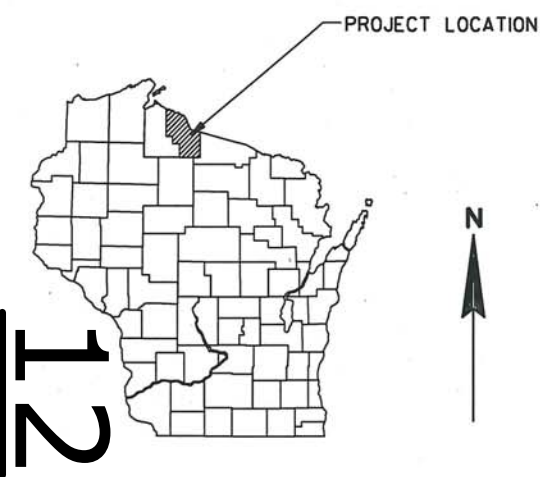


RHI NOVEMBER 2016
PROJECT ID: 1175-20-70
WITH: N/A
COUNTY: IRON

ORDER OF SHEETS

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

TOTAL SHEETS = 78



DESIGN DESIGNATION

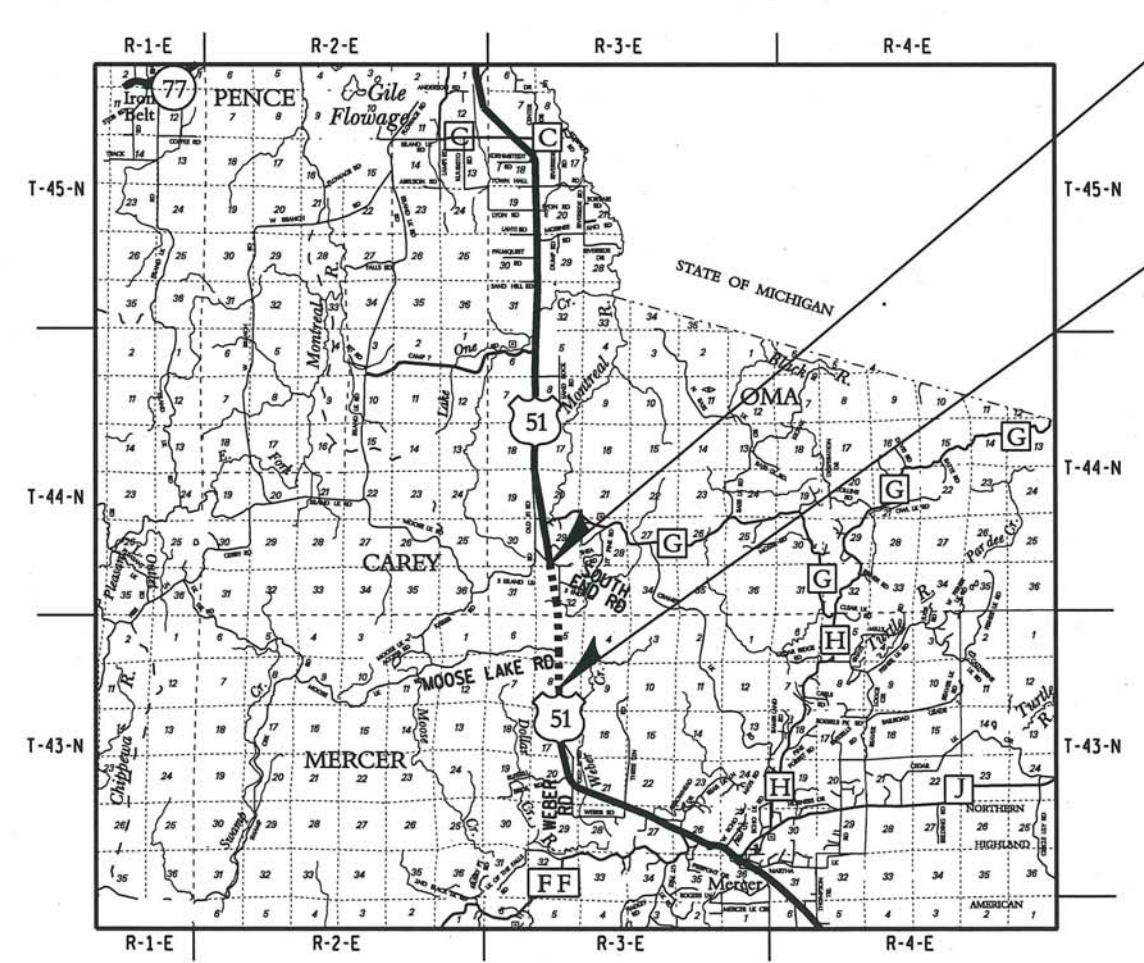
A.A.D.T. (2014)	=	2,130
A.A.D.T. (2034)	=	2,600
D.H.V.	=	335
D.D.	=	61/39
T.	=	19.48
DESIGN SPEED	=	55
ESALS	=	1,204,500

CONVENTIONAL SYMBOLS

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
PLAN OF PROPOSED IMPROVEMENT
MANITOWISH - HURLEY
MOOSE LAKE ROAD TO SOUTH END ROAD
USH 51
IRON COUNTY

STATE PROJECT NUMBER
1175-20-70



END PROJECT
STA 274+25.00

BEGIN PROJECT
STA 139+50.00
Y=286428.085
X=753019.836

LAYOUT
SCALE 0 2 MI
TOTAL NET LENGTH OF CENTERLINE = 2.552 MI

COORDINATES ON THIS PLAN ARE REFERENCED TO THE
IRON COUNTY COORDINATE SYSTEM.
ELEVATIONS ON THIS PLAN ARE REFERENCED TO THE
NORTH AMERICAN VERTICAL DATUM 1988.

STATE PROJECT	FEDERAL PROJECT	
	PROJECT	CONTRACT
1175-20-70	WISC 2016347	1

ORIGINAL PLANS PREPARED BY

AECOM

BRUCE N. GERLAND
E26213
Stevens Point, WI
10/31/13

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PREPARED BY
Surveyor: AECOM
Designer: AECOM
Project Manager: JIM VOLKMANN
Regional Examiner: CHERYL SIMON
Regional Supervisor: ANNA WISNER
C.O. Examiner:

APPROVED FOR THE DEPARTMENT
DATE: 10/31/13 Anna Wisner (Signature)

E

GENERAL NOTES

THE LOCATIONS OF EXISTING AND PROPOSED UTILITY INSTALLATIONS, AS SHOWN ON THE PLANS ARE APPROXIMATE. THERE MAY BE OTHER UTILITY INSTALLATIONS WITHIN THE PROJECT AREA THAT ARE NOT SHOWN. IT IS THE CONTRACTOR'S RESPONSIBILITY TO HAVE ALL UTILITIES LOCATED BEFORE EXCAVATION.

NO TREES OR SHRUBS ARE TO BE REMOVED UNLESS SUCH TREES OR SHRUBS HAVE FIRST BEEN INDICATED FOR REMOVAL BY THE ENGINEER IN THE FIELD.

WHEN THE QUANTITY OF THE ITEM OF BASE OR HMA PAVEMENT IS MEASURED FOR PAYMENT BY THE TON, THE DEPTH OR THICKNESS OF THE COURSE SHOWN ON THE PLANS IS APPROXIMATE AND THE ACTUAL THICKNESS WILL DEPEND ON THE DISTRIBUTION OF MATERIAL AS DIRECTED BY THE ENGINEER.

4-INCH HMA PAVEMENT USED FOR MAINLINE USH 51 SHALL BE CONSTRUCTED IN TWO (2) LAYERS. THE UPPER LAYER SHALL BE 1 3/4 INCHES OF HMA PAVEMENT 4 MT 58-34 S. THE LOWER LAYER SHALL BE 2 1/4 INCHES OF HMA PAVEMENT 3 MT 58-28 S.

6-INCH HMA PAVEMENT USED FOR MAINLINE AT CULVERT REPLACEMENT LOCATIONS SHALL BE CONSTRUCTED IN TWO (2) LAYERS. THE UPPER LAYER SHALL BE 2 INCHES OF HMA PAVEMENT 4 MT 58-34 S. THE LOWER LAYER SHALL BE 4 INCHES OF HMA PAVEMENT 3 MT 58-28 S.

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 = 17.4 ACRES
TOTAL AREA EXPECTED TO BE DISTURBED BY CONSTRUCTION ACTIVITIES = 17.4 ACRES

UTILITY OWNERS

COMMUNICATION LINE:

BRIAN HUHN
CENTURYLINK
SUITE 5
400 W 9TH ST N
LADYSMITH, WI 54848
(715) 523-0023
(715) 563-8294 (CELL)
brian.huhn@centurylink.com

ELECTRIC:

GARY TARASEWICZ
BAYFIELD ELECTRIC COOPERATIVE INC - ELECTRICITY
P.O. BOX 68
IRON RIVER, WI 54847
(715) 372-4287
(715) 492-0725 (CELL)
gary.tarasewicz@bayfieldelectric.com

MURRAY SMERER
XCEL ENERGY - ELECTRICITY
2400 FARM ROAD
ASHLAND, WI 54806
(715) 682-6928
murray.j.smerer@xcelenergy.com

KYLE NEIDERMIRE
XCEL ENERGY - ELECTRICITY-TRANSMISSION
P.O. BOX 8 - MELBY CENTRE
EAU CLAIRE, WI 54702
(715) 737-1576
kyle.s.neidermire@xcelenergy.com

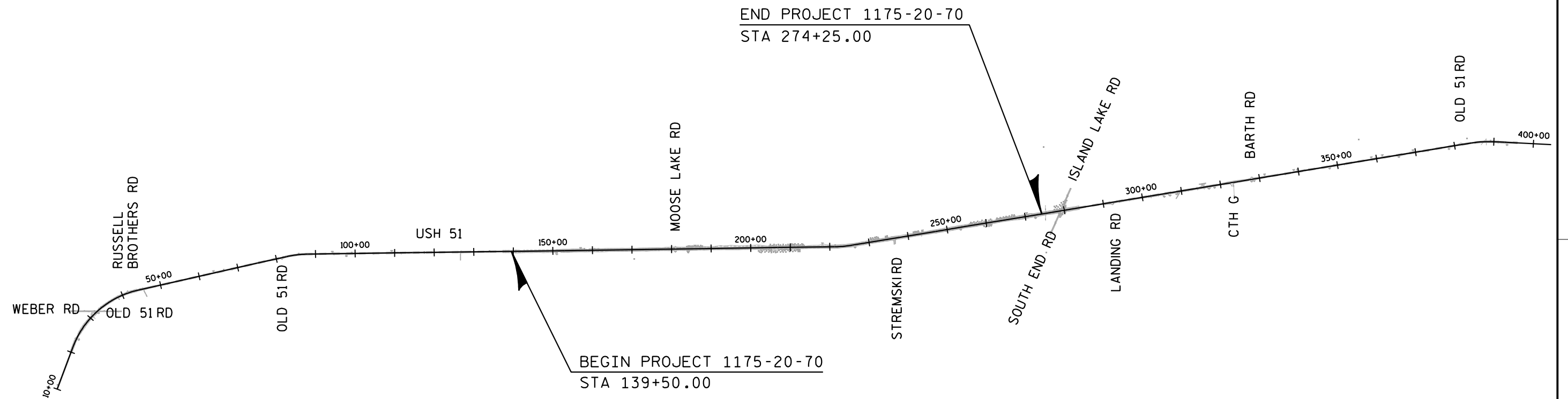


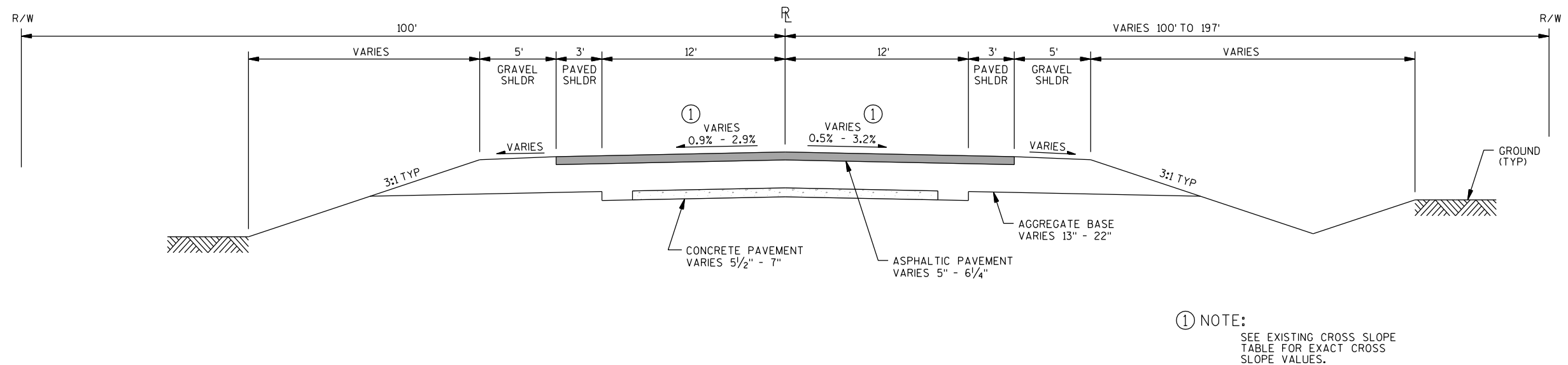
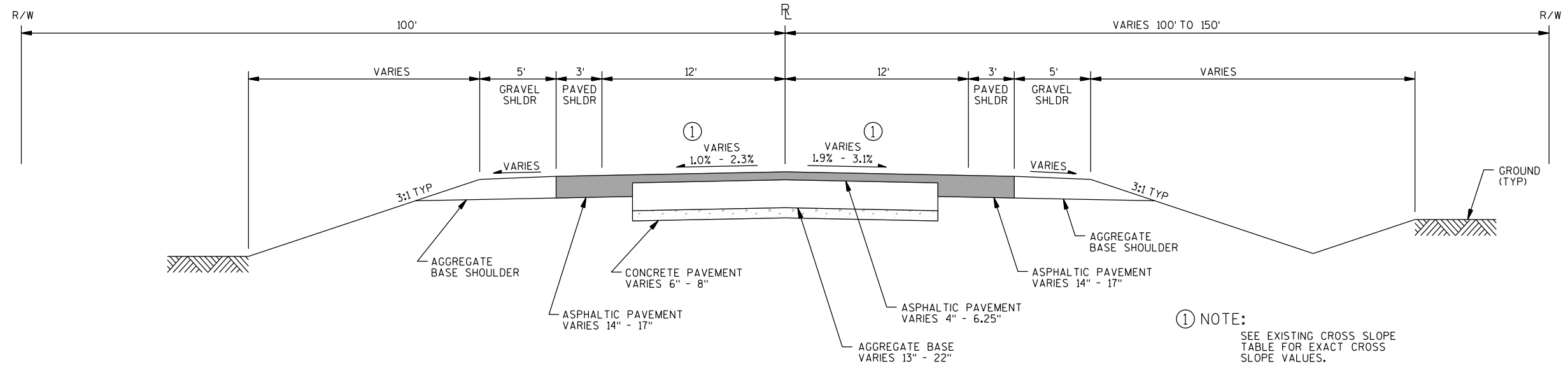
Dial  or (800) 242-8511

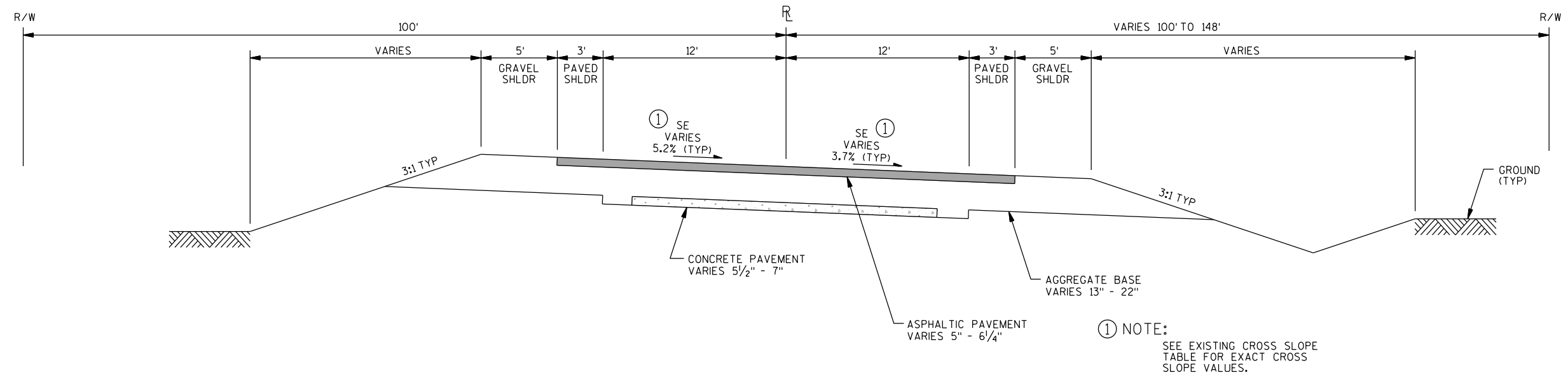
www.DiggersHotline.com

DNR LIAISON

WISCONSIN DNR
JON SIMONSEN
107 SUTLIFF AVE
RHINELANDER, WI 54501
715-365-8916
EMAIL: jonathan.simonsen@wisconsin.gov

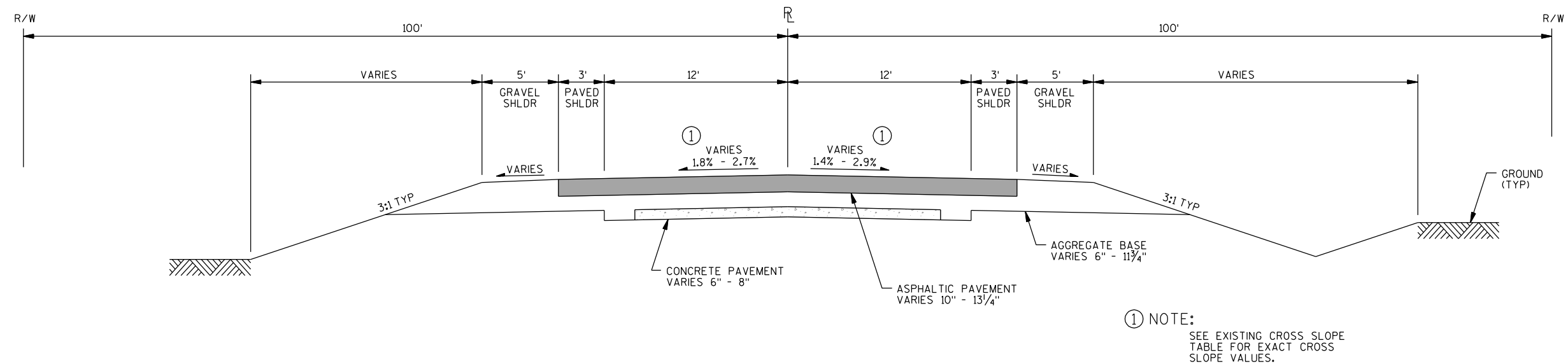






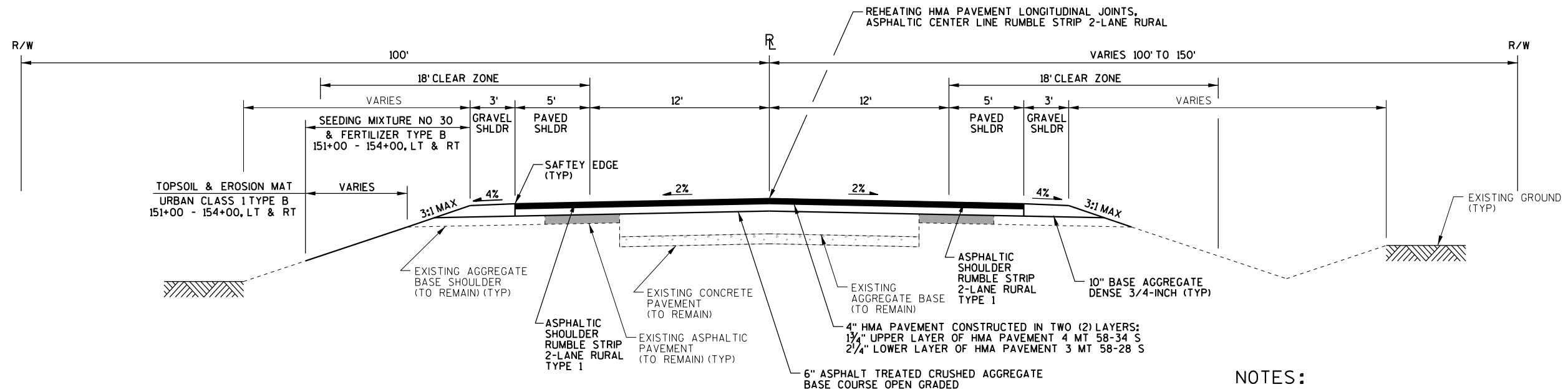
TYPICAL SUPERELEVATED EXISTING SECTION - USH 51

STA 220+04 - STA 226+98



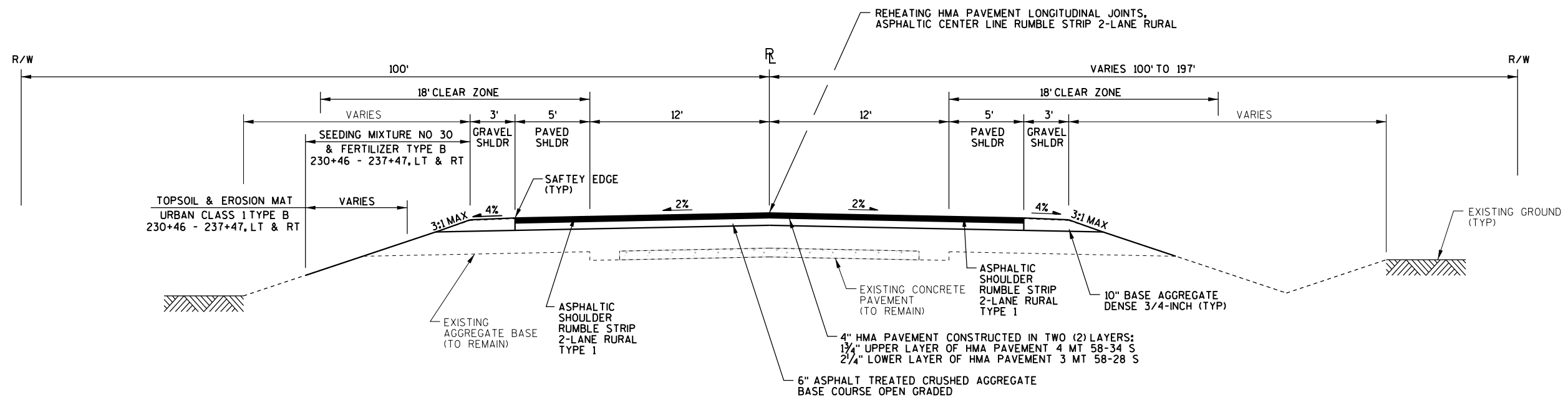
TYPICAL EXISTING SECTION - USH 51

STA 245+00 - STA 274+25



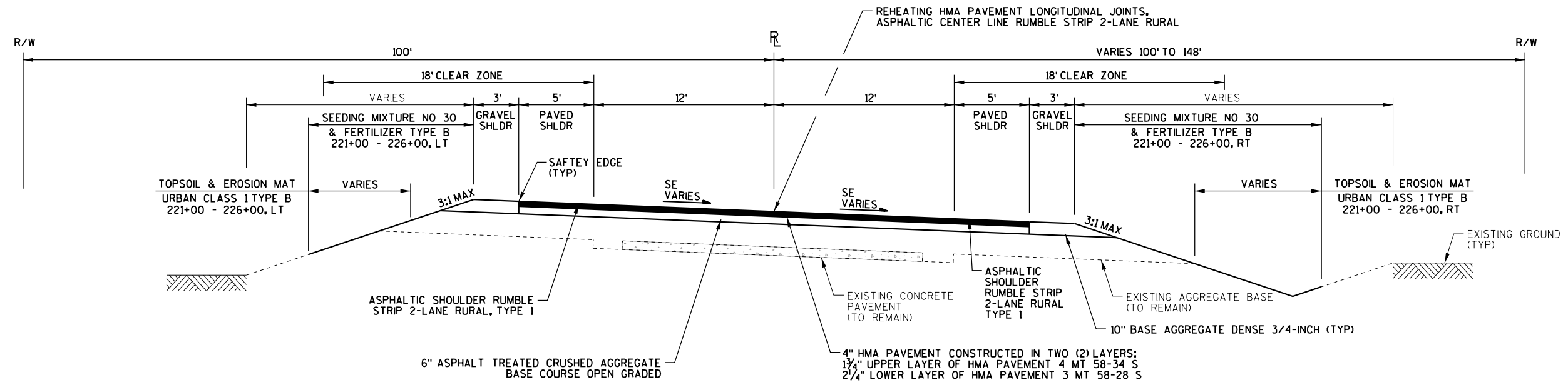
TYPICAL FINISHED SECTION - USH 51

STA 139+50 - STA 171+00



TYPICAL FINISHED SECTION - USH 51

STA 171+00 - STA 220+04
STA 226+98 - STA 245+00



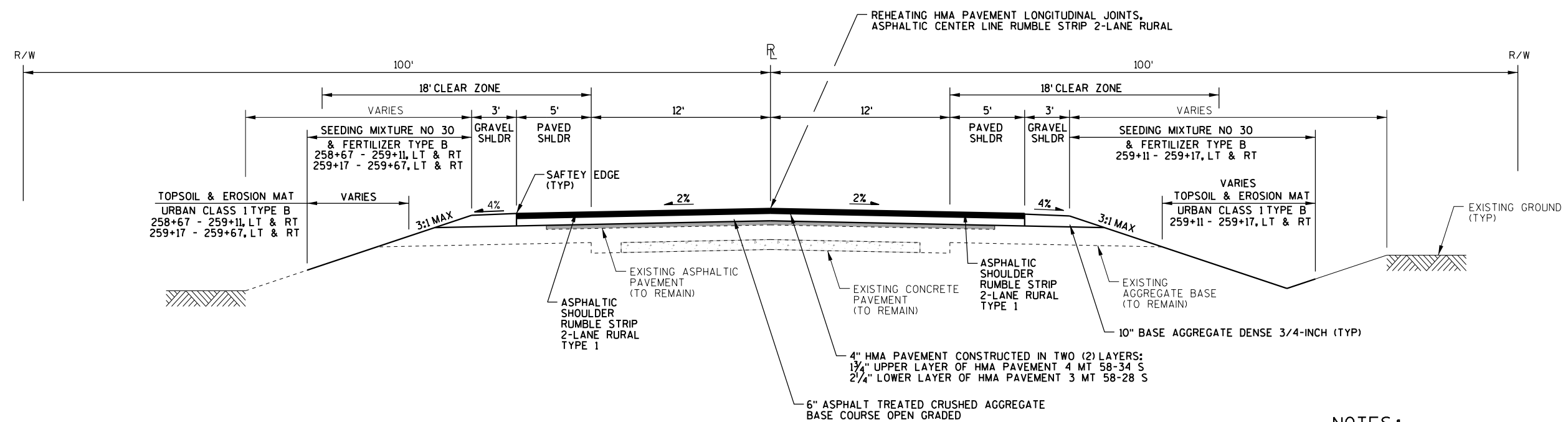
TYPICAL SUPERELEVATED FINISHED SECTION - USH 51

STA 220+04 - STA 226+98

CURVE INFORMATION								PC SIDE OF CURVE				PT SIDE OF CURVE			
PC STATION	PI STATION	PT STATION	RADIUS (FT)	SUPER ELEVATION	DESIGN SPEED (MPH)	SUPER RUNOFF (L)	TANGENT RUNOUT (X)	NORMAL CROWN	REVERSE CROWN	FULL SUPER BEGIN	FULL SUPER END	REVERSE CROWN	FLAT	NORMAL CROWN	
221+19.52	223+51.32	225+82.26	3100	3.80%	55	97	51	220+04	220+55	221+06	221+52	225+50	225+96	226+47	226+98

NOTES:

- 1) SEE UNDERDRAIN DETAIL FOR PROPOSED UNDERDRAIN LOCATIONS.
- 2) REMOVE TOP 10" OF EXISTING ROADWAY & GRAVEL SHOULDER (EXCAVATION COMMON).

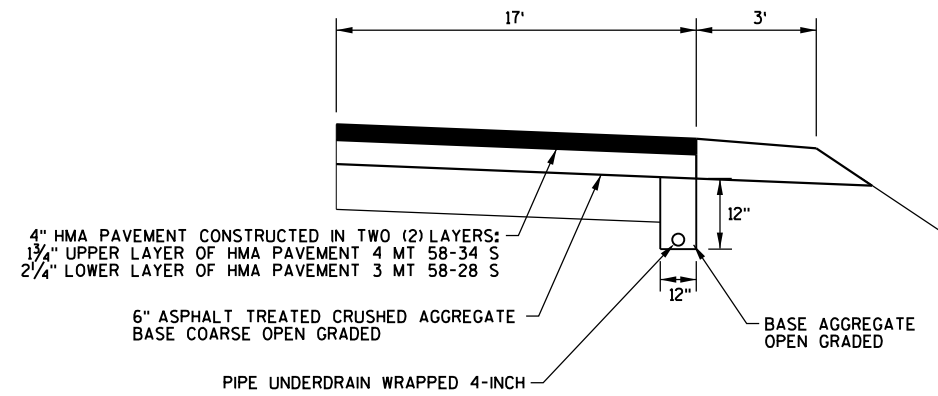


TYPICAL FINISHED SECTION - USH 51

STA 245+00 - STA 274+25

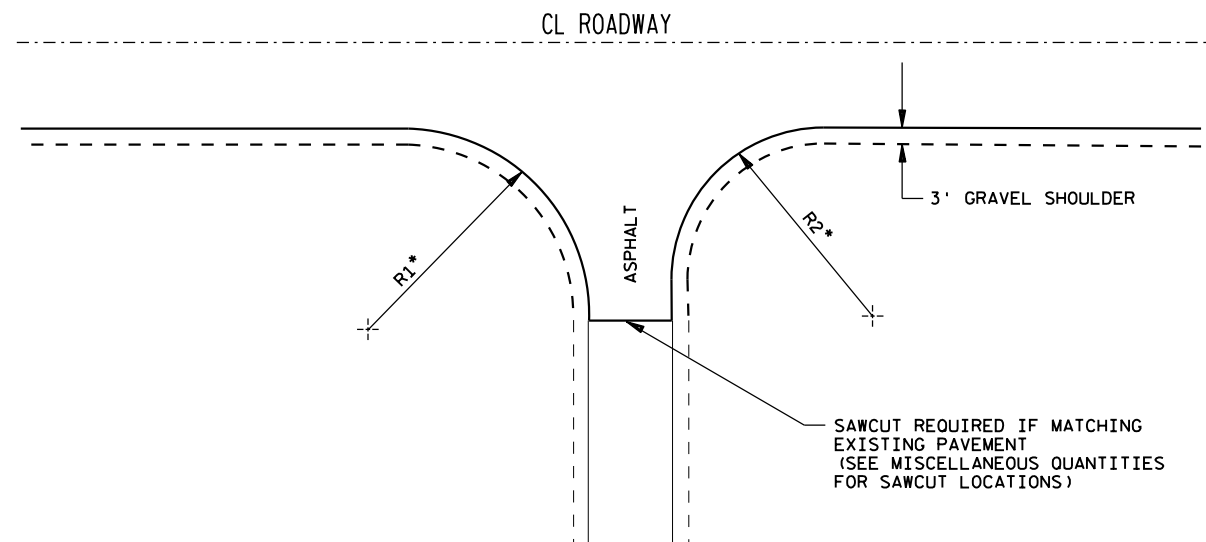
NOTES:

- 1) SEE UNDERDRAIN DETAIL FOR PROPOSED UNDERDRAIN LOCATIONS.
- 2) REMOVE TOP 10" OF EXISTING ROADWAY & GRAVEL SHOULDER (EXCAVATION COMMON).



UNDERDRAIN DETAIL

STA 142+50 - STA 144+50 LT/RT
 STA 184+00 - STA 186+00 LT/RT
 STA 203-75 - STA 205+75 LT/RT
 STA 220+55 - STA 226+47 LT
 STA 235+05 - STA 237+05 LT/RT
 STA 258+90 - STA 260+90 LT/RT

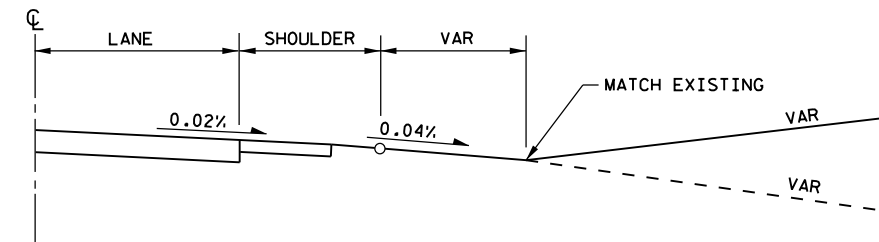


TYPE "C" MODIFIED INTERSECTION

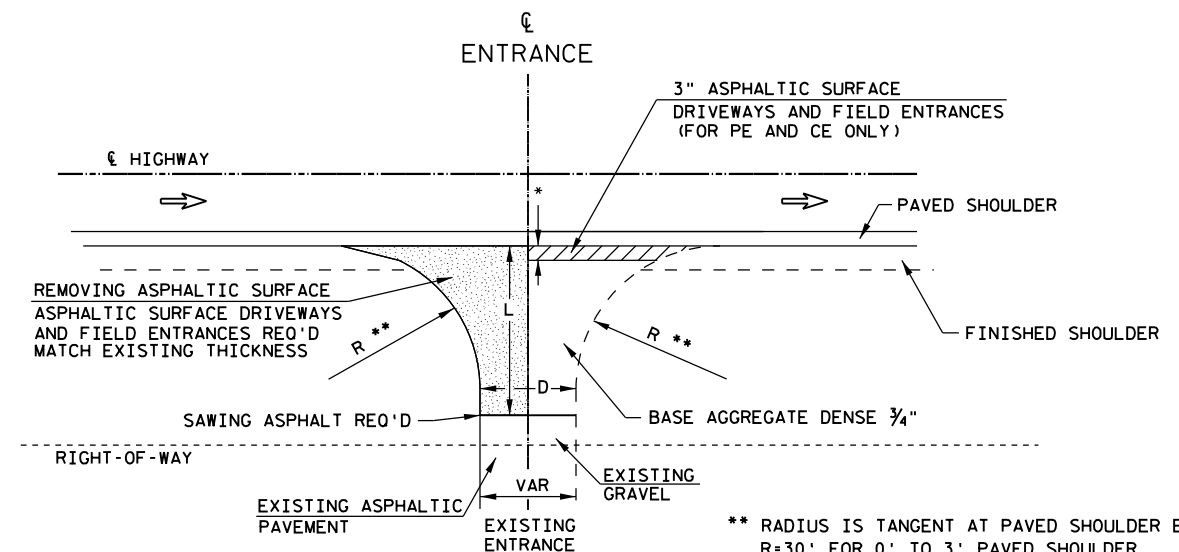
* RADIUS IS TANGENT
 AT PAVED SHOULDER

SIDE ROAD	R1*	DISTANCE	STATION	OFFSET	R2*	DISTANCE	STATION	OFFSET
MOOSE LAKE ROAD	34'		181+49	52' LT	22'		180+72	41' LT
STREMSKI ROAD	29'		236+07	47' RT	24'		236+85	42' RT

NOTE: CONTRACTOR TO FIELD VERIFY PRIOR TO REMOVING EXISTING ASPHALT



TYPICAL PROFILE VIEW

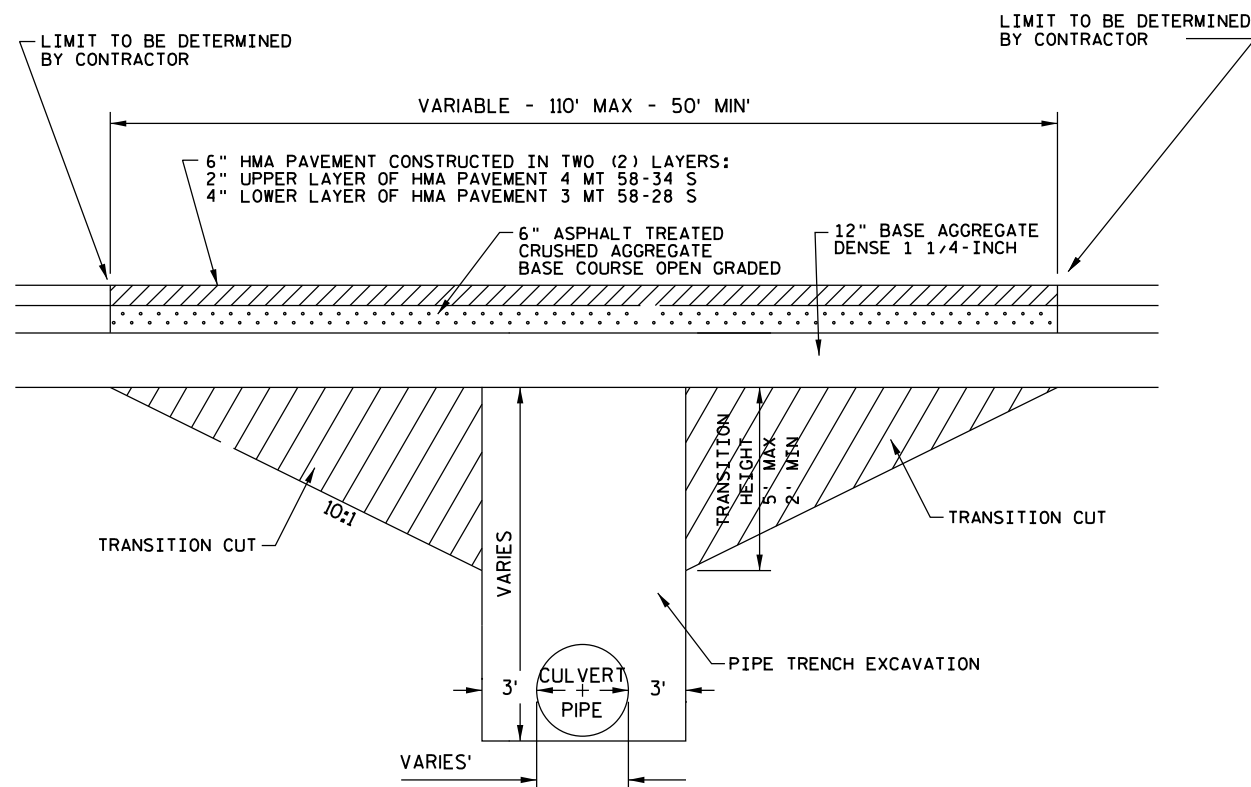


L=VARIABLE, EXACT LENGTH TO BE DETERMINED
 IN THE FIELD BY THE ENGINEER.

D=DRIVEWAY WIDTH
 D=20' TYP (PE & FE) (16' MIN - 24' MAX)
 D=28' TYP (CE & FARM ENT) (24' MIN - 35' MAX)

PLAN VIEW

RURAL DRIVEWAY INTERSECTION (PE, FE & CE) (FOR RESURFACING PROJECTS)

QUANTITIES FOR INFORMATIONAL PURPOSE

CULVERT	TRANSITIONAL HEIGHT FT	CUT VOL CY
49	5	645
56	5	590

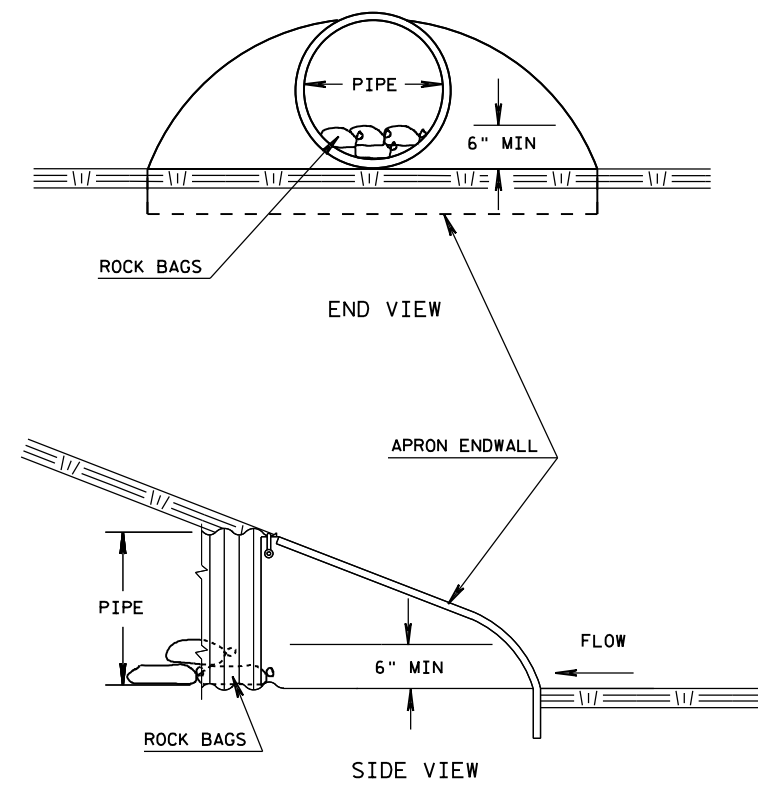
NOTE: REUSE MATERIAL REMOVED IN TRANSITION CUT AND PIPE TRENCH EXCAVATIONS AS BACKFILL UNLESS OTHERWISE DIRECTED BY THE ENGINEER TO USE BACKFILL GRANULAR

PIPE TRENCH EXCAVATION, EXCLUDING TRANSITION CUT IS CONSIDERED INCIDENTAL TO PIPE INSTALLATION. TRANSITION CUT WILL BE PAID FOR AS CULVERT PIPE TRANSITION.

TRANSITION CUT WILL BE SHOULDER POINT TO SHOULDER POINT.

CULVERT PIPE TRANSITION

STA 230+94 CULVERT 49
STA 259+14 CULVERT 56

CULVERT PIPE CHECKS

Approximate Station	Boring Number	LT. Shoulder	Mainline	RT. Shoulder	Approximate Station	Boring Number	LT. Shoulder	Mainline	RT. Shoulder
141+81	S-4 (LT) B-12 (Main)	13.15' LT 14" Asphalt	6.67' LT 18" Asphalt 5" Base 7" Pulv Asph 7" Conc Pav		211+85	B-19 (Main)		7.41' RT 5.5" Asphalt 6.75" Base 11.5" Pulv Asph 6.5" Conc Pav	
151+81	B-13 (Main)		6.28' RT 6" Asphalt 4" Base 14" Pulv Asph 8" Conc Pav		221+92	B-20 (Main)		7.35' LT 5.25" Asphalt 6.75" Base 0" Pulv Asph 0" Conc Pav	
161+81	B-14 (Main)		6.31' LT 4.75" Asphalt 6.5" Base 13.75" Pulv Asph 7" Conc Pav		231+81	B-21 (Main) S-7 (RT)		7.12' RT 5.75" Asphalt 6.25" Base 14.5" Pulv Asph 6" Conc Pav	13.20' RT 6" Asphalt 6" Base
171+75	B-15 (Main) S-5 (RT)		7.22' RT 5.5" Asphalt 6.75" Base 10.75" Pulv Asph 7" Conc Pav	14.25' RT 5" Asphalt 3" Base	241+90	B-22 (Main)		6.18' LT 6.25" Asphalt 6.75" Base 13.5" Pulv Asph 5.75" Conc Pav	
181+80	B-16 (Main)		7.39' LT 5" Asphalt 6.5" Base 6.5" Pulv Asph 7" Conc Pav		251+85	B-23 (Main)		7.39' RT 10.25" Asphalt 5.75" Base 4" Pulv Asph 7.5" Conc Pav	
191+75	B-17 (Main)		7.23' RT 5.25" Asphalt 6.25" Base 12" Pulv Asph 6.5" Conc Pav		261+97	S-8 (LT) B-24 (Main)	12.32' LT 12.25" Asphalt 17.75" Base	6.61' LT 12.25" Asphalt 9.75" Base 0" Pulv Asph 6.5" Conc Pav	
201+95	S-6 (RT) B-18 (Main)	13.91' LT 5" Asphalt 5" Base	6.76' LT 5.75" Asphalt 6.75" Base 15.25" Pulv Asph 5.5" Conc Pav		271+92	B-25 (Main)		8.28' RT 11.5" Asphalt 8" Base 0" Pulv Asph 7.5" Conc Pav	

EXISTING CROSS SLOPES

CROSS SLOPE (%)		
STATION	LT	RT
140+35	2.1	-2.0
141+00	1.7	-1.9
142+00	1.7	-2.0
143+00	1.6	-1.9
144+00	1.5	-2.5
145+00	1.6	-2.8
146+00	1.6	-2.2
147+00	1.7	-2.3
148+00	2.0	-2.5
149+00	2.1	-2.6
150+00	2.0	-2.7
151+00	1.7	-2.6
152+00	1.5	-2.5
153+00	1.6	-2.4
154+00	2.0	-2.6
155+00	1.6	-2.1
156+00	1.5	-2.0
157+00	1.5	-1.9
158+00	1.7	-2.0
159+00	2.1	-2.2
160+00	2.3	-2.6
161+00	1.8	-2.3
162+00	1.3	-2.2
163+00	1.4	-2.4
164+00	2.1	-3.1
165+00	1.8	-2.9
166+00	1.7	-2.5
167+00	1.7	-2.4
168+00	1.5	-2.4
169+00	1.2	-2.1
170+00	1.0	-2.3
171+00	1.1	-2.3
172+00	1.5	-2.4
173+00	1.3	-2.4
174+00	0.9	-2.1
175+00	1.3	-2.3
176+00	2.0	-1.9
177+00	1.9	-2.1
178+00	1.9	-2.3
179+00	2.1	-2.2
180+00	1.9	-2.1
181+00	1.9	-2.1
182+00	2.3	-2.5
183+00	1.5	-2.1
184+00	1.8	-2.2
185+00	2.3	-2.8
186+00	2.0	-3.2
187+00	2.0	-2.9
188+00	2.2	-2.8
189+00	2.7	-2.9
190+00	2.4	-2.5
191+00	2.3	-2.3
192+00	2.2	-2.1
193+00	2.0	-1.7
194+00	2.2	-1.8
195+00	2.5	-2.0
196+00	2.9	-2.3
197+00	2.5	-2.0
198+00	2.1	-2.1
199+00	2.2	-1.9
200+00	2.2	-1.9

FOR INFORMATION ONLY

EXISTING CROSS SLOPES

CROSS SLOPE (%)		
STATION	LT	RT
201+00	2.1	-1.5
202+00	2.4	-1.7
203+00	2.1	-1.6
204+00	2.3	-1.7
205+00	2.5	-2.1
206+00	2.2	-2.4
207+00	2.1	-2.1
208+00	2.2	-2.1
209+00	2.4	-2.3
210+00	2.5	-2.3
211+00	2.2	-2.3
212+00	1.9	-1.9
213+00	2.1	-1.7
214+00	2.3	-1.9
215+00	2.6	-2.3
216+00	2.6	-2.2
217+00	2.9	-2.1
218+00	2.6	-2.5
219+00	2.5	-2.2
220+00	2.6	-0.5
221+00	2.7	1.1
222+00	4.6	3.0
223+00	5.5	4.1
224+00	5.7	4.1
225+00	5.1	3.6
226+00	3.3	1.5
227+00	2.3	-0.8
228+00	2.2	-2.1
229+00	1.9	-2.0
230+00	2.1	-2.2
231+00	2.4	-2.3
232+00	2.4	-2.3
233+00	2.1	-2.1
234+00	2.1	-2.1
235+00	2.3	-2.1
236+00	2.4	-2.9
237+00	1.9	-2.6
238+00	1.9	-1.9
239+00	1.9	-1.9
240+00	2.1	-1.9
241+00	-1.3	-1.9
242+00	2.2	-2.2
243+00	1.9	-2.1
244+00	1.9	-1.9
245+00	1.9	-1.8
246+00	2.3	-2.2
247+00	2.0	-1.7
248+00	1.8	-2.0
249+00	2.3	-2.0
250+00	2.1	-2.0
251+00	1.9	-1.5
252+00	2.3	-2.0
253+00	2.3	-1.9
254+00	2.4	-1.8
255+00	2.1	-1.9
256+00	2.3	-1.8
257+00	2.5	-1.7
258+00	2.2	-1.4
259+00	2.2	-1.7
260+00	2.1	-1.9
261+00	2.1	-1.9

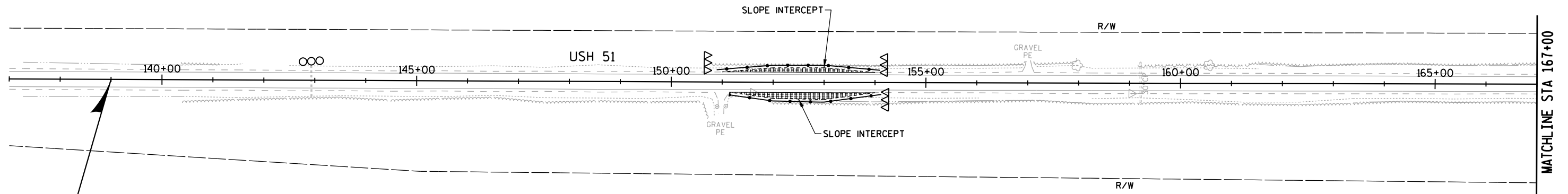
FOR INFORMATION ONLY

EXISTING CROSS SLOPES

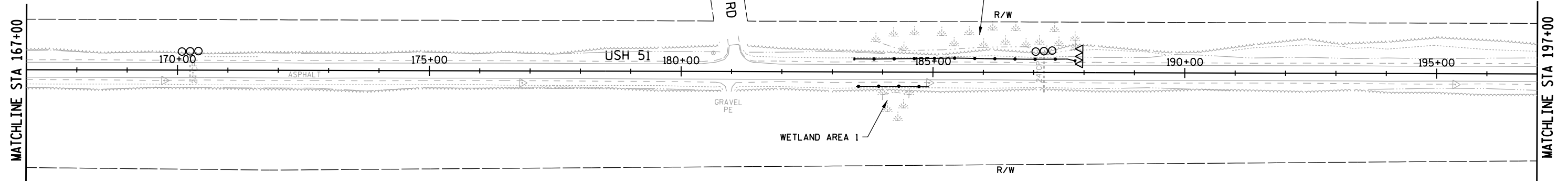
CROSS SLOPE (%)		
STATION	LT	RT
262+00	2.4	-1.9
263+00	2.1	-2.1
264+00	2.1	-1.9
265+00	2.3	-2.3
266+00	2.7	-2.9
267+00	2.1	-2.4
268+00	2.1	-2.1
269+00	2.0	-1.9
270+00	1.9	-2.1
271+00	2.2	-2.2
272+00	2.1	-2.1
273+00	2.0	-2.2
274+00	1.9	-2.2

