

PROJECT ID:
WITH: 9304-12-70

9304-11-70

COUNTY: FLORENCE

FLORENCE

STATE PROJECT	FEDERAL PROJECT	
	PROJECT	CONTRACT
9304-11-70	WISC 2021097	1

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STATE HIGHWAY REHABILITATION

ARMSTRONG CREEK - FLORENCE

WEST ONEONTA LANE TO WOODS CREEK ROAD

STH 101

FLORENCE COUNTY

STATE PROJECT NUMBER
9304-11-70

END PROJECT 9304-11-70
STA 413+10

B-19-0001

STA 305+40 - STA 306+20

BEGIN PROJECT 9304-11-70
STA 17+56

ORDER OF SHEETS

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

TOTAL SHEETS = 150

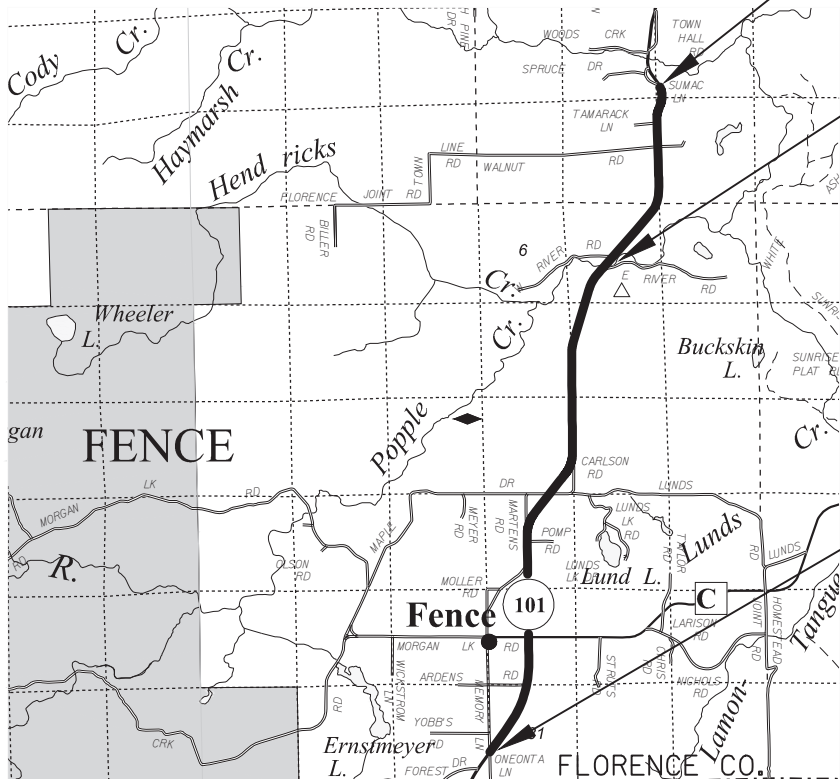


DESIGN DESIGNATION

A.A.D.T.	2021	=	750
A.A.D.T.	2041	=	1000
D.H.V.		=	22.9%
D.D.		=	61/39
T.		=	14.6%
DESIGN SPEED		=	55 MPH
ESALS		=	394,200

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		ELECTRIC	
EXISTING CULVERT		FIBER OPTIC	
PROPOSED CULVERT (Box or Pipe)		GAS	
COMBUSTIBLE FLUIDS		SANITARY SEWER	
		STORM SEWER	
		TELEPHONE	
MARSH AREA		WATER	
		UTILITY PEDESTAL	
		POWER POLE	
WOODED OR SHRUB AREA		TELEPHONE POLE	



LAYOUT

SCALE 0 2 MILE

TOTAL NET LENGTH OF CENTERLINE = 7.492 MI

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

ELEVATIONS SHOWN ON THE PLAN ARE REFERENCED TO THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 2012)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PREPARED BY	
Surveyor	<u>COLEMAN ENGINEERING</u>
Designer	<u>EVAN HAVES</u>
Project Manager	<u>STACY LAGENBUCHER</u>
Regional Examiner	<u>CHERYL L. SIMON</u>
Regional Supervisor	<u>ROBIN STAFFORD</u>

APPROVED FOR THE DEPARTMENT

DATE: 7/30/20 Stacy Hagenbucher
(Signature)

E

GENERAL NOTES

WHEN THE QUANTITY OF THE ITEMS OF BASE AGGREGATE, SUBBASE OR HMA PAVEMENT IS MEASURED FOR PAYMENT BY THE TON OR CUBIC YARD, THE DEPTH OR THICKNESS OF THE LAYERS SHOWN ON THE PLAN IS APPROXIMATE AND THE ACTUAL THICKNESS WILL DEPEND ON THE DISTRIBUTION OF THE MATERIAL AS DIRECTED BY THE ENGINEER.

CONTRACTOR WILL BE RESPONSIBLE FOR RESHAPING AND SEEDING ANY PREVIOUSLY GRASSED AREAS WHICH ARE DISTURBED BY HIS OPERATION OUTSIDE OF THE NORMAL CONSTRUCTION LIMITS.

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.

PURSUANT TO CHAPTER 59 OF THE WISCONSIN STATUTES, THE CONTRACTOR SHALL CAREFULLY MAKE A SEARCH FOR EVIDENCE OF A LANDMARK IN ALL AREAS WHERE SUCH A LANDMARK MAY EXIST.

WORK WITH UTMOST CARE AND PROTECT ALL SURVEY MARKERS.
REMOVAL OF ANY SURVEY MARKER IS TO BE WITH THE APPROVAL OF THE ENGINEER.

UTILITIES

CENTURYLINK - COMMUNICATION LINE

PETER JOHNSON, SR
2425 MARY ST
MARINETTE, WI 54143
PHONE: (715) 735-0059 WORK
PHONE: (715) 938-1480 MOBILE
E-MAIL: PETERS.S.JOHNSON@CENTURYLINK.COM

NSIGHT TELSERVICES- COMMUNICATION LINE

RICK VINCENT
470 SECURITY BLVD
GREEN BAY, WI 54313
PHONE: (920) 617-7316 WORK
E-MAIL: RICK.VINCENT@NSIGHT.COM

WISCONSIN PUBLIC SERVICE CORPORATION - ELECTRICITY

RANDY D STEIER
2850 S ASHLAND AVE
PO BOX 19001
GREEN BAY, WI 54307-9001
PHONE: (920) 617-5167 WORK
PHONE: (920) 655-1596 MOBILE
E-MAIL: RANDY.STEIER@WISCONSINPUBLICSERVICE.COM

ORDER OF CONSTRUCTION DETAIL SHEETS

- GENERAL NOTES
- PROJECT OVERVIEW
- TYPICAL SECTIONS
- CONSTRUCTION DETAILS
- EROSION CONTROL

AS-BUILTS

9304-05-60
T 099 (3)

WISCONSIN DEPARTMENT
OF NATURAL RESOURCE

JON SIMONSEN
1007 SUTLIFF AVENUE
RHINELANDER, WI 54501
PHONE: (715) 367-1936 WORK
PHONE: (715) 365-8932 FAX
E-MAIL: JONATHON.SIMONSEN@WISCONSIN.GOV

DIGGERSHOTLINE

Dial 811 or (800)242-8511

www.DiggersHotline.com

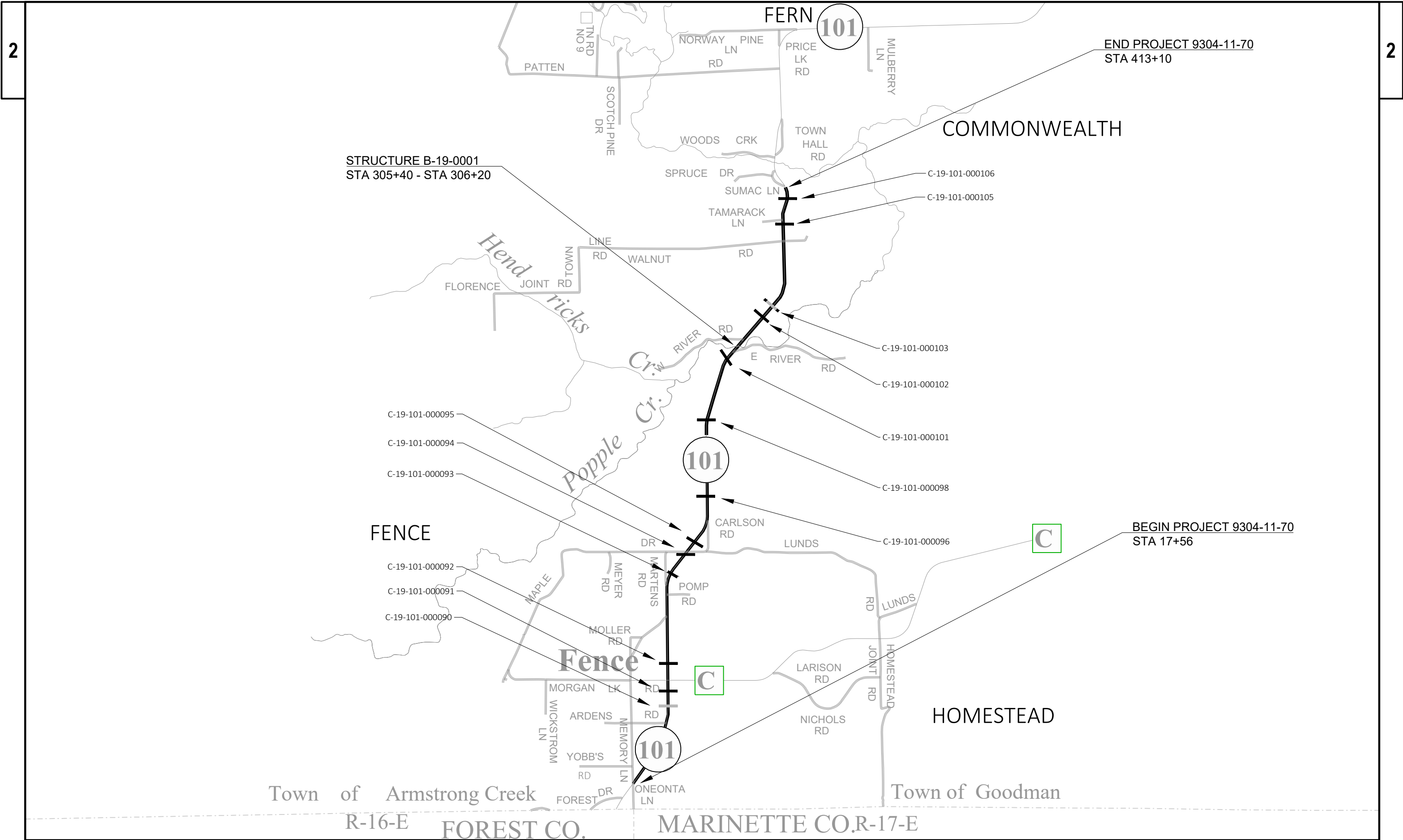
RUNOFF COEFFICIENT TABLE

	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 .22	.16 .30	.22 .38	.12 .26	.20 .34	.27 .44	.15 .30	.24 .37	.33 .50	.19 .34	.28 .41	.38 .56
MEDIAN STRIP- TURF	.19 .24	.20 .26	.24 .30	.19 .25	.22 .28	.26 .33	.20 .26	.23 .30	.30 .37	.20 .27	.25 .32	.30 .40
SIDE SLOPE- TURF			.25 .32			.27 .34			.28 .36			.30 .38
PAVEMENT:												
ASPHALT	.70 - .95											
CONCRETE	.80 - .95											
BRICK	.70 - .80											
DRIVES, WALKS	.75 - .85											
ROOFS	.75 - .95											
GRAVEL ROADS, SHOULDERS	.40 - .60											

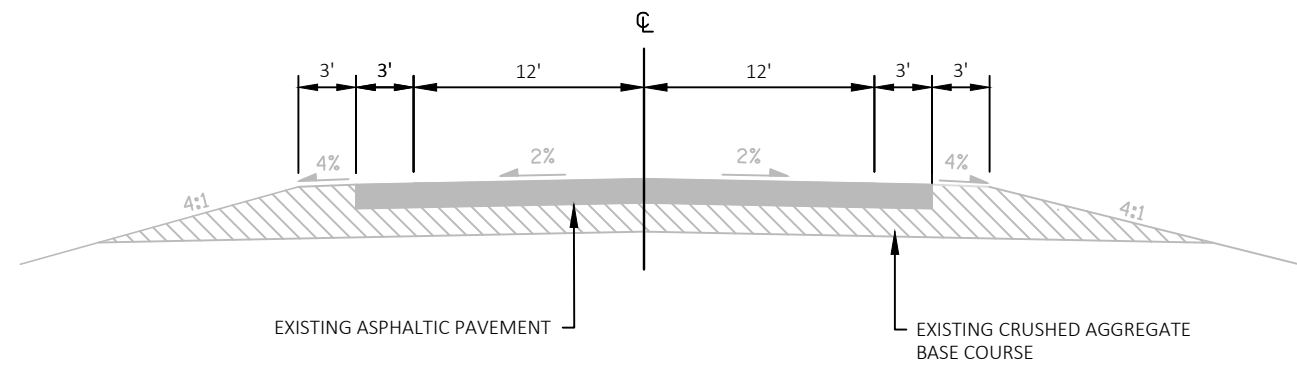
TOTAL PROJECT AREA = 33.35 ACRES
TOTAL AREA EXPECTED TO BE DISTURBED BY CONSTRUCTION ACTIVITIES = 3.05 ACRES

CONTROL POINT TABLE

NO	STATION	OFFSET	EASTING	NORTHING	ELEVATION	DESCRIPTION
32	73+19.32	17.56' RT	367837.118	109925.542	1524.14	1/2-INCH REBAR WITH PLASTIC CAP
31	76+98.23	19.00' RT	367842.292	110304.633	1517.33	1/2-INCH REBAR WITH PLASTIC CAP
30	80+85.08	18.26' RT	367845.015	110691.447	1516.80	1/2-INCH REBAR WITH PLASTIC CAP
29	100+70.10	20.38' RT	367864.916	112676.369	1526.44	1/2-INCH REBAR WITH PLASTIC CAP
28	103+85.17	19.51' RT	367866.863	112991.437	1532.88	1/2-INCH REBAR WITH PLASTIC CAP
27	148+83.77	19.10' RT	367962.913	117480.086	1514.62	1/2-INCH REBAR WITH PLASTIC CAP
26	152+77.75	22.55' RT	368101.935	117843.408	1511.33	1/2-INCH REBAR WITH PLASTIC CAP
25	167+97.61	18.74' RT	369024.609	119040.780	1513.96	1/2-INCH REBAR WITH PLASTIC CAP
24	173+55.05	18.72' RT	369380.637	119469.704	1508.53	1/2-INCH REBAR WITH PLASTIC CAP
23	178+30.72	16.93' RT	369683.082	119836.848	1506.17	1/2-INCH REBAR WITH PLASTIC CAP
22	197+53.19	19.20' RT	370515.826	121527.209	1484.91	1/2-INCH REBAR WITH PLASTIC CAP
21	201+29.11	18.99' RT	370519.027	121903.118	1483.02	1/2-INCH REBAR WITH PLASTIC CAP
20	251+14.75	-20.70' LT	370533.868	126889.790	1432.01	5/8-INCH REBAR WITH PLASTIC CAP
19	259+59.30	18.22' RT	370741.713	127707.495	1425.37	5/8-INCH REBAR WITH PLASTIC CAP
18	293+23.84	-36.86' LT	371771.490	130915.244	1351.14	1/2-INCH REBAR WITH PLASTIC CAP
17	297+04.80	-21.74' LT	372016.074	131214.442	1335.80	5/8-INCH REBAR WITH PLASTIC CAP
14	316+39.35	-16.39' LT	373328.572	132635.488	1340.66	1/2-INCH REBAR WITH PLASTIC CAP
13	319+91.94	30.10' RT	373600.544	132864.649	1335.64	1/2-INCH REBAR WITH PLASTIC CAP
12	328+26.95	-17.15' LT	374128.380	133513.392	1346.78	1/2-INCH REBAR WITH PLASTIC CAP
11	331+28.13	-18.67' LT	374330.886	133736.454	1350.01	1/2-INCH REBAR WITH PLASTIC CAP
8	384+07.08	-20.66' LT	375555.224	138591.496	1493.83	1/2-INCH REBAR WITH PLASTIC CAP
7	386+67.47	-19.46' LT	375550.917	138851.853	1493.69	1/2-INCH REBAR WITH PLASTIC CAP
6	402+06.00	-16.96' LT	375687.901	140373.533	1484.02	1/2-INCH REBAR WITH PLASTIC CAP
5	404+75.66	19.60' RT	375820.597	140612.084	1468.82	1/2-INCH REBAR WITH PLASTIC CAP

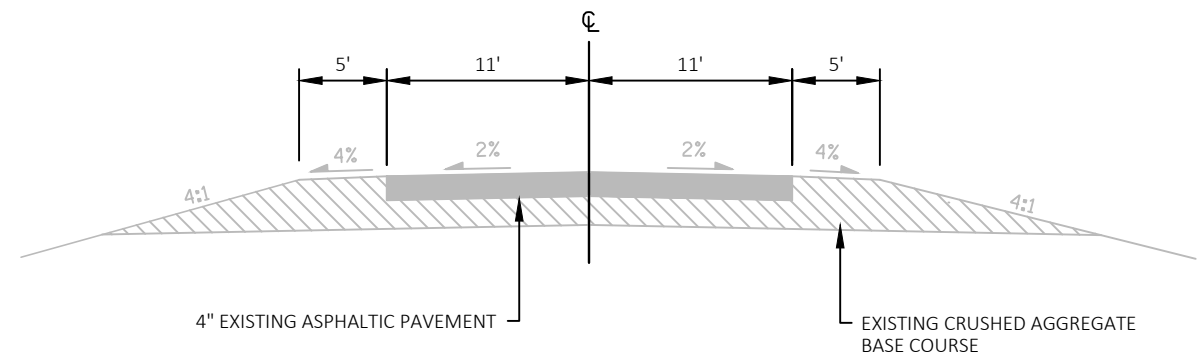


PROJECT NO: 9304-11-70	HWY: STH 101	COUNTY: FLORENCE	PLAN: PROJECT OVERVIEW	SHEET	E
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EXISTING TYPICAL SECTION STH 101

STA 17+56 - STA 230+50

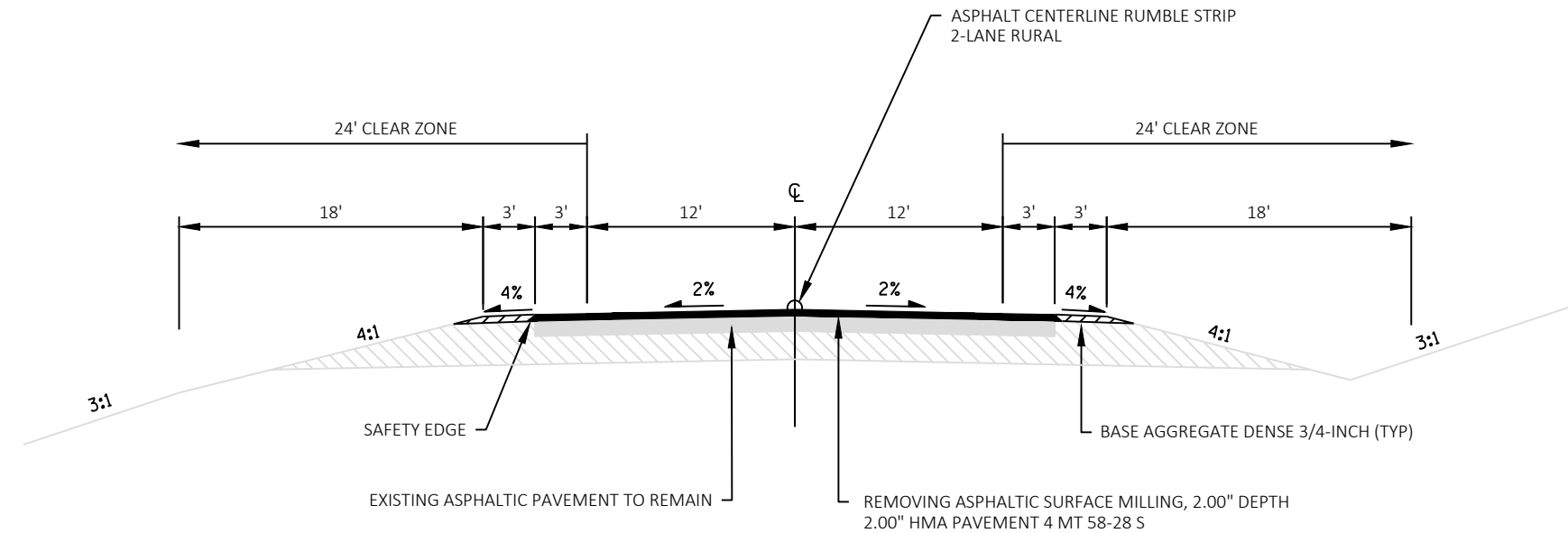


EXISTING TYPICAL SECTION STH 101

STA 230+50 - STA 413+10

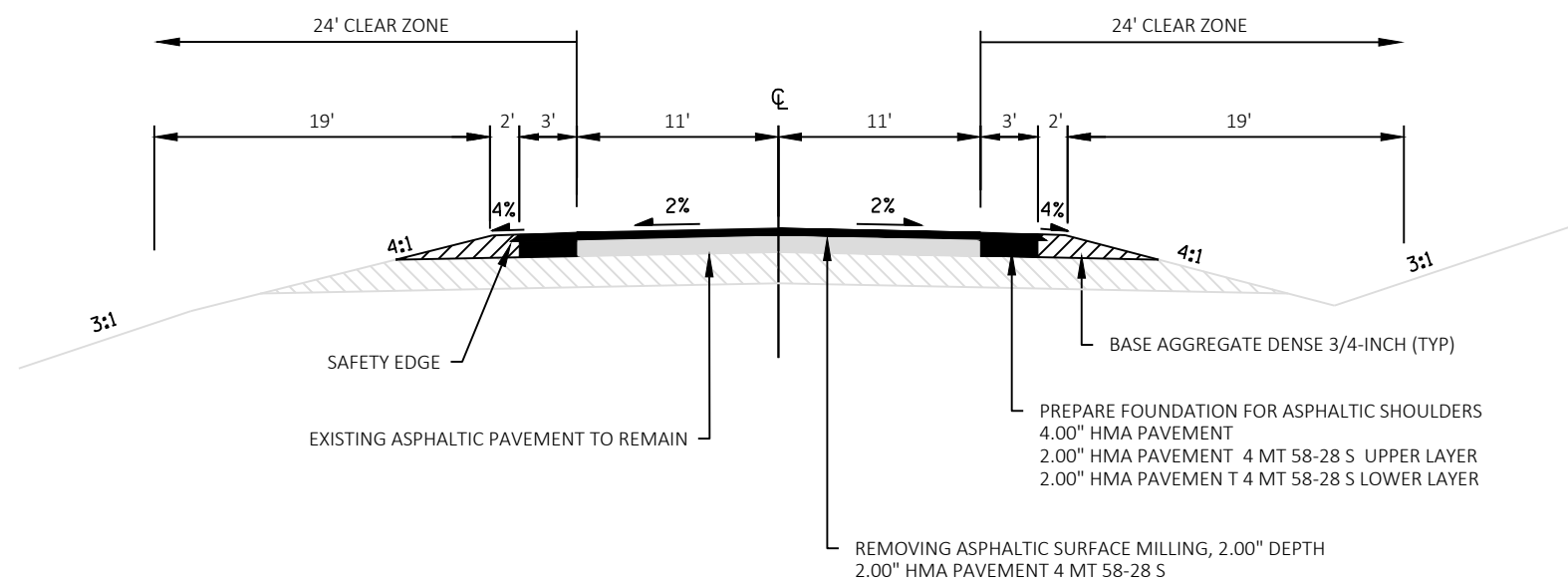
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2 |



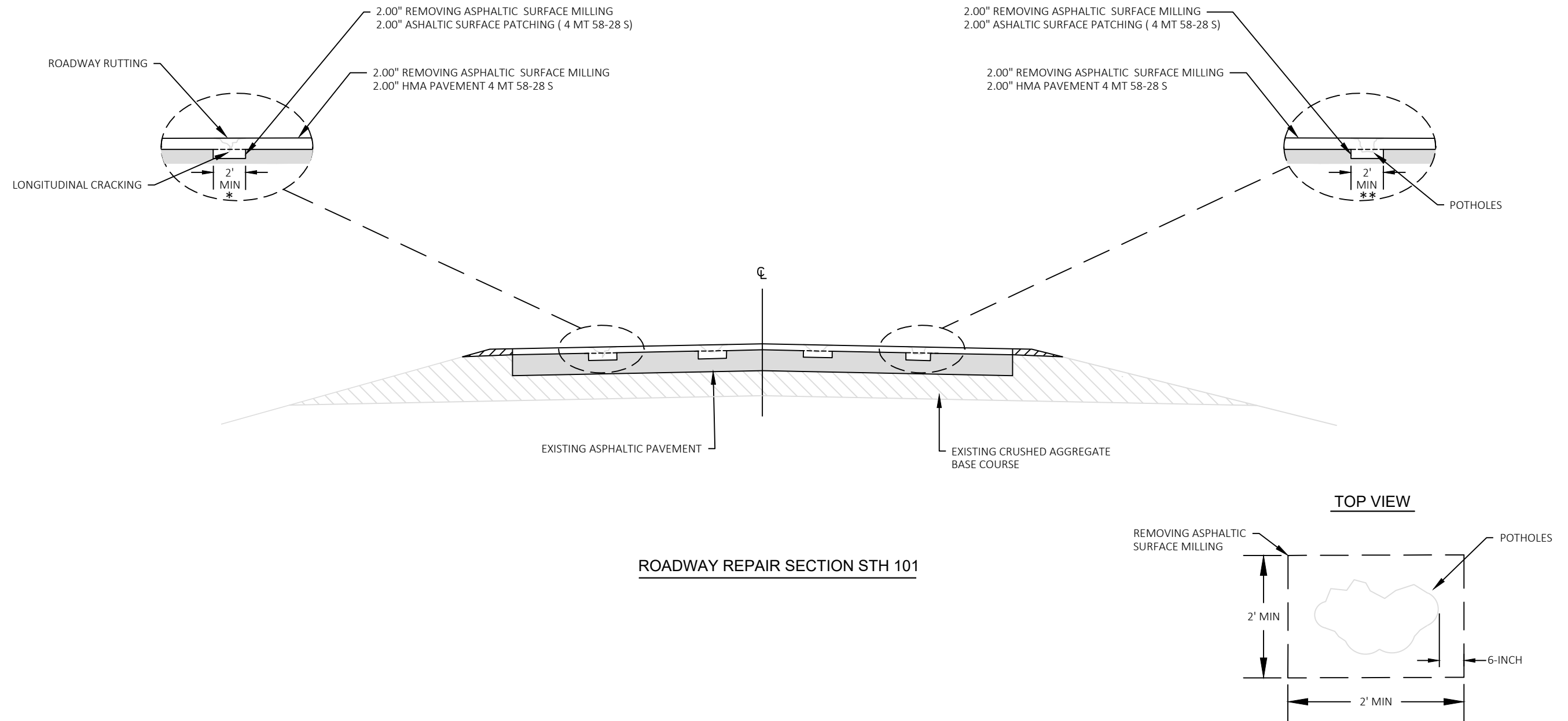
FINISHED TYPICAL SECTION STH 101

STA 17+56 - STA 230+50



FINISHED TYPICAL SECTION STH 101

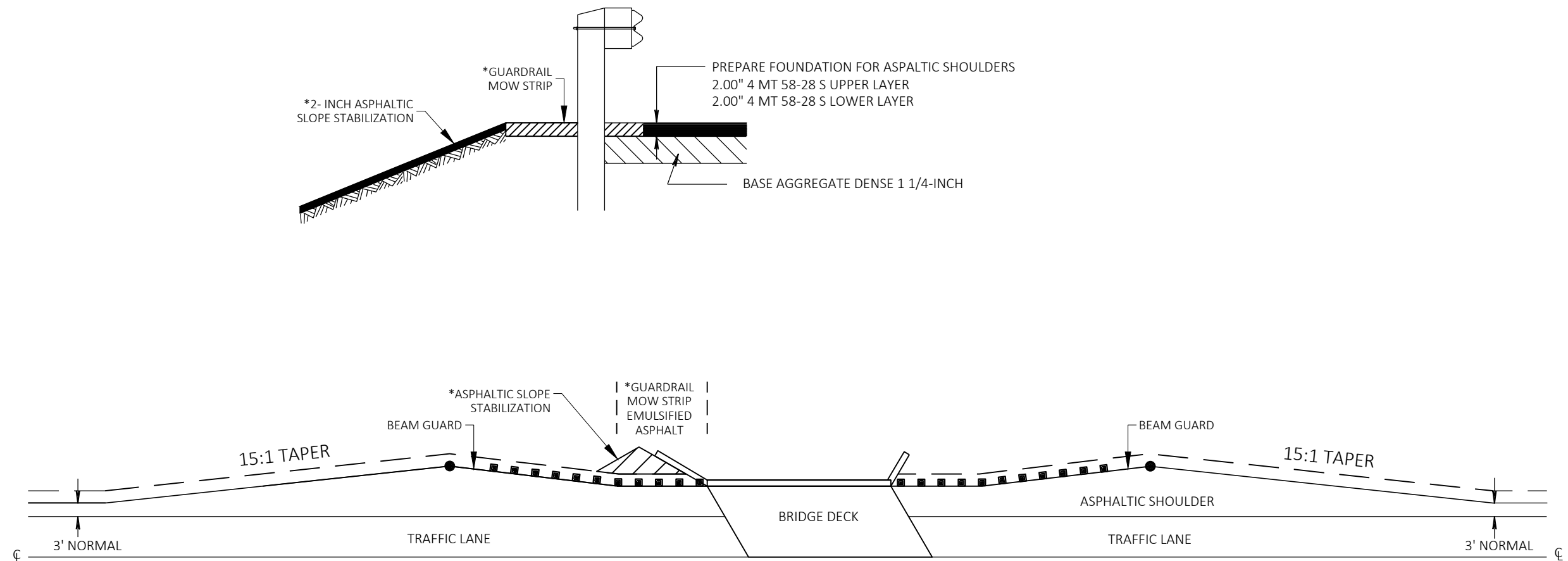
STA 230+50 - STA 413+10



NOTE: ROADWAY RUTTING, LONGITUDINAL CRACKING AND POTHOLES ARE TO BE REPAIRED BETWEEN ASPHALTIC SURFACE MILLINGS AND FINAL SURFACE (72HRS)

* REMOVING ASPHALTIC SURFACE MILLING WIDTH VARIES BASED ON RUTTING AND LONGITUDINAL CRACKING

** REMOVING ASPHALTIC SURFACE MILLING AREA TO BE MINIMUM OF 4 SQUARE FEET

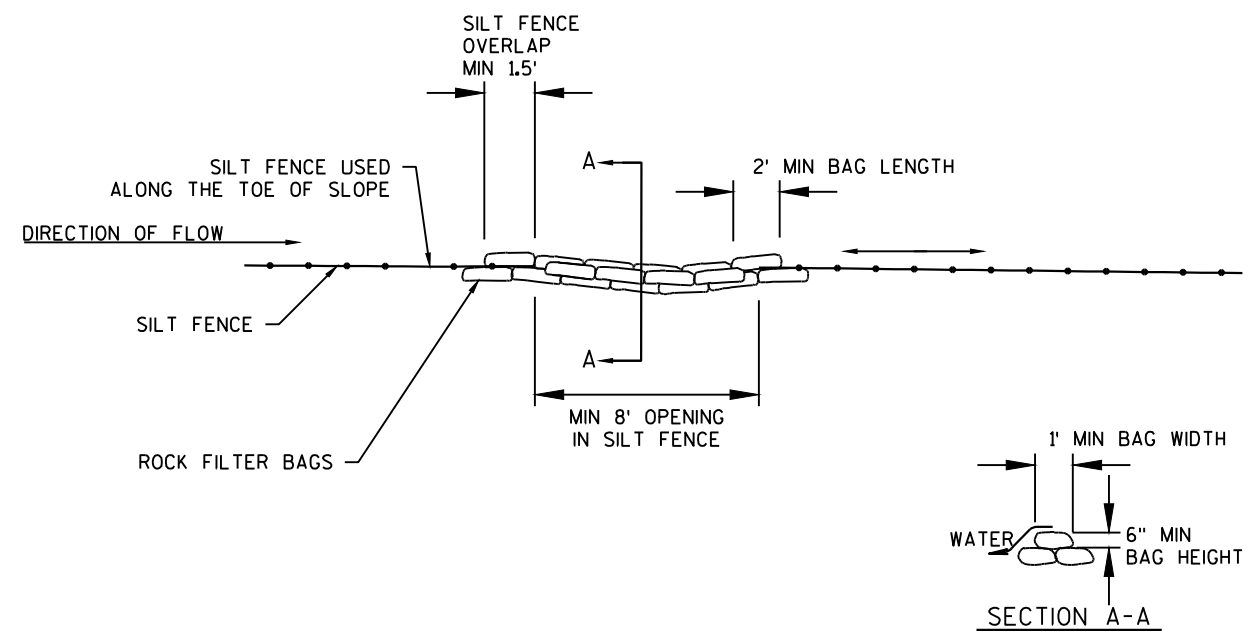


DETAIL FOR ASPHALTIC SHOULDER AND SLOPES AT EXISTING BEAM GUARD

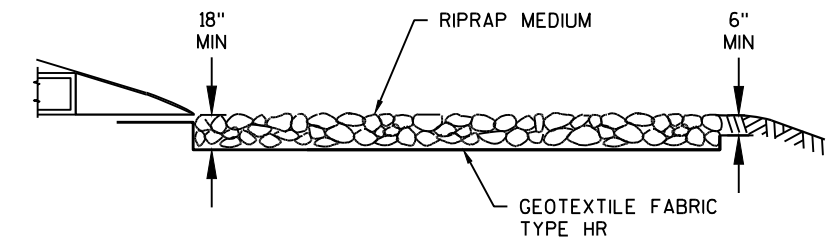
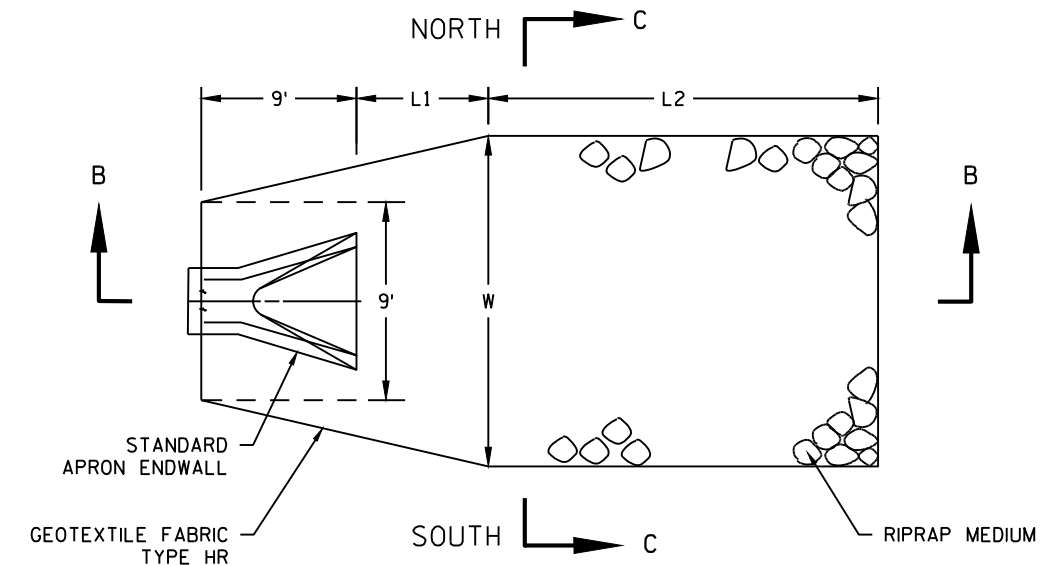
STA 302+29 - STA 305+22
STA 303+66 - STA 305+66
STA 306+42 - STA 309+36
STA 306+58 - STA 307+98

*NOTES: GUARDRAIL MOW STRIPS AND ASPHALTIC SLOPE STABILIZATION IS ONLY PLACED ON THE SOUTH END OF THE BRIDGE AND BOTH SIDES OF THE ROADWAY.

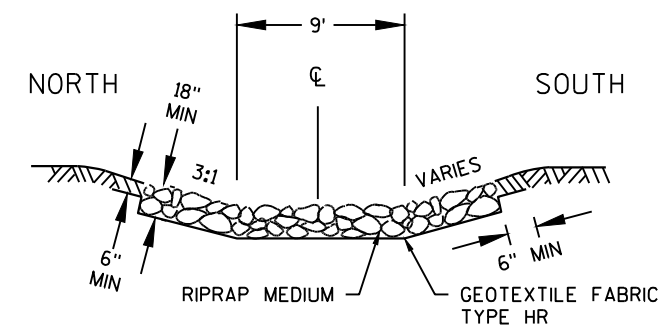
GUARDRAIL MOW STRIP EMULSIFIED ASPHALT ARE ONLY TO BE PLACED AROUND POSTS 50 FT FROM BRIDGE PARAPET. SEE GUARDRAIL MOW STRIP SDD AND MISCELLANEOUS QUANTITIES FOR MORE DETAILS.



ROCK BAGS USED FOR SILT FENCE RELIEF



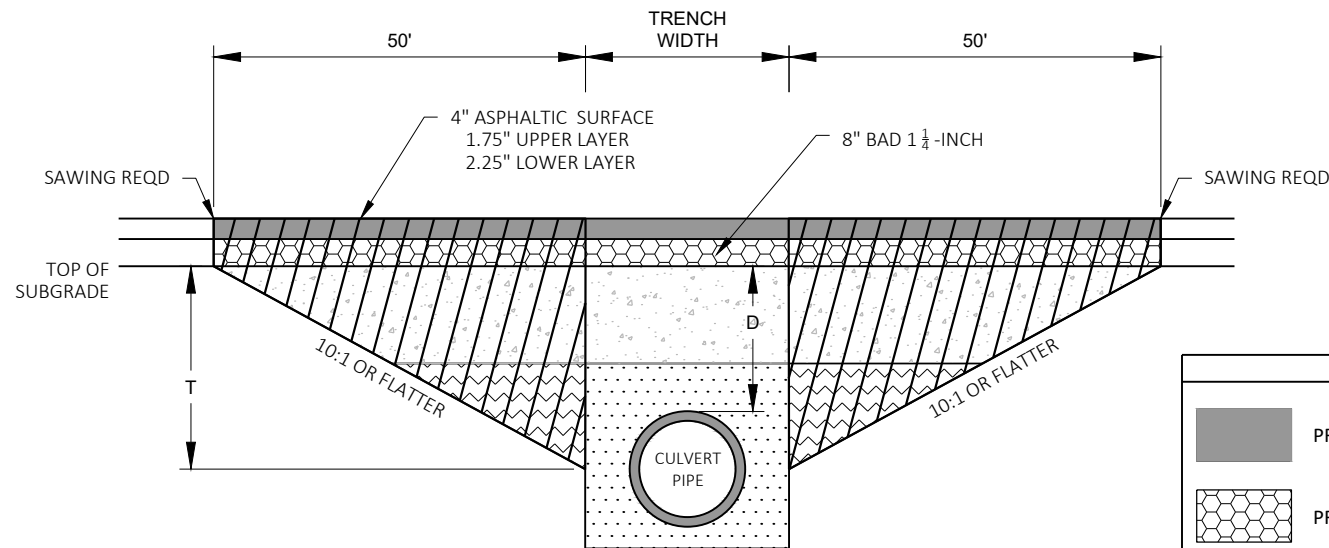
SECTION B-B



SECTION C-C

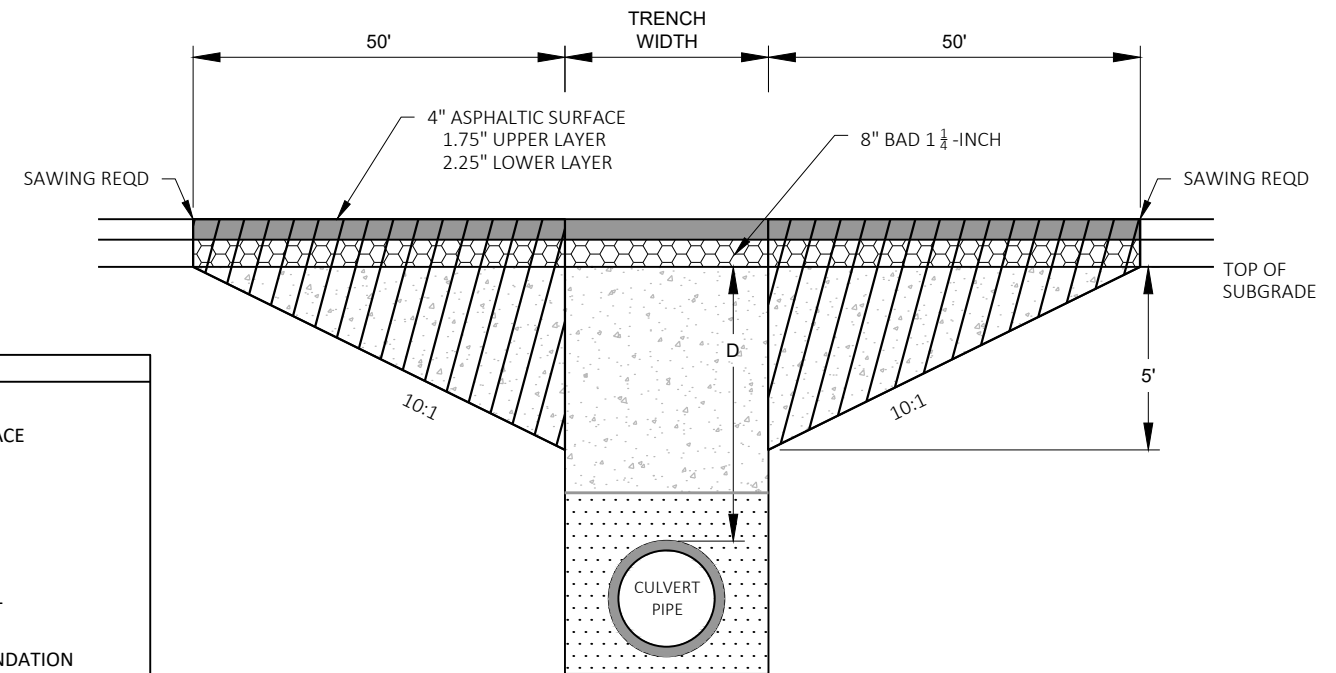
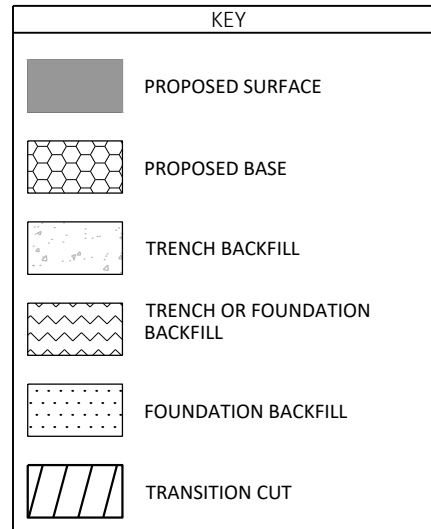
OUTLET ENDWALL RIPRAP AND GEOTEXTILE FABRIC DETAIL

STA	OFFSET	W	L1	L2
199+44	54' RT	12.5'	3.5'	5'
385+40	34' LT	13'	4'	5.5'



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

DEPTH D < 6 FT



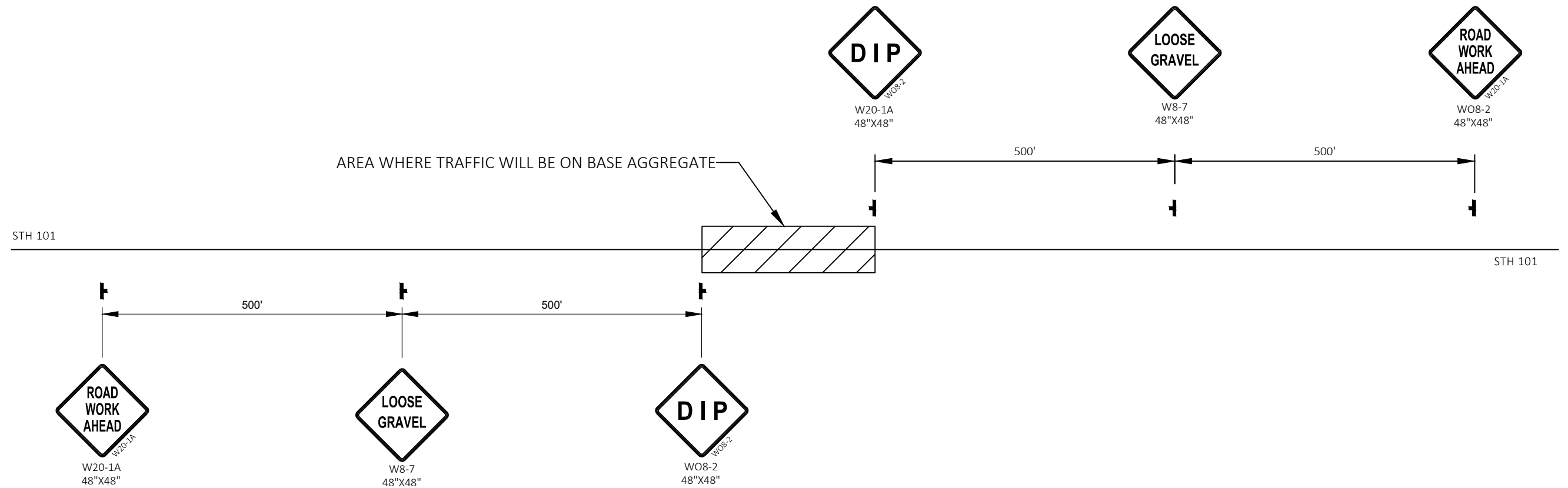
DEPTH D ≥ 6 FT

NOTES

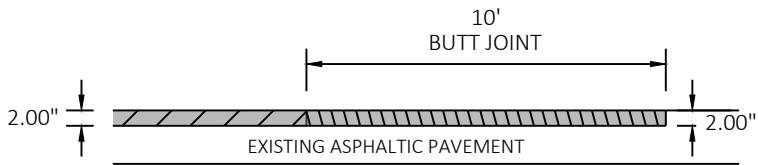
TRANSITION CUT IS PAID AS EXCAVATION COMMON.
TRANSITION CUT WIDTH IS FROM SUBGRADE SHOULDER POINT TO SUBGRADE SHOULDER POINT.
BACKFILL THE TRANSITION CUT AREAS WITH FOUNDATION AND TRENCH BACKFILL AS SPECIFIED IN STANDARD SPEC 520.
PERFORM CULVERT PIPE INSTALLATION BEFORE ASPHALT MILLING AND PAVING OPERATIONS.
PLACE HMA 4 MT 58-28 S AFTER CULVERT PIPE INSTALLATION AND BEFORE ASPHALTIC SURFACE MILLING OPERATIONS.

CULVERT PIPE TRANSITION

ROUTE	STA (CL)	DEPTH D (FT)	PIPE DIA (IN)	REMARKS
STH 101	74+45	4.5	36	C-19-101-000090 REMOVAL
STH 101	79+28	1.5	24	C-19-101-000091 REPLACEMENT
STH 101	102+25	3.5	24	C-19-101-000092 REPLACEMENT
STH 101	150+91	3.5	24	C-19-101-000093 REPLACEMENT
STH 101	170+29	2.5	24	C-19-101-000094 REPLACEMENT
STH 101	176+53	3.0	24	C-19-101-000095 REPLACEMENT
STH 101	199+44	5.5	36	C-19-101-000096 REPLACEMENT
STH 101	255+66	11.5	24	C-19-101-000098 REPLACEMENT
STH 101	295+23	2.5	24	C-19-101-000101 REPLACEMENT
STH 101	318+40	13.5	24	C-19-101-000102 REPLACEMENT
STH 101	385+41	2.5	36	C-19-101-000105 REPLACEMENT
STH 101	403+51	1.5	24	C-19-101-000106 REPLACEMENT



LOOSE GRAVEL SIGNING

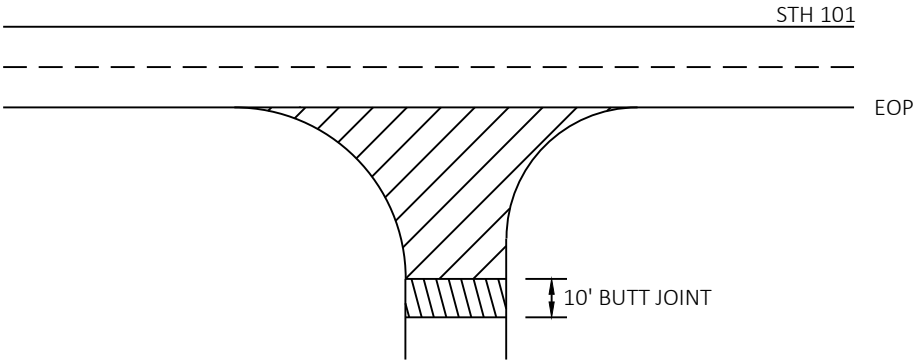


MAINLINE BUTT JOINT DETAIL

- STA 17+56 - STA 17+66
- STA 305+38 - STA 305+48
- STA 306+14 - STA 306+24
- STA 413+00 - STA 413+10

- HMA PAVEMENT
- REMOVING ASPHALTIC SURFACE MILLING
- REMOVING ASPHALTIC SURFACE BUTT JOINTS

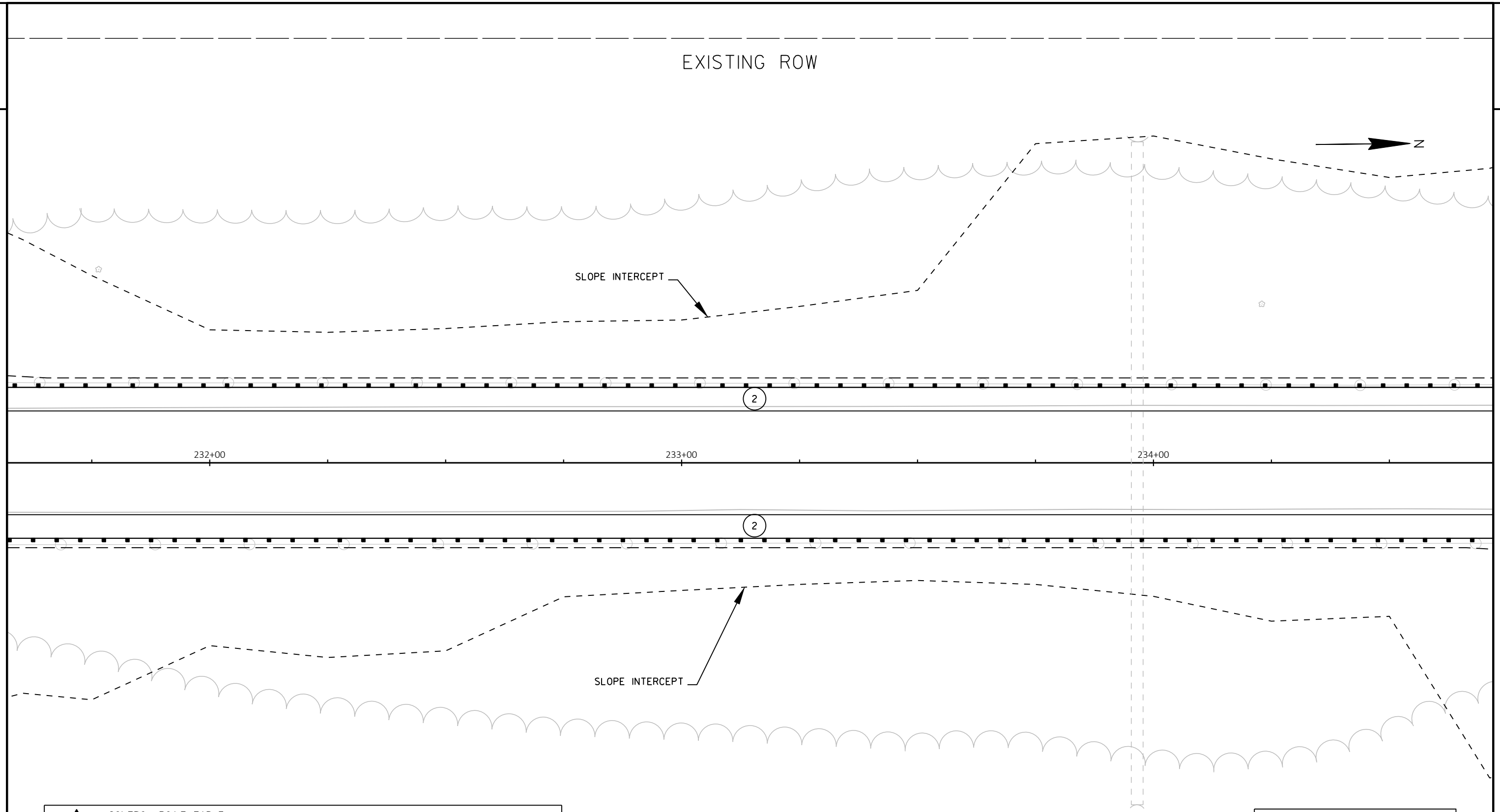
BUTT JOINT
MAINLINE AND SIDE ROADS



- REMOVING ASPHALTIC SURFACE MILLING
- REMOVING ASPHALTIC SURFACE BUTT JOINTS
SEE BUTT JOINT DETAIL

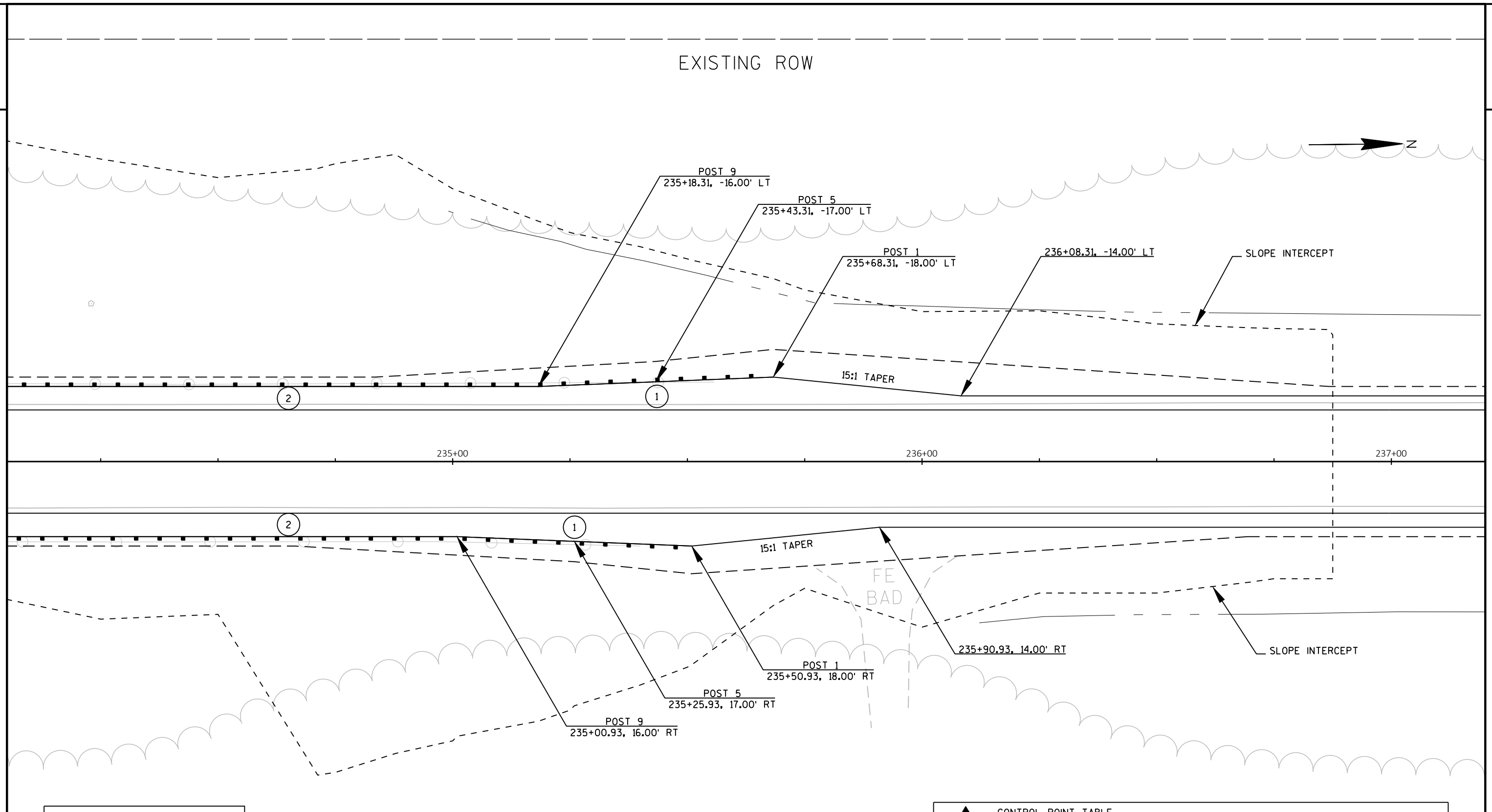
NOTE: WHEN MATCHING TO AN UNPAVED SURFACE
BUTT JOINT IS NOT REQUIRED

SIDE ROADS
WITHOUT CURB AND GUTTER



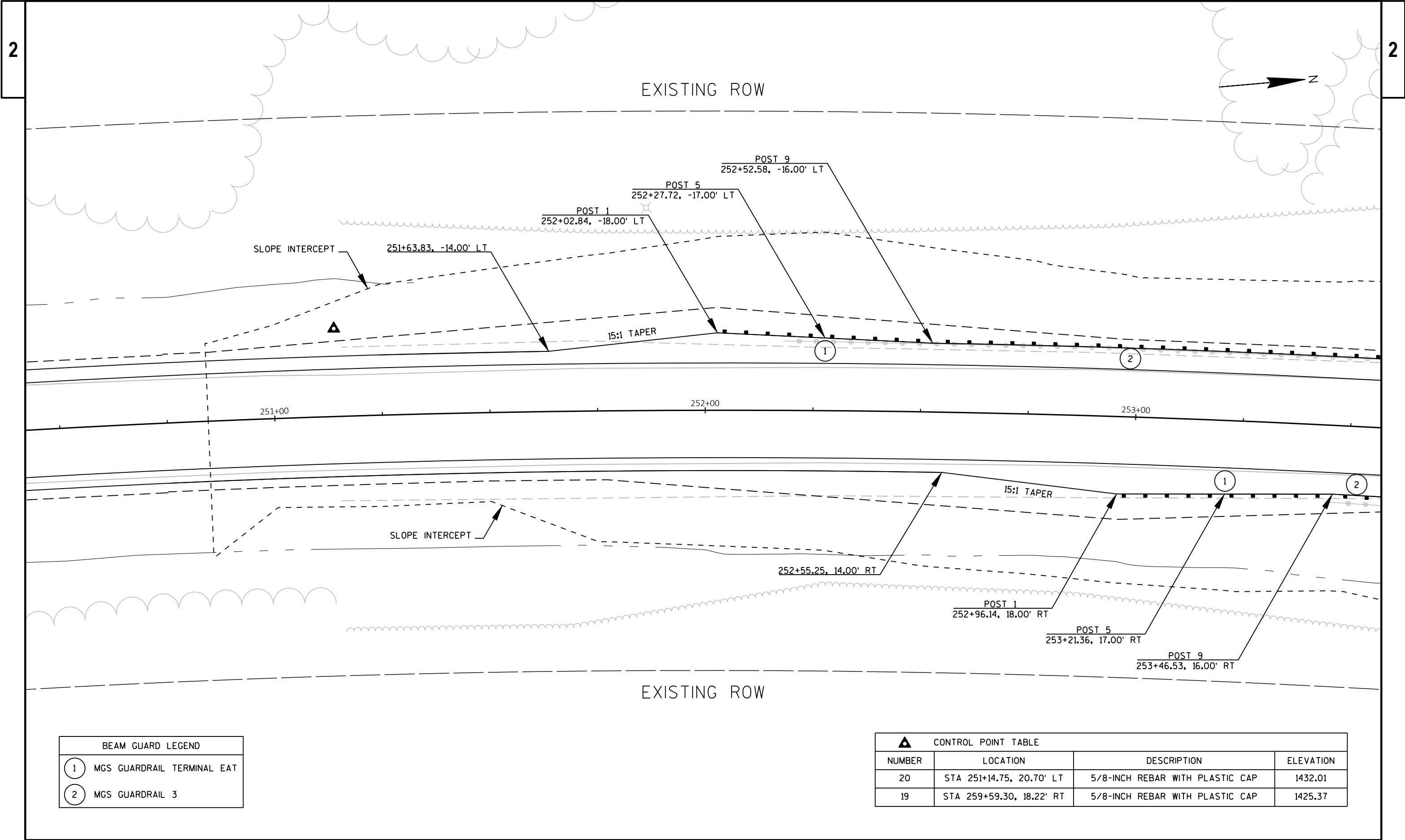
CONTROL POINT TABLE			
NUMBER	LOCATION	DESCRIPTION	ELEVATION
21	STA 201+29.11, 18.99' RT	5/8-INCH REBAR WITH PLASTIC CAP	1483.02
20	STA 251+14.75, 20.70' LT	5/8-INCH REBAR WITH PLASTIC CAP	1432.01

BEAM GUARD LEGEND	
1	MGS GUARDRAIL TERMINAL EAT
2	MGS GUARDRAIL 3



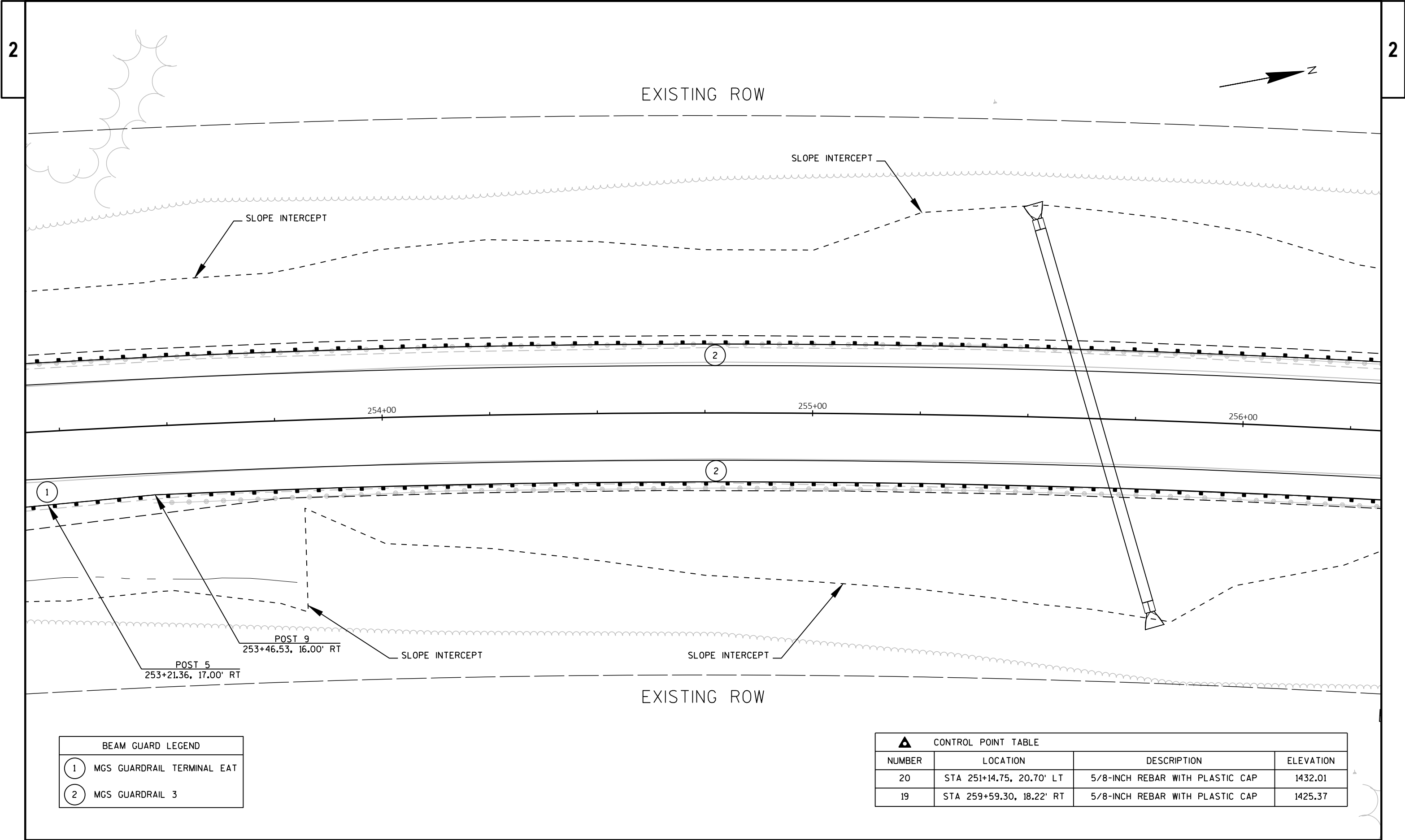
BEAM GUARD LEGEND	
①	MGS GUARDRAIL TERMINAL EAT
②	MGS GUARDRAIL 3

CONTROL POINT TABLE			
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BEAM GUARD LEGEND	
1	MGS GUARDRAIL TERMINAL EAT
2	MGS GUARDRAIL 3

CONTROL POINT TABLE			
NUMBER	LOCATION	DESCRIPTION	ELEVATION
20	STA 251+14.75, 20.70' LT	5/8-INCH REBAR WITH PLASTIC CAP	1432.01
19	STA 259+59.30, 18.22' RT	5/8-INCH REBAR WITH PLASTIC CAP	1425.37

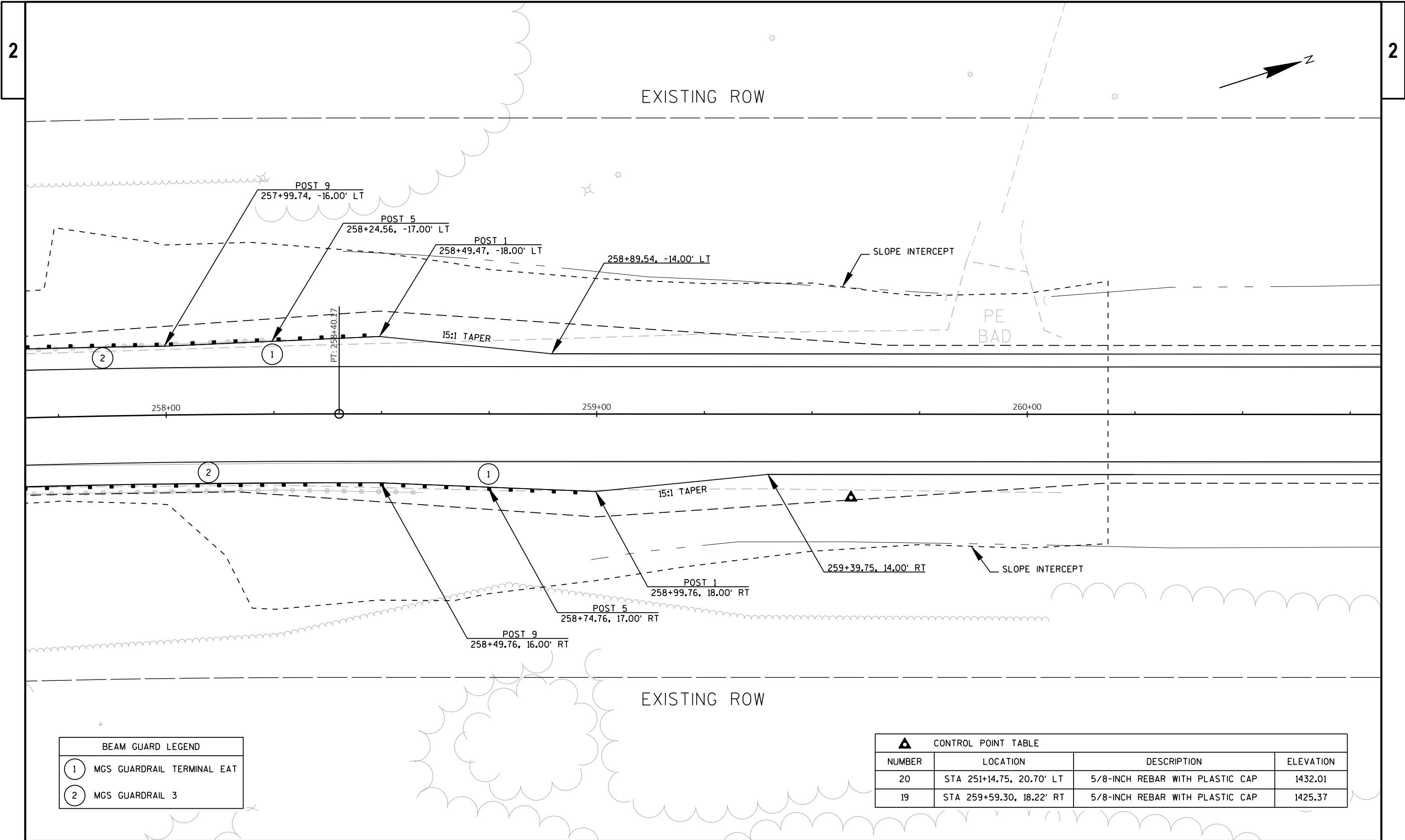


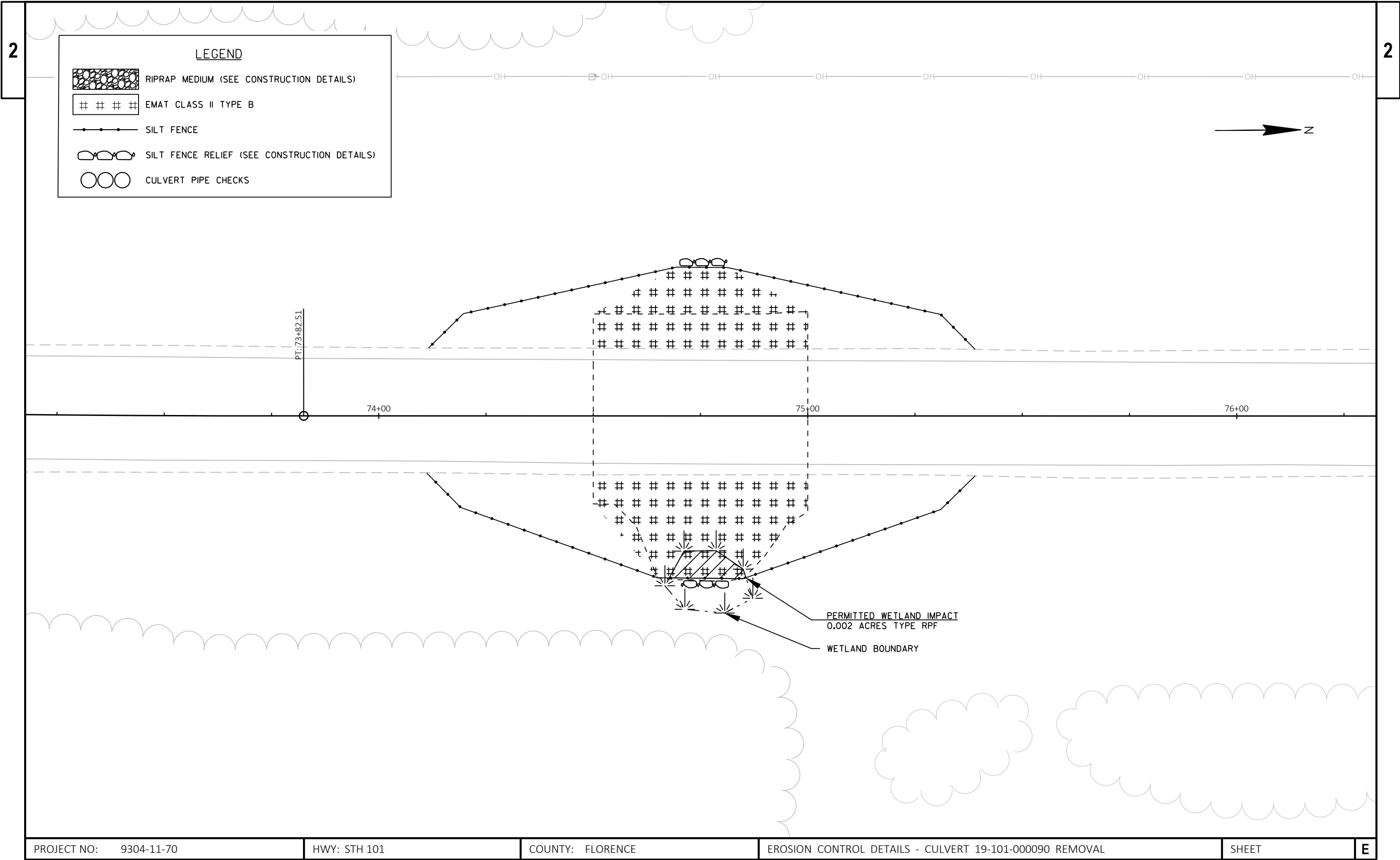
BEAM GUARD LEGEND	
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CONTROL POINT TABLE			
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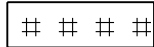
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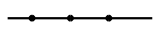




LEGEND

 RIPRAP MEDIUM (SEE CONSTRUCTION DETAILS)

 EMAT CLASS II TYPE B

 SILT FENCE

 SILT FENCE RELIEF (SEE CONSTRUCTION DETAILS)

 CULVERT PIPE CHECKS

PROJECT NO: 9304-11-70

HWY: STH 101

COUNTY: FLORENCE

EROSION CONTROL DETAILS - CULVERT 19-101-000090 REMOVAL

SHEET

E

FILE NAME: \\RHIRTOPFLPPI01\N3PUBLIC\PD5\C3D\93041100\022001_EC.DWG
LAYOUT NAME - 01

PLOT DATE: 10/29/2020 2:57 PM

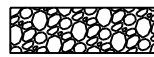
PLOT BY: MAVES, EVAN A

PLOT NAME:

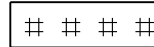
PLOT SCALE: 1 IN:20 FT

WISDOT/CADD5 SHEET 42

LEGEND



RIPRAP MEDIUM (SEE CONSTRUCTION DETAILS)



EMAT CLASS II TYPE B



SILT FENCE



SILT FENCE RELIEF (SEE CONSTRUCTION DETAILS)



CULVERT PIPE CHECKS



78+00

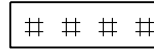
79+00

80+00

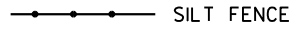
LEGEND



RIPRAP MEDIUM (SEE CONSTRUCTION DETAILS)



EMAT CLASS II TYPE B



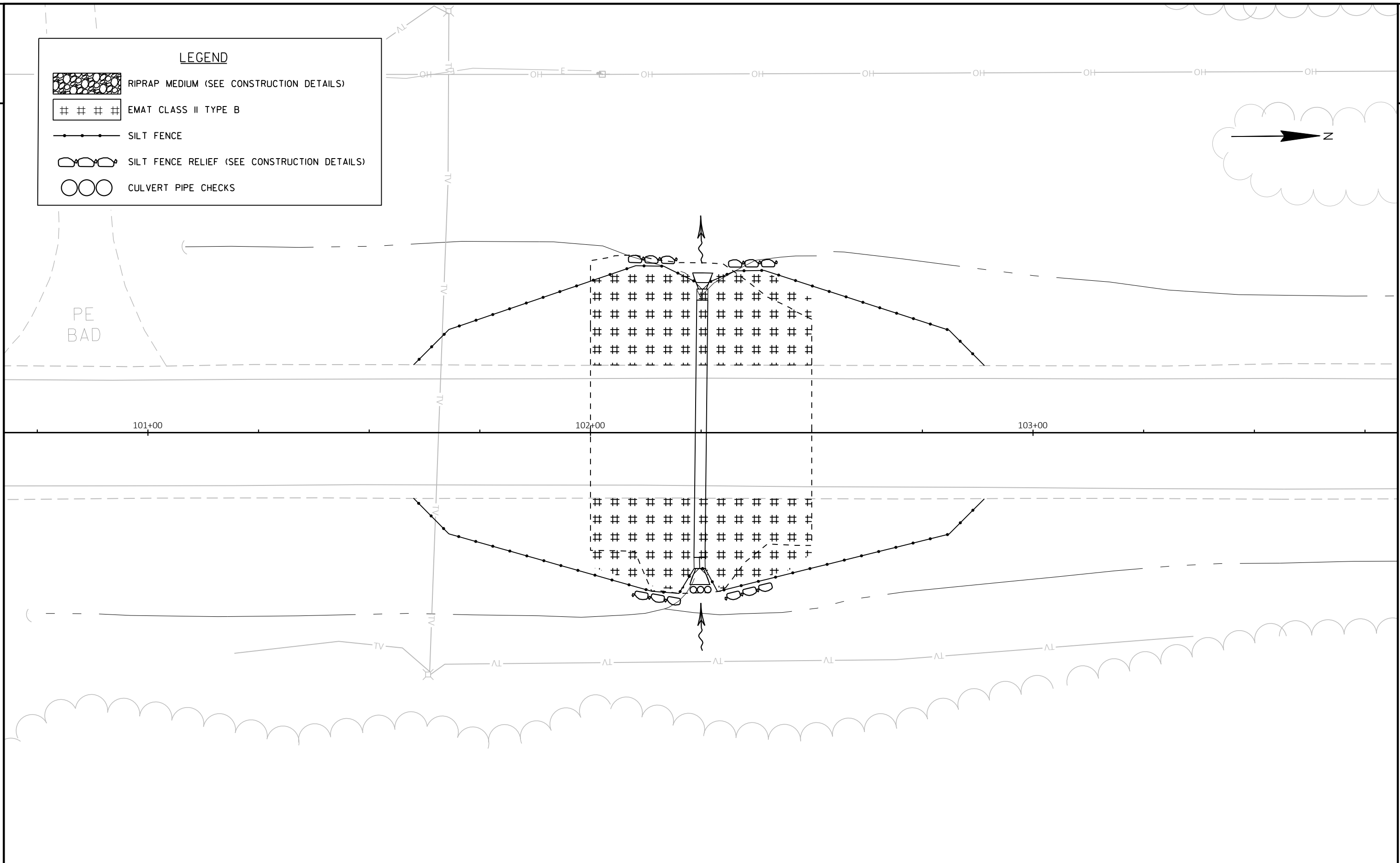
SILT FENCE



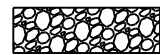
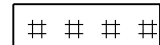
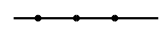
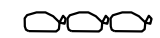
SILT FENCE RELIEF (SEE CONSTRUCTION DETAILS)



CULVERT PIPE CHECKS



LEGEND

 RIPRAP MEDIUM (SEE CONSTRUCTION DETAILS) EMAT CLASS II TYPE B SILT FENCE SILT FENCE RELIEF (SEE CONSTRUCTION DETAILS) CULVERT PIPE CHECKS

EXISTING ROW



EXISTING ROW

150+00

151+00

152+00

EXISTING ROW

EXISTING ROW

PROJECT NO: 9304-11-70

HWY: STH 101

COUNTY: FLORENCE

EROSION CONTROL DETAILS - CULVERT 19-101-000093 REPLACEMENT

SHEET

E

FILE NAME: \\RHIRTOP\FLPPI01\N3PUBLIC\PD5\C3D\93041100\SHEETS\PLAN\022001_EC.DWG
LAYOUT NAME - 04

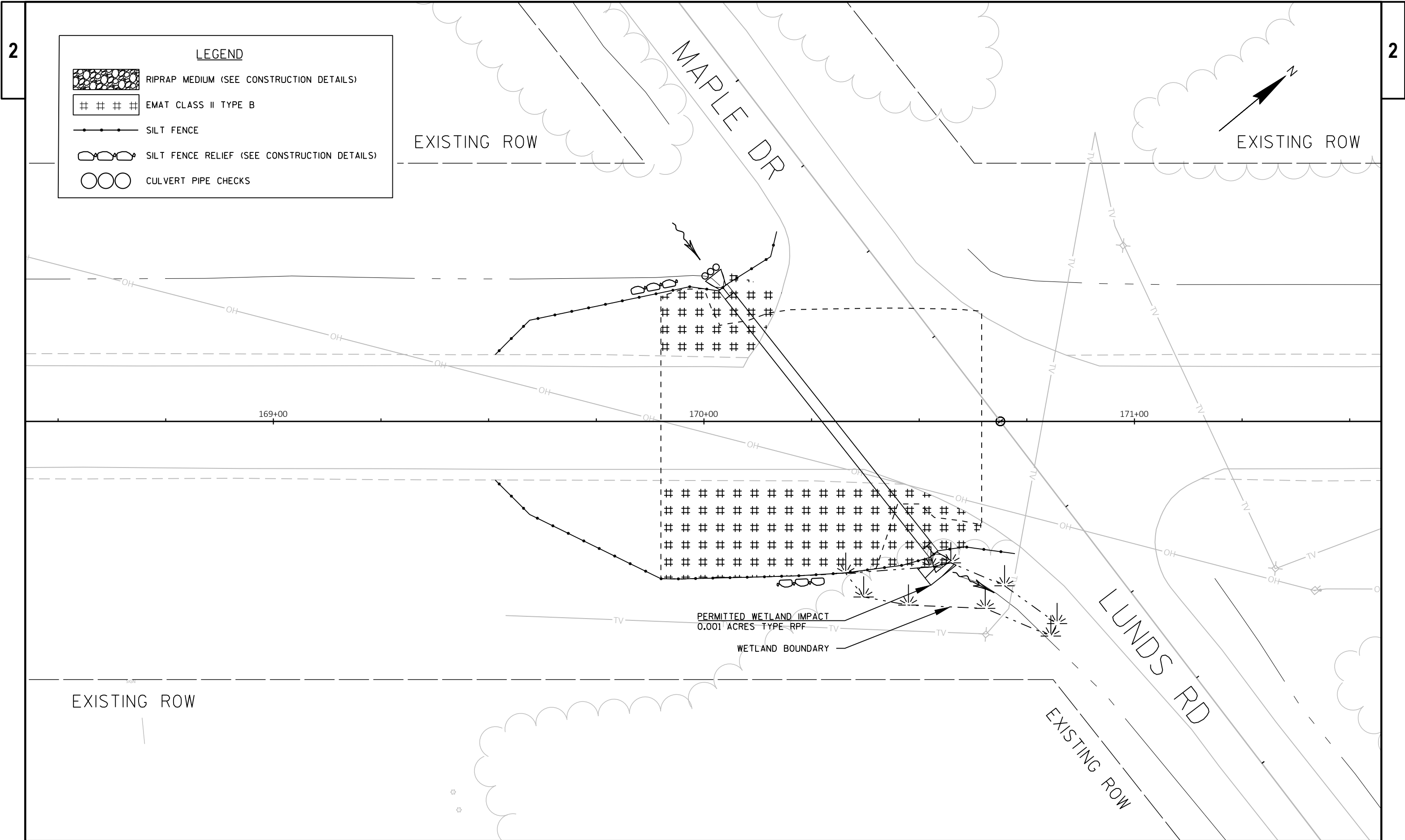
PLOT DATE: 10/29/2020 2:58 PM

PLOT BY: MAVES, EVAN A

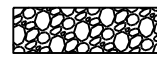
PLOT NAME:

PLOT SCALE: 1 IN:20 FT

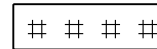
WISDOT/CADDs SHEET 42



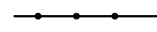
LEGEND



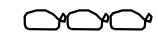
RIPRAP MEDIUM (SEE CONSTRUCTION DETAILS)



EMAT CLASS II TYPE B



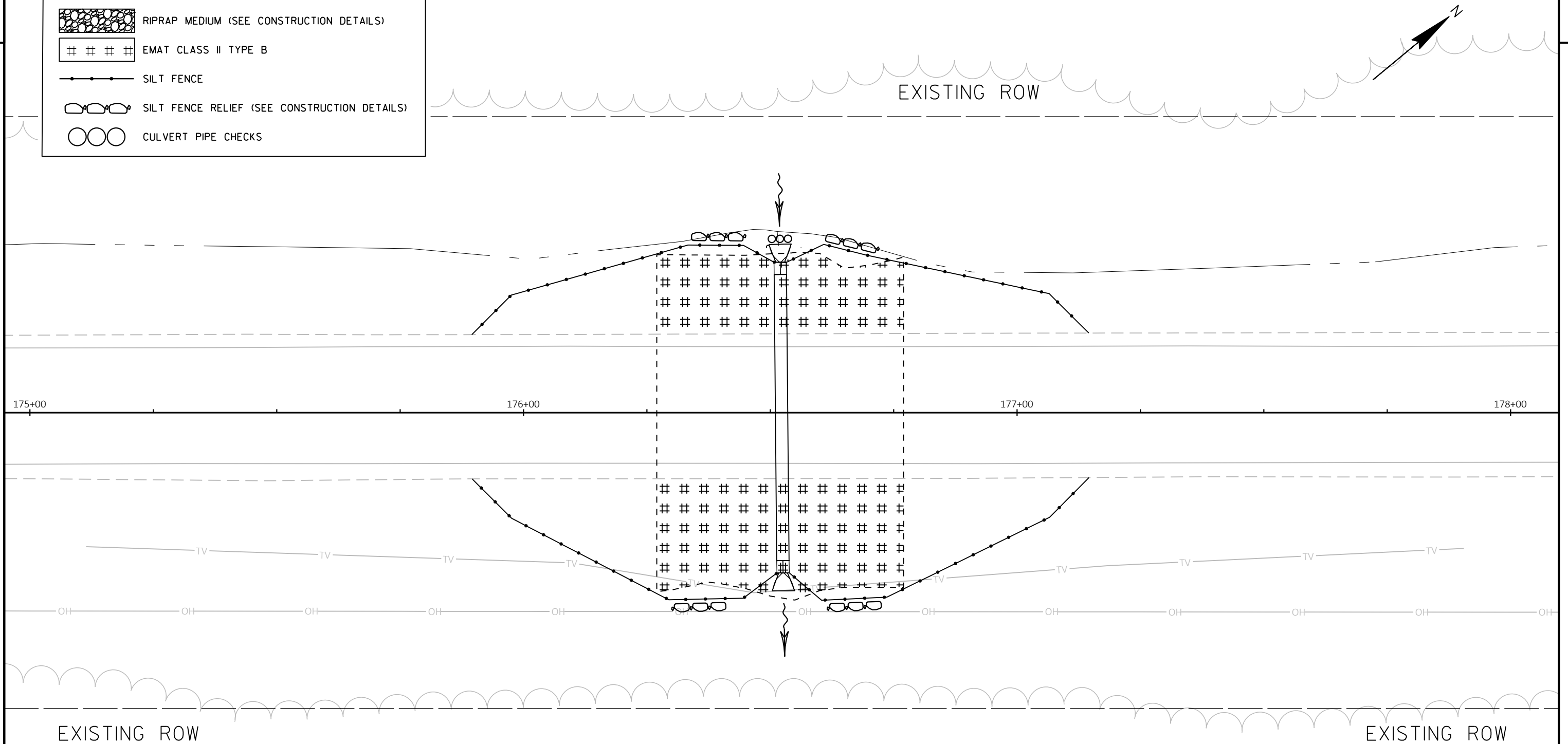
SILT FENCE



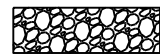
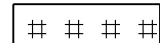
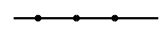
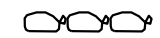
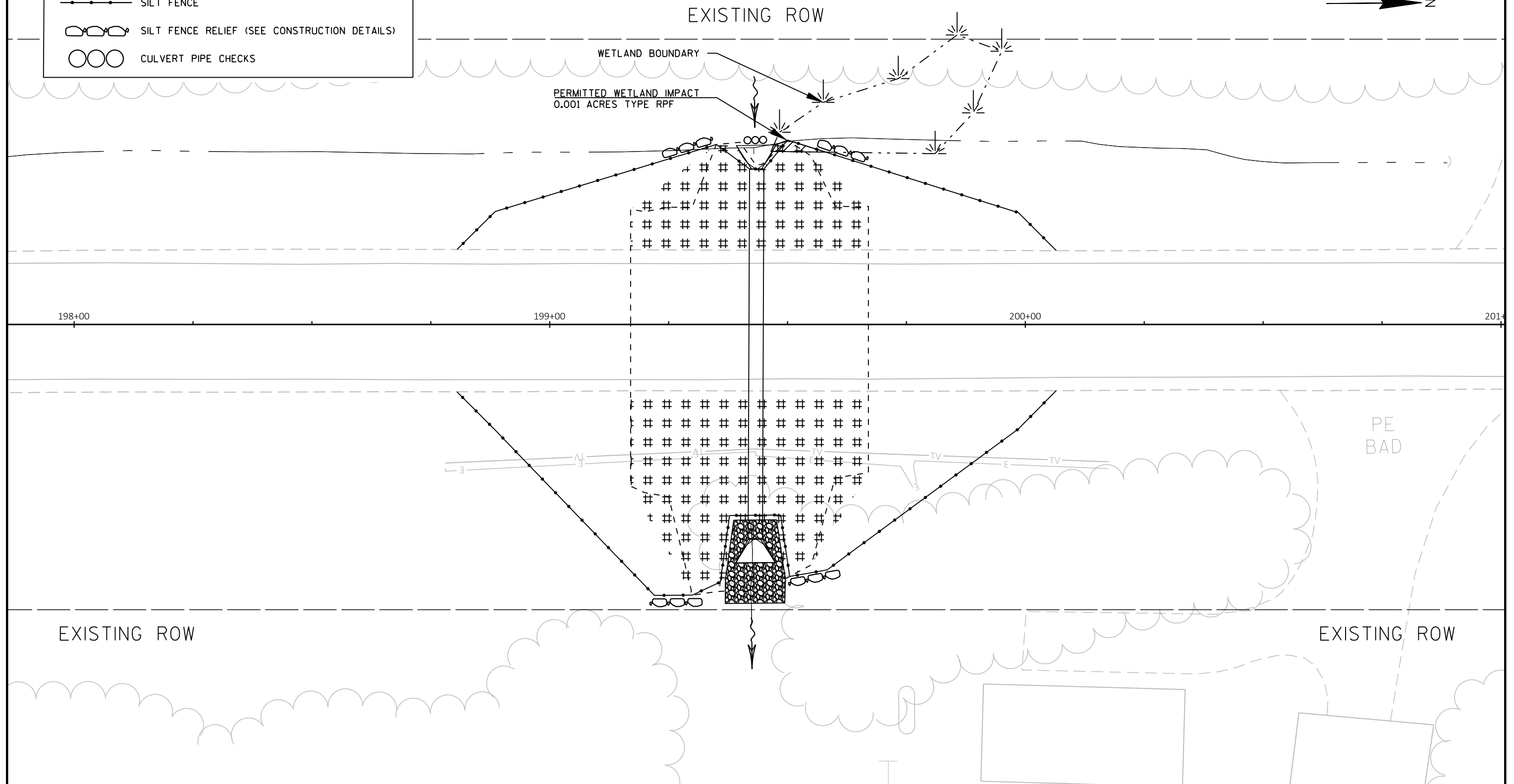
SILT FENCE RELIEF (SEE CONSTRUCTION DETAILS)



CULVERT PIPE CHECKS



LEGEND

 RIPRAP MEDIUM (SEE CONSTRUCTION DETAILS) EMAT CLASS II TYPE B SILT FENCE SILT FENCE RELIEF (SEE CONSTRUCTION DETAILS) CULVERT PIPE CHECKS

PROJECT NO: 9304-11-70

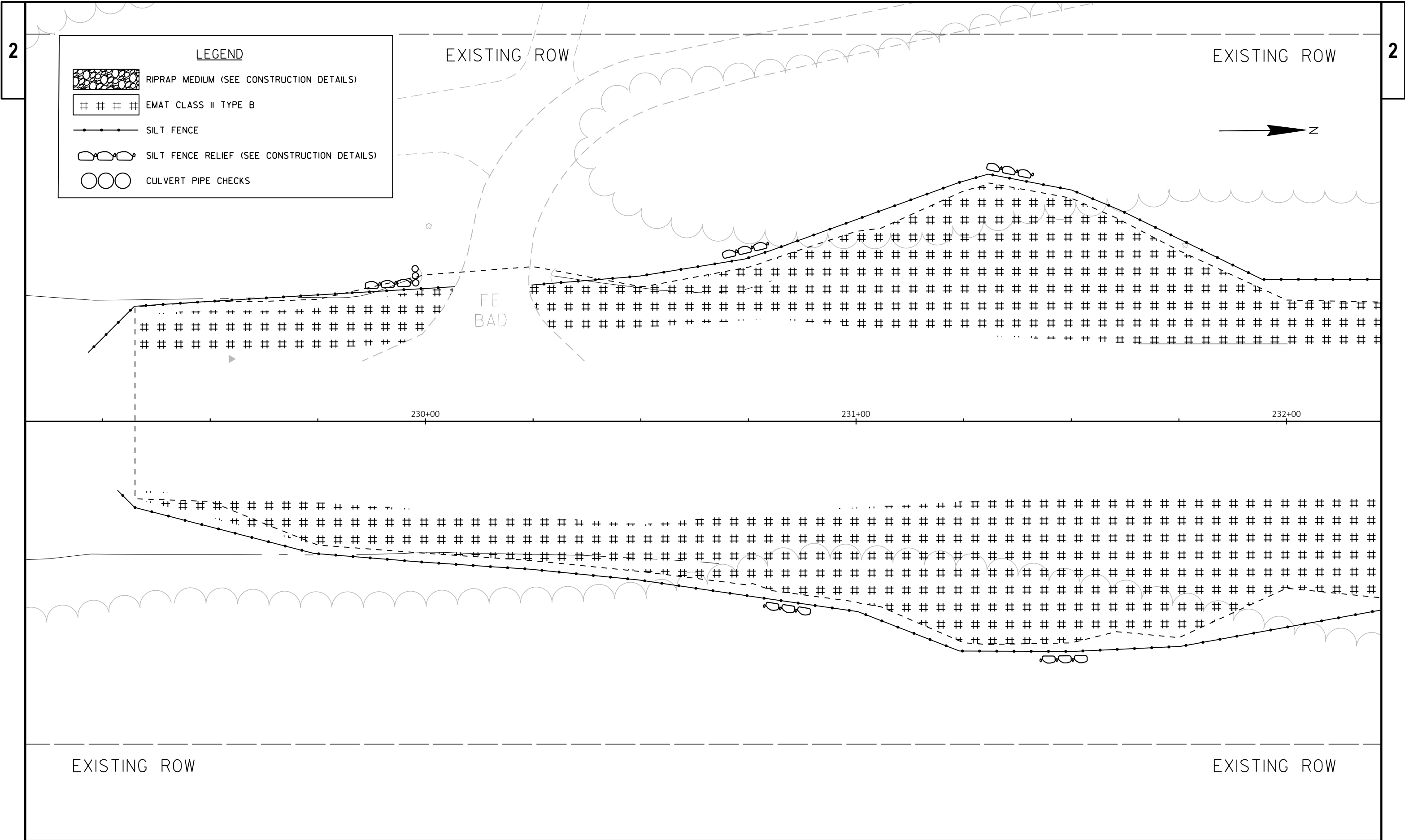
HWY: STH 101

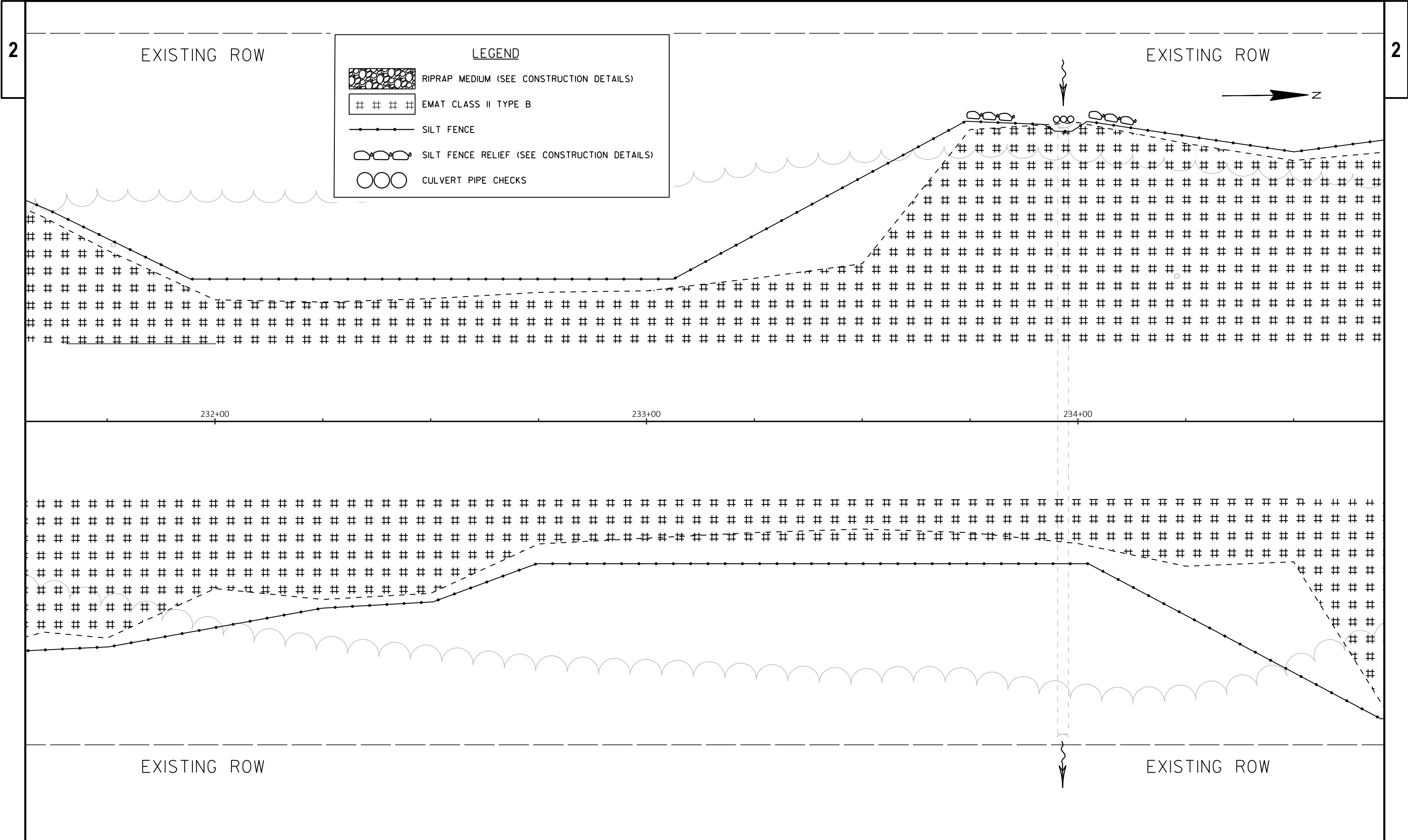
COUNTY: FLORENCE

EROSION CONTROL DETAILS - CULVERT 19-101-000096 REPLACEMENT

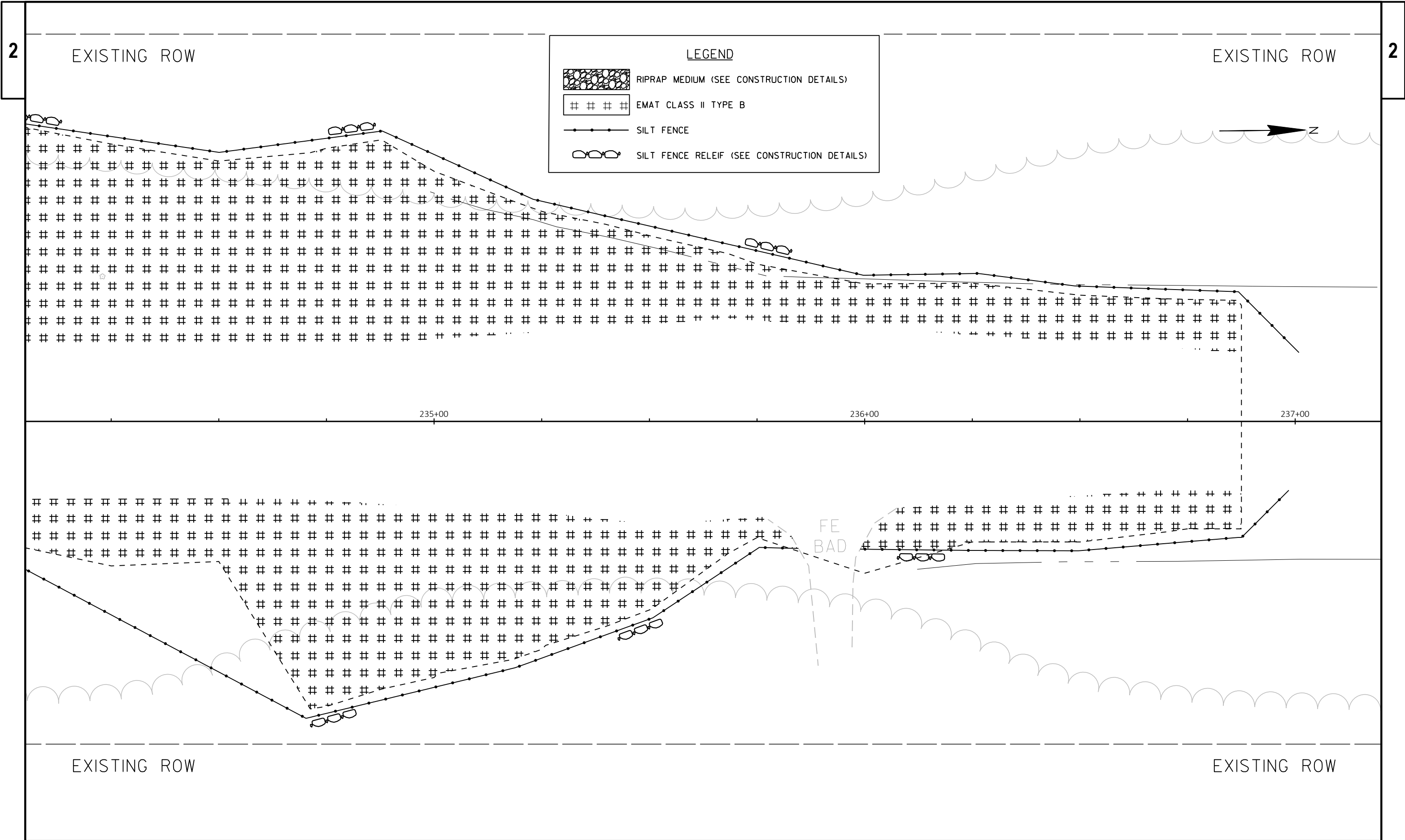
SHEET

E





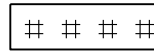
PROJECT NO: 9304-11-70	HWY: STH 101	COUNTY: FLORENCE	EROSION CONTROL DETAILS - BEAM GUARD EATS STA 229+21 TO STA 237+09	SHEET	E
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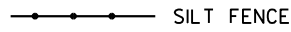
LEGEND



RIPRAP MEDIUM (SEE CONSTRUCTION DETAILS)



EMAT CLASS II TYPE B



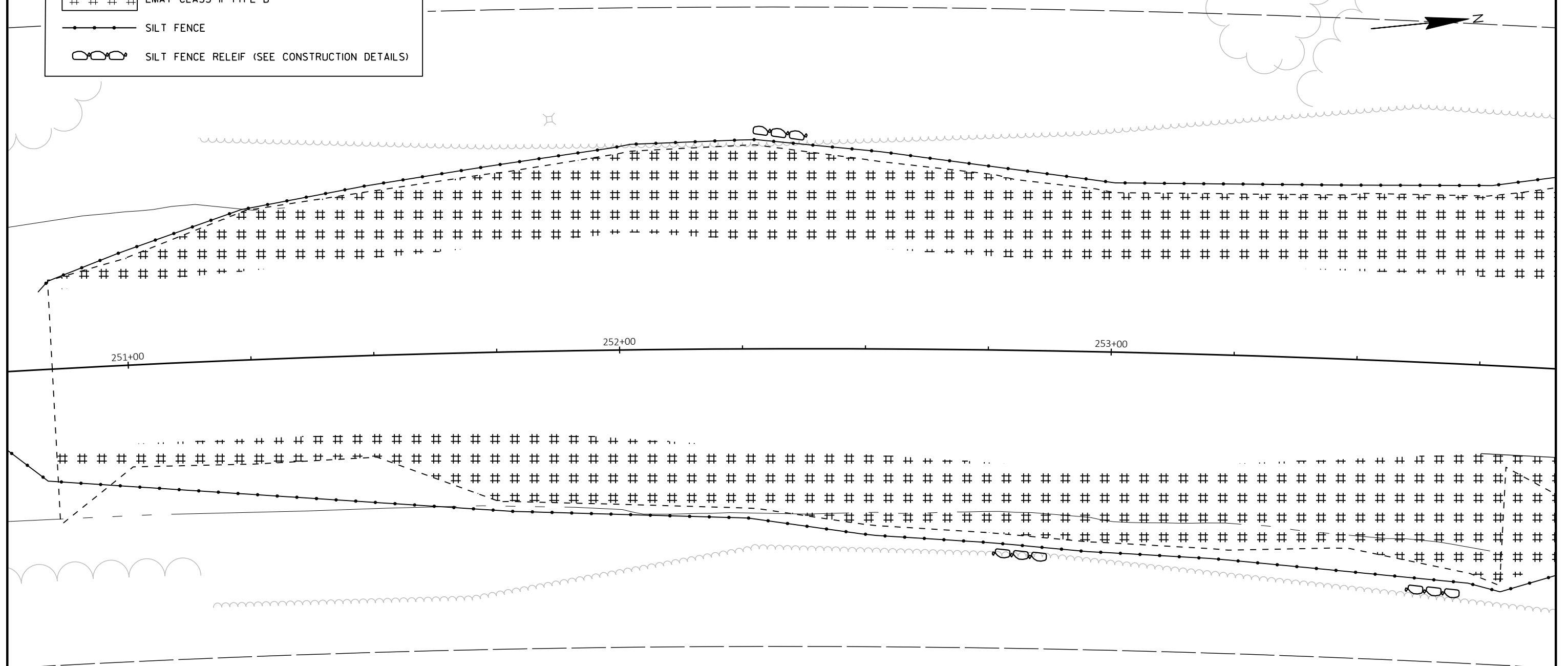
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SILT FENCE RELEIF (SEE CONSTRUCTION DETAILS)

EXISTING ROW

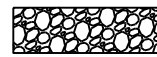
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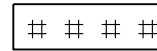
EXISTING ROW

EXISTING ROW

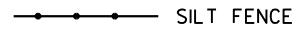
LEGEND



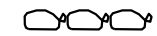
RIPRAP MEDIUM (SEE CONSTRUCTION DETAILS)



EMAT CLASS II TYPE B



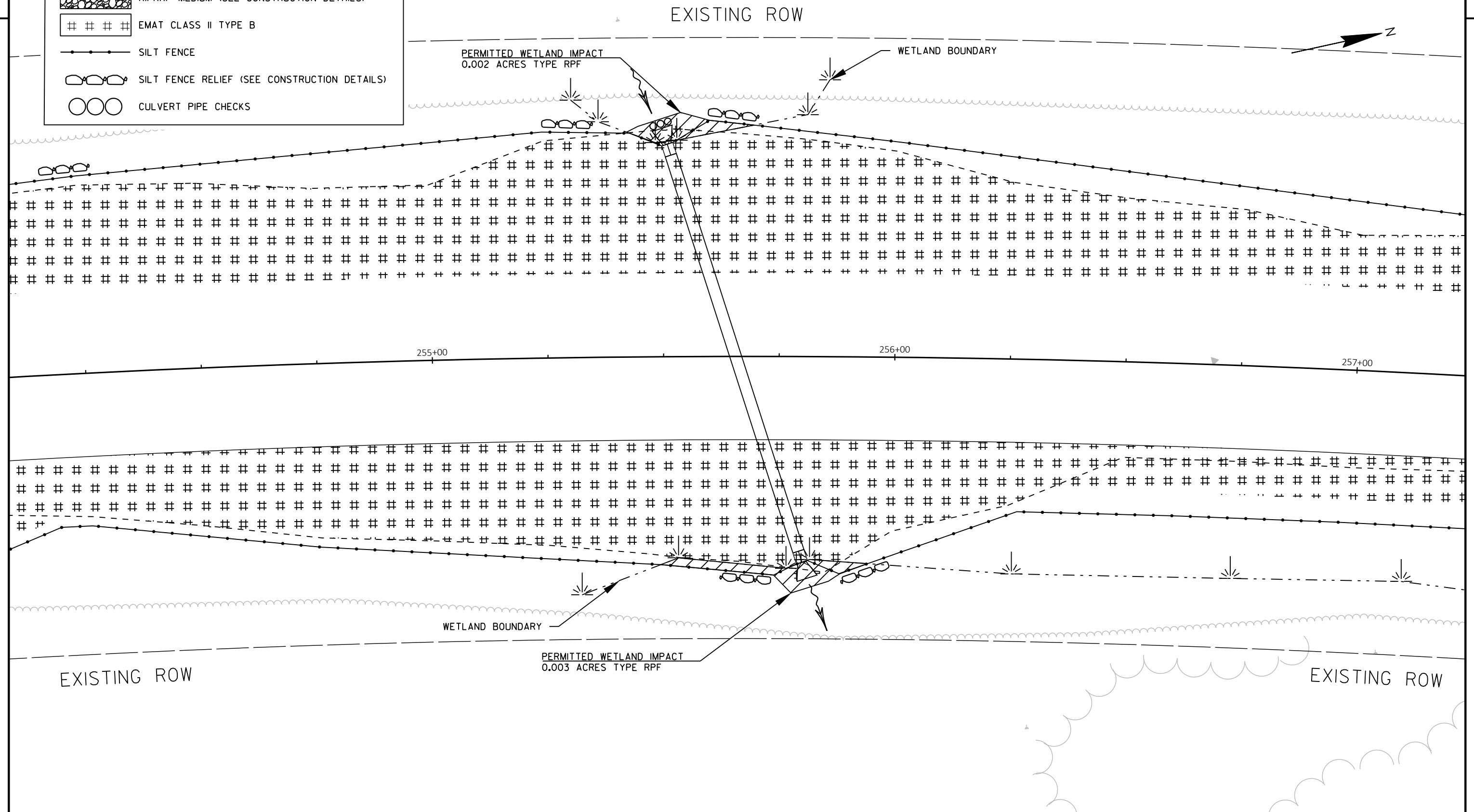
SILT FENCE



SILT FENCE RELIEF (SEE CONSTRUCTION DETAILS)



CULVERT PIPE CHECKS



PROJECT NO: 9304-11-70

HWY: STH 101

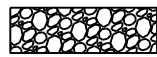
COUNTY: FLORENCE

EROSION CONTROL DETAILS - CULVERT 19-101-000098 REPLACEMENT

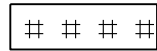
SHEET

E

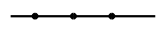
LEGEND



RIPRAP MEDIUM (SEE CONSTRUCTION DETAILS)



EMAT CLASS II TYPE B



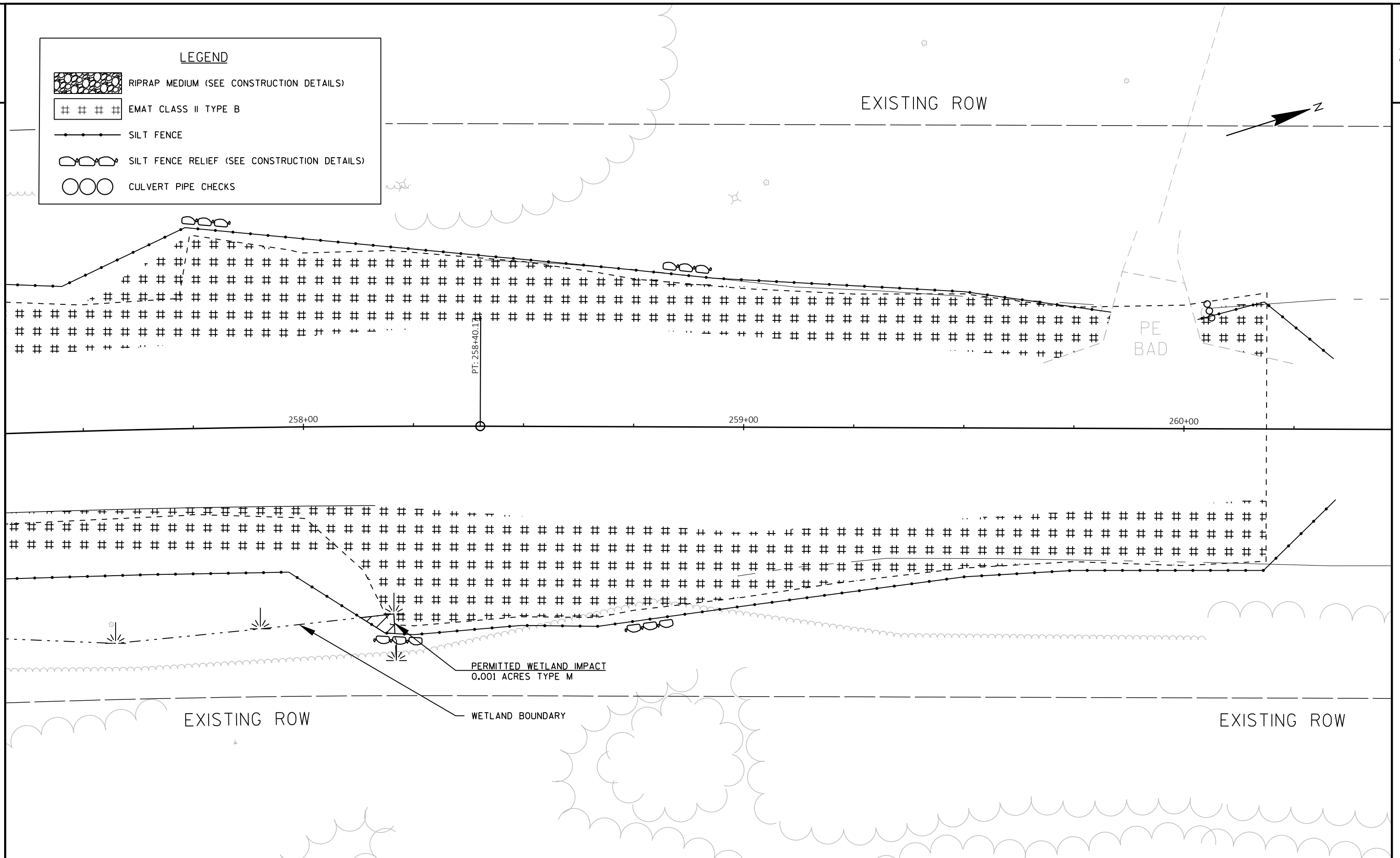
SILT FENCE



SILT FENCE RELIEF (SEE CONSTRUCTION DETAILS)



CULVERT PIPE CHECKS



PROJECT NO: 9304-11-70

HWY: STH 101

COUNTY: FLORENCE

EROSION CONTROL DETAILS - BEAM GUARD EATS STA 250+67 TO STA 260+35

SHEET

E

FILE NAME : \\RHIRTOP\FLPPI01\N3PUBLIC\PD5\C3D\93041100\SHEETSPLAN\022001_EC.DWG
LAYOUT NAME - 13

PLOT DATE : 10/29/2020 3:00 PM

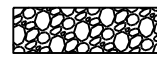
PLOT BY : MAVES, EVAN A

PLOT NAME :

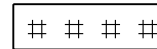
PLOT SCALE : 1 IN:20 FT

WISDOT/CADDs SHEET 42

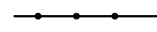
LEGEND



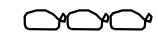
RIPRAP MEDIUM (SEE CONSTRUCTION DETAILS)



EMAT CLASS II TYPE B



SILT FENCE

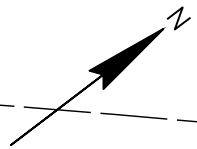


SILT FENCE RELIEF (SEE CONSTRUCTION DETAILS)



CULVERT PIPE CHECKS

EXISTING ROW



294+00

295+00

296+00

EXISTING ROW

EXISTING ROW

PROJECT NO: 9304-11-70

HWY: STH 101

COUNTY: FLORENCE

EROSION CONTROL DETAILS - CULVERT 19-101-000101 REPLACEMENT

SHEET

E

FILE NAME: \\RHIRTOP\PLP\PI01\N3PUBLIC\PD5\C3D\93041100\022001_EC.DWG
LAYOUT NAME - 14

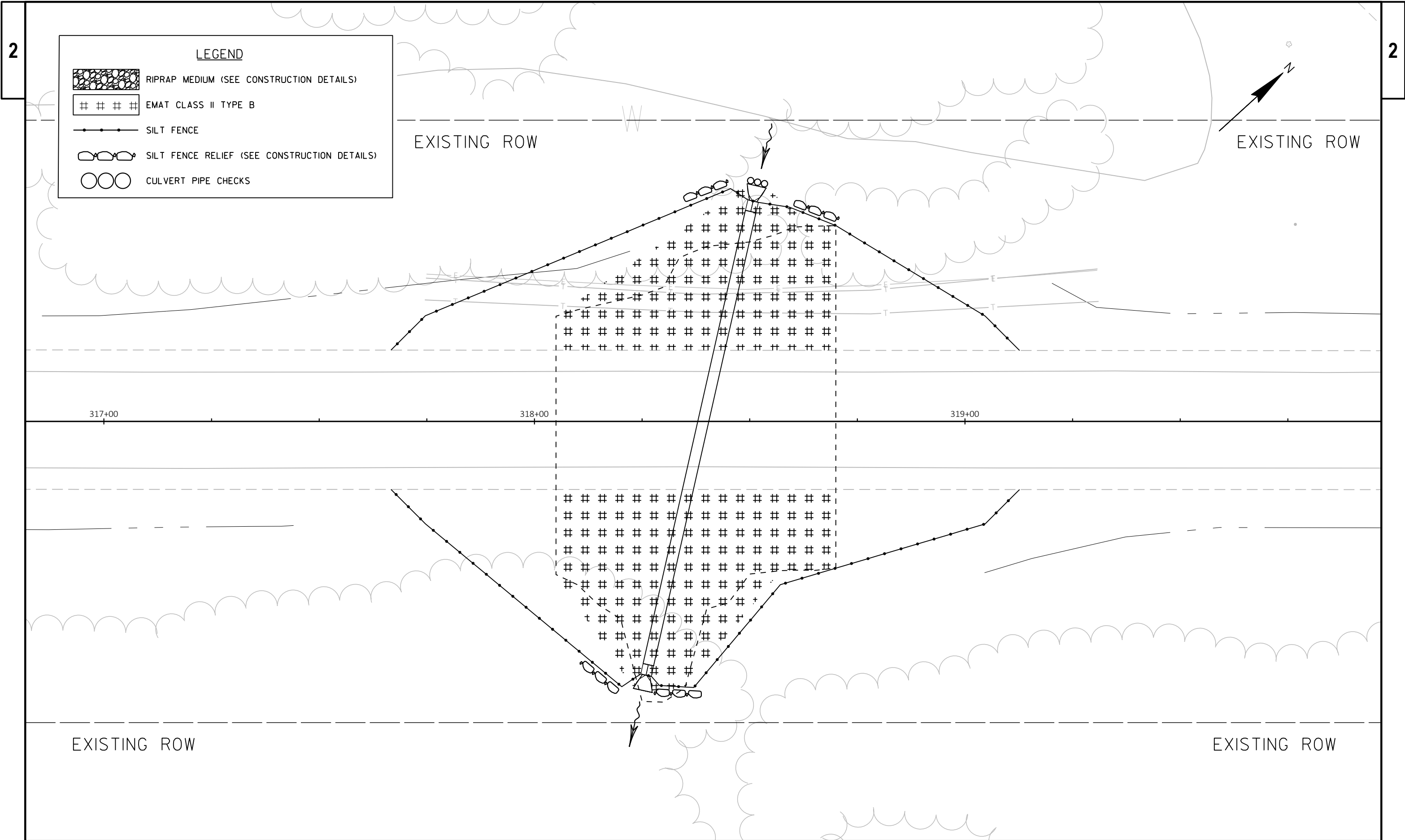
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PLOT BY: MAVES, EVAN A

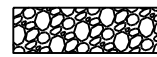
PLOT NAME:

PLOT SCALE: 1 IN:20 FT

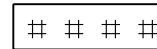
WISDOT/CADDs SHEET 42



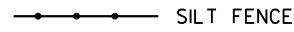
LEGEND



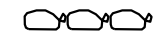
RIPRAP MEDIUM (SEE CONSTRUCTION DETAILS)



EMAT CLASS II TYPE B



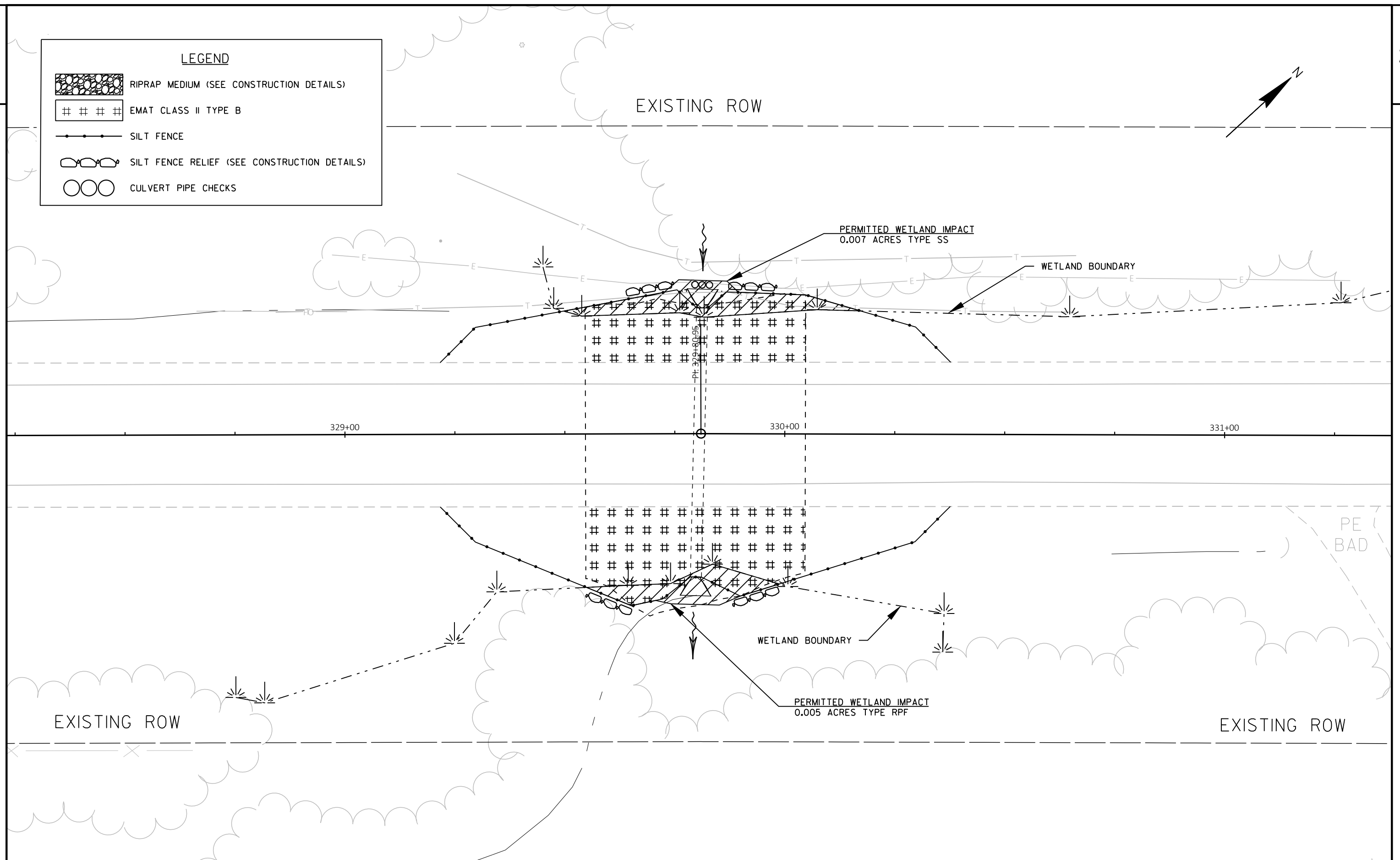
SILT FENCE



SILT FENCE RELIEF (SEE CONSTRUCTION DETAILS)



CULVERT PIPE CHECKS



PROJECT NO: 9304-11-70

HWY: STH 101

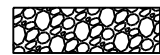
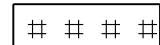
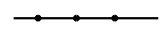
COUNTY: FLORENCE

EROSION CONTROL DETAILS - CULVERT 19-101-000103 ENDWALL REPLACEMENT

SHEET

E

LEGEND

 RIPRAP MEDIUM (SEE CONSTRUCTION DETAILS) EMAT CLASS II TYPE B SILT FENCE SILT FENCE RELIEF (SEE CONSTRUCTION DETAILS) CULVERT PIPE CHECKS

→ Z

EXISTING ROW

EXISTING ROW

384+00

385+00

386+00

3

EXISTING ROW

EXISTING ROW

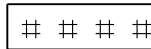
PERMITTED WETLAND IMPACT
0.010 ACRES TYPE SS

WETLAND BOUNDARY

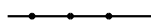
LEGEND



RIPRAP MEDIUM (SEE CONSTRUCTION DETAILS)



EMAT CLASS II TYPE B



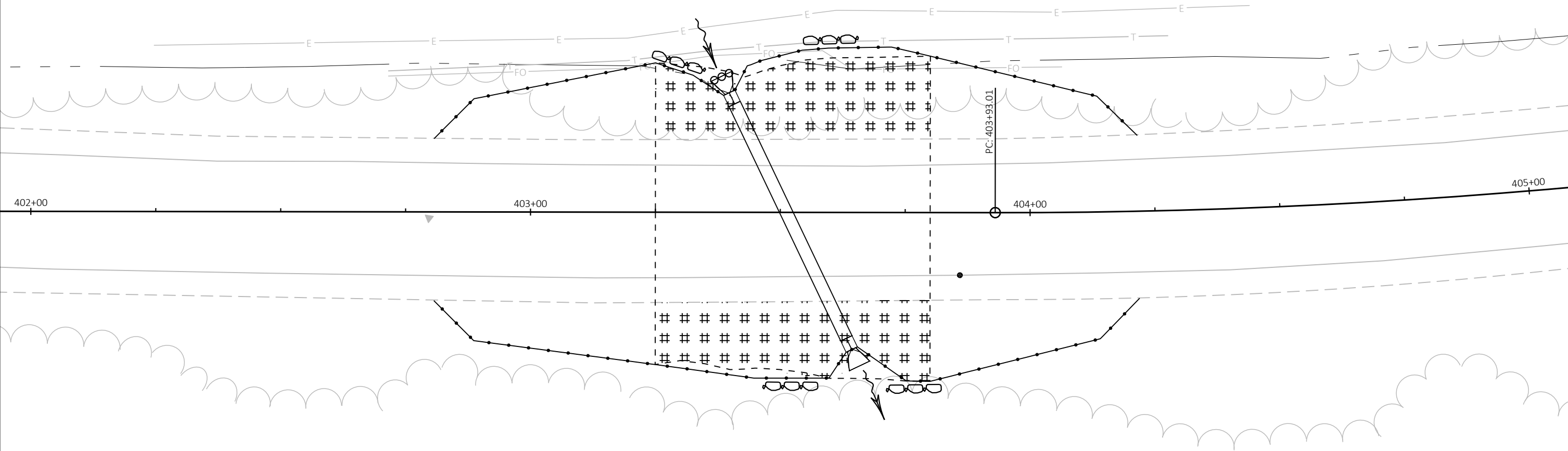
SILT FENCE



SILT FENCE RELIEF (SEE CONSTRUCTION DETAILS)



CULVERT PIPE CHECKS



DETOUR

M4-8

24"X12"

NORTH

M3-1

24"X12"

SOUTH

M3-3

24"X12"

101

M1-6

24"X24"



M05-1R

21"X21"



M05-1L

21"X21"



M06-1

21"X21"



M06-1

21"X21"



W20-3A

48"X48"



W20-3C

48"X48"



W20-3D

48"X48"



W20-2A

48"X48"



G20-51

60"X24"



R11-3

60"X30"



R11-2

48"X30"

HWY 101
ROAD CLOSED
BEGINS XXX-XX

G20-57C

96"X48"

ROAD CLOSED
TO
THRU TRAFFIC

R11-4

60"X30"



M4-9R

30"X24"



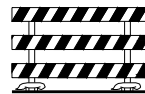
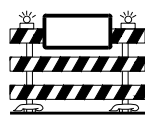
M4-9L

30"X24"

END
DETOUR

M4-8A

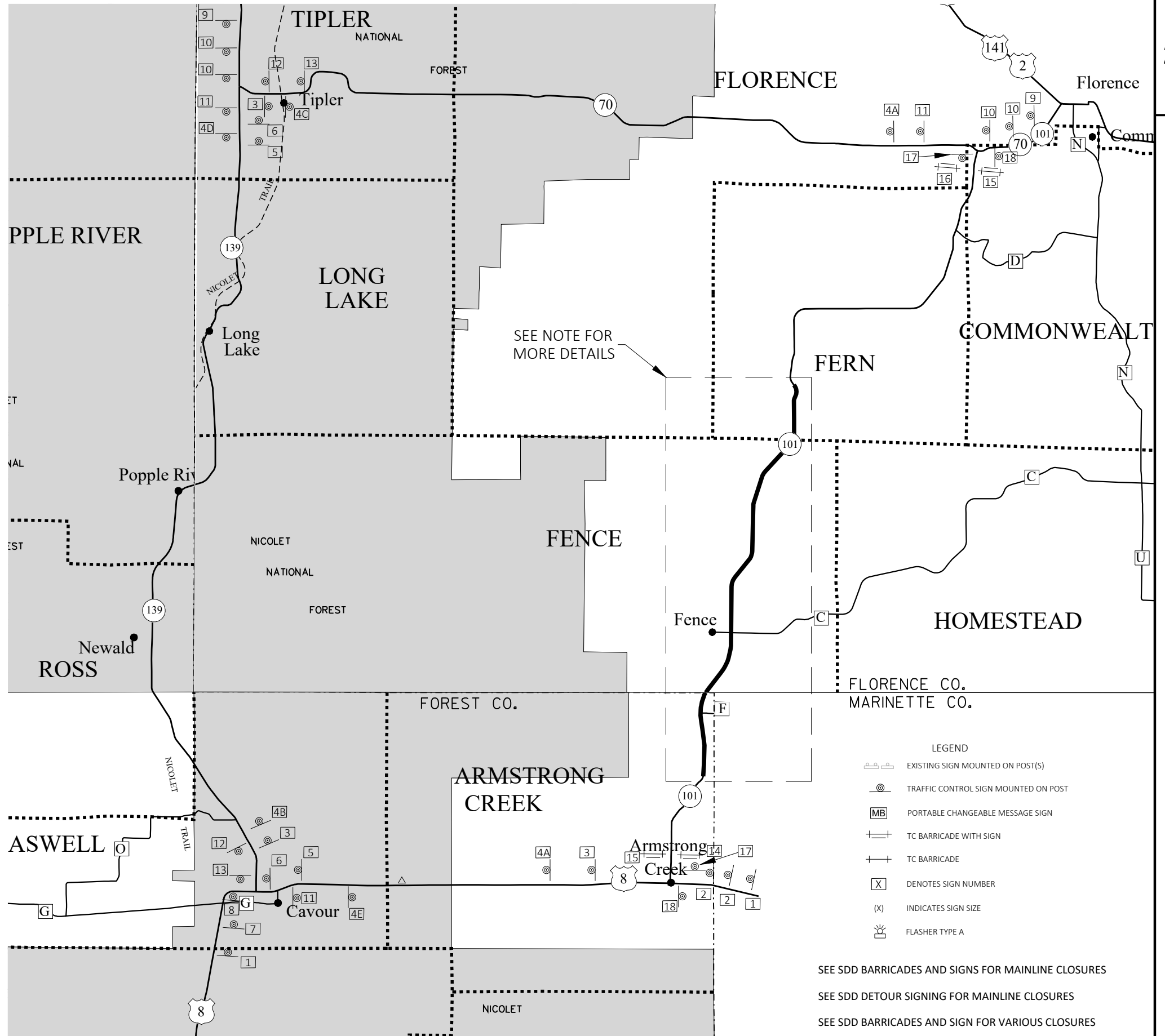
24"X18"



1. NORTH / STH 101 / DETOUR AHEAD
2. DETOUR / NORTH / STH 101 / UP ARROW
3. DETOUR / NORTH / STH 101
4. DETOUR NEXT XX MILES
5. DETOUR / NORTH / STH 101 / RIGHT TURN ARROW
6. DETOUR / NORTH / STH 101 / RIGHT ARROW
7. DETOUR / NORTH / STH 101 / LEFT TURN ARROW
8. DETOUR / NORTH / STH 101 / LEFT ARROW
9. SOUTH / STH 101 / DETOUR AHEAD
10. DETOUR / SOUTH / STH 101 / UP ARROW
11. DETOUR / SOUTH / STH 101
12. DETOUR / SOUTH / STH 101 / LEFT TURN ARROW
13. DETOUR / SOUTH / STH 101 / LEFT ARROW
14. BARRICADE / DETOUR WITH LEFT ARROW
15. BARRICADE / ROAD CLOSED TO THRU TRAFFIC
16. BARRICADE / DETOUR WITH RIGHT ARROW
17. HWY 101 ROAD CLOSED BEGINS XXX-XX
18. END DETOUR

- A. 48 MILES
B. 39 MILES
C. 18 MILES
D. 30 MILES
E. 9 MILES

NOTE: SET UP SIGNS AND BARRICADES FOR EACH CULVERT REPLACEMENT AS SHOWN IN SDD BARRICADES AND SIGNS FOR MAINLINE CLOSURES (DETAIL C: MAINLINE CLOSURE, NO POSTED DETOUR)



Estimate Of Quantities By Plan Sets

9304-11-70					
Line	Item	Item Description	Unit	Total	Qty
0002	201.0105	Clearing	STA	8.000	8.000
0006	201.0205	Grubbing	STA	8.000	8.000
0010	203.0100	Removing Small Pipe Culverts	EACH	10.000	10.000
0016	203.0200	Removing Old Structure (station) 03. 74+75	LS	1.000	1.000
0018	203.0200	Removing Old Structure (station) 04. 102+25	LS	1.000	1.000
0022	204.0115	Removing Asphaltic Surface Butt Joints	SY	330.000	330.000
0024	204.0120	Removing Asphaltic Surface Milling	SY	117,125.000	117,125.000
0030	204.9060.S	Removing (item description) 01. Removing Culvert Endwalls	EACH	1.000	1.000
0032	205.0100	Excavation Common	CY	5,075.000	5,075.000
0034	208.0100	Borrow	CY	2,479.000	2,479.000
0040	211.0100	Prepare Foundation for Asphaltic Paving (project) 02. 9304-11-70	LS	1.000	1.000
0042	211.0400	Prepare Foundation for Asphaltic Shoulders	STA	364.000	364.000
0046	213.0100	Finishing Roadway (project) 02. 9304-11-70	EACH	1.000	1.000
0048	305.0110	Base Aggregate Dense 3/4-Inch	TON	1,830.000	1,830.000
0050	305.0120	Base Aggregate Dense 1 1/4-Inch	TON	2,585.000	2,585.000
0052	455.0605	Tack Coat	GAL	9,985.000	9,985.000
0054	460.0105.S	HMA Percent Within Limits (PWL) Test Strip Volumetrics	EACH	0.500	0.500
0056	460.0110.S	HMA Percent Within Limits (PWL) Test Strip Density	EACH	1.000	1.000
0058	460.2000	Incentive Density HMA Pavement	DOL	225.000	225.000
0060	460.2005	Incentive Density PWL HMA Pavement	DOL	11,350.000	11,350.000
0062	460.2007	Incentive Density HMA Pavement Longitudinal Joints	DOL	78,980.000	78,980.000
0064	460.2010	Incentive Air Voids HMA Pavement	DOL	12,940.000	12,940.000
0066	460.6224	HMA Pavement 4 MT 58-28 S	TON	16,017.000	16,017.000
0068	465.0105	Asphaltic Surface	TON	920.000	920.000
0070	465.0110	Asphaltic Surface Patching	TON	675.000	675.000
0072	465.0475	Asphalt Centerline Rumble Strips 2-Lane Rural	LF	18,559.000	18,559.000
0074	520.1036	Apron Endwalls for Culvert Pipe 36-Inch	EACH	2.000	2.000
0076	520.3636	Culvert Pipe Class III-B Non-metal 36-Inch	LF	78.000	78.000
0078	522.0124	Culvert Pipe Reinforced Concrete Class III 24-Inch	LF	608.000	608.000
0082	522.0136	Culvert Pipe Reinforced Concrete Class III 36-Inch	LF	52.000	52.000
0084	522.1024	Apron Endwalls for Culvert Pipe Reinforced Concrete 24-Inch	EACH	18.000	18.000
0088	522.1036	Apron Endwalls for Culvert Pipe Reinforced Concrete 36-Inch	EACH	2.000	2.000
0094	525.0330	Apron Endwalls for Culvert Pipe Aluminum 30-Inch	EACH	2.000	2.000
0100	606.0200	Riprap Medium	CY	21.000	21.000
0104	614.0397	Guardrail Mow Strip Emulsified Asphalt	SY	89.000	89.000
0106	614.2300	MGS Guardrail 3	LF	1,837.500	1,837.500
0108	614.2610	MGS Guardrail Terminal EAT	EACH	8.000	8.000

Estimate Of Quantities By Plan Sets

9304-11-70

Line	Item	Item Description	Unit	Total	Qty
0112	618.0100	Maintenance And Repair of Haul Roads (project) 02. 9304-11-70	EACH	1.000	1.000
0114	619.1000	Mobilization	EACH	0.600	0.600
0116	624.0100	Water	MGAL	5.500	5.500
0118	625.0100	Topsoil	SY	10,600.000	10,600.000
0122	628.1504	Silt Fence	LF	7,750.000	7,750.000
0124	628.1520	Silt Fence Maintenance	LF	1,965.000	1,965.000
0126	628.1905	Mobilizations Erosion Control	EACH	5.000	5.000
0128	628.1910	Mobilizations Emergency Erosion Control	EACH	3.000	3.000
0132	628.2023	Erosion Mat Class II Type B	SY	10,600.000	10,600.000
0138	628.7555	Culvert Pipe Checks	EACH	75.000	75.000
0140	628.7570	Rock Bags	EACH	1,400.000	1,400.000
0142	629.0210	Fertilizer Type B	CWT	7.820	7.820
0144	630.0120	Seeding Mixture No. 20	LB	335.300	335.300
0146	630.0500	Seed Water	MGAL	12.400	12.400
0148	633.5200	Markers Culvert End	EACH	24.000	24.000
0150	642.5001	Field Office Type B	EACH	0.600	0.600
0152	643.0300	Traffic Control Drums	DAY	600.000	600.000
0154	643.0420	Traffic Control Barricades Type III	DAY	117.000	117.000
0156	643.0705	Traffic Control Warning Lights Type A	DAY	212.000	212.000
0158	643.0900	Traffic Control Signs	DAY	2,254.000	2,254.000
0160	643.5000	Traffic Control	EACH	0.600	0.600
0162	645.0120	Geotextile Type HR	SY	62.000	62.000
0164	646.1020	Marking Line Epoxy 4-Inch	LF	96,418.000	96,418.000
0166	646.4520	Marking Line Same Day Epoxy 4-Inch	LF	23,831.000	23,831.000
0170	648.0100	Locating No-Passing Zones	MI	7.490	7.490
0172	649.0105	Temporary Marking Line Paint 4-Inch	LF	36,913.000	36,913.000
0174	649.0120	Temporary Marking Line Epoxy 4-Inch	LF	18,199.000	18,199.000
0178	650.6000	Construction Staking Pipe Culverts	EACH	11.000	11.000
0180	650.8000	Construction Staking Resurfacing Reference	LF	39,554.000	39,554.000
0184	650.9910	Construction Staking Supplemental Control (project) 02. 9304-11-70	LS	1.000	1.000
0186	650.9920	Construction Staking Slope Stakes	LF	1,800.000	1,800.000
0188	690.0150	Sawing Asphalt	LF	640.000	640.000
0192	740.0440	Incentive IRI Ride	DOL	29,965.000	29,965.000
0196	ASP.1T0A	On-the-Job Training Apprentice at \$5.00/HR	HRS	1,000.000	1,000.000
0198	ASP.1T0G	On-the-Job Training Graduate at \$5.00/HR	HRS	630.000	630.000
0200	SPV.0090	Special 01. Salvaged Cable Guard	LF	2,060.000	2,060.000
0204	SPV.0180	Special 02. Removing Asphaltic Surface Milling Roadway Repair	SY	5,300.000	5,300.000

Estimate Of Quantities By Plan Sets

					9304-11-70	
0206	SPV.0180	Special 03. Asphaltic Slope Stabilization	SY	60.000	60.000	

CLEARING AND GRUBBING

				201.0105	201.0205
				CLEARING	GRUBBING
STATION	TO	STATION	LOCATION	(STA)	(STA)
199+30	-	199+60	RT	1	1
230+60	-	231+85	RT	2	2
230+90	-	231+55	LT	1	1
233+70	-	235+25	LT	2	2
234+60	-	235+60	RT	1	1
258+60	-	258+90	RT	1	1
TOTALS =				8	8

REMOVING CULVERTS AND ENDWALLS

				203.0100	203.0200.03	203.0200.04	204.9060.S	CULVERT NUMBER, SIZE, LENGTH & MATERIAL
				REMOVING SMALL PIPE CULVERTS (EACH)	REMOVING OLD STRUCTURE STA 74+75 (LS)	REMOVING OLD STRUCTURE STA 102+25 (LS)	REMOVING CULVERT ENDWALLS (EACH)	
STATION	TO	STATION	LOCATION					
74+75	-	74+75	LT & RT	---	1	---	---	C-000090; 72-IN 60 FT CORRUGATED STEEL
79+27	-	79+29	LT & RT	1	---	---	---	C-000091; 24-IN 66 FT CORRUGATED STEEL
102+25	-	102+25	LT & RT	---	---	1	---	C-000092; 72-IN 60 FT CORRUGATED STEEL
150+90	-	150+91	RT & LT	1	---	---	---	C-000093; 24-IN 69 FT REINFORCED CONCRETE
170+05	-	170+56	LT & RT	1	---	---	---	C-000094; 24-IN 82 FT REINFORCED CONCRETE
176+52	-	176+53	LT & RT	1	---	---	---	C-000095; 24-IN 64 FT REINFORCED CONCRETE
199+44	-	199+44	LT & RT	1	---	---	---	C-000096; 24-IN 75 FT REINFORCED CONCRETE
255+51	-	255+81	LT & RT	1	---	---	---	C-000098; 24-IN 95 FT REINFORCED CONCRETE
295+13	-	295+34	RT & LT	1	---	---	---	C-000101; 24-IN 52 FT CORRUGATED STEEL
318+27	-	318+51	RT & LT	1	---	---	---	C-000102; 24-IN 107 FT CORRUGATED STEEL
329+80	-	329+81	RT & LT	---	---	---	1	C-000103; 30-IN STEEL ENDWALLS
385+40	-	385+41	RT & LT	1	---	---	---	C-000105; 24-IN 60 FT CORRUGATED ALUMINUM
403+41	-	403+63	LT & RT	1	---	---	---	C-000106; 24-IN 52 FT CORRUGATED STEEL
TOTAL =				10	1	1	1	

REMOVING ASPHALTIC SURFACE BUTT JOINTS

		204.0115
		(SY)
STATIONING	LOCATION	
17+56 - 17+66	BEGIN PROJECT	CL 34
305+38 - 305+48	BEFORE B-19-0001	CL 25
306+14 - 306+24	AFTER B-19-0001	CL 25
413+00 - 413+10	END PROJECT	CL 25
18+91	ONEONTA LANE	RT 23
18+91	MEMORY LANE	LT 23
87+98	CTH C	RT 28
87+98	MORGAN LAKE ROAD	LT 25
127+62	MEMORY LANE	LT 26
146+08	MARTENS ROAD	LT 28
170+69	MAPLE DRIVE	LT 21
170+69	LUNDS ROAD	RT 21
193+55	CARLSON ROAD	RT 26
TOTAL =		330

REMOVING ASPHALTIC SURFACE MILLING

		204.0120	SPV.0180.02
		(SY)	(SY)
STATIONING	LOCATION		
17+66 - 230+50	MAINLINE	CL 70,950	---
230+50 - 305+38	MAINLINE	CL 18,305	---
306+24 - 413+00	MAINLINE	CL 26,100	---
320+47 - 320+90	PE DRIVEWAY*	LT 15	---
373+63 - 374+05	PE DRIVEWAY*	LT 15	---
18+91	ONEONTA LANE	RT 260	---
18+91	MEMORY LANE	LT 230	---
87+98	CTH C	RT 170	---
87+98	MORGAN LAKE ROAD	LT 155	---
127+62	MEMORY LANE	LT 365	---
146+08	MARTENS ROAD	LT 185	---
170+69	MAPLE DRIVE	LT 165	---
170+69	LUNDS ROAD	RT 120	---
193+55	CARLSON ROAD	RT 90	---
VARIES	ROADWAY REPAIR	LT/RT ---	5,300
TOTAL =		117,125	5,300

*NOTE: MILL 3 FT OF PAVED DRIVEWAY FOR PAVED SHOULDERS

PREPARE FOUNDATION
FOR ASPHALTIC PAVING

		211.0100
		(LS)
LOCATION		
PROJECT 01. 9304-11-70		1
TOTAL =		1

PREPARE FOUNDATION FOR
ASPHALTIC SHOULDERS

					211.0400
					(STA)
STATION	TO	STATION	LOCATION		
230+25	-	304+68	LT		75
230+25	-	304+68	RT		75
306+84	-	413+10	LT		107
306+84	-	413+10	RT		107
TOTAL =					364

ALL ITEMS AND QUANTITIES ON THIS SHEET ARE CATEGORY 0010 UNLESS OTHERWISE NOTED

CULVERT PIPE TRANSITION AND BACKFILL

				205.0100	208.0100	REMARKS
				EXCAVATION		
				COMMON	BORROW	
STATION	TO	STATION	LOCATION	(CY)	(CY)	
74+19	-	75+31	CL	500	---	C-000090 REMOVAL
78+73	-	79+83	CL	325	---	C-000091 REPLACEMENT
101+68	-	102+81	CL	455	---	C-000092 REPLACEMENT
150+36	-	151+45	CL	455	---	C-000093 REPLACEMENT
169+60	-	170+65	CL	375	---	C-000094 REPLACEMENT
175+98	-	177+07	CL	425	---	C-000095 REPLACEMENT
198+89	-	199+99	CL	505	---	C-000096 REPLACEMENT
255+17	-	256+26	CL	450	---	C-000098 REPLACEMENT
294+61	-	295+85	CL	400	---	C-000101 REPLACEMENT
317+82	-	318+98	CL	480	---	C-000102 REPLACEMENT
329+55	-	330+05	LT & RT	---	60	C-000103 BACKFILL NEW ENDWALLS
384+86	-	385+96	CL	375	---	C-000105 REPLACEMENT
402+89	-	404+14	CL	330	---	C-000106 REPLACEMENT
TOTALS =				5,075	60	
					(*)	

(*) NOTE: ADDITIONAL QUANTITIES SHOWN ELSEWHERE

EARTHWORK

DIVISION	FROM/TO STATION (STA TO STA)	LOCATION	AVAILABLE MATERIAL (CY)	UNEXPANDED FILL (CY)	EXPANDED FILL (1)	MASS ORDINATE +/- (2) (CY)	WASTE (CY)	208.0100 BORROW (CY)	REMARKS
					FACTOR 1.25 (CY)				
DIVISION 1	229+30 - 236+90	STH 101 LT & RT	0	886	1,108	-1,108	0	1,108	BEAM GUARD INSTALLATION
	250+85 - 260+20	STH 101 LT & RT	0	1,049	1,311	-1,311	0	1,311	BEAM GUARD INSTALLATION
DIVISION 1 GRAND TOTAL =			0	1,935	2,419	-2,419	0	2,419	
								(*)	

NOTES:
(1) EXPANDED FILL FACTOR = 1.25
EXPANDED FILL = UNEXPANDED FILL * FILL FACTOR
(2) 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.

