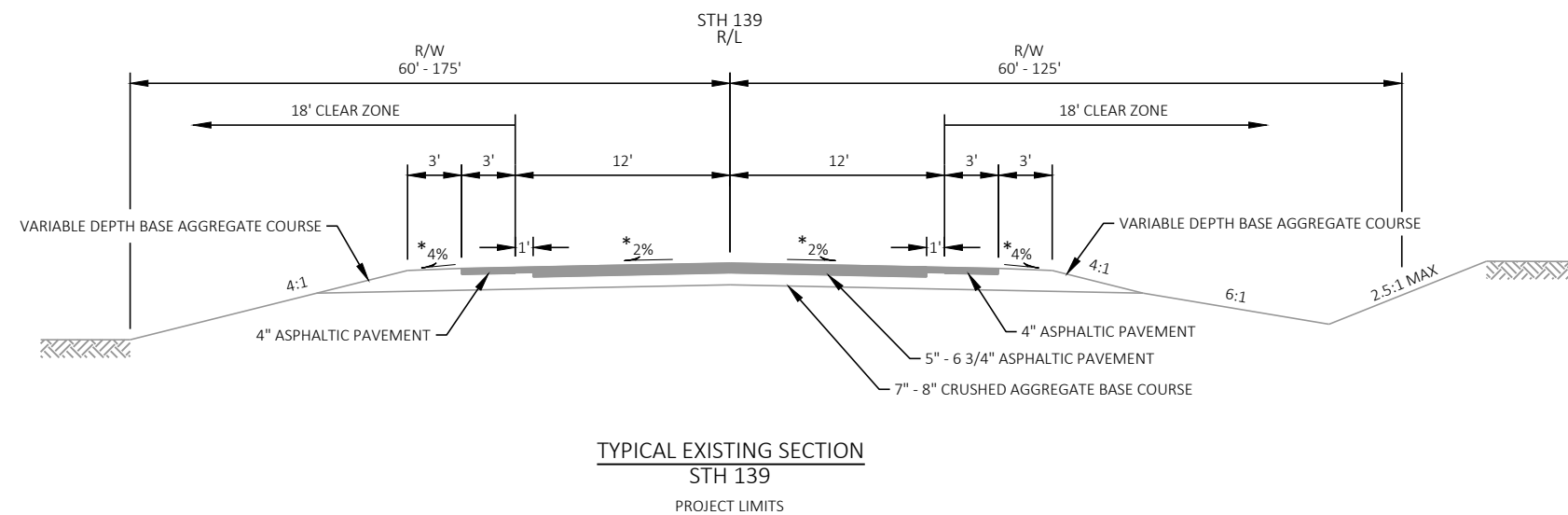
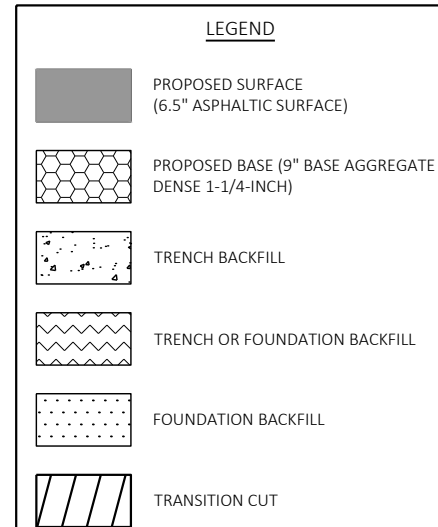
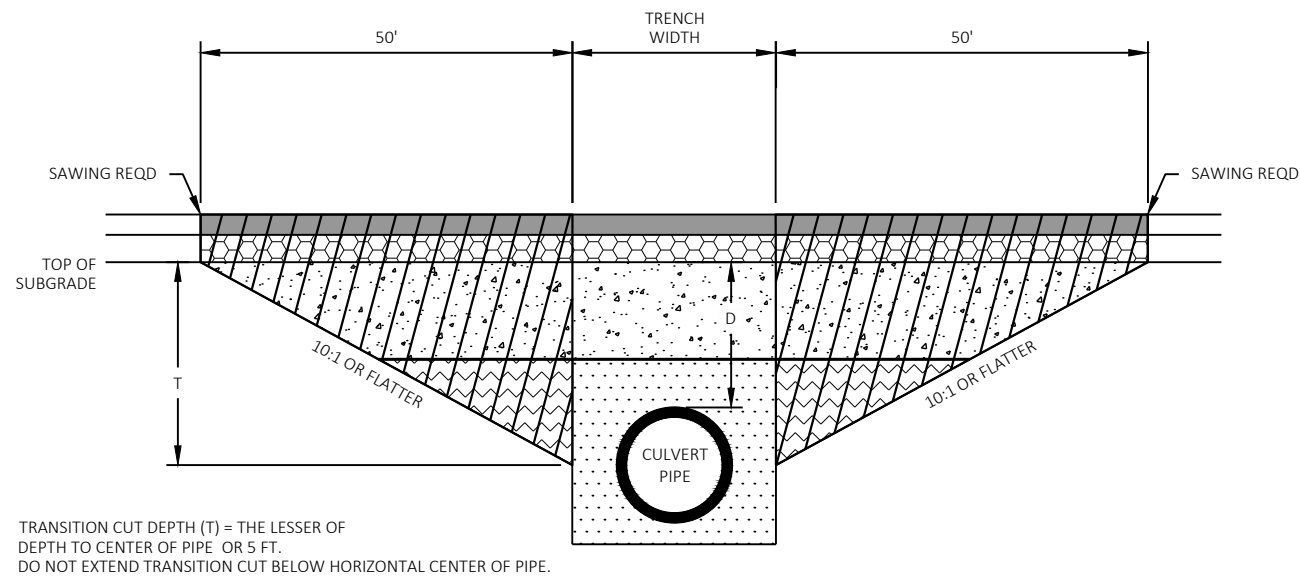


PROJECT NO: 9110-10-60	HWY: STH 139	COUNTY: FLORENCE	PROJECT OVERVIEW	SHEET	E
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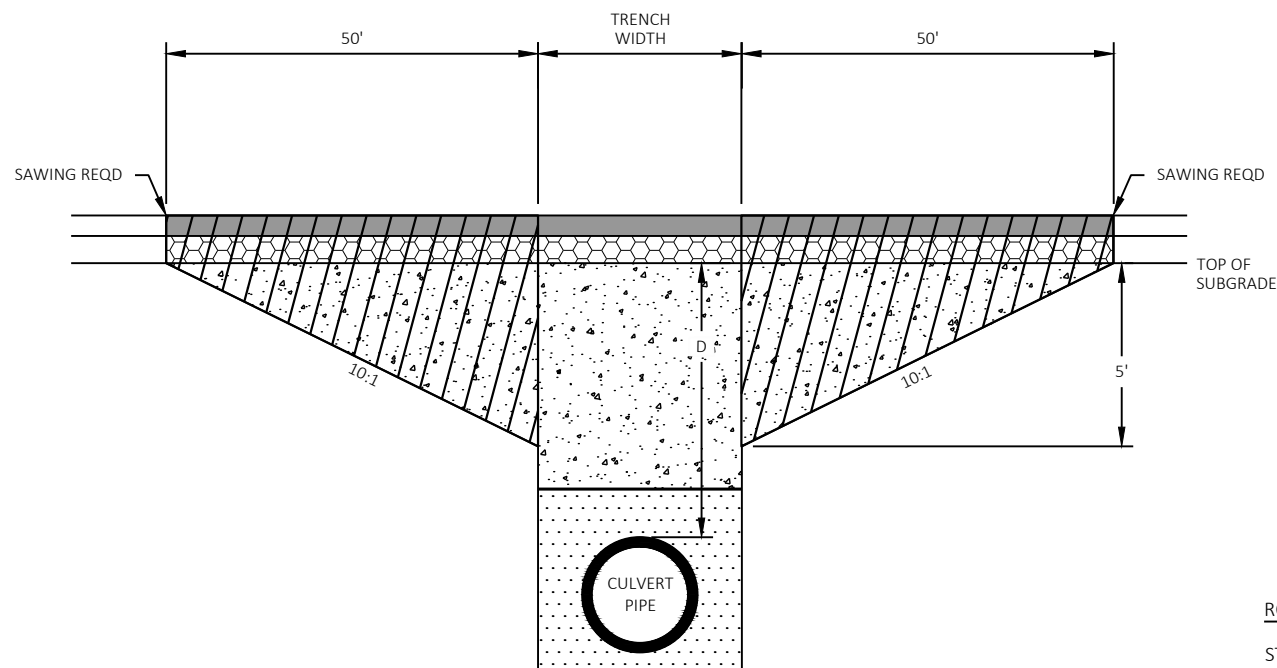


NOTE

- * CROSS SLOPE VARIES DUE TO SUPERELEVATION. SEE SECTION 5
PLAN SHEETS FOR SUPERELEVATION INFORMATION.



DEPTH D < 6 FT



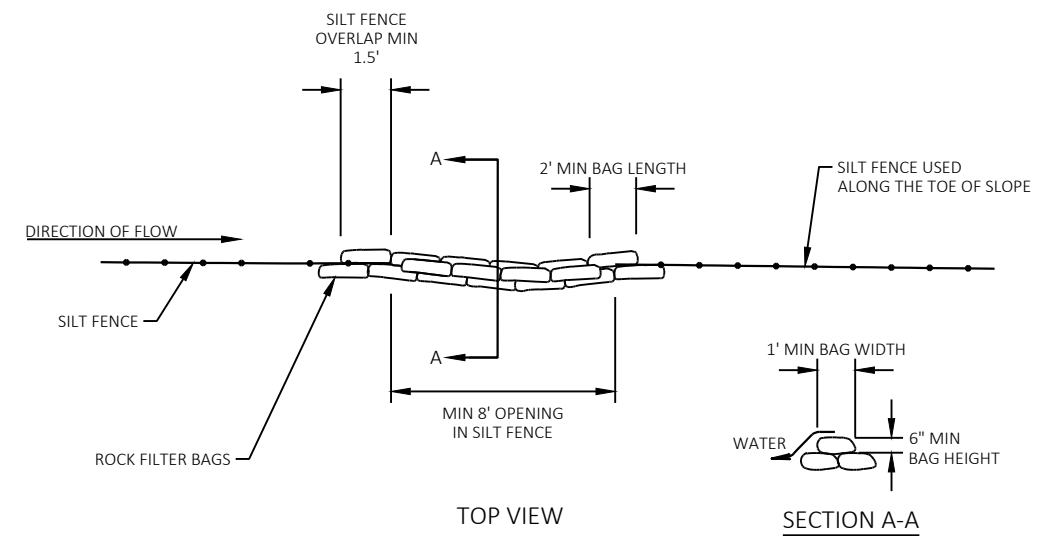
DEPTH D ≥ 6 FT

NOTES

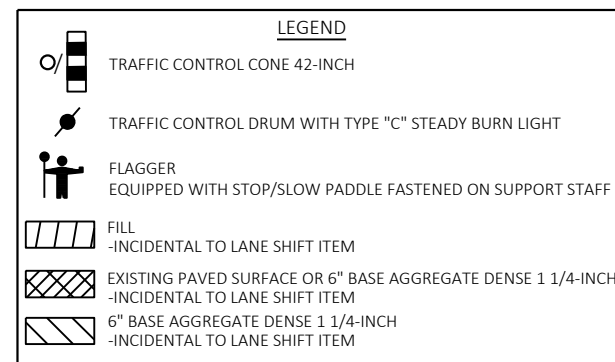
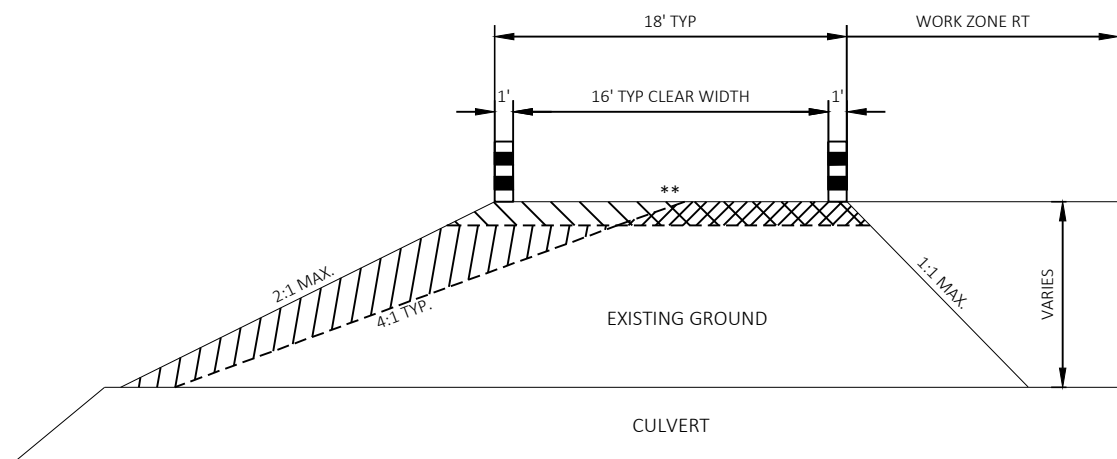
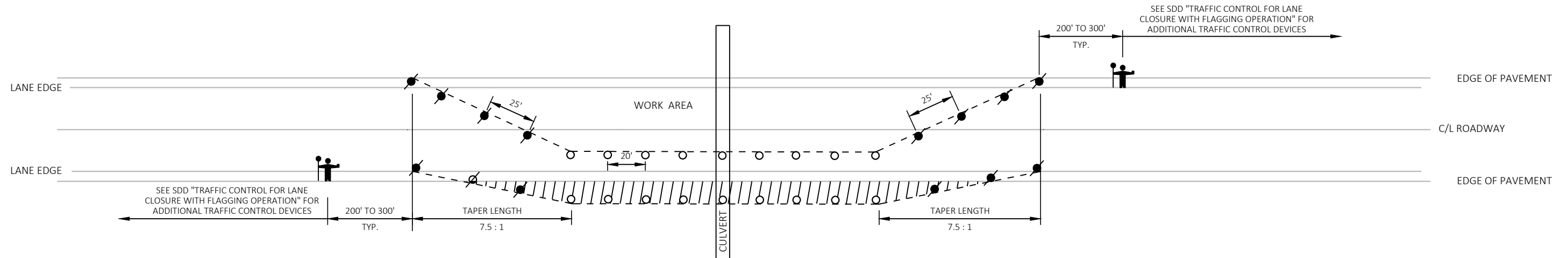
TRANSITION CUT IS PAID AS EXCAVATION COMMON.
TRANSITION CUT WIDTH IS FROM SUBGRADE SHOULDER POINT TO SUBGRADE SHOULDER POINT.
BACKFILL THE TRANSITION CUT AREAS WITH FOUNDATION AND TRENCH BACKFILL AS SPECIFIED IN STANDARD SPEC 520.
PERFORM CULVERT PIPE INSTALLATION BEFORE THE MILLING AND OVERLAY OPERATIONS IN PROJECT 9110-10-70.
PLACE ASPHALTIC SURFACE AFTER CULVERT PIPE INSTALLATION AND BEFORE THE MILLING AND OVERLAY OPERATIONS IN PROJECT 9110-10-70.

CULVERT PIPE TRANSITION DETAIL

ROUTE	STA (CL)	DEPTH D (FT)	PIPE DIA (IN)
STH 139	917+22	4.2'	24"
STH 139	941+31	6.3'	30"
STH 139	973+59	2.8'	36"
STH 139	984+41	3.1'	30"
STH 139	1063+33	6.5'	36"
STH 139	1090+65	9.1'	36"
STH 139	1140+41	7.0'	36"
STH 139	1151+91	5.4'	30"
STH 70/139	1169+34	12.8'	36"
STH 70/139	1233+22	8.0'	30"
STH 70/139	1249+27	4.5'	30"
STH 70/139	1259+69	9.3'	30"
STH 70/139	1291+35	14.2'	36"

**ROCK BAGS USED FOR SILT FENCE RELIEF****NOTE**

PLACE AT LOW POINT OF SILT FENCE AS DIRECTED BY THE ENGINEER.



SPECIAL APPLICATION NOTES

1. THE TAPER SHOULD EXTEND ACROSS THE SHOULDER UNLESS DOING SO WOULD GREATLY CONFLICT WITH THE WORK OPERATION.
2. ALL LANE CLOSURE SIGNS SHALL BE REMOVED OR COVERED AND ALL DEVICES REMOVED BEYOND THE SHOULDER WHEN WORK IS NOT IN PROGRESS AND THE LANE IS RESTORED TO A SAFE OPERATING CONDITION. PLACE W08-2 AND W08-7 TRAFFIC CONTROL SIGNS WHEN ASPHALTIC PAVEMENT WILL NOT BE REPLACED BY THE END OF THE WORK DAY.

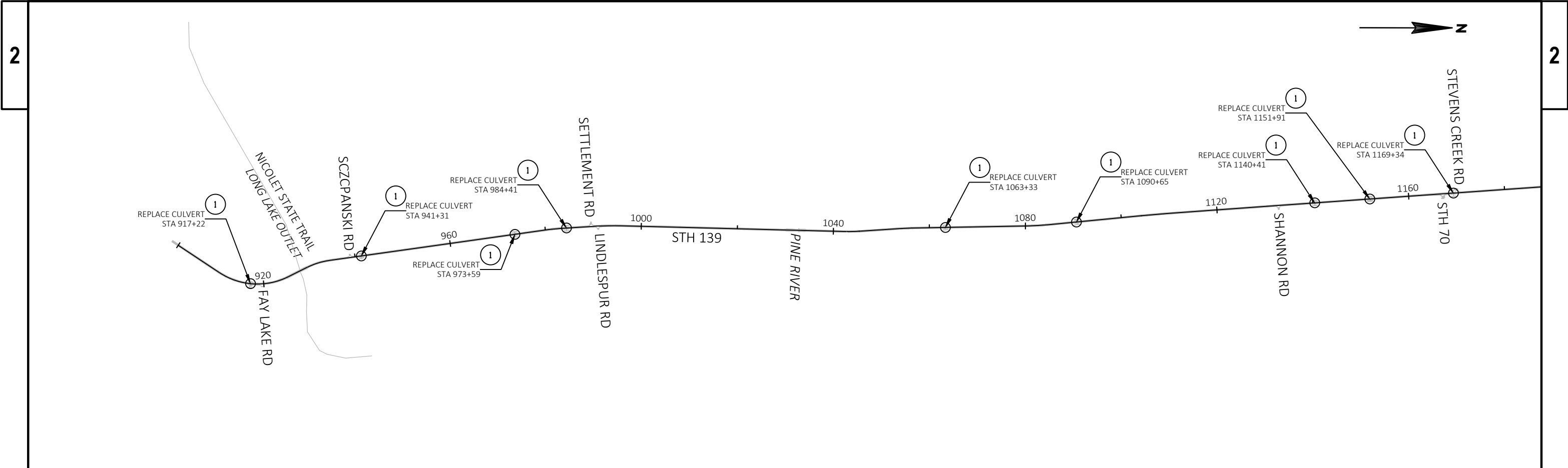


3. LANE SHIFT RT SHOWN. MIRROR FOR LANE SHIFT LT.
- ** 4. THE PROFILES OF THE TEMPORARY LANES SHIFTS AT STATIONS 1169+34 LT&RT AND 1233+22 RT MAY NEED TO BE ADJUSTED TO STAY WITHIN ESTIMATED LANE SHIFT SLOPE INTERCEPTS.
5. NO WETLAND IMPACTS FOR LANE SHIFT OUTSIDE OF PERMITTED AREAS. SEE SECTION 5 SHEETS.

GENERAL NOTES

1. "WO" SIGNS ARE THE SAME AS "W" SIGNS EXCEPT THE BACKGROUND IS ORANGE.
2. THE EXACT NUMBER, LOCATION, AND SPACING OF ALL SIGNS AND DEVICES SHALL BE ADJUSTED TO FIT FIELD CONDITIONS AS DIRECTED BY THE ENGINEER.
3. CHANNELIZING DEVICES PLACED ADJACENT TO WORK AREA SHALL BE REMOVED FROM TRAVEL LANE WHEN WORK IS NOT IN PROGRESS.
4. ALL SIGNS ARE 48" X 48" UNLESS OTHERWISE NOTED.

LANE SHIFT DETAIL

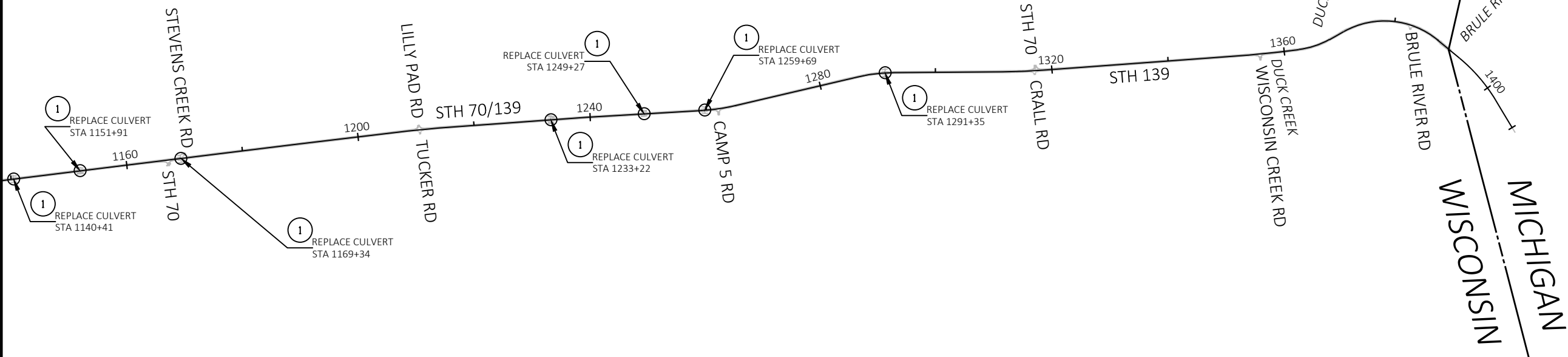


TRAFFIC CONTROL GENERAL NOTES

- 1. ALL SIGNS ARE 48" X 48" UNLESS OTHERWISE NOTED.
- 2. "WO" SIGNS ARE THE SAME AS "W" SIGNS EXCEPT THE BACKGROUND IS ORANGE.
- 3. SEE TRAFFIC CONTROL SHEET IN PROJECT ID 9110-10-70 FOR ADDITIONAL TRAFFIC CONTROL DEVICES AND INFORMATION. PLACE TRAFFIC CONTROL SIGNS PCMS AND DISPLAY THE MESSAGE 7 DAYS PRIOR TO THE EXPECTED START OF THE PROPOSED WORK.

LEGEND

- 1 SEE LANE SHIFT CONSTRUCTION DETAIL FOR ADDITIONAL TRAFFIC CONTROL AT CULVERT REPLACEMENT LOCATIONS.



PROJECT NO: 9110-10-60

HWY: STH 139

COUNTY: FLORENCE

TRAFFIC CONTROL OVERVIEW

SHEET

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Estimate Of Quantities By Plan Sets

9110-10-60					
Line	Item	Item Description	Unit	Total	Qty
0002	201.0105	Clearing	STA	2.000	2.000
0004	201.0205	Grubbing	STA	2.000	2.000
0006	203.0100	Removing Small Pipe Culverts	EACH	13.000	13.000
0012	205.0100	Excavation Common	CY	7,190.000	7,190.000
0016	213.0100	Finishing Roadway (project) 01. 9110-10-60	EACH	1.000	1.000
0020	305.0110	Base Aggregate Dense 3/4-Inch	TON	285.000	285.000
0022	305.0120	Base Aggregate Dense 1 1/4-Inch	TON	3,875.000	3,875.000
0024	455.0605	Tack Coat	GAL	495.000	495.000
0038	465.0105	Asphaltic Surface	TON	1,800.000	1,800.000
0044	520.1024	Apron Endwalls for Culvert Pipe 24-Inch	EACH	2.000	2.000
0046	520.1030	Apron Endwalls for Culvert Pipe 30-Inch	EACH	12.000	12.000
0048	520.1036	Apron Endwalls for Culvert Pipe 36-Inch	EACH	12.000	12.000
0050	520.3424	Culvert Pipe Class III-A Non-metal 24-Inch	LF	60.000	60.000
0052	520.3430	Culvert Pipe Class III-A Non-metal 30-Inch	LF	464.000	464.000
0054	520.3436	Culvert Pipe Class III-A Non-metal 36-Inch	LF	336.000	336.000
0056	520.3636	Culvert Pipe Class III-B Non-metal 36-Inch	LF	206.000	206.000
0058	618.0100	Maintenance And Repair of Haul Roads (project) 01. 9110-10-60	EACH	1.000	1.000
0062	619.1000	Mobilization	EACH	0.500	0.500
0066	624.0100	Water	MGAL	155.000	155.000
0068	625.0100	Topsoil	SY	14,200.000	14,200.000
0070	628.1504	Silt Fence	LF	8,145.000	8,145.000
0072	628.1520	Silt Fence Maintenance	LF	8,145.000	8,145.000
0074	628.1905	Mobilizations Erosion Control	EACH	10.000	10.000
0076	628.1910	Mobilizations Emergency Erosion Control	EACH	3.000	3.000
0078	628.2004	Erosion Mat Class I Type B	SY	20,980.000	20,980.000
0080	628.7504	Temporary Ditch Checks	LF	210.000	210.000
0082	628.7555	Culvert Pipe Checks	EACH	100.000	100.000
0084	628.7570	Rock Bags	EACH	1,105.000	1,105.000
0086	629.0210	Fertilizer Type B	CWT	9.000	9.000
0088	630.0130	Seeding Mixture No. 30	LB	255.000	255.000
0090	630.0500	Seed Water	MGAL	320.000	320.000
0092	633.5200	Markers Culvert End	EACH	26.000	26.000
0096	638.2102	Moving Signs Type II	EACH	5.000	5.000
0098	638.4000	Moving Small Sign Supports	EACH	5.000	5.000
0100	642.5001	Field Office Type B	EACH	0.500	0.500
0102	643.0300	Traffic Control Drums	DAY	2,375.000	2,375.000
0104	643.0715	Traffic Control Warning Lights Type C	DAY	2,375.000	2,375.000
0106	643.0900	Traffic Control Signs	DAY	260.000	260.000
0110	643.1070	Traffic Control Cones 42-Inch	DAY	1,330.000	1,330.000

Estimate Of Quantities By Plan Sets

9110-10-60

Line	Item	Item Description	Unit	Total	Qty
0112	643.5000	Traffic Control	EACH	0.500	0.500
0120	649.0105	Temporary Marking Line Paint 4-Inch	LF	1,965.000	1,965.000
0124	650.6000	Construction Staking Pipe Culverts	EACH	13.000	13.000
0128	650.9910	Construction Staking Supplemental Control (project) 01. 9110-10-60	LS	1.000	1.000
0132	690.0150	Sawing Asphalt	LF	815.000	815.000
0136	SPV.0060	Special 01. Lane Shift, Station 917+22	EACH	1.000	1.000
0138	SPV.0060	Special 02. Lane Shift, Station 941+31	EACH	1.000	1.000
0140	SPV.0060	Special 03. Lane Shift, Station 973+59	EACH	1.000	1.000
0142	SPV.0060	Special 04. Lane Shift, Station 984+41	EACH	1.000	1.000
0144	SPV.0060	Special 05. Lane Shift, Station 1063+33	EACH	1.000	1.000
0146	SPV.0060	Special 06. Lane Shift, Station 1090+65	EACH	1.000	1.000
0148	SPV.0060	Special 07. Lane Shift, Station 1140+41	EACH	1.000	1.000
0150	SPV.0060	Special 08. Lane Shift, Station 1151+91	EACH	1.000	1.000
0152	SPV.0060	Special 09. Lane Shift, Station 1169+34	EACH	1.000	1.000
0154	SPV.0060	Special 10. Lane Shift, Station 1233+22	EACH	1.000	1.000
0156	SPV.0060	Special 11. Lane Shift, Station 1249+27	EACH	1.000	1.000
0158	SPV.0060	Special 12. Lane Shift, Station 1259+69	EACH	1.000	1.000
0160	SPV.0060	Special 13. Lane Shift, Station 1291+35	EACH	1.000	1.000

CULVERT ITEMS

		520.3424	520.3430	520.3436	520.3636	520.1024	520.1030	520.1036	633.5200
		CULVERT PIPE CLASS III-A NON-METAL 24-INCH	CULVERT PIPE CLASS III-A NON-METAL 30-INCH	CULVERT PIPE CLASS III-A NON-METAL 36-INCH	CULVERT PIPE CLASS III-B NON-METAL 36-INCH	APRON ENDWALLS FOR CULVERT PIPE 24-INCH	APRON ENDWALLS FOR CULVERT PIPE 30-INCH	APRON ENDWALLS FOR CULVERT PIPE 36-INCH	MARKERS CULVERT END
CATEGORY	STATION	LF	LF	LF	LF	EACH	EACH	EACH	EACH
0010	917+22	60	--	--	--	2	--	--	2
	941+31	--	86	--	--	--	2	--	2
	973+59	--	--	60	--	--	--	2	2
	984+41	--	60	--	--	--	2	--	2
	1063+33	--	--	92	--	--	--	2	2
	1090+65	--	--	96	--	--	--	2	2
	1140+41	--	--	88	--	--	--	2	2
	1151+91	--	76	--	--	--	2	--	2
	1169+34	--	--	--	106	--	--	2	2
	1233+22	--	86	--	--	--	2	--	2
	1249+27	--	64	--	--	--	2	--	2
	1259+69	--	92	--	--	--	2	--	2
	1291+35	--	--	--	100	--	--	2	2
	TOTALS	60	464	336	206	2	12	12	26

EROSION CONTROL ITEMS

					628.1504	628.1520	628.2004	628.7504	628.7555	628.7570
					SILT FENCE	SILT FENCE MAINTENANCE	EROSION MAT CLASS I TYPE B	TEMPORARY DITCH CHECKS	CULVERT PIPE CHECKS	ROCK BAGS
CATEGORY	STATION	TO	STATION	OFFSET	LF	LF	SY	LF	EACH	EACH
0010	915+80	-	918+66	RT	273	273	320	--	6	34
	916+62	-	917+83	LT	115	115	30	13	--	34
	939+93	-	942+70	LT	296	296	420	13	--	34
	940+20	-	942+42	RT	233	233	260	--	6	34
	972+42	-	974+75	LT	223	223	250	13	--	34
	972+64	-	974+53	RT	189	189	230	--	6	34
	983+35	-	985+46	RT	211	211	270	--	6	34
	983+40	-	985+42	LT	194	194	170	13	--	34
	1061+89	-	1064+77	LT	295	295	490	--	6	34
	1062+33	-	1064+54	RT	245	245	350	13	--	34
	1089+03	-	1092+26	RT	331	331	810	13	--	34
	1089+05	-	1091+92	LT	289	289	730	--	6	34
	1138+96	-	1141+54	LT	262	262	520	--	6	34
	1139+13	-	1141+68	RT	277	277	350	13	--	34
	1150+25	-	1153+57	LT	331	331	660	13	--	34
	1151+22	-	1152+60	RT	145	145	100	--	6	34
	1167+74	-	1169+91	LT	213	213	560	--	6	34
	1168+11	-	1170+80	RT	288	288	540	13	--	34
	1231+64	-	1234+81	LT	292	292	510	13	--	34
	1232+13	-	1234+32	RT	226	226	440	--	6	34
	1247+92	-	1250+61	LT	258	258	380	13	--	34
	1248+45	-	1250+06	RT	164	164	170	--	6	34
	1257+97	-	1261+47	LT	318	318	770	--	6	34
	1258+59	-	1260+79	RT	232	232	390	13	--	34
	1289+56	-	1293+13	LT	347	347	1,010	13	--	34
	1289+96	-	1292+73	RT	270	270	620	--	6	34
	TEMPORARY LANE SHIFTS				--	--	5,430	--	--	--
	UNDISTRIBUTED				1,630	1,630	4,200	41	22	221
	TOTALS				8,145	8,145	20,980	210	100	1,105

NOTES
ROCK BAGS ARE FOR SILT FENCE RELIEF, WHERE NEEDED.
EROSION MAT QUANTITIES INCLUDED FOR TEMPORARY LANE SHIFT FILLS AT LOCATIONS OVER 9-FEET DEEP.

RESTORATION ITEMS

					625.0100	629.0210	630.0130	630.0500
					TOPSOIL	FERTILIZER TYPE B	SEEDING MIXTURE NO. 30	SEED WATER
CATEGORY	STATION	TO	STATION	OFFSET	SY	CWT	LB	MGAL
0010	915+80	-	918+66	RT	320	0.20	5.8	7.2
	916+62	-	917+83	LT	30	0.05	0.6	0.7
	939+93	-	942+70	LT	420	0.26	7.5	9.3
	940+20	-	942+42	RT	260	0.17	4.8	5.9
	972+42	-	974+75	LT	250	0.16	4.6	5.7
	972+64	-	974+53	RT	230	0.14	4.1	5.1
	983+35	-	985+46	RT	270	0.17	5.0	6.3
	983+40	-	985+42	LT	170	0.11	3.1	3.9
	1061+89	-	1064+77	LT	490	0.31	8.8	11.0
	1062+33	-	1064+54	RT	350	0.22	6.3	7.8
	1089+03	-	1092+26	RT	810	0.51	14.7	18.4
	1089+05	-	1091+92	LT	730	0.46	13.2	16.4
	1138+96	-	1141+54	LT	520	0.33	9.4	11.7
	1139+13	-	1141+68	RT	350	0.22	6.3	7.9
	1150+25	-	1153+57	LT	660	0.42	11.9	14.8
	1151+22	-	1152+60	RT	100	0.06	1.8	2.3
	1167+74	-	1169+91	LT	560	0.35	10.1	12.6
	1168+11	-	1170+80	RT	540	0.34	9.7	12.1
	1231+64	-	1234+81	LT	510	0.32	9.1	11.4
	1232+13	-	1234+32	RT	440	0.28	7.9	9.9
	1247+92	-	1250+61	LT	380	0.24	6.9	8.6
	1248+45	-	1250+06	RT	170	0.11	3.0	3.7
	1257+97	-	1261+47	LT	770	0.49	13.9	17.3
	1258+59	-	1260+79	RT	390	0.25	7.1	8.8
	1289+56	-	1293+13	LT	1,010	0.64	18.2	22.7
	1289+96	-	1292+73	RT	620	0.39	11.2	14.0
	UNDISTRIBUTED				2,850	1.80	50.0	64.4
	TOTALS				14,200	9.00	255.0	320.0

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		628.1905	628.1910
		MOBILIZATIONS EROSION CONTROL	MOBILIZATIONS EMERGENCY EROSION CONTROL
CATEGORY	LOCATION	EACH	EACH
0010	PROJECT	10	3
TOTALS		10	3

		624.0100
CATEGORY	LOCATION	WATER
		MGAL
0010		
	PROJECT	155
TOTAL		155

		638.2102	638.4000
		MOVING SIGNS TYPE II	MOVING SMALL SIGN SUPPORTS
CATEGORY	SIGN NUMBER	EACH	EACH
0010			
	3-1	1	1
	6-1	1	1
	7-1	1	1
	9-1	1	1
	9-2	1	1
TOTALS		5	5

3

		643.0300		643.0715		643.1070		643.0900		
		TRAFFIC CONTROL DRUMS		TRAFFIC CONTROL WARNING LIGHTS TYPE C		TRAFFIC CONTROL CONES 42-INCH		TRAFFIC CONTROL SIGNS		
CATEGORY	LOCATION	DURATION								
		DAYS	NO.	DAY	NO.	DAY	NO.	DAY	NO.	DAY
0010	PROJECT	95	25	2,375	25	2,375	14	1,330	4	260
TOTALS				2,375	2,375	1,330	260			

649.0105			
TEMPORARY MARKING LINE PAINT 4-INCH			
<u>YELLOW</u>			
CATEGORY	STATION	TO	STATION
			LF
0010			
	916+65	-	917+80
	940+77	-	941+86
	973+04	-	974+13
	983+86	-	984+96
	1062+79	-	1063+87
	1090+00	-	1091+30
	1139+86	-	1140+95
	1151+37	-	1152+45
	1168+80	-	1169+88
	1232+68	-	1233+77
	1248+72	-	1249+81
	1259+15	-	1260+23
	1290+79	-	1291+90
TOTAL			1,965

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EROSION MAT  
SILT FENCE  
ESTIMATED SLOPE INTERCEPT  
DELINEATED WETLAND BOUNDARY  
CULVERT PIPE CHECK  
TEMPORARY DITCH CHECK  
SURFACE WATER FLOW  
SAWCUT  
PERMITTED WETLAND IMPACTS

CURVE 1 DATA  
PI = 918+60.01  
Y = 153633.58  
X = 307846.76  
PC = 910+24.59  
Y = 152971.83  
X = 307336.83  
PT = 925+37.20  
Y = 154403.23  
X = 307521.85  
T = 835.42  
L = 1512.61  
R = 1432.40  
DELTA = 60°30'15" LT  
D = 4°0'0"



STA 917+22  
CULVERT 191390140  
REMOVE 1-24" CMCP  
1-24"X60' CP CLASS III-A NON-METAL REQ'D  
2-AEW REQ'D  
9.1" LHF  
2-MARKERS FOR CULVERT END REQ'D

CENTURYLINK  
(COMMUNICATION)

BASE AGG PE

FAY LAKE RD

NOTES

DISTURBED AREAS WITHIN THE RIGHT-OF-WAY, EXCEPT THE AREAS WITHIN THE FINISHED SHOULDER POINTS, SHALL BE FERTILIZED, SEEDED, TOPSOILED AND COVERED WITH EROSION MAT.

PLACE SILT FENCE WITHIN 1-FT TO 3-FT OF THE SLOPE INTERCEPT IN WETLAND AREAS.

NO WETLAND IMPACTS FOR TEMPORARY LANE SHIFTS OUTSIDE OF PERMITTED AREAS SHOWN.

PROJECT NO: 9110-10-60

HWY: STH 139

COUNTY: FLORENCE

PLAN

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LEGEND

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EROSION MAT

—●—●—

SILT FENCE

- - -

ESTIMATED SLOPE INTERCEPT

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DELINEATED WETLAND BOUNDARY

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CULVERT PIPE CHECK

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TEMPORARY DITCH CHECK

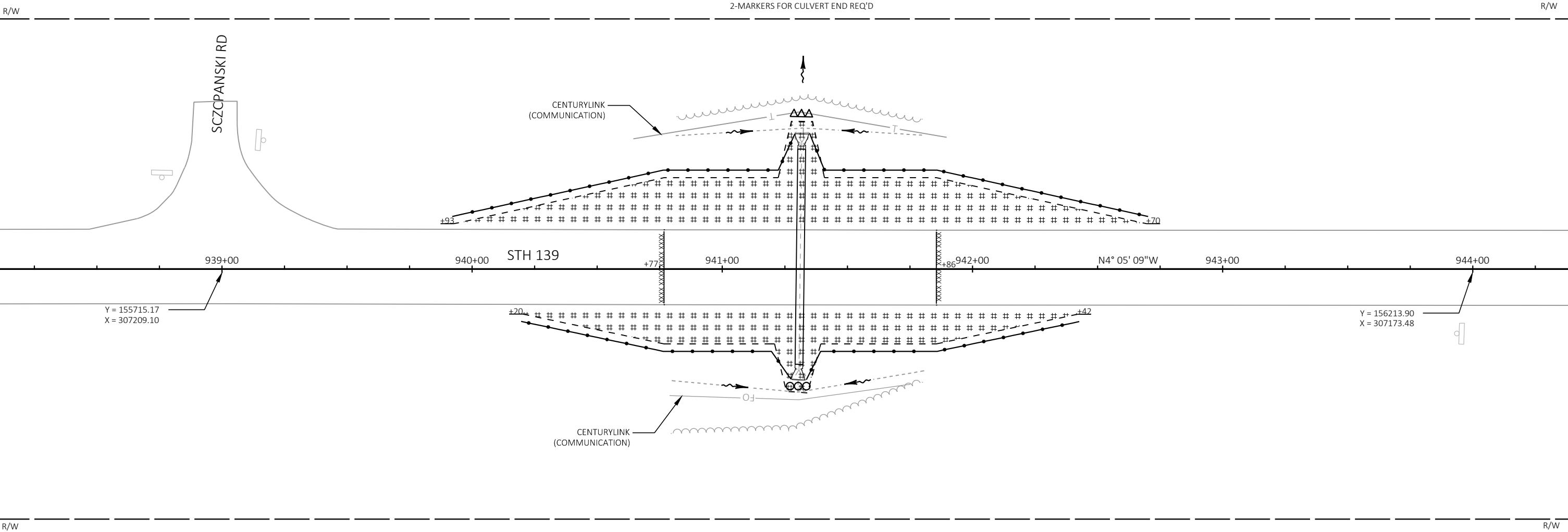
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SURFACE WATER FLOW

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SAWCUT

PERMITTED WETLAND IMPACTS



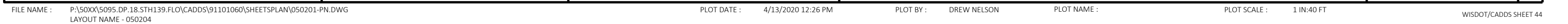
NOTES

DISTURBED AREAS WITHIN THE RIGHT-OF-WAY, EXCEPT THE AREAS WITHIN THE FINISHED SHOULDER POINTS, SHALL BE FERTILIZED, SEEDED, TOPSOILED AND COVERED WITH EROSION MAT.

PLACE SILT FENCE WITHIN 1-FT TO 3-FT OF THE SLOPE INTERCEPT IN WETLAND AREAS.

NO WETLAND IMPACTS FOR TEMPORARY LANE SHIFTS OUTSIDE OF PERMITTED AREAS SHOWN.





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EROSION MAT

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SILT FENCE

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ESTIMATED SLOPE INTERCEPT

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DELINEATED WETLAND BOUNDARY

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CULVERT PIPE CHECK

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TEMPORARY DITCH CHECK

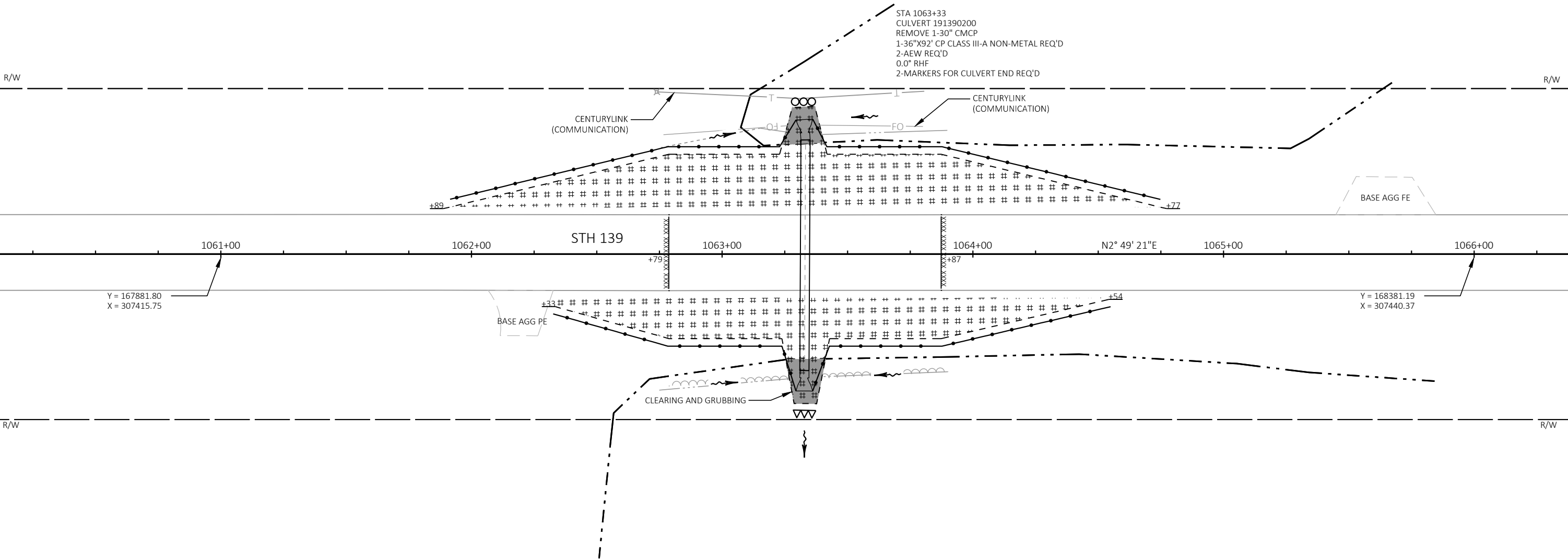
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SURFACE WATER FLOW

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SAWCUT

PERMITTED WETLAND IMPACTS



NOTES

DISTURBED AREAS WITHIN THE RIGHT-OF-WAY, EXCEPT THE AREAS WITHIN THE FINISHED SHOULDER POINTS, SHALL BE FERTILIZED, SEEDED, TOPSOILED AND COVERED WITH EROSION MAT.

PLACE SILT FENCE WITHIN 1-FT TO 3-FT OF THE SLOPE INTERCEPT IN WETLAND AREAS.

NO WETLAND IMPACTS FOR TEMPORARY LANE SHIFTS OUTSIDE OF PERMITTED AREAS SHOWN.

LEGEND

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EROSION MAT

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SILT FENCE

- - -

ESTIMATED SLOPE INTERCEPT

- - -

DELINEATED WETLAND BOUNDARY

∞

CULVERT PIPE CHECK

ΔΔΔ

TEMPORARY DITCH CHECK

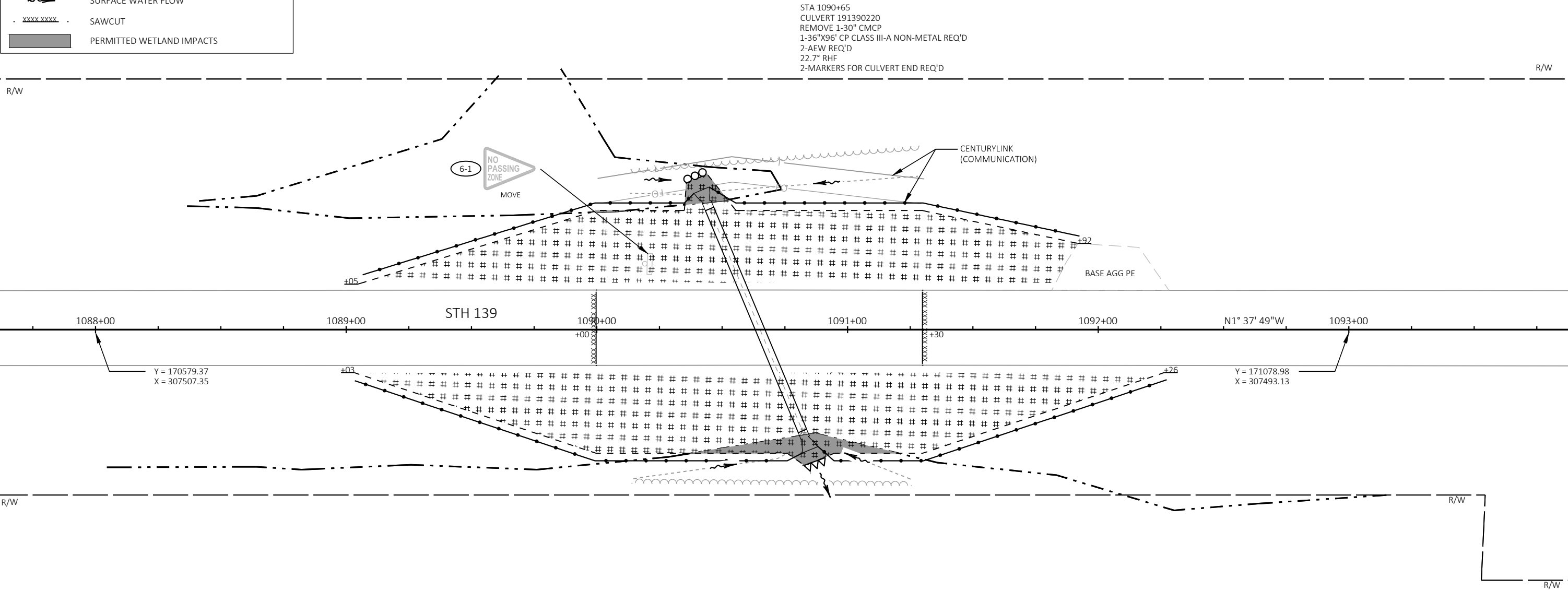
~→

SURFACE WATER FLOW

· xxx xxx ·

SAWCUT

PERMITTED WETLAND IMPACTS



**NOTES**

DISTURBED AREAS WITHIN THE RIGHT-OF-WAY, EXCEPT THE AREAS WITHIN THE FINISHED SHOULDER POINTS, SHALL BE FERTILIZED, SEEDED, TOPSOILED AND COVERED WITH EROSION MAT.

PLACE SILT FENCE WITHIN 1-FT TO 3-FT OF THE SLOPE INTERCEPT IN WETLAND AREAS.

NO WETLAND IMPACTS FOR TEMPORARY LANE SHIFTS OUTSIDE OF PERMITTED AREAS SHOWN.

LEGEND

#####

EROSION MAT

●—●

SILT FENCE

- - -

ESTIMATED SLOPE INTERCEPT

- - -

DELINEATED WETLAND BOUNDARY

∞∞

CULVERT PIPE CHECK

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TEMPORARY DITCH CHECK

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SURFACE WATER FLOW

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SAWCUT

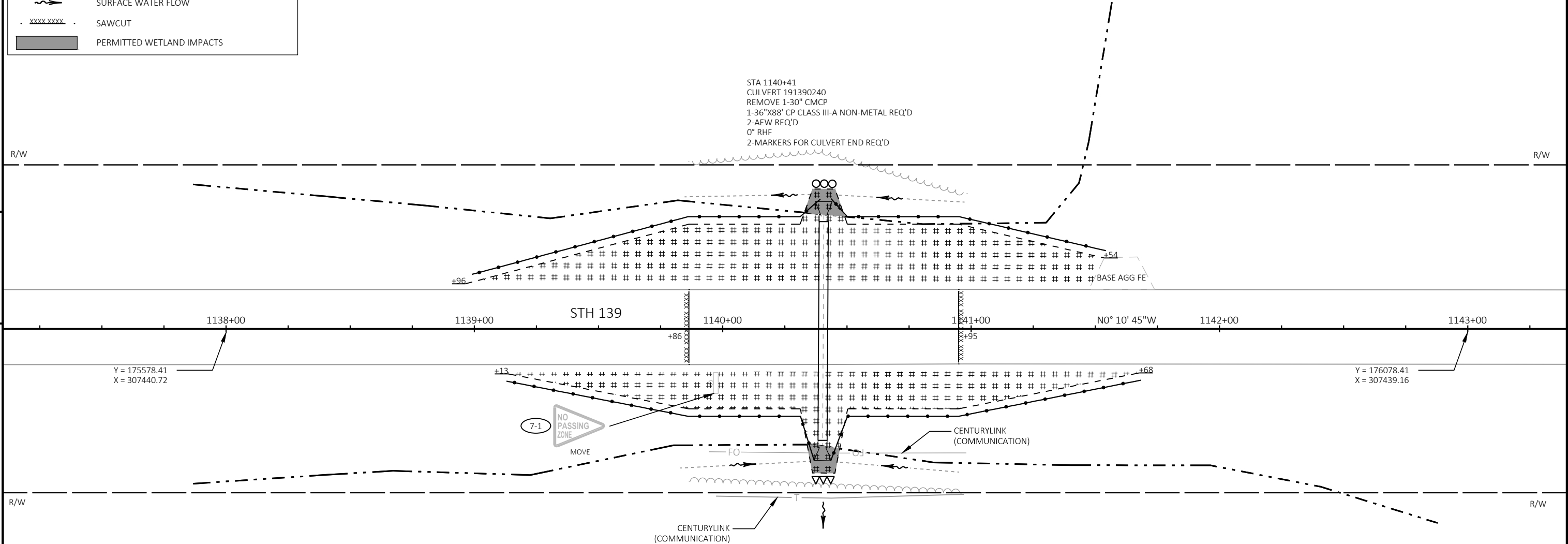
PERMITTED WETLAND IMPACTS



STA 1140+41  
CULVERT 191390240  
REMOVE 1-30" CMCP  
1-36"X88' CP CLASS III-A NON-METAL REQ'D  
2-AEW REQ'D  
0° RHF  
2-MARKERS FOR CULVERT END REQ'D

5

5



NOTES

DISTURBED AREAS WITHIN THE RIGHT-OF-WAY, EXCEPT THE AREAS WITHIN THE FINISHED SHOULDER POINTS, SHALL BE FERTILIZED, SEEDED, TOPSOILED AND COVERED WITH EROSION MAT.

PLACE SILT FENCE WITHIN 1-FT TO 3-FT OF THE SLOPE INTERCEPT IN WETLAND AREAS.

NO WETLAND IMPACTS FOR TEMPORARY LANE SHIFTS OUTSIDE OF PERMITTED AREAS SHOWN.







LEGEND

#####

EROSION MAT

—●—●—

SILT FENCE

- - -

ESTIMATED SLOPE INTERCEPT

- - -

DELINEATED WETLAND BOUNDARY

∞∞

CULVERT PIPE CHECK

△△△

TEMPORARY DITCH CHECK

~>

SURFACE WATER FLOW

· xxx xxx ·

SAWCUT

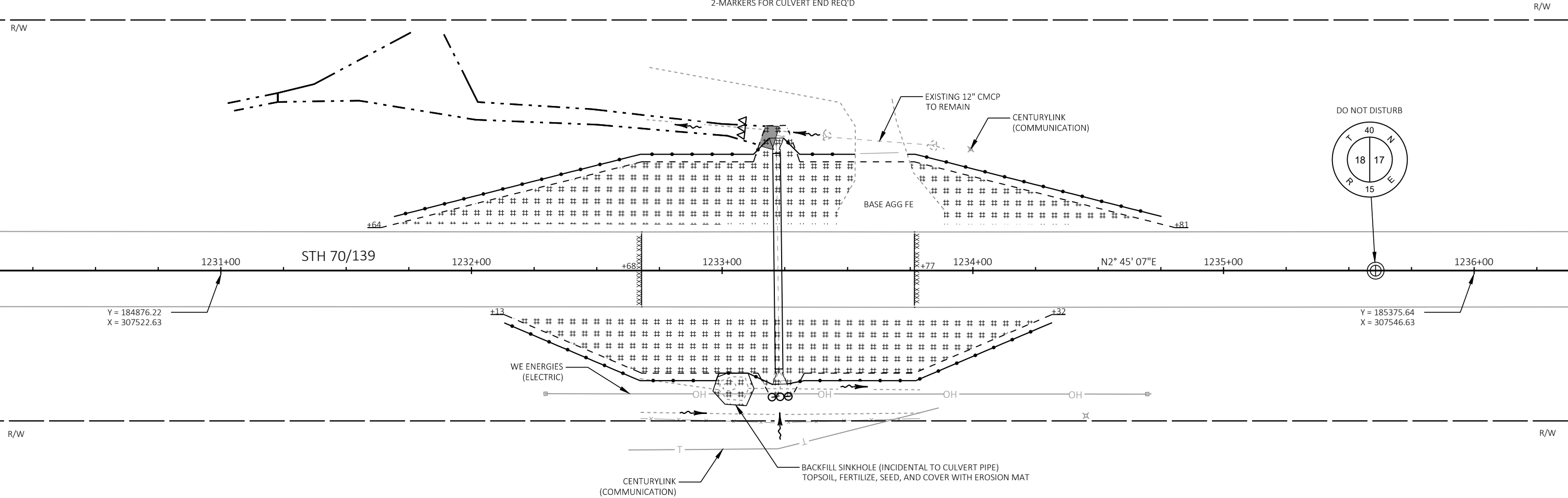
PERMITTED WETLAND IMPACTS

STA 1233+22  
CULVERT 190700050  
REMOVE 1-30" CMCP  
1-30"x86' CP CLASS III-A NON-METAL REQ'D  
2-AEW REQ'D  
0° RHF  
2-MARKERS FOR CULVERT END REQ'D



5

5

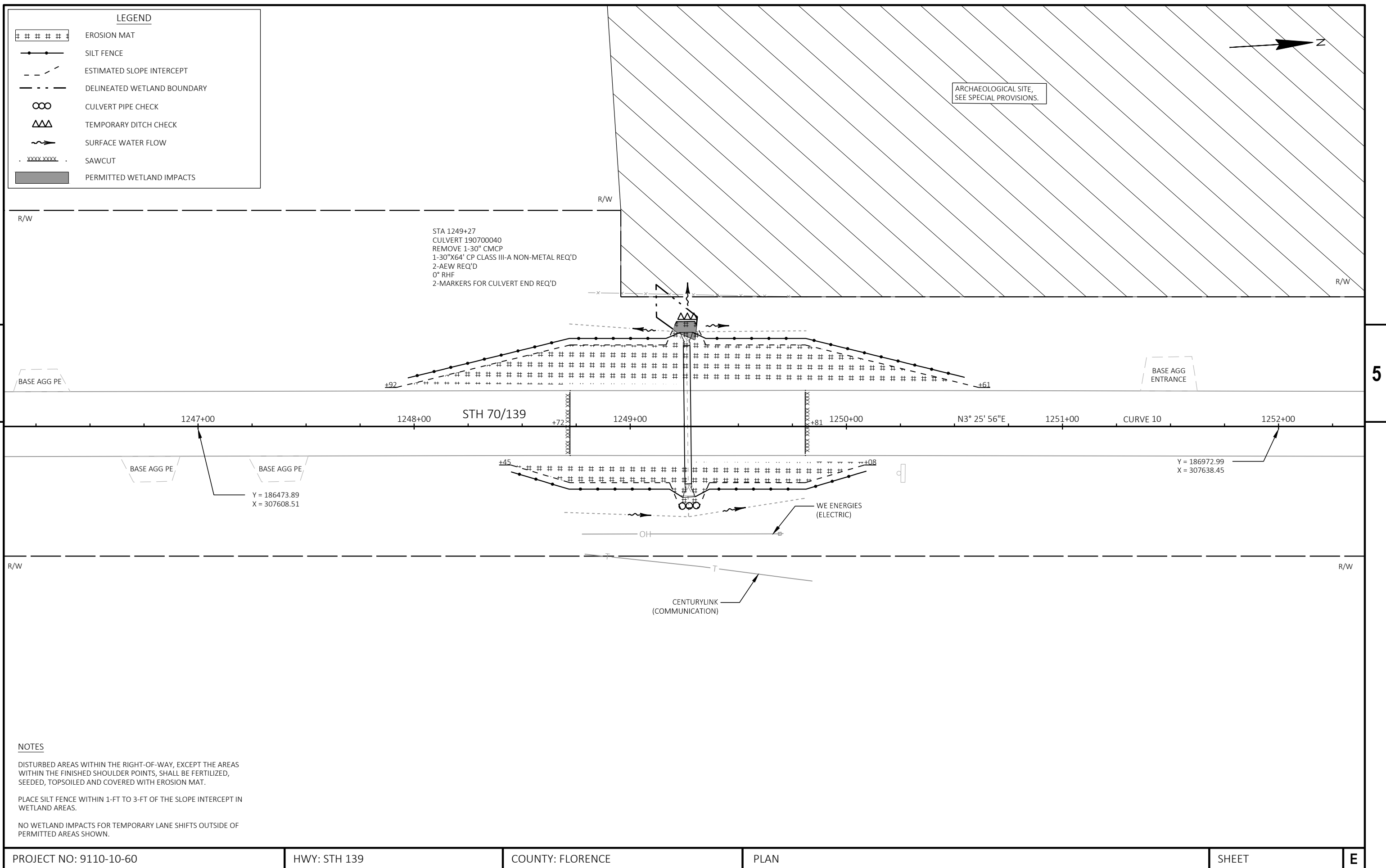


**NOTES**

DISTURBED AREAS WITHIN THE RIGHT-OF-WAY, EXCEPT THE AREAS WITHIN THE FINISHED SHOULDER POINTS, SHALL BE FERTILIZED, SEEDED, TOPSOILED AND COVERED WITH EROSION MAT.