FOR INFORMATION ONLY

EROSION CONTROL LEGEND	
	SILT FENCE
	CULVERT PIPE CHECKS
	TEMPORARY DITCH CHECK
	EROSION MAT URBAN CLASS 1 TYPE B



MATCHLINE STA 167+00



PROJECT NUMBER: 1175-20-70

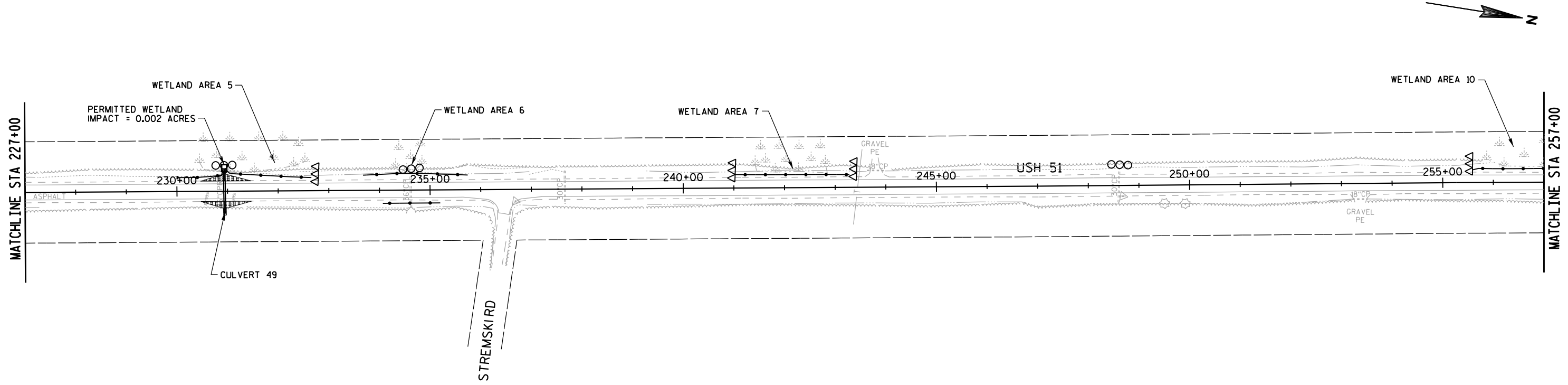
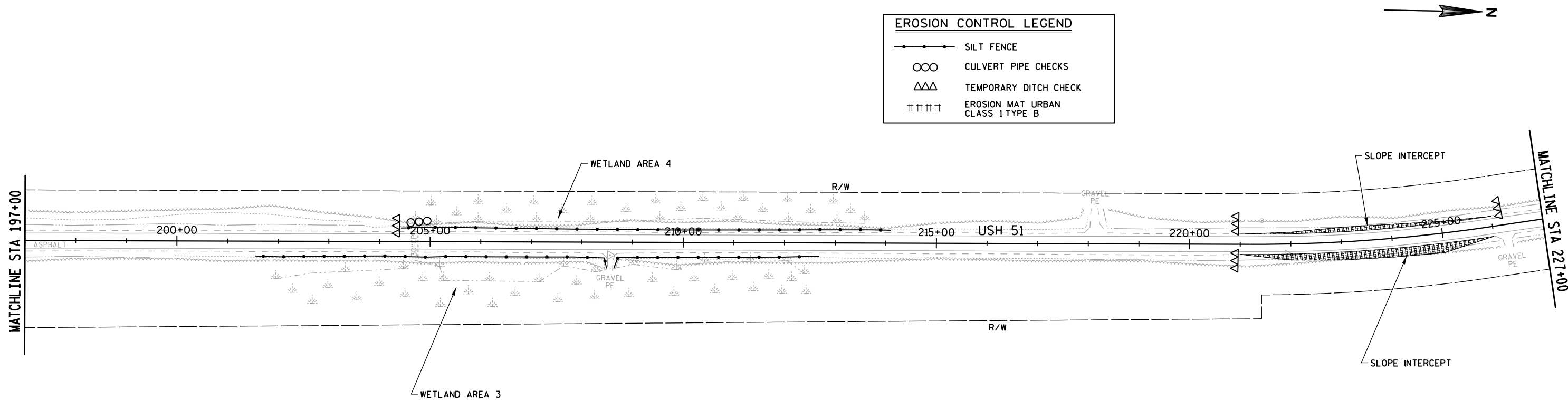
HWY: USH 51

COUNTY: IRON

EROSION CONTROL

SHEET

E



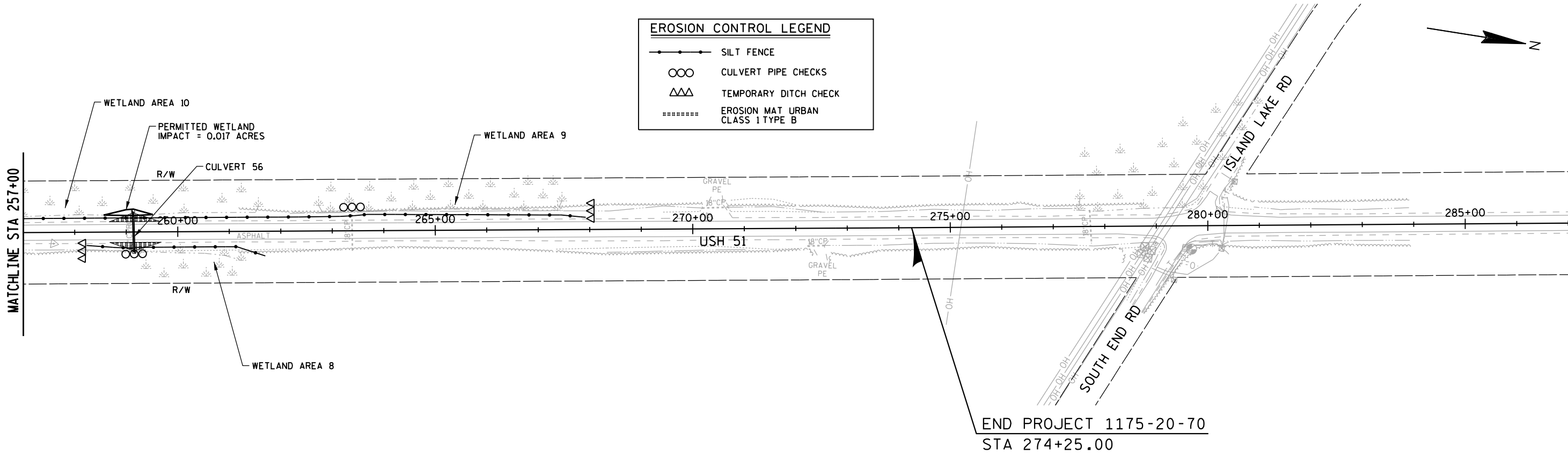
EROSION CONTROL LEGEND

SILT FENCE

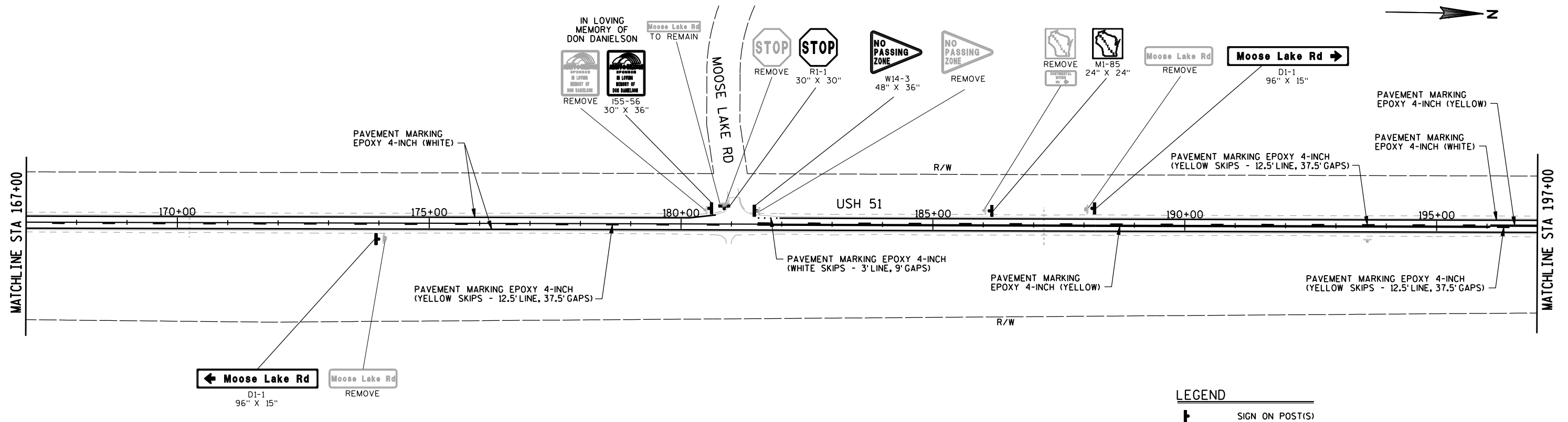
CULVERT PIPE CHECKS

TEMPORARY DITCH CHECK

EROSION MAT URBAN
CLASS 1 TYPE B

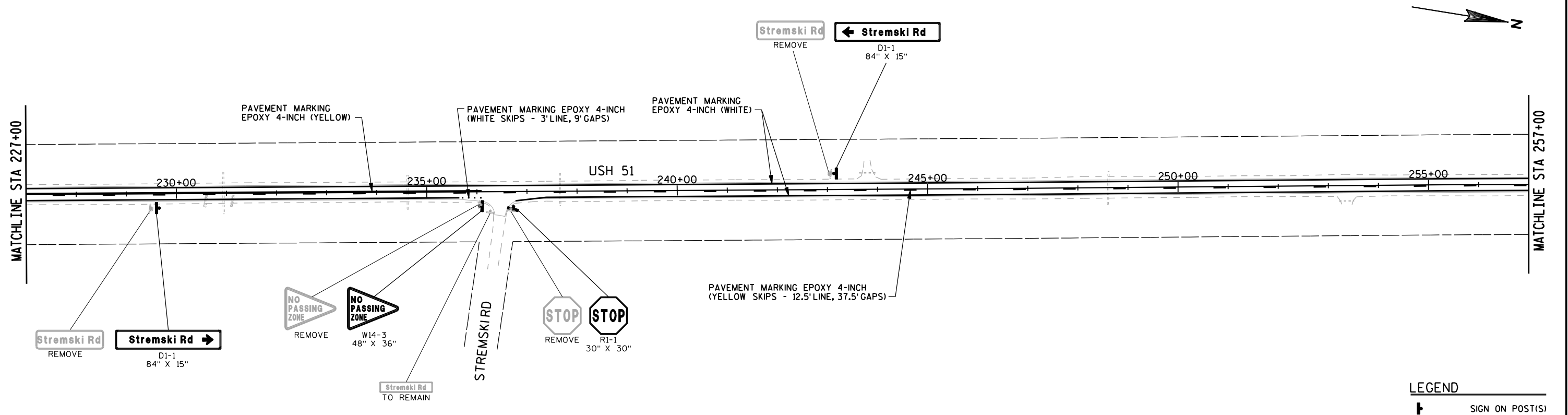
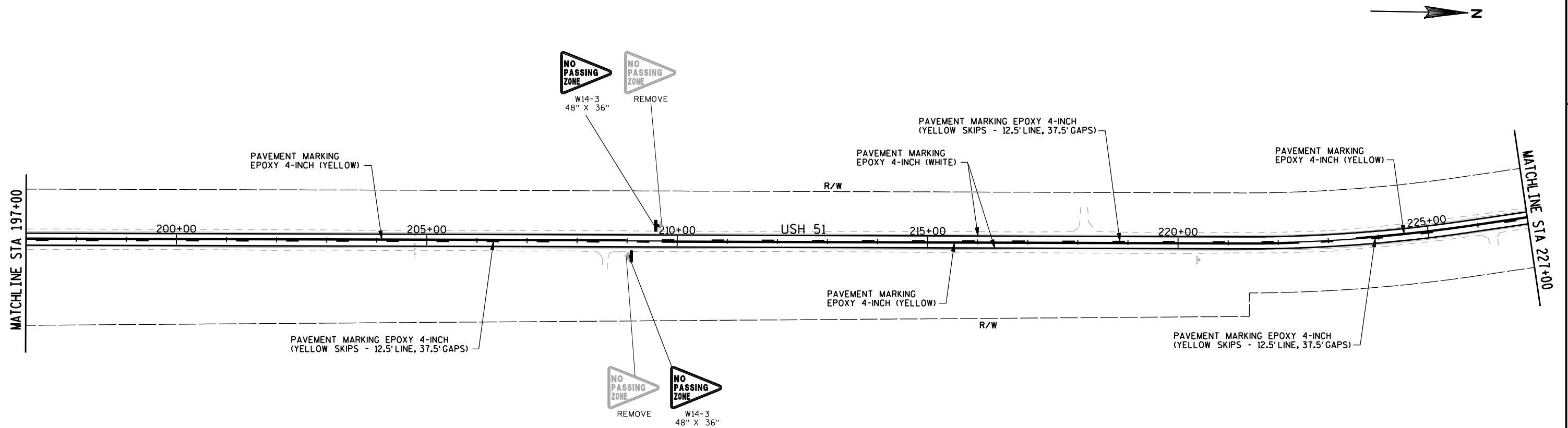


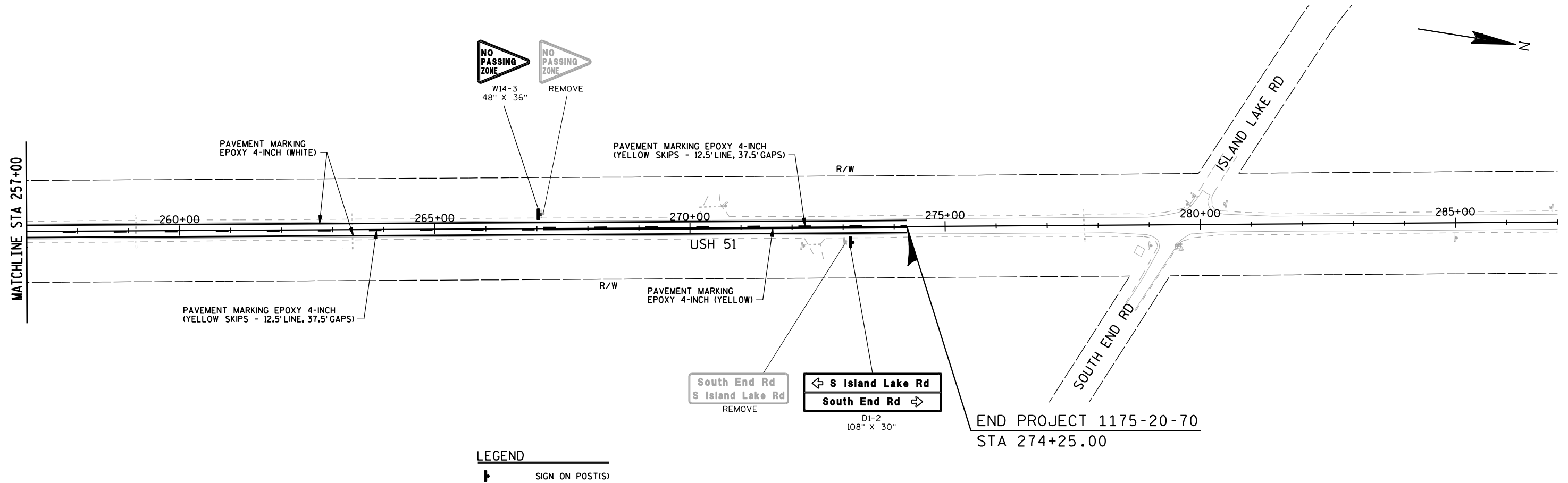
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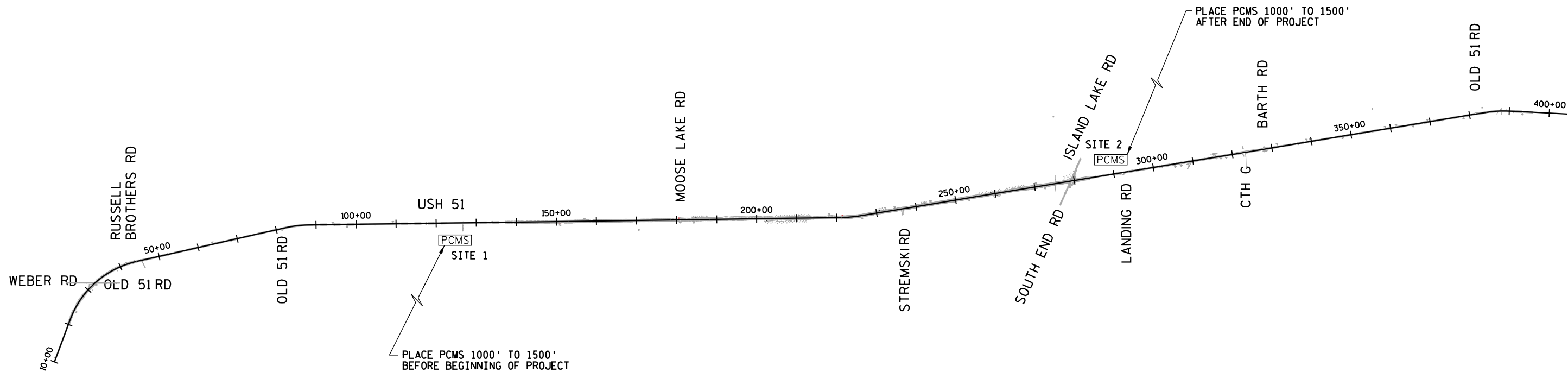
11

WISDOT/CADDS SHEET 42



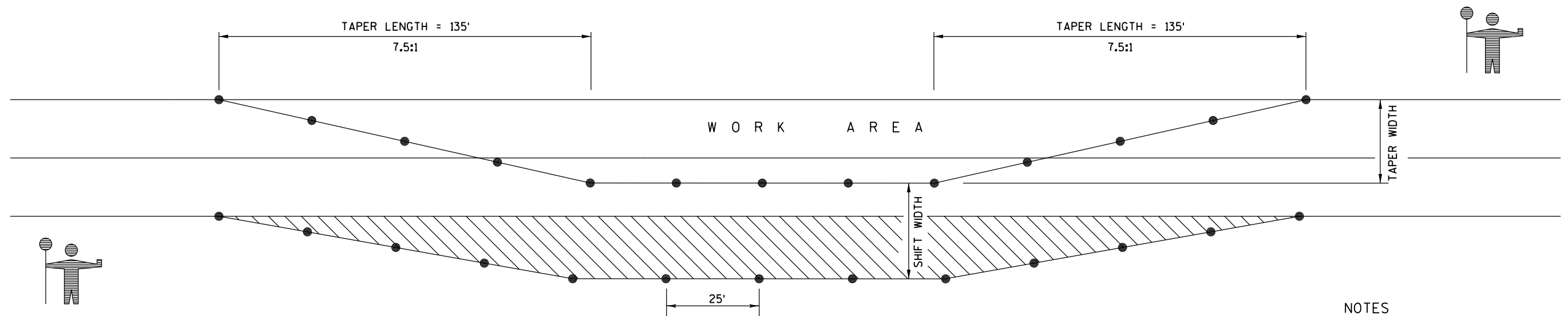


	ONE WEEK PRIOR TO STAGE 1		DURING STAGE 1	
SITE NO.	PHASE 1 (3 SEC.)	PHASE 2 (3 SEC.)	PHASE 1 (3 SEC.)	PHASE 2 (3 SEC.)
SITE 1	US 51 ROAD WORK	BEGINS (DATE)	US 51 ROAD WORK	EXPECT DELAYS
	US 51 ROAD WORK	BEGINS (DATE)	US 51 ROAD WORK	EXPECT DELAYS
SITE 2	US 51 ROAD WORK	BEGINS (DATE)	US 51 ROAD WORK	EXPECT DELAYS



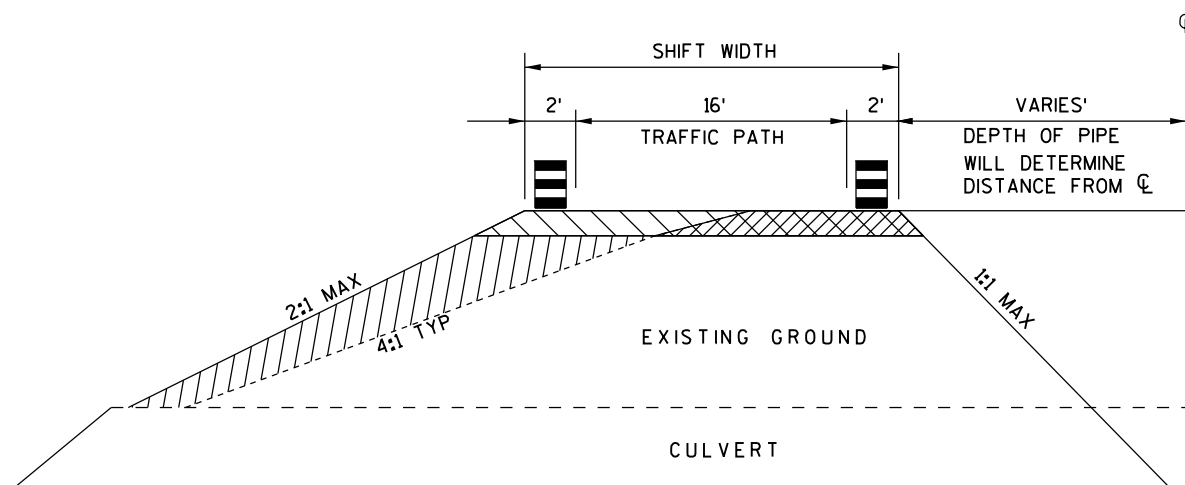
LEGEND

PCMS PORTABLE CHANGEABLE MESSAGE BOARD



NOTES

1. USE WITH SDD "TRAFFIC CONTROL FOR LANE CLOSURE"
2. FLAGGERS ARE SPECIFIC TO THIS OPERATION
3. THE TAPER SHOULD EXTEND ACROSS THE SHOULDER UNLESS DOING SO WOULD GREATLY CONFLICT WITH THE WORK OPERATION
4. 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
5. CHANNELIZING DEVICES PLACED ADJACENT TO WORK AREA SHALL BE PULLED BACK FROM TRAVEL LANE WHEN WORK IS NOT IN PROGRESS

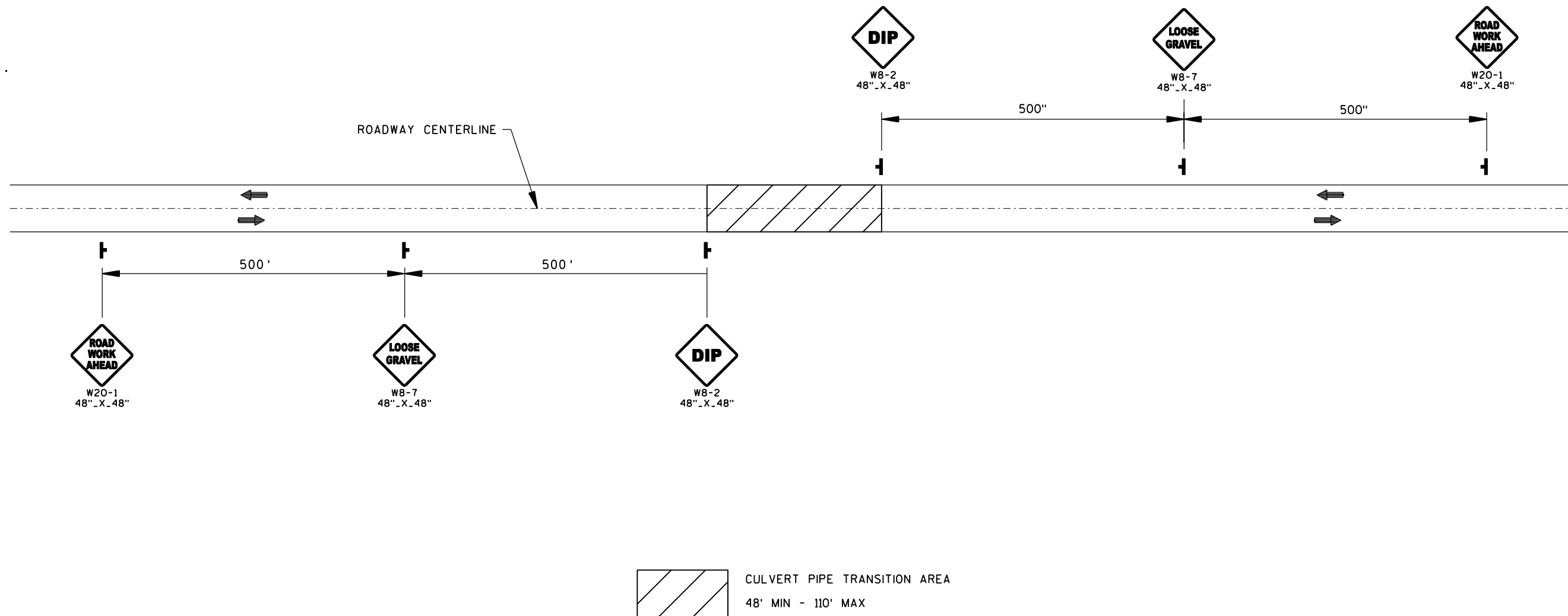


LANE SHIFT DETAIL

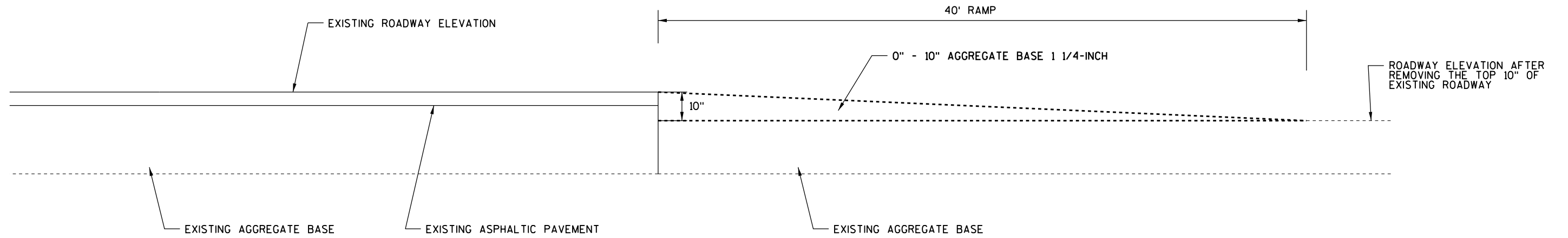
STA 229+09 - STA 232+79
STA 257+29 - STA 260+99

KEY

- DRUM WITHOUT WARNING LIGHT
- ▨ FILL
- INCIDENTAL TO LANE SHIFT ITEM
- ▩ EXISTING PAVED SURFACE
OR
6" BASE AGGREGATE DENSE 1 1/4 INCH
- INCIDENTAL TO LANE SHIFT ITEM
- ▧ 6" BASE AGGREGATE DENSE 1 1/4 INCH
- INCIDENTAL TO LANE SHIFT ITEM

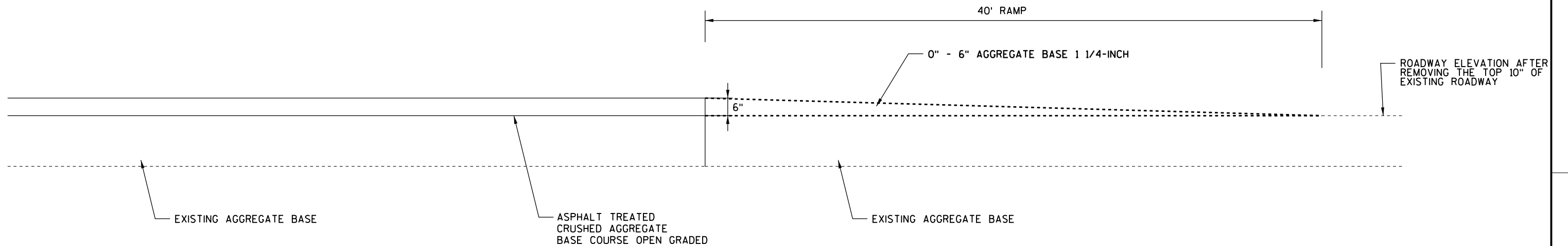
TEMPORARY SIGNING AT CULVERT PIPE REPLACEMENT

2

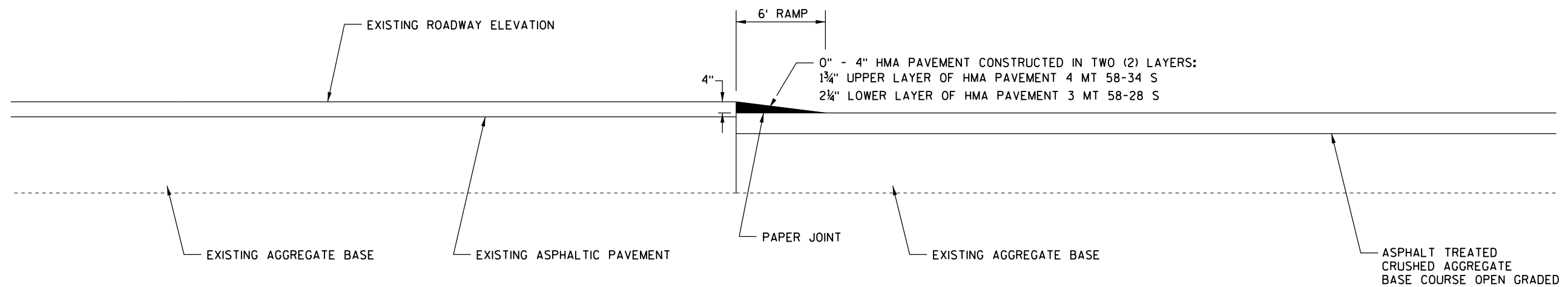


TRAFFIC CONTROL - TEMPORARY ROADWAY RAMPS DETAIL
(BETWEEN EXISTING ROADWAY ELEVATION AND TOP OF EXISTING BASE)

2



TRAFFIC CONTROL - TEMPORARY ROADWAY RAMPS DETAIL
(BETWEEN TOP OF ASPHALT TREATED CRUSHED AGGREGATE BASE COURSE OPEN GRADED AND TOP OF EXISTING BASE)



TRAFFIC CONTROL - TEMPORARY ROADWAY RAMPS DETAIL
(BETWEEN EXISTING ROADWAY ELEVATION AND TOP OF ASPHALT TREATED CRUSHED AGGREGATE BASE COURSE OPEN GRADED)

PROJECT NUMBER: 1175-20-70

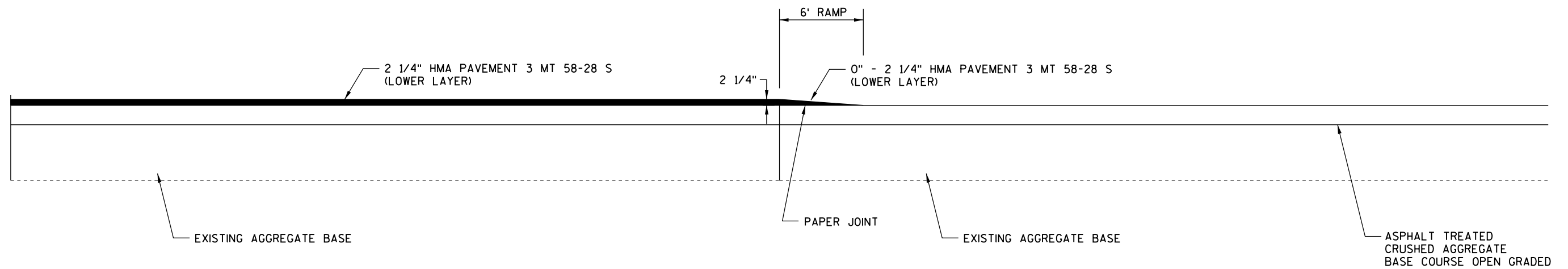
HWY: USH 51

COUNTY: IRON

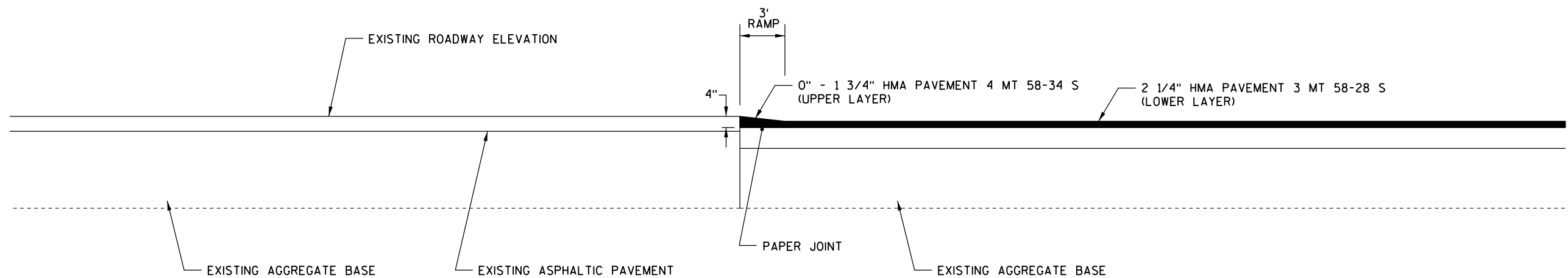
TRAFFIC CONTROL - TEMPORARY RAMP

SHEET

E



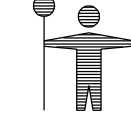
TRAFFIC CONTROL - TEMPORARY ROADWAY RAMPS DETAIL
(BETWEEN THE LOWER LAYER OF HMA PAVEMENT AND TOP OF ASPHALT TREATED CRUSHED AGGREGATE BASE COURSE OPEN GRADED)



TRAFFIC CONTROL - TEMPORARY ROADWAY RAMPS DETAIL
(BETWEEN EXISTING ROADWAY ELEVATION AND THE LOWER LAYER OF HMA PAVEMENT)

MAINLINE ROADWAY UNDER CONSTRUCTION

LEGEND

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

CENTER OF ROADWAY
MAINLINE ROADWAY UNDER CONSTRUCTION

SIDE ROAD

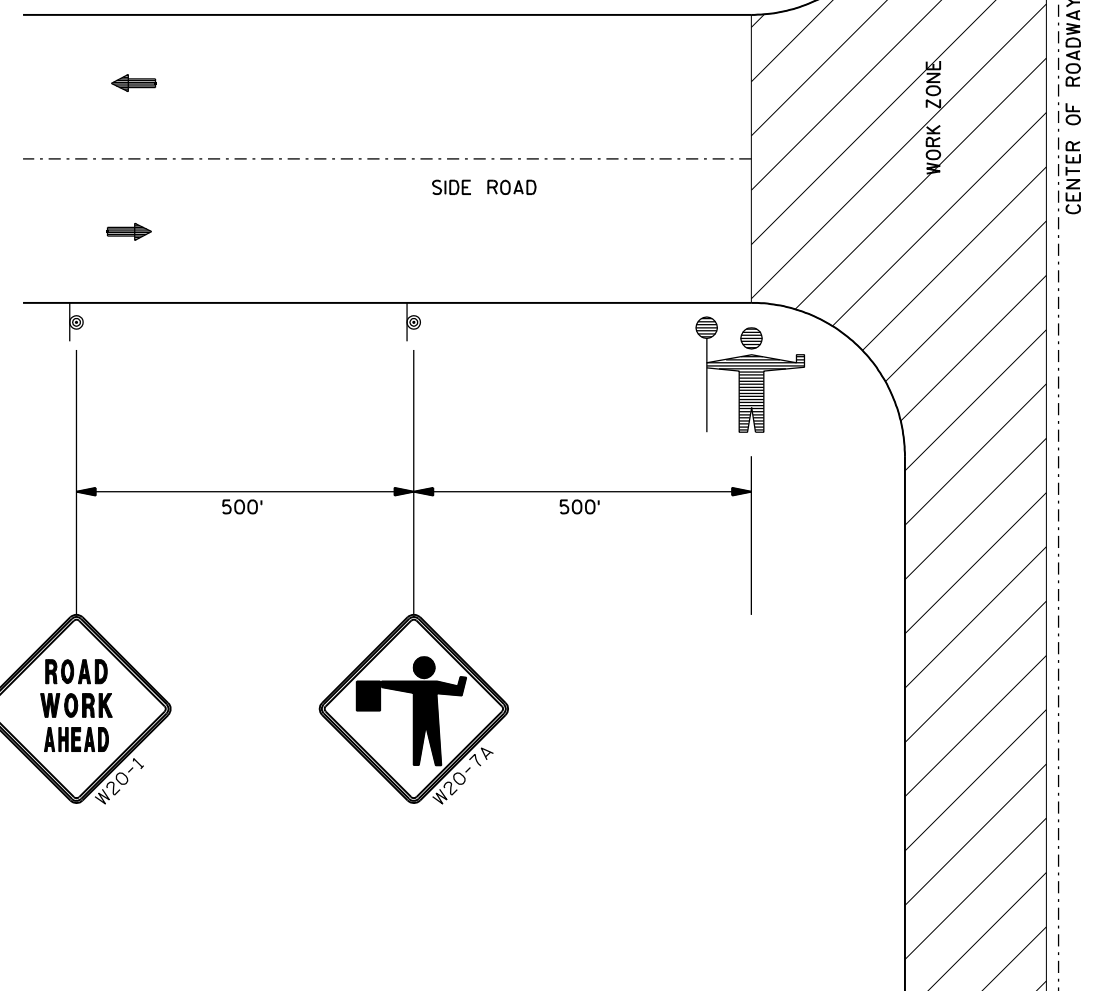
500' MAX OR AT LAST INTERSECTION
WHICHEVER IS CLOSER



LEGEND

-  SIGN ON PERMANENT SUPPORT

TYPICAL SIDEROAD APPROACH WARNING SIGN DETAIL



SIGNS FOR SIDE ROADS DURING FLAGGING OPERATIONS

PRESTAGE 1A**TRAFFIC**

USH 51 REDUCED TO 1-LANE OF TRAFFIC USING THE EXISTING SB LANE. USH 51 TO BE KEPT OPEN TO TRAFFIC WITH THE USE OF FLAGGERS USING WISDOT STANDARD DETAIL DRAWING "TRAFFIC CONTROL FOR LANE CLOSURE (SUITABLE FOR MOVING OPERATIONS)."

CONSTRUCTION

CONSTRUCT THE NB LANE SHIFT AT CULVERT REPLACEMENT LOCATIONS. SEE "LANE SHIFT DETAIL."

PRESTAGE 1B**TRAFFIC**

USH 51 REDUCED TO 1-LANE OF TRAFFIC USING THE NB LANE SHIFT. USH 51 TO BE KEPT OPEN TO TRAFFIC WITH THE USE OF FLAGGERS USING WISDOT STANDARD DETAIL DRAWING "TRAFFIC CONTROL FOR LANE CLOSURE (SUITABLE FOR MOVING OPERATIONS)."

CONSTRUCTION

REPLACE CULVERT PIPE UNDER THE EXISTING SB LANE.
CONSTRUCT THE SB LANE SHIFT AT CULVERT REPLACEMENT LOCATIONS. SEE "LANE SHIFT DETAIL."

PRESTAGE 1C**TRAFFIC**

USH 51 REDUCED TO 1-LANE OF TRAFFIC USING THE SB LANE SHIFT. USH 51 TO BE KEPT OPEN TO TRAFFIC WITH THE USE OF FLAGGERS USING WISDOT STANDARD DETAIL DRAWING "TRAFFIC CONTROL FOR LANE CLOSURE (SUITABLE FOR MOVING OPERATIONS)."

CONSTRUCTION

REPLACE CULVERT PIPE UNDER THE EXISTING NB LANE.
REMOVE THE NB LANE SHIFT AT CULVERT REPLACEMENT LOCATIONS.

PRESTAGE 1D**TRAFFIC**

USH 51 REDUCED TO 1-LANE OF TRAFFIC USING THE NB LANE. USH 51 TO BE KEPT OPEN TO TRAFFIC WITH THE USE OF FLAGGERS USING WISDOT STANDARD DETAIL DRAWING "TRAFFIC CONTROL FOR LANE CLOSURE (SUITABLE FOR MOVING OPERATIONS)."

CONSTRUCTION

REMOVE THE SB LANE SHIFT AT CULVERT REPLACEMENT LOCATIONS.

PRESTAGE 1E**TRAFFIC**

USH 51 REDUCED TO 1-LANE OF TRAFFIC USING THE SB LANE. USH 51 TO BE KEPT OPEN TO TRAFFIC WITH THE USE OF FLAGGERS USING WISDOT STANDARD DETAIL DRAWING "TRAFFIC CONTROL FOR LANE CLOSURE (SUITABLE FOR MOVING OPERATIONS)."

CONSTRUCTION

PLACE ASPHALT TREATED CRUSHED AGGREGATE BASE COURSE AT CULVERT REPLACEMENT LOCATIONS ON THE NB LANE.

PRESTAGE 1F**TRAFFIC**

USH 51 REDUCED TO 1-LANE OF TRAFFIC USING THE NB LANE. USH 51 TO BE KEPT OPEN TO TRAFFIC WITH THE USE OF FLAGGERS USING WISDOT STANDARD DETAIL DRAWING "TRAFFIC CONTROL FOR LANE CLOSURE (SUITABLE FOR MOVING OPERATIONS)."

CONSTRUCTION

PLACE ASPHALT TREATED CRUSHED AGGREGATE BASE COURSE AT CULVERT REPLACEMENT LOCATIONS ON THE SB LANE.

PRESTAGE 1G**TRAFFIC**

USH 51 REDUCED TO 1-LANE OF TRAFFIC USING THE SB LANE. USH 51 TO BE KEPT OPEN TO TRAFFIC WITH THE USE OF FLAGGERS USING WISDOT STANDARD DETAIL DRAWING "TRAFFIC CONTROL FOR LANE CLOSURE (SUITABLE FOR MOVING OPERATIONS)."

CONSTRUCTION

PLACE THE LOWER LAYER OF HMA PAVEMENT AT CULVERT REPLACEMENT LOCATIONS ON THE NB LANE.

PRESTAGE 1H**TRAFFIC**

USH 51 REDUCED TO 1-LANE OF TRAFFIC USING THE NB LANE. USH 51 TO BE KEPT OPEN TO TRAFFIC WITH THE USE OF FLAGGERS USING WISDOT STANDARD DETAIL DRAWING "TRAFFIC CONTROL FOR LANE CLOSURE (SUITABLE FOR MOVING OPERATIONS)."

CONSTRUCTION

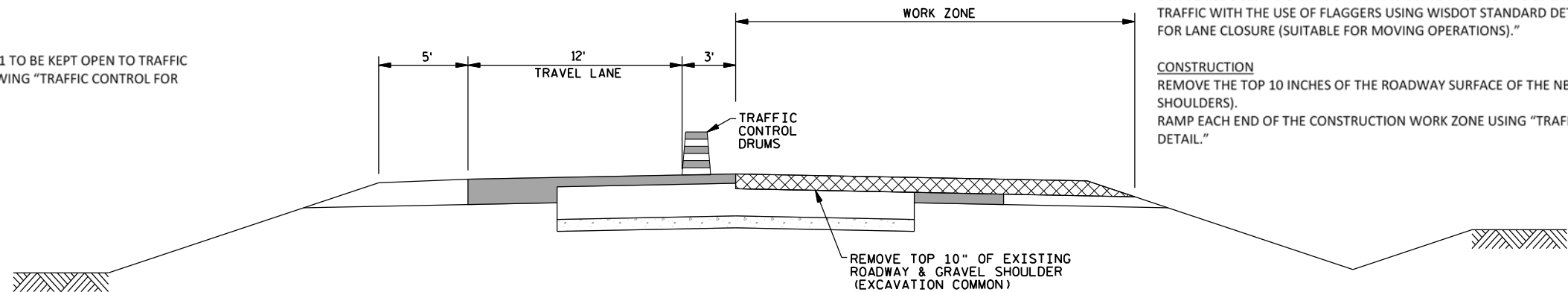
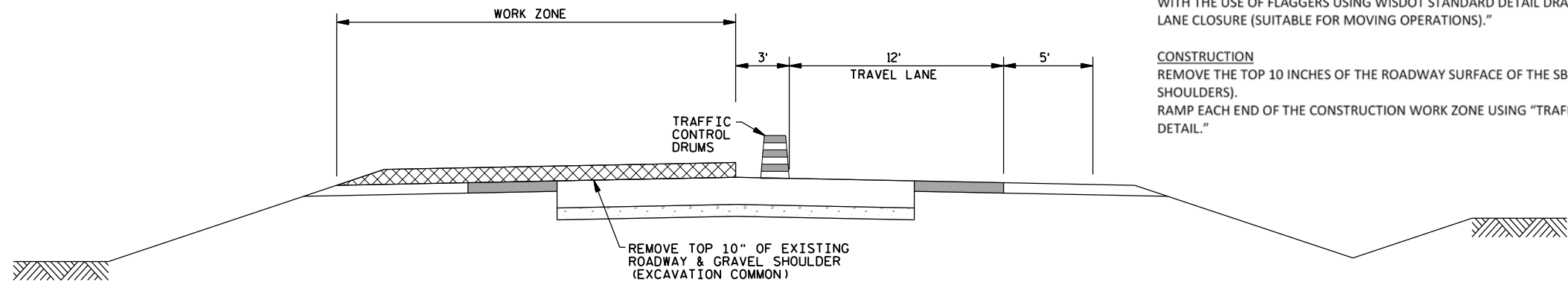
PLACE THE LOWER LAYER OF HMA PAVEMENT AT CULVERT REPLACEMENT LOCATIONS ON THE SB LANE.

STAGE 1A**TRAFFIC**

USH 51 REDUCED TO 1-LANE OF TRAFFIC USING THE EXISTING SB LANE. USH 51 TO BE KEPT OPEN TO TRAFFIC WITH THE USE OF FLAGGERS USING WISDOT STANDARD DETAIL DRAWING "TRAFFIC CONTROL FOR LANE CLOSURE (SUITABLE FOR MOVING OPERATIONS)."

CONSTRUCTION

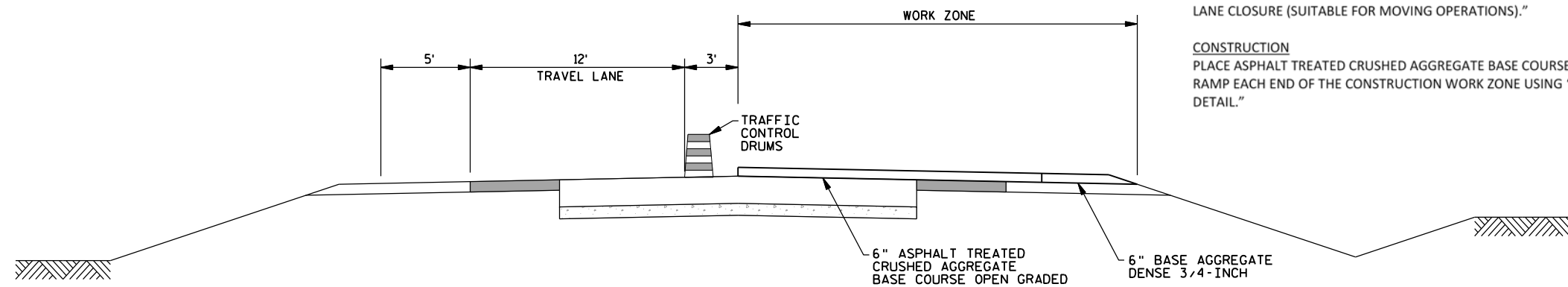
REMOVE THE TOP 10 INCHES OF THE ROADWAY SURFACE OF THE NB LANE (INCLUDING THE SHOULDERS).
RAMP EACH END OF THE CONSTRUCTION WORK ZONE USING "TRAFFIC CONTROL - TEMPORARY RAMPS DETAIL."

**TRAFFIC CONTROL STAGING TYPICAL SECTION****STAGE 1A****TRAFFIC CONTROL STAGING TYPICAL SECTION****STAGE 1B****STAGE 1B****TRAFFIC**

USH 51 REDUCED TO 1-LANE OF TRAFFIC USING THE NB LANE. USH 51 TO BE KEPT OPEN TO TRAFFIC WITH THE USE OF FLAGGERS USING WISDOT STANDARD DETAIL DRAWING "TRAFFIC CONTROL FOR LANE CLOSURE (SUITABLE FOR MOVING OPERATIONS)."

CONSTRUCTION

REMOVE THE TOP 10 INCHES OF THE ROADWAY SURFACE OF THE SB LANE (INCLUDING THE SHOULDERS).
RAMP EACH END OF THE CONSTRUCTION WORK ZONE USING "TRAFFIC CONTROL - TEMPORARY RAMPS DETAIL."

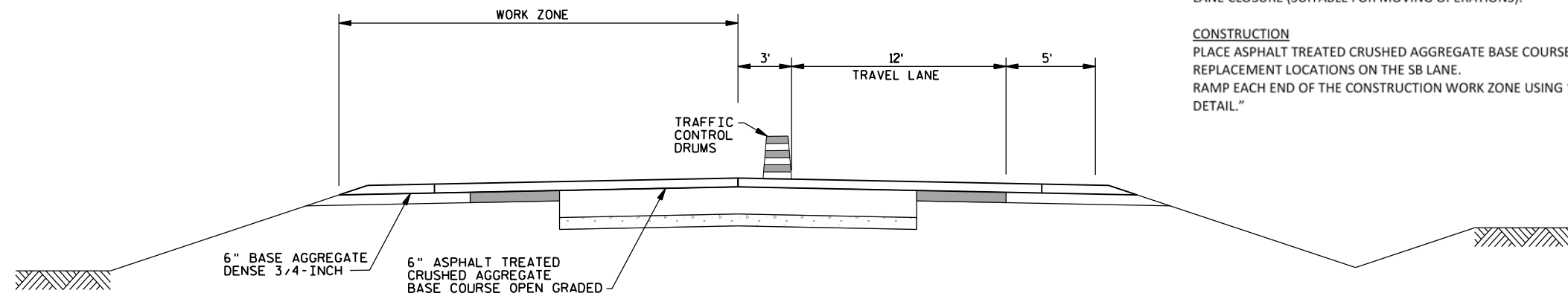
**STAGE 2A**

TRAFFIC
USH 51 REDUCED TO 1-LANE OF TRAFFIC USING THE SB LANE. USH 51 TO BE KEPT OPEN TO TRAFFIC WITH THE USE OF FLAGGERS USING WISDOT STANDARD DETAIL DRAWING "TRAFFIC CONTROL FOR LANE CLOSURE (SUITABLE FOR MOVING OPERATIONS)."

CONSTRUCTION
PLACE ASPHALT TREATED CRUSHED AGGREGATE BASE COURSE OPEN ON THE NB LANE.
RAMP EACH END OF THE CONSTRUCTION WORK ZONE USING "TRAFFIC CONTROL – TEMPORARY RAMPS DETAIL."

TRAFFIC CONTROL STAGING TYPICAL SECTION

STAGE 2A

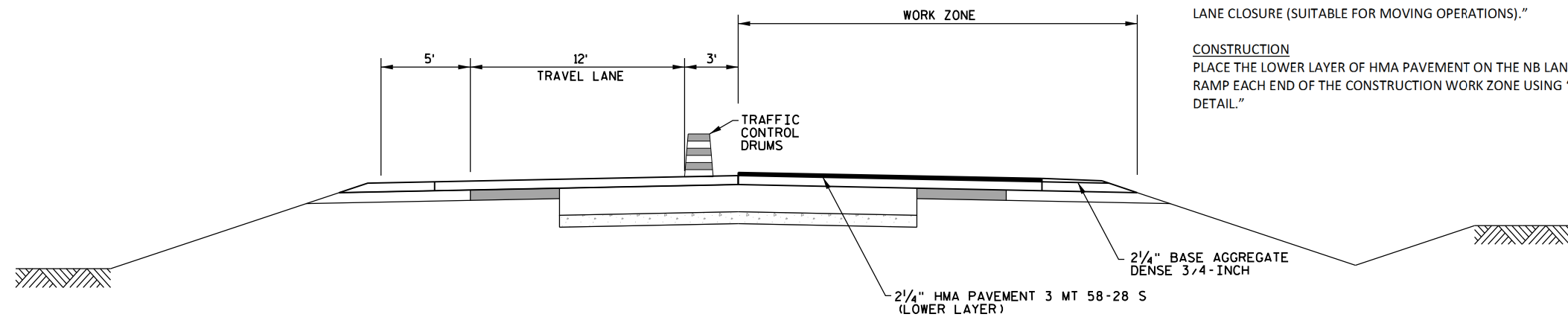
**STAGE 2B**

TRAFFIC
USH 51 REDUCED TO 1-LANE OF TRAFFIC USING THE NB LANE. USH 51 TO BE KEPT OPEN TO TRAFFIC WITH THE USE OF FLAGGERS USING WISDOT STANDARD DETAIL DRAWING "TRAFFIC CONTROL FOR LANE CLOSURE (SUITABLE FOR MOVING OPERATIONS)."

CONSTRUCTION
PLACE ASPHALT TREATED CRUSHED AGGREGATE BASE COURSE OPEN GRADED AT CULVERT REPLACEMENT LOCATIONS ON THE SB LANE.
RAMP EACH END OF THE CONSTRUCTION WORK ZONE USING "TRAFFIC CONTROL – TEMPORARY RAMPS DETAIL."