(*) NOTE: ADDITIONAL QUANTITIES SHOWN ELSEWHERE

ALL ITEMS AND QUANTITIES ON THIS SHEET ARE CATEGORY 0010 UNLESS OTHERWISE NOTED

				305.0110	624.0100
				BASE AGGREGATE	
				DENSE 3/4-INCH	WATER
STATION	TO	STATION	LOCATION	(TON)	(MGAL)
17+56	-	230+50	LT	830	---
17+56	-	230+50	RT	830	---
UNDISTRIBUTED			---	170	2.5

(*) NOTE: ADDITIONAL QUANTITIES SHOWN ELSEWHERE

PROJECT NO: 9304-11-70

COUNTY: FLORENCE

SHEET:

3

				305.0120	624.0100	
				BASE AGGREGATE		
				DENSE 1 1/4-INCH	WATER	
STATION	TO	STATION	LOCATION	(TON)	(MGAL)	REMARKS
74+19	-	75+31	CL	200	---	C-19-101-000090 REMOVAL
78+73	-	79+83	CL	200	---	C-19-101-000091 REPLACEMENT
101+68	-	102+81	CL	210	---	C-19-101-000092 REPLACEMENT
150+36	-	151+45	CL	200	---	C-19-101-000093 REPLACEMENT
169+60	-	170+65	CL	190	---	C-19-101-000094 REPLACEMENT
175+98	-	177+07	CL	200	---	C-19-101-000095 REPLACEMENT
198+89	-	199+99	CL	200	---	C-19-101-000096 REPLACEMENT
255+17	-	256+26	CL	180	---	C-19-101-000098 REPLACEMENT
294+61	-	295+85	CL	200	---	C-19-101-000101 REPLACEMENT
317+82	-	318+98	CL	190	---	C-19-101-000102 REPLACEMENT
384+86	-	385+96	CL	180	---	C-19-101-000105 REPLACEMENT
402+89	-	404+14	CL	200	---	C-19-101-000106 REPLACEMENT
UNDISTRIBUTED			---	235	3.0	

(*) NOTE: ADDITIONAL QUANTITIES SHOWN ELSEWHERE

PLOT SCALE : 1:1

HMA PAVEMENT PWL QMP MIXTURE ACCEPTANCE TABLE

LOCATION	STATIONING	MIXTURE USE	UNDERLYING SURFACE	BID ITEM	TONS	THICKNESS	QUALITY MANAGEMENT PROGRAM TO BE USED FOR:	
							MIXTURE ACCEPTANCE	DENSITY ACCEPTANCE
12 FOOT DRIVING LANE	17+56 TO 230+50	UPPER LAYER	MILLED EXISTING HMA SURFACE	4 MT 58-28 S	6,360	2.00-INCHES	PWL INCENTIVE AIR VOIDS HMA PAVEMENT 460.2010	INCENTIVE DENSITY PWL HMA PAVEMENT 460.2005
11 FOOT DRIVING LANE	230+50 TO 305+48	UPPER LAYER	MILLED EXISTING HMA SURFACE	4 MT 58-28 S	2,060	2.00-INCHES	PWL INCENTIVE AIR VOIDS HMA PAVEMENT 460.2010	INCENTIVE DENSITY PWL HMA PAVEMENT 460.2005
11 FOOT DRIVING LANE	306+14 TO 413+10	UPPER LAYER	MILLED EXISTING HMA SURFACE	4 MT 58-28 S	2,930	2.00-INCHES	PWL INCENTIVE AIR VOIDS HMA PAVEMENT 460.2010	INCENTIVE DENSITY PWL HMA PAVEMENT 460.2005
3 FOOT SHOULDER	17+56 TO 230+50	UPPER LAYER	MILLED EXISTING HMA SURFACE	4 MT 58-28 S	1,590	2.00-INCHES	PWL INCENTIVE AIR VOIDS HMA PAVEMENT 460.2010	ACCEPTANCE TESTING BY THE DEPARTMENT; NOT ELIGIBLE FOR INCENTIVE
3 - 5 FOOT SHOULDER	230+50 TO 304+68	UPPER LAYER	4 MT 58-28 S	4 MT 58-28 S	635	2.00-INCHES	QMP AS PER SS 460	ACCEPTANCE TESTING BY THE DEPARTMENT; NOT ELIGIBLE FOR INCENTIVE
3 - 5 FOOT SHOULDER	230+50 TO 304+68	LOWER LAYER	BASE AGGREGATE	4 MT 58-28 S	635	2.00-INCHES	QMP AS PER SS 460	ACCEPTANCE TESTING BY THE DEPARTMENT; NOT ELIGIBLE FOR INCENTIVE
3 FOOT SHOULDER	306+84 TO 413+10	UPPER LAYER	4 MT 58-28 S	4 MT 58-28 S	795	2.00-INCHES	QMP AS PER SS 460	ACCEPTANCE TESTING BY THE DEPARTMENT; NOT ELIGIBLE FOR INCENTIVE
3 FOOT SHOULDER	306+84 TO 413+10	LOWER LAYER	BASE AGGREGATE	4 MT 58-28 S	795	2.00-INCHES	QMP AS PER SS 460	ACCEPTANCE TESTING BY THE DEPARTMENT; NOT ELIGIBLE FOR INCENTIVE
SIDEROAD INTERSECTIONS		UPPER LAYER	MILLED EXISTING HMA SURFACE	4 MT 58-28 S	225	2.00-INCHES	QMP AS PER SS 460	INCENTIVE DENSITY HMA PAVEMENT 460.2000
VARIOUS		CULVERT PATCHES	BASE AGGREGATE	ASPHALTIC SURFACE	920	4.00-INCHES	QMP AS PER SS 460	ACCEPTANCE BY ORDINARY COMPACTION
VARIOUS		MILLED SURFACE REPAIR	MILLED EXISTING HMA SURFACE	ASPHALTIC SURFACE PATCHING	600	2.00-INCHES	QMP AS PER SS 460	ACCEPTANCE BY ORDINARY COMPACTION

ALL ITEMS AND QUANTITIES ON THIS SHEET ARE CATEGORY 0010 UNLESS OTHERWISE NOTED

HMA PAVEMENT

		455.0605*	460.6224			
				HMA		
				PAVEMENT		
				4 MT 58-28 S		
STATIONING		LOCATION		TACK COAT (GAL)	(TON)	REMARKS
17+56	-	230+50	CL	4,970	7,950	MAINLINE
230+50	-	305+48	CL	1,290	2,060	MAINLINE
306+14	-	413+10	CL	1,840	2,930	MAINLINE
230+11	-	235+91	RT	25	75	5 FT PAVED SHOULDER
230+41	-	236+08	LT	25	75	5 FT PAVED SHOULDER
235+91	-	252+55	RT	40	125	3 FT PAVED SHOULDER
236+08	-	251+64	LT	40	120	3 FT PAVED SHOULDER
251+64	-	258+90	LT	30	95	5 FT PAVED SHOULDER
252+55	-	259+40	RT	30	90	5 FT PAVED SHOULDER
258+90	-	304+68	LT	110	345	3 FT PAVED SHOULDER
259+40	-	304+68	RT	110	340	3 FT PAVED SHOULDER
306+84	-	413+10	LT	250	795	3 FT PAVED SHOULDER
306+84	-	413+10	RT	250	795	3 FT PAVED SHOULDER
18+91	ONEONTA LANE	RT		20	32	SIDEROAD
18+91	MEMORY LANE	LT		20	28	SIDEROAD
87+98	CTH C	RT		15	22	SIDEROAD
87+98	MORCAN LAKE ROAD	LT		15	20	SIDEROAD
127+62	MEMORY LANE	LT		30	44	SIDEROAD
146+08	MARTENS ROAD	LT		15	24	SIDEROAD
170+69	MAPLE DRIVE	LT		15	22	SIDEROAD
170+69	LUNDS ROAD	RT		10	16	SIDEROAD
193+55	CARISON ROAD	RT		10	14	SIDEROAD
TOTALS =				9,160	16,017	
				(*)		

*NOTE: TACK COAT TO BE USED BETWEEN THE MILLED SURFACE AND OVERLAY PAVEMENT
(*) NOTE: ADDITIONAL QUANTITIES SHOWN ELSEWHERE

ALL ITEMS AND QUANTITIES ON THIS SHEET ARE CATEGORY 0010 UNLESS OTHERWISE NOTED

ASPHALTIC SURFACE

				455.0605*	465.0105*	465.0110	
				TACK	ASPHALTIC	ASPHALTIC	
				COAT	SURFACE	SURFACE	
				(GAL)	(TON)	PATCHING	
STATION	TO	STATION	LOCATION	(GAL)	(TON)	(TON)	REMARKS
74+19	-	75+31	CL	30	85	---	C-000090 REMOVAL
78+73	-	79+83	CL	30	85	---	C-000091 REPLACEMENT
101+68	-	102+81	CL	30	85	---	C-000092 REPLACEMENT
150+36	-	151+45	CL	30	85	---	C-000093 REPLACEMENT
169+60	-	170+65	CL	25	80	---	C-000094 REPLACEMENT
175+98	-	177+07	CL	30	85	---	C-000095 REPLACEMENT
198+89	-	199+99	CL	30	85	---	C-000096 REPLACEMENT
255+17	-	256+26	CL	20	60	---	C-000098 REPLACEMENT
294+61	-	295+85	CL	25	70	---	C-000101 REPLACEMENT
317+82	-	318+98	CL	20	65	---	C-000102 REPLACEMENT
384+86	-	385+96	CL	20	65	---	C-000105 REPLACEMENT
402+89	-	404+14	CL	25	70	---	C-000106 REPLACEMENT
UNDISTRIBUTED			LT/RT	510	---	675	MILLED SURFACE REPAIR
TOTALS =				825	920	675	
				(*)			

*NOTE: SEE CULVERT PIPE TRANSITION DETAILS
TACK COAT TO BE USED BETWEEN UPPER AND LOWER LAYERS OF PAVEMENT
(*) NOTE: ADDITIONAL QUANTITIES SHOWN ELSEWHERE

ASPHALTIC CENTERLINE RUMBLE STRIPS
2 LANE RURAL

		465.0475		
				(LF)
STATION	TO	STATION	LOCATION	
20+91	-	59+70	CL	3,879
63+70	-	85+98	CL	2,228
89+98	-	125+62	CL	3,564
129+62	-	144+08	CL	1,446
148+08	-	168+69	CL	2,061
172+69	-	191+55	CL	1,886
195+55	-	230+50	CL	3,495
TOTAL =				18,559

CROSS DRAIN CULVERTS

			520.1036	520.3636*	522.0124	522.0136	522.1024	522.1036	525.0330	633.5200
			APRON ENDWALLS FOR CULVERT PIPE	CULVERT PIPE CLASS III-B NON-METAL	CULVERT PIPE REINFORCED CONCRETE CLASS III	CULVERT PIPE REINFORCED CONCRETE CLASS III	APRON ENDWALLS FOR CULVERT PIPE REINFORCED CONCRETE	APRON ENDWALLS FOR CULVERT PIPE REINFORCED CONCRETE	APRON ENDWALLS FOR CULVERT PIPE ALUMINUM	MARKERS CULVERT END
STATION	LOCATION	CULVERT NO.	36-INCH (EACH)	36-INCH (LF)	24-INCH (LF)	36-INCH (LF)	24-INCH (EACH)	36-INCH (EACH)	30-INCH (EACH)	END (EACH)
79+28	CL	19-101-000091	---	---	54	---	2	---	---	2
102+25	CL	19-101-000092	---	---	58	---	2	---	---	2
150+91	CL	19-101-000093	---	---	60	---	2	---	---	2
170+29	CL	19-101-000094	---	---	74	---	2	---	---	2
176+53	CL	19-101-000095	---	---	58	---	2	---	---	2
199+44	CL	19-101-000096	2	78	---	---	---	---	---	2
255+66	CL	19-101-000098	---	---	90	---	2	---	---	2
295+23	CL	19-101-000101	---	---	54	---	2	---	---	2
318+40	CL	19-101-000102	---	---	108	---	2	---	---	2
329+81	LT & RT	19-101-000103	---	---	---	---	---	---	2	2
385+41	CL	19-101-000105	---	---	---	52	---	2	---	2
403+51	CL	19-101-000106	---	---	52	---	2	---	---	2
TOTALS =			2	78	608	52	18	2	2	24

*NOTE: PLAN LENGTH WAS DESIGNED FOR CONCRETE PIPE. LENGTH WILL VARY IF ALTERNATIVE MATERIAL FOR THE CULVERT IS USED.

RIPRAP

				606.0200	645.0120	REMARKS
				RIPRAP MEDIUM (CY)	GEOTEXTILE TYPE HR (SY)	
STATION	TO	STATION	LOCATION			
199+37	-	199+50	48' RT	10	30	C-19-101-000096 OUTLET
385+33	-	385+47	32' RT	11	32	C-19-101-000105 OUTLET
TOTALS =				21	62	

BEAM GUARD

				614.0397	614.2300	614.2610	SPV.0180.03
				GUARDRAIL MOW STRIP EMULSIFIED ASPHALT	MGS GUARDRAIL 3 (LF)	MGS GUARDRAIL TERMINAL EAT (EACH)	ASPHALTIC SLOPE STABILIZATION (SY)
STATION	TO	STATION	LOCATION				
230+51	-	235+51	RT	16	400	2	---
230+81	-	235+69	LT	15.5	387.5	2	---
252+03	-	258+50	LT	18	500	2	---
252+96	-	259+00	RT	19.5	550	2	---
304+85	-	305+39	LT	10	---	---	30
305+00	-	305+53	RT	10	---	---	30
TOTALS =				89	1,837.5	8	60

ALL ITEMS AND QUANTITIES ON THIS SHEET ARE CATEGORY 0010 UNLESS OTHERWISE NOTED

EROSION CONTROL

				625.0100	628.1504	628.1520	628.1905	628.1910	628.2023	628.7555	628.7570	629.0210	630.0120	631.0500	REMARKS
				MOBILIZATIONS											
				SILT FENCE			MOBILIZATIONS	EMERGENCY	EROSION	CULVERT	SEEDING				
				TOPSOIL	SILT FENCE	MAINTENANCE	EROSION	EROSION	MAT CLASS II	PIPE	ROCK	FERTILIZER	MIXTURE	SEED	
STATION	TO	STATION	LOCATION	(SY)	(LF)	(LF)	CONTROL	CONTROL	TYPE B	CHECKS	BAGS	TYPE B	NO. 20	WATER	
74+11	-	75+39	LT & RT	210	280	70	---	---	210	---	40	0.18	7.8	0.3	C-000090 REMOVAL
78+65	-	79+91	LT & RT	170	290	75	---	---	170	5	80	0.16	6.8	0.3	C-000091 REPLACEMENT
101+60	-	102+89	LT & RT	230	290	75	---	---	230	5	80	0.20	8.6	0.3	C-000092 REPLACEMENT
150+28	-	151+53	LT & RT	240	290	75	---	---	240	5	80	0.20	8.6	0.3	C-000093 REPLACEMENT
169+52	-	170+73	LT & RT	220	210	55	---	---	220	5	40	0.19	8.1	0.3	C-000094 REPLACEMENT
175+90	-	177+15	LT & RT	230	280	70	---	---	230	5	80	0.20	8.4	0.3	C-000095 REPLACEMENT
198+81	-	200+07	LT & RT	290	330	85	---	---	290	5	80	0.23	10.0	0.4	C-000096 REPLACEMENT
229+22	-	237+01	LT & RT	3,380	1,590	400	---	---	3,380	10	240	2.38	101.8	3.8	BEAM GUARD INSTALLATION
250+75	-	260+35	LT & RT	3,480	1,940	485	---	---	3,480	10	240	2.44	104.5	3.9	BEAM GUARD INSTALLATION & C-000098 REPLACEMENT
294+53	-	295+93	LT & RT	160	310	80	---	---	160	5	40	0.14	6.2	0.2	C-000101 REPLACEMENT
317+74	-	319+06	LT & RT	460	350	90	---	---	460	5	80	0.33	14.0	0.5	C-000102 REPLACEMENT
329+22	-	330+38	LT & RT	200	260	65	---	---	200	5	80	0.16	6.8	0.3	C-000103 ENDWALL BACKFILL
384+78	-	386+04	LT & RT	180	310	80	---	---	180	5	40	0.15	6.5	0.2	C-000105 REPLACEMENT
402+81	-	404+22	LT & RT	180	310	80	---	---	180	5	80	0.16	6.8	0.3	C-000106 REPLACEMENT
UNDISTRIBUTED			---	970	710	180	5	3	970	---	120	0.71	30.5	1.1	
TOTALS =				10,600	7,750	1,965	5	3	10,600	75	1,400	7.82	335.3	12.4	

ALL ITEMS AND QUANTITIES ON THIS SHEET ARE CATEGORY 0010 UNLESS OTHERWISE NOTED

TRAFFIC CONTROL

STATIONING	OPERATIONS	DURATION (DAYS)	643.0300		643.0420		643.0705		643.0900		643.5000	REMARKS
			DRUMS		BARRICADES		WARNING LIGHT		SIGNS		TRAFFIC	
			(EACH)	(DAYS)	TYPE III	(DAYS)	TYPE A	(DAYS)	(EACH)	(DAYS)	CONTROL	
74+45	C-19-101-000090 REMOVAL	0.5	---	---	12	6	24	12	106	53	---	DETOUR ROUTE
79+28	C-19-101-000091 REPLACEMENT	0.5	---	---	12	6	24	12	106	53	---	DETOUR ROUTE
102+25	C-19-101-000092 REPLACEMENT	0.5	---	---	14	7	28	14	108	54	---	DETOUR ROUTE
150+91	C-19-101-000093 REPLACEMENT	0.5	---	---	14	7	28	14	108	54	---	DETOUR ROUTE
170+29	C-19-101-000094 REPLACEMENT	0.5	---	---	20	10	40	20	110	55	---	DETOUR ROUTE / SIDEROADS CLOSED
176+53	C-19-101-000095 REPLACEMENT	0.5	---	---	14	7	28	14	108	54	---	DETOUR ROUTE
199+44	C-19-101-000096 REPLACEMENT	1	---	---	14	14	28	28	108	108	---	DETOUR ROUTE
255+66	C-19-101-000098 REPLACEMENT	1	---	---	14	14	28	28	108	108	---	DETOUR ROUTE
295+23	C-19-101-000101 REPLACEMENT	0.5	---	---	14	7	28	14	108	54	---	DETOUR ROUTE
318+40	C-19-101-000102 REPLACEMENT	1	---	---	14	14	28	28	108	108	---	DETOUR ROUTE
329+81	C-19-101-000103 ENDWALLS	0.5	40	20	1	0.5	---	---	8	4	---	
385+41	C-19-101-000105 REPLACEMENT	0.5	---	---	14	7	28	14	108	54	---	DETOUR ROUTE
403+51	C-19-101-000106 REPLACEMENT	0.5	---	---	14	7	28	14	108	54	---	DETOUR ROUTE
230+00 - 236+00	BEAM GUARD INSTALLATION	5	50	250	1	5	---	---	8	40	---	
251+50 - 259+50	BEAM GUARD INSTALLATION	5	66	330	1	5	---	---	8	40	---	
CULVERT REPLACEMENT LOOSE GRAVEL SIGNING		VARIES	---	---	---	---	---	---	VARIES	180	---	
MAINLINE MILLING AND PAVING		10	---	---	---	---	---	---	12	100	---	
RUMBLE STRIPS / PAVEMENT MARKINGS		3	---	---	---	---	---	---	12	36	---	
PROJECT 9304-11-70 *		55	---	---	---	---	---	---	19	1045	0.6	
TOTALS =			600		117		212		2,254		0.6	

* TYPICAL SIDE ROADS

- 18+91 RT ONEONTA LANE
- 18+91 LT MEMORY LANE
- 87+98 RT CTH C
- 87+98 LT MORCAN LAKE ROAD
- 127+62 LT MEMORY LANE
- 146+08 LT MARTENS ROAD
- 170+69 LT MAPLE DRIVE
- 170+69 RT LUNDS ROAD
- 193+55 RT CARLSON ROAD

ALL ITEMS AND QUANTITIES ON THIS SHEET ARE CATEGORY 0010 UNLESS OTHERWISE NOTED

PAVEMENT MARKING LINE

				646.1020 EPOXY 4-INCH			646.4520 SAME DAY EPOXY 4-INCH		649.0105 TEMPORARY PAINT 4-INCH		649.0120 TEMPORARY EPOXY 4-INCH		648.0100 LOCATING NO-PASSING ZONES
STATION	TO	STATION	LOCATION	YELLOW SOLID (LF)	YELLOW DASH (LF)	WHITE EDGELINE (LF)	YELLOW SOLID (LF)	YELLOW DASH (LF)	YELLOW SOLID (LF)	YELLOW DASH (LF)	YELLOW SOLID (LF)	YELLOW DASH (LF)	(MI)
17+56	-	24+56	MAINLINE	---	175	1,240	---	---	---	56	---	175	---
24+56	-	33+02	MAINLINE	846	212	1,692	---	---	846	68	846	212	---
33+02	-	36+98	MAINLINE	792	---	792	---	---	792	---	792	---	---
36+98	-	45+34	MAINLINE	836	209	1,672	---	---	836	67	836	209	---
45+34	-	50+65	MAINLINE	---	133	1,062	---	---	---	42	---	133	---
50+65	-	59+21	MAINLINE	856	214	1,712	---	---	856	68	856	214	---
59+21	-	65+35	MAINLINE	1,228	---	1,228	---	---	1,228	---	1,228	---	---
65+35	-	73+96	MAINLINE	861	215	1,722	---	---	861	69	861	215	---
73+96	-	137+69	MAINLINE	---	1,593	12,506	---	---	---	510	---	1,593	---
137+69	-	146+77	MAINLINE	908	227	1,816	---	---	908	73	908	227	---
146+77	-	155+62	MAINLINE	1,770	---	1,770	---	---	1,770	---	1,770	---	---
155+62	-	164+20	MAINLINE	858	215	1,716	---	---	858	69	858	215	---
164+20	-	178+27	MAINLINE	---	352	2,704	---	---	---	113	---	352	---
178+27	-	186+92	MAINLINE	865	216	1,730	---	---	865	69	865	216	---
186+92	-	194+97	MAINLINE	1,610	---	1,563	---	---	1,610	---	1,610	---	---
194+97	-	203+47	MAINLINE	850	213	1,700	---	---	850	68	850	213	---
203+47	-	217+80	MAINLINE	---	358	2,866	---	---	---	115	---	358	---
217+80	-	224+98	MAINLINE	718	180	1,436	---	---	718	57	718	180	---
224+98	-	230+50	MAINLINE	552	138	1,104	---	---	552	44	552	138	---
230+50		232+95	MAINLINE	---	---	490	245	61	245	20	---	---	---
232+95	-	245+11	MAINLINE	---	---	2,432	---	304	---	97	---	---	---
245+11	-	253+72	MAINLINE	---	---	1,722	861	215	861	69	---	---	---
253+72	-	258+88	MAINLINE	---	---	1,032	1,032	---	1,032	---	---	---	---
258+88	-	267+61	MAINLINE	---	---	1,746	873	218	873	70	---	---	---
267+61	-	270+95	MAINLINE	---	---	668	---	84	---	27	---	---	---
270+95	-	279+00	MAINLINE	---	---	1,610	805	201	805	64	---	---	---
279+00	-	293+77	MAINLINE	---	---	2,954	2,954	---	2,954	---	---	---	---
293+77	-	302+12	MAINLINE	---	---	1,625	835	209	835	67	---	---	---
302+12	-	305+48	MAINLINE	---	---	672	---	84	---	27	---	---	---
306+14	-	306+46	MAINLINE	---	---	64	---	8	---	3	---	---	---
306+46	-	313+82	MAINLINE	---	---	1,352	736	184	736	59	---	---	---
313+82	-	314+36	MAINLINE	---	---	108	---	14	---	4	---	---	---
314+36	-	321+04	MAINLINE	---	---	1,336	668	167	668	53	---	---	---
321+04	-	331+56	MAINLINE	---	---	2,104	---	263	---	84	---	---	---
331+56	-	339+66	MAINLINE	---	---	1,620	810	203	810	65	---	---	---
339+66	-	370+49	MAINLINE	---	---	6,166	6,166	---	6,166	---	---	---	---
370+49	-	378+99	MAINLINE	---	---	1,700	850	213	850	68	---	---	---
378+99	-	388+06	MAINLINE	---	---	1,779	---	227	---	73	---	---	---
388+06	-	396+94	MAINLINE	---	---	1,776	888	222	888	71	---	---	---
396+94	-	413+10	MAINLINE	---	---	3,232	3,232	---	3,232	---	---	---	---
17+56	-	413+10	MAINLINE	---	---	---	---	---	---	---	---	---	7.49
SUBTOTALS =				13,550	4,649	78,219	20,955	2,876	34,505	2,408	13,550	4,649	7.49
TOTALS =				96,418			23,831		36,913		18,199		7.49

ALL ITEMS AND QUANTITIES ON THIS SHEET ARE CATEGORY 0010 UNLESS OTHERWISE NOTED

CONSTRUCTION STAKING

				650.6000	650.8000	650.9910	650.9920	REMARKS
				PIPE CULVERTS	RESURFACING REFERENCE	SUPPLEMENTAL CONTROL	SLOPE STAKES	
STATION	TO	STATION	LOCATION	(EACH)	(LF)	(LS)	(LF)	
78+73	-	79+83	LT & RT	1	---	---	---	C-000091 REPLACEMENT
101+68	-	102+81	LT & RT	1	---	---	---	C-000092 REPLACEMENT
150+36	-	151+45	LT & RT	1	---	---	---	C-000093 REPLACEMENT
169+60	-	170+65	LT & RT	1	---	---	---	C-000094 REPLACEMENT
175+96	-	177+06	LT & RT	1	---	---	---	C-000095 REPLACEMENT
198+89	-	199+99	LT & RT	1	---	---	---	C-000096 REPLACEMENT
229+33	-	236+88	LT & RT	---	---	---	760	BEAM GUARD EAT INSTALLATION
250+85	-	260+19	LT & RT	---	---	---	940	BEAM GUARD EAT INSTALLATION
255+00	-	256+30	LT & RT	1	---	---	---	C-000098 REPLACEMENT
294+61	-	295+85	LT & RT	1	---	---	---	C-000101 REPLACEMENT
317+75	-	319+05	LT & RT	1	---	---	---	C-000102 REPLACEMENT
329+30	-	330+30	LT & RT	---	---	---	100	BACKFILL NEW C-19-101-000103 ENDWALLS
384+86	-	385+96	LT & RT	1	---	---	---	C-000105 REPLACEMENT
402+89	-	404+14	LT & RT	1	---	---	---	C-000106 REPLACEMENT
17+56	-	413+10	STH 101 LT & RT	---	39,554	1		PROJECT 9304-11-70
TOTALS =				11	39,554	1	1,800	

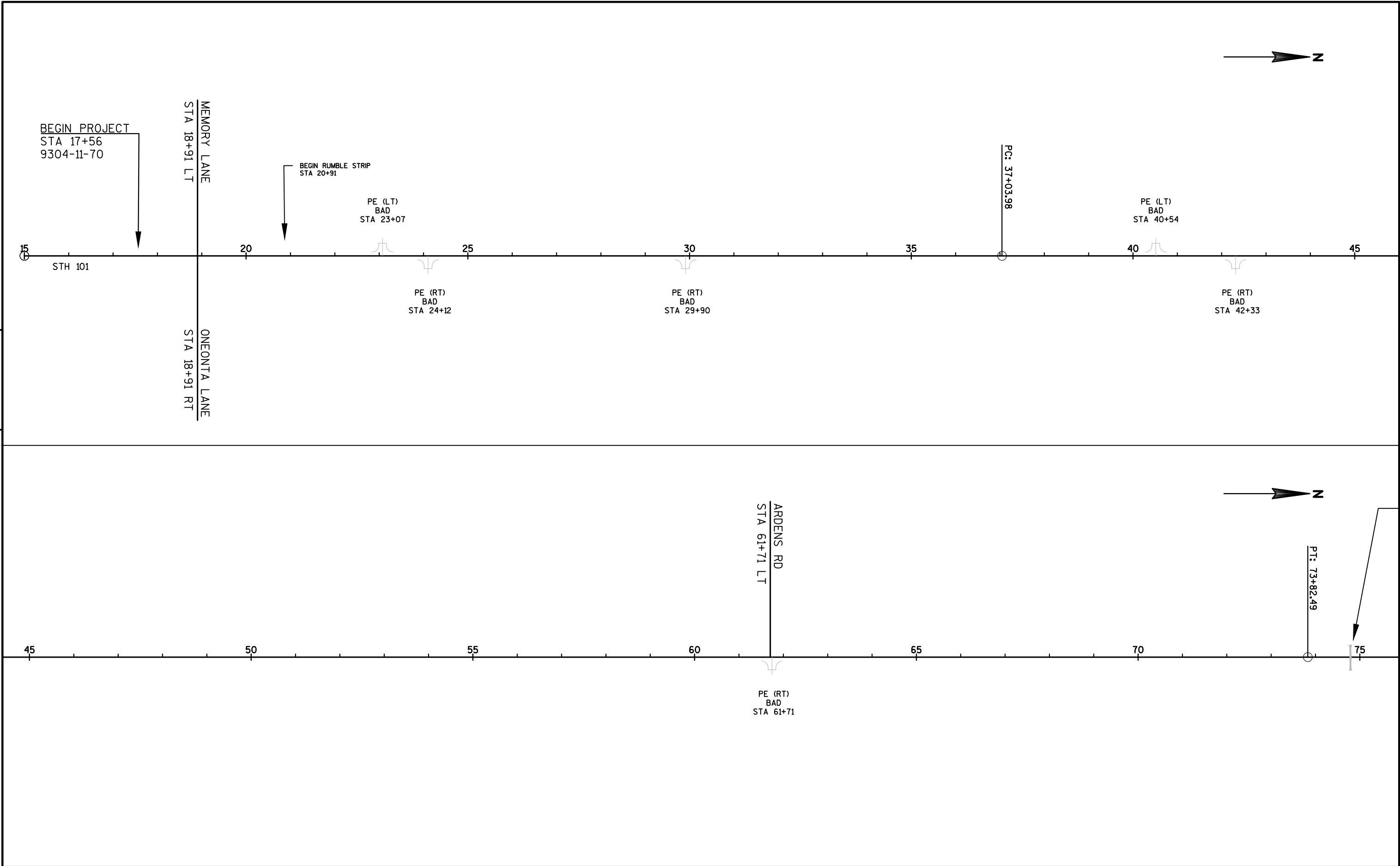
SAWING ASPHALT

690.0150					
STATION	TO	STATION	LOCATION	(LF)	REMARKS
74+19	-	75+31	CL	60	19-101-000090 CULVERT REMOVAL
78+73	-	79+83	CL	60	19-101-000091 CULVERT REPLACEMENT
101+68	-	102+81	CL	60	19-101-000092 CULVERT REPLACEMENT
150+36	-	151+45	CL	60	19-101-000093 CULVERT REPLACEMENT
169+60	-	170+65	CL	60	19-101-000094 CULVERT REPLACEMENT
175+98	-	177+07	CL	60	19-101-000095 CULVERT REPLACEMENT
198+89	-	199+99	CL	60	19-101-000096 CULVERT REPLACEMENT
255+17	-	256+26	CL	44	19-101-000098 CULVERT REPLACEMENT
294+61	-	295+85	CL	44	19-101-000101 CULVERT REPLACEMENT
317+82	-	318+98	CL	44	19-101-000102 CULVERT REPLACEMENT
384+86	-	385+96	CL	44	19-101-000105 CULVERT REPLACEMENT
402+89	-	404+14	CL	44	19-101-000106 CULVERT REPLACEMENT
TOTAL =				640	

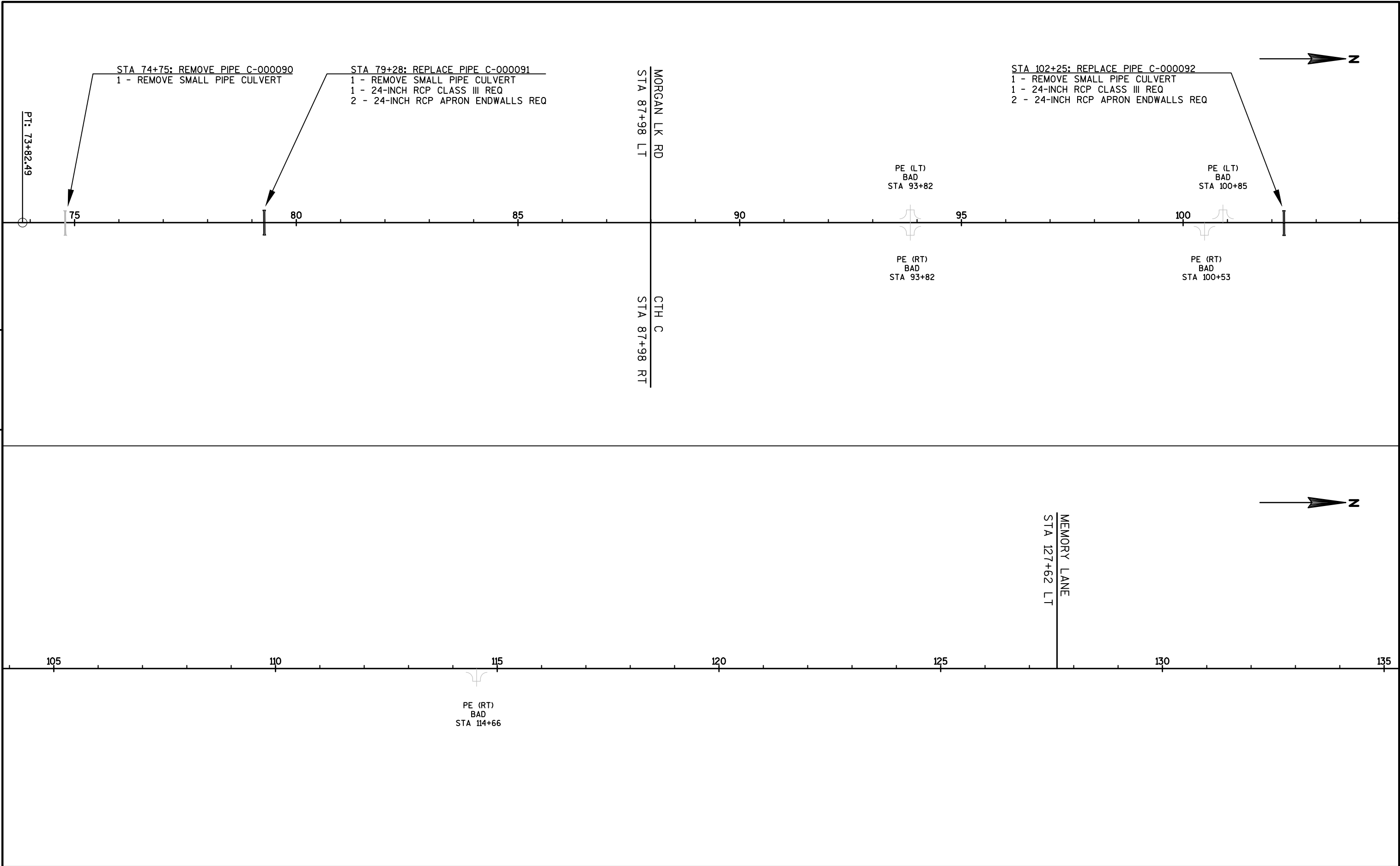
SALVAGED CABLE GUARD

SPV.0090 SPECIAL 01.				
STATION	TO	STATION	LOCATION	(LF)
230+78	-	235+41	RT	465
230+94	-	235+57	LT	465
252+18	-	258+29	LT	615
253+46	-	258+60	RT	515
TOTAL =				2,060

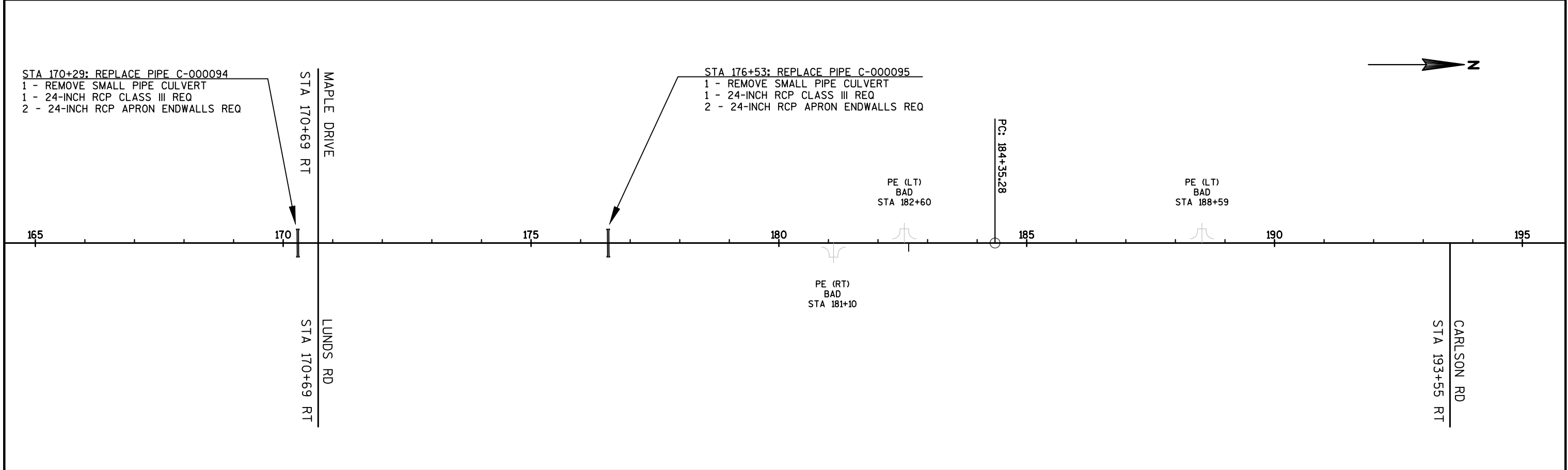
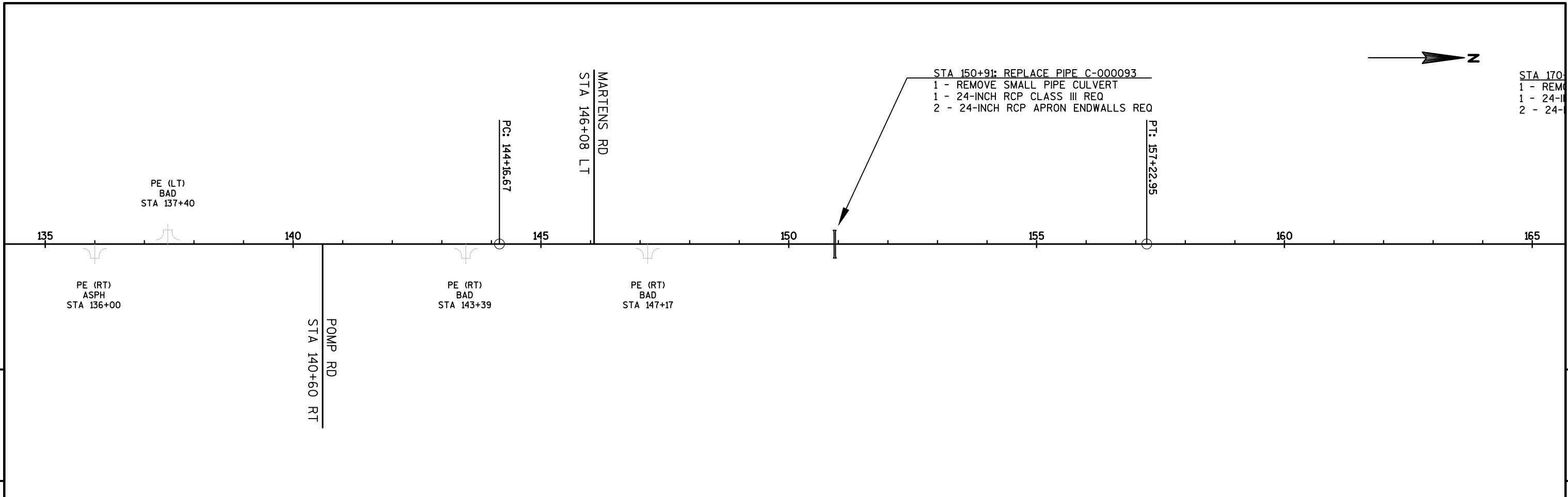
ALL ITEMS AND QUANTITIES ON THIS SHEET ARE CATEGORY 0010 UNLESS OTHERWISE NOTED



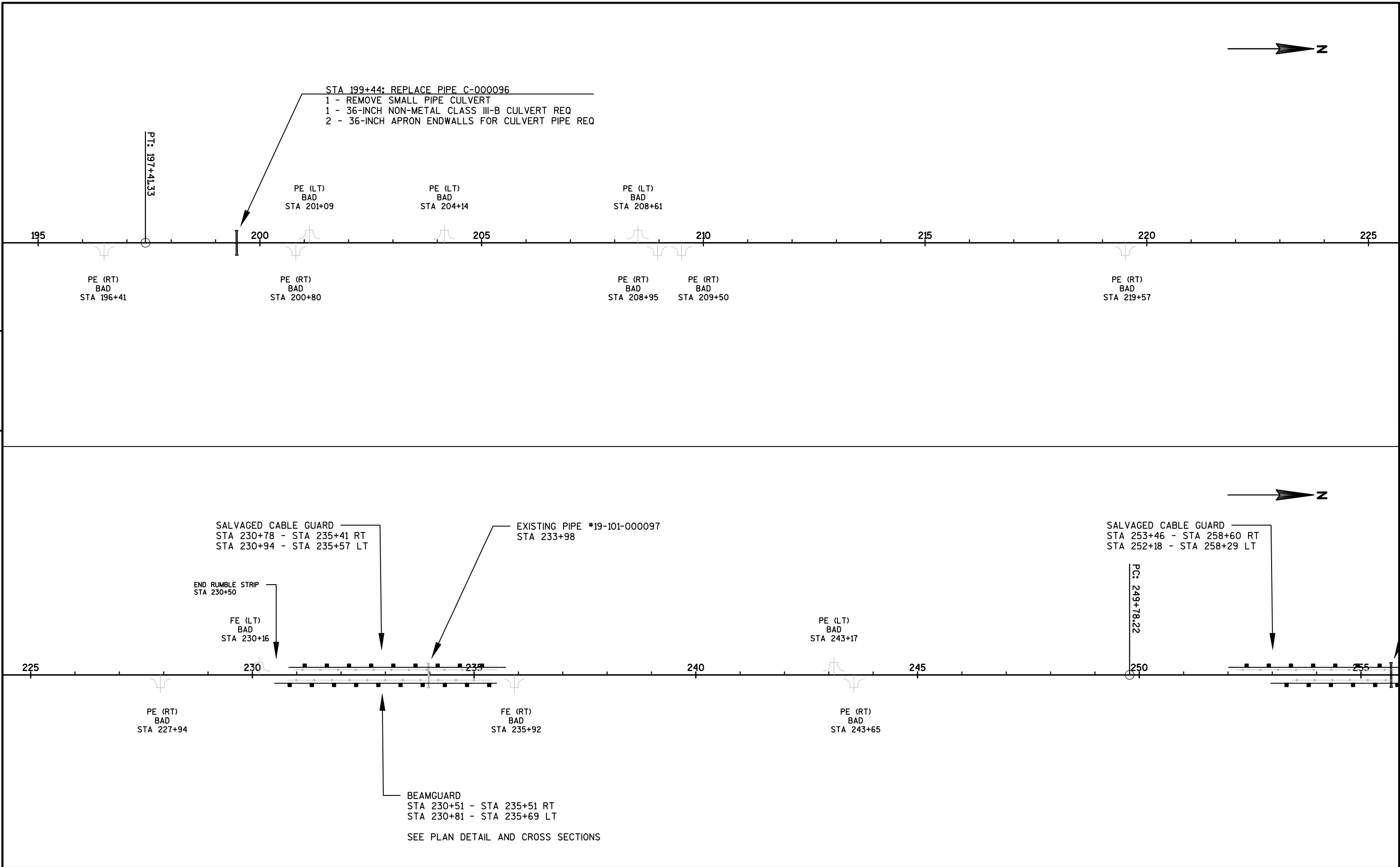
PROJECT NO: 9304-11-70	HWY: STH 101	COUNTY: FLORENCE	LINE DIAGRAM	SHEET	E
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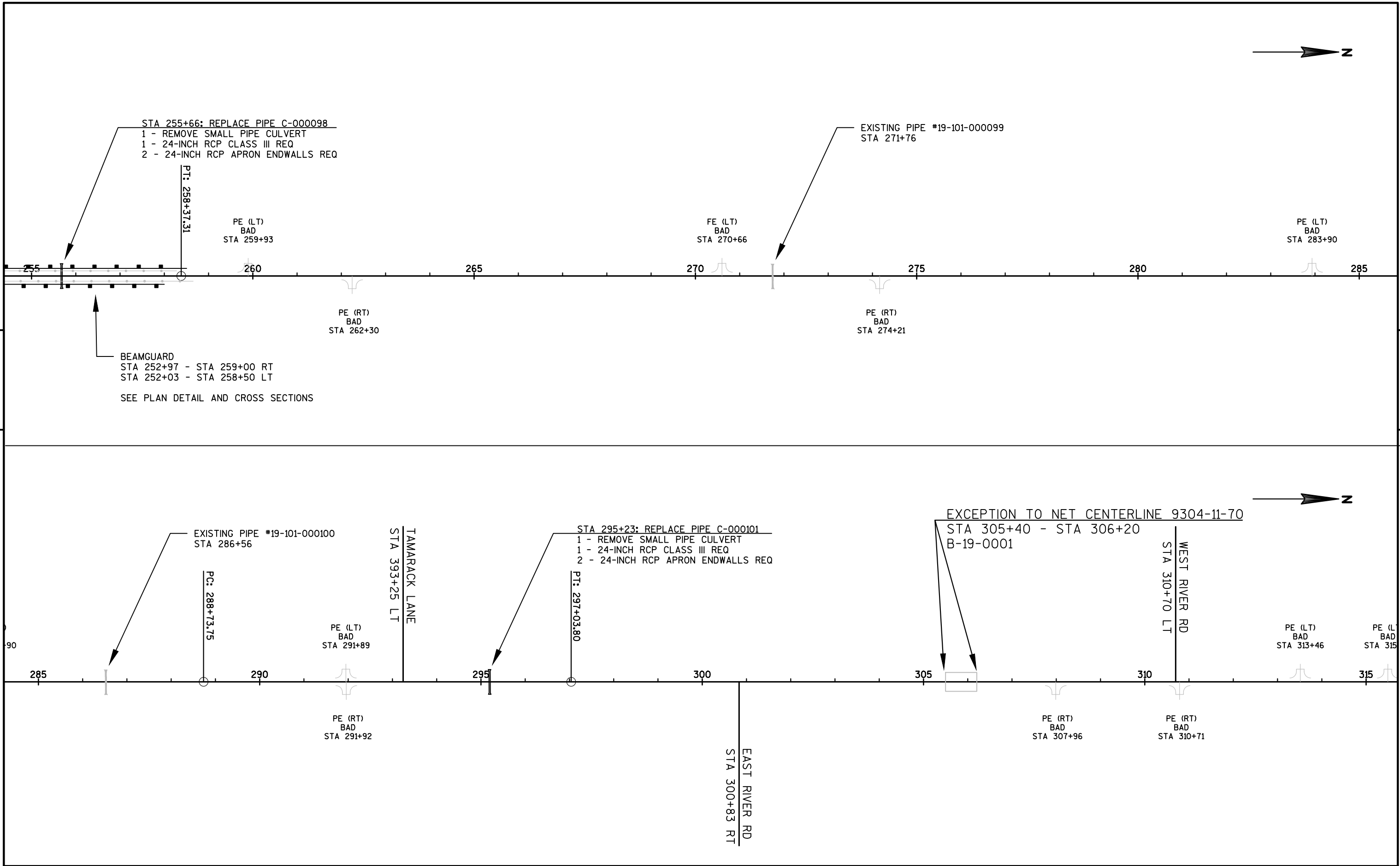
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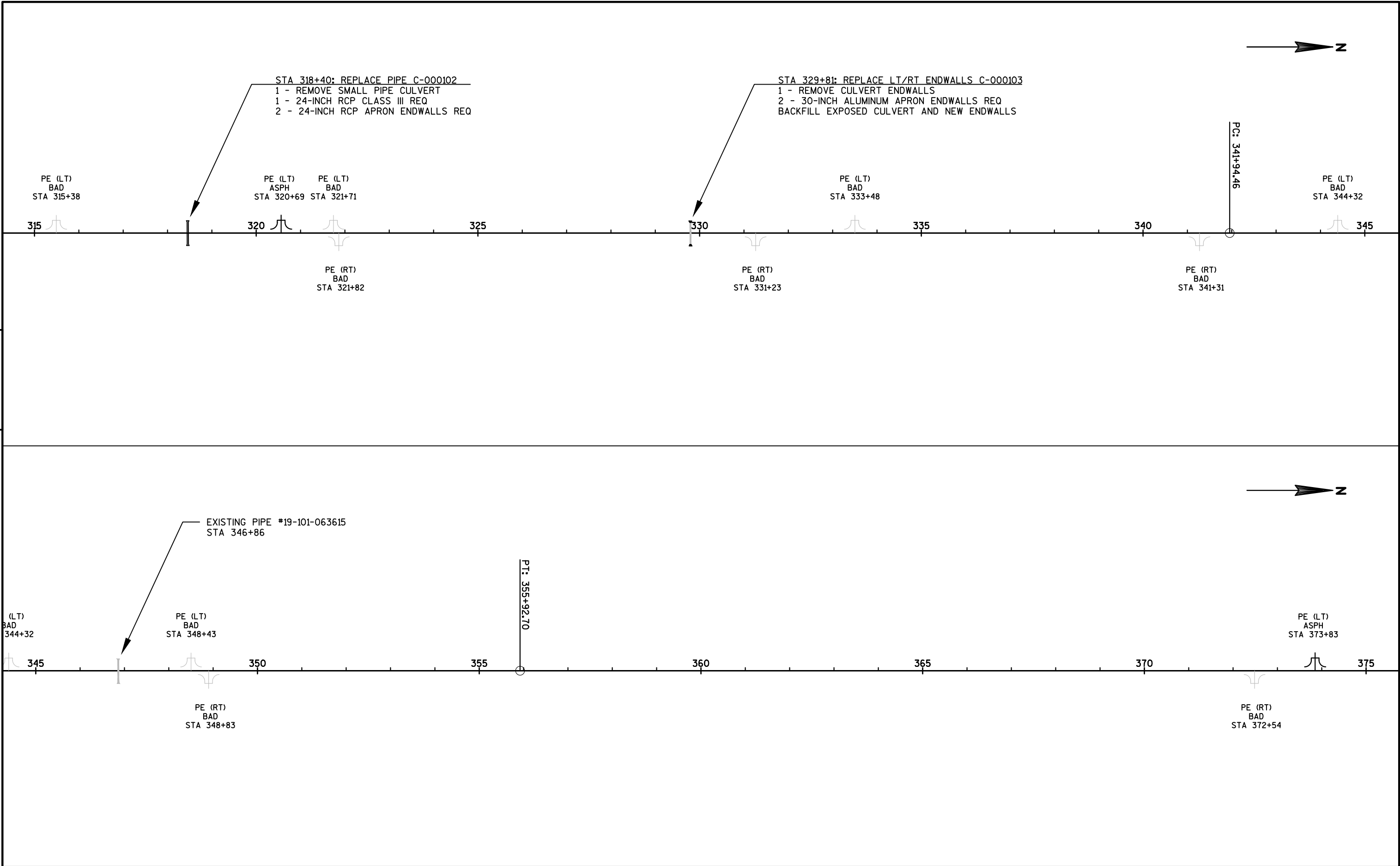
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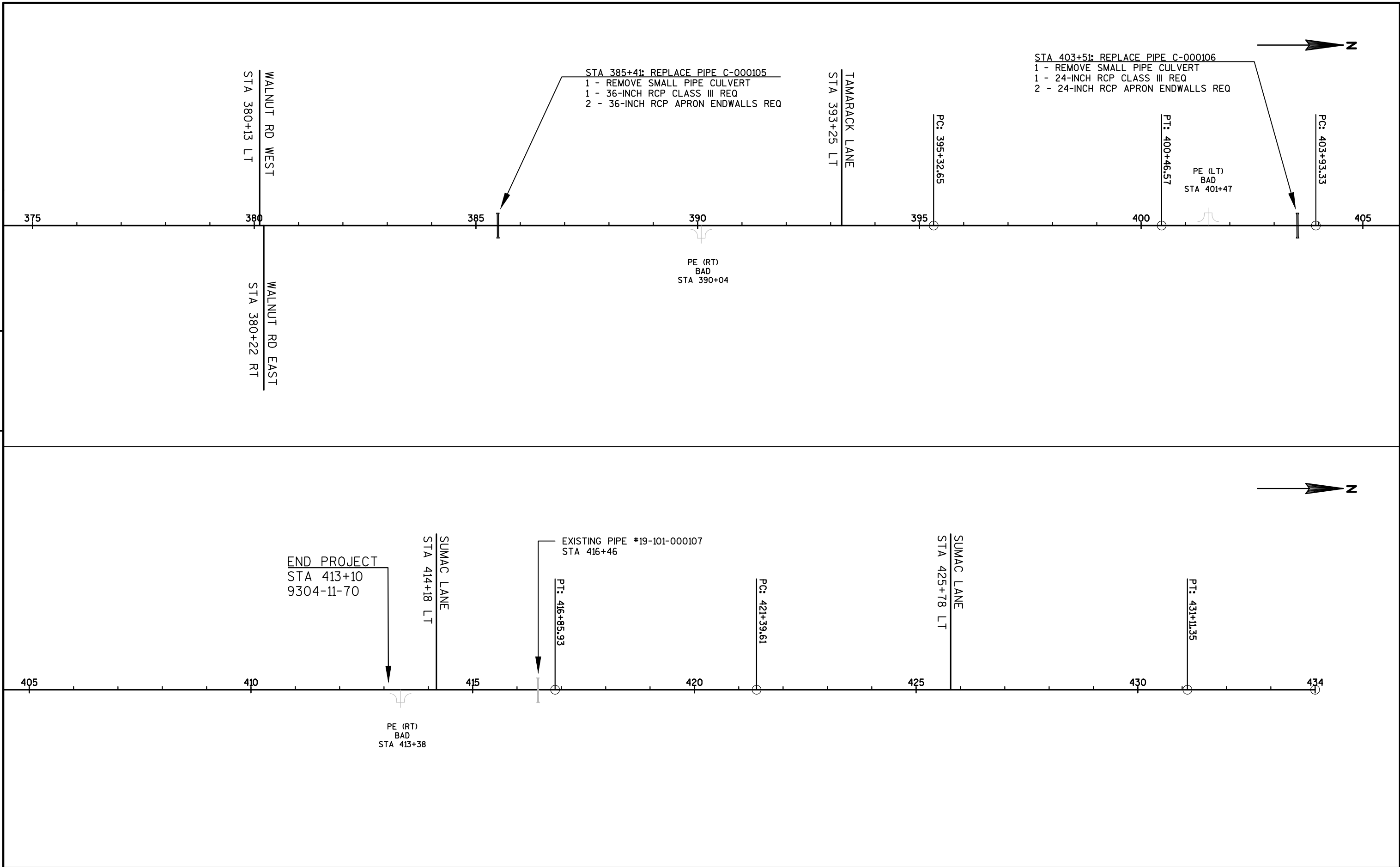
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PROJECT NO: 9304-11-70	HWY: STH 101	COUNTY: FLORENCE	LINE DIAGRAM	SHEET	E
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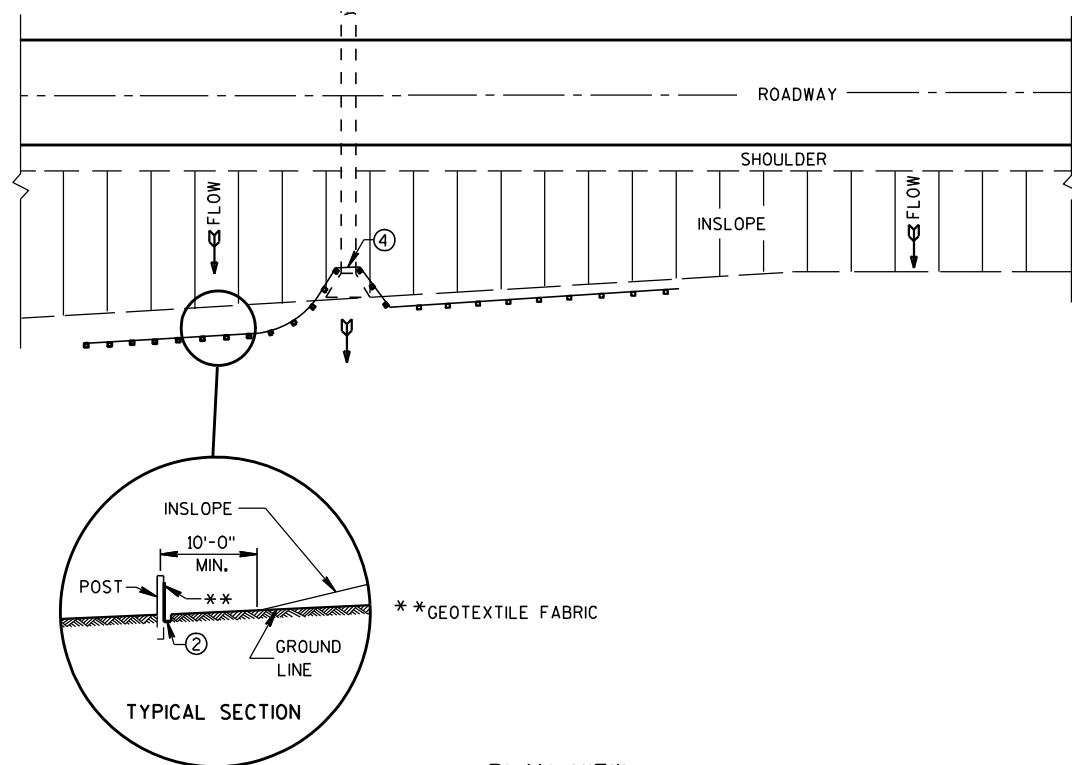
PROJECT NO: 9304-11-70	HWY: STH 101	COUNTY: FLORENCE	LINE DIAGRAM	SHEET	E
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PROJECT NO: 9304-11-70	HWY: STH 101	COUNTY: FLORENCE	LINE DIAGRAM	SHEET	E
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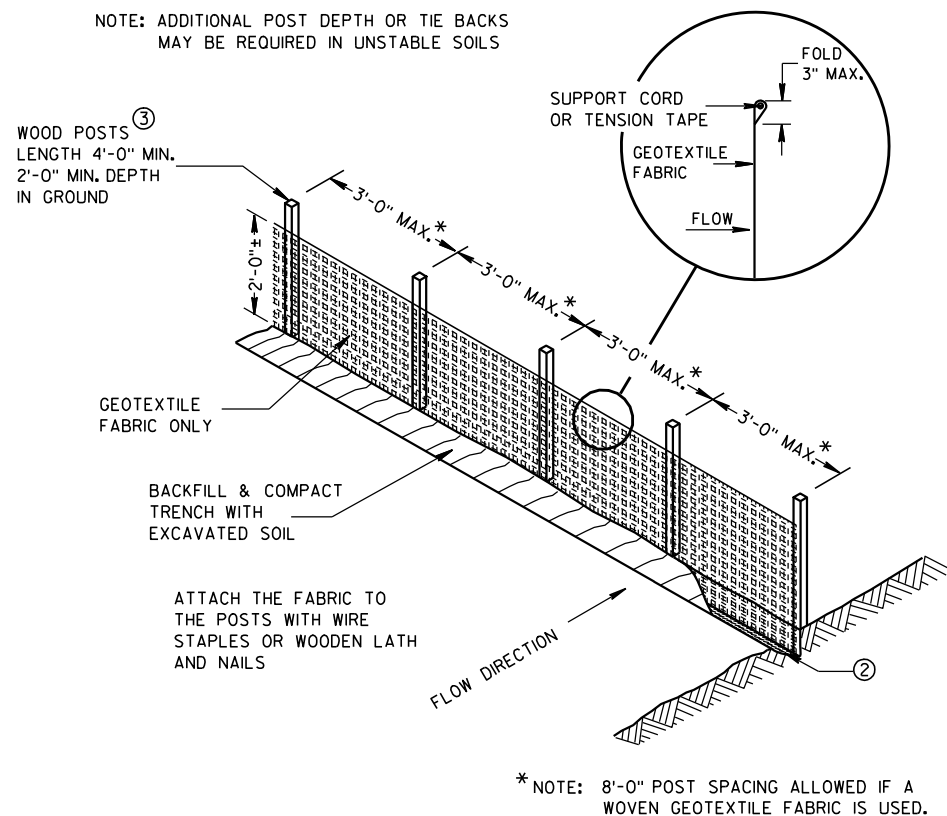
Standard Detail Drawing List

08E09-06	SILT FENCE
08E15-01	CULVERT PIPE CHECK
08F01-11	APRON ENDWALLS FOR CULVERT PIPE
08F04-07	JOINT TIES FOR CONCRETE PIPE AND CONCRETE COLLAR DETAIL
09A01-13A	AT-GRADE SIDE ROAD INTERSECTION, TYPES "B1", "B2", "C" AND D AND TEE INTERSECTION BYPASS LANE
13A11-03A	2-LANE RURAL CENTER LINE RUMBLE STRIP, MILLING
13A11-03B	2-LANE RURAL CENTER LINE RUMBLE STRIP, MILLING
13C19-02	HMA LONGITUDINAL JOINTS
14B28-04A	GUARDRAIL MOW STRIP
14B29-01	SAFETY EDGE
14B42-06A	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-06B	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-06C	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-06D	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B44-04A	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B44-04B	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B44-04C	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
15A03-02A	FLEXIBLE MARKER POST FOR CULVERT END
15A03-02B	FLEXIBLE MARKER POST FOR CULVERT END
15C02-08A	BARRICADES AND SIGNS FOR MAINLINE CLOSURES
15C02-08B	BARRICADES AND SIGNS FOR VARIOUS CLOSURES
15C02-08C	DETOUR SIGNING FOR MAINLINE CLOSURES
15C04-05	TRAFFIC CONTROL, ADVANCE WARNING SIGNS 45 M.P.H. OR GREATER TWO-WAY UNDIVIDED ROAD OPEN TO TRAFFIC
15C08-20A	LONGITUDINAL MARKING (MAINLINE)
15C11-07B	CHANNELIZING DEVICES DRUMS, CONES, BARRICADES AND VERTICAL PANELS
15C12-07	TRAFFIC CONTROL FOR LANE CLOSURE WITH FLAGGING OPERATION
15C19-06A	MOVING PAVEMENT MARKING OPERATION TWO-LANE TWO-WAY ROADWAY
15C35-04A	PAVEMENT MARKING (INTERSECTIONS)
15D28-04	TRAFFIC CONTROL, WORK ON SHOULDER OR PARKING LANE, UNDIVIDED ROADWAY
15D38-02A	TEMPORARY TRAFFIC CONTROL SIGN MOUNTING
15D38-02B	ATTACHMENT OF SIGNS TO POSTS
15D39-02	TRAFFIC CONTROL, DROP-OFF SIGNING
15D44-02	TRAFFIC CONTROL, SIGNING ON ROADWAYS WITH MILLED SURFACES

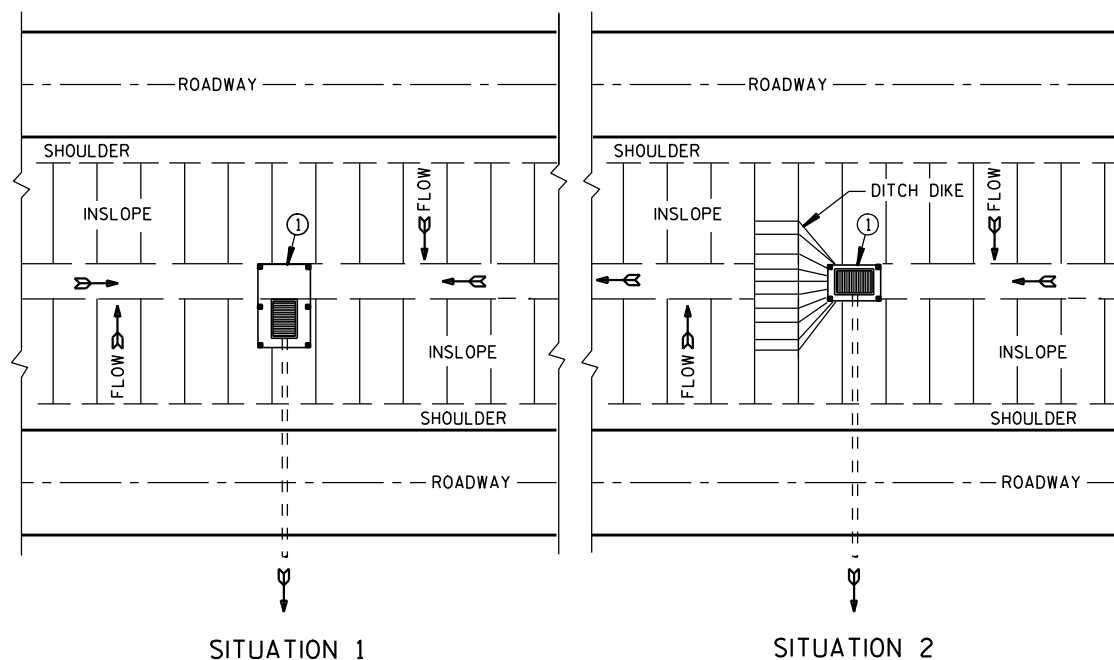


TYPICAL APPLICATION OF SILT FENCE

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

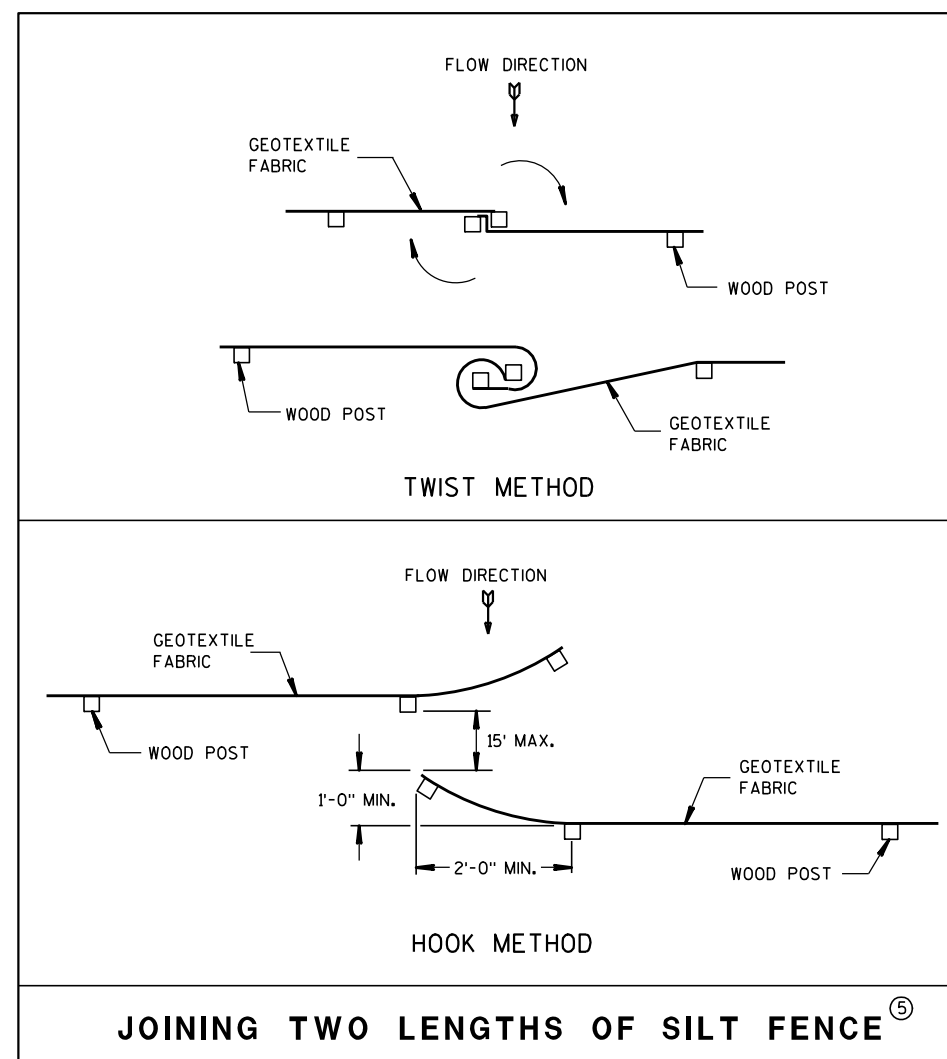


SILT FENCE



PLAN VIEW

SILT FENCE AT MEDIAN SURFACE DRAINS

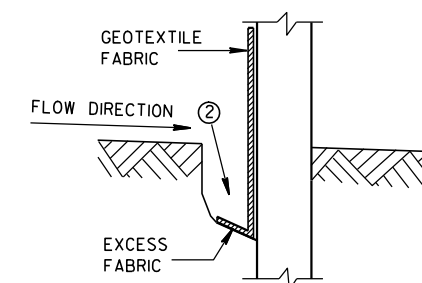


JOINING TWO LENGTHS OF SILT FENCE

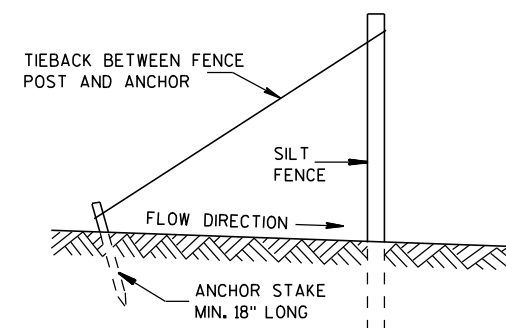
GENERAL NOTES

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

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



TRENCH DETAIL



SILT FENCE TIE BACK
(WHEN REQUIRED BY THE ENGINEER)

SILT FENCE

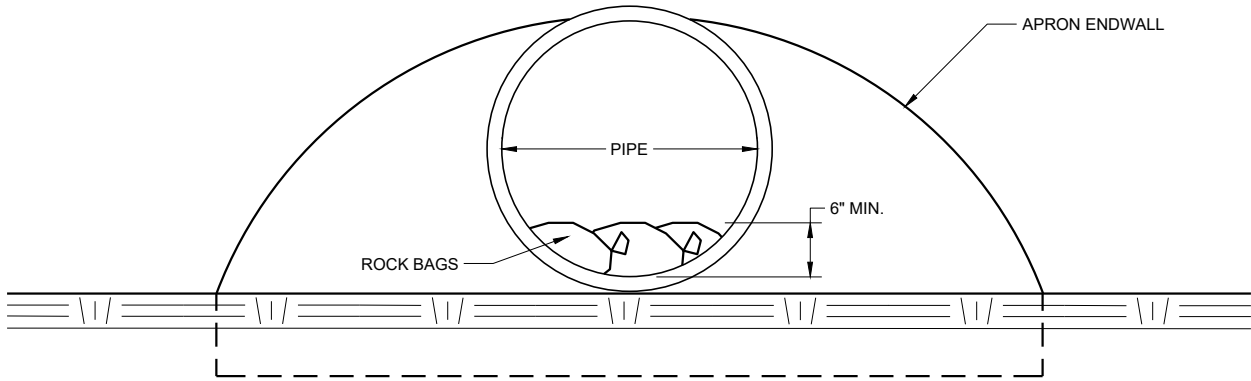
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

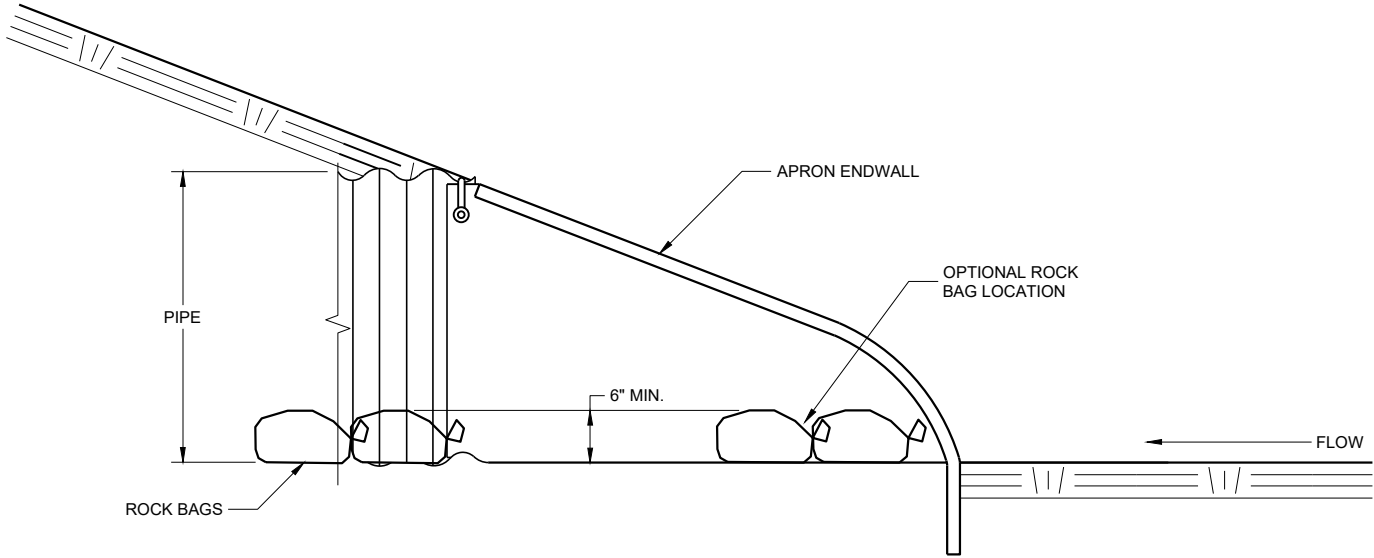
4-29-05
DATE

FHWA

/S/ Beth Cannestra
CHIEF ROADWAY DEVELOPMENT ENGINEER



END VIEW



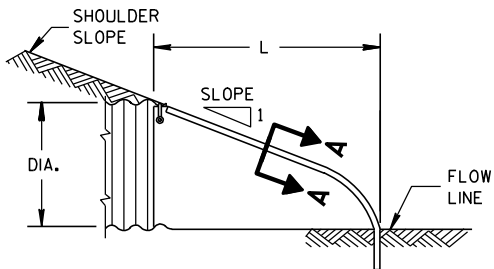
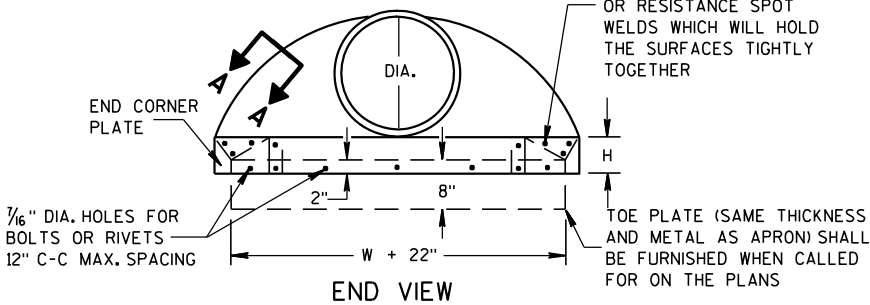
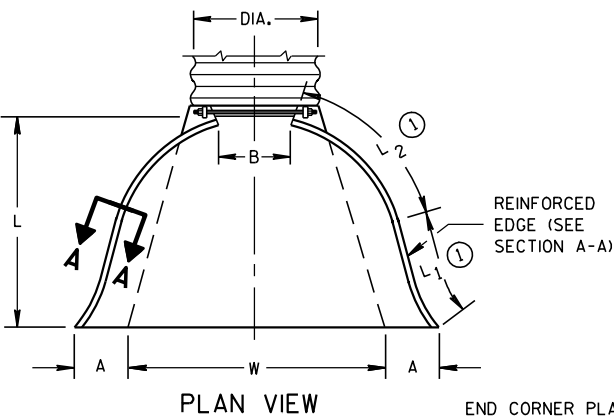
SIDE VIEW

CULVERT PIPE CHECK
(INSTALL ON INLET END ONLY)

CULVERT PIPE CHECK	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED May 2019 DATE	/S/ Daniel Schave EROSION CONTROL 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	1 Pc.
15	.064	.060	7	8	6	26	14	21 3/4	30	2 1/2 to 1	1	1 Pc.
18	.064	.060	8	10	6	31	15	28 1/4	36	2 1/2 to 1	1	1 Pc.
21	.064	.060	9	12	6	36	18	29 5/8	42	2 1/2 to 1	1	1 Pc.
24	.064	.075	10	13	6	41	18	37 1/4	48	2 1/2 to 1	1	1 Pc.
30	.079	.075	12	16	8	51	18	52 1/4	60	2 1/2 to 1	1	1 Pc.
36	.079	.105	14	19	9	60	24	59 3/4	72	2 1/2 to 1	2	2 Pc.
42	.109	.105	16	22	11	69	24	75 5/8	84	2 1/2 to 1	2	2 Pc.
48	.109	.105	18	27	12	78	24	81	90	2 1/4 to 1	3	3 Pc.
54	.109	.105	18	30	12	84	30	85 1/2	102	2 1/4 to 1	3	3 Pc.
60	.109x	.105x	18	33	12	87	—	—	114	2 to 1	3	3 Pc.
66	.109x	.105x	18	36	12	87	—	—	120	2 to 1	3	3 Pc.
72	.109x	.105x	18	39	12	87	—	—	126	2 to 1	3	3 Pc.
78	.109x	.105x	18	42	12	87	—	—	132	1 1/2 to 1	3	3 Pc.
84	.109x	.105x	18	45	12	87	—	—	138	1 1/2 to 1	3	3 Pc.
90	.109x	.105x	18	37	12	87	—	—	144	1 1/2 to 1	3	3 Pc.
96	.109x	.105x	18	35	12	87	—	—	150	1 1/2 to 1	3	3 Pc.

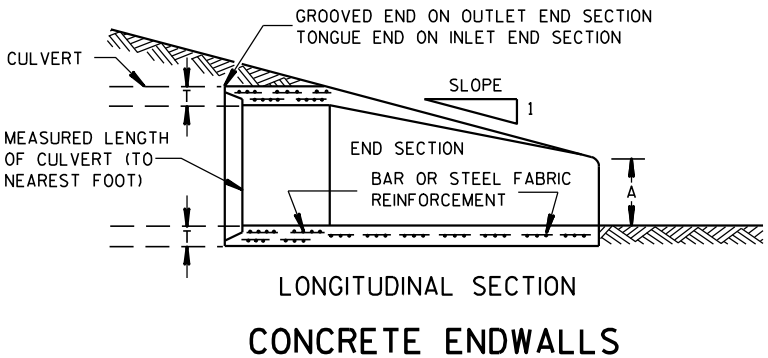
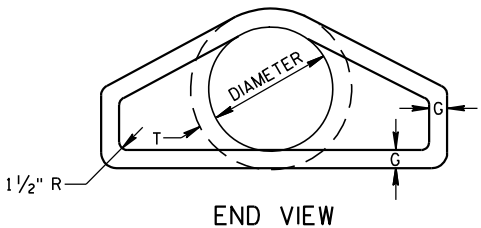
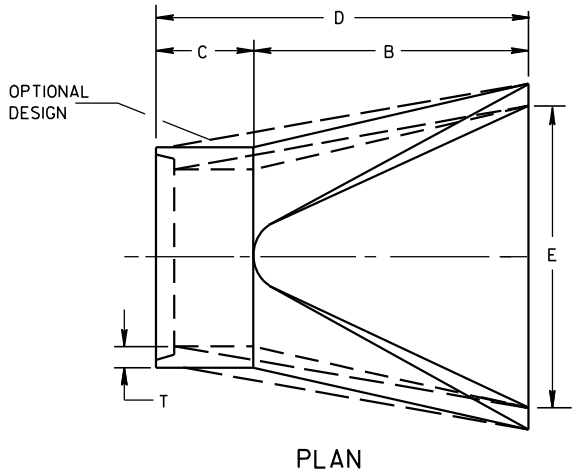
* EXCEPT CENTER PANEL
SEE GENERAL NOTES



METAL ENDWALLS

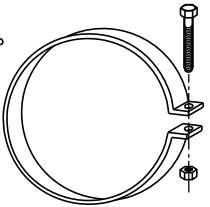
REINFORCED CONCRETE APRON ENDWALLS												
PIPE DIA. (IN.)	DIMENSIONS (Inches)							APPROX. SLOPE				
	T	A	B	C	D	E	G					
12	2	4	24	48 7/8	72 7/8	24	2	3 to 1				
15	2 1/4	6	27	46	73	30	2 1/4	3 to 1				
18	2 1/2	9	27	46	73	36	2 1/2	3 to 1				
21	2 3/4	9	36	37 1/2	73 1/2	42	2 3/4	3 to 1				
24	3	9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

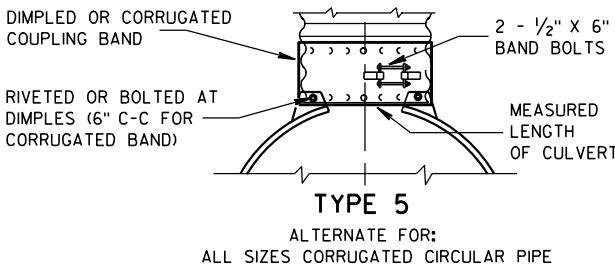
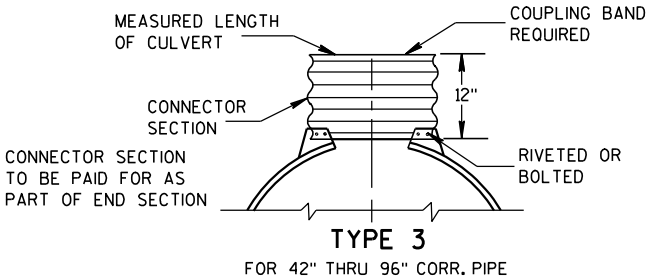
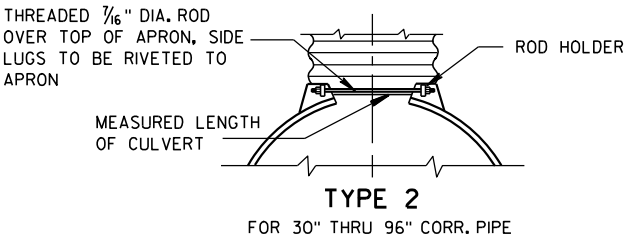
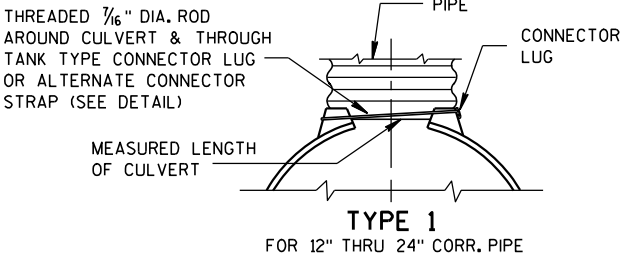


CONCRETE ENDWALLS

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



ALTERNATE FOR TYPE 1 CONNECTION
END SECTION CONNECTOR STRAP



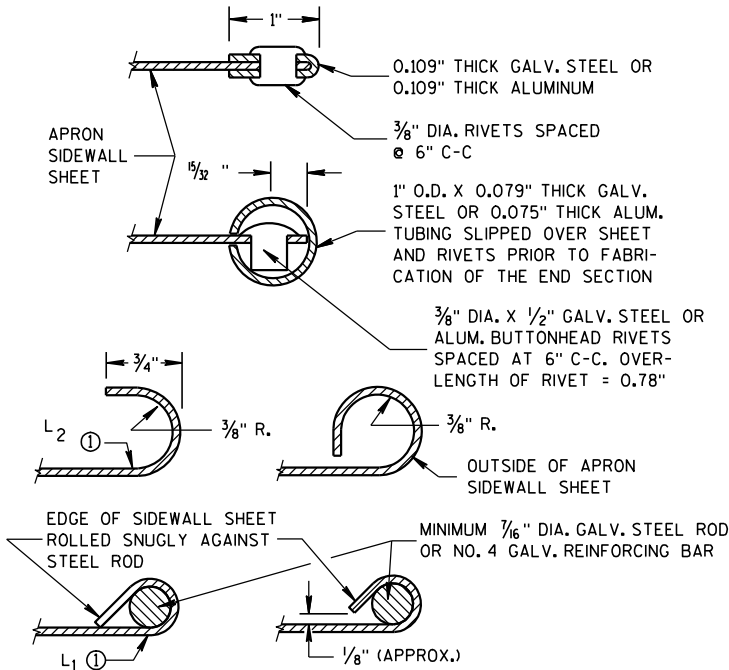
NOTE: DIMPLED BAND FITS OVER OUTSIDE OF ENDWALL, AND CORRUGATED BAND FITS INSIDE ENDWALL. DIMPLED BAND MAY BE USED WITH HELICALLY CORRUGATED PIPE.

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

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

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

CONNECTION DETAILS

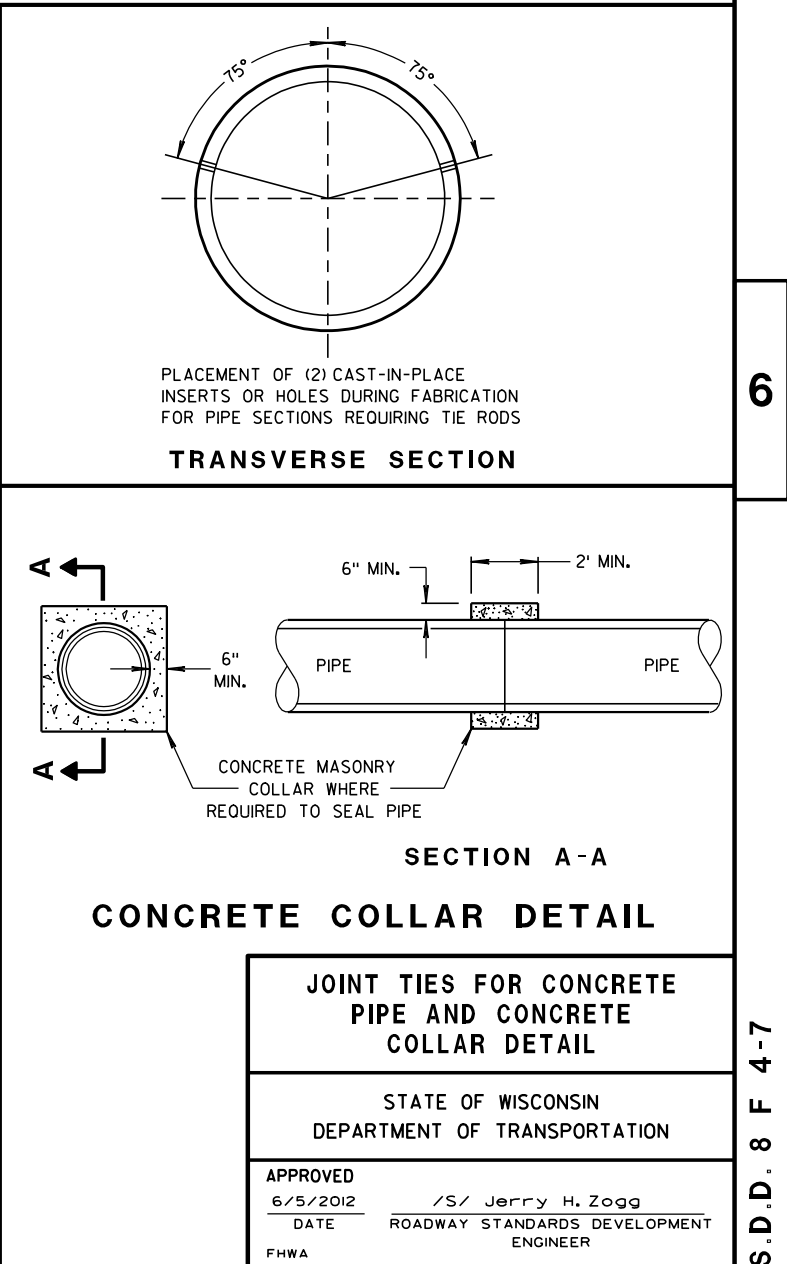
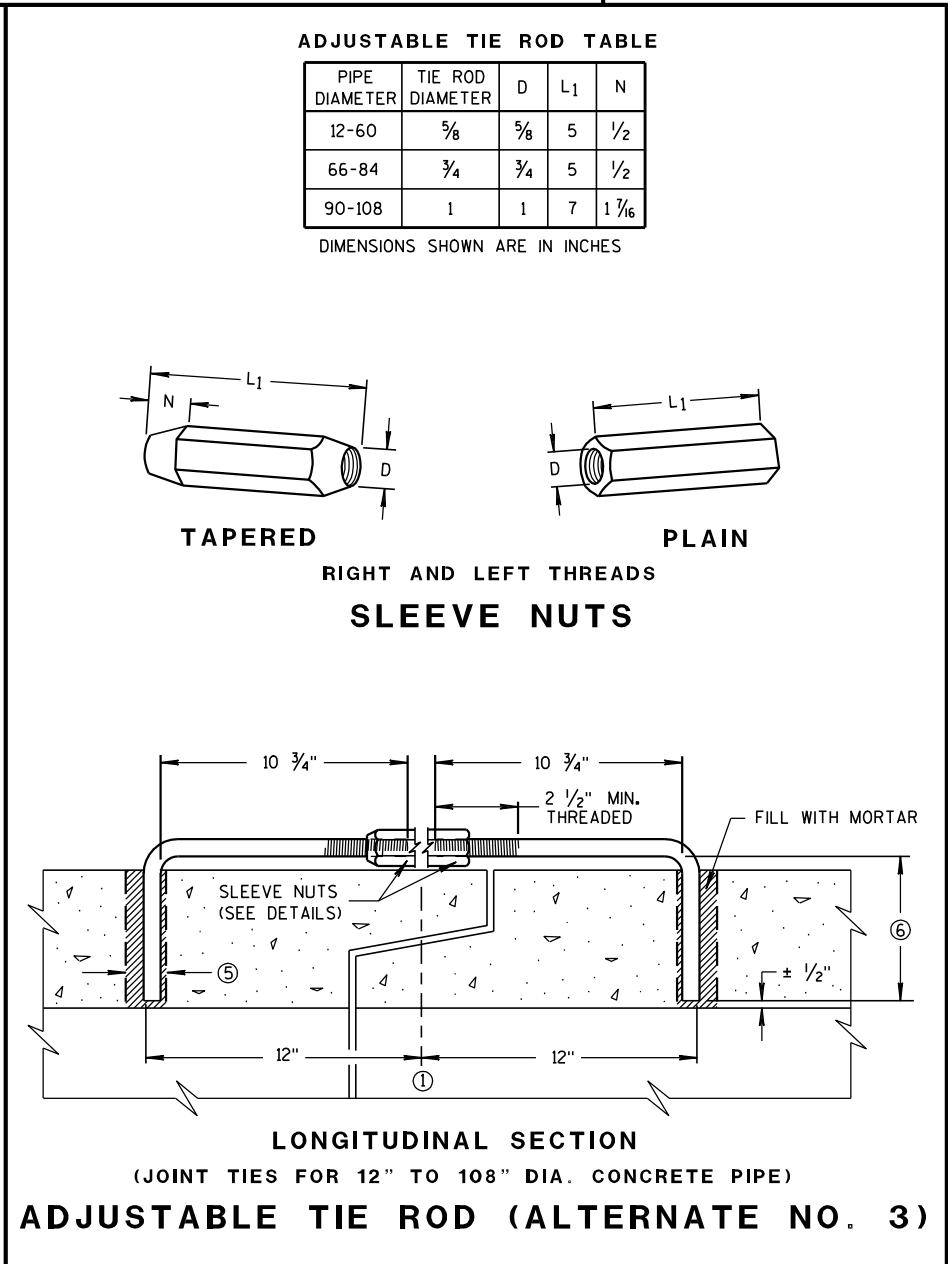
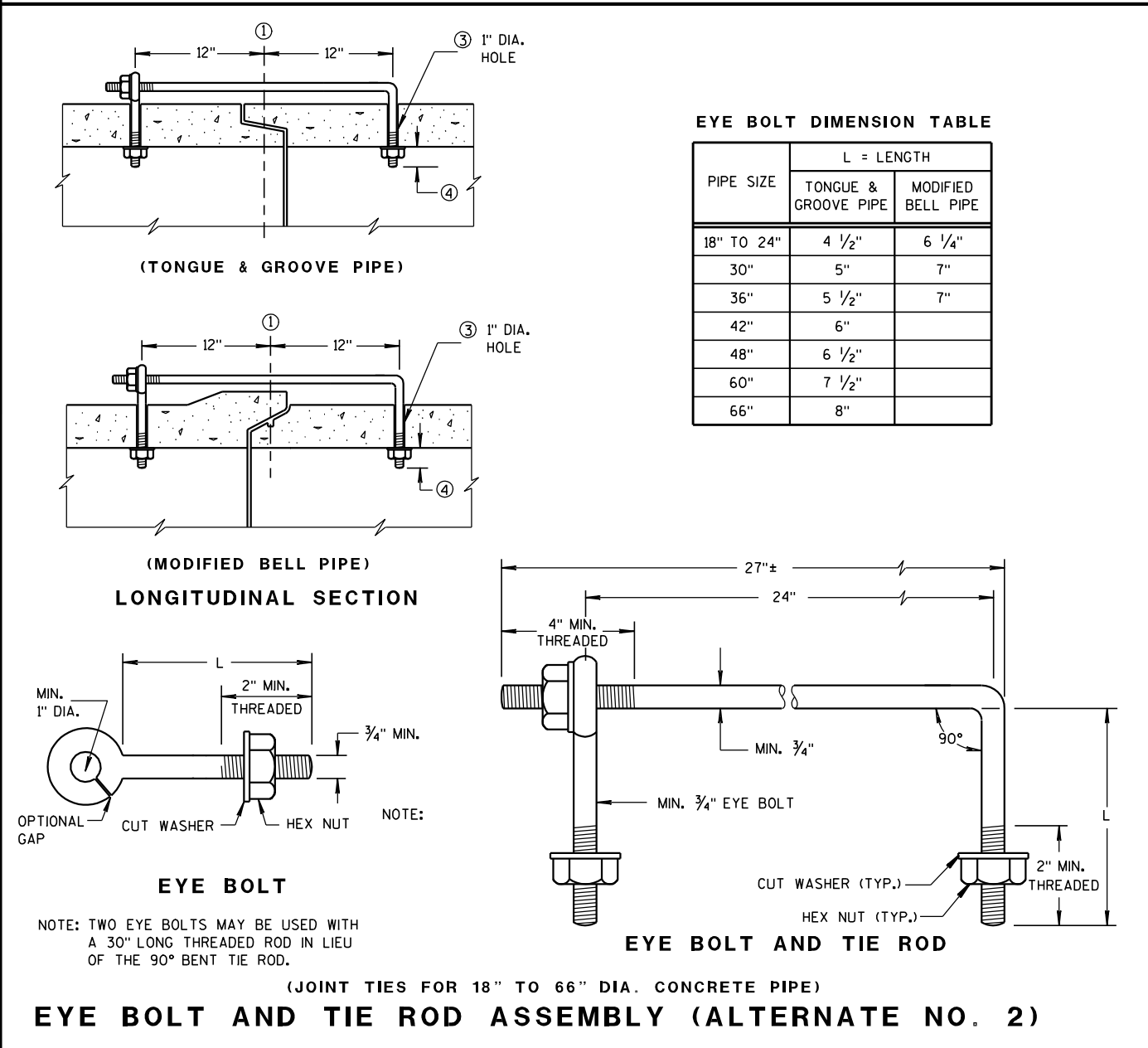
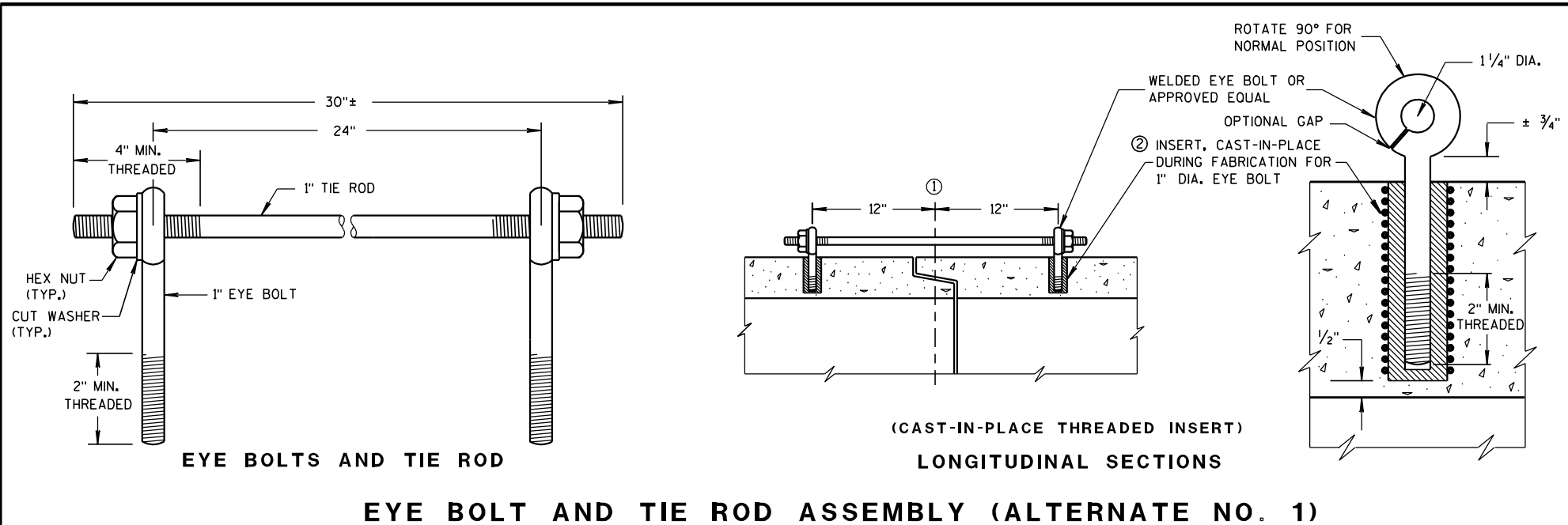


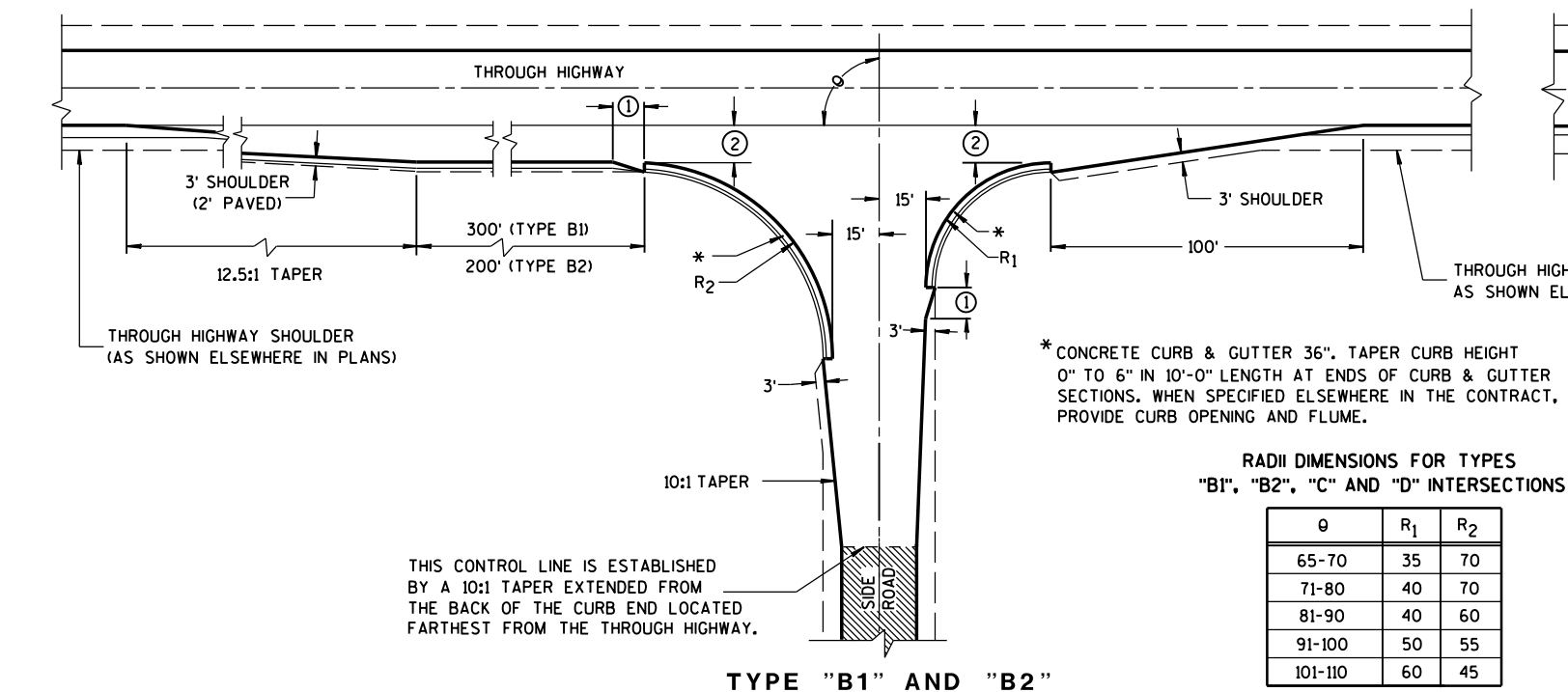
SECTION A-A

GENERAL NOTES

- DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.
- CONCRETE CULVERT ENDWALLS MAY NOT BE USED WITH GALVANIZED STEEL OR ALUMINUM CULVERT PIPE OR VISE VERSA. GALVANIZED STEEL OR ALUMINUM ENDWALLS SHALL NORMALLY BE INSTALLED ON CULVERT PIPE OF THE SAME METAL.
- ALL THREE PIECE STEEL APRON ENDWALLS FOR 60" DIAMETER PIPE AND LARGER SHALL HAVE 0.109" SIDES AND 0.138" CENTER PANELS. ALL THREE PIECE ALUMINUM APRON ENDWALLS FOR 60" DIAMETER PIPE AND LARGER SHALL HAVE 0.105" SIDES AND 0.134" CENTER PANELS. THE WIDTH OF CENTER PANELS SHALL BE GREATER THAN 20 PERCENT OF THE PIPE PERIMETER.
- LAP SEAMS SHALL BE TIGHTLY JOINED BY GALVANIZED RIVETS OR BOLTS FOR STEEL UNITS AND ALUMINUM RIVETS AND BOLTS FOR ALUMINUM UNITS. FOR THE 60" THROUGH 96" DIAMETER APRON ENDWALL SIZES, THE REINFORCED EDGES AND CENTER PANEL SEAMS SHALL BE FURTHER REINFORCED WITH GALVANIZED STEEL OR ALUMINUM STIFFENER ANGLES. THE ANGLES SHALL BE ATTACHED BY GALVANIZED NUTS AND BOLTS FOR STEEL UNITS AND ALUMINUM NUTS AND BOLTS FOR ALUMINUM UNITS.
- WHERE TWO OR MORE PIPES WITH APRON ENDWALLS ARE LAID ADJACENT TO EACH OTHER, THEY SHALL BE SEPARATED BY A DISTANCE SUFFICIENT TO PROVIDE A MINIMUM CLEARANCE OF 6 INCHES BETWEEN APRON ENDWALLS.
- ① FOR PIPE SIZES UP TO 60" DIAMETER, A 180° ROLLED EDGE MAY BE USED INSTEAD OF STEEL ROD REINFORCEMENT. SEE SECTION A-A.

APRON ENDWALLS FOR CULVERT PIPE	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED 11/30/94 DATE	/S/ Rory L. Rhinesmith CHIEF ROADWAY DEVELOPMENT ENGINEER
FHWA	





GENERAL NOTES

DESIGNS MAY BE USED INTERCHANGEABLY IN COMBINATION OR SEPARATELY FOR ANY ONE COMPLETE INTERSECTION DEPENDING UPON INTERSECTION ANGLE AND SURFACING OF EACH APPROACH ROADWAY.

SIDE ROAD SURFACING NOTE

WHEN THE SIDE ROAD IS NOT PRESENTLY PAVED, PAVEMENT SHALL BE PLACED TO THE LIMITS SHOWN UNLESS OTHERWISE PROVIDED IN THE CONTRACT. WHERE THE CONSTRUCTION LIMITS ARE BEYOND THE PAVING LIMITS, CRUSHED AGGREGATE SURFACING SHALL BE PLACED BETWEEN THE PAVING LIMITS AND CONSTRUCTION LIMITS.

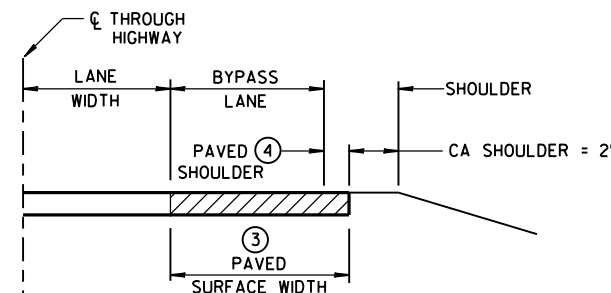
WHEN THE SIDE ROAD IS PRESENTLY PAVED, NEW PAVEMENT SHALL BE PLACED TO THE LIMITS OF DESIGN AS SHOWN AND BEYOND, IF NECESSARY, TO MEET EXISTING PAVEMENT.

WHEN THE SIDE ROAD IS THE CONSTRUCTION PROJECT, THE INTERSECTION SURFACING SHALL BE THE SAME AS FOR THE PROJECT.

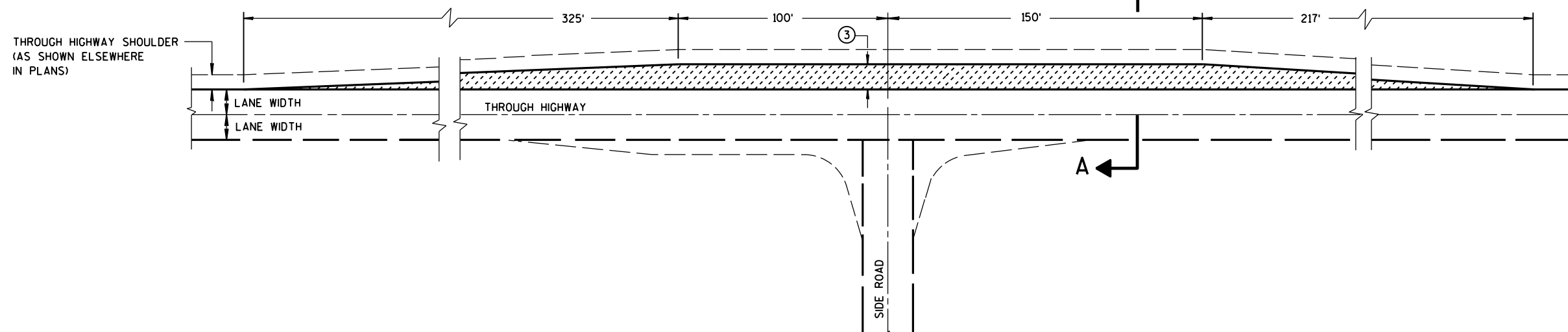
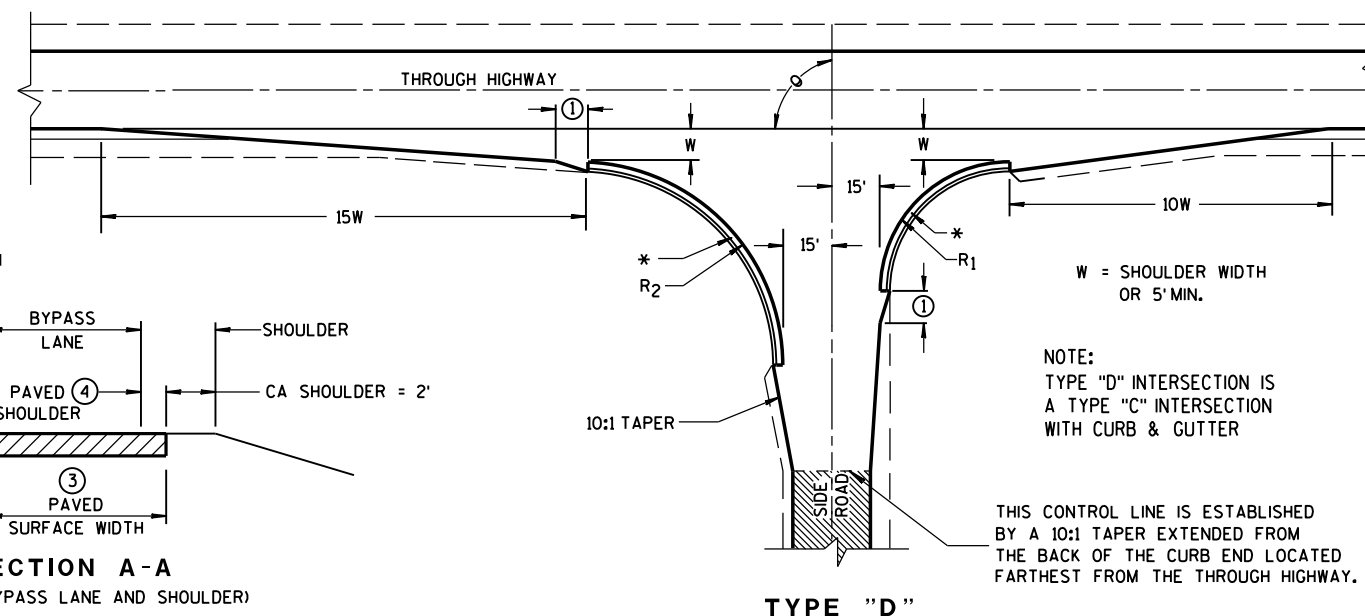
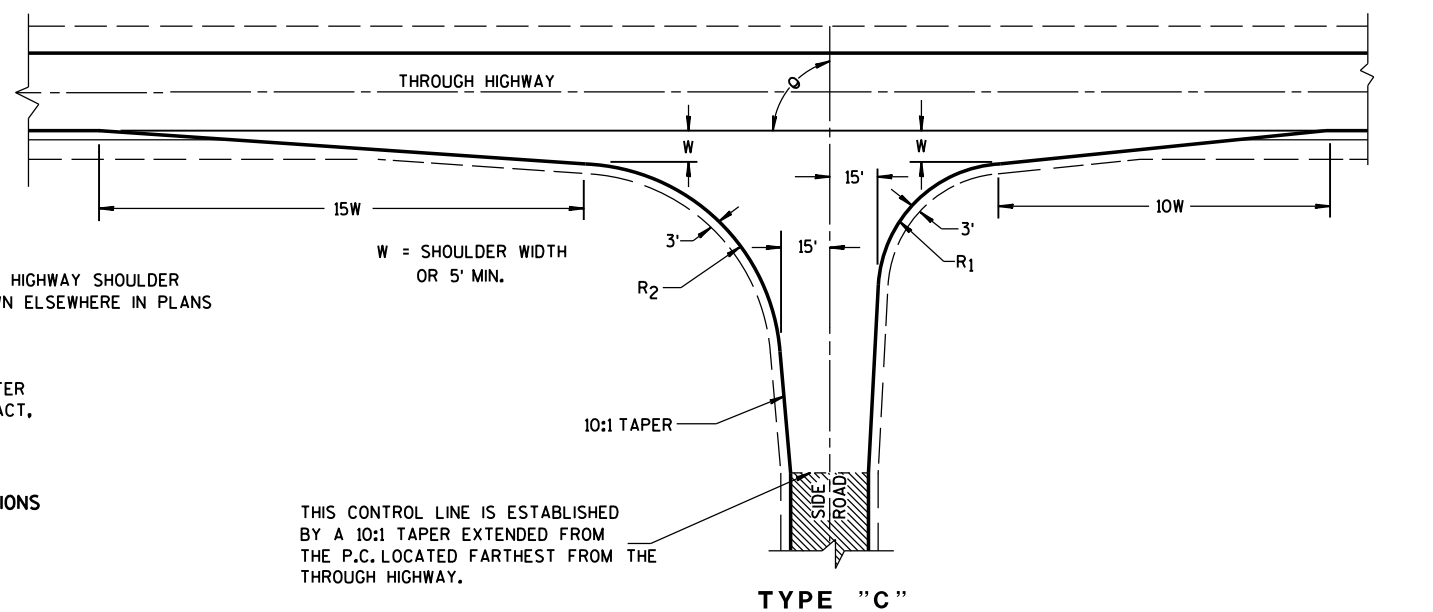
EXISTING PAVED SURFACE

BYPASS LANE

- ① 10-FT TYPICAL.
- ② 12-FT** PLUS ADDITIONAL WIDTH FOR BIKE LANE IF SHOWN ELSEWHERE IN THE PLAN.
- **10-FT MAY BE USED ON TYPE B2 ON RESURFACING PROJECTS IF SPECIFIED IN THE CONTRACT.
- ③ BYPASS LANE PAVED SURFACE WIDTH OUTSIDE OF TRAVEL LANE
-ASPHALT = 12-FT PLUS PAVED SHOULDER WIDTH.
-PC CPNCRETE = 13-FT PLUS PAVED SHOULDER WIDTH.
- ④ BYPASS LANE PAVED SHOULDER WIDTH = THE GREATER OF 1-FT OR THE PAVED SHOULDER WIDTH OF THE THROUGH HIGHWAY.



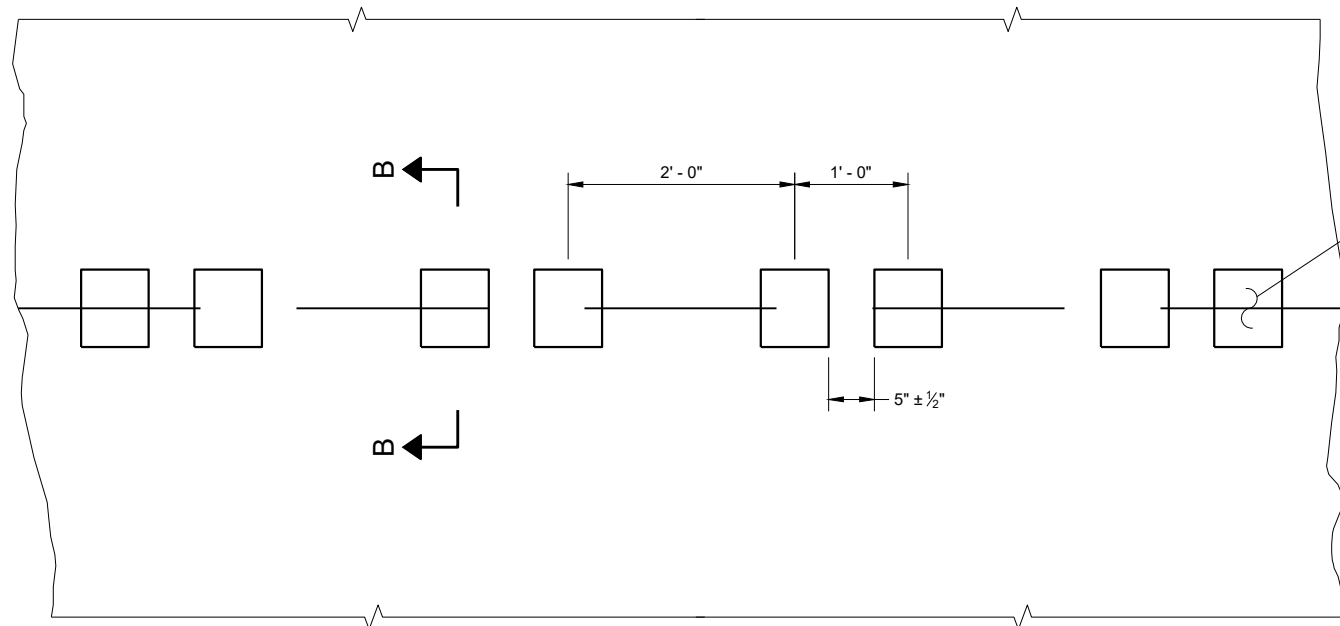
SECTION A-A
(SHOWING BYPASS LANE AND SHOULDER)



TEE INTERSECTION BYPASS LANE DETAIL

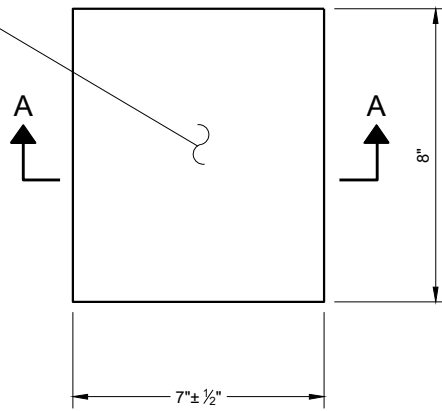
AT-GRADE SIDE ROAD
INTERSECTION, TYPES "B1", "B2",
"C" AND "D" AND TEE
INTERSECTION BYPASS LANE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



PLAN VIEW
SHOULDER WITH GROOVES

PLACEMENT DETAIL FOR TYPE 1 MILLED RUMBLE STRIP



PLAN VIEW
(SINGLE GROOVE)

GENERAL NOTES

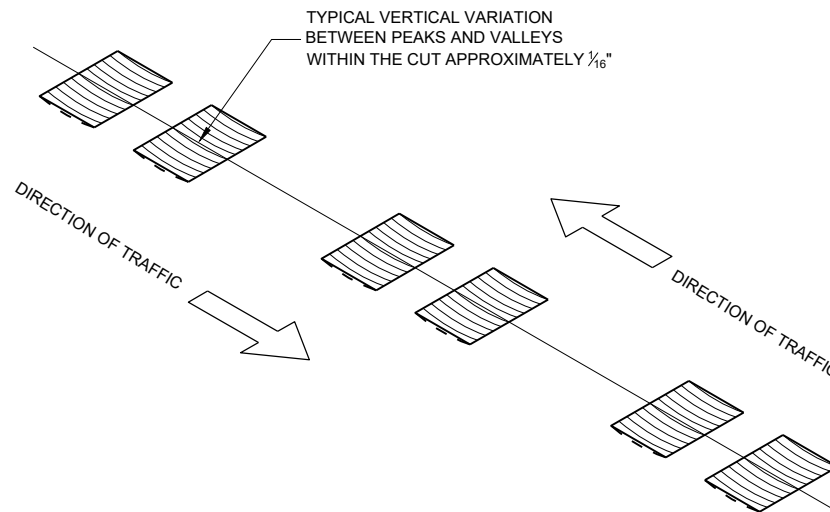
DETAILS OF CONSTRUCTION NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND APPLICABLE SPECIAL PROVISIONS.

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

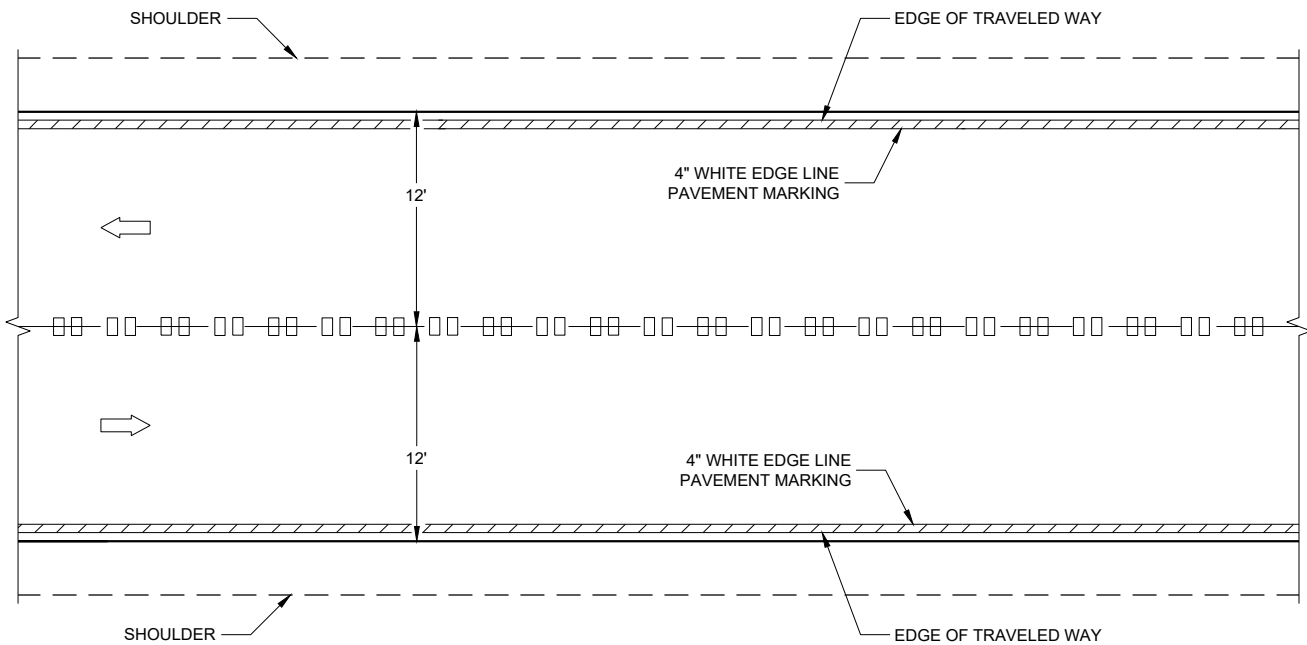
INSTALL PAVEMENT MARKING AFTER THE GROOVES ARE INSTALLED.

SEE SIGNING PLAN FOR SIGN REQUIREMENTS THAT MAY BE NEEDED.

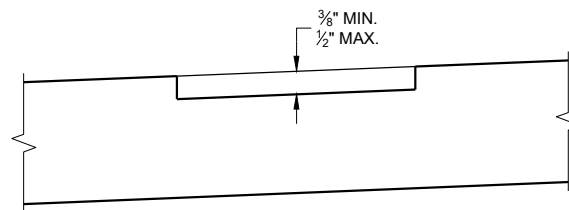
- ① CENTERLINE GROOVES MAY BE OMITTED IN AREAS WITH HIGH CONCENTRATIONS OF DRIVEWAYS. WHEN DIRECTED BY THE ENGINEER.



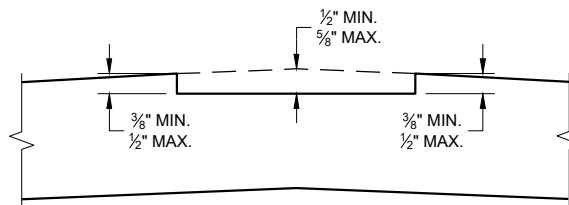
ISOMETRIC



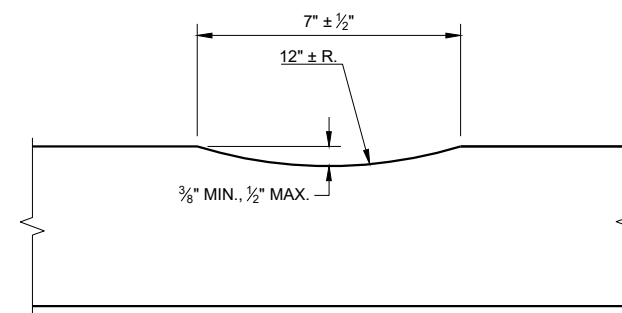
CENTERLINE GROOVES ON TWO-WAY ROADWAYS



SECTION B - B
SUPERELEVATED ROADWAY



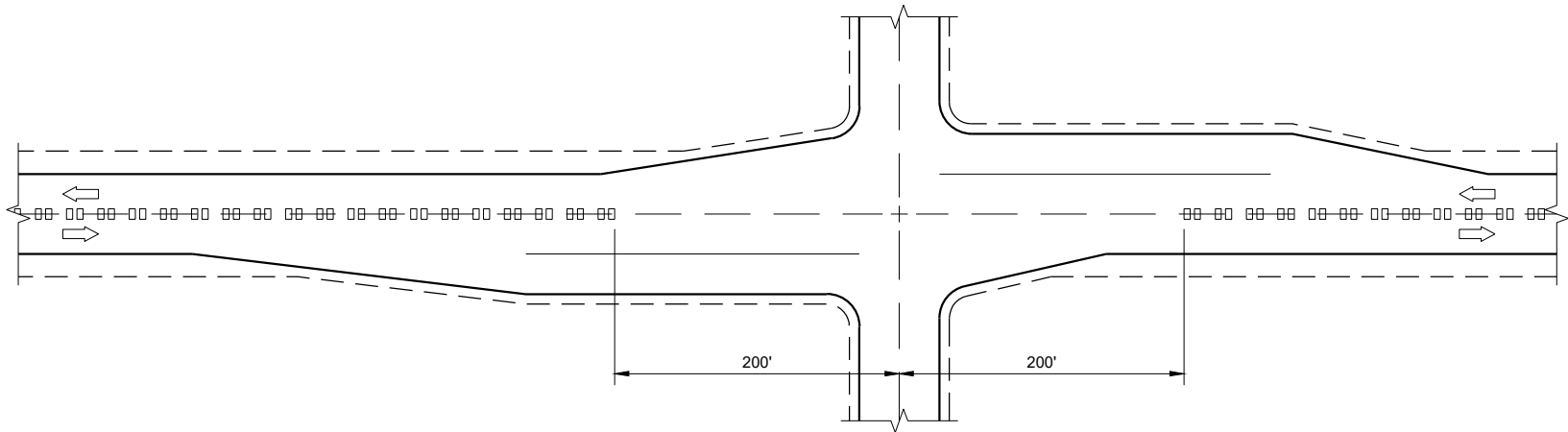
SECTION B - B
CROWNED ROADWAY



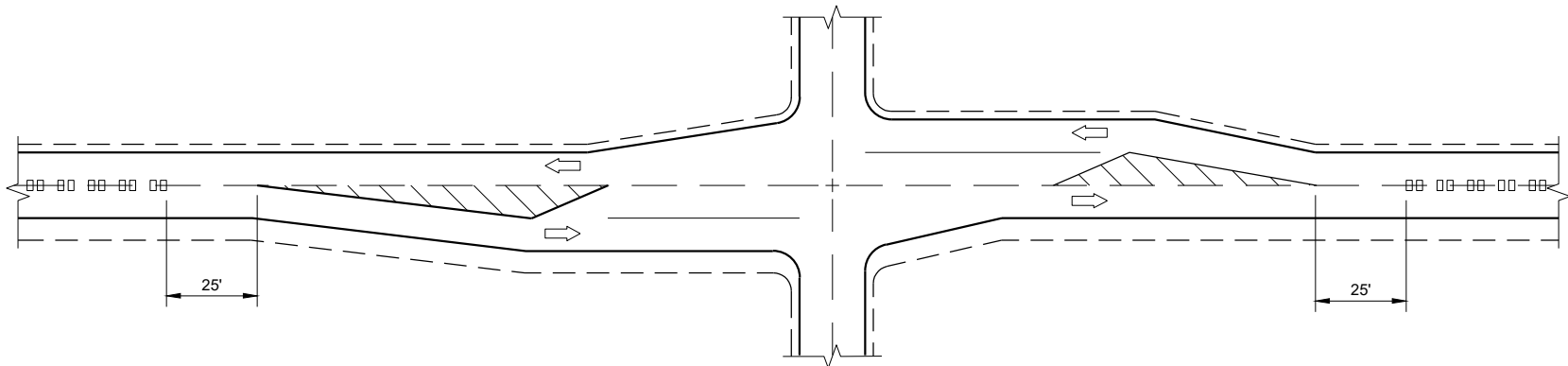
SECTION A - A

2-LANE RURAL
CENTER LINE RUMBLE STRIP,
MILLING

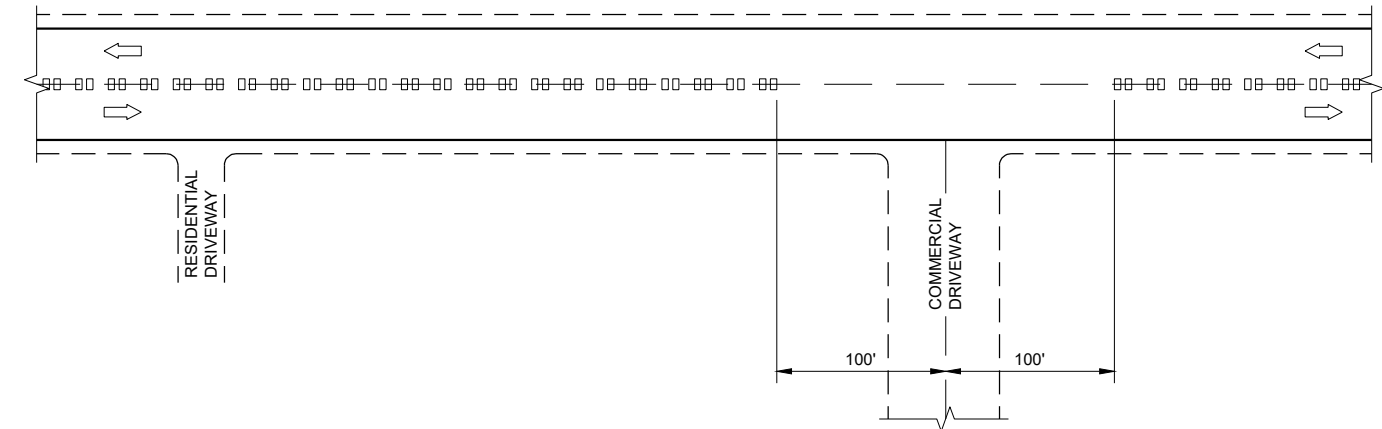
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



CENTERLINE GROOVES AT INTERSECTIONS



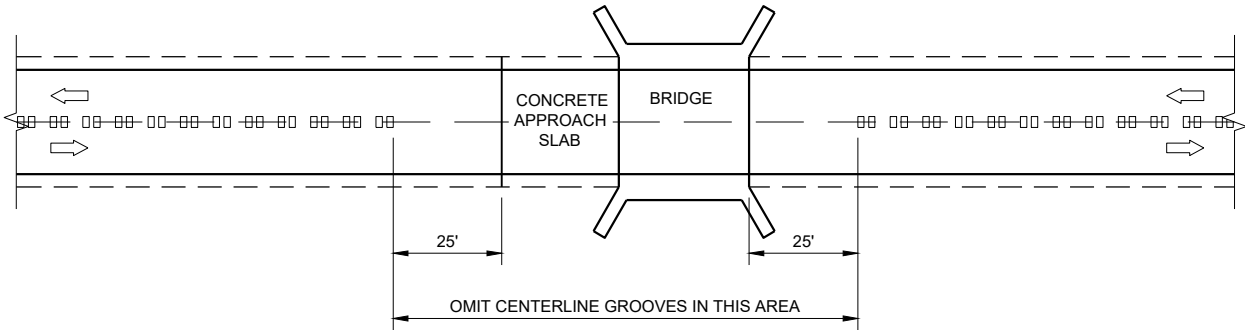
CENTERLINE GROOVES AT INTERSECTIONS
(WITH LEFT TURN LANES)



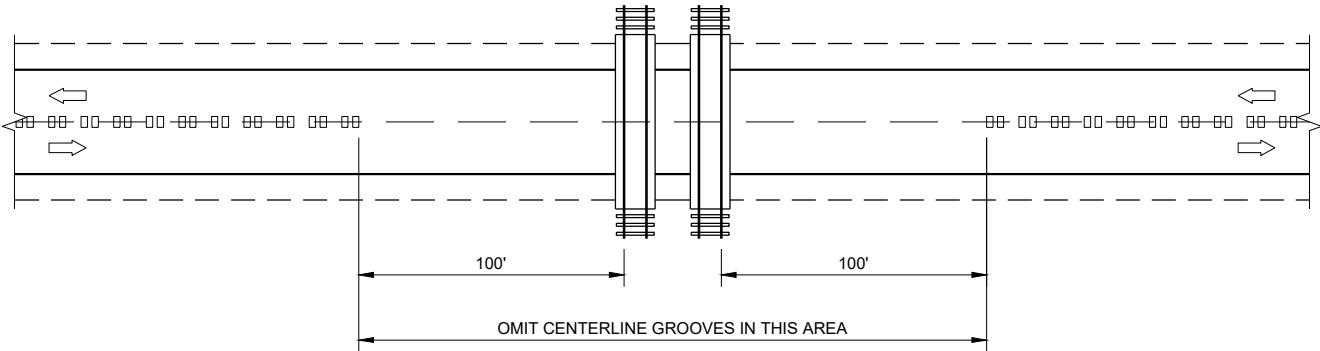
CENTERLINE GROOVES AT DRIVEWAYS^①

GENERAL NOTES

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



CENTERLINE GROOVES AT BRIDGES



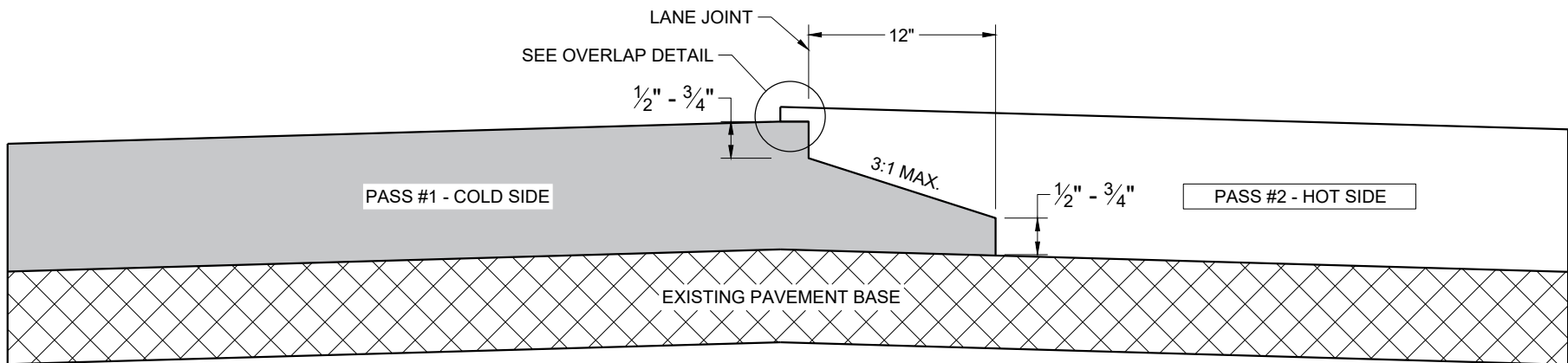
CENTERLINE GROOVES AT RAILROADS

2-LANE RURAL
CENTERLINE RUMBLE STRIP,
MILLING

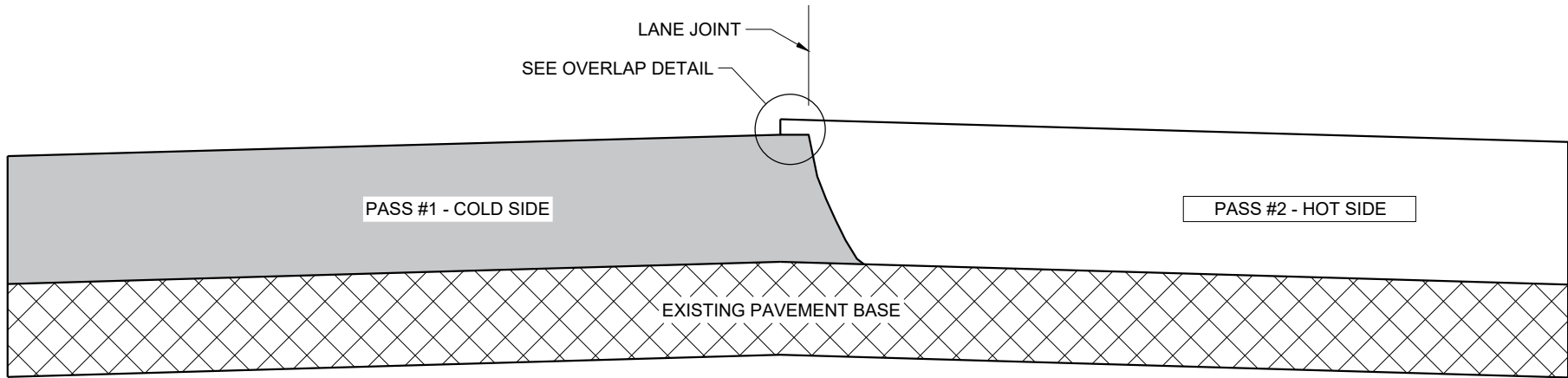
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

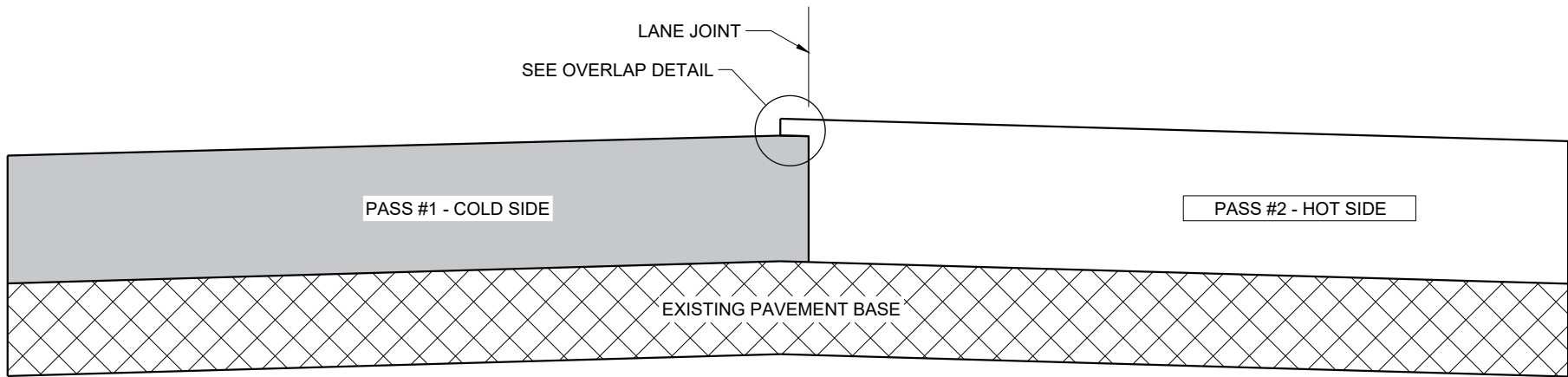
FHWA



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



**TYPICAL PAVEMENT CROSS SECTION
VERTICAL LONGITUDINAL JOINT**



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

GENERAL NOTES

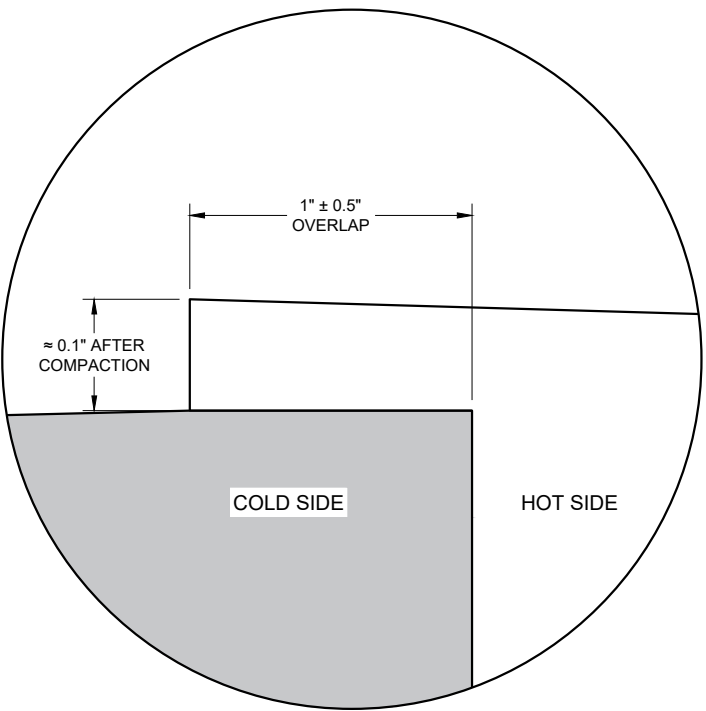
IN ADDITION TO THE DETAILS PROVIDED IN THIS DRAWING, CONFORM TO STANDARD SPECIFICATION 450.3.2.8 FOR WHEN A NOTCHED WEDGE JOINT IS REQUIRED AND FOR GENERAL JOINT CONSTRUCTION REQUIREMENTS.

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

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

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

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

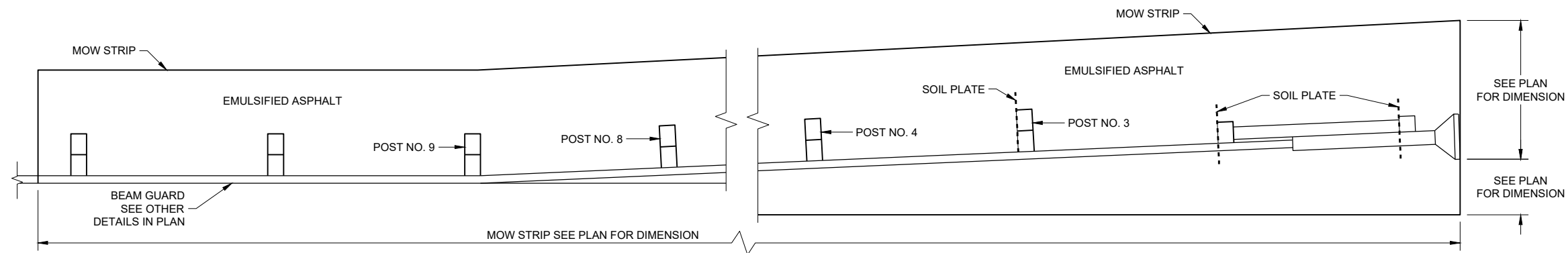


OVERLAP DETAIL (TYPICAL)

HMA LONGITUDINAL JOINTS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

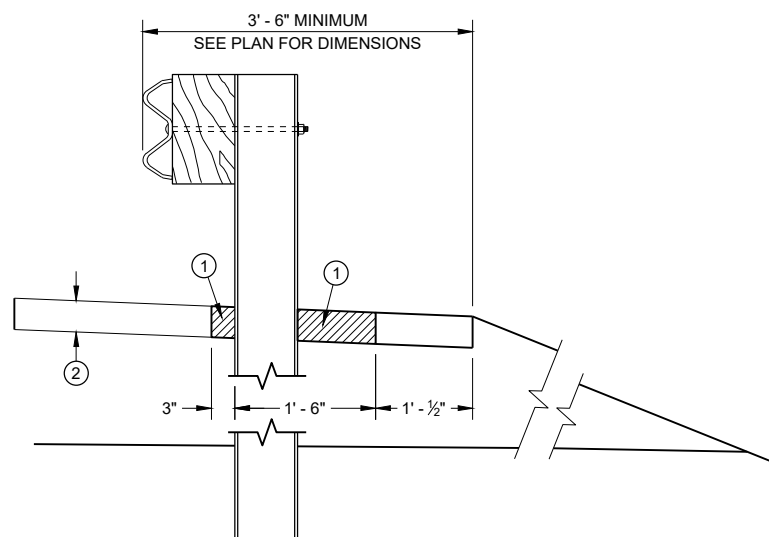


PLAN VIEW
MOW STRIP LAYOUT FOR ENERGY ABSORBING TERMINAL

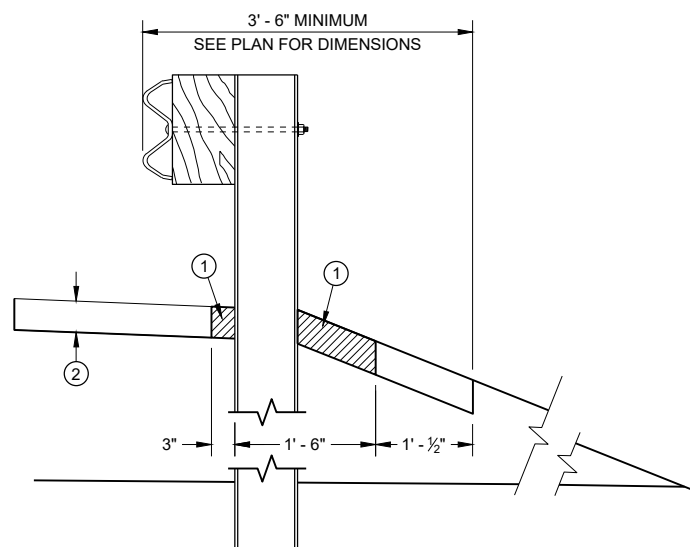
GENERAL NOTES

ONLY USE STEEL POSTS IN CONCRETE AND ASPHALT MOW STRIPS.

