

UTILITIES

BAYFIELD ELECTRIC COOPERATIVE
PO BOX 68
IRON RIVER, WI 54847
CONTACT: GARY TARASEWICZ
PHONE: (715) 372-4287

CENTURYLINK
PO BOX 13
SHELDON, WI 54766
CONTACT: JIM AROUETTE
PHONE: (715) 452-5168

DEPARTMENT OF NATURAL RESOURCES

WDNR - NORTHWEST DISTRICT HEADQUARTERS
810 WEST MAPLE STREET
SPOONER, WI 54801
CONTACT: SHAWN HASELEU
PHONE: (715) 635-4228

GENERAL NOTES:

RESTORE PRIVATE ENTRANCES TO
EXISTING CONDITIONS UNLESS SHOWN OTHERWISE.

THE EXACT CONSTRUCTION LIMITS OF PRIVATE ENTRANCES SHALL BE
COORDINATED WITH THE ENGINEER IN THE FIELD.

WHEN THE QUANTITY OF BASE AGGREGATE IS MEASURED BY THE TON,
THE THICKNESS OF THE LAYER SHOWN ON THE PLAN IS
APPROXIMATE, AND THE ACTUAL THICKNESS WILL DEPEND ON THE
DISTRIBUTION OF MATERIAL AS DIRECTED BY THE ENGINEER.

PRIOR TO THE PLACEMENT OF BEAMGUARD AND GUARDRAIL,THE
SHOULDERS SHALL BE IN PLACE, SHAPED, AND COMPACTED UNLESS
SHOWN OTHERWISE.

IN BEAMGUARD AND GUARDRAIL AREAS, EXTEND PAVED SHOULDER OUT
TO BEAMGUARD AND GUARDRAIL FACE.

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

DISTURBED AREAS WITHIN THE RIGHT-OF-WAY, EXCEPT THE AREAS
WITHIN THE FINISHED SHOULDER POINTS, SHALL BE FERTILIZED,
SEEDED AND E-MATTED.

THE LOCATIONS OF EXISTING AND PROPOSED UTILITY INSTALLATIONS
ARE NOT SHOWN ON THE PLANS. THERE ARE UTILITY INSTALLATIONS
WITHIN THE PROJECT LIMITS.

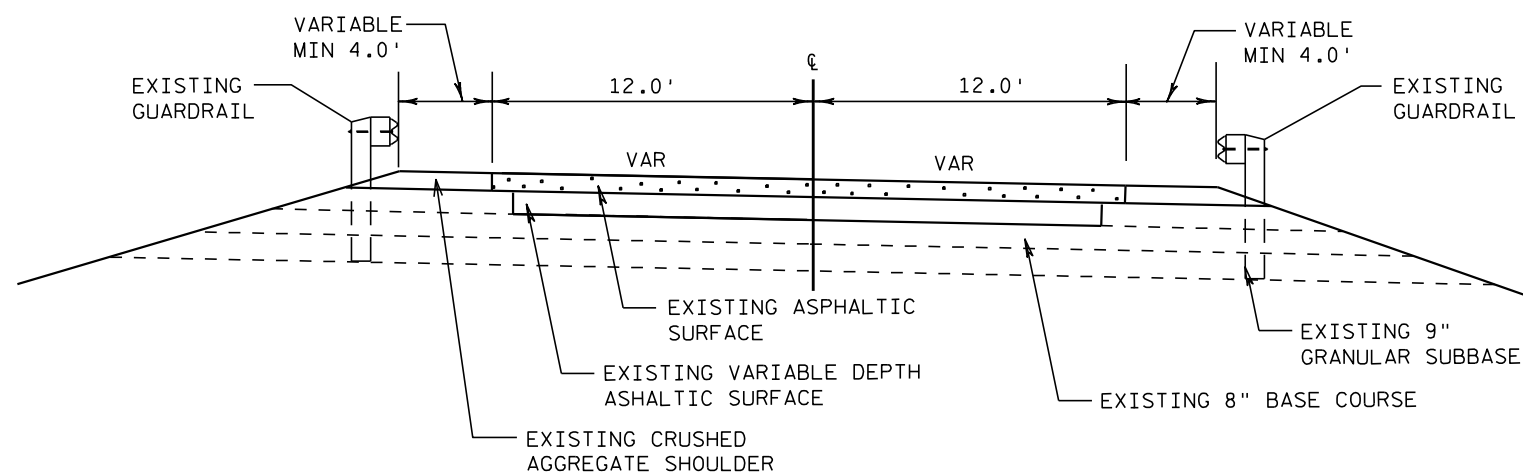
RUNOFF COEFFICIENT TABLE

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

TOTAL PROJECT AREA = 3.3 ACRES
TOTAL AREA EXPECTED TO BE DISTURBED BY CONSTRUCTION ACTIVITIES = 1.2 ACRES

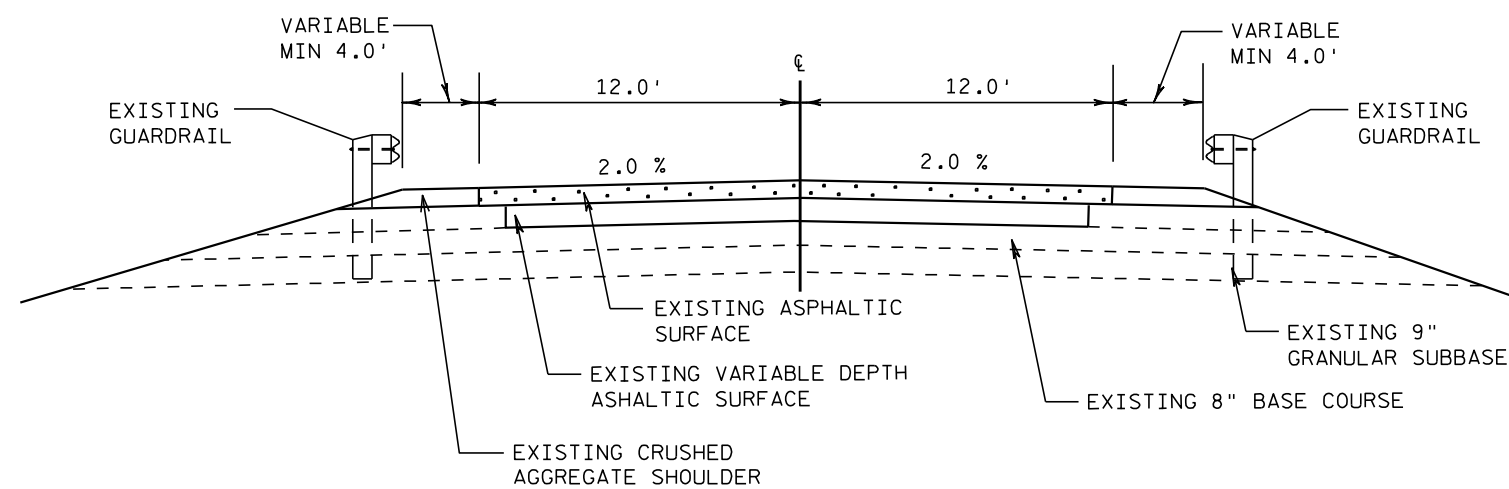


Dial  or (800)242-8511
www.DiggersHotline.com



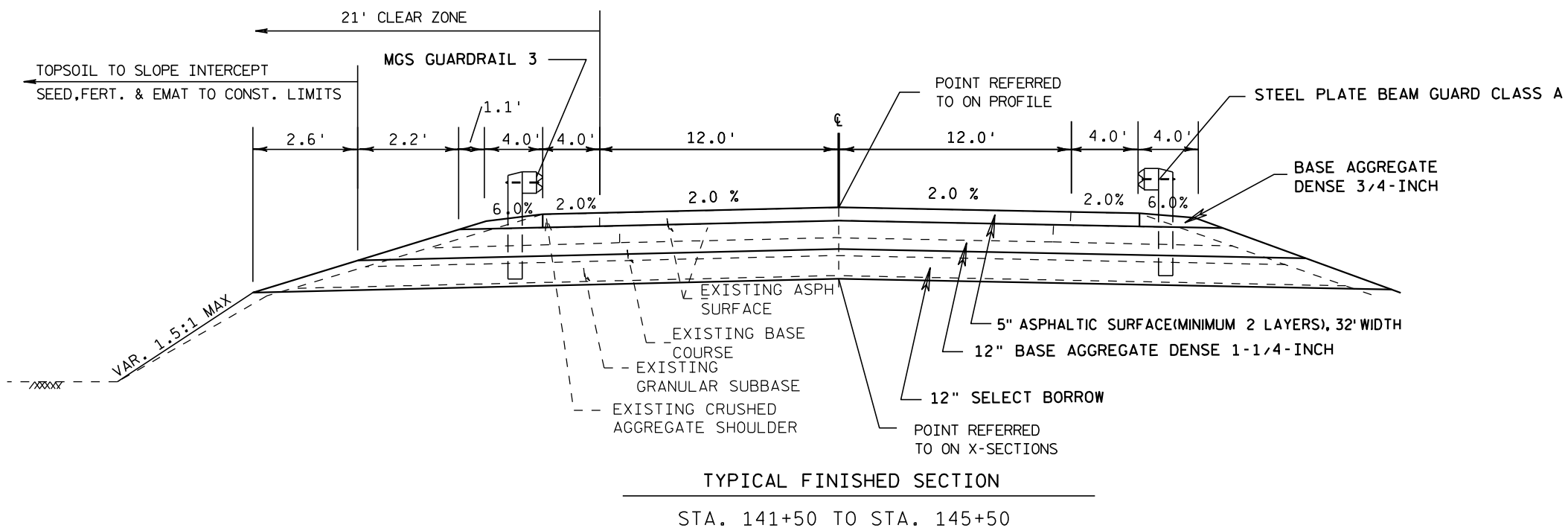
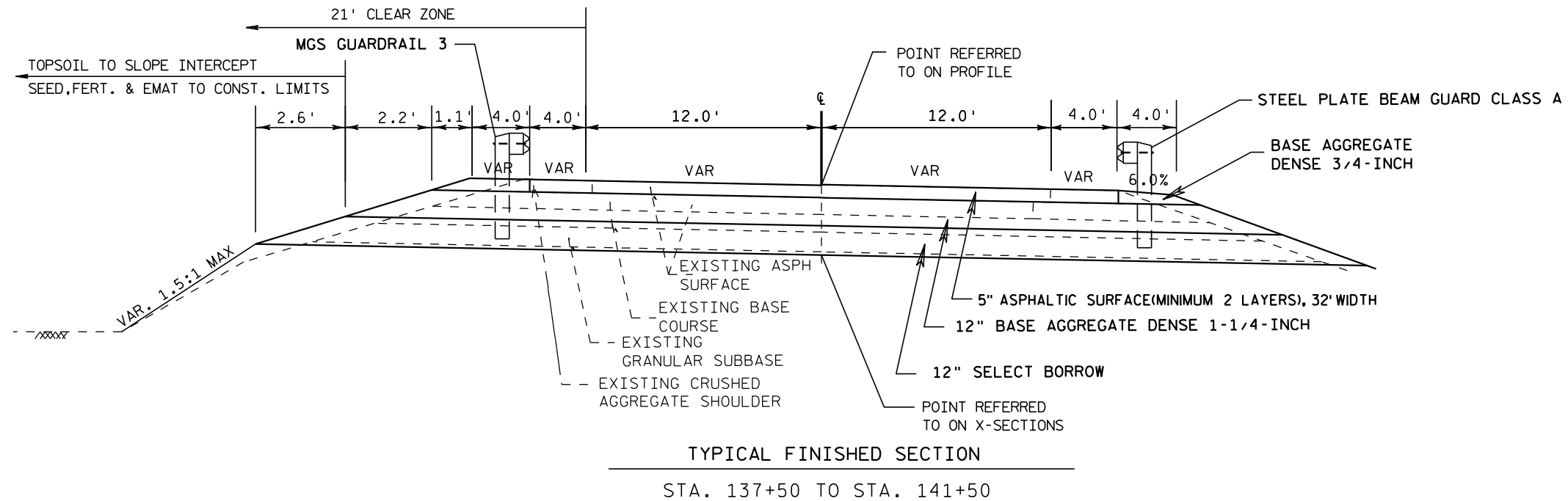
TYPICAL EXISTING SECTION

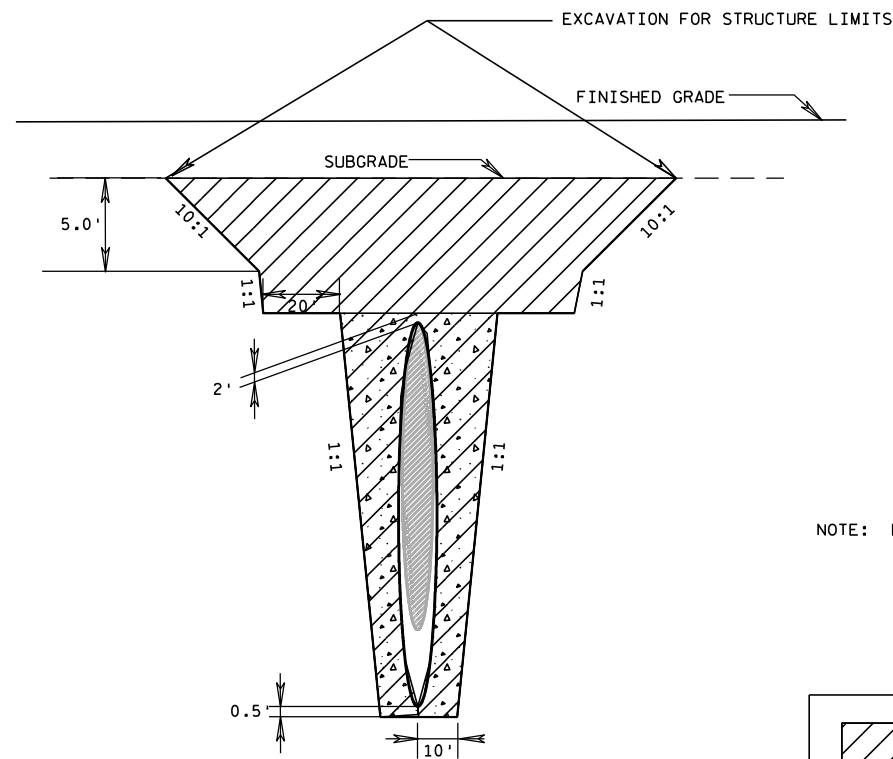
STA. 137+50 TO STA. 141+50



TYPICAL EXISTING SECTION

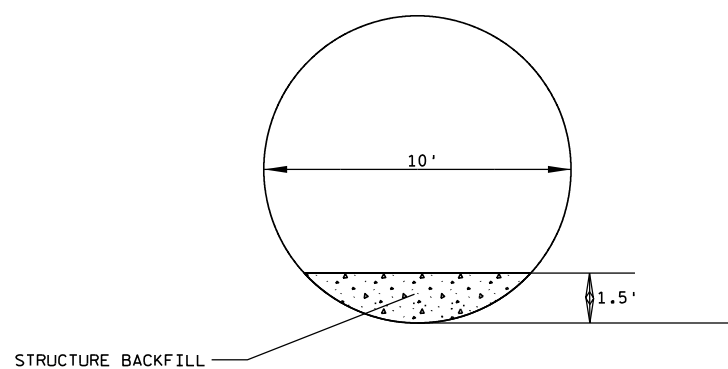
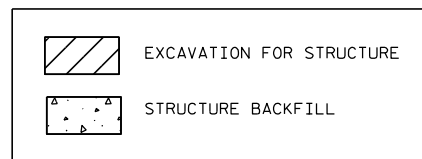
STA. 141+50 TO STA. 145+50



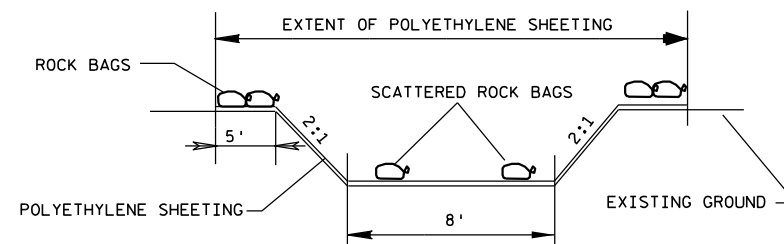


SAXINE TRIBUTARY
C-4-69 EXCAVATION DETAIL

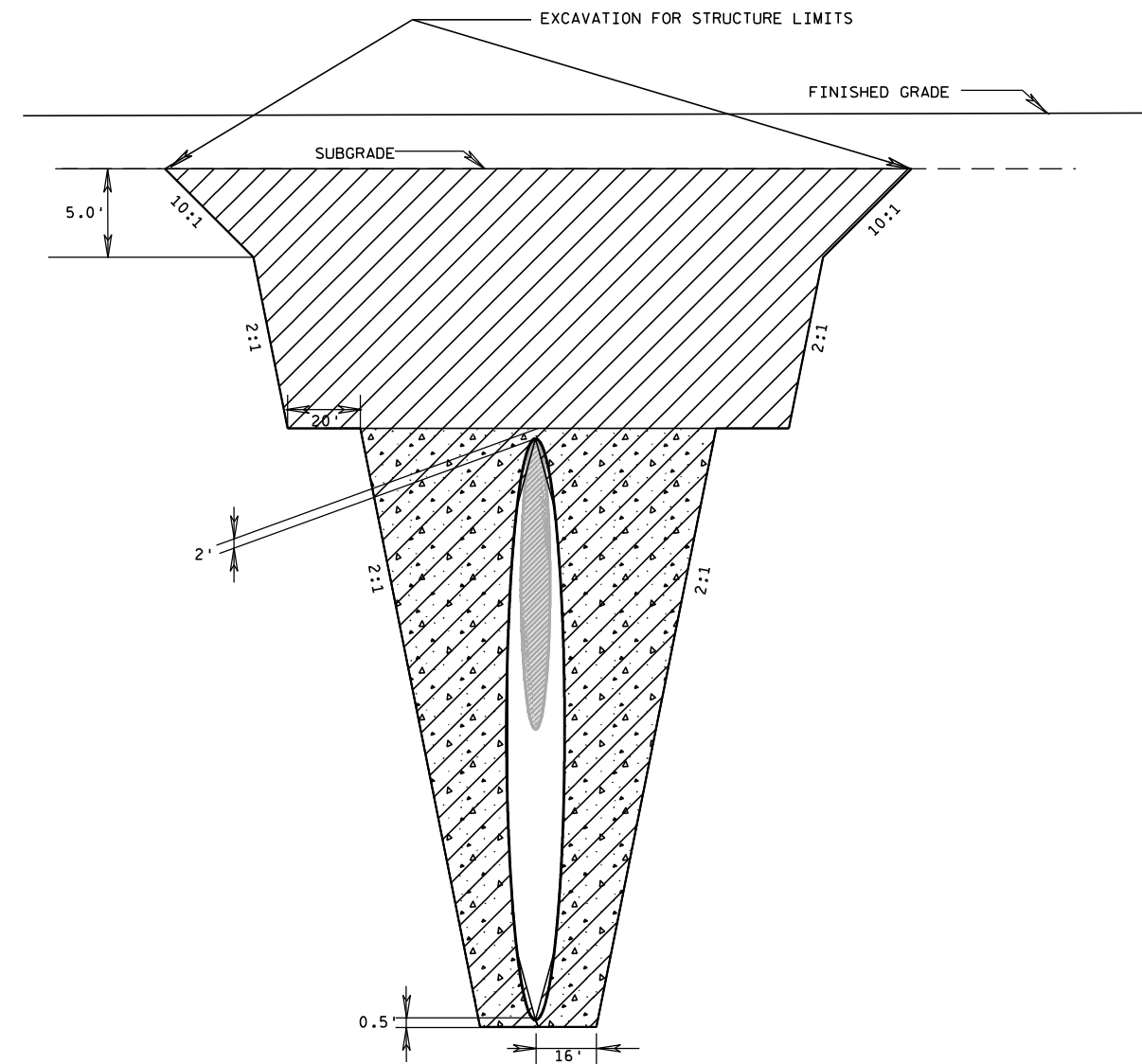
NOTE: EXCAVATION FOR TEMPORARY CHANNEL
IS INCLUDED IN EXCAVATION FOR STRUCTURE.



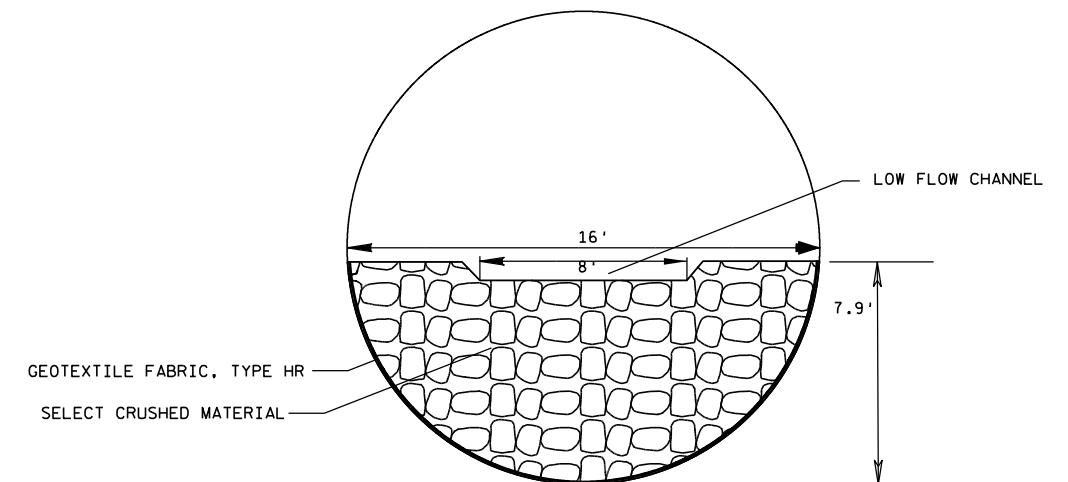
SAXINE TRIBUTARY C-4-69 CHANNEL SUBSTRATE IN CULVERT DETAIL



DETAIL FOR OPTIONAL TEMPORARY CHANNEL



SAXINE CREEK
C-4-68 EXCAVATION DETAIL



SAXINE CREEK C-4-68 SELECT CRUSHED MATERIAL CHANNEL DETAIL
THE LOW FLOW CHANNEL IS 8' WIDE AND 3 INCHES DEEP



PROJECT 8510-04-66
STA 140+13
REMOVE EXISTING 96" x 110' SPP
INSTALL 120" x 120' CPCA STRUCTURE C-04-0069
INLET ELEVATION 608.33
OUTLET ELEVATION 604.88

TEMPORARY SETTLING BASIN
(SEE DETAIL)

ROCK BAG LOCATION "B"

140

PUMPING DEVICE
REQ'D.

PT 139+51.60

ROCK BAG LOCATION "A"

PROJECT 8510-04-60
STA 143+26
REMOVE EXISTING 96" x 106' SPP
INSTALL 192" x 104' SPP STRUCTURE C-04-0068
INLET ELEVATION 598.40
OUTLET ELEVATION 597.50

PUMPING DEVICE REQ'D.

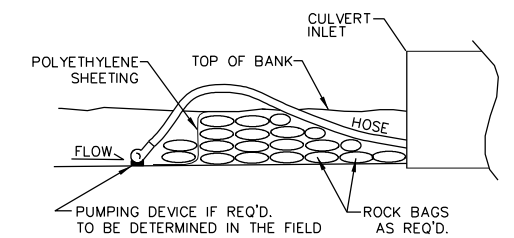
ROCK BAG
LOCATION "A"

SAXINE TRIBUTARY

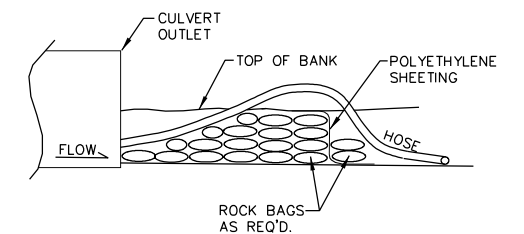
SAXINE CREEK

TEMPORARY SETTLING BASIN
(SEE DETAIL)

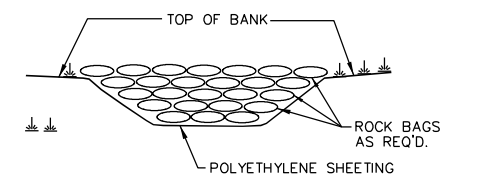
ROCK BAG LOCATION "B"



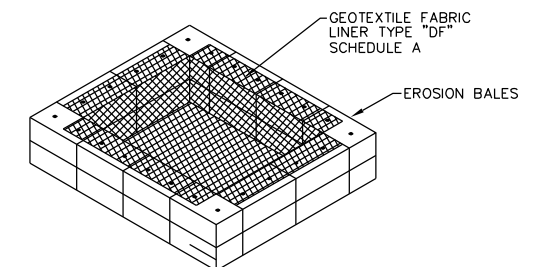
ROCK BAG LOCATION "A" DETAIL
(TO STOP FLOW INTO WORK AREA)



ROCK BAG LOCATION "B" DETAIL
(TO STOP BACKWASH INTO WORK AREA)



TYPICAL ROCK BAG INSTALLATION
IN EXISTING CHANNEL



TEMPORARY SETTLING BASIN
SIZE TO BE DETERMINED BY WATER
QUANTITY AND QUALITY

TEMPORARY SETTLING BASIN

SIZE TO BE DETERMINED BY WATER QUANTITY AND QUALITY
NOTES:

1. THE TEMPORARY SETTLING BASIN SHALL BE COMPLETED PRIOR TO BEGINNING OF PUMPING OPERATIONS. CONTRACTOR SHALL PUMP WATER FOR STRUCTURE EXCAVATION TO BASIN PRIOR TO DISCHARGE INTO THE STREAM.
2. BASIN SHALL BE KEPT LESS THAN 10% FULL OF SEDIMENT. GEOTEXTILE FABRIC TYPE DF AND SEDIMENTS SHALL BE DISPOSED OF BY THE CONTRACTOR OFF OF THE PROJECT SITE.
3. PAID FOR AS EROSION BALES AND GEOTEXTILE FABRIC TYPE DF.
4. PUMPING DEVICE OR ENGINEER APPROVED EQUAL WILL BE PAID FOR UNDER THE CORRESPONDING PIPE BID ITEMS.

PROJECT 8510-04-66
STA 140+13
REMOVE EXISTING 96" x 110' SPP
INSTALL 120" x 120' CPCA STRUCTURE C-04-0069
INLET ELEVATION 608.33
OUTLET ELEVATION 604.88

SAXINE TRIBUTARY

SAXINE CREEK

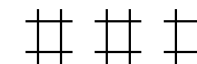
P1 144+80.21

145

PT 139+51.60

PROJECT 8510-04-60
STA 143+26
REMOVE EXISTING 96" x 106' SPP
INSTALL 192" x 104' SPP STRUCTURE C-04-0068
INLET ELEVATION 598.40
OUTLET ELEVATION 597.50

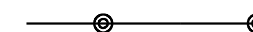
LEGEND



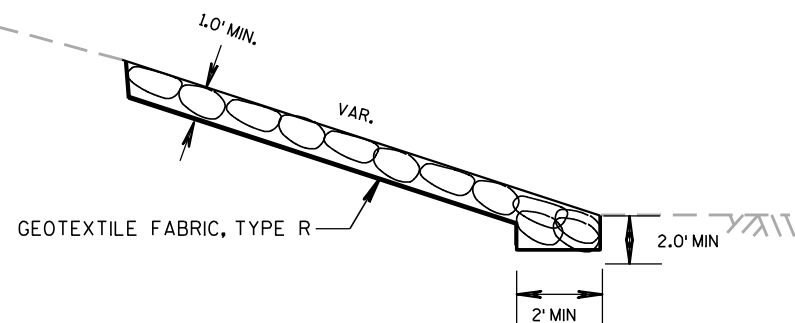
EROSION MAT



LIGHT RIPRAP



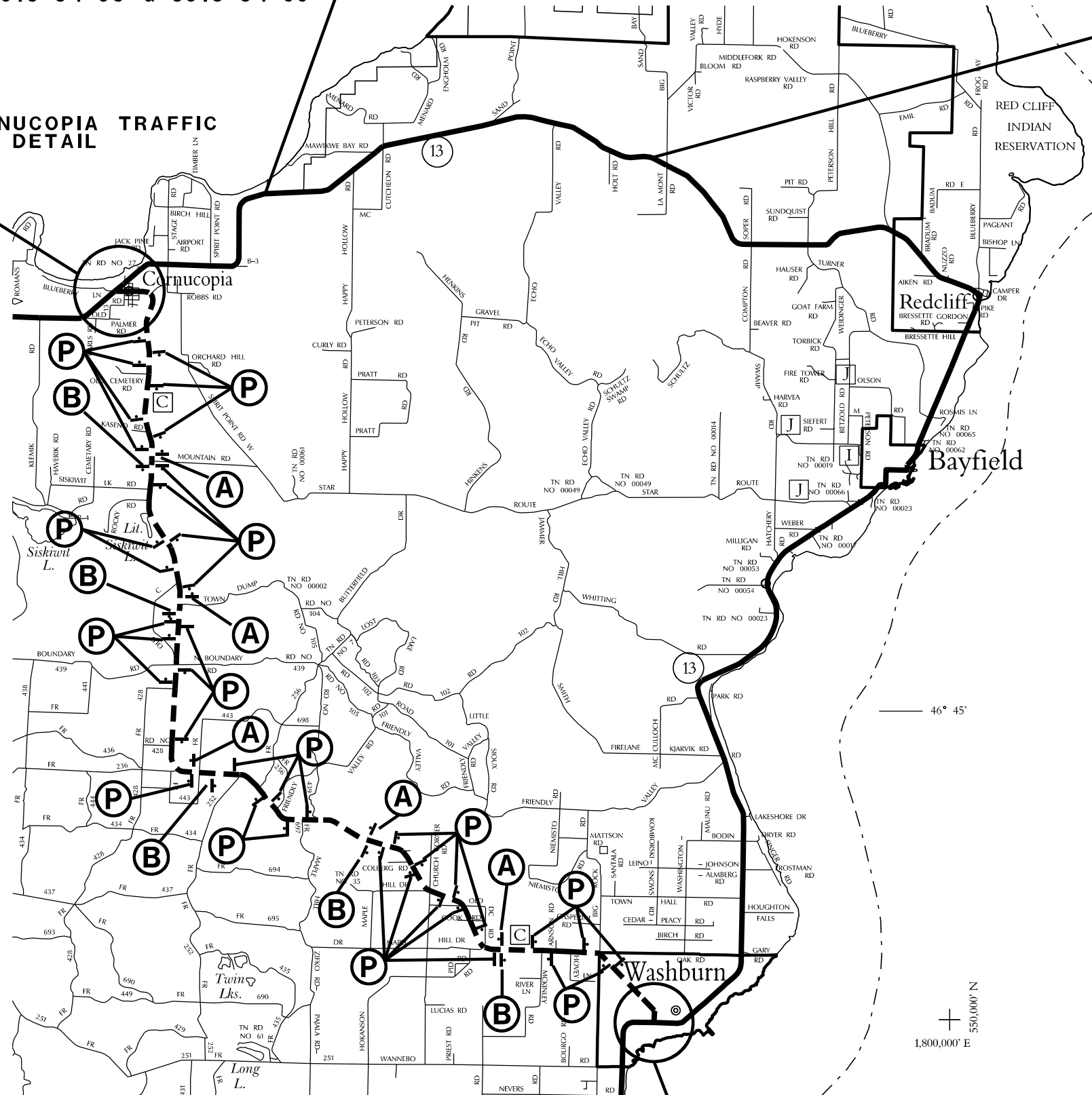
SILT FENCE



DETAIL FOR RIPRAP LIGHT AND GEOTEXTILE FABRIC, TYPE R

PROJECT LOCATION
PROJECT 8510-04-60 & 8510-04-66

SEE CORNUCOPIA TRAFFIC
CONTROL DETAIL



SEE WASHBURN TRAFFIC
CONTROL DETAIL

PROJECT LOCATION
PROJECT 8510-05-60

----- DETOUR ROUTE

(A)

M4-8 DETOUR 24" X 12"

M3-1 NORTH 24" X 12"

M1-6 13 24" X 24"

(B)

M4-8 DETOUR 24" X 12"

M3-3 SOUTH 24" X 12"

M1-6 13 24" X 24"

(P)



W14-3
48" X 36"

GENERAL NOTES FOR SIGNING:

ALL SIGNS AND DEVICES SHALL BE IN CONFORMANCE WITH THE WISCONSIN MANUAL OF TRAFFIC CONTROL DEVICES. (WMUTCD)

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

DURING HOURS OF DARKNESS, ALL BARRICADES USED TO SHIELD A HAZARD SHALL BE EQUIPPED WITH TYPE "A" LIGHTS AND DEVICES USED TO DELINEATE A TRAVEL PATH SHALL BE EQUIPPED WITH TYPE "C" LIGHTS

"WO" SIGNS ARE THE SAME A "W" SIGNS EXCEPT THE BACKGROUND SHALL BE ORANGE

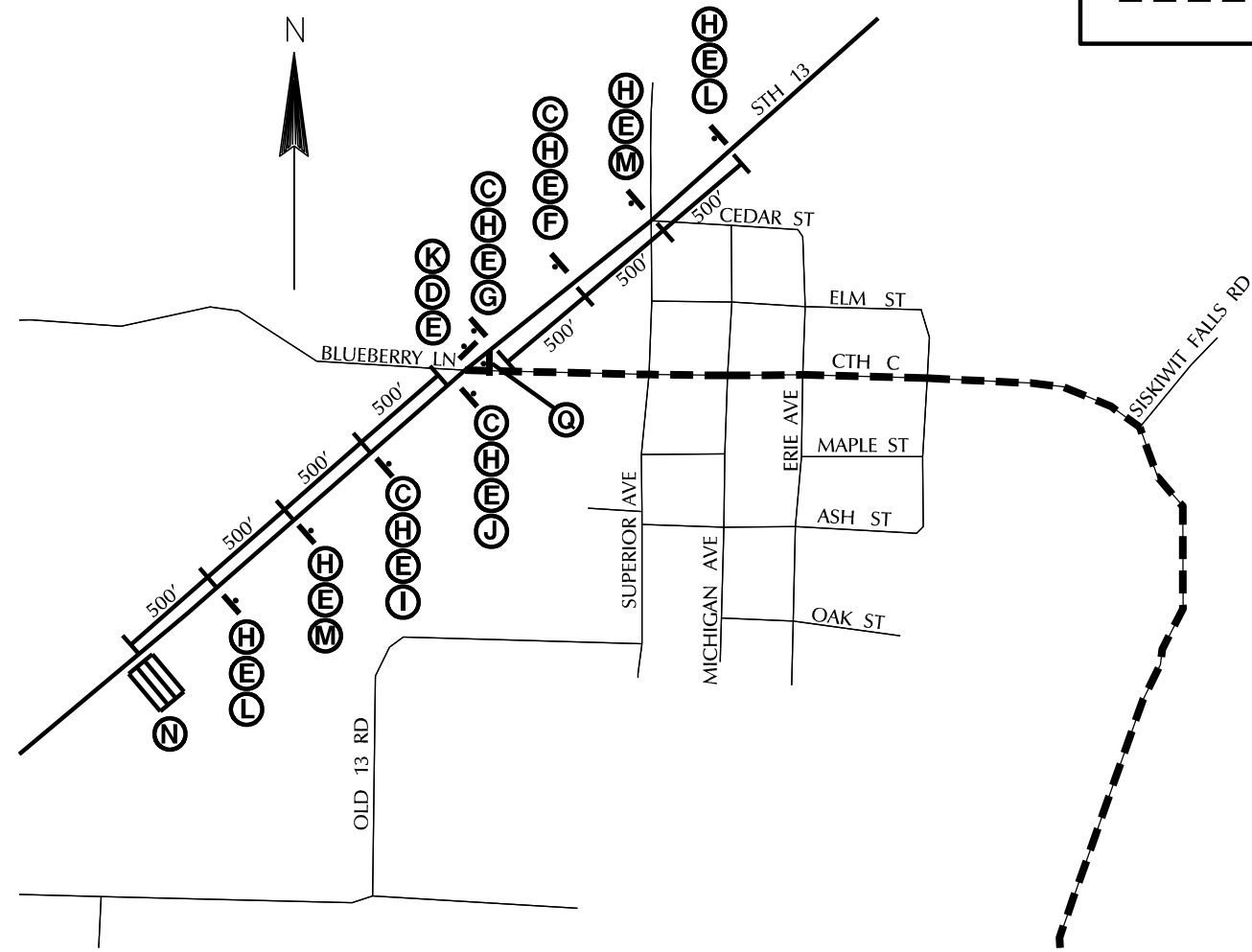
DETOUR SIGNS SHALL BE PLACED ON NEW POSTS UNLESS APPROVED BY THE ENGINEER

BEFORE INSTALLING ANY SIGN POSTS, LOCATIONS ARE TO BE CLEARED WITH UTILITIES THROUGH DIGGER'S HOTLINE 1-800-242-8511

THE NO PASSING ZONE SIGNS SHALL BE PLACED AT THE LOCATIONS OF THE EXISTING NO PASSING ZONES ON THE DETOUR ROUTE.

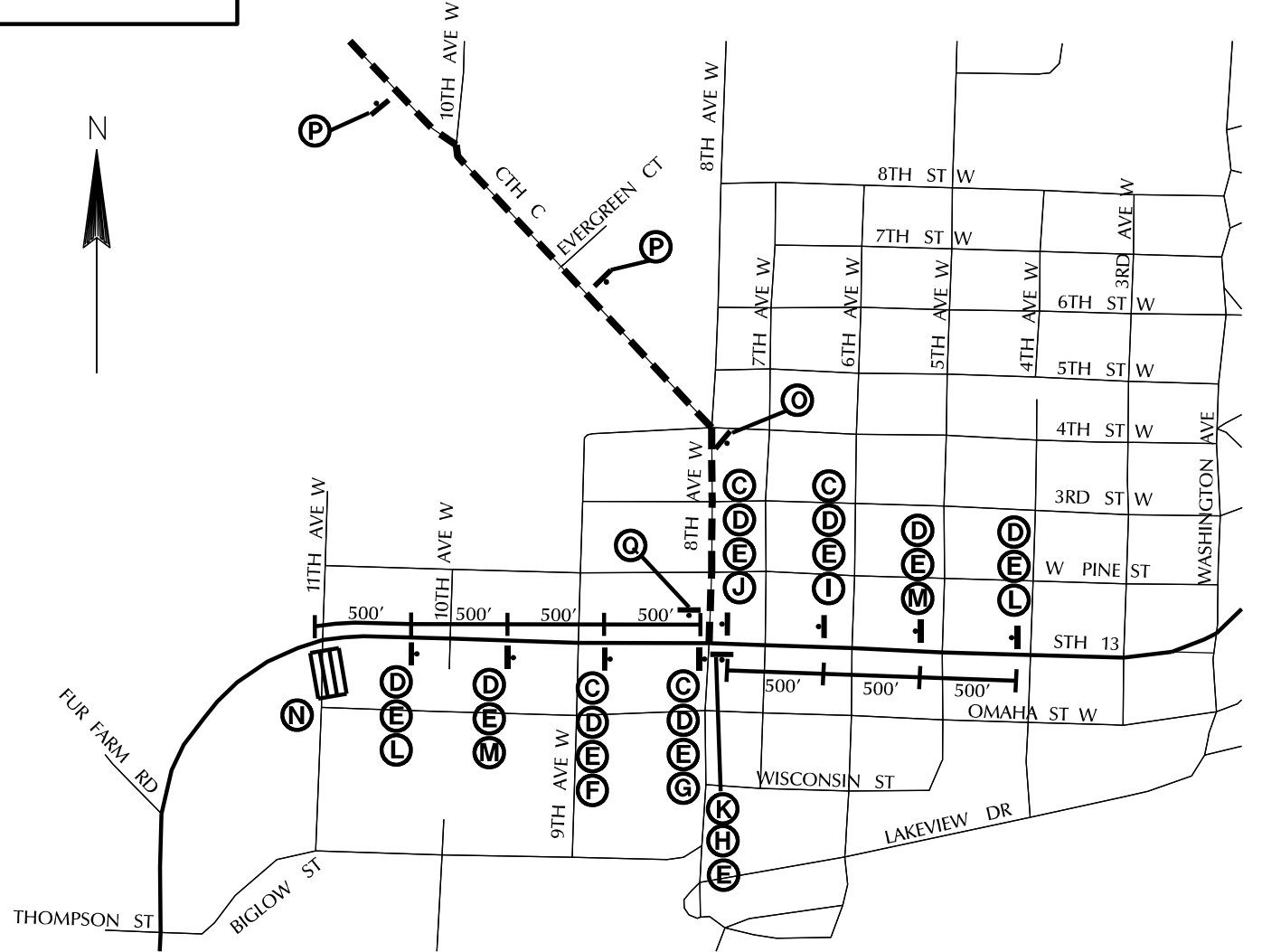
LAYOUT AND ACTUAL PLACEMENT OF THE SIGNS SHALL BE DONE BY THE CONTRACTOR IN ACCORDANCE WITH THE WMUTCD.

NO PERMANENT SIGNING WORK SHALL BE PERFORMED WITHOUT THE APPROVAL OF THE ENGINEER.



CORNUCOPIA TRAFFIC CONTROL DETAIL

----- DETOUR ROUTE



WASHBURN TRAFFIC CONTROL DETAIL

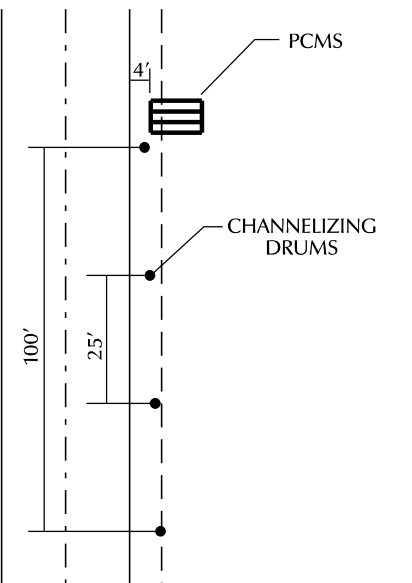
TRAFFIC CONTROL SIGNS

C DETOUR M4-8 24" X 12"	D NORTH M3-1 24" X 12"	E 13 M1-6 24" X 24"	F ← M05-1L 21" X 21"	G ← M06-1 21" X 21"	H SOUTH M3-3 24" X 12"	I ↗ M05-1R 21" X 21"	J → M06-1 21" X 21"
K END DETOUR M4-8A 24" X 18"	L DETOUR AHEAD W20-2A 48" X 48"	M DETOUR 1000 FT W20-2C 48" X 48"	N PORTABLE CHANGEABLE MESSAGE BOARD PCMS		O → W1-6 48" X 24"	P NO PASSING ZONE W14-3 48" X 36"	

PERMANENT SIGN REPLACEMENT

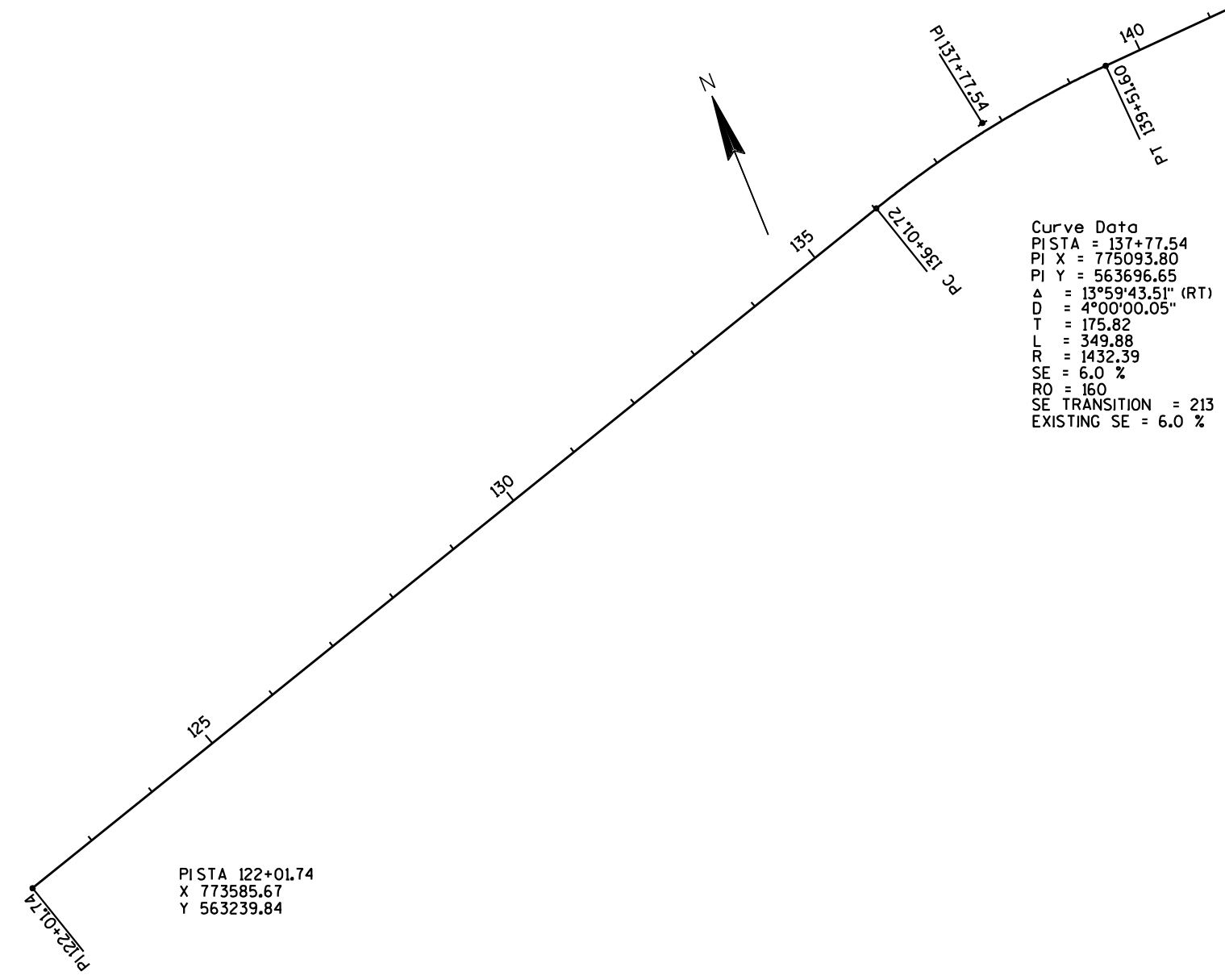
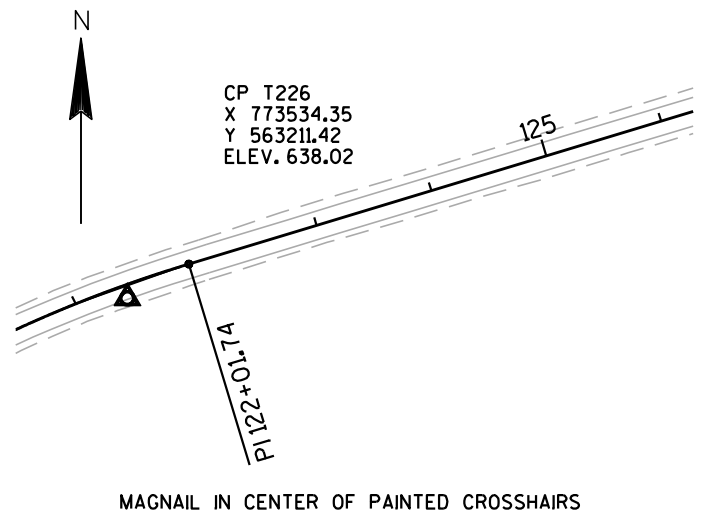
Q
STOP
R1-1
36" X 36"

PCMS DETAIL

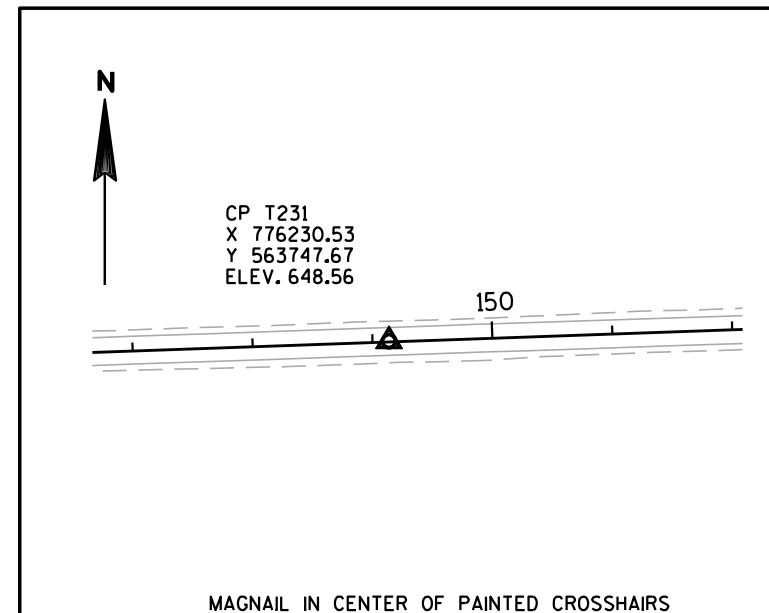


2

2



SUPERELEVATION TRANSITION		
LEFT	STATION	RIGHT
-2.00%	134+42	-2.00%
+2.00%	135+49	-2.00%
+6.00%	136+55	-6.00%
+6.00%	138+98	-6.00%
+2.00%	140+05	-2.00%
-2.00%	141+11	-2.00%



DATE 27JAN14			E S T I M A T E O F Q U A N T I T I E S			
LINE				8510-04-60	8510-04-66	
NUMBER	ITEM	ITEM DESCRIPTION	UNIT	TOTAL	QUANTITY	QUANTITY
0010	201.0105	CLEARING	STA	5.000	3.000	2.000
0020	201.0205	GRUBBING	STA	5.000	3.000	2.000
0030	203.0200	REMOVING OLD STRUCTURE (STATION) 01. STA. 143+26	LS	1.000	1.000	
0040	203.0200	REMOVING OLD STRUCTURE (STATION) 02. STA. 140+13	LS	1.000		1.000
0060	205.0100	EXCAVATION COMMON	CY	3,192.000	1,582.000	1,610.000
0070	206.2000	EXCAVATION FOR STRUCTURES CULVERTS (STRUCTURE) 01. C-04-0069	LS	1.000		1.000
0090	206.4000	EXCAVATION FOR STRUCTURES STRUCTURAL PLATE PIPE OR PIPE ARCHES (STATION) 01. STA. 143+26	LS	1.000	1.000	
0100	208.1100	SELECT BORROW	CY	1,770.000	885.000	885.000
0110	210.0100	BACKFILL STRUCTURE	CY	7,075.000	5,230.000	1,845.000
0120	211.0100	PREPARE FOUNDATION FOR ASPHALTIC PAVING (PROJECT) 01.8510-04-60	LS	1.000	1.000	
0130	211.0100	PREPARE FOUNDATION FOR ASPHALTIC PAVING (PROJECT) 02.8510-04-66	LS	1.000		1.000
0150	213.0100	FINISHING ROADWAY (PROJECT) 01. 8510-04-60	EACH	1.000	1.000	
0160	213.0100	FINISHING ROADWAY (PROJECT) 02. 8510-04-66	EACH	1.000		1.000
0180	305.0110	BASE AGGREGATE DENSE 3/4-INCH	TON	270.000	135.000	135.000
0190	305.0120	BASE AGGREGATE DENSE 1 1/4-INCH	TON	2,460.000	1,230.000	1,230.000
0200	312.0110	SELECT CRUSHED MATERIAL	TON	450.000	450.000	
0210	455.0605	TACK COAT	GAL	70.000	35.000	35.000
0220	465.0105	ASPHALTIC SURFACE	TON	800.000	400.000	400.000
0230	606.0100	RIPRAP LIGHT	CY	180.000	105.000	75.000
0240	614.0305	STEEL PLATE BEAM GUARD CLASS A	LF	637.000	325.000	312.000
0250	614.0345	STEEL PLATE BEAM GUARD SHORT RADIUS	LF	50.000	25.000	25.000
0260	614.0370	STEEL PLATE BEAM GUARD ENERGY ABSORBING TERMINAL	EACH	2.000	1.000	1.000
0270	614.0390	STEEL PLATE BEAM GUARD SHORT RADIUS TERMINAL	EACH	2.000	1.000	1.000
0280	614.0920	SALVAGED RAIL	LF	800.000	450.000	350.000
0290	614.2300	MGS GUARDRAIL 3	LF	563.000	347.000	216.000
0300	614.2610	MGS GUARDRAIL TERMINAL EAT	EACH	2.000	1.000	1.000
0310	618.0100	MAINTENANCE AND REPAIR OF HAUL ROADS (PROJECT) 01.8510-04-60	EACH	1.000	1.000	
0320	618.0100	MAINTENANCE AND REPAIR OF HAUL ROADS (PROJECT) 02.8510-04-66	EACH	1.000		1.000
0340	619.1000	MOBILIZATION	EACH	0.750	0.450	0.300
0350	625.0100	TOPSOIL	SY	1,800.000	1,100.000	700.000
0360	628.1104	EROSION BALES	EACH	100.000	50.000	50.000
0370	628.1504	SILT FENCE	LF	2,000.000	1,000.000	1,000.000
0380	628.1520	SILT FENCE MAINTENANCE	LF	2,000.000	1,000.000	1,000.000
0390	628.1905	MOBILIZATIONS EROSION CONTROL	EACH	6.000	4.000	2.000
0400	628.1910	MOBILIZATIONS EMERGENCY EROSION CONTROL	EACH	4.000	2.000	2.000
0410	628.2008	EROSION MAT URBAN CLASS I TYPE B	SY	2,700.000	1,550.000	1,150.000
0420	628.5505	POLYETHYLENE SHEETING	SY	2,500.000	1,500.000	1,000.000
0430	628.7570	ROCK BAGS	EACH	850.000	500.000	350.000
0440	629.0210	FERTILIZER TYPE B	CWT	2.000	1.000	1.000
0450	630.0120	SEEDING MIXTURE NO. 20	LB	72.000	42.000	30.000
0460	630.0300	SEEDING BORROW PIT	LB	50.000	30.000	20.000
0470	633.5200	MARKERS CULVERT END	EACH	4.000	2.000	2.000
0480	637.2210	SIGNS TYPE II REFLECTIVE H	SF	14.920		14.920

DATE 27JAN14			E S T I M A T E O F Q U A N T I T I E S			
LINE					8510-04-60	8510-04-66
NUMBER	ITEM	ITEM DESCRIPTION	UNIT	TOTAL	QUANTITY	QUANTITY
0490	638.2602	REMOVING SIGNS TYPE II	EACH	2.000		2.000
0500	642.5201	FIELD OFFICE TYPE C	EACH	0.750	0.450	0.300
0510	643.0100	TRAFFIC CONTROL (PROJECT) 01.8510-04-60	EACH	1.000	1.000	
0520	643.0100	TRAFFIC CONTROL (PROJECT) 02.8510-04-66	EACH	1.000		1.000
0540	643.0300	TRAFFIC CONTROL DRUMS	DAY	600.000	360.000	240.000
0550	643.0420	TRAFFIC CONTROL BARRICADES TYPE III	DAY	1,350.000	810.000	540.000
0560	643.0705	TRAFFIC CONTROL WARNING LIGHTS TYPE A	DAY	2,700.000	1,620.000	1,080.000
0570	643.0715	TRAFFIC CONTROL WARNING LIGHTS TYPE C	DAY	600.000	360.000	240.000
0580	643.0900	TRAFFIC CONTROL SIGNS	DAY	1,200.000	720.000	480.000
0590	643.0920	TRAFFIC CONTROL COVERING SIGNS TYPE II	EACH	10.000		10.000
0600	643.1050	TRAFFIC CONTROL SIGNS PCMS	DAY	150.000	90.000	60.000
0610	643.2000	TRAFFIC CONTROL DETOUR (PROJECT) 01.8510-04-60	EACH	1.000	1.000	
0620	643.2000	TRAFFIC CONTROL DETOUR (PROJECT) 02.8510-04-66	EACH	1.000		1.000
0640	643.3000	TRAFFIC CONTROL DETOUR SIGNS	DAY	10,050.000	6,030.000	4,020.000
0650	645.0111	GEOTEXTILE FABRIC TYPE DF SCHEDULE A	SY	80.000	40.000	40.000
0660	645.0120	GEOTEXTILE FABRIC TYPE HR	SY	295.000	295.000	
0670	645.0130	GEOTEXTILE FABRIC TYPE R	SY	545.000	320.000	225.000
0680	646.0106	PAVEMENT MARKING EPOXY 4-INCH	LF	3,200.000	1,600.000	1,600.000
0690	650.4500	CONSTRUCTION STAKING SUBGRADE	LF	1,600.000	800.000	800.000
0700	650.5000	CONSTRUCTION STAKING BASE	LF	800.000	400.000	400.000
0710	650.6000	CONSTRUCTION STAKING PIPE CULVERTS	EACH	2.000	1.000	1.000
0720	650.9910	CONSTRUCTION STAKING SUPPLEMENTAL CONTROL (PROJECT) 01.8510-04-60	LS	1.000	1.000	
0730	650.9910	CONSTRUCTION STAKING SUPPLEMENTAL CONTROL (PROJECT) 02.8510-04-66	LS	1.000		1.000
0750	650.9920	CONSTRUCTION STAKING SLOPE STAKES	LF	800.000	400.000	400.000
0760	690.0150	SAWING ASPHALT	LF	48.000	24.000	24.000
0770	SPV.0090	SPECIAL 01. PIPE STRUCTURAL PLATE 192-INCH	LF	104.000	104.000	
0780	SPV.0090	SPECIAL 02. CULVERT PIPE CORRUGATED ALUMINUM 120-INCH	LF	120.000		120.000

3

CLEARING AND GRUBBING					
PROJECT ID	STATION	TO	STATION	CLEARING	GRUBBING
				201.0105 STA	201.0105 STA
8510-04-60	142+00	-	145+00	3	3
PROJECT 8510-04-60 TOTALS =				3	3
8510-04-66	139+00	-	141+00	2	2
PROJECT 8510-04-66 TOTALS =				2	2
ITEM TOTALS =				5	5

EXCAVATION COMMON					
PROJECT ID	STATION	TO	STATION	205.0100	REMARKS
				CY	
8510-04-60	141+50	-	145+50	1582	SEE EARTHWORK SUMMARY
PROJECT 8510-04-60 TOTAL =				1582	
8510-04-66	137+50	-	141+50	1610	SEE EARTHWORK SUMMARY
PROJECT 8510-04-66 TOTAL =				1610	
ITEM TOTAL =				3192	

SELECT BORROW					
PROJECT ID	STATION	TO	STATION	208.1100	REMARKS
				CY	
8510-04-60	141+50	-	145+50	885	SUBBASE
PROJECT 8510-04-60 TOTAL =				885	
8510-04-66	137+50	-	141+50	885	SUBBASE
PROJECT 8510-04-66 TOTAL =				885	
ITEM TOTAL =				1770	

BASE AGGREGATE DENSE					
PROJECT ID	STATION	TO	STATION	3/4-INCH	1 1/4-INCH
				305.0110 TON	305.0120 TON
8510-04-60	142+00	-	145+00	135	1230
PROJECT 8510-04-60 TOTALS =				135	1230
8510-04-66	139+00	-	141+00	135	1230
PROJECT 8510-04-66 TOTALS =				135	1230
ITEM TOTALS =				270	2460

SELECT CRUSHED MATERIAL AND GEOTEXTILE FABRIC TYPE HR				
MARY			SELECT	GEOTEXTILE FABRIC
			CRUSHED MATERIAL	TYPE HR
			312.0110	645.0120
PROJECT ID	STATION	TON	SY	
8510-04-60	143+26	450	295	
MARY	PROJECT 8510-04-60 TOTALS =		450	295
	ITEM TOTALS =		450	295

BACKFILL STRUCTURE					
PROJECT ID	STATION	CY	REMARKS	210.0100	
8510-04-60	143+26	5230	STRUCTURE BACKFILL		
PROJECT 8510-04-60 TOTAL =				5230	
8510-04-66	140+13	1810	STRUCTURE BACKFILL		
	140+13	35	CHANNEL SUBSTRATE IN CULVERT		
PROJECT 8510-04-66 TOTAL =				1845	
ITEM TOTAL =				7075	

ASPHALT QUANTITIES					
PROJECT ID	STATION	TO	STATION	TACK COAT	ASPHALTIC
				455.0605 GAL	SURFACE 465.0105 TON
8510-04-60	142+00	-	145+00	35	400
PROJECT 8510-04-60 TOTALS =				35	400
8510-04-66	139+00	-	141+00	35	400
PROJECT 8510-04-66 TOTALS =				35	400
ITEM TOTALS =				70	800

RIPRAP AND GEOTEXTILE FABRIC TYPE R					
PROJECT ID	STATION	LOCATION	CY	RIPRAP	GEOTEXTILE FABRIC
				LIGHT 606.0100	TYPE R 645.0130 SY
8510-04-60	143+20	LT	50		150
	143+30	RT	55		170
PROJECT 8510-04-60 TOTALS =				105	320
8510-04-66	139+75	RT	30		90
	140+50	LT	45		135
PROJECT 8510-04-66 TOTALS =				75	225
ITEM TOTALS =				180	545

