

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 Plan
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

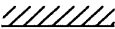


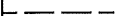


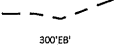





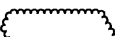
TOTAL SHEETS = 162



DESIGN DESIGNATION

A.A.D.T. (2018)	= 1,250
A.A.D.T. (2038)	= 1,450
D.H.V. (2038)	= 28.9%
D.D.	= 60/40
T.	= 34.4%
DESIGN SPEED	= 55 MPH
ESALS	= 1,124.200

CONVENTIONAL SYMBOLS

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

PROFILE
GRADE LINE
ORIGINAL GROUND
MARSH OR ROCK PROFILE
(To be noted as such)
SPECIAL DITCH

GRADE ELEVATION

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

ROCK
 LABEL

35.36

E
 FO
 G
 SAN
 SS
 T
 W

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PLAN OF PROPOSED IMPROVEMENT

PITTSVILLE - NEILLSVILLE

EAST COUNTY LINE TO MERIDIAN AVENUE

STH 73
CLARK COUNTY

STATE PROJECT NUMBER
7050-03-72

PITTSVILLE - NEILLSVILLE

TOMAS CREEK BRIDGE B-10-0193

STH 73
CLARK COUNTY

STATE PROJECT NUMBER
7050-08-74

PITTSVILLE - NEILLSVILLE

TOMAS CREEK BRIDGE B-10-0192

STH 73
CLARK COUNTY

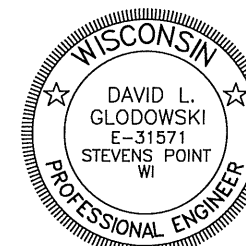
STATE PROJECT NUMBER
7050-09-73

STATE PROJECT	FEDERAL PROJECT	
	PROJECT	CONTRACT
7050-03-72	WISC 2018259	1
7050-08-74	_____	_____
7050-09-73	_____	_____

ORIGINAL PLANS PREPARED BY



120 Wilshire Boulevard North • Stevens Point, WI 54481
(715) 341-4363 • fax (715) 341-1856



1/26/18
(Date)

DAVID L. GLODOWSKI, PE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PREPARED BY	
Surveyor	GREMMER & ASSOCIATES, INC.
Designer	GREMMER & ASSOCIATES, INC.
Project Manager	DAVID KOEPP, P.E.
Regional Examiner	TOU YANG, P.E.
Regional Supervisor	TIMOTHY MASON, P.E.

APPROVED FOR THE DEPARTMENT

DATE: 2/1/2018

(Signat

7

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

GENERAL NOTES

ALL DISTANCES AND STATIONING SHOWN ON THIS PLAN ARE GROUND VALUES.

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

THE CONTRACTORS PAVING OPERATION SHALL BE CONSISTENT WITH THE PLAN TYPICAL SECTIONS AND CONSTRUCTED TO PREVENT HMA LONGITUDINAL JOINTS FROM BEING LOCATED WITHIN A DRIVE, TURNING, AND PASSING LANE.

CURVE DATA IS BASED ON ARC DEFINITION.

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

TRAFFIC CONTROL NOTES

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

PLACE TEMPORARY PORTABLE RUMBLE STRIP ARRAY ACCORDING TO SDD TRAFFIC CONTROL FOR LANE CLOSURE WITH FLAGGING OPERATION.

PLACE TRAFFIC CONTROL SIGNS ACCORDING TO SDD TRAFFIC CONTROL FOR LANE CLOSURE WITH FLAGGING OPERATION.

PLACE TRAFFIC CONTROL SIGN "ROAD WORK AHEAD" ON ALL SIDE ROADS APPROACHING STH 73 WITHIN THE WORK ZONE.

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

ALL PAVEMENT MARKING, TEMPORARY OR EXISTING, WHICH MAY CONFLICT WITH THE CONSTRUCTION TRAFFIC PATTERN SHALL BE REMOVED OR COVERED.

ALL SIGNS AND DEVICES SHALL BE IN CONFORMANCE WITH THE "WISCONSIN MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" (WMUTCD), A SUPPLEMENT TO THE FEDERAL HIGHWAY ADMINISTRATION'S "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES".

TRAFFIC CONTROL FOR BRIDGE STRUCTURES WITHIN THE PROJECT LIMITS ARE SHOWN IN TRAFFIC CONTROL PLAN SHEETS.