TRAFFIC CONTROL STAGING TYPICAL SECTION

STAGE 2B



TRAFFIC CONTROL STAGING TYPICAL SECTION
STAGE 3A

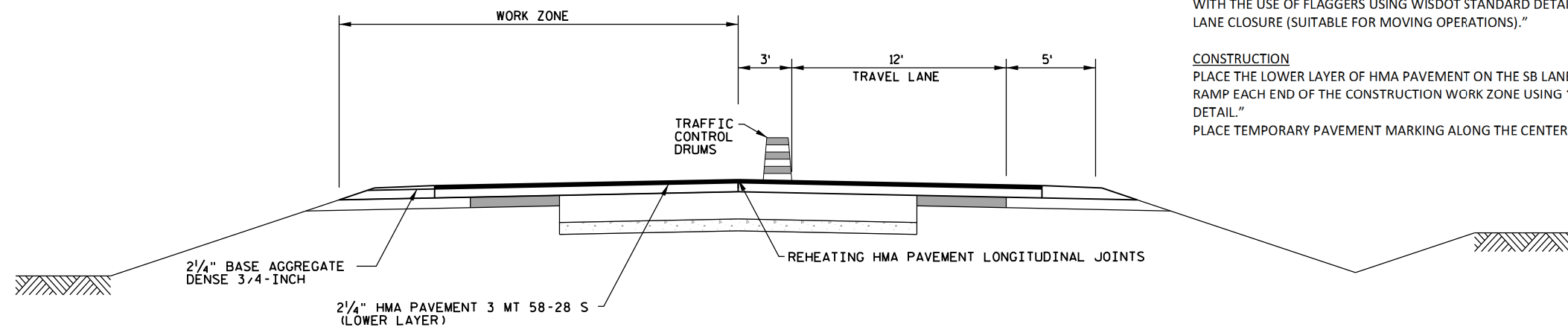
STAGE 3A

TRAFFIC

USH 51 REDUCED TO 1-LANE OF TRAFFIC USING THE SB LANE. USH 51 TO BE KEPT OPEN TO TRAFFIC WITH THE USE OF FLAGGERS USING WISDOT STANDARD DETAIL DRAWING "TRAFFIC CONTROL FOR LANE CLOSURE (SUITABLE FOR MOVING OPERATIONS)."

CONSTRUCTION

PLACE THE LOWER LAYER OF HMA PAVEMENT ON THE NB LANE. RAMP EACH END OF THE CONSTRUCTION WORK ZONE USING "TRAFFIC CONTROL - TEMPORARY RAMP DETAIL."



TRAFFIC CONTROL STAGING TYPICAL SECTION
STAGE 3B

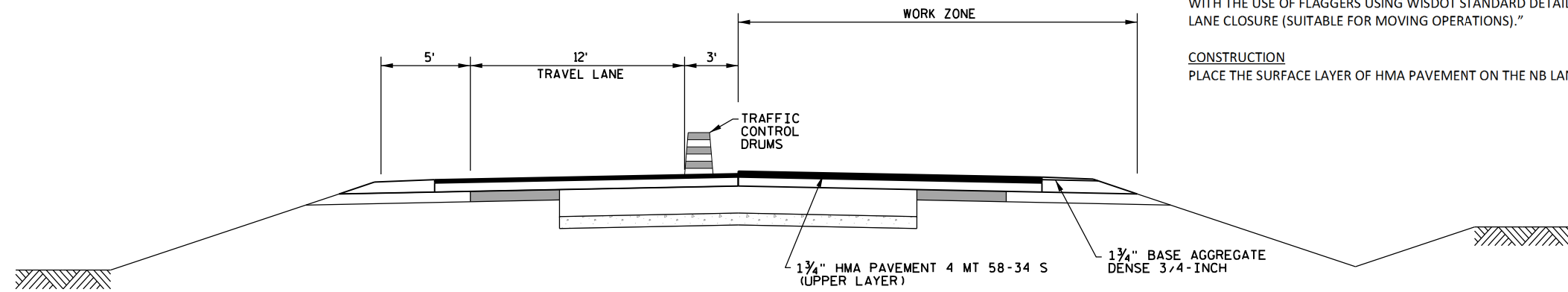
STAGE 3B

TRAFFIC

USH 51 REDUCED TO 1-LANE OF TRAFFIC USING THE NB LANE. USH 51 TO BE KEPT OPEN TO TRAFFIC WITH THE USE OF FLAGGERS USING WISDOT STANDARD DETAIL DRAWING "TRAFFIC CONTROL FOR LANE CLOSURE (SUITABLE FOR MOVING OPERATIONS)."

CONSTRUCTION

PLACE THE LOWER LAYER OF HMA PAVEMENT ON THE SB LANE. RAMP EACH END OF THE CONSTRUCTION WORK ZONE USING "TRAFFIC CONTROL - TEMPORARY RAMP DETAIL." PLACE TEMPORARY PAVEMENT MARKING ALONG THE CENTERLINE.



TRAFFIC CONTROL STAGING TYPICAL SECTION

STAGE 4A

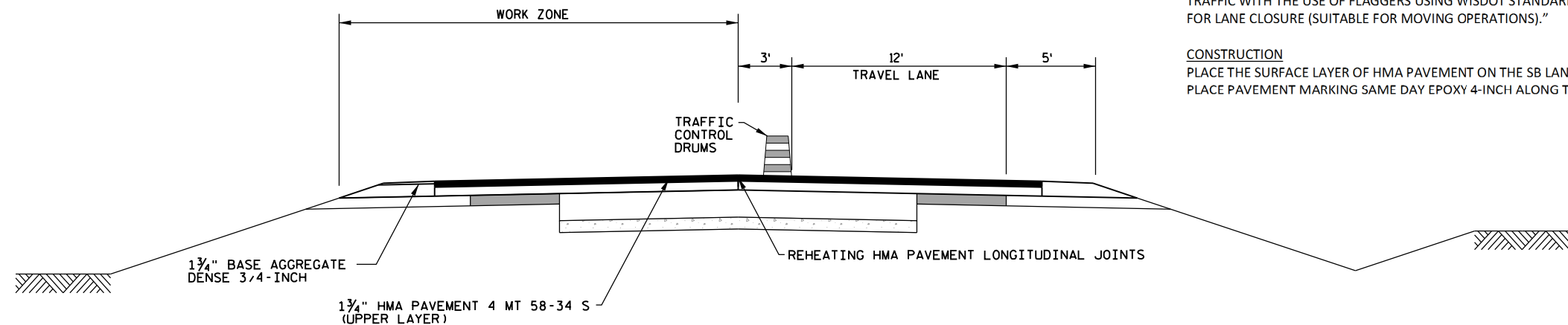
STAGE 4A

TRAFFIC

USH 51 REDUCED TO 1-LANE OF TRAFFIC USING THE SB LANE. USH 51 TO BE KEPT OPEN TO TRAFFIC WITH THE USE OF FLAGGERS USING WISDOT STANDARD DETAIL DRAWING "TRAFFIC CONTROL FOR LANE CLOSURE (SUITABLE FOR MOVING OPERATIONS)."

CONSTRUCTION

PLACE THE SURFACE LAYER OF HMA PAVEMENT ON THE NB LANE.



TRAFFIC CONTROL STAGING TYPICAL SECTION

STAGE 4B

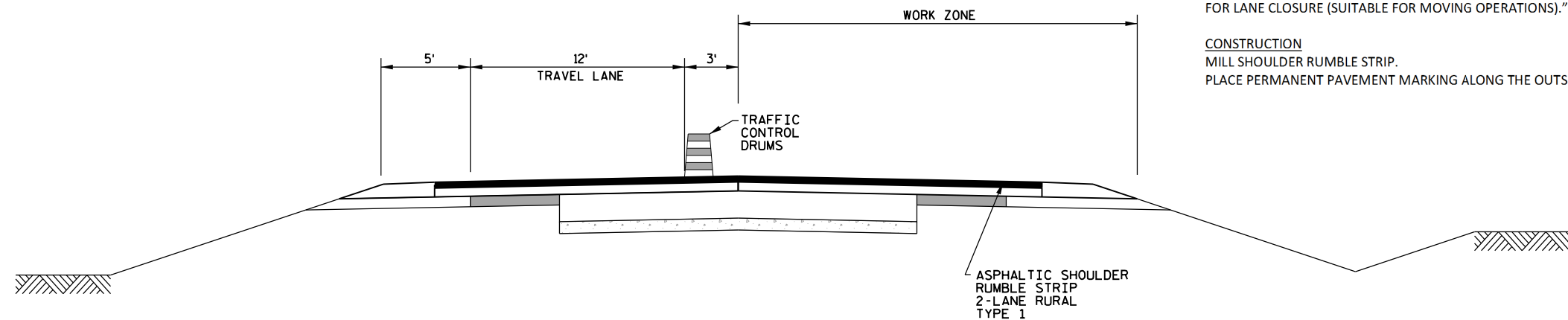
STAGE 4B

TRAFFIC

USH 51 REDUCED TO 1-LANE OF TRAFFIC USING THE FINISHED NB LANE. USH 51 TO BE KEPT OPEN TO TRAFFIC WITH THE USE OF FLAGGERS USING WISDOT STANDARD DETAIL DRAWING "TRAFFIC CONTROL FOR LANE CLOSURE (SUITABLE FOR MOVING OPERATIONS)."

CONSTRUCTION

PLACE THE SURFACE LAYER OF HMA PAVEMENT ON THE SB LANE.
PLACE PAVEMENT MARKING SAME DAY EPOXY 4-INCH ALONG THE CENTERLINE.



TRAFFIC CONTROL STAGING TYPICAL SECTION
STAGE 5A

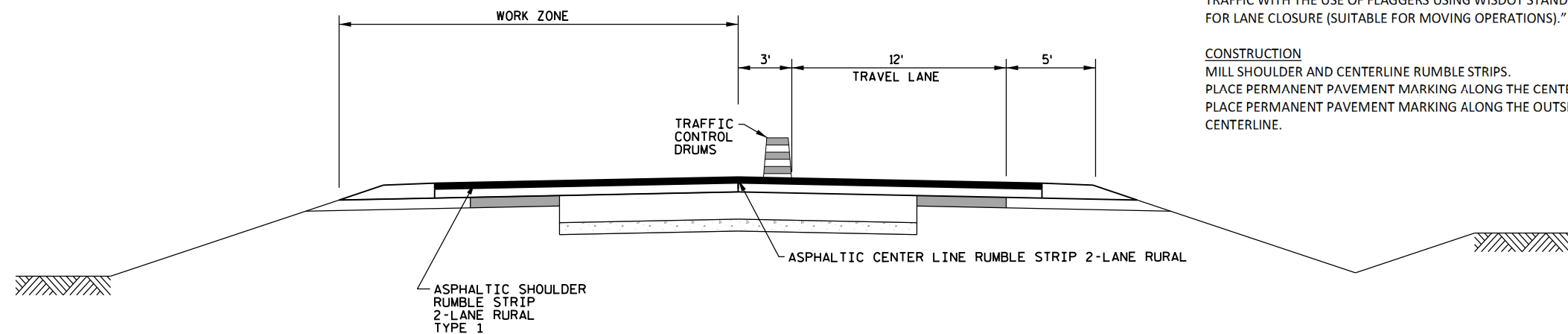
STAGE 5A

TRAFFIC

USH 51 REDUCED TO 1-LANE OF TRAFFIC USING THE FINISHED SB LANE. USH 51 TO BE KEPT OPEN TO TRAFFIC WITH THE USE OF FLAGGERS USING WISDOT STANDARD DETAIL DRAWING "TRAFFIC CONTROL FOR LANE CLOSURE (SUITABLE FOR MOVING OPERATIONS)."

CONSTRUCTION

MILL SHOULDER RUMBLE STRIP.
PLACE PERMANENT PAVEMENT MARKING ALONG THE OUTSIDE EDGE OF THE NB LANE.



TRAFFIC CONTROL STAGING TYPICAL SECTION
STAGE 5B

STAGE 5B

TRAFFIC

USH 51 REDUCED TO 1-LANE OF TRAFFIC USING THE FINISHED NB LANE. USH 51 TO BE KEPT OPEN TO TRAFFIC WITH THE USE OF FLAGGERS USING WISDOT STANDARD DETAIL DRAWING "TRAFFIC CONTROL FOR LANE CLOSURE (SUITABLE FOR MOVING OPERATIONS)."

CONSTRUCTION

MILL SHOULDER AND CENTERLINE RUMBLE STRIPS.
PLACE PERMANENT PAVEMENT MARKING ALONG THE CENTERLINE.
PLACE PERMANENT PAVEMENT MARKING ALONG THE OUTSIDE EDGE OF THE SB LANE AND THE CENTERLINE.

DATE 19AUG16		E S T I M A T E O F Q U A N T I T I E S			
LINE				1175-20-70	
NUMBER	ITEM	ITEM DESCRIPTION	UNIT	TOTAL	QUANTITY
0010	203.0100	Removing Small Pipe Culverts	EACH	2.000	2.000
0020	205.0100	Excavation Common	CY	12,600.000	12,600.000
0030	208.0100	Borrow	CY	211.000	211.000
0040	209.0100	Backfill Granular	CY	620.000	620.000
0050	213.0100	Finishing Roadway (project) 01. 1175-20-70	EACH	1.000	1.000
0060	305.0110	Base Aggregate Dense 3/4-Inch	TON	6,850.000	6,850.000
0070	305.0120	Base Aggregate Dense 1 1/4-Inch	TON	550.000	550.000
0080	310.0110	Base Aggregate Open-Graded	TON	195.000	195.000
0090	440.4410	Incentive IRI Ride	DOL	5,110.000	5,110.000
0100	455.0605	Tack Coat	GAL	2,630.000	2,630.000
0110	460.2000	Incentive Density HMA Pavement	DOL	7,340.000	7,340.000
0120	460.4110.S	Reheating HMA Pavement Longitudinal Joints	LF	13,500.000	13,500.000
0130	460.6223	HMA Pavement 3 MT 58-28 S	TON	6,634.000	6,634.000
0140	460.6244	HMA Pavement 4 MT 58-34 S	TON	5,109.000	5,109.000
0150	465.0120	Asphaltic Surface Driveways and Field Entrances	TON	15.000	15.000
0160	465.0425	Asphaltic Shoulder Rumble Strips 2-Lane Rural	LF	20,850.000	20,850.000
0170	465.0475	Asphalt Center Line Rumble Strips 2-Lane Rural	LF	12,700.000	12,700.000
0180	522.0130	Culvert Pipe Reinforced Concrete Class III 30-Inch	LF	66.000	66.000
0190	522.0136	Culvert Pipe Reinforced Concrete Class III 36-Inch	LF	68.000	68.000
0200	522.1030	Apron Endwalls for Culvert Pipe Reinforced Concrete 30-Inch	EACH	2.000	2.000
0210	522.1036	Apron Endwalls for Culvert Pipe Reinforced Concrete 36-Inch	EACH	2.000	2.000
0220	612.0404	Pipe Underdrain Wrapped 4-Inch	LF	2,600.000	2,600.000
0230	612.0804	Apron Endwalls for Underdrain Reinforced Concrete 4-Inch	EACH	22.000	22.000
0240	618.0100	Maintenance And Repair of Haul Roads (project) 01. 1175-20-70	EACH	1.000	1.000
0250	619.1000	Mobilization	EACH	1.000	1.000
0260	624.0100	Water	MGAL	74.000	74.000
0270	625.0100	Topsoil	SY	3,100.000	3,100.000
0280	628.1504	Silt Fence	LF	6,910.000	6,910.000
0290	628.1520	Silt Fence Maintenance	LF	6,910.000	6,910.000
0300	628.1905	Mobilizations Erosion Control	EACH	5.000	5.000
0310	628.1910	Mobilizations Emergency Erosion Control	EACH	2.000	2.000
0320	628.2008	Erosion Mat Urban Class I Type B	SY	3,100.000	3,100.000
0330	628.2027	Erosion Mat Class II Type C	SY	60.000	60.000
0340	628.7504	Temporary Ditch Checks	LF	120.000	120.000
0350	628.7555	Culvert Pipe Checks	EACH	69.000	69.000
0360	629.0210	Fertilizer Type B	CWT	2.000	2.000
0370	630.0130	Seeding Mixture No. 30	LB	55.000	55.000
0380	630.0160	Seeding Mixture No. 60	LB	4.000	4.000
0390	633.5200	Markers Culvert End	EACH	4.000	4.000
0400	634.0616	Posts Wood 4x6-Inch X 16-FT	EACH	18.000	18.000
0410	634.0618	Posts Wood 4x6-Inch X 18-FT	EACH	2.000	2.000
0420	637.2210	Signs Type II Reflective H	SF	81.860	81.860
0430	637.2230	Signs Type II Reflective F	SF	36.000	36.000
0440	638.2602	Removing Signs Type II	EACH	17.000	17.000
0450	638.3000	Removing Small Sign Supports	EACH	20.000	20.000

DATE 19AUG16		E S T I M A T E O F Q U A N T I T I E S			
LINE		1175-20-70			
NUMBER	ITEM	ITEM DESCRIPTION	UNIT	TOTAL	QUANTITY
0460	642.5001	Field Office Type B	EACH	1.000	1.000
0470	643.0100	Traffic Control (project) 01. 1175-20-70	EACH	1.000	1.000
0480	643.0300	Traffic Control Drums	DAY	7,290.000	7,290.000
0490	643.0900	Traffic Control Signs	DAY	662.000	662.000
0500	643.1050	Traffic Control Signs PCMS	DAY	28.000	28.000
0510	646.0106	Pavement Marking Epoxy 4-Inch	LF	36,950.000	36,950.000
0520	646.0406	Pavement Marking Same Day Epoxy 4-Inch	LF	10,200.000	10,200.000
0530	648.0100	Locating No-Passing Zones	MI	2.550	2.550
0540	649.0402	Temporary Pavement Marking Paint 4-Inch	LF	20,400.000	20,400.000
0550	650.6000	Construction Staking Pipe Culverts	EACH	2.000	2.000
0560	650.8000	Construction Staking Resurfacing Reference	LF	13,480.000	13,480.000
0570	650.9910	Construction Staking Supplemental Control (project) 01. 1175-20-70	LS	1.000	1.000
0580	650.9920	Construction Staking Slope Stakes	LF	1,600.000	1,600.000
0590	690.0150	Sawing Asphalt	LF	180.000	180.000
0600	690.0250	Sawing Concrete	LF	120.000	120.000
0610	ASP.1T0A	On-the-Job Training Apprentice at \$5.00/HR	HRS	2,000.000	2,000.000
0620	ASP.1T0G	On-the-Job Training Graduate at \$5.00/HR	HRS	1,260.000	1,260.000
0630	SPV.0060	Special 01. Culvert Pipe Transitions	EACH	2.000	2.000
0640	SPV.0060	Special 02. Lane Shift	EACH	4.000	4.000
0650	SPV.0195	Special 01. Asphalt Treated Crushed Aggregate Base Course Open Graded	TON	17,200.000	17,200.000

3

3

REMOVING SMALL PIPE CULVERTS		
203.0100		
STATION	EACH	REMARKS
230+94	1	36-INCH RCP
259+14	1	36-INCH RCP
TOTAL	2	

BACKFILL GRANULAR	
209.0100	
STATION	CY
UNDISTRIBUTED	620
TOTAL	620

NOTE: NATIVE MATERIAL PROPOSED AT
CULVERT PIPE LOCATIONS. BACKFILL
GRANULAR TO BE USED IF SPECIFIED BY THE
FIELD ENGINEER.

FINISHING ROADWAY (PROJECT)	
213.0100	
PROJECT	EACH
PROJECT 1175-20-70	1
TOTAL	1

EARTHWORK SUMMARY											
DIVISION	STATION	LOCATION	205.0100 COMMON EXCAVATION	SALVAGED/ UNUSABLE PAVEMENT MATERIAL	AVAILABLE MATERIAL (2)	UNEXPANDED FILL	EXPANDED FILL (3)	MASS ORDINATE +/- (4)	WASTE	208.0100 BORROW	COMMENT:
			CUT (1)				FACTOR 1.30				
1	139+50 - 274+25	USH 51	12,600	12,600	0	0	0	0	0		
SUBTOTAL			12,600	12,600	0	0	0	0	0		
2	151+00 - 154+00	USH 51	0	0	0	48	62	-62	0		
	221+00 - 226+00	USH 51	0	0	0	115	149	-149	0		
SUBTOTAL			0	0	0	163	211	-211	0		
TOTAL			12,600	12,600	0	163	211	-211	0	211	

- 1) SALVAGED/UNSUALE PAVEMENT MATERIAL IS INCLUDED IN CUT.
- 2) AVAILABLE MATERIAL = CUT - SALVAGED/UNUSUALE PAVEMENT MATERIAL.
- 3) EXPANDED FILL, FACTOR = 1.30
EXPANDED FILL = UNEXPANDED FILL * FILL FACTOR
- 4) THE MASS ORDINATE + OR - QTY CALCULATED FOR THE DIVISION.
PLUS QUANTITY INDICATES AN EXCESS OF MATERIAL WITHIN THE DIVISION.
MINUS INDICATES A SHORTAGE OF MATERIAL WITHIN THE DIVISION.

BASE AGGREGATE DENSE				HMA ITEMS								ASHPALTIC CENTER LINE RUMBLE STRIP 2-LANE RURAL		ASHPALTIC SHOULDER RUMBLE STRIP 2-LANE RURAL		
305.0110 3/4-INCH				455.0605				460.6223				465.0475		465.0425		
305.0120 1 1/4-INCH				TACK COAT				HMA PAVEMENT 3 MT 58-28 S				LF		TYPE 1		
STATION	LOCATION	TON	TON	STATION	LOCATION	GAL	TON	STATION	LOCATION	TON	TON	STATION	LOCATION	LF	LF	LF
139+50 - 180+39	LT	1,050	-	139+50 - 274+25	-	2,600	6,448	139+50 - 179+09	LT	3,950	1,380	139+50 - 156+69	LT	1,380		
139+50 - 235+68	RT	2,400	-	230+94	CULVERT 49	15	93	183+09 - 234+51	RT	5,150	900	139+50 - 150+67	RT	900		
150+98	RT	2	-	259+14	CULVERT 56	15	93	238+51 - 274+25	RT	3,600	2,350	151+29 - 180+63	RT	2,350		
157+00	LT	2	-	VARIOUS	DRIVEWAYS	-	-	TOTAL	RT	12,700	1,850	157+33 - 180+41	LT	1,850		
180+95	RT	2	-								2,160	181+26 - 208+26	RT	2,160		
181+94 - 274+25	LT	2,300	-								2,870	181+96 - 217+78	LT	2,870		
208+55	RT	2	-								1,370	208+87 - 225+91	RT	1,370		
218+12	LT	4	-								2,000	218+47 - 243+47	LT	2,000		
226+26	RT	2	-								730	226+60 - 235+64	RT	730		
230+94	CULVERT 49	18	130								1,270	237+21 - 253+02	RT	1,270		
237+15 - 274+25	RT	950	-								2,080	244+13 - 270+05	LT	2,080		
243+80	LT	2	-								1,480	253+72 - 272+10	RT	1,480		
253+36	RT	2	-								280	270+85 - 274+25	LT	280		
259+14	CULVERT 56	15	120								120	272+80 - 274+25	RT	120		
270+44	LT	4	-													
VARIUOS	TRAFFIC CONTROL RAMPS	-	300													
VARIOUS	DRIVEWAYS	95	-													
TOTAL		6,850	550													
				CULVERT PIPE ITEMS								UNLESS OTHERWISE NOTED ALL ITEMS IN CATEGORY 0010				
				STATION	CULVERT	NUMBER	INLET	DISCHARGE	PIPE	CLASS III 30-INCH	CLASS III 36-INCH	CLASS III 30-INCH	CLASS III 36-INCH	EACH	EACH	
				230+94	49		1656.10	1655.49	0.90%	-	68	-	2	2	1	
				259+14	56		1665.33	1665.33	0.00%	66	-	2	-	2	1	
				TOTAL						66	68	2	2	4	2	
PROJECT NUMBER: 1175-20-70				HWY: USH 51				COUNTY: IRON				MISCELLANEOUS QUANTITIES				SHEET
																E

3

UNDERDRAIN ITEMS				
		612.0404	310.0110	612.0804
		PIPE UNDERDRAIN/ WRAPPED 4-INCH	BASE AGGREGATE OPEN GRADED	APRON ENDWALLS FOR UNDERDRAIN REINFORCED CONCRETE 4-INCH
STATION	LOCATION	LF	TON	EACH
142+50 - 144+50	LT	200	15	2
142+50 - 144+50	RT	200	15	2
184+00 - 186+00	LT	200	15	2
184+00 - 186+00	RT	200	15	2
203+75 - 205+75	LT	200	15	2
203+75 - 205+75	RT	200	15	2
220+55 - 226+47	LT	600	45	2
235+05 - 237+05	LT	200	15	2
235+05 - 237+05	RT	200	15	2
258+90 - 260+90	LT	200	15	2
258+90 - 260+90	RT	200	15	2
TOTAL		2,600	195	22

MOBILIZATION	
	619.1000
PROJECT	EACH
PROJECT 1175-20-70	1
TOTAL	1

LANDSCAPING ITEMS						
		625.0100	628.2008	628.2027	629.0210	630.0130
		TOPSOIL	EROSION MAT URBAN CLASS I TYPE B	EROSION MAT CLASS II TYPE C	FERTILIZER TYPE B	SEEDING MIXTURE NO 30
STATION	LOCATION	SY	SY	SY	CWT	LB
151+00 - 154+00	LT	210	210	-	0.1	4
151+14 - 154+00	RT	290	290	-	0.2	5
230+94	CULVERT 49	170	170	15	0.1	3
259+14	CULVERT 56	180	180	20	0.1	3
UNDISTRIBUTED	-	2,250	2,250	25	1.4	40
TOTAL		3,100	3,100	60	2	55

		630.0160
		SEEDING MIXTURE NO 60
STATION	LOCATION	LB
151+00 - 154+00	LT	-
151+14 - 154+00	RT	-
230+94	CULVERT 49	1
259+14	CULVERT 56	2
UNDISTRIBUTED	-	1
TOTAL		4

3

SILT FENCE			
		628.1504	628.1520
		SILT FENCE	SILT FENCE MAINTENANCE
STATION	LOCATION	LF	LF
150+89 - 154+10	LT	320	320
151+13 - 154+12	RT	300	300
183+42 - 187+84	LT	445	445
183+47 - 184+92	RT	145	145
201+55 - 208+49	RT	710	710
204+43 - 214+10	LT	965	965
208+63 - 212+68	RT	420	420
230+00 - 230+91	LT	100	100
230+96 - 232+66	LT	175	175
233+68 - 235+75	LT	205	205
234+07 - 235+20	RT	115	115
241+02 - 243+28	LT	225	225
255+59 - 259+12	LT	355	355
258+57 - 259+14	RT	60	60
259+15 - 267+71	LT	855	855
259+16 - 261+69	RT	255	255
UNDISTRIBUTED	-	1,260	1,260
TOTAL		6,910	6,910

TEMPORARY DITCH CHECK		
		628.7504
STATION	LOCATION	LF
150+65	LT	7.5
154+24	LT	7.5
154+27	RT	7.5
187+85	LT	7.5
204+43	LT	7.5
220+96	RT	7.5
220+97	LT	7.5
225+22	LT	7.5
232+66	LT	7.5
241+02	LT	7.5
243+28	LT	7.5
255+60	LT	7.5
258+57	RT	7.5
268+05	LT	7.5
UNDISTRUBUTED	-	15
TOTAL		120

WATER			
		624.0100	
STATION	LOCATION	MGAL	REMARKS
139+50 - 274+25	USH 51	74	BASE AGG. COMPACTION
TOTAL		74	

MOBILIZATIONS EROSION CONTROL		
		628.1905
		MOBILIZATIONS EROSION CONTROL
PROJECT	EACH	628.1910 MOBILIZATIONS EMERGENCY EROSION CONTROL
PROJECT 1175-20-70	5	2
TOTAL	5	2

CULVERT PIPE CHECKS		
		628.7555
STATION	LOCATION	EACH
143+93	LT	4
150+65	LT	4
154+24	LT	4
154+27	RT	4
170+25	LT	4
187+20	LT	4
204+78	LT	4
220+96	RT	4
220+97	LT	4
225+22	LT	4
230+93	LT	4
234+63	LT	4
248+62	LT	4
259+15	RT	4
263+39	LT	4
UNDISTRIBUTED	-	9
TOTAL		69

EXISTING SIGNING				
		638.2602	638.3000	
		REMOVING SIGNS TYPE II	REMOVING SMALL SIGN SUPPORTS	
STATION	LOCATION	EACH	EACH	REMARKS
147+37	RT	1	1	W14-3
174+13	RT	1	2	"MOOSE LAKE RD"
180+47	LT	1	1	I55-56
108+88	LT	1	1	R1-1
181+52	LT	1	1	W14-3
186+01	LT	2	1	M1-85
188+03	LT	1	2	"MOOSE LAKE RD"
208+98	RT	1	1	W14-3
209+69	LT	1	1	W14-3
220+42	RT	1	2	"STREMSKI RD"
236+08	RT	1	1	W14-3
236+68	RT	1	1	R1-1
243+03	LT	1	2	"STREMSKI RD"
267+12	LT	1	1	W14-3
273+05	RT	2	2	"S ISLAND LAKE RD/SOUTH END RD"
TOTAL		17	20	

UNLESS OTHERWISE NOTED
ALL ITEMS IN CATEGORY 0010

3

FIELD OFFICE TYPE B	
PROJECT	642.5001 EACH
PROJECT 1175-20-70	1
TOTAL	1

TRAFFIC CONTROL (PROJECT)	
PROJECT	643.0100 EACH
PROJECT 1175-20-70	1
TOTAL	1

TRAFFIC CONTROL ITEMS								
		643.0300		643.0900		643.1050		SPV.0060.02
		TRAFFIC CONTROL		TRAFFIC CONTROL		TRAFFIC CONTROL		
		DRUMS		SIGNS		SIGNS PCMS		LANE SHIFT
STATION	DAYS	EACH	DAYS	EACH	DAYS	EACH	DAYS	EACH
SITE 1	14	-	-	-	-	1	14	-
139+50	7	-	-	1	7	-	-	-
139+50 - 274+25	54	135	7,290	12	648	-	-	-
230+94	-	-	-	-	-	-	-	2
259+14	-	-	-	-	-	-	-	2
274+25	7	-	-	1	7	-	-	-
SITE 2	14	-	-	-	-	1	14	-
TOTAL			7,290		662		28	4

PAVEMENT MARKING EPOXY

		646.0106		646.0406	
		4-INCH		SAME DAY 4-INCH	
		WHITE	DASHED WHITE	YELLOW ¹	DASHED YELLOW ¹
			3-FOOT LINE		12.5-FOOT LINE
			9-FOOT SKIP		37.5-FOOT SKIP
STATION	LOCATION	LF	LF	LF	LF
139+50 -274+25	CENTER LINE	-	-	-	3,400
139+50 - 147+36	CENTER LINE	-	-	790	-
181+53 - 208+98	CENTER LINE	-	-	2,750	-
209+69 - 222+42	CENTER LINE	-	-	1,280	-
223+56 - 236+10	CENTER LINE	-	-	1,260	-
267+12 - 274+25	CENTER LINE	-	-	720	-
139+50 - 180+69	LT	4,120	-	-	-
139+50 - 235+65	RT	9,620	-	-	-
181+52 - 181+96	LT	-	10	-	-
181+96 - 274+25	LT	9,240	-	-	-
235+65 - 237+13	RT	-	10	-	-
236+77 - 274+25	RT	3,750	-	-	-
SUBTOTAL		26,730	20	6,800	3,400
TOTAL			36,950		10,200

NOTE 1: APPLIED AFTER ASPHALT CENTER LINE RUMBLE STRIPS 2-LANE RURAL.

3

LOCATING NO-PASSING ZONES

STATION	648.0100 MI
139+50 - 274+25	2.55
TOTAL	2.55

TEMPORARY PAVEMENT MARKING 4-INCH

		649.0402	
		YELLOW	DASHED YELLOW
			12.5-FOOT LINE
			37.5-FOOT SKIP
STAGE 3B	STATION	LOCATION	LF
	139+50 - 274+25	-	-
	139+50 -274+25	CENTER LINE	-
	139+50 - 147+36	CENTER LINE	790
	181+53 - 208+98	CENTER LINE	2,750
	209+69 - 222+42	CENTER LINE	1,280
	223+56 - 236+10	CENTER LINE	1,260
	267+12 - 274+25	CENTER LINE	720
	SUBTOTAL		6,800
			3,400
STAGE 4B	STATION	LOCATION	LF
	139+50 - 274+25	-	-
	139+50 -274+25	CENTER LINE	-
	139+50 - 147+36	CENTER LINE	790
	181+53 - 208+98	CENTER LINE	2,750
	209+69 - 222+42	CENTER LINE	1,280
	223+56 - 236+10	CENTER LINE	1,260
	267+12 - 274+25	CENTER LINE	720
	SUBTOTAL		6,800
			3,400
	TOTAL		20,400

CONSTRUCTION STAKING

		650.6000	650.8000	650.9910	650.9920
		PIPE	RESURFACING	SUPPLEMENTAL	SLOPE
		CULVERTS	REFERENCE	CONTROL	STAKES
STATION	LOCATION	EACH	LF	LS	LF
PROJECT 1175-20-70	-	-	-	1	-
139+50 - 274+25	-	-	13,480	-	-
151+00 - 154+00	LT	-	-	-	300
151+00 - 154+00	RT	-	-	-	300
221+00 - 226+00	LT	-	-	-	500
221+00 - 226+00	RT	-	-	-	500
230+94	CULVERT 49	1	-	-	-
259+14	CULVER 56	1	-	-	-
TOTAL		2	13,480	1	1,600

SAWING ASPHALT

STATION	690.0150 LF
139+50	30
230+40	30
231+48	30
258+60	30
259+68	30
274+25	30
TOTAL	180

SAWING CONCRETE

STATION	690.0250 LF
139+50	20
230+40	20
231+48	20
258+60	20
259+68	20
274+25	20
TOTAL	120

UNLESS OTHERWISE NOTED
ALL ITEMS IN CATEGORY 0010

PROJECT NUMBER: 1175-20-70

HWY:USH 51

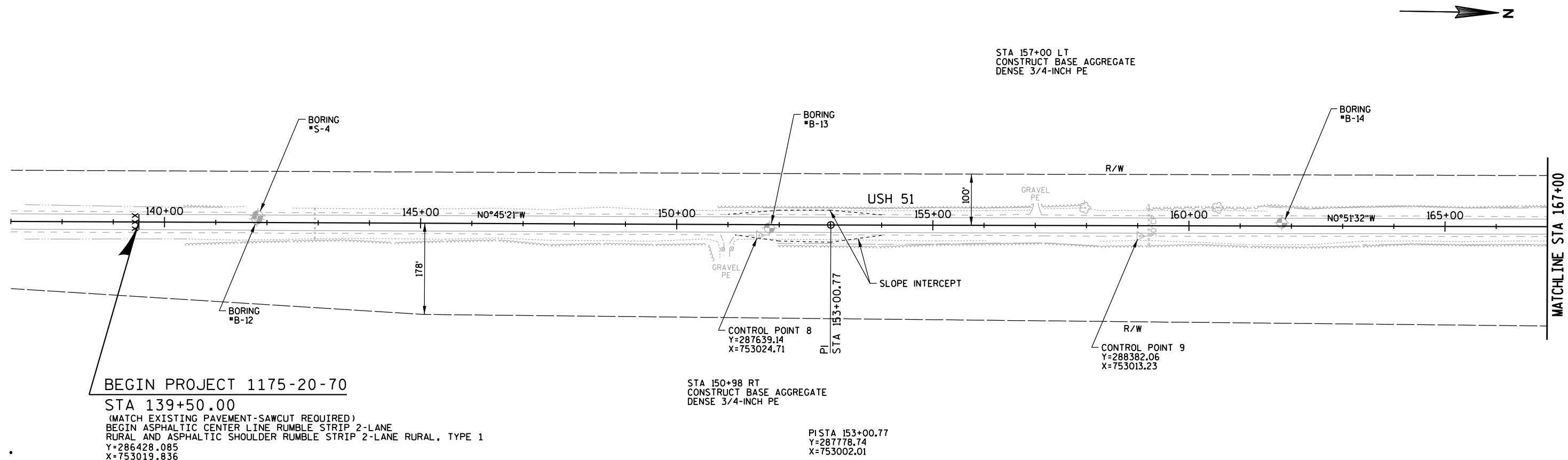
COUNTY:IRON

MISCELLANEOUS QUANTITIES

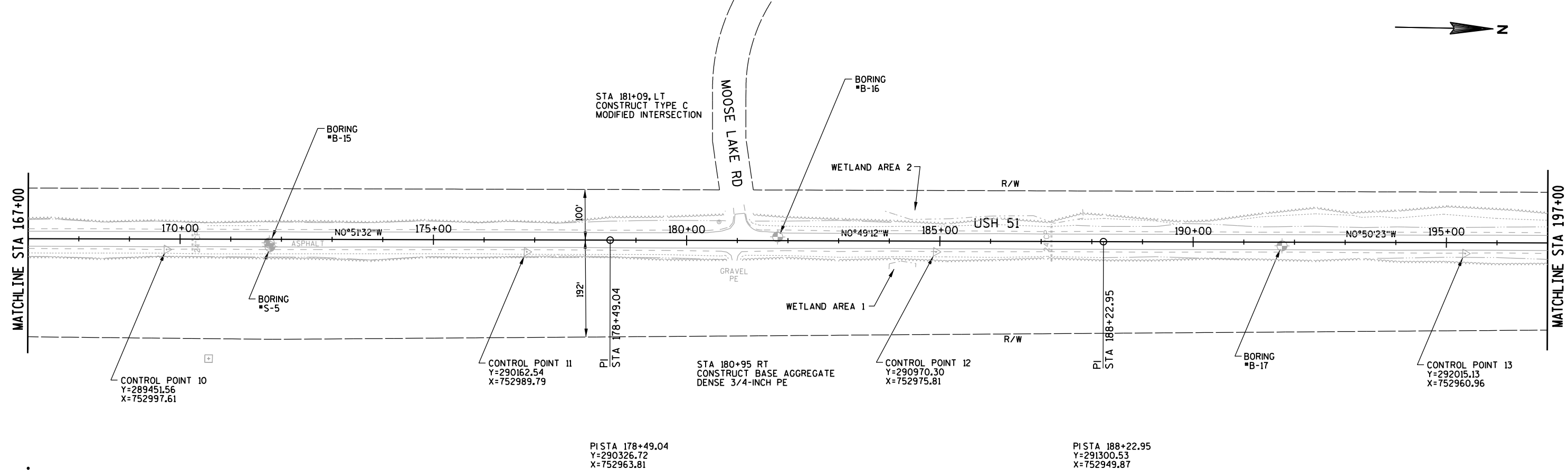
SHEET

E

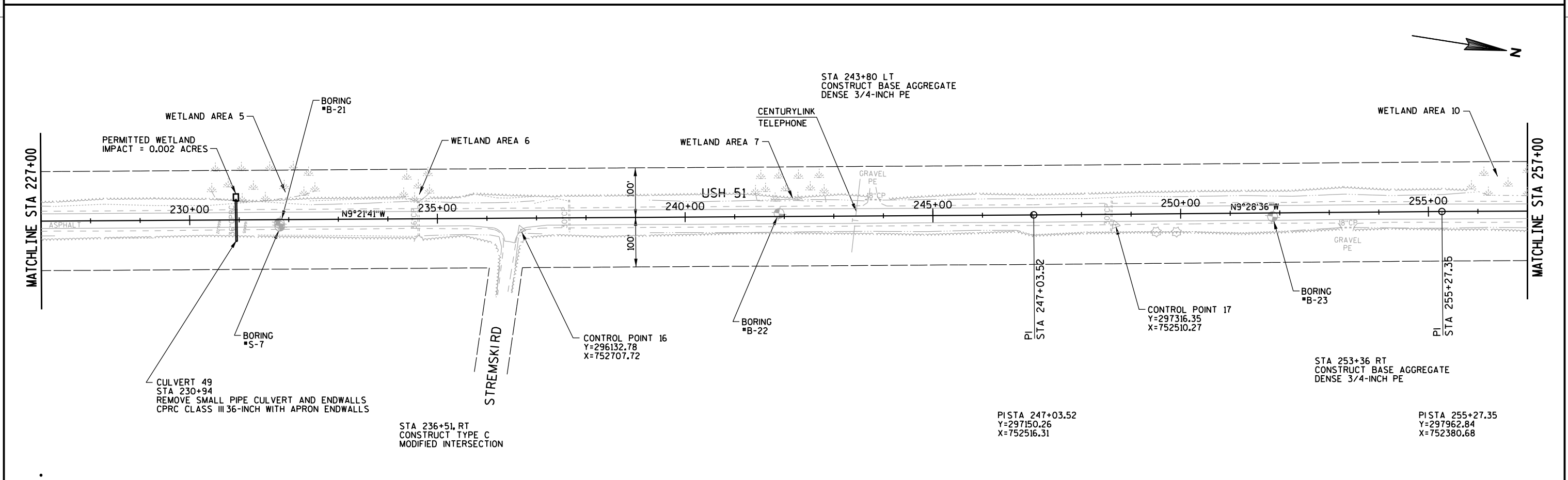
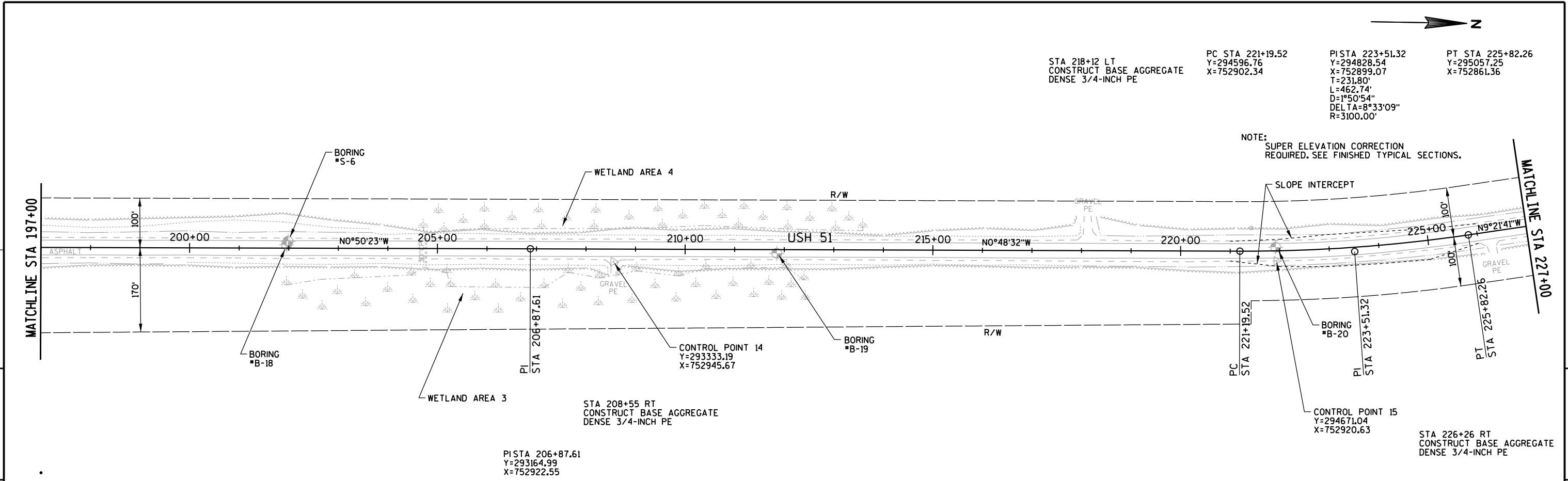
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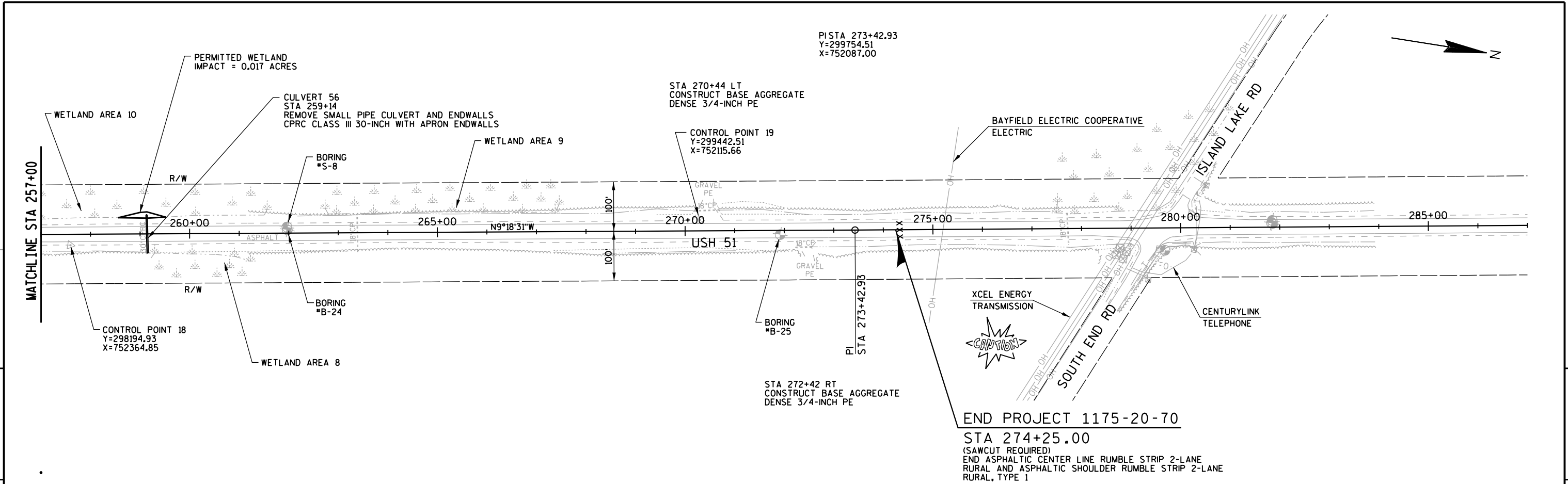
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PROJECT NUMBER: 1175-20-70	HWY: USH 51	COUNTY: IRON	PLAN SHEET	SHEET	E
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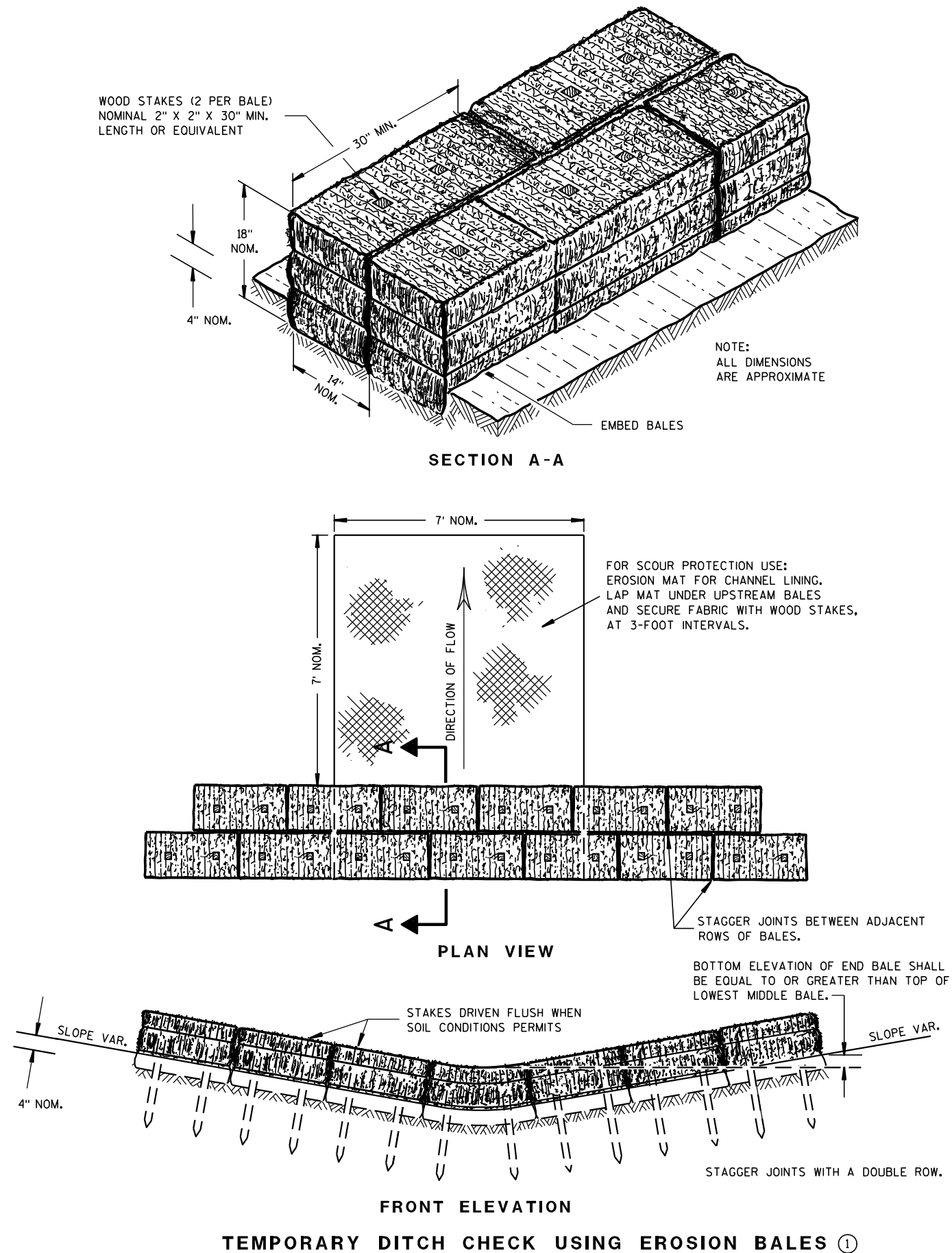
PROJECT NUMBER: 1175-20-70	HWY: USH 51	COUNTY: IRON	PLAN SHEET	SHEET	E
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PROJECT NUMBER: 1175-20-70	HWY: USH 51	COUNTY: IRON	PLAN SHEET	SHEET	E
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Standard Detail Drawing List

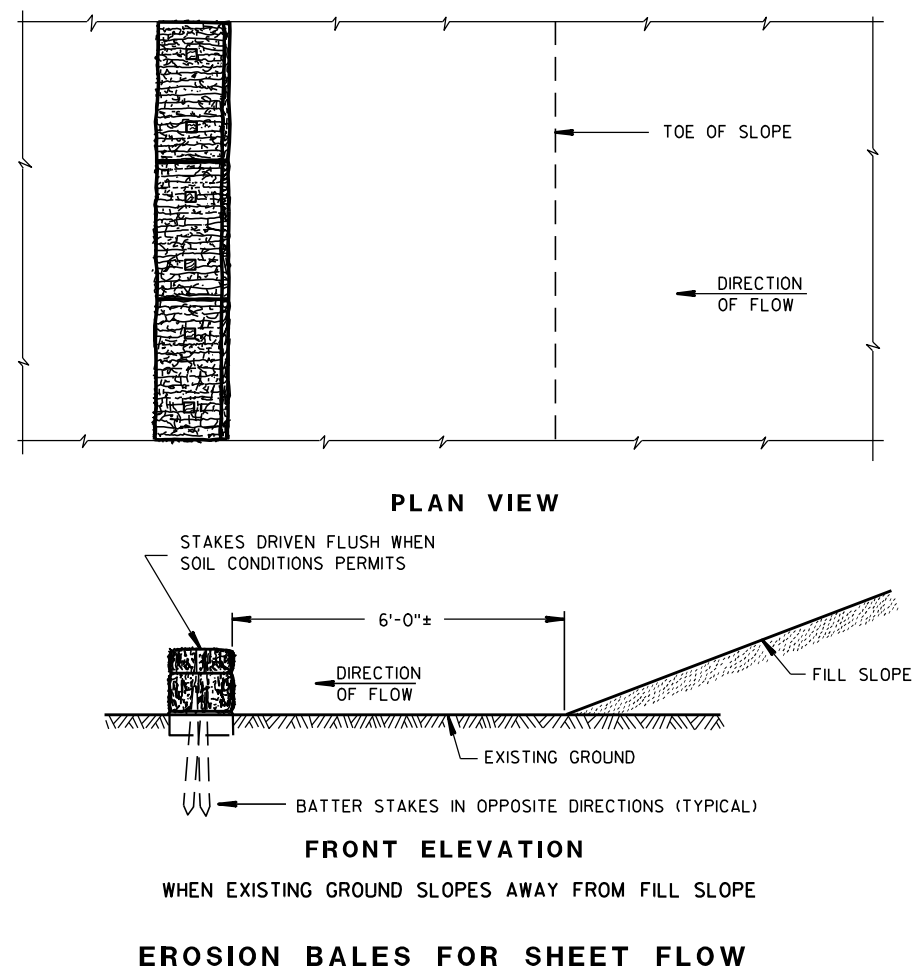
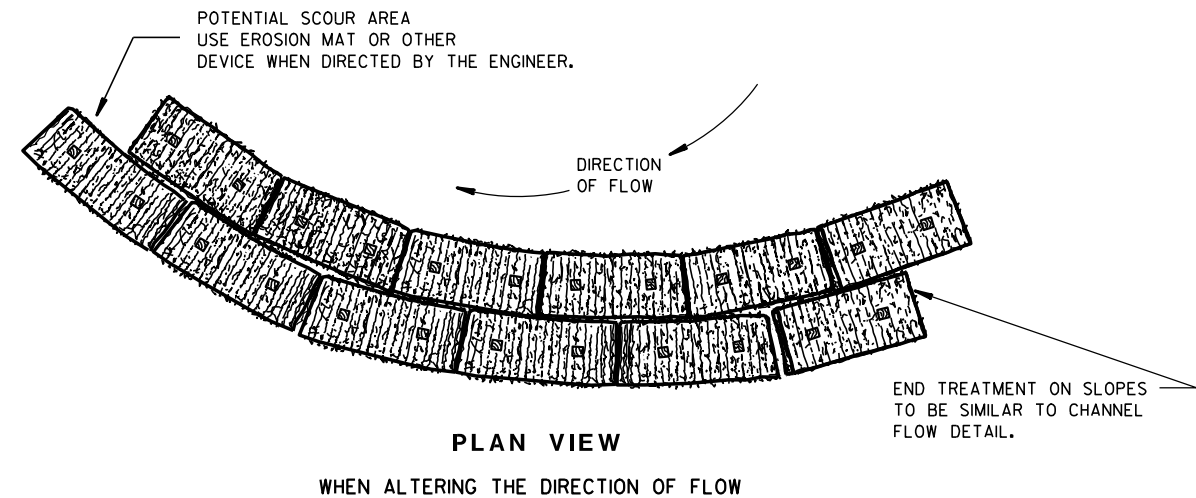
08E08-03	TYPICAL INSTALLATIONS OF EROSION BALES / TEMPORARY DITCH CHECKS
08E09-06	SILT FENCE
08F01-11	APRON ENDWALLS FOR CULVERT PIPE
08F04-07	JOINT TIES FOR CONCRETE PIPE AND CONCRETE COLLAR DETAIL
08F06-04	REINFORCED CONCRETE APRON ENDWALL FOR PIPE UNDERDRAIN
13A10-01A	2-LANE RURAL SHOULDER RUMBLE STRIP, MILLING
13A10-01C	2-LANE RURAL SHOULDER RUMBLE STRIP, MILLING
13A10-01D	2-LANE RURAL SHOULDER RUMBLE STRIP, MILLING
13A11-02A	2-LANE RURAL CENTER LINE RUMBLE STRIP, MILLING
13A11-02B	2-LANE RURAL CENTER LINE RUMBLE STRIP, MILLING
14B29-01	SAFETY EDGE
15A03-02A	FLEXIBLE MARKER POST FOR CULVERT END
15A03-02B	FLEXIBLE MARKER POST FOR CULVERT END
15C04-03	TRAFFIC CONTROL, ADVANCE WARNING SIGNS 45 M.P.H. OR GREATER TWO-WAY UNDIVIDED ROAD OPEN TO TRAFFIC
15C08-16A	PAVEMENT MARKING (MAINLINE)
15C08-16B	PAVEMENT MARKING (INTERSECTIONS)
15C12-04	TRAFFIC CONTROL FOR LANE CLOSURE (SUITABLE FOR MOVING OPERATIONS)
15C19-03A	MOVING PAVEMENT MARKING OPERATION TWO-LANE TWO-WAY ROADWAY
15C19-03B	MOVING PAVEMENT MARKING OPERATION MULTI-LANE UNDIVIDED ROADWAY



