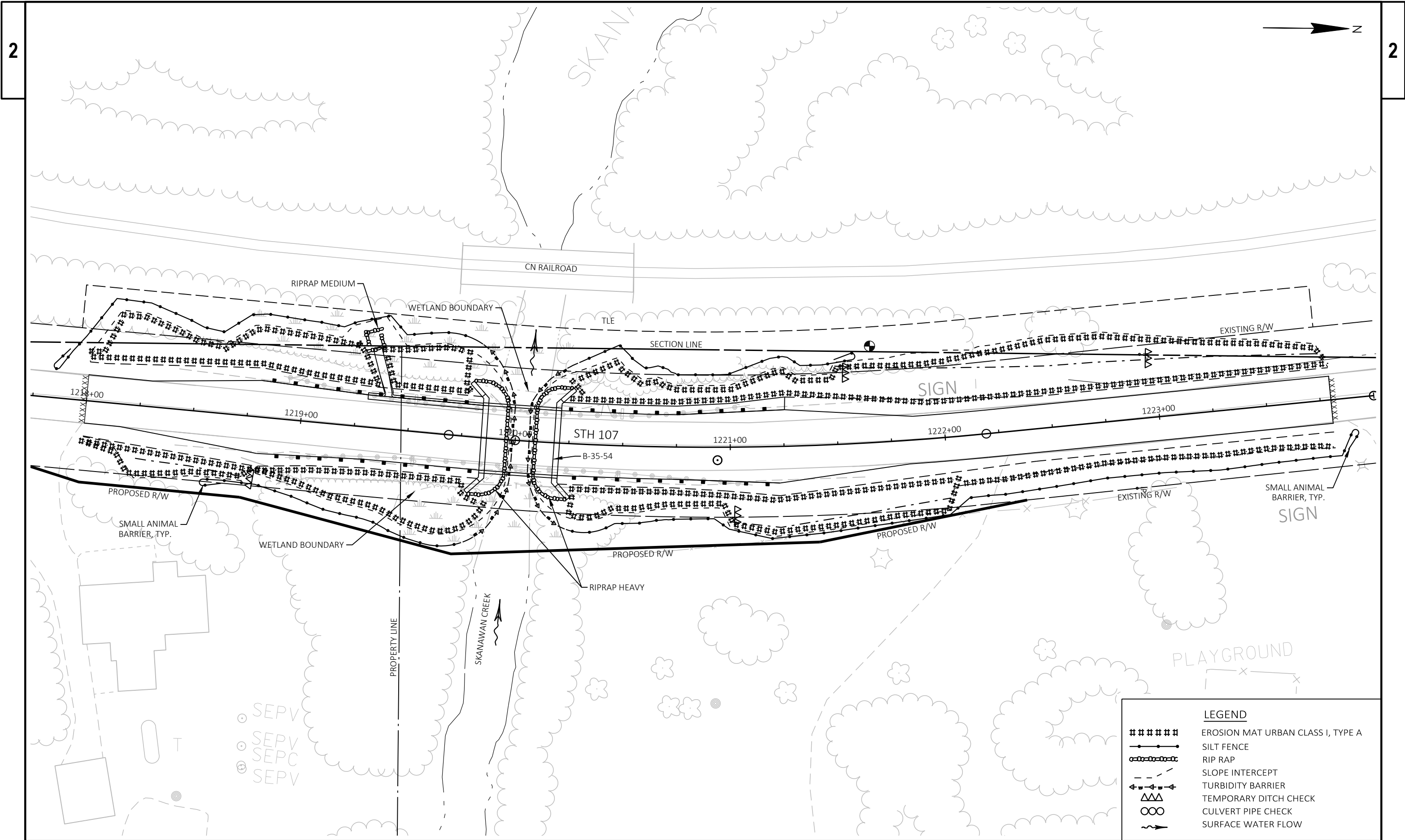


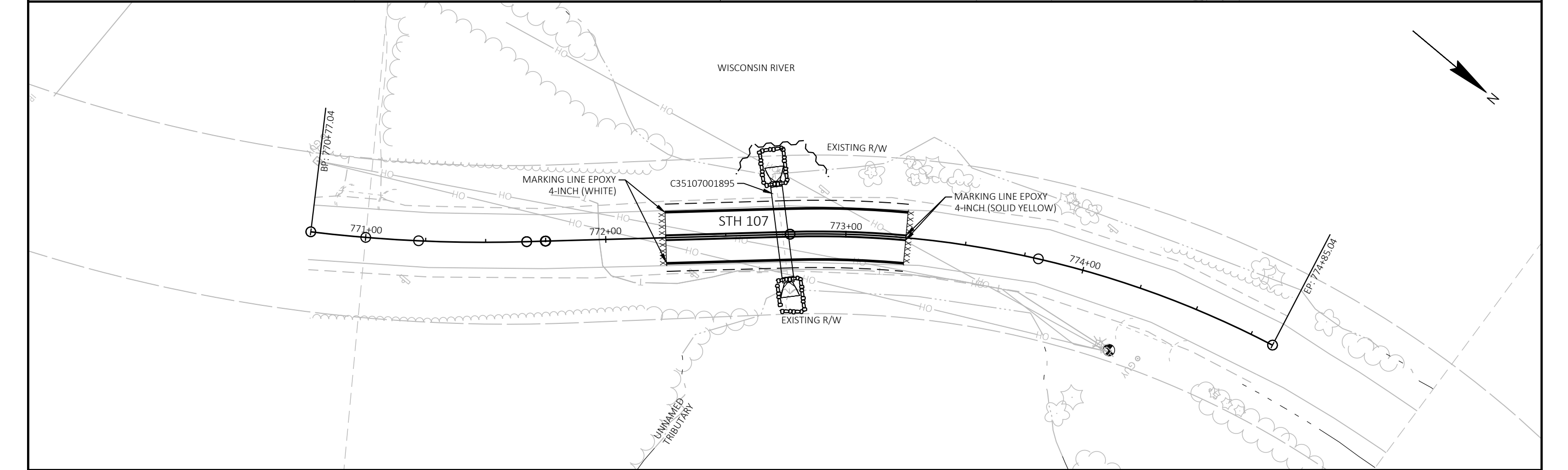
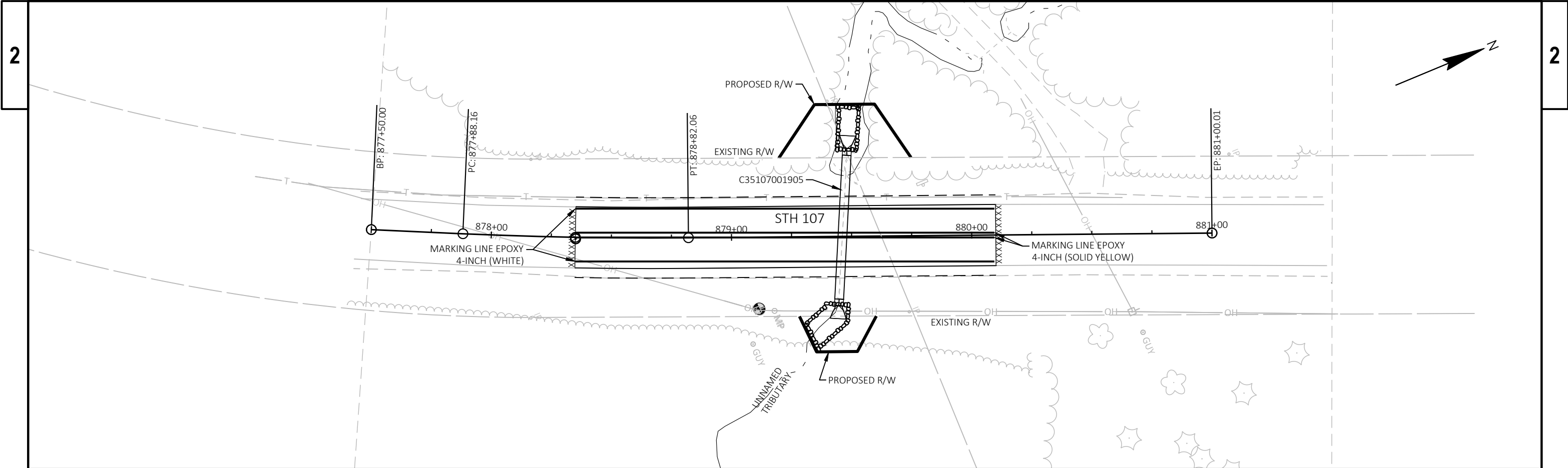
SECTION A-A

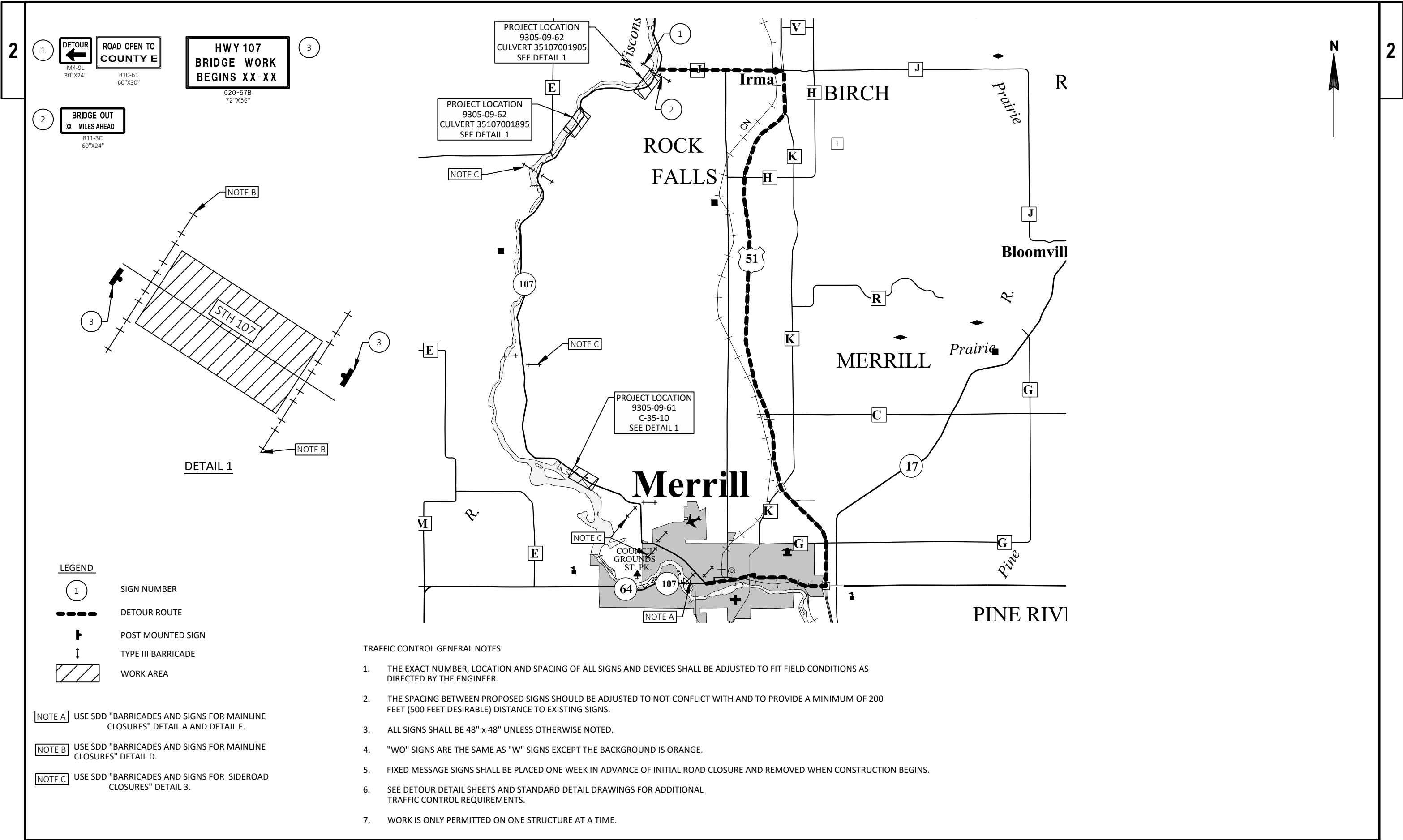
ROCK BAGS USED FOR DITCH CHECKS









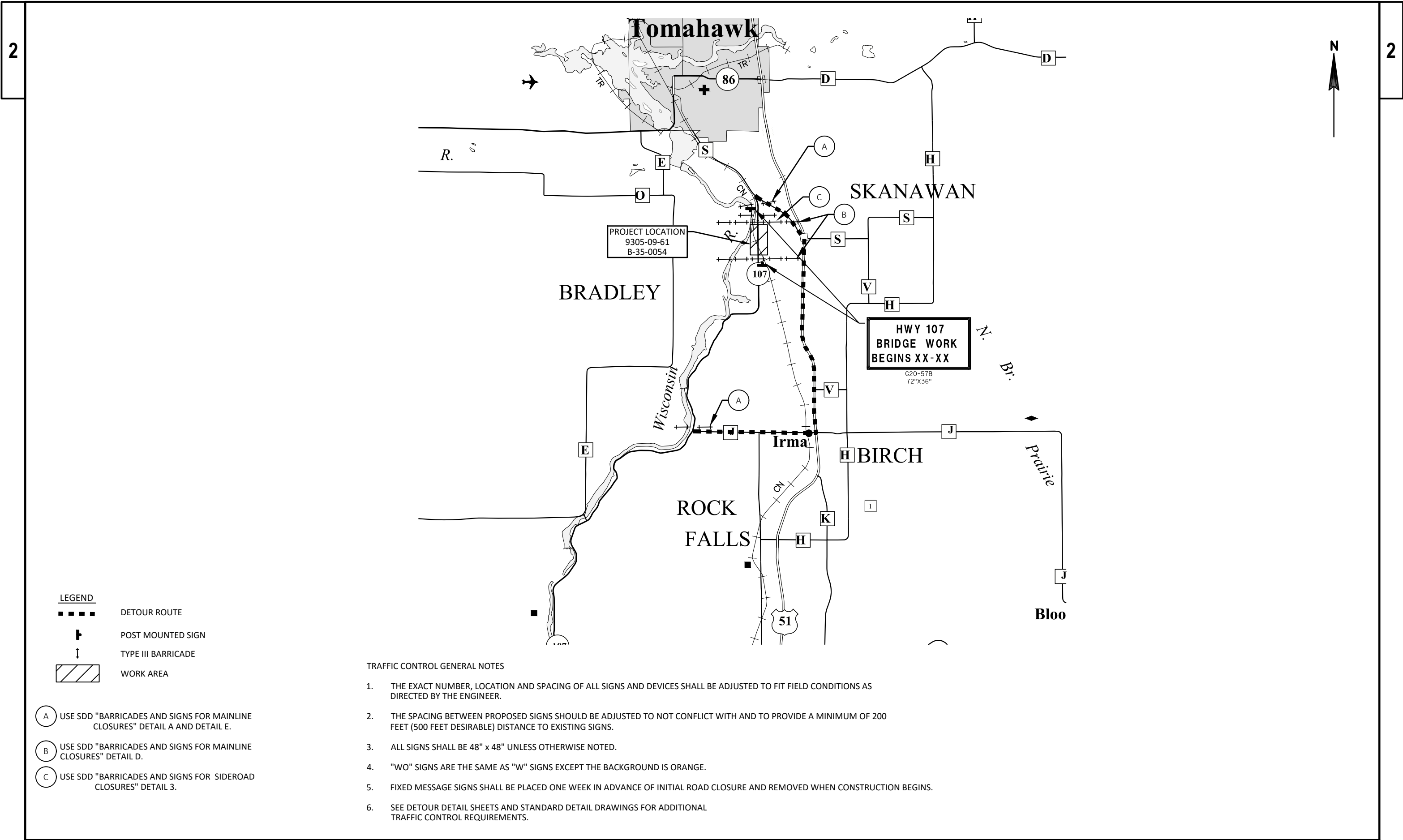


NOTE A USE SDD "BARRICADES AND SIGNS FOR MAINLINE CLOSURES" DETAIL A AND DETAIL E.

NOTE B USE SDD "BARRICADES AND SIGNS FOR MAINLINE CLOSURES" DETAIL D.

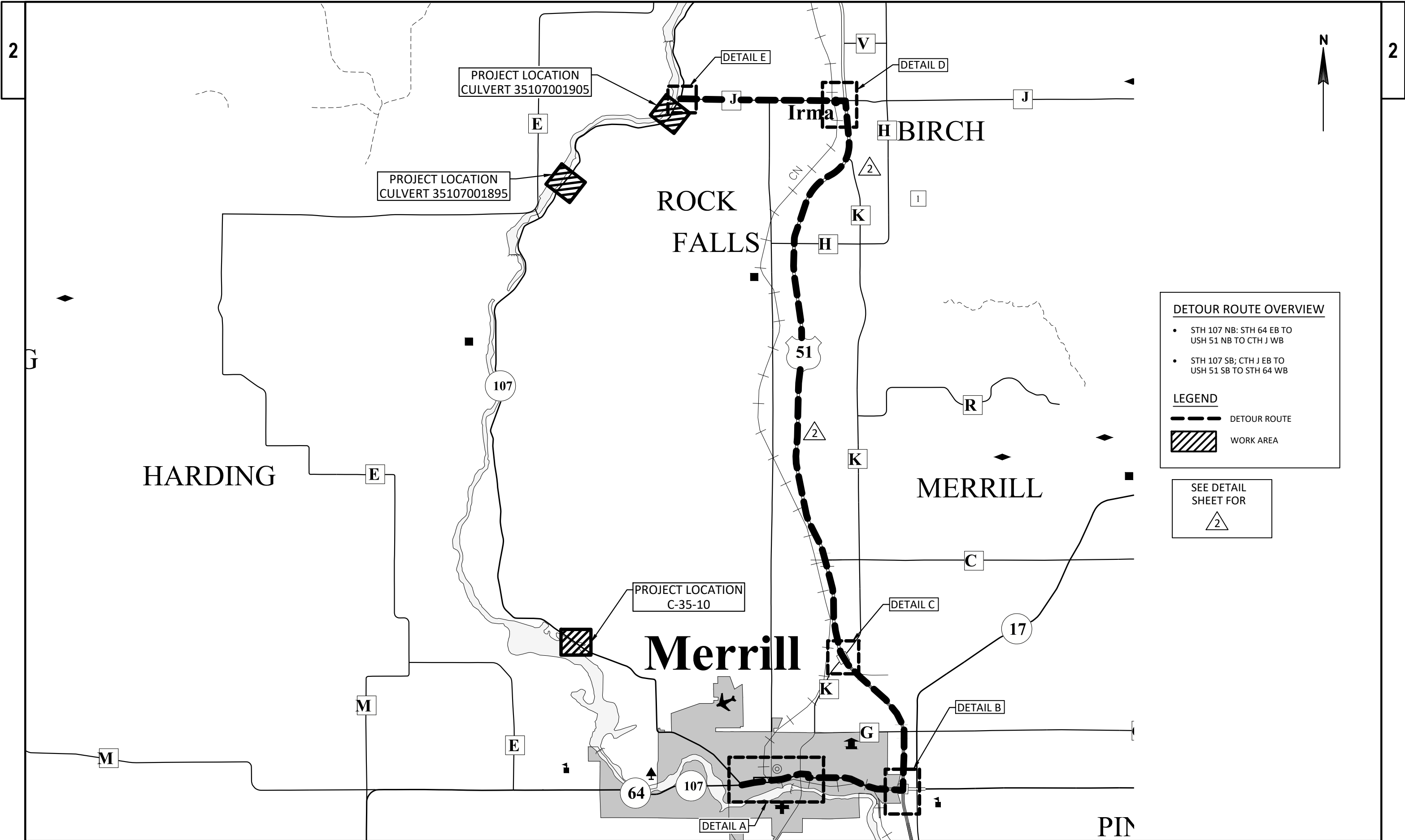
NOTE C USE SDD "BARRICADES AND SIGNS FOR SIDEROAD CLOSURES" DETAIL 3.

- TRAFFIC CONTROL GENERAL NOTES
1. THE EXACT NUMBER, LOCATION AND SPACING OF ALL SIGNS AND DEVICES SHALL BE ADJUSTED TO FIT FIELD CONDITIONS AS DIRECTED BY THE ENGINEER.
 2. THE SPACING BETWEEN PROPOSED SIGNS SHOULD BE ADJUSTED TO NOT CONFLICT WITH AND TO PROVIDE A MINIMUM OF 200 FEET (500 FEET DESIRABLE) DISTANCE TO EXISTING SIGNS.
 3. ALL SIGNS SHALL BE 48" x 48" UNLESS OTHERWISE NOTED.
 4. "WO" SIGNS ARE THE SAME AS "W" SIGNS EXCEPT THE BACKGROUND IS ORANGE.
 5. FIXED MESSAGE SIGNS SHALL BE PLACED ONE WEEK IN ADVANCE OF INITIAL ROAD CLOSURE AND REMOVED WHEN CONSTRUCTION BEGINS.
 6. SEE DETOUR DETAIL SHEETS AND STANDARD DETAIL DRAWINGS FOR ADDITIONAL TRAFFIC CONTROL REQUIREMENTS.
 7. WORK IS ONLY PERMITTED ON ONE STRUCTURE AT A TIME.



- LEGEND**
- DETOUR ROUTE
 - POST MOUNTED SIGN
 - TYPE III BARRICADE
 - WORK AREA
- A USE SDD "BARRICADES AND SIGNS FOR MAINLINE CLOSURES" DETAIL A AND DETAIL E.
- B USE SDD "BARRICADES AND SIGNS FOR MAINLINE CLOSURES" DETAIL D.
- C USE SDD "BARRICADES AND SIGNS FOR SIDEROAD CLOSURES" DETAIL 3.

- TRAFFIC CONTROL GENERAL NOTES
- THE EXACT NUMBER, LOCATION AND SPACING OF ALL SIGNS AND DEVICES SHALL BE ADJUSTED TO FIT FIELD CONDITIONS AS DIRECTED BY THE ENGINEER.
 - THE SPACING BETWEEN PROPOSED SIGNS SHOULD BE ADJUSTED TO NOT CONFLICT WITH AND TO PROVIDE A MINIMUM OF 200 FEET (500 FEET DESIRABLE) DISTANCE TO EXISTING SIGNS.
 - ALL SIGNS SHALL BE 48" x 48" UNLESS OTHERWISE NOTED.
 - "WO" SIGNS ARE THE SAME AS "W" SIGNS EXCEPT THE BACKGROUND IS ORANGE.
 - FIXED MESSAGE SIGNS SHALL BE PLACED ONE WEEK IN ADVANCE OF INITIAL ROAD CLOSURE AND REMOVED WHEN CONSTRUCTION BEGINS.
 - SEE DETOUR DETAIL SHEETS AND STANDARD DETAIL DRAWINGS FOR ADDITIONAL TRAFFIC CONTROL REQUIREMENTS.



DETOUR ROUTE OVERVIEW

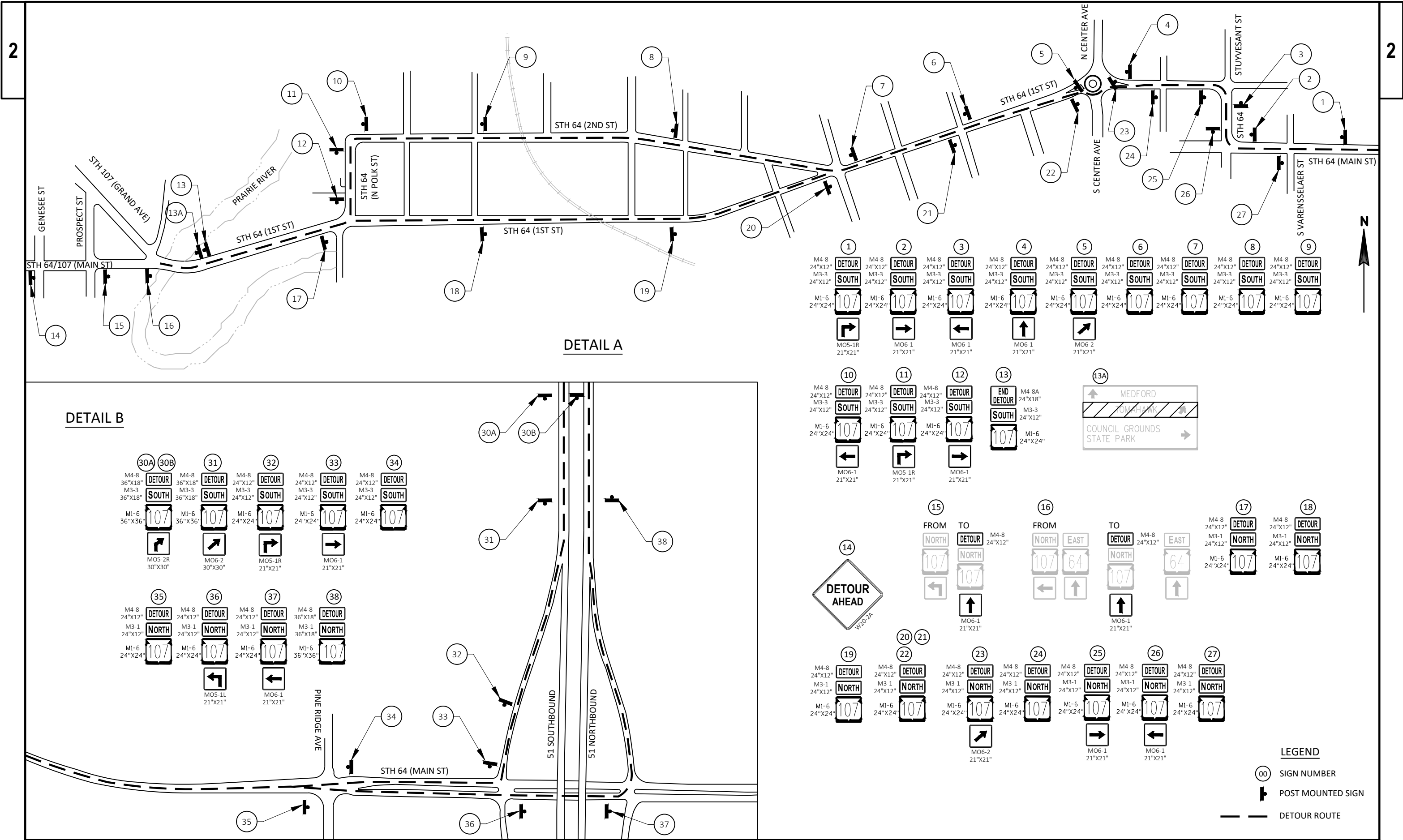
- STH 107 NB: STH 64 EB TO USH 51 NB TO CTH J WB
- STH 107 SB; CTH J EB TO USH 51 SB TO STH 64 WB

LEGEND

--- DETOUR ROUTE

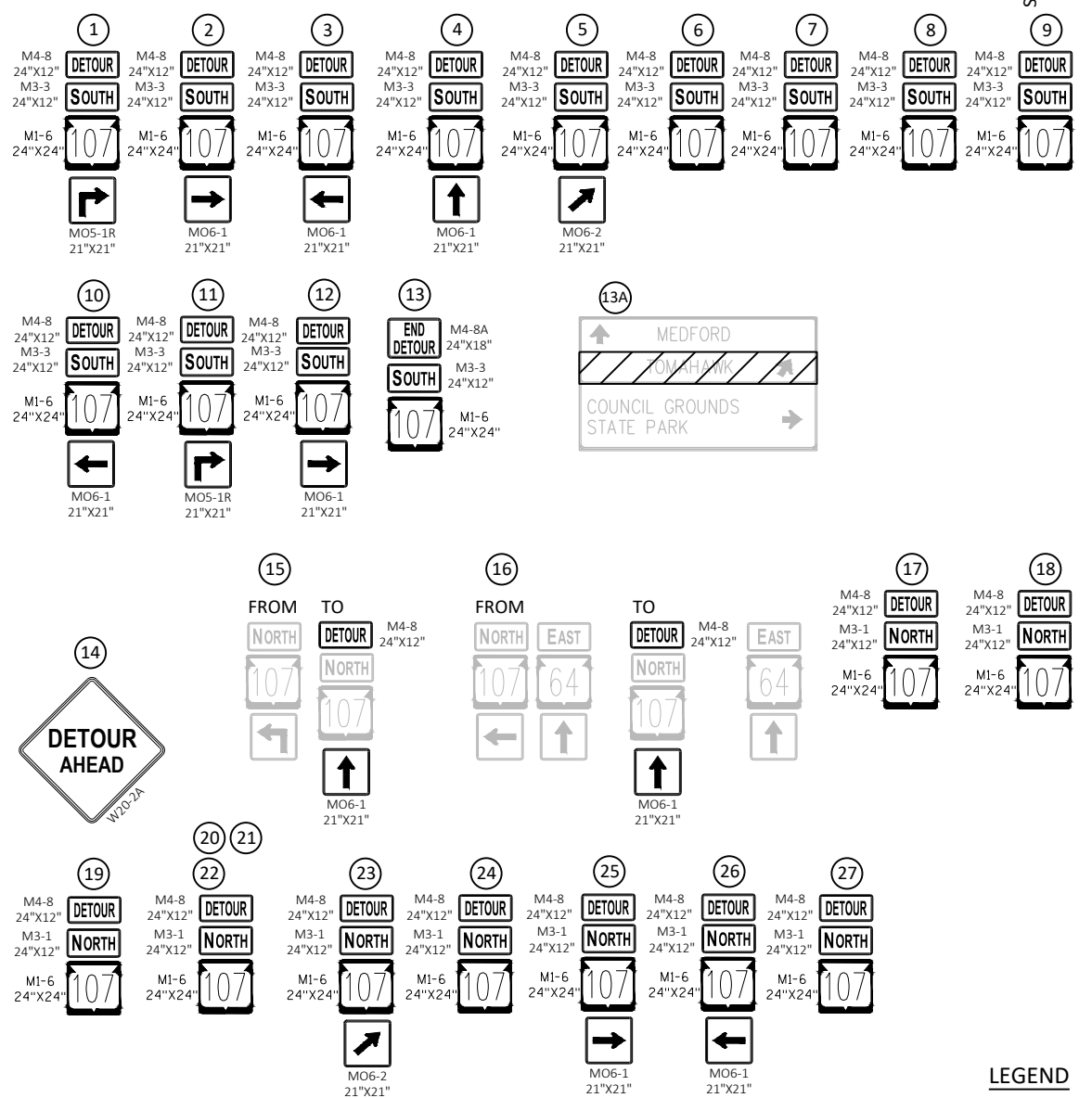
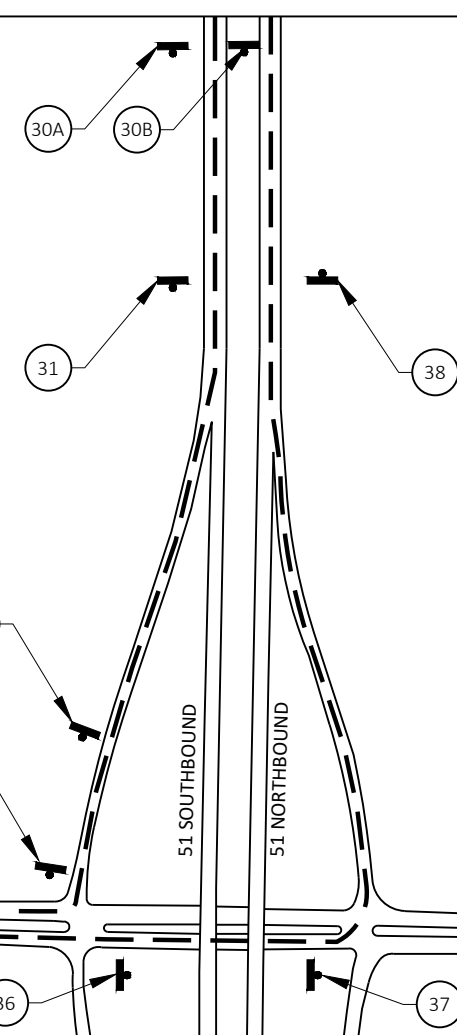
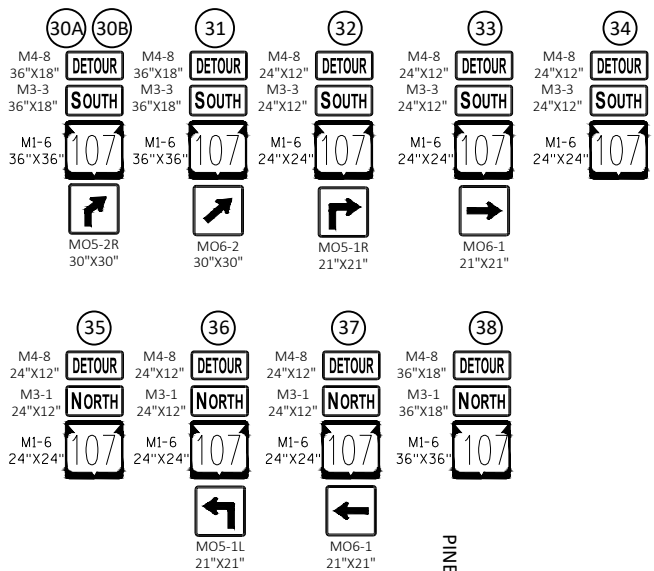
WORK AREA

SEE DETAIL SHEET FOR



DETAIL A

DETAIL B



- LEGEND**
- 00 SIGN NUMBER
 - POST MOUNTED SIGN
 - DETOUR ROUTE

41

M4-8
36"X18"
M3-3
36"X18"

DETOUR

SOUTH

M1-6
36"X36"

107

MO6-1
30"X30"

↑

43

M4-8
36"X18"
M3-1
36"X18"

DETOUR

NORTH

M1-6
36"X36"

107

MO6-1
30"X30"

↑

42

M4-8
36"X18"
M3-3
36"X18"

DETOUR

SOUTH

M1-6
36"X36"

107

44

M4-8
36"X18"
M3-1
36"X18"

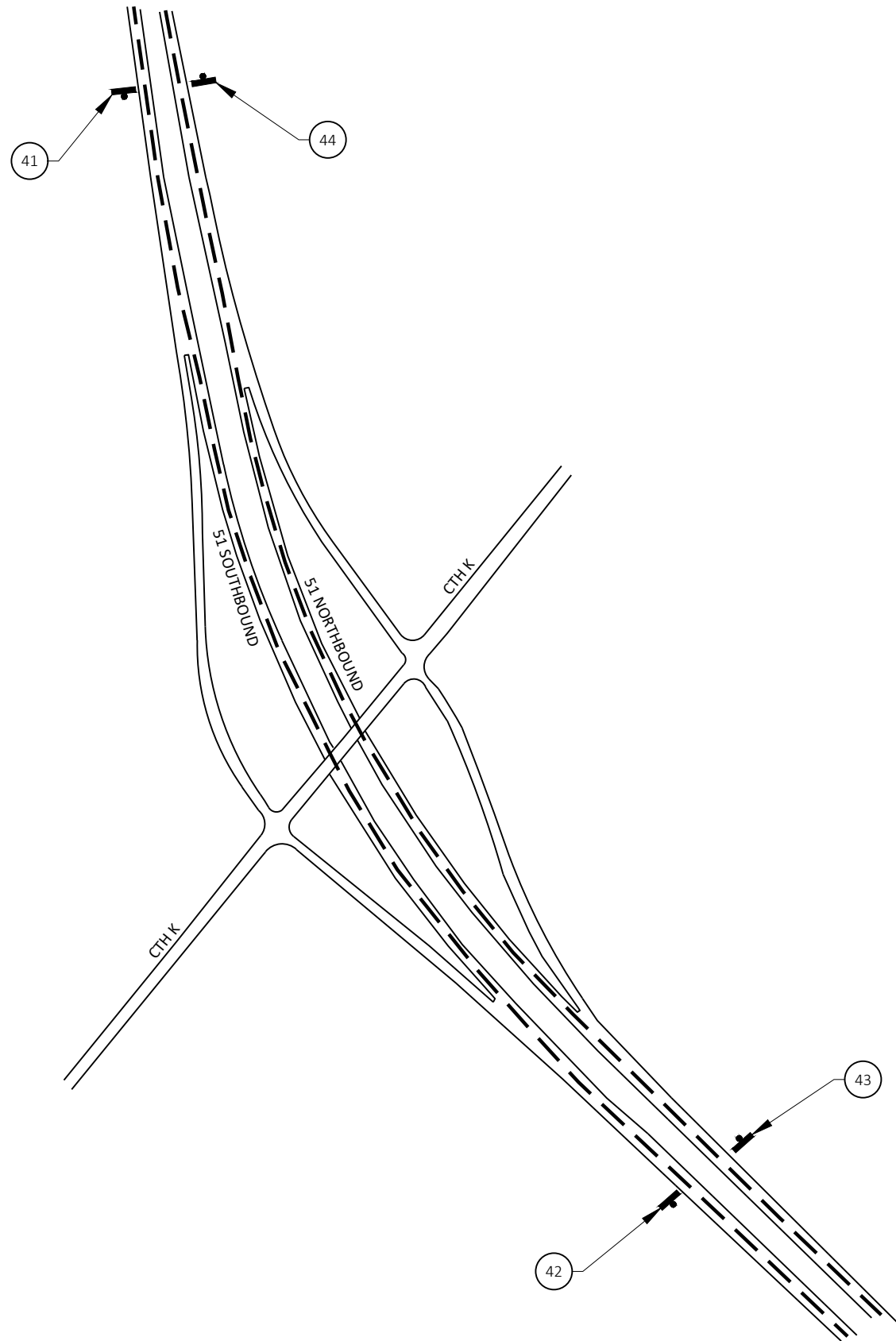
DETOUR

NORTH

M1-6
36"X36"

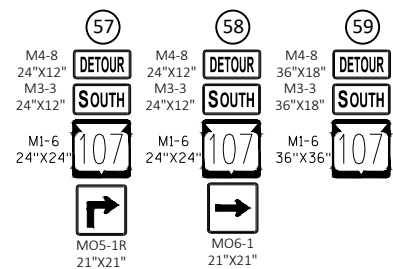
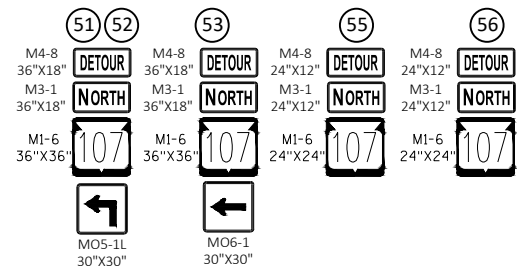
107

DETAIL C

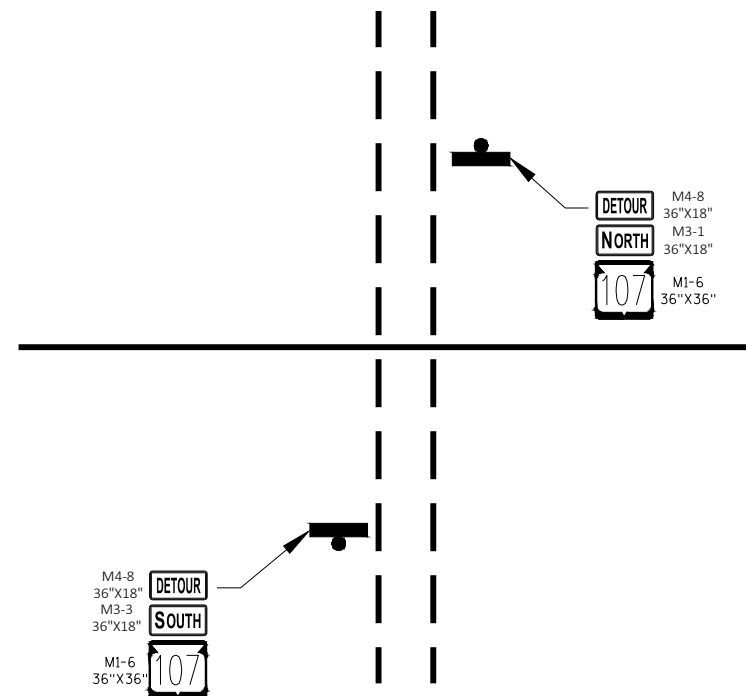
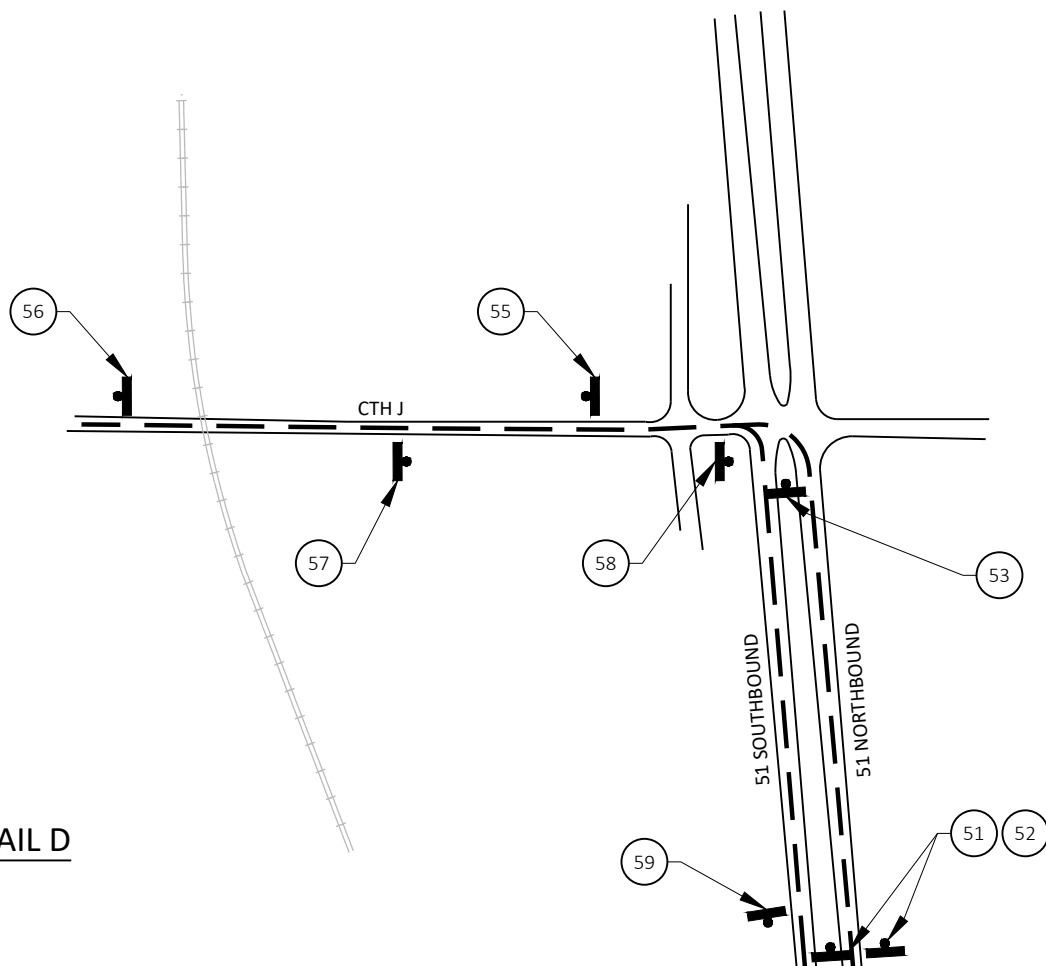


LEGEND

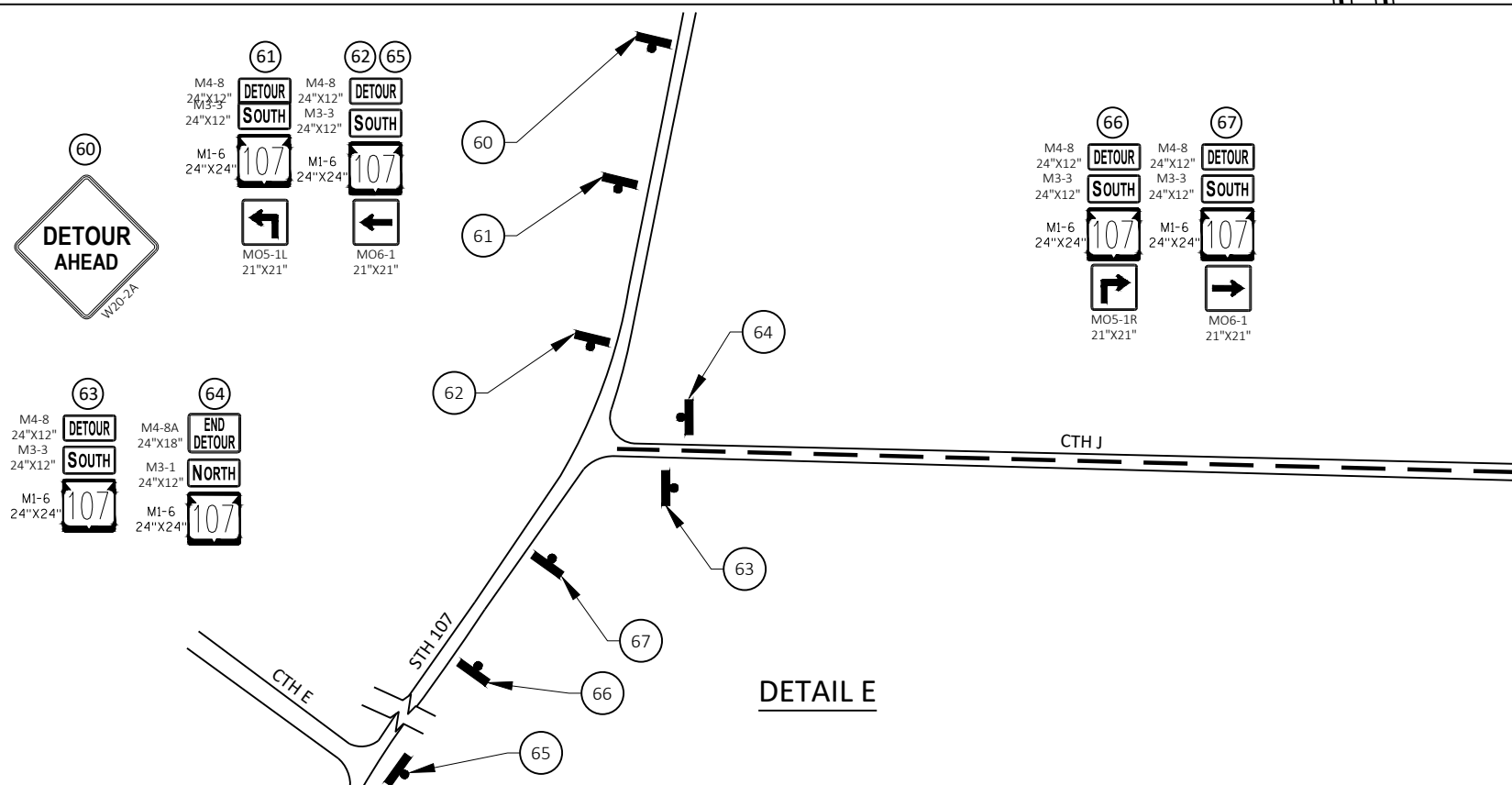
- 00 SIGN NUMBER
- POST MOUNTED SIGN
- DETOUR ROUTE



DETAIL D



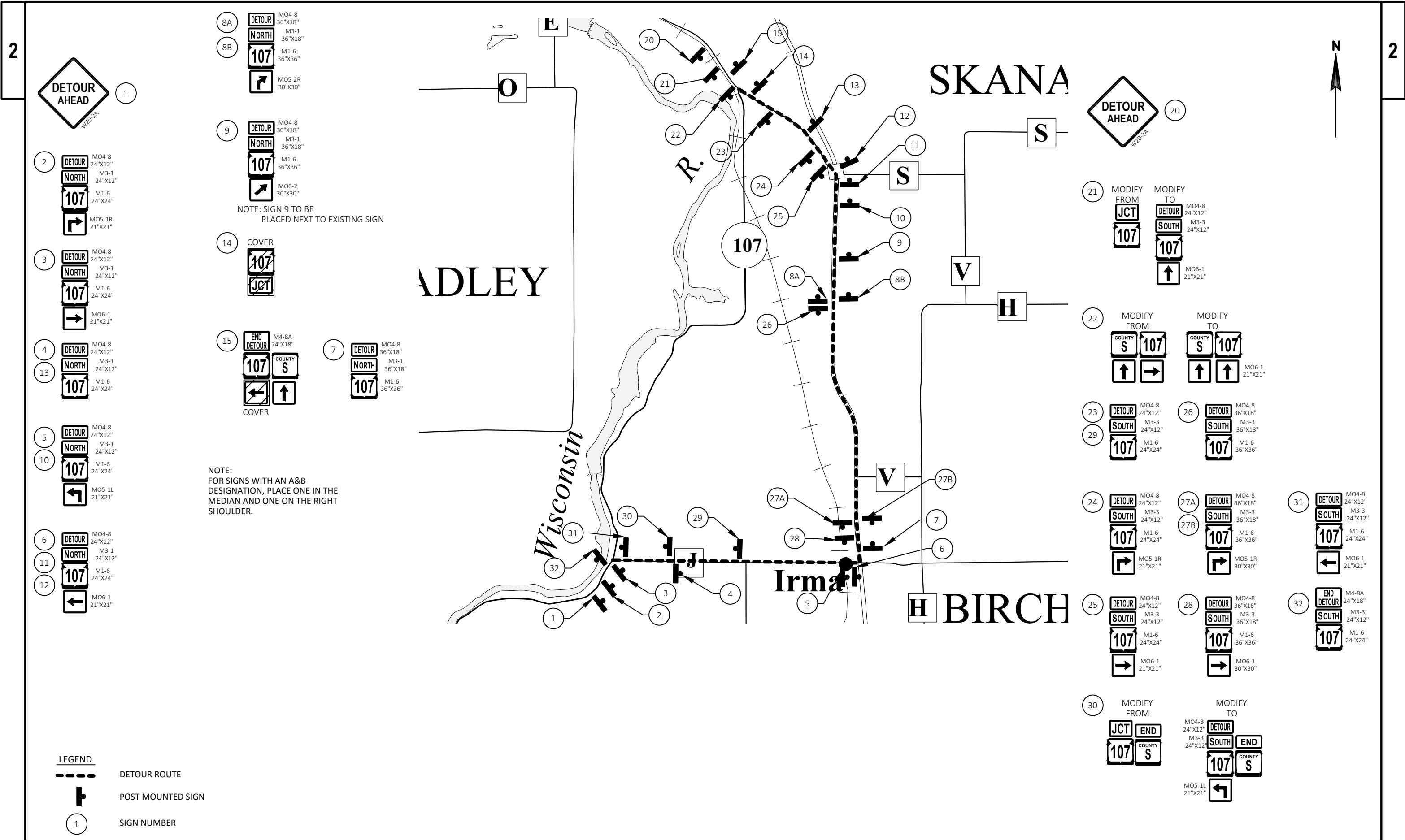
2 SIDEROAD
LINCOLN DR
CTH K / WINKELMAN AVE



DETAIL E

LEGEND

- 00 SIGN NUMBER
- POST MOUNTED SIGN
- DETOUR ROUTE



Estimate Of Quantities

					9305-09-61	9305-09-62
Line	Item	Item Description	Unit	Total	Qty	Qty
0002	201.0105	Clearing	STA	6.000	5.000	1.000
0004	201.0205	Grubbing	STA	6.000	5.000	1.000
0006	203.0100	Removing Small Pipe Culverts	EACH	2.000		2.000
0008	203.0220	Removing Structure (structure) 01. C-35-10	EACH	1.000	1.000	
0010	203.0260	Removing Structure Over Waterway Minimal Debris (structure) 01. C-35-13	EACH	1.000	1.000	
0012	204.0120	Removing Asphaltic Surface Milling	SY	370.000	370.000	
0014	204.0165	Removing Guardrail	LF	740.000	740.000	
0016	205.0100	Excavation Common	CY	2,129.000	827.000	1,302.000
0018	205.0400	Excavation Marsh	CY	96.000	96.000	
0020	206.1000	Excavation for Structures Bridges (structure) 01. B-35-54	LS	1.000	1.000	
0022	206.5000	Cofferdams (structure) 01. C35107001895	LS	1.000		1.000
0024	209.2100	Backfill Granular Grade 2	CY	1,210.000	116.000	1,094.000
0026	210.1500	Backfill Structure Type A	TON	500.000	500.000	
0028	211.0100	Prepare Foundation for Asphaltic Paving (project) 01. 9305-09-61	LS	1.000	1.000	
0030	213.0100	Finishing Roadway (project) 01. 9305-09-61	EACH	1.000	1.000	
0032	213.0100	Finishing Roadway (project) 02. 9305-09-62	EACH	1.000		1.000
0034	305.0110	Base Aggregate Dense 3/4-Inch	TON	230.000	160.000	70.000
0036	305.0120	Base Aggregate Dense 1 1/4-Inch	TON	1,750.000	1,220.000	530.000
0038	416.1010	Concrete Surface Drains	CY	2.000	2.000	
0040	455.0605	Tack Coat	GAL	185.000	135.000	50.000
0042	465.0105	Asphaltic Surface	TON	585.000	415.000	170.000
0044	502.0100	Concrete Masonry Bridges	CY	163.000	163.000	
0046	502.3200	Protective Surface Treatment	SY	122.000	122.000	
0048	502.3210	Pigmented Surface Sealer	SY	36.000	36.000	
0050	502.4204	Adhesive Anchors No. 4 Bar	EACH	40.000	40.000	
0052	504.0100	Concrete Masonry Culverts	CY	1.000	1.000	
0054	505.0400	Bar Steel Reinforcement HS Structures	LB	4,960.000	4,960.000	
0056	505.0600	Bar Steel Reinforcement HS Coated Structures	LB	18,890.000	18,890.000	
0058	509.1500	Concrete Surface Repair	SF	208.000	208.000	
0060	516.0500	Rubberized Membrane Waterproofing	SY	20.000	20.000	
0062	522.0136	Culvert Pipe Reinforced Concrete Class III 36-Inch	LF	60.000		60.000
0064	522.0448	Culvert Pipe Reinforced Concrete Class IV 48-Inch	LF	38.000		38.000
0066	522.1036	Apron Endwalls for Culvert Pipe Reinforced Concrete 36-Inch	EACH	2.000		2.000
0068	522.1048	Apron Endwalls for Culvert Pipe Reinforced Concrete 48-Inch	EACH	2.000		2.000
0070	550.0500	Pile Points	EACH	14.000	14.000	
0072	550.1100	Piling Steel HP 10-Inch X 42 Lb	LF	350.000	350.000	
0074	601.0588	Concrete Curb & Gutter 4-Inch Sloped 36-Inch Type TBT	LF	53.000	53.000	
0076	606.0200	Riprap Medium	CY	64.000	8.000	56.000
0078	606.0300	Riprap Heavy	CY	213.000	153.000	60.000
0080	612.0406	Pipe Underdrain Wrapped 6-Inch	LF	150.000	150.000	
0082	614.0150	Anchor Assemblies for Steel Plate Beam Guard	EACH	4.000	4.000	
0084	614.0305	Steel Plate Beam Guard Class A	LF	112.500	112.500	
0086	614.0340	Steel Plate Beam Guard Over Low-Fill Culverts Class A	LF	187.500	187.500	
0088	614.0397	Guardrail Mow Strip Emulsified Asphalt	SY	46.000	46.000	
0090	614.2300	MGS Guardrail 3	LF	50.000	50.000	
0092	614.2500	MGS Thrie Beam Transition	LF	157.600	157.600	
0094	614.2610	MGS Guardrail Terminal EAT	EACH	4.000	4.000	
0096	618.0100	Maintenance And Repair of Haul Roads (project) 01. 9305-91-61	EACH	1.000	1.000	
0098	618.0100	Maintenance And Repair of Haul Roads (project) 02. 9305-09-62	EACH	1.000		1.000

Estimate Of Quantities

				9305-09-61	9305-09-62	
Line	Item	Item Description	Unit	Total	Qty	Qty
0100	619.1000	Mobilization	EACH	1.000	0.850	0.150
0102	624.0100	Water	MGAL	12.000	8.000	4.000
0104	625.0100	Topsoil	SY	3,750.000	2,650.000	1,100.000
0106	628.1504	Silt Fence	LF	2,315.000	1,160.000	1,155.000
0108	628.1520	Silt Fence Maintenance	LF	2,315.000	1,160.000	1,155.000
0110	628.1905	Mobilizations Erosion Control	EACH	4.000	2.000	2.000
0112	628.1910	Mobilizations Emergency Erosion Control	EACH	4.000	2.000	2.000
0114	628.2006	Erosion Mat Urban Class I Type A	SY	3,750.000	2,650.000	1,100.000
0116	628.6005	Turbidity Barriers	SY	430.000	430.000	
0118	628.7504	Temporary Ditch Checks	LF	100.000	50.000	50.000
0120	628.7555	Culvert Pipe Checks	EACH	20.000		20.000
0122	628.7570	Rock Bags	EACH	20.000	10.000	10.000
0124	629.0210	Fertilizer Type B	CWT	2.370	1.670	0.700
0126	630.0130	Seeding Mixture No. 30	LB	70.000	50.000	20.000
0128	630.0500	Seed Water	MGAL	8.000	5.000	3.000
0130	633.5200	Markers Culvert End	EACH	4.000		4.000
0132	634.0616	Posts Wood 4x6-Inch X 16-FT	EACH	9.000	9.000	
0134	637.2210	Signs Type II Reflective H	SF	33.250	33.250	
0136	638.2602	Removing Signs Type II	EACH	12.000	12.000	
0138	638.3000	Removing Small Sign Supports	EACH	13.000	13.000	
0140	642.5001	Field Office Type B	EACH	1.000	1.000	
0142	643.0420	Traffic Control Barricades Type III	DAY	1,706.000	1,566.000	140.000
0144	643.0705	Traffic Control Warning Lights Type A	DAY	2,484.000	2,204.000	280.000
0146	643.0900	Traffic Control Signs	DAY	16,242.000	13,862.000	2,380.000
0148	643.0920	Traffic Control Covering Signs Type II	EACH	2.000	2.000	
0150	643.1000	Traffic Control Signs Fixed Message	SF	164.000	100.000	64.000
0152	643.5000	Traffic Control	EACH	1.000	0.900	0.100
0154	645.0111	Geotextile Type DF Schedule A	SY	86.000	86.000	
0156	645.0120	Geotextile Type HR	SY	311.000	223.000	88.000
0158	646.1020	Marking Line Epoxy 4-Inch	LF	3,810.000	2,710.000	1,100.000
0160	650.4500	Construction Staking Subgrade	LF	855.000	580.000	275.000
0162	650.5000	Construction Staking Base	LF	855.000	580.000	275.000
0164	650.5500	Construction Staking Curb Gutter and Curb & Gutter	LF	53.000	53.000	
0166	650.6000	Construction Staking Pipe Culverts	EACH	2.000		2.000
0168	650.6500	Construction Staking Structure Layout (structure) 01. B-35-54	LS	1.000	1.000	
0170	650.8000	Construction Staking Resurfacing Reference	LF	115.000	115.000	
0172	650.9910	Construction Staking Supplemental Control (project) 01. 9305-09-61	LS	1.000	1.000	
0174	650.9910	Construction Staking Supplemental Control (project) 02. 9305-09-62	LS	1.000		1.000
0176	650.9920	Construction Staking Slope Stakes	LF	855.000	580.000	275.000
0178	690.0150	Sawing Asphalt	LF	136.000	44.000	92.000
0180	715.0502	Incentive Strength Concrete Structures	DOL	984.000	984.000	
0182	801.0117	Railroad Flagging Reimbursement	DOL	20,000.000	20,000.000	
0184	999.2000.S	Installing and Maintaining Bird Deterrent System (station) 01. STA 1220+00	EACH	1.000	1.000	
0186	SPV.0035	Special 01. Scour Repair Grout Bags	CY	4.000	4.000	
0188	SPV.0060	Special 01. Settlement Monitoring	EACH	1.000	1.000	
0190	SPV.0165	Special 01. Underwater Concrete Surface Repair	SF	80.000	80.000	
0192	SPV.0195	Special 01. Select Crushed Material for Travel Corridor	TON	130.000	130.000	

EARTHWORK

DIVISION	FROM/TO STATION	205.0100 COMMON EXCAVATION (1)		SALVAGED/UNUSABLE PAVEMENT MATERIAL (4)	AVAILABLE MATERIAL (5)	205.0400 MARSH EXCAVATION (6)	209.2100 BACKFILL GRANULAR GRADE 2	UNEXPANDED FILL	EXPANDED FILL (13)	MASS ORDINATE (14)	WASTE
		CUT (2)	EBS EXCAVATION (3)				FACTOR		FACTOR 1.25		
							1.20				
9305-09-61											
B-35-0054	1217+75 - 1224+00	827	0	127	700	96	116	608	760	-60	36
-61 PROJECT TOTALS		827	0	127	700	96	116	608	760	-60	36
9305-09-62											
35107001895	772+15 - 773+35	159	0	27	132	0	0	4	5	127	127
35107001895	PIPE TRANSITION	217	0	0	217	0	260	0	0	217	217
35107001905	878+25 - 880+25	231	0	44	187	0	0	59	74	113	113
35107001905	PIPE TRANSITION	695	0	0	695	0	834	0	0	695	695
-62 PROJECT TOTALS		1,302	0	71	1,231	0	1,094	63	79	1,152	1,152
CONTRACT TOTALS		2,129	0	198	1,930	96	1,210	671	839	1,091	1,188
TOTAL COMMON EXC		2,129									

NOTES:

- (1) COMMON EXCAVATION IS THE SUM OF THE CUT AND EBS EXCAVATION COLUMNS. ITEM NUMBER 205.0100
- (2) SALVAGED/UNSUABLE PAVEMENT MATERIAL IS INCLUDED IN CUT.
- (5) AVAILABLE MATERIAL = CUT - SALVAGED/UNUSALBE PAVEMENT MATERIAL
- (6) MARSH EXCAVATION - TO BE BACKFILLED WITH BACKFILL GRANULAR GRADE 2, ITEM 209.2100. MARSH EXCAVATION ASSUMED TO BE WASTED.
- (8) INCLUDES MARSH EXCAVATION WASTE
- (14) THE MASS ORDINATE = CUT - EXPANDED FILL (DOES NOT INCLUDE MARSH EXCAVATION)

PREPARE FOUNDATION FOR ASPHALTIC PAVING

					211.0100.01 9305-09-61
STATION TO STATION			LOCATION		LS
9305-09-61					
231+04	-	232+19	C-35-10		1
-61 PROJECT TOTAL					1
CONTRACT TOTAL					1

CLEARING AND GRUBBING

STATION TO STATION	LOCATION	201.0105 CLEARING STA	201.0205 GRUBBING STA
9305-09-61			
1218+00 - 1223+00	B-35-54	5	5
-61 PROJECT TOTALS		5	5
9305-09-62			
879+00 - 880+00	35107001905	1	1
-62 PROJECT TOTALS		1	1
CONTRACT TOTALS		6	6

BASE COURSE

REMOVING SMALL PIPE CULVERTS

			203.0100 REMOVING SMALL PIPE CULVERTS EACH
STATION	DIR	LOCATION	
9305-09-62			
772+74	R/L	35107001895	1
879+46	R/L	35107001905	1
-62 PROJECT TOTAL			2
CONTRACT TOTAL			2

STATION TO STATION	LOCATION	305.0110	305.0120	624.0100	
		BASE AGGREGATE DENSE			WATER
		3/4-INCH TON	1 1/4-INCH TON	MGAL	
9305-09-61					
1218+00 - 1223+80	B-35-54	160	1,220	8	
-61 PROJECT TOTALS		160	1,220	8	
9305-09-62					
772+15 - 773+35	35107001895	20	210	2	
878+35 - 880+10	35107001905	50	320	2	
-62 PROJECT TOTALS		70	530	4	
CONTRACT TOTALS		230	1,750	13	

ASPHALTIC ITEMS

				204.0120 REMOVING ASPHALTIC SURFACE MILLING SY	455.0605 TACK COAT GAL	465.0105 ASPHALTIC SURFACE TON
STATION	TO	STATION	LOCATION			
9305-09-61						
231+05	-	232+19	C-35-10	370	25	45
1218+00	-	1223+80	B-35-54	---	110	370
-61 PROJECT TOTALS				370	135	415
9305-09-62						
772+25	-	773+25	35107001895	---	20	60
878+35	-	880+10	35107001905	---	30	110
-62 PROJECT TOTALS				0	50	170
CONTRACT TOTALS				370	185	585

REMOVING GUARDRAIL

					204.0165 REMOVING GUARDRAIL LF
STATION TO STATION			DIR	LOCATION	
9305-09-61					
1218+90	-	1221+10	LT	B-35-54	220
1218+90	-	1221+10	RT	B-35-54	220
230+87	-	232+37	LT	C-35-10	150
230+87	-	232+37	RT	C-35-10	150
-61 PROJECT TOTAL					740
CONTRACT TOTAL					740

CONCRETE SURFACE DRAIN

			416.1010 CONCRETE SURFACE DRAIN CY
STATION	DIR	LOCATION	
9305-09-61			
1219+35	LT	B-35-54	2
-61 PROJECT TOTAL			2
CONTRACT TOTAL			2

ALL ITEMS ARE CATEGORY 0010
UNLESS OTHERWISE NOTED

3

CULVERT PIPE

STATION	LOCATION	522.1036	522.1048	522.0136	522.0448	633.5200	650.6000
		APRON ENDWALLS FOR CULVERT PIPE REINFORCED CONCRETE		CULVERT PIPE REINFORCED CONCRETE CLASS III	CULVERT PIPE REINFORCED CONCRETE CLASS IV	MARKERS CULVERT END	CONSTRUCTION STAKING CULVERTS
		36-INCH EACH	48-INCH EACH	36-INCH LF	48-INCH LF	EACH	EACH
9305-09-62							
772+75	35107001895	---	2	---	38	2	1
879+45	35107001905	2	---	60	---	2	1
-62 PROJECT TOTALS		2	2	60	38	4	2
CONTRACT TOTALS		2	2	60	38	4	2

ALL ITEMS ARE CATEGORY 0010
UNLESS OTHERWISE NOTED

CONCRETE CURB AND GUTTER

STATION TO STATION	DIR	LOCATION	601.0588 CONCRETE CURB & GUTTER 4-INCH SLOPED 36-INCH TYPE TBT LF
9305-09-61			
1219+29 - 1219+82	LT	B-35-54	53
-61 PROJECT TOTAL			53
CONTRACT TOTAL			53

3

RIPRAP

STATION	DIR	LOCATION	606.0200 RIPRAP MEDIUM CY	606.0300 RIPRAP HEAVY CY	645.0120 GEOTEXTILE TYPE HR SY
9305-09-61					
1219+35	LT	B-35-54	8	---	6
-61 PROJECT TOTALS			8	0	6
9305-09-62					
772+71	LT	35107001895	28	---	20
772+75	RT	35107001895	28	---	20
879+48	LT	35107001905	---	30	24
879+45	RT	35107001905	---	30	24
-62 PROJECT TOTALS			56	60	88
CONTRACT TOTALS			64	60	94

BEAM GUARD

STATION TO STAION			DIR	LOCATION	614.0397 GUARDRAIL MOW STRIP EMULSIFIED ASPHALT SY	614.2300 MGS GUARDRAIL 3 LF	614.0340 STEEL PLATE BEAM GUARD OVER LOW FILL CULVERTS CLASS A LF	614.0305 STEEL PLATE BEAM GUARD CLASS A LF	614.2500 MGS THRIE BEAM TRANSITION LF	614.2610 MGS GUARDRAIL TERMINAL EAT EACH
9305-09-61										
230+87	-	232+37	LT	C-35-10	---	---	93.75	56.25	---	---
230+87	-	232+37	RT	C-35-10	---	---	93.75	56.25	---	---
1218+80	-	1219+85	LT	B-35-54	---	12.5	---	---	39.4	1
1218+80	-	1219+85	RT	B-35-54	---	12.5	---	---	39.4	1
1220+18	-	1221+23	LT	B-35-54	46	12.5	---	---	39.4	1
1220+19	-	1221+20	RT	B-35-54	---	12.5	---	---	39.4	1
-61 PROJECT TOTALS					46	50	187.5	112.5	157.6	4
CONTRACT TOTALS					46	50	187.5	112.5	157.6	4

LANDSCAPING ITEMS

					625.0100	628.2006 EROSION MAT URBAN CLASS I TYPE A	629.0210	630.0130	630.0500
STATION TO STATION			DIR	LOCATION	TOPSOIL SY	SY	FERTILIZER TYPE B CWT	SEEDING MIX NO. 30 LB	SEED WATER MGAL
9305-09-61									
1217+75	-	1224+00	LT	B-35-54	1,180	1,180	0.74	20	2
1217+75	-	1224+00	RT	B-35-54	1,030	1,030	0.65	20	2
UNDISTRIBUTED					440	440	0.28	10	1
-61 PROJECT TOTALS					2,650	2,650	1.67	50	5
9305-09-62									
772+15	-	773+35	LT	35107001895	370	370	0.23	7	1
878+25	-	880+25	RT	35107001905	550	550	0.35	10	1
UNDISTRIBUTED					180	180	0.12	3	1
-62 PROJECT TOTALS					1,100	1,100	0.70	20	3
CONTRACT TOTALS					3,750	3,750	2.37	70	8

EROSION CONTROL ITEMS

				628.1504	628.1520	628.1905	628.1910	628.6005	628.7504	628.7555	628.7570
				SILT FENCE LF	SILT FENCE MAINT LF	MOB. EROSION CONTROL EA	MOB. EROSION CONTROL EMERGENCY EA	TURBIDITY BARRIER SY	TEMPORARY DITCH CHECKS LF	CULVERT PIPE CHECKS EACH	ROCK BAGS EACH
STATION TO STATION			LOCATION								
9305-09-61											
1218+00	-	1223+80	B-35-54	950	950	---	---	130	40	---	---
231+25	-	231+75	C-35-10	---	---	---	---	300	---	---	---
UNDISTRIBUTED				210	210	2	2	---	10	---	10
-61 PROJECT TOTALS				1,160	1,160	2	2	430	50	0	10
9305-09-62											
772+25		773+25	35107001895	350	350	---	---	---	---	10	
878+35	-	880+10	35107001905	575	575	---	---	---	---	7	---
UNDISTRIBUTED				230	230	2	2	---	50	3	10
-62 PROJECT TOTALS				1,155	1,155	2	2	0	50	20	10
CONTRACT TOTALS				2,315	2,315	4	4	430	100	20	20

3

PERMANENT SIGNS TYPE II AND SIGN SUPPORTS

SIGN							634.0616	637.2210
NO. STATION LOCATION FACE DIR. SIGN CODE DESCRIPTION							POSTS WOOD 4 X 6-INCH 16-FT EACH	SIGNS TYPE II REFLECTIVE H SF
IN X IN								
9305-09-61								
204	1222+15	LT	B-35-54	WB	D2-1	MERRILL 21 MILES	60 X 15	6.25
205	1223+63	RT	B-35-54	EB	W3-1	STOP AHEAD	36 X 36	9.00
206	231+50	LT	C-35-10	EB	W5-52L	OBJ MARKER	12 X 36	3.00
207	231+74	LT	C-35-10	WB	W5-52R	OBJ MARKER	12 X 36	3.00
208	231+86	LT	C-35-10	WB	R7-1D	NO PARKING	18 X 24	3.00
209	231+31	RT	C-35-10	EB	R7-1D	NO PARKING	18 X 24	3.00
210	231+50	RT	C-35-10	EB	W5-52R	OBJ MARKER	12 X 36	3.00
211	231+74	RT	C-35-10	WB	W5-52L	OBJ MARKER	12 X 36	3.00
-61 PROJECT TOTALS							9	33.25
CONTRACT TOTALS							9	33.25

REMOVING SIGNS TYPE II AND REMOVING SMALL SIGN SUPPORTS

SIGN NO. STATION LOCATION DESCRIPTION					638.2602 REMOVING SIGNS TYPE II EACH	638.3000 REMOVING SMALL SIGN SUPPORTS EACH
9305-09-61						
R100	1219+52	LT	B-35-54	OBJECT MARKER	1	1
R101	1219+52	RT	B-35-54	OBJECT MARKER	1	1
R102	1220+75	LT	B-35-54	OBJECT MARKER	1	1
R103	1220+75	RT	B-35-54	OBJECT MARKER	1	1
R104	1222+15	LT	B-35-54	MERRILL 23 MILES	1	2
R105	1223+67	RT	B-35-54	STOP AHEAD	1	1
R106	231+39	LT	C-35-10	OBJ MARKER	1	1
R107	231+78	LT	C-35-10	OBJ MARKER	1	1
R108	231+84	LT	C-35-10	NO PARKING	1	1
R109	231+22	RT	C-35-10	NO PARKING	1	1
R110	231+39	RT	C-35-10	OBJ MARKER	1	1
R111	231+78	RT	C-35-10	OBJ MARKER	1	1
-61 PROJECT TOTALS					12	13
CONTRACT TOTALS					12	13

3

TRAFFIC CONTROL

LOCATION	EST. SERVICE PERIOD	643.0420		643.0705		643.0900		643.1000	643.5000
	DAYS	BARRICADES TYPE III	NO	DAYS	NO	DAYS	SIGNS	SIGNS FIXED MESSAGE	TRAFFIC CONTROL
								SF	EACH
9305-09-61									
C-35-10									
STH 107	29	14	406	28	812	12	348	64	---
DETOUR	29	--	--	--	--	226	6,554	--	---
B-35-0054									
STH 107	58	20	1,160	24	1,392	29	1,682	36	
DETOUR	58	--	--	--	--	91	5,278	--	---
UNDISTRIBUTED								0.9	
-61 PROJECT TOTALS		1,566		2,204		13,862		100	0.9
9305-09-62									
CULVERT 35107001895 & CULVERT 35107001905									
STH 107	10	14	140	28	280	12	120	64	0.1
DETOUR	10	--	--	--	--	226	2,260	--	---
-62 PROJECT TOTALS		140		280		2,380		64	0.1
CONTRACT TOTALS		1,706		2,484		16,242		164	1

MARKING LINE

STATION - STATION		LOCATION		646.1020	
				EPOXY 4-INCH (WHITE) LF	EPOXY 4-INCH (YELLOW) LF
9305-09-61					
1218+00	-	1223+80	B-35-0054	1,160	1,160
231+00	-	232+20	C-35-10	240	150
-61 PROJECT TOTAL				2,710	
9305-09-62					
772+25	-	773+25	35107001895	200	200
878+35	-	880+10	35107001905	350	350
-62 PROJECT TOTAL				1,100	
CONTRACT TOTAL				3,810	

COVERING SIGNS

LOCATION	643.0920 TRAFFIC CONTROL COVERING SIGNS TYPE II		
	EACH	NUMBER OF CYCLES	NUMBER OF SIGNS
9305-09-61			
STH 107 DETOUR	2	1	1
-61 PROJECT TOTAL		2	
CONTRACT TOTAL		2	

ALL ITEMS ARE CATEGORY 0010
UNLESS OTHERWISE NOTED

CONSTRUCTION STAKING

STATION TO STATION	LOCATION	650.4500	650.5000	650.5500	650.8000	650.9910	650.9920
		CONSTRUCTION STAKING					
		SUBGRADE	BASE	CURB GUTTER AND CURB & GUTTER	RESURFACING REFERENCE	SUPPLEMENTAL CONTROL	SLOPE STAKES
		LF	LF	LF	LF	LS	LF
9305-09-61							
231+05 - 232+19	C-35-10	---	---	---	115	---	---
1218+00 - 1223+80	B-35-54	580	580	53	---	---	580
9305-09-61	STH 107	---	---	---	---	1	---
-61 PROJECT TOTALS		580	580	53	115	1	580
9305-09-62							
772+25 - 773+25	35107001895	100	100	---	---	---	100
878+35 - 880+10	35107001905	175	175	---	---	---	175
9305-09-62	STH 107	---	---	---	---	1	---
-62 PROJECT TOTALS		275	275	0	0	1	275
CONTRACT TOTALS		855	855	53	115	2	855

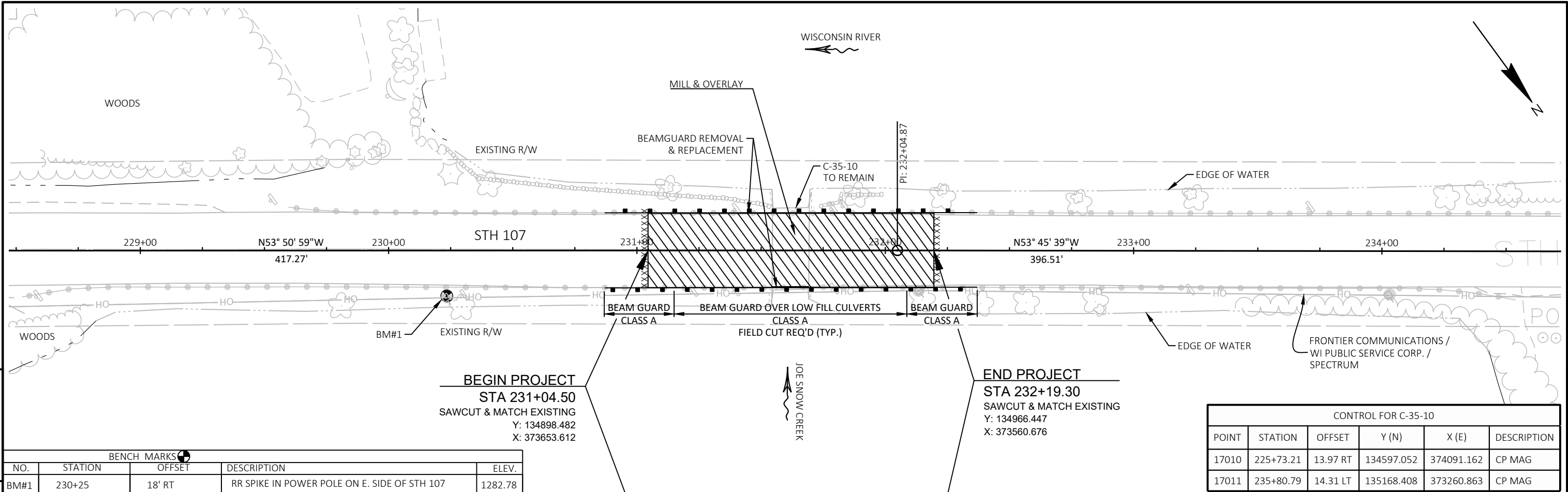
SETTLEMENT MONITORING

LOCATION	SPV.0060.01
	EA
9305-09-61	
B-35-54	1
-61 PROJECT TOTAL	1
CONTRACT TOTAL	1

SAW CUTTING

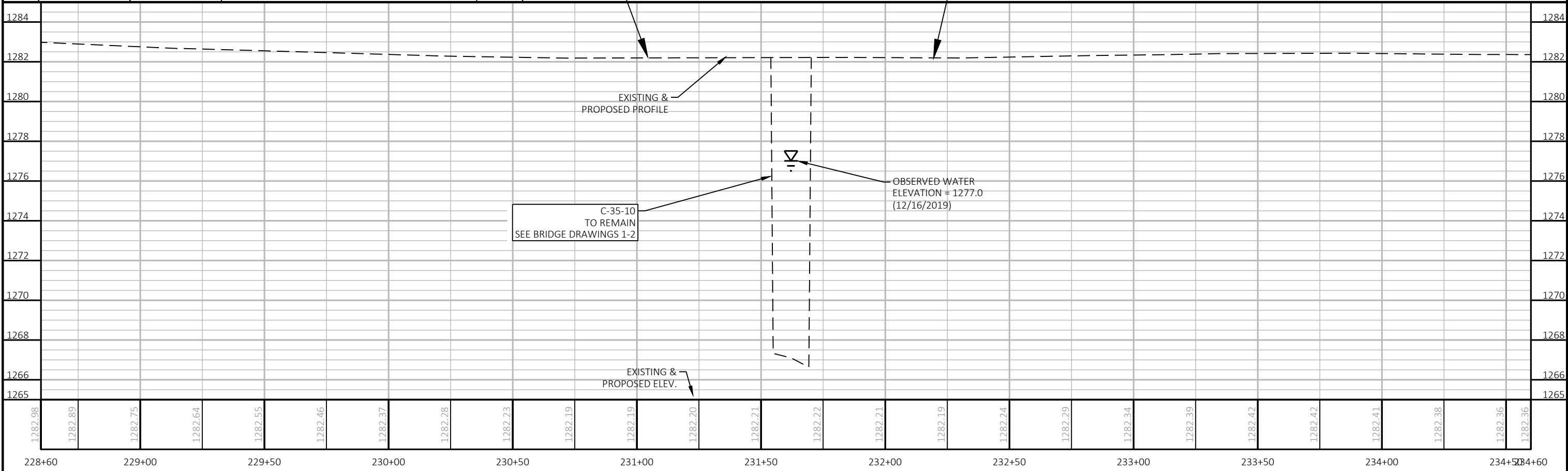
STATION	LOCATION	690.0150 SAWING ASPHALT LF
9305-09-61		
1218+00	B-35-54	22
1223+80	B-35-54	22
-61 PROJECT TOTAL		44
9305-09-62		
772+25	35107001895	22
773+25	35107001895	22
878+35	35107001905	24
880+10	35107001905	24
-62 PROJECT TOTAL		92
CONTRACT TOTAL		136

ALL ITEMS ARE CATEGORY 0010
UNLESS OTHERWISE NOTED

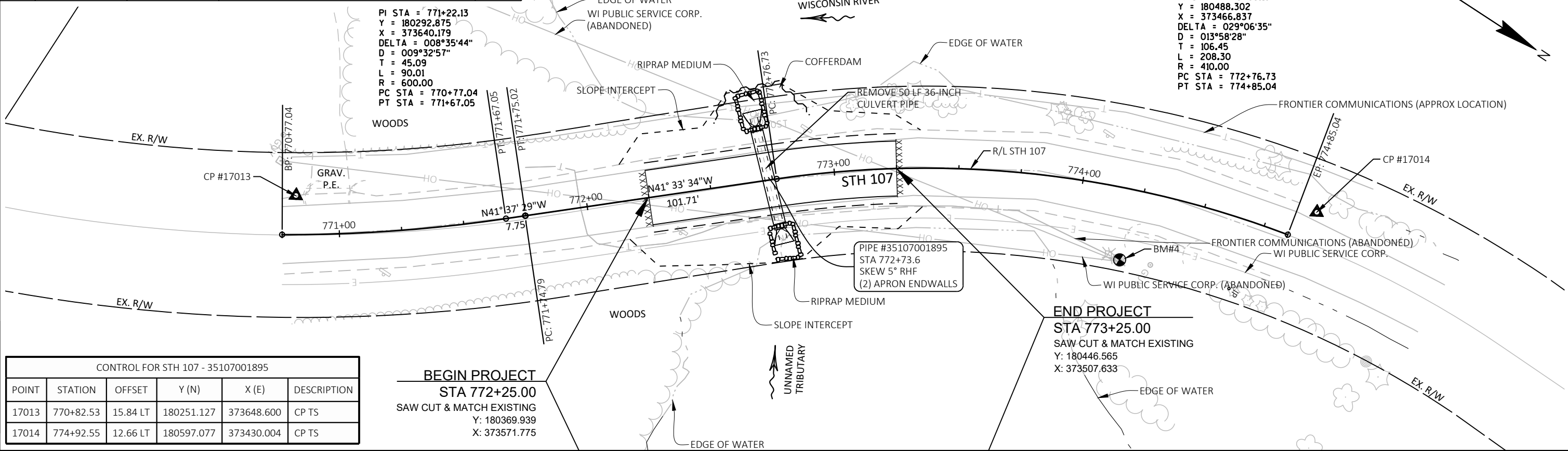


BENCH MARKS				
NO.	STATION	OFFSET	DESCRIPTION	ELEV.
BM#1	230+25	18' RT	RR SPIKE IN POWER POLE ON E. SIDE OF STH 107	1282.78