ORDER OF SECTION 2 SHEETS

GENERAL NOTES

PROJECT OVERVIEW

TYPICAL SECTIONS

CONSTRUCTION DETAILS

PERMANENT SIGNING

PAVEMENT MARKING

TRAFFIC CONTROL

DESIGN CONTACTS

WISCONSIN DEPARTMENT OF TRANSPORTATION
ATTN: DAVID KOEPP
NW REGION REPRESENTATIVE
718 WEST CLAIREMONT AVENUE
EAU CLAIRE, WI 54701
OFFICE: 715.836.2078
EMAIL: david.koepp@dot.wi.gov

GREMMER & ASSOCIATES, INC.
ATTN: DAVID GLODOWSKI
120 WILSHIRE BOULEVARD NORTH
STEVENS POINT, WI 54481
OFFICE: 715.341.4363
EMAIL: d.glodowski@gremmerassociates.com

DEPARTMENT OF NATURAL RESOURCES
ATTN: SHAWN HASELEU
810 WEST MAPLE STREET
SPOONER, WI 54801
OFFICE: 715.635.4228
EMAIL: Shawn.Haseleu@wisconsin.gov

UTILITIES

CLARK ELECTRIC COOPERATIVE
ATTN: RICK SUDA
124 NORTH MAIN STREET
P.O. BOX 190
GREENWOOD, WI 54437-0190
PHONE: 715.267.6188
EMAIL: rsuda@cecoop.com

DAIRYLAND POWER COOPERATIVE
ATTN: ROB MALY
3200 EAST AVENUE SOUTH
P.O. BOX 817
LA CROSSE, WI 54602-0817
EMAIL: Rob.Maly@DairylandPower.com

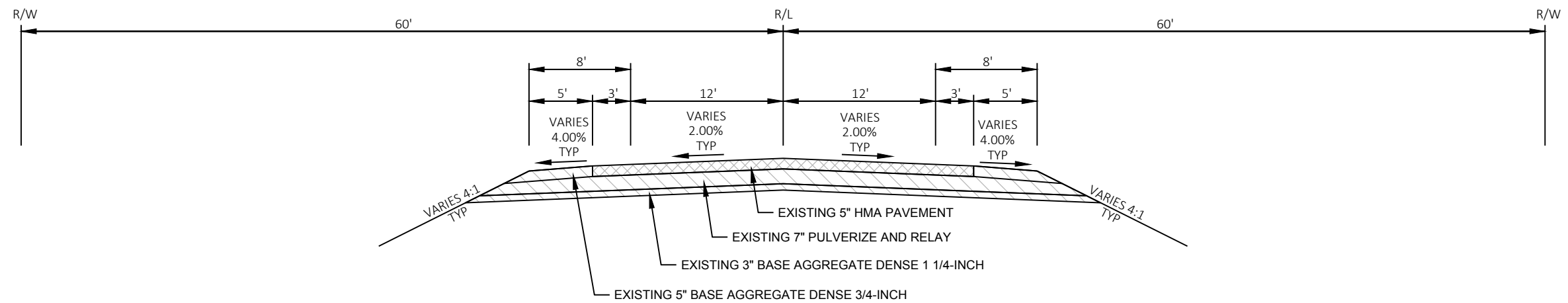
TDS TELECOM (BADGER TELECOM, LLC)
ATTN: STEVE JAKUBIEC
10 COLLEGE AVENUE
SUITE 218A
APPLETON, WI 54911
PHONE: 920.882.4166
EMAIL: steve.jakubiec@tdstelecom.com

TDS TELECOM (CENTRAL STATE TELEPHONE CO)
ATTN: STEVE JAKUBIEC
10 COLLEGE AVENUE
SUITE 218A
APPLETON, WI 54911
PHONE:920.882.4166
EMAIL: steve.jakubiec@tdstelecom.com