GENERAL NOTES

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

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

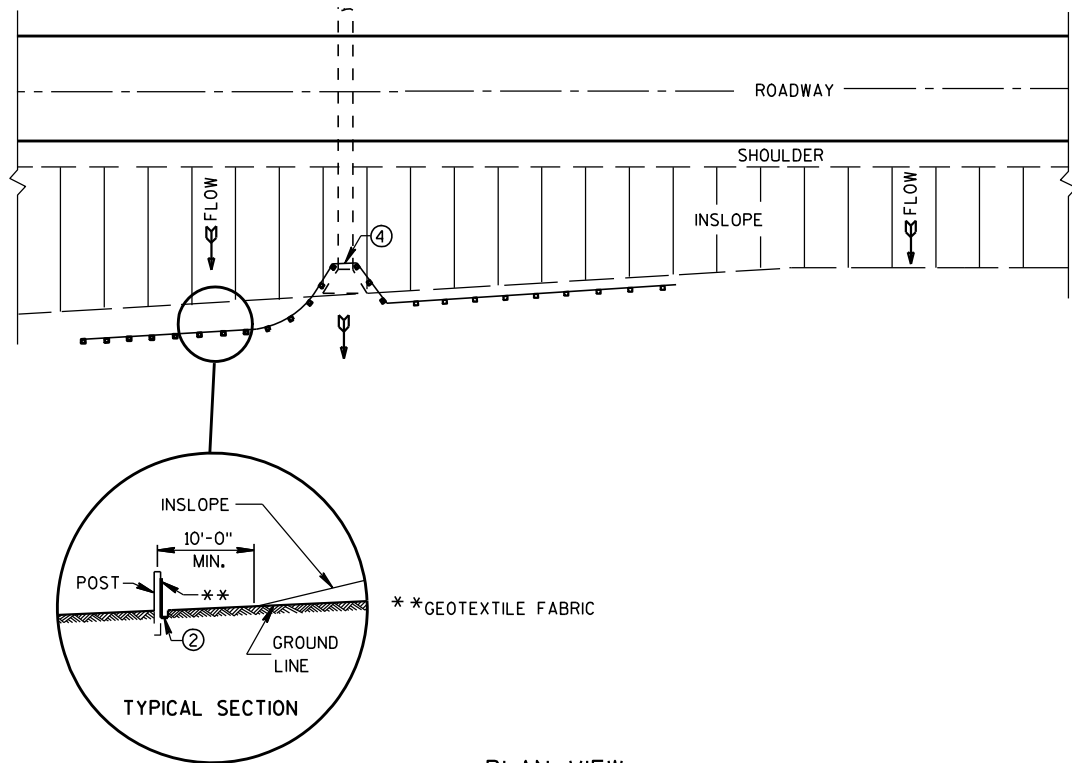
TYPICAL INSTALLATIONS OF
EROSION BALES / TEMPORARY
DITCH CHECKS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

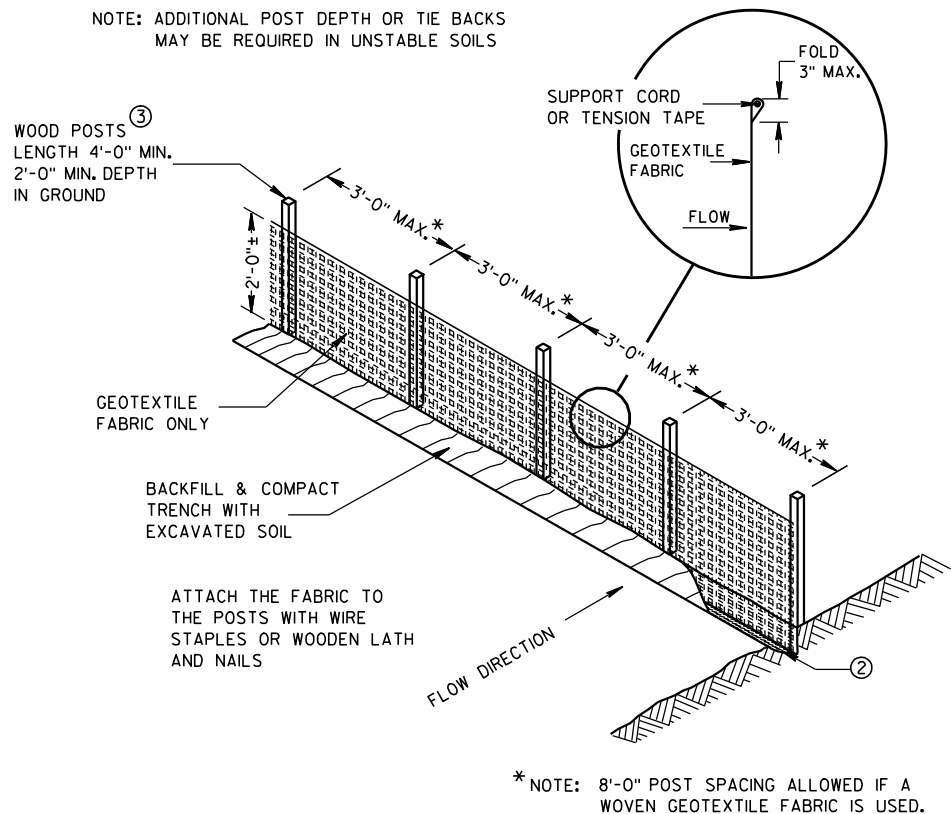
APPROVED

6/04/02
DATE/S/ Beth Canestra
CHIEF ROADWAY DEVELOPMENT ENGINEER

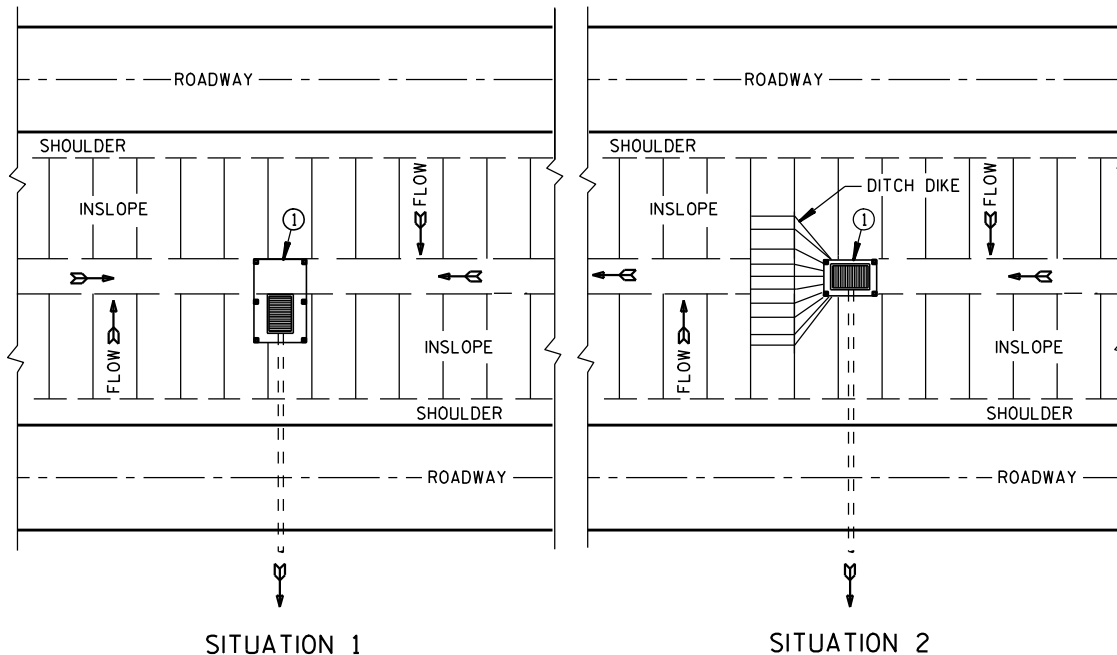
FHWA



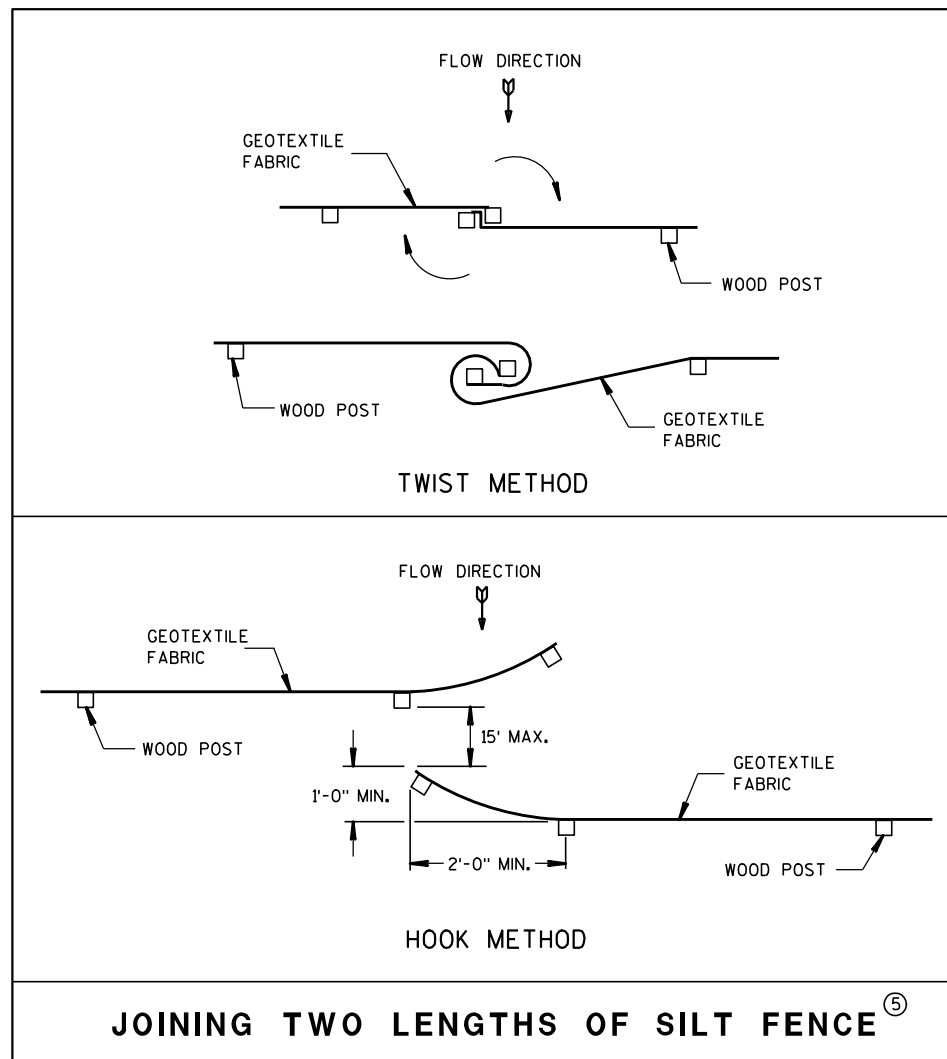
PLAN VIEW
TYPICAL APPLICATION OF SILT FENCE



SILT FENCE



PLAN VIEW
SILT FENCE AT MEDIAN SURFACE DRAINS

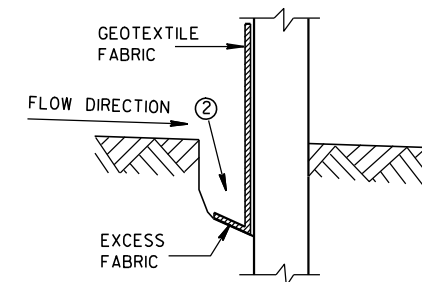


JOINING TWO LENGTHS OF SILT FENCE (5)

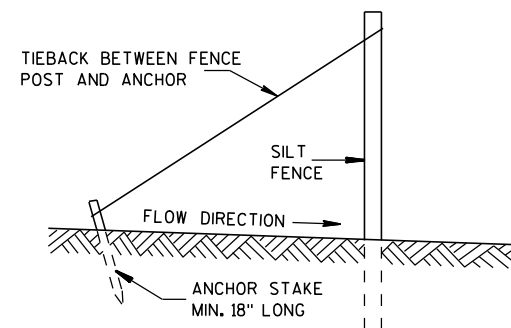
GENERAL NOTES

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

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



TRENCH DETAIL

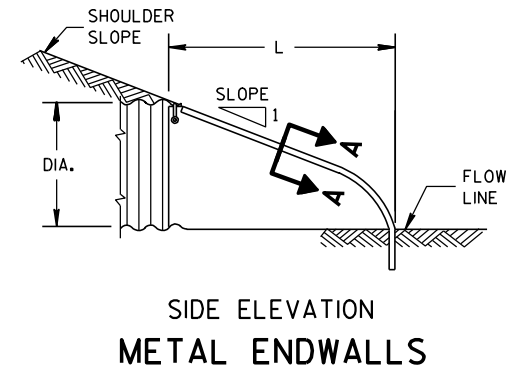
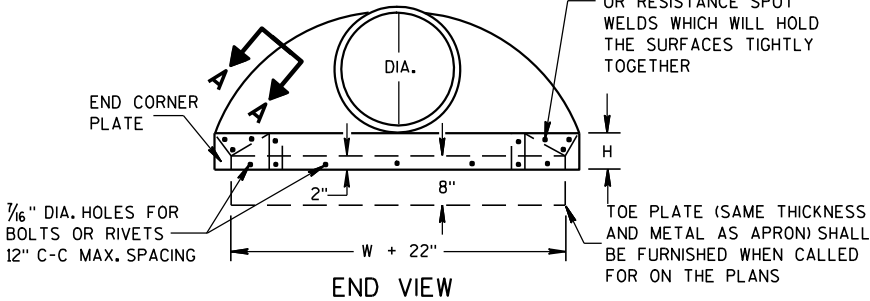
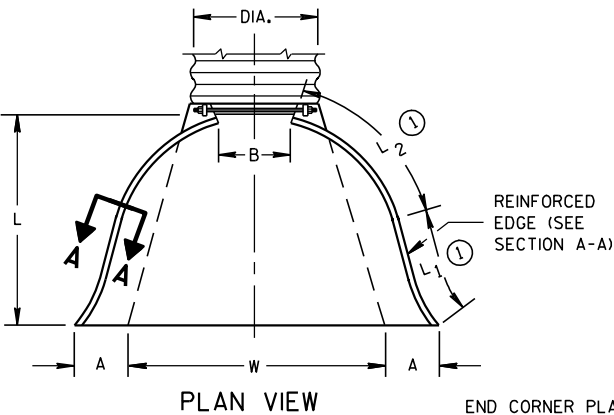


SILT FENCE TIE BACK
(WHEN REQUIRED BY THE ENGINEER)

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

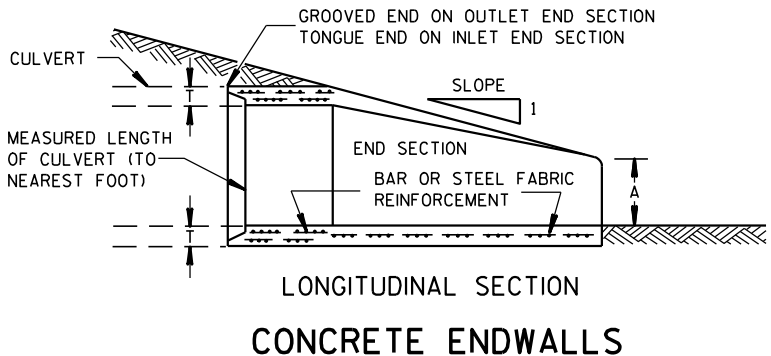
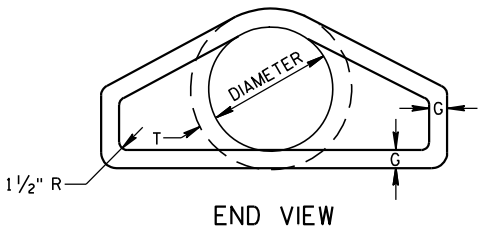
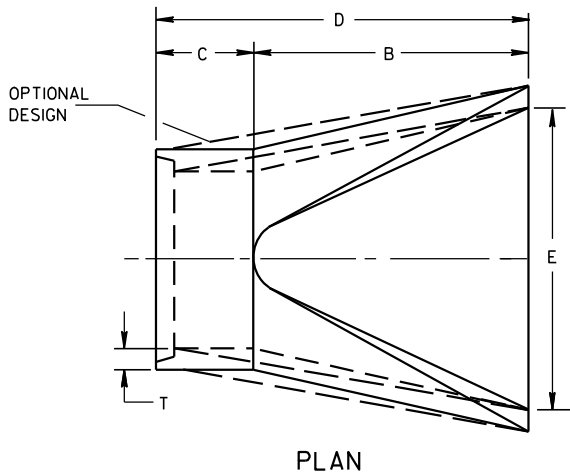
METAL APRON ENDWALLS											
PIPE DIA. (IN.)	MIN. THICK. (Inches)		DIMENSIONS (Inches)							APPROX. SLOPE	BODY
	STEEL	ALUM.	A (±1")	B (MAX.)	H (±1")	L (±1 1/2")	L1 ①	L2 ①	W (±2")		
12	.064	.060	6	6	6	21	12	17 1/2	24	2 1/2 to 1	1 Pc.
15	.064	.060	7	8	6	26	14	21 3/4	30	2 1/2 to 1	1 Pc.
18	.064	.060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

* EXCEPT CENTER PANEL
SEE GENERAL NOTES

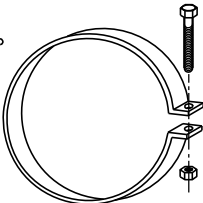


REINFORCED CONCRETE APRON ENDWALLS											
PIPE DIA. (IN.)	DIMENSIONS (Inches)							APPROX. SLOPE			
	T	A	B	C	D	E	G				
12	2	4	24	48 7/8	72 7/8	24	2	3 to 1			
15	2 1/4	6	27	46	73	30	2 1/4	3 to 1			
18	2 1/2	9	27	46	73	36	2 1/2	3 to 1			
21	2 3/4	9	36	37 1/2	73 1/2	42	2 3/4	3 to 1			
24	3	9 1/2	43 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			

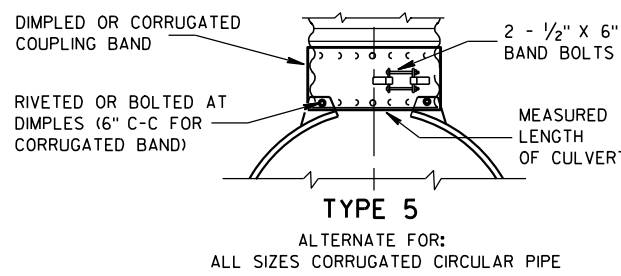
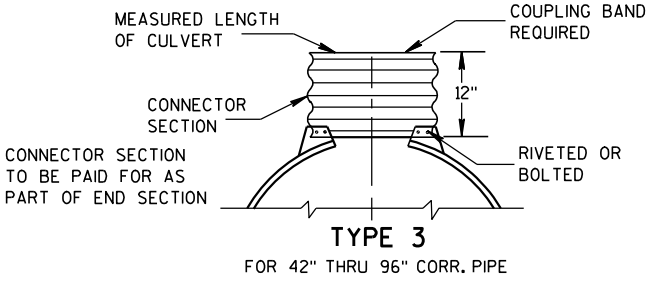
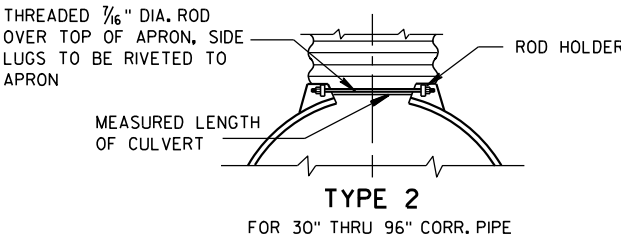
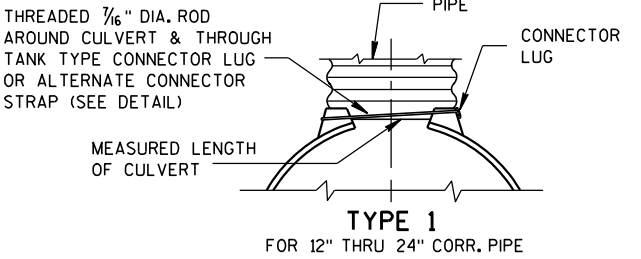
* MINIMUM
** MAXIMUM



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



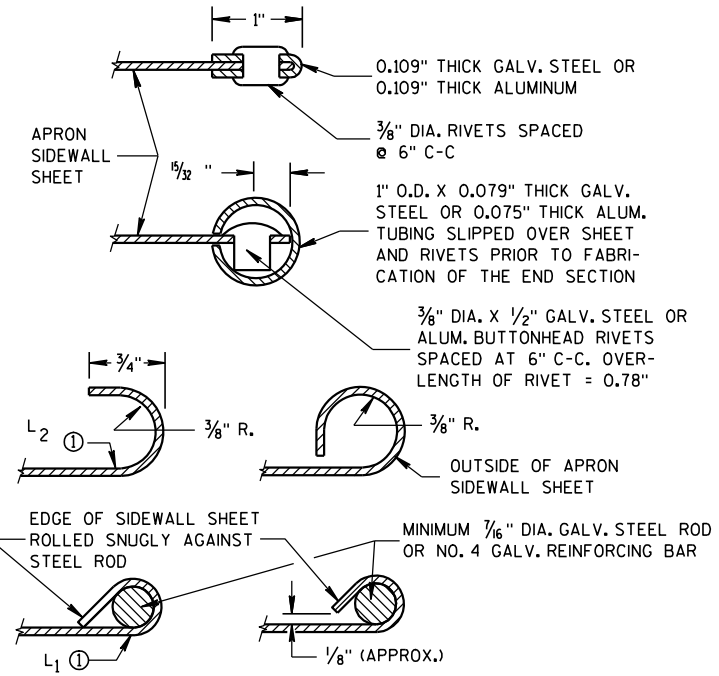
NOTE: DIMPLED BAND FITS OVER OUTSIDE OF ENDWALL, AND CORRUGATED BAND FITS INSIDE ENDWALL. DIMPLED BAND MAY BE USED WITH HELICALLY CORRUGATED PIPE.

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



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.

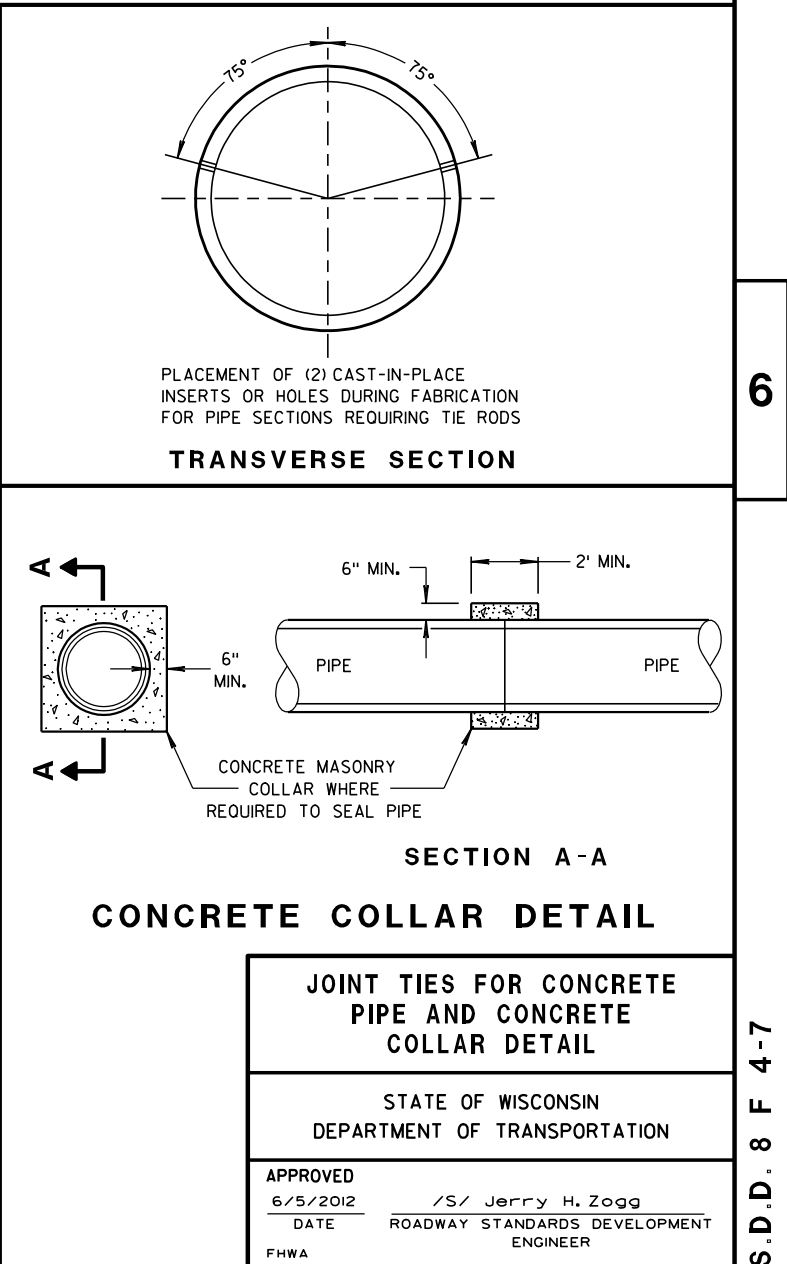
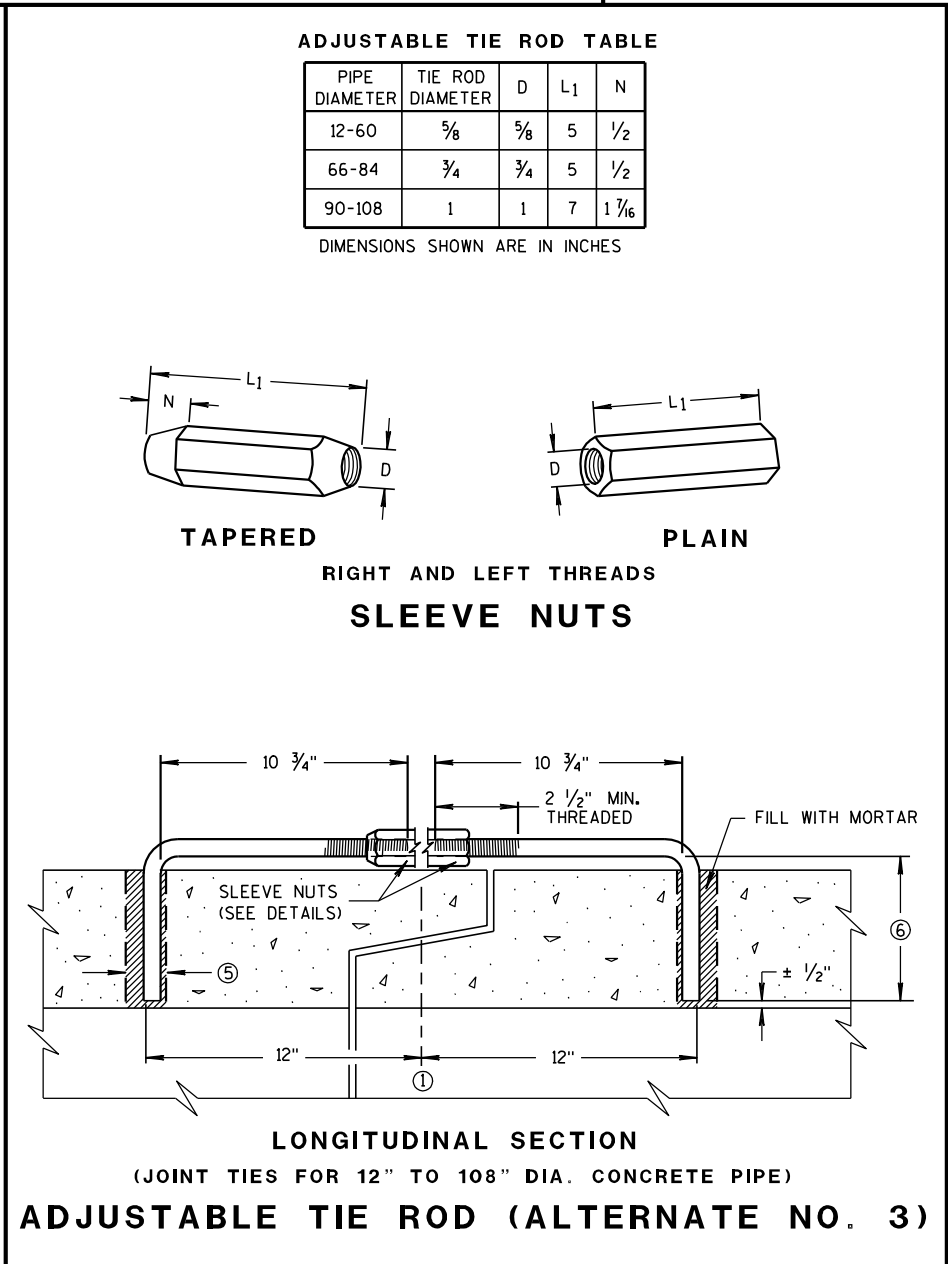
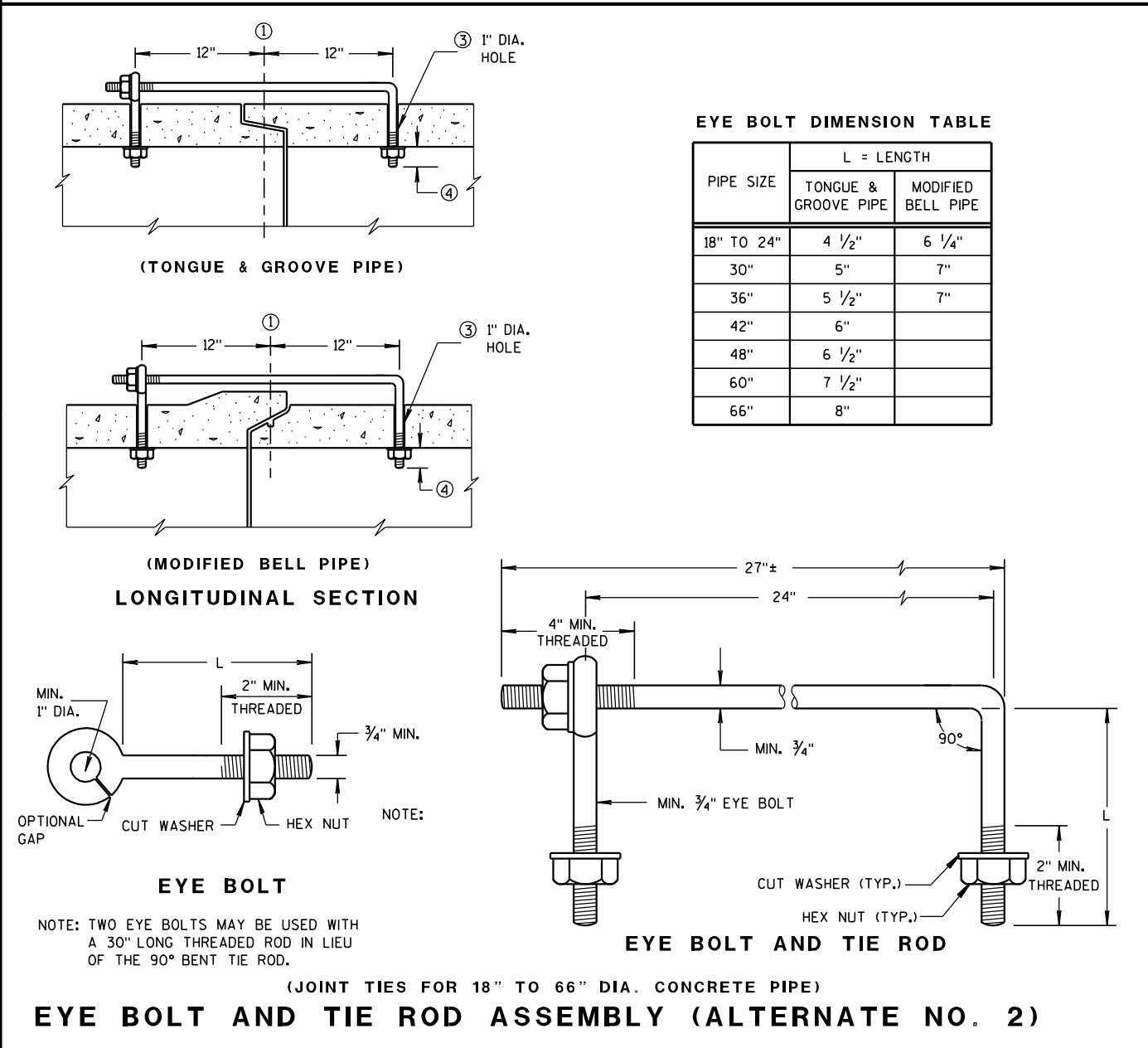
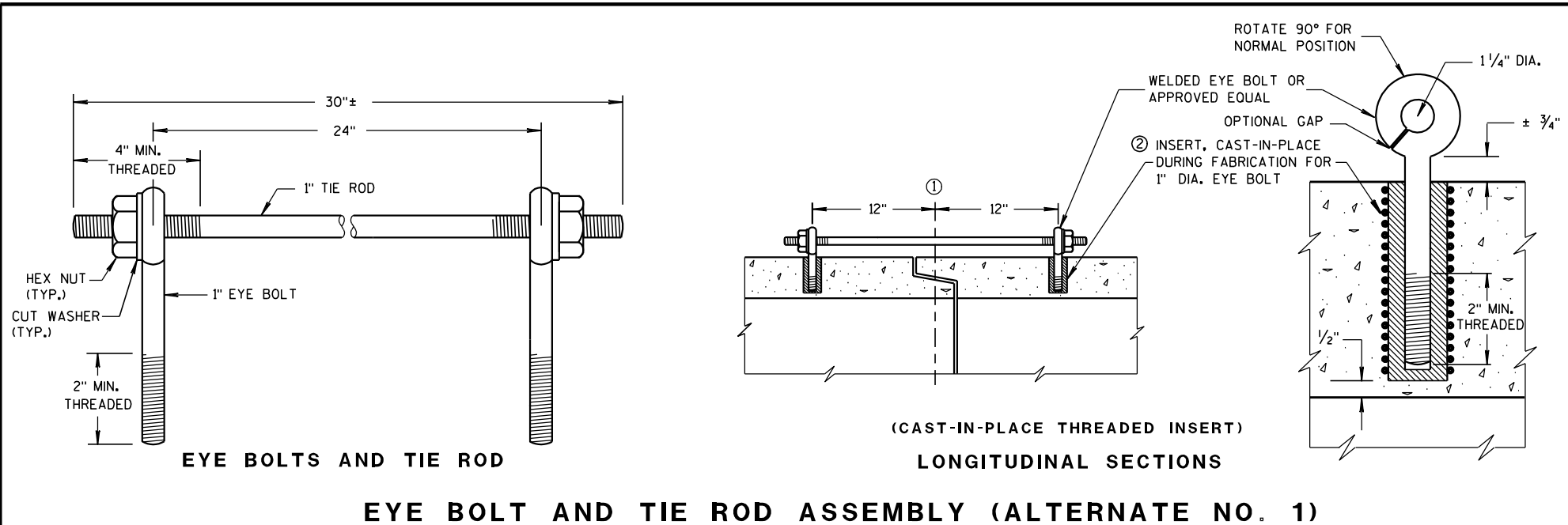
ALL THREE PIECE STEEL APRON ENDWALLS FOR 60" DIAMETER PIPE AND LARGER SHALL HAVE 0.109" SIDES AND 0.138" CENTER PANELS. ALL THREE PIECE ALUMINUM APRON ENDWALLS FOR 60" DIAMETER PIPE AND LARGER SHALL HAVE 0.105" SIDES AND 0.134" CENTER PANELS. THE WIDTH OF CENTER PANELS SHALL BE GREATER THAN 20 PERCENT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

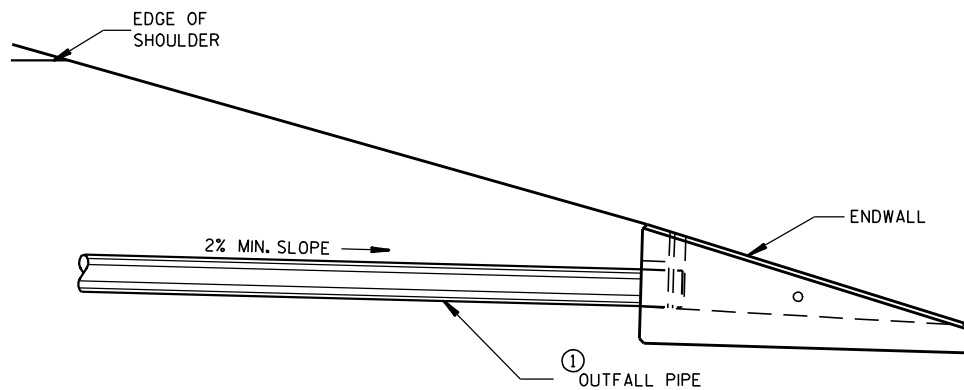
① FOR PIPE SIZES UP TO 60" DIAMETER, A 180° ROLLED EDGE MAY BE USED INSTEAD OF STEEL ROD REINFORCEMENT. SEE SECTION A-A.

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	

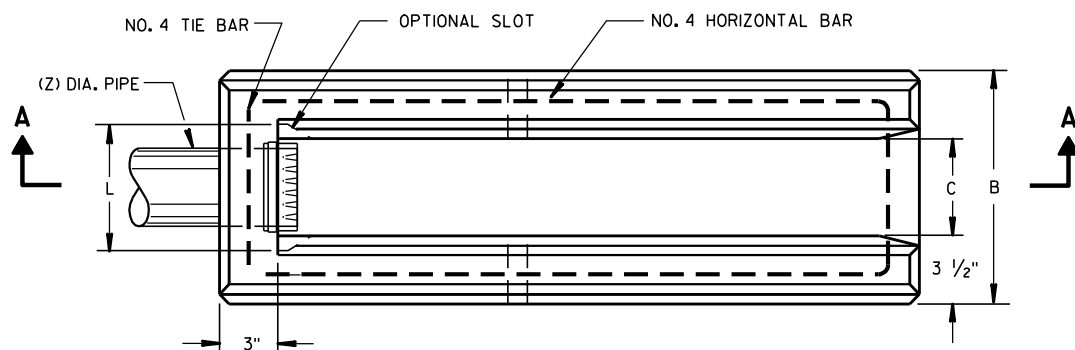


DIMENSIONS IN INCHES											
PIPE DIA.	A	B	C	D	E	F	G	H	J	L	Z
**4	6	12	5 1/4	9	8	32	36	11	2 3/8	6 1/2	4
6	8	14	7 1/4	11	10	42	44	13	3 5/8	8 1/2	6

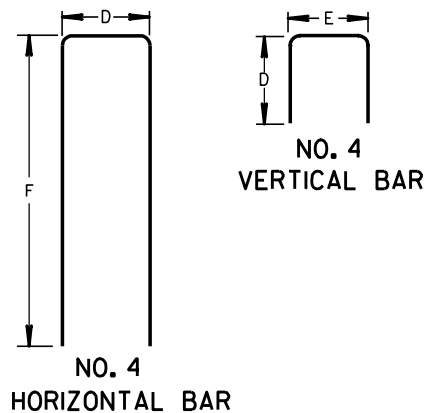
** APRON ENDWALL FOR 6 INCH DIAMETER PIPE MAY BE SUBSTITUTED FOR THIS SIZE PROVIDED THE HOLE IN THE HEADWALL IS SIZED AND LOCATED TO CONFORM TO THE 4 INCH DIAMETER PIPE DIMENSIONS (C & J)



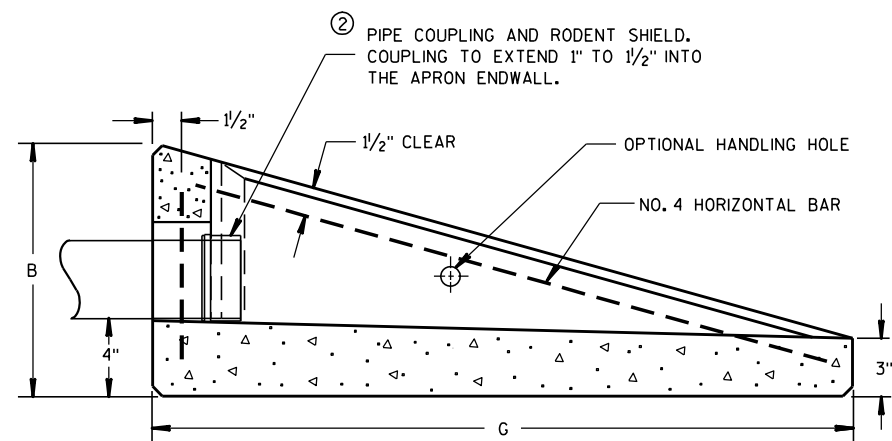
INSTALLATION DETAIL



PLAN VIEW

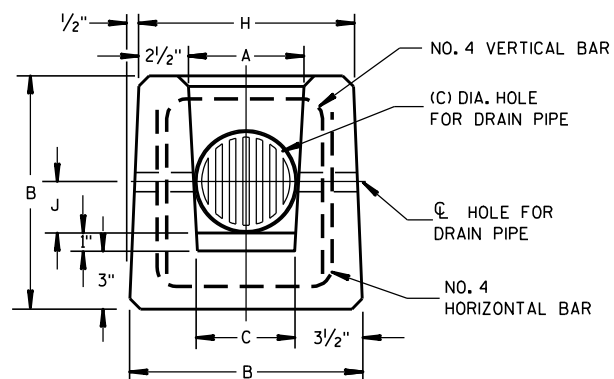


BAR STEEL REINFORCEMENT DETAILS



SECTION A-A

CONCRETE APRON ENDWALL FOR UNDERDRAIN



END VIEW

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.

ALTERNATIVE DESIGNS WHICH PROVIDE EQUIVALENT CAPACITY AND STRENGTH MAY BE USED WHEN APPROVED BY THE ENGINEER. ENDWALL MAY BE EITHER PRECAST OR CAST-IN-PLACE CONCRETE.

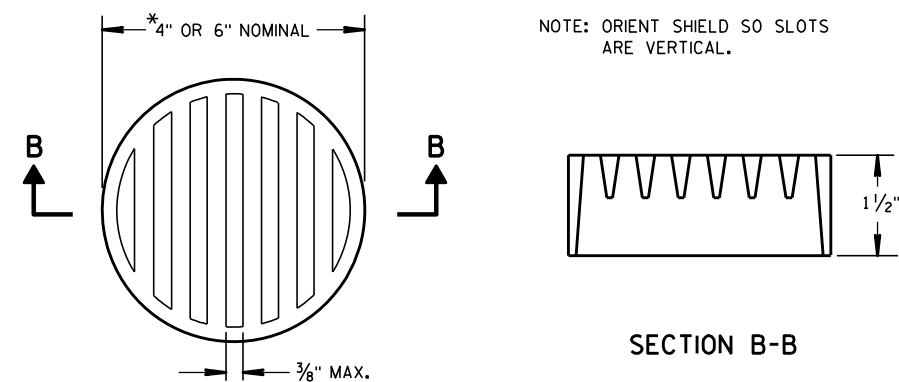
THE UNDERDRAIN PIPE SHALL BE FULLY INSERTED AND SEALED INTO THE ENDWALL WITH CEMENT MORTAR PRIOR TO BACKFILLING AROUND THE STRUCTURE.

THE UPPERMOST POINT OF THE ENDWALL SHALL BE PLACED FLUSH WITH THE ROADWAY SLOPE. ADJACENT EMBANKMENT SLOPES SHALL BE SHAPED TO FIT THE SIDES AND TOE OF THE ENDWALL. EXACT PLACEMENT OF THE OUTFALL PIPE AND ENDWALL SHALL BE DETERMINED BY THE ENGINEER TO MATCH THE ELEVATIONS AND FLOW DIRECTION OF THE ROADSIDE DITCH.

- ① THE OUTFALL PIPE UNDERDRAIN AND FITTINGS SHALL CONFORM TO THE REQUIREMENTS OF THE SPECIFICATION FOR POLY (VINYL CHORIDE) (PVC) PLASTIC DRAIN, WASTE AND VENT PIPE AND FITTINGS, ASTM DESIGNATION: D 2665, SCHEDULE 40 PVC OR THE STANDARD SPECIFICATION FOR TYPE PSM POLY (VINYL CHORIDE) (PVC) SEWER PIPE AND FITTINGS, ASTM DESIGNATION: D 3034, TYPE PSM SDR 23.5 PVC SEWER PIPE, ALL JOINTS SHALL BE SOLVENT WELDED.

THE OUTFALL PIPE INCLUDING ALL FITTINGS AND THE RODENT SHIELD SHALL BE MEASURED AND PAID FOR AS PIPE UNDERDRAIN UNPERFORATED.

- ② THE RODENT SHIELD SHALL BE A PVC GRATE SIMILAR TO THIS DETAIL. THE GRATE IS COMMERCIALY AVAILABLE AS A FLOOR STRAINER. A PIPE COUPLING IS REQUIRED FOR THE ATTACHMENT OF THIS SHIELD TO THE OUTFALL PIPE. THE SHIELD SHALL BE FASTENED TO THE PIPE COUPLING WITH TWO OR MORE NO. 10 X 1-INCH STAINLESS STEEL SHEET METAL SCREWS.



② RODENT SHIELD

*NOTE: DIMENSIONS ARE APPROXIMATE. THE GRATE IS SIZED TO FIT INTO A PIPE COUPLING.