PLACE SILT FENCE WITHIN 1-FT TO 3-FT OF THE SLOPE INTERCEPT IN WETLAND AREAS.

NO WETLAND IMPACTS FOR TEMPORARY LANE SHIFTS OUTSIDE OF PERMITTED AREAS SHOWN.





EROSION MAT

SILT FENCE

ESTIMATED SLOPE INTERCEPT

DELINEATED WETLAND BOUNDARY

CULVERT PIPE CHECK

TEMPORARY DITCH CHECK

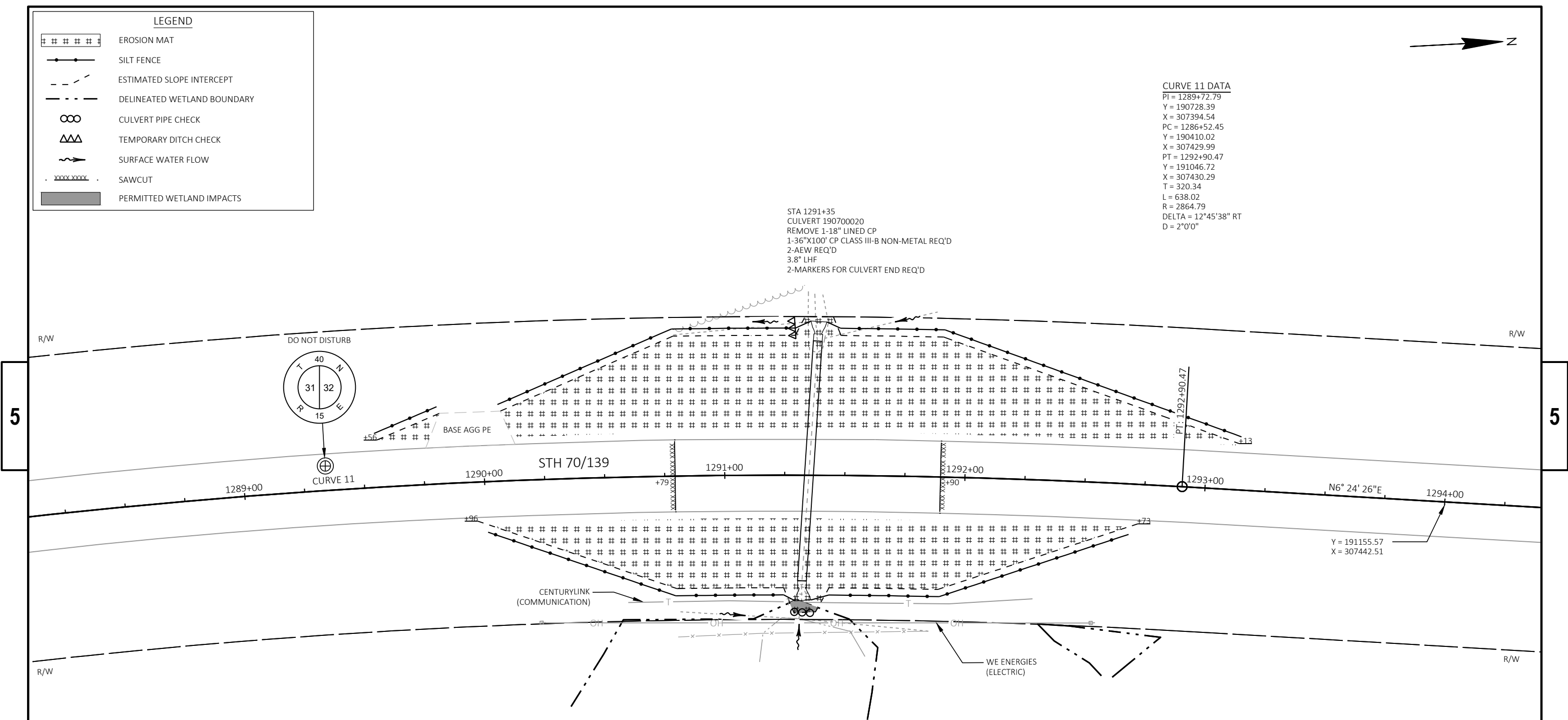
SURFACE WATER FLOW

SAWCUT

PERMITTED WETLAND IMPACTS

CURVE 11 DATA  
PI = 1289+72.79  
Y = 190728.39  
X = 307394.54  
PC = 1286+52.45  
Y = 190410.02  
X = 307429.99  
PT = 1292+90.47  
Y = 191046.72  
X = 307430.29  
T = 320.34  
L = 638.02  
R = 2864.79  
DELTA = 12°45'38" RT  
D = 2°0'0"

STA 1291+35  
CULVERT 190700020  
REMOVE 1-18" LINED CP  
1-36"X100' CP CLASS III-B NON-METAL REQ'D  
2-AEW REQ'D  
3.8° LHF  
2-MARKERS FOR CULVERT END REQ'D



NOTES

DISTURBED AREAS WITHIN THE RIGHT-OF-WAY, EXCEPT THE AREAS WITHIN THE FINISHED SHOULDER POINTS, SHALL BE FERTILIZED, SEEDED, TOPSOILED AND COVERED WITH EROSION MAT.

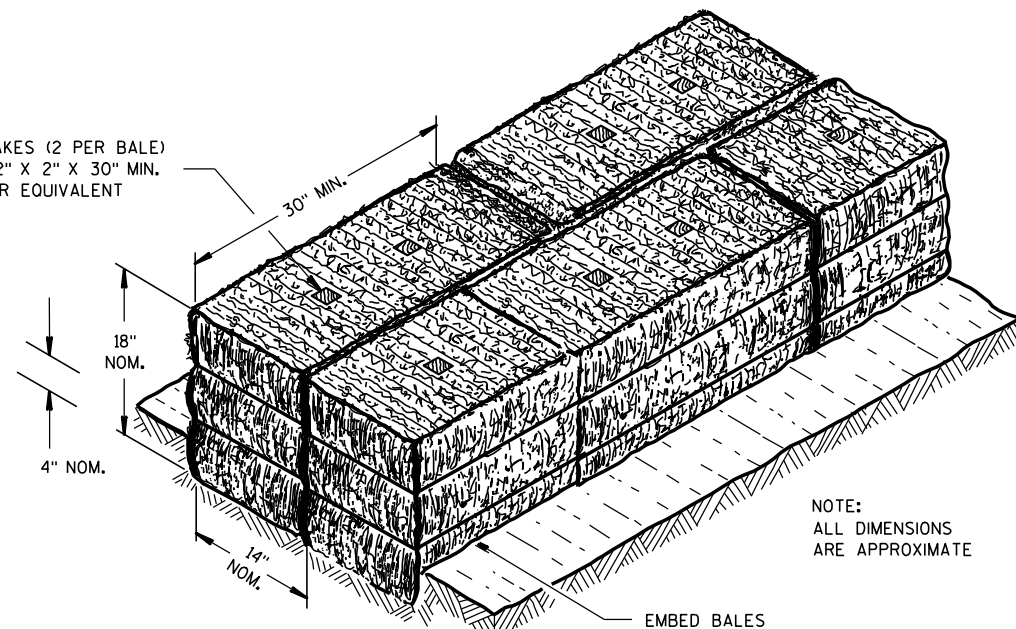
PLACE SILT FENCE WITHIN 1-FT TO 3-FT OF THE SLOPE INTERCEPT IN WETLAND AREAS.

NO WETLAND IMPACTS FOR TEMPORARY LANE SHIFTS OUTSIDE OF PERMITTED AREAS SHOWN.

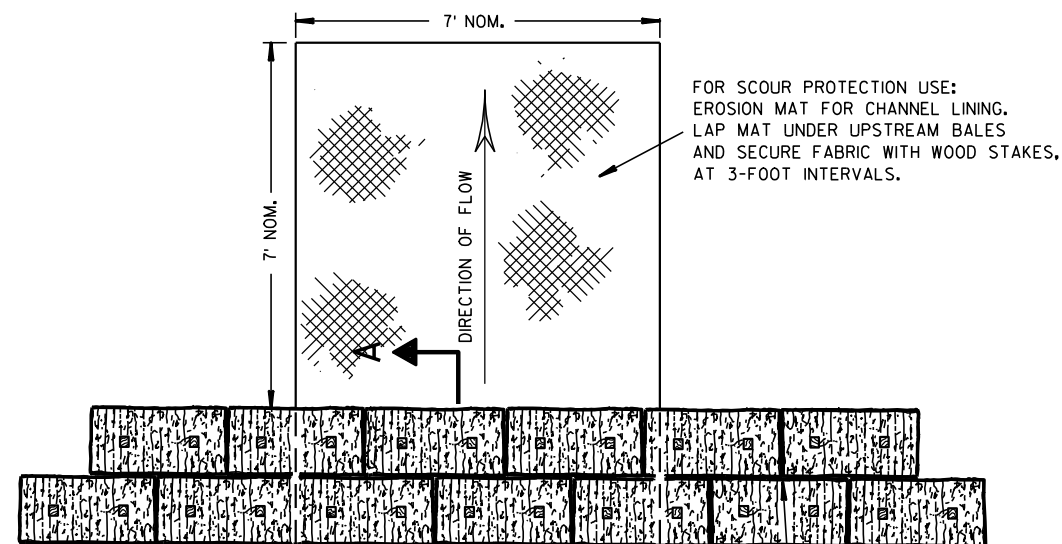
Standard Detail Drawing List

|           |                                                                                                    |
|-----------|----------------------------------------------------------------------------------------------------|
| 08E08-03  | TYPICAL INSTALLATIONS OF EROSION BALES / TEMPORARY DITCH CHECKS                                    |
| 08E09-06  | SILT FENCE                                                                                         |
| 08E15-01  | CULVERT PIPE CHECK                                                                                 |
| 08F01-11  | APRON ENDWALLS FOR CULVERT PIPE                                                                    |
| 08F04-07  | JOINT TIES FOR CONCRETE PIPE AND CONCRETE COLLAR DETAIL                                            |
| 15C03-05  | BARRICADES AND SIGNS FOR SIDEROAD CLOSURES                                                         |
| 15C04-05  | TRAFFIC CONTROL, ADVANCE WARNING SIGNS 45 M.P.H. OR GREATER TWO-WAY UNDIVIDED ROAD OPEN TO TRAFFIC |
| 15C08-20A | LONGITUDINAL MARKING (MAINLINE)                                                                    |
| 15C11-07B | CHANNELIZING DEVICES DRUMS, CONES, BARRICADES AND VERTICAL PANELS                                  |
| 15C12-07  | TRAFFIC CONTROL FOR LANE CLOSURE WITH FLAGGING OPERATION                                           |
| 15C19-06A | MOVING PAVEMENT MARKING OPERATION TWO-LANE TWO-WAY ROADWAY                                         |
| 15D28-03  | TRAFFIC CONTROL, WORK ON SHOULDER OR PARKING LANE, UNDIVIDED ROADWAY                               |
| 15D38-02A | TEMPORARY TRAFFIC CONTROL SIGN MOUNTING                                                            |
| 15D38-02B | ATTACHMENT OF SIGNS TO POSTS                                                                       |

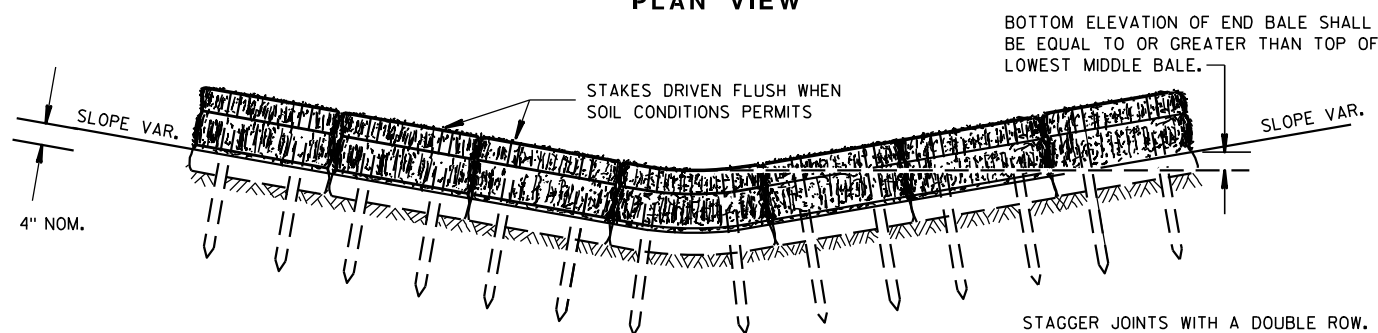
WOOD STAKES (2 PER BALE)  
NOMINAL 2" X 2" X 30" MIN.  
LENGTH OR EQUIVALENT



SECTION A-A



PLAN VIEW



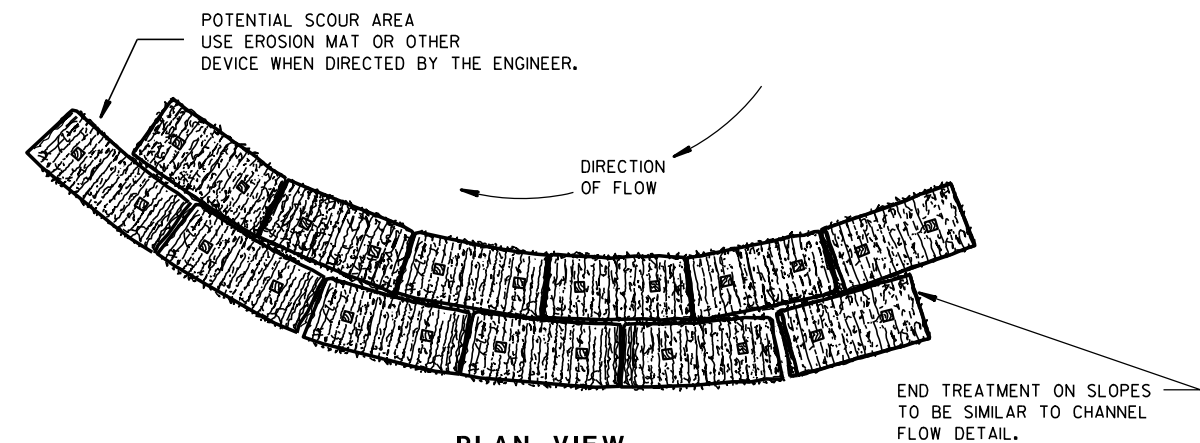
FRONT ELEVATION

TEMPORARY DITCH CHECK USING EROSION BALES ①

## GENERAL NOTES

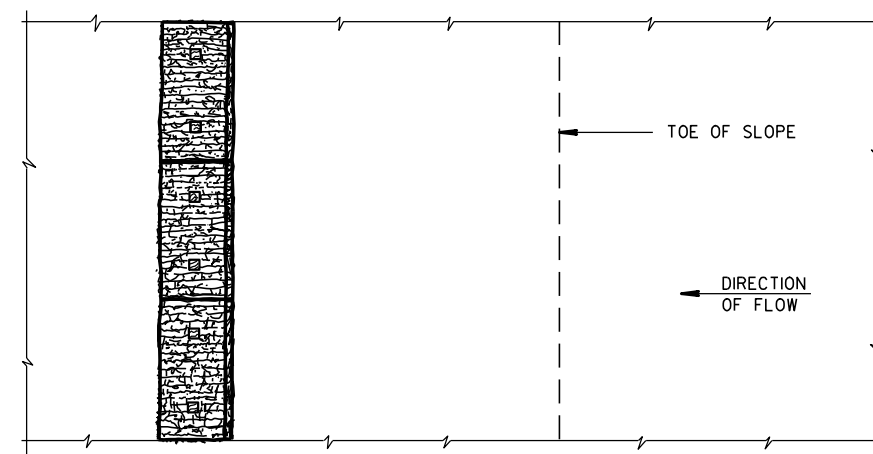
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

- 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.

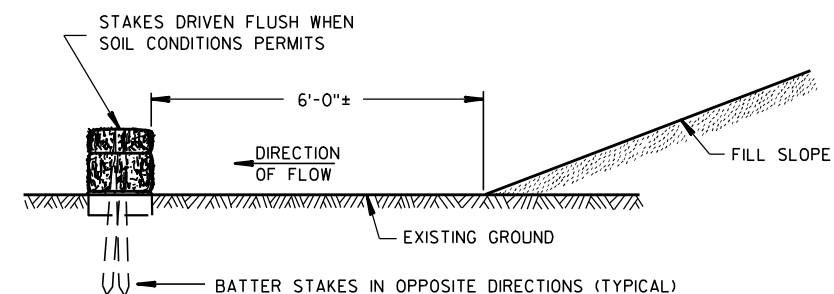


PLAN VIEW

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

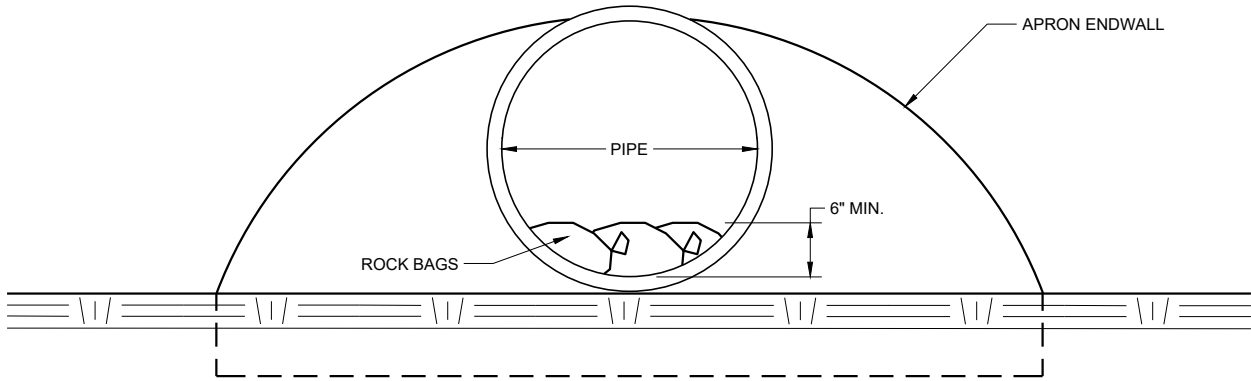




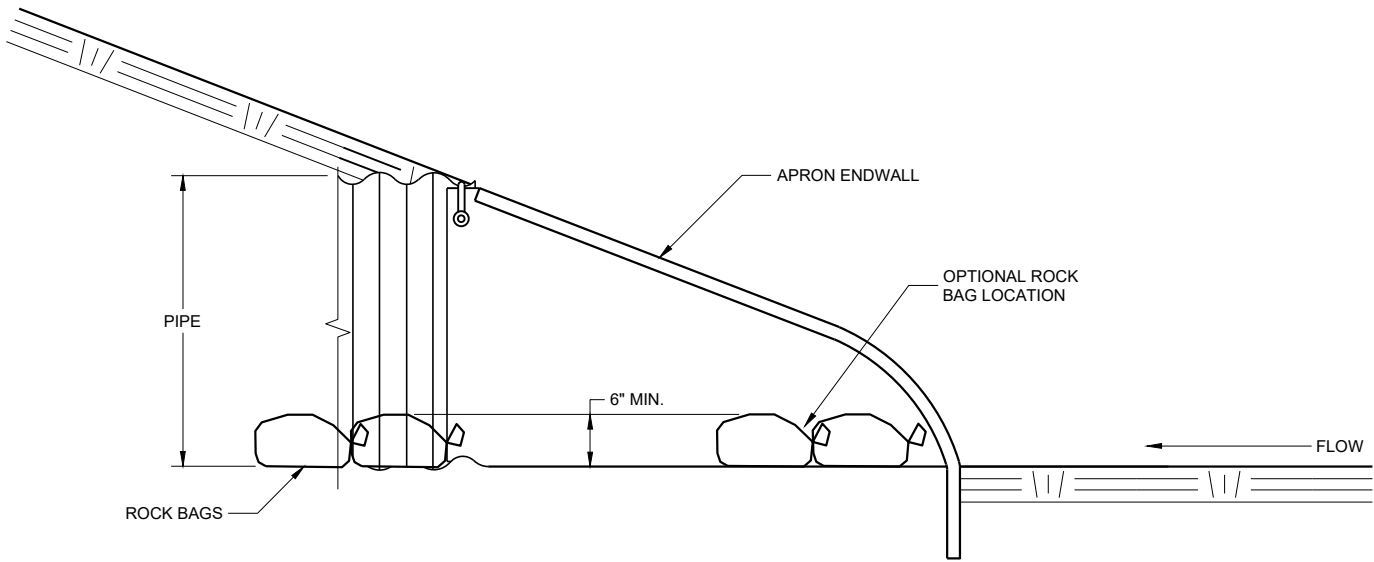
- ① HORIZONTAL BRACE REQUIRED WITH 2" X 4" WOODEN FRAME OR EQUIVALENT AT TOP OF POSTS.
- ② FOR MANUAL INSTALLATIONS THE TRENCH SHALL BE A MINIMUM OF 4" WIDE & 6" DEEP TO BURY AND ANCHOR THE GEOTEXTILE FABRIC. FOLD MATERIAL TO FIT TRENCH AND BACKFILL & COMPACT TRENCH WITH EXCAVATED SOIL.
- ③ WOOD POSTS 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.



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



END VIEW



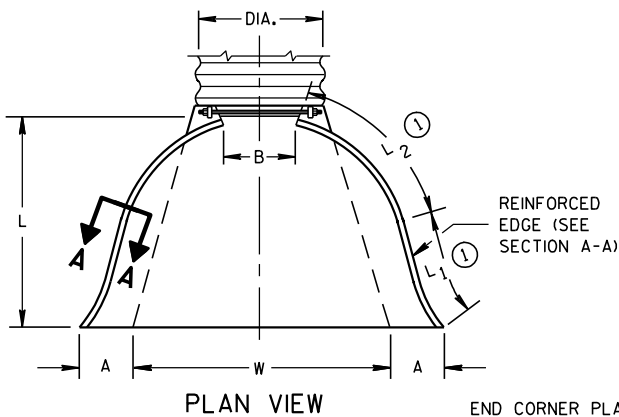
SIDE VIEW

**CULVERT PIPE CHECK**  
(INSTALL ON INLET END ONLY)

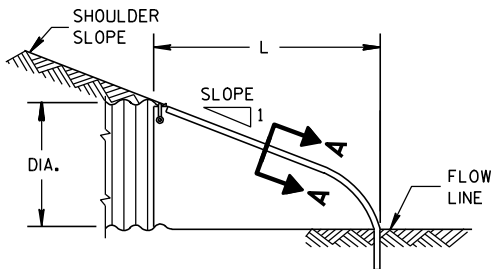
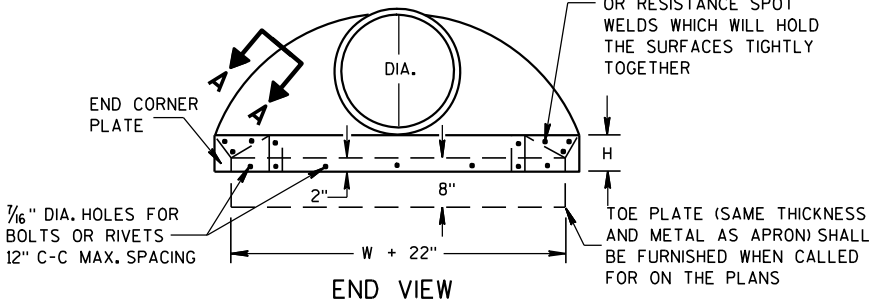
| CULVERT PIPE CHECK                                 |                                               |
|----------------------------------------------------|-----------------------------------------------|
| STATE OF WISCONSIN<br>DEPARTMENT OF TRANSPORTATION |                                               |
| APPROVED<br>May 2019<br>DATE                       | /S/ Daniel Schave<br>EROSION CONTROL ENGINEER |
| FHWA                                               |                                               |

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

\* EXCEPT CENTER PANEL  
SEE GENERAL NOTES



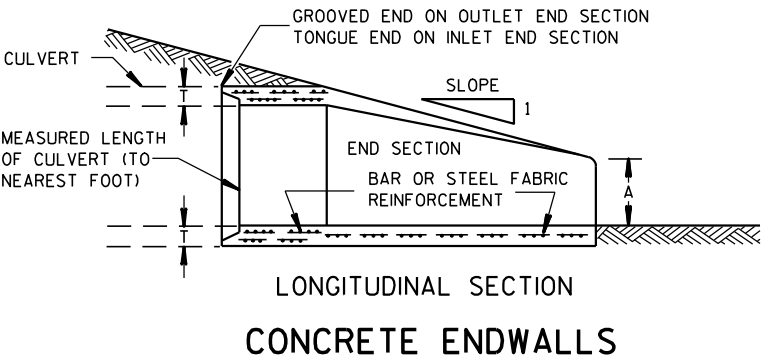
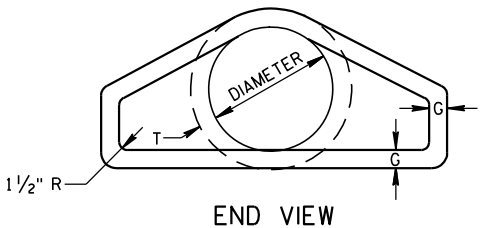
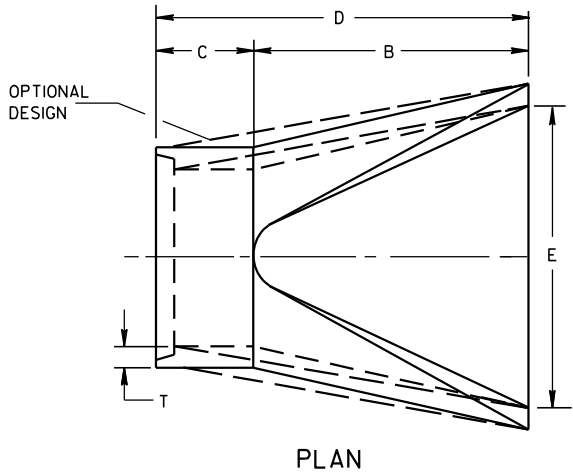
END CORNER PLATES MAY  
BE FASTENED TO APRON  
PROPER BY BOLTS, RIVETS,  
OR RESISTANCE SPOT  
WELDS WHICH WILL HOLD  
THE SURFACES TIGHTLY  
TOGETHER



SIDE ELEVATION  
METAL ENDWALLS

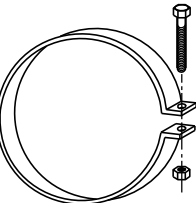
| REINFORCED CONCRETE APRON ENDWALLS |                     |        |        |           |            |     |       |                  |  |  |  |  |
|------------------------------------|---------------------|--------|--------|-----------|------------|-----|-------|------------------|--|--|--|--|
| PIPE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

\* MINIMUM  
\*\* MAXIMUM

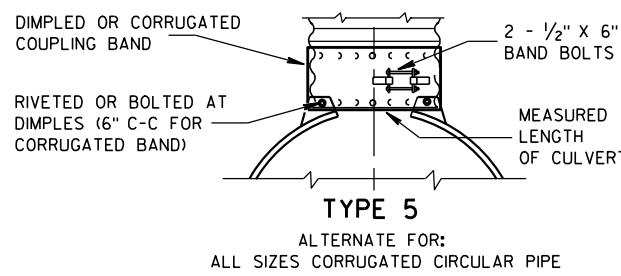
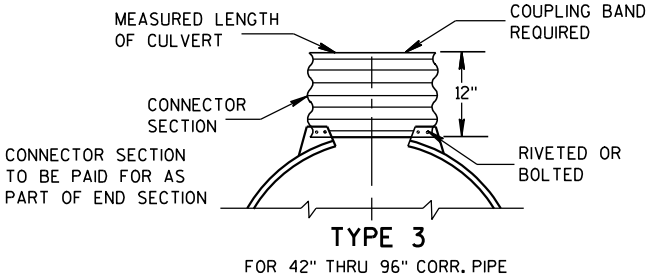
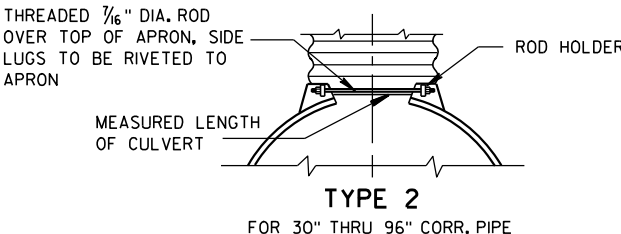
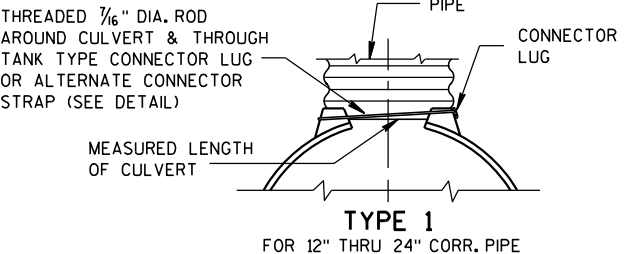


LONGITUDINAL SECTION  
CONCRETE ENDWALLS

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



ALTERNATE FOR TYPE 1 CONNECTION  
END SECTION CONNECTOR STRAP



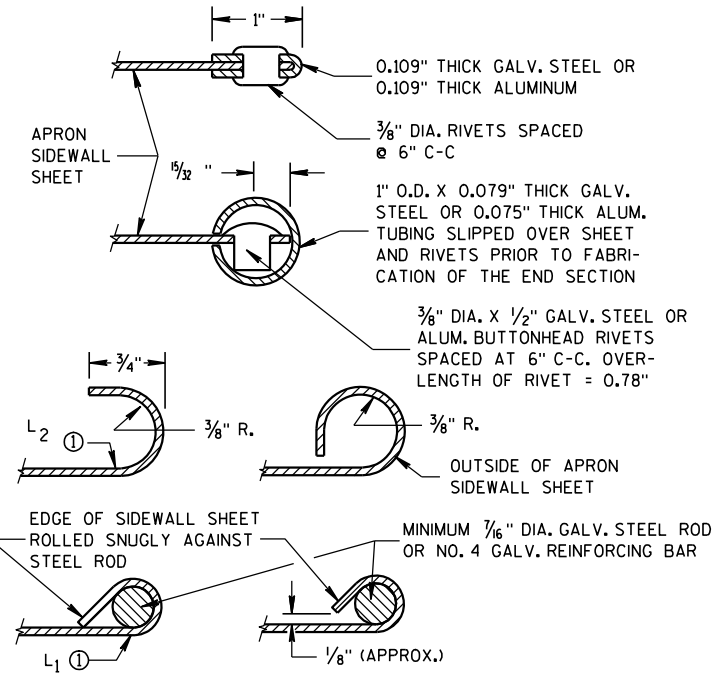
NOTE: DIMPLED BAND FITS OVER OUTSIDE OF ENDWALL,  
AND CORRUGATED BAND FITS INSIDE ENDWALL.  
DIMPLED BAND MAY BE USED WITH HELICALLY  
CORRUGATED PIPE.

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

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

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

CONNECTION DETAILS



SECTION A-A

GENERAL NOTES

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

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

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

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

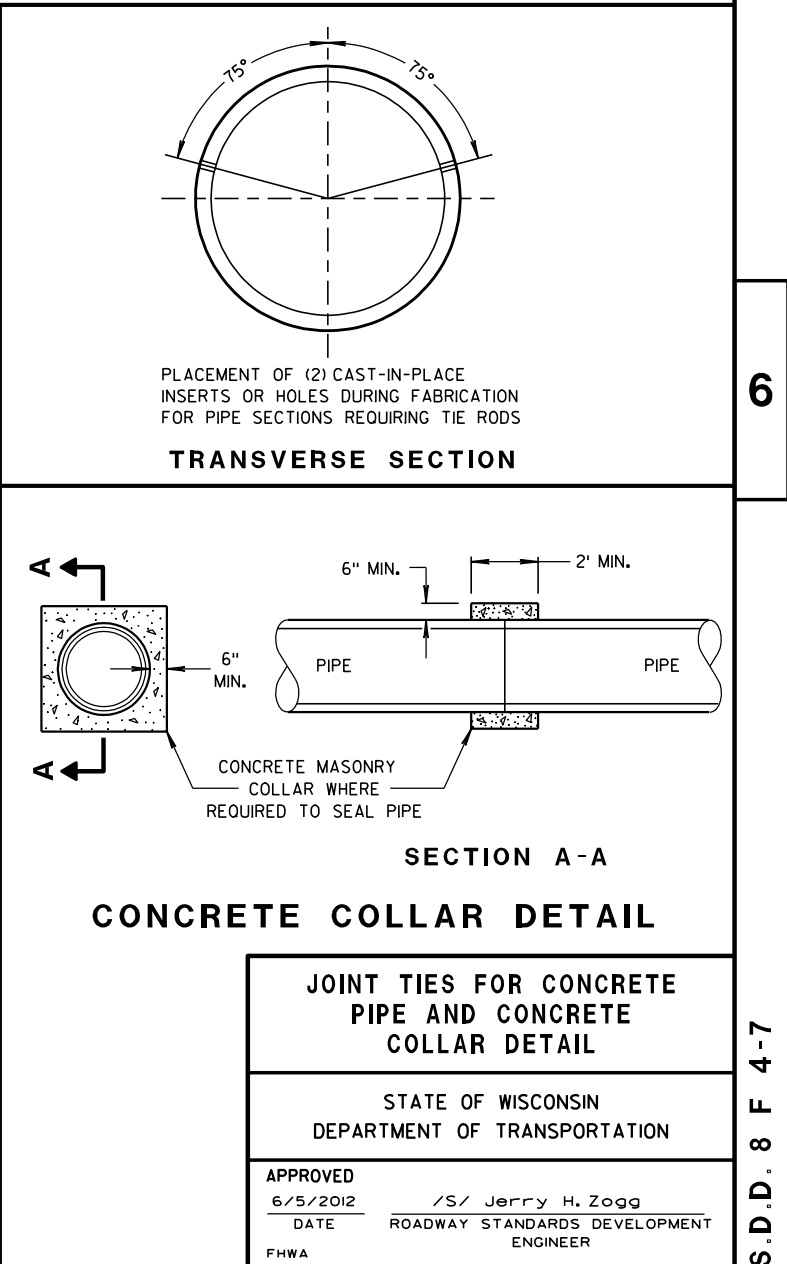
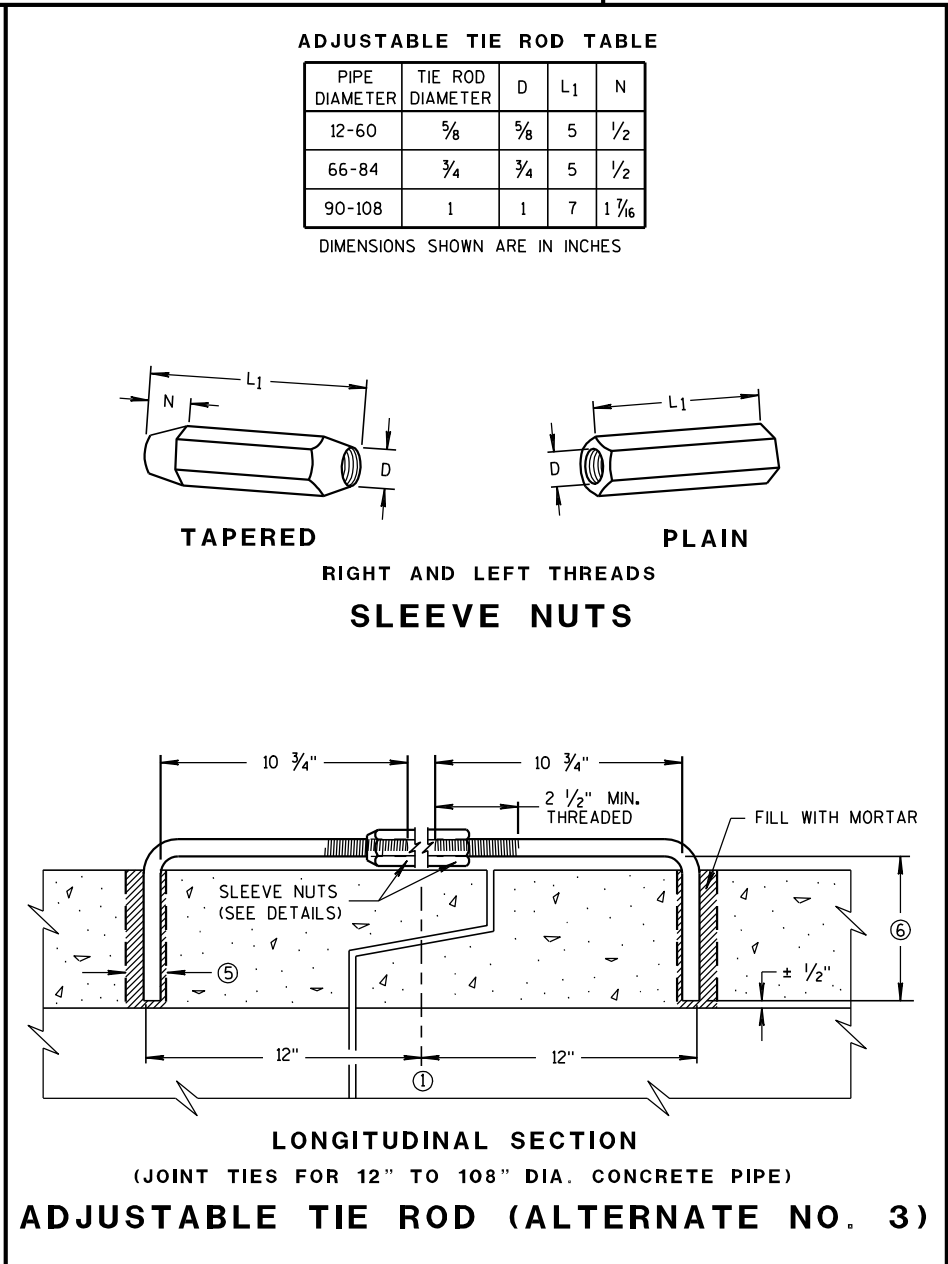
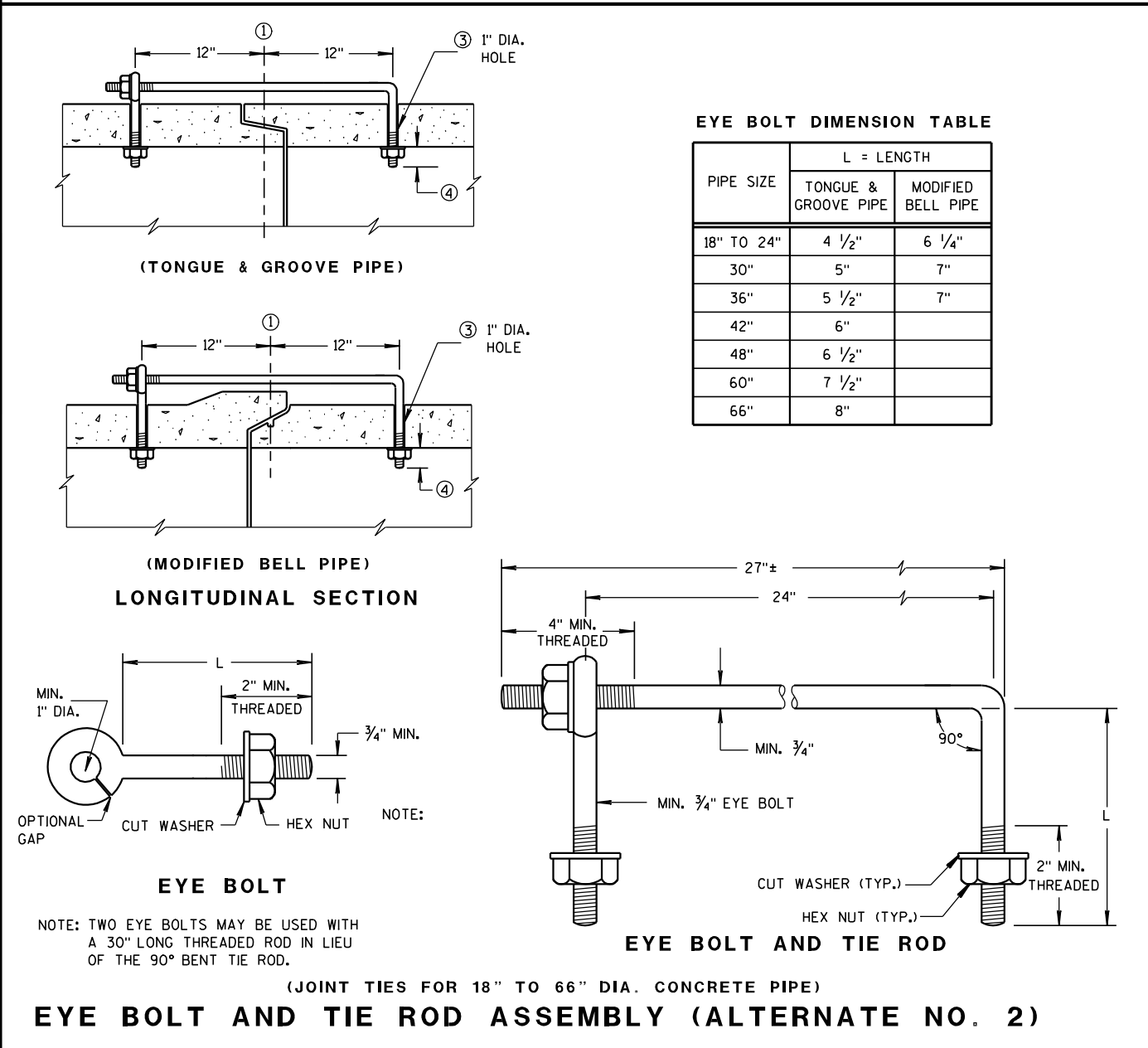
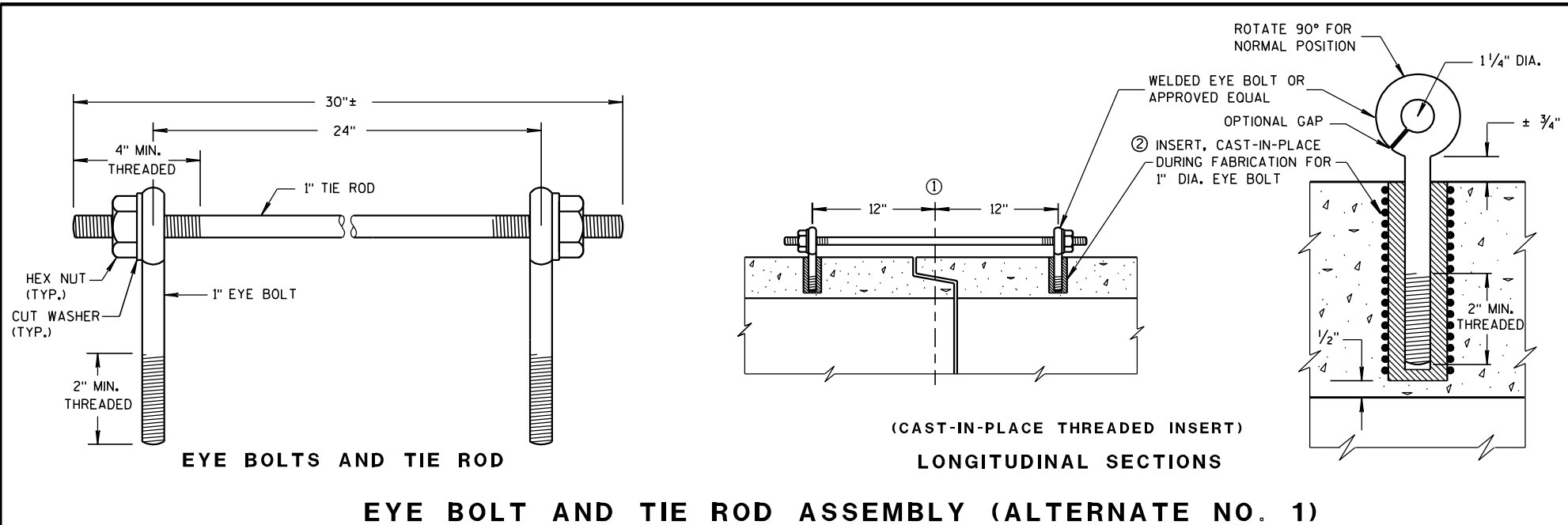
WHERE TWO OR MORE PIPES WITH APRON ENDWALLS ARE LAID ADJACENT  
TO EACH OTHER, THEY SHALL BE SEPARATED BY A DISTANCE SUFFICIENT  
TO PROVIDE A MINIMUM CLEARANCE OF 6 INCHES BETWEEN APRON ENDWALLS.

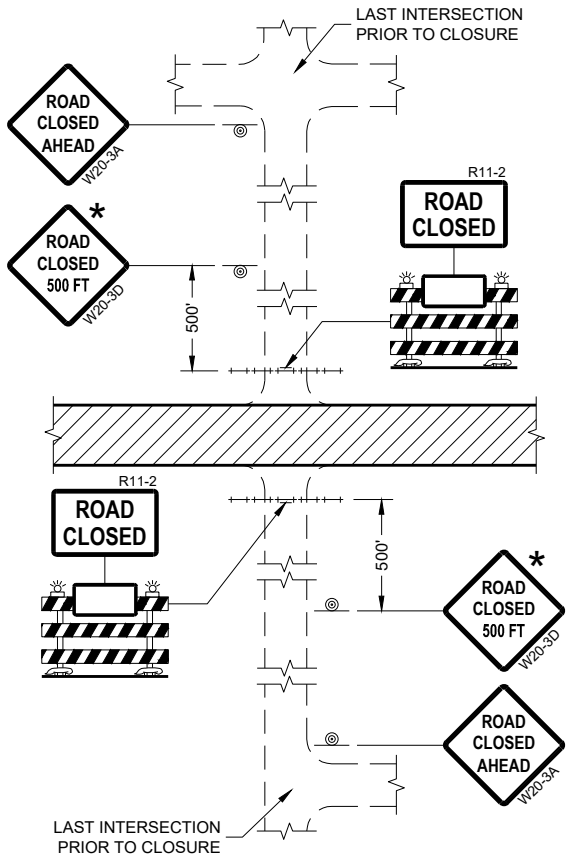
① FOR PIPE SIZES UP TO 60" DIAMETER, A 180° ROLLED EDGE MAY BE USED  
INSTEAD OF STEEL ROD REINFORCEMENT. SEE SECTION A-A.

APRON ENDWALLS FOR  
CULVERT PIPE

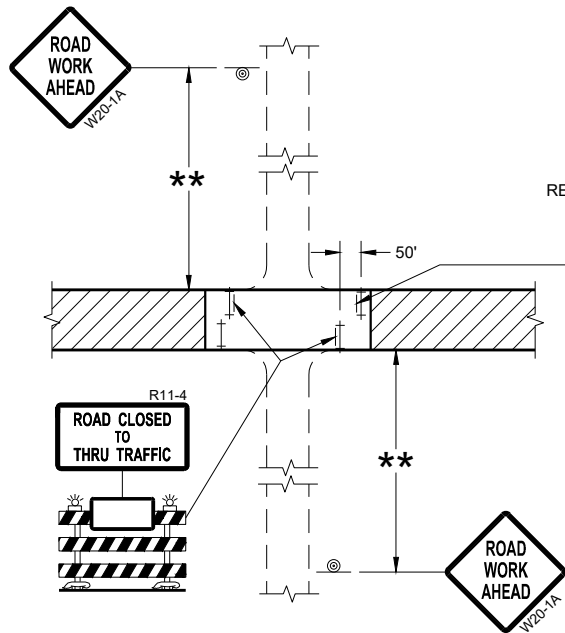
STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

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

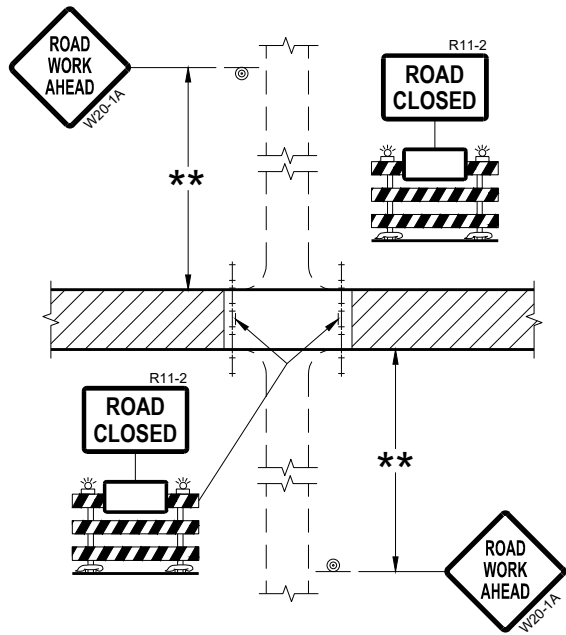




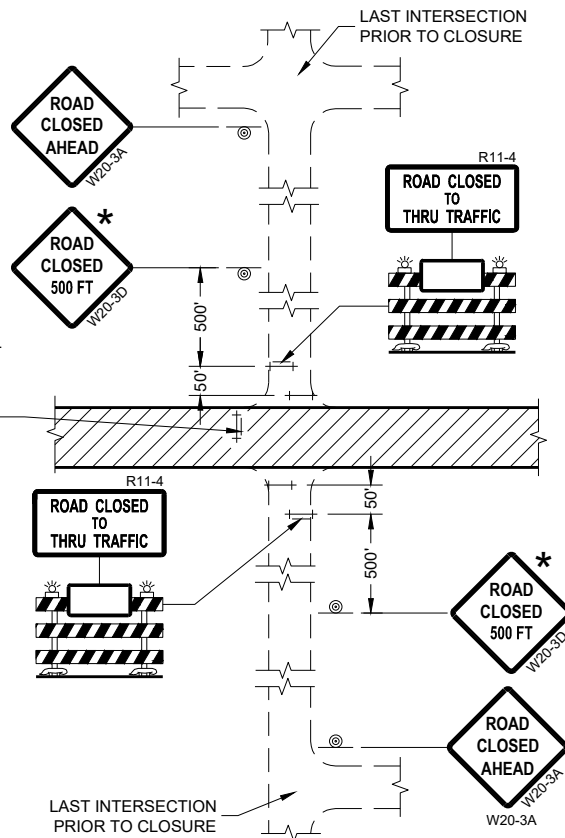
**DETAIL 1**  
(NO ACCESS TO PROJECT)



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



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



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

### GENERAL NOTES

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

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

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

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

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

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

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

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

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

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

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

### LEGEND

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

### BARRICADES AND SIGNS FOR SIDEROAD CLOSURES

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

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

FHWA

GENERAL NOTES

THE EXACT NUMBER, LOCATION, AND SPACING OF ALL SIGNS AND DEVICES SHALL BE ADJUSTED TO FIT FIELD CONDITIONS.

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




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

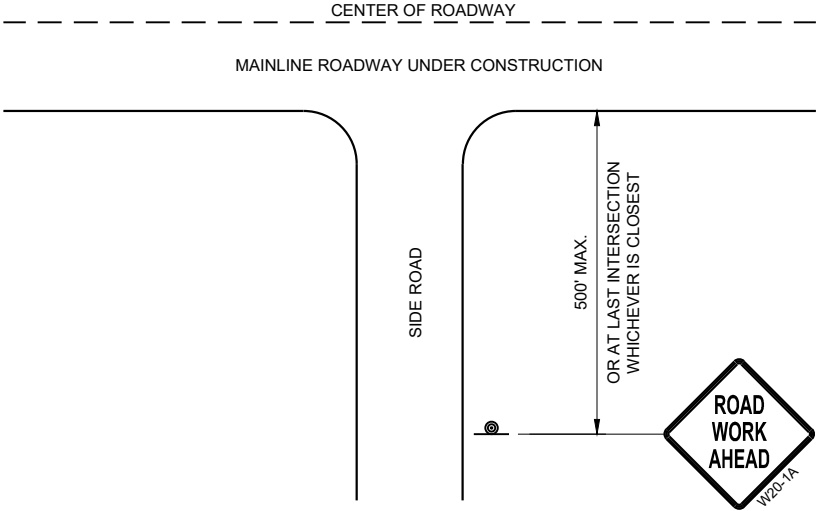
SIGNS THAT WILL BE IN PLACE LESS THAN SEVEN CONTINUOUS DAYS AND NIGHTS MAY BE MOUNTED ON PORTABLE SUPPORTS.

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

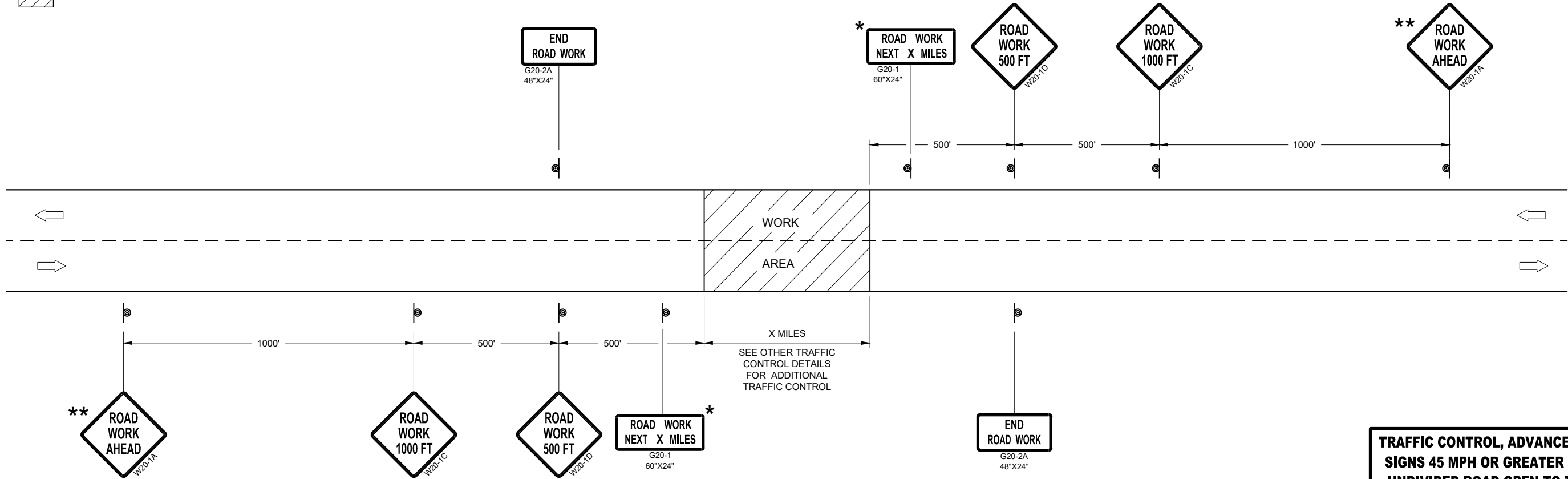
- \* OMIT G20-1 SIGNS IF LENGTH OF WORK AREA IS 2 MILES OR LESS
- \*\* PLACE AN ADDITIONAL W20-1A "ROAD WORK AHEAD" SIGN IF WORK AREA WITHIN THE PROJECT IS SEPARATED BY MORE THAN 2 MILES FROM PREVIOUS WORK AREA.