STEEL PLATE BEAM GUARD SHORT RADIUS AND TERMINAL					
PROJECT ID	STATION	LOCATION	LF	SHORT	SHORT RADIUS
				RADIUS 614.0345	TERMINAL 614.0390 EACH
8510-04-60	141+75	RT	25		1
PROJECT 8510-04-60 TOTALS =				25	1
8510-04-66	141+15	RT	25		1
PROJECT 8510-04-66 TOTALS =				25	1
ITEM TOTALS =				50	2

3

3

SALVAGED RAIL					614.0920
PROJECT ID	STATION	TO	STATION	LOCATION	LF
8510-04-60	141+50	-	144+15	LT	265
	142+40	-	144+25	RT	185
PROJECT 8510-04-60 TOTALS =					450
8510-04-66	139+05	-	140+70	RT	185
	139+65	-	141+50	LT	165
PROJECT 8510-04-66 TOTALS =					350
ITEM TOTALS =					800

STEEL PLATE BEAM GUARD AND TERMINAL					STEEL PLATE BEAM GUARD CLASS A 614.0305	STEEL PLATE BEAM GUARD EAT 614.0370
PROJECT ID	STATION	TO	STATION	LOCATION	LF	EACH
8510-04-60	141+75	-	145+00	RT	325	
	145+00	-	145+50	RT		1
PROJECT 8510-04-60 TOTALS =					325	1
8510-04-66	137+53	-	138+03	RT		1
	138+03	-	141+15	RT	312	
PROJECT 8510-04-66 TOTALS =					312	1
ITEM TOTALS =					637	2

MGS GUARDRAIL AND TERMINAL					MGS GUARDRAIL 3 614.2300	MGS GUARDRAIL TERMINAL EAT 614.2610
PROJECT ID	STATION	TO	STATION	LOCATION	LF	EACH
8510-04-60	141+50	-	144+97	LT	347	
	144+97	-	145+50	LT		1
PROJECT 8510-04-60 TOTALS =					347	1
8510-04-66	138+81	-	139+34	LT		1
	139+34	-	141+50	LT	216	
PROJECT 8510-04-66 TOTALS =					216	1
ITEM TOTALS =					563	2

TOPSOIL, EROSION MAT, FERTILIZER, AND SEED					TOPSOIL 625.0100	EROSION MAT URBAN CL I 628.2008	FERTILIZER TYPE B 629.0210	SEEDING MIX NO. 20 630.0120	SEEDING BORROW PIT 630.0300
PROJECT ID	STATION	TO	STATION		SY	SY	CWT	LB	LB
8510-04-60	141+50	-	145+00		1100	1550	1	42	
			BORROW PIT WASTE AREA						15 15
PROJECT 8510-04-60 TOTALS =					1100	1550	1	42	30
8510-04-66	137+50	-	141+50		700	1150	1	30	
			BORROW PIT WASTE AREA						10 10
PROJECT 8510-04-66 TOTALS =					700	1150	1	30	20
ITEM TOTALS =					1800	2700	2	72	50

POLYETHYLENE SHEETING			628.5505
PROJECT ID	LOCATION		SY
8510-04-60	TEMPORARY CHANNEL		1500
PROJECT 8510-04-60 TOTAL =			1500
8510-04-66	TEMPORARY CHANNEL		1000
PROJECT 8510-04-66 TOTAL =			1000
ITEM TOTAL =			2500

ROCK BAGS			628.7570
PROJECT ID	LOCATION		EACH
8510-04-60	CHANNEL DIVERSION		500
PROJECT 8510-04-60 TOTAL =			500
8510-04-66	CHANNEL DIVERSION		350
PROJECT 8510-04-66 TOTAL =			350
ITEM TOTAL =			850

EROSION BALES AND GEOTEXTILE FABRIC TYPE DF			
PROJECT ID	LOCATION	EROSION BALES 628.1104	GEOTEXTILE FABRIC TYPE DF SCHEDULE A 645.0111
8510-04-60	TEMPORARY SETTLING BASIN	50	40
PROJECT 8510-04-60 TOTALS =		50	40
8510-04-66	TEMPORARY SETTLING BASIN	50	40
PROJECT 8510-04-66 TOTALS =		50	40
ITEM TOTALS =		100	80

SILT FENCE			
PROJECT ID	LOCATION	SILT FENCE 628.1504	SILT FENCE MAINTENANCE 628.1520
8510-04-60	UNDISTRIBUTED	1000	1000
PROJECT 8510-04-60 TOTALS =		1000	1000
8510-04-66	UNDISTRIBUTED	1000	1000
PROJECT 8510-04-66 TOTALS =		1000	1000
ITEM TOTALS =		2000	2000

3

CONSTRUCTION STAKING

PROJECT ID	STATION	TO	STATION	COMMENT	SUBGRADE	BASE	SLOPE
					650.4500	650.5000	650.9920
					LF	LF	LF
8510-04-60	141+50	-	145+50		400	400	400
	141+50		145+50	SELECT BORROW	400		
PROJECT 8510-04-60 TOTALS =					800	400	400
8510-04-66	137+50	-	141+50		400	400	400
	137+50	-	141+50	SELECT BORROW	400		
PROJECT 8510-04-66 TOTALS =					800	400	400
ITEM TOTALS =					1600	800	800

CONSTRUCTION STAKING PIPE CULVERTS

PROJECT ID	STATION	650.6000
		EACH
8510-04-60	143+26	1
PROJECT 8510-04-60 TOTAL =		1
8510-04-66	140+13	1
PROJECT 8510-04-66 TOTAL =		1
ITEM TOTAL =		2

MARKERS CULVERT END

PROJECT ID	STATION	633.5200
		EACH
8510-04-60	143+26	2
PROJECT 8510-04-60 TOTAL =		2
8510-04-66	140+13	2
PROJECT 8510-04-66 TOTAL =		2
ITEM TOTAL =		4

SAWING ASPHALT

PROJECT ID	STATION	690.0150
		LF
8510-04-60	145+50	24
PROJECT 8510-04-60 TOTAL =		24
8510-04-66	137+50	24
PROJECT 8510-04-66 TOTAL =		24
ITEM TOTAL =		48

MOBILIZATIONS EROSION CONTROL

PROJECT ID	LOCATION	628.1905
		EACH
8510-04-60	ON PROJECT	4
PROJECT 8510-04-60 TOTAL =		4
8510-04-66	ON PROJECT	2
PROJECT 8510-04-66 TOTAL =		2
ITEM TOTAL =		6

MOBILIZATIONS EMERGENCY EROSION CONTROL

PROJECT ID	LOCATION	628.1910
		EACH
8510-04-60	ON PROJECT	2
PROJECT 8510-04-60 TOTAL =		2
8510-04-66	ON PROJECT	2
PROJECT 8510-04-66 TOTAL =		2
ITEM TOTAL =		4

3

3

PAVEMENT MARKING EPOXY 4-INCH						646.0106
PROJECT ID	STATION	TO	STATION	LOCATION	WHITE LF	YELLOW LF
8510-04-60	141+50	-	145+50	LT	400	
	141+50	-	145+50	RT	400	
	141+50	-	145+50	CL		800
PROJECT 8510-04-60 SUBTOTALS =					800	800
PROJECT 8510-04-60 TOTAL = 1600						
8510-04-66	137+50	-	141+50	RT	400	
	137+50	-	141+50	LT	400	
	137+50	-	141+50	CL		800
PROJECT 8510-04-66 SUBTOTALS =					800	800
PROJECT 8510-04-66 TOTAL = 1600						
ITEM TOTAL = 3200						

EXCAVATION FOR STRUCTURES CULVERTS (STRUCTURE) 01. C-04-0069			206.2000.01	
PROJECT ID	STATION	LS		
8510-04-66	140+13	1		
PROJECT 8510-04-66 TOTAL =			1	

EXCAVATION FOR STRUCTURES STRUCTURAL PLATE PIPE OR PIPE ARCHES 01. STA. 143+26			206.4000.01	
PROJECT ID	STATION	LS		
8510-04-60	143+26	1		
PROJECT 8510-04-60 TOTAL =			1	

SPECIAL 01. PIPE STRUCTURAL PL		SPV.
PROJECT ID	STATION	
8510-04-60	143+26	
PROJECT 8510-04-60 TOTAL =		
MINIMUM THICKNESS = 0.138"		

TRAFFIC CONTROL COVERING SIGNS TYPE II				643.0900
PROJECT ID	SIGN MESSAGE	LOCATION		EACH
8510-04-66	BAYFIELD RIGHT ARROW	NB CTH C, 400 FT S. OF CTH C & STH 13 INT., CORNUCOPIA		1
	BAYFIELD 21	SB STH 13, 500 FT S. OF CTH C & STH 13 INT., CORNUCOPIA		1
	RED CLIFF 17	SB STH 13, 1400 FT NORTH OF SISKIWIT FALLS RD		1
	BAYFIELD 19	SB STH 13, 400 FT NORTH OF SISKIWIT FALLS RD		1
	LAKE SUPERIOR CIRCLE TOUR EAST	SB STH 13, 300 FT NORTH OF SISKIWIT FALLS RD		1
	CORNUCOPIA 21	NB STH 13, 200 FT NORTH OF N. LIMITS RD, BAYFIELD		1
	CONFLICTING SIGNS AS DIRECTED BY ENGINEER	UNDISTRIBUTED		4
			ITEM TOTAL =	10

DETOUR ROUTE SIGN REPLACEMENT						
		637.2210		638.2602		
		SIGNS		REMOVE		
		TYPE II		SIGNS		
		REFLECTIVE H		TYPE II		
PROJECT ID	CODE	CODE DESCRIPTION	W x H	SF	EACH	COMMENTS
8510-04-66	R1-1	Stop	36 x 36	7.46 ft²	1	Replace existing sign at CTH C & STH 13 Intersection in Washburn
	R1-1	Stop	36 x 36	7.46 ft²	1	Replace existing sign at CTH C & STH 13 Intersection in Cornucopia
ITEM TOTALS=				14.92	2	

REMOVING OLD STRUCTURE (STATION) 01. STA. 143+26			203.0200.01	
PROJECT ID	STATION	LS		
8510-04-60	143+26	1		
PROJECT 8510-04-60 TOTAL =			1	

REMOVING OLD STRUCTURE (STATION) 02. STA. 140+13			203.0200.02	
PROJECT ID	STATION	LS		
8510-04-66	140+13	1		
PROJECT 8510-04-66 TOTAL =			1	

SPECIAL 02. CULVERT PIPE		
<u>CORRUGATED ALUMINUM 120-INCH</u>		
SPV.0090.02		
PROJECT ID	STATION	LF
8510-04-66	140+13	120
PROJECT 8510-04-66 TOTAL =		120
MINIMUM THICKNESS = 0.125"		

TRAFFIC CONTROL DRUMS,BARRICADES WARNING LIGHTS AND PCMS

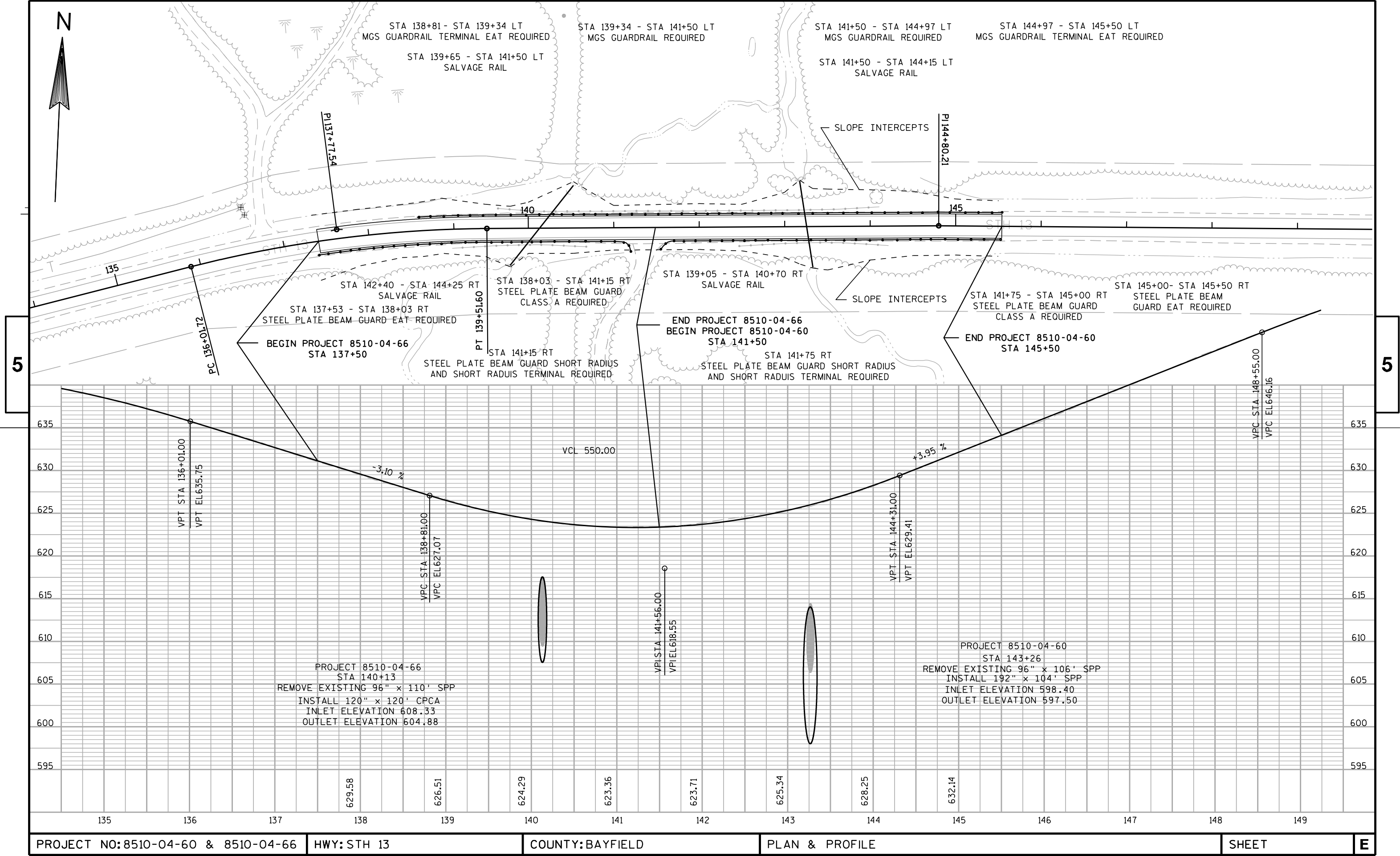
LOCATION	DRUMS		BARRICADES TYPE III		WARNING LIGHTS TYPE A		WARNING LIGHTS TYPE C		PCMS		
	643.0300		643.0420		643.0705		643.0715		643.1050		
	8510-04-60	8510-04-66	8510-04-60	8510-04-66	8510-04-60	8510-04-66	8510-04-60	8510-04-66	8510-04-60	8510-04-66	
	DAYS	DAYS	DAYS	DAYS	DAYS	DAYS	DAYS	DAYS	DAYS	DAYS	
CTH C & STH 13 INTERSECTION CORNUCOPIA	180	120					180	120	45	30	
CTH C & STH 13 INTERSECTION CORNUCOPIA			45	30	90	60					
STH 13 SOUTH OF CORNUCOPIA			45	30	90	60					
1000 FT FROM WORK ZONE			90	60	180	120					
500 FT FROM WORK ZONE			180	120	360	240					
500 FT FROM WORK ZONE			180	120	360	240					
1000 FT FROM WORK ZONE			90	60	180	120					
STH 13 NORTH OF RED CLIFF			45	30	90	60					
STH 13 NORTH OF BAYFIELD			45	30	90	60					
STH 13 NORTH OF WASHBURN			45	30	90	60					
CTH C & STH 13 INTERSECTION WASHBURN			45	30	90	60					
CTH C & STH 13 INTERSECTION WASHBURN	180	120					180	120	45	30	
PROJECT 8510-04-60 TOTALS =		360	810		1620		360		90		
PROJECT 8510-04-66 TOTALS =		240	540		1080		240		60		
ITEM TOTAL = 600 DAYS			ITEM TOTAL = 1350 DAYS			ITEM TOTAL = 2700 DAYS			ITEM TOTAL = 600 DAYS		
DRUMS			BARRICADES TYPE III			WARNING LIGHTS TYPE A			WARNING LIGHTS TYPE C		
643.0300			643.0420			643.0705			643.0715		
									PCMS		
									643.1050		

TRAFFIC CONTROL SIGNS

SIGN CODE	SIGN MESSAGE	SIZE	LOCATION	643.0900	
				8510-04-60	8510-04-66
				DAYS	DAYS
R11-3C	BRIDGE OUT 4 MILES AHEAD	60X30	CTH C & STH 13 INTERSECTION CORNUCOPIA	45	30
R11-3C	BRIDGE OUT 3 MILES AHEAD	60X30	STH 13 SOUTH OF CORNUCOPIA	45	30
W20-3A	ROAD CLOSED AHEAD	48X48		45	30
W20-3C	ROAD CLOSED 1000 FT	48X48		45	30
W20-3D	ROAD CLOSED 500 FT	48X48		45	30
R11-2B	BRIDGE OUT	48X30		45	30
R11-2B	BRIDGE OUT	48X30		45	30
R11-2B	BRIDGE OUT	48X30		45	30
R11-2B	BRIDGE OUT	48X30		45	30
W20-3D	ROAD CLOSED 500 FT	48X48		45	30
W20-3C	ROAD CLOSED 1000 FT	48X48		45	30
W20-3A	ROAD CLOSED AHEAD	48X48		45	30
R11-3C	BRIDGE OUT 14 MILES AHEAD	60X30	STH 13 NORTH OF RED CLIFF	45	30
R11-3C	BRIDGE OUT 17 MILES AHEAD	60X30	STH 13 NORTH OF BAYFIELD	45	30
R11-3C	BRIDGE OUT 29 MILES AHEAD	60X30	STH 13 NORTH OF WASHBURN	45	30
R11-3C	BRIDGE OUT 30 MILES AHEAD	60X30	CTH C & STH 13 INTERSECTION WASHBURN	45	30
PROJECT 8510-04-60 TOTAL =				720	
PROJECT 8510-04-66 TOTAL =					480
ITEM TOTAL = 1200					

TRAFFIC CONTROL DETOUR SIGNS										643.3000			
										8510-04-60		8510-04-66	
SIGN CODE	SIGN MESSAGE	SIZE	LOCATION	DAYS		DAYS							
M4-8	DETOUR	24X12	DETOUR REASSURANCE SIGN ON CTH C	45		30							
M3-1	NORTH	24X12		45		30							
M1-6	13	24X24		45		30							
M4-8	DETOUR	24X12	DETOUR REASSURANCE SIGN ON CTH C	45		30							
M3-3	SOUTH	24X12		45		30							
M1-6	13	24X24		45		30							
W14-3	NO PASSING ZONE	48X36	SB CTH C NO PASSING ZONE	45		30							
W14-3	NO PASSING ZONE	48X36	NB CTH C NO PASSING ZONE	45		30							
W14-3	NO PASSING ZONE	48X36	SB CTH C NO PASSING ZONE	45		30							
W14-3	NO PASSING ZONE	48X36	NB CTH C NO PASSING ZONE	45		30							
W14-3	NO PASSING ZONE	48X36	SB CTH C NO PASSING ZONE	45		30							
W14-3	NO PASSING ZONE	48X36	NB CTH C NO PASSING ZONE	45		30							
W14-3	NO PASSING ZONE	48X36	SB CTH C NO PASSING ZONE	45		30							
W1-6	NIGHT ARROW SINGLE	48X24	4TH ST & CTH C INTERSECTION WASHBURN	45		30							
M3-1	NORTH	24X12	CTH C & STH 13 INTERSECTION WASHBURN	45		30							
M1-6	13	24X24		45		30							
W20-2A	DETOUR AHEAD	48X48		45		30							
M3-1	NORTH	24X12	CTH C & STH 13 INTERSECTION WASHBURN	45		30							
M1-6	13	24X24		45		30							
W20-2C	DETOUR 1000 FT	48X48		45		30							
M4-8	DETOUR	24X12	CTH C & STH 13 INTERSECTION WASHBURN	45		30							
M3-1	NORTH	24X12		45		30							
M1-6	13	24X24		45		30							
M05-1L	LEFT ADVANCE ARROW	21X21		45		30							
M4-8	DETOUR	24X12	CTH C & STH 13 INTERSECTION WASHBURN	45		30							
M3-1	NORTH	24X12		45		30							
M1-6	13	24X24		45		30							
M06-1	ARROW	21X21		45		30							
M4-8A	END DETOUR	24X18	CTH C & STH 13 INTERSECTION WASHBURN	45		30							
M3-3	SOUTH	24X12		45		30							
M1-6	13	24X24		45		30							
M4-8	DETOUR	24X12	CTH C & STH 13 INTERSECTION WASHBURN	45		30							
M3-1	NORTH	24X12		45		30							
M1-6	13	24X24		45		30							
M06-1	ARROW	21X21		45		30							
M4-8	DETOUR	24X12	CTH C & STH 13 INTERSECTION WASHBURN	45		30							
M3-1	NORTH	24X12		45		30							
M1-6	13	24X24		45		30							
M05-1R	RIGHT ADVANCE ARROW	21X21		45		30							
M3-1	NORTH	24X12	CTH C & STH 13 INTERSECTION WASHBURN	45		30							
M1-6	13	24X24		45		30							
W20-2C	DETOUR 1000 FT	48X48		45		30							
M3-1	NORTH	24X12	CTH C & STH 13 INTERSECTION WASHBURN	45		30							
M1-6	13	24X24		45		30							
W20-2A	DETOUR AHEAD	48X48		45		30							
PROJECT 8510-04-60 PAGE TOTAL = 2025										PROJECT 8510-04-66 PAGE TOTAL = 1350			
PROJECT 8510-04-60 TOTAL = 6030										PROJECT 8510-04-66 TOTAL = 4020			
ITEM TOTAL = 10050													

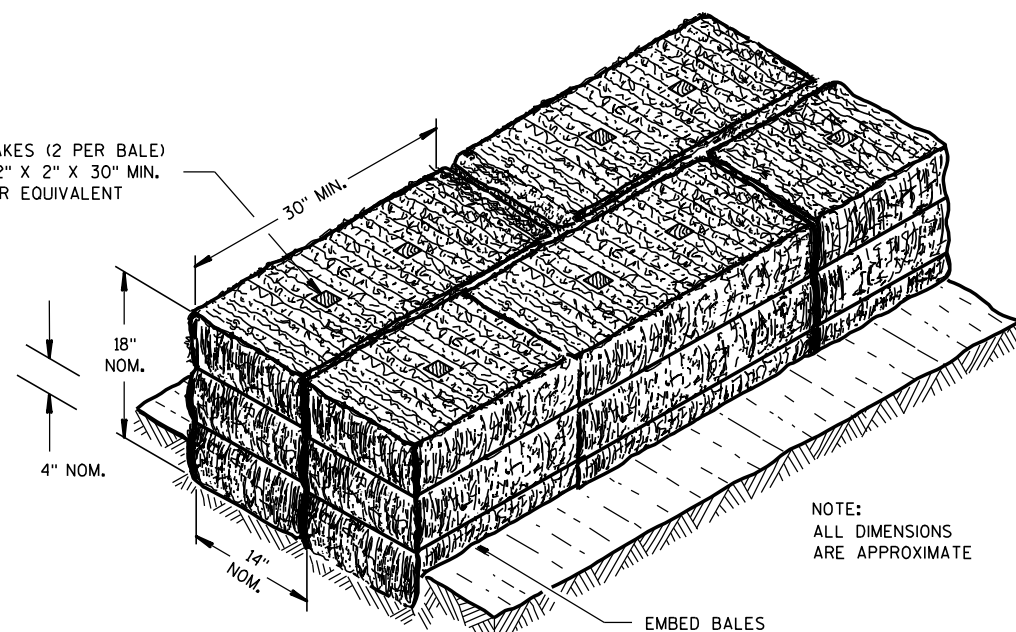
PROJECT NO: 8510-04-60 & 8510-04-66	HWY: STH 13	COUNTY: BAYFIELD	MISCELLANEOUS QUANTITIES	SHEET:	E
-------------------------------------	-------------	------------------	--------------------------	--------	---



Standard Detail Drawing List

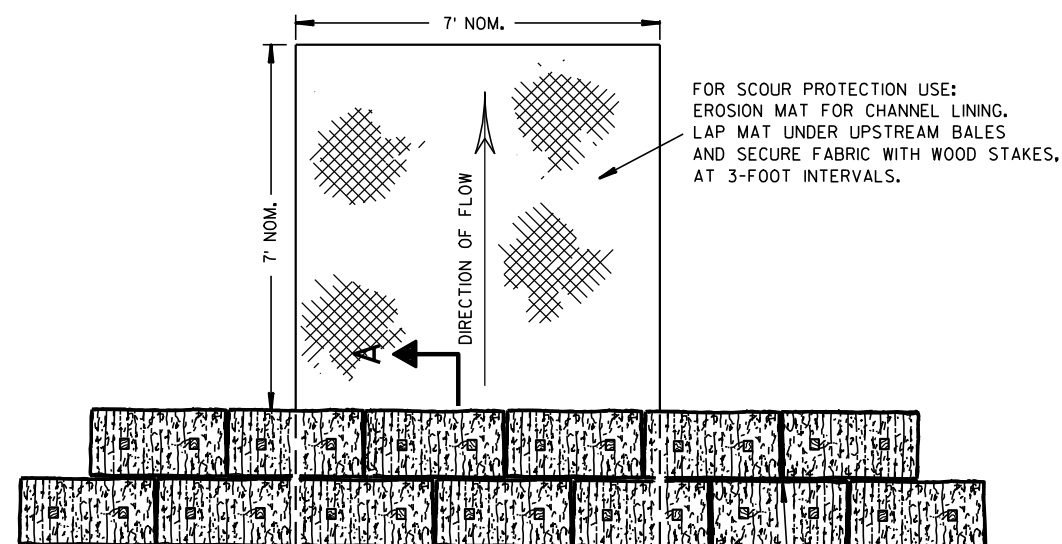
08E08-03	TYPICAL INSTALLATIONS OF EROSION BALES / TEMPORARY DITCH CHECKS
08E09-06	SILT FENCE
14B15-07A	STEEL PLATE BEAM GUARD, CLASS "A" INSTALLATION & ELEMENTS
14B15-07B	STEEL PLATE BEAM GUARD, CLASS "A" INSTALLATION & ELEMENTS
14B15-07C	STEEL PLATE BEAM GUARD, CLASS "A", INSTALLATION & ELEMENTS
14B18-06A	STEEL PLATE BEAM GUARD, CLASS "A" (AT BRIDGES, OBSTACLES AND SIDERoads/DRIVEWAYS)
14B24-07A	STEEL PLATE BEAM GUARD ENERGY ABSORBING TERMINAL
14B24-07B	STEEL PLATE BEAM GUARD ENERGY ABSORBING TERMINAL
14B24-07C	STEEL PLATE BEAM GUARD ENERGY ABSORBING TERMINAL
14B27-01A	STEEL PLATE BEAM GUARD SHORT RADIUS TERMINAL
14B27-01B	STEEL PLATE BEAM GUARD SHORT RADIUS TERMINAL
14B27-01C	STEEL PLATE BEAM GUARD SHORT RADIUS TERMINAL
14B42-02A	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-02B	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-02C	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B44-01A	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B44-01B	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B44-01C	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
15A03-02A	FLEXIBLE MARKER POST FOR CULVERT END
15A03-02B	FLEXIBLE MARKER POST FOR CULVERT END
15C02-05A	BARRICADES AND SIGNS FOR MAINLINE CLOSURES
15C02-05B	BARRICADES AND SIGNS FOR MAINLINE CLOSURES
15C02-05C	DETOUR SIGNING FOR MAINLINE CLOSURES
15C08-16A	PAVEMENT MARKING (MAINLINE)
15C12-04	TRAFFIC CONTROL FOR LANE CLOSURE (SUITABLE FOR MOVING OPERATIONS)

WOOD STAKES (2 PER BALE)
NOMINAL 2" X 2" X 30" MIN.
LENGTH OR EQUIVALENT



NOTE:
ALL DIMENSIONS
ARE APPROXIMATE

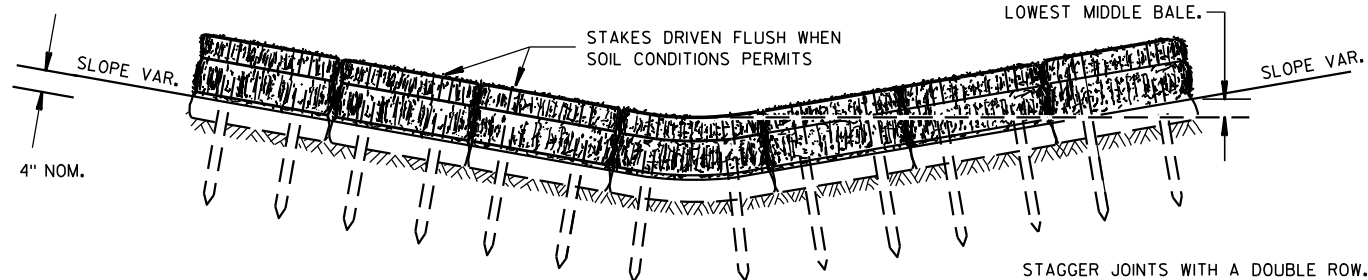
SECTION A-A



PLAN VIEW

STAGGER JOINTS BETWEEN ADJACENT
ROWS OF BALES.

BOTTOM ELEVATION OF END BALE SHALL
BE EQUAL TO OR GREATER THAN TOP OF
LOWEST MIDDLE BALE.



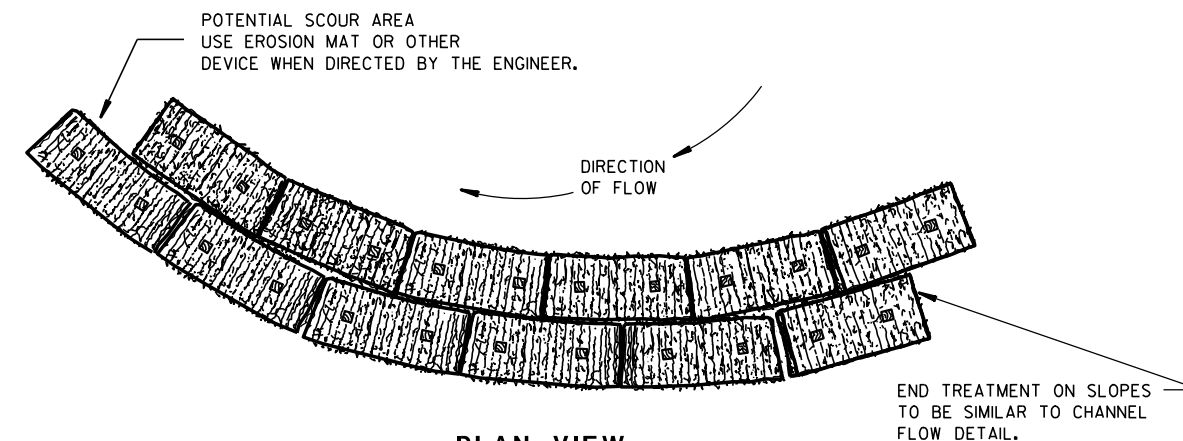
FRONT ELEVATION

TEMPORARY DITCH CHECK USING EROSION BALES ①

GENERAL NOTES

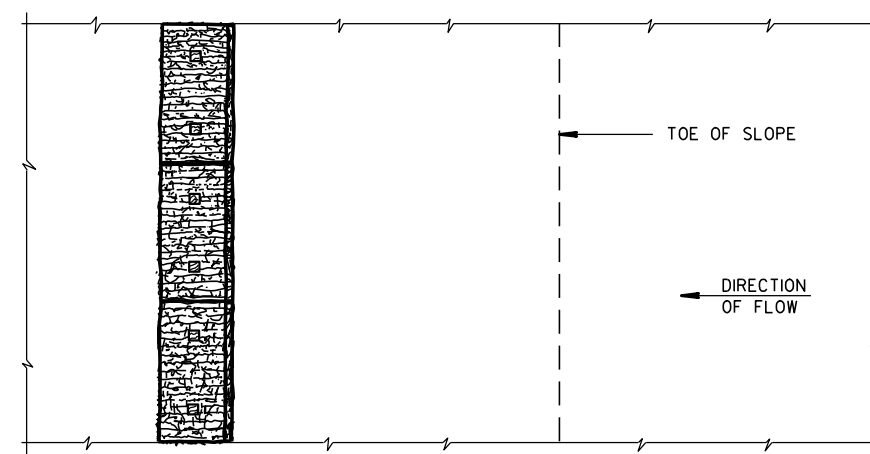
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

- 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.

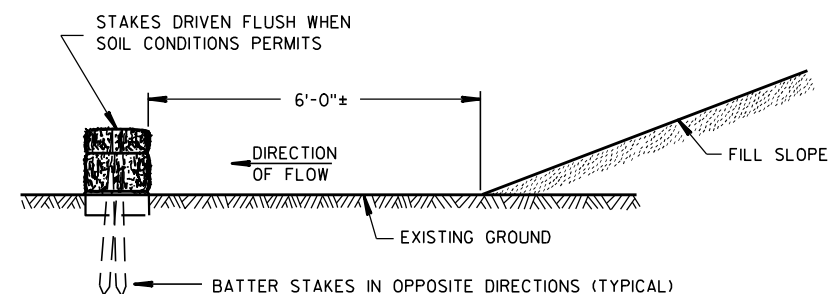


PLAN VIEW

WHEN ALTERING THE DIRECTION OF FLOW



PLAN VIEW



FRONT ELEVATION

WHEN EXISTING GROUND SLOPES AWAY FROM FILL SLOPE

EROSION BALES FOR SHEET FLOW

TYPICAL INSTALLATIONS OF
EROSION BALES / TEMPORARY
DITCH CHECKS

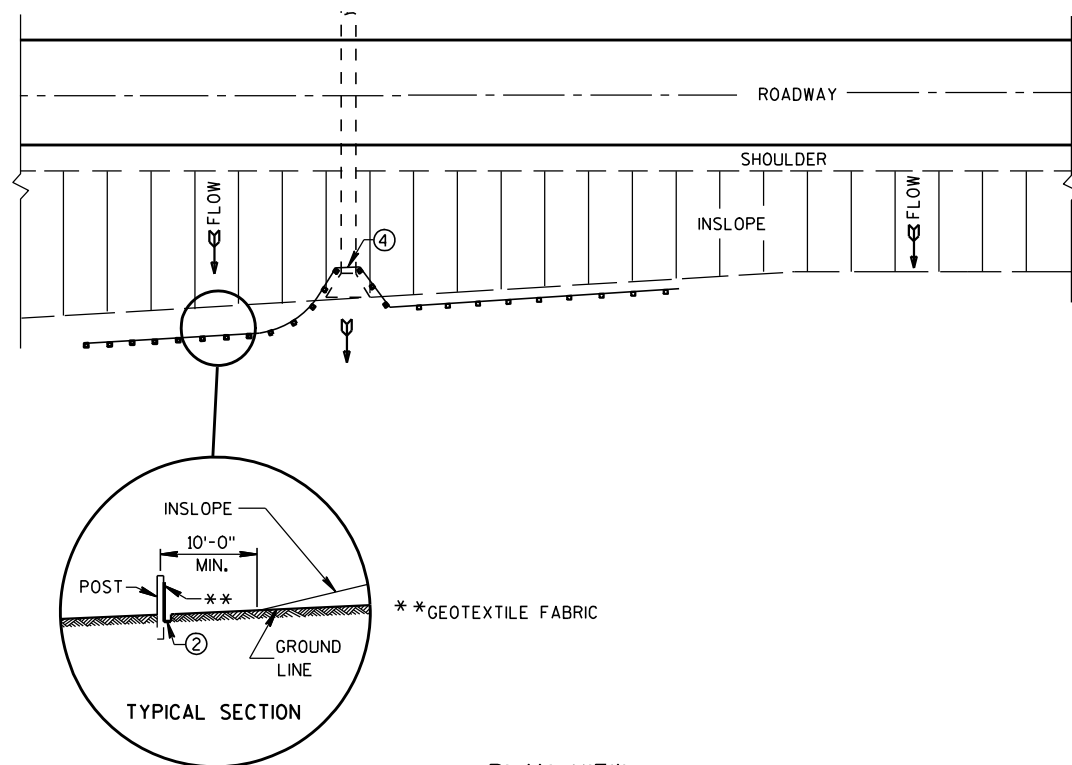
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

6/04/02
DATE

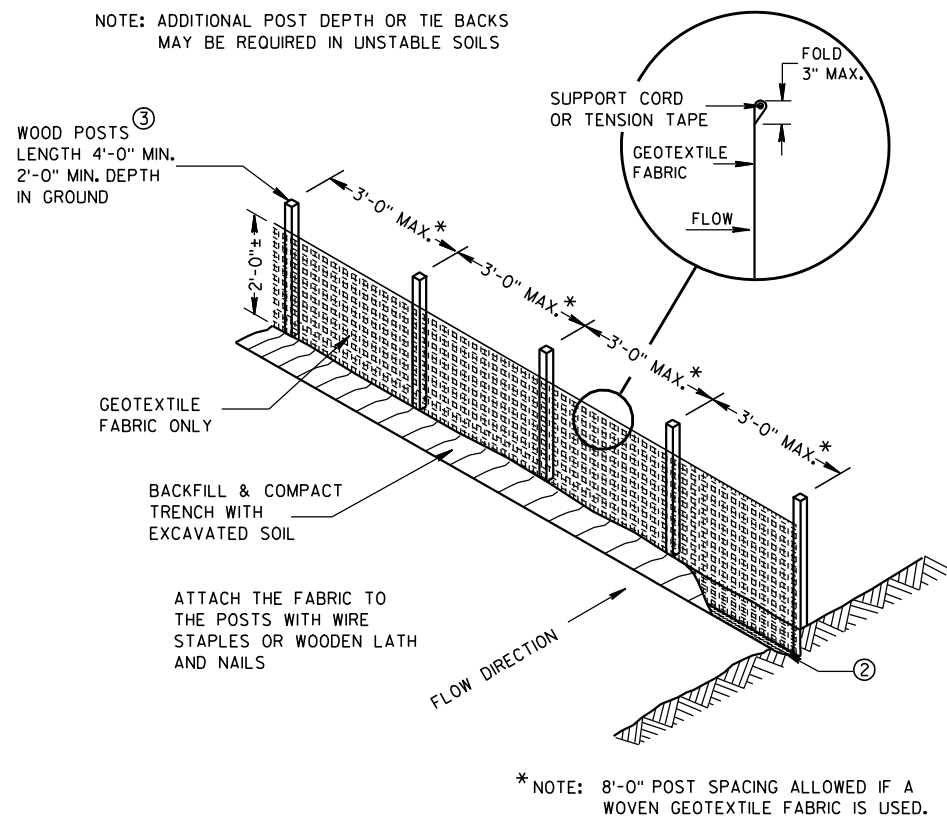
FHWA

/S/ Beth Canestra
CHIEF ROADWAY DEVELOPMENT ENGINEER

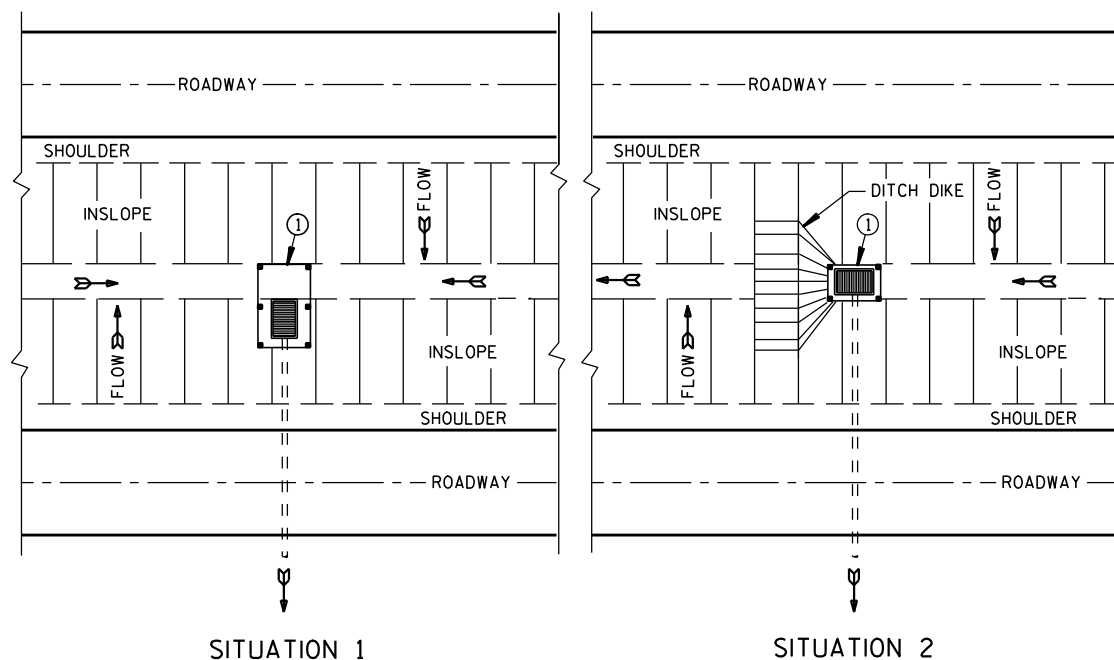


PLAN VIEW
TYPICAL APPLICATION OF SILT FENCE

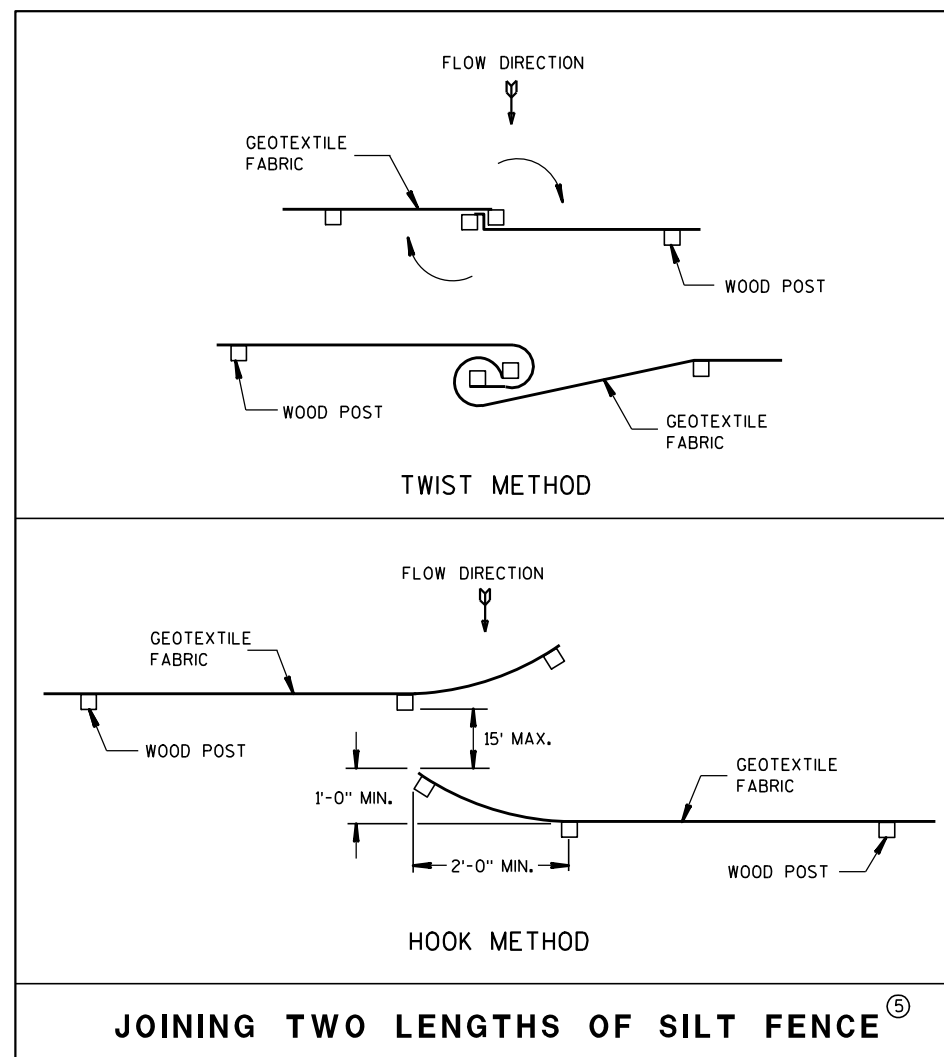
NOTE: ADDITIONAL POST DEPTH OR TIE BACKS
MAY BE REQUIRED IN UNSTABLE SOILS



SILT FENCE



PLAN VIEW
SILT FENCE AT MEDIAN SURFACE DRAINS

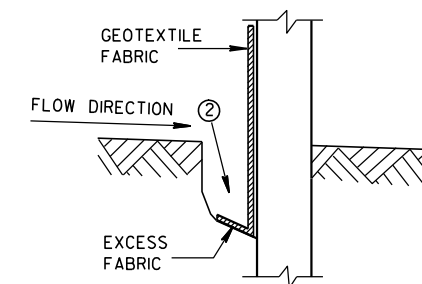


JOINING TWO LENGTHS OF SILT FENCE^⑤

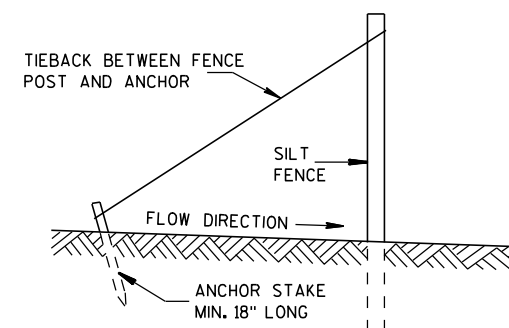
GENERAL NOTES

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

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



TRENCH DETAIL



SILT FENCE TIE BACK
(WHEN REQUIRED BY THE ENGINEER)

SILT FENCE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

4-29-05
DATE

FHWA

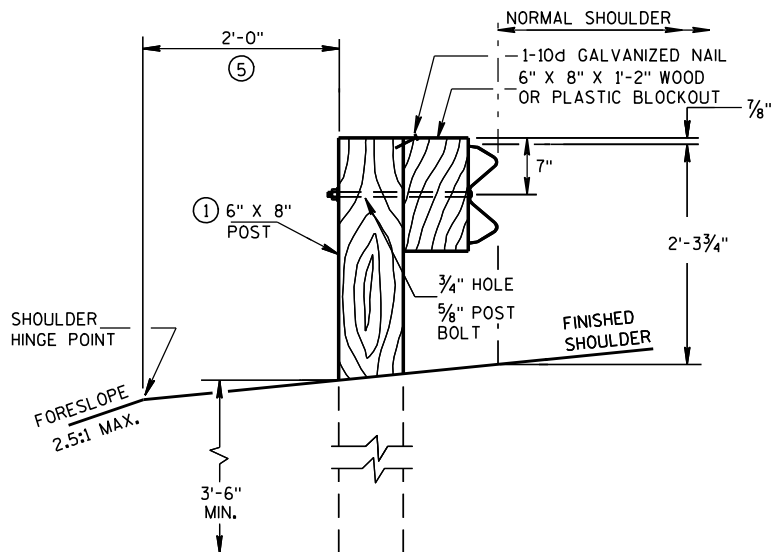
/S/ Beth Cannestra
CHIEF ROADWAY DEVELOPMENT ENGINEER

GENERAL NOTES

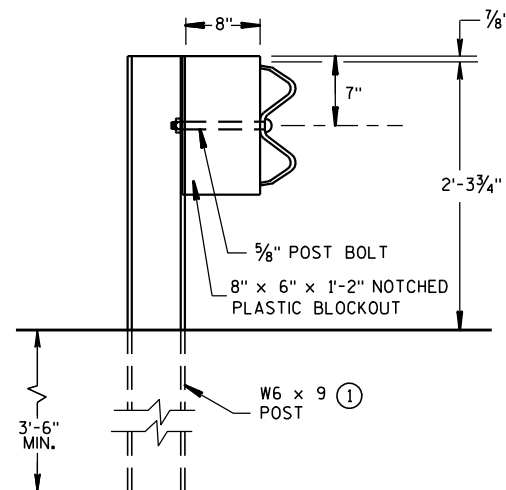
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS, AND THE APPLICABLE SPECIAL PROVISIONS.

- ① 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.
- ② 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 SPALTER COATING ON GALVANIZED POSTS.
- ③ INSTALL STEEL POSTS WITH HOLES ON APPROACHING TRAFFIC SIDE.
- ④ USE EITHER WOOD OR APPROVED PLASTIC BLOCKOUTS ON WOOD POSTS.
- ⑤ 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).
- ⑥ 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.

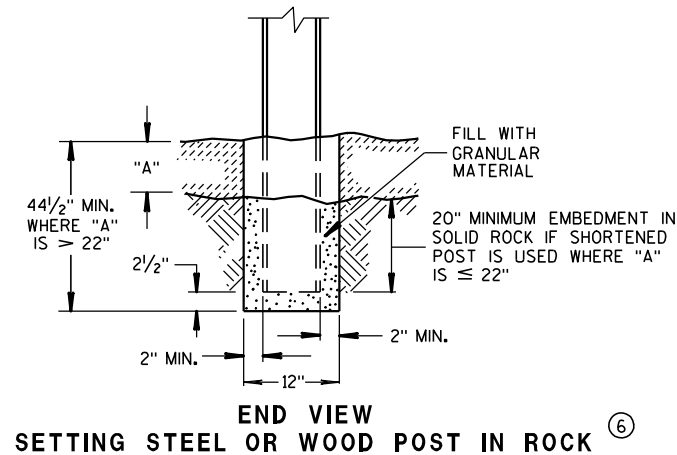
INSTALL BEAM GUARD SECTIONS AND ALL NECESSARY HARDWARE ACCORDING TO THE APPLICABLE PLAN AND CURRENT STANDARD AND SUPPLEMENTAL SPECIFICATIONS. ALL DIMENSIONS ARE SUBJECT TO MANUFACTURER'S TOLERANCES EXCEPT WHERE ALLOWABLE TOLERANCES ARE SHOWN.



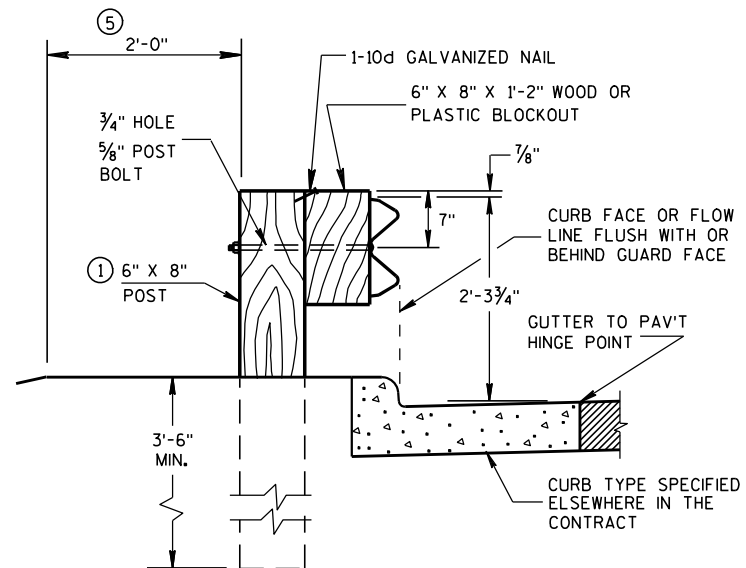
END VIEW
LOCATED ALONG A ROADWAY SHOULDER
STANDARD INSTALLATION



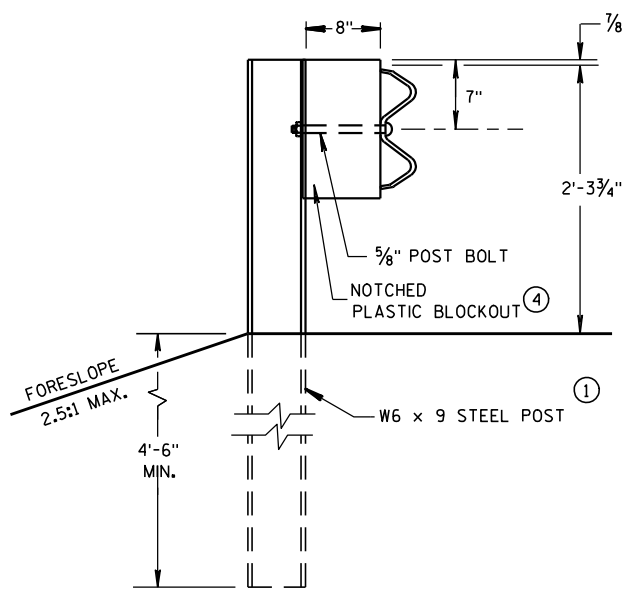
END VIEW
STEEL POST & NOTCHED
PLASTIC BLOCKOUT ALTERNATIVE
STANDARD INSTALLATION



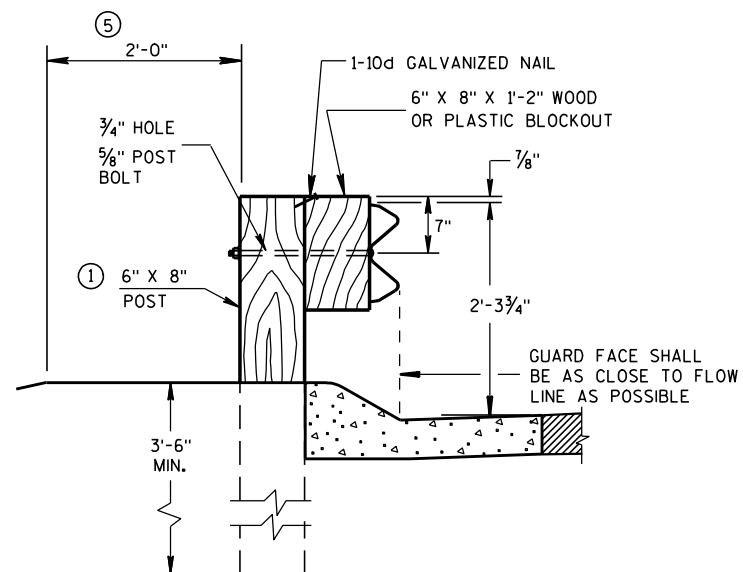
END VIEW
SETTING STEEL OR WOOD POST IN ROCK ⑥



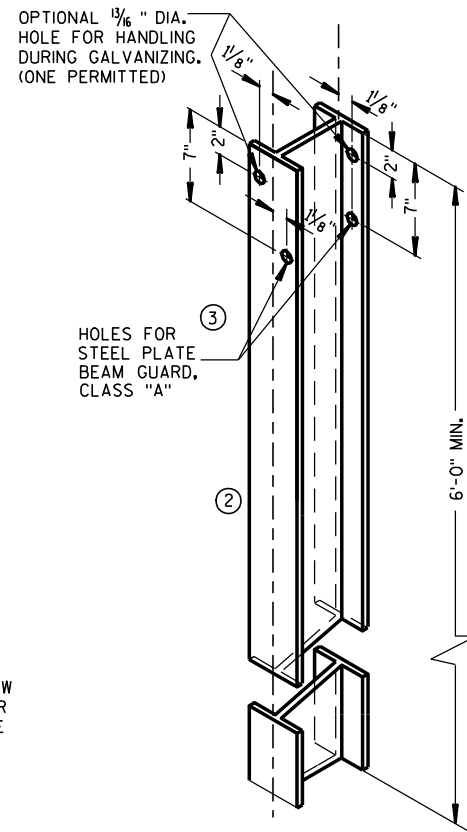
END VIEW
LOCATED ALONG A CURBED ROADWAY



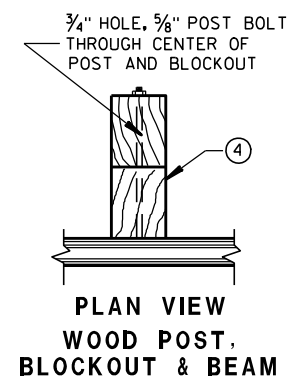
END VIEW
LONGER POST AT HALF
POST SPACING W BEAM
(LHW)



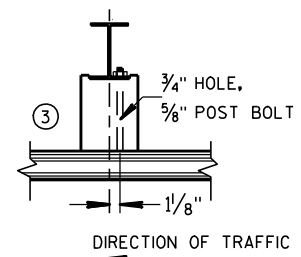
END VIEW
LOCATED ALONG A
MOUNTABLE CURBED ROADWAY



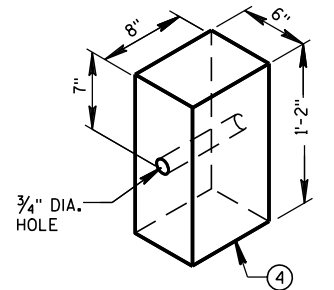
STEEL POST &
HOLE PUNCHING DETAIL
(W6 X 9) ①
ALL HOLES 1/8" DIAMETER EXCEPT AS NOTED



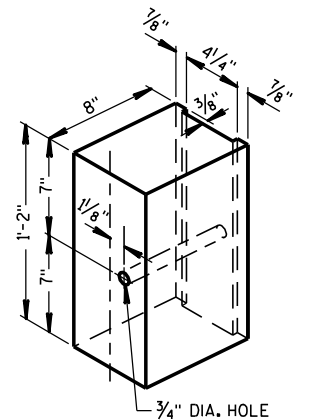
PLAN VIEW
WOOD POST,
BLOCKOUT & BEAM



PLAN VIEW
STEEL POST, NOTCHED
PLASTIC BLOCKOUT & BEAM



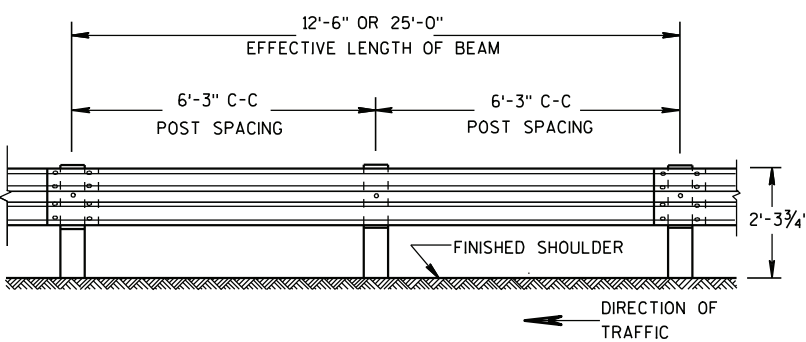
WOOD OR PLASTIC
BLOCKOUT FOR
WOOD POSTS



TYPICAL NOTCHED
PLASTIC BLOCKOUT
FOR STEEL POSTS ①

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

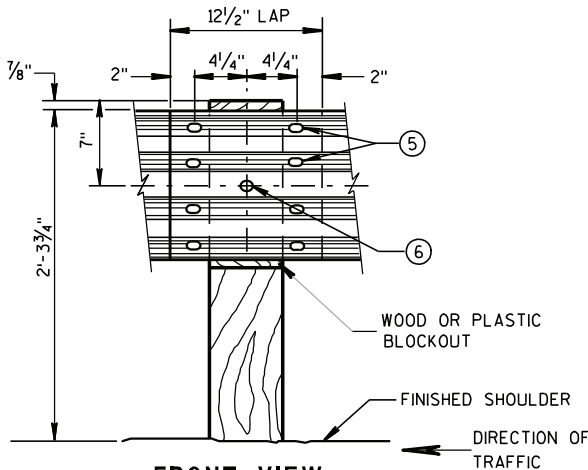
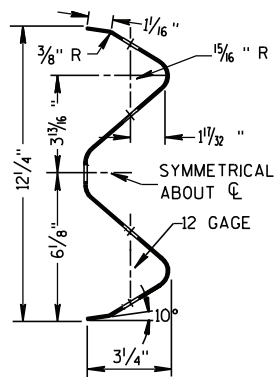
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



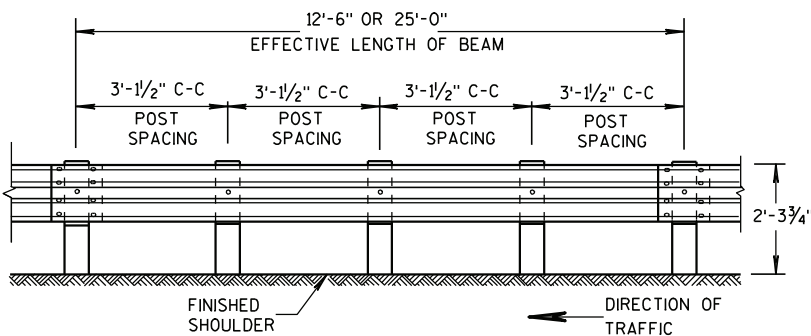
FRONT VIEW

POST SPACING STANDARD INSTALLATION

SECTION THRU W BEAM

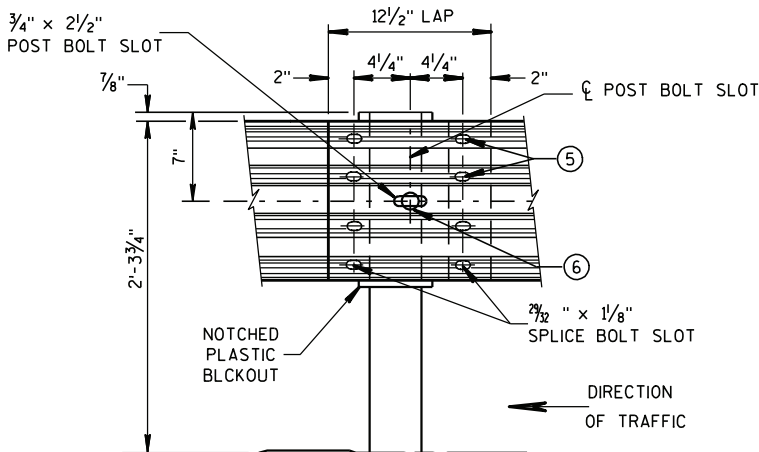


FRONT VIEW
BEAM SPLICE AT WOOD POST
AND POST MOUNTING DETAIL



FRONT VIEW

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

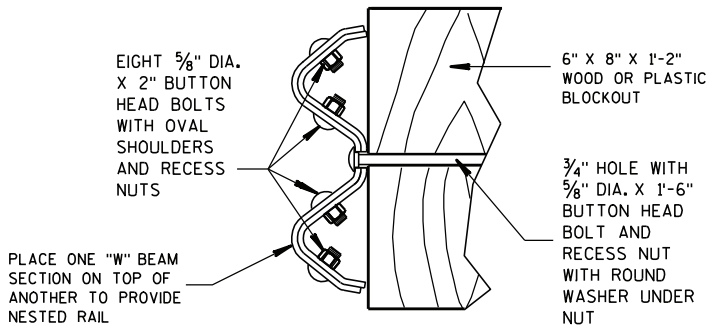


FRONT VIEW
BEAM SPLICE AT STEEL POST

TYPICAL SPLICING DETAILS OF STEEL PLATE BEAM GUARD

GENERAL NOTES

- ① PROVIDE TYPE "H" SILVER REFLECTIVE SHEETING ON ALL REFLECTORS EXCEPT THOSE LOCATED ALONG THE LEFT EDGE OF ONE-WAY ROADWAYS, WHICH SHALL BE PROVIDED WITH TYPE "H" YELLOW REFLECTIVE SHEETING.
- ② DO NOT INSTALL REFLECTORS ON THE FIRST 50 FEET OF THE APPROACH END OF THE ENERGY ABSORBING TERMINAL.
- ③ REVERSE EVERY OTHER REFLECTOR FOR 2-WAY VISIBILITY. THE CONTRACTOR MAY FURNISH TWO-SIDED REFLECTORS IN LIEU OF ONE-SIDED REFLECTORS.
- ④ PROVIDE AN ANGLE OF BEND OF $90^\circ \pm 1^\circ$ FOR TWO-SIDED REFLECTORS.
- ⑤ 8 - 5/8" ϕ X 2" BUTTON HEAD BOLTS WITH OVAL SHOULDERS & RECESS NUTS.
- ⑥ 5/8" ϕ X 1'-6" BUTTON HEAD BOLT AND AND RECESS NUT WITH ROUND WASHER UNDER NUT.