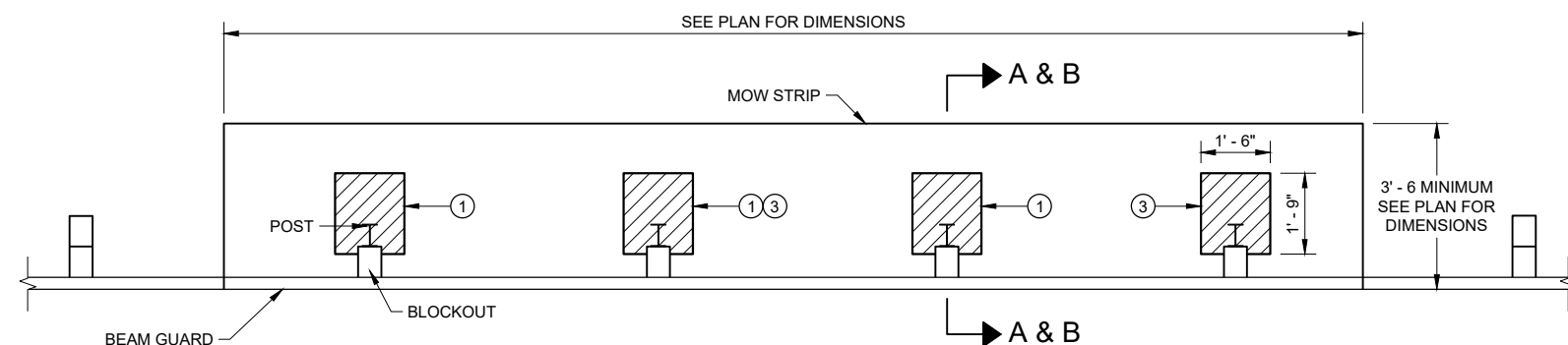
- ① CONTROLLED LOW-STRENGTH BACKFILL OR EMULSIFIED ASPHALT.
- ② DEPTH OF MOW STRIP:
ASPHALT - 4"
CONCRETE - 4"
EMULSIFIED ASPHALT - 1" OR LESS
- ③ FOR EMULSIFIED ASPHALT, MOW STRIP STRIP LEAVE OUTS NOT REQUIRED. (TYPICAL FOR ALL POSTS)



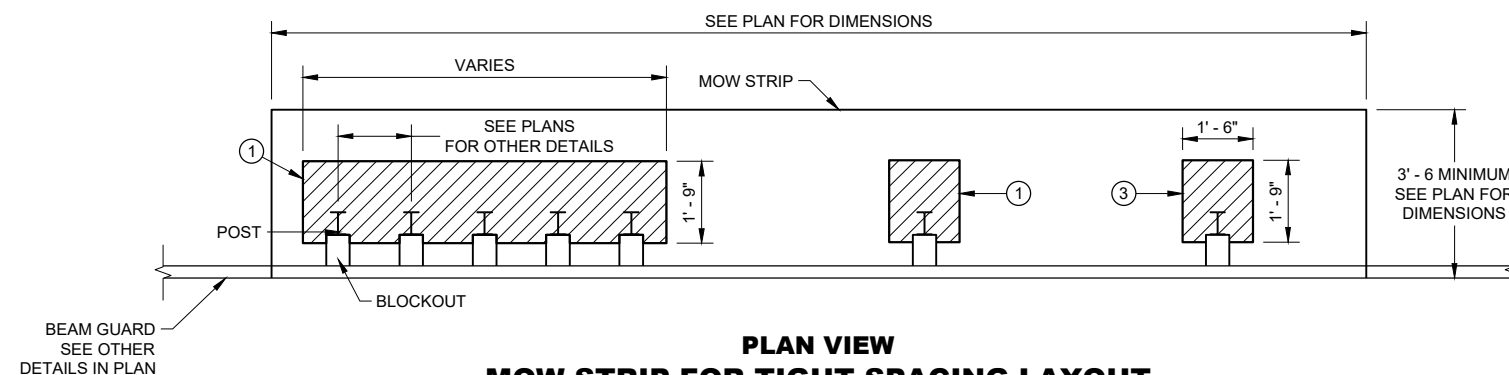
SECTION A - A



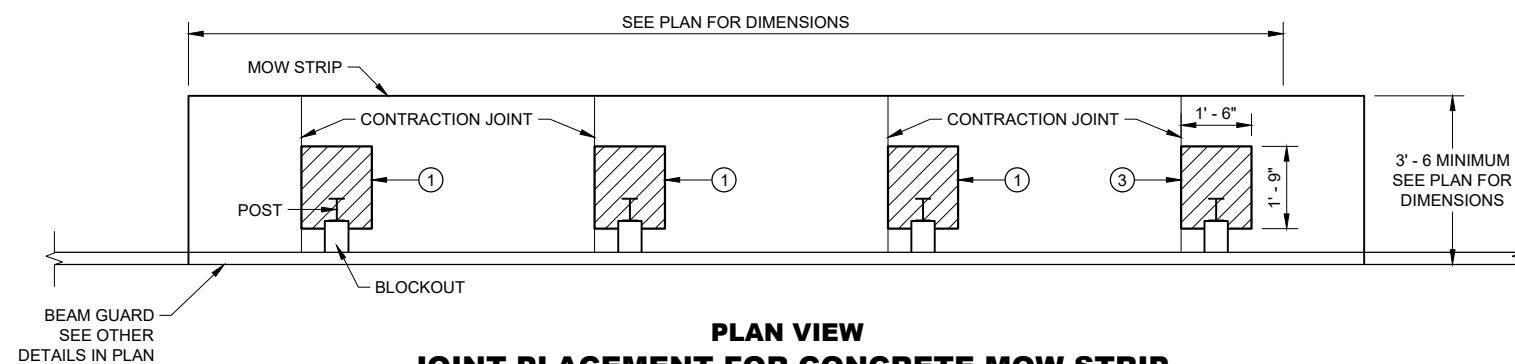
SECTION B - B



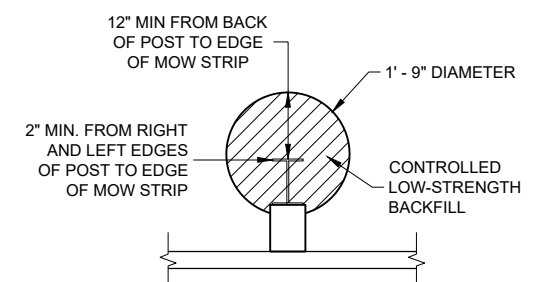
PLAN VIEW
MOW STRIP FOR TYPICAL BLOCKOUT LAYOUT



PLAN VIEW
MOW STRIP FOR TIGHT SPACING LAYOUT



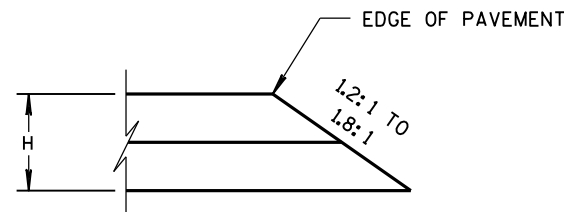
PLAN VIEW
JOINT PLACEMENT FOR CONCRETE MOW STRIP



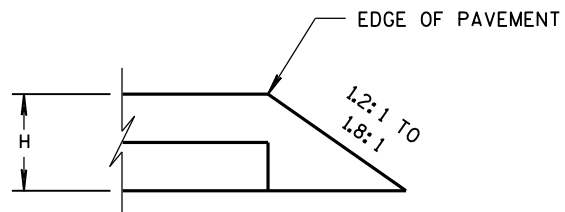
ALTERNATIVE HMA
MOW STRIP DESIGN

GUARDRAIL MOW STRIP

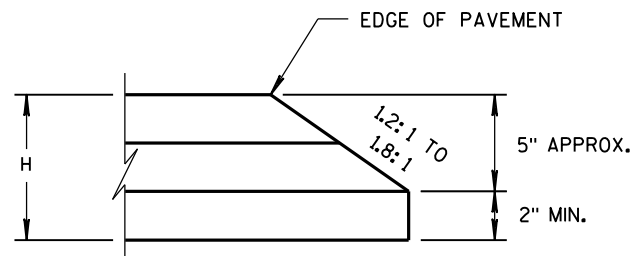
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



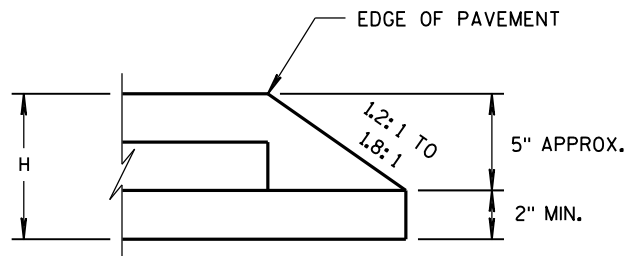
CONSTRUCTED WITH FINAL TWO LAYERS
FOR H 5" OR LESS



CONSTRUCTED WITH FINAL LAYER
FOR H 5" OR LESS

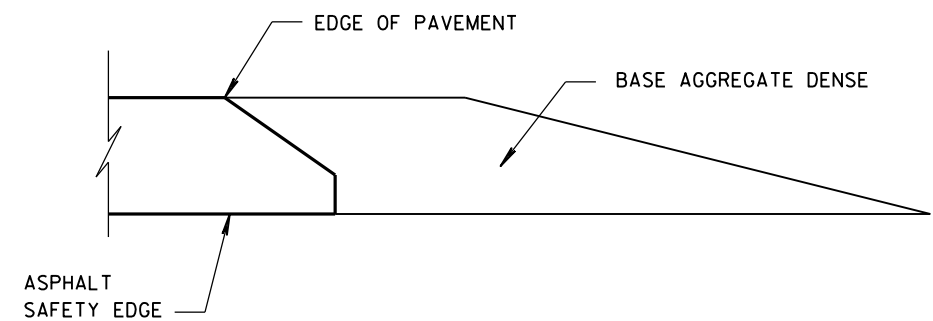


CONSTRUCTED WITH FINAL TWO LAYERS
FOR H GREATER THAN 5"



CONSTRUCTED WITH FINAL LAYER
FOR H GREATER THAN 5"

HMA PAVEMENT AND HMA OVERLAYS



FINISHED SHOULDER AGGREGATE PLACEMENT

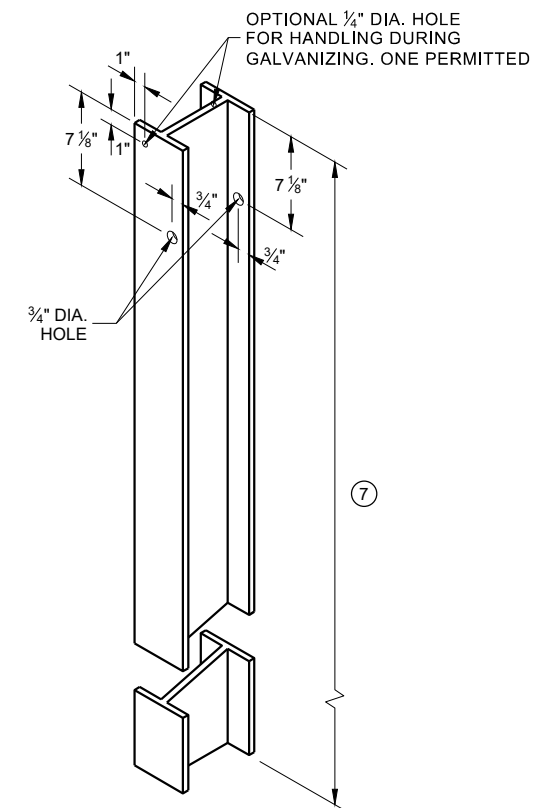
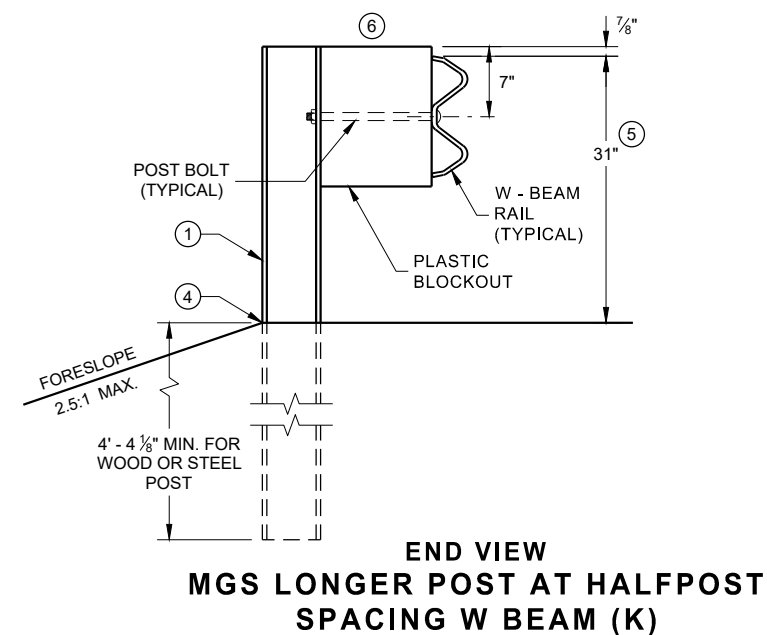
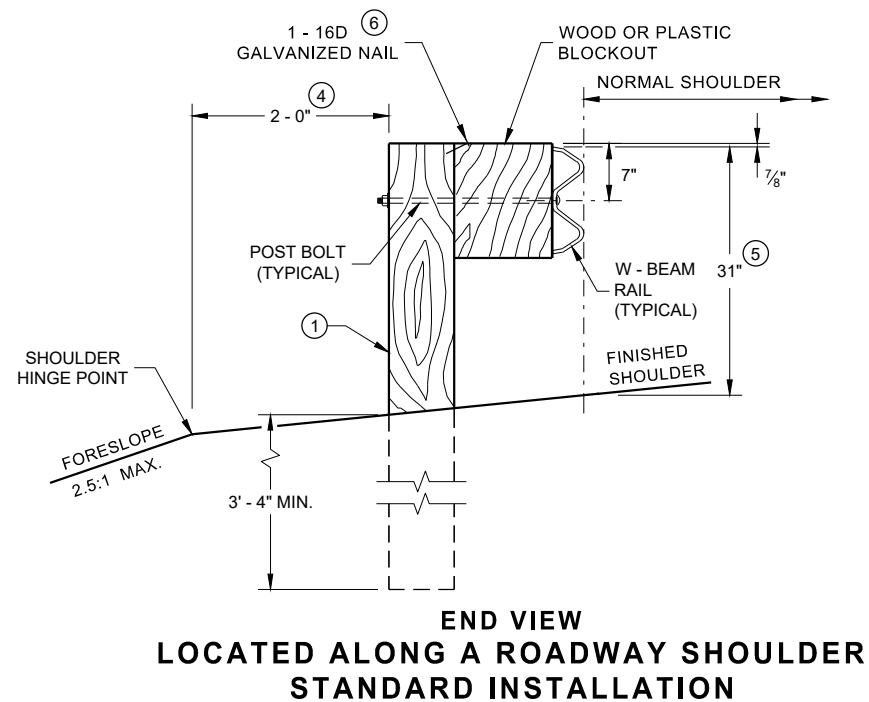
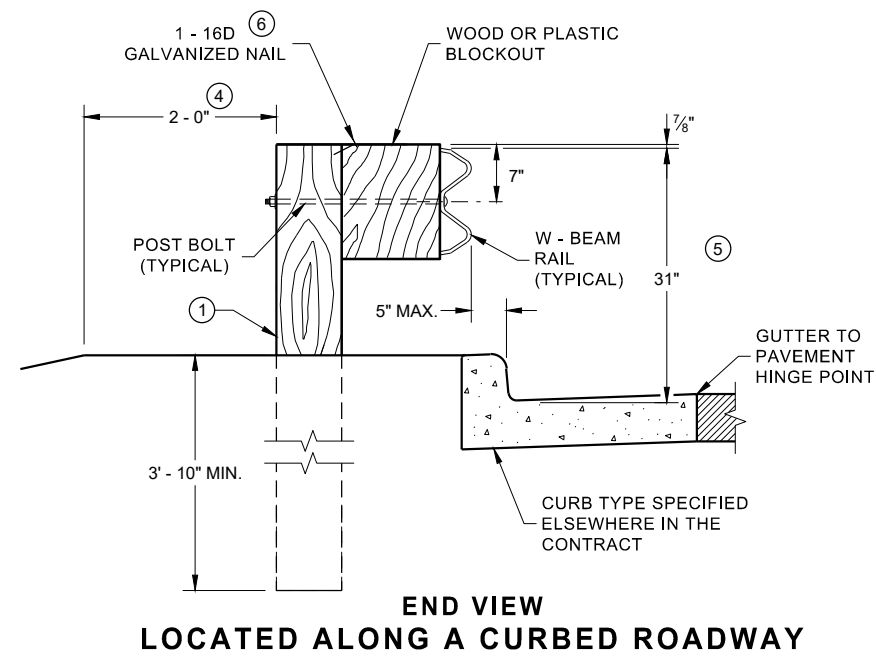
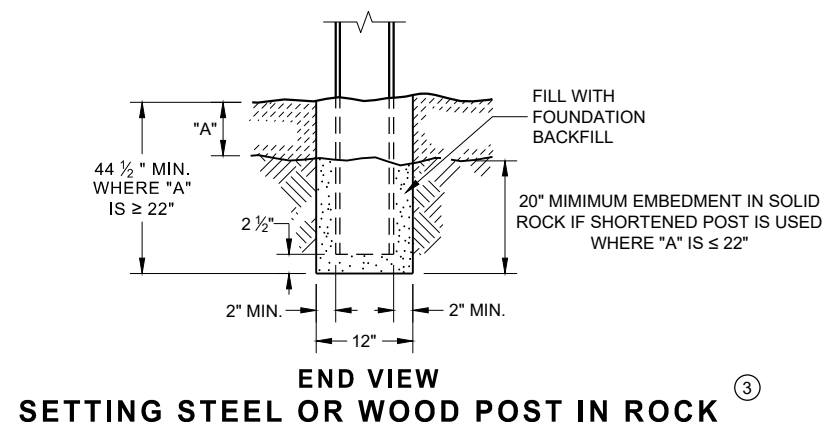
SAFETY EDGE_{SM}

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

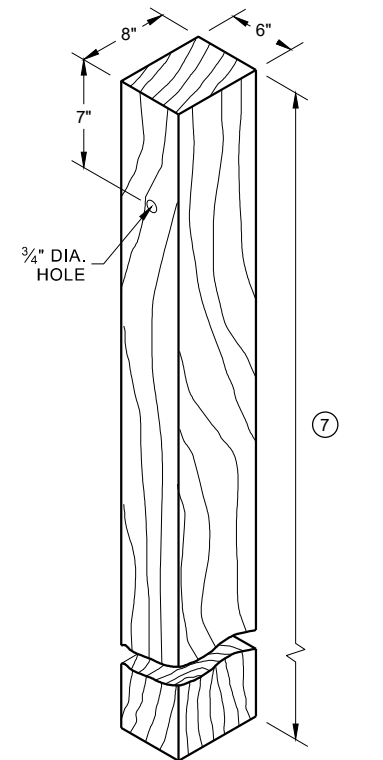
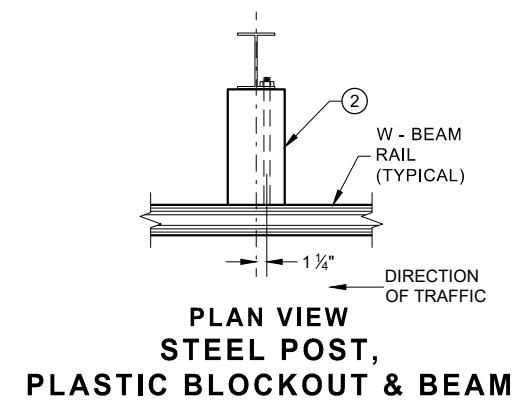
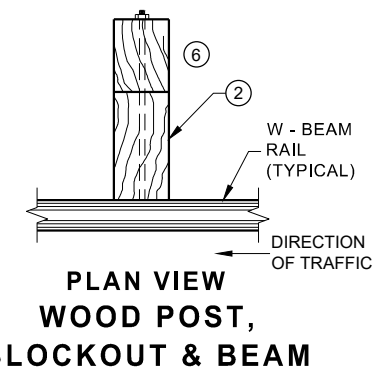
APPROVED
11/30/2012
DATE
FHWA

/s/ Jerry H. Zogg
ROADWAY STANDARDS DEVELOPMENT
ENGINEER

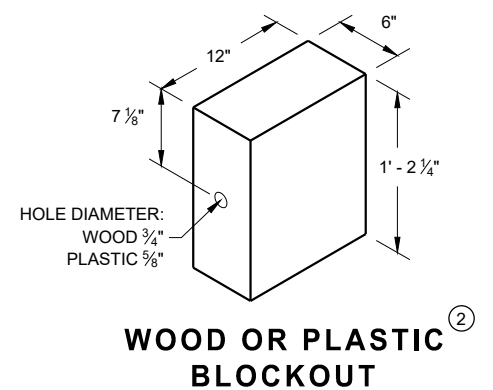
- ① WOOD OR STEEL POSTS (w6X9 OR w6X8.5) MAY BE USED. DO NOT INTERMIX WOOD AND STEEL POSTS. INSTALL STEEL POSTS WITH HOLES ON APPROACHING TRAFFIC SIDE.
- ② USE WOOD OR APPROVED PLASTIC BLOCKOUTS. WOOD BLOCKOUTS MAY BE CONSTRUCTED OUT OF TWO OR MORE WOOD BLOCKOUTS. SEE ALTERNATE WOOD BLOCKOUT DETAIL. DIMENSIONS OF APPROVED PLASTIC BLOCKOUTS MAY VARY.
- ③ IF ROCK IS ENCOUNTERED DURING EXCAVATION, PROVIDE A HOLE 12 INCHES IN DIAMETER EXTENDING 30 INCHES DEEP INTO THE ROCK. PLACE APPROXIMATELY 2 1/2" INCHES OF GRANULAR MATERIAL IN THE BOTTOM OF THE HOLE. CUT THE POSTS TO LENGTH AND INSTALL. BACKFILL WITH EXCAVATED MATERIAL AND COMPACT. BACKFILL IS TO BE FREE OF LARGE ROCKS.
- ④ WHEN THE DISTANCE FROM BACK OF POST TO SHOULDER HINGE POINT IS LESS THAN 2 FEET INSTALL LONGER POST AT HALF POST SPACING (K).
- ⑤ FOR NEW MGS INSTALLATION TOP OF W-BEAM RAIL TOLERANCE IS +1". FOR EXISTING MGS INSTALLATION TOP OF W-BEAM IS BETWEEN 27 3/4" TO 32".
- ⑥ WHEN USING STEEL POST AND WOOD BLOCKOUTS INSTALL FOUR 16D GALVANIZED NAILS. INSTALL NAILS AT THE BACK CORNERS OF THE BLOCK AND BEND THE NAILS OVER THE FLANGE OF THE STEEL POST.
- ⑦ TOTAL POST LENGTH FOR TYPE K IS 7' - 0".
TOTAL POST LENGTH FOR OTHER MGS TYPES IS 6' - 0".

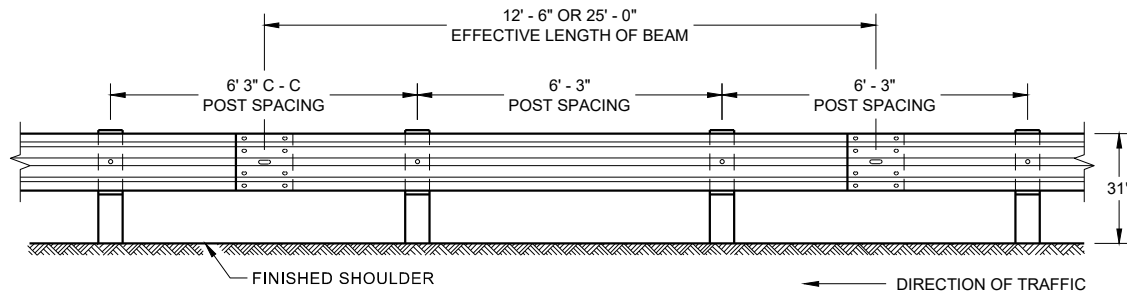


**STEEL POST & HOLE
PUNCHING DETAIL
(W 6 X 9) ①**

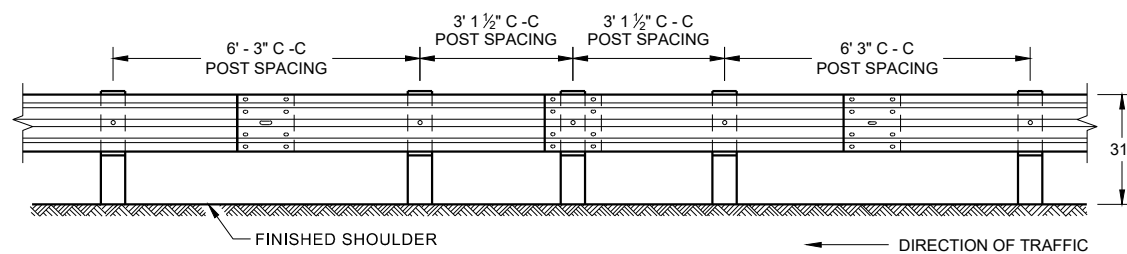


WOOD POST (6" X 8") NOMINAL ⁽¹⁾

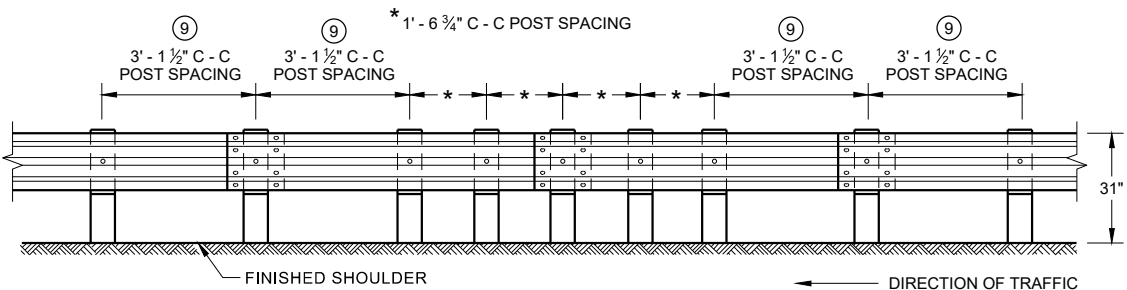




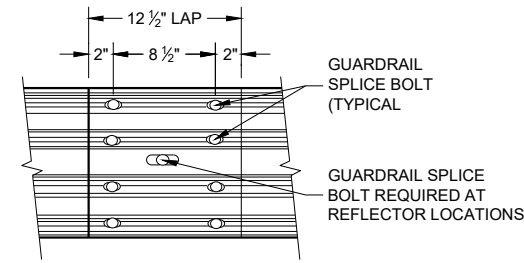
**FRONT VIEW
POST SPACING STANDARD INSTALLATION**



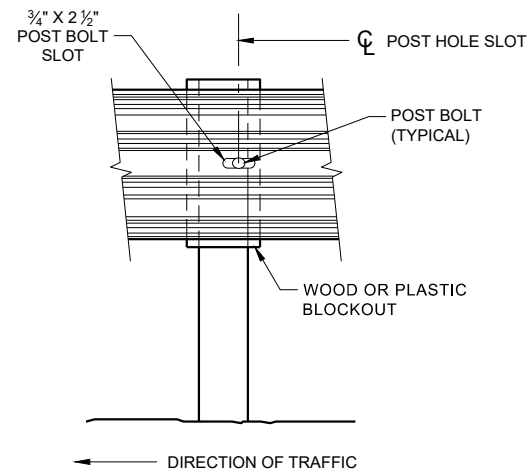
**FRONT VIEW
HALF POST SPACING (HS) AND
HALF POST SPACING WITH LONGER POSTS (K)**



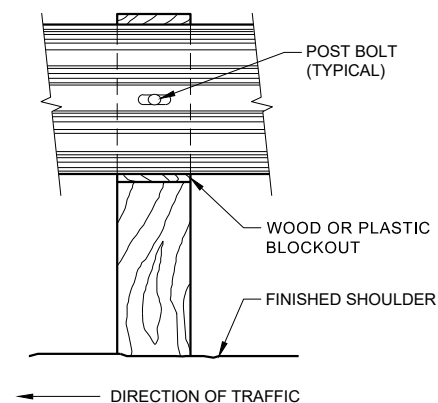
**FRONT VIEW
QUARTER POST SPACING (QS)**



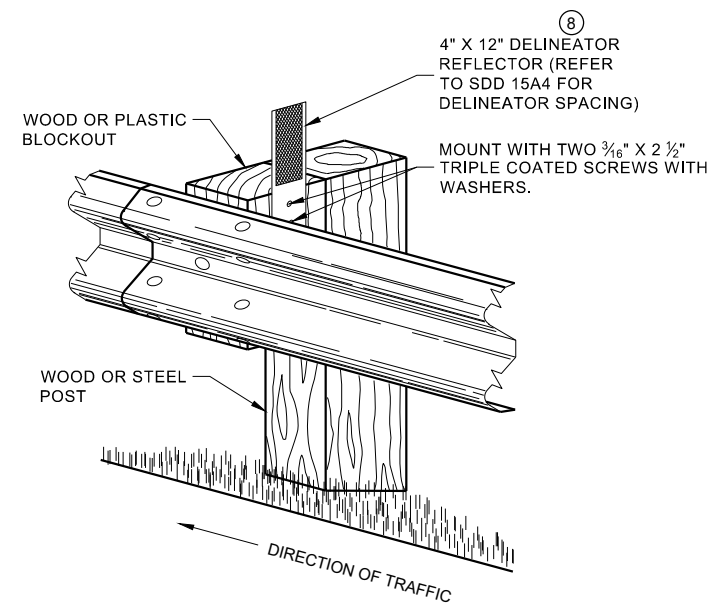
**FRONT VIEW
MID-SPAN BEAM SPLICE**



FRONT VIEW AT STEEL POST



FRONT VIEW AT WOOD POST



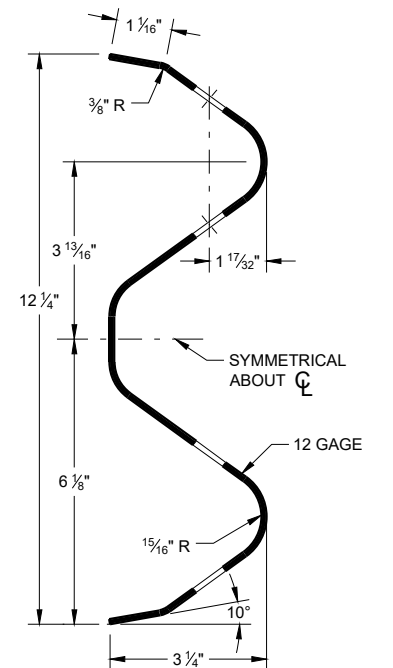
**ONE SIDED REFLECTOR DETAIL
AND TYPICAL INSTALLATION**

GENERAL NOTES

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

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

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



SECTION THRU W-BEAM RAIL

**MIDWEST GUARDRAIL SYSTEM
(MGS) GUARDRAIL**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



NOTE:

-

POST BOLT TABLE

Technical drawing of a 1/2 inch diameter ball bearing. The drawing shows a cross-section of the bearing with the following dimensions:

- Width: $\frac{5}{8}$ inch
- Height: $\frac{15}{16}$ inch
- Diameter: $1 \frac{5}{16}$ inch

ALTERNATE BOLT HEAD



1" X $\frac{1}{16}$ " DEEP
RECESS BOTH SIDES

$\frac{5}{8}$ " - 11 MODIFIED
HEAVY HEX NUT

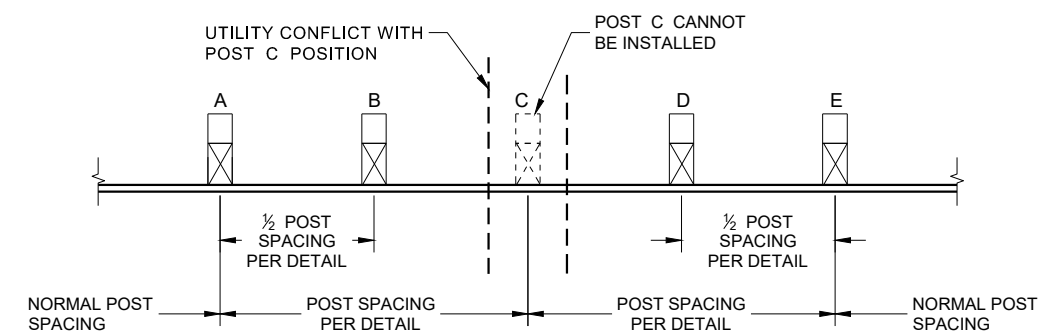
$\frac{11}{16}$ "

$1 \frac{5}{16}$ "

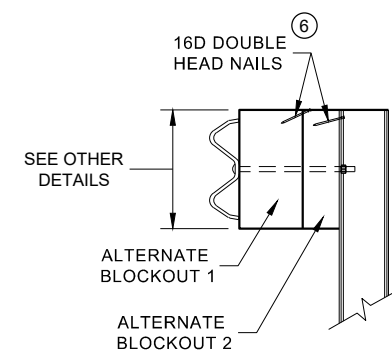
POST BOLT, SPLICE BOLT AND RECESS NUT

-
- The diagram shows a road with a dashed center line. A vehicle, represented by a rectangle with diagonal hatching, is moving from right to left, as indicated by an arrow labeled "DIRECTION OF TRAFFIC". The road surface is uneven, with a series of small bumps that increase in height as the vehicle approaches a larger rectangular obstacle labeled "OBSTACLE".

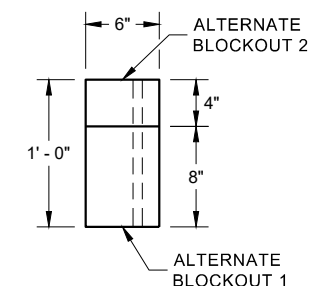
PLAN VIEW
BEAM LAPPING DETAIL



POST DRIVING FOR CONTINUOUS UNDERGROUND OBSTRUCTION



SIDE VIEW

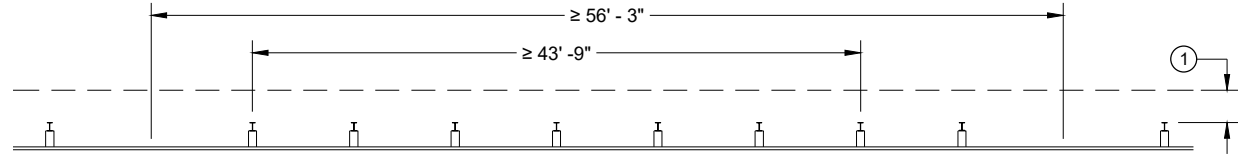


PLAN VIEW

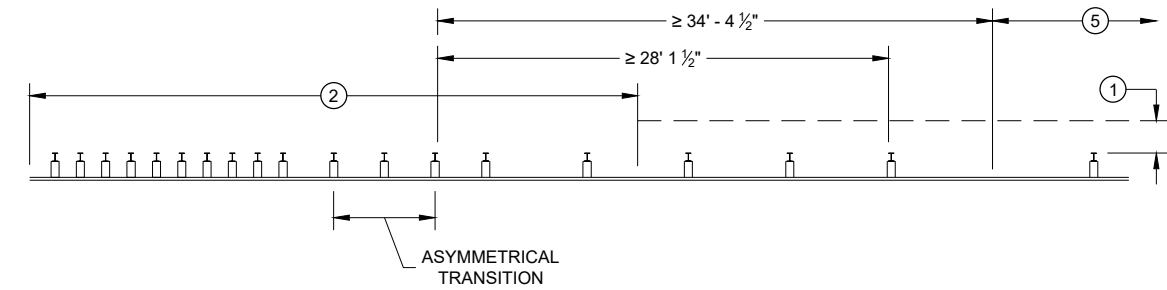
ALTERNATE WOOD BLOCKOUT DETAIL

MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL

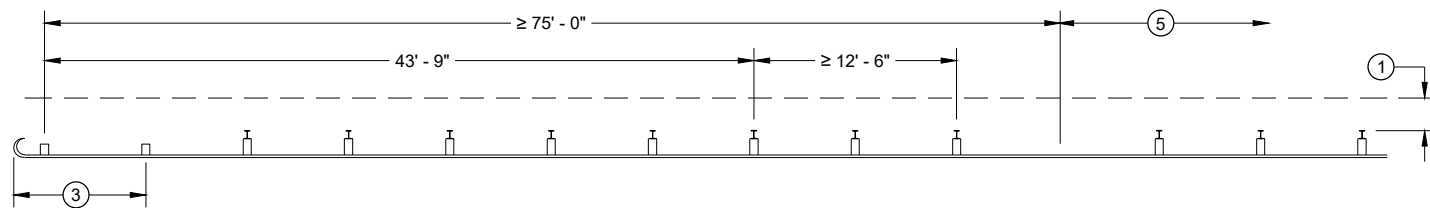
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



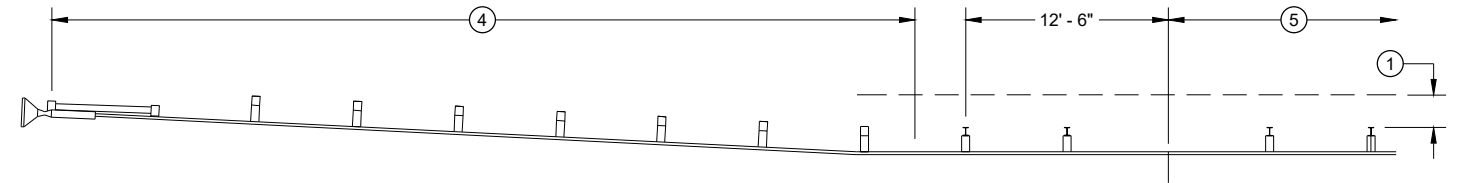
MISSING POST IN NORMAL BEAM GUARD RUN



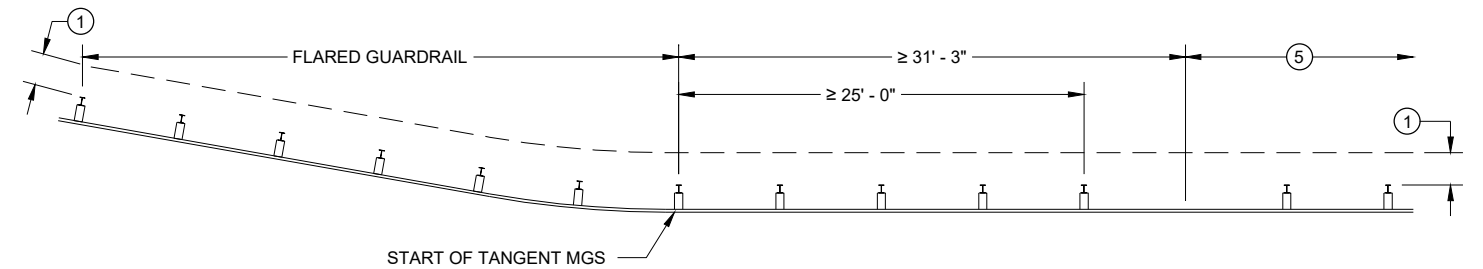
MISSING POST NEAR APPROACH THRIE BEAM TRANSITION



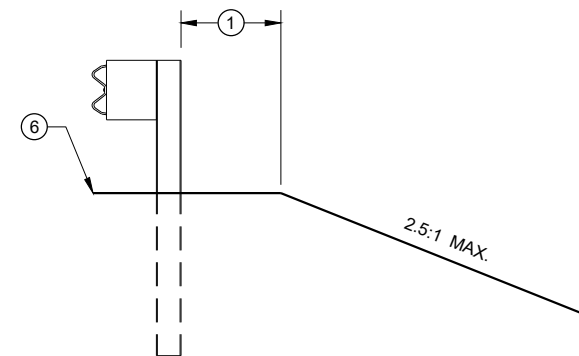
MISSING POST IN NORMAL BEAM GUARD RUN
NEAR TYPE 2 TERMINAL



MISSING POST IN NORMAL BEAM GUARD RUN NEAR EAT



MISSING POST IN NORMAL BEAM GUARD RUN
NEAR FLARED BEAM GUARD



CROSS SECTION VIEW

- ① MINIMUM OF 2 FEET OF GRADING BEHIND POST.
- ② SEE SDD 14B45 FOR MORE DETAILS.
- ③ SEE SDD 14B47 FOR MORE DETAILS.
- ④ SEE SDD 14B44 FOR MORE DETAILS.
- ⑤ SEE MISSING POST IN NORMAL BEAM GUARD RUN FOR DISTANCE TO NEXT MISSING POST AND AREA FOR WELL DRAINED, COMPACTED SOILS.
- ⑥ SEE PLAN FOR SHOULDER DESIGN.

**MIDWEST GUARDRAIL SYSTEM
(MGS) GUARDRAIL**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

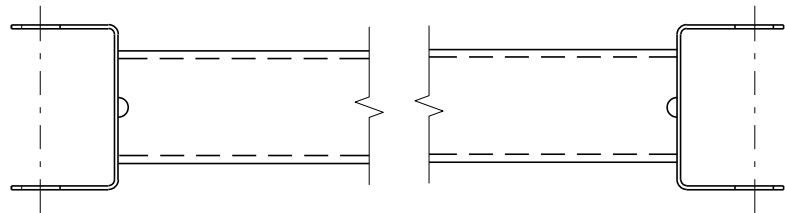
- (A) THE SLOPE IN THE AREA BOUNDED BY THE GRADELINE, THE HINGE POINT LINE (HPL) AND THE CLEAR ZONE LIMITS (CZL) SHALL BE 4:1 OR FLATTER.
- (B) AFTER FINAL ASSEMBLY, RECHECK CABLE TO BE SURE IT IS TAUT AND HAS NOT RELAXED
- (C) DIFFERENT MANUFACTURERS REQUIRE DIFFERENT PERFORATED W - BEAM RAIL END PANELS.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

DIMENSIONS MAY VARY, MANUFACTURER'S INFORMATION.

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

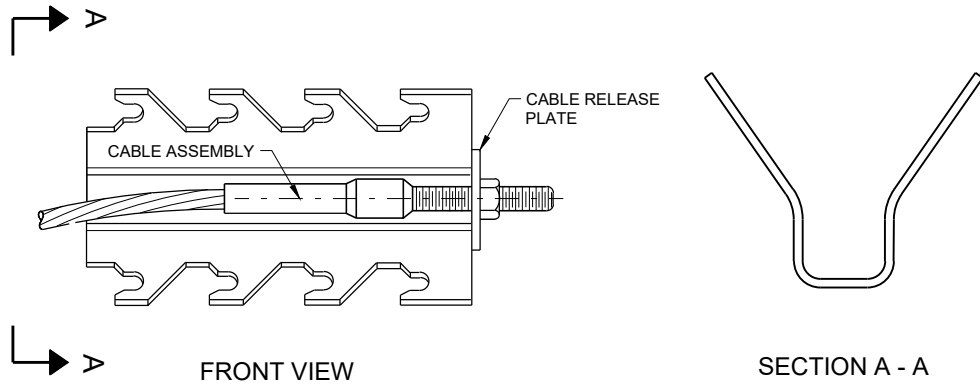


STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

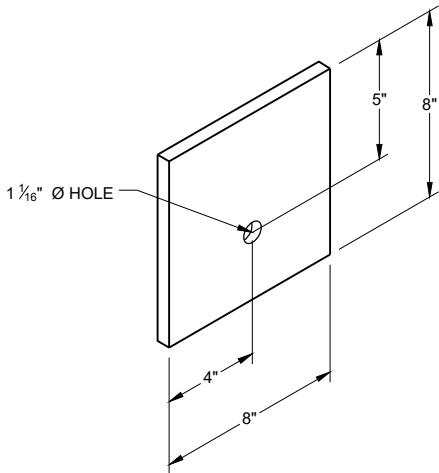


GENERIC GROUND STRUT^⑨ [Ⓔ]

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



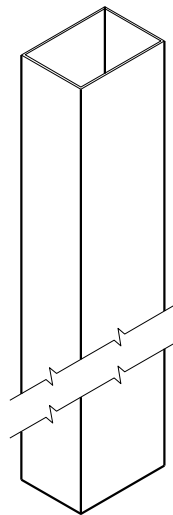
GENERIC ANCHOR CABLE BOX^⑨ [Ⓔ]



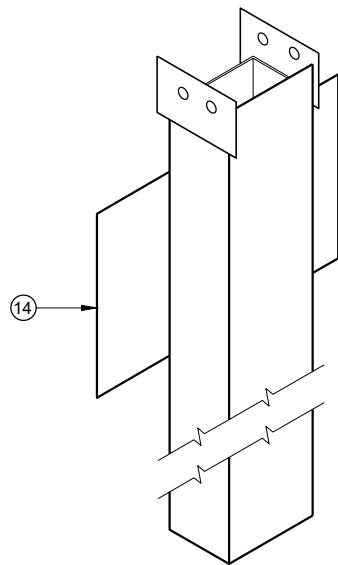
BEARING PLATE^⑥ [Ⓔ]

MIDWEST GUARDRAIL SYSTEM
ENERGY ABSORBING TERMINAL
(MGS)

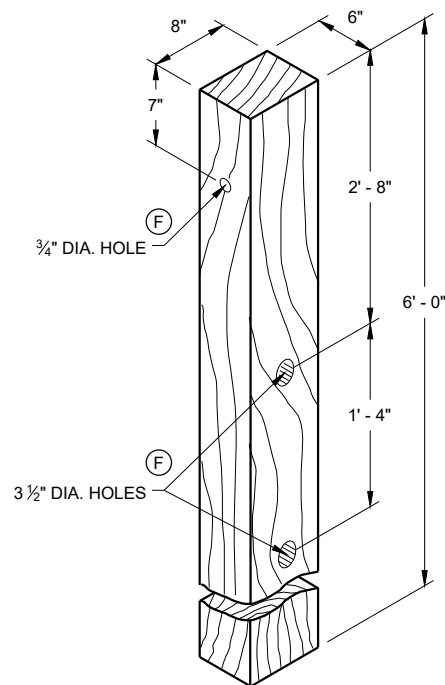
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



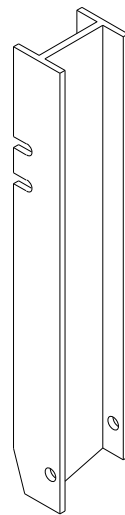
UPPER POST NO. 1^{(1) (E)}



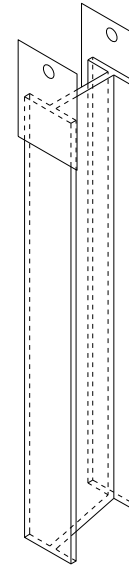
LOWER POST NO. 1^{(2) (E)}



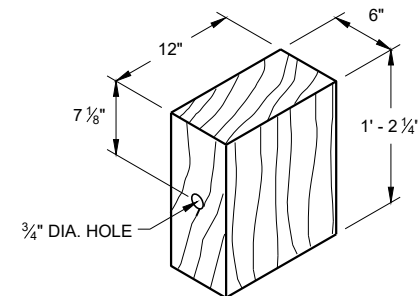
WOOD CRT POST^{(3) (E)}
POSTS NUMBER 3-9



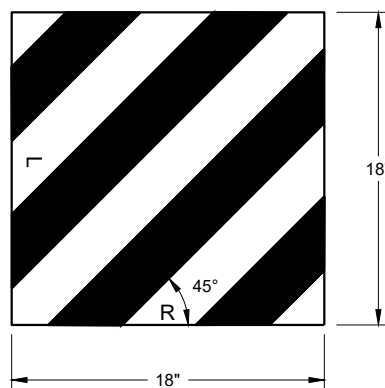
UPPER POST NO. 2^{(15) (E)}



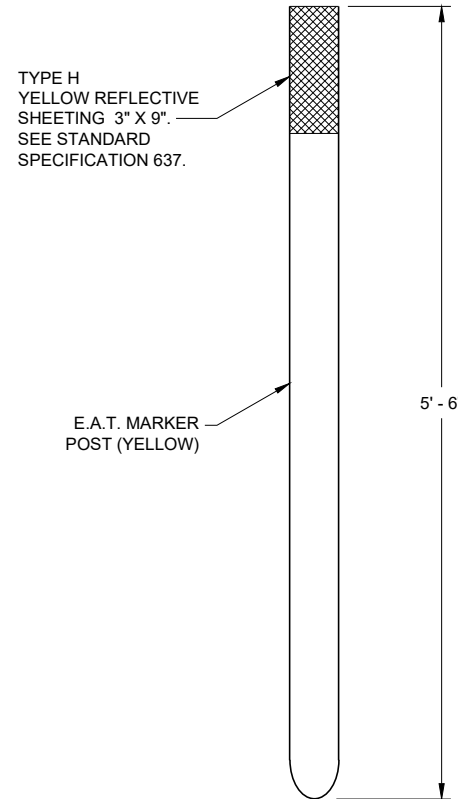
LOWER POST NO. 2^{(16) (E)}



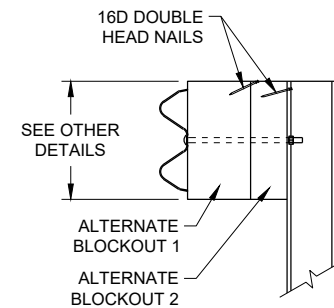
WOOD BLOCKOUT⁽⁴⁾
REQ'D. AT ALL POSTS EXCEPT POST NO'S 1 & 2



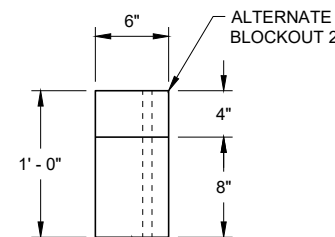
REFLECTIVE SHEETING DETAIL^(E)



E.A.T. MARKER POST⁽¹³⁾



SIDE VIEW



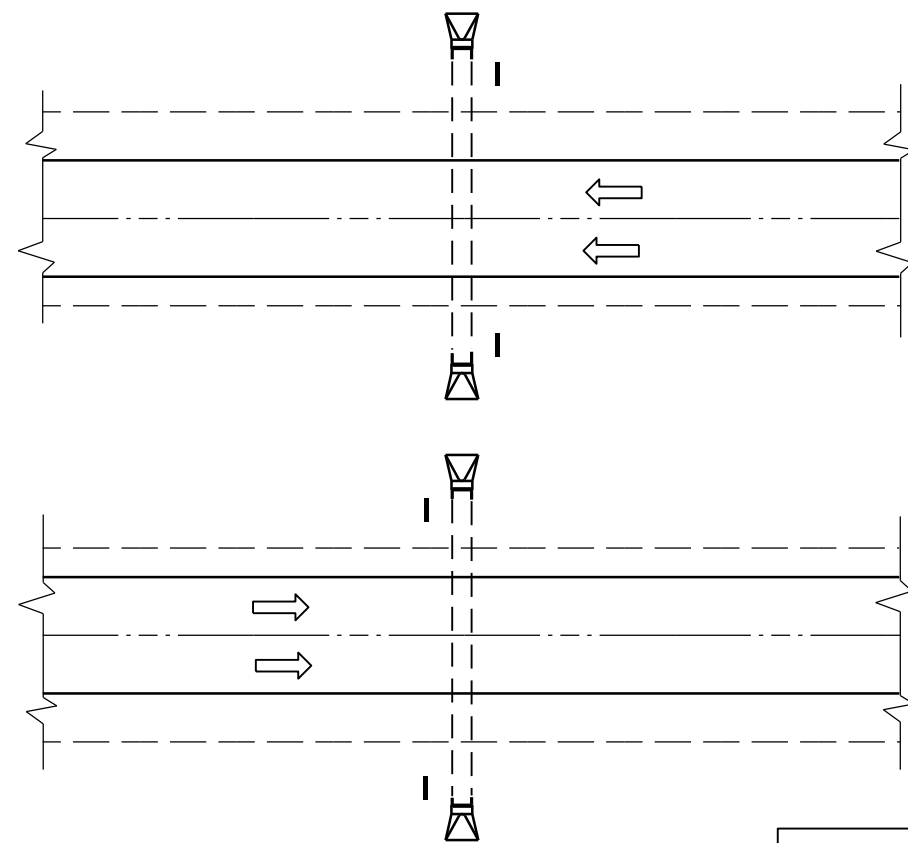
TOP VIEW

ALTERNATE WOOD
BLOCKOUT DETAIL

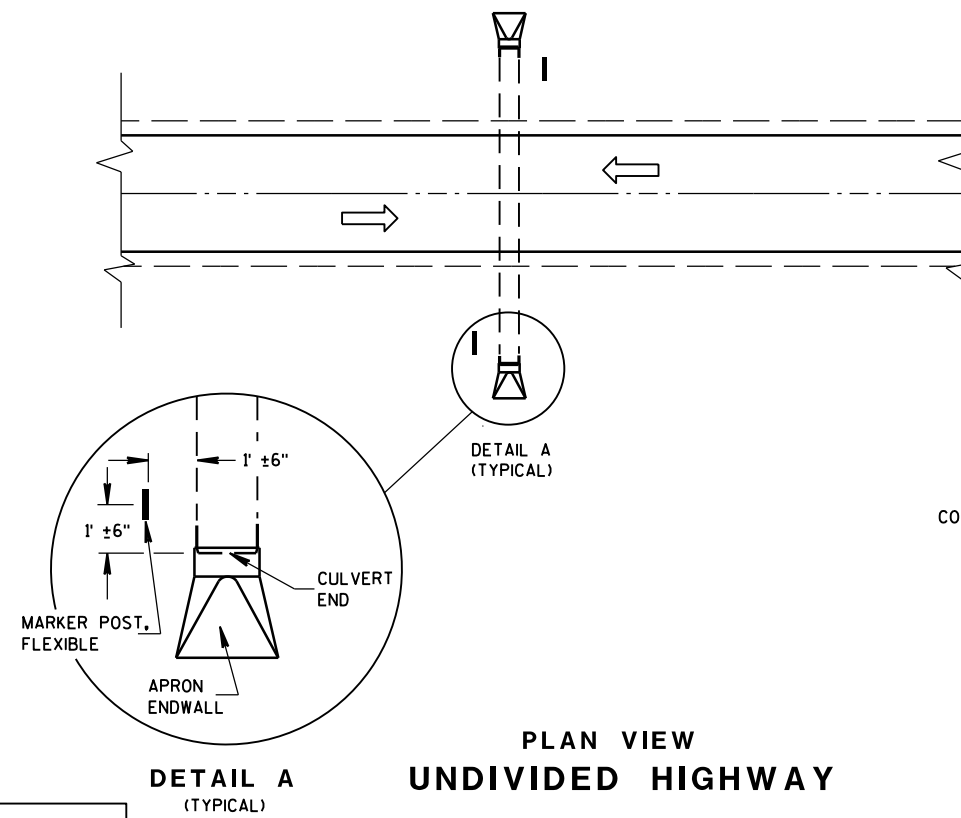
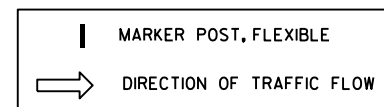
**MIDWEST GUARDRAIL SYSTEM
ENERGY ABSORBING TERMINAL
(MGS)**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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



PLAN VIEW
DIVIDED HIGHWAY



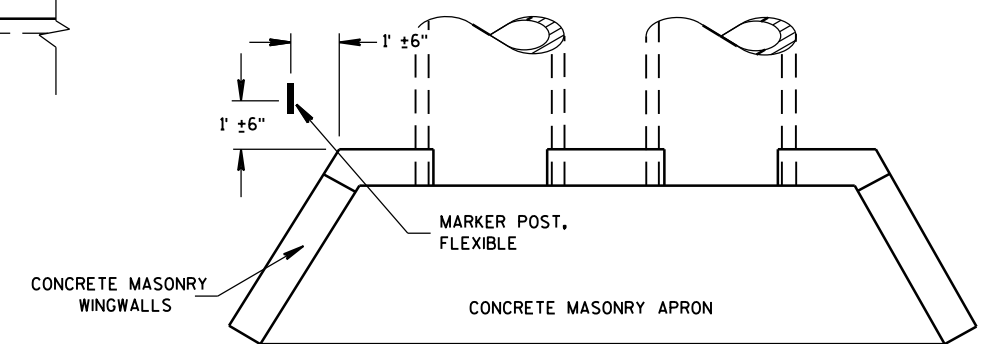
DETAIL A
(TYPICAL)

PLAN VIEW
UNDIVIDED HIGHWAY

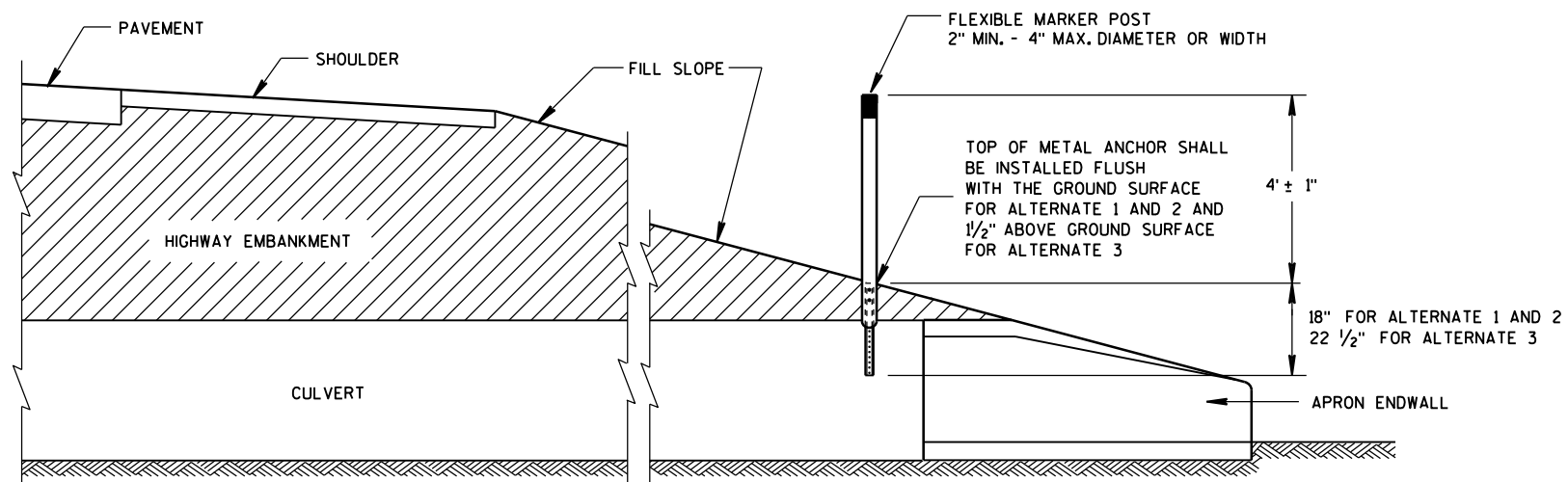
FLEXIBLE MARKER POST LOCATION

GENERAL NOTES

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



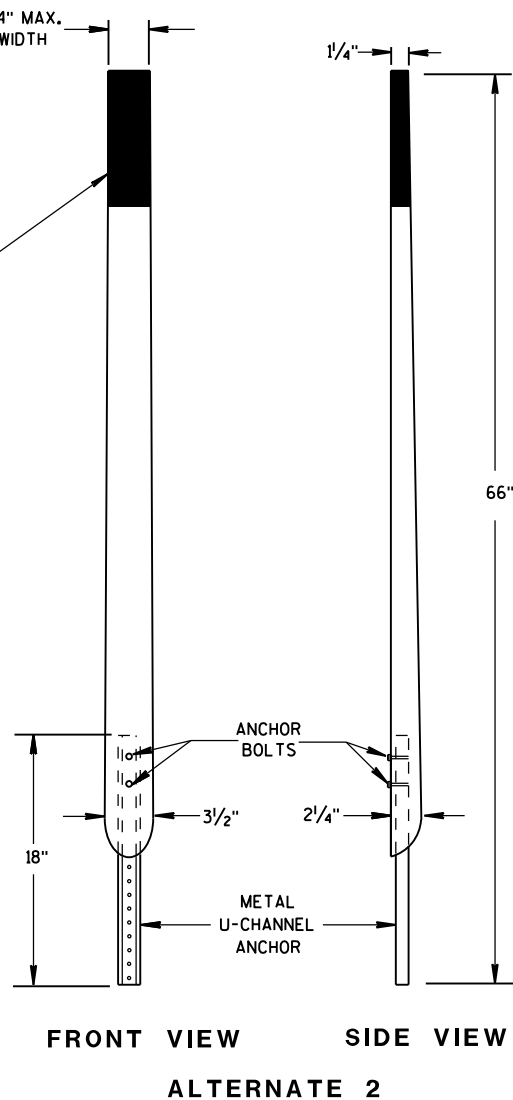
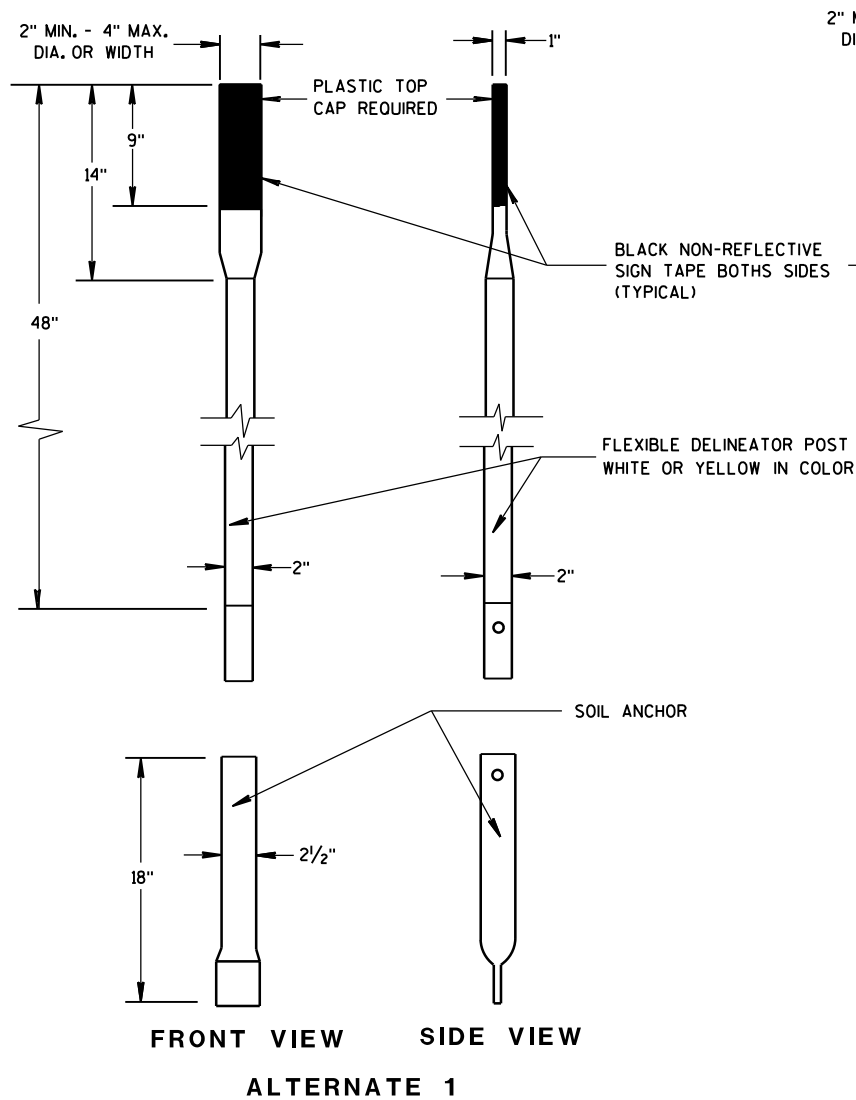
PLAN VIEW
CONCRETE MASONRY ENDWALLS FOR
CULVERT PIPE AND PIPE ARCH



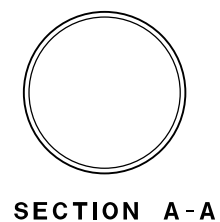
CROSS SECTION
FLEXIBLE MARKER POST

FLEXIBLE MARKER POST
FOR CULVERT END

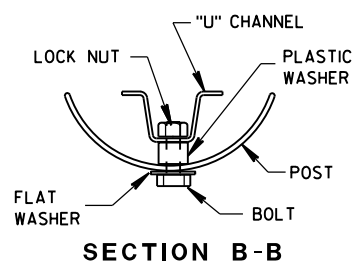
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



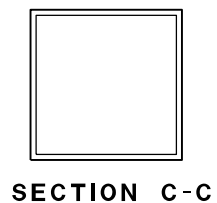
FLEXIBLE MARKER POSTS



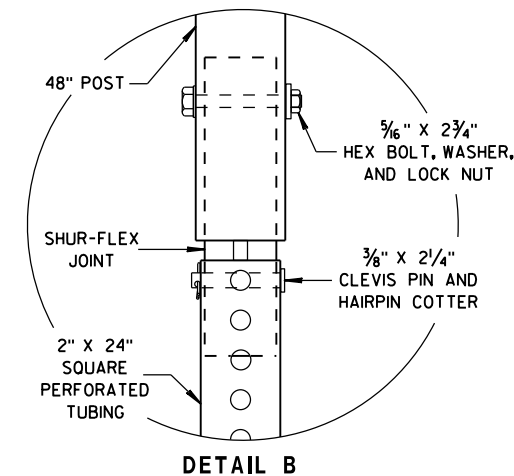
SECTION A-A



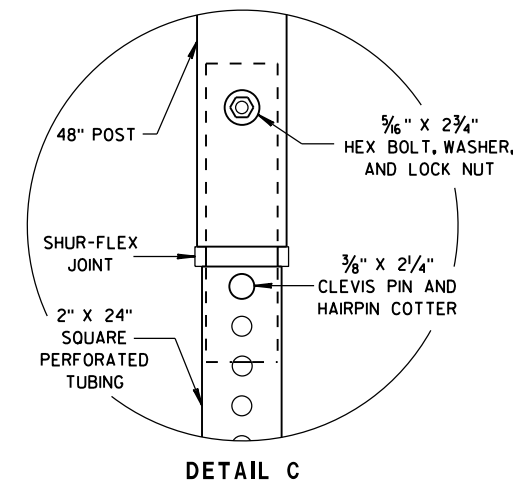
SECTION B-B



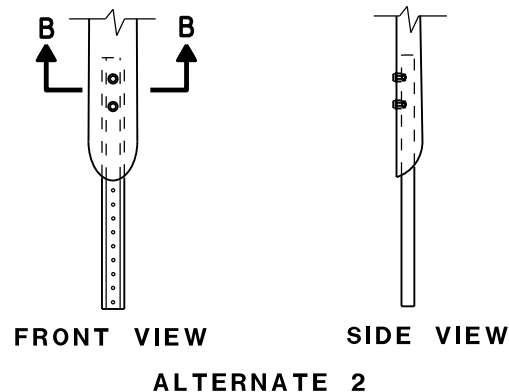
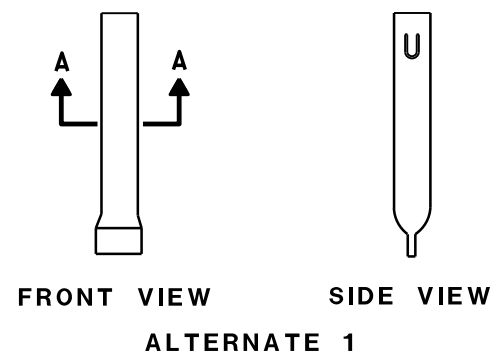
SECTION C-C



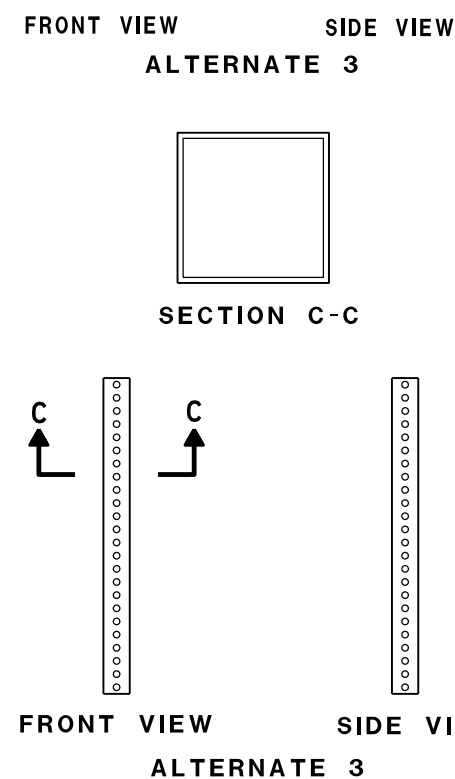
DETAIL B



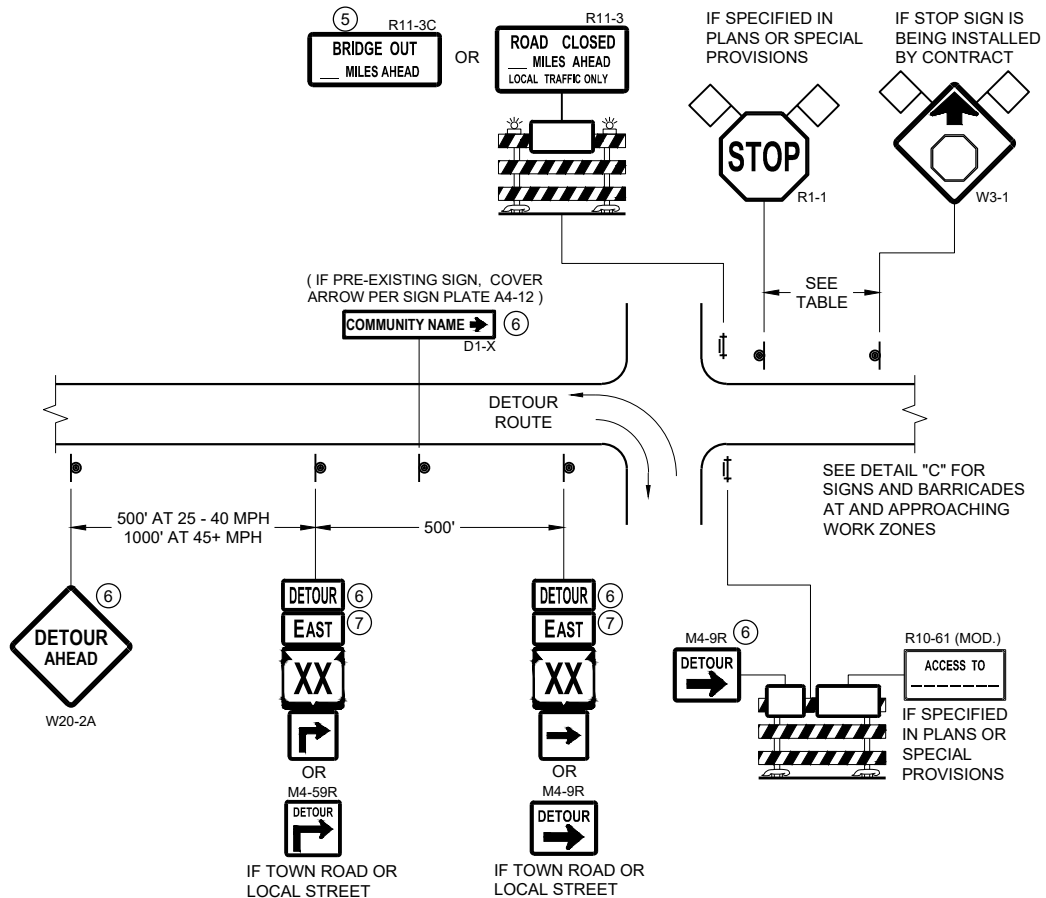
DETAIL C



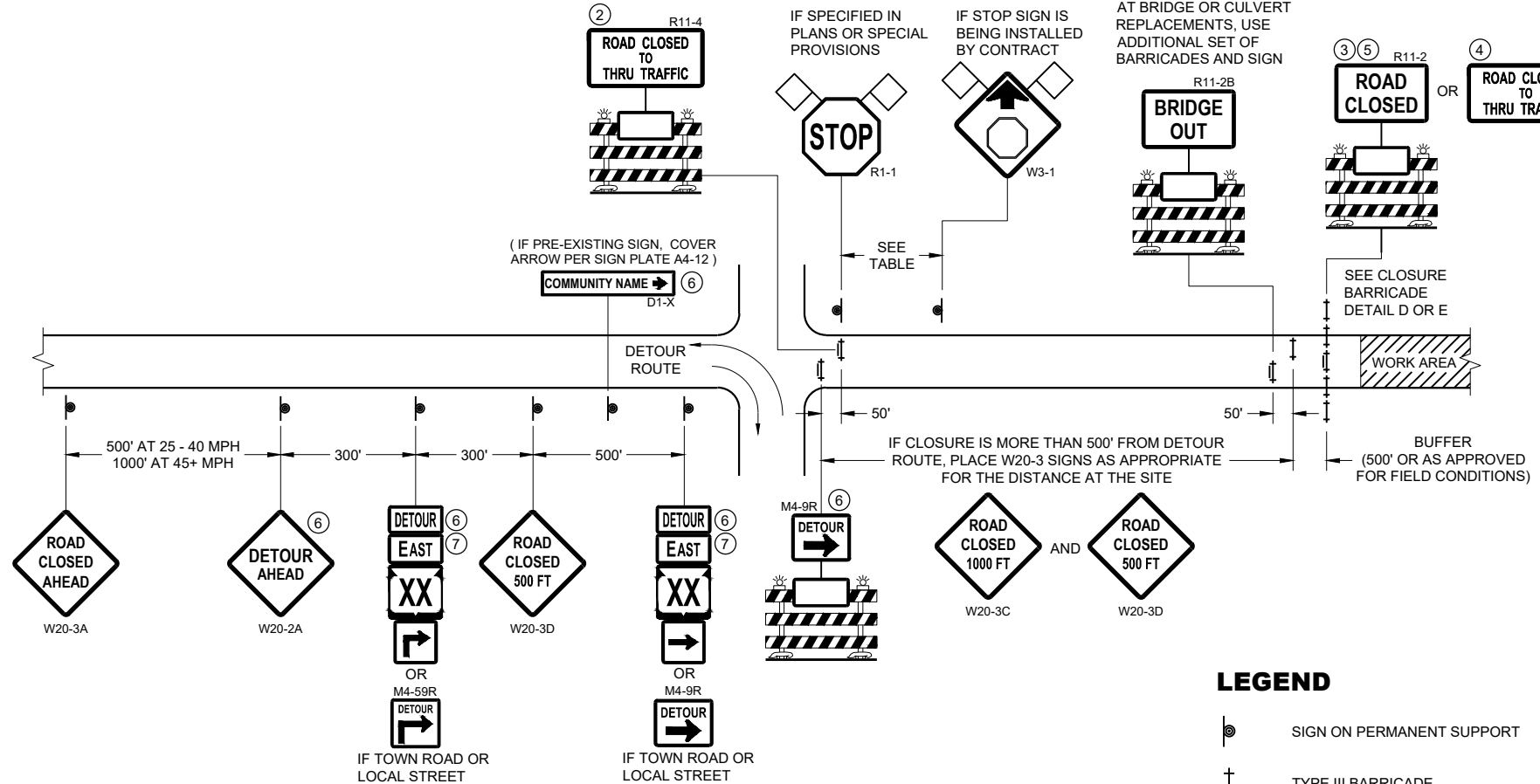
FLEXIBLE MARKER POST ANCHORS



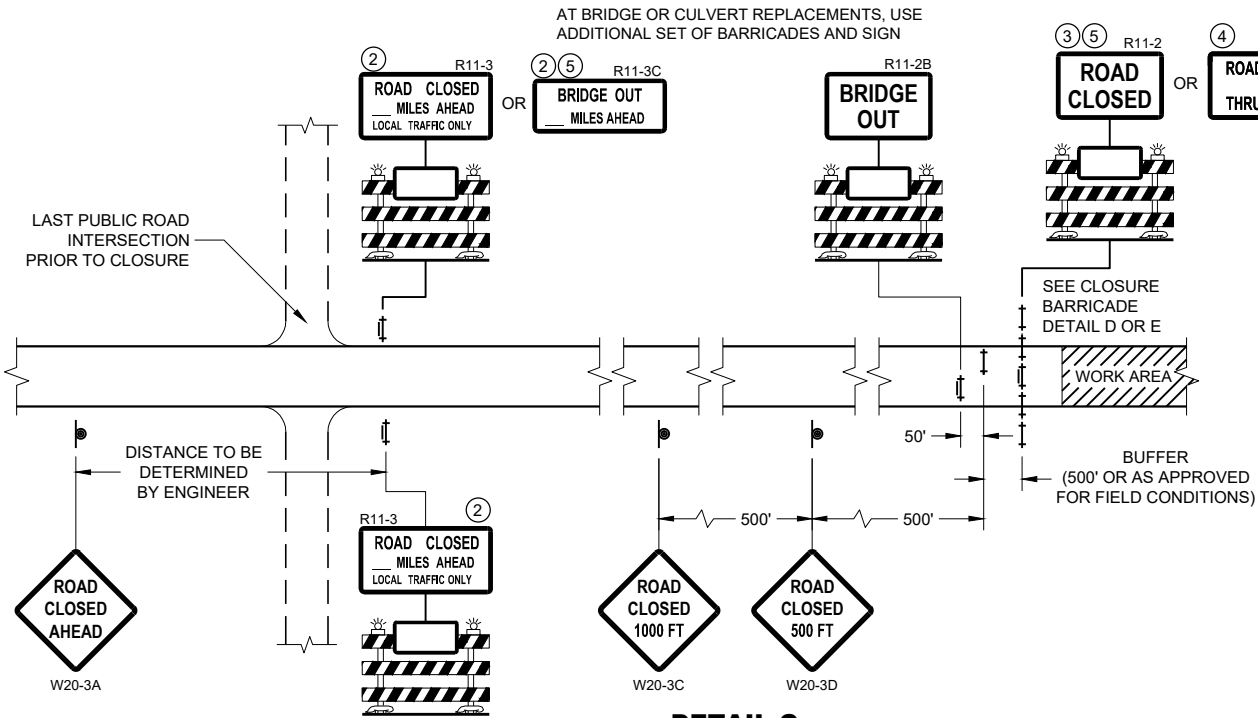
FLEXIBLE MARKER POST FOR CULVERT END	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED 10/1/2012 DATE	/S/ Travis Feltes STATE TRAFFIC ENGINEER OF DESIGN
FHWA	



DETAIL A
MAINLINE CLOSURE WITH POSTED DETOUR
WORK ZONE GREATER THAN OR EQUAL TO 1/2 MILE FROM
DETOUR ROUTE (1000 FEET IF URBAN)



DETAIL B
MAINLINE CLOSURE WITH POSTED DETOUR
WORK ZONE LESS THAN 1/2 MILE FROM
DETOUR ROUTE (1000 FEET IF URBAN)



DETAIL C
MAINLINE CLOSURE, NO POSTED DETOUR

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

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

LEGEND

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

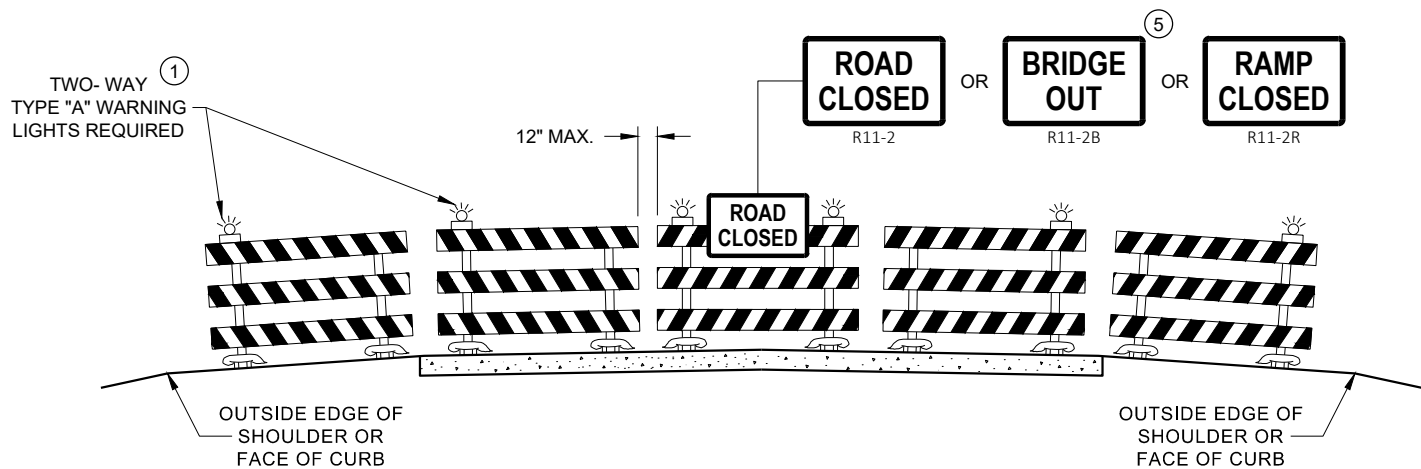
DETOUR M4 - 8
EAST M3 - X
XX OR **XX** OR **COUNTY X**
M1 - 4 M1 - 6 M1 - 5A
→ OR **→**
M05 - 1 M06 - 1

**BARRICADES AND SIGNS
FOR MAINLINE CLOSURES**

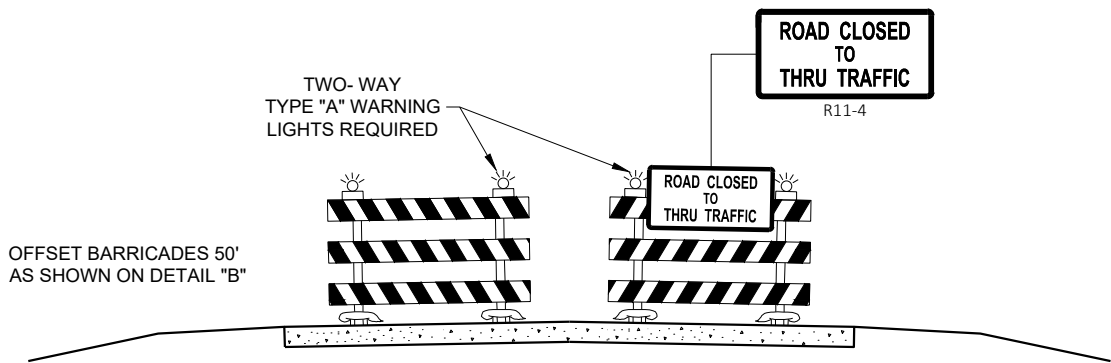
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

FHWA



DETAIL D
ROAD CLOSURE BARRICADE DETAIL
APPROACH VIEW



DETAIL E
LANE CLOSURE BARRICADE DETAIL
APPROACH VIEW

SEE SDD 15C2 - SHEET "a" FOR LEGEND

GENERAL NOTES

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

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

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

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

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

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

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

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

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

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

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

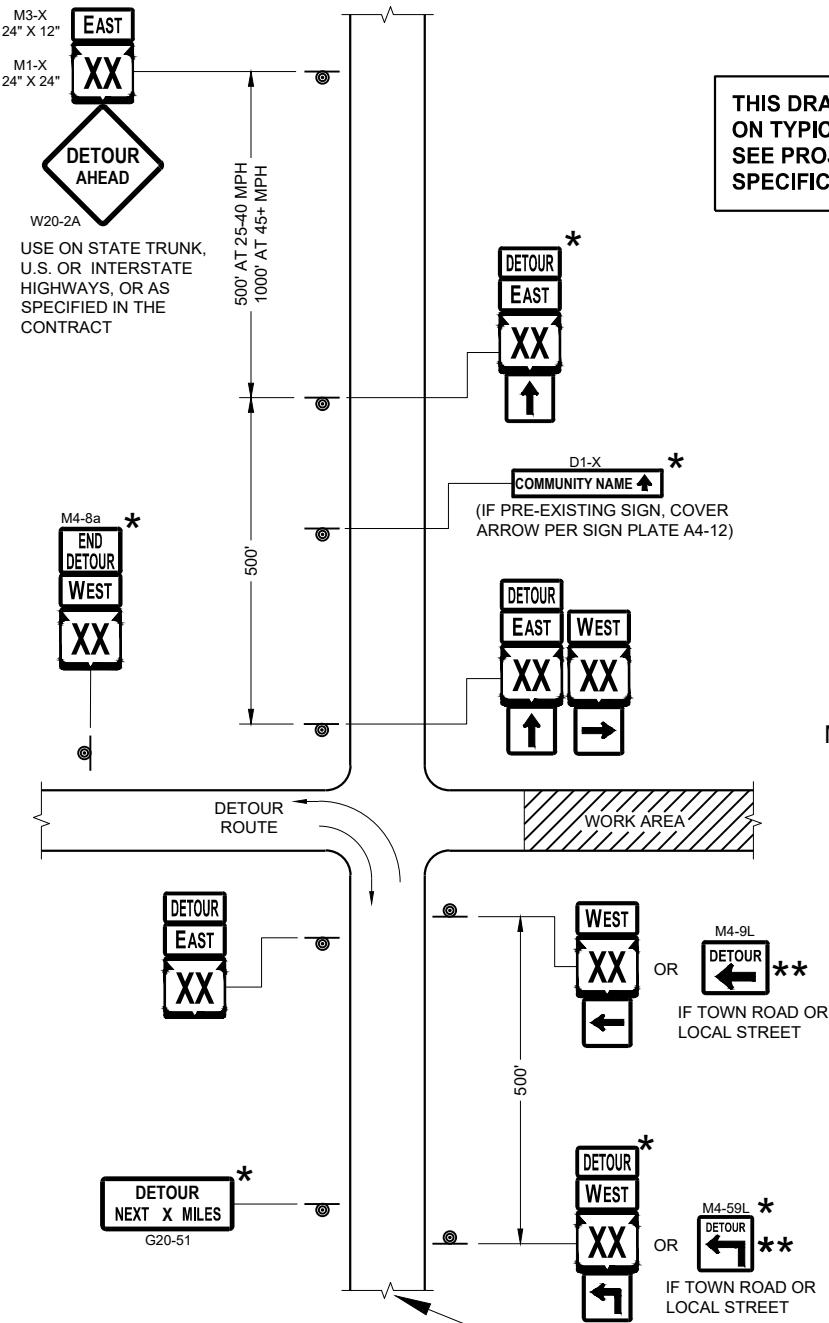
- 1 TWO WARNING LIGHTS SHALL BE PROVIDED ON THE CENTER BARRICADE AND A MINIMUM OF ONE WARNING LIGHT SHALL BE PROVIDED ON EACH OF THE OTHER BARRICADES WITHIN THE ROADWAY LIMITS. SPACING OF THE WARNING LIGHTS SHALL BE UNIFORM TO THE EDGE OF ROADWAY AS SHOWN (APPROX. 8 FOOT LIGHT SPACING).
- 2 THESE SIGNS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

BARRICADES AND SIGNS
FOR
VARIOUS CLOSURES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

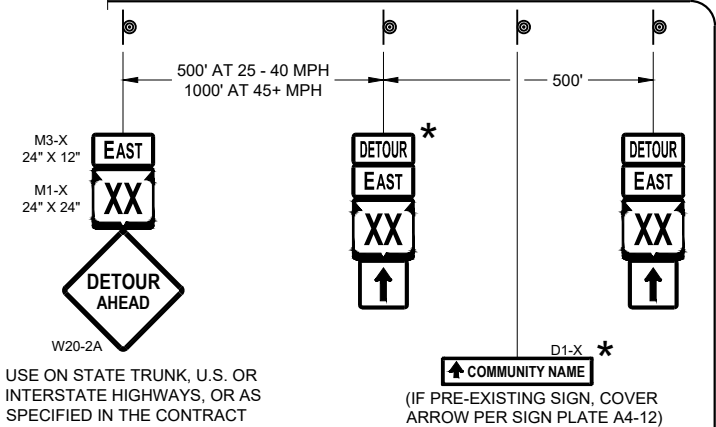
FHWA



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

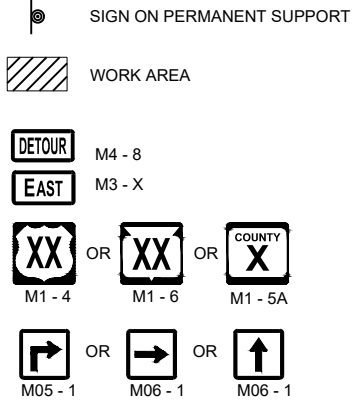
THIS DRAWING PROVIDES GENERAL GUIDANCE
ON TYPICAL DETOUR SIGN LAYOUT AND SPACING.
SEE PROJECT DETOUR SIGNING SHEETS FOR
SPECIFIC DETAILS FOR EACH PROJECT.

MATCH POINT



DETAIL F
DETOUR SIGNING

LEGEND



GENERAL NOTES

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

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

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

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

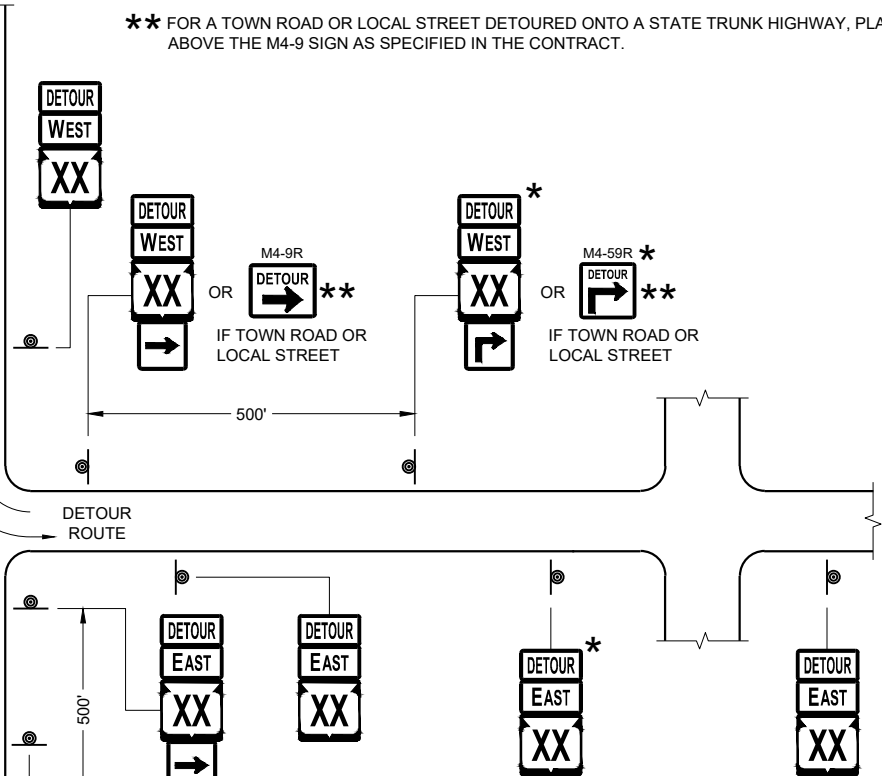
SIGNS THAT WILL BE IN PLACE LESS THAN 7 CONTINUOUS DAYS AND NIGHTS MAY BE MOUNTED ON PORTABLE SUPPORTS.

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

SIGN SIZES SHALL BE AS FOLLOWS:

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

- * OPTIONAL SIGNS. SEE SPECIFIC PROJECT DETOUR SIGNING DETAIL SHEETS.
- ** FOR A TOWN ROAD OR LOCAL STREET DETOURED ONTO A STATE TRUNK HIGHWAY, PLACE A ROAD NAME PLAQUE ABOVE THE M4-9 SIGN AS SPECIFIED IN THE CONTRACT.



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

DETOUR SIGNING
FOR MAINLINE CLOSURES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

FHWA

GENERAL NOTES

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

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

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

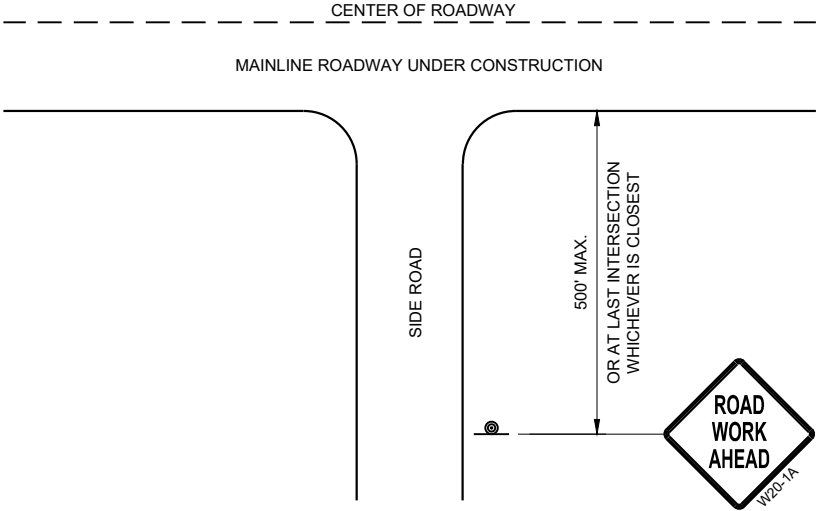
SIGNS THAT WILL BE IN PLACE LESS THAN SEVEN CONTINUOUS DAYS AND NIGHTS MAY BE MOUNTED ON PORTABLE SUPPORTS.

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

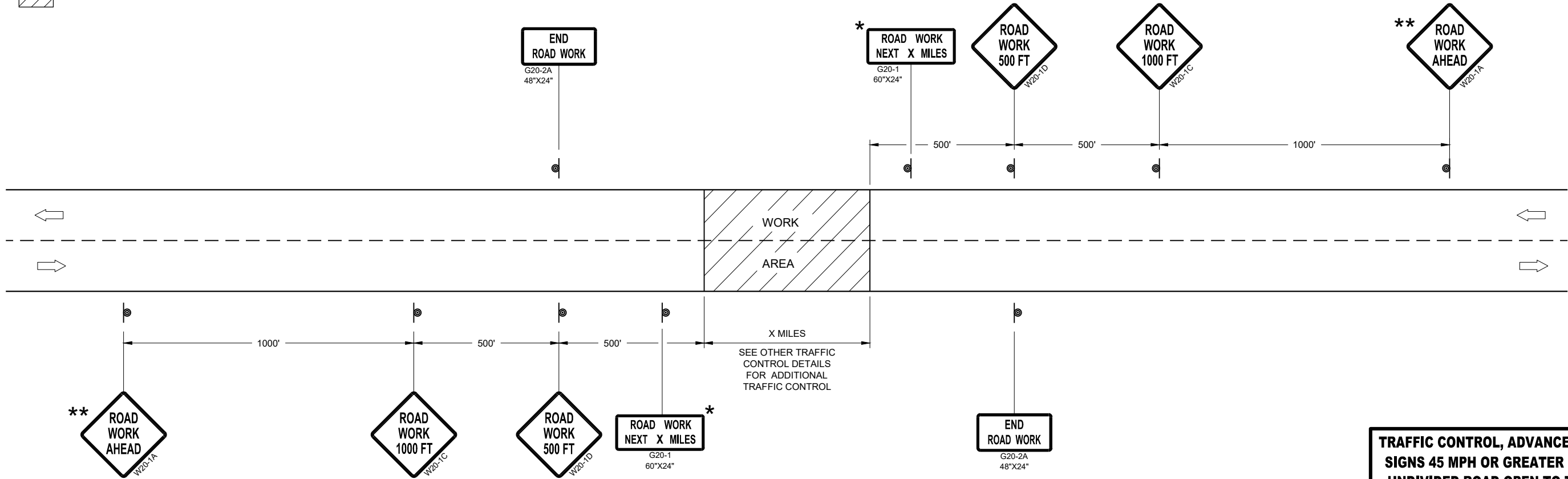
- * OMIT G20-1 SIGNS IF LENGTH OF WORK AREA IS 2 MILES OR LESS
- ** PLACE AN ADDITIONAL W20-1A "ROAD WORK AHEAD" SIGN IF WORK AREA WITHIN THE PROJECT IS SEPARATED BY MORE THAN 2 MILES FROM PREVIOUS WORK AREA.

LEGEND

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



TYPICAL SIDE ROAD APPROACH
WARNING SIGN DETAIL

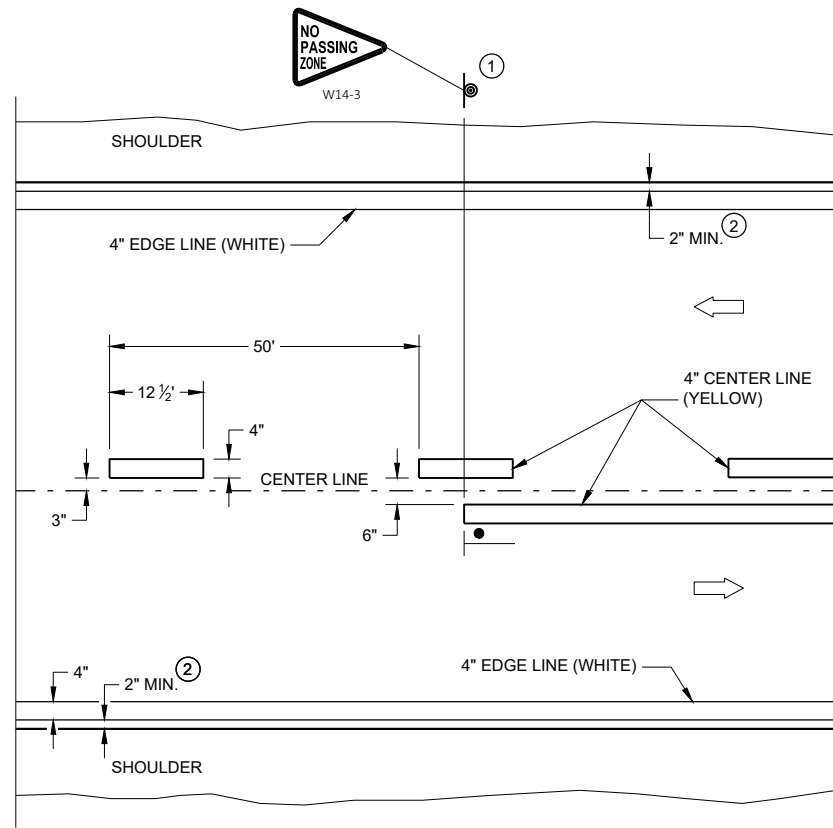


TRAFFIC CONTROL, ADVANCE WARNING SIGNS 45MPH OR GREATER

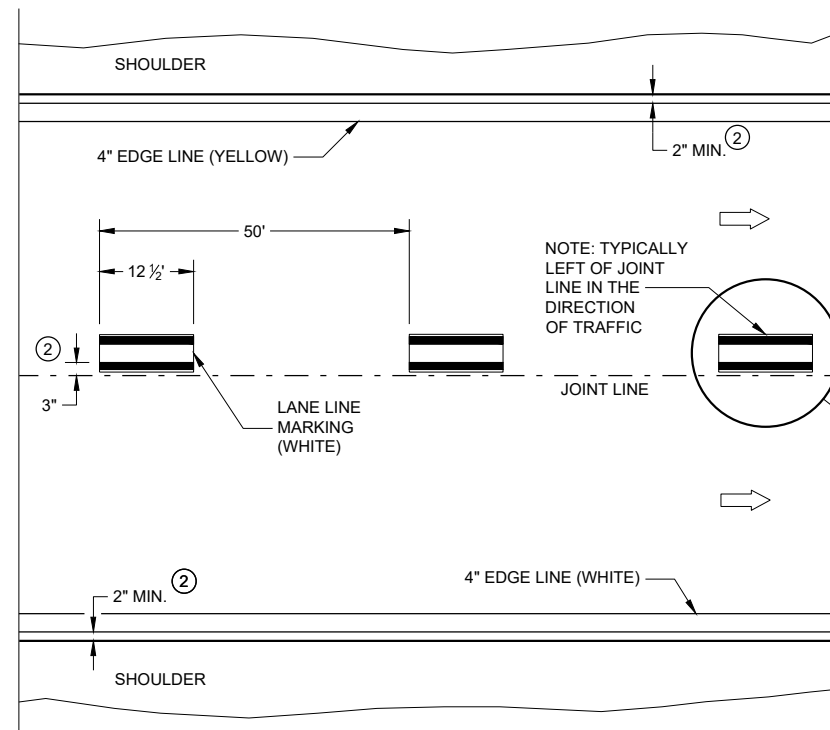
TRAFFIC CONTROL, ADVANCE WARNING
SIGNS 45 MPH OR GREATER TWO-WAY
UNDIVIDED ROAD OPEN TO TRAFFICE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

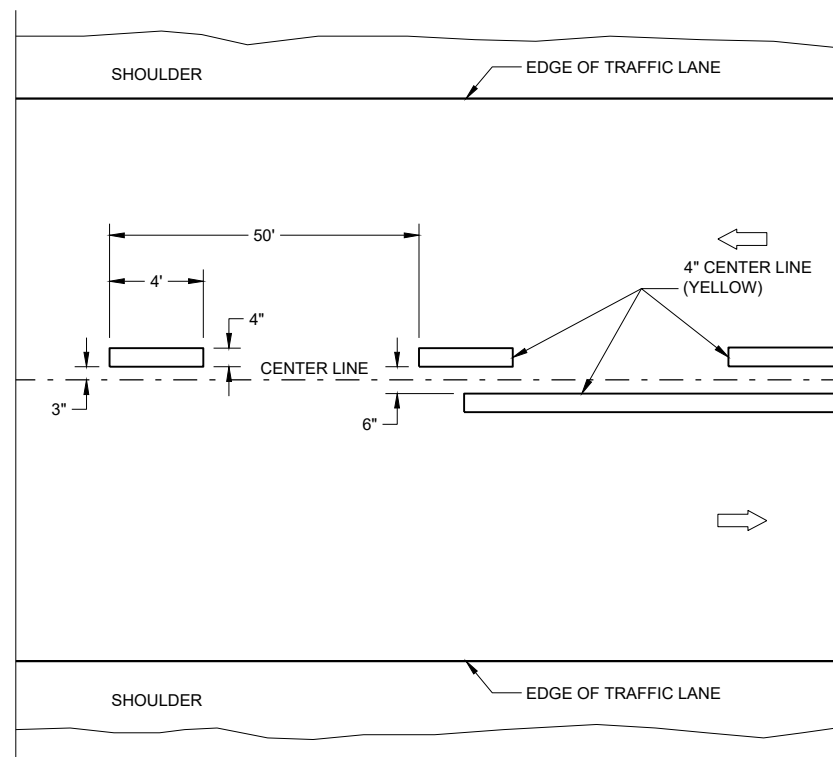


TWO WAY TRAFFIC

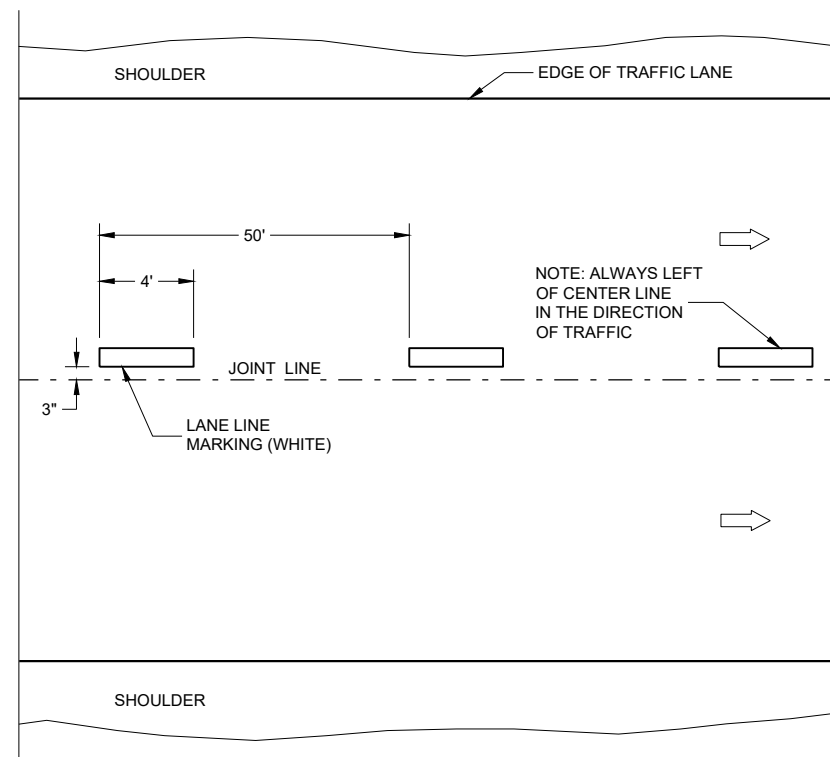


ONE WAY TRAFFIC

PERMANENT PAVEMENT MARKING



TWO WAY TRAFFIC



ONE WAY TRAFFIC

TEMPORARY PAVEMENT MARKING

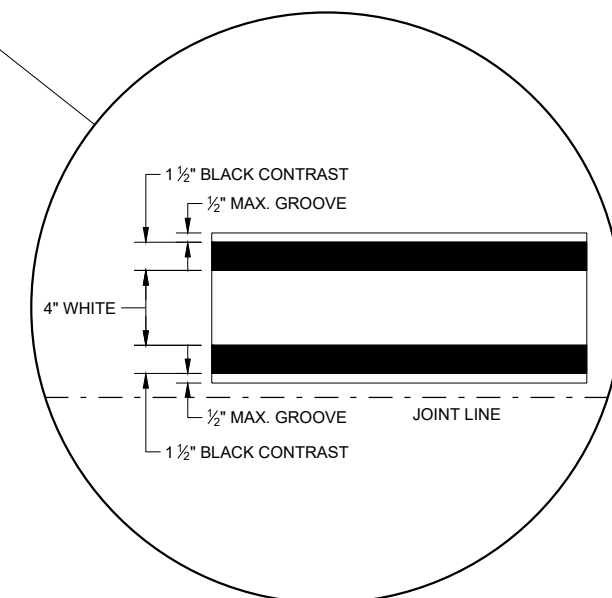
GENERAL NOTES

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

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

LEGEND

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

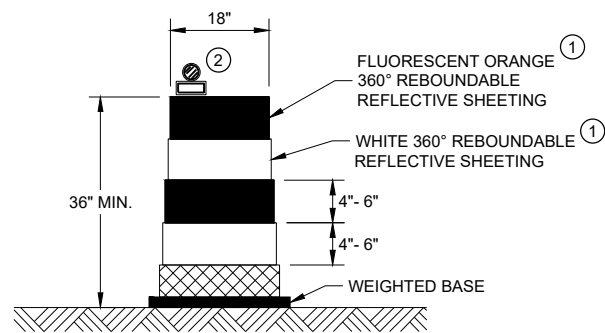


LONGITUDINAL MARKING (MAINLINE)

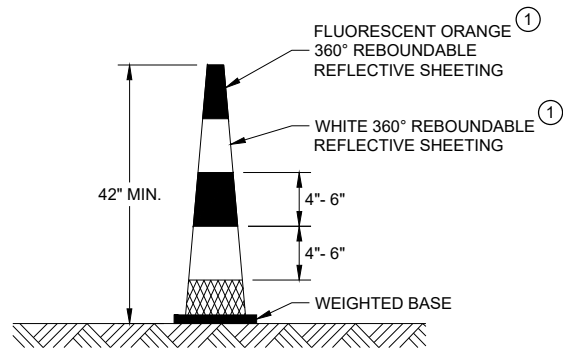
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
February 2020
DATE

/S/ Matthew Rauch
STATEWIDE SIGNING AND MARKING
ENGINEER

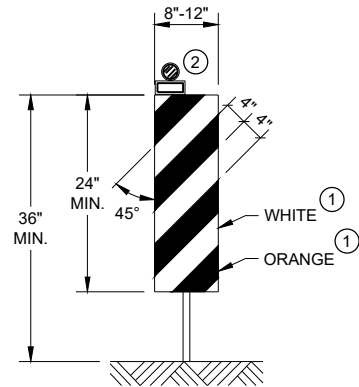


DRUM



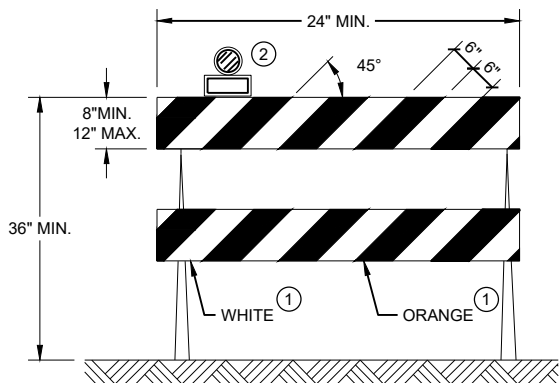
42" CONE

DO NOT USE IN TAPERS
½ SPACING OF DRUMS



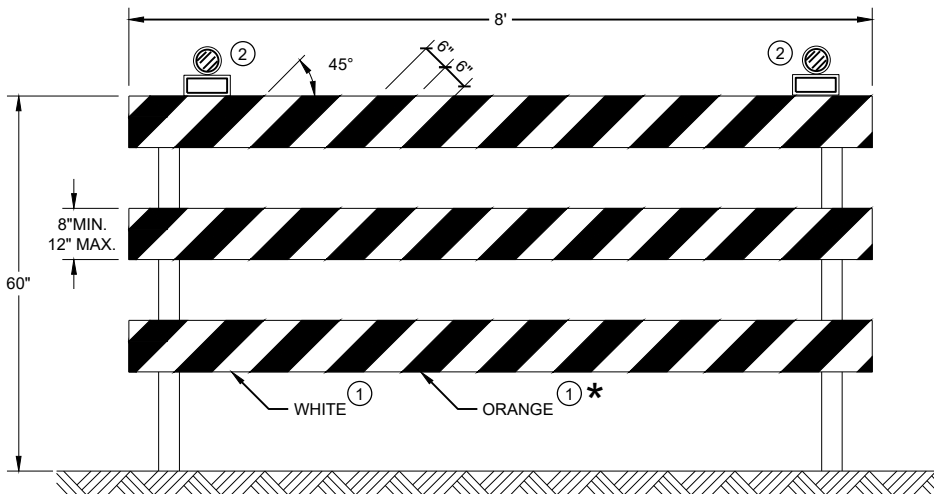
VERTICAL PANEL

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



TYPE II BARRICADE

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



TYPE III BARRICADE

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

* IF USED FOR A PERMANENT APPLICATION USE RED SHEETING.

GENERAL NOTES

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

CHANNELIZING DEVICES
DRUMS, CONES, BARRICADES
AND VERTICAL PANELS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

FHWA

LEGEND

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

GENERAL NOTES

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

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

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

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

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

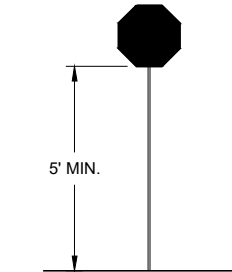
WHEN A SIDE ROAD OR RAMP INTERSECTS THE FACILITY ON WHICH THE WORK IS BEING PERFORMED, ADDITIONAL TRAFFIC CONTROLS SHALL BE PROVIDED AS SPECIFIED IN THE PLANS AND/OR THE SPECIAL PROVISIONS OR AS APPROVED BY THE ENGINEER.

FLAGGING

- FLAGGERS SHALL BE IN SIGHT OF EACH OTHER OR IN DIRECT COMMUNICATION AT ALL TIMES. THEY SHALL BE EQUIPPED WITH STOP/SLOW PADDLES FASTENED ON SUPPORT STAFFS. WHEN THE FLAGGING OPERATION IS NOT IN EFFECT REMOVE TEMPORARY PORTABLE RUMBLE STRIPS PRIOR TO COVERING OR REMOVING ALL ADVANCE SIGNING.
- ① FOR MOVING WORK OPERATIONS, POST ADDITIONAL W20-7A FLAGGER SIGNS AT APPROXIMATELY 3,500' INTERVALS IN THE MOVING WORK OPERATION OR AS APPROVED BY THE ENGINEER.
 - ② SIGN NOT REQUIRED IF FLAGGING OPERATION OCCURS WITHIN A SIGNED ROAD WORK ZONE AREA.
- WHEN THE DISTANCE BETWEEN FLAGGERS EXCEEDS 2 MILES, A PILOT CAR IS REQUIRED. WHEN CURVES REDUCE SIGHT DISTANCE BELOW 400', A PILOT CAR IS REQUIRED.

TEMPORARY PORTABLE RUMBLE STRIPS

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



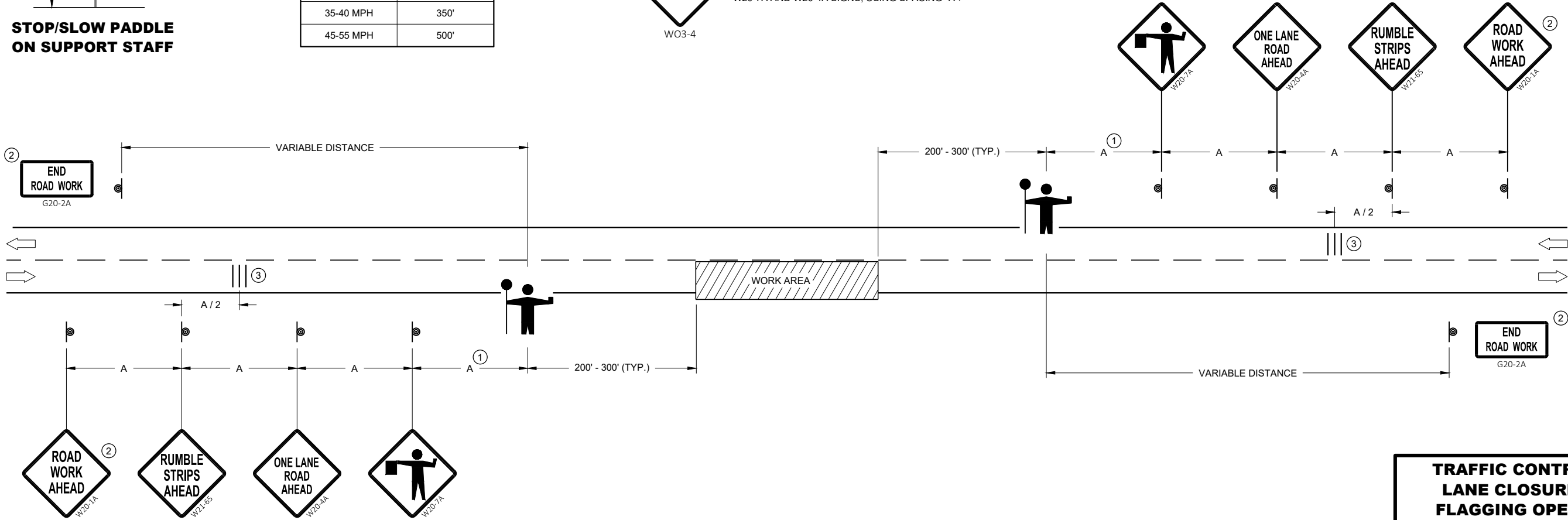
STOP/SLOW PADDLE ON SUPPORT STAFF

SIGN AND TEMPORARY RUMBLE STRIP ARRAY SPACING TABLE

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



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



TRAFFIC CONTROL FOR LANE CLOSURE WITH FLAGGING OPERATION

TRAFFIC CONTROL FOR LANE CLOSURE WITH FLAGGING OPERATION

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
May 2019
DATE

/S/ Andrew Heidtke
WORK ZONE ENGINEER

FHWA

LEGEND

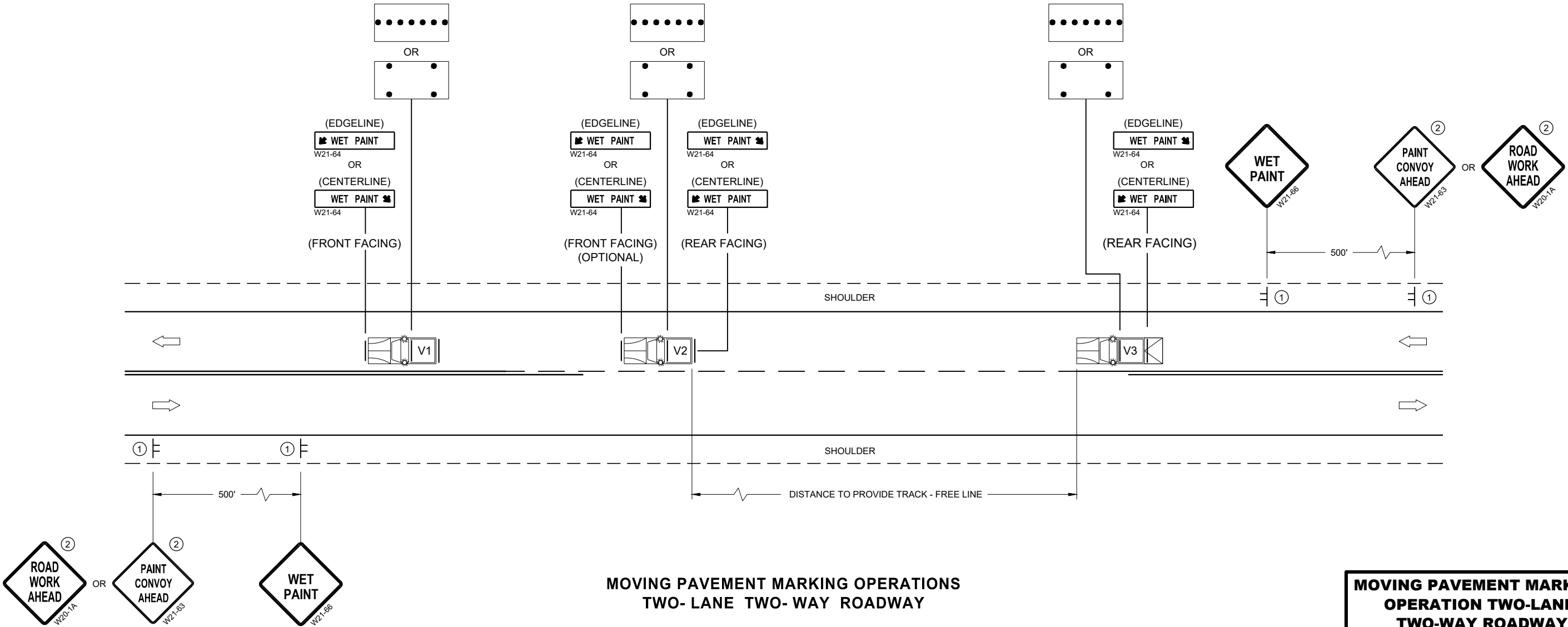
- V1 LEAD VEHICLE
- V2 MARKING VEHICLE
- V3 SHADOW VEHICLE
-  TRUCK MOUNTED ATTENUATOR (TMA)
-  SIGN ON TEMPORARY SUPPORT
-  DIRECTION OF TRAFFIC
-  FLASHING ARROW PANEL (CAUTION)

GENERAL NOTES

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

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

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

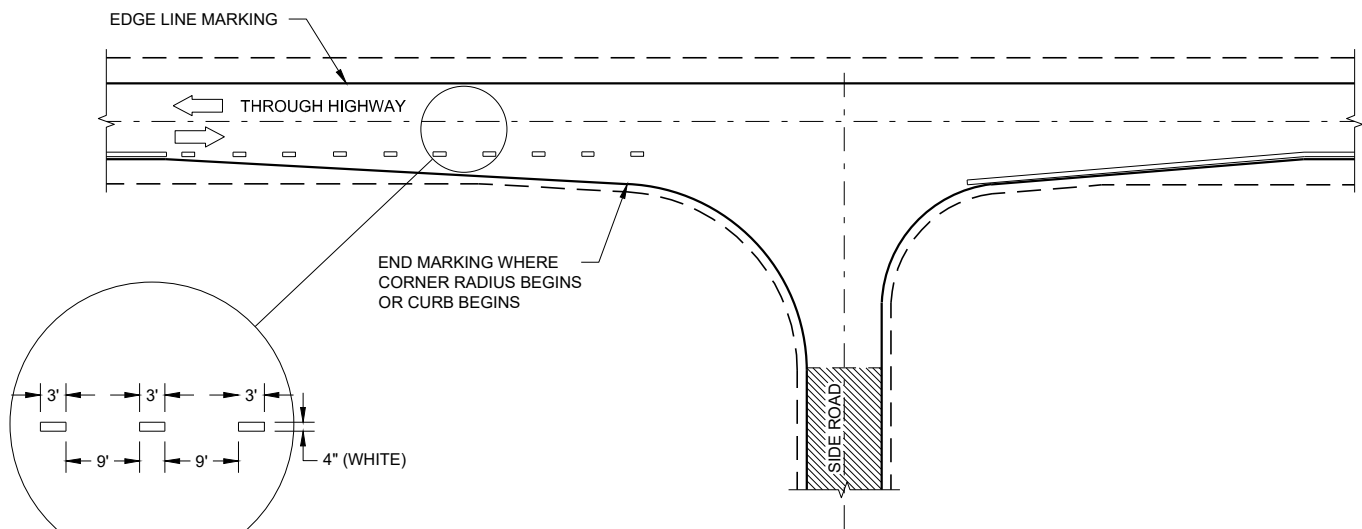


MOVING PAVEMENT MARKING OPERATIONS
TWO-LANE TWO-WAY ROADWAY

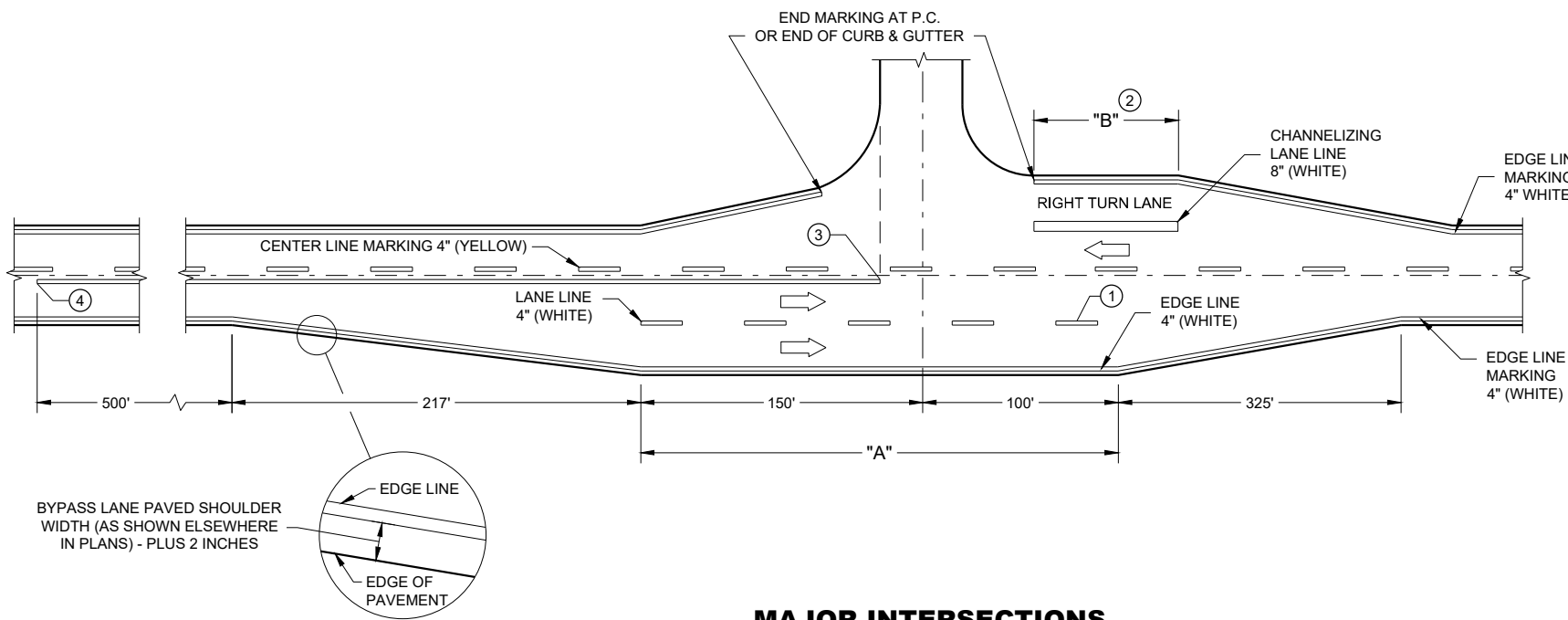
MOVING PAVEMENT MARKING
OPERATION TWO-LANE
TWO-WAY ROADWAY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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



MINOR INTERSECTION



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

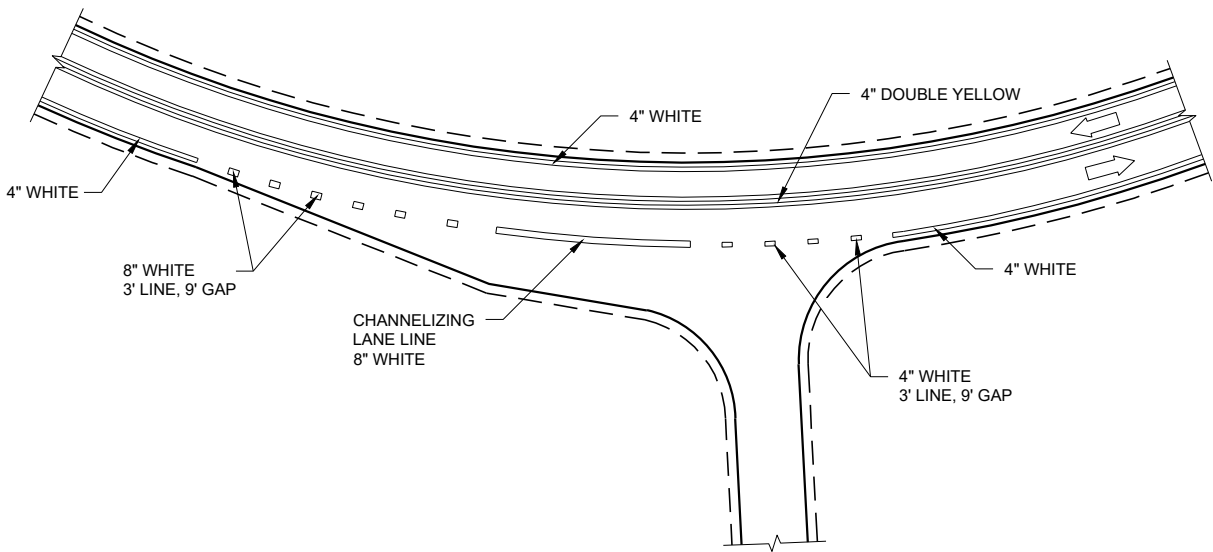
GENERAL NOTES

OMIT EDGE LINES THROUGH INTERSECTIONS. CONTINUE EDGE LINES 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 BARRIER LINE ENDS AT SIDE ROAD PAVEMENT / SURFACE EDGE EXTENSION.
- ④ BARRIER LINE STARTS 500 FEET PRIOR TO THE BYPASS TAPER.

LEGEND

➡ DIRECTION OF TRAVEL



INTERSECTION ON OUTSIDE OF CURVE

PAVEMENT MARKING
(INTERSECTIONS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

LEGEND

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

GENERAL NOTES

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

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

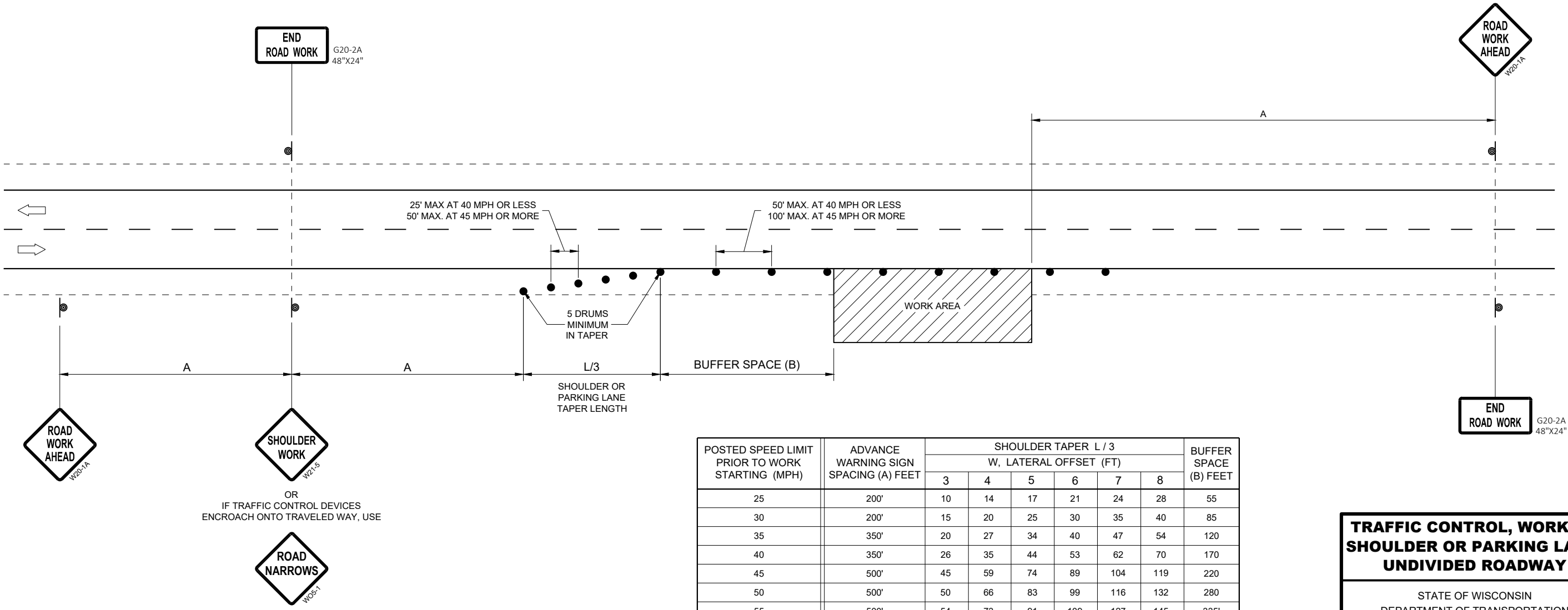
ANY SIGNS TEMPORARY OR EXISTING, WHICH CONFLICT WITH THE TRAFFIC CONTROL "IN USE" SHALL BE REMOVED OR COVERED AS NEEDED AND AS APPROVED BY THE ENGINEER.

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

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

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

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

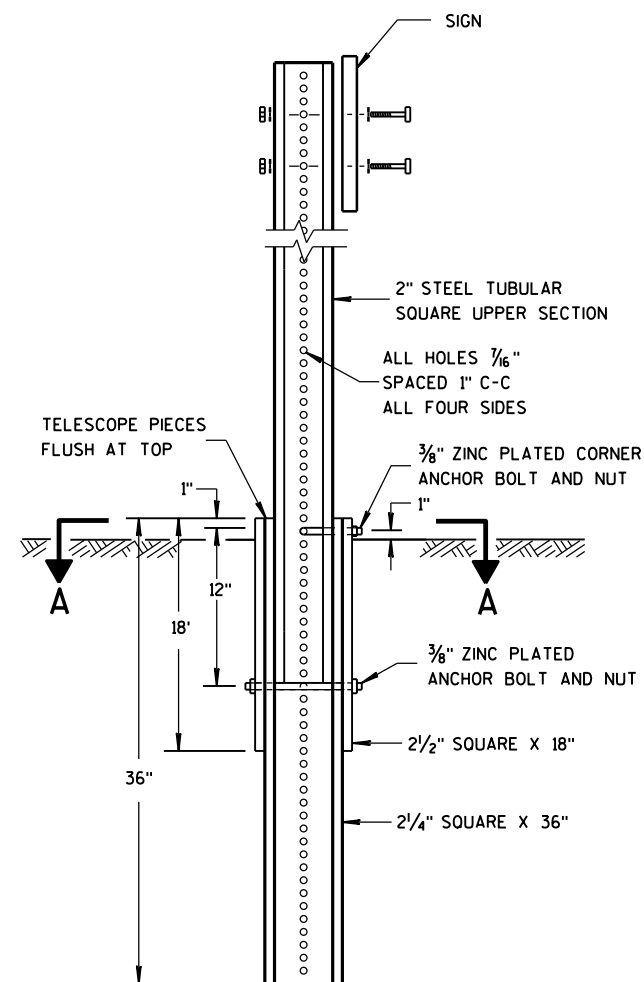


POSTED SPEED LIMIT PRIOR TO WORK STARTING (MPH)	ADVANCE WARNING SIGN SPACING (A) FEET	SHOULDER TAPER L / 3 W, LATERAL OFFSET (FT)						BUFFER SPACE (B) FEET
		3	4	5	6	7	8	
25	200'	10	14	17	21	24	28	55
30	200'	15	20	25	30	35	40	85
35	350'	20	27	34	40	47	54	120
40	350'	26	35	44	53	62	70	170
45	500'	45	59	74	89	104	119	220
50	500'	50	66	83	99	116	132	280
55	500'	54	73	91	109	127	145	335'

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
May 2020 /S/ Andrew Heidtke
DATE STATEWIDE WORK ZONE TRAFFIC
SAFETY ENGINEER
FHWA

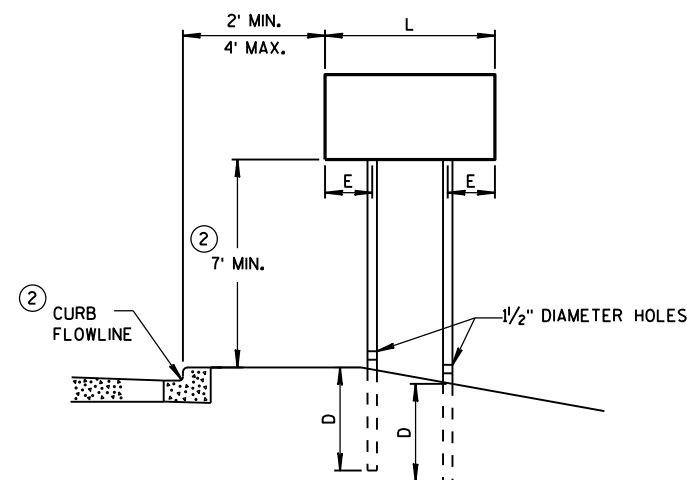
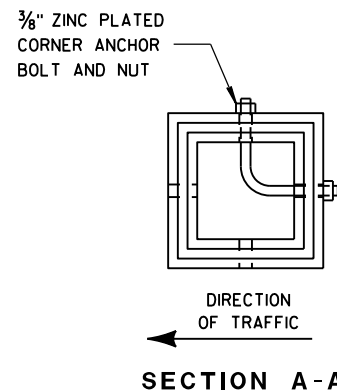


DETAIL OF TUBULAR
STEEL SIGN POST

TUBULAR STEEL POSTS

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

SIGNS WIDER THAN 3 FEET OR LARGER THAN 9 SQ. FT. SHALL BE MOUNTED ON MULTIPLE POSTS (SEE ABOVE TABLE).
SIGNS LARGER THAN 27 SQ. FT. SHALL NOT BE MOUNTED ON TUBULAR STEEL POSTS.

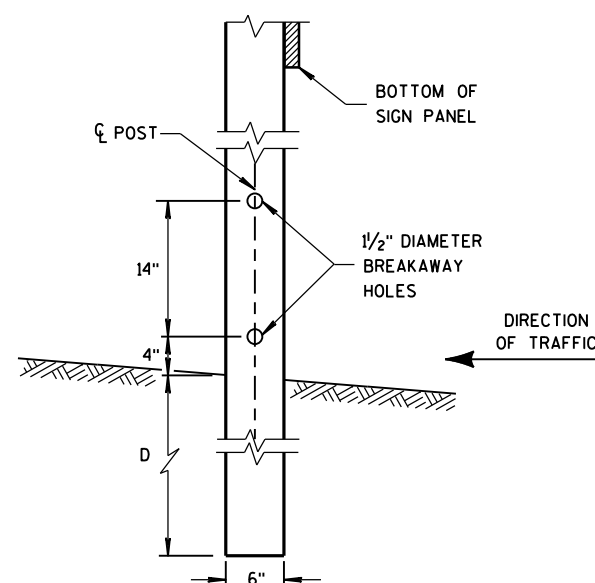


URBAN AREA

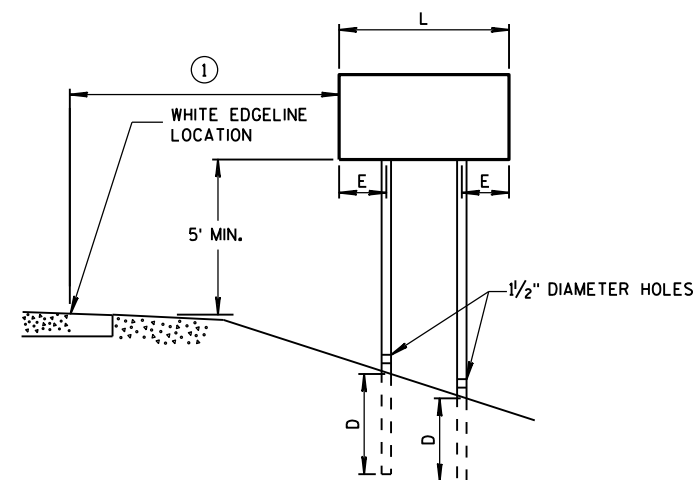
POST MOUNTING DETAIL FOR TEMPORARY TRAFFIC CONTROL FIXED MESSAGE SIGNS

WOOD POST
EMBEDMENT DEPTH

AREA OF SIGN INSTALLATION (SQ. FT.)	D (MIN)
20 OR LESS	4'
GREATER THAN 20	5'



4 "x6 " WOOD POST
MODIFICATION



RURAL AREA

4 " X 6 " WOOD POST

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

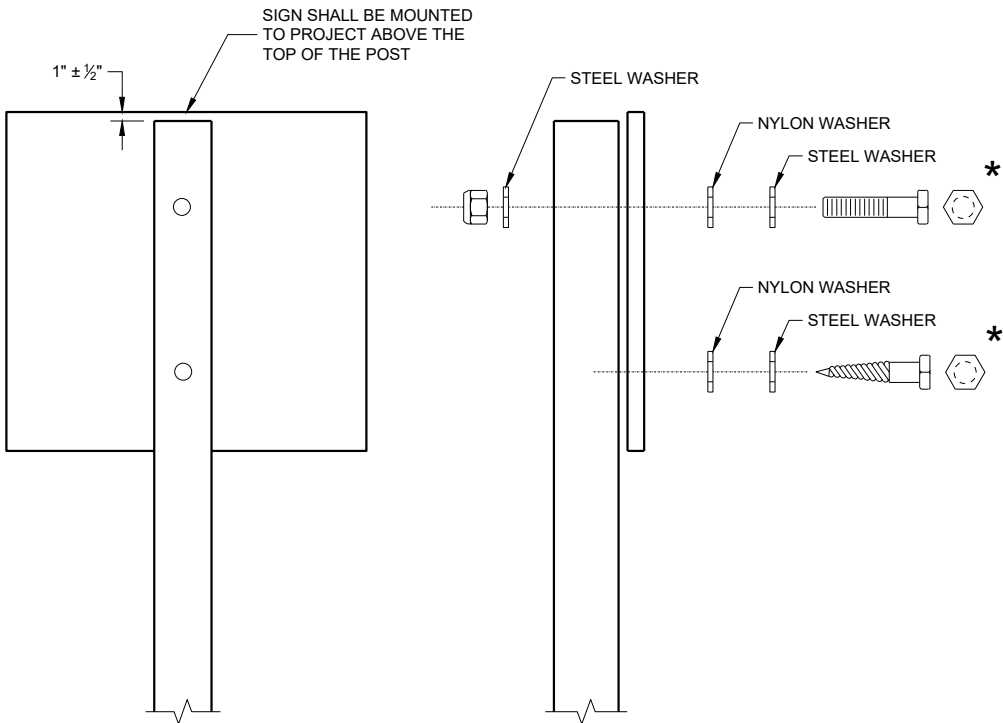
SEE NOTE ③

GENERAL NOTES

- ① 6 FEET FROM THE EDGE OF PAVEMENT (EDGE LINE LOCATION) UNLESS OTHERWISE DIRECTED BY THE PROJECT ENGINEER. LATERAL OFFSET SHOULD BE ADJUSTED TO AVOID THE DITCH FLOWLINE.
- ② THE EXISTENCE OF CURB AND GUTTER DOES NOT IN ITSELF MANDATE THE VERTICAL CLEARANCE ILLUSTRATED. THAT HEIGHT IS TYPICALLY MEASURED WHERE THERE IS SIDEWALK ADJACENT TO THE ROADWAY OR PARKING IS PERMITTED. IN THE ABSENCE OF SIDEWALK, VERTICAL CLEARANCE IS MEASURED FROM THE TOP OF THE CURB. IF NO SIDEWALK AND NO PARKING, VERTICAL CLEARANCE MAY BE REDUCED TO 5 FOOT MINIMUM. OFFSET OF SIGNS IS MEASURED FROM THE CURB FLOWLINE.
- ③ FOR SIGNS REQUIRING 4 POSTS, SPACE INTERMEDIATE POSTS EVENLY.

TEMPORARY TRAFFIC CONTROL
SIGN MOUNTING

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



NUTS, BOLTS AND LAGS USED FOR MOUNTING SIGNS SHALL HAVE HEXAGONAL HEADS AND SHALL BE EITHER:

- A. HOT DIP GALVANIZED IN ACCORDANCE WITH ASTM DESIGNATION: A 153, CLASS D, OR SC 3
- B. ELECTRO-GALVANIZED IN ACCORDANCE WITH ASTM DESIGNATION: B 633, TYPE III, SC 3

THREADS ON BOLTS AND NUTS SHALL BE MANUFACTURED WITH SUFFICIENT ALLOWANCE FOR THE CADMIUM PLATE OR GALVANIZED COATING TO PERMIT THE NUTS TO RUN FREELY ON THE BOLTS.

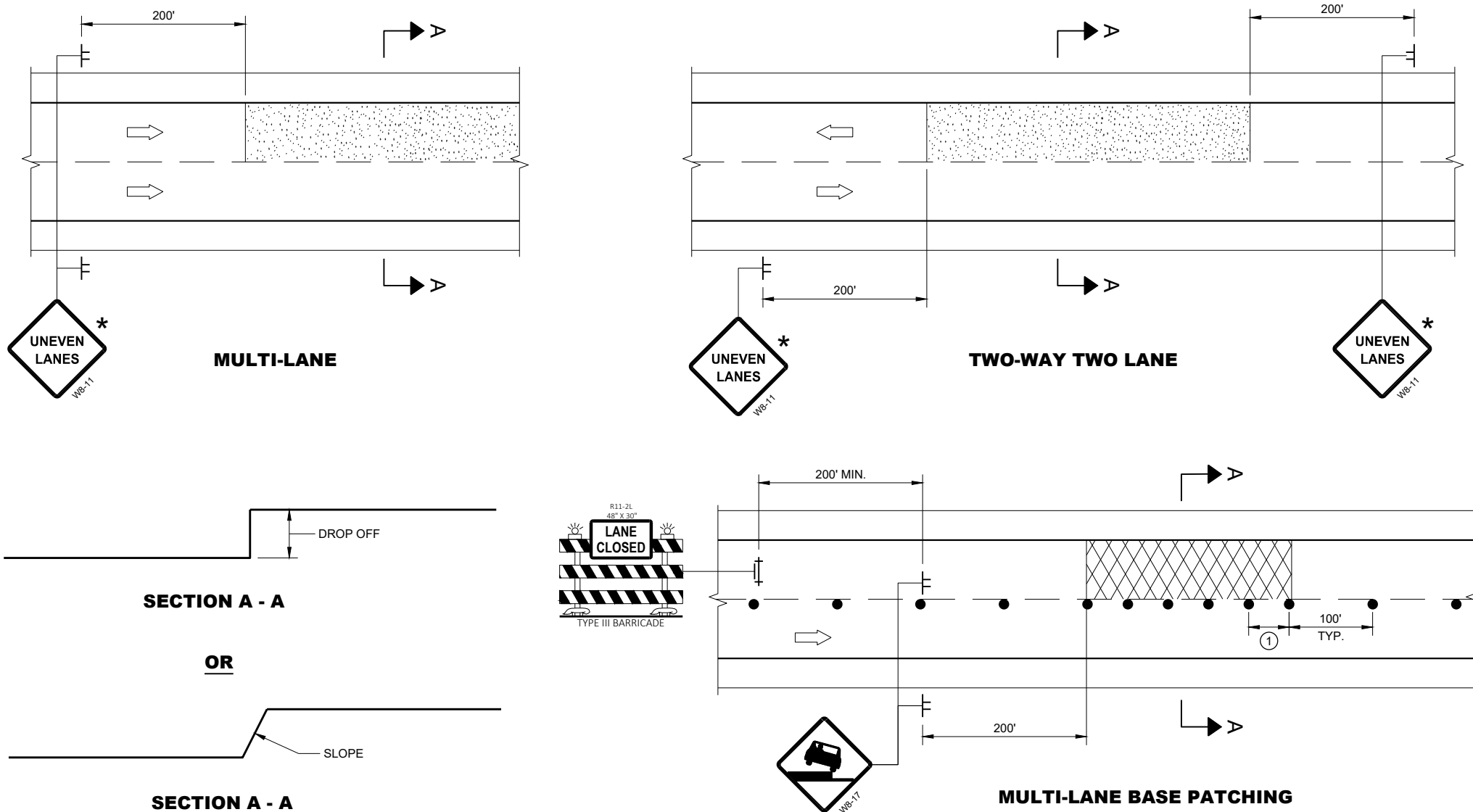
WOOD POST (4" x 6")
LAG SCREWS - ¾" x 3"
MACHINE BOLTS - ⅝" x 6 ½" OR 7" LENGTH W/NUTS

SQUARE STEEL POST (2" x 2")
MACHINE BOLTS - ¾" x 3 ¼" LENGTH W/NUTS
RIVETS - ⅝" (6605-9-6) BULB-TITE, TRI-FOLD, ALUMINUM
BODY/MANDREL O.D. FLANGE 0.720 - 0.765 INCH,
GRIP RANGE 0.042 - 0.375 INCH

WASHERS (ALL POSTS) -
1 ¼" O.D. x ⅜" I.D. x ⅛" STEEL
1 ¼" O.D. x ⅜" I.D. x 0.080 NYLON

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

ATTACHMENT OF SIGNS TO POSTS	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED June 2017 DATE	/S/ Andrew Heidtke WORK ZONE ENGINEER
FHWA	



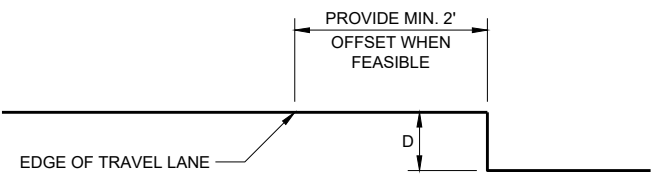
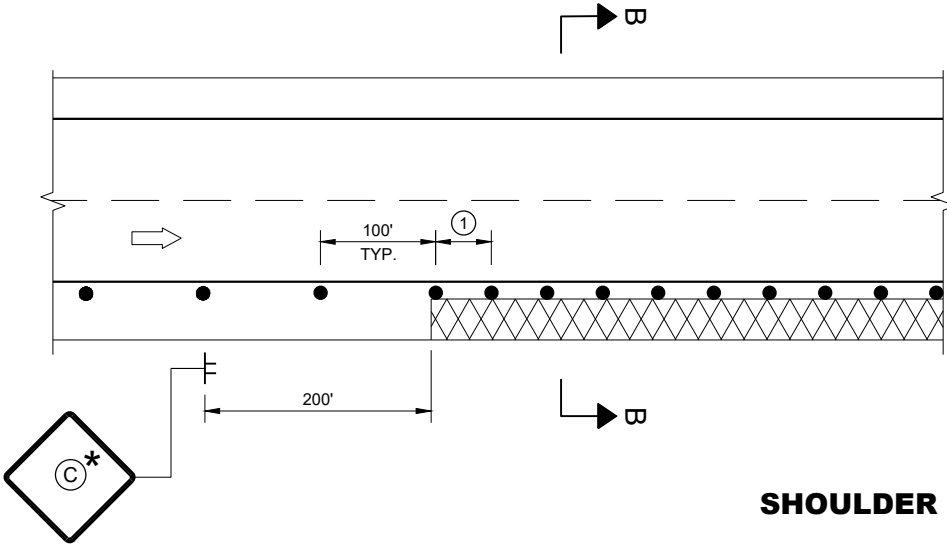
ADJACENT LANE DROP-OFFS

GENERAL NOTES

- FOR SPOT LOCATIONS USE ENGINEERING JUDGEMENT WHEN PLACING ADDITIONAL SIGNS.
- ALL SIGNS ARE 48" X 48" UNLESS OTHERWISE NOTED.
- "WO" SIGNS ARE THE SAME AS "W" SIGNS EXCEPT THE BACKGROUND IS ORANGE.
- WARNING LIGHTS ARE NOT REQUIRED IF THE LANE CLOSURE IS A DAYTIME ONLY OPERATION.
- * IF THE DROP-OFF IS CONTINUOUS ALONG THE PROJECT, PLACE ADDITIONAL SIGNS EVERY 1 MILE AND AFTER EVERY ENTRANCE RAMP.
- ① USE CLOSER SPACING WHEN DELINEATING DROP-OFF.