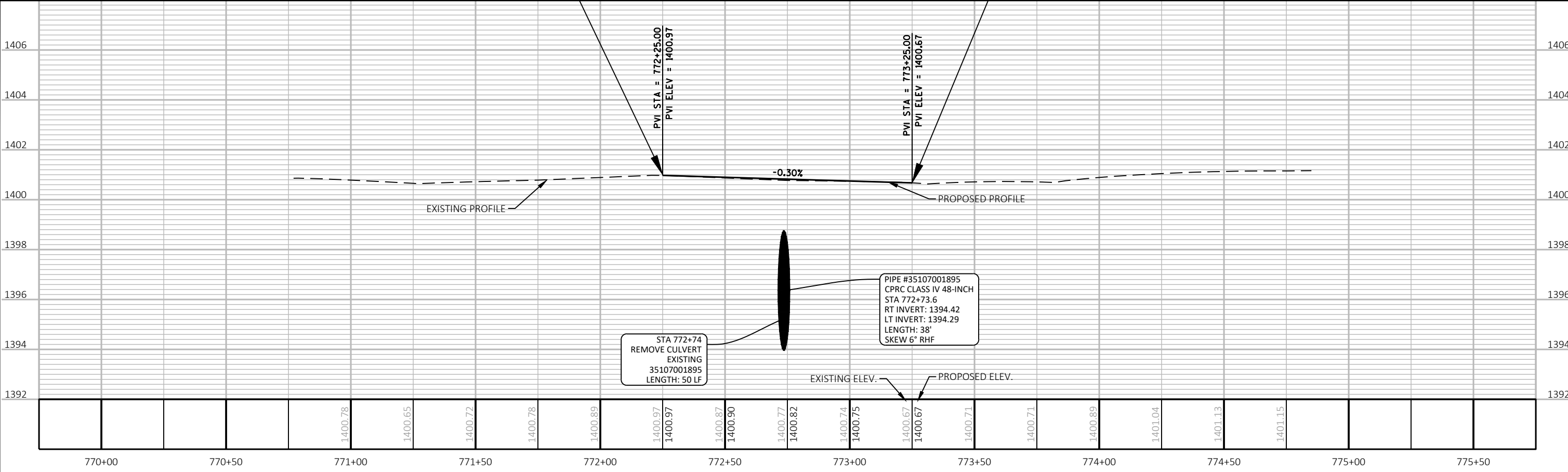
CONTROL FOR C-35-10					
POINT	STATION	OFFSET	Y (N)	X (E)	DESCRIPTION
17010	225+73.21	13.97 RT	134597.052	374091.162	CP MAG
17011	235+80.79	14.31 LT	135168.408	373260.863	CP MAG



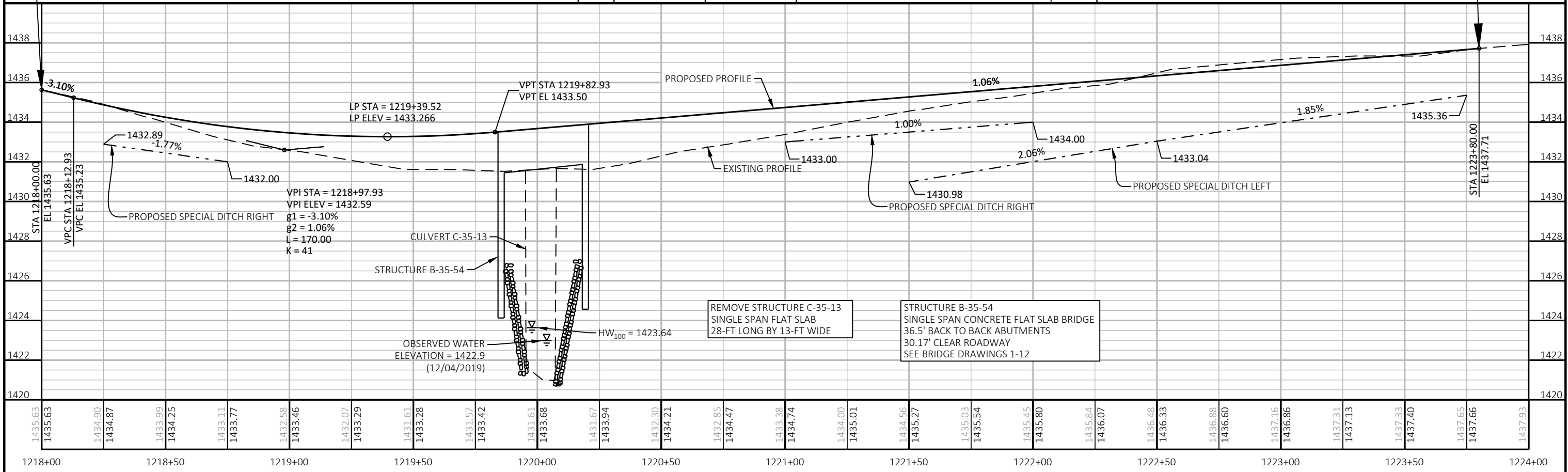
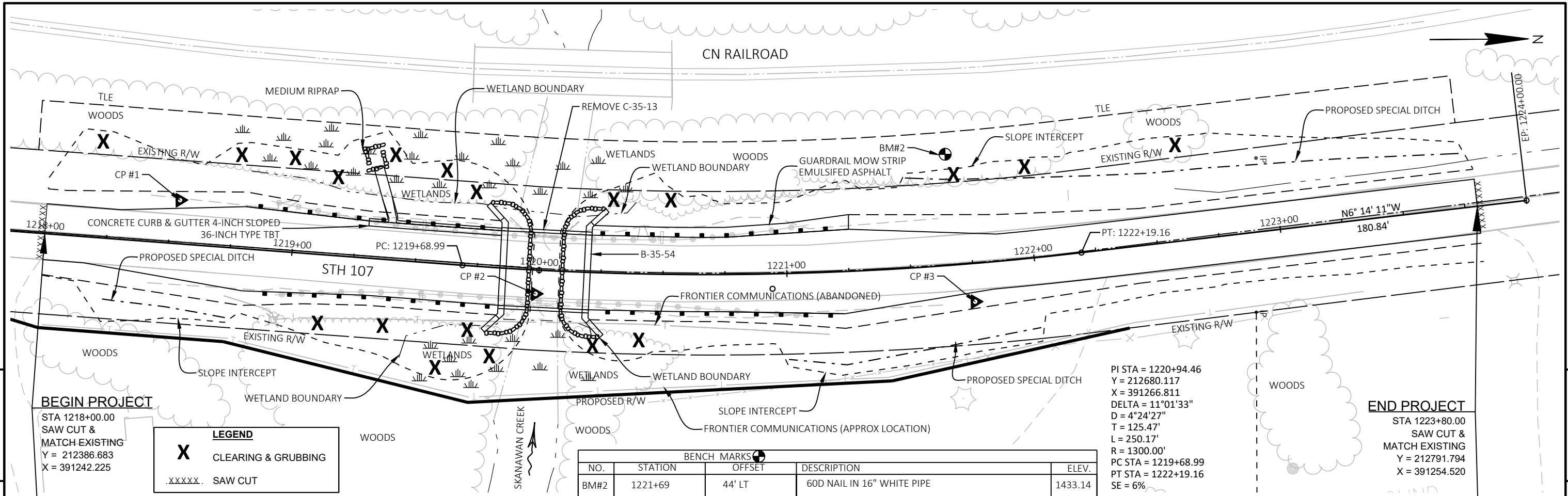
BENCH MARKS			
NO.	STATION	OFFSET	DESCRIPTION
BM#4	774+20.87	28.7' RT	60D NAIL IN POWER POLE 3366-17R12
			ELEV. 1399.71



CONTROL FOR STH 107 - 35107001895					
POINT	STATION	OFFSET	Y (N)	X (E)	DESCRIPTION
17013	770+82.53	15.84 LT	180251.127	373648.600	CP TS
17014	774+92.55	12.66 LT	180597.077	373430.004	CP TS



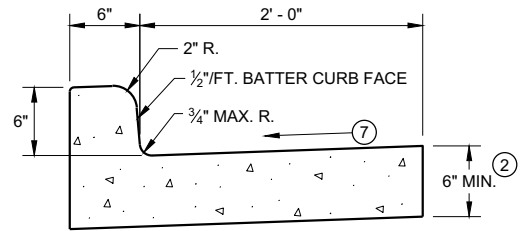
PROJECT NO: 9305-09-62	HWY: STH 107	COUNTY: LINCOLN	PLAN AND PROFILE: STH 107 35107001895	SHEET 29
------------------------	--------------	-----------------	---------------------------------------	----------



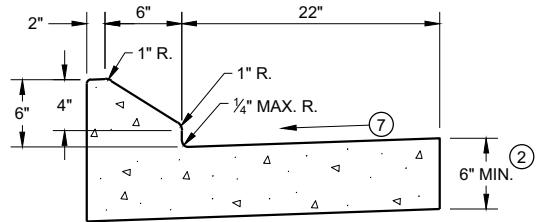
PROJECT NO:	9305-09-61	HWY:	STH 107	COUNTY:	LINCOLN	PLAN AND PROFILE:	STH 107 - B-35-0054	SHEET	31	E
-------------	------------	------	---------	---------	---------	-------------------	---------------------	-------	----	---

Standard Detail Drawing List

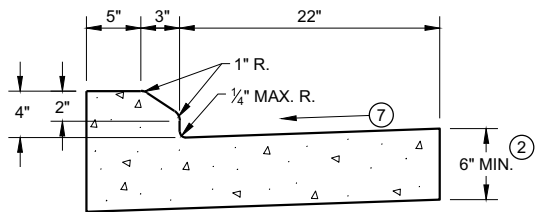
08D01-22A	CONCRETE CURB & GUTTER
08D01-22B	CONCRETE CURB, TIES AND CURB AND GUTTER APPLICATIONS
08D02-07A	CONCRETE SURFACE DRAINS FLUME TYPE AT STRUCTURES
08D02-07B	CONCRETE SURFACE DRAINS FLUME TYPE AT STRUCTURES
08D02-07C	CONCRETE SURFACE DRAINS FLUME TYPE AT STRUCTURES
08E08-03	TYPICAL INSTALLATIONS OF EROSION BALES / TEMPORARY DITCH CHECKS
08E09-06	SILT FENCE
08E11-02	TURBIDITY BARRIER
08E15-01	CULVERT PIPE CHECK
08F01-11	APRON ENDWALLS FOR CULVERT PIPE
08F04-08	JOINT TIES FOR CONCRETE PIPE AND CONCRETE COLLAR DETAIL
12A03-10	NAME PLATE (STRUCTURES)
14B15-11A	STEEL PLATE BEAM GUARD, CLASS "A" INSTALLATION & ELEMENTS
14B15-11B	STEEL PLATE BEAM GUARD, CLASS "A" INSTALLATION & ELEMENTS
14B15-11C	STEEL PLATE BEAM GUARD, CLASS "A", INSTALLATION & ELEMENTS
14B25-01	STEEL PLATE BEAM GUARD, CLASS "A", OVER LOW FILL CULVERTS
14B28-04A	GUARDRAIL MOW STRIP
14B28-04B	GUARDRAIL MOW STRIP
14B42-07A	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-07B	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-07C	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-07D	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B44-04A	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B44-04B	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B44-04C	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B45-05A	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-05B	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-05C	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-05D	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
15A03-02A	FLEXIBLE MARKER POST FOR CULVERT END
15A03-02B	FLEXIBLE MARKER POST FOR CULVERT END
15C02-08A	BARRICADES AND SIGNS FOR MAINLINE CLOSURES
15C02-08B	BARRICADES AND SIGNS FOR VARIOUS CLOSURES
15C02-08C	DETOUR SIGNING FOR MAINLINE CLOSURES
15C03-05	BARRICADES AND SIGNS FOR SIDEROAD CLOSURES
15C06-09	SIGNING & MARKING FOR TWO LANE BRIDGES
15C08-20A	LONGITUDINAL MARKING (MAINLINE)
15C11-09B	CHANNELIZING DEVICES DRUMS, CONES, BARRICADES AND VERTICAL PANELS
15C19-06A	MOVING PAVEMENT MARKING OPERATION TWO-LANE TWO-WAY ROADWAY
15D51-01	TRAFFIC CONTROL, MOBILE OPERATIONS ON AN UNDIVIDED ROADWAY



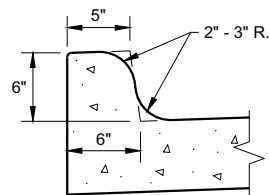
TYPES A^① & D



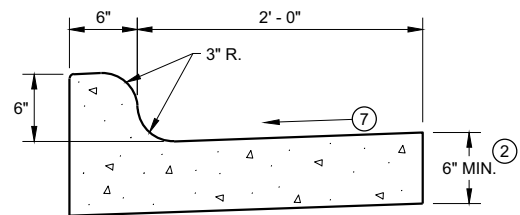
6" SLOPED CURB TYPES G^① & J



4" SLOPED CURB TYPES G^① & J

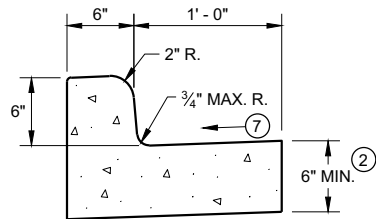


TYPES K^① & L
(OPTIONAL CURB SHAPE)



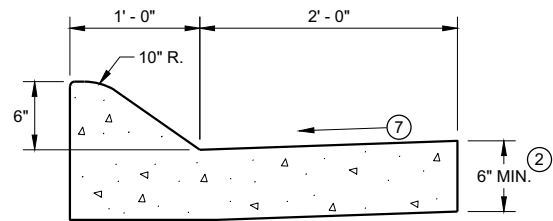
TYPES K^① & L

CONCRETE CURB AND GUTTER 30"

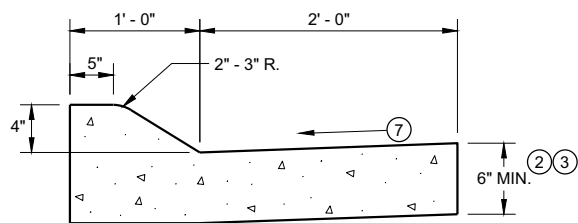


TYPES A^① & D

CONCRETE CURB AND GUTTER 18"

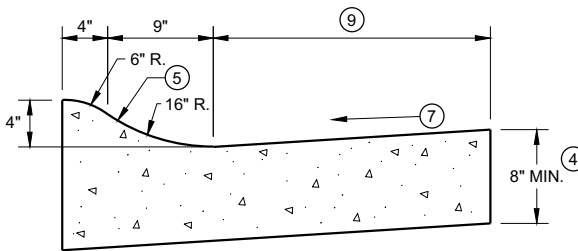


6" SLOPED CURB TYPES A^① & D



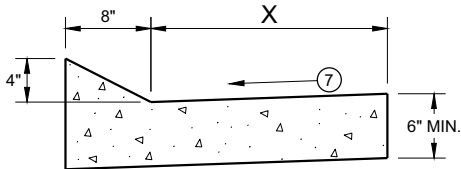
4" SLOPED CURB TYPES A^① & D

CONCRETE CURB AND GUTTER 36"



4" SLOPED CURB TYPES R^① & T

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

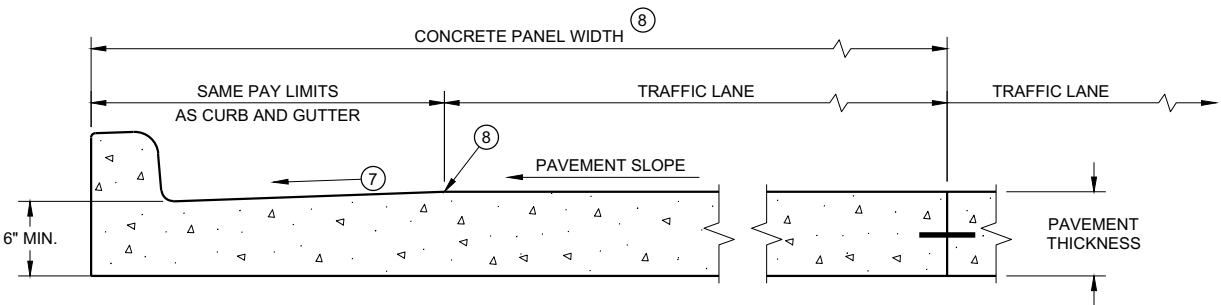


TYPES TBT & TBTT^①

CONCRETE CURB AND GUTTER

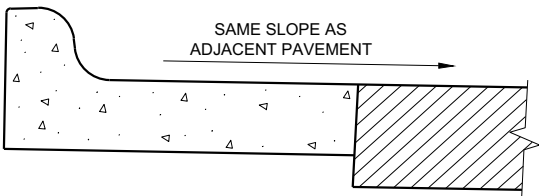
PAVEMENT THICKNESS
AND MAXIMUM CONCRETE
PANEL WIDTH TABLE

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



PARTIAL SECTION OF PAVEMENT *
WITH INTEGRAL CURB AND GUTTER

* BIKE LANE IS NOT SHOWN



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

GENERAL NOTES

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

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

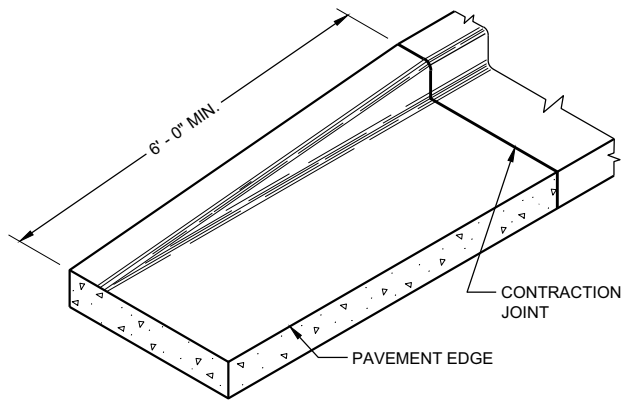
INTEGRAL CURB AND GUTTER SHALL CONFORM TO THE DETAILS SHOWN FOR CONCRETE CURB AND GUTTER INCLUDING THE TRANSVERSE GUTTER SLOPE.

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

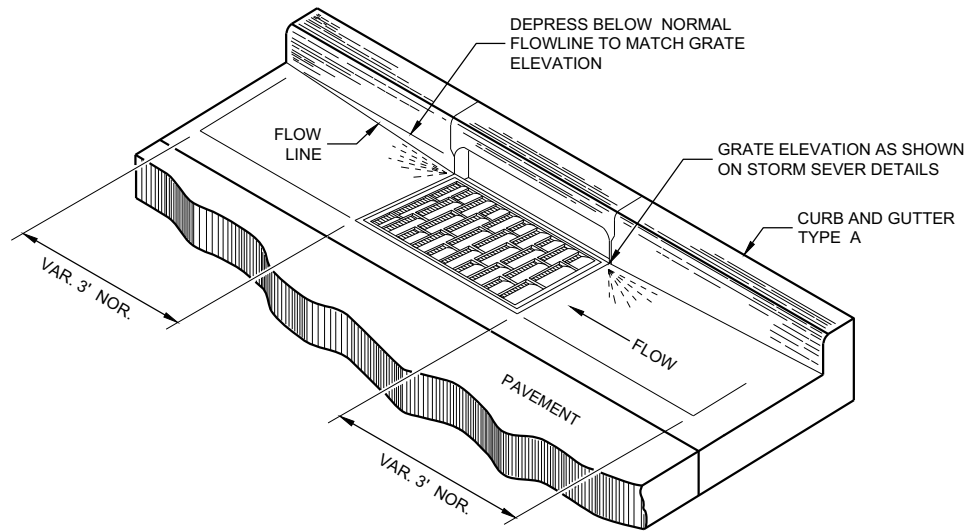
- ① TIE BARS ARE REQUIRED FOR CURB AND GUTTERS TYPES A, G, K, R, AND TBTT.
- ② THE BOTTOM OF CURB AND GUTTER MAY BE CONSTRUCTED EITHER LEVEL OR PARALLEL TO THE SLOPE OF THE SUBGRADE OR BASE AGGREGATE PROVIDED A 6" MINIMUM GUTTER THICKNESS IS MAINTAINED.
- ③ USE 8" MINIMUM GUTTER THICKNESS WHEN USED WITH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

CONCRETE CURB AND GUTTER

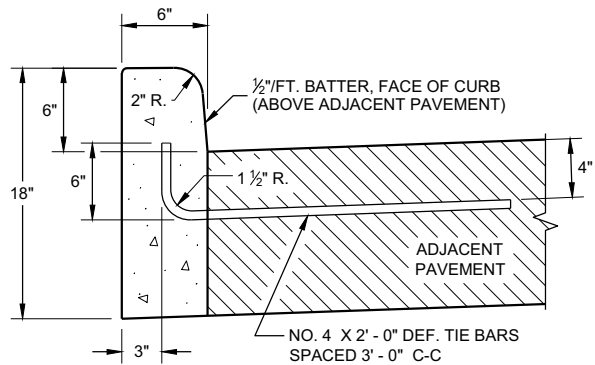
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



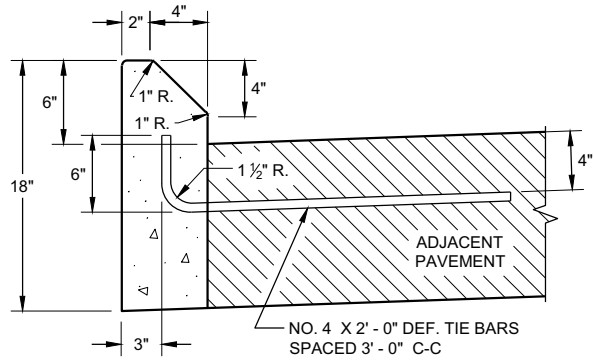
END SECTION CURB AND GUTTER



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

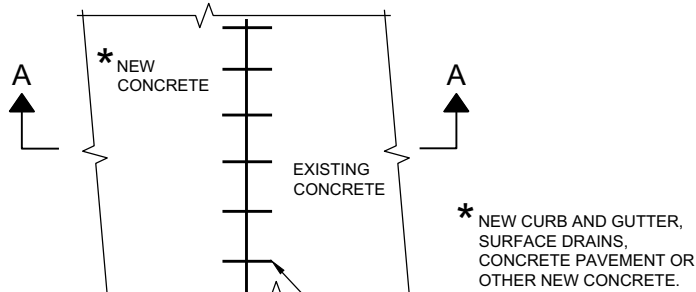


TYPES A^① & D

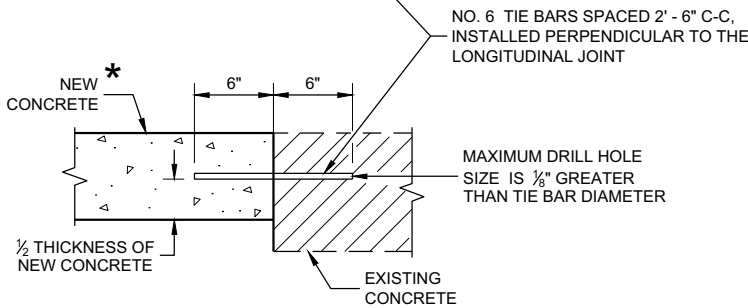


TYPES G^① & J

CONCRETE CURB



PLAN VIEW



SECTION A - A

TIE BARS DRILLED
INTO EXISTING PAVEMENT

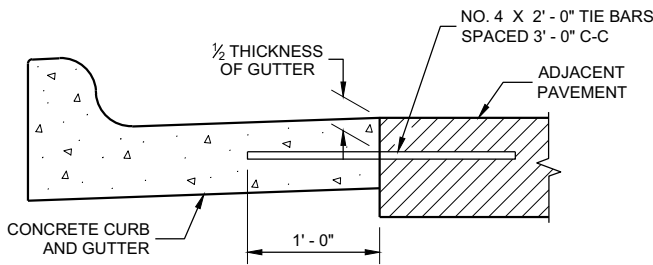
GENERAL NOTES

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

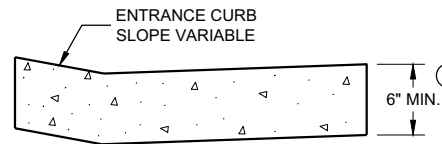
PAVEMENT TIES AND TIE BARS SHALL BE EPOXY COATED IN CONFORMANCE WITH SUBSECTION 505.2.6.2 OF THE STANDARD SPECIFICATIONS.

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

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



TYPICAL TIE BAR LOCATION^①



DRIVEWAY ENTRANCE CURB^⑨
(WHEN DIRECTED BY THE ENGINEER)

CONCRETE CURB, TIES AND CURB AND GUTTER APPLICATIONS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
February 2021 /S/ Rodney Taylor
DATE ROADWAY STANDARDS DEVELOPMENT ENGINEER 34

FHWA

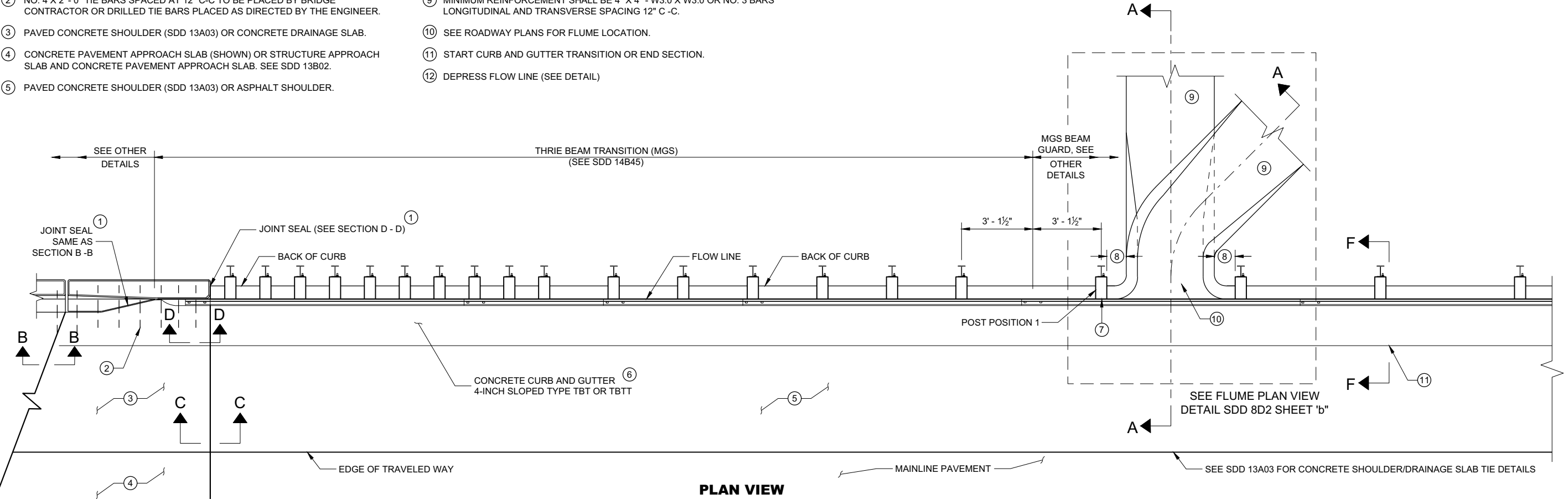
GENERAL NOTES

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

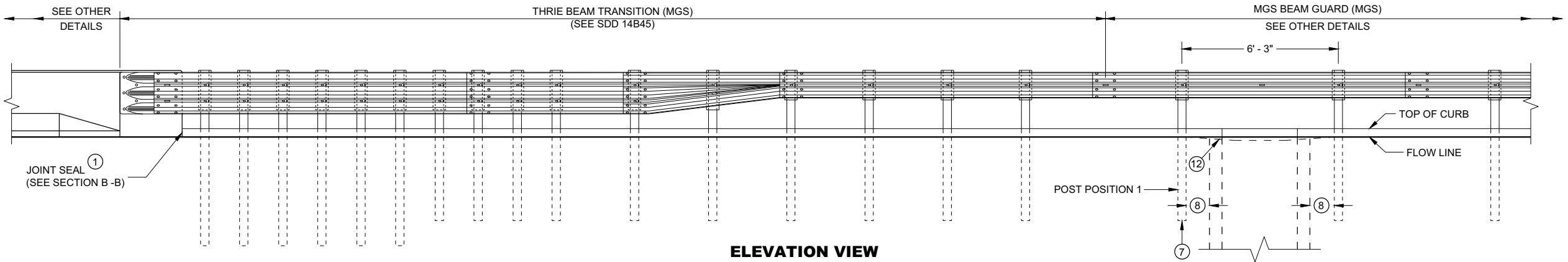
ALL STEEL REINFORCEMENT SHALL BE EMBEDDED 2 INCHES CLEAR UNLESS OTHERWISE SHOWN OR NOTED.

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

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



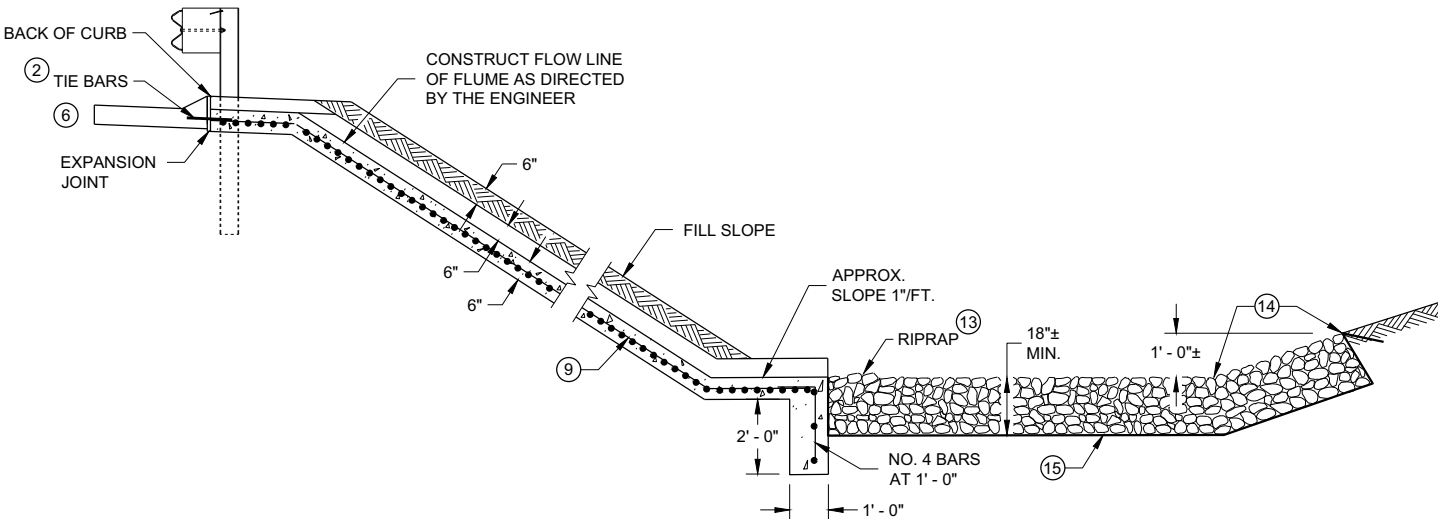
PLAN VIEW



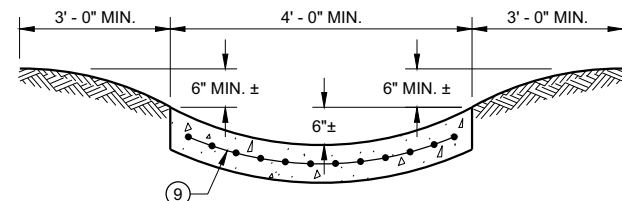
ELEVATION VIEW

CONCRETE SURFACE
DRAINS FLUME TYPE
AT STRUCTURES

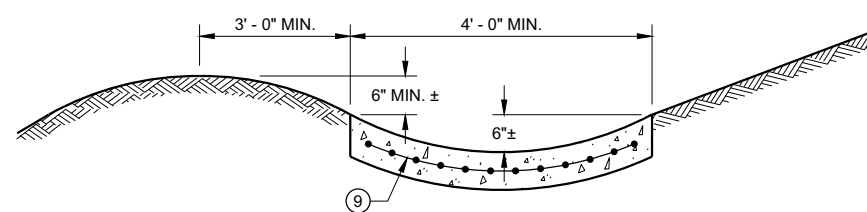
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



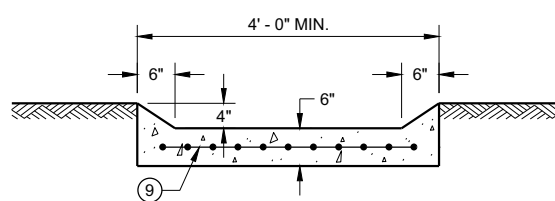
SECTION A - A



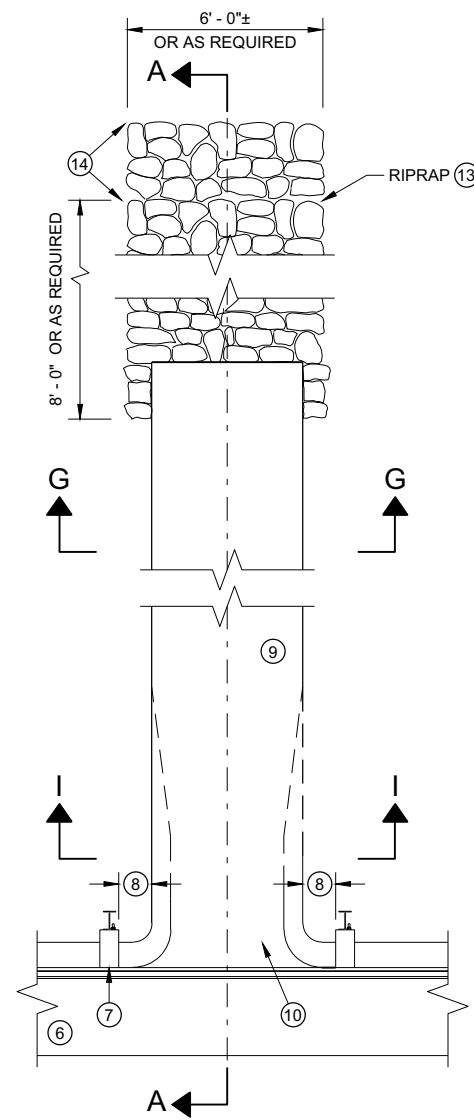
SECTION G - G



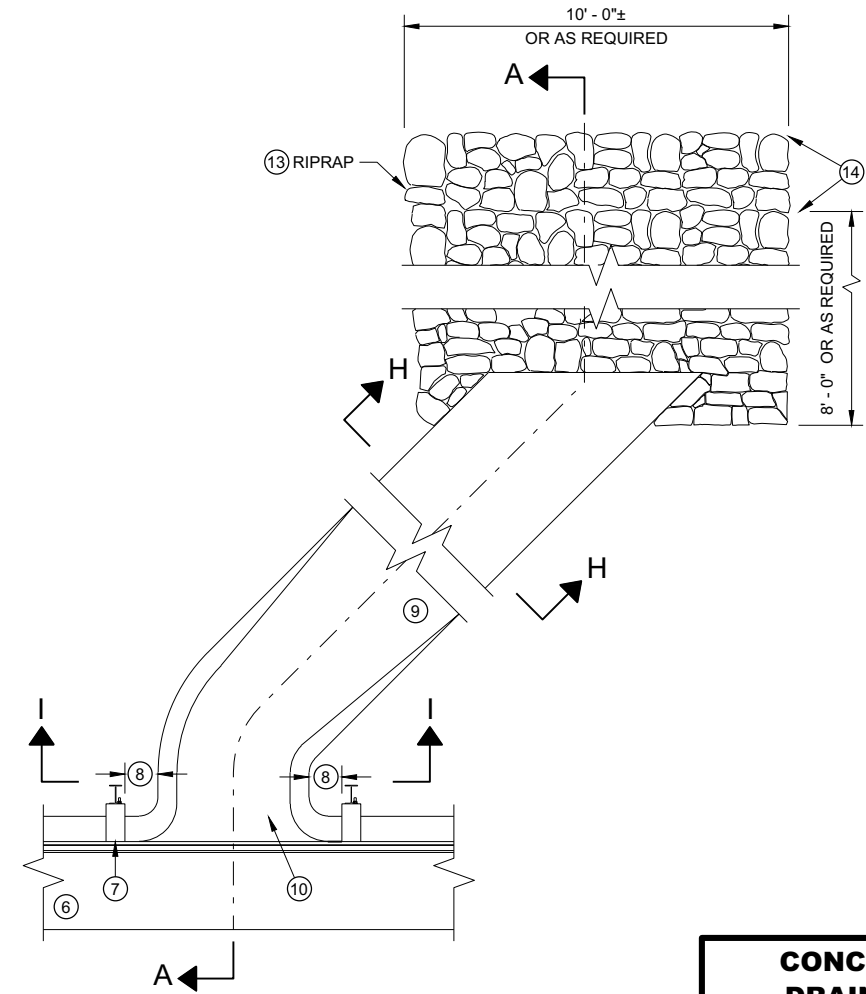
SECTION H - H



SECTION I - I



**PLAN VIEW
PERPENDICULAR FLUME**



**PLAN VIEW
SKEWED FLUME**

GENERAL NOTES

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

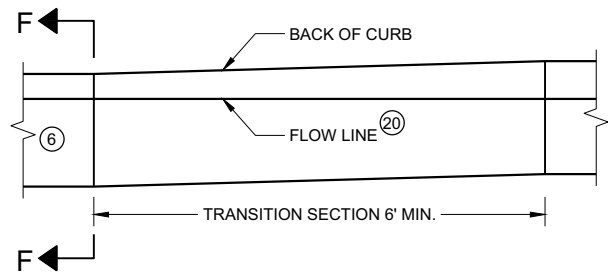
ALL STEEL REINFORCEMENT SHALL BE EMBEDDED 2 INCHES CLEAR UNLESS OTHERWISE SHOWN OR NOTED.

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

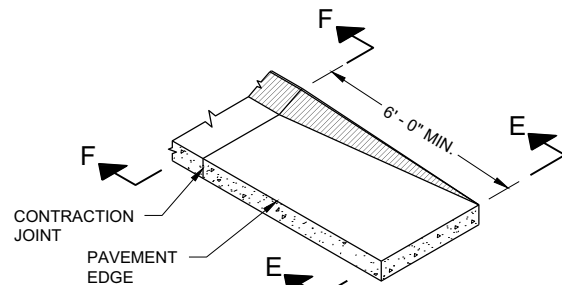
- ⑦ PLACE FLUME BEFORE MSG THRIE BEAM TRANSITION POST 1 (SEE SDD 14B45)
- ⑧ CENTER FLUME BETWEEN POSTS. 6-INCH MINIMUM SEPARATION FROM OUTSIDE EDGE OF FLUME TO POSTS.
- ⑨ MINIMUM REINFORCEMENT SHALL BE 4" X 4" - W3.0 X W3.0 OR NO. 3 BARS LONGITUDINAL AND TRANSVERSE SPACING 12" C -C.
- ⑩ SEE ROADWAY PLANS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

**CONCRETE SURFACE
DRAINS FLUME TYPE
AT STRUCTURES**

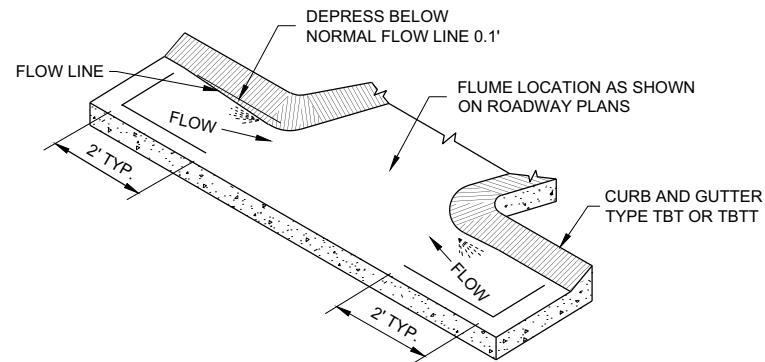
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



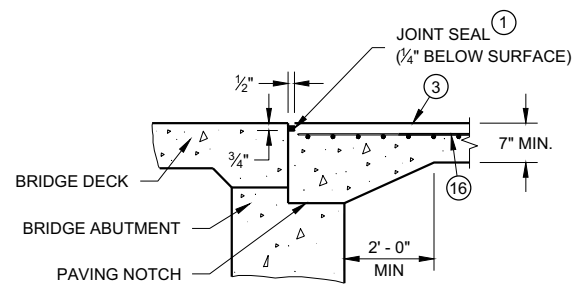
**CURB AND GUTTER TRANSITION SECTION
CONCRETE CURB AND GUTTER 4-INCH SLOPED
36 INCH TYPE TBT OR TBTT**



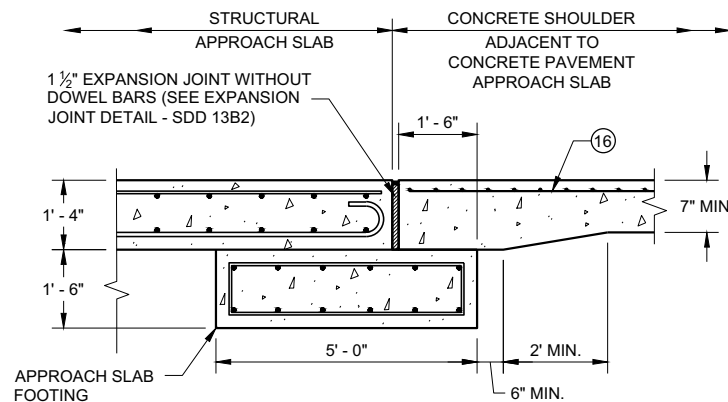
**CURB AND GUTTER END SECTION
CONCRETE CURB AND GUTTER 4-INCH SLOPED
36 INCH TYPE TBT OR TBTT**



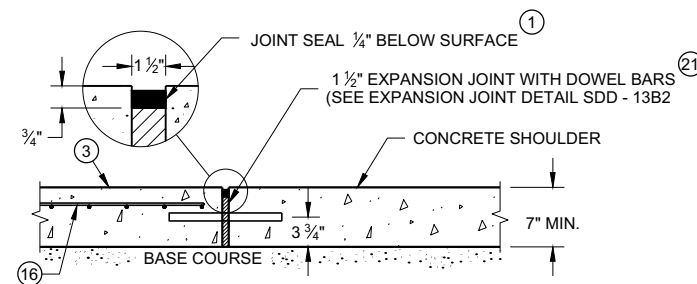
**CURB AND GUTTER FLOW LINE DEPRESSION
AT FLUMES CONCRETE CURB AND GUTTER
4-INCH SLOPED 36 INCH TYPE TBT OR TBTT**



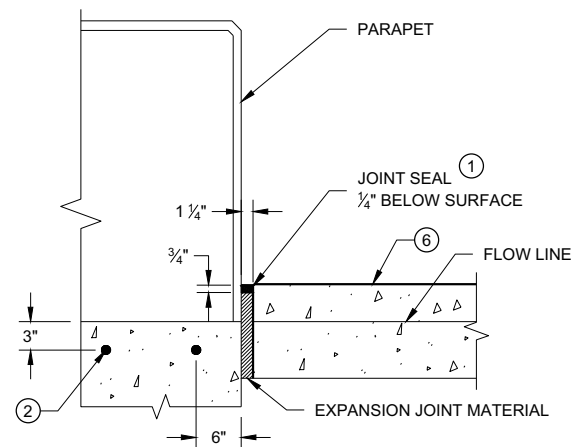
SECTION B-B



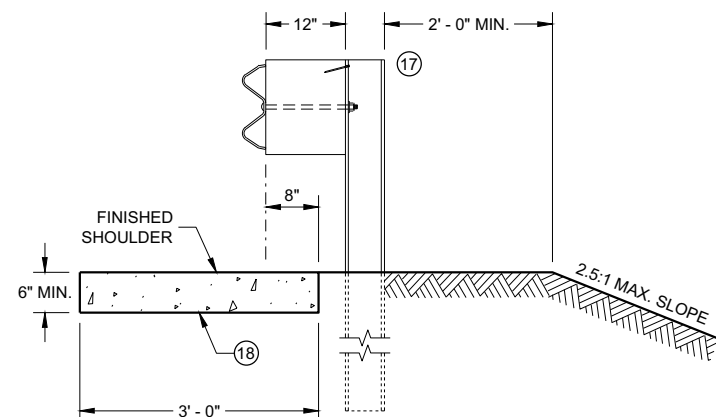
**SECTION C - C
JOINT DETAIL FOR BRIDGE WITH STRUCTURAL
APPROACH SLAB AND CONCRETE APPROACH SLAB**



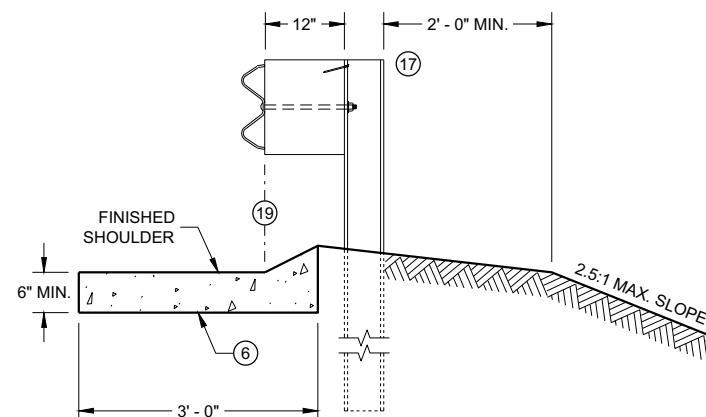
**SECTION C - C
JOINT DETAIL FOR BRIDGE APPROACH
WITH CONCRETE SHOULDERS**



SECTION D - D



SECTION E - E



SECTION F - F

GENERAL NOTES

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

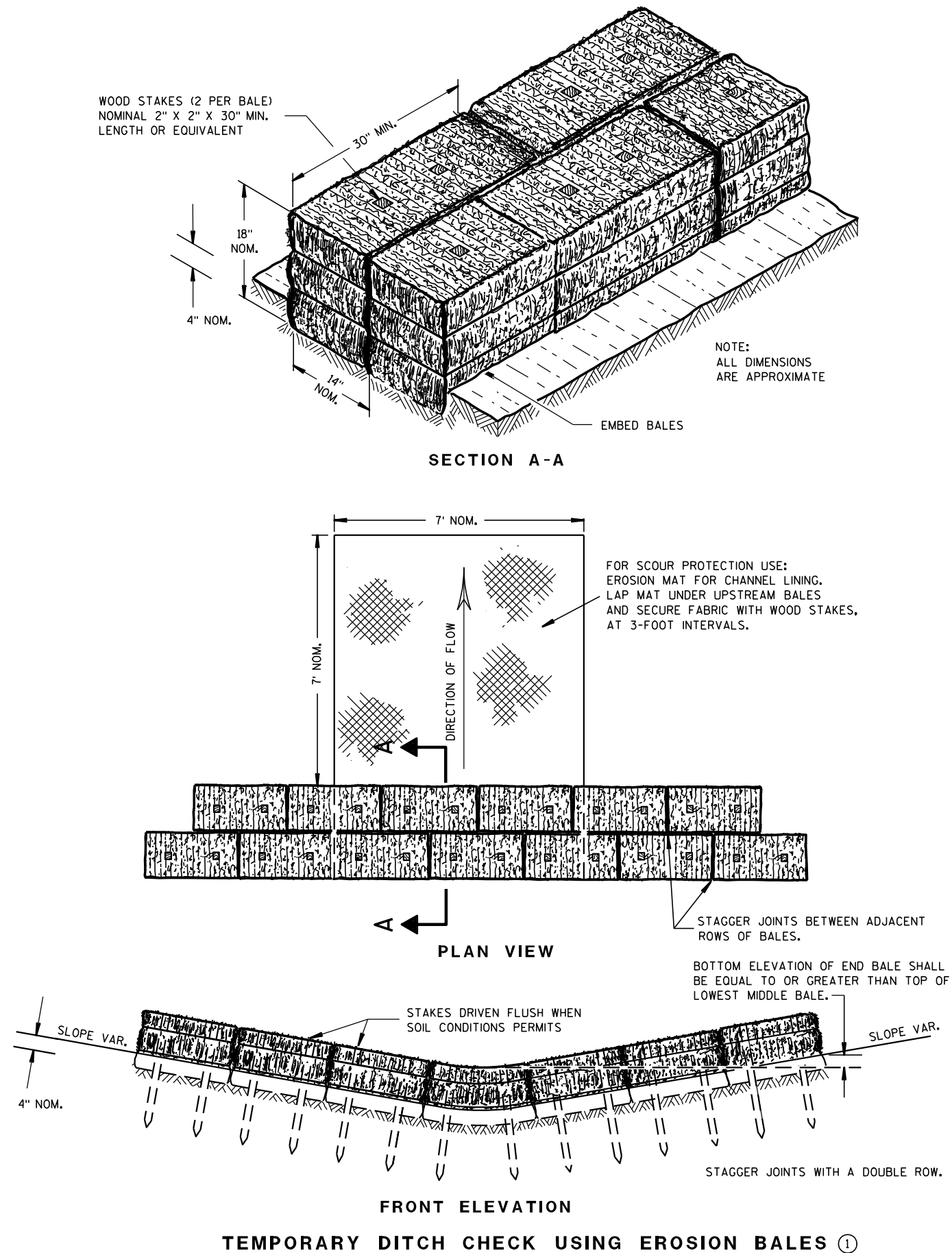
ALL STEEL REINFORCEMENT SHALL BE EMBEDDED 2 INCHES CLEAR UNLESS OTHERWISE SHOWN OR NOTED.

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

CONCRETE SURFACE DRAINS FLUME TYPE AT STRUCTURES

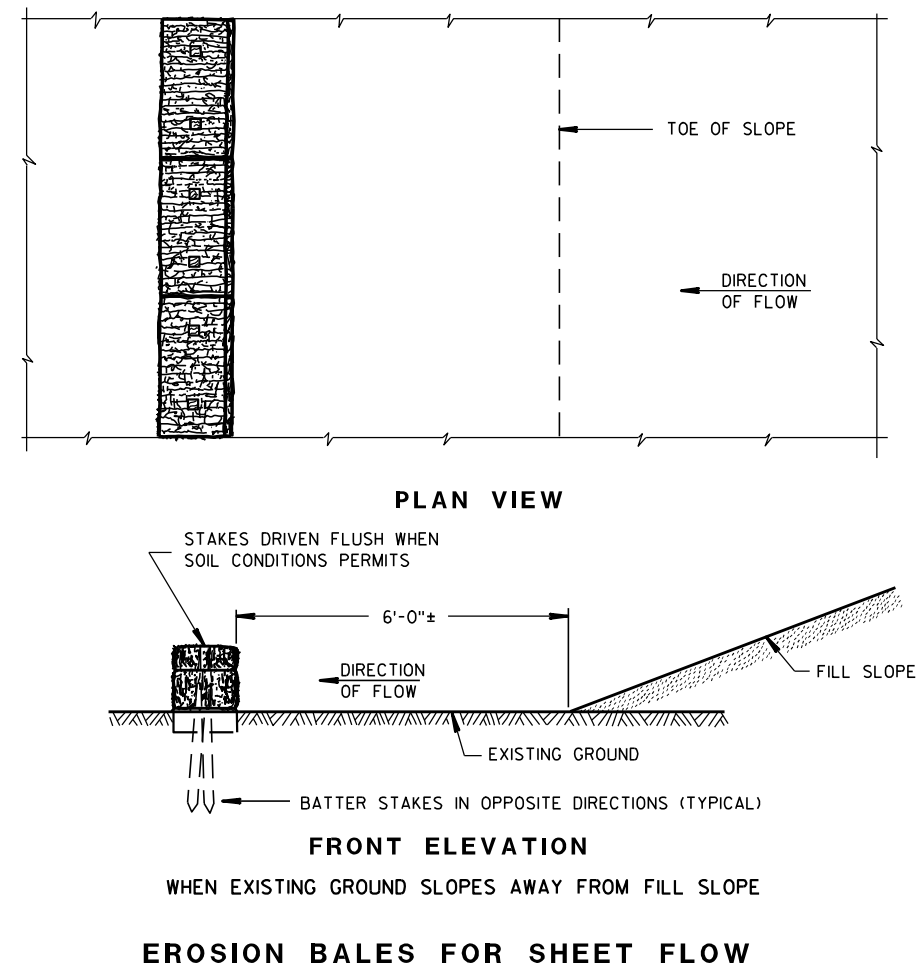
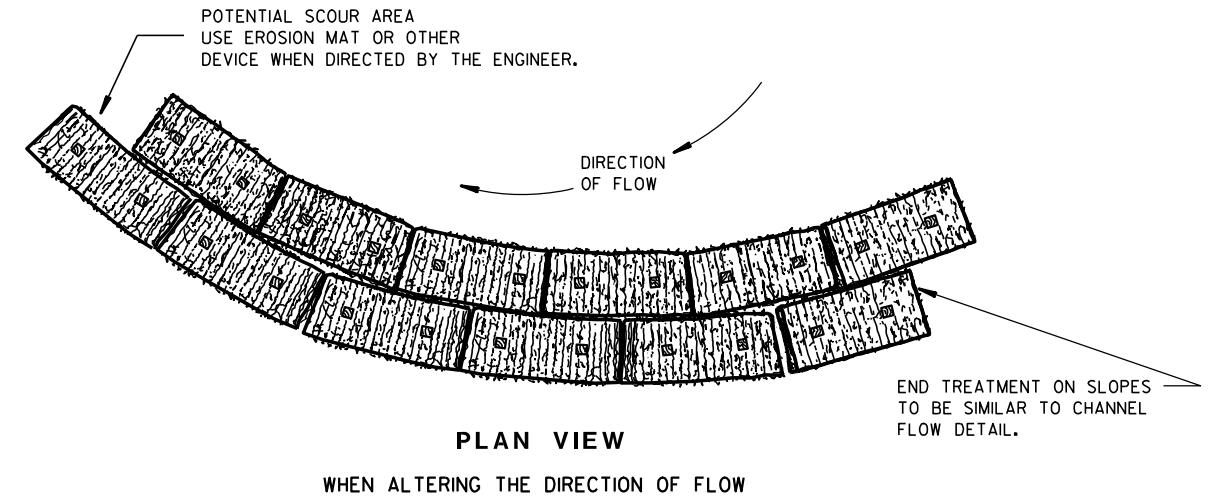
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
February 2020 /S/ Rodney Taylor
DATE ROADWAY STANDARDS DEVE 37
ENGINEER
FHWA

**GENERAL NOTES**

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

- 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.



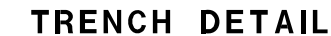
**TYPICAL INSTALLATIONS OF
EROSION BALES / TEMPORARY
DITCH CHECKS**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
6/04/02 /S/ Beth Conn-----
DATE CHIEF ROADWAY DEVELOPER 38 JINEER
FHWA



- ① HORIZONTAL BRACE REQUIRED WITH 2" X 4" WOODEN FRAME OR EQUIVALENT AT TOP OF POSTS.
- ② FOR MANUAL INSTALLATIONS THE TRENCH SHALL BE A MINIMUM OF 4" WIDE & 6" DEEP TO BURY AND ANCHOR THE GEOTEXTILE FABRIC. FOLD MATERIAL TO FIT TRENCH AND BACKFILL & COMPACT TRENCH WITH EXCAVATED SOIL.
- ③ WOOD POSTS SHALL BE A MINIMUM SIZE OF 1 1/8" X 1 1/8" OF OAK OR HICKORY.
- ④ SILT FENCE TO EXTEND ACROSS THE TOP OF THE PIPE.
- ⑤ CONSTRUCT SILT FENCE FROM A CONTINUOUS ROLL IF POSSIBLE BY CUTTING LENGTHS TO AVOID JOINTS. IF A JOINT IS NECESSARY USE ONE OF THE FOLLOWING TWO METHODS; A) OVERLAP THE END POSTS AND TWIST, OR ROTATE, AT LEAST 180 DEGREES, B) HOOK THE END OF EACH SILT FENCE LENGTH.

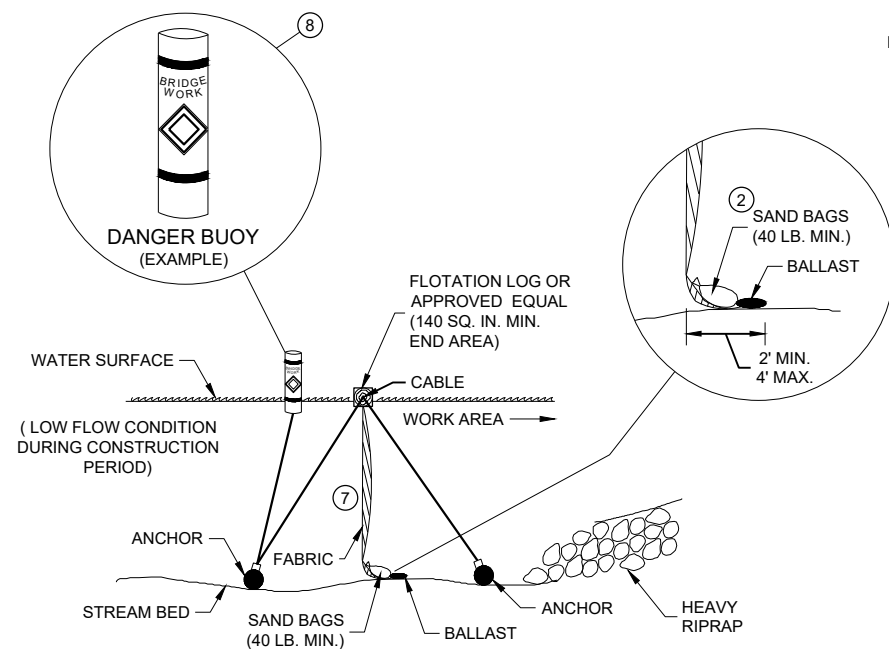


SILT FENCE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

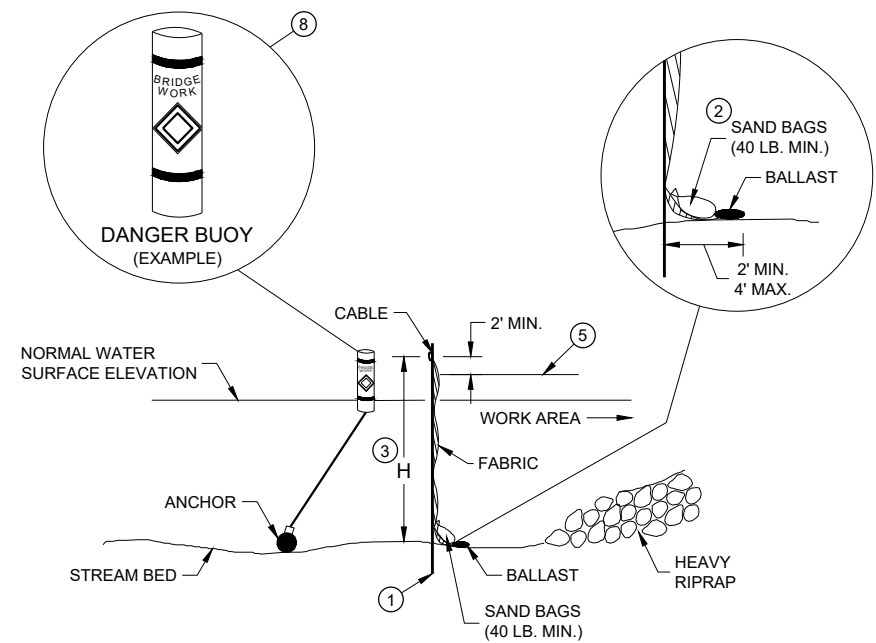
APPROVED
4-29-05 /S/ Beth Connolly
DATE CHIEF ROADWAY DEVELOPMENT 39 INCHES

FHWA



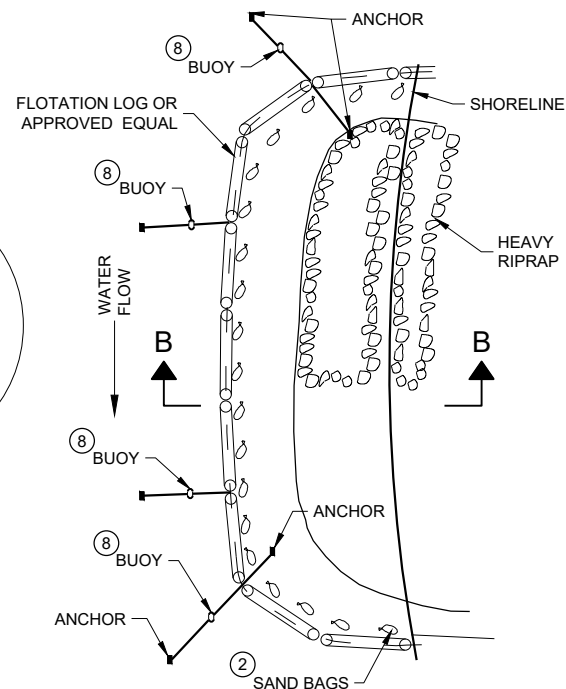
SECTION B - B

TURBIDITY BARRIER - FLOAT ALTERNATIVE CAUTION - SEE NOTE 6

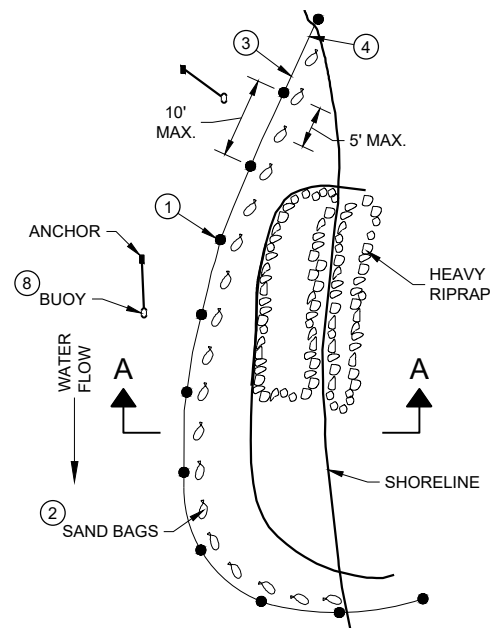


SECTION A - A

TURBIDITY BARRIER - STANDARD POST INSTALLATION



PLAN VIEW



PLAN VIEW

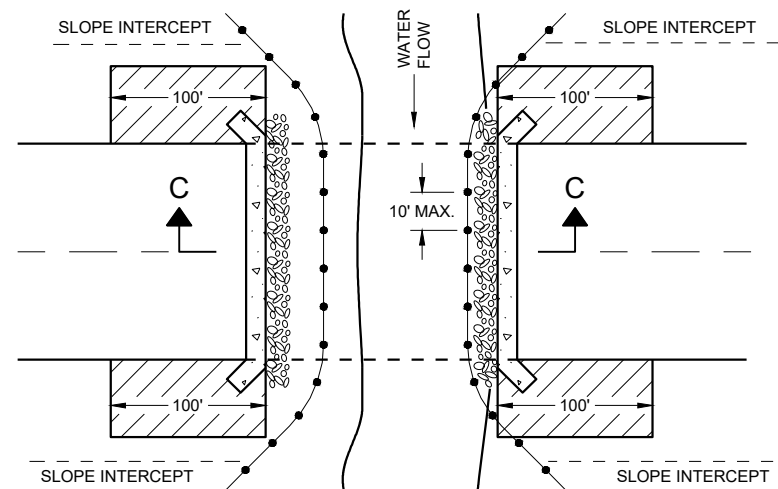
TURBIDITY BARRIER PLACEMENT DETAILS

GENERAL NOTES

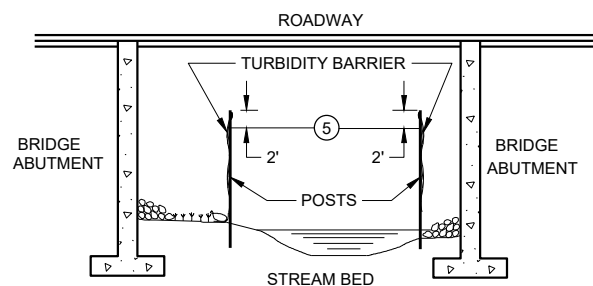
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

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

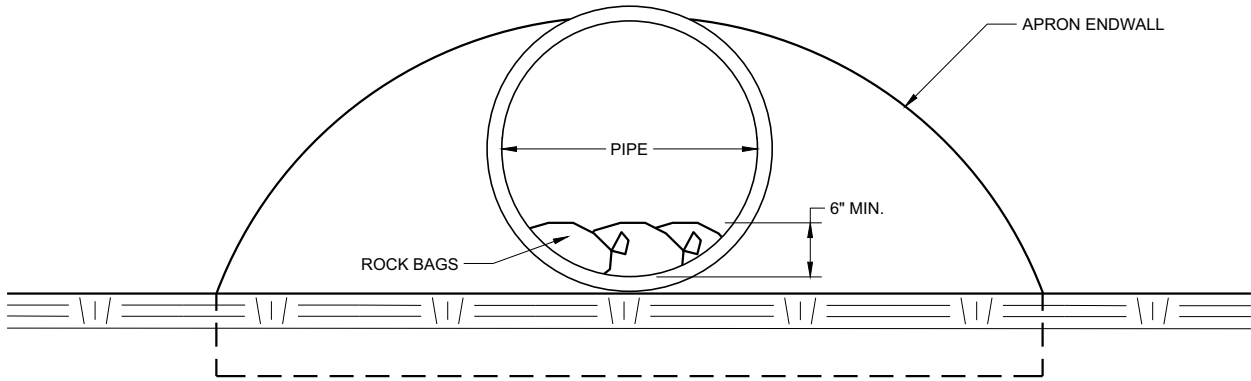
TURBIDITY BARRIER DETAIL SHOWING TYPICAL PLACEMENT AT STRUCTURES

TURBIDITY BARRIER

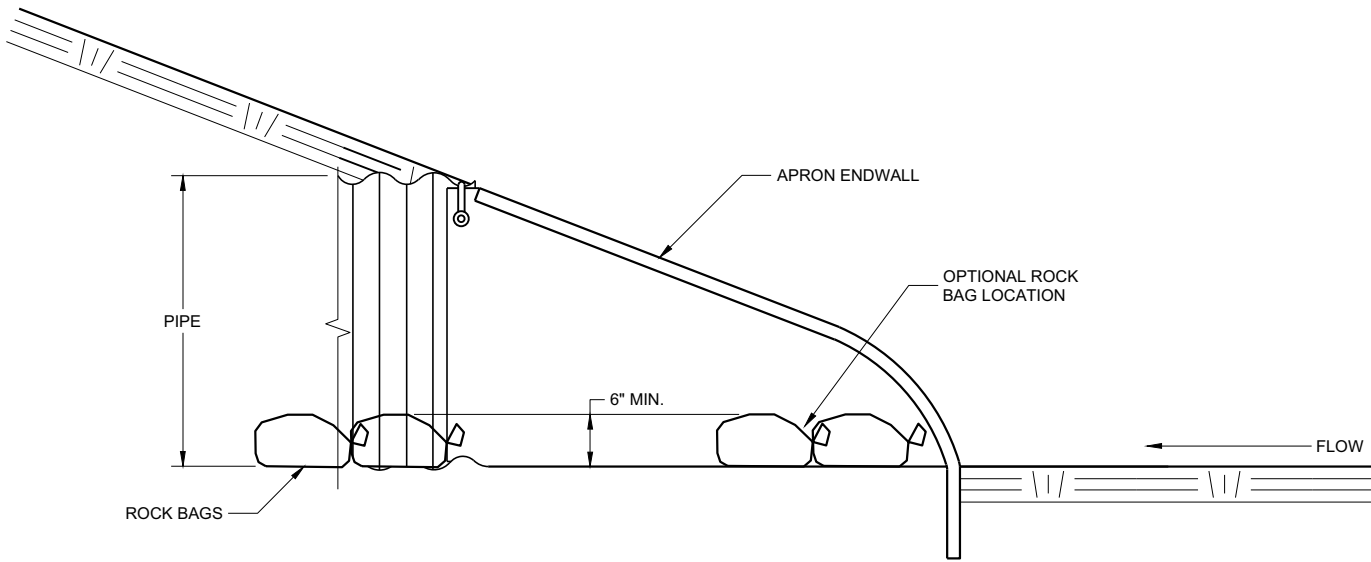
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
6/4/02 DATE /S/ Beth Cannestra
CHIEF ROADWAY DEVELOPER
ENGINEER 40

FHWA



END VIEW



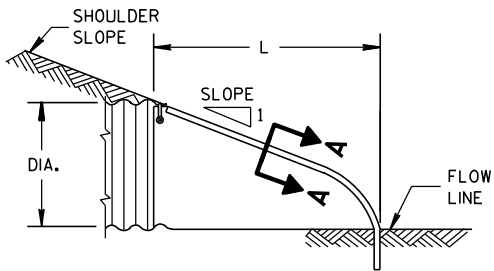
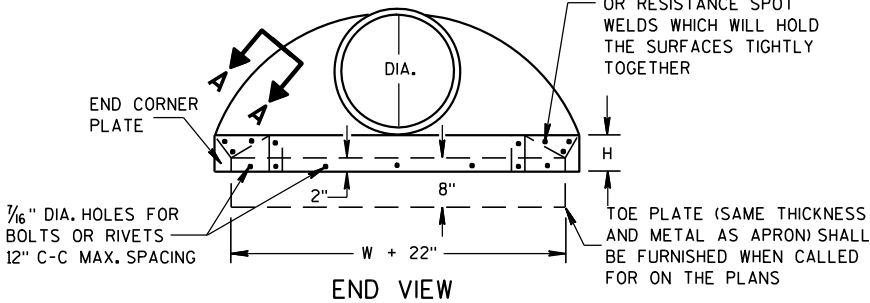
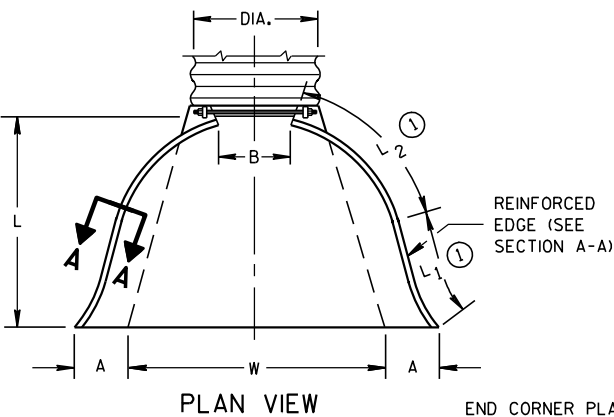
SIDE VIEW

CULVERT PIPE CHECK
(INSTALL ON INLET END ONLY)

CULVERT PIPE CHECK	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED May 2019 DATE	/S/ Daniel Schave EROSION CONTROL ENGI 41
FHWA	

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

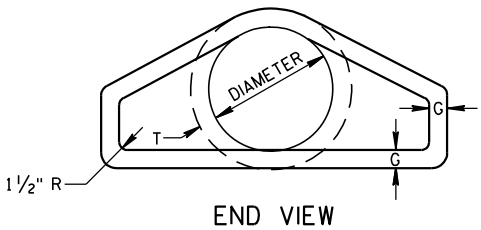
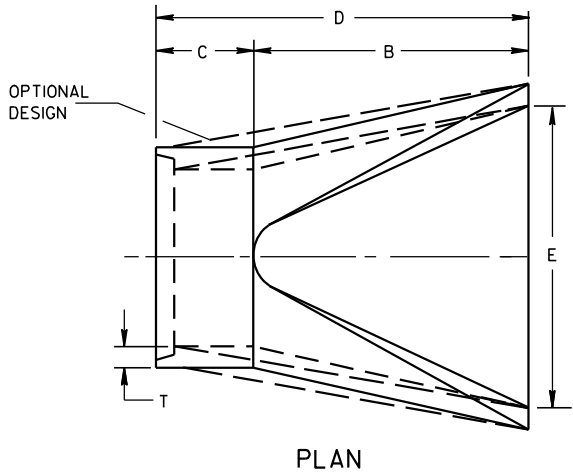
* EXCEPT CENTER PANEL
SEE GENERAL NOTES



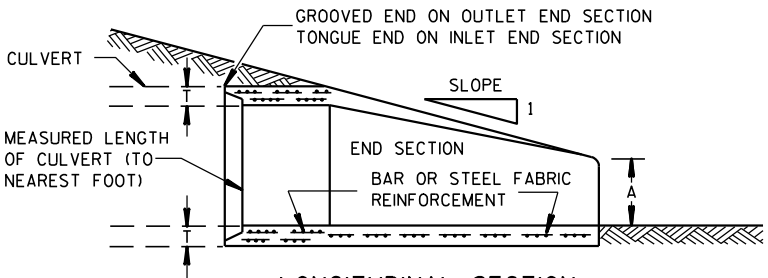
SIDE ELEVATION
METAL ENDWALLS

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

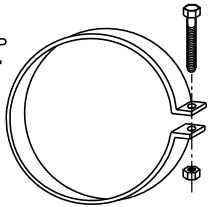
* MINIMUM
** MAXIMUM



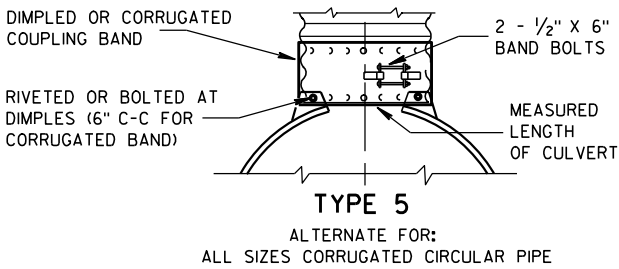
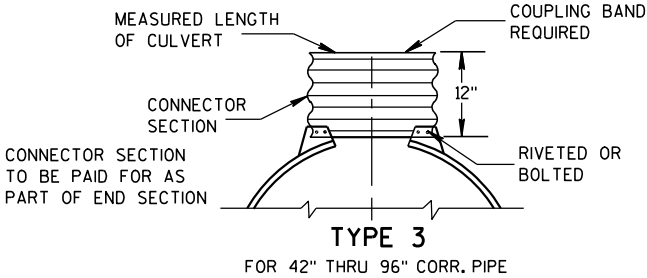
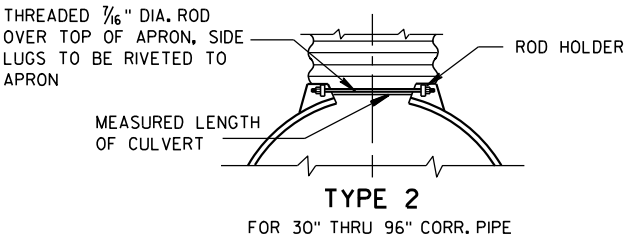
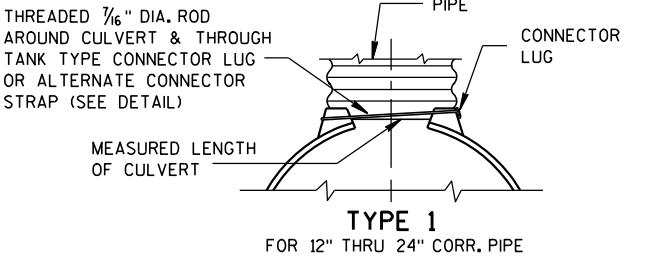
LONGITUDINAL SECTION
CONCRETE ENDWALLS



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



ALTERNATE FOR TYPE 1 CONNECTION
END SECTION CONNECTOR STRAP



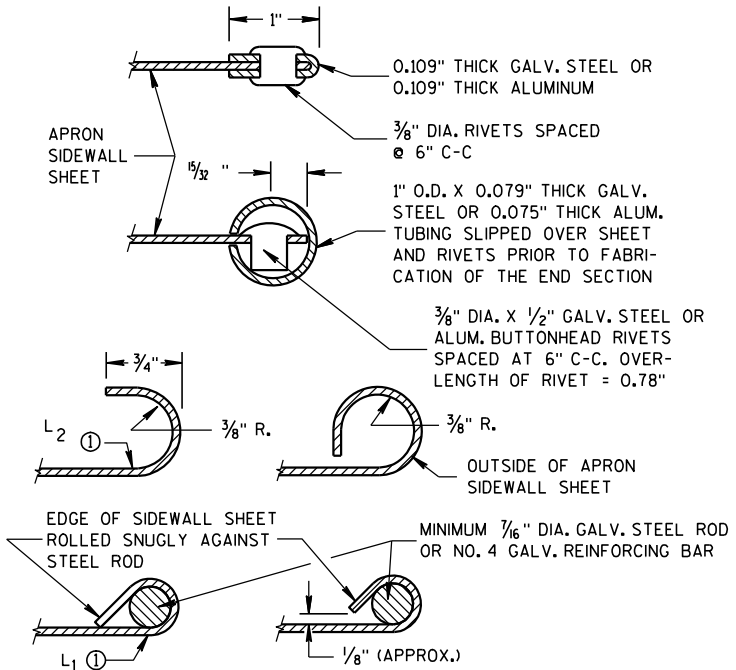
NOTE: DIMPLED BAND FITS OVER OUTSIDE OF ENDWALL, AND CORRUGATED BAND FITS INSIDE ENDWALL. DIMPLED BAND MAY BE USED WITH HELICALLY CORRUGATED PIPE.

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

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

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

CONNECTION DETAILS



SECTION A-A

GENERAL NOTES

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

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

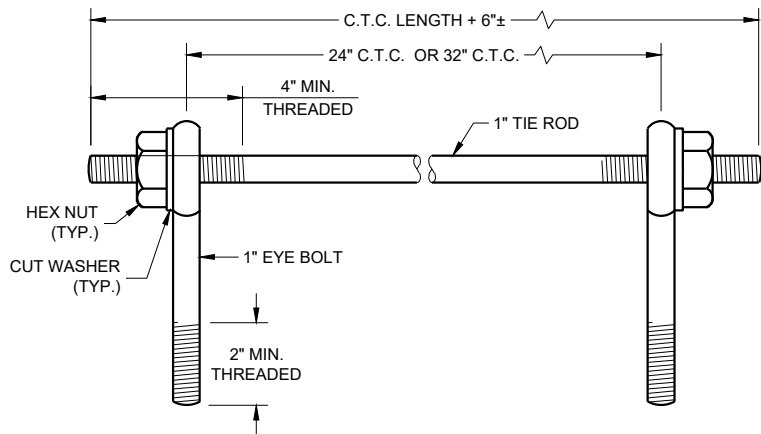
ALL THREE PIECE STEEL APRON ENDWALLS FOR 60" DIAMETER PIPE AND LARGER SHALL HAVE 0.109" SIDES AND 0.138" CENTER PANELS. ALL THREE PIECE ALUMINUM APRON ENDWALLS FOR 60" DIAMETER PIPE AND LARGER SHALL HAVE 0.105" SIDES AND 0.134" CENTER PANELS. THE WIDTH OF CENTER PANELS SHALL BE GREATER THAN 20 PERCENT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

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

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

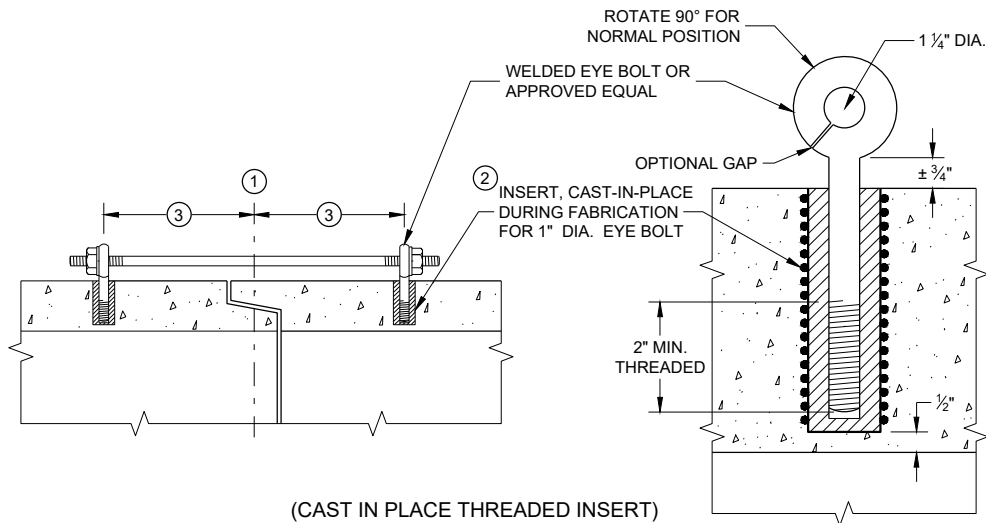
① FOR PIPE SIZES UP TO 60" DIAMETER, A 180° ROLLED EDGE MAY BE USED INSTEAD OF STEEL ROD REINFORCEMENT. SEE SECTION A-A.

APRON ENDWALLS FOR CULVERT PIPE			
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
APPROVED 11/30/94 DATE	/S/ Rory L. Rhin... CHIEF ROADWAY DEVELOP 42	NEER	
FHWA			



EYE BOLTS AND TIE ROD

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



(CAST IN PLACE THREADED INSERT)

LONGITUDINAL SECTIONS

GENERAL NOTES

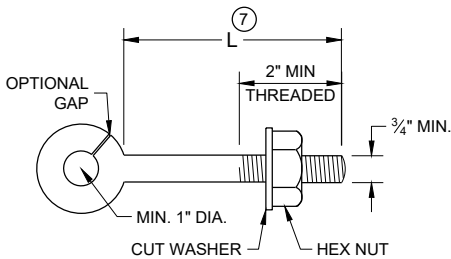
DETAILS OF CONSTRUCTION, MATERIALS, AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND APPLICABLE SPECIAL PROVISIONS.

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

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

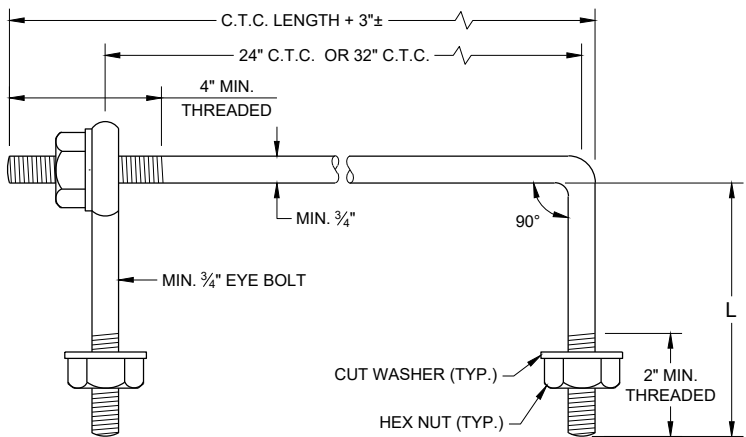
JOINT TIES TO BE HOT-DIP GALVANIZED PER ASTM A 153.