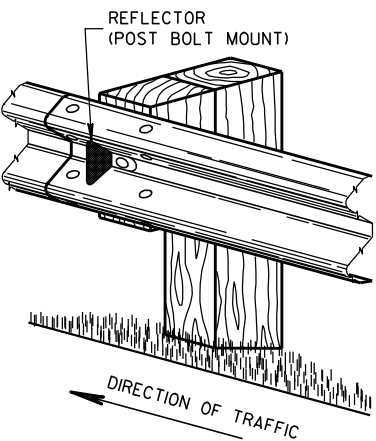


NESTED W BEAM (NW)

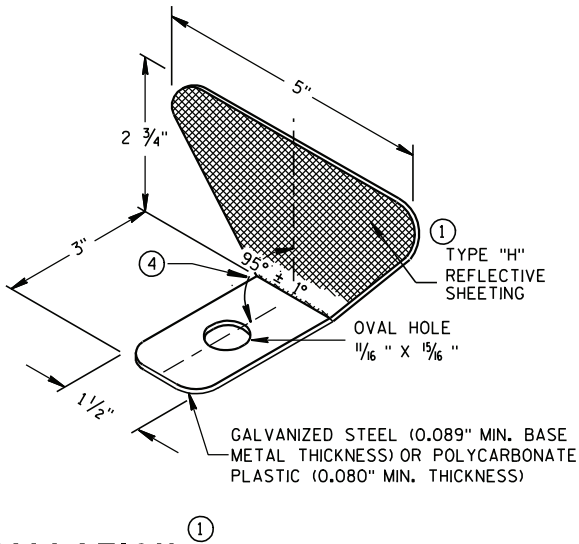
USE ALL OTHER STANDARD BEAM GUARD DETAILS FOR
CONSTRUCTING NESTED W BEAM (NW)

REFLECTOR SPACING^②

	BEAM GUARD LENGTH	REFLECTOR SPACING	NO. SURFACES REFLECTORIZED	MIN. NO. REFLECTORS
ONE WAY TRAFFIC	< 200'	50' C-C	1	3
	> 200'	100' C-C	1	
TWO WAY TRAFFIC	< 200'	25' C-C	1 ③	6
	> 200'	50' C-C	1	
TWO WAY TRAFFIC	< 200'	50' C-C	2 ④	3
	> 200'	100' C-C	2	

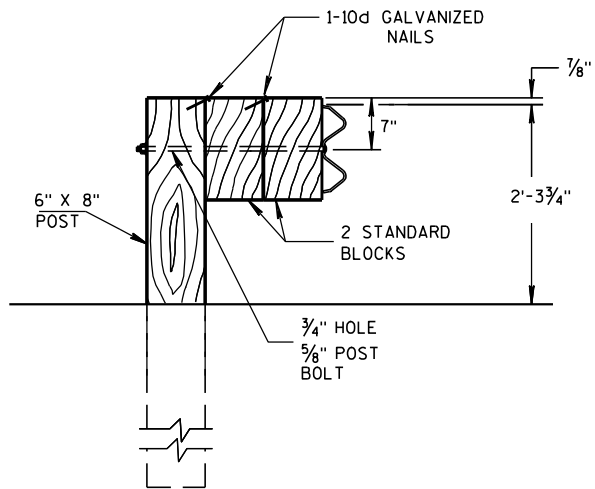


ONE SIDED REFLECTOR DETAIL AND TYPICAL INSTALLATION



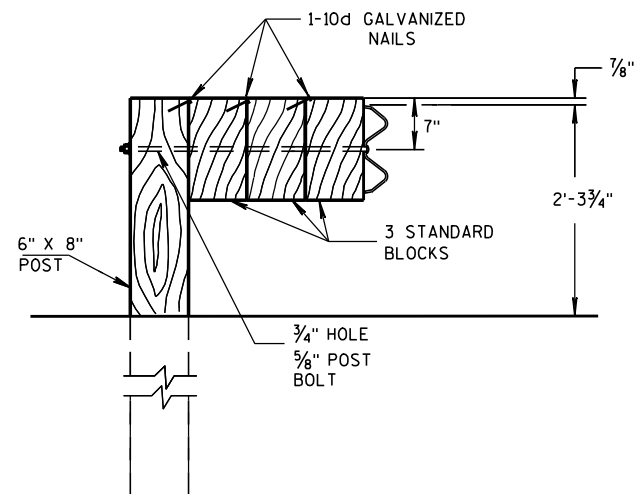
STEEL PLATE BEAM GUARD, CLASS "A", INSTALLATION & ELEMENTS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



DETAIL FOR DOUBLE BLOCKS

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

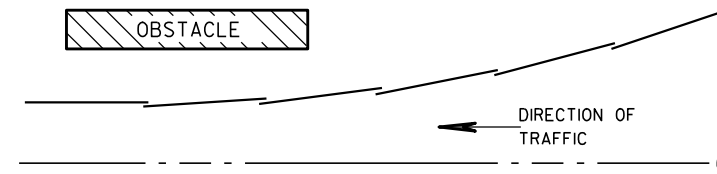


DETAIL FOR TRIPLE BLOCKS

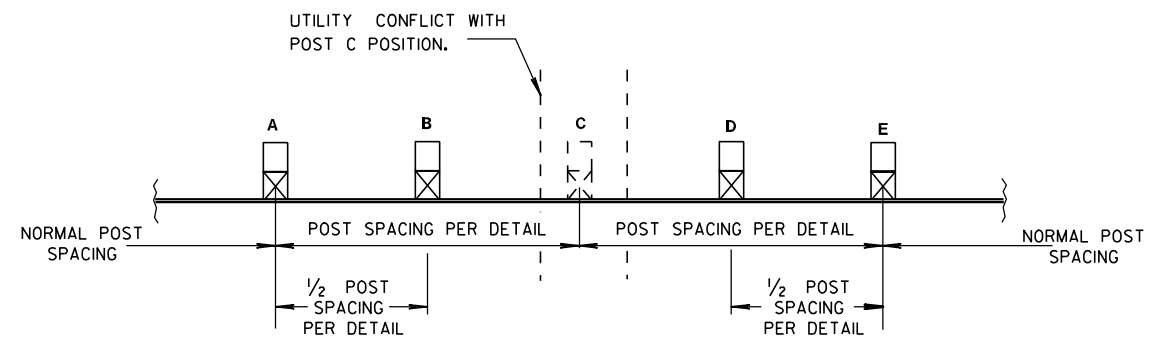
TRIPLE BLOCK DETAIL IS LIMITED TO ONE
LOCATION WITHIN A BEAM GUARD RUN.

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

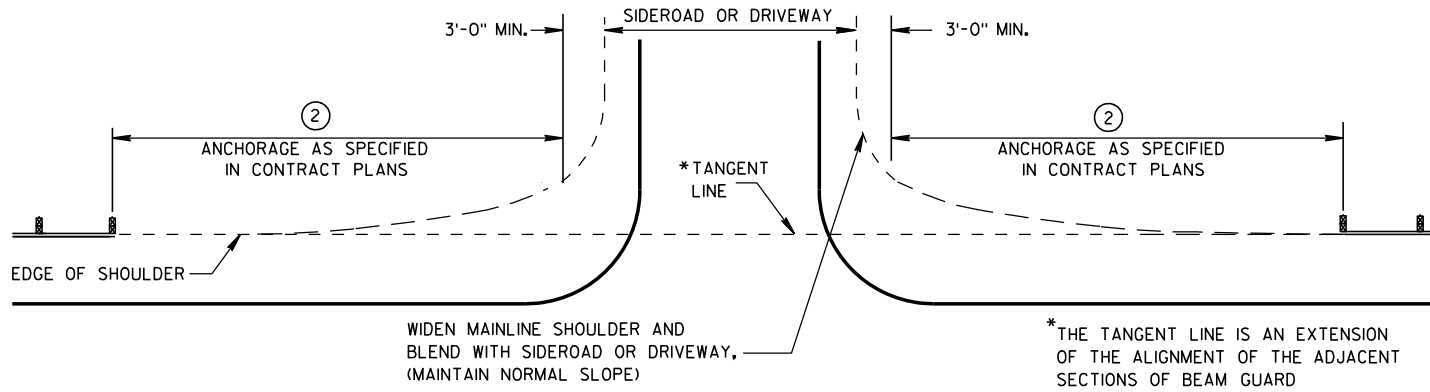
APPROVED

5/23/11

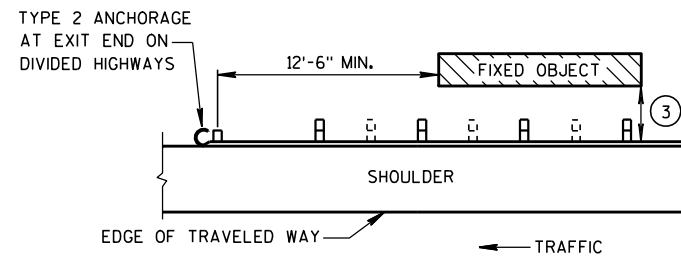
DATE

FHWA

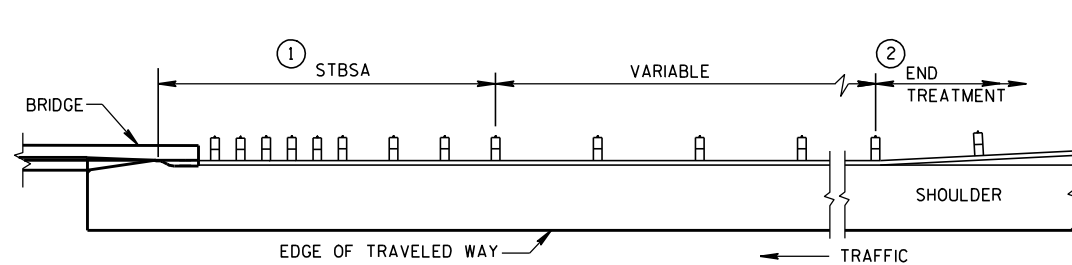
/S/ Jerry H. Zogg
ROADWAY STANDARDS DEVELOPMENT
ENGINEER



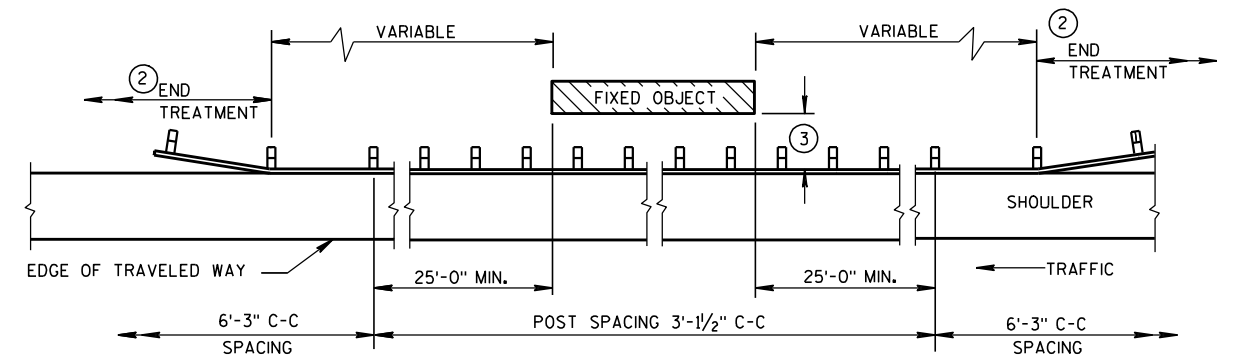
BEAM GUARD AT SIDEROADS OR DRIVEWAYS



BEAM GUARD AT OBSTACLES EXIT END - ONE WAY TRAFFIC



BEAM GUARD AT FULL WIDTH BRIDGES

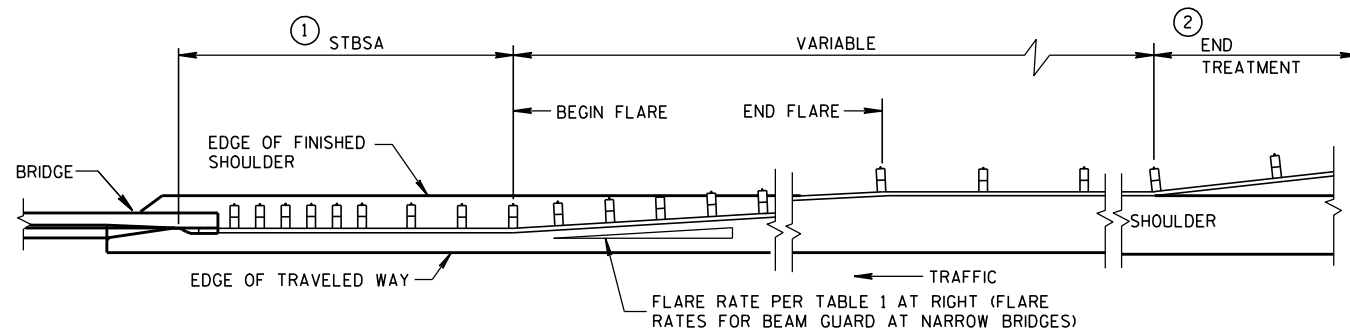


BEAM GUARD AT OBSTACLES - TWO WAY TRAFFIC

(RAIL TO OBSTACLE CLEARANCE 3'-6" TO 4'-6")

TABLE 1
FLARE RATES FOR BEAM
GUARD AT NARROW BRIDGES

POSTED SPEED (MPH)	FLARE RATE
25	13:1
30	15:1
35	16:1
40	18:1
45	21:1
50	24:1
55	26:1
65	30:1



BEAM GUARD AT NARROW BRIDGES (FLARED TO SHOULDER EDGE, THEN PARALLEL TO ROADWAY)

GENERAL NOTES

DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP SHALL CONFORM TO THE PERTINENT STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

W6 X 9 OR W6 X 8.5 STEEL POSTS WITH 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.

THE LOCATIONS AND LENGTHS OF BEAM GUARD ARE SHOWN ELSEWHERE IN THE PLAN.

- STEEL THRIE BEAM STRUCTURAL APPROACH (STBSA) - SEE CURRENT SDD 14B20.
- USE AN APPROVED END TREATMENT FOR THE TRAFFIC APPROACH SIDE OF BRIDGE/OBSTACLES. USE TYPE 2 ANCHORAGE ONLY AT THE DOWNSTREAM ENDS OF BEAM GUARD LOCATED ALONG ROADWAYS WITH ONE WAY TRAFFIC.

MINIMUM LATERAL DISTANCE FROM FACE OF BEAM GUARD TO FIXED OBJECT	POST SPACING
3'-6"	3' - 1 1/2"
4'-6"	6' - 3"

STEEL PLATE BEAM GUARD
CLASS "A"
AT BRIDGES, OBSTACLES
AND SIDEROADS/DRIVEWAYS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
8-21-07 DATE /S/ Jerry H. Zogg
ROADWAY STANDARDS DEVELOPMENT
ENGINEER
FHWA

BILL OF MATERIALS

NOTE NO.	QTY.	DESCRIPTION
①	4	WOOD BREAKAWAY TERMINAL POST: 5 1/2" X 7 1/2" X 3'-9"
②	**	STEEL TUBE: OPTION 1 - QUANTITY OF 4 TS 8" X 6" X 0.188", 4'-6" LONG OR OPTION 2 - QUANTITY OF 2 TS 8" X 6" X 0.188", 6'-0" AND 2 TS 8" X 6" X 0.188", 4'-6" LONG
③	2	SOIL PLATE: 2'-0" X 1'-6" X 1/4" **
④	4	WOOD BREAKAWAY CRT POST: 6" X 8" X 6'-0"
⑤	6	WOOD OFFSET BLOCKS: 6' X 8" X 1'-2"
⑥	1	PIPE SLEEVE: 2" X 5 1/2" STANDARD PIPE
⑦	1	BEARING PLATE
⑧	1	BCT CABLE ASSEMBLY
⑨	1	CABLE ANCHOR BOX
⑩	1	STRUT & YOKE
⑪	1	STEEL PLATE BEAM, END PANEL 12 GA, 13'-6 1/2" LONG FOR SKT-350, ET-2000 AND ET-2000 PLUS
⑫	3	STEEL PLATE BEAM: 12 GA, 13'-6 1/2"
⑬	1	ET-2000/ET-2000 PLUS GUARDRAIL EXTRUDER OR SKT-350 IMPACT HEAD: AS FURNISHED BY MANUFACTURER
⑭	1	REFLECTIVE SHEETING TYPE H: 18" X 18"
⑮	1	E.A.T. MARKER POST

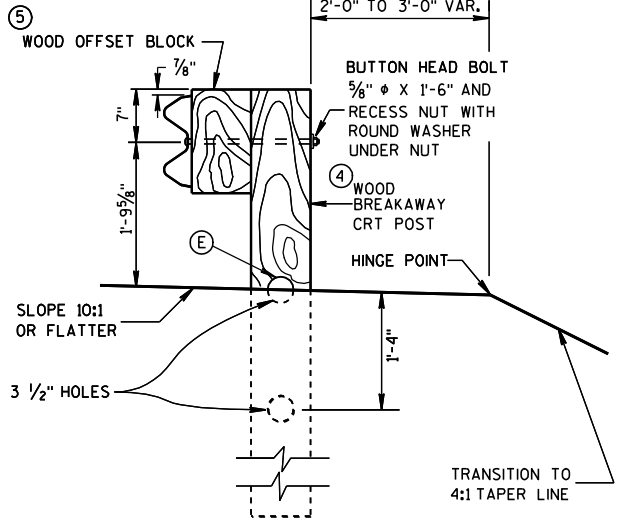
GENERAL NOTES

FOLLOW MANUFACTURE'S BOLTING RECOMMENDATIONS. IF NONE ARE AVAILABLE, INSTALL 5/8" ϕ X 1'-6" BUTTON HEAD BOLTS AT ALL POSTS EXCEPT FOR POST 1.

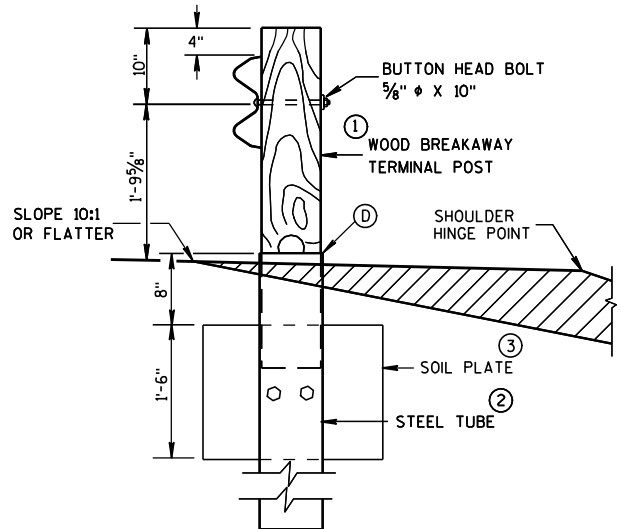
- (A) THE SLOPE IN THE AREA BOUNDED BY THE EXTENDED VEHICLE RUNOUT PATH (EVRP), THE HINGE POINT LINE (HPL), AND THE CLEAR ZONE LIMITS (CZL) SHALL BE 4:1 OR FLATTER.
- (B) AFTER FINAL ASSEMBLY, RECHECK CABLE TO BE SURE IT IS TAUT AND HAS NOT RELAXED.
- (C) THE 13 SLOT FIRST RAIL PANEL MAY BE USED IN LIEU OF THE 3 SLOT RAIL PANEL ON SKT-350 ONLY.
- (D) THE TOP OF THE STEEL TUBE ON POSTS 1 THROUGH 4 SHALL NOT BE MORE THAN 3" ABOVE THE FINISH GROUND ELEVATION.
- (E) THE CENTER OF THE UPPER 3 1/2" DIAMETER HOLE ON POST 5 THROUGH 8 SHALL BE 3/4" ABOVE THE FINISHED GROUND LINE.
- (F) SHEETING IS ATTACHED TO 0.040 ALUMINUM SHEET AND ATTACHED TO E.A.T. HEAD USING 4 STAINLESS STEEL SELF-TAPPING SCREWS, ONE SCREW PER CORNER OF E.A.T. STEEL POSTS SHALL NOT BE ALLOWED FOR USE WITH ENERGY ABSORBING TERMINALS.
- DO NOT INSTALL REFLECTORS ON THE FIRST 50 FEET OF THE APPROACH END OF THE ENERGY ABSORBING TERMINAL.

* DO NOT ATTACH BLOCKOUTS TO POSTS 1 AND 2.

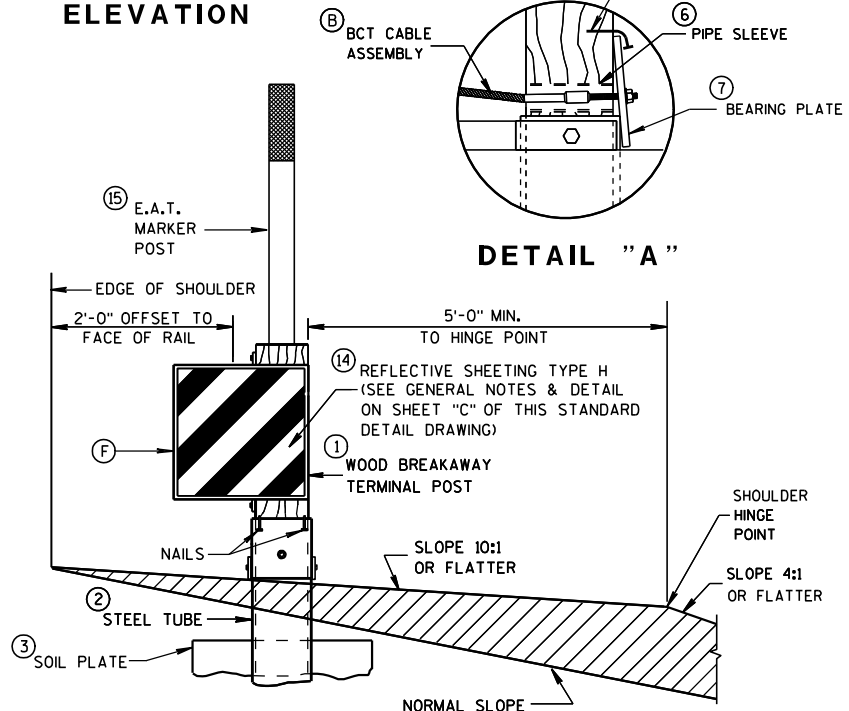
** SDD SHOWS 4 - 54 INCH STEEL TUBES WITH SOIL PLATES INSTALLED ON POST 1 AND POST 2. POST 3 AND 4 DO NOT NEED SOIL PLATES. AN ALTERNATIVE INSTALLATION WOULD CONSIST OF 2 - 72 INCH STEEL TUBES ON POST 1 AND POST 2 AND 54 INCH TUBES ON POSTS 3 AND 4. THE ALTERNATIVE INSTALLATION DOES NOT REQUIRE SOIL PLATES.



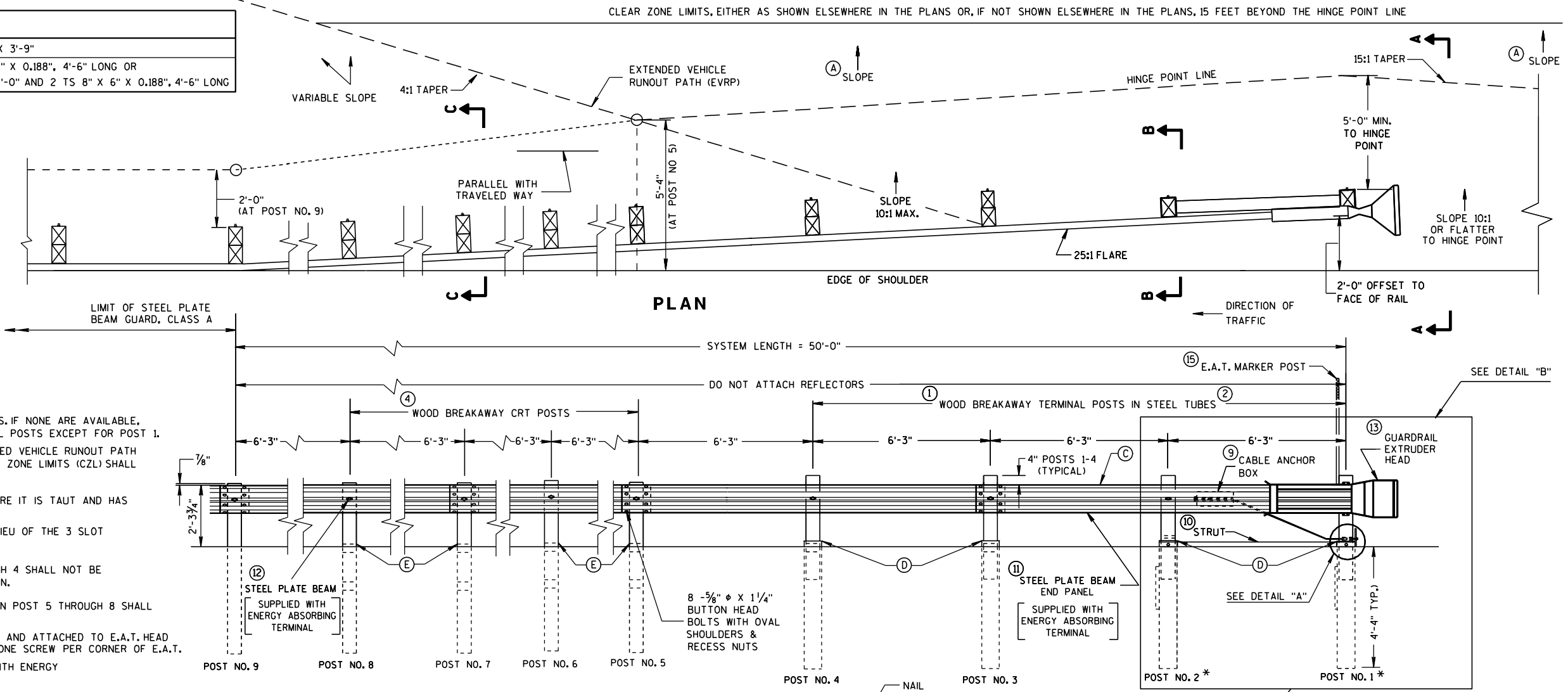
SECTION C-C
TYPICAL AT POST NOS. 6, 8



SECTION B-B
TYPICAL AT POST NO. 2*



SECTION A-A
TYPICAL AT POST NO. 1*



PLAN

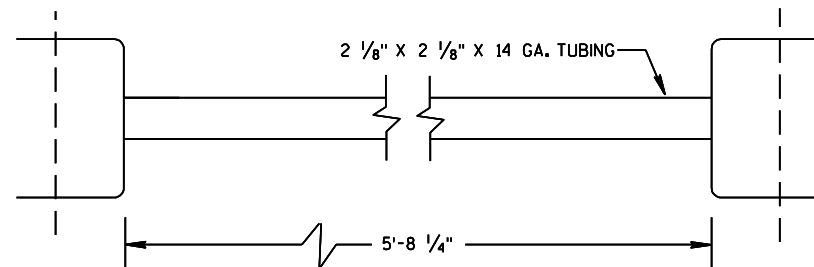
ELEVATION

DETAIL "A"

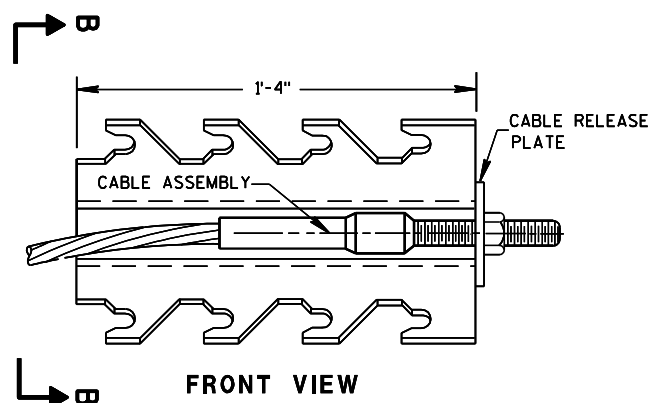
DETAIL "B"

STEEL PLATE BEAM GUARD
ENERGY ABSORBING TERMINAL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

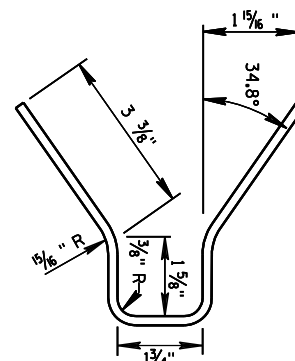


⑩ STRUT DETAIL (SKT-350)

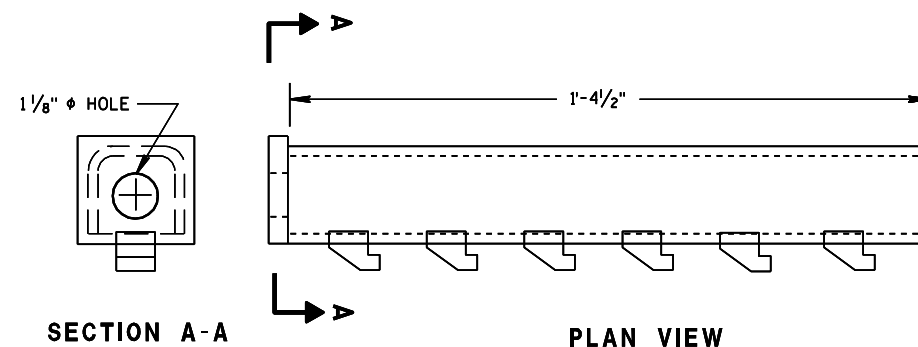


⑨ CABLE ANCHOR BOX (SKT-350)

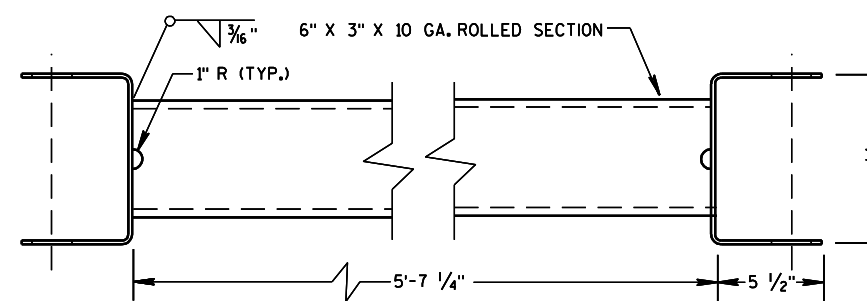
(SKT-350)



SECTION B-B

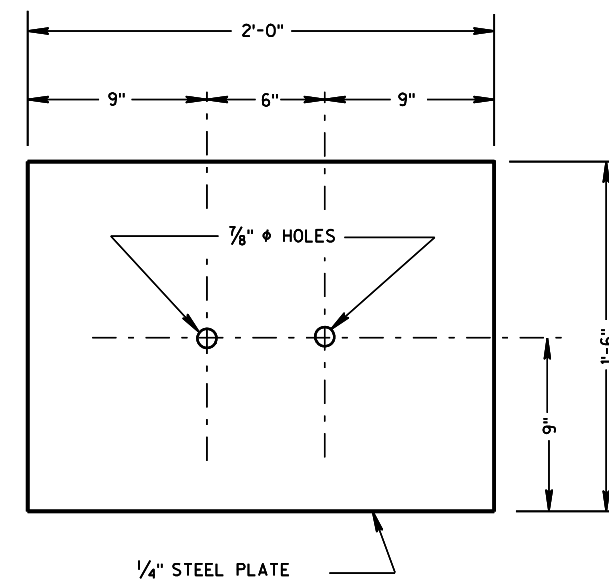


⑨ CABLE ANCHOR BOX (ET-2000/ET-2000 PLUS)

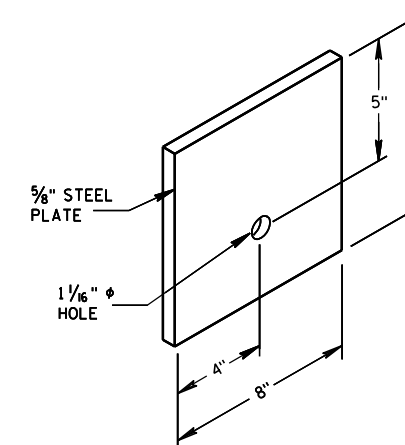


⑩ STRUT DETAIL (ET-2000/ET-2000 PLUS)

(ET-2000/ET-2000 PLUS)



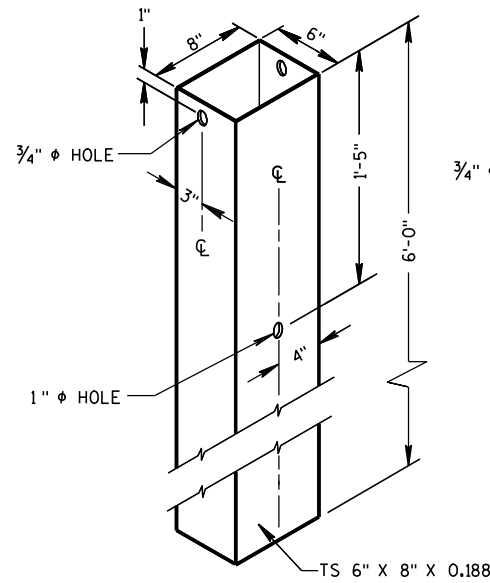
③ SOIL PLATE
(SKT-350, ET-2000/ET-2000 PLUS)



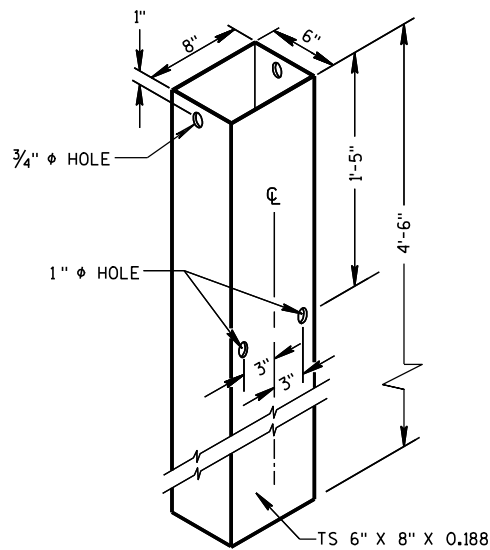
⑦ STEEL BEARING PLATE
(SKT-350, ET-2000/ET-2000 PLUS)

STEEL PLATE BEAM GUARD
ENERGY ABSORBING TERMINAL

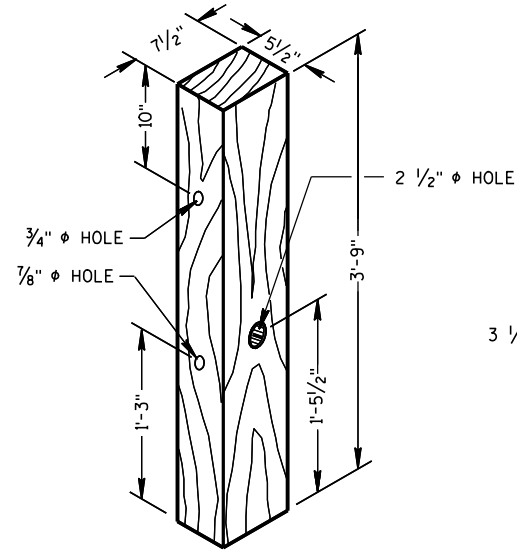
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



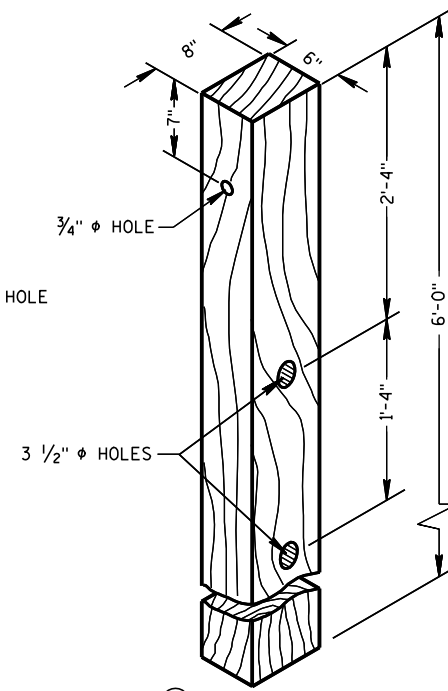
② **72" STEEL TUBE**
(POSTS NO. 1-4)



② **54" STEEL TUBE**
(POSTS NO. 1-4)

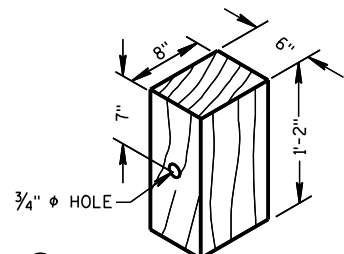


① **TERMINAL POST**
(POSTS NO. 1-4)



④ **CRT POST**
(POSTS NO'S 5-8)

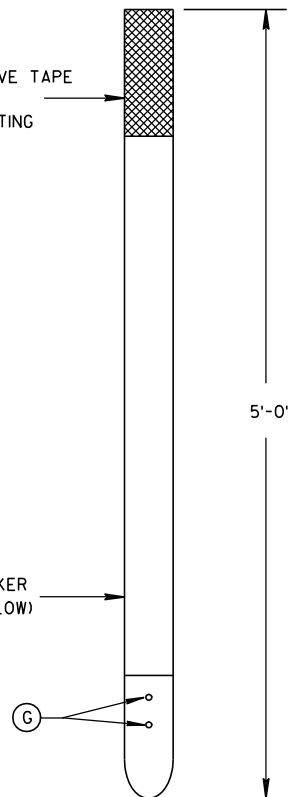
WOOD BREAKAWAY POSTS



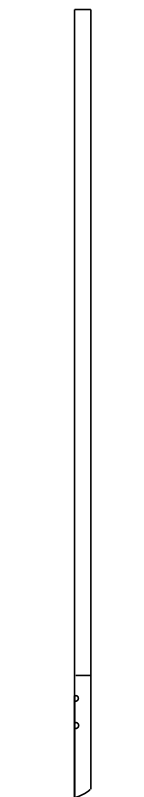
⑤ **WOOD OFFSET BLOCK**
REQ'D. AT ALL POSTS EXCEPT POST NO'S 1 & 2

YELLOW REFLECTIVE TAPE
3" X 9" TYPE H
REFLECTIVE SHEETING

E.A.T. MARKER
POST (YELLOW)



FRONT VIEW



SIDE VIEW

⑮ **E.A.T. MARKER POST**

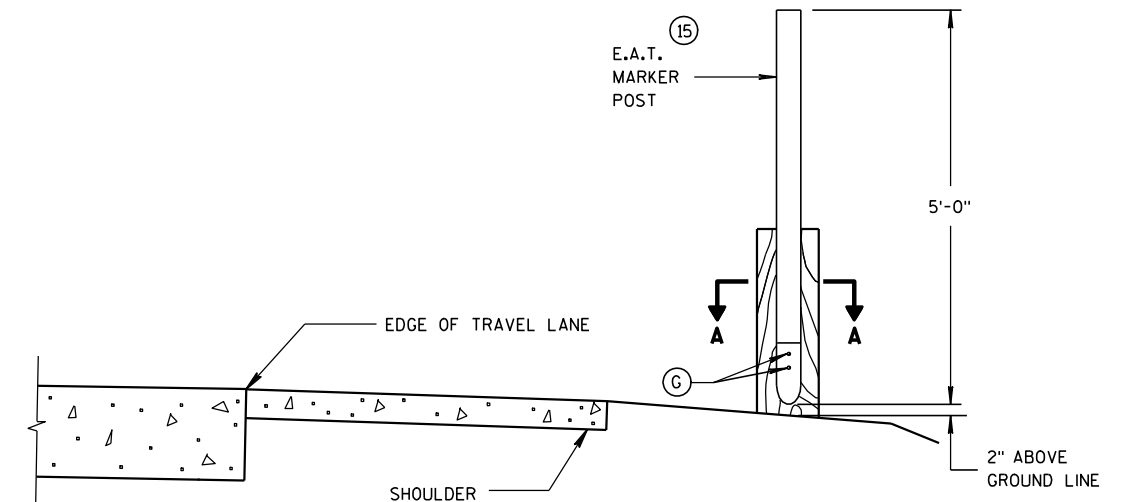
GENERAL NOTES

STEEL PLATE BEAM GUARD, ENERGY ABSORBING TERMINAL SHALL BE PAID FOR AT THE CONTRACT UNIT PRICE EACH, WHICH SHALL INCLUDE HARDWARE, STEEL PLATE BEAM GUARD, POSTS, REFLECTIVE SHEETING AND INSTALLATION AS SHOWN.

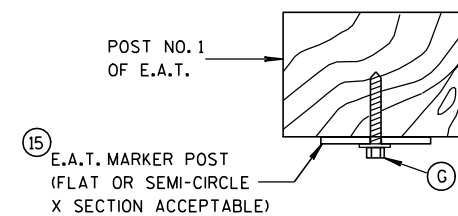
WHEN ROCK IS ENCOUNTERED DURING EXCAVATION, A 12 INCH DIA. POST HOLE EXTENDING 20 INCHES DEEP INTO THE ROCK MAY BE USED IF APPROVED BY THE ENGINEER. GRANULAR MATERIAL SHALL BE PLACED IN THE BOTTOM OF THE HOLE APPROXIMATELY 2 1/2 INCHES DEEP TO PROVIDE DRAINAGE. THE SOIL TUBES SHALL BE FIELD CUT TO LENGTH,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

SEE APPROVED PRODUCTS LIST FOR ACCEPTABLE E. A. T. MARKER POST.

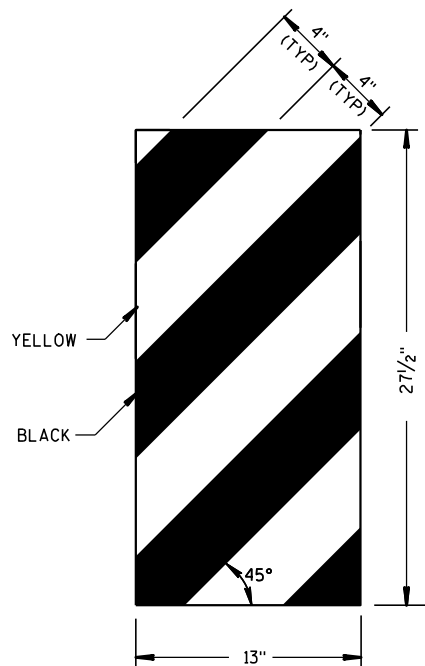
⑮ 1/2" DIA. X 3" LAG BOLT WITH WASHER.



TYPICAL INSTALLATION OF E.A.T. MARKER POST BACKSIDE OF POST NO. 1
(E.A.T. AND RAIL REMOVED FOR CLARITY)

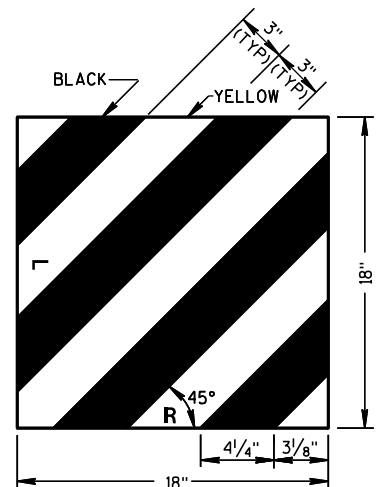


SECTION A-A



ET-2000 PLUS ONLY

⑭ **REFLECTIVE SHEETING DETAILS**



ET-2000 AND SKT-350

**STEEL PLATE BEAM GUARD
ENERGY ABSORBING TERMINAL**

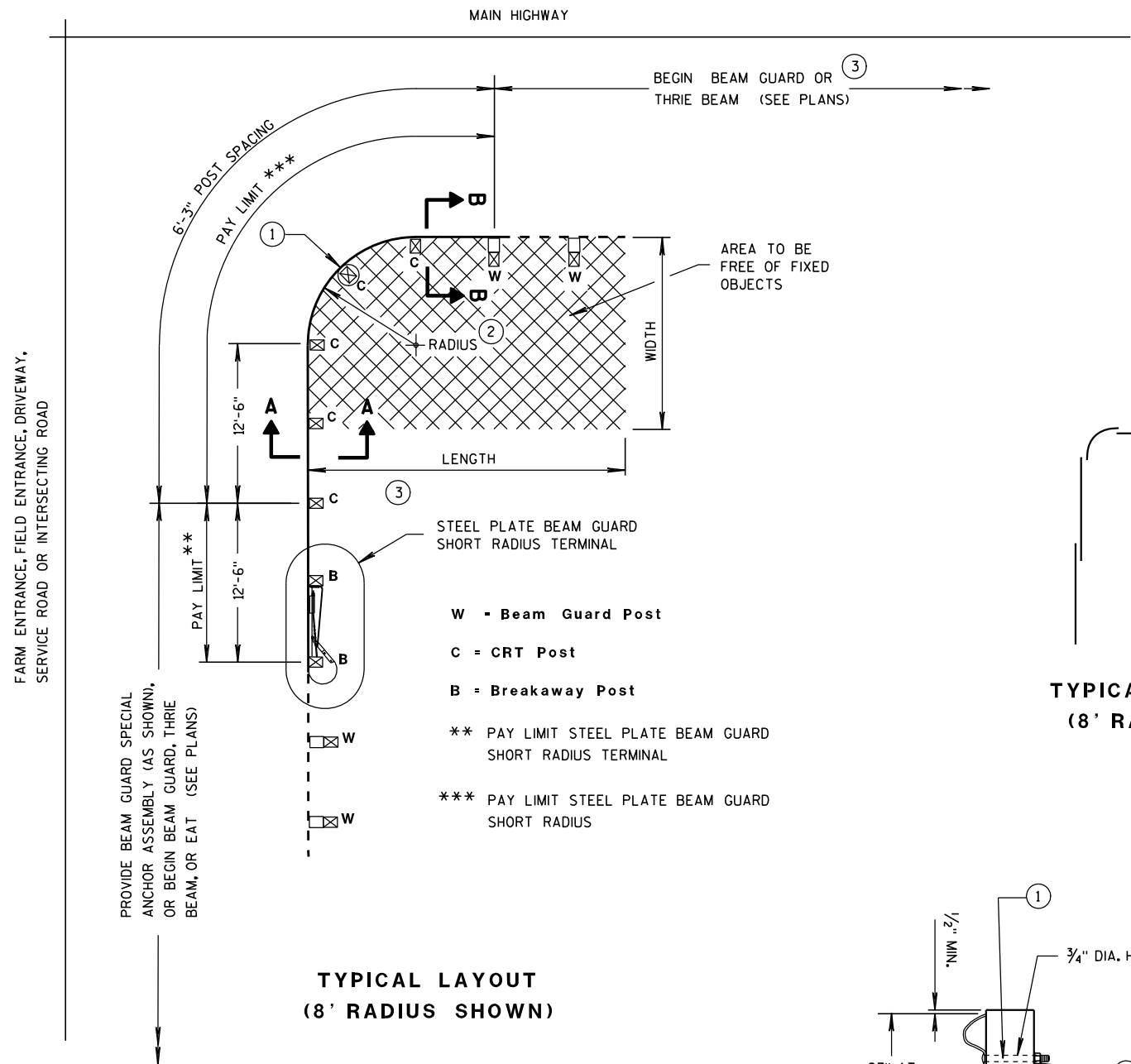
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

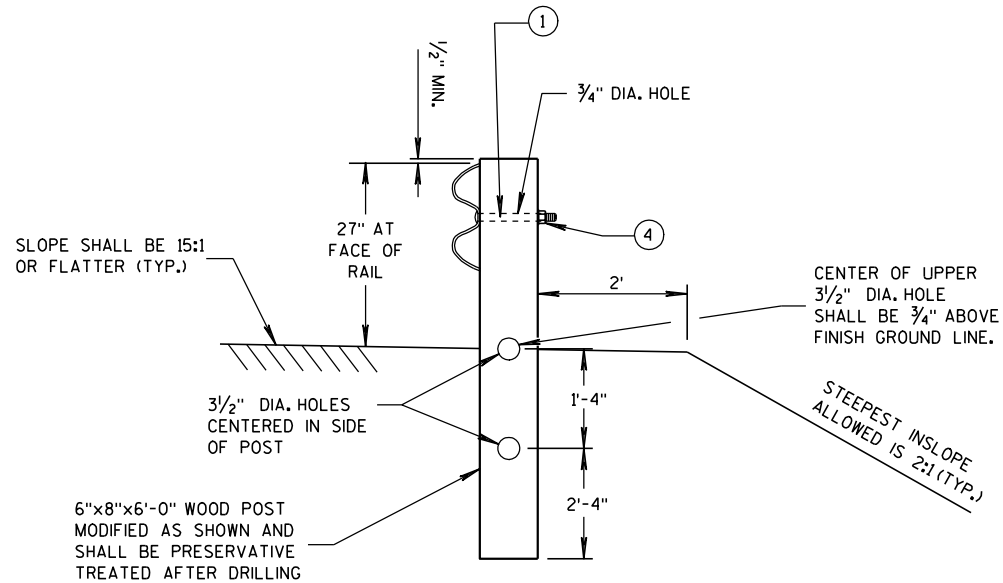
4-12-10
DATE

FHWA

/S/ Jerry H. Zogg
ROADWAY STANDARDS DEVELOPMENT
ENGINEER



TYPICAL LAYOUT
(8' RADIUS SHOWN)



SECTION A-A
(CRT POST)

STEEL PLATE BEAM GUARD SHORT RADIUS TERMINAL

TYPICAL LAP SPLICES
(8' RADIUS SHOWN)

GENERAL NOTES

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

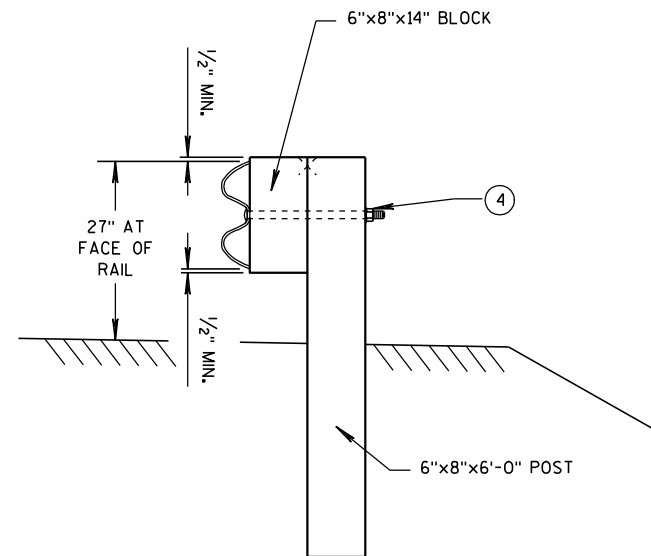
SHOP BEND CURVED RAIL SECTIONS.

SEE STANDARD DETAIL DRAWING 14 B 15 FOR OTHER DETAIL.