LEGEND

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



SECTION B - B

SHOULDER DROP-OFFS

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

TRAFFIC CONTROL, DROP-OFF SIGNING

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

GENERAL NOTES

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

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

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

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

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

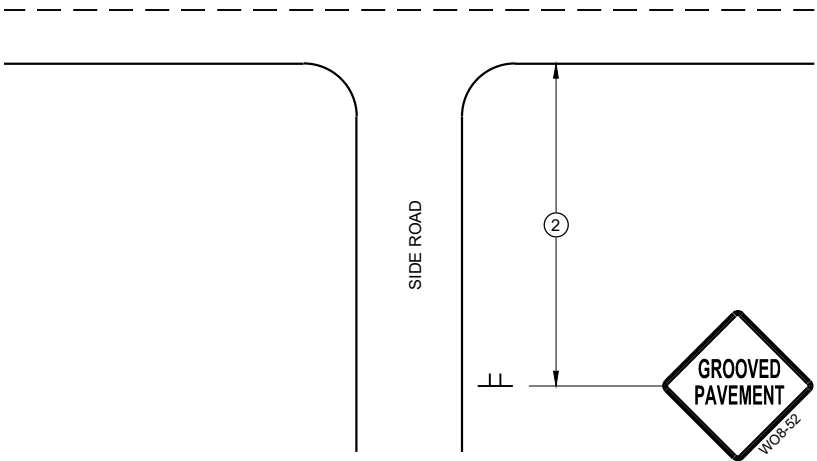
ALL SIGNS INAPPROPRIATE TO THE STATUS OF THE CONTROL ZONE, INCLUDING PRE-EXISTING SIGNS IN THE VICINITY, SHALL BE COVERED OR REMOVED AS DIRECTED BY THE ENGINEER.

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

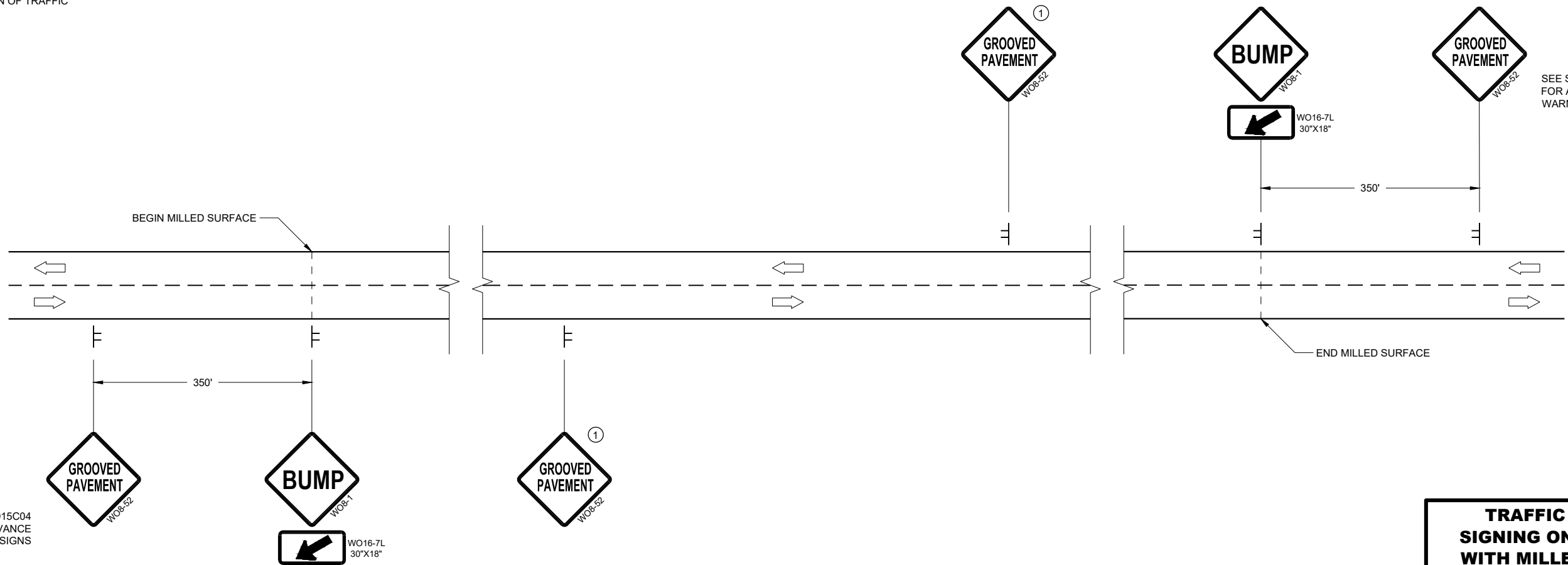
- ① PLACE SIGNS 350' IN ADVANCE OF MILLED SURFACES AND AT 1 MILE INTERVALS, OR AS DIRECTED BY THE ENGINEER.
- ② PLACE SIGN 200' MIN. FROM INTERSECTION AND 200' MIN. AFTER ADVANCE WARNING SIGN SHOWN IN SDD 15C04.

LEGEND

-  SIGN ON TEMPORARY SUPPORT
-  DIRECTION OF TRAFFIC



TYPICAL SIDE ROAD APPROACH
SIGN DETAIL



SEE SDD15C04
FOR ADVANCE
WARNING SIGNS

SEE SDD15C04
FOR ADVANCE
WARNING SIGNS

DETAIL FOR SIGNING ON MILLED SURFACES

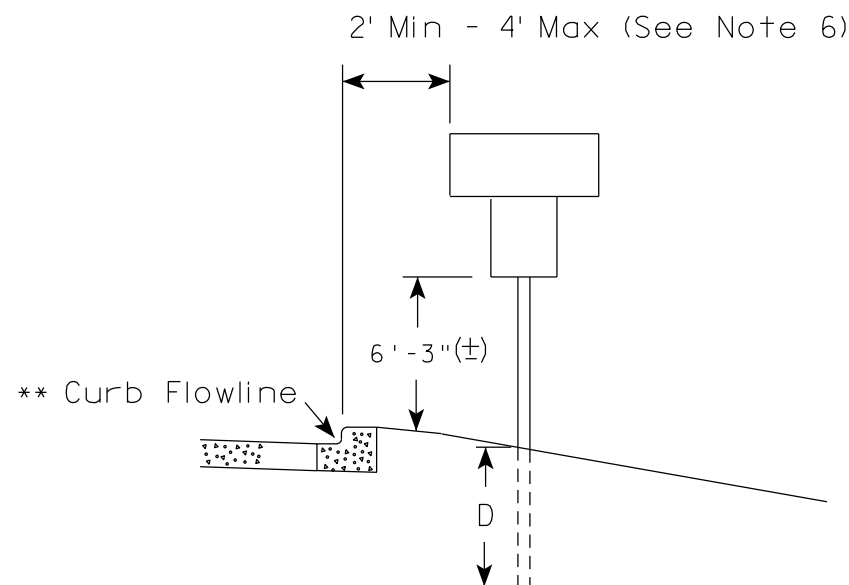
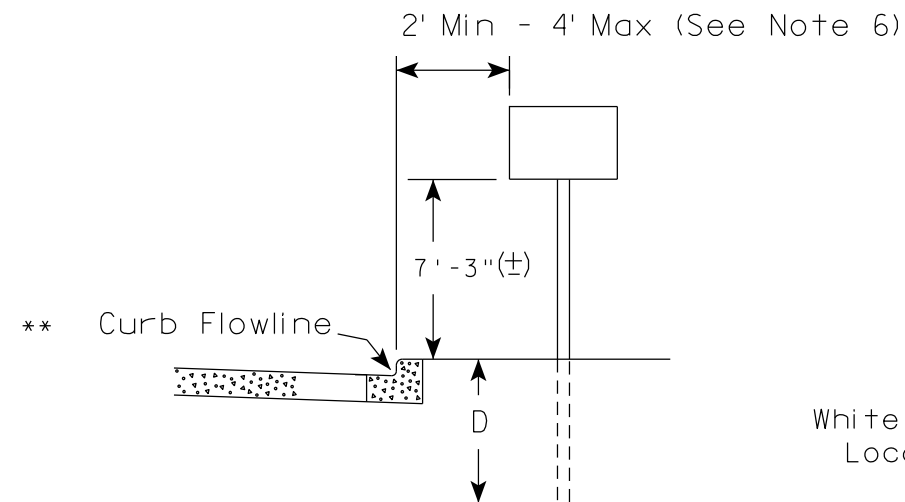
TRAFFIC CONTROL,
SIGNING ON ROADWAYS
WITH MILLED SURFACES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

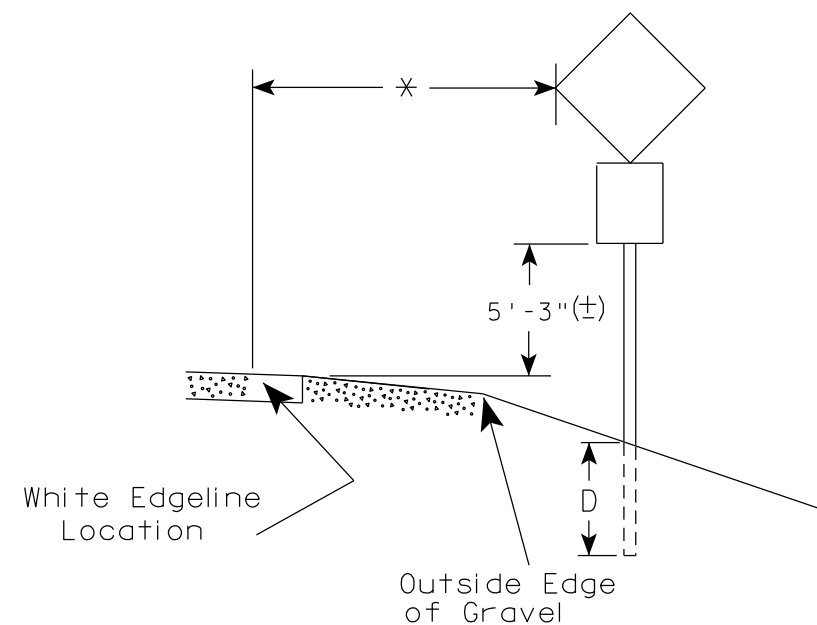
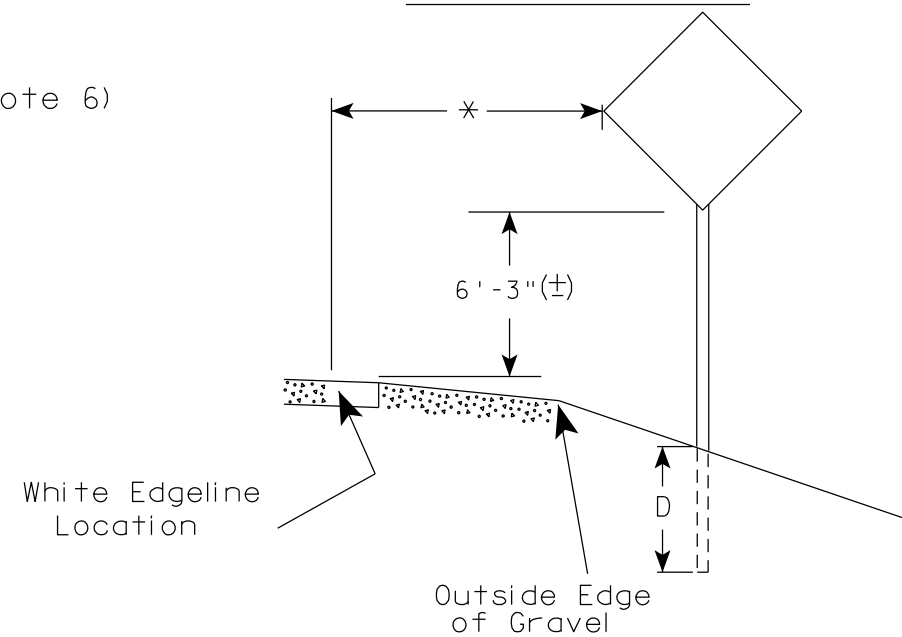
FHWA

URBAN AREA



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

RURAL AREA (See Note 2)



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

POST EMBEDMENT DEPTH

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

GENERAL NOTES

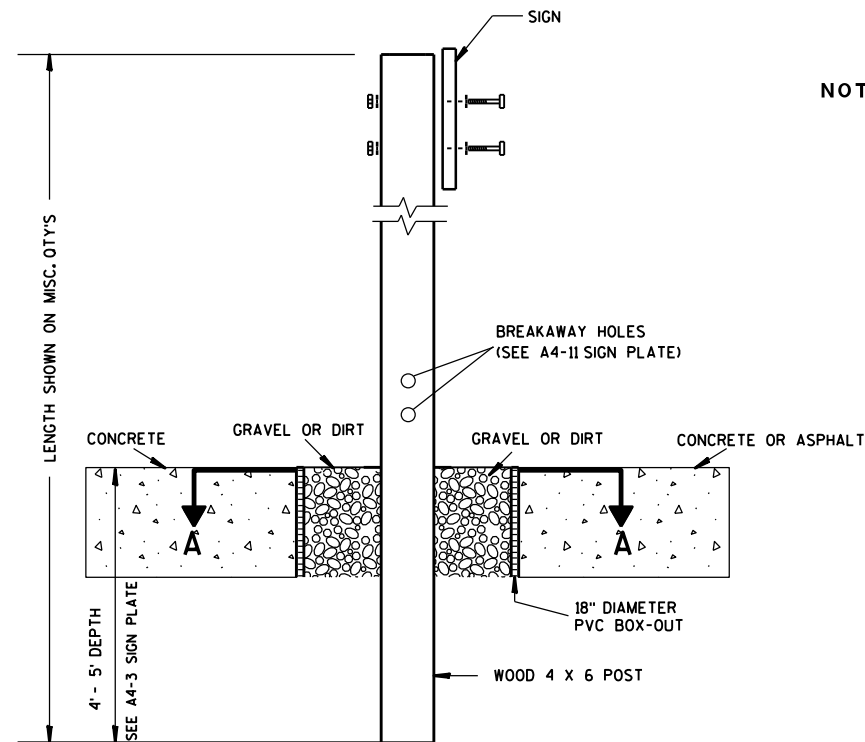
- Signs wider than 4 feet or 20 sq.ft or larger, shall be mounted on multiple posts. Refer to plate A4-4.
- If signs are mounted on or behind barrier wall, see A4-10 sign plate.
The Double Arrow sign (W12-1D) shall be mounted at a height of 2'-3" (±). The Chevron sign (W1-8), Roundabout Chevron panel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

TYPICAL INSTALLATION
OF PERMANENT TYPE II
SIGNS ON SINGLE POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

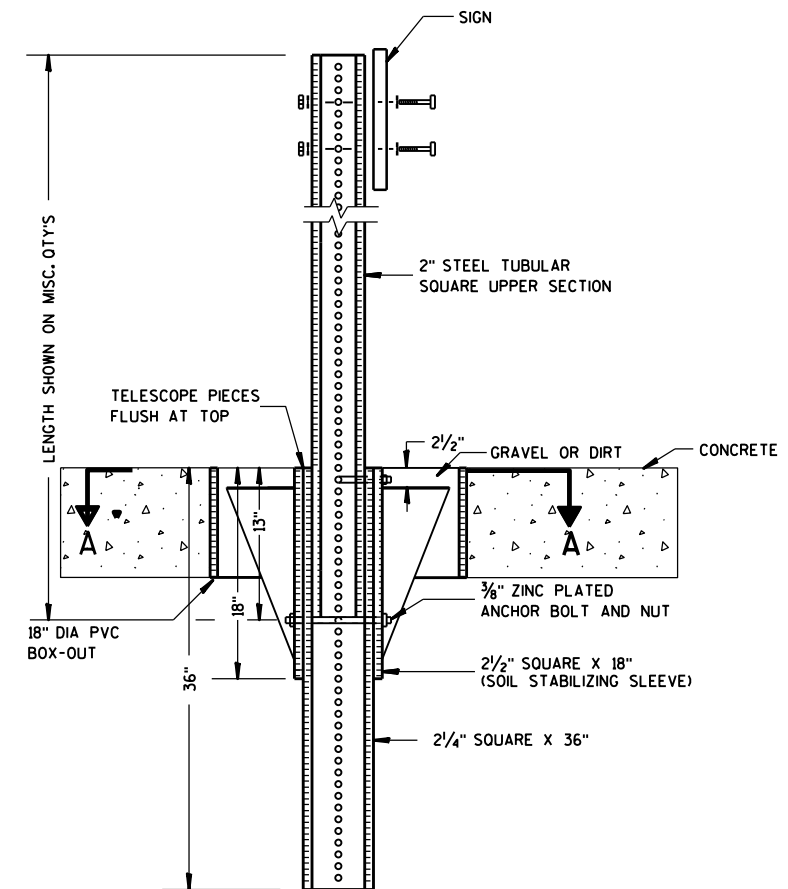
DATE 5/13/2020 PLATE NO. A4-3.22



ELEVATION VIEW

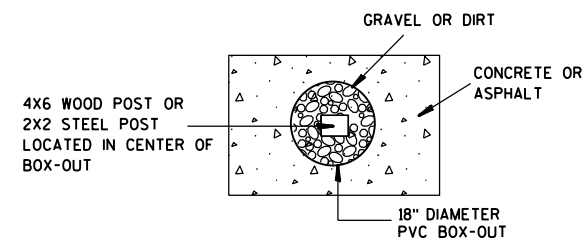
DETAIL OF WOOD 4 X 6 SIGN POST IN BOX-OUT

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



ELEVATION VIEW

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



PLAN VIEW

FOR NEW CONCRETE/ASPHALT INSTALLATIONS

SIGN POST
BOX-OUTS
A4-3B

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

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

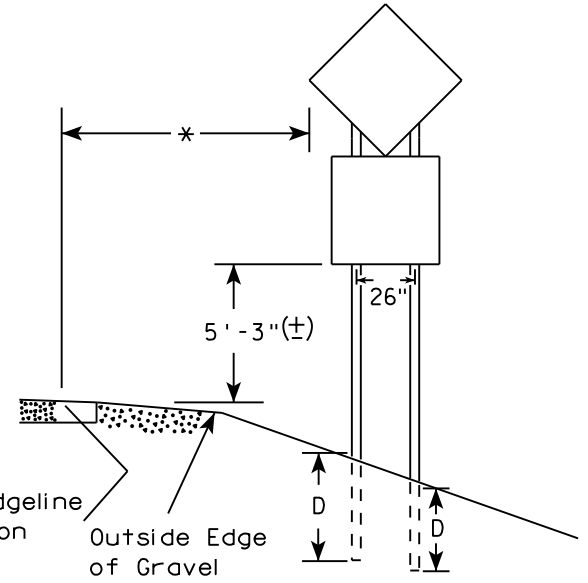
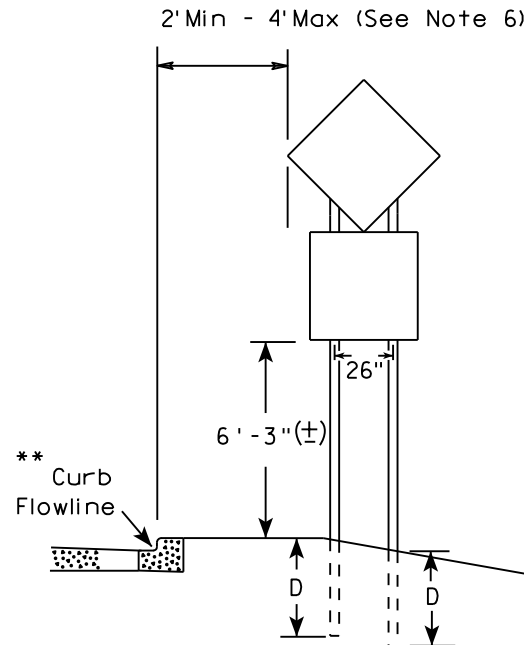
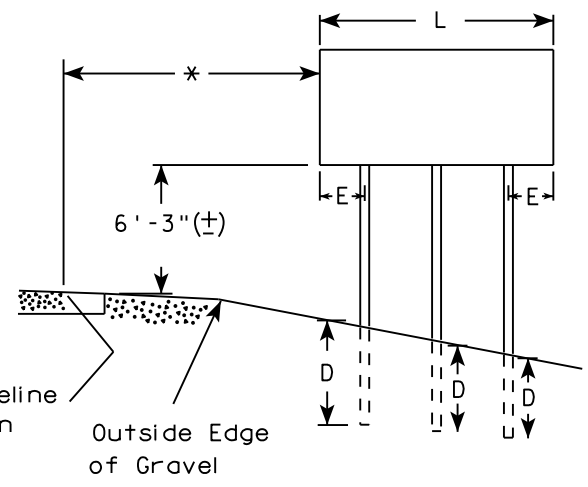
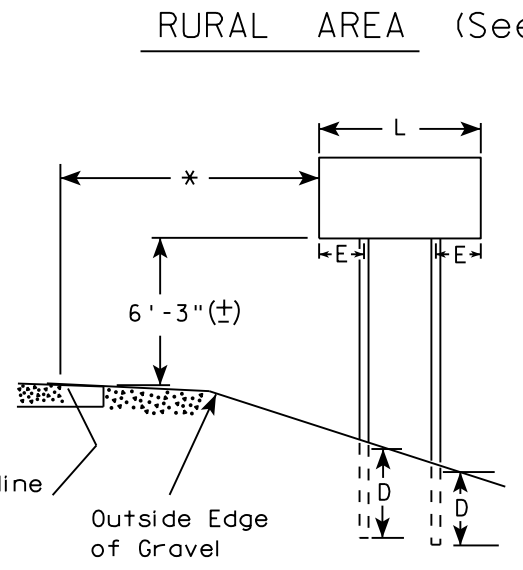
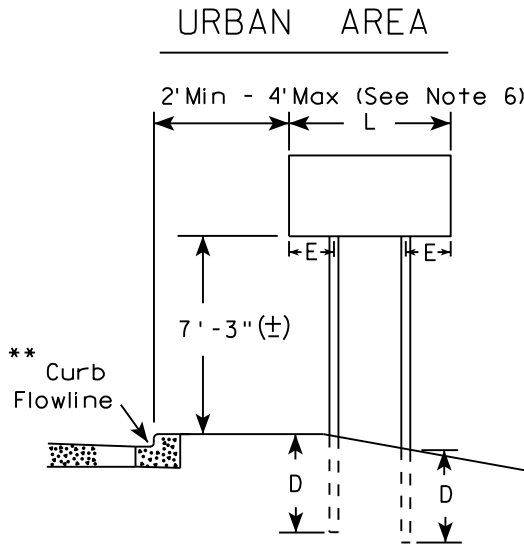
PROJECT NO:

HWY:

COUNTY:

SHEET NO:

E



48" DIAMOND WARNING SIGN

48" DIAMOND WARNING SIGN

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

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

POST EMBEDMENT DEPTH

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

TYPICAL INSTALLATION
OF TYPE II SIGNS
ON MULTIPLE POSTS

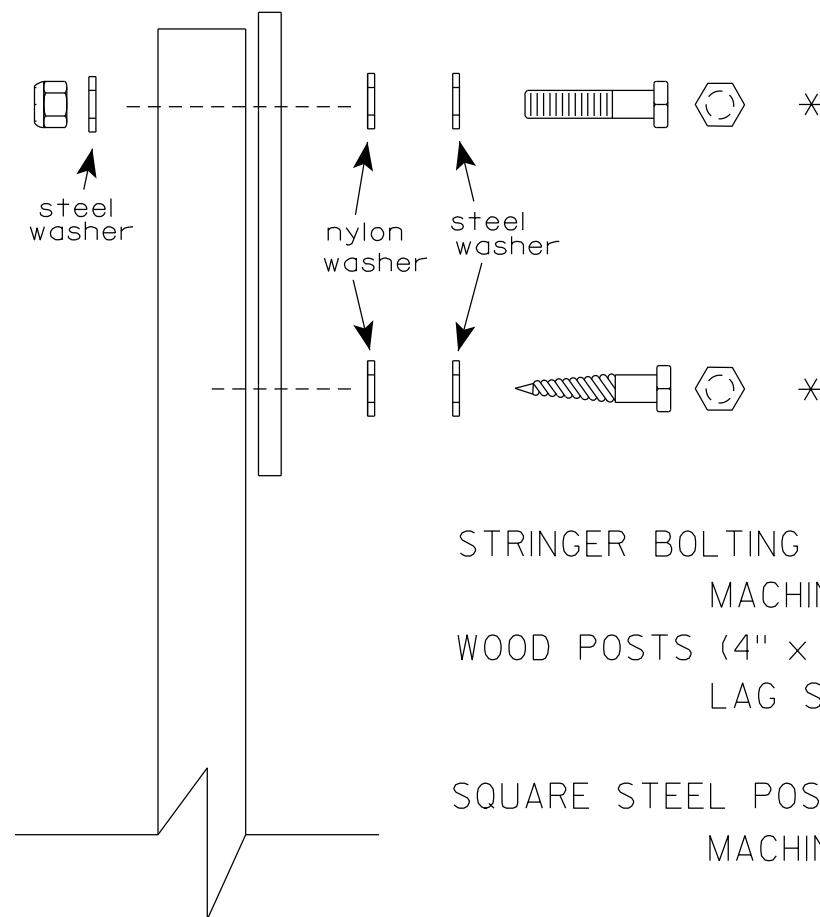
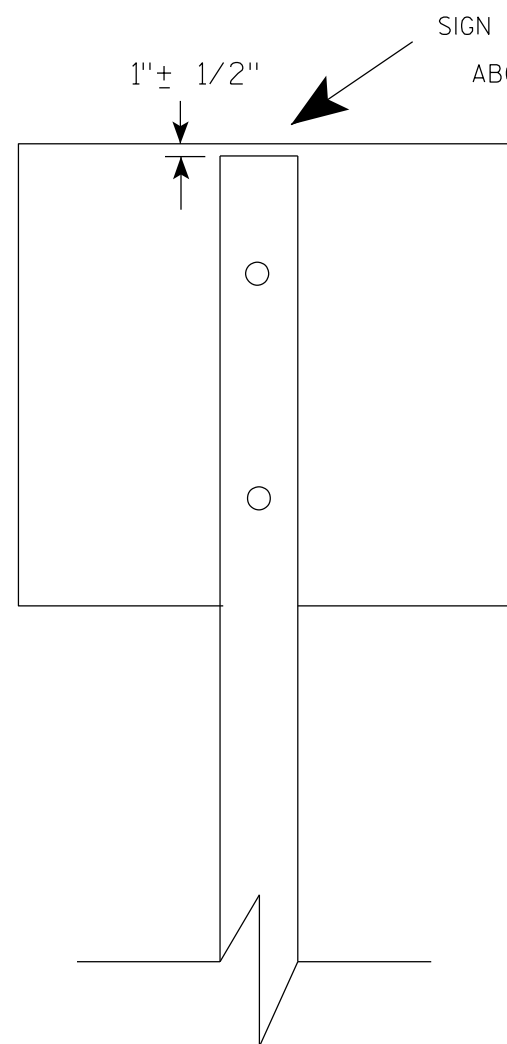
WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

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

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

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



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

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

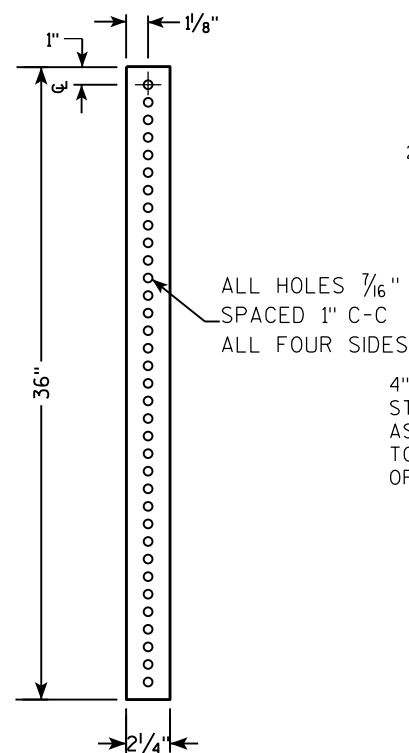
Threads on bolts and nuts shall be manufactured with sufficient allowance for the cadmium plate or galvanized coating to permit the nuts to run freely on the bolts.

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

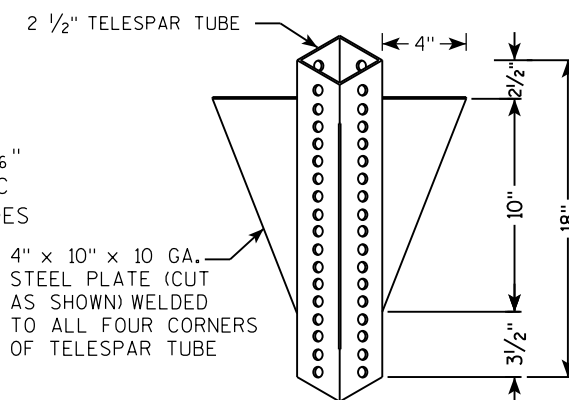
* Two different fastening systems are shown for illustration purposes. On any individual sign, either one or the other system shall be used. Actual number of fasteners per sign varies with the sign area, but normally there are two. For a single post installation, all signs greater than 9 sq. ft. require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

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

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

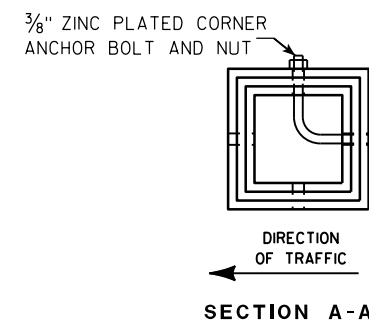


**2 1/2" SQUARE
12 GAUGE
OMNI-DIRECTIONAL
PERFORATED
SOIL STABILIZING SLEEVE
GALVANIZED FINISH**

[illegible]

TECHNICAL DRAWING OF A SIGNPOST ASSEMBLY:

- Dimensions:**
 - Overall height: LENGTH SHOWN ON MISC. Q'TYS
 - Section A-A: 36" (total), 18" (upper), 12" (lower)
 - Section B-B: 1"
- Components:**
 - SIGN
 - SEE SIGN PLATE A4-8 FOR BOLT WASHER, & NUT MATERIAL
 - 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
 - $\frac{3}{8}$ " ZINC PLATED ANCHOR BOLT AND NUT
 - 2 1/2" SQUARE X 18" (SOIL STABILIZING SLEEVE)
 - 2 1/4" SQUARE X 36"
 - TELESCOPE PIECES FLUSH AT TOP



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

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

TUBULAR STEEL
SIGN POST
A4-9

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R. Rauch

for State Traffic Engineer

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

PROJECT NO:

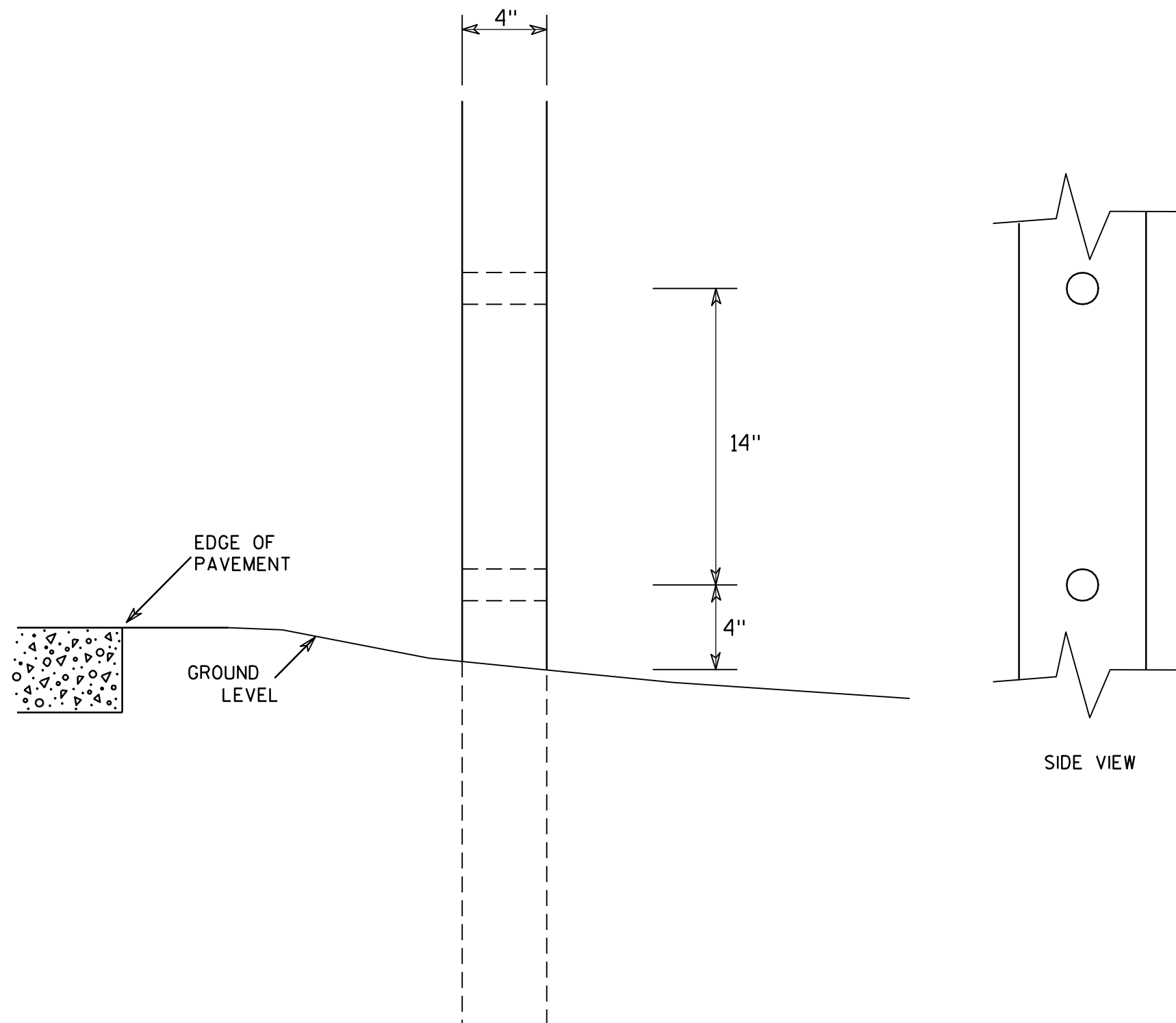
HWY:

COUNTY:

SHEET NO:

T

7



GENERAL NOTES

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

7

4 X 6 WOOD POST MODIFICATIONS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED

Chester J. Spang
for State Traffic Engineer

DATE 3/27/97

PLATE NO. A4-11.2

PROJECT NO:

HWY:

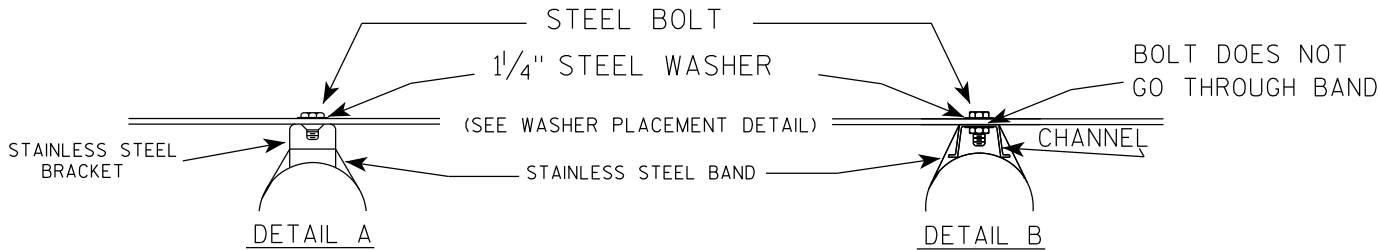
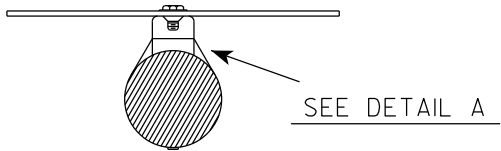
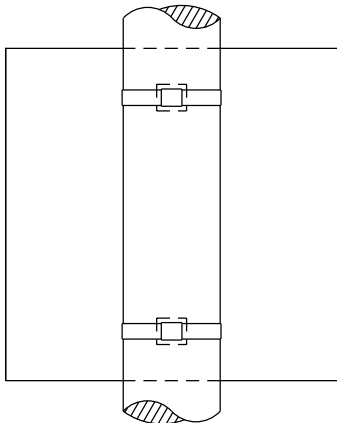
COUNTY:

SHEET NO:

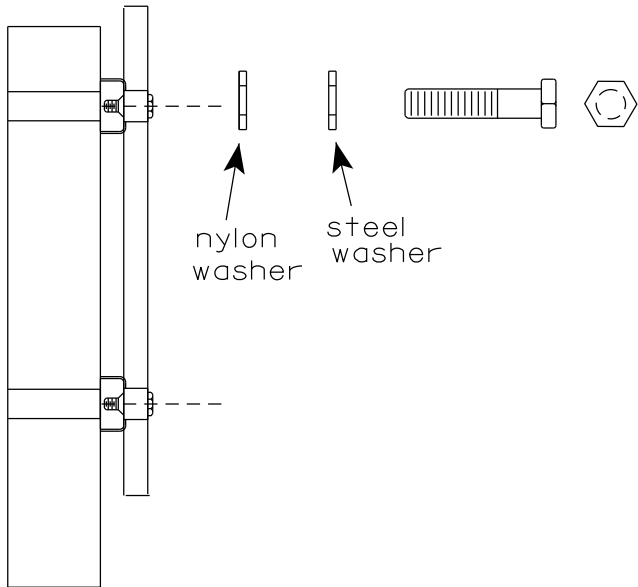
E

BANDING

SINGLE SIGN



WASHER PLACEMENT

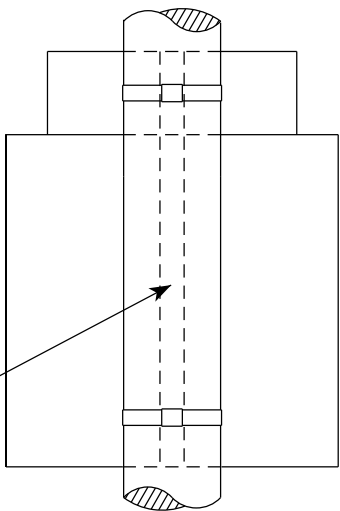


WASHERS (ALL POSTS) -
1-1/4" O.D. X 3/8" I.D. X 1/16" STEEL
1-1/4" O.D. X 3/8" I.D. X .080 NYLON
FOR ALL TYPE H SIGNS

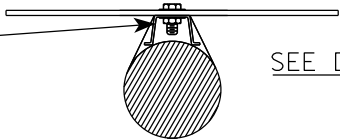
GENERAL NOTES

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

"J" ASSEMBLY



CHANNEL
SEE TYPICAL PANEL
INSTALLATION SHEET

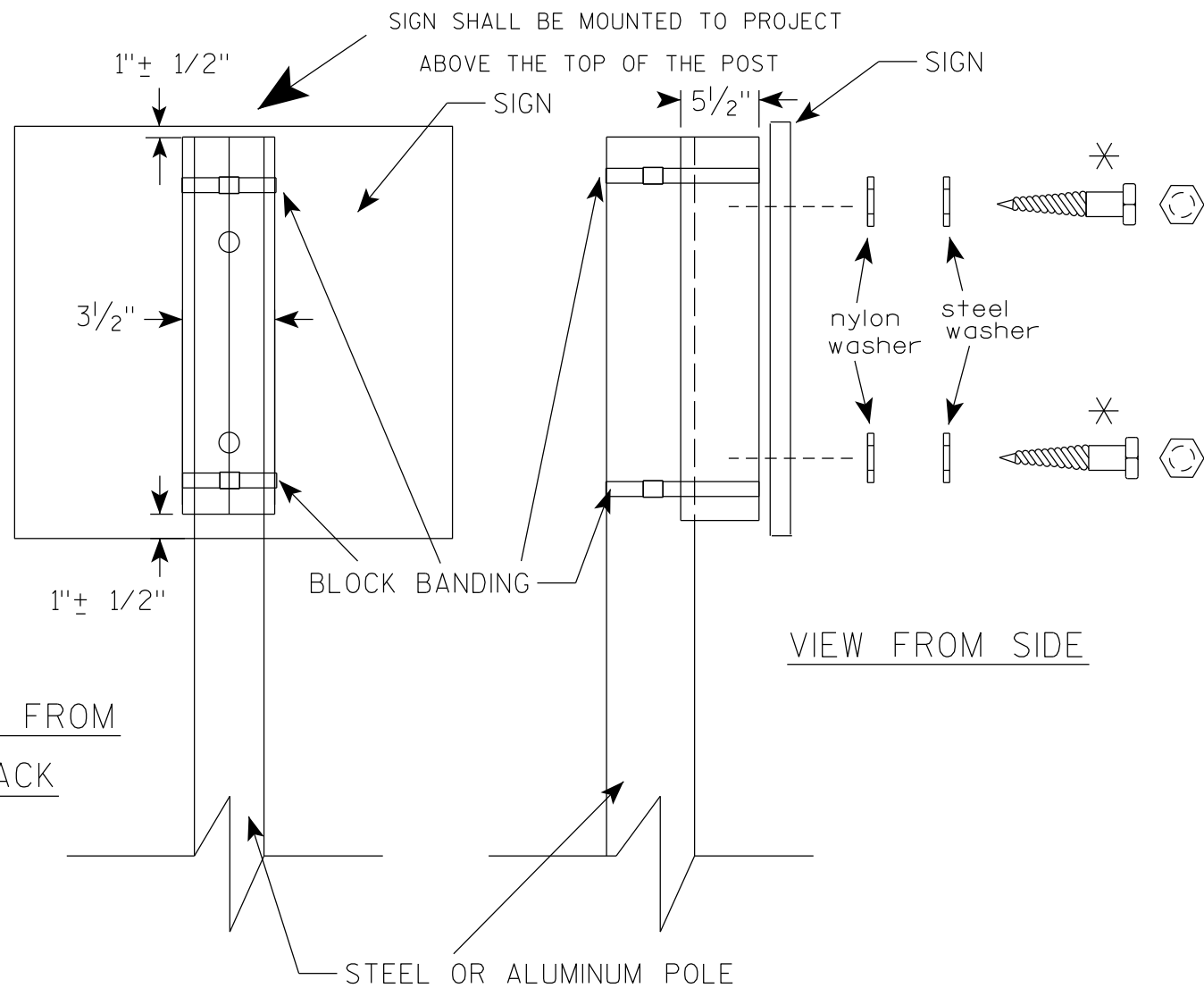


STANDARD SIGN
SIGN BANDING DETAILS

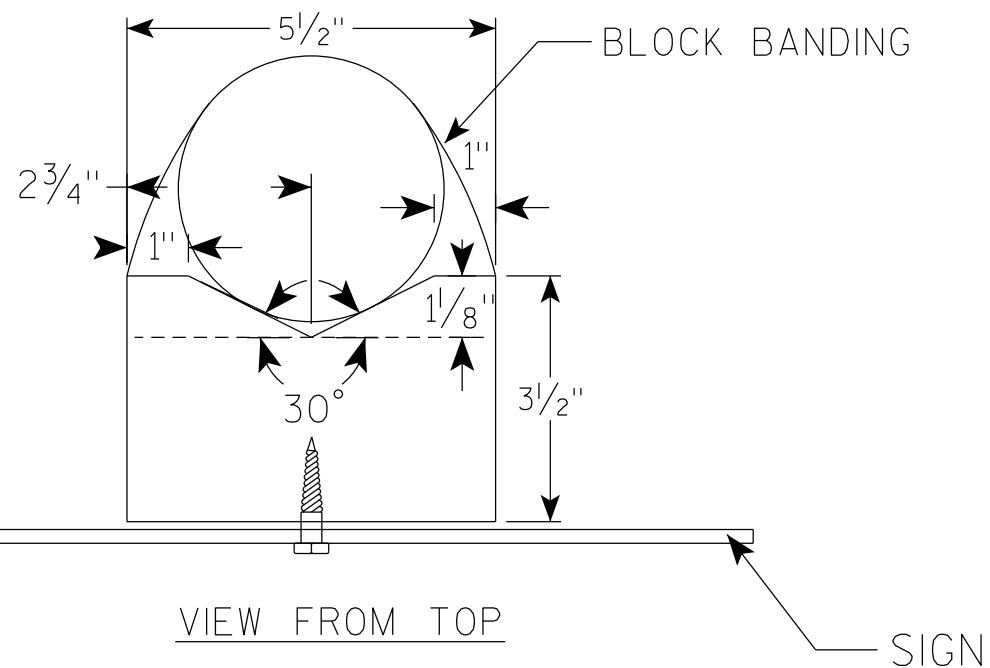
WISCONSIN DEPT OF TRANSPORTATION

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

VIEW FROM
BACK



VIEW FROM SIDE



GENERAL NOTES

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

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

BLOCK BANDING DETAIL
(V-BLOCK OPTION)

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R. Rauch
for State Traffic Engineer

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

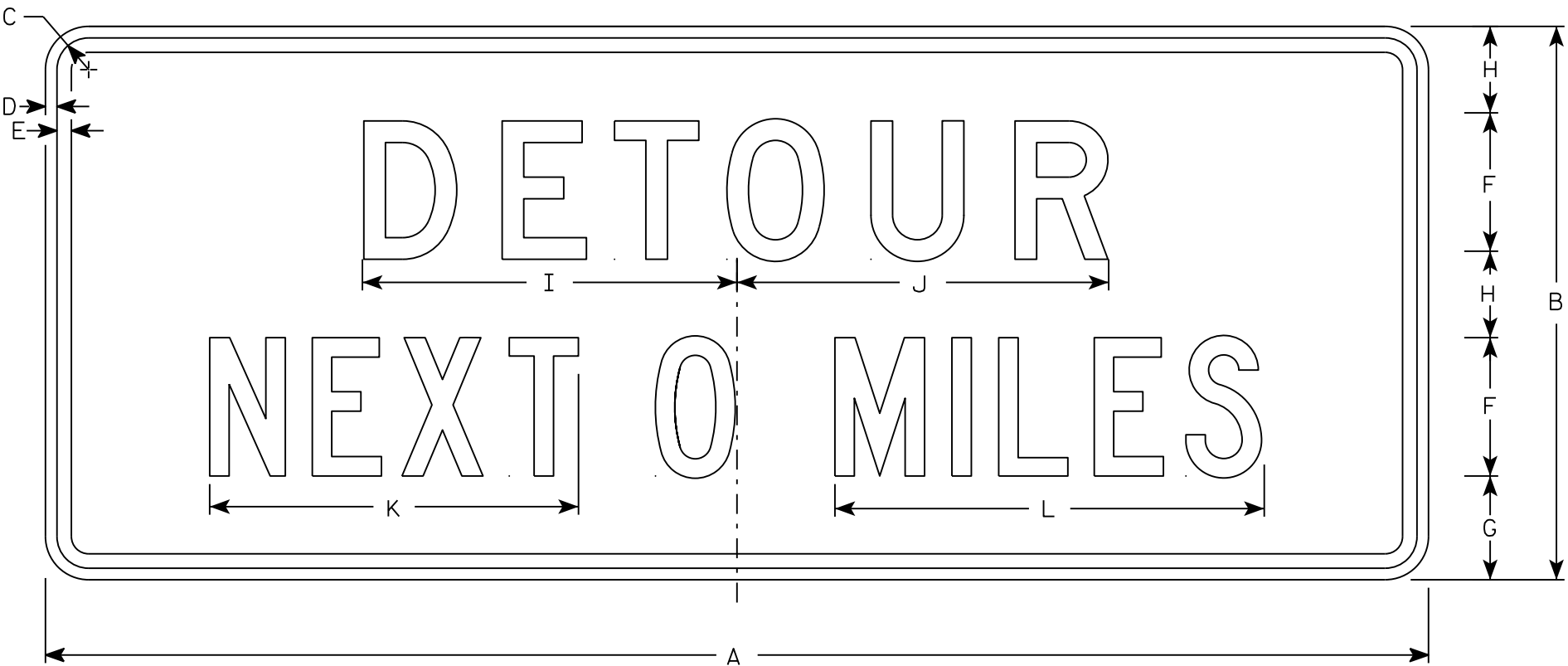
PROJECT NO:

SHEET NO:

E

NOTES

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



G20-51

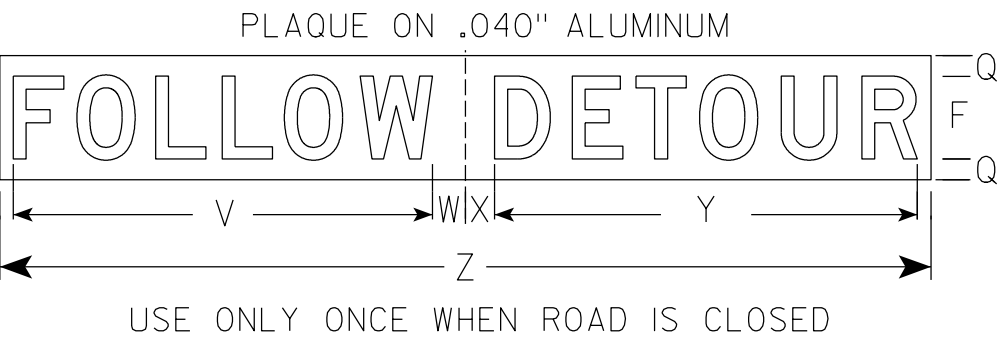
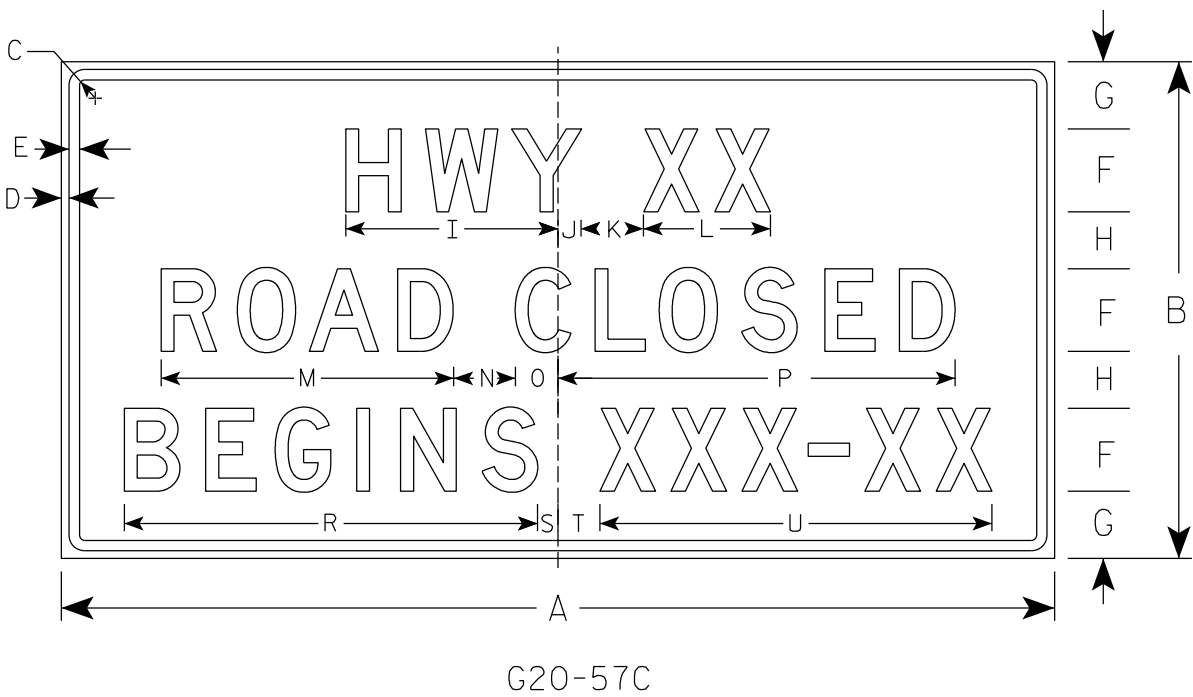
SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2	60	24	1 3⁄8	1⁄2	5⁄8	6	4 1⁄2	3 3⁄4	16 1⁄4	16 1⁄8	16	18 5⁄8															10
3																											
4	60	24	1 3⁄8	1⁄2	5⁄8	6	4 1⁄2	3 3⁄4	16 1⁄4	16 1⁄8	16	18 5⁄8															10
5																											

STANDARD SIGN
G20-51

WISCONSIN DEPT OF TRANSPORTATION

APPROVED
Matthew R. Rauch
for State Traffic Engineer

DATE 3/14/17 PLATE NO. G20-51.2



NOTES

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

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2																											
3	72	36	1 1/8	1/2	5/8	6	5	4	15 5/8	1 5/8	5	9 1/4	21 1/8	5	2 7/8	29	2	30	1 3/4	3 1/4	28 3/8	40 1/2	2	2	29 3/4	66	18.0
4	96	48	2 1/4	3/4	1	8	6 1/2	5 1/2	20 5/8	2 1/4	6	12 1/4	28 1/4	6	4 1/8	38 3/8	2	39 7/8	2	4	37 7/8	29 3/4	3 1/8	2 7/8	40 7/8	90	32.0
5																											

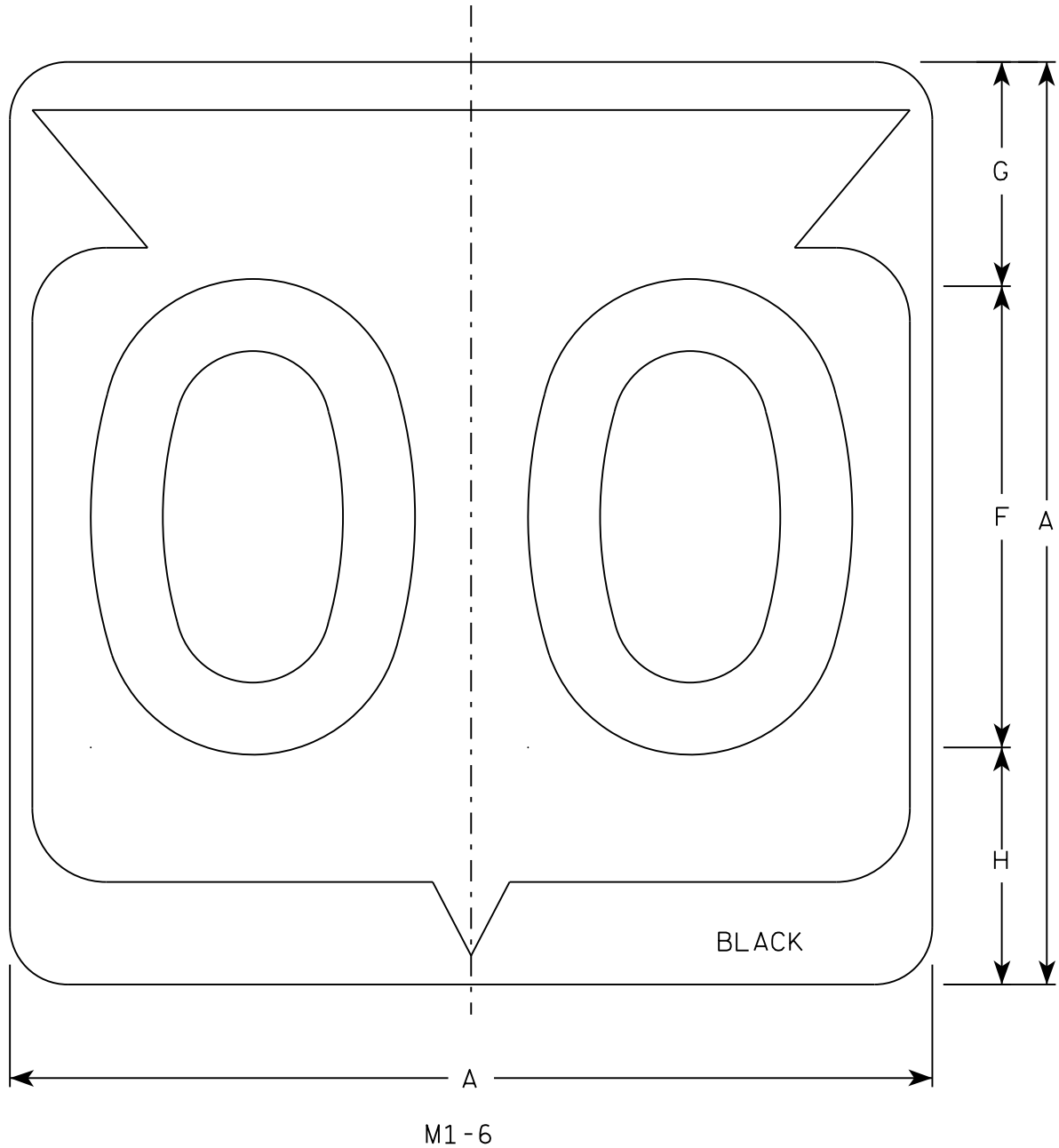
STANDARD SIGN
G20-57C

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

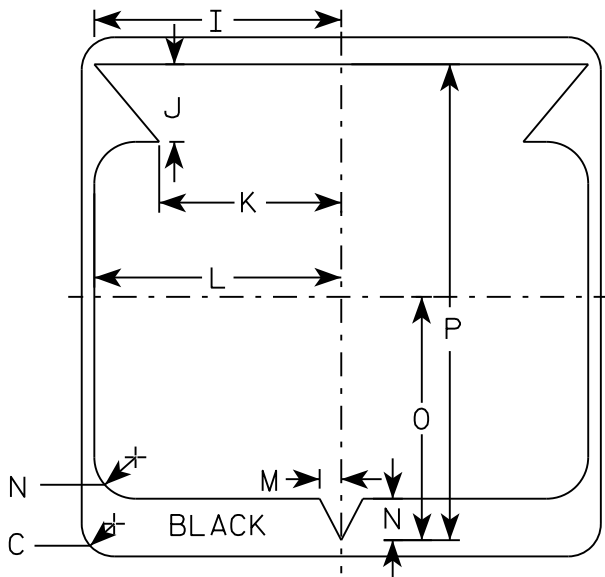
DATE 9/25/19 PLATE NO. G20-57C.1

7



NOTES

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



7

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2	24		1 1/2			12	5 1/2	6 1/2	10 1/4	2 1/2	8 7/8	11 1/2	1	1 7/8	11 1/4	21 7/8											4.0
3	36		2 1/4			18	8 3/4	9 1/4	15 3/8	5 3/8	12 5/8	17 1/8	1 1/2	2 7/8	16 7/8	33											9.0
4	36		2 1/4			18	8 3/4	9 1/4	15 3/8	5 3/8	12 5/8	17 1/8	1 1/2	2 7/8	16 7/8	33											9.0
5	36		2 1/4			18	8 3/4	9 1/4	15 3/8	5 3/8	12 5/8	17 1/8	1 1/2	2 7/8	16 7/8	33											9.0

PROJECT NO:

HWY:

COUNTY:

SHEET NO:

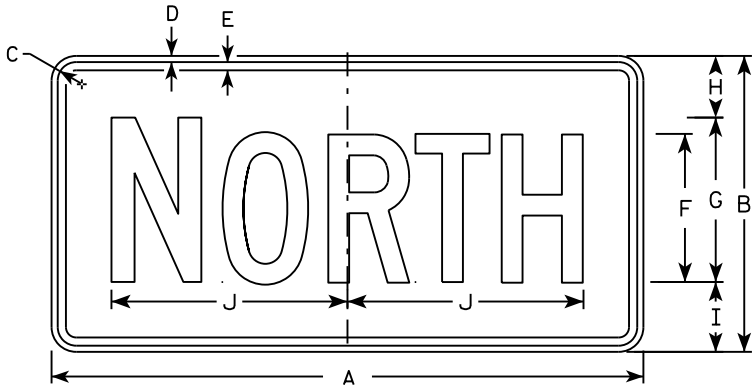
E

STATE ROUTE MARKER
M1-6 FOR ASSEMBLIES

WISCONSIN DEPT OF TRANSPORTATION

APPROVED
Matthew R. Rauch
for State Traffic Engineer

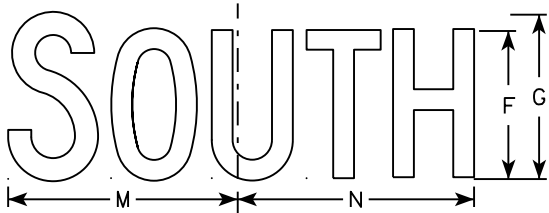
DATE 3/16/18 PLATE NO. M1-6.10



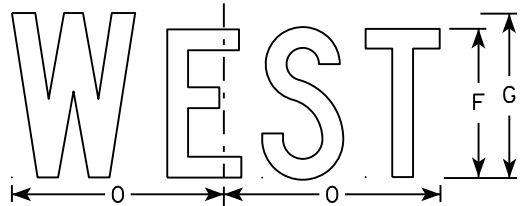
M3-1
MM3-1
MP3-1



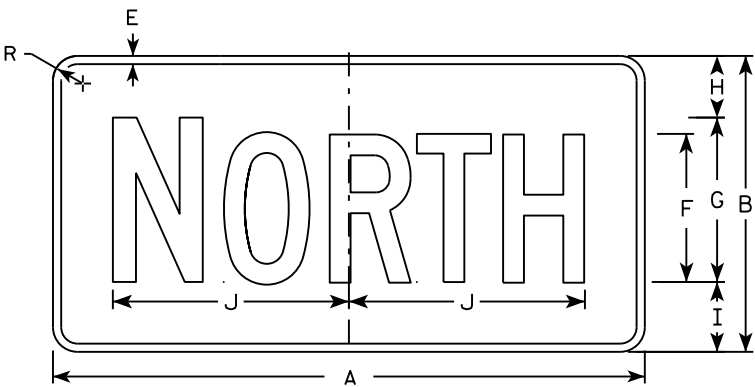
M3-2
MM3-2
MP3-2



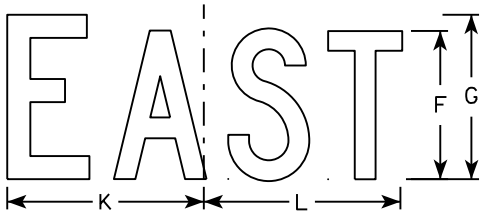
M3-3
MM3-3
MP3-3



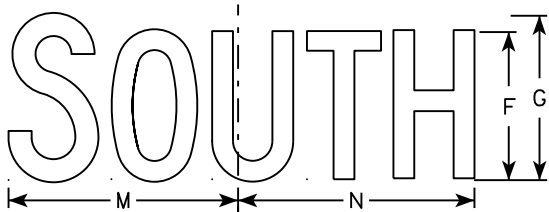
M3-4
MM3-4
MP3-4



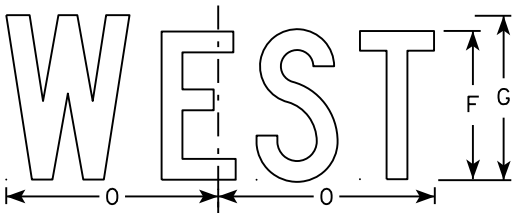
MB3-1
MK3-1
MN3-1



MB3-2
MK3-2
MN3-2



MB3-3
MK3-3
MN3-3



MB3-4
MK3-4
MN3-4

NOTES

1. All Signs Type II - Type H
2. Color:
Background - See note 5
Message - See note 5
3. Message Series - C
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. M3-1 thru M3-4 Background - White
Message - Black
MB3-1 thru MB3-4 Background - Blue
Message - White
MK3-1 thru MK3-4 Background - Green
Message - White
MM3-1 thru MM3-4 Background - White
Message - Green
MN3-1 thru MN3-4 Background - Brown
Message - White
MP3-1 thru MP3-4 Background - White
Message - Blue
6. Note the first letter of each direction is larger than the remainder of the message.

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

STANDARD SIGNS
M3-1 thru M3-4
SERIES

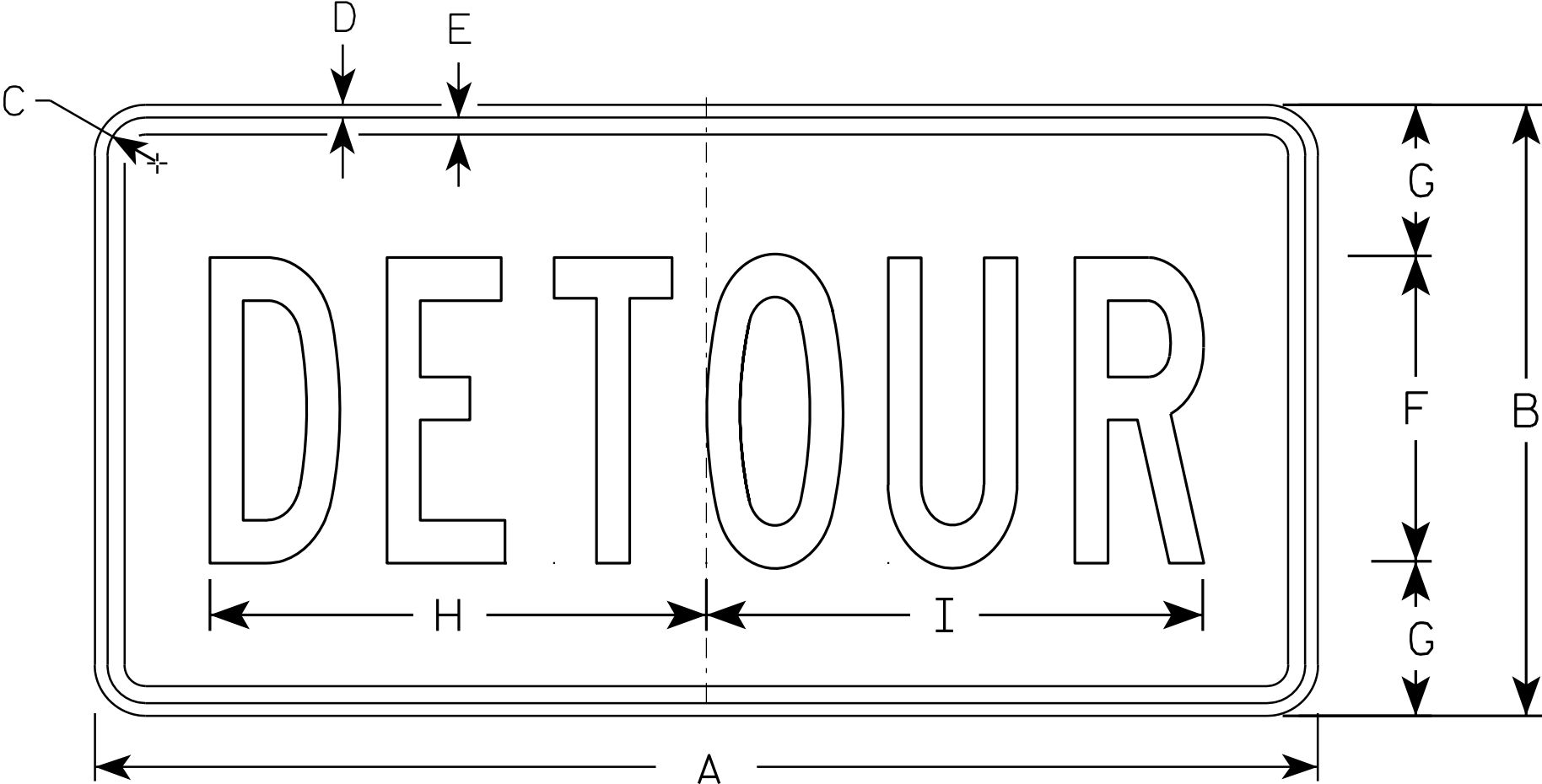
WISCONSIN DEPT OF TRANSPORTATION

APPROVED
Matthew R. Rauch
for State Traffic Engineer

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

NOTES

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



M4 - 8

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

STANDARD SIGN
M4 - 8

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

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

PROJECT NO:

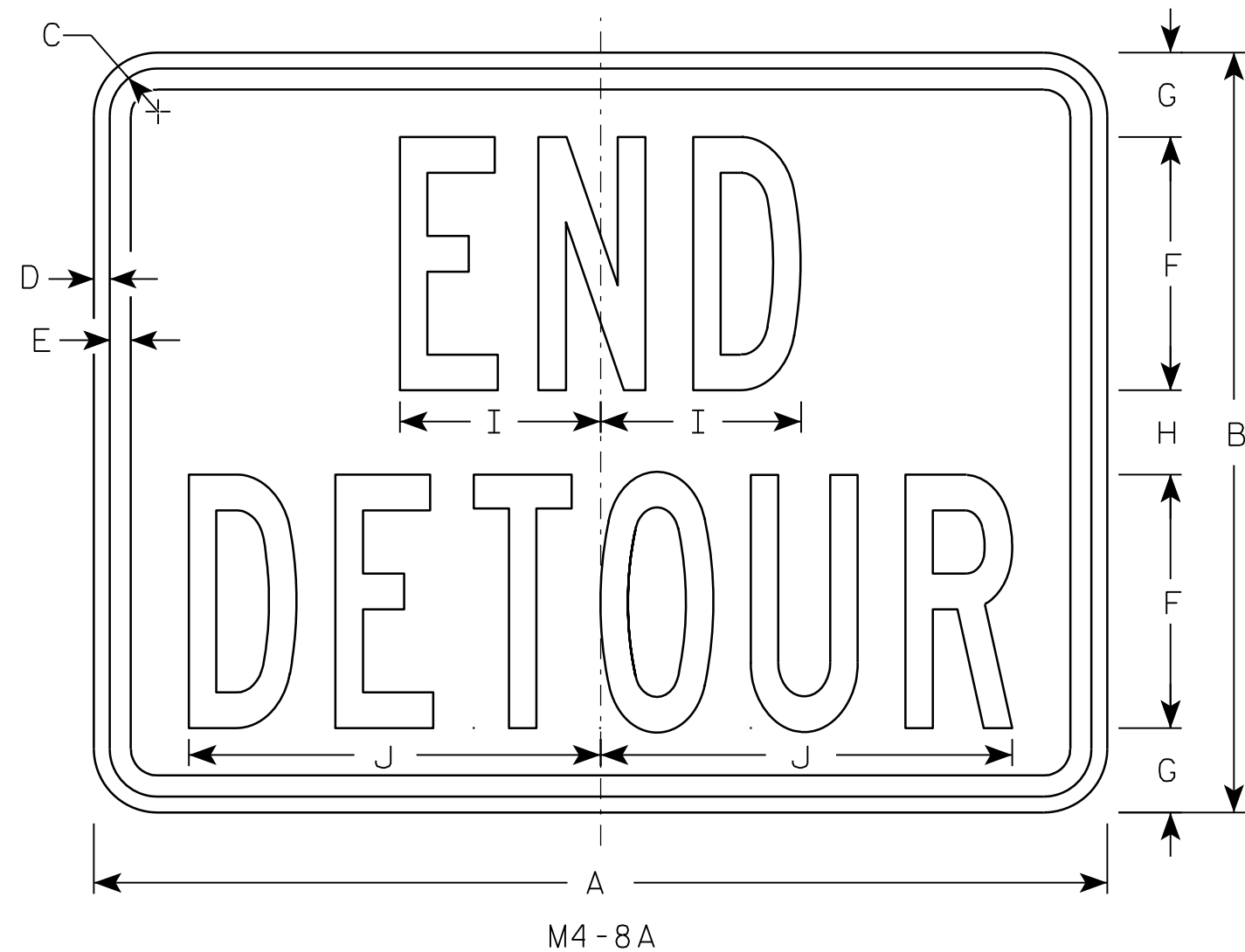
HWY:

COUNTY:

SHEET NO:

E

7



NOTES

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

7

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

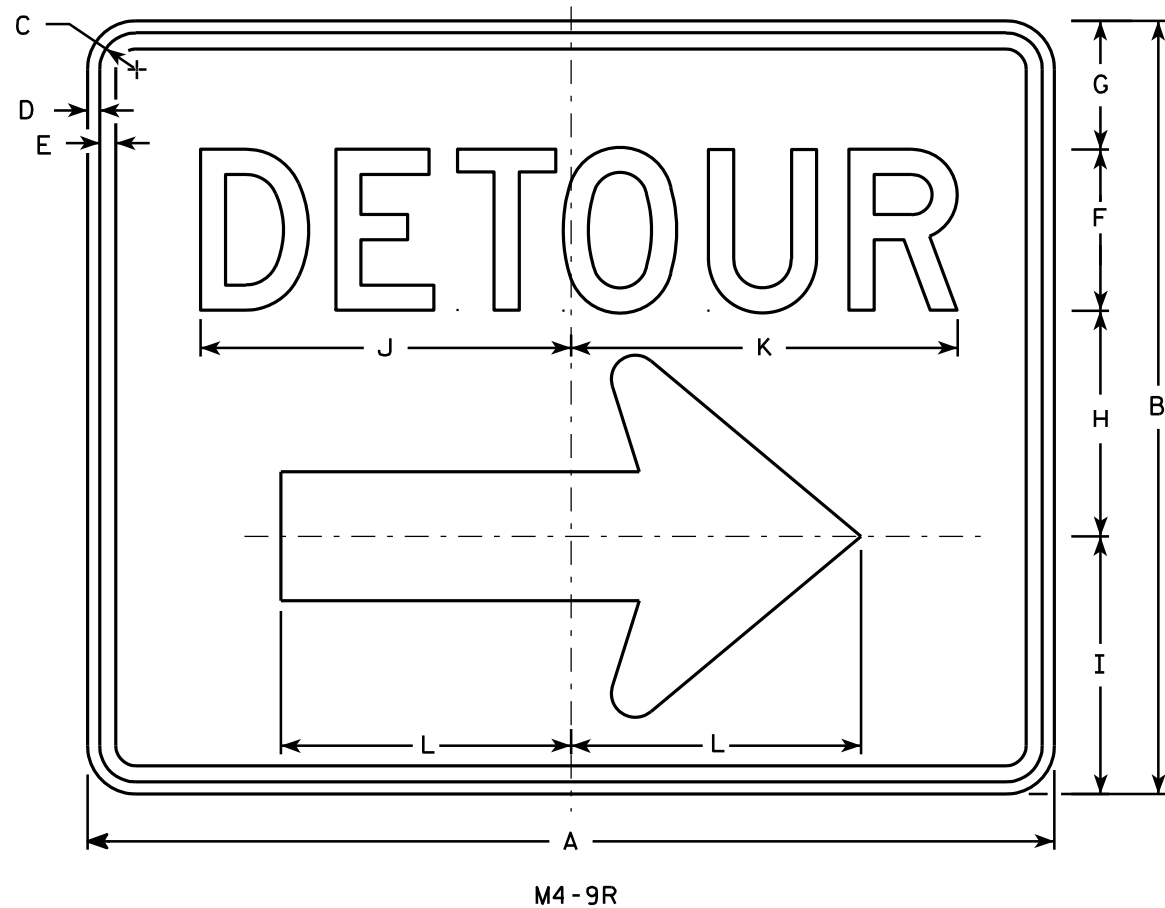
PROJECT NO:	HWY:	COUNTY:		SHEET NO:	E
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STANDARD SIGN
M4-8A

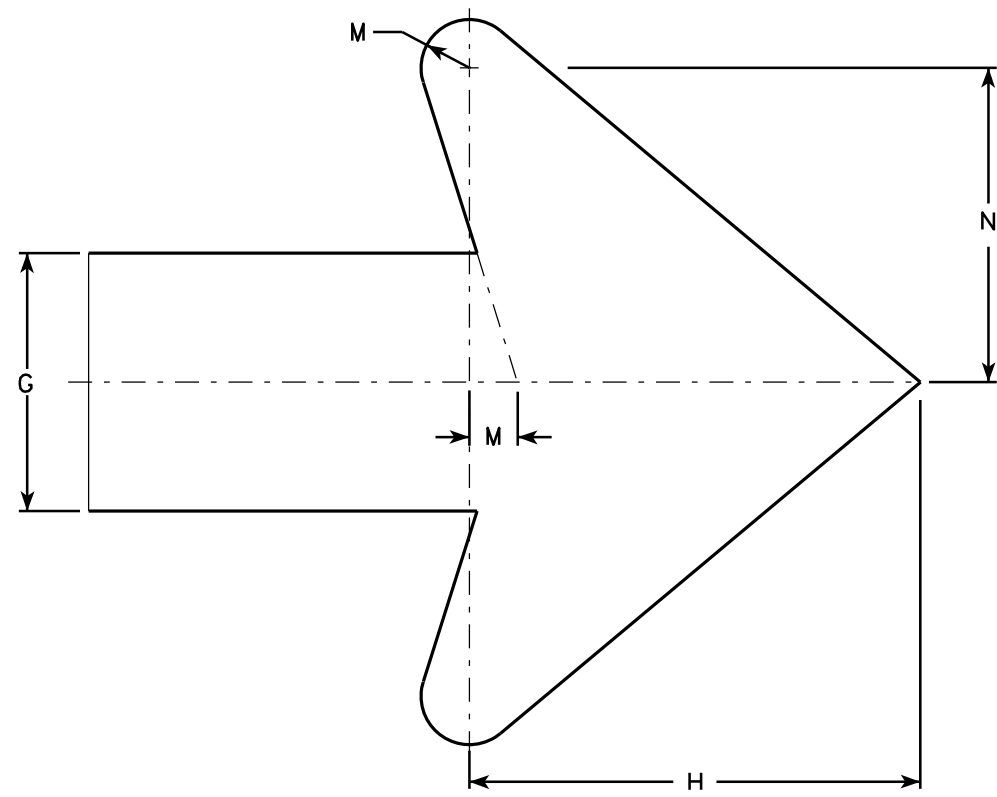
WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

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



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



Arrow Detail

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

STANDARD SIGN
M4-9 R & L

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
For State Traffic Engineer

DATE 3/9/11 PLATE NO. M4-9R.4

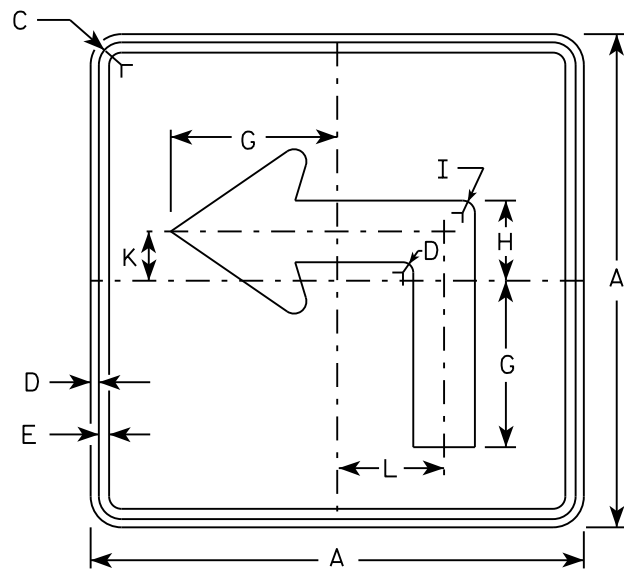
PROJECT NO:

HWY:

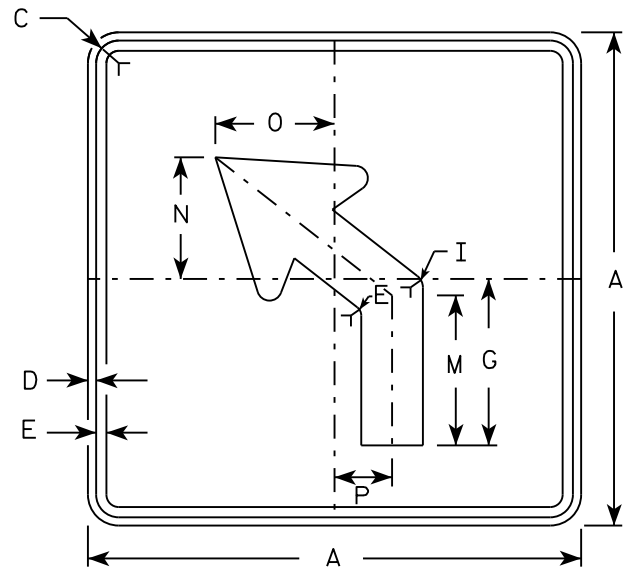
COUNTY:

SHEET NO:

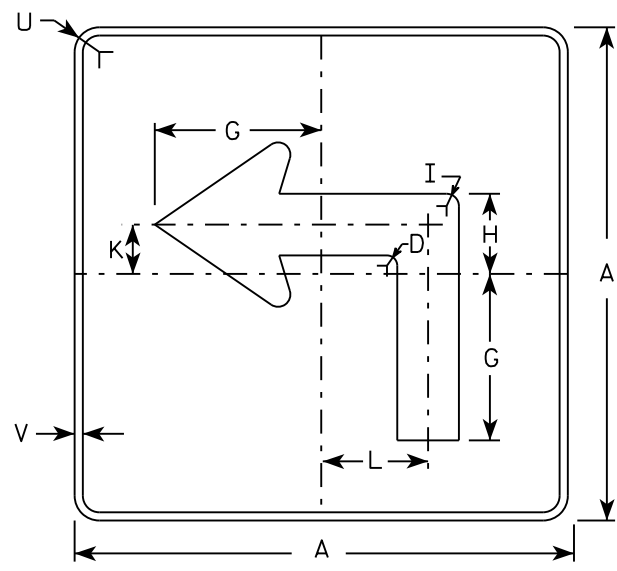
E



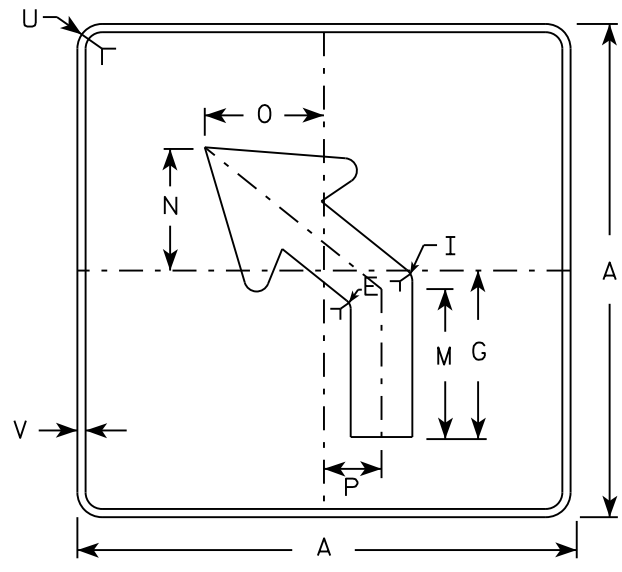
M5-1L
MM5-1L
M05-1L
MP5-1L



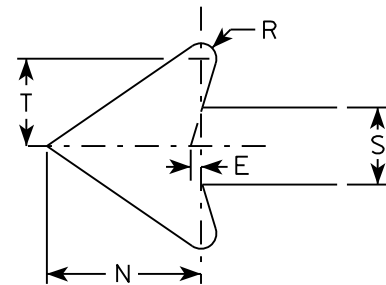
M5-2L
MM5-2L
M05-2L
MP5-2L



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



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



NOTES

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

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

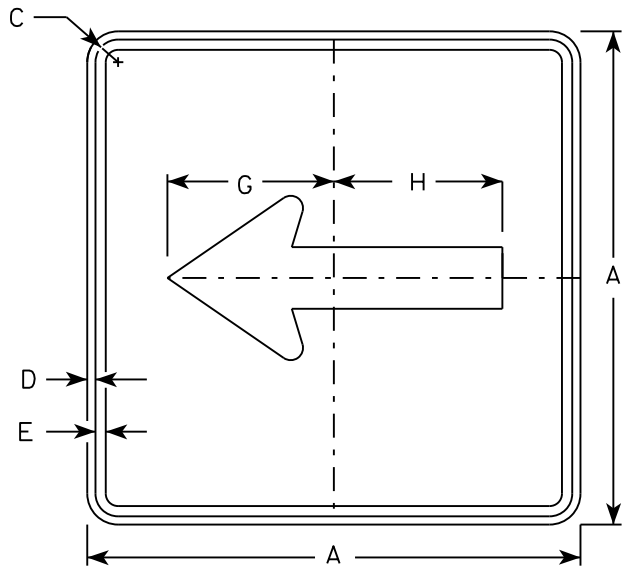
PROJECT NO:	HWY:	COUNTY:	SHEET NO:	E
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STANDARD SIGN
M5-1 & M5-2

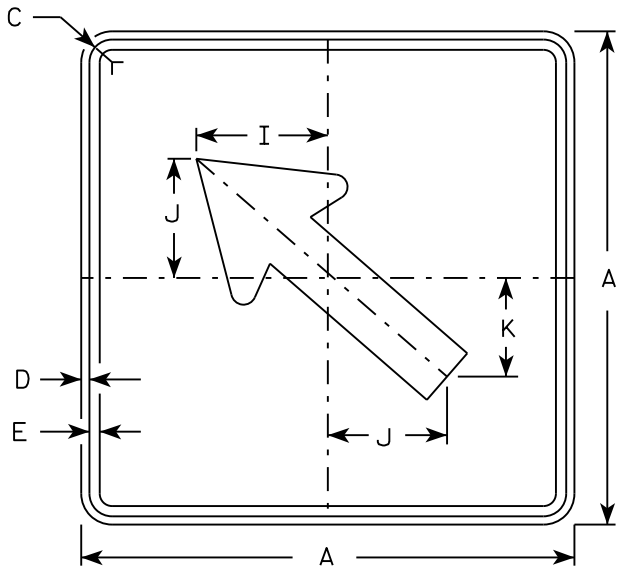
WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

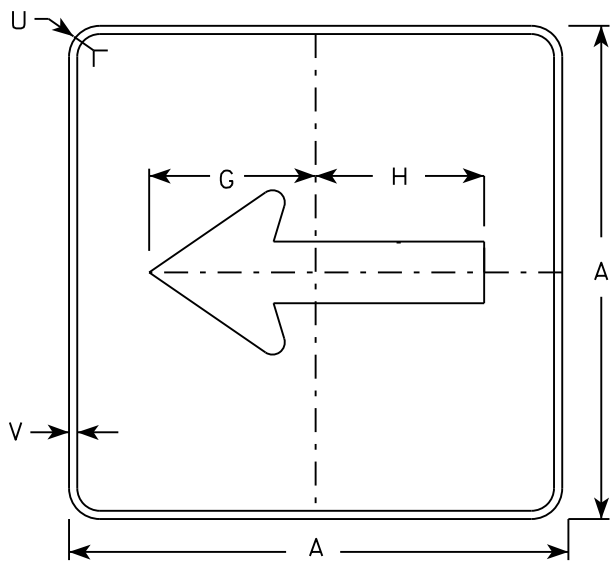
DATE 10/15/15 PLATE NO. M5-1.13



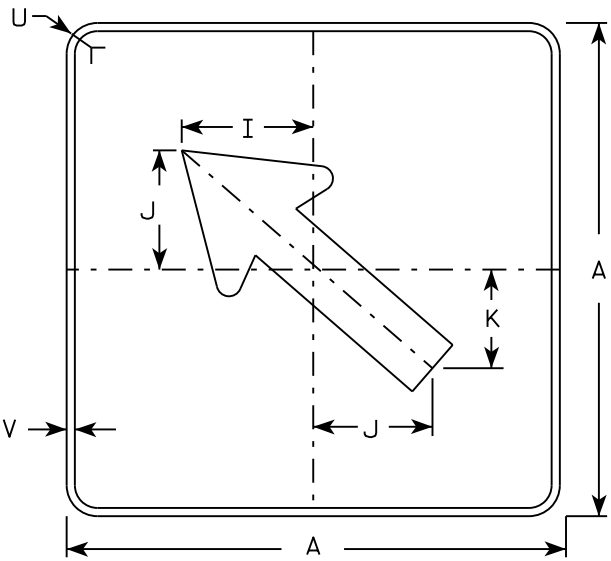
M6 - 1
MM6 - 1
M06 - 1
MP6 - 1



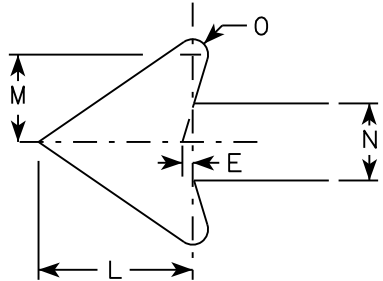
M6 - 2
MM6 - 2
M06 - 2
MP6 - 2



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



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



NOTES

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

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

PROJECT NO:

HWY:

COUNTY:

SHEET NO:

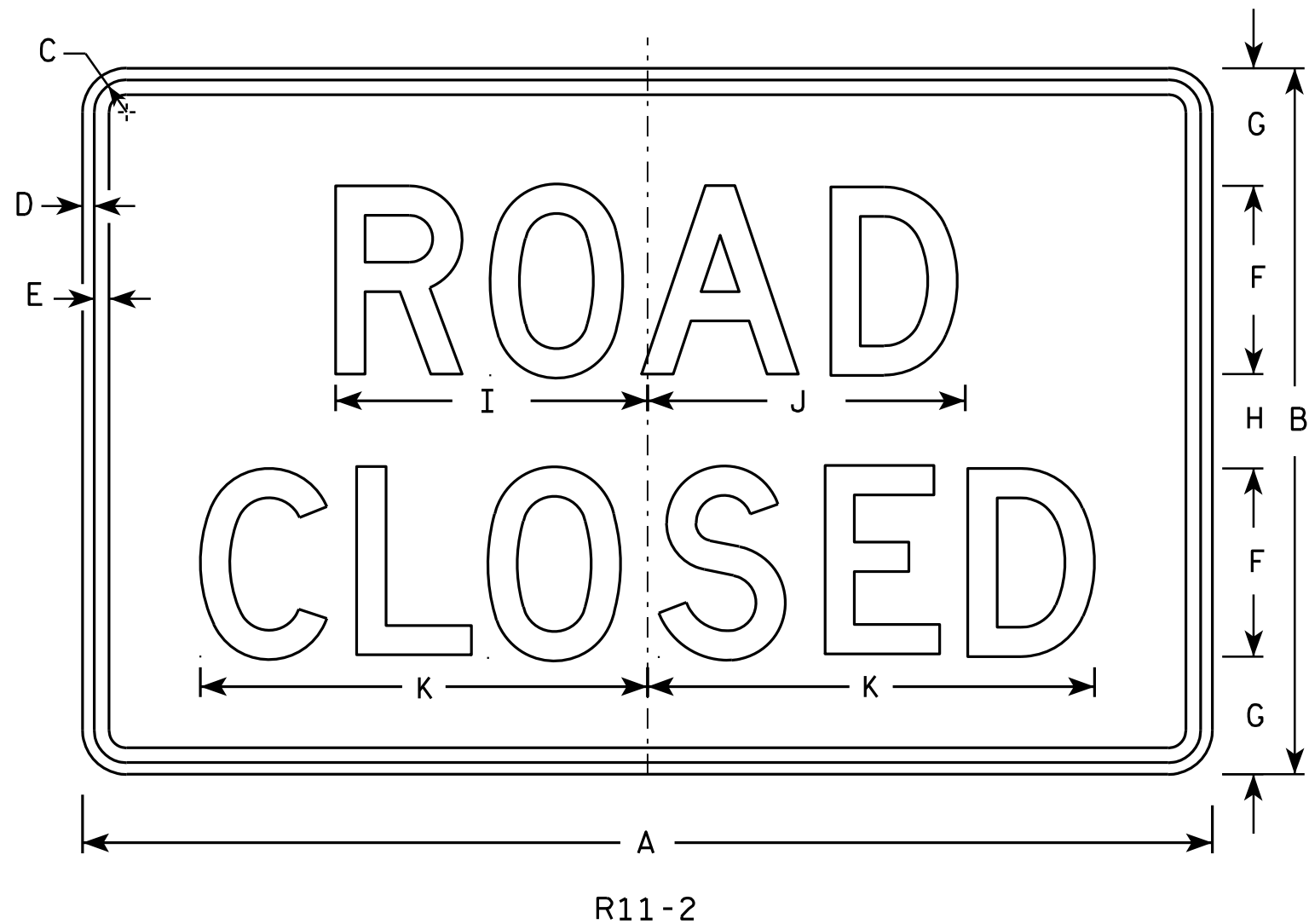
E

STANDARD SIGN
M6 - 1 & M6 - 2
SERIES

WISCONSIN DEPT OF TRANSPORTATION

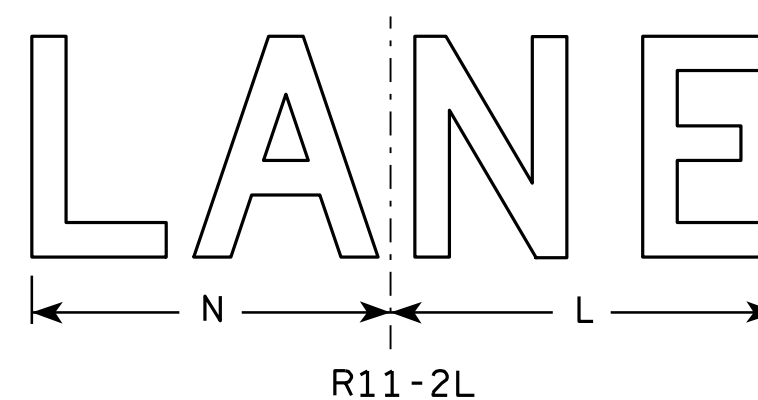
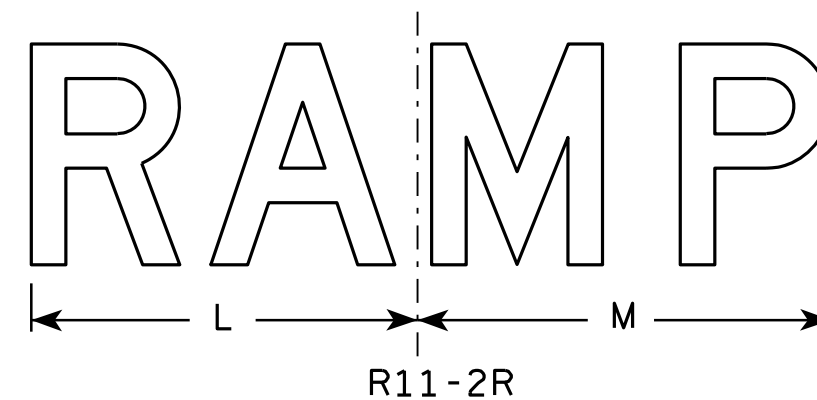
APPROVED
Matthew R. Rauch
for State Traffic Engineer

DATE 10/15/15 PLATE NO. M6-1.15



NOTES

- Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
- Color:
Background - White
Message - Black
- Message Series - D
- 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.
- Modify the message as required.



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	30	1 3⁄8	1⁄2	5⁄8	8	5	4	13 1⁄4	13 1⁄2	19	14	15	13													10.0
2M	48	30	1 3⁄8	1⁄2	5⁄8	8	5	4	13 1⁄4	13 1⁄2	19	14	15	13													10.0
3	48	30	1 3⁄8	1⁄2	5⁄8	8	5	4	13 1⁄4	13 1⁄2	19	14	15	13													10.0
4	48	30	1 3⁄8	1⁄2	5⁄8	8	5	4	13 1⁄4	13 1⁄2	19	14	15	13													10.0
5	48	30	1 3⁄8	1⁄2	5⁄8	8	5	4	13 1⁄4	13 1⁄2	19	14	15	13													10.0

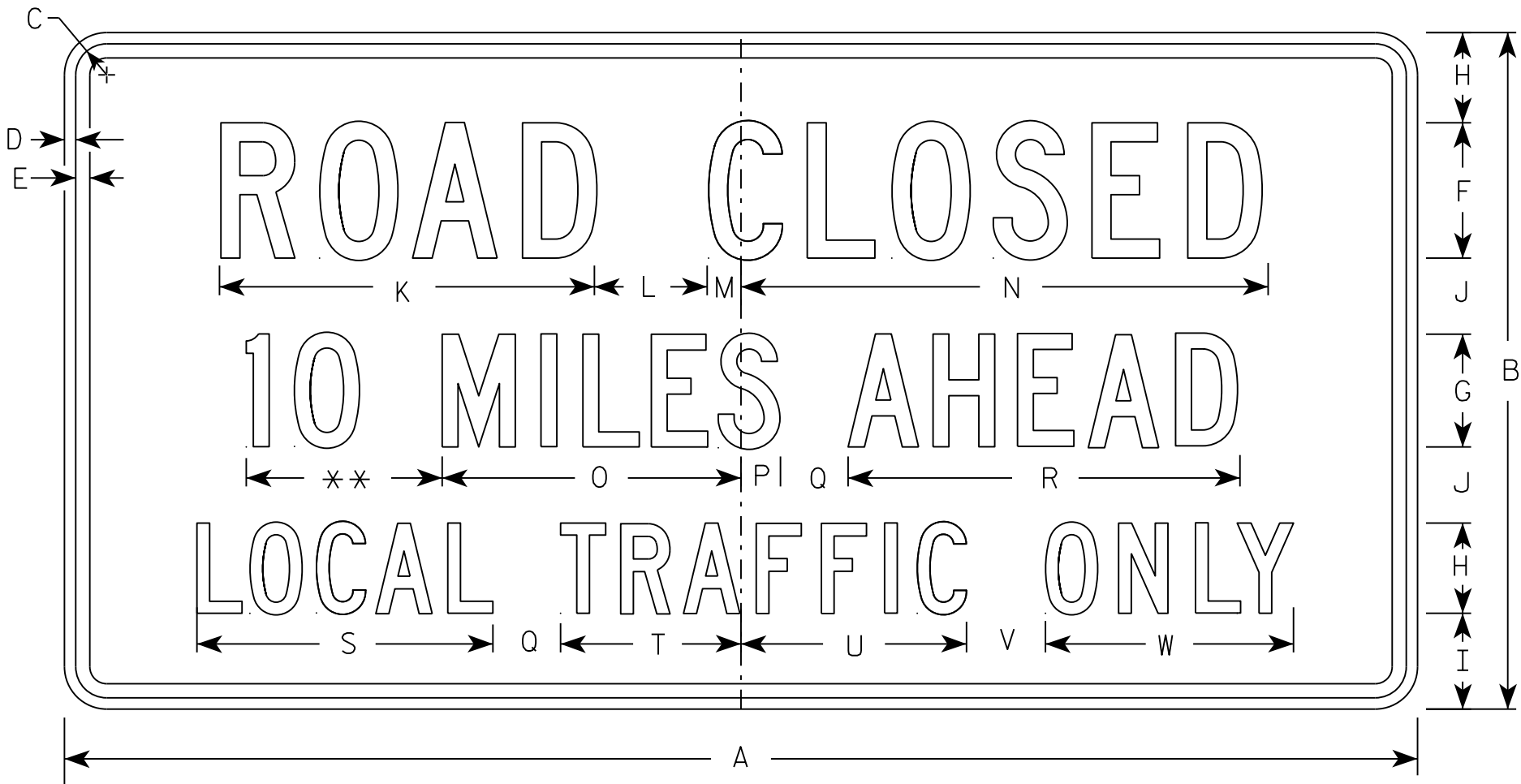
STANDARD SIGN R11-2

WISCONSIN DEPT OF TRANSPORTATION
APPROVED *Matthew R. Rauch*
for State Traffic Engineer
DATE 4/1/11 PLATE NO. R11-2.10

PROJECT NO: HWY: COUNTY: SHEET NO: E

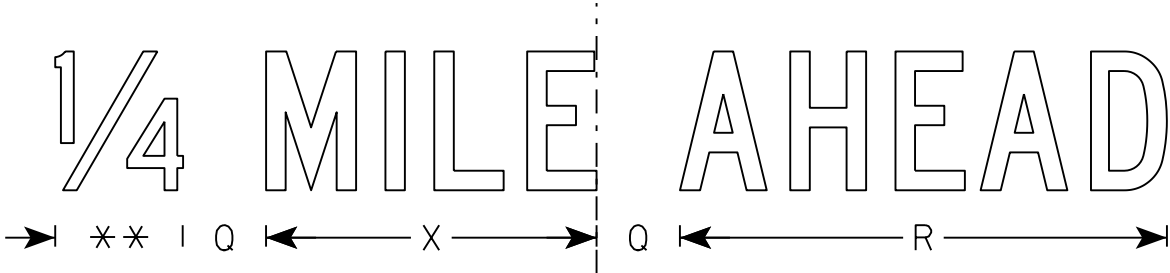
NOTES

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



R11-3

** See Note 5



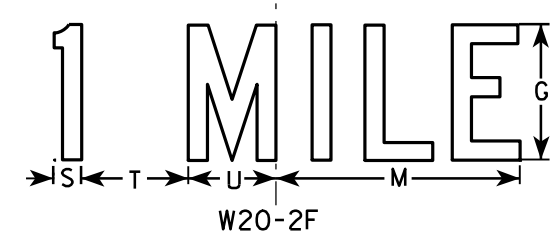
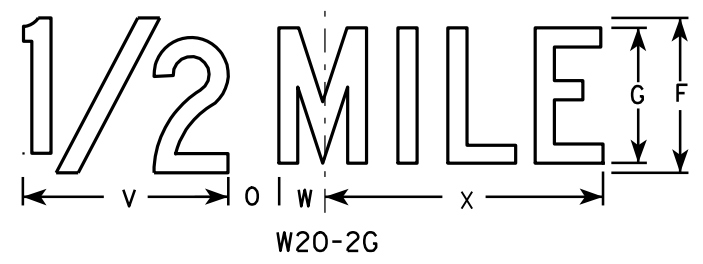
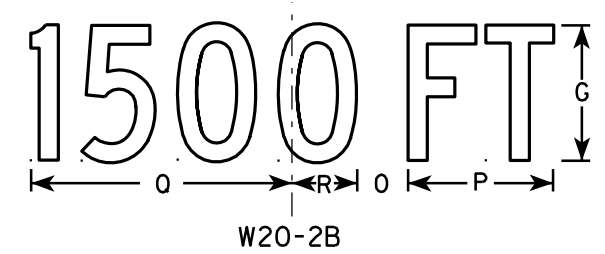
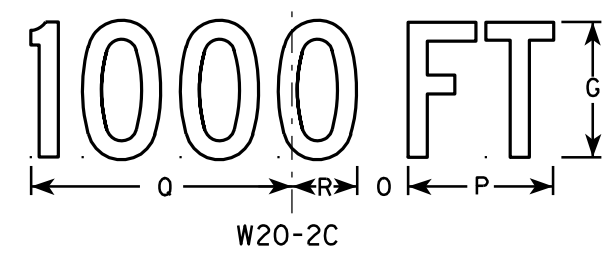
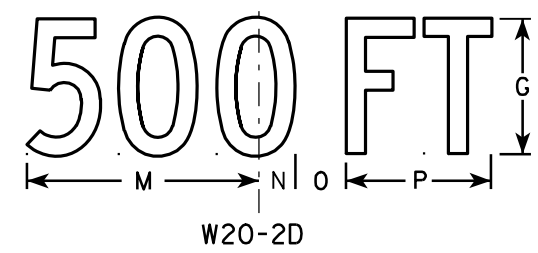
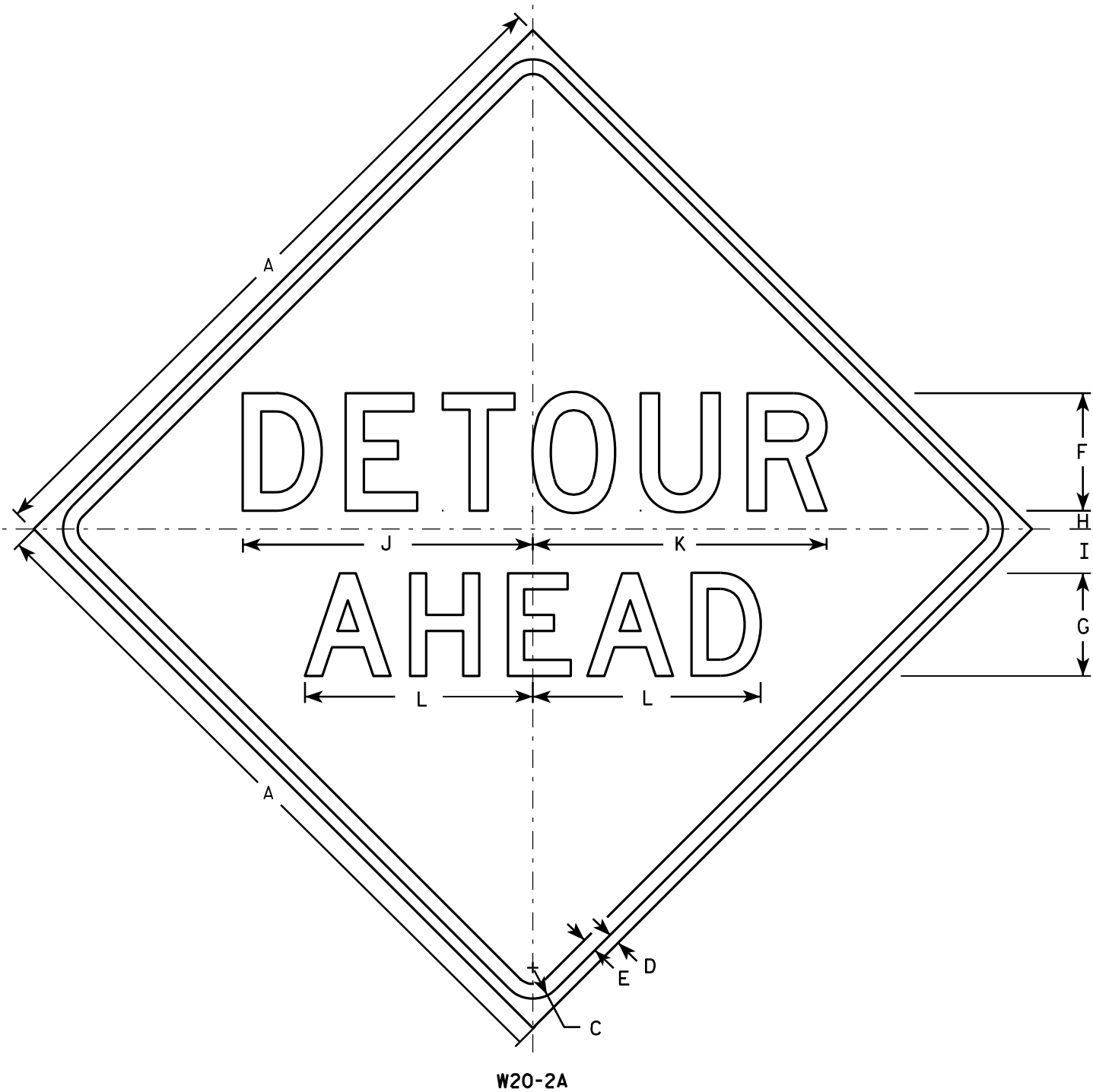
SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	36	18	1 3⁄8	1⁄2	5⁄8	4	3	2 1⁄2	2	2	11 1⁄8	3	1 1⁄8	15 1⁄4	8	1 1⁄2	2	10 3⁄4	8 3⁄8	4 3⁄4	6 1⁄2	2	6 3⁄4	7 1⁄8			4.5
2S	60	30	1 3⁄8	1⁄2	5⁄8	6	5	4	4 1⁄4	3 3⁄8	16 5⁄8	5	1 1⁄2	23	13 1⁄4	1 3⁄4	3	17 3⁄8	13 1⁄8	8	10	3 1⁄2	11	11 7⁄8			12.5
2M	60	30	1 3⁄8	1⁄2	5⁄8	6	5	4	4 1⁄4	3 3⁄8	16 5⁄8	5	1 1⁄2	23	13 1⁄4	1 3⁄4	3	17 3⁄8	13 1⁄8	8	10	3 1⁄2	11	11 7⁄8			12.5
3																											
4																											
5																											

STANDARD SIGN
R11-3

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 3/15/17 PLATE NO. R11-3.8



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 - See note 5
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. Line 1 is Series D.
Line 2 is Series D for AHEAD and Series C for all other distances.

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

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

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 3/18/11 PLATE NO. W20-2.6

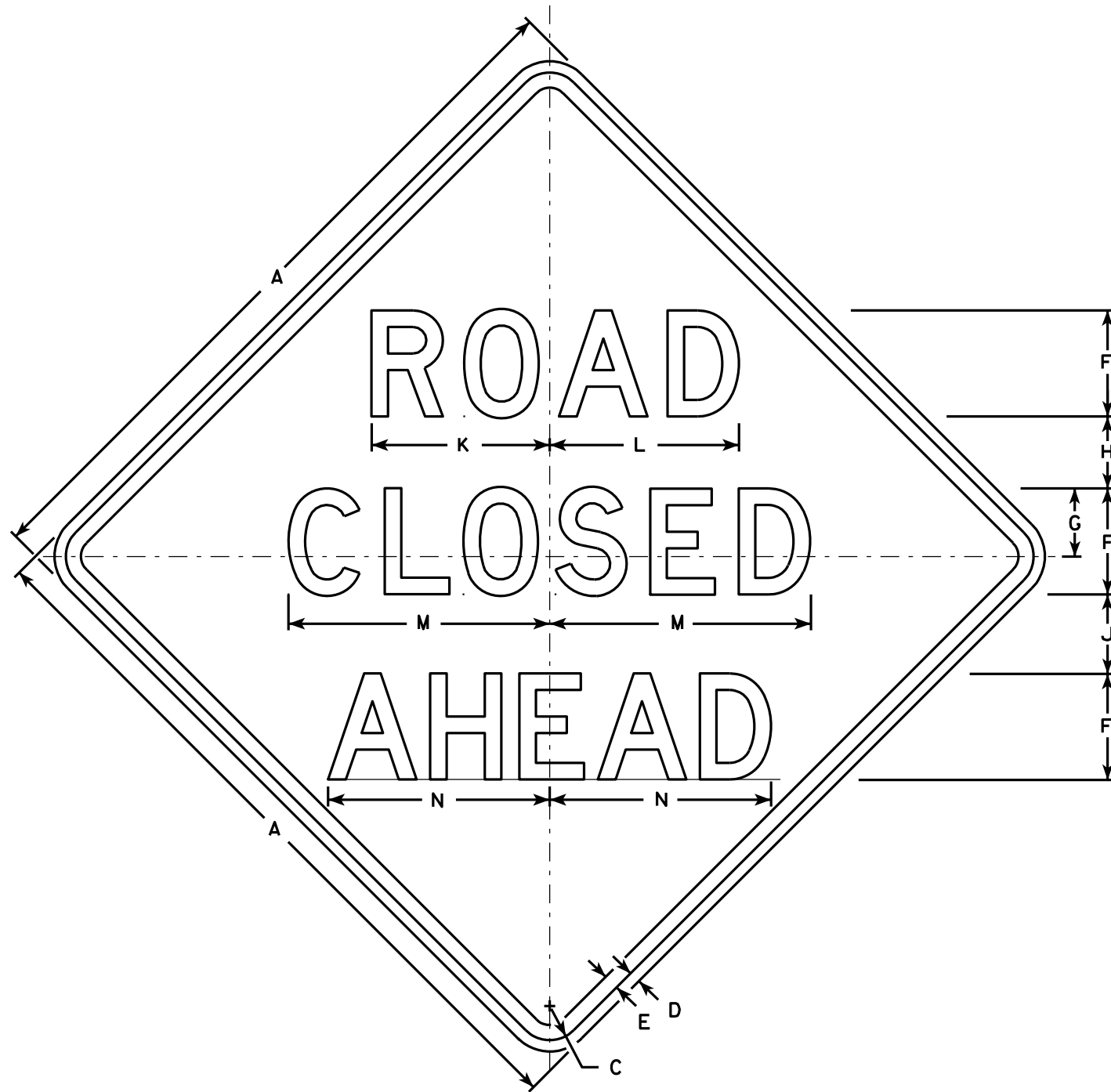
PROJECT NO:

HWY:

COUNTY:

SHEET NO:

E



W20-3A

500 FT

W20-3D

1000 FT

W20-3C

1500 FT

W20-3B

1/2 MILE

W20-3G

1 MILE

W20-3F

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 - see note 5
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. Lines 1 and 2 are Series D.
Line 3 is Series D for AHEAD and Series C for all other distances.

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	36		1 5/8	5/8	3/4	5	3 3/8	3 1/2	1 1/8	4	8 3/8	8 7/8	12 1/2	11	9	6	10 1/8	2 1/2	1 7/8	5 5/8	8	1 3/8	4 1/2	3 1/2	10 3/4	1 3/4	9.0
2S	48		2 1/4	3/4	1	7	4 1/2	4 3/4	1 1/2	5 1/4	11 3/4	12 1/2	17 1/4	14 5/8	12	8	13 1/2	3 3/8	2 5/8	7 1/2	10 5/8	1 7/8	6	4 5/8	14 3/8	2 3/8	16.0
2M	48		2 1/4	3/4	1	7	4 1/2	4 3/4	1 1/2	5 1/4	11 3/4	12 1/2	17 1/4	14 5/8	12	8	13 1/2	3 3/8	2 5/8	7 1/2	10 5/8	1 7/8	6	4 5/8	14 3/8	2 3/8	16.0
3	48		2 1/4	3/4	1	7	4 1/2	4 3/4	1 1/2	5 1/4	11 3/4	12 1/2	17 1/4	14 5/8	12	8	13 1/2	3 3/8	2 5/8	7 1/2	10 5/8	1 7/8	6	4 5/8	14 3/8	2 3/8	16.0
4	48		2 1/4	3/4	1	7	4 1/2	4 3/4	1 1/2	5 1/4	11 3/4	12 1/2	17 1/4	14 5/8	12	8	13 1/2	3 3/8	2 5/8	7 1/2	10 5/8	1 7/8	6	4 5/8	14 3/8	2 3/8	16.0
5	48		2 1/4	3/4	1	7	4 1/2	4 3/4	1 1/2	5 1/4	11 3/4	12 1/2	17 1/4	14 5/8	12	8	13 1/2	3 3/8	2 5/8	7 1/2	10 5/8	1 7/8	6	4 5/8	14 3/8	2 3/8	16.0

STANDARD SIGN
W20-3A, B, C, D, F & G

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
For State Traffic Engineer

DATE 3/18/11 PLATE NO. W20-3.7

PROJECT NO:

HWY:

COUNTY:

SHEET NO:

E

STATION	REAL STATION	DISTANCE	AREA (SF)		INCREMENTAL VOL (CY) (UNADJUSTED)		CUMULATIVE VOL (CY)		
			CUT	FILL	CUT	FILL	X 1.00 CUT	X 1.25 EXPANDED FILL	MASS ORDINATE
229+35	22935.00	0.00	4.89	0.71	0	0	0	0	0
229+40	22940.00	5.00	4.30	0.72	1	0	1	0	1
229+45	22945.00	5.00	3.88	0.66	1	0	2	0	2
229+50	22950.00	5.00	3.69	0.58	1	0	3	0	3
229+55	22955.00	5.00	3.36	0.82	1	0	4	0	4
229+60	22960.00	5.00	3.02	1.17	1	0	5	0	5
229+65	22965.00	5.00	2.48	1.84	1	0	6	0	6
229+70	22970.00	5.00	1.83	3.01	0	0	6	0	6
229+75	22975.00	5.00	1.32	4.56	0	1	6	1	5
229+80	22980.00	5.00	1.01	6.22	0	1	6	3	4
229+85	22985.00	5.00	0.87	7.86	0	1	6	4	2
229+90	22990.00	5.00	1.55	8.59	0	2	6	6	0
229+95	22995.00	5.00	3.82	9.26	0	2	6	9	-3
230+00	23000.00	5.00	12.38	8.07	1	2	7	11	-4
230+05	23005.00	5.00	16.31	8.69	3	2	10	14	-4
230+10	23010.00	5.00	19.22	10.05	3	2	13	16	-3
230+15	23015.00	5.00	22.11	11.27	4	2	17	19	-2
230+20	23020.00	5.00	18.73	12.73	4	2	21	21	0
230+25	23025.00	5.00	15.27	14.50	3	3	24	25	-1
230+30	23030.00	5.00	10.37	17.82	2	3	26	29	-3
230+35	23035.00	5.00	4.52	18.99	1	3	27	33	-6
230+40	23040.00	5.00	1.43	20.61	1	4	28	38	-10
230+45	23045.00	5.00	0.35	24.61	0	4	28	43	-15
230+50	23050.00	5.00	0.15	27.52	0	5	28	49	-21
230+55	23055.00	5.00	0.20	28.76	0	5	28	55	-27
230+60	23060.00	5.00	0.56	29.82	0	5	28	61	-33
230+65	23065.00	5.00	0.58	33.40	0	6	28	69	-41
230+70	23070.00	5.00	0.45	38.19	0	7	28	78	-50
230+75	23075.00	5.00	0.20	44.33	0	8	28	88	-60
230+80	23080.00	5.00	0.21	49.79	0	9	28	99	-71
230+85	23085.00	5.00	0.26	50.37	0	9	28	110	-82
230+90	23090.00	5.00	0.28	49.54	0	9	28	121	-93
230+95	23095.00	5.00	0.41	50.19	0	9	28	133	-105
231+00	23100.00	5.00	0.45	53.22	0	10	28	145	-117
231+05	23105.00	5.00	0.56	51.77	0	10	28	158	-130
231+10	23110.00	5.00	0.79	51.70	0	10	28	170	-142
231+15	23115.00	5.00	1.29	52.61	0	10	28	183	-155
231+20	23120.00	5.00	0.68	55.78	0	10	28	195	-167
231+25	23125.00	5.00	0.73	59.97	0	11	28	209	-181
231+30	23130.00	5.00	0.81	59.30	0	11	28	223	-195
231+35	23135.00	5.00	0.86	60.47	0	11	28	236	-208
231+40	23140.00	5.00	0.92	54.46	0	11	28	250	-222

STATION	REAL STATION	DISTANCE	AREA (SF)		INCREMENTAL VOL (CY) (UNADJUSTED)		CUMULATIVE VOL (CY) (CONTINUED)		
			CUT	FILL	CUT	FILL	X 1.00 CUT	X 1.25 EXPANDED FILL	MASS ORDINATE
231+45	23145.00	5.00	1.12	48.60	0	10	28	263	-235
231+50	23150.00	5.00	1.02	40.68	0	8	28	273	-245
231+55	23155.00	5.00	1.01	29.98	0	7	28	281	-253
231+60	23160.00	5.00	0.98	23.64	0	5	28	288	-260
231+65	23165.00	5.00	0.95	20.94	0	4	28	293	-265
231+70	23170.00	5.00	0.91	18.19	0	4	28	298	-270
231+75	23175.00	5.00	0.86	14.55	0	3	28	301	-273
231+80	23180.00	5.00	0.93	13.52	0	3	28	305	-277
231+85	23185.00	5.00	0.97	12.94	0	2	28	308	-280
231+90	23190.00	5.00	0.82	12.13	0	2	28	310	-282
231+95	23195.00	5.00	0.75	11.16	0	2	28	313	-285
232+00	23200.00	5.00	0.74	10.89	0	2	28	315	-287
232+05	23205.00	5.00	0.74	11.16	0	2	28	318	-290
232+10	23210.00	5.00	0.75	11.41	0	2	28	320	-292
232+15	23215.00	5.00	0.77	11.61	0	2	28	323	-295
232+20	23220.00	5.00	0.79	11.89	0	2	28	325	-297
232+25	23225.00	5.00	0.84	12.07	0	2	28	328	-300
232+30	23230.00	5.00	0.80	12.29	0	2	28	330	-302
232+35	23235.00	5.00	0.74	12.51	0	2	28	333	-305
232+40	23240.00	5.00	0.64	12.82	0	2	28	335	-307
232+45	23245.00	5.00	0.51	13.15	0	2	28	338	-310
232+50	23250.00	5.00	0.36	13.32	0	2	28	340	-312
232+55	23255.00	5.00	0.38	12.46	0	2	28	343	-315
232+60	23260.00	5.00	0.37	11.70	0	2	28	345	-317
232+65	23265.00	5.00	0.32	10.87	0	2	28	348	-320
232+70	23270.00	5.00	0.27	10.49	0	2	28	350	-322
232+75	23275.00	5.00	0.23	10.46	0	2	28	353	-325
232+80	23280.00	5.00	0.28	10.30	0	2	28	355	-327
232+85	23285.00	5.00	0.31	10.36	0	2	28	358	-330
232+90	23290.00	5.00	0.33	10.52	0	2	28	360	-332
232+95	23295.00	5.00	0.31	10.96	0	2	28	363	-335
233+00	23300.00	5.00	0.21	11.64	0	2	28	365	-337
233+05	23305.00	5.00	0.23	11.80	0	2	28	368	-340
233+10	23310.00	5.00	0.25	11.98	0	2	28	370	-342
233+15	23315.00	5.00	0.27	12.11	0	2	28	373	-345
233+20	23320.00	5.00	0.25	11.98	0	2	28	375	-347
233+25	23325.00	5.00	0.22	11.74	0	2	28	378	-350
233+30	23330.00	5.00	0.22	11.56	0	2	28	380	-352
233+35	23335.00	5.00	0.24	11.25	0	2	28	383	-355
233+40	23340.00	5.00	0.25	10.96	0	2	28	385	-357
233+45	23345.00	5.00	0.24	10.75	0	2	28	388	-360
233+50	23350.00	5.00	0.23	10.62	0	2	28	390	-362

STATION	REAL STATION	DISTANCE	AREA (SF)		INCREMENTAL VOL (CY) (UNADJUSTED)		CUMULATIVE VOL (CY) (CONTINUED)		
			CUT	FILL	CUT	FILL	X 1.00 CUT	X 1.25 EXPANDED FILL	MASS ORDNATE
233+55	23355.00	5.00	0.17	11.34	0	2	28	393	-365
233+60	23360.00	5.00	0.12	13.64	0	2	28	395	-367
233+65	23365.00	5.00	0.10	18.48	0	3	28	399	-371
233+70	23370.00	5.00	0.13	22.48	0	4	28	404	-376
233+75	23375.00	5.00	0.27	27.79	0	5	28	410	-382
233+80	23380.00	5.00	0.30	30.78	0	5	28	416	-388
233+85	23385.00	5.00	0.27	33.79	0	6	28	424	-396
233+90	23390.00	5.00	0.30	35.89	0	6	28	431	-403
233+95	23395.00	5.00	0.59	36.82	0	7	28	440	-412
234+00	23400.00	5.00	0.89	35.25	0	7	28	449	-421
234+05	23405.00	5.00	1.11	33.61	0	6	28	456	-428
234+10	23410.00	5.00	1.39	31.90	0	6	28	464	-436
234+15	23415.00	5.00	1.25	31.34	0	6	28	471	-443
234+20	23420.00	5.00	0.91	32.51	0	6	28	479	-451
234+25	23425.00	5.00	0.51	34.64	0	6	28	486	-458
234+30	23430.00	5.00	0.65	35.03	0	6	28	494	-466
234+35	23435.00	5.00	0.69	34.93	0	6	28	501	-473
234+40	23440.00	5.00	0.70	34.87	0	6	28	509	-481
234+45	23445.00	5.00	0.71	34.53	0	6	28	516	-488
234+50	23450.00	5.00	0.74	33.85	0	6	28	524	-496
234+55	23455.00	5.00	0.62	37.95	0	7	28	533	-505
234+60	23460.00	5.00	0.62	55.25	0	9	28	544	-516
234+65	23465.00	5.00	0.71	85.20	0	13	28	560	-532
234+70	23470.00	5.00	0.86	112.60	0	18	28	583	-555
234+75	23475.00	5.00	0.83	124.44	0	22	28	610	-582
234+80	23480.00	5.00	0.76	136.85	0	24	28	640	-612
234+85	23485.00	5.00	0.62	153.26	0	27	28	674	-646
234+90	23490.00	5.00	0.68	160.13	0	29	28	710	-682
234+95	23495.00	5.00	0.51	150.59	0	29	28	746	-718
235+00	23500.00	5.00	0.59	141.53	0	27	28	780	-752
235+05	23505.00	5.00	0.65	129.68	0	25	28	811	-783
235+10	23510.00	5.00	0.67	121.70	0	23	28	840	-812
235+15	23515.00	5.00	0.65	114.98	0	22	28	868	-840
235+20	23520.00	5.00	0.68	109.19	0	21	28	894	-866
235+25	23525.00	5.00	0.72	103.01	0	20	28	919	-891
235+30	23530.00	5.00	0.71	93.95	0	18	28	941	-913
235+35	23535.00	5.00	0.64	89.09	0	17	28	963	-935
235+40	23540.00	5.00	0.61	84.14	0	16	28	983	-955
235+45	23545.00	5.00	0.61	75.82	0	15	28	1,001	-973
235+50	23550.00	5.00	0.59	70.22	0	14	28	1,019	-991
235+55	23555.00	5.00	0.80	60.20	0	12	28	1,034	-1,006
235+60	23560.00	5.00	0.92	47.78	0	10	28	1,046	-1,018

STATION	REAL STATION	DISTANCE	AREA (SF)		INCREMENTAL VOL (CY) (UNADJUSTED)		CUMULATIVE VOL (CY) (CONTINUED)		
			CUT	FILL	CUT	FILL	X 1.00 CUT	X 1.25 EXPANDED FILL	MASS ORDINATE
235+65	23565.00	5.00	0.94	37.94	0	8	28	1,056	-1,028
235+70	23570.00	5.00	1.00	30.66	0	6	28	1,064	-1,036
235+75	23575.00	5.00	1.42	21.98	0	5	28	1,070	-1,042
235+80	23580.00	5.00	2.22	16.29	0	4	28	1,075	-1,047
235+85	23585.00	5.00	4.75	11.94	1	3	29	1,079	-1,050
235+90	23590.00	5.00	7.47	9.62	1	2	30	1,081	-1,051
235+95	23595.00	5.00	6.60	8.07	1	2	31	1,084	-1,053
236+00	23600.00	5.00	4.00	6.78	1	1	32	1,085	-1,053
236+05	23605.00	5.00	3.54	7.48	1	1	33	1,086	-1,053
236+10	23610.00	5.00	1.97	9.30	1	2	34	1,089	-1,055
236+15	23615.00	5.00	1.14	8.50	0	2	34	1,091	-1,057
236+20	23620.00	5.00	0.73	7.72	0	2	34	1,094	-1,060
236+25	23625.00	5.00	0.63	8.01	0	1	34	1,095	-1,061
236+30	23630.00	5.00	0.58	7.73	0	1	34	1,096	-1,062
236+35	23635.00	5.00	0.61	7.51	0	1	34	1,098	-1,064
236+40	23640.00	5.00	0.70	7.35	0	1	34	1,099	-1,065
236+45	23645.00	5.00	0.73	7.10	0	1	34	1,100	-1,066
236+50	23650.00	5.00	0.70	6.77	0	1	34	1,101	-1,067
236+55	23655.00	5.00	0.75	5.89	0	1	34	1,103	-1,069
236+60	23660.00	5.00	0.87	4.93	0	1	34	1,104	-1,070
236+65	23665.00	5.00	1.29	4.13	0	1	34	1,105	-1,071
236+70	23670.00	5.00	2.22	3.54	0	1	34	1,106	-1,072
236+75	23675.00	5.00	5.04	2.56	1	1	35	1,108	-1,073
236+80	23680.00	5.00	5.78	1.42	1	0	36	1,108	-1,072
236+85	23685.00	5.00	6.63	0.86	1	0	37	1,108	-1,071

STATION	REAL STATION	DISTANCE	AREA (SF)		INCREMENTAL VOL (CY) (UNADJUSTED)		CUMULATIVE VOL (CY)		
			CUT	FILL	CUT	FILL	X 1.00 CUT	X 1.25 EXPANDED FILL	MASS ORDNATE
250+85	25085.00	0.00	0.03	14.64	0	0	0	0	0
250+90	25090.00	5.00	0.03	12.81	0	3	0	4	-4
250+95	25095.00	5.00	0.02	9.06	0	2	0	6	-6
251+00	25100.00	5.00	0.03	7.65	0	2	0	9	-9
251+05	25105.00	5.00	0.04	8.84	0	2	0	11	-11
251+10	25110.00	5.00	0.00	9.77	0	2	0	14	-14
251+15	25115.00	5.00	0.00	10.21	0	2	0	16	-16
251+20	25120.00	5.00	0.00	10.13	0	2	0	19	-19
251+25	25125.00	5.00	0.01	10.76	0	2	0	21	-21
251+30	25130.00	5.00	0.02	11.78	0	2	0	24	-24
251+35	25135.00	5.00	0.05	12.99	0	2	0	26	-26
251+40	25140.00	5.00	0.09	14.35	0	3	0	30	-30
251+45	25145.00	5.00	0.15	15.87	0	3	0	34	-34
251+50	25150.00	5.00	0.22	17.58	0	3	0	38	-38
251+55	25155.00	5.00	0.30	20.15	0	3	0	41	-41
251+60	25160.00	5.00	0.29	23.49	0	4	0	46	-46
251+65	25165.00	5.00	0.30	27.71	0	5	0	53	-53
251+70	25170.00	5.00	0.33	32.36	0	6	0	60	-60
251+75	25175.00	5.00	0.50	34.55	0	6	0	68	-68
251+80	25180.00	5.00	0.45	38.06	0	7	0	76	-76
251+85	25185.00	5.00	0.40	42.47	0	7	0	85	-85
251+90	25190.00	5.00	0.34	47.03	0	8	0	95	-95
251+95	25195.00	5.00	0.29	51.91	0	9	0	106	-106
252+00	25200.00	5.00	0.25	57.11	0	10	0	119	-119
252+05	25205.00	5.00	0.22	61.02	0	11	0	133	-133
252+10	25210.00	5.00	0.20	62.45	0	11	0	146	-146
252+15	25215.00	5.00	0.18	64.12	0	12	0	161	-161
252+20	25220.00	5.00	0.17	66.23	0	12	0	176	-176
252+25	25225.00	5.00	0.16	67.69	0	12	0	191	-191
252+30	25230.00	5.00	0.18	65.84	0	12	0	206	-206
252+35	25235.00	5.00	0.21	62.39	0	12	0	221	-221
252+40	25240.00	5.00	0.27	59.29	0	11	0	235	-235
252+45	25245.00	5.00	0.37	56.52	0	11	0	249	-249
252+50	25250.00	5.00	0.49	54.08	0	10	0	261	-261
252+55	25255.00	5.00	0.65	51.87	0	10	0	274	-274
252+60	25260.00	5.00	0.79	50.76	0	10	0	286	-286
252+65	25265.00	5.00	0.90	49.95	0	9	0	298	-298
252+70	25270.00	5.00	0.98	49.37	0	9	0	309	-309
252+75	25275.00	5.00	1.04	49.01	0	9	0	320	-320
252+80	25280.00	5.00	1.07	48.42	0	9	0	331	-331
252+85	25285.00	5.00	0.76	47.15	0	9	0	343	-343
252+90	25290.00	5.00	0.14	47.35	0	9	0	354	-354

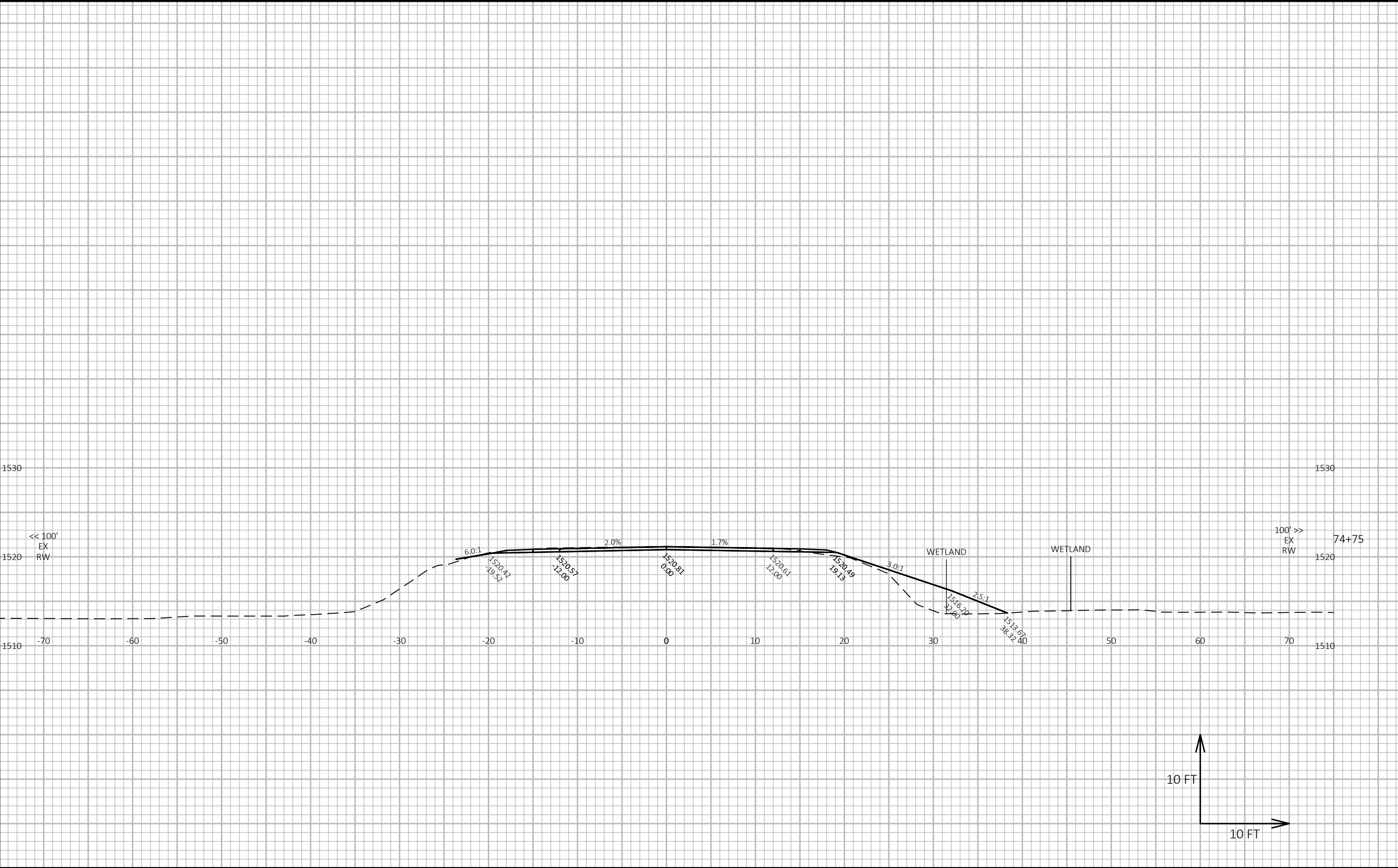
STATION	REAL STATION	DISTANCE	AREA (SF)		INCREMENTAL VOL (CY) (UNADJUSTED)		CUMULATIVE VOL (CY) (CONTINUED)		
			CUT	FILL	CUT	FILL	X 1.00 CUT	X 1.25 EXPANDED FILL	MASS ORDNATE
252+95	25295.00	5.00	0.06	48.29	0	9	0	365	-365
253+00	25300.00	5.00	0.06	48.10	0	9	0	376	-376
253+05	25305.00	5.00	0.11	47.49	0	9	0	388	-388
253+10	25310.00	5.00	0.16	46.75	0	9	0	399	-399
253+15	25315.00	5.00	0.23	45.88	0	9	0	410	-410
253+20	25320.00	5.00	0.31	44.92	0	8	0	420	-420
253+25	25325.00	5.00	0.41	43.81	0	8	0	430	-430
253+30	25330.00	5.00	0.31	39.85	0	8	0	440	-440
253+35	25335.00	5.00	0.22	36.00	0	7	0	449	-449
253+40	25340.00	5.00	0.16	32.03	0	6	0	456	-456
253+45	25345.00	5.00	0.11	28.09	0	6	0	464	-464
253+50	25350.00	5.00	0.00	27.29	0	5	0	470	-470
253+55	25355.00	5.00	0.22	22.16	0	5	0	476	-476
253+60	25360.00	5.00	0.62	18.59	0	4	0	481	-481
253+65	25365.00	5.00	0.92	17.72	0	3	0	485	-485
253+70	25370.00	5.00	1.41	17.32	0	3	0	489	-489
253+75	25375.00	5.00	2.08	17.37	0	3	0	493	-493
253+80	25380.00	5.00	3.20	17.41	0	3	0	496	-496
253+85	25385.00	5.00	0.06	17.85	0	3	0	500	-500
253+90	25390.00	5.00	0.02	18.58	0	3	0	504	-504
253+95	25395.00	5.00	0.01	19.74	0	4	0	509	-509
254+00	25400.00	5.00	0.01	21.29	0	4	0	514	-514
254+05	25405.00	5.00	0.00	22.98	0	4	0	519	-519
254+10	25410.00	5.00	0.00	24.86	0	4	0	524	-524
254+15	25415.00	5.00	0.00	26.89	0	5	0	530	-530
254+20	25420.00	5.00	0.00	28.29	0	5	0	536	-536
254+25	25425.00	5.00	0.01	29.43	0	5	0	543	-543
254+30	25430.00	5.00	0.01	30.76	0	6	0	550	-550
254+35	25435.00	5.00	0.01	31.91	0	6	0	558	-558
254+40	25440.00	5.00	0.01	32.88	0	6	0	565	-565
254+45	25445.00	5.00	0.01	33.67	0	6	0	573	-573
254+50	25450.00	5.00	0.01	34.29	0	6	0	580	-580
254+55	25455.00	5.00	0.01	34.47	0	6	0	588	-588
254+60	25460.00	5.00	0.01	34.52	0	6	0	595	-595
254+65	25465.00	5.00	0.02	34.44	0	6	0	603	-603
254+70	25470.00	5.00	0.02	34.23	0	6	0	610	-610
254+75	25475.00	5.00	0.02	33.88	0	6	0	618	-618
254+80	25480.00	5.00	0.04	32.95	0	6	0	625	-625
254+85	25485.00	5.00	0.06	32.77	0	6	0	633	-633
254+90	25490.00	5.00	0.07	32.63	0	6	0	640	-640
254+95	25495.00	5.00	0.10	32.51	0	6	0	648	-648
255+00	25500.00	5.00	0.01	32.47	0	6	0	655	-655

STATION	REAL STATION	DISTANCE	AREA (SF)		INCREMENTAL VOL (CY) (UNADJUSTED)		CUMULATIVE VOL (CY) (CONTINUED)		
			CUT	FILL	CUT	FILL	X 1.00 CUT	X 1.25 EXPANDED FILL	MASS ORDNATE
255+05	25505.00	5.00	0.01	32.80	0	6	0	663	-663
255+10	25510.00	5.00	0.01	33.77	0	6	0	670	-670
255+15	25515.00	5.00	0.01	35.36	0	6	0	678	-678
255+20	25520.00	5.00	0.01	37.59	0	7	0	686	-686
255+25	25525.00	5.00	0.01	40.37	0	7	0	695	-695
255+30	25530.00	5.00	0.01	44.12	0	8	0	705	-705
255+35	25535.00	5.00	0.02	48.32	0	9	0	716	-716
255+40	25540.00	5.00	0.01	50.40	0	9	0	728	-728
255+45	25545.00	5.00	0.01	55.18	0	10	0	740	-740
255+50	25550.00	5.00	0.01	54.73	0	10	0	753	-753
255+55	25555.00	5.00	0.01	49.60	0	10	0	765	-765
255+60	25560.00	5.00	0.00	48.26	0	9	0	776	-776
255+65	25565.00	5.00	0.00	46.95	0	9	0	788	-788
255+70	25570.00	5.00	0.00	47.86	0	9	0	799	-799
255+75	25575.00	5.00	0.00	49.88	0	9	0	810	-810
255+80	25580.00	5.00	0.00	60.60	0	10	0	823	-823
255+85	25585.00	5.00	0.08	61.48	0	11	0	836	-836
255+90	25590.00	5.00	0.02	52.04	0	11	0	850	-850
255+95	25595.00	5.00	0.01	41.30	0	9	0	861	-861
256+00	25600.00	5.00	0.00	31.69	0	7	0	870	-870
256+05	25605.00	5.00	0.00	28.02	0	6	0	878	-878
256+10	25610.00	5.00	0.01	24.76	0	5	0	884	-884
256+15	25615.00	5.00	0.01	22.11	0	4	0	889	-889
256+20	25620.00	5.00	0.01	20.06	0	4	0	894	-894
256+25	25625.00	5.00	0.00	18.62	0	4	0	899	-899
256+30	25630.00	5.00	0.20	17.56	0	3	0	903	-903
256+35	25635.00	5.00	0.33	17.08	0	3	0	906	-906
256+40	25640.00	5.00	0.47	16.97	0	3	0	910	-910
256+45	25645.00	5.00	0.27	16.68	0	3	0	914	-914
256+50	25650.00	5.00	0.01	16.33	0	3	0	918	-918
256+55	25655.00	5.00	0.01	16.22	0	3	0	921	-921
256+60	25660.00	5.00	0.00	16.10	0	3	0	925	-925
256+65	25665.00	5.00	0.00	15.97	0	3	0	929	-929
256+70	25670.00	5.00	0.00	15.81	0	3	0	933	-933
256+75	25675.00	5.00	0.00	15.59	0	3	0	936	-936
256+80	25680.00	5.00	0.00	14.70	0	3	0	940	-940
256+85	25685.00	5.00	0.00	13.81	0	3	0	944	-944
256+90	25690.00	5.00	0.00	12.93	0	2	0	946	-946
256+95	25695.00	5.00	0.00	12.07	0	2	0	949	-949
257+00	25700.00	5.00	0.00	11.21	0	2	0	951	-951
257+05	25705.00	5.00	0.05	10.59	0	2	0	954	-954
257+10	25710.00	5.00	0.07	10.68	0	2	0	956	-956