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

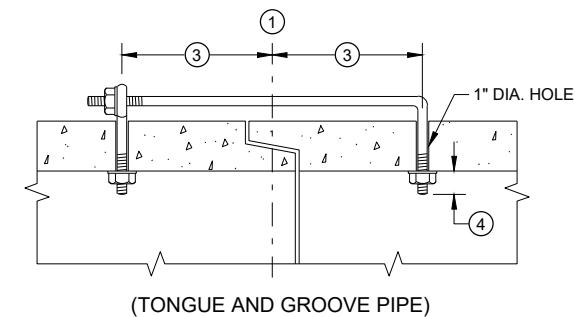


EYE BOLT 7

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



EYE BOLT AND TIE ROD

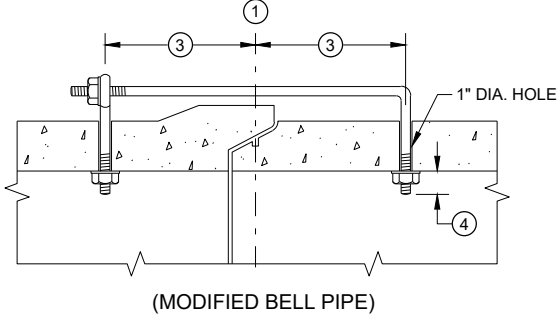


(TONGUE AND GROOVE PIPE)

LONGITUDINAL SECTION

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

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

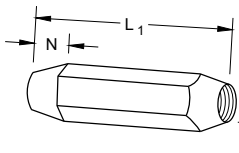


(MODIFIED BELL PIPE)

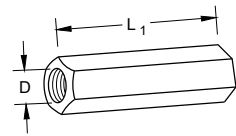
ADJUSTABLE TIE ROD TABLE

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

DIMENSIONS SHOWN ARE IN INCHES

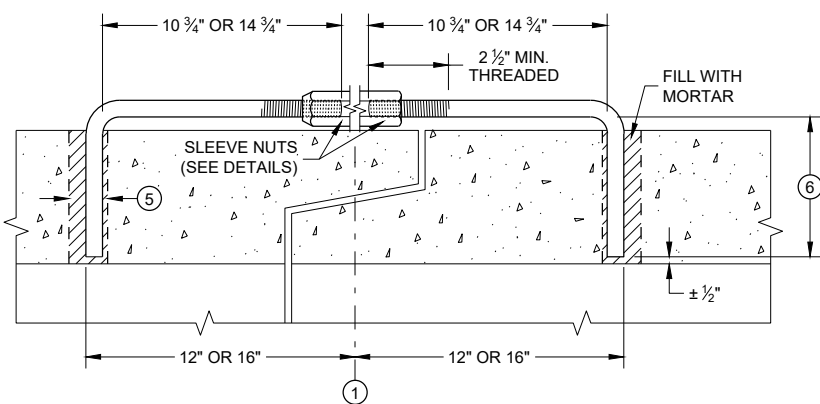


TAPERED



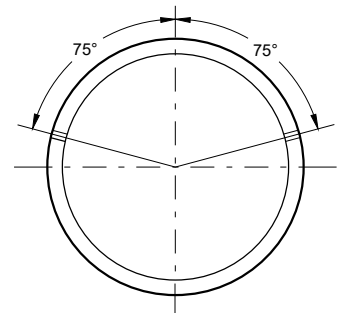
PLAIN

RIGHT AND LEFT THREADS
SLEEVE NUTS



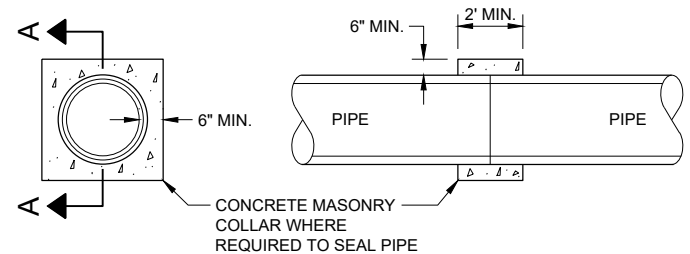
LONGITUDINAL SECTION

ADJUSTABLE TIE ROD (ALTERNATE NO. 3)



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

TRANSVERSE SECTION



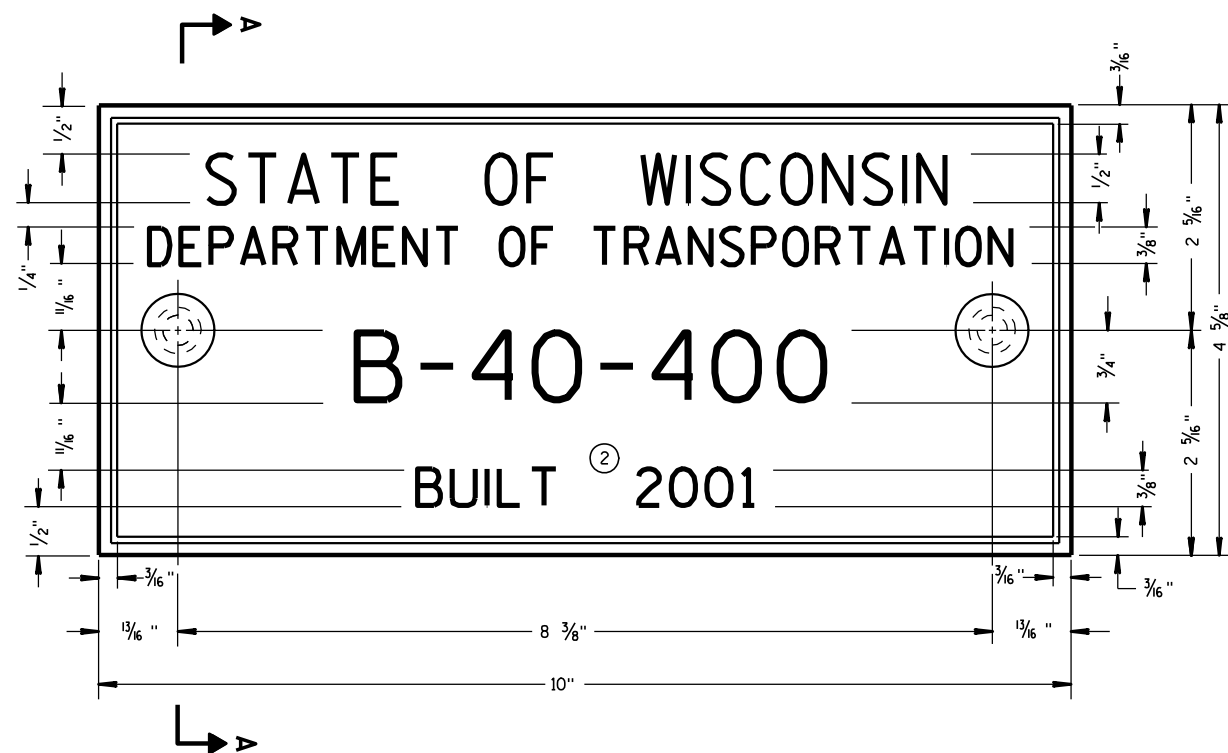
SECTION A - A

CONCRETE COLLAR DETAIL

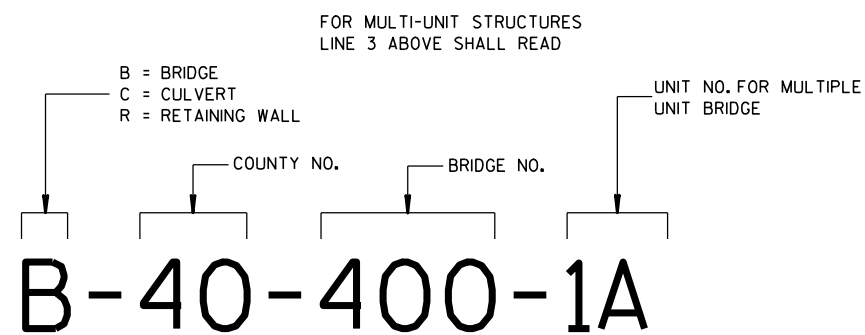
JOINT TIES FOR CONCRETE PIPE AND CONCRETE COLLAR DETAIL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
November 2021 /S/ Rodney Taylor
DATE ROADWAY STANDARDS DEVELOPMENT ENGINEER 43
FHWA



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



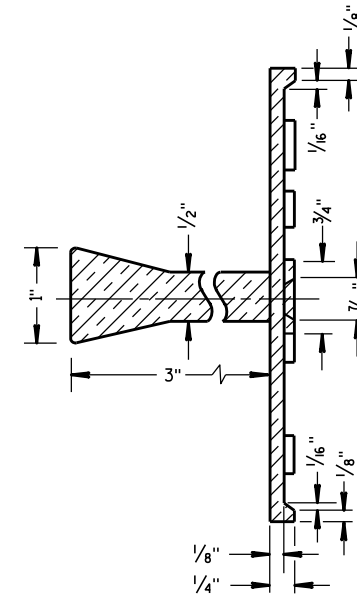
**NUMBERING DESIGNATION
MULTI-UNIT STRUCTURES**

GENERAL NOTES

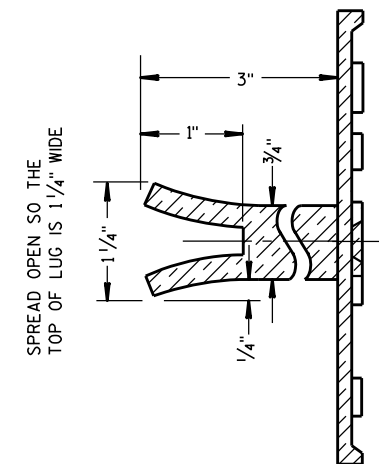
NAME PLATES TO BE INSTALLED ON BRIDGES, CULVERTS, AND RETAINING WALLS SHALL CONFORM TO THE REQUIREMENTS OF SECTION 502.3.11 OF THE STANDARD SPECIFICATIONS.

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.

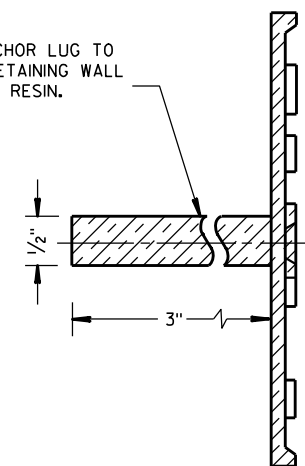


SECTION A-A



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

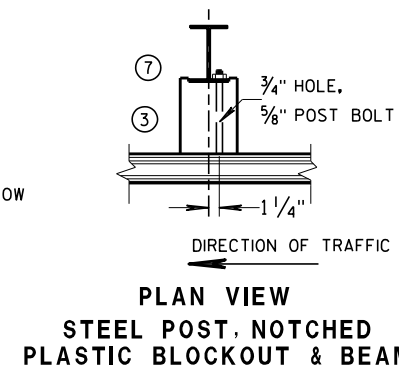
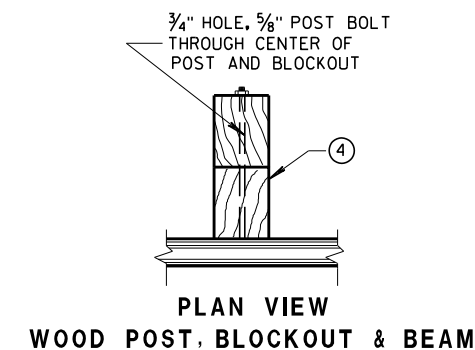
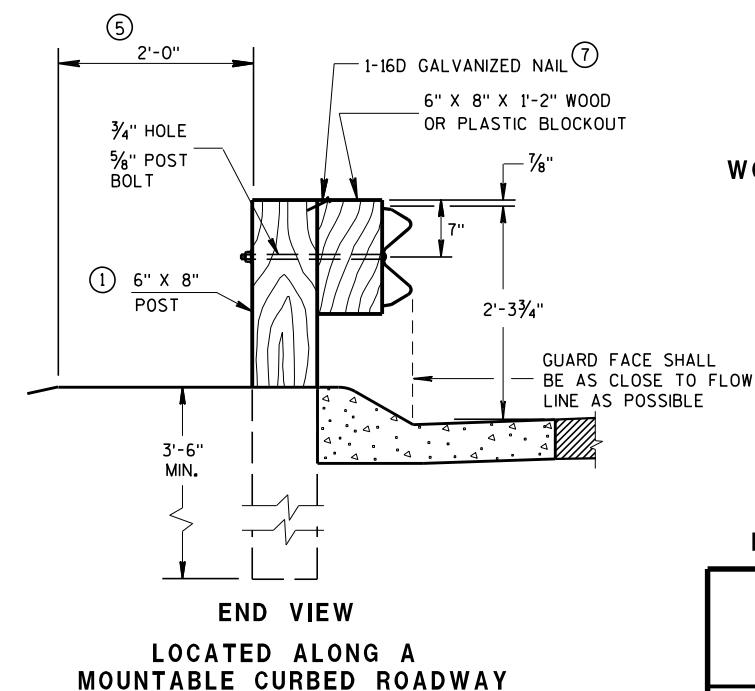
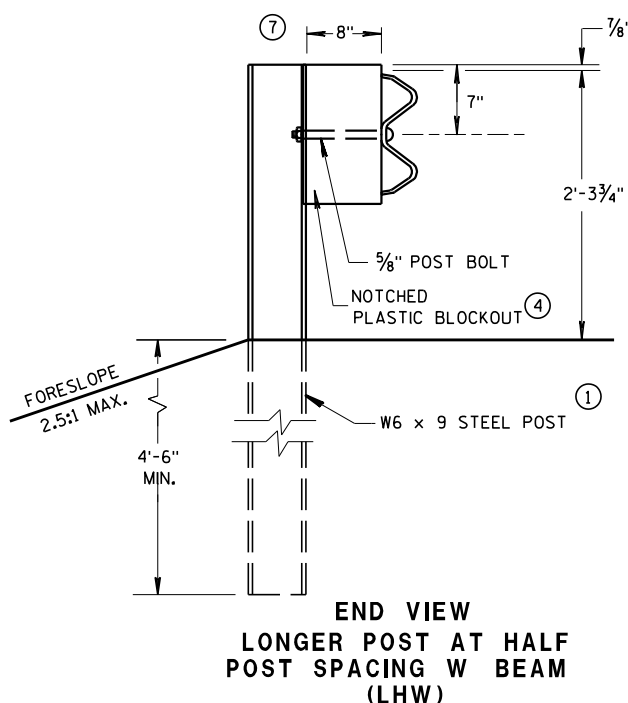
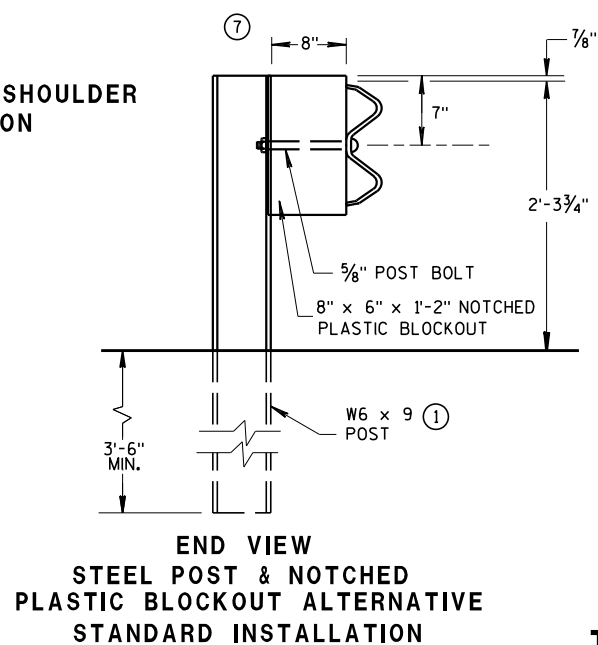
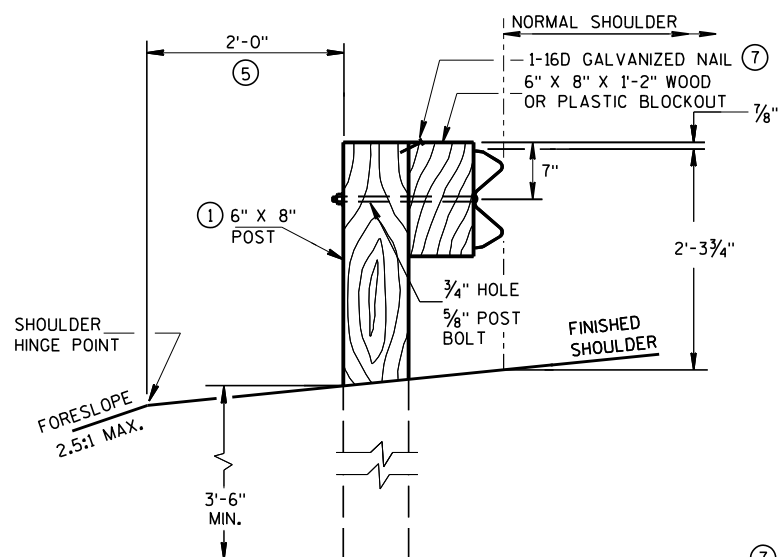
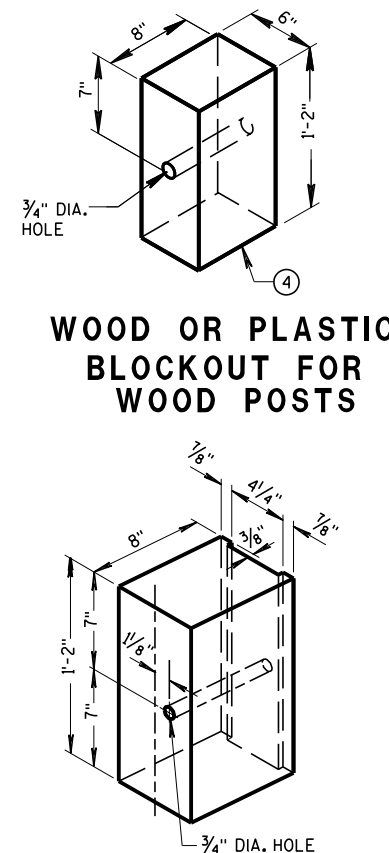
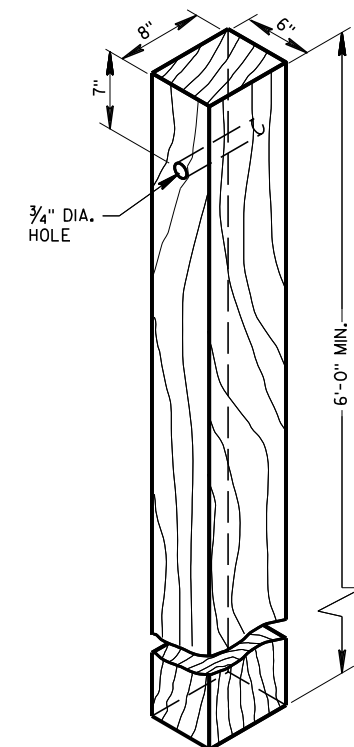
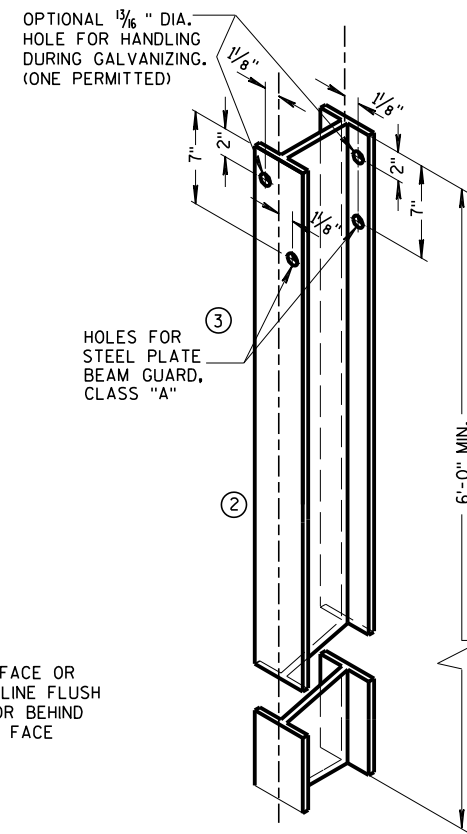
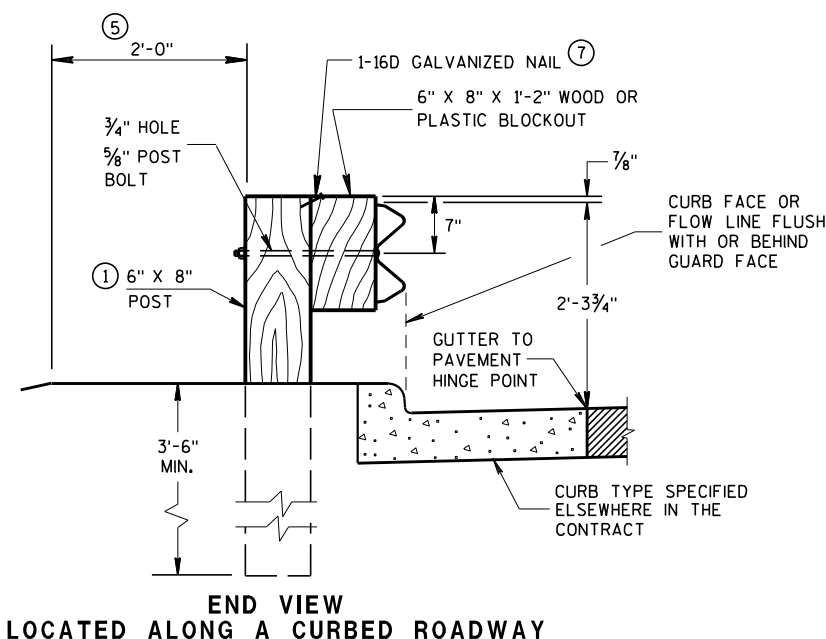
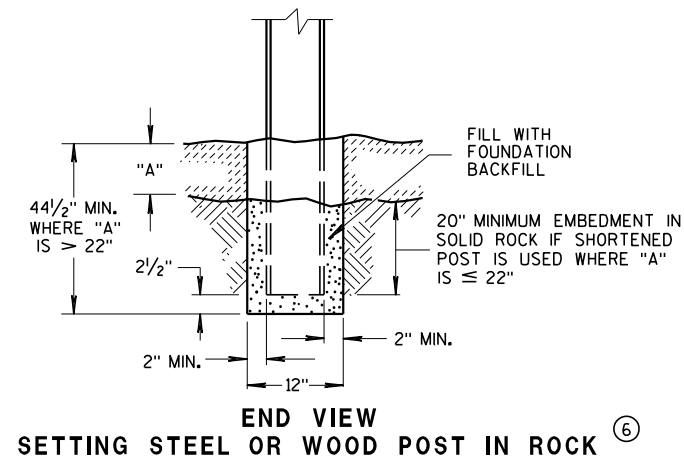
APPROVED

3/26/10 DATE /S/ Scot Beck CHIEF STRUCTURAL DEVELOPER 44 JEEER
FHWA

GENERAL NOTES

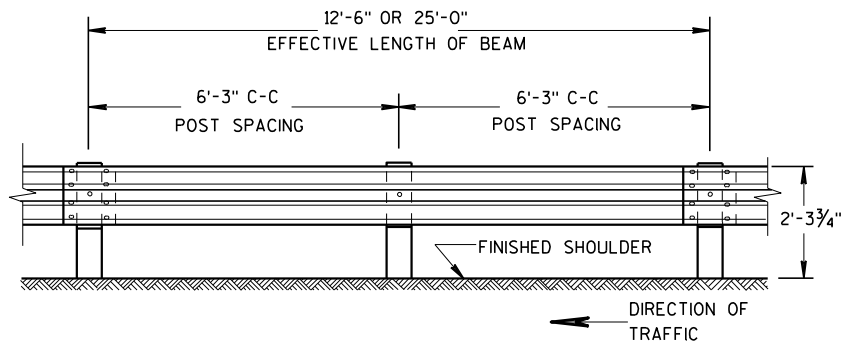
- W6 X 9 OR W6 X 8.5 STEEL POSTS AND NOTCHED PLASTIC BLOCKOUTS ARE ACCEPTABLE ALTERNATIVES FOR 6" X 8" WOOD POSTS WITH WOOD OR PLASTIC BLOCKOUTS. USE APPROVED NOTCHED PLASTIC BLOCKOUTS WITH STEEL POSTS. APPROVED PLASTIC BLOCKOUT DESIGNS MAY VARY FROM THIS TYPICAL DETAIL WHEN USED IN CONJUNCTION WITH STEEL POSTS. DO NOT MIX STEEL POSTS AND WOOD POSTS IN A SINGLE INSTALLATION.
- USE STRUCTURAL STEEL POSTS CONFORMING TO ASTM A 36. GALVANIZED POSTS ACCORDING TO AASHTO M 111. EITHER SET THE POSTS IN DRILLED HOLES OR DRIVE TO GRADE. REMOVE MUSHROOMING CAUSED BY DRIVING AND REPAIR DAMAGED SPELTER COATING ON GALVANIZED POSTS.
- INSTALL STEEL POSTS WITH HOLES ON APPROACHING TRAFFIC SIDE.
- USE EITHER WOOD OR APPROVED PLASTIC BLOCKOUTS ON WOOD POSTS.
- IF THE DISTANCE FROM BACK OF POST TO SHOULDER HINGE POINT IS LESS THAN 2 FEET INSTALL LONGER POST AT HALF POST SPACING, W BEAM (LHW).
- IF ROCK IS ENCOUNTERED DURING EXCAVATION, THE ENGINEER MAY APPROVE USING A 12 INCH DIAMETER POST HOLE EXTENDING 20 INCHES DEEP INTO THE ROCK. PLACE GRANULAR MATERIAL IN THE BOTTOM OF THE HOLE APPROXIMATELY 2 1/2 INCHES DEEP. CUT THE POSTS TO LENGTH AND PLACE IN THE HOLE. BACKFILL WITH MATERIAL EXCAVATED FROM THE HOLE AND COMPACT ADEQUATELY.
- 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.

INSTALL BEAM GUARD SECTIONS AND ALL NECESSARY HARDWARE ACCORDING TO THE APPLICABLE PLAN AND CURRENT STANDARD AND SUPPLEMENTAL SPECIFICATIONS. ALL DIMENSIONS ARE SUBJECT TO MANUFACTURER'S TOLERANCES EXCEPT WHERE ALLOWABLE TOLERANCES ARE SHOWN.



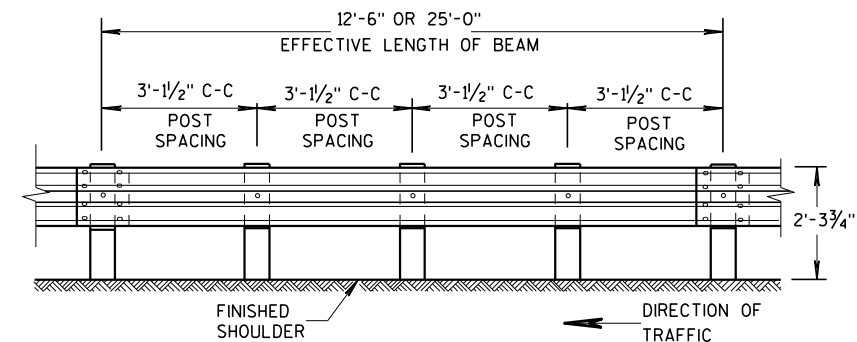
**STEEL PLATE BEAM GUARD,
CLASS "A"
INSTALLATION & ELEMENTS**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



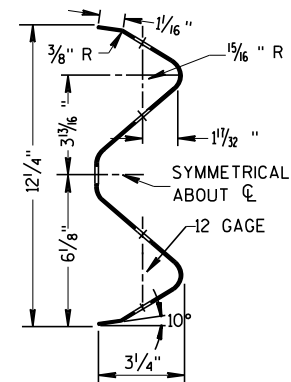
FRONT VIEW

POST SPACING STANDARD INSTALLATION

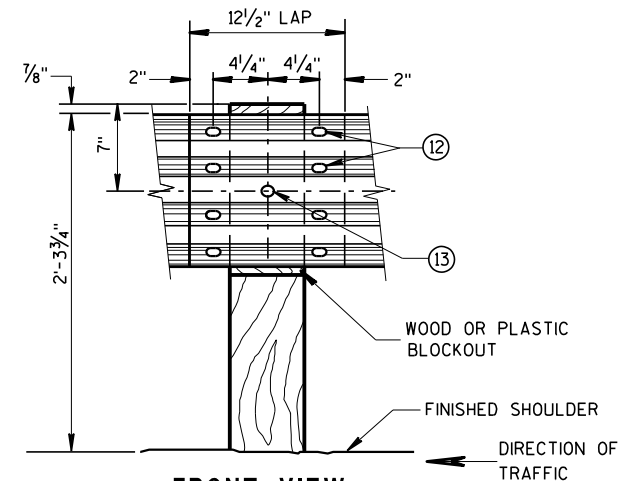


FRONT VIEW

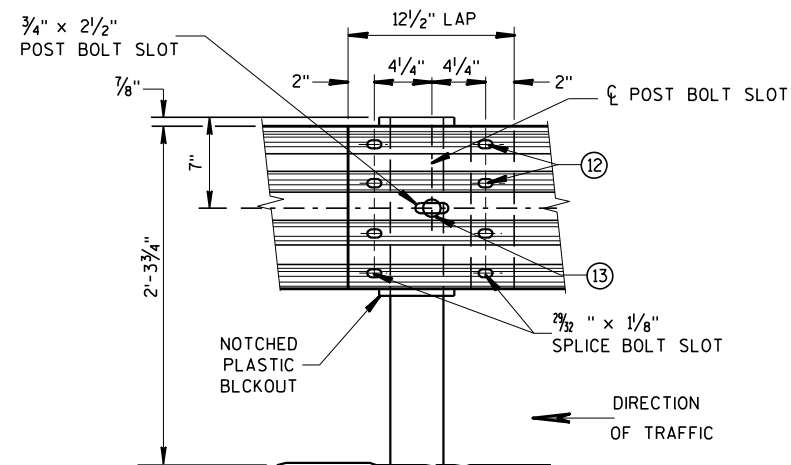
POST SPACING FOR LONGER POST
AT HALF POST SPACING W BEAM (LHW)



SECTION THRU W BEAM



FRONT VIEW
BEAM SPLICE AT WOOD POST
AND POST MOUNTING DETAIL

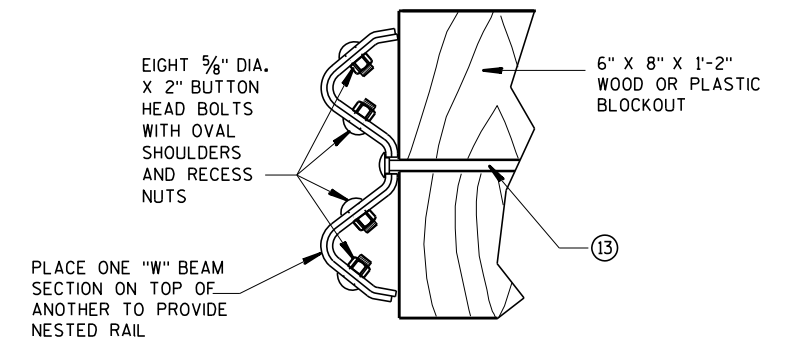


FRONT VIEW
BEAM SPLICE AT STEEL POST
TYPICAL SPLICING DETAILS
OF STEEL PLATE BEAM GUARD

GENERAL NOTES

FURNISH GUARDRAIL DEFLECTORS FROM APPROVED PRODUCTS LIST.

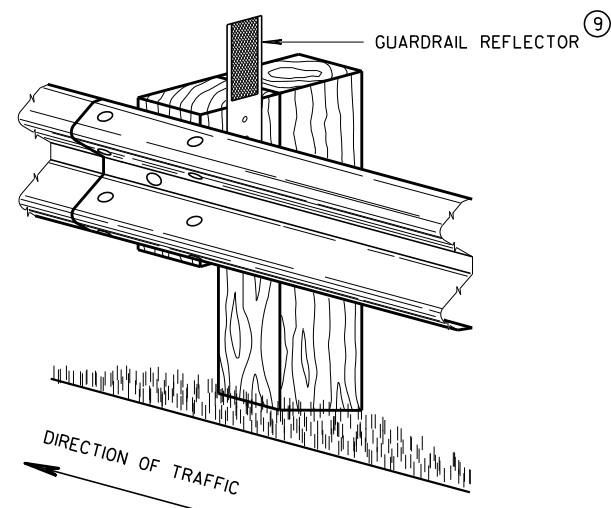
- ⑨ DO NOT INSTALL REFLECTORS ON THE FIRST 50 FEET OF THE APPROACH END OF THE ENERGY ABSORBING TERMINA. START REFLECTORS AT POST #9 AND SPACE EVENLY EVERY 100 FEET (MAX.) TO THE END OF GUARDRAIL RUN, USING A MINIMUM OF 3 REFLECTORS.
- ⑫ 8 - 5/8" ϕ X 2" BUTTON HEAD BOLTS WITH OVAL SHOULDERS & RECESS NUTS.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



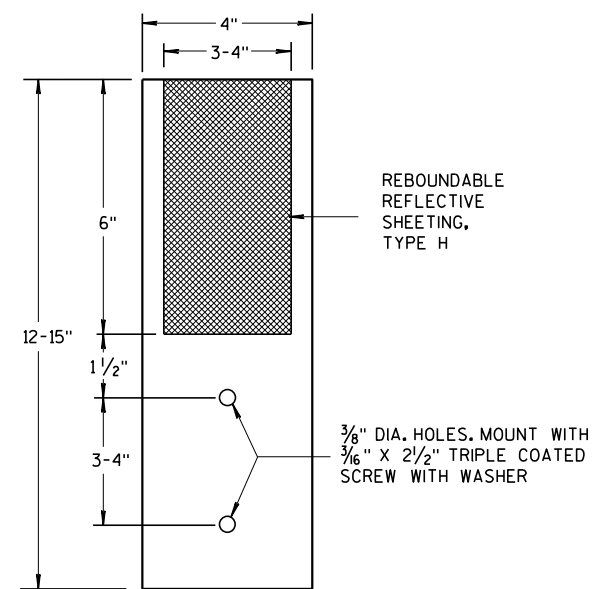
NESTED W BEAM (NW)

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

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



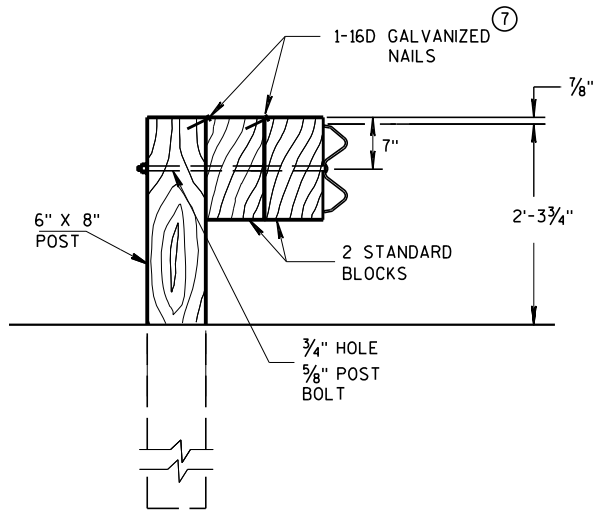
4" X 12" GUARDRAIL REFLECTOR DETAIL
AND TYPICAL INSTALLATION *



4"x 12" GUARDRAIL REFLECTOR

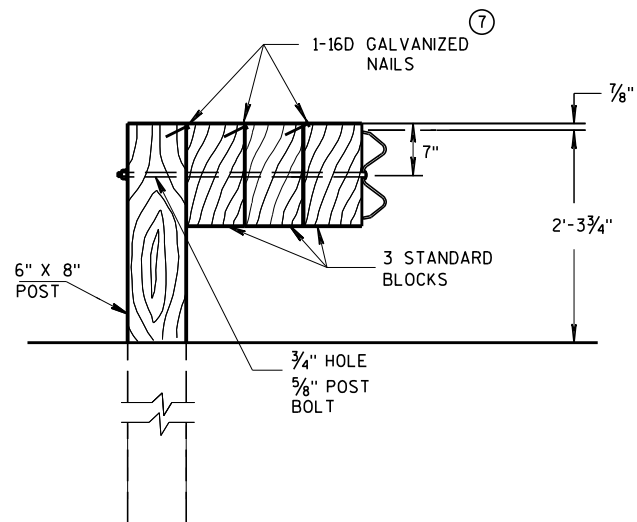
STEEL PLATE BEAM GUARD,
CLASS "A",
INSTALLATION & ELEMENTS

STATE OF WISCO46
DEPARTMENT OF TRANSPORTATION



DETAIL FOR DOUBLE BLOCKS

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

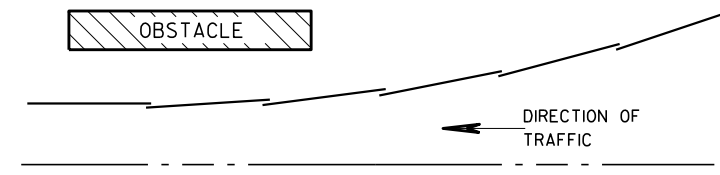


DETAIL FOR TRIPLE BLOCKS

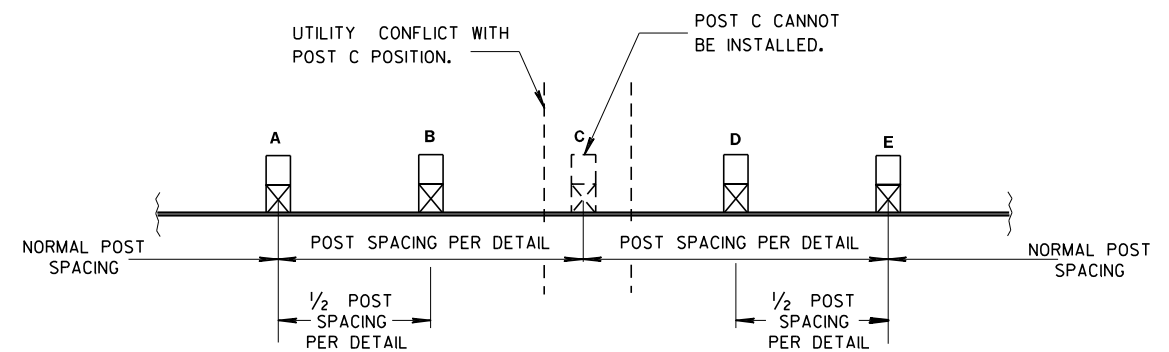
TRIPLE BLOCK DETAIL IS LIMITED TO ONE
LOCATION WITHIN A BEAM GUARD RUN.

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

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



PLAN VIEW BEAM LAPPING DETAIL

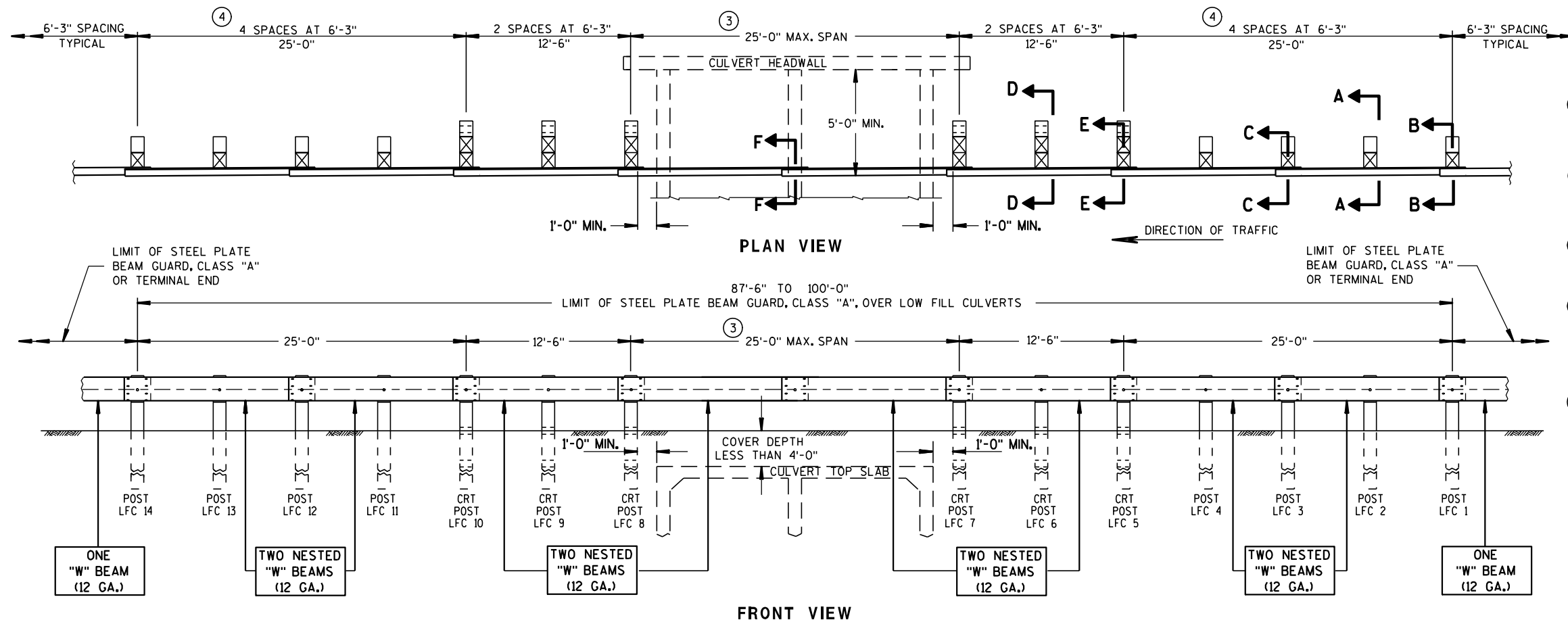


POST DRIVING FOR CONTINUOUS UNDERGROUND OBSTRUCTION

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

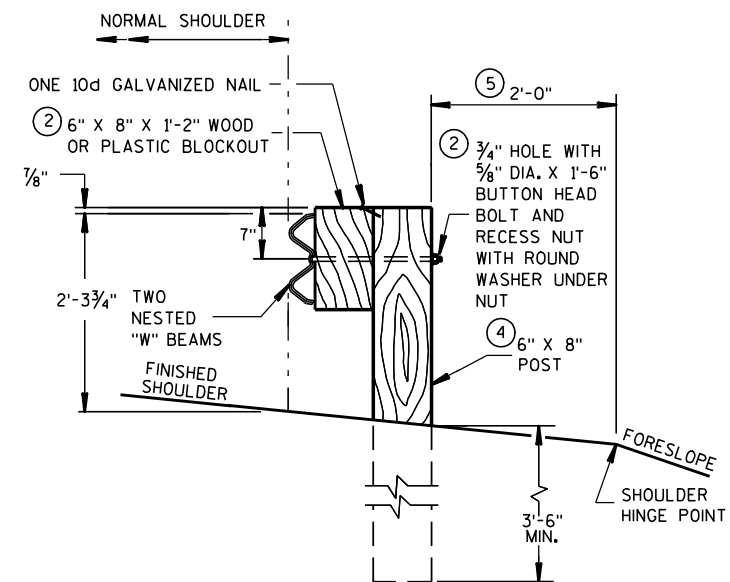
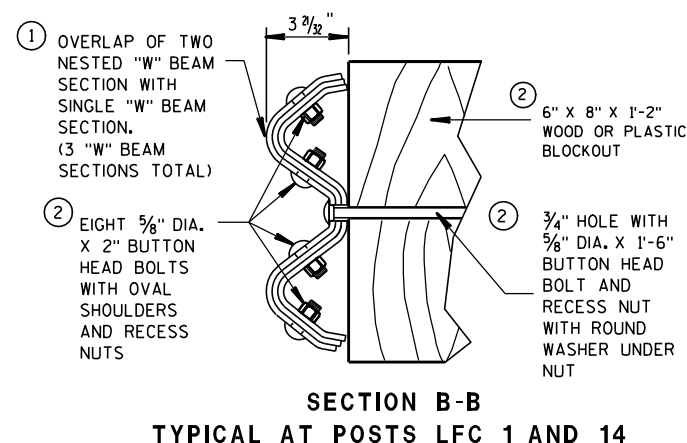
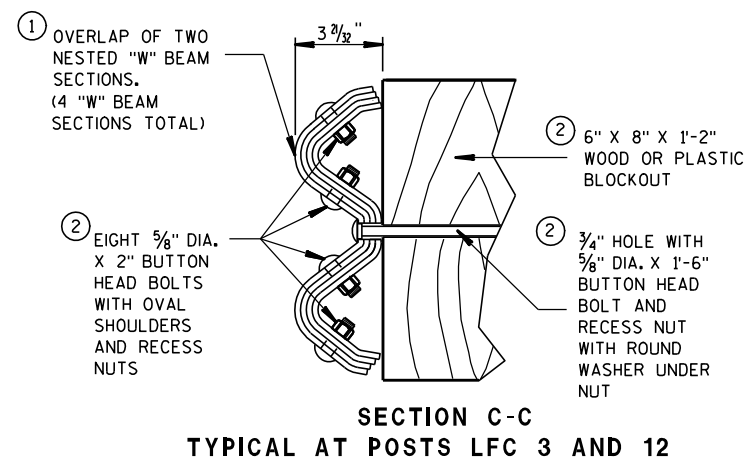
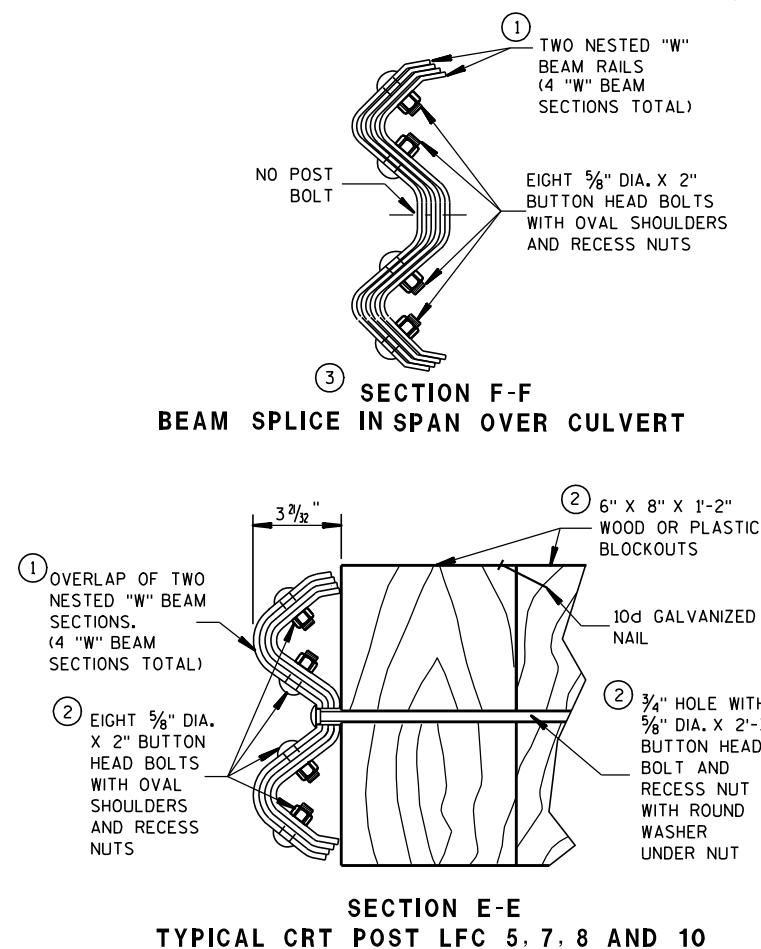
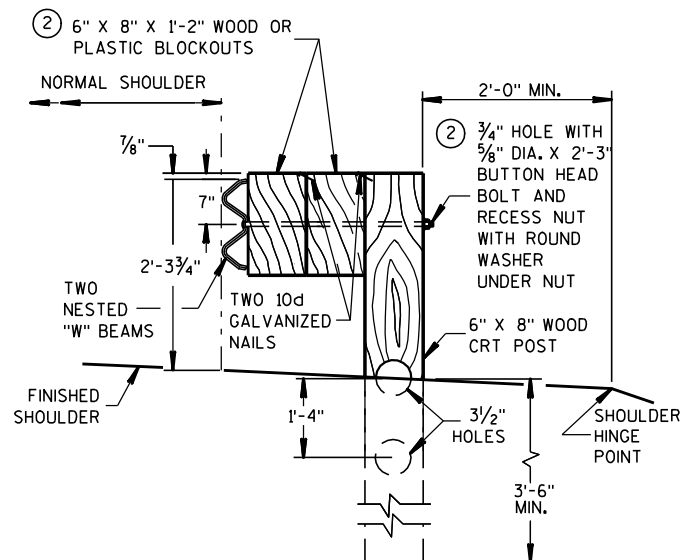
APPROVED	/S/ Rodney Taylor
June 2017	DATE
ROADWAY STANDARDS 47	UNIT SUPERVISOR
FHWA	MENT



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.

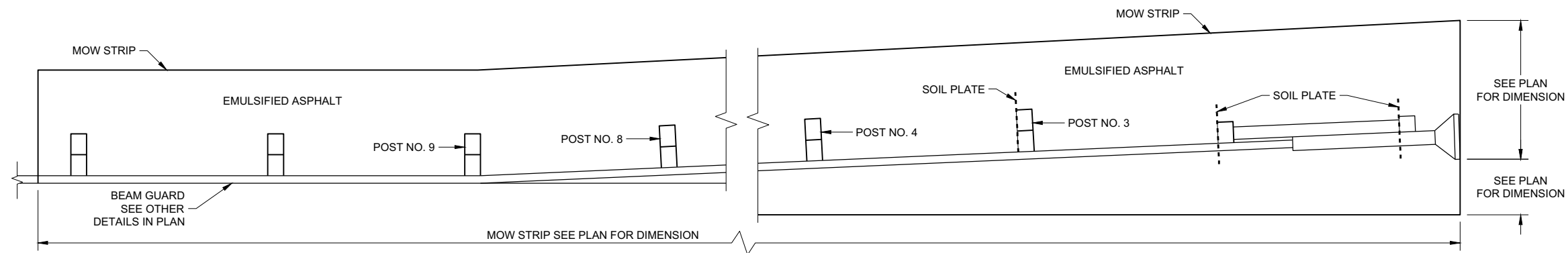
- MAINTAIN THE NESTING OF EACH NESTED PAIR OF "W" BEAM SECTIONS THROUGH SPLICES. ORIENTATE NESTED "W" BEAM SPLICES IN THE DIRECTION OF TRAFFIC AS THE PLAN VIEW SHOWS. SEE S.D.D. 14 B 15 FOR SPLICE INSTALLATION.
- THE CONTRACTOR MAY USE APPROVED PLASTIC BLOCKOUTS IN LIEU OF WOOD BLOCKOUTS. SEE S.D.D. 14 B 15 FOR TYPICAL BLOCKOUT, SPLICE AND REFLECTOR INSTALLATIONS. USE BOLT SIZES AND LENGTHS AS SHOWN ON THIS DETAIL.
- PROVIDE 12'-6", 18'-9" AND 25'-0" SPANS ONLY. USE A MAXIMUM OF ONE SPLICE LOCATED ANYWHERE WITHIN THE SPAN SECTION. LOCATE ALL OTHER SPLICES AT BEAM GUARD POSTS.
- IN THE FIRST AND LAST 25 FOOT SECTIONS (POSTS LFC 1-4 & LFC 11-14), THE CONTRACTOR MAY USE W6 X 9 OR W6 X 8.5 STEEL POSTS WITH NOTCHED PLASTIC BLOCKOUTS OR 6" X 8" WOOD POSTS WITH EITHER WOOD OR PLASTIC BLOCKOUTS. DO NOT MIX STEEL POSTS WITH NOTCHED PLASTIC BLOCKOUTS AND WOOD POSTS WITH EITHER WOOD OR PLASTIC BLOCKOUTS IN THE SAME INSTALLATION.
- WHERE EXISTING CONDITIONS DO NOT PERMIT THE APPROPRIATE EARTHWORK, THE PLAN TYPICAL SECTIONS OR DETAILS MAY SHOW, OR THE ENGINEER MAY ALLOW, THE REDUCTION OR ELIMINATION OF THE 2 FOOT DISTANCE TO THE HINGE POINT. BUILD AS THE PLAN SHOWS OR ENGINEER DIRECTS. IF THE 2 FOOT DISTANCE TO THE HINGE POINT IS REDUCED OR ELIMINATED, INCREASE THE POST SOIL DEPTH TO 4'-6" OR MORE.



**STEEL PLATE BEAM GUARD,
CLASS "A", OVER LOW
FILL CULVERTS**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
12/8/00 /S/ John Have-
DATE CHIEF ROADWAY DEVELOP 48 GINEER
FHWA

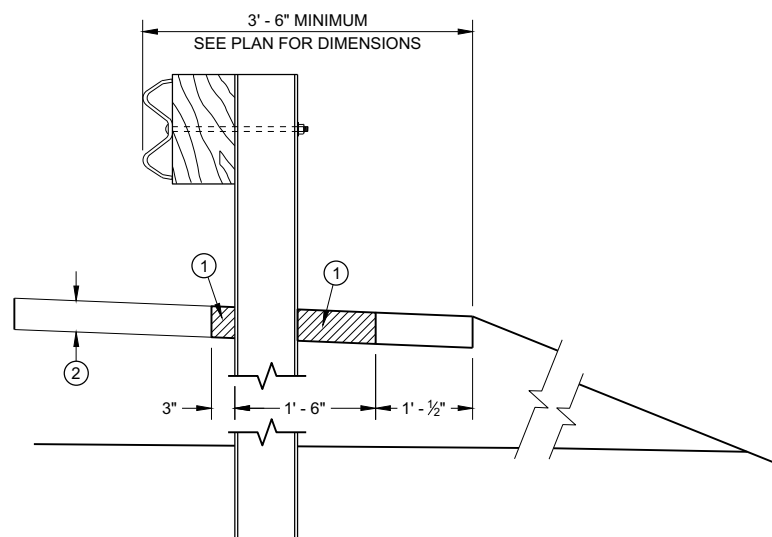


PLAN VIEW
MOW STRIP LAYOUT FOR ENERGY ABSORBING TERMINAL

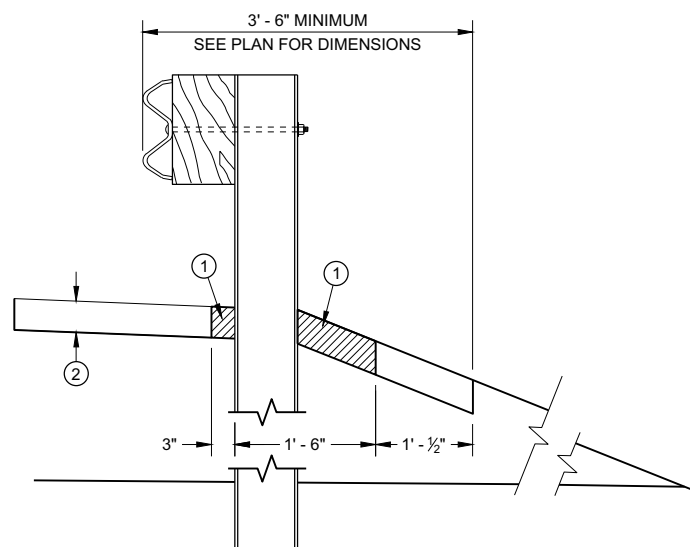
GENERAL NOTES

ONLY USE STEEL POSTS IN CONCRETE AND ASPHALT MOW STRIPS.

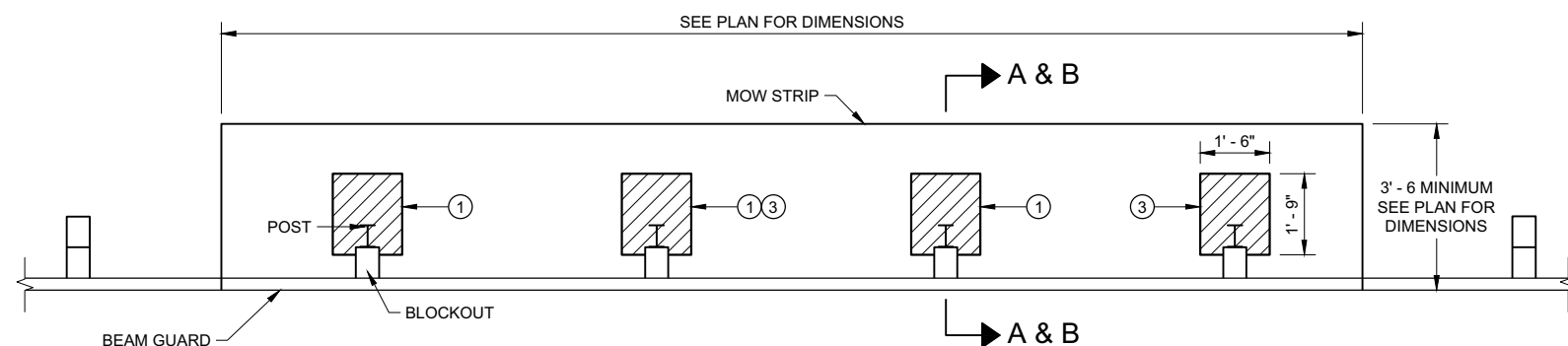
- ① CONTROLLED LOW-STRENGTH BACKFILL OR EMULSIFIED ASPHALT.
- ② DEPTH OF MOW STRIP:
ASPHALT - 4"
CONCRETE - 4"
EMULSIFIED ASPHALT - 1" OR LESS
- ③ FOR EMULSIFIED ASPHALT, MOW STRIP STRIP LEAVE OUTS NOT REQUIRED. (TYPICAL FOR ALL POSTS)



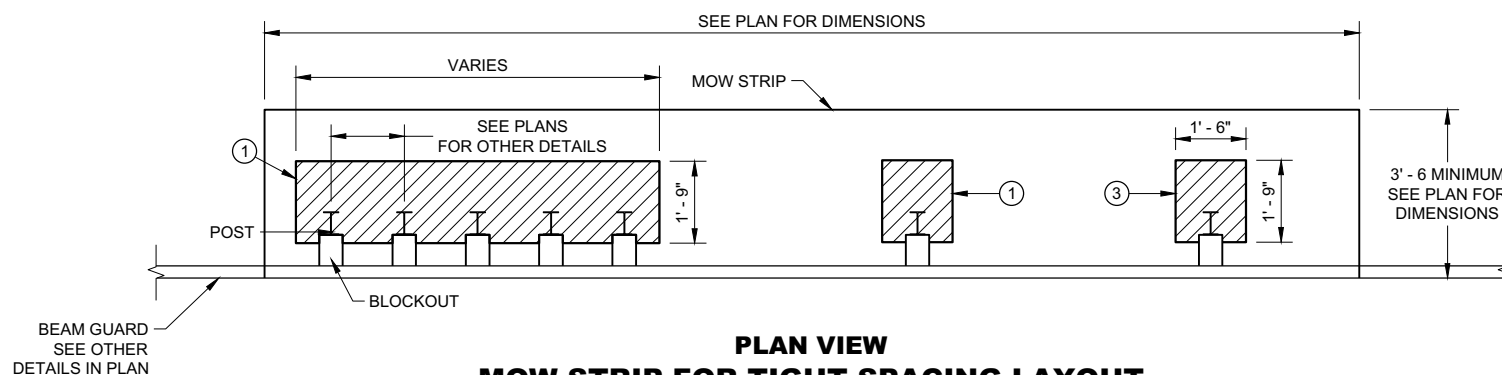
SECTION A - A



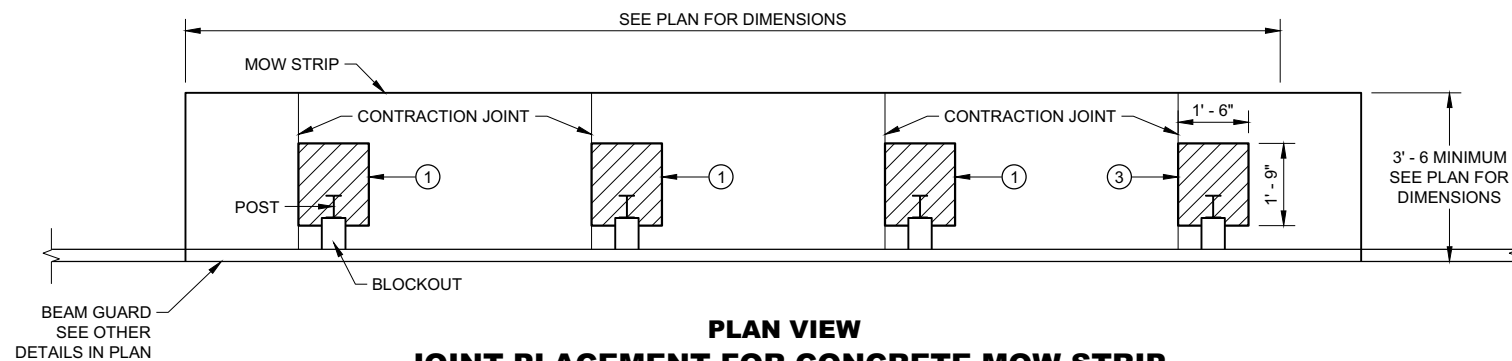
SECTION B - B



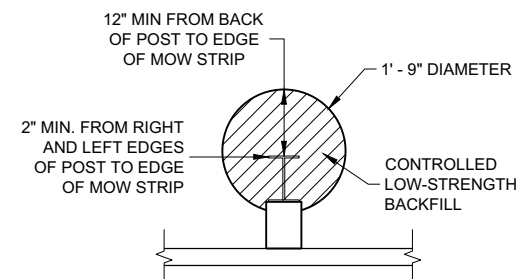
PLAN VIEW
MOW STRIP FOR TYPICAL BLOCKOUT LAYOUT



PLAN VIEW
MOW STRIP FOR TIGHT SPACING LAYOUT



PLAN VIEW
JOINT PLACEMENT FOR CONCRETE MOW STRIP



ALTERNATIVE HMA
MOW STRIP DESIGN

GUARDRAIL MOW STRIP

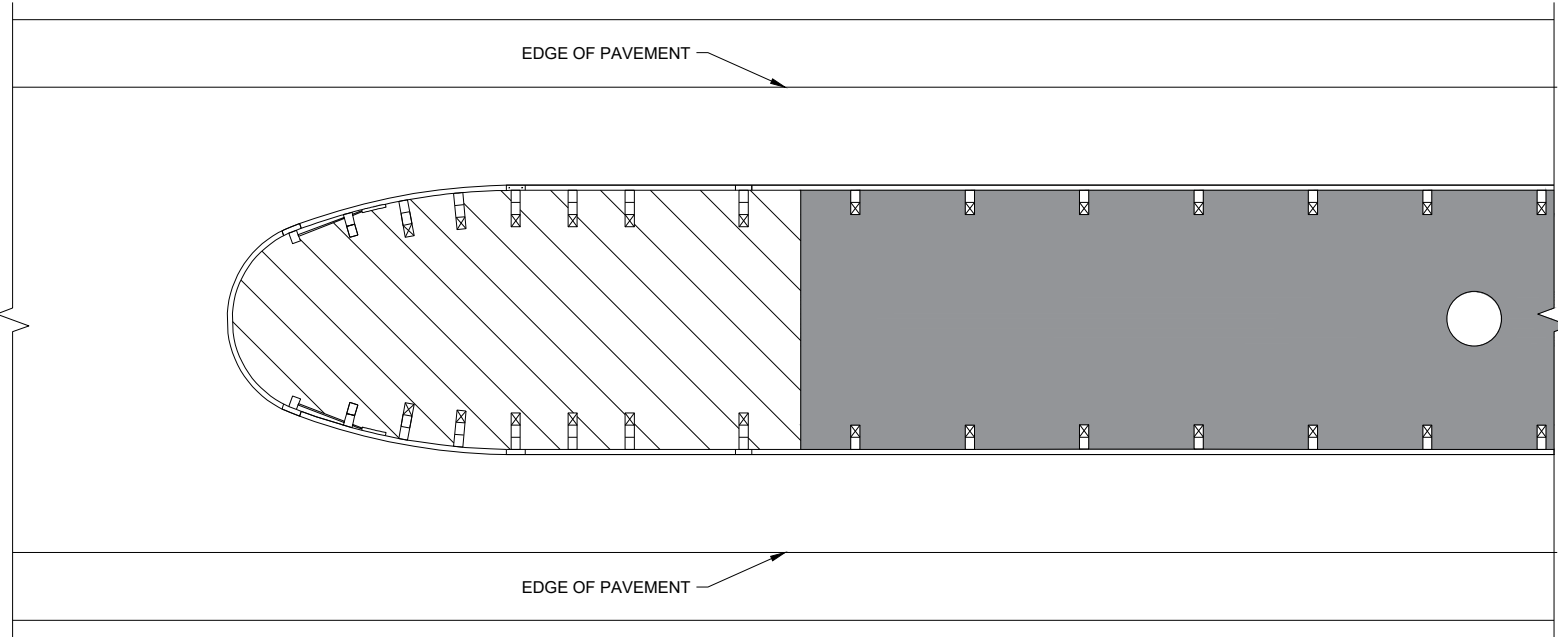
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

LEGEND

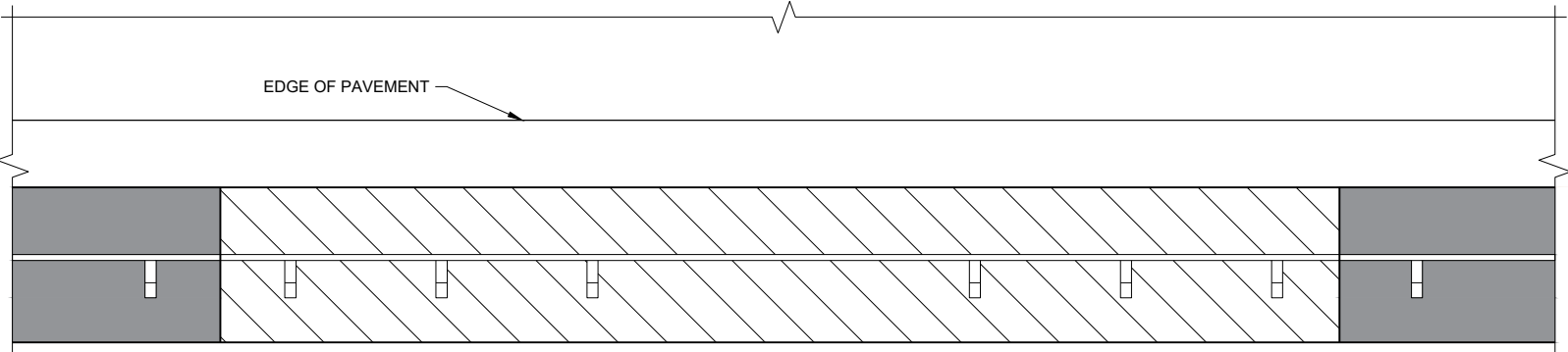
- CONCRETE, ASPHALT, OR EMULSIFIED ASPHALT MOW STRIP (SEE OTHER DETAILS)
- EMULSIFIED ASPHALT MOW STRIP (SEE OTHER DETAILS)

GENERAL NOTES

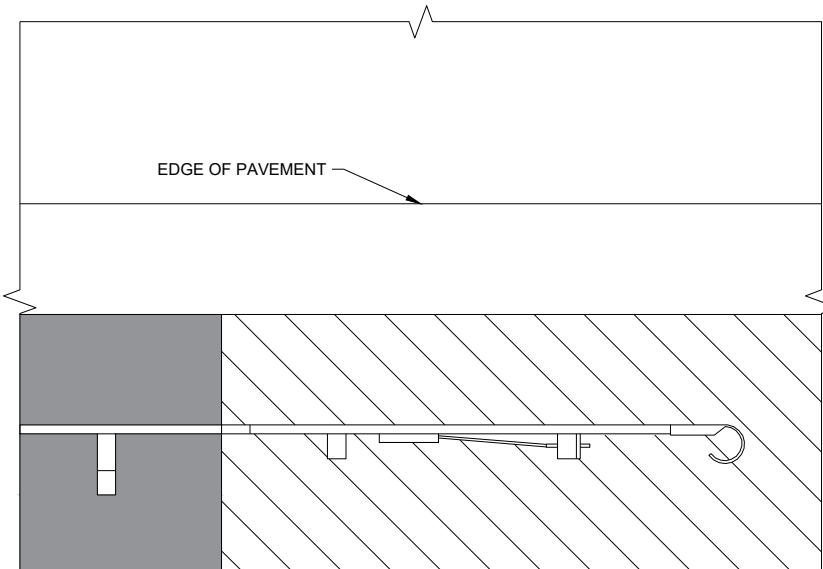
EXISTING THRIE BEAM BULLNOSES MAY HAVE WOOD POSTS. NEW THRIE BEAM BULLNOSE WILL HAVE STEEL POSTS.



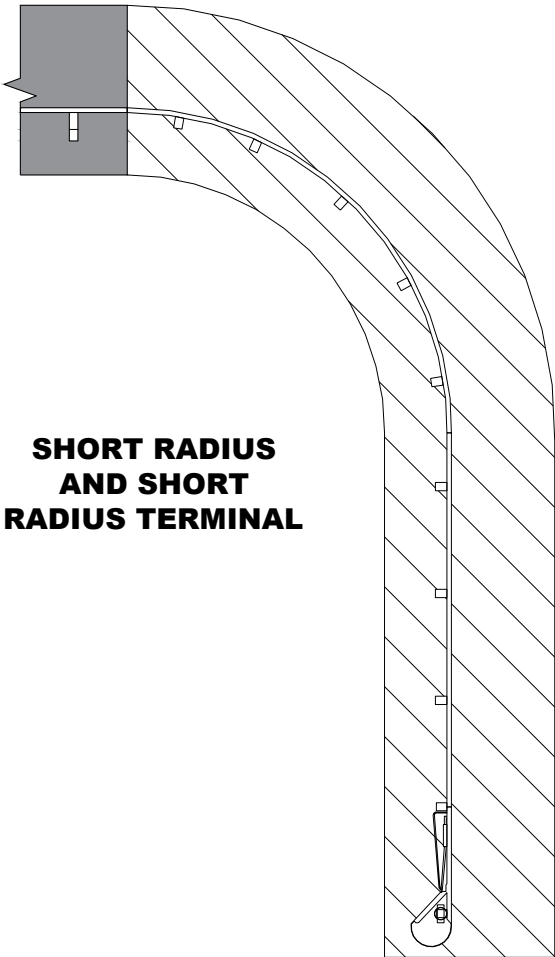
THRIE BEAM BULLNOSE



LONG - SPAN



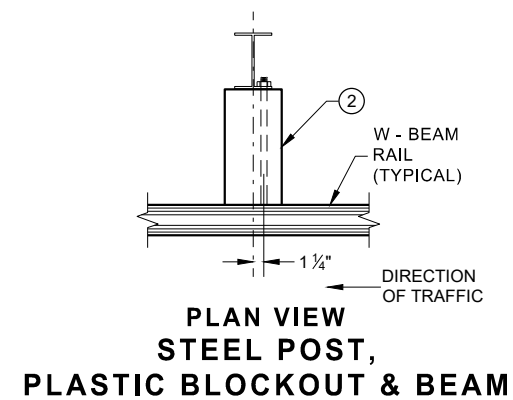
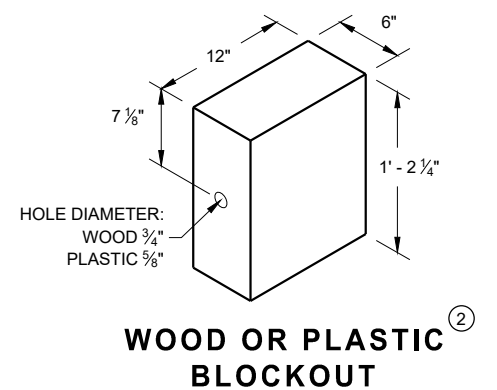
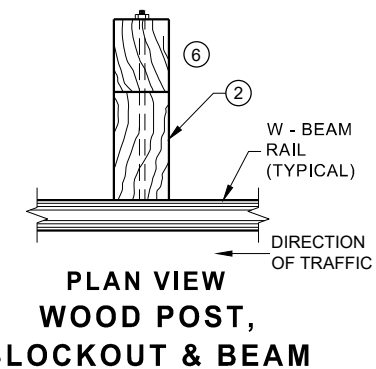
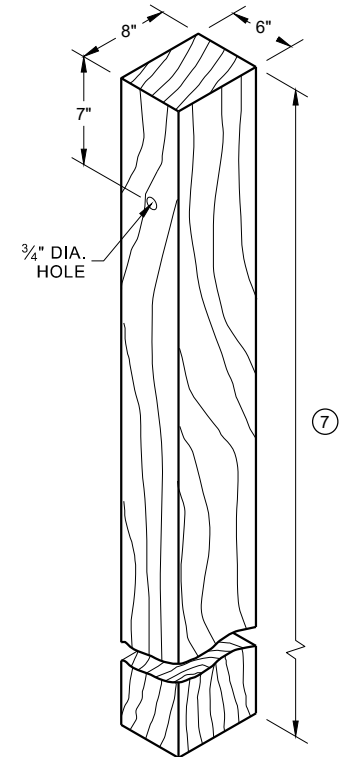
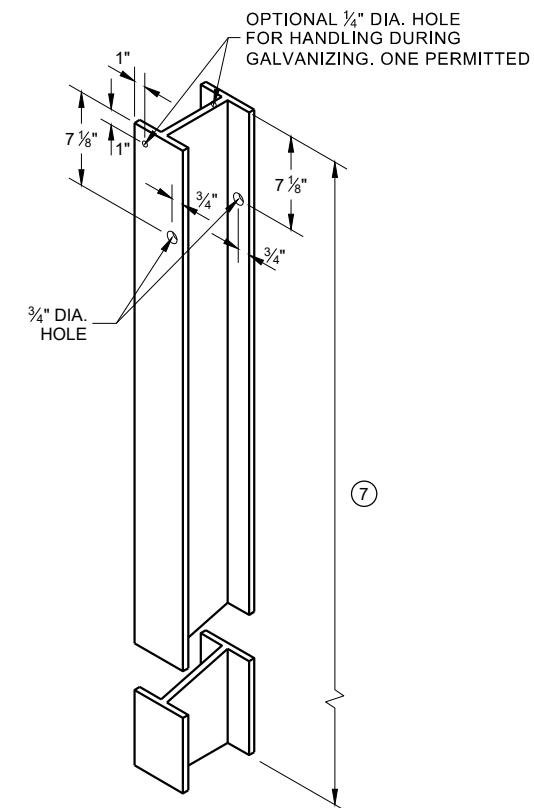
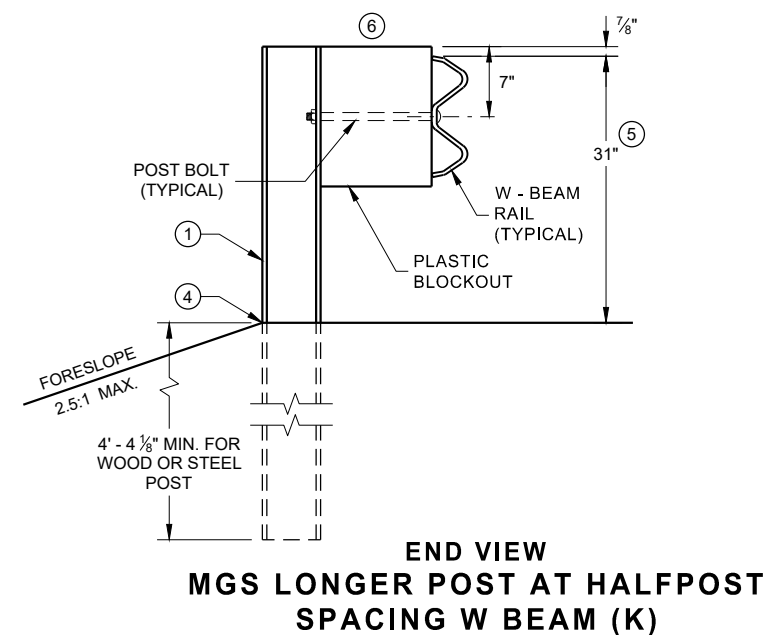
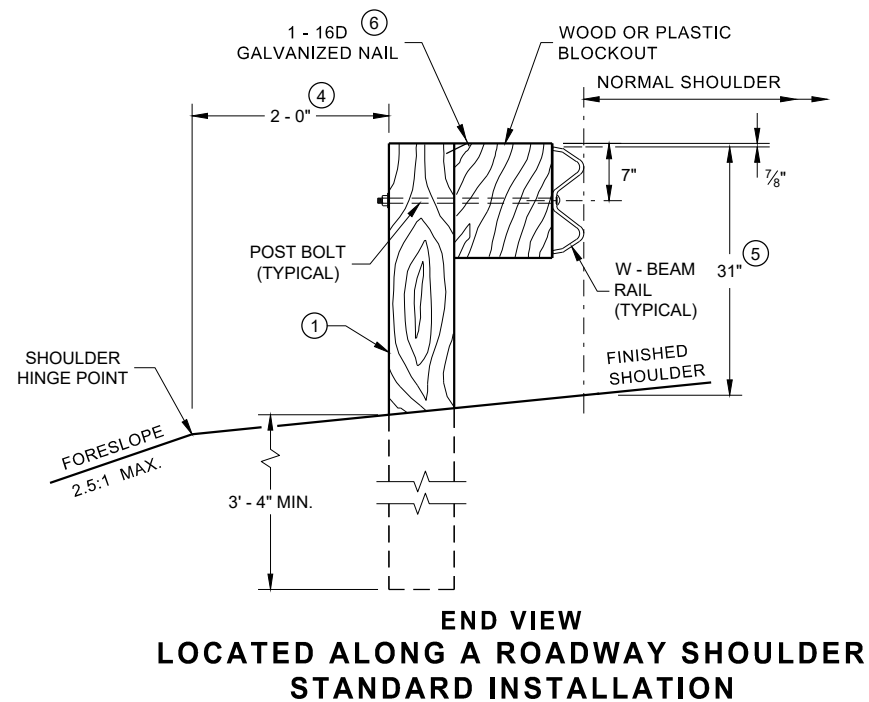
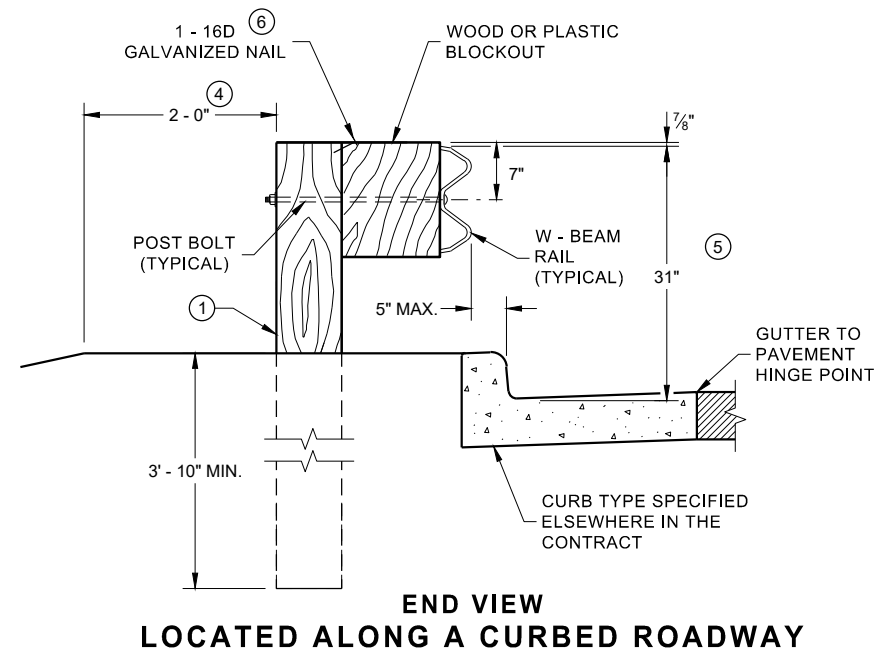
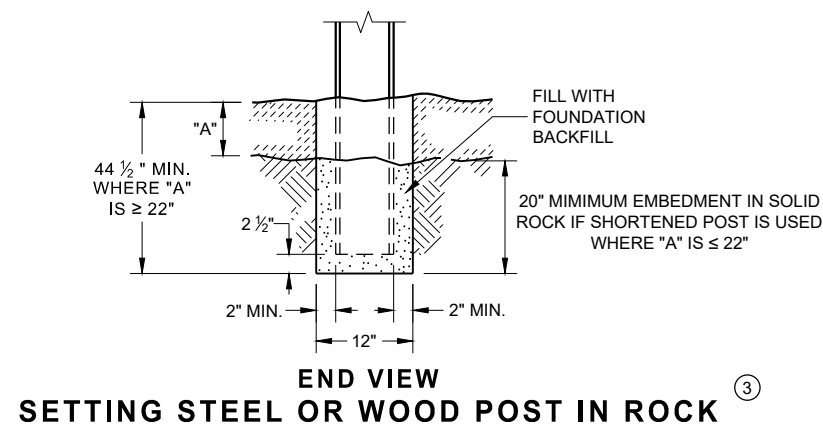
TYPE 2 TERMINAL



SHORT RADIUS
AND SHORT
RADIUS TERMINAL

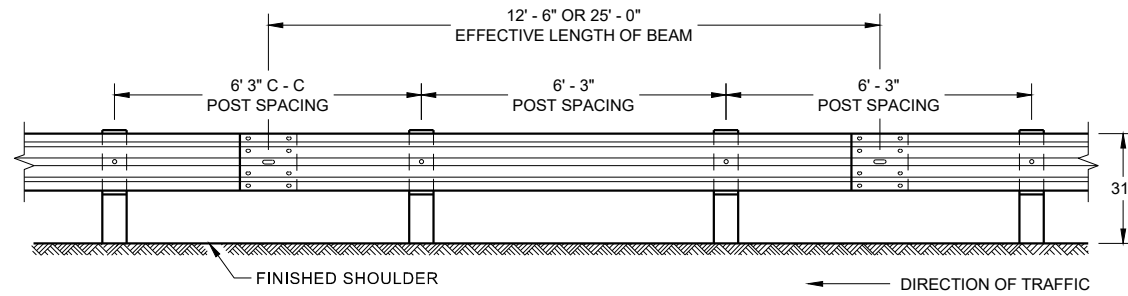
GUARDRAIL MOW STRIP	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED August 2020 DATE	/S/ Rodney Taylor ROADWAY STANDARDS DEVELOPMENT ENGINEER 50
FHWA	

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

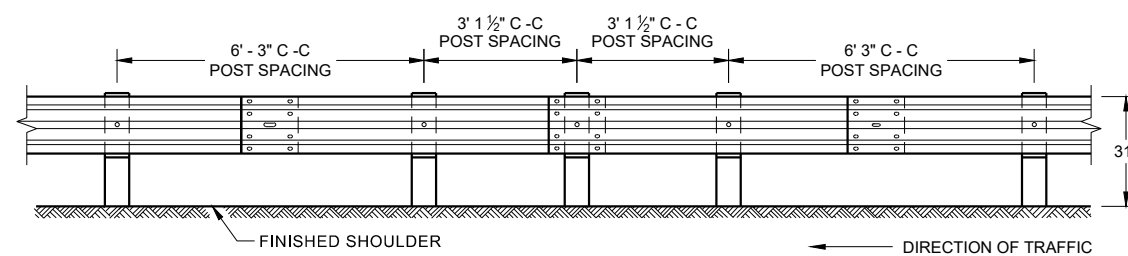


**MIDWEST GUARDRAIL SYSTEM
(MGS) GUARDRAIL**

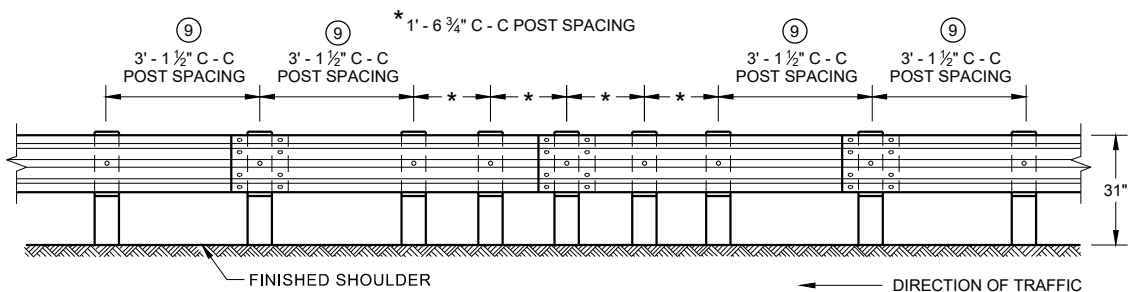
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION 51



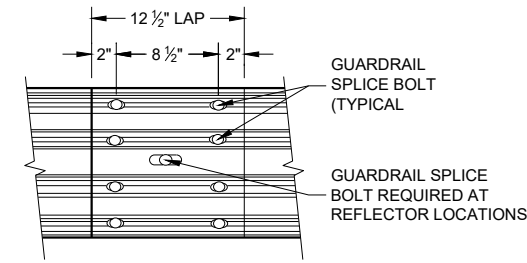
**FRONT VIEW
POST SPACING STANDARD INSTALLATION**



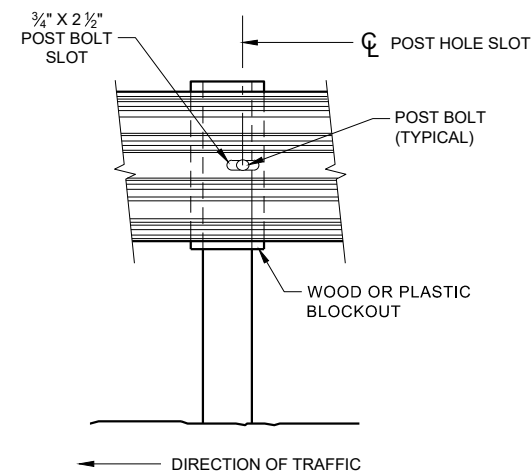
**FRONT VIEW
HALF POST SPACING (HS) AND
HALF POST SPACING WITH LONGER POSTS (K)**



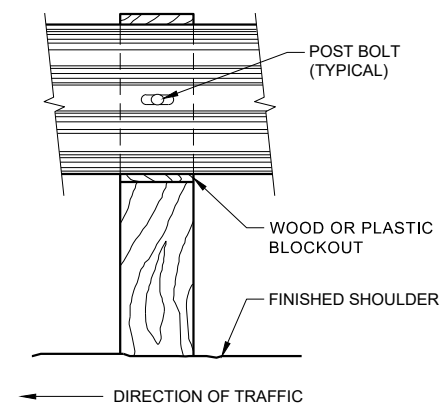
**FRONT VIEW
QUARTER POST SPACING (QS)**



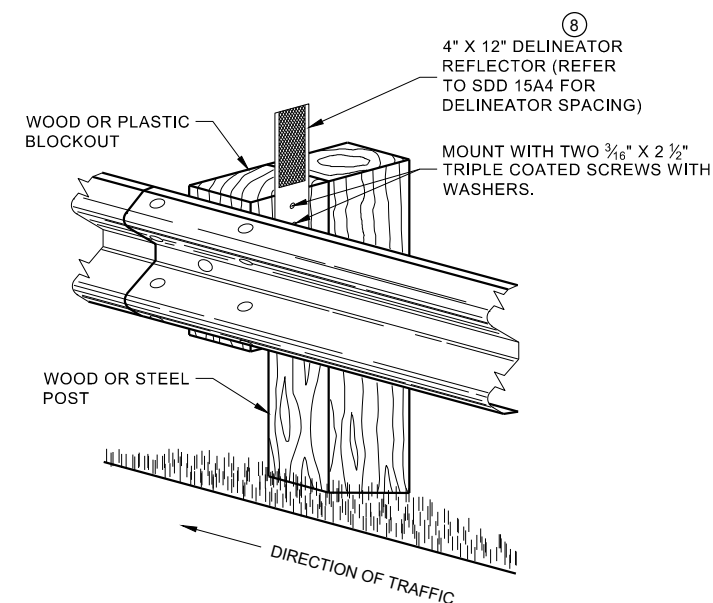
**FRONT VIEW
MID-SPAN BEAM SPLICE**



FRONT VIEW AT STEEL POST



FRONT VIEW AT WOOD POST



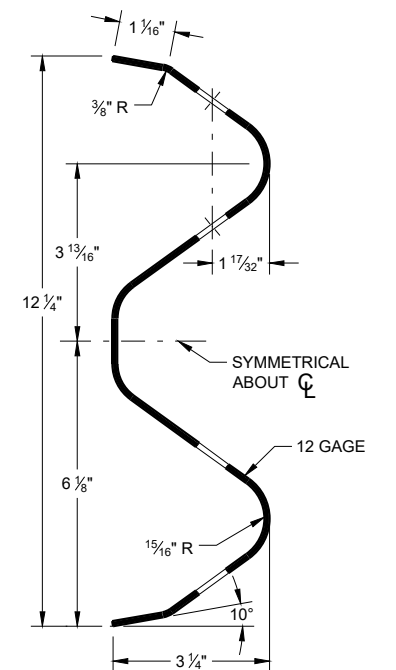
**ONE SIDED REFLECTOR DETAIL
AND TYPICAL INSTALLATION**

GENERAL NOTES

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

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

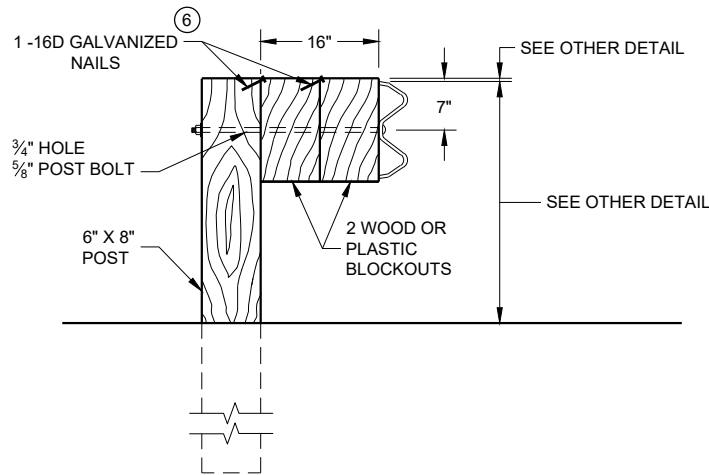
GUARD RAIL SPLICE BOLTS ARE A 3/8" DIAMETER ASTM A307 GUARDRAIL HEAD BOLT. A GUARDRAIL SPLICE BOLT REQUIRES 3/8" DIAMETER A563A DOUBLE RECESSED (DR) HEAVY HEX NUT.