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

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

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



SECTION B-B
(BEAM GUARD POST)

STEEL PLATE BEAM GUARD
SHORT RADIUS TERMINAL

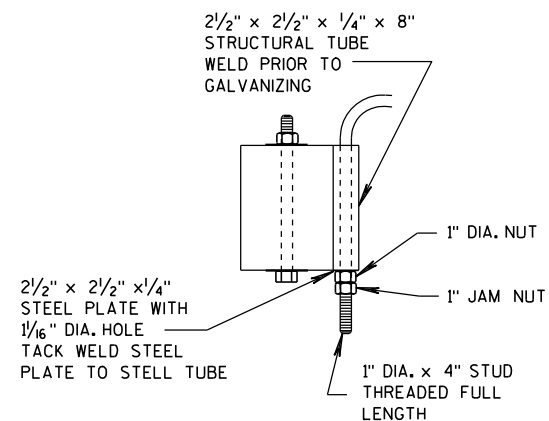
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



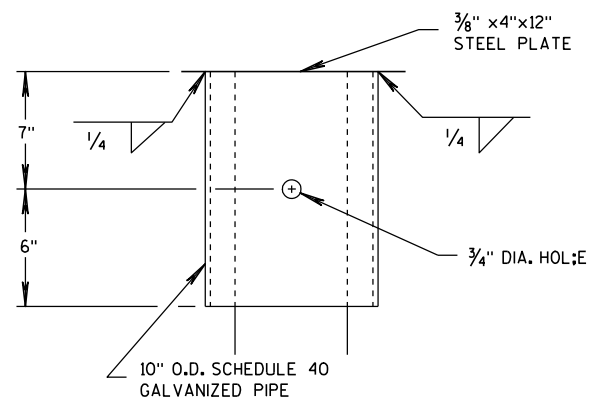
STEEL PLATE BEAM GUARD SHORT RADIUS TERMINAL

GENERAL NOTES

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



DETAIL A

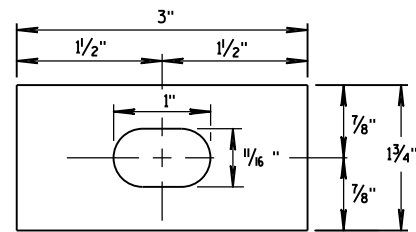


DETAIL B

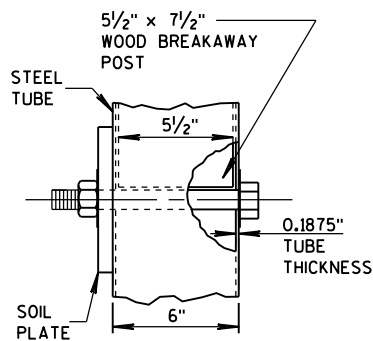
(BEAM GUARD AND TERMINAL
SECTION NOT SHOWN)

STEEL PLATE BEAM GUARD SHORT RADIUS TERMINAL

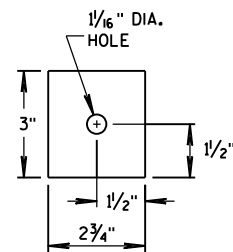
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



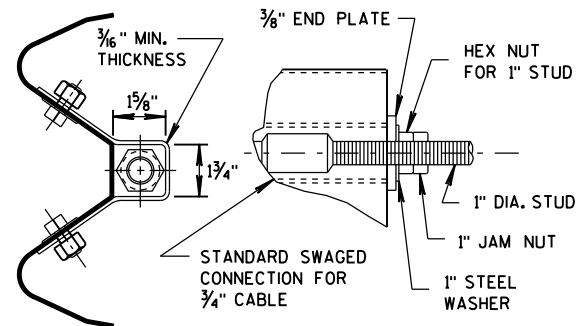
**RECTANGULAR
PLATE WASHER**



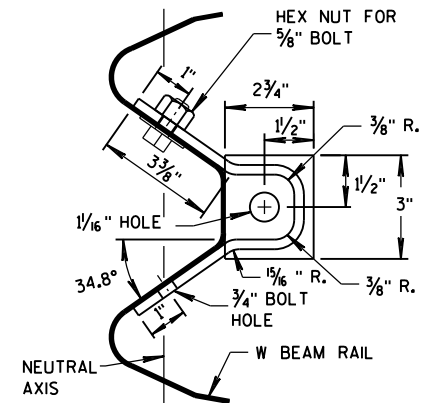
DETAIL D



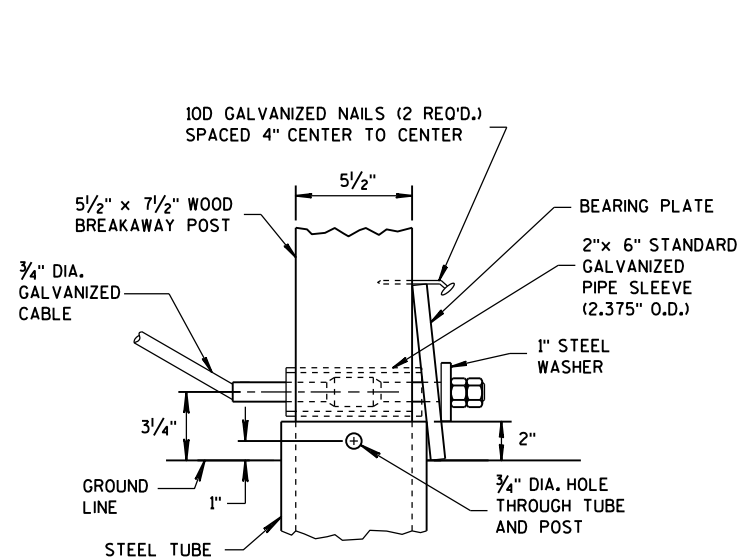
END PLATE



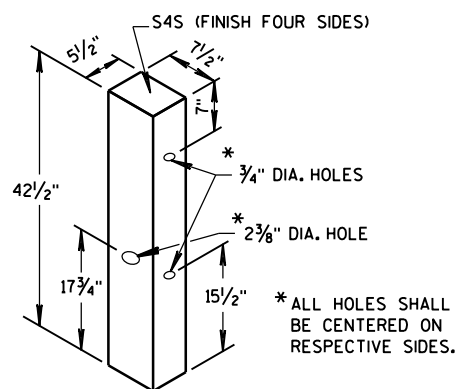
**SECTION C-C
(END PLATE REMOVED)**



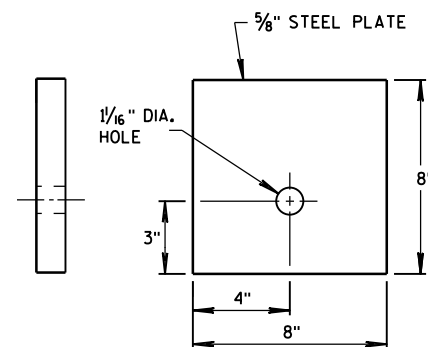
ANCHOR BRACKET



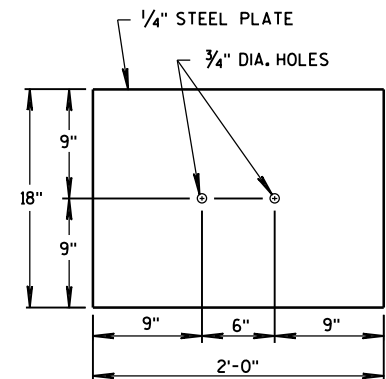
DETAIL C



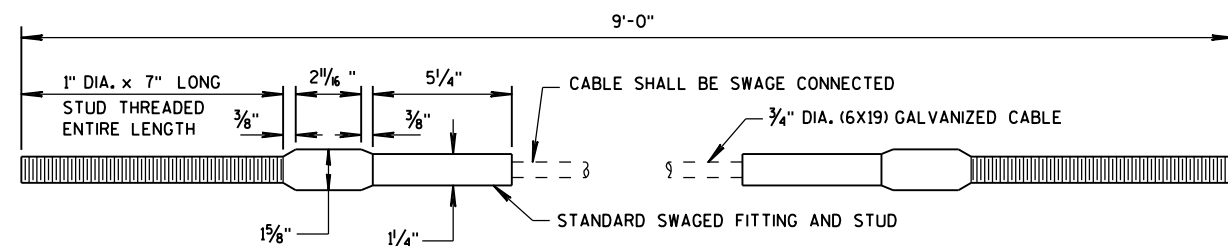
WOOD BREAKAWAY POST



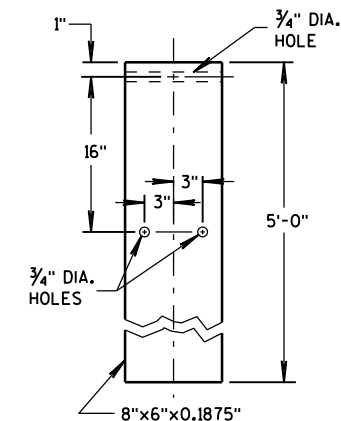
BEARING PLATE



SOIL PLATE



CABLE ASSEMBLY



STEEL TUBE

**STEEL PLATE BEAM GUARD
SHORT RADIUS TERMINAL**

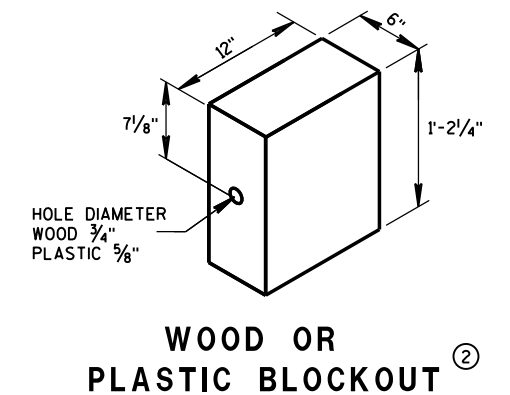
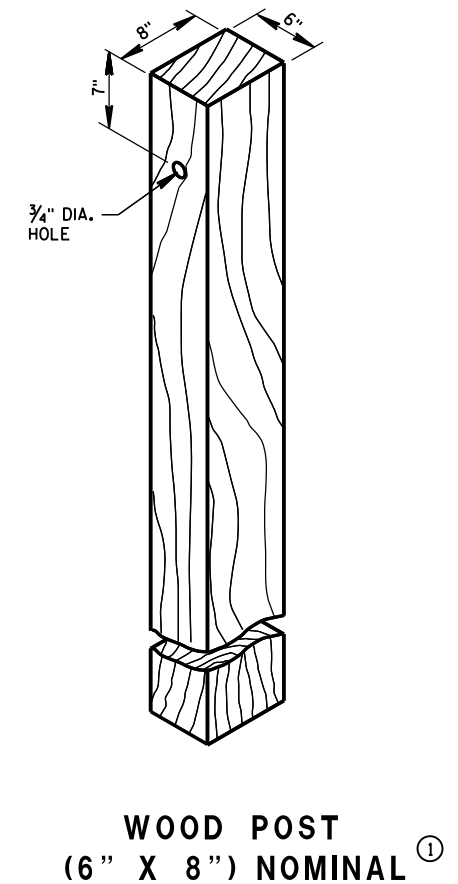
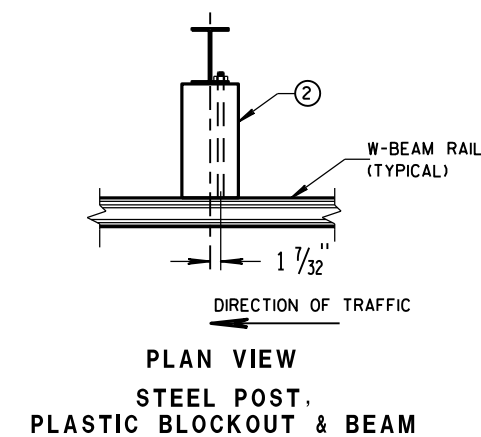
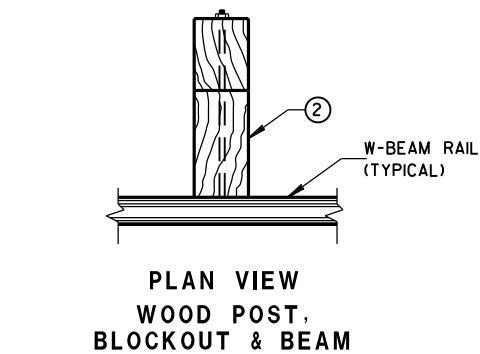
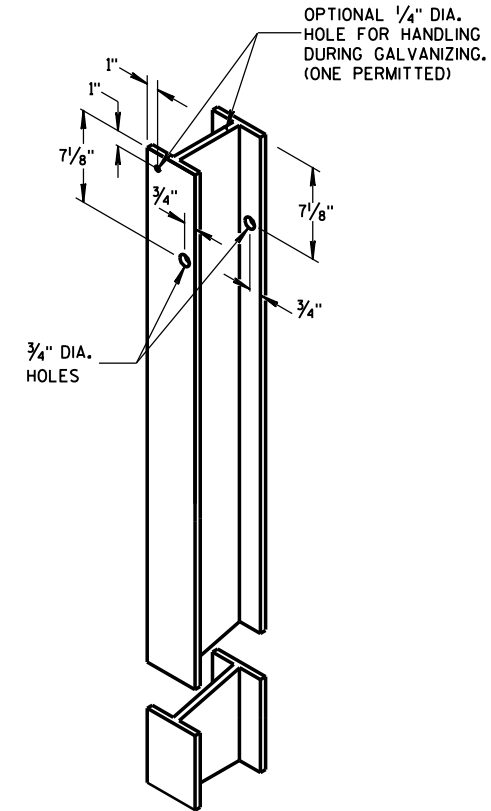
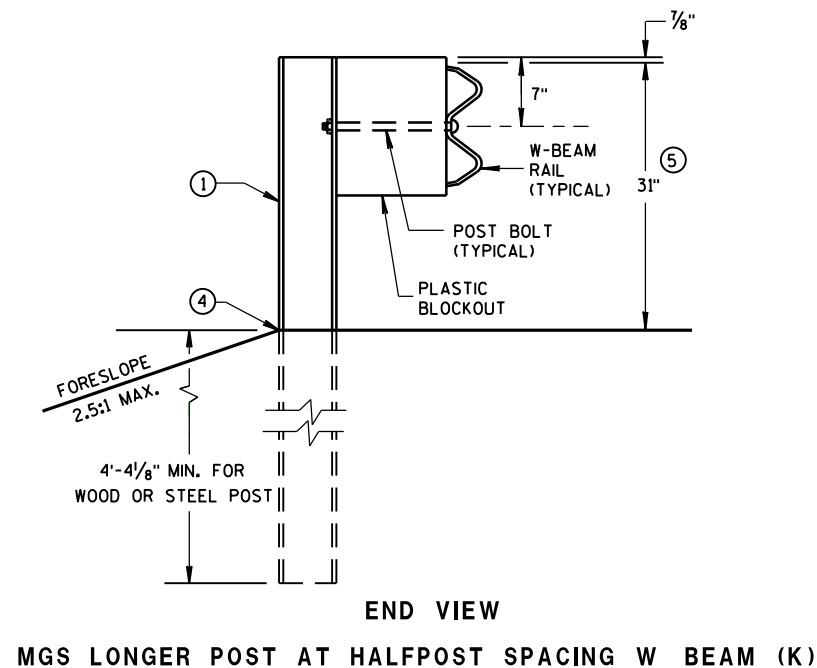
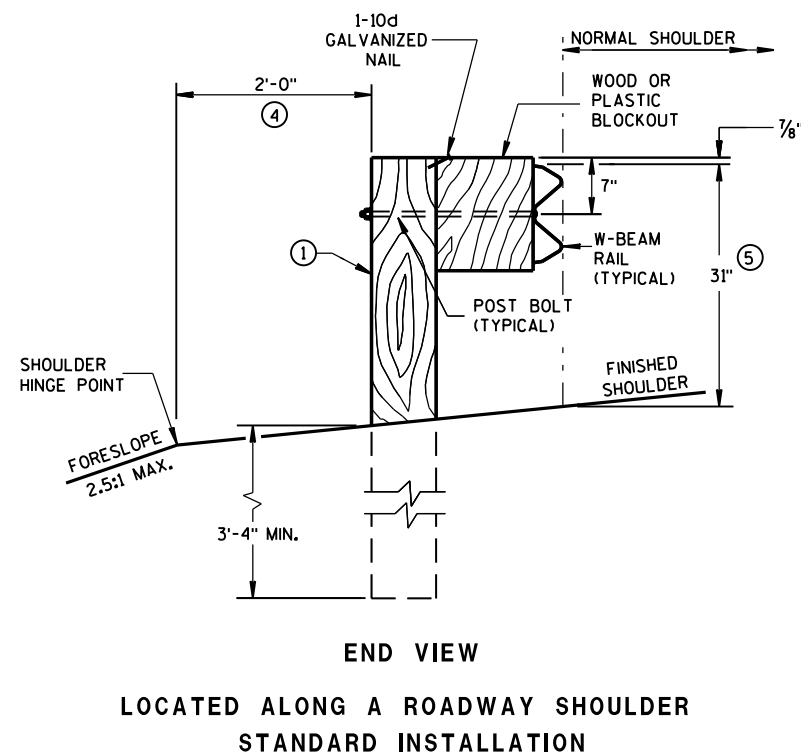
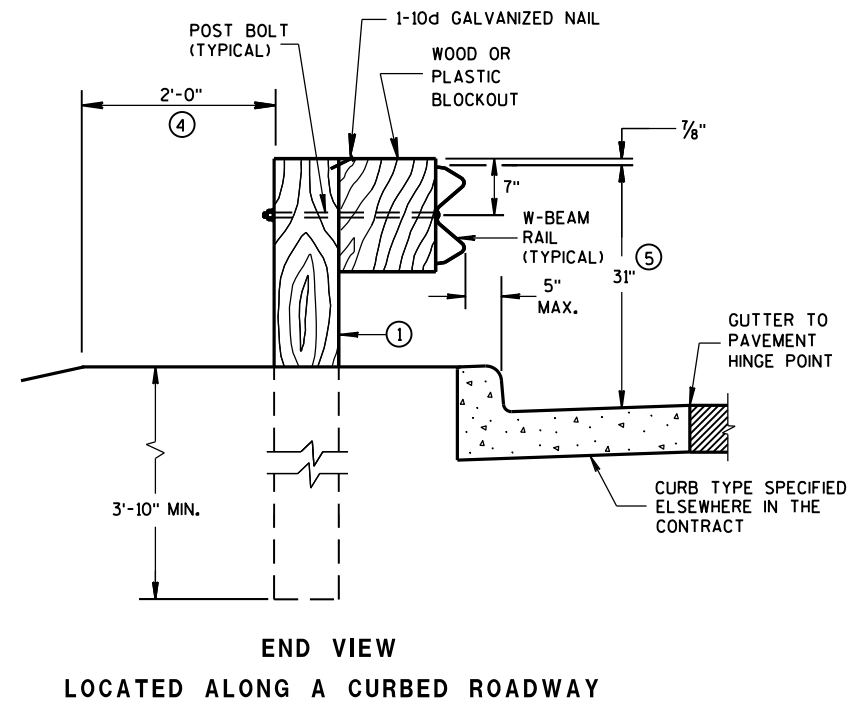
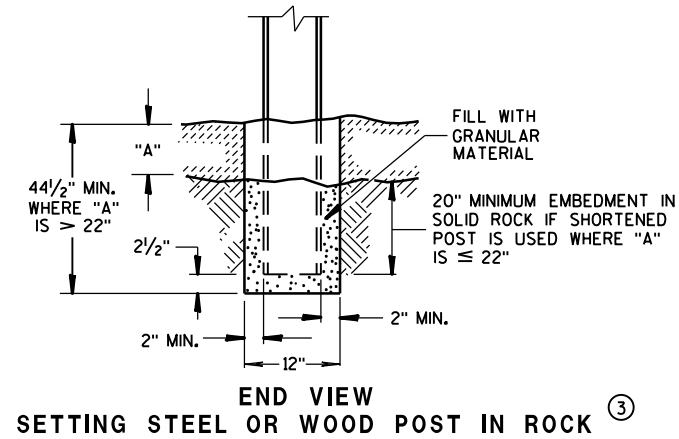
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

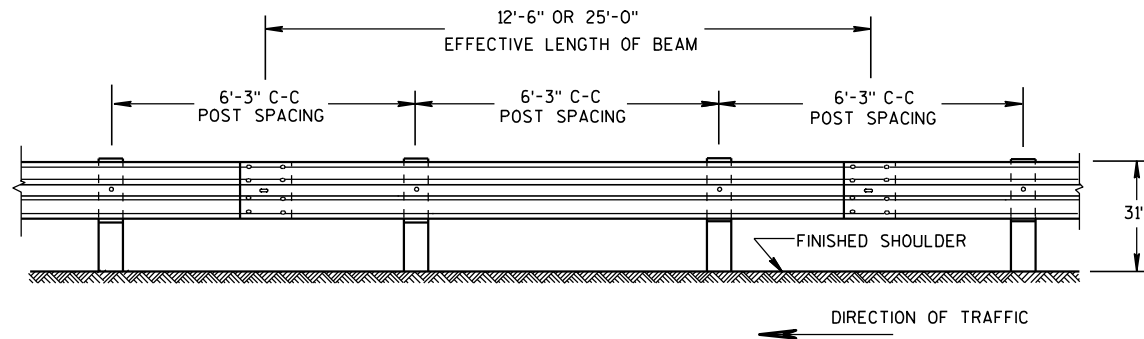
APPROVED
12/18/08
DATE
FHWA

/S/ Jerry H. Zogg
ROADWAY STANDARDS DEVELOPMENT
ENGINEER

6

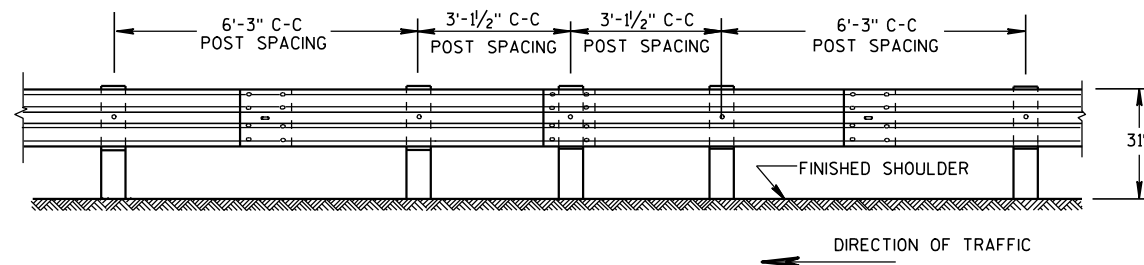
- S.D.D. 14 B 42-2a**





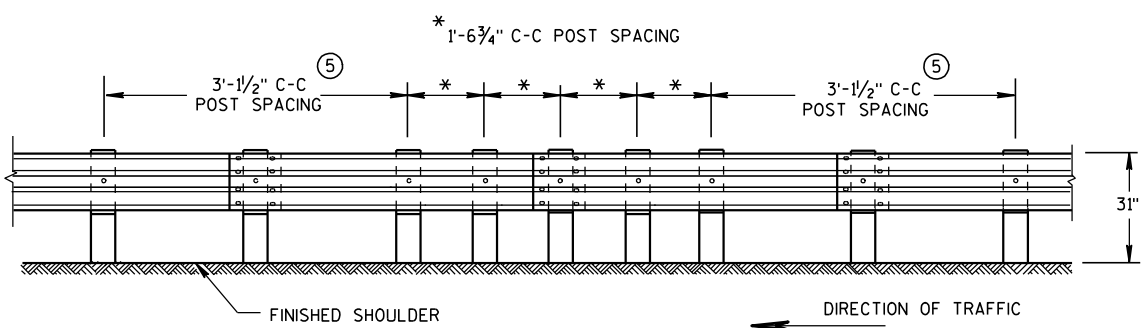
FRONT VIEW

POST SPACING STANDARD INSTALLATION



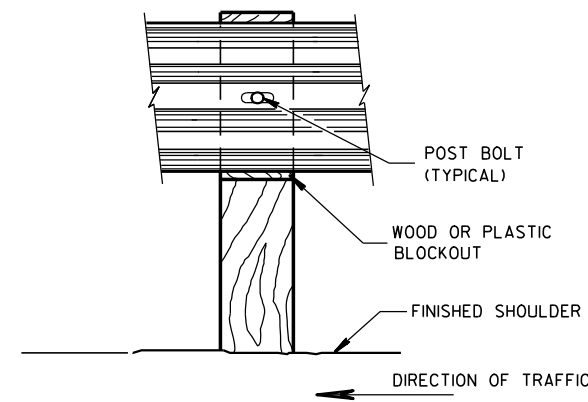
FRONT VIEW

HALF POST SPACING (HS) AND
HALF POST SPACING WITH LONGER POSTS (K)

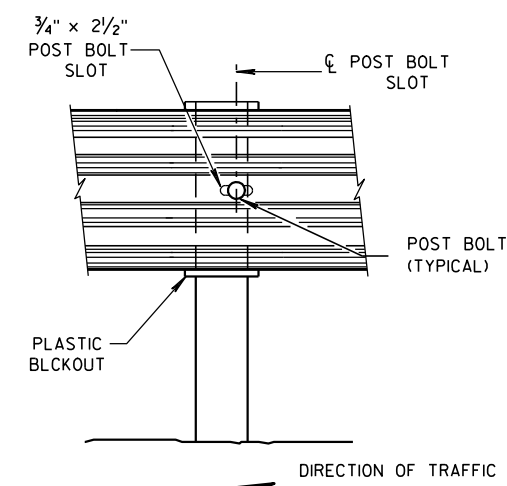


FRONT VIEW

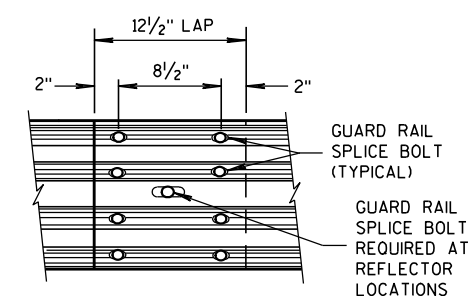
QUARTER POST SPACING (QS)



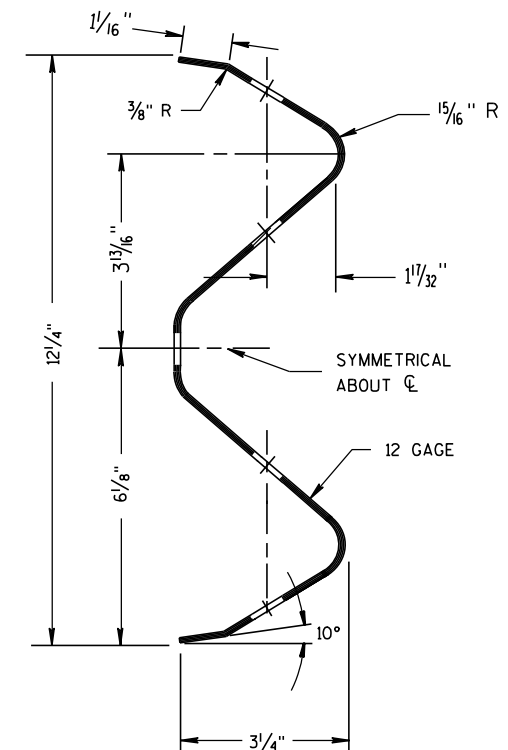
FRONT VIEW AT WOOD POST



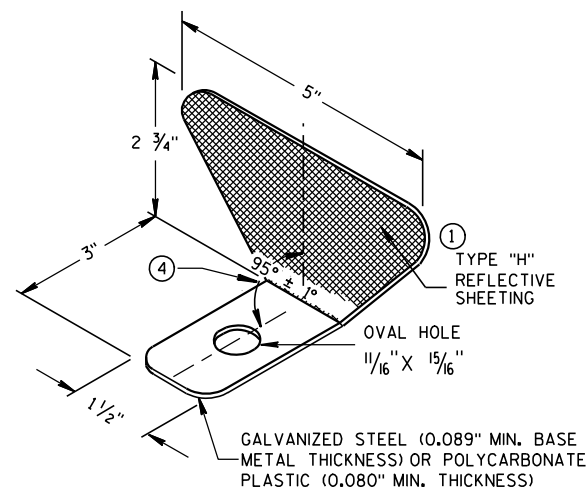
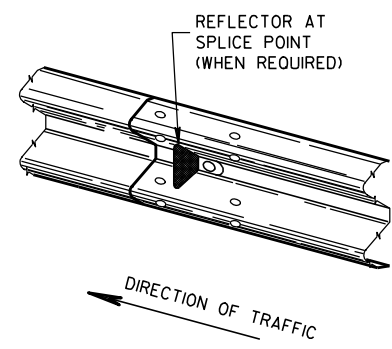
FRONT VIEW AT STEEL POST



FRONT VIEW
MID-SPAN BEAM SPLICE



SECTION THRU W-BEAM RAIL



ONE SIDED REFLECTOR DETAIL AND TYPICAL INSTALLATION

GENERAL NOTES

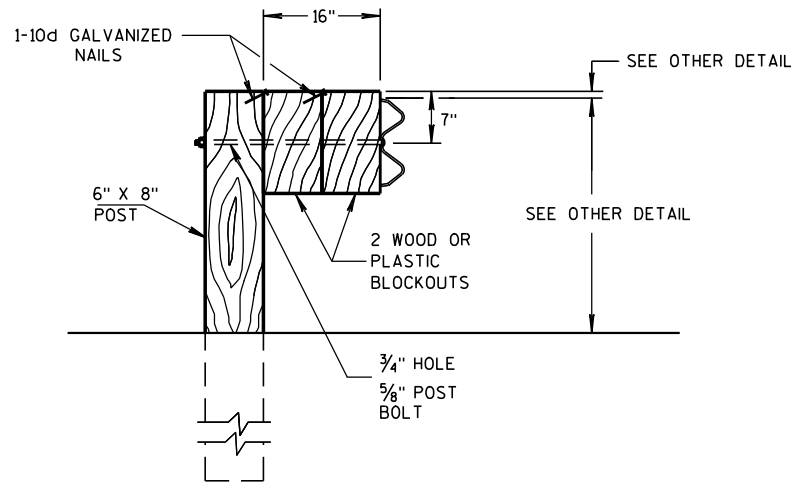
- 1 PROVIDE TYPE "H" SILVER REFLECTIVE SHEETING ON ALL REFLECTORS EXCEPT THOSE LOCATED ALONG THE LEFT EDGE OF ONE-WAY ROADWAYS, WHICH SHALL BE PROVIDED WITH TYPE "H" YELLOW REFLECTIVE SHEETING.
 - 2 DO NOT INSTALL REFLECTORS ON THE FIRST 50 FEET OF THE APPROACH END OF THE ENERGY ABSORBING TERMINAL. RAIL SPLICE LOCATIONS ARE THE ONLY ACCEPTABLE LOCATIONS FOR REFLECTORS.
 - 3 REVERSE EVERY OTHER REFLECTOR FOR 2-WAY VISIBILITY. THE CONTRACTOR MAY FURNISH TWO-SIDED REFLECTORS IN LIEU OF ONE-SIDED REFLECTORS.
 - 4 PROVIDE AN ANGLE OF BEND OF $90^\circ \pm 1^\circ$ FOR TWO-SIDED REFLECTORS.
 - 5 25 FEET OF HALF POST SPACING IS REQUIRED ON APPROACH AND DEPARTURE ENDS OF QUARTER POST SPACING.
- POST BOLTS ARE A $\frac{5}{8}$ " DIAMETER ASTM A307 GUARDRAIL BOLT. A POST BOLT REQUIRES $\frac{5}{8}$ " DIAMETER A563A DOUBLE RECESSED (DR) HEAVY HEX NUT AND $\frac{5}{8}$ " DIAMETER F844 FLAT WASHER. POST BOLTS MAY BE LONGER IF MULTIPLE BLOCKOUTS ARE BEING USED.
- GUARD RAIL SPLICE BOLTS ARE A $\frac{5}{8}$ " DIAMETER ASTM A307 GUARDRAIL HEAD BOLT. A GUARDRAIL SPLICE BOLT REQUIRES $\frac{5}{8}$ " DIAMETER A563A DOUBLE RECESSED (DR) HEAVY HEX NUT.

REFLECTOR SPACING

	BEAM GUARD LENGTH	REFLECTOR SPACING	NO. SURFACES REFLECTORIZED	MIN. NO. REFLECTORS
ONE WAY TRAFFIC	< 200'	50' C-C	1	3
	> 200'	100' C-C	1	
TWO WAY TRAFFIC	< 200'	25' C-C	1	6
	> 200'	50' C-C	1	
TWO WAY TRAFFIC	< 200'	50' C-C	2	3
	> 200'	100' C-C	2	

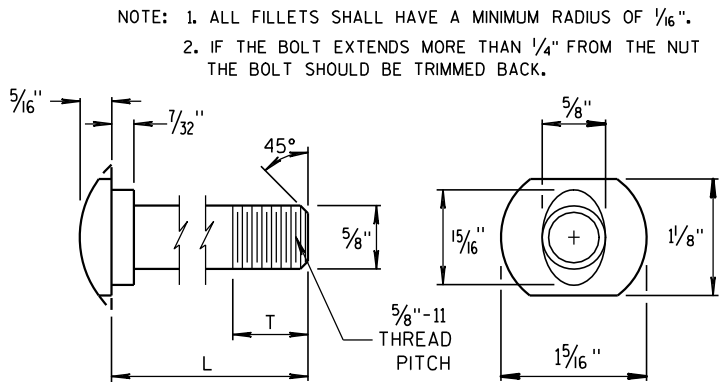
MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

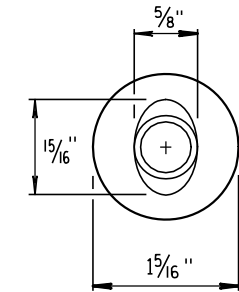


DETAIL FOR 16" BLOCKOUT DEPTH

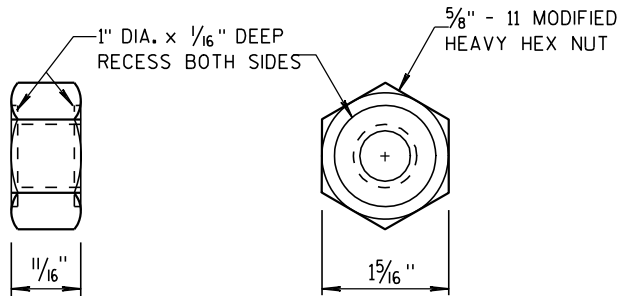
IT IS ACCEPTABLE TO USE BLOCKOUTS UP TO 16" DEEP TO INCREASE THE POST OFFSET TO AVOID UNDERGROUND OBSTACLES. THERE IS NO LIMIT TO THE NUMBER OF POSTS THAT CAN HAVE ADDITIONAL BLOCKOUTS UP TO 16" DEEP.



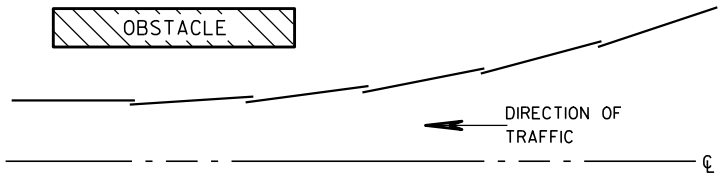
POST BOLT TABLE



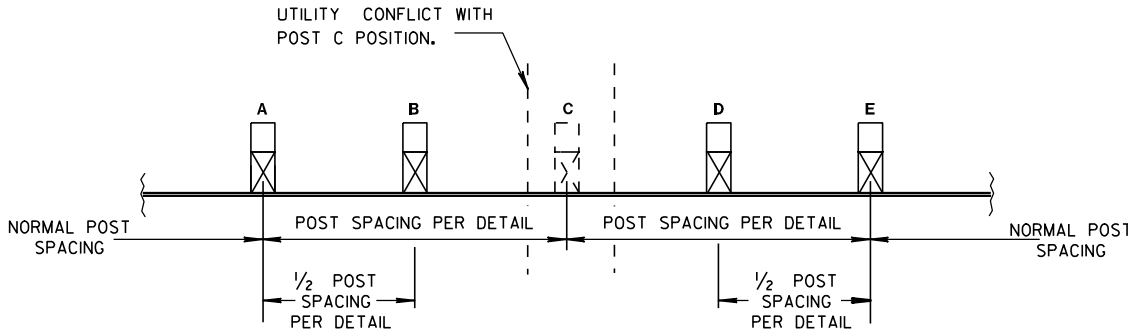
ALTERNATE BOLT HEAD



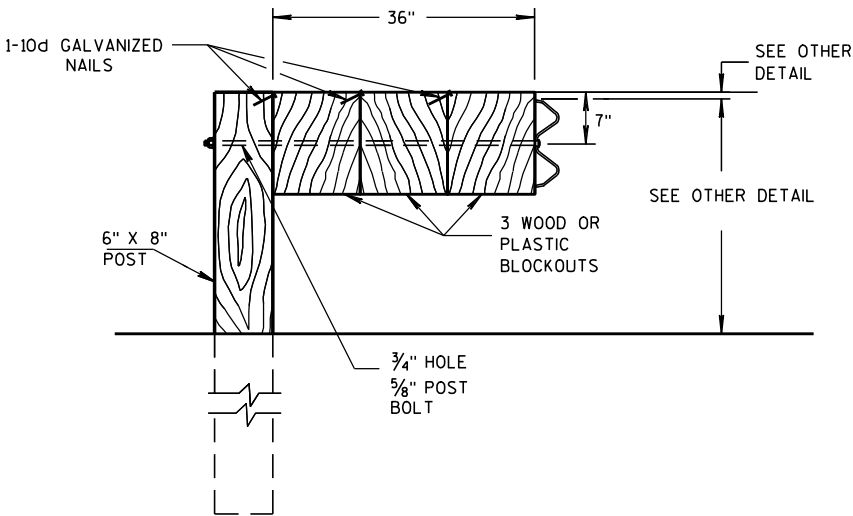
POST BOLT AND RECESS NUT



PLAN VIEW
BEAM LAPPING DETAIL



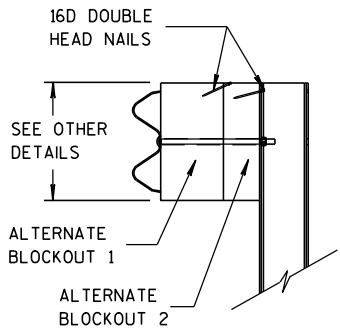
POST DRIVING FOR CONTINUOUS
UNDERGROUND OBSTRUCTION



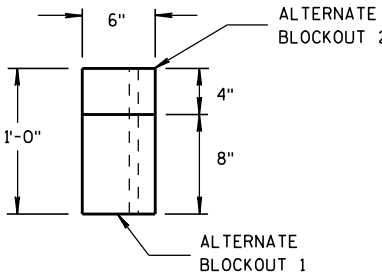
DETAIL FOR 36" BLOCKOUT DEPTH

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

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



SIDE VIEW



TOP VIEW

ALTERNATE WOOD
BLOCKOUT DETAIL

MIDWEST GUARDRAIL SYSTEM
(MGS) GUARDRAIL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
11/15/2011
DATE
/S/ Jerry H. Zogg
ROADWAY STANDARDS DEVELOPMENT
ENGINEER
FHWA

GENERAL NOTES

- (A) THE SLOPE IN THE AREA BOUNDED BY THE EXTENDED VEHICLE RUNOUT PATH (EVRP), 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 MANUFACTURES REQUIRE DIFFERENT PERFORATED W-BEAM RAIL END PANELS. SEE MANUFACTURES INFORMATION.
- (D) THE TOP OF THE STEEL TUBE ON POST 1 AND POST 2 SHALL NOT BE MORE THAN 3" ABOVE THE FINISH GROUND ELEVATION.
- (E) SHEETING IS ATTACHED TO 0.040 ALUMINUM SHEET AND ATTACHED TO E.A.T. HEAD USING 4 STAINLESS STEEL SELF-TAPPING SCREWS. ONE SCREW PER CORNER OF E.A.T.
- (F) 1/2" DIAMETER X 3" LONG LAG BOLT AND WASHER.
- (H) HARDWARE VARIES BETWEEN DIFFERENT MANUFACTURES. SEE MANUFACTURE'S DRAWING FOR INFORMATION.
- (I) DIMENSIONS MAY VARY. SEE MANUFACTURE'S INFORMATION.

SEE SDD 14B42 FOR MORE INFORMATION.

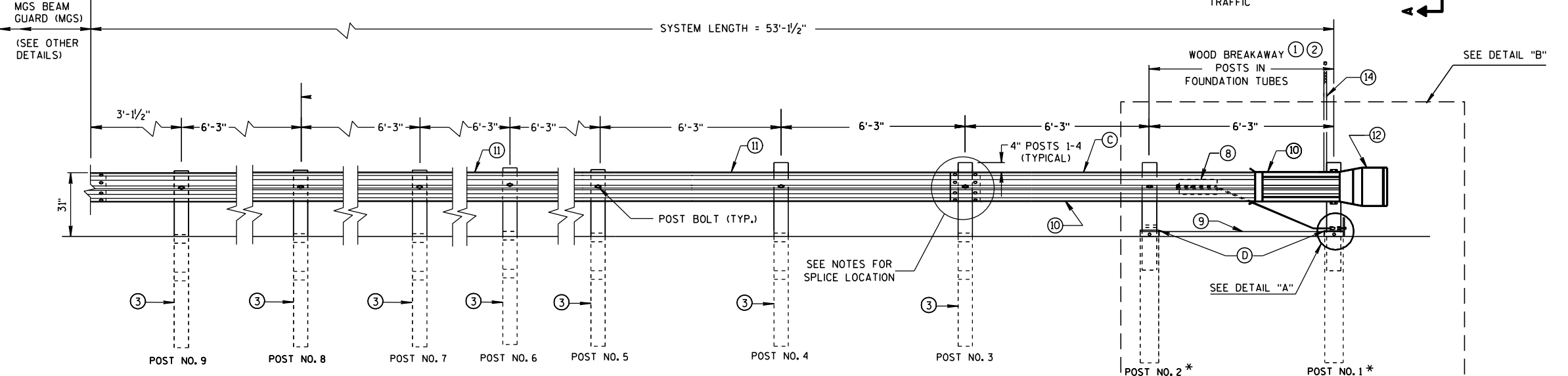
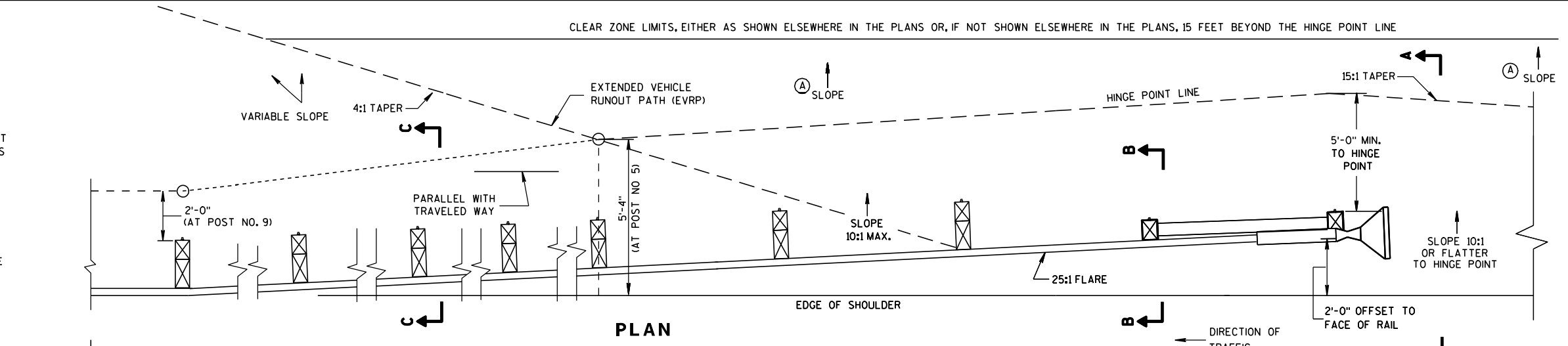
* DO NOT ATTACH BLOCKOUTS TO POSTS 1 AND 2.

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

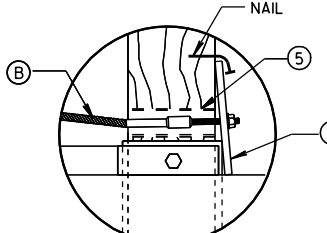
W-BEAM RAIL SPLICES ARE LOCATED AT POST NUMBER 3, AND BETWEEN POST 5 AND 6, BETWEEN POSTS 7 AND 8, AND MIDDLE OF THE SPAN AFTER POST 9.

PATTERN AND COLORS ON REFLECTIVE SHEETING TYPE H ARE TO CONFORM TO OM3-L OR OM3-R OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.

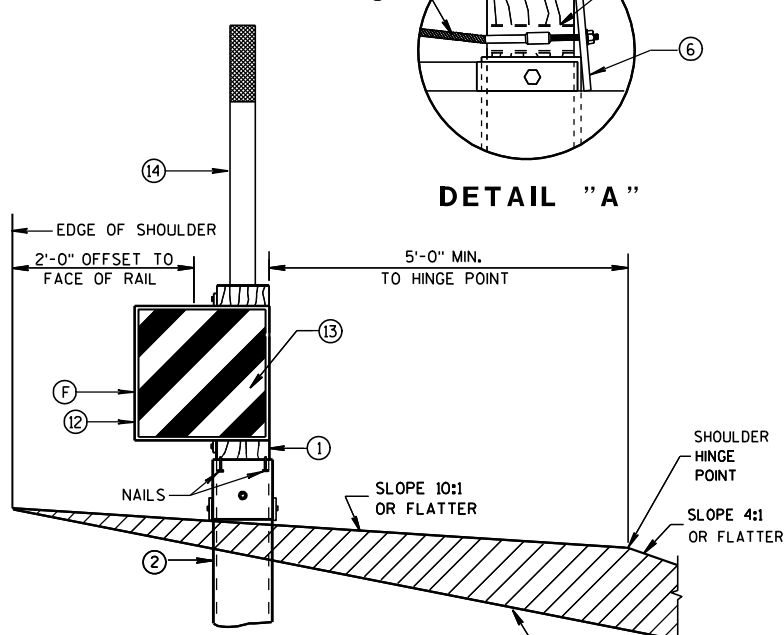
THE CENTER OF THE UPPER 3/2" DIAMETER HOLE ON POST NUMBER 3 THROUGH POST 9 IS TO BE FLUSH WITH THE GROUND LINE ($\pm \frac{3}{4}$ ")



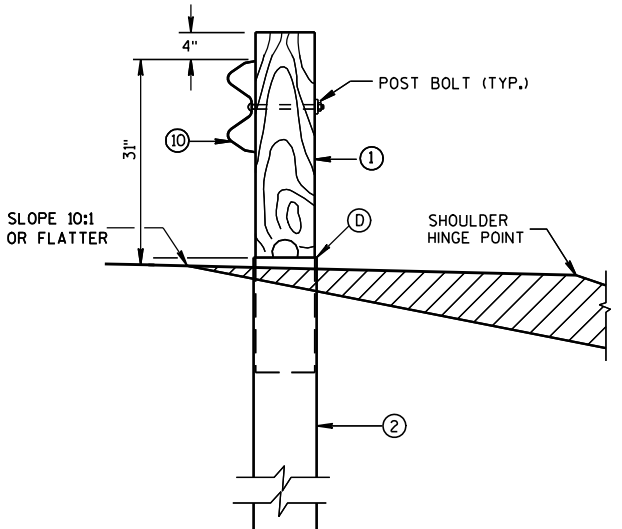
ELEVATION



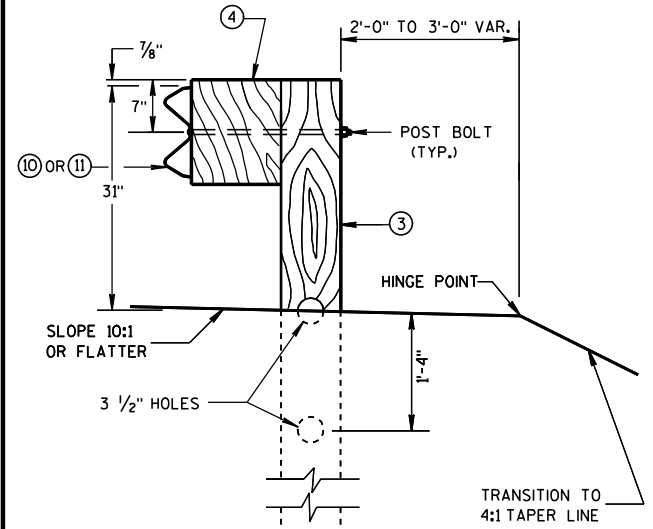
DETAIL "A"



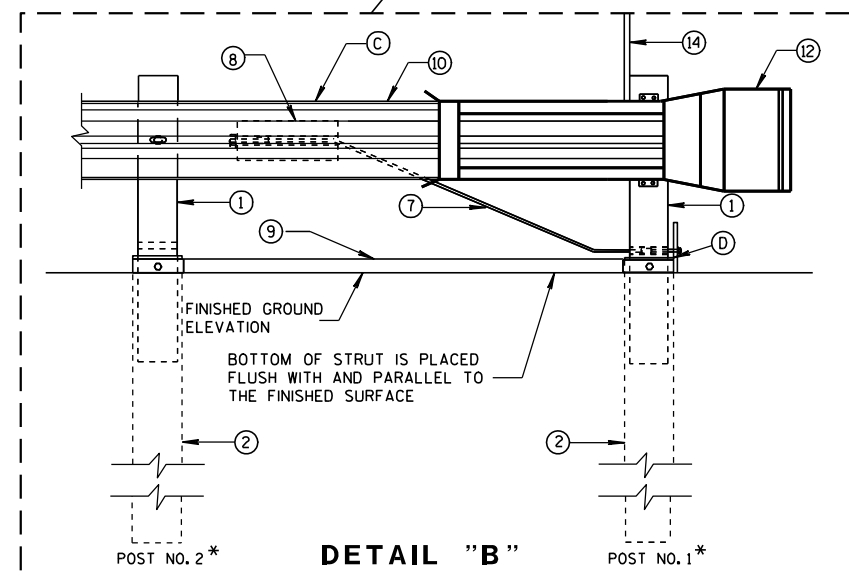
SECTION A-A
TYPICAL AT POST NO. 1*



SECTION B-B
TYPICAL AT POST NO. 2*



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

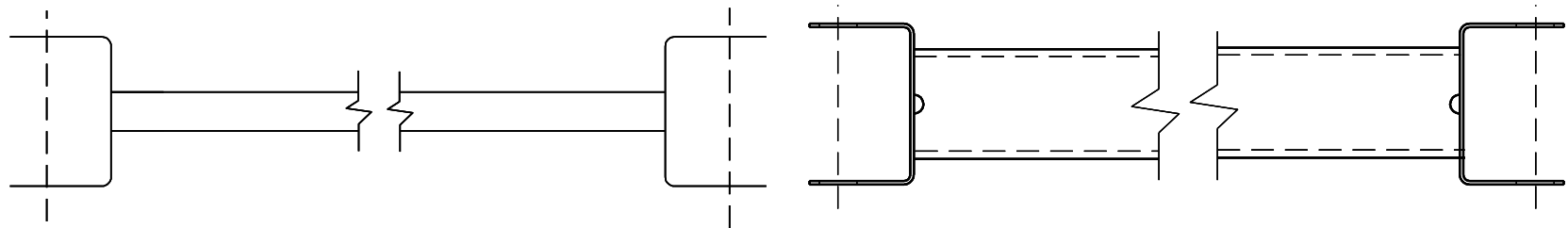


DETAIL "B"

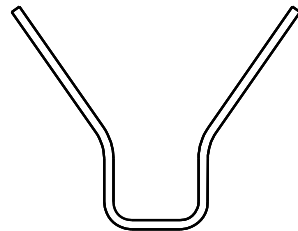
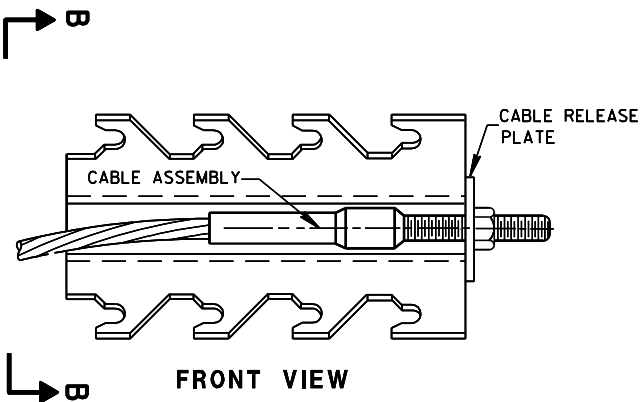
MIDWEST GUARDRAIL SYSTEM
ENERGY ABSORBING TERMINAL
(MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

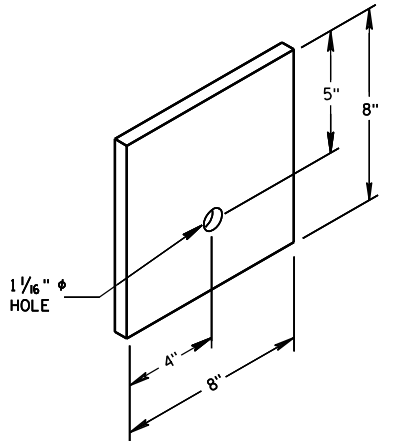
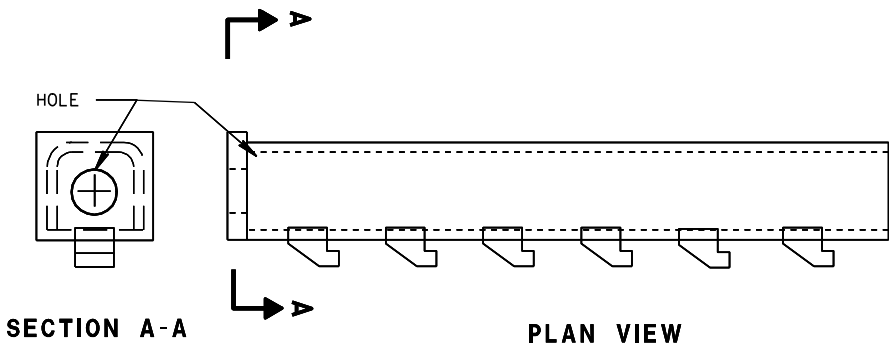
BILL OF MATERIALS	
PART NO.	DESCRIPTION
MATERIALS PROVIDED BY MGS EAT MANUFACTURER. SEE MANUFACTURER'S DETAILS FOR MORE INFORMATION.	
①	WOOD BREAKAWAY POST
②	6" X 8" X 0.188", 6'-0" LONG FOUNDATION TUBE AT POSTS 1 AND 2
③	WOOD CRT
④	WOOD BLOCKOUT
⑤	PIPE SLEEVE
⑥	BEARING PLATE
⑦	BCT CABLE ASSEMBLY
⑧	ANCHOR 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	END SECTION EAT
⑬	0.040" ALUMINUM SHEET WITH REFLECTIVE SHEETING TYPE H (ONLY THE SHEETING IS SUPPLIED BY THE MANUFACTURER)
⑭	EAT MARKER POST - YELLOW (SEE APPROVED PRODUCTS LIST)



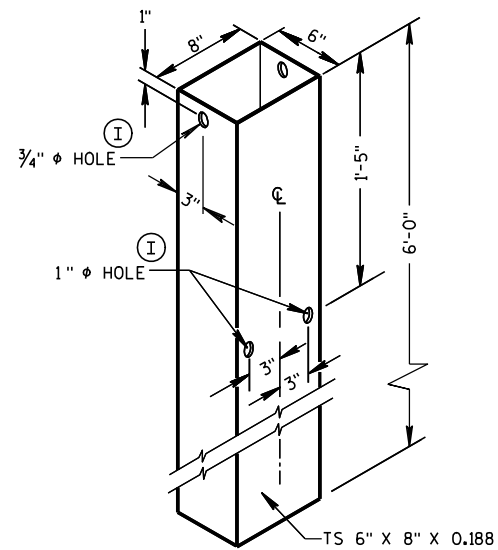
⑨ H
GENERIC GROUND STRUT



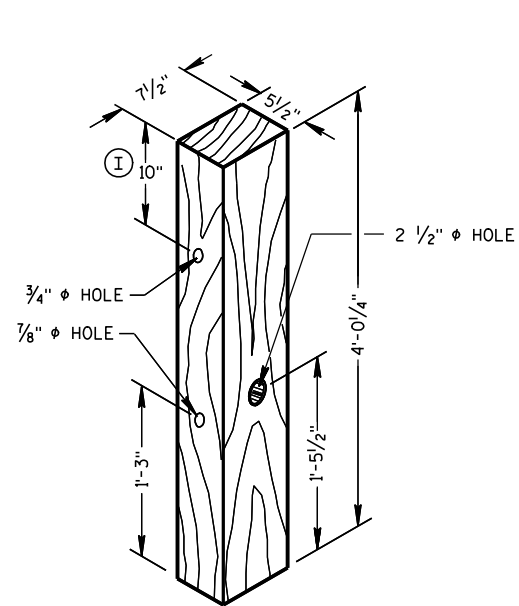
SECTION B-B
⑧ H
GENERIC ANCHOR CABLE BOX



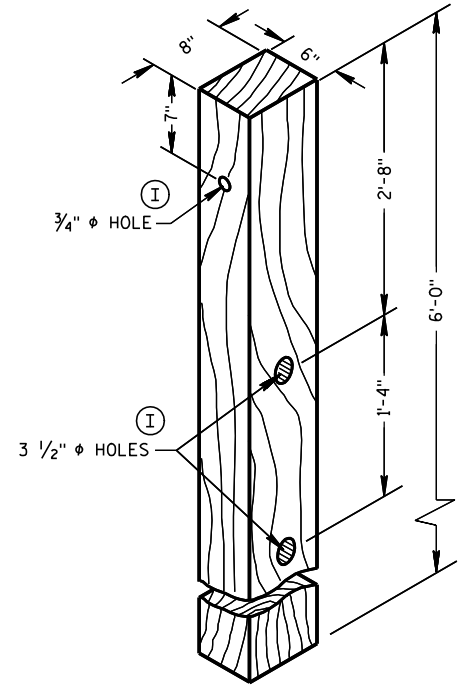
⑥
BEARING PLATE



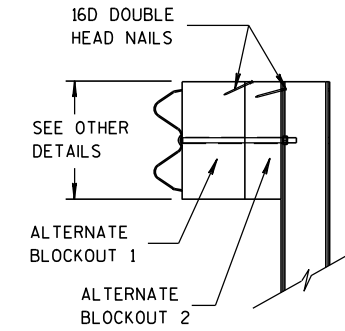
FOUNDATION TUBE ②



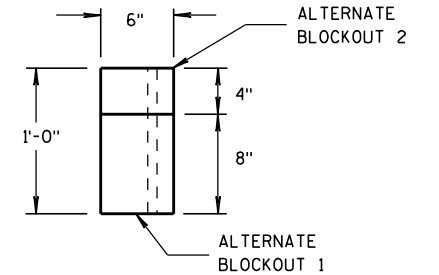
WOOD BREAKAWAY POST ①



WOOD CRT POST ③

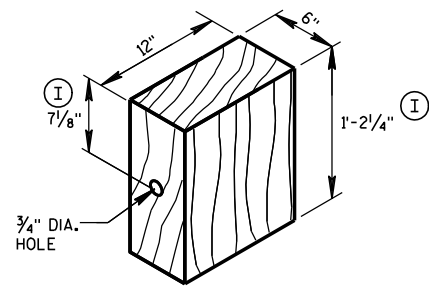


SIDE VIEW



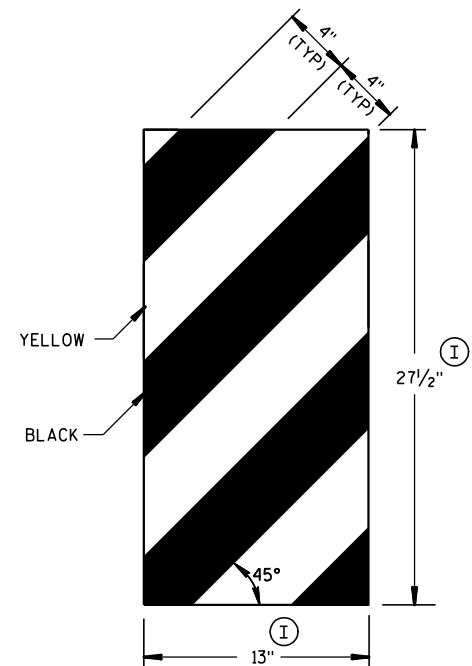
TOP VIEW

ALTERNATE WOOD
BLOCKOUT DETAIL

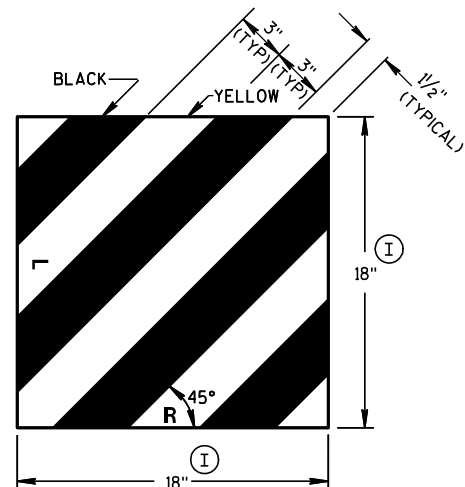


WOOD BLOCKOUT ④

YELLOW REFLECTIVE TAPE
3" X 9" TYPE H
REFLECTIVE SHEETING



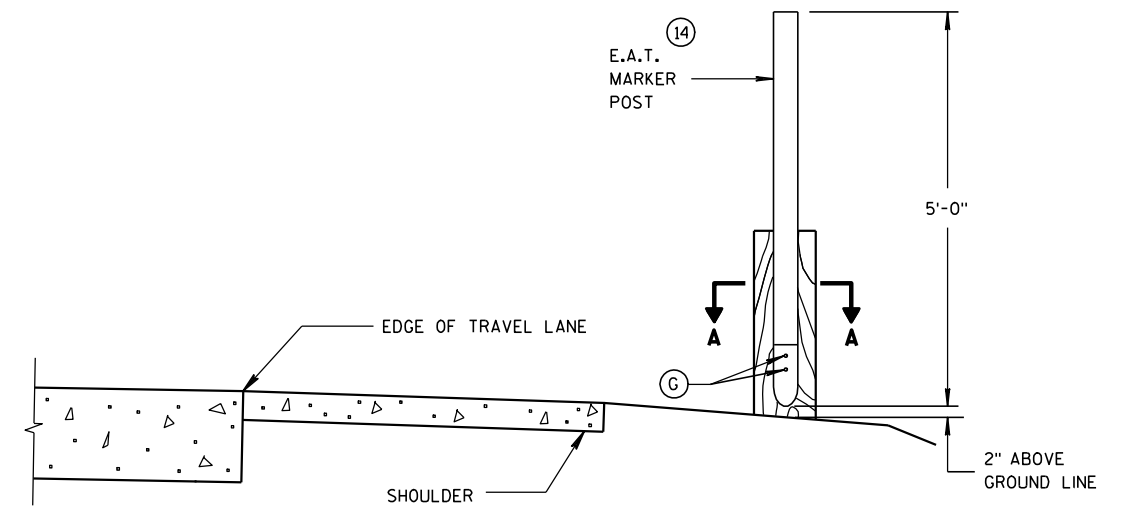
GENERIC REFLECTIVE SHEETING ⑬ ④



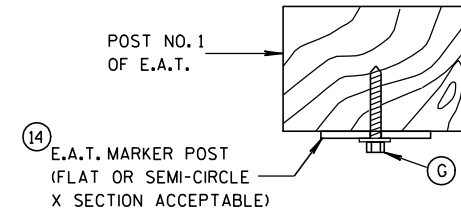
FRONT VIEW

SIDE VIEW

E.A.T. MARKER POST ⑭



TYPICAL INSTALLATION OF E.A.T.
MARKER POST BACKSIDE OF POST NO. 1
(E.A.T. AND RAIL REMOVED FOR CLARITY)

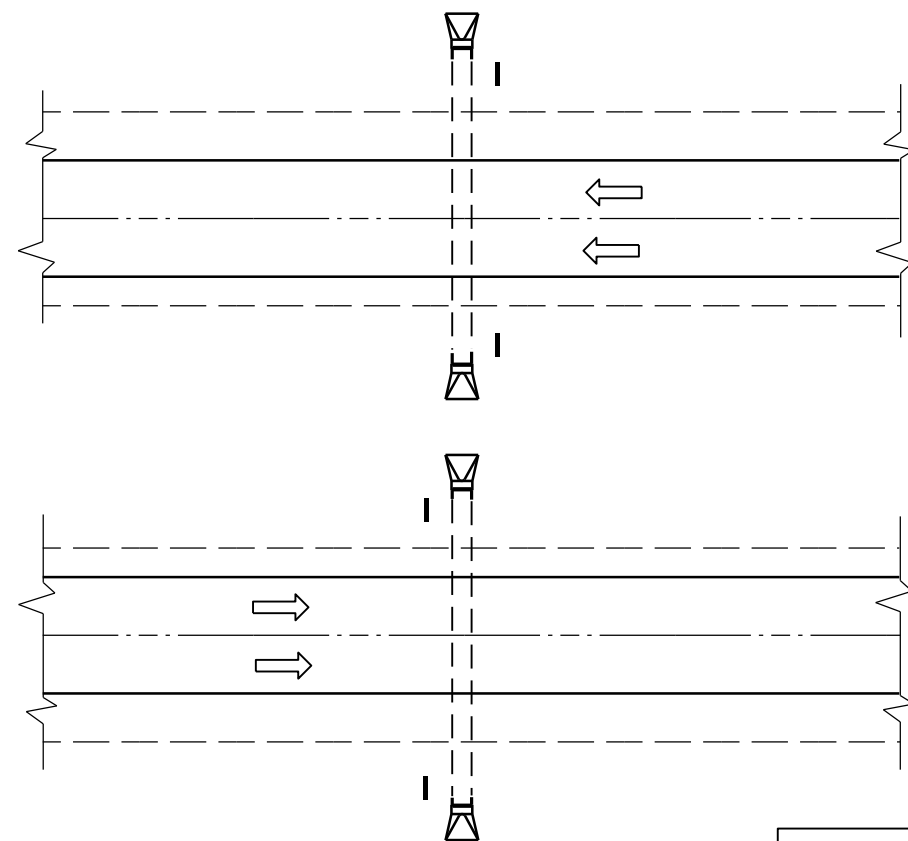


SECTION A-A

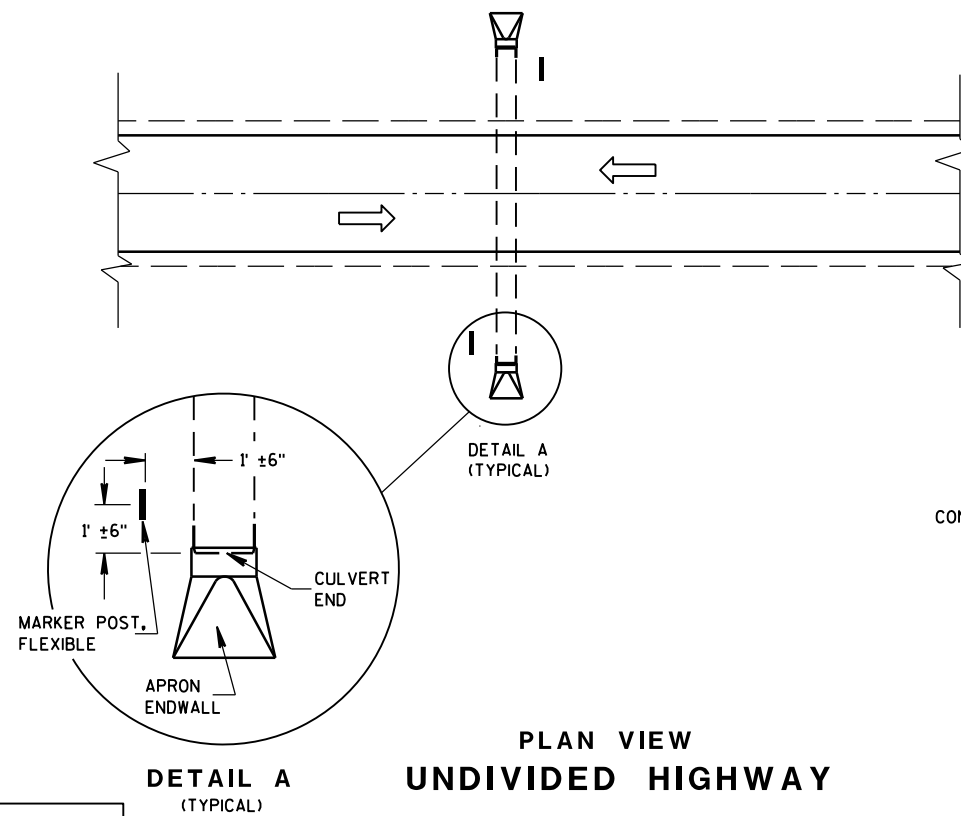
MIDWEST GUARDRAIL SYSTEM
ENERGY ABSORBING TERMINAL
(MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