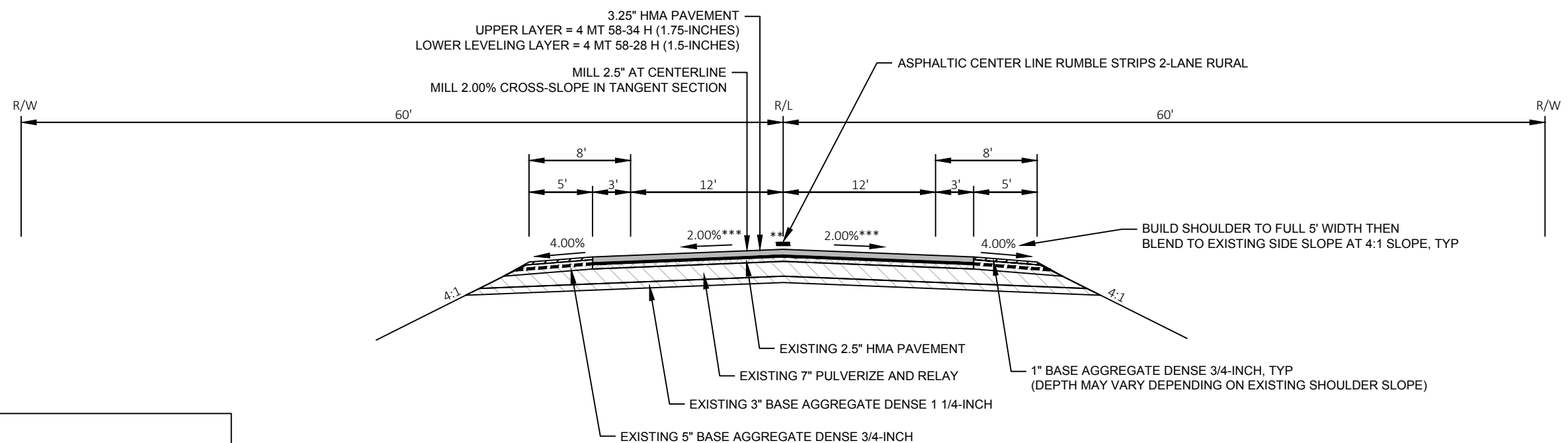
DIGGERSHOTLINE

Dial 811 or (800)242-8511

www.DiggersHotline.com



TYPICAL EXISTING SECTION
STA 0+00 TO STA 438+00



TYPICAL FINISHED SECTION
STA 0+00 TO STA 438+00

TYPICAL SECTION NOTES:

- SHAPING SHOULDERS
- PREPARE FOUNDATION FOR ASPHALTIC PAVING
- ** REHEATING HMA PAVEMENT LONGITUDINAL JOINTS
- *** CROSS-SLOPE IS SUPERELEVATED FROM STATION RANGES BELOW:
(SEE CONSTRUCTION DETAILS FOR MORE DATA)
- STA. 12+80.56 TO STA. 33+92.98
- STA. 56+28.62 TO STA. 81+88.34
- STA. 128+86.13 TO STA. 151+88.05
- STA. 213+67.98 TO STA. 239+42.18
- STA. 260+79.99 TO STA. 271+17.87
- STA. 325+88.72 TO STA. 331+77.55
- STA. 375+72.99 TO STA. 382+33.19