LEGEND

-  SIGN ON PERMANENT SUPPORT
-  DIRECTION OF TRAFFIC
-  WORK AREA



TYPICAL SIDE ROAD APPROACH  
WARNING SIGN DETAIL



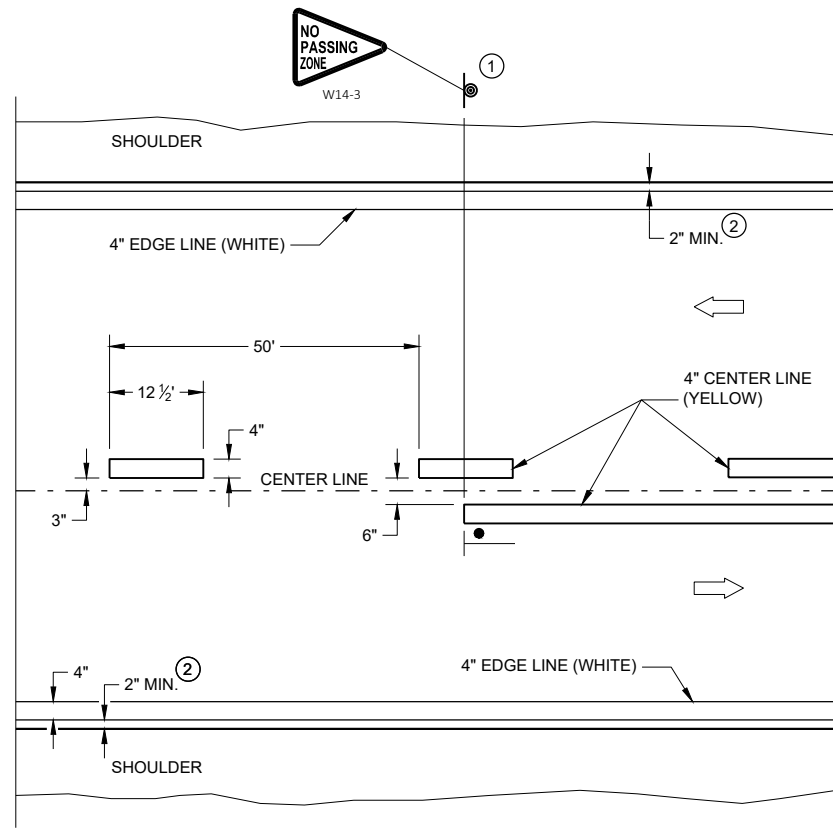
TRAFFIC CONTROL, ADVANCE WARNING SIGNS 45MPH OR GREATER

TRAFFIC CONTROL, ADVANCE WARNING  
SIGNS 45 MPH OR GREATER TWO-WAY  
UNDIVIDED ROAD OPEN TO TRAFFICE

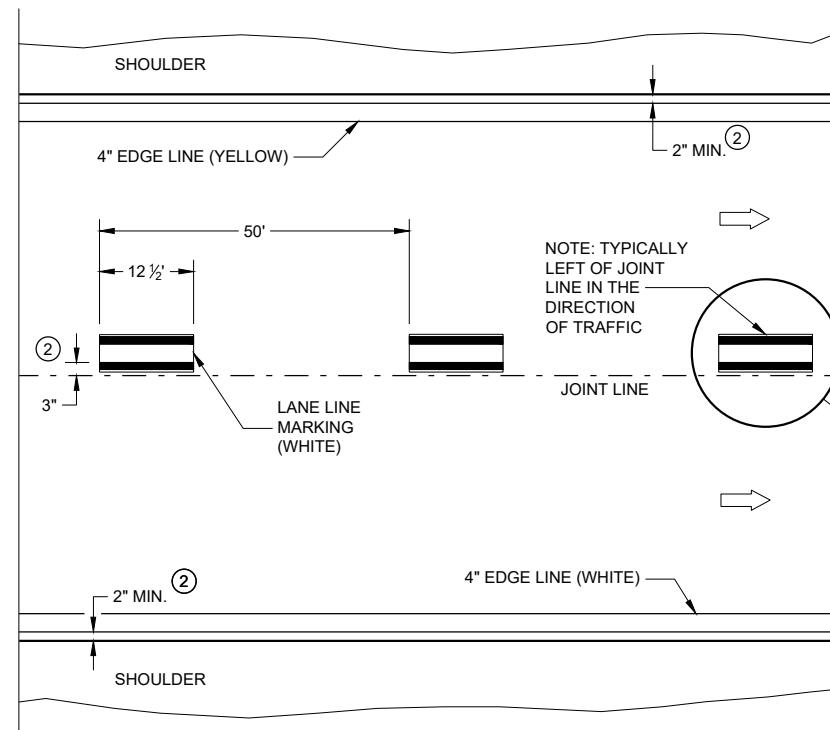
STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

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

FHWA

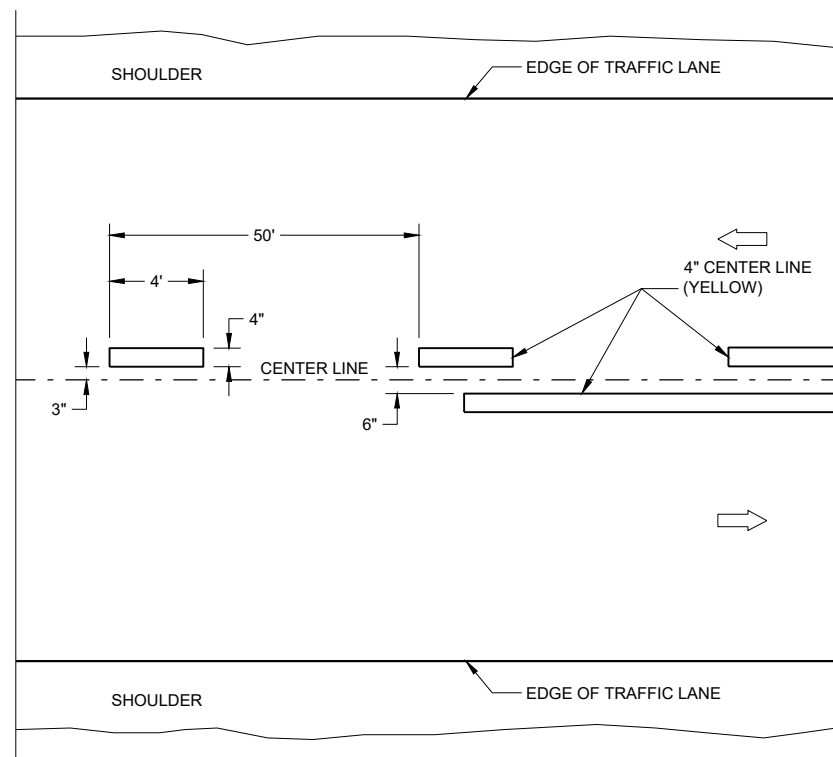


## TWO WAY TRAFFIC

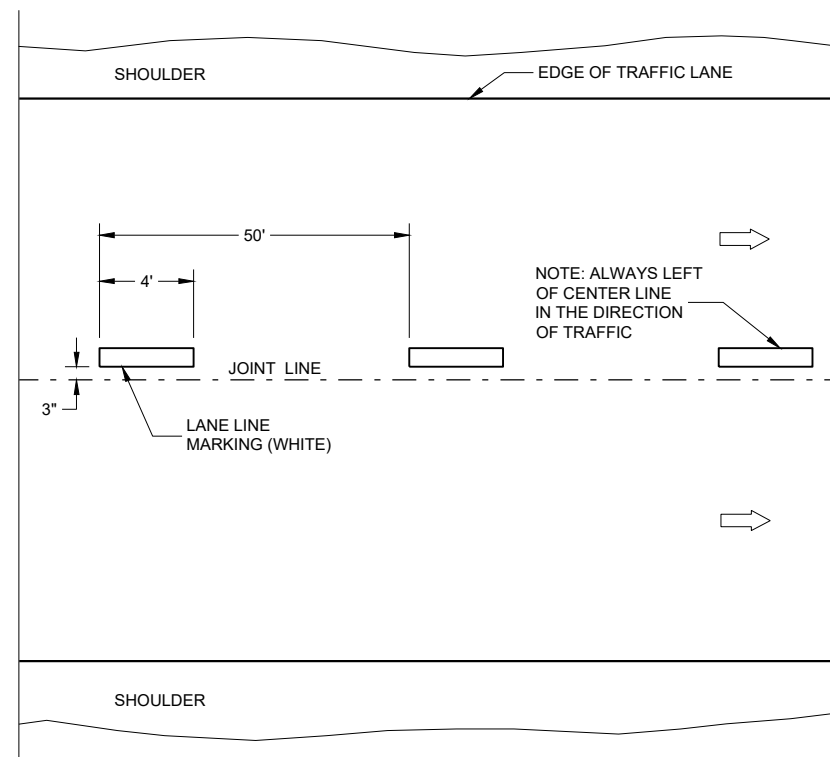


## ONE WAY TRAFFIC

## PERMANENT PAVEMENT MARKING



## TWO WAY TRAFFIC



## ONE WAY TRAFFIC




## TEMPORARY PAVEMENT MARKING

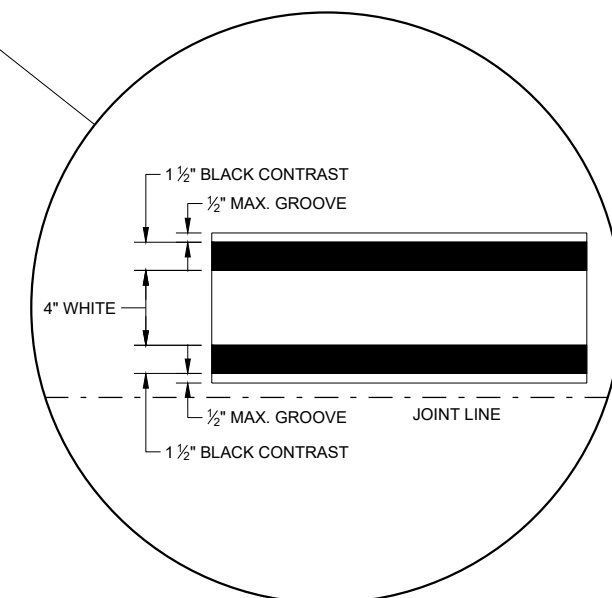
## GENERAL NOTES

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

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

## LEGEND

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

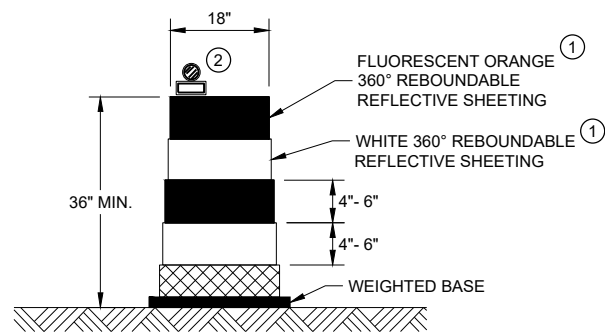


### LONGITUDINAL MARKING (MAINLINE)

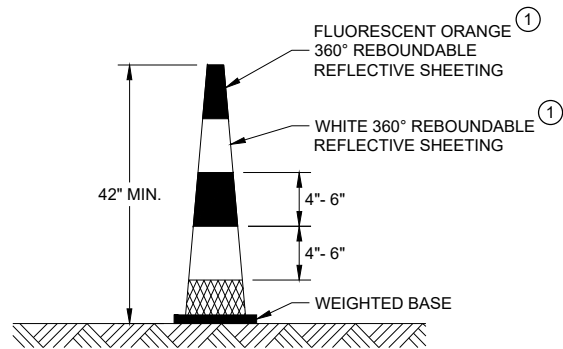
STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

APPROVED  
February 2020  
DATE

/S/ Matthew Rauch  
STATEWIDE SIGNING AND MARKING  
ENGINEER

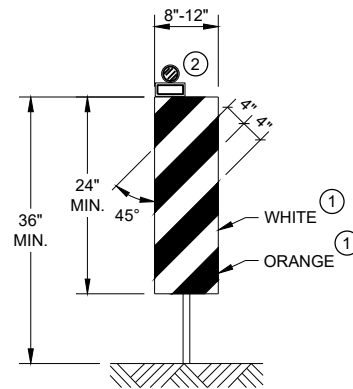


DRUM



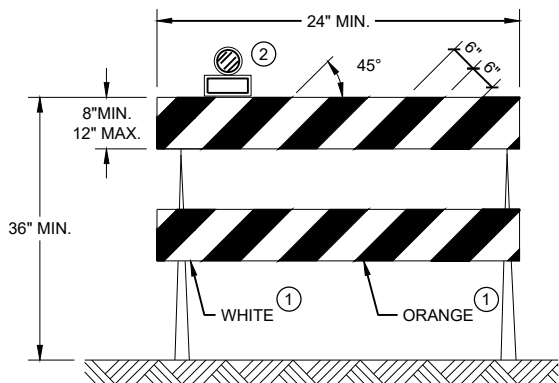
42" CONE

DO NOT USE IN TAPERS  
½ SPACING OF DRUMS



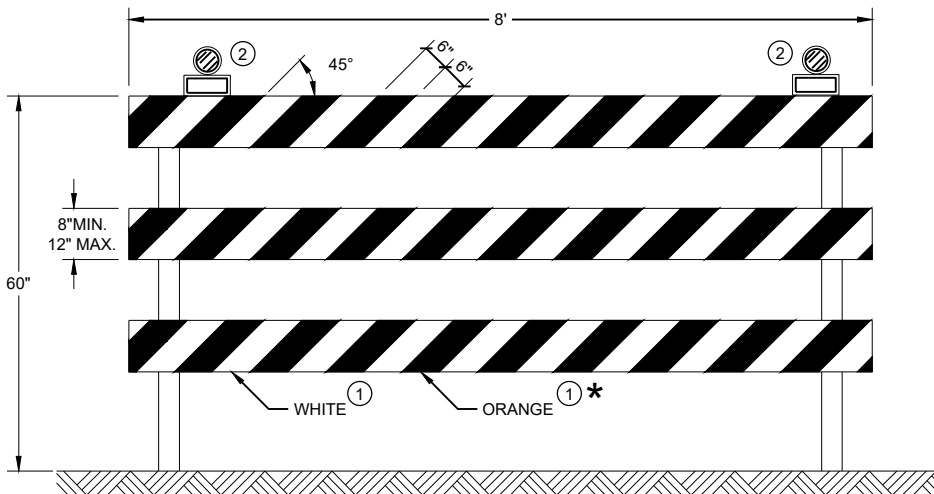
VERTICAL PANEL

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



TYPE II BARRICADE

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



TYPE III BARRICADE

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

\* IF USED FOR A PERMANENT APPLICATION USE RED SHEETING.

GENERAL NOTES

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

CHANNELIZING DEVICES  
DRUMS, CONES, BARRICADES  
AND VERTICAL PANELS






STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

APPROVED  
June 2017 /S/ Andrew Heidtke  
DATE WORK ZONE ENGINEER

FHWA



LEGEND

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

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.

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

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

THE EXACT NUMBER, LOCATION AND SPACING OF ALL SIGNS, DEVICES, AND 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.

FLAGGING

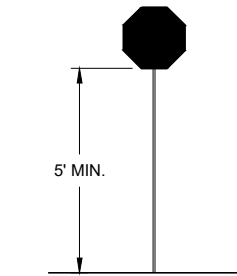
FLAGGERS SHALL BE IN SIGHT OF EACH OTHER OR IN DIRECT COMMUNICATION AT ALL TIMES. THEY SHALL BE EQUIPPED WITH STOP/SLOW PADDLES FASTENED ON SUPPORT STAFFS. WHEN THE FLAGGING OPERATION IS NOT IN EFFECT REMOVE TEMPORARY PORTABLE RUMBLE STRIPS PRIOR TO COVERING OR REMOVING ALL ADVANCE SIGNING.

- ① FOR MOVING WORK OPERATIONS, POST ADDITIONAL W20-7A FLAGGER SIGNS AT APPROXIMATELY 3,500' 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.

WHEN THE DISTANCE BETWEEN FLAGGERS EXCEEDS 2 MILES, A PILOT CAR IS REQUIRED. WHEN CURVES REDUCE SIGHT DISTANCE BELOW 400', A PILOT CAR IS REQUIRED.

TEMPORARY PORTABLE RUMBLE STRIPS

- UTILIZE TEMPORARY PORTABLE RUMBLE STRIPS ON ALL FLAGGING OPERATIONS.
- ③ EACH TEMPORARY PORTABLE RUMBLE STRIP ARRAY CONSISTS OF THREE RUMBLE STRIPS SPACED ACCORDING TO MANUFACTURER'S RECOMMENDATION, PLACED TRANSVERSE ACROSS THE LANE AT LOCATIONS SHOWN.
- ONLY USE TEMPORARY PORTABLE RUMBLE STRIPS FOR THE APPROVED PRODUCTS LIST.
- INSTALL TEMPORARY RUMBLE STRIPS PER MANUFACTURER'S RECOMMENDATIONS.
- PLACE ADVANCE SIGNING PRIOR TO INSTALLING TEMPORARY RUMBLE STRIPS.
- DO NOT INSTALL TEMPORARY PORTABLE RUMBLE STRIPS ON GRAVEL, MILLED SURFACES, OR ASPHALT THAT HAS BEEN PAVED LESS THAN 12 HOURS.



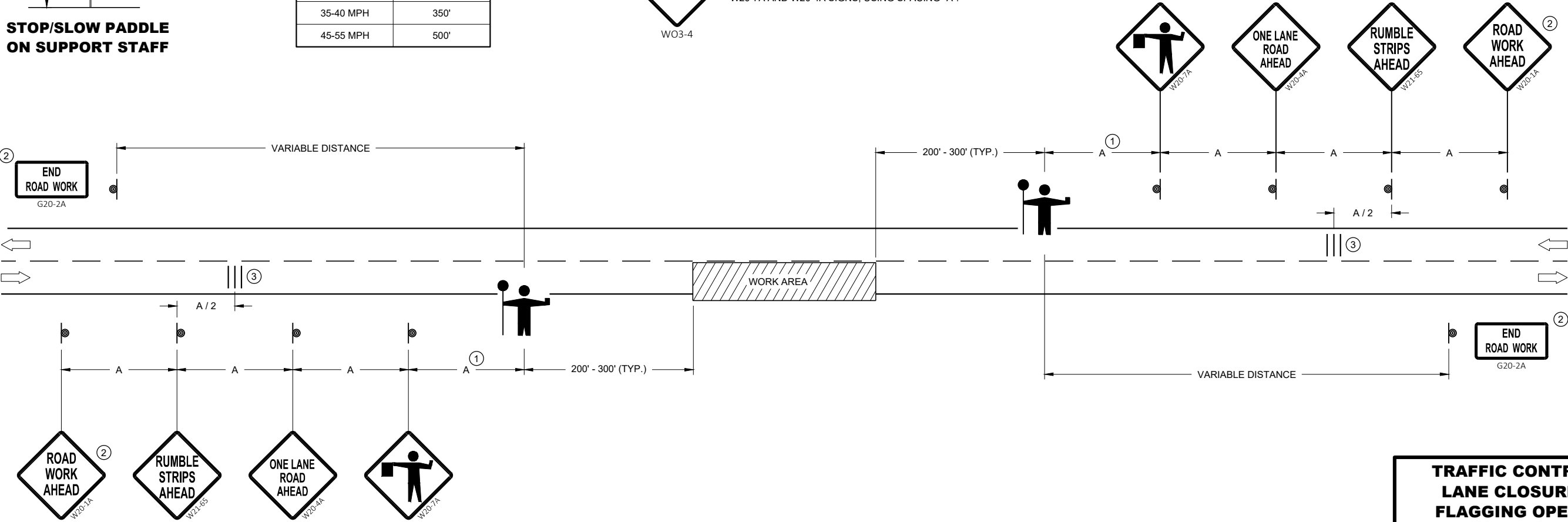
STOP/SLOW PADDLE ON SUPPORT STAFF

SIGN AND TEMPORARY RUMBLE STRIP ARRAY SPACING TABLE

| SPEED LIMIT | SPACING "A" |
|-------------|-------------|
| 25-30 MPH   | 200'        |
| 35-40 MPH   | 350'        |
| 45-55 MPH   | 500'        |



USE OF W03-4 SIGN IS OPTIONAL. WHEN USED, THIS SIGN SHALL BE LOCATED BETWEEN THE W20-7A AND W20-4A SIGNS, USING SPACING "A".



TRAFFIC CONTROL FOR LANE CLOSURE WITH FLAGGING OPERATION





**TRAFFIC CONTROL FOR LANE CLOSURE WITH FLAGGING OPERATION**

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

APPROVED  
May 2019 /S/ Andrew Heidtke  
DATE WORK ZONE ENGINEER

FHWA

LEGEND

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

GENERAL NOTES

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

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

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

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

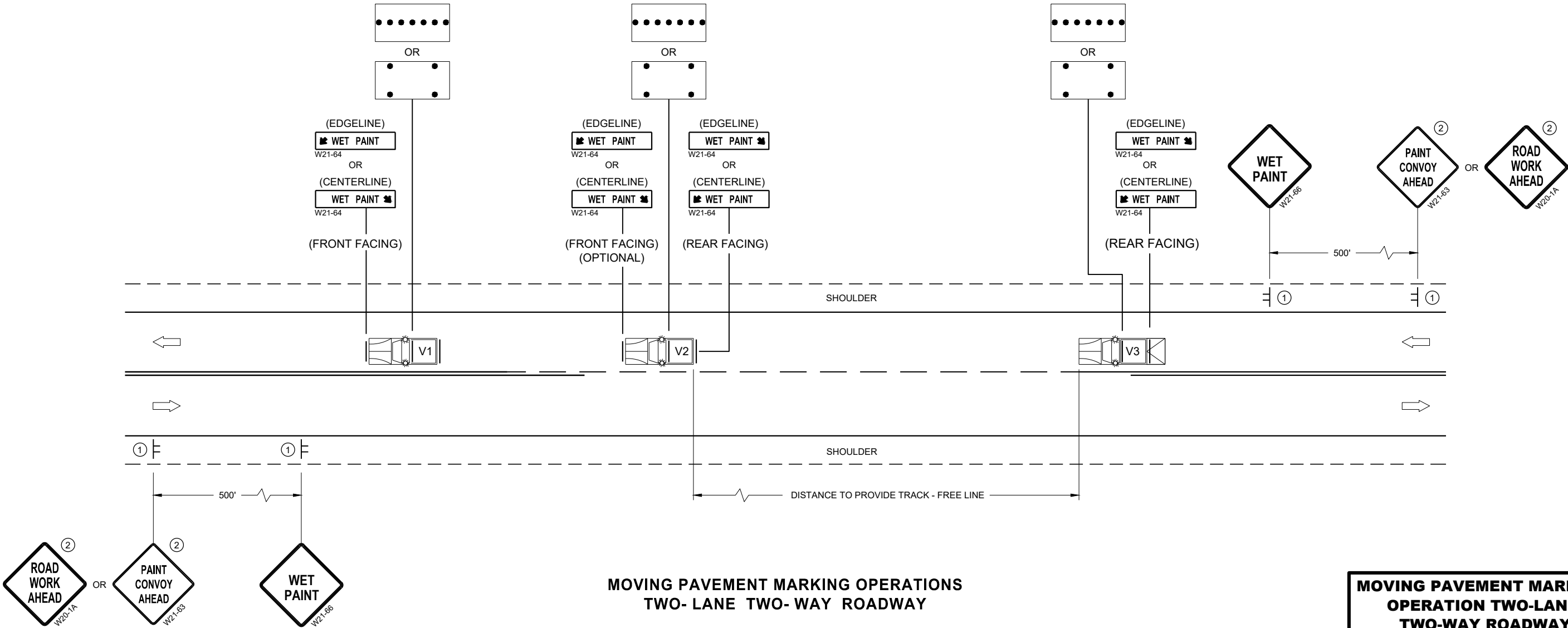
THE WORK AND SHADOW VEHICLES SHOULD PULL OVER PERIODICALLY TO ALLOW TRAFFIC TO PASS.

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

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

CONES SHALL BE A MINIMUM OF 18" FOR WET PAVEMENT MARKING .

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



MOVING PAVEMENT MARKING  
OPERATION TWO-LANE  
TWO-WAY ROADWAY

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

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

LEGEND





-  SIGN ON PERMANENT SUPPORT
-  TRAFFIC CONTROL DRUM
-  DIRECTION OF TRAFFIC
-  WORK ZONE

TABLE A

| SHOULDER TAPER LENGTH (FEET) |    |     |     |     | BUFFER SPACE (FEET) |
|------------------------------|----|-----|-----|-----|---------------------|
| S \ W                        | 4  | 6   | 8   | 10  |                     |
| 30                           | 20 | 30  | 40  | 50  | 200                 |
| 35                           | 30 | 45  | 55  | 70  | 250                 |
| 40                           | 40 | 55  | 75  | 90  | 305                 |
| 45                           | 60 | 90  | 120 | 150 | 360                 |
| 50                           | 70 | 100 | 135 | 170 | 425                 |
| 55                           | 75 | 110 | 150 | 185 | 495                 |

W = SHOULDER WIDTH (FEET  
S = NON-CONSTRUCTION SPEED LIMIT (MPH)

TAPER LENGTH

L = WS AT 45 MPH OR GREATER  
L = WS² / 60 AT 40 MPH OR LESS

SHOULDER TAPER LENGTH = 1/3L

GENERAL NOTES

ALL SIGNS ARE 48"X48" UNLESS OTHERWISE NOTED. IF NECESSARY DUE TO SPACE CONSTRAINTS IN URBAN AREAS, 36" X 36" SIGNS MAY BE USED IF APPROVED BY THE REGIONAL TRAFFIC UNIT.

"WO" IS THE SAME AS "W" EXCEPT THE BACKGROUND IS ORANGE.

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

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

CHANNELIZING DEVICES PLACED ADJACENT TO WORK AREA SHALL BE PULLED BACK FROM THE TRAVEL LANE WHEN WORK IS NOT IN PROGRESS.

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

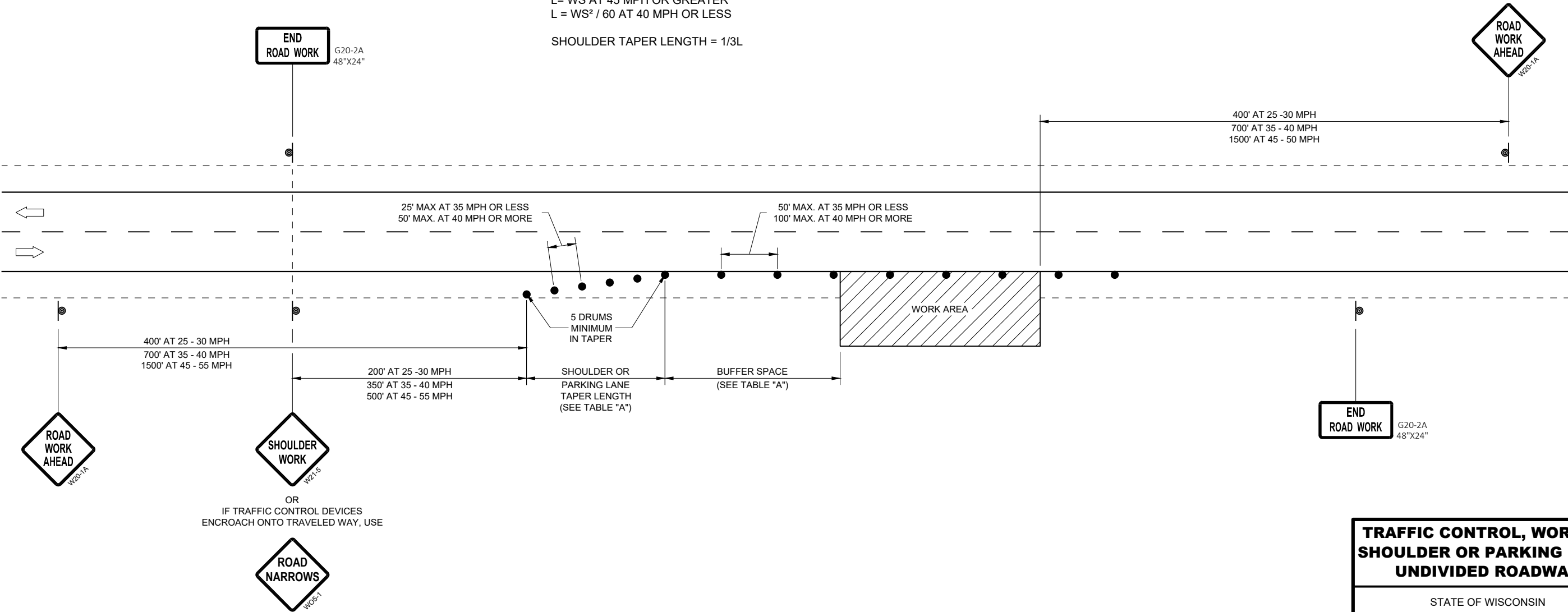
W20-1A AND G20-2A SIGNS ARE NOT REQUIRED IF THE WORK AREA IS WITHIN A LARGER WORK ZONE WHERE THESE SIGNS ARE ALREADY RESENT. G20-2A SIGNS MAY ALSO BE OMITTED IF DURATION OF WORK IS LESS THAN 7 CONTINUOUS DAYS AND NIGHTS.

6

6

SDD 15D28 - 03

SDD 15D28 - 03



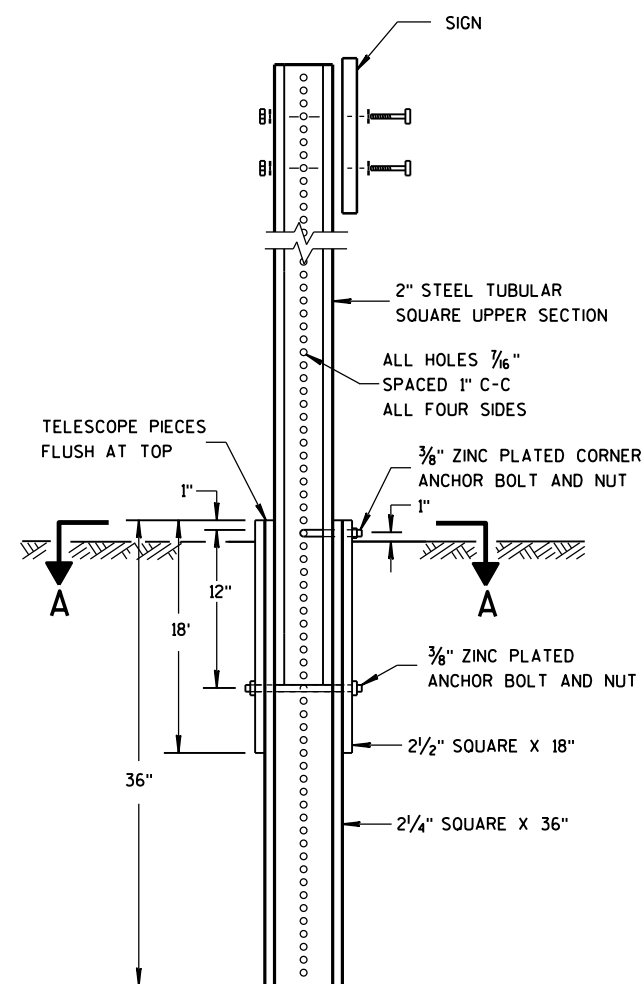
TRAFFIC CONTROL, WORK ON  
SHOULDER OR PARKING LANE,  
UNDIVIDED ROADWAY

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

APPROVED  
August 2019  
DATE

/S/ Andrew Heidtke  
STATEWIDE WORK ZONE TRAFFIC  
SAFETY ENGINEER

FHWA



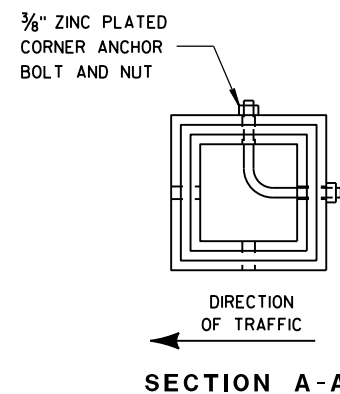
**DETAIL OF TUBULAR  
STEEL SIGN POST**

**TUBULAR STEEL POSTS**

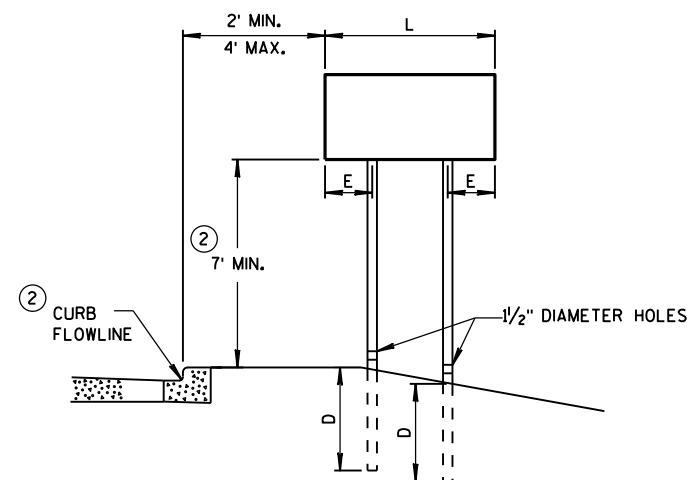
| AREA OF SIGN<br>INSTALLATION<br>(SQ. FT.)      | NUMBER OF<br>REQUIRED TUBULAR<br>STEEL POSTS |
|------------------------------------------------|----------------------------------------------|
| 9 OR LESS                                      | 1                                            |
| GREATER THAN 9<br>LESS THAN OR EQUAL<br>TO 18  | 2                                            |
| GREATER THAN 18<br>LESS THAN OR EQUAL<br>TO 27 | 3                                            |

SIGNS WIDER THAN 3 FEET OR LARGER THAN 9 SQ. FT. SHALL BE MOUNTED ON MULTIPLE POSTS (SEE ABOVE TABLE).

SIGNS LARGER THAN 27 SQ. FT. SHALL NOT BE MOUNTED ON TUBULAR STEEL POSTS.



**SECTION A-A**

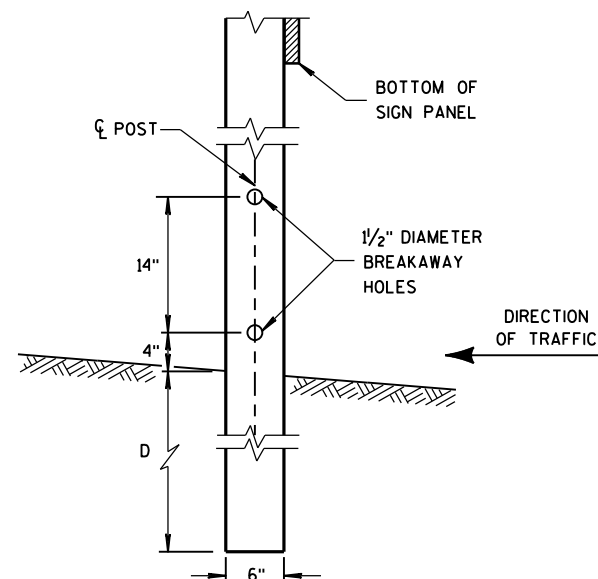


**URBAN AREA**

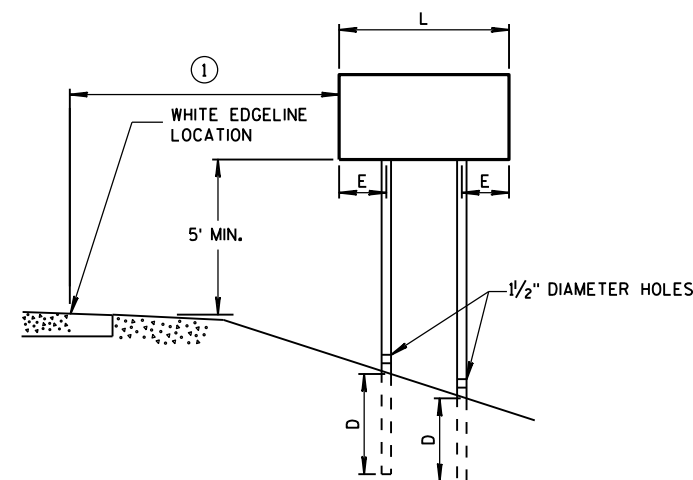
**POST MOUNTING DETAIL FOR TEMPORARY TRAFFIC CONTROL FIXED MESSAGE SIGNS**

**WOOD POST  
EMBEDMENT DEPTH**

| AREA OF SIGN<br>INSTALLATION<br>(SQ. FT.) | D<br>(MIN) |
|-------------------------------------------|------------|
| 20 OR LESS                                | 4'         |
| GREATER THAN 20                           | 5'         |



**4"x6" WOOD POST  
MODIFICATION**



**RURAL AREA**

**4" X 6" WOOD POST**

| POST SPACING REQUIREMENTS               |     | NUMBER OF<br>WOOD POSTS<br>REQUIRED |
|-----------------------------------------|-----|-------------------------------------|
| L                                       | E   |                                     |
| 48" OR LESS AND<br>LESS THAN 20 SQ. FT. | -   | 1                                   |
| LESS THAN 60"                           | 12" | 2                                   |
| 60" TO 120"                             | L/5 | 2                                   |
| GREATER THAN 120"<br>LESS THAN 168"     | 12" | 3                                   |
| 168" AND GREATER                        | 12" | 4                                   |

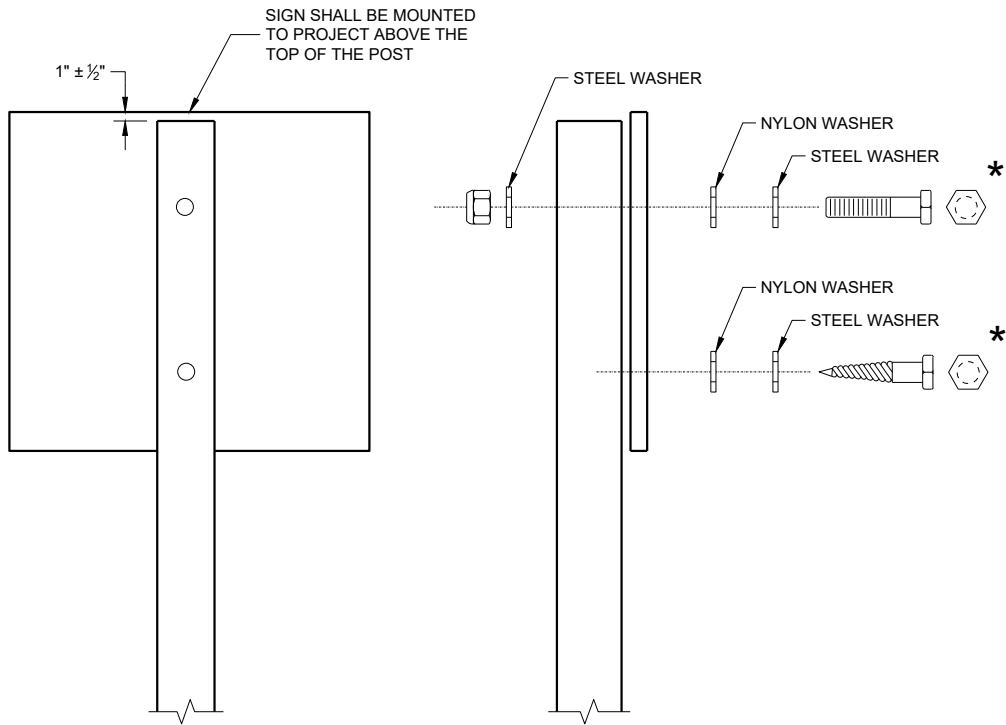
SEE NOTE ③

**GENERAL NOTES**

- ① 6 FEET FROM THE EDGE OF PAVEMENT (EDGE LINE LOCATION) UNLESS OTHERWISE DIRECTED BY THE PROJECT ENGINEER. LATERAL OFFSET SHOULD BE ADJUSTED TO AVOID THE DITCH FLOWLINE.
- ② 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. IF NO SIDEWALK AND NO PARKING, VERTICAL CLEARANCE MAY BE REDUCED TO 5 FOOT MINIMUM. OFFSET OF SIGNS IS MEASURED FROM THE CURB FLOWLINE.
- ③ FOR SIGNS REQUIRING 4 POSTS, SPACE INTERMEDIATE POSTS EVENLY.

**TEMPORARY TRAFFIC CONTROL  
SIGN MOUNTING**

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION



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 POST (4" x 6")  
LAG SCREWS - 3/8" x 3"  
MACHINE BOLTS - 5/16" x 6 1/2" OR 7" LENGTH W/NUTS

SQUARE STEEL POST (2" x 2")  
MACHINE BOLTS - 3/8" x 3 1/4" LENGTH W/NUTS  
RIVETS - 3/32" (6605-9-6) BULB-TITE, TRI-FOLD, ALUMINUM  
BODY/MANDREL O.D. FLANGE 0.720 - 0.765 INCH,  
GRIP RANGE 0.042 - 0.375 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 0.080 NYLON

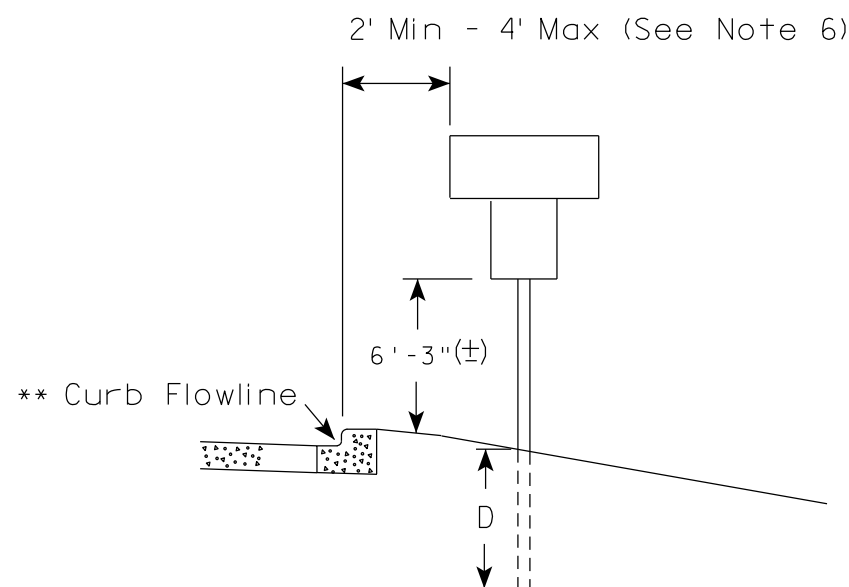
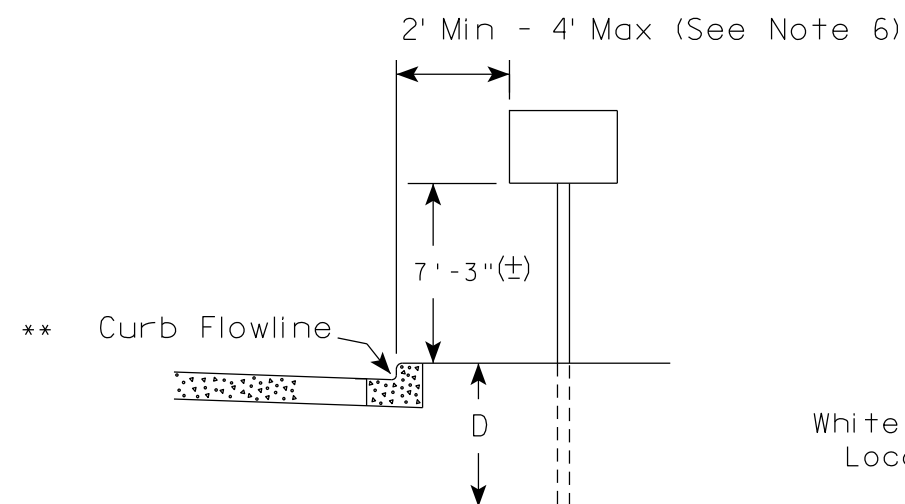
\* TWO DIFFERENT FASTENING SYSTEMS ARE SHOWN FOR ILLUSTRATION  
PURPOSES. ON ANY INDIVIDUAL SIGN, EITHER ONE OR THE OTHER SYSTEM  
SHALL BE USED. ACTUAL NUMBER OF FASTENERS PER SIGN VARIES WITH  
THE SIGN AREA. FOR A SINGLE POST INSTALLATION, ALL SIGNS GREATER  
THAN 9 SQ. FT. REQUIRE THE USE OF 3 FASTENERS.

ATTACHMENT OF SIGNS  
TO POSTS

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

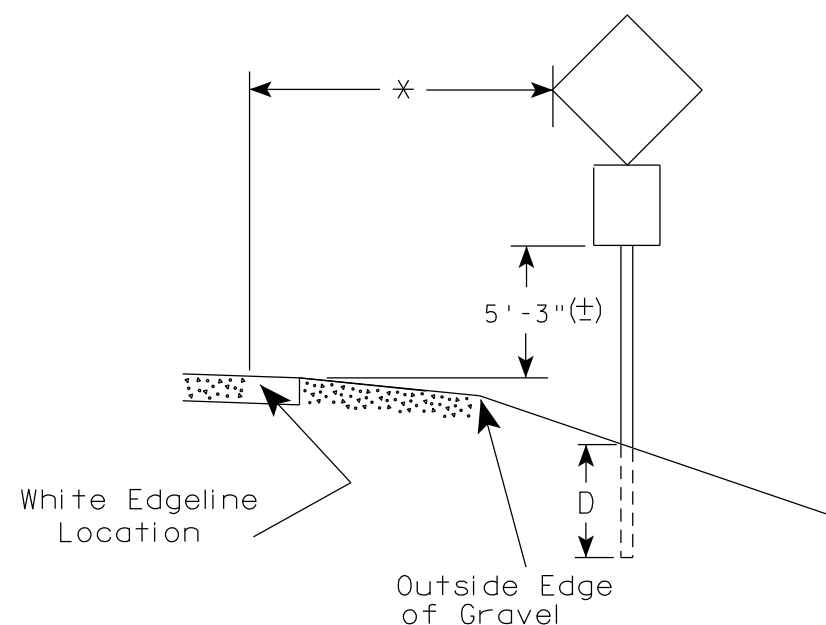
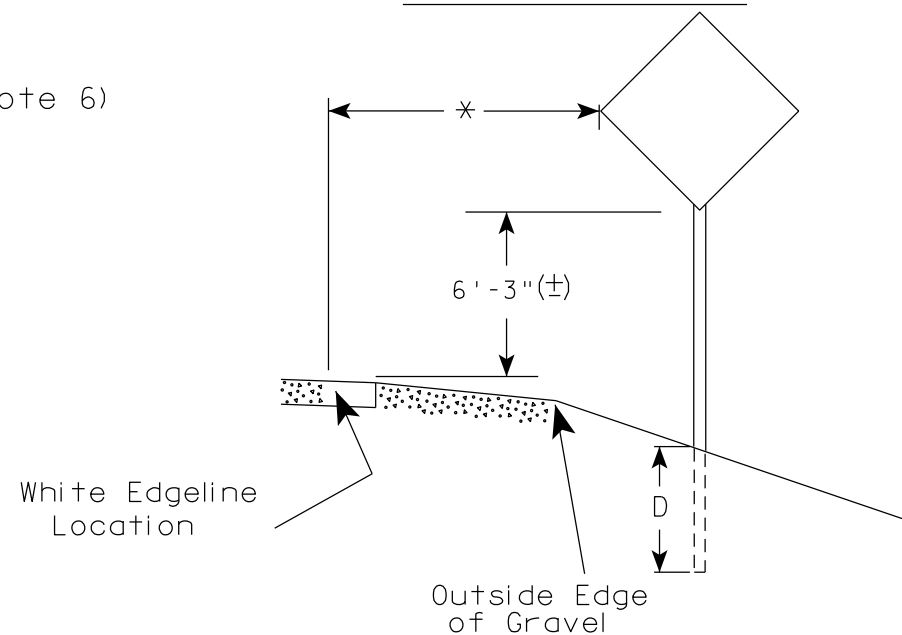
APPROVED  
June 2017 /S/ Andrew Heidtke  
DATE WORK ZONE ENGINEER  
FHWA

# URBAN AREA



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

# RURAL AREA (See Note 2)



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

## POST EMBEDMENT DEPTH

| Area of Sign Installation<br>( Sq. Ft. ) | D<br>( Min ) |
|------------------------------------------|--------------|
| 20 or Less                               | 4'           |
| Greater than 20                          | 5'           |

## GENERAL NOTES

1. Signs wider than 4 feet or 20 sq.ft or larger, shall be mounted on multiple posts. Refer to plate A4-4.
2. If signs are mounted on or behind barrier wall, see A4-10 sign plate.  
The Double Arrow sign (W12-1D) shall be mounted at a height of 2'-3" (±). The Chevron sign (W1-8), Roundabout Chevron panel (R6-4B), Enhanced Reference Markers, Clearance Markers (W5-52), Mile Markers (D10 series), In Road Object Markers (W5-54) & End of Road Markers (W5-56) shall be mounted at a height of 4'-3" (±).
3. For expressways and freeways, mounting height is 7'- 3" (±) or 6'-3" (±) depending upon existence of a sub-sign.
4. Minimum mounting height for signs mounted on traffic signal poles is 5'- 3" (±).
5. Offset distance shall be consistent with existing signs or consistent throughout length of project.
6. The (±) tolerance for mounting height is 3 inches.
7. Folding signs shall be mounted at a height of 5'-3" (±) or as directed by the Engineer.