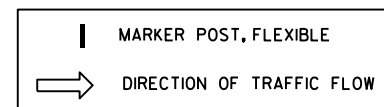
APPROVED
5/23/2011 /S/ Jerry H. Zogg
DATE ROADWAY STANDARDS DEVELOPMENT
ENGINEER
FHWA



PLAN VIEW
DIVIDED HIGHWAY



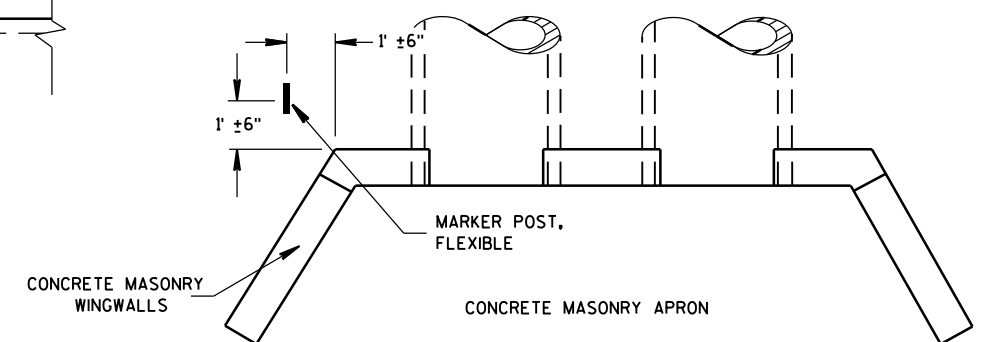
PLAN VIEW
UNDIVIDED HIGHWAY



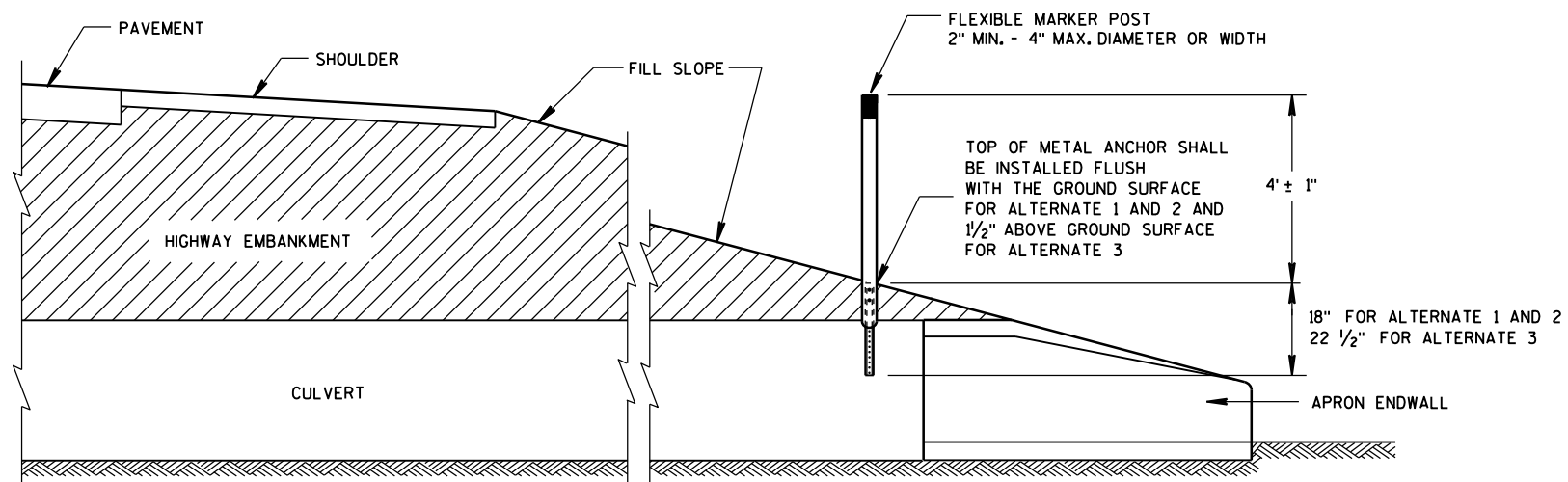
FLEXIBLE MARKER POST LOCATION

GENERAL NOTES

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



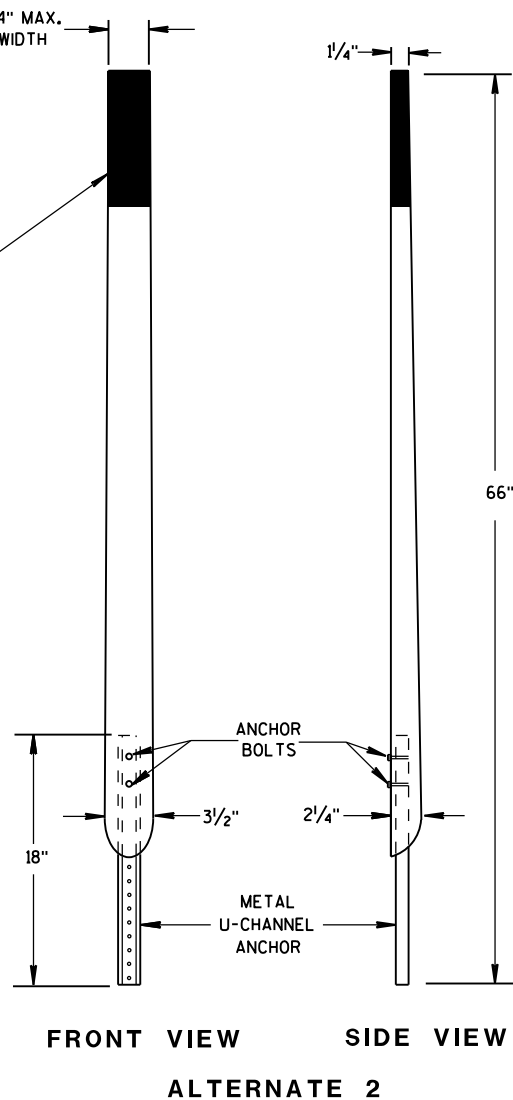
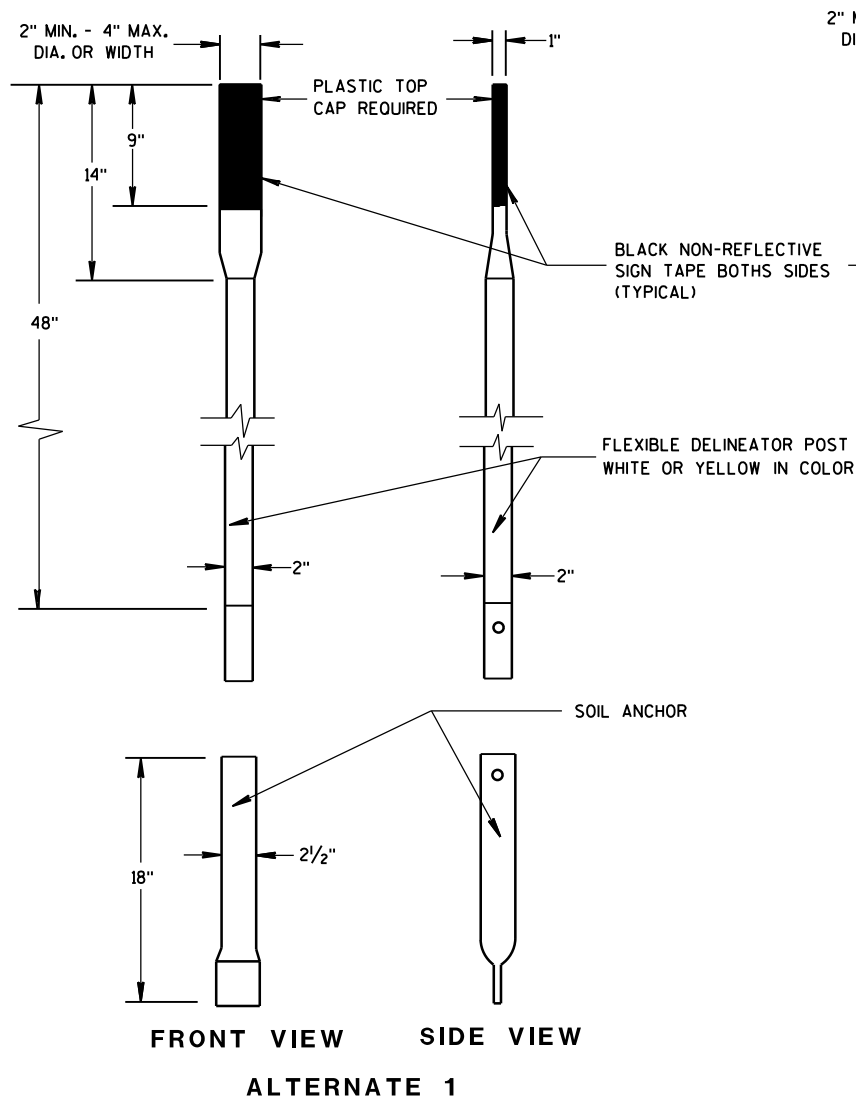
PLAN VIEW
CONCRETE MASONRY ENDWALLS FOR
CULVERT PIPE AND PIPE ARCH



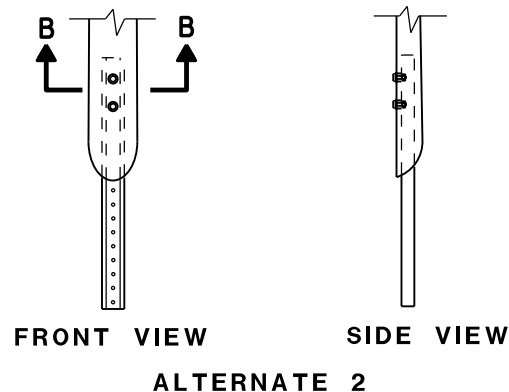
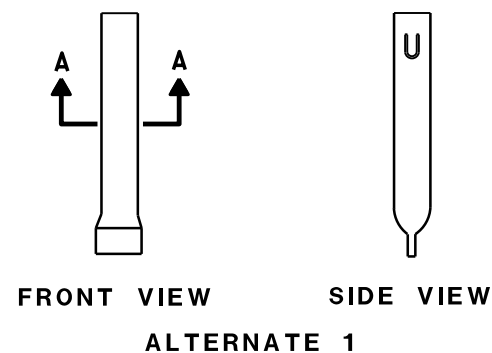
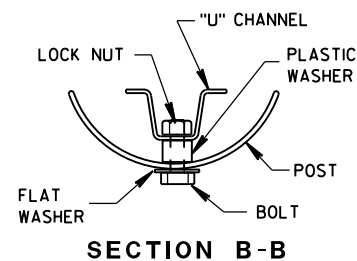
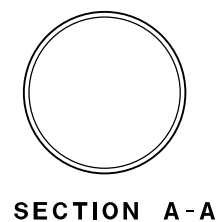
CROSS SECTION
FLEXIBLE MARKER POST

FLEXIBLE MARKER POST
FOR CULVERT END

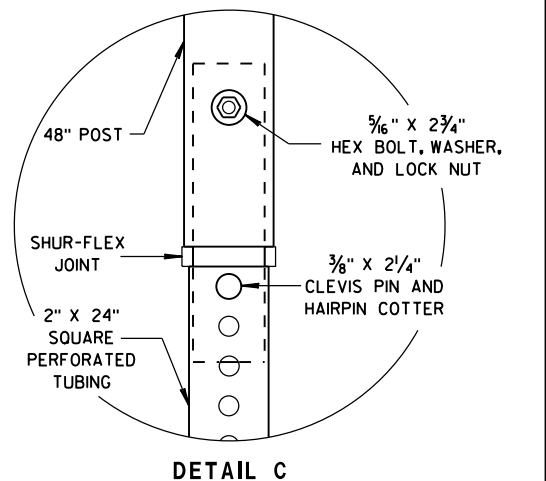
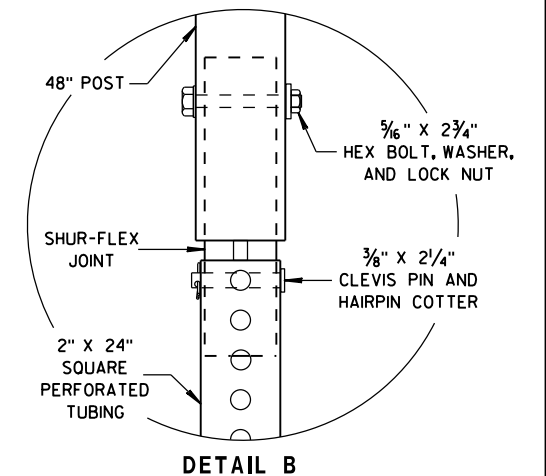
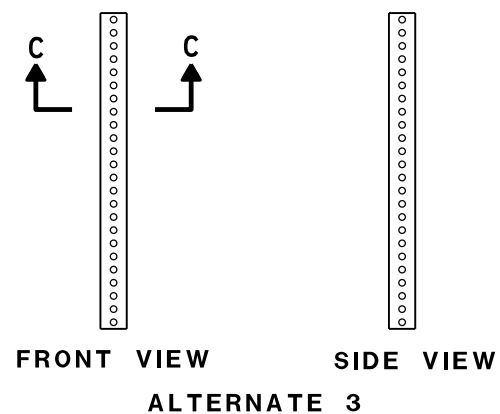
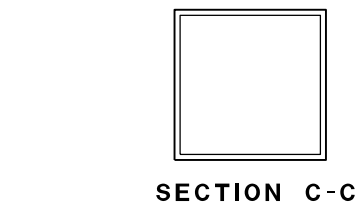
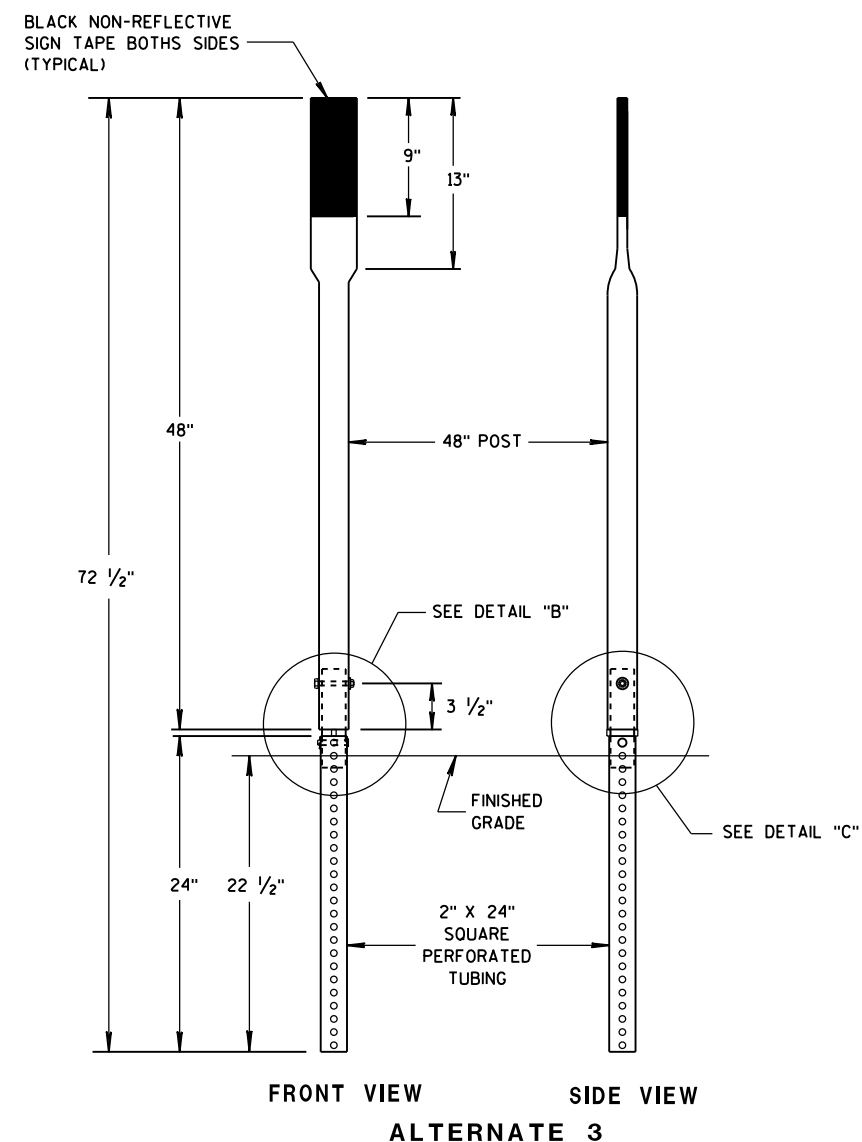
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



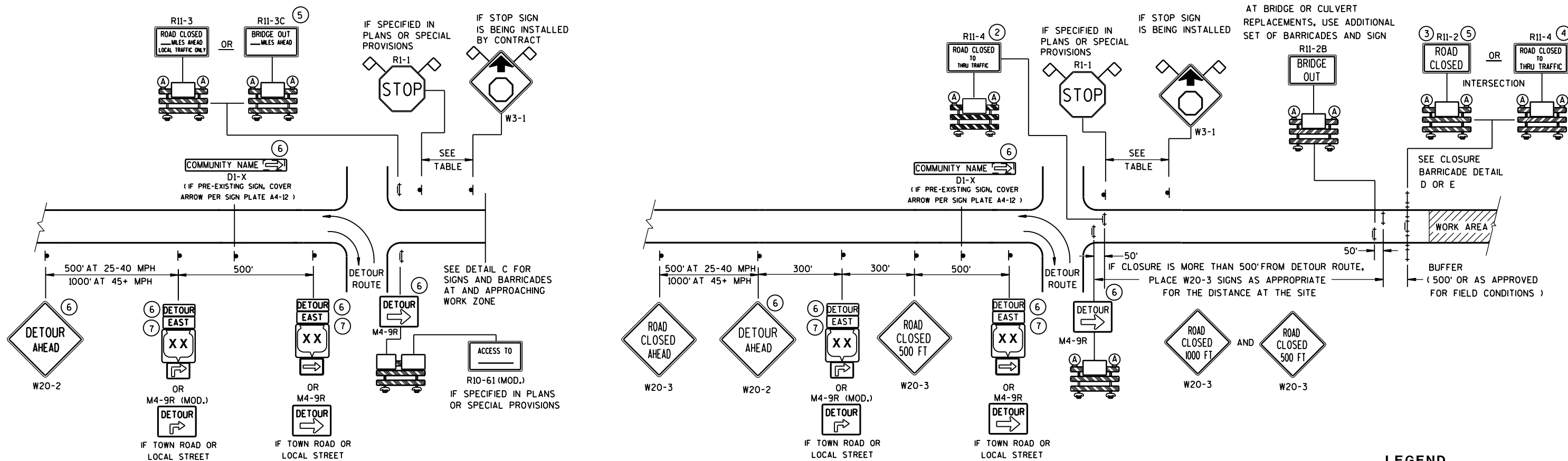
FLEXIBLE MARKER POSTS



FLEXIBLE MARKER POST ANCHORS



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



DETAIL A
MAINLINE CLOSURE WITH POSTED DETOUR

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

DETAIL B
MAINLINE CLOSURE WITH POSTED DETOUR

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

LEGEND

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

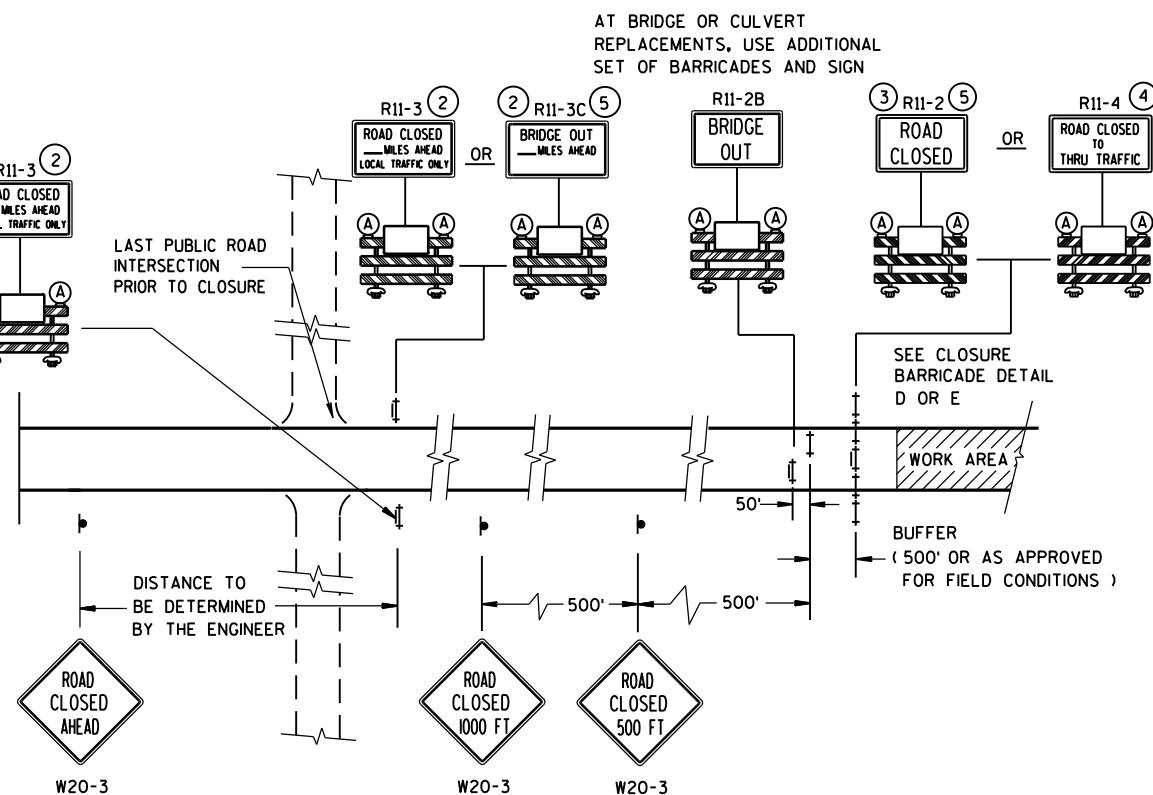
WORK AREA

DETOUR EAST
M4-8
M3-X
M1-4
M1-5A
M1-6

M05-1
M06-1

FLAGS, 16" X 16" MIN., (ORANGE)

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



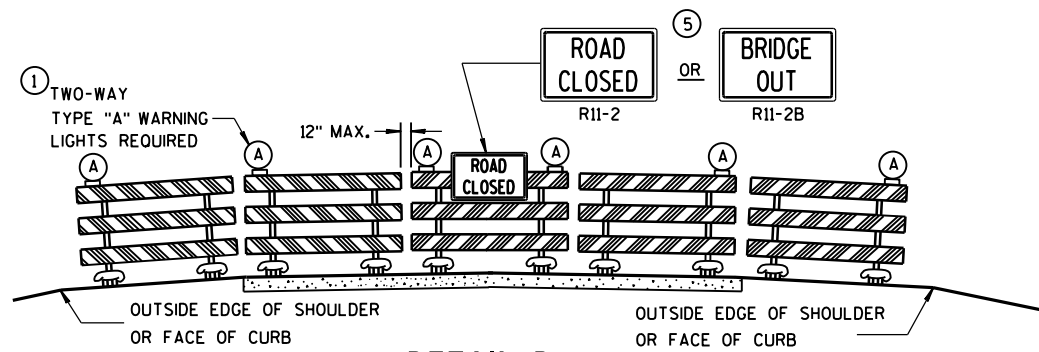
DETAIL C
MAINLINE CLOSURE, NO POSTED DETOUR

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

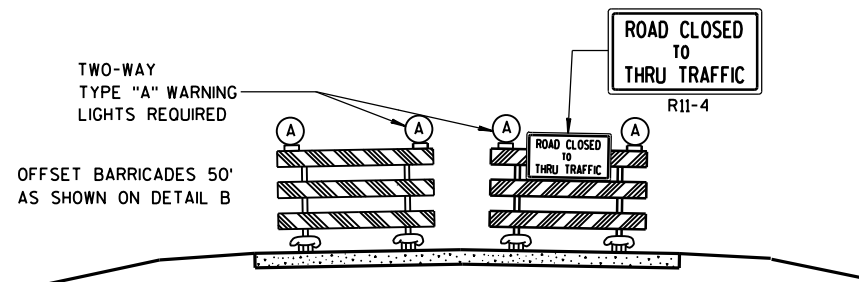
**BARRICADES AND SIGNS
FOR
MAINLINE CLOSURES**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

8/2013 DATE /S/ Travis Feltes
STATE TRAFFIC ENGINEER OF DESIGN
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 BARRICADES SHALL COVER NO MORE THAN THE TOP RAIL. THE SIGNS SHALL NOT COVER ANY PORTION OF THE MIDDLE 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, 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". (30" X 15" 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.)

D1-X SHALL BE AS SHOWN ON SPECIFIC PROJECT SIGNING DETAIL SHEETS.

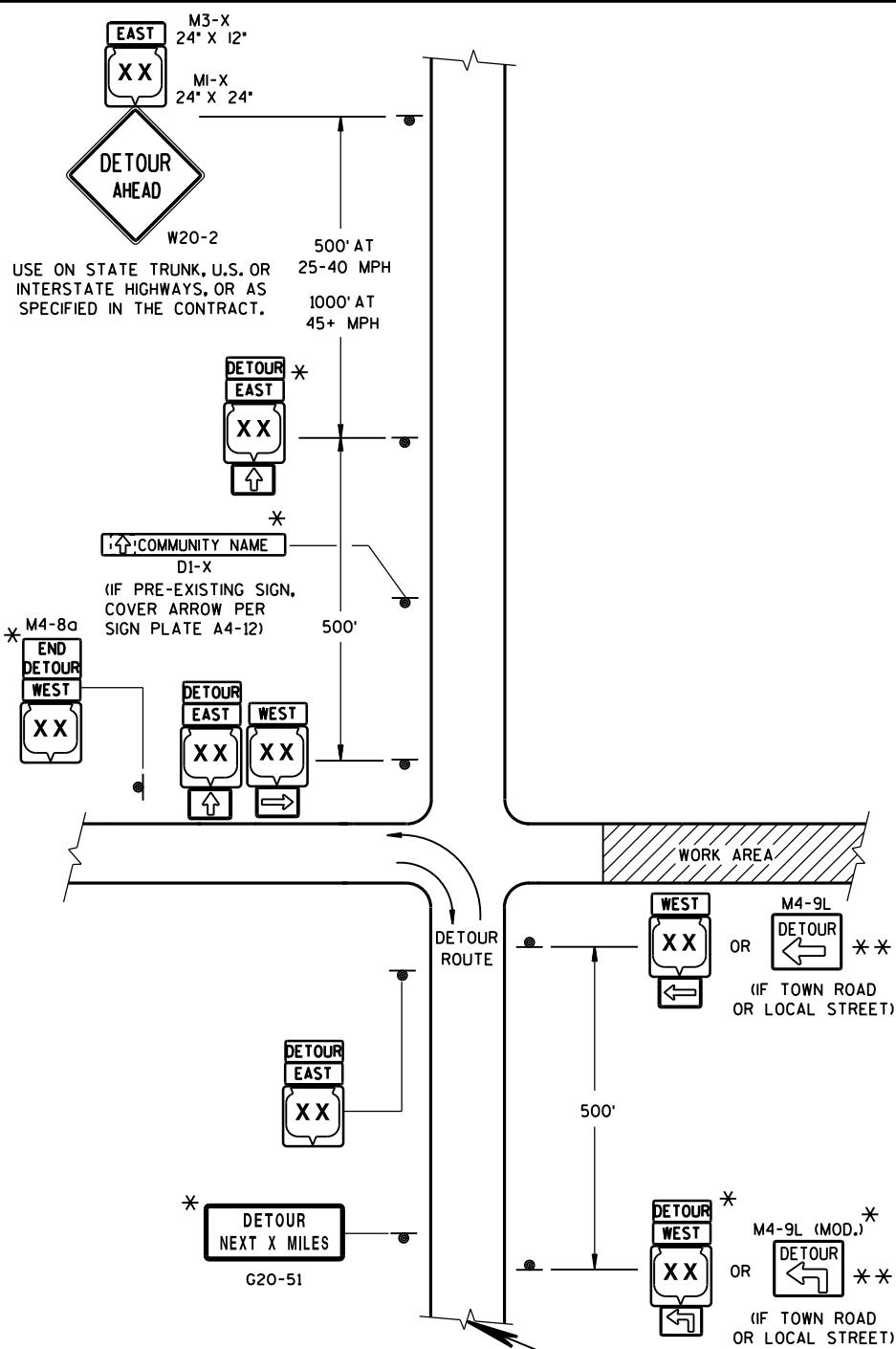
R1-1 SHALL BE 36" X 36".

- 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 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 LANE 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
MAINLINE CLOSURES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

8/2013 /S/ Travis Feltes
DATE STATE TRAFFIC ENGINEER OF DESIGN
FHWA



LEGEND

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

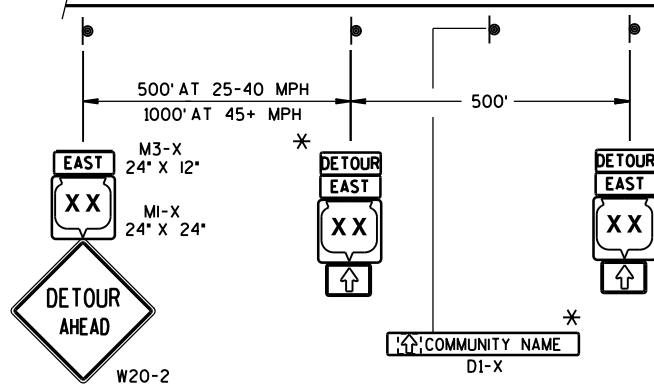
SEE SPECIFIC PROJECT DETOUR
SIGNING DETAIL SHEETS AND
DETAIL A OR B ON SDD 15C2-SHEET "a"

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

USE ON STATE TRUNK, U.S. OR
INTERSTATE HIGHWAYS, OR AS
SPECIFIED IN THE CONTRACT.



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.

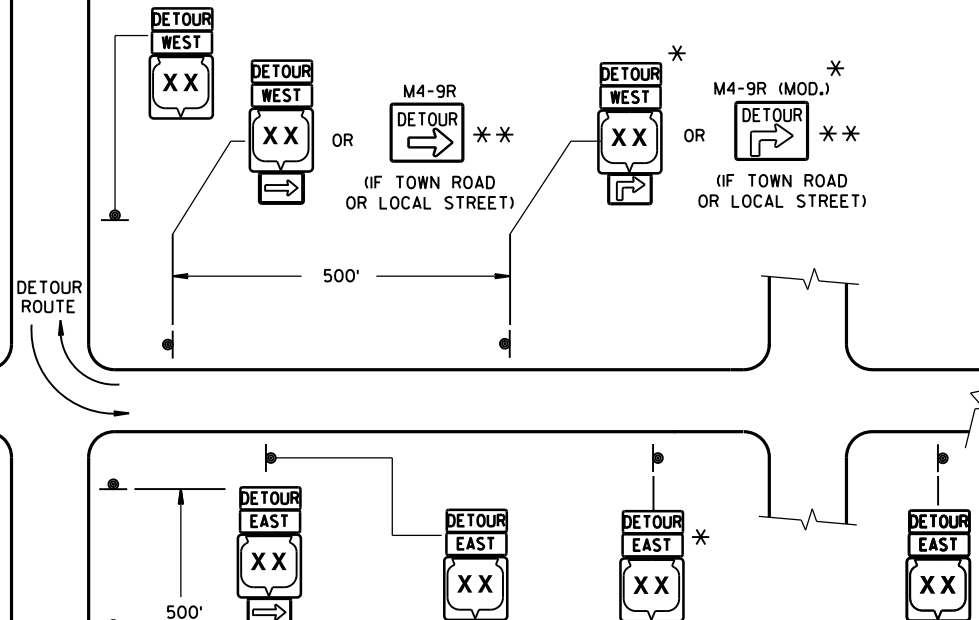
"MO" SIGNS ARE THE SAME AS "M" SIGNS EXCEPT THE BACKGROUND IS ORANGE.

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". (30" X 15" 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 SHALL BE 30" X 24".
- M4-8a SHALL BE 24" X 18".
- G20-51 SHALL BE 60" X 24".
- W20-2 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.

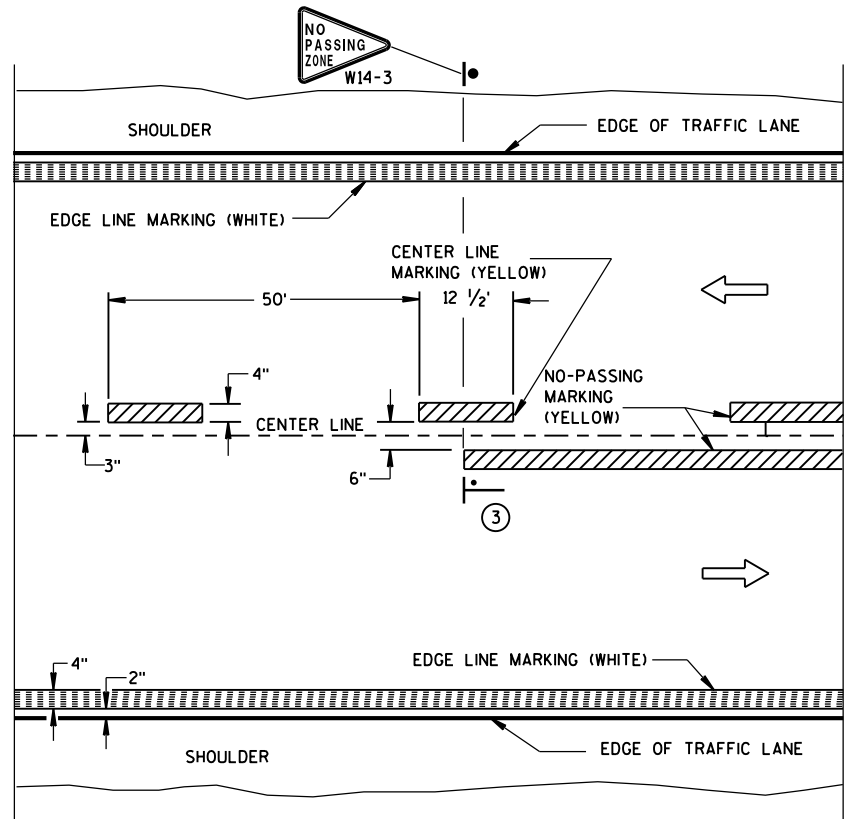


PLACE SIGNS BEYOND INTERSECTIONS WITH
STATE OR COUNTY TRUNK HIGHWAYS OR
AT 4 MILE MAXIMUM SPACING (4 BLOCKS IF
URBAN AREA.)

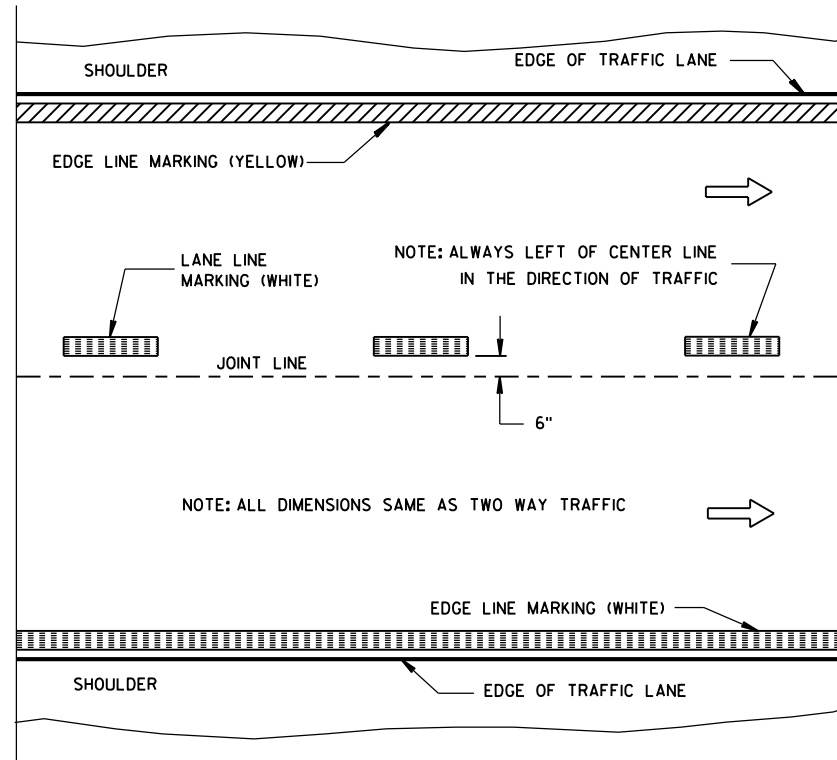
DETOUR SIGNING FOR
MAINLINE CLOSURES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
8/2013 /S/ Travis Feltes
DATE STATE TRAFFIC ENGINEER OF DESIGN
FHWA

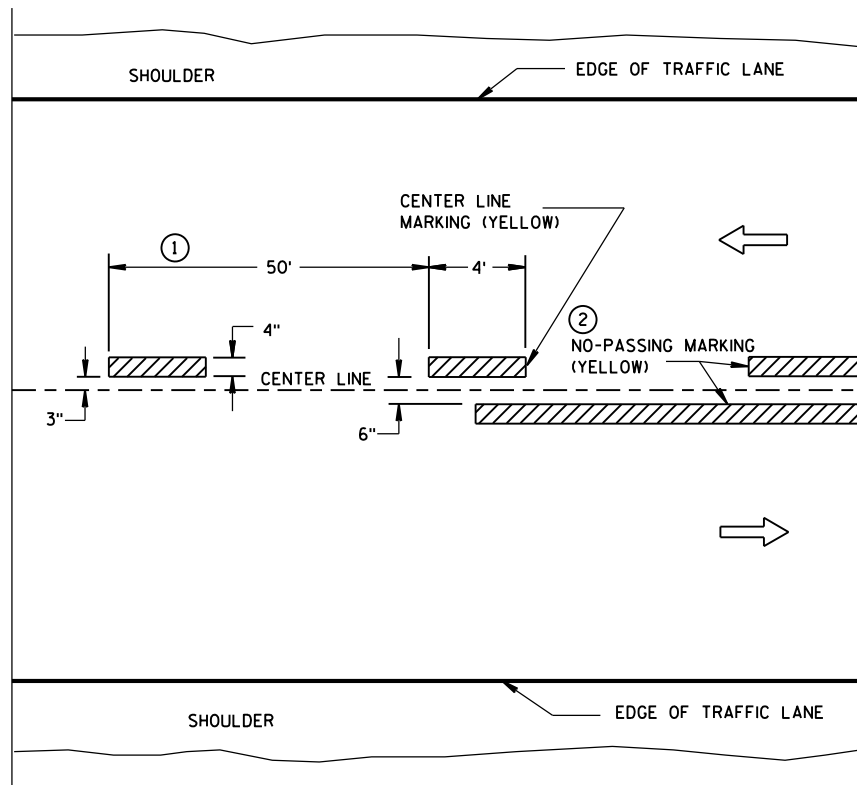


TWO WAY TRAFFIC

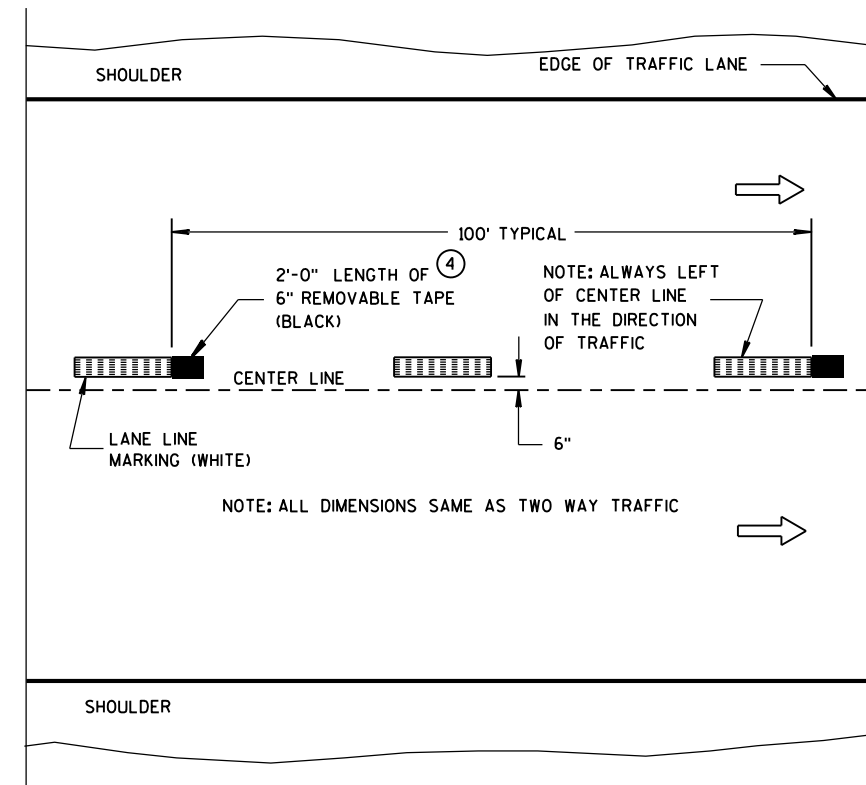


ONE WAY TRAFFIC

PERMANENT PAVEMENT MARKING



TWO WAY TRAFFIC



ONE WAY TRAFFIC

TEMPORARY (INTERMEDIATE) PAVEMENT MARKING
(SHOWS CYCLE FOR TEMPORARY CENTER LINE OR TEMPORARY LANE LINE MARKING)

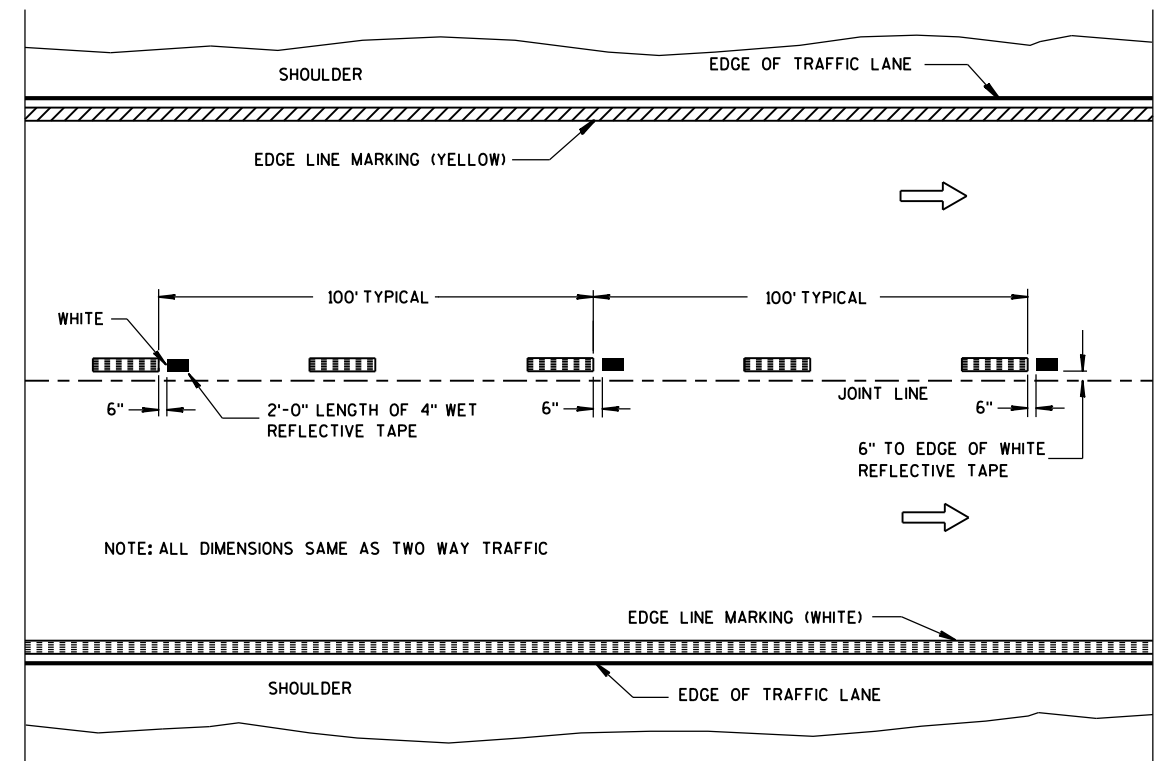
GENERAL NOTES

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

- 1 HALF CYCLE LENGTHS (25'±) WITH 2' MINIMUM STRIPE LENGTHS SHALL BE PROVIDED ON ROADWAYS (INCLUDING TEMPORARY TRAVELED WAYS) WITH REVERSE CURVATURE, CURVATURE OF OVER 5 DEGREES OR WHEN DIRECTED BY THE ENGINEER TO MARK UNUSUAL ALIGNMENT OF THE TRAVELED WAY.
- 2 NO PASSING ZONE TEMPORARY PAVEMENT MARKING IS REQUIRED TO BE PLACED, WHERE APPROPRIATE, ALONG WITH CENTERLINE TEMPORARY PAVEMENT MARKING WHEN A SAME DAY PERMANENT PAVEMENT MARKING ITEM IS INCLUDED IN THE CONTRACT.
- 3 NO PASSING ZONE MARKINGS ARE PLACED ACCORDING TO "T" MARKINGS. IF EXISTING NO PASSING ZONE W14-3 SIGNS ARE BEYOND 50 FEET IN EITHER DIRECTION, THE SIGNS SHALL BE MOVED TO THE "T" MARKINGS.
- 4 CONCRETE ONLY.

NOTE

ARROW SYMBOL (→) SHOWS DIRECTION OF TRAVEL



WET REFLECTIVE TAPE SUPPLEMENT TO
SPRAYED OR NON WET REFLECTIVE TAPE LANE LINE

LEGEND

- "T" MARKING
- POST MOUNTED SIGN

PAVEMENT MARKING
(MAINLINE)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
5-13-2013 /S/ Travis Feltes
DATE STATE TRAFFIC ENGINEER
FHWA

LEGEND

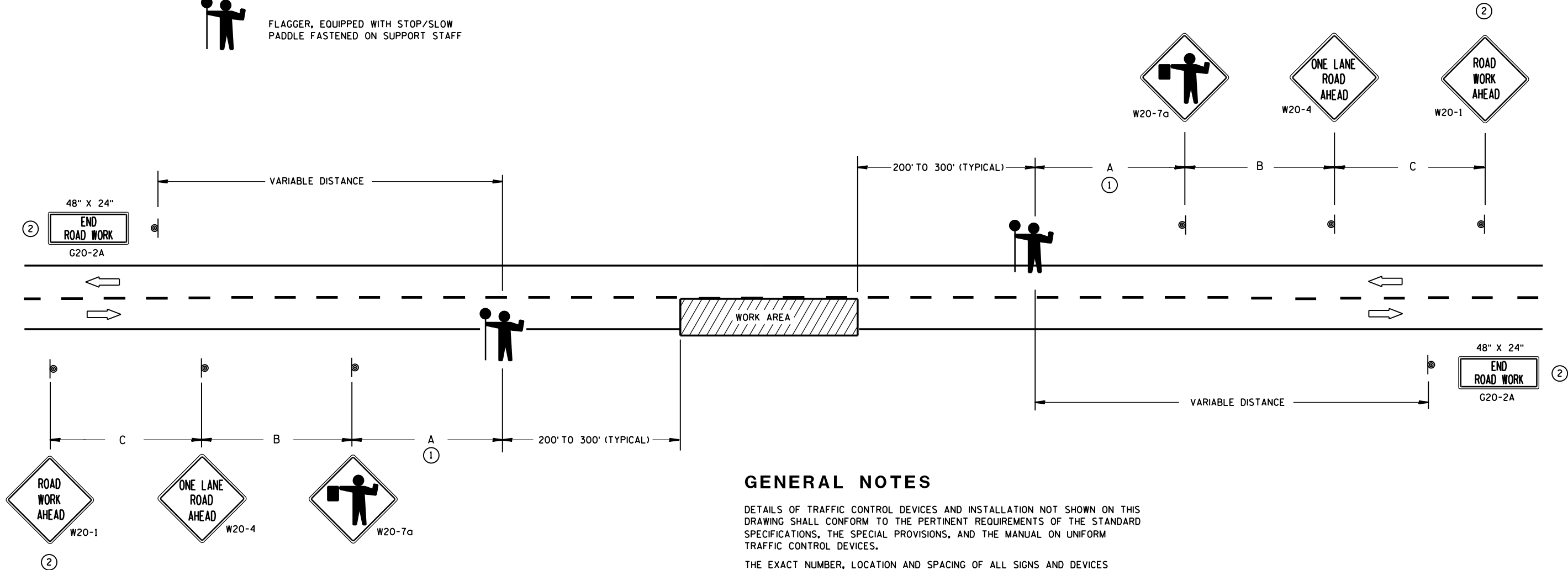
-  SIGN ON PORTABLE OR PERMANENT SUPPORT
-  DIRECTION OF TRAFFIC
-  WORK AREA
-  FLAGGER, EQUIPPED WITH STOP/SLOW PADDLE FASTENED ON SUPPORT STAFF

SIGN SPACING TABLE

SPEED LIMIT	SIGN SPACING A,B,C
25-35 MPH	200'
35-40 MPH	350'
45-55 MPH	500'



USE OF THE "BE PREPARED TO STOP" SIGN IS OPTIONAL. WHEN USED, THIS SIGN SHALL BE LOCATED BETWEEN THE W20-7a AND W20-4 SIGNS. A 500' TYPICAL SPACING SHALL BE PROVIDED BETWEEN THE SIGNS.



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.

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

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

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

FLAGGERS SHALL BE IN SIGHT OF EACH OTHER OR IN DIRECT COMMUNICATION AT ALL TIMES. THEY SHALL BE EQUIPPED WITH STOP/SLOW PADDLES FASTENED ON SUPPORT STAFFS. WHEN THE FLAGGING OPERATION IS NOT IN EFFECT, COVER OR REMOVE ALL TEMPORARY TRAFFIC CONTROL SIGNS.

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

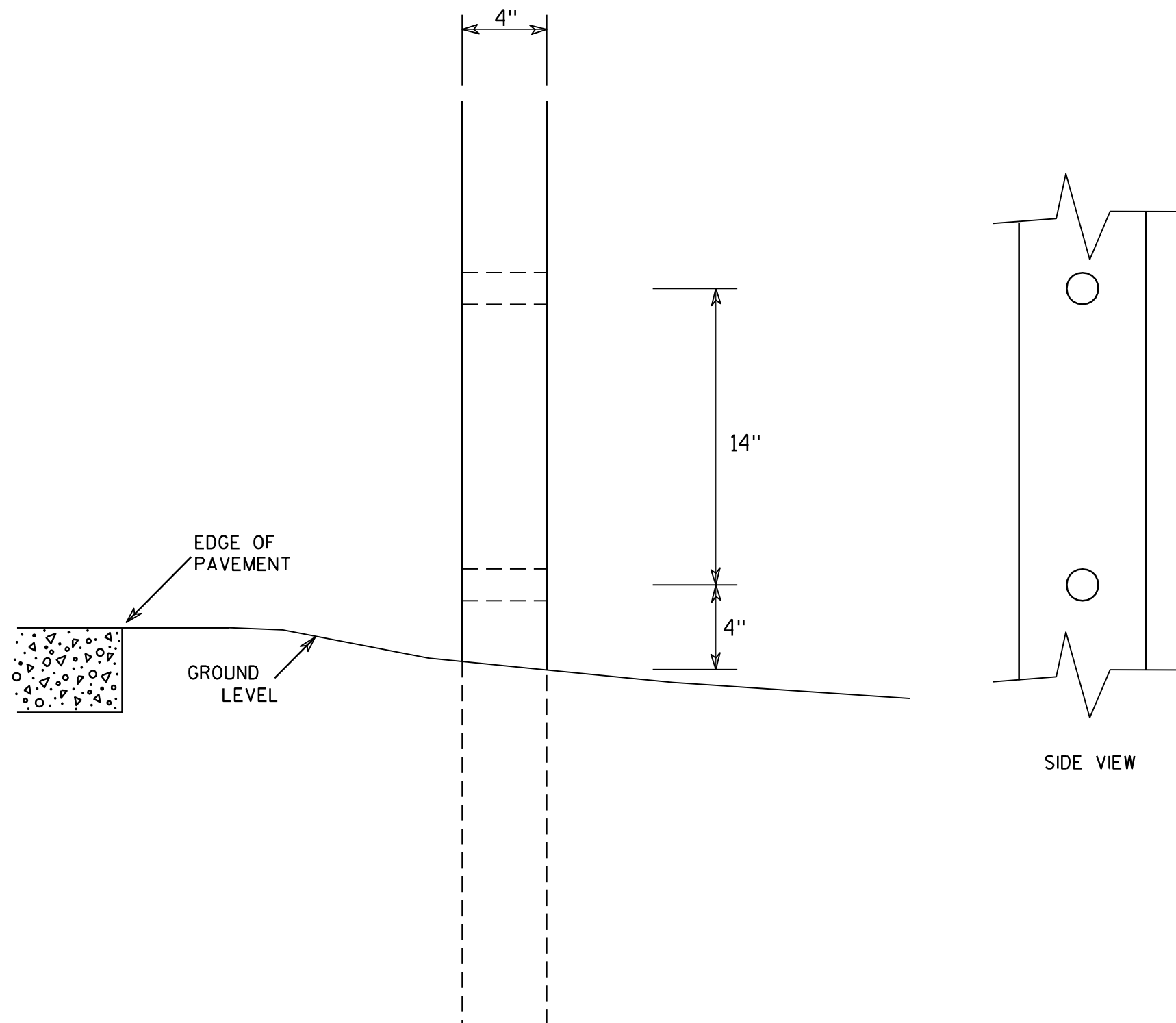
- ① FOR A MOVING WORK OPERATION, SIGNING FOR BOTH DIRECTIONS SHALL BE REESTABLISHED (AS SIMULTANEOUSLY AS PRACTICAL) AT APPROXIMATELY 3500 FOOT INTERVALS IN THE MOVING WORK OPERATION OR AS APPROVED BY THE ENGINEER.
- ② SIGN NOT REQUIRED IF FLAGGING OPERATION OCCURS WITHIN A SIGNED ROAD WORK ZONE AREA.

TRAFFIC CONTROL FOR LANE CLOSURE (SUITABLE FOR MOVING OPERATIONS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
8/2013 /S/ Travis Feltes
DATE STATE TRAFFIC ENGINEER OF DESIGN
FHWA

7



GENERAL NOTES

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

7

4 X 6 WOOD POST MODIFICATIONS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED

Chester J. Spang
for State Traffic Engineer

DATE 3/27/97

PLATE NO. A4-11.2

PROJECT NO:

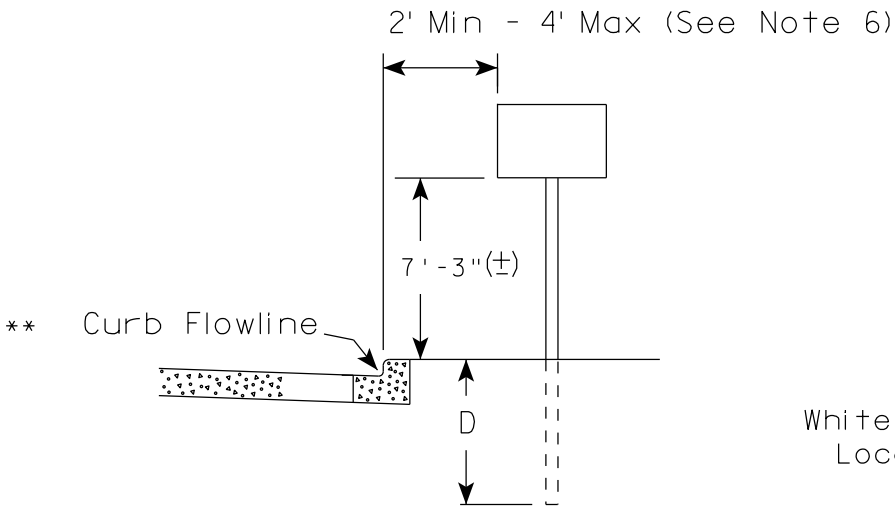
HWY:

COUNTY:

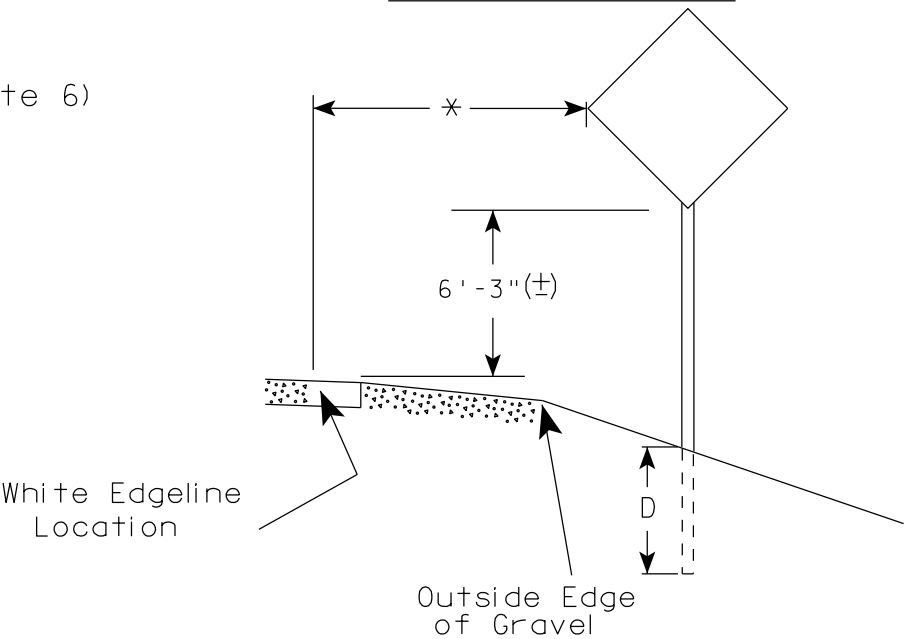
SHEET NO:

E

URBAN AREA



RURAL AREA (See Note 2)



GENERAL NOTES

1. Signs wider than 4 feet, 20 sq.ft or larger, shall be mounted on multiple posts. Refer to plate A4-4.
2. If signs are mounted on barrier wall, see A4-10 sign plate.
3. For expressways and freeways, mounting height is 7'- 3" (±) or 6'-3" (±) depending upon existence of a sub-sign.
4. Minimum mounting height for J assemblies (A4-5) is 7'-3" (±) or 6'-3" (±) per urban or rural detail respectively.
5. Minimum mounting height for signs mounted on traffic signal poles is 5'- 3" (±).
6. Offset distance shall be consistent with existing signs or consistent throughout length of project.
7. The (±) tolerance for mounting height is 3 inches.
8. Folding stop signs (R1-1F) shall be mounted at a height of 5'-3" (±) or as directed by the Engineer.
9. 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), Enhanced Reference Markers, Clearance Markers (W5-52), Mile Markers (D10 series) & End of Rod Markers (W5-56 & W5-56A) shall be mounted at a height of 4'-3" (+).