SECTION THRU W-BEAM RAIL

**MIDWEST GUARDRAIL SYSTEM
(MGS) GUARDRAIL**

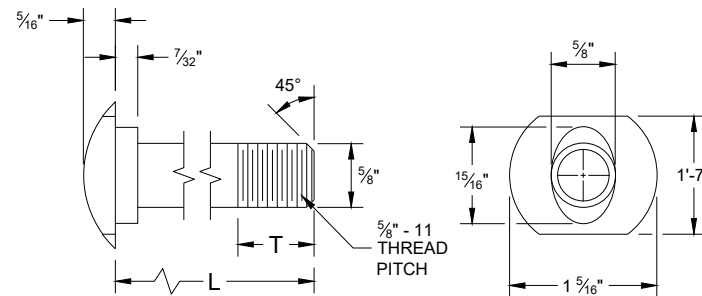
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



DETAIL FOR 16" BLOCKOUT DEPTH

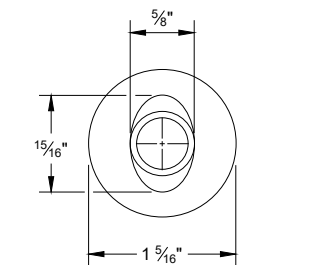
IT IS ACCEPTABLE TO USE BLOCKOUTS UP TO 16" DEEP TO INCREASE THE POST OFFSET TO AVOID UNDERGROUND OBSTACLES. THERE IS NO LIMIT TO THE NUMBER OF POSTS THAT CAN HAVE ADDITIONAL BLOCKOUTS UP TO 16" DEEP.

- 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.

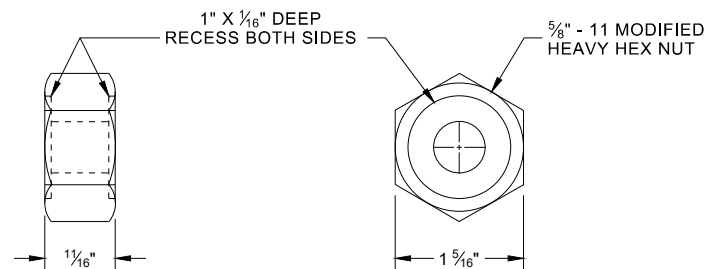


POST BOLT TABLE

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

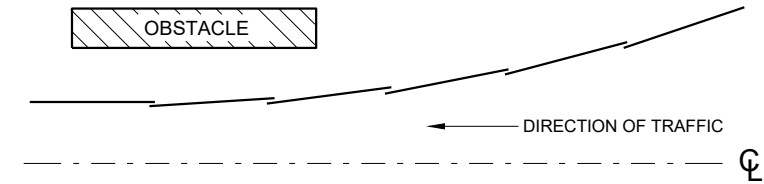


ALTERNATE BOLT HEAD

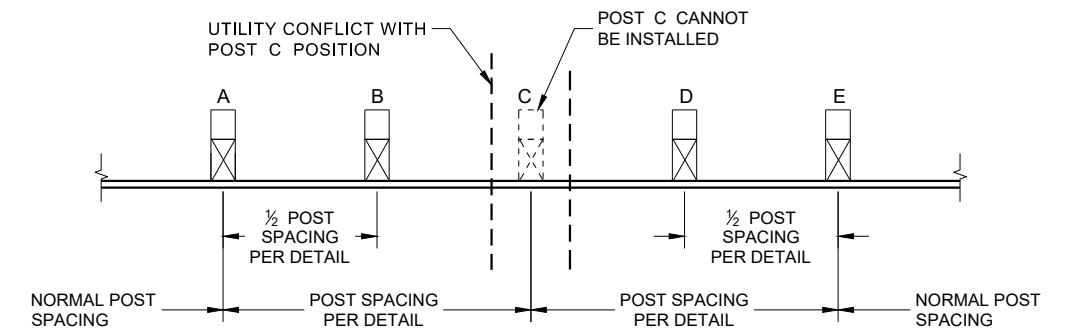


POST BOLT, SPLICE BOLT
AND RECESS NUT

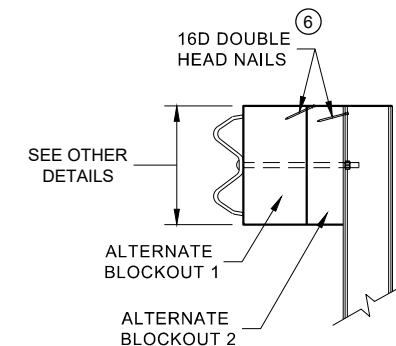
- ⑥ WHEN USING STEEL POST AD WOOD BLOCKOUTS, INSTALL FOUR 16D GALVANIZED NAILS. INSTALL NAILS AT THE BACK CORNERS OF THE BLOCK AND BEND THE NAILS OVER THE FLANGE OF THE STEEL POST.



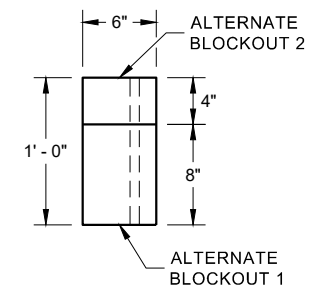
PLAN VIEW
BEAM LAPPING DETAIL



POST DRIVING FOR CONTINUOUS
UNDERGROUND OBSTRUCTION



SIDE VIEW



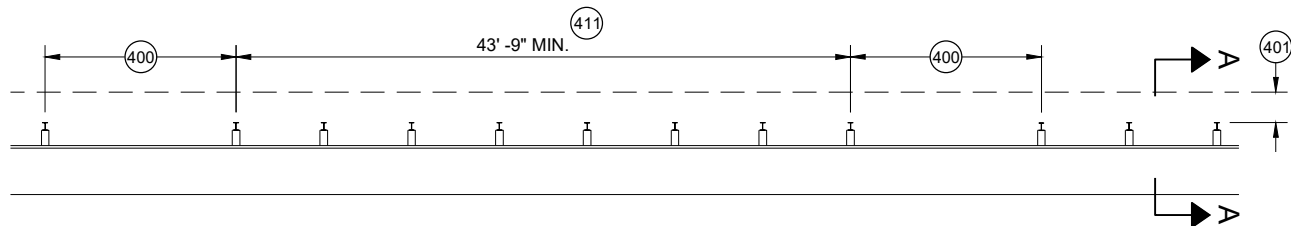
PLAN VIEW

ALTERNATE WOOD
BLOCKOUT DETAIL

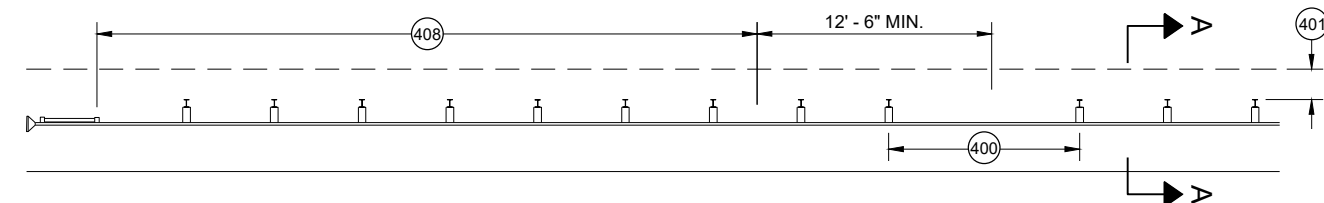
- NOTES: UNDER SPECIAL CIRCUMSTANCES, SUCH AS AVOIDING OBSTACLES THAT ARE NOT RELOCATED, IT IS ACCEPTABLE TO INSTALL ADDITIONAL BLOCKOUTS TO OBTAIN UP TO 36" DEPTH FOR ONE OR TWO POSTS IN A SECTION OF GUARDRAIL.
- DO NOT USE 16" OR 36" BLOCKOUTS IF IT CAUSES THE POST TO BE DRIVEN BEYOND SHOULDER HINGE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

MIDWEST GUARDRAIL SYSTEM
(MGS) GUARDRAIL

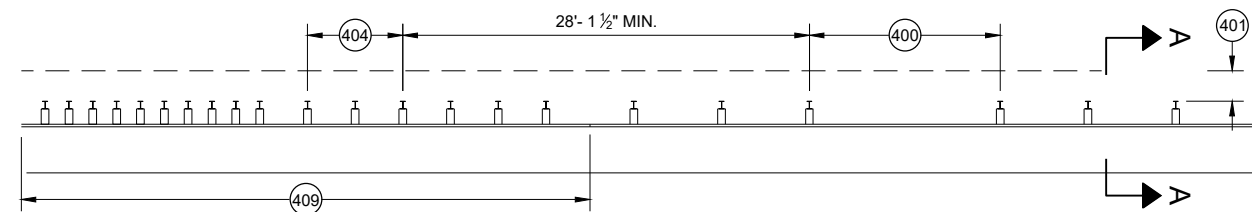
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



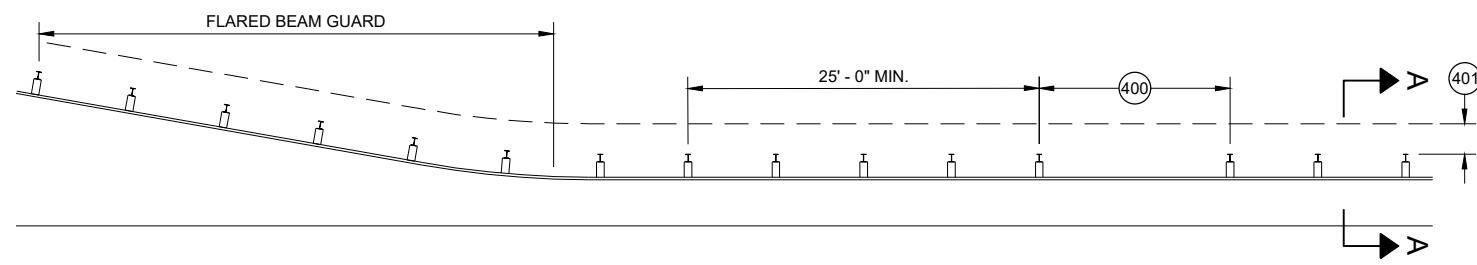
MISSING POST IN MGS GUARDRAIL



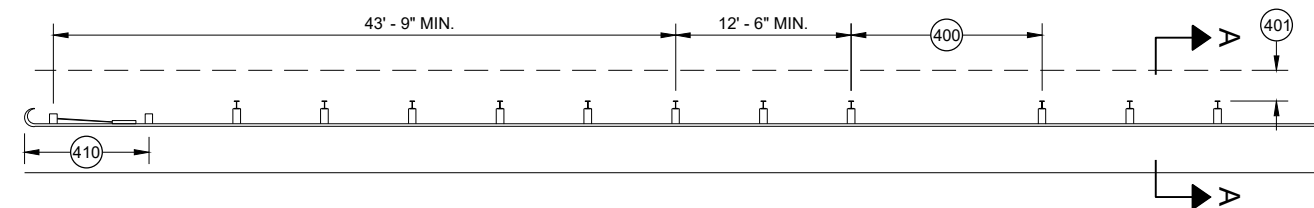
MISSING POST IN MGS GUARDRAIL NEAR EAT



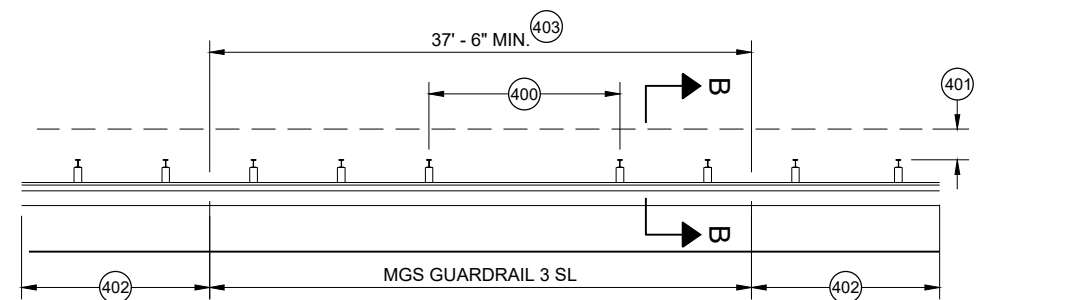
MISSING POST IN MGS GUARDRAIL NEAR AN APPROACH TRANSITION



MISSING POST IN MGS GUARDRAIL NEAR FLARED BEAM GUARD

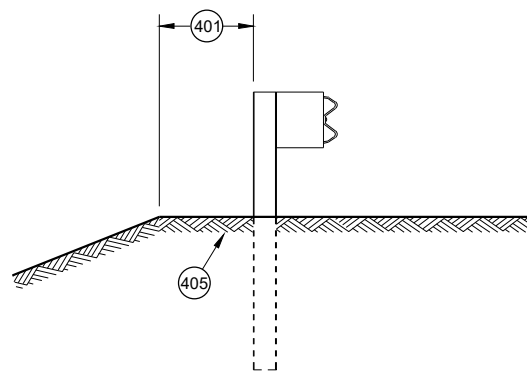


MISSING POST IN MGS GUARDRAIL NEAR A TYPE 2 END TERMINAL

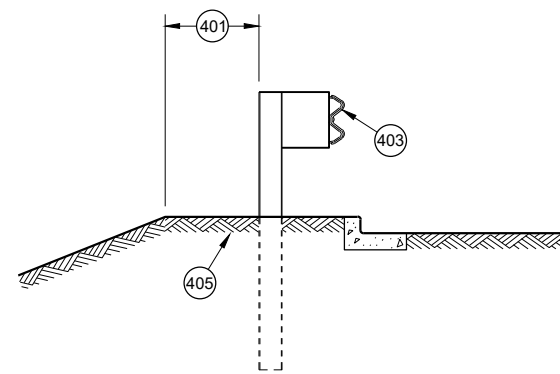


MISSING POST IN SHORT SPAN MGS GUARDRAIL NEAR CURB (SL)

- (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

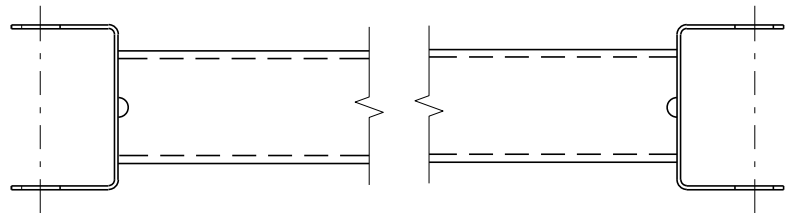
MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED May 2021 DATE	/S/ Rodney Taylor ROADWAY STANDARDS DEVELOPMENT UNIT SUPERVISOR
FHWA 54	

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

DIMENSIONS MAY VARY, MANUFACTURER'S INFORMATION.

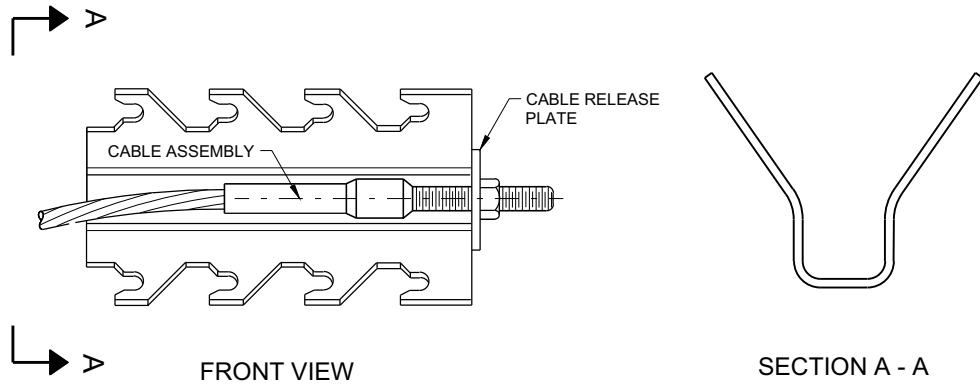
THE CENTER OF THE UPPER 3 1/2" DIAMETER HOLE ON POST NUMBER 3 THROUGH POST 9 IS TO BE FLUSH WITH THE GROUND LINE UP TO A MAXIMUM OF 2" ABOVE GROUND LINE. WOOD BLOCKS ON POSTS NUMBERED 3 THROUGH 9 MAY BE ADJUSTED UP TO 3" ABOVE THE TOP OF POST.

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION 55

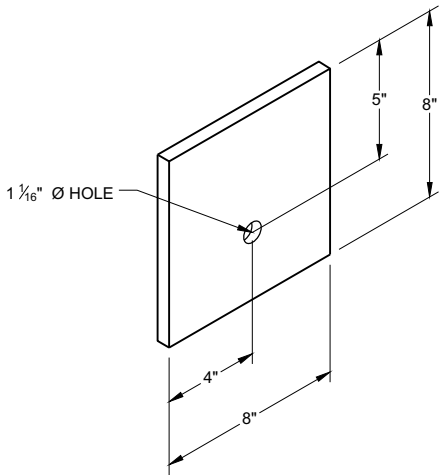


GENERIC GROUND STRUT⁹ ^E

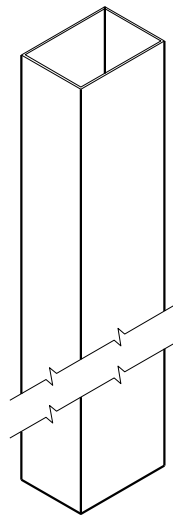
BILL OF MATERIALS	
PART NO.	DESCRIPTION MATERIALS PROVIDED BY MGS EAT MANUFACTURER. SEE MANUFACTURER'S DETAILS FOR MORE INFORMATION.
①	UPPER POST NO. 1 6" X 6" TUBE
②	LOWER POST NO. 1
③	WOOD CRT
④	WOOD BLOCKOUT
⑤	PIPE SLEEVE
⑥	BEARING PLATE
⑦	BCT CABLE ASSEMBLY
⑧	ANCHOR CABLE BOX
⑨	GROUND STRUT
⑩	PERFORATED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



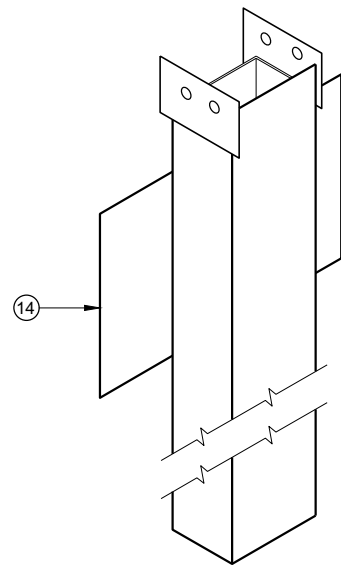
GENERIC ANCHOR CABLE BOX⁹ ^E



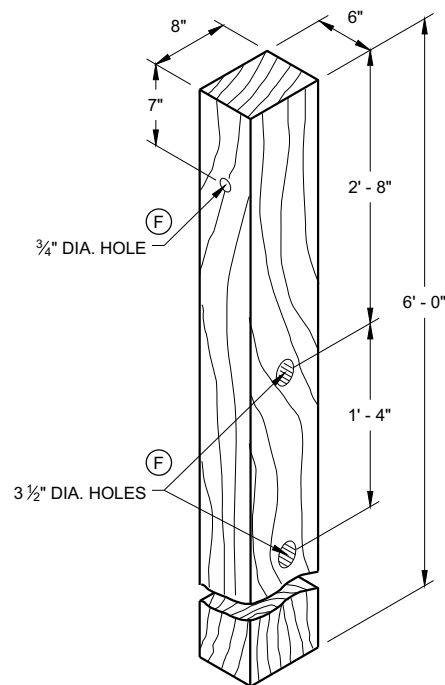
BEARING PLATE⁶ ^E



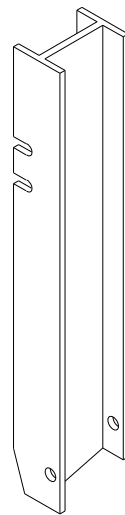
UPPER POST NO. 1 ⁽¹⁾ (E)



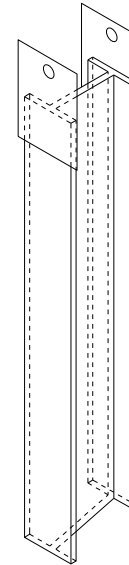
LOWER POST NO. 1 ⁽²⁾ (E)



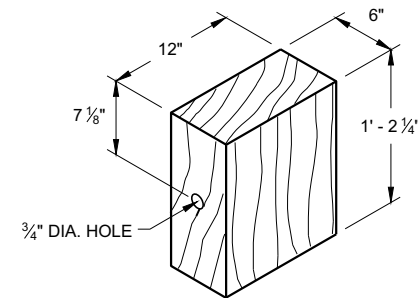
WOOD CRT POST ⁽³⁾ (E)
POSTS NUMBER 3-9



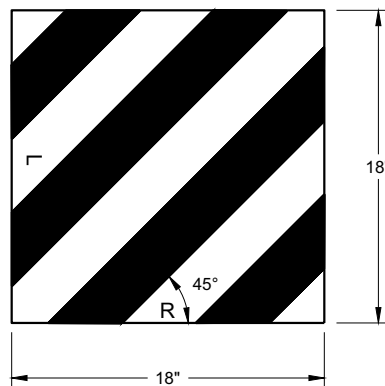
UPPER POST NO. 2 ⁽¹⁵⁾ (E)



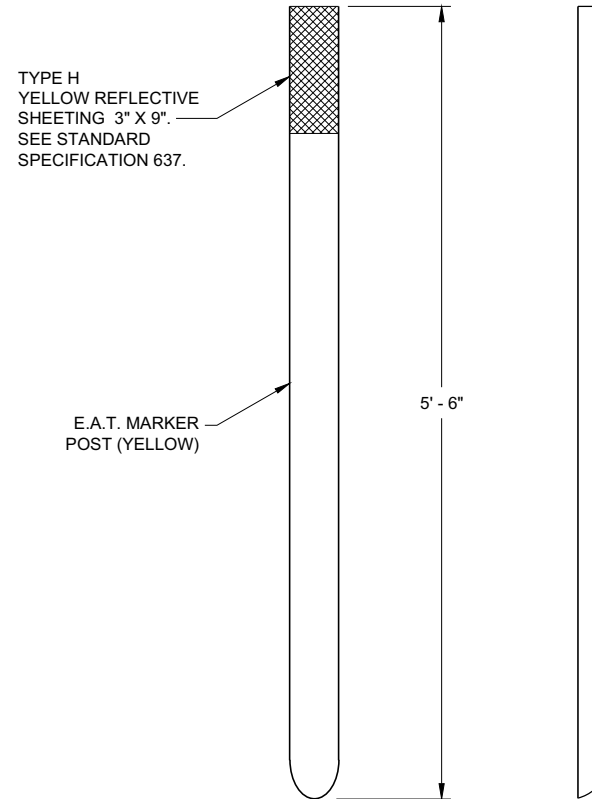
LOWER POST NO. 2 ⁽¹⁶⁾ (E)



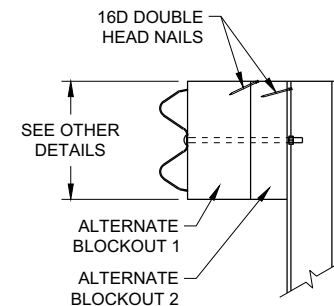
WOOD BLOCKOUT ⁽⁴⁾
REQ'D. AT ALL POSTS EXCEPT POST NO'S 1 & 2



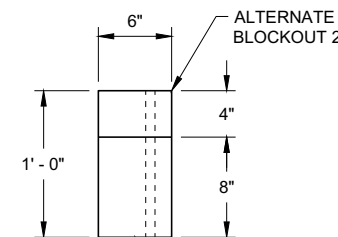
REFLECTIVE SHEETING DETAIL ^(E)



E.A.T. MARKER POST ⁽¹³⁾



SIDE VIEW



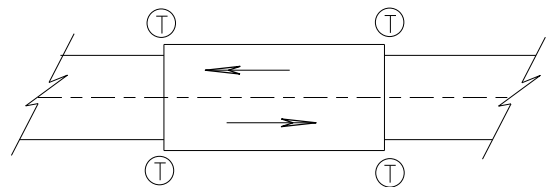
TOP VIEW

ALTERNATE WOOD
BLOCKOUT DETAIL

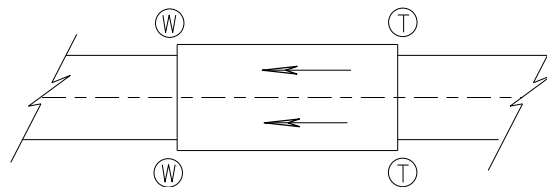
**MIDWEST GUARDRAIL SYSTEM
ENERGY ABSORBING TERMINAL
(MGS)**

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

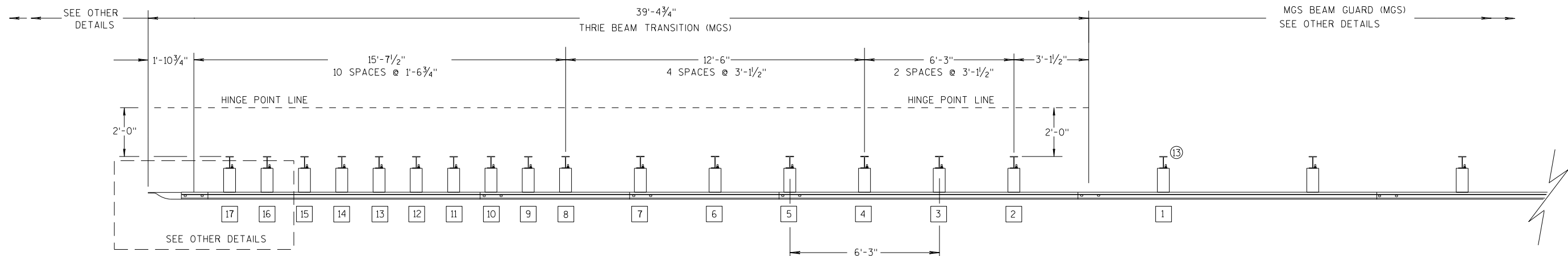
IF ROCK IS ENCOUNTERED, REMOVE ROCK TO FULL DEPTH OF POST PLUS 2 1/2", AND 12" DIAMETER AROUND POST. SEE 14B42 FOR MORE DETAILS.

TRANSITION USES STEEL POSTS ONLY.

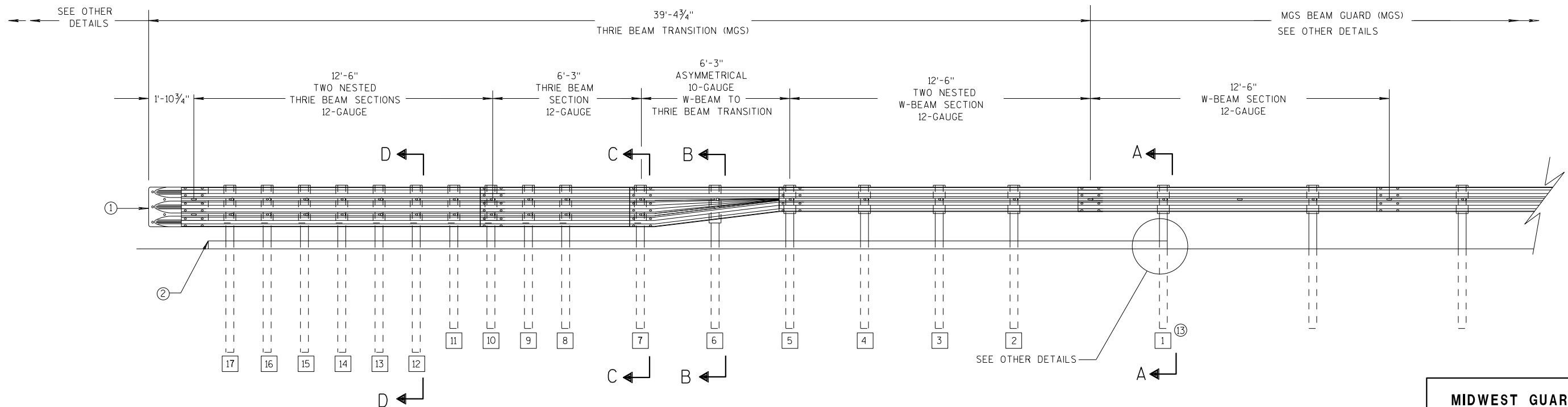
SEE STANDARD DETAIL DRAWING 14 B 42 FOR MORE INFORMATION.

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

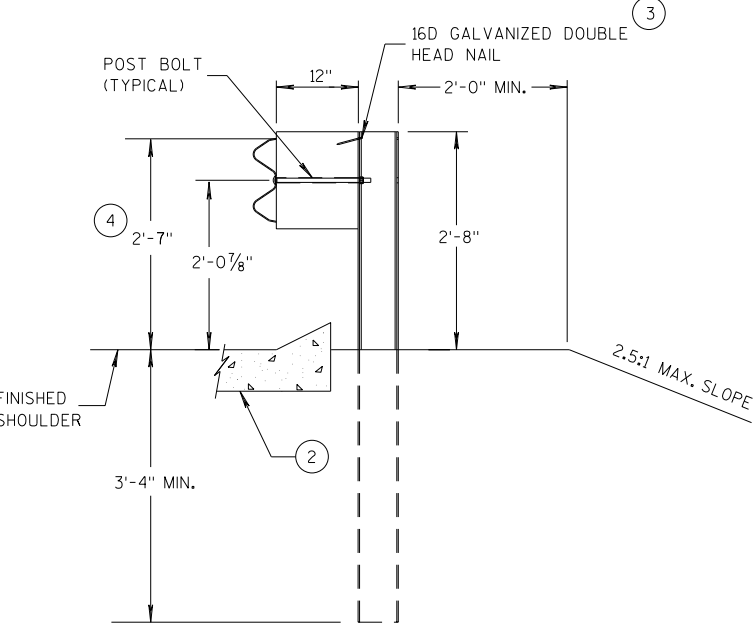
MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

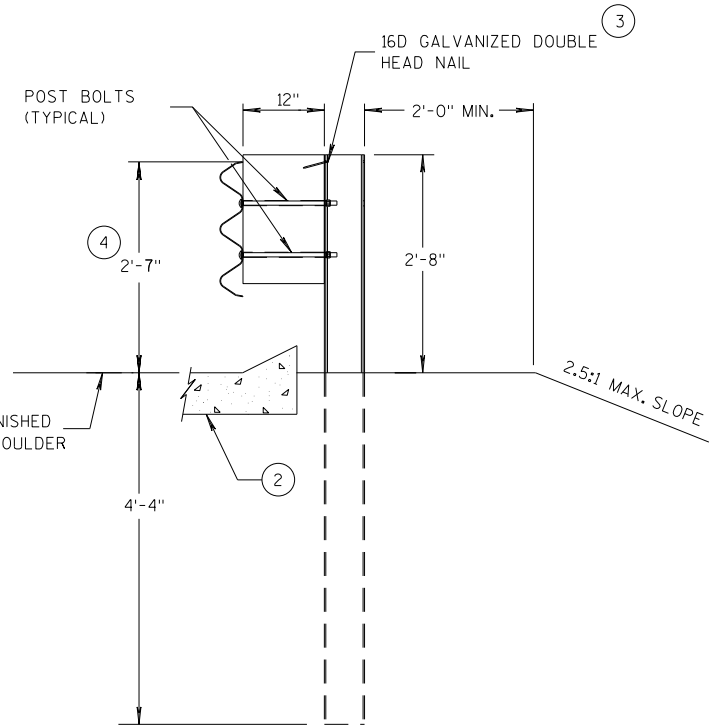
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

GENERAL NOTES

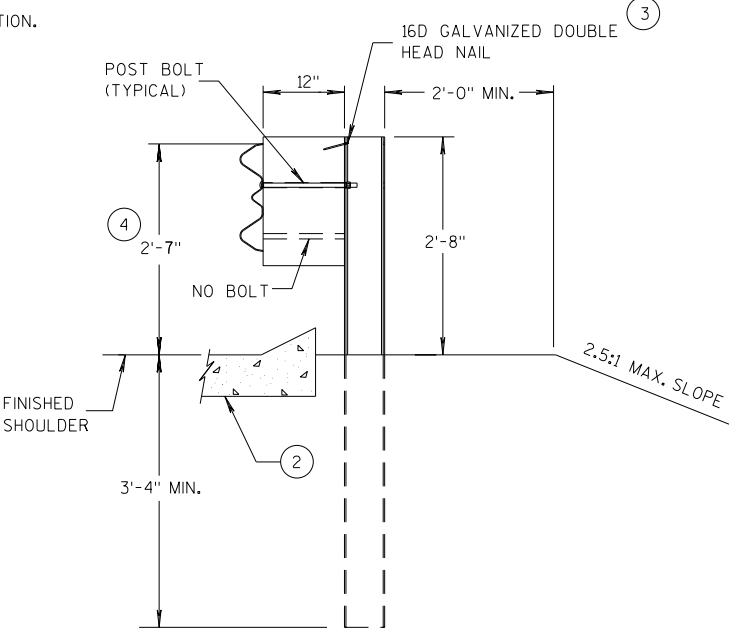
- 2 OPTIONAL CURB AND GUTTER OR DRAINAGE FEATURE SEE PLAN FOR INFORMATION.
- 3 WHEN USING STEEL POSTS AND WOOD BLOCKOUTS INSTALL FOUR 10D GALVANIZED NAILS. INSTALL NAILS AT THE BACK CORNERS OF THE BLOCK AND BEND THE NAILS OVER THE FLANGE OF THE STEEL POST.
- 4 TOLERANCE FOR TOP OF W-BEAM RAIL IS ± 1".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



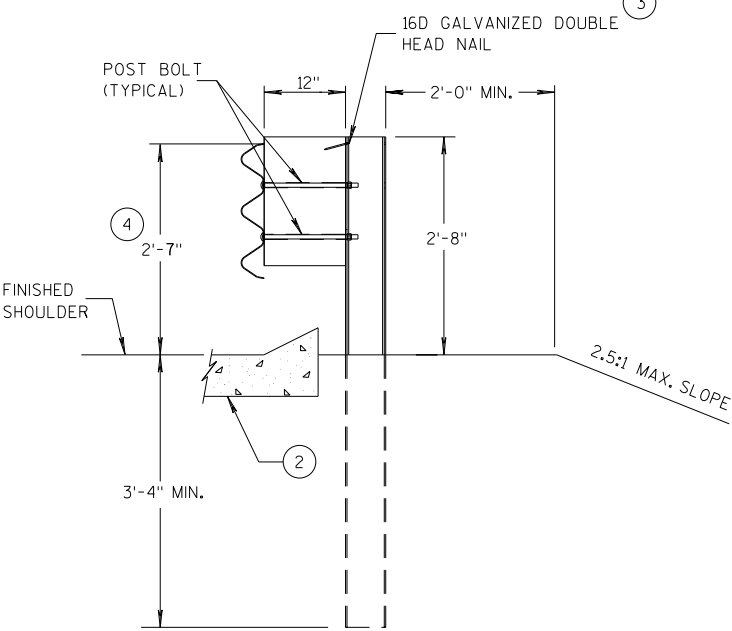
SECTION A-A
POSTS 1-5



SECTION D-D
POSTS 12-17



SECTION B-B
POST 6



SECTION C-C
POSTS 7-11

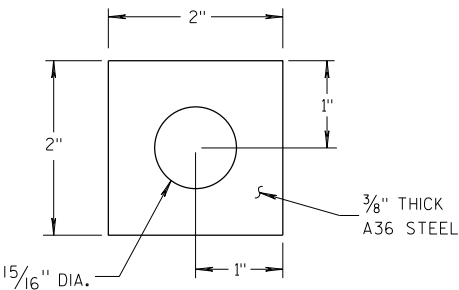
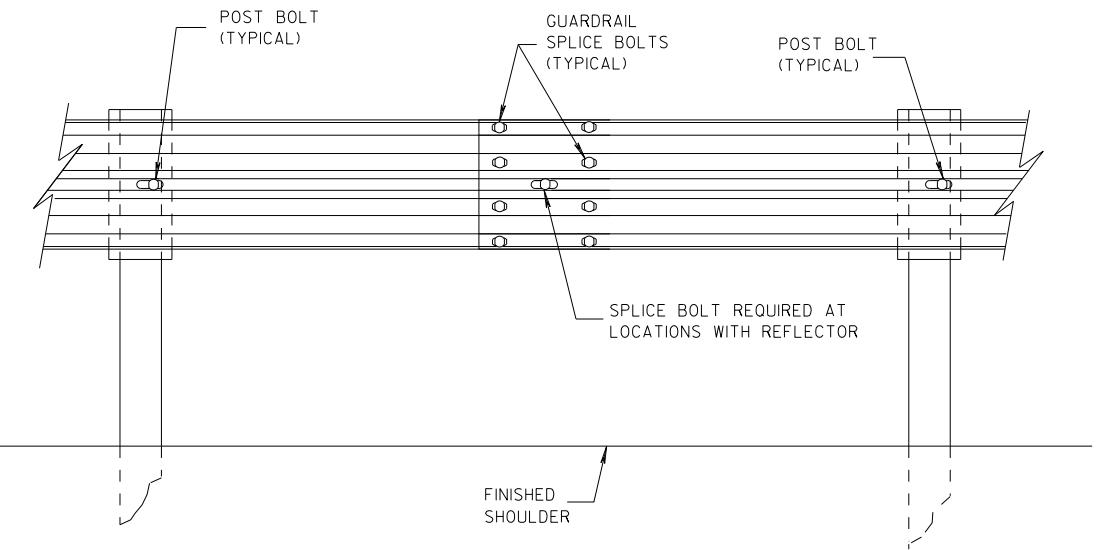
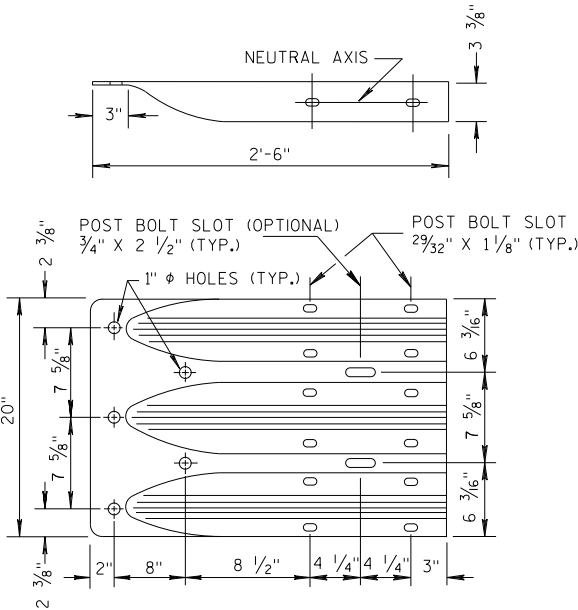


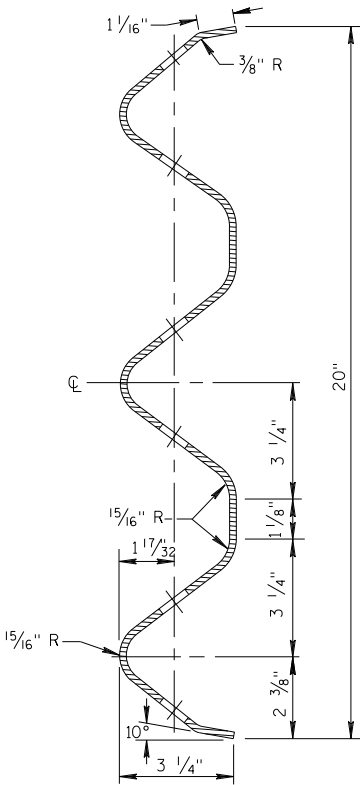
PLATE WASHER DETAIL



SPLICE DETAIL



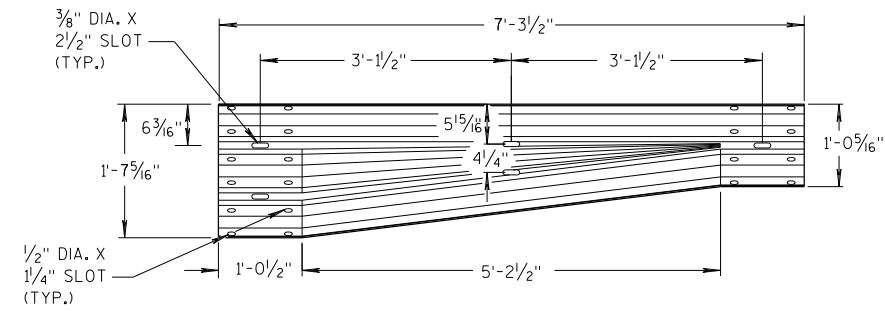
THRIE BEAM
TERMINAL CONNECTOR



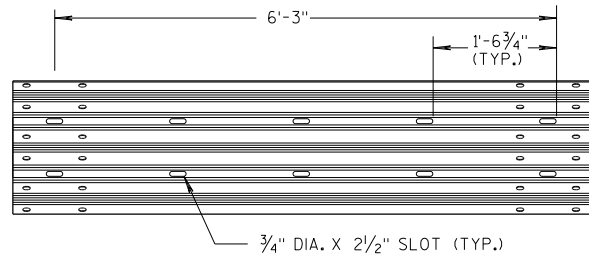
SECTION THRU THRIE
BEAM RAIL ELEMENT

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

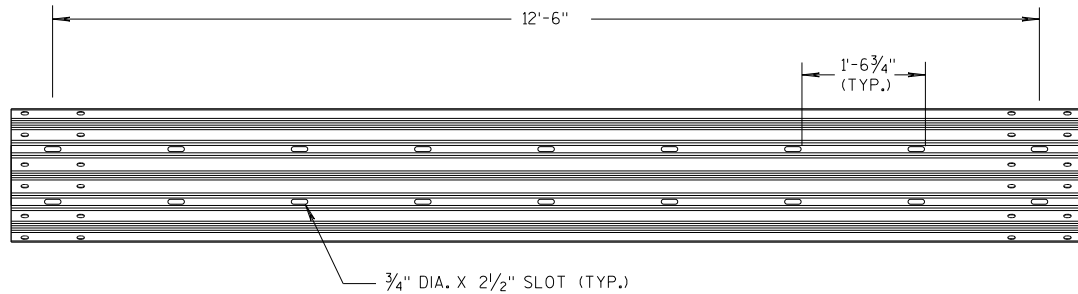
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



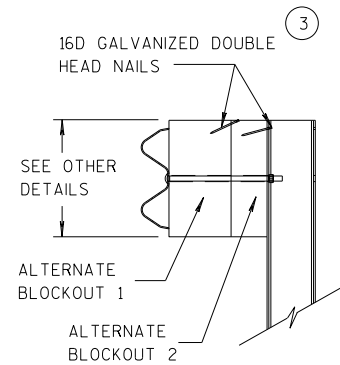
W-BEAM TO THRIE BEAM TRANSITION SECTION



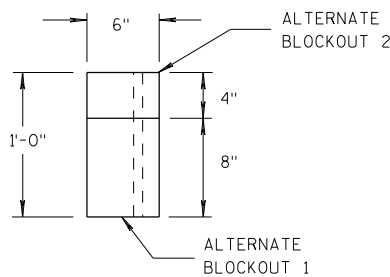
6'-3" THRIE BEAM SECTION



12'-6" THRIE BEAM SECTION

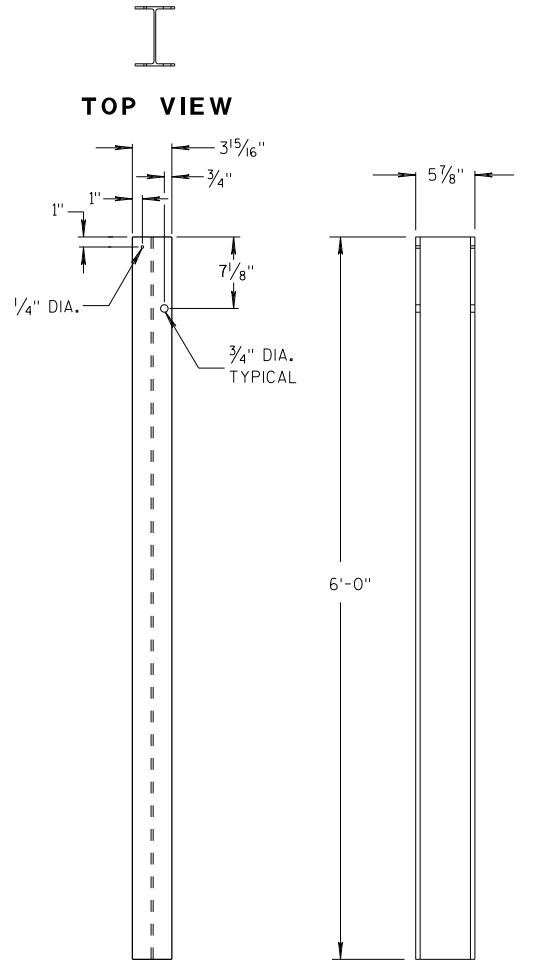


SIDE VIEW



TOP VIEW

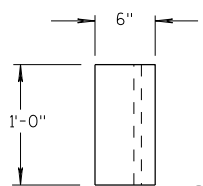
ALTERNATE WOOD BLOCKOUT DETAIL



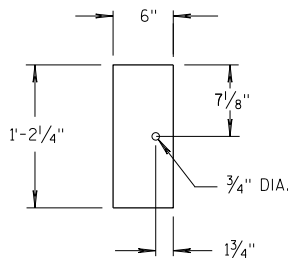
FRONT VIEW

SIDE VIEW

STEEL POSTS 1-5

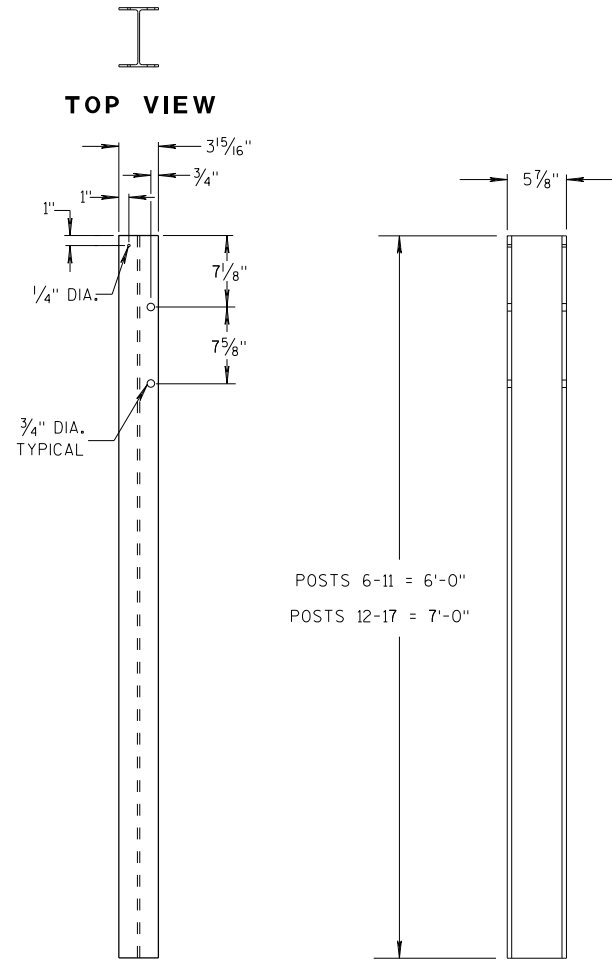


TOP VIEW



FRONT VIEW

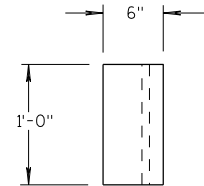
BLOCKOUT POSTS 1-5



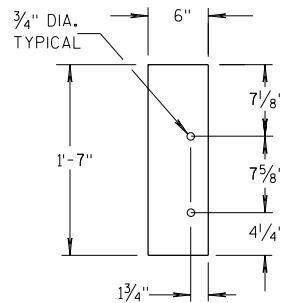
FRONT VIEW

SIDE VIEW

STEEL POSTS 6-17



TOP VIEW



FRONT VIEW

BLOCKOUT POSTS 6-17

GENERAL NOTES

STEEL POSTS ARE W6X9 OR W6X8.5.

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

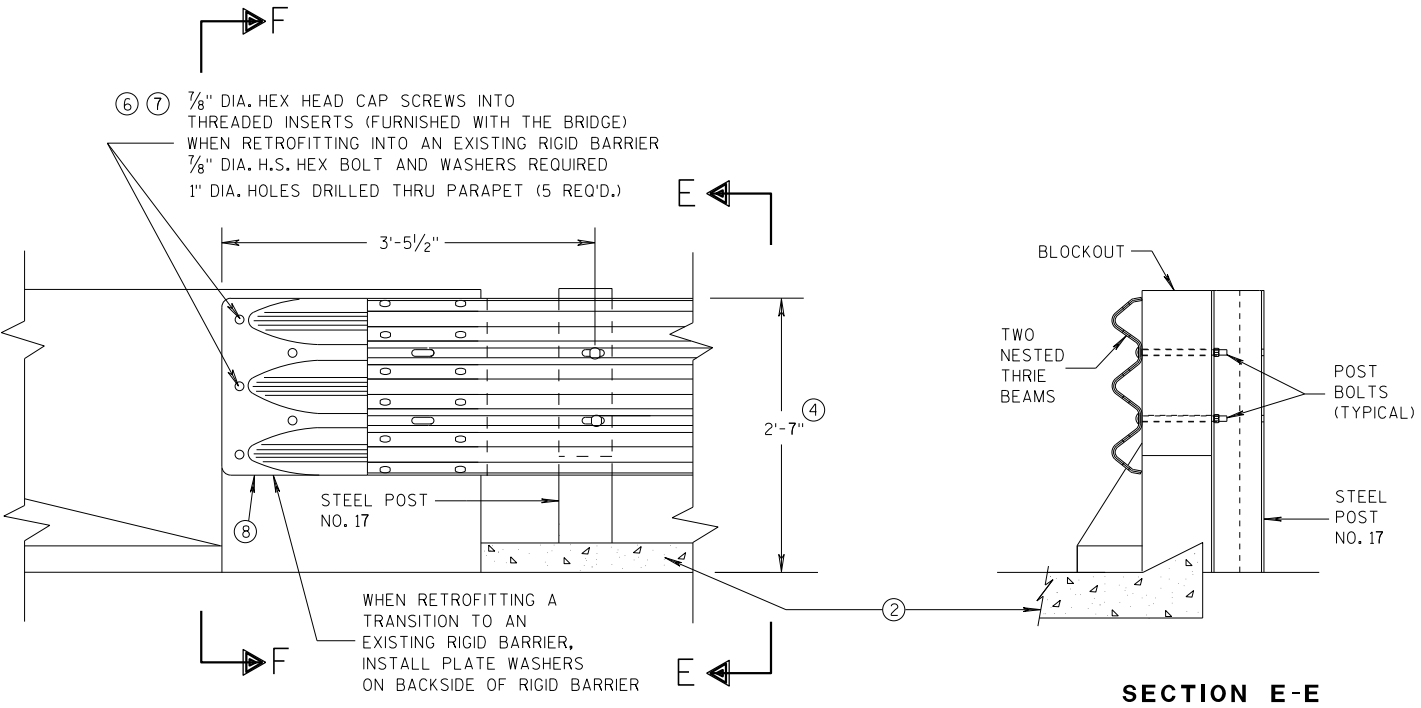
③ WHEN USING STEEL POSTS AND WOOD BLOCKOUTS INSTALL FOUR 16D GALVANIZED NAILS. INSTALL NAILS AT THE BACK CORNERS OF THE BLOCK AND BEND THE NAILS OVER THE FLANGE OF THE STEEL POST.

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

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

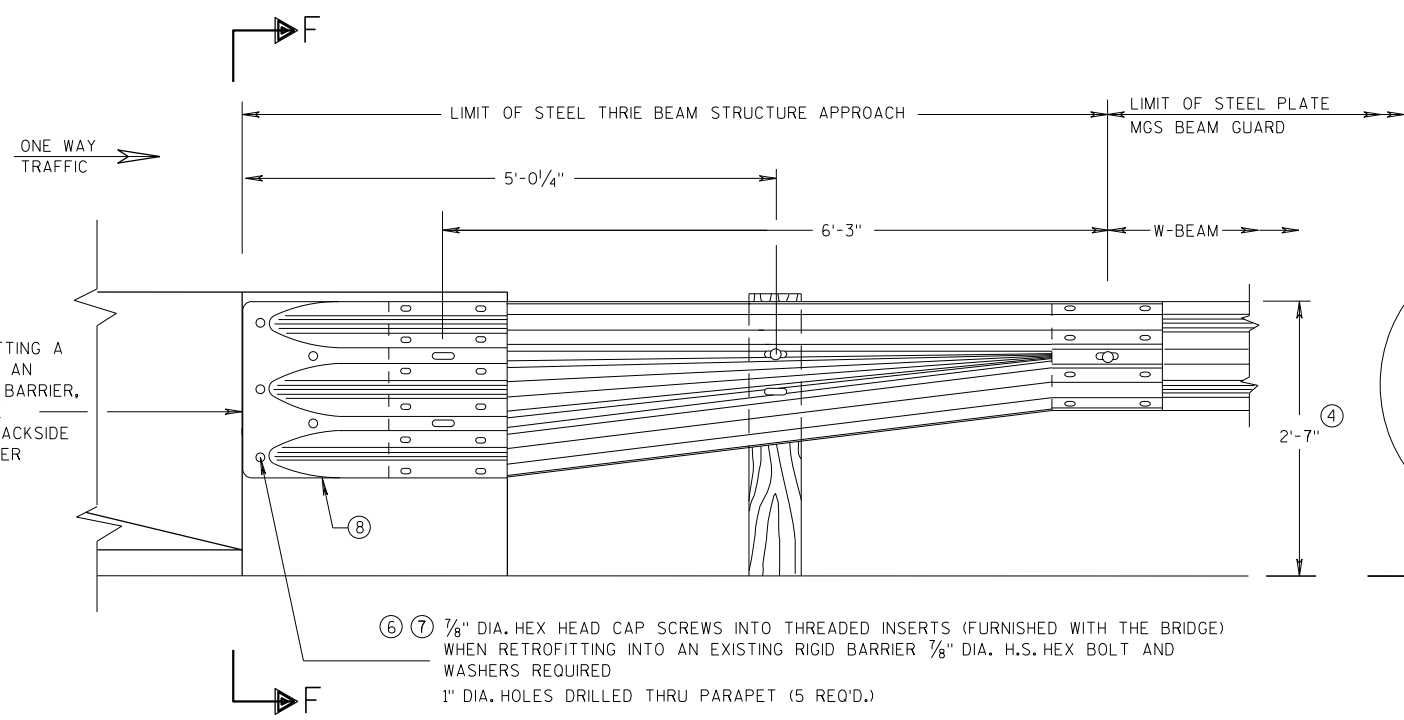
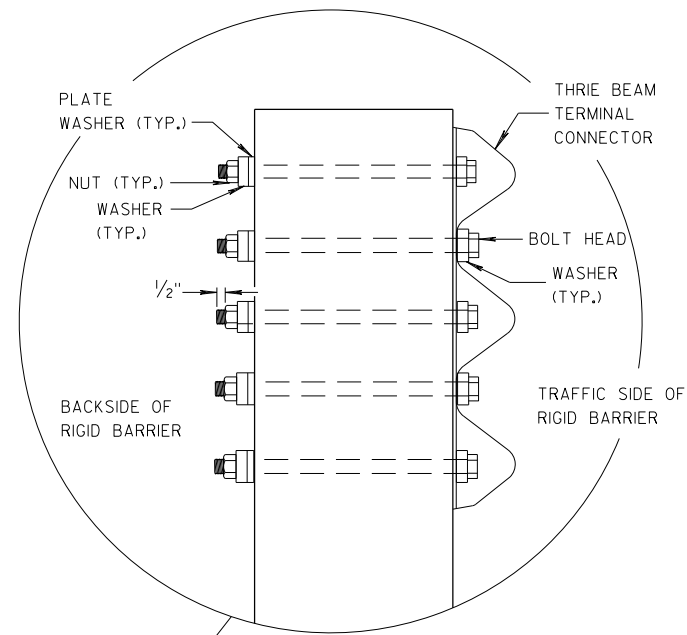
**MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

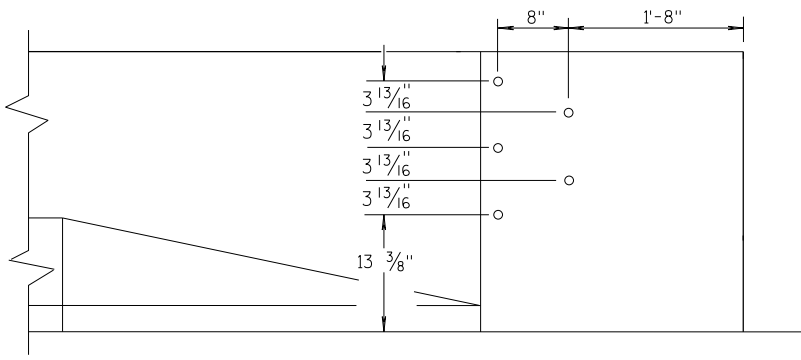


GENERAL NOTES

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



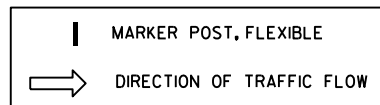
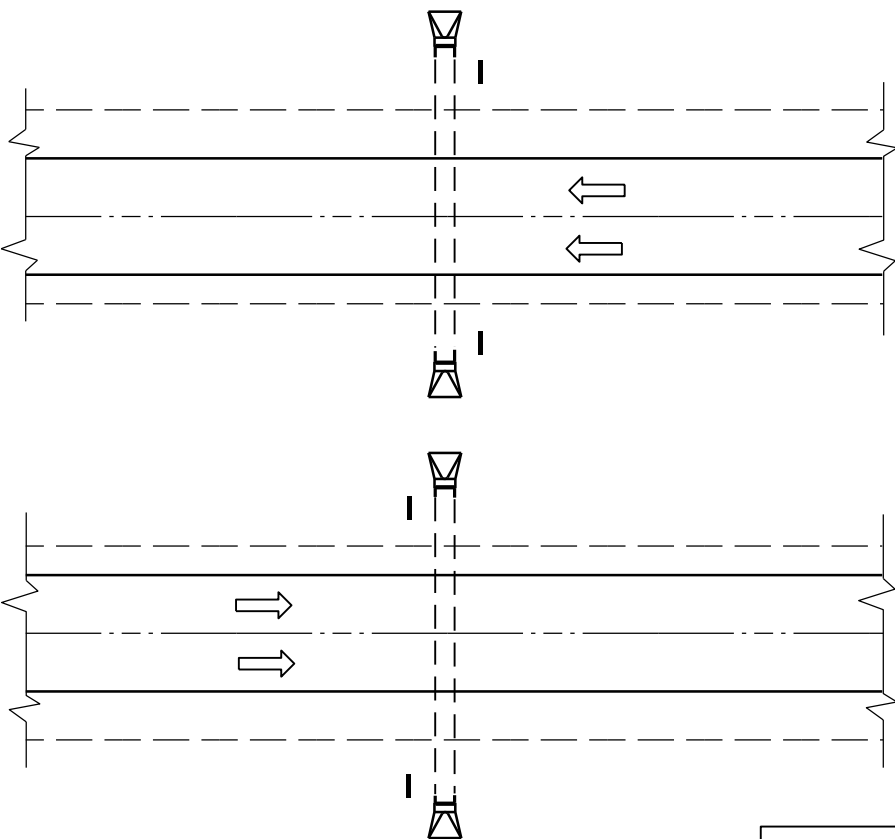
SECTION F-F



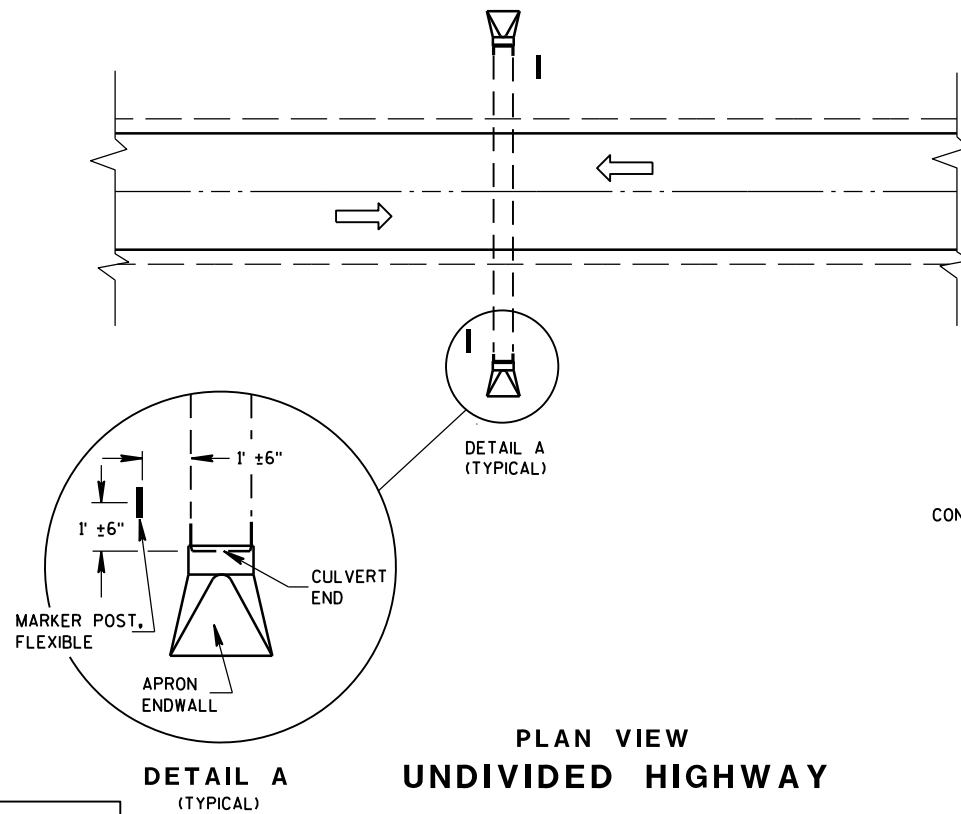
DRILL HOLE LOCATION

MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)			
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
APPROVED 07/2018	/S/ Rodney Taylor		
DATE	ROADWAY STANDARDS	61	NT
FHWA	UNIT SUPERVISOR		

PLAN VIEW
DIVIDED HIGHWAY

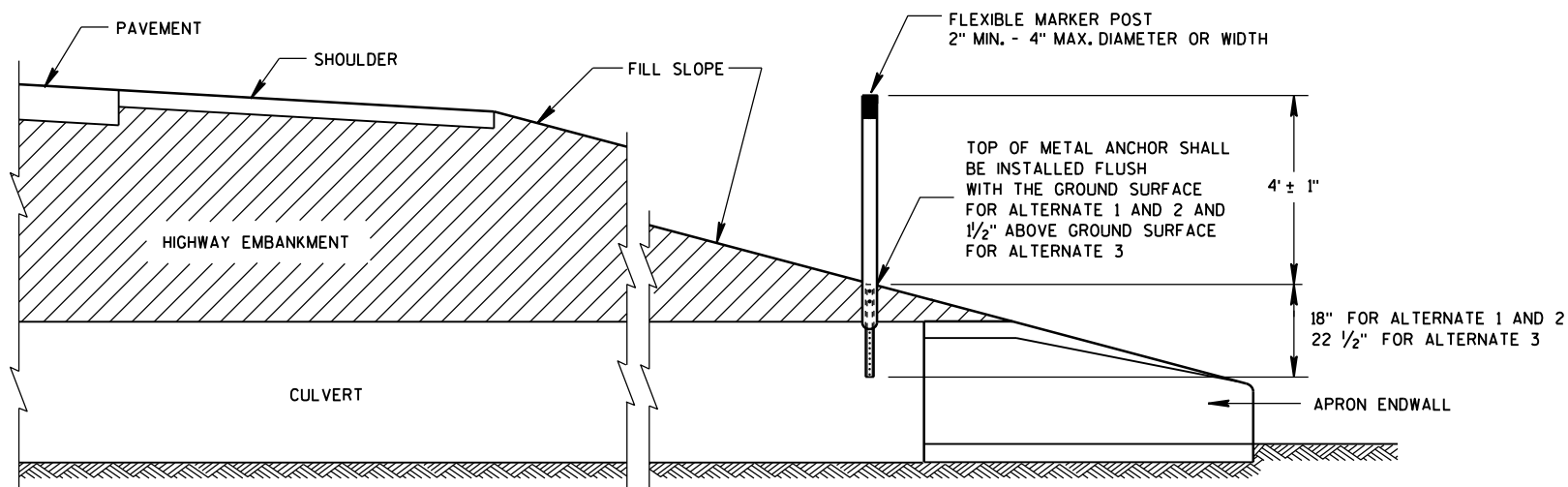


PLAN VIEW
UNDIVIDED HIGHWAY



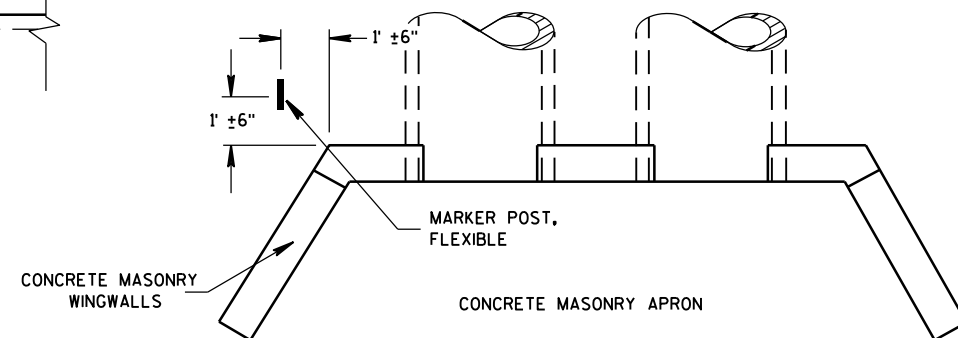
FLEXIBLE MARKER POST LOCATION

CROSS SECTION
FLEXIBLE MARKER POST



GENERAL NOTES

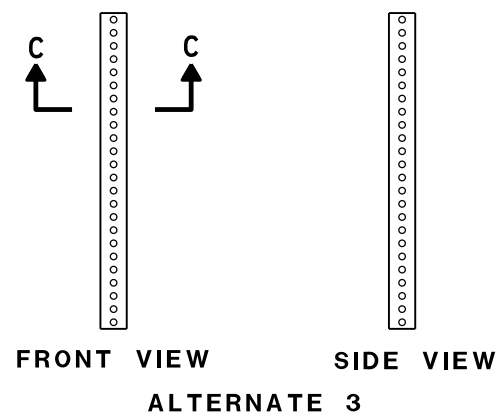
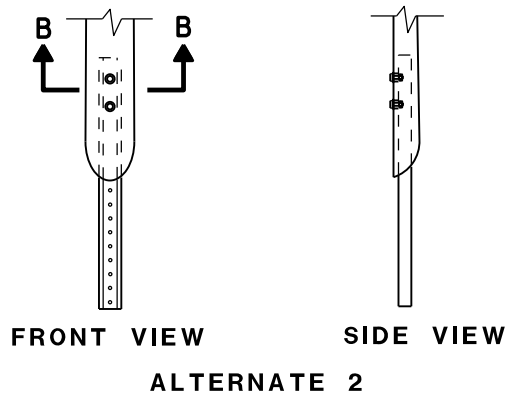
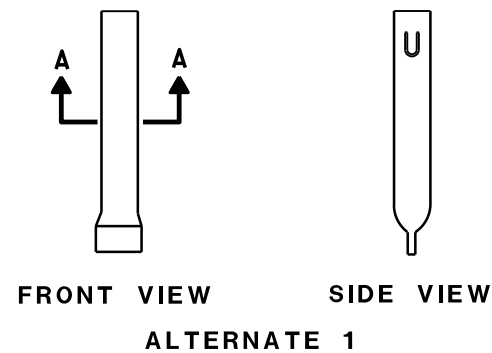
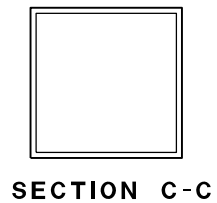
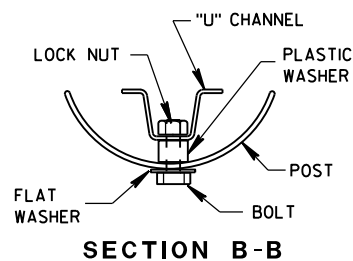
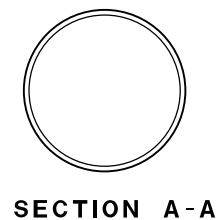
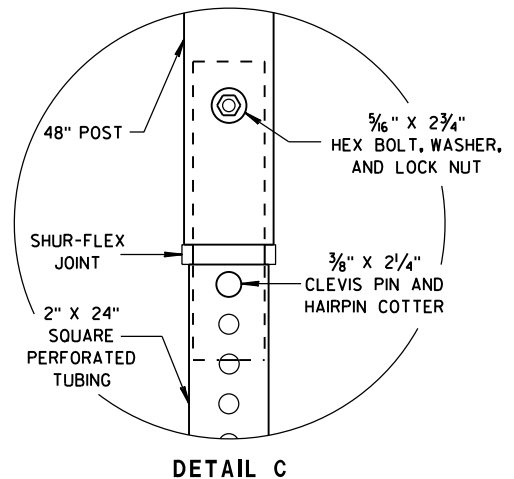
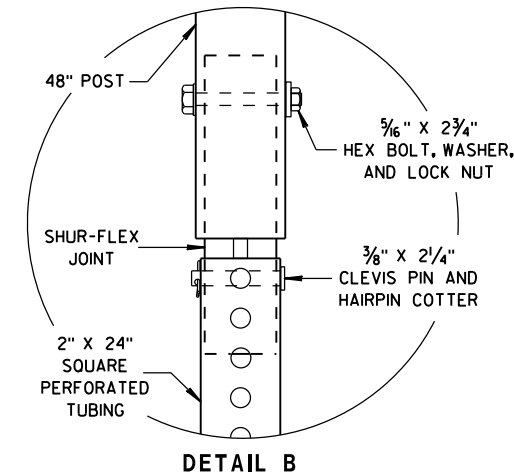
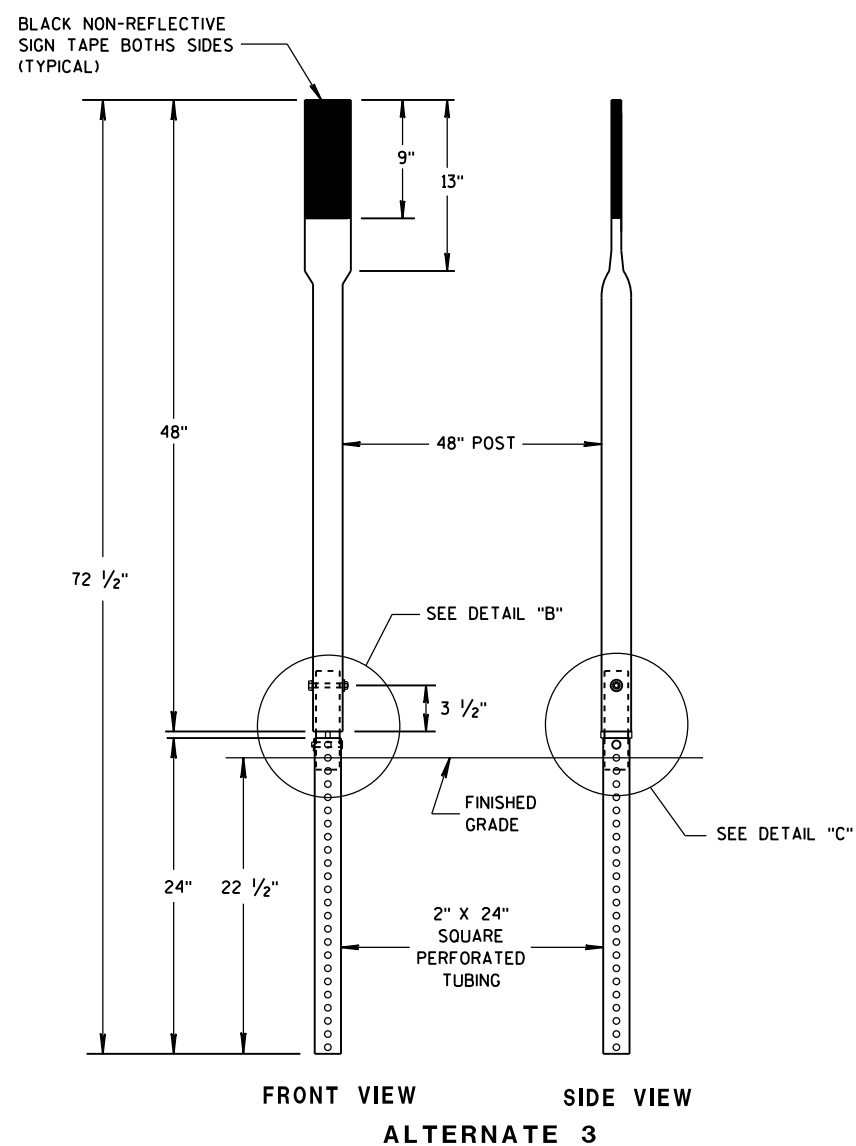
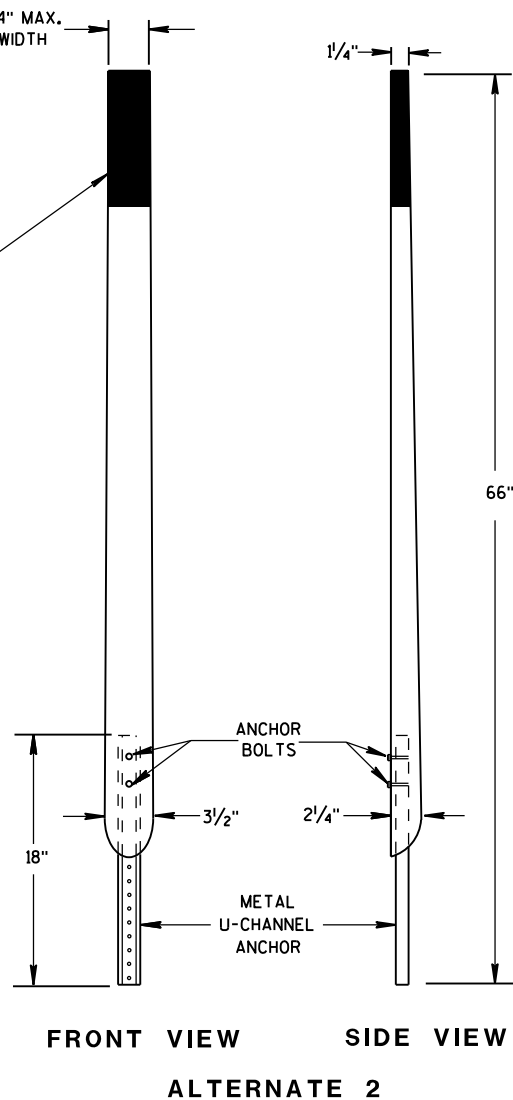
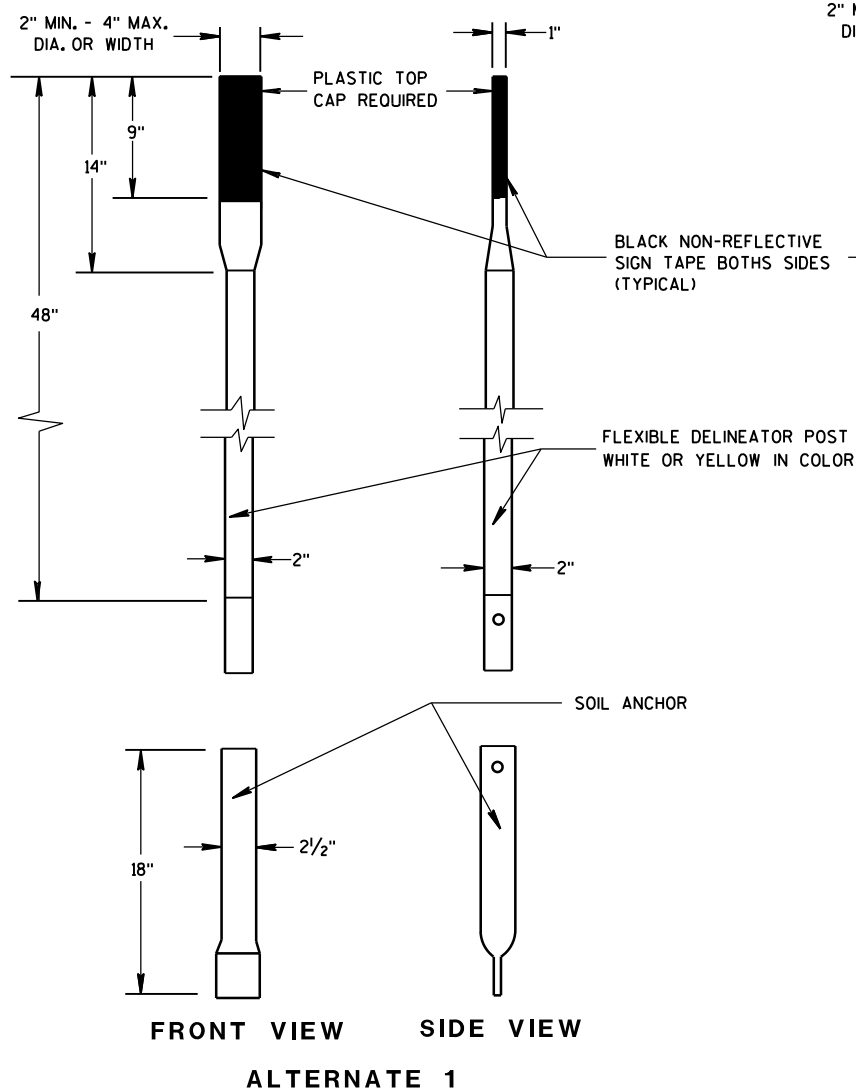
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.