TYPICAL INSTALLATION  
OF PERMANENT TYPE II  
SIGNS ON SINGLE POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*  
for State Traffic Engineer

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

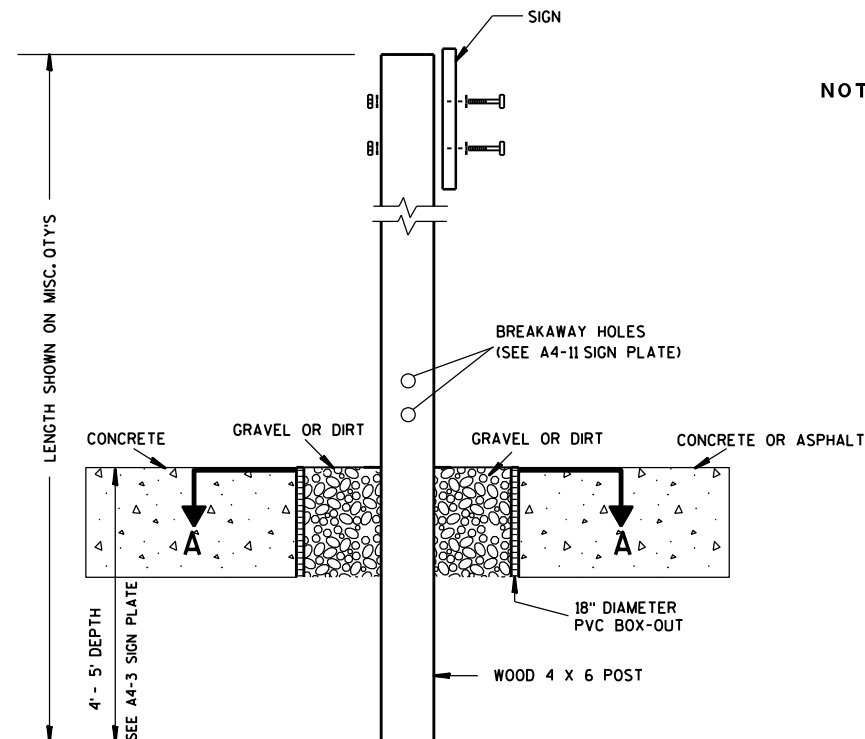
PROJECT NO:

HWY:

COUNTY:

SHEET NO:

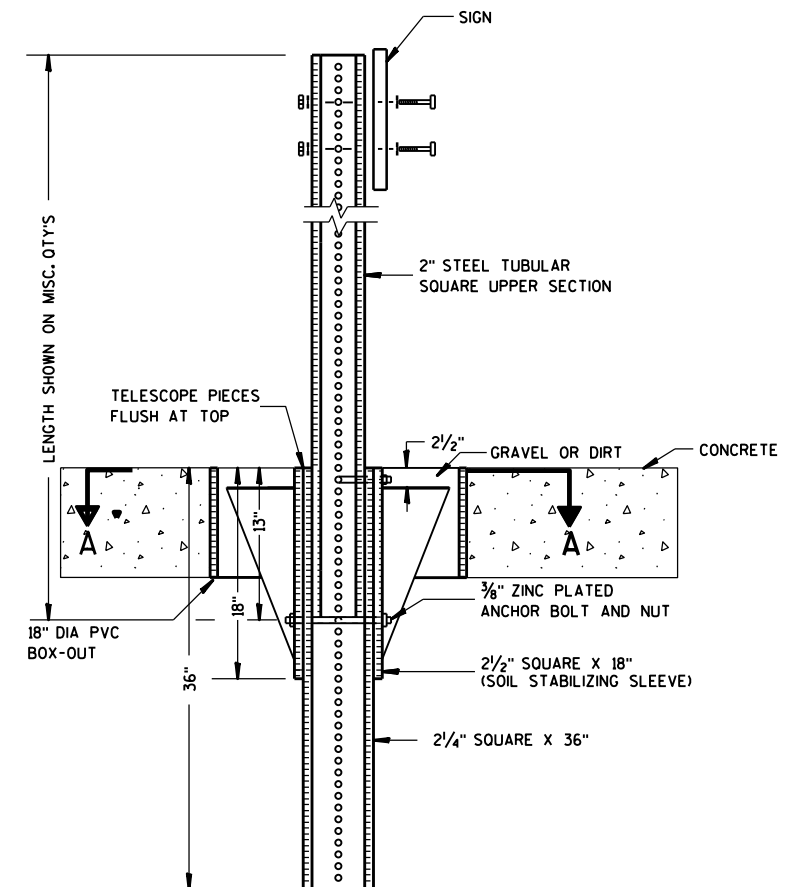
E



**ELEVATION VIEW**

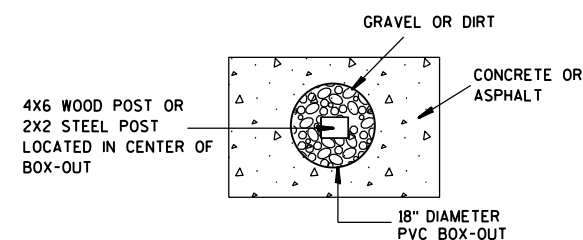
**DETAIL OF WOOD 4 X 6 SIGN POST IN BOX-OUT**

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



**ELEVATION VIEW**

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



**PLAN VIEW**

**FOR NEW CONCRETE/ASPHALT INSTALLATIONS**

**SIGN POST  
BOX-OUTS  
A4-3B**

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*  
for State Traffic Engineer

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

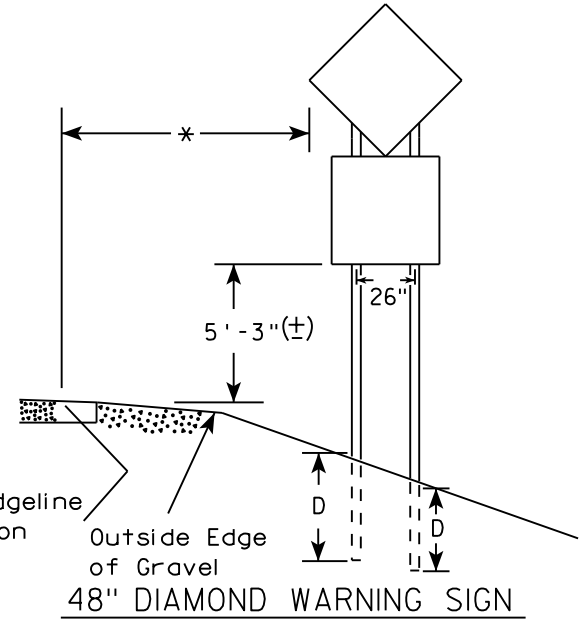
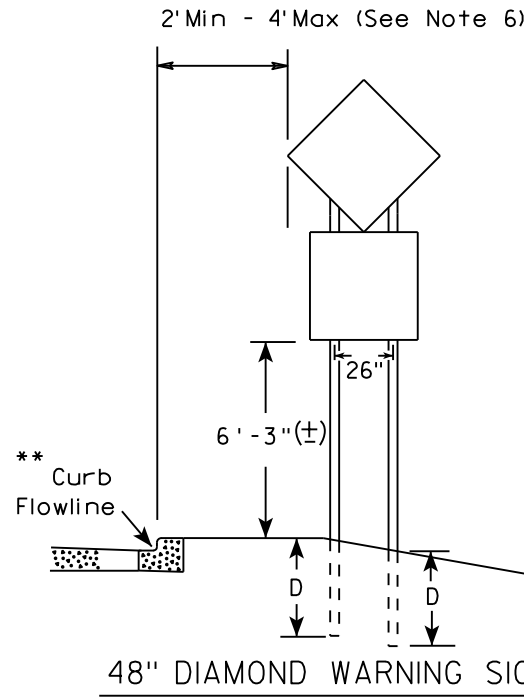
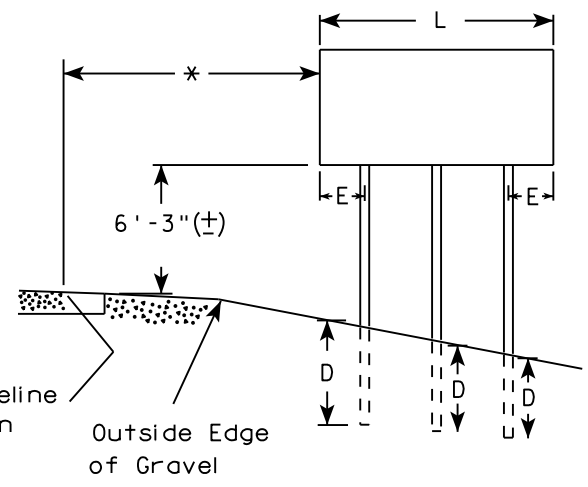
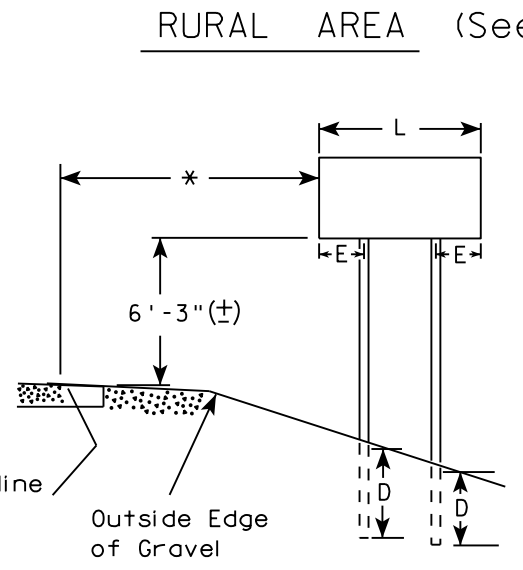
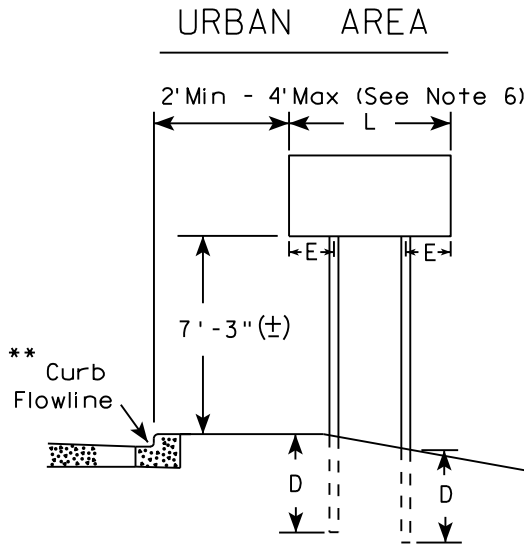
PROJECT NO:

HWY:

COUNTY:

SHEET NO:

**E**



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

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

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

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

\*\*\*

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

| SIGN SHAPE OTHER THAN DIAMOND<br>(THREE POSTS REQUIRED) |     |
|---------------------------------------------------------|-----|
| L                                                       | E   |
| Greater than 108"<br>to 144"                            | 12" |

POST EMBEDMENT DEPTH

| Area of Sign<br>Installation<br>( Sq. Ft. ) | D<br>( Min ) |
|---------------------------------------------|--------------|
| 20 or Less                                  | 4'           |
| Greater than 20                             | 5'           |

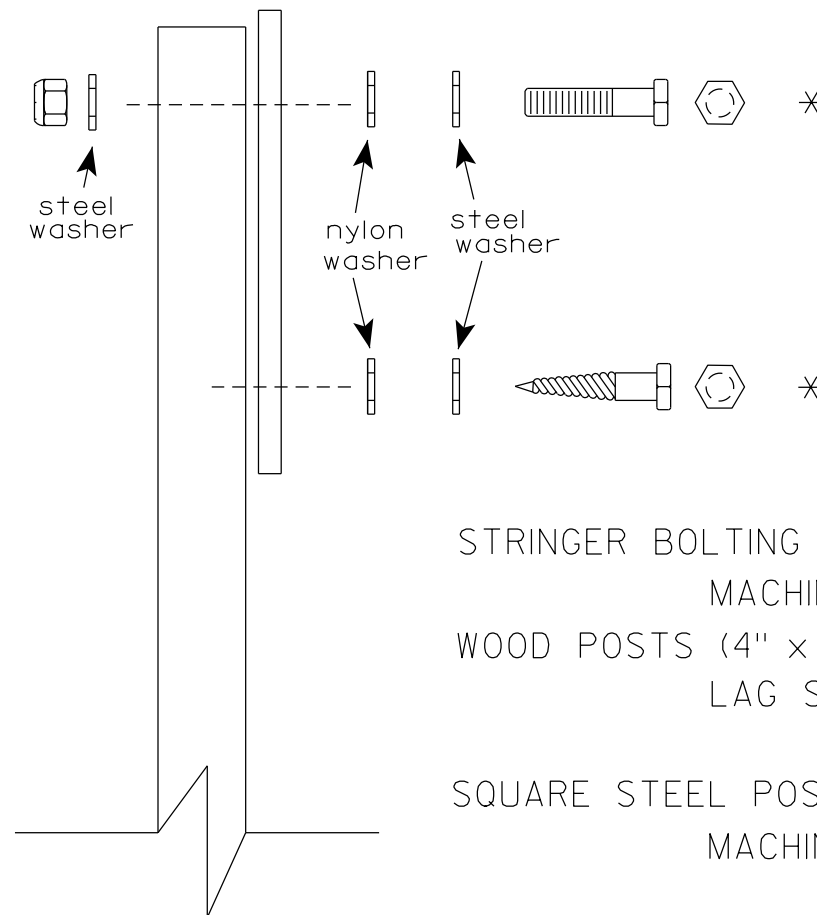
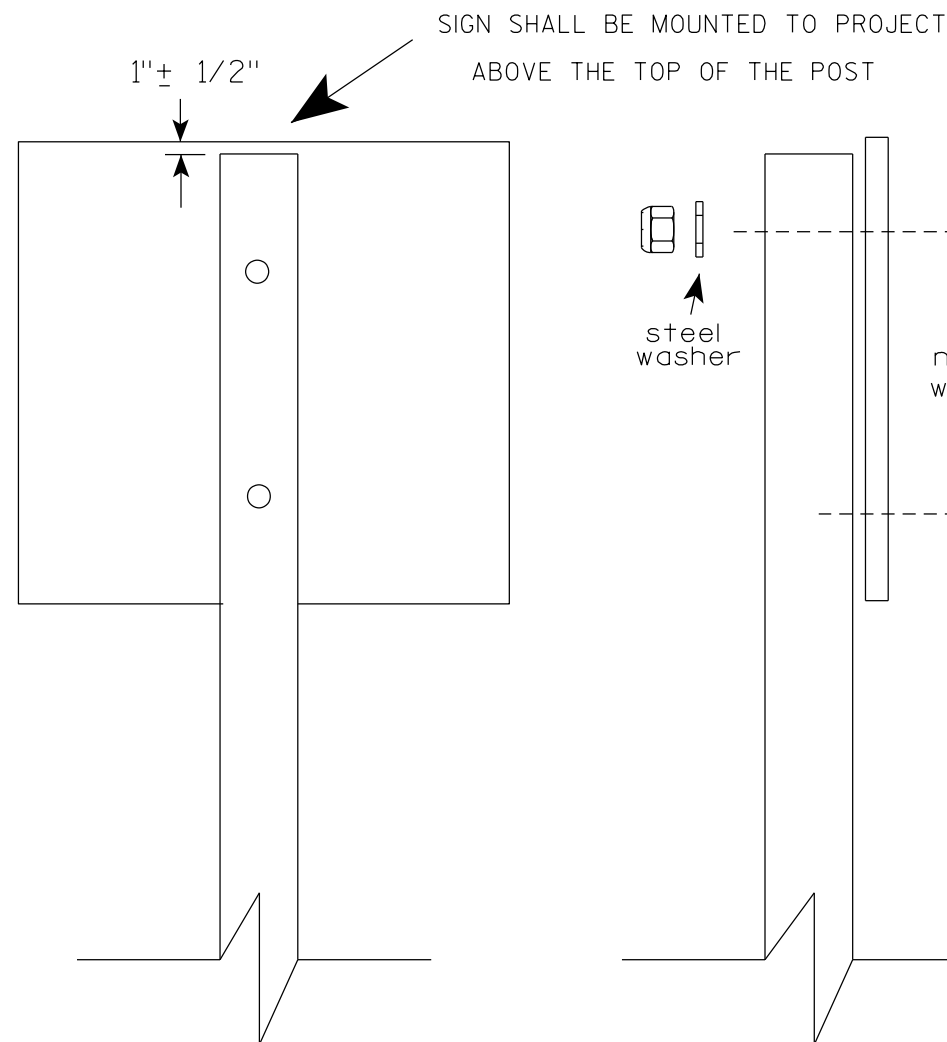
TYPICAL INSTALLATION  
OF TYPE II SIGNS  
ON MULTIPLE POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*  
for State Traffic Engineer

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





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

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

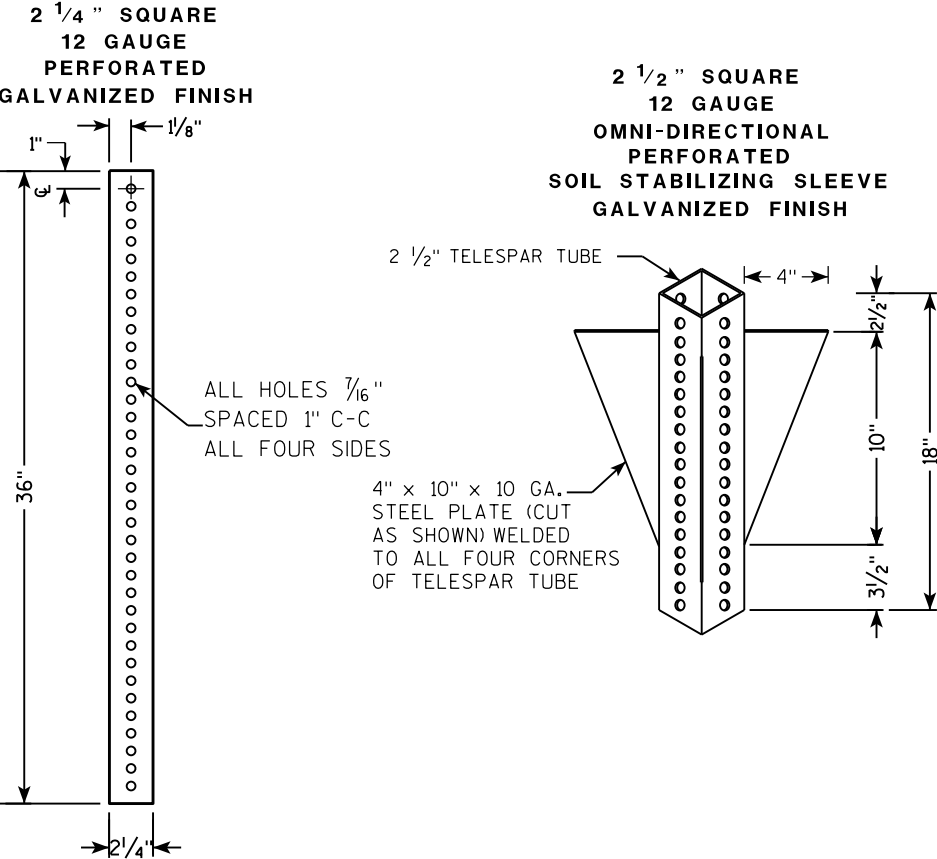
Threads on bolts and nuts shall be manufactured with sufficient allowance for the cadmium plate or galvanized coating to permit the nuts to run freely on the bolts.

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

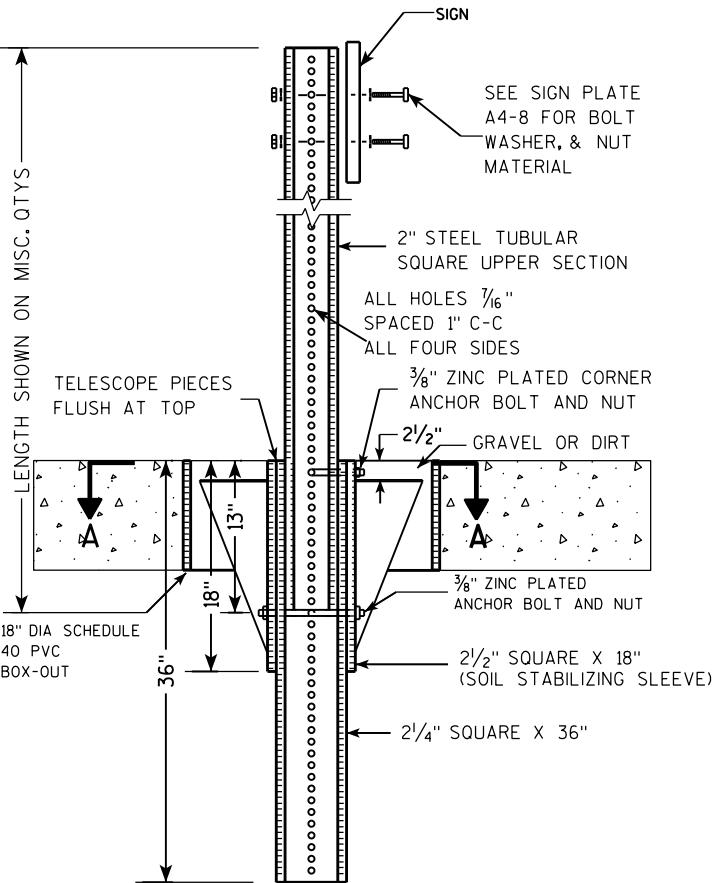
\* Two different fastening systems are shown for illustration purposes. On any individual sign, either one or the other system shall be used. Actual number of fasteners per sign varies with the sign area, but normally there are two. For a single post installation, all signs greater than 9 sq. ft. require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

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

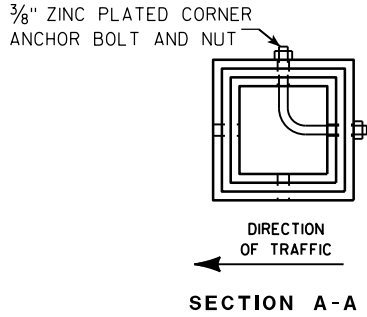
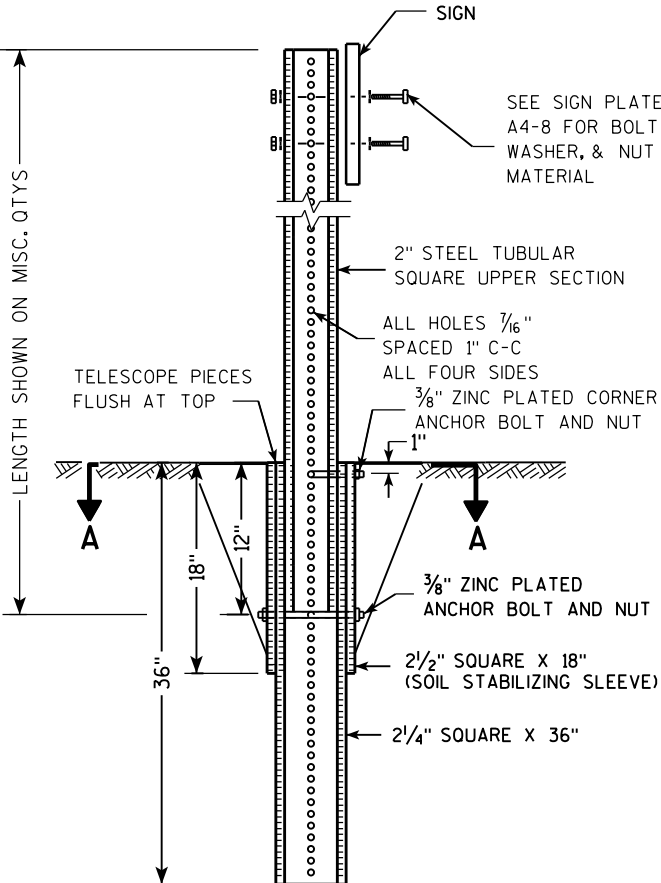
TELESCOPIC TUBING ANCHORS  
TWO PIECE SYSTEM



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



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



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

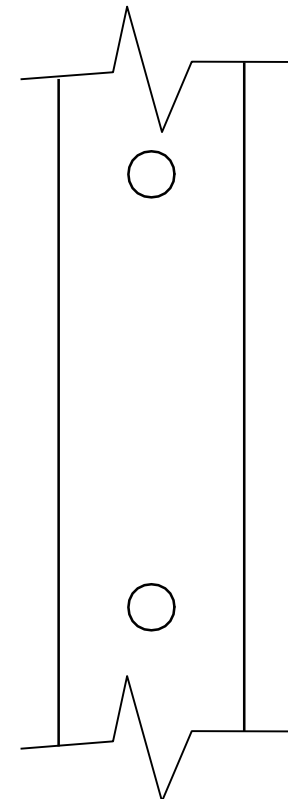
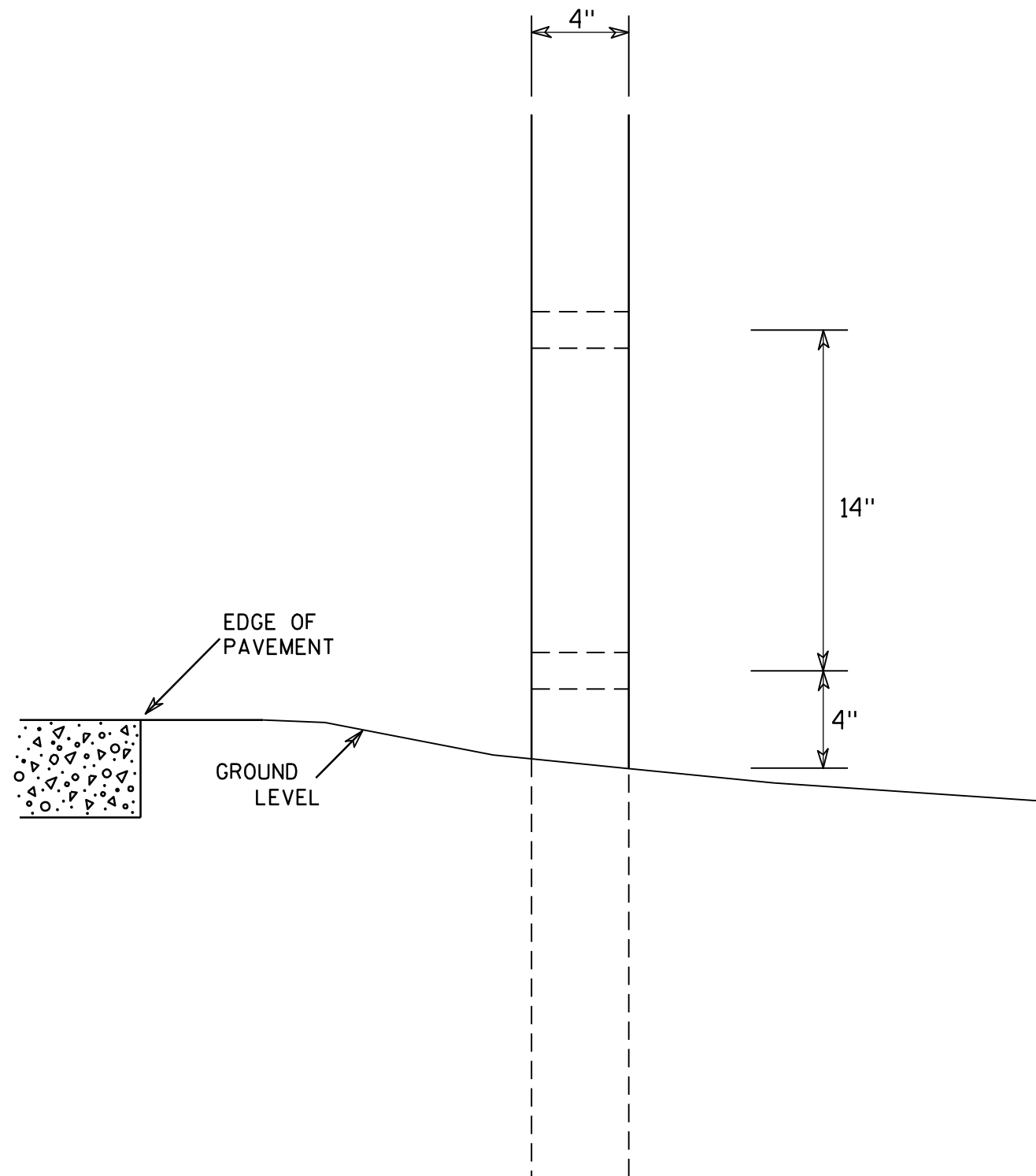
Signs wider than 3 feet or larger than 9 sq. ft shall be mounted on multiple posts (see above table).

TUBULAR STEEL  
SIGN POST  
A4-9

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*  
for State Traffic Engineer

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



SIDE VIEW

# GENERAL NOTES

1. All 4 x 6 Wood Posts shall be modified by having two 1 1/2" diameter holes drilled perpendicular to the roadway centerline.

## 4 X 6 WOOD POST MODIFICATIONS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED

*Chester J. Spang*  
for State Traffic Engineer

DATE 3/27/97

PLATE NO. A4-11.2

PROJECT NO:

HWY:

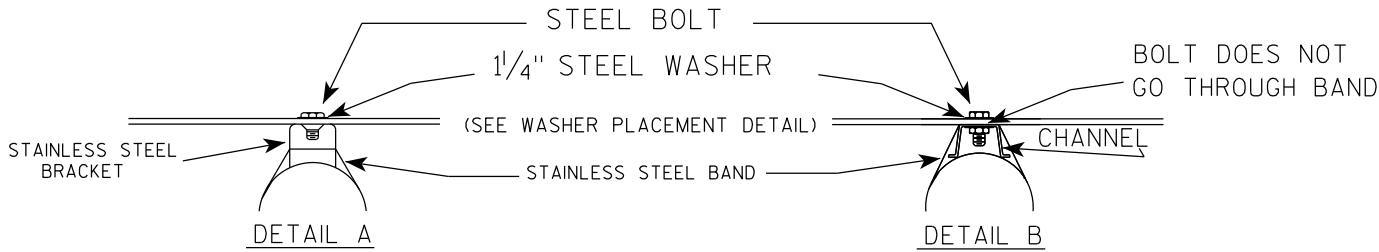
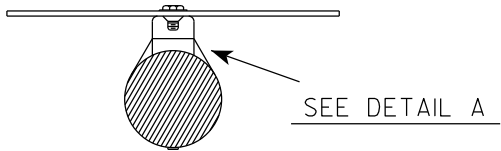
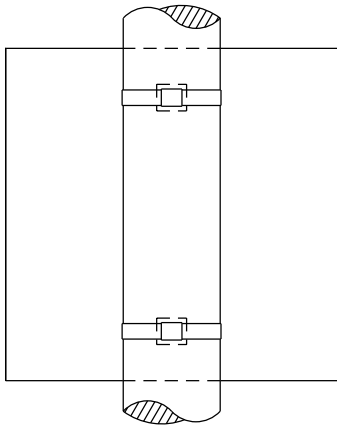
COUNTY:

SHEET NO:

E

BANDING

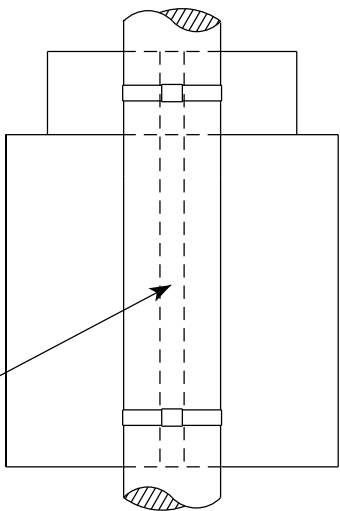
SINGLE SIGN



GENERAL NOTES

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

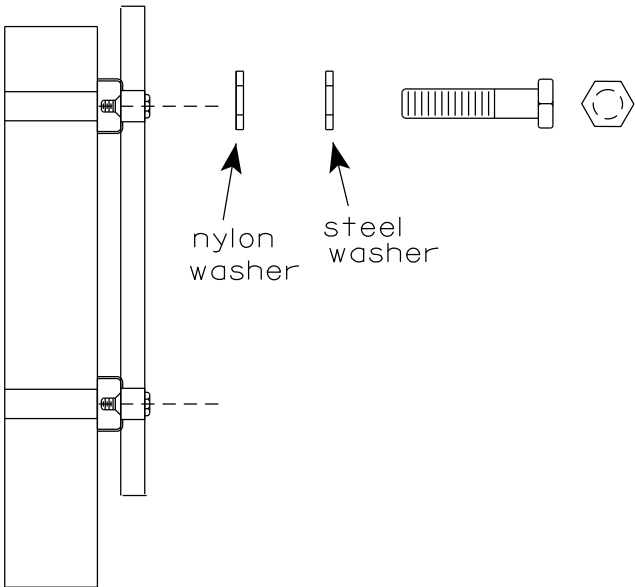
"J" ASSEMBLY



CHANNEL  
SEE TYPICAL PANEL  
INSTALLATION SHEET

SEE DETAIL B

WASHER PLACEMENT



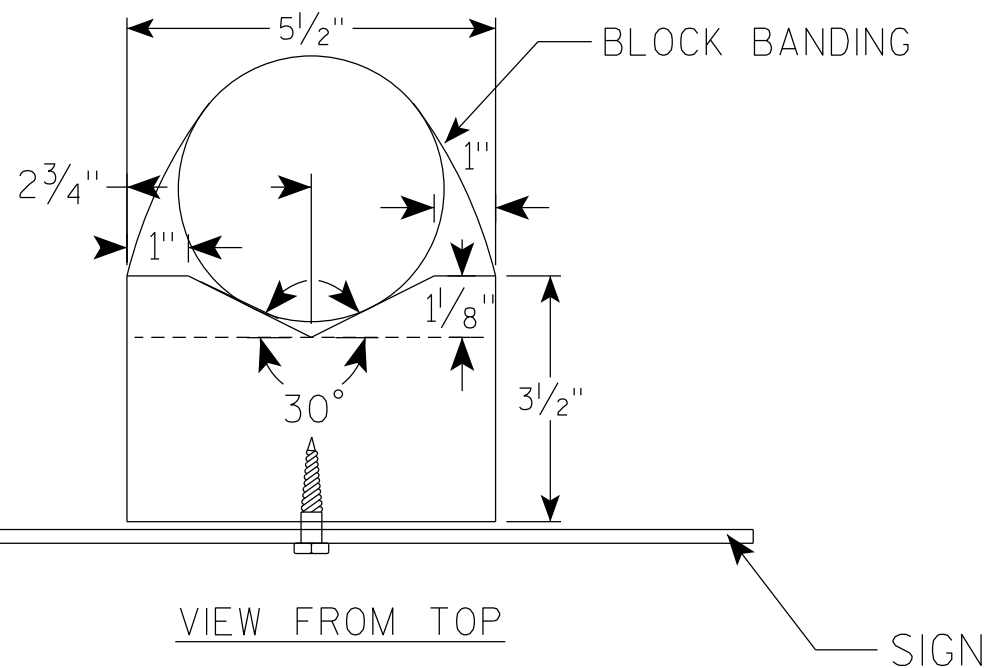
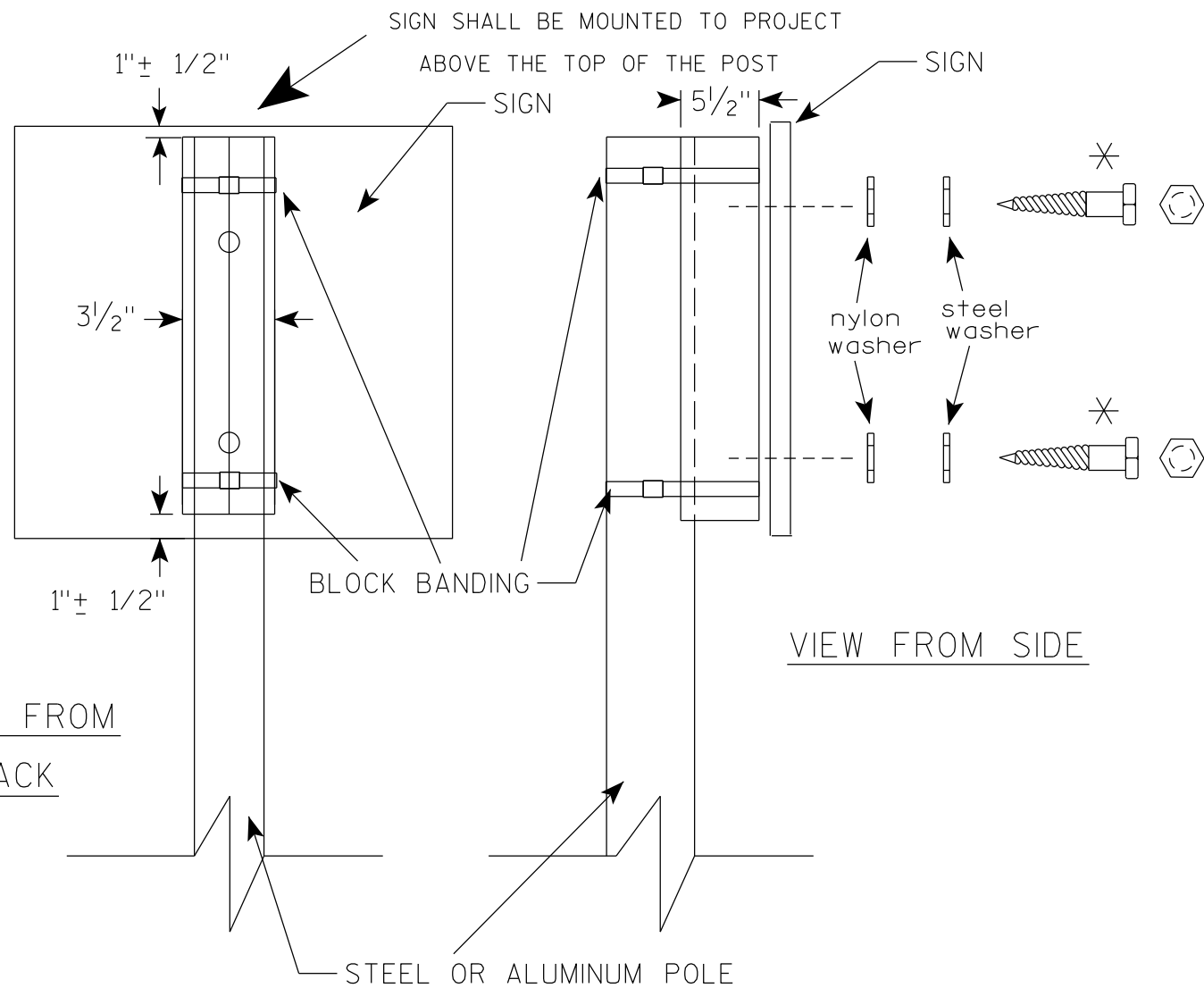
WASHERS (ALL POSTS) -  
1-1/4" O.D. X  $\frac{3}{8}$ " I.D. X  $\frac{1}{16}$ " STEEL  
1-1/4" O.D. X  $\frac{3}{8}$ " I.D. X .080 NYLON  
FOR ALL TYPE H SIGNS

STANDARD SIGN  
SIGN BANDING DETAILS

WISCONSIN DEPT OF TRANSPORTATION

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

VIEW FROM  
BACK



## GENERAL NOTES

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

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

BLOCK BANDING DETAIL  
( V-BLOCK OPTION )

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R. Rauch  
for State Traffic Engineer

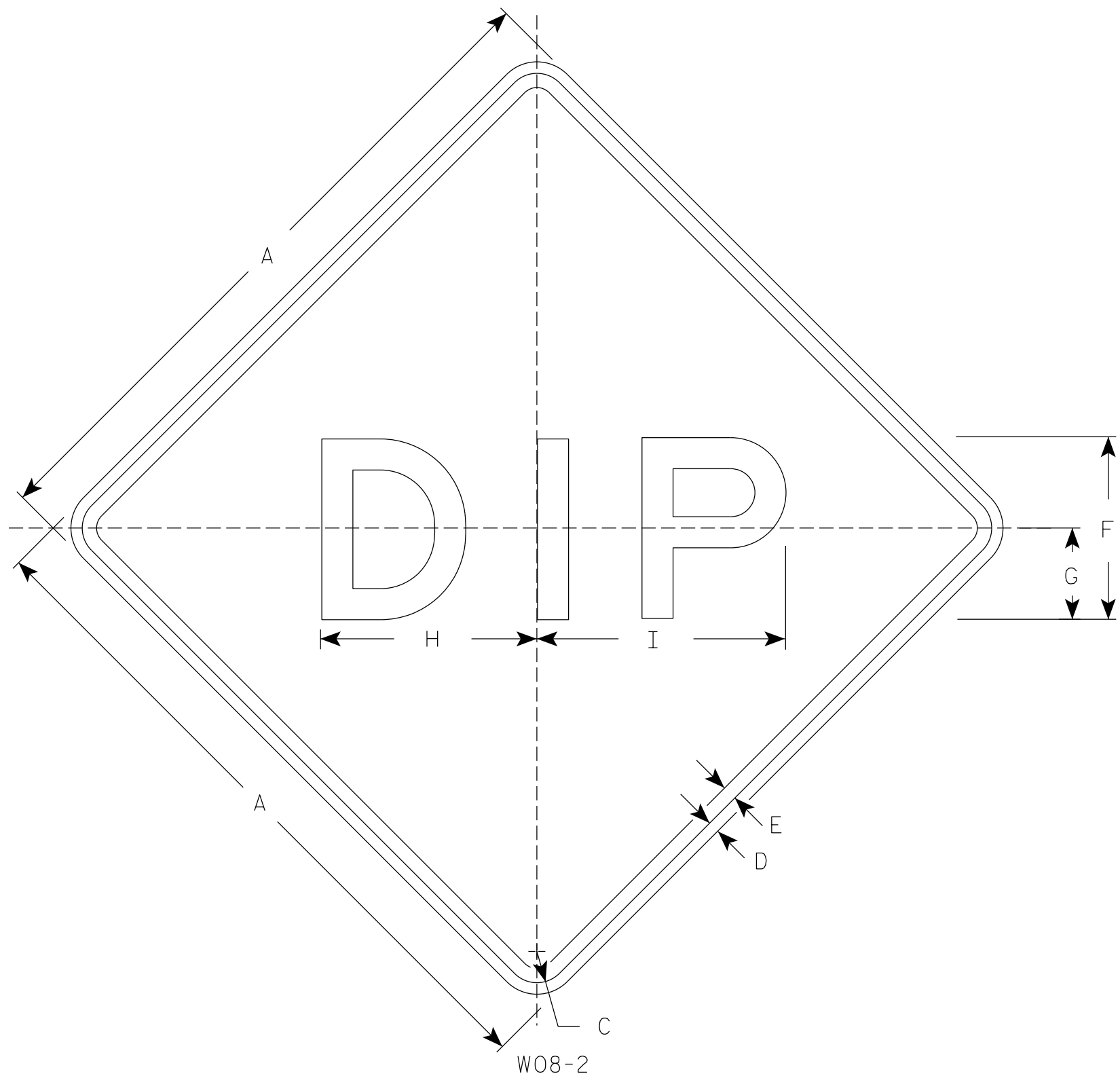
DATE 6/10/19 PLATE NO. A5-10.2

PROJECT NO:

SHEET NO:

E

7



NOTES

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

7

| SIZE | A  | B | C     | D   | E   | F  | G | H      | I      | J | K | L | M | N | O | P | Q | R | S | T | U | V | W | X | Y | Z | Area<br>sq. ft. |
|------|----|---|-------|-----|-----|----|---|--------|--------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|-----------------|
| 1    | 36 |   | 1 5/8 | 5/8 | 3/4 | 10 | 5 | 11 7/8 | 13 1/2 |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   | 9.0             |
| 2S   | 48 |   | 2 1/4 | 3/4 | 1   | 12 | 6 | 14 1/4 | 16 1/4 |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   | 16.0            |
| 2M   | 48 |   | 2 1/4 | 3/4 | 1   | 12 | 6 | 14 1/4 | 16 1/4 |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   | 16.0            |
| 3    | 48 |   | 2 1/4 | 3/4 | 1   | 12 | 6 | 14 1/4 | 16 1/4 |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   | 16.0            |
| 4    | 48 |   | 2 1/4 | 3/4 | 1   | 12 | 6 | 14 1/4 | 16 1/4 |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   | 16.0            |
| 5    | 48 |   | 2 1/4 | 3/4 | 1   | 12 | 6 | 14 1/4 | 16 1/4 |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   | 16.0            |

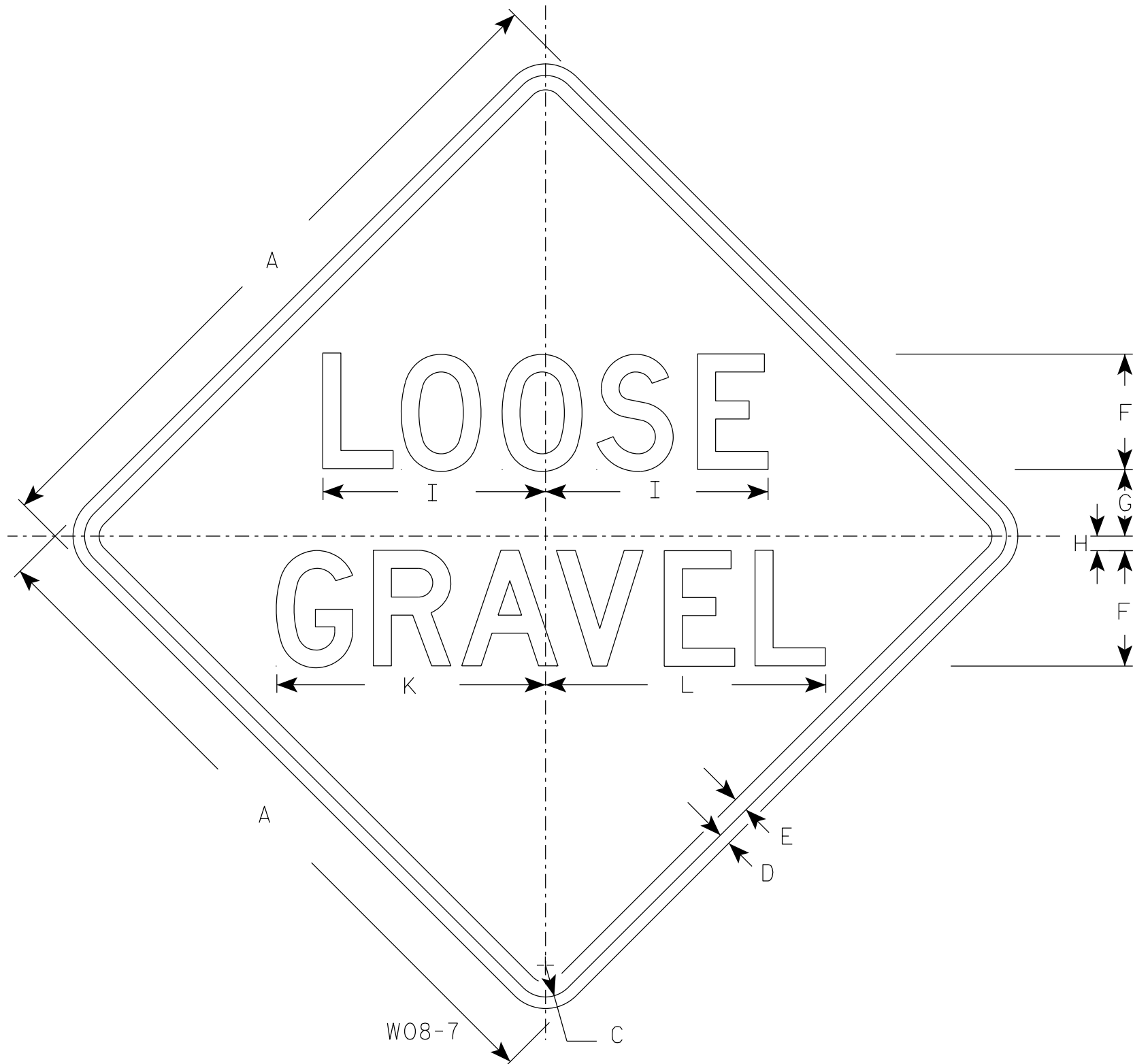
STANDARD SIGN  
W08-2

WISCONSIN DEPT OF TRANSPORTATION

APPROVED  
*Matthew R. Rauch*  
for State Traffic Engineer

DATE 3/7/19 PLATE NO. W08-2.2

SHEET NO: E



NOTES

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

| 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<br>sq. ft. |
|------|----|---|-------|-----|-----|---|-------|-----|--------|---|--------|--------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|-----------------|
| 1    | 36 |   | 1 5/8 | 5/8 | 3/4 | 6 | 4 1/8 | 3/4 | 11 5/8 |   | 14     | 14 1/2 |   |   |   |   |   |   |   |   |   |   |   |   |   |   | 9.0             |
| 2S   | 48 |   | 2 1/4 | 3/4 | 1   | 8 | 5 1/2 | 1   | 15 1/2 |   | 18 5/8 | 19 3/8 |   |   |   |   |   |   |   |   |   |   |   |   |   |   | 16.0            |
| 2M   | 48 |   | 2 1/4 | 3/4 | 1   | 8 | 5 1/2 | 1   | 15 1/2 |   | 18 5/8 | 19 3/8 |   |   |   |   |   |   |   |   |   |   |   |   |   |   | 16.0            |
| 3    | 48 |   | 2 1/4 | 3/4 | 1   | 8 | 5 1/2 | 1   | 15 1/2 |   | 18 5/8 | 19 3/8 |   |   |   |   |   |   |   |   |   |   |   |   |   |   | 16.0            |
| 4    | 48 |   | 2 1/4 | 3/4 | 1   | 8 | 5 1/2 | 1   | 15 1/2 |   | 18 5/8 | 19 3/8 |   |   |   |   |   |   |   |   |   |   |   |   |   |   | 16.0            |
| 5    | 48 |   | 2 1/4 | 3/4 | 1   | 8 | 5 1/2 | 1   | 15 1/2 |   | 18 5/8 | 19 3/8 |   |   |   |   |   |   |   |   |   |   |   |   |   |   | 16.0            |

STANDARD SIGN

W08 - 7

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*  
for State Traffic Engineer

DATE 4/16/2020 PLATE NO. W08-7.8

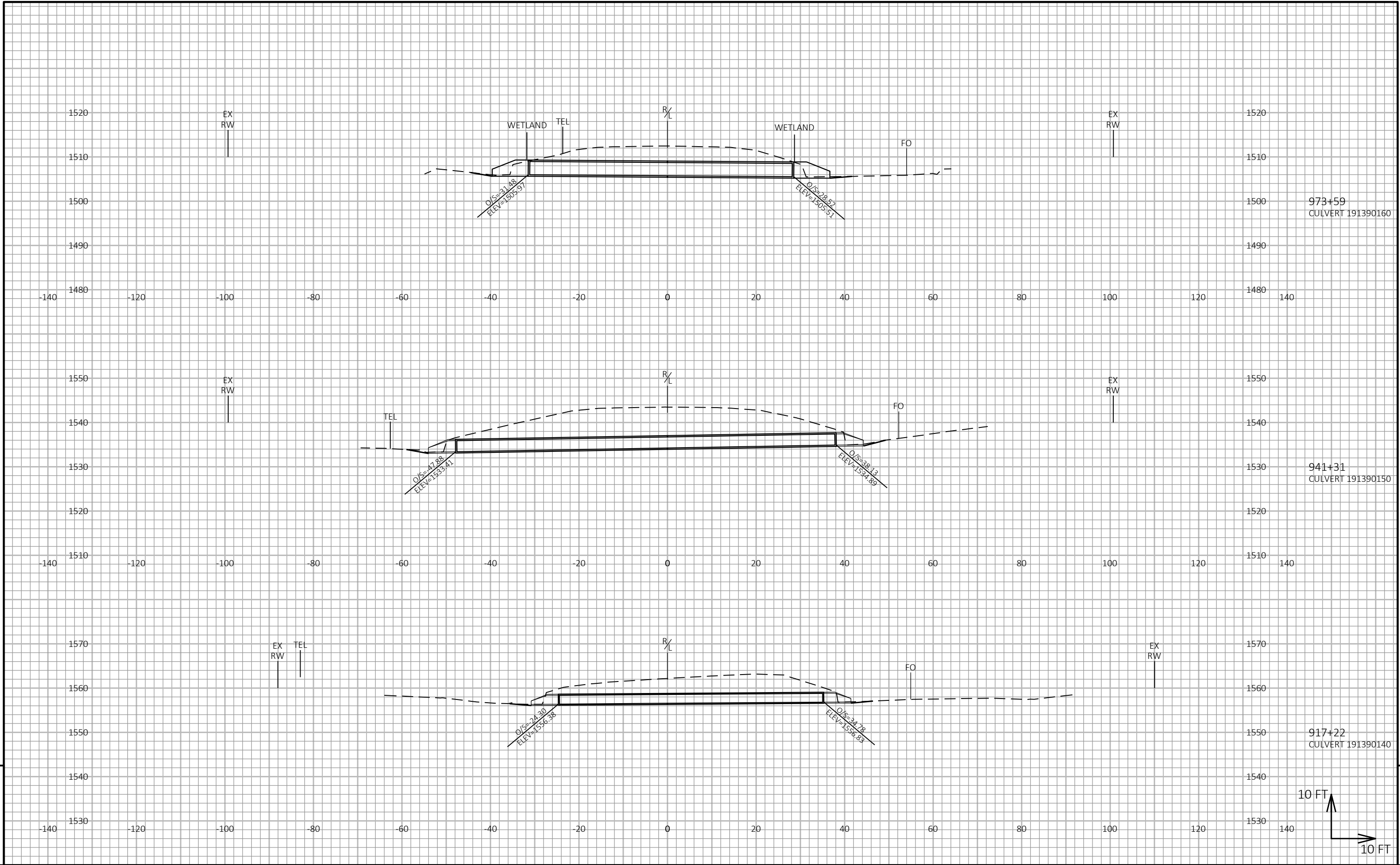
PROJECT NO:

HWY:

COUNTY:

SHEET NO:

E

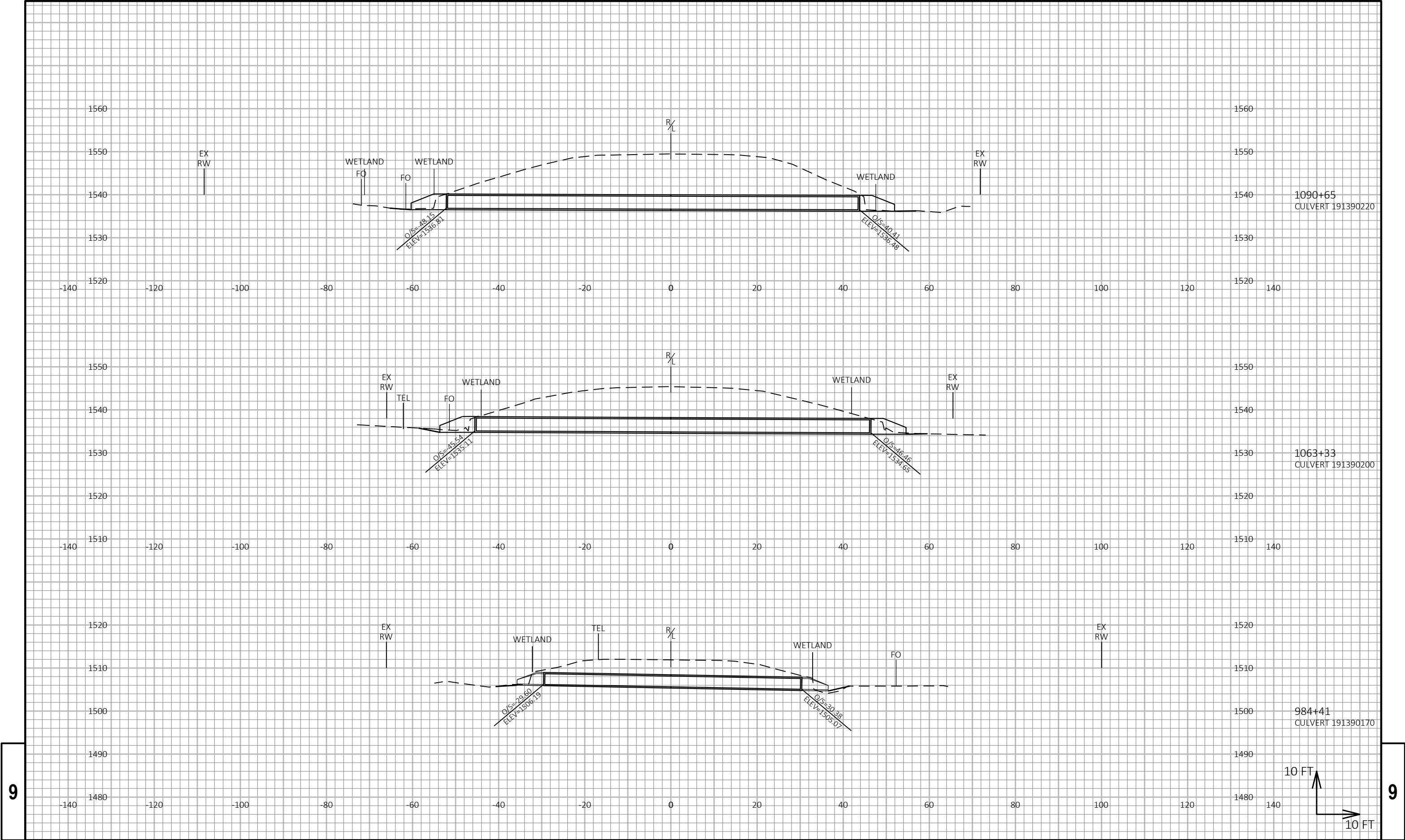


9

9

|                        |              |                  |                |       |   |
|------------------------|--------------|------------------|----------------|-------|---|
| PROJECT NO: 9110-10-60 | HWY: STH 139 | COUNTY: FLORENCE | CROSS SECTIONS | SHEET | E |
|------------------------|--------------|------------------|----------------|-------|---|

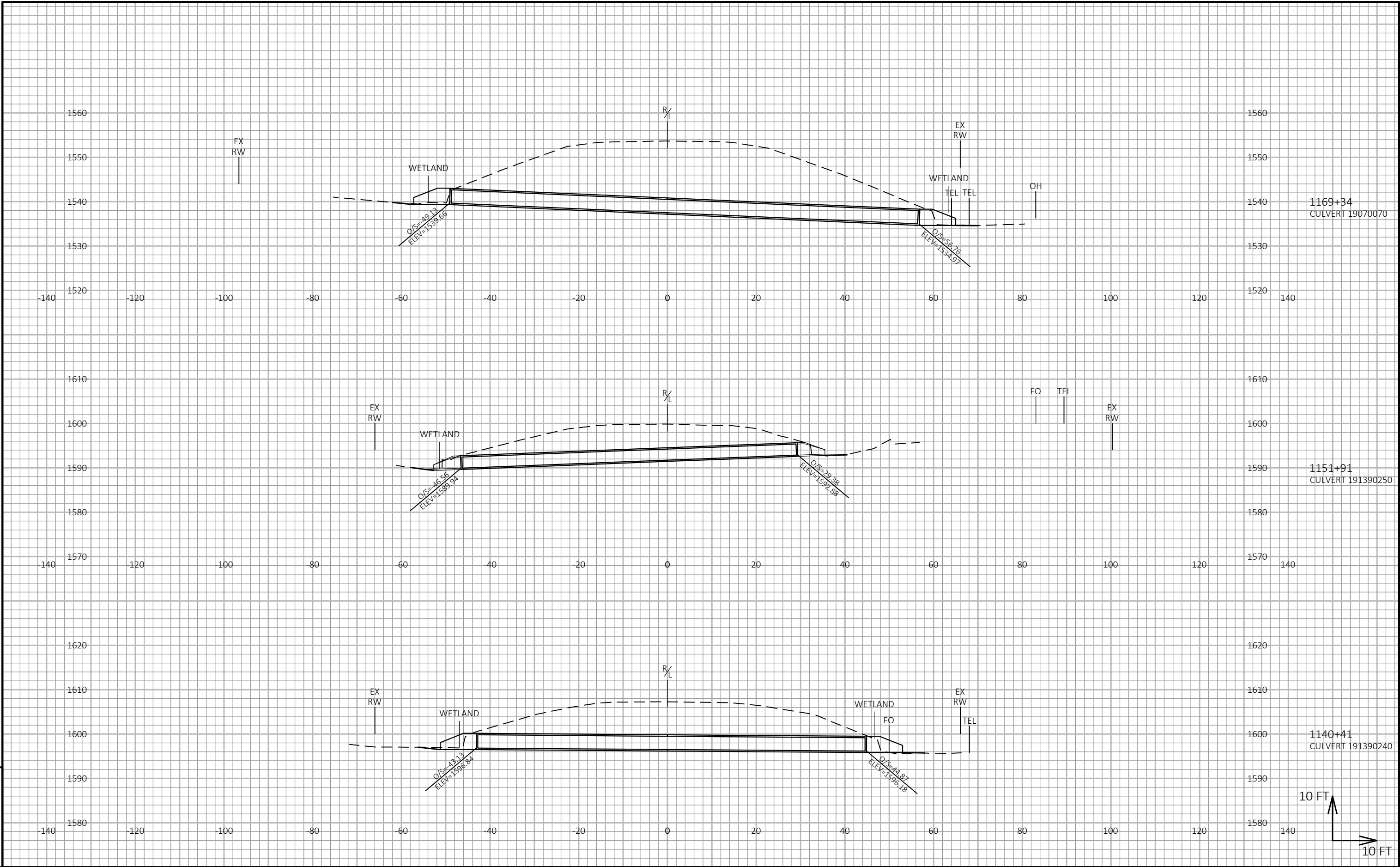


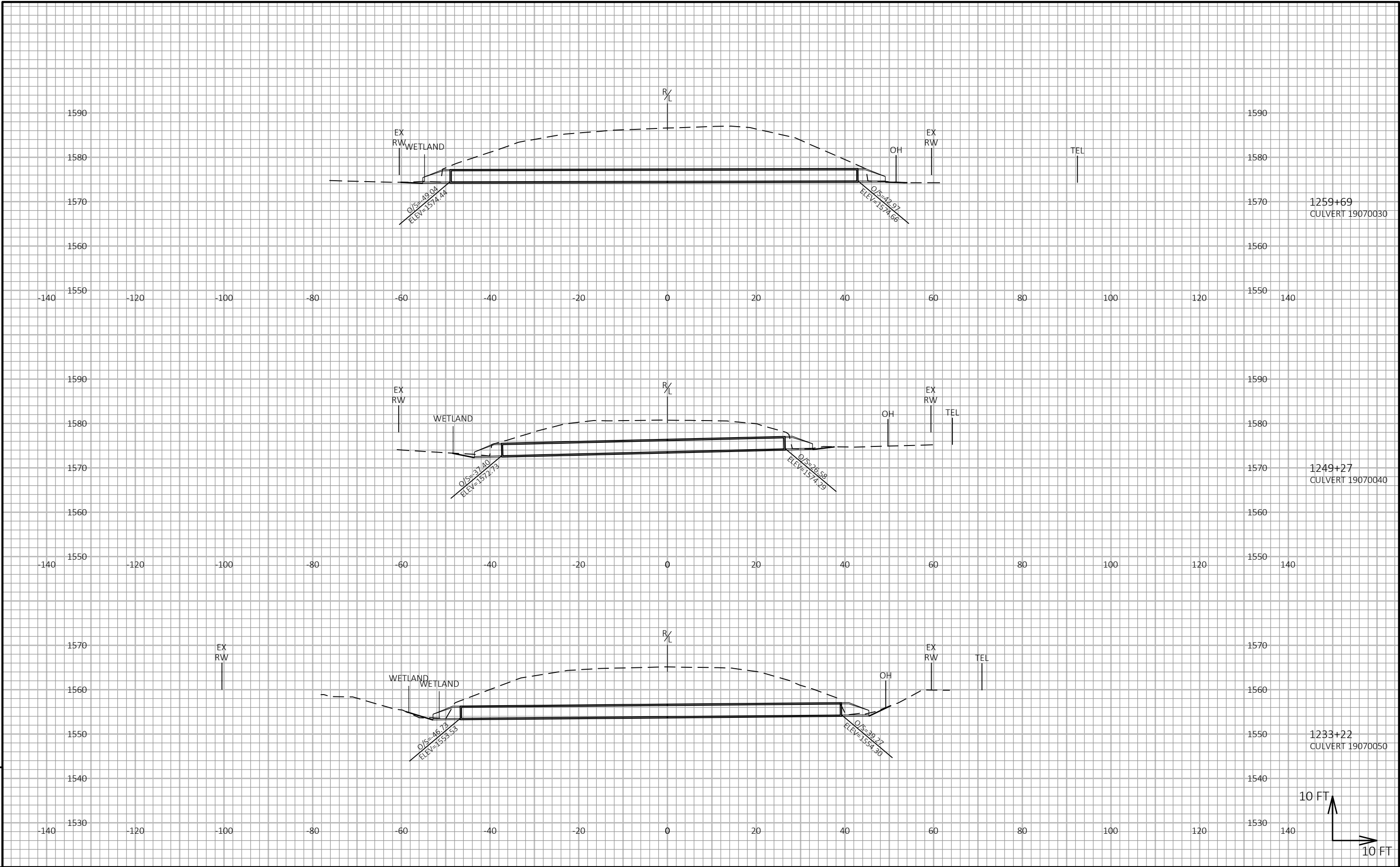


9

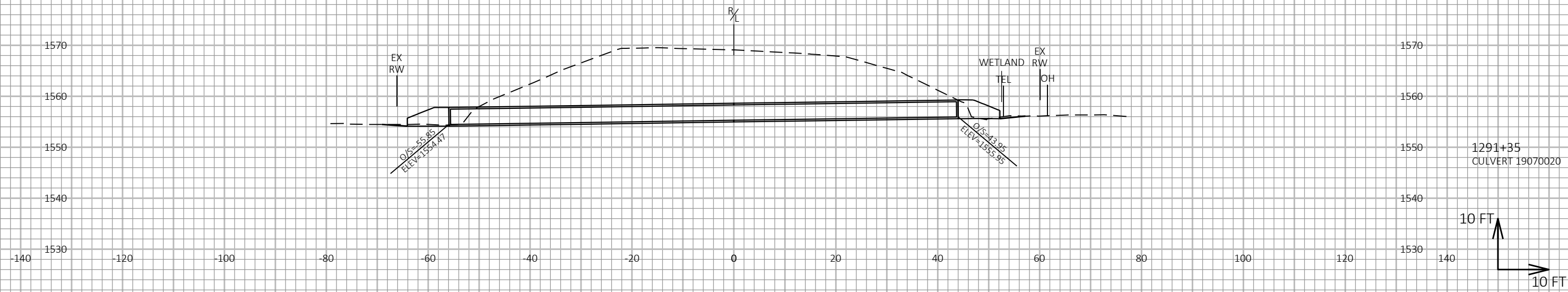
9

|                        |              |                  |                |       |   |
|------------------------|--------------|------------------|----------------|-------|---|
| PROJECT NO: 9110-10-60 | HWY: STH 139 | COUNTY: FLORENCE | CROSS SECTIONS | SHEET | E |
|------------------------|--------------|------------------|----------------|-------|---|





9



9

## Notes



## ***Wisconsin Department of Transportation***

Dedicated people creating transportation solutions  
through innovation and exceptional service.