POST EMBEDMENT DEPTH

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

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

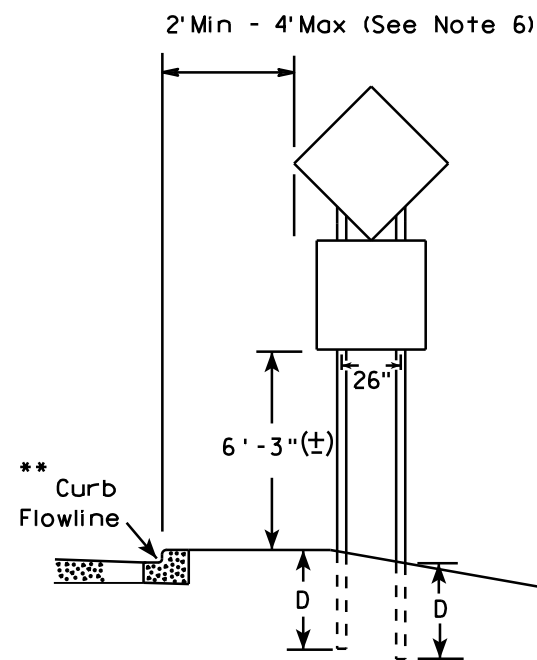
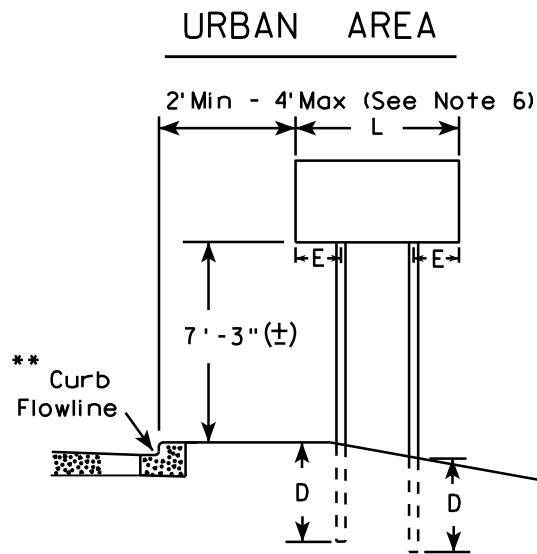
* 6 feet from edge of a paved shoulder or 12 feet from the edge of pavement (edge line location) or 2 feet from outside edge of gravel, whichever is greater unless directed by project engineer.

TYPICAL INSTALLATION
OF PERMANENT TYPE II
SIGNS ON SINGLE POSTS

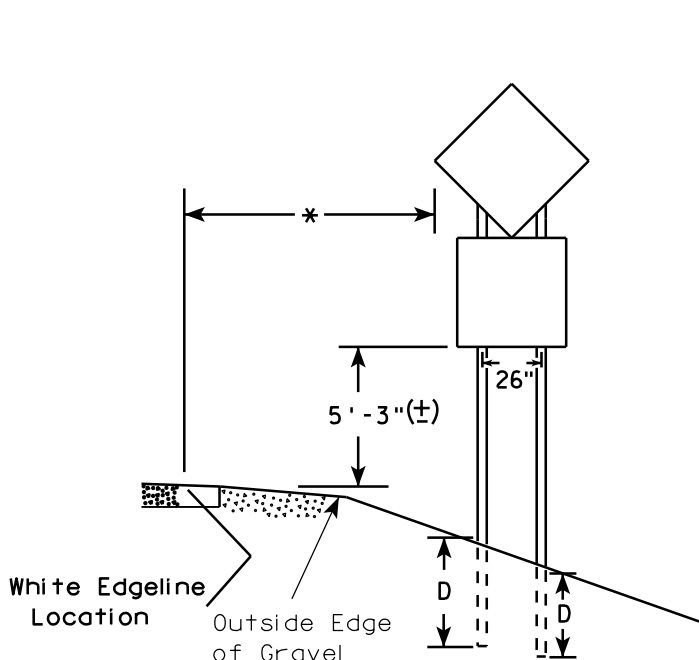
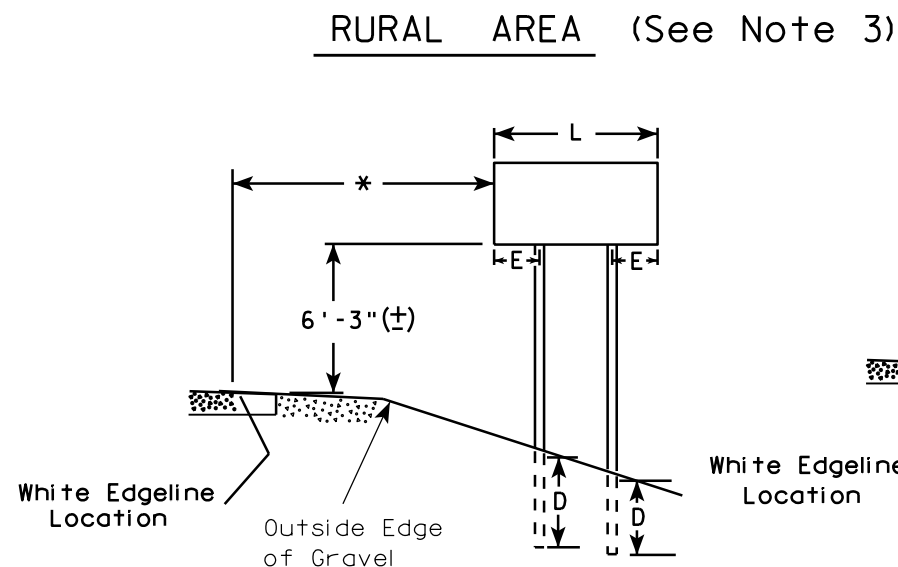
WISCONSIN DEPT OF TRANSPORTATION

APPROVED
Matthew R. Rauch
for State Traffic Engineer

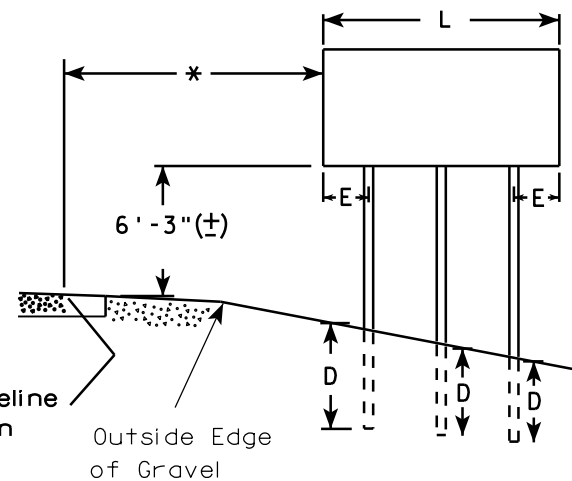
DATE 9/30/13 PLATE NO. A4-3.18



48" DIAMOND WARNING SIGN



48" DIAMOND WARNING SIGN



GENERAL NOTES

1. For 3 or 4 post installations, individual post spacing shall be greater than 3'-6".
2. See tables below for required number of posts.
3. For expressways and freeways, mounting height is 7'-3" (±) or 6'-3" (±) depending upon existence of sub-sign.
4. The (±) tolerance for mounting height is 3 inches.
5. Minimum mounting height for J assemblies (A4-5) is 7'-3" (±) or 6'-3" (±) per urban or rural detail respectively.
6. Offset distance shall be consistent with existing signs or consistent throughout length of project.
7. Folding stop signs (R1-1F) 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) & End of Road Markers (W5-56 & W5-56A) 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 or 20 S.F. or less in area.

SIGN SHAPE OTHER THAN DIAMOND (TWO POSTS REQUIRED)	
L	E
Greater than 48" Less than 60"	12"
60" to 120"	L/5

SIGN SHAPE OTHER THAN DIAMOND (THREE POSTS REQUIRED)	
L	E
Greater than 120" less than 168"	12"

SIGN SHAPE OTHER THAN DIAMOND (FOUR POSTS REQUIRED)	
L	E
168" and greater	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 9/30/13 PLATE NO. A4-4.12

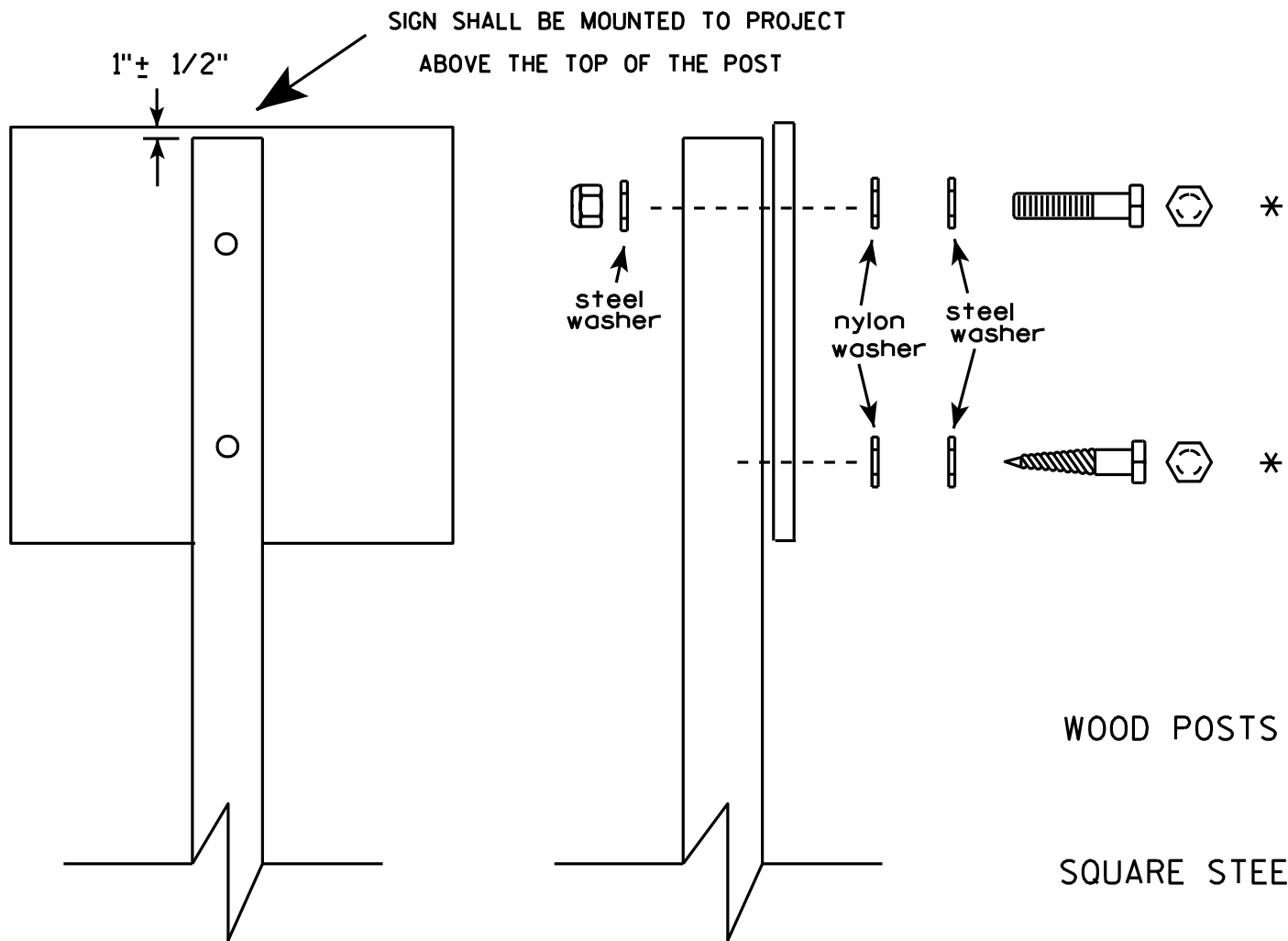
PROJECT NO:

HWY:

COUNTY:

SHEET NO:

E

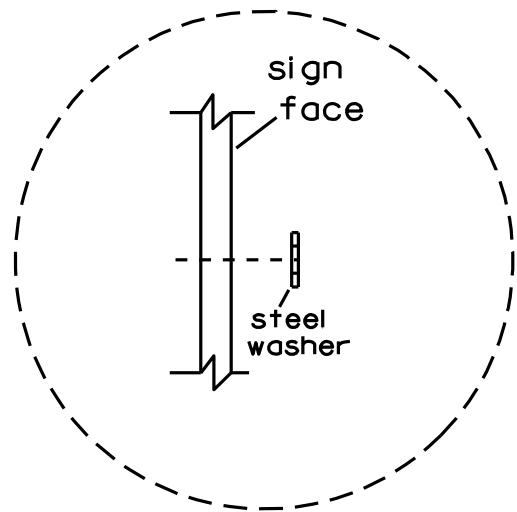


Nuts, bolts and lags used for mounting signs shall have hexagonal heads and shall be either :

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

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

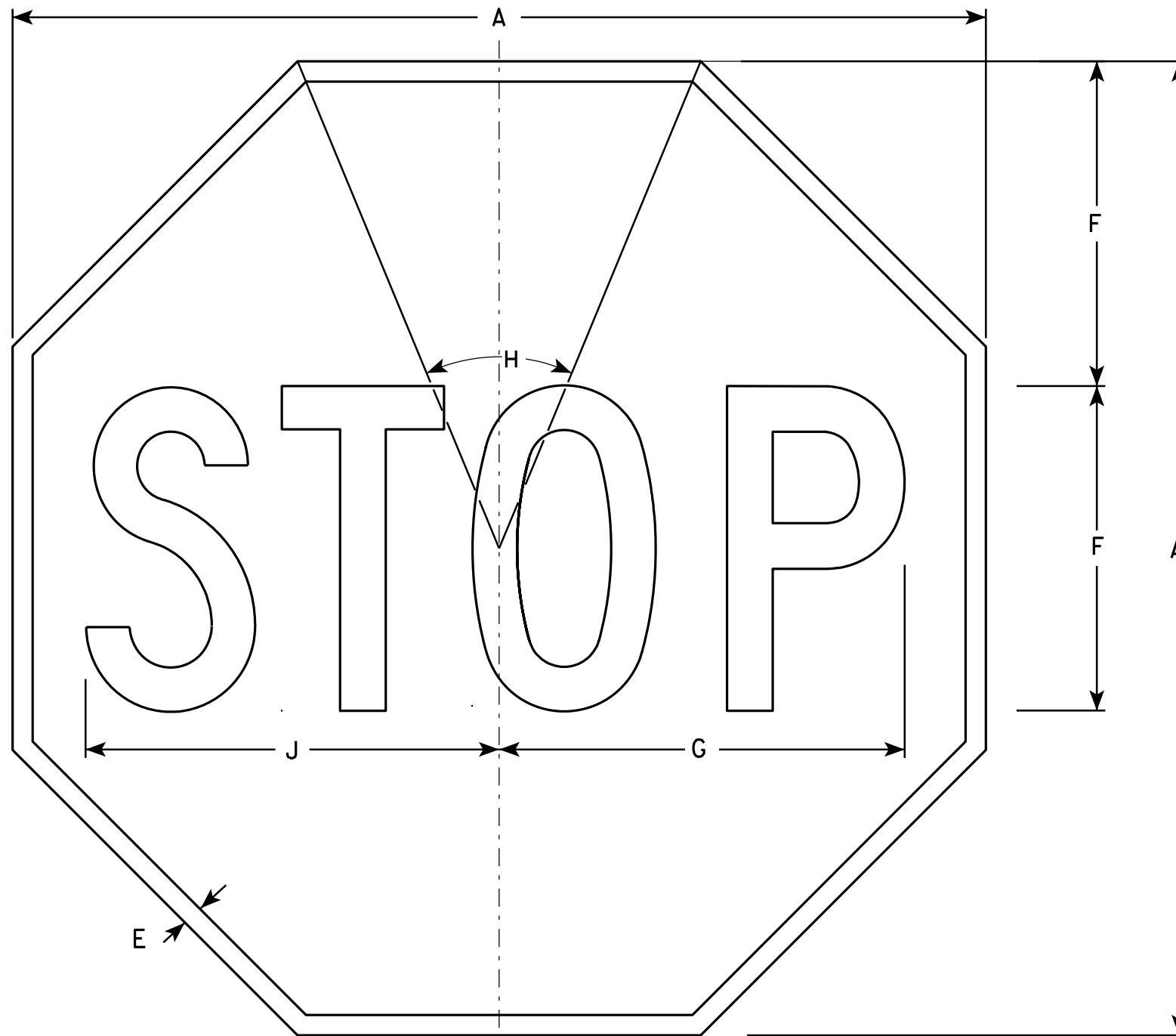
- WOOD POSTS (4" x 4" or 4" x 6")
LAG SCREWS - 3/8" X 3"
MACHINE BOLTS - 5/16" X 6-1/2" or 7" Length w/ nuts
- SQUARE STEEL POSTS (2" x 2")
MACHINE BOLTS - 3/8" X 3-1/4" Length w/ nuts
RIVETS - 9/32" (6605-9-6) BULB-TITE, TRI-FOLD, ALUMINUM BODY/MANDREL
O.D. FLANGE .720-.765 INCH, GRIP RANGE .042-.375 INCH
- WASHERS (ALL POSTS) -
1-1/4" O.D. X 3/8" I.D. X 1/16" STEEL
1-1/4" O.D. X 3/8" I.D. X .080 NYLON for all Type H signs.



Washer Placement when Sign Has Other Than Type H or Type F Face

* 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 3/23/10	PLATE NO. A4-8.7



NOTES

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

R1-1

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	24				3/8	8	10	45°		10 1/4																	3.31
2S	30				5/8	10	12 1/2	45°		12 3/4																	5.18
2M	36				3/4	12	15	45°		15 3/8																	7.46
3	36				3/4	12	15	45°		15 3/8																	7.46
4	48				1	16	20	45°		20 1/2																	13.25
5	48				1	16	20	45°		20 1/2																	13.25
6	18				3/8	6	7 3/4	45°		7 3/4																	1.86
7	12				1/4	4	5	45°		5 1/8																	0.78

STANDARD SIGN
R1 - 1

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 12/03/10 PLATE NO. R1-1.12

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

PROJECT 8510-04-66

EARTHWORK SUMMARY

From Station	To Station	Common Excavation (1)	Salvaged/Unusable Pavement Material (2)	Available Material (3)	Marsh Excavation	Rock Excavation	Unexpanded Fill	Expanded Fill (4) Factor 1.25	Waste (5)	Borrow
137+50	140+13	1003	78	925	0	0	41	51	874	0
140+13	141+50	607	41	566	0	0	27	34	532	0
TOTALS		1610	119	1491	0	0	68	85	1406	0

- 1) Common Excavation between selected station range(Does not include excavation for placement of riprap)
2) Salvaged Asphalt
3) Usable = Common - Salvaged Asphalt
4) Marsh Excavation
5) Rock Excavation
6) Unexpanded Embank (Fill) value
7) Adjusted Total Fill = Embank - (Rock * Rock Factor)) * Embank Factor

PROJECT 8510-04-60

EARTHWORK SUMMARY

From Station	To Station	Common Excavation (1)	Salvaged/Unusable Pavement Material (2)	Available Material (3)	Marsh Excavation	Rock Excavation	Unexpanded Fill	Expanded Fill (4) Factor 1.25	Waste (5)	Borrow
141+50	143+26	689	52	637	0	0	19	24	613	0
143+26	145+50	893	66	827	0	0	141	176	651	0
TOTALS		1582	118	1464	0	0	160	200	1264	0

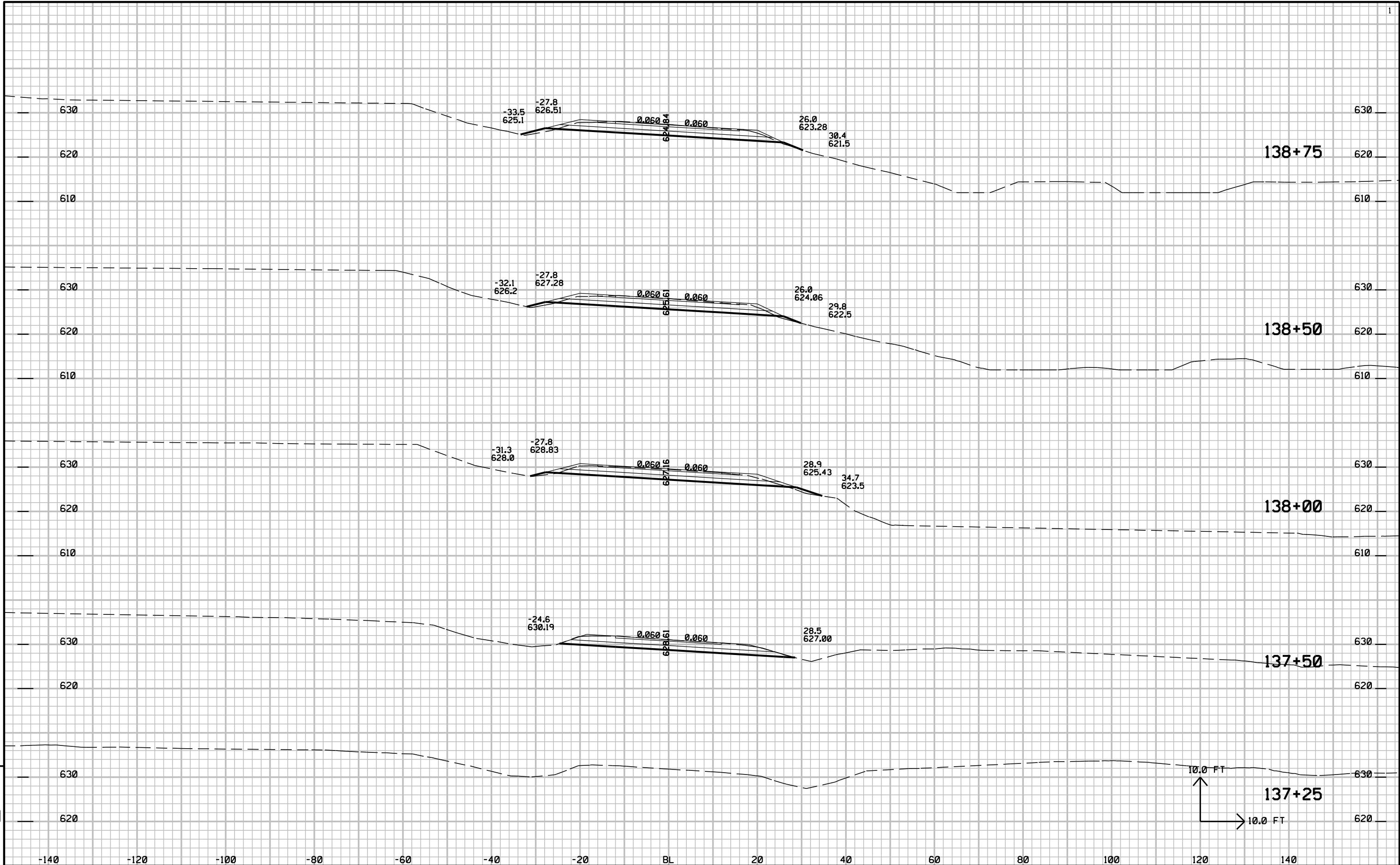
- 1) Common Excavation between selected station range(Does not include excavation for placement of riprap)
2) Salvaged Asphalt
3) Usable = Common - Salvaged Asphalt
4) Marsh Excavation
5) Rock Excavation
6) Unexpanded Embank (Fill) value
7) Adjusted Total Fill = Embank - (Rock * Rock Factor)) * Embank Factor

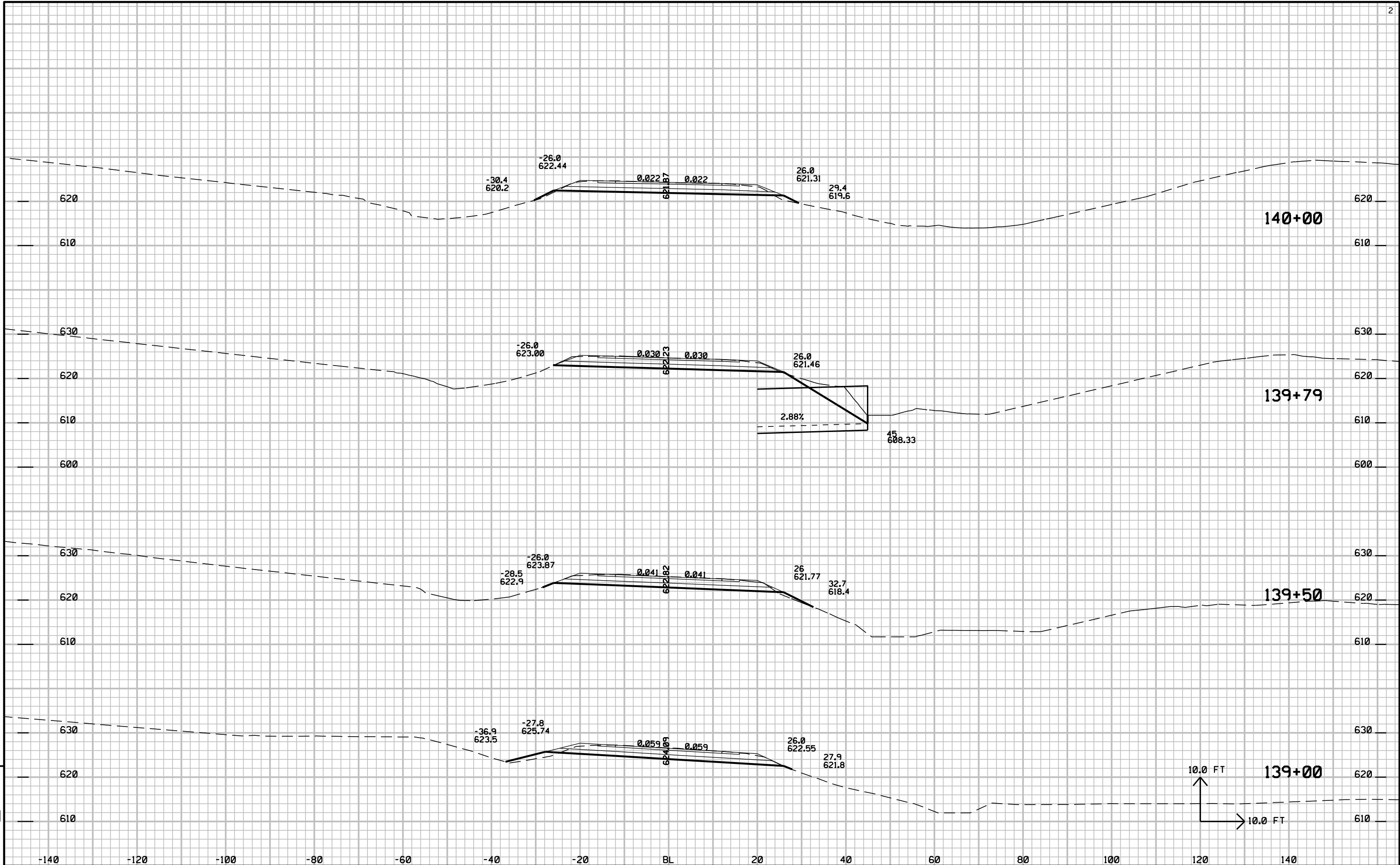
PROJECT 8510-04-66

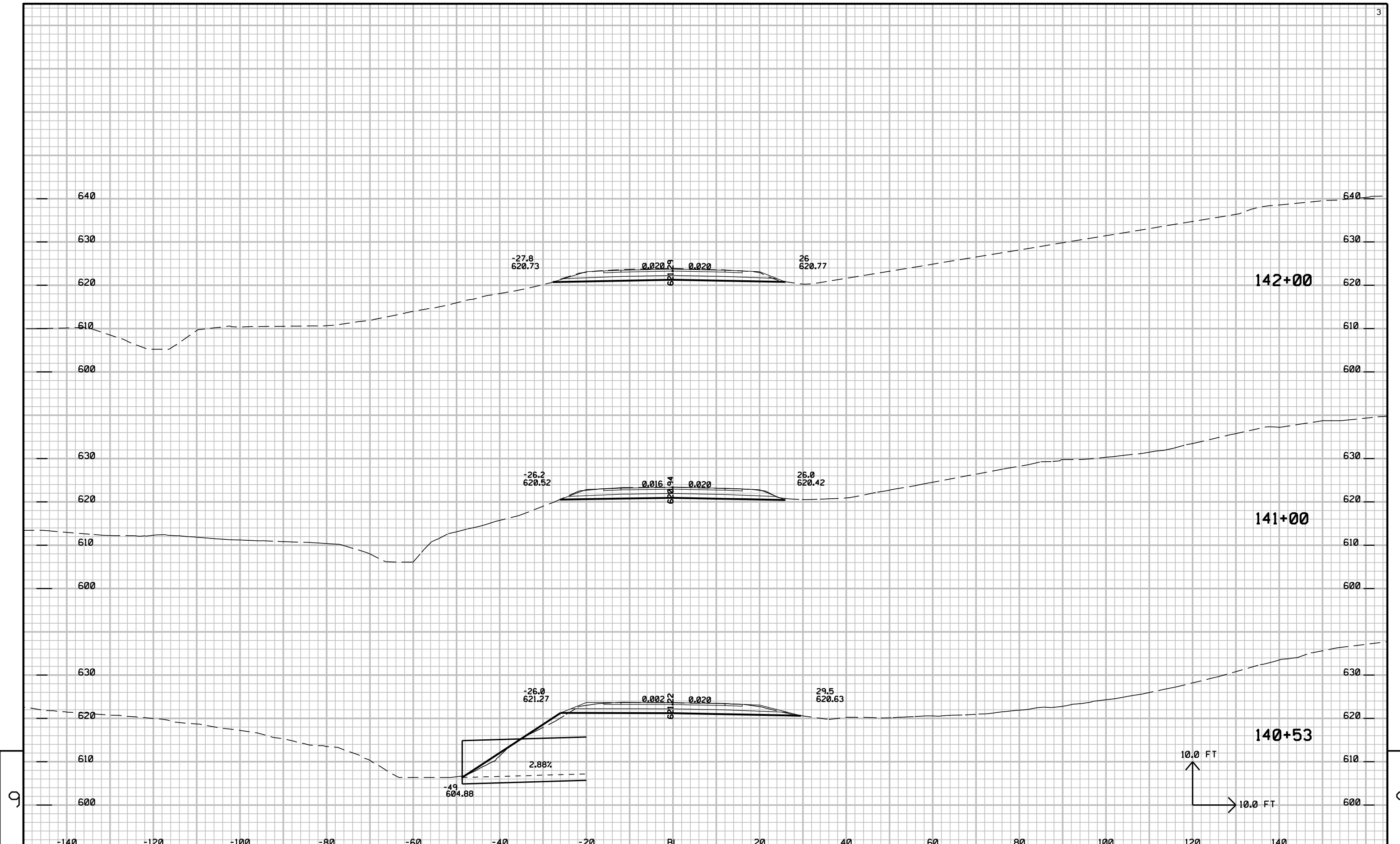
STATION	AREA (SF)		Incremental Vol (CY)		Cumulative Vol (CY)		Mass Haul
	Common	Fill	Common	Fill	Common	Fill	
137+50	103.5	0.0					
138+00	98.6	5.1	187.20	4.70	187.20	5.88	181.33
138+50	98.3	4.7	182.30	9.10	369.50	17.25	352.25
138+75	103.6	5.1	93.50	4.50	463.00	22.88	440.13
139+00	107.3	9.4	97.60	6.70	560.60	31.25	529.35
139+50	108.2	3.4	199.50	11.90	760.10	46.13	713.98
139+79	155.4	0.2	141.60	1.90	901.70	48.50	853.20
140+00	105.4	4.4	101.40	1.80	1003.10	50.75	952.35
140+53	107.5	12.3	209.00	16.40	1212.10	71.25	1140.85
141+00	111.1	0.0	190.30	10.70	1402.40	84.63	1317.78
141+50	112.9	0.0	207.40	0.00	1609.80	84.63	1525.18

PROJECT 8510-04-60

STATION	AREA (SF)		Incremental Vol (CY)		Cumulative Vol (CY)		Mass Haul
	Common	Fill	Common	Fill	Common	Fill	
141+50	112.9	0.0					
142+00	114.6	0.0	210.60	0.00	210.60	0.00	210.60
142+50	110.4	0.1	208.30	0.10	418.90	0.13	418.78
143+00	92.9	9.9	188.30	9.30	607.20	11.75	595.45
143+18	151.9	20.1	81.60	10.00	688.80	24.25	664.55
143+33	151.1	16.9	84.20	10.30	773.00	37.13	735.88
143+50	90.4	31.4	76.00	15.20	849.00	56.13	792.88
144+00	99.7	21.6	175.90	49.10	1024.90	117.50	907.40
144+50	97.8	12.9	182.80	32.00	1207.70	157.50	1050.20
145+00	99.5	12.0	182.70	23.00	1390.40	186.25	1204.15
145+50	107.0	0.4	191.30	11.40	1581.70	200.50	1381.20

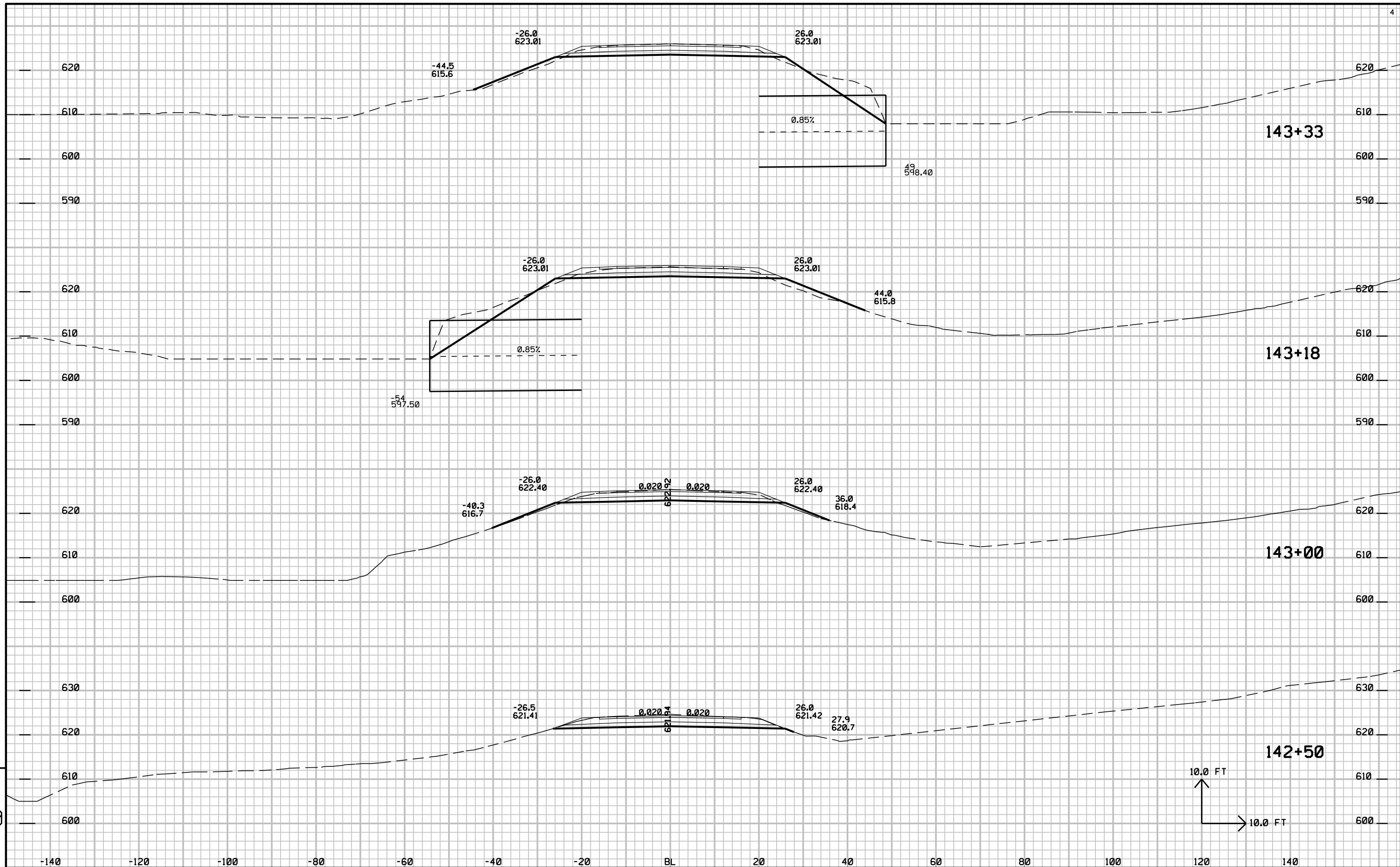


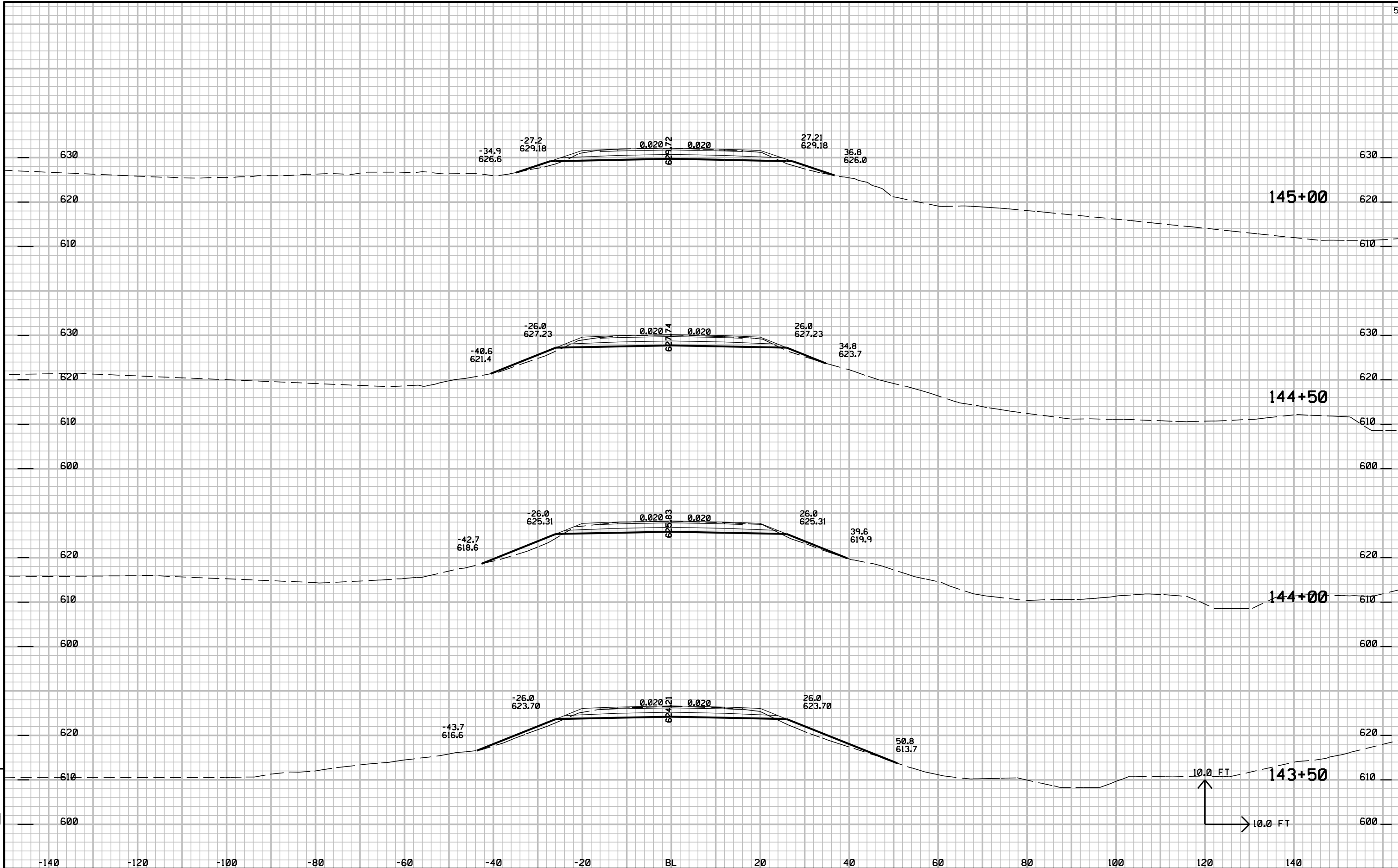




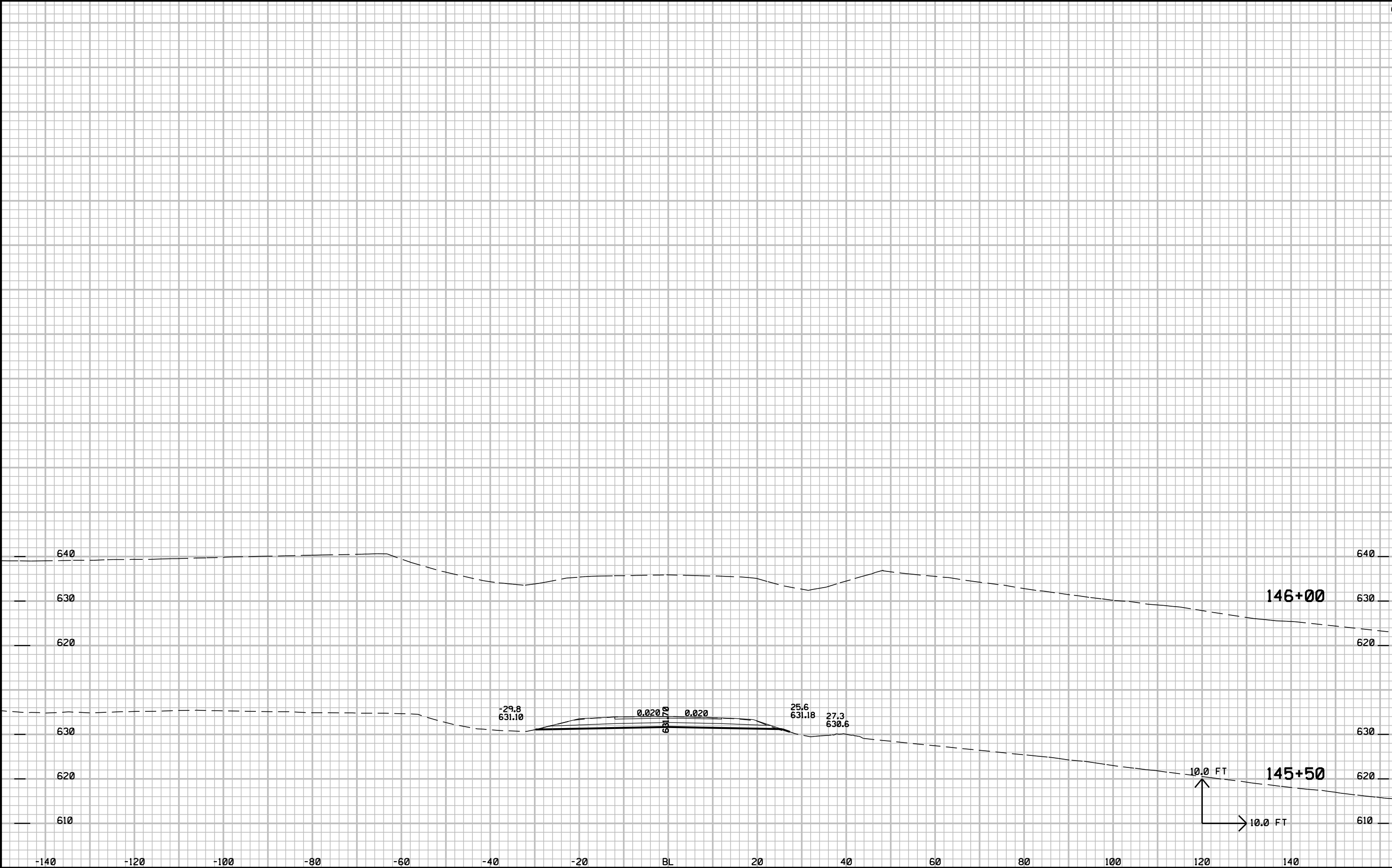
9

9

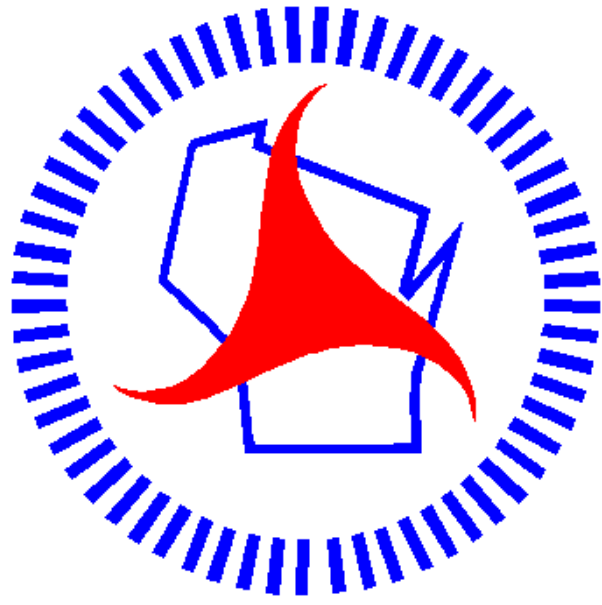




9



9



Wisconsin Department of Transportation

Dedicated people creating transportation solutions
through innovation and exceptional service.

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

UTILITIES

BAYFIELD ELECTRIC COOPERATIVE
PO BOX 68
IRON RIVER, WI 54847
CONTACT: GARY TARASEWICZ
PHONE: (715) 372-4287

CENTURYLINK
PO BOX 13
SHELDON, WI 54766
CONTACT: JIM AROUETTE
PHONE: (715) 452-5168

DEPARTMENT OF NATURAL RESOURCES

WDNR - NORTHWEST DISTRICT HEADQUARTERS
810 WEST MAPLE STREET
SPOONER, WI 54801
CONTACT: SHAWN HASELEU
PHONE: (715) 635-4228

GENERAL NOTES:

RESTORE PRIVATE ENTRANCES TO
EXISTING CONDITIONS UNLESS SHOWN OTHERWISE.

THE EXACT CONSTRUCTION LIMITS OF PRIVATE ENTRANCES SHALL BE
COORDINATED WITH THE ENGINEER IN THE FIELD.

WHEN THE QUANTITY OF BASE AGGREGATE IS MEASURED BY THE TON,
THE THICKNESS OF THE LAYER SHOWN ON THE PLAN IS
APPROXIMATE, AND THE ACTUAL THICKNESS WILL DEPEND ON THE
DISTRIBUTION OF MATERIAL AS DIRECTED BY THE ENGINEER.

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

DISTURBED AREAS WITHIN THE RIGHT-OF-WAY, EXCEPT THE AREAS
WITHIN THE FINISHED SHOULDER POINTS, SHALL BE FERTILIZED,
SEEDED AND E-MATTED.

THE LOCATIONS OF EXISTING AND PROPOSED UTILITY INSTALLATIONS
ARE NOT SHOWN ON THE PLANS. THERE ARE UTILITY INSTALLATIONS
WITHIN THE PROJECT LIMITS.

RUNOFF COEFFICIENT TABLE

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

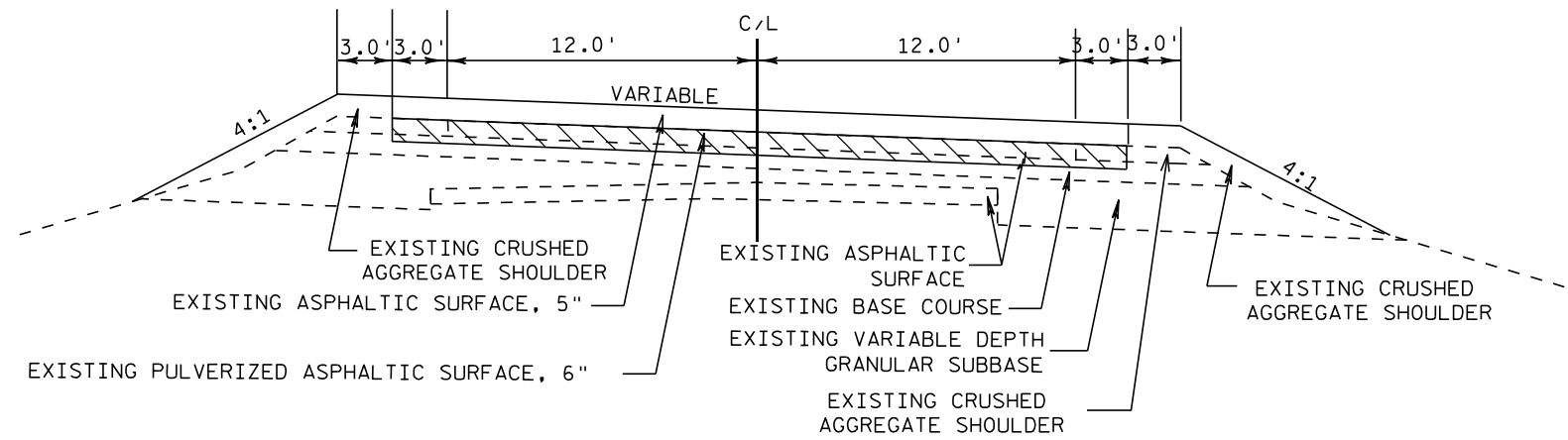
TOTAL PROJECT AREA = 0.8 ACRES
TOTAL AREA EXPECTED TO BE DISTURBED BY CONSTRUCTION ACTIVITIES = 0.5 ACRES

DIGGERSHOTLINE

Dial 811 or (800)242-8511

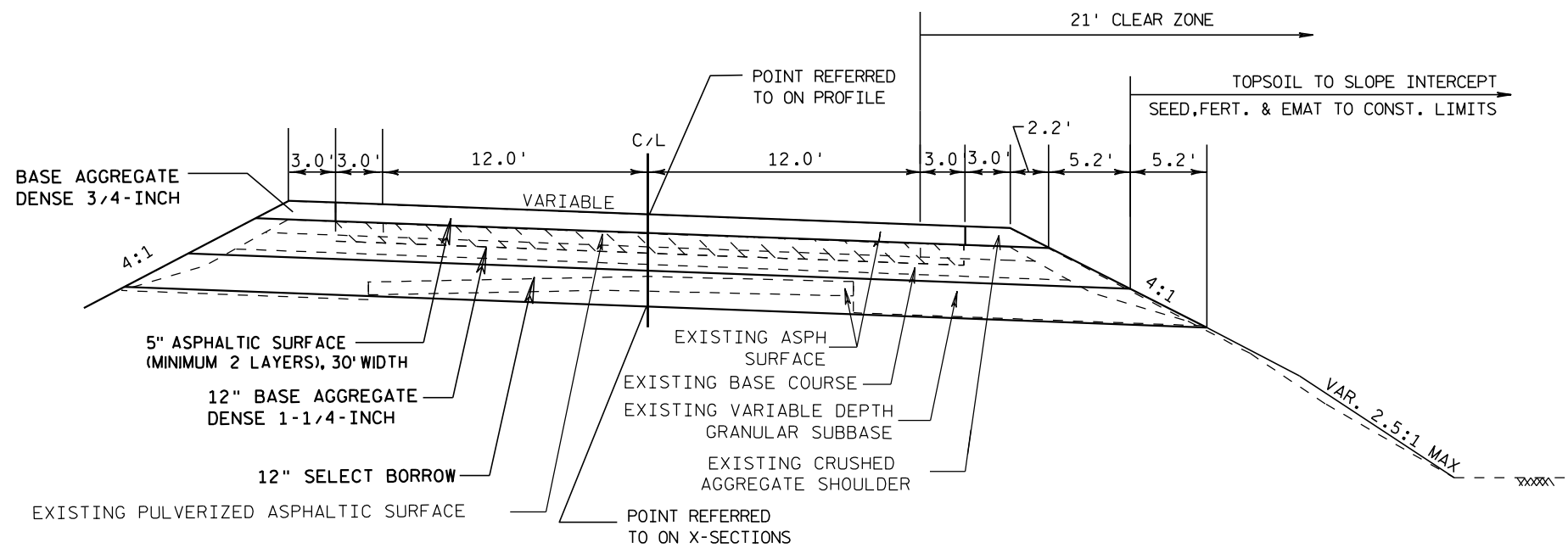


www.DiggersHotline.com



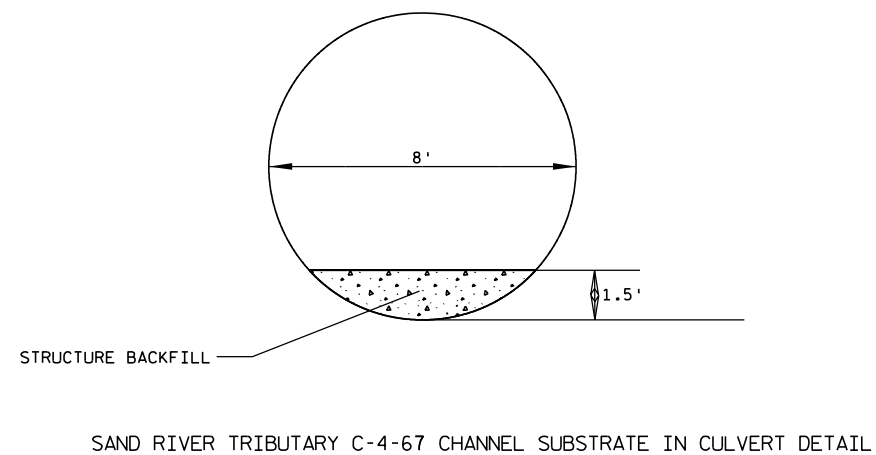
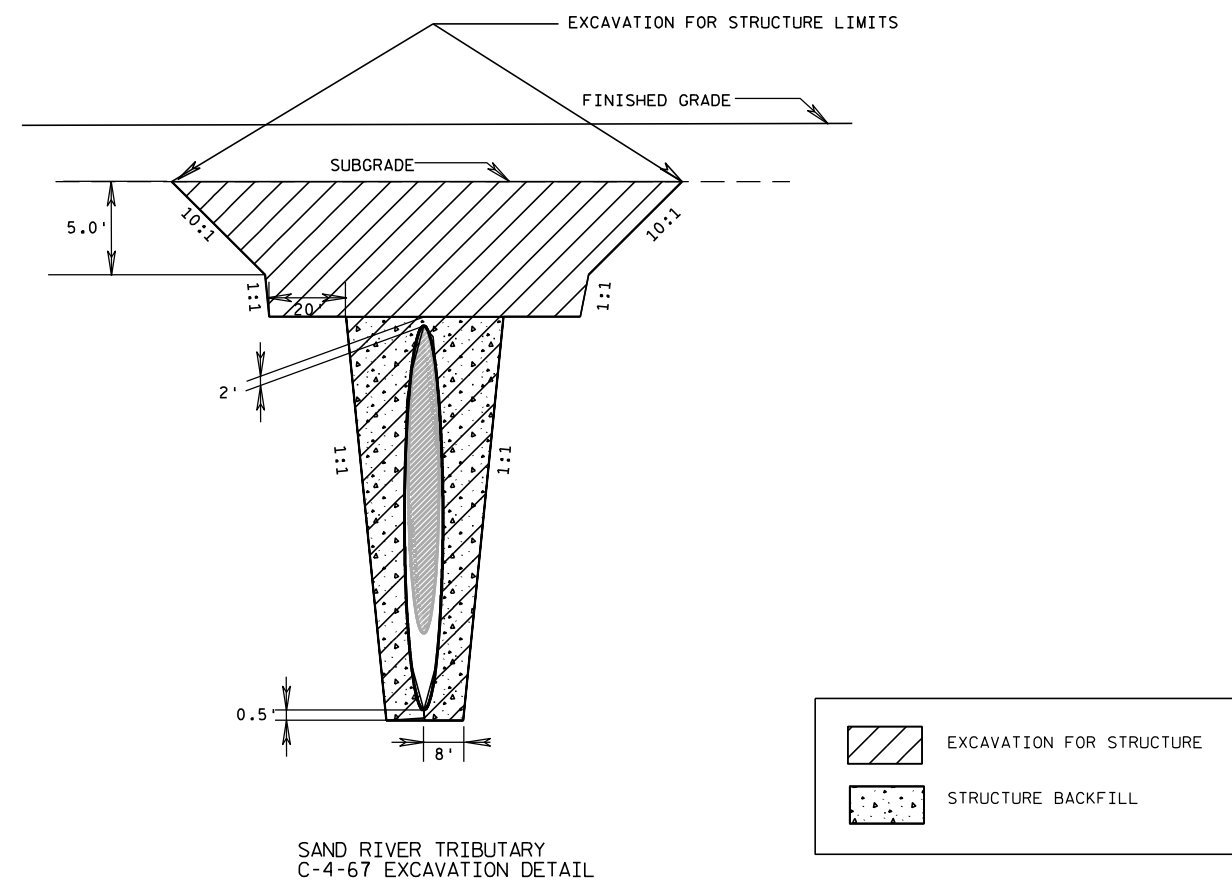
TYPICAL EXISTING SECTION

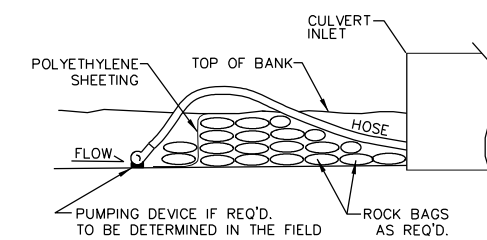
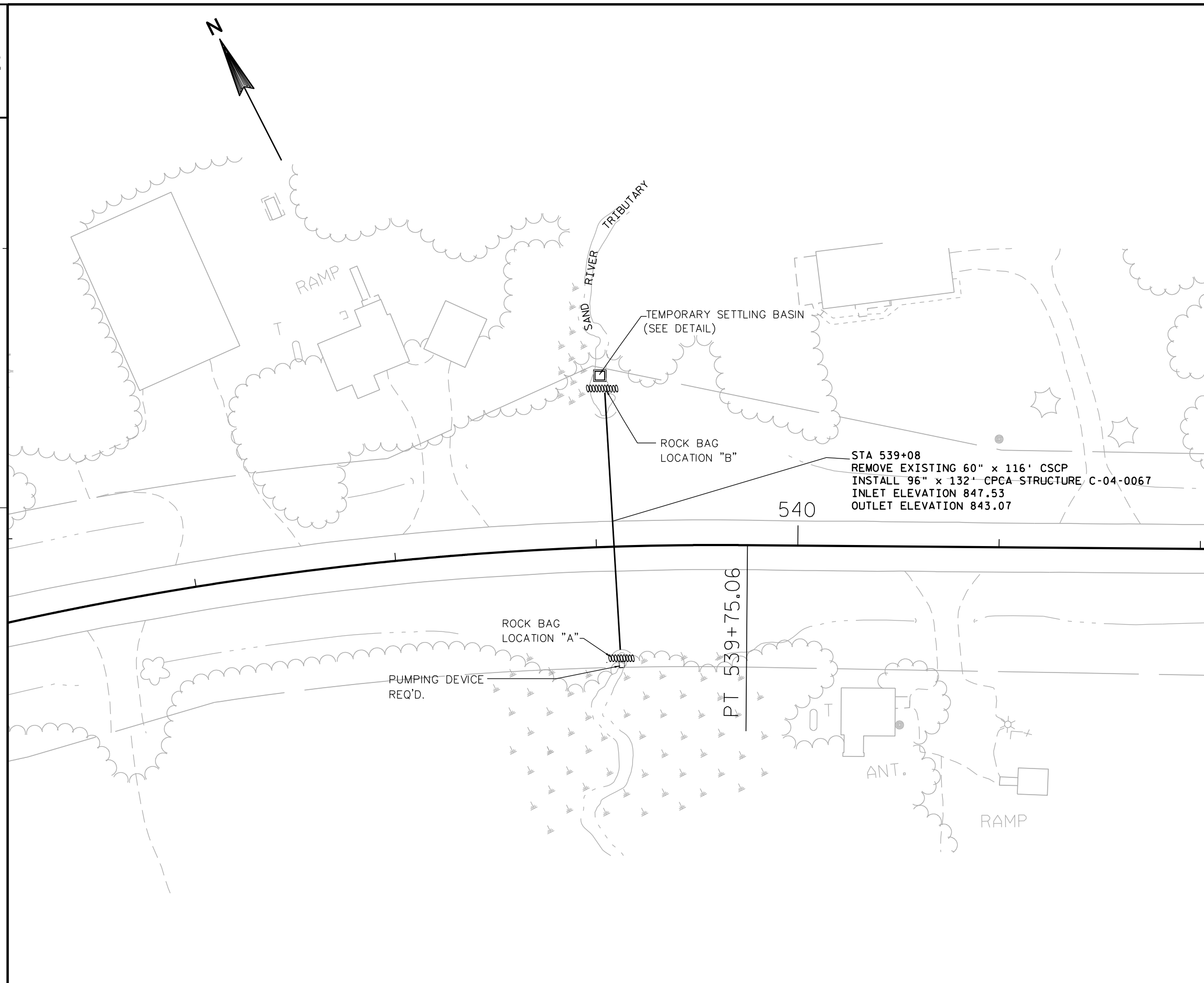
STA. 537+75 TO STA. 540+50



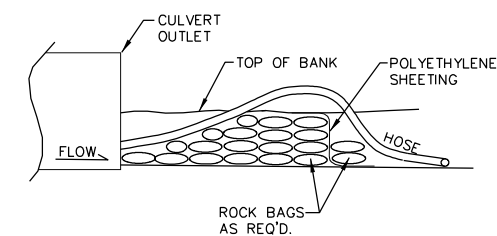
TYPICAL FINISHED SECTION

STA. 537+75 TO STA. 540+50

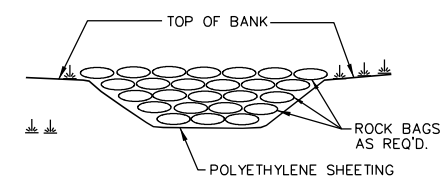




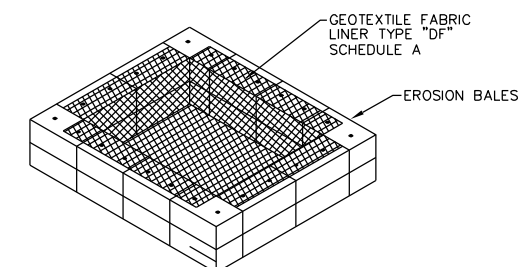
ROCK BAG LOCATION "A" DETAIL
(TO STOP FLOW INTO WORK AREA)



ROCK BAG LOCATION "B" DETAIL
(TO STOP BACKWASH INTO WORK AREA)



TYPICAL ROCK BAG INSTALLATION
IN EXISTING CHANNEL



TEMPORARY SETTLING BASIN
SIZE TO BE DETERMINED BY WATER QUANTITY AND QUALITY

TEMPORARY SETTLING BASIN

SIZE TO BE DETERMINED BY WATER QUANTITY AND QUALITY

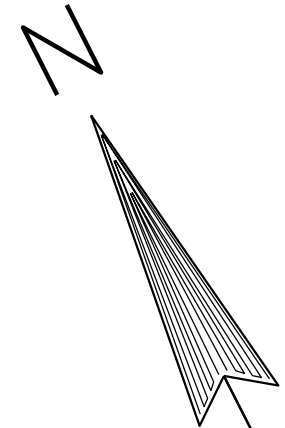
NOTES:

1. THE TEMPORARY SETTLING BASIN SHALL BE COMPLETED PRIOR TO BEGINNING OF PUMPING OPERATIONS. CONTRACTOR SHALL PUMP WATER FOR STRUCTURE EXCAVATION TO BASIN PRIOR TO DISCHARGE INTO THE STREAM.
2. BASIN SHALL BE KEPT LESS THAN 10% FULL OF SEDIMENT. GEOTEXTILE FABRIC TYPE DF AND SEDIMENTS SHALL BE DISPOSED OF BY THE CONTRACTOR OFF OF THE PROJECT SITE.
3. PAID FOR AS EROSION BALES AND GEOTEXTILE FABRIC TYPE DF.
4. PUMPING DEVICE OR ENGINEER APPROVED EQUAL WILL BE PAID FOR UNDER THE CORRESPONDING PIPE BID ITEMS.