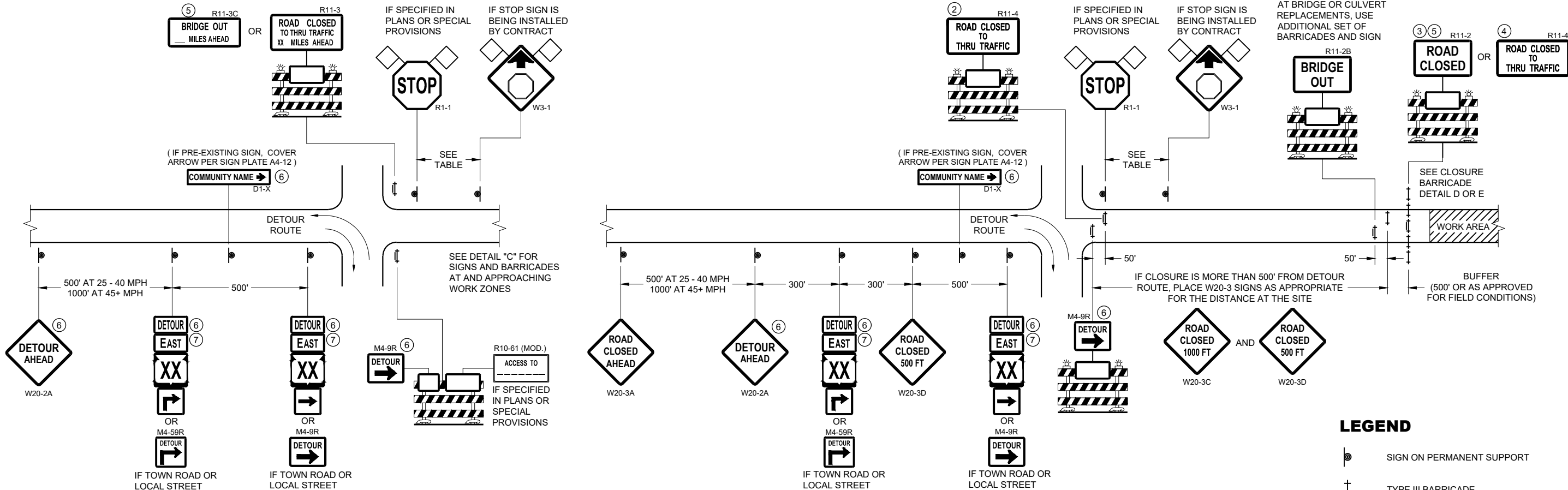
PLAN VIEW
CONCRETE MASONRY ENDWALLS FOR
CULVERT PIPE AND PIPE ARCH

FLEXIBLE MARKER POST
FOR CULVERT END

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



FLEXIBLE MARKER POST FOR CULVERT END		
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION		
APPROVED 10/1/2012 DATE	/S/ Travis Feltes STATE TRAFFIC ENGINEER 63	IGN
FHWA		

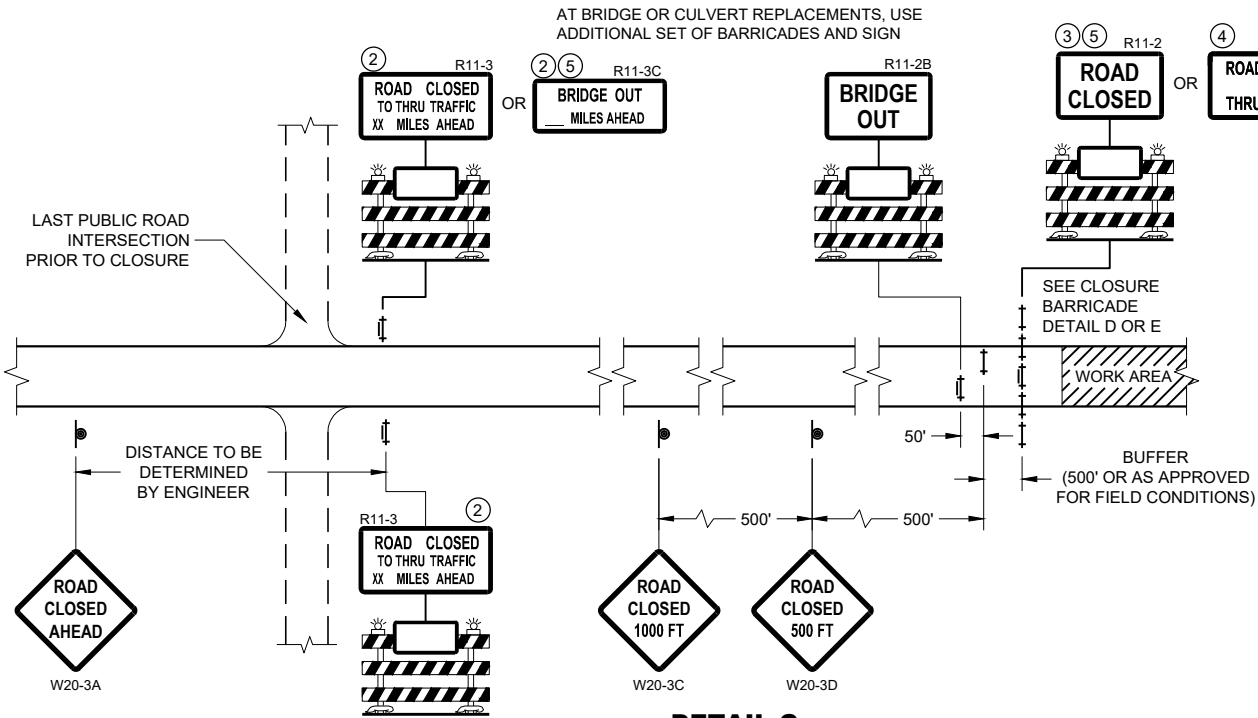


DETAIL A
MAINLINE CLOSURE WITH POSTED DETOUR

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

DETAIL B
MAINLINE CLOSURE WITH POSTED DETOUR

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



DETAIL C
MAINLINE CLOSURE, NO POSTED DETOUR

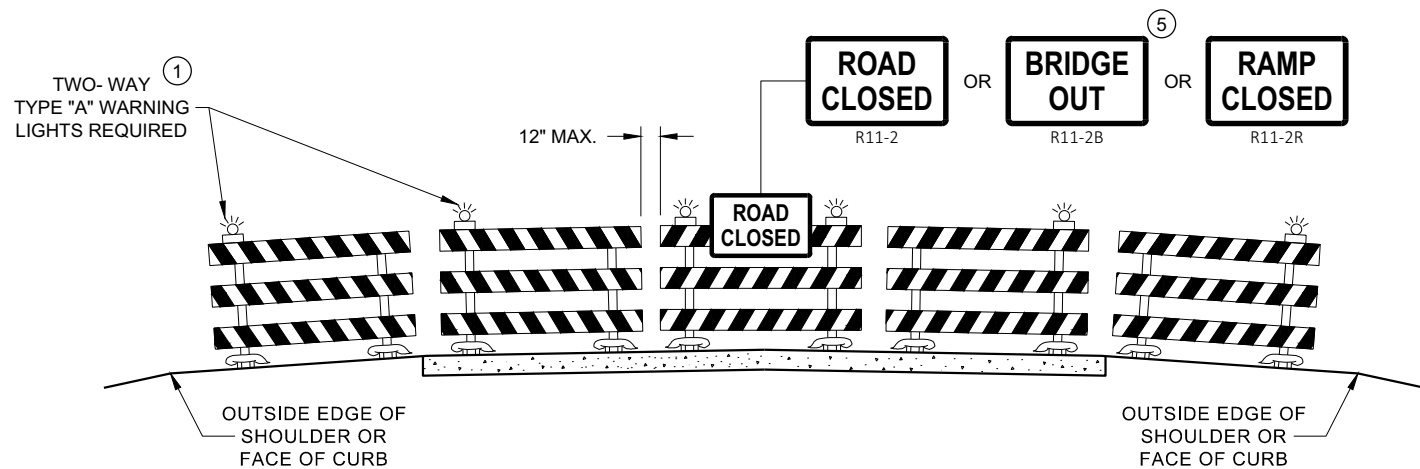
SPEED LIMIT (MPH)	"STOP AHEAD" ADVANCE WARNING DISTANCE (FT)
25	200
30	200
35	350
40	350
45	500
50	550
55	750

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

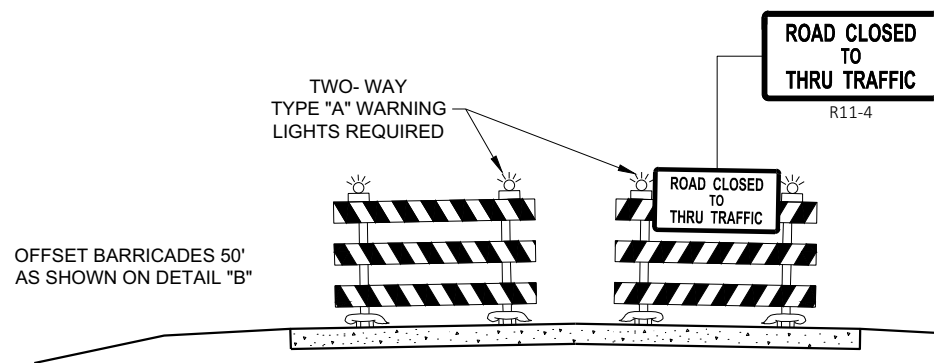
**BARRICADES AND SIGNS
FOR MAINLINE CLOSURES**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
February 2020 /S/ Andrew Heidtke
DATE WORK ZONE ENGINEER 64
FHWA



DETAIL D
ROAD CLOSURE BARRICADE DETAIL
APPROACH VIEW



DETAIL E
LANE CLOSURE BARRICADE DETAIL
APPROACH VIEW

SEE SDD 15C2 - SHEET "a" FOR LEGEND

GENERAL NOTES

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

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

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

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

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

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

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

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

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

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

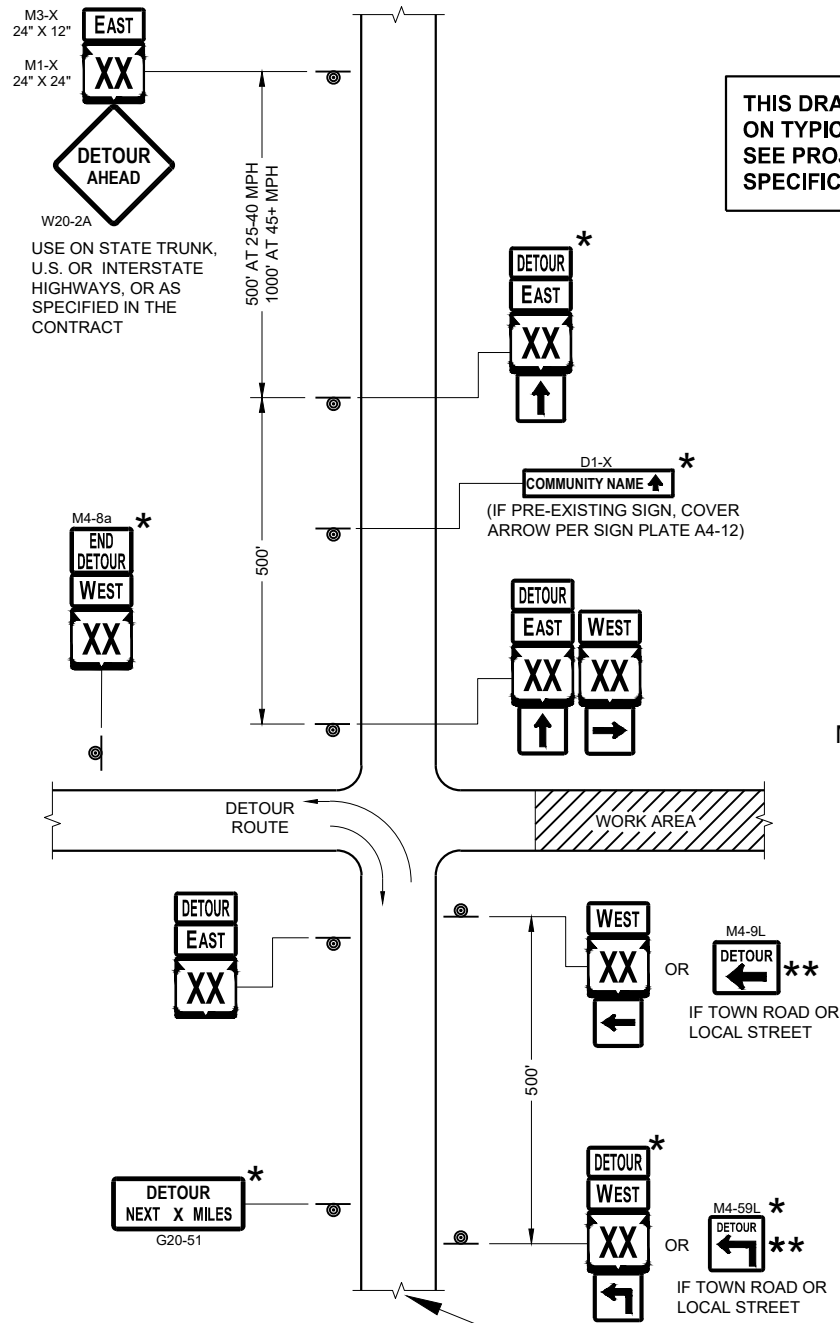
- R11 - 2 SHALL BE 48" X 30"
- R11 - 3 SHALL, R11 - 4 AND R10 - 61 SHALL BE 60 " X 30"
- M4 - 9 SHALL BE 30" X 24"
- M3 - X SHALL BE 24" X 12" (36" X 18" IF NEEDED TO MATCH EXISTING SIGNS)
- M4 - 8 SHALL BE 24" X 12" (36" X 18" IF NEEDED TO MATCH EXISTING SIGNS)
- M1 - 4, M1 - 5A AND M1 - 6 SHALL BE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

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

BARRICADES AND SIGNS FOR VARIOUS CLOSURES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

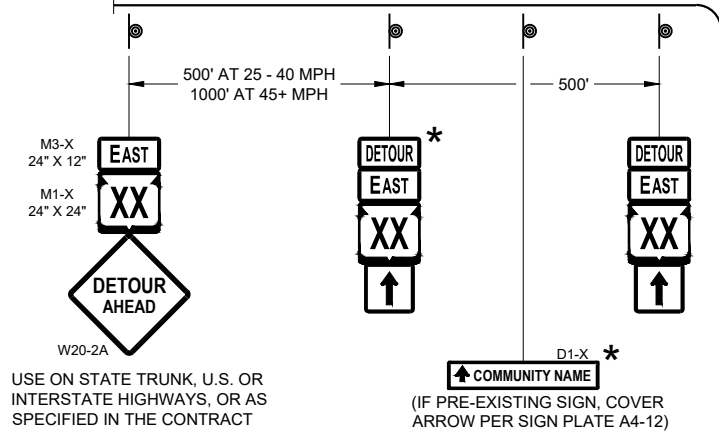
APPROVED
February 2020 /S/ Andrew Heidtke
DATE WORK ZONE ENGINEER 65
FHWA



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

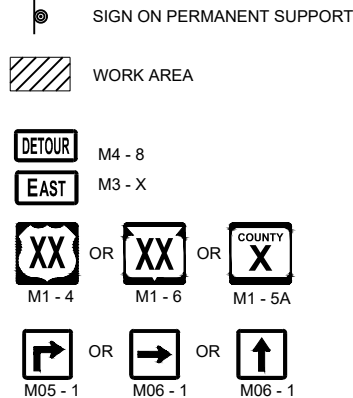
THIS DRAWING PROVIDES GENERAL GUIDANCE
ON TYPICAL DETOUR SIGN LAYOUT AND SPACING.
SEE PROJECT DETOUR SIGNING SHEETS FOR
SPECIFIC DETAILS FOR EACH PROJECT.

MATCH POINT



DETAIL F
DETOUR SIGNING

LEGEND



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.

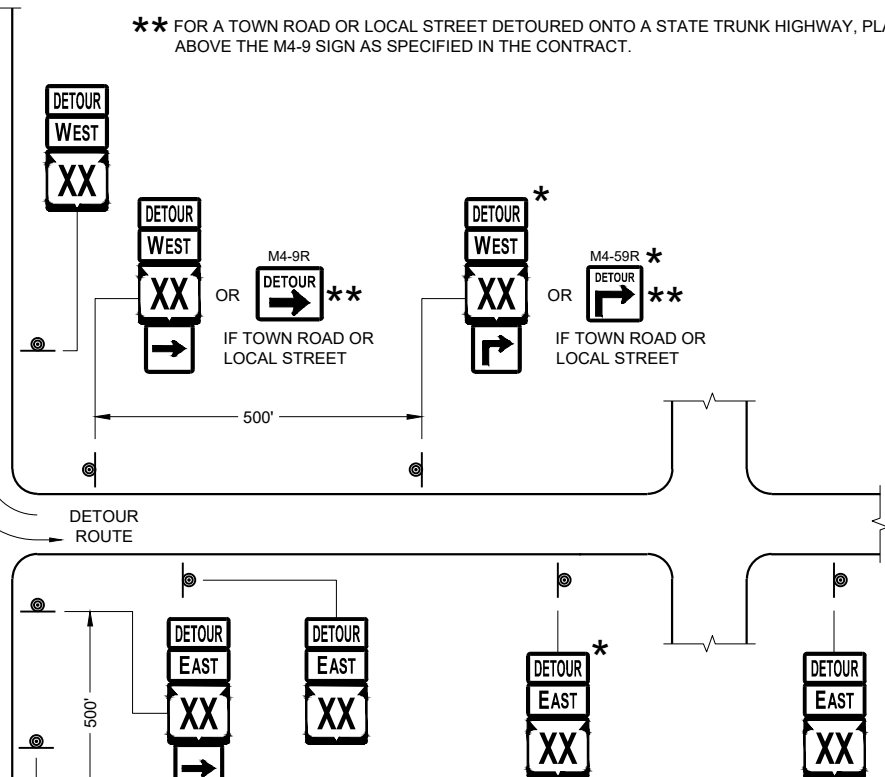
"MO" SIGNS ARE THE SAME AS "M" SIGNS EXCEPT THE BACKGROUND IS ORANGE.

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.

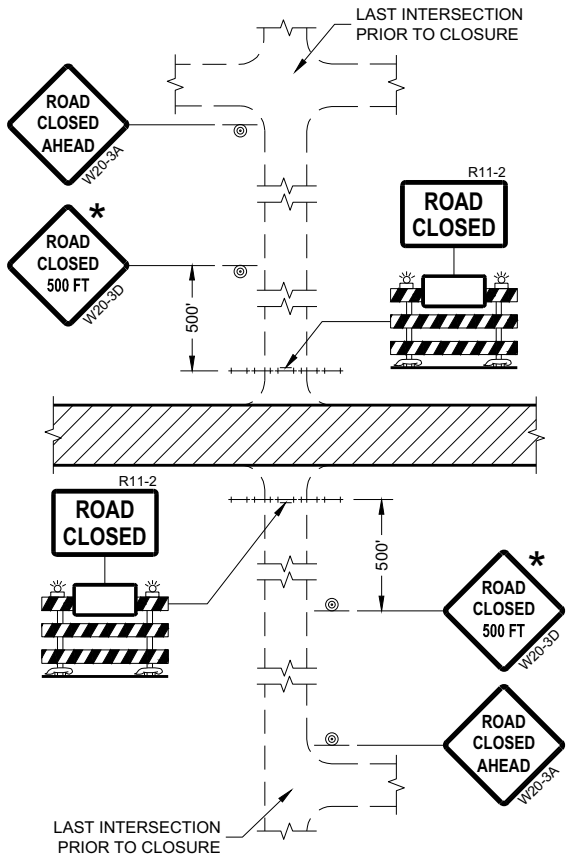


PLACE SIGNS BEYOND INTERSECTIONS
WITH STATE OR COUNTY TRUNK
HIGHWAYS OR AT 4 MILE MAXIMUM
SPACING (4 BLOCKS IF URBAN AREA)

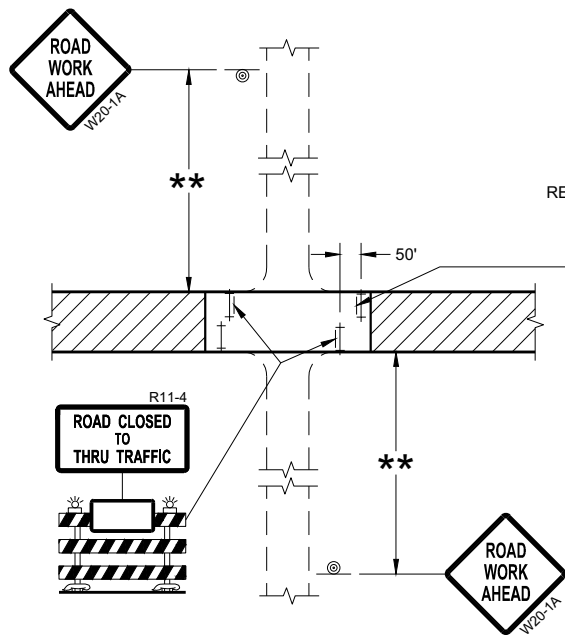
DETOUR SIGNING
FOR MAINLINE CLOSURES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

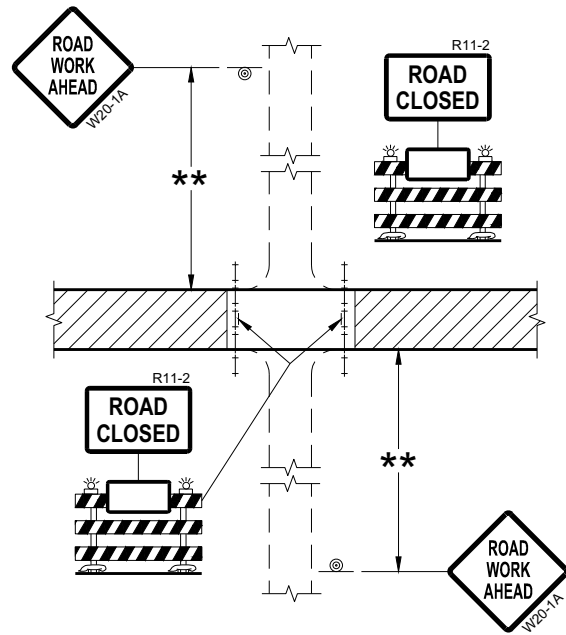
APPROVED
February 2020 /S/ Andrew Heidtke
DATE WORK ZONE ENGINEER 66
FHWA



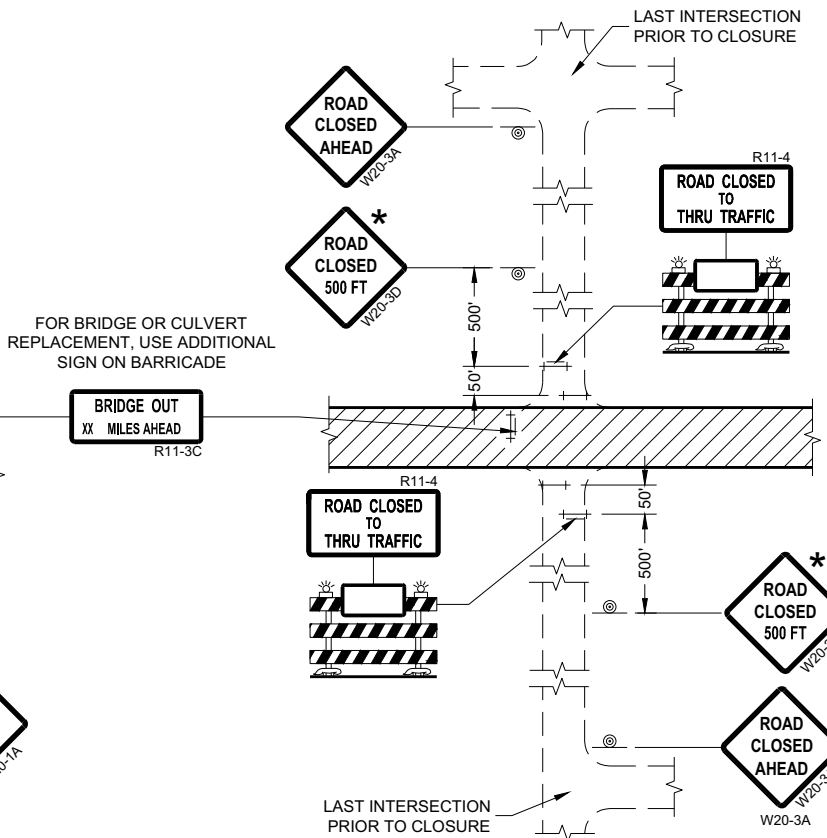
DETAIL 1
(NO ACCESS TO PROJECT)



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



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



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

GENERAL NOTES

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

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

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

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

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

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

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

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

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

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

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

LEGEND

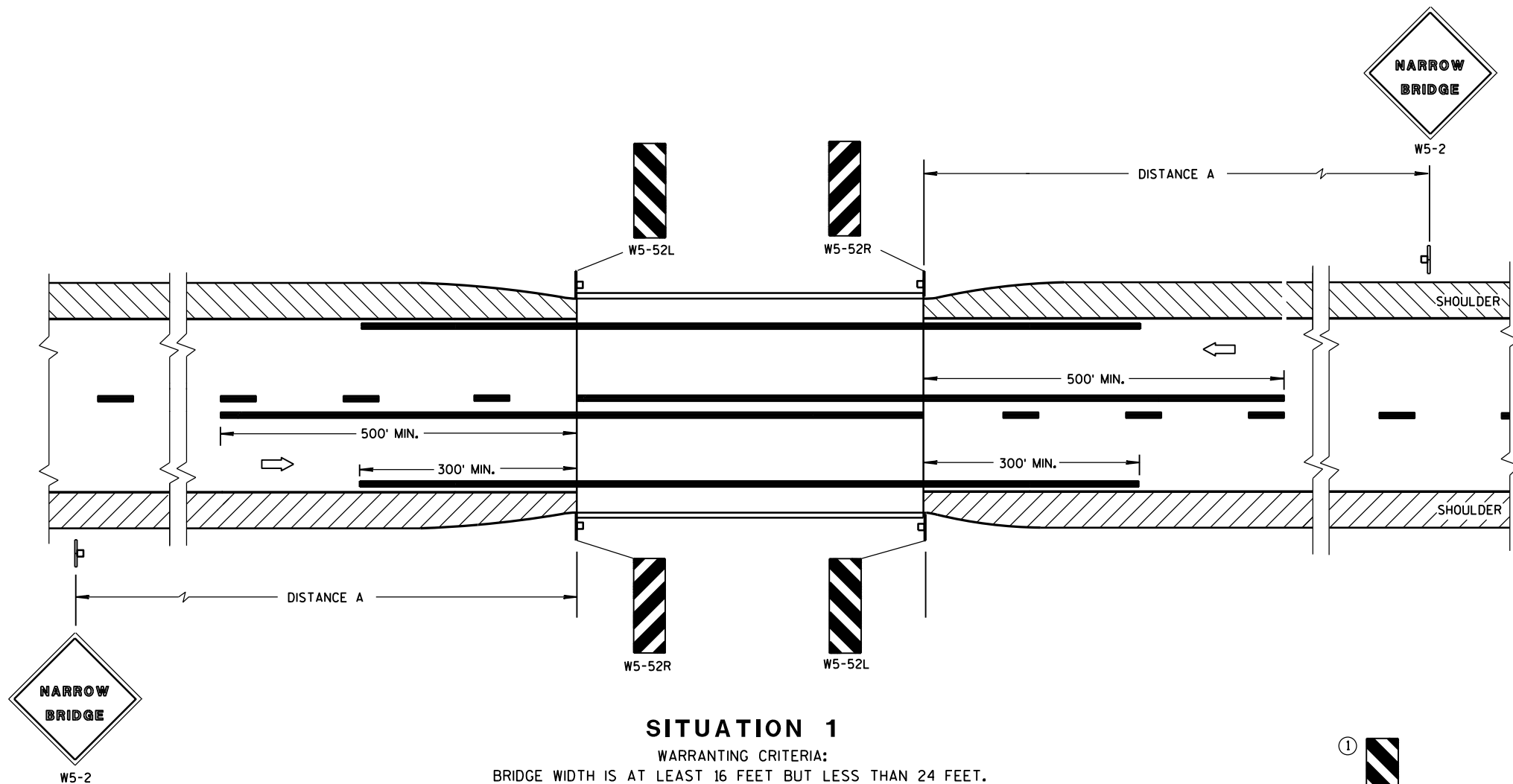
- SIGN ON PERMANENT SUPPORT
- TYPE III BARRICADE
- TYPE III BARRICADE WITH ATTACHED SIGN
- TYPE "A" WARNING LIGHT (FLASHING)
- WORK AREA

**BARRICADES AND SIGNS
FOR
SIDEROAD CLOSURES**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
July 2018 /S/ Andrew Heidtke
DATE WORK ZONE ENGINEER 67

FHWA



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

DISTANCE TABLE

POSTED OR 85th PERCENTILE SPEED	DISTANCE "A"
25	150'
30	200'
35	250'
40	300'
45	400'
50	550'
55	750'

GENERAL NOTES

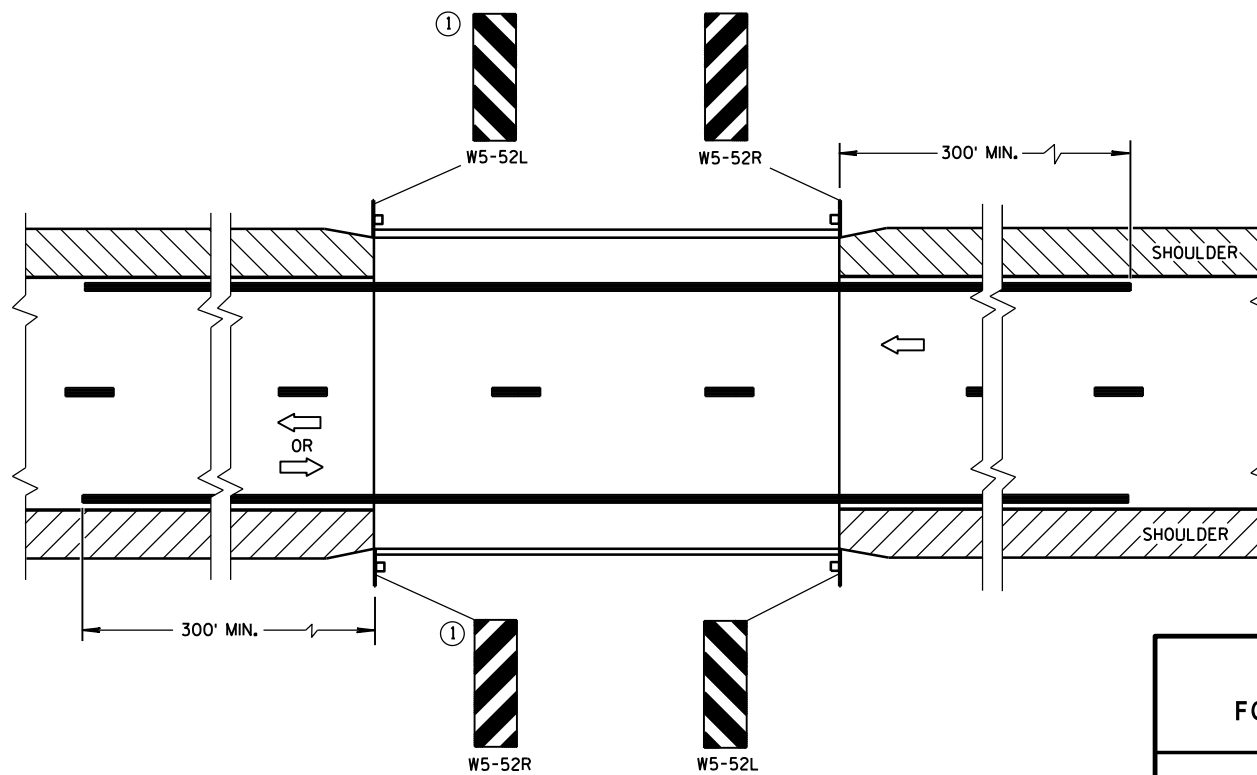
DETAILS OF TRAFFIC CONTROL DEVICES AND INSTALLATION NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS, THE SPECIAL PROVISIONS, AND THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.

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.

① OMIT ON ONE-WAY TRAVELLED WAYS.

➡ DIRECTION OF TRAFFIC



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

SIGNING & MARKING FOR TWO LANE BRIDGES

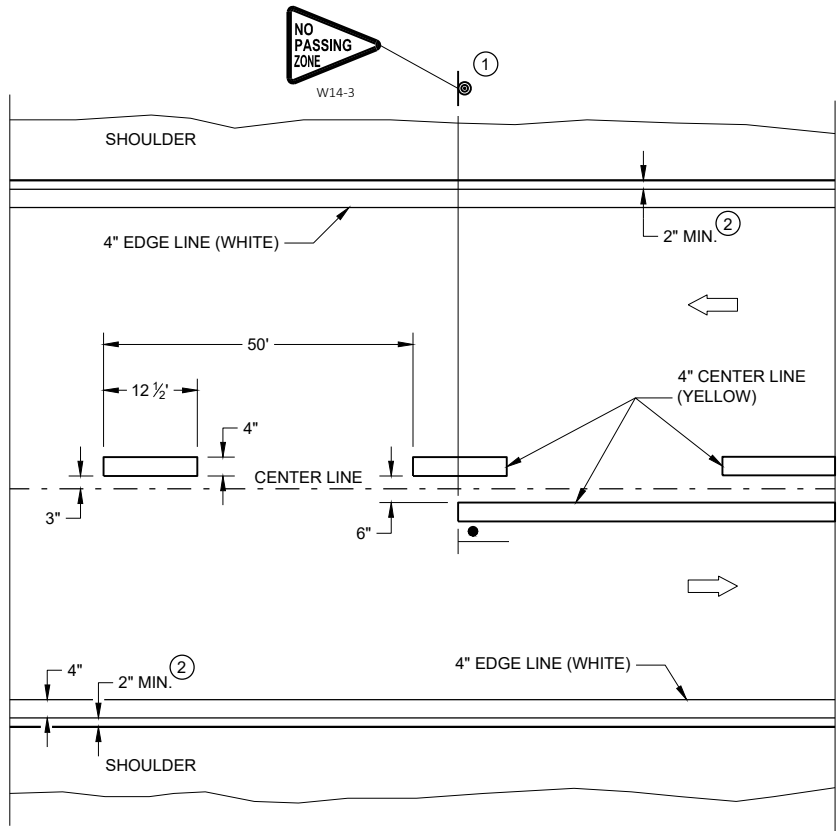
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

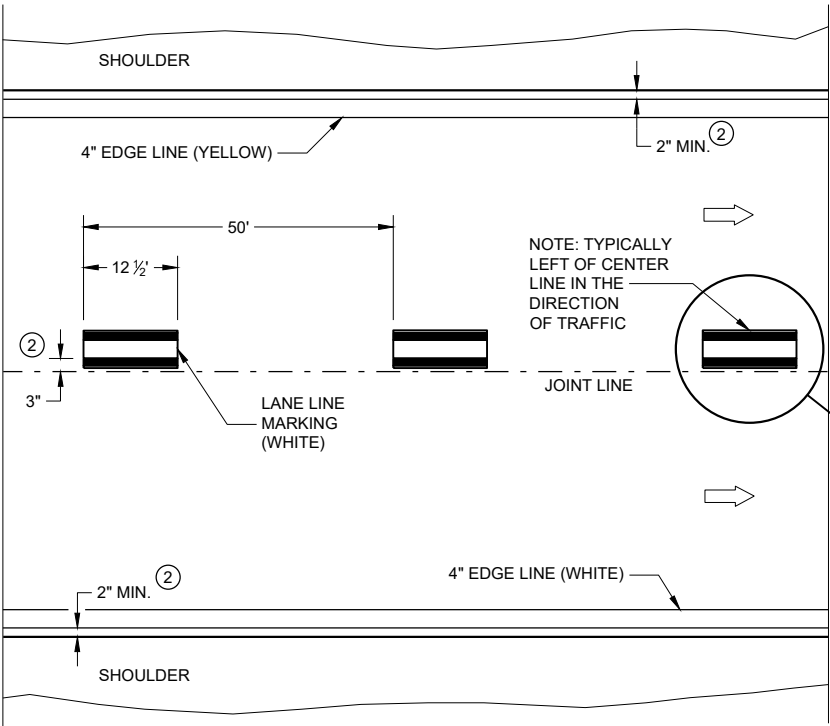
June 2017
DATE

/S/ Matthew R. Rauch
STATE SIGNING AND MAR 68 JEER

FHWA

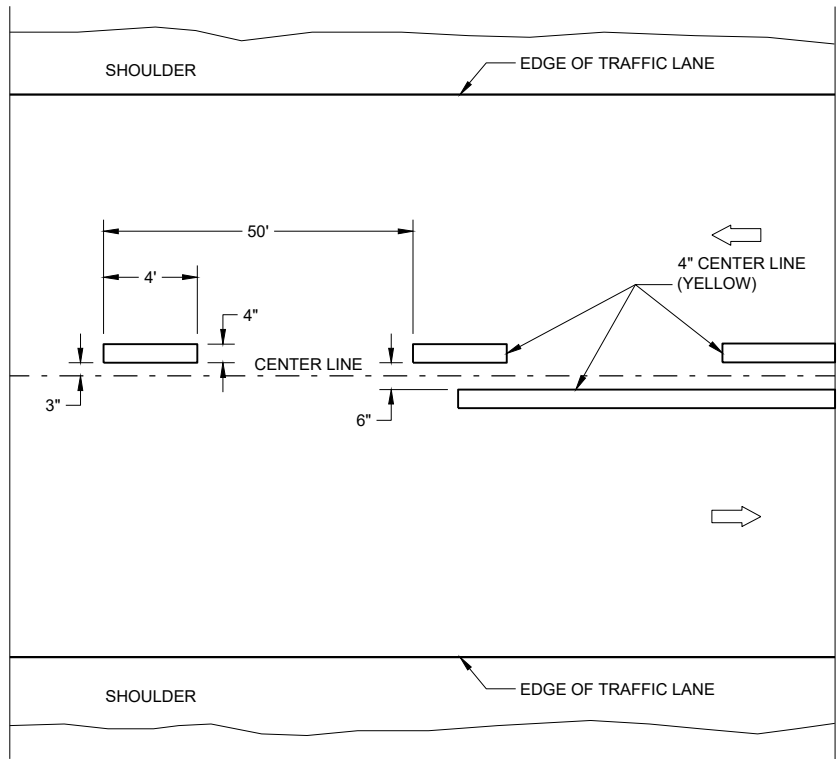


TWO WAY TRAFFIC

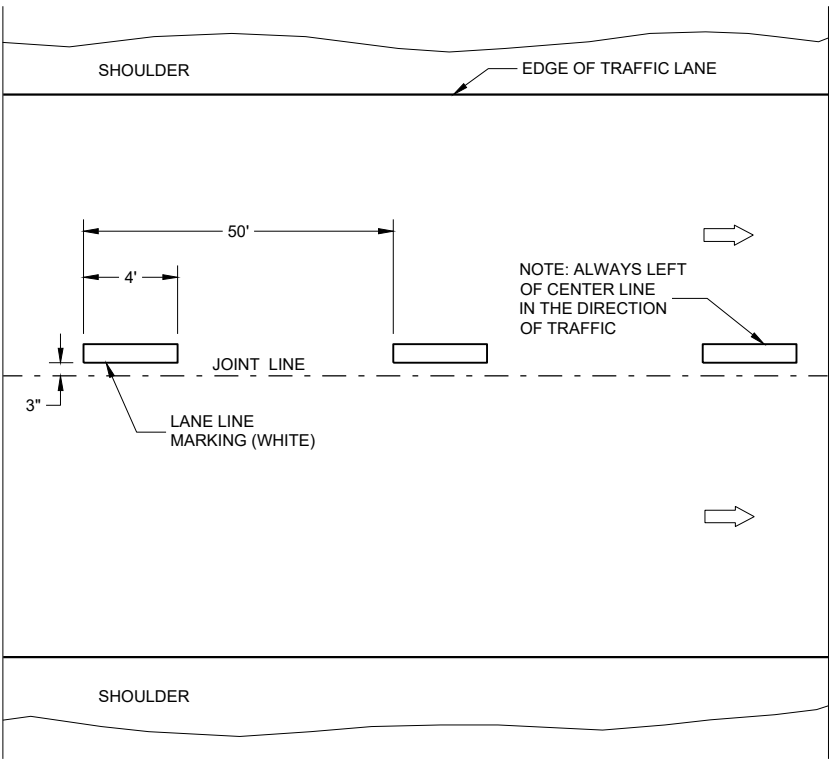


ONE WAY TRAFFIC

PERMANENT PAVEMENT MARKING



TWO WAY TRAFFIC



ONE WAY TRAFFIC

TEMPORARY PAVEMENT MARKING

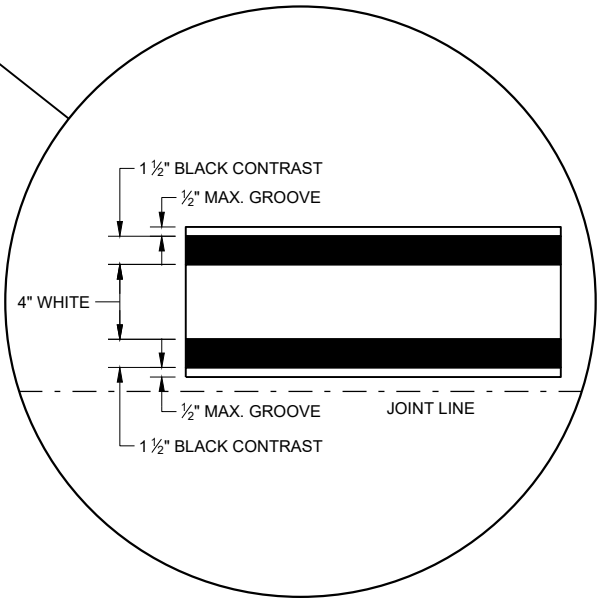
GENERAL NOTES

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

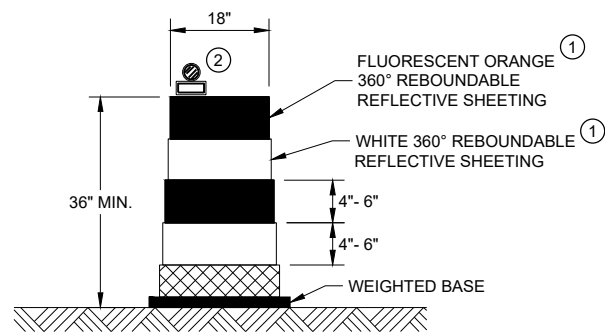
- "T" MARKING
- SIGN ON PERMANENT SUPPORT
- DIRECTION OF TRAFFIC



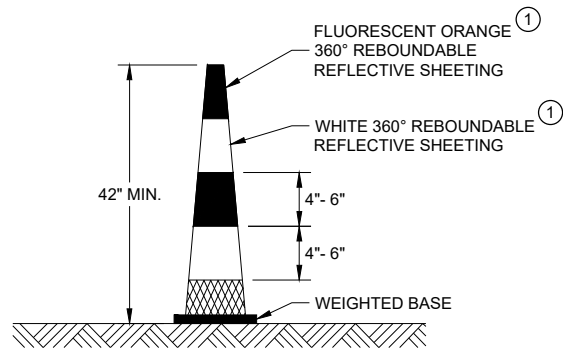
LONGITUDINAL MARKING
(MAINLINE)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
February 2020
DATE
/S/ Matthew Rauch
STATEWIDE SIGNING AND M
ENGINEER 69
FHWA

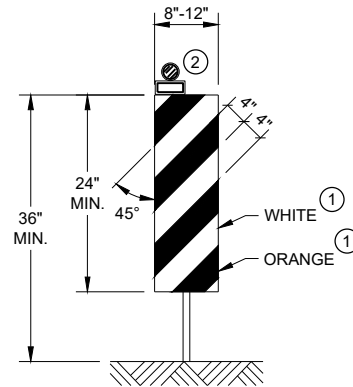


DRUM



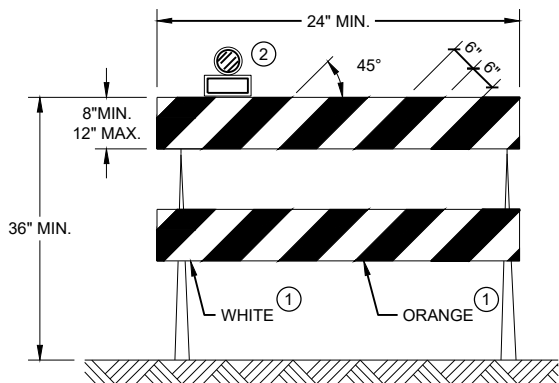
42" CONE

DO NOT USE IN TAPERS
½ SPACING OF DRUMS



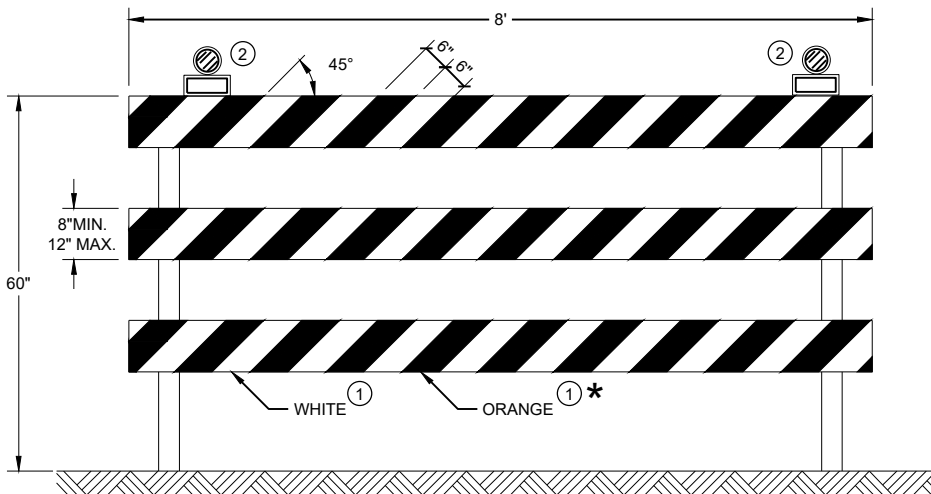
VERTICAL PANEL

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
May 2021 /S/ Andrew Heidtke
DATE WORK ZONE ENGINEER 70
FHWA

LEGEND

- V1 LEAD VEHICLE
- V2 MARKING VEHICLE
- V3 SHADOW VEHICLE
-  TRUCK MOUNTED ATTENUATOR (TMA)
-  SIGN ON TEMPORARY SUPPORT
-  DIRECTION OF TRAFFIC
-  FLASHING ARROW PANEL (CAUTION)

GENERAL NOTES

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

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

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

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

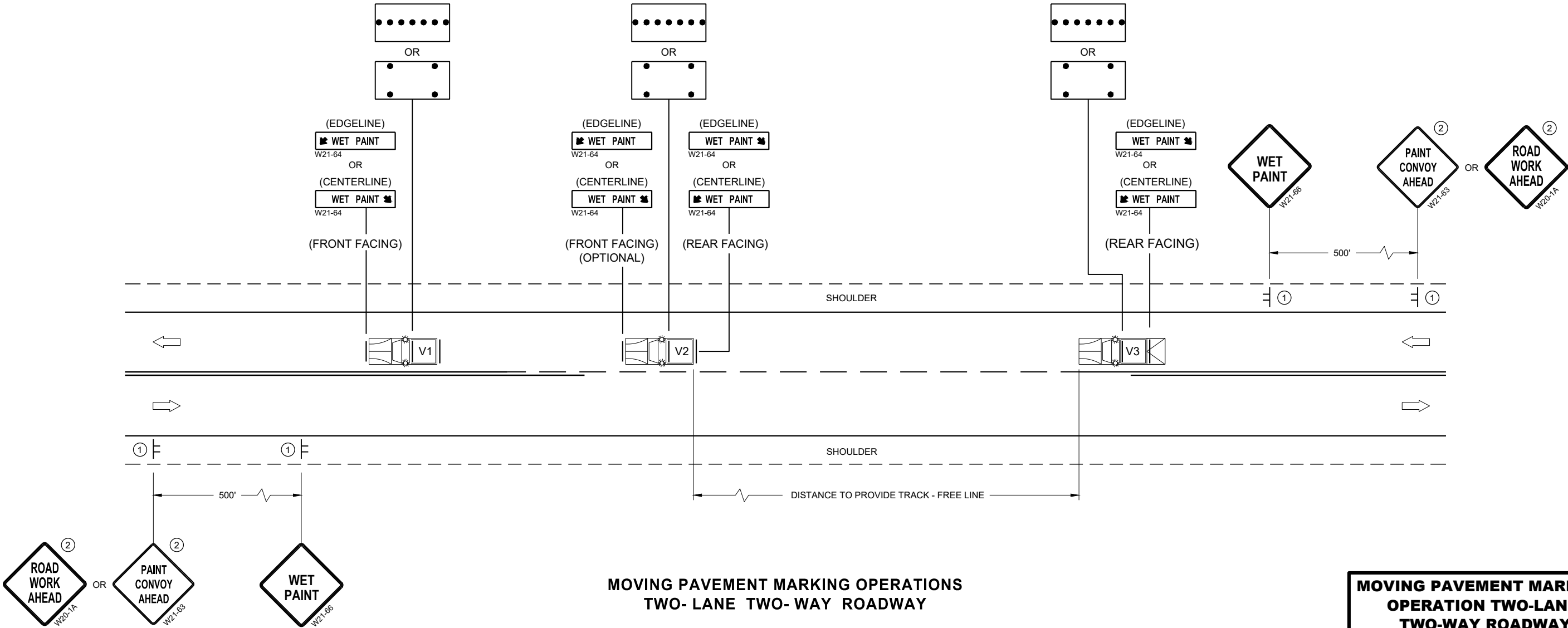
THE WORK AND SHADOW VEHICLES SHOULD PULL OVER PERIODICALLY TO ALLOW TRAFFIC TO PASS.

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

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

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

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



MOVING PAVEMENT MARKING OPERATIONS
TWO-LANE TWO-WAY ROADWAY

MOVING PAVEMENT MARKING
OPERATION TWO-LANE
TWO-WAY ROADWAY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
November 2019 /S/ Andrew Heidtke
DATE WORK ZONE ENGINEER 71
FHWA

LEGEND

- V1

WORK VEHICLE
- V2

SHADOW VEHICLE
- 

TRUCK MOUNTED ATTENUATOR (TMA)
- 

FLASHING ARROW PANEL (CAUTION)
- 

WORK AREA
- 

DIRECTION OF TRAFFIC

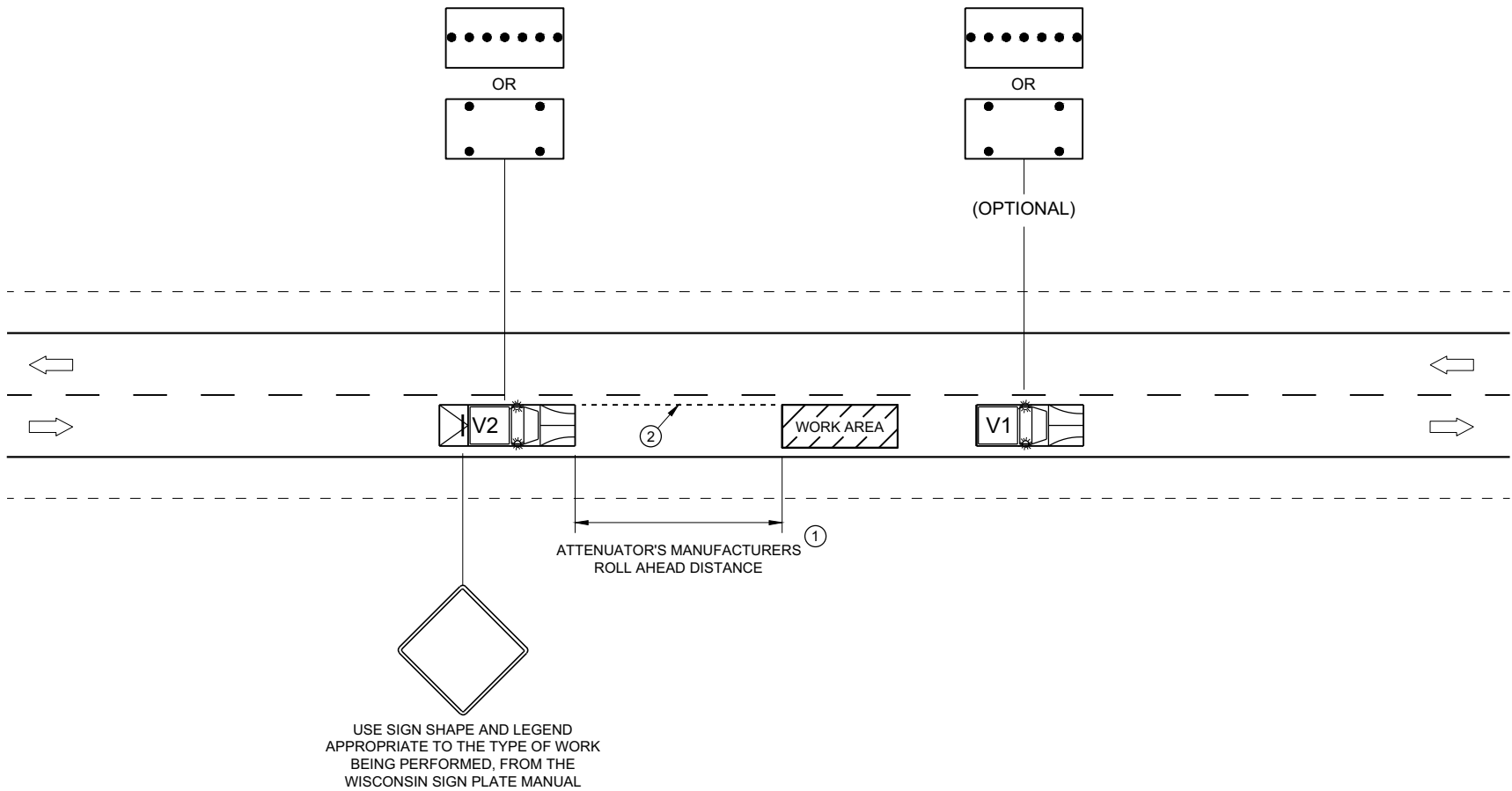
POSTED SPEED PRIOR TO WORK STARTING (MPH)	DECISION SIGHT DISTANCE (D)
0 - 25	550'
30	550'
35	700'
40	700'
45	900'
50	900'
55	1200'

GENERAL NOTES

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

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

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



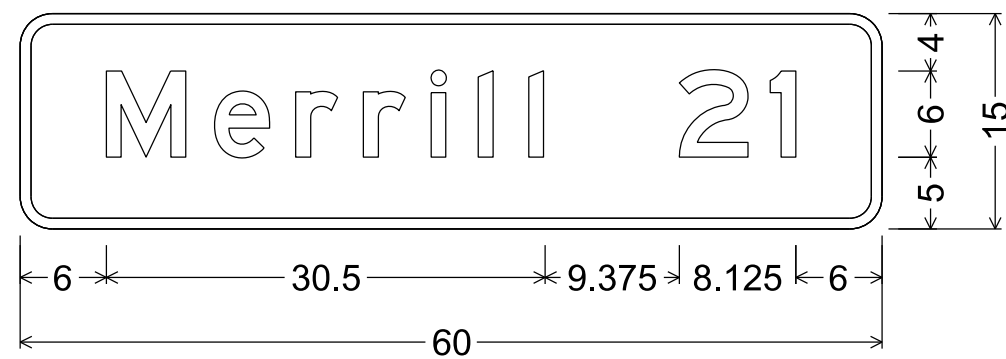
TRAFFIC CONTROL,
MOBILE OPERATIONS ON
AN UNDIVIDED ROADWAY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
February 2021 /S/ Andrew Heidtke
DATE SAFETY ENGINEER
FHWA

NOTES

1. Sign is Type II - Type H Reflective
2. Color:
Background - Green
Message - White
3. Message Series - E

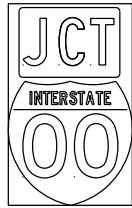


D2-1; 2.250" Radius, 0.750" Border

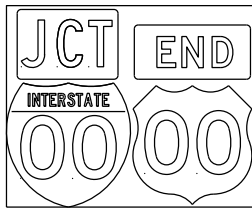
7

7

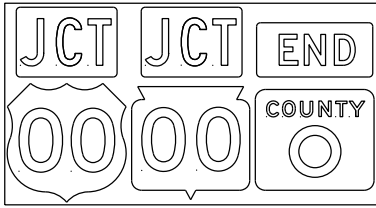
TYPICAL ASSEMBLIES



J1-1



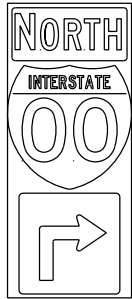
J1-2



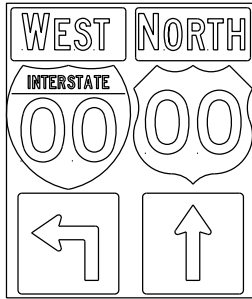
J1-3



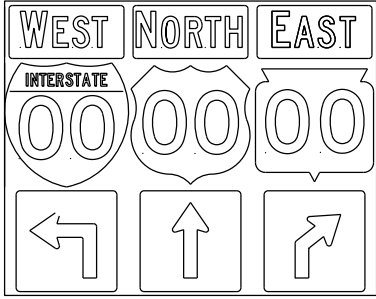
JR1-1



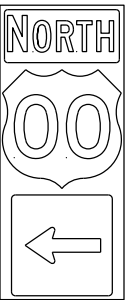
J2-1



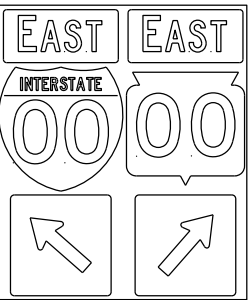
J2-2



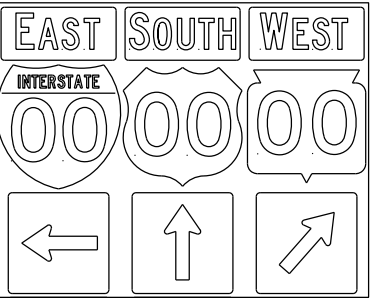
J2-3



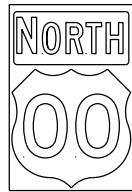
J3-1



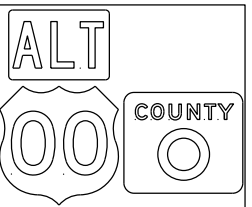
J3-2



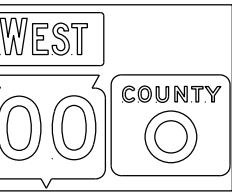
J3-3



J4-1



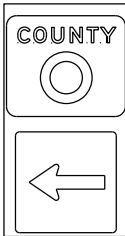
J4-2



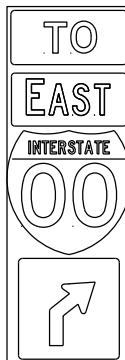
J4-2



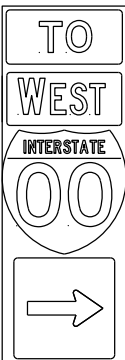
J12-1



J13-1



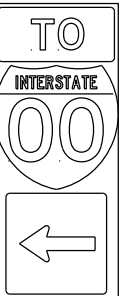
J32-1



J33-1



J22-1



J23-1



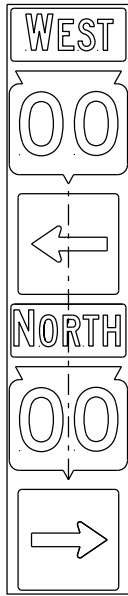
JR13-1



JR23-1

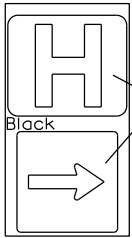


JR99-1



JV

(Typical Vertical J-Assembly
See Note 10 and 11)

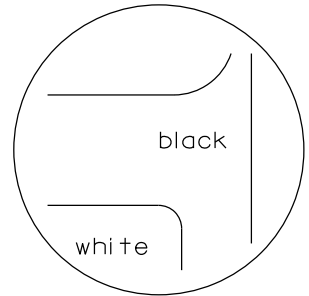
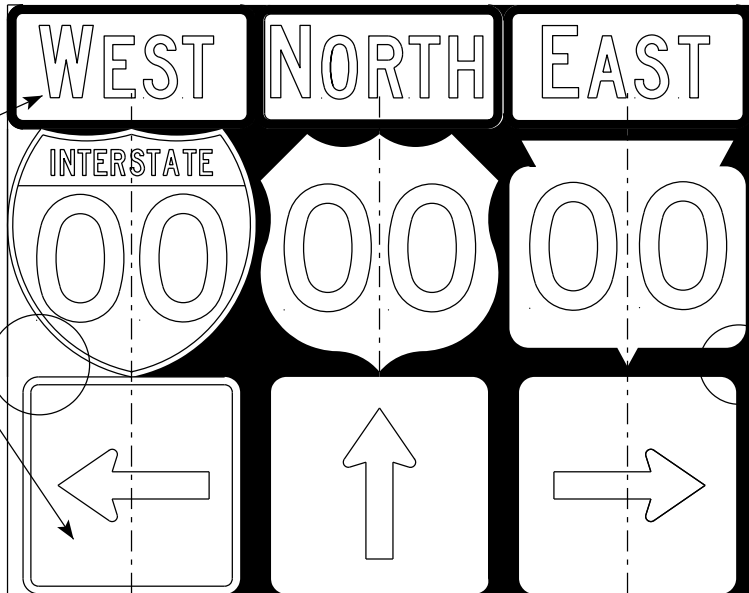
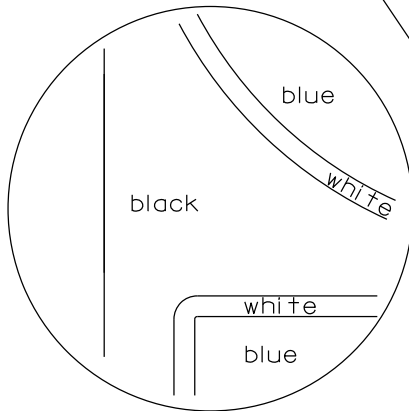


JH-1

Blue Background

Black

blue background
with interstate



black background

ROUTE MARKERS & COMPONENTS
IN TYPICAL ASSEMBLIES

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

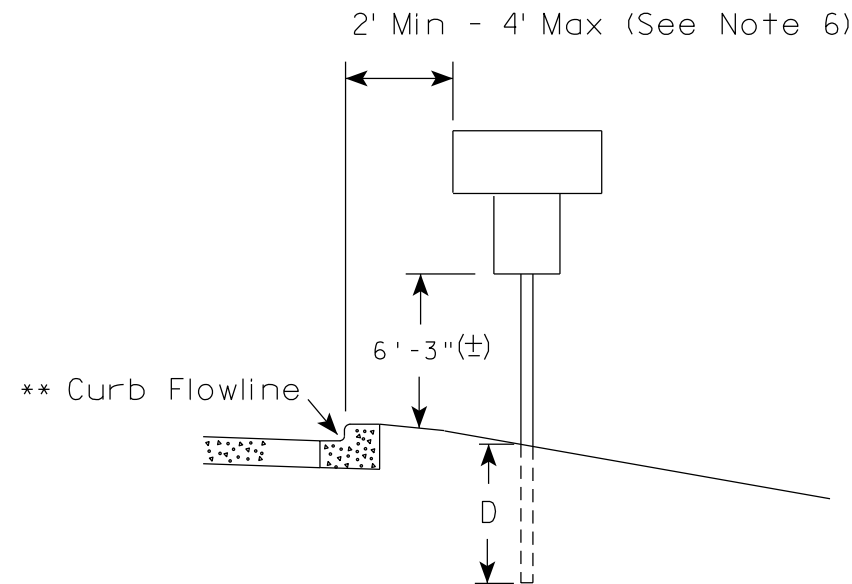
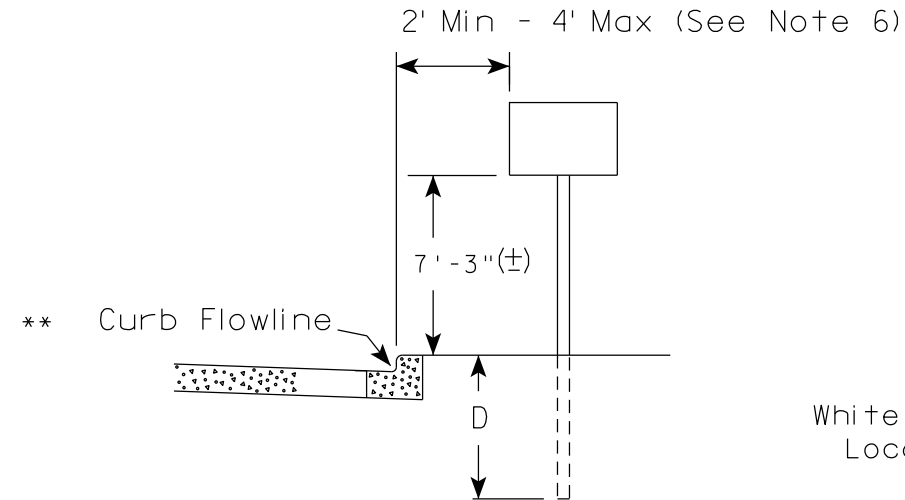
DATE 3/18/21 PLATE NO. A2-1S.9

PROJECT NO:

SHEET NO: 74

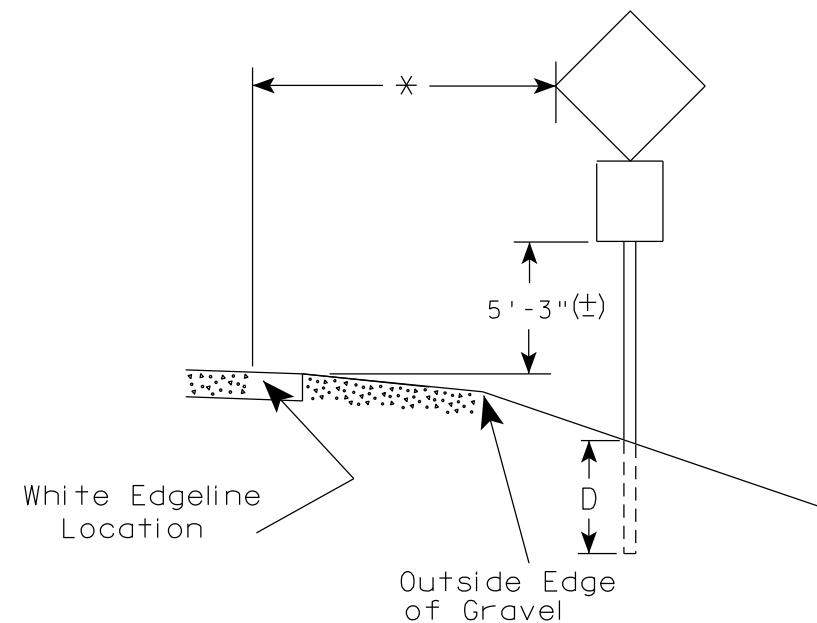
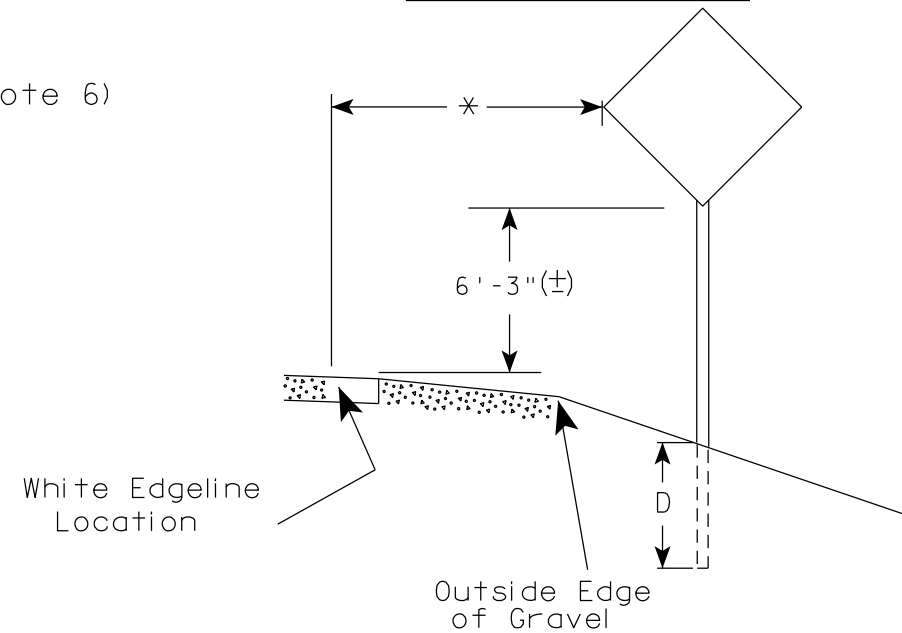
E

URBAN AREA



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

RURAL AREA (See Note 2)



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

POST EMBEDMENT DEPTH

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

GENERAL NOTES

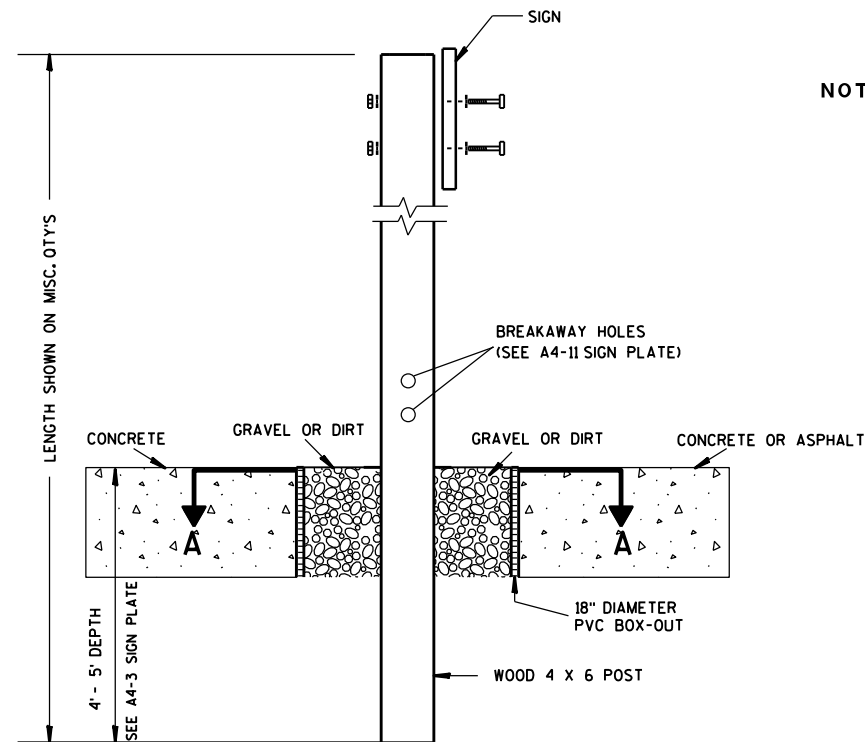
- Signs wider than 4 feet or 20 sq.ft or larger, shall be mounted on multiple posts. Refer to plate A4-4.
- If signs are mounted on or behind barrier wall, see A4-10 sign plate.
The Double Arrow sign (W12-1D) shall be mounted at a height of 2'-3" (±). The Chevron sign (W1-8), Roundabout Chevron panel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

TYPICAL INSTALLATION
OF PERMANENT TYPE II
SIGNS ON SINGLE POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

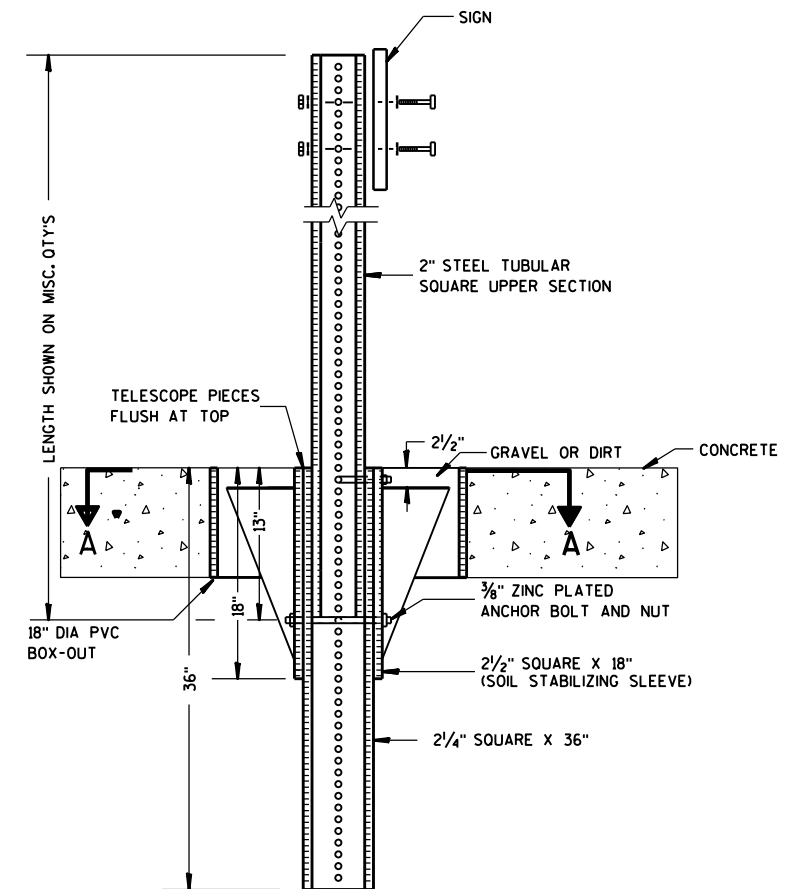
DATE 5/13/2020 PLATE NO. A4-3.22



ELEVATION VIEW

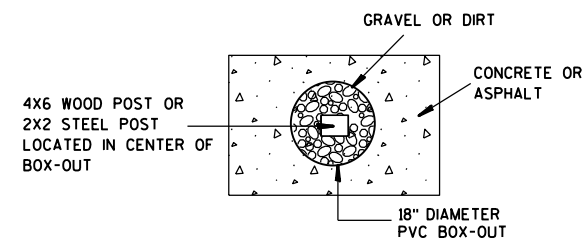
DETAIL OF WOOD 4 X 6 SIGN POST IN BOX-OUT

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



ELEVATION VIEW

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



PLAN VIEW

FOR NEW CONCRETE/ASPHALT INSTALLATIONS

SIGN POST BOX-OUTS A4-3B

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 1/27/14 PLAT 76 A4-3B.1

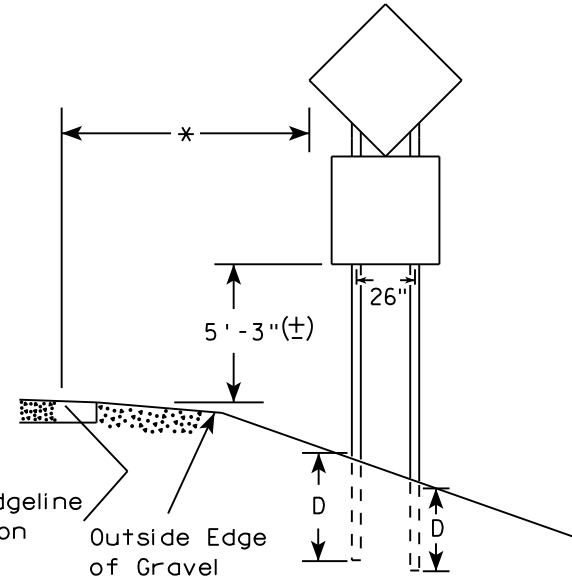
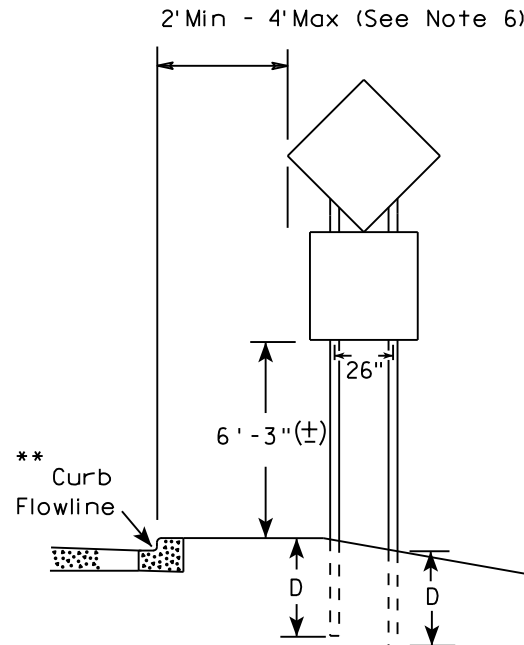
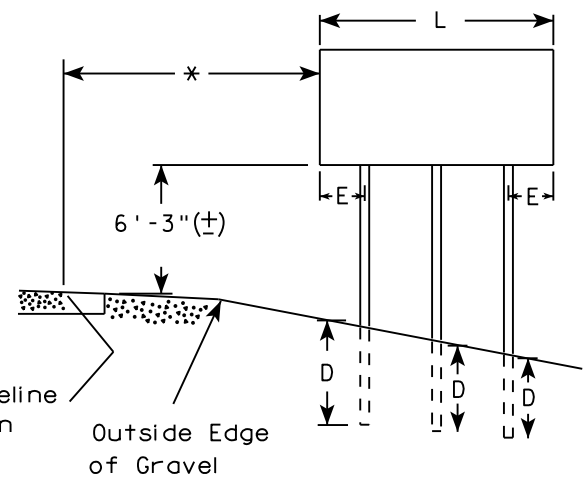
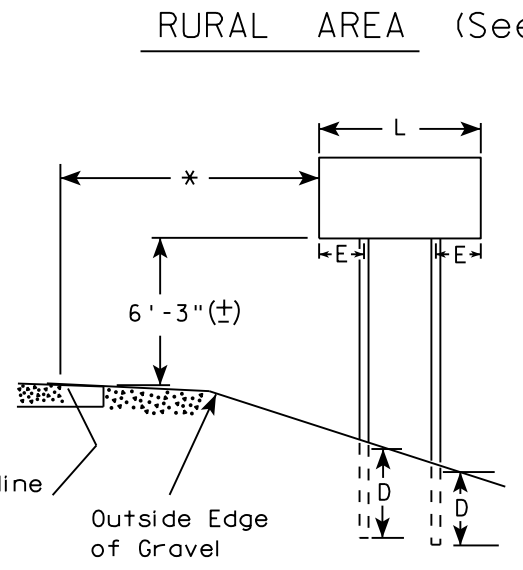
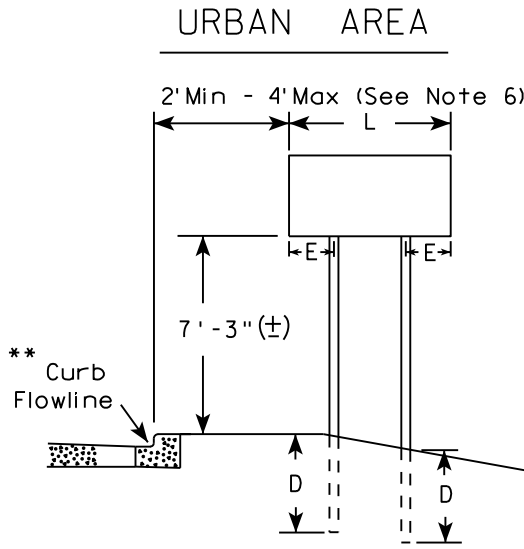
PROJECT NO:

HWY:

COUNTY:

SHEET NO:

E



48" DIAMOND WARNING SIGN

48" DIAMOND WARNING SIGN

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

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

POST EMBEDMENT DEPTH

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

TYPICAL INSTALLATION
OF TYPE II SIGNS
ON MULTIPLE POSTS

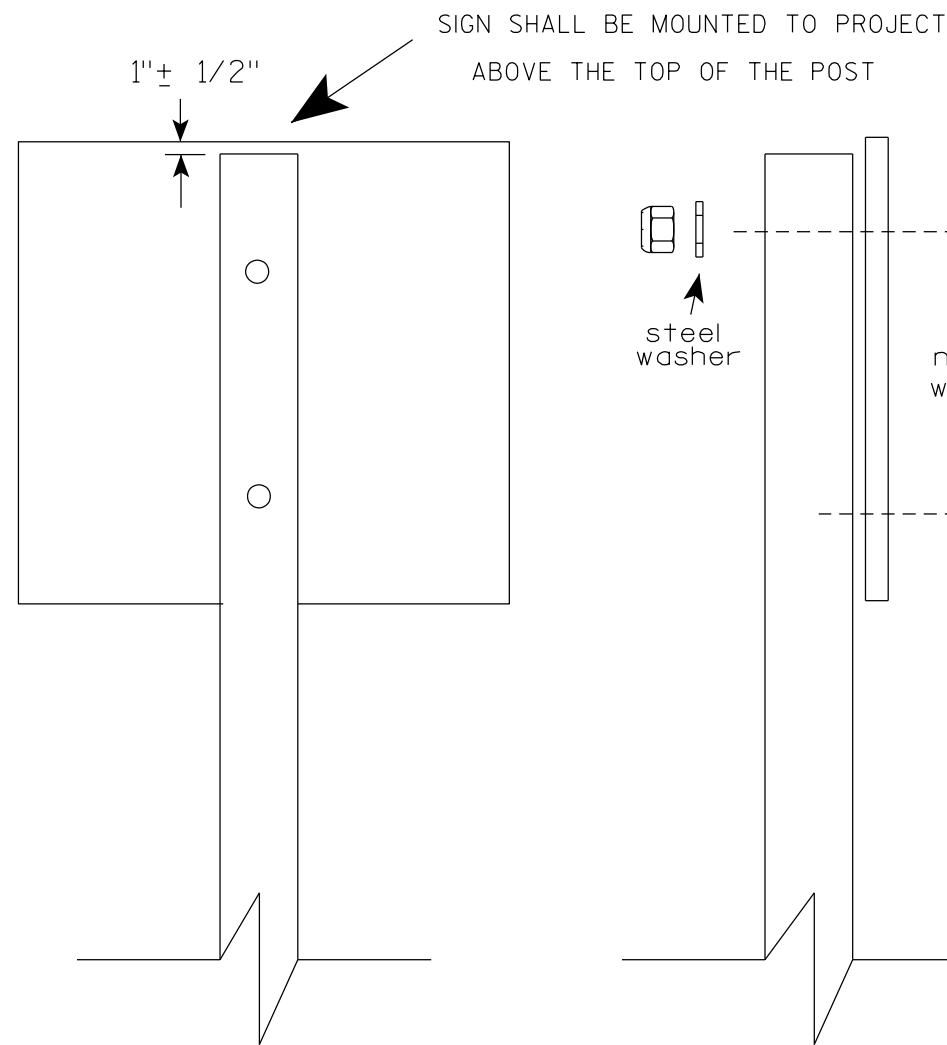
WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

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

- GENERAL NOTES
1. For 3 or 4 post installations, individual post spacing shall be greater than 3'-6".
 2. See tables below for required number of posts.
 3. For expressways and freeways, mounting height is 7'-3" (±) or 6'-3" (±) depending upon existence of sub-sign.
 4. The (±) tolerance for mounting height is 3 inches.
 5. J-Assemblies are considered to be one sign for mounting height.
 6. Offset distance shall be consistent with existing signs or consistent throughout length of project.
 7. Folding signs shall be mounted at a height of 5'-3" (±) or as directed by the engineer.
 8. The Double Arrow sign (W12-1) shall be mounted at a height of 2'-3" (±). The Chevron sign (W1-8), Roundabout Chevron panel (R6-4B), Clearance Markers (W5-52), Mile Markers (D10 series), In Road Object Markers (W5-54) & End of Road Markers (W5-56) shall be mounted at a height of 4'-3" (±).

- * 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.



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

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

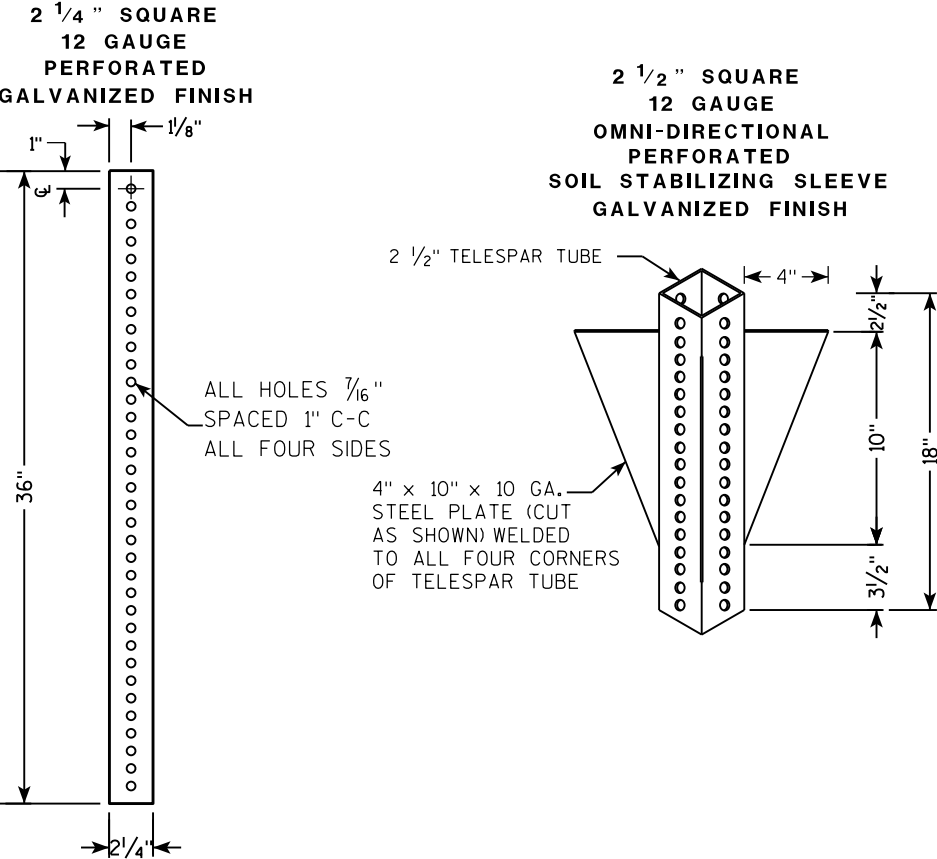
Threads on bolts and nuts shall be manufactured with sufficient allowance for the cadmium plate or galvanized coating to permit the nuts to run freely on the bolts.