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

| STATE PROJECT | FEDERAL PROJECT |          |
|---------------|-----------------|----------|
|               | PROJECT         | CONTRACT |
| 9110-10-70    | WISC 2020382    | 1        |
|               |                 |          |
|               |                 |          |
|               |                 |          |

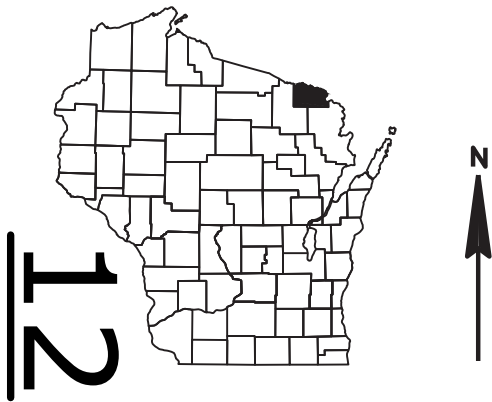
## PLAN OF PROPOSED IMPROVEMENT

## FAY LAKE ROAD TO MICHIGAN STATE LINE

# STH 139

# FLORENCE COUNTY














|                      |
|----------------------|
| STATE PROJECT NUMBER |
| <b>9110-10-70</b>    |



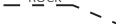















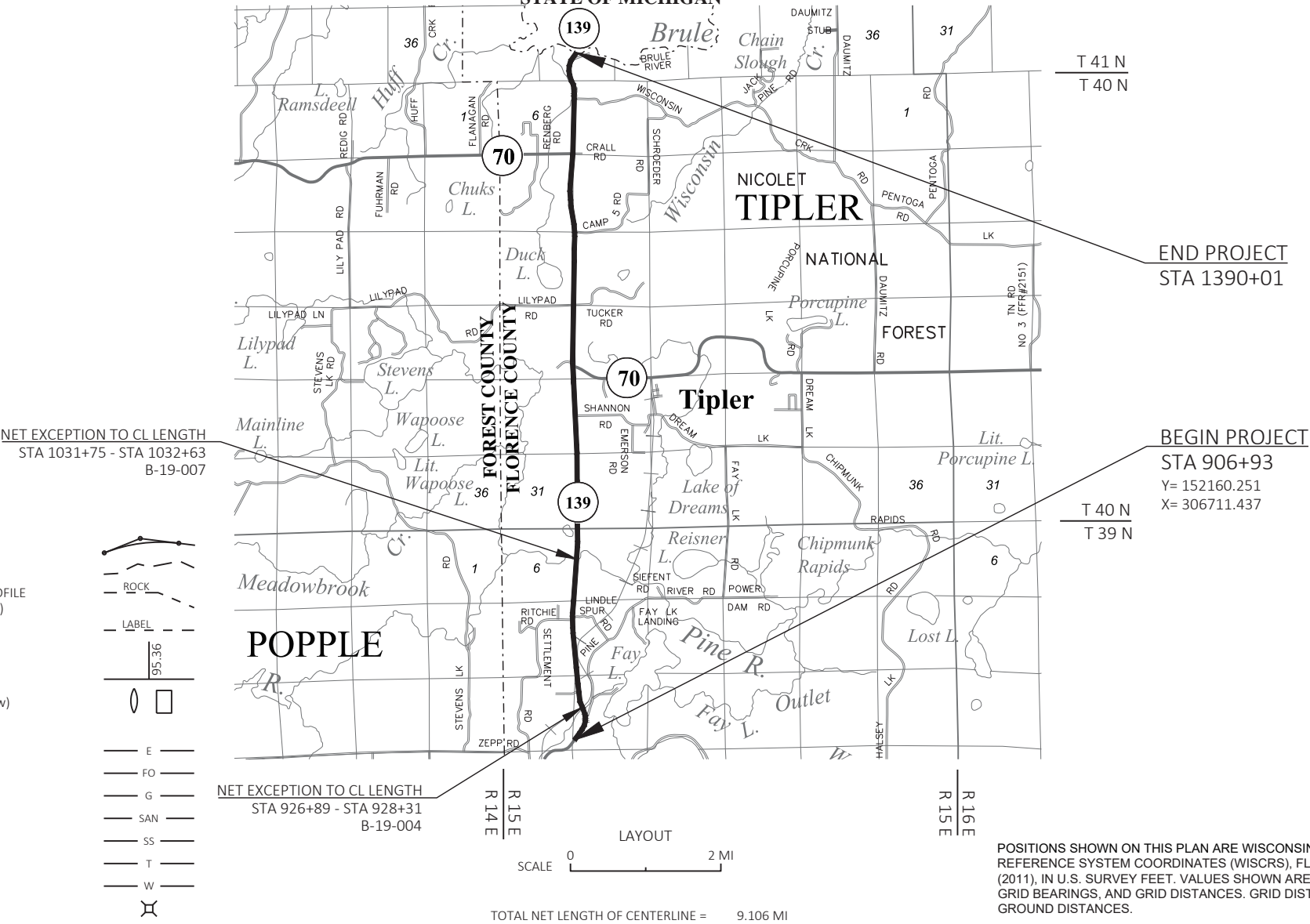
DESIGN DESIGNATION

|              |      |   |         |
|--------------|------|---|---------|
| A.A.D.T.     | 2021 | = | 1675    |
| A.A.D.T.     | 2041 | = | 1940    |
| D.H.V.       | 2041 | = | 250     |
| D.D.         |      | = | 60/40   |
| T.           |      | = | 23.3%   |
| DESIGN SPEED |      | = | 60 MPH  |
| ESALS        |      | = | 562,100 |

## CONVENTIONAL SYMBOLS

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

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



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

ALL ELEVATIONS ON THIS PROJECT ARE REFERENCED TO THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88), 2012 ADJUSTMENT

|                                                                                                                                                                                  |                                                |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------|
| <h1 style="margin: 0;">emcs.<sup>inc</sup></h1> <p style="margin: 5px 0;">500 North 17th Avenue<br/>Wausau, WI 54401</p> <p style="margin: 0;">715.845.1081 Fax 715.845.1099</p> |                                                |
|                                                                                             |                                                |
| <u>11/28/2018</u><br>DATE                                                                                                                                                        | <u>Stephanie G. Christensen</u><br>(SIGNATURE) |
| STATE OF WISCONSIN<br>DEPARTMENT OF TRANSPORTATION                                                                                                                               |                                                |
| PREPARED BY                                                                                                                                                                      |                                                |
| Surveyor                                                                                                                                                                         | <u>EMCS, INC.</u>                              |
| Designer                                                                                                                                                                         | <u>EMCS, INC.</u>                              |
| Project Manager                                                                                                                                                                  | <u>JIM VOLKMANN</u>                            |
| Regional Examiner                                                                                                                                                                | <u>CHERYL SIMON</u>                            |
| Regional Supervisor                                                                                                                                                              | <u>JED PETERS</u>                              |
| APPROVED FOR THE DEPARTMENT                                                                                                                                                      |                                                |
| DATE: <u>11/28/2018</u>                                                                                                                                                          | <u>[Signature]</u><br>(Signature)              |

GENERAL NOTES

THERE ARE UTILITY FACILITIES WITHIN THE PROJECT AREA THAT ARE NOT SHOWN ON THE PLANS. THE CONTRACTOR SHALL COORDINATE HIS CONSTRUCTION ACTIVITIES WITH A CALL TO DIGGERS HOTLINE AND/OR A DIRECT CALL TO THE UTILITIES THAT HAVE FACILITIES IN THE AREA. NOT ALL UTILITIES ARE MEMBERS OF DIGGERS HOTLINE.

AS-BUILTS USED FOR PLAN DEVELOPMENT

PROJECT NO: 9110-06-60, CONSTRUCTION YEAR: 2008  
PROJECT NO: 9110-04-70, CONSTRUCTION YEAR: 1993 - 1994  
PROJECT NO: 9110-00-75, CONSTRUCTION YEAR: 1987 - 1988  
PROJECT NO: 9110-00-74, CONSTRUCTION YEAR: 1986 - 1987  
PROJECT NO: 9110-01-73, CONSTRUCTION YEAR: 1980-1981  
PROJECT NO: 7909, CONSTRUCTION YEAR: 1936

ORDER OF SECTION 2 SHEETS

- PROJECT OVERVIEW
- TYPICAL SECTIONS
- CONSTRUCTION DETAILS
- TRAFFIC CONTROL

UTILITIES

COMMUNICATIONS

CENTURYLINK  
PETE JOHNSON  
2425 MARY ST  
MARINETTE, WI 54133  
(715) 938-1480  
PETER.S.JOHNSON@CENTURYLINK.COM

ELECTRIC

WE ENERGIES  
BILL HOWARD  
4352 COUNTY ROAD B  
LAND O' LAKES, WI 54540  
(906) 779-2472  
WILLIAM.HOWARD@WE-ENERGIES.COM

24 HOUR WE ELECTRIC DISPATCH

1-800-662-4797

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 = 177.5 ACRES  
TOTAL AREA EXPECTED TO BE DISTURBED BY CONSTRUCTION ACTIVITIES = 0 ACRES



Dial 811 or (800)242-8511

www.DiggersHotline.com

OTHER CONTACTS

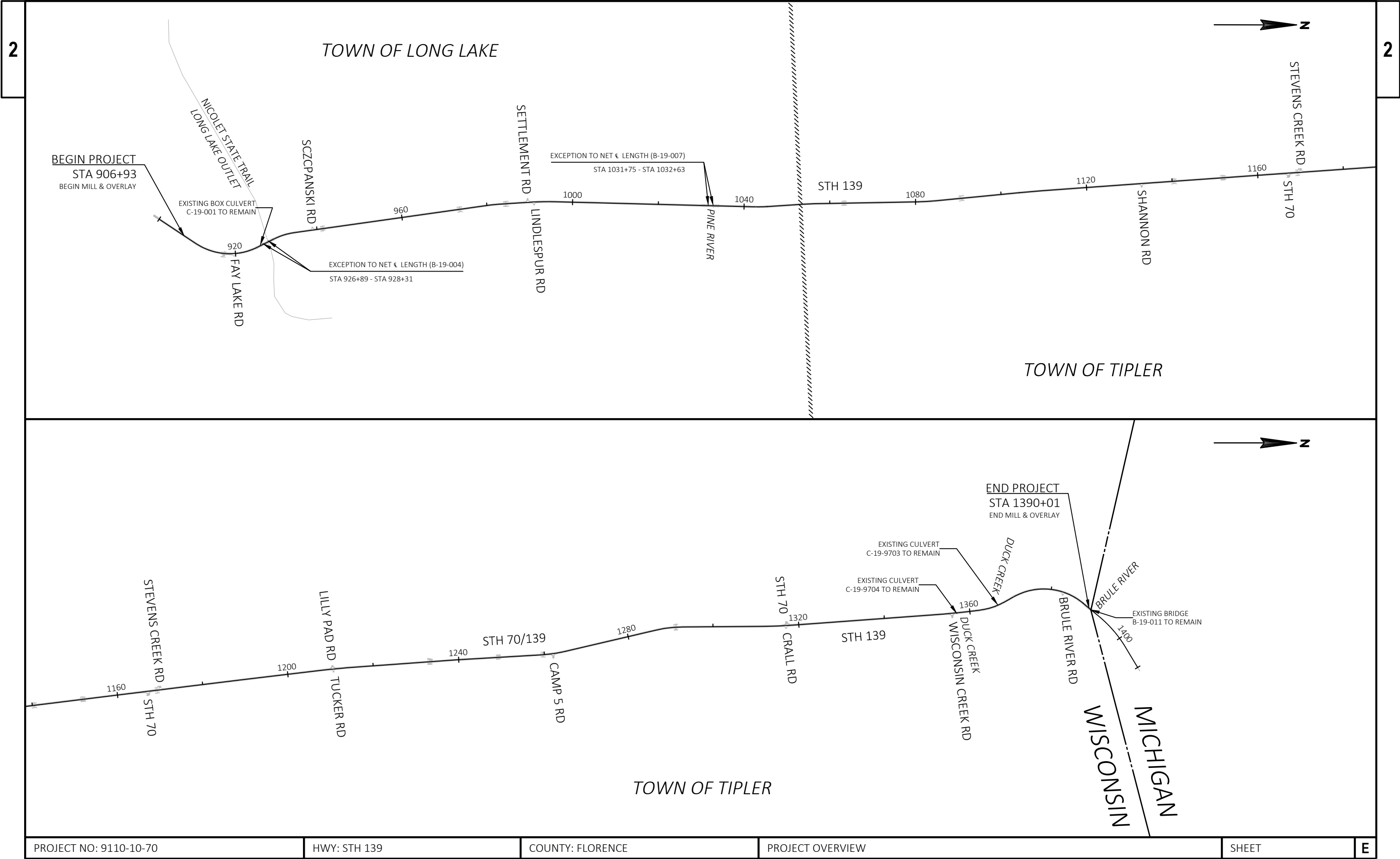
WISDOT RWIS TOWER

MIKE ADAMS  
PO BOX 7986  
MADISON, WI 53707  
(608) 266-5004  
MICHAEL.ADAMS@DOT.WI.GOV

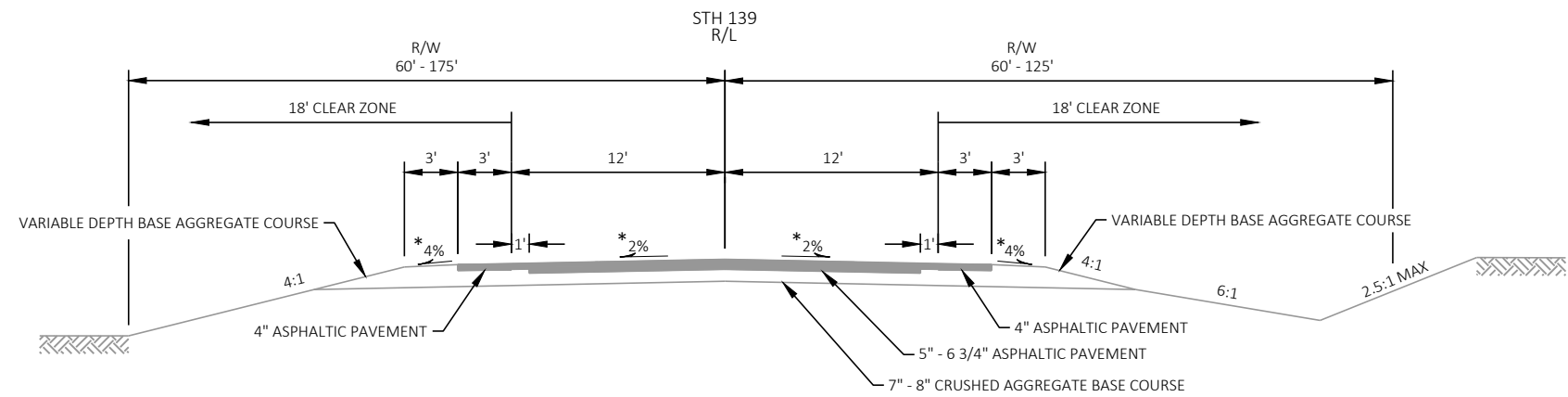
DNR LIAISON

JON SIMONSEN  
107 SUTLIFF AVENUE  
RHINELANDER, WI 54501  
(715) 367-1936  
JONATHAN.SIMONSEN@WISCONSIN.GOV

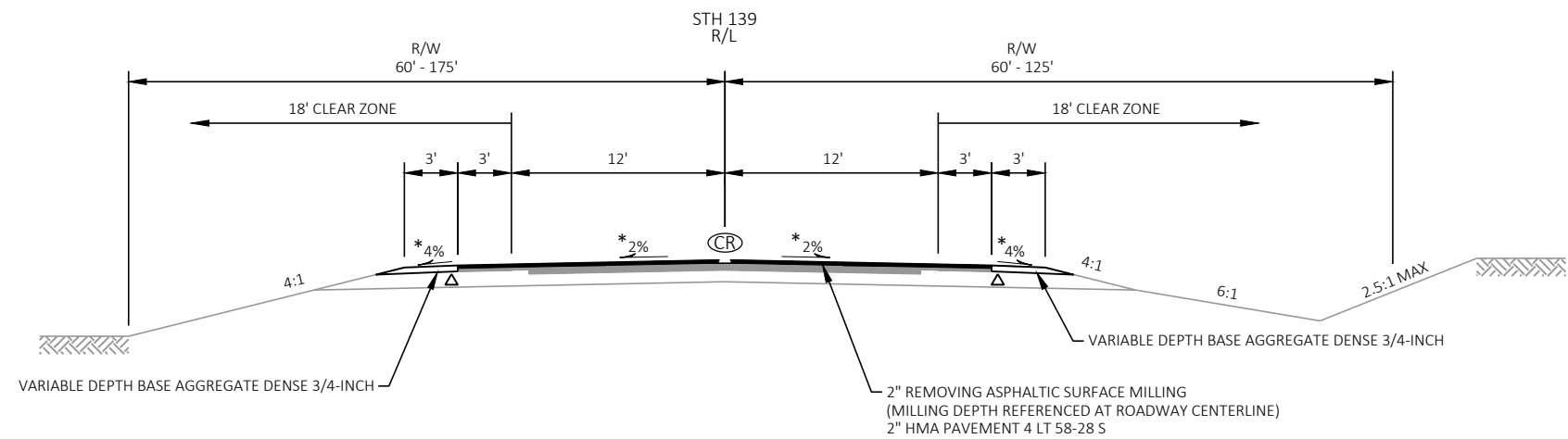




|                        |              |                  |                  |       |   |
|------------------------|--------------|------------------|------------------|-------|---|
| PROJECT NO: 9110-10-70 | HWY: STH 139 | COUNTY: FLORENCE | PROJECT OVERVIEW | SHEET | E |
|------------------------|--------------|------------------|------------------|-------|---|



TYPICAL EXISTING SECTION  
STH 139  
STA 906+93 - STA 1390+01



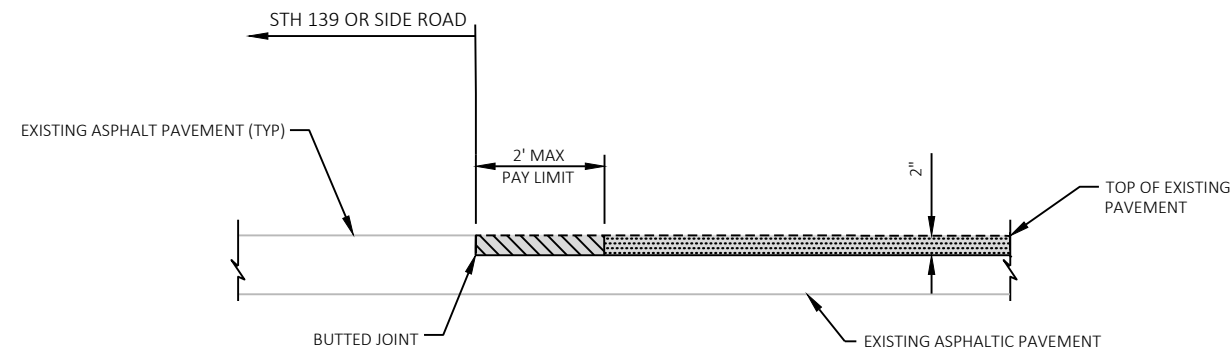
TYPICAL FINISHED SECTION  
STH 139  
STA 906+93 - STA 1390+01

NOTES

\* CROSS SLOPE VARIES DUE TO SUPERELEVATION. VARIABLE DEPTH WEDGE COARSE REQUIRED WHERE SUPERELEVATIONS ARE BEING ADJUSTED. SEE SECTION 5 PLAN SHEETS FOR SUPERELEVATION INFORMATION.

CR ASPHALTIC CENTERLINE RUMBLE STRIPS  
2-LANE RURAL. SEE SDD'S FOR "2-LANE RURAL CENTERLINE RUMBLE STRIP, MILLING" FOR ADDITIONAL INFORMATION.

Δ PAVEMENT SAFETY EDGE REQUIRED. SEE SDD "SAFETY EDGE".



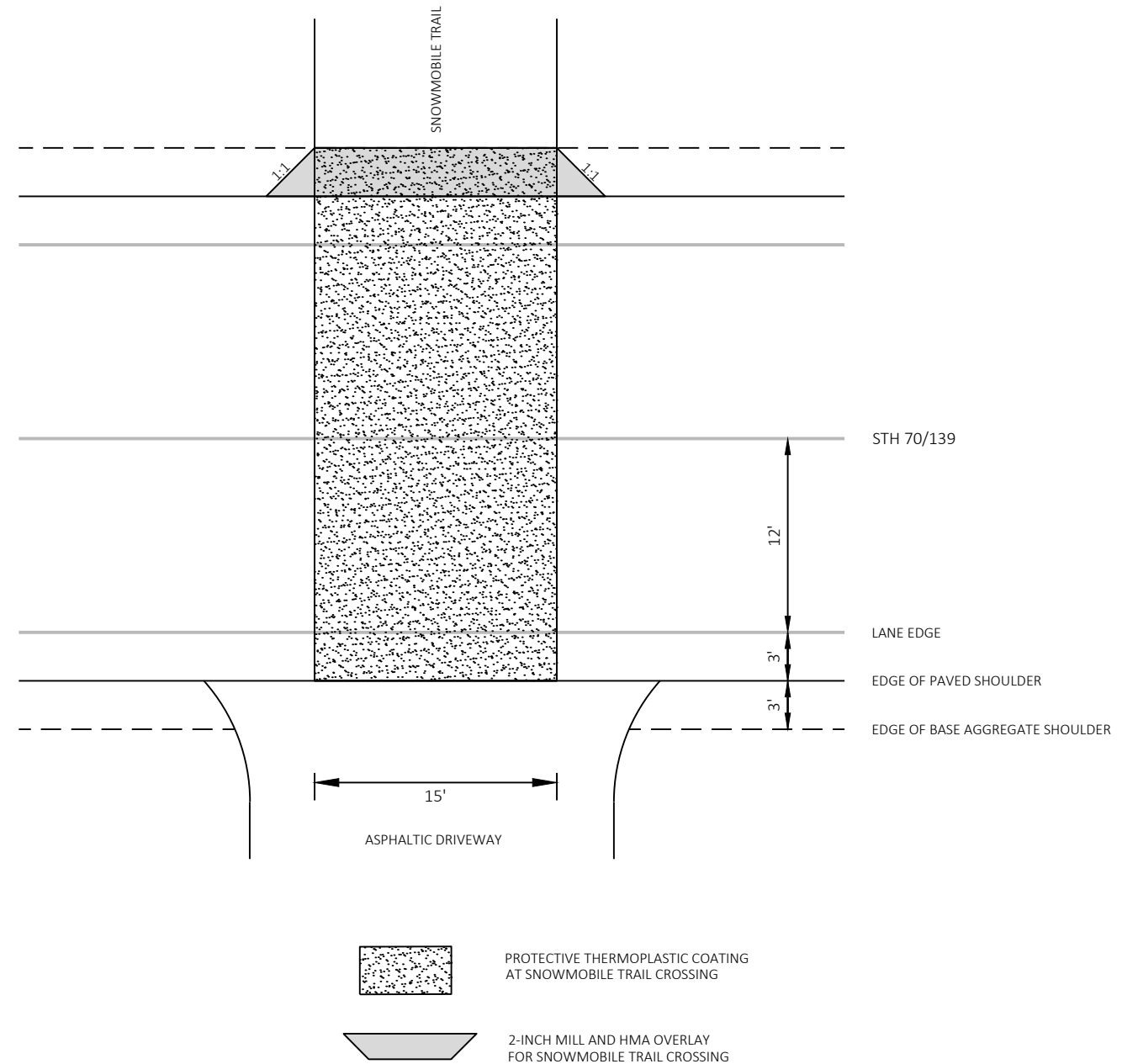
- REMOVING ASPHALTIC SURFACE BUTT JOINTS  
DO NOT REMOVE MATERIAL UNDER THIS ITEM UNTIL 24 HOURS BEFORE PAVING
- REMOVING ASPHALTIC SURFACE MILLING
- PROPOSED HMA PAVEMENT OVERLAY

**BUTT JOINT DETAIL**

STA 906+93  
STA 926+89 (B-19-004)  
STA 928+31 (B-19-004)  
STA 1031+75 (B-19-007)  
STA 1032+63 (B-19-007)  
STA 1390+01 (B-19-011)  
SEE SECTION 5 PLAN SHEETS FOR SIDE ROAD LOCATIONS

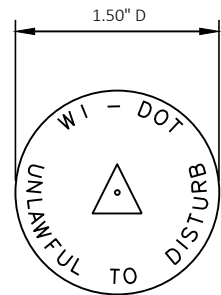
**NOTE**

FOR BASE AGGREGATE SIDE ROADS, EXTEND MILL AND OVERLAY TO  
END OF EXISTING PAVEMENT LIMITS



**SNOWMOBILE TRAIL CROSSING DETAIL**

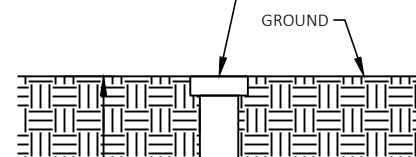
STA 1193+40



### WISDOT MONUMENT CAP MARKER LOGO (SSDR130)

CONTRACTOR TO ORDER LANDMARK REFERENCE MONUMENTS WITH THE ABOVE STAMPING

MONUMENT MARKER TO BE FLUSH WITH GROUND SURFACE OR DEPRESSED IN PAVED SURFACE.

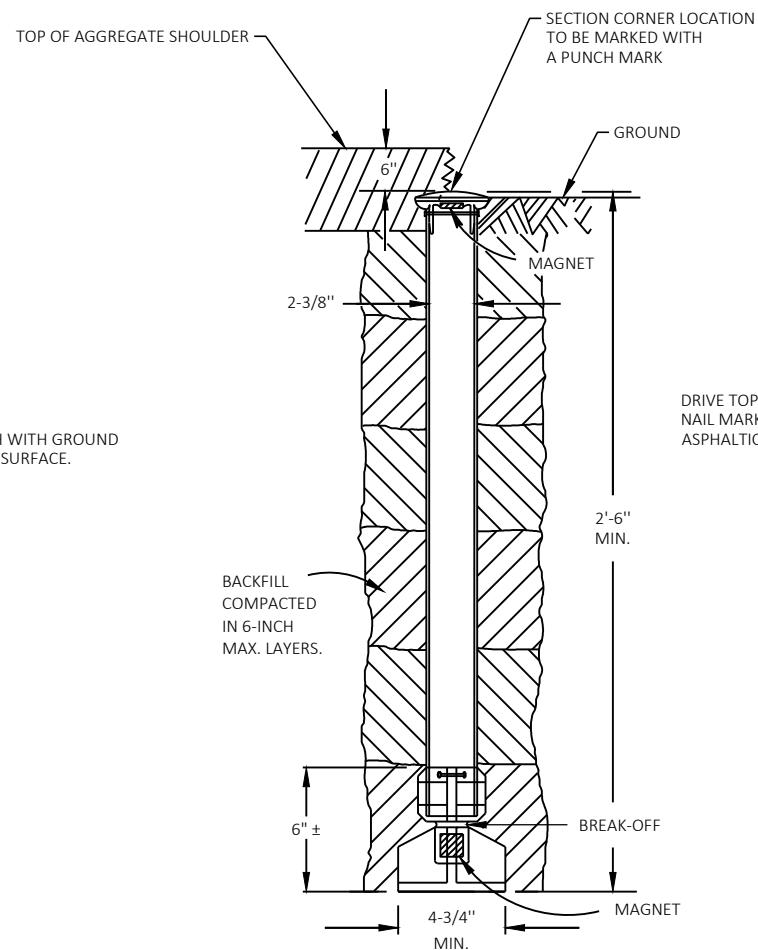


30"

(FRONT VIEW)

BERNTSEN DRIVABLE MONUMENT SSDR130

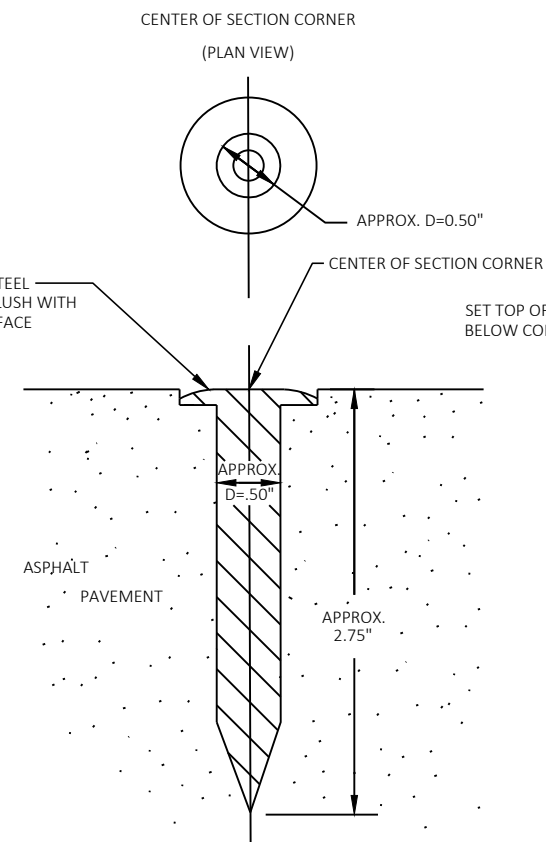
### LANDMARK REFERENCE MONUMENT (TIES ONLY)



(SIDE VIEW)

### OUTSIDE OF PAVEMENT

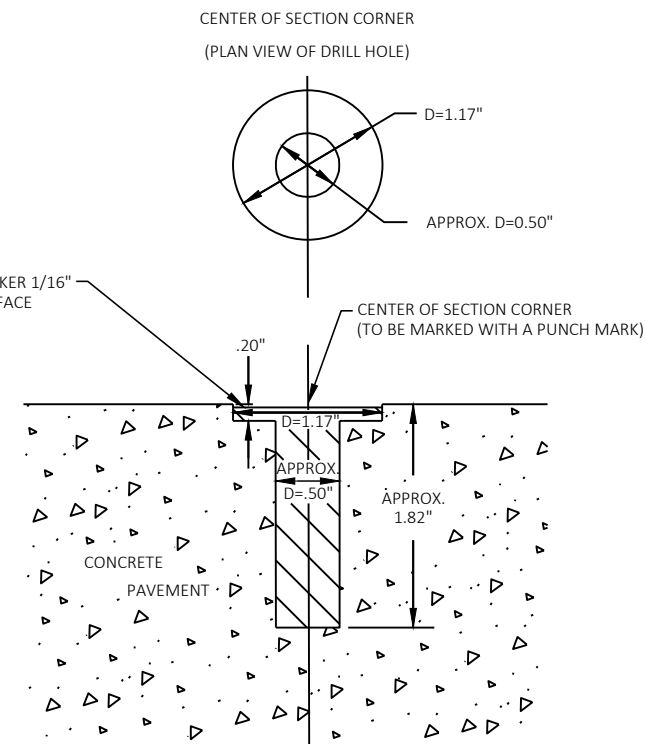
BERNTSEN A1BR30 ALUMINUM BREAK-OFF MONUMENT



(SIDE VIEW)

### IN ASPHALTIC PAVEMENT

BERNTSEN SNM1 STEEL NAIL MARKER



(SIDE VIEW OF DRILL HOLE)

### IN CONCRETE PAVEMENT

BERNTSEN BP - 1 BRASS MARKER WITH ANCHOR PLUG

NOTE: TO DRILL HOLE, USE A "SURVEY MARKER COUNTERSINK DRILL BIT" ITEM #BPMDDL, AVAILABLE FROM BERNTSEN INTERNATIONAL INC.

### SECTION CORNER MONUMENTS

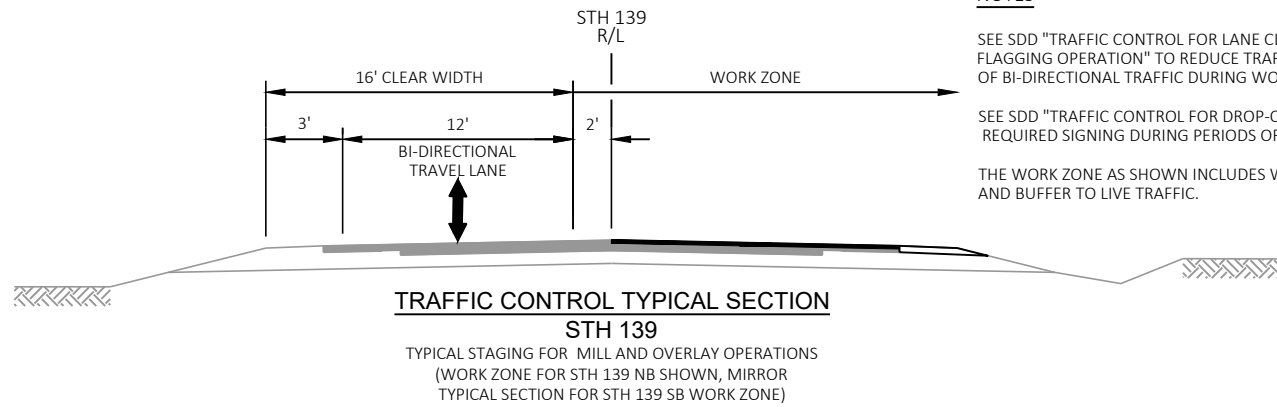
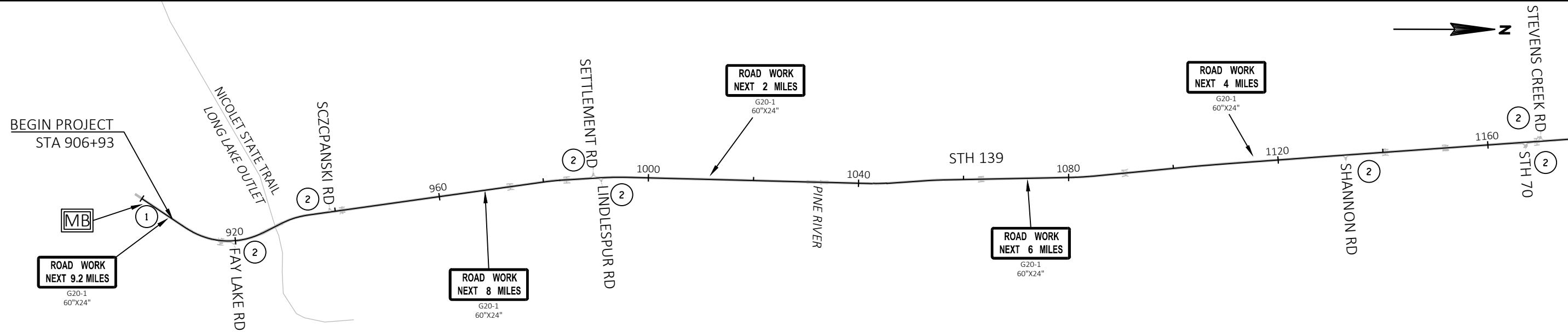
#### GENERAL NOTES

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.

LOCATE LANDMARK REFERENCE MONUMENTS OUTSIDE THE CONSTRUCTION LIMITS AND WITHIN WISDOT RIGHT OF WAY. LOCATION TO BE APPROVED BY THE ENGINEER.

CONTRACTOR WILL SUPPLY ALL REQUIRED SURVEY MONUMENTS.

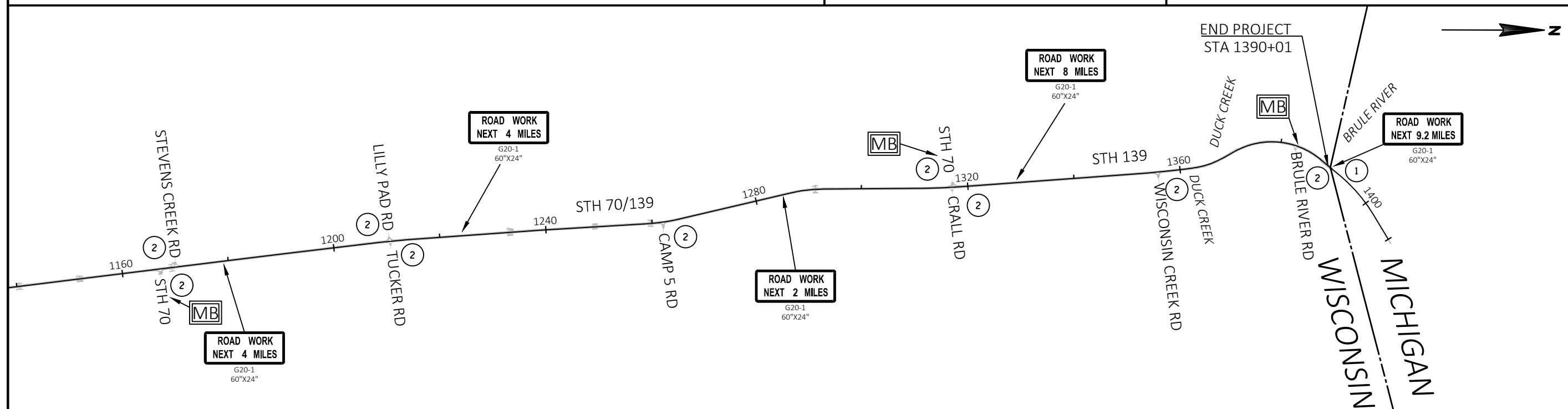
### SECTION CORNER MONUMENT AND LANDMARK REFERENCE MONUMENT DETAIL



TRAFFIC CONTROL SIGNS PCMS

PLACE TRAFFIC CONTROL SIGNS PCMS AND  
DISPLAY THE MESSAGE 7 DAYS PRIOR TO THE  
EXPECTED START OF THE PROPOSED WORK OF  
THIS PROJECT OR PROJECT ID 9110-10-60.  
ADJUST THE MESSAGE DATE ACCORDINGLY.

| TRAFFIC CONTROL SIGNS PCMS MESSAGES                      |                           |                    |
|----------------------------------------------------------|---------------------------|--------------------|
|                                                          | PRIOR TO CONSTRUCTION     |                    |
| PCMS SIGN LOCATION                                       | PHASE 1<br>(2 SEC)        | PHASE 2<br>(2 SEC) |
| STH 139 NB<br>0.1 MILES SOUTH OF BEGIN<br>PROJECT LIMITS | STH 139<br>WORK<br>STARTS | STARTING<br>DATE   |
| STH 139 SB<br>0.1 MILES SOUTH OF END<br>PROJECT LIMITS   | STH 139<br>WORK<br>STARTS | STARTING<br>DATE   |
| STH 70 WB<br>0.1 MILES EAST<br>OF STH 139                | STH 139<br>WORK<br>STARTS | STARTING<br>DATE   |
| STH 70 EB<br>0.1 MILES WEST<br>OF STH 139                | STH 139<br>WORK<br>STARTS | STARTING<br>DATE   |



Estimate Of Quantities By Plan Sets

| 9110-10-70 |            |                                                                           |      |             |             |
|------------|------------|---------------------------------------------------------------------------|------|-------------|-------------|
| Line       | Item       | Item Description                                                          | Unit | Total       | Qty         |
| 0008       | 204.0115   | Removing Asphaltic Surface Butt Joints                                    | SY   | 105.000     | 105.000     |
| 0010       | 204.0120   | Removing Asphaltic Surface Milling                                        | SY   | 165,530.000 | 165,530.000 |
| 0014       | 211.0100   | Prepare Foundation for Asphaltic Paving (project) 01. 9110-10-70          | LS   | 1.000       | 1.000       |
| 0018       | 213.0100   | Finishing Roadway (project) 02. 9110-10-70                                | EACH | 1.000       | 1.000       |
| 0020       | 305.0110   | Base Aggregate Dense 3/4-Inch                                             | TON  | 5,475.000   | 5,475.000   |
| 0024       | 455.0605   | Tack Coat                                                                 | GAL  | 11,655.000  | 11,655.000  |
| 0026       | 460.0105.S | HMA Percent Within Limits (PWL) Test Strip Volumetrics                    | EACH | 1.000       | 1.000       |
| 0028       | 460.0110.S | HMA Percent Within Limits (PWL) Test Strip Density                        | EACH | 1.000       | 1.000       |
| 0030       | 460.2005   | Incentive Density PWL HMA Pavement                                        | DOL  | 14,430.000  | 14,430.000  |
| 0032       | 460.2007   | Incentive Density HMA Pavement Longitudinal Joints                        | DOL  | 19,240.000  | 19,240.000  |
| 0034       | 460.2010   | Incentive Air Voids HMA Pavement                                          | DOL  | 18,720.000  | 18,720.000  |
| 0036       | 460.5224   | HMA Pavement 4 LT 58-28 S                                                 | TON  | 18,720.000  | 18,720.000  |
| 0040       | 465.0110   | Asphaltic Surface Patching                                                | TON  | 185.000     | 185.000     |
| 0042       | 465.0475   | Asphalt Centerline Rumble Strips 2-Lane Rural                             | LF   | 42,525.000  | 42,525.000  |
| 0060       | 618.0100   | Maintenance And Repair of Haul Roads (project) 02. 9110-10-70             | EACH | 1.000       | 1.000       |
| 0062       | 619.1000   | Mobilization                                                              | EACH | 0.500       | 0.500       |
| 0064       | 621.0100   | Landmark Reference Monuments                                              | EACH | 52.000      | 52.000      |
| 0066       | 624.0100   | Water                                                                     | MGAL | 50.000      | 50.000      |
| 0094       | 634.0616   | Posts Wood 4x6-Inch X 16-FT                                               | EACH | 2.000       | 2.000       |
| 0096       | 638.2102   | Moving Signs Type II                                                      | EACH | 5.000       | 5.000       |
| 0098       | 638.4000   | Moving Small Sign Supports                                                | EACH | 5.000       | 5.000       |
| 0100       | 642.5001   | Field Office Type B                                                       | EACH | 0.500       | 0.500       |
| 0102       | 643.0300   | Traffic Control Drums                                                     | DAY  | 140.000     | 140.000     |
| 0106       | 643.0900   | Traffic Control Signs                                                     | DAY  | 4,300.000   | 4,300.000   |
| 0108       | 643.1050   | Traffic Control Signs PCMS                                                | DAY  | 28.000      | 28.000      |
| 0112       | 643.5000   | Traffic Control                                                           | EACH | 0.500       | 0.500       |
| 0114       | 646.1020   | Marking Line Epoxy 4-Inch                                                 | LF   | 165,120.000 | 165,120.000 |
| 0116       | 646.6120   | Marking Stop Line Epoxy 18-Inch                                           | LF   | 45.000      | 45.000      |
| 0118       | 648.0100   | Locating No-Passing Zones                                                 | MI   | 9.150       | 9.150       |
| 0120       | 649.0105   | Temporary Marking Line Paint 4-Inch                                       | LF   | 65,945.000  | 65,945.000  |
| 0122       | 649.0120   | Temporary Marking Line Epoxy 4-Inch                                       | LF   | 70,590.000  | 70,590.000  |
| 0126       | 650.8000   | Construction Staking Resurfacing Reference                                | LF   | 48,308.000  | 48,308.000  |
| 0130       | 650.9910   | Construction Staking Supplemental Control (project) 02. 9110-10-70        | LS   | 1.000       | 1.000       |
| 0134       | 740.0440   | Incentive IRI Ride                                                        | DOL  | 36,425.000  | 36,425.000  |
| 0162       | SPV.0060   | Special 14. Reestablish Section Corner Monuments                          | EACH | 13.000      | 13.000      |
| 0164       | SPV.0180   | Special 01. Protective Thermoplastic Coating at Snowmobile Trail Crossing | SY   | 55.000      | 55.000      |



3

|          |               | 634.0616                       | 638.2102                | 638.4000                      |
|----------|---------------|--------------------------------|-------------------------|-------------------------------|
|          |               | POSTS WOOD<br>4X6-INCH X 16-FT | MOVING SIGNS<br>TYPE II | MOVING SMALL<br>SIGN SUPPORTS |
| CATEGORY | LOCATION      | EACH                           | EACH                    | EACH                          |
| 0010     | UNDISTRIBUTED | 2                              | 5                       | 5                             |
| TOTALS   |               | 2                              | 5                       | 5                             |

NOTE  
UNDISTRIBUTED QUANTITIES ARE FOR ADJUSTMENT OF ANY NO PASSING ZONE SIGNS,  
IF REQUIRED.

|          |                               | 643.0300 |                       |     | 643.0900              |       | 643.1050                   |     |
|----------|-------------------------------|----------|-----------------------|-----|-----------------------|-------|----------------------------|-----|
|          |                               | DURATION | TRAFFIC CONTROL DRUMS |     | TRAFFIC CONTROL SIGNS |       | TRAFFIC CONTROL SIGNS PCMS |     |
| CATEGORY | LOCATION                      | DAYS     | NO.                   | DAY | NO.                   | DAY   | NO.                        | DAY |
| 0010     | PRIOR TO CONSTRUCTION PROJECT | 7        | 20                    | 140 | --                    | --    | 4                          | 28  |
|          |                               | 113      | --                    | --  | 38                    | 4,300 | --                         | --  |
| TOTALS   |                               |          |                       | 140 | 4,300                 |       | 28                         |     |

3

|          |         |    |         | 646.1020                  | 649.0105                            | 649.0120                            |        |
|----------|---------|----|---------|---------------------------|-------------------------------------|-------------------------------------|--------|
|          |         |    |         | MARKING LINE EPOXY 4-INCH | TEMPORARY MARKING LINE PAINT 4-INCH | TEMPORARY MARKING LINE EPOXY 4-INCH |        |
|          |         |    |         | WHITE                     | YELLOW                              | YELLOW                              |        |
| CATEGORY | STATION | TO | STATION | LF                        | LF                                  | LF                                  | LF     |
| 0010     | 906+93  | -  | 990+98  | 16,329                    | 13,195                              | 12,422                              | 13,195 |
|          | 990+98  | -  | 1100+00 | 21,757                    | 11,380                              | 9,718                               | 11,380 |
|          | 1100+00 | -  | 1210+50 | 21,485                    | 16,583                              | 15,665                              | 16,583 |
|          | 1210+50 | -  | 1317+21 | 20,890                    | 17,493                              | 16,795                              | 17,493 |
|          | 1317+21 | -  | 1390+01 | 14,069                    | 11,939                              | 11,345                              | 11,939 |
| TOTALS   |         |    |         | 94,530                    | 70,590                              | 65,945                              | 70,590 |
|          |         |    |         | 165,120                   |                                     |                                     |        |

| MARKING STOP LINE<br>EPOXY 18-INCH |         |        |    |             |
|------------------------------------|---------|--------|----|-------------|
| CATEGORY                           | STATION | OFFSET | LF | COMMENTS    |
| 0010                               | 1167+25 | RT     | 25 | STH 70 EAST |
|                                    | 1317+10 | LT     | 20 | STH 70 WEST |
|                                    | TOTAL   |        |    |             |
|                                    |         |        | 45 |             |

|                        |
|------------------------|
| PROJECT NO: 9110-10-70 |
|------------------------|

|              |
|--------------|
| HWY: STH 139 |
|--------------|

COUNTY: FLORENCE

| MISCELLANEOUS QUANTITIES |     |
|--------------------------|-----|
| 1                        | ... |
| 2                        | ... |
| 3                        | ... |
| 4                        | ... |
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| 97                       | ... |
| 98                       | ... |
| 99                       | ... |
| 100                      | ... |

SHEET

E



3

LOCATING NO-PASSING ZONES

| 648.0100<br>LOCATING<br>NO-PASSING<br>ZONES |         |    |         |      |
|---------------------------------------------|---------|----|---------|------|
| CATEGORY                                    | STATION | TO | STATION | MI   |
| 0010                                        | 906+93  | -  | 1390+01 | 9.15 |
| TOTAL                                       |         |    |         | 9.15 |

LANDMARK REFERENCE MONUMENTS

| 621.0100<br>LANDMARK<br>REFERENCE<br>MONUMENTS |                                     |  |      | SPV.0060.14<br>REESTABLISH<br>SECTION CORNER<br>MONUMENTS |  |
|------------------------------------------------|-------------------------------------|--|------|-----------------------------------------------------------|--|
| CATEGORY                                       | LOCATION                            |  | EACH | EACH                                                      |  |
| 0010                                           | WEST 1/2 OF SEC 8, T39N, R15E       |  | 4    | 1                                                         |  |
|                                                | NORTHWEST 1/4 OF SEC 8, T39N, R15E  |  | 4    | 1                                                         |  |
|                                                | WEST 1/2 OF SEC 5, T39N, R15E       |  | 4    | 1                                                         |  |
|                                                | NORTHWEST 1/4 OF SEC 32, T40N, R15E |  | 4    | 1                                                         |  |
|                                                | WEST 1/2 OF SEC 29, T40N, R15E      |  | 4    | 1                                                         |  |
|                                                | NORTHWEST 1/4 OF SEC 29, T40N, R15E |  | 4    | 1                                                         |  |
|                                                | WEST 1/2 OF SEC 20, T40N, R15E      |  | 4    | 1                                                         |  |
|                                                | NORTHWEST 1/4 OF SEC 20, T40N, R15E |  | 4    | 1                                                         |  |
|                                                | WEST 1/2 OF SEC 17, T40N, R15E      |  | 4    | 1                                                         |  |
|                                                | NORTHWEST 1/4 OF SEC 17, T40N, R15E |  | 4    | 1                                                         |  |
|                                                | WEST 1/2 OF SEC 8, T40N, R15E       |  | 4    | 1                                                         |  |
|                                                | NORTHWEST 1/4 OF SEC 8, T40N, R15E  |  | 4    | 1                                                         |  |
|                                                | NORTHWEST 1/4 OF SEC 5, T40N, R15E  |  | 4    | 1                                                         |  |
|                                                | TOTALS                              |  | 52   | 13                                                        |  |

WATER

| 624.0100<br>WATER<br>MGAL |          |    |
|---------------------------|----------|----|
| CATEGORY                  | LOCATION |    |
| 0010                      | PROJECT  |    |
| TOTAL                     |          | 50 |

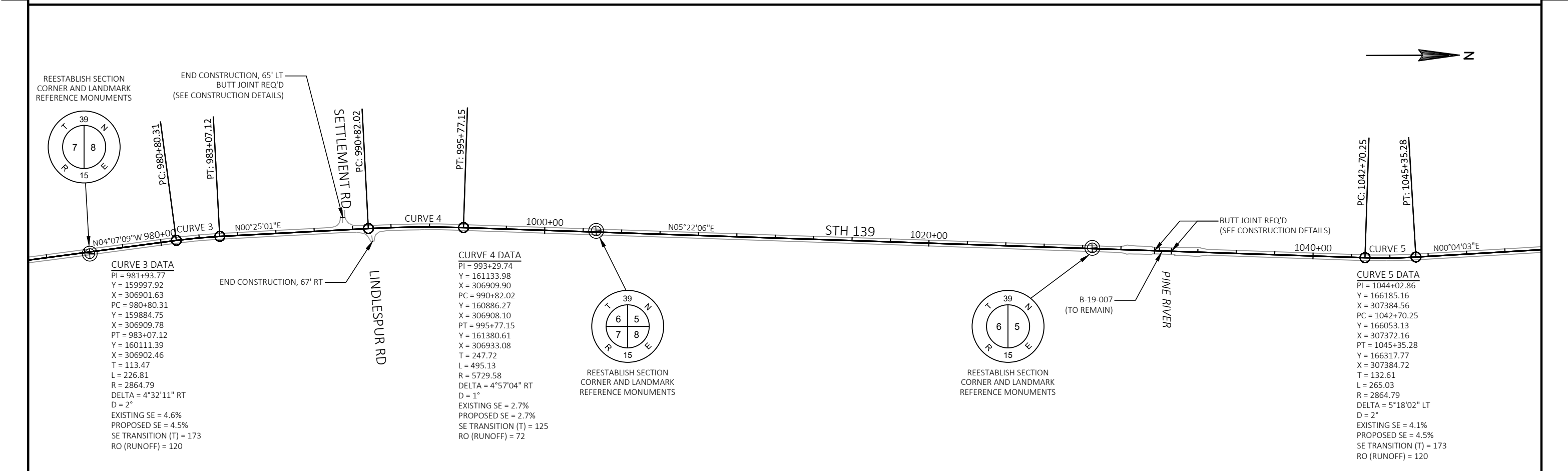
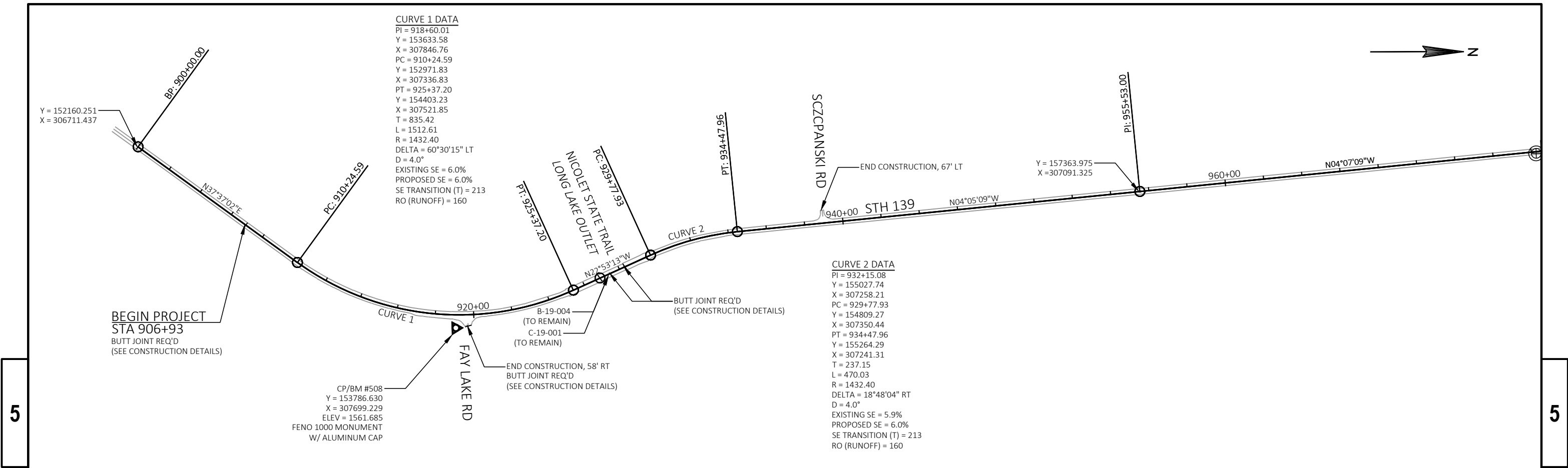
3