REINFORCED CONCRETE APRON ENDWALL FOR PIPE UNDERDRAIN

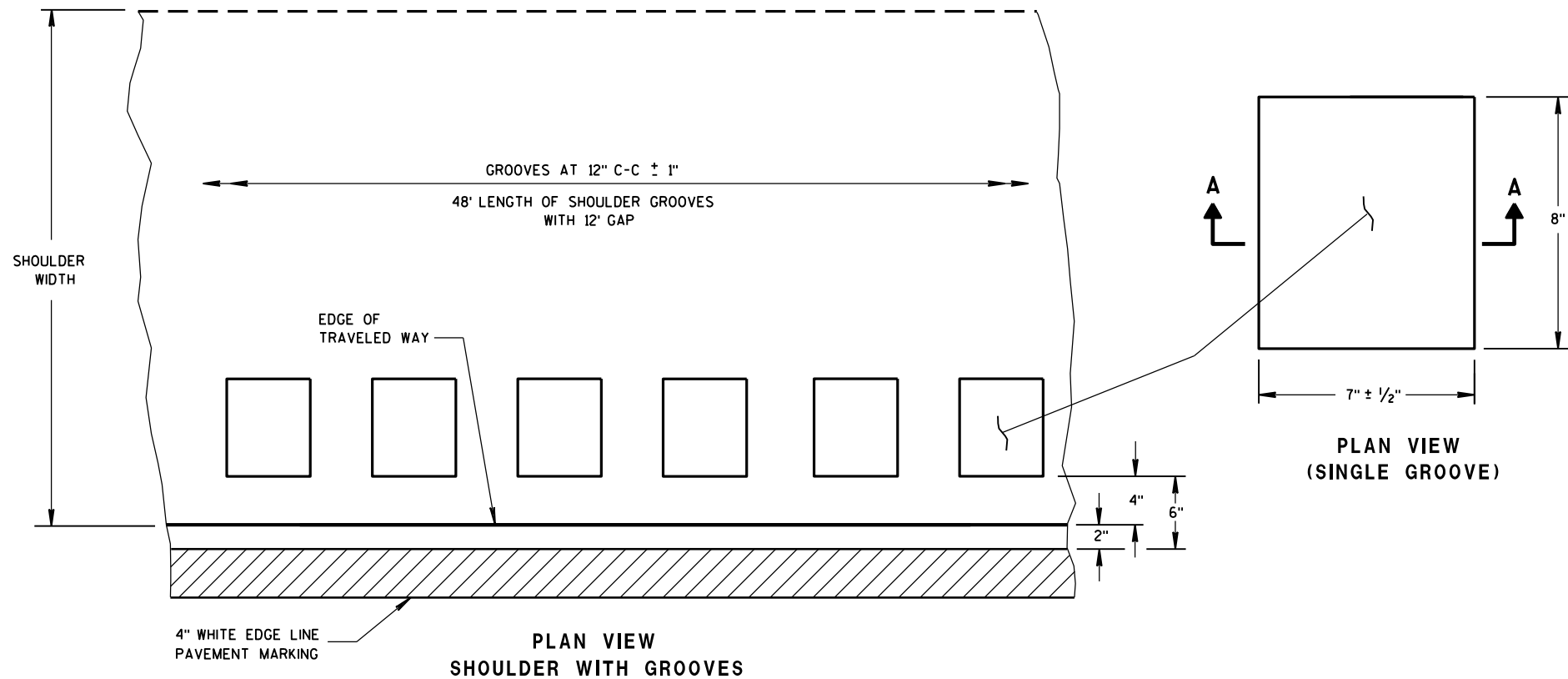
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

3/10/98
DATE

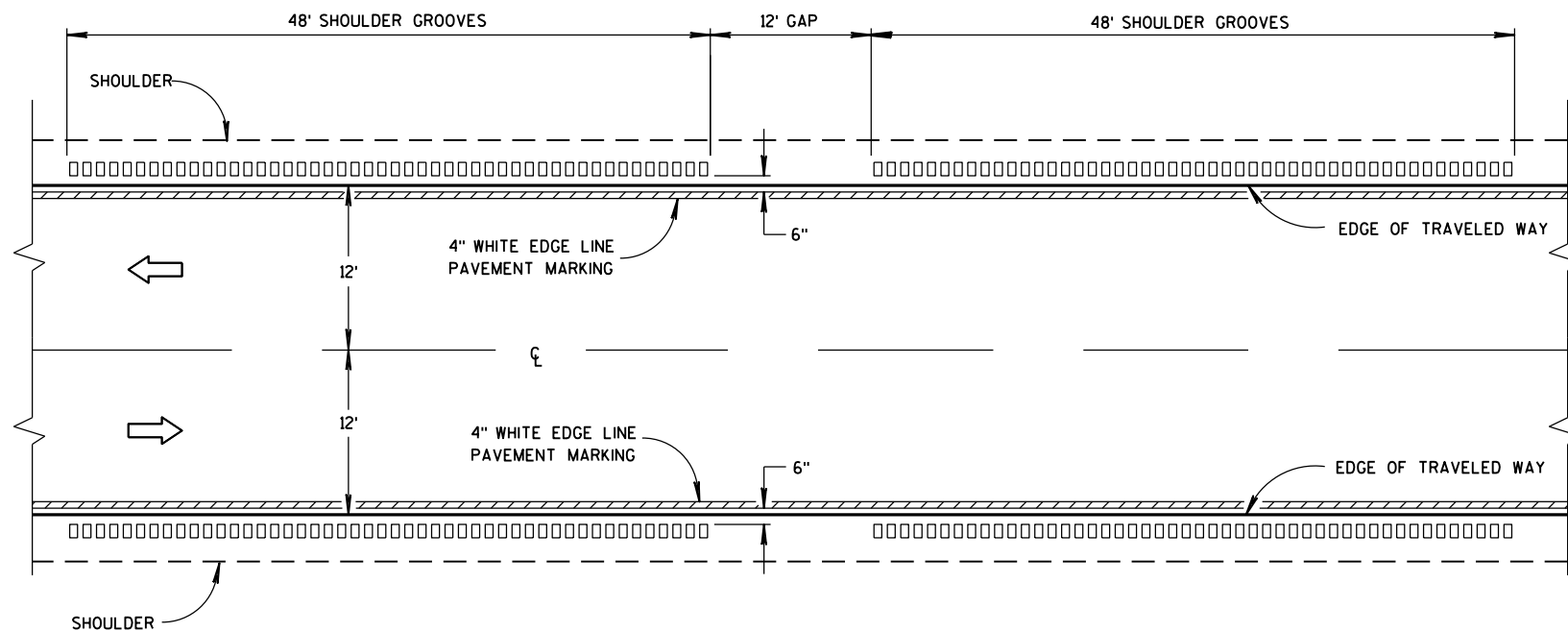
/S/ Rory L. Rhinesmith
CHIEF ROADWAY DEVELOPMENT ENGINEER

FHWA



6

PLACEMENT DETAIL FOR TYPE 1 MILLED RUMBLE STRIP



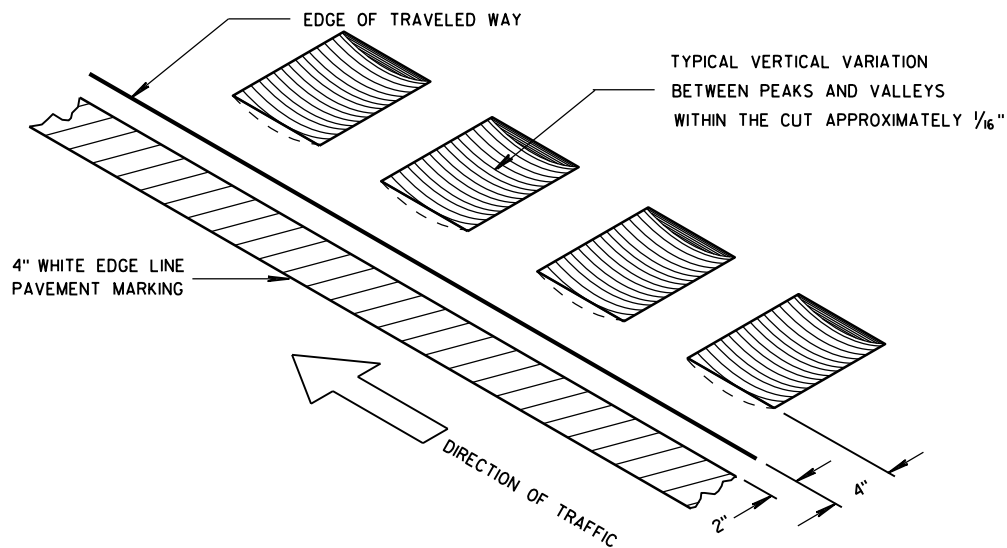
TYPE 1
2-LANE SHOULDER RUMBLE STRIP

GENERAL NOTES

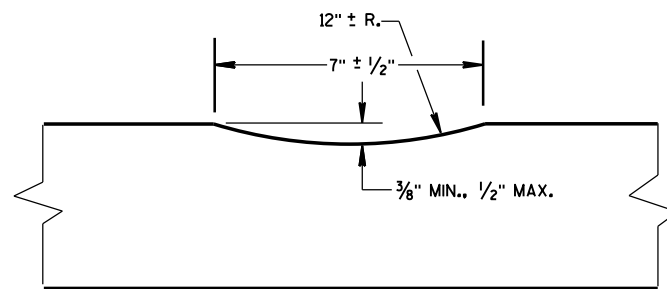
DETAILS OF CONSTRUCTION SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND APPLICABLE SPECIAL PROVISIONS.

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

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



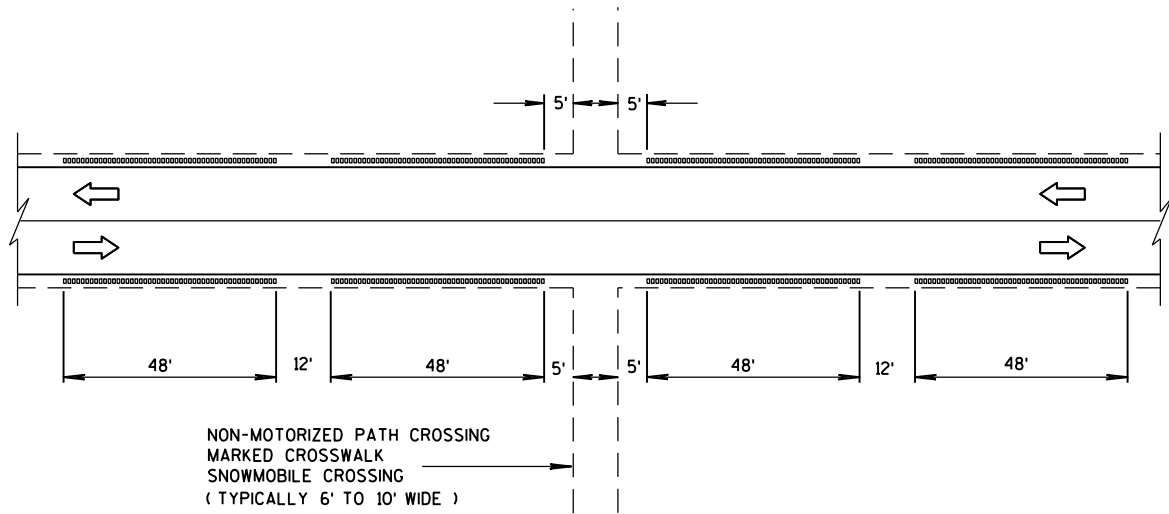
ISOMETRIC



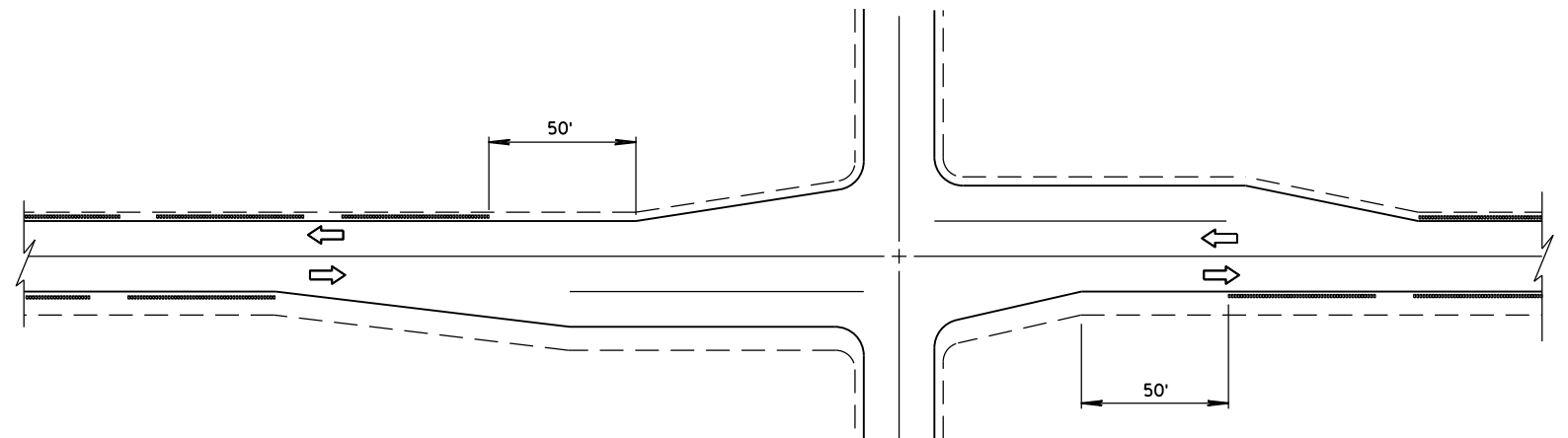
SECTION A-A

2-LANE RURAL
SHOULDER RUMBLE STRIP, MILLING

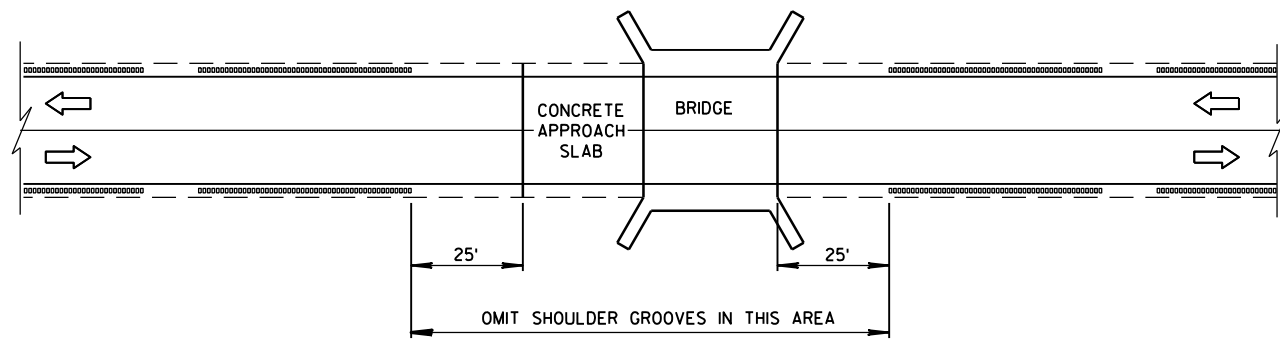
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



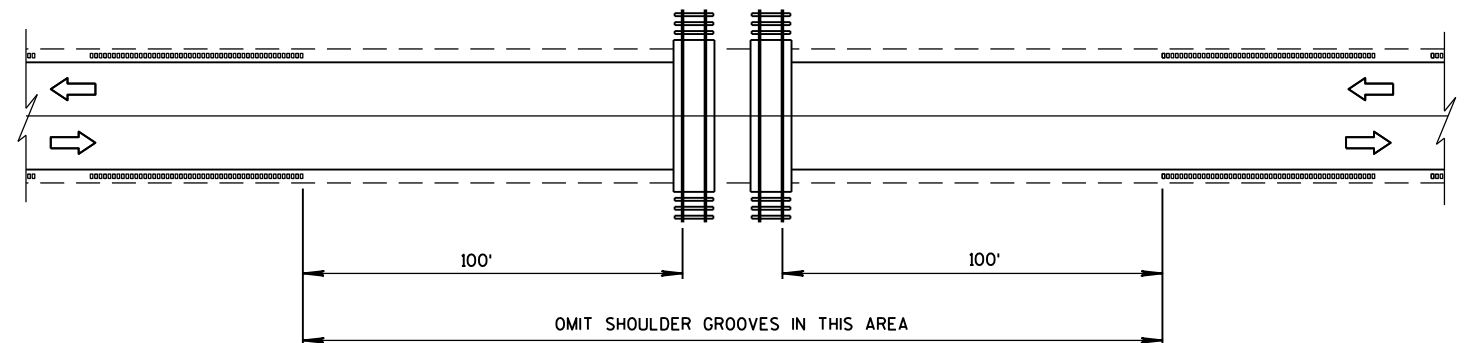
SHOULDER GROOVES AT MISCELLANEOUS CROSSINGS



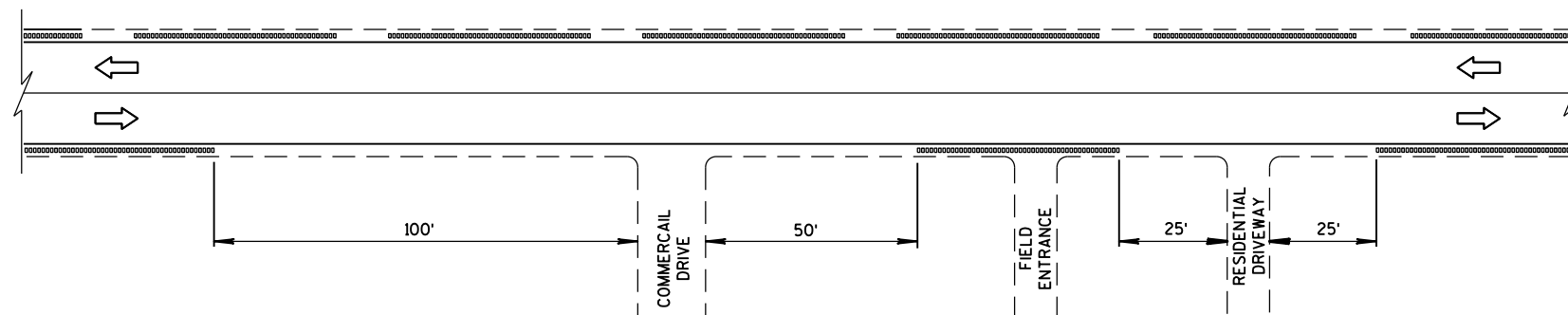
SHOULDER GROOVES AT INTERSECTIONS



SHOULDER GROOVES AT BRIDGES



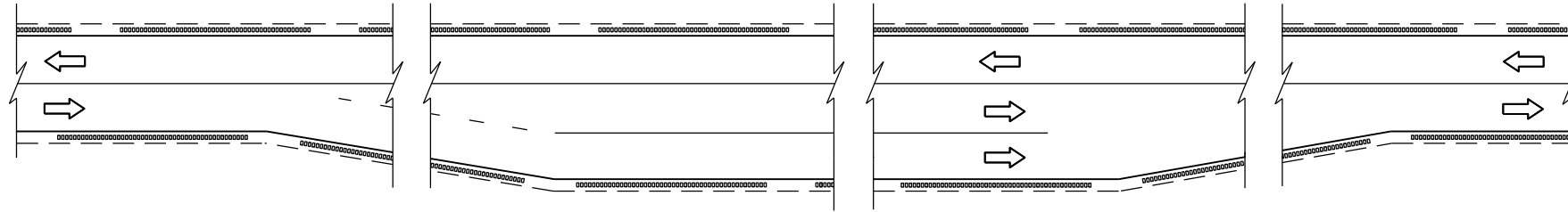
SHOULDER GROOVES AT RAILROADS



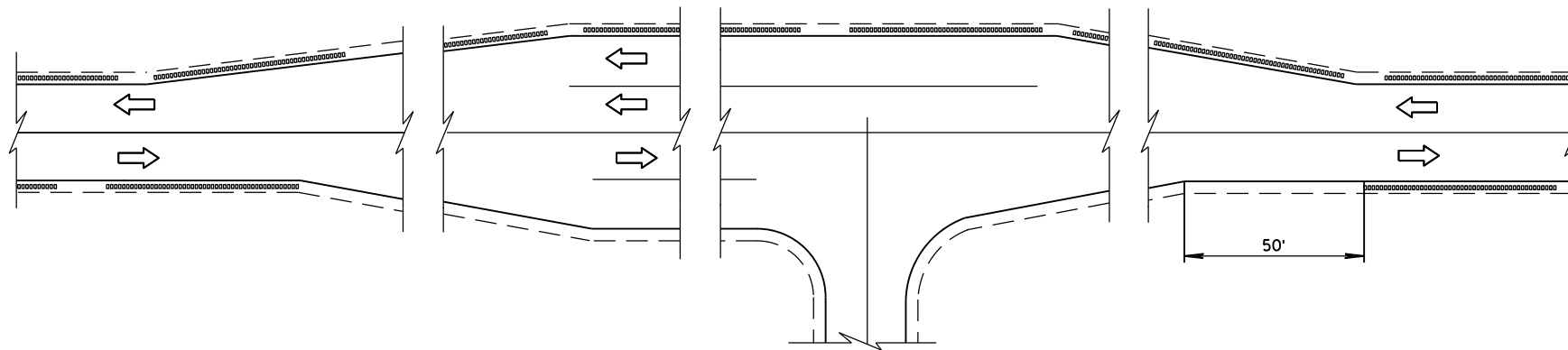
SHOULDER GROOVES AT DRIVEWAYS^①

2-LANE RURAL
SHOULDER RUMBLE STRIP, MILLING

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



SHOULDER GROOVES AT PASSING AND CLIMBING LANES



SHOULDER GROOVES AT BYPASS LANES

2-LANE RURAL
SHOULDER RUMBLE STRIP, MILLING

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
12/17/2012
DATE
FHWA

/S/ Jerry H. Zogg
ROADWAY STANDARDS DEVELOPMENT
ENGINEER

GENERAL NOTES

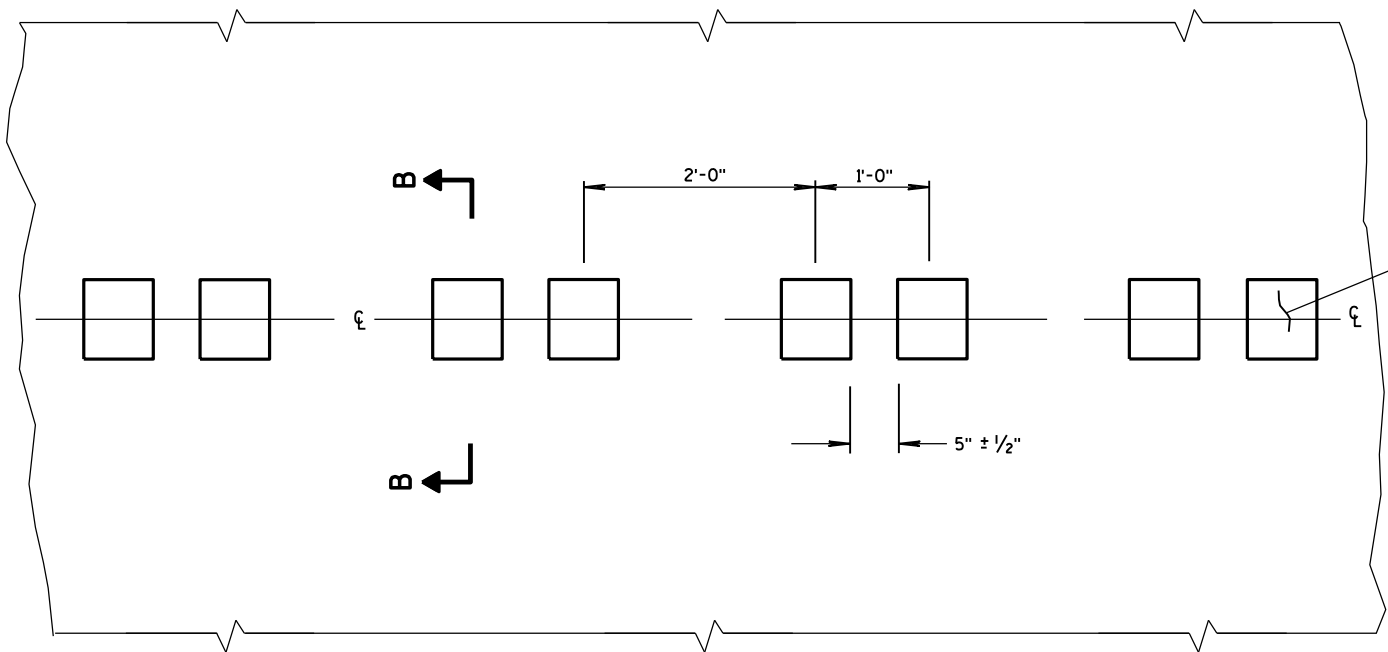
DETAILS OF CONSTRUCTION SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND APPLICABLE SPECIAL PROVISIONS.

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

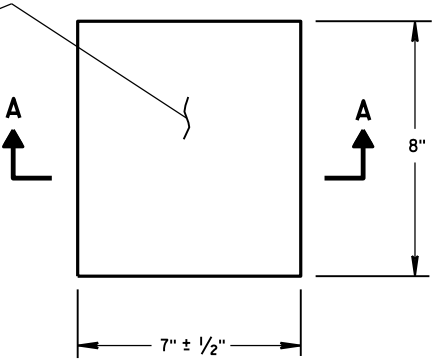
INSTALL PAVEMENT MARKING AFTER THE GROOVES ARE INSTALLED.

SEE SIGNING PLAN FOR SIGN REQUIREMENTS THAT MAY BE NEEDED.

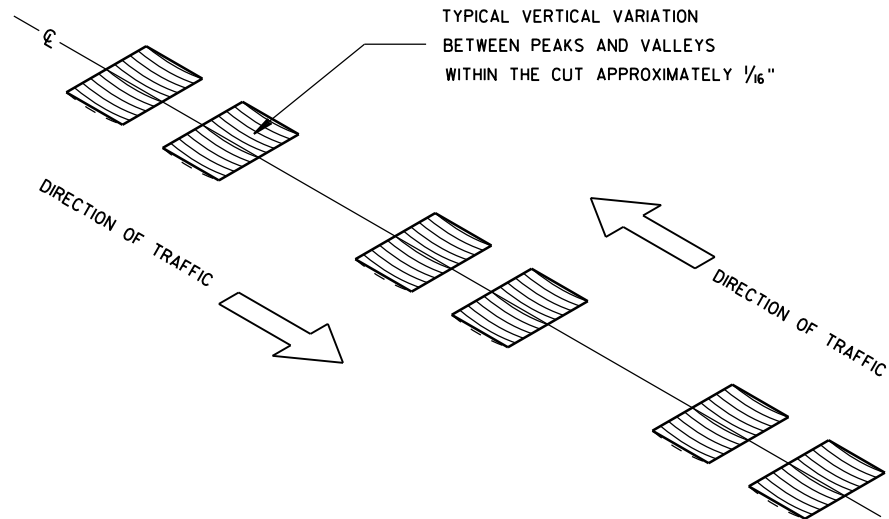
- ① CENTERLINE GROOVES MAY BE OMITTED IN AREAS WITH HIGH CONCENTRATIONS OF DRIVEWAYS, WHEN DIRECTED BY THE ENGINEER.



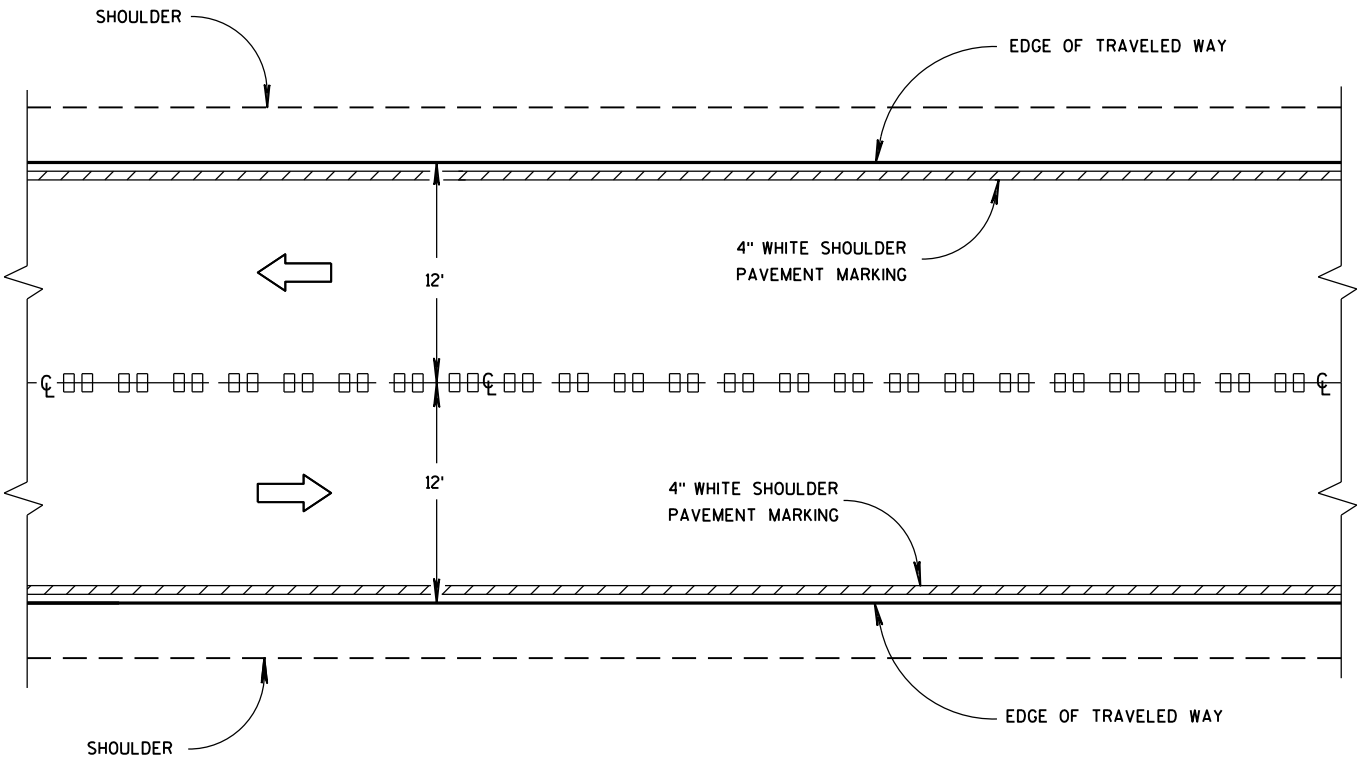
PLAN VIEW
CENTER LINE WITH GROOVES



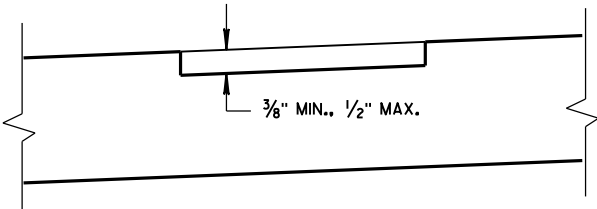
PLAN VIEW
(SINGLE GROOVE)



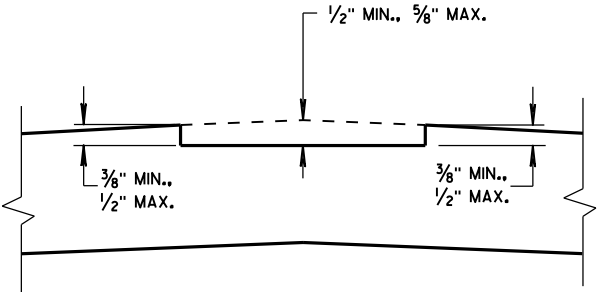
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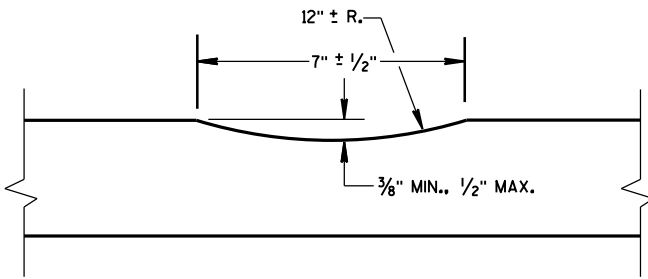
CENTER LINE GROOVES ON TWO-WAY ROADWAYS



SECTION B-B
SUPERELEVATED ROADWAY



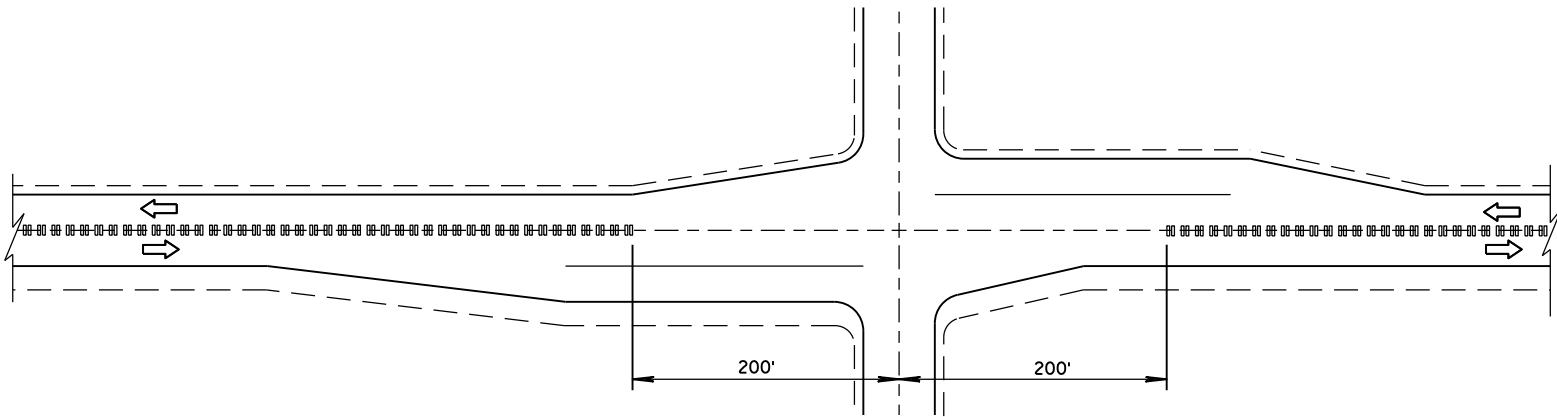
SECTION B-B
CROWNED ROADWAY



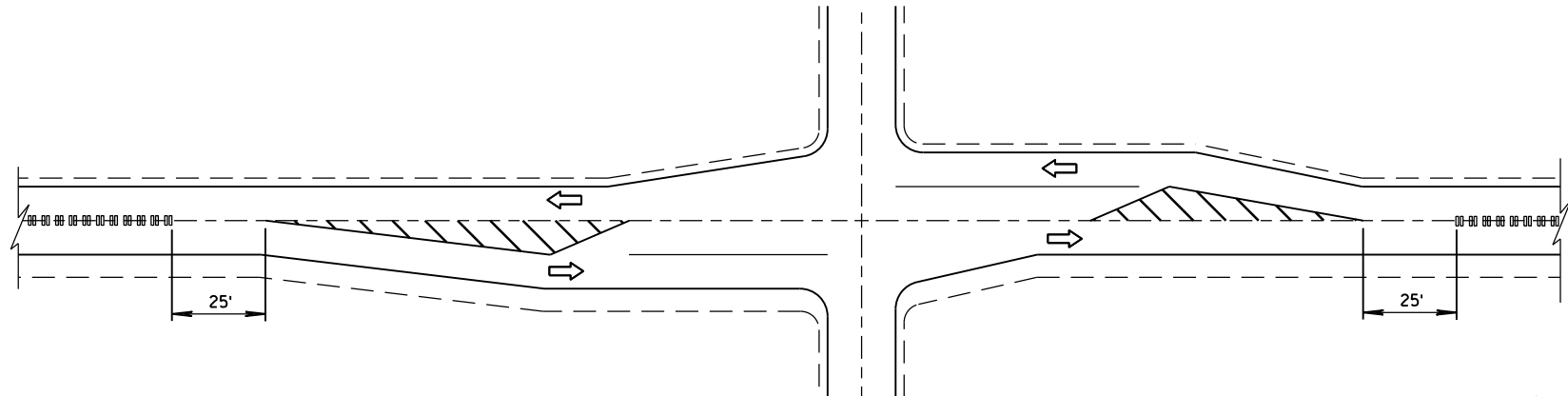
SECTION A-A

2-LANE RURAL
CENTER LINE RUMBLE STRIP,
MILLING

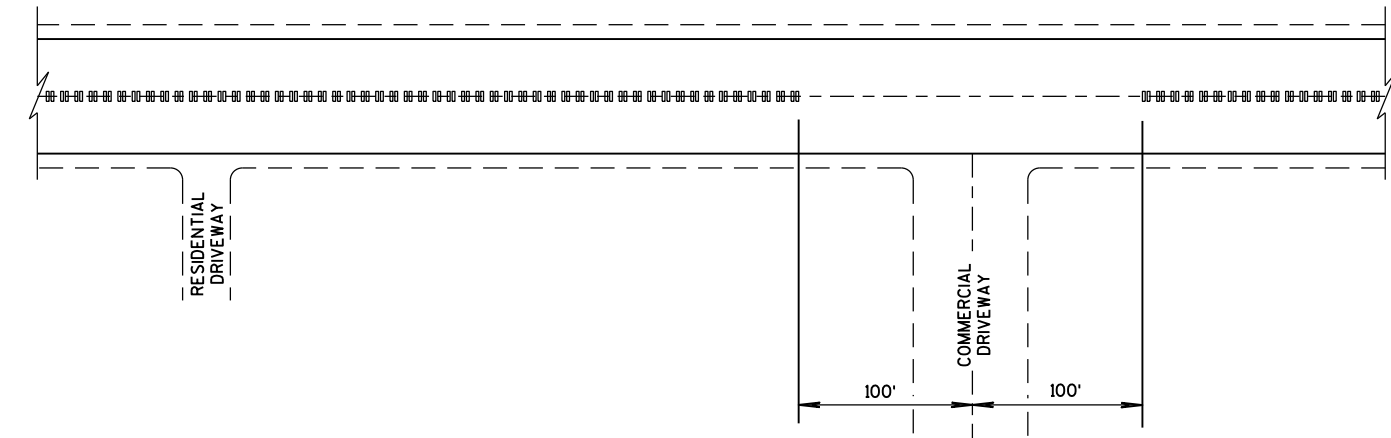
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



CENTER LINE GROOVES AT INTERSECTIONS

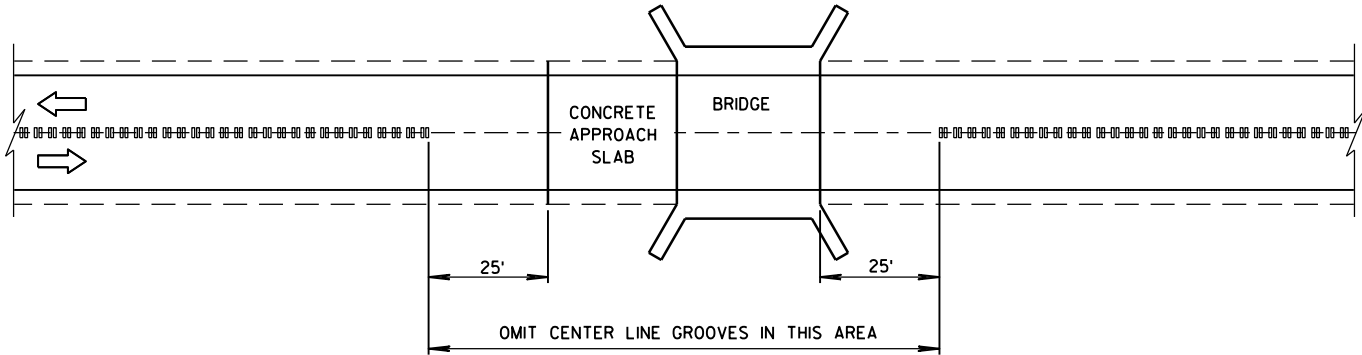


CENTER LINE GROOVES AT INTERSECTIONS
(WITH LEFT TURN LANES)

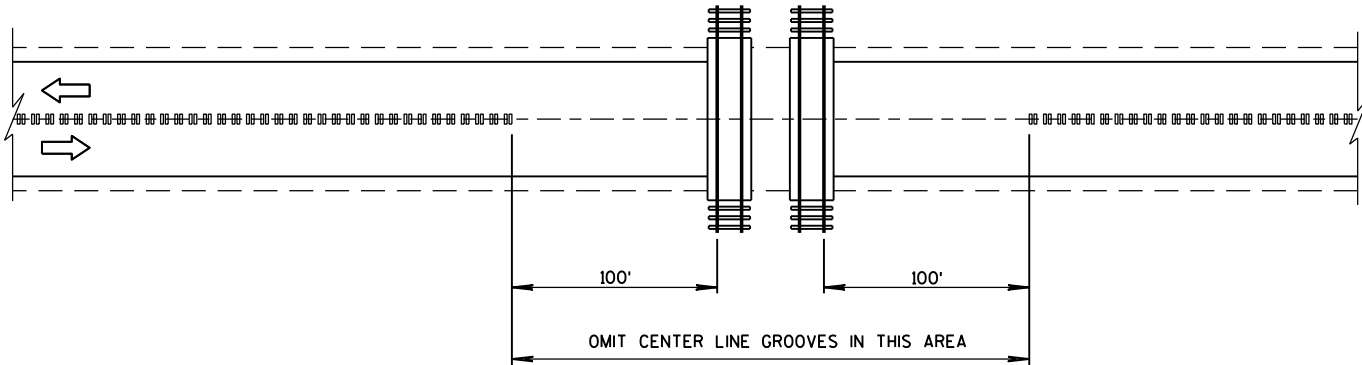


CENTER LINE GROOVES AT DRIVEWAYS¹

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

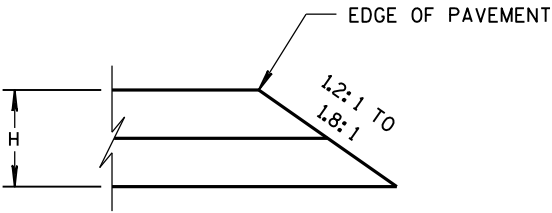


CENTER LINE GROOVES AT BRIDGES

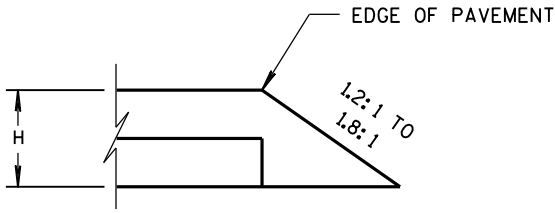


CENTER LINE GROOVES AT RAILROADS

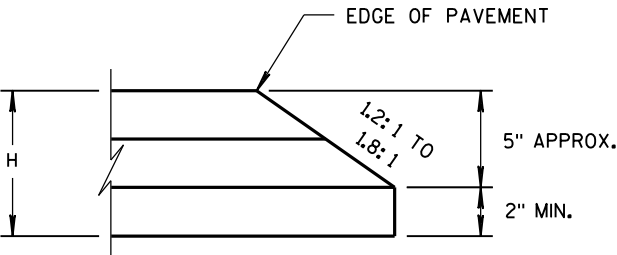
2-LANE RURAL CENTER LINE RUMBLE STRIP, MILLING	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED 5/15/2013 DATE	/S/ Jerry H. Zogg ROADWAY STANDARDS DEVELOPMENT ENGINEER
FHWA	



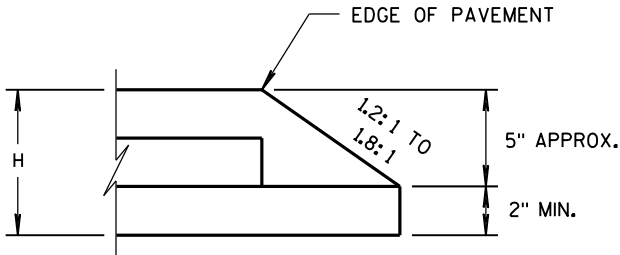
CONSTRUCTED WITH FINAL TWO LAYERS
FOR H 5" OR LESS



CONSTRUCTED WITH FINAL LAYER
FOR H 5" OR LESS

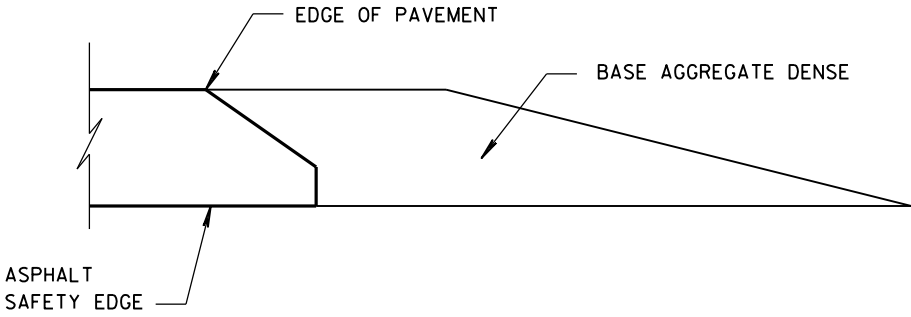


CONSTRUCTED WITH FINAL TWO LAYERS
FOR H GREATER THAN 5"



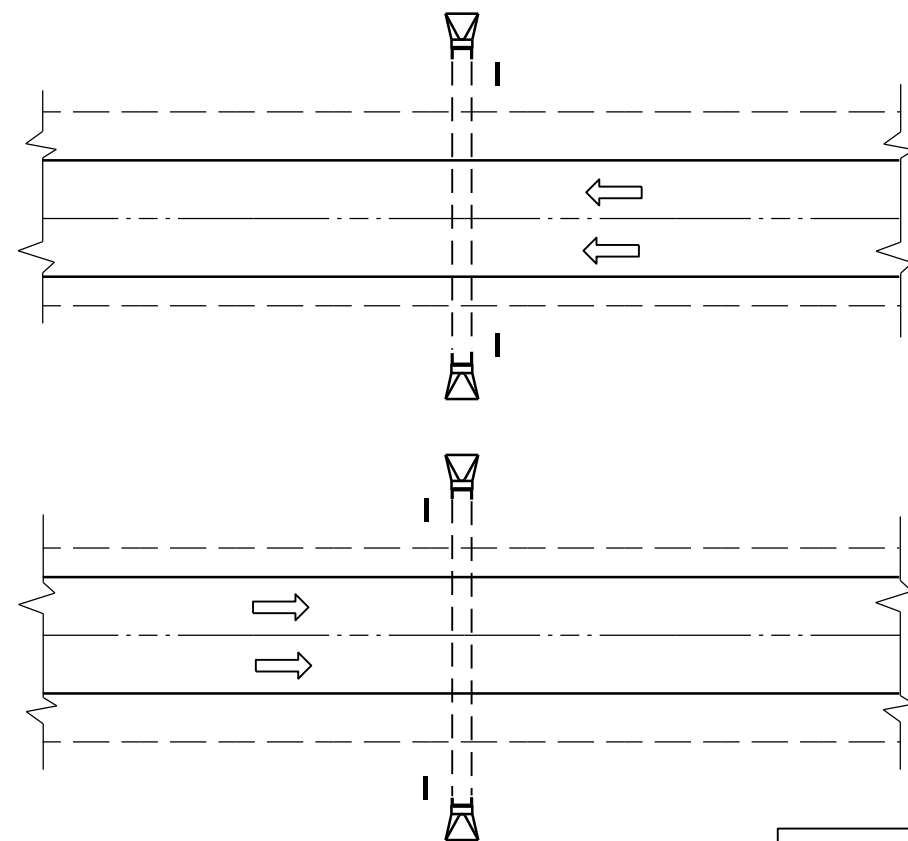
CONSTRUCTED WITH FINAL LAYER
FOR H GREATER THAN 5"

HMA PAVEMENT AND HMA OVERLAYS

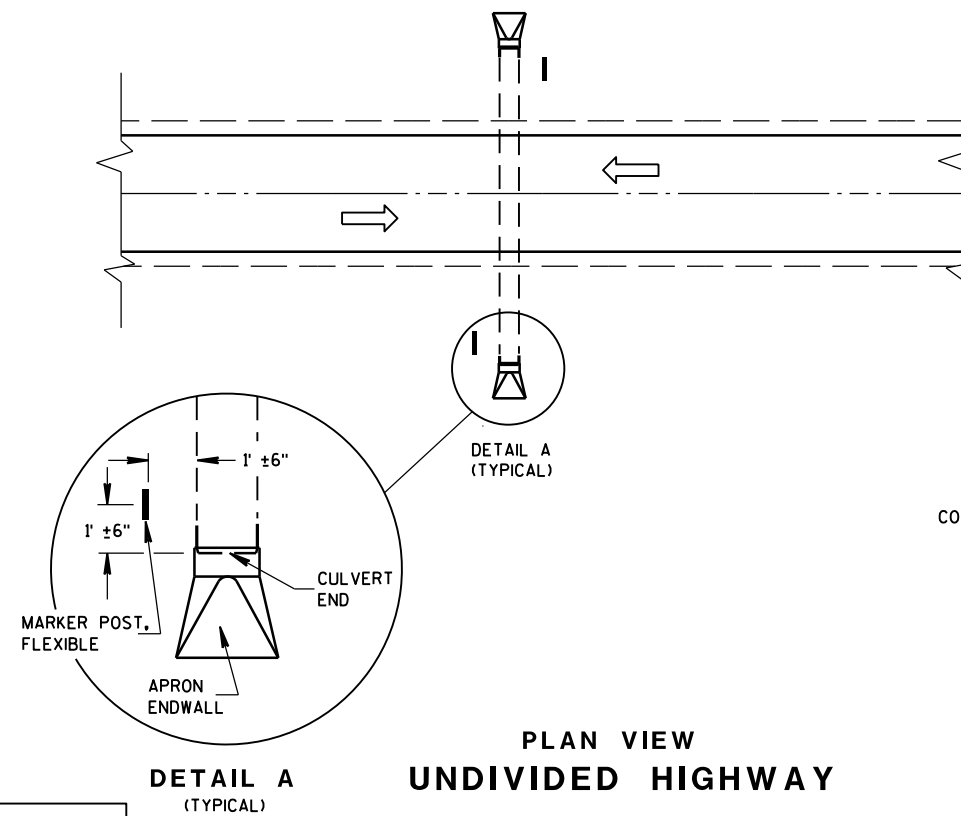
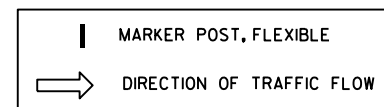


FINISHED SHOULDER AGGREGATE PLACEMENT

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



PLAN VIEW
DIVIDED HIGHWAY

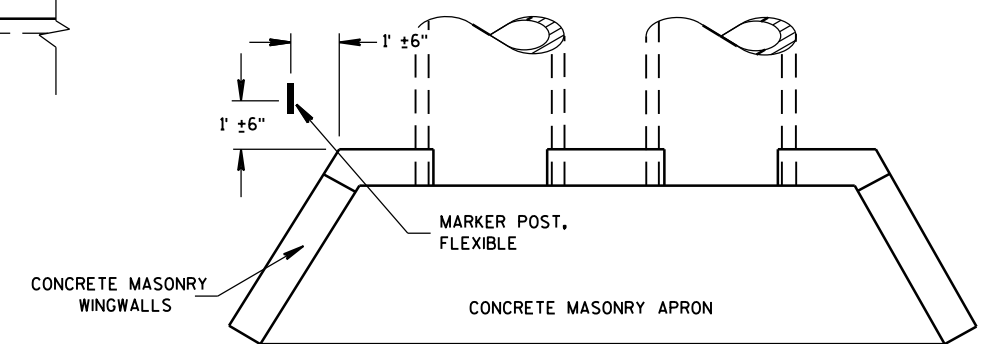


PLAN VIEW
UNDIVIDED HIGHWAY

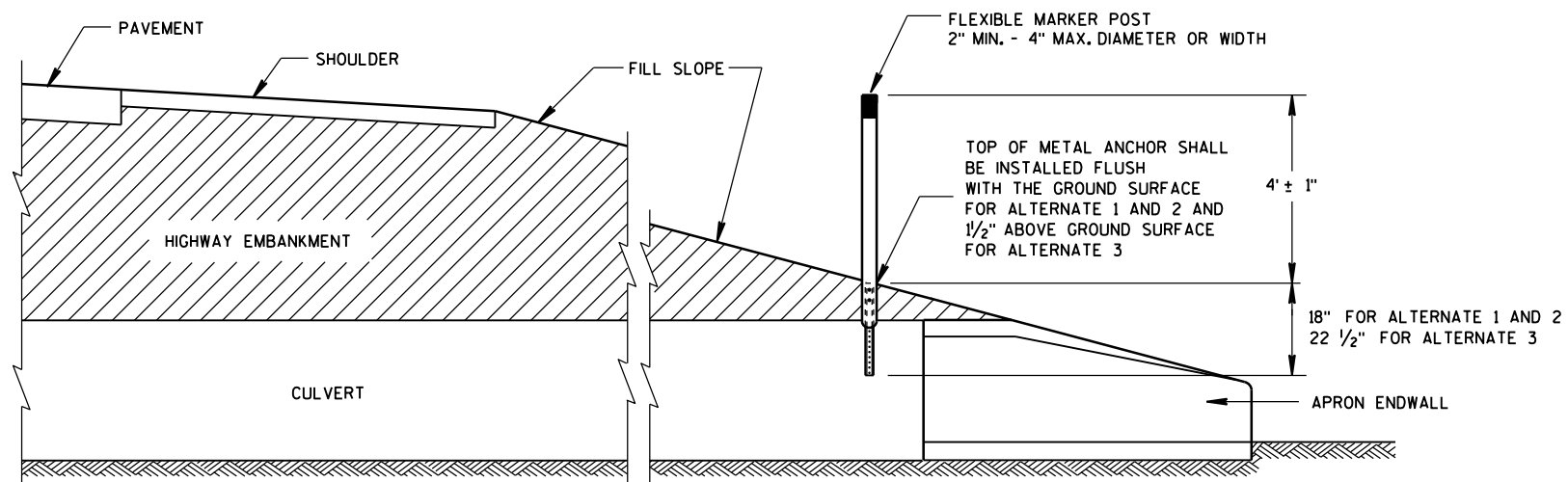
FLEXIBLE MARKER POST LOCATION

GENERAL NOTES

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



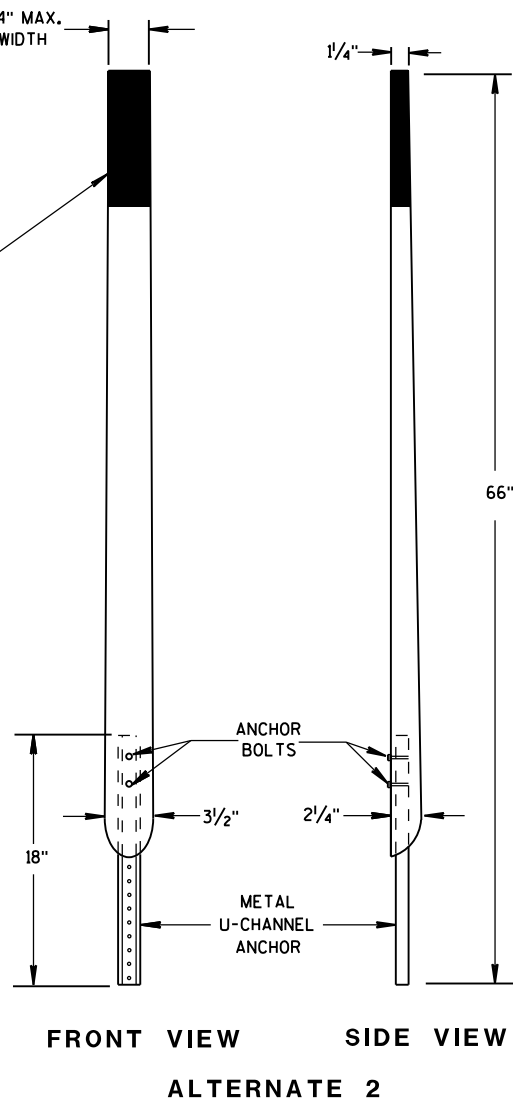
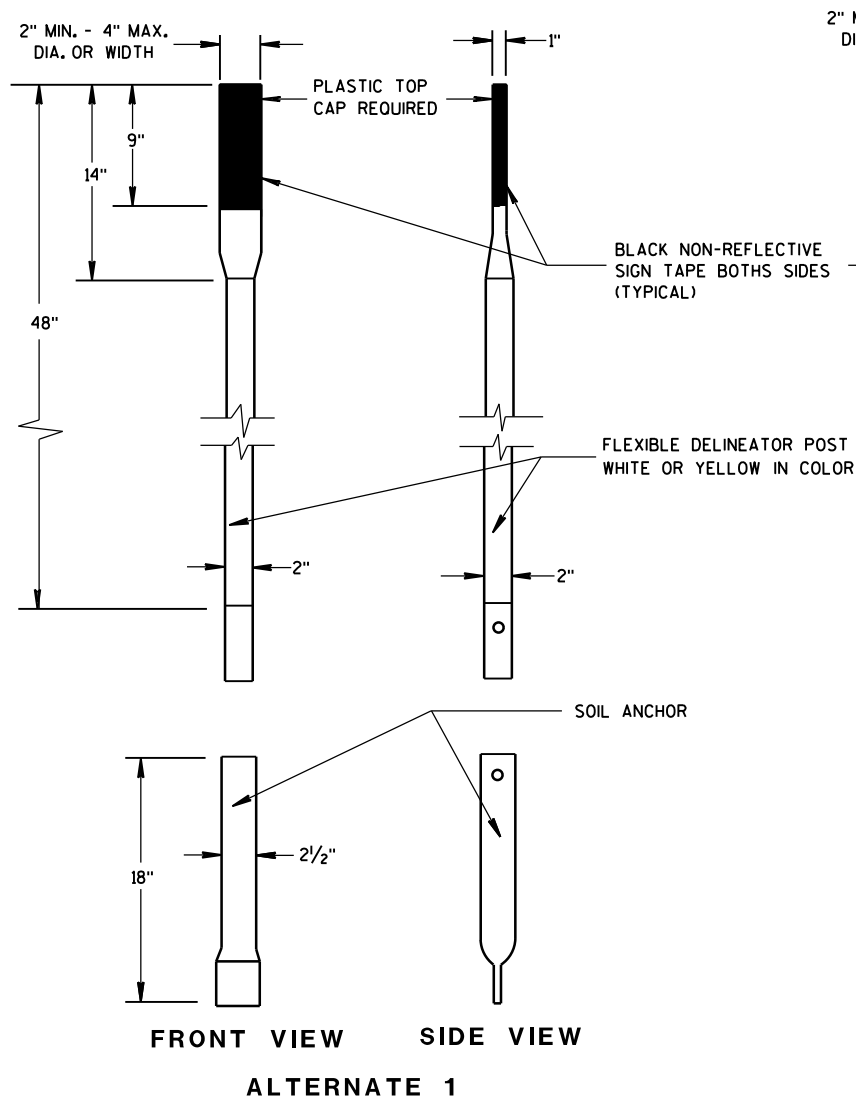
PLAN VIEW
CONCRETE MASONRY ENDWALLS FOR
CULVERT PIPE AND PIPE ARCH