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

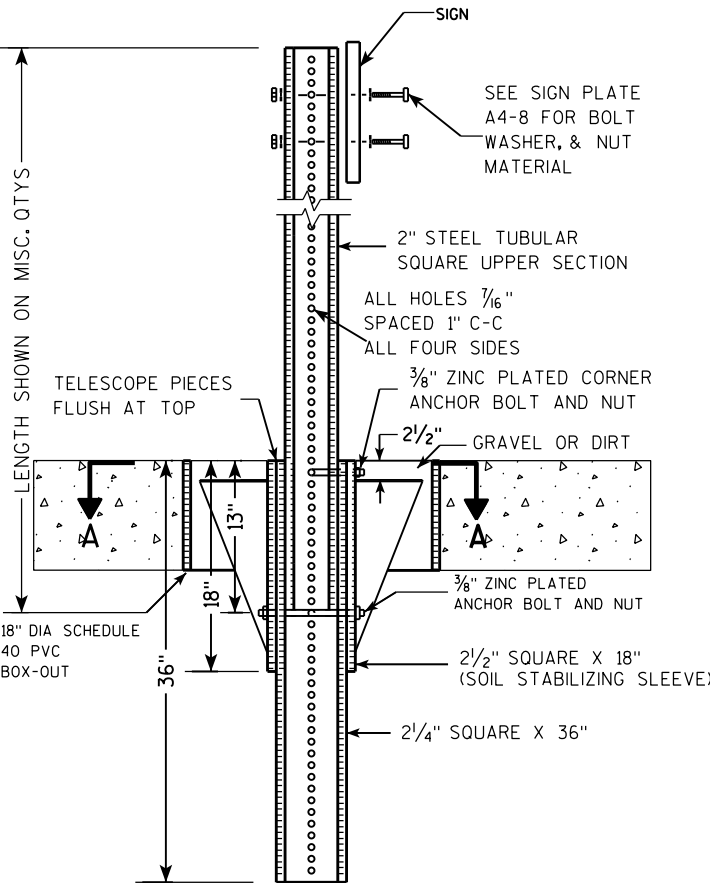
* Two different fastening systems are shown for illustration purposes. On any individual sign, either one or the other system shall be used. Actual number of fasteners per sign varies with the sign area, but normally there are two. For a single post installation, all signs greater than 9 sq. ft. require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

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

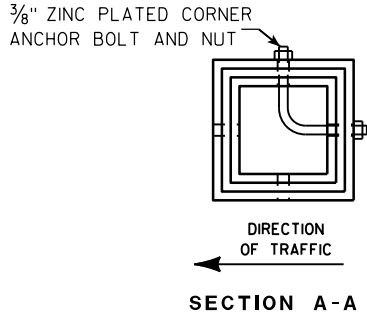
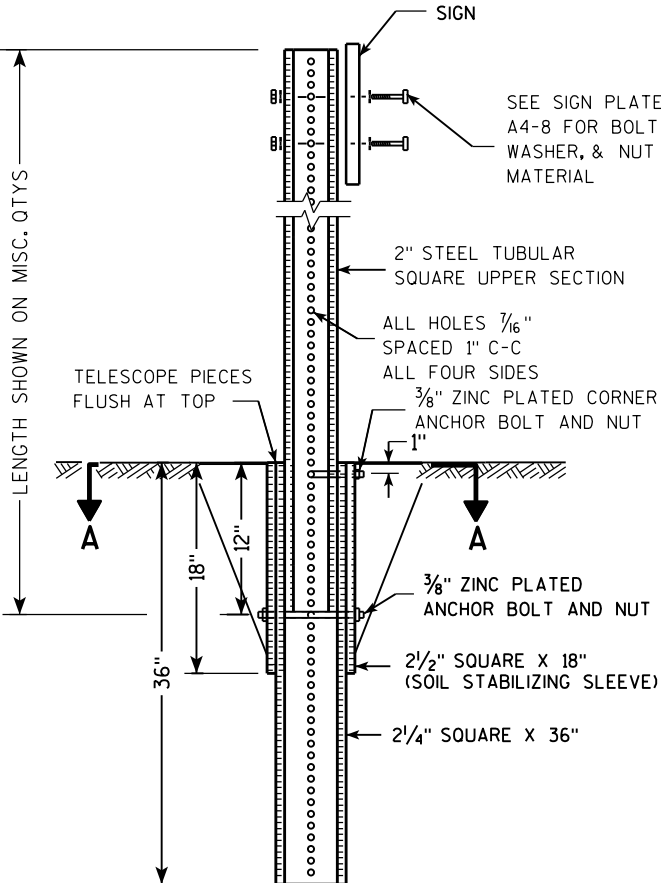
TELESCOPIC TUBING ANCHORS
TWO PIECE SYSTEM



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



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



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

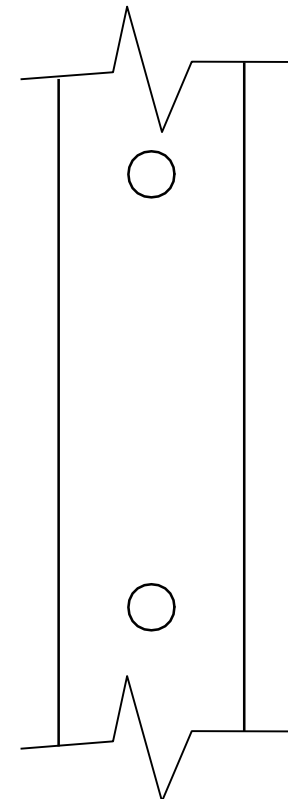
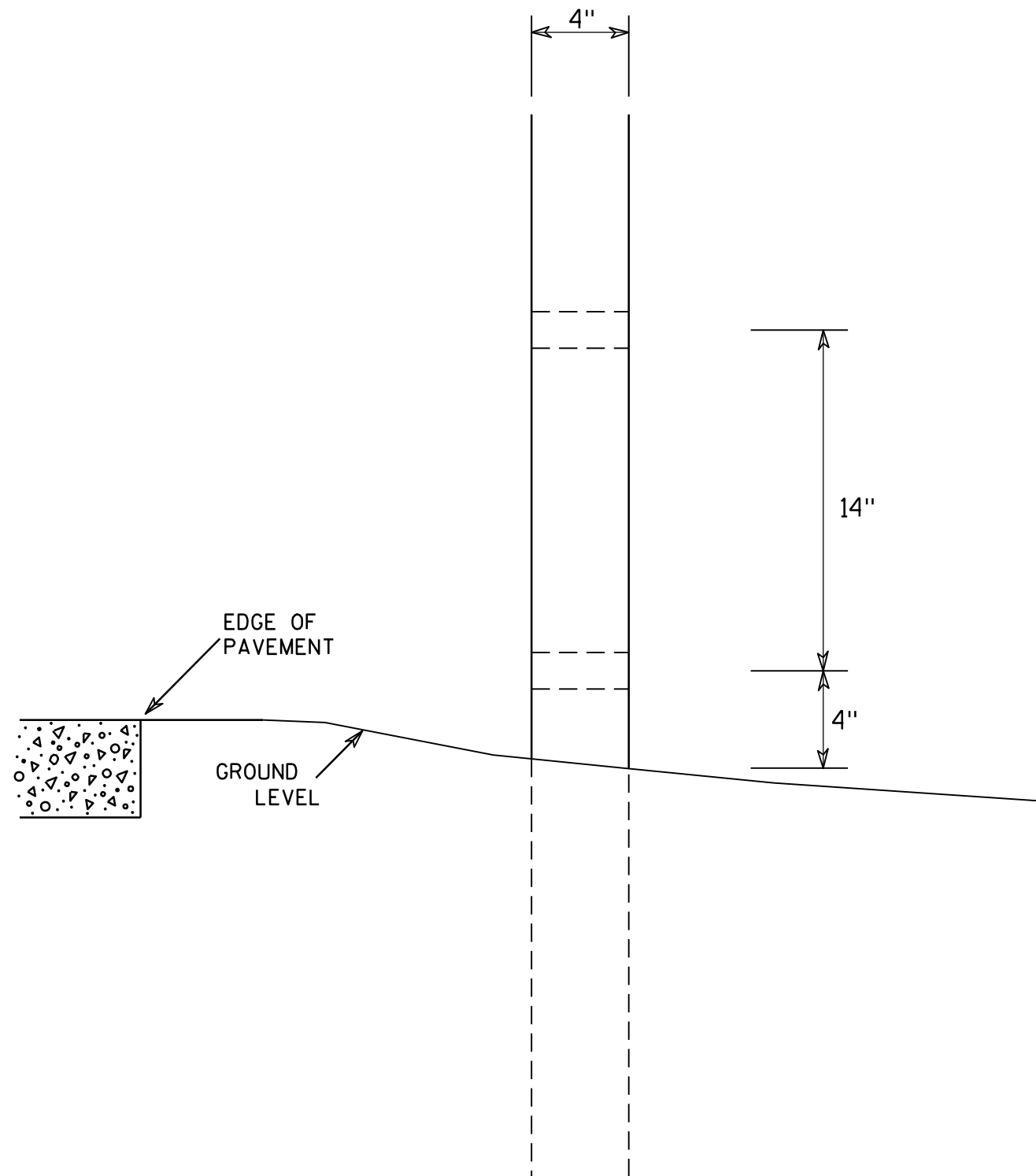
Signs wider than 3 feet or larger than 9 sq. ft shall be mounted on multiple posts (see above table).

TUBULAR STEEL
SIGN POST
A4-9

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 2/05/15 PLAT 14-9.9



SIDE VIEW

GENERAL NOTES

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

4 X 6 WOOD POST MODIFICATIONS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED

Chester J. Spang
for State Traffic Engineer

DATE 3/27/97

PLATE NO. A4-11.2

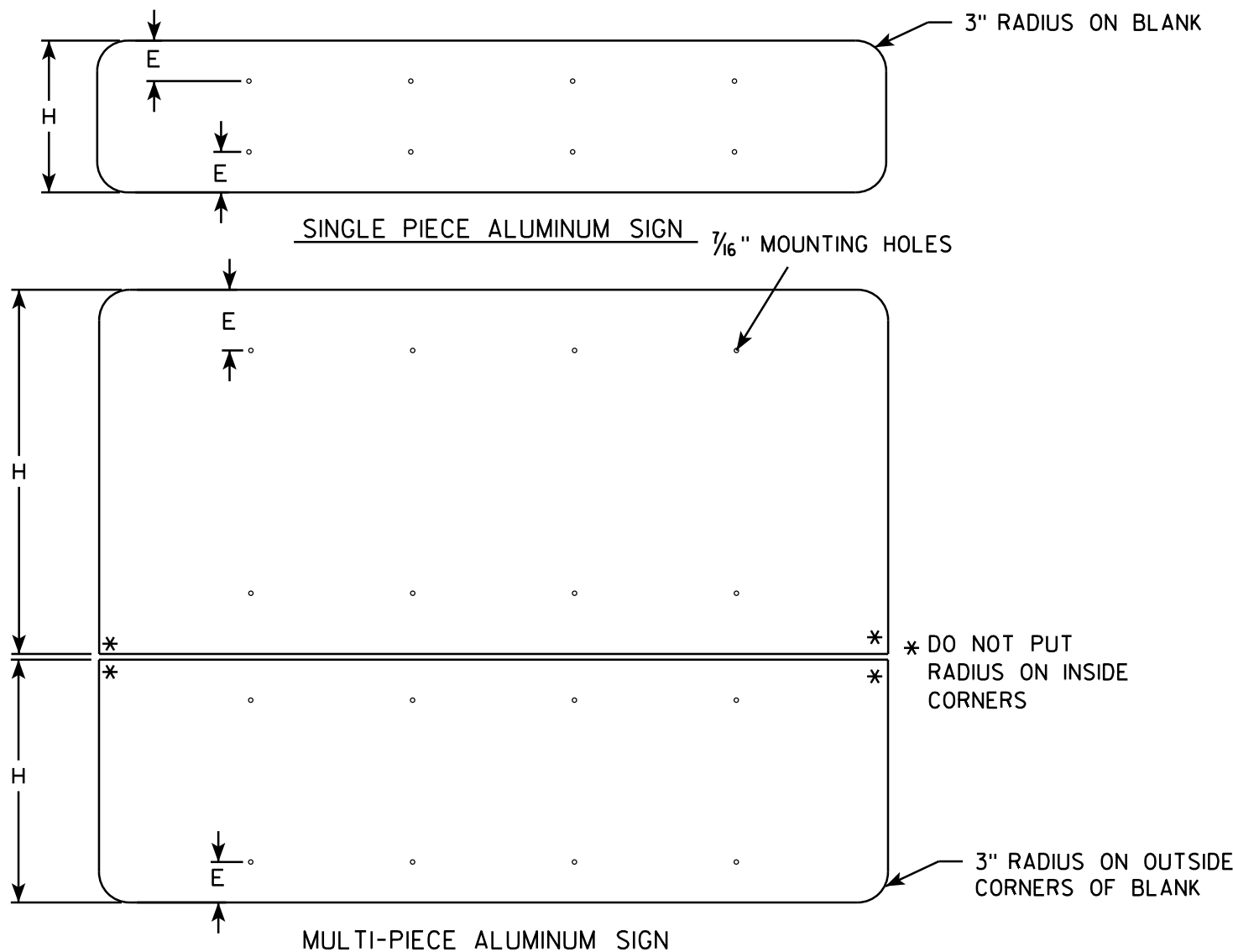
PROJECT NO:

HWY:

COUNTY:

SHEET NO: 80

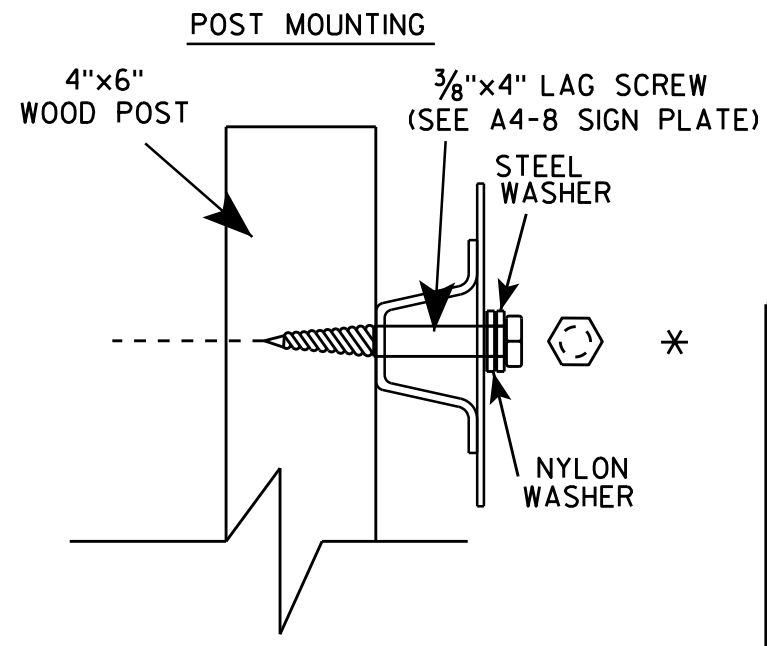
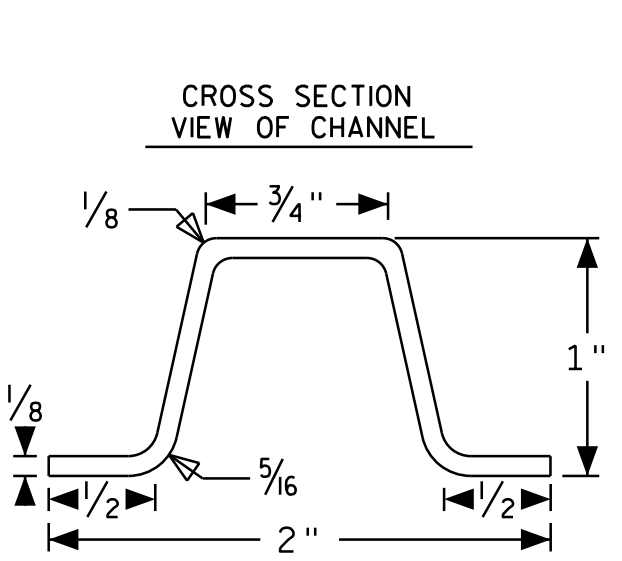
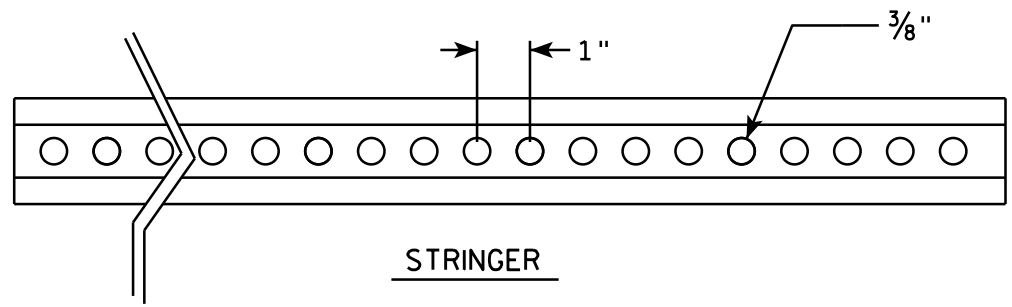
E



GENERAL NOTES

- ALL SIGNS OVER 60" IN WIDTH SHALL HAVE A 3" RADIUS ON THE OUTSIDE CORNERS OF THE ALUMINUM BLANK.
- MOUNTING HOLES SHALL BE 7/16" DIAMETER.
- SEE CHART FOR HOLE SPACING REQUIREMENTS
- FOR SIGN PANELS WITH DIMENSION (H) 36" AND OVER, DIMENSION E SHALL BE 6"
- FOR SIGN PANELS WITH DIMENSION (H) UNDER 36", DIMENSION E SHALL BE 4"
- SIGN STRINGER MATERIAL SHALL CONSIST OF STEEL CHANNEL POST SECTIONS, WEIGHING 1.12 LBS/FT IN ACCORDANCE WITH SECTION 633.2.1 OF THE STANDARD SPECIFICATIONS FOR HIGHWAY AND STRUCTURE CONSTRUCTION.
- SEE SIGN PLATE A4-8 FOR SIGN STRINGER BOLTING REQUIREMENTS.

SIGN WIDTH	STRINGER WIDTH	POSTS	HOLE SPACING	MOUNTING HOLES			
78"	72"	2	16"	15"	31"	47"	63"
84"	72"	2	17"	16 1/2"	33 1/2"	50 1/2"	67 1/2"
90"	72"	2	18"	18"	36"	54"	72"
96"	90"	2	19"	19 1/2"	38 1/2"	57 1/2"	76 1/2"
102"	90"	2	20"	21"	41"	61"	81"
108"	90"	2	21"	22 1/2"	43 1/2"	64 1/2"	85 1/2"
114"	108"	3	15"	12"	27"	42"	57" 72" 87" 102"
120"	108"	3	16"	12"	28"	44"	60" 76" 92" 108"
126"	108"	3	17"	12"	29"	46"	63" 80" 97" 114"
132"	126"	3	18"	12"	30"	48"	66" 84" 102" 120"
138"	126"	3	19"	12"	31"	50"	69" 88" 107" 126"
144"	126"	3	20"	12"	32"	52"	72" 92" 112" 132"



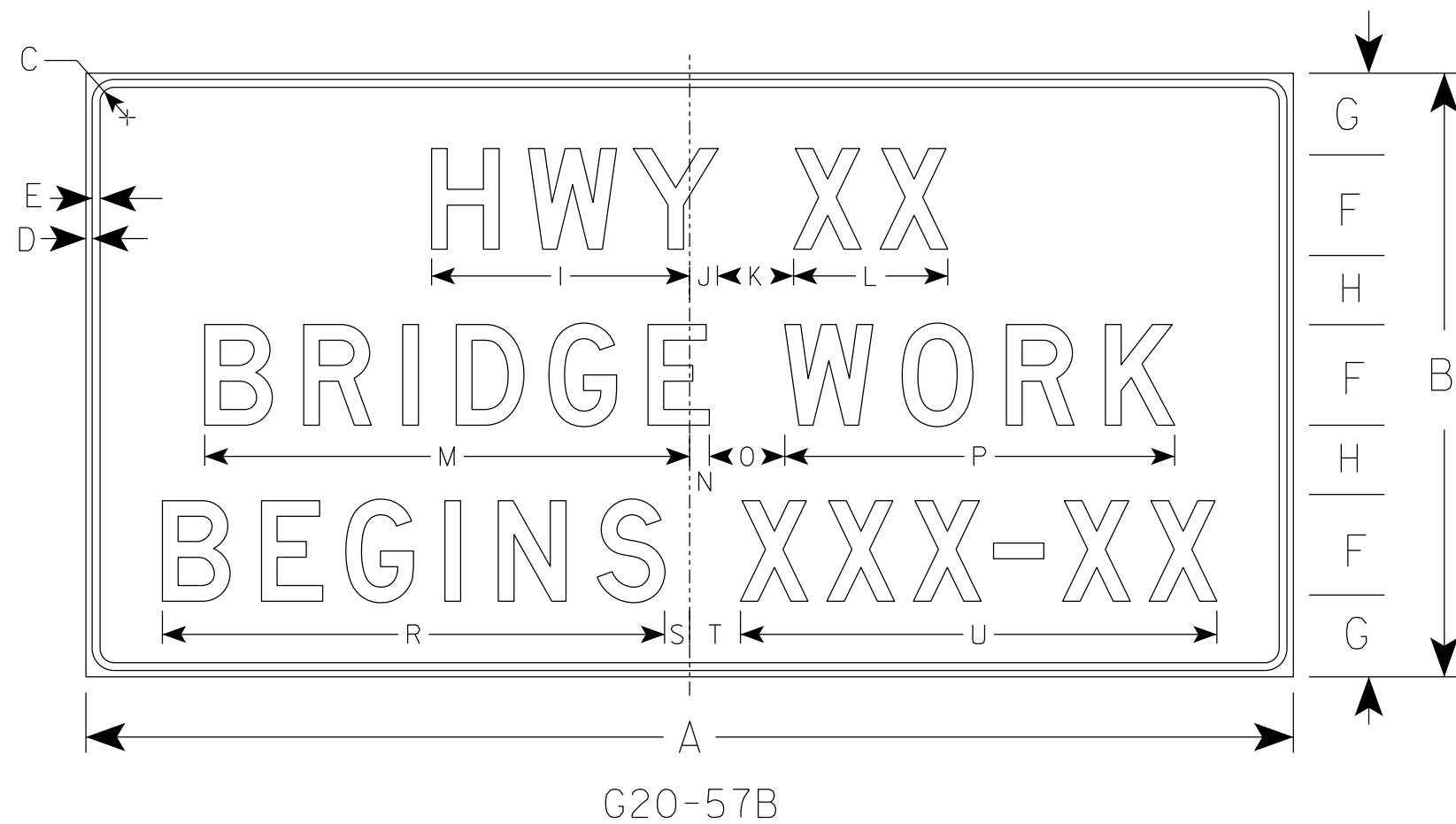
SIGN STRINGER MOUNTING REQUIREMENTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 4/26/16 PLATE No A4-18.1
81

7



NOTES

- 1. Sign is Type II - Type F Reflective
- 2. Color:
 - Background - Orange
 - Message - Black
- 3. Message Series - D
- 4. Substitute appropriate numeral and adjust spacing to achieve proper balance.

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																											
3	72	36	1 1/8	1/2	5/8	6	5	4	15 5/8	1 5/8	5	9 1/4	29 1/8	7/8	5	23 1/4		29 7/8	1 3/4	3 1/4	28 1/2					18.0	
4	96	48	2 1/4	3/4	1	8	6 1/2	5 1/2	20 5/8	2 1/4	6	12 1/4	38 1/2	1 1/2	6	31		39 1/4	2	4	37 7/8					32.0	
5																											

PROJECT NO:

HWY:

COUNTY:

SHEET NO: 82

E

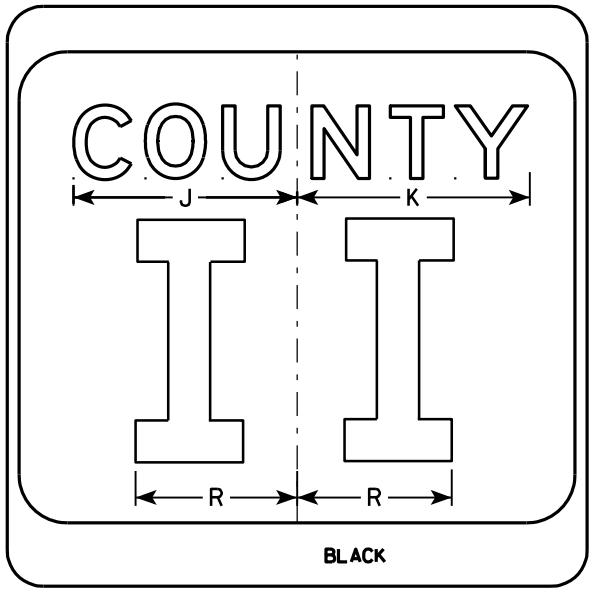
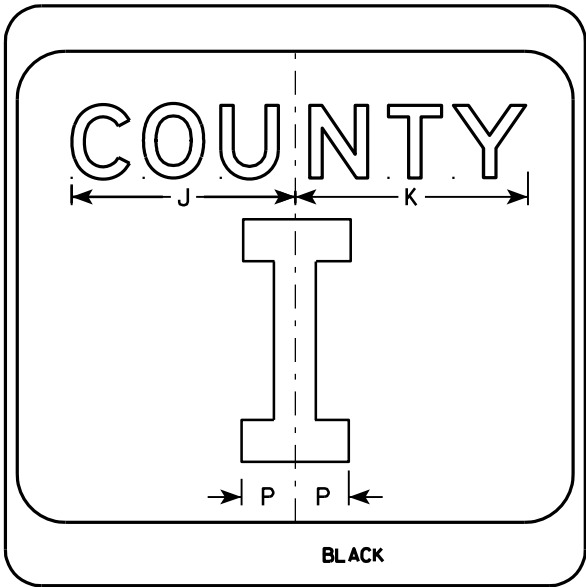
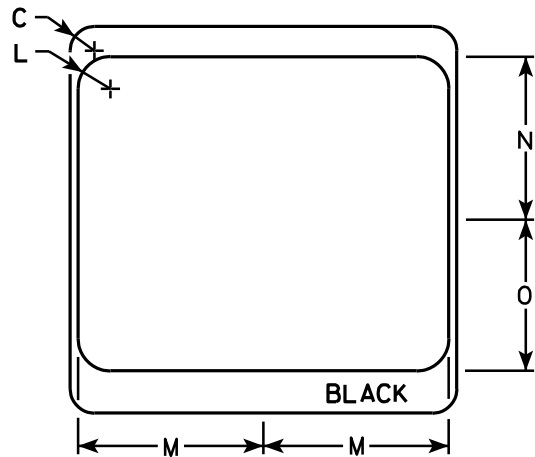
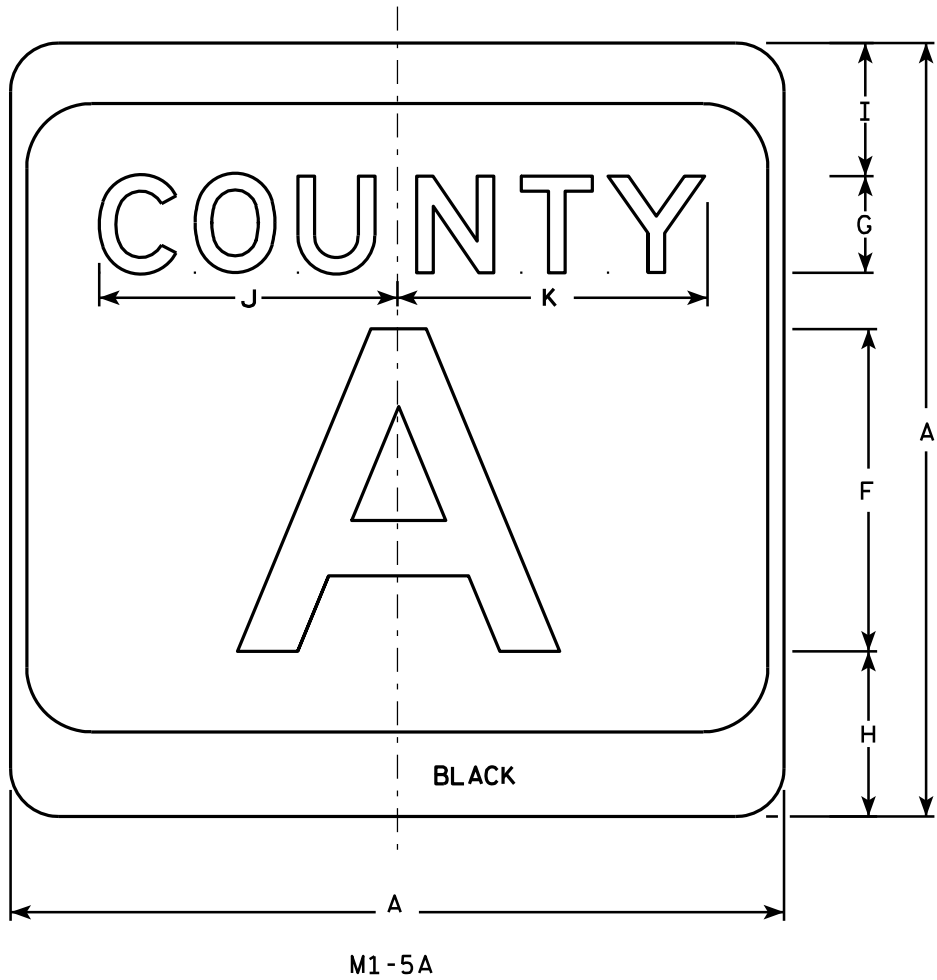
STANDARD SIGN
G20-57B

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 1/22/19 PLATE NO. G20-57B.1

7



NOTES

- 1. Sign is Type II - see Note 7 - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
- 2. Color:
Background - White & Black - See Note 7
Message - Black
- 3. Message Series - see Note 5
- 4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
- 5. Message Series E for 1 letter.
Message Series D for 2 letters unless message is too big then Series C.
Message Series C for 3 letters unless message is too big then Series B.
- 6. Substitute appropriate letters & optically center to achieve proper balance.
- 7. Permanent Signs
Background - Type H Reflective
Detour or temporary Signs
Background - Reflective

7

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

PROJECT NO:

HWY:

COUNTY:

SHEET NO: 83

E

CTH MARKER

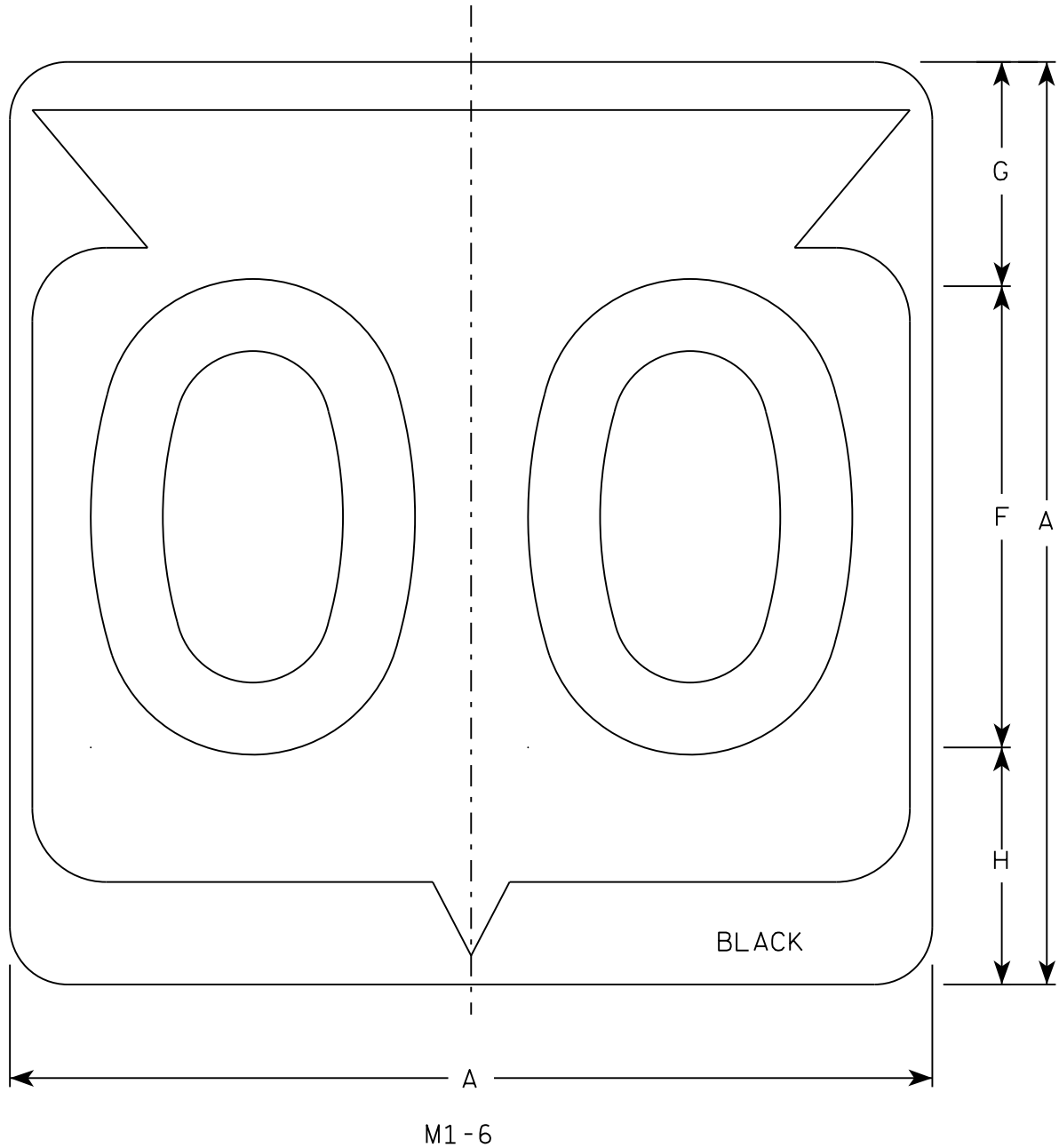
M1-5A FOR ASSEMBLIES

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

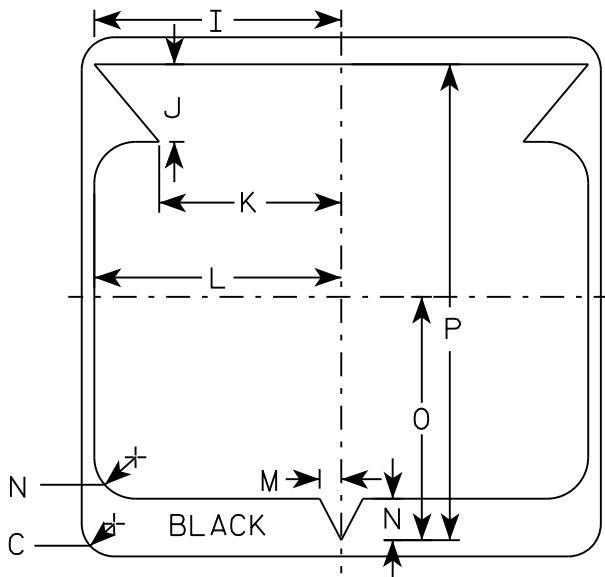
DATE 9/27/11 PLATE NO. M1-5A.8

7



NOTES

- 1. Sign is Type II - Type H Reflective
- 2. Color:
Background - White
Message - Black
- 3. Message Series - D except 3 number signs Series C
- 4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.



7

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			12	5 1/2	6 1/2	10 1/4	2 1/2	8 7/8	11 1/2	1	1 7/8	11 1/4	21 7/8											4.0
3	36		2 1/4			18	8 3/4	9 1/4	15 3/8	5 3/8	12 5/8	17 1/8	1 1/2	2 7/8	16 7/8	33											9.0
4	36		2 1/4			18	8 3/4	9 1/4	15 3/8	5 3/8	12 5/8	17 1/8	1 1/2	2 7/8	16 7/8	33											9.0
5	36		2 1/4			18	8 3/4	9 1/4	15 3/8	5 3/8	12 5/8	17 1/8	1 1/2	2 7/8	16 7/8	33											9.0

PROJECT NO:

HWY:

COUNTY:

SHEET NO: 84

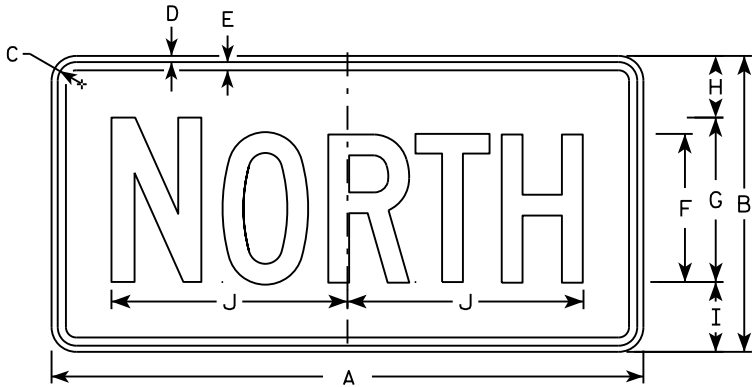
E

STATE ROUTE MARKER
M1-6 FOR ASSEMBLIES

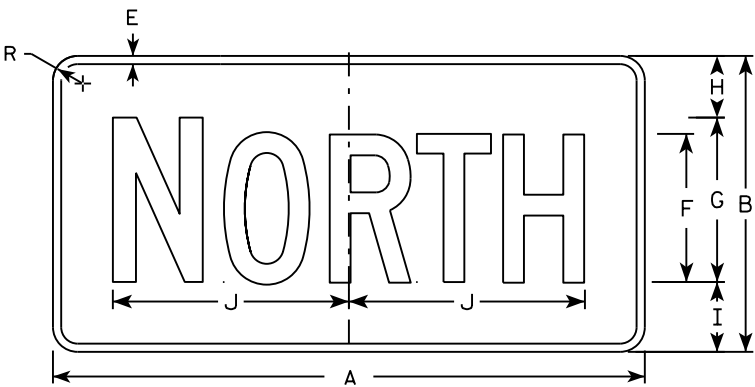
WISCONSIN DEPT OF TRANSPORTATION

APPROVED
Matthew R. Rauch
for State Traffic Engineer

DATE 3/16/18 PLATE NO. M1-6.10



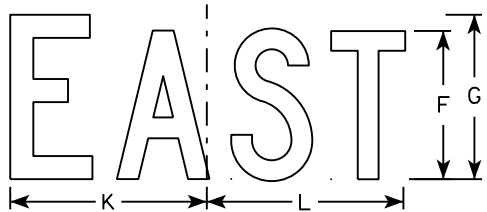
M3-1
MM3-1
MP3-1



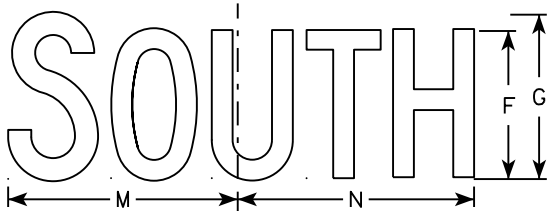
MB3-1
MK3-1
MN3-1



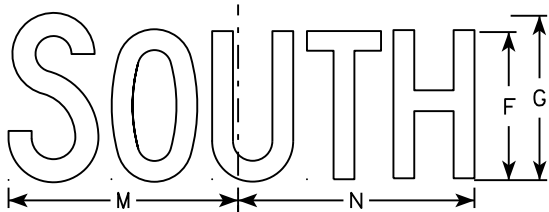
M3-2
MM3-2
MP3-2



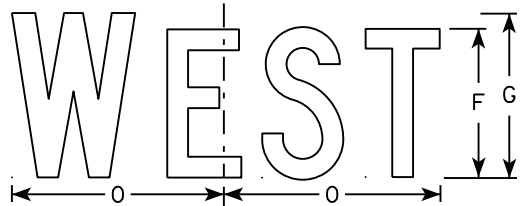
MB3-2
MK3-2
MN3-2



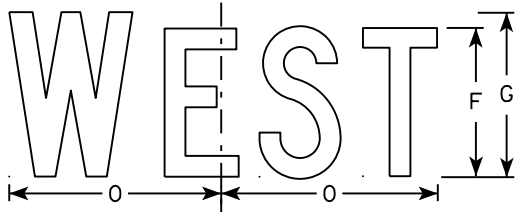
M3-3
MM3-3
MP3-3



MB3-3
MK3-3
MN3-3



M3-4
MM3-4
MP3-4



MB3-4
MK3-4
MN3-4

NOTES

1. All Signs Type II - Type H
2. Color:
Background - See note 5
Message - See note 5
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. M3-1 thru M3-4 Background - White
Message - Black
MB3-1 thru MB3-4 Background - Blue
Message - White
MK3-1 thru MK3-4 Background - Green
Message - White
MM3-1 thru MM3-4 Background - White
Message - Green
MN3-1 thru MN3-4 Background - Brown
Message - White
MP3-1 thru MP3-4 Background - White
Message - Blue
6. Note the first letter of each direction is larger than the remainder of the message.

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2	24	12	1 1/8	3/8	3/8	6	7	2 1/4	2 3/4	10 1/4	7 7/8	8 3/8	10 1/4	9 3/4	8 3/4			1 1/2									2.00
3	36	18	1 1/8	3/8	1/2	9	10	3 3/4	4 1/4	14 3/8	12	12 1/8	14	14 1/8	13			1 1/2									4.5
4	36	18	1 1/8	3/8	1/2	9	10	3 3/4	4 1/4	14 3/8	12	12 1/8	14	14 1/8	13			1 1/2									4.5
5	36	18	1 1/8	3/8	1/2	9	10	3 3/4	4 1/4	14 3/8	12	12 1/8	14	14 1/8	13			1 1/2									4.5

STANDARD SIGNS
M3-1 thru M3-4
SERIES

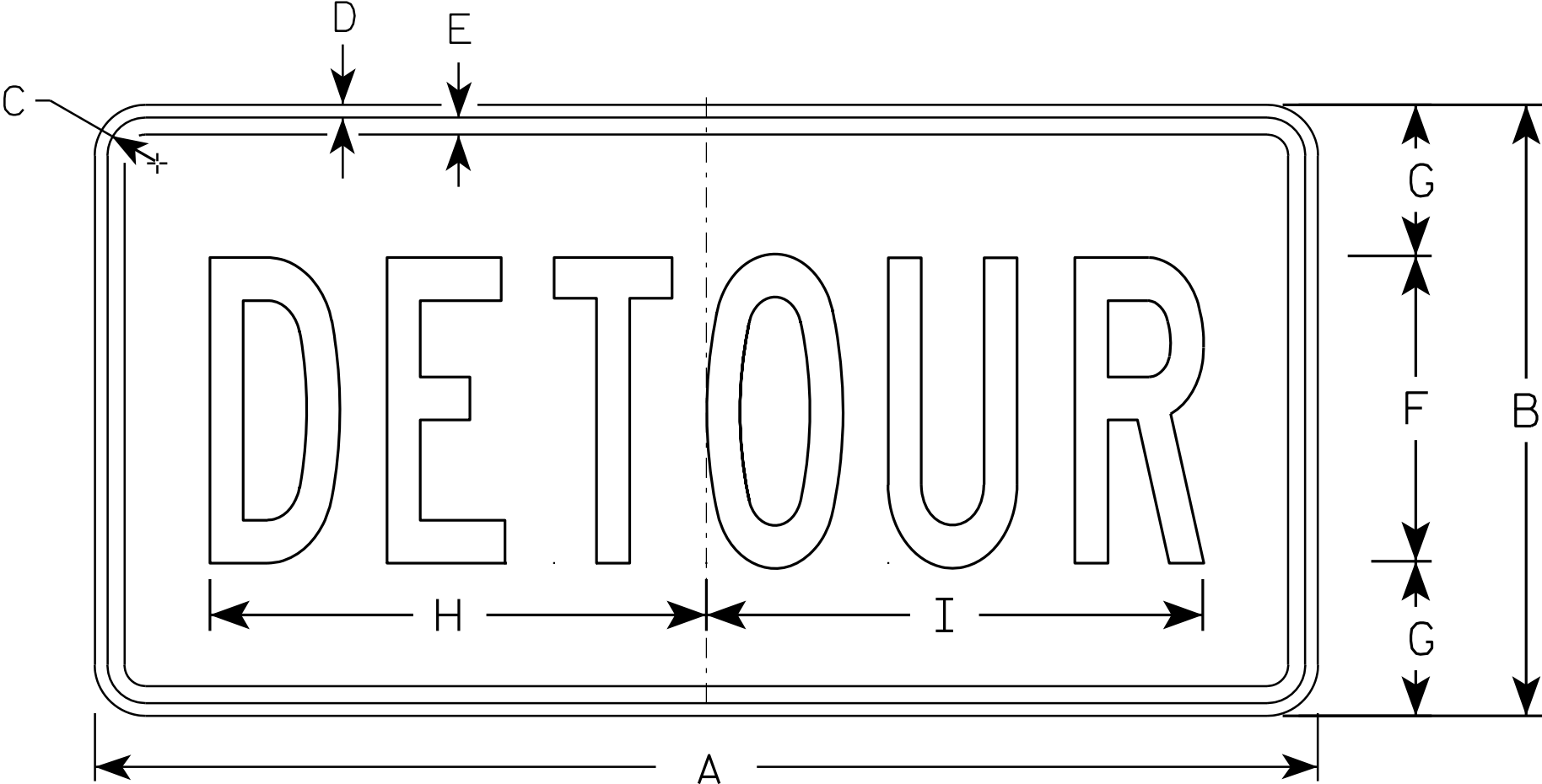
WISCONSIN DEPT OF TRANSPORTATION

APPROVED
Matthew R. Rauch
for State Traffic Engineer

DATE 10/15/15 PLATE NO. 85 M3-1.14

NOTES

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



M4 - 8

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

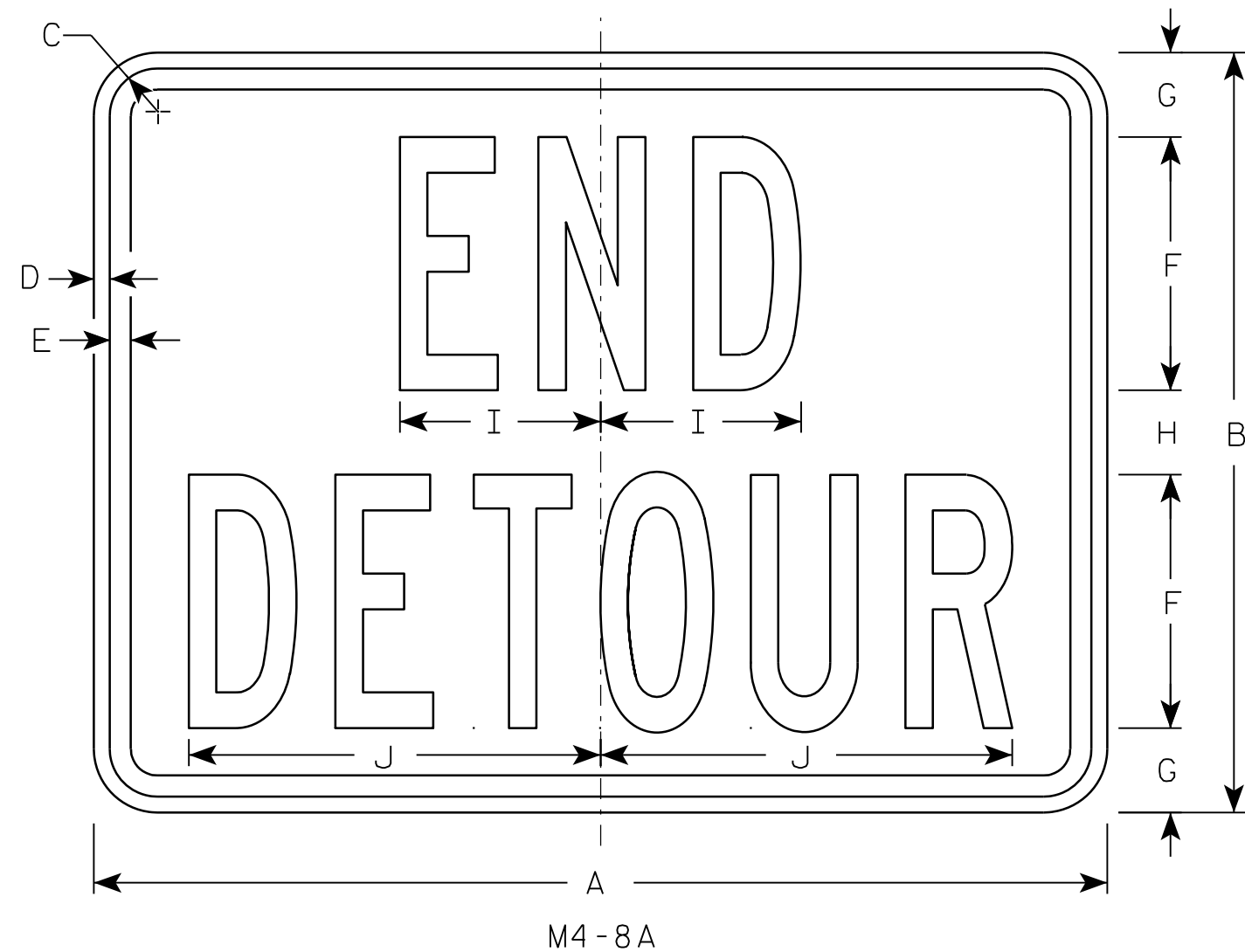
STANDARD SIGN
M4 - 8

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

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

7



NOTES

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

7

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

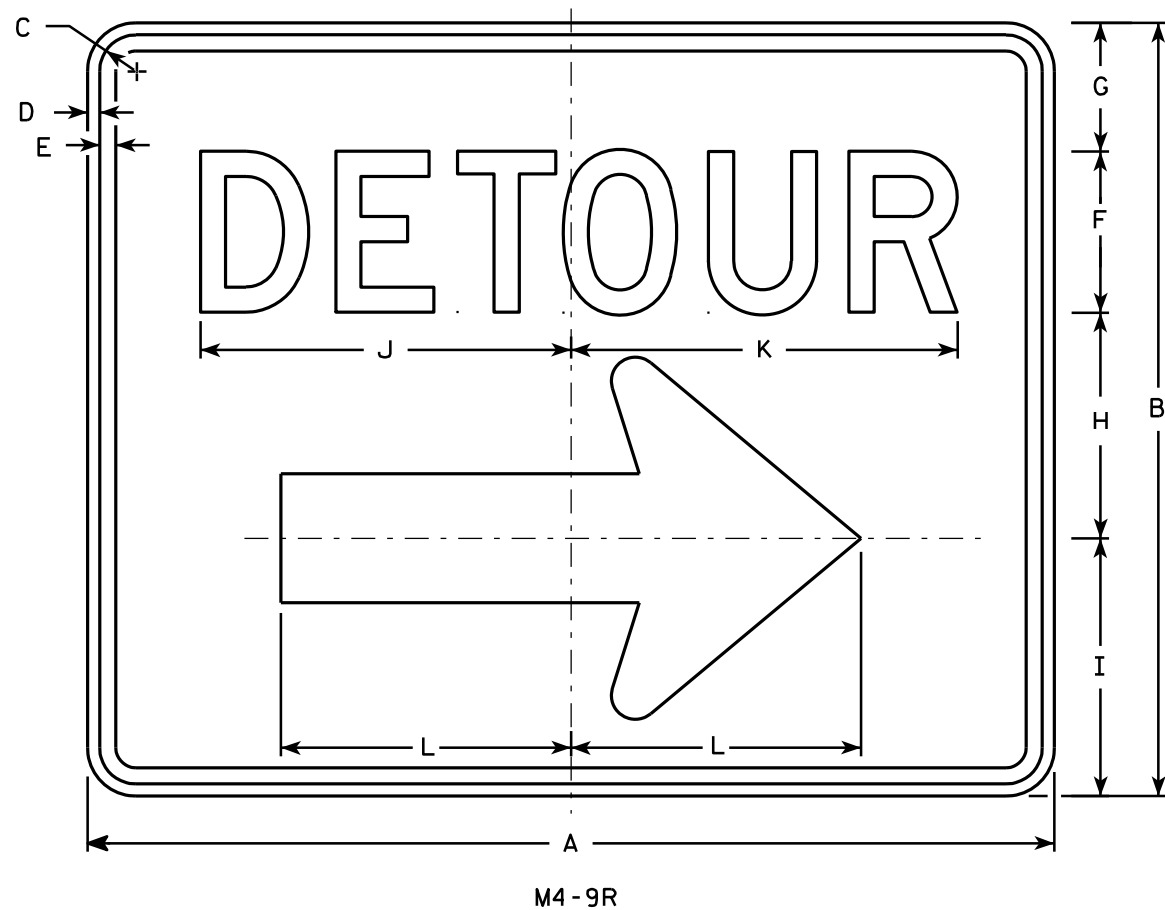
PROJECT NO:	HWY:	COUNTY:		SHEET NO: 87	E
-------------	------	---------	--	--------------	---

STANDARD SIGN
M4-8A

WISCONSIN DEPT OF TRANSPORTATION

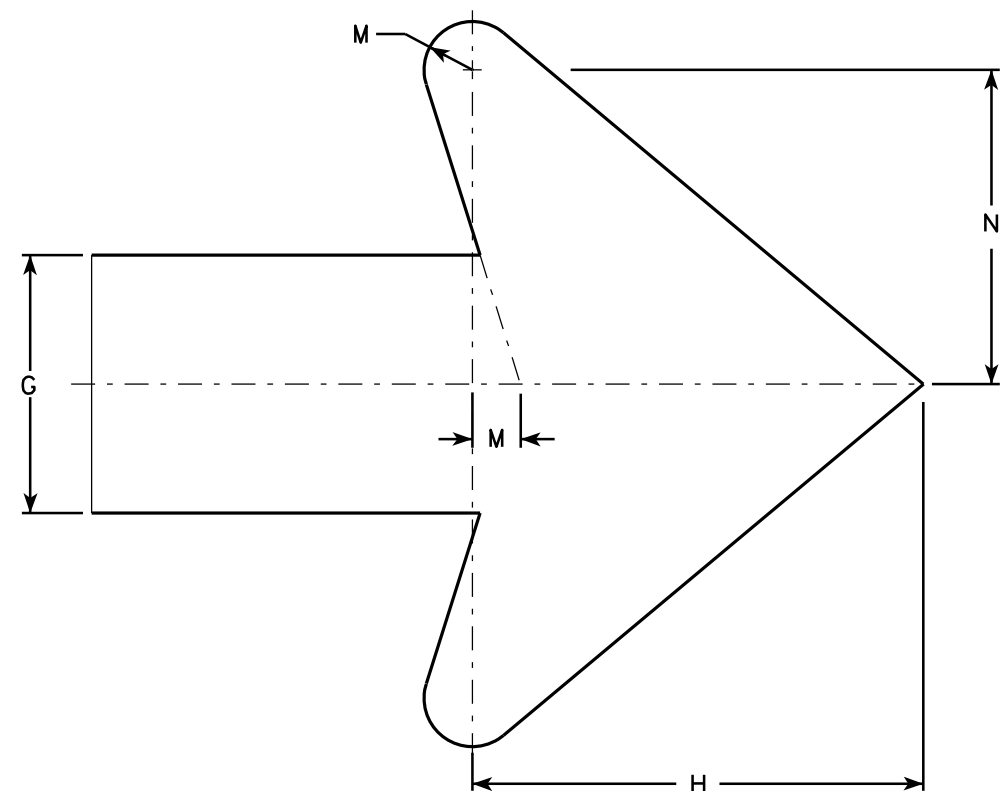
APPROVED *Matthew R. Rauch*
for State Traffic Engineer

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



NOTES

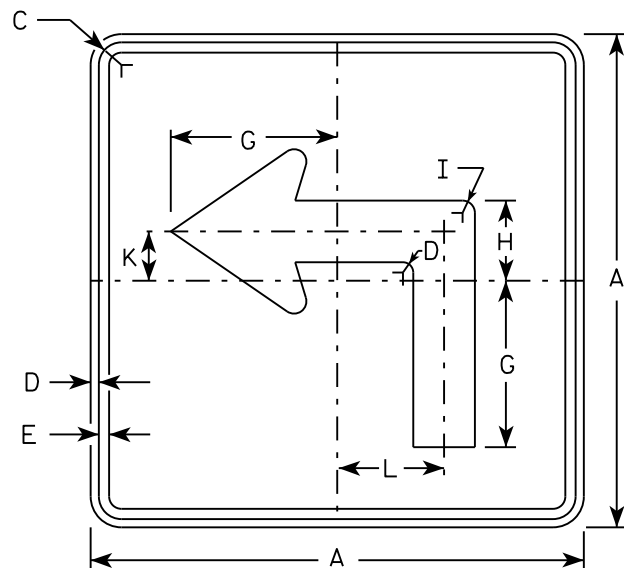
1. Sign is Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
Background - Orange
Message - Black
3. Message Series - D
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. M4-9L is the same as M4-9R except the arrow is reversed.



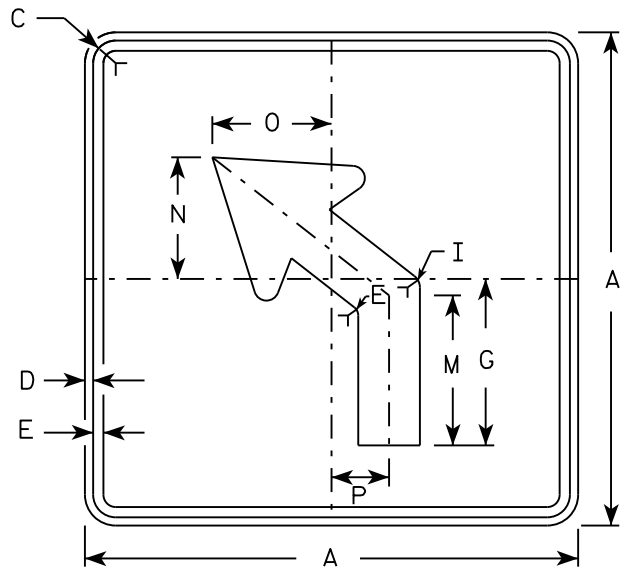
Arrow Detail

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2	30	24	1 1/8	3/8	1/2	5	4	7	8	11 1/2	12	9	3/4	4 7/8													5.00
3	30	24	1 1/8	3/8	1/2	5	4	7	8	11 1/2	12	9	3/4	4 7/8													5.00
4	48	36	1 3/8	1/2	5/8	8	6	10 1/2	11 5/8	20 5/8	20 1/2	13 1/4	1 1/8	6 7/8													12.0
5	48	36	1 3/8	1/2	5/8	8	6	10 1/2	11 5/8	20 5/8	20 1/2	13 1/4	1 1/8	6 7/8													12.0

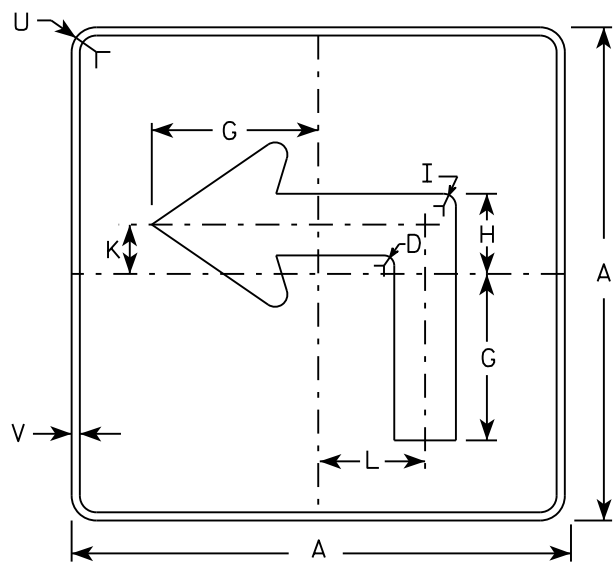
PROJECT NO:	HWY:	COUNTY:	SHEET NO: 88	E
-------------	------	---------	--------------	---



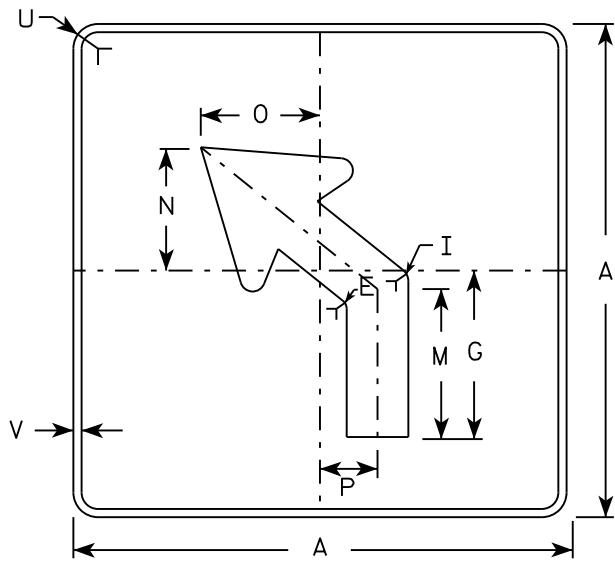
M5-1L
MM5-1L
M05-1L
MP5-1L



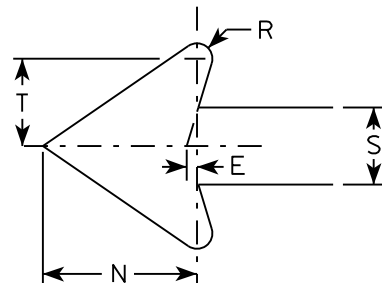
M5-2L
MM5-2L
M05-2L
MP5-2L



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



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



NOTES

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

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

PROJECT NO:

HWY:

COUNTY:

SHEET NO:

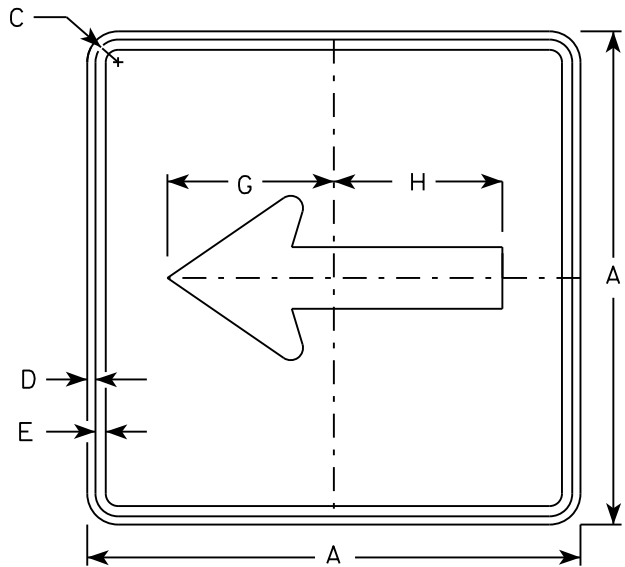
E

STANDARD SIGN
M5-1 & M5-2

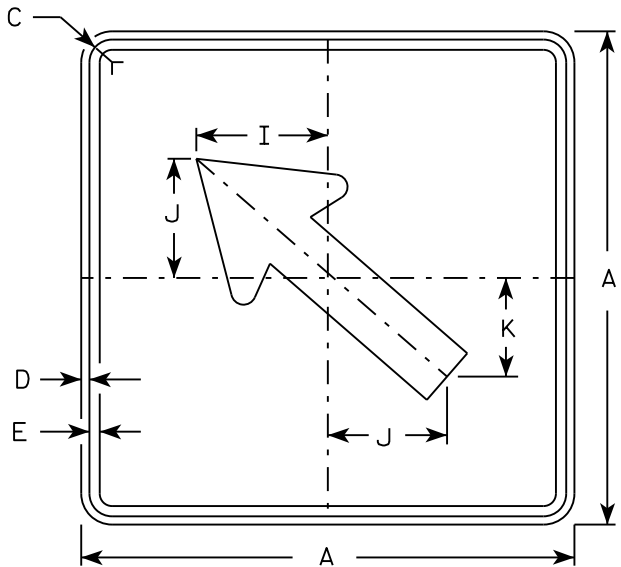
WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

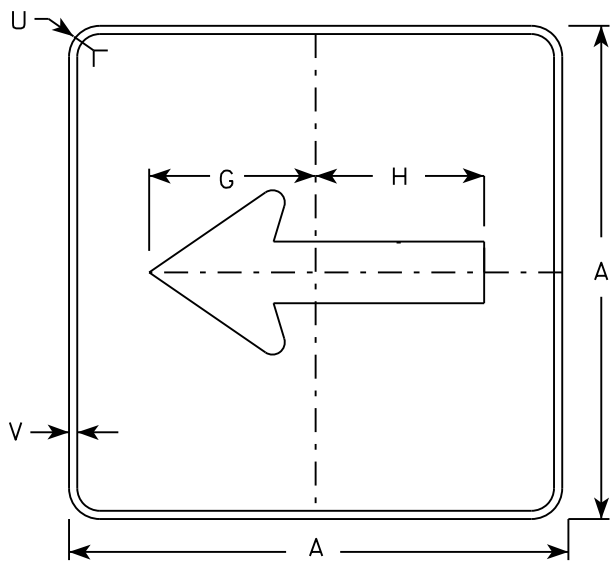
DATE 10/15/15 PLATE 89 M5-1.13



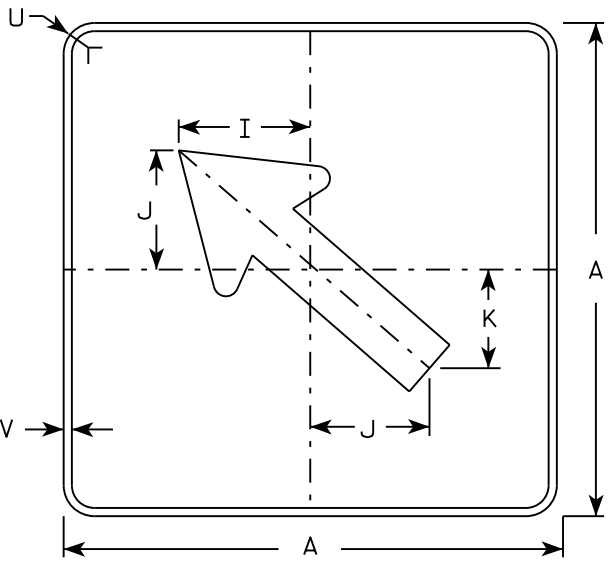
M6 - 1
MM6 - 1
M06 - 1
MP6 - 1



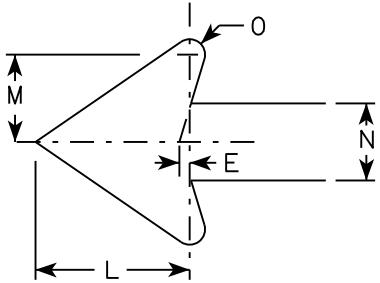
M6 - 2
MM6 - 2
M06 - 2
MP6 - 2



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



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



NOTES

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

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

PROJECT NO:

HWY:

COUNTY:

SHEET NO:

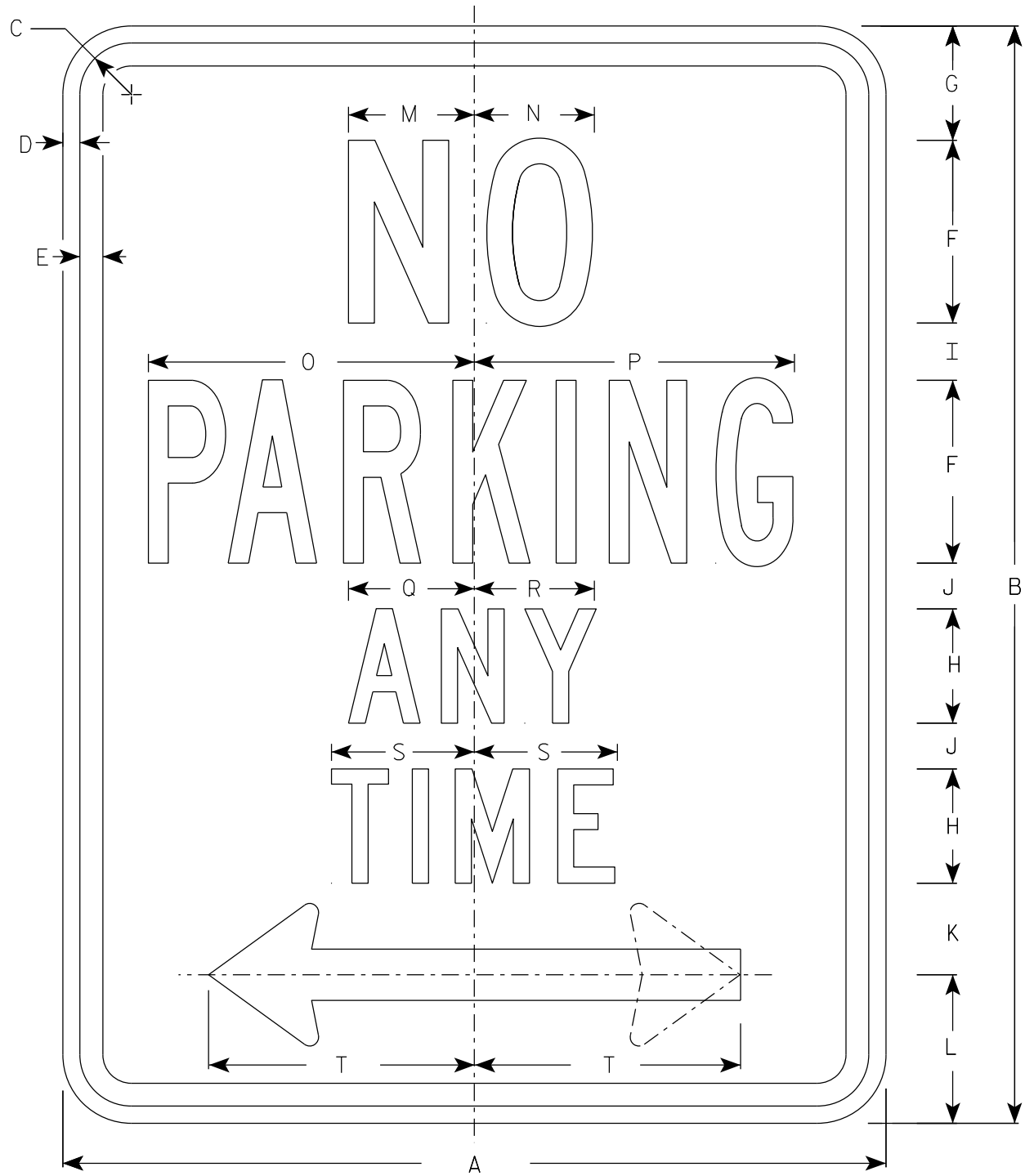
E

STANDARD SIGN
M6 - 1 & M6 - 2
SERIES

WISCONSIN DEPT OF TRANSPORTATION

APPROVED
Matthew R. Rauch
for State Traffic Engineer

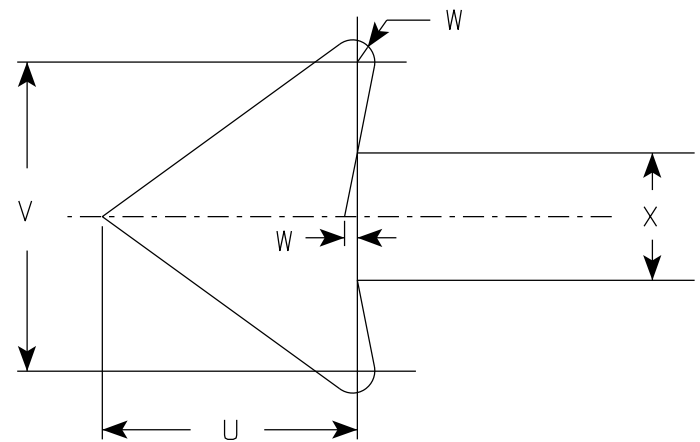
DATE 10/15/15 PLAT 90 M6-1.15



R7-1

NOTES

1. Sign is Type II - Type H Reflective
2. Color:
Background - White
Message - Red
3. Message Series - See Note 5
4. Lines 1, 3 and 4 are series C, line 2 is series B.
5. R7-1D (double arrow)
R7-1L (left arrow)
R7-1R (right arrow)



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	12	18	1 1/8	3/8	3/8	3	1 7/8	2	7/8	5/8	1 1/2	2 1/2	2	2	4 7/8	4 7/8	2 1/4	2 1/8	2 1/2	3 7/8	1 1/2	1 3/4	1/8	3/4			1.5
2S	18	24	1 1/8	3/8	1/2	4	2 1/2	2 1/2	1 1/4	1	2	3 1/4	2 3/4	2 5/8	7 1/8	7	2 3/4	2 5/8	3 1/8	5 7/8	2 1/4	2 5/8	1/4	1 1/8			3.0
2M	24	30	1 1/8	3/8	1/2	5	3	3	2	1 1/4	2 1/2	4	3 1/4	3 3/8	9 1/4	9 1/4	3 1/4	3 1/4	3 3/4	7 3/4	3	3 1/2	1/4	1 1/2			5.0
3	24	30	1 1/8	3/8	1/2	5	3	3	2	1 1/4	2 1/2	4	3 1/4	3 3/8	9 1/4	9 1/4	3 1/4	3 1/4	3 3/4	7 3/4	3	3 1/2	1/4	1 1/2			5.0
4																											
5																											

STANDARD SIGN

R7 - 1

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
For State Traffic Engineer

DATE 3/31/2021 PLATE NO. R7-1.10

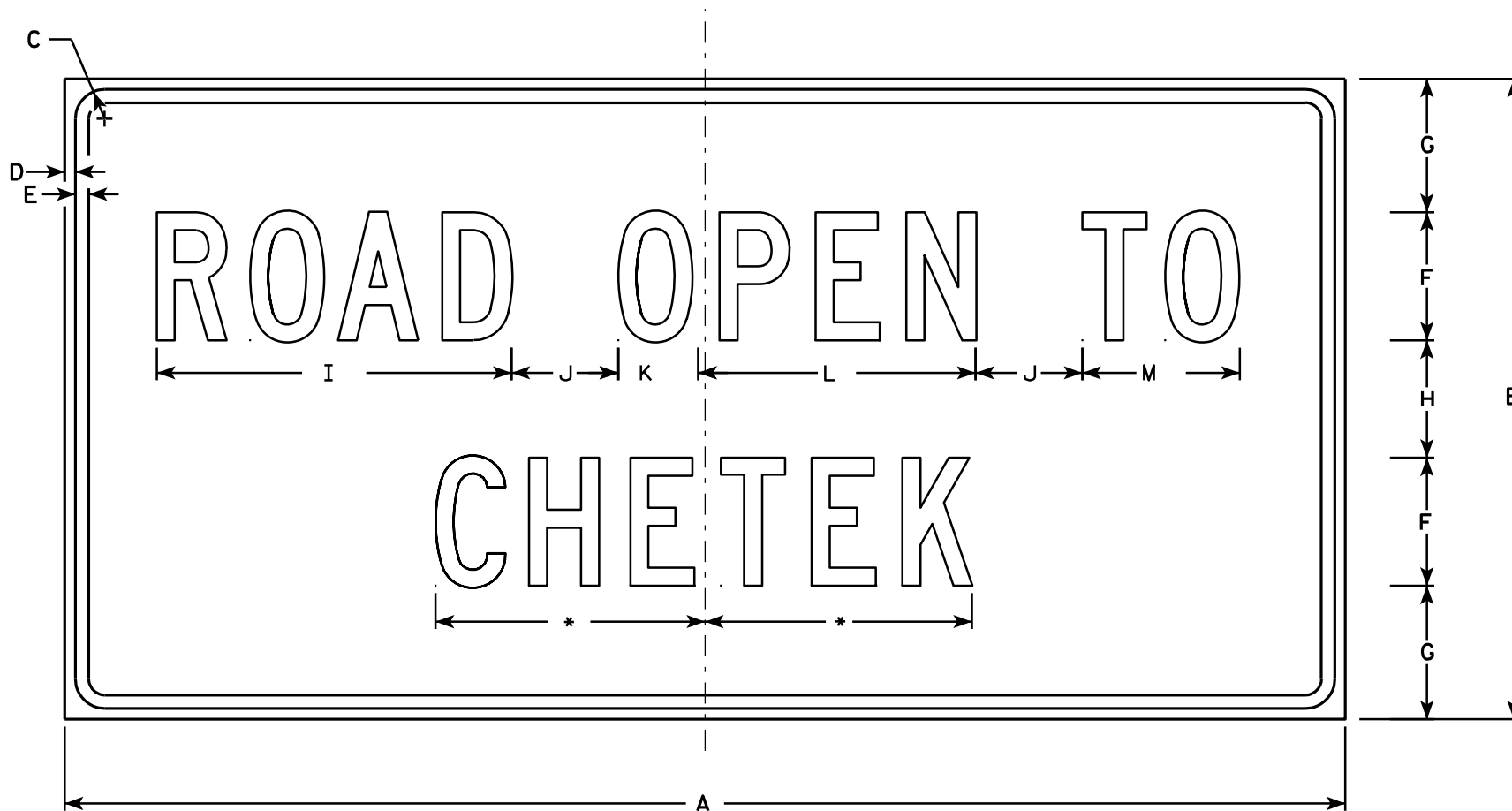
PROJECT NO:

HWY:

COUNTY:

SHEET NO: 91

E



R10-61

*See note 5

NOTES

1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
Background - White
Message - Black
3. Message Series - 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 message and optically balance.

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	O	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	36	24	1 3⁄8	1⁄2	5⁄8	4	5 1⁄2	5	10 3⁄4	2	2 1⁄8	8 3⁄8	4 5⁄8														6.0
2S	60	30	1 3⁄8	1⁄2	5⁄8	6	6 1⁄4	5 1⁄2	16 5⁄8	5	3 3⁄4	13	7 3⁄8														12.5
2M	60	30	1 3⁄8	1⁄2	5⁄8	6	6 1⁄4	5 1⁄2	16 5⁄8	5	3 3⁄4	13	7 3⁄8														12.5
3																											
4																											
5																											

STANDARD SIGN	
R10-61	
WISCONSIN DEPT OF TRANSPORTATION	
APPROVED	<i>Matthew R. Rauch</i> For State Traffic Engineer
DATE 4/4/11	PLATE NO. R10-61.5

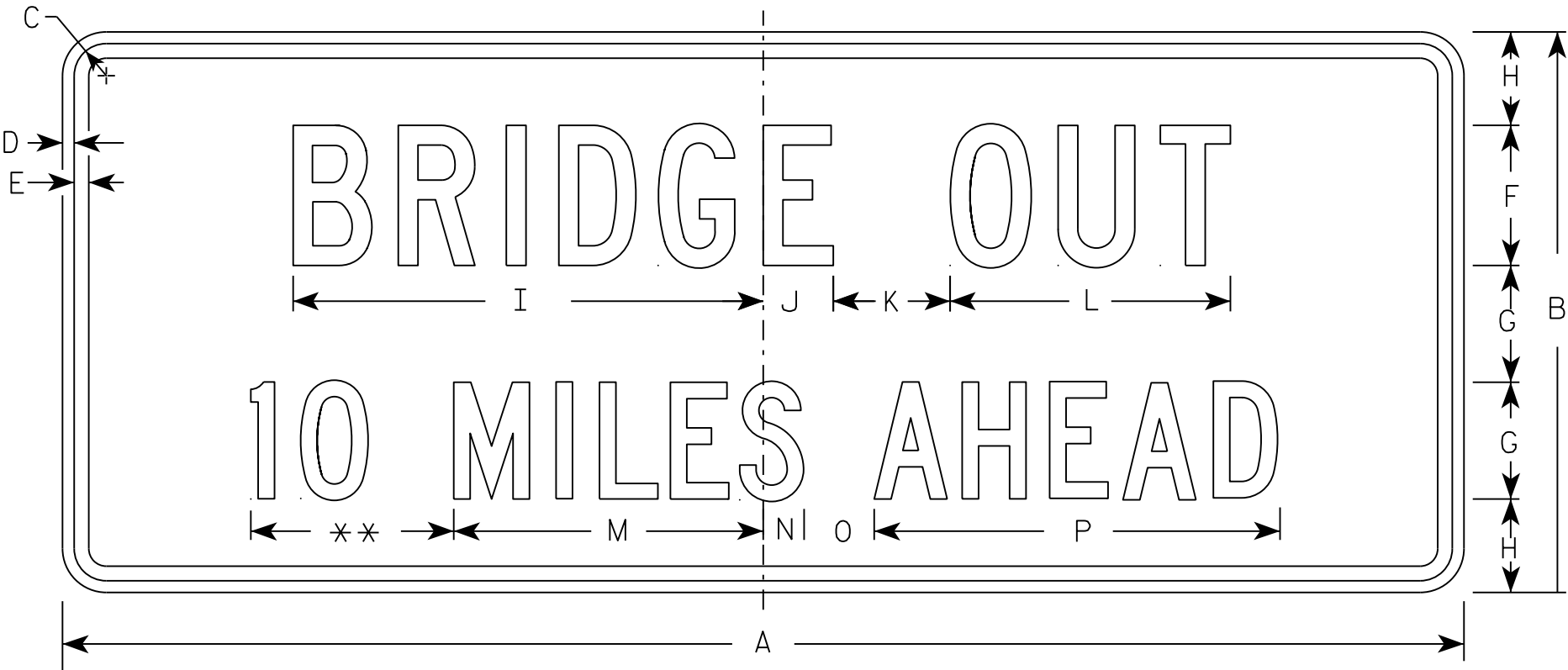
PROJECT NO:	HWY:	COUNTY:	SHEET NO: 92	E
-------------	------	---------	--------------	---

NOTES

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

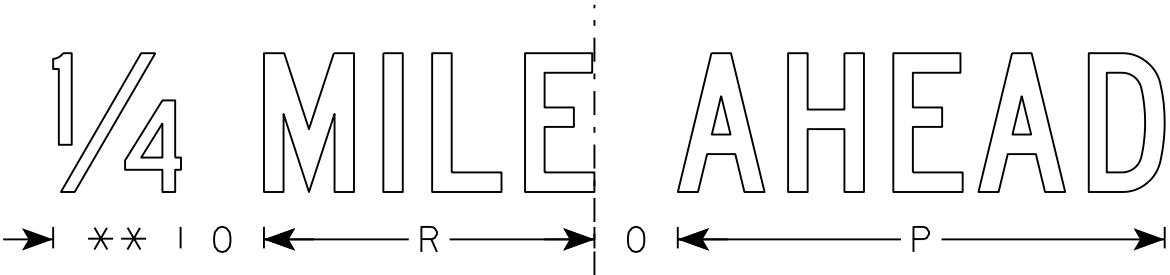
Background - White

Message - Black
3. Message Series - C
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. Substitute appropriate numerals to nearest quarter mile and optically adjust spacing to achieve proper balance.