CONSTRUCTION STAKING

| 650.8000<br>CONSTRUCTION<br>STAKING<br>RESURFACING<br>REFERENCE |         |    |         |        |        |    | 650.9910.02<br>CONSTRUCTION<br>STAKING<br>SUPPLEMENTAL<br>CONTROL<br>(9110-10-70) |  |
|-----------------------------------------------------------------|---------|----|---------|--------|--------|----|-----------------------------------------------------------------------------------|--|
| CATEGORY                                                        | STATION | TO | STATION | OFFSET | LF     | LS |                                                                                   |  |
| 0010                                                            | 906+93  | -  | 990+98  | LT&RT  | 8,405  | -- |                                                                                   |  |
|                                                                 | 990+98  | -  | 1100+00 | LT&RT  | 10,902 | -- |                                                                                   |  |
|                                                                 | 1100+00 | -  | 1210+50 | LT&RT  | 11,050 | -- |                                                                                   |  |
|                                                                 | 1210+50 | -  | 1317+21 | LT&RT  | 10,671 | -- |                                                                                   |  |
|                                                                 | 1317+21 | -  | 1390+01 | LT&RT  | 7,280  | -- |                                                                                   |  |
| PROJECT                                                         |         |    |         |        | --     | 1  |                                                                                   |  |
| TOTALS                                                          |         |    |         |        | 48,308 | 1  |                                                                                   |  |

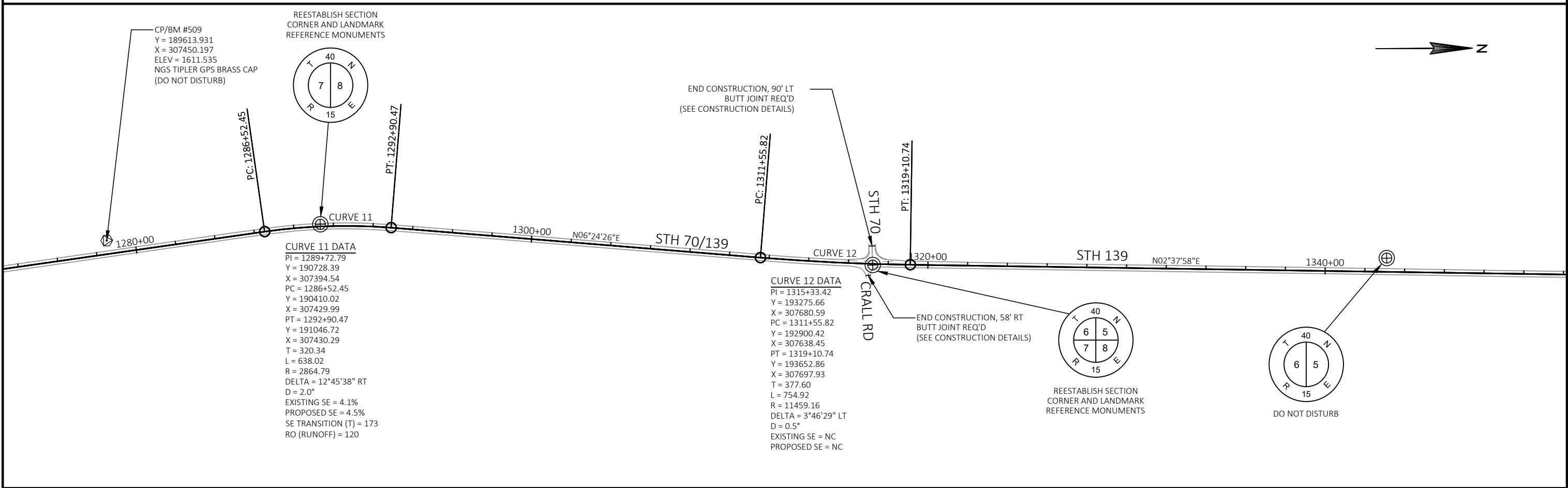
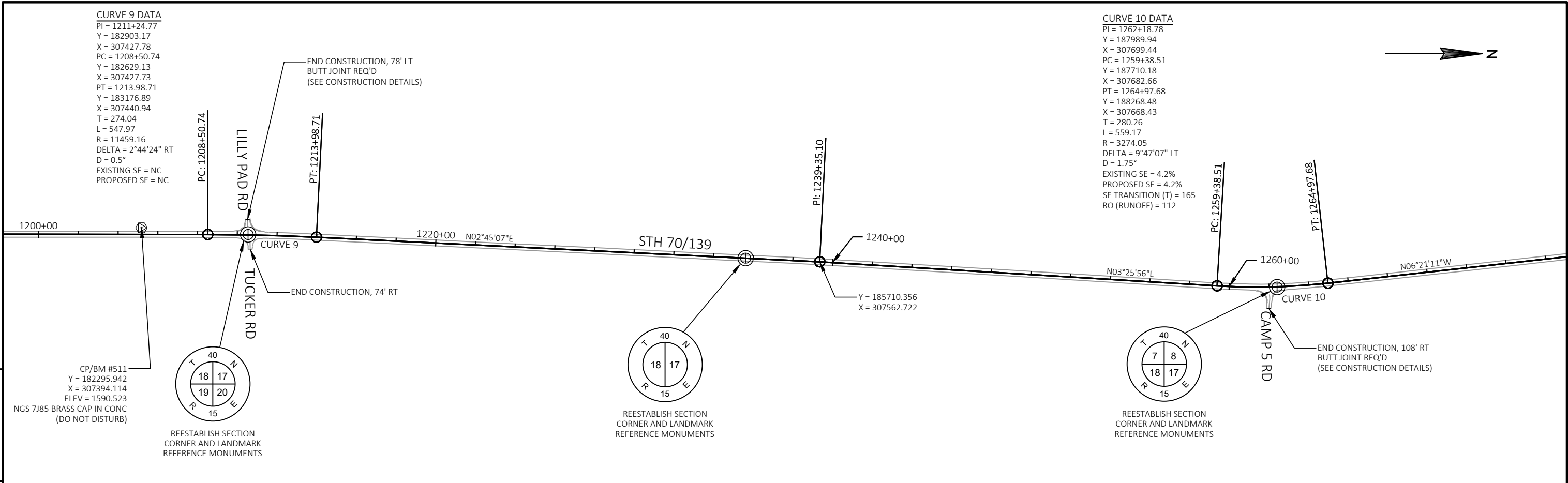
SNOWMOBILE CROSSING

| SPV.0180.01<br>PROTECTIVE<br>THERMOPLASTIC<br>COATING AT<br>SNOWMOBILE<br>TRAIL CROSSING |         |        |    |
|------------------------------------------------------------------------------------------|---------|--------|----|
| CATEGORY                                                                                 | STATION | OFFSET | SY |
| 0010                                                                                     | 1193+40 | LT&RT  | 55 |
| TOTAL                                                                                    |         |        | 55 |

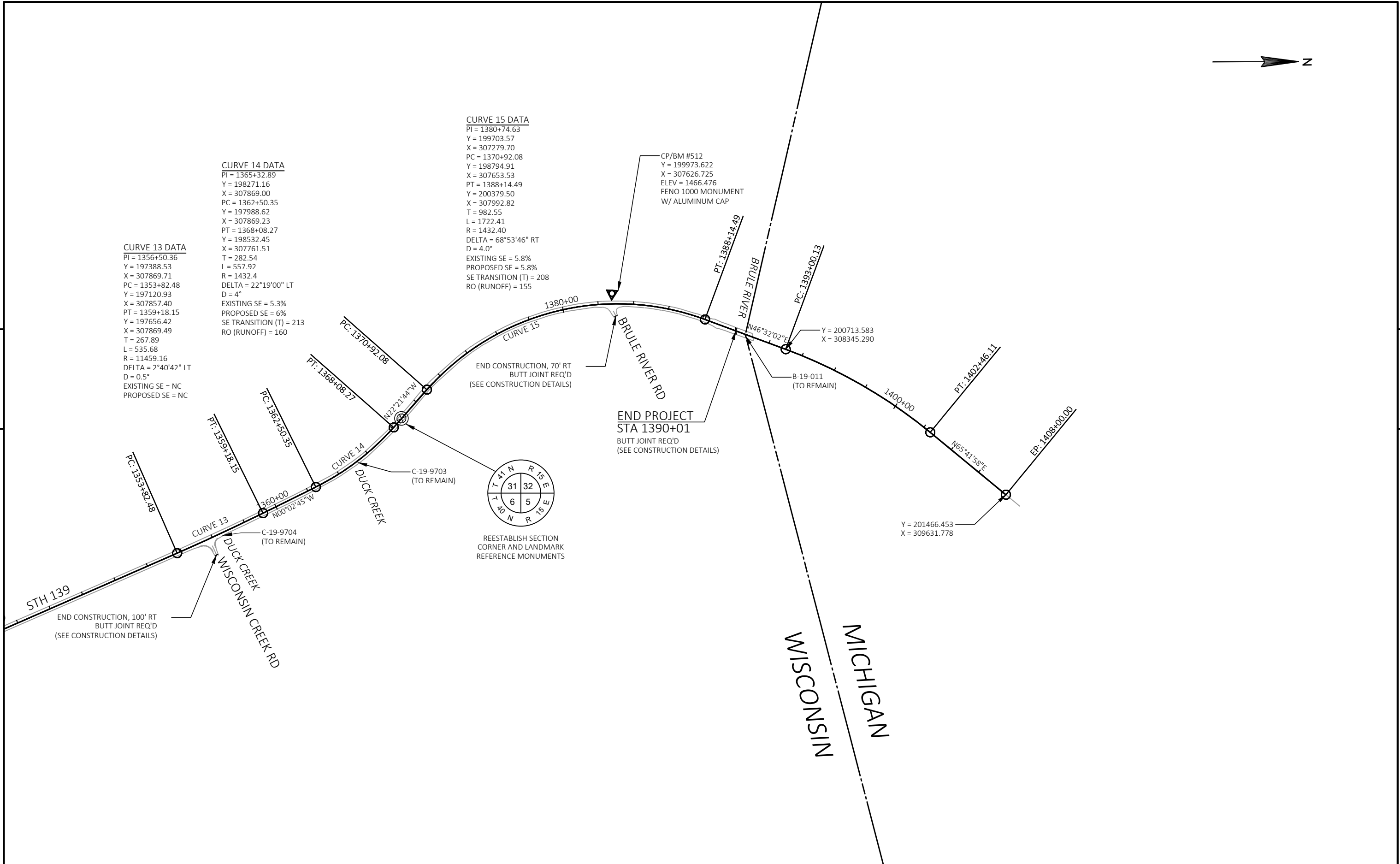


|                        |              |                  |      |       |   |
|------------------------|--------------|------------------|------|-------|---|
| PROJECT NO: 9110-10-70 | HWY: STH 139 | COUNTY: FLORENCE | PLAN | SHEET | E |
|------------------------|--------------|------------------|------|-------|---|



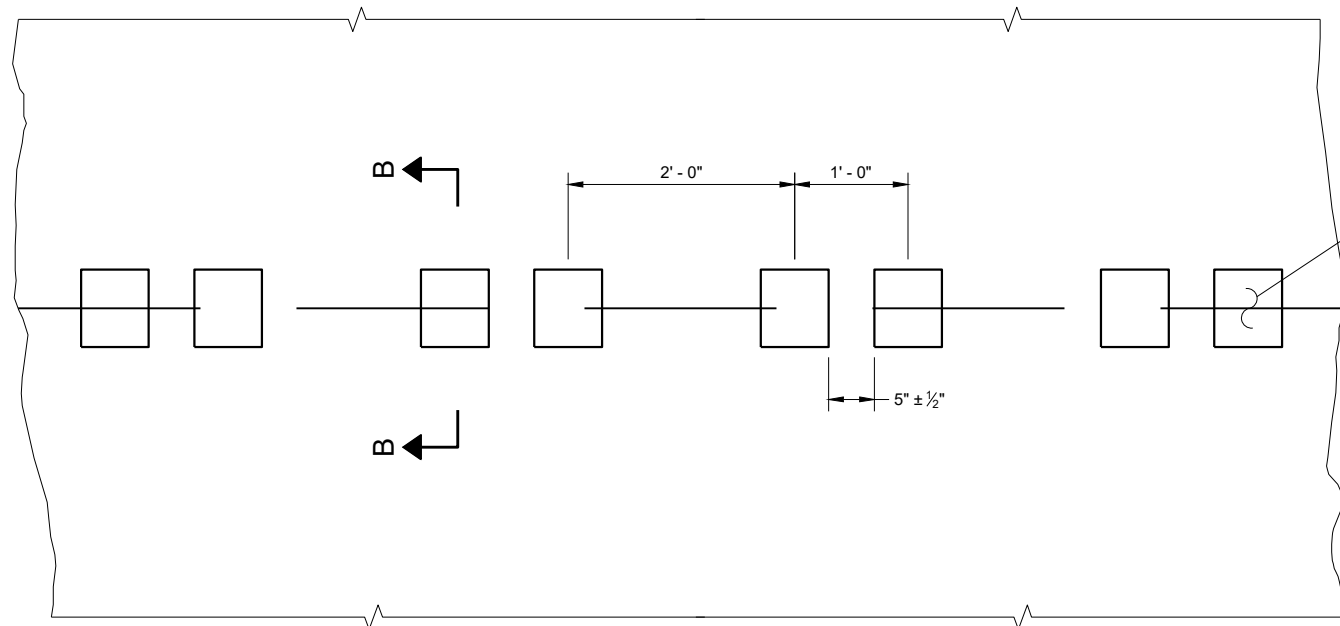


|                        |              |                  |      |       |   |
|------------------------|--------------|------------------|------|-------|---|
| PROJECT NO: 9110-10-70 | HWY: STH 139 | COUNTY: FLORENCE | PLAN | SHEET | E |
|------------------------|--------------|------------------|------|-------|---|



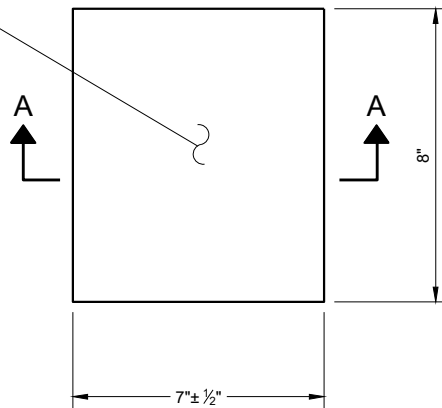
Standard Detail Drawing List

|           |                                                                                                    |
|-----------|----------------------------------------------------------------------------------------------------|
| 13A11-03A | 2-LANE RURAL CENTER LINE RUMBLE STRIP, MILLING                                                     |
| 13A11-03B | 2-LANE RURAL CENTER LINE RUMBLE STRIP, MILLING                                                     |
| 13C19-02  | HMA LONGITUDINAL JOINTS                                                                            |
| 14B29-01  | SAFETY EDGE                                                                                        |
| 15C03-05  | BARRICADES AND SIGNS FOR SIDEROAD CLOSURES                                                         |
| 15C04-05  | TRAFFIC CONTROL, ADVANCE WARNING SIGNS 45 M.P.H. OR GREATER TWO-WAY UNDIVIDED ROAD OPEN TO TRAFFIC |
| 15C08-20A | LONGITUDINAL MARKING (MAINLINE)                                                                    |
| 15C11-07B | CHANNELIZING DEVICES DRUMS, CONES, BARRICADES AND VERTICAL PANELS                                  |
| 15C12-07  | TRAFFIC CONTROL FOR LANE CLOSURE WITH FLAGGING OPERATION                                           |
| 15C19-06A | MOVING PAVEMENT MARKING OPERATION TWO-LANE TWO-WAY ROADWAY                                         |
| 15C33-04  | STOP LINE AND CROSSWALK PAVEMENT MARKING                                                           |
| 15D28-03  | TRAFFIC CONTROL, WORK ON SHOULDER OR PARKING LANE, UNDIVIDED ROADWAY                               |
| 15D38-02A | TEMPORARY TRAFFIC CONTROL SIGN MOUNTING                                                            |
| 15D38-02B | ATTACHMENT OF SIGNS TO POSTS                                                                       |
| 15D39-02  | TRAFFIC CONTROL, DROP-OFF SIGNING                                                                  |
| 15D44-02  | TRAFFIC CONTROL, SIGNING ON ROADWAYS WITH MILLED SURFACES                                          |



PLAN VIEW  
SHOULDER WITH GROOVES

PLACEMENT DETAIL FOR TYPE 1 MILLED RUMBLE STRIP



PLAN VIEW  
(SINGLE GROOVE)

GENERAL NOTES

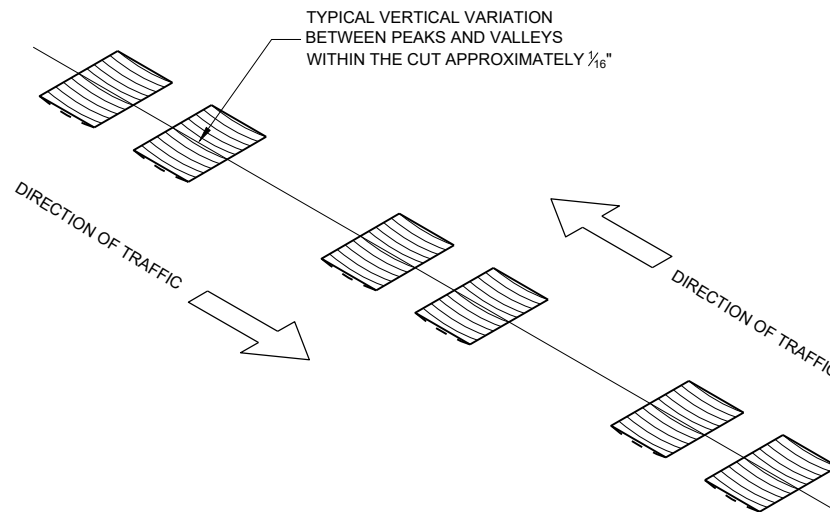
DETAILS OF CONSTRUCTION NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND APPLICABLE SPECIAL PROVISIONS.

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

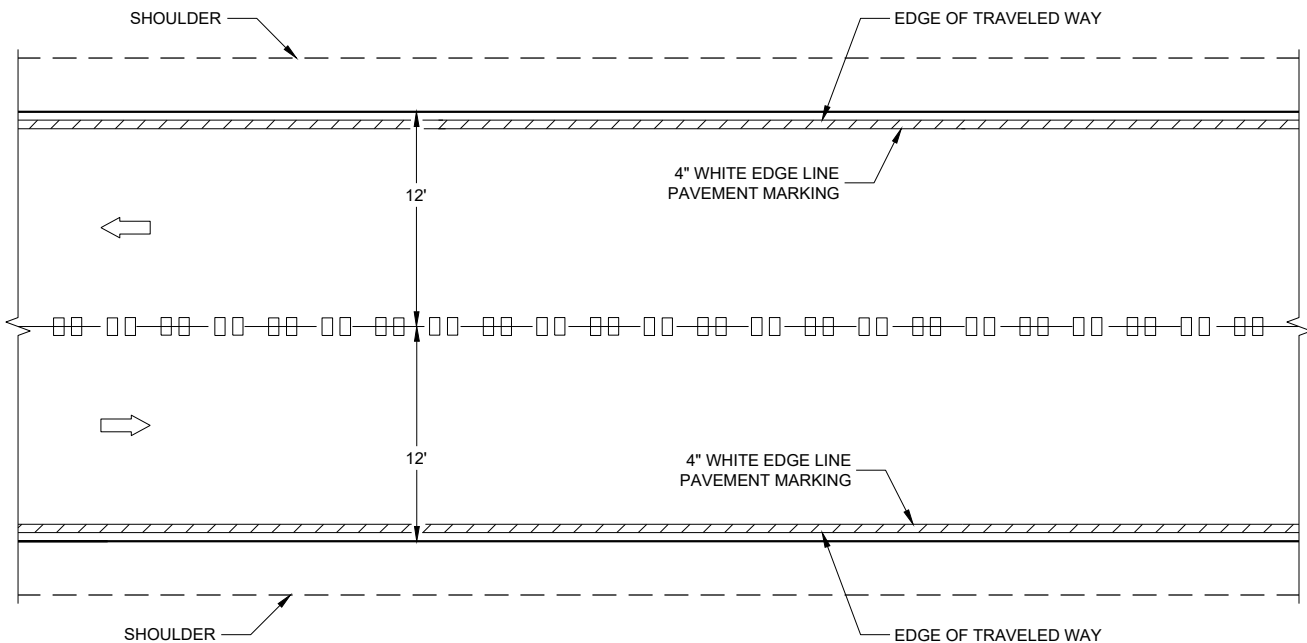
INSTALL PAVEMENT MARKING AFTER THE GROOVES ARE INSTALLED.

SEE SIGNING PLAN FOR SIGN REQUIREMENTS THAT MAY BE NEEDED.

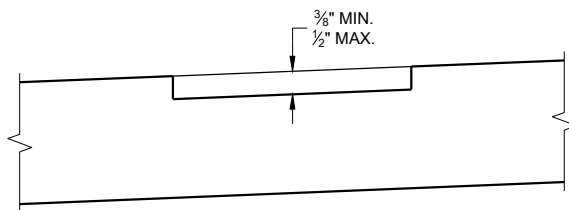
- ① CENTERLINE GROOVES MAY BE OMITTED IN AREAS WITH HIGH CONCENTRATIONS OF DRIVEWAYS. WHEN DIRECTED BY THE ENGINEER.



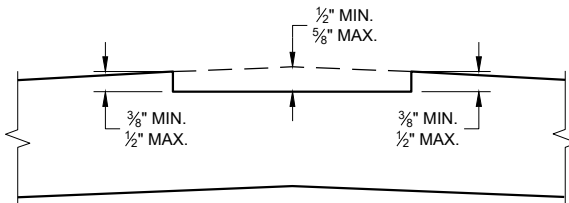
ISOMETRIC



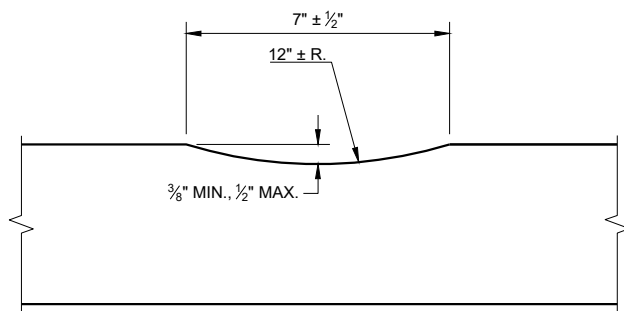
CENTERLINE GROOVES ON TWO-WAY ROADWAYS



SECTION B - B  
SUPERELEVATED ROADWAY



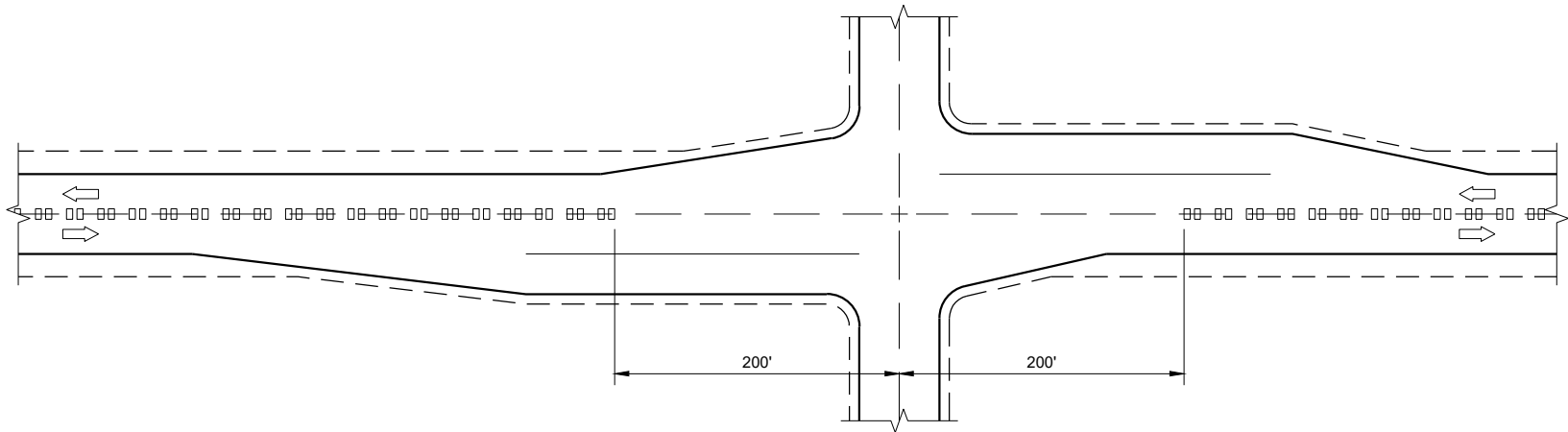
SECTION B - B  
CROWNED ROADWAY



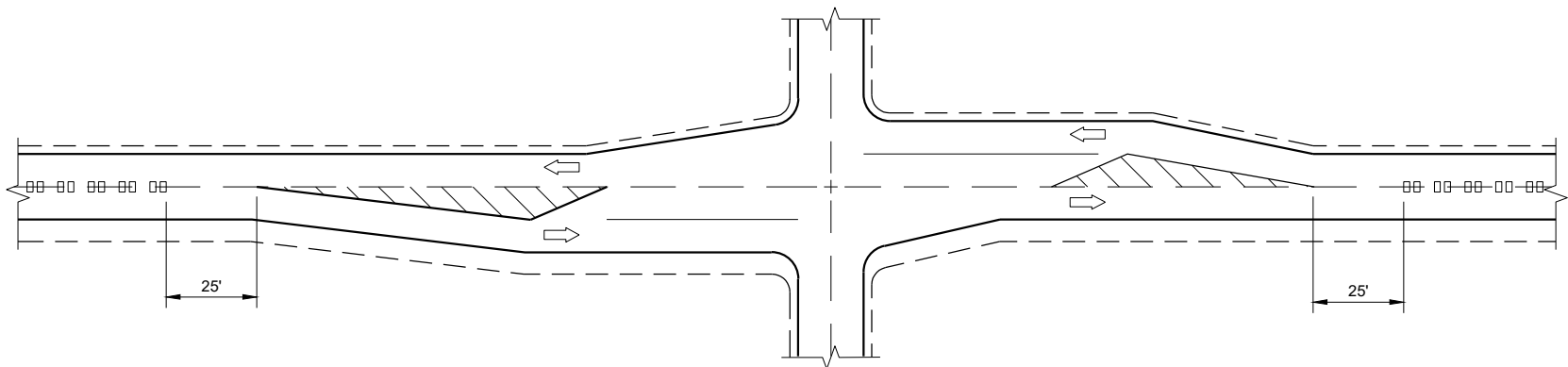
SECTION A - A

2-LANE RURAL  
CENTER LINE RUMBLE STRIP,  
MILLING

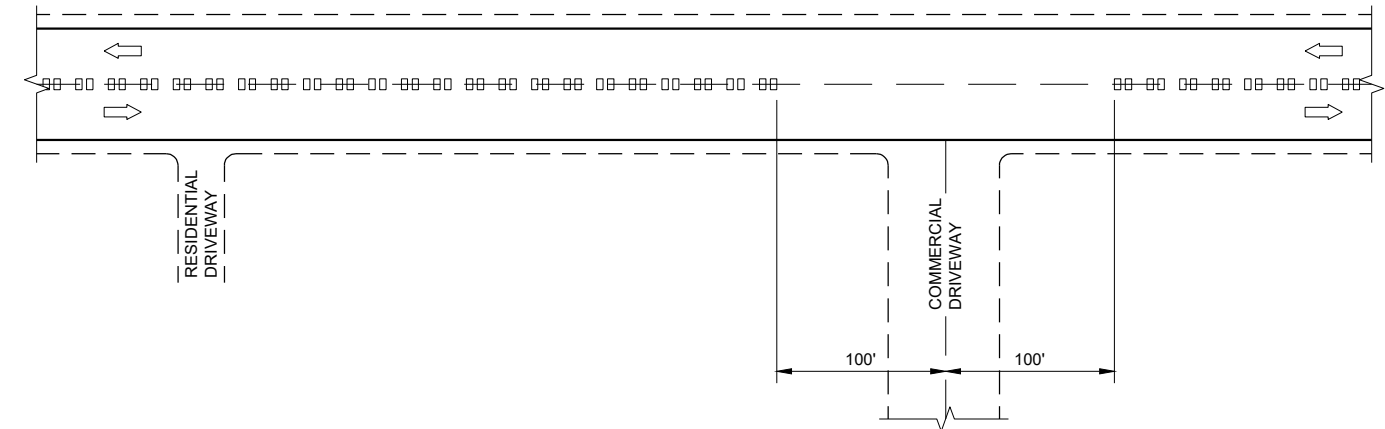
STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION



CENTERLINE GROOVES AT INTERSECTIONS



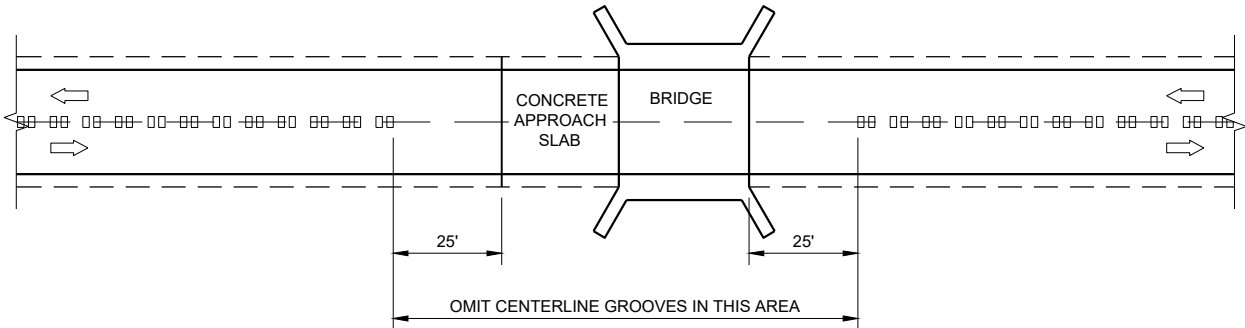
CENTERLINE GROOVES AT INTERSECTIONS  
(WITH LEFT TURN LANES)



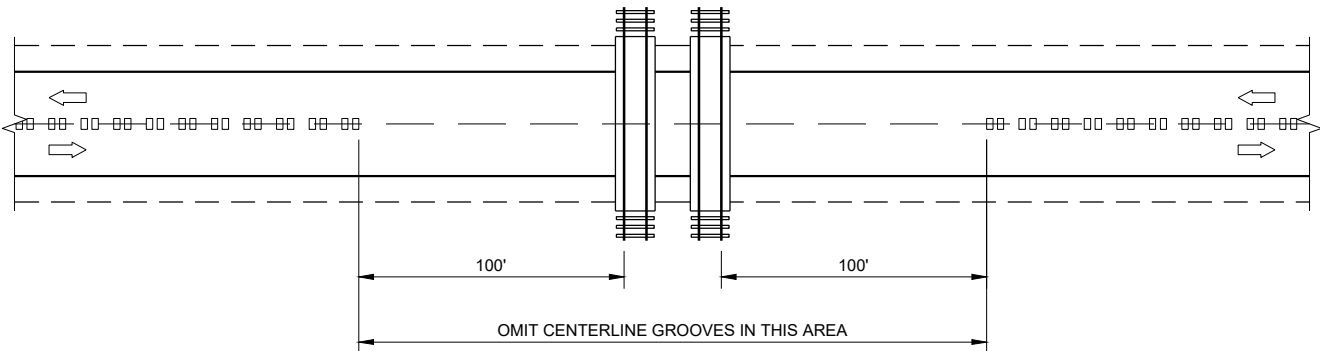
CENTERLINE GROOVES AT DRIVEWAYS<sup>①</sup>

GENERAL NOTES

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



CENTERLINE GROOVES AT BRIDGES



CENTERLINE GROOVES AT RAILROADS

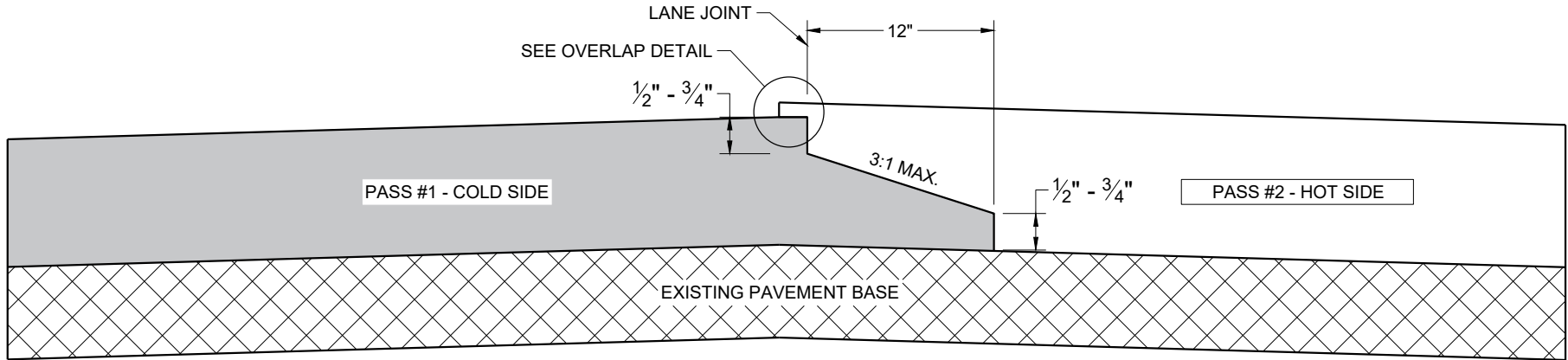
2-LANE RURAL  
CENTERLINE RUMBLE STRIP,  
MILLING

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

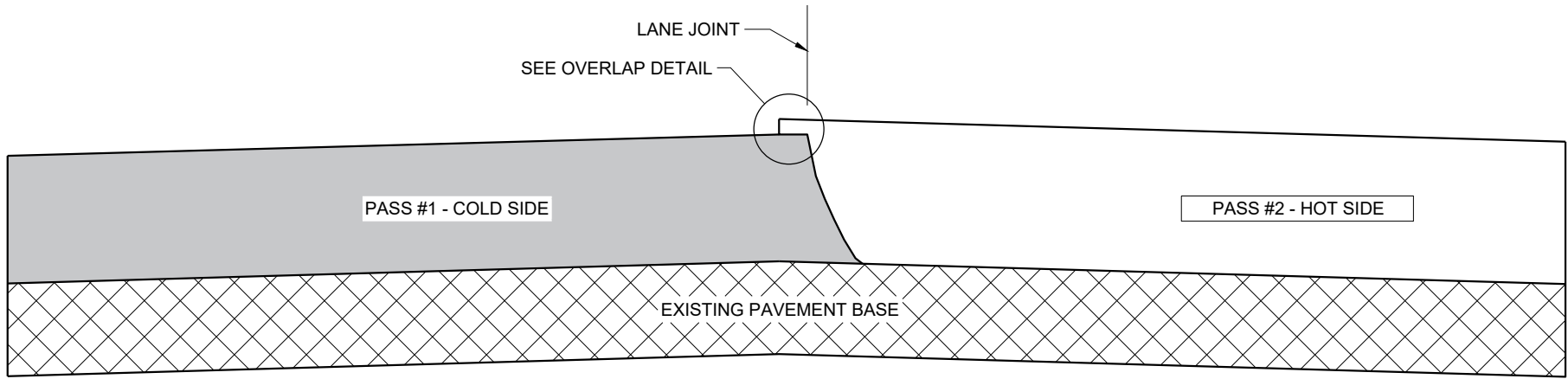
APPROVED  
7/2018  
DATE  
/S/ Rodney Taylor  
ROADWAY STANDARDS DEVELOPMENT  
ENGINEER

FHWA

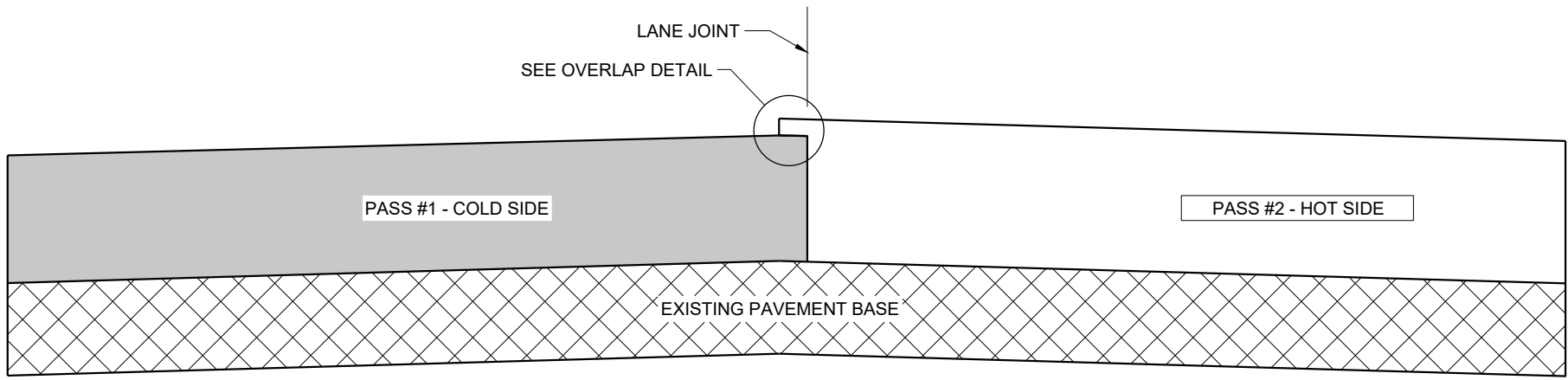




**TYPICAL PAVEMENT CROSS SECTION  
OF NOTCHED WEDGE LONGITUDINAL JOINT**



**TYPICAL PAVEMENT CROSS SECTION  
VERTICAL LONGITUDINAL JOINT**



**TYPICAL PAVEMENT CROSS SECTION  
OF MILLED LONGITUDINAL JOINT**

**GENERAL NOTES**

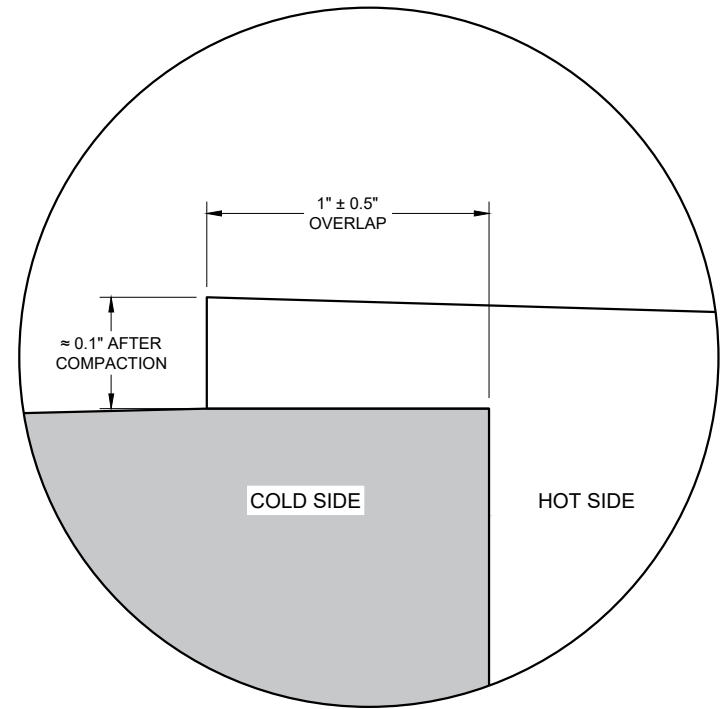
IN ADDITION TO THE DETAILS PROVIDED IN THIS DRAWING, CONFORM TO STANDARD SPECIFICATION 450.3.2.8 FOR WHEN A NOTCHED WEDGE JOINT IS REQUIRED AND FOR GENERAL JOINT CONSTRUCTION REQUIREMENTS.

FOR ALL LONGITUDINAL JOINTS, ENSURE THE PAVER SCREED OVERLAPS THE PREVIOUSLY PLACED PAVEMENT BY 1" ± 0.5" AND THE HOT SIDE OF THE JOINT REMAINS HIGHER THAN THE COLD SIDE BY APPROXIMATELY 0.1" AFTER FINAL COMPACTION.

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

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

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

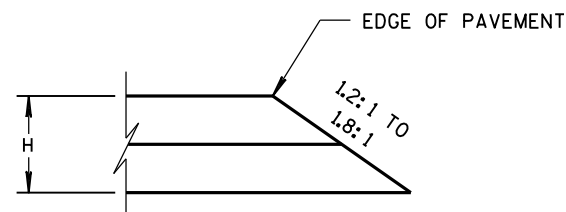


**OVERLAP DETAIL (TYPICAL)**

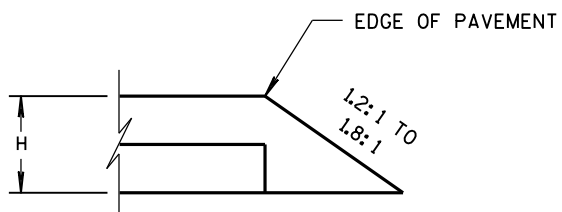
**HMA LONGITUDINAL JOINTS**

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

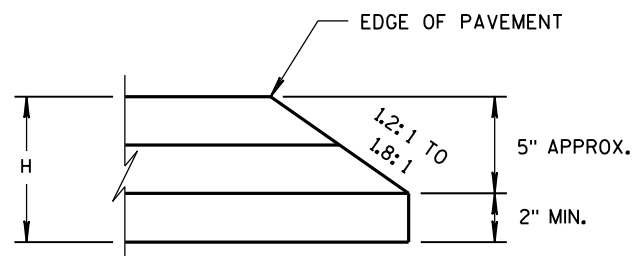
APPROVED  
February 2020 /S/ Steven Hefel  
DATE HMA PAVEMENT ENGINEER  
FHWA



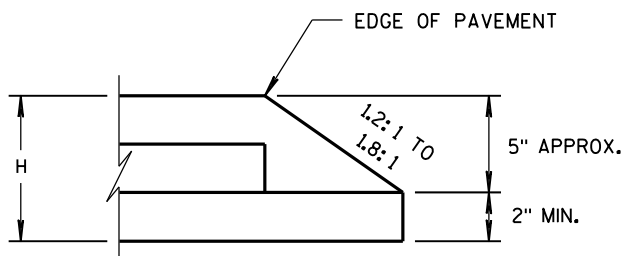
CONSTRUCTED WITH FINAL TWO LAYERS  
FOR H 5" OR LESS



CONSTRUCTED WITH FINAL LAYER  
FOR H 5" OR LESS

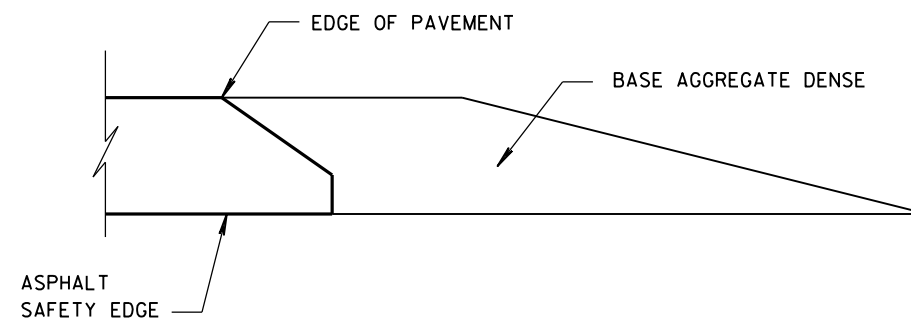


CONSTRUCTED WITH FINAL TWO LAYERS  
FOR H GREATER THAN 5"



CONSTRUCTED WITH FINAL LAYER  
FOR H GREATER THAN 5"

### HMA PAVEMENT AND HMA OVERLAYS



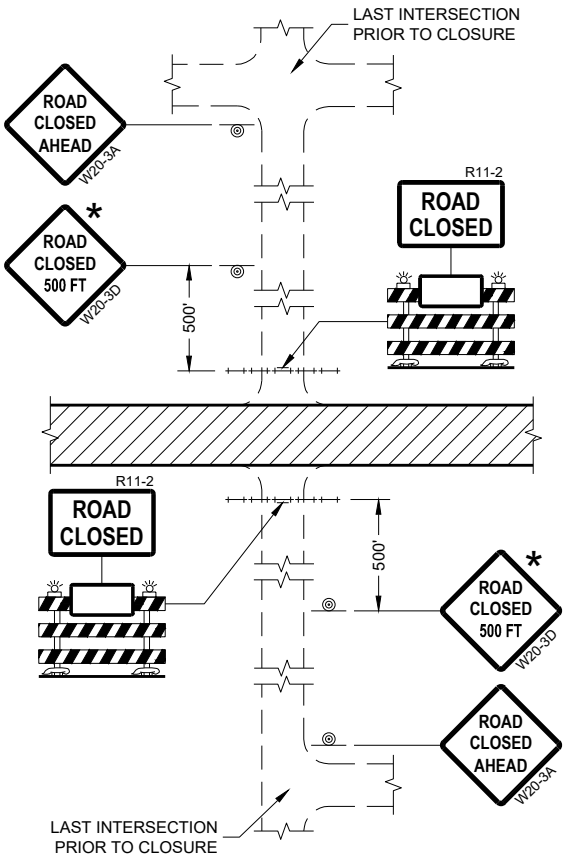
### FINISHED SHOULDER AGGREGATE PLACEMENT

SAFETY EDGE<sub>SM</sub>

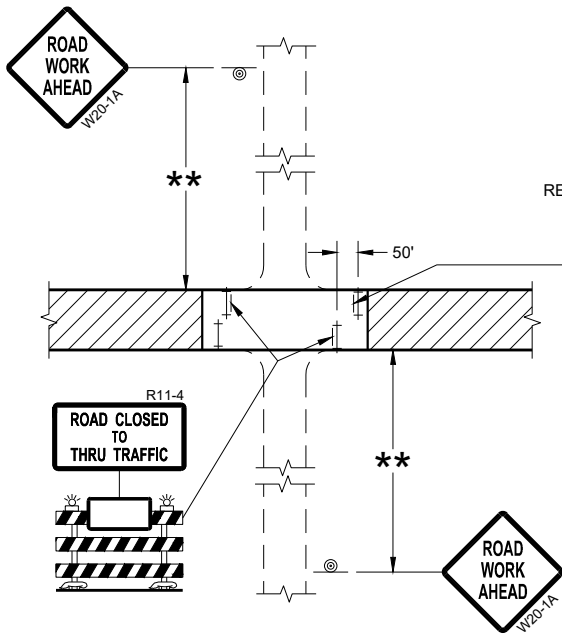
STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

APPROVED  
11/30/2012  
DATE  
FHWA

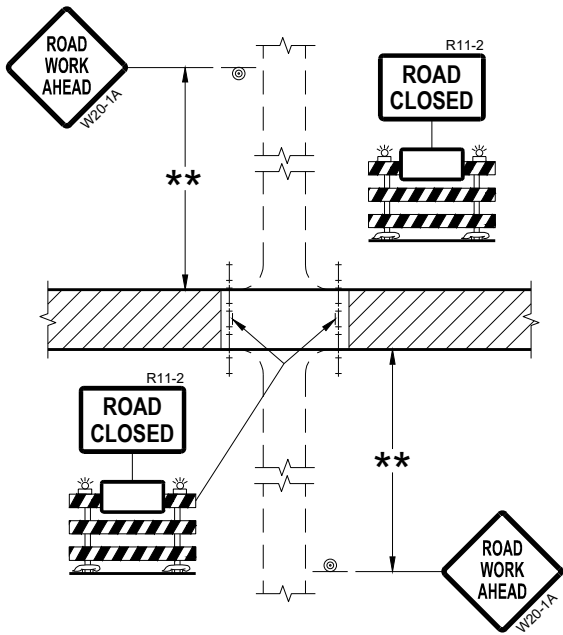
/s/ Jerry H. Zogg  
ROADWAY STANDARDS DEVELOPMENT  
ENGINEER



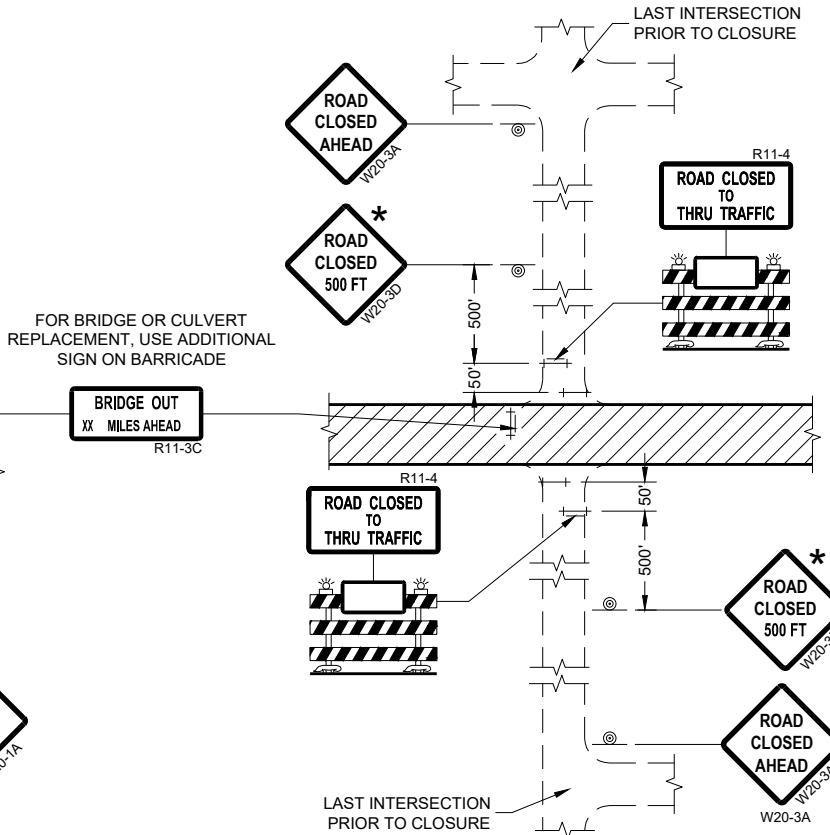
**DETAIL 1**  
(NO ACCESS TO PROJECT)



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



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



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

**GENERAL NOTES**

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

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

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

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

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

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

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

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

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

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

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

**LEGEND**

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

**BARRICADES AND SIGNS  
FOR  
SIDEROAD CLOSURES**

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

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

GENERAL NOTES

THE EXACT NUMBER, LOCATION, AND SPACING OF ALL SIGNS AND DEVICES SHALL BE ADJUSTED TO FIT FIELD CONDITIONS.

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




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

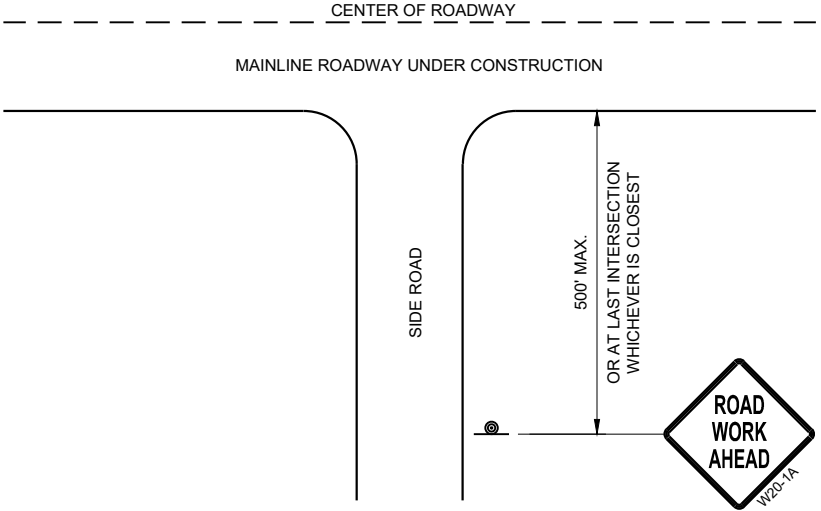
SIGNS THAT WILL BE IN PLACE LESS THAN SEVEN CONTINUOUS DAYS AND NIGHTS MAY BE MOUNTED ON PORTABLE SUPPORTS.

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

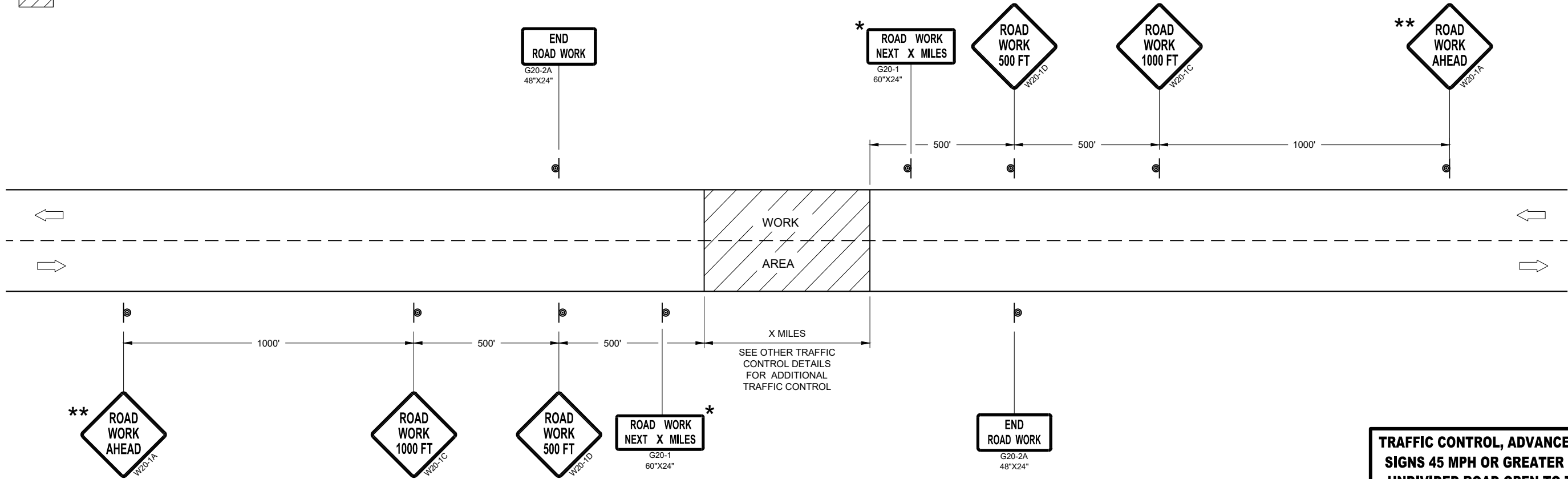
- \* OMIT G20-1 SIGNS IF LENGTH OF WORK AREA IS 2 MILES OR LESS
- \*\* PLACE AN ADDITIONAL W20-1A "ROAD WORK AHEAD" SIGN IF WORK AREA WITHIN THE PROJECT IS SEPARATED BY MORE THAN 2 MILES FROM PREVIOUS WORK AREA.