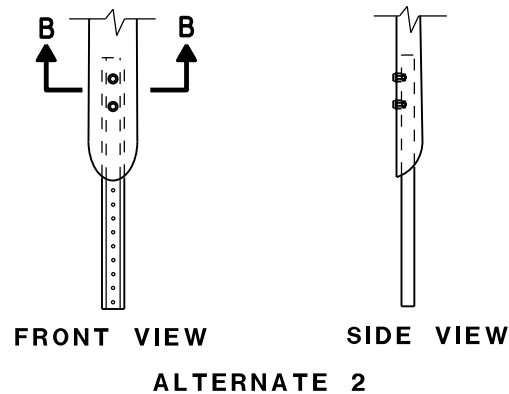
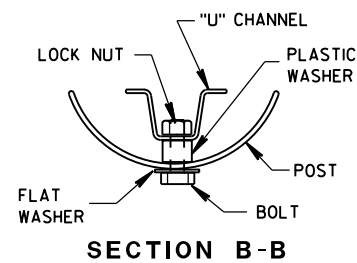
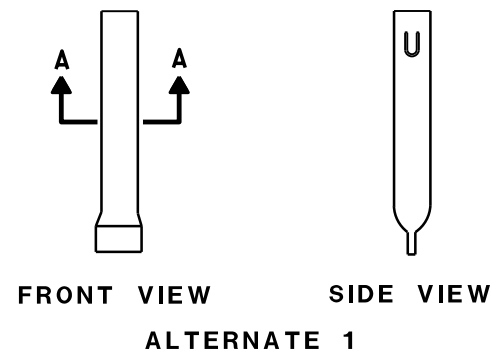
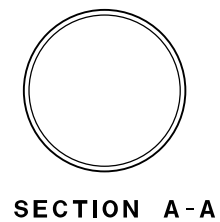
CROSS SECTION
FLEXIBLE MARKER POST

FLEXIBLE MARKER POST
FOR CULVERT END

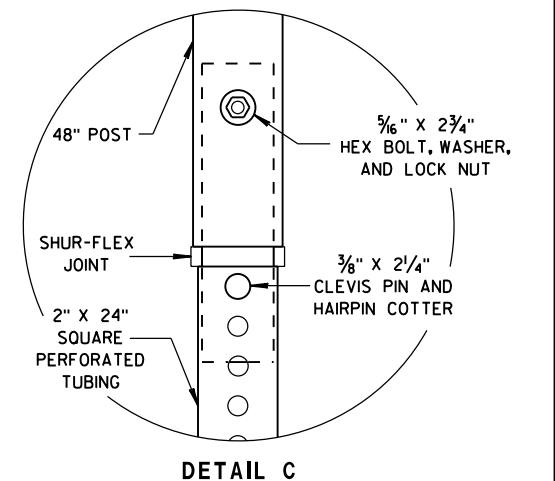
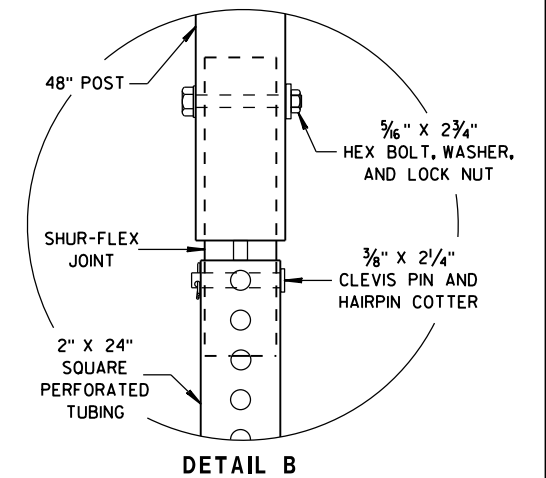
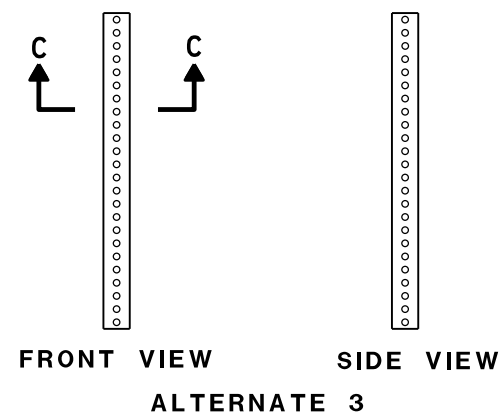
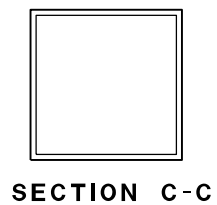
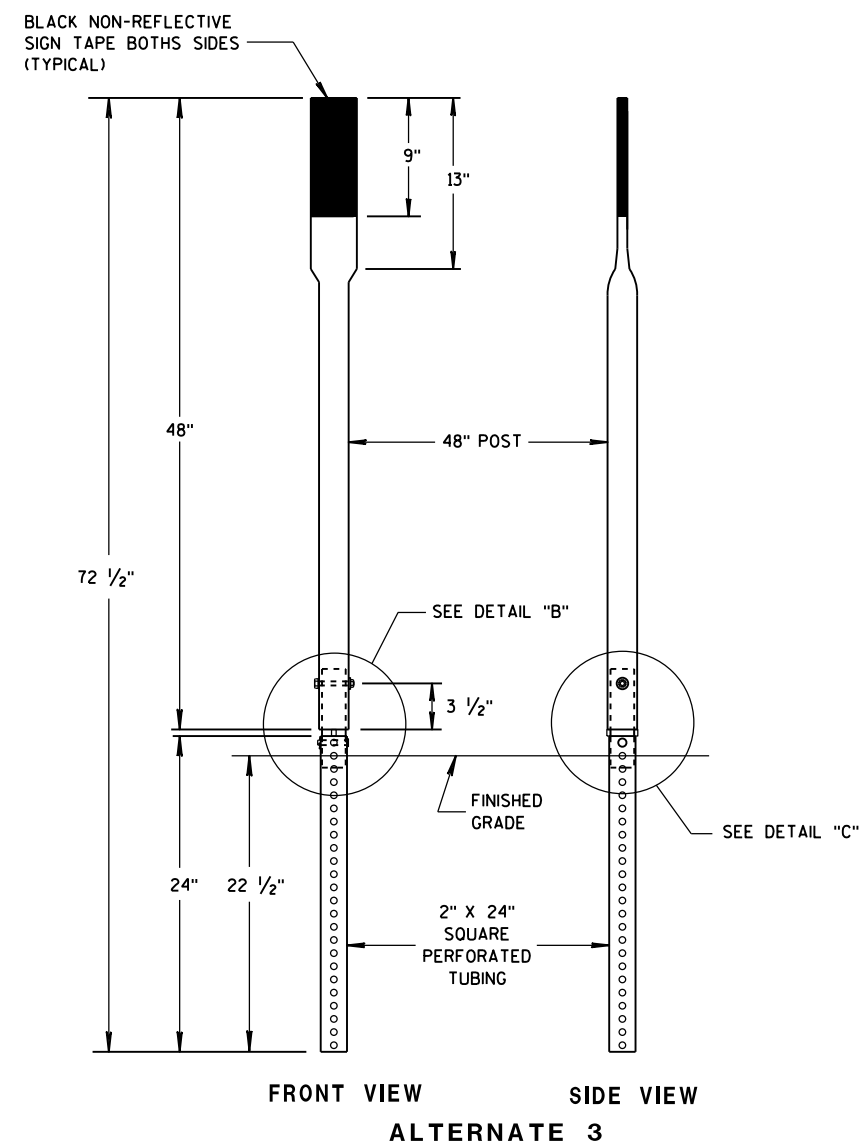
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



FLEXIBLE MARKER POSTS



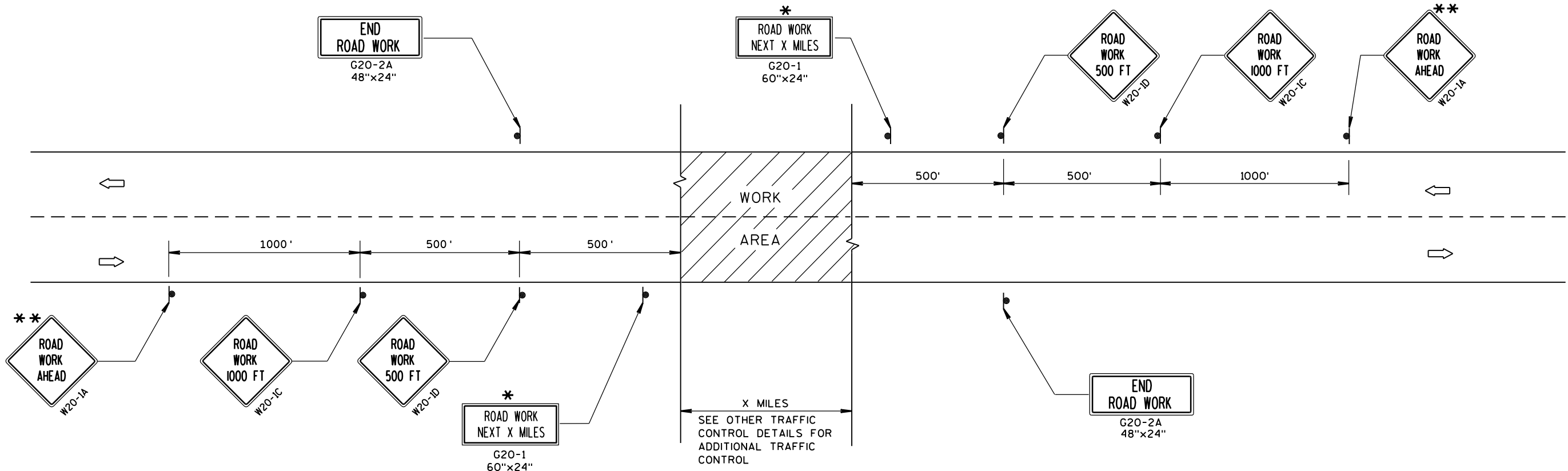
FLEXIBLE MARKER POST ANCHORS



FLEXIBLE MARKER POST FOR CULVERT END

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
10/1/2012 /S/ Travis Feltes
DATE STATE TRAFFIC ENGINEER OF DESIGN
FHWA



TYPICAL SIDEROAD APPROACH WARNING SIGN DETAIL

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.

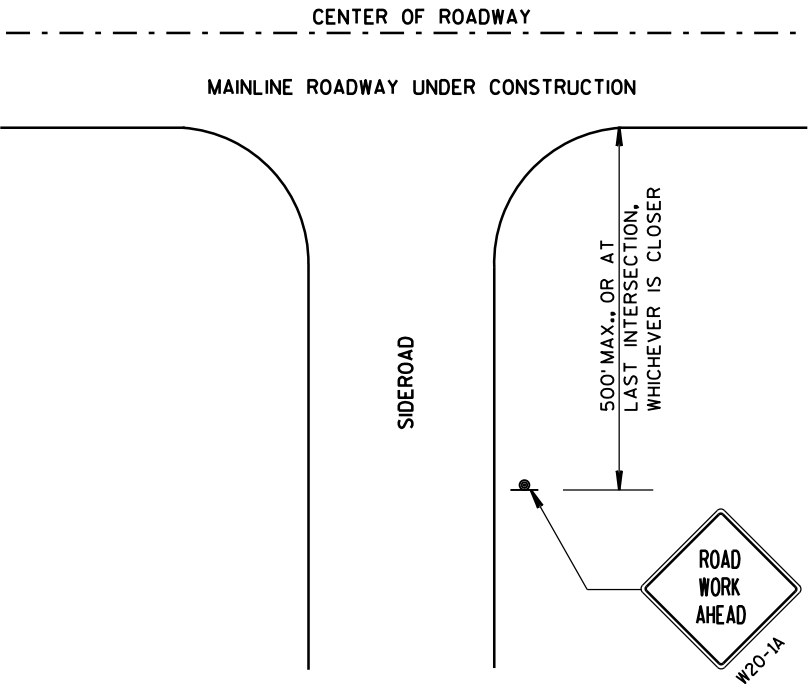
ALL SIGNS ARE 48"x48" UNLESS OTHERWISE NOTED.

SIGNS THAT WILL BE IN PLACE LESS THAN 7 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 RE-ESTABLISHED.

* OMIT G20-1 SIGNS IF LENGTH OF WORK AREA IS 2 MILES OR LESS.

** PLACE ADDITIONAL W20-1A "ROAD WORK AHEAD" SIGN IF WORK AREA WITHIN THE PROJECT IS SEPARATED BY MORE THAN 2 MILES FROM PREVIOUS WORK AREA.



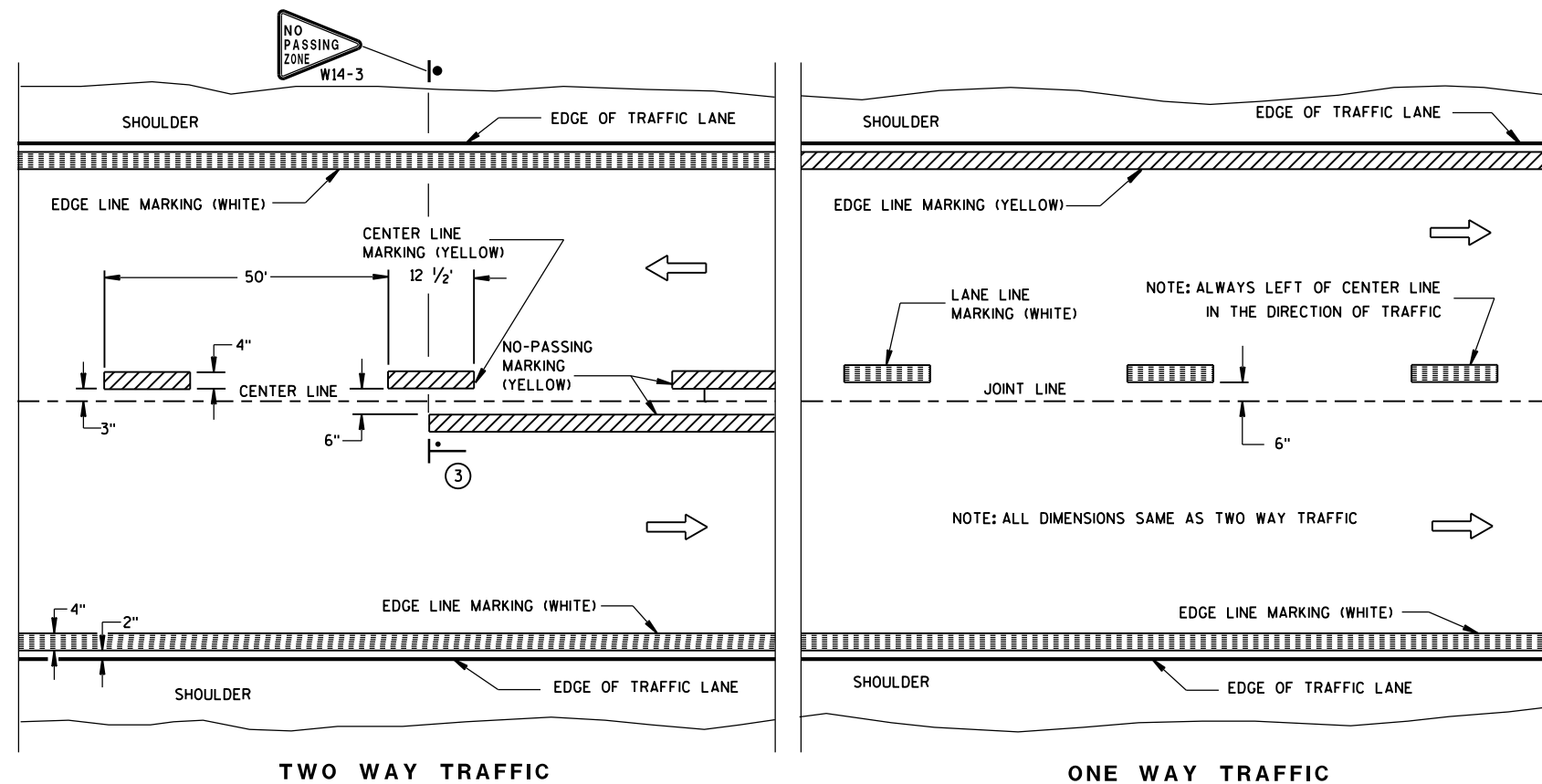
LEGEND

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

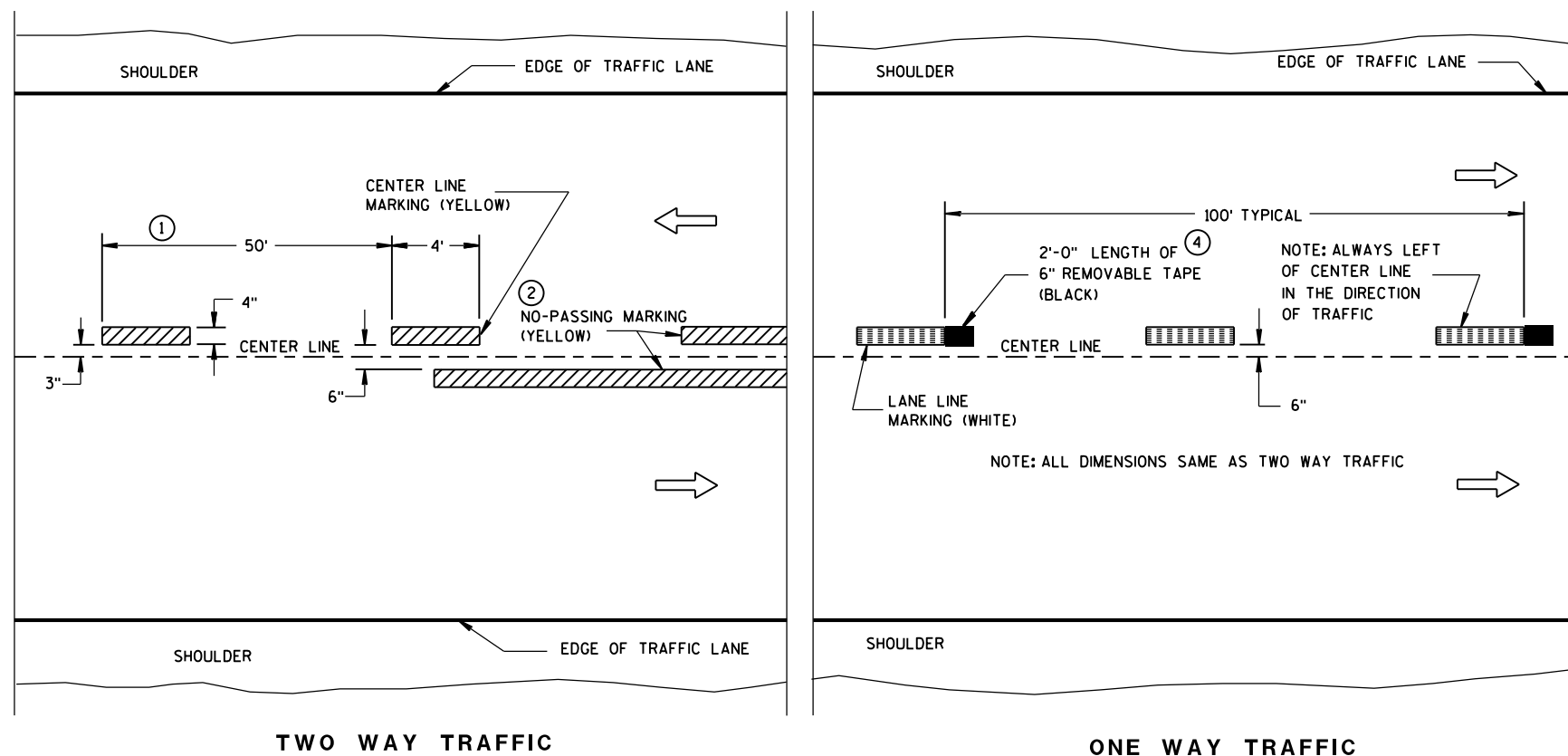
TRAFFIC CONTROL, ADVANCE
WARNING SIGNS 45 M.P.H.
OR GREATER TWO-WAY
UNDIVIDED ROAD OPEN TO TRAFFIC

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
Sept. 2015 /S/ Peter Amokobe Atepe
DATE STATEWIDE WORK ZONE TRAFFIC
FHWA SAFETY ENGINEER



PERMANENT PAVEMENT MARKING



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

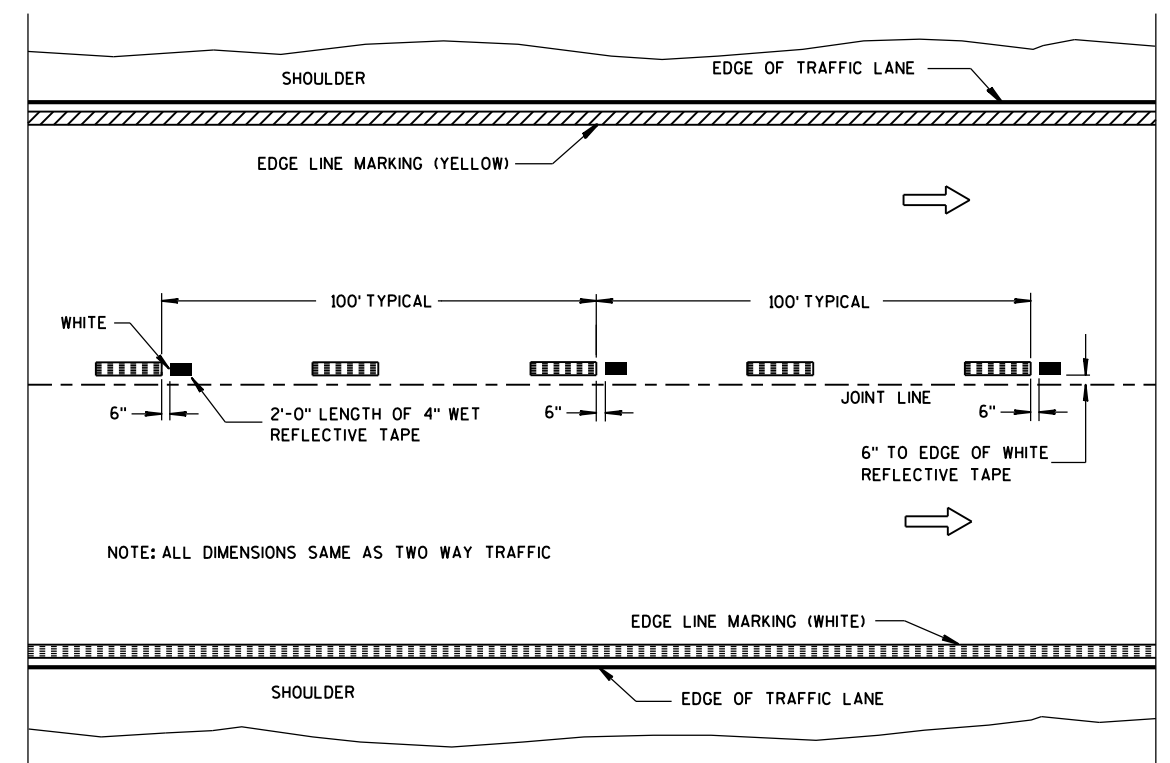
GENERAL NOTES

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

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

NOTE

ARROW SYMBOL () SHOWS DIRECTION OF TRAVEL



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

LEGEND

 "T" MARKING

● POST MOUNTED SIGN

PAVEMENT MARKING
(MAINLINE)

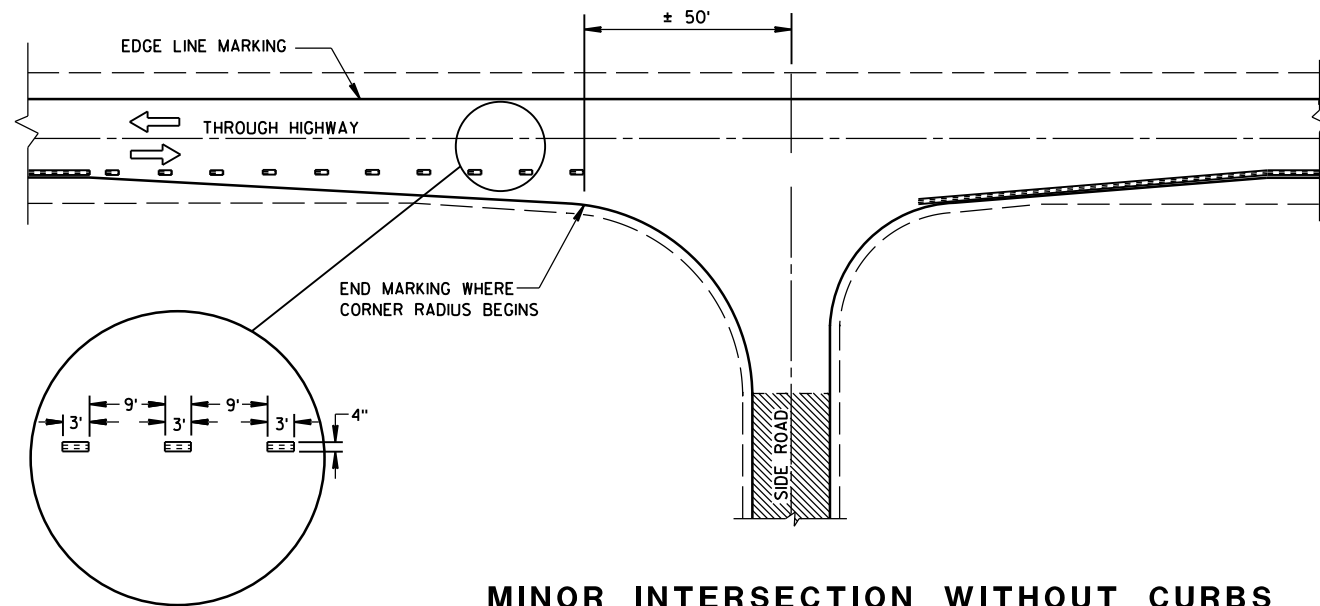
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

5-13-2013
DATE

/S/ Travis Feltes
STATE TRAFFIC ENGINEER

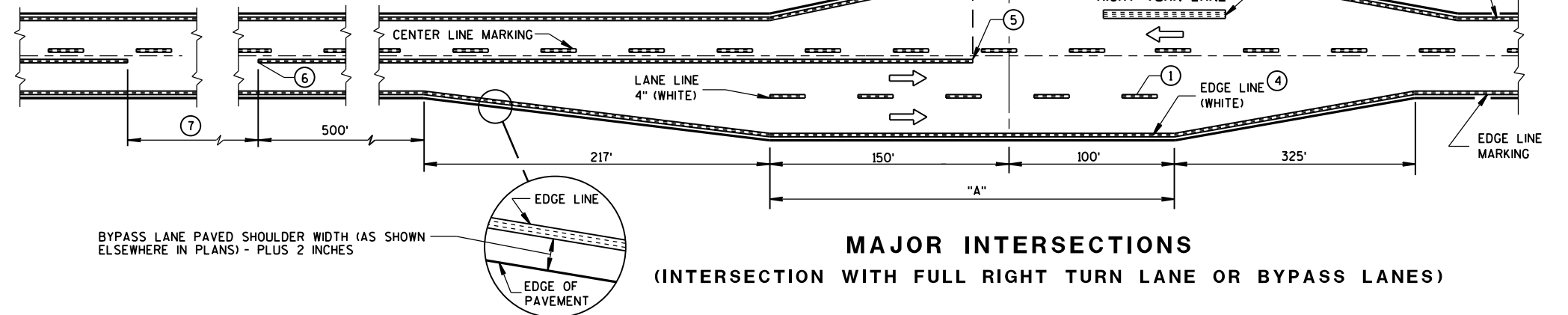
FHWA



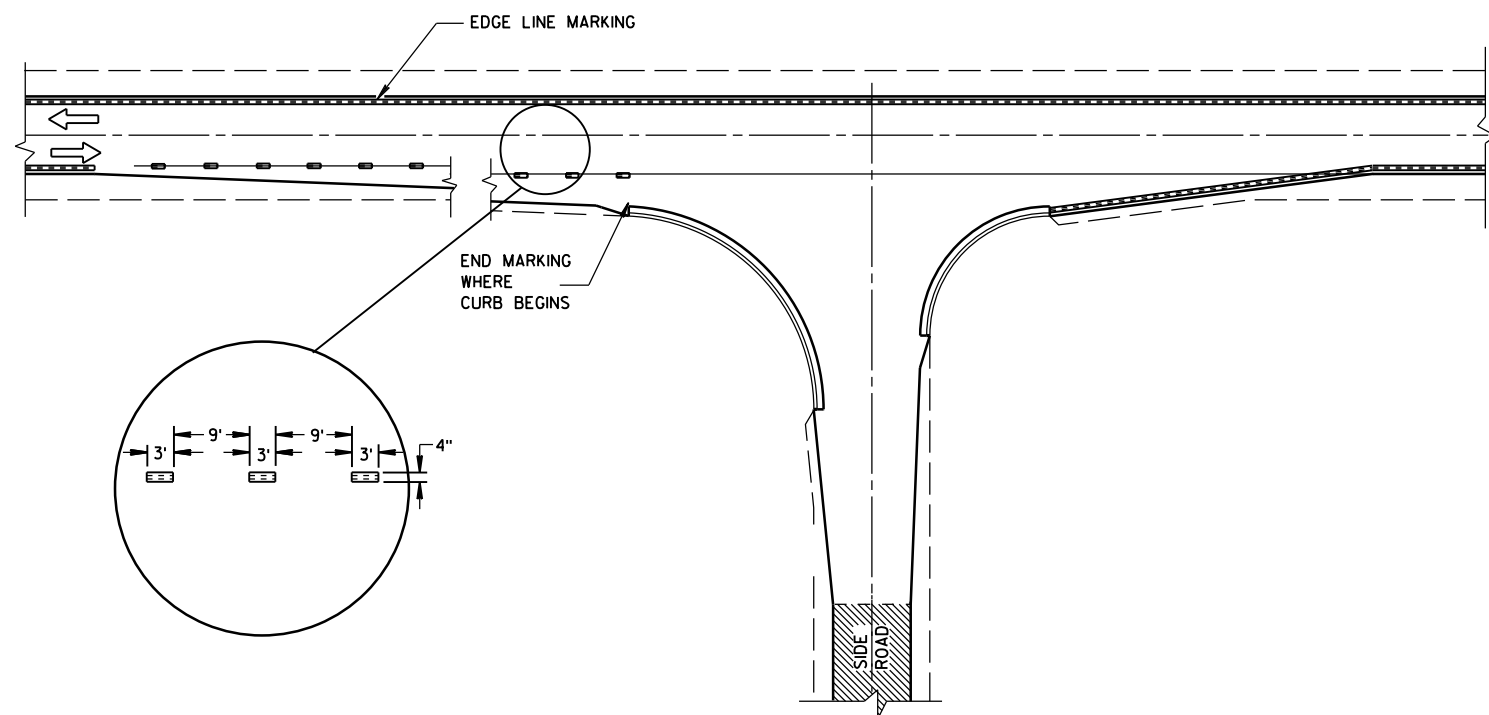
MINOR INTERSECTION WITHOUT CURBS

⑦

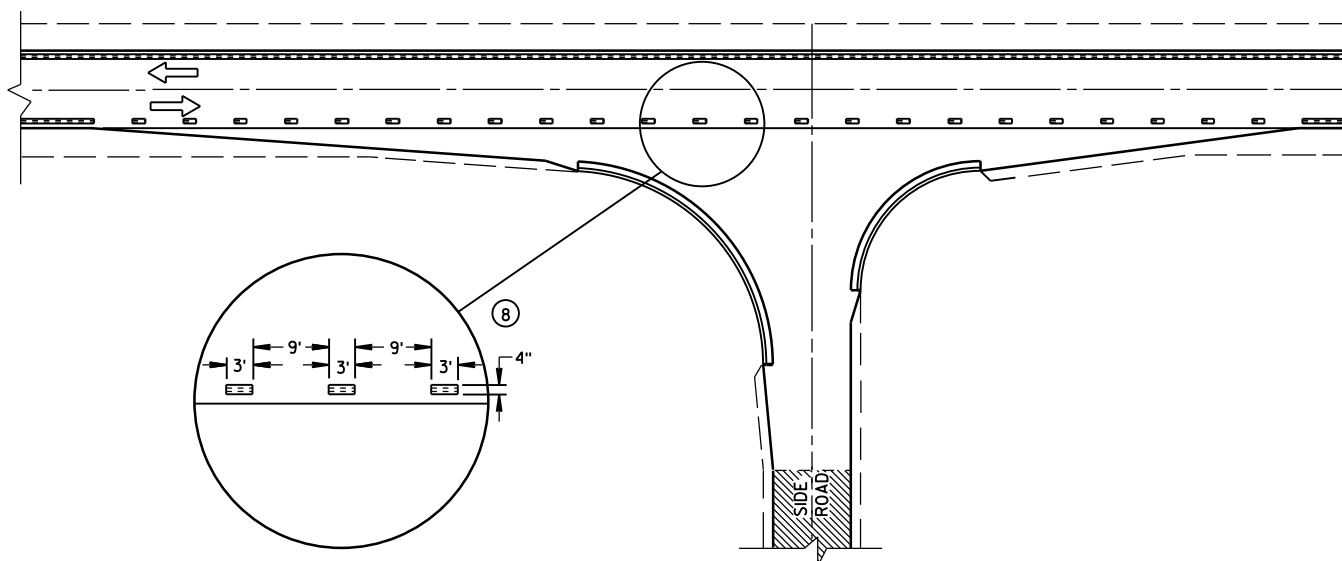
POSTED SPEED (MPH)	MINIMUM DISTANCE BETWEEN ZONES (FEET)
25 - 30	528
35 - 40	528
45 - 50	686
55	792



MAJOR INTERSECTIONS
(INTERSECTION WITH FULL RIGHT TURN LANE OR BYPASS LANES)



MINOR INTERSECTION WITH CURBS
(TYPICAL MARKING)



MINOR INTERSECTION WITH CURBS
③ (FOR SPECIAL CONDITIONS AS SPECIFIED)

GENERAL NOTES

- EDGE LINES SHALL BE OMITTED THROUGH INTERSECTIONS. EDGE LINES SHALL BE CONTINUED THROUGH DRIVEWAYS.
- ① WHEN DISTANCE "A" IS LESS THAN 250 FEET, OMIT LANE LINE.
 - ② WHEN DISTANCE "B" IS LESS THAN 100 FEET, OMIT CHANNELIZING LANE LINE.
 - ③ ALTERNATIVE MARKING SHALL BE PROVIDED WHEN SPECIFIED IN THE CONTRACT. TYPICAL SITUATIONS WHERE THIS MARKING MAY BE REQUIRED ARE WHERE THE INTERSECTION IS ON A SHARP HORIZONTAL CURVE OR CREST VERTICAL CURVE IN AN UNLIGHTED AREA SUCH THAT THE EDGE LINE MAY BE MISLEADING TO THE MOTORIST OR DISAPPEAR FROM SIGHT.
 - ④ THE EDGE LINE IN THE TAPER AREAS OF THE BYPASS LANE AND THE BYPASS LANE SHALL BE LOCATED 1-FOOT FROM EDGE OF PAVEMENT TO THE OUTSIDE EDGE OF EDGE LINE.
 - ⑤ BARRIER LINE ENDS AT SIDE ROAD PAVEMENT/SURFACE EDGE EXTENSION.
 - ⑥ BARRIER LINE STARTS 500 FEET PRIOR TO THE BYPASS TAPER.
 - ⑦ IF THE DISTANCE BETWEEN 2 SUCCESSIVE NO-PASSING ZONES IS LESS THAN THE MINIMUM DISTANCE BETWEEN ZONES, CONNECT THE 2 ZONES.
 - ⑧ 3' LINE 9' GAP, EXCEPT RETRACE THE EXISTING LINE - GAP PATTERN WHERE EXISTING MARKINGS ARE IN PLACE.
- ARROW SYMBOL (→) SHOWS DIRECTION OF TRAVEL

PAVEMENT MARKING
(INTERSECTIONS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

LEGEND

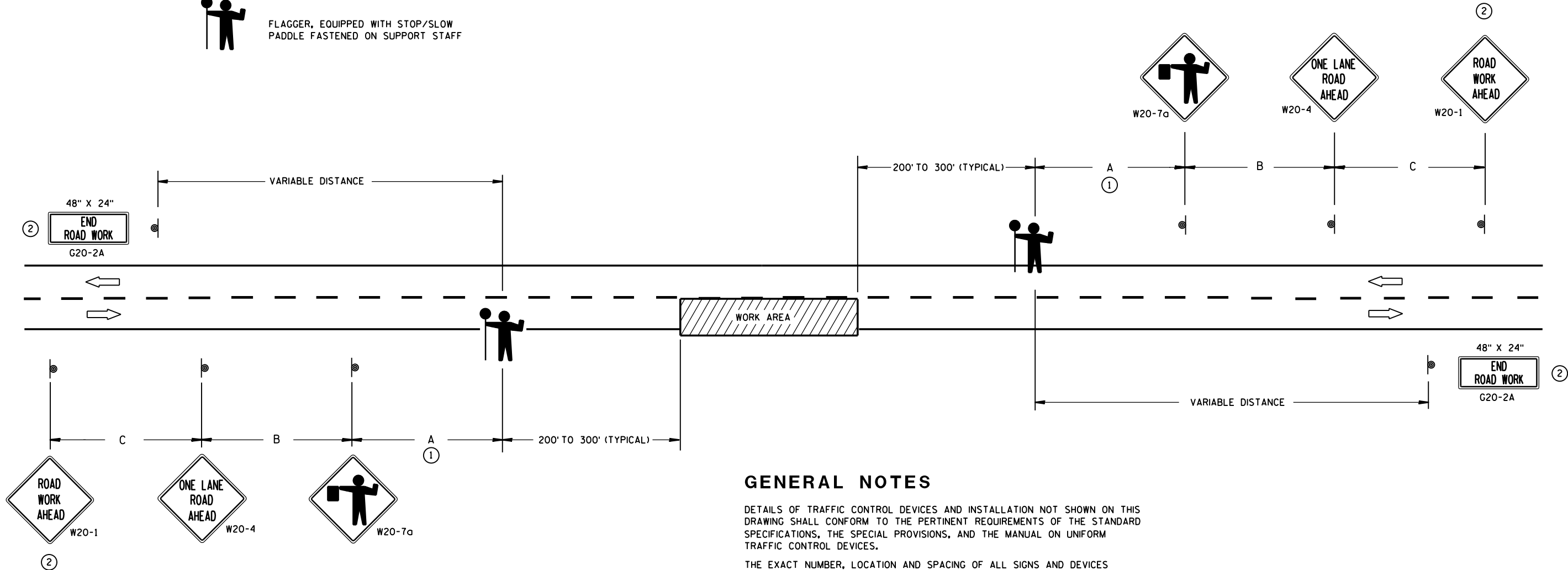
-  SIGN ON PORTABLE OR PERMANENT SUPPORT
-  DIRECTION OF TRAFFIC
-  WORK AREA
-  FLAGGER, EQUIPPED WITH STOP/SLOW PADDLE FASTENED ON SUPPORT STAFF

SIGN SPACING TABLE

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



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



GENERAL NOTES

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

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

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

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

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

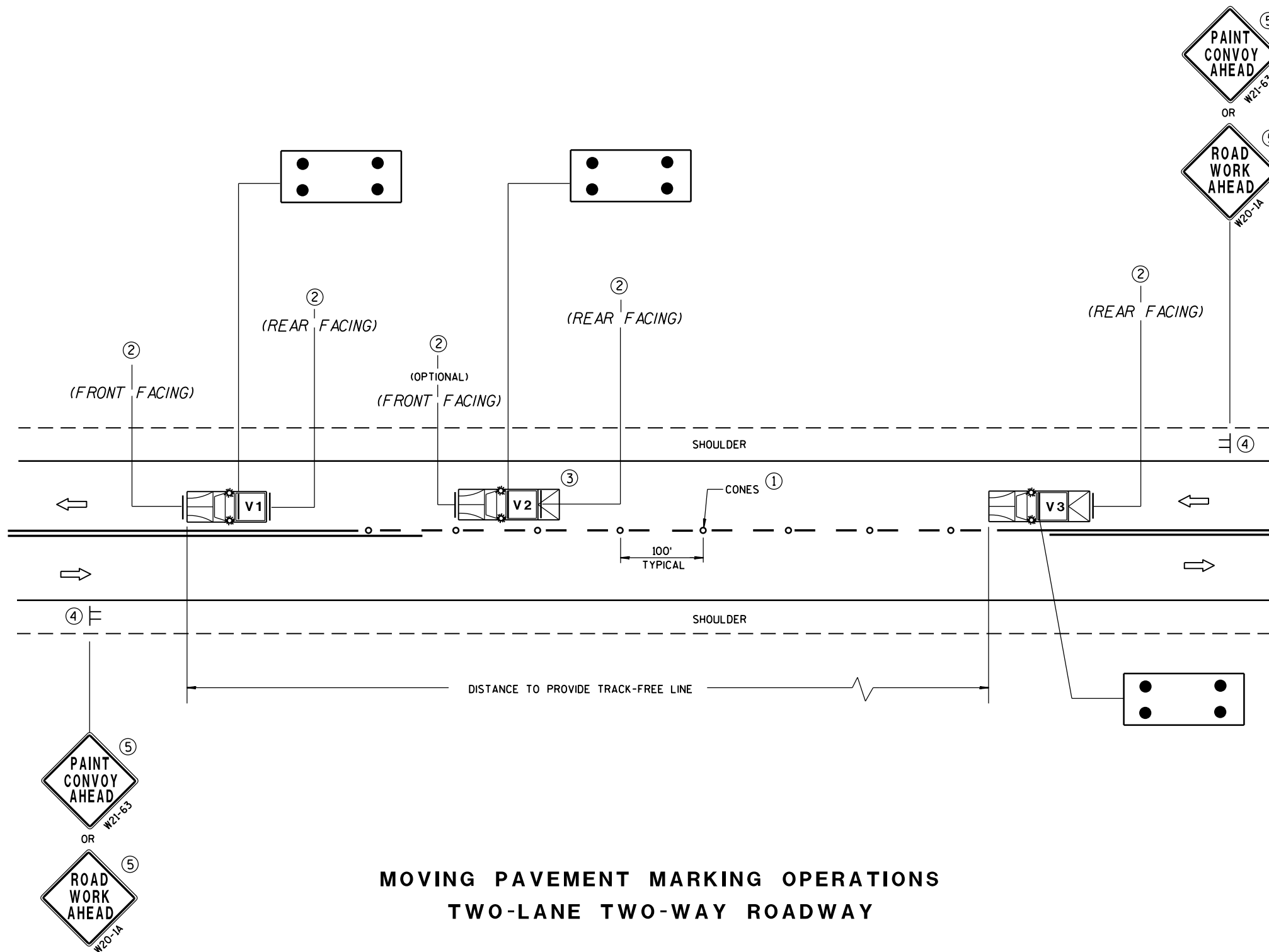
ALL SIGNS ARE 48" X 48" UNLESS OTHERWISE NOTED.

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

TRAFFIC CONTROL FOR LANE CLOSURE (SUITABLE FOR MOVING OPERATIONS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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



MOVING PAVEMENT MARKING OPERATIONS
TWO-LANE TWO-WAY ROADWAY

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.

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.

IF SPEED LIMIT IS 40 MPH OR LESS STATIONARY SIGNS MAY BE OMITTED IF CONES ARE USED.

ALTERNATE SIGN MESSAGES, SUCH AS "PAINT CREW AHEAD" OR "ROAD PAINTING AHEAD" MAY BE USED.

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 OR HORIZONTAL CURVES THAT RESTRICT SIGHT DISTANCE.

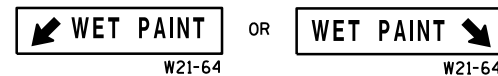
THE WORK AND SHADOW VEHICLES SHOULD PULL OVER PERIODICALLY TO ALLOW TRAFFIC TO PASS.

THIS DRAWING SHALL BE USED FOR CENTERLINE OR EDGELINE MARKING.

WHEN NO WORK ACTIVITY IS TAKING PLACE, REMOVE OR TURN THE STATIONARY WARNING SIGNS AWAY FROM TRAFFIC.

① CONES MAY BE OMITTED ON PAINTED LINE IF APPROVED BY THE ENGINEER. CONSIDER PAVEMENT MARKING DRY OR CURE TIMES AND TRAFFIC VOLUME.

② USE STANDARD SIGN W21-64 WITH APPROPRIATE ARROW.



③ OPTIONAL TRUCK-MOUNTED ATTENUATOR.

④ SIGNS SHALL BE REPEATED APPROXIMATELY EVERY THREE MILES.

⑤ IF CONSTRUCTION WORK ZONE SIGNS ARE IN PLACE, W20-1 OR W21-63 ARE NOT REQUIRED.

LEGEND

V1 LEAD VEHICLE

V2 SHADOW VEHICLE

V3 TRAIL VEHICLE WITH TMA

TMA TRUCK-MOUNTED ATTENUATOR

SIGN ON TEMPORARY SUPPORT

DIRECTION OF TRAFFIC

CONES

FLASHING ARROW PANEL (CAUTION)

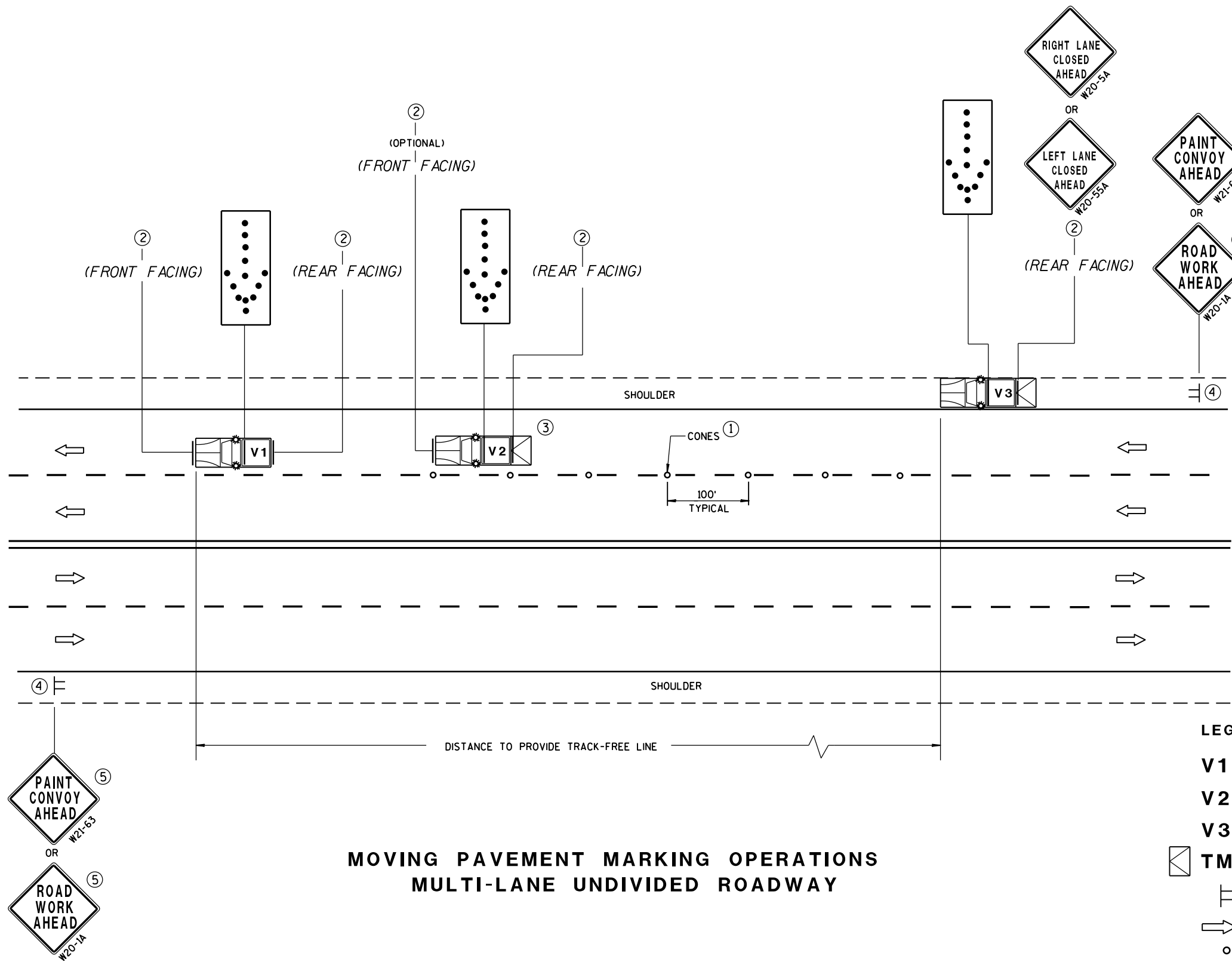
MOVING PAVEMENT MARKING
OPERATION
TWO-LANE TWO-WAY ROADWAY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

DATE /S/ Peter Amakobe Atepe
STATEWIDE WORK ZONE TRAFFIC
SAFETY ENGINEER

FHWA



MOVING PAVEMENT MARKING OPERATIONS
MULTI-LANE UNDIVIDED ROADWAY

GENERAL NOTES

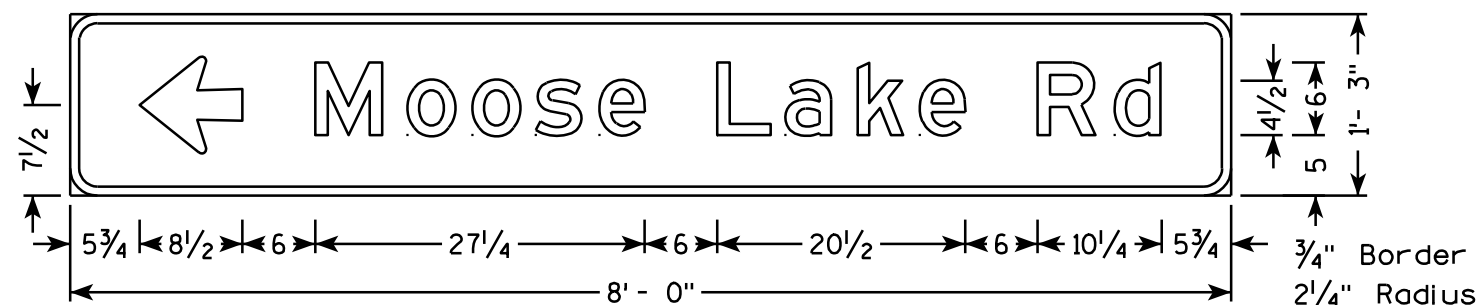
- ALL VEHICLES SHALL BE EQUIPPED WITH TWO 360 DEGREE HIGH INTENSITY YELLOW FLASHING LIGHTS OR STROBE LIGHTS AND OPERATED WITH HEADLIGHTS TURNED ON.
- ALL VEHICLES SHALL BE EQUIPPED WITH REAR FACING TYPE B OR C FLASHING ARROW PANEL. SIGNS PLACED ON VEHICLES MUST NOT OBSCURE THE ARROW PANEL.
- ALL SIGNS ARE 48" X 48" UNLESS OTHERWISE SPECIFIED.
- IF SPEED LIMIT IS 40 MPH OR LESS STATIONARY SIGNS MAY BE OMITTED IF CONES ARE USED.
- ALTERNATE SIGN MESSAGES, SUCH AS "PAINT CREW AHEAD" OR "ROAD PAINTING AHEAD" MAY BE USED.
- 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 OR HORIZONTAL CURVES THAT RESTRICT SIGHT DISTANCE.
- WHEN WORK ACTIVITY BLOCKS THE LEFT LANE, REVERSE TRAFFIC CONTROL.
- WHEN A RAMP INTERSECTS THE FACILITY ON WHICH THE WORK IS BEING PERFORMED, PROVIDE ADDITIONAL TRAFFIC CONTROLS AS SPECIFIED IN THE CONTRACT OR AS APPROVED BY THE ENGINEER.
- USE AN ATTENUATOR ON THE REARMOST VEHICLE THAT BLOCKS ALL OR PART OF THE TRAFFIC LANE.
- FOR EDGE LINE MARKING OR IF CONES ARE NOT USED, POSITION THE REARMOST SHADOW VEHICLE ON THE SHOULDER AS SHOWN IN THE MUTCD IF THE SHOULDER HAS ADEQUATE WIDTH.
- WHEN NO WORK ACTIVITY IS TAKING PLACE, REMOVE OR TURN THE STATIONARY WARNING SIGNS AWAY FROM TRAFFIC.
- THIS DRAWING SHALL BE USED FOR CENTERLINE OR EDGE LINE OR LANELINE MARKING FOR MULTILANE UNDIVIDED ROADWAYS.