PROJECT NO: 7050-03-72

HWY: STH 73

COUNTY: CLARK

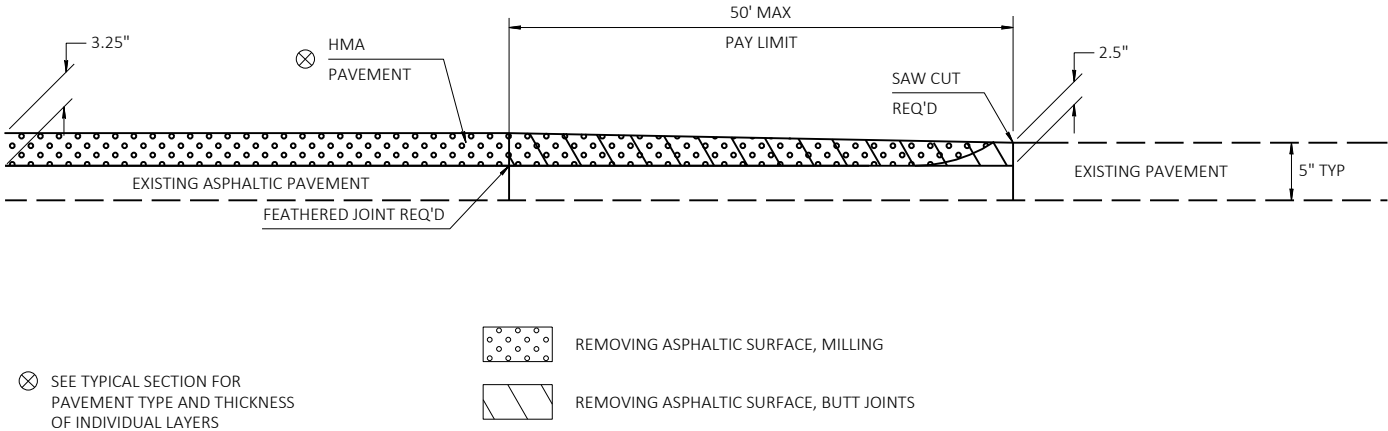
PLAN: TYPICAL SECTION

SHEET

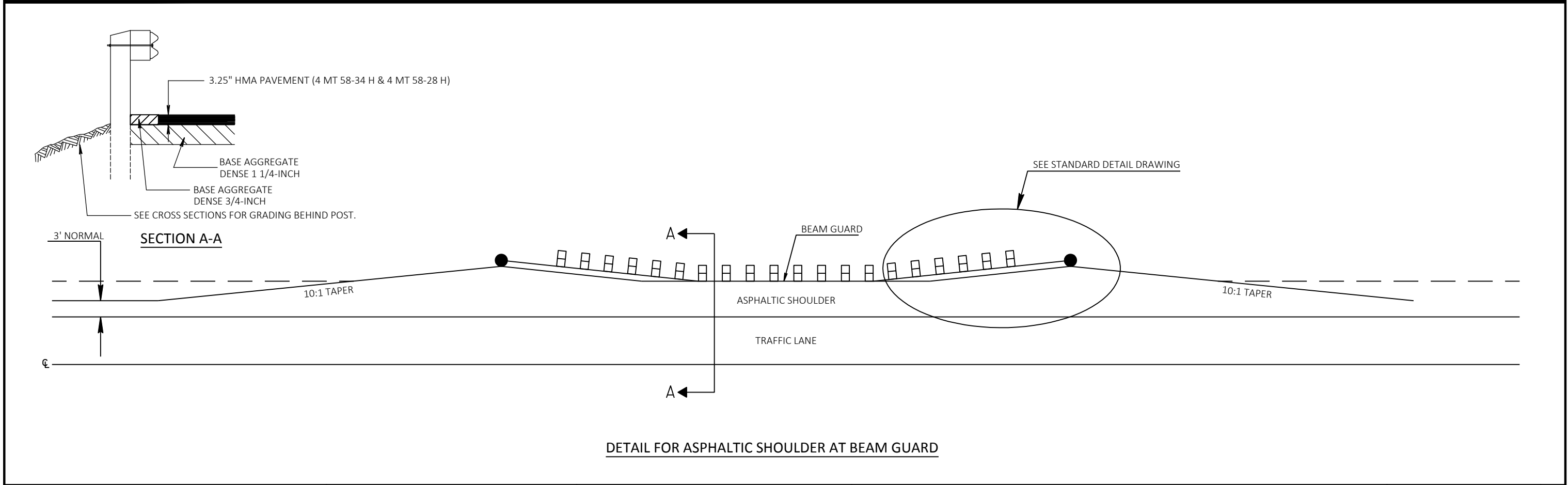
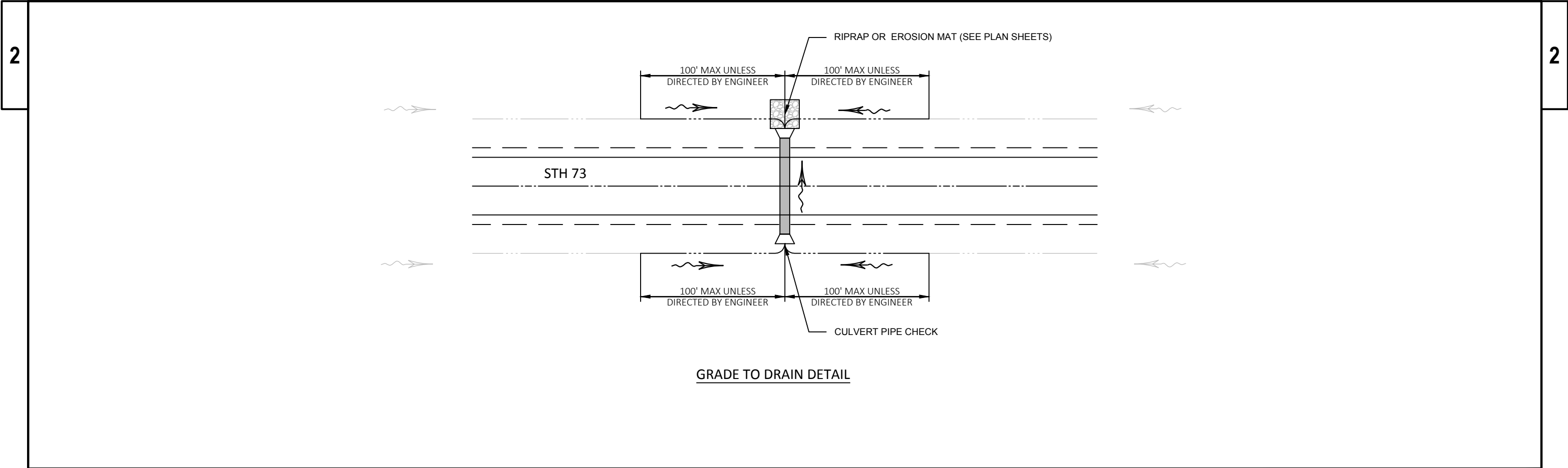
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SUPERELEVATION DATA