LEGEND

-  SIGN ON PERMANENT SUPPORT
-  DIRECTION OF TRAFFIC
-  WORK AREA



TYPICAL SIDE ROAD APPROACH  
WARNING SIGN DETAIL

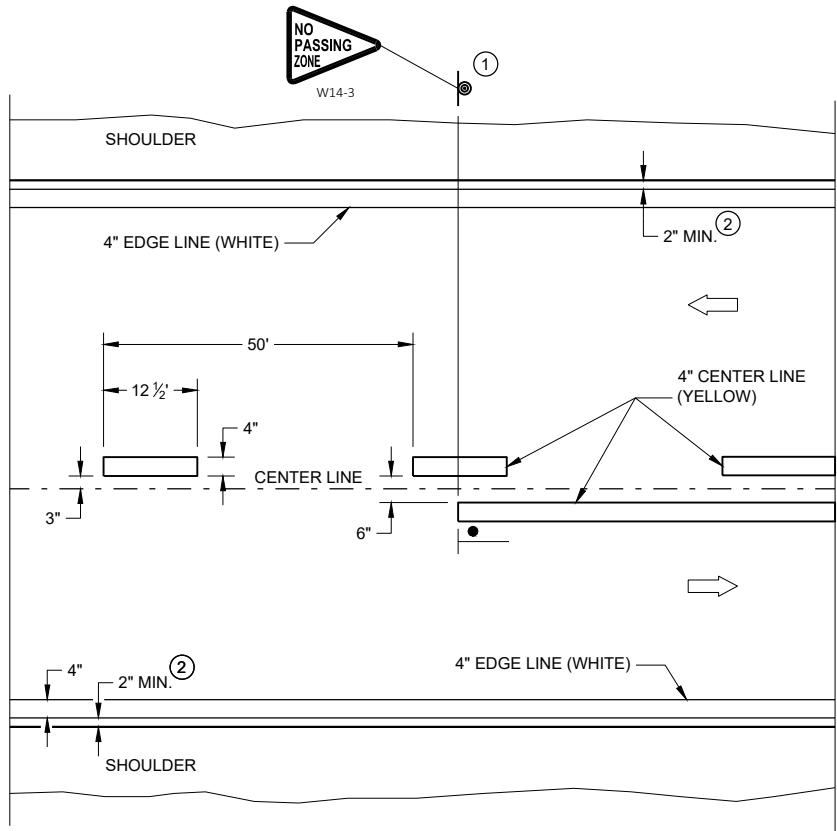


TRAFFIC CONTROL, ADVANCE WARNING SIGNS 45MPH OR GREATER

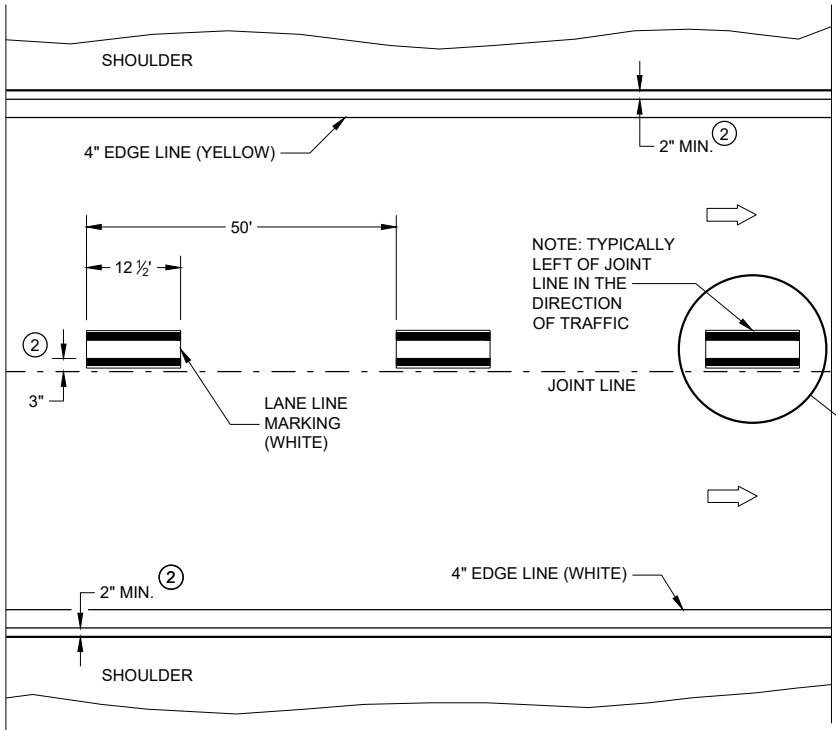
TRAFFIC CONTROL, ADVANCE WARNING  
SIGNS 45 MPH OR GREATER TWO-WAY  
UNDIVIDED ROAD OPEN TO TRAFFICE

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

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

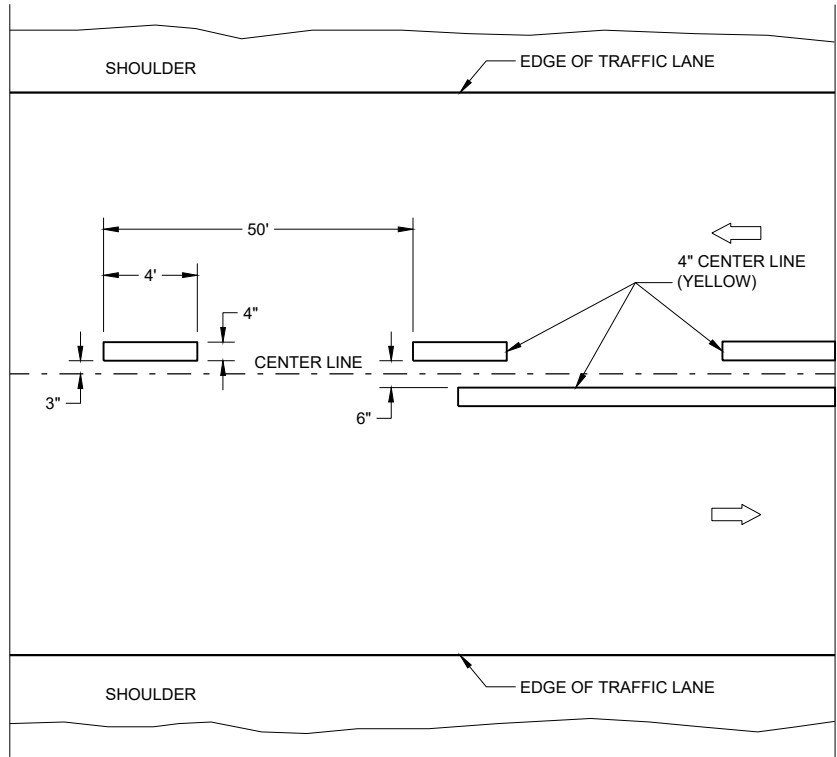


TWO WAY TRAFFIC

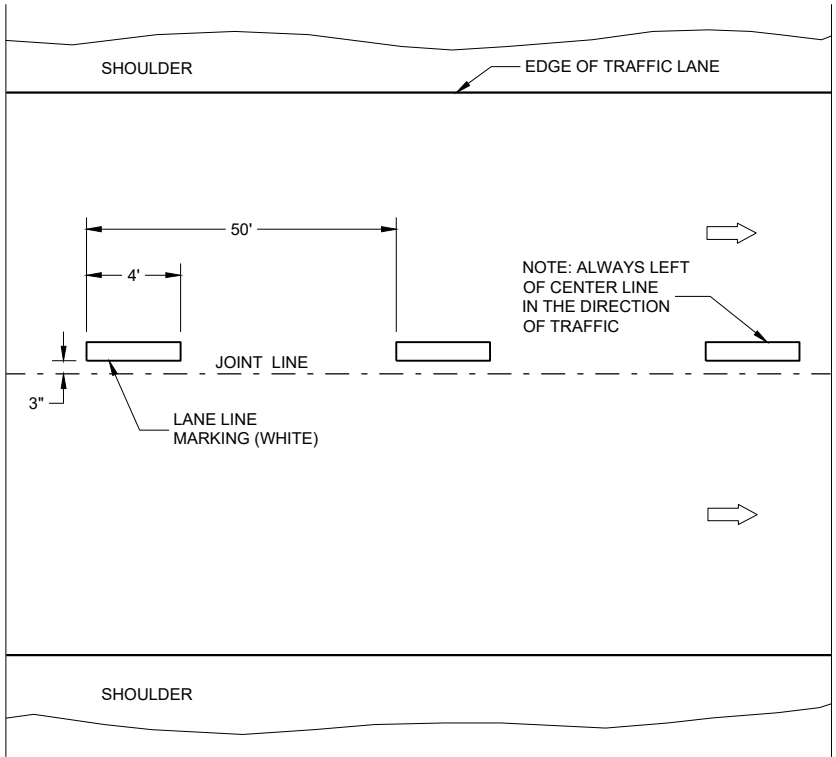


ONE WAY TRAFFIC

PERMANENT PAVEMENT MARKING



TWO WAY TRAFFIC



ONE WAY TRAFFIC

TEMPORARY PAVEMENT MARKING

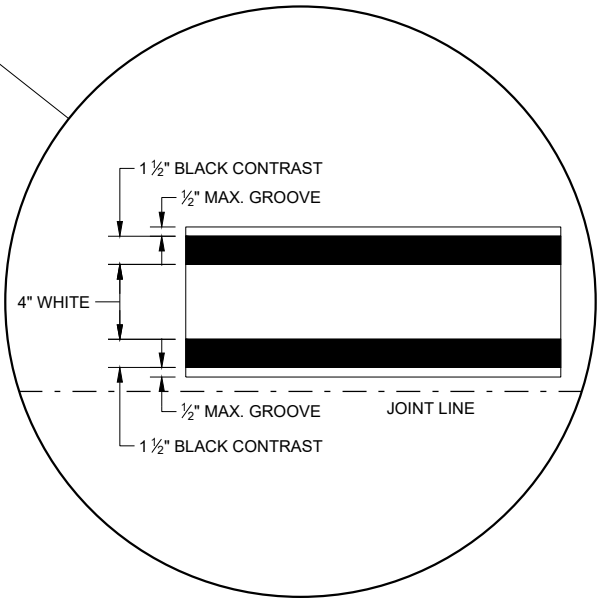
GENERAL NOTES

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

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

LEGEND

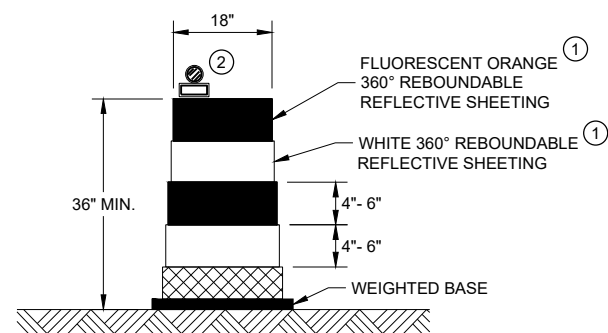
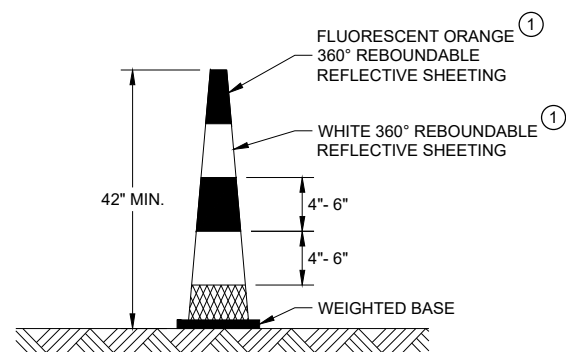
- "T" MARKING
- SIGN ON PERMANENT SUPPORT
- DIRECTION OF TRAFFIC



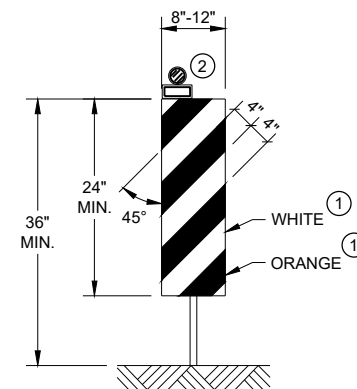
LONGITUDINAL MARKING (MAINLINE)

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

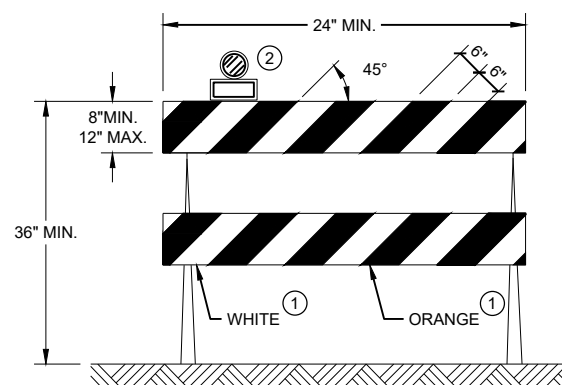
APPROVED  
February 2020  
DATE  
/S/ Matthew Rauch  
STATEWIDE SIGNING AND MARKING  
ENGINEER  
FHWA

**DRUM****42" CONE**

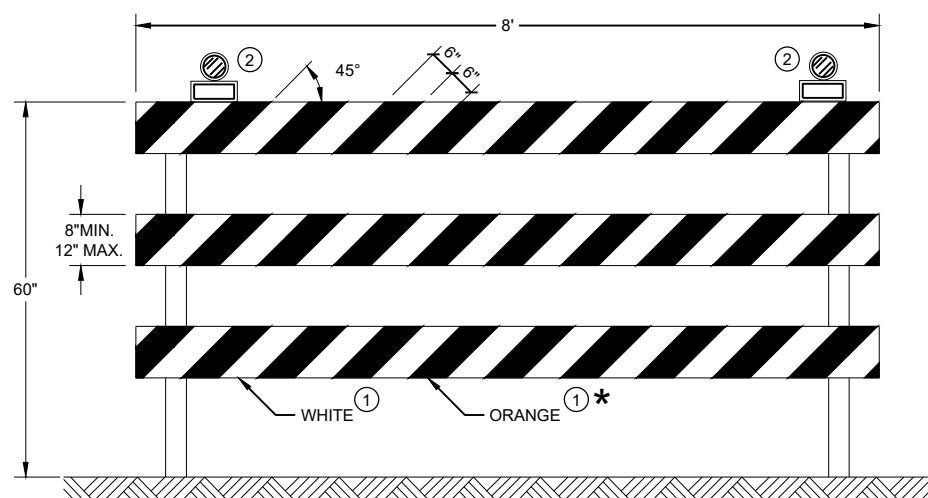
DO NOT USE IN TAPERS  
 $\frac{1}{2}$  SPACING OF DRUMS

**VERTICAL PANEL**

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

**TYPE II BARRICADE**

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

**TYPE III BARRICADE**

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

\* IF USED FOR A PERMANENT APPLICATION USE RED SHEETING.

**GENERAL NOTES**

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






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

STATE OF WISCONSIN  
 DEPARTMENT OF TRANSPORTATION

APPROVED  
 June 2017 /S/ Andrew Heidtke  
 DATE WORK ZONE ENGINEER

FHWA

LEGEND

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

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.

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

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

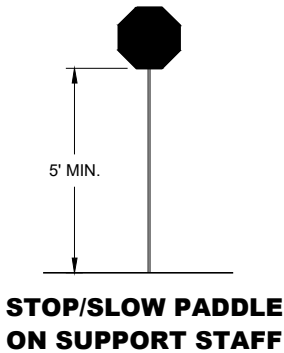
THE EXACT NUMBER, LOCATION AND SPACING OF ALL SIGNS, DEVICES, AND LOCATION OF ALL FLAGGERS SHALL BE ADJUSTED TO FIT FIELD CONDITIONS AS APPROVED BY THE ENGINEER.

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.

FLAGGING

- 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 REMOVE TEMPORARY PORTABLE RUMBLE STRIPS PRIOR TO COVERING OR REMOVING ALL ADVANCE SIGNING.
- FOR MOVING WORK OPERATIONS, POST ADDITIONAL W20-7A FLAGGER SIGNS AT APPROXIMATELY 3,500' INTERVALS IN THE MOVING WORK OPERATION OR AS APPROVED BY THE ENGINEER.
  - SIGN NOT REQUIRED IF FLAGGING OPERATION OCCURS WITHIN A SIGNED ROAD WORK ZONE AREA.
- WHEN THE DISTANCE BETWEEN FLAGGERS EXCEEDS 2 MILES, A PILOT CAR IS REQUIRED. WHEN CURVES REDUCE SIGHT DISTANCE BELOW 400', A PILOT CAR IS REQUIRED.
- TEMPORARY PORTABLE RUMBLE STRIPS**
- UTILIZE TEMPORARY PORTABLE RUMBLE STRIPS ON ALL FLAGGING OPERATIONS.
- EACH TEMPORARY PORTABLE RUMBLE STRIP ARRAY CONSISTS OF THREE RUMBLE STRIPS SPACED ACCORDING TO MANUFACTURER'S RECOMMENDATION, PLACED TRANSVERSE ACROSS THE LANE AT LOCATIONS SHOWN.
- ONLY USE TEMPORARY PORTABLE RUMBLE STRIPS FOR THE APPROVED PRODUCTS LIST.
- INSTALL TEMPORARY RUMBLE STRIPS PER MANUFACTURER'S RECOMMENDATIONS.
- PLACE ADVANCE SIGNING PRIOR TO INSTALLING TEMPORARY RUMBLE STRIPS.
- DO NOT INSTALL TEMPORARY PORTABLE RUMBLE STRIPS ON GRAVEL, MILLED SURFACES, OR ASPHALT THAT HAS BEEN PAVED LESS THAN 12 HOURS.

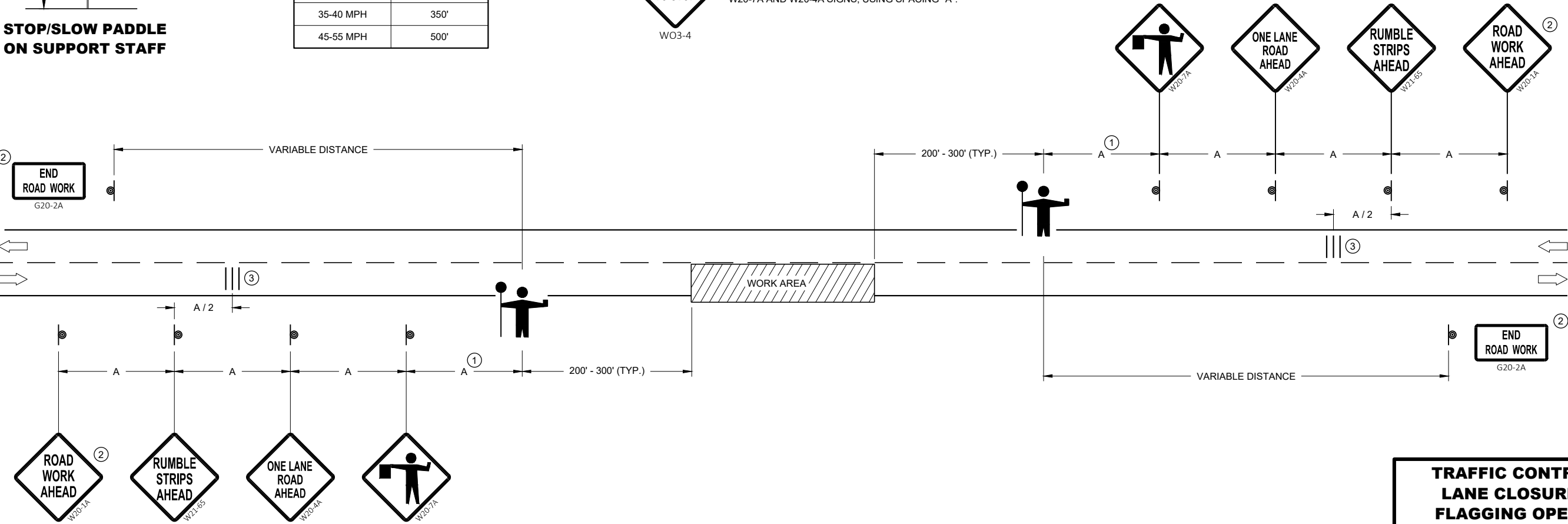


SIGN AND TEMPORARY RUMBLE STRIP ARRAY SPACING TABLE

| SPEED LIMIT | SPACING "A" |
|-------------|-------------|
| 25-30 MPH   | 200'        |
| 35-40 MPH   | 350'        |
| 45-55 MPH   | 500'        |







USE OF W03-4 SIGN IS OPTIONAL. WHEN USED, THIS SIGN SHALL BE LOCATED BETWEEN THE W20-7A AND W20-4A SIGNS, USING SPACING "A".



TRAFFIC CONTROL FOR LANE CLOSURE WITH FLAGGING OPERATION

|                                                                 |                                          |
|-----------------------------------------------------------------|------------------------------------------|
| <b>TRAFFIC CONTROL FOR LANE CLOSURE WITH FLAGGING OPERATION</b> |                                          |
| STATE OF WISCONSIN<br>DEPARTMENT OF TRANSPORTATION              |                                          |
| APPROVED<br>May 2019<br>DATE                                    | /S/ Andrew Heidtke<br>WORK ZONE ENGINEER |
| FHWA                                                            |                                          |

LEGEND

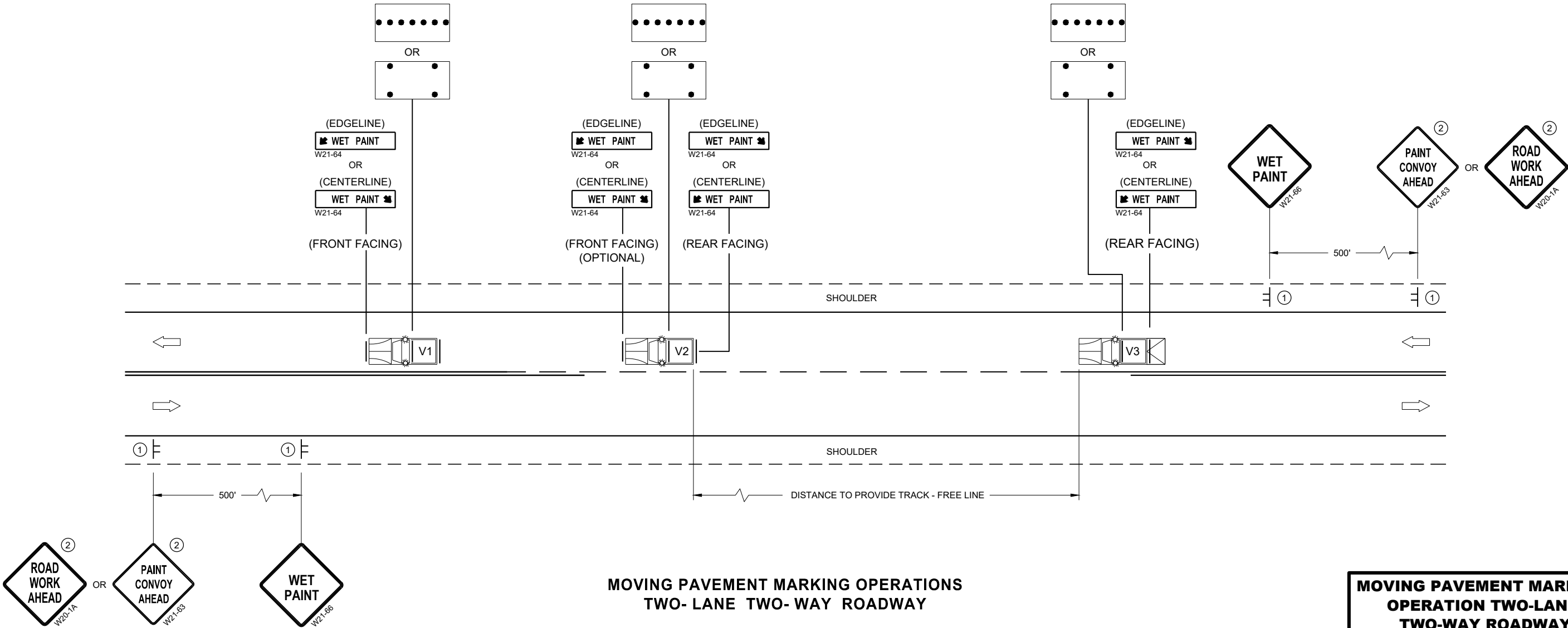
- V1 LEAD VEHICLE
- V2 MARKING VEHICLE
- V3 SHADOW VEHICLE
-  TRUCK MOUNTED ATTENUATOR (TMA)
-  SIGN ON TEMPORARY SUPPORT
-  DIRECTION OF TRAFFIC
-  FLASHING ARROW PANEL (CAUTION)

GENERAL NOTES

- ALL VEHICLES SHALL BE EQUIPPED WITH TWO 360 DEGREE HIGH INTENSITY YELLOW FLASHING LIGHTS OR STROBE LIGHTS AND OPERATED WITH HEADLIGHTS TURNED ON.
- ALL VEHICLES SHALL BE EQUIPPED WITH REAR FACING TYPE B OR C FLASHING ARROW PANEL OPERATING IN CAUTION MODE. SIGNS PLACED ON VEHICLES MUST NOT OBSCURE THE ARROW PANEL.
- ALL SIGNS ARE 48" X 48" UNLESS OTHERWISE SPECIFIED.
- DISTANCE BETWEEN VEHICLES MAY VARY ACCORDING TO TERRAIN, SIGHT DISTANCE, PAINT DRYING TIME, AND OTHER FACTORS. WHENEVER ADEQUATE STOPPING SIGHT DISTANCE EXISTS TO THE REAR, SHADOW VEHICLES SHOULD MAINTAIN THE MINIMUM DISTANCE FROM THE WORK VEHICLE AND PROCEED AT THE SAME SPEED AS THE WORK VEHICLE. SHADOW VEHICLES SHOULD SLOW DOWN IN ADVANCE OF VERTICAL AND HORIZONTAL CURVES THAT RESTRICT SIGHT DISTANCE.
- THE WORK AND SHADOW VEHICLES SHOULD PULL OVER PERIODICALLY TO ALLOW TRAFFIC TO PASS.

- WHEN NO WORK ACTIVITY IS TAKING PLACE, REMOVE OR LAY STATIONARY SIGNS AND SUPPORTS FLAT ON THE GRADE WITH UPRIGHTS ORIENTED PARALLEL TO AND DOWNSTREAM FROM TRAFFIC.
- CONES SHOULD BE USED BETWEEN THE MARKING AND SHADOW VEHICLE AT 100 FOOT SPACING. CONES MAY BE OMITTED ON PAINTED LINE IF APPROVED BY THE ENGINEER. CONSIDER PAVEMENT MARKING DRY OR CURE TIMES AND TRAFFIC VOLUME.
- CONES SHALL BE A MINIMUM OF 18" FOR WET PAVEMENT MARKING .

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

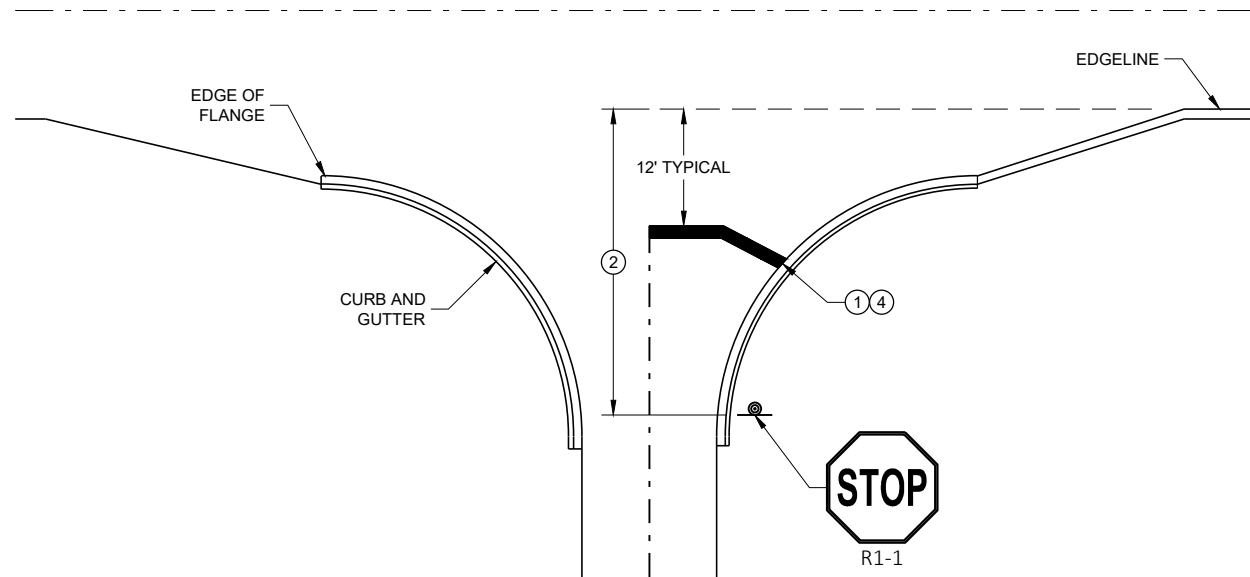


MOVING PAVEMENT MARKING  
OPERATION TWO-LANE  
TWO-WAY ROADWAY

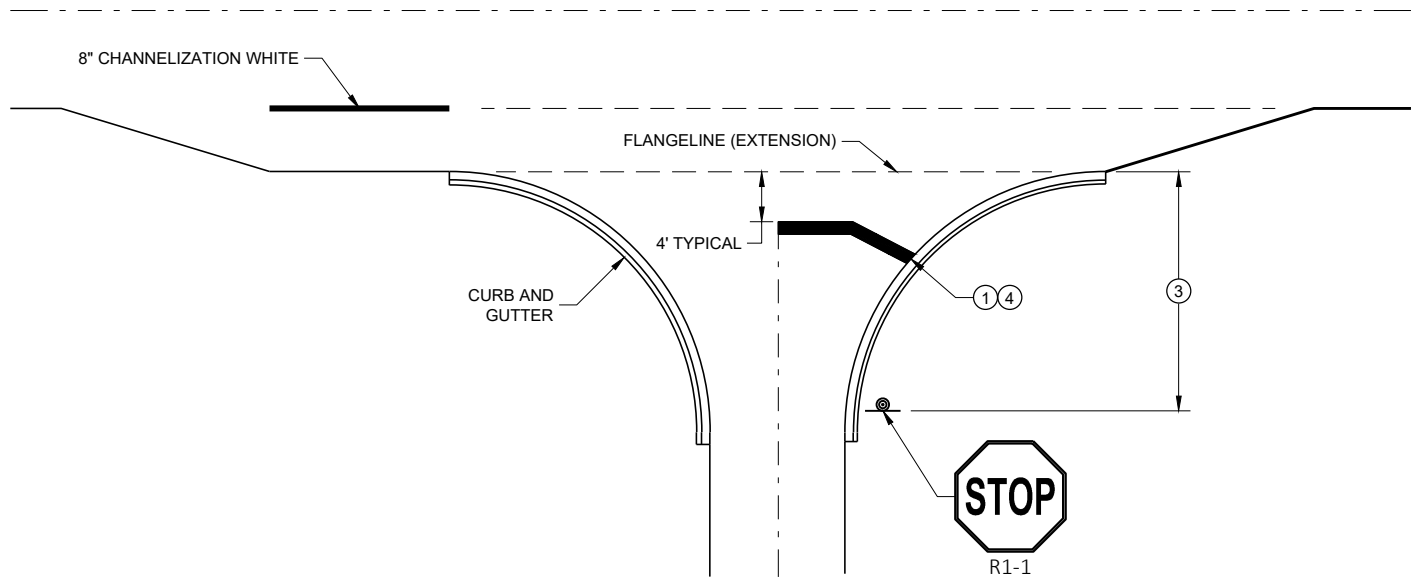
STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

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

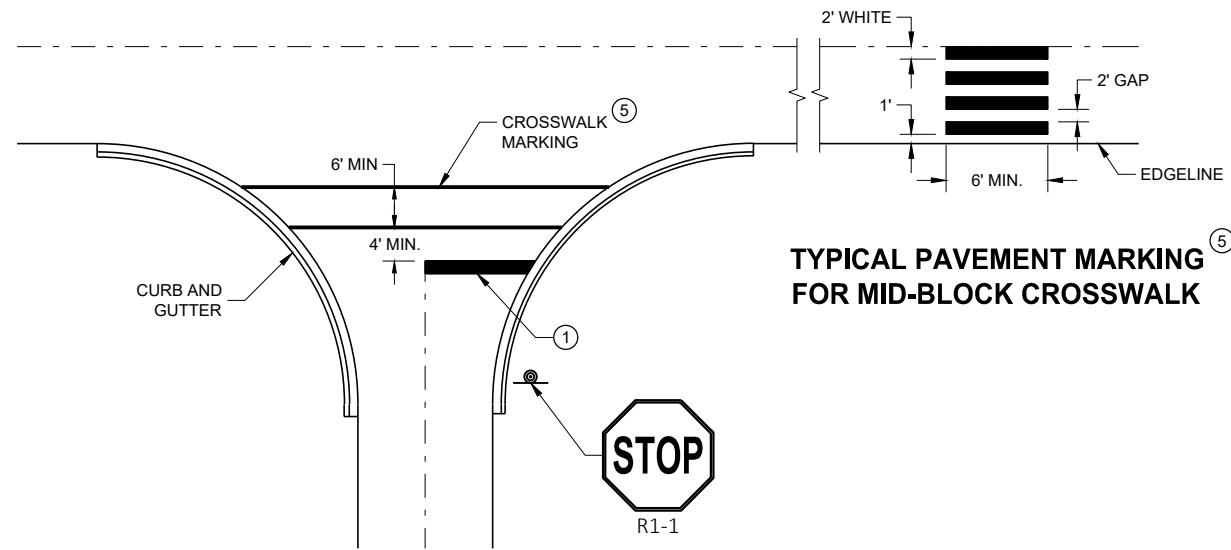




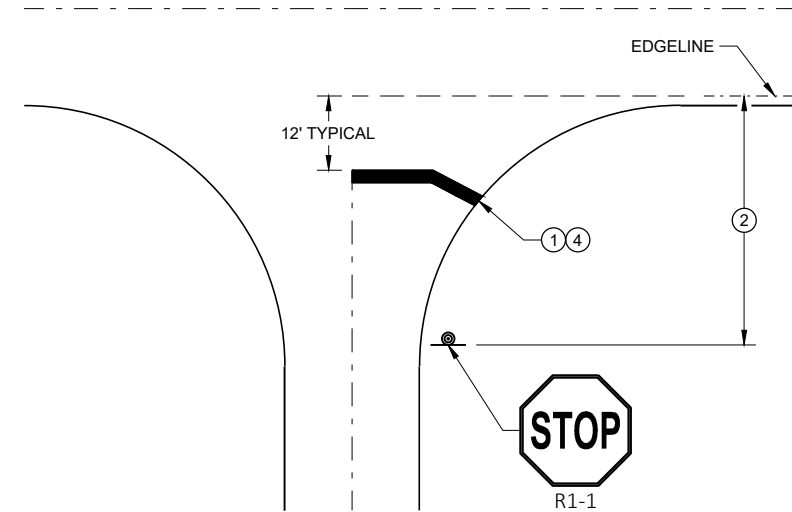
TYPICAL STOP LINE PAVEMENT MARKING  
WITH CURB AND GUTTER



TYPICAL STOP LINE PAVEMENT MARKING  
FOR SIDEROADS WITH RIGHT TURN LANE



TYPICAL STOP LINE PAVEMENT MARKING FOR  
SIDEROADS WITH CROSSWALK MARKING



TYPICAL STOP LINE PAVEMENT MARKING  
WITHOUT CURB AND GUTTER

GENERAL NOTES

STOP SIGN SHALL BE PLACED A MINIMUM OF 6 FEET TO A MAXIMUM OF 50 FEET FROM THE EDGE LINE LOCATION.

- 1 18-INCH STOP LINES MAY BE DELETED OR ADDED BY THE REGION MARKING ENGINEER BASED ON VISIBILITY AND SIGHT LINES.
- 2 NO STOP LINE IS REQUIRED IF STOP SIGN IS LESS THAN OR EQUAL TO 40 FEET FROM THE EDGE LINE.
- 3 NO STOP LINE IS REQUIRED IF STOP SIGN IS LESS THAN OR EQUAL TO 30 FEET FROM THE FLANGELINE EXTENSION.
- 4 MOVE CLOSER TO THE EDGE OF TRAVEL LINE AS NEEDED FOR VISIBILITY AND SIGHT LINES (NO CLOSER THAN 4 FEET).
- 5 LADDER BAR CROSSWALKS SHOULD ONLY BE USED FOR MID BLOCK CROSSINGS. USE 2 - 6" TRANSVERSE LINES INSTEAD.

STOP LINE AND CROSSWALK  
PAVEMENT MARKING

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

APPROVED  
November 2019 /S/ Matthew Rauch  
DATE STATE SIGNING AND MARKING  
ENGINEER  
FHWA

LEGEND





-  SIGN ON PERMANENT SUPPORT
-  TRAFFIC CONTROL DRUM
-  DIRECTION OF TRAFFIC
-  WORK ZONE

TABLE A

| SHOULDER TAPER LENGTH (FEET) |    |     |     |     | BUFFER SPACE (FEET) |
|------------------------------|----|-----|-----|-----|---------------------|
| S \ W                        | 4  | 6   | 8   | 10  |                     |
| 30                           | 20 | 30  | 40  | 50  | 200                 |
| 35                           | 30 | 45  | 55  | 70  | 250                 |
| 40                           | 40 | 55  | 75  | 90  | 305                 |
| 45                           | 60 | 90  | 120 | 150 | 360                 |
| 50                           | 70 | 100 | 135 | 170 | 425                 |
| 55                           | 75 | 110 | 150 | 185 | 495                 |

W = SHOULDER WIDTH (FEET  
S = NON-CONSTRUCTION SPEED LIMIT (MPH)

TAPER LENGTH

L = WS AT 45 MPH OR GREATER  
L = WS² / 60 AT 40 MPH OR LESS

SHOULDER TAPER LENGTH = 1/3L

GENERAL NOTES

ALL SIGNS ARE 48"X48" UNLESS OTHERWISE NOTED. IF NECESSARY DUE TO SPACE CONSTRAINTS IN URBAN AREAS, 36" X 36" SIGNS MAY BE USED IF APPROVED BY THE REGIONAL TRAFFIC UNIT.

"WO" IS THE SAME AS "W" EXCEPT THE BACKGROUND IS ORANGE.

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

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

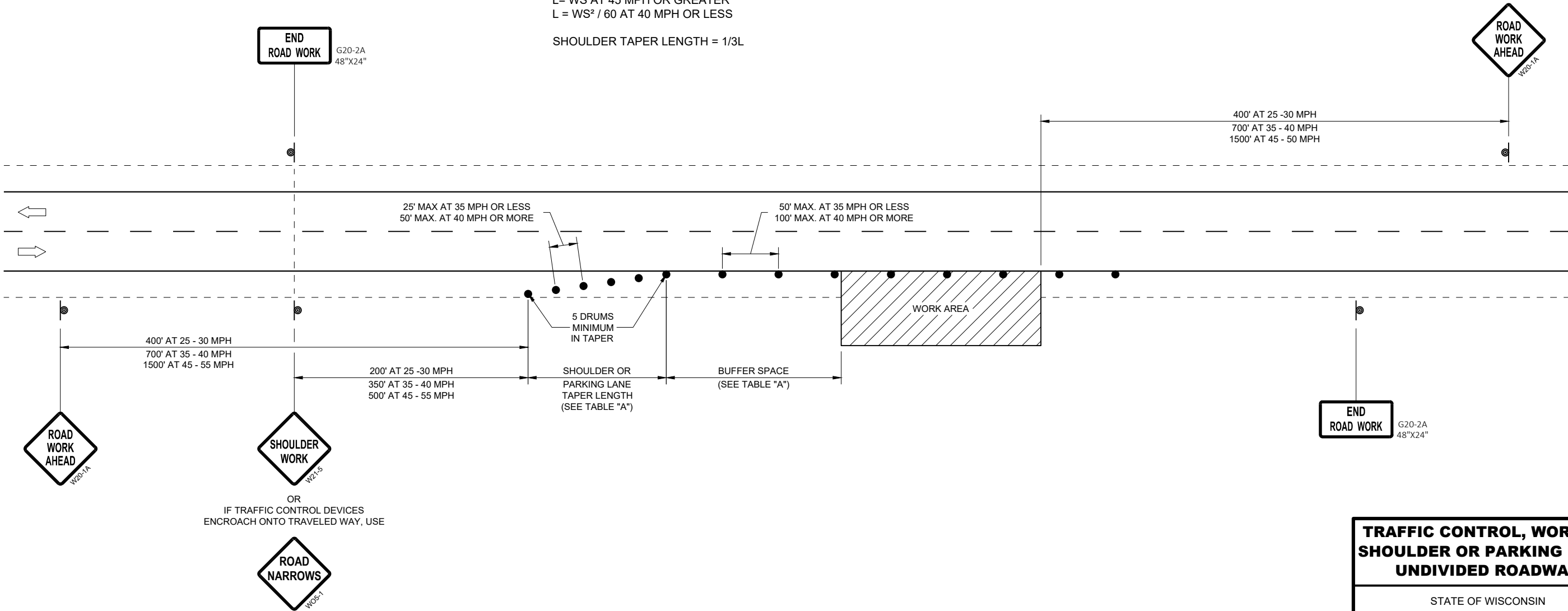
CHANNELIZING DEVICES PLACED ADJACENT TO WORK AREA SHALL BE PULLED BACK FROM THE TRAVEL LANE WHEN WORK IS NOT IN PROGRESS.

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

W20-1A AND G20-2A SIGNS ARE NOT REQUIRED IF THE WORK AREA IS WITHIN A LARGER WORK ZONE WHERE THESE SIGNS ARE ALREADY RESENT. G20-2A SIGNS MAY ALSO BE OMITTED IF DURATION OF WORK IS LESS THAN 7 CONTINUOUS DAYS AND NIGHTS.

6

SDD 15D28 - 03



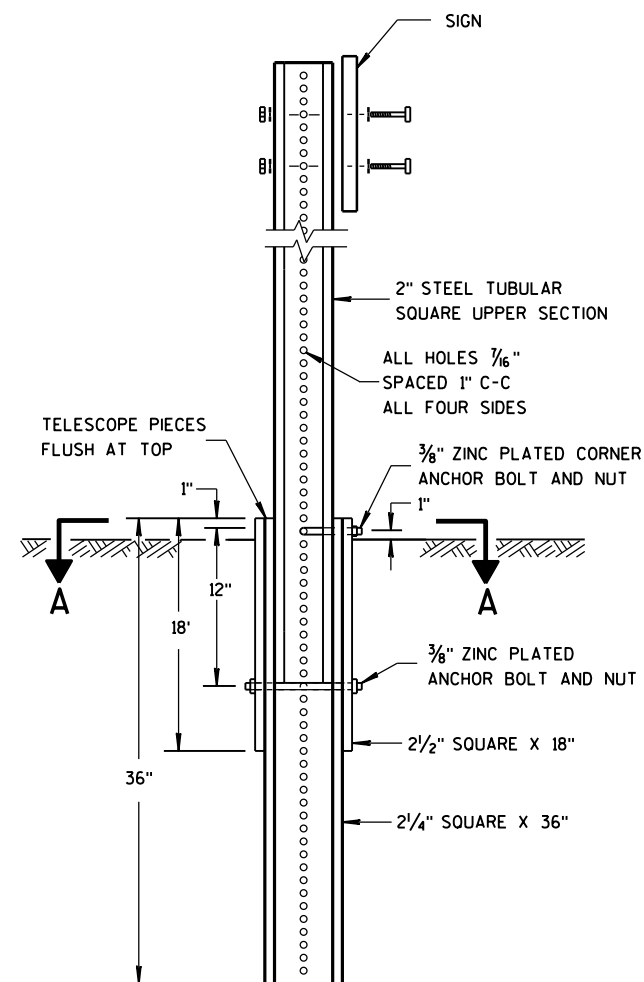
6

SDD 15D28 - 03

TRAFFIC CONTROL, WORK ON  
SHOULDER OR PARKING LANE,  
UNDIVIDED ROADWAY

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

APPROVED  
August 2019  
DATE /S/ Andrew Heidtke  
STATEWIDE WORK ZONE TRAFFIC  
SAFETY ENGINEER  
FHWA



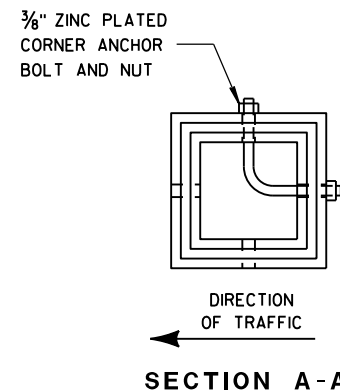
DETAIL OF TUBULAR  
STEEL SIGN POST

TUBULAR STEEL POSTS

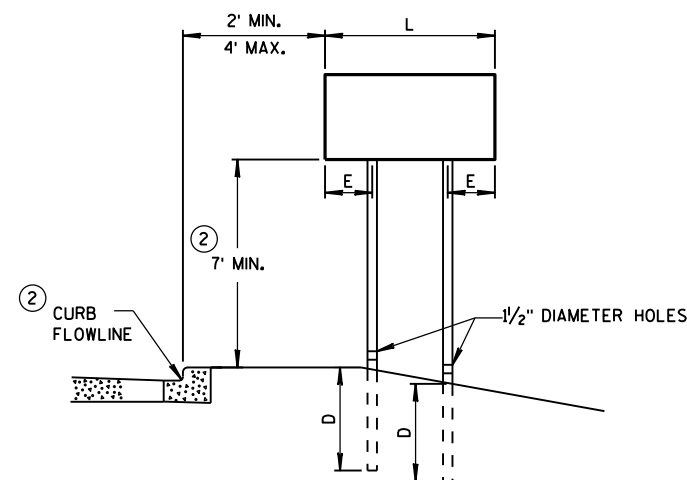
| AREA OF SIGN<br>INSTALLATION<br>(SQ. FT.)      | NUMBER OF<br>REQUIRED TUBULAR<br>STEEL POSTS |
|------------------------------------------------|----------------------------------------------|
| 9 OR LESS                                      | 1                                            |
| GREATER THAN 9<br>LESS THAN OR EQUAL<br>TO 18  | 2                                            |
| GREATER THAN 18<br>LESS THAN OR EQUAL<br>TO 27 | 3                                            |

SIGNS WIDER THAN 3 FEET OR LARGER THAN 9 SQ. FT. SHALL  
BE MOUNTED ON MULTIPLE POSTS (SEE ABOVE TABLE).

SIGNS LARGER THAN 27 SQ. FT. SHALL NOT BE MOUNTED  
ON TUBULAR STEEL POSTS.



SECTION A-A

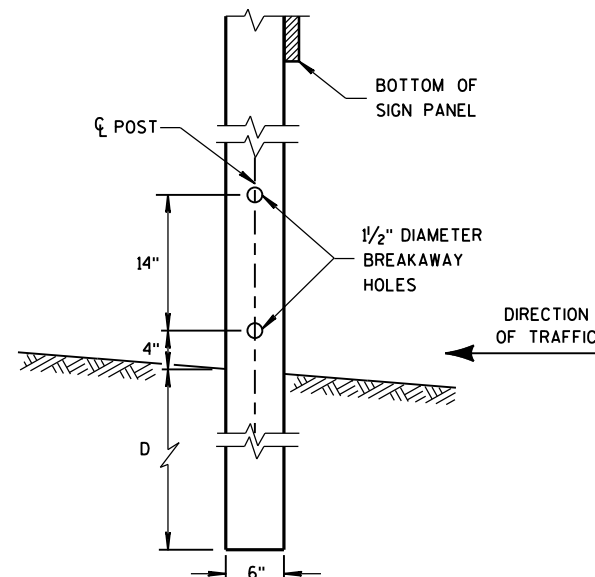


URBAN AREA

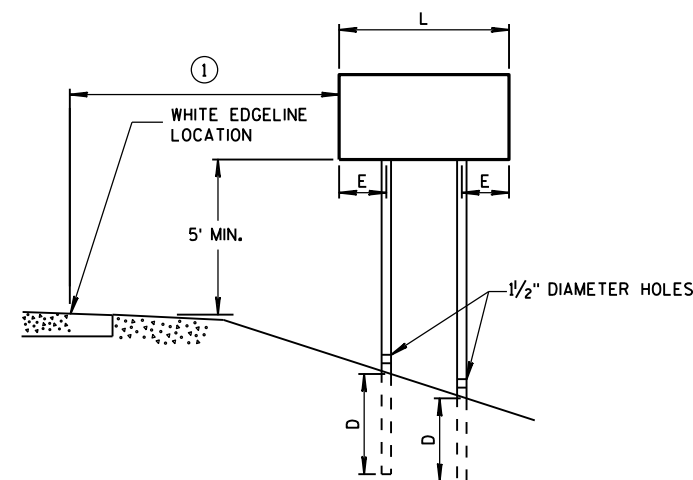
POST MOUNTING DETAIL FOR TEMPORARY TRAFFIC CONTROL FIXED MESSAGE SIGNS

WOOD POST  
EMBEDMENT DEPTH

| AREA OF SIGN<br>INSTALLATION<br>(SQ. FT.) | D<br>(MIN) |
|-------------------------------------------|------------|
| 20 OR LESS                                | 4'         |
| GREATER THAN 20                           | 5'         |



4 "x6 " WOOD POST  
MODIFICATION



RURAL AREA

4 " X 6 " WOOD POST

| POST SPACING REQUIREMENTS               |     | NUMBER OF<br>WOOD POSTS<br>REQUIRED |
|-----------------------------------------|-----|-------------------------------------|
| L                                       | E   |                                     |
| 48" OR LESS AND<br>LESS THAN 20 SQ. FT. | -   | 1                                   |
| LESS THAN 60"                           | 12" | 2                                   |
| 60" TO 120"                             | L/5 | 2                                   |
| GREATER THAN 120"<br>LESS THAN 168"     | 12" | 3                                   |
| 168" AND GREATER                        | 12" | 4                                   |

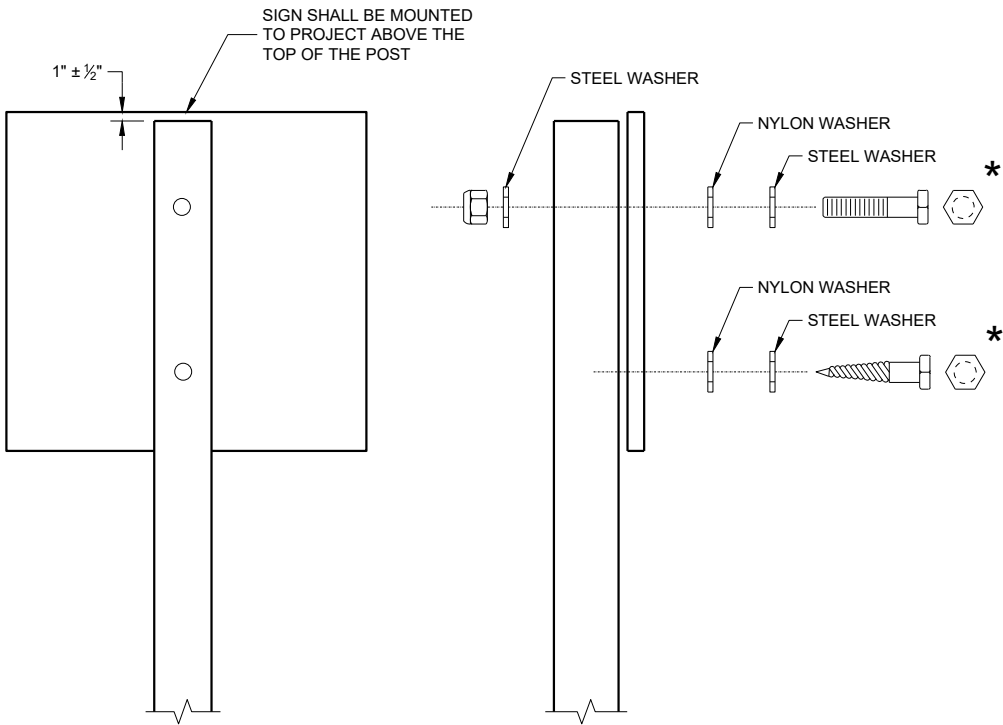
SEE NOTE ③

GENERAL NOTES

- ① 6 FEET FROM THE EDGE OF PAVEMENT (EDGE LINE LOCATION) UNLESS  
OTHERWISE DIRECTED BY THE PROJECT ENGINEER. LATERAL OFFSET SHOULD  
BE ADJUSTED TO AVOID THE DITCH FLOWLINE.
- ② 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. IF NO SIDEWALK AND NO PARKING,  
VERTICAL CLEARANCE MAY BE REDUCED TO 5 FOOT MINIMUM. OFFSET  
OF SIGNS IS MEASURED FROM THE CURB FLOWLINE.
- ③ FOR SIGNS REQUIRING 4 POSTS, SPACE INTERMEDIATE POSTS EVENLY.

TEMPORARY TRAFFIC CONTROL  
SIGN MOUNTING

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION



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 POST (4" x 6")  
LAG SCREWS - 3/8" x 3"  
MACHINE BOLTS - 5/16" x 6 1/2" OR 7" LENGTH W/NUTS

SQUARE STEEL POST (2" x 2")  
MACHINE BOLTS - 3/8" x 3 1/4" LENGTH W/NUTS  
RIVETS - 3/32" (6605-9-6) BULB-TITE, TRI-FOLD, ALUMINUM  
BODY/MANDREL O.D. FLANGE 0.720 - 0.765 INCH,  
GRIP RANGE 0.042 - 0.375 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 0.080 NYLON

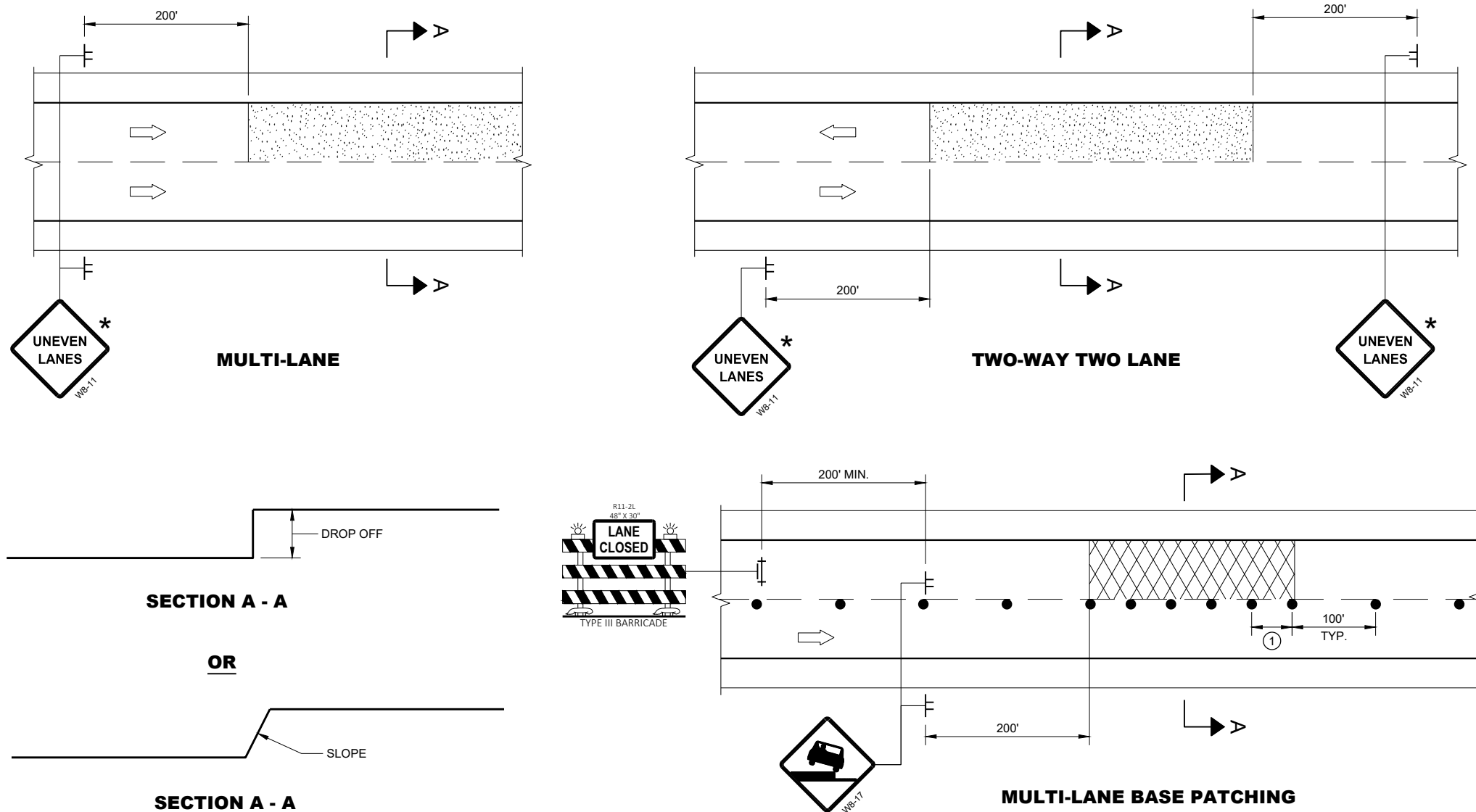
\* TWO DIFFERENT FASTENING SYSTEMS ARE SHOWN FOR ILLUSTRATION  
PURPOSES. ON ANY INDIVIDUAL SIGN, EITHER ONE OR THE OTHER SYSTEM  
SHALL BE USED. ACTUAL NUMBER OF FASTENERS PER SIGN VARIES WITH  
THE SIGN AREA. FOR A SINGLE POST INSTALLATION, ALL SIGNS GREATER  
THAN 9 SQ. FT. REQUIRE THE USE OF 3 FASTENERS.

ATTACHMENT OF SIGNS  
TO POSTS

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

APPROVED  
June 2017 /S/ Andrew Heidtke  
DATE WORK ZONE ENGINEER

FHWA



**GENERAL NOTES**

FOR SPOT LOCATIONS USE ENGINEERING JUDGEMENT WHEN PLACING ADDITIONAL SIGNS.

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

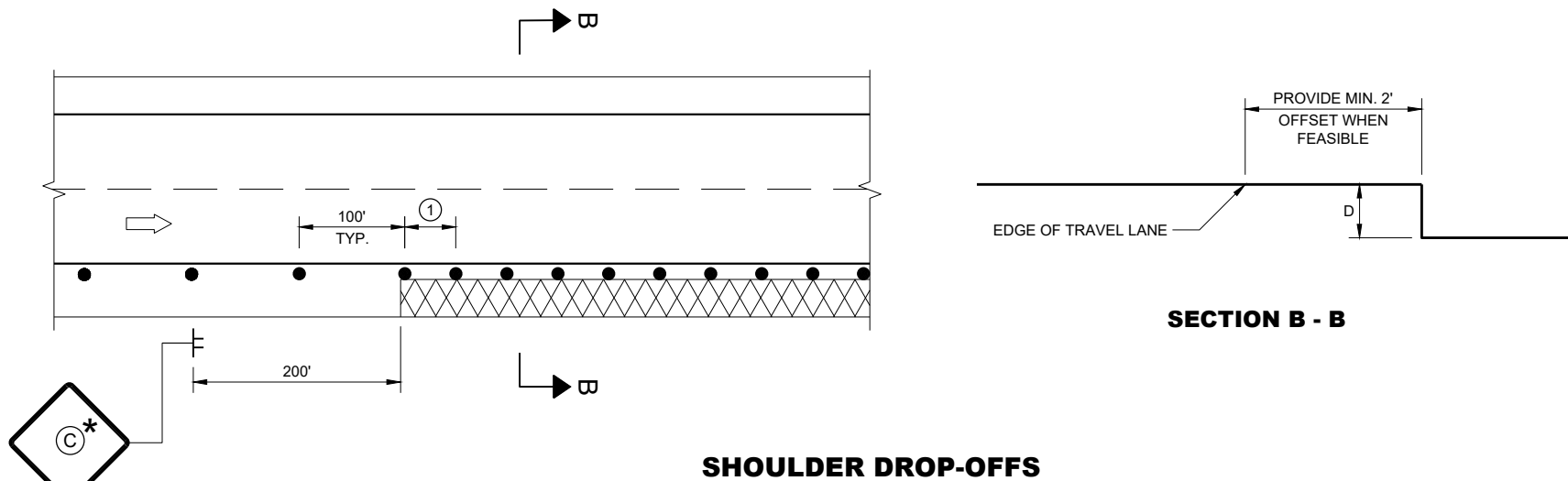
"WO" SIGNS ARE THE SAME AS "W" SIGNS EXCEPT THE BACKGROUND IS ORANGE.