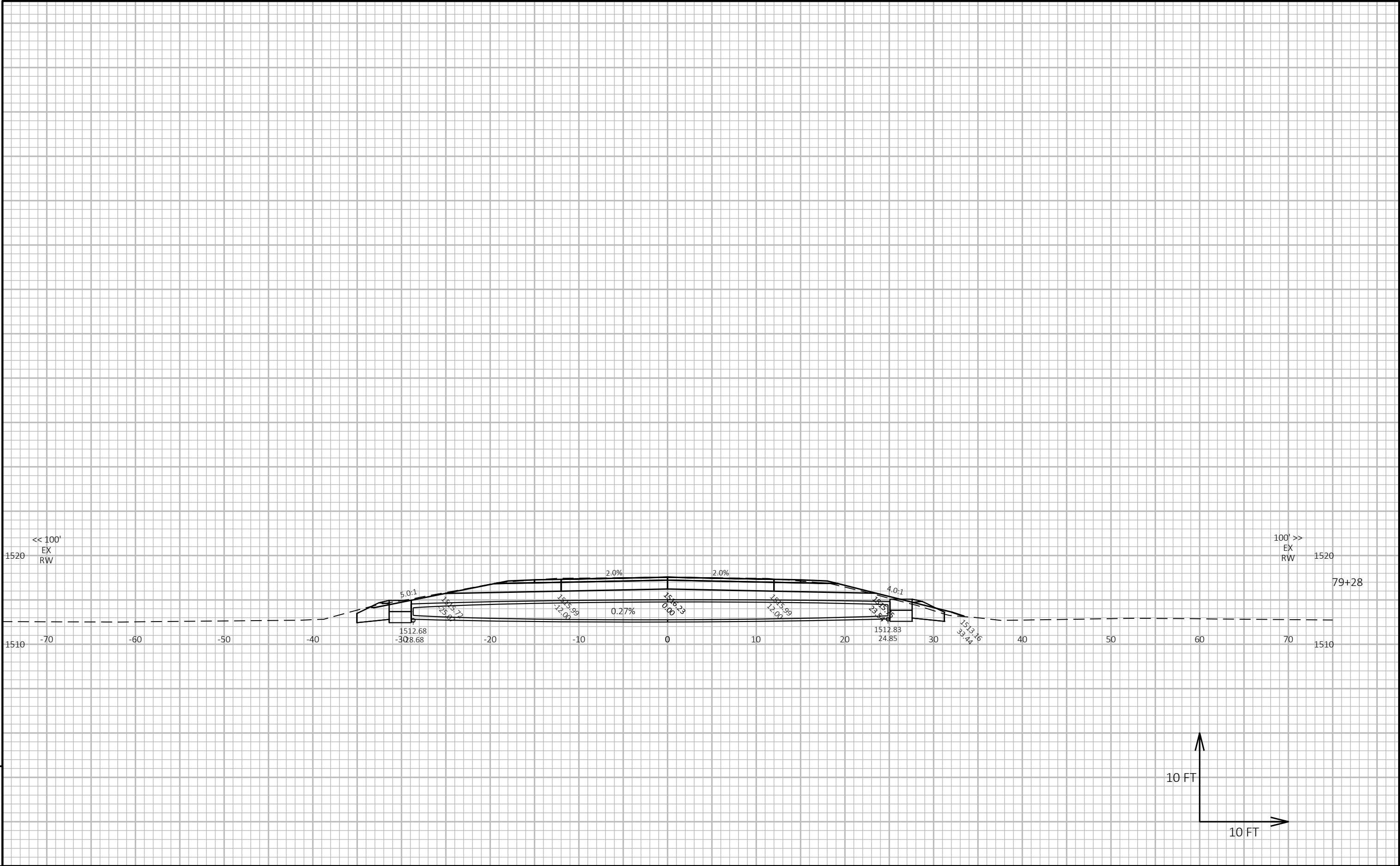
STATION	REAL STATION	DISTANCE	AREA (SF)		INCREMENTAL VOL (CY) (UNADJUSTED)		CUMULATIVE VOL (CY) (CONTINUED)		
			CUT	FILL	CUT	FILL	X 1.00 CUT	X 1.25 EXPANDED FILL	MASS ORDINATE
257+15	25715.00	5.00	0.03	11.21	0	2	0	959	-959
257+20	25720.00	5.00	0.01	11.82	0	2	0	961	-961
257+25	25725.00	5.00	0.00	12.49	0	2	0	964	-964
257+30	25730.00	5.00	0.00	12.53	0	2	0	966	-966
257+35	25735.00	5.00	0.00	12.56	0	2	0	969	-969
257+40	25740.00	5.00	0.00	12.52	0	2	0	971	-971
257+45	25745.00	5.00	0.00	12.33	0	2	0	974	-974
257+50	25750.00	5.00	0.00	11.98	0	2	0	976	-976
257+55	25755.00	5.00	0.01	12.19	0	2	0	979	-979
257+60	25760.00	5.00	0.03	12.20	0	2	0	981	-981
257+65	25765.00	5.00	0.03	12.18	0	2	0	984	-984
257+70	25770.00	5.00	0.02	12.42	0	2	0	986	-986
257+75	25775.00	5.00	1.17	14.46	0	2	0	989	-989
257+80	25780.00	5.00	0.57	14.82	0	3	0	993	-993
257+85	25785.00	5.00	0.33	16.11	0	3	0	996	-996
257+90	25790.00	5.00	0.52	18.44	0	3	0	1,000	-1,000
257+95	25795.00	5.00	0.76	21.47	0	4	0	1,005	-1,005
258+00	25800.00	5.00	1.04	19.85	0	4	0	1,010	-1,010
258+05	25805.00	5.00	1.41	22.39	0	4	0	1,015	-1,015
258+10	25810.00	5.00	2.18	24.99	0	4	0	1,020	-1,020
258+15	25815.00	5.00	2.62	28.24	0	5	0	1,026	-1,026
258+20	25820.00	5.00	1.91	37.15	0	6	0	1,034	-1,034
258+25	25825.00	5.00	1.53	42.31	0	7	0	1,043	-1,043
258+30	25830.00	5.00	0.75	44.27	0	8	0	1,053	-1,053
258+35	25835.00	5.00	0.47	44.60	0	8	0	1,063	-1,063
258+40	25840.00	5.00	0.37	46.56	0	8	0	1,073	-1,073
258+45	25845.00	5.00	0.23	48.95	0	9	0	1,084	-1,084
258+50	25850.00	5.00	0.02	51.54	0	9	0	1,095	-1,095
258+55	25855.00	5.00	0.04	51.38	0	10	0	1,108	-1,108
258+60	25860.00	5.00	0.05	51.98	0	10	0	1,120	-1,120
258+65	25865.00	5.00	0.04	53.42	0	10	0	1,133	-1,133
258+70	25870.00	5.00	0.03	52.04	0	10	0	1,145	-1,145
258+75	25875.00	5.00	0.02	49.36	0	9	0	1,156	-1,156
258+80	25880.00	5.00	0.07	47.50	0	9	0	1,168	-1,168
258+85	25885.00	5.00	0.12	46.65	0	9	0	1,179	-1,179
258+90	25890.00	5.00	0.06	46.01	0	9	0	1,190	-1,190
258+95	25895.00	5.00	0.01	45.29	0	8	0	1,200	-1,200
259+00	25900.00	5.00	0.00	44.38	0	8	0	1,210	-1,210
259+05	25905.00	5.00	0.00	40.63	0	8	0	1,220	-1,220
259+10	25910.00	5.00	0.00	36.93	0	7	0	1,229	-1,229
259+15	25915.00	5.00	0.00	33.28	0	7	0	1,238	-1,238
259+20	25920.00	5.00	0.00	29.69	0	6	0	1,245	-1,245

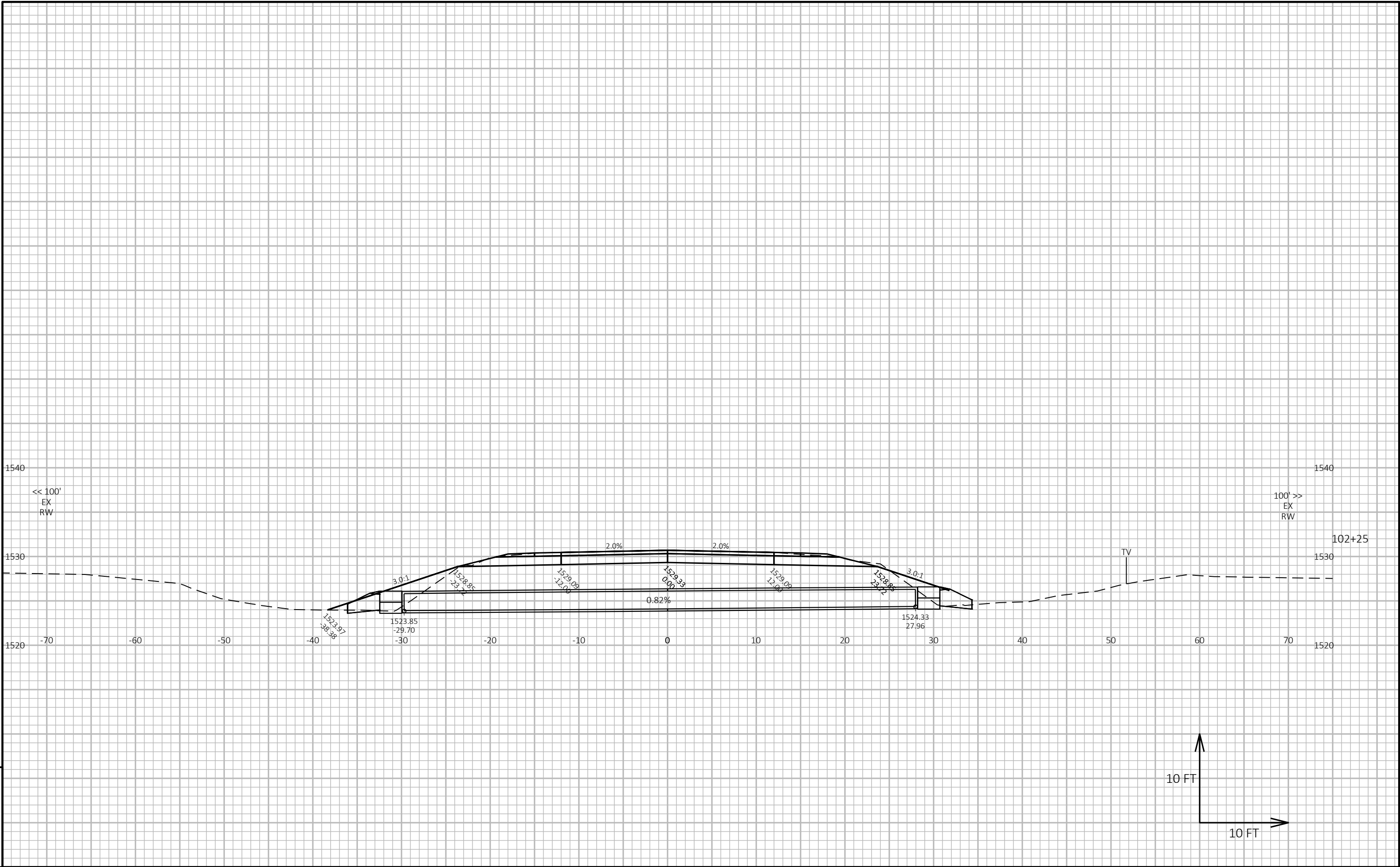
STATION	REAL STATION	DISTANCE	AREA (SF)		INCREMENTAL VOL (CY) (UNADJUSTED)		CUMULATIVE VOL (CY) (CONTINUED)		
			CUT	FILL	CUT	FILL	X 1.00 CUT	X 1.25 EXPANDED FILL	MASS ORDINATE
259+25	25925.00	5.00	0.01	27.11	0	5	0	1,251	-1,251
259+30	25930.00	5.00	0.07	25.78	0	5	0	1,258	-1,258
259+35	25935.00	5.00	0.11	24.32	0	5	0	1,264	-1,264
259+40	25940.00	5.00	0.07	22.80	0	4	0	1,269	-1,269
259+45	25945.00	5.00	0.02	20.71	0	4	0	1,274	-1,274
259+50	25950.00	5.00	0.06	18.54	0	4	0	1,279	-1,279
259+55	25955.00	5.00	0.23	15.95	0	3	0	1,283	-1,283
259+60	25960.00	5.00	0.52	13.49	0	3	0	1,286	-1,286
259+65	25965.00	5.00	0.94	11.21	0	2	0	1,289	-1,289
259+70	25970.00	5.00	1.49	9.34	0	2	0	1,291	-1,291
259+75	25975.00	5.00	1.85	7.77	0	2	0	1,294	-1,294
259+80	25980.00	5.00	1.95	7.96	0	1	0	1,295	-1,295
259+85	25985.00	5.00	1.98	8.14	0	1	0	1,296	-1,296
259+90	25990.00	5.00	1.90	8.50	0	2	0	1,299	-1,299
259+95	25995.00	5.00	1.80	8.82	0	2	0	1,301	-1,301
260+00	26000.00	5.00	1.73	9.14	0	2	0	1,304	-1,304
260+05	26005.00	5.00	1.45	9.35	0	2	0	1,306	-1,306
260+10	26010.00	5.00	1.06	10.11	0	2	0	1,309	-1,309
260+15	26015.00	5.00	1.29	9.72	0	2	0	1,311	-1,311

STATION	REAL STATION	DISTANCE	AREA (SF)		INCREMENTAL VOL (CY) (UNADJUSTED)		CUMULATIVE VOL (CY)		
			CUT	FILL	CUT	FILL	X 1.00 CUT	X 1.25 EXPANDED FILL	MASS ORDINATE
329+55	32955.00	0.00	0.50	14.59	0	0	0	0	0
329+60	32960.00	5.00	0.48	16.01	0	3	0	4	-4
329+65	32965.00	5.00	0.40	20.95	0	3	0	8	-8
329+70	32970.00	5.00	0.41	29.31	0	5	0	14	-14
329+75	32975.00	5.00	0.33	38.11	0	6	0	21	-21
329+80	32980.00	5.00	0.25	39.07	0	7	0	30	-30
329+85	32985.00	5.00	0.17	34.97	0	7	0	39	-39
329+90	32990.00	5.00	0.11	27.82	0	6	0	46	-46
329+95	32995.00	5.00	0.06	23.57	0	5	0	53	-53
330+00	33000.00	5.00	0.03	21.74	0	4	0	58	-58



PROJECT NO: 9304-11-70	HWY: STH 101	COUNTY: FLORENCE	CROSS SECTIONS: CATTLE PASS 19-101-000090 REMOVAL	SHEET E
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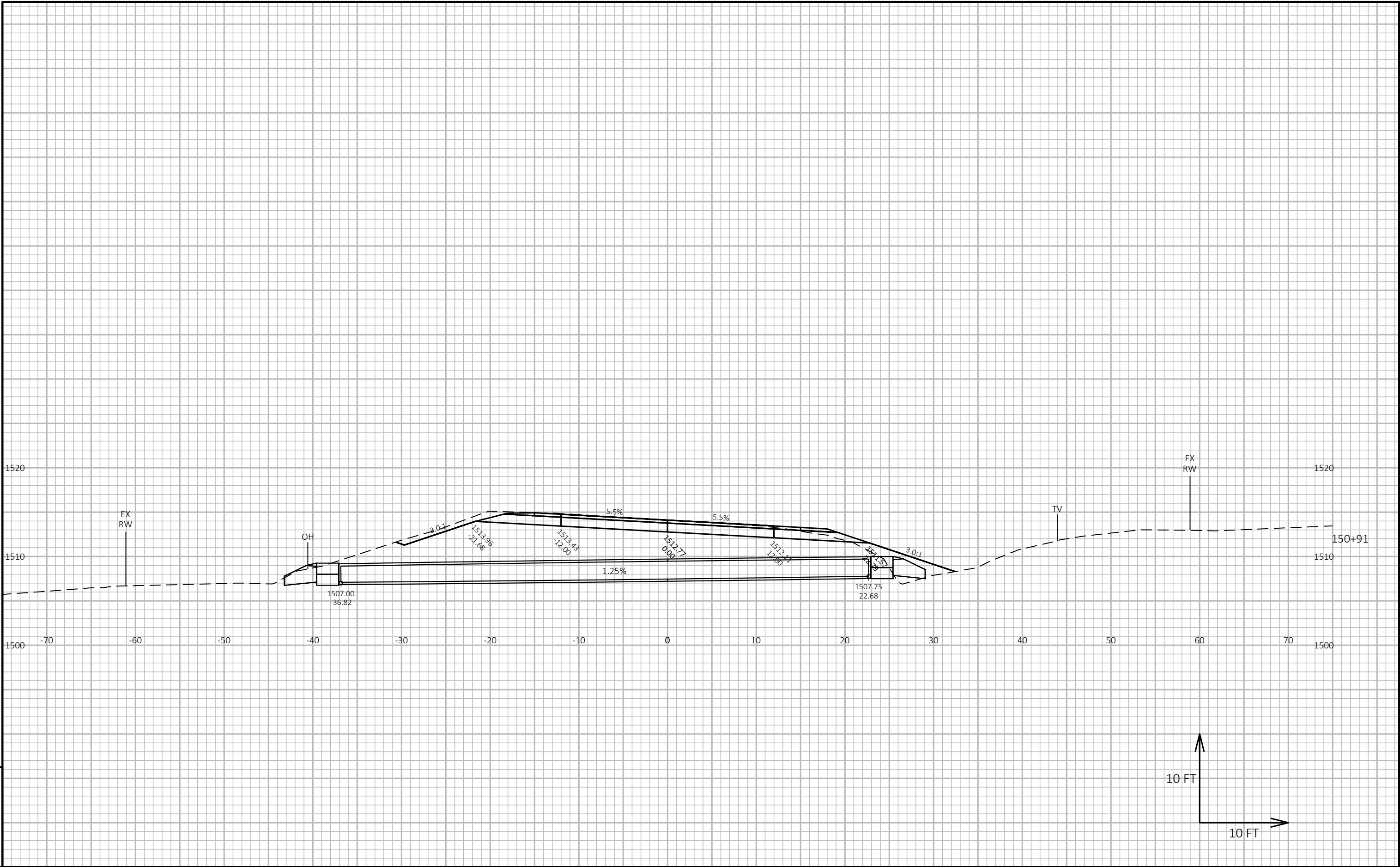




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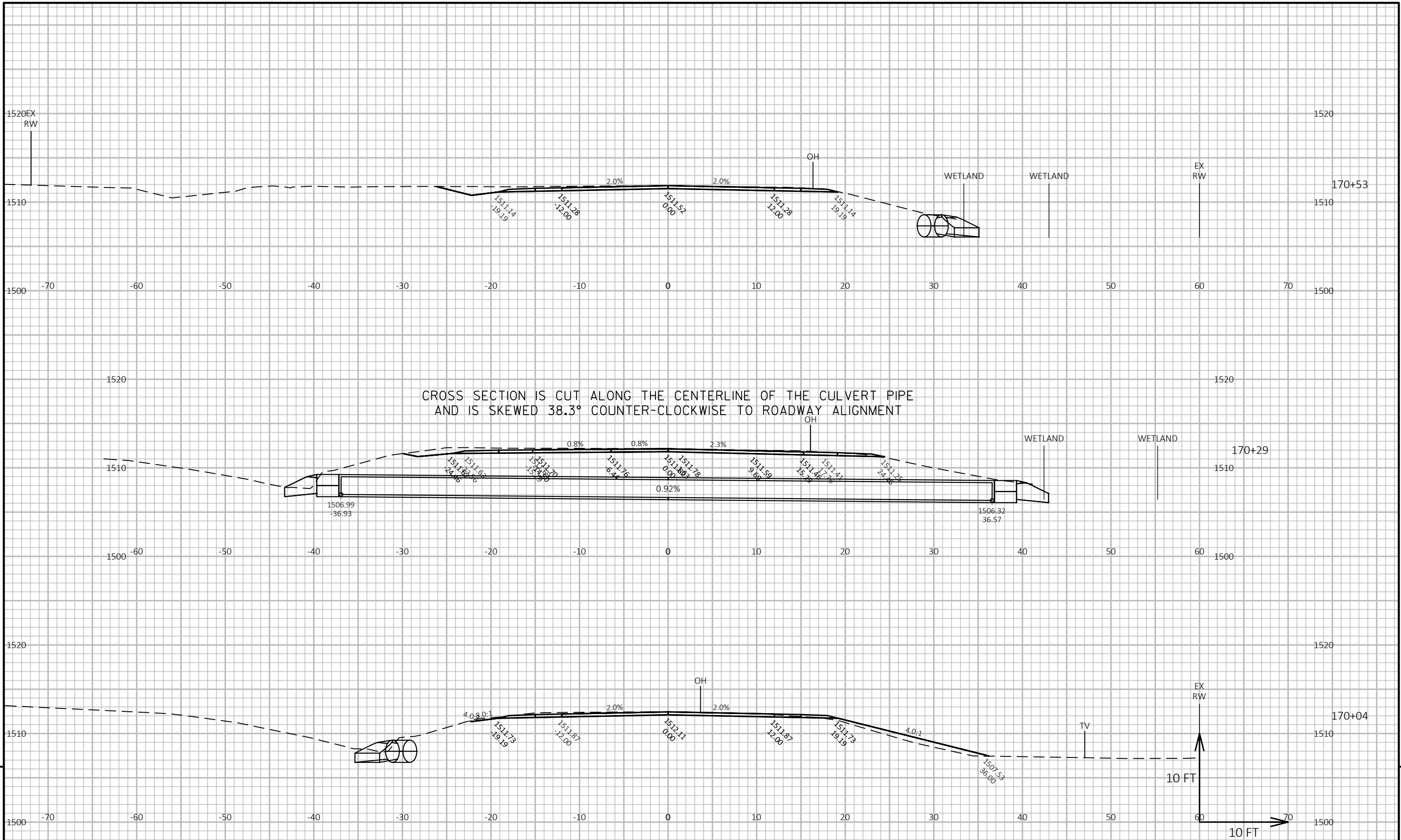
PROJECT NO: 9304-11-70	HWY: STH 101	COUNTY: FLORENCE	CROSS SECTIONS: CULVERT 19-101-000092 REPLACEMENT	SHEET E
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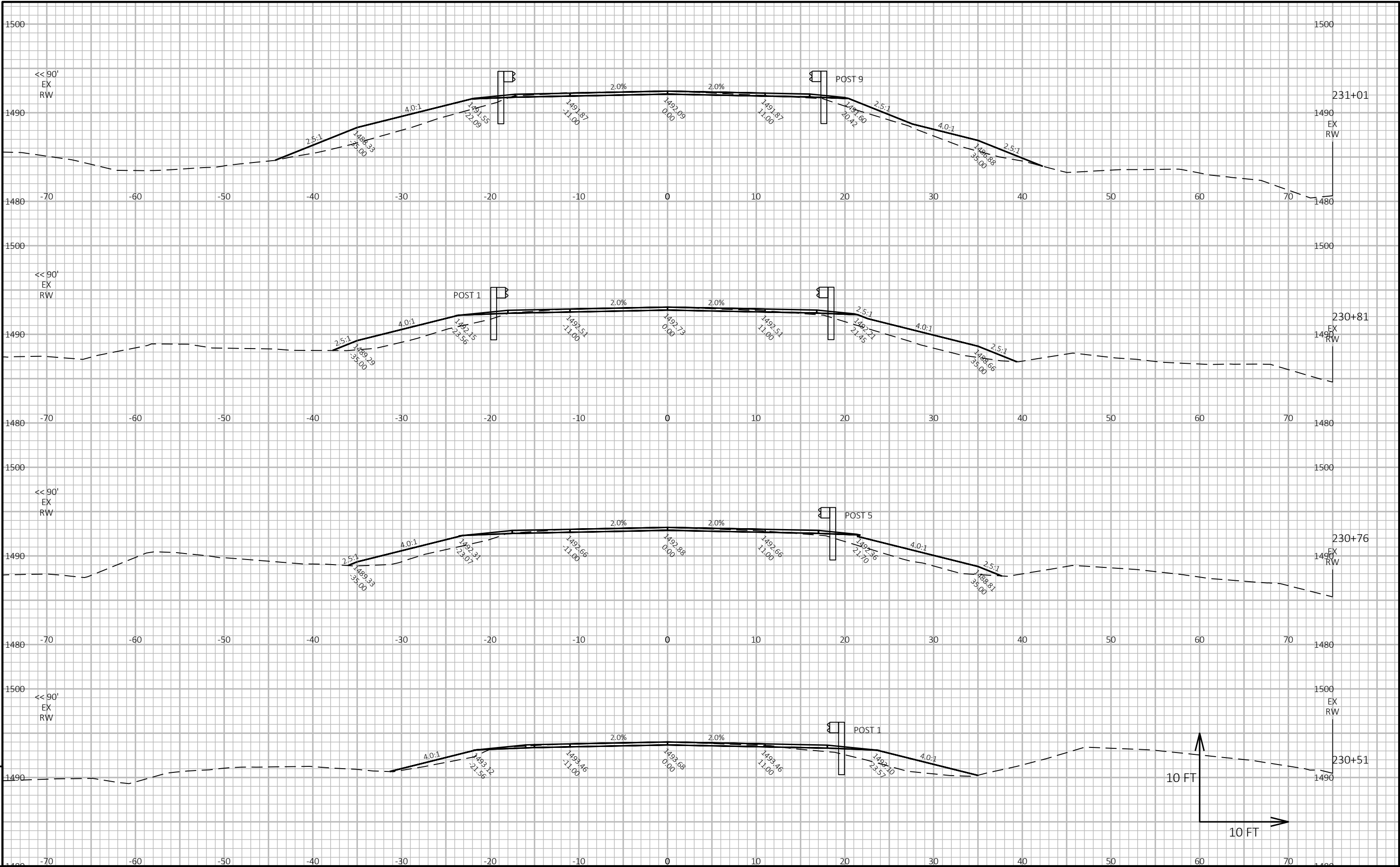
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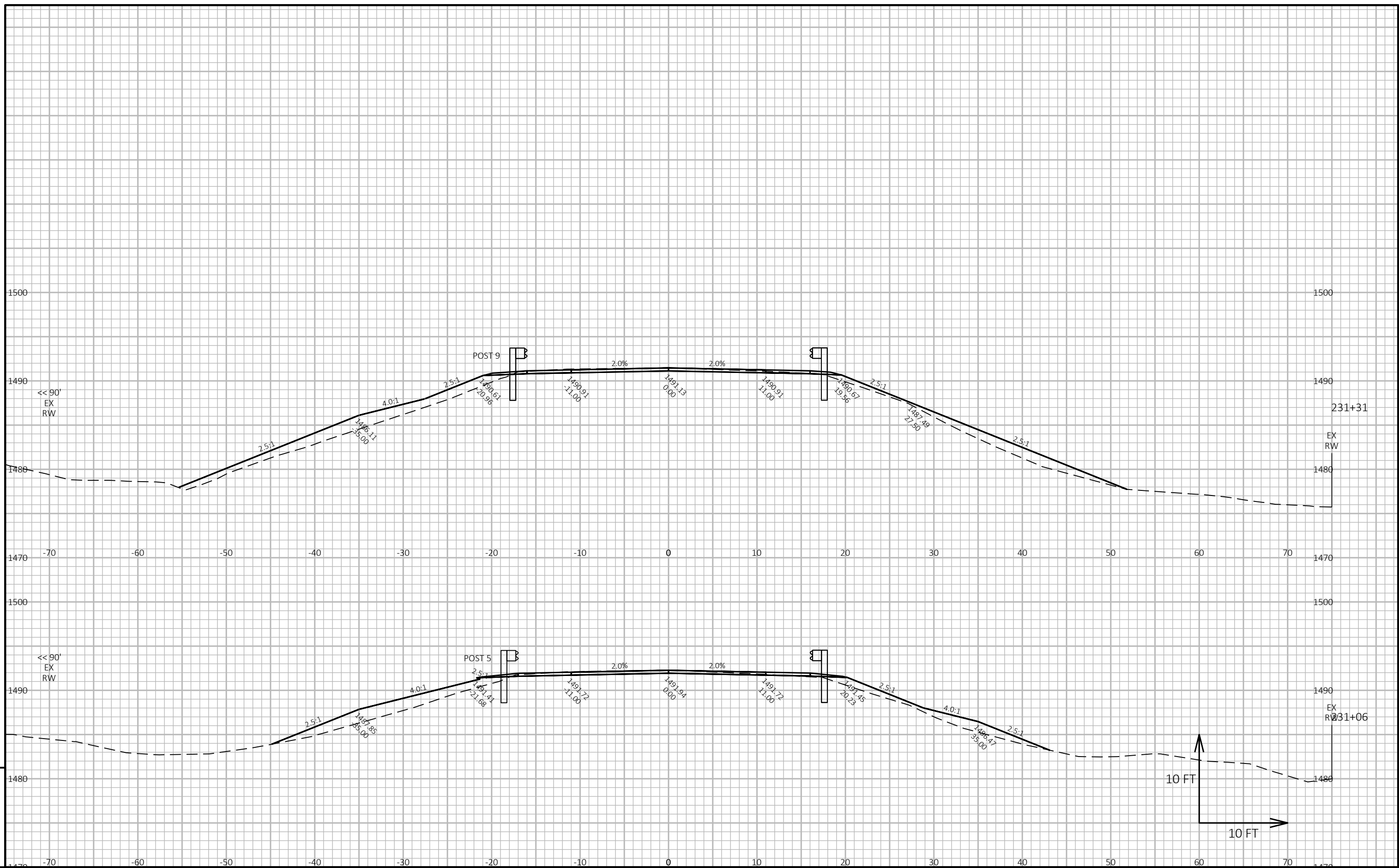
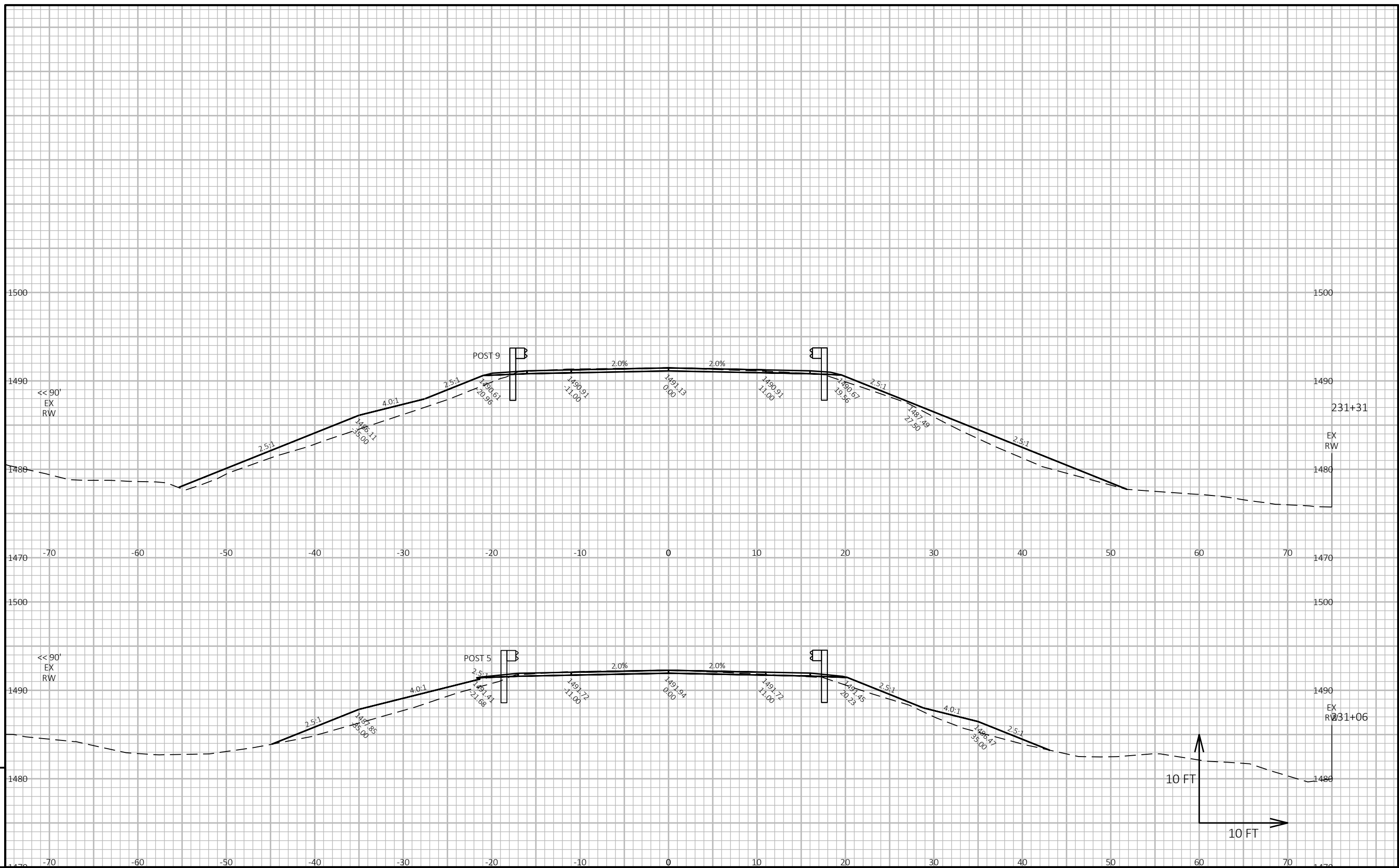
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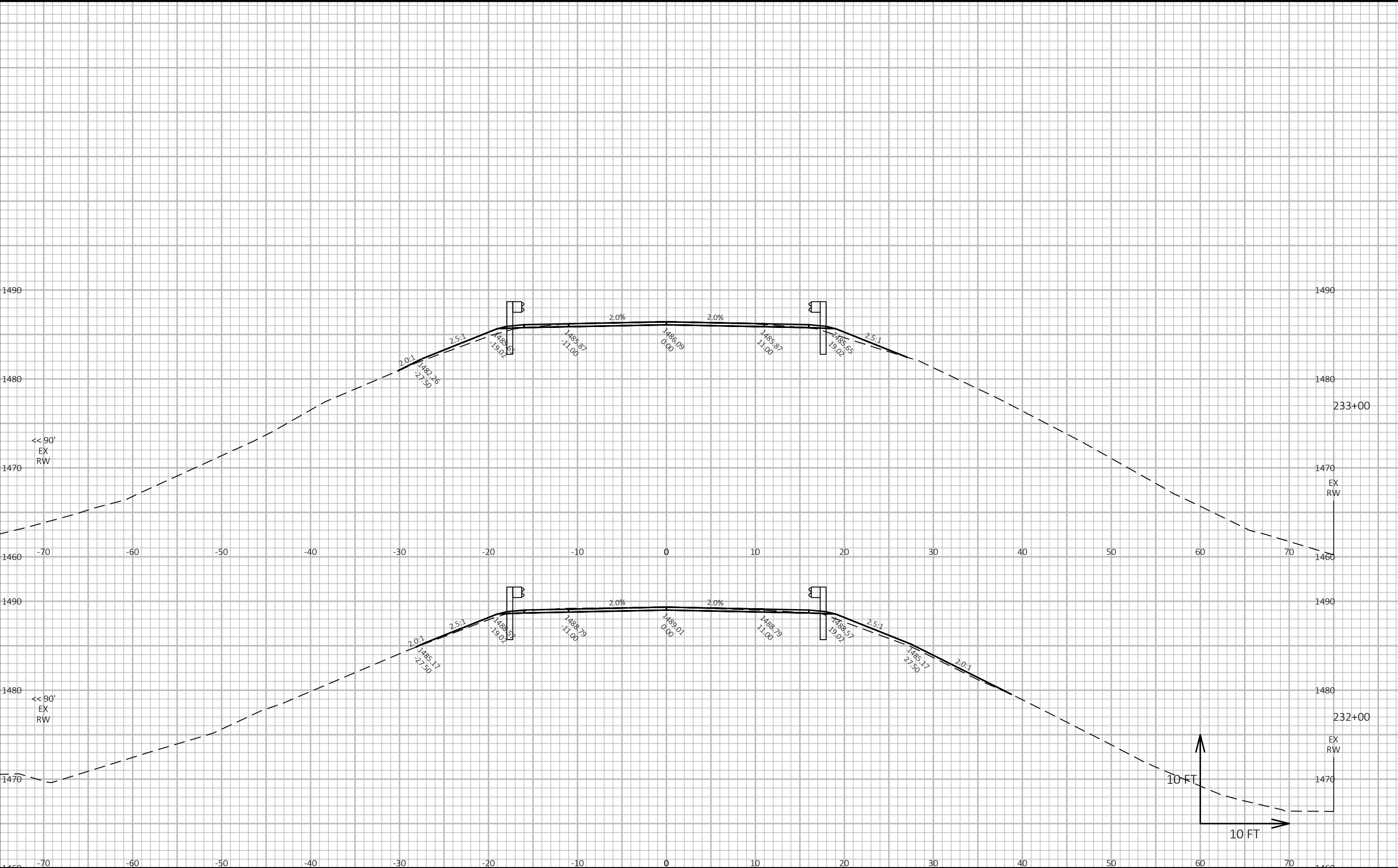
PROJECT NO: 9304-11-70	HWY: STH 101	COUNTY: FLORENCE	CROSS SECTIONS: CULVERT 19-101-000093 REPLACEMENT	SHEET E
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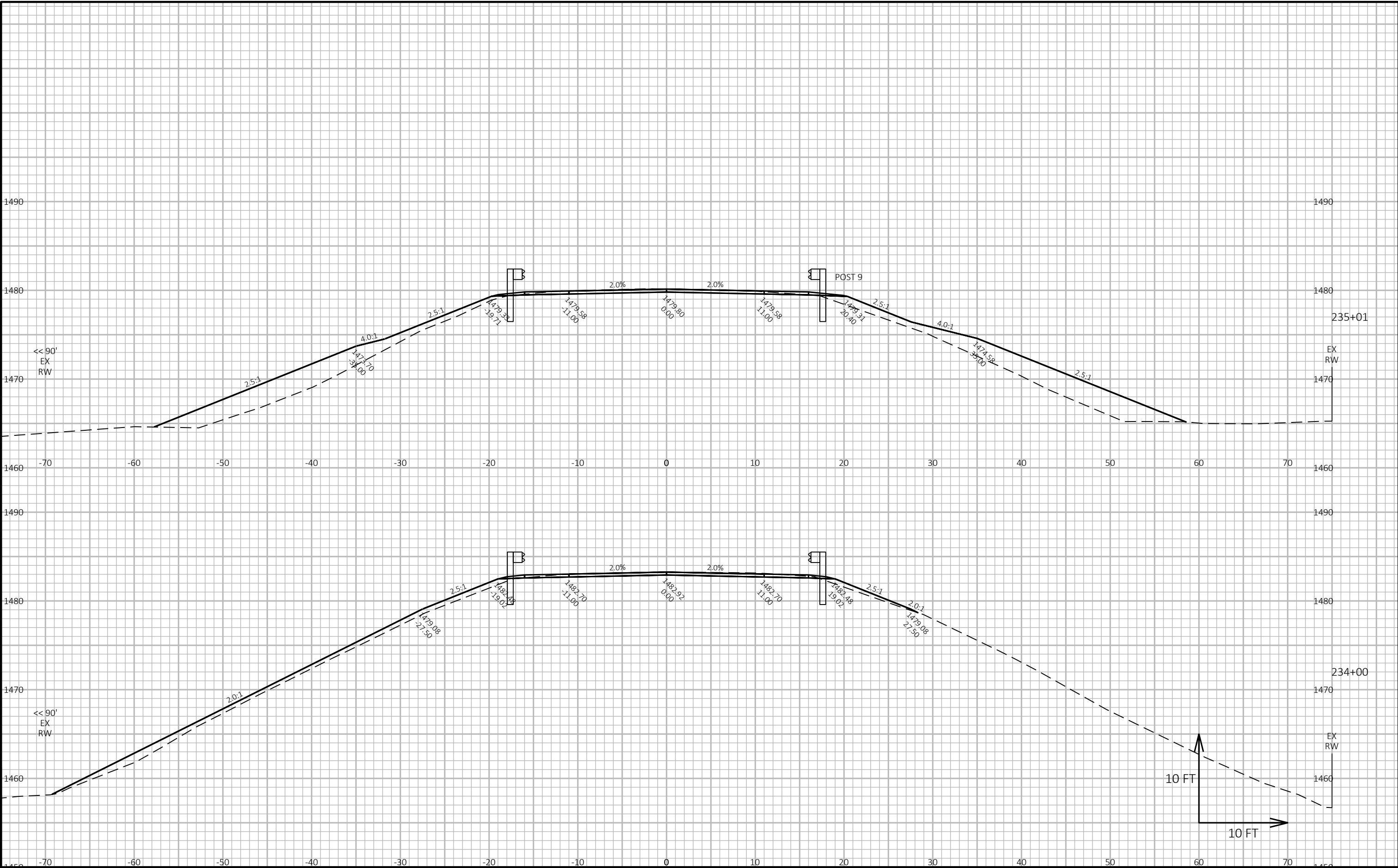


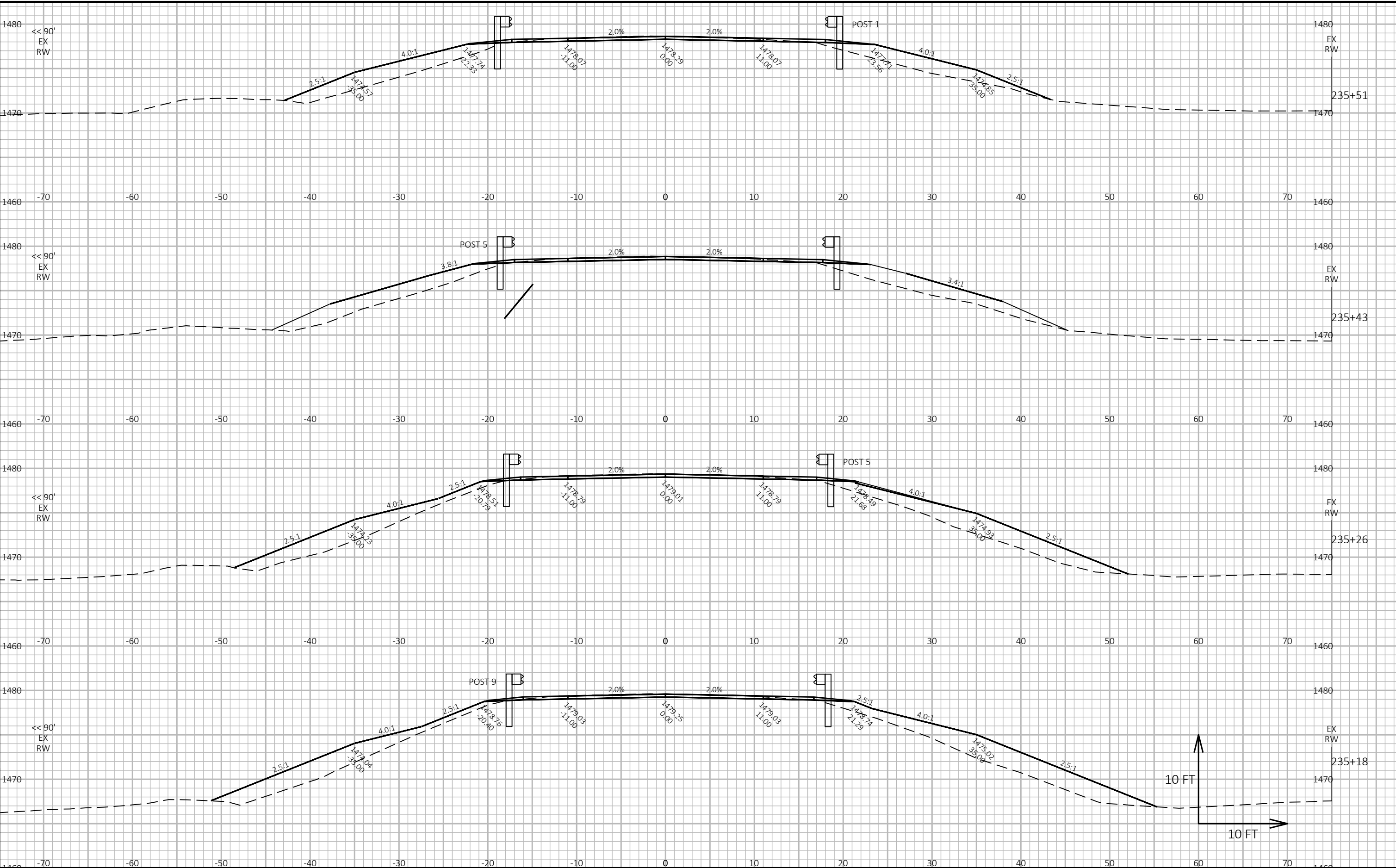
CROSS SECTION IS CUT ALONG THE CENTERLINE OF THE CULVERT PIPE
AND IS SKEWED 38.3° COUNTER-CLOCKWISE TO ROADWAY ALIGNMENT

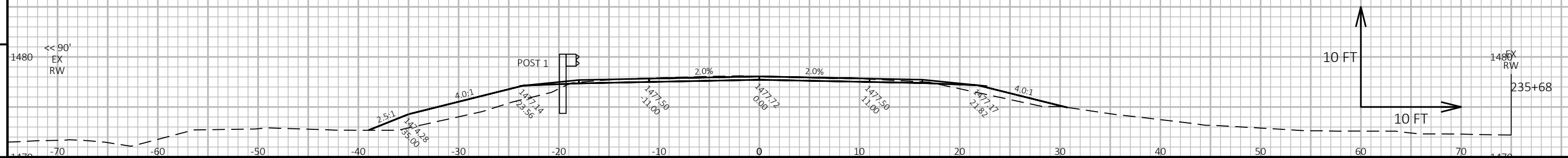












PROJECT NO:	9304-11-70
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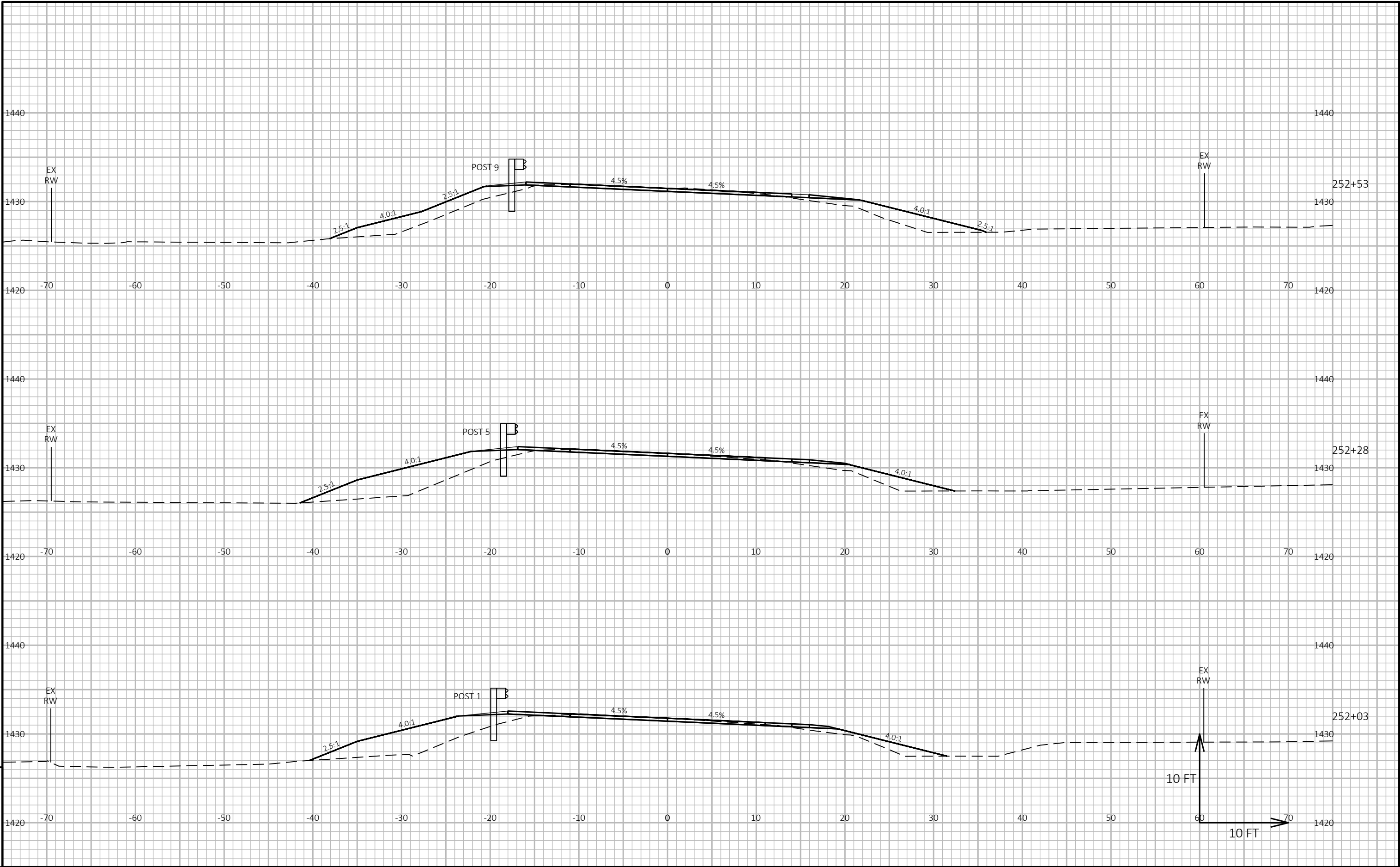
HWY: STH 101

COUNTY: FLORENCE

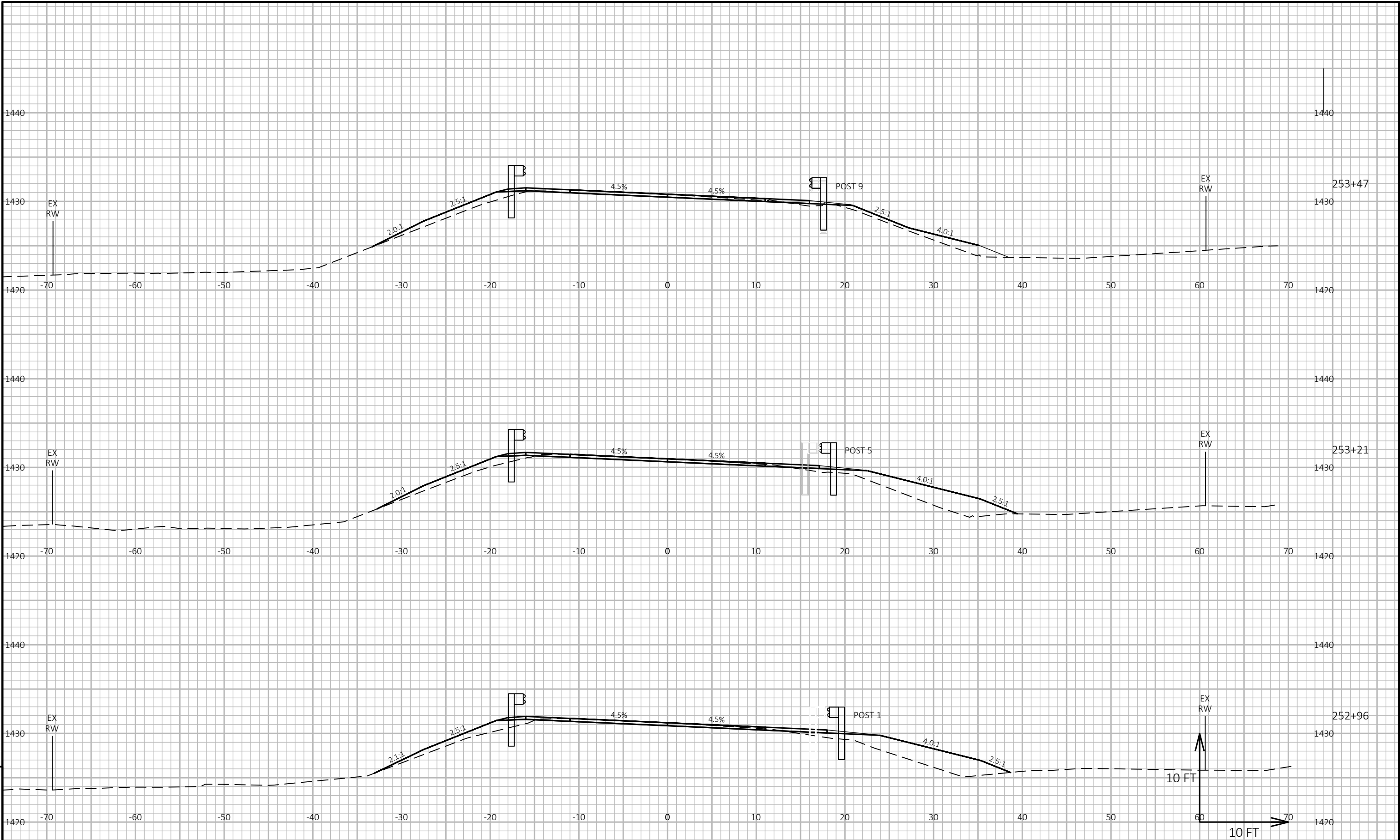
CROSS SECTIONS: BEAM GUARD EAT INSTALLATION STA 229+33 TO STA 236+88

SHEET

1



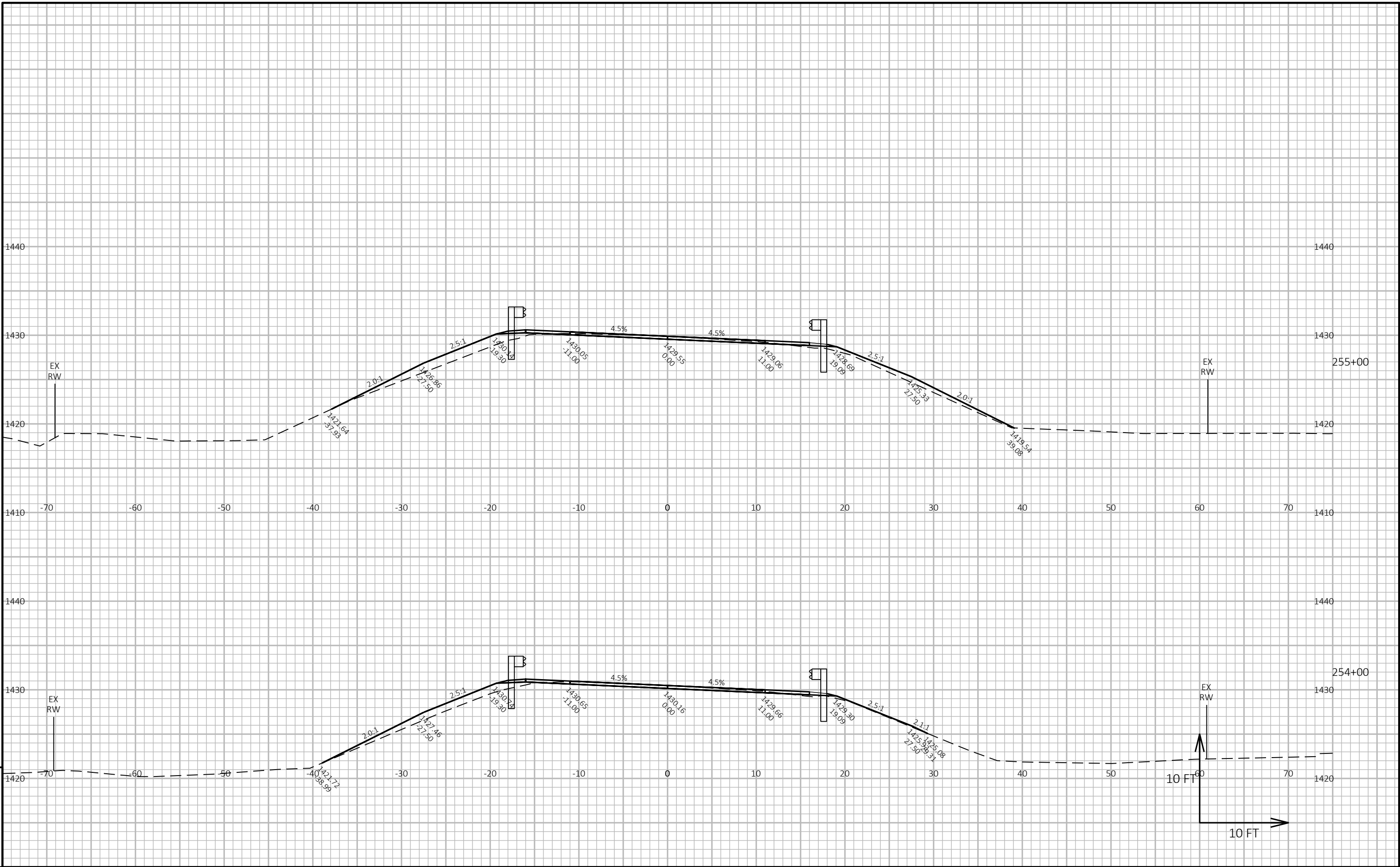
PROJECT NO: 9304-11-70	HWY: STH 101	COUNTY: FLORENCE	CROSS SECTIONS: BEAM GUARD EAT INSTALLATION STA 250+85 TO STA 260+19	SHEET E
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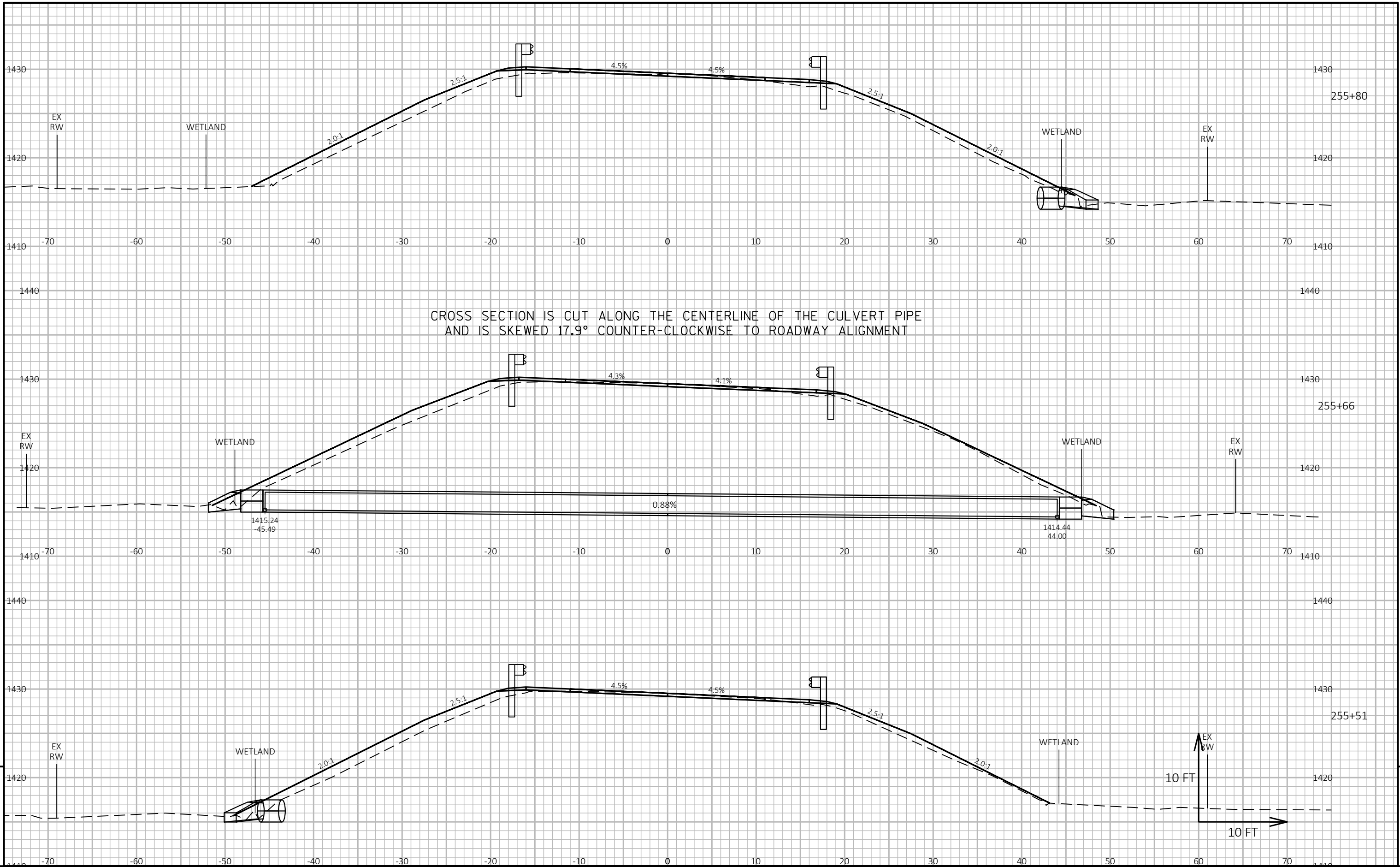


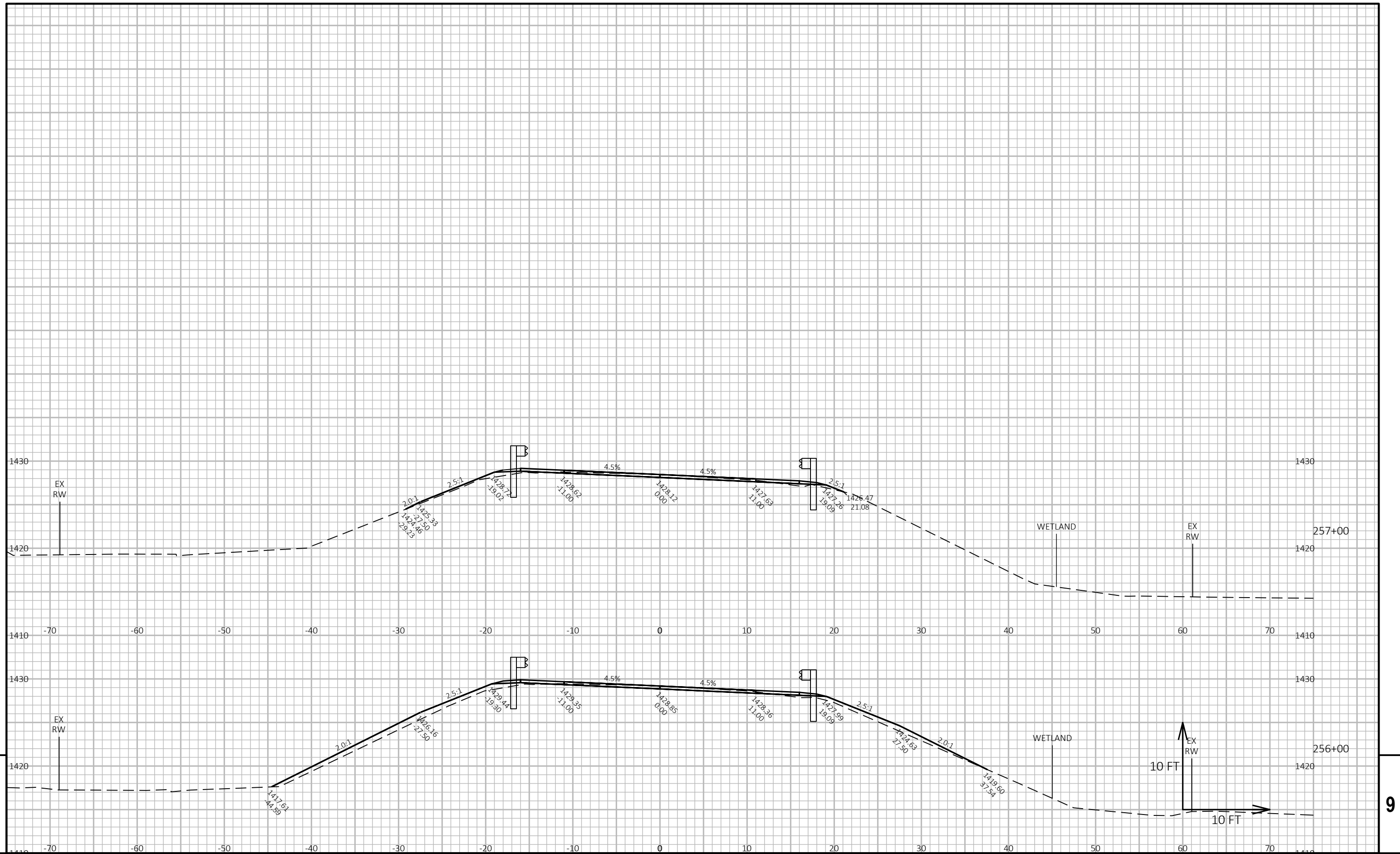
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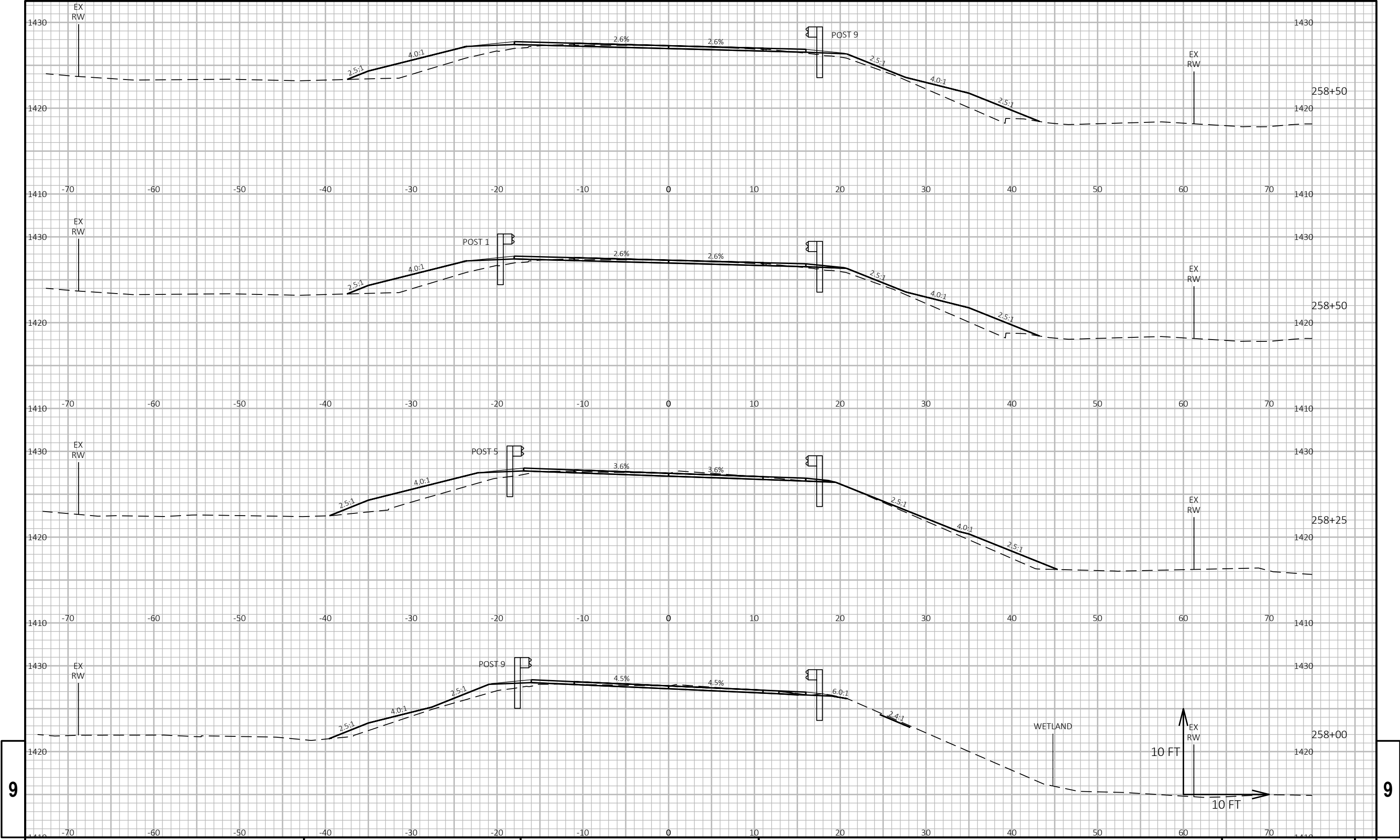
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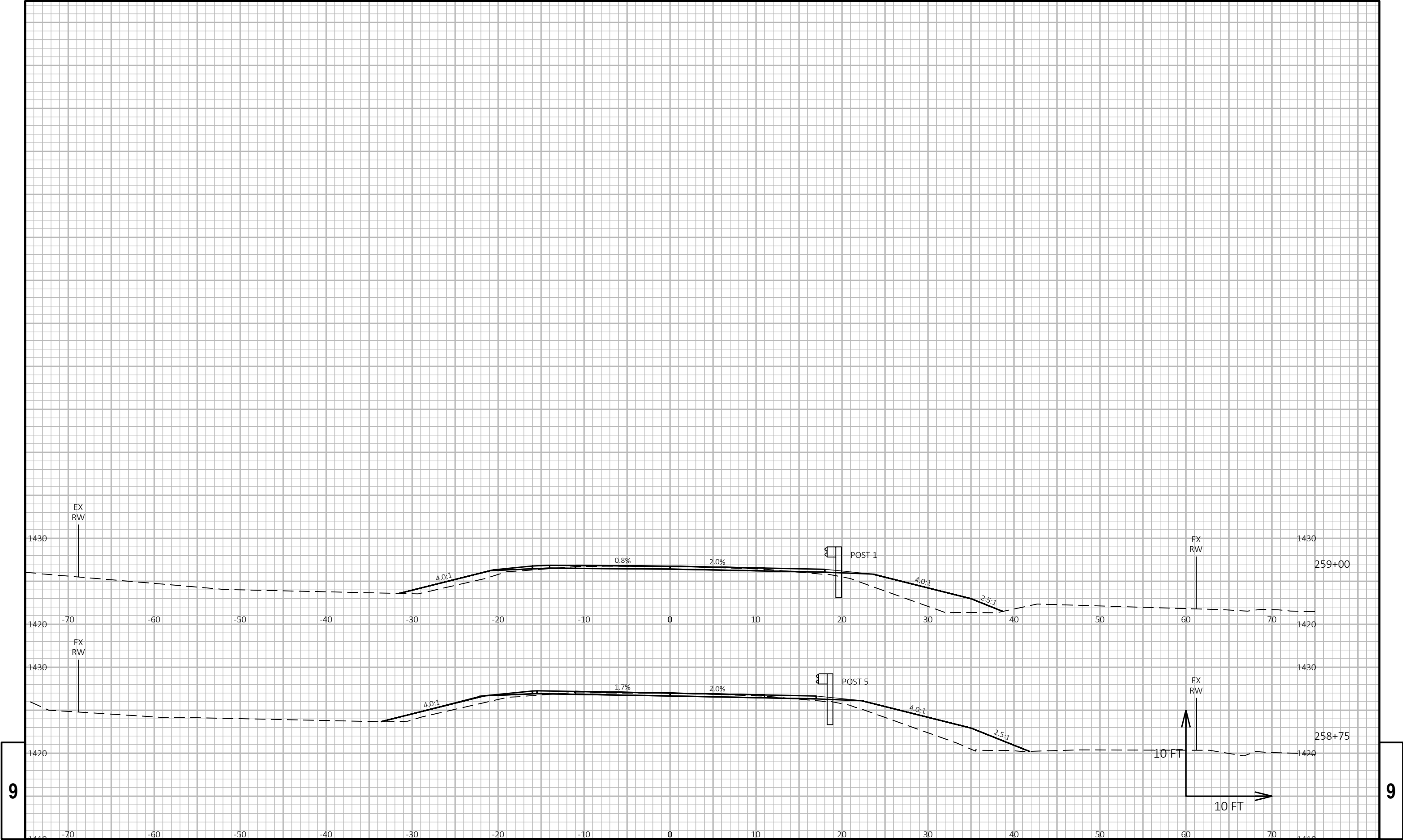
PROJECT NO: 9304-11-70	HWY: STH 101	COUNTY: FLORENCE	CROSS SECTIONS: BEAM GUARD EAT INSTALLATION STA 250+85 TO STA 260+19	SHEET E
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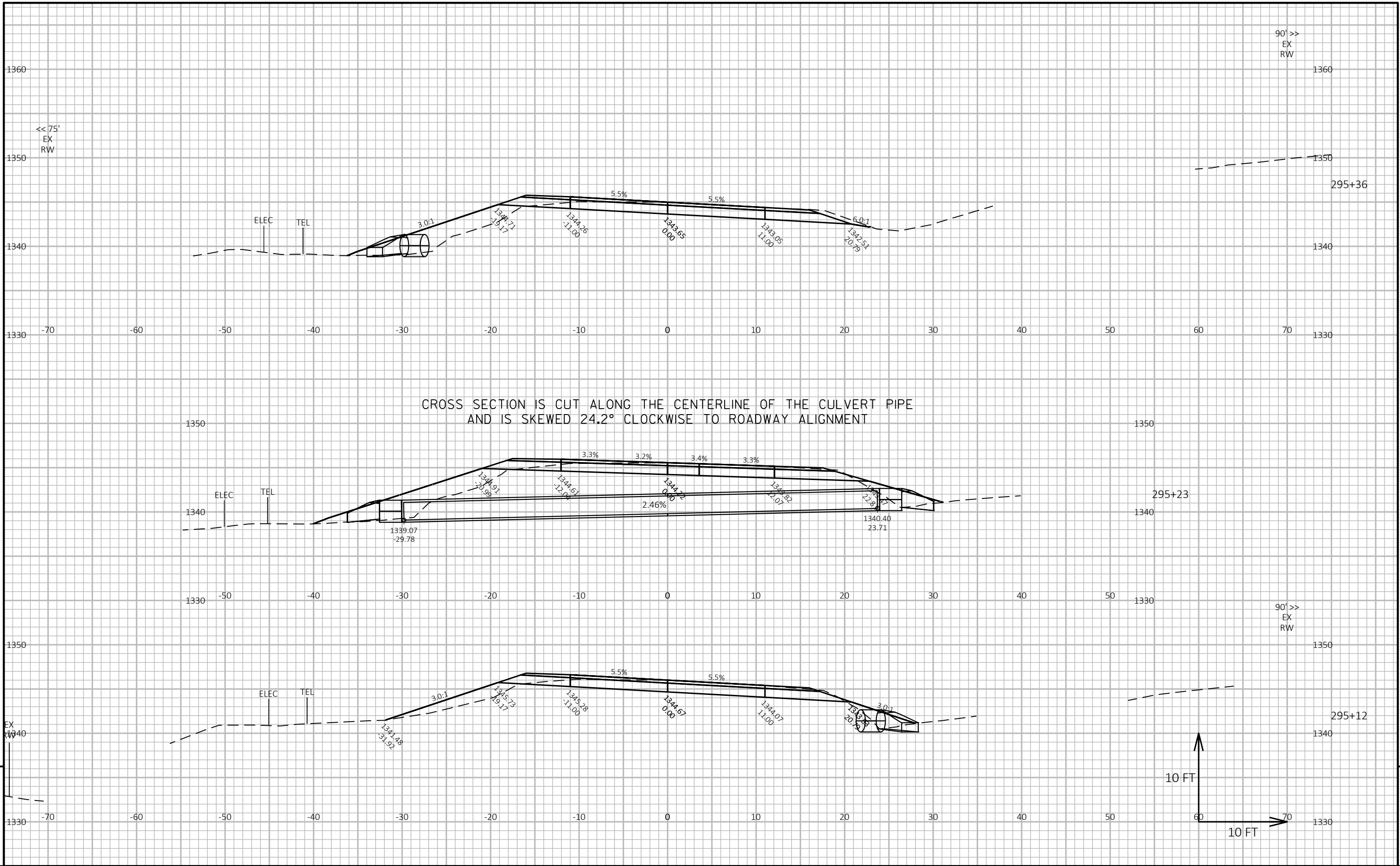


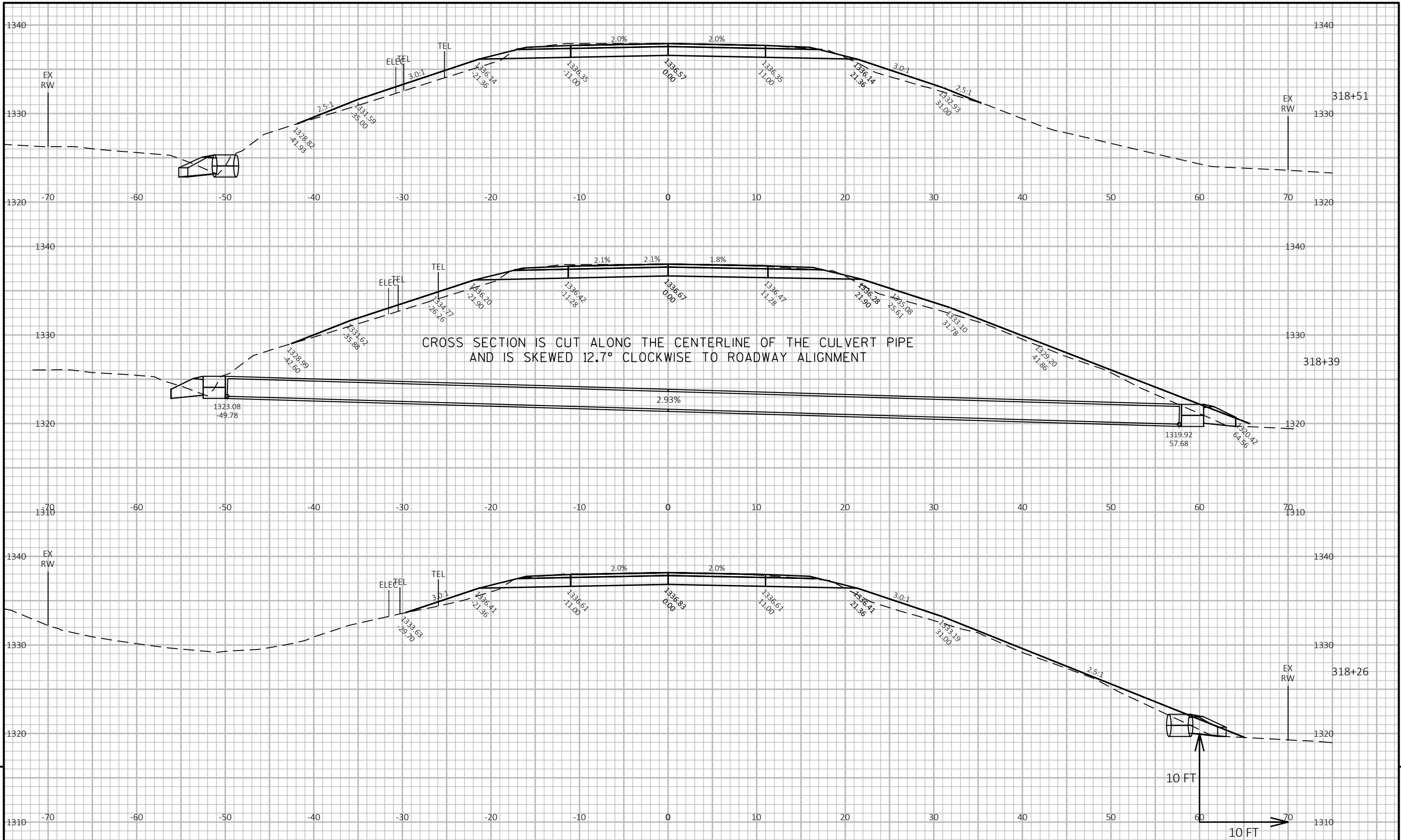






9		PROJECT NO: 9304-11-70		HWY: STH 101		COUNTY: FLORENCE		CROSS SECTIONS: BEAM GUARD EAT INSTALLATION STA 250+85 TO STA 260+19		SHEET		9
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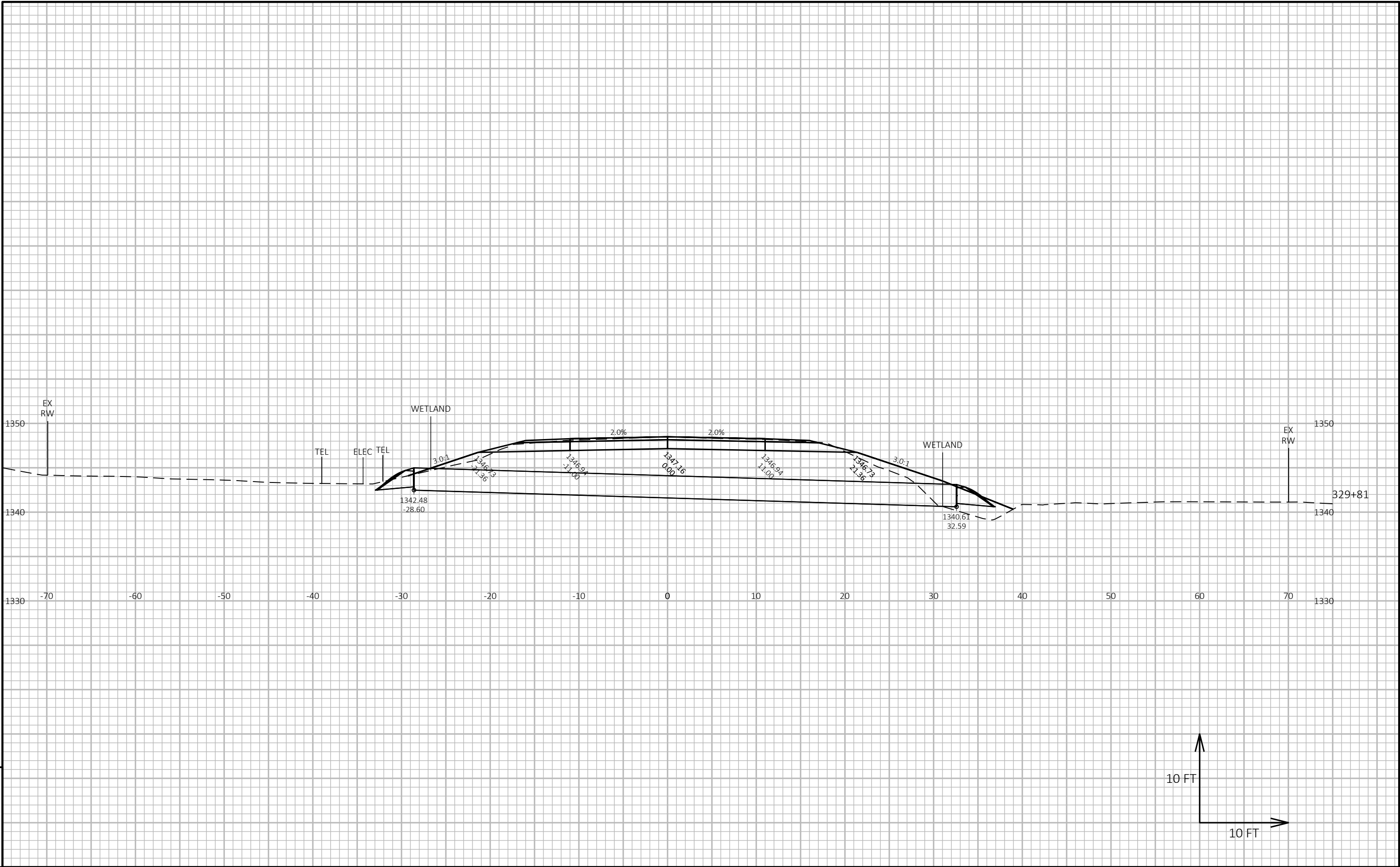




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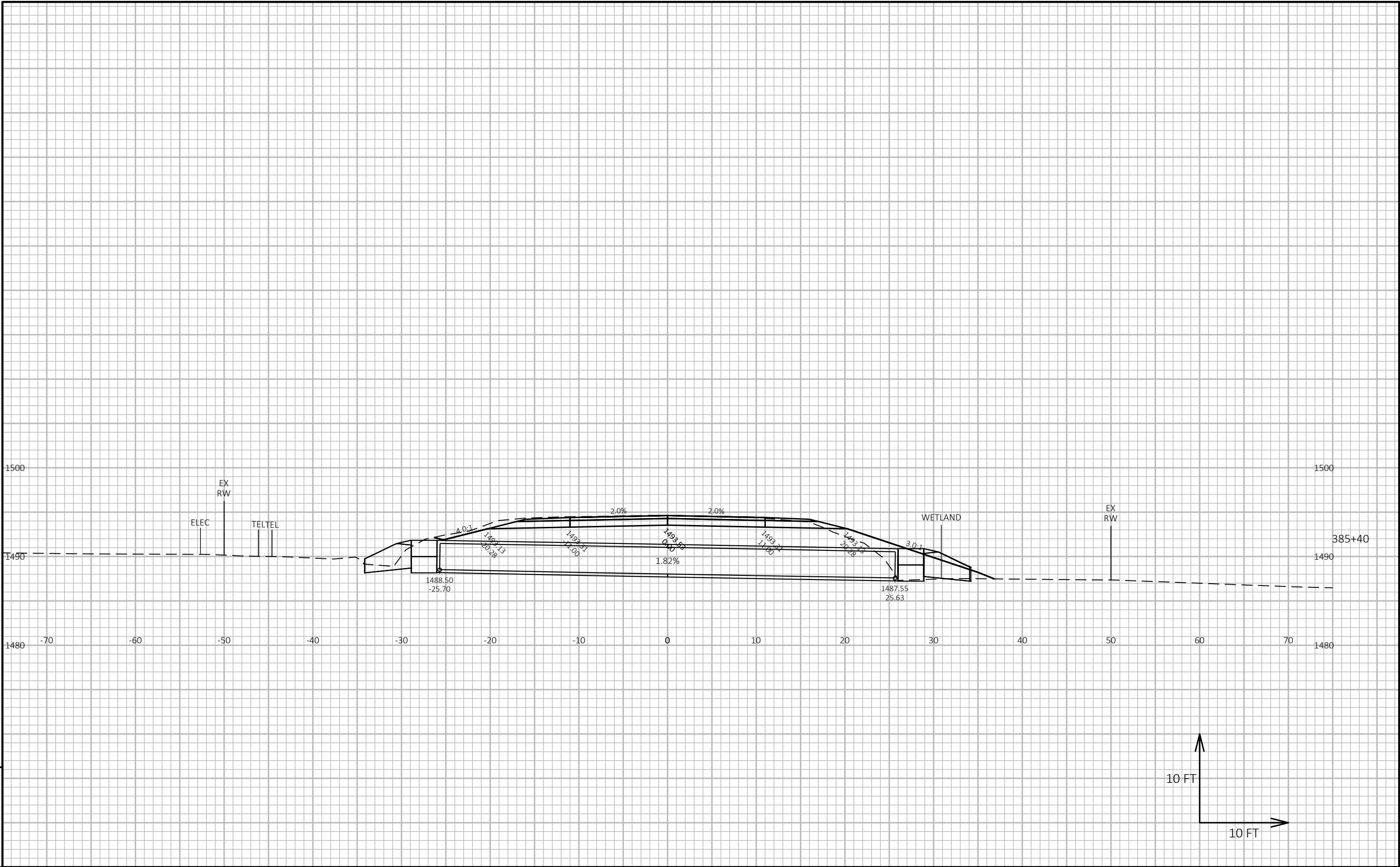
PROJECT NO: 9304-11-70	HWY: STH 101	COUNTY: FLORENCE	CROSS SECTIONS: CULVERT 19-101-000102 REPLACEMENT	SHEET E
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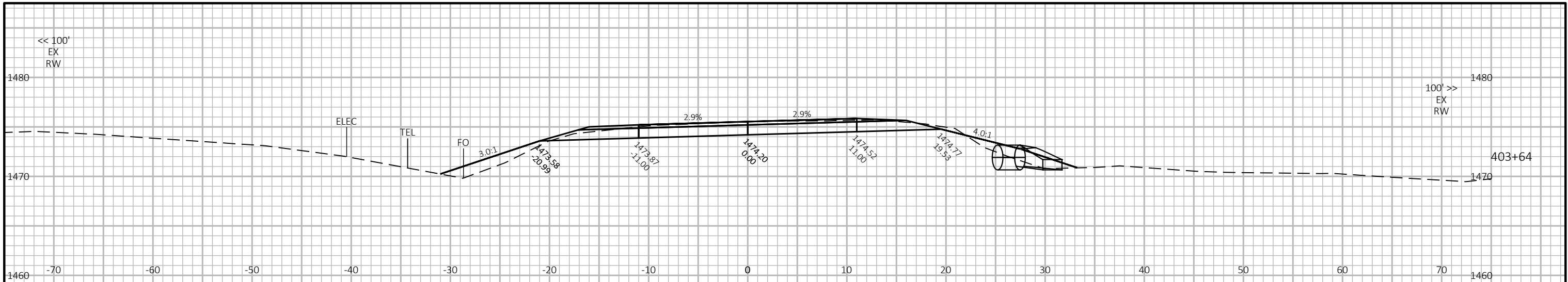
PROJECT NO: 9304-11-70	HWY: STH 101	COUNTY: FLORENCE	CROSS SECTIONS: CULVERT 19-101-000103 ENDWALL REPLACEMENT	SHEET E
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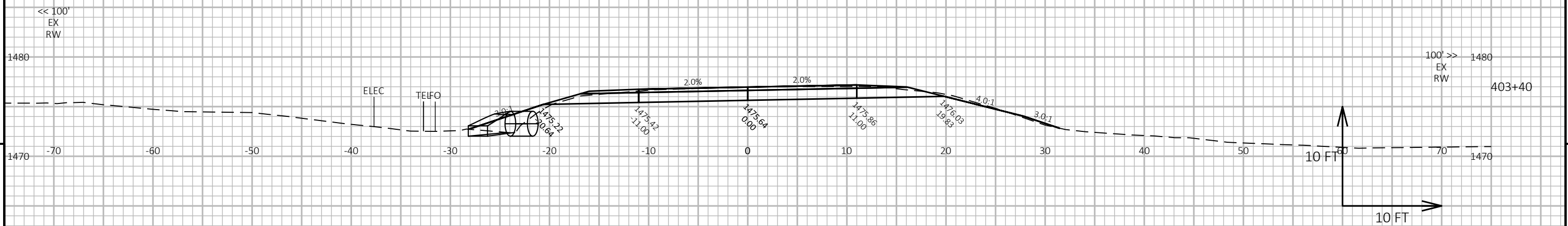
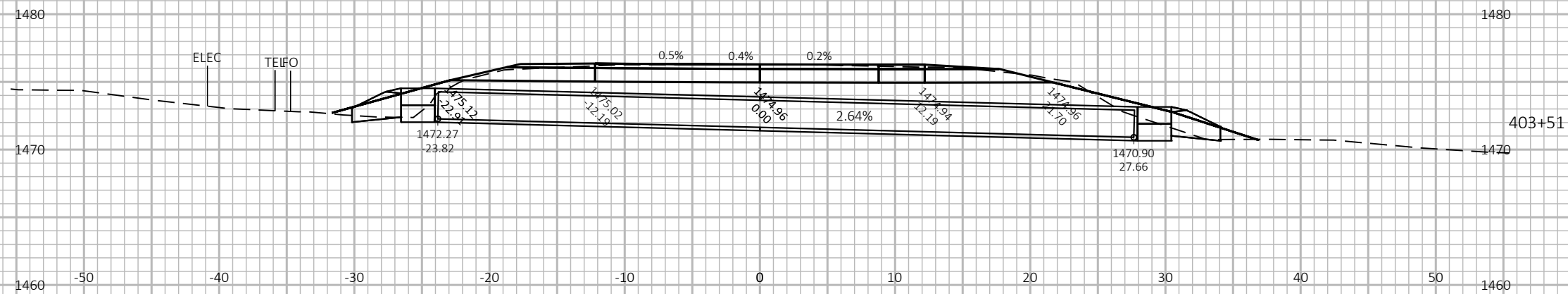
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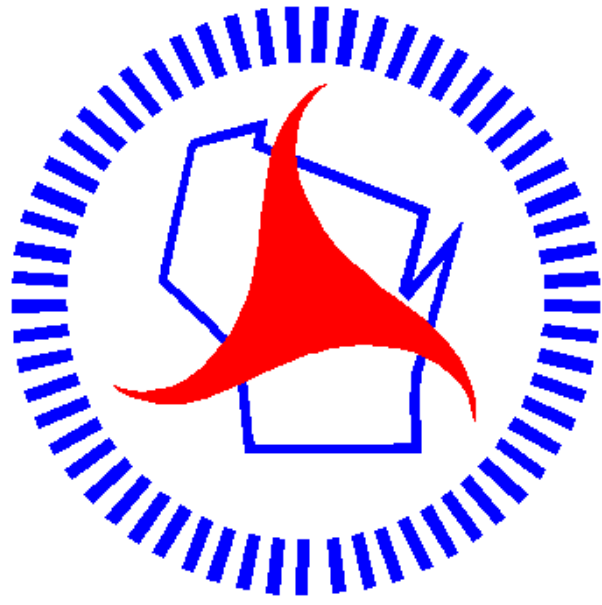
PROJECT NO: 9304-11-70	HWY: STH 101	COUNTY: FLORENCE	CROSS SECTIONS: CULVERT 19-101-000105 REPLACEMENT	SHEET E
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CROSS SECTION IS CUT ALONG THE CENTERLINE OF THE CULVERT PIPE
AND IS SKEWED 25.7° COUNTER-CLOCKWISE TO ROADWAY ALIGNMENT



Notes



Wisconsin Department of Transportation

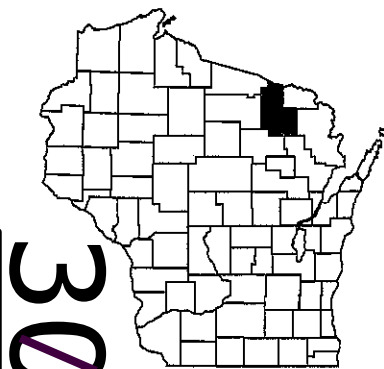
Dedicated people creating transportation solutions
through innovation and exceptional service.

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

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 = 102



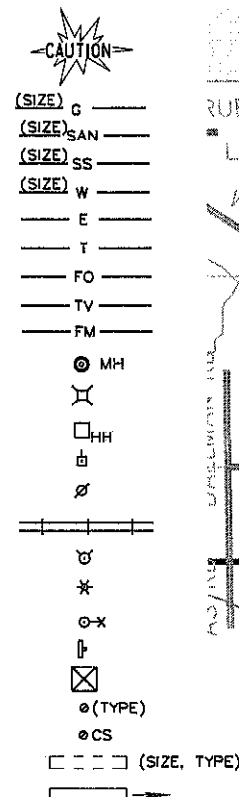
DESIGN DESIGNATION

A.A.D.T.	(2020)	=	1330
A.A.D.T.	(2040)	=	1580
D.H.V.		=	283
D.D.		=	61/39
T.		=	24.3
DESIGN SPEED		=	VARIABLE, 40-55 MPH
ESALS		=	358,000

CONVENTIONAL SYMBOLS

COUNTY LINE	
CORPORATE LIMITS	
PROPERTY LINE	
LIMITED EASEMENT	
EXISTING RIGHT OF WAY	
PROPOSED OR NEW R/W LINE	
FENCE	
GUARD RAIL	
SLOPE INTERCEPT	
ORIGINAL GROUND	
MARSH OR ROCK PROFILE (To be noted as such)	
MARSH AREA	
WOODED OR SHRUB AREA	
STREAM OR WATER EDGE	
BUSH	
PINE TREE	(SIZE)
TREE	(SIZE)
TRAFFIC SIGNAL CONTROL CABINET	
TRAFFIC SIGNAL	
TRAFFIC SIGNAL MAST--ARM	
TRAFFIC SIGNAL WITH LIGHT	
EXISTING PULL BOX	
ROLLARD	

COMBUSTIBLE FLUIDS
UNDERGROUND UTILITIES
GAS
SANITARY SEWER
STORM SEWER
WATER
ELECTRIC
TELEPHONE
FIBER OPTIC
CABLE TELEVISION
FORCE MAIN
MANHOLE
UTILITY PEDESTAL
FIBER OPTIC HAND HOLE
POWER POLE
TELEPHONE POLE
RAILROAD
HYDRANT
LIGHT POLE
RAILROAD SIGNAL
SIGN
TRANSMISSION TOWER
VALVE
CURB STOP
EXISTING CULVERT
PROPOSED CULVERT
(Box or Pipe)



STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PLAN OF PROPOSED IMPROVEMENT

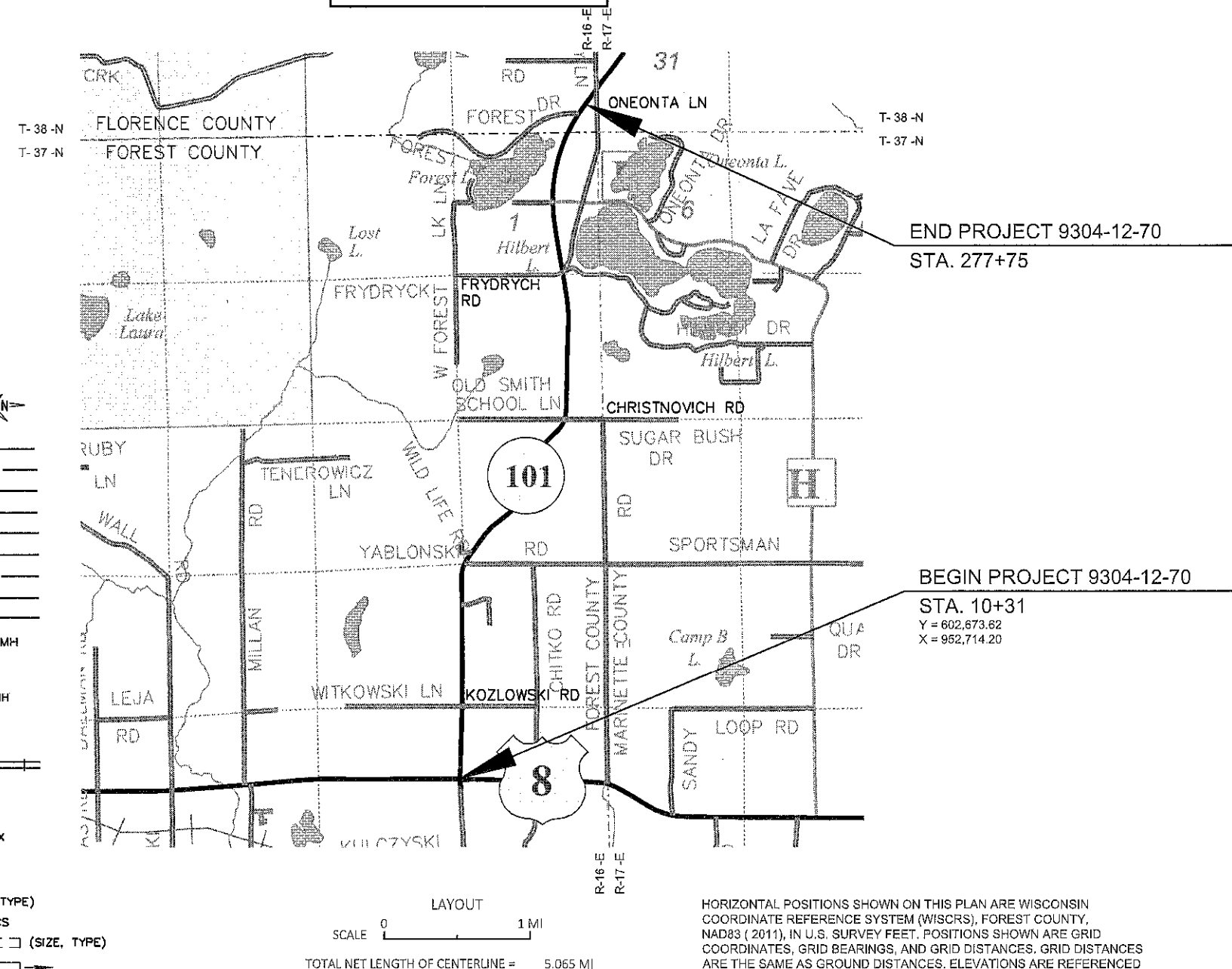
ARMSTRONG CREEK - FLORENCE

USH 8 - WEST ONEONTA LANE

STH 101

FOREST COUNTY

STATE PROJECT NUMBER
9304-12-70



HORIZONTAL POSITIONS SHOWN ON THIS PLAN ARE WISCONSIN
COORDINATE REFERENCE SYSTEM (WISCRS), FOREST COUNTY,
NAD83 (2011), IN U.S. SURVEY FEET. POSITIONS SHOWN ARE GRID
COORDINATES, GRID BEARINGS, AND GRID DISTANCES. GRID DISTANCES
ARE THE SAME AS GROUND DISTANCES. ELEVATIONS ARE REFERENCED
TO NAVD 88 (2012). GPS DERIVED ELEVATIONS ARE BASED ON GEOID 12A.

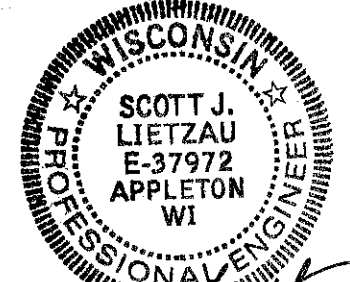
STATE PROJECT	FEDERAL PROJECT	
	PROJECT	CONTRACT
9304-12-70	WISC 2021098	1

ORIGINAL PLANS PREPARED BY

raSmith

CREATIVITY BEYOND ENGINEERING

rasmith.com



6-24-20 *[Signature]*
(Date) (Signature)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PREPARED BY

Surveyor	raSmith
Designer	raSmith
Project Manager	STACY HAGENBUCHER
Regional Examiner	
Regional Supervisor	JED PETERS

APPROVED FOR THE DEPARTMENT

DATE: 7/30/20 Stacy Hagenbucher
(Signature)

P

UTILITY CONTACTS

CENTURYLINK - COMMUNICATIONS LINE
2425 MARY STREET
MARINETTE, WI 54143
PETER JOHNSON
(920) 715-0059
peter.s.johnson@centurylink.com

WISCONSIN PUBLIC SERVICE CORPORATION -
ELECTRICITY
2850 S ASHLAND AVENUE
PO BOX 19001
GREEN BAY, WI 54307-9001
RANDY STEIER
(920) 617-5167
randy.steier@wisconsinpublicservice.com

ASBUILT REFERENCES (CONSTRUCTION YEAR)

PROJECT ID 9304-08-60 (2003)
PROJECT ID 9304-03-70 (1992)

DNR LIAISON

DNR NORTHERN REGION HEADQUATERS
MR. JON SIMONSEN
107 SUTLIFF AVENUE
RHINELANDER, WI 54501
(715) 367-1936
jonathan.simonsen@wisconsin.gov

GENERAL NOTES

- 1
- THERE MAY BE UTILITY FACILITIES WITHIN THE PROJECT AREA THAT ARE NOT SHOWN ON THE PLANS. COORDINATE CONSTRUCTION WITH A CALL TO DIGGERS HOTLINE AND/OR A DIRECT CALL TO THE UTILITIES THAT HAVE FACILITIES IN THE AREA. NOT ALL UTILITIES ARE MEMBERS OF DIGGERS HOTLINE.
- 2
- RIGHT OF WAY DIMENSIONS AND LINEWORK ARE BASED ON AS-BUILT AND COUNTY GIS INFORMATION. THEY HAVE NOT BEEN VERIFIED.
- 3
- SLOPE INTERCEPTS ON THE PLAN DETAILS AND EROSION CONTROL PLANS REFLECT THE APPROXIMATE LIMITS OF THE BUILD OUT FOR THE LANE SHIFT OR THE FINAL CROSS SECTIONS, WHICHEVER IS FURTHER. CONTRACTOR TO DETERMINE LANE SHIFT CROSS SECTIONS AT THE TIME OF CONSTRUCTION.

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 .22	.16 .30	.22 .38	.12 .26	.20 .34	.27 .44	.15 .30	.24 .37	.33 .50	.19 .34	.28 .41	.38 .56
MEDIAN STRIP- TURF	.19 .24	.20 .26	.24 .30	.19 .25	.22 .28	.26 .33	.20 .26	.23 .30	.30 .37	.20 .27	.25 .32	.30 .40
SIDE SLOPE- TURF			.25 .32			.27 .34			.28 .36			.30 .38
PAVEMENT:												
ASPHALT	.70 - .95											
CONCRETE	.80 - .95											
BRICK	.70 - .80											
DRIVES, WALKS	.75 - .85											
ROOFS	.75 - .95											
GRAVEL ROADS, SHOULDERS	.40 - .60											

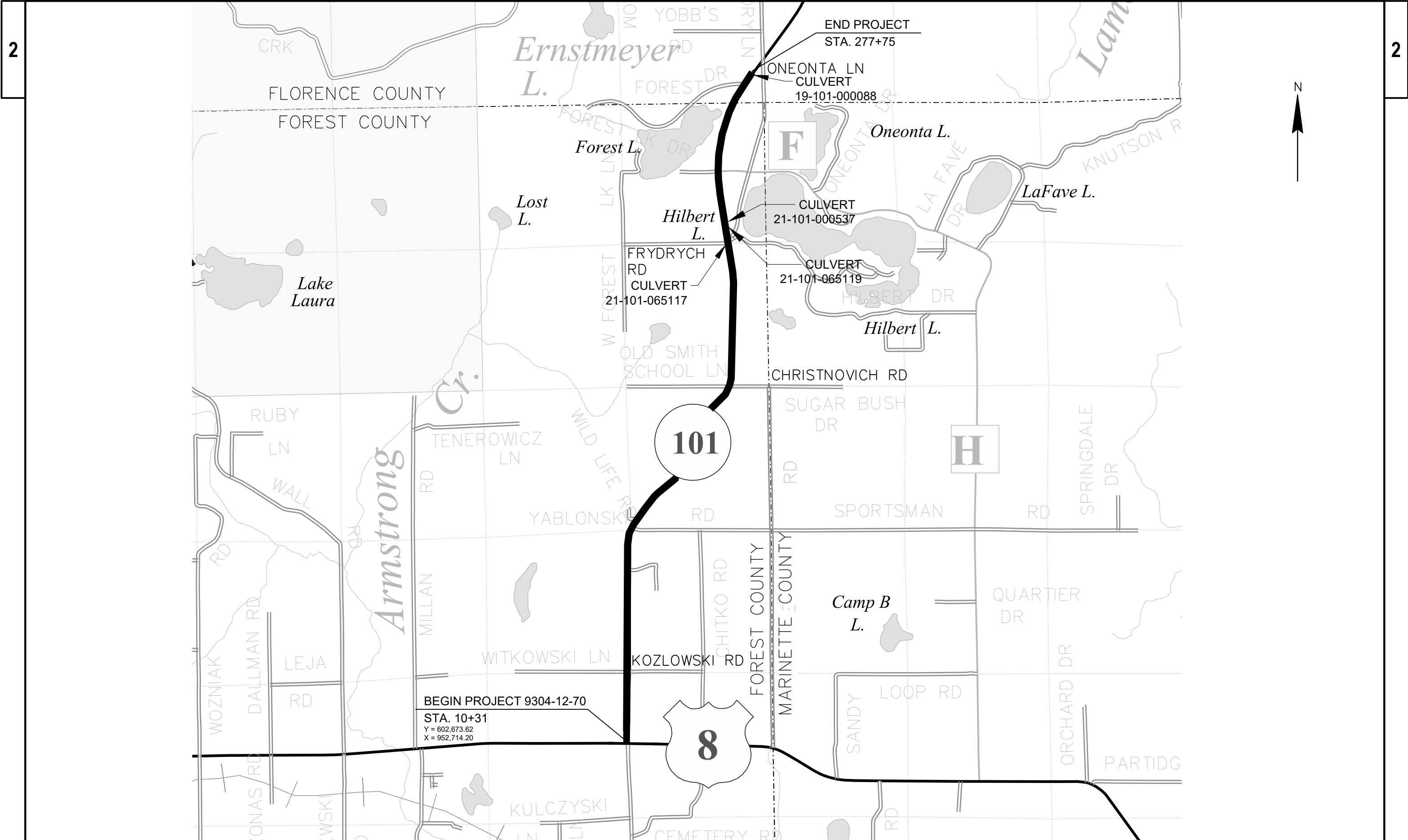
TOTAL PROJECT AREA = 62.136 ACRES
TOTAL AREA EXPECTED TO BE DISTURBED BY CONSTRUCTION ACTIVITIES = 1.061 ACRES

ORDER OF SECTION 2 SHEETS

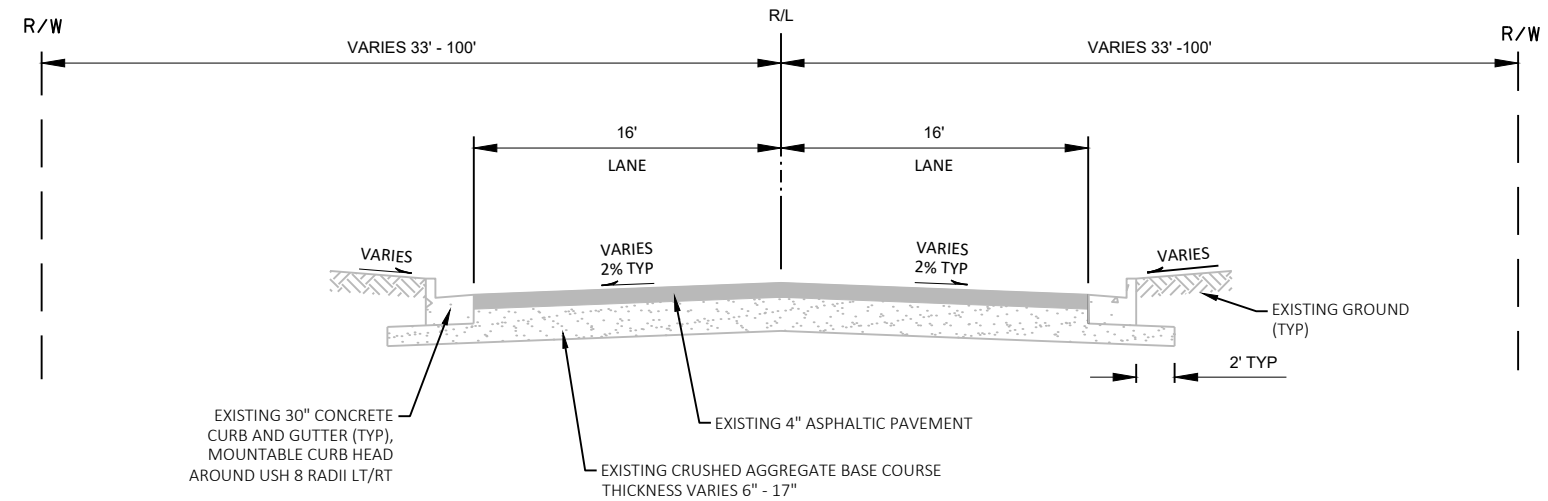
- PROJECT OVERVIEW
- TYPICAL SECTIONS
- CONSTRUCTION DETAILS
- PLAN DETAILS
- EROSION CONTROL PLANS



Dial 811 or (800) 242-8511
www.DiggersHotline.com



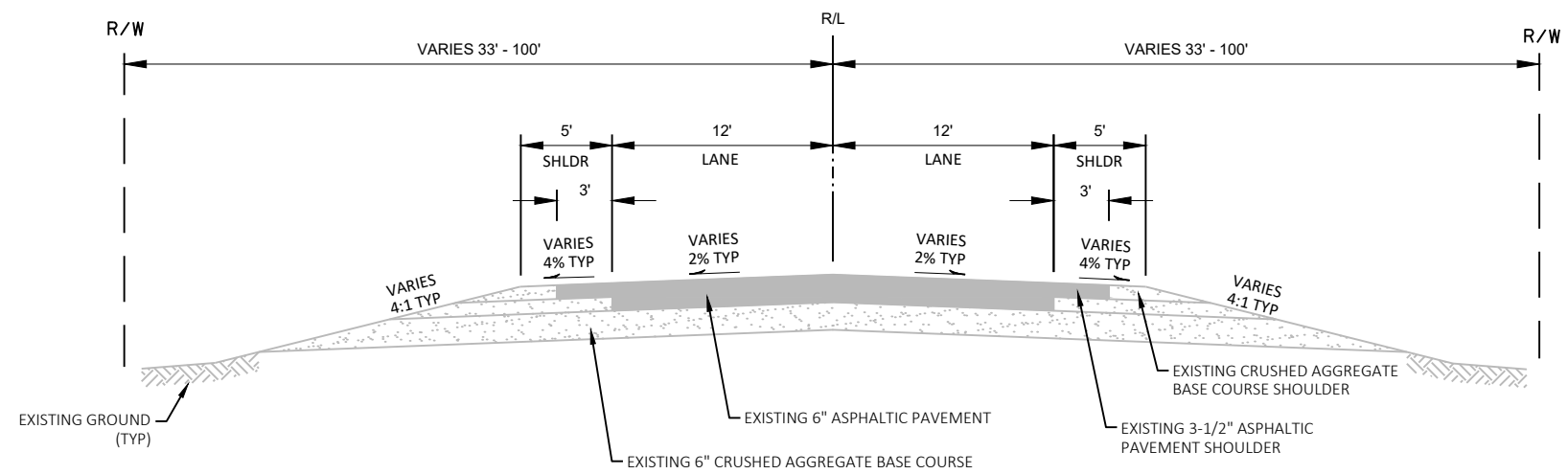
PROJECT NO: 9304-12-70	HWY: STH 101	COUNTY: FOREST	PROJECT OVERVIEW	SHEET	E
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EXISTING TYPICAL SECTION

STH 101

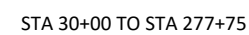
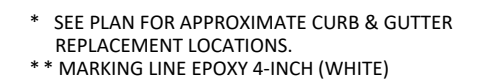
STA 10+31 TO STA 30+00

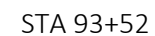


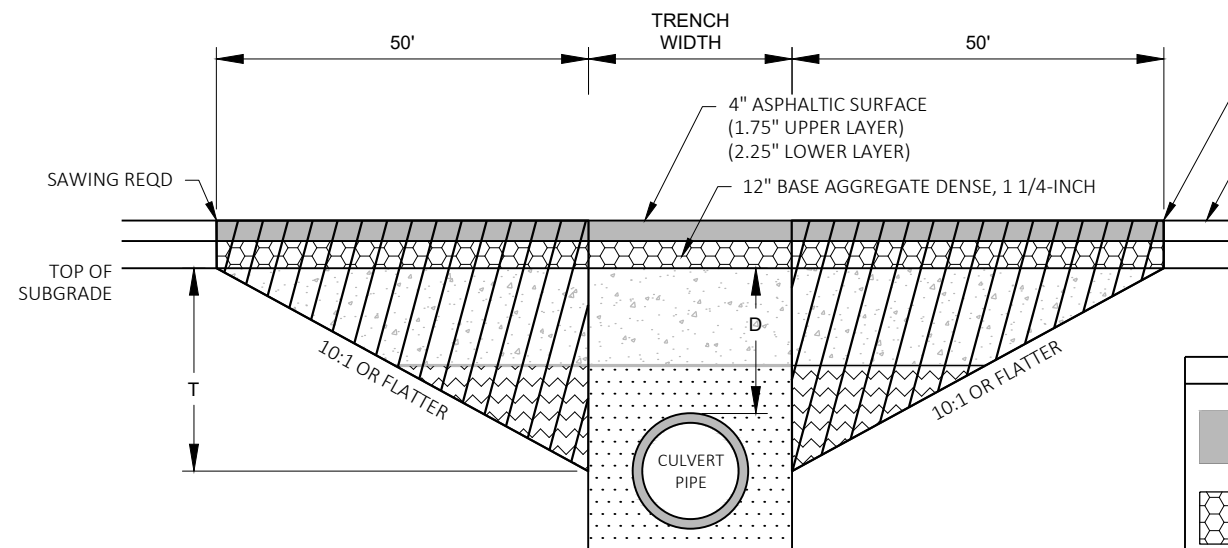
EXISTING TYPICAL SECTION

STH 101

STA 30+00 TO STA 277+75

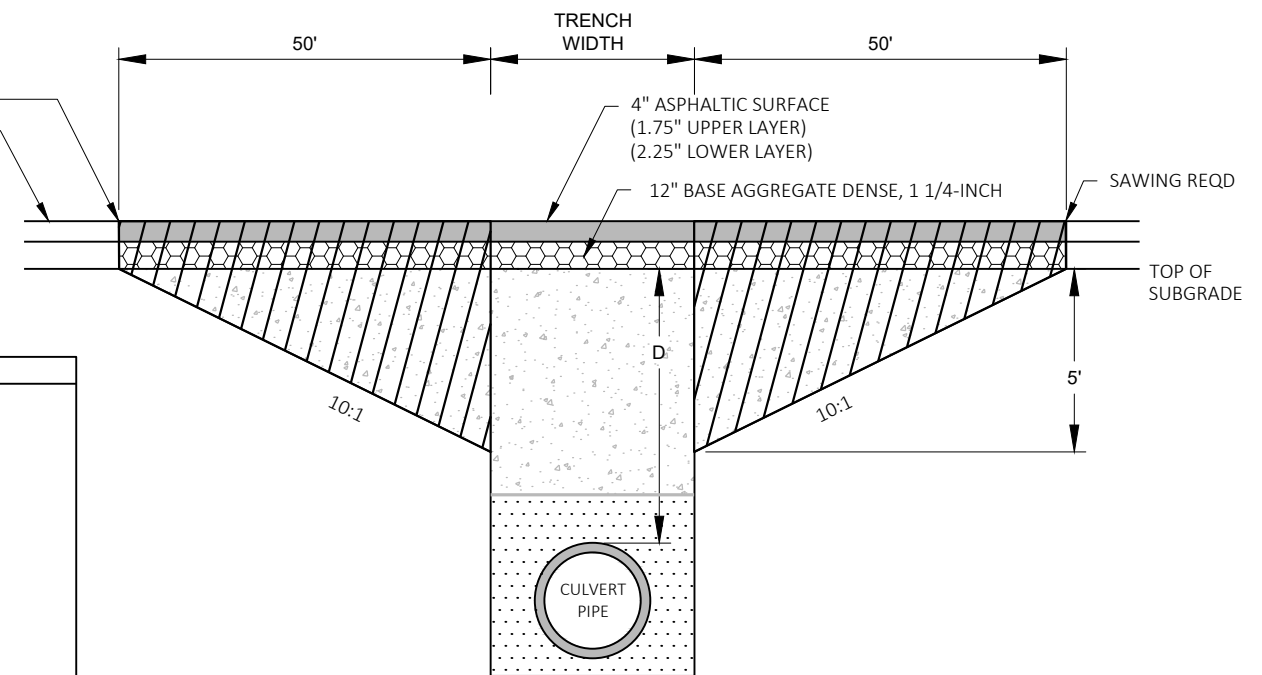
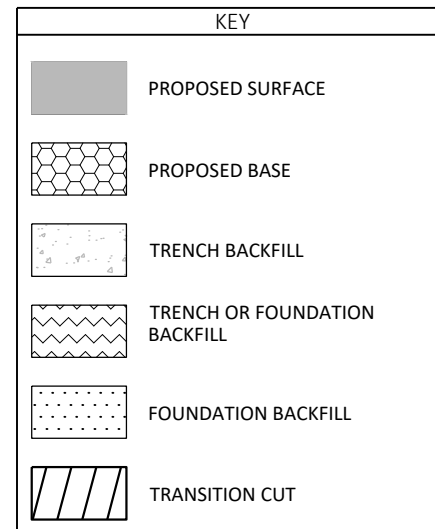






TRANSITION CUT DEPTH (T) = THE LESSER OF DEPTH TO CENTER OF PIPE OR 5 FT.
DO NOT EXTEND TRANSITION CUT BELOW HORIZONTAL CENTER OF PIPE.

DEPTH D < 6 FT



DEPTH D ≥ 6 FT

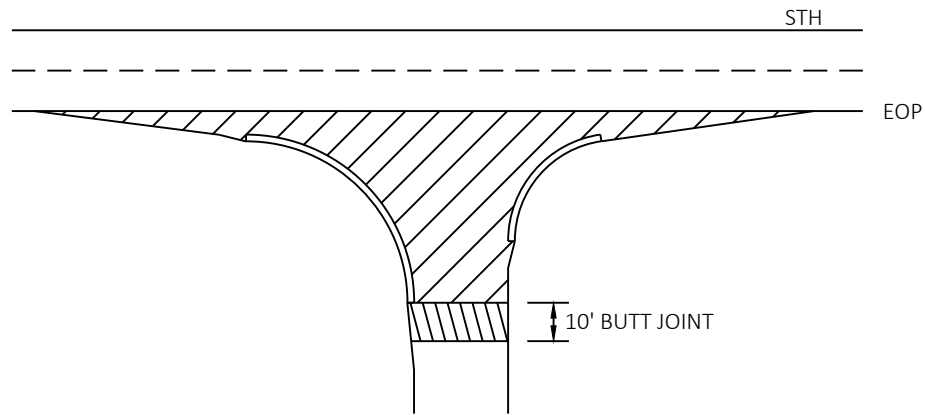
NOTES

- TRANSITION CUT IS PAID AS EXCAVATION COMMON.
- TRANSITION CUT WIDTH IS FROM SUBGRADE SHOULDER POINT TO SUBGRADE SHOULDER POINT.
- BACKFILL THE TRANSITION CUT AREAS WITH FOUNDATION AND TRENCH BACKFILL AS SPECIFIED IN STANDARD SPEC 520.
- PERFORM CULVERT PIPE INSTALLATION BEFORE MILLING AND PAVING OPERATIONS.
- PLACE HMA 4 MT 58-28 S AFTER CULVERT PIPE INSTALLATION AND BEFORE ASPHALTIC SURFACE MILLING OPERATIONS.

CULVERT DATA

ROUTE	STA (CL)	DEPTH D (FT)	EXISTING PIPE DIA (IN)	PROPOSED PIPE DIA (IN)	CULVERT NUMBER	REMARKS
STH 101	207+85	9.0'	24	24	21-101-065117	---
STH 101	214+01	11.4'	30	30	21-101-065119	---
STH 101	216+00	5.5'	72	N/A	21-101-000537	REMOVE EXISTING PIPE WITH NO REPLACEMENT
STH 101	276+90	0.0	72	N/A	19-101-000088	REMOVE EXISTING PIPE WITH NO REPLACEMENT

CULVERT PIPE TRANSITION DETAIL



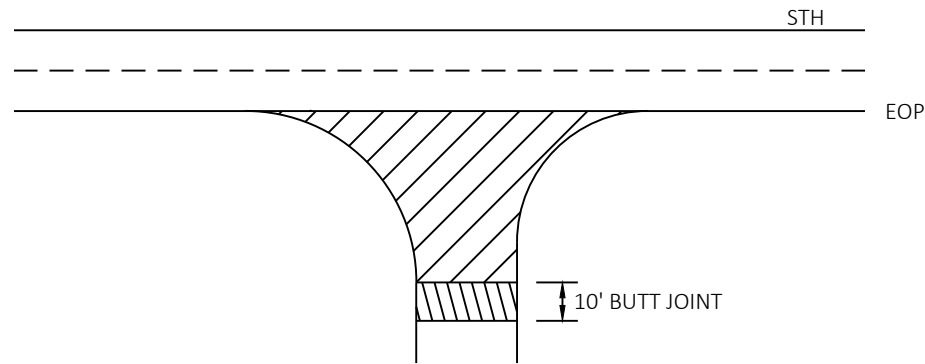
- REMOVING ASPHALTIC SURFACE MILLING
- REMOVING ASPHALTIC SURFACE BUTT JOINTS
SEE BUTT JOINT DETAIL

NOTES:

1. WHEN MATCHING TO AN UNPAVED SURFACE, BUTT JOINT IS NOT REQUIRED.
2. MILL TO THE END OF RADIUS OR EXISTING PAVEMENT JOINT, WHICHEVER IS CLOSER.

SIDE ROADS

WITH CURB AND GUTTER
CTH F



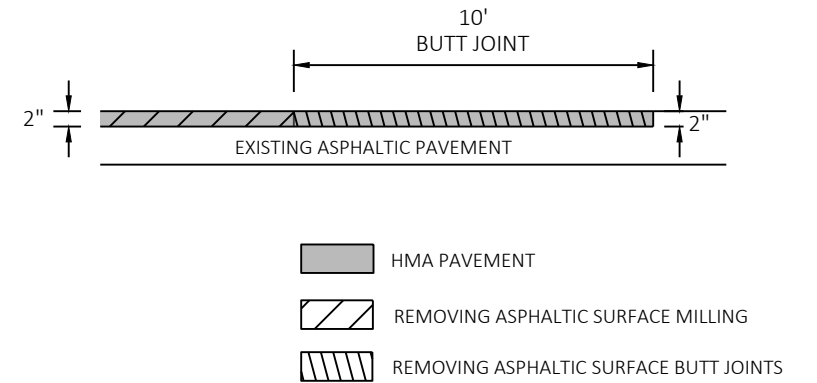
- REMOVING ASPHALTIC SURFACE MILLING
- REMOVING ASPHALTIC SURFACE BUTT JOINTS
SEE BUTT JOINT DETAIL

NOTES:

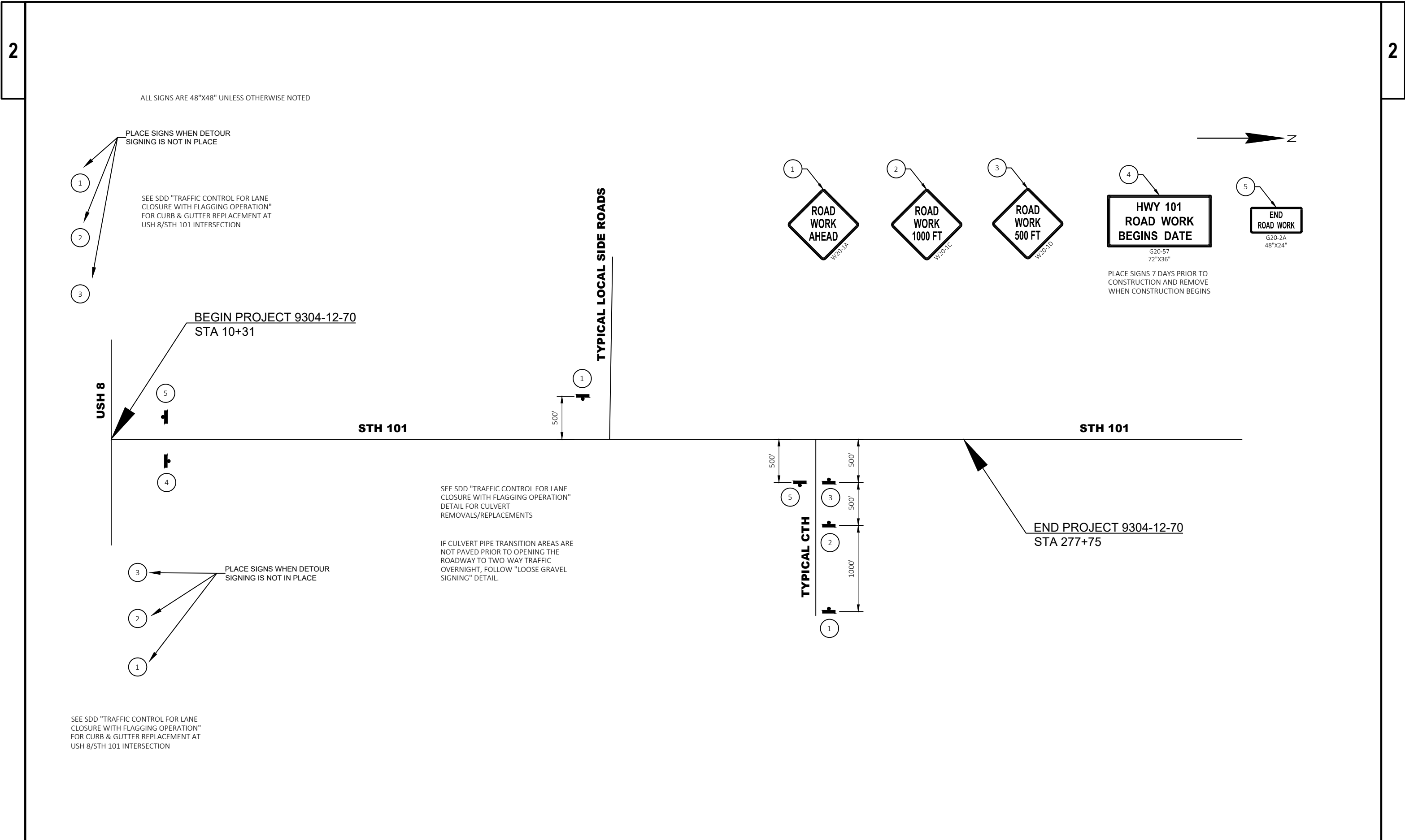
1. WHEN MATCHING TO AN UNPAVED SURFACE, BUTT JOINT IS NOT REQUIRED.
2. MILL TO THE END OF RADIUS OR EXISTING PAVEMENT JOINT, WHICHEVER IS CLOSER.

SIDE ROADS

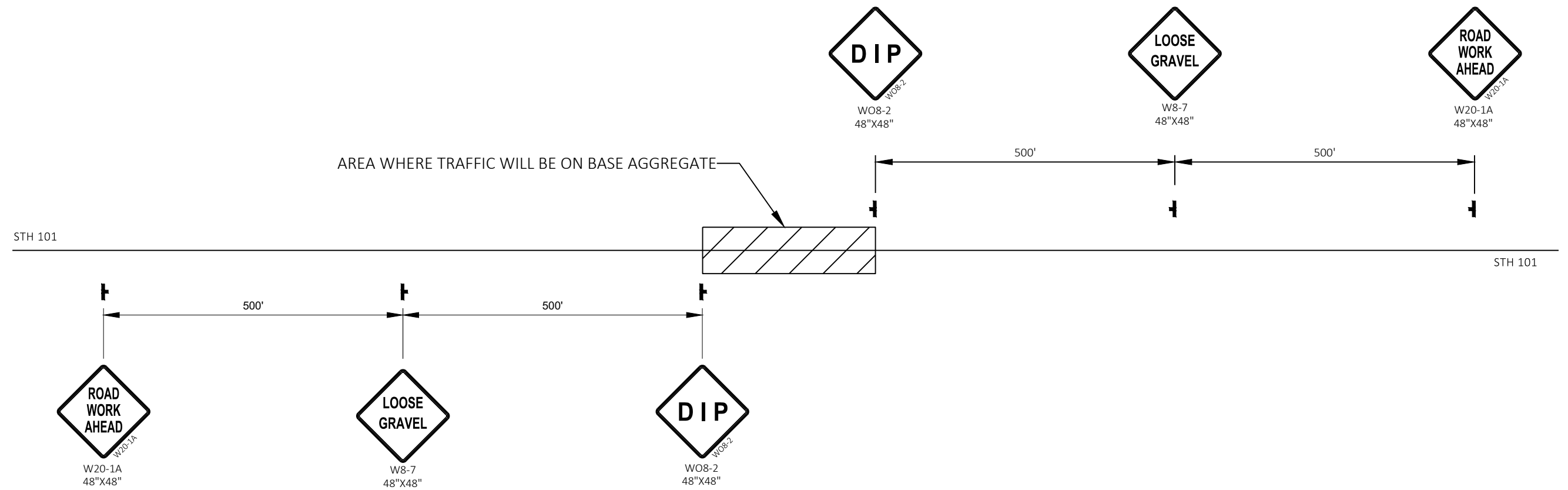
WITHOUT CURB AND GUTTER
WITKOWSKI LANE
KOZLOWSKI ROAD
YABLONSKI ROAD
CHRISTNOVICH ROAD
OLD SMITH SCHOOL LANE
FRYDRYCH RD
HILBERT DRIVE
EAST FOREST LAKE LANE
FOREST LAKE DRIVE

BUTT JOINT DETAILSBUTT JOINT

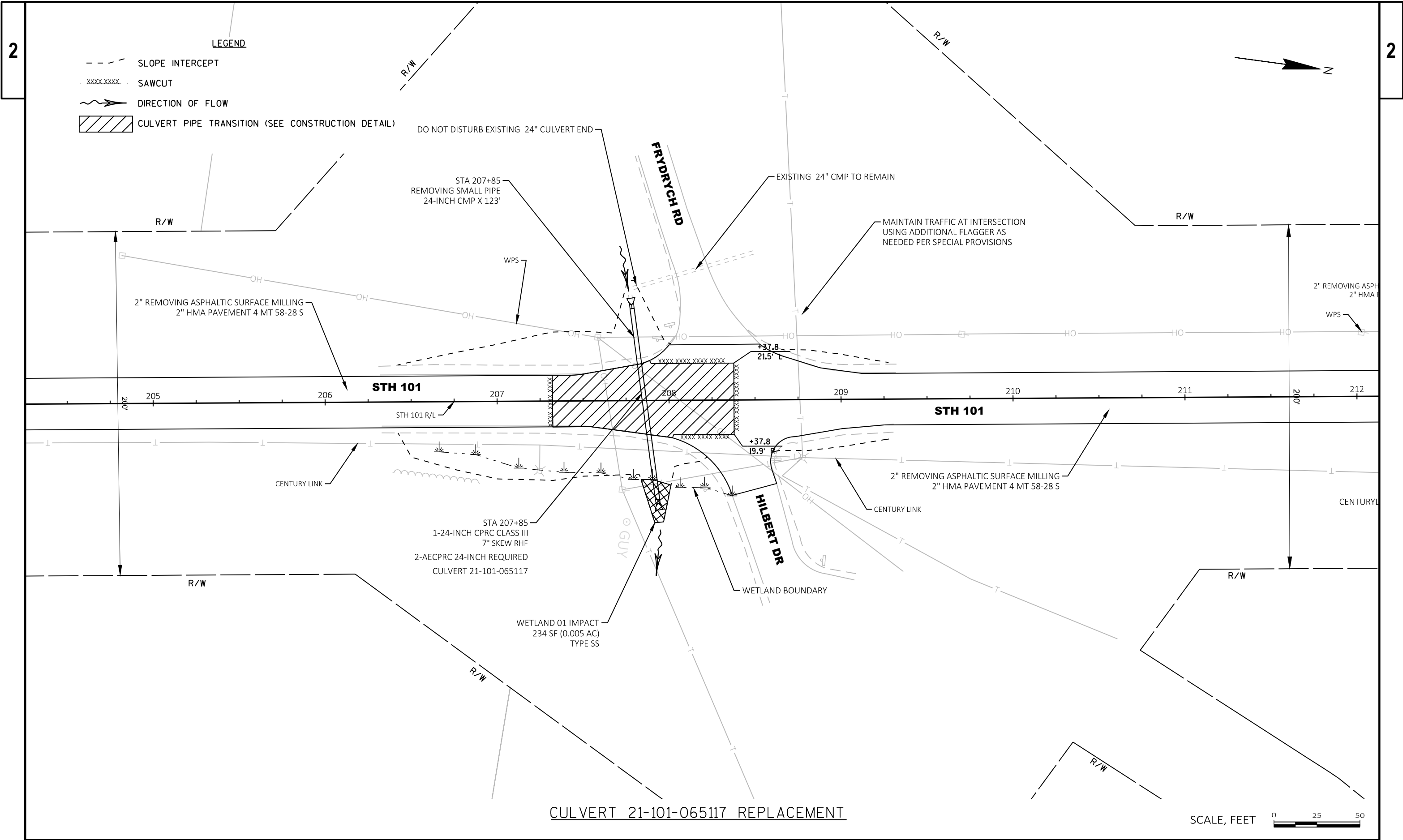
MAINLINE AND SIDE ROADS

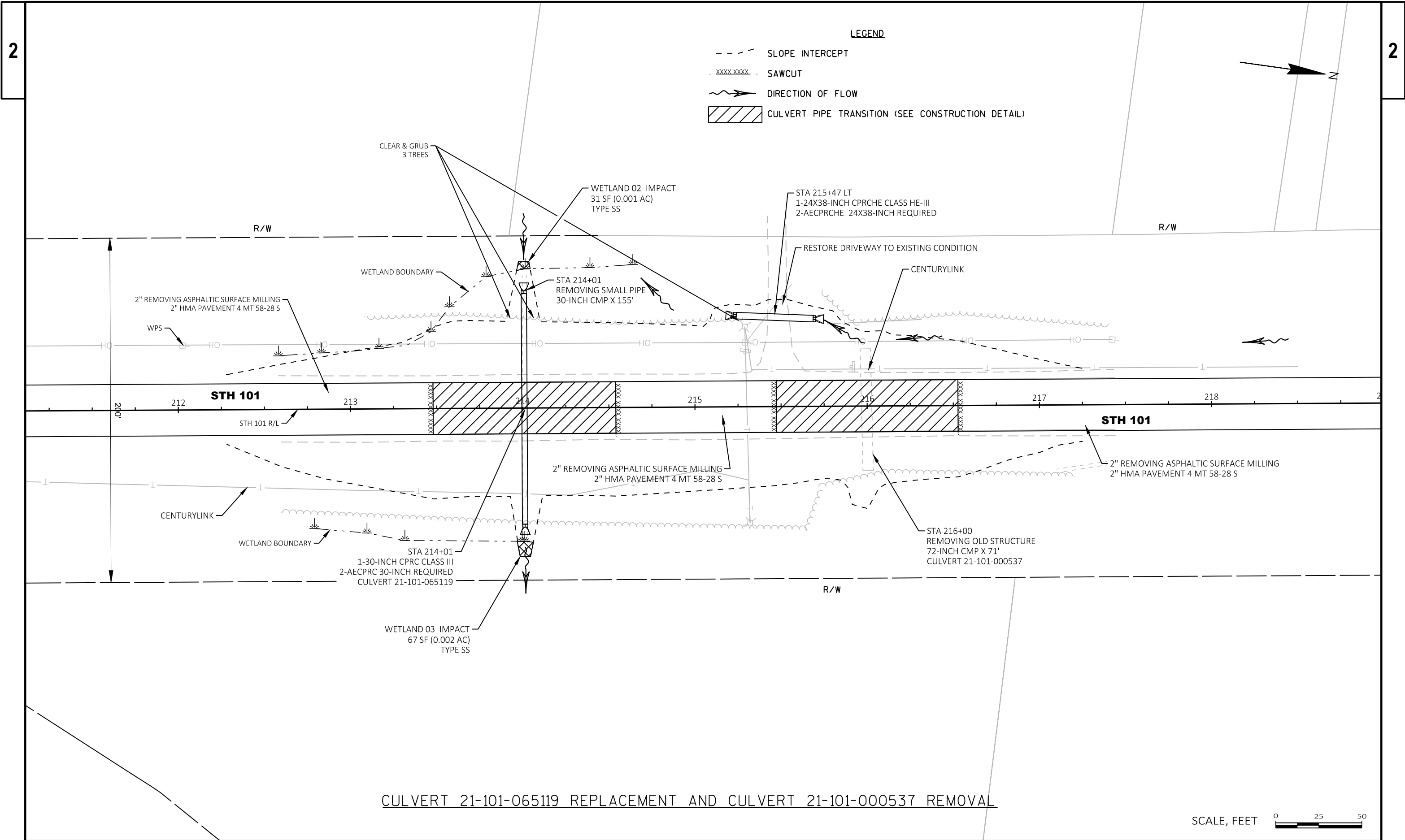


PROJECT NO: 9304-12-70	HWY: STH 101	COUNTY: FOREST	TRAFFIC CONTROL WARNING SIGN LOCATIONS	SHEET	E
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LOOSE GRAVEL SIGNING

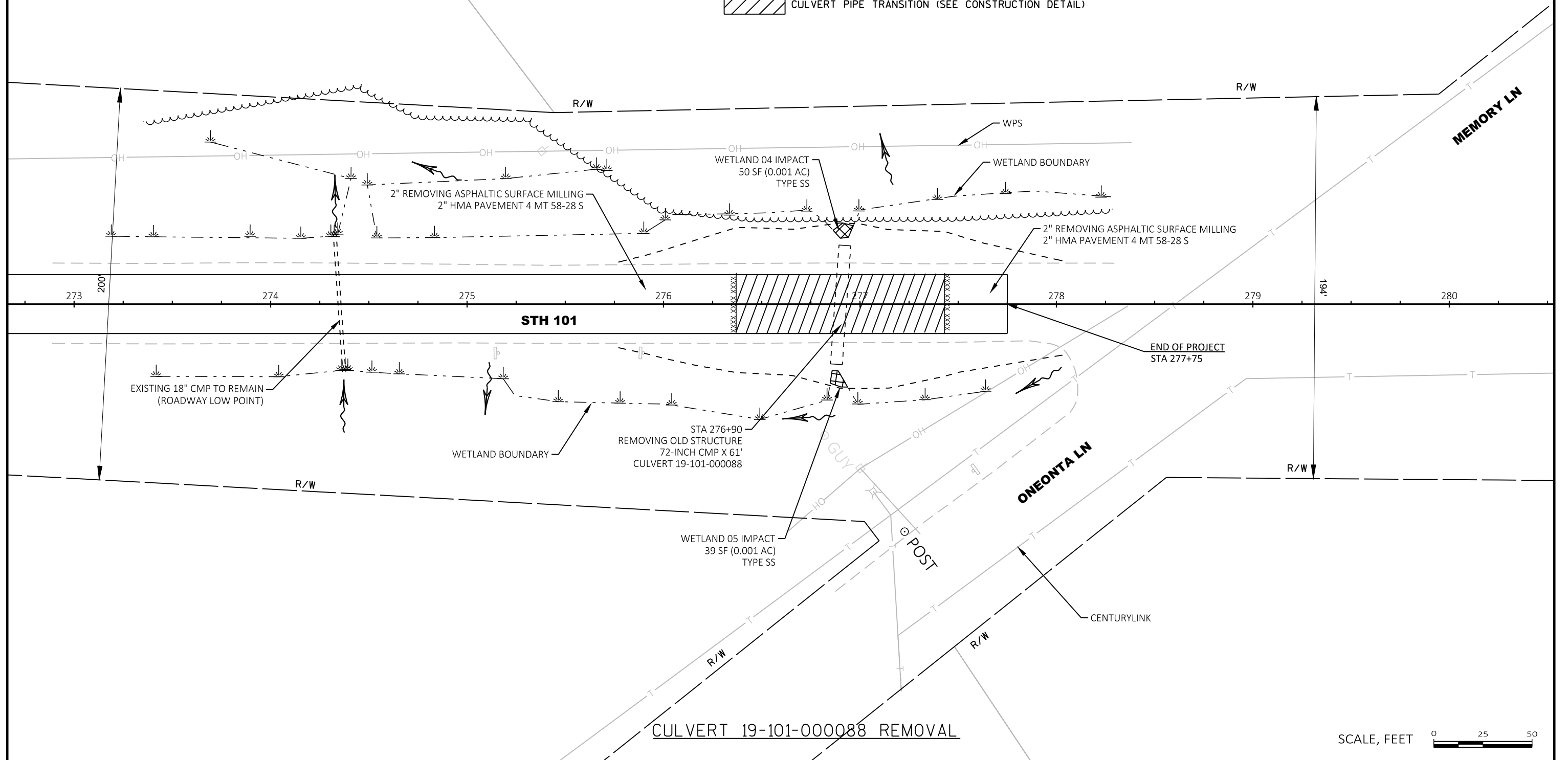




CULVERT 21-101-065119 REPLACEMENT AND CULVERT 21-101-000537 REMOVAL

LEGEND

- SLOPE INTERCEPT
- .xxxxxxx. SAWCUT
- ~> DIRECTION OF FLOW
- ▨ CULVERT PIPE TRANSITION (SEE CONSTRUCTION DETAIL)



PROJECT NO: 9304-12-70

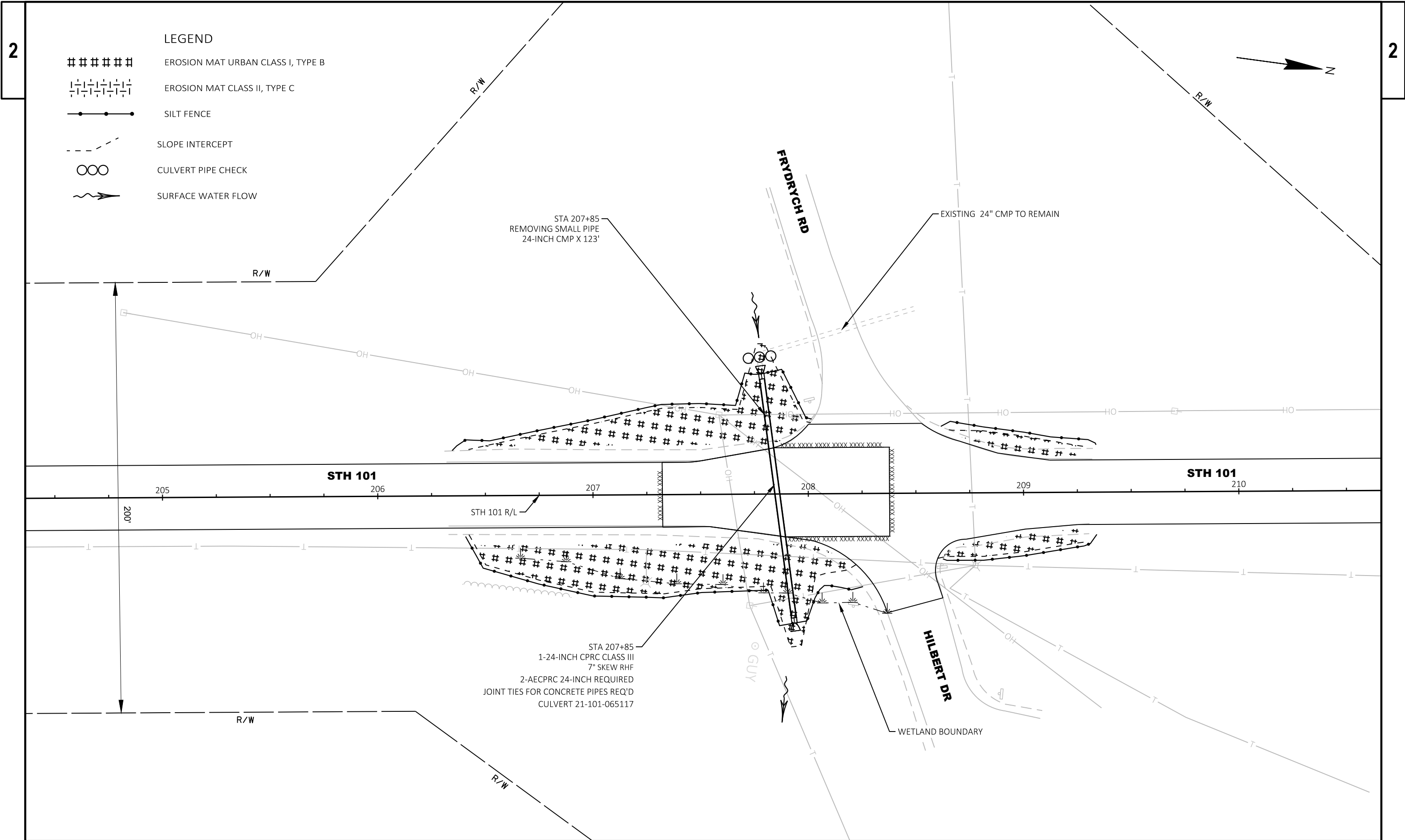
HWY: STH 101

COUNTY: FOREST

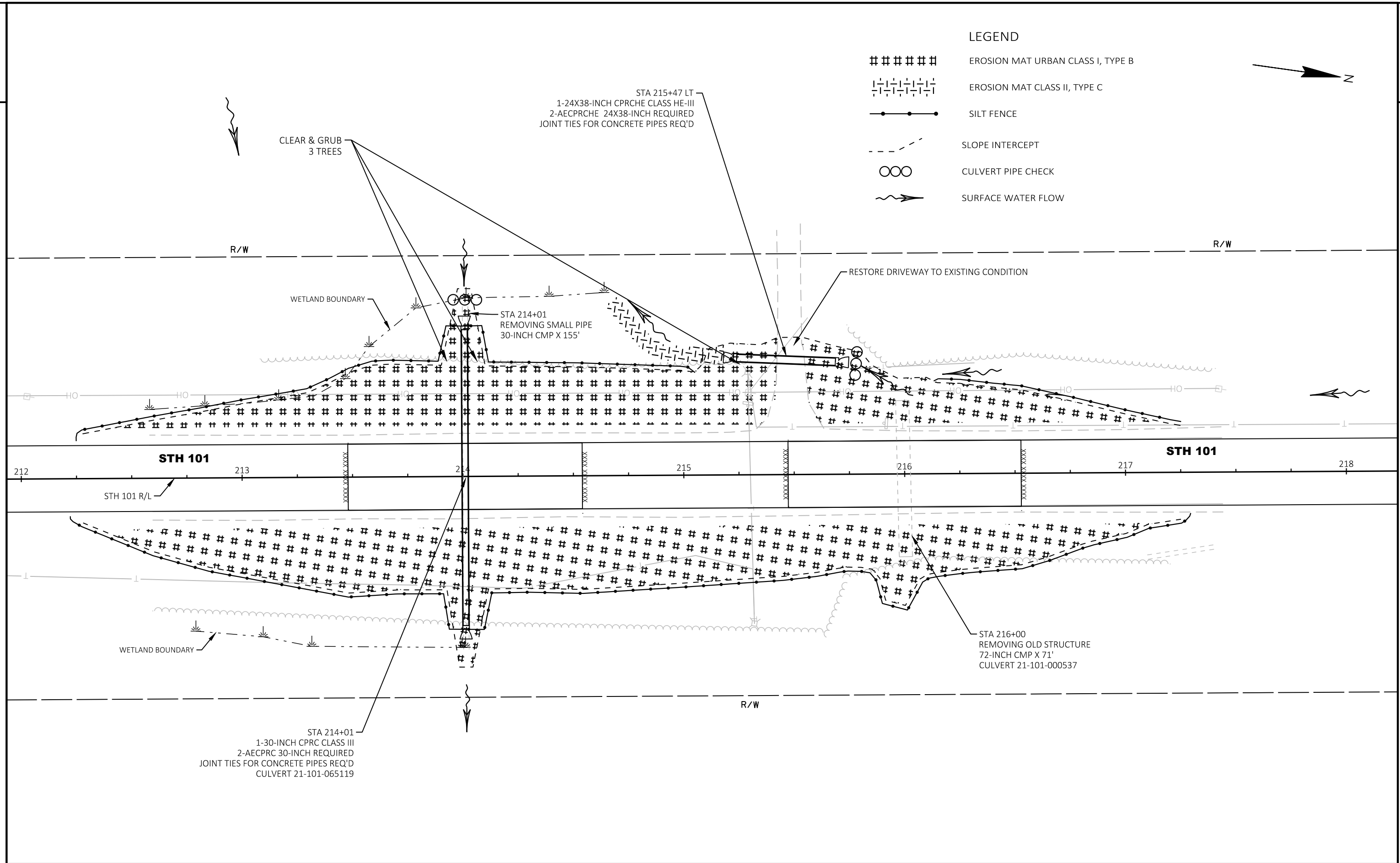
PLAN DETAILS

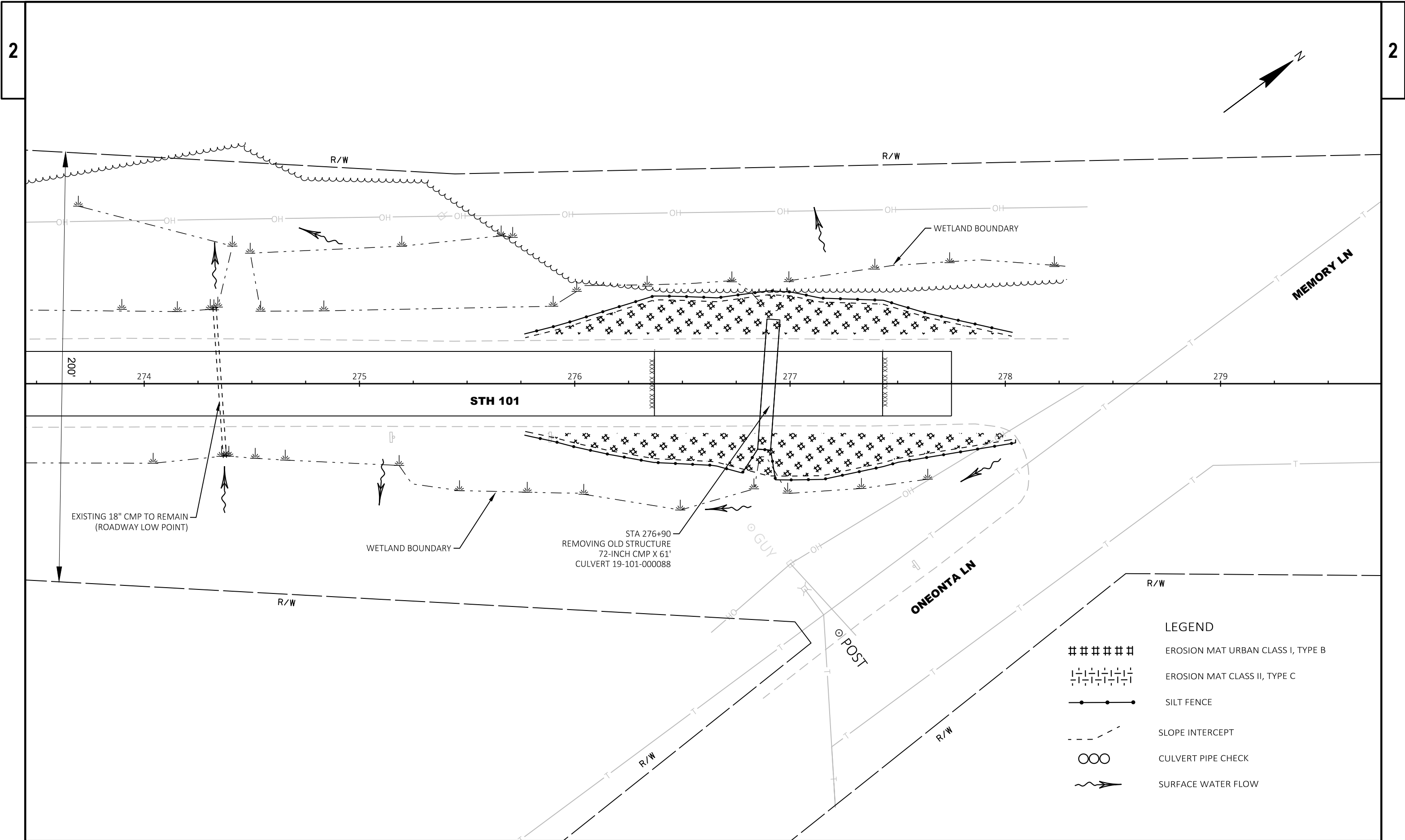
SHEET

E



PROJECT NO: 9304-12-70	HWY: STH 101	COUNTY: FOREST	EROSION CONTROL CULVERT 21-101-065117	SHEET E
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Estimate Of Quantities By Plan Sets

9304-12-70					
Line	Item	Item Description	Unit	Total	Qty
0004	201.0120	Clearing	ID	28.000	28.000
0008	201.0220	Grubbing	ID	28.000	28.000
0010	203.0100	Removing Small Pipe Culverts	EACH	2.000	2.000
0012	203.0200	Removing Old Structure (station) 01. 216+00	LS	1.000	1.000
0014	203.0200	Removing Old Structure (station) 02. 276+90	LS	1.000	1.000
0020	204.0110	Removing Asphaltic Surface	SY	430.000	430.000
0022	204.0115	Removing Asphaltic Surface Butt Joints	SY	393.000	393.000
0024	204.0120	Removing Asphaltic Surface Milling	SY	121,313.000	121,313.000
0026	204.0150	Removing Curb & Gutter	LF	1,583.000	1,583.000
0028	204.0180	Removing Delineators and Markers	EACH	10.000	10.000
0032	205.0100	Excavation Common	CY	2,895.000	2,895.000
0036	209.2500	Backfill Granular Grade 2	TON	140.000	140.000
0038	211.0100	Prepare Foundation for Asphaltic Paving (project) 01. 9304-12-70	LS	1.000	1.000
0042	211.0400	Prepare Foundation for Asphaltic Shoulders	STA	2.000	2.000
0044	213.0100	Finishing Roadway (project) 01. 9304-12-70	EACH	1.000	1.000
0048	305.0110	Base Aggregate Dense 3/4-Inch	TON	1,776.000	1,776.000
0050	305.0120	Base Aggregate Dense 1 1/4-Inch	TON	1,620.000	1,620.000
0052	455.0605	Tack Coat	GAL	7,165.000	7,165.000
0054	460.0105.S	HMA Percent Within Limits (PWL) Test Strip Volumetrics	EACH	0.500	0.500
0056	460.0110.S	HMA Percent Within Limits (PWL) Test Strip Density	EACH	1.000	1.000
0058	460.2000	Incentive Density HMA Pavement	DOL	190.000	190.000
0060	460.2005	Incentive Density PWL HMA Pavement	DOL	8,200.000	8,200.000
0062	460.2007	Incentive Density HMA Pavement Longitudinal Joints	DOL	53,488.000	53,488.000
0064	460.2010	Incentive Air Voids HMA Pavement	DOL	10,220.000	10,220.000
0066	460.6224	HMA Pavement 4 MT 58-28 S	TON	10,767.000	10,767.000
0068	465.0105	Asphaltic Surface	TON	351.000	351.000
0070	465.0110	Asphaltic Surface Patching	TON	540.000	540.000
0072	465.0475	Asphalt Centerline Rumble Strips 2-Lane Rural	LF	21,846.000	21,846.000
0078	522.0124	Culvert Pipe Reinforced Concrete Class III 24-Inch	LF	112.000	112.000
0080	522.0130	Culvert Pipe Reinforced Concrete Class III 30-Inch	LF	134.000	134.000
0084	522.1024	Apron Endwalls for Culvert Pipe Reinforced Concrete 24-Inch	EACH	2.000	2.000
0086	522.1030	Apron Endwalls for Culvert Pipe Reinforced Concrete 30-Inch	EACH	2.000	2.000
0090	522.2324	Culvert Pipe Reinforced Concrete Horizontal Elliptical Class HE-III 24x38-Inch	LF	45.000	45.000
0092	522.2624	Apron Endwalls for Culvert Pipe Reinforced Concrete Horizontal Elliptical 24x38-Inch	EACH	2.000	2.000
0096	601.0411	Concrete Curb & Gutter 30-Inch Type D	LF	1,521.000	1,521.000
0098	601.0557	Concrete Curb & Gutter 6-Inch Sloped 36-Inch Type D	LF	62.000	62.000

Estimate Of Quantities By Plan Sets

9304-12-70					
Line	Item	Item Description	Unit	Total	Qty
0102	611.8115	Adjusting Inlet Covers	EACH	5.000	5.000
0110	618.0100	Maintenance And Repair of Haul Roads (project) 01. 9304-12-70	EACH	1.000	1.000
0114	619.1000	Mobilization	EACH	0.400	0.400
0116	624.0100	Water	MGAL	80.000	80.000
0118	625.0100	Topsoil	SY	3,675.000	3,675.000
0120	627.0200	Mulching	SY	130.000	130.000
0122	628.1504	Silt Fence	LF	3,710.000	3,710.000
0124	628.1520	Silt Fence Maintenance	LF	1,855.000	1,855.000
0126	628.1905	Mobilizations Erosion Control	EACH	8.000	8.000
0128	628.1910	Mobilizations Emergency Erosion Control	EACH	2.000	2.000
0130	628.2008	Erosion Mat Urban Class I Type B	SY	3,545.000	3,545.000
0134	628.2027	Erosion Mat Class II Type C	SY	50.000	50.000
0136	628.7015	Inlet Protection Type C	EACH	11.000	11.000
0138	628.7555	Culvert Pipe Checks	EACH	13.000	13.000
0140	628.7570	Rock Bags	EACH	32.000	32.000
0142	629.0210	Fertilizer Type B	CWT	4.000	4.000
0144	630.0120	Seeding Mixture No. 20	LB	130.000	130.000
0146	630.0500	Seed Water	MGAL	213.000	213.000
0148	633.5200	Markers Culvert End	EACH	4.000	4.000
0150	642.5001	Field Office Type B	EACH	0.400	0.400
0152	643.0300	Traffic Control Drums	DAY	112.000	112.000
0154	643.0420	Traffic Control Barricades Type III	DAY	104.000	104.000
0156	643.0705	Traffic Control Warning Lights Type A	DAY	208.000	208.000
0158	643.0900	Traffic Control Signs	DAY	2,246.000	2,246.000
0160	643.5000	Traffic Control	EACH	0.400	0.400
0164	646.1020	Marking Line Epoxy 4-Inch	LF	86,721.000	86,721.000
0168	646.6120	Marking Stop Line Epoxy 18-Inch	LF	30.000	30.000
0170	648.0100	Locating No-Passing Zones	MI	5.070	5.070
0174	649.0120	Temporary Marking Line Epoxy 4-Inch	LF	30,914.000	30,914.000
0176	650.5500	Construction Staking Curb Gutter and Curb & Gutter	LF	1,257.000	1,257.000
0178	650.6000	Construction Staking Pipe Culverts	EACH	3.000	3.000
0180	650.8000	Construction Staking Resurfacing Reference	LF	26,744.000	26,744.000
0182	650.9910	Construction Staking Supplemental Control (project) 01. 9304-12-70	LS	1.000	1.000
0186	650.9920	Construction Staking Slope Stakes	LF	212.000	212.000
0188	690.0150	Sawing Asphalt	LF	2,322.000	2,322.000
0190	690.0250	Sawing Concrete	LF	109.000	109.000
0194	740.0440	Incentive IRI Ride	DOL	20,260.000	20,260.000
0196	ASP.1T0A	On-the-Job Training Apprentice at \$5.00/HR	HRS	1,000.000	1,000.000

Estimate Of Quantities By Plan Sets

9304-12-70					
Line	Item	Item Description	Unit	Total	Qty
0198	ASP.1T0G	On-the-Job Training Graduate at \$5.00/HR	HRS	630.000	630.000
0202	SPV.0180	Special 01. Protective Thermoplastic Coating at Snowmobile Trail Crossings	SY	74.000	74.000

CLEARING & GRUBBING		
	201.0120 CLEARING	201.0220 GRUBBING
STATION - STATION	(ID)	(ID)
213+92, 55' LT	10	10
214+06, 55' LT	8	8
215+25, 55' LT	10	10
TOTALS	28	28

REMOVING CURB & GUTTER				
STATION	TO	STATION	LOCATION	204.0150 (LF)
10+31	-	11+25	LT	94
11+80	-	12+25	LT	45
13+40	-	14+00	LT	60
14+76	-	15+24	LT	48
15+57	-	16+00	LT	43
18+00	-	18+32	LT	32
19+80	-	20+15	LT	35
21+00	-	21+65	LT	65
22+70	-	25+60	LT	290
26+35	-	27+30	LT	95
28+00	-	28+43	LT	43
29+00	-	29+60	LT	60
10+74	-	11+52	RT	78
12+50	-	13+15	RT	65
17+46	-	17+71	RT	25
18+83	-	20+25	RT	142
21+17	-	21+33	RT	16
23+88	-	24+12	RT	24
24+86	-	25+44	RT	58
26+10	-	27+10	RT	100
27+50	-	27+65	RT	15
28+50	-	30+00	RT	150
TOTALS				1,583

REMOVING CULVERT ITEMS					
		203.0100 REMOVING SMALL PIPE CULVERTS	203.0200.01 REMOVING OLD STRUCTURE STA 216+00	203.0200.02 REMOVING OLD STRUCTURE STA 276+90	
STATION	LOCATION	(EACH)	(LS)	(LS)	NOTES
207+85	21-101-065117	1	-	-	24-INCH CMP
214+01	21-101-065119	1	-	-	30-INCH CMP
216+00	21-101-000537	-	1	-	72-INCH CMP
276+90	19-101-000088	-	-	1	72-INCH CMP
TOTALS		2	1	1	

REMOVING ASPHALT					
				204.0110 REMOVING ASPHALTIC SURFACE	204.0120 REMOVING ASPHALTIC SURFACE MILLING
STATION	TO	STATION	LOCATION	(SY)	(SY)
10+31	-	36+00	USH 8 TO WITKOWSKI *	430	9,015
36+00	-	89+00	WITKOWSKI TO YABLONSKI	-	18,010
89+00	-	154+00	YABLONSKI TO OLD SMITH SCHOOL	-	21,836
154+00	-	208+00	OLD SMITH SCHOOL TO FRYDRYCH	-	18,422
208+00	-	234+00	FRYDRYCH TO CTH F	-	18,010
234+00	-	268+00	CTH F TO FOREST LAKE DR	-	18,010
268+00	-	277+75	FOREST LAKE DR TO ONEONTA LN	-	18,010
TOTALS				430	121,313
* PAVED AREAS IN FRONT OF OR BEHIND CURB & GUTTER REPLACEMENTS					

REMOVING ASPHALTIC SURFACE BUTT JOINTS		
STATION	LOCATION	204.0115 (SY)
10+31	STH 101 SOUTH LIMIT	90
36+40	WITKOWSKI RD	23
36+40	KOZLOWSKI RD	27
89+40	YABLONSKI RD	32
154+50	OLD SMITH SCHOOL LN	23
154+70	CHRISTNOVICH RD	26
208+25	FRYDRYCH RD	26
208+35	HILBERT DR	30
234+00	FOREST LAKE LN	21
234+10	CTH F	34
267+75	FOREST LAKE DR	27
277+75	STH 101 NORTH LIMIT	33
TOTALS		393

REMOVING DELINEATORS AND MARKERS	
STATION - STATION	204.0180 (EACH)
PROJECT	10
TOTALS	10

ALL ITEMS CATEGORY 0010 UNLESS NOTED

EARTHWORK SUMMARY

205.0100		
From/To Station	Culvert Number	Excavation Common (CY)
207+32 - 208+38	21-101-065117	850
213+48 - 214+54	21-101-065119	700
215+47 - 216+53	21-101-000537	730
276+37 - 277+43	19-101-000088	615

2,895

GRANULAR BACKFILL

209.2500	
LOCATION	GRADE 2 (TON)
UNDISTRIBUTED	140
TOTALS	140

PREPARE FOUNDATION FOR ASPHALTIC SHOULDERS

211.0400	
STATION	LOCATION (STA)
93+50	SNOWMOBILE TRAIL CROSSING
TOTALS	2

BASE AGGREGATE ITEMS

* 305.0110 305.0120 624.0100						
BASE AGGREGATE				BASE AGGREGATE		
DENSE 3/4-INCH				DENSE 1 1/4-INCH	WATER	
STATION	TO	STATION	LOCATION	(TON)	(TON)	(MGAL)
10+31	-	36+00	USH 8 TO WITKOWSKI	76	-	10
36+00	-	89+00	WITKOWSKI TO YABLONSKI	370	-	10
89+00	-	154+00	YABLONSKI TO OLD SMITH SCHOOL	450	-	10
154+00	-	208+00	OLD SMITH SCHOOL TO FRYDRYCH	370	290	10
208+00	-	234+00	FRYDRYCH TO CTH F	200	930	20
234+00	-	268+00	CTH F TO FOREST LAKE DR	240	-	10
268+00	-	277+75	FOREST LAKE DR TO ONEONTA LN	70	400	10
TOTALS				1,776	1,620	80
* INCLUDES QUANTITY FOR GRAVEL AREAS BEHIND CURB & GUTTER REPLACEMENTS AND DRIVEWAY AT STA 215+50 LT						

ALL ITEMS CATEGORY 0010 UNLESS NOTED

HMA PAVEMENT AND ASPHALT ITEMS							
*							
				455.0605	460.6224	465.0105	465.0110
				TACK	HMA PAVEMENT	ASPHALTIC	ASPHALTIC
				COAT	4 MT 58-28 S	SURFACE	SURFACE
STATION	TO	STATION	LOCATION	(GAL)	(TON)	(TON)	PATCHING (TON)
10+31	-	36+00	USH 8 TO WITKOWSKI	640	1,128	6	-
36+00	-	89+00	WITKOWSKI TO YABLONSKI	1,280	2,087	-	-
89+00	-	154+00	YABLONSKI TO OLD SMITH SCHOOL	1,550	2,536	-	-
154+00	-	208+00	OLD SMITH SCHOOL TO FRYDRYCH	1,420	2,125	61	-
208+00	-	234+00	FRYDRYCH TO CTH F	1,046	1,066	202	-
234+00	-	268+00	CTH F TO FOREST LAKE DR	840	1,365	-	-
268+00	-	277+75	FOREST LAKE DR TO ONEONTA LN	389	376	81	-
30+00	-	277+75	SAFETY EDGE (PROJECT WIDE)	-	85	-	-
UNDISTRIBUTED				-	-	-	540
TOTALS				7,165	10,767	351	540
* FOR REPLACING PAVED AREAS BEHIND CURB & GUTTER REPLACEMENTS AND TEMPORARY PAVEMENT AT CULVERT TRANSITION CUTS.							