- ① CONES MAY BE OMITTED ON PAINTED LINE IF APPROVED BY THE ENGINEER. CONSIDER PAVEMENT MARKING DRY OR CURE TIMES AND TRAFFIC VOLUME.
- ② USE STANDARD SIGN W21-64 WITH APPROPRIATE ARROW.
- ③ OPTIONAL TRUCK-MOUNTED ATTENUATOR.
- ④ SIGNS SHALL BE REPEATED APPROXIMATELY EVERY THREE MILES.
- ⑤ IF CONSTRUCTION WORK ZONE SIGNS ARE IN PLACE, W20-1 OR W21-63 ARE NOT REQUIRED.

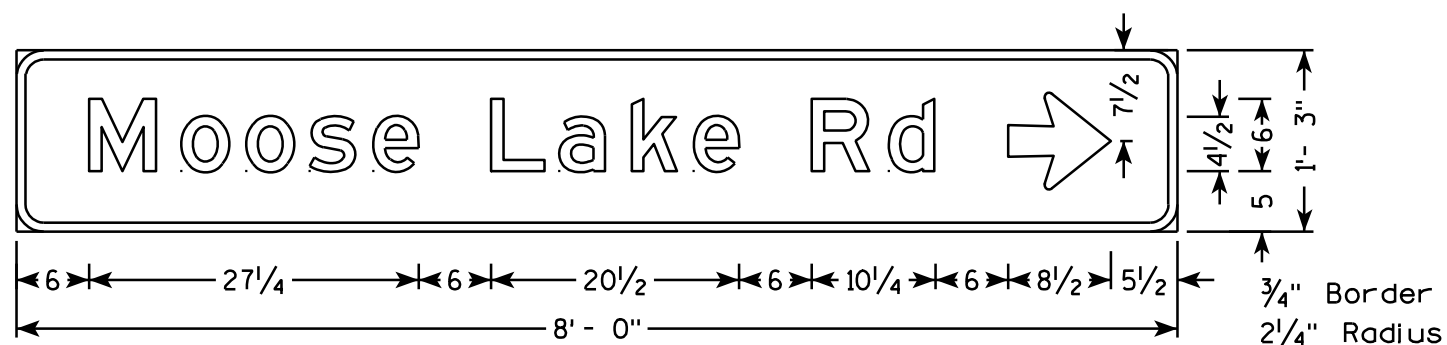
LEGEND

- V1 LEAD VEHICLE
- V2 SHADOW VEHICLE
- V3 TRAIL VEHICLE WITH TMA
- TMA TRUCK-MOUNTED ATTENUATOR
- SIGN ON TEMPORARY SUPPORT
- DIRECTION OF TRAFFIC
- CONES
- FLASHING ARROW PANEL (MERGE)

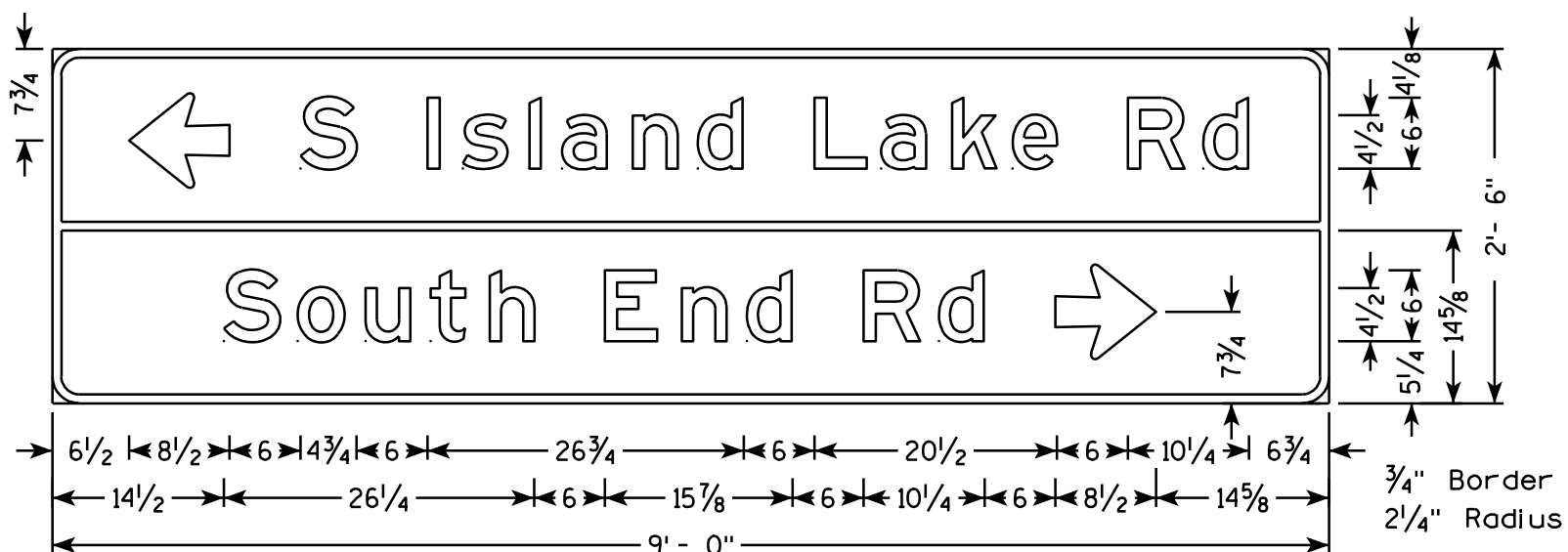
MOVING PAVEMENT MARKING OPERATION MULTI-LANE UNDIVIDED ROADWAY	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED Sept. 2015 DATE	/S/ Peter Amakobe Atepe STATEWIDE WORK ZONE TRAFFIC SAFETY ENGINEER
FHWA	



D1-1



D1-1



D1-2

NOTES

1. All Signs Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
Background - GREEN
Message - WHITE
3. Message Series - E

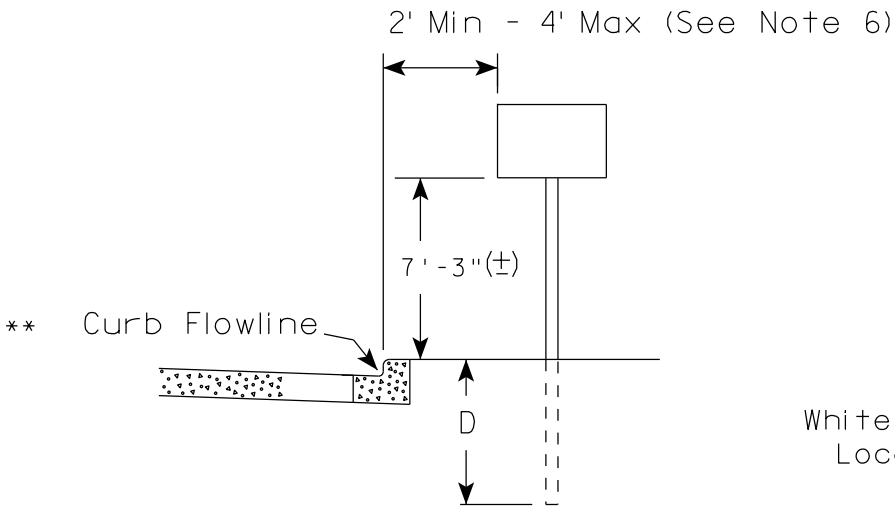


D1-1

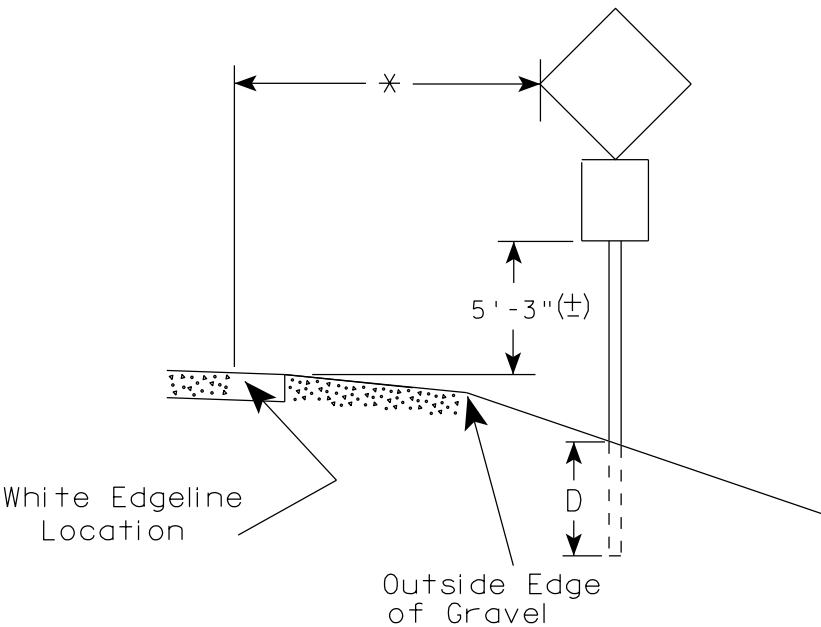
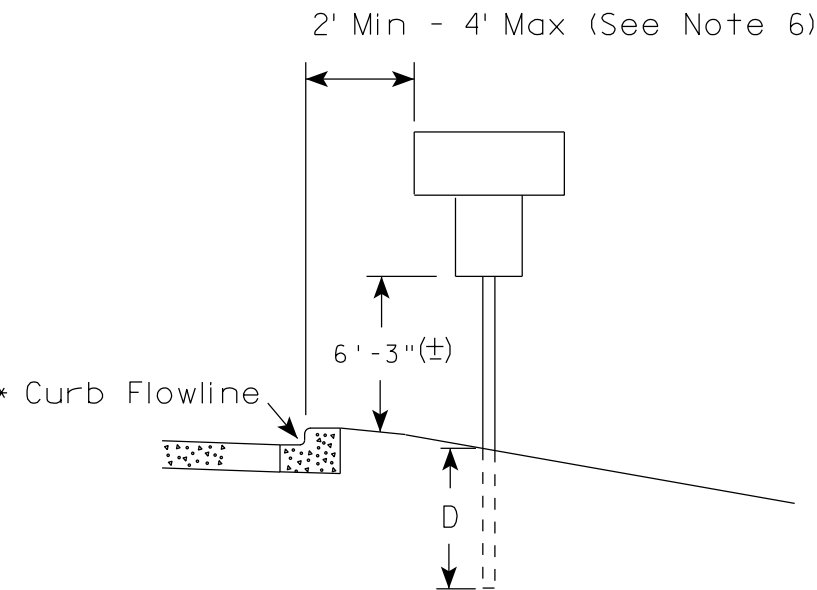
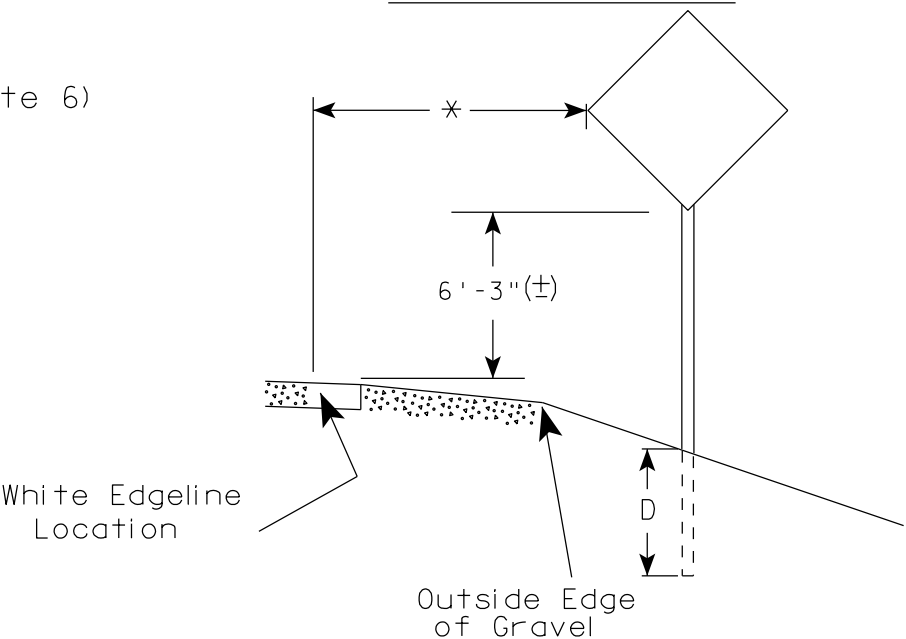


D1-1

URBAN AREA



RURAL AREA (See Note 2)



POST EMBEDMENT DEPTH

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

GENERAL NOTES

1. Signs wider than 4 feet or 20 sq.ft or larger, shall be mounted on multiple posts. Refer to plate A4-4.
2. If signs are mounted on barrier wall, see A4-10 sign plate.
3. For expressways and freeways, mounting height is 7'- 3" (±) or 6'-3" (±) depending upon existence of a sub-sign.
4. Minimum mounting height for J assemblies (A2-1S) is 7'-3" (±) or 6'-3" (±) per urban or rural detail respectively.
5. Minimum mounting height for signs mounted on traffic signal poles is 5'- 3" (±).
6. Offset distance shall be consistent with existing signs or consistent throughout length of project.
7. The (±) tolerance for mounting height is 3 inches.
8. Folding signs shall be mounted at a height of 5'-3" (±) or as directed by the Engineer.
9. The Double Arrow sign (W12-1) shall be mounted at a height of 2'-3" (±). The Chevron sign (W1-8), Roundabout Chevron panel (R6-4B), Enhanced Reference Markers, Clearance Markers (W5-52), Mile Markers (D10 series), In Road Object Markers (W5-54) & End of Road Markers (W5-56) shall be mounted at a height of 4'-3" (±).

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

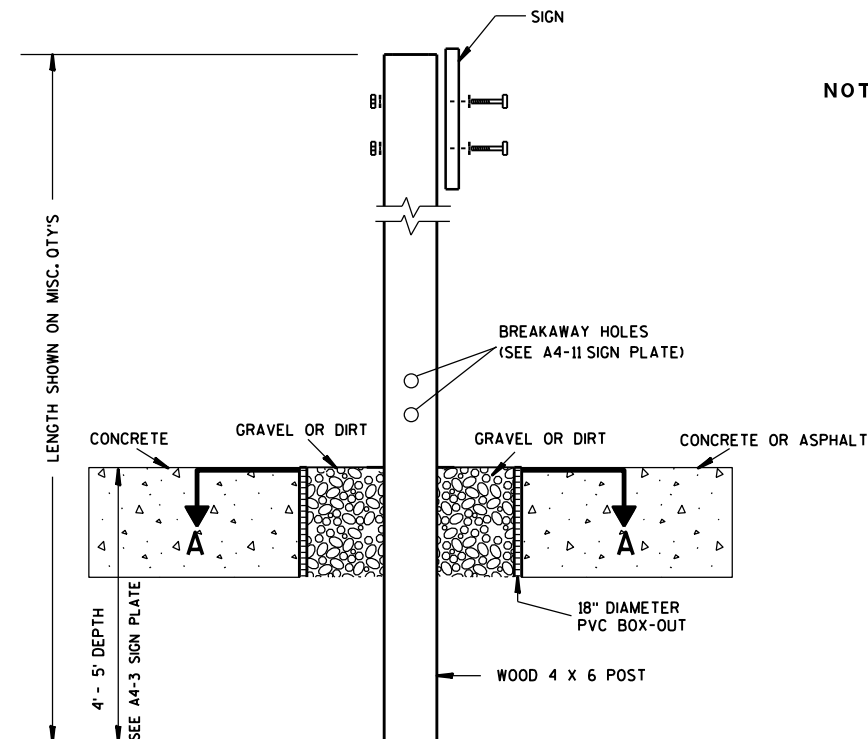
* 6 feet from edge of a paved shoulder or 12 feet from the edge of pavement (edge line location) or 2 feet from outside edge of gravel, whichever is greater unless directed by project engineer.

TYPICAL INSTALLATION
OF PERMANENT TYPE II
SIGNS ON SINGLE POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED
Matthew R. Rauch
for State Traffic Engineer

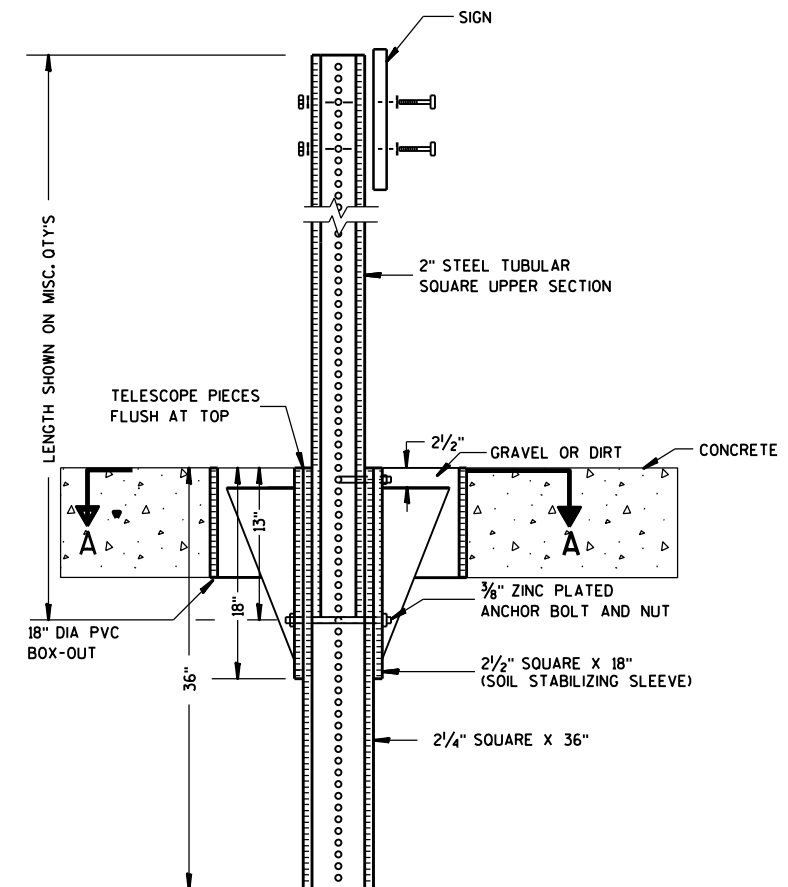
DATE 7/23/15 PLATE NO. A4-3.20



ELEVATION VIEW

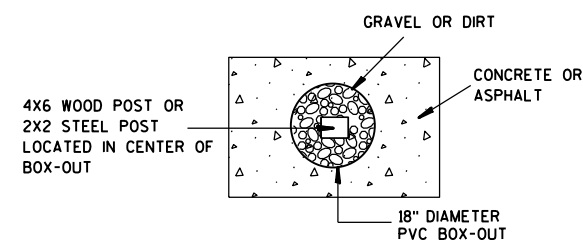
DETAIL OF WOOD 4 X 6 SIGN POST IN BOX-OUT

- 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

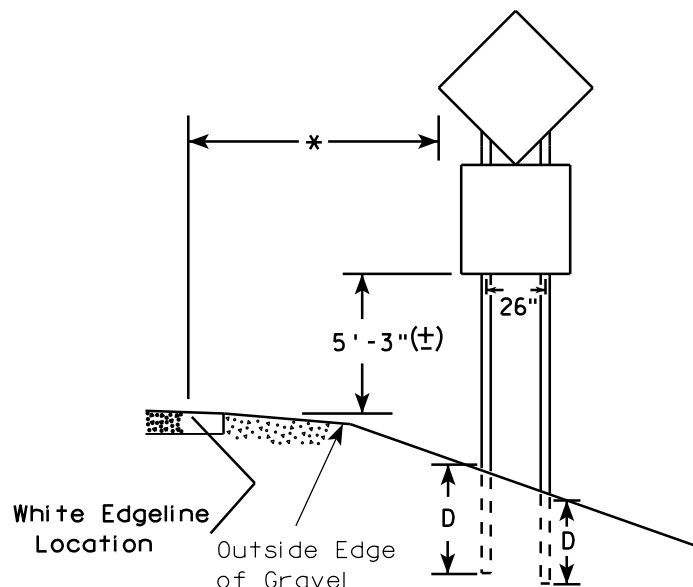
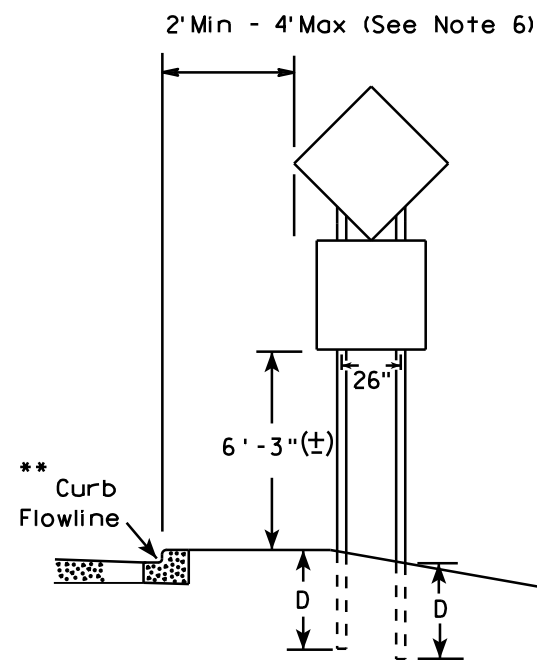
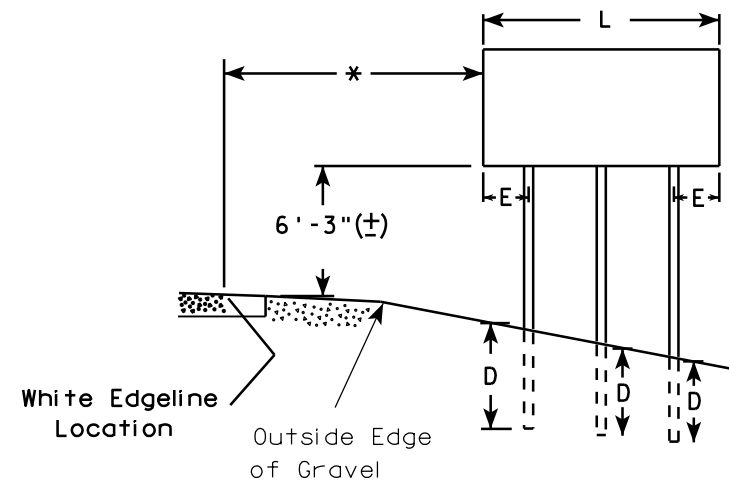
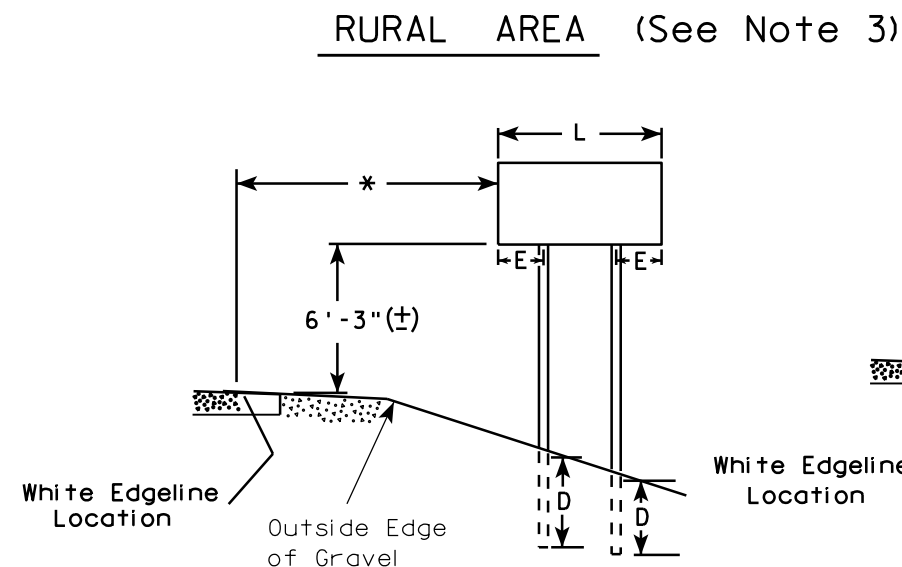
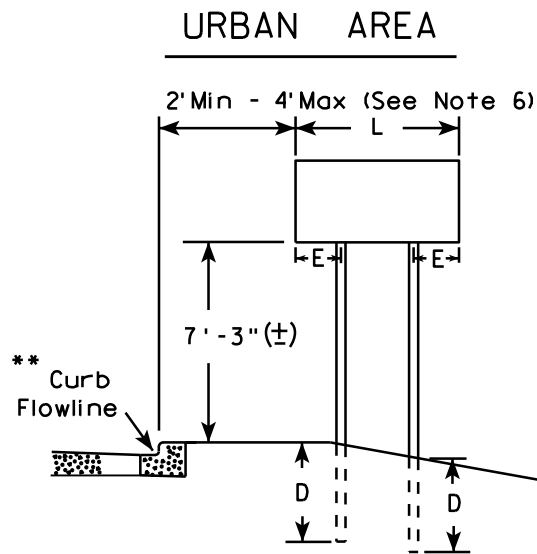
PROJECT NO:

HWY:

COUNTY:

SHEET NO:

E



48" DIAMOND WARNING SIGN

- GENERAL NOTES**
1. For 3 or 4 post installations, individual post spacing shall be greater than 3'-6".
 2. See tables below for required number of posts.
 3. For expressways and freeways, mounting height is 7'-3" (±) or 6'-3" (±) depending upon existence of sub-sign.
 4. The (±) tolerance for mounting height is 3 inches.
 5. Minimum mounting height for J assemblies (A2-1S) is 7'-3" (±) or 6'-3" (±) per urban or rural detail respectively.
 6. Offset distance shall be consistent with existing signs or consistent throughout length of project.
 7. Folding 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 (TWO POSTS REQUIRED)	
L	E
Greater than 48" Less than 60"	12"
60" to 120"	L/5

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

SIGN SHAPE OTHER THAN DIAMOND (FOUR POSTS REQUIRED)	
L	E
168" and greater	12"

POST EMBEDMENT DEPTH

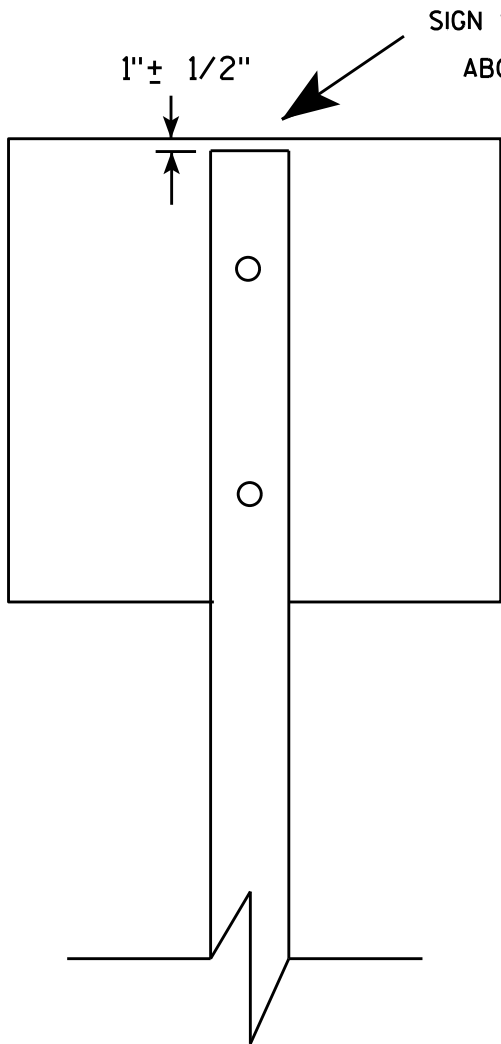
Area of Sign Installation (Sq. Ft.)	D (Min)
20 or Less	4'
Greater than 20	5'

TYPICAL INSTALLATION
OF TYPE II SIGNS
ON MULTIPLE POSTS

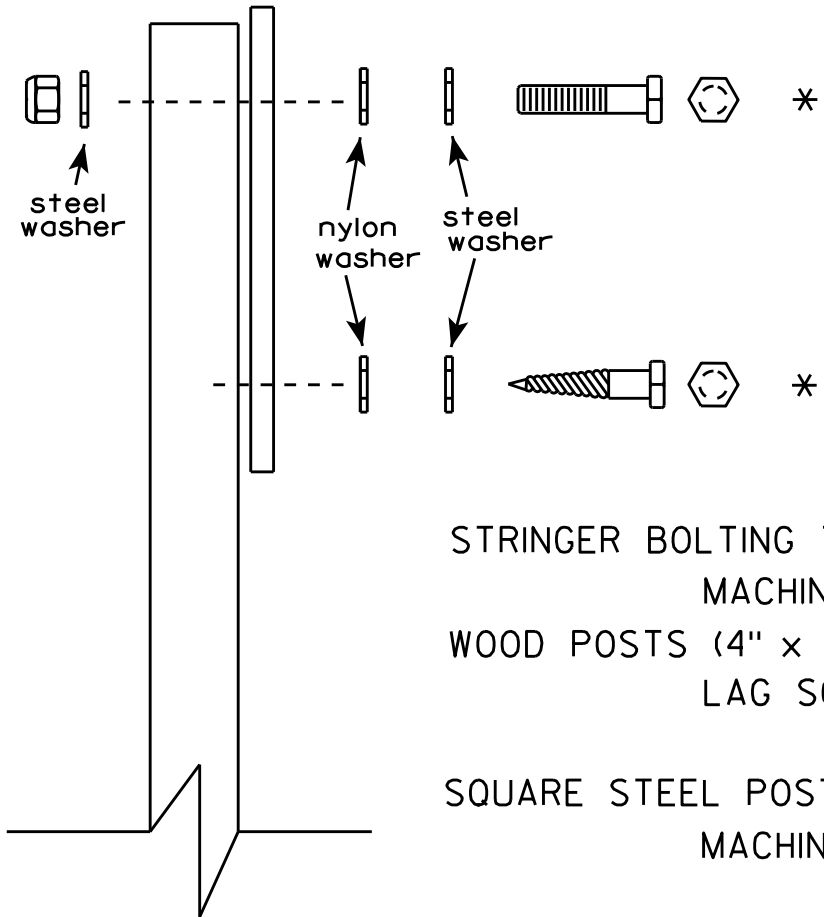
WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 7/23/15 PLATE NO. A4-4.14



SIGN SHALL BE MOUNTED TO PROJECT
ABOVE THE TOP OF THE POST



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.

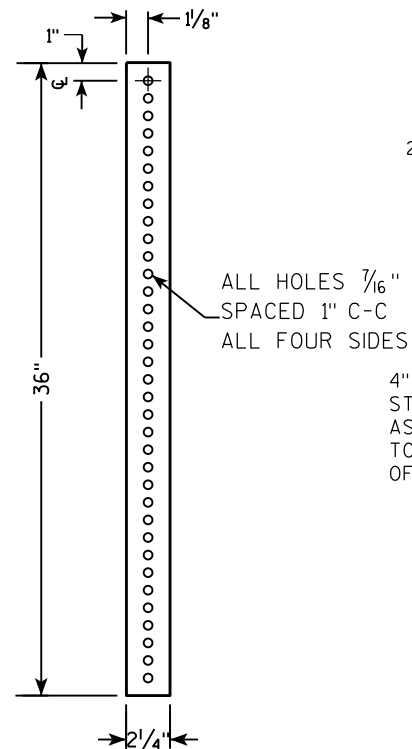
Threads on bolts and nuts shall be manufactured with sufficient allowance for the cadmium plate or galvanized coating to permit the nuts to run freely on the bolts.

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

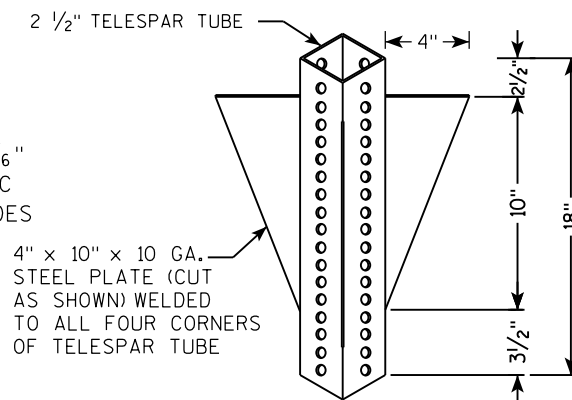
* Two different fastening systems are shown for illustration purposes. On any individual sign, either one or the other system shall be used. Actual number of fasteners per sign varies with the sign area, but normally there are two. For a single post installation, all signs greater than 9 sq. ft. require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

ATTACHMENT OF SIGNS TO POSTS	
WISCONSIN DEPT OF TRANSPORTATION	
APPROVED	<i>Matthew R. Rauch</i> For State Traffic Engineer
DATE 4/27/16	PLATE NO. A4-8.8

**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
 2 1/2" GRAVEL OR DIRT
 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

LENGTH SHOWN ON MISC. QTY'S

TELESCOPE PIECES FLUSH AT TOP

2" STEEL TUBULAR SQUARE UPPER SECTION

ALL HOLES $\frac{7}{16}$ " SPACED 1" C-C ALL FOUR SIDES

$\frac{3}{8}$ " ZINC PLATED CORNER ANCHOR BOLT AND NUT

1"

$\frac{3}{8}$ " ZINC PLATED ANCHOR BOLT AND NUT

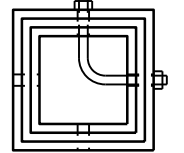
2 1/2" SQUARE X 18" (SOIL STABILIZING SLEEVE)

2 1/4" SQUARE X 36"

SEE SIGN PLATE A4-8 FOR BOLT WASHER, & NUT MATERIAL

SIGN

3/8" ZINC PLATED CORNER
ANCHOR BOLT AND NUT



DIRECTION
OF TRAFFIC

SECTION A-A

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:

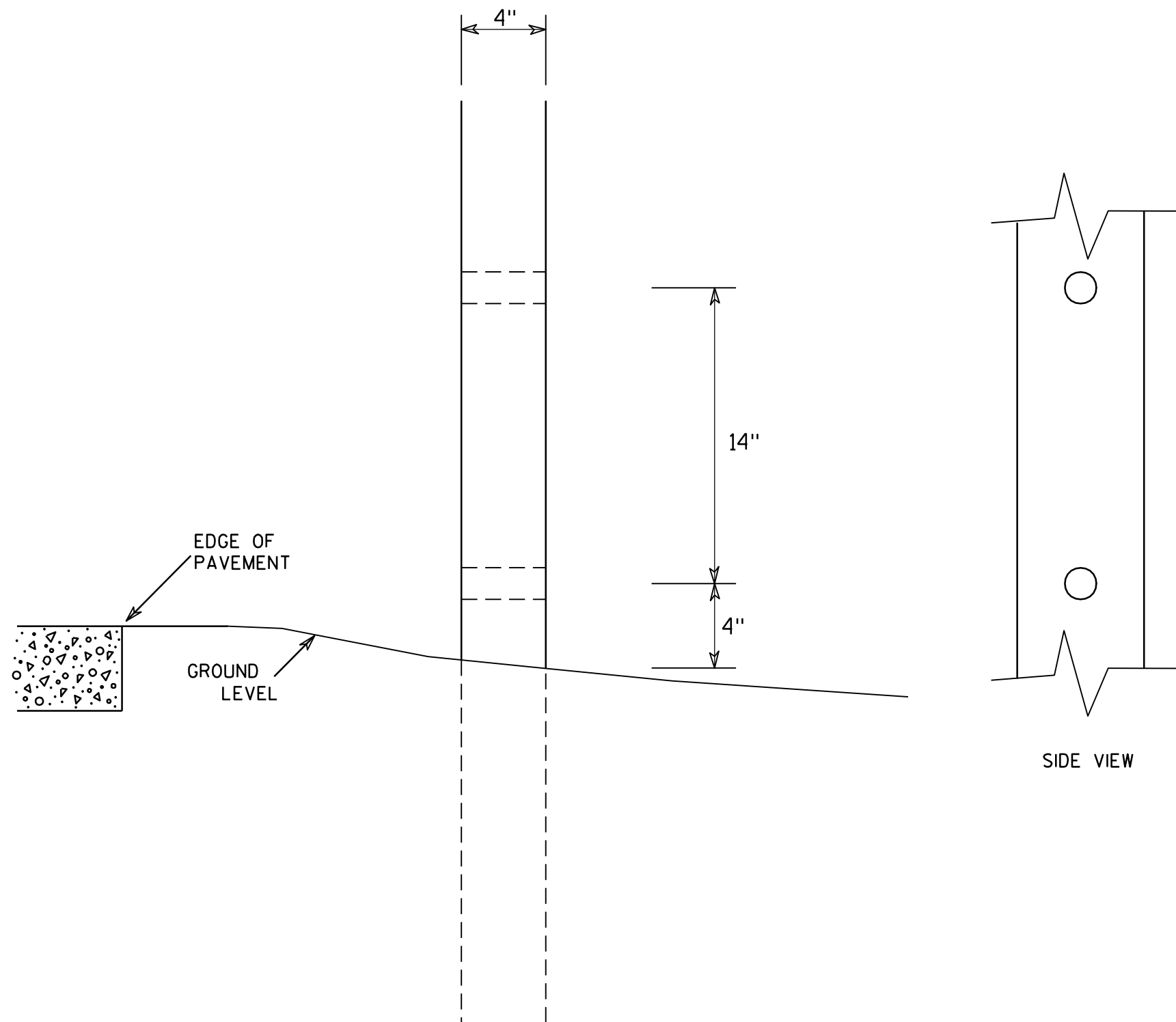
HWY:

COUNTY:

SHEET NO:

11

7



GENERAL NOTES

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

7

4 X 6 WOOD POST MODIFICATIONS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED

Chester J. Spang
for State Traffic Engineer

DATE 3/27/97

PLATE NO. A4-11.2

PROJECT NO:

HWY:

COUNTY:

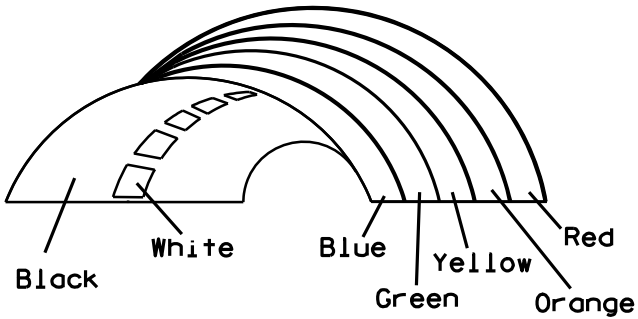
SHEET NO:

E



* VARIES

Background Colors of Symbol*



*1/4" Black Border between each color of rainbow and border of rainbow

NOTES

1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
Background - White
Message - (See Note 5)
3. Message Series - (See Note 6)
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. Border - Blue
Line 1 - Red
Line 2 - Black
Line 3-5 - Blue
6. Line 1 - Dutch 8011L
Line 2 - Series E
Line 3-5 - Series C
7. Contractor shall provide and install a new post bracket in accordance with the I55-56B sign detail.

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2	30	36	1 1/2	1/2	5/8	3	2	3 1/2	2 7/8	1	8	2 1/8	11 1/4	11 1/8	9 3/8	1 1/4		3/4	12 5/8	7 1/2							7.5
3																											
4																											
5																											

PROJECT NO:

HWY:

COUNTY:

SHEET NO:

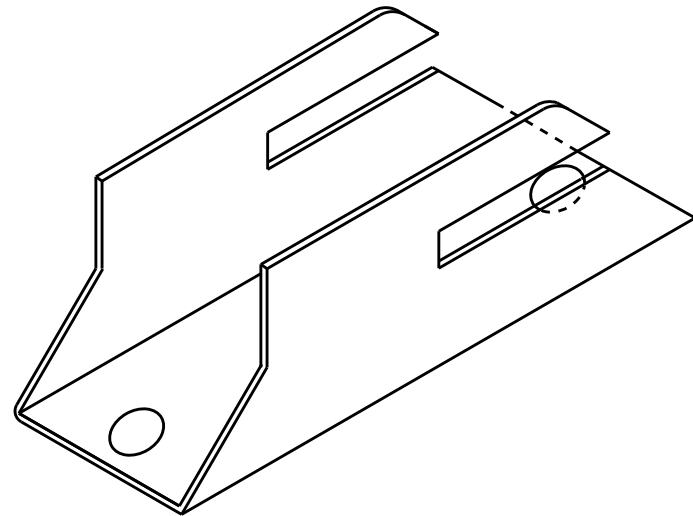
STANDARD SIGN
I55-56

WISCONSIN DEPT OF TRANSPORTATION

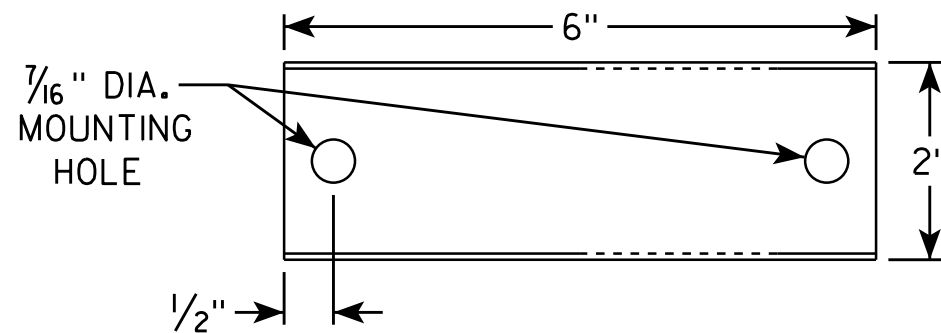
APPROVED *Matthew R. Rauch*
For State Traffic Engineer

DATE 4/27/11 PLATE NO. I55-56.3

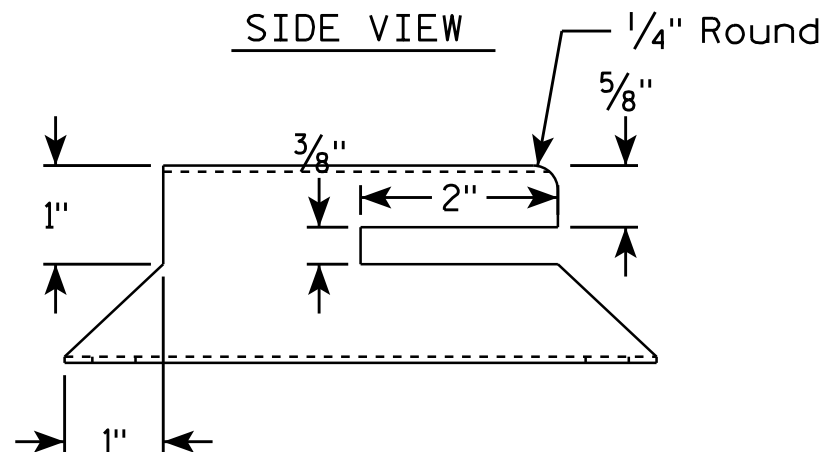
ISOMETRIC VIEW



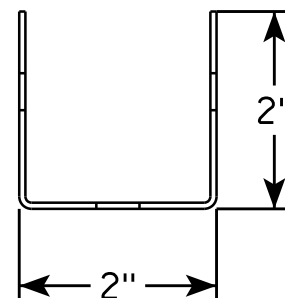
TOP VIEW



SIDE VIEW



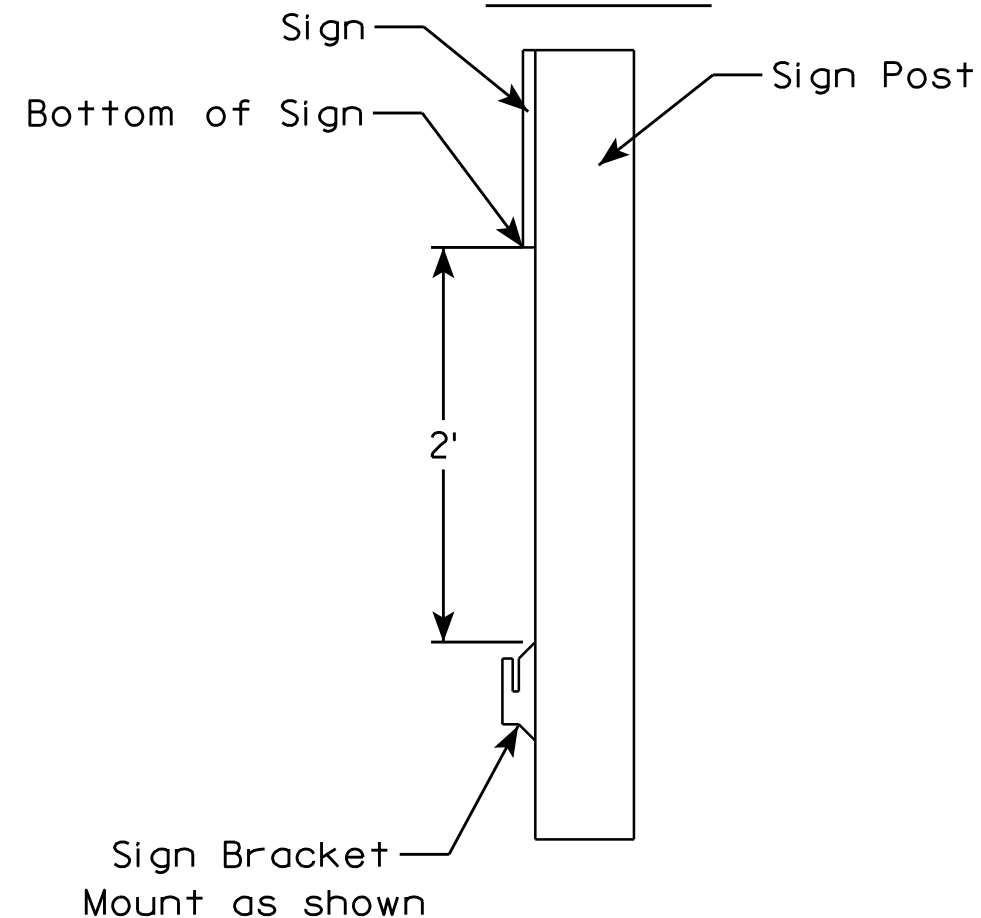
END VIEW



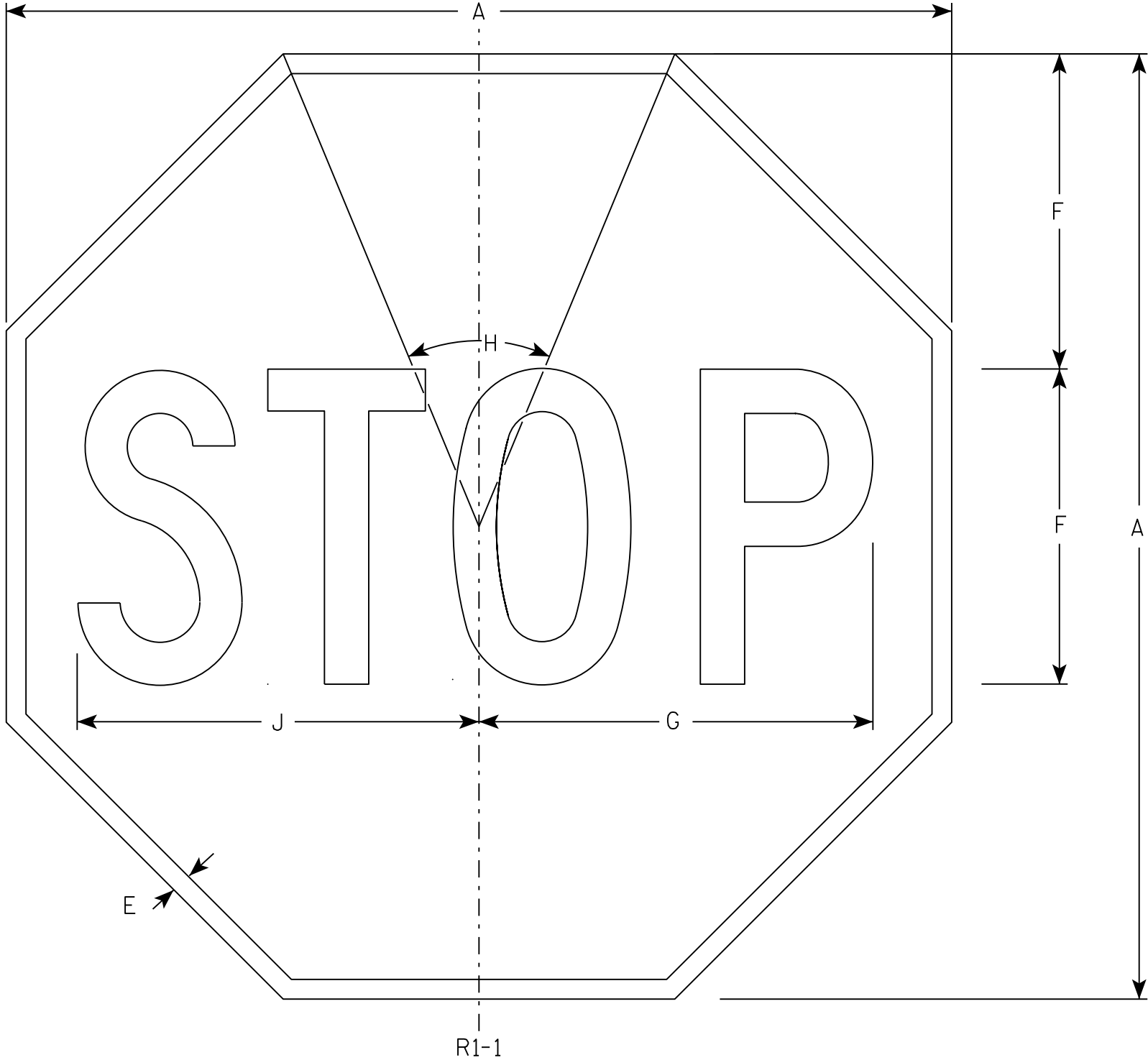
NOTES

1. Must be capable of permanent attachment to a wood or steel channel sign post utilizing the fastening hardware specified on the A4-8 sign plate.
2. Shall be entirely primed and painted with two coats of a black powder coated enamel paint.
3. Shall be made with 12 gauge steel, and incorporate no welds, no hinged components, no threaded lock-type components, and no parts which are loose or can be separated from the main body.
4. Shall have rounded edges with at least 1/8" radii.
5. Shall not have unrounded and uncoated metal edges which can contact the back surface of the roll-up sign.
6. Top of bracket shall be mounted 2' below the bottom of the I55-56 sign.
7. Cost of bracket and fastening hardware shall be incidental to the I55-56 sign.