R11-3C

** See Note 5



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

STANDARD SIGN
R11-3C

WISCONSIN DEPT OF TRANSPORTATION

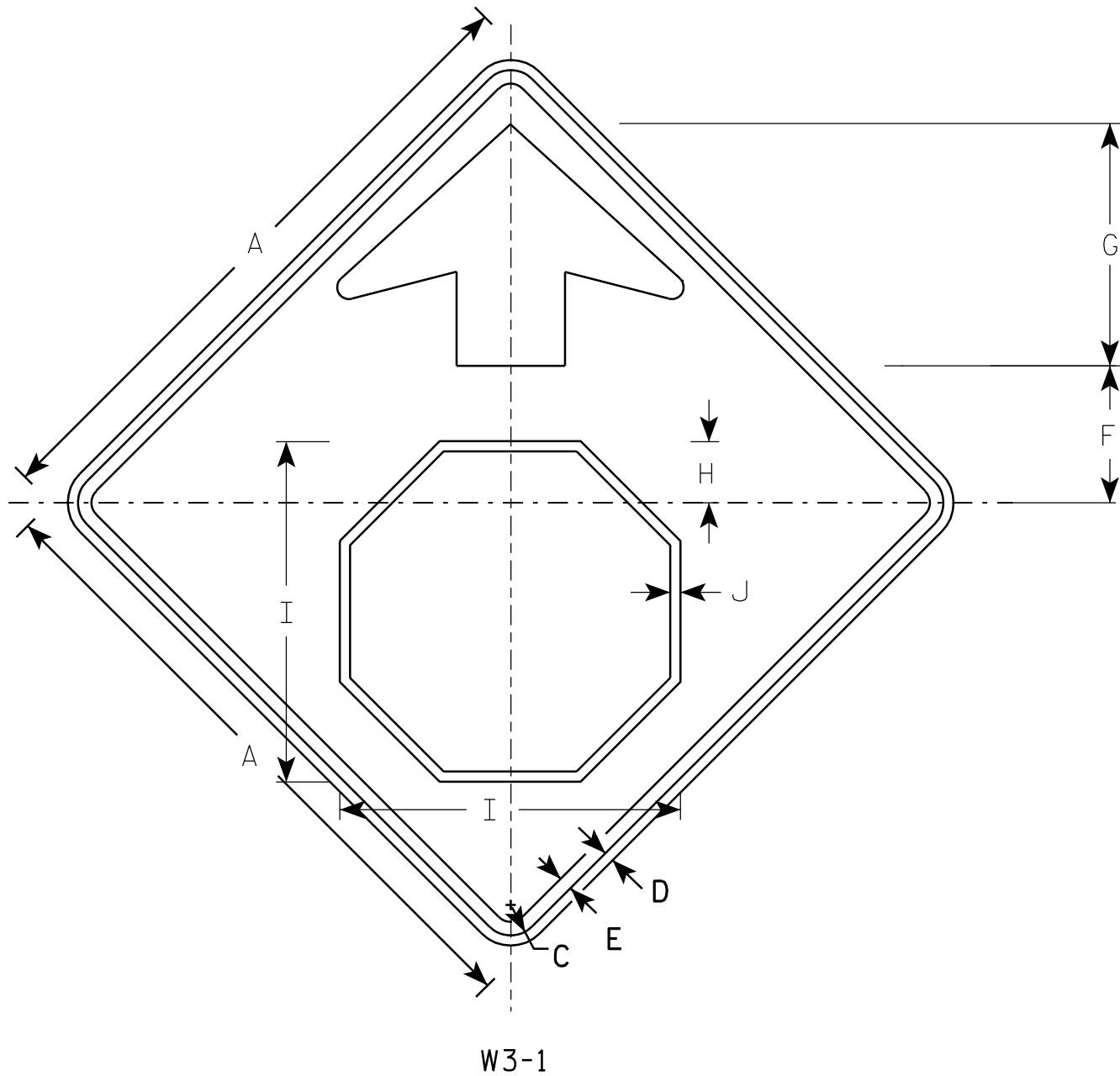
APPROVED
Matthew R. Rauch
for State Traffic Engineer

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

PROJECT NO:

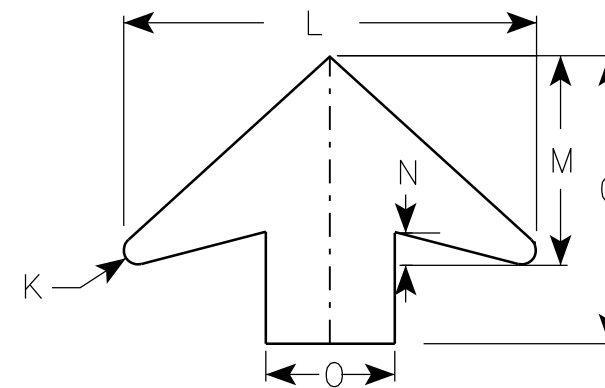
SHEET NO: 93

E



NOTES

1. All Signs Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
Background - YELLOW
Arrow & Border - BLACK
Stop Symbol - WHITE BORDER ON RED BACKGROUND



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	30		1 3/8	1/2	5/8	6 1/4	11 1/4	2 7/8	15 3/4	1/2	1/2	16	8	1 1/4	5												6.25
2S	36		1 5/8	5/8	3/4	7 1/2	13 1/2	3 1/2	19	5/8	5/8	19 1/4	9 3/4	1 5/8	6												9.0
2M	36		1 5/8	5/8	3/4	7 1/2	13 1/2	3 1/2	19	5/8	5/8	19 1/4	9 3/4	1 5/8	6												9.0
3	36		1 5/8	5/8	3/4	7 1/2	13 1/2	3 1/2	19	5/8	5/8	19 1/4	9 3/4	1 5/8	6												9.0
4	48		2 1/4	3/4	1	10	17 7/8	4 1/2	25 1/8	3/4	7/8	25 5/8	13	2	8												16.0
5	48		2 1/4	3/4	1	10	17 7/8	4 1/2	25 1/8	3/4	7/8	25 5/8	13	2	8												16.0

PROJECT NO:

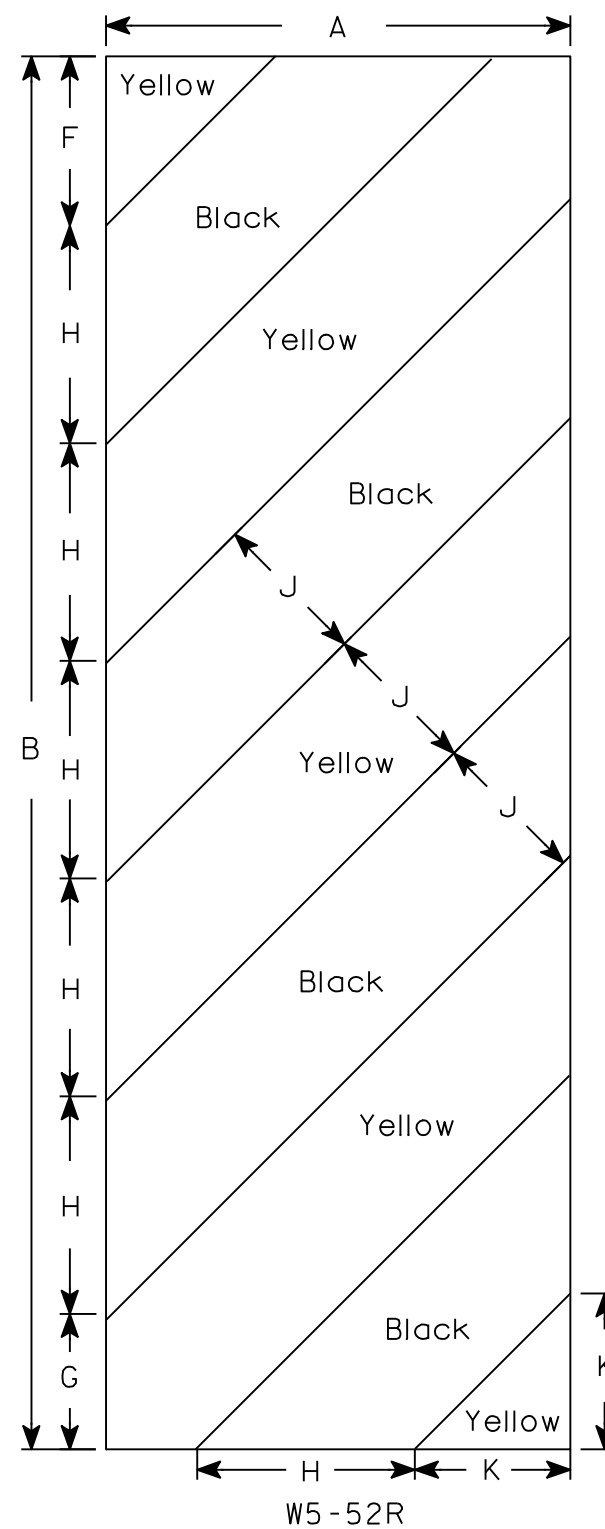
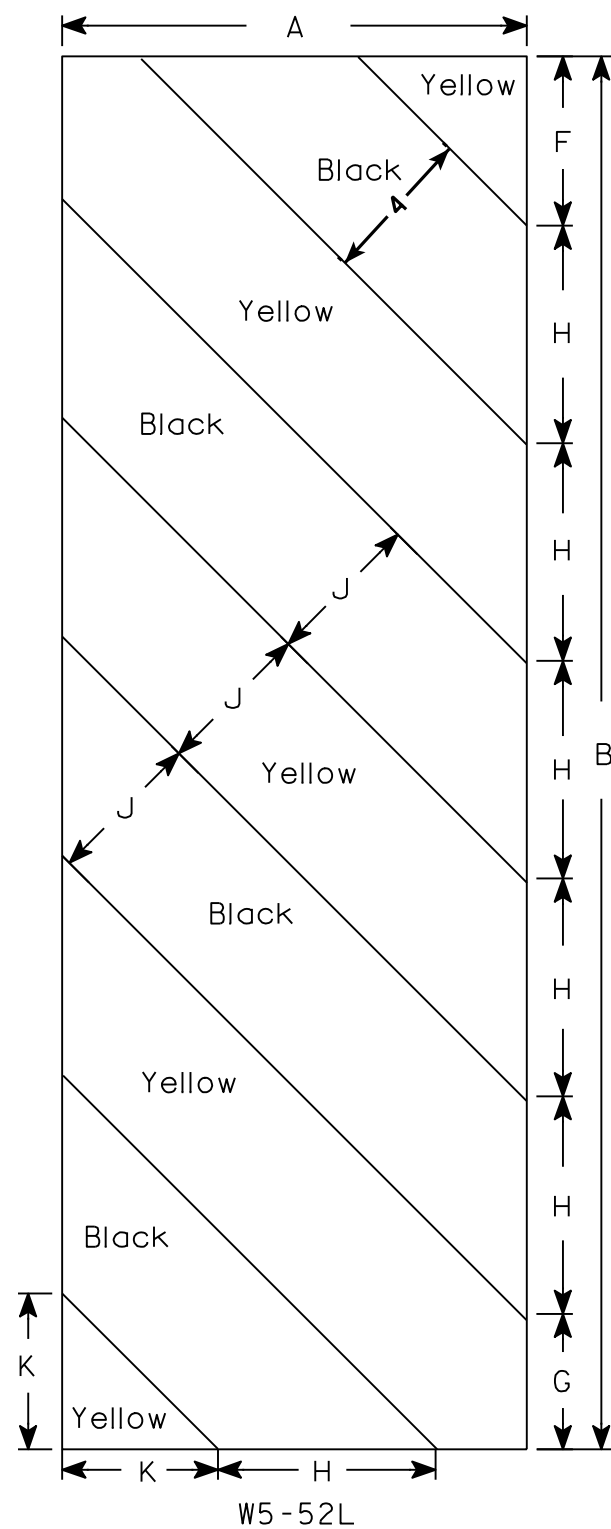
STANDARD SIGN
W3-1

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer
DATE 6/7/10 PLATE NO. W3-1.12

SHEET NO: 94

E



NOTES

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

[illegible]

STANDARD SIGN
W5-52L & W5-52R

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer
DATE 5/29/12 PLATE NO. W5-52.9

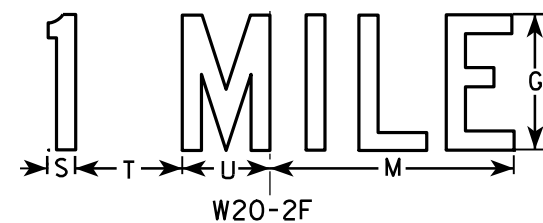
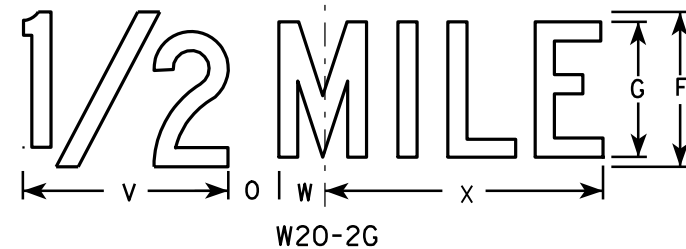
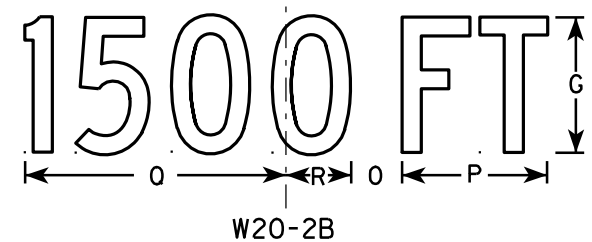
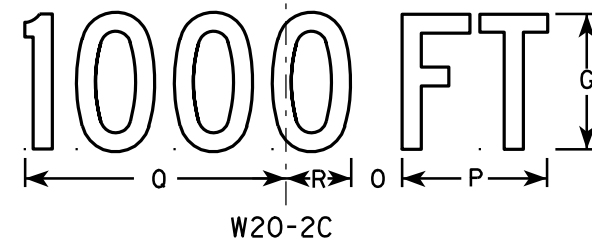
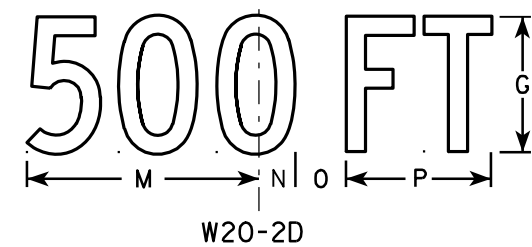
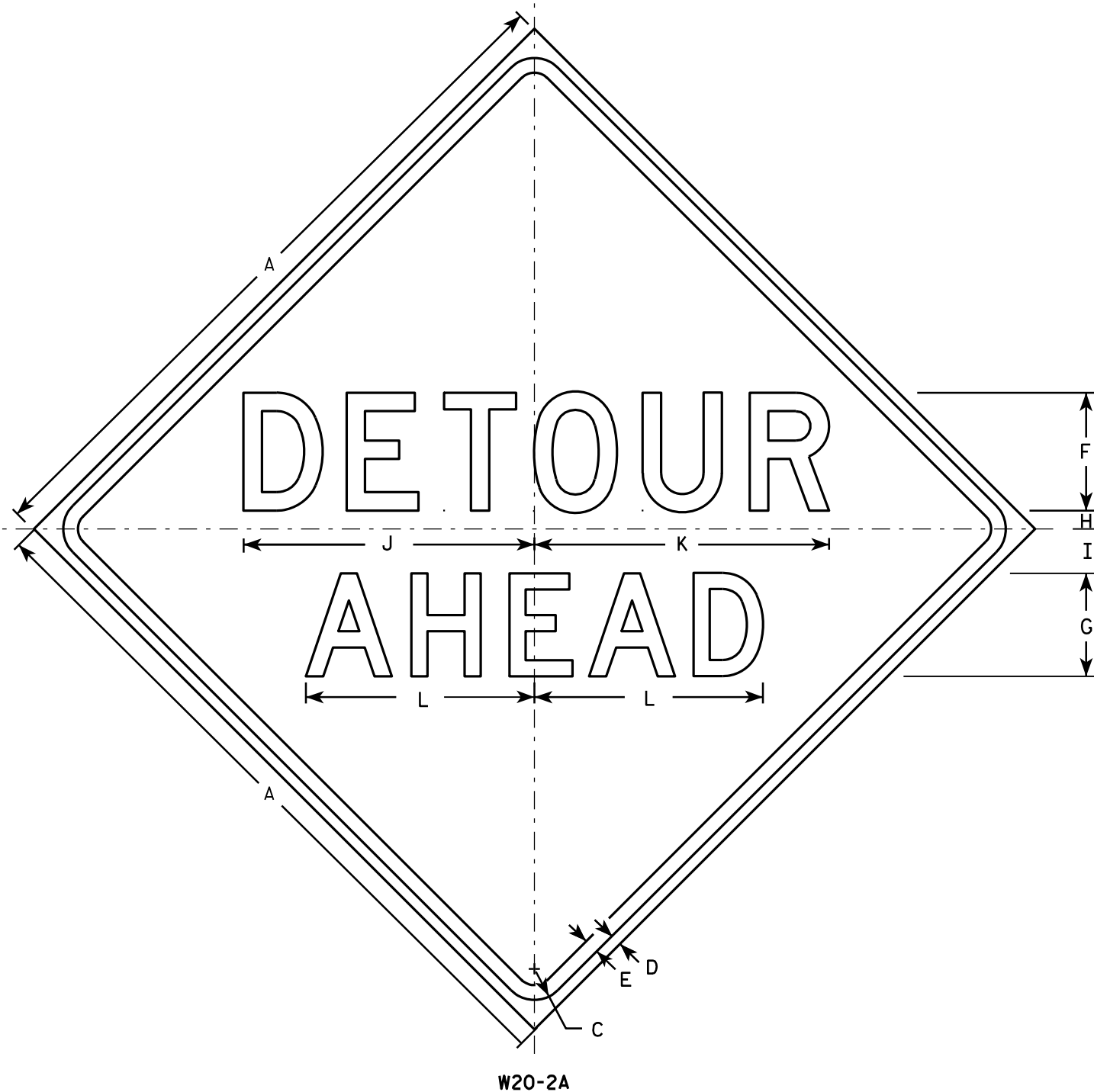
PROJECT NO:

HWY:

COUNTY:

SHEET NO: 95

E



NOTES

- Sign is Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
- 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		1 5/8	5/8	3/4	6	5	1	2 1/4	14 3/4	15	11 5/8	9	1 3/8	1 7/8	5 5/8	10 1/8	2 1/2	1 1/8	4 1/2	3 1/2	8	1 3/4	10 3/4			9.0
2S	48		2 1/4	3/4	1	8	7	1 1/4	3	19 3/4	20	15 1/2	12	1 7/8	2 5/8	7 1/2	13 1/2	3 3/8	1 1/2	6	4 5/8	10 5/8	2 3/8	14 3/8			16.0
2M	48		2 1/4	3/4	1	8	7	1 1/4	3	19 3/4	20	15 1/2	12	1 7/8	2 5/8	7 1/2	13 1/2	3 3/8	1 1/2	6	4 5/8	10 5/8	2 3/8	14 3/8			16.0
3	48		2 1/4	3/4	1	8	7	1 1/4	3	19 3/4	20	15 1/2	12	1 7/8	2 5/8	7 1/2	13 1/2	3 3/8	1 1/2	6	4 5/8	10 5/8	2 3/8	14 3/8			16.0
4	48		2 1/4	3/4	1	8	7	1 1/4	3	19 3/4	20	15 1/2	12	1 7/8	2 5/8	7 1/2	13 1/2	3 3/8	1 1/2	6	4 5/8	10 5/8	2 3/8	14 3/8			16.0
5	48		2 1/4	3/4	1	8	7	1 1/4	3	19 3/4	20	15 1/2	12	1 7/8	2 5/8	7 1/2	13 1/2	3 3/8	1 1/2	6	4 5/8	10 5/8	2 3/8	14 3/8			16.0

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

WISCONSIN DEPT OF TRANSPORTATION
APPROVED *Matthew R. Rauch* for State Traffic Engineer
DATE 3/18/11 PLATE NO. W20-2.6

LIST OF DRAWINGS

1. GENERAL PLAN
2. CROSS SECTION & QUANTITIES
3. SUBSURFACE EXPLORATION
4. SOUTH ABUTMENT
5. SOUTH ABUTMENT WING 1
6. SOUTH ABUTMENT WING 2
7. NORTH ABUTMENT
8. NORTH ABUTMENT WING 3
9. NORTH ABUTMENT WING 4
10. SUPERSTRUCTURE
11. SUPERSTRUCTURE DETAILS
12. SINGLE SLOPE PARAPET 42SS

CURVE GEOMETRY

PISTA = 1220+94.46
N = 212680.117
E = 391266.811
 Δ = 011°01'33"
D = 004°24'27"
T = 127.47'
L = 250.17'
R = 1300.00'
PC STA = 1219+68.99
PT STA = 1222+19.16
SE = 6%

TRAFFIC DATA

ADT = 230 (2020)
230 (2040)
RDS = 60 M.P.H.

DESIGN DATA

STRUCTURE IS DESIGNED FOR FUTURE WEARING
SURFACE OF 20"/SQ. FT.

LIVE LOAD:

DESIGN LOADING _____ HL-93
INVENTORY RATING FACTOR _____ RF = 1.34
OPERATING RATING FACTOR _____ RF = 1.82
WISCONSIN STANDARD PERMIT
VEHICLE (Wis-SPV) _____ 250 KIPS

MATERIAL PROPERTIES:

CONCRETE MASONRY
SUPERSTRUCTURE _____ f'_c = 4,000 PSI
ALL OTHER _____ f'_c = 3,500 PSI
HIGH STRENGTH BAR STEEL
REINFORCEMENT, GRADE 60 _____ f_y = 60,000 PSI

HYDRAULIC DATA

100 YEAR FREQUENCY

Q_{100} _____ 100.0 C.F.S.
VELOCITY _____ 4.42 F.P.S.
HIGH WATER _____ EL. 1423.70 (100 YEAR)
WATERWAY AREA _____ 23 S.F.
DRAINAGE AREA _____ 9.3 SQ. MILES
OVERTOPPING FREQUENCY = N/A
SCOUR CRITICAL CODE = 5

2 YEAR FREQUENCY

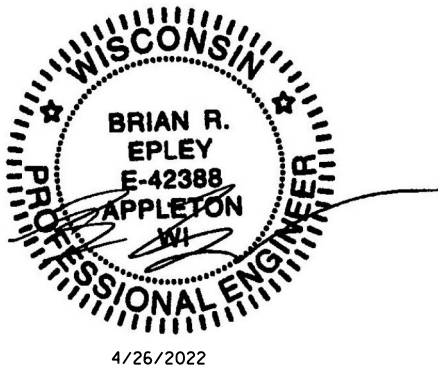
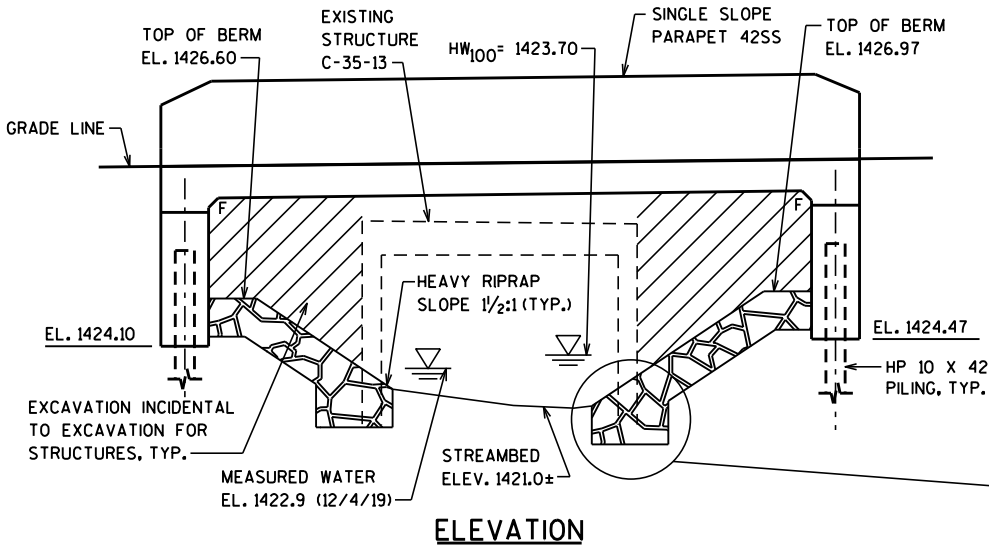
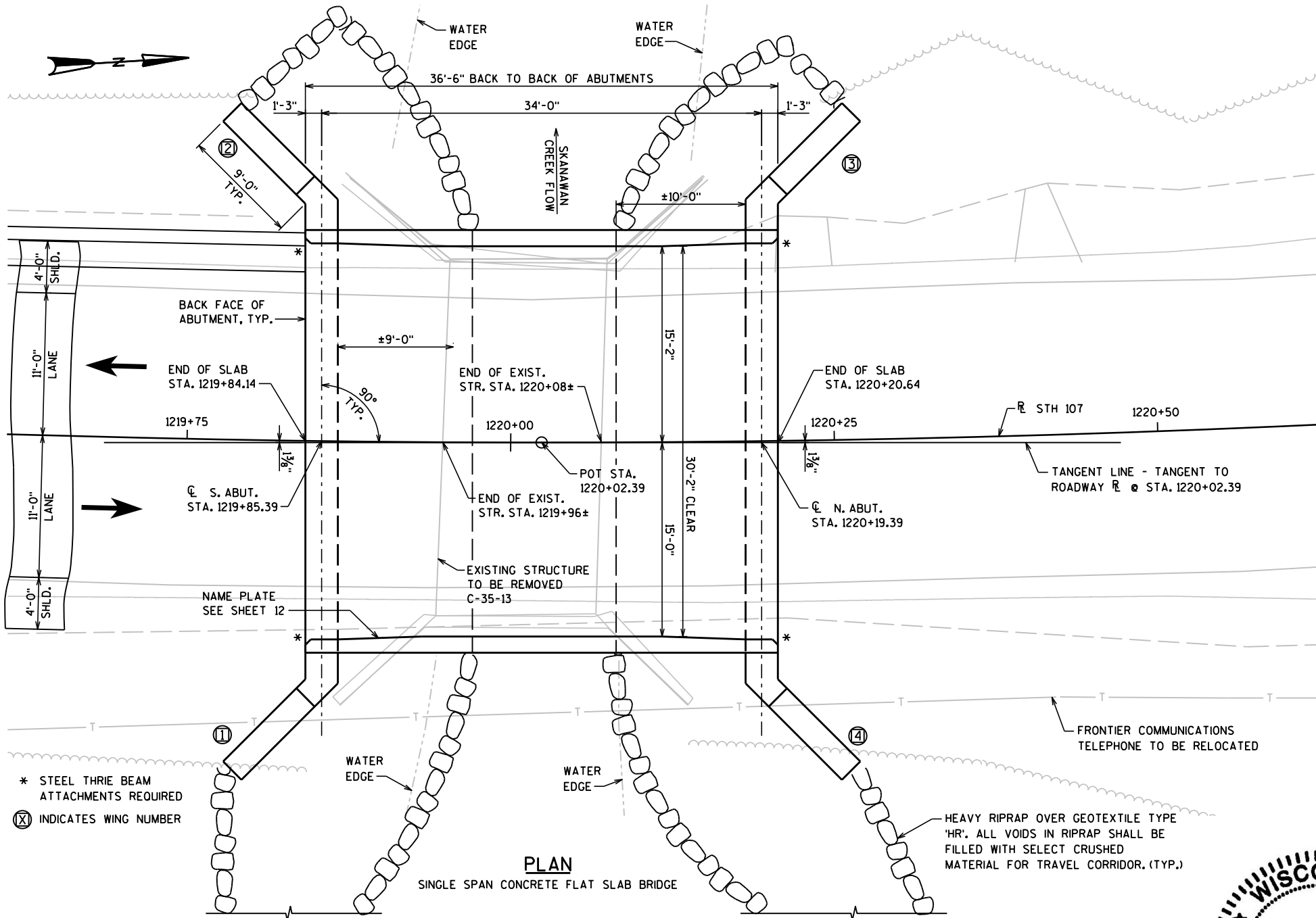
Q_2 _____ 44.0 C.F.S.
VELOCITY _____ 3.27 F.P.S.
HIGH WATER _____ EL. 1422.84 (2 YEAR)

REGULATORY WATER SURFACE WISCONSIN
RIVER, SECTION AR = 1427.48, FIRM
55069C0237D. EFF. 8/16/2011

FOUNDATION DATA

ABUTMENTS TO BE SUPPORTED ON HP 10 X 42 PILING DRIVEN
TO A REQUIRED DRIVING RESISTANCE OF 180 TONS ** PER
PILE. ESTIMATED LENGTH = 25' AT EACH ABUTMENT. PILING
SHALL BE FITTED WITH PILE POINTS.

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



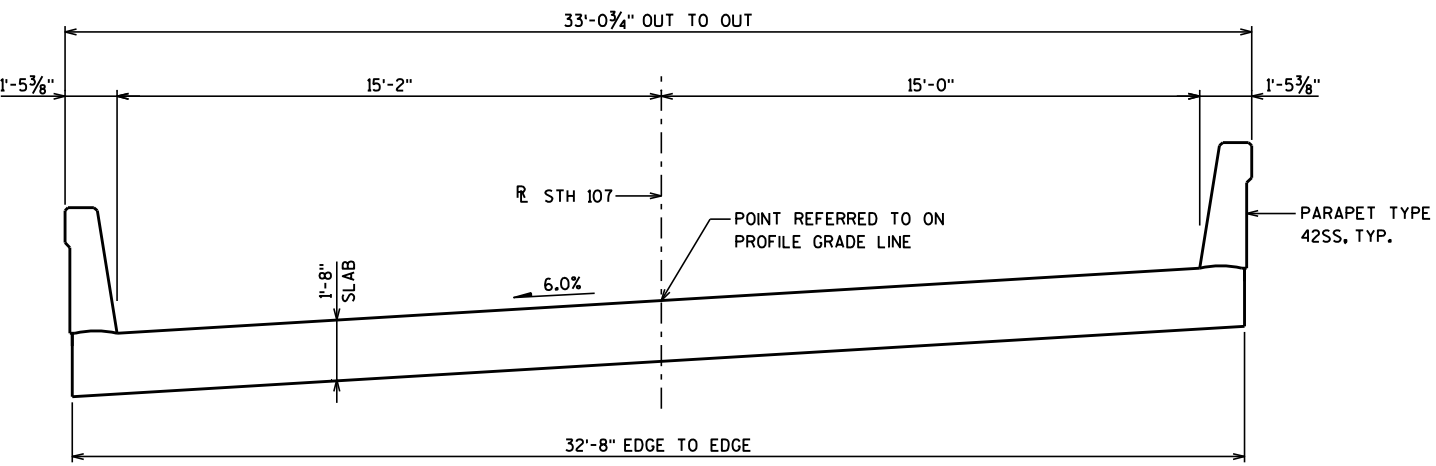
CONSULTANT CONTACT

BRIAN EPLEY
WESTWOOD
(920) 735-6900

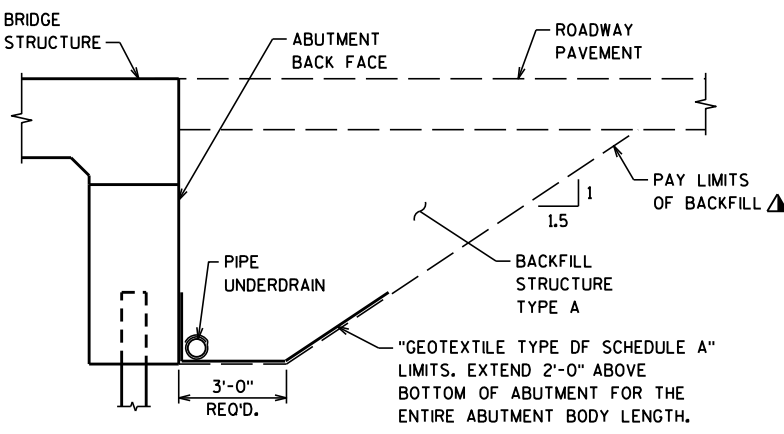
BRIDGE OFFICE CONTACT

AARON BONK
(608) 261-0261

NO.	DATE	REVISION	BY
ORIGINAL PLANS PREPARED BY			
Westwood			
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
ACCEPTED	DATE	SDR	DATE
	05/04/22		
STRUCTURE B-35-54			
STH 107 OVER SKANAWAN CREEK			
COUNTY	LINCOLN	TOWN	BRADLEY
DESIGN SPEC.	AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS	LOAD	HL-93
DESIGNED BY	BRE CK'D. KRO	DRAWN BY	BRE CK'D. KRO
GENERAL PLAN			SHEET 1 OF 12
			97



CROSS SECT. THRU RDWY.
LOOKING UPSTATION



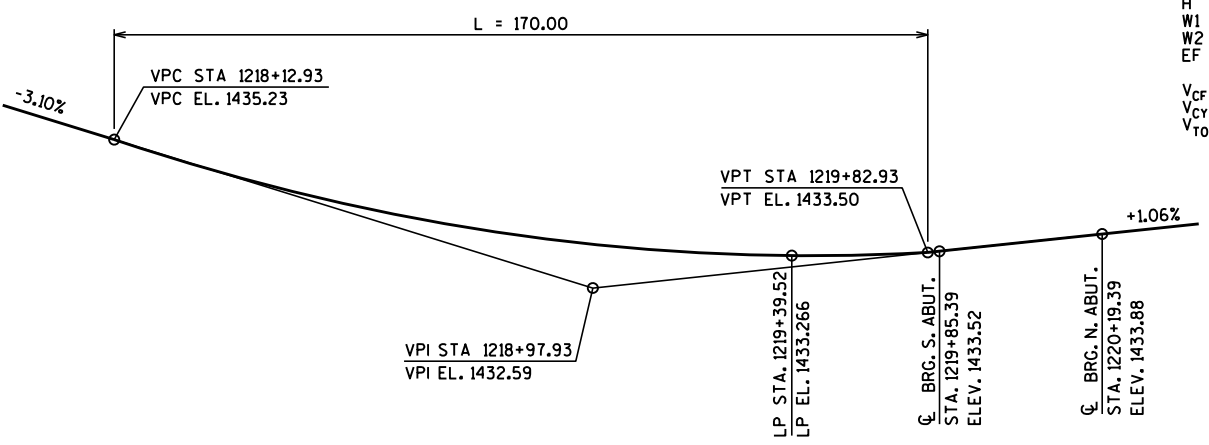
TYPICAL SECTION THRU ABUTMENT

BENCH MARKS (NAVD 88)

NO.	STATION	DESCRIPTION	ELEV.
BM#2	1221+69, 44' LT.	60D SPK IN 16" WHITE PINE	1433.14

TOTAL ESTIMATED QUANTITIES

ITEM NO.	BID ITEMS	UNIT	SUPER.	SOUTH ABUT.	NORTH ABUT.	TOTALS
203.0260	REMOVING STRUCTURE OVER WATERWAY MINIMAL DEBRIS C-35-13	EA	1	---	---	1
206.1000	EXCAVATION FOR STRUCTURES BRIDGES B-35-54	LS	1	---	---	1
210.1500	BACKFILL STRUCTURE TYPE A	TON	---	250	250	500
502.0100	CONCRETE MASONRY BRIDGES	CY	88.7	37.2	37.2	163
502.3200	PROTECTIVE SURFACE TREATMENT	SY	122	---	---	122
502.3210	PIGMENTED SURFACE SEALER	SY	36	---	---	36
505.0400	BAR STEEL REINFORCEMENT HS STRUCTURES	LB	---	2,480	2,480	4,960
505.0600	BAR STEEL REINFORCEMENT HS COATED STRUCTURES	LB	16,030	1,400	1,400	18,830
516.0500	RUBBERIZED MEMBRANE WATERPROOFING	SY	---	10	10	20
550.0500	PILE POINTS	EA	---	7	7	14
550.1100	PILING STEEL HP 10-INCH X 42 LB	LF	---	175	175	350
606.0300	RIPRAP HEAVY	CY	---	75	78	153
612.0406	PIPE UNDERDRAIN WRAPPED 6-INCH	LF	---	75	75	150
614.0150	ANCHOR ASSEMBLIES FOR STEEL PLATE BEAM GUARD	EA	4	---	---	4
645.0111	GEOTEXTILE TYPE DF SCHEDULE A	SY	---	43	43	86
645.0120	GEOTEXTILE TYPE HR	SY	---	106	111	217
SPV.0195.01	SELECT CRUSHED MATERIAL FOR TRAVEL CORRIDOR	TON	---	65	65	130
NON-BID ITEMS						
	FILLER	SIZE				1/2" & 3/4"



PROFILE GRADE LINE

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.

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

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

AT THE BACKFACE 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.

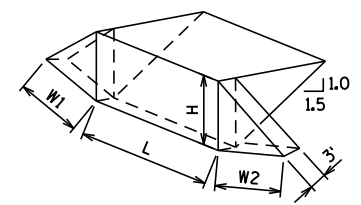
THE EXISTING GROUND LINE SHALL BE USED AS THE UPPER LIMITS OF EXCAVATION.

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 THE GENERAL PLAN SHEET AND IN THE ABUTMENT DETAILS.

ALL VOIDS BETWEEN HEAVY RIPRAP SHALL BE FILLED USING SELECT CRUSHED MATERIAL, PAID UNDER ITEM "SELECT CRUSHED MATERIAL FOR TRAVEL CORRIDOR".

THIS BRIDGE WILL REPLACE THE EXISTING CONCRETE FLAT SLAB BRIDGE SUPPORTED ON REINFORCED CONCRETE ABUTMENTS. THE STRUCTURE WAS BUILT IN 1915.

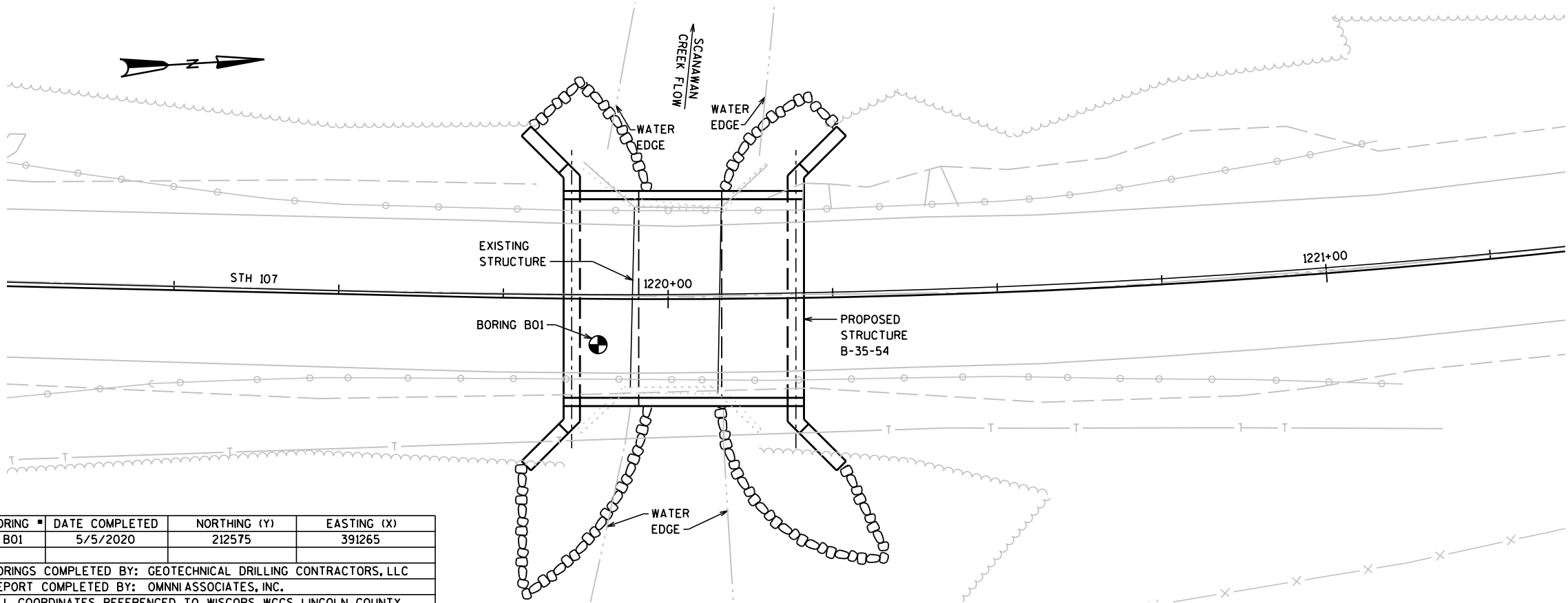
PROTECTIVE SURFACE TREATMENT SHALL BE APPLIED TO THE ENTIRE TOP OF SLAB. PIGMENTED SURFACE SEALER SHALL BE APPLIED TO THE ENTIRE FRONT FACES AND TOPS OF PARAPETS.



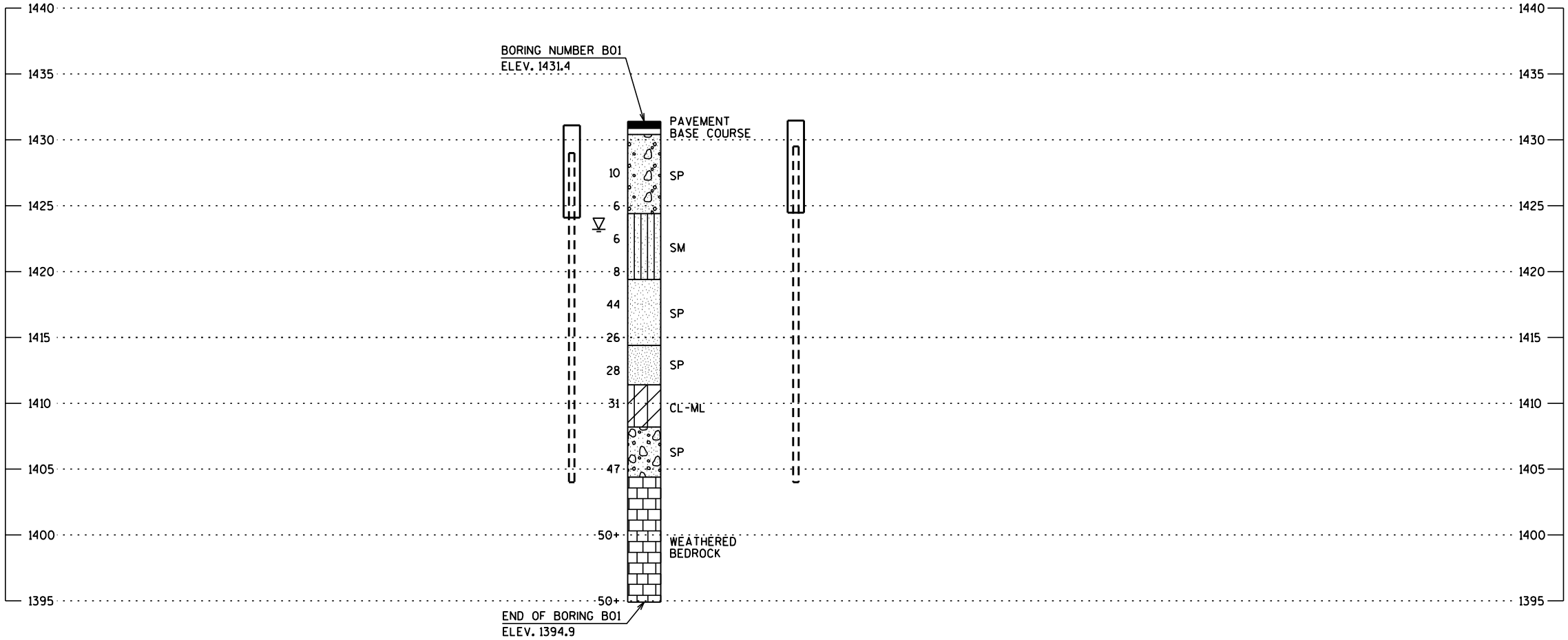
ABUTMENT BACKFILL DIAGRAM
FOR WINGS PARALLEL TO ABUTMENT

L = OUT TO OUT OF ABUTMENT BODY (FT)
H = AVERAGE ABUTMENT FILL HEIGHT (FT)
W1 = WING 1 LENGTH (FT)
W2 = WING 2 LENGTH (FT)
EF = EXPANSION FACTOR (1.20 FOR CY BID ITEMS AND 1.00 FOR TON BID ITEMS)
 $V_{CF} = (L)(3.0')(H) + (L)(0.5)(1.5H)(H) + (3.0')(0.5)(W1+W2)(H)$
 $V_{CY} = V_{CF} (EF)/27$
 $V_{TON} = V_{CY} (2.0)$

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-35-54			
DRAWN BY		BRE	PLANS CK'D. KRO
CROSS SECTION & QUANTITIES		SHEET 2 OF 12	
		98	



BORING	DATE COMPLETED	NORTHING (Y)	EASTING (X)
B01	5/5/2020	212575	391265
BORINGS COMPLETED BY: GEOTECHNICAL DRILLING CONTRACTORS, LLC			
REPORT COMPLETED BY: OMNI ASSOCIATES, INC.			
ALL COORDINATES REFERENCED TO WISCORS WCCS LINCOLN COUNTY			



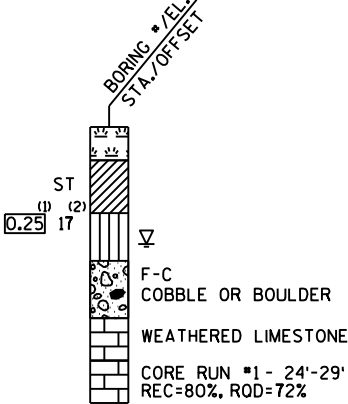
STATE PROJECT NUMBER

9305-09-61

MATERIAL SYMBOLS

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

LEGEND OF BORING



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

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

GROUND WATER ELEVATION

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

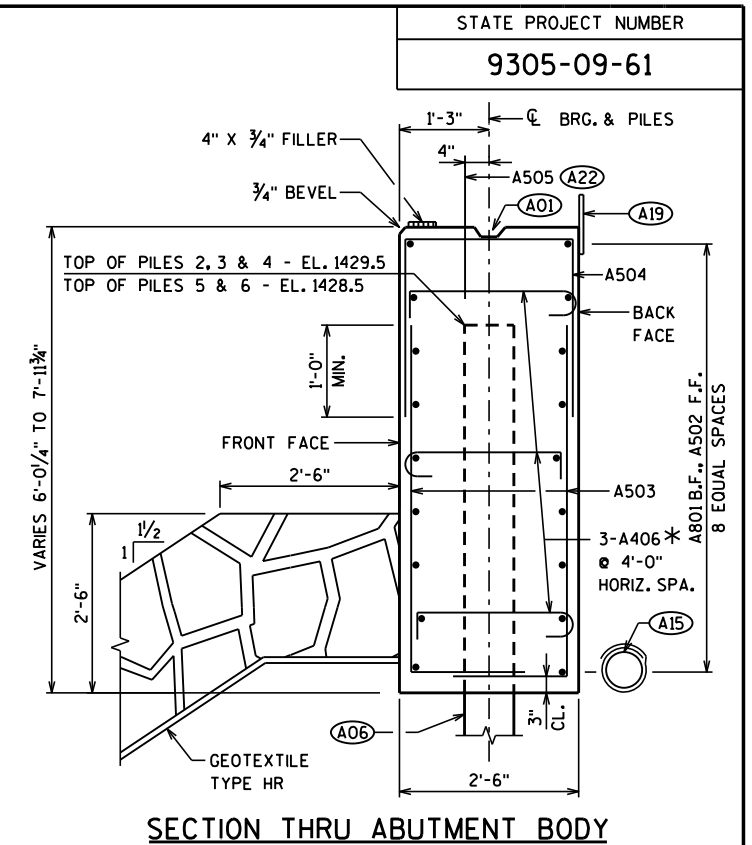
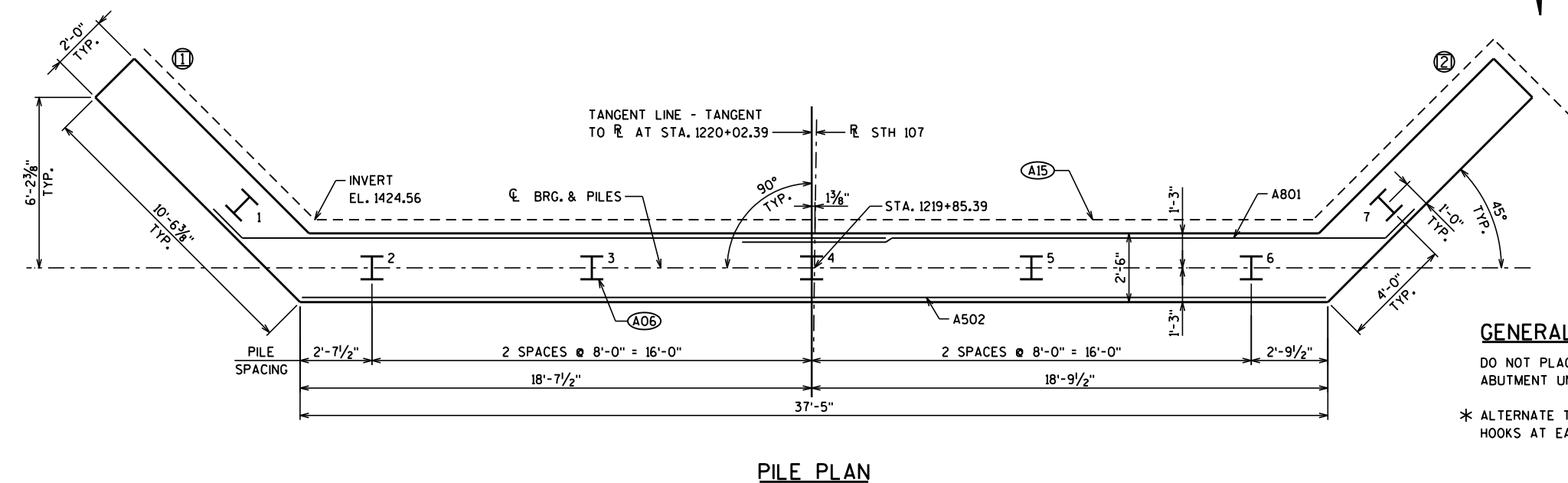
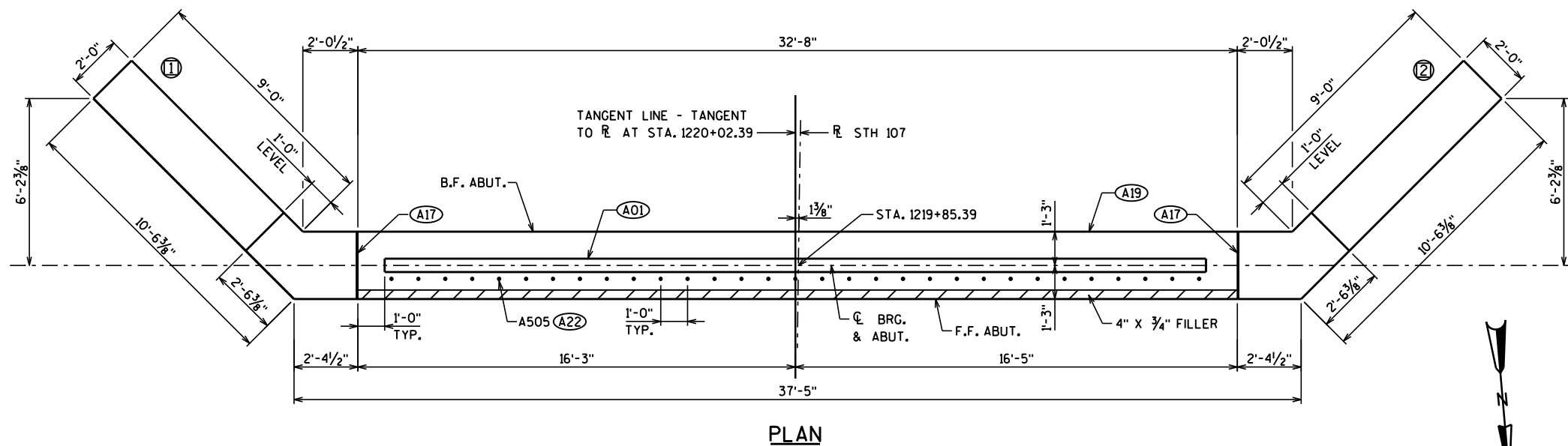
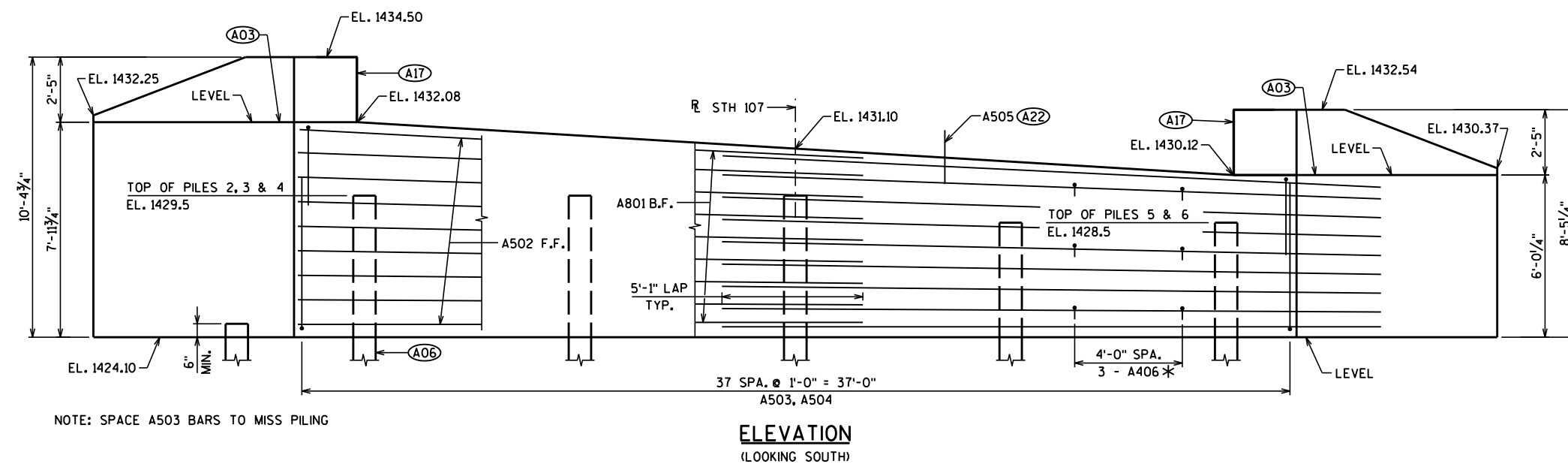
ABBREVIATIONS

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

SUBSURFACE EXPLORATION FOR FOUNDATION DESIGN AND BIDDERS INFORMATION

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

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-35-54			
DRAWN BY		BRE	PLANS CK'D. KRO
SUBSURFACE EXPLORATION		SHEET 3 OF 12	
		99	



LEGEND

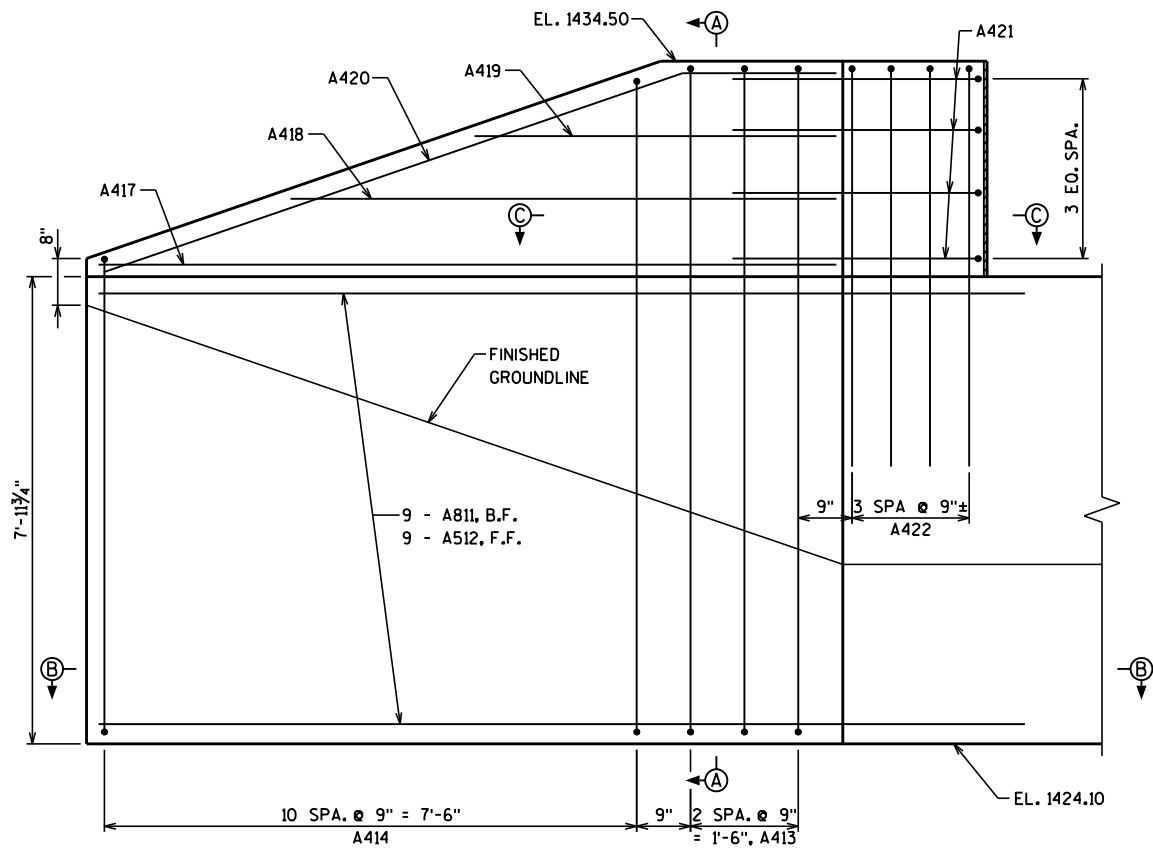
- (A01) CONSTRUCTION JOINT-FORMED BY BEVELED 2 x 6.
- (A03) OPTIONAL CONST. JOINT: KEYWAY FORMED BY BEVELED 2 x 6. (18" R.M.W. @ B.F. & 3/4" "V" GROOVE @ F.F. IF JOINT IS USED).
- (A06) SUPPORT ABUTMENT ON HP 10 X 42 STEEL PILING, ESTIMATED 25' LONG WITH A REQUIRED DRIVING RESISTANCE OF 180 TONS PER PILE. PILE POINTS REQUIRED.
- (A15) PIPE UNDERDRAIN WRAPPED 6-INCH. SLOPE 0.5% MIN. ATTACH RODENT SHIELD AT ENDS OF PIPE UNDERDRAIN (SEE SHEET 5 FOR DETAILS).
- (A17) 1/2" FILLER INCLUDED IN WING LENGTH, SEAL ALL EXPOSED HORIZONTAL AND VERTICAL SURFACES OF 1/2" FILLER WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER. (1" DEEP AND HOLD 1/8" BELOW SURFACE OF CONCRETE.)
- (A19) 18" RUBBERIZED MEMBRANE WATERPROOFING. SEAL ALL HORIZONTAL AND VERTICAL JOINTS ON BACKFACE.
- (A22) A505 BARS SPACED @ 1'-0" CTRS. MAY BE PLACED AFTER CONCRETE IS POURED BUT BEFORE INITIAL SET HAS TAKEN PLACE. (EMBED 1'-0" INTO CONC.)
- (X) DENOTES WING NUMBER

GENERAL NOTES

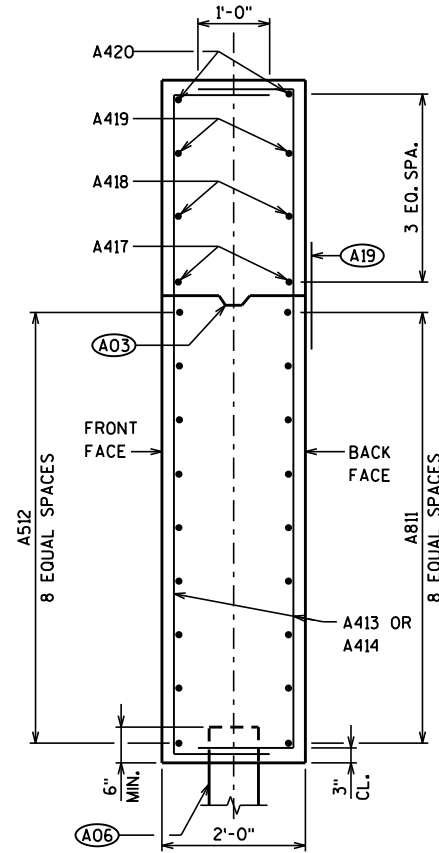
DO NOT PLACE FILL ABOVE 3'-0" FROM BOTTOM OF
ABUTMENT UNTIL SUPERSTRUCTURE IS IN PLACE.

* ALTERNATE THE POSITION OF THE 90° AND 180°
HOOKS AT EACH VERTICAL LAYER OF TIES.

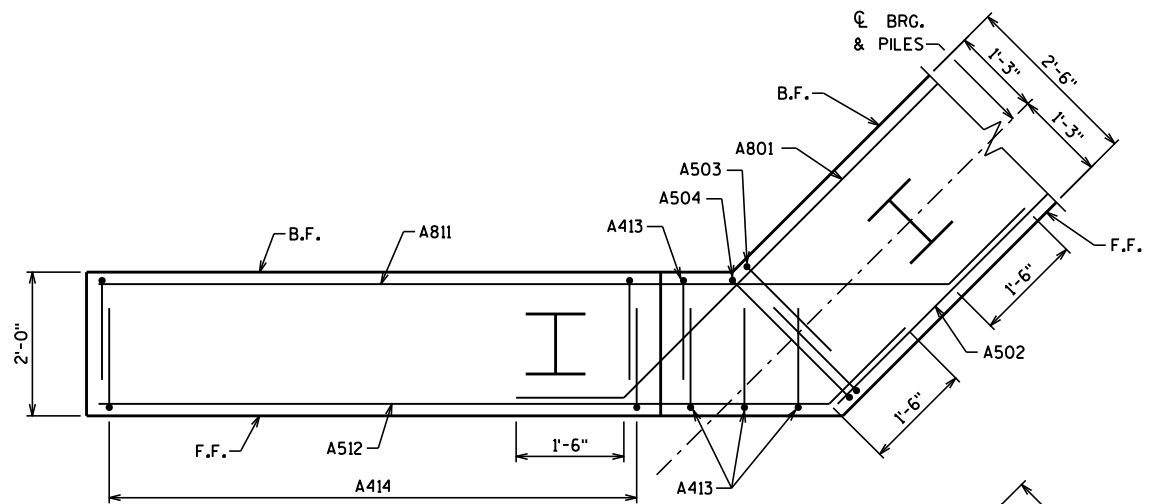
NO.	DATE	REVISION			BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION					
STRUCTURE B-35-54					
		DRAWN BY	BRE	PLANS CKD.	KRO
SOUTH ABUTMENT				SHEET 4 OF 12	
				100	



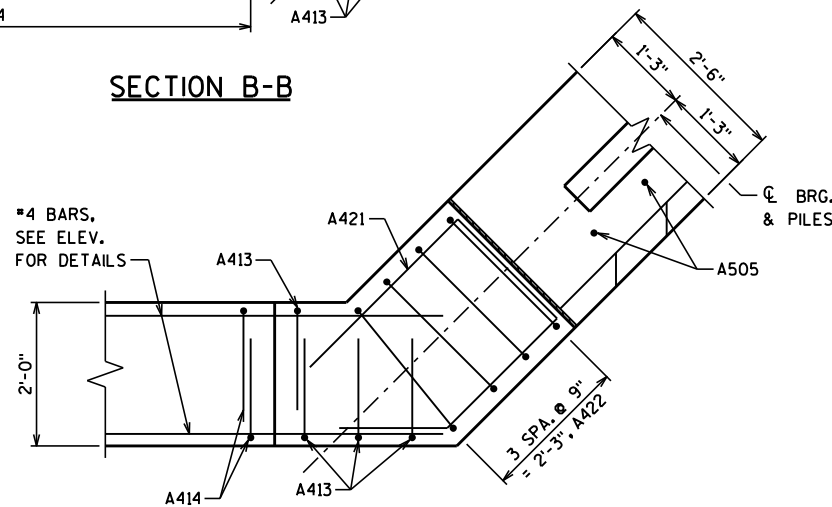
ELEVATION - WING 1



SECTION A-A



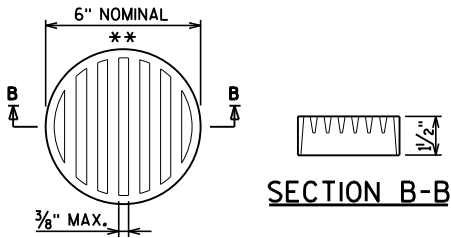
SECTION B-B



SECTION C-C

NOTES

- (A03) OPTIONAL CONST. JOINT: KEYWAY FORMED BY BEVELED 2 x 6. (18" R.M.W. @ B.F. & 3/4" "V" GROOVE @ F.F. IF JOINT IS USED).
- (A06) SUPPORT ABUTMENT ON HP 10 x 42 STEEL PILING, ESTIMATED 25' LONG WITH A REQUIRED DRIVING RESISTANCE OF 180 TONS PER PILE. PILE POINTS REQUIRED.
- (A19) 18" RUBBERIZED MEMBRANE WATERPROOFING. SEAL ALL HORIZONTAL AND VERTICAL JOINTS ON BACKFACE.

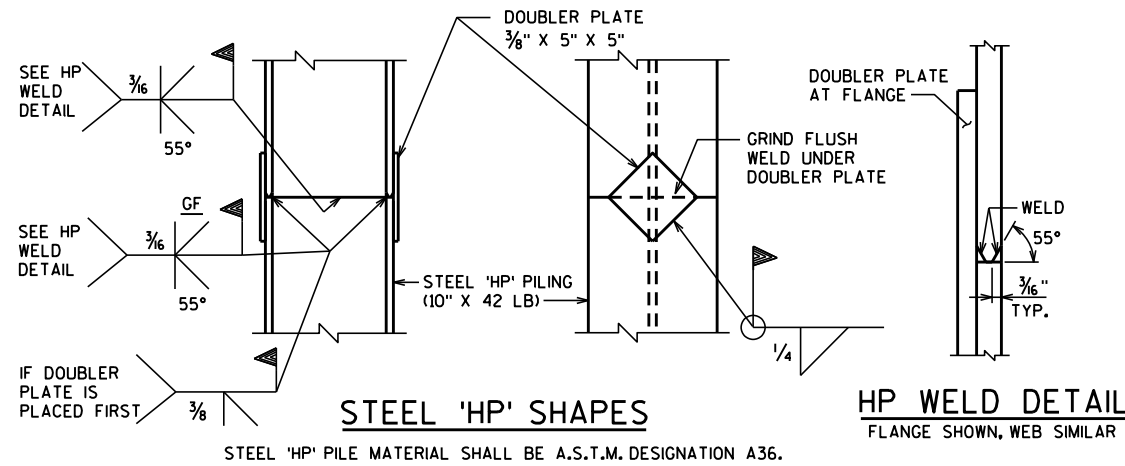


RODENT SCREEN DETAIL

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

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

THE RODENT SCREEN 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 SCREEN TO THE EXPOSED END OF THE PIPE UNDERDRAIN. THE SCREEN SHALL BE FASTENED TO THE PIPE COUPLING WITH TWO OR MORE NO. 10 x 1-INCH SHEET METAL SCREWS.



STEEL 'HP' SHAPES

STEEL 'HP' PILE MATERIAL SHALL BE A.S.T.M. DESIGNATION A36.

HP WELD DETAIL

FLANGE SHOWN, WEB SIMILAR

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-35-54			
DRAWN BY		BRE	PLANS CK'D. KRO
SOUTH ABUTMENT WING 1		SHEET 5 OF 12	
		101	



BAR MARK	COAT	NO. REQ'D.	LENGTH	SERIES	BENT	LOCATION
A801		18	24'-11"		X	BODY - B.F. - HORIZ.
A502		9	37'-3"			BODY - F.F. - HORIZ.
A503		76	7'-1"		X	BODY - F.F. - B.F. - VERT.
A504		38	7'-11"		X	BODY - TOP - VERT.
A505	X	31	2'-0"			BODY - VERTICAL, DOWEL
A406		30	2'-11"		X	BODY - TIES - HORIZ.
A811	X	16	13'-6"		X	WINGS - HORIZONTAL, B.F.
A512	X	16	11'-10"		X	WINGS - HORIZONTAL, F.F.
A413	X	4	12'-6"		X	WING 1 - VERTICAL
A414	X	22	11'-4"	△	X	WING 1 - VERTICAL
A415	X	4	10'-6"		X	WING 2 - VERTICAL
A416	X	22	9'-4"	△	X	WING 2 - VERTICAL
A417	X	4	10'-3"			WINGS - HORIZONTAL
A418	X	4	7'-4"			WINGS - HORIZONTAL
A419	X	4	4'-7"			WINGS - HORIZONTAL
A420	X	4	10'-7"		X	WINGS - HORIZONTAL
A421	X	8	9'-3"		X	WINGS - HORIZONTAL
A422	X	4	12'-6"		X	WING 1 - VERTICAL
A423	X	4	8'-10"		X	WING 2 - VERTICAL

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

BAR MARK	NO. REQ'D.	LENGTH
A414	2 SERIES OF 11	10'-4" TO 12'-4"
A416	2 SERIES OF 11	8'-4" TO 10'-4"

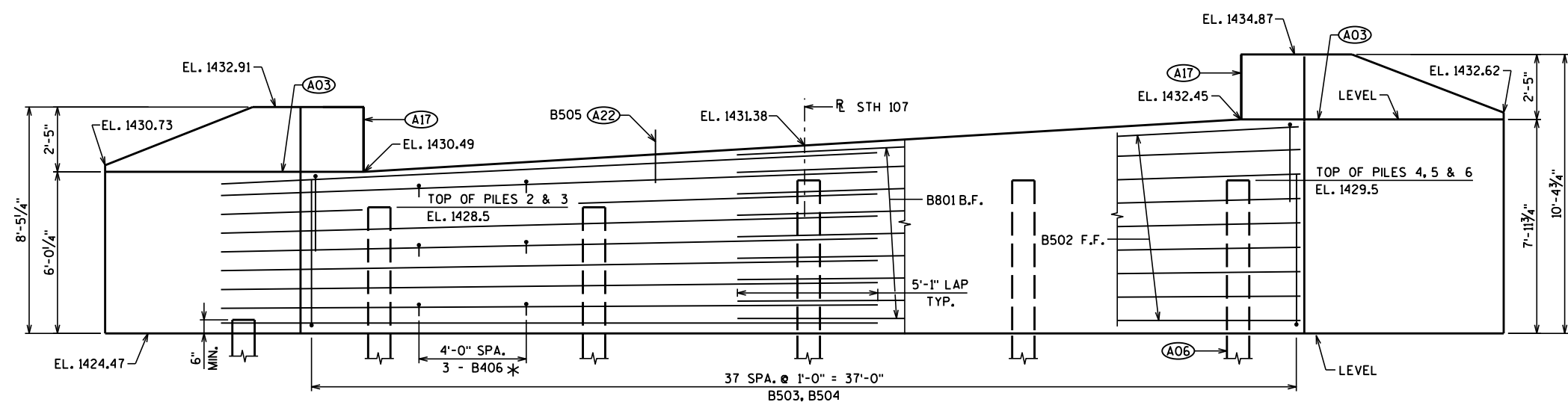


(A03) OPTIONAL CONST. JOINT: KEYWAY FORMED BY BEVELED 2 x 6. (18" R.M.W. @ B.F. & 3/4" "V" GROOVE @ F.F. IF JOINT IS USED).

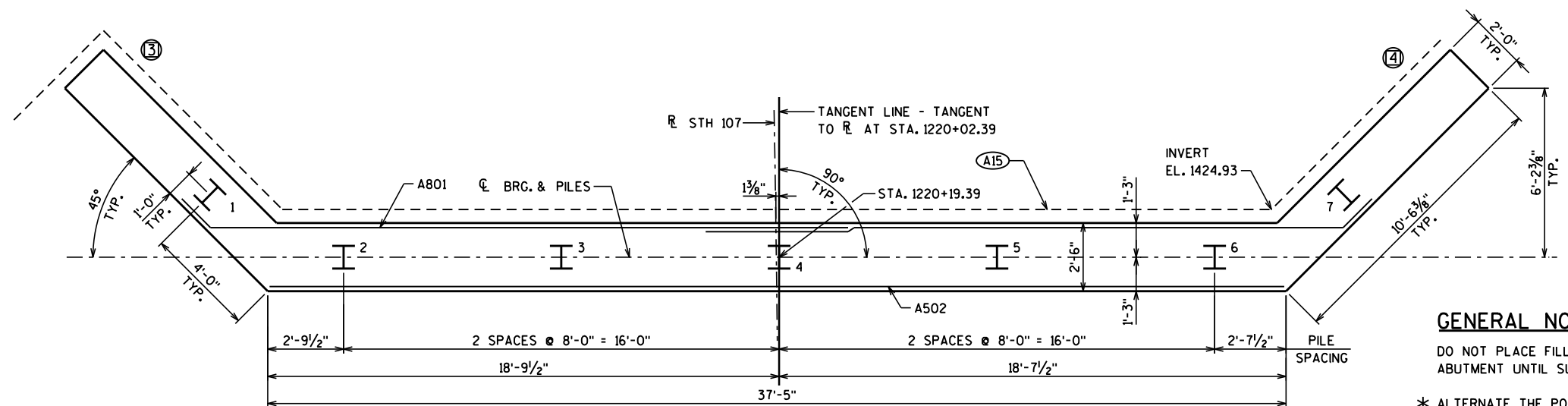
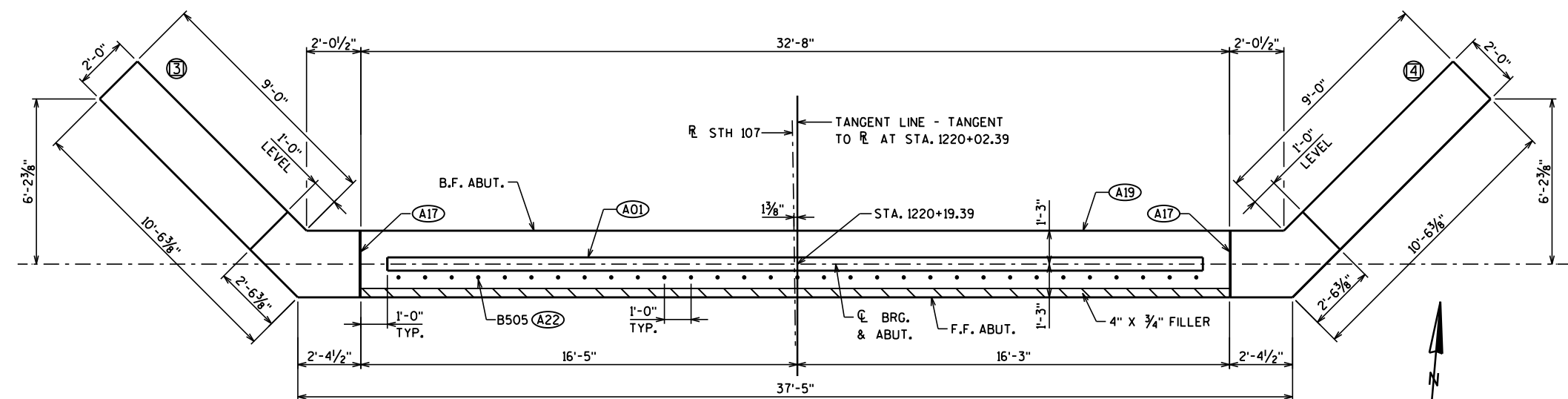
(A06) SUPPORT ABUTMENT ON HP 10 X 42 STEEL PILE. ESTIMATED 25' LONG WITH A REQUIRED DRIVING RESISTANCE OF 180 TONS PER PILE. PILE POINT REQUIRED.

(A19) 18" RUBBERIZED MEMBRANE WATERPROOFING, SIDE AND ALL HORIZONTAL AND VERTICAL JOINTS ON BACKFACE.

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-35-54			
		DRAWN BY	BRE PLANS KCD. KRO
SOUTH ABUTMENT WING 2		SHEET 6 OF 12	
		102	



NOTE: SPACE B503 BARS TO MISS PILING



SECTION THRU ABUTMENT BODY

LEGEND

- (A01) CONSTRUCTION JOINT-FORMED BY BEVELED 2×6 .
- (A03) OPTIONAL CONST. JOINT: KEYWAY FORMED BY BEVELED 2×6 . (18" R.M.W. @ B.F. & $3/4"$ "V" GROOVE @ F.F. IF JOINT IS USED).
- (A06) SUPPORT ABUTMENT ON HP 10 X 42 STEEL PILING, ESTIMATED 25' LONG WITH A REQUIRED DRIVING RESISTANCE OF 180 TONS PER PILE. PILE POINTS REQUIRED.
- (A15) PIPE UNDERDRAIN WRAPPED 6-INCH. SLOPE 0.5% MIN. ATTACH RODENT SHIELD AT ENDS OF PIPE UNDERDRAIN (SEE SHEET 5 FOR DETAILS).
- (A17) $1/2"$ FILLER INCLUDED IN WING LENGTH, SEAL ALL EXPOSED HORIZONTAL AND VERTICAL SURFACES OF $1/2"$ FILLER WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER. (1" DEEP AND HOLD $1/8"$ BELOW SURFACE OF CONCRETE.)
- (A19) 18" RUBBERIZED MEMBRANE WATERPROOFING. SEAL ALL HORIZONTAL AND VERTICAL JOINTS ON BACKFACE.
- (A22) B505 BARS SPACED @ 1'-0" CTRS. MAY BE PLACED AFTER CONCRETE IS POURED BUT BEFORE INITIAL SET HAS TAKEN PLACE. (EMBED 1'-0" INTO CONC.)
- (XI) DENOTES WING NUMBER

SEE SHEET 8 & 9 FOR WINGWALL DETAILS, SHEET 8 FOR BILL OF BARS, AND BAR BENDING DIAGRAM, SHEET 5 FOR PILE SPLICE DETAIL.

GENERAL NOTES

DO NOT PLACE FILL ABOVE 3'-0" FROM BOTTOM OF
ABUTMENT UNTIL SUPERSTRUCTURE IS IN PLACE.

* ALTERNATE THE POSITION OF THE 90° AND 180° HOOKS AT EACH VERTICAL LAYER OF TIES.

NO.	DATE	REVISION			BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION					
STRUCTURE B-35-54					
		DRAWN BY	BRE	PLANS CK'D.	KRO
NORTH ABUTMENT			SHEET 7 OF 12		
			103		



BAR MARK	COAT	NO. REQ'D.	LENGTH	SERIES	BENT	LOCATION
B801		18	24'-11"		X	BODY - B.F. - HORIZ.
B502		9	37'-3"			BODY - F.F. - HORIZ.
B503		76	7'-1"		X	BODY - F.F. - B.F. - VERT.
B504		38	7'-11"		X	BODY - TOP - VERT.
B505	X	31	2'-0"			BODY - VERTICAL, DOWEL
B406		30	2'-11"		X	BODY - TIES - HORIZ.
B811	X	16	13'-6"		X	WINGS - HORIZONTAL, B.F.
B512	X	16	11'-10"		X	WINGS - HORIZONTAL, F.F.
B413	X	4	10'-6"		X	WING 3 - VERTICAL
B414	X	22	9'-4"	△	X	WING 3 - VERTICAL
B415	X	4	12'-6"		X	WING 4 - VERTICAL
B416	X	22	11'-4"	△	X	WING 4 - VERTICAL
B417	X	4	10'-3"			WINGS - HORIZONTAL
B418	X	4	7'-4"			WINGS - HORIZONTAL
B419	X	4	4'-7"			WINGS - HORIZONTAL
B420	X	4	10'-7"		X	WINGS - HORIZONTAL
B421	X	8	9'-3"		X	WINGS - HORIZONTAL
B422	X	4	8'-10"		X	WING 3 - VERTICAL
B423	X	4	12'-6"		X	WING 4 - VERTICAL

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

BAR MARK	NO. REQ'D.	LENGTH
B414	2 SERIES OF 11	8'-4" TO 10'-4"
B416	2 SERIES OF 11	10'-4" TO 12'-4"



A03) OPTIONAL JOINT: KEYWAY FORMED BY BEVELED 2 x 6. (18" R.M.W. @ B.F. & 3/4" "V" GROOVE @ F.F. IF JOINT IS USED).

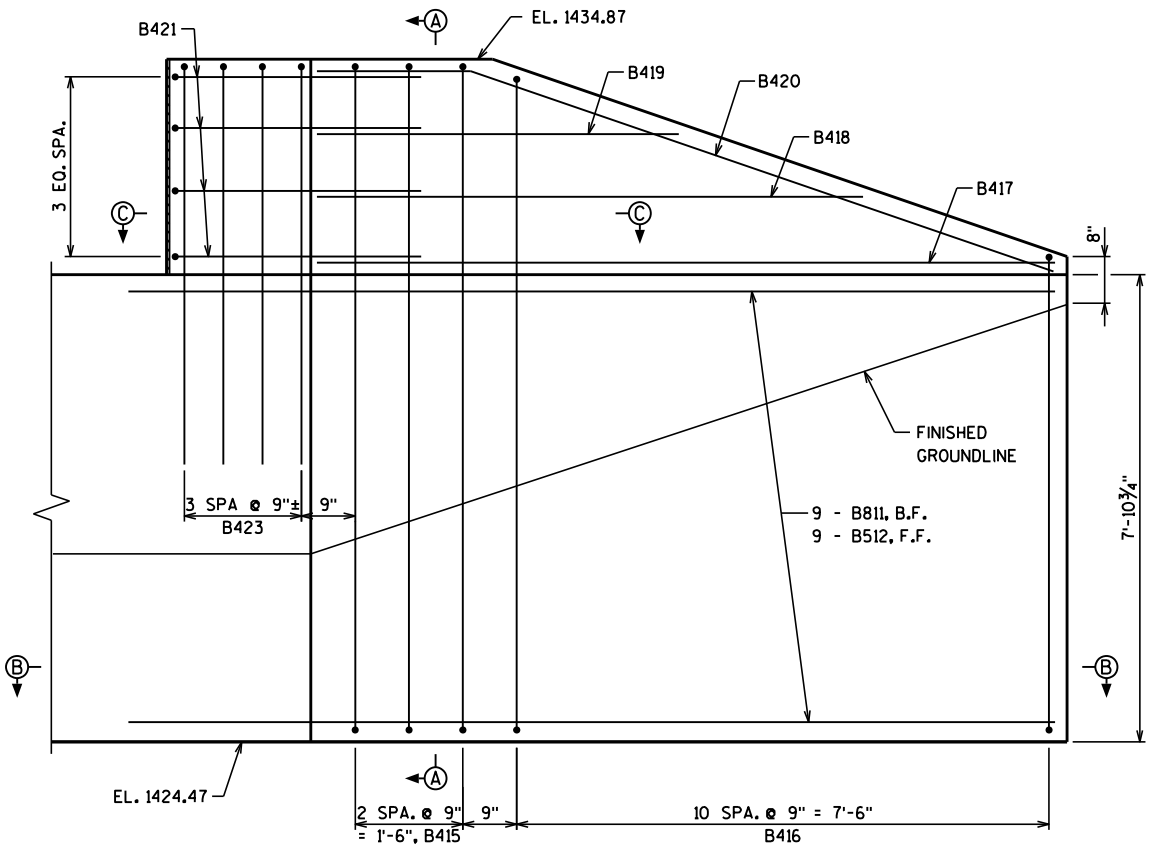
A06) SUPPORT ABUTMENT ON HP 10 x 42 STEEL PILING, ESTIMATED 25' LONG WITH A REQUIRED DRIVING RESISTANCE OF 180 TONS PER PILE. PILE POINTS REQUIRED.

A19) 18" RUBBERIZED MEMBRANE WATERPROOFING. SEAL ALL HORIZONTAL AND VERTICAL JOINTS ON BACKFACE.

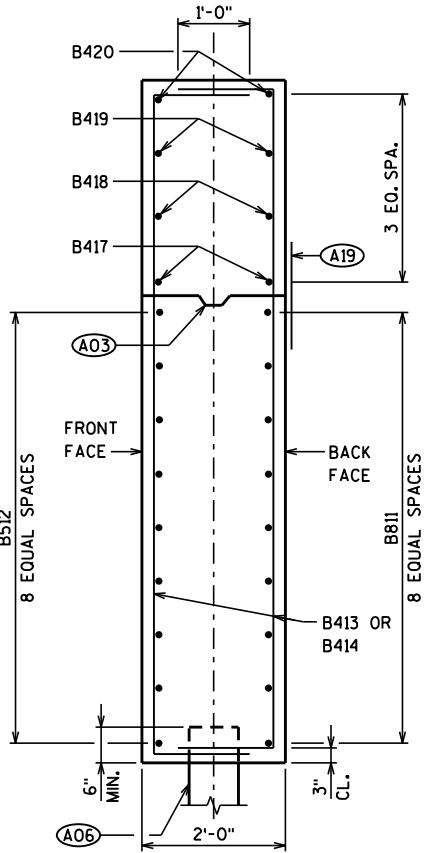
NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-35-54			
		DRAWN BY	BRE PLANS CK'D. KRO
NORTH ABUTMENT WING 3		SHEET 8 OF 12	
		104	

NOTES

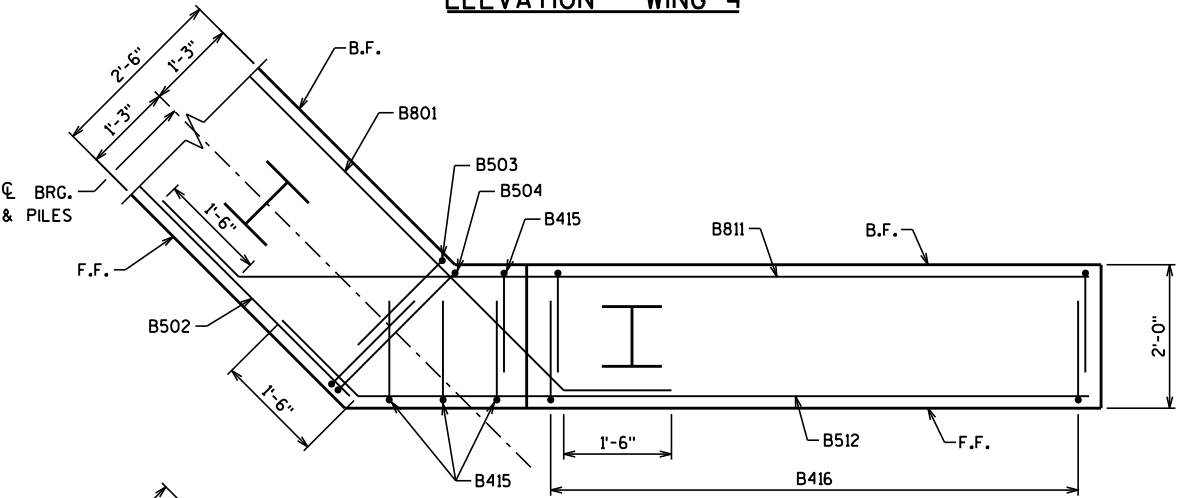
- (A03) OPTIONAL CONST. JOINT: KEYWAY FORMED BY BEVELED 2 x 6. (18" R.M.W. @ B.F. & 3/4" "V" GROOVE @ F.F. IF JOINT IS USED).
- (A06) SUPPORT ABUTMENT ON HP 10 x 42 STEEL PILING, ESTIMATED 25' LONG WITH A REQUIRED DRIVING RESISTANCE OF 180 TONS PER PILE. PILE POINTS REQUIRED.
- (A19) 18" RUBBERIZED MEMBRANE WATERPROOFING. SEAL ALL HORIZONTAL AND VERTICAL JOINTS ON BACKFACE.