HMA PAVEMENT PWL ITEMS				
460.0105.S				
HMA				
PERCENT WITHIN				
LIMITS (PWL)				
TEST STRIP				
VOLUMETRICS				
DENSITY				
STATION	TO	STATION	EACH	EACH
10+31	-	277+75	1	1
PROJECT TOTALS			1	1

PWL MIXTURE USE TABLE										
THE FOLLOWING ACCEPTANCE CRITERIA ARE APPLICABLE FOR THIS PROJECT:								QUALITY MANAGEMENT PROGRAM TO BE USED FOR:		
LOCATION	STATION	TO	STATION	MIXTURE USE	UNDERLYING SURFACE	BID ITEM	TONS	THICKNESS (INCHES)	MIXTURE ACCEPTANCE	DENSITY ACCEPTANCE
12 FOOT DRIVING LANES	10+31	-	277+75	UPPER LAYER	MILLED EXISTING HMA SURFACE	4 MT 58-28 S	8,200	2	PWL INCENTIVE AIR VOIDS HMA PAVEMENT 460.2010	INCENTIVE DENSITY PWL HMA PAVEMENT 460.2005
4 FOOT SHOULDERS	10+31	-	30+00	UPPER LAYER	MILLED EXISTING HMA SURFACE	4 MT 58-28 S	201	2	PWL INCENTIVE AIR VOIDS HMA PAVEMENT 460.2010	ACCEPTANCE TESTING BY THE DEPARTMENT; NOT ELIGIBLE FOR INCENTIVE
3 FOOT SHOULDERS	30+00	-	277+75	UPPER LAYER	MILLED EXISTING HMA SURFACE	4 MT 58-28 S	1,815	2	PWL INCENTIVE AIR VOIDS HMA PAVEMENT 460.2010	ACCEPTANCE TESTING BY THE DEPARTMENT; NOT ELIGIBLE FOR INCENTIVE
SIDE ROAD INTERSECTIONS	--			UPPER LAYER	MILLED EXISTING HMA SURFACE	4 MT 58-28 S	294	2	QMP AS PER STANDARD SPEC 460	INCENTIVE DENSITY HMA PAVEMENT 460.2000
VARIOUS	--			CULVERT PATCHES	BASE AGGREGATE	ASPHALTIC SURFACE	345	4	QMP AS PER STANDARD SPEC 460	ACCEPTANCE BY ORDINARY COMPACTION
VARIOUS	--			MILLED SURFACE REPAIR	MILLED EXISTING HMA SURFACE	ASPHALTIC SURFACE PATCHING	540	2	QMP AS PER STANDARD SPEC 460	ACCEPTANCE BY ORDINARY COMPACTION

ALL ITEMS CATEGORY 0010 UNLESS NOTED

3

3

CULVERT PIPE ITEMS																	
										522.0124	522.0130	522.1024	522.1030	522.2324	522.2624	633.5200	650.6000
										CULVERT PIPE REINFORCED CONCRETE CLASS III		APRON ENDWALLS FOR FOR CULVERT PIPE REINFORCED CONCRETE		CULVERT PIPE REINFORCED CONCRETE HORIZ ELLIPTICAL CLASS HE-III	APRON ENDWALLS FOR CULVERT PIPE REINFORCED CONCRETE HORIZ ELLIPTICAL	MARKERS CULVERT END	CONSTRUCTION STAKING PIPE CULVERTS
STATION	LOCATION	PIPE INLET END			PIPE OUTLET END			SKEW	SLOPE %	24-INCH (LF)	30-INCH (LF)	24-INCH (EACH)	30-INCH (EACH)	24X38-INCH (LF)	24X38-INCH (EACH)	(EACH)	(EACH)
207+85	21-101-065117	207+78.8	53.5' LT	1477.67	207+93.0	57.6' RT	1475.70	7° RHF	1.76	112	-	2	-	-	-	2	1
214+01	21-101-065119	214+01	66.5' LT	1477.41	214+01	67.5' RT	1476.95	-	0.34	-	134	-	2	-	-	2	1
215+50	DRIVEWAY	215+68.9	50.9' LT	1488.35	215+24.2	52.9' LT	1487.98	-	0.83	-	-	-	-	45	2	-	1
TOTALS										112	134	2	2	45	2	4	3

<u>EROSION CONTROL</u>											
				627.0200	628.1504	628.1520	628.2008	628.2027	628.7015	628.7555	628.7570
					SILT	SILT	EROSION MAT	EROSION MAT	INLET	CULVERT	
				MULCHING	FENCE	MAINTENANCE	URBAN CLASS I	CLASS II	PROTECTION	PIPE	ROCK
STATION	TO	STATION	LOCATION	(SY)	(LF)	(LF)	TYPE B	TYPE C	TYPE C	CHECKS	BAGS
10+31	-	36+00	LT/RT *	130	-	-		-	11	-	-
206+30	-	209+30	21-101-065117	-	920	460	725	-	-	3	-
212+25	-	217+25	21-101-065119 **	-	1,920	960	2,260	-	-	5	-
215+24	-	215+69	DRIVEWAY LT	-	-	-	-	50	-	5	-
276+90	-	276+90	19-101-000088	-	870	435	560	-	-	-	-
UNDISTRIBUTED											32
TOTALS				130	3,710	1,855	3,545	50	11	13	32
* EROSION MAT BEHIND CURB & GUTTER REPLACEMENT AREAS											
** EROSION CONTROL DEVICES AT THIS LOCATION INCLUDE DEVICES NEEDED FOR REMOVAL OF CULVERT 21-101-000537 AT STA 216+00											

<u>EROSION CONTROL MOBILIZATION</u>		
	628.1905	628.1910
	MOBILIZATIONS	MOBILIZATIONS
	EROSION	EMERGENCY
	CONTROL	EROSION CONTROL
LOCATION	(EACH)	(EACH)
PROJECT	8	2
TOTALS	8	2

ASPHALT CENTERLINE RUMBLE STRIPS 2-LANE RURAL					465.0475
STATION	TO	STATION	LOCATION		(LF)
10+31	-	36+00	USH 8 TO WITKOWSKI	-	
36+00	-	89+00	WITKOWSKI TO YABLONSKI	4,900	
89+00	-	154+00	YABLONSKI TO OLD SMITH SCHOOL	6,107	
154+00	-	208+00	OLD SMITH SCHOOL TO FRYDRYCH	4,958	
208+00	-	234+00	FRYDRYCH TO CTH F	2,174	
234+00	-	268+00	CTH F TO FOREST LAKE DR	2,979	
268+00	-	277+75	FOREST LAKE DR TO ONEONTA LN	728	
TOTALS					21,846

ALL ITEMS CATEGORY 0010 UNLESS NOTED

3

CURB & GUTTER ITEMS								
				601.0411	601.0557	611.8115	650.5500	690.0250
				CONCRETE	CONCRETE		CONSTRUCTION	
				CURB & GUTTER	CURB & GUTTER	ADJUSTING	STAKING CURB	
				30-INCH TYPE D	6-INCH SLOPED	INLET	GUTTER AND	SAWING
				30-INCH TYPE D	36-INCH TYPE D	COVERS	CURB & GUTTER	CONCRETE
STATION	TO	STATION	LOCATION	(LF)	(LF)	(EACH)	(LF)	(LF)
10+31	-	11+25	LT	32	62	-	94	6
11+80	-	12+25	LT	45	-	1	-	5
13+40	-	14+00	LT	60	-	-	60	5
14+76	-	15+24	LT	48	-	-	-	5
15+57	-	16+00	LT	43	-	-	-	5
18+00	-	18+32	LT	32	-	-	-	5
19+80	-	20+15	LT	35	-	1	-	5
21+00	-	21+65	LT	65	-	-	65	5
22+70	-	25+60	LT	290	-	-	290	5
26+35	-	27+30	LT	95	-	1	95	5
28+00	-	28+43	LT	43	-	-	-	5
29+00	-	29+60	LT	60	-	-	60	5
10+74	-	11+52	RT	78	-	-	78	5
12+50	-	13+15	RT	65	-	-	65	5
17+46	-	17+71	RT	25	-	-	-	5
18+83	-	20+25	RT	142	-	1	142	5
21+17	-	21+33	RT	16	-	-	-	5
23+88	-	24+12	RT	24	-	-	-	5
24+86	-	25+44	RT	58	-	-	58	5
26+10	-	27+10	RT	100	-	1	100	5
27+50	-	27+65	RT	15	-	-	-	5
28+50	-	30+00	RT	150	-	-	150	3
TOTALS				1,521	62	5	1,257	109

<u>SAWING ASPHALT</u>				
				690.0150
STATION	TO	STATION	LOCATION	(LF)
10+31	-	36+00	USH 8 TO WITKOWSKI *	1,984
207+32	-	208+38	CULVERT 21-101-065117	158
213+48	-	214+54	CULVERT 21-101-065119	60
215+47	-	216+53	CULVERT 21-101-000537	60
276+37	-	277+43	CULVERT 19-101-000088	60
TOTALS				2,322
* ASPHALT AREAS AT CURB & GUTTER REMOVALS				

3

RESTORATION ITEMS							
STATION	TO	STATION	LOCATION	625.0100	629.0210	630.0500	630.0120
				TOPSOIL (SY)	FERTILIZER TYPE B (CWT)	SEED WATER (MGAL)	SEEDING MIXTURE NO. 20 (LB)
10+31	-	36+00	LT/RT *	130	1	6	5
206+30	-	209+30	21-101-065117	725	1	40	25
212+25	-	217+25	21-101-065119	2,260	2	128	75
215+24	-	215+69	DRIVEWAY LT	-	-	0	-
276+90	-	276+90	19-101-000088	560	1	38	25
TOTALS				3,675	4	213	130

* BEHIND CURB & GUTTER REPLACEMENT AREAS

<u>CONSTRUCTION STAKING ITEMS</u>				
		650.8000	650.9910	650.9920
		CONSTRUCTION STAKING		
		RESURFACING	SUPPLEMENTAL	SLOPE
		REFERENCE	CONTROL	STAKES
STATION	LOCATION	(LF)	(LS)	(LF)
216+00	CULVERT 21-101-000537	-	-	106
276+90	CULVERT 19-101-000088	-	-	106
	PROJECT	26,744	1	-
TOTALS		26,744	1	212
ADDITIONAL STAKING ITEMS SHOWN IN "CULVERT PIPE ITEMS" AND "CURB & GUTTER ITEMS" TABLES				

ALL ITEMS CATEGORY 0010 UNLESS NOTED

TRAFFIC CONTROL ITEMS

STATION	LOCATION	DURATION (DAYS)	643.0300		643.0420		643.0705		643.0900	
			TRAFFIC CONTROL		TRAFFIC CONTROL BARRICADES		TRAFFIC CONTROL WARNING		TRAFFIC CONTROL	
			DRUMS (EACH)*	(DAY)	TYPE III (EACH)*	(DAY)	LIGHTS TYPE A (EACH)*	(DAY)	SIGNS (EACH)*	(DAY)
	STH 101 SOUTH LIMIT	96	-	-	-	-	-	-	2	192
207+85	21-101-065117	0.5	-	-	12	6	24	12	106	53
214+01 & 216+00	21-101-065119 & 21-101-000537	1	-	-	12	12	24	24	106	106
276+90	19-101-000088	0.5	-	-	12	6	24	12	106	53
	SIDE ROADS	96	-	-	-	-	-	-	18	1,728
	SIDE ROAD CLOSURES	2	-	-	40	80	80	160	50	100
	USH 8 **	7	16	112	-	-	-	-	-	-
	PROJECT ***	7	-	-	-	-	-	-	2	14
TOTALS				112	104		208		2,246	

* NUMBER OF DEVICES FOR INFORMATION ONLY
** DRUMS INCLUDED FOR PROTECTION OF CURB & GUTTER REPLACEMENT AT USH 8/STH 101 INTERSECTION RADII
*** PLACE ONE G20-57 SIGN AT EACH PROJECT LIMIT FOR 7 DAYS PRIOR TO CONSTRUCTION AND THEN REMOVE

PAVEMENT MARKING ITEMS

STATION	TO	STATION	LOCATION	646.1020		649.0120	646.6120	648.0100
				MARKING		TEMPORARY	MARKING	LOCATING
				LINE EPOXY 4-INCH (WHITE) (LF)	(YELLOW) (LF)	LINE EPOXY 4-INCH (YELLOW) (LF)	STOP LINE EPOXY 18-INCH (LF)	NO PASSING ZONES (MI)
10+31	-	36+00	USH 8 TO WITKOWSKI	5,036	1,208	1,208	30	-
36+00	-	89+00	WITKOWSKI TO YABLONSKI	10,382	2,788	2,788	-	-
89+00	-	154+00	YABLONSKI TO OLD SMITH SCHOOL	12,935	13,000	13,000	-	-
154+00	-	208+00	OLD SMITH SCHOOL TO FRYDRYCH	10,591	4,300	4,300	-	-
208+00	-	234+00	FRYDRYCH TO CTH F	4,963	2,356	2,356	-	-
234+00	-	268+00	CTH F TO FOREST LAKE DR	6,631	6,500	6,500	-	-
268+00	-	277+75	FOREST LAKE DR TO ONEONTA LN	2,101	763	763	-	-
			PROJECT	-	-	-	-	5.07
			UNDISTRIBUTED	-	3,168	-	-	-
SUBTOTALS				52,639	34,082	-	-	-
GRAND TOTALS				86,721		30,914	30	5.07

PROTECTIVE THERMOPLASTIC COATING
AT SNOWMOBILE TRAIL CROSSINGS

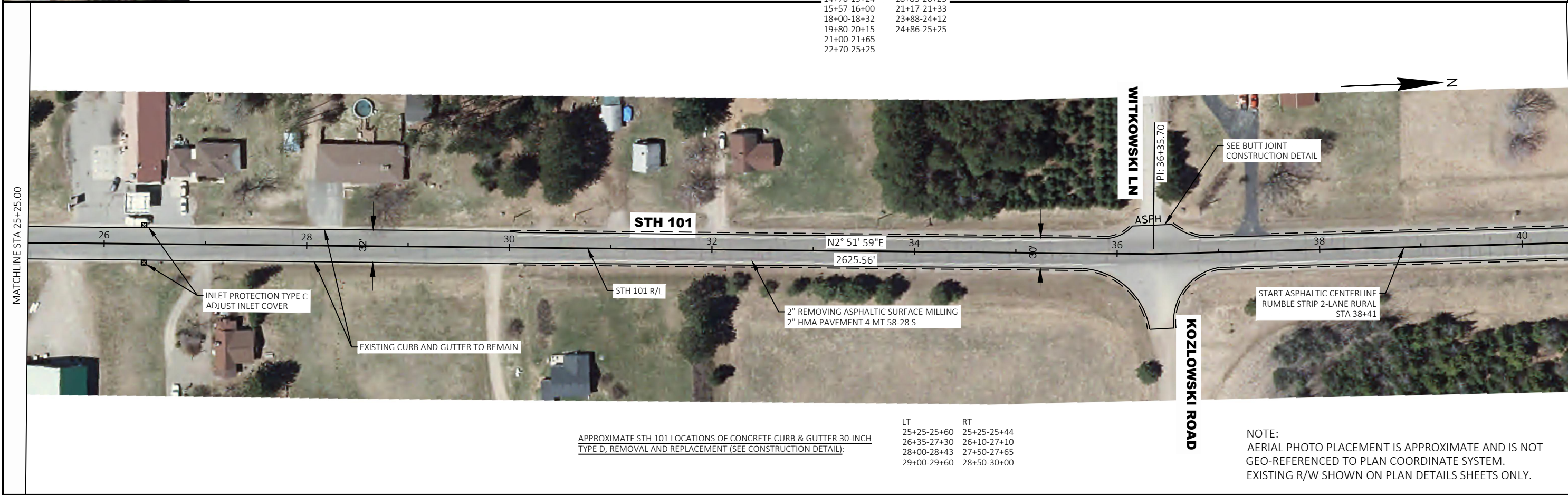
		SPV.0180.001
STATION	LOCATION	(SY)
93+50	NORTH OF YABLONSKI	74
TOTALS		74

ALL ITEMS CATEGORY 0010 UNLESS NOTED



APPROXIMATE STH 101 LOCATIONS OF CONCRETE CURB & GUTTER 30-INCH
TYPE D, REMOVAL AND REPLACEMENT (SEE CONSTRUCTION DETAIL):

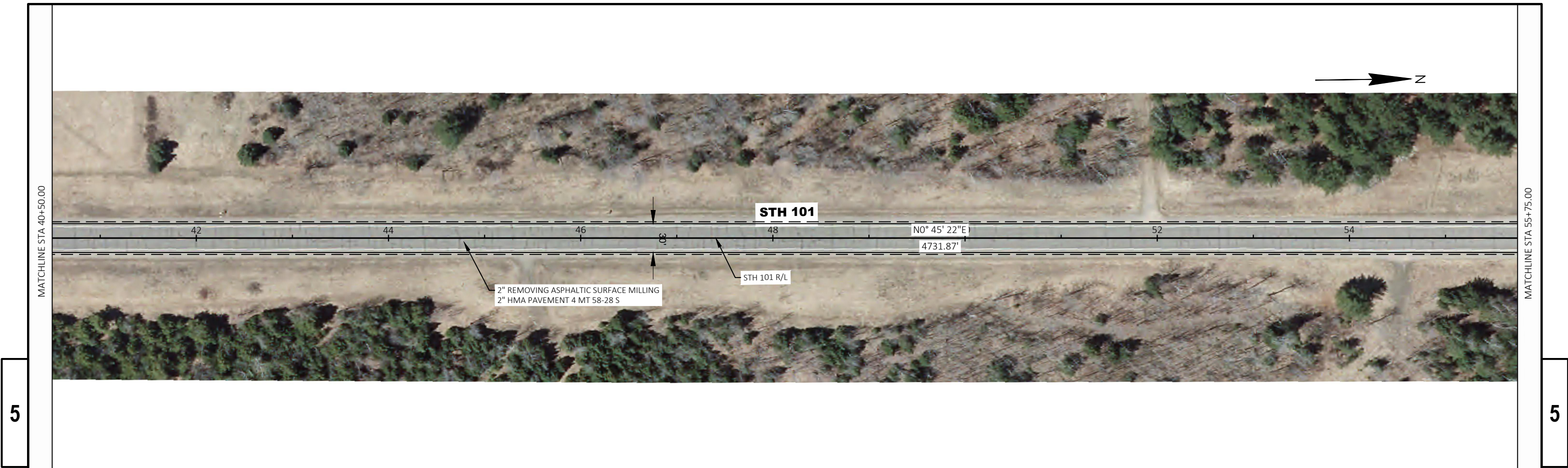
LT	RT
10+31-11+41	10+74-11+52
11+80-12+25	12+50-13+15
13+40-14+00	17+46-17+71
14+76-15+24	18+83-20+25
15+57-16+00	21+17-21+33
18+00-18+32	23+88-24+12
19+80-20+15	24+86-25+25
21+00-21+65	
22+70-25+25	



APPROXIMATE STH 101 LOCATIONS OF CONCRETE CURB & GUTTER 30-INCH
TYPE D, REMOVAL AND REPLACEMENT (SEE CONSTRUCTION DETAIL):

LT	RT
25+25-25+60	25+25-25+44
26+35-27+30	26+10-27+10
28+00-28+43	27+50-27+65
29+00-29+60	28+50-30+00

NOTE:
AERIAL PHOTO PLACEMENT IS APPROXIMATE AND IS NOT
GEO-REFERENCED TO PLAN COORDINATE SYSTEM.
EXISTING R/W SHOWN ON PLAN DETAILS SHEETS ONLY.



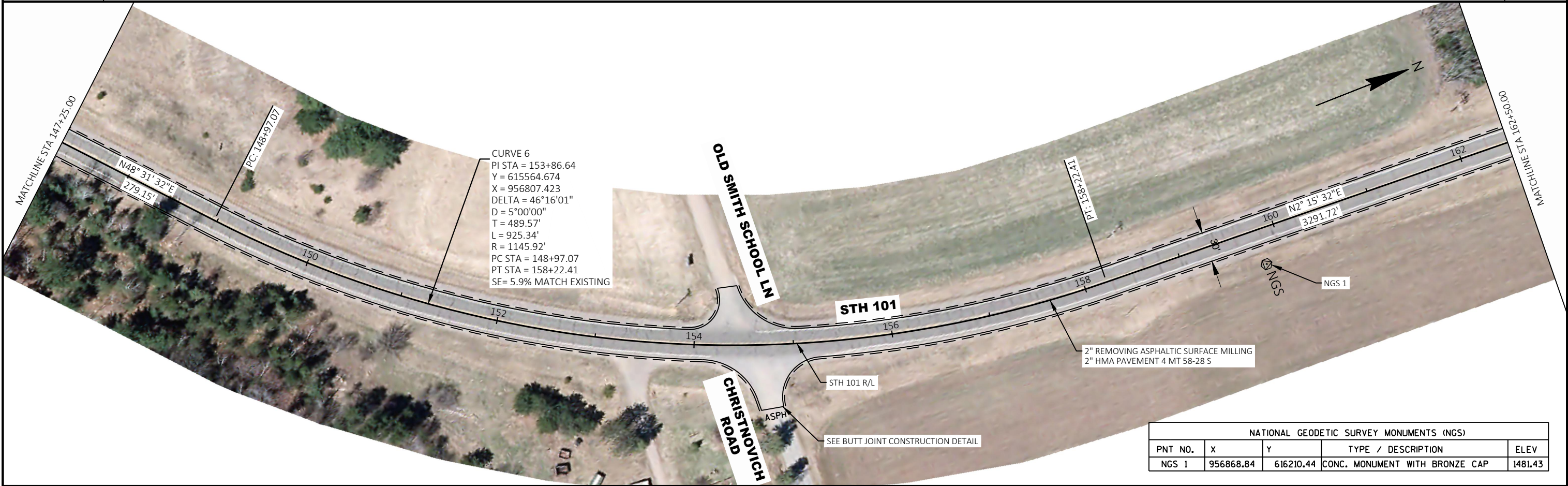
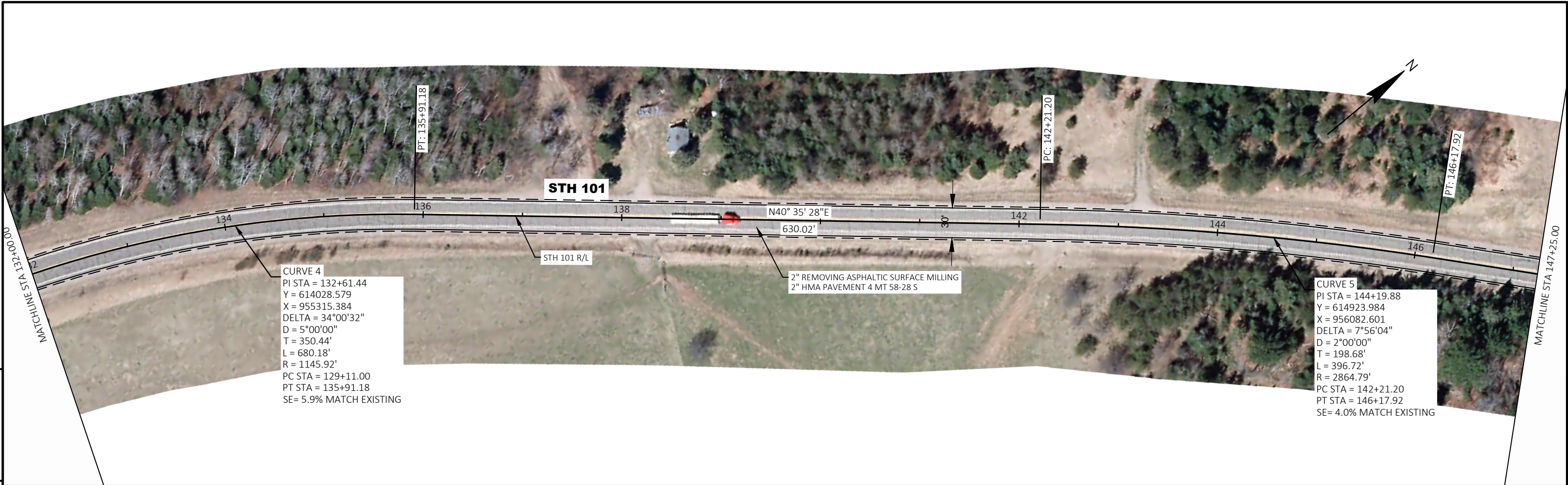
PROJECT NO: 9304-12-70	HWY: STH 101	COUNTY: FOREST	PLAN	SHEET	E
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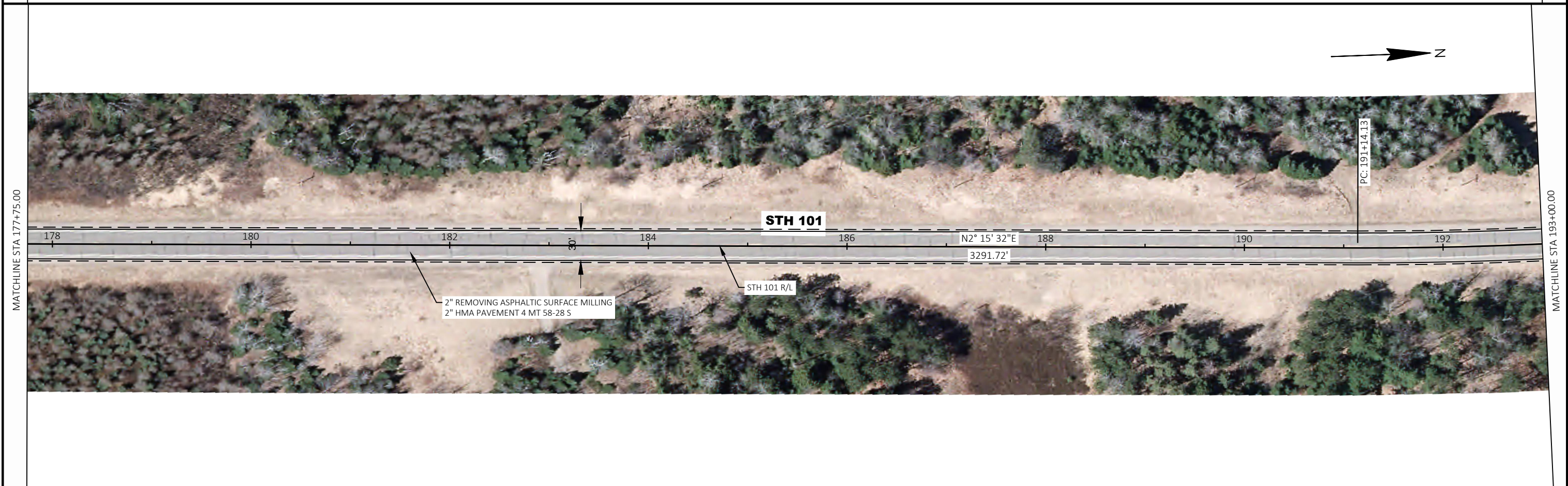
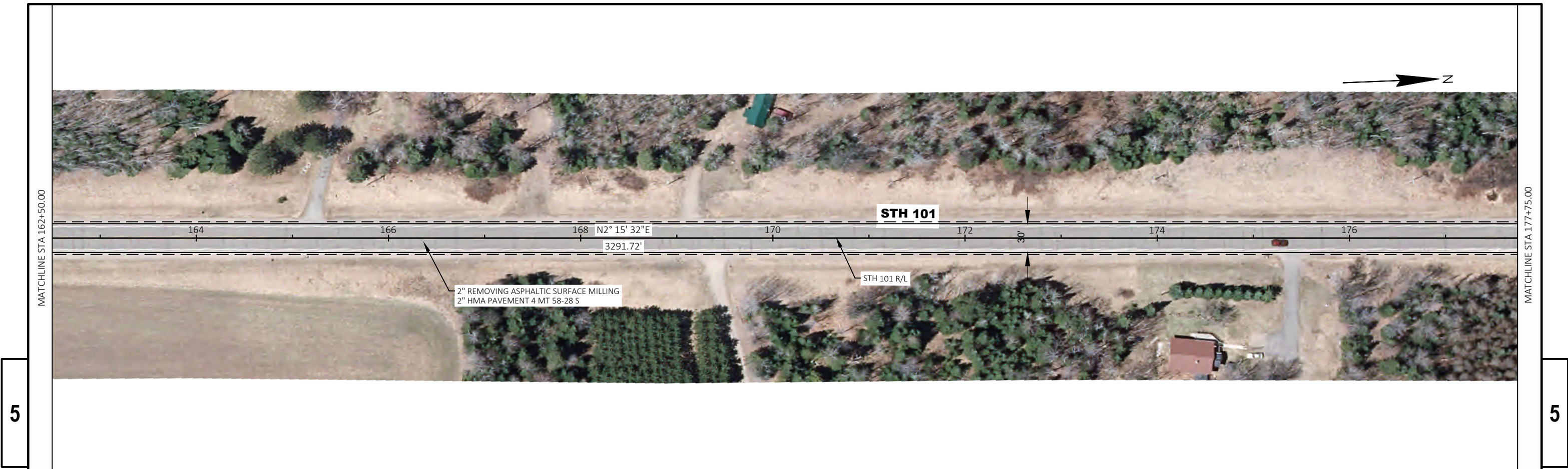
PROJECT NO:	9304-12-70	HWY: STH 101	COUNTY: FOREST	PLAN	SHEET	E
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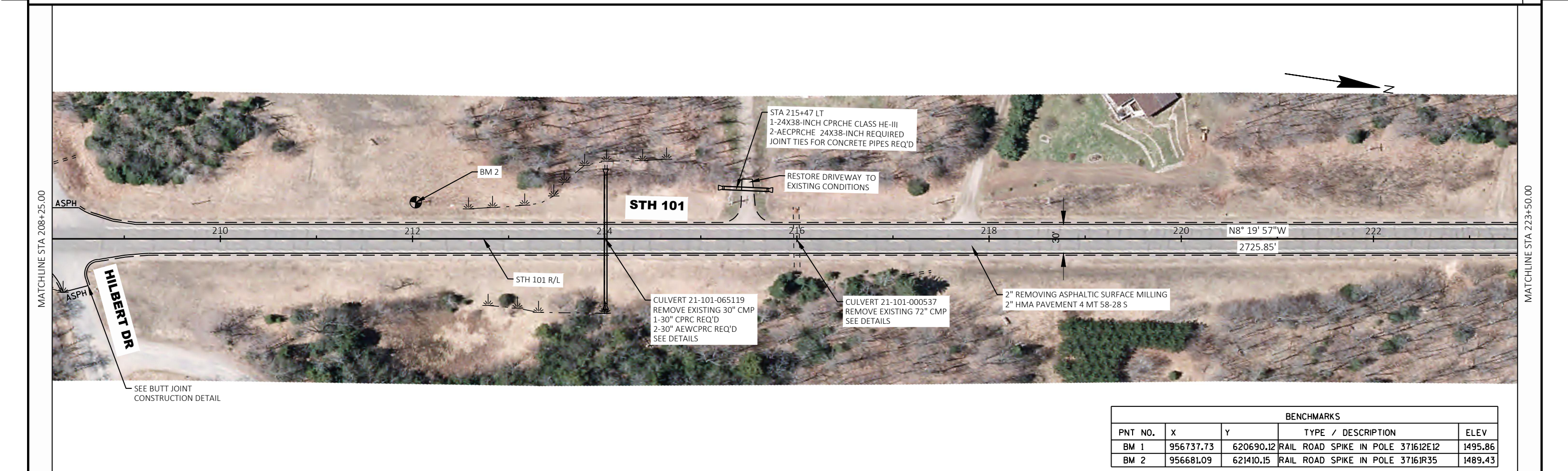
PROJECT NO: 9304-12-70	HWY: STH 101	COUNTY: FOREST	PLAN	SHEET	E
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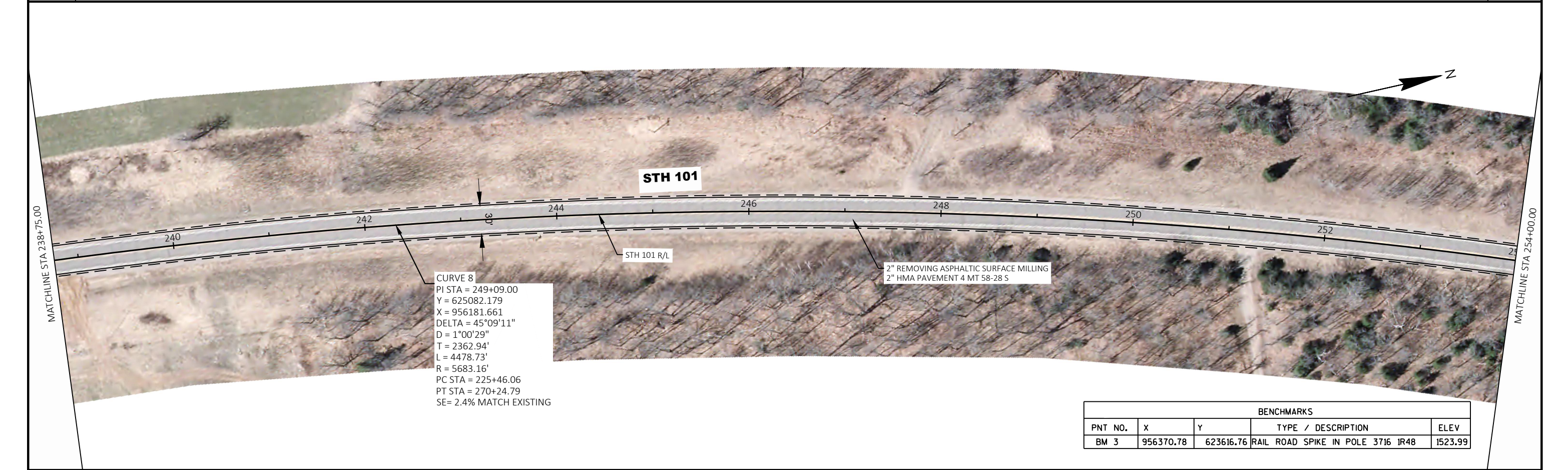
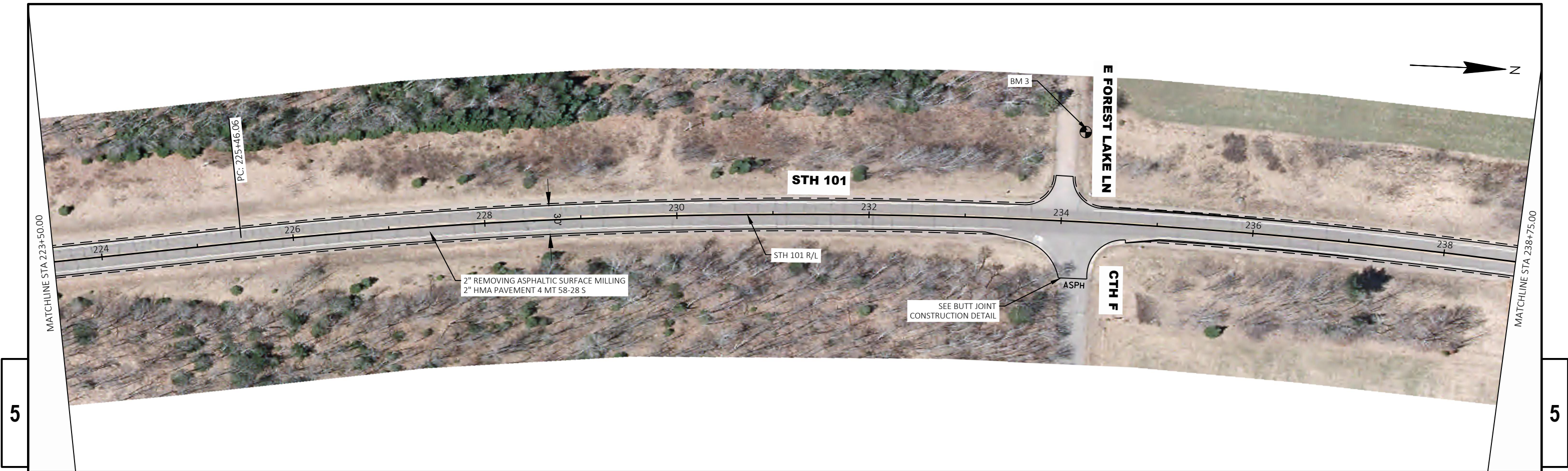
NATIONAL GEODETIC SURVEY MONUMENTS (NGS)				
PNT NO.	X	Y	TYPE / DESCRIPTION	ELEV
NGS 1	956868.84	616210.44	CONC. MONUMENT WITH BRONZE CAP	1481.43

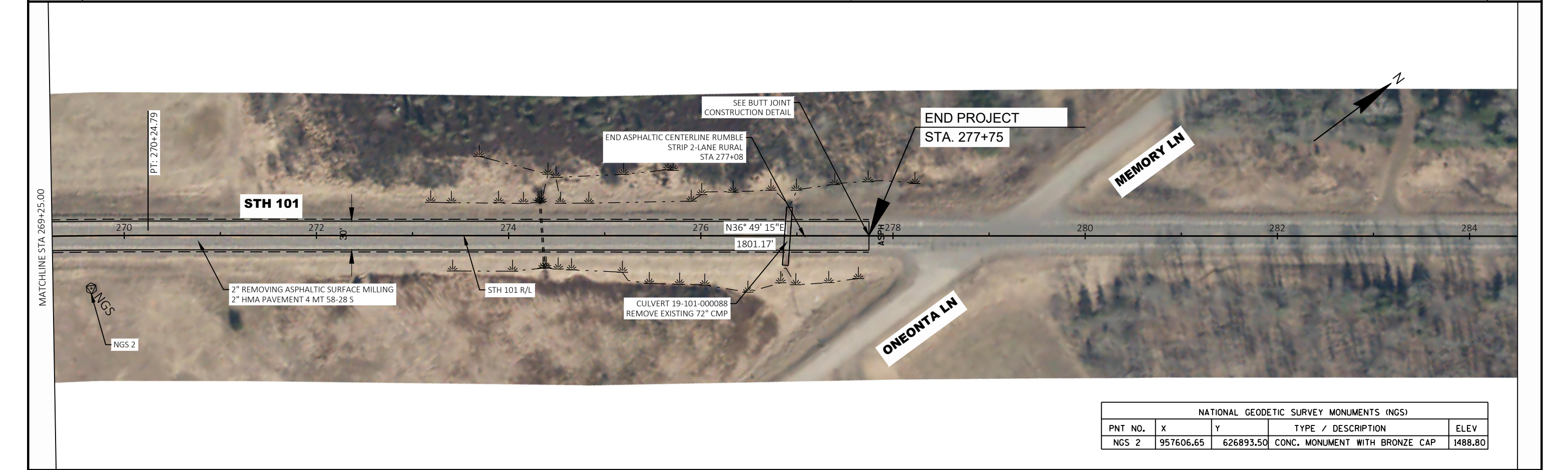


PROJECT NO: 9304-12-70	HWY: STH 101	COUNTY: FOREST	PLAN	SHEET	E
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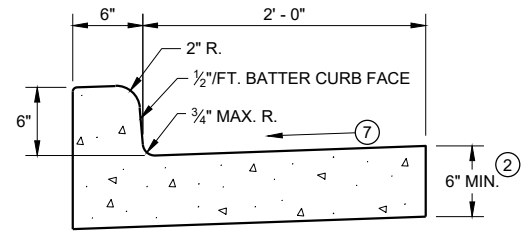
BENCHMARKS				
PNT NO.	X	Y	TYPE / DESCRIPTION	ELEV
BM 1	956737.73	620690.12	RAIL ROAD SPIKE IN POLE 371612E12	1495.86
BM 2	956681.09	621410.15	RAIL ROAD SPIKE IN POLE 37161R35	1489.43



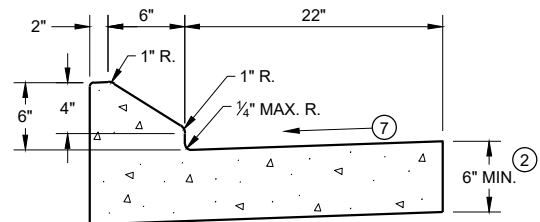


Standard Detail Drawing List

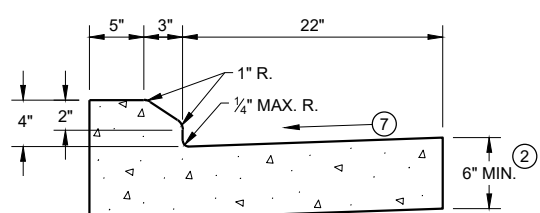
08D01-21A	CONCRETE CURB & GUTTER
08D01-21B	CONCRETE CURB, TIES AND CURB AND GUTTER APPLICATIONS
08D22-01	DRIVEWAYS WITHOUT CURB & GUTTER RESURFACING PROJECTS RURAL
08E08-03	TYPICAL INSTALLATIONS OF EROSION BALES / TEMPORARY DITCH CHECKS
08E09-06	SILT FENCE
08E10-02	INLET PROTECTION TYPE A, B, C AND D
08E15-01	CULVERT PIPE CHECK
08F01-11	APRON ENDWALLS FOR CULVERT PIPE
08F02-01	APRON ENDWALLS FOR PIPE ARCH AND ELLIPTICAL PIPE
08F04-07	JOINT TIES FOR CONCRETE PIPE AND CONCRETE COLLAR DETAIL
13A11-03A	2-LANE RURAL CENTER LINE RUMBLE STRIP, MILLING
13A11-03B	2-LANE RURAL CENTER LINE RUMBLE STRIP, MILLING
13C19-02	HMA LONGITUDINAL JOINTS
14B29-01	SAFETY EDGE
15A03-02A	FLEXIBLE MARKER POST FOR CULVERT END
15A03-02B	FLEXIBLE MARKER POST FOR CULVERT END
15C02-08A	BARRICADES AND SIGNS FOR MAINLINE CLOSURES
15C02-08B	BARRICADES AND SIGNS FOR VARIOUS CLOSURES
15C02-08C	DETOUR SIGNING FOR MAINLINE CLOSURES
15C04-05	TRAFFIC CONTROL, ADVANCE WARNING SIGNS 45 M.P.H. OR GREATER TWO-WAY UNDIVIDED ROAD OPEN TO TRAFFIC
15C05-05	TRAFFIC CONTROL, ADVANCE WARNING SIGNS 40 M.P.H. OR LESS
15C08-20A	LONGITUDINAL MARKING (MAINLINE)
15C11-07B	CHANNELIZING DEVICES DRUMS, CONES, BARRICADES AND VERTICAL PANELS
15C12-07	TRAFFIC CONTROL FOR LANE CLOSURE WITH FLAGGING OPERATION
15C19-06A	MOVING PAVEMENT MARKING OPERATION TWO-LANE TWO-WAY ROADWAY
15C33-04	STOP LINE AND CROSSWALK PAVEMENT MARKING
15C35-04A	PAVEMENT MARKING (INTERSECTIONS)
15D28-04	TRAFFIC CONTROL, WORK ON SHOULDER OR PARKING LANE, UNDIVIDED ROADWAY
15D38-02A	TEMPORARY TRAFFIC CONTROL SIGN MOUNTING
15D38-02B	ATTACHMENT OF SIGNS TO POSTS
15D39-02	TRAFFIC CONTROL, DROP-OFF SIGNING
15D44-02	TRAFFIC CONTROL, SIGNING ON ROADWAYS WITH MILLED SURFACES



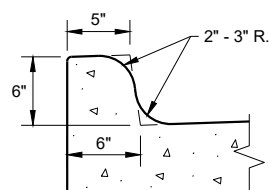
TYPES A^① & D



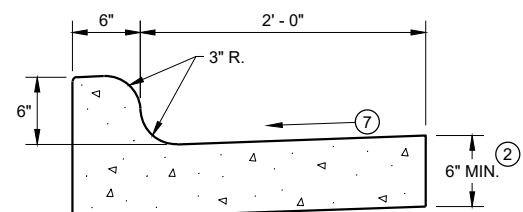
6" SLOPED CURB TYPES G^① & J



4" SLOPED CURB TYPES G^① & J

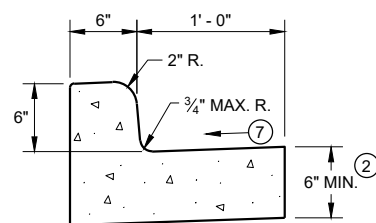


TYPES K^① & L
(OPTIONAL CURB SHAPE)



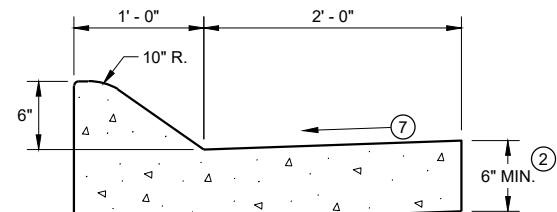
TYPES K^① & L

CONCRETE CURB AND GUTTER 30"

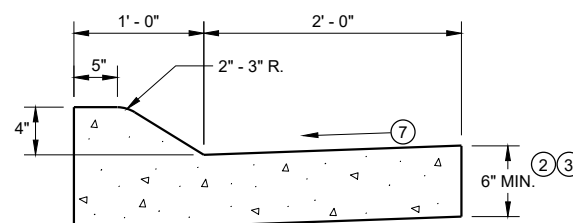


TYPES A^① & D

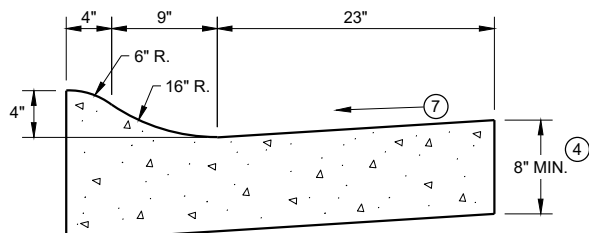
CONCRETE CURB AND GUTTER 18"



6" SLOPED CURB TYPES A^① & D



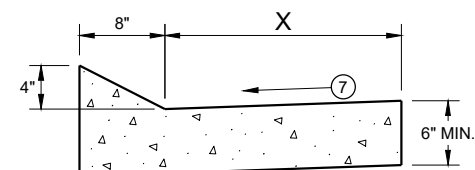
4" SLOPED CURB TYPES A^① & D



4" SLOPED CURB TYPES R^① & T^⑤

CONCRETE CURB AND GUTTER 36"

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

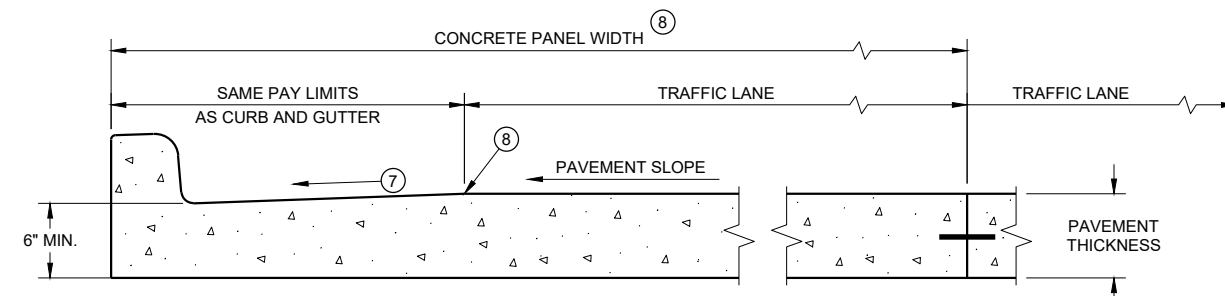


TYPES TBT & TBTT^①

CONCRETE CURB AND GUTTER

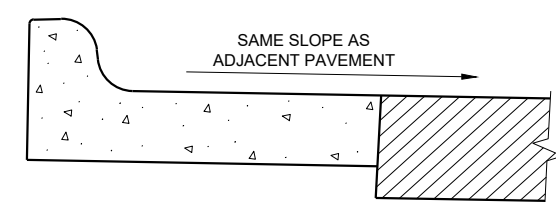
PAVEMENT THICKNESS
AND MAXIMUM CONCRETE
PANEL WIDTH TABLE

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



PARTIAL SECTION OF PAVEMENT *
WITH INTEGRAL CURB AND GUTTER

* BIKE LANE IS NOT SHOWN



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

CONCRETE CURB AND GUTTER

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

GENERAL NOTES

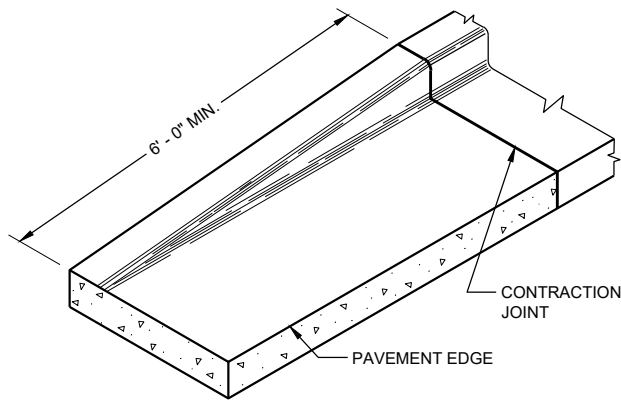
DETAILS OF CONSTRUCTION AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE CONTRACT.

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

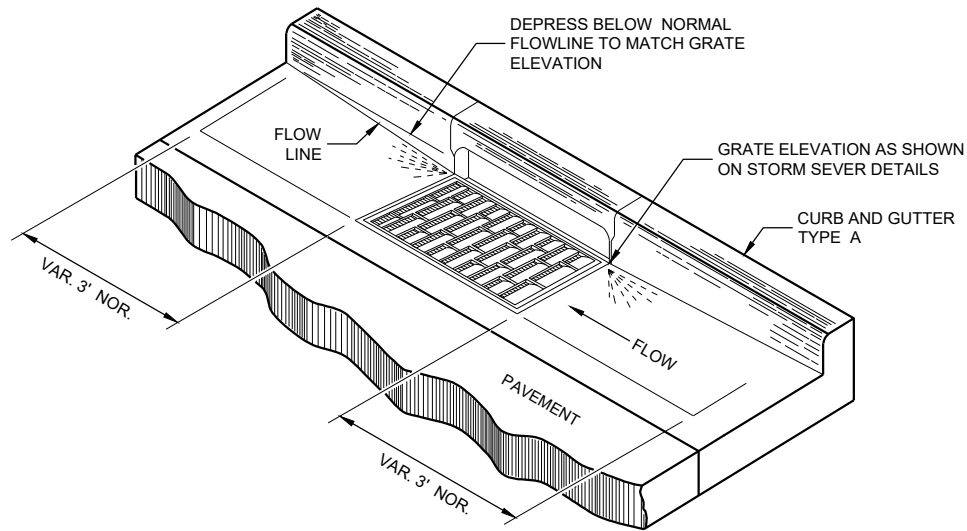
INTEGRAL CURB AND GUTTER SHALL CONFORM TO THE DETAILS SHOWN FOR CONCRETE CURB AND GUTTER INCLUDING THE TRANSVERSE GUTTER SLOPE.

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

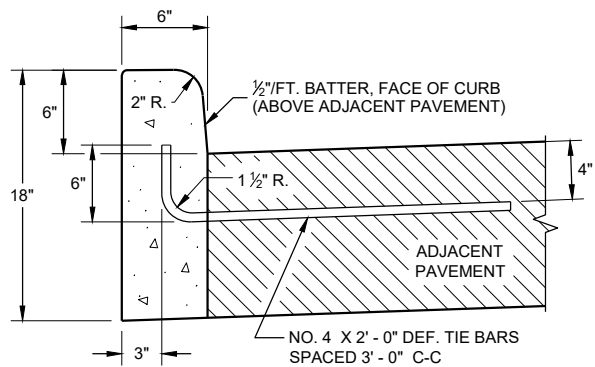
- ① TIE BARS ARE REQUIRED FOR CURB AND GUTTERS TYPES A, G, K, R, AND TBTT.
- ② THE BOTTOM OF CURB AND GUTTER MAY BE CONSTRUCTED EITHER LEVEL OR PARALLEL TO THE SLOPE OF THE SUBGRADE OR BASE AGGREGATE PROVIDED A 6" MINIMUM GUTTER THICKNESS IS MAINTAINED.
- ③ USE 8" MINIMUM GUTTER THICKNESS WHEN USED WITH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



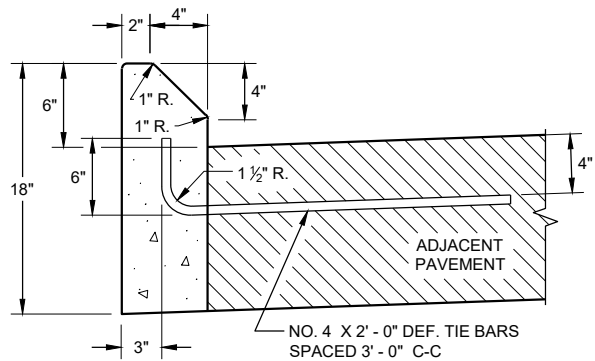
END SECTION CURB AND GUTTER



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

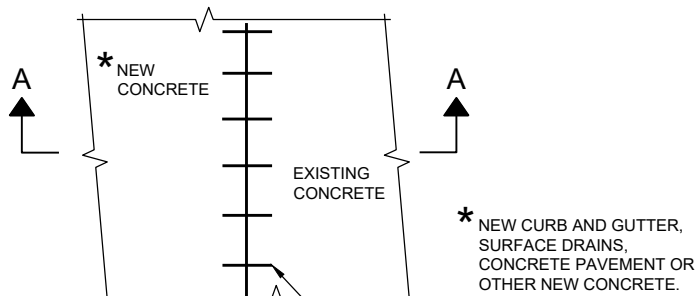


TYPES A^① & D

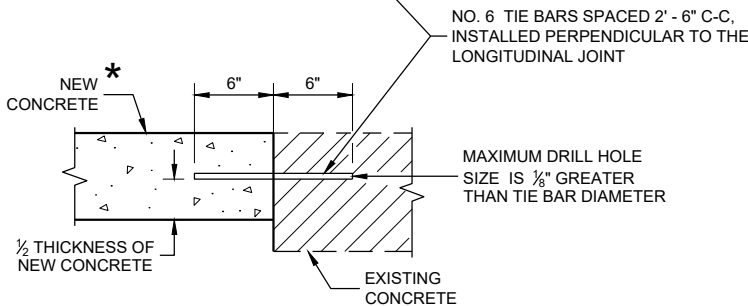


TYPES G^① & J

CONCRETE CURB



PLAN VIEW



SECTION A - A

TIE BARS DRILLED
INTO EXISTING PAVEMENT

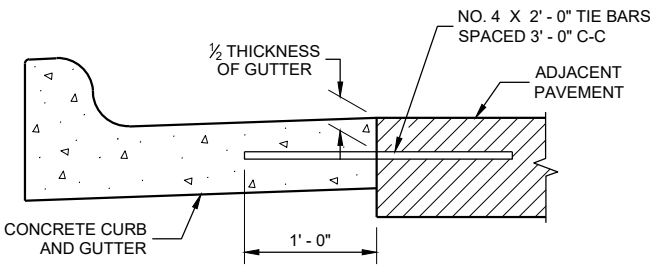
GENERAL NOTES

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

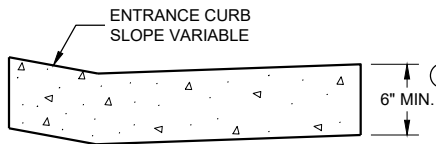
PAVEMENT TIES AND TIE BARS SHALL BE EPOXY COATED IN CONFORMANCE WITH SUBSECTION 505.2.6.2 OF THE STANDARD SPECIFICATIONS.

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

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



TYPICAL TIE BAR LOCATION^①



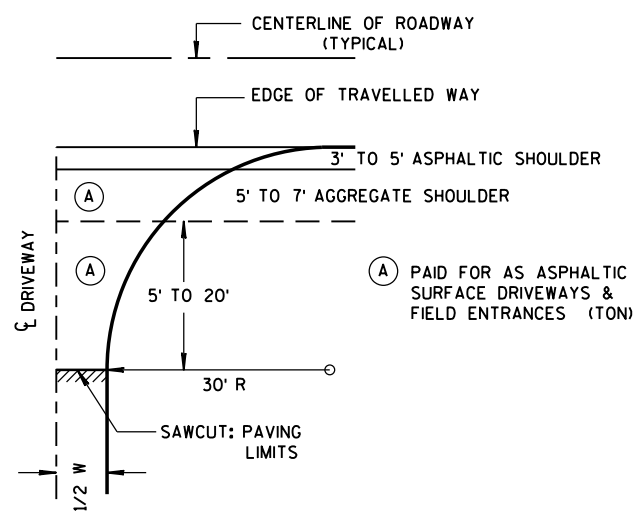
DRIVEWAY ENTRANCE CURB^⑨
(WHEN DIRECTED BY THE ENGINEER)

CONCRETE CURB, TIES
AND CURB AND GUTTER
APPLICATIONS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

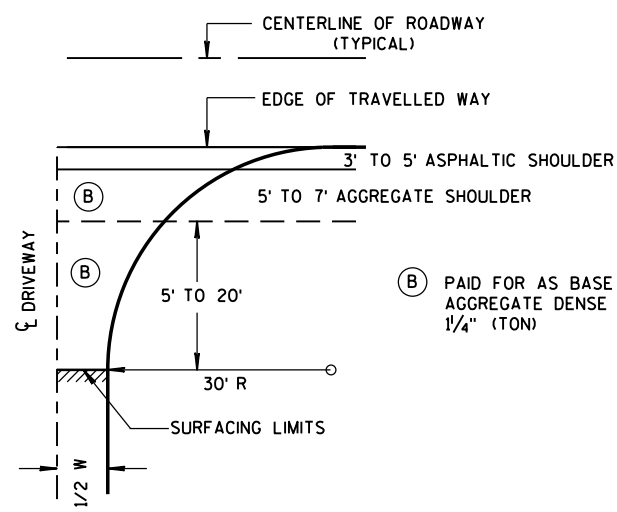
APPROVED
February 2020
DATE /S/ Rodney Taylor
ROADWAY STANDARDS DEVELOPMENT
ENGINEER

FHWA



PLAN VIEW
HALF SECTION

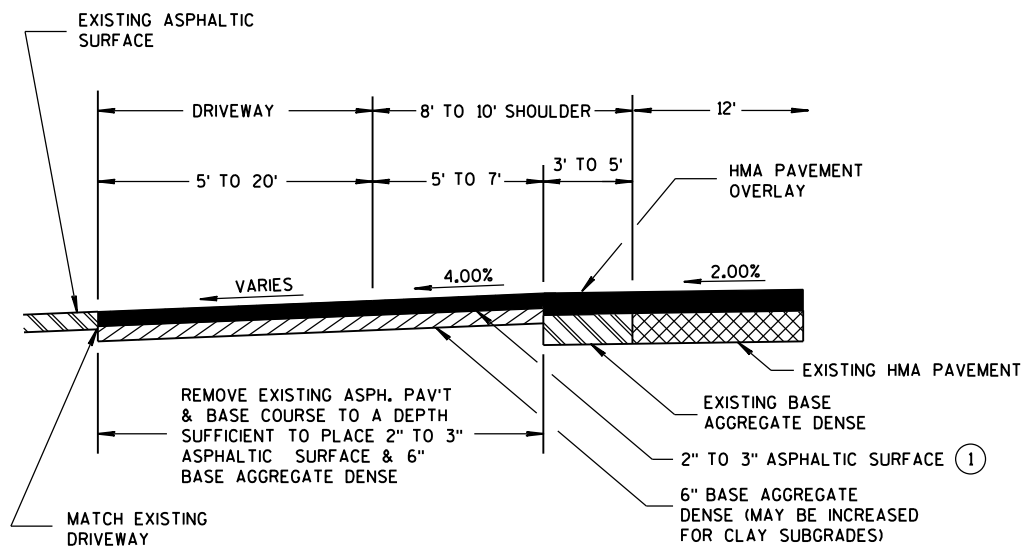
W MIN. = 16'
W MAX. = 24'



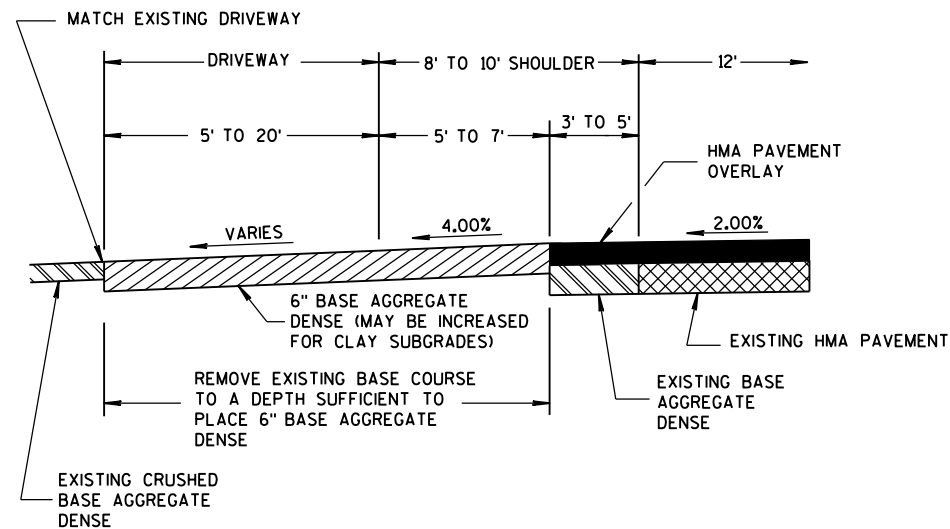
PLAN VIEW
HALF SECTION

GENERAL NOTES

① DESIGN WILL DETERMINE FINAL DRIVEWAY ASPHALTIC THICKNESS BASED ON TYPE OF USAGE AND LOADINGS.

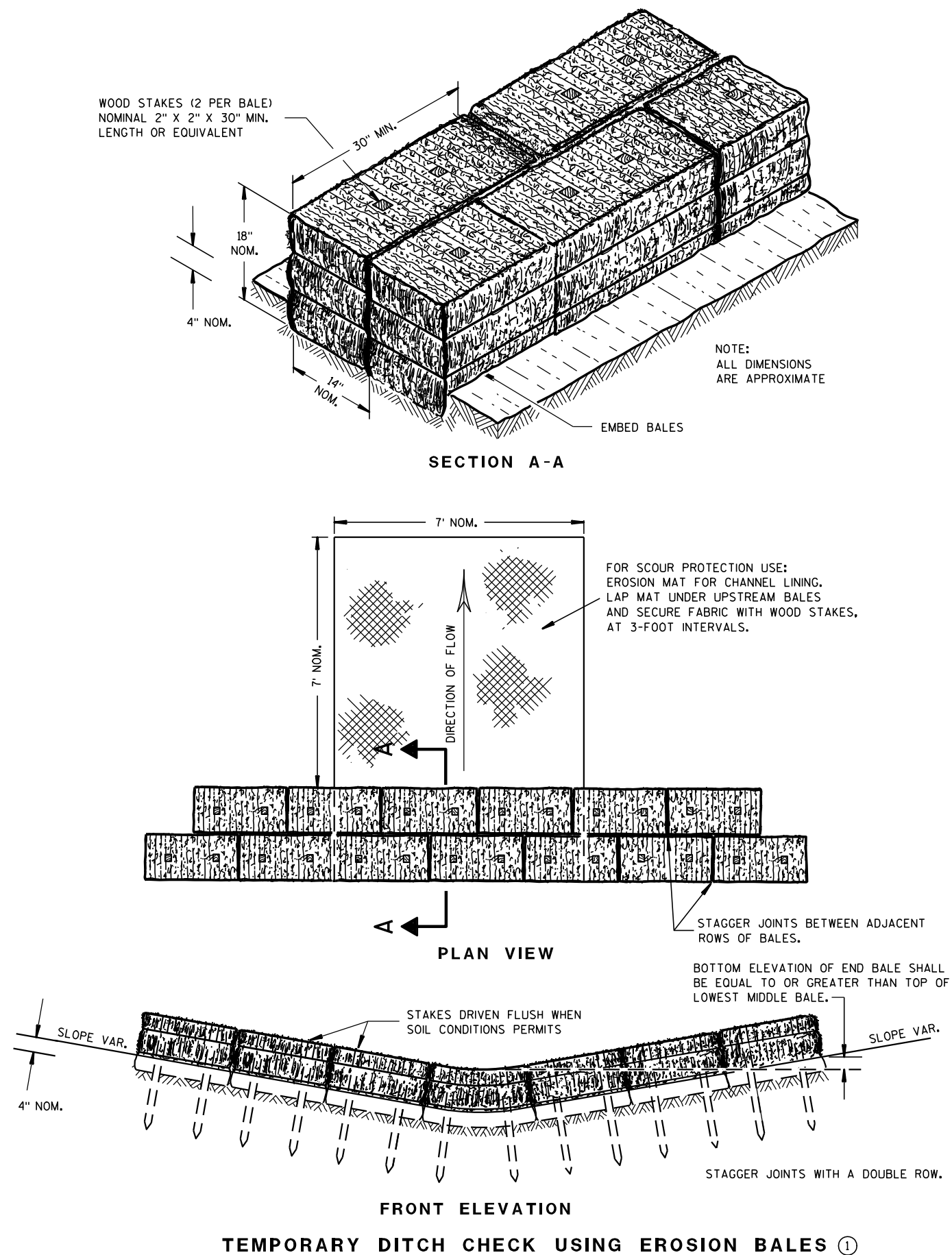


PROFILE VIEW
RURAL ENTRANCE
WITH ASPHALTIC SURFACE
RESURFACING PROJECTS



PROFILE VIEW
RURAL ENTRANCE
WITH AGGREGATE SURFACE
6" BASE AGGREGATE DENSE
RESURFACING PROJECTS

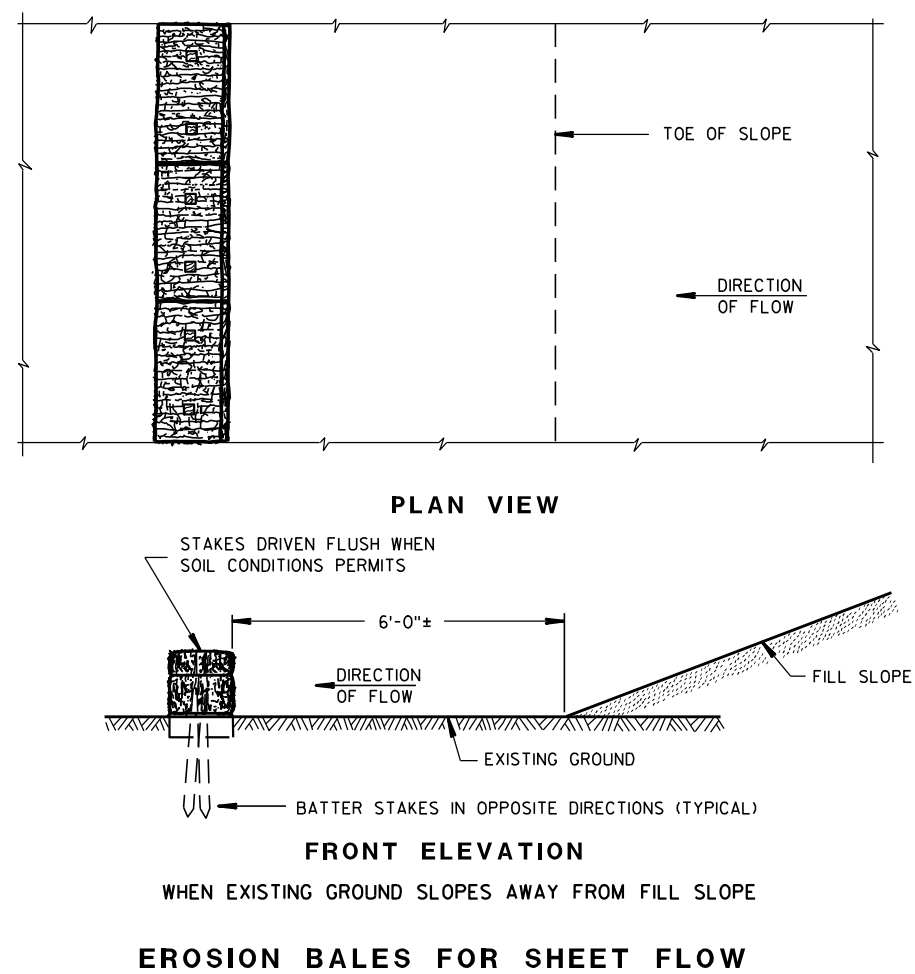
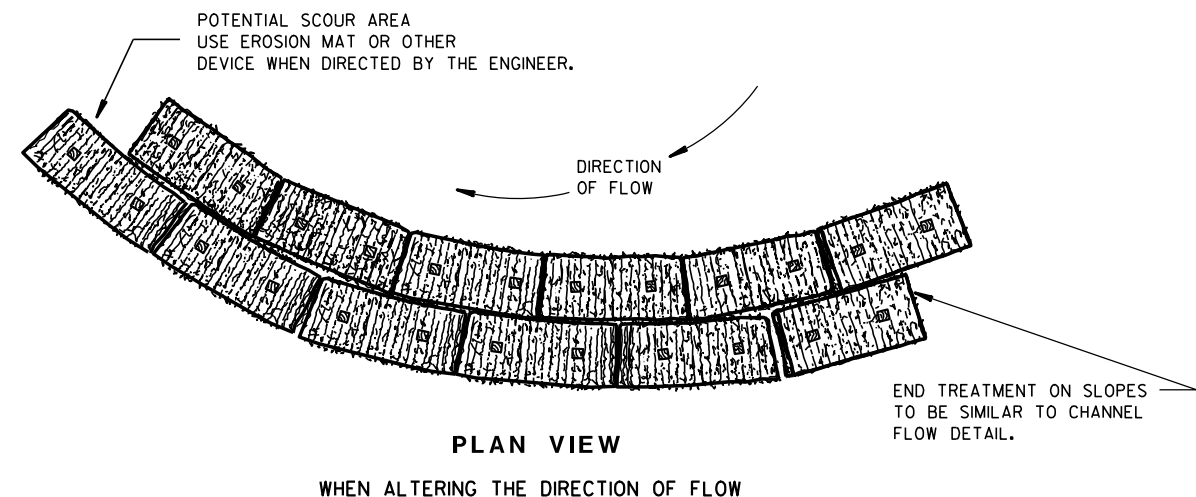
DRIVEWAYS WITHOUT CURB & GUTTER RESURFACING PROJECTS RURAL	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED December, 2016 DATE	/S/ Rodney Taylor ROADWAY STANDARDS DEVELOPMENT UNIT SUPERVISOR FHWA



GENERAL NOTES

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

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

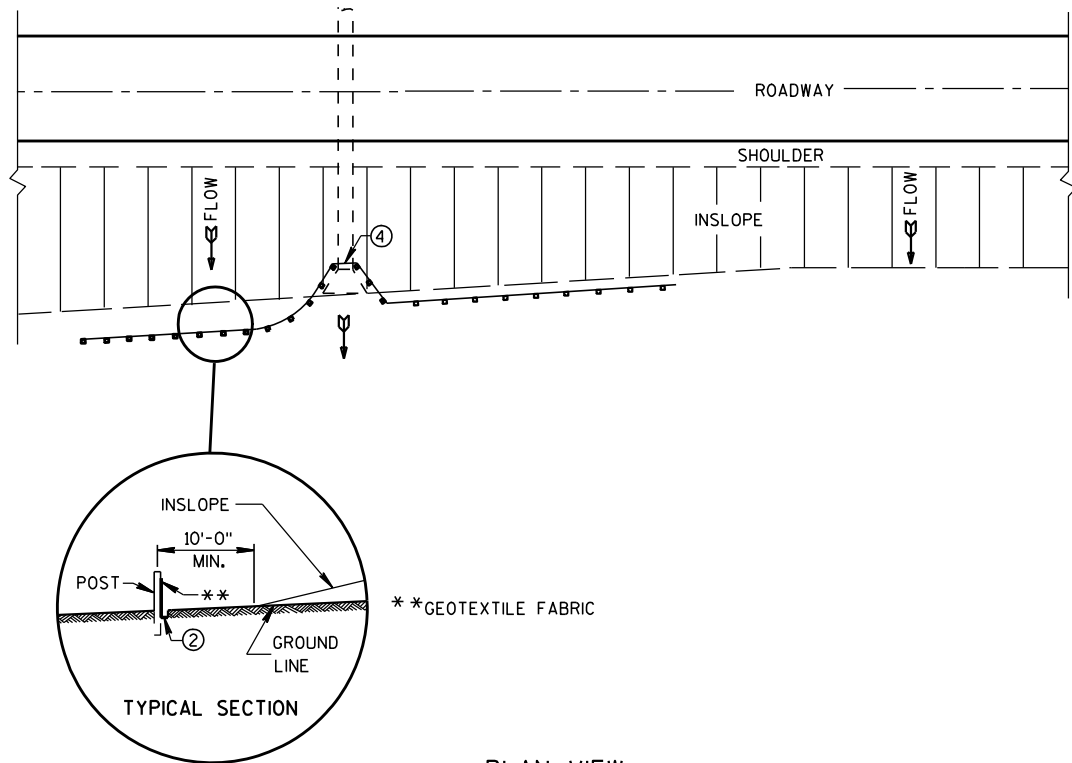
TYPICAL INSTALLATIONS OF
EROSION BALES / TEMPORARY
DITCH CHECKS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

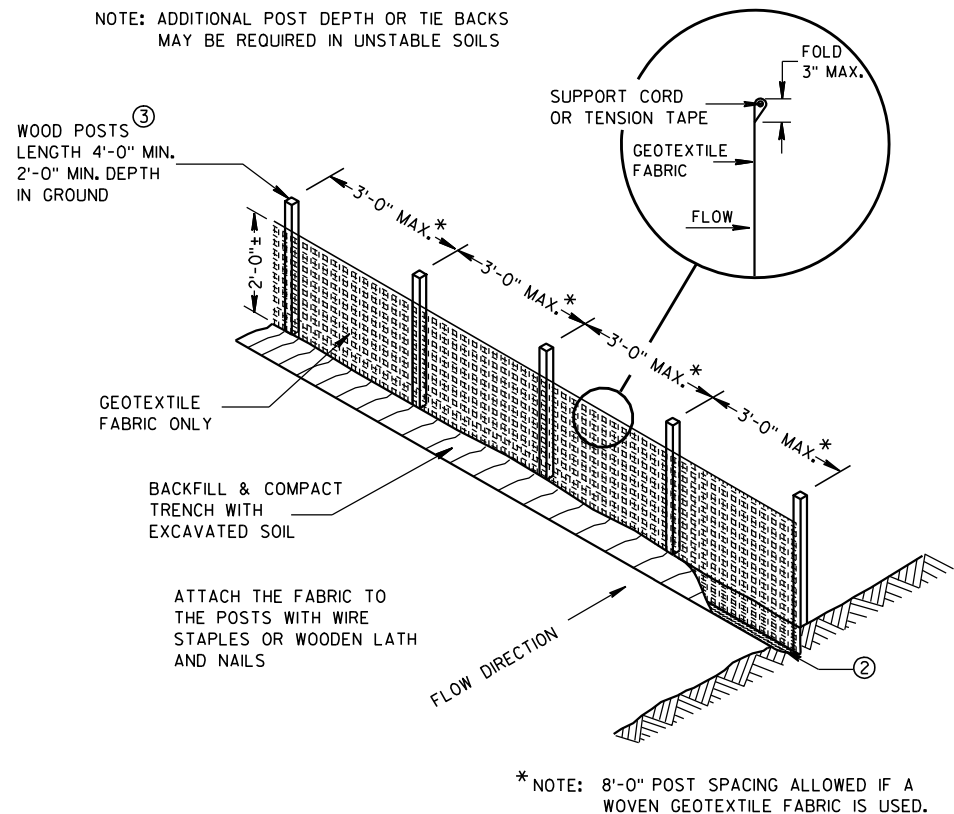
APPROVED

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

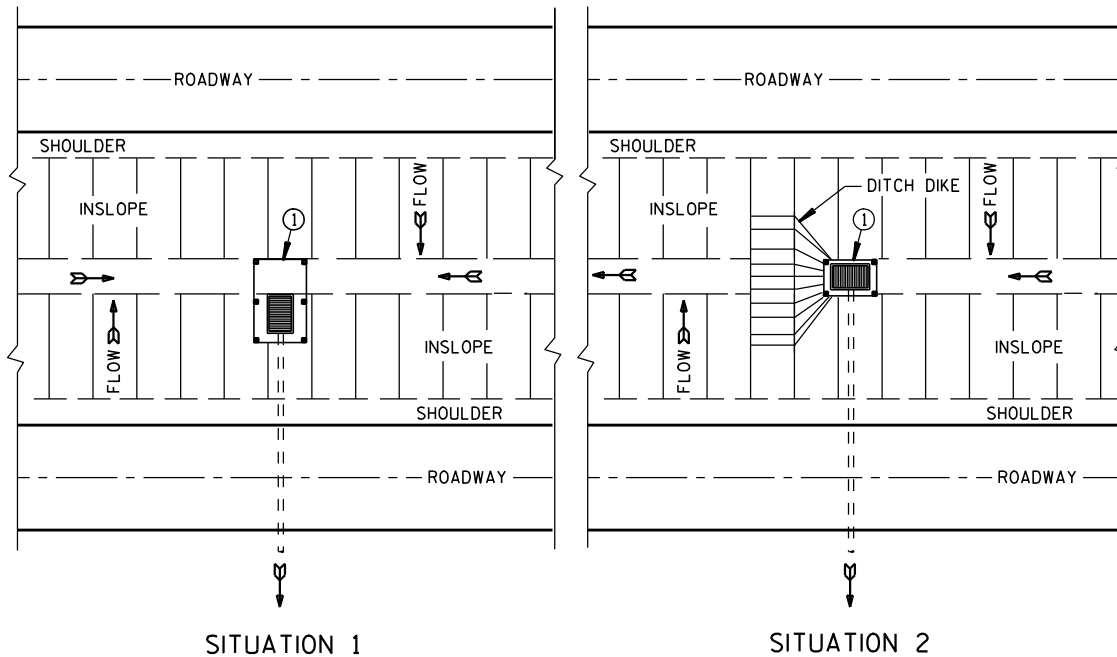
FHWA



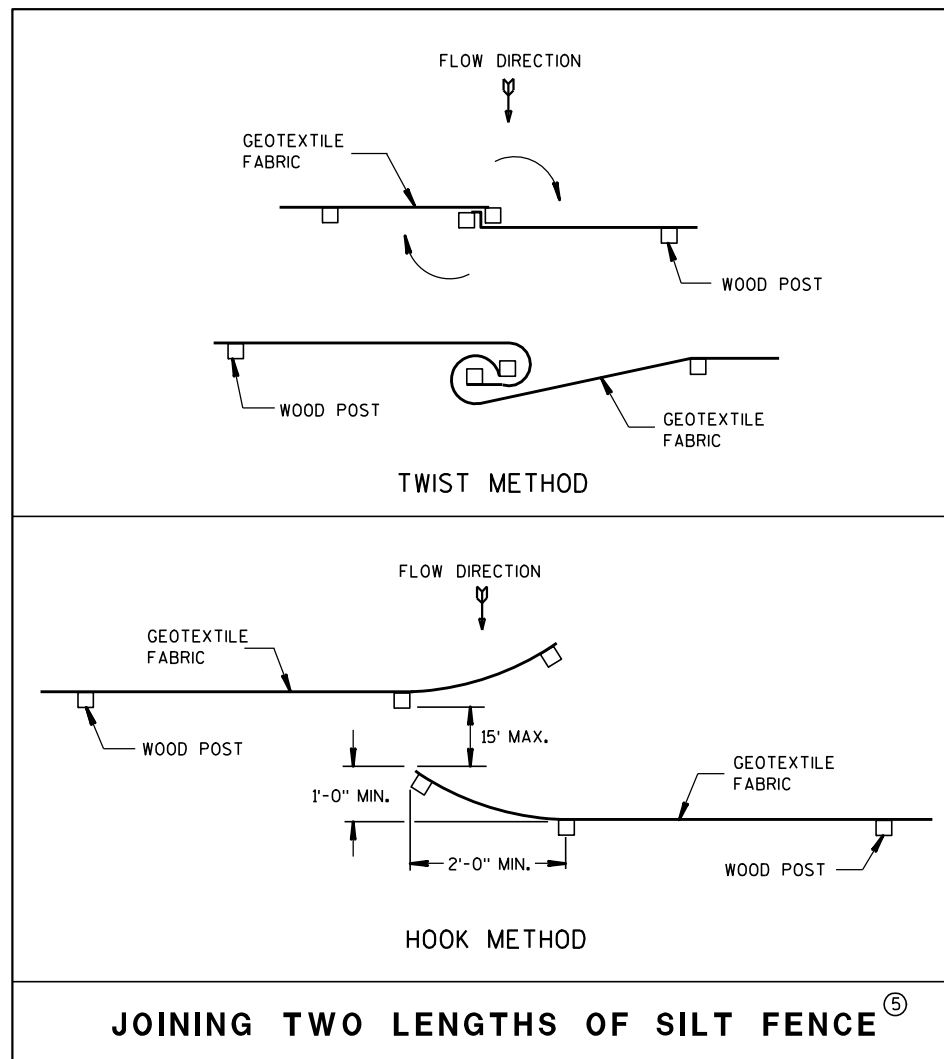
PLAN VIEW
TYPICAL APPLICATION OF SILT FENCE



SILT FENCE



PLAN VIEW
SILT FENCE AT MEDIAN SURFACE DRAINS

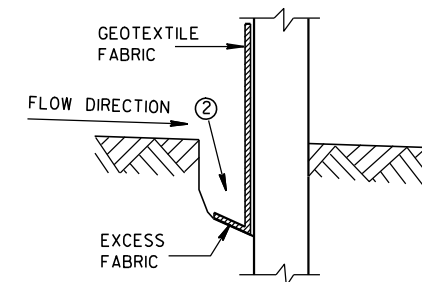


JOINING TWO LENGTHS OF SILT FENCE

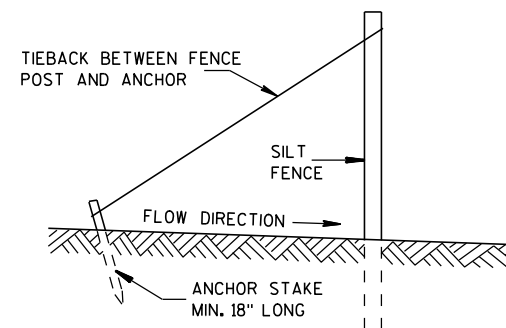
GENERAL NOTES

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

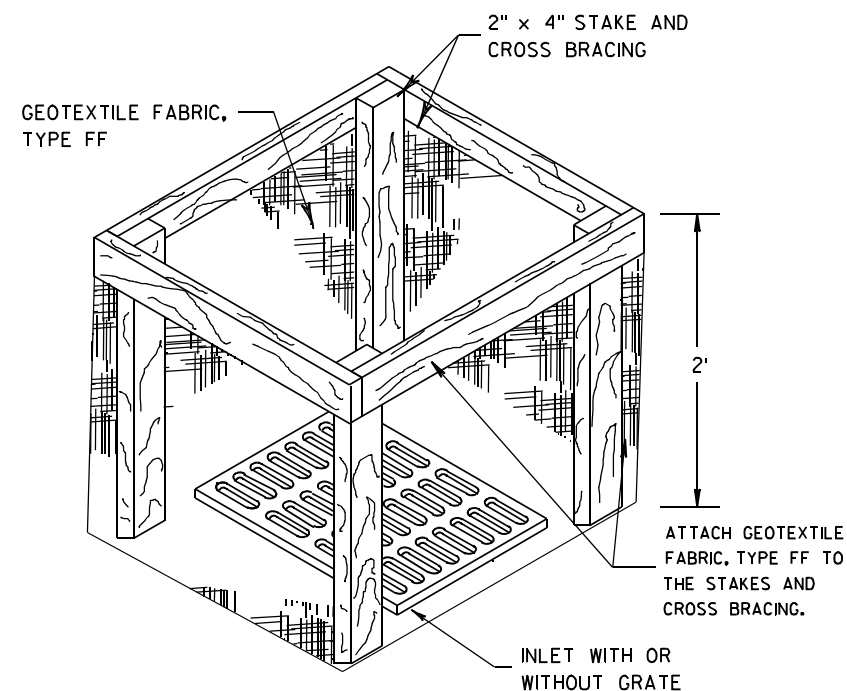
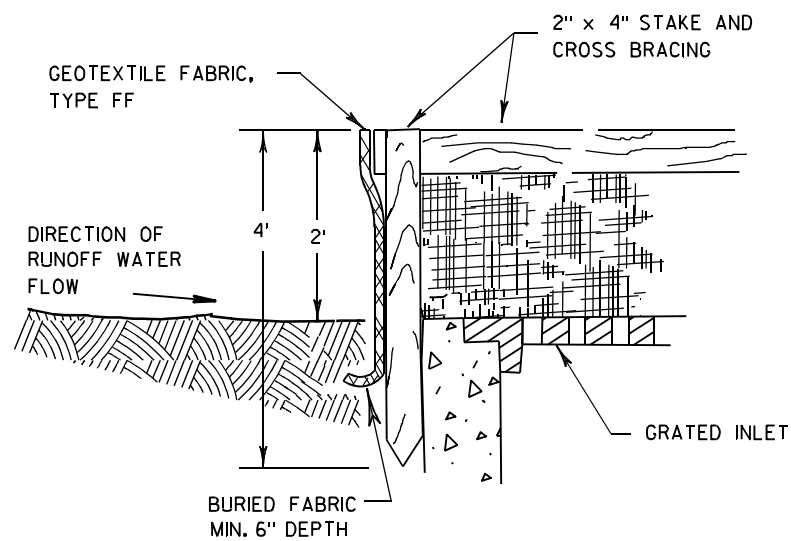


SILT FENCE TIE BACK
(WHEN REQUIRED BY THE ENGINEER)

SILT FENCE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
4-29-05 /S/ Beth Canestra
DATE CHIEF ROADWAY DEVELOPMENT ENGINEER
FHWA



INLET PROTECTION, TYPE A

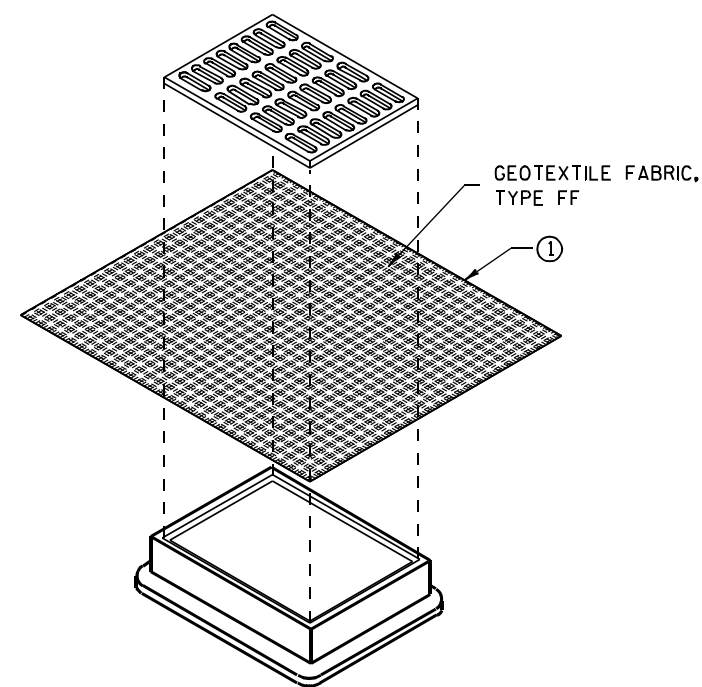
GENERAL NOTES

INLET PROTECTION DEVICES SHALL BE MAINTAINED OR REPLACED AT THE DIRECTION OF THE ENGINEER.

MANUFACTURED ALTERNATIVES APPROVED AND LISTED ON THE DEPARTMENT'S EROSION CONTROL PRODUCT ACCEPTABILITY LIST MAY BE SUBSTITUTED.

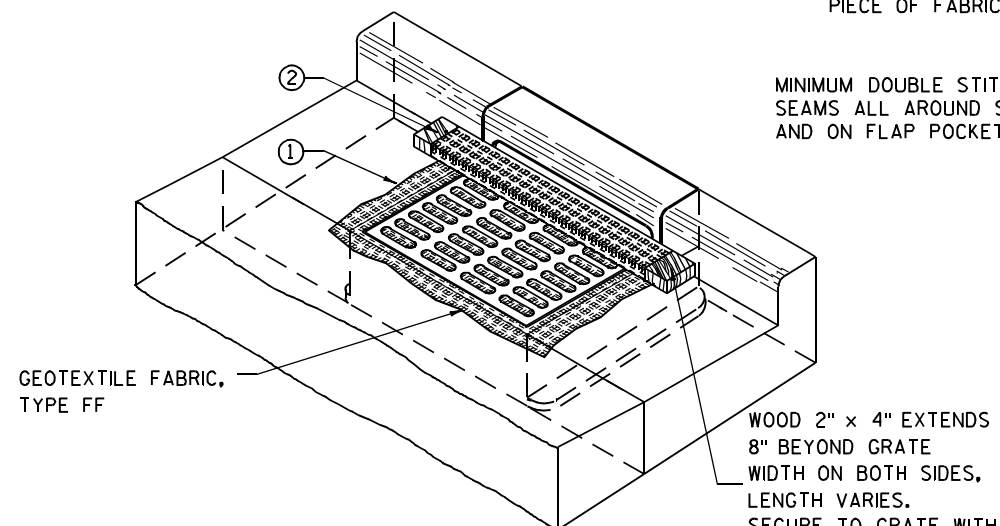
WHEN REMOVING OR MAINTAINING INLET PROTECTION, CARE SHALL BE TAKEN SO THAT THE SEDIMENT TRAPPED ON THE GEOTEXTILE FABRIC DOES NOT FALL INTO THE INLET. ANY MATERIAL FALLING INTO THE INLET SHALL BE REMOVED IMMEDIATELY.

- ① FINISHED SIZE, INCLUDING FLAP POCKETS WHERE REQUIRED, SHALL EXTEND A MINIMUM OF 10" AROUND THE PERIMETER TO FACILITATE MAINTENANCE OR REMOVAL.
- ② FOR INLET PROTECTION, TYPE C (WITH CURB BOX), AN ADDITIONAL 18" OF FABRIC IS WRAPPED AROUND THE WOOD AND SECURED WITH STAPLES. THE WOOD SHALL NOT BLOCK THE ENTIRE HEIGHT OF THE CURB BOX OPENING.
- ③ FLAP POCKETS SHALL BE LARGE ENOUGH TO ACCEPT WOOD 2X4.



**INLET PROTECTION, TYPE B
(WITHOUT CURB BOX)**

(CAN BE INSTALLED IN ANY INLET WITHOUT A CURB BOX)



INLET PROTECTION, TYPE C (WITH CURB BOX)

INSTALLATION NOTES

TYPE B & C

TRIM EXCESS FABRIC IN THE FLOW LINE TO WITHIN 3" OF THE GRATE.

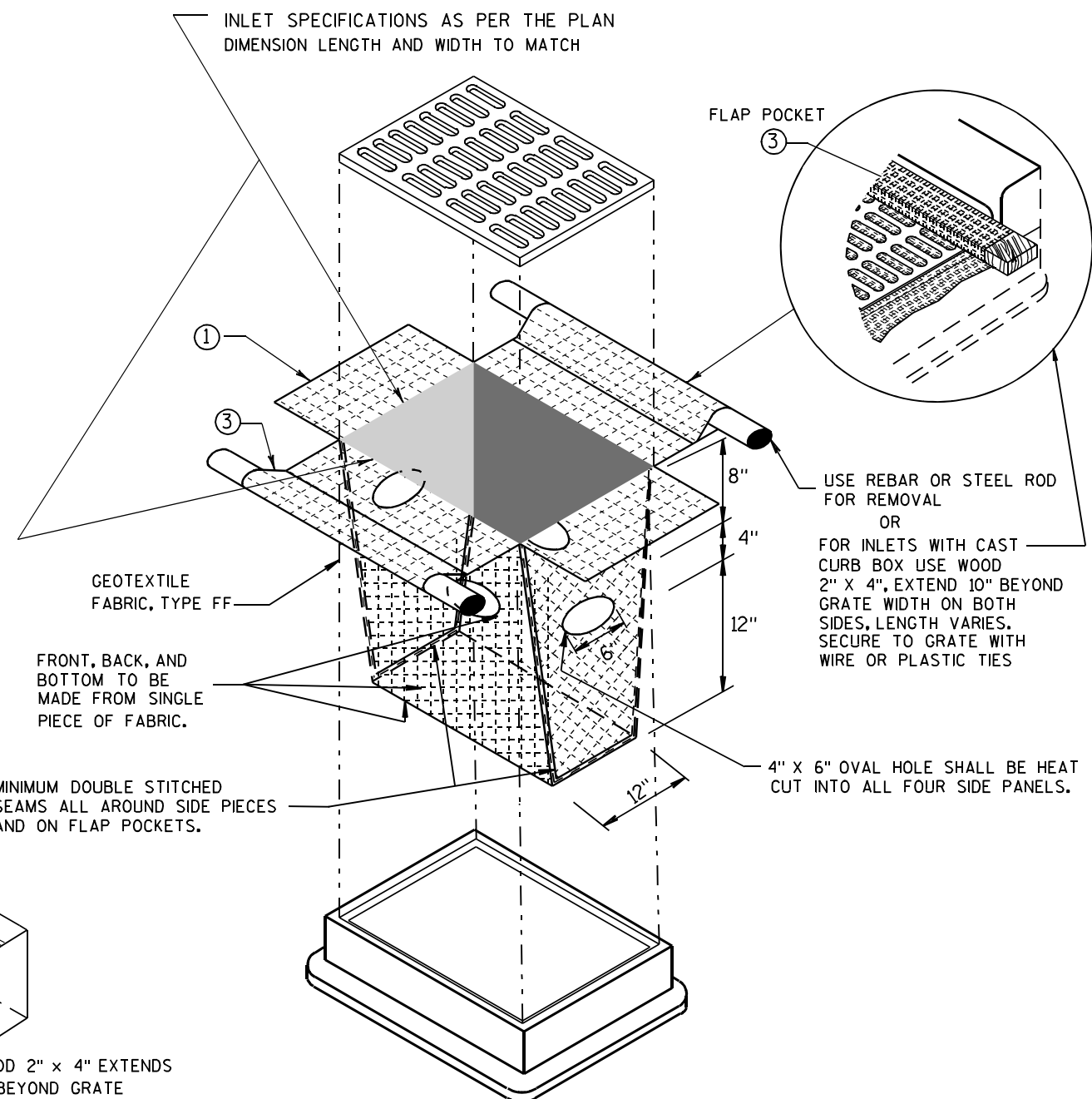
THE CONTRACTOR SHALL DEMONSTRATE A METHOD OF MAINTENANCE, USING A SEWN FLAP, HAND HOLDS OR OTHER METHOD TO PREVENT ACCUMULATED SEDIMENT FROM ENTERING THE INLET.

TYPE D

DO NOT INSTALL INLET PROTECTION TYPE D IN INLETS SHALLOWER THAN 30", MEASURED FROM THE BOTTOM OF THE INLET TO THE TOP OF THE GRATE.

TRIM EXCESS FABRIC IN THE FLOW LINE TO WITHIN 3" OF THE GRATE.

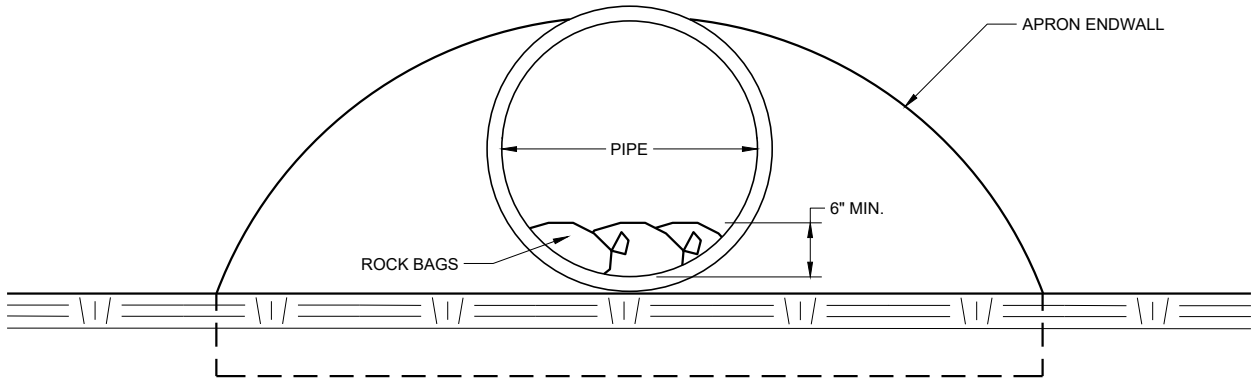
THE INSTALLED BAG SHALL HAVE A MINIMUM SIDE CLEARANCE, BETWEEN THE INLET WALLS AND THE BAG, MEASURED AT THE BOTTOM OF THE OVERFLOW HOLES, OF 3". WHERE NECESSARY THE CONTRACTOR SHALL CINCH THE BAG, USING PLASTIC ZIP TIES, TO ACHIEVE THE 3" CLEARANCE. THE TIES SHALL BE PLACED AT A MAXIMUM OF 4" FROM THE BOTTOM OF THE BAG.



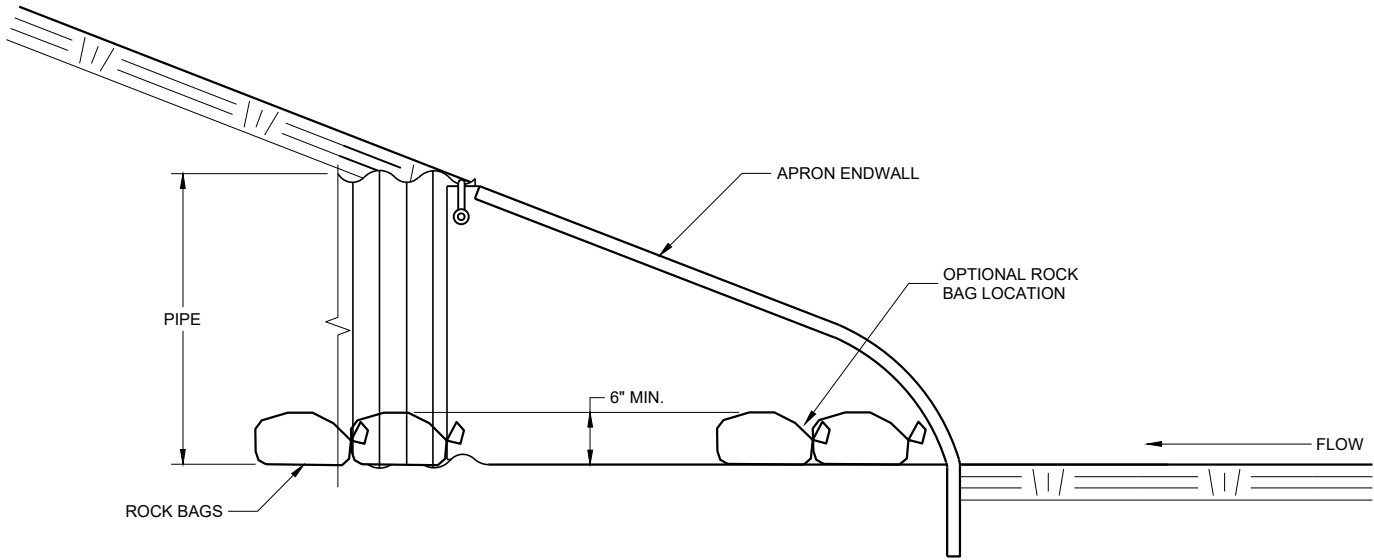
INLET PROTECTION, TYPE D

(CAN BE INSTALLED IN ANY INLET TYPE WITH OR WITHOUT A CURB BOX AS PER NOTE ②)

INLET PROTECTION TYPE A, B, C, AND D	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED 10/16/02 DATE	/S/ Beth Cannestra CHIEF ROADWAY DEVELOPMENT ENGINEER
FHWA	



END VIEW



SIDE VIEW

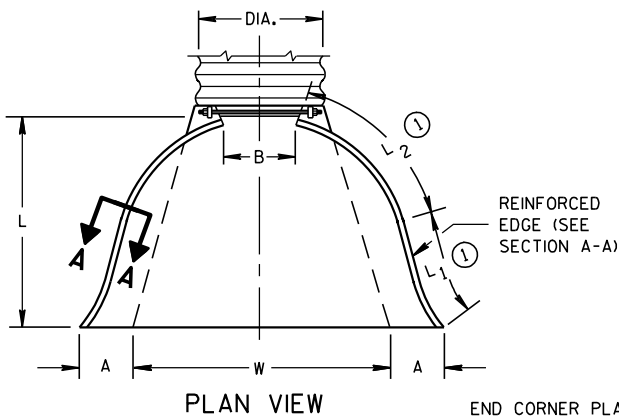
CULVERT PIPE CHECK
(INSTALL ON INLET END ONLY)

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

FHWA

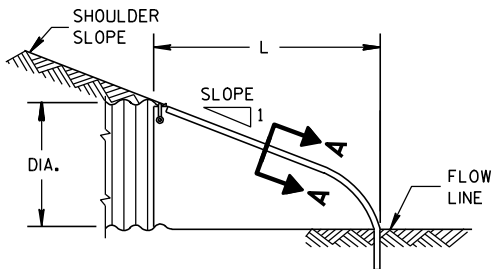
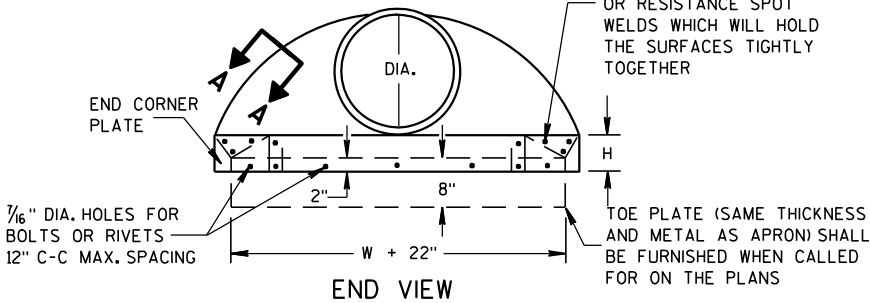
METAL APRON ENDWALLS												
PIPE DIA. (IN.)	MIN. THICK. (Inches)		DIMENSIONS (Inches)							APPROX. SLOPE		BODY
	STEEL	ALUM.	A (±1")	B (MAX.)	H (±1")	L (±1 1/2")	L1 ①	L2 ①	W (±2")			
12	.064	.060	6	6	6	21	12	17 1/2	24	2 1/2 to 1		1 Pc.
15	.064	.060	7	8	6	26	14	21 3/4	30	2 1/2 to 1		1 Pc.
18	.064	.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



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

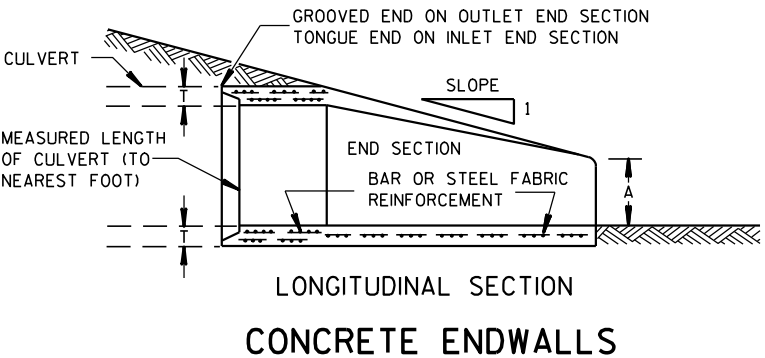
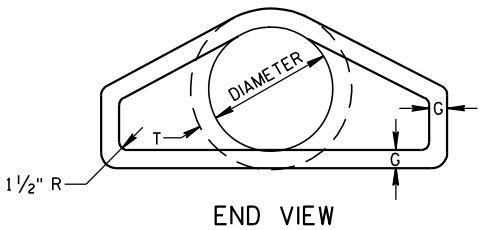
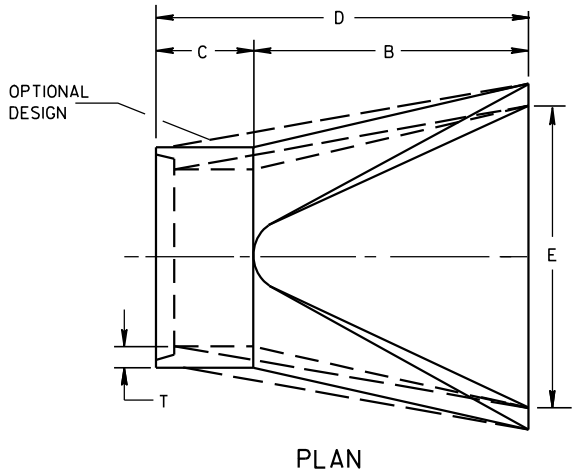
TOE PLATE (SAME THICKNESS AND METAL AS APRON) SHALL BE FURNISHED WHEN CALLED FOR ON THE PLANS



SIDE ELEVATION
METAL ENDWALLS

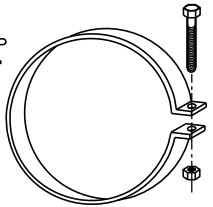
REINFORCED CONCRETE APRON ENDWALLS												
PIPE DIA. (IN.)	DIMENSIONS (Inches)							APPROX. SLOPE				
	T	A	B	C	D	E	G					
12	2	4	24	48 7/8	72 7/8	24	2	3 to 1				
15	2 1/4	6	27	46	73	30	2 1/4	3 to 1				
18	2 1/2	9	27	46	73	36	2 1/2	3 to 1				
21	2 3/4	9	36	37 1/2	73 1/2	42	2 3/4	3 to 1				
24	3	9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

* MINIMUM
** MAXIMUM

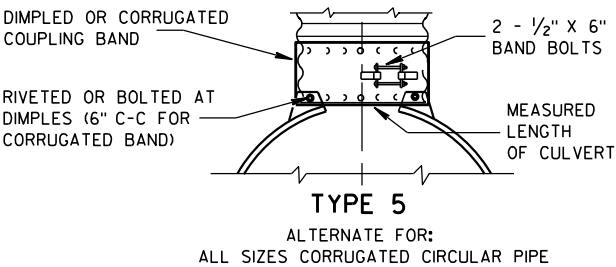
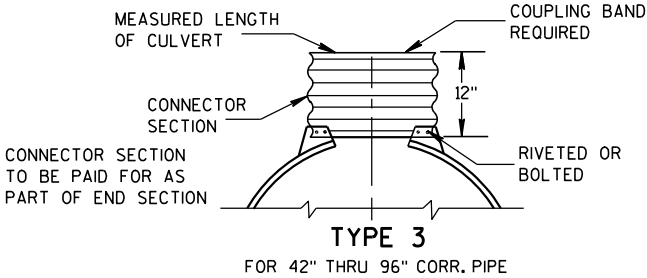
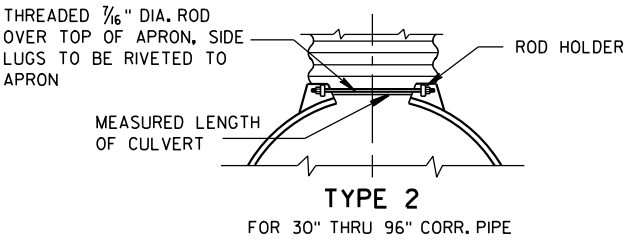
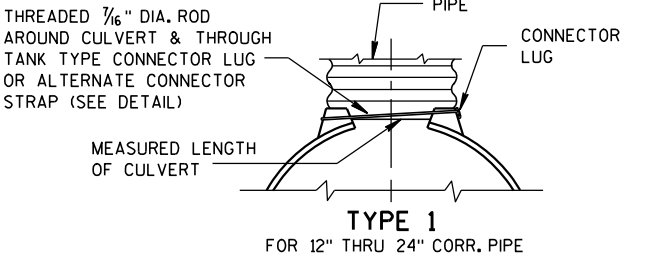


LONGITUDINAL SECTION
CONCRETE ENDWALLS

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



ALTERNATE FOR TYPE 1 CONNECTION
END SECTION CONNECTOR STRAP



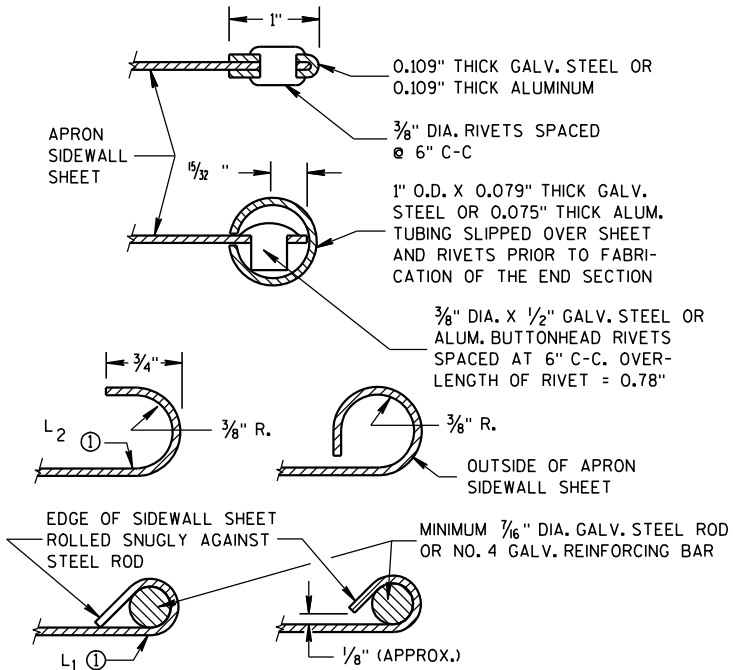
NOTE: DIMPLED BAND FITS OVER OUTSIDE OF ENDWALL, AND CORRUGATED BAND FITS INSIDE ENDWALL. DIMPLED BAND MAY BE USED WITH HELICALLY CORRUGATED PIPE.

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

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

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

CONNECTION DETAILS



SECTION A-A

GENERAL NOTES

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

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

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

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

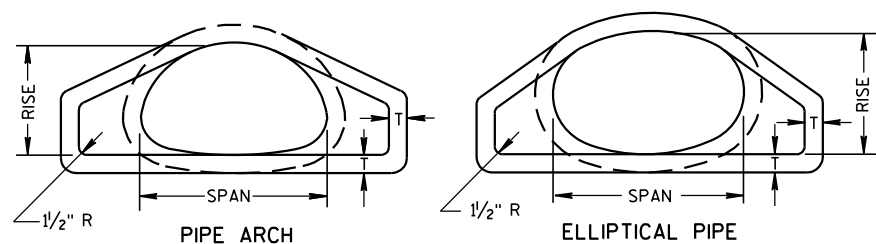
WHERE TWO OR MORE PIPES WITH APRON ENDWALLS ARE LAID ADJACENT TO EACH OTHER, THEY SHALL BE SEPARATED BY A DISTANCE SUFFICIENT TO PROVIDE A MINIMUM CLEARANCE OF 6 INCHES BETWEEN APRON ENDWALLS.

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

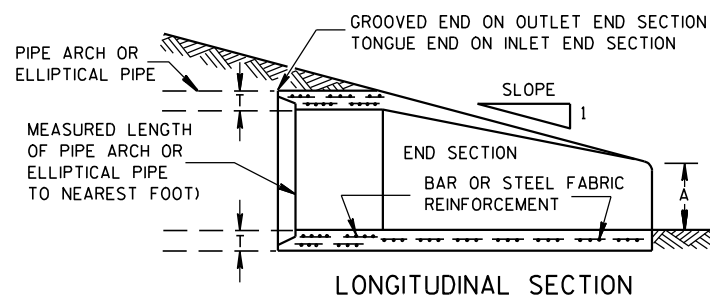
APRON ENDWALLS FOR
CULVERT PIPE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

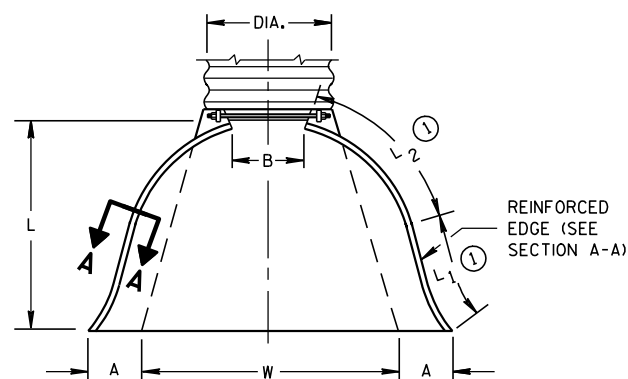


END VIEW



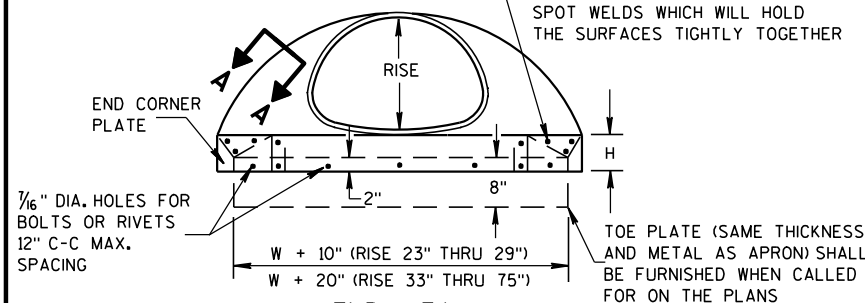
LONGITUDINAL SECTION

CONCRETE ENDWALLS

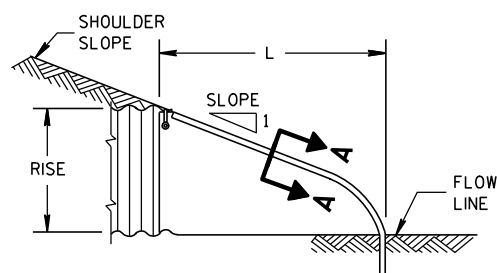
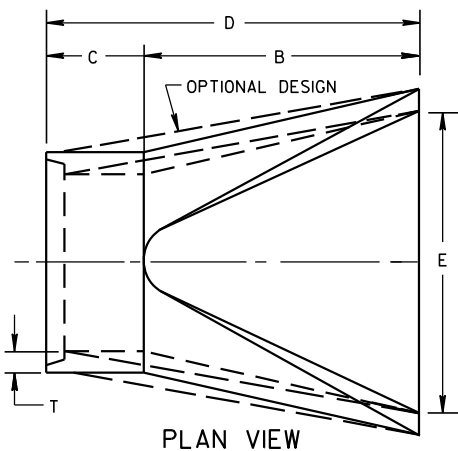


PLAN VIEW

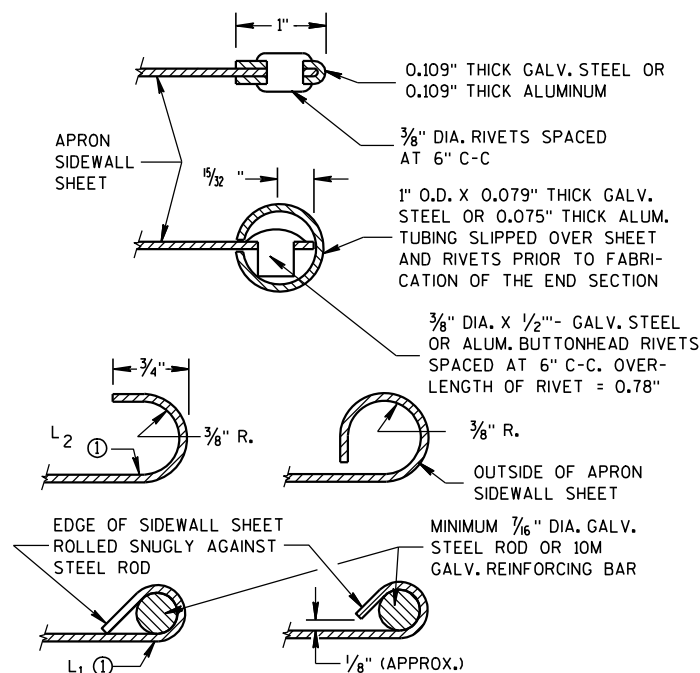
END CORNER PLATES MAY BE FASTENED TO APRON PROPER BY BOLTS, RIVETS, OR RESISTANCE SPOT WELDS WHICH WILL HOLD THE SURFACES TIGHTLY TOGETHER



END VIEW

SIDE ELEVATION
METAL ENDWALLS

PLAN VIEW



SECTION A-A

2- 2 2/3" X 1/2" CORRUGATIONS													
EQUIV. DIA. (Inches)	(Inches)		MIN. THICK. (Inches)		DIMENSIONS (Inches)							APPROX. SLOPE	BODY
	SPAN	RISE	STEEL	ALUM.	A (±1")	B (MAX.)	H (±1")	L (±1 1/2")	L1 ①	L2 ①	W (±2")		
15	17	13	.064	.060	7	9	6	19	14	16	30	2 1/2 to 1	1 Pc.
18	21	15	.064	.060	7	10	6	23	14	19 3/8	36	2 1/2 to 1	1 Pc.
21	24	18	.064	.060	8	12	6	28	18	21 3/4	42	2 1/2 to 1	1 Pc.
24	28	20	.064	.060	9	14	6	32	18	27 1/2	48	2 1/2 to 1	1 Pc.
30	35	24	.079	.075	10	16	6	39	18	37 5/8	60	2 1/2 to 1	1 Pc.
36	42	29	.079	.075	12	18	8	46	24	45 3/8	75	2 1/2 to 1	1 Pc.
42	49	33	.109	.105	13	21	9	53	24	54 3/4	85	2 1/2 to 1	2 Pc.
48	57	38	.109	.105	18	26	12	63	24	68	90	2 1/2 to 1	3 Pc.
54	64	43	.109	.105	18	30	12	70	24	72 3/4	102	2 1/4 to 1	3 Pc.
60	71	47	.109*	.105*	18	33	12	77	30	82 1/4	114	2 1/4 to 1	3 Pc.
66	77	52	.109*	.105*	18	36	12	77	—	—	126	2 to 1	3 Pc.
72	83	57	.109*	.105*	18	39	12	77	—	—	138	2 to 1	3 Pc.

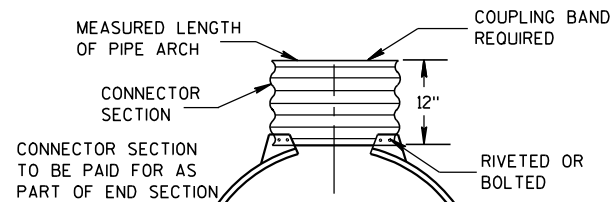
3" X 1" CORRUGATIONS													
EQUIV. DIA. (Inches)	(Inches)		MIN. THICK. (Inches)		DIMENSIONS (Inches)							APPROX. SLOPE	BODY
	SPAN	RISE	STEEL	ALUM.	A (±1")	B (MAX.)	H (±1")	L (±1 1/2")	L1 ①	L2 ①	W (±2")		
48	53	41	.109	.105	18	26	12	63	24	72 3/4	90	2 1/2 to 1	2 Pc.
54	60	46	.109	.105	18	30	12	70	30	82 1/4	102	2 to 1	2 Pc.
60	66	51	.109*	.105*	18	33	12	77	—	—	114	1 1/2 to 1	3 Pc.
66	73	55	.109*	.105*	18	36	12	77	—	—	126	1 1/2 to 1	3 Pc.
72	81	59	.109*	.105*	18	39	12	77	—	—	138	2 to 1	3 Pc.
78	87	63	.109*	.105*	22	38	12	77	—	—	148	1 1/2 to 1	3 Pc.
84	95	67	.109*	.105*	22	34	12	77	—	—	162	1 1/2 to 1	3 Pc.
90	103	71	.109*	.105*	22	38	12	77	—	—	174	1 1/2 to 1	3 Pc.
96	112	75	.109*	.105*	24	40	12	77	—	—	174	1 1/2 to 1	3 Pc.

NOTE: ALL SPLICES TO BE LAP RIVETED OR BOLTED.

* EXCEPT CENTER PANEL
SEE GENERAL NOTES

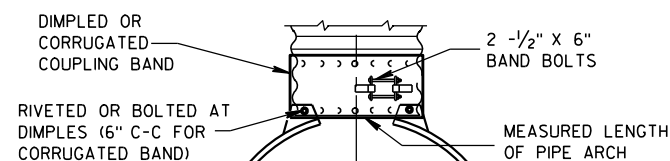
TYPE 2

FOR 17" X 13" THRU 112" X 75" PIPE ARCH



TYPE 3

FOR 64" X 43" THRU 112" X 75" PIPE ARCH



TYPE 5

ALTERNATE FOR:
ALL SIZES CORRUGATED PIPE ARCHESNOTE: DIMPLED BAND FITS OVER OUTSIDE OF ENDWALL,
AND CORRUGATED BAND FITS INSIDE ENDWALL.

CONNECTION DETAILS

REINFORCED CONCRETE PIPE ARCH

EQUIV. DIA. (Inches)	DIMENSIONS (Inches)								APPROX. SLOPE
	**SPAN	**RISE	T	A	B	C	D	E	
24	29	18	3	8 1/2	39	33	72	48	3 to 1
30	36	22	3 1/2	9 1/2	50	46	96	60	3 to 1
36	44	27	4	11 1/8	60	36	96	72	3 to 1
42	51	31	4 1/2	15 1/16	60	36	96	78	3 to 1
48	58	36	5	21	60	36	96	84	3 to 1
54	65	40	5 1/2	25 1/2	60	36	96	90	3 to 1
60	73	45	6	31	60	36	96	96	3 to 1
72	88	54	7	31	60	39	99	120	2 to 1
84	102	62	8	28 1/2	83	19	102	144	2 to 1

REINFORCED CONCRETE ELLIPTICAL PIPE

EQUIV. DIA. (Inches)	DIMENSIONS (Inches)								APPROX. SLOPE
	**SPAN	**RISE	T	A	B	C	D	E	
24	30	19	3 1/4	8 1/2	39	33	72	48	3 to 1
30	38	24	3 3/4	9 1/2	54	18	72	60	3 to 1
36	45	29	4 1/2	11 1/8	60	24	84	72	2 1/2 to 1
42	53	34	5	15 1/4	60	36	96	78	2 1/2 to 1
48	60	38	5 1/2	21	60	36	96	84	2 1/2 to 1
54	68	43	6	25 1/2	60	36	96	90	2 1/2 to 1
60	76	48	6 1/2	30	60	36	96	96	2 1/2 to 1

**NOMINAL SIZE

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

ALL THREE PIECE STEEL APRON ENDWALLS FOR 66" X 51" PIPE ARCH AND LARGER SHALL HAVE 0.109" SIDES AND 0.138" CENTER PANELS. ALL THREE PIECE ALUMINUM APRON ENDWALLS FOR 66" X 51" PIPE ARCH 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 ARCH 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 77" X 52" THROUGH 112" X 75" 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.