SIDE VIEW



ROLLUP SIGN BRACKET I55-56B	
WISCONSIN DEPT OF TRANSPORTATION	
APPROVED	<i>Matthew R. Rauch</i> for State Traffic Engineer
DATE 4/26/16	PLATE NO. I55-56B.2



NOTES

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

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

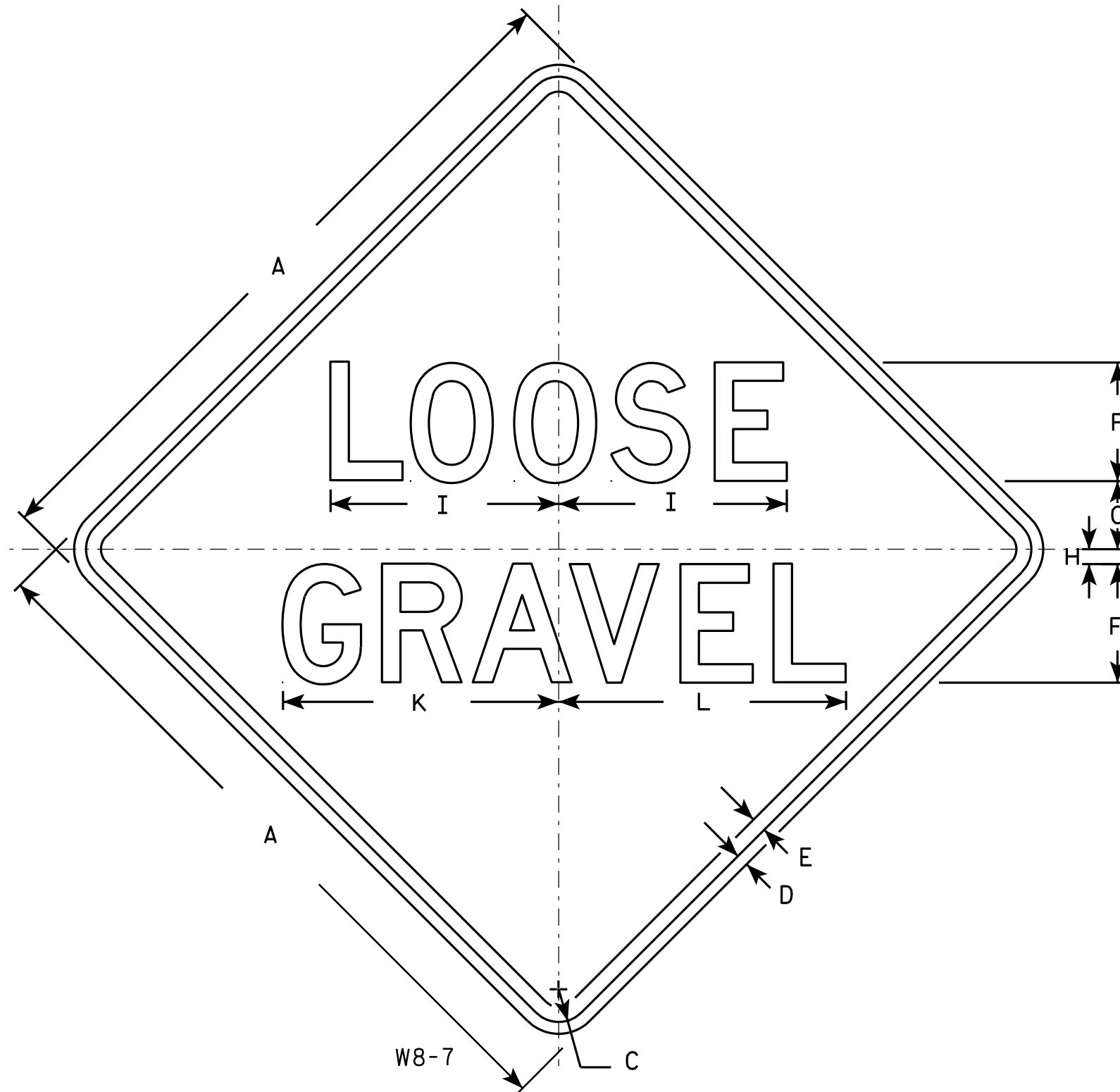
STANDARD SIGN

R1-1

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 11/12/15 PLATE NO. R1-1.13



NOTES

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

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

W8-7

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer
DATE 5/30/12 PLATE NO. W8-7.7

PROJECT NO:

HWY:

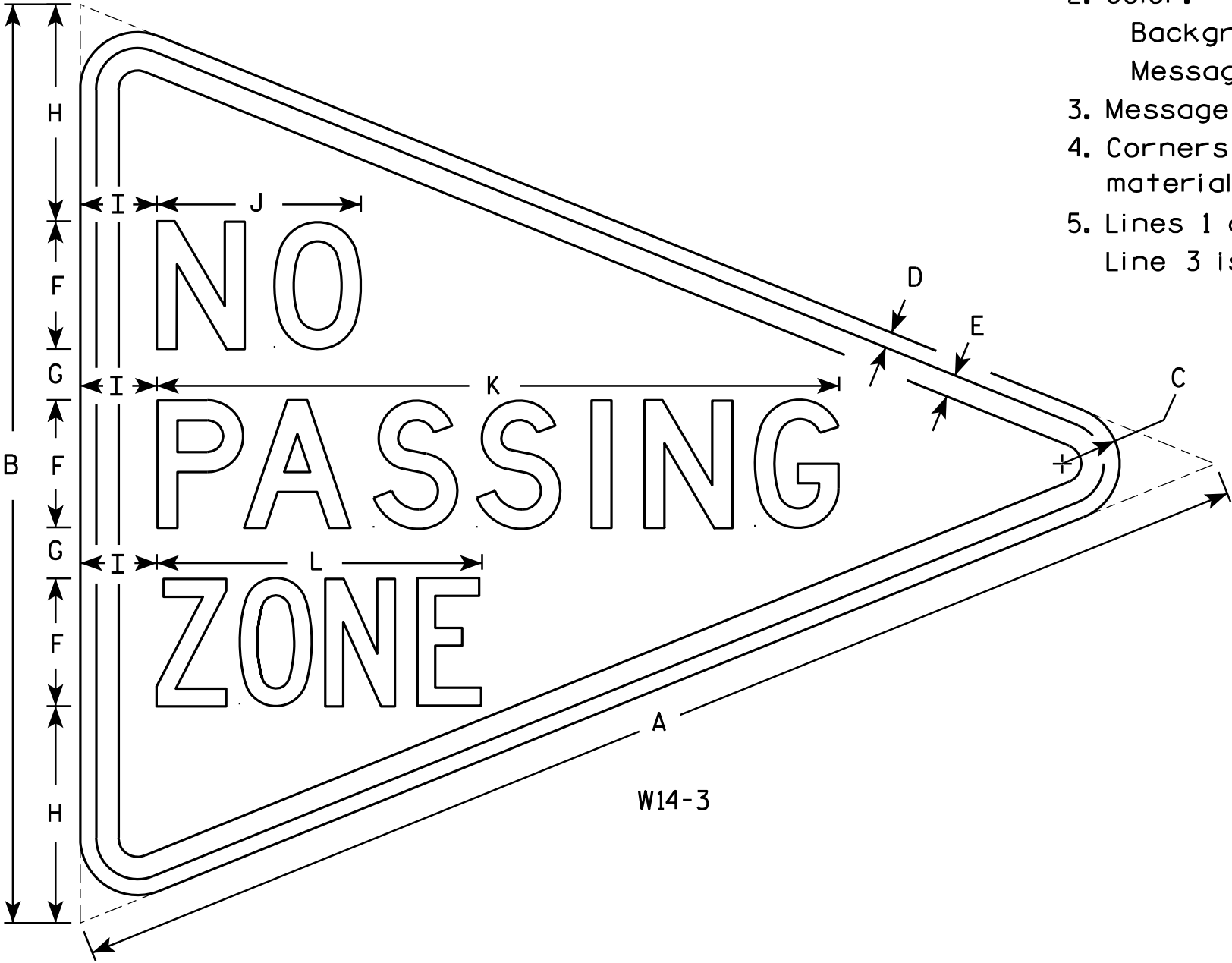
COUNTY:

SHEET NO:

E

NOTES

- 1. Sign is Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
- 2. Color:
Background - Yellow
Message - Black
- 3. Message Series - See note 5
- 4. Corners and borders shall be rounded on all base materials for this sign.
- 5. Lines 1 and 2 are Series D.
Line 3 is series C.



SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2S	48	36	2 1/4	5/8	7/8	5	2	8 1/2	3	8	26 3/4	12 3/4															6.0
2M	48	36	2 1/4	5/8	7/8	5	2	8 1/2	3	8	26 3/4	12 3/4															6.0
3	64	48	3	3/4	1 1/4	6	3	12	4	10 3/4	33 5/8	16 1/2															10.7
4																											
5																											

STANDARD SIGN
W14-3

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
For State Traffic Engineer

DATE 6/7/10 PLATE NO. W14-3.9

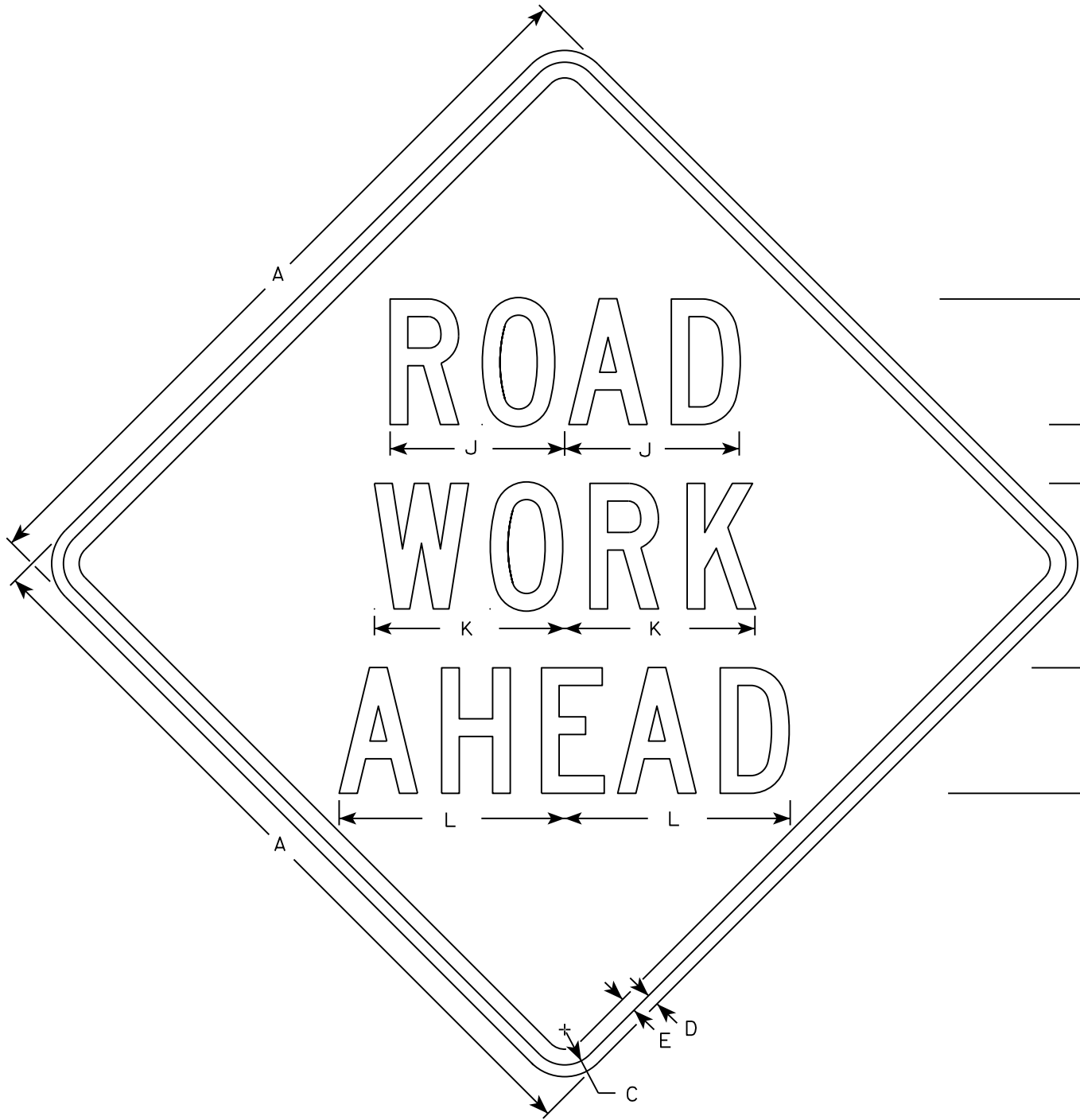
PROJECT NO:

HWY:

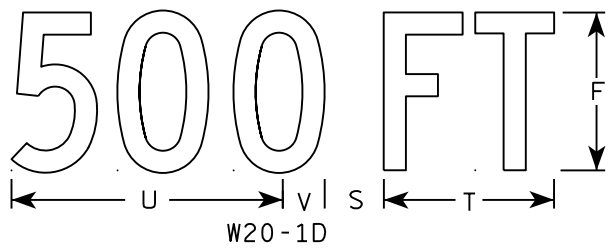
COUNTY:

SHEET NO:

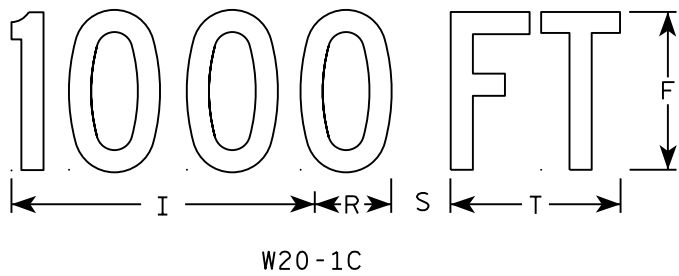
E



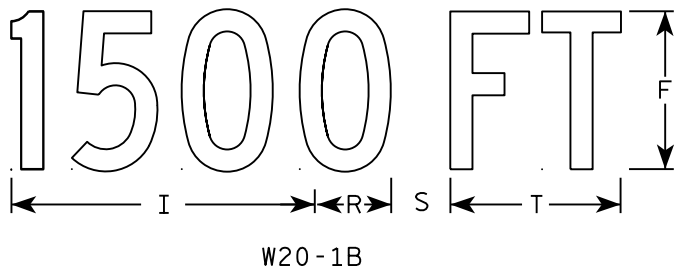
W20-1A



W20-1D



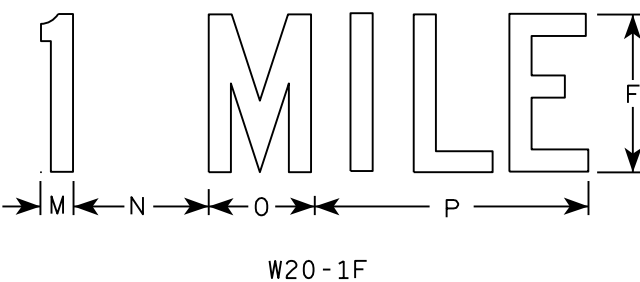
W20-1C



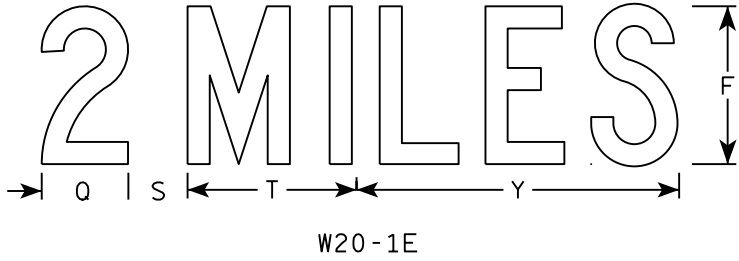
W20-1B



W20-1G



W20-1F



W20-1E

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.

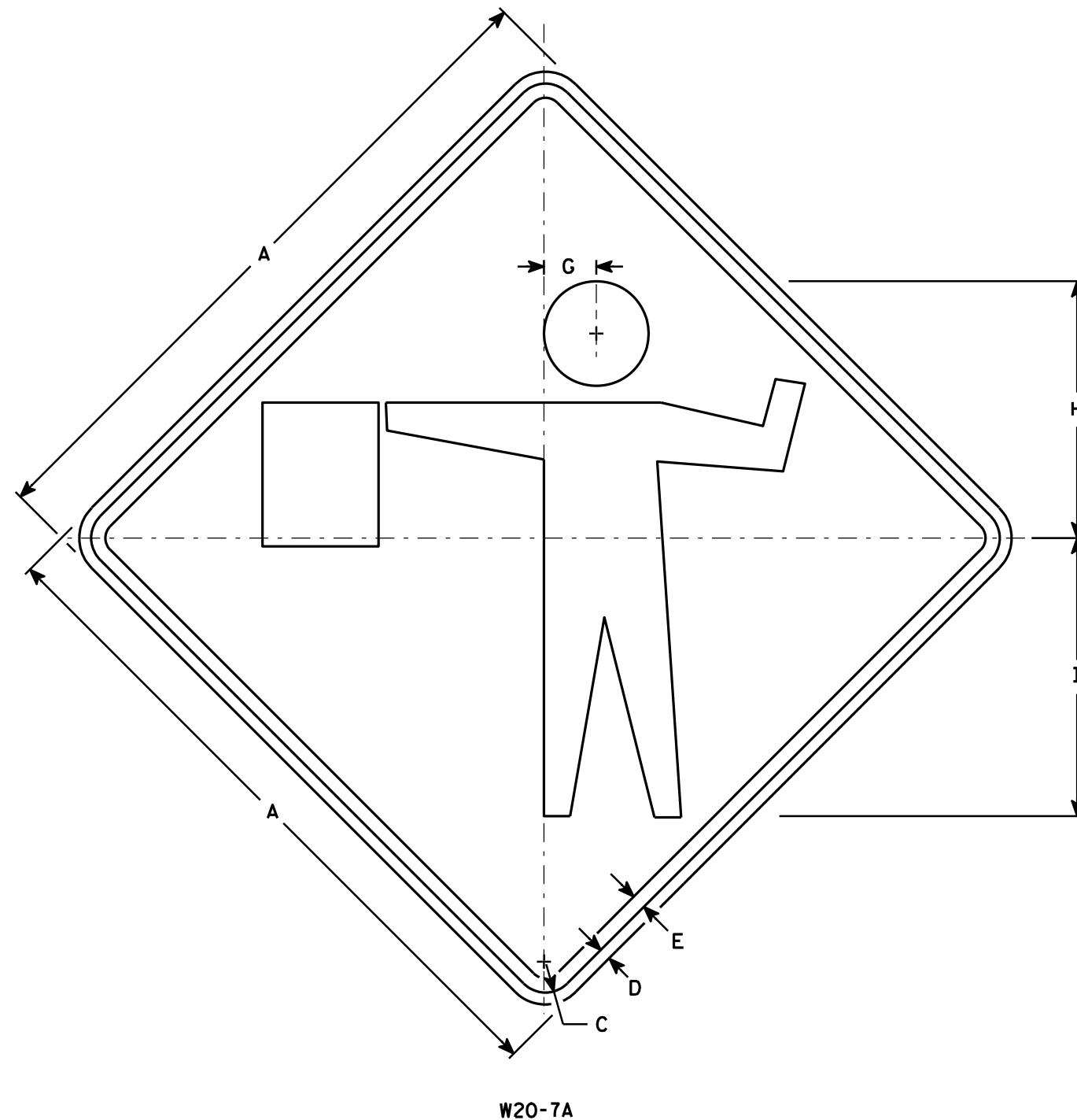
SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	36		1 3/8	1/2	5/8	5	2 5/8	3 1/4	10 1/8	7	7 5/8	8 7/8	1 1/8	4 1/2	3 1/2	9		2 1/2	2 1/4	5 5/8	9	1 3/8	8	1 3/4	10 3/4	6	9.0
2S	48		2 1/4	3/4	1	8	3 3/4	5 1/8	15 3/8	11 1/8	12 1/8	14 3/8	1 5/8	6 7/8	5 3/8	13 7/8	4 3/8	3 7/8	3	8 5/8	13 3/4	2 1/8	11 7/8	2 3/4	16 3/8	9	16.0
2M	48		2 1/4	3/4	1	8	3 3/4	5 1/8	15 3/8	11 1/8	12 1/8	14 3/8	1 5/8	6 7/8	5 3/8	13 7/8	4 3/8	3 7/8	3	8 5/8	13 3/4	2 1/8	11 7/8	2 3/4	16 3/8	9	16.0
3	48		2 1/4	3/4	1	8	3 3/4	5 1/8	15 3/8	11 1/8	12 1/8	14 3/8	1 5/8	6 7/8	5 3/8	13 7/8	4 3/8	3 7/8	3	8 5/8	13 3/4	2 1/8	11 7/8	2 3/4	16 3/8	9	16.0
4	48		2 1/4	3/4	1	8	3 3/4	5 1/8	15 3/8	11 1/8	12 1/8	14 3/8	1 5/8	6 7/8	5 3/8	13 7/8	4 3/8	3 7/8	3	8 5/8	13 3/4	2 1/8	11 7/8	2 3/4	16 3/8	9	16.0
5	48		2 1/4	3/4	1	8	3 3/4	5 1/8	15 3/8	11 1/8	12 1/8	14 3/8	1 5/8	6 7/8	5 3/8	13 7/8	4 3/8	3 7/8	3	8 5/8	13 3/4	2 1/8	11 7/8	2 3/4	16 3/8	9	16.0

STANDARD SIGN
W20-1A, B, C, D, F & G

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 5/07/15 PLATE NO. W20-1.10



NOTES

1. Sign is Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
Background - Orange
Message - Black
3. 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.

W20-7A

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	36		1 5/8	5/8	3/4		2 3/4	13 1/2	14 5/8																		9.00
2S	48		2 1/4	3/4	1		3 3/4	18	19 1/2																		16.00
2M	48		2 1/4	3/4	1		3 3/4	18	19 1/2																		16.00
3	48		2 1/4	3/4	1		3 3/4	18	19 1/2																		16.00
4	48		2 1/4	3/4	1		3 3/4	18	19 1/2																		16.00
5	48		2 1/4	3/4	1		3 3/4	18	19 1/2																		16.00

STANDARD SIGN W20-7A

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 3/18/11 PLATE NO. W20-7A.5

PROJECT NO: HWY: COUNTY: SHEET NO: E

STATION	AREA (SF)		INCREMENTAL VOL (CY) (UNADJUSTED)		CUMULATIVE VOL (CY)		MASS ORDINATE
	CUT	FILL	CUT	FILL	EXPANDED		
					CUT	FILL	
NOTE 4							
151+00	0	0	0	0	0	0	0
152+00	0	5	0	9	0	12	-12
153+00	0	8	0	24	0	43	-43
154+00	0	0	0	15	0	62	-62
			0	48			

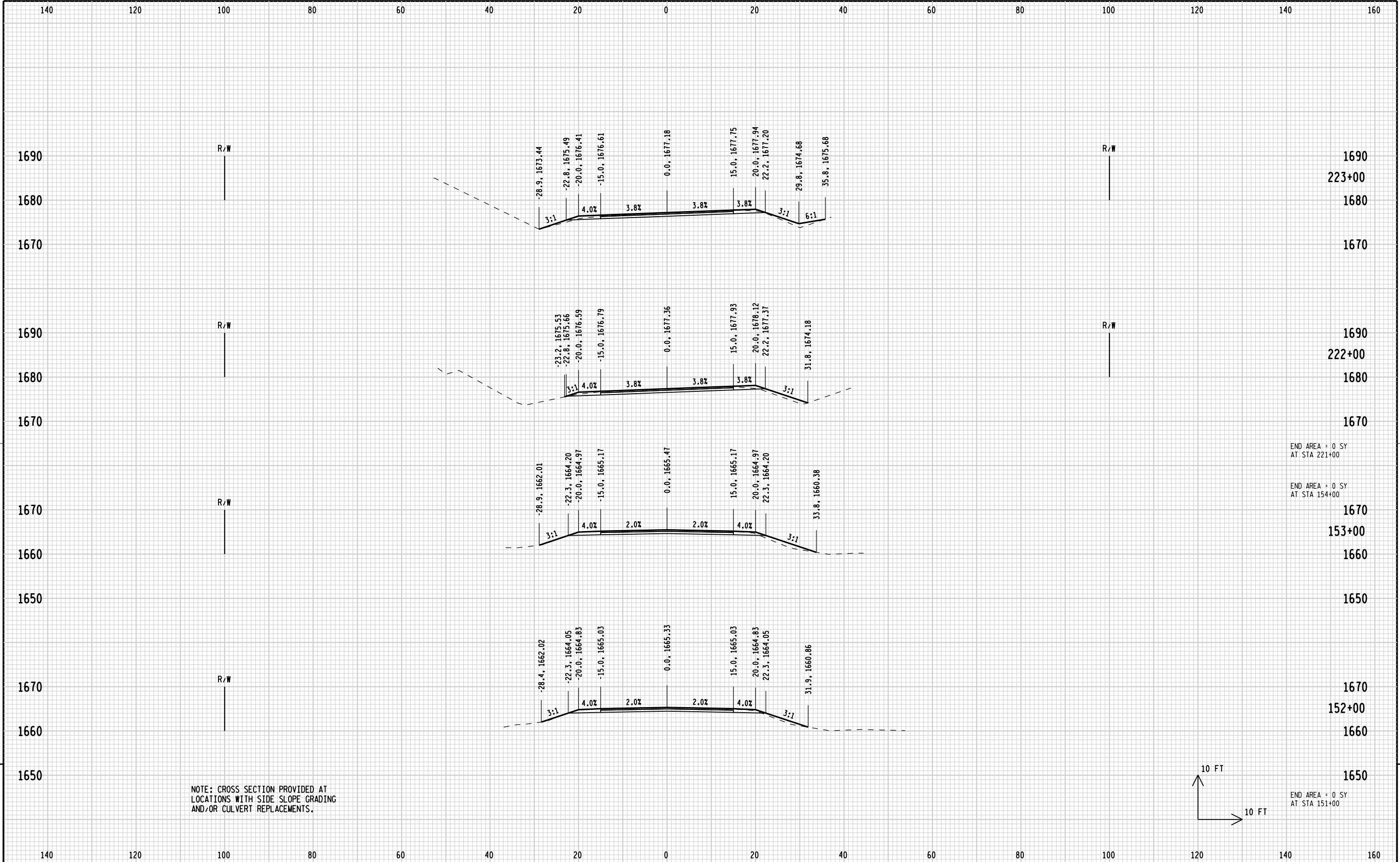
NOTES:
1 - CUT - MAINLINE CUT SHOWN IN MISCELLANEOUS QUANTITIES
2 - SALVAGED/UNUSABLE PAVEMENT MATERIAL
3 - FILL
4 - MASS ORDINATE

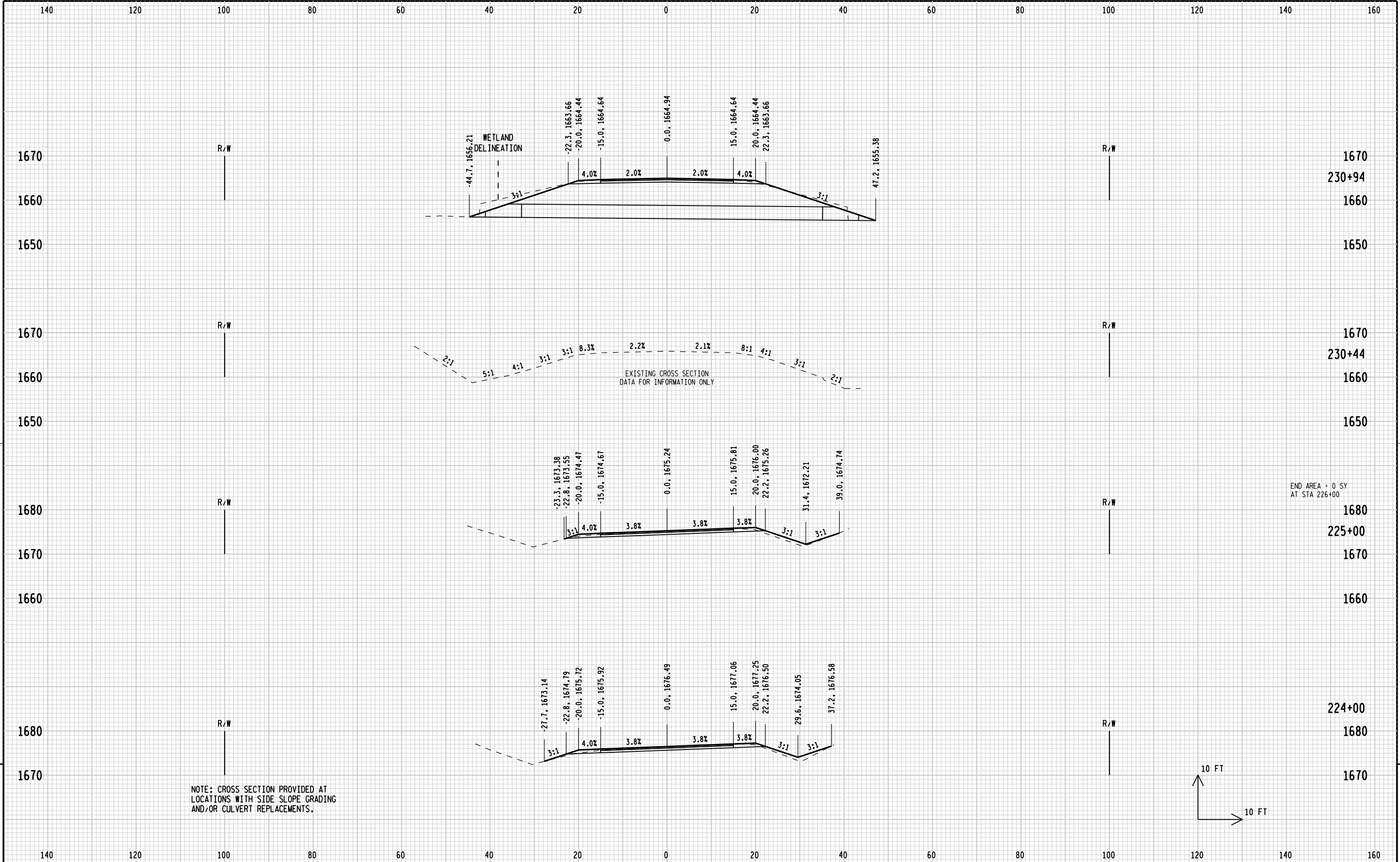
CUT INCLUDES SALVAGED/UNUSABLE PAVEMENT MATERIAL
DOES NOT SHOW UP IN CROSS SECTIONS
DOES NOT INCLUDE UNUSABLE PAVEMENT EXC VOLUME
USABLE CUT - (FILL)*FILL FACTOR

STATION	AREA (SF)		INCREMENTAL VOL (CY) (UNADJUSTED)		CUMULATIVE VOL (CY)		MASS ORDINATE
	CUT	FILL	CUT	FILL	EXPANDED		
					CUT	FILL	
	NOTE 1	NOTE 3	NOTE 1	NOTE 4			
221+00	0	0	0	0	0	0	0
222+00	0	6	0	11	0	14	-14
223+00	0	8	0	26	0	48	-48
224+00	0	10	0	33	0	91	-91
225+00	0	7	0	31	0	132	-132
226+00	0	0	0	13	0	149	-149
			0	115			

NOTES:
1 - CUT - MAINLINE CUT SHOWN IN MISCELLANEOUS QUANTITIES
2 - SALVAGED/UNUSABLE PAVEMENT MATERIAL
3 - FILL
4 - MASS ORDINATE

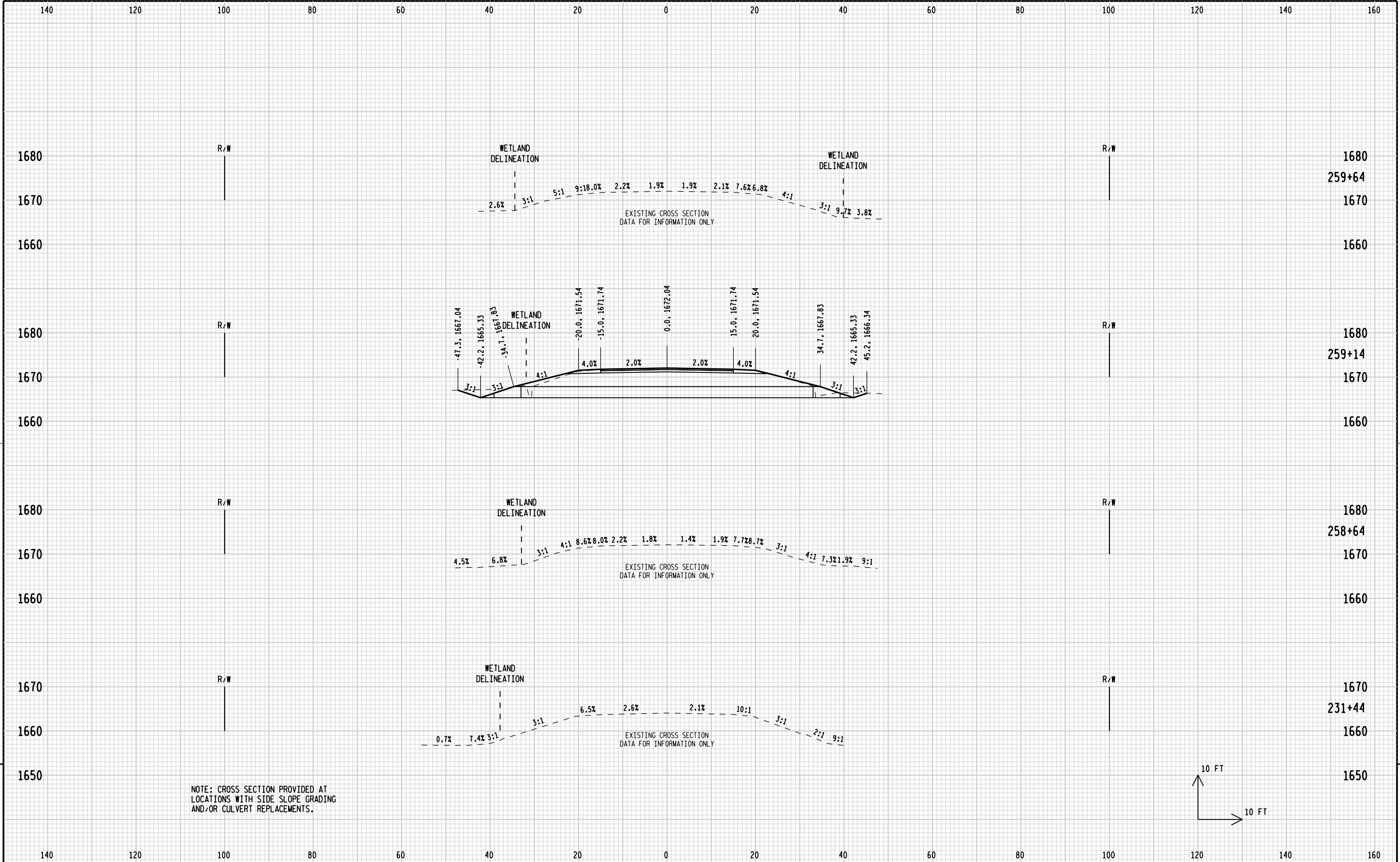
CUT INCLUDES SALVAGED/UNUSABLE PAVEMENT MATERIAL
DOES NOT SHOW UP IN CROSS SECTIONS
DOES NOT INCLUDE UNUSABLE PAVEMENT EXC VOLUME
USABLE CUT - (FILL)*FILL FACTOR





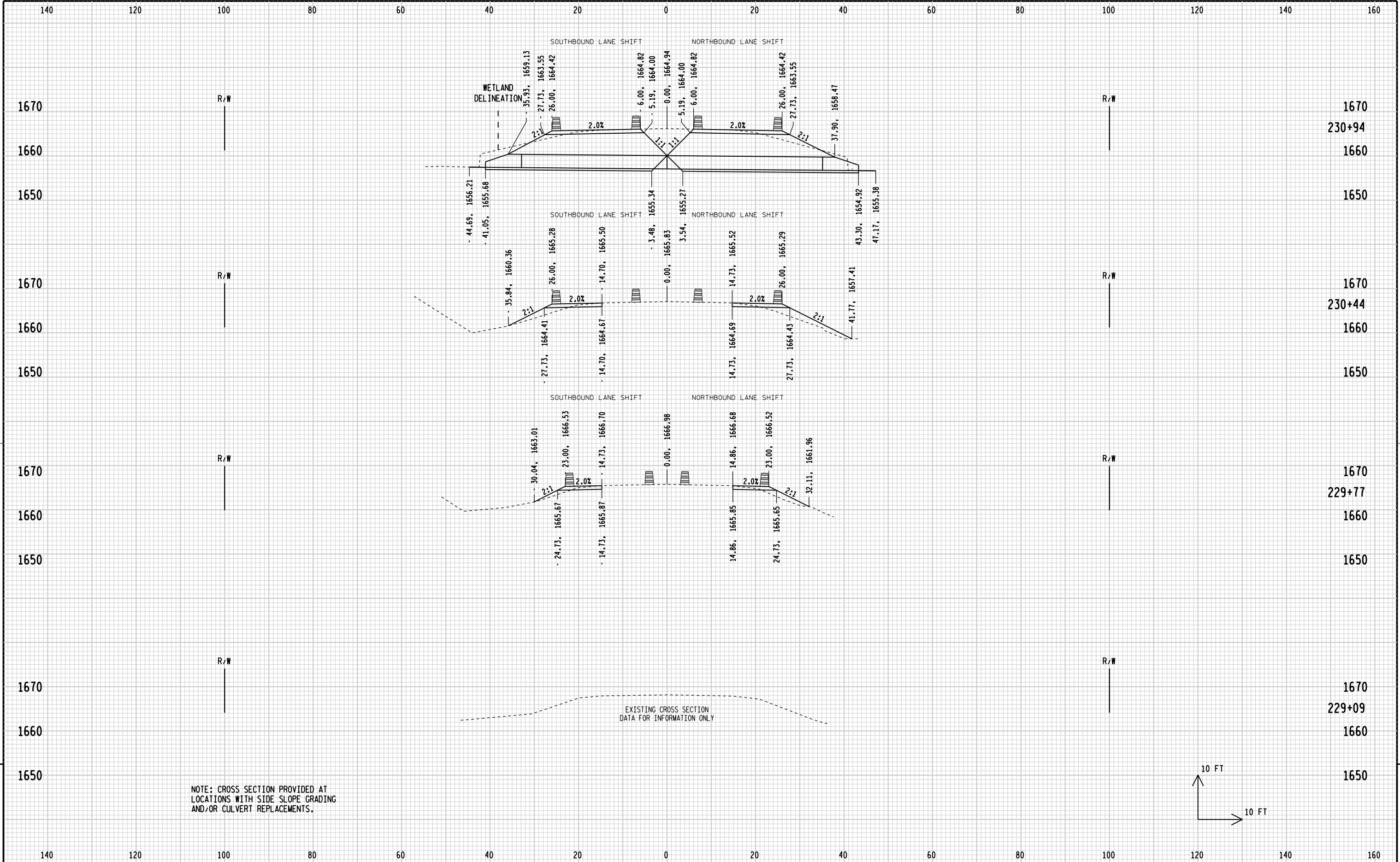
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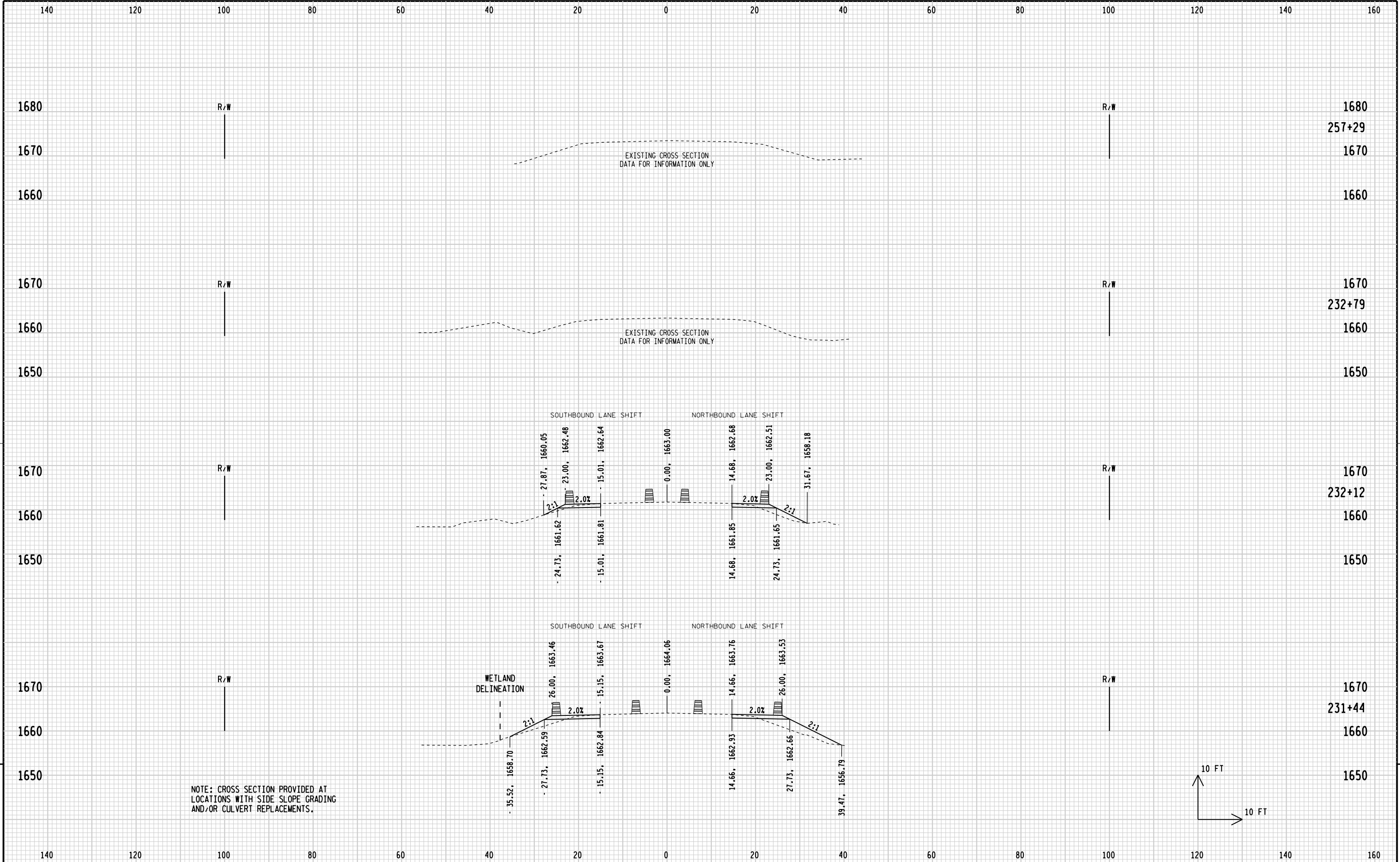
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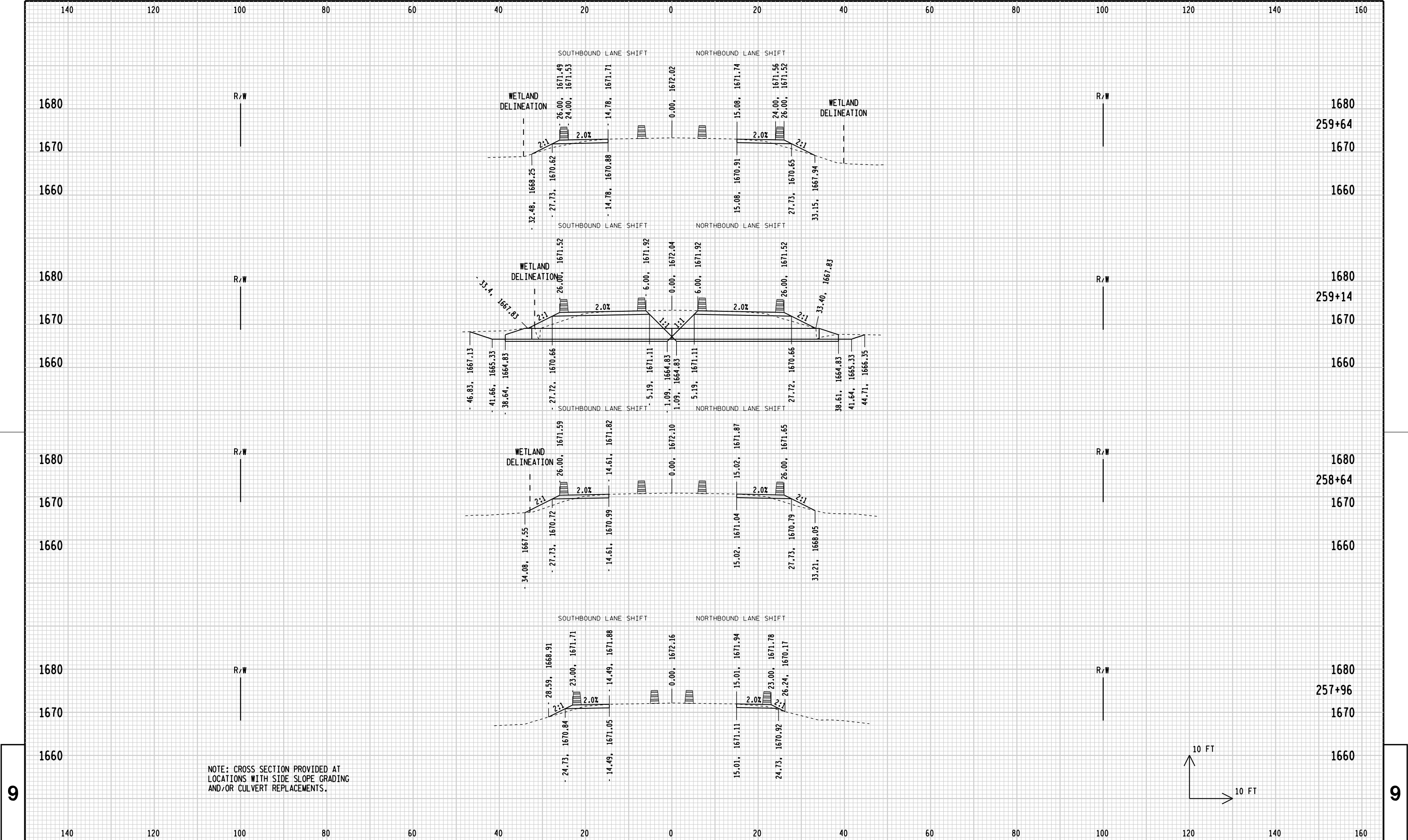
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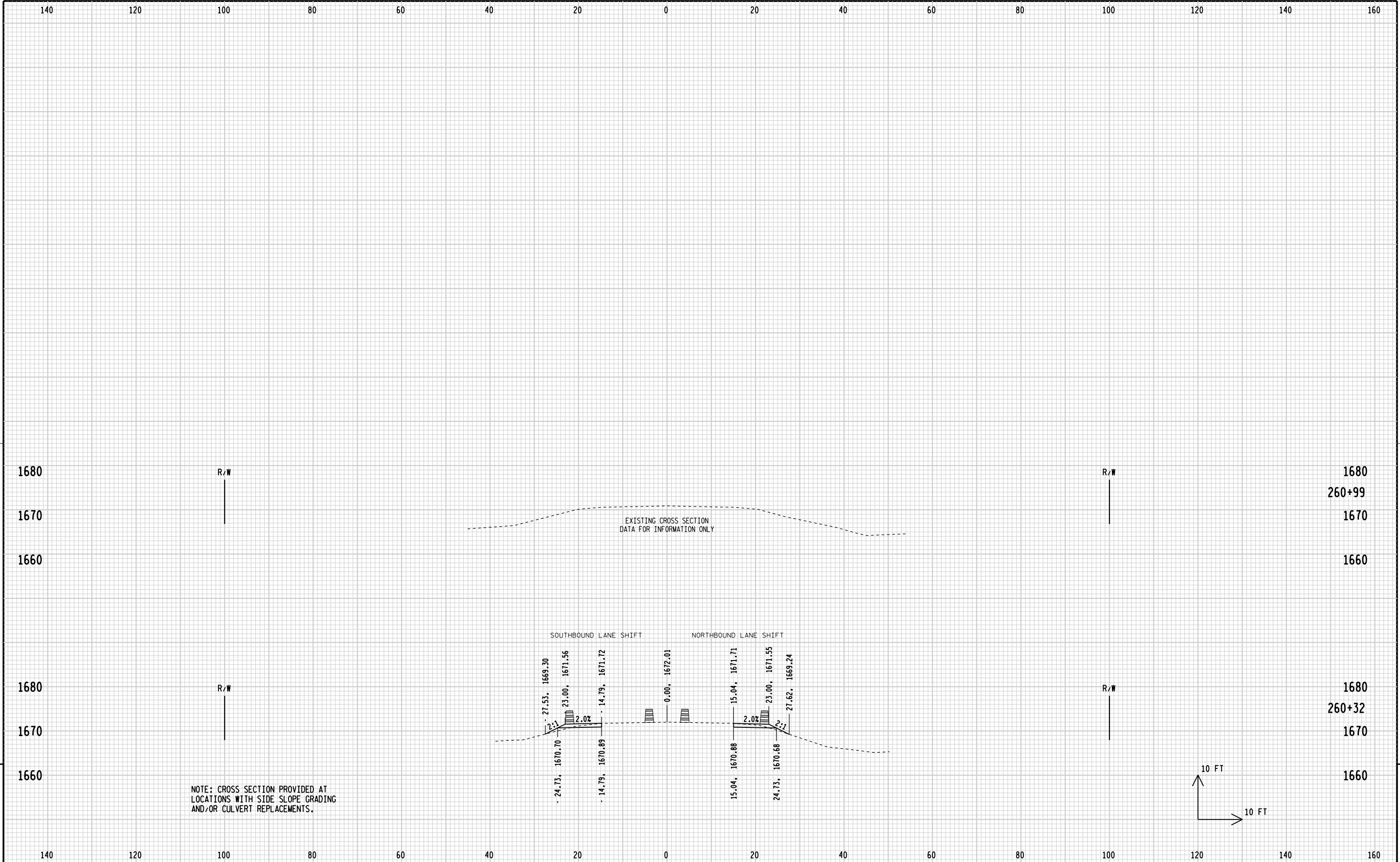
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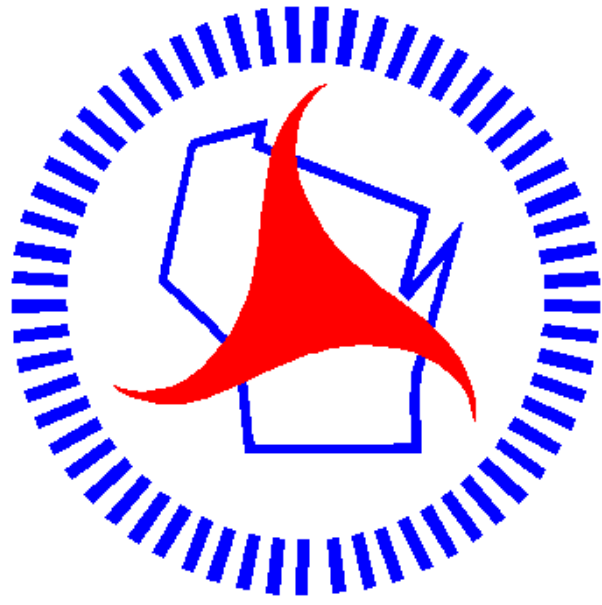
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Wisconsin Department of Transportation

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through innovation and exceptional service.

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