LEGEND

EROSION MAT

—●—●— SILT FENCE



STA 539+08
REMOVE EXISTING 60" x 116' CSCP
INSTALL 96" x 132' CPCA STRUCTURE C-04-0067
INLET ELEVATION 847.53
OUTLET ELEVATION 843.07

SAND - RIVER
TRIBUTARY

RAMP

P1536+08.97

540

S 62°30'3

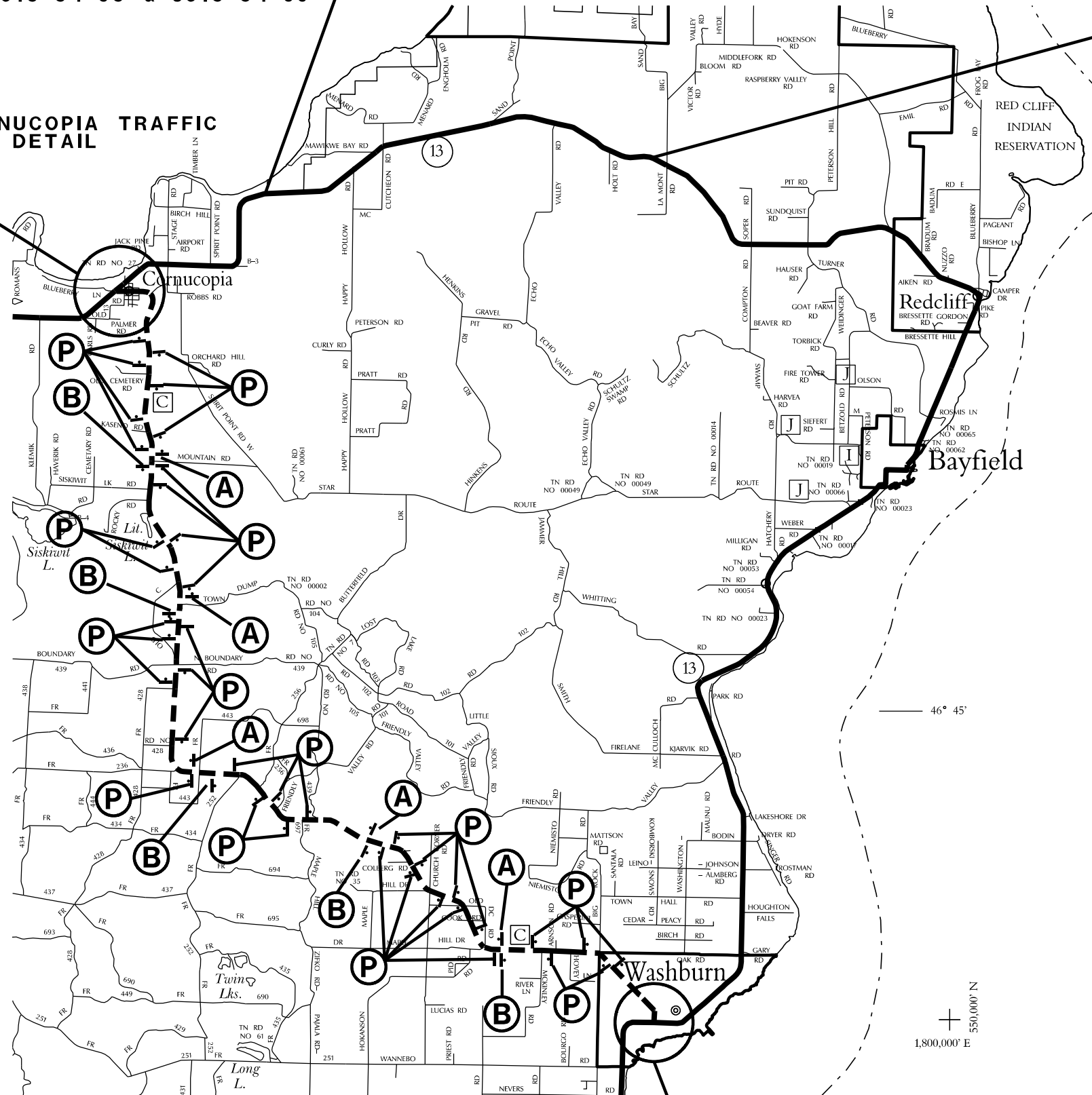
PT 539+05.06

ANT.

RAMP

PROJECT LOCATION
PROJECT 8510-04-60 & 8510-04-66

SEE CORNUCOPIA TRAFFIC
CONTROL DETAIL



SEE WASHBURN TRAFFIC
CONTROL DETAIL

PROJECT LOCATION
PROJECT 8510-05-60

----- DETOUR ROUTE

A	M4-8	DETOUR	24" X 12"
	M3-1	NORTH	24" X 12"
	M1-6	13	24" X 24"
B	M4-8	DETOUR	24" X 12"
	M3-3	SOUTH	24" X 12"
	M1-6	13	24" X 24"
P		NO PASSING ZONE	
		W14-3	48" X 36"

GENERAL NOTES FOR SIGNING:

ALL SIGNS AND DEVICES SHALL BE IN CONFORMANCE WITH THE WISCONSIN MANUAL OF TRAFFIC CONTROL DEVICES. (WMUTCD)

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

DURING HOURS OF DARKNESS, ALL BARRICADES USED TO SHIELD A HAZARD SHALL BE EQUIPPED WITH TYPE "A" LIGHTS AND DEVICES USED TO DELINEATE A TRAVEL PATH SHALL BE EQUIPPED WITH TYPE "C" LIGHTS

"WO" SIGNS ARE THE SAME A "W" SIGNS EXCEPT THE BACKGROUND SHALL BE ORANGE

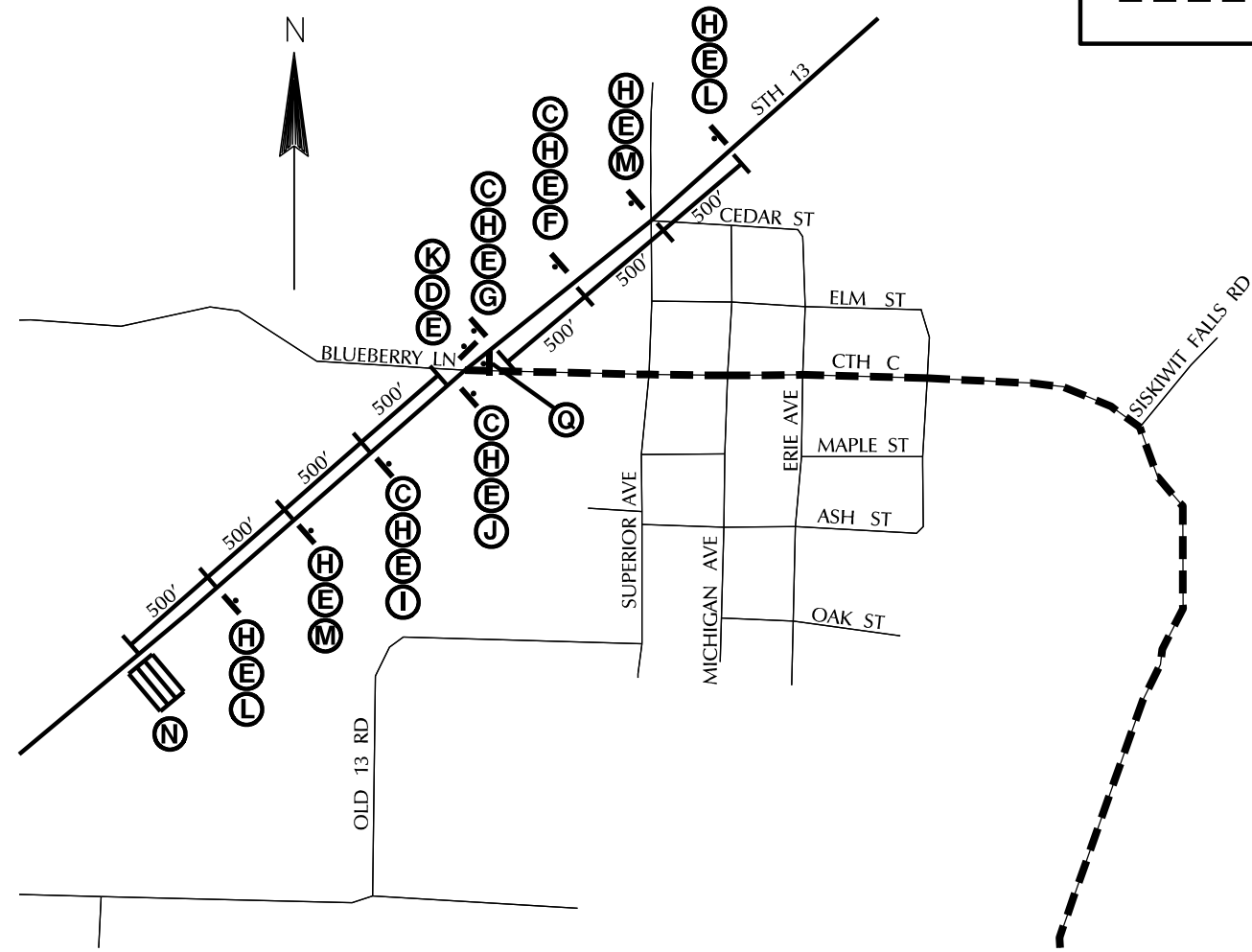
DETOUR SIGNS SHALL BE PLACED ON NEW POSTS UNLESS APPROVED BY THE ENGINEER

BEFORE INSTALLING ANY SIGN POSTS, LOCATIONS ARE TO BE CLEARED WITH UTILITIES THROUGH DIGGER'S HOTLINE 1-800-242-8511

THE NO PASSING ZONE SIGNS SHALL BE PLACED AT THE LOCATIONS OF THE EXISTING NO PASSING ZONES ON THE DETOUR ROUTE.

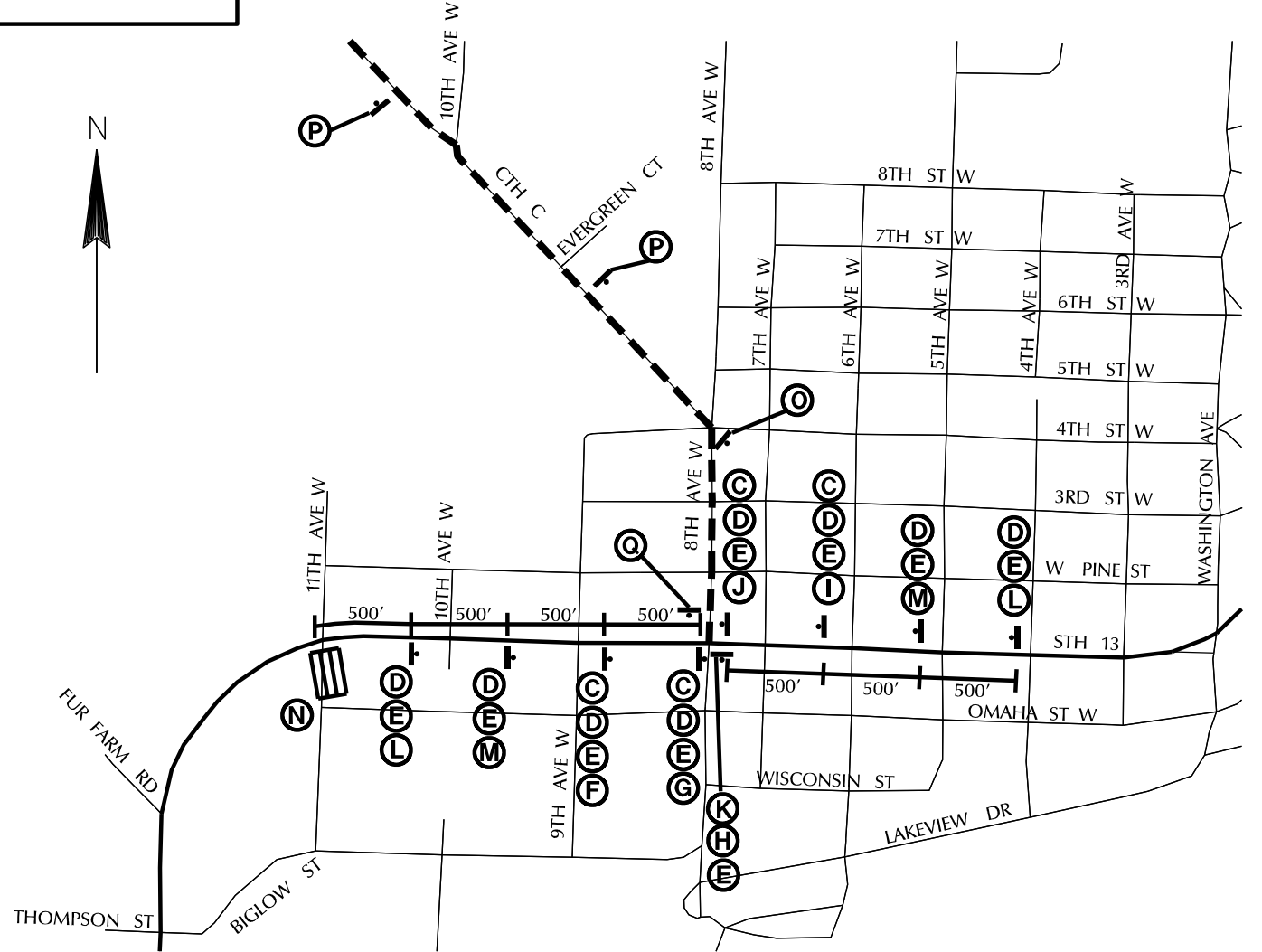
LAYOUT AND ACTUAL PLACEMENT OF THE SIGNS SHALL BE DONE BY THE CONTRACTOR IN ACCORDANCE WITH THE WMUTCD.

NO PERMANENT SIGNING WORK SHALL BE PERFORMED WITHOUT THE APPROVAL OF THE ENGINEER.



CORNUCOPIA TRAFFIC CONTROL DETAIL

----- DETOUR ROUTE



WASHBURN TRAFFIC CONTROL DETAIL

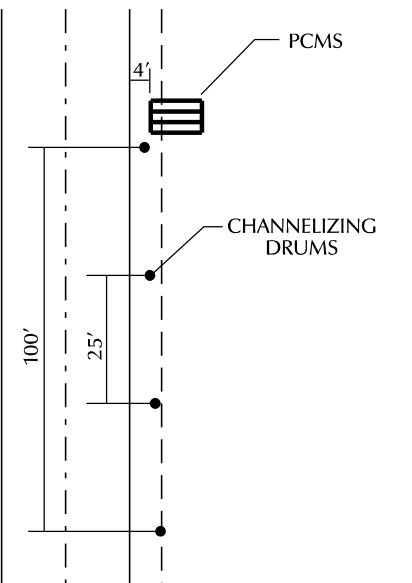
TRAFFIC CONTROL SIGNS

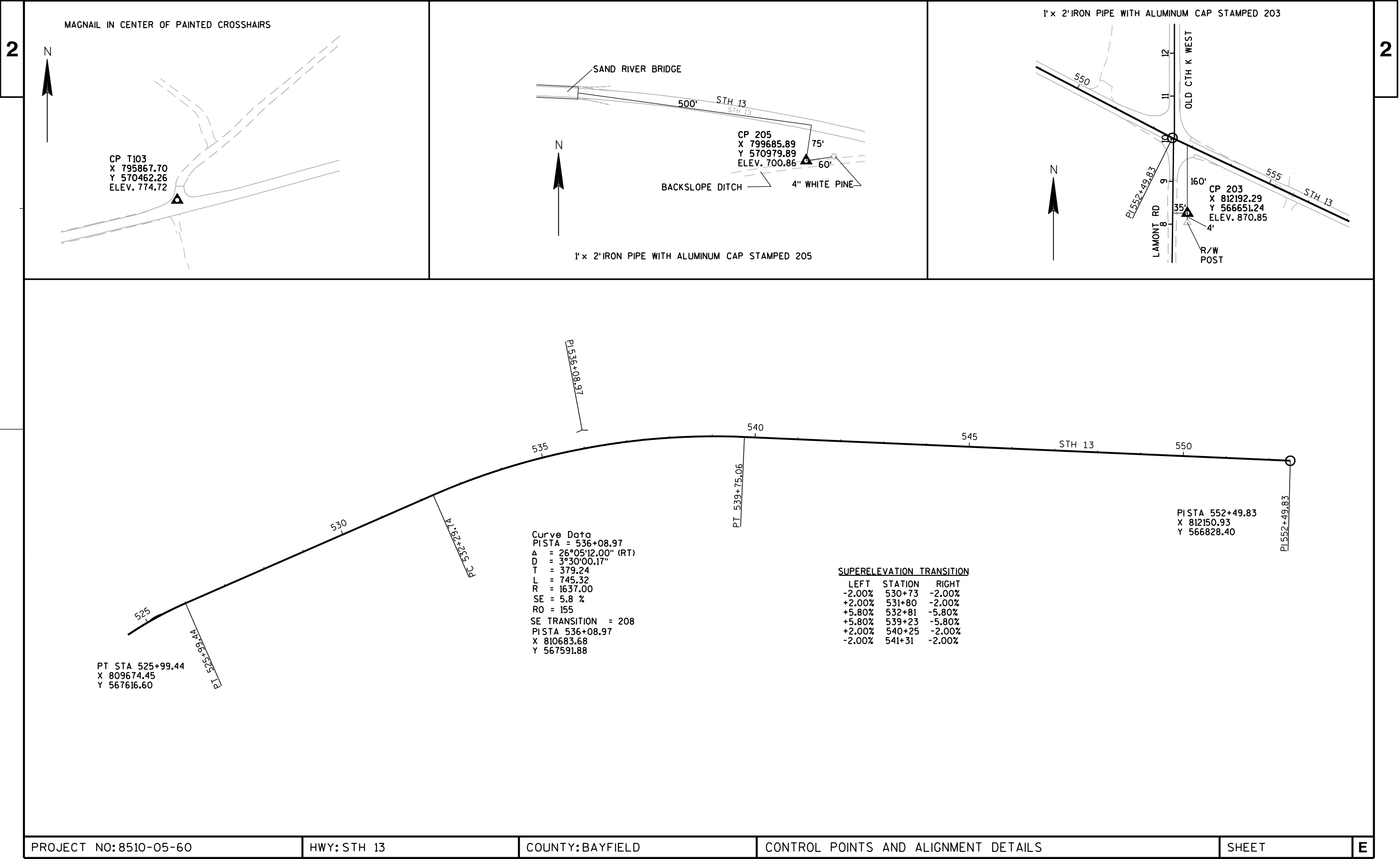
 M4-8 24" X 12"	 M3-1 24" X 12"	 M1-6 24" X 24"	 M05-1L 21" X 21"	 M06-1 21" X 21"	 M3-3 24" X 12"	 M05-1R 21" X 21"	 M06-1 21" X 21"
 M4-8A 24" X 18"	 W20-2A 48" X 48"	 W20-2C 48" X 48"	 PCMS		 W1-6 48" X 24"	 W14-3 48" X 36"	

PERMANENT SIGN REPLACEMENT

R1-1
36" X 36"

PCMS DETAIL





PROJECT NO: 8510-05-60

HWY: STH 13

COUNTY: BAYFIELD

CONTROL POINTS AND ALIGNMENT DETAILS

SHEET

E

FILE NAME : n:\PDS\Design\Projects\85100530\DGNS\027201_od.DGN

PLOT DATE : 31-OCT-2013 13:33

PLOT BY : dotr7m

PLOT NAME :

PLOT SCALE : 200:1

WISDOT/CADDs SHEET 42

DATE 27JAN14		E S T I M A T E O F Q U A N T I T I E S			
LINE					8510-05-60
NUMBER	ITEM	ITEM DESCRIPTION	UNIT	TOTAL	QUANTITY
0010	201.0105	CLEARING	STA	1.000	1.000
0020	201.0205	GRUBBING	STA	1.000	1.000
0050	203.0200	REMOVING OLD STRUCTURE (STATION) 03. STA 539+08	LS	1.000	1.000
0060	205.0100	EXCAVATION COMMON	CY	1,351.000	1,351.000
0080	206.2000	EXCAVATION FOR STRUCTURES CULVERTS (STRUCTURE) 02. C-04-0067	LS	1.000	1.000
0100	208.1100	SELECT BORROW	CY	635.000	635.000
0110	210.0100	BACKFILL STRUCTURE	CY	1,425.000	1,425.000
0140	211.0100	PREPARE FOUNDATION FOR ASPHALTIC PAVING (PROJECT) 03.8510-05-60	LS	1.000	1.000
0170	213.0100	FINISHING ROADWAY (PROJECT) 03. 8510-05-60	EACH	1.000	1.000
0180	305.0110	BASE AGGREGATE DENSE 3/4-INCH	TON	80.000	80.000
0190	305.0120	BASE AGGREGATE DENSE 1 1/4-INCH	TON	860.000	860.000
0210	455.0605	TACK COAT	GAL	22.000	22.000
0220	465.0105	ASPHALTIC SURFACE	TON	275.000	275.000
0330	618.0100	MAINTENANCE AND REPAIR OF HAUL ROADS (PROJECT) 03.8510-04-60	EACH	1.000	1.000
0340	619.1000	MOBILIZATION	EACH	0.250	0.250
0350	625.0100	TOPSOIL	SY	1,200.000	1,200.000
0360	628.1104	EROSION BALES	EACH	50.000	50.000
0370	628.1504	SILT FENCE	LF	600.000	600.000
0380	628.1520	SILT FENCE MAINTENANCE	LF	600.000	600.000
0390	628.1905	MOBILIZATIONS EROSION CONTROL	EACH	2.000	2.000
0400	628.1910	MOBILIZATIONS EMERGENCY EROSION CONTROL	EACH	2.000	2.000
0410	628.2008	EROSION MAT URBAN CLASS I TYPE B	SY	1,500.000	1,500.000
0420	628.5505	POLYETHYLENE SHEETING	SY	250.000	250.000
0430	628.7570	ROCK BAGS	EACH	200.000	200.000
0440	629.0210	FERTILIZER TYPE B	CWT	1.000	1.000
0450	630.0120	SEEDING MIXTURE NO. 20	LB	42.000	42.000
0460	630.0300	SEEDING BORROW PIT	LB	30.000	30.000
0470	633.5200	MARKERS CULVERT END	EACH	2.000	2.000
0500	642.5201	FIELD OFFICE TYPE C	EACH	0.250	0.250
0530	643.0100	TRAFFIC CONTROL (PROJECT) 03.8510-05-60	EACH	1.000	1.000
0540	643.0300	TRAFFIC CONTROL DRUMS	DAY	200.000	200.000
0550	643.0420	TRAFFIC CONTROL BARRICADES TYPE III	DAY	450.000	450.000
0560	643.0705	TRAFFIC CONTROL WARNING LIGHTS TYPE A	DAY	900.000	900.000
0570	643.0715	TRAFFIC CONTROL WARNING LIGHTS TYPE C	DAY	200.000	200.000
0580	643.0900	TRAFFIC CONTROL SIGNS	DAY	400.000	400.000
0600	643.1050	TRAFFIC CONTROL SIGNS PCMS	DAY	50.000	50.000
0630	643.2000	TRAFFIC CONTROL DETOUR (PROJECT) 03. 8510-05-60	EACH	1.000	1.000
0640	643.3000	TRAFFIC CONTROL DETOUR SIGNS	DAY	3,350.000	3,350.000
0650	645.0111	GEOTEXTILE FABRIC TYPE DF SCHEDULE A	SY	40.000	40.000
0680	646.0106	PAVEMENT MARKING EPOXY 4-INCH	LF	900.000	900.000
0690	650.4500	CONSTRUCTION STAKING SUBGRADE	LF	550.000	550.000
0700	650.5000	CONSTRUCTION STAKING BASE	LF	275.000	275.000
0710	650.6000	CONSTRUCTION STAKING PIPE CULVERTS	EACH	1.000	1.000
0740	650.9910	CONSTRUCTION STAKING SUPPLEMENTAL CONTROL (PROJECT) 03.8510-05-60	LS	1.000	1.000
0750	650.9920	CONSTRUCTION STAKING SLOPE STAKES	LF	275.000	275.000
0760	690.0150	SAWING ASPHALT	LF	60.000	60.000
0790	SPV.0090	SPECIAL 03. CULVERT PIPE CORRUGATED ALUMINUM 96-INCH	LF	132.000	132.000

CLEARING AND GRUBBING

PROJECT ID	STATION TO	STATION	CLEARING	GRUBBING
			201.0105 STA	201.0105 STA
8510-05-60	539+00	- 540+00	1	1
PROJECT 8510-05-60 TOTALS =			1	1

EXCAVATION COMMON

PROJECT ID	STATION TO	STATION	205.0100	REMARKS
			CY	
8510-05-60	537+75	- 540+50	1351	SEE EARTHWORK SUMMARY
PROJECT 8510-05-60 TOTAL =			1351	

SELECT BORROW

PROJECT ID	STATION TO	STATION	208.1100	REMARKS
			CY	
8510-05-60	537+75	- 540+50	635	SUBBASE
PROJECT 8510-05-60 TOTAL =			635	

BACKFILL STRUCTURE

PROJECT ID	STATION	210.0100	REMARKS
		CY	
8510-05-60	539+08	1400	STRUCTURE BACKFILL
	539+08	25	CHANNEL SUBSTRATE IN CULVERT
PROJECT 8510-05-60 TOTAL =		1425	

BASE AGGREGATE DENSE

PROJECT ID	STATION TO	STATION	3/4-INCH	1 1/4-INCH
			305.0110 TON	305.0120 TON
8510-05-60	537+75	- 540+50	80	860
PROJECT 8510-05-60 TOTALS =			80	860

ASPHALT QUANTITIES

PROJECT ID	STATION TO	STATION	TACK COAT	ASPHALTIC
			455.0605 GAL	465.0105 TON
8510-05-60	537+75	- 540+50	22	275
PROJECT 8510-05-60 TOTALS =			22	275

REMOVING OLD STRUCTURE (STATION) 03. STA. 539+08

PROJECT ID	STATION	203.0200.03
		LS
8510-05-60	539+08	1
PROJECT 8510-05-60 TOTAL =		1

EXCAVATION FOR STRUCTURES CULVERTS
(STRUCTURE) 02. C-04-0067

PROJECT ID	STATION	206.2000.02
		LS
8510-05-60	539+08	1
PROJECT 8510-05-60 TOTAL =		1

SPECIAL 03. CULVERT PIPE
CORRUGATED ALUMINUM 96-INCH

PROJECT ID	STATION	SPV.0090.03
		LF
8510-05-60	539+08	132
PROJECT 8510-05-60 TOTAL =		132

MINIMUM THICKNESS = 0.125"

TOPSOIL, EROSION MAT, FERTILIZER, AND SEED								
PROJECT ID	STATION	TO	STATION	TOPSOIL	EROSION MAT	FERTILIZER	SEEDING	SEEDING
				625.0100	URBAN CL I	TYPE B	MIX NO. 20	BORROW PIT
				SY	628.2008	629.0210	630.0120	630.0300
					SY	CWT	LB	LB
8510-05-60	537+75	-	540+50	1200	1500	1	42	15
			BORROW PIT					15
			WASTE AREA					
PROJECT 8510-05-60 TOTALS =				1200	1500	1	42	30

EROSION BALES AND GEOTEXTILE FABRIC TYPE DF			
PROJECT ID	LOCATION	EROSION	GEOTEXTILE FABRIC
		BALES	TYPE DF SCHEDULE A
		628.1104	645.0111
		EACH	SY
8510-05-60	TEMPORARY SETTLING BASIN	50	40
PROJECT 8510-05-60 TOTALS =		50	40

SILT FENCE			
PROJECT ID	LOCATION	SILT	SILT FENCE
		FENCE	MAINTENANCE
		628.1504	628.1520
		LF	LF
8510-05-60	UNDISTRIBUTED	600	600
PROJECT 8510-05-60 TOTALS =		600	600

POLYETHYLENE SHEETING		
PROJECT ID	LOCATION	628.5505
		SY
8510-05-60	ROCK BAG INSTALLATION IN EXISTING CHANNEL	250
PROJECT 8510-05-60 TOTAL =		250

ROCK BAGS		
PROJECT ID	LOCATION	628.7570
		EACH
8510-05-60	CULVERT ENDS IN EXISTING CHANNEL	200
PROJECT 8510-05-60 TOTAL =		200

CONSTRUCTION STAKING								
PROJECT ID	STATION	TO	STATION	COMMENT	SUBGRADE	BASE	SLOPE	
					650.4500	650.5000	STAKES	
					LF	LF	650.9920	
							LF	
8510-05-60	537+75	-	540+50		275	275	275	
	537+75	-	540+50	SELECT BORROW	275			
PROJECT 8510-05-60 TOTALS =					550	275	275	

CONSTRUCTION STAKING PIPE CULVERTS		
PROJECT ID	STATION	650.6000
		EACH
8510-05-60	539+08	1
PROJECT 8510-05-60 TOTAL =		1

MARKERS CULVERT END		
PROJECT ID	STATION	633.5200
		EACH
8510-05-60	539+08	2
PROJECT 8510-05-60 TOTAL =		2

MOBILIZATIONS EROSION CONTROL		
PROJECT ID	LOCATION	628.1905
		EACH
8510-05-60	ON PROJECT	2
PROJECT 8510-05-60 TOTAL =		2

MOBILIZATIONS EMERGENCY EROSION CONTROL		
PROJECT ID	LOCATION	628.1910
		EACH
8510-05-60	ON PROJECT	2
PROJECT 8510-05-60 TOTAL =		2

SAWING ASPHALT		
PROJECT ID	STATION	690.0150
		LF
8510-05-60	537+50	30
	540+50	30
PROJECT 8510-05-60 TOTAL =		60

TRAFFIC CONTROL DRUMS, BARRICADES WARNING LIGHTS AND PCMS

LOCATION	DRUMS	BARRICADES TYPE III	WARNING LIGHTS TYPE A	WARNING LIGHTS TYPE C	PCMS
	643.0300 DAYS	643.0420 DAYS	643.0705 DAYS	643.0715 DAYS	643.1050 DAYS
CTH C & STH 13 INTERSECTION CORNUCOPIA	100			100	25
CTH C & STH 13 INTERSECTION CORNUCOPIA		25	50		
STH 13 SOUTH OF CORNUCOPIA		25	50		
1000 FT FROM WORK ZONE		50	100		
500 FT FROM WORK ZONE		100	200		
500 FT FROM WORK ZONE		100	200		
1000 FT FROM WORK ZONE		50	100		
STH 13 NORTH OF RED CLIFF		25	50		
STH 13 NORTH OF BAYFIELD		25	50		
STH 13 NORTH OF WASHBURN		25	50		
CTH C & STH 13 INTERSECTION WASHBURN		25	50		
CTH C & STH 13 INTERSECTION WASHBURN	100			100	25
PROJECT 8510-05-60 TOTALS =	200	450	900	200	50

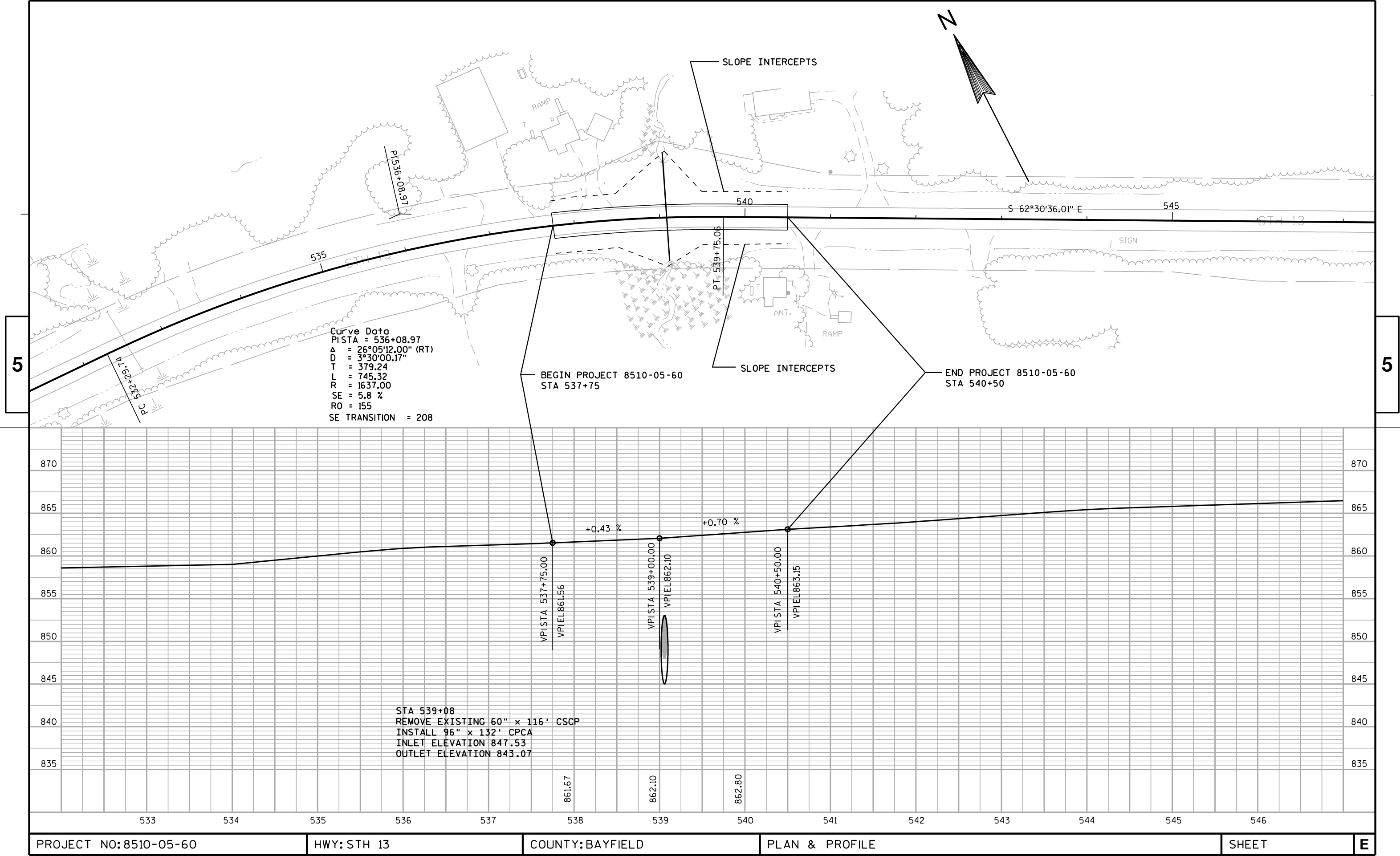
PAVEMENT MARKING EPOXY 4-INCH

TRAFFIC CONTROL SIGNS

					646.0106	
PROJECT ID	STATION TO	STATION	LOCATION	WHITE LF	YELLOW LF	
8510-05-60	537+75	-	540+50	LT	275	
	537+75	-	540+50	RT	275	
	537+75	-	540+50	CL	350	
	PROJECT 8510-04-60 SUBTOTALS =			550	350	
PROJECT 8510-05-60 TOTAL =					900	

SIGN CODE	SIGN MESSAGE	SIZE	LOCATION	643.0900 DAYS
R11-3C	BRIDGE OUT 11 MILES AHEAD	60X30	CTH C & STH 13 INTERSECTION CORNUCOPIA	25
R11-3C	BRIDGE OUT 10 MILES AHEAD	60X30	STH 13 SOUTH OF CORNUCOPIA	25
W20-3A	ROAD CLOSED AHEAD	48X48		25
W20-3C	ROAD CLOSED 1000 FT	48X48		25
W20-3D	ROAD CLOSED 500 FT	48X48		25
R11-2B	BRIDGE OUT	48X30		25
R11-2B	BRIDGE OUT	48X30		25
R11-2B	BRIDGE OUT	48X30		25
R11-2B	BRIDGE OUT	48X30		25
W20-3D	ROAD CLOSED 500 FT	48X48		25
W20-3C	ROAD CLOSED 1000 FT	48X48		25
W20-3A	ROAD CLOSED AHEAD	48X48		25
R11-3C	BRIDGE OUT 7 MILES AHEAD	60X30	STH 13 NORTH OF RED CLIFF	25
R11-3C	BRIDGE OUT 10 MILES AHEAD	60X30	STH 13 NORTH OF BAYFIELD	25
R11-3C	BRIDGE OUT 22 MILES AHEAD	60X30	STH 13 NORTH OF WASHBURN	25
R11-3C	BRIDGE OUT 23 MILES AHEAD	60X30	CTH C & STH 13 INTERSECTION WASHBURN	25
PROJECT 8510-05-60 TOTAL =				400

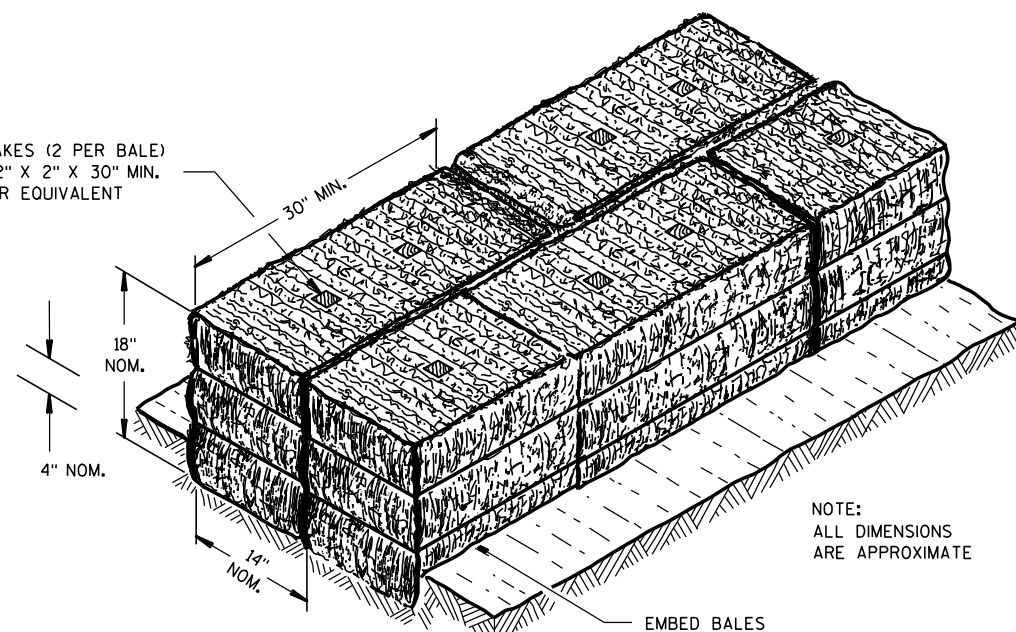
TRAFFIC CONTROL DETOUR SIGNS						643.3000
SIGN CODE	SIGN MESSAGE	SIZE	LOCATION	DAYS		
M4-8	DETOUR	24X12	DETOUR REASSURANCE SIGN ON CTH C	25		
M3-1	NORTH	24X12		25		
M1-6	13	24X24		25		
M4-8	DETOUR	24X12	DETOUR REASSURANCE SIGN ON CTH C	25		
M3-3	SOUTH	24X12		25		
M1-6	13	24X24		25		
W14-3	NO PASSING ZONE	48X36	SB CTH C NO PASSING ZONE	25		
W14-3	NO PASSING ZONE	48X36	NB CTH C NO PASSING ZONE	25		
W14-3	NO PASSING ZONE	48X36	SB CTH C NO PASSING ZONE	25		
W14-3	NO PASSING ZONE	48X36	NB CTH C NO PASSING ZONE	25		
W14-3	NO PASSING ZONE	48X36	SB CTH C NO PASSING ZONE	25		
W14-3	NO PASSING ZONE	48X36	NB CTH C NO PASSING ZONE	25		
W14-3	NO PASSING ZONE	48X36	SB CTH C NO PASSING ZONE	25		
W1-6	NIGHT ARROW SINGLE	48X24	4TH ST & CTH C INTERSECTION WASHBURN	25		
M3-1	NORTH	24X12	CTH C & STH 13 INTERSECTION WASHBURN	25		
M1-6	13	24X24		25		
W20-2A	DETOUR AHEAD	48X48		25		
M3-1	NORTH	24X12	CTH C & STH 13 INTERSECTION WASHBURN	25		
M1-6	13	24X24		25		
W20-2C	DETOUR 1000 FT	48X48		25		
M4-8	DETOUR	24X12	CTH C & STH 13 INTERSECTION WASHBURN	25		
M3-1	NORTH	24X12		25		
M1-6	13	24X24		25		
M06-1	ARROW	21X21		25		
M4-8A	END DETOUR	24X18	CTH C & STH 13 INTERSECTION WASHBURN	25		
M3-3	SOUTH	24X12		25		
M1-6	13	24X24		25		
M4-8	DETOUR	24X12	CTH C & STH 13 INTERSECTION WASHBURN	25		
M3-1	NORTH	24X12		25		
M1-6	13	24X24		25		
M06-1	ARROW	21X21		25		
M4-8	DETOUR	24X12	CTH C & STH 13 INTERSECTION WASHBURN	25		
M3-1	NORTH	24X12		25		
M1-6	13	24X24		25		
M05-1R	RIGHT ADVANCE ARROW	21X21		25		
M3-1	NORTH	24X12	CTH C & STH 13 INTERSECTION WASHBURN	25		
M1-6	13	24X24		25		
W20-2C	DETOUR 1000 FT	48X48		25		
M3-1	NORTH	24X12	CTH C & STH 13 INTERSECTION WASHBURN	25		
M1-6	13	24X24		25		
W20-2A	DETOUR AHEAD	48X48		25		
PROJECT 8510-05-60 PAGE TOTAL =				1125		
PROJECT 8510-05-60 TOTAL = 3350						



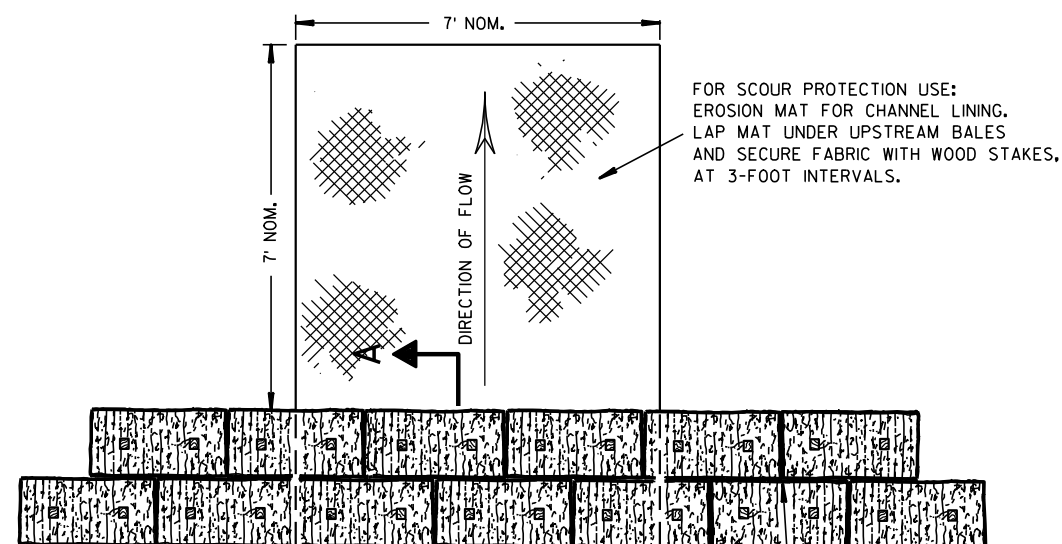
Standard Detail Drawing List

08E08-03	TYPICAL INSTALLATIONS OF EROSION BALES / TEMPORARY DITCH CHECKS
08E09-06	SILT FENCE
15A03-02A	FLEXIBLE MARKER POST FOR CULVERT END
15A03-02B	FLEXIBLE MARKER POST FOR CULVERT END
15C02-05A	BARRICADES AND SIGNS FOR MAINLINE CLOSURES
15C02-05B	BARRICADES AND SIGNS FOR MAINLINE CLOSURES
15C02-05C	DETOUR SIGNING FOR MAINLINE CLOSURES
15C08-16A	PAVEMENT MARKING (MAINLINE)
15C12-04	TRAFFIC CONTROL FOR LANE CLOSURE (SUITABLE FOR MOVING OPERATIONS)

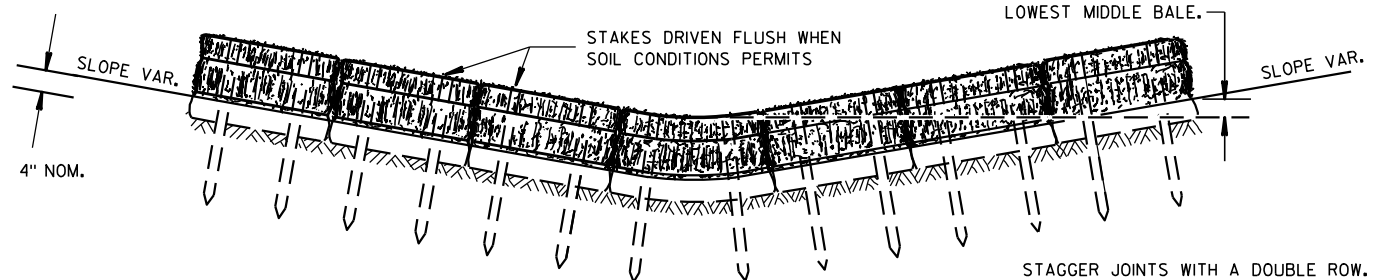
WOOD STAKES (2 PER BALE)
NOMINAL 2" X 2" X 30" MIN.
LENGTH OR EQUIVALENT



SECTION A-A



PLAN VIEW



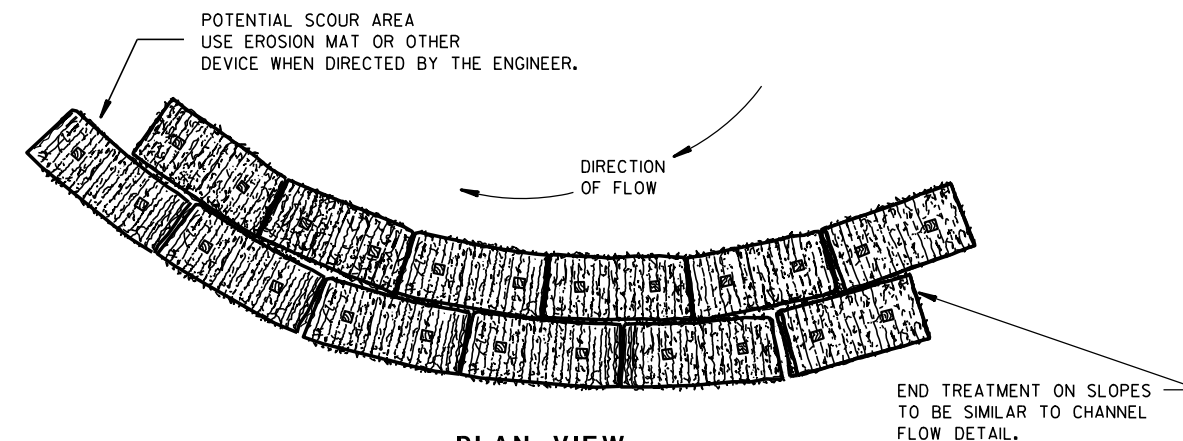
FRONT ELEVATION

TEMPORARY DITCH CHECK USING EROSION BALES ①

GENERAL NOTES

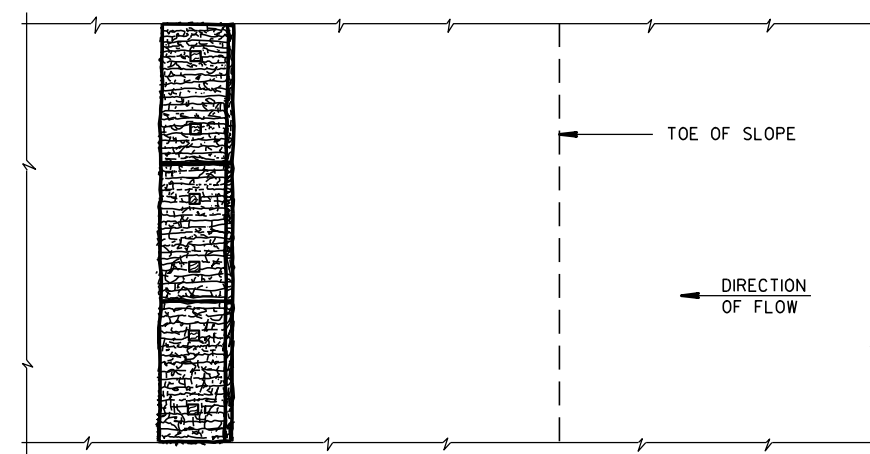
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

- 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.

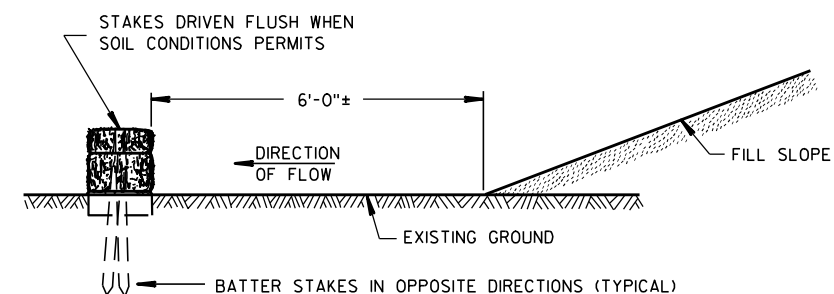


PLAN VIEW

WHEN ALTERING THE DIRECTION OF FLOW



PLAN VIEW



FRONT ELEVATION

WHEN EXISTING GROUND SLOPES AWAY FROM FILL SLOPE

EROSION BALES FOR SHEET FLOW

TYPICAL INSTALLATIONS OF
EROSION BALES / TEMPORARY
DITCH CHECKS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

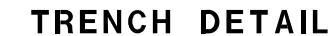
6/04/02
DATE

FHWA

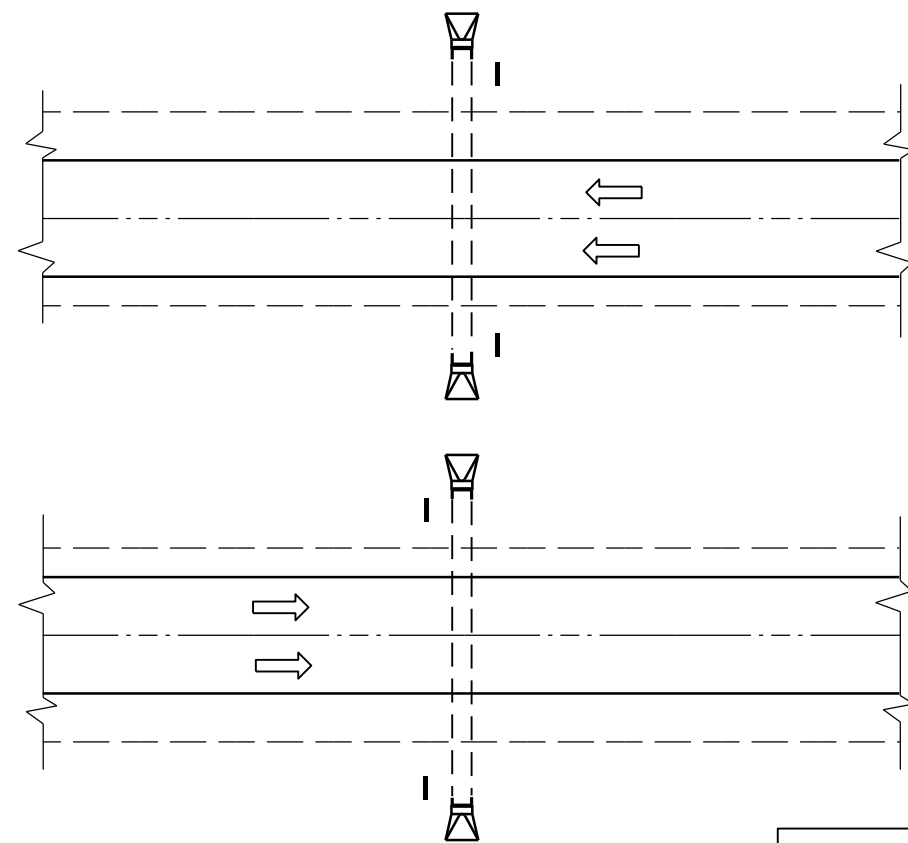
/S/ Beth Canestra
CHIEF ROADWAY DEVELOPMENT ENGINEER



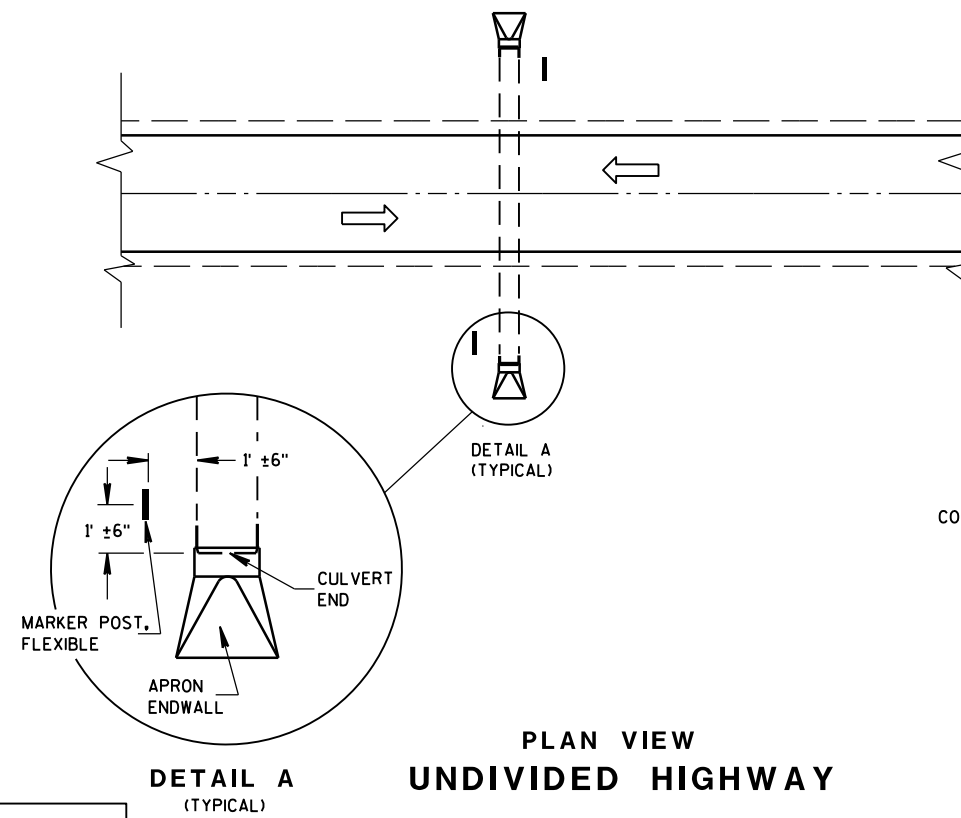
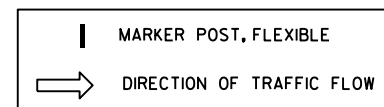
- ① HORIZONTAL BRACE REQUIRED WITH 2" X 4" WOODEN FRAME OR EQUIVALENT AT TOP OF POSTS.
- ② FOR MANUAL INSTALLATIONS THE TRENCH SHALL BE A MINIMUM OF 4" WIDE & 6" DEEP TO BURY AND ANCHOR THE GEOTEXTILE FABRIC. FOLD MATERIAL TO FIT TRENCH AND BACKFILL & COMPACT TRENCH WITH EXCAVATED SOIL.
- ③ WOOD POSTS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