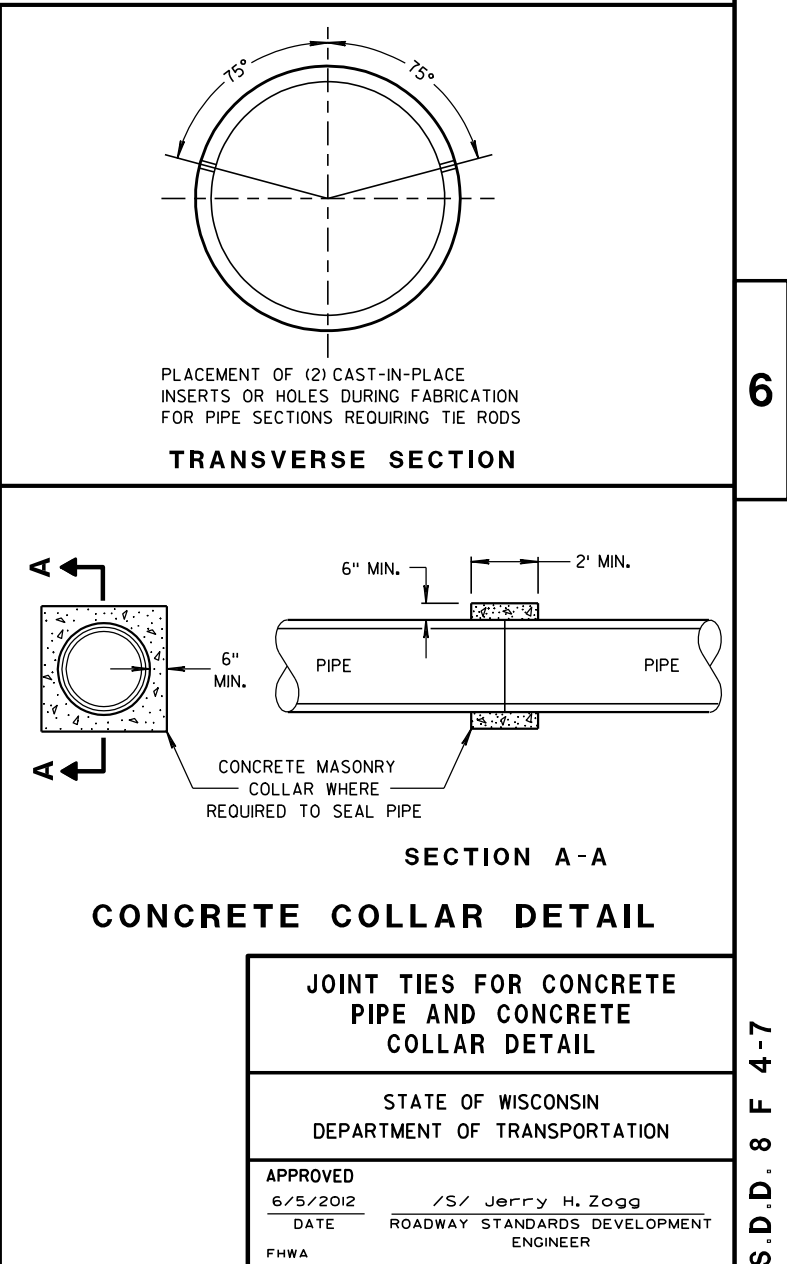
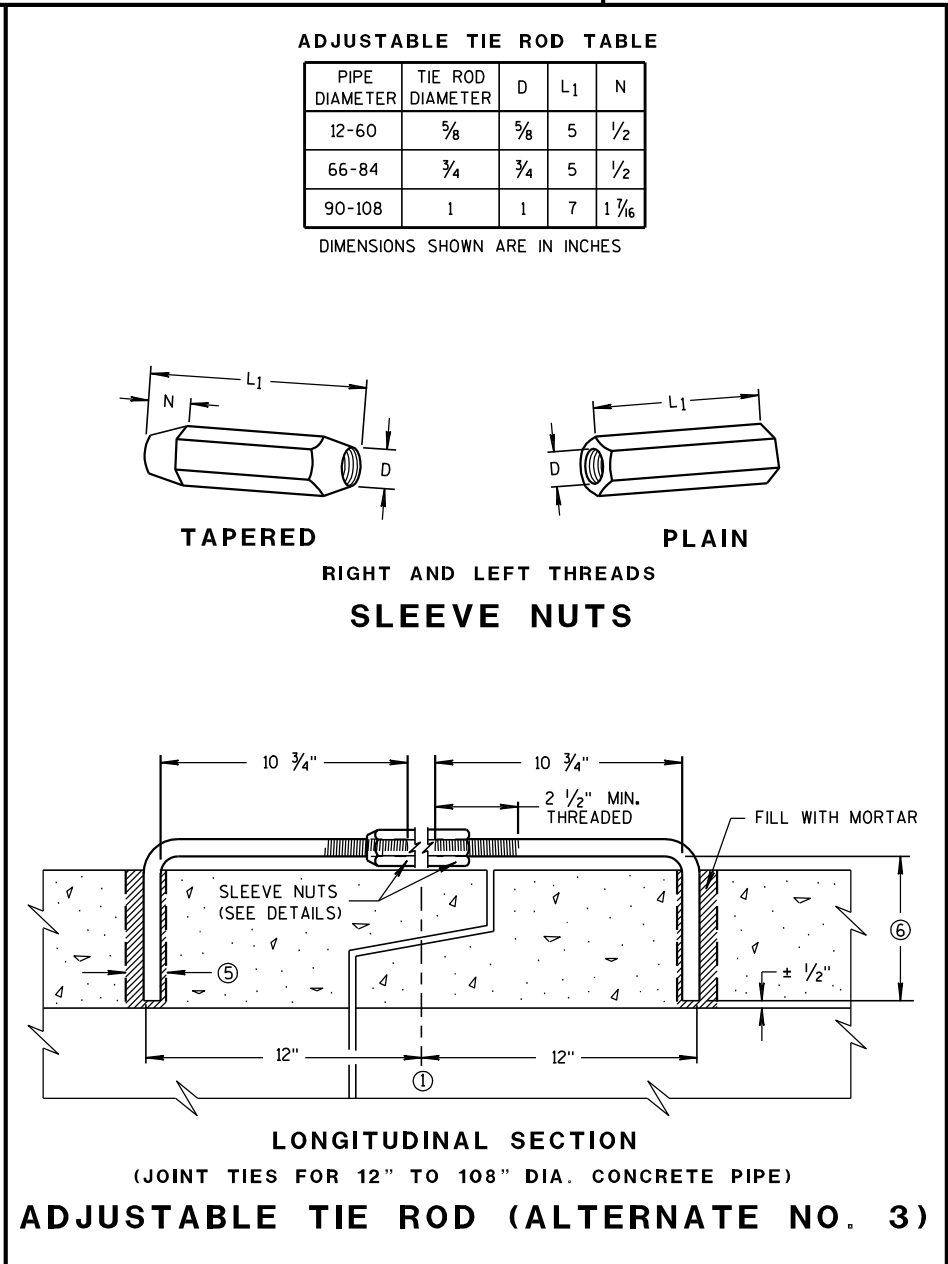
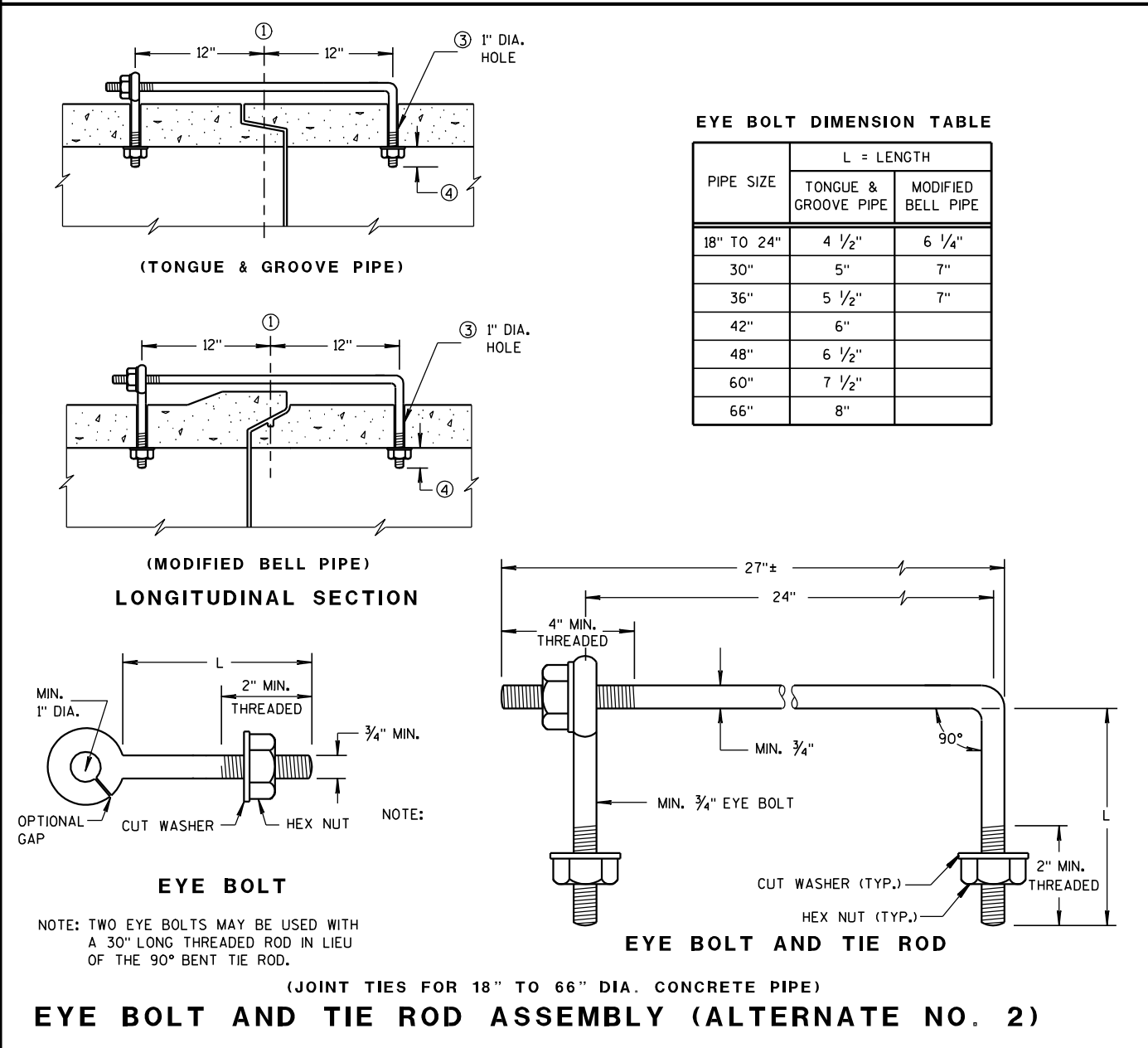
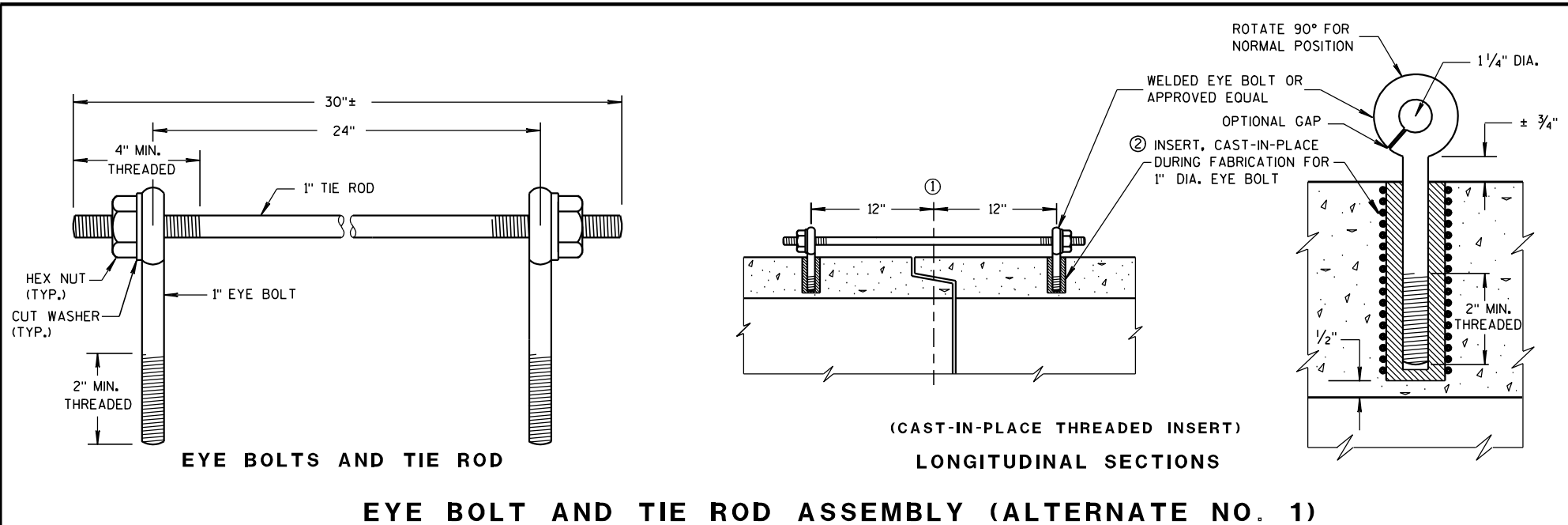
① FOR PIPE ARCH SIZES UP TO 73" X 55" A 180° ROLLED EDGE MAY BE USED INSTEAD OF STEEL ROD REINFORCEMENT. SEE SECTION A-A.

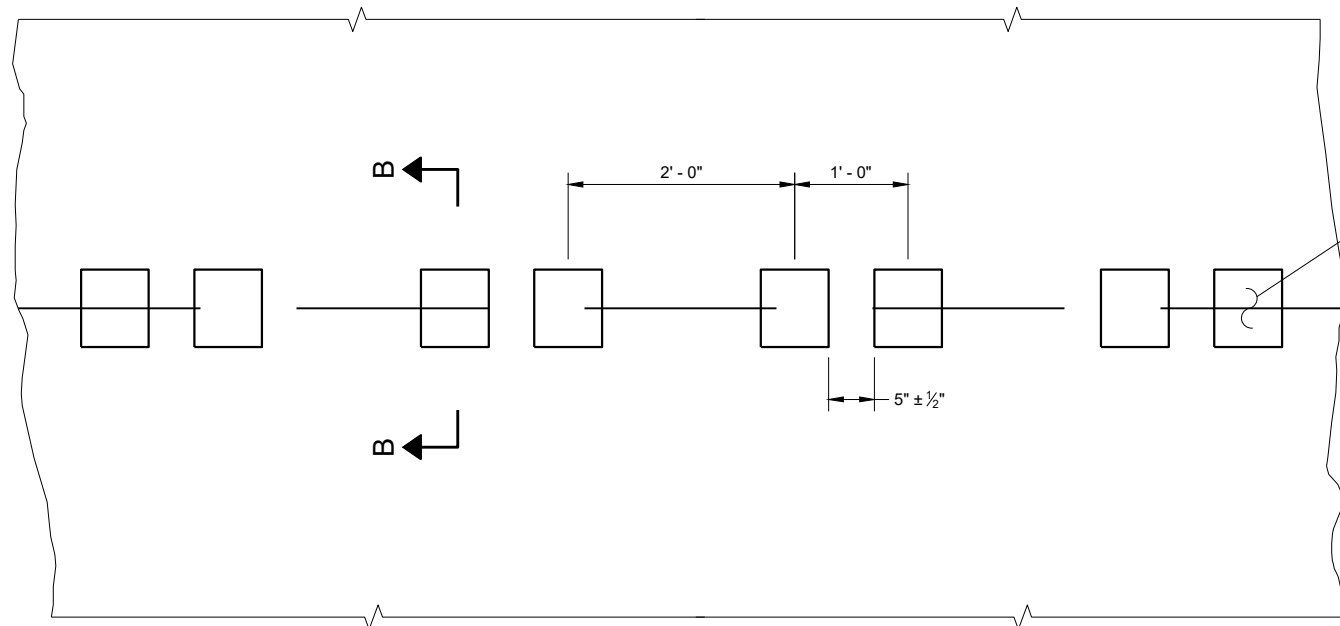
APRON ENDWALLS FOR
PIPE ARCH AND
ELLIPTICAL PIPESTATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

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

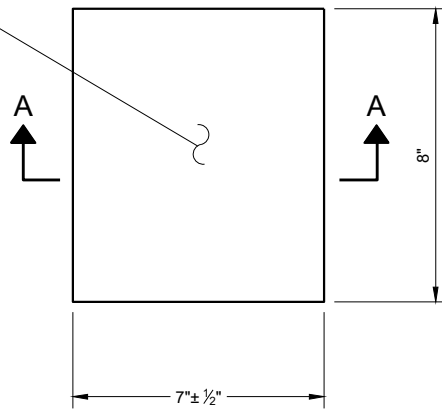
FHWA





PLAN VIEW
SHOULDER WITH GROOVES

PLACEMENT DETAIL FOR TYPE 1 MILLED RUMBLE STRIP



PLAN VIEW
(SINGLE GROOVE)

GENERAL NOTES

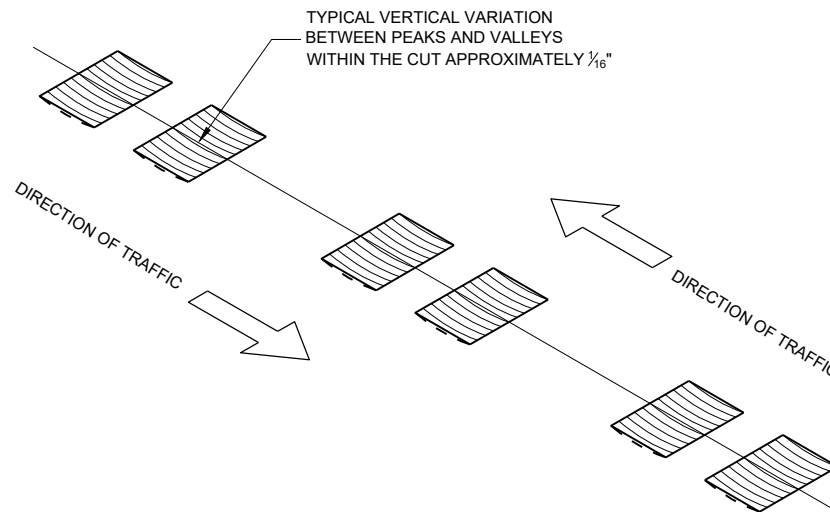
DETAILS OF CONSTRUCTION NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND APPLICABLE SPECIAL PROVISIONS.

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

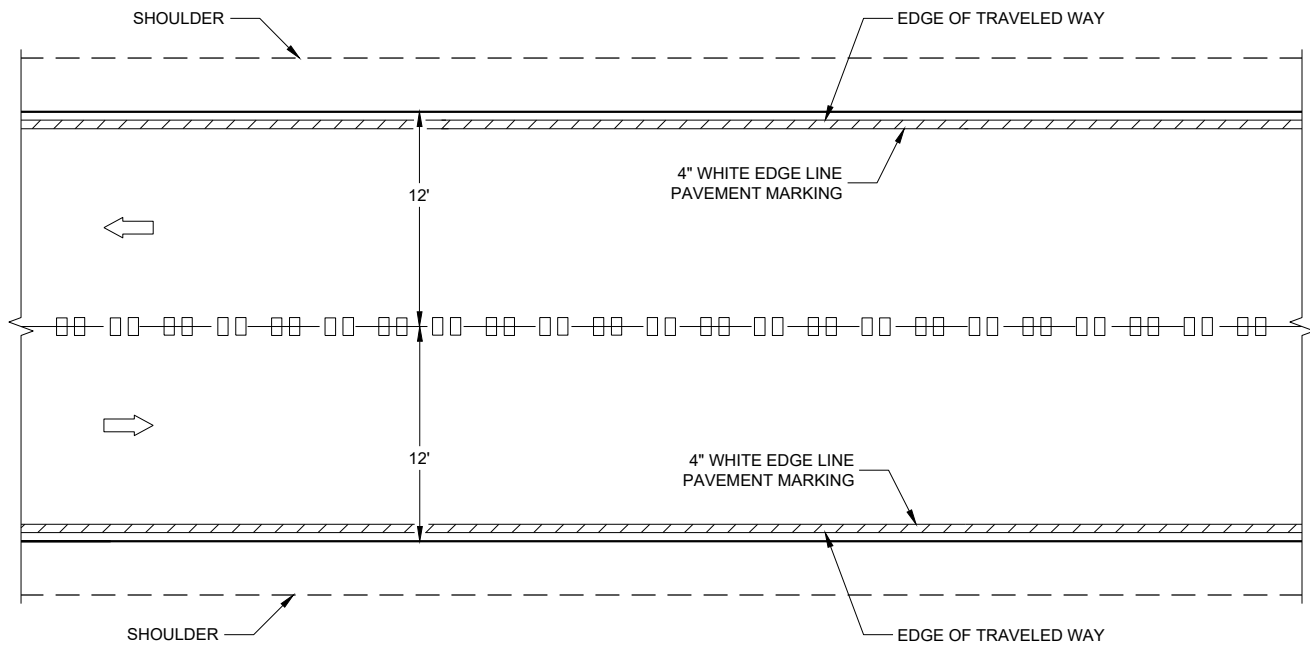
INSTALL PAVEMENT MARKING AFTER THE GROOVES ARE INSTALLED.

SEE SIGNING PLAN FOR SIGN REQUIREMENTS THAT MAY BE NEEDED.

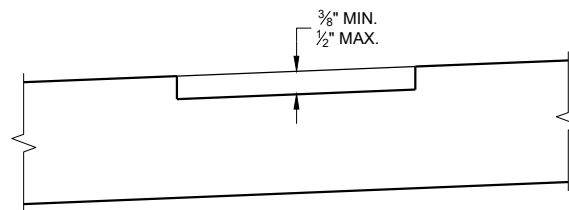
- ① CENTERLINE GROOVES MAY BE OMITTED IN AREAS WITH HIGH CONCENTRATIONS OF DRIVEWAYS. WHEN DIRECTED BY THE ENGINEER.



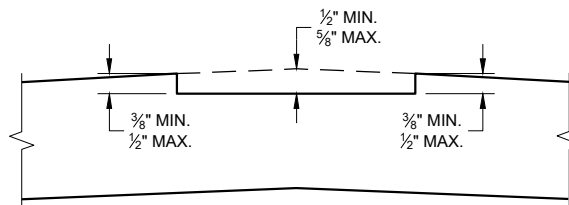
ISOMETRIC



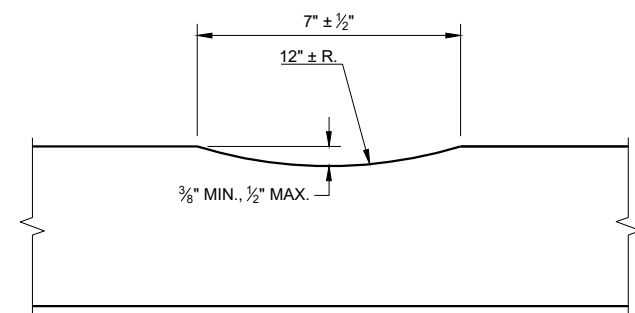
CENTERLINE GROOVES ON TWO-WAY ROADWAYS



SECTION B - B
SUPERELEVATED ROADWAY



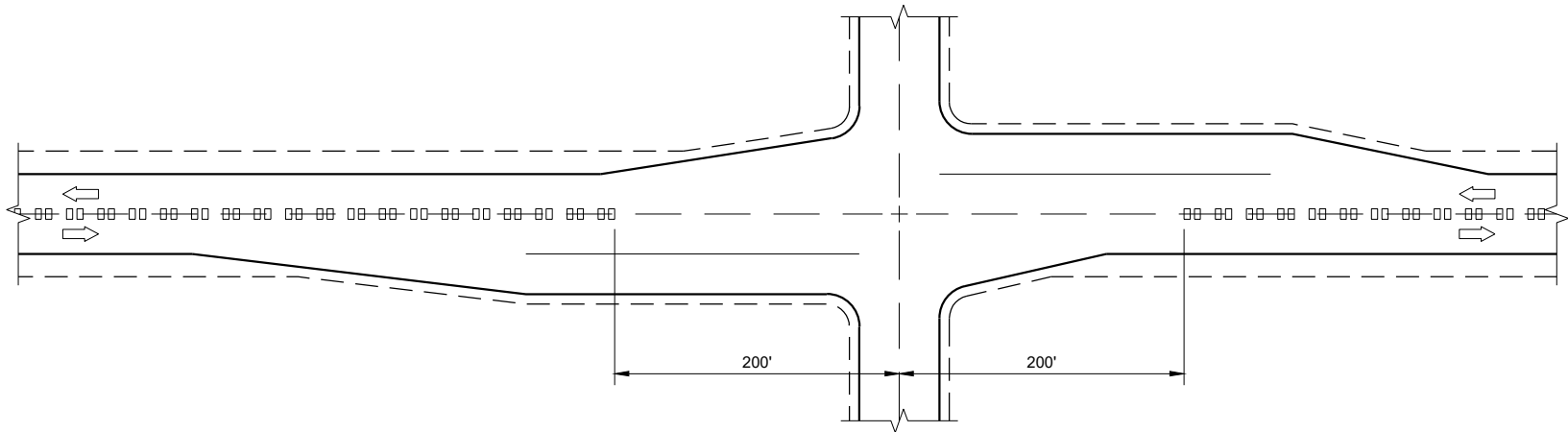
SECTION B - B
CROWNED ROADWAY



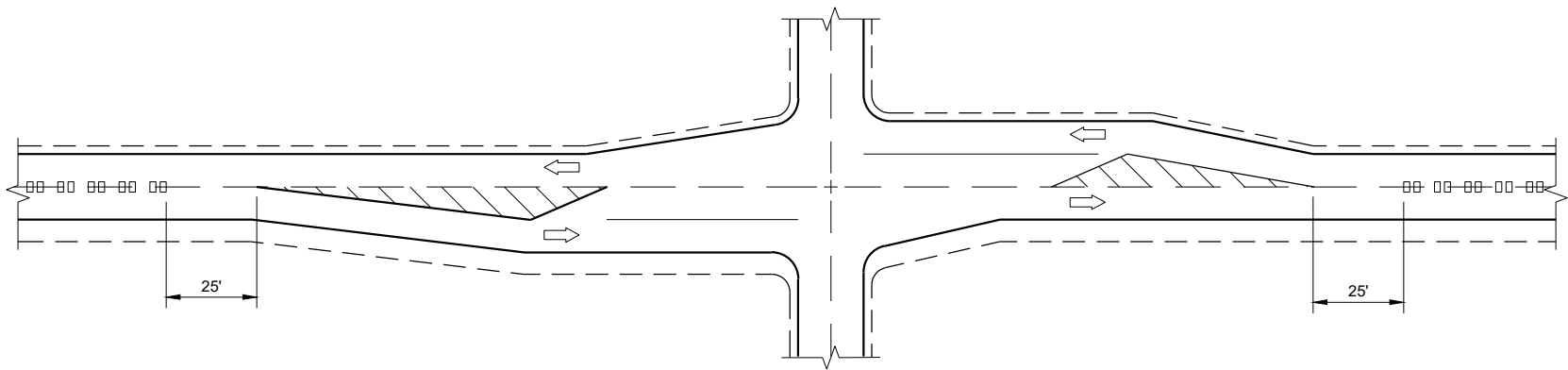
SECTION A - A

**2-LANE RURAL
CENTER LINE RUMBLE STRIP,
MILLING**

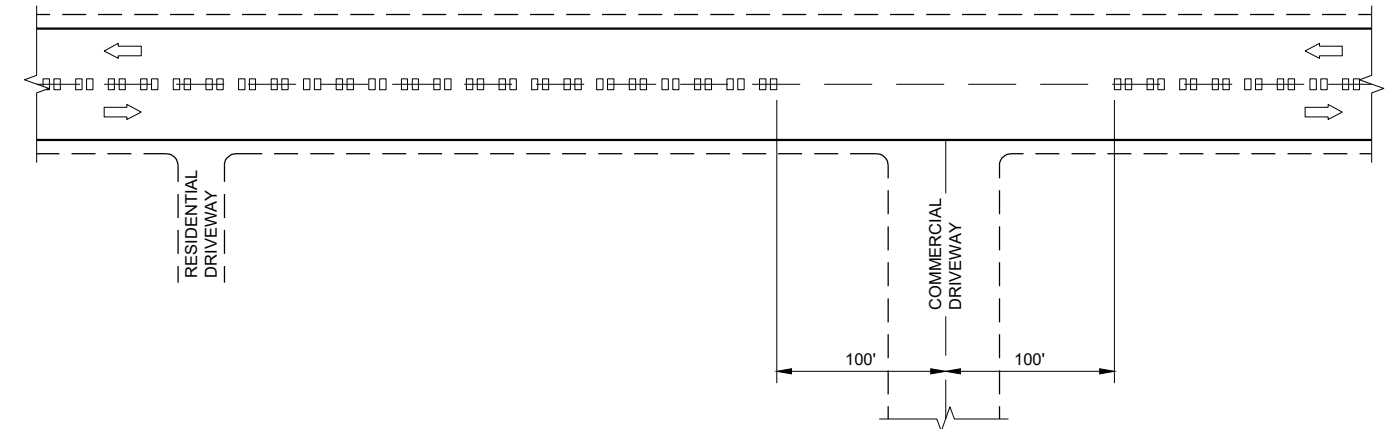
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



CENTERLINE GROOVES AT INTERSECTIONS



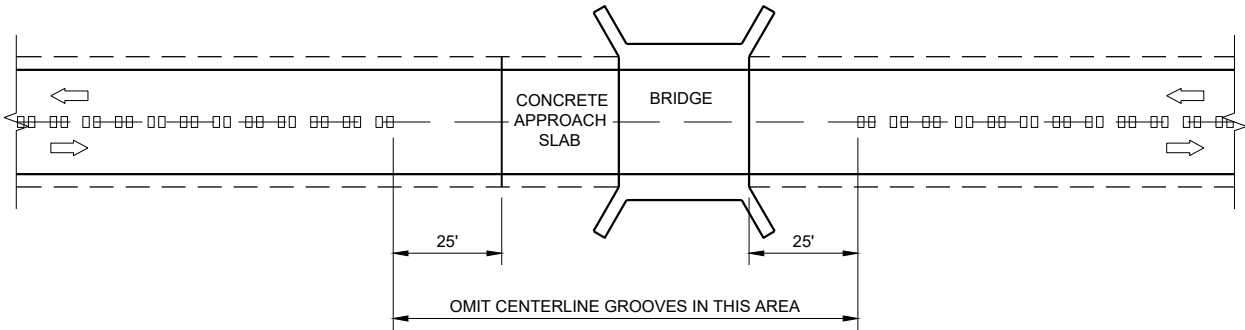
CENTERLINE GROOVES AT INTERSECTIONS
(WITH LEFT TURN LANES)



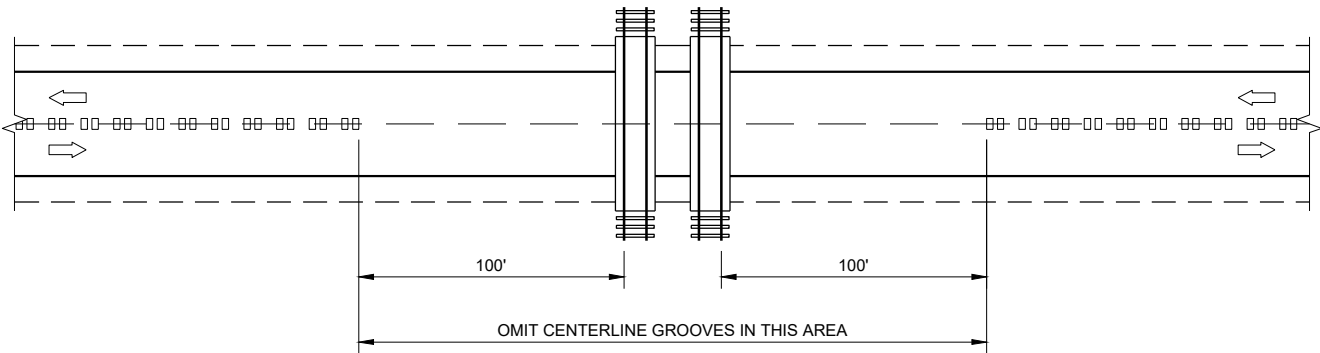
CENTERLINE GROOVES AT DRIVEWAYS^①

GENERAL NOTES

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



CENTERLINE GROOVES AT BRIDGES

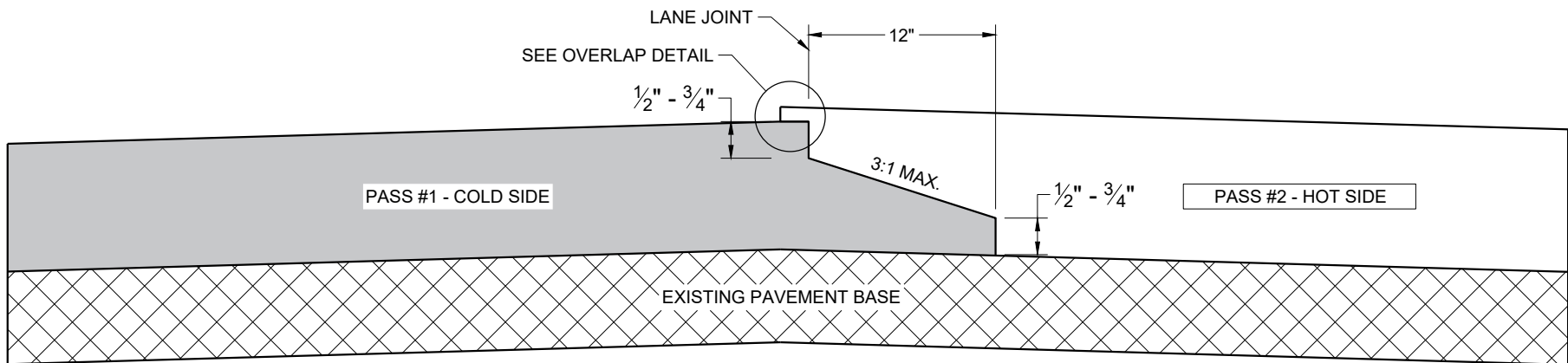


CENTERLINE GROOVES AT RAILROADS

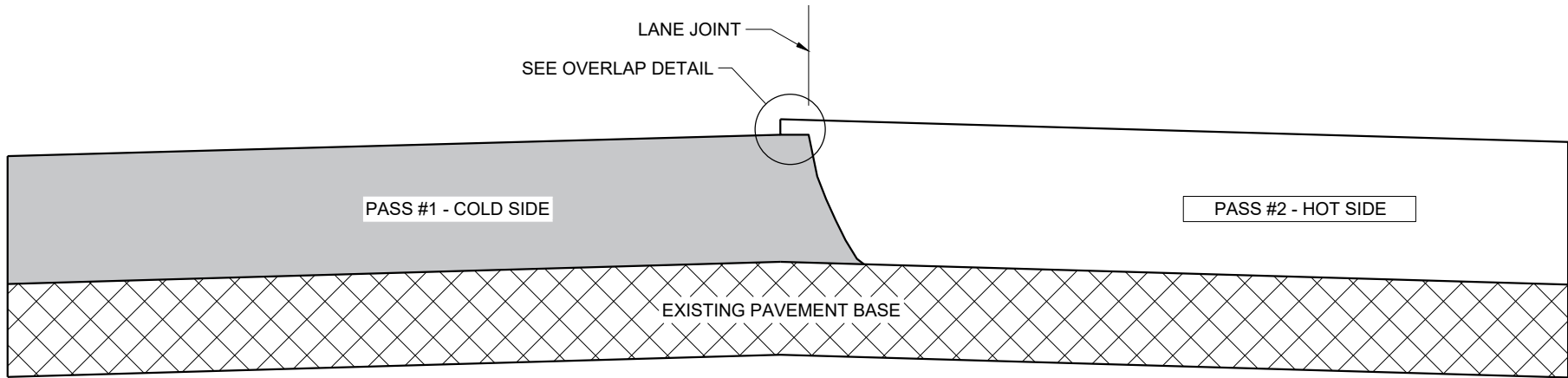
2-LANE RURAL
CENTERLINE RUMBLE STRIP,
MILLING

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

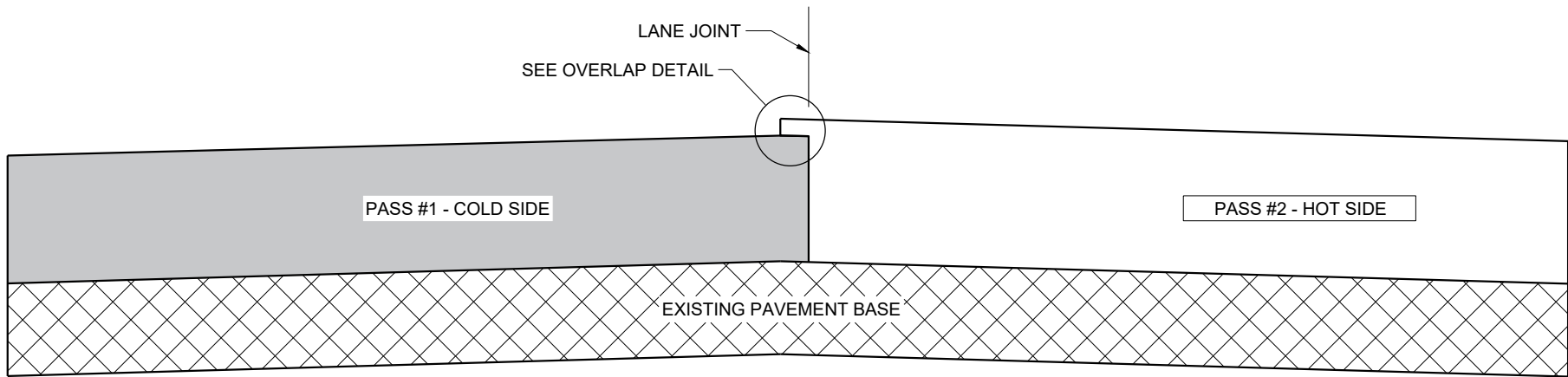
APPROVED
7/2018
DATE
/S/ Rodney Taylor
ROADWAY STANDARDS DEVELOPMENT
ENGINEER
FHWA



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



**TYPICAL PAVEMENT CROSS SECTION
VERTICAL LONGITUDINAL JOINT**



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

GENERAL NOTES

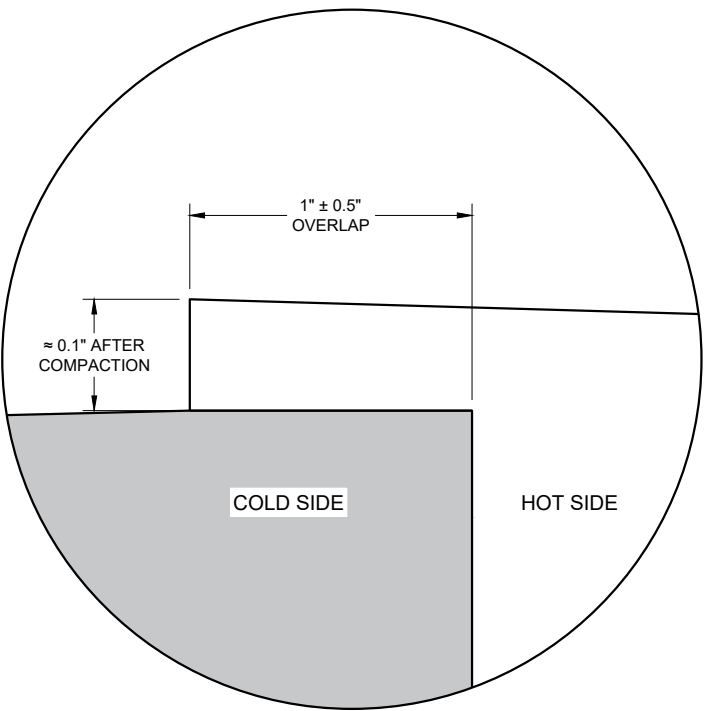
IN ADDITION TO THE DETAILS PROVIDED IN THIS DRAWING, CONFORM TO STANDARD SPECIFICATION 450.3.2.8 FOR WHEN A NOTCHED WEDGE JOINT IS REQUIRED AND FOR GENERAL JOINT CONSTRUCTION REQUIREMENTS.

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

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

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

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

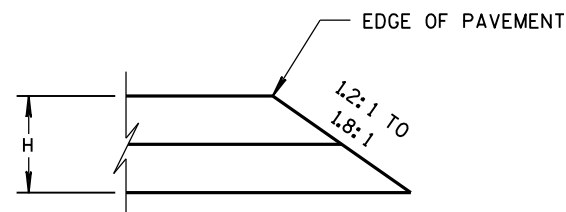


OVERLAP DETAIL (TYPICAL)

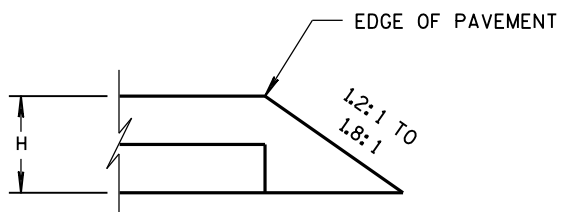
HMA LONGITUDINAL JOINTS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

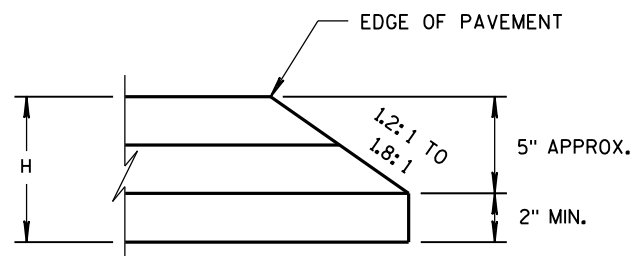
APPROVED
February 2020 /S/ Steven Hefel
DATE HMA PAVEMENT ENGINEER
FHWA



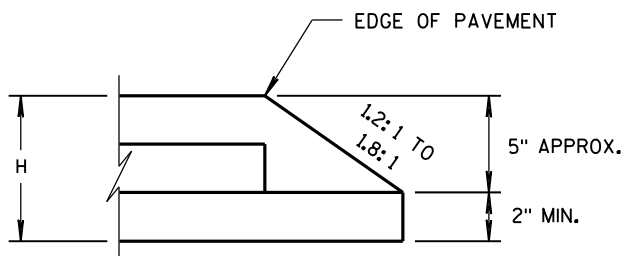
CONSTRUCTED WITH FINAL TWO LAYERS
FOR H 5" OR LESS



CONSTRUCTED WITH FINAL LAYER
FOR H 5" OR LESS

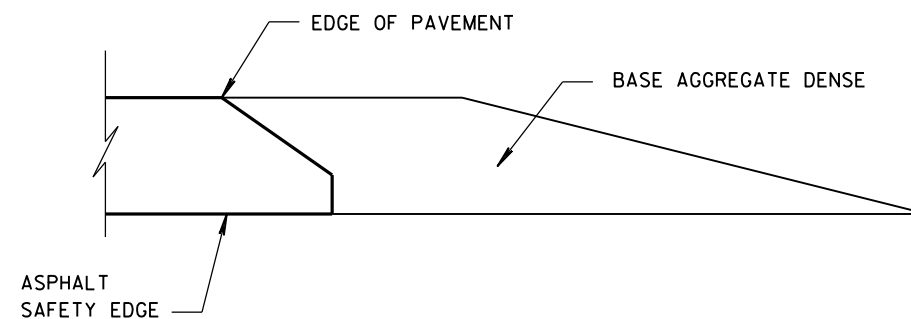


CONSTRUCTED WITH FINAL TWO LAYERS
FOR H GREATER THAN 5"



CONSTRUCTED WITH FINAL LAYER
FOR H GREATER THAN 5"

HMA PAVEMENT AND HMA OVERLAYS



FINISHED SHOULDER AGGREGATE PLACEMENT

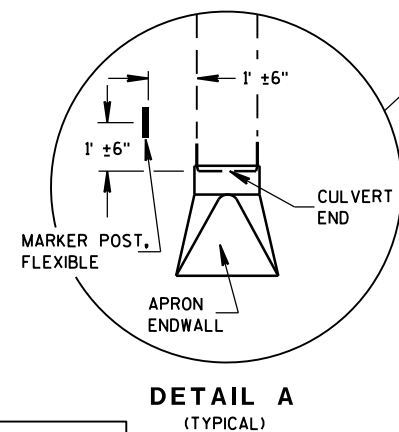
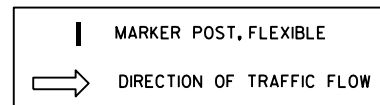
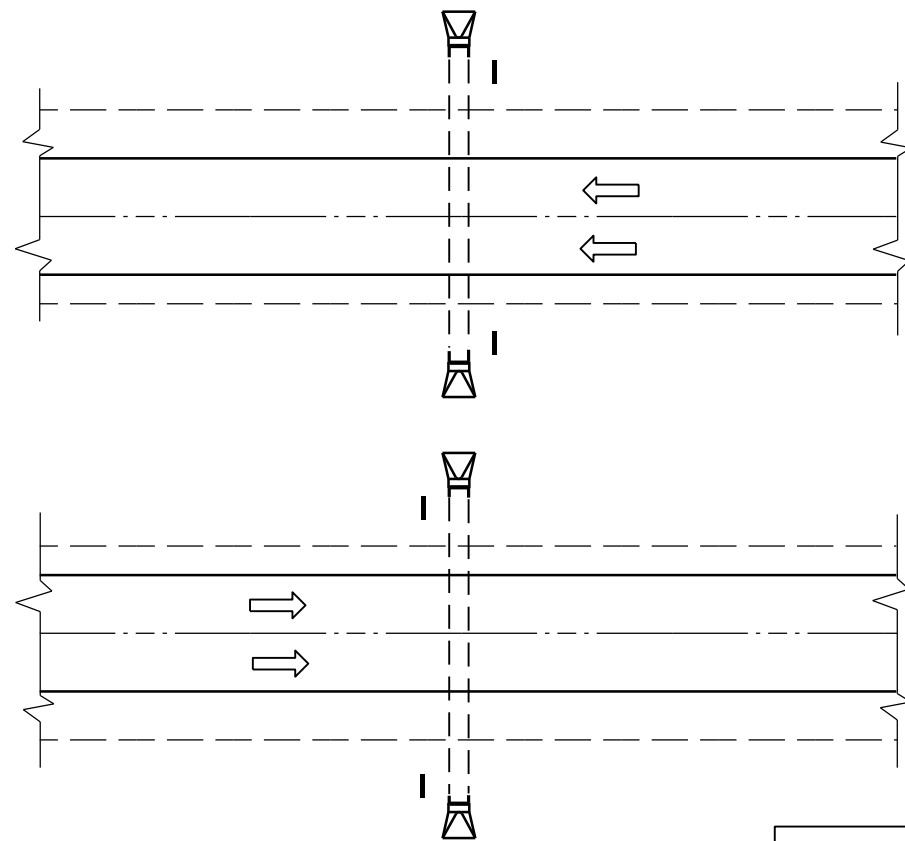
SAFETY EDGE_{SM}

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
11/30/2012
DATE
FHWA

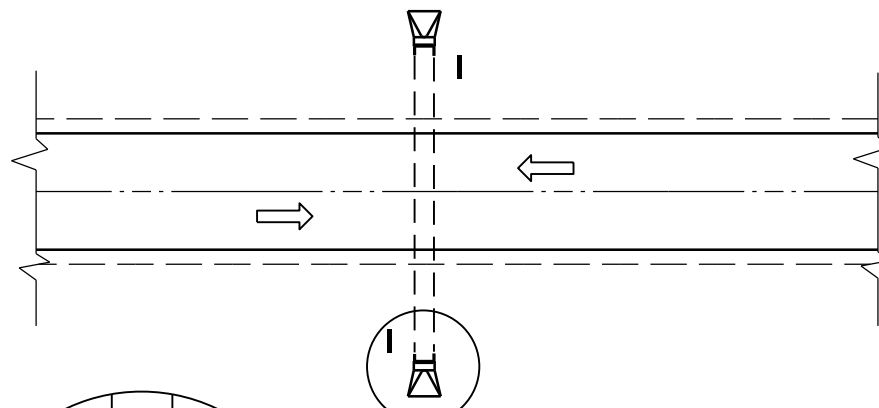
/s/ Jerry H. Zogg
ROADWAY STANDARDS DEVELOPMENT
ENGINEER

PLAN VIEW
DIVIDED HIGHWAY



DETAIL A
(TYPICAL)

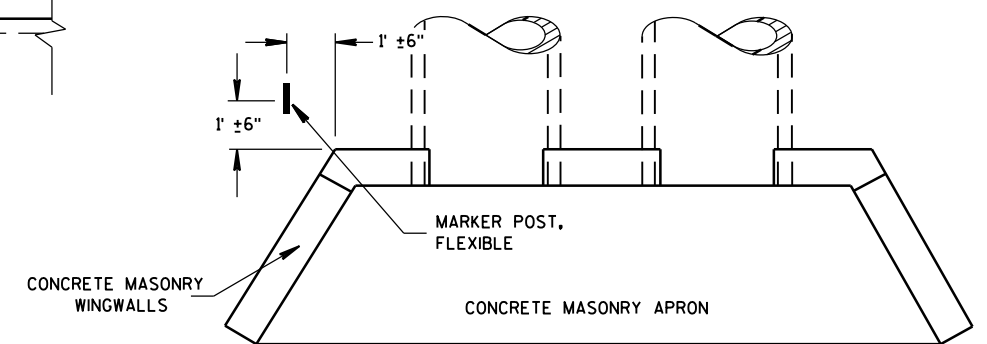
PLAN VIEW
UNDIVIDED HIGHWAY



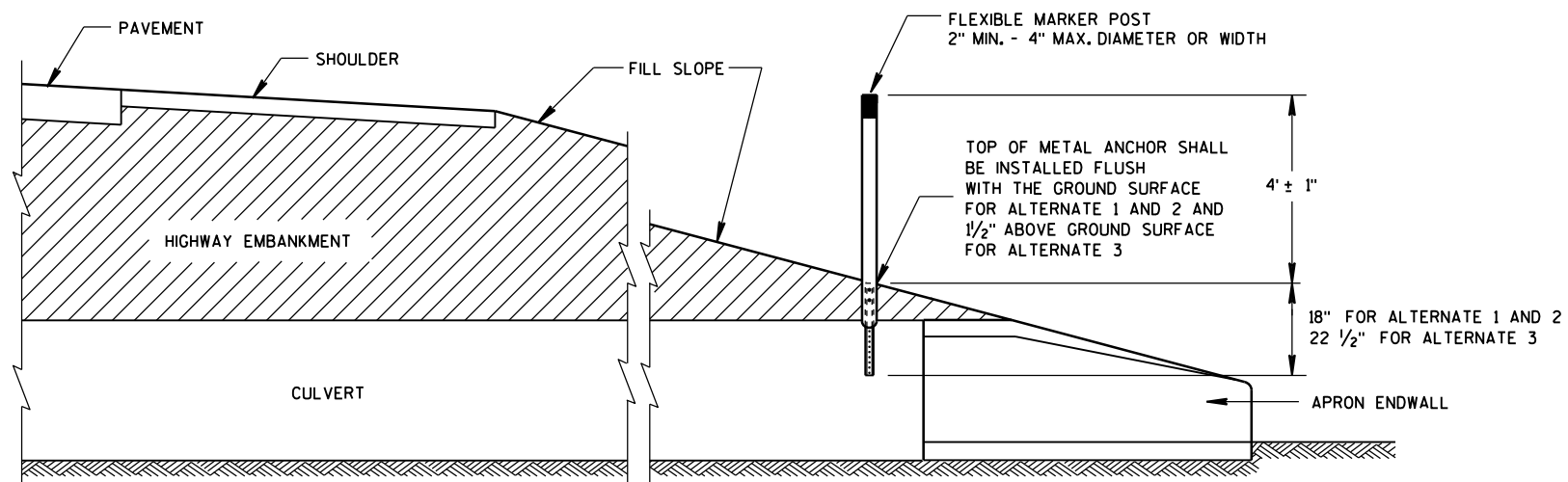
FLEXIBLE MARKER POST LOCATION

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.



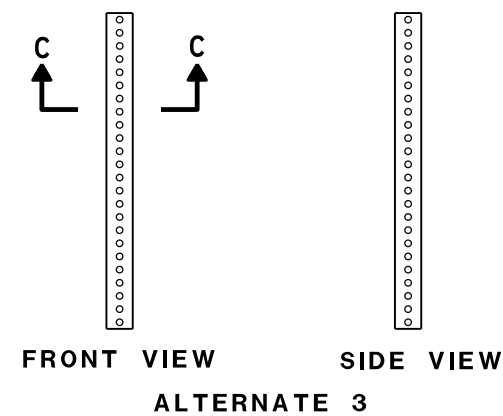
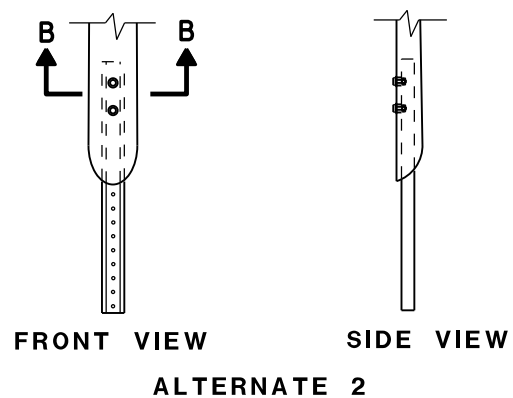
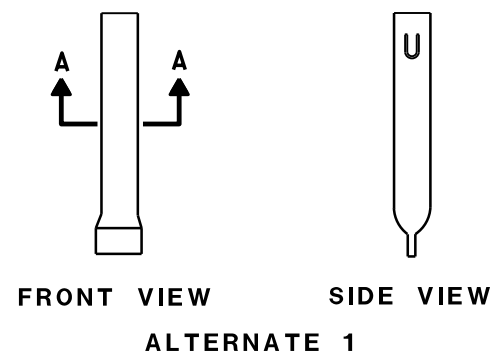
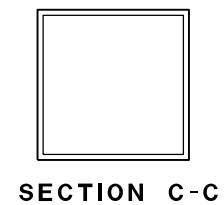
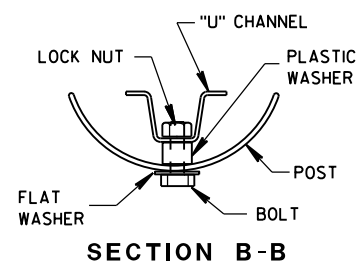
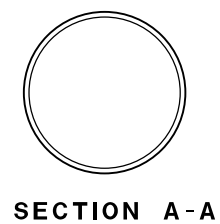
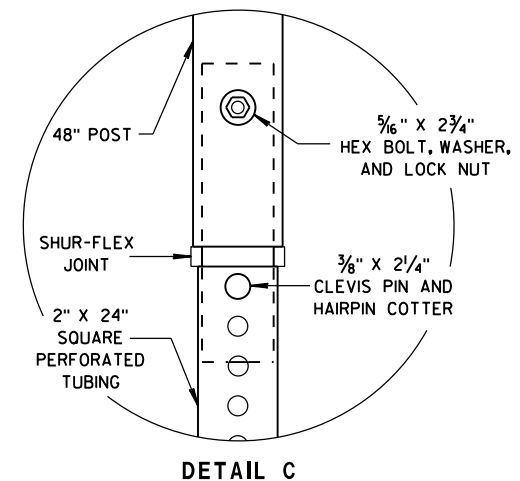
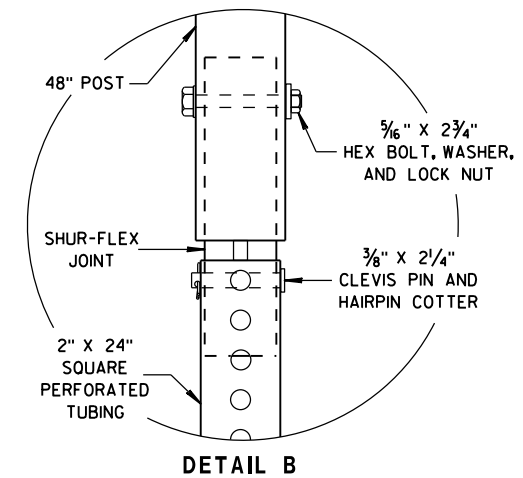
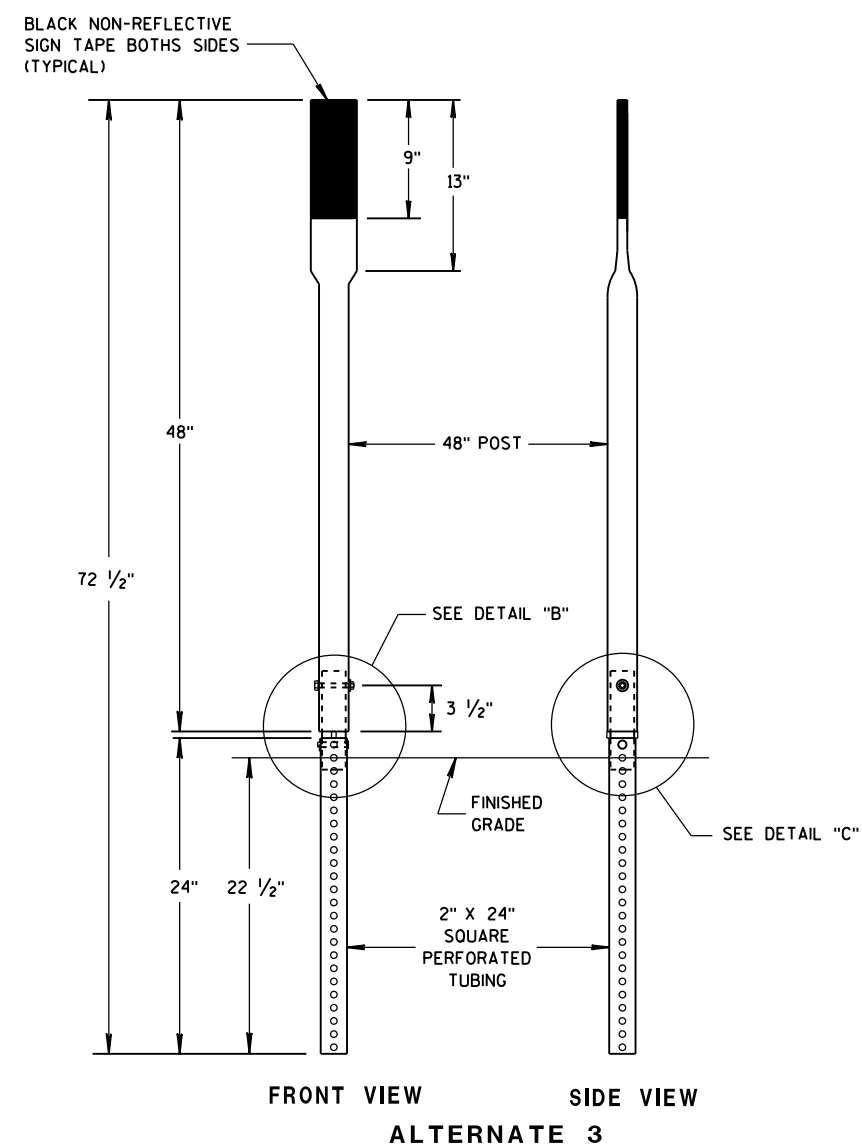
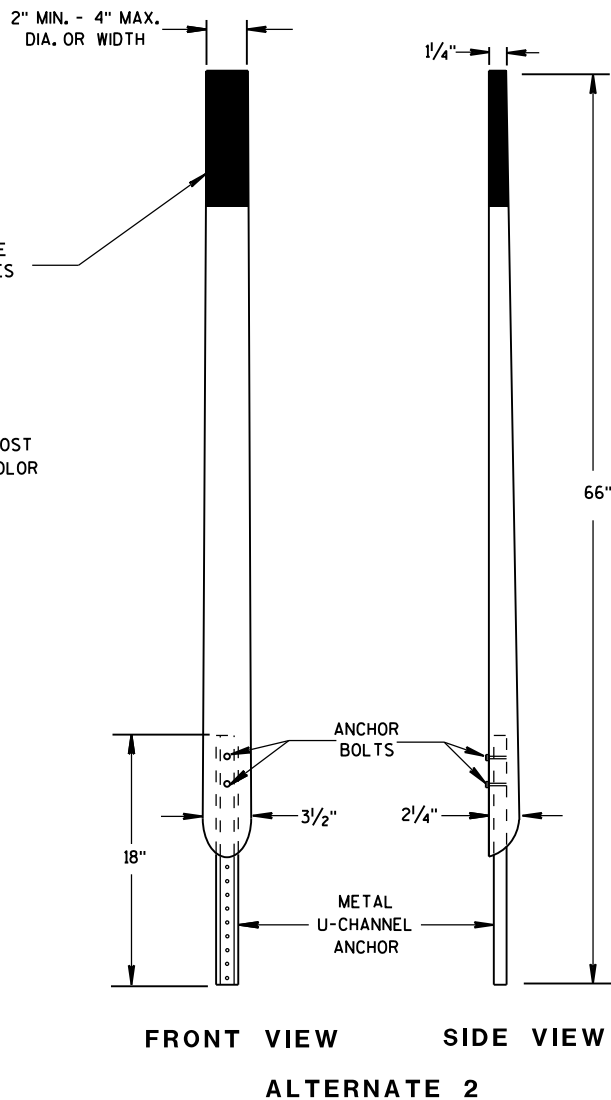
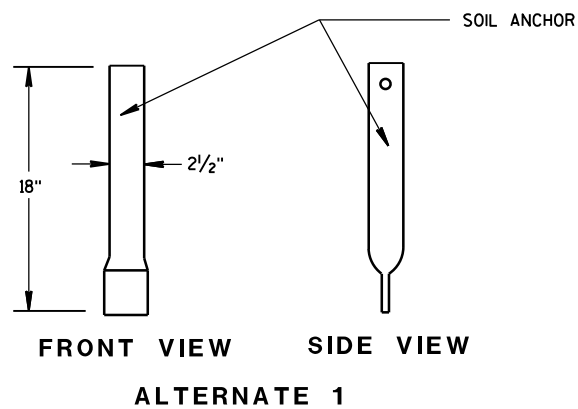
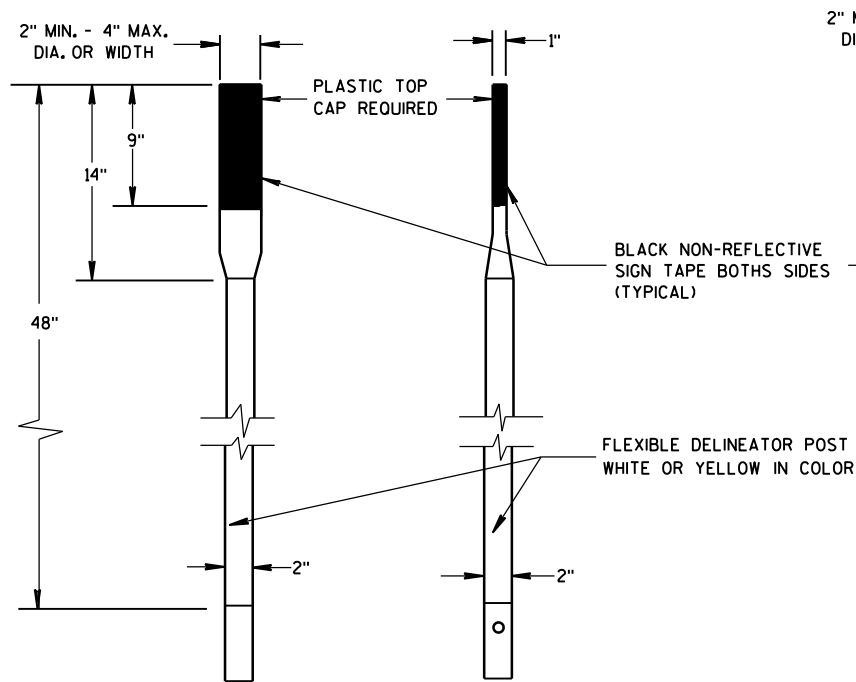
PLAN VIEW
CONCRETE MASONRY ENDWALLS FOR
CULVERT PIPE AND PIPE ARCH



CROSS SECTION
FLEXIBLE MARKER POST

FLEXIBLE MARKER POST
FOR CULVERT END

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

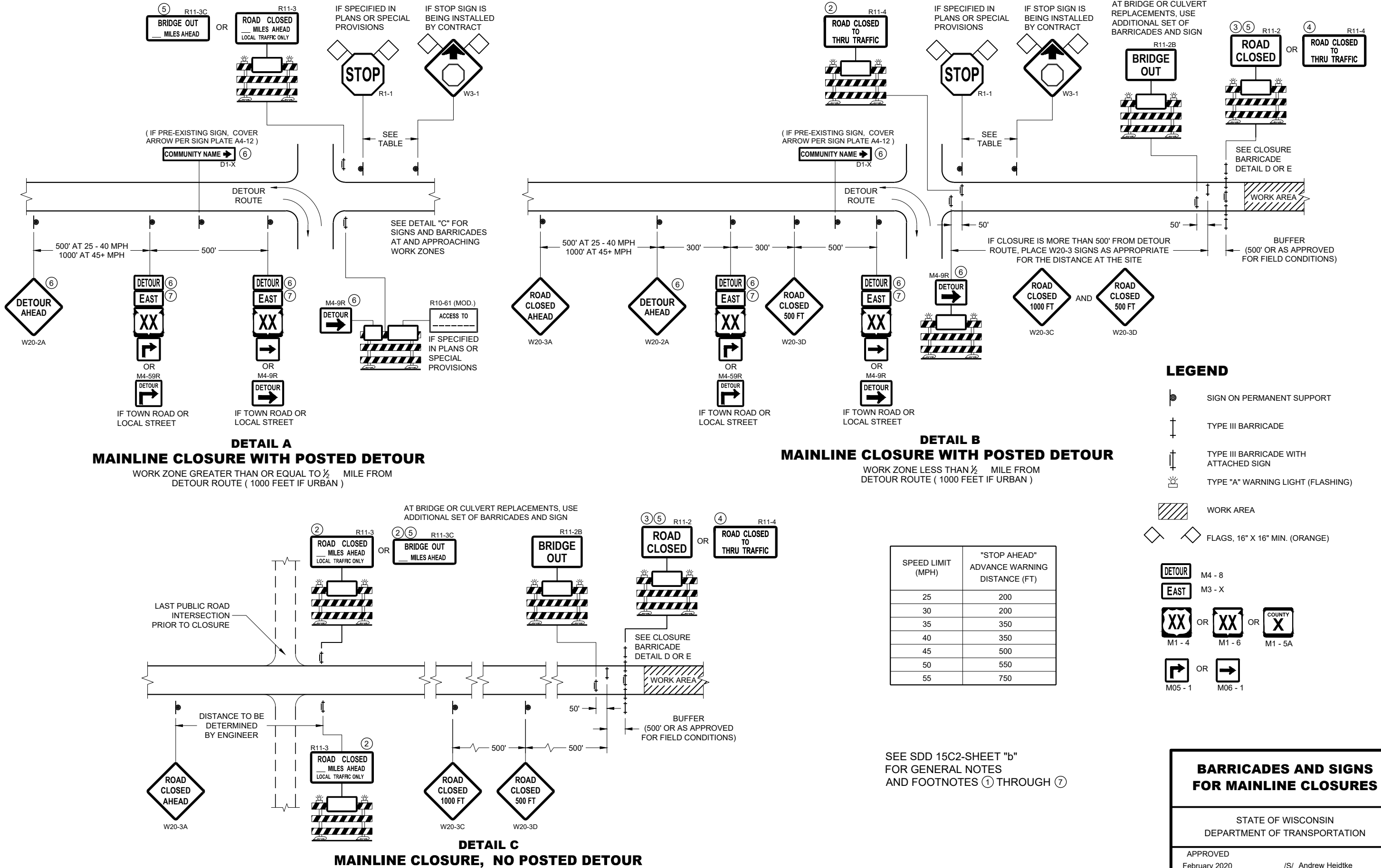


FLEXIBLE MARKER POST FOR CULVERT END

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
10/1/2012
DATE
FHWA

/S/ Travis Feltes
STATE TRAFFIC ENGINEER OF DESIGN

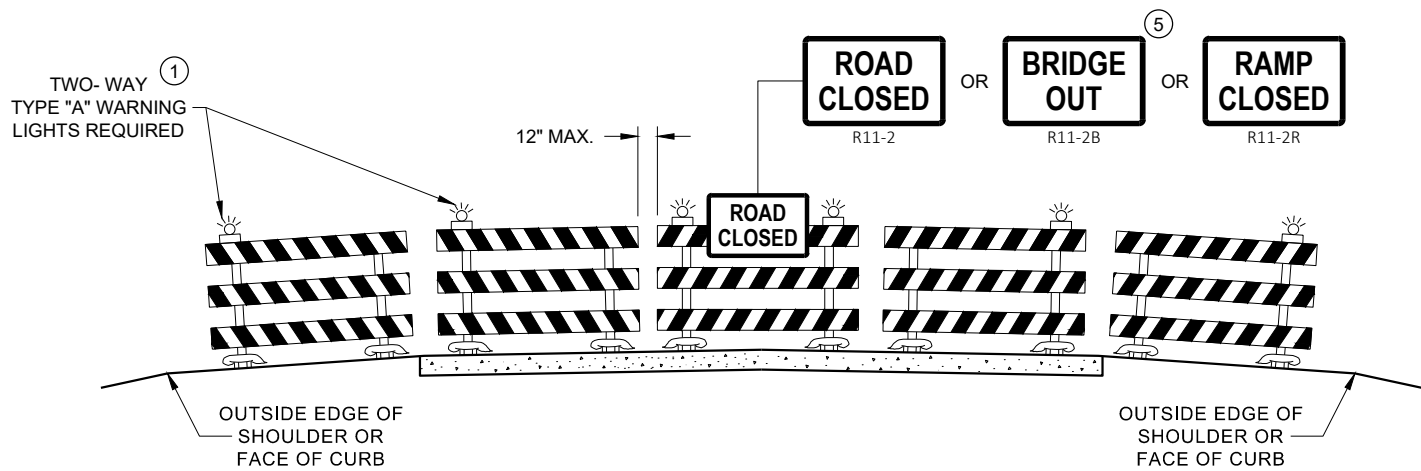


**BARRICADES AND SIGNS
FOR MAINLINE CLOSURES**

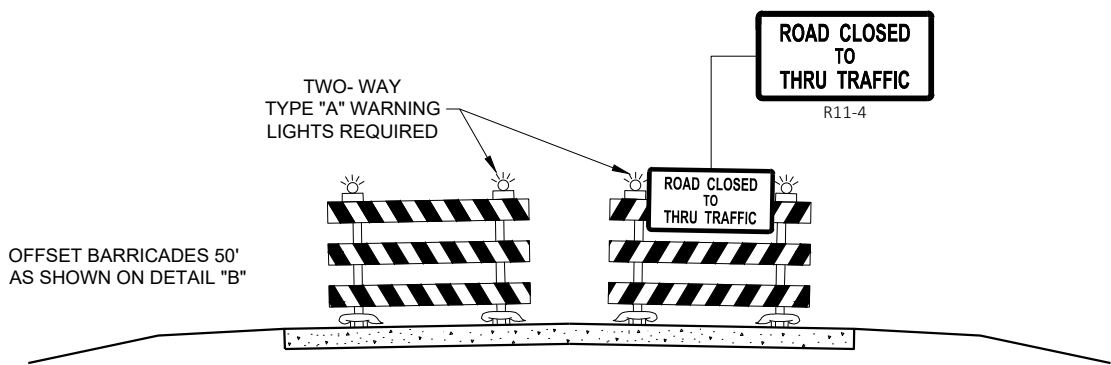
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

FHWA



DETAIL D
ROAD CLOSURE BARRICADE DETAIL
APPROACH VIEW



DETAIL E
LANE CLOSURE BARRICADE DETAIL
APPROACH VIEW

SEE SDD 15C2 - SHEET "a" FOR LEGEND

GENERAL NOTES

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

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

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

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

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

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

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

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

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

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

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

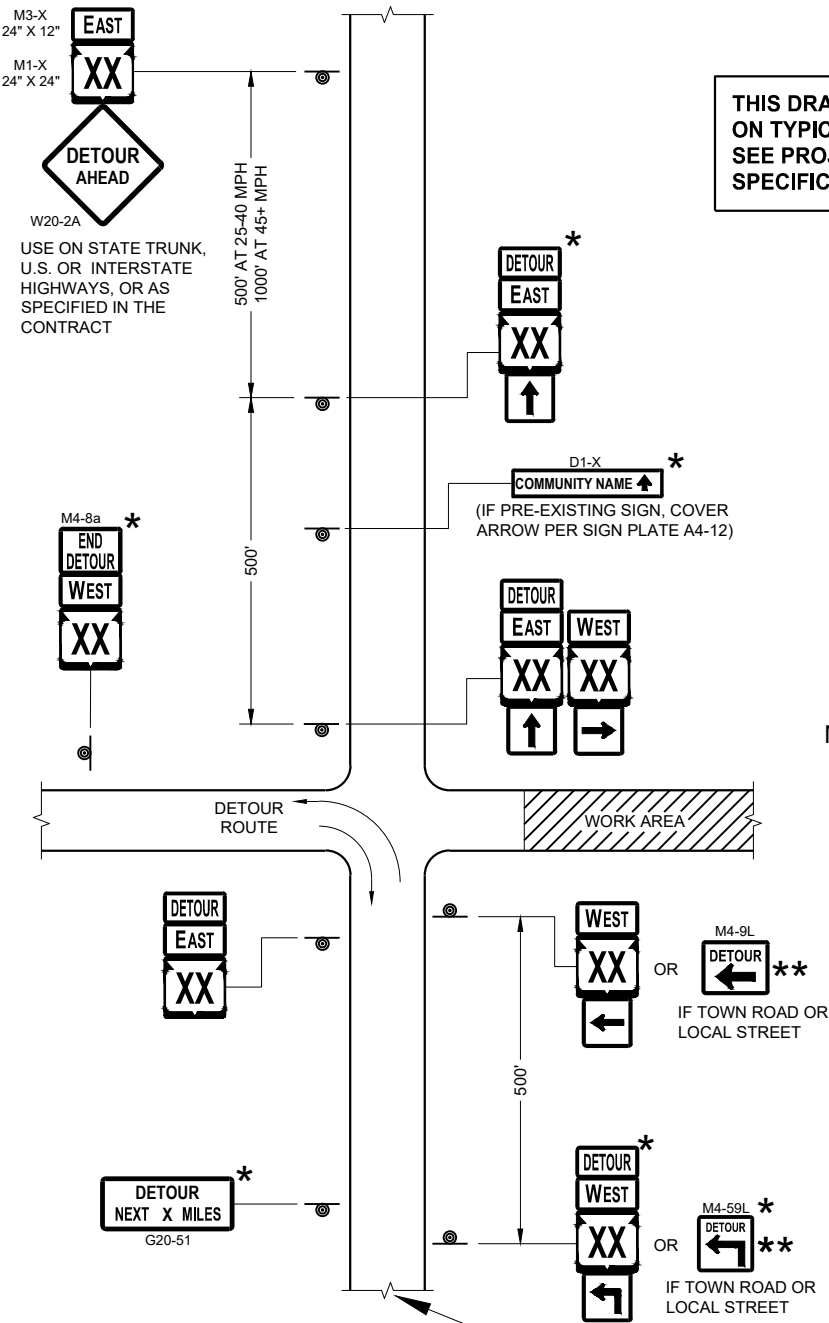
- 1 TWO WARNING LIGHTS SHALL BE PROVIDED ON THE CENTER BARRICADE AND A MINIMUM OF ONE WARNING LIGHT SHALL BE PROVIDED ON EACH OF THE OTHER BARRICADES WITHIN THE ROADWAY LIMITS. SPACING OF THE WARNING LIGHTS SHALL BE UNIFORM TO THE EDGE OF ROADWAY AS SHOWN (APPROX. 8 FOOT LIGHT SPACING).
- 2 THESE SIGNS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

**BARRICADES AND SIGNS
FOR
VARIOUS CLOSURES**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

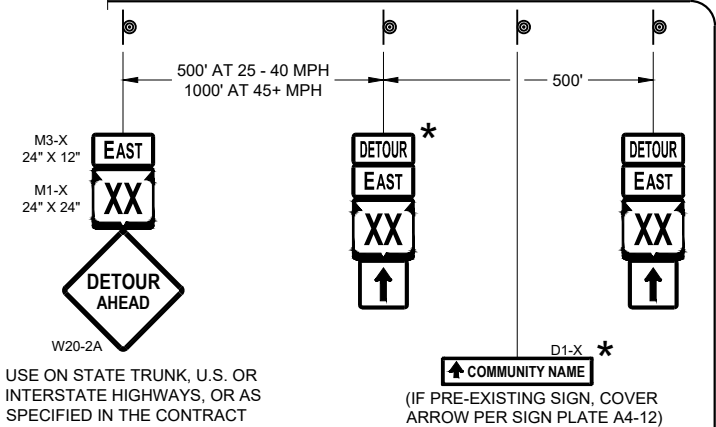
FHWA



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

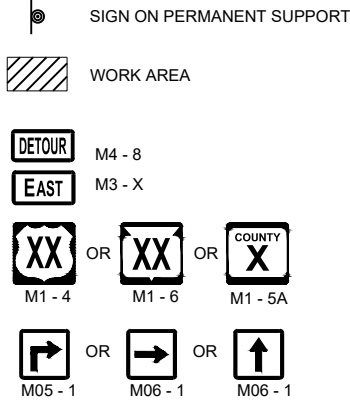
THIS DRAWING PROVIDES GENERAL GUIDANCE
ON TYPICAL DETOUR SIGN LAYOUT AND SPACING.
SEE PROJECT DETOUR SIGNING SHEETS FOR
SPECIFIC DETAILS FOR EACH PROJECT.

MATCH POINT



DETAIL F
DETOUR SIGNING

LEGEND



GENERAL NOTES

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

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

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

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

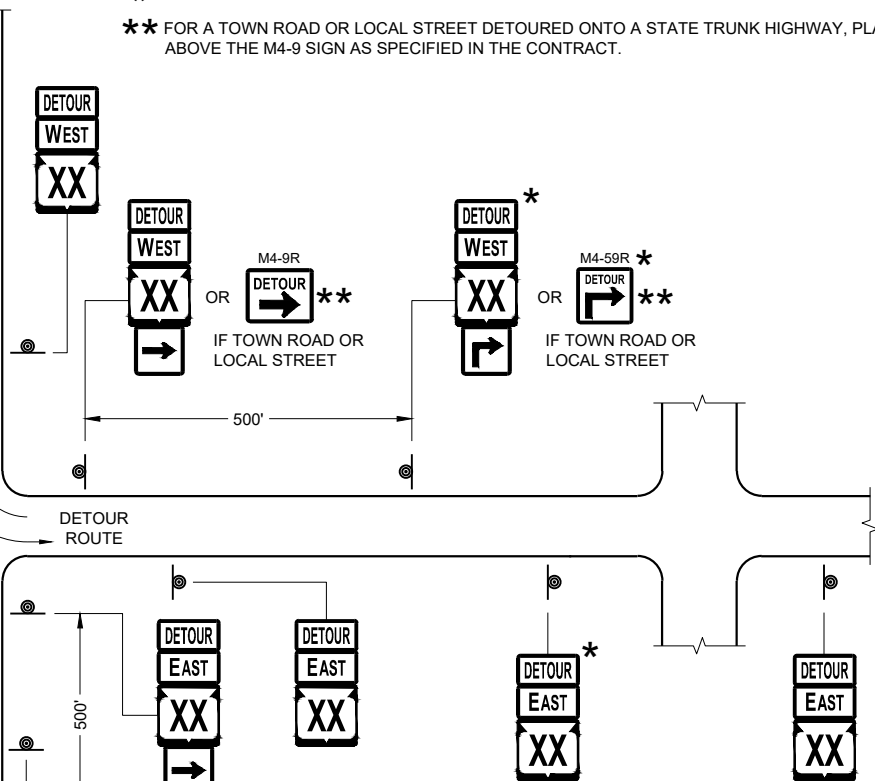
SIGNS THAT WILL BE IN PLACE LESS THAN 7 CONTINUOUS DAYS AND NIGHTS MAY BE MOUNTED ON PORTABLE SUPPORTS.

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

SIGN SIZES SHALL BE AS FOLLOWS:

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

- * OPTIONAL SIGNS. SEE SPECIFIC PROJECT DETOUR SIGNING DETAIL SHEETS.
- ** FOR A TOWN ROAD OR LOCAL STREET DETOURED ONTO A STATE TRUNK HIGHWAY, PLACE A ROAD NAME PLAQUE ABOVE THE M4-9 SIGN AS SPECIFIED IN THE CONTRACT.



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

DETOUR SIGNING
FOR MAINLINE CLOSURES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

FHWA

GENERAL NOTES

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

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

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

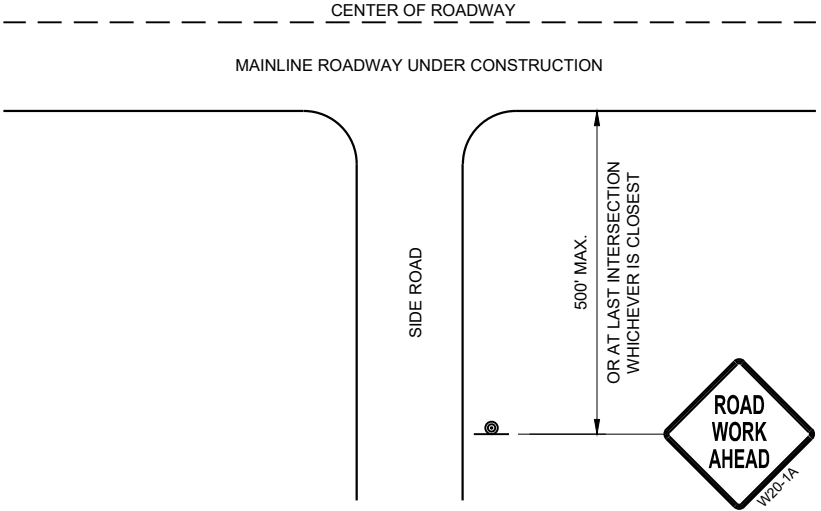
SIGNS THAT WILL BE IN PLACE LESS THAN SEVEN CONTINUOUS DAYS AND NIGHTS MAY BE MOUNTED ON PORTABLE SUPPORTS.

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

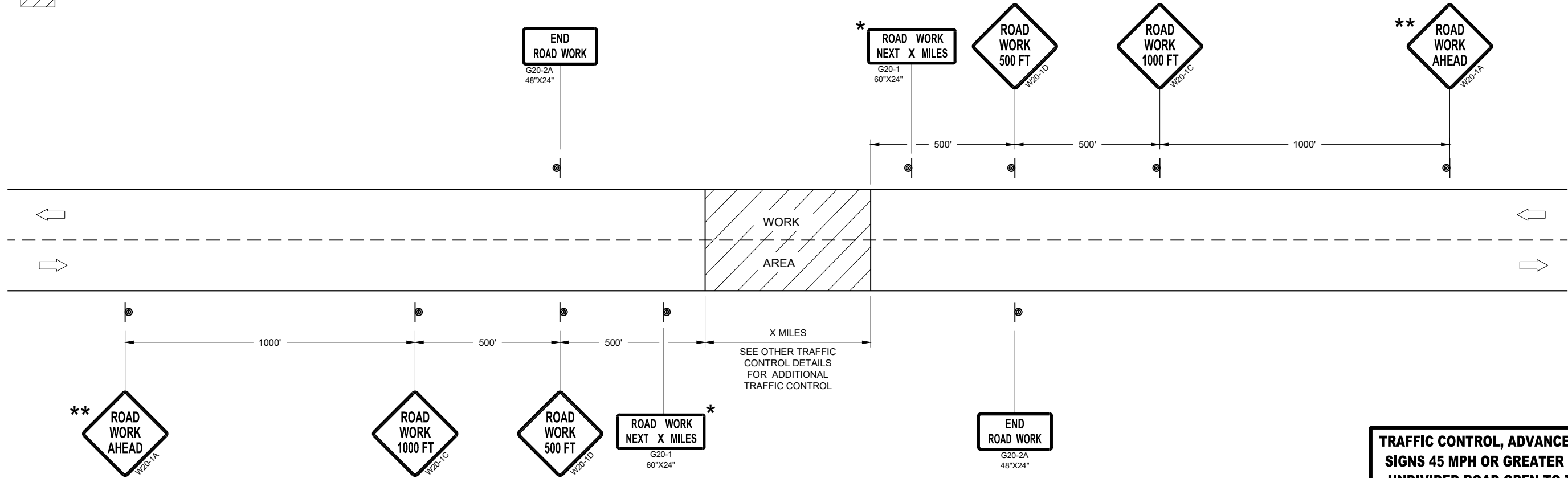
- * OMIT G20-1 SIGNS IF LENGTH OF WORK AREA IS 2 MILES OR LESS
- ** PLACE AN ADDITIONAL W20-1A "ROAD WORK AHEAD" SIGN IF WORK AREA WITHIN THE PROJECT IS SEPARATED BY MORE THAN 2 MILES FROM PREVIOUS WORK AREA.

LEGEND

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



TYPICAL SIDE ROAD APPROACH
WARNING SIGN DETAIL



TRAFFIC CONTROL, ADVANCE WARNING SIGNS 45MPH OR GREATER

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

FHWA

GENERAL NOTES

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

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

ALL SIGNS ARE 48" X 48" UNLESS OTHERWISE NOTED. IF NECESSARY DUE TO SPACE CONSTRAINTS, 36"X36" SIGNS MAY BE USED INSTEAD OF 48" X 48" SIGNS.

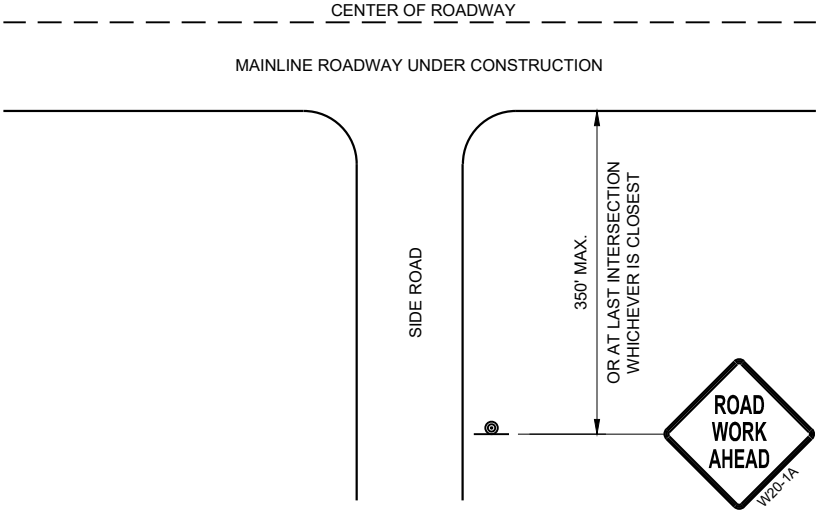
SIGNS THAT WILL BE IN PLACE LESS THAN SEVEN CONTINUOUS DAYS AND NIGHTS MAY BE MOUNTED ON PORTABLE SUPPORTS.

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

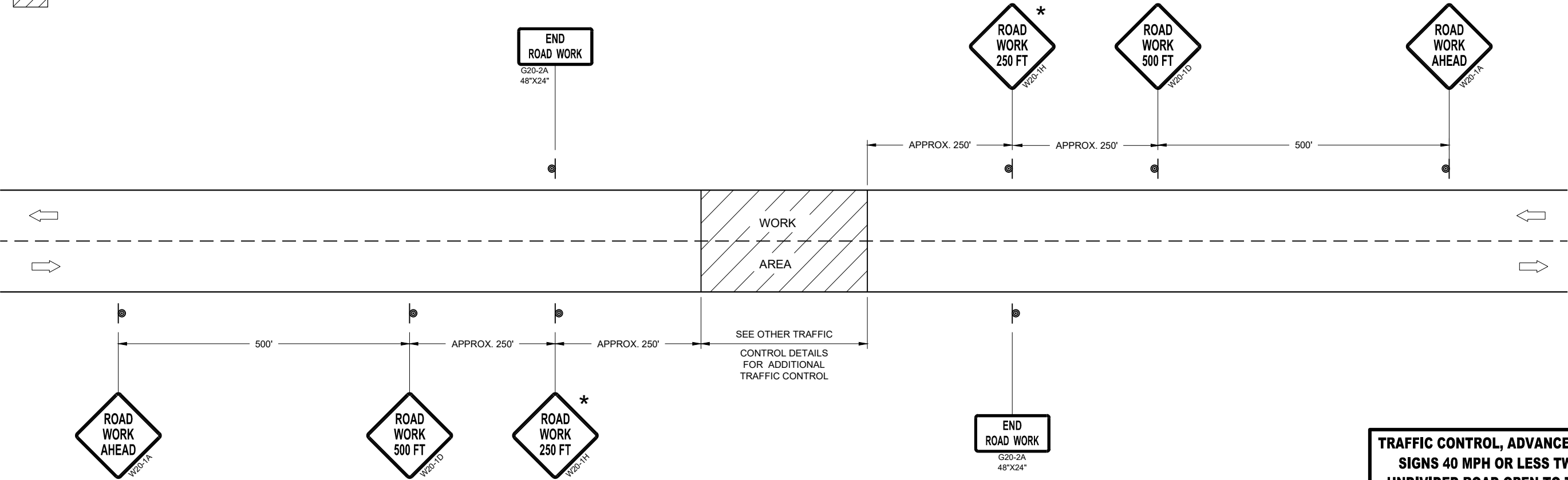
* THE THIRD W20-1 SIGN IS REQUIRED ONLY IF THERE IS AN INTERSECTION BETWEEN THE "ROAD WORK 500 FEET" SIGN AND THE WORK ZONE. ADJUST THE PLACEMENT OF THIS SIGN BASED ON INTERSECTION LOCATION AND OTHER FIELD CONDITIONS.

LEGEND

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



TYPICAL SIDE ROAD APPROACH
WARNING SIGN DETAIL

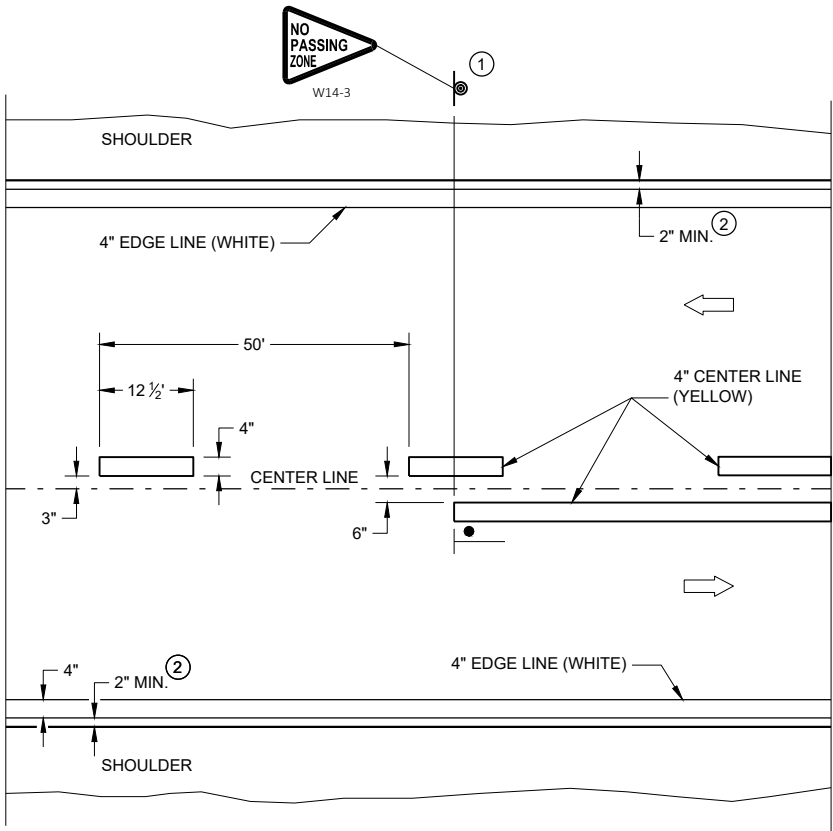


TRAFFIC CONTROL, ADVANCE WARNING SIGNS 40MPH OR LESS

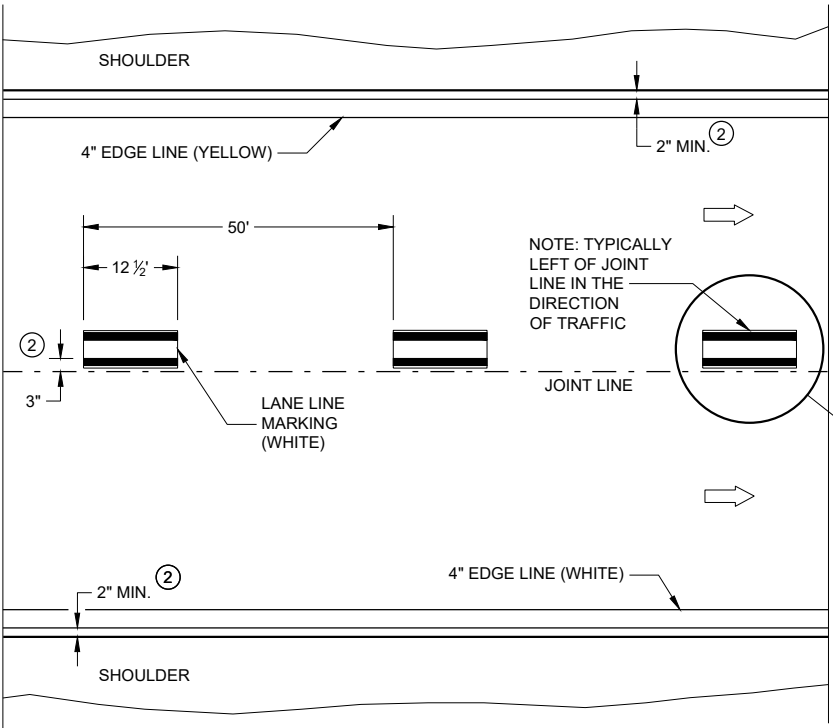
TRAFFIC CONTROL, ADVANCE WARNING
SIGNS 40 MPH OR LESS TWO-WAY
UNDIVIDED ROAD OPEN TO TRAFFICE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

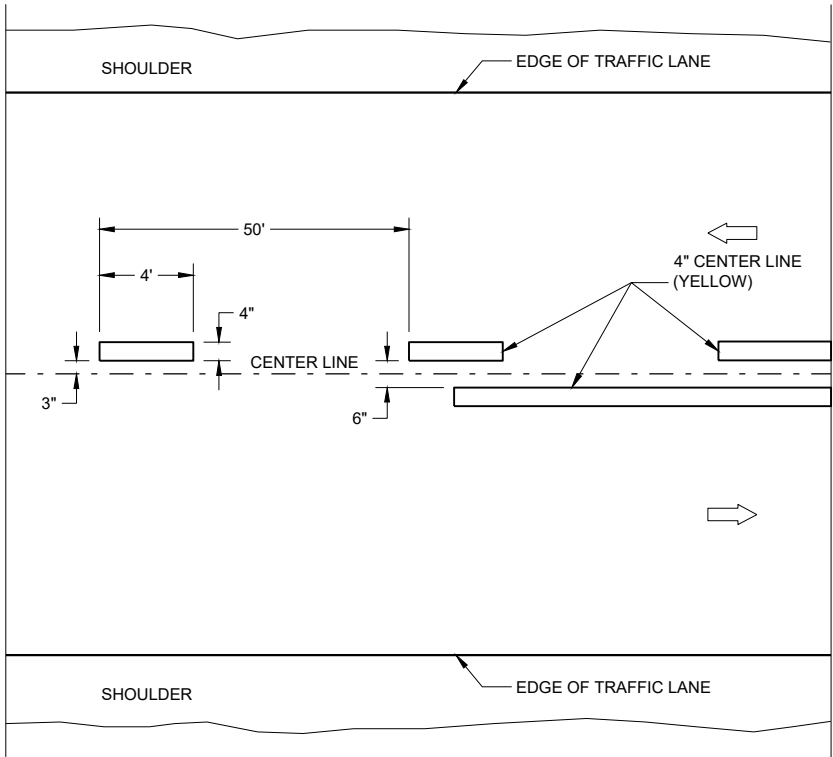


TWO WAY TRAFFIC

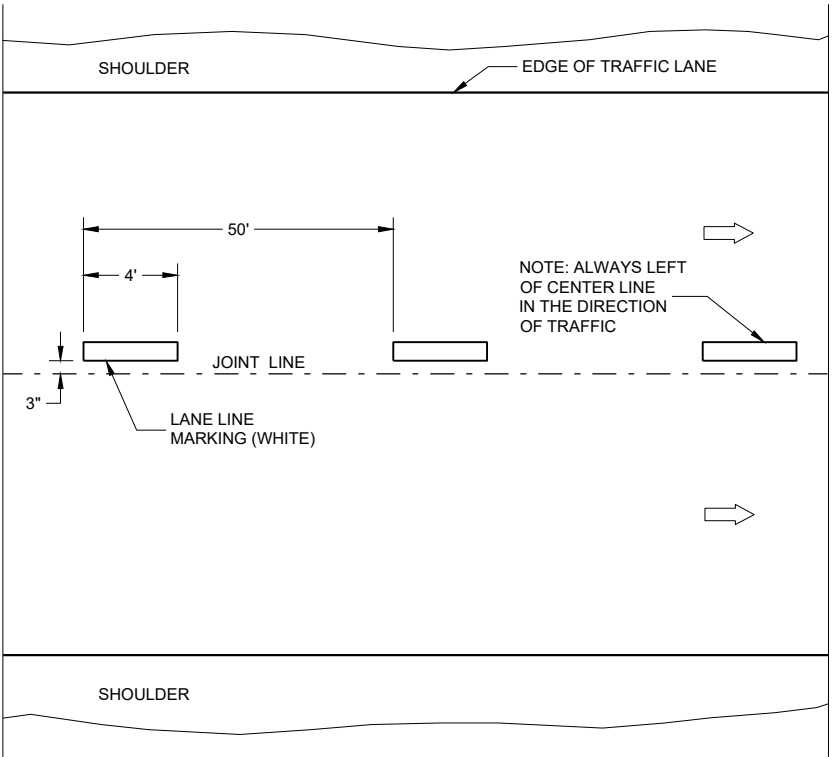


ONE WAY TRAFFIC

PERMANENT PAVEMENT MARKING



TWO WAY TRAFFIC



ONE WAY TRAFFIC

TEMPORARY PAVEMENT MARKING

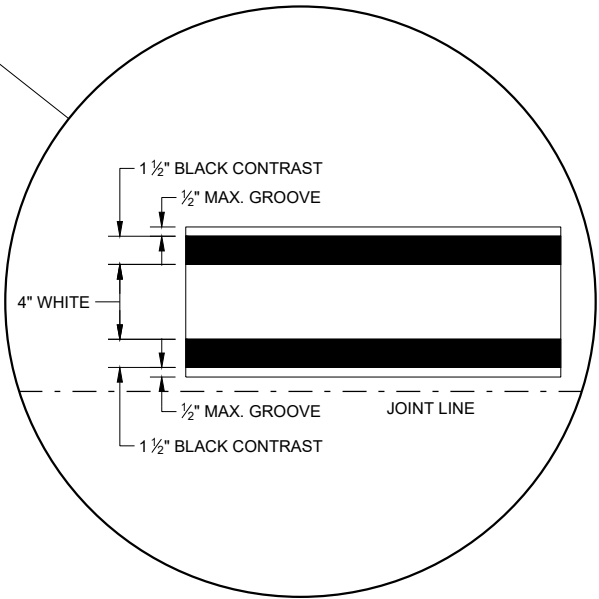
GENERAL NOTES

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

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

LEGEND

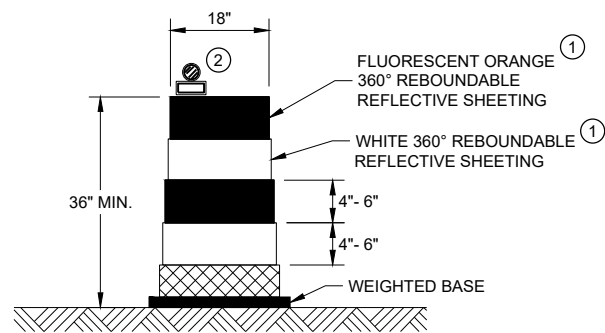
- "T" MARKING
- SIGN ON PERMANENT SUPPORT
- DIRECTION OF TRAFFIC



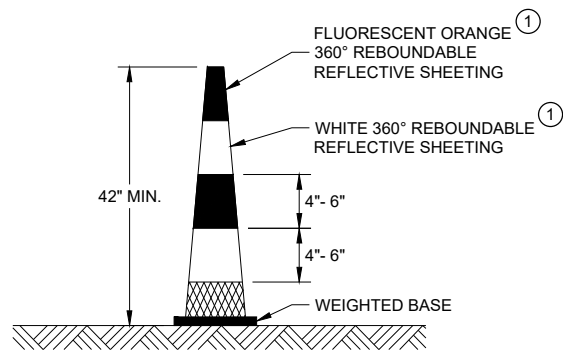
LONGITUDINAL MARKING (MAINLINE)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

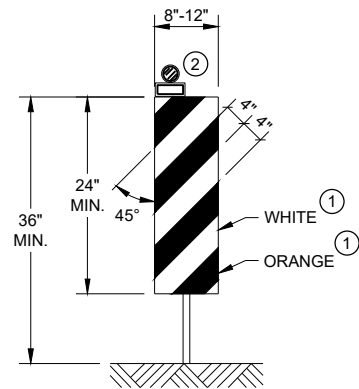


DRUM



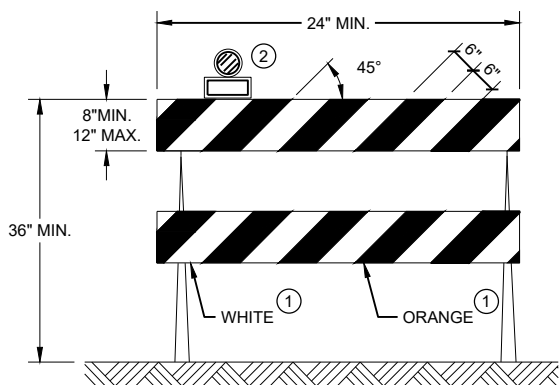
42" CONE

DO NOT USE IN TAPERS
½ SPACING OF DRUMS



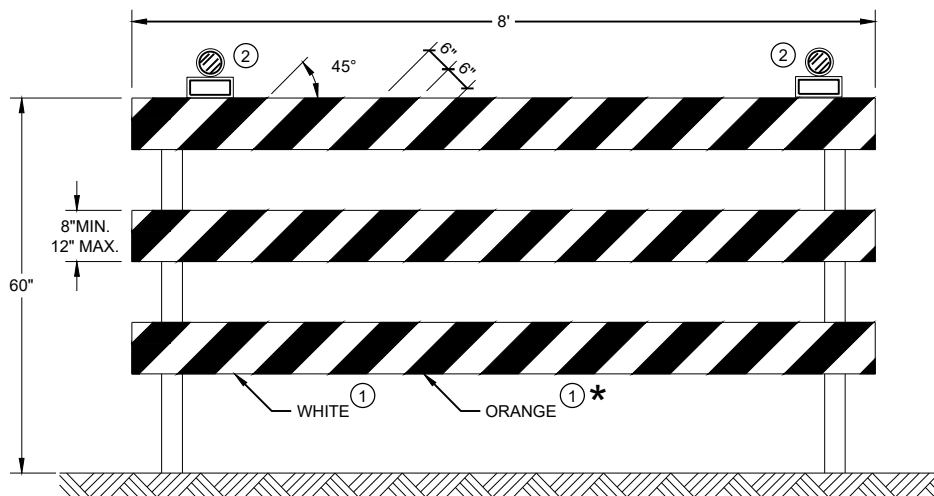
VERTICAL PANEL

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



TYPE II BARRICADE

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



TYPE III BARRICADE

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

* IF USED FOR A PERMANENT APPLICATION USE RED SHEETING.

GENERAL NOTES

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

CHANNELIZING DEVICES
DRUMS, CONES, BARRICADES
AND VERTICAL PANELS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

FHWA

LEGEND

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

GENERAL NOTES

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

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

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

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

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

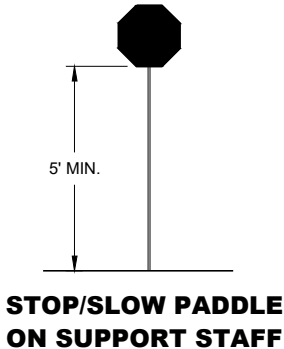
WHEN A SIDE ROAD OR RAMP INTERSECTS THE FACILITY ON WHICH THE WORK IS BEING PERFORMED, ADDITIONAL TRAFFIC CONTROLS SHALL BE PROVIDED AS SPECIFIED IN THE PLANS AND/OR THE SPECIAL PROVISIONS OR AS APPROVED BY THE ENGINEER.

FLAGGING

- FLAGGERS SHALL BE IN SIGHT OF EACH OTHER OR IN DIRECT COMMUNICATION AT ALL TIMES. THEY SHALL BE EQUIPPED WITH STOP/SLOW PADDLES FASTENED ON SUPPORT STAFFS. WHEN THE FLAGGING OPERATION IS NOT IN EFFECT REMOVE TEMPORARY PORTABLE RUMBLE STRIPS PRIOR TO COVERING OR REMOVING ALL ADVANCE SIGNING.
- FOR MOVING WORK OPERATIONS, POST ADDITIONAL W20-7A FLAGGER SIGNS AT APPROXIMATELY 3,500' INTERVALS IN THE MOVING WORK OPERATION OR AS APPROVED BY THE ENGINEER.
 - SIGN NOT REQUIRED IF FLAGGING OPERATION OCCURS WITHIN A SIGNED ROAD WORK ZONE AREA.
- WHEN THE DISTANCE BETWEEN FLAGGERS EXCEEDS 2 MILES, A PILOT CAR IS REQUIRED. WHEN CURVES REDUCE SIGHT DISTANCE BELOW 400', A PILOT CAR IS REQUIRED.

TEMPORARY PORTABLE RUMBLE STRIPS

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

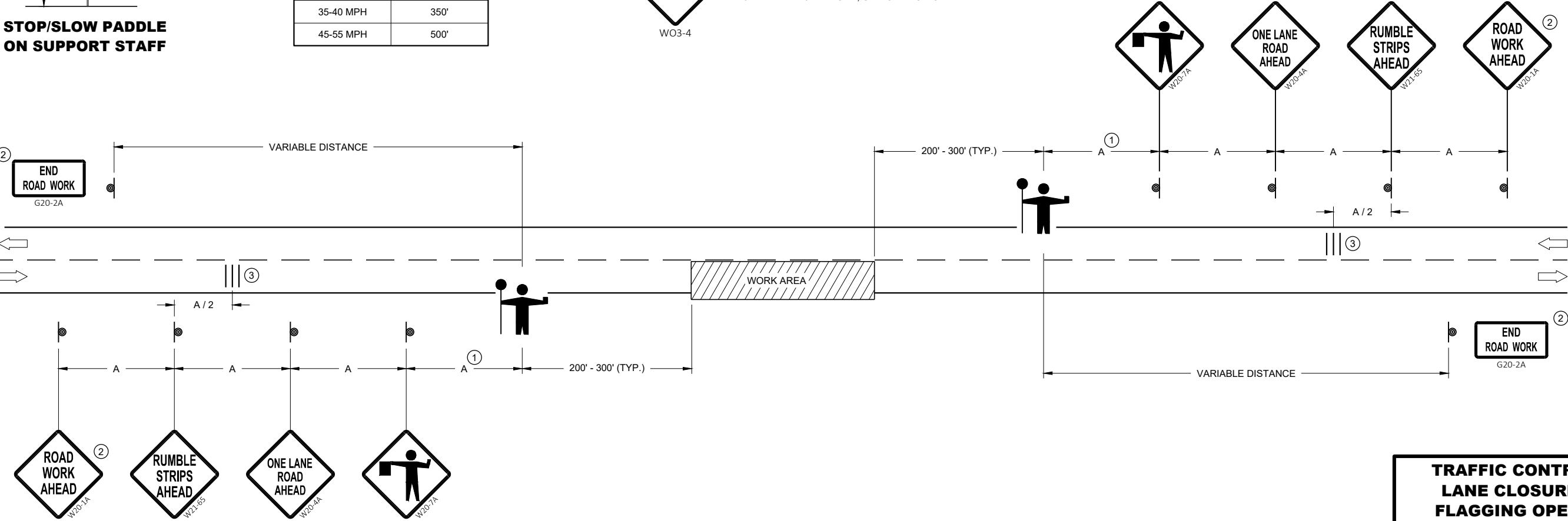


SIGN AND TEMPORARY RUMBLE STRIP ARRAY SPACING TABLE

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



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



TRAFFIC CONTROL FOR LANE CLOSURE WITH FLAGGING OPERATION

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

LEGEND

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

GENERAL NOTES

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

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

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

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

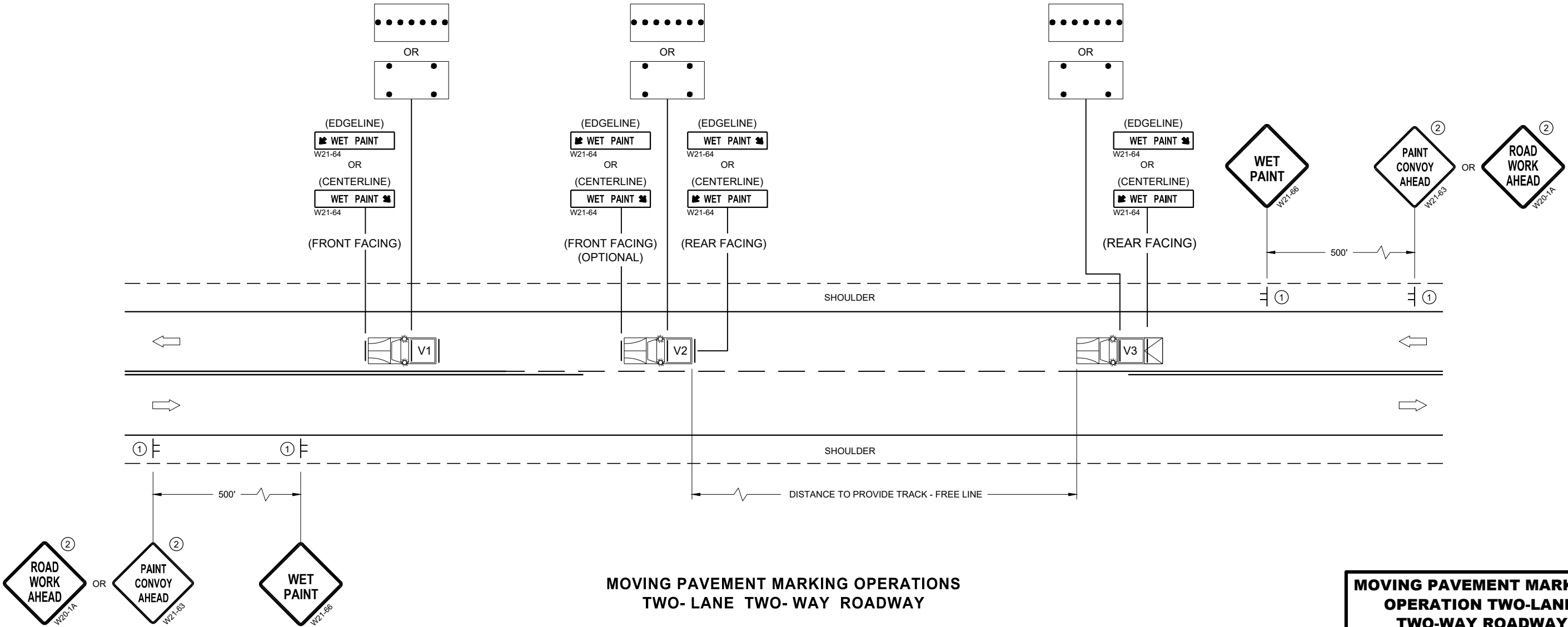
THE WORK AND SHADOW VEHICLES SHOULD PULL OVER PERIODICALLY TO ALLOW TRAFFIC TO PASS.

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

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

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

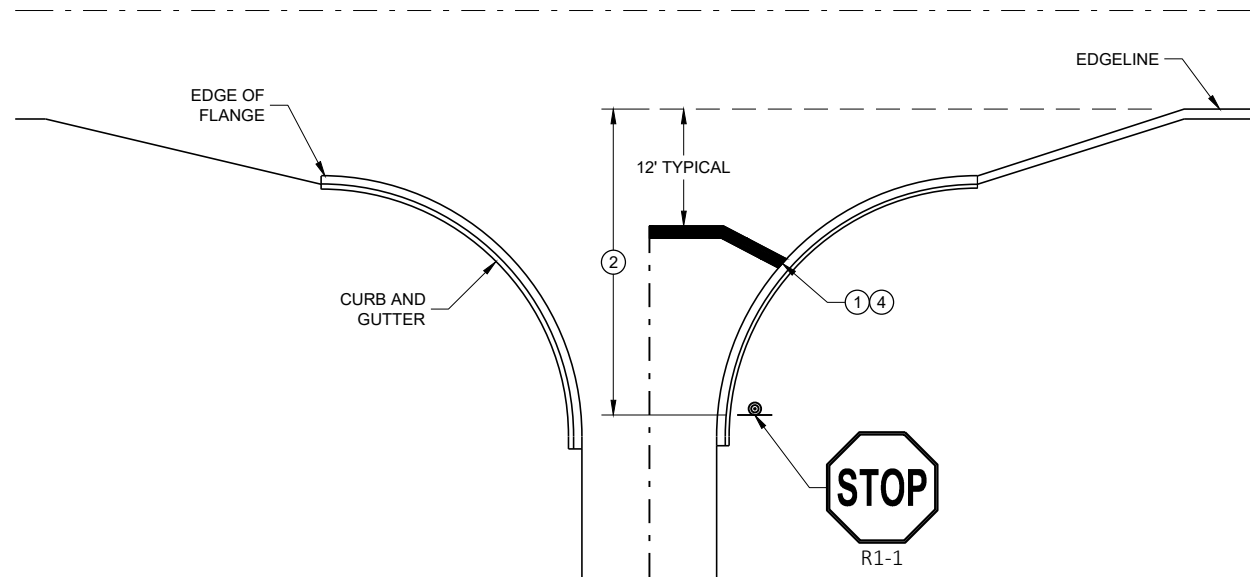
- ① SIGNS SHALL BE REPEATED APPROXIMATELY EVERY THREE MILES.
- ② IF CONSTRUCTION WORK ZONE SIGNS ARE IN PLACE, W20-1A OR W21-63 ARE NOT REQUIRED.



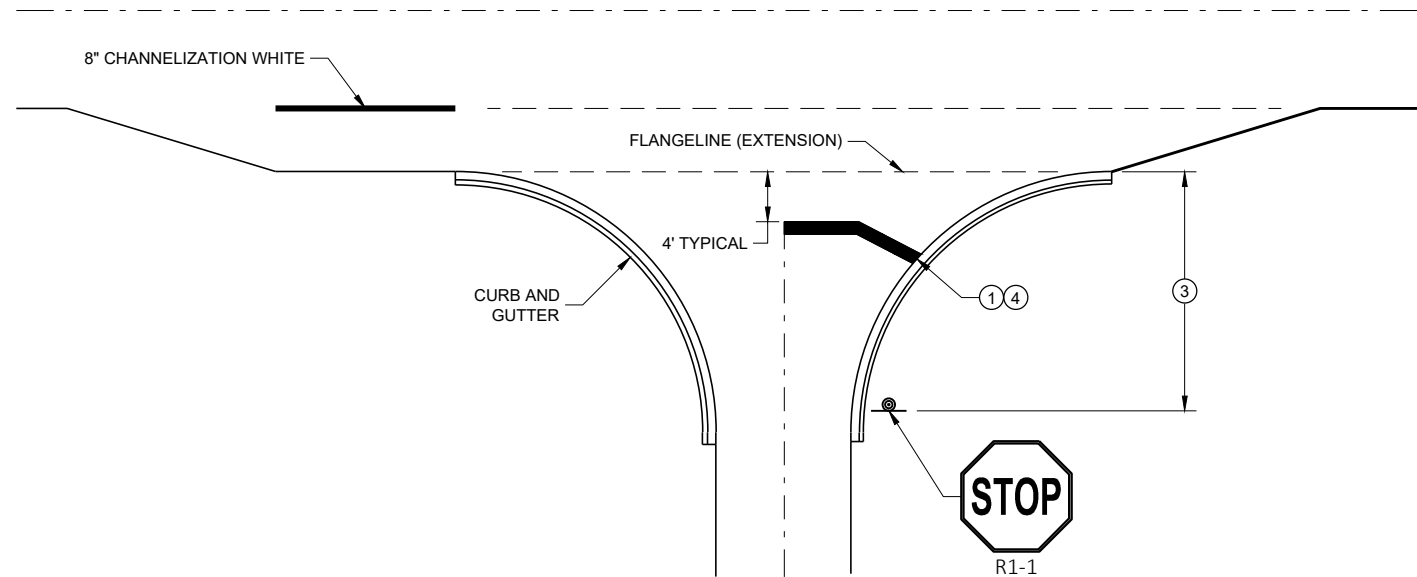
MOVING PAVEMENT MARKING
OPERATION TWO-LANE
TWO-WAY ROADWAY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

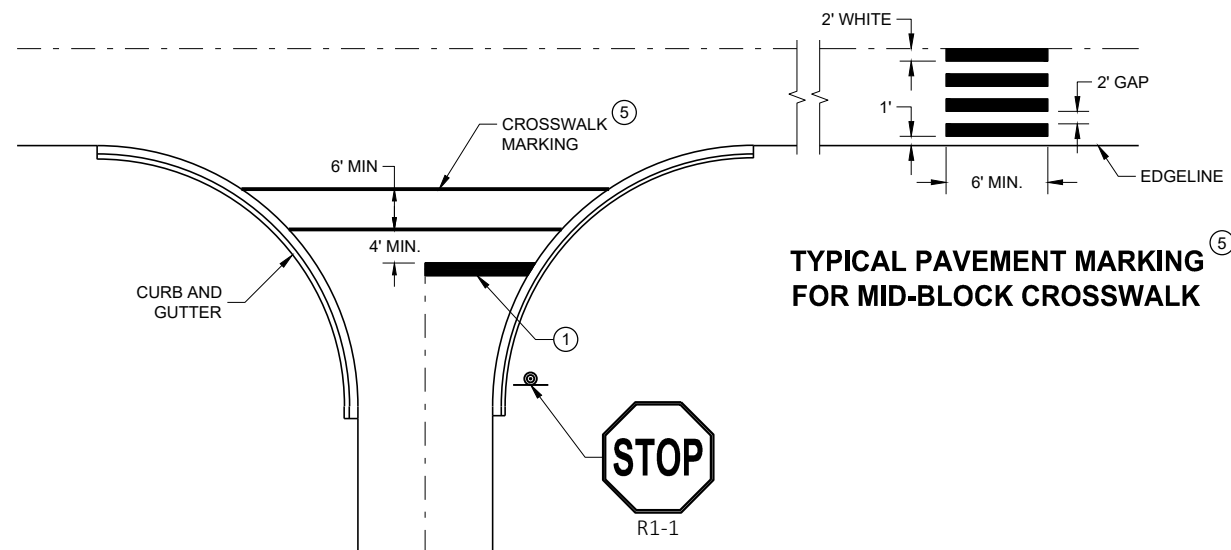
APPROVED
November 2019 /S/ Andrew Heidtke
DATE WORK ZONE ENGINEER
FHWA



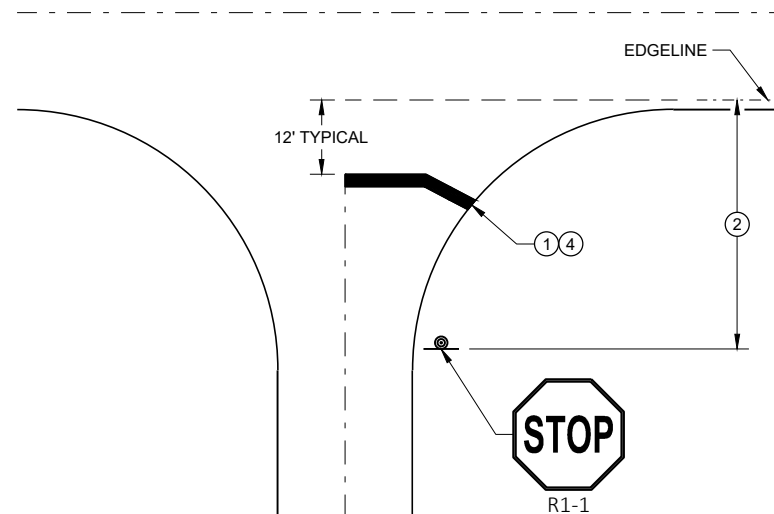
TYPICAL STOP LINE PAVEMENT MARKING
WITH CURB AND GUTTER



TYPICAL STOP LINE PAVEMENT MARKING
FOR SIDEROADS WITH RIGHT TURN LANE



TYPICAL STOP LINE PAVEMENT MARKING FOR
SIDEROADS WITH CROSSWALK MARKING



TYPICAL STOP LINE PAVEMENT MARKING
WITHOUT CURB AND GUTTER

GENERAL NOTES

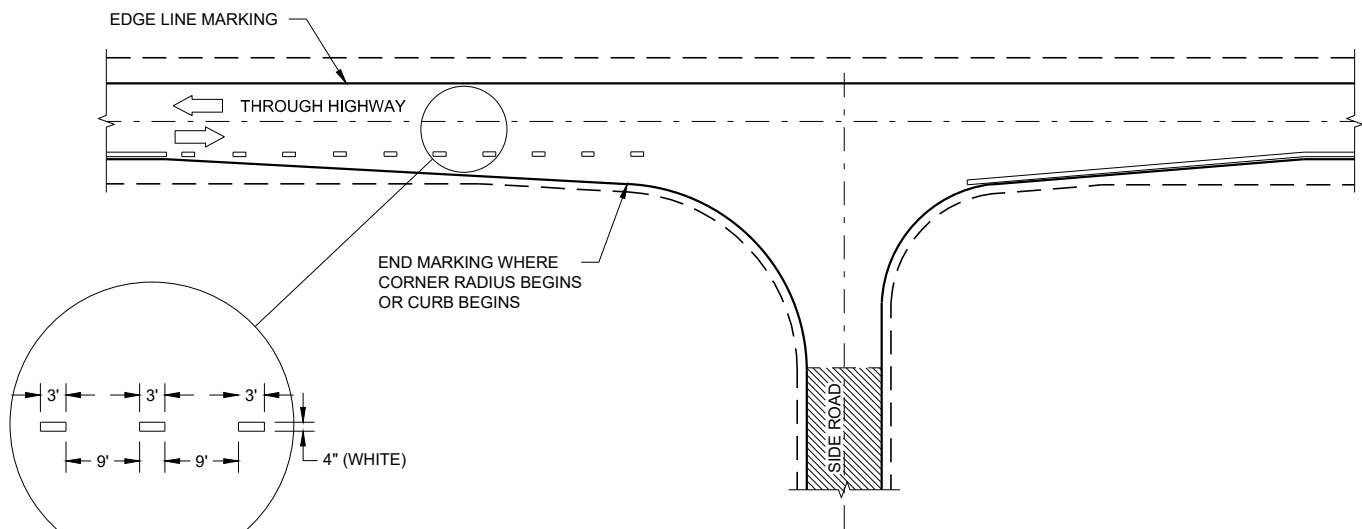
STOP SIGN SHALL BE PLACED A MINIMUM OF 6 FEET TO A MAXIMUM OF 50 FEET FROM THE EDGE LINE LOCATION.

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

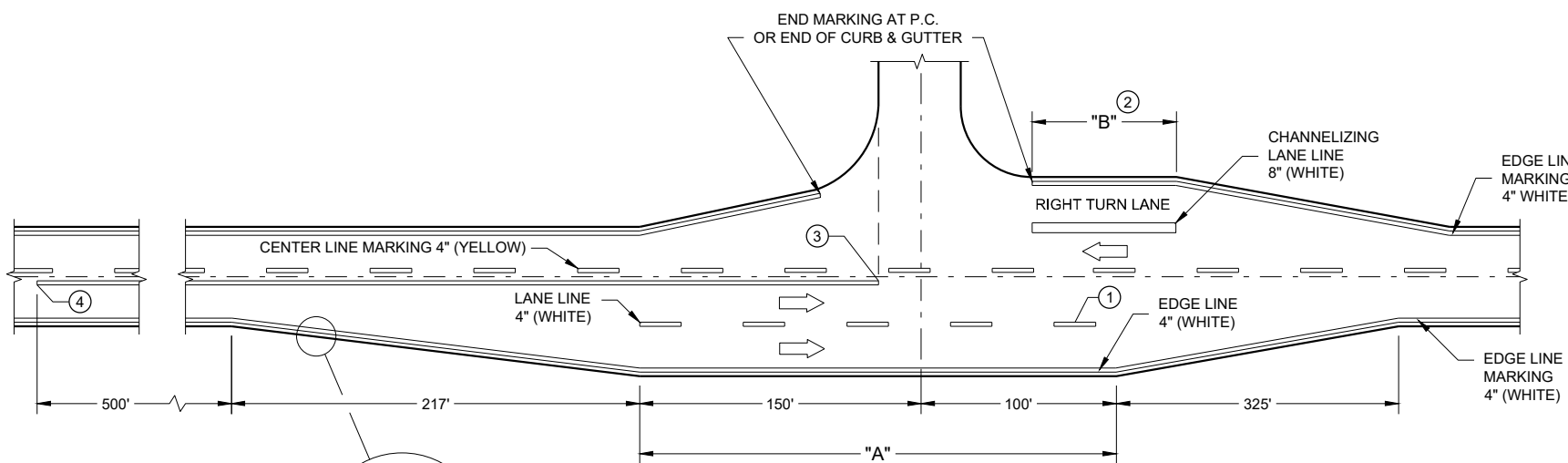
STOP LINE AND CROSSWALK
PAVEMENT MARKING

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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



MINOR INTERSECTION



MAJOR INTERSECTIONS

(INTERSECTION WITH FULL RIGHT TURN LANE OR BYPASS LANE)

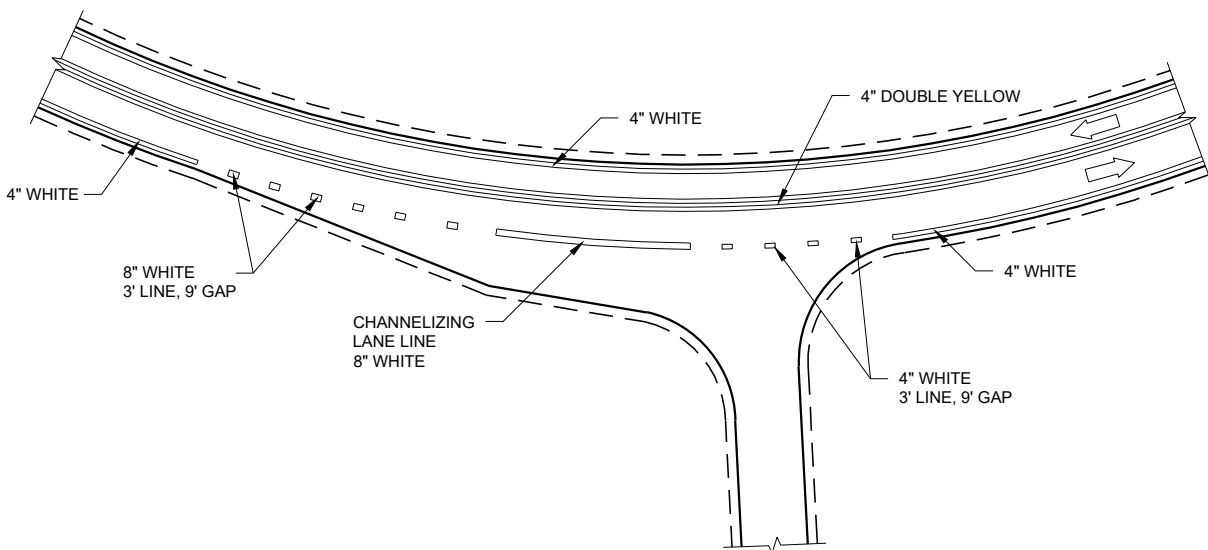
GENERAL NOTES

OMIT EDGE LINES THROUGH INTERSECTIONS. CONTINUE EDGE LINES 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 BARRIER LINE ENDS AT SIDE ROAD PAVEMENT / SURFACE EDGE EXTENSION.
- ④ BARRIER LINE STARTS 500 FEET PRIOR TO THE BYPASS TAPER.

LEGEND

➡ DIRECTION OF TRAVEL



INTERSECTION ON OUTSIDE OF CURVE

PAVEMENT MARKING
(INTERSECTIONS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

LEGEND

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

GENERAL NOTES

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

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

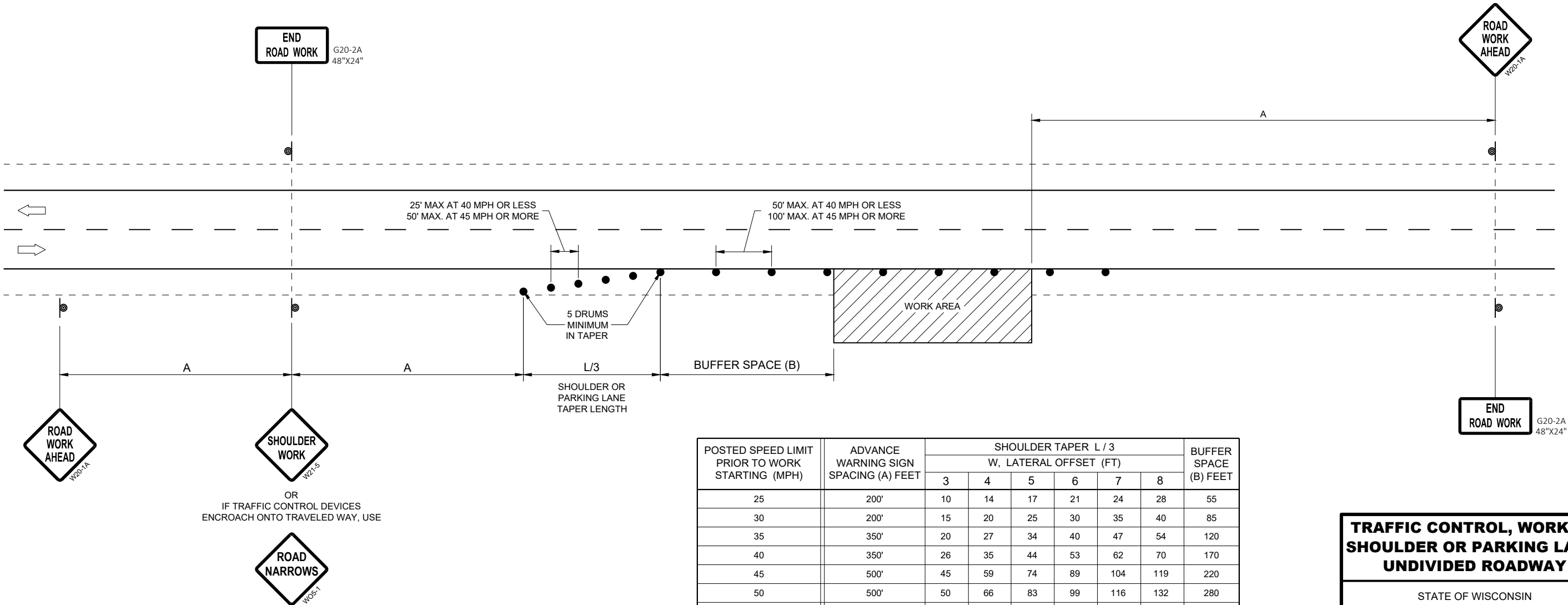
ANY SIGNS TEMPORARY OR EXISTING, WHICH CONFLICT WITH THE TRAFFIC CONTROL "IN USE" SHALL BE REMOVED OR COVERED AS NEEDED AND AS APPROVED BY THE ENGINEER.

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

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

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

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

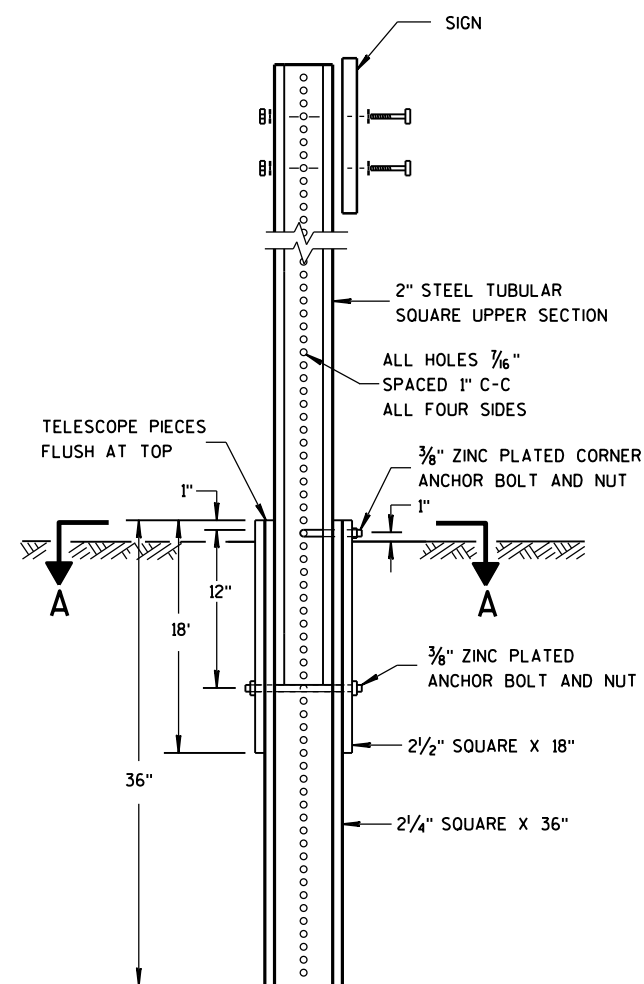


POSTED SPEED LIMIT PRIOR TO WORK STARTING (MPH)	ADVANCE WARNING SIGN SPACING (A) FEET	SHOULDER TAPER L / 3 W, LATERAL OFFSET (FT)						BUFFER SPACE (B) FEET
		3	4	5	6	7	8	
25	200'	10	14	17	21	24	28	55
30	200'	15	20	25	30	35	40	85
35	350'	20	27	34	40	47	54	120
40	350'	26	35	44	53	62	70	170
45	500'	45	59	74	89	104	119	220
50	500'	50	66	83	99	116	132	280
55	500'	54	73	91	109	127	145	335'

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
May 2020 /S/ Andrew Heidtke
DATE STATEWIDE WORK ZONE TRAFFIC
SAFETY ENGINEER
FHWA



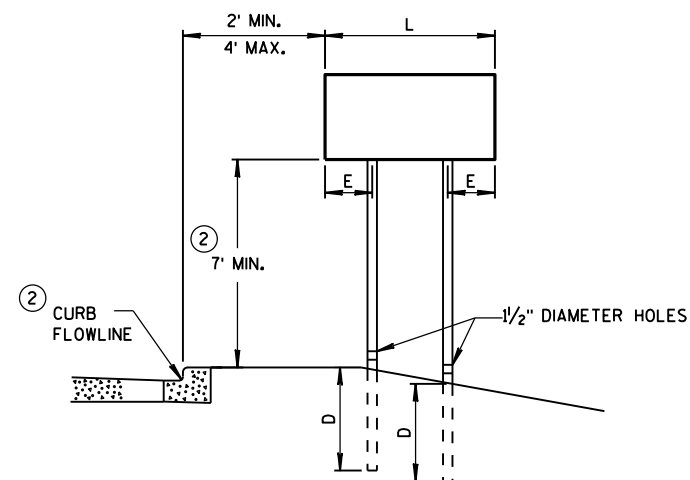
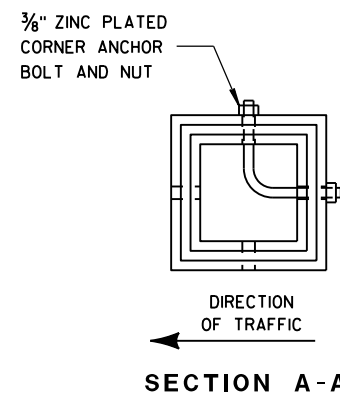
DETAIL OF TUBULAR STEEL SIGN POST

TUBULAR STEEL POSTS

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

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

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

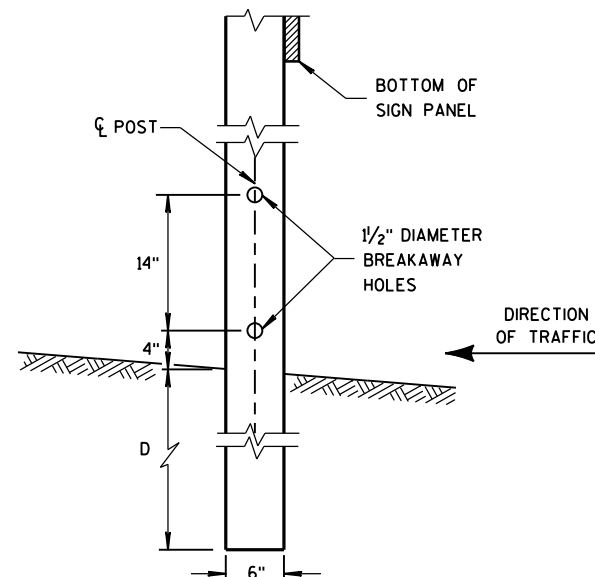


URBAN AREA

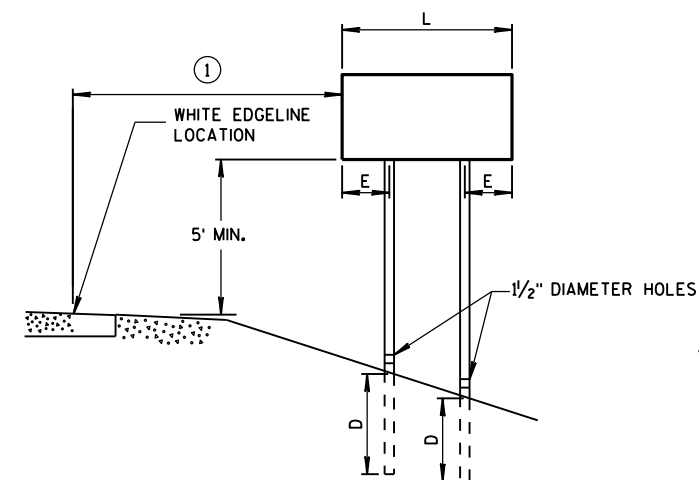
POST MOUNTING DETAIL FOR TEMPORARY TRAFFIC CONTROL FIXED MESSAGE SIGNS

WOOD POST
EMBEDMENT DEPTH

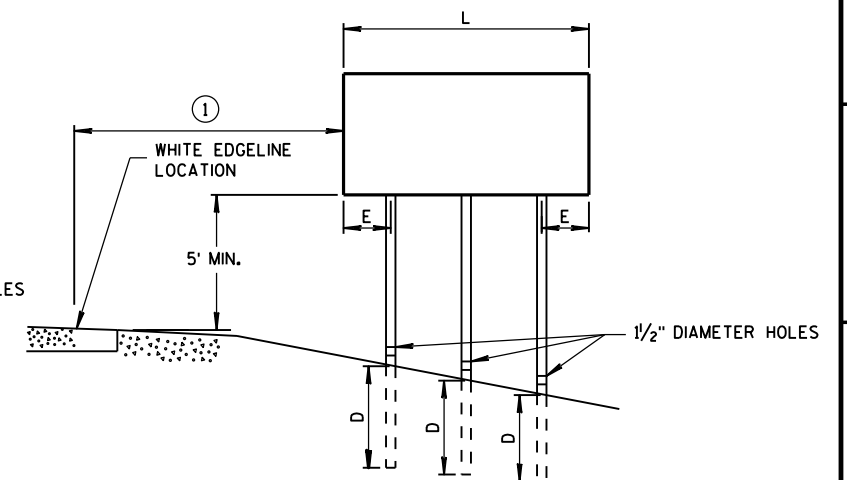
AREA OF SIGN INSTALLATION (SQ. FT.)	D (MIN)
20 OR LESS	4'
GREATER THAN 20	5'



4"x6" WOOD POST MODIFICATION



RURAL AREA



GENERAL NOTES

- ① 6 FEET FROM THE EDGE OF PAVEMENT (EDGE LINE LOCATION) UNLESS OTHERWISE DIRECTED BY THE PROJECT ENGINEER. LATERAL OFFSET SHOULD BE ADJUSTED TO AVOID THE DITCH FLOWLINE.
- ② THE EXISTENCE OF CURB AND GUTTER DOES NOT IN ITSELF MANDATE THE VERTICAL CLEARANCE ILLUSTRATED. THAT HEIGHT IS TYPICALLY MEASURED WHERE THERE IS SIDEWALK ADJACENT TO THE ROADWAY OR PARKING IS PERMITTED. IN THE ABSENCE OF SIDEWALK, VERTICAL CLEARANCE IS MEASURED FROM THE TOP OF THE CURB. IF NO SIDEWALK AND NO PARKING, VERTICAL CLEARANCE MAY BE REDUCED TO 5 FOOT MINIMUM. OFFSET OF SIGNS IS MEASURED FROM THE CURB FLOWLINE.
- ③ FOR SIGNS REQUIRING 4 POSTS, SPACE INTERMEDIATE POSTS EVENLY.

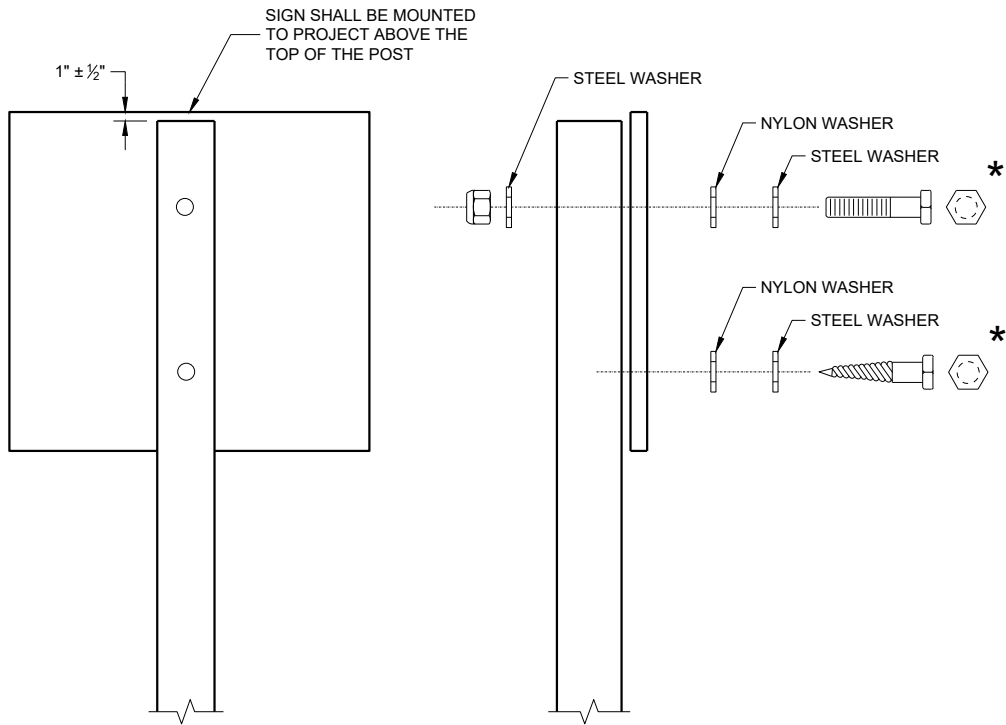
4" X 6" WOOD POST

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

SEE NOTE (3)

TEMPORARY TRAFFIC CONTROL SIGN MOUNTING

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



NUTS, BOLTS AND LAGS USED FOR MOUNTING SIGNS SHALL HAVE HEXAGONAL HEADS AND SHALL BE EITHER:

- A. HOT DIP GALVANIZED IN ACCORDANCE WITH ASTM DESIGNATION: A 153, CLASS D, OR SC 3
- B. ELECTRO-GALVANIZED IN ACCORDANCE WITH ASTM DESIGNATION: B 633, TYPE III, SC 3

THREADS ON BOLTS AND NUTS SHALL BE MANUFACTURED WITH SUFFICIENT ALLOWANCE FOR THE CADMIUM PLATE OR GALVANIZED COATING TO PERMIT THE NUTS TO RUN FREELY ON THE BOLTS.

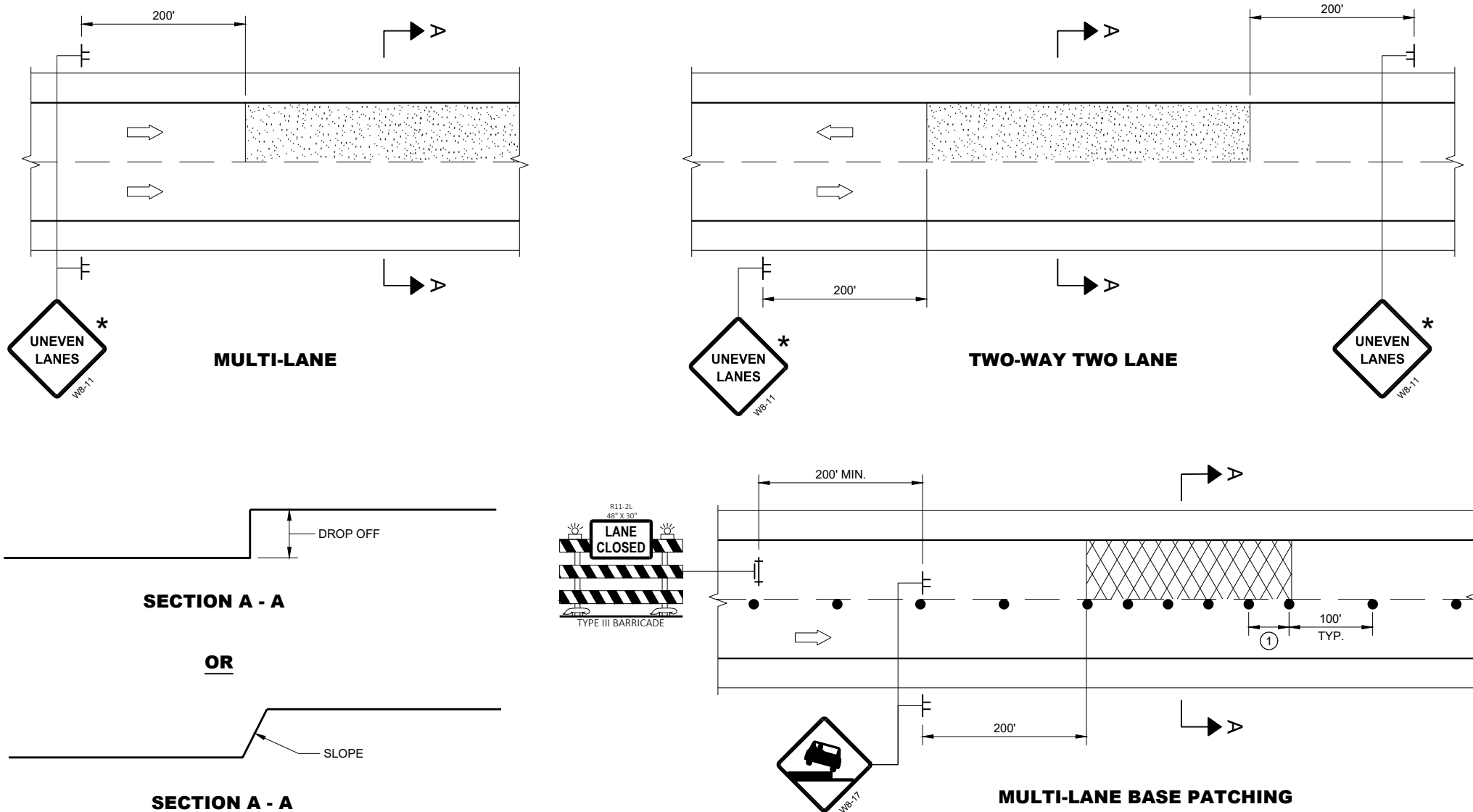
WOOD POST (4" x 6")
LAG SCREWS - ¾" x 3"
MACHINE BOLTS - ⅝" x 6 ½" OR 7" LENGTH W/NUTS

SQUARE STEEL POST (2" x 2")
MACHINE BOLTS - ¾" x 3 ¼" LENGTH W/NUTS
RIVETS - ⅝" (6605-9-6) BULB-TITE, TRI-FOLD, ALUMINUM
BODY/MANDREL O.D. FLANGE 0.720 - 0.765 INCH,
GRIP RANGE 0.042 - 0.375 INCH

WASHERS (ALL POSTS) -
1 ¼" O.D. x ⅜" I.D. x ⅛" STEEL
1 ¼" O.D. x ⅜" I.D. x 0.080 NYLON

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

ATTACHMENT OF SIGNS TO POSTS	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED June 2017 DATE	/S/ Andrew Heidtke WORK ZONE ENGINEER
FHWA	



GENERAL NOTES

FOR SPOT LOCATIONS USE ENGINEERING JUDGEMENT WHEN PLACING ADDITIONAL SIGNS.

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

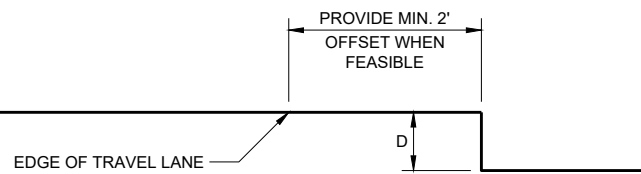
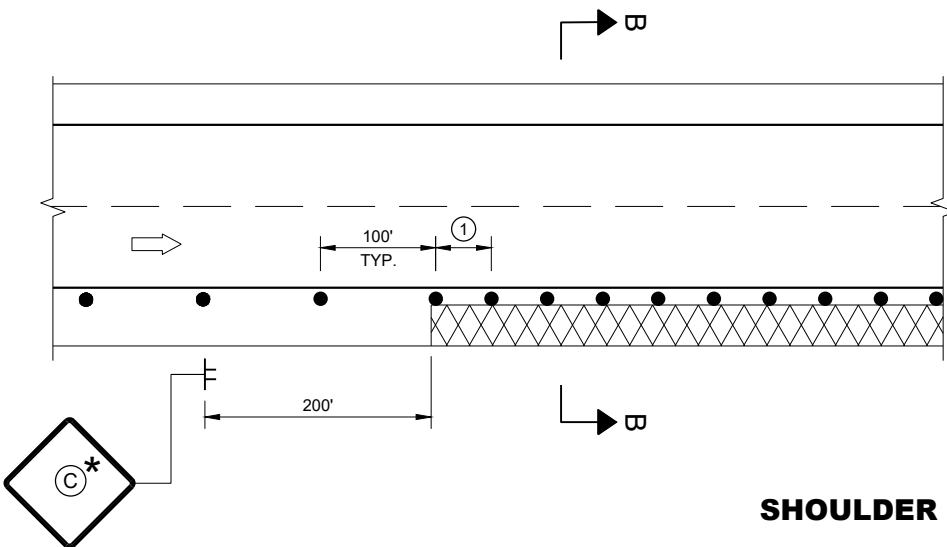
"WO" SIGNS ARE THE SAME AS "W" SIGNS EXCEPT THE BACKGROUND IS ORANGE.

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

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

① USE CLOSER SPACING WHEN DELINEATING DROP-OFF.