WARNING LIGHTS ARE NOT REQUIRED IF THE LANE CLOSURE IS A DAYTIME ONLY OPERATION.

\* IF THE DROP-OFF IS CONTINUOUS ALONG THE PROJECT, PLACE ADDITIONAL SIGNS EVERY 1 MILE AND AFTER EVERY ENTRANCE RAMP.

① USE CLOSER SPACING WHEN DELINEATING DROP-OFF.

- LEGEND**
- SIGN ON TEMPORARY SUPPORT
  - TRAFFIC CONTROL DRUM
  - TYPE III BARRICADE WITH ATTACHED SIGN
  - TYPE "A" WARNING LIGHT (FLASHING)
  - DIRECTION OF TRAFFIC
  - WORK AREA WITH DROP-OFF
  - MILLED SURFACE



| D                                     | SIGN C                                                                                              |
|---------------------------------------|-----------------------------------------------------------------------------------------------------|
| < 2" WITH A SLOPE STEEPER THAN 3:1    | LOW SHOULDER<br>WO8-9                                                                               |
| 2" < 6" WITH A SLOPE STEEPER THAN 3:1 | SHOULDER DROP - OFF<br>W8-9A<br>PROVIDE A 3:1 OR FLATTER SLOPE OF MATERIAL ADJACENT TO THE PAVEMENT |

**TRAFFIC CONTROL, DROP-OFF SIGNING**

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

APPROVED  
March 2018  
DATE

/S/ Andrew Heidtke  
WORK ZONE ENGINEER

FHWA

GENERAL NOTES

DRAWING NOT TO SCALE. ALL SIGNS AND POSTS ON THIS SHEET SHALL BE PAID FOR WITH 'TRAFFIC CONTROL SIGNS' BID ITEM. ALL SIDE ROADS WHICH ARE UNDER CONSTRUCTION OF CURB AND GUTTER AND/OR GRADING SHALL BE ADEQUATELY SIGNED.

ALL SIGNS AND DEVICES SHALL BE IN CONFORMANCE WITH THE WISCONSIN MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (WMUTCD). SIGN LAYOUTS SHALL BE IN ACCORDANCE WITH THE WISDOT STANDARD SIGN PLATES.

"WO" SIGNS ARE THE SAME AS "W" SIGNS EXCEPT THAT THE BACKGROUND IS ORANGE.

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

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

ALL SIGNS INAPPROPRIATE TO THE STATUS OF THE CONTROL ZONE, INCLUDING PRE-EXISTING SIGNS IN THE VICINITY, SHALL BE COVERED OR REMOVED AS DIRECTED BY THE ENGINEER.


SEE 15C34 FOR ADDITIONAL TRAFFIC CONTROL SIGNING WHEN CENTERLINE PAVEMENT MAKINGS ARE MISSING. 'DO NOT PASS' SIGNS MUST BE INSTALLED ON THE SAME DAY AS MILLING OPERATIONS.


- 1

PLACE SIGNS 350' IN ADVANCE OF MILLED SURFACES AND AT 1 MILE INTERVALS, OR AS DIRECTED BY THE ENGINEER.
- 2

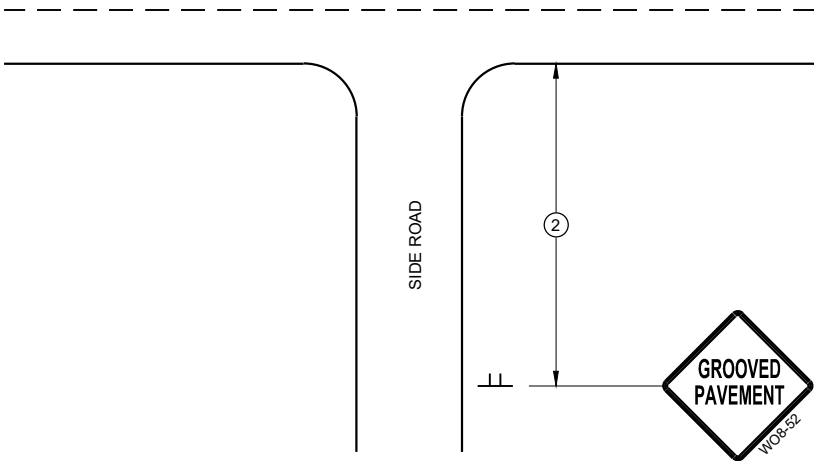
PLACE SIGN 200' MIN. FROM INTERSECTION AND 200' MIN. AFTER ADVANCE WARNING SIGN SHOWN IN SDD 15C04.

LEGEND

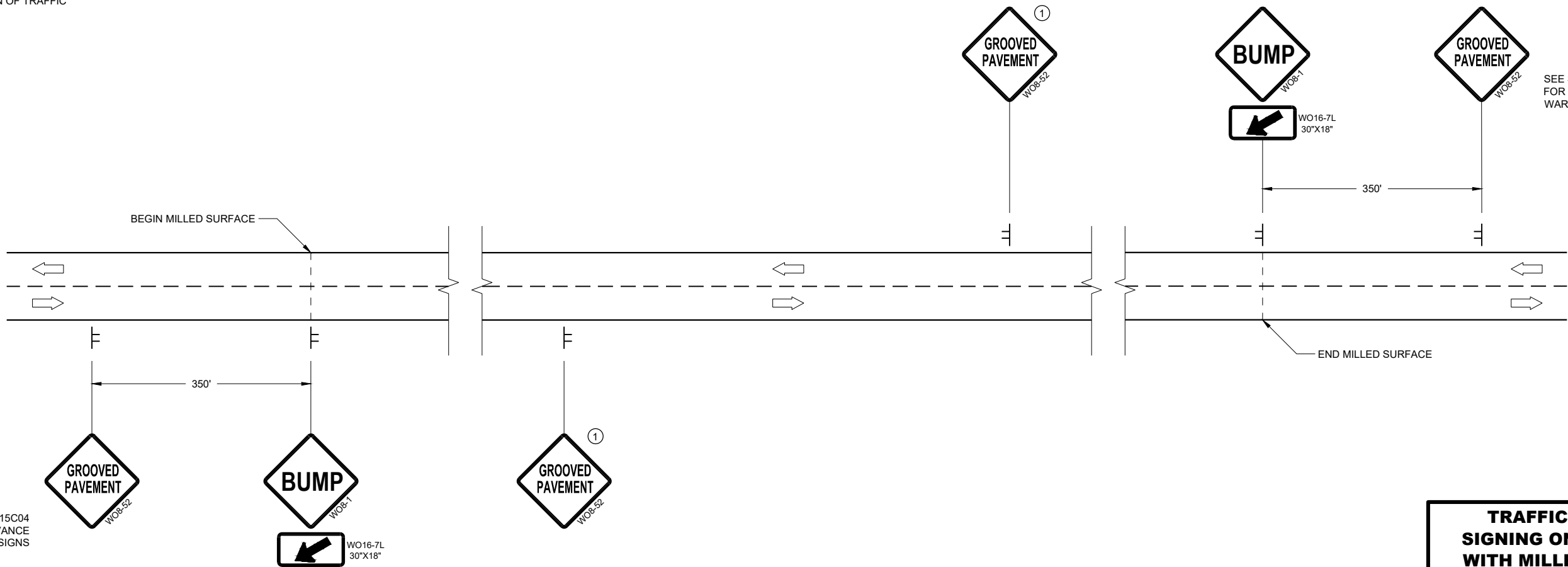
- 

SIGN ON TEMPORARY SUPPORT
- 

DIRECTION OF TRAFFIC



TYPICAL SIDE ROAD APPROACH  
SIGN DETAIL



SEE SDD15C04  
FOR ADVANCE  
WARNING SIGNS

TRAFFIC CONTROL,  
SIGNING ON ROADWAYS  
WITH MILLED SURFACES

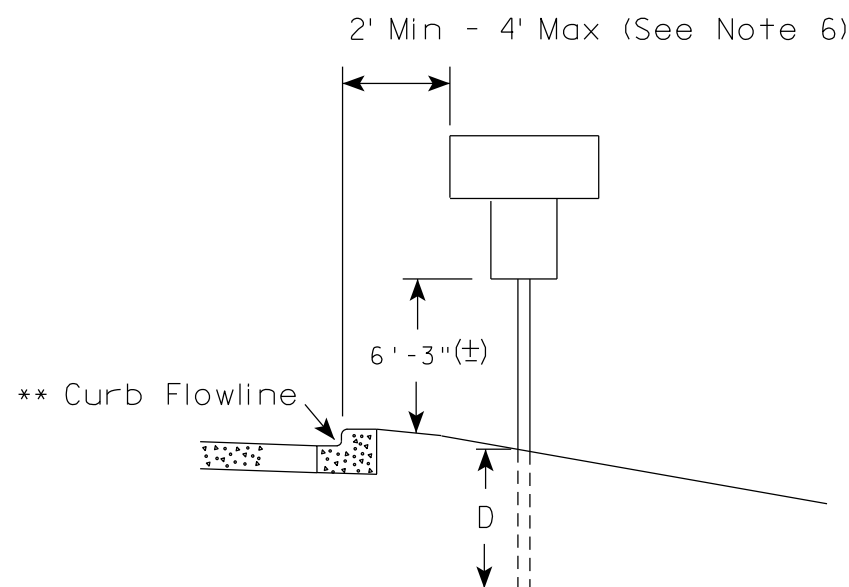
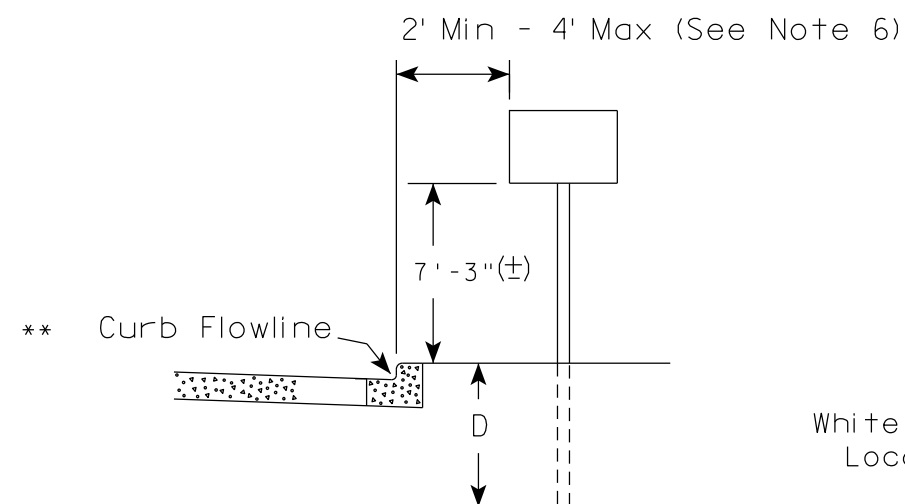
STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

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

FHWA

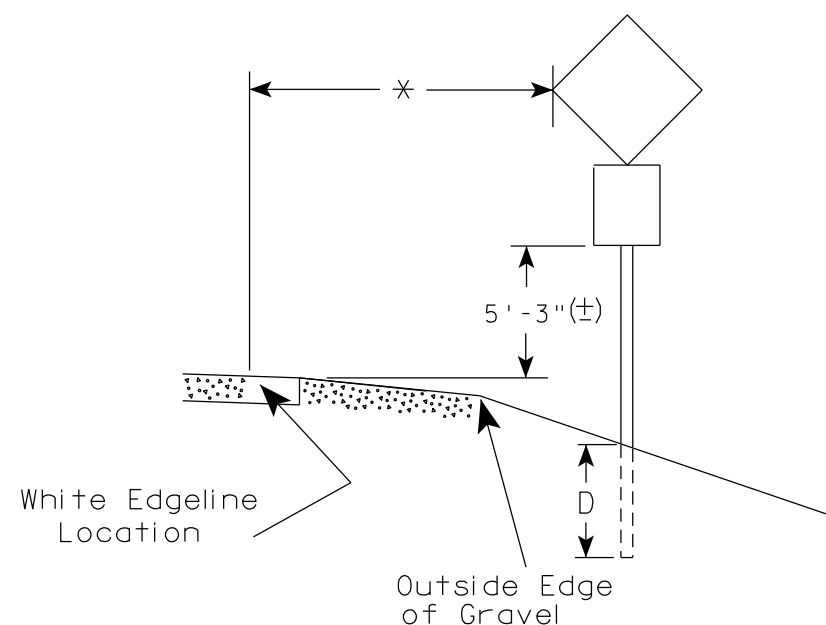
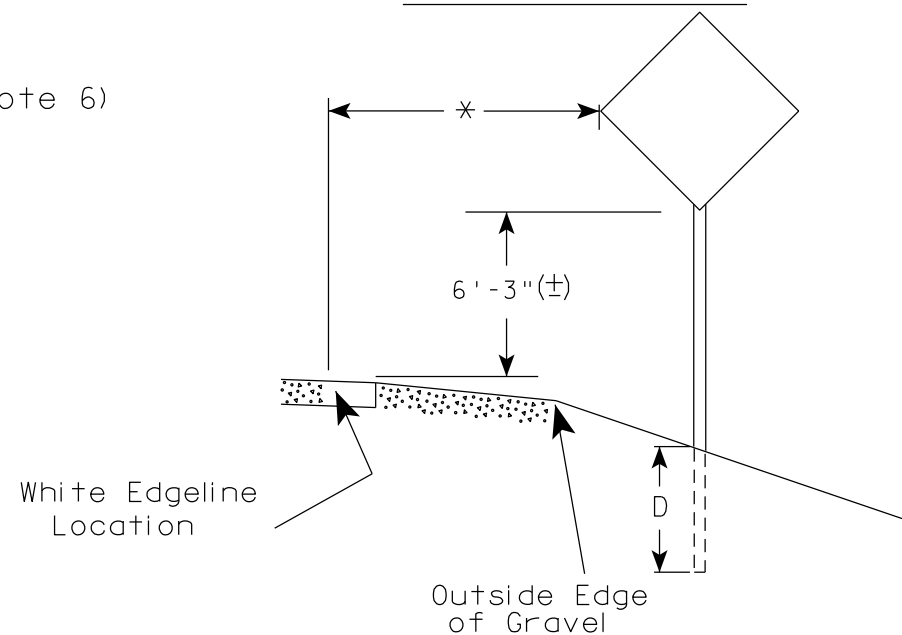
DETAIL FOR SIGNING ON MILLED SURFACES

# URBAN AREA



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

# RURAL AREA (See Note 2)



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

## POST EMBEDMENT DEPTH

| Area of Sign Installation<br>( Sq. Ft. ) | D<br>( Min ) |
|------------------------------------------|--------------|
| 20 or Less                               | 4'           |
| Greater than 20                          | 5'           |

## GENERAL NOTES

- Signs wider than 4 feet or 20 sq.ft or larger, shall be mounted on multiple posts. Refer to plate A4-4.
- If signs are mounted on or behind barrier wall, see A4-10 sign plate.  
The Double Arrow sign (W12-1D) shall be mounted at a height of 2'-3" (±). The Chevron sign (W1-8), Roundabout Chevron panel (R6-4B), Enhanced Reference Markers, Clearance Markers (W5-52), Mile Markers (D10 series), In Road Object Markers (W5-54) & End of Road Markers (W5-56) shall be mounted at a height of 4'-3" (±).
- For expressways and freeways, mounting height is 7'- 3" (±) or 6'-3" (±) depending upon existence of a sub-sign.
- Minimum mounting height for signs mounted on traffic signal poles is 5'- 3" (±).
- Offset distance shall be consistent with existing signs or consistent throughout length of project.
- The (±) tolerance for mounting height is 3 inches.
- Folding signs shall be mounted at a height of 5'-3" (±) or as directed by the Engineer.

TYPICAL INSTALLATION  
OF PERMANENT TYPE II  
SIGNS ON SINGLE POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*  
for State Traffic Engineer

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

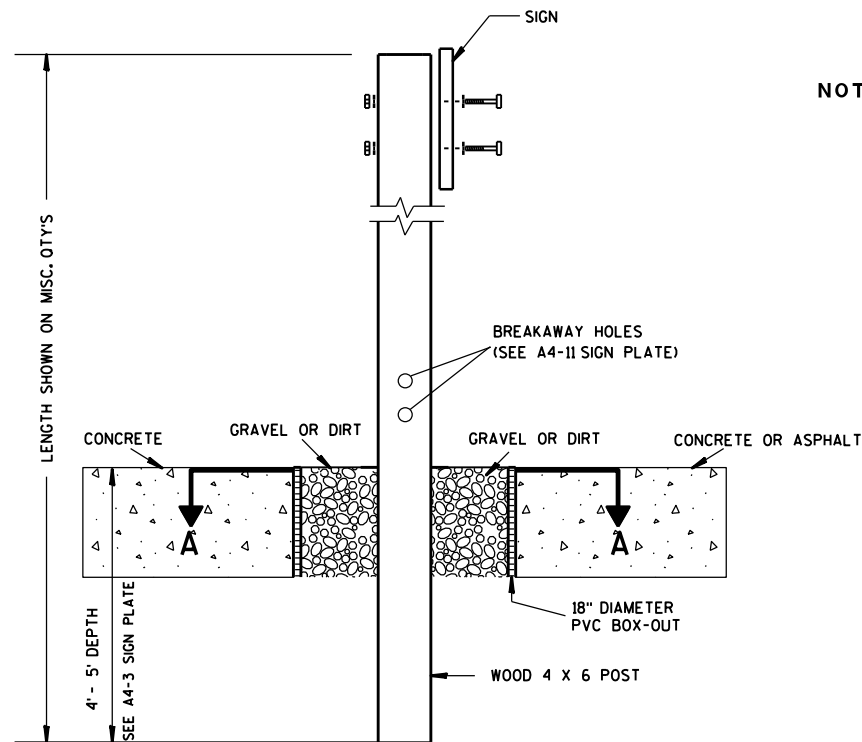
PROJECT NO:

HWY:

COUNTY:

SHEET NO:

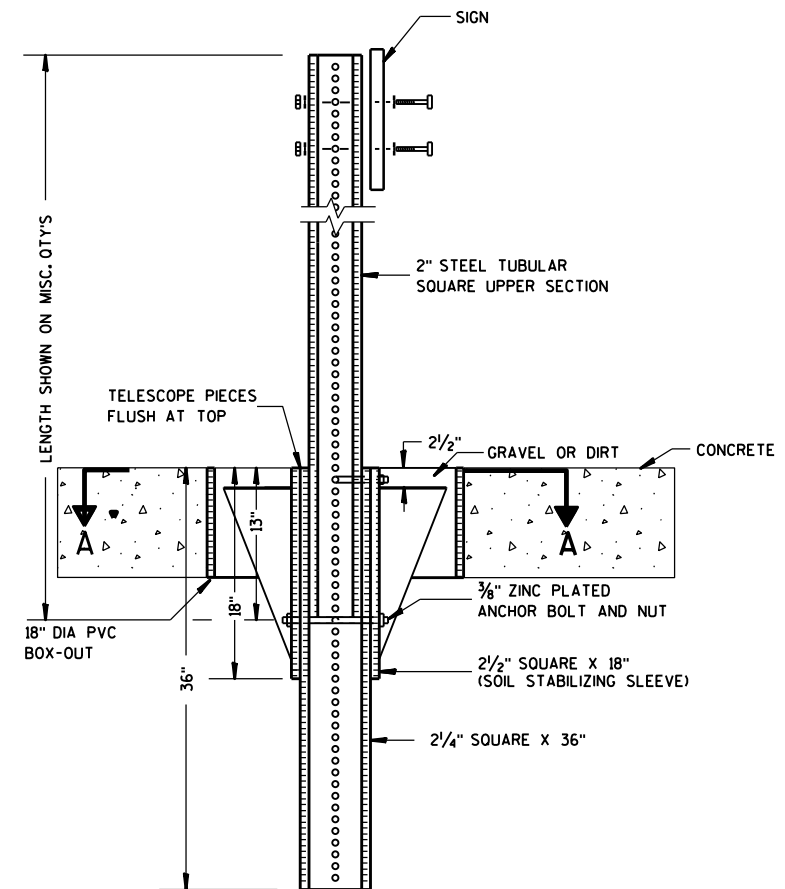
E



### ELEVATION VIEW

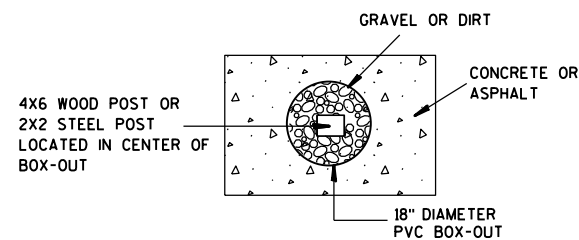
DETAIL OF WOOD 4 X 6 SIGN POST IN BOX-OUT

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



### ELEVATION VIEW

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



### PLAN VIEW

FOR NEW CONCRETE/ASPHALT INSTALLATIONS

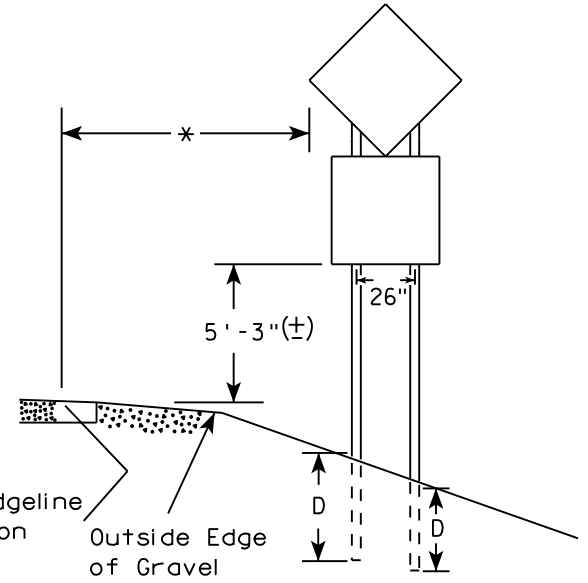
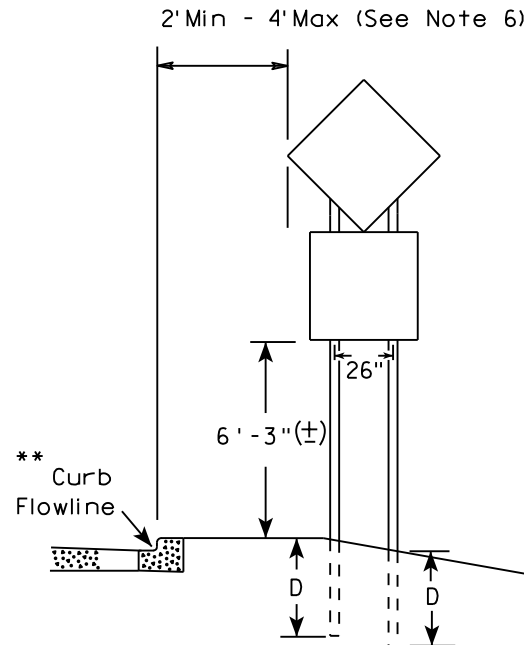
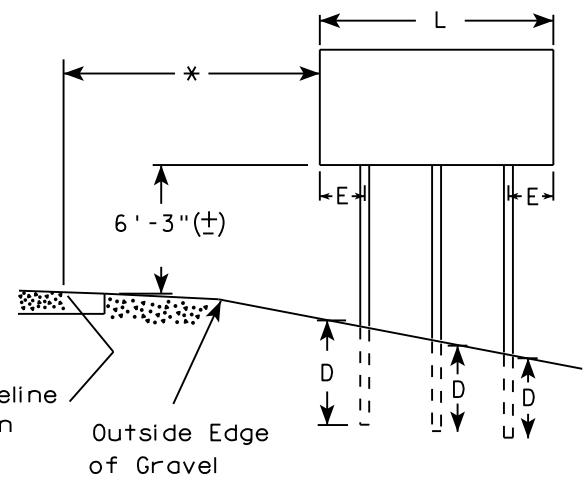
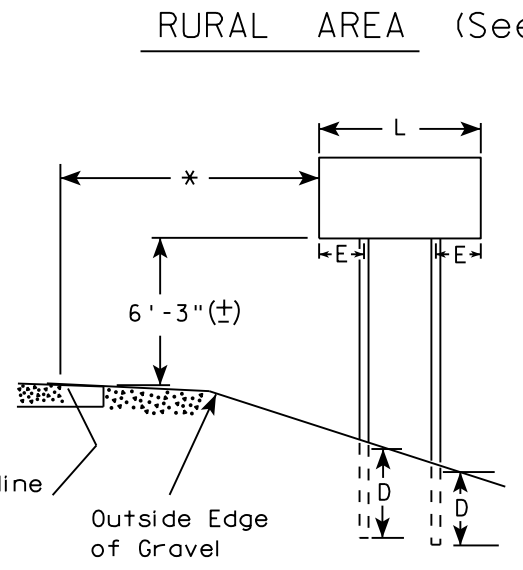
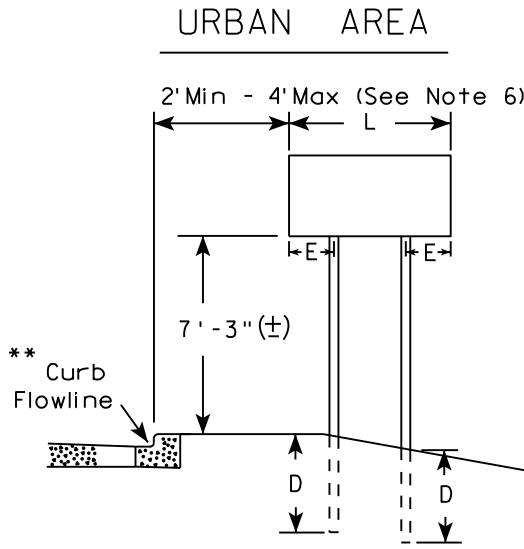
SIGN POST  
BOX-OUTS  
A4-3B

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*  
for State Traffic Engineer

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





48" DIAMOND WARNING SIGN

48" DIAMOND WARNING SIGN

\*\*\*

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

| SIGN SHAPE OTHER THAN DIAMOND<br>(THREE POSTS REQUIRED) |     |
|---------------------------------------------------------|-----|
| L                                                       | E   |
| Greater than 108"<br>to 144"                            | 12" |

POST EMBEDMENT DEPTH

| Area of Sign<br>Installation<br>( Sq. Ft. ) | D<br>( Min ) |
|---------------------------------------------|--------------|
| 20 or Less                                  | 4'           |
| Greater than 20                             | 5'           |

TYPICAL INSTALLATION  
OF TYPE II SIGNS  
ON MULTIPLE POSTS

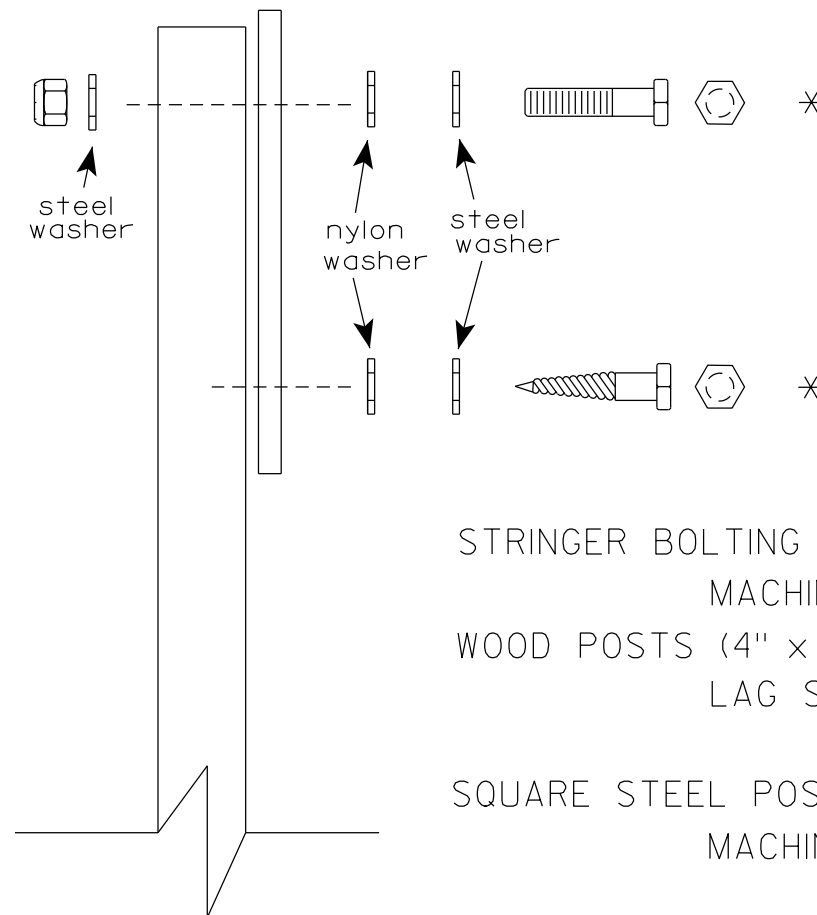
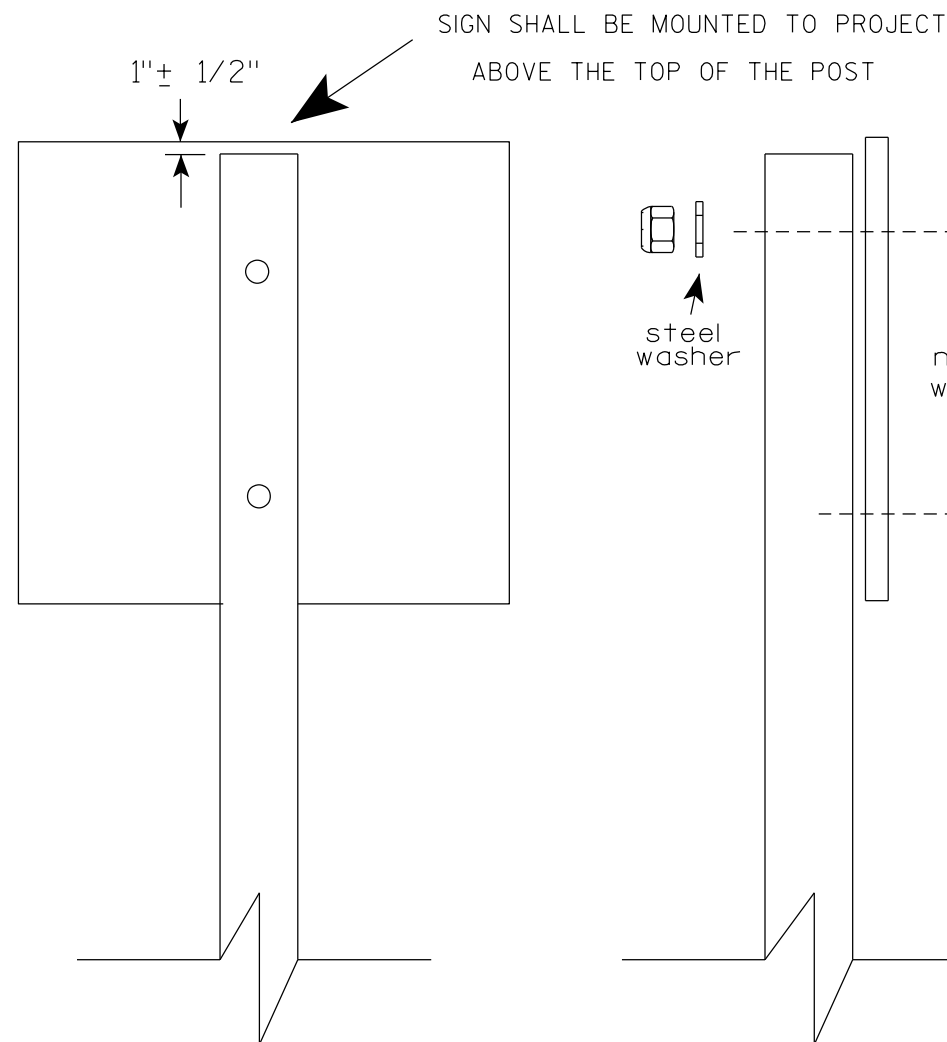
WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*  
for State Traffic Engineer

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

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

- \* 6 feet from edge of a paved shoulder or 12 feet from the edge of pavement (edge line location) or 2 feet from outside edge of gravel, whichever is greater unless directed by project engineer.
- \*\* The existence of curb and gutter does not in itself mandate the vertical clearance illustrated. That height is typically measured where there is sidewalk adjacent to the roadway or parking is permitted. In the absence of sidewalk vertical clearance is measured from the top of the curb. Offset of signs is measured from the flow line.
- \*\*\* See A4-3 sign plate for signs 4' or less in width and less than 20 S.F. in area.



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

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

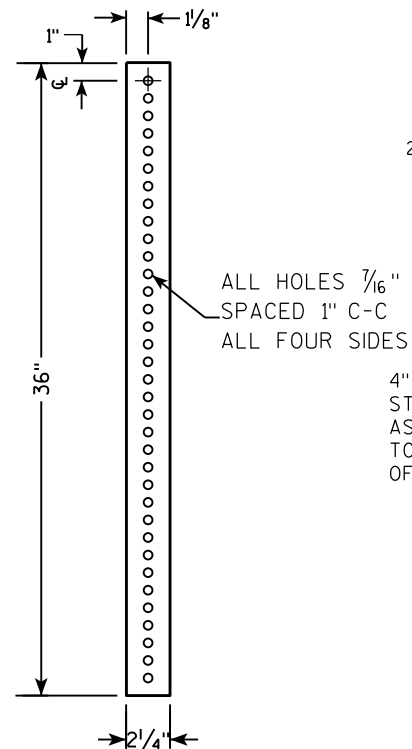
Threads on bolts and nuts shall be manufactured with sufficient allowance for the cadmium plate or galvanized coating to permit the nuts to run freely on the bolts.

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

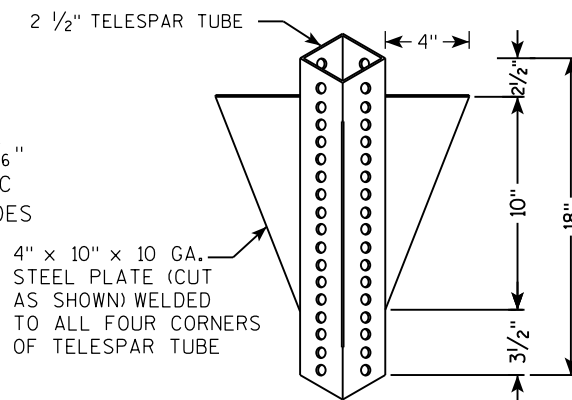
\* Two different fastening systems are shown for illustration purposes. On any individual sign, either one or the other system shall be used. Actual number of fasteners per sign varies with the sign area, but normally there are two. For a single post installation, all signs greater than 9 sq. ft. require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

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

**2 1/4 " SQUARE  
12 GAUGE  
PERFORATED  
GALVANIZED FINISH**

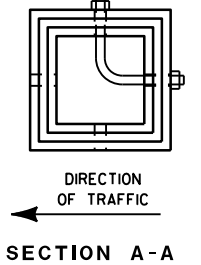


**2 1/2" SQUARE  
12 GAUGE  
OMNI-DIRECTIONAL  
PERFORATED  
SOIL STABILIZING SLEEVE  
GALVANIZED FINISH**



LENGTH SHOWN ON MISC. QTY'S  
 18" DIA SCHEDULE 40 PVC BOX-OUT  
 TELESCOPE PIECES FLUSH AT TOP  
 36"  
 18"  
 13"  
 2 1/2"  
 2 1/4" SQUARE X 36"  
 2 1/2" SQUARE X 18" (SOIL STABILIZING SLEEVE)  
 3/8" ZINC PLATED ANCHOR BOLT AND NUT  
 3/8" ZINC PLATED CORNER ANCHOR BOLT AND NUT  
 ALL HOLES 7/16" SPACED 1" C-C ALL FOUR SIDES  
 2" STEEL TUBULAR SQUARE UPPER SECTION  
 SEE SIGN PLATE A4-8 FOR BOLT WASHER, & NUT MATERIAL  
 SIGN  
 2 1/2" GRAVEL OR DIRT

3/8" ZINC PLATED CORNER  
ANCHOR BOLT AND NUT



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

TUBULAR STEEL  
SIGN POST  
A4-9

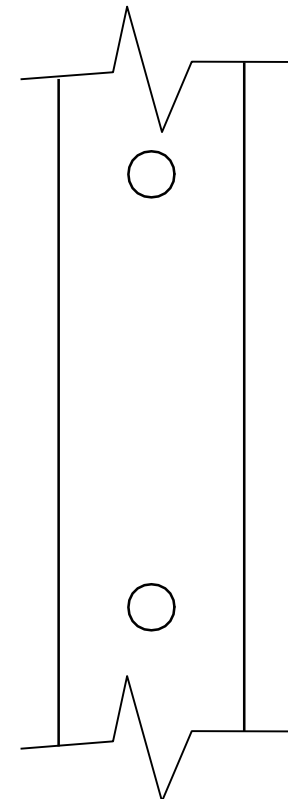
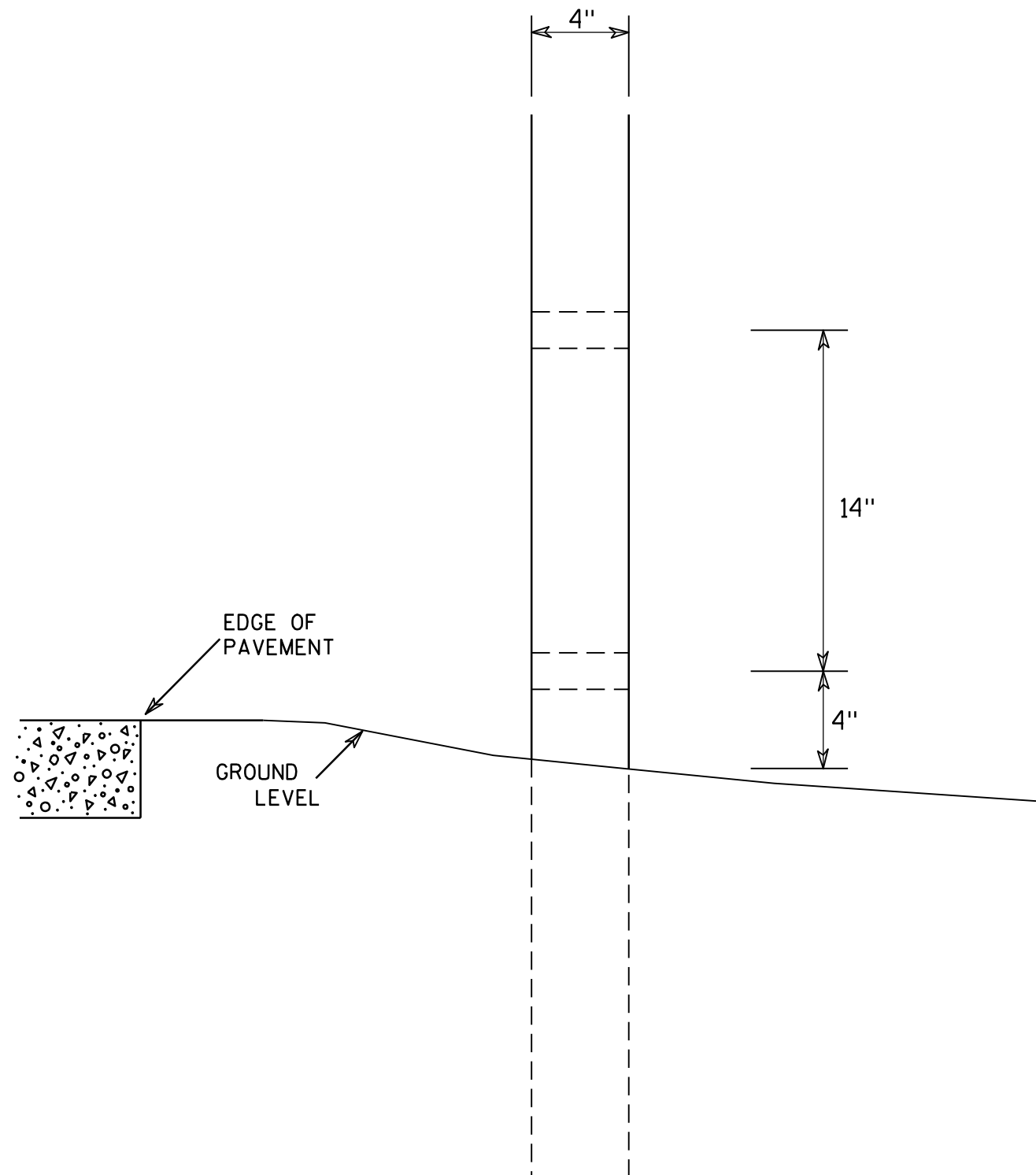
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch

for State Traffic Engineer

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

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



SIDE VIEW

# GENERAL NOTES

1. All 4 x 6 Wood Posts shall be modified by having two 1 1/2" diameter holes drilled perpendicular to the roadway centerline.

## 4 X 6 WOOD POST MODIFICATIONS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED

*Chester J. Spang*  
for State Traffic Engineer

DATE 3/27/97

PLATE NO. A4-11.2

PROJECT NO:

HWY:

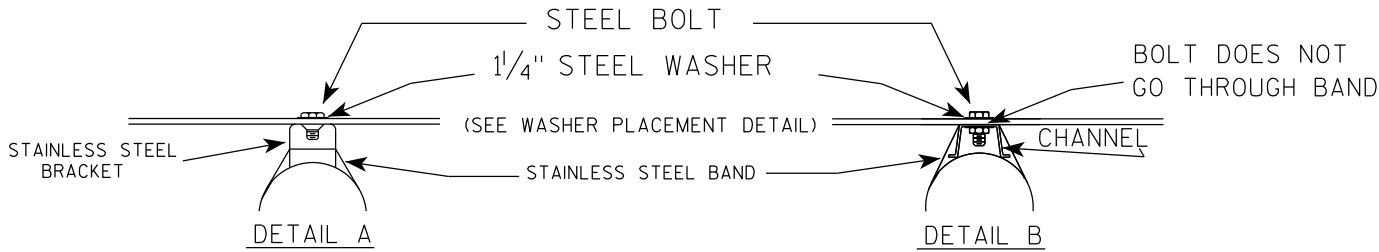
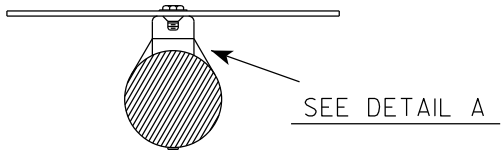
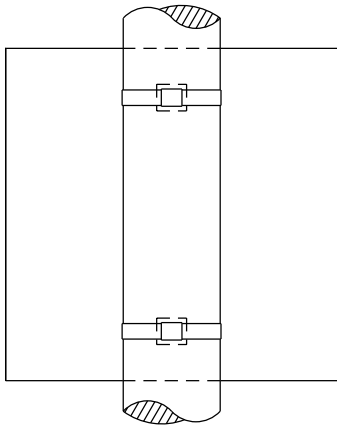
COUNTY:

SHEET NO:

E

BANDING

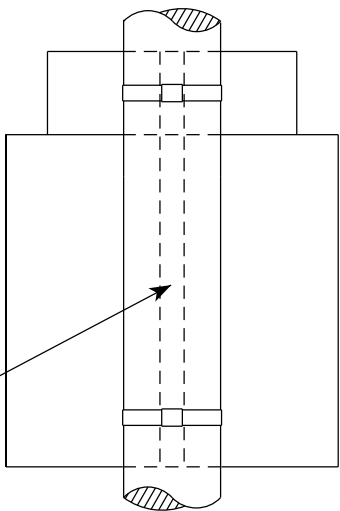
SINGLE SIGN



GENERAL NOTES

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

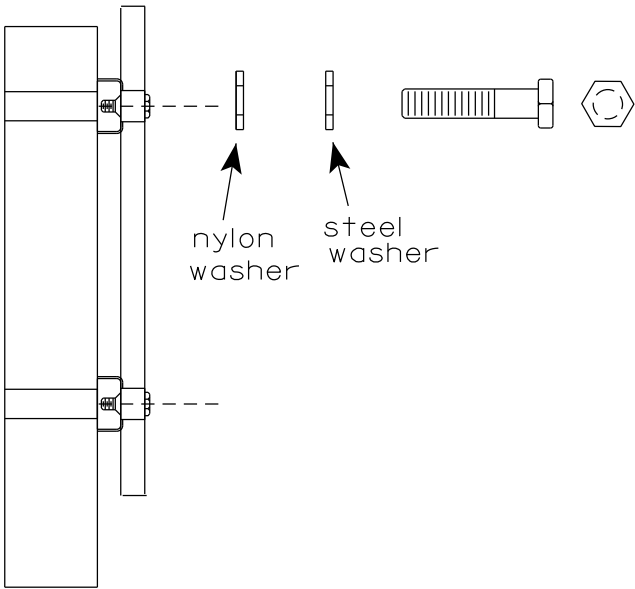
"J" ASSEMBLY



CHANNEL  
SEE TYPICAL PANEL  
INSTALLATION SHEET

SEE DETAIL B

WASHER PLACEMENT



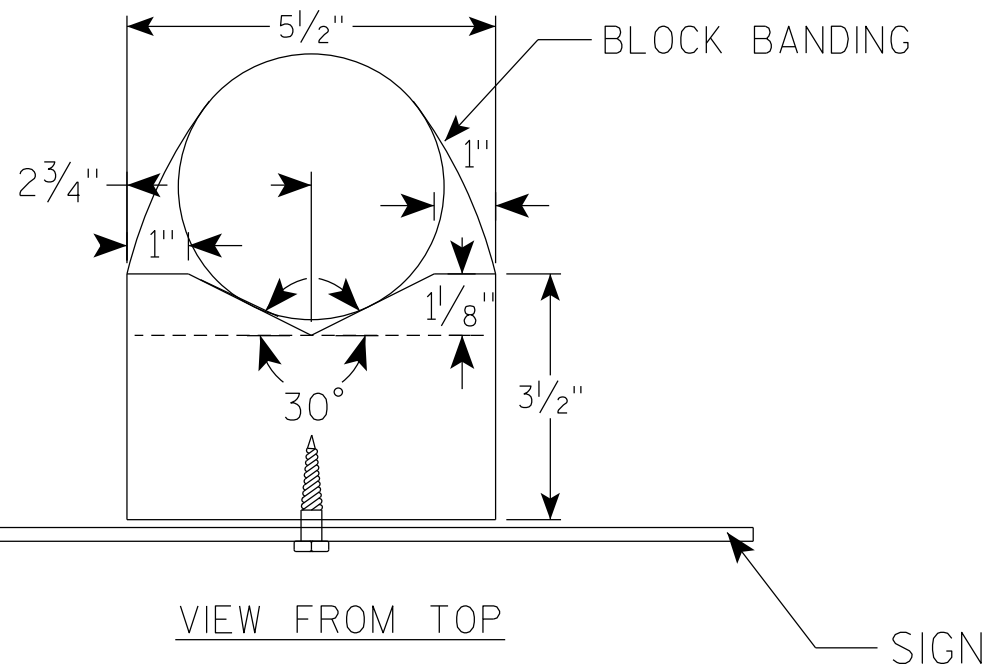
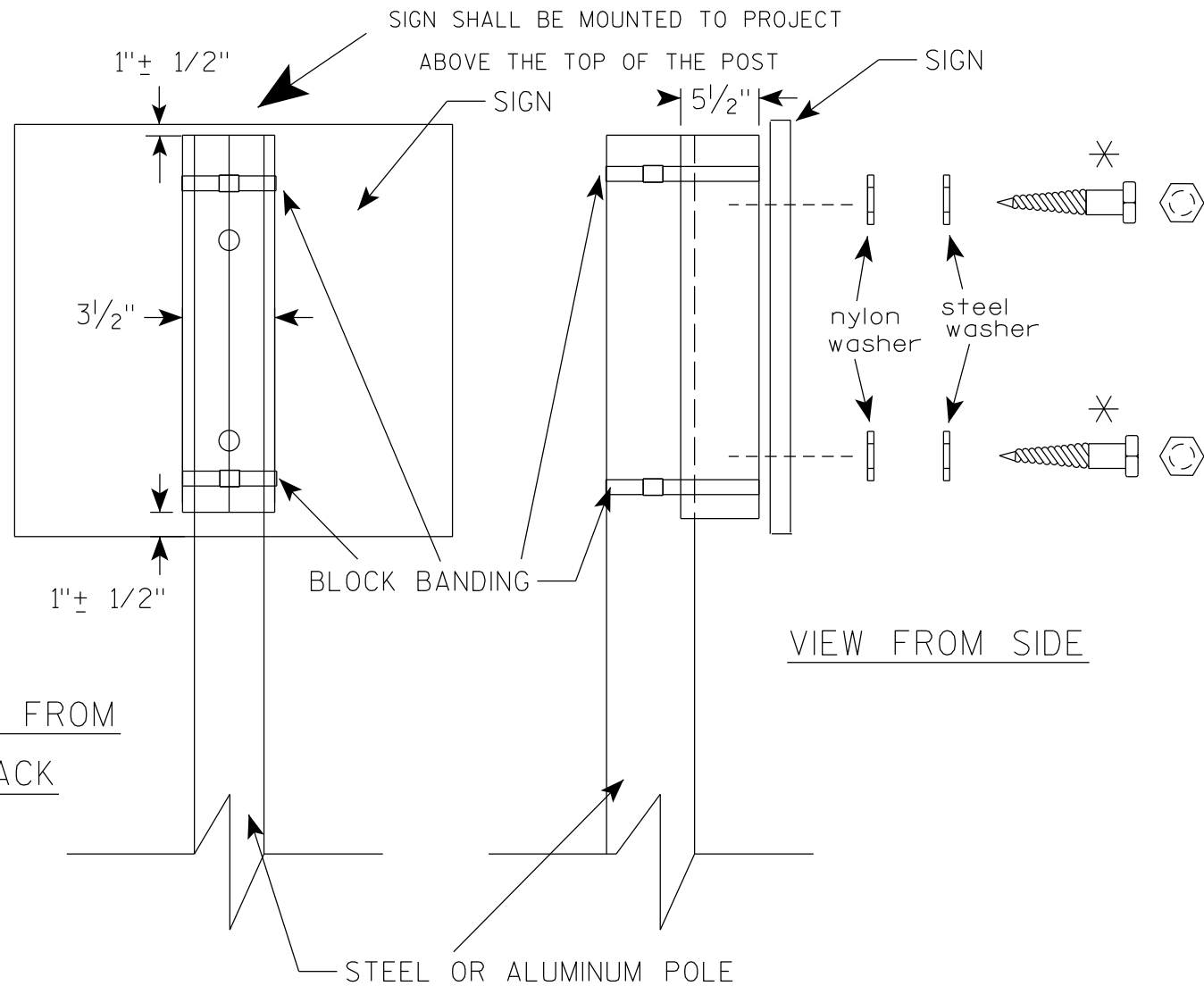
WASHERS (ALL POSTS) -  
1-1/4" O.D. X  $\frac{3}{8}$ " I.D. X  $\frac{1}{16}$ " STEEL  
1-1/4" O.D. X  $\frac{3}{8}$ " I.D. X .080 NYLON  
FOR ALL TYPE H SIGNS

STANDARD SIGN  
SIGN BANDING DETAILS

WISCONSIN DEPT OF TRANSPORTATION

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

VIEW FROM  
BACK



## GENERAL NOTES

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

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

BLOCK BANDING DETAIL  
( V-BLOCK OPTION )

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*  
for State Traffic Engineer

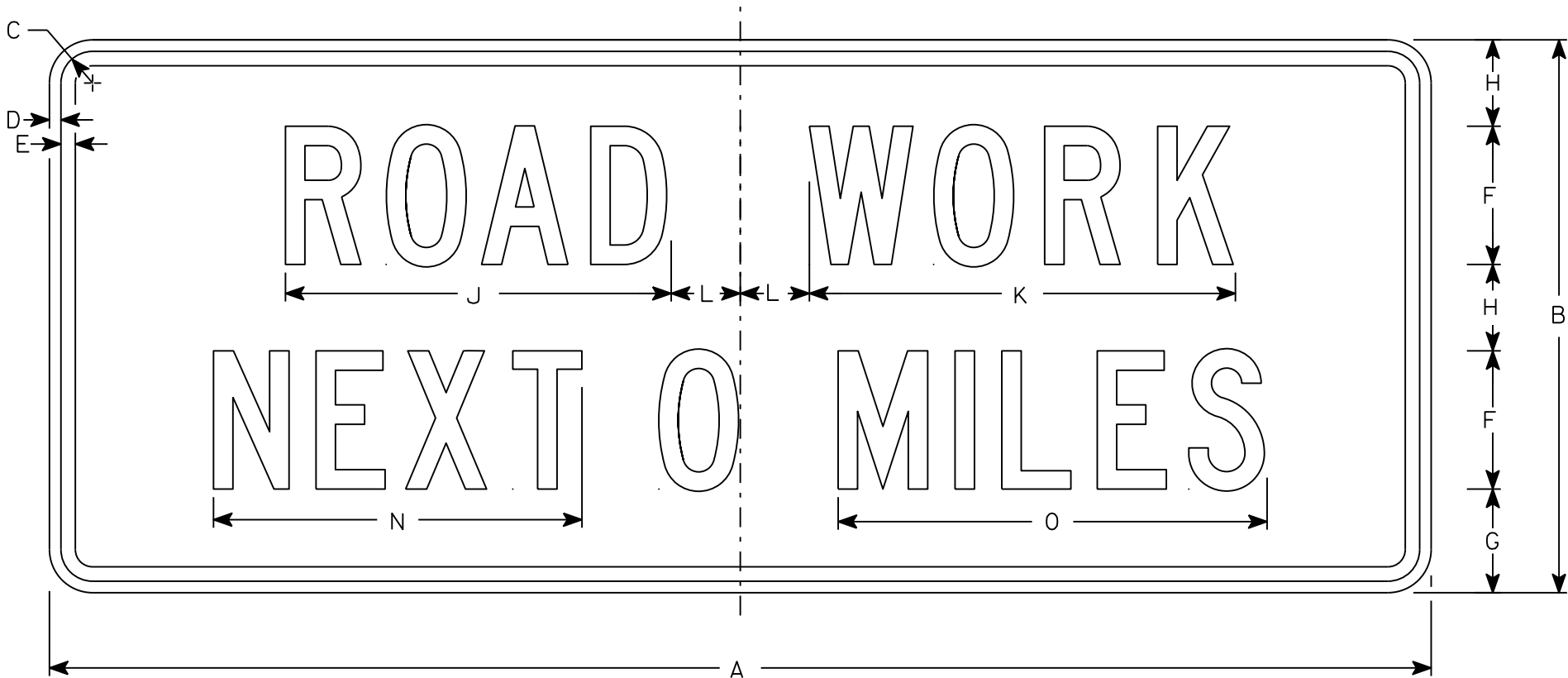
DATE 6/10/19 PLATE NO. A5-10.2

PROJECT NO:

SHEET NO:

E

7



G20-1

NOTES

- 1. Sign is Type II - Type F Reflective
- 2. Color:  
Background - Orange  
Message - Black
- 3. Message Series - C
- 4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
- 5. Round distance to nearest whole Mile and substitute appropriate numerals and optically adjust spacing to achieve proper balance

7

| SIZE | A  | B  | C     | D   | E   | F | G     | H     | I | J      | K      | L | M | N  | O      | P | Q | R | S | T | U | V | W | X | Y | Z | Area<br>sq. ft. |
|------|----|----|-------|-----|-----|---|-------|-------|---|--------|--------|---|---|----|--------|---|---|---|---|---|---|---|---|---|---|---|-----------------|
| 1    |    |    |       |     |     |   |       |       |   |        |        |   |   |    |        |   |   |   |   |   |   |   |   |   |   |   |                 |
| 2    | 60 | 24 | 1 3⁄8 | 1⁄2 | 5⁄8 | 6 | 4 1⁄2 | 3 3⁄4 |   | 16 3⁄4 | 18 1⁄2 | 3 |   | 16 | 18 5⁄8 |   |   |   |   |   |   |   |   |   |   |   | 10              |
| 3    |    |    |       |     |     |   |       |       |   |        |        |   |   |    |        |   |   |   |   |   |   |   |   |   |   |   |                 |
| 4    | 60 | 24 | 1 3⁄8 | 1⁄2 | 5⁄8 | 6 | 4 1⁄2 | 3 3⁄4 |   | 16 3⁄4 | 18 1⁄2 | 3 |   | 16 | 18 5⁄8 |   |   |   |   |   |   |   |   |   |   |   | 10              |
| 5    |    |    |       |     |     |   |       |       |   |        |        |   |   |    |        |   |   |   |   |   |   |   |   |   |   |   |                 |

STANDARD SIGN  
G20-1

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*  
For State Traffic Engineer

DATE 3/14/17 PLATE NO. G20-1.8



## ***Wisconsin Department of Transportation***

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