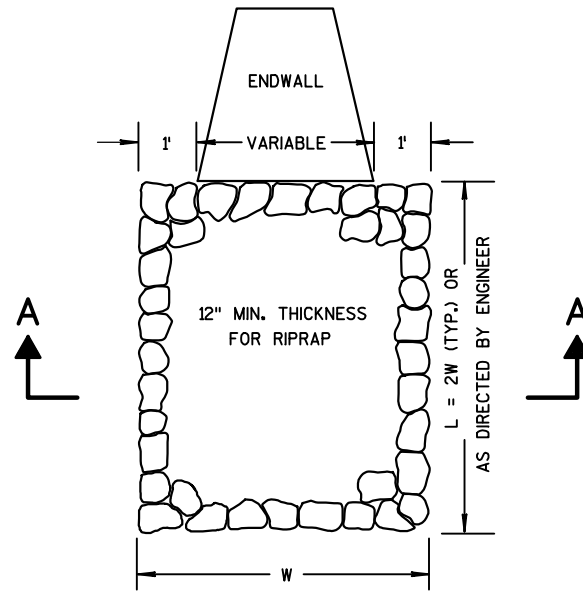
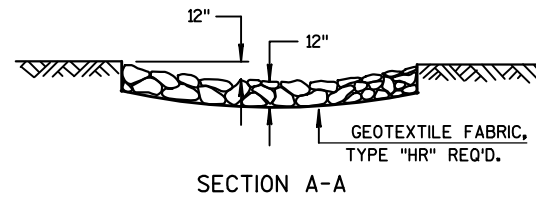
ROADWAY	CURVE NO.	PC	PT	R (FT)	TRANSITION IN REGION					TRANSITION OUT REGION					MAX e	DESIGN SPEED (MPH)
					END NORMAL CROWN	LEVEL CROWN	REVERSE CROWN	LOW SHOULDER MATCH	BEGIN FULL SUPER	END FULL SUPER	LOW SHOULDER MATCH	REVERSE CROWN	LEVEL CROWN	BEGIN NORMAL CROWN		
STH 73	1	14+40.57	32+32.98	1148.00	12+80.56	13+33.90	13+87.23	14+40.56	14+93.90	31+79.65	32+32.98	32+86.32	33+39.65	33+92.98	6.00%	60
STH 73	2	57+87.52	80+29.44	1435.00	56+28.62	56+81.90	57+35.17	57+88.45	58+40.32	79+76.64	80+28.52	80+81.79	81+35.06	81+88.34	5.95%	60
STH 73	3	130+46.14	132+96.14	1050.00	128+86.13	129+39.46	129+92.80	130+46.13	130+99.46	132+42.81	--	--	--	--	6.00%	60
STH 73	4	132+96.14	150+28.05	1287.00	--	--	--	--	133+49.46	149+74.72	150+28.05	150+81.39	151+34.72	151+88.05	6.00%	60
STH 73	5	170+79.13	174+78.86	11459.16	213+67.98	214+21.43	214+74.88	215+28.33	215+68.30	237+41.86	237+81.83	238+35.28	238+88.73	239+42.18	5.50%	60
STH 73	6	215+19.35	237+90.81	1904.00	260+79.99	261+33.34	261+86.69	262+40.04	262+81.20	269+16.66	269+57.82	270+11.17	270+64.52	271+17.87	5.54%	60
STH 73	7	262+31.92	269+65.94	1870.00	325+88.72	326+41.99	326+95.27	--	327+13.27	330+52.99	--	330+71.00	331+24.27	331+77.55	2.68%	60
STH 73	8	326+89.52	330+76.75	5729.58	375+72.99	376+26.30	376+79.88	--	376+82.11	381+24.07	--	381+26.56	381+79.88	382+33.19	2.09%	60



BUTT JOINT DETAIL FOR MILLED ASPHALTIC PAVEMENTS