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



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

TRAFFIC CONTROL, DROP-OFF SIGNING

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
March 2018
DATE

/S/ Andrew Heidtke
WORK ZONE ENGINEER

FHWA

GENERAL NOTES

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

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

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

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

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

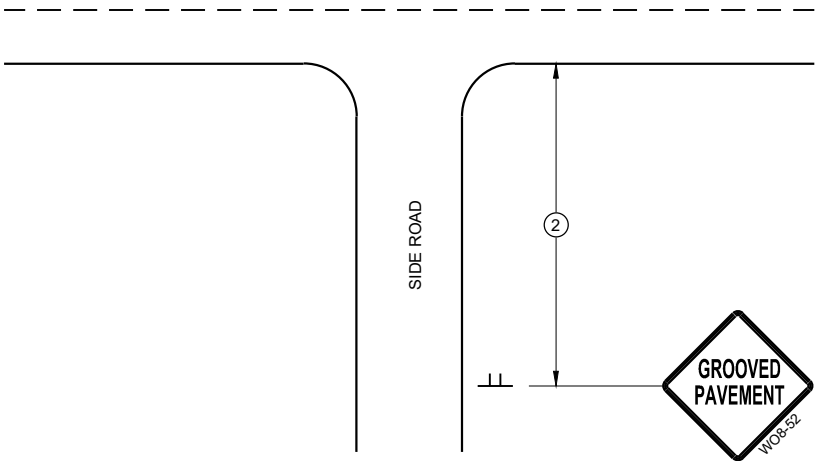
ALL SIGNS INAPPROPRIATE TO THE STATUS OF THE CONTROL ZONE, INCLUDING PRE-EXISTING SIGNS IN THE VICINITY, SHALL BE COVERED OR REMOVED AS DIRECTED BY THE ENGINEER.

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

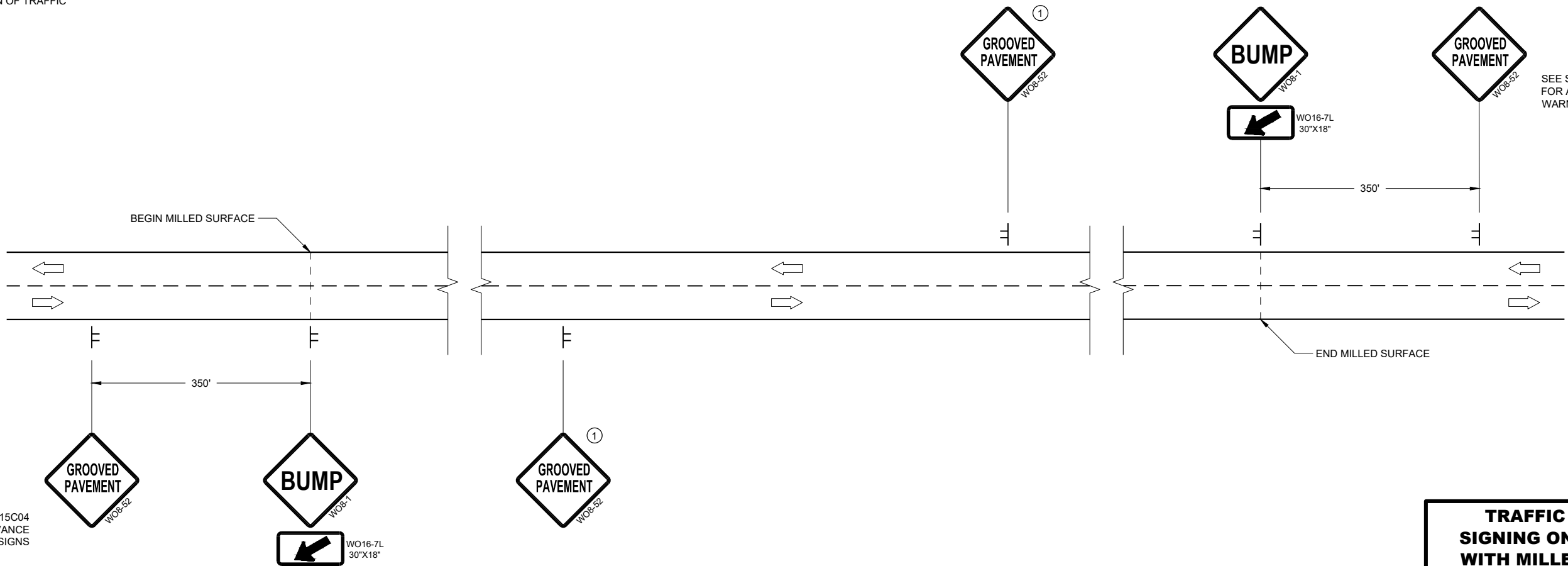
- ① PLACE SIGNS 350' IN ADVANCE OF MILLED SURFACES AND AT 1 MILE INTERVALS, OR AS DIRECTED BY THE ENGINEER.
- ② PLACE SIGN 200' MIN. FROM INTERSECTION AND 200' MIN. AFTER ADVANCE WARNING SIGN SHOWN IN SDD 15C04.

LEGEND

-  SIGN ON TEMPORARY SUPPORT
-  DIRECTION OF TRAFFIC



TYPICAL SIDE ROAD APPROACH
SIGN DETAIL



SEE SDD15C04
FOR ADVANCE
WARNING SIGNS

SEE SDD15C04
FOR ADVANCE
WARNING SIGNS

DETAIL FOR SIGNING ON MILLED SURFACES

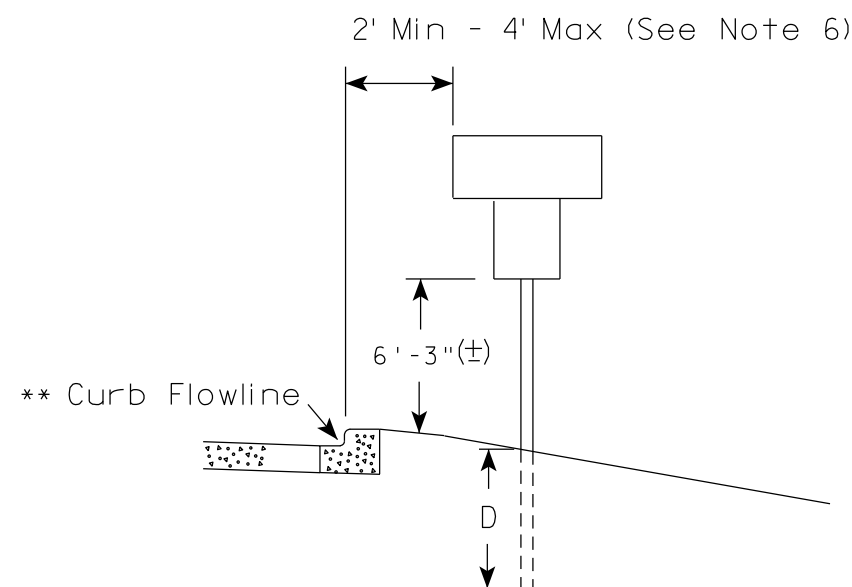
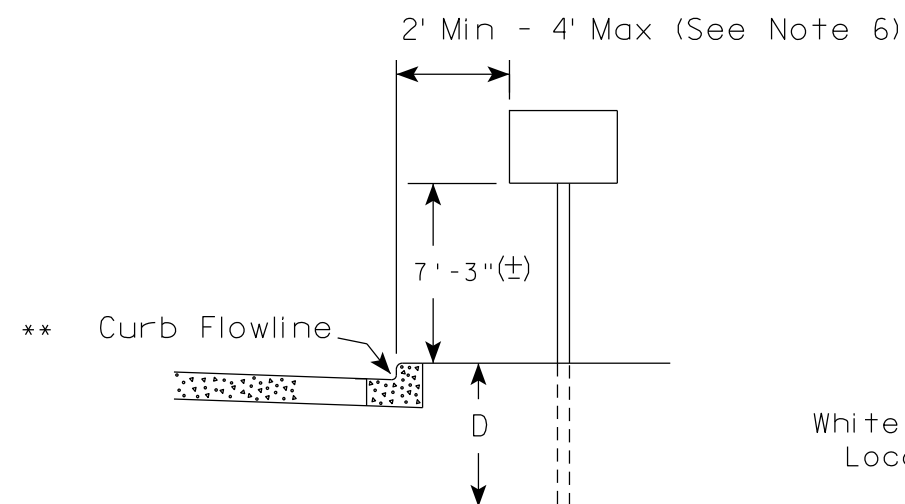
TRAFFIC CONTROL,
SIGNING ON ROADWAYS
WITH MILLED SURFACES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

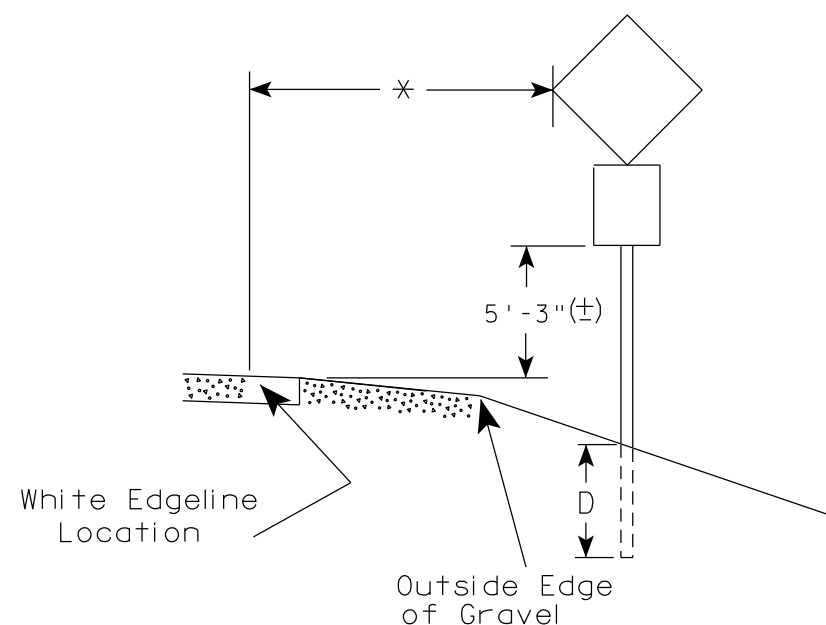
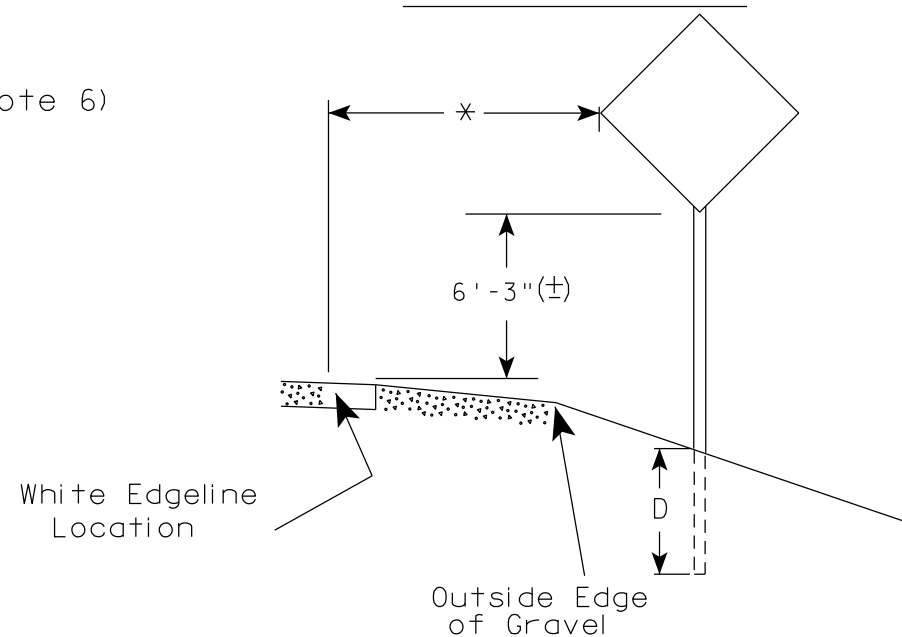
FHWA

URBAN AREA



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

RURAL AREA (See Note 2)



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

POST EMBEDMENT DEPTH

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

GENERAL NOTES

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

TYPICAL INSTALLATION OF PERMANENT TYPE II SIGNS ON SINGLE POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

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

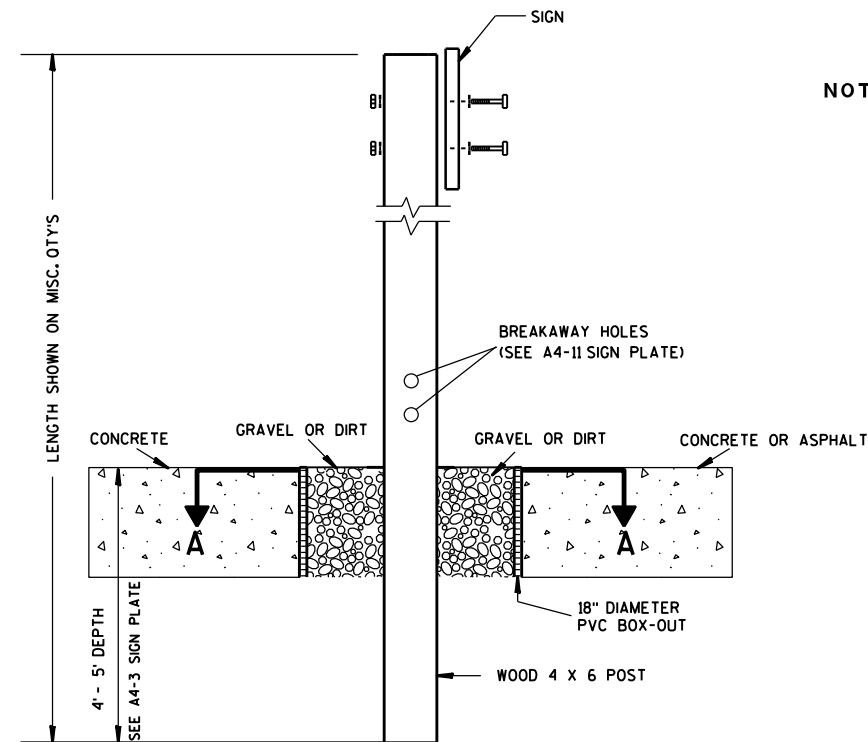
PROJECT NO:

HWY:

COUNTY:

SHEET NO:

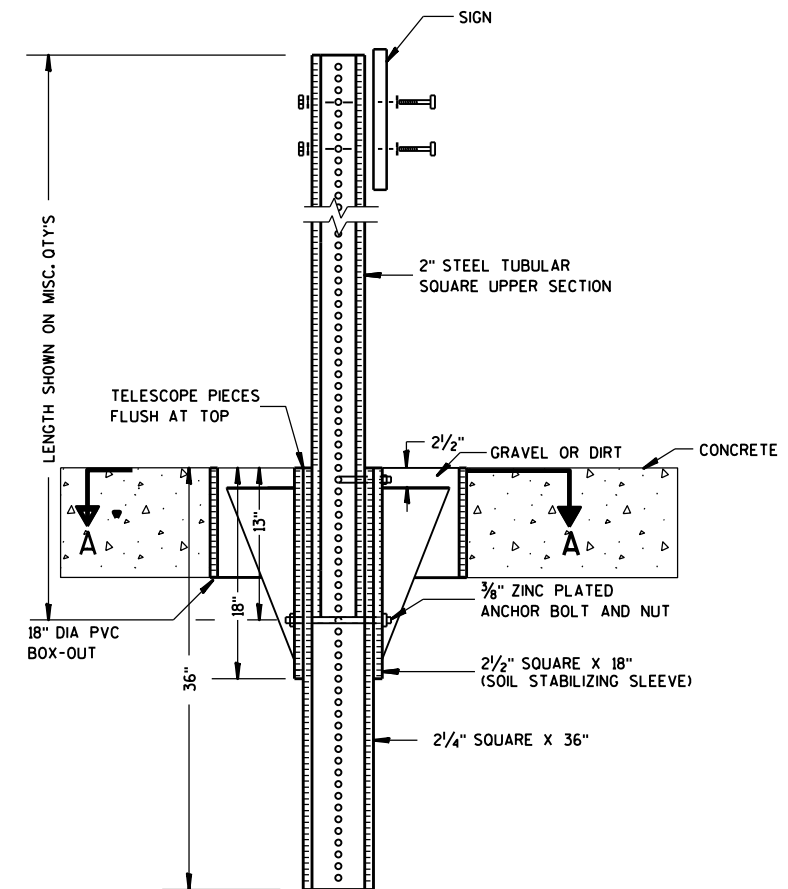
E



ELEVATION VIEW

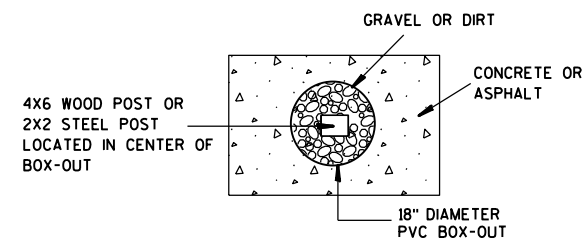
DETAIL OF WOOD 4 X 6 SIGN POST IN BOX-OUT

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



ELEVATION VIEW

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



PLAN VIEW

FOR NEW CONCRETE/ASPHALT INSTALLATIONS

SIGN POST
BOX-OUTS
A4-3B

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

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

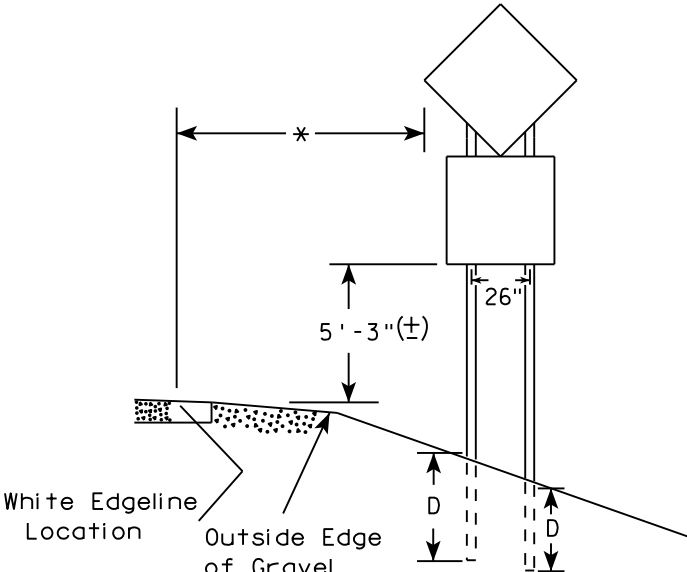
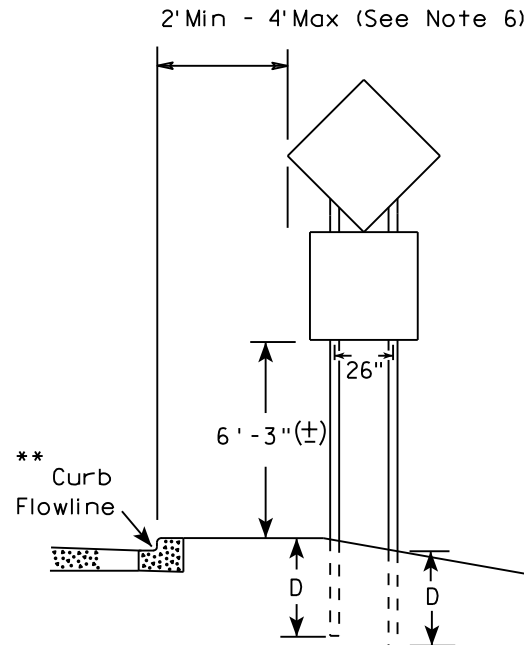
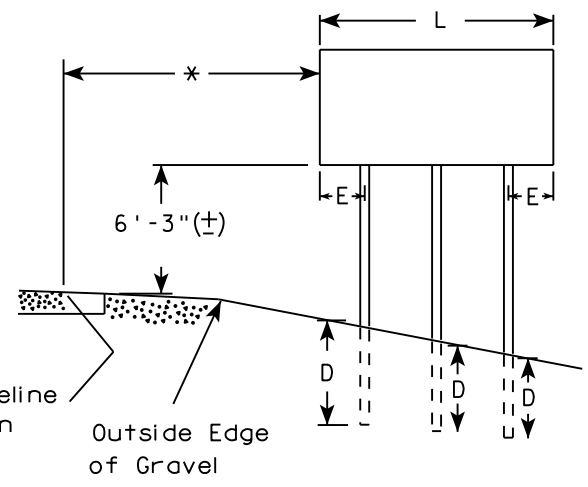
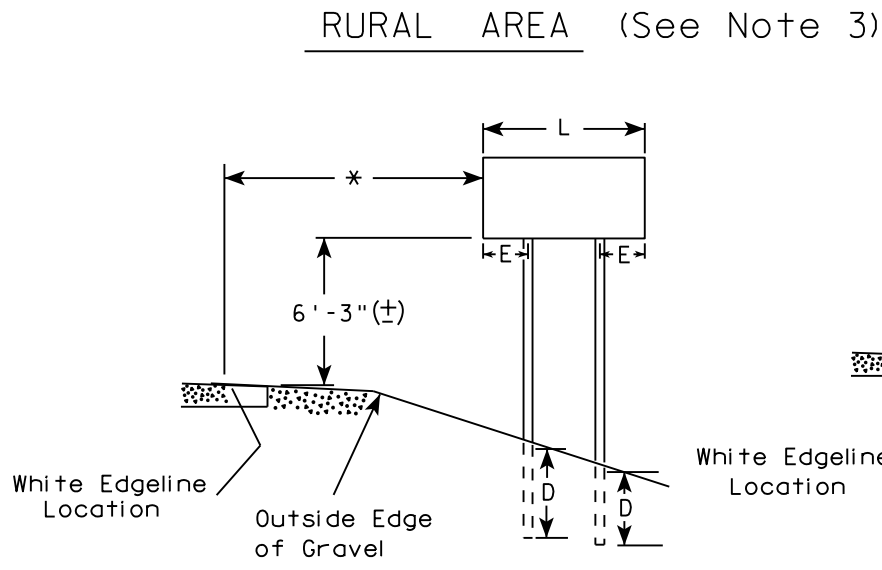
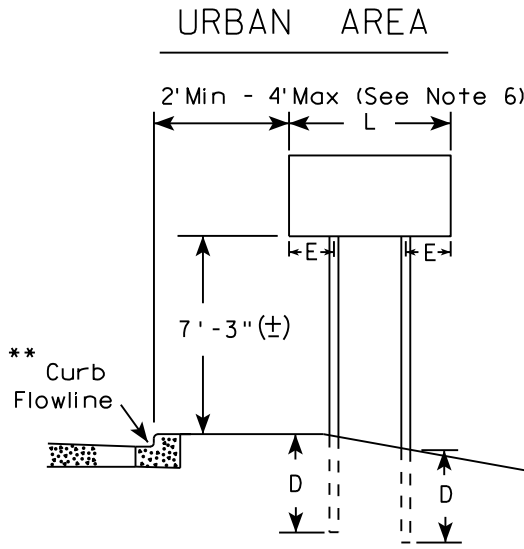
PROJECT NO:

HWY:

COUNTY:

SHEET NO:

E



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

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

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

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

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

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

POST EMBEDMENT DEPTH

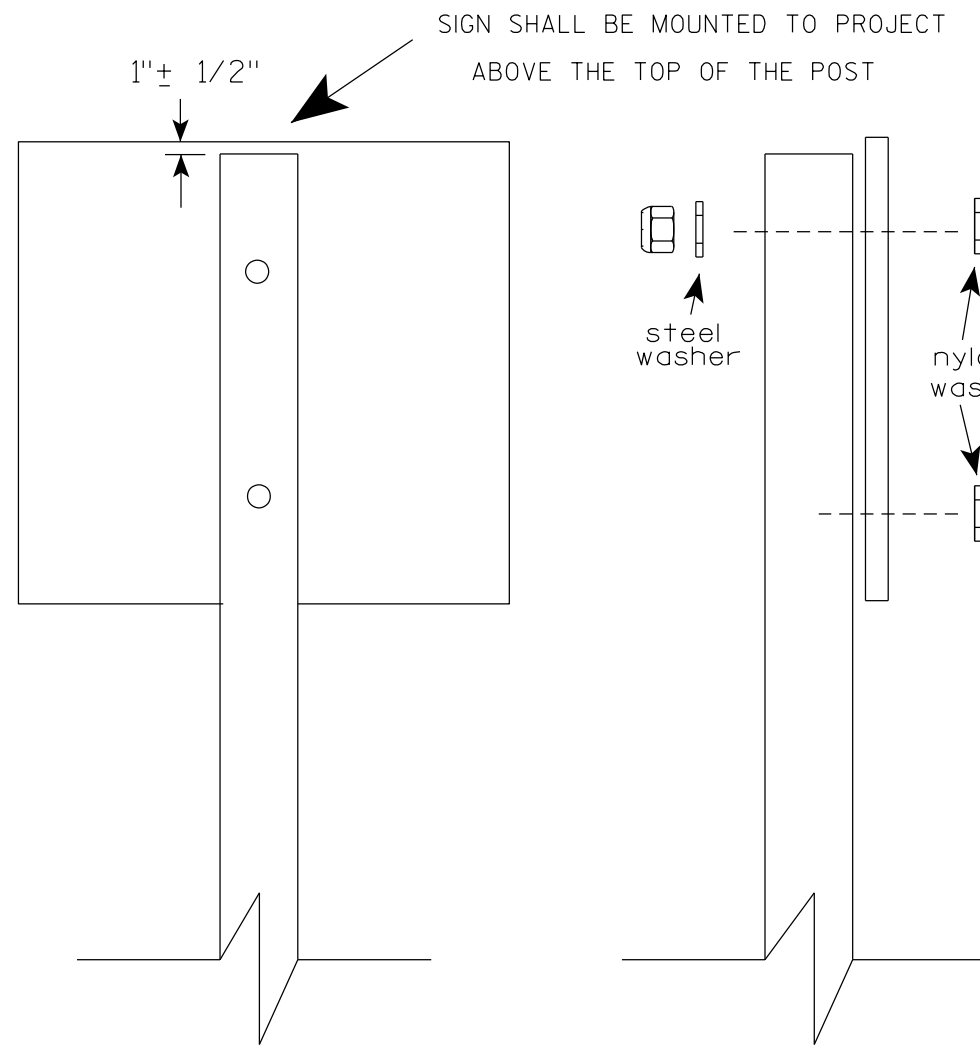
Area of Sign Installation (Sq. Ft.)	D (Min)
20 or Less	4'
Greater than 20	5'

TYPICAL INSTALLATION
OF TYPE II SIGNS
ON MULTIPLE POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

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



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

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

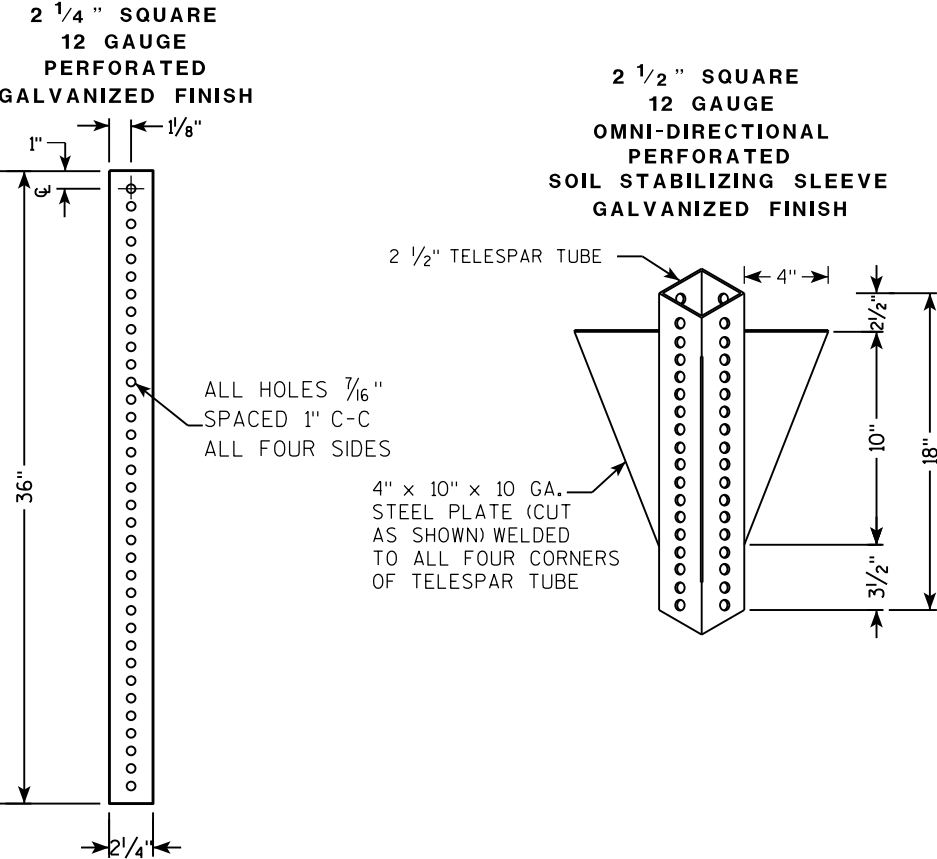
Threads on bolts and nuts shall be manufactured with sufficient allowance for the cadmium plate or galvanized coating to permit the nuts to run freely on the bolts.

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

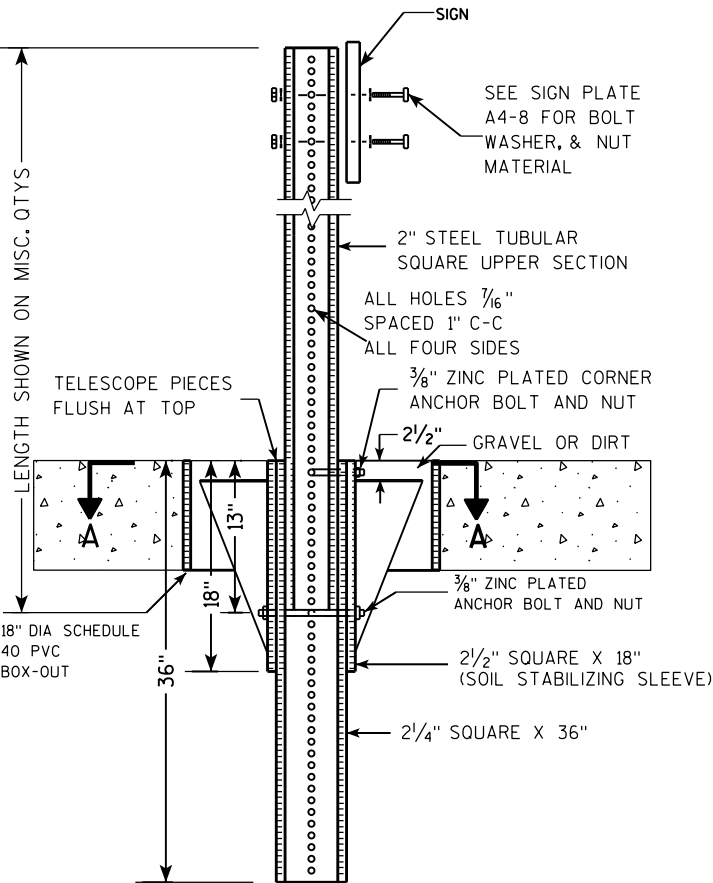
* Two different fastening systems are shown for illustration purposes. On any individual sign, either one or the other system shall be used. Actual number of fasteners per sign varies with the sign area, but normally there are two. For a single post installation, all signs greater than 9 sq. ft. require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

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

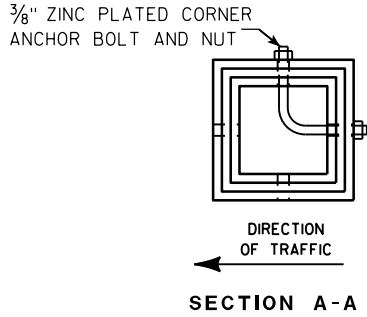
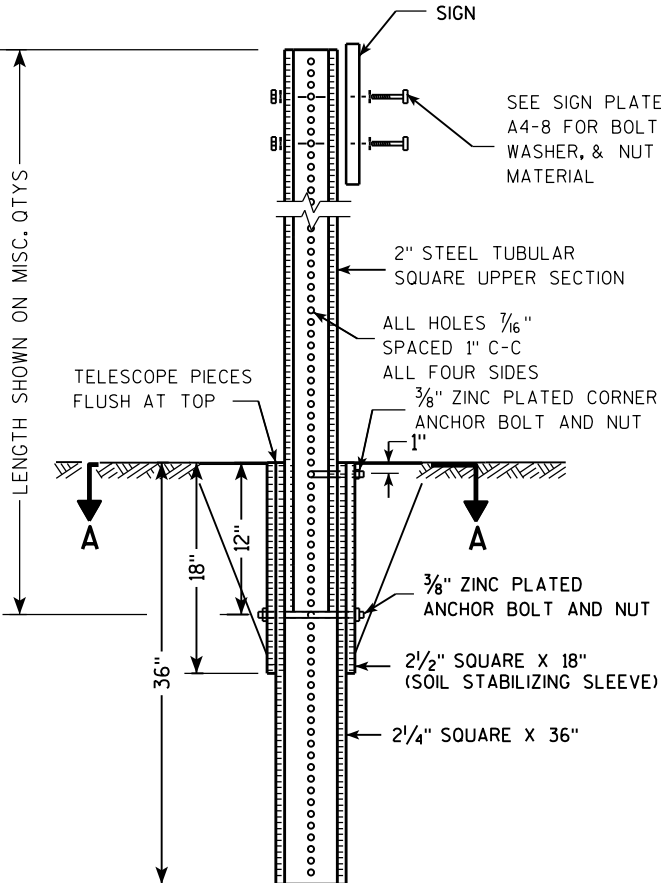
TELESCOPIC TUBING ANCHORS
TWO PIECE SYSTEM



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



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



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

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

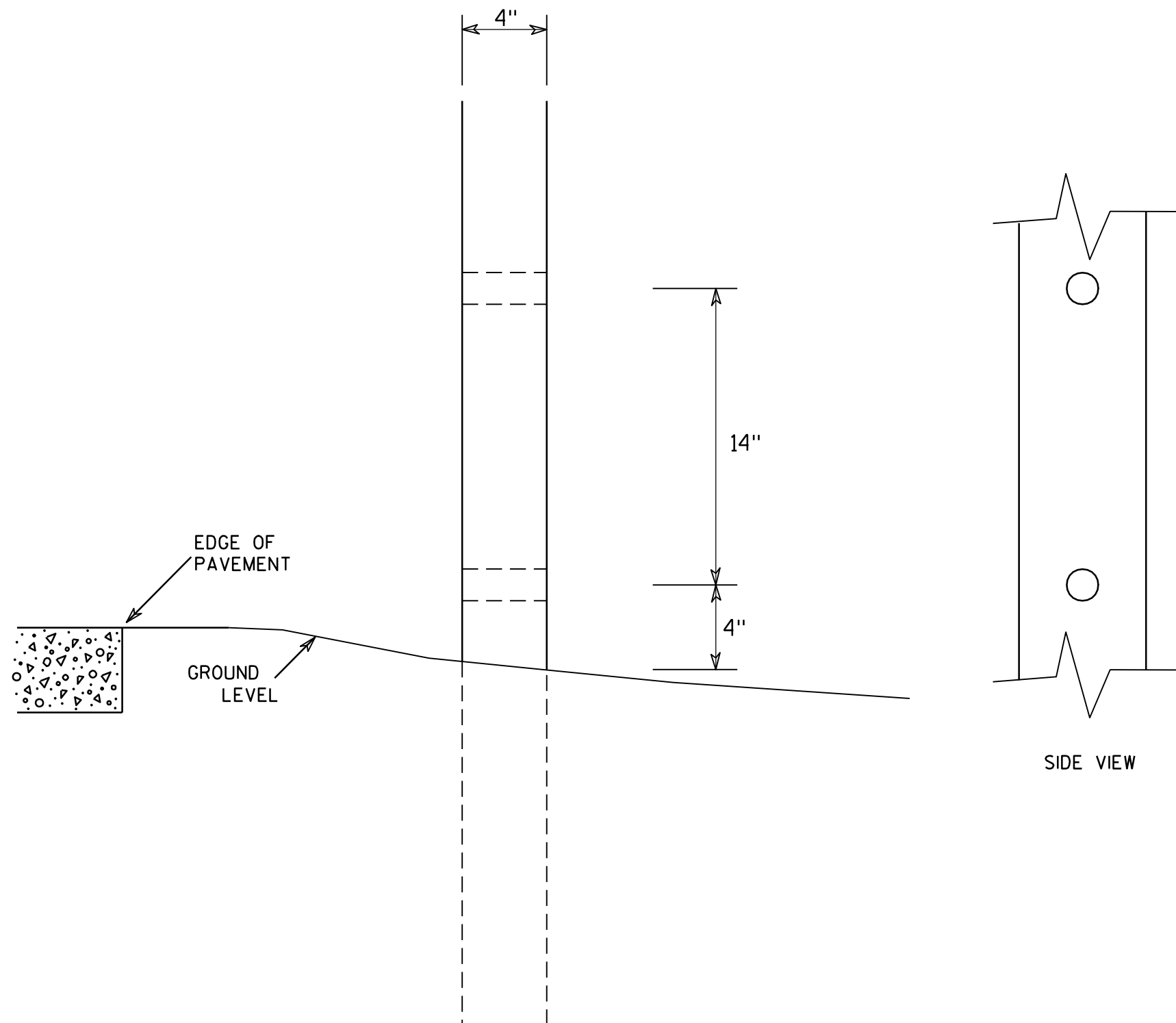
TUBULAR STEEL
SIGN POST
A4-9

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

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

7



GENERAL NOTES

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

7

4 X 6 WOOD POST MODIFICATIONS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED

Chester J. Spang
for State Traffic Engineer

DATE 3/27/97

PLATE NO. A4-11.2

PROJECT NO:

HWY:

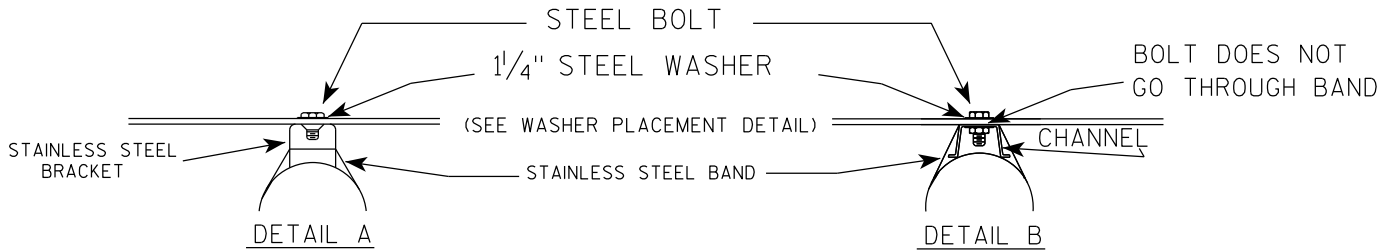
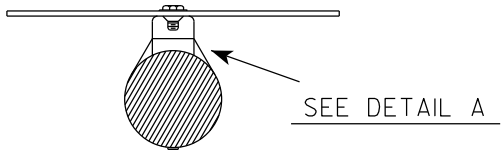
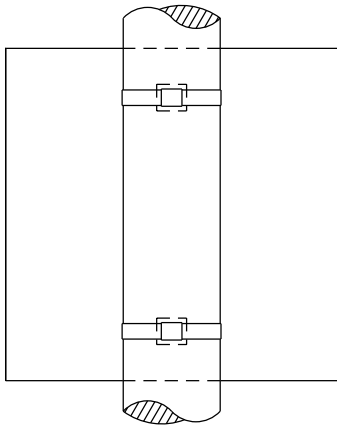
COUNTY:

SHEET NO:

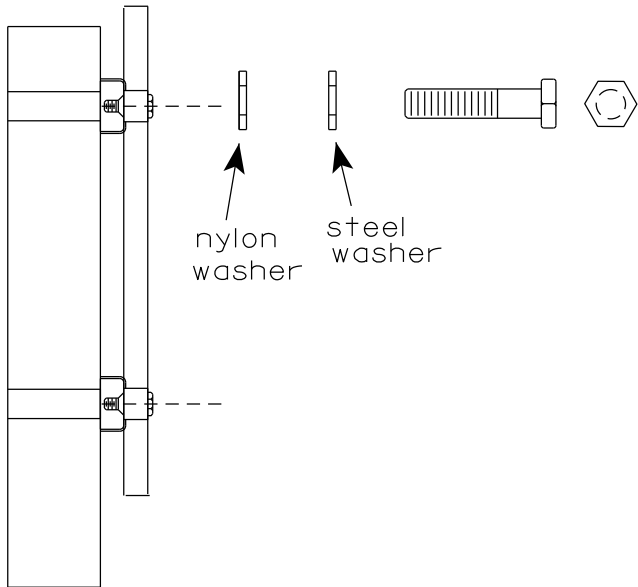
E

BANDING

SINGLE SIGN



WASHER PLACEMENT

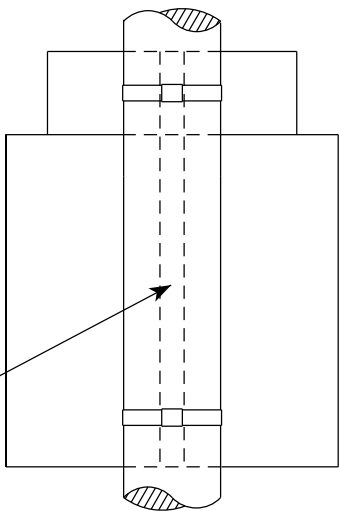


WASHERS (ALL POSTS) -
1-1/4" O.D. X 3/8" I.D. X 1/16" STEEL
1-1/4" O.D. X 3/8" I.D. X .080 NYLON
FOR ALL TYPE H SIGNS

GENERAL NOTES

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

"J" ASSEMBLY



CHANNEL
SEE TYPICAL PANEL
INSTALLATION SHEET

SEE DETAIL B

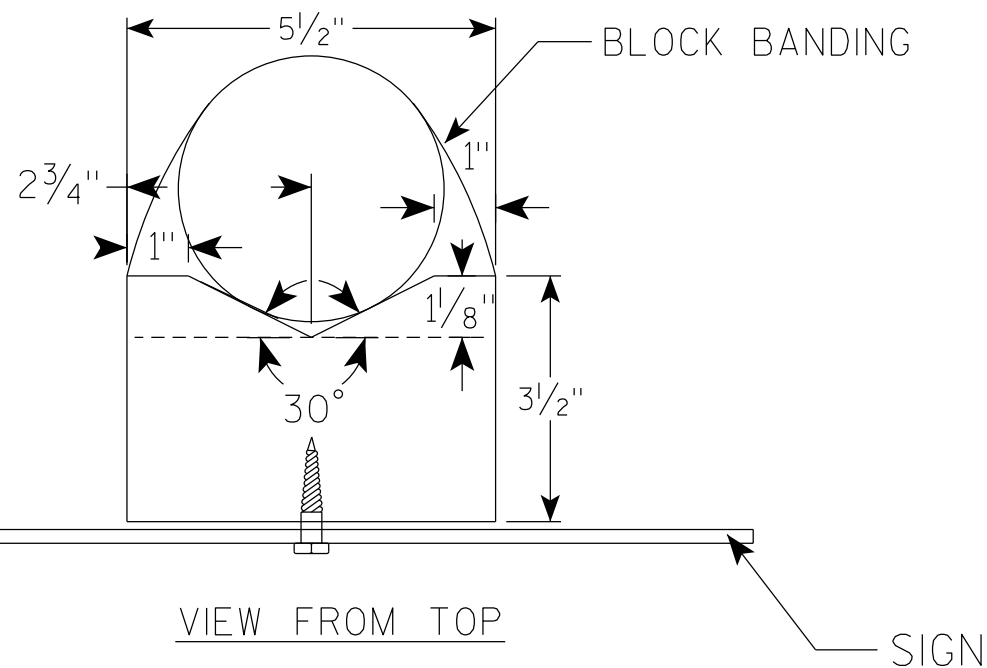
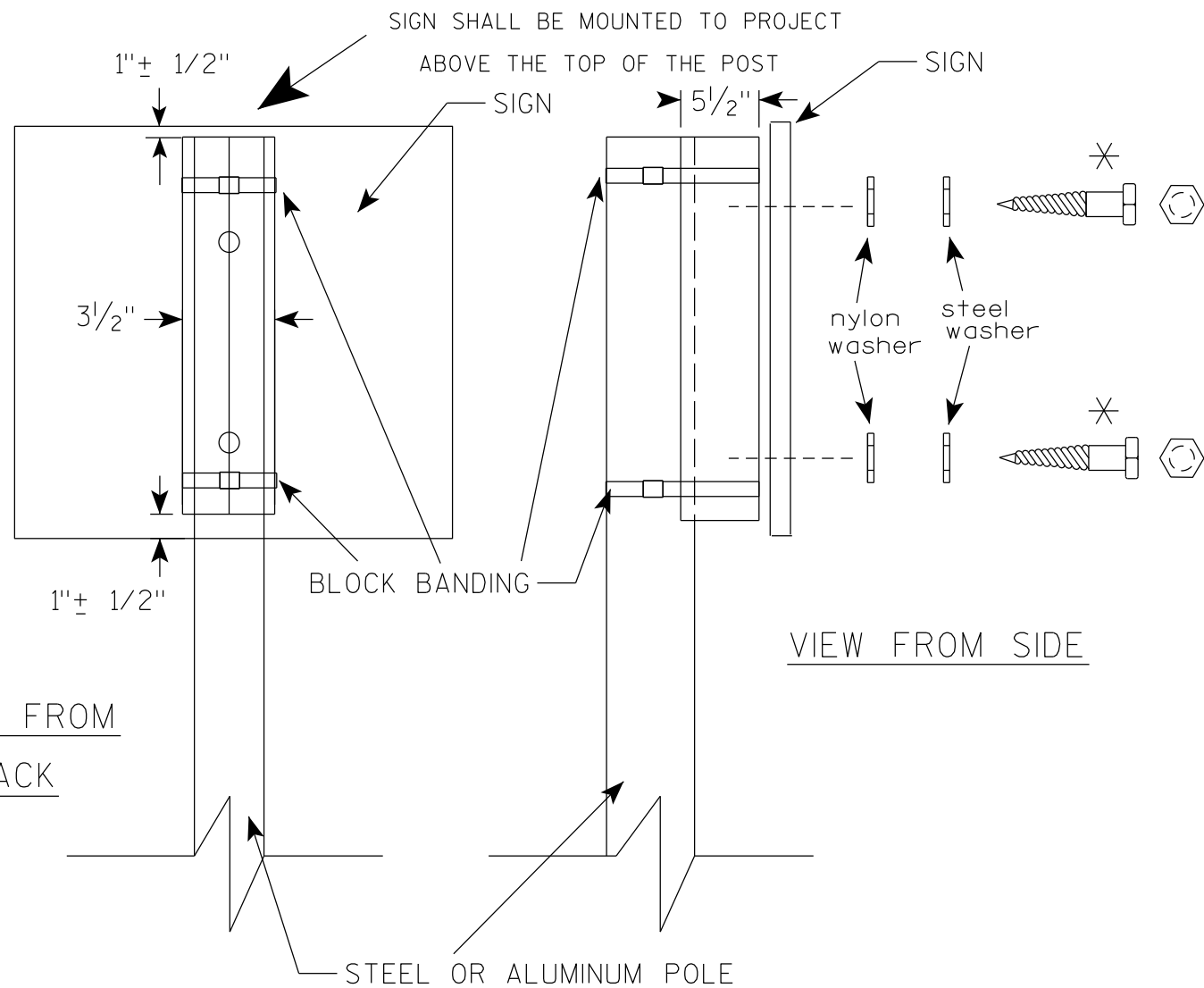
STANDARD SIGN
SIGN BANDING DETAILS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 6/10/19 PLATE NO. A5-9.4

VIEW FROM
BACK



GENERAL NOTES

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

✱ LAG BOLTS SHALL BE 3/8" X 2 1/2"

BLOCK BANDING DETAIL
(V-BLOCK OPTION)

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R. Rauch
for State Traffic Engineer

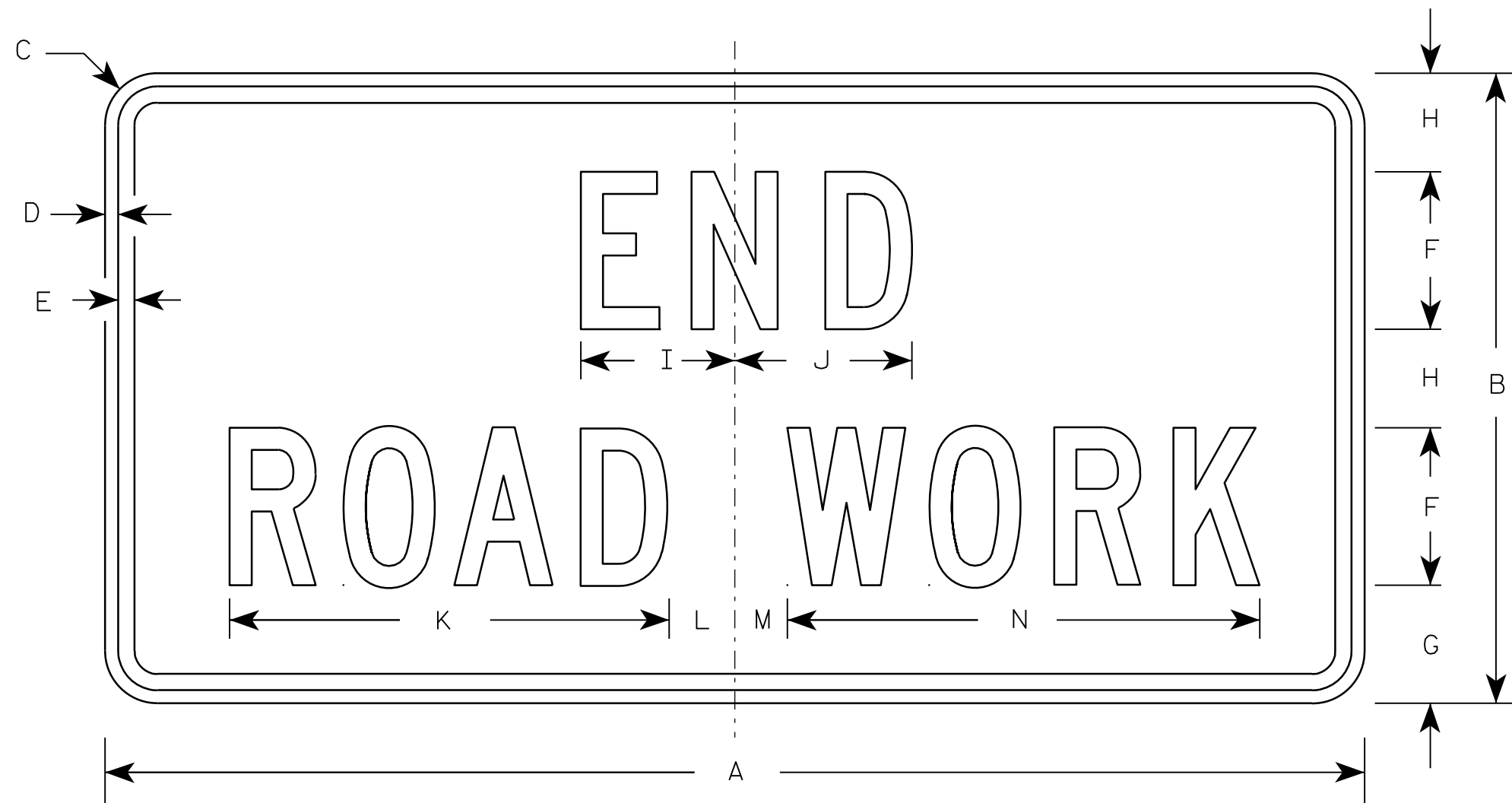
DATE 6/10/19 PLATE NO. A5-10.2

PROJECT NO:

SHEET NO:

E

7



G20-2A

Metric equivalent
for this sign is:

SIZE	
1	900 mm X 450 mm
2	1200 mm X 600 mm
3	1200 mm X 600 mm
4	1200 mm X 600 mm
5	1200 mm X 600 mm

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.	Area m ²
1	36	18	1 1/8	3/8	1/2	4	3 3/4	2 1/2	4 1/8	4 1/8	11 1/8	2	1	12 1/8													4.5	0.41
2	48	24	1 1/2	1/2	5/8	6	4 1/2	3 3/4	5 7/8	6 3/4	16 3/4	2 1/2	1 3/4	18 1/2													8.0	0.72
3	48	24	1 1/2	1/2	5/8	6	4 1/2	3 3/4	5 7/8	6 3/4	16 3/4	2 1/2	1 3/4	18 1/2													8.0	0.72
4	48	24	1 1/2	1/2	5/8	6	4 1/2	3 3/4	5 7/8	6 3/4	16 3/4	2 1/2	1 3/4	18 1/2													8.0	0.72
5	48	24	1 1/2	1/2	5/8	6	4 1/2	3 3/4	5 7/8	6 3/4	16 3/4	2 1/2	1 3/4	18 1/2													8.0	0.72

NOTES

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

7

PROJECT NO:

HWY:

COUNTY:

SHEET NO:

E

7

7

NOTES

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



G20-57

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2																											
3	72	36	1 1/8	1/2	5/8	6	5	4	15 5/8	1 5/8	5	9 1/4	21 1/4	3 1/2	1 1/2	23 1/4		29 7/8	1 3/4	3 1/4	28 1/2						18.0
4	96	48	2 1/4	3/4	1	8	6 1/2	5 1/2	20 5/8	2 1/4	6	12 1/4	28 1/4	4 3/8	1 5/8	31		39 1/4	2	4	37 7/8						32.0
5																											

STANDARD SIGN
G20-57

WISCONSIN DEPT OF TRANSPORTATION

APPROVED

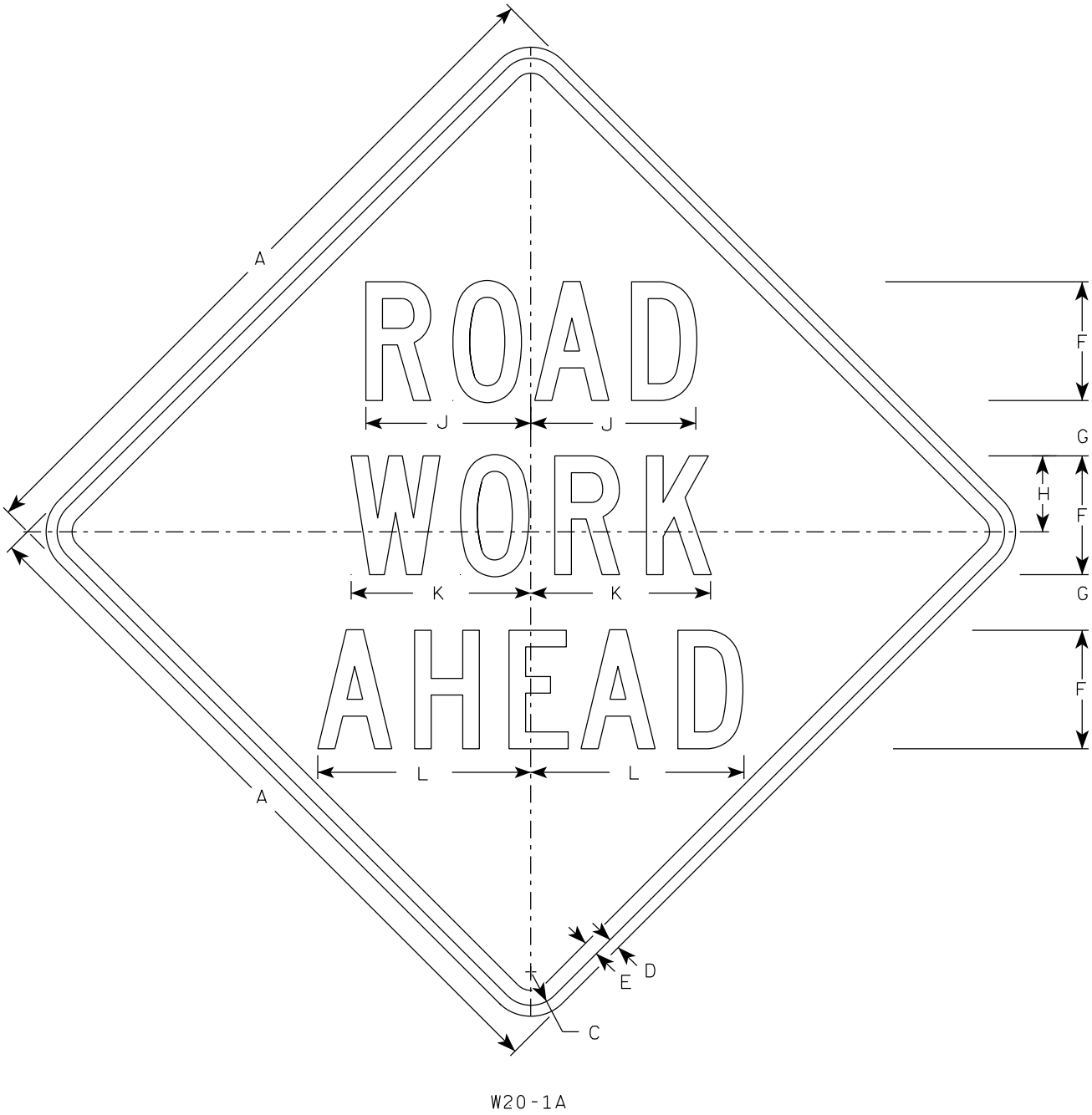
For State Traffic Engineer

DATE 1/22/19 PLATE NO. G20-57.3

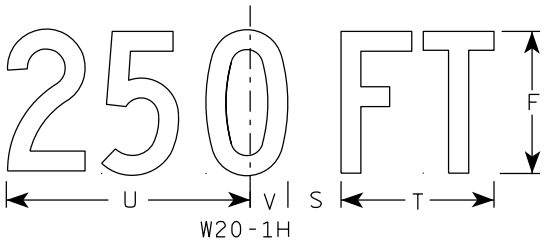
PROJECT NO: HWY: COUNTY: SHEET NO: E

NOTES

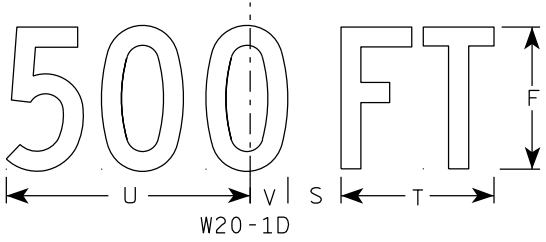
1. Sign is Type II - Type F Reflective
2. Color:
Background - Orange
Message - Black
3. Message Series - C
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.



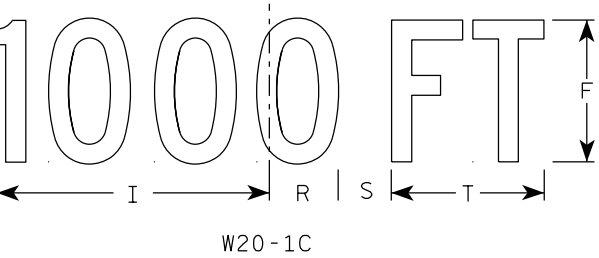
W20-1A



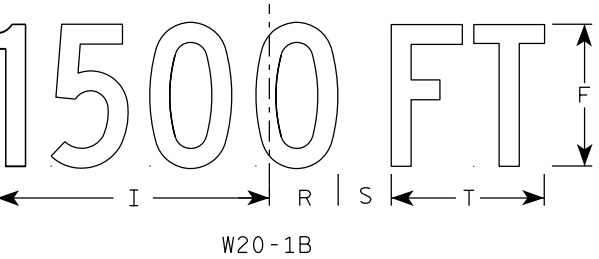
W20-1H



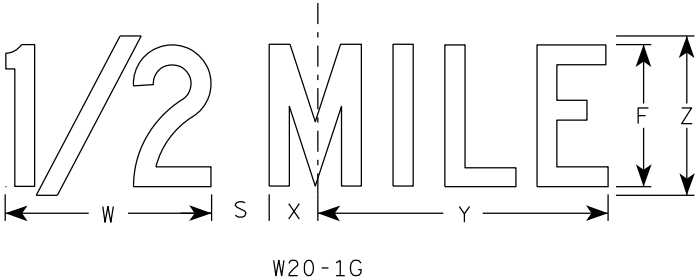
W20-1D



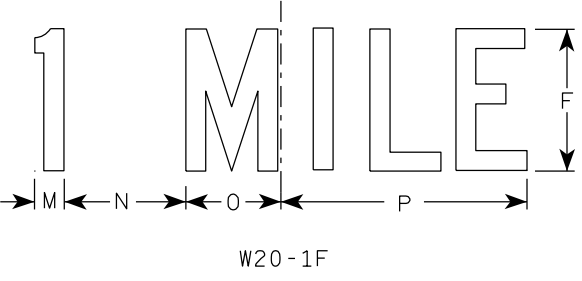
W20-1C



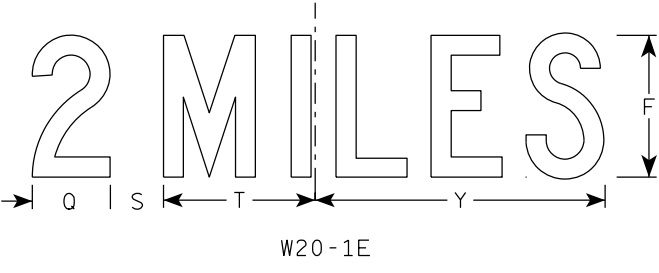
W20-1B



W20-1G



W20-1F



W20-1E

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	A _{req} sq. ft.
1	36		1 5/8	5/8	3/4	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	3 1/4	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

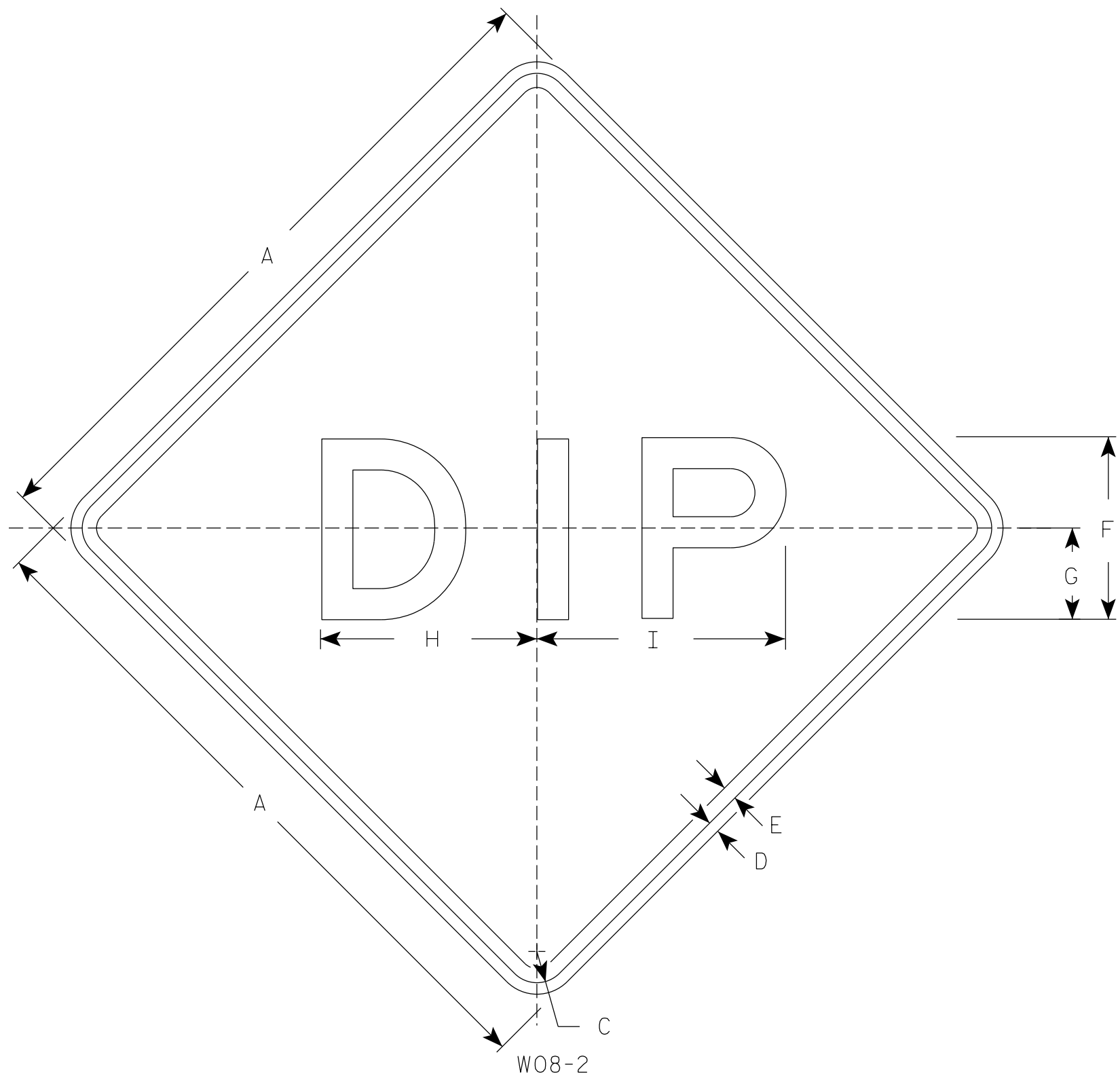
STANDARD SIGN
W20-1A, B, C, D, E, F, G & H

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 3/25/2020 PLATE NO. W20-1.11

7



NOTES

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

7

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

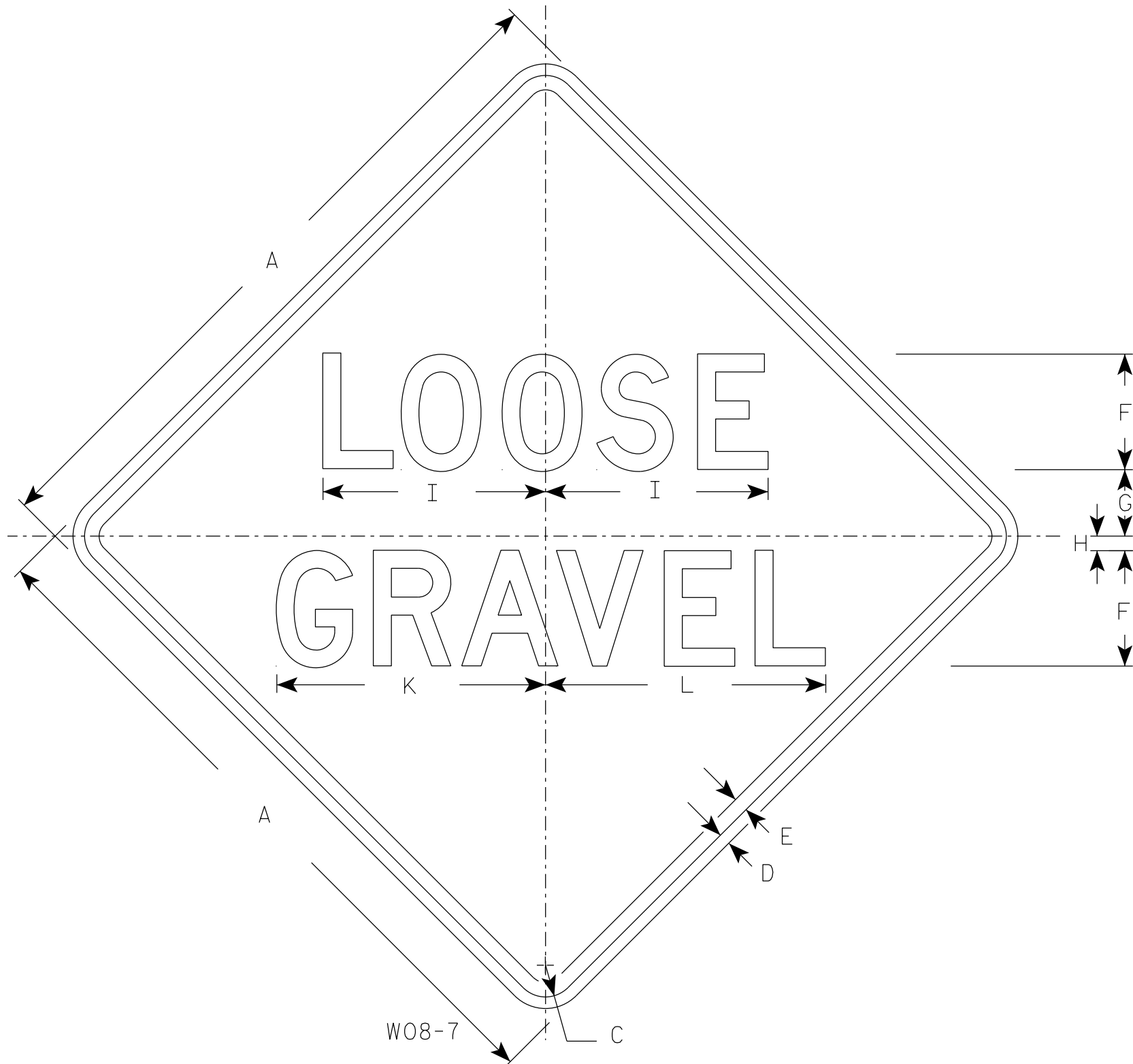
STANDARD SIGN
W08-2

WISCONSIN DEPT OF TRANSPORTATION

APPROVED
Matthew R. Rauch
for State Traffic Engineer

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

SHEET NO: E



NOTES

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

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	36		1 5/8	5/8	3/4	6	4 1/8	3/4	11 5/8		14	14 1/2															9.0
2S	48		2 1/4	3/4	1	8	5 1/2	1	15 1/2		18 5/8	19 3/8															16.0
2M	48		2 1/4	3/4	1	8	5 1/2	1	15 1/2		18 5/8	19 3/8															16.0
3	48		2 1/4	3/4	1	8	5 1/2	1	15 1/2		18 5/8	19 3/8															16.0
4	48		2 1/4	3/4	1	8	5 1/2	1	15 1/2		18 5/8	19 3/8															16.0
5	48		2 1/4	3/4	1	8	5 1/2	1	15 1/2		18 5/8	19 3/8															16.0

STANDARD SIGN

W08 - 7

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

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

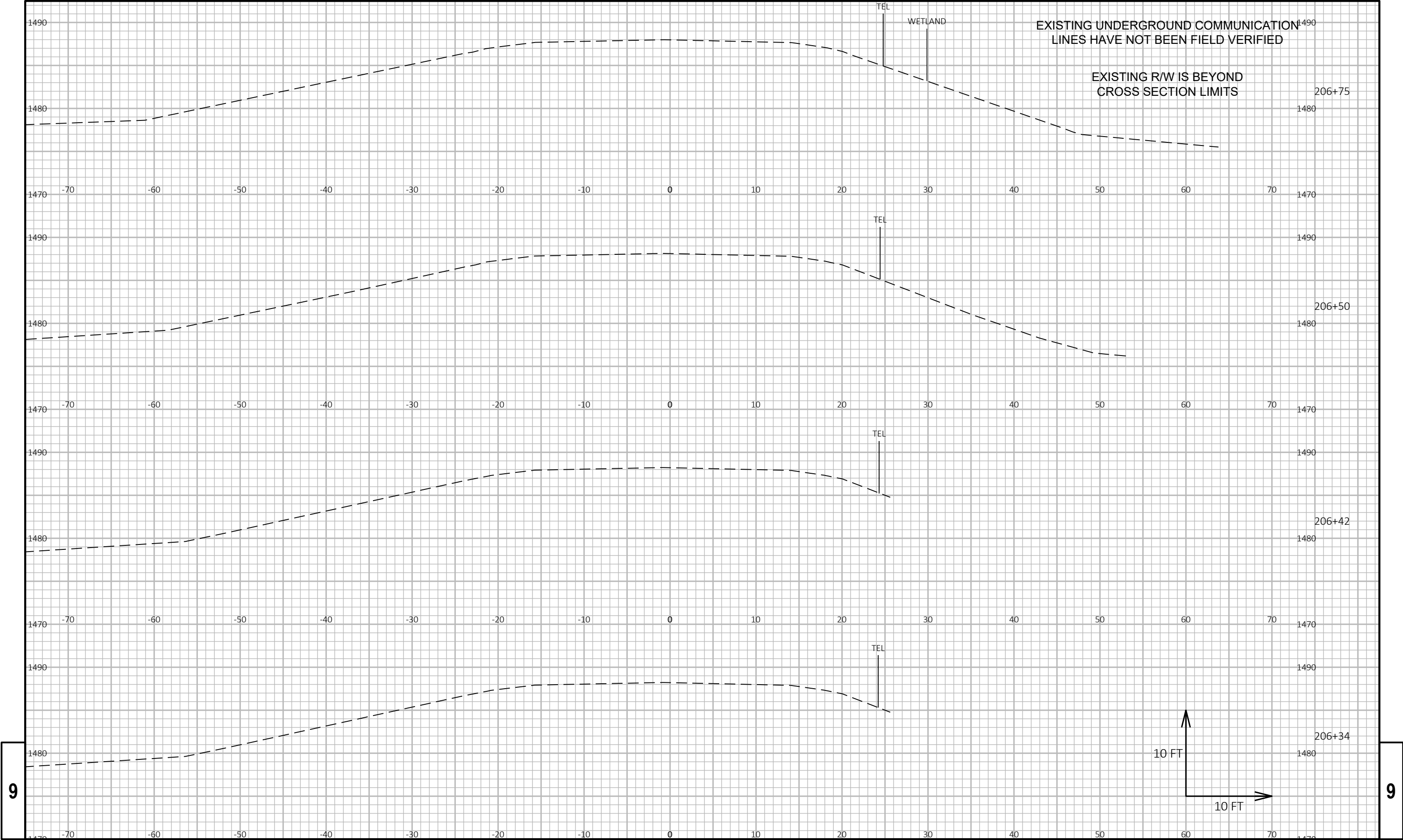
PROJECT NO:

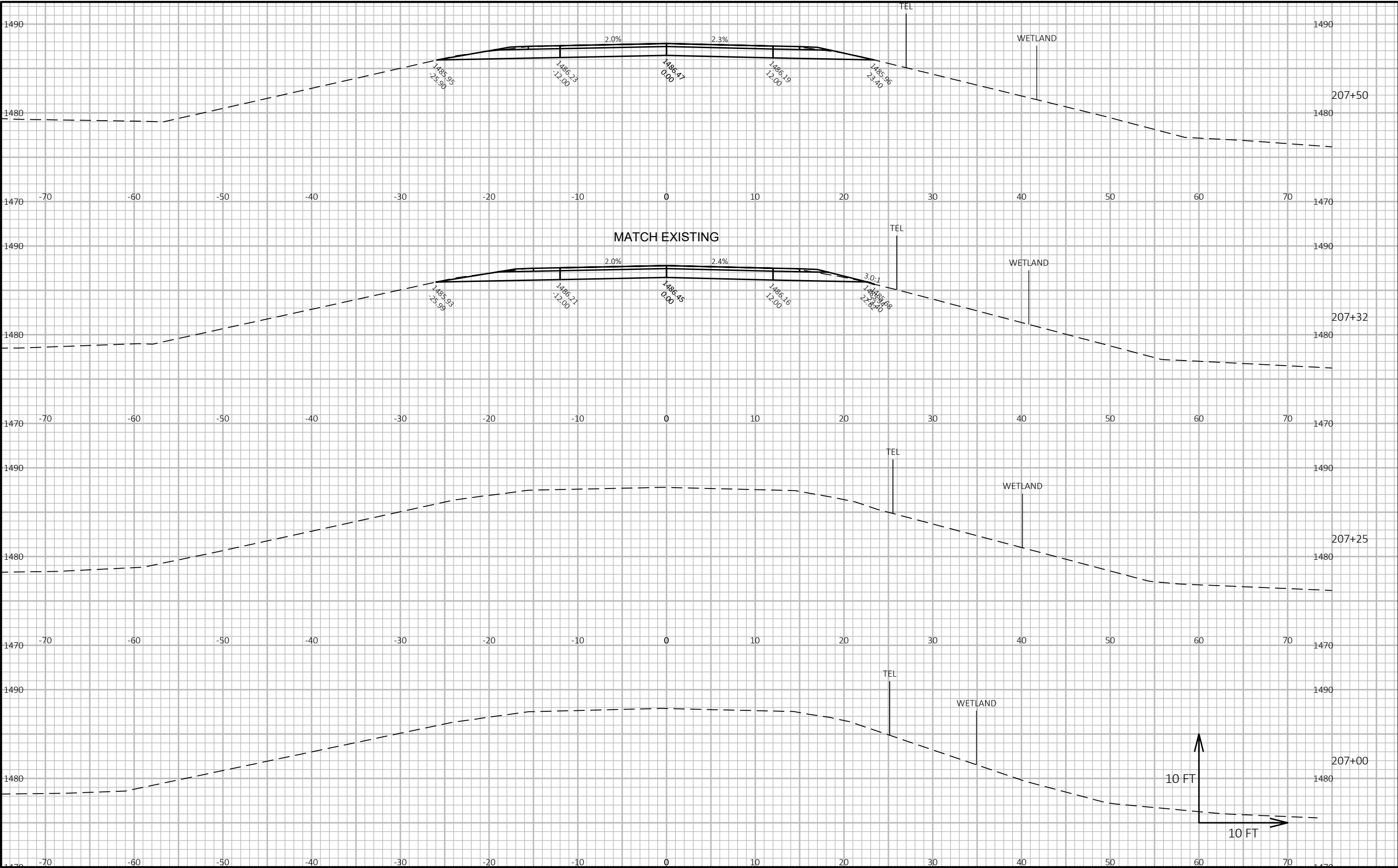
HWY:

COUNTY:

SHEET NO:

E

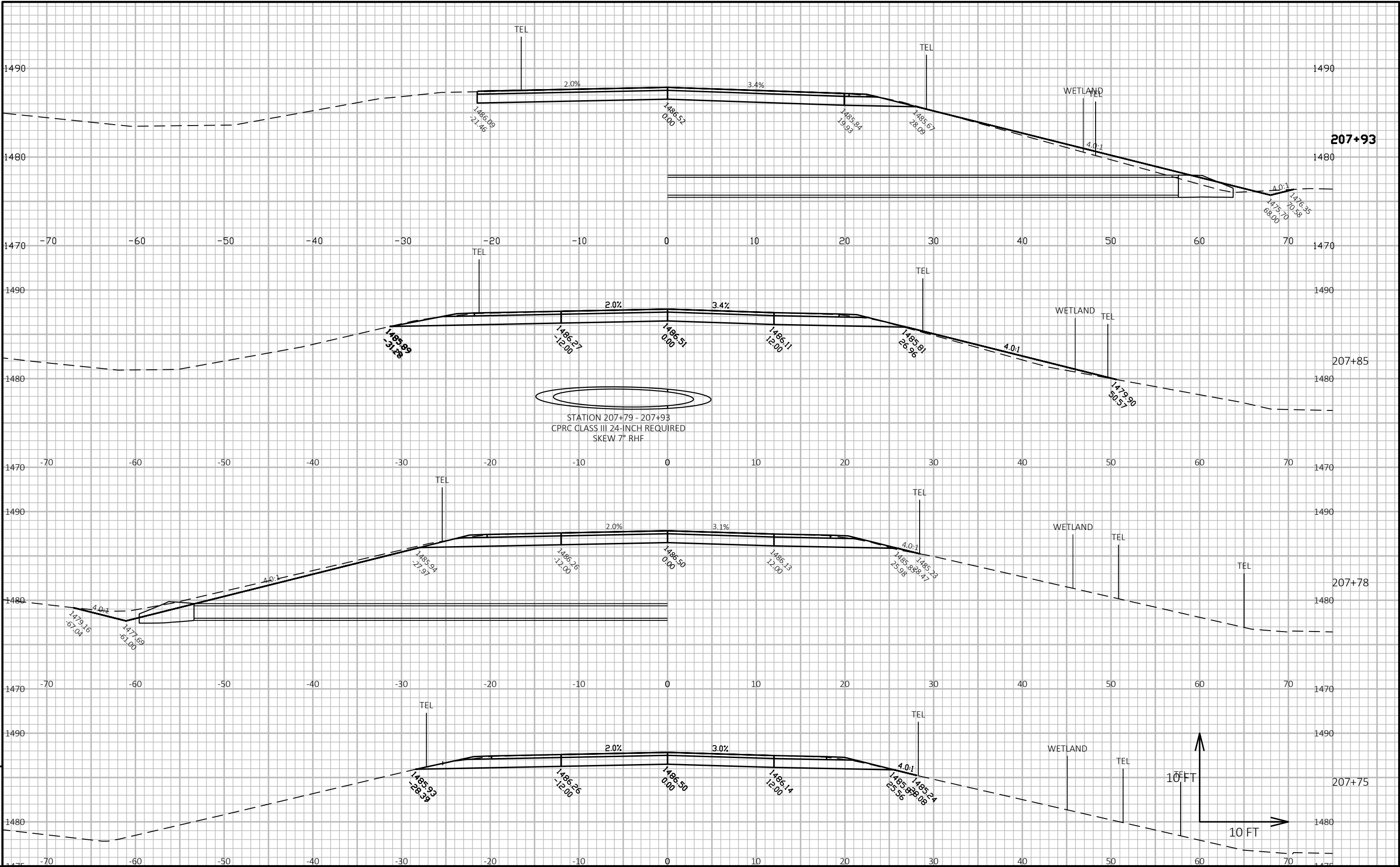


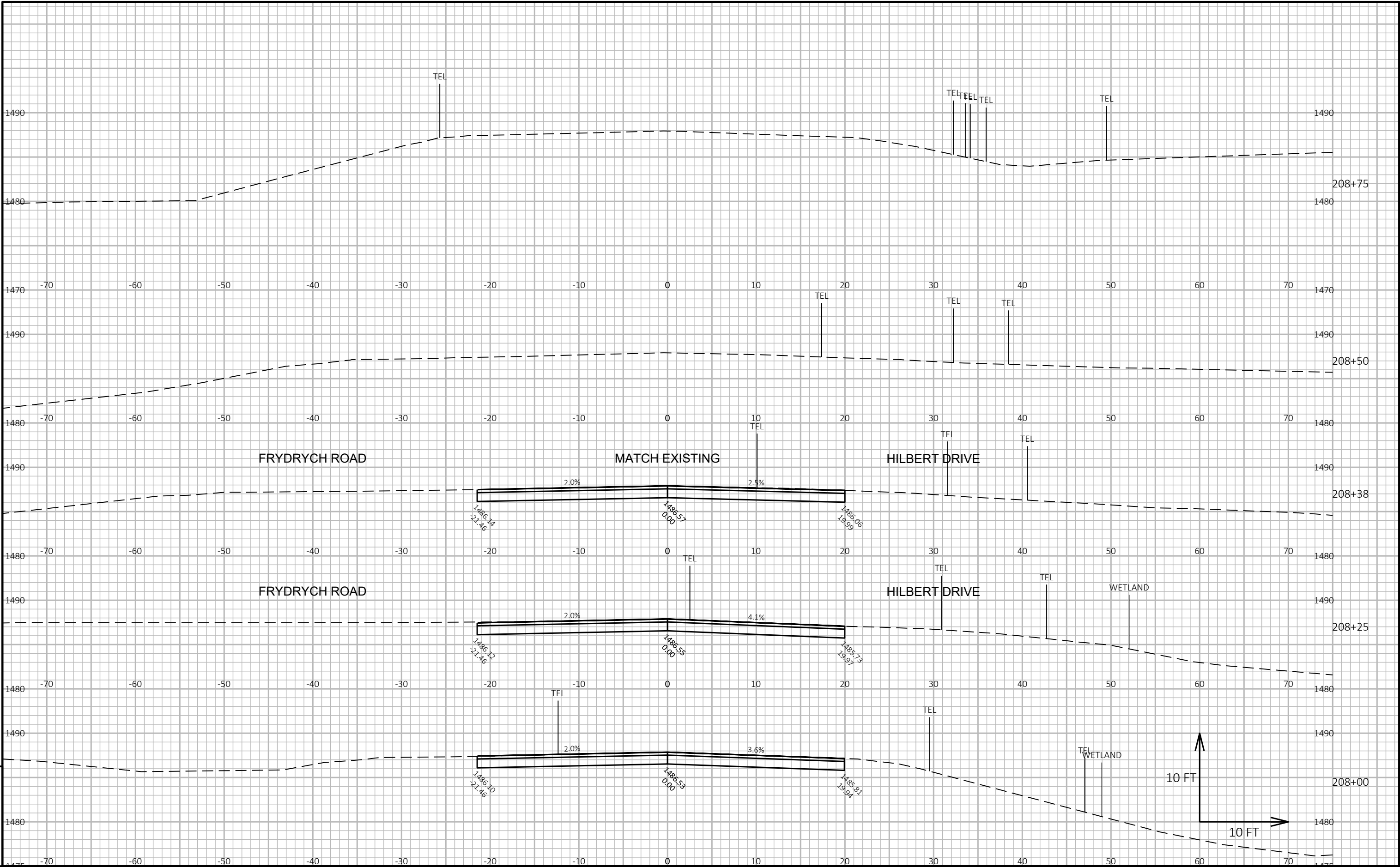


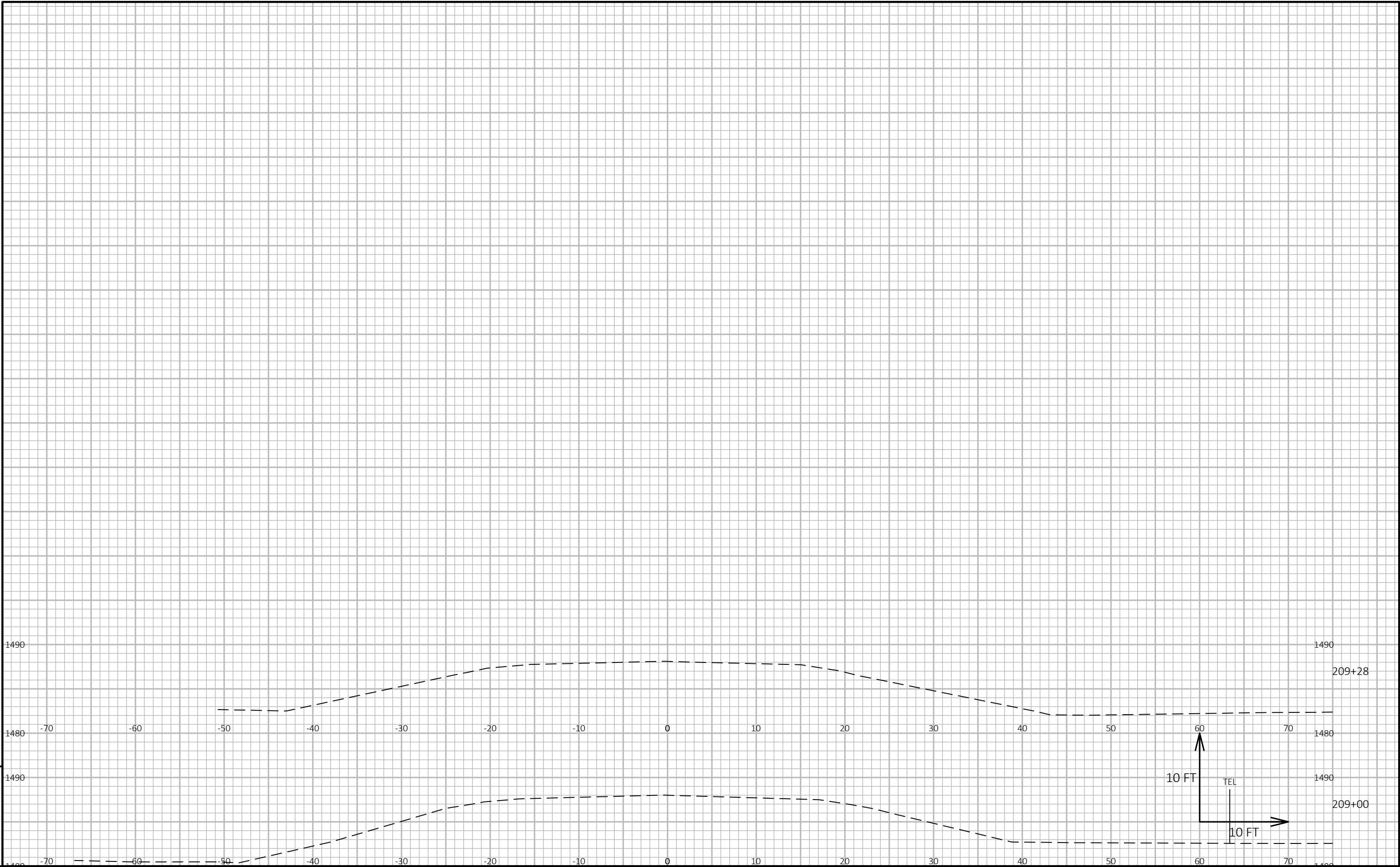
9

9

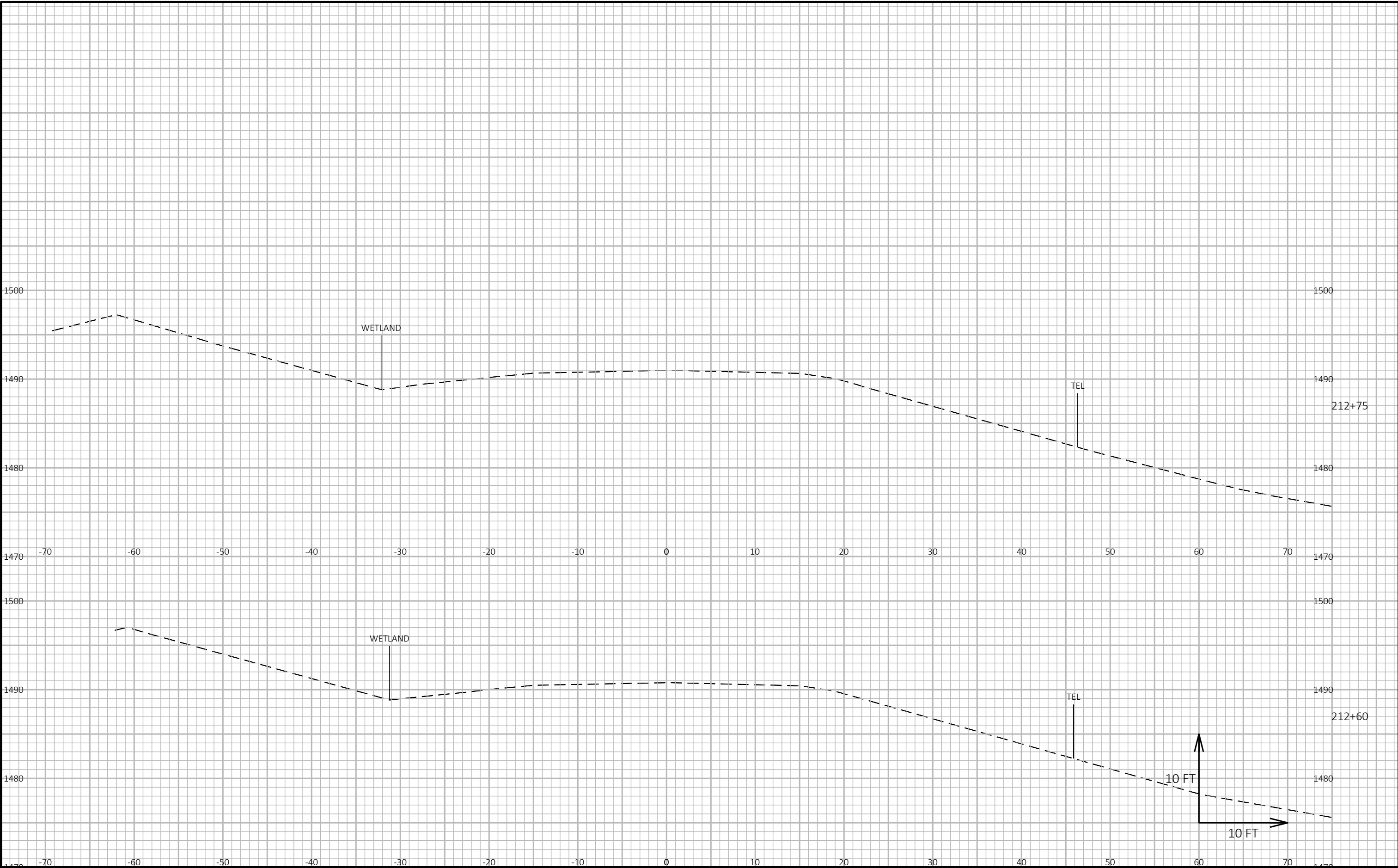
PROJECT NO: 9304-12-70	HWY: STH 101	COUNTY: FOREST	CROSS SECTIONS: 207+85 CULVERT 21-101-065117 FINAL	SHEET E
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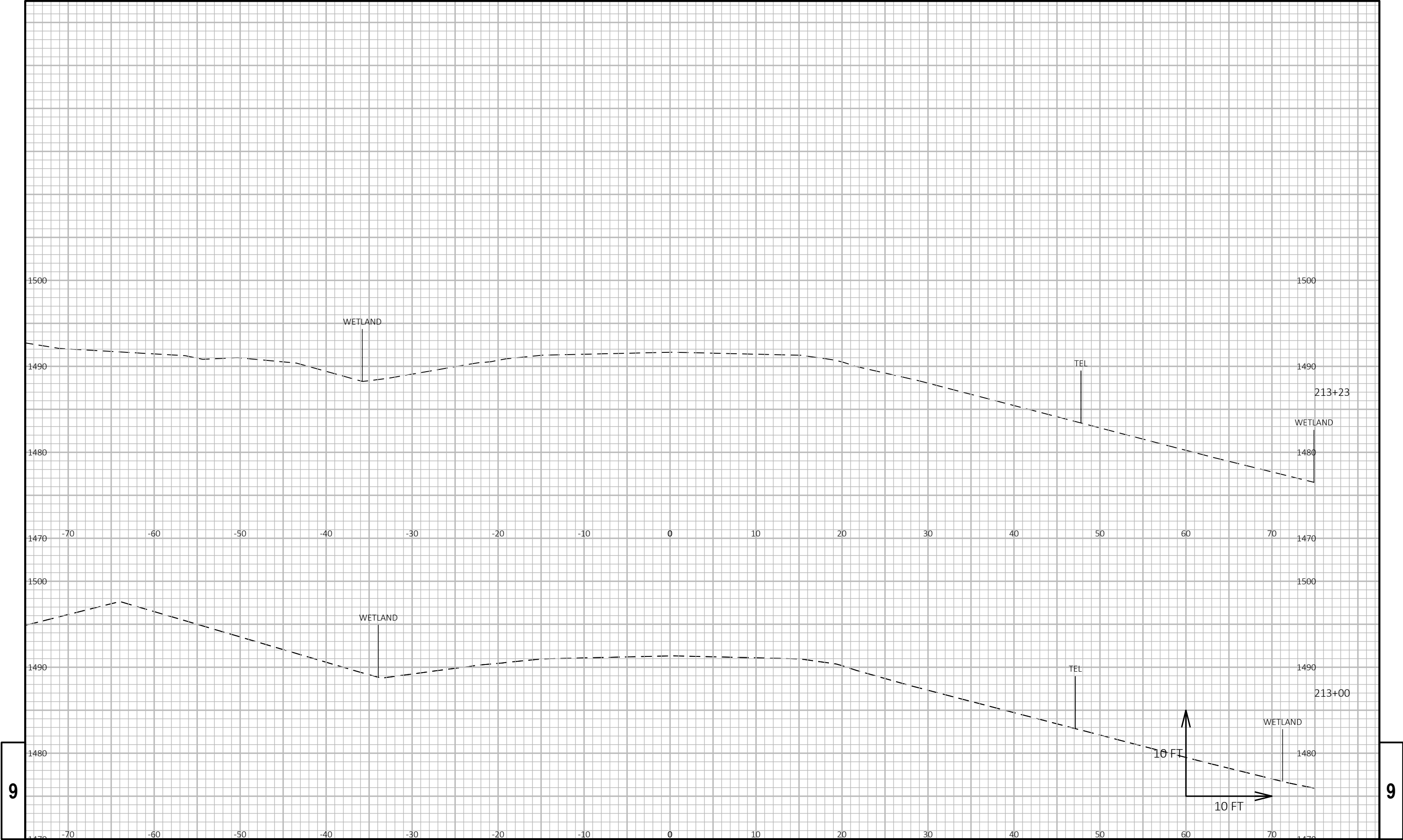




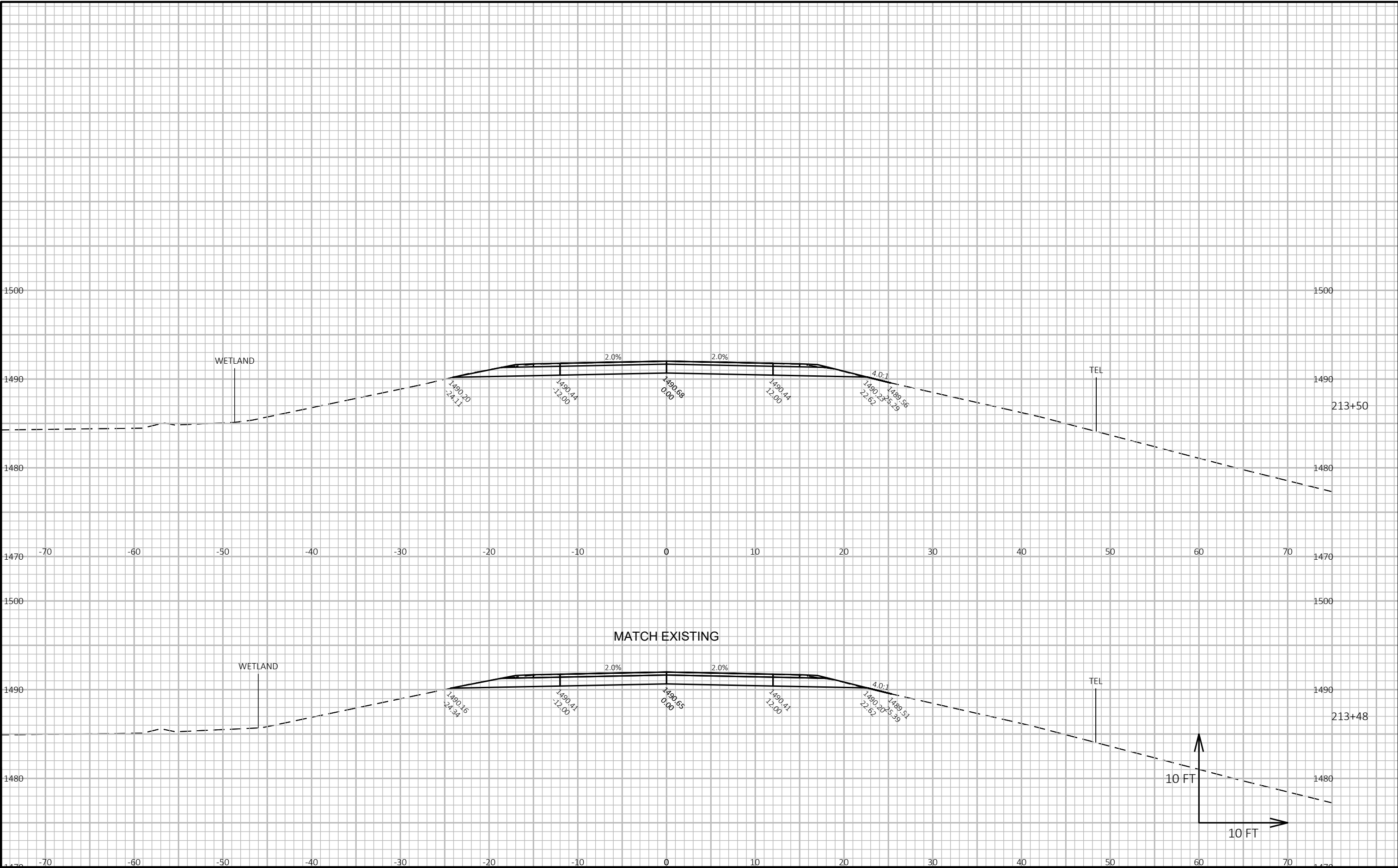


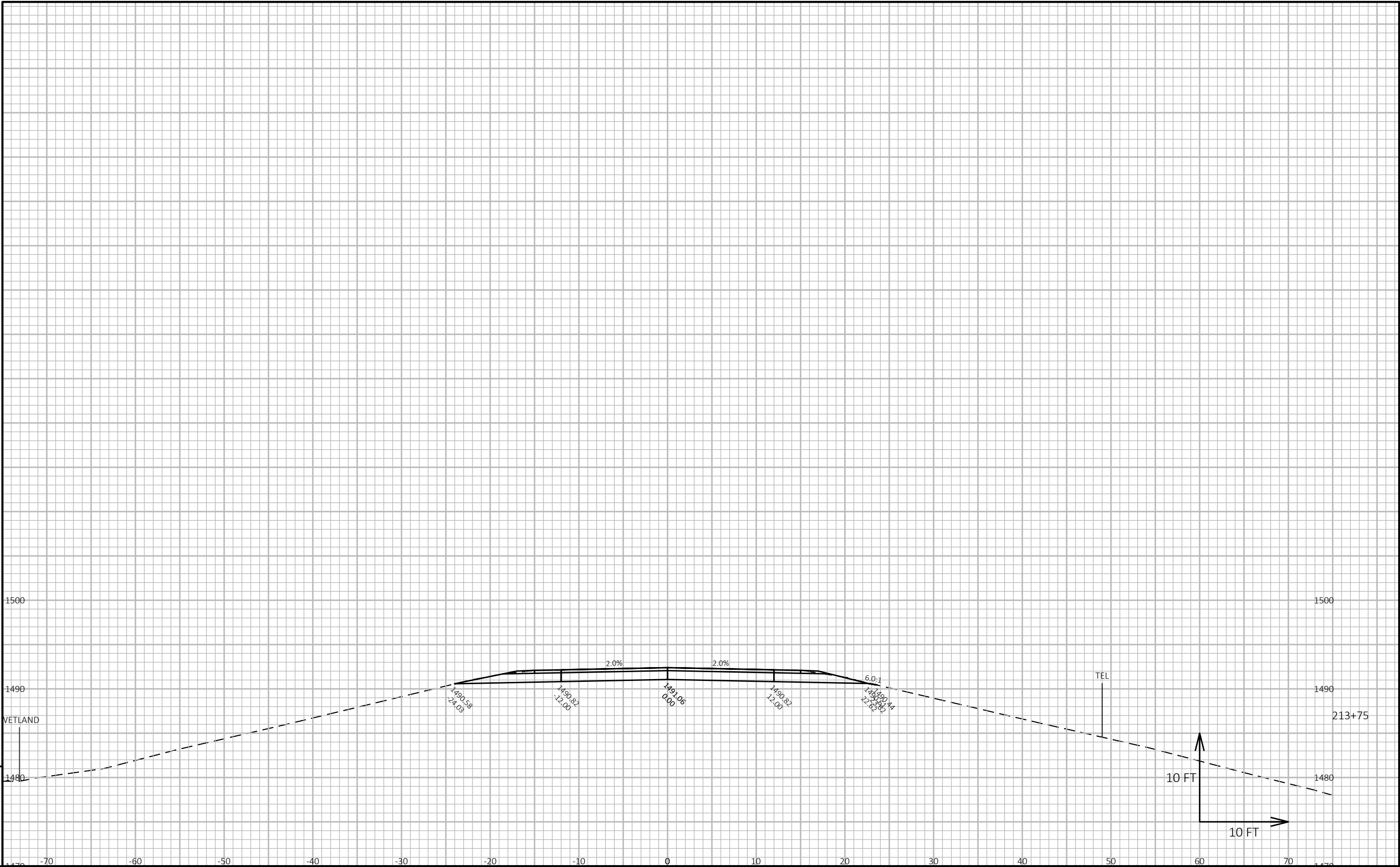
PROJECT NO: 9304-12-70	HWY: STH 101	COUNTY: FOREST	CROSS SECTIONS: 207+85 CULVERT 21-101-065117 FINAL	SHEET E
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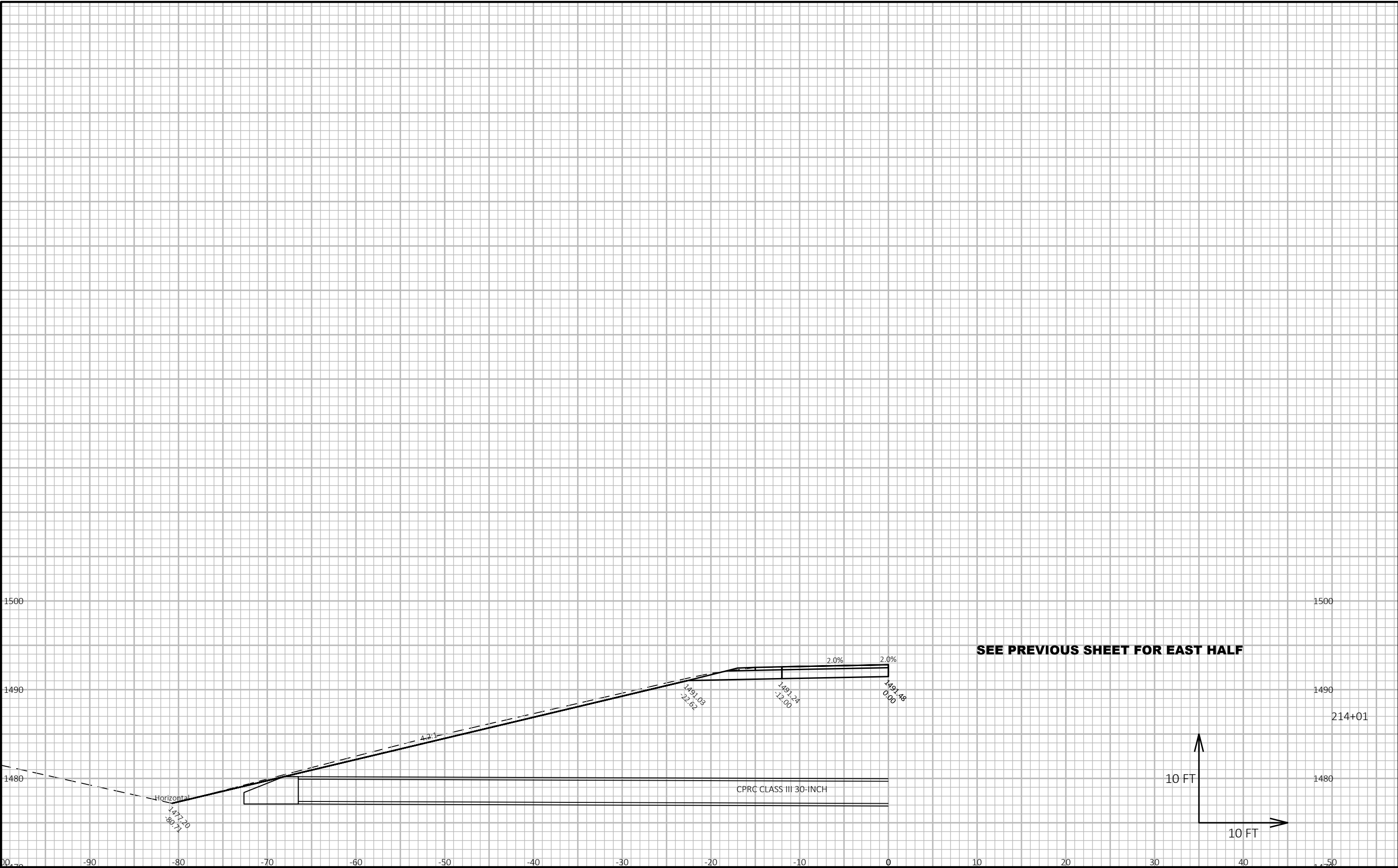
9															9			
	PROJECT NO: 9304-12-70				HWY: STH 101				COUNTY: FOREST				CROSS SECTIONS: 214+01 - 216+00 - CULVERTS 21-101-065119+21-101-000537 FINAL			SHEET		E



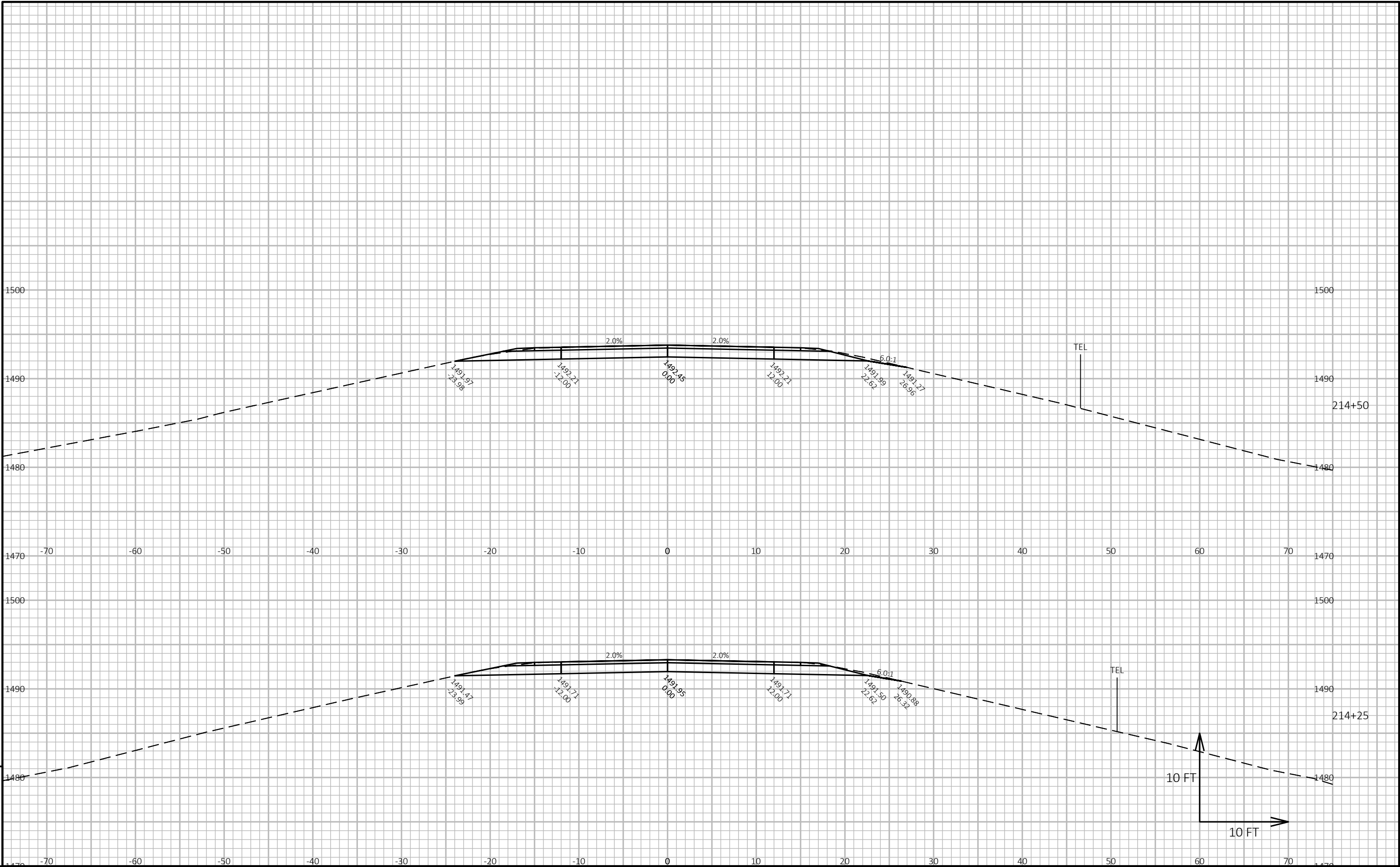


SEE NEXT SHEET FOR WEST HALF



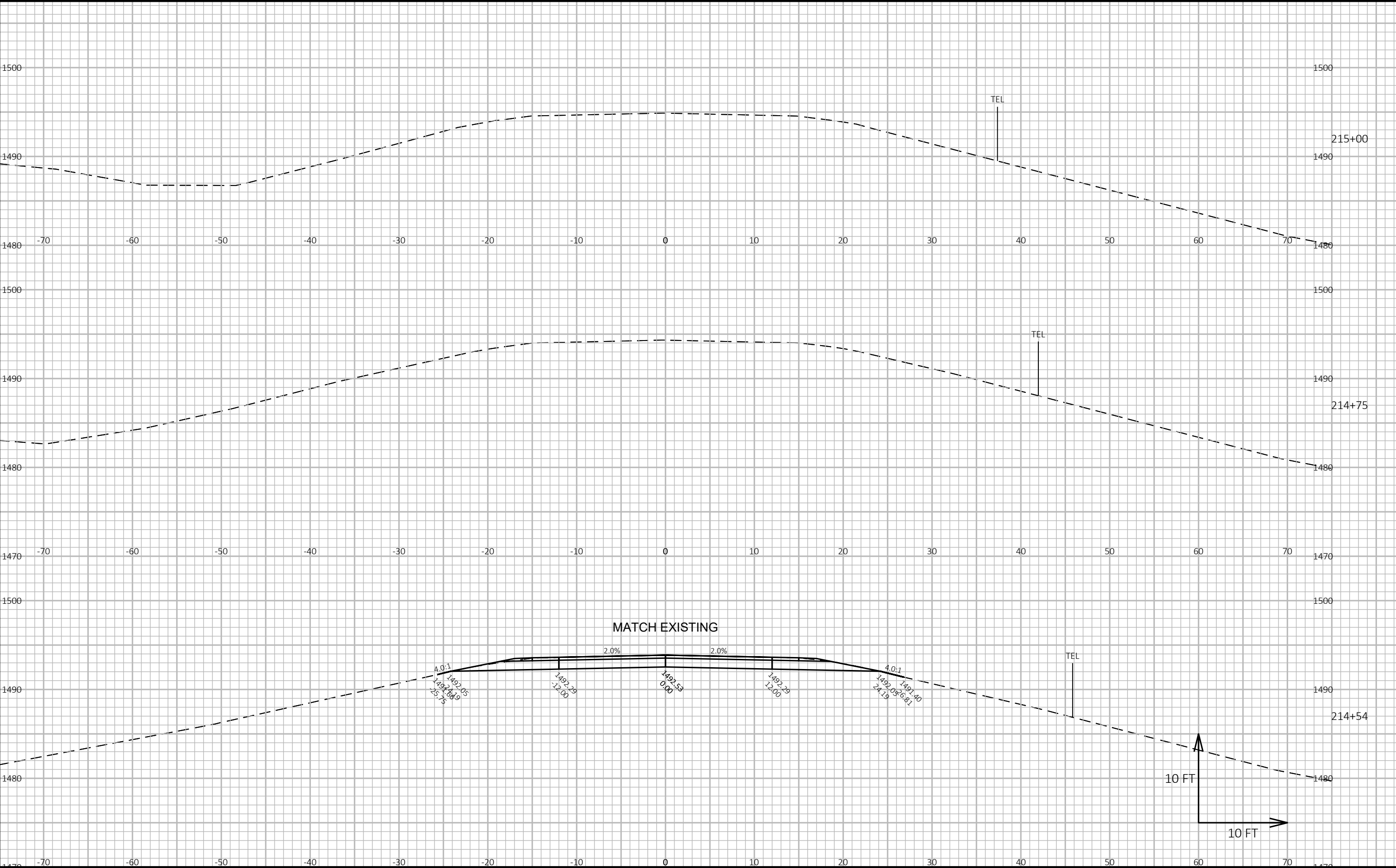


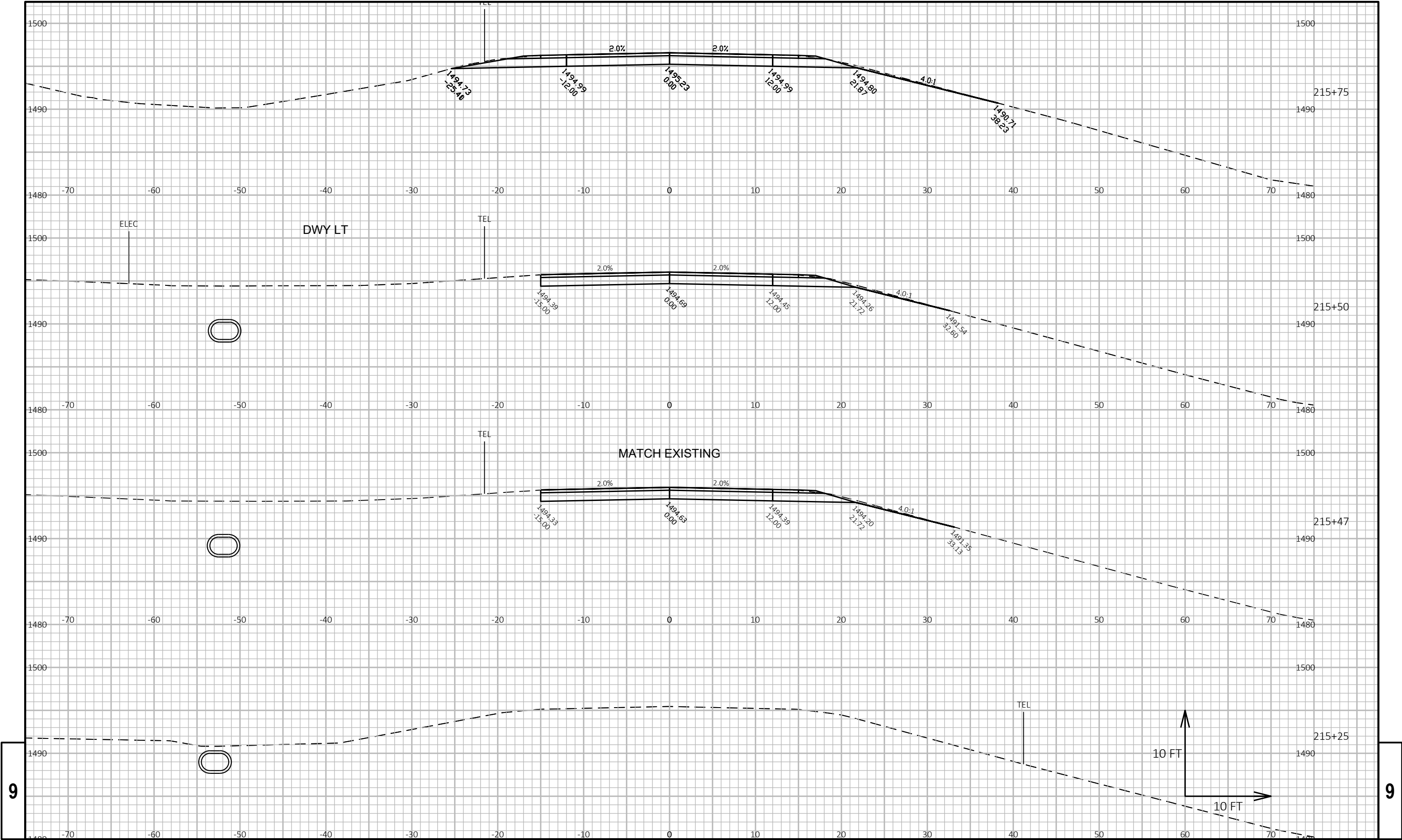
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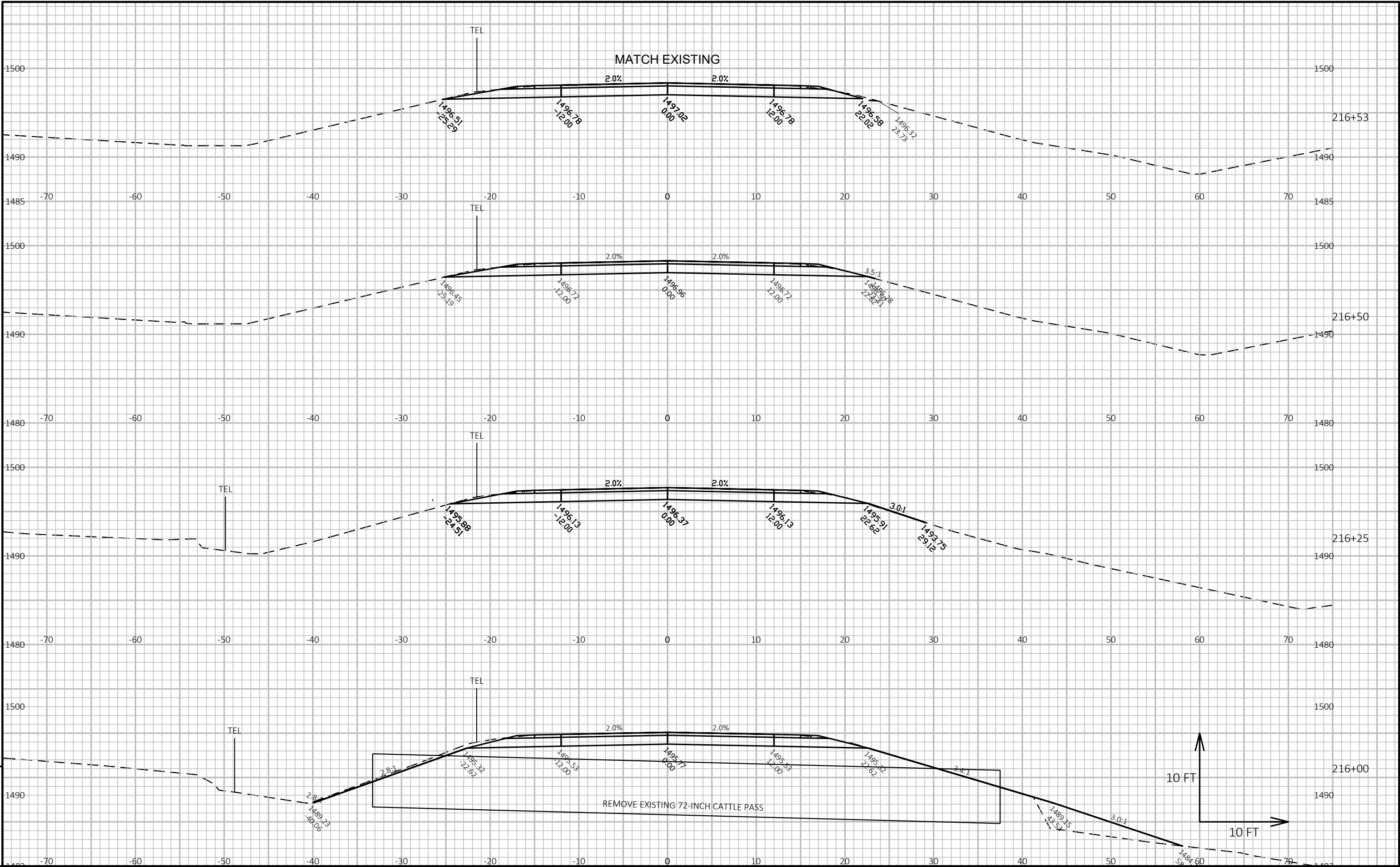


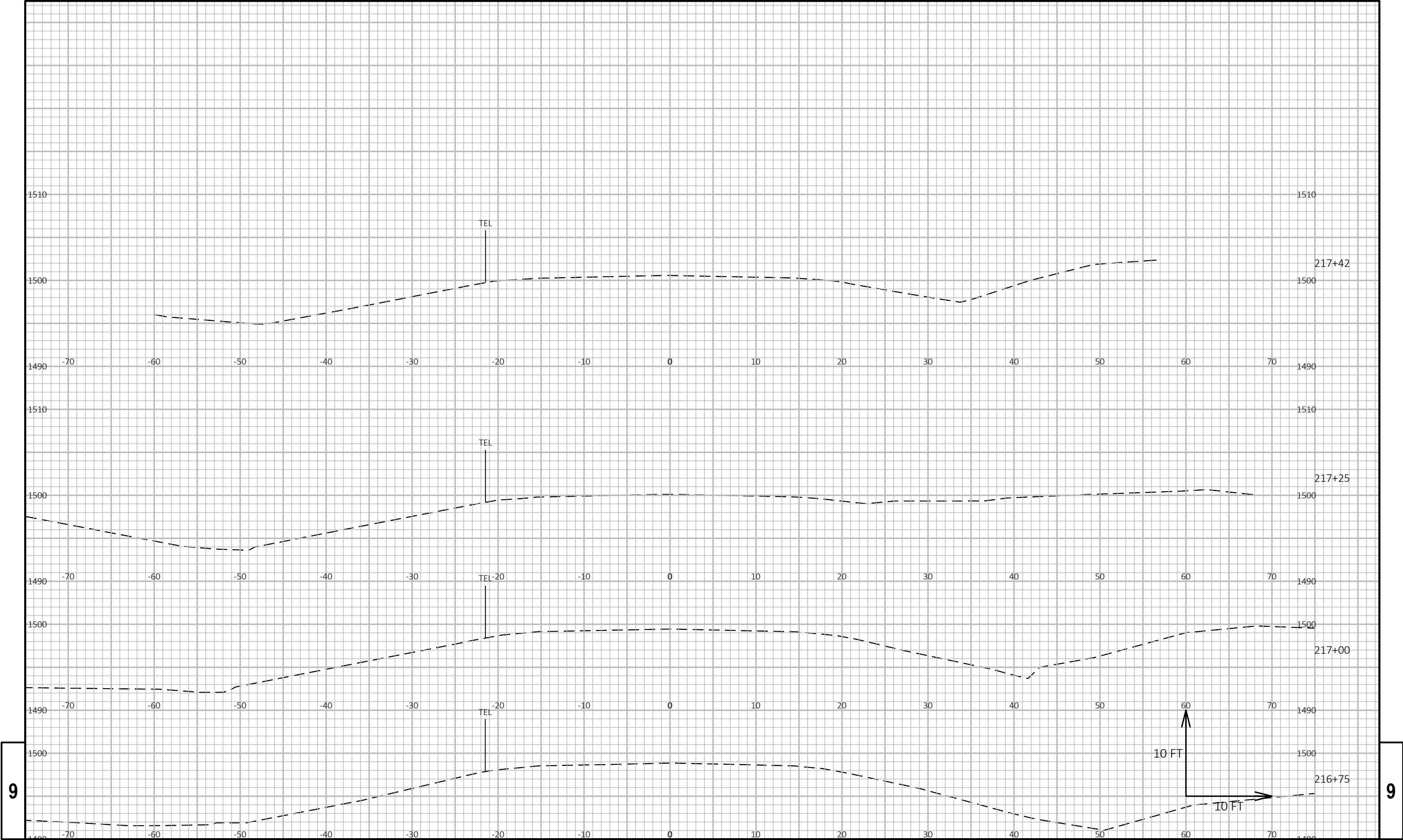
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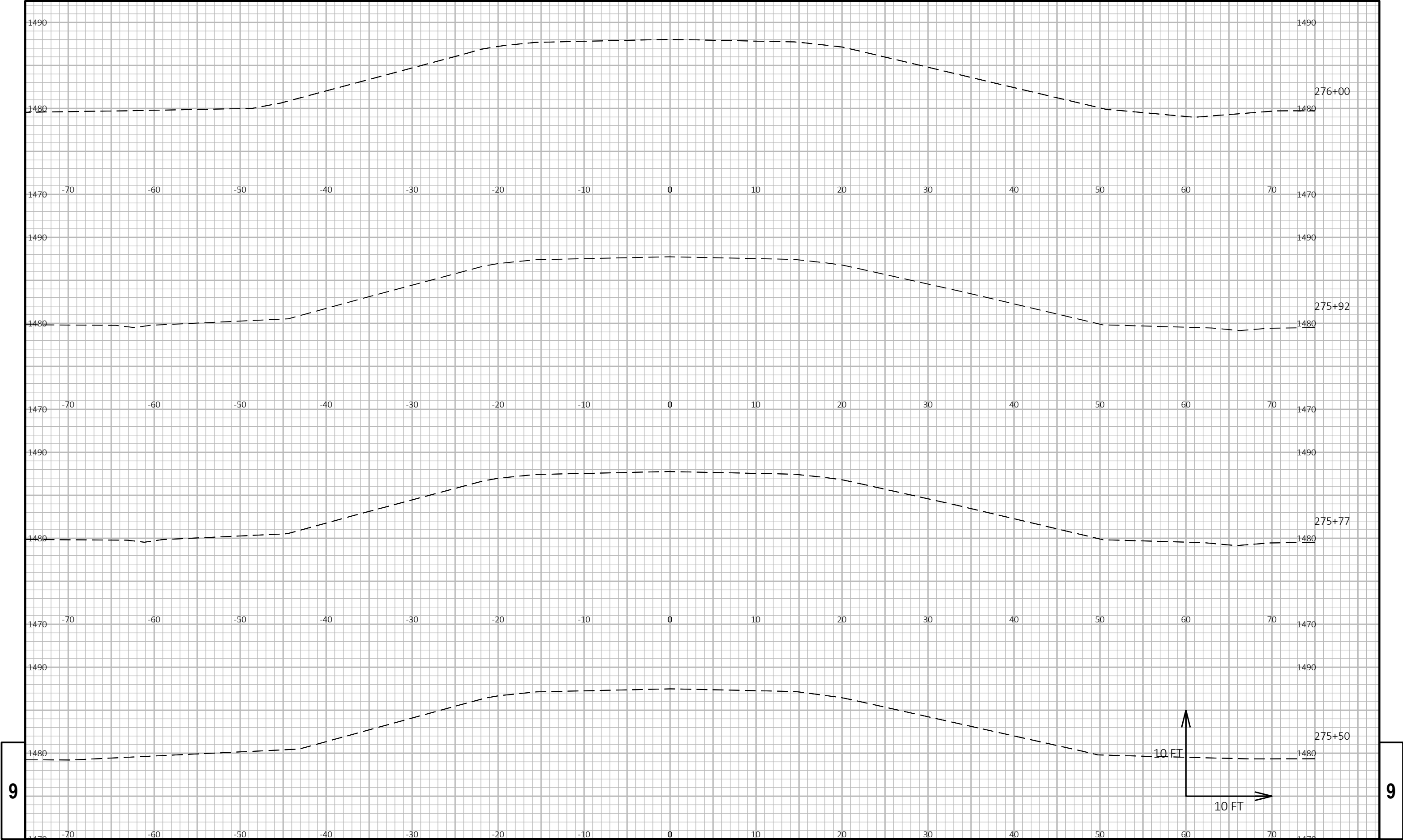
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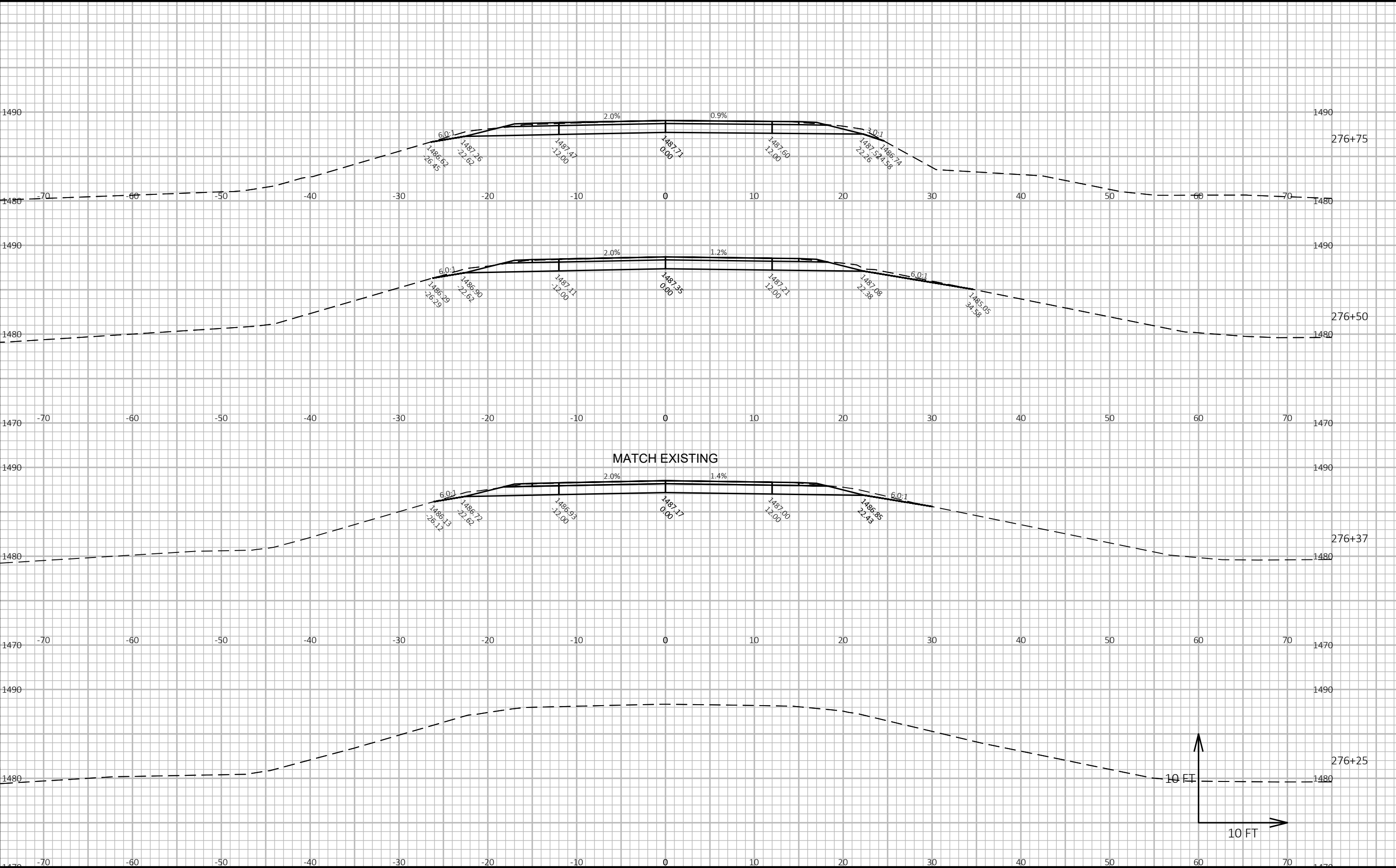


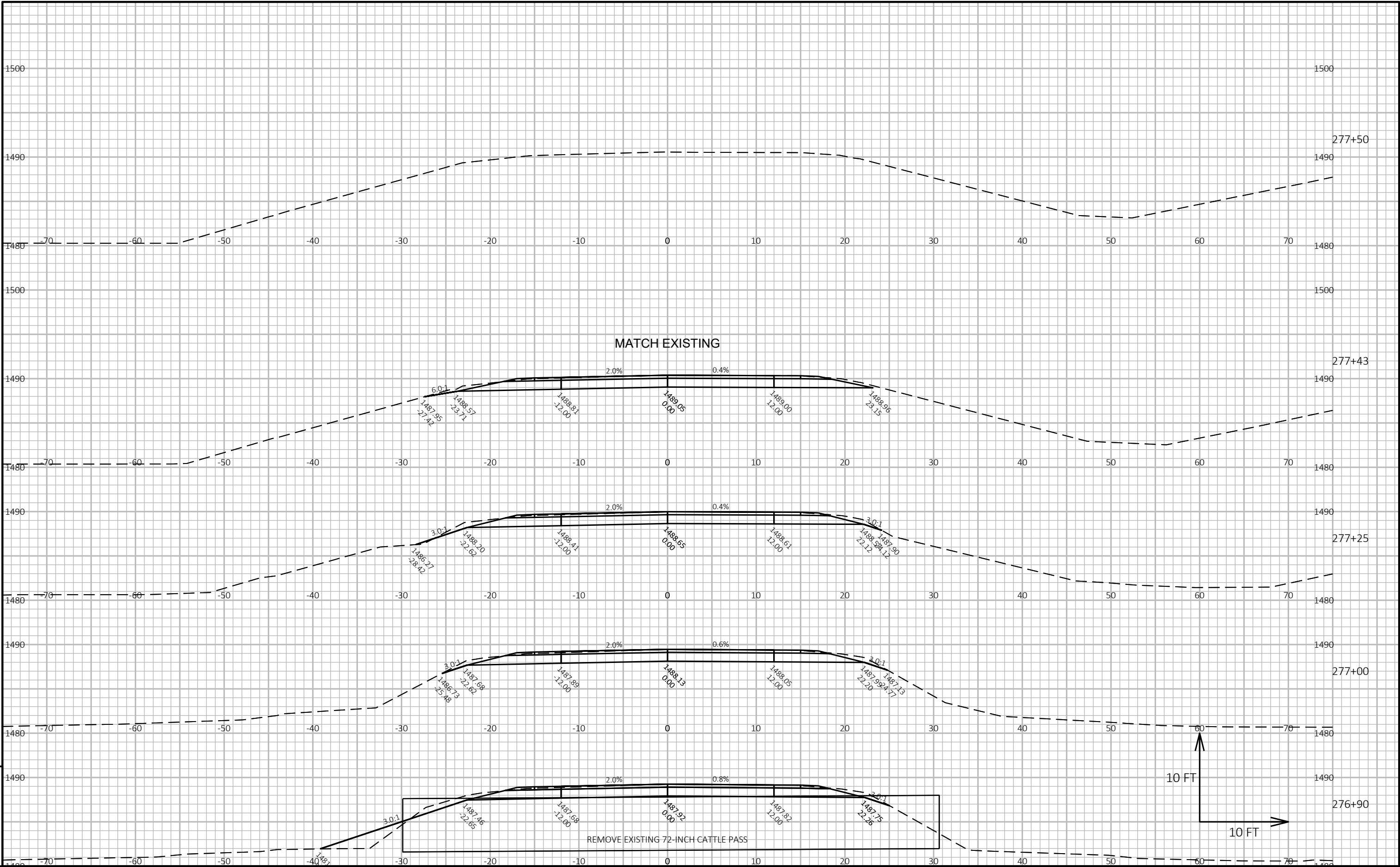


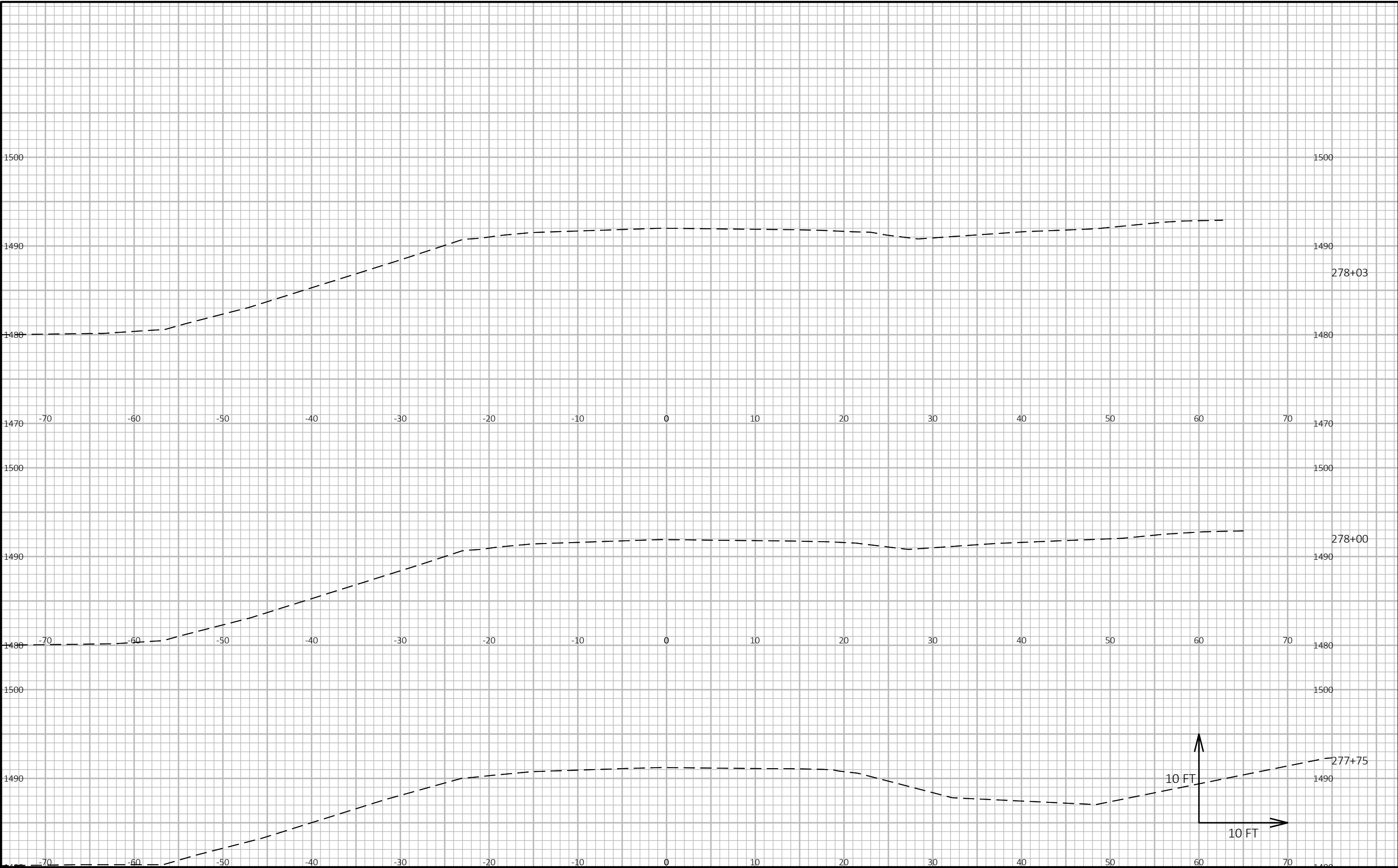
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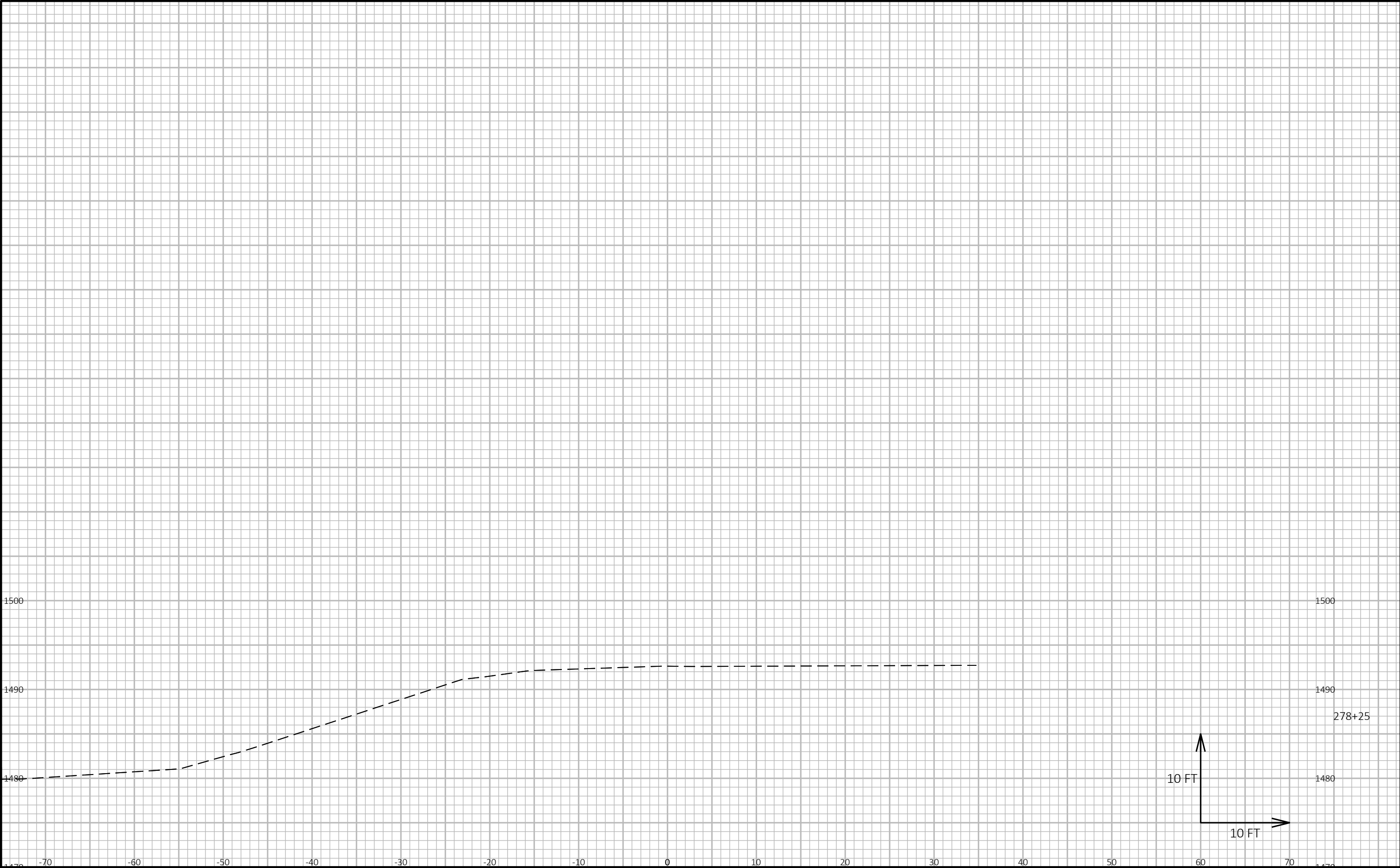
PROJECT NO: 9304-12-70	HWY: STH 101	COUNTY: FOREST	CROSS SECTIONS: 276+90 - CULVERT 19-101-000088 FINAL	SHEET E
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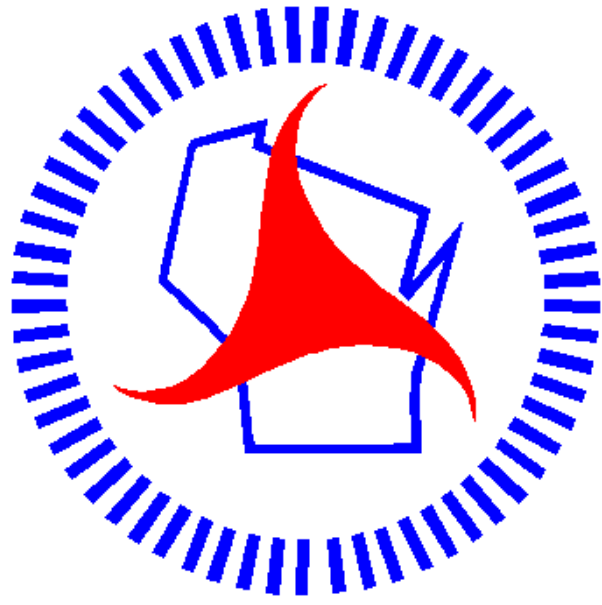
9		PROJECT NO: 9304-12-70			HWY: STH 101			COUNTY: FOREST			CROSS SECTIONS: 276+90 - CULVERT 19-101-000088 FINAL			SHEET		E
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9

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PROJECT NO:	9304-12-70	HWY:	STH 101	COUNTY:	FOREST	CROSS SECTIONS:	276+90 - CULVERT 19-101-000088 FINAL	SHEET	E
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Wisconsin Department of Transportation

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