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



PLAN VIEW
DIVIDED HIGHWAY

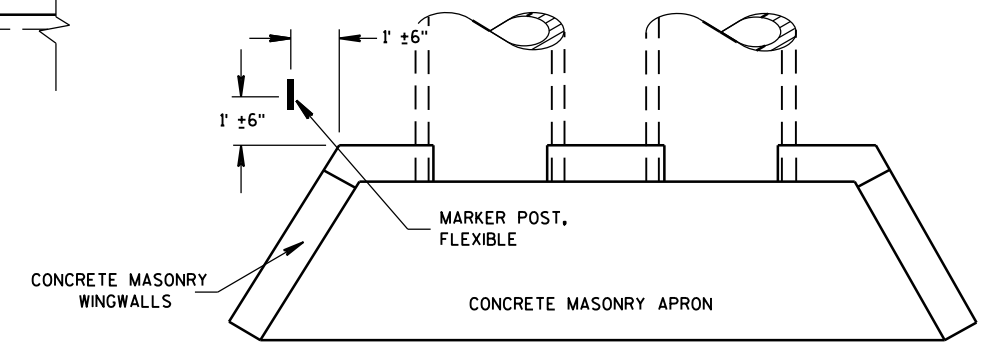


PLAN VIEW
UNDIVIDED HIGHWAY

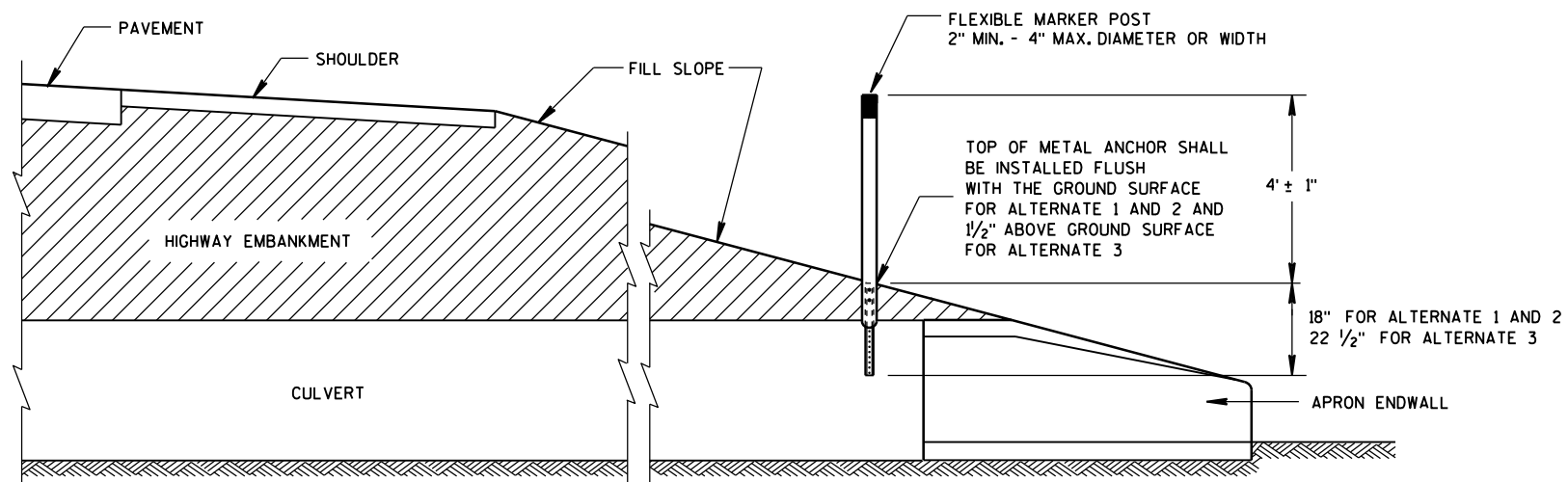
FLEXIBLE MARKER POST LOCATION

GENERAL NOTES

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



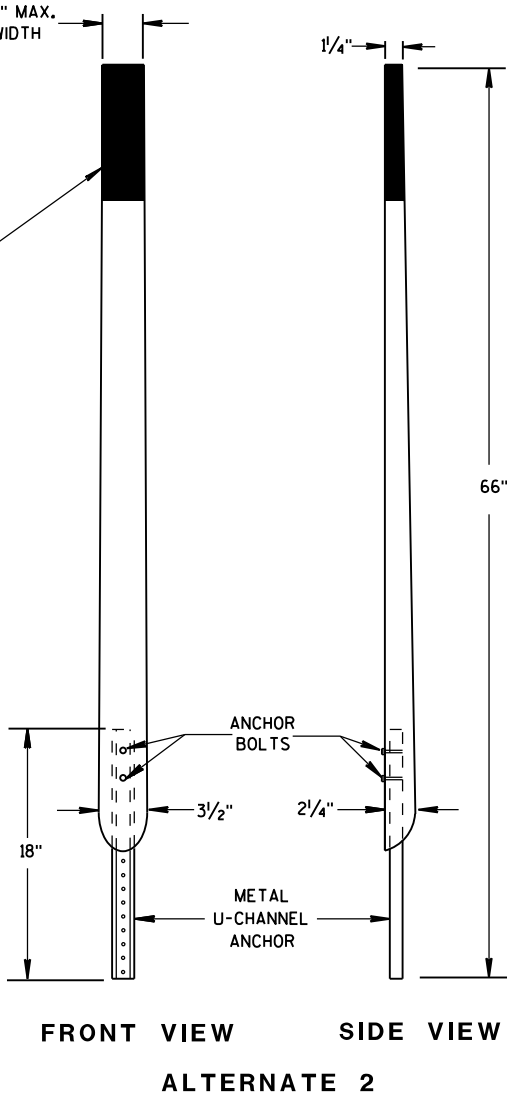
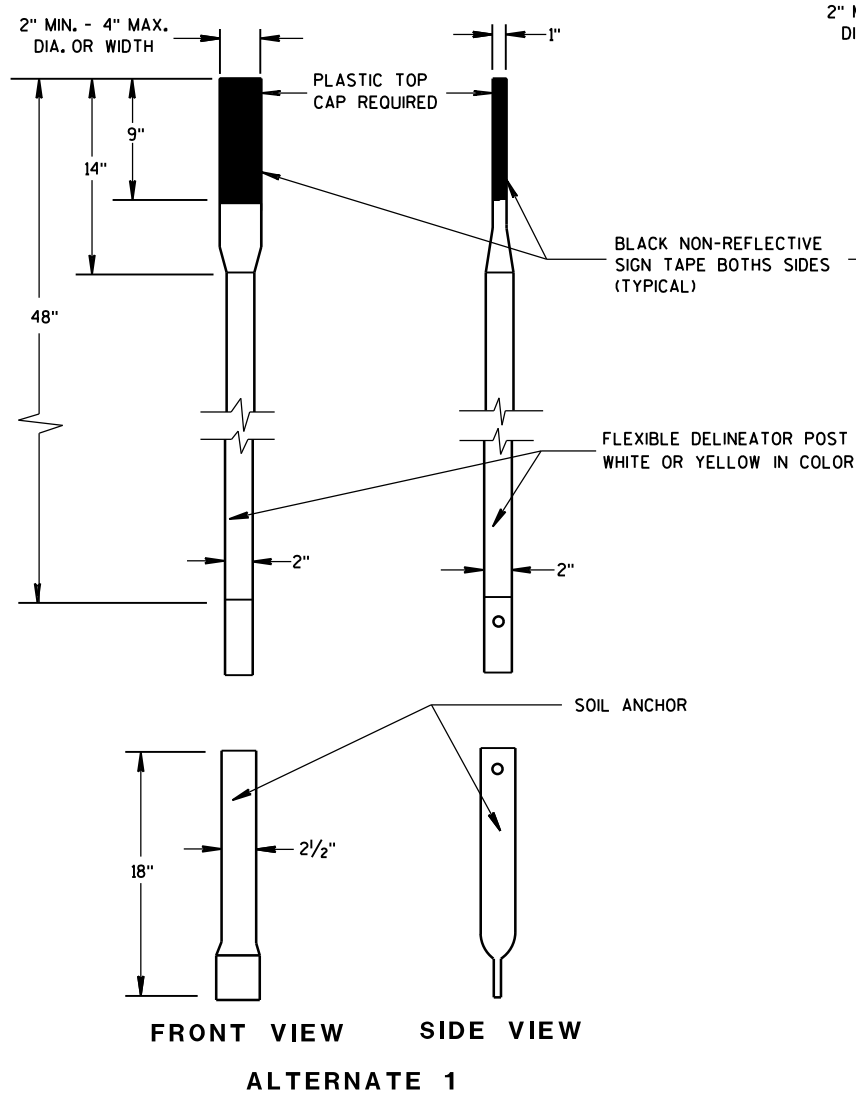
PLAN VIEW
CONCRETE MASONRY ENDWALLS FOR
CULVERT PIPE AND PIPE ARCH



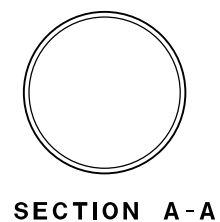
CROSS SECTION
FLEXIBLE MARKER POST

FLEXIBLE MARKER POST
FOR CULVERT END

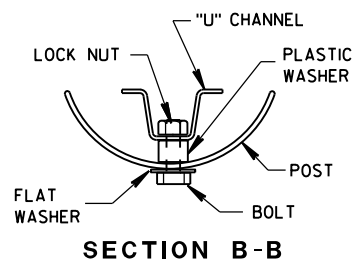
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



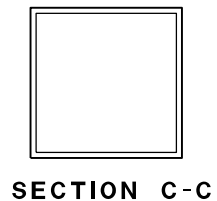
FLEXIBLE MARKER POSTS



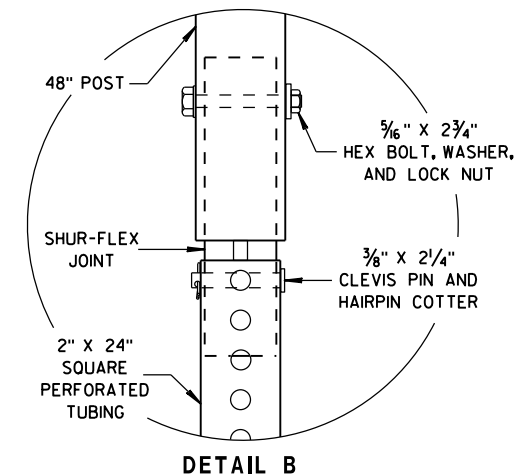
SECTION A-A



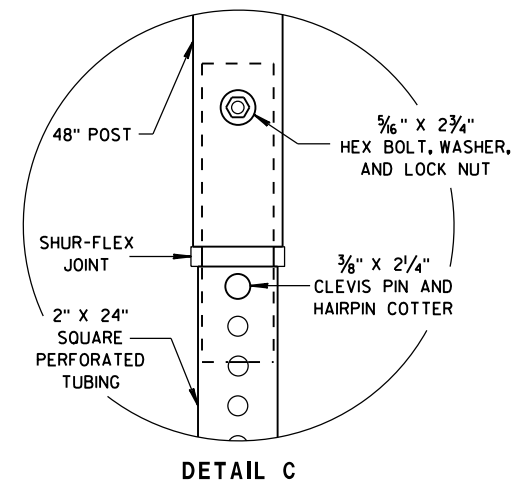
SECTION B-B



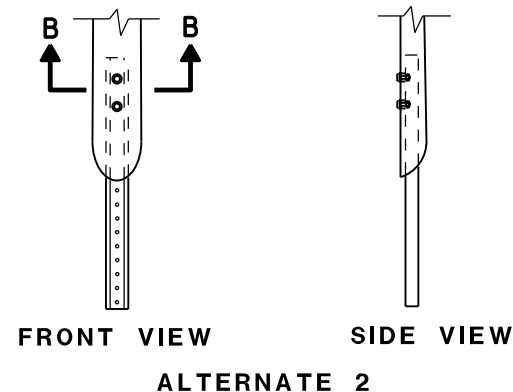
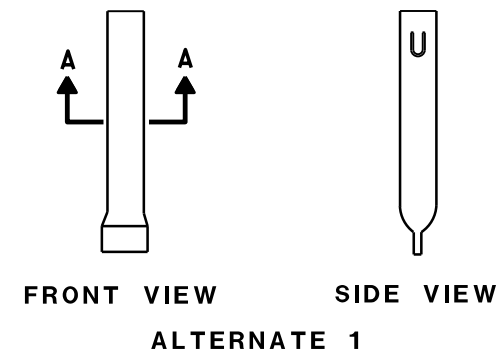
SECTION C-C



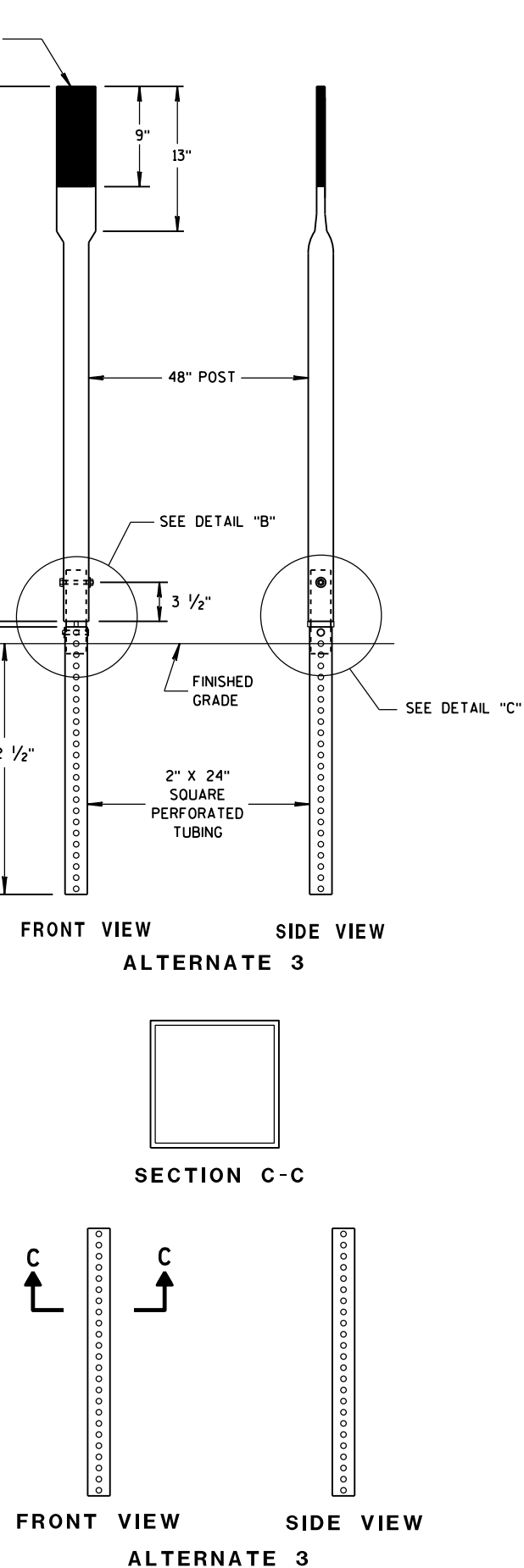
DETAIL B



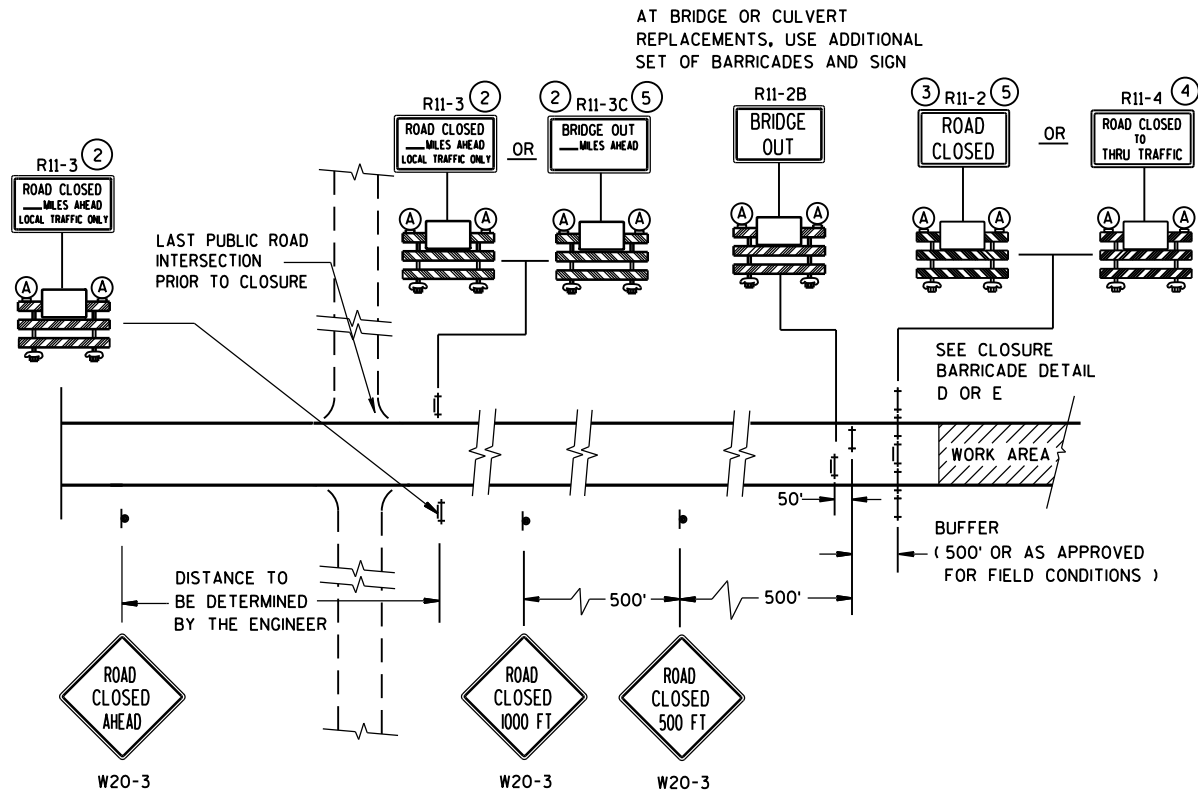
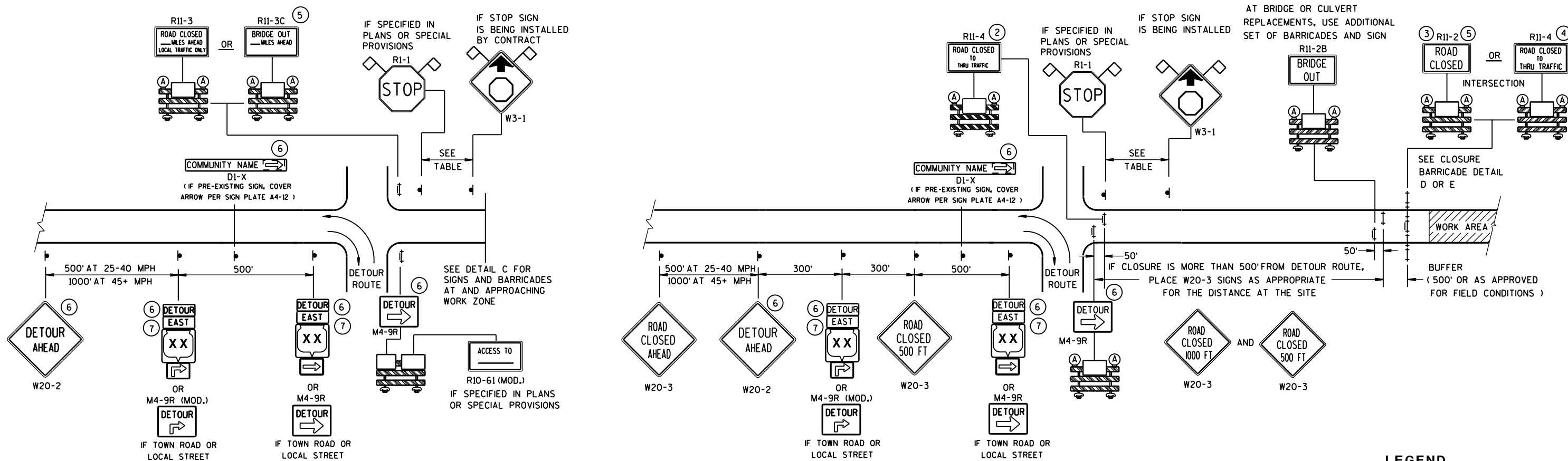
DETAIL C



FLEXIBLE MARKER POST ANCHORS

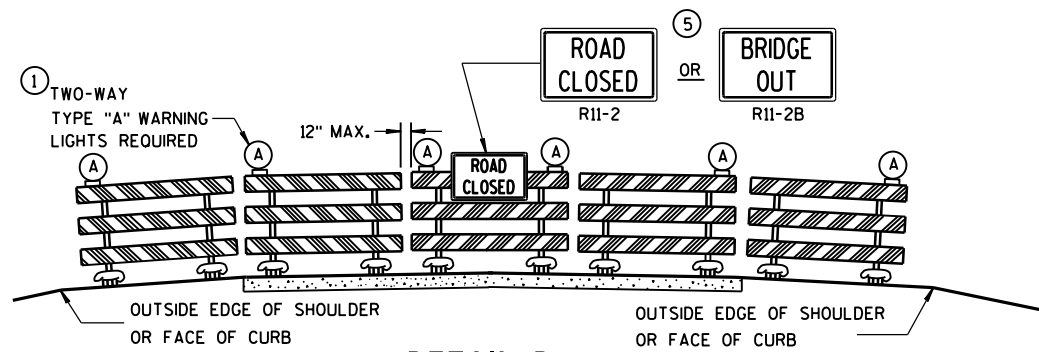


FLEXIBLE MARKER POST FOR CULVERT END	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED 10/1/2012 DATE	/S/ Travis Feltes STATE TRAFFIC ENGINEER OF DESIGN
FHWA	

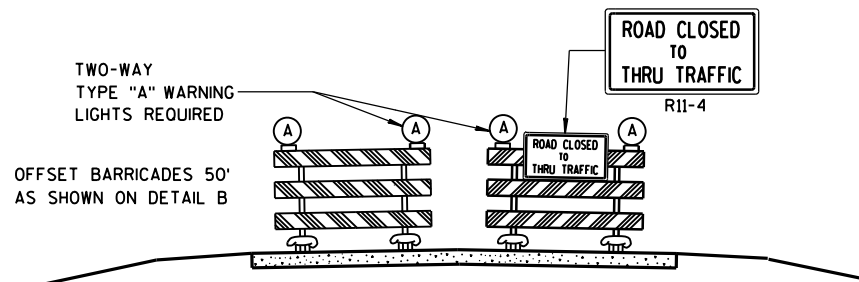


SEE SDD 15C2-SHEET "b"
FOR GENERAL NOTES
AND FOOTNOTES ① THROUGH ⑦

BARRICADES AND SIGNS FOR MAINLINE CLOSURES	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
8/2013 DATE	/S/ Travis Feltes STATE TRAFFIC ENGINEER OF DESIGN
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 BARRICADES SHALL COVER NO MORE THAN THE TOP RAIL. THE SIGNS SHALL NOT COVER ANY PORTION OF THE MIDDLE 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:

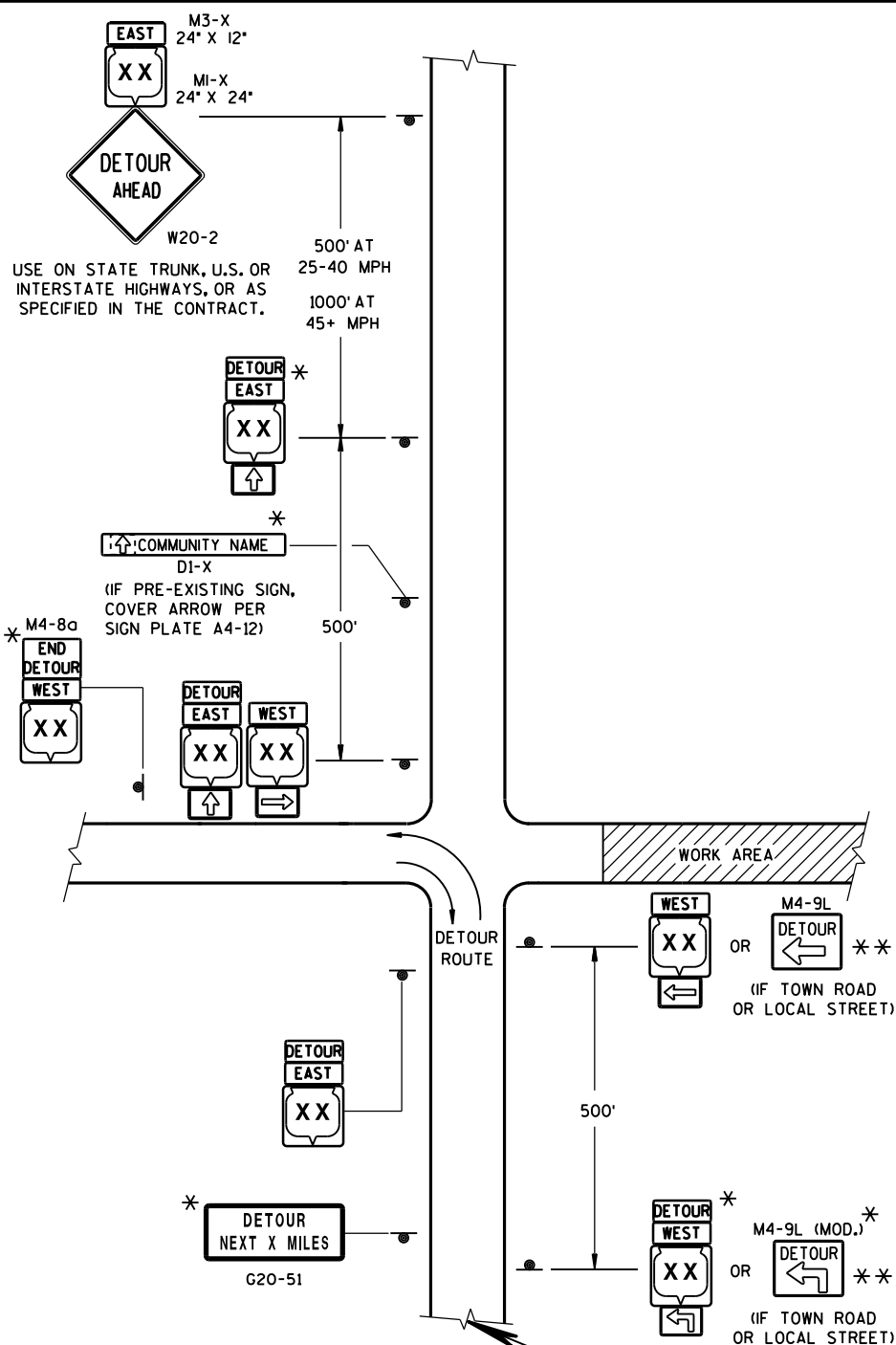
- R11-2 SHALL BE 48" X 30".
- R11-3, R11-4 AND R10-61 SHALL BE 60" X 30".
- M4-9 SHALL BE 30" X 24".
- M3-X SHALL BE 24" X 12". (36" X 18" IF NEEDED TO MATCH EXISTING SIGNS.)
- M4-8 SHALL BE 24" X 12". (30" X 15" IF NEEDED TO MATCH EXISTING SIGNS.)
- M1-4, M1-5A, AND M1-6 SHALL BE 24" X 24". (36" X 36" 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.)
- 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 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 LANE 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
MAINLINE CLOSURES**

**STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION**

8/2013 /S/ Travis Feltes
DATE STATE TRAFFIC ENGINEER OF DESIGN
FHWA



LEGEND

● SIGN ON PERMANENT SUPPORT

▨ WORK AREA

DETOUR EAST M4-8 M3-X

MI-4 OR COUNTY MI-5A OR MI-6

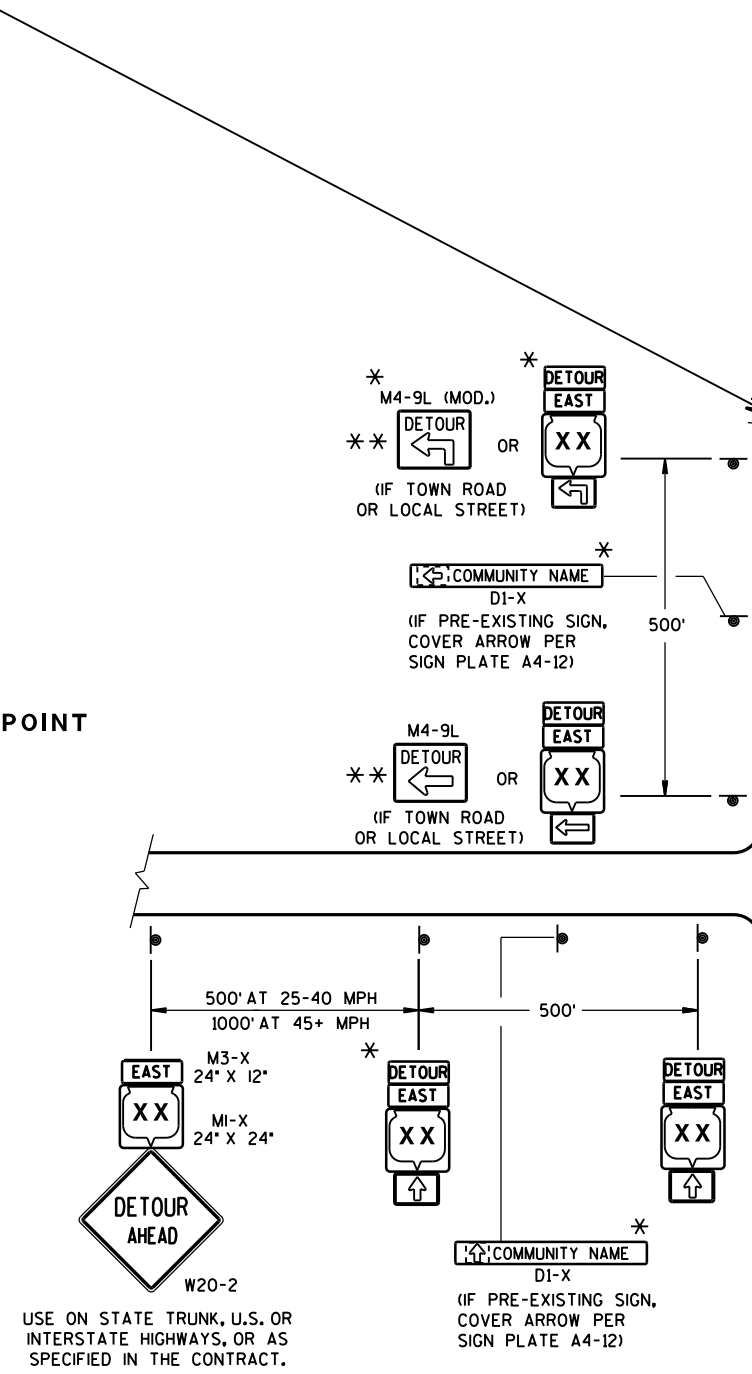
M05-1 OR M06-1 OR M06-1

SEE SPECIFIC PROJECT DETOUR SIGNING DETAIL SHEETS AND DETAIL A OR B ON SDD 15C2-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.

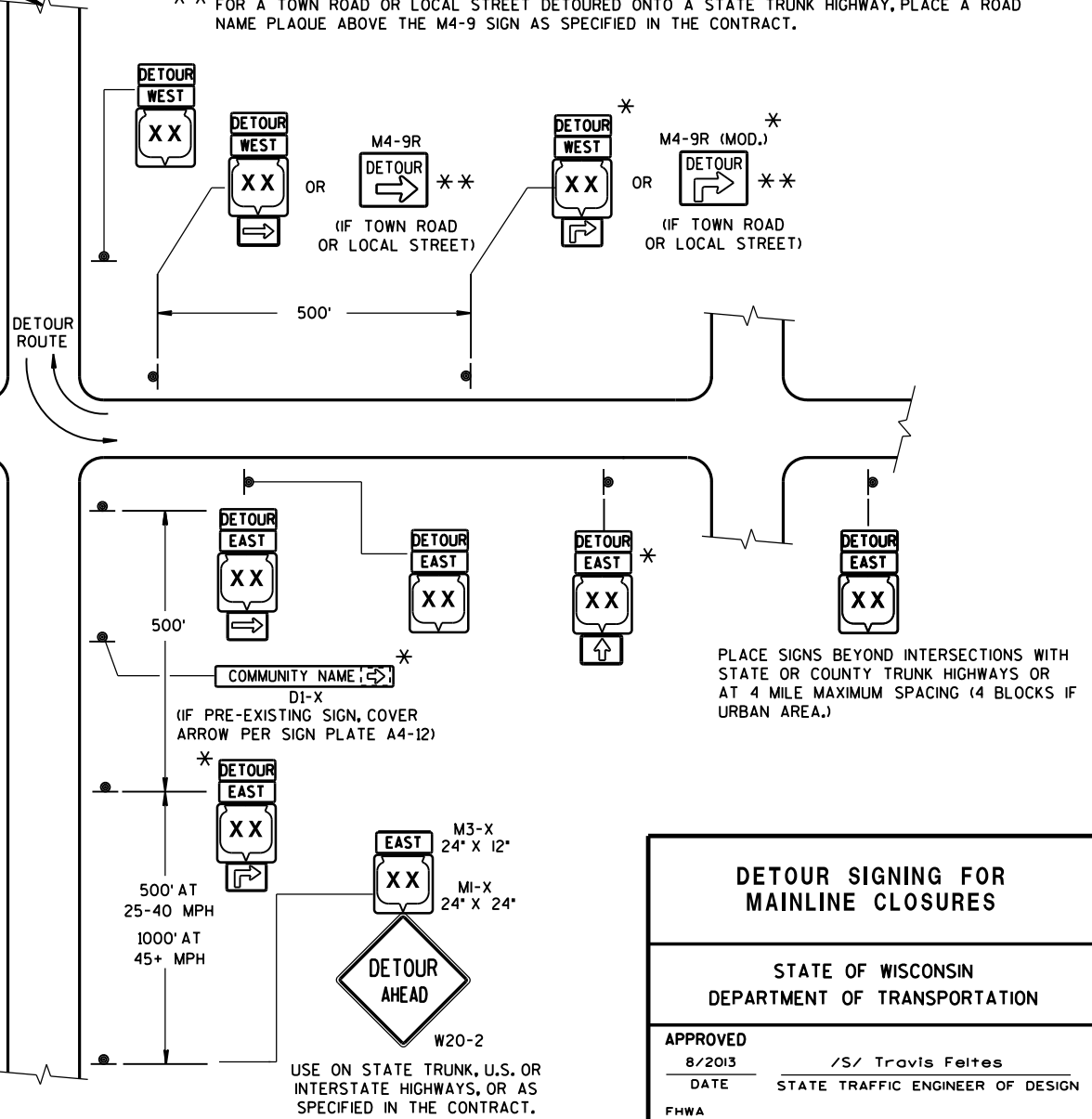
MATCH POINT

DETAIL F
DETOUR SIGNING

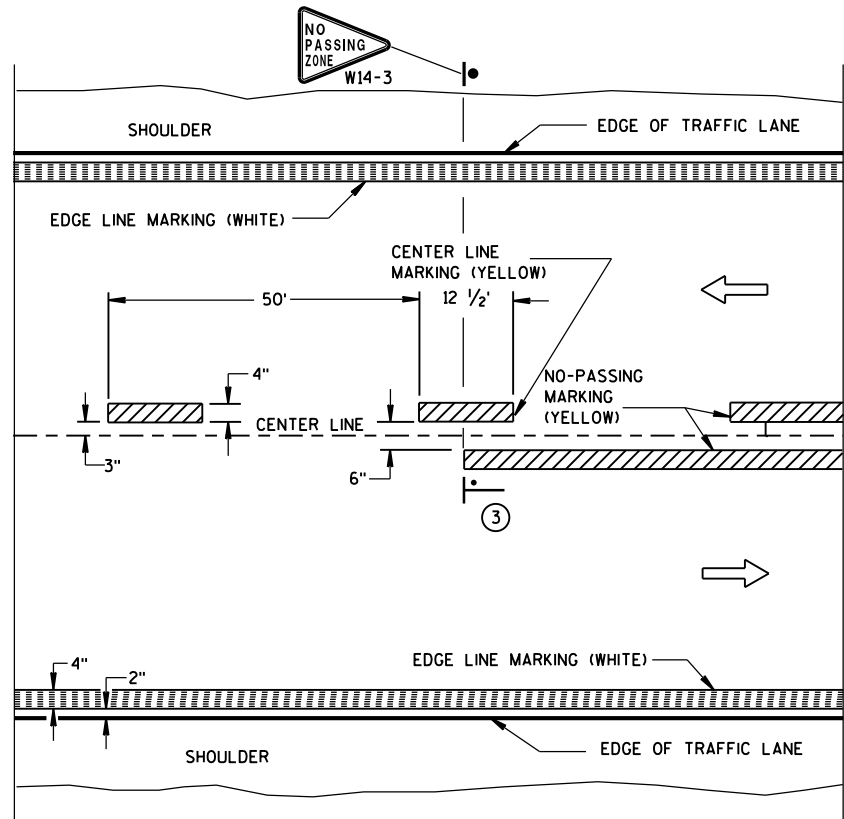


GENERAL NOTES

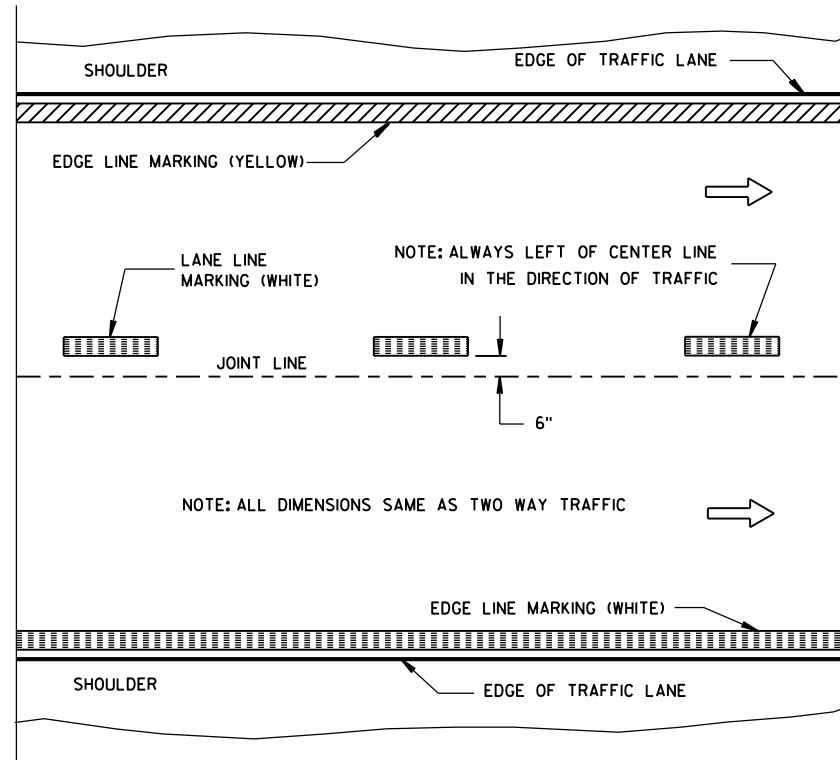
- THE EXACT NUMBER, LOCATION AND SPACING OF ALL SIGNS SHALL BE ADJUSTED TO FIT FIELD CONDITIONS AS APPROVED BY THE ENGINEER.
- IF THERE ARE EXISTING ROUTE MARKER ASSEMBLIES THAT WILL REMAIN IN PLACE, ADJUST THE LOCATION OF THE DETOUR ROUTE SIGNS TO CORRESPOND WITH THE EXISTING ASSEMBLIES. SEE SPECIFIC 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". (30" X 15" IF NEEDED TO MATCH EXISTING SIGNS.)
 - MI-4, MI-5A, AND MI-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 SHALL BE 30" X 24".
 - M4-8a SHALL BE 24" X 18".
 - G20-51 SHALL BE 60" X 24".
 - W20-2 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.



DETOUR SIGNING FOR MAINLINE CLOSURES	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED 8/2013 DATE	/S/ Travis Feltes STATE TRAFFIC ENGINEER OF DESIGN
FHWA	

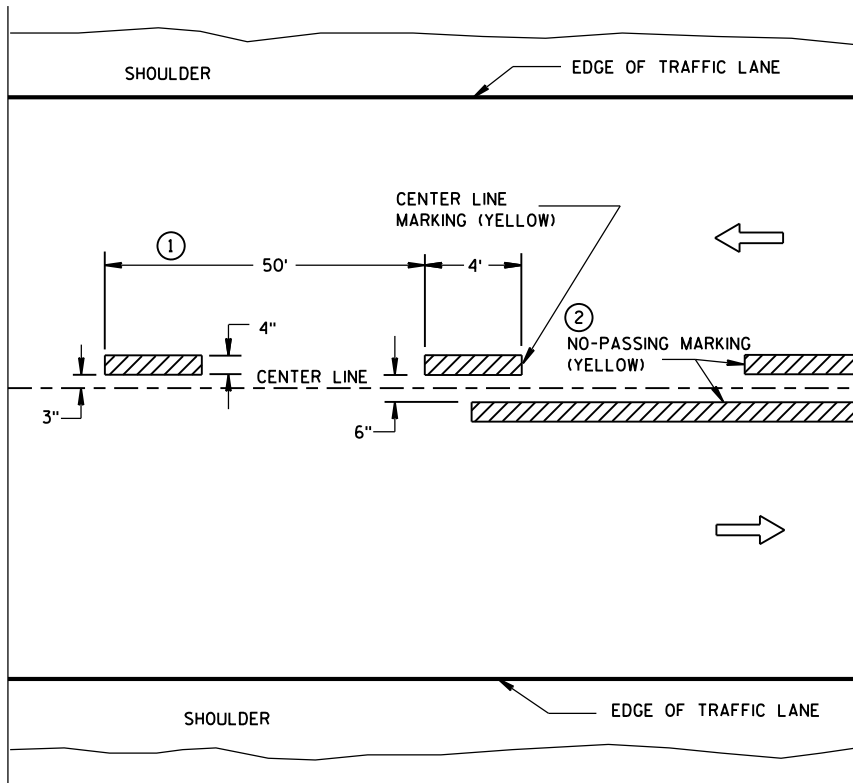


TWO WAY TRAFFIC

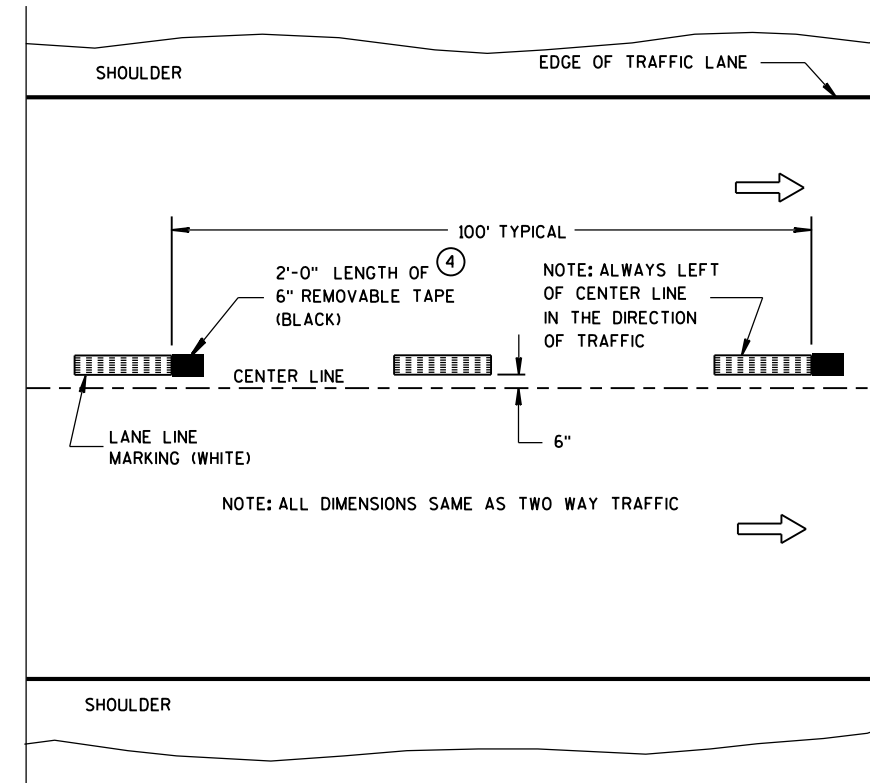


ONE WAY TRAFFIC

PERMANENT PAVEMENT MARKING



TWO WAY TRAFFIC



ONE WAY TRAFFIC

TEMPORARY (INTERMEDIATE) PAVEMENT MARKING
(SHOWS CYCLE FOR TEMPORARY CENTER LINE OR TEMPORARY LANE LINE MARKING)

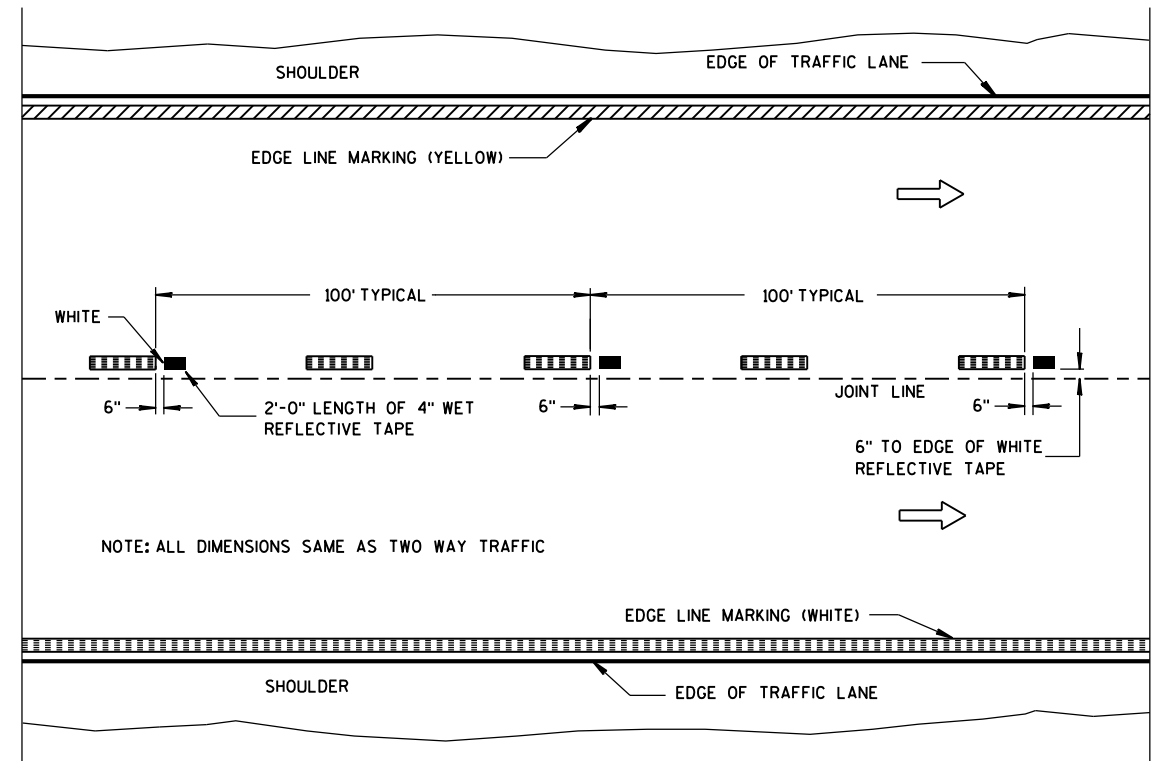
GENERAL NOTES

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

- 1 HALF CYCLE LENGTHS (25'±) WITH 2' MINIMUM STRIPE LENGTHS SHALL BE PROVIDED ON ROADWAYS (INCLUDING TEMPORARY TRAVELED WAYS) WITH REVERSE CURVATURE, CURVATURE OF OVER 5 DEGREES OR WHEN DIRECTED BY THE ENGINEER TO MARK UNUSUAL ALIGNMENT OF THE TRAVELED WAY.
- 2 NO PASSING ZONE TEMPORARY PAVEMENT MARKING IS REQUIRED TO BE PLACED, WHERE APPROPRIATE, ALONG WITH CENTERLINE TEMPORARY PAVEMENT MARKING WHEN A SAME DAY PERMANENT PAVEMENT MARKING ITEM IS INCLUDED IN THE CONTRACT.
- 3 NO PASSING ZONE MARKINGS ARE PLACED ACCORDING TO "T" MARKINGS. IF EXISTING NO PASSING ZONE W14-3 SIGNS ARE BEYOND 50 FEET IN EITHER DIRECTION, THE SIGNS SHALL BE MOVED TO THE "T" MARKINGS.
- 4 CONCRETE ONLY.

NOTE

ARROW SYMBOL (→) SHOWS DIRECTION OF TRAVEL



WET REFLECTIVE TAPE SUPPLEMENT TO
SPRAYED OR NON WET REFLECTIVE TAPE LANE LINE

LEGEND

- "T" MARKING
- POST MOUNTED SIGN

PAVEMENT MARKING
(MAINLINE)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

5-13-2013
DATE

FHWA

/S/ Travis Feltes
STATE TRAFFIC ENGINEER

LEGEND

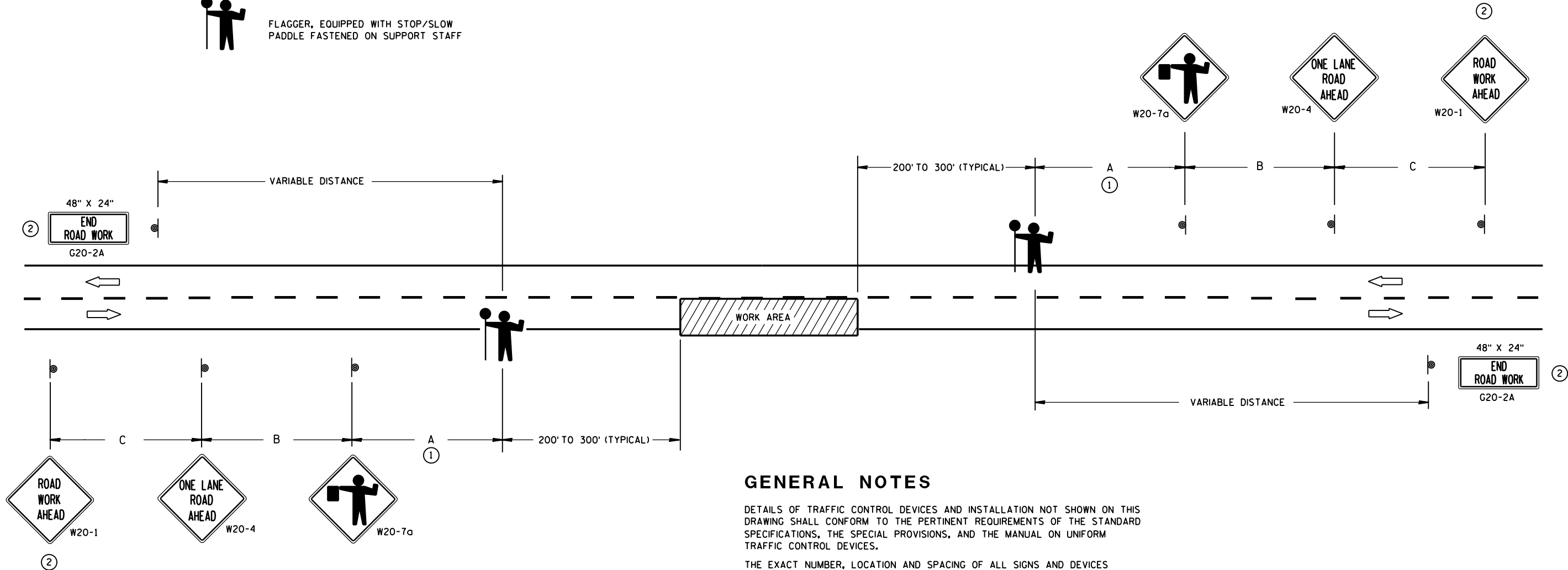
-  SIGN ON PORTABLE OR PERMANENT SUPPORT
-  DIRECTION OF TRAFFIC
-  WORK AREA
-  FLAGGER, EQUIPPED WITH STOP/SLOW PADDLE FASTENED ON SUPPORT STAFF

SIGN SPACING TABLE

SPEED LIMIT	SIGN SPACING A,B,C
25-35 MPH	200'
35-40 MPH	350'
45-55 MPH	500'



USE OF THE "BE PREPARED TO STOP" SIGN IS OPTIONAL. WHEN USED, THIS SIGN SHALL BE LOCATED BETWEEN THE W20-7a AND W20-4 SIGNS. A 500' TYPICAL SPACING SHALL BE PROVIDED BETWEEN THE SIGNS.



- ① FOR A MOVING WORK OPERATION, SIGNING FOR BOTH DIRECTIONS SHALL BE REESTABLISHED (AS SIMULTANEOUSLY AS PRACTICAL) AT APPROXIMATELY 3500 FOOT INTERVALS IN THE MOVING WORK OPERATION OR AS APPROVED BY THE ENGINEER.
- ② SIGN NOT REQUIRED IF FLAGGING OPERATION OCCURS WITHIN A SIGNED ROAD WORK ZONE AREA.

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.

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

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

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

FLAGGERS SHALL BE IN SIGHT OF EACH OTHER OR IN DIRECT COMMUNICATION AT ALL TIMES. THEY SHALL BE EQUIPPED WITH STOP/SLOW PADDLES FASTENED ON SUPPORT STAFFS. WHEN THE FLAGGING OPERATION IS NOT IN EFFECT, COVER OR REMOVE ALL TEMPORARY TRAFFIC CONTROL SIGNS.

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

TRAFFIC CONTROL FOR LANE CLOSURE (SUITABLE FOR MOVING OPERATIONS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
8/2013 /S/ Travis Feltes
DATE STATE TRAFFIC ENGINEER OF DESIGN
FHWA

PROJECT 8510-05-60

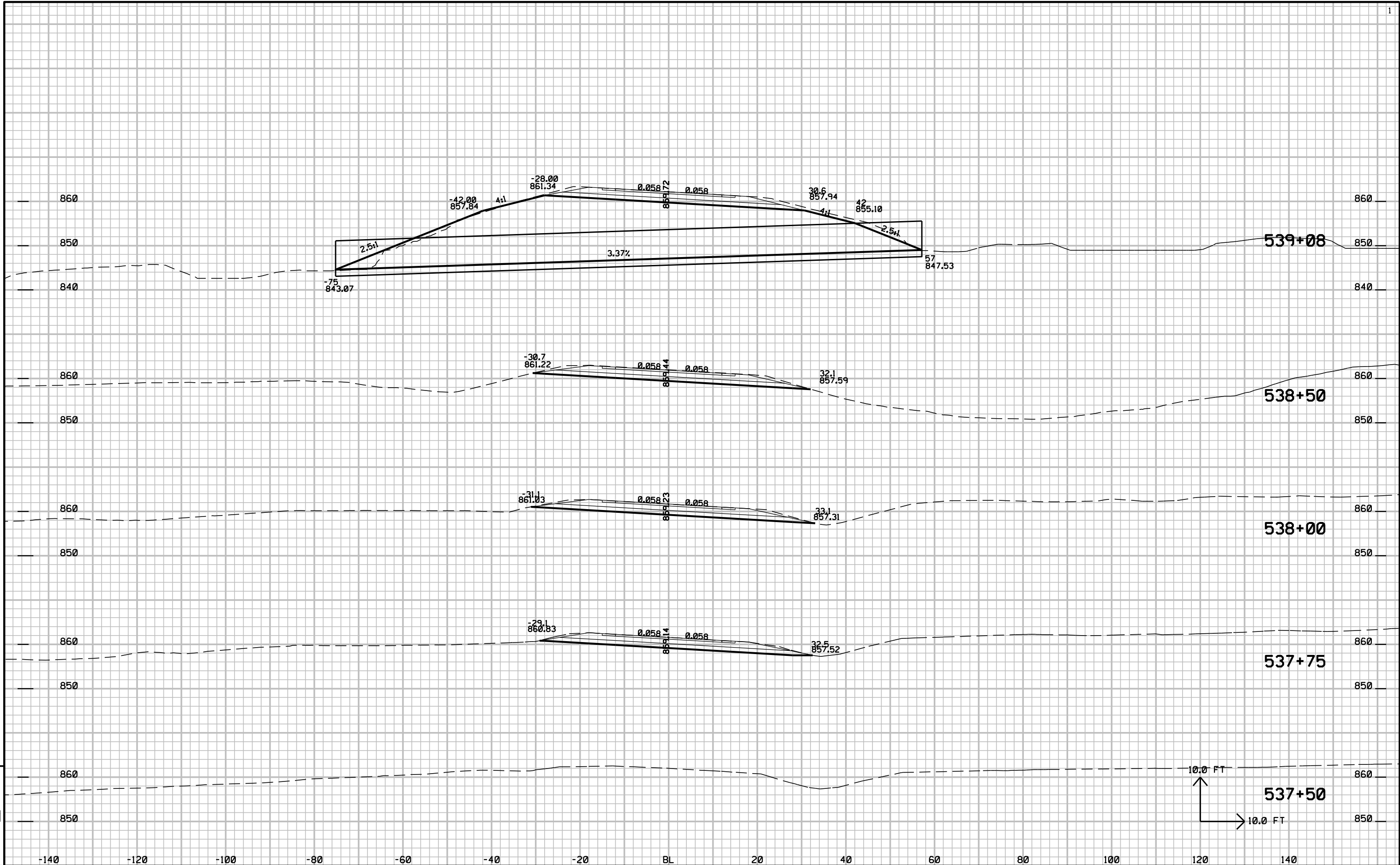
EARTHWORK SUMMARY

From Station	To Station	Common Excavation (1)	Salvaged/Unusable Pavement Material (2)	Available Material (3)	Marsh Excavation	Rock Excavation	Unexpanded Fill	Expanded Fill (4) Factor 1.25	Waste (5)	Borrow
537+75	539+08	667	123	544	0	0	34	43	502	0
539+08	540+50	684	131	553	0	0	24	30	523	0
TOTALS		1351	254	1097	0	0	58	73	1025	0

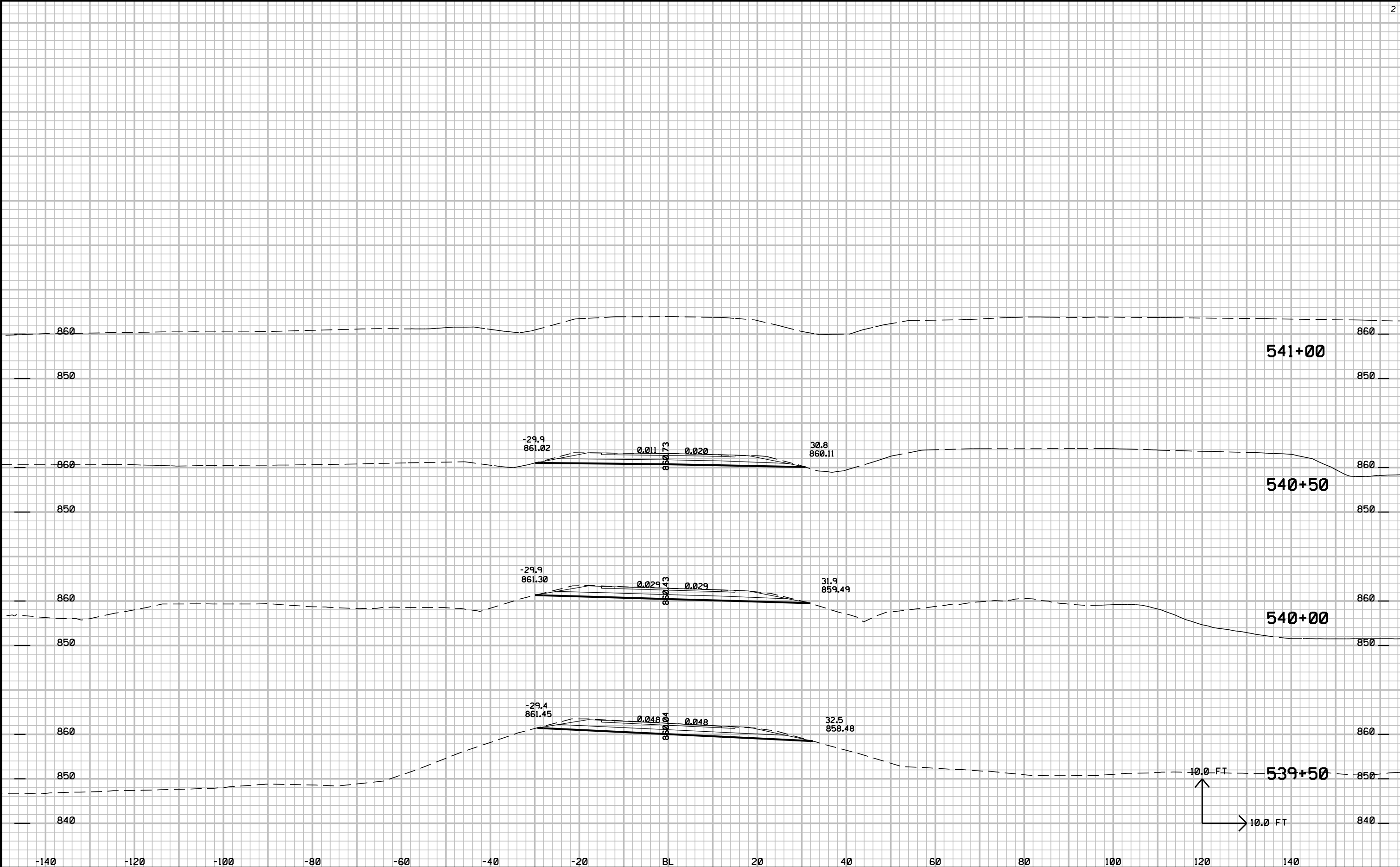
- 1) Common Excavation between selected station range(Does not include excavation for placement of riprap)
- 2) Salvaged Asphalt
- 3) Usable = Common - Salvaged Asphalt
- 4) Marsh Excavation
- 5) Rock Excavation
- 6) Unexpanded Embank (Fill) value
- 7) Adjusted Total Fill = Embank - (Rock * Rock Factor)) * Embank Factor

PROJECT 8510-05-60

STATION	AREA (SF)		Incremental Vol (CY)		Cumulative Vol (CY)		Mass Haul
	Common	Fill	Common	Fill	Common	Fill	
537+75	124.9	0.0					
538+00	130.0	0.0	118.00	0.00	118.00	0.00	118.00
538+50	132.7	0.0	243.20	0.00	361.20	0.00	361.20
539+08	151.7	31.3	305.50	33.60	666.70	42.00	624.70
539+50	127.8	0.0	217.50	24.36	884.20	72.45	811.75
540+00	126.4	0.0	235.40	0.00	1119.60	72.45	1047.15
540+50	123.7	0.0	231.60	0.00	1351.20	72.45	1278.75

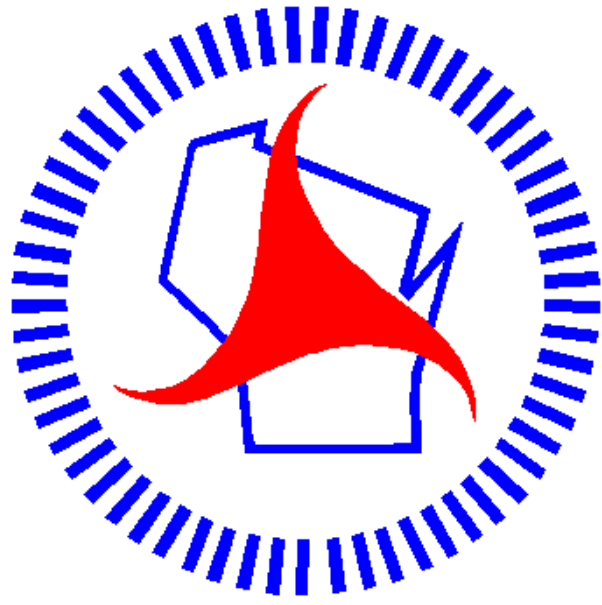


9



9

Notes



Wisconsin Department of Transportation

Dedicated people creating transportation solutions
through innovation and exceptional service.

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