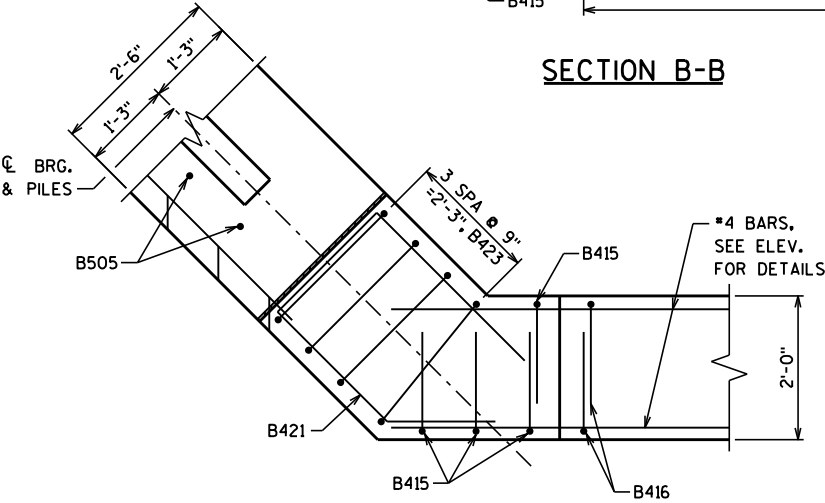
ELEVATION - WING 4



SECTION A-A



SECTION B-B



SECTION C-C

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-35-54			
DRAWN BY		BRE	PLANS CK'D. KRO
NORTH ABUTMENT WING 4		SHEET 9 OF 12	
		105	

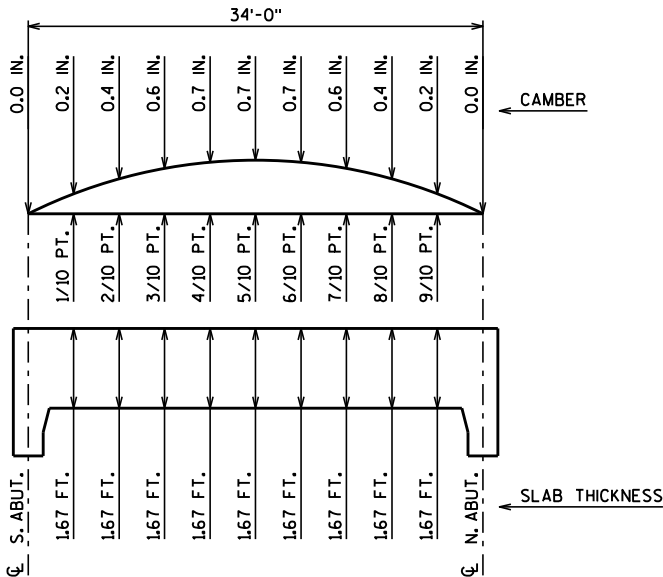


(LOOKING NORTH)



 TOP OF DECK ELEVATION CALCULATED HERE.

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-35-54			
DRAWN BY		BRE	PLANS CK'D. KRO
SUPERSTRUCTURE		SHEET 10 OF 12	
		106	



CAMBER DIAGRAM

CAMBER IS BASED ON 3 TIMES DEAD LOAD DEFLECTIONS.
CAMBER SPANS AS SHOWN TO PROVIDE FOR DEADLOAD DEFLECTION AND FUTURE CREEP. CAMBER DOES NOT INCLUDE ALLOWANCE FOR FORM SETTLEMENT.

SURVEY TOP OF SLAB ELEVATIONS

	S. ABUTMENT	5/10 PT.	N. ABUTMENT
W. GUTTER			
TANGENT LINE			
E. GUTTER			

BILL OF BARS

BAR MARK	COAT	NO. REQ'D.	LENGTH	BENT	SERIES	LOCATION
S1001	X	33	36'-2"			LONGITUDINAL BOTTOM
S1002	X	32	29'-0"			LONGITUDINAL BOTTOM
S503	X	85	32'-4"			TRANSVERSE TOP & BOTTOM
S404	X	36	36'-2"			LONGITUDINAL TOP
S505	X	72	5'-0"			TRANSVERSE TOP OUTSIDE
S506	X	66	5'-5"	X		END OF SLAB
S507	X	66	3'-0"	X		END OF SLAB
S508	X	58	4'-5"	X		PARAPET VERT.
S509	X	58	6'-8"	X		PARAPET VERT.
S510	X	16	18'-6"			PARAPET HORIZ.
S511	X	48	2'-9"	X		PARAPET VERT.
S512	X	68	4'-4"	X		PARAPET VERT.
S513	X	20	6'-5"	X		PARAPET VERT.
S514	X	24	6'-6"	X		PARAPET VERT.
S515	X	4	10'-7"	X		PARAPET HORIZ.
S516	X	20	10'-7"			PARAPET HORIZ.
S517	X	24	5'-5"	X	△	PARAPET VERT.
S518	X	8	10'-9"	X		PARAPET HORIZ.

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

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

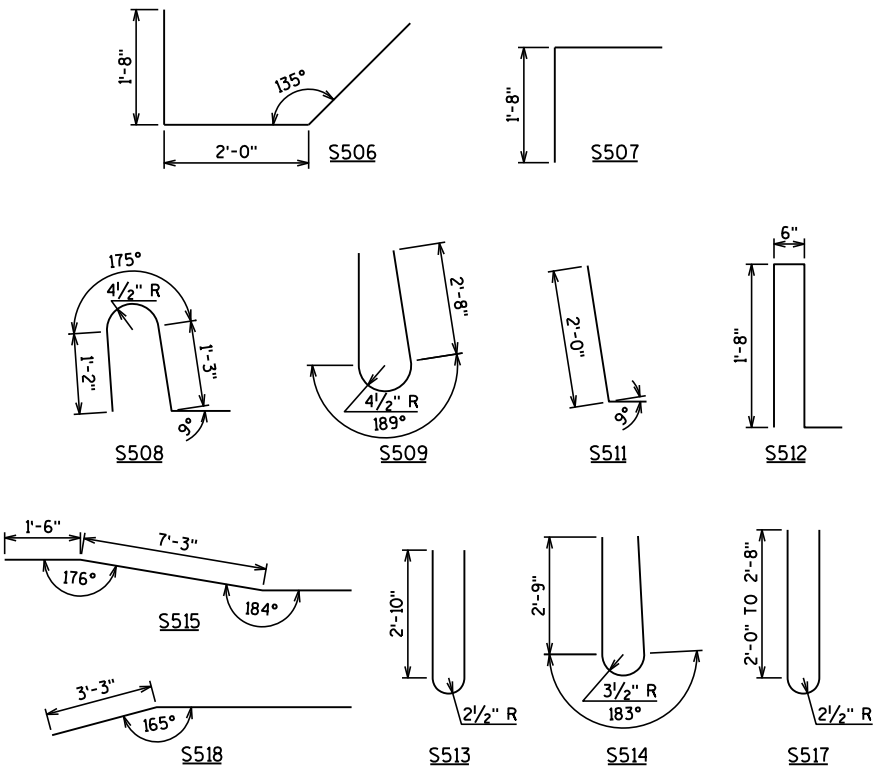
LESS TOP OF SLAB ELEVATION AT FINAL GRADE
PLUS SLAB THICKNESS
PLUS CAMBER
PLUS FORM SETTLEMENT/DEFLECTION DUE TO PLACEMENT OF SLAB CONCRETE (TO BE COMPUTED BY THE CONTRACTOR)
EQUALS TOP OF SLAB FALSEWORK ELEVATION.

TOP OF DECK ELEVATIONS

LOCATION	S.ABUT.	1/10	2/10	3/10	4/10	5/10	6/10	7/10	8/10	9/10	N.ABUT.
W. EDGE	1432.61	1432.65	1432.68	1432.72	1432.76	1432.79	1432.83	1432.86	1432.90	1432.94	1432.97
C/L	1433.52	1433.56	1433.59	1433.63	1433.67	1433.70	1433.74	1433.77	1433.81	1433.85	1433.88
E. EDGE	1434.42	1434.46	1434.49	1434.53	1434.57	1434.60	1434.64	1434.67	1434.71	1434.75	1434.78

TABLE OF TENTH POINT OFFSETS FROM R₁ STH 107

1/10 POINT	WEST EDGE OF DECK		TANGENT LINE		EAST EDGE OF DECK	
	STATION	OFFSET	STATION	OFFSET	STATION	OFFSET
S. ABUT.	1219+85.19	-15.05	1219+85.39	0.11	1219+85.59	15.11
0.1	1219+88.63	-15.10	1219+88.79	0.07	1219+88.95	15.07
0.2	1219+92.07	-15.13	1219+92.19	0.04	1219+92.31	15.04
0.3	1219+95.51	-15.15	1219+95.59	0.02	1219+95.67	15.02
0.4	1219+98.95	-15.16	1219+98.99	0.00	1219+99.03	15.00
0.5	1220+02.39	-15.17	1220+02.39	0.00	1220+02.39	15.00
0.6	1220+05.83	-15.16	1220+05.79	0.00	1220+05.75	15.00
0.7	1220+09.27	-15.15	1220+09.19	0.02	1220+09.12	15.02
0.8	1220+12.71	-15.13	1220+12.59	0.04	1220+12.48	15.04
0.9	1220+16.15	-15.10	1220+15.99	0.07	1220+15.84	15.07
N. ABUT.	1220+19.59	-15.05	1220+19.39	0.11	1220+19.20	15.11

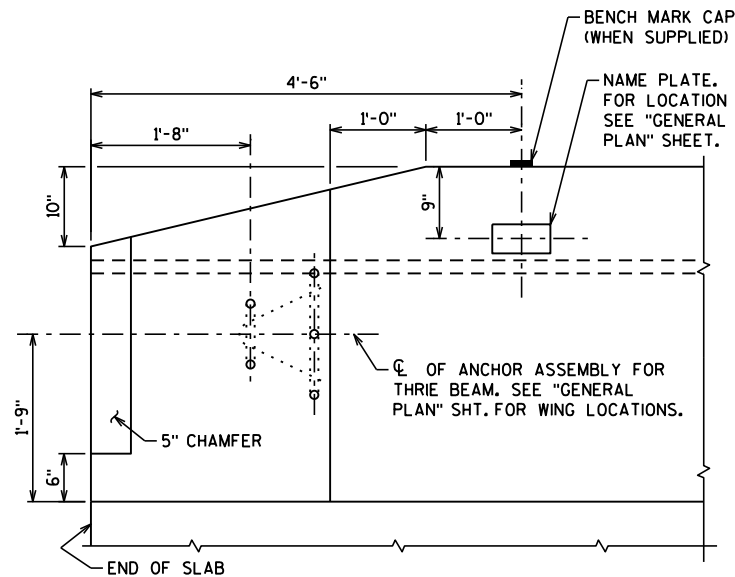
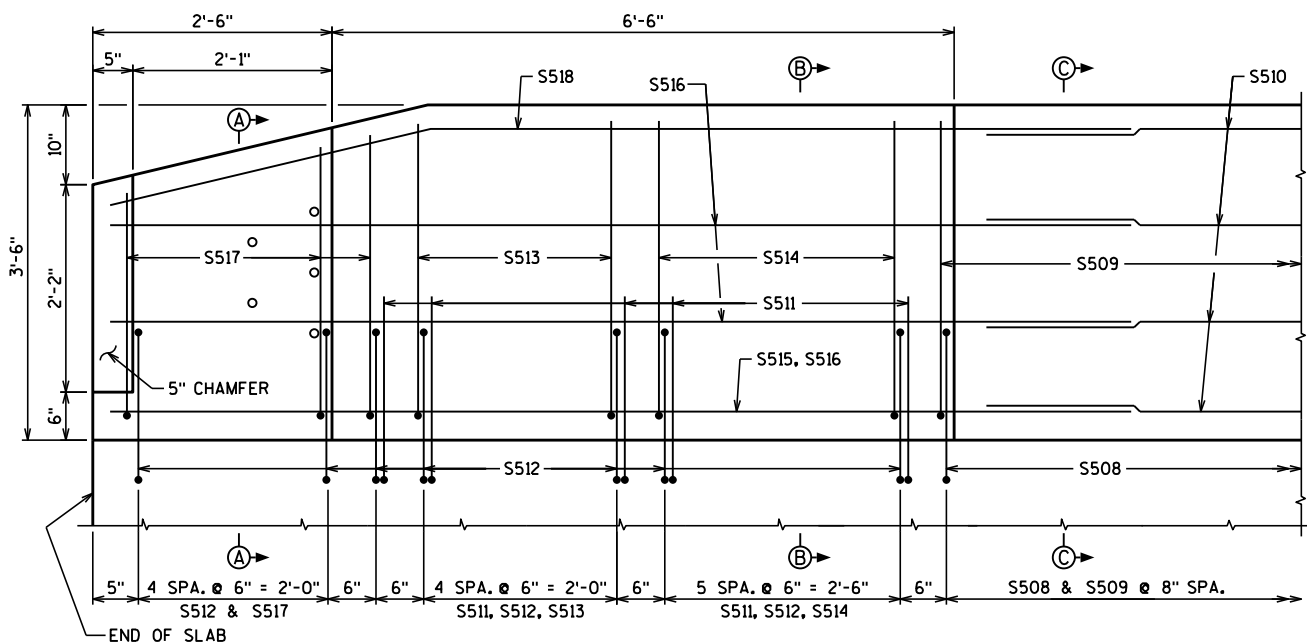
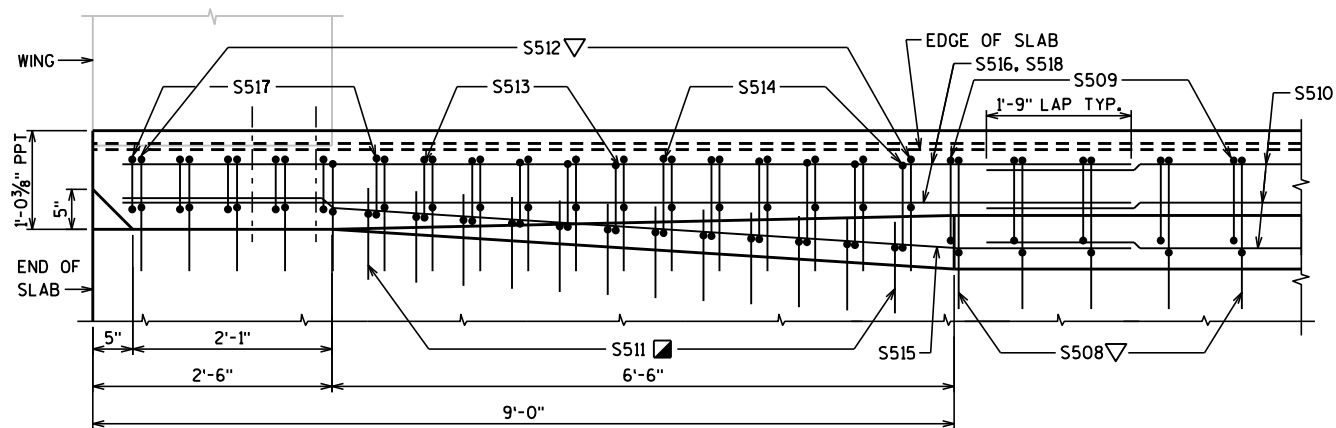
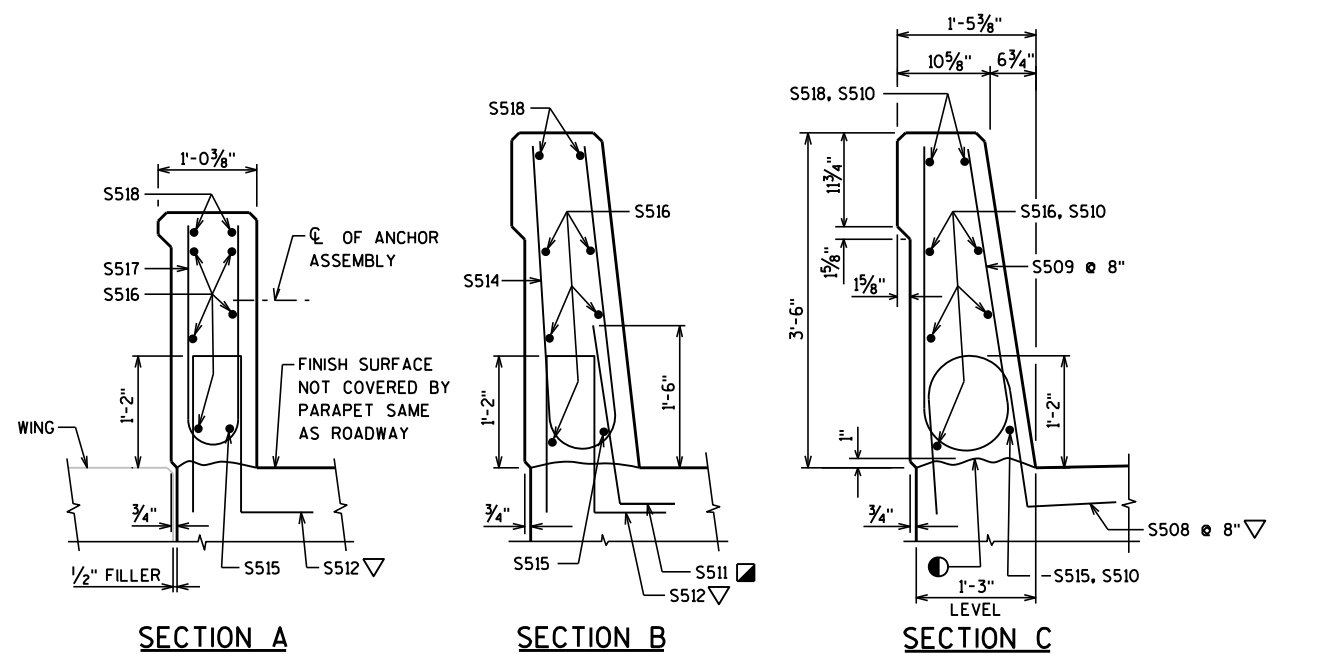


BAR BEND DIAGRAMS

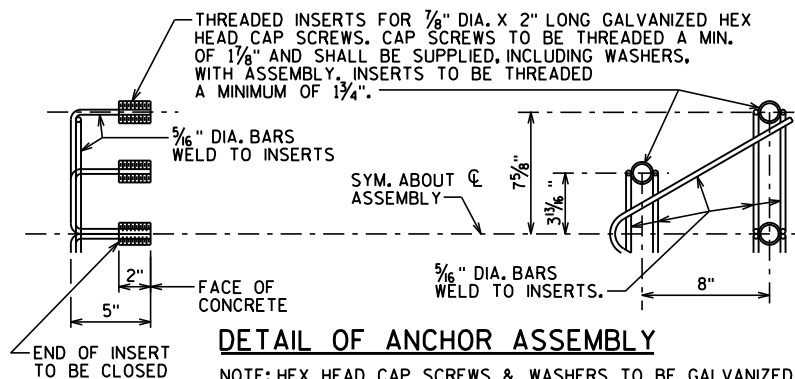
BAR SERIES

BAR NO.	NO. REQ'D.	LENGTH
S517	4 SERIES OF 6	4'-9" TO 6'-1"

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-35-54			
DRAWN BY		BRE	PLANS CK'D. KRO
SUPERSTRUCTURE DETAILS		SHEET 11 OF 12	
		107	

**NOTES**

- CONST. JOINT - STRIKE OFF AS SHOWN.
- USE CARE TO PLACE S511 BARS CORRECTLY ALONG TRANSITION OF PARAPET.
- ▽ S508, AND S512 BARS TO BE TIED TO SLAB STEEL BEFORE SLAB IS POURED.



NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-35-54			
DRAWN BY		BRE	PLANS CK'D. KRO
SINGLE SLOPE PARAPET 42SS		SHEET 12 OF 12	
		108	

DESIGN DATA

MATERIAL PROPERTIES:

CONCRETE MASONRY
CULVERTS $f'c = 3,500$ PSI
HIGH STRENGTH BAR STEEL
REINFORCEMENT, GRADE 60 $f_y = 60,000$ PSI

LIST OF DRAWINGS

1. GENERAL PLAN
2. CROSS SECTION & QUANTITIES

TRAFFIC DATA

ADT = 230 (2023)
230 (2043)
RDS = 60 M.P.H.

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.

ALL CONCRETE REMOVAL NOT COVERED WITH A CONCRETE OVERLAY SHALL BE DEFINED BY A 1/2" INCH DEEP SAW CUT, UNLESS SPECIFIED OTHERWISE.

REMOVING STRUCTURE SHALL INCLUDE REMOVING GUARDRAIL AND POSTS ATTACHED TO THE STRUCTURE AND LOOSE CONCRETE AT FULL SECTION REPAIR.

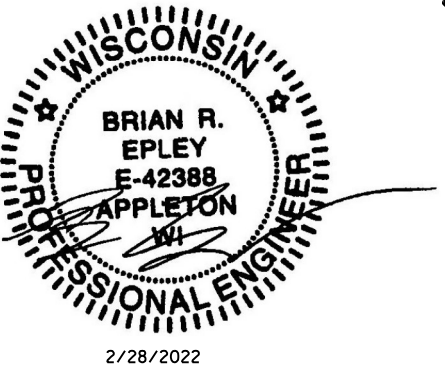
CONCRETE SURFACE REPAIR AREAS SHALL BE DETERMINED BY THE FIELD ENGINEER. "CONCRETE SURFACE REPAIR" TO INCLUDE BUT NOT LIMITED TO THE SLAB, ABUTMENT, AND WINGS.

UTILIZE EXISTING BAR STEEL REINFORCEMENT WHERE SHOWN AND EXTEND 24 BAR DIAMETERS INTO NEW WORK, UNLESS SPECIFIED OTHERWISE.

THE CONTRACTOR SHALL SUPPLY A NEW NAME PLATE IN ACCORDANCE WITH SECTION 502.3.11 OF THE STANDARD SPECIFICATIONS AND THE STANDARD DETAIL DRAWINGS. NAME PLATE TO SHOW ORIGINAL CONSTRUCTION YEAR 1924.

☆ GROUT BAGS SHALL BE A MINIMUM OF 2'-0" WIDE X 4'-0" LONG X 1'-0" THICK AND A MAXIMUM OF 4'-0" WIDE X 8'-0" LONG X 1'-6" THICK.

ⓧ INDICATES WING NUMBER.



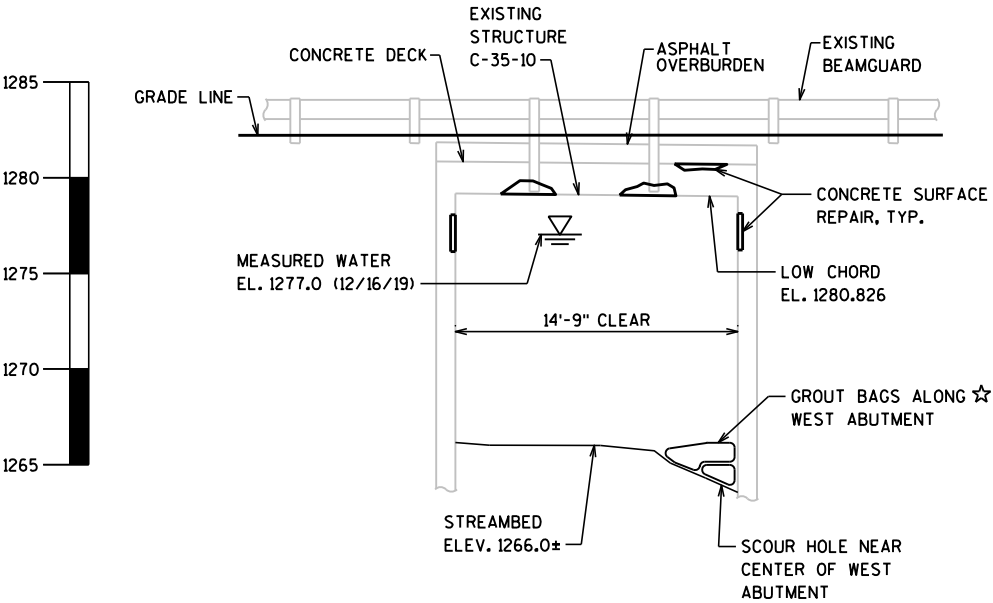
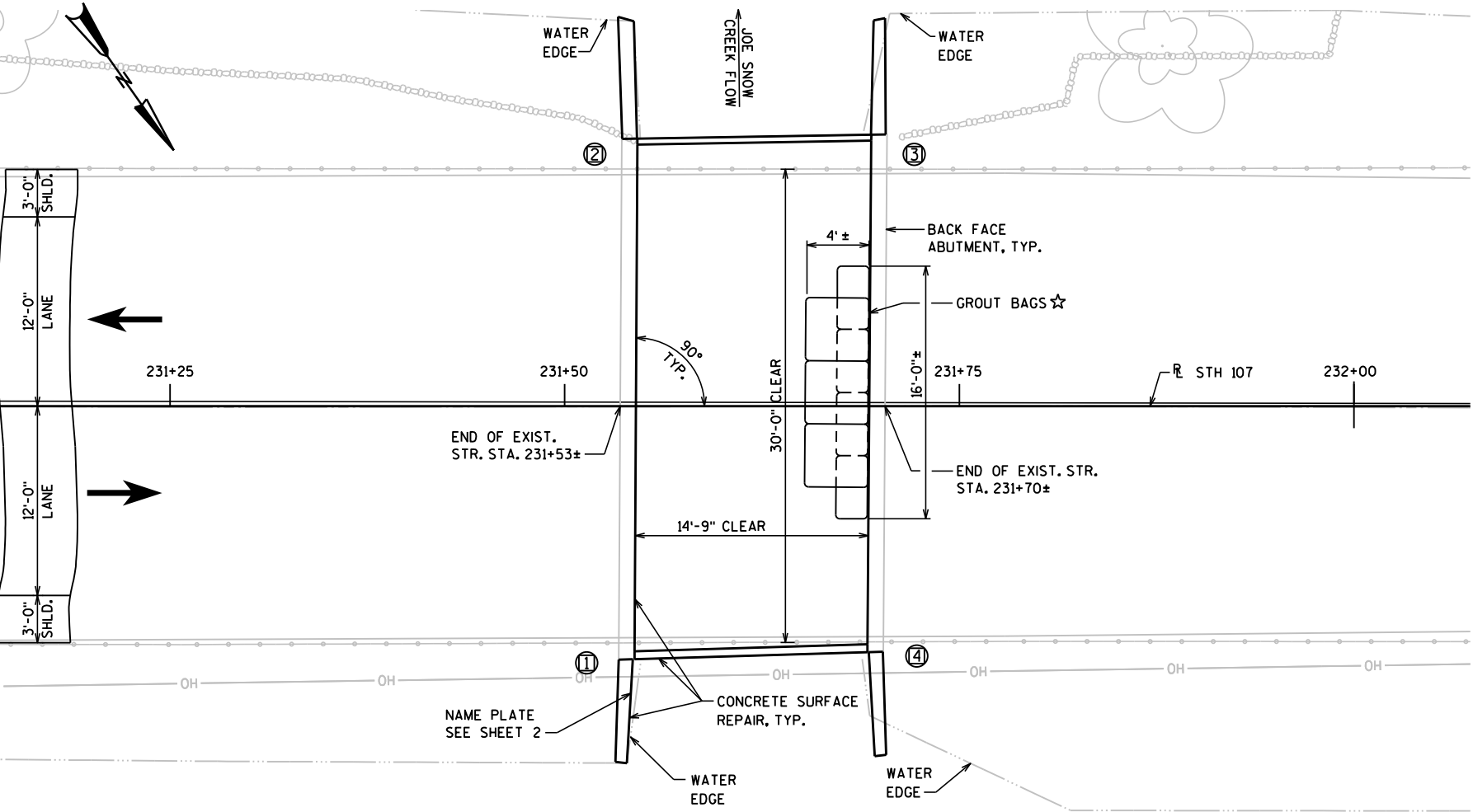
CONSULTANT CONTACT

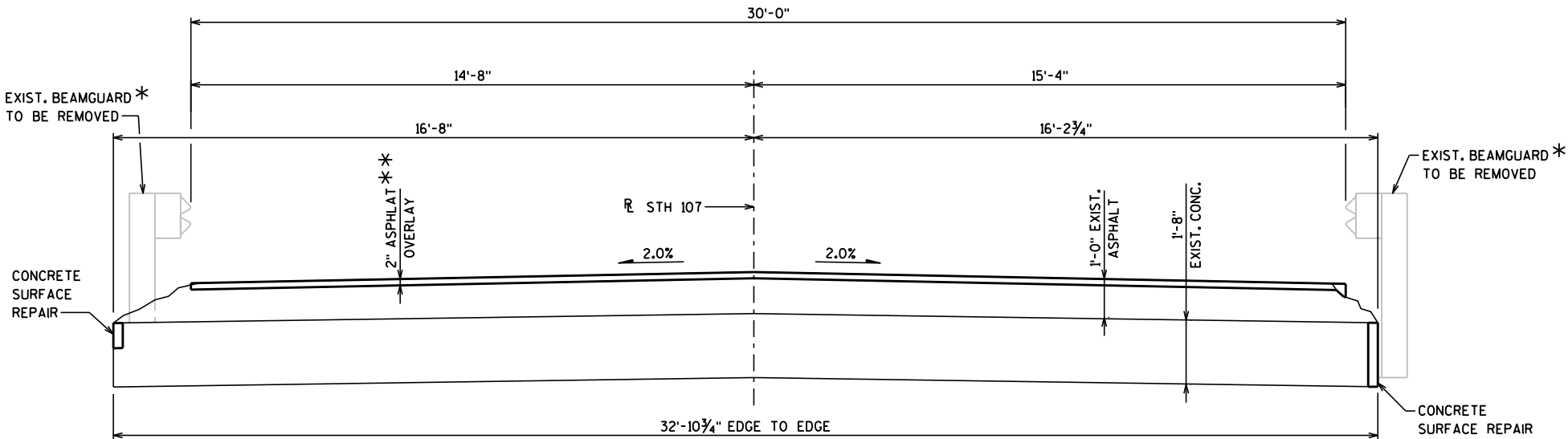
BRIAN EPLEY
WESTWOOD
(920) 735-6900

BRIDGE OFFICE CONTACT

AARON BONK
(608) 261-0261

NO.	DATE	REVISION	BY
ORIGINAL PLANS PREPARED BY			
Westwood			
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
ACCEPTED	 SDR		05/10/22
CHIEF STRUCTURES DESIGN ENGINEER			DATE
STRUCTURE C-35-10			
STH 107 OVER JOE SNOW CREEK			
COUNTY	LINCOLN	TOWN	MERRILL
DESIGN SPEC. REHABILITATION N/A			
DESIGNED BY	BRE	DESIGN CK'D.	KRO
DRAWN BY	BRE	PLANS CK'D.	KRO
GENERAL PLAN		SHEET 1 OF 2	
		109	





CROSS SECT. THRU RDWY.
LOOKING UPSTATION

* SEE ROADWAY PLANS FOR
NEW LONG SPAN BEAMGUARD

** SEE ROADWAY PLANS FOR
MILLING AND ASPHALTIC
SURFACE

BILL OF BARS

BAR MARK	COAT	NO. REQ'D.	LENGTH	BENT	LOCATION
A401	X	20	2'-6"		WINGWALL STRAIGHT ANCHORS
A402	X	20	2'-0"	X	WINGWALL BENT ANCHORS

ADHESIVE ANCHORS NO. 4 BARS. EMBED MIN. 5" INTO EXISTING CONCRETE WITH MIN. 3" EDGE DISTANCE.

FIELD CUT BARS AS NECESSARY TO FIT. USE CUT END AS EMBEDDED ANCHOR.

14 UNDISTRIBUTED BARS ARE INCLUDED FOR POTENTIALLY AFFECTED AREAS. EXACT AMOUNT TO BE CONFIRMED IN THE FIELD BY THE ENGINEER.

8"

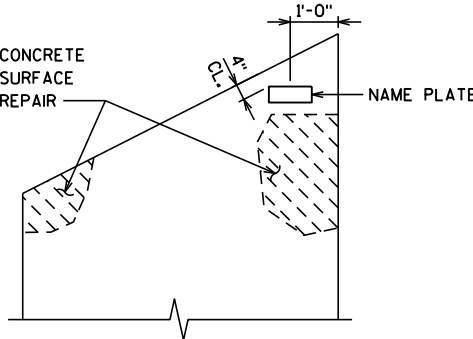
A402

BENCH MARKS (NAVD 88)

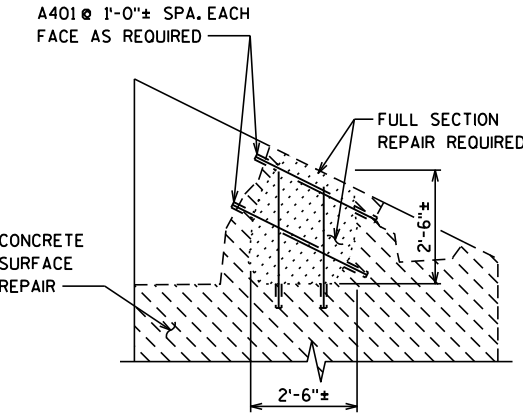
NO.	STATION	DESCRIPTION	ELEV.
BM 1	230+25, 18' RT.	RR SPIKE IN PPOL EAST SIDE STH 107	1282.78

TOTAL ESTIMATED QUANTITIES

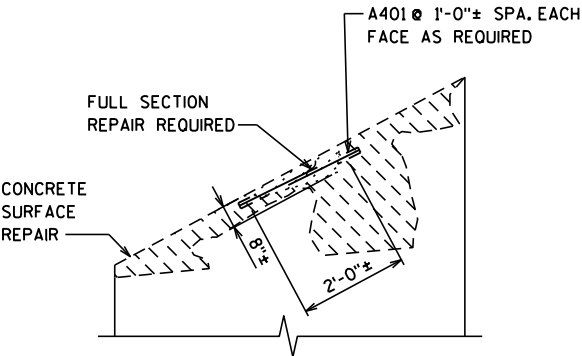
ITEM NO.	BID ITEMS	UNIT	SUPER.	ABUTS.	TOTALS
203.0220	REMOVING STRUCTURE C-35-10	EA	---	---	1
502.4204	ADHESIVE ANCHORS NO. 4 BAR	EA	---	40	40
504.0100	CONCRETE MASONRY CULVERTS	CY	---	1.00	1
505.0600	BAR STEEL REINFORCEMENT HS COATED STRUCTURES	LB	---	60	60
509.1500	CONCRETE SURFACE REPAIR	SF	33	175	208
SPV.0035	SCOUR REPAIR GROUT BAGS	CY	---	4	4
SPV.0165	UNDERWATER CONCRETE SURFACE REPAIR	SF	---	80	80
NON-BID ITEMS					
	FILLER	SIZE			1/2" & 3/4"



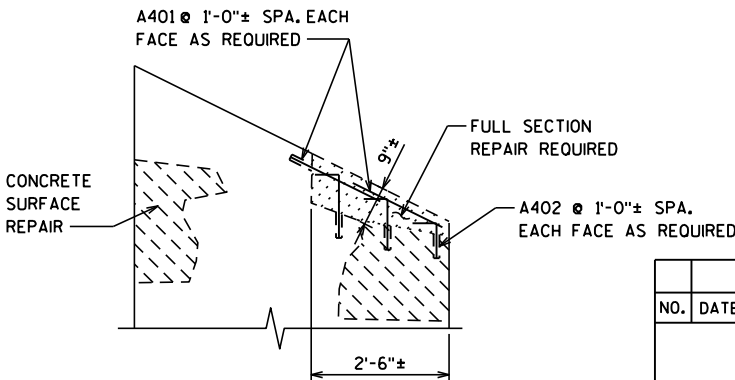
WING 1 ELEVATION



WING 2 ELEVATION



WING 3 ELEVATION



WING 4 ELEVATION

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE C-35-10			
DRAWN BY		BRE	PLANS CK'D. KRO
CROSS SECTION & QUANTITIES		SHEET 2 OF 2	
		110	

NOTES:
1 - CUT
3 - FILL
8 - MASS ORDINATE

CUT INCLUDES SALVAGED/UNUSABLE PAVEMENT MATERIAL
DOES NOT INCLUDE UNUSABLE PAVEMENT EXC VOLUME
IF MARSH OR EBS TO BE BACKFILLED WITH COMMON OR BORROW: [(CUT - SALVAGED PAVT - EXPANDED MARSH EXC - EXPANDED EBS) - ((FILL - REDUCED MARSH IN FILL - REDUCED EBS IN FILL - EXPANDED ROCK) * FILL FACTOR)]

EARTHWORK - STH 107 35107001895

STATION	AREA (SF)			INCREMENTAL VOL (CY) (UNADJUSTED)			CUMULATIVE VOL (CY)		
	CUT	SALVAGED/ UNUSABLE PAVEMENT MATERIAL	FILL	CUT	SALVAGED/UNUSABLE PAVEMENT MATERIAL	FILL	CUT 1.00	EXPANDED FILL 1.00	MASS ORDINATE
				NOTE 1	NOTE 2	NOTE 3	NOTE 1		NOTE 8
772+15	0.00	6.00	0.00	0	0	0	0	0	0
772+25	36.23	6.00	2.36	7	2	0	7	0	4
772+50	46.32	6.00	0.00	38	6	1	45	2	36
772+73.6	33.11	6.00	2.62	35	5	1	80	3	64
773+00	40.21	6.00	0.00	36	6	1	115	4	93
773+25	38.51	6.00	0.00	36	6	0	152	4	124
773+35	0.00	6.00	0.00	7	2	0	159	4	128

NOTE: TABLE DOES NOT INCLUDE PIPE EXCAVATION AND BACKFILL

EARTHWORK STH 107_35107001905

STATION	AREA (SF)			INCREMENTAL VOL (CY) (UNADJUSTED)			CUMULATIVE VOL (CY)		
	CUT	SALVAGED/ UNUSABLE PAVEMENT MATIERAL	FILL	CUT	SALVAGED/UNUSABLE PAVEMENT MATERIAL	FILL	CUT 1.00	EXPANDED FILL 1.25	MASS ORDINATE
				NOTE 1	NOTE 2	NOTE 3	NOTE 1		NOTE 8
878+25	0.00	6.00	0.00	0	0	0	0	0	0
878+35	34.30	6.00	2.32	6	2	0	6	1	4
878+50	32.33	6.00	3.67	19	3	2	25	3	17
878+75	34.88	6.00	3.47	31	6	3	56	7	38
879+00	34.53	6.00	2.76	32	6	3	88	10	61
879+25	35.19	6.00	7.04	32	6	5	120	16	82
879+46.14	25.96	6.00	38.87	24	5	18	144	38	79
879+75	31.27	6.00	5.69	31	6	24	175	68	73
880+00	37.87	6.00	1.96	32	6	4	207	73	95
880+10	37.36	6.00	1.33	14	2	1	221	73	106
880+25	0.00	6.00	0.00	10	3	0	231	74	113

NOTE: TABLE DOES NOT INCLUDE PIPE EXCAVATION AND BACKFILL

EARTHWORK - STH 107 B-35-0054

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 1.00	EXPANDED FILL 1.25	EXPANDED MARSH BACKFILL 1.20	MASS ORDINATE
					NOTE 1	NOTE 2	NOTE 3		NOTE 1		NOTE 4	NOTE 8
1217+75	0.00	5.50	0.00	0.00	0	0	0	0	0	0	0	0
1218+00.01	70.43	5.50	0.01	0.00	33	5	0	0	33	0	0	33
1218+50	57.57	5.50	0.00	0.00	119	10	0	0	151	0	0	151
1218+81.01	19.16	5.50	35.14	0.00	44	6	20	0	195	25	0	170
1219+05.96	6.48	5.50	63.63	22.00	12	5	46	10	207	70	12	125
1219+30.97	0.09	5.50	126.88	26.00	3	5	88	22	210	152	39	18
1219+50	0.00	5.50	194.97	56.00	0	4	113	29	210	258	74	-124
1219+83.88	0.00	5.50	0.00	0.00	0	7	122	35	210	367	116	-277
STRUCTURE B-35-54												
1220+20.98	0.00	5.50	0.00	0.00	0	8	0	0	210	367	116	-277
1220+50	0.00	5.50	108.15	0.00	0	6	58	0	210	439	116	-350
1220+73.37	0.27	5.50	41.87	0.00	0	5	65	0	210	521	116	-431
1220+75.04	0.50	5.50	39.72	0.00	0	0	3	0	210	524	116	-434
1220+98.07	12.49	5.50	24.70	0.00	6	5	27	0	216	558	116	-463
1221+00.31	15.44	5.50	27.29	0.00	1	0	2	0	217	561	116	-464
1221+22.73	35.10	5.50	22.99	0.00	21	5	21	0	238	587	116	-469
1221+25.62	34.20	5.50	21.89	0.00	4	1	2	0	242	590	116	-469
1221+50	48.80	5.50	15.00	0.00	37	5	17	0	279	611	116	-452
1222+00	58.82	5.50	4.36	0.00	100	10	18	0	379	633	116	-375
1222+50	76.92	5.50	2.62	0.00	71	10	2	0	450	636	116	-307
1223+00	89.81	5.50	0.00	0.00	154	10	2	0	604	639	116	-155
1223+50	60.58	5.50	0.21	0.00	139	10	0	0	744	639	116	-16
1223+80	53.61	5.50	0.00	0.00	63	6	0	0	807	640	116	47
1224+00	0.00	5.50	0.00	0.00	20	4	0	0	827	640	116	67

NOTES:

1 - CUT

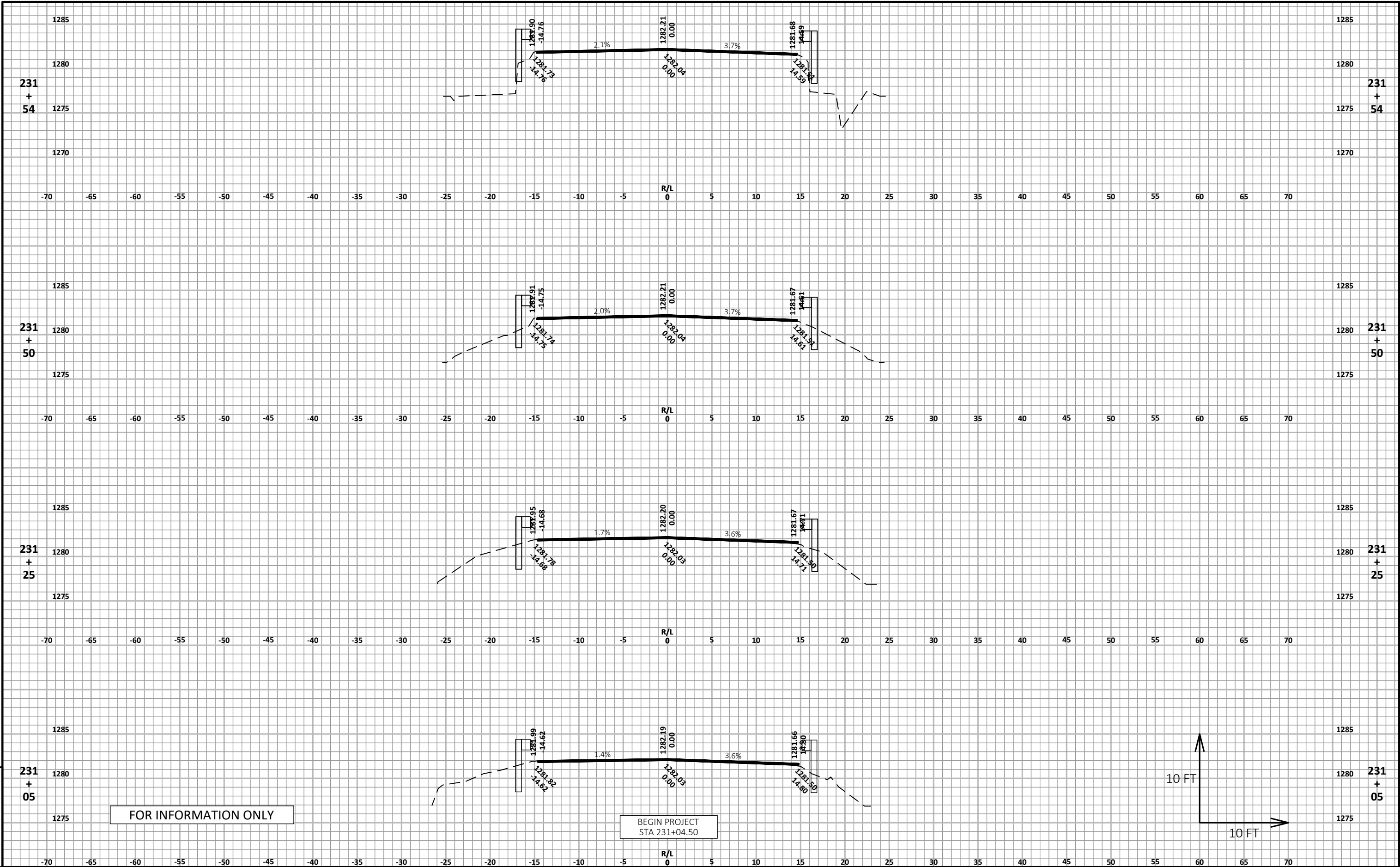
3 - FILL

8 - MASS ORDINATE

CUT INCLUDES SALVAGED/UNUSABLE PAVEMENT MATERIAL

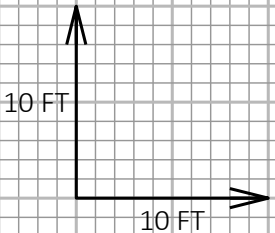
DOES NOT INCLUDE UNUSABLE PAVEMENT EXC VOLUME

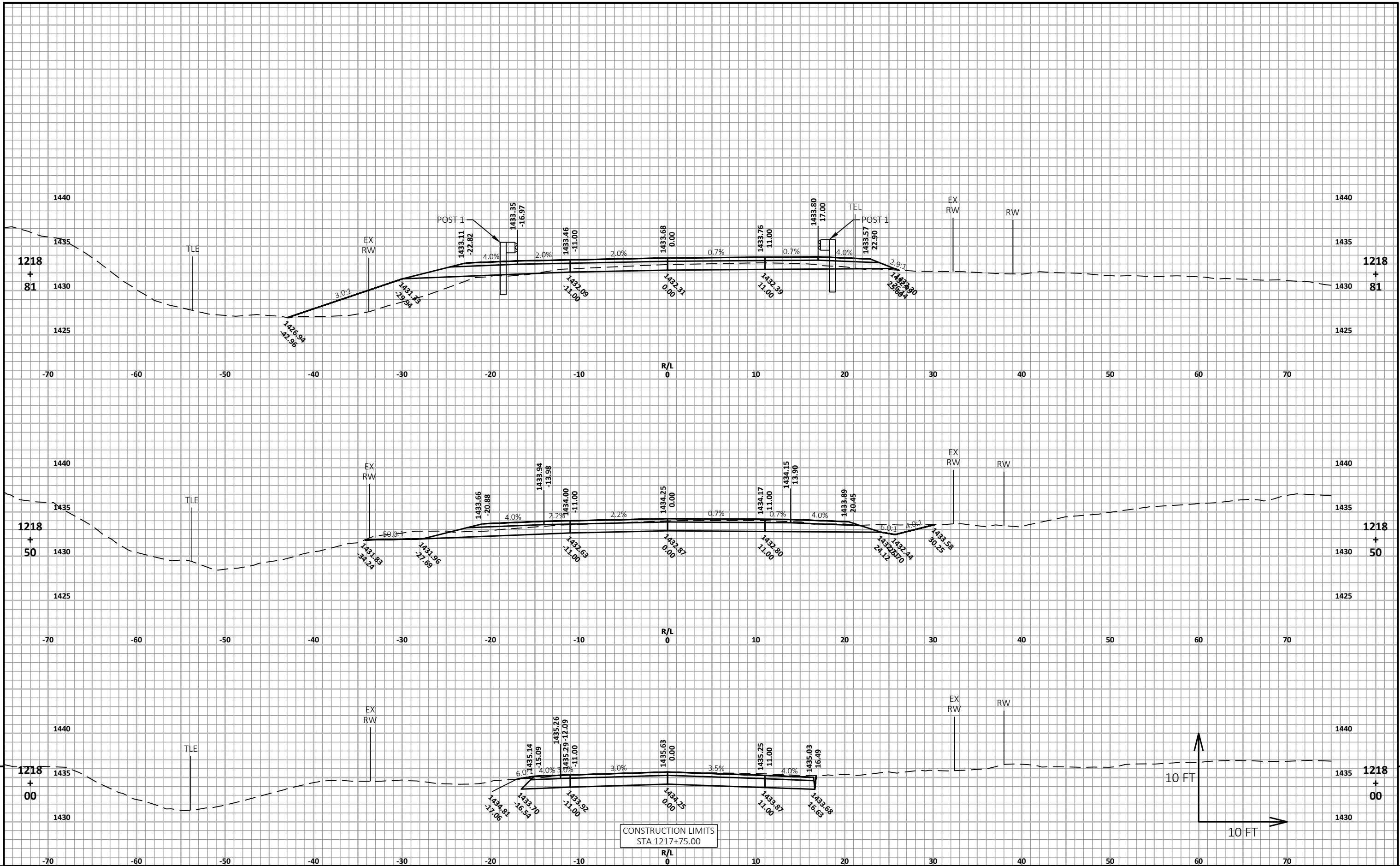
IF MARSH OR EBS TO BE BACKFILLED WITH COMMON OR BORROW: [(CUT - SALVAGED PAVT - EXPANDED MARSH EXC - EXPANDED EBS) - ((FILL - REDUCED MARSH IN FILL - REDUCED EBS IN FILL - EXPANDED ROCK) * FILL FACTOR)]

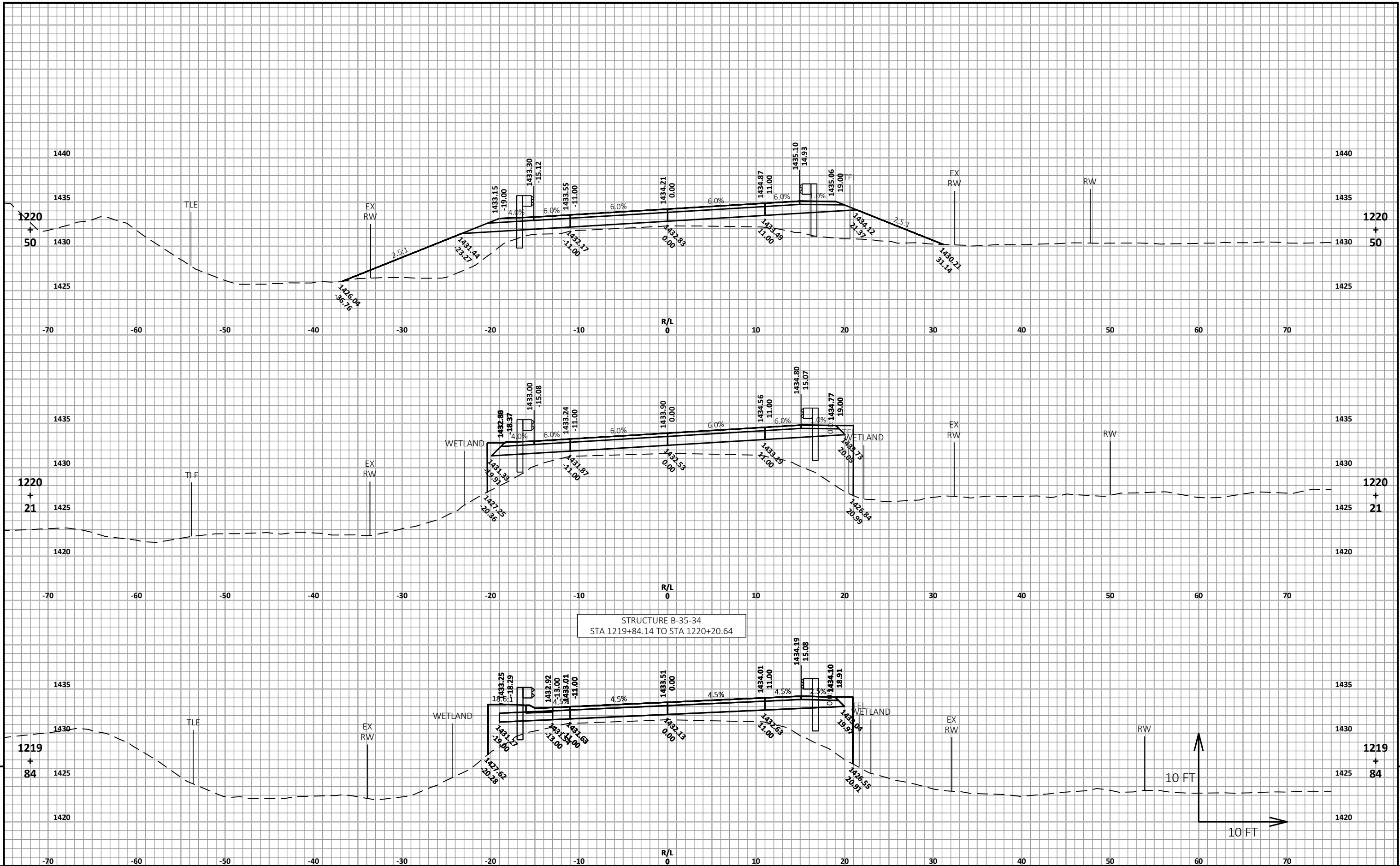


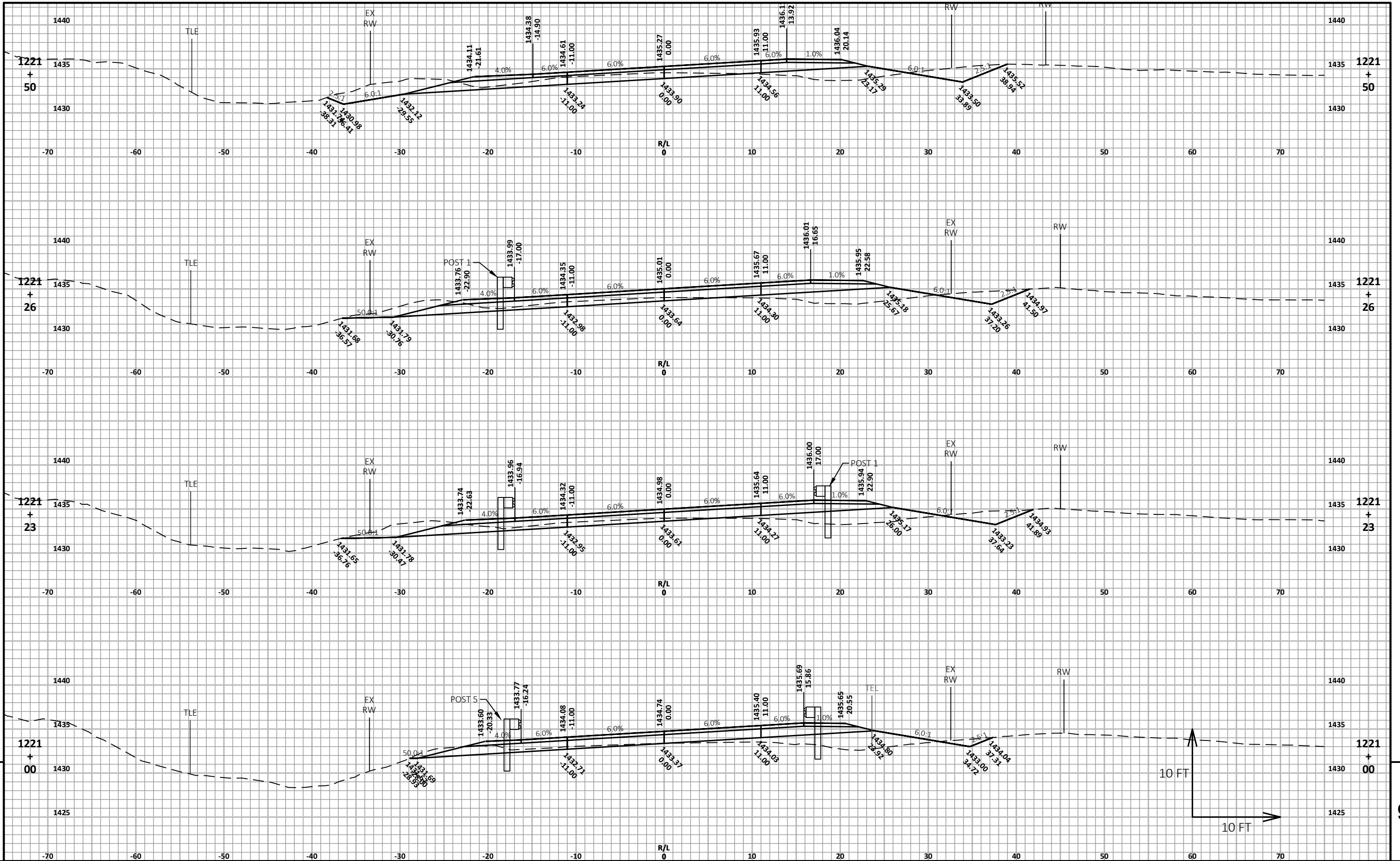
FOR INFORMATION ONLY

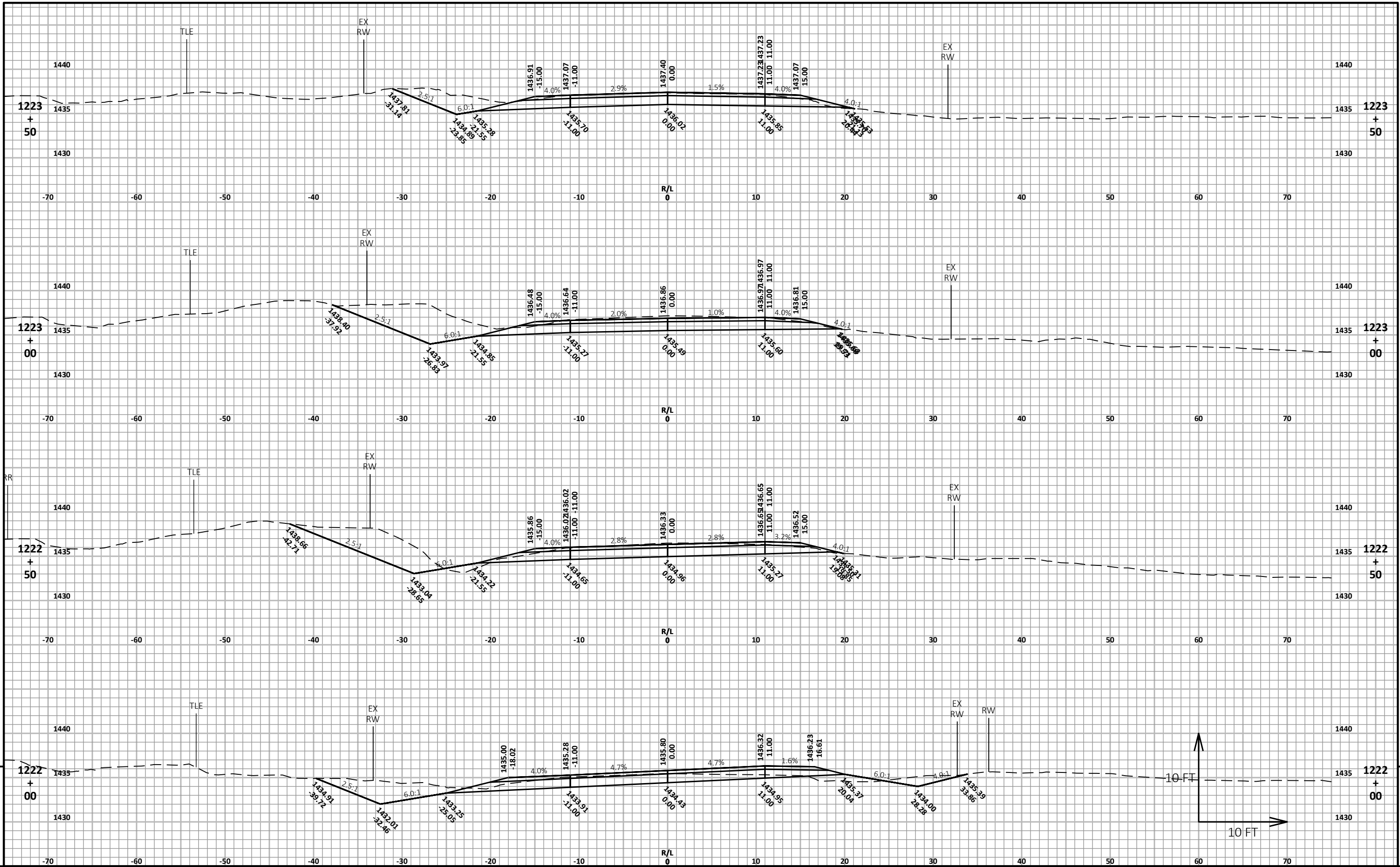
BEGIN PROJECT
STA 231+04.50

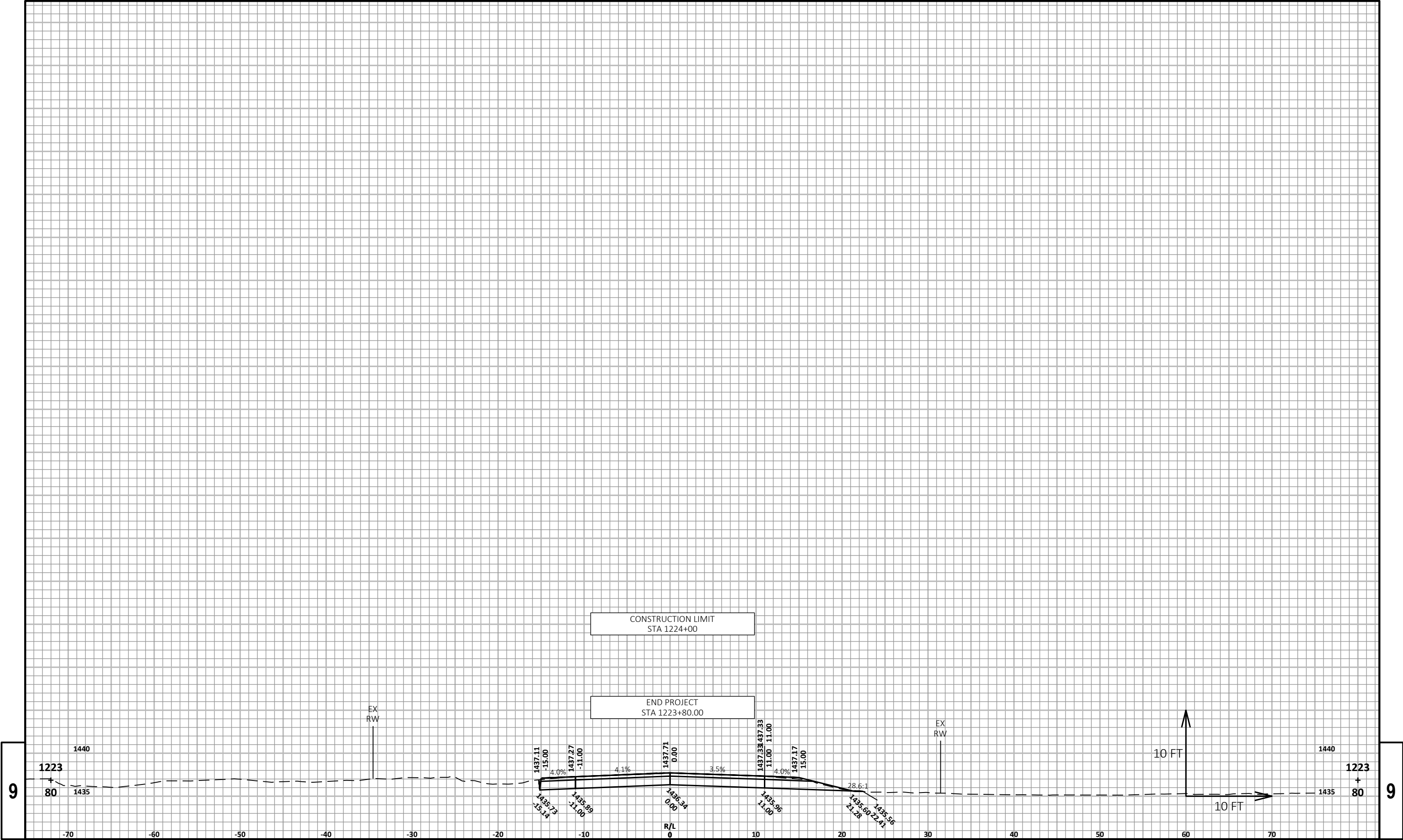


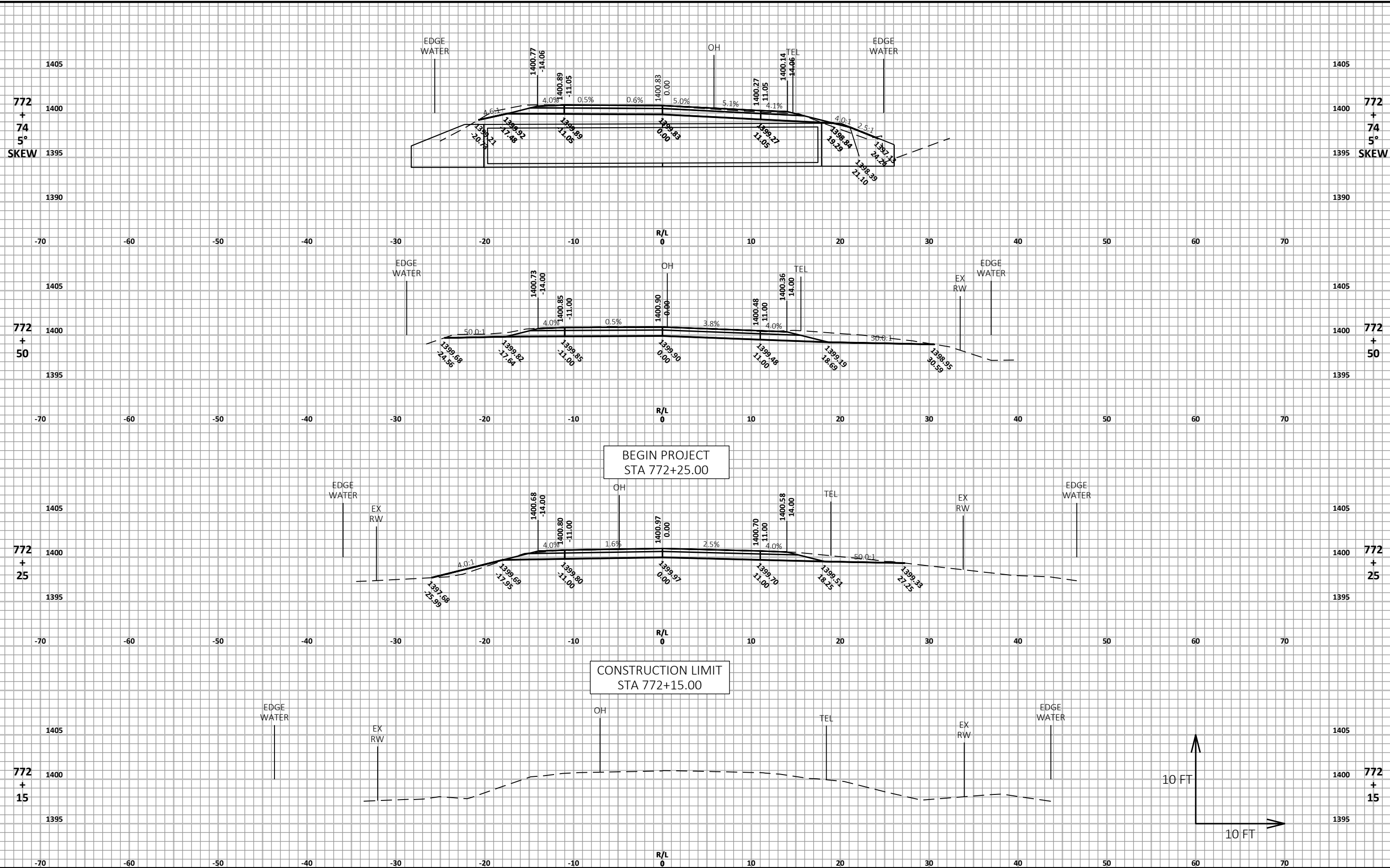


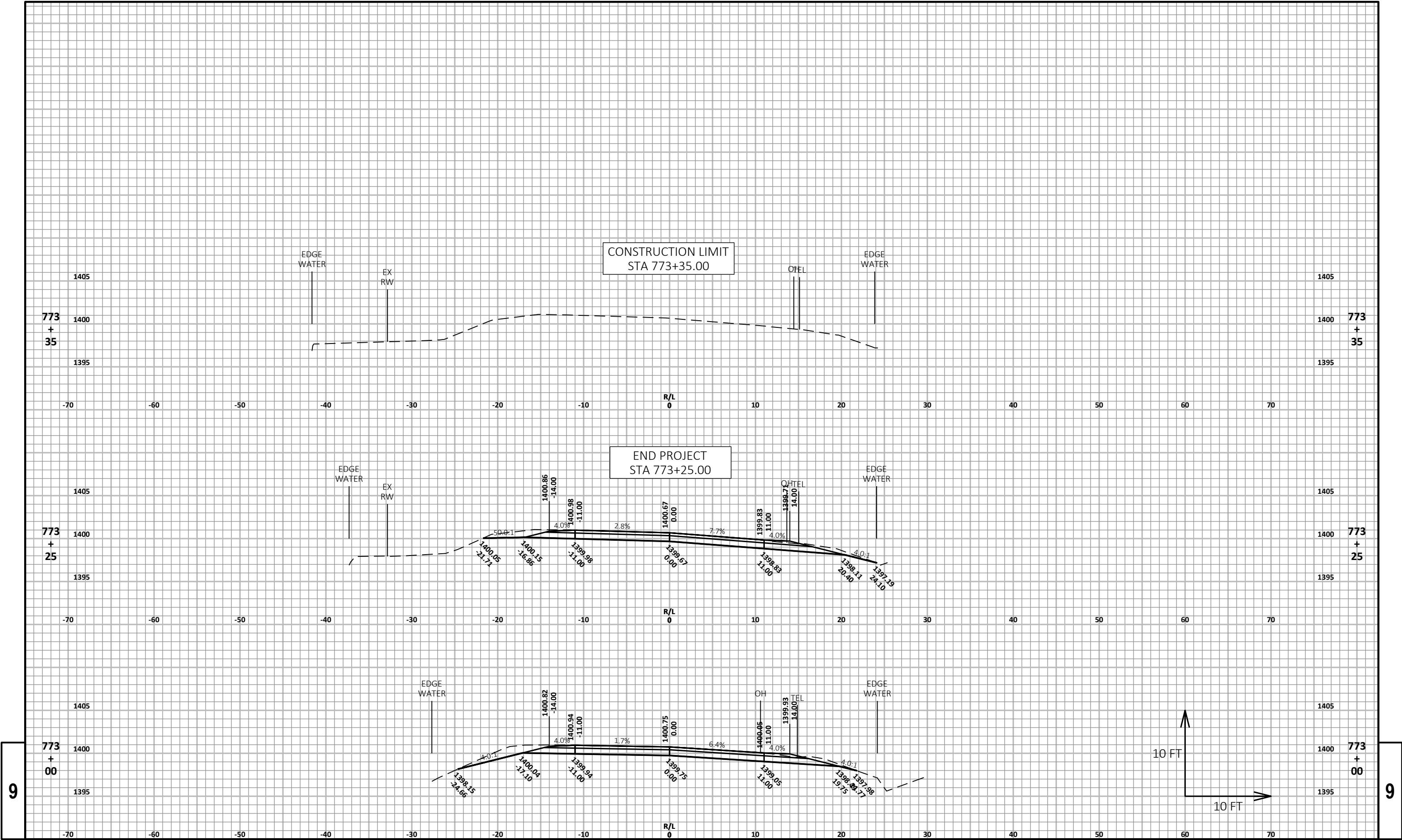


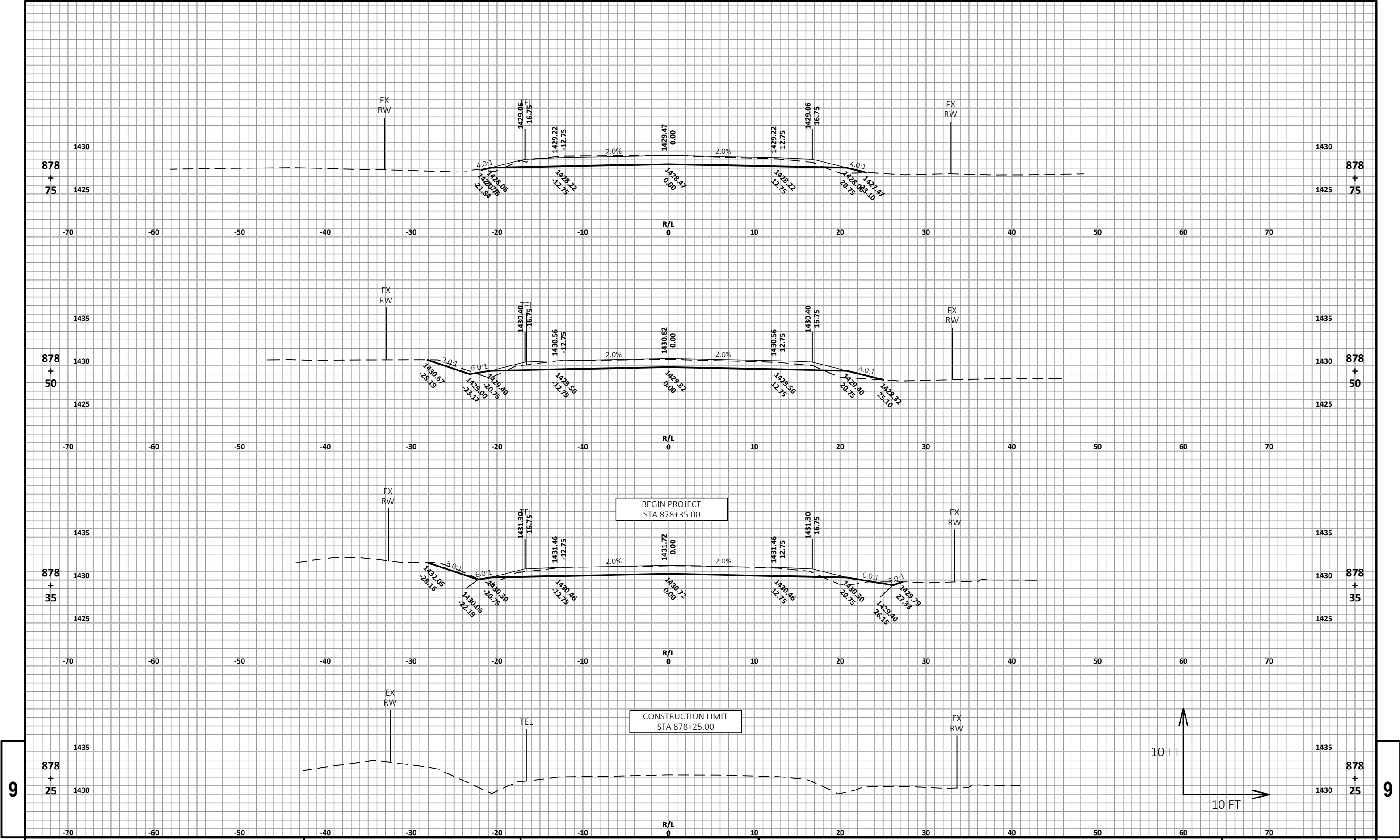






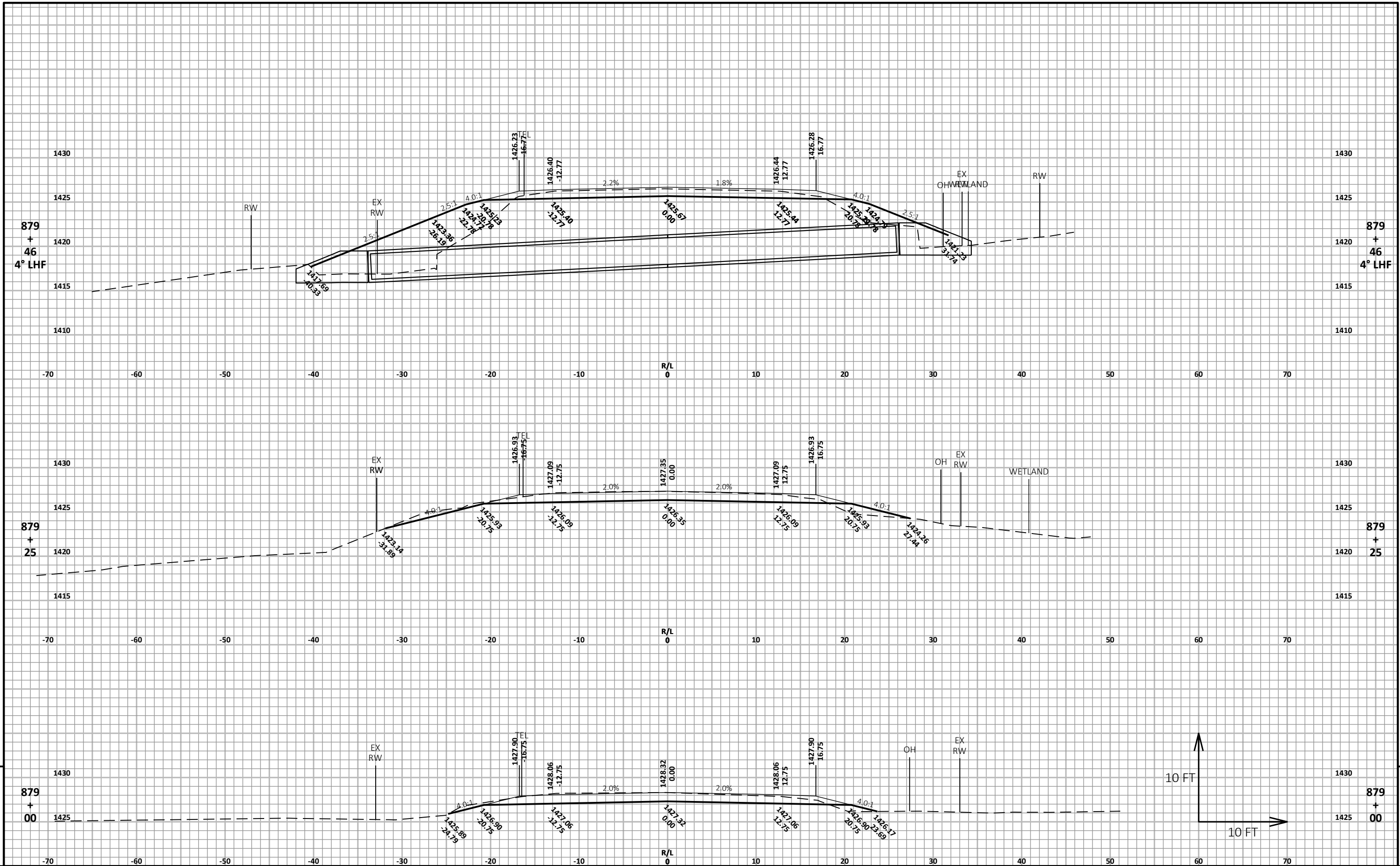


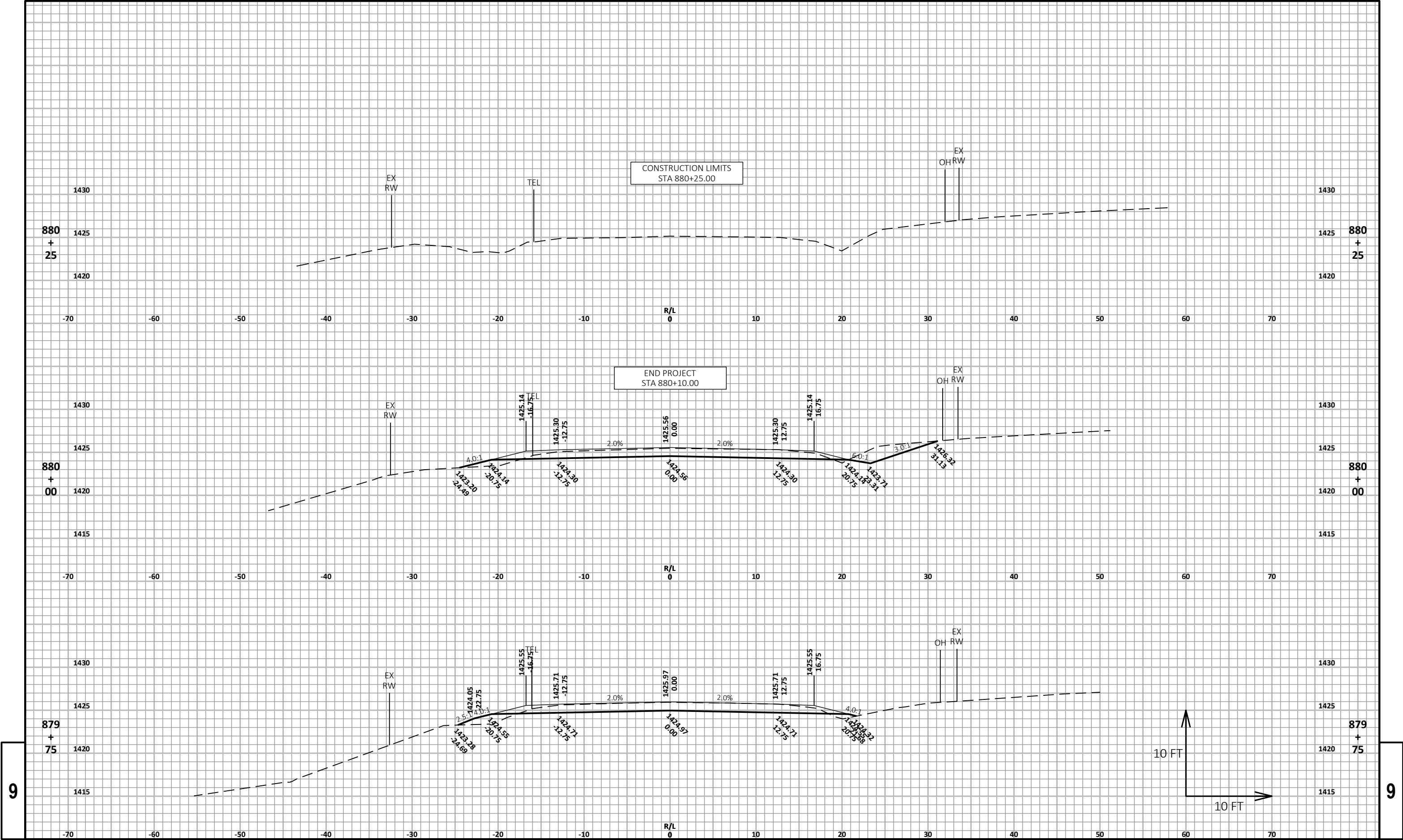




9

9

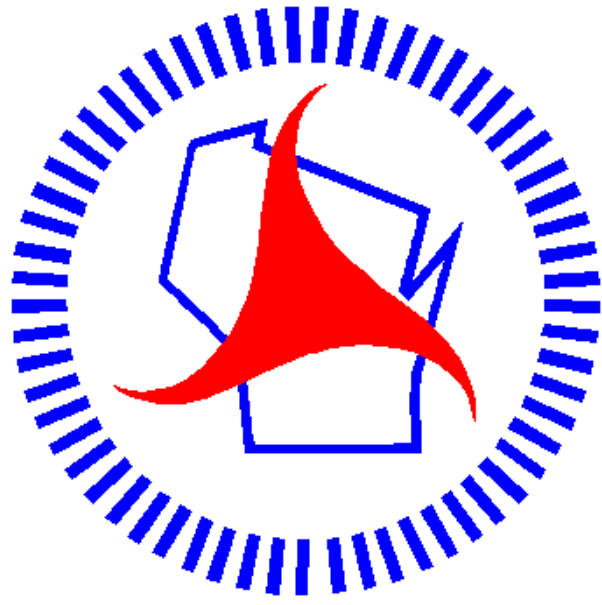




9

9

Notes



Wisconsin Department of Transportation

Dedicated people creating transportation solutions through innovation and exceptional service.

<http://www.dot.wisconsin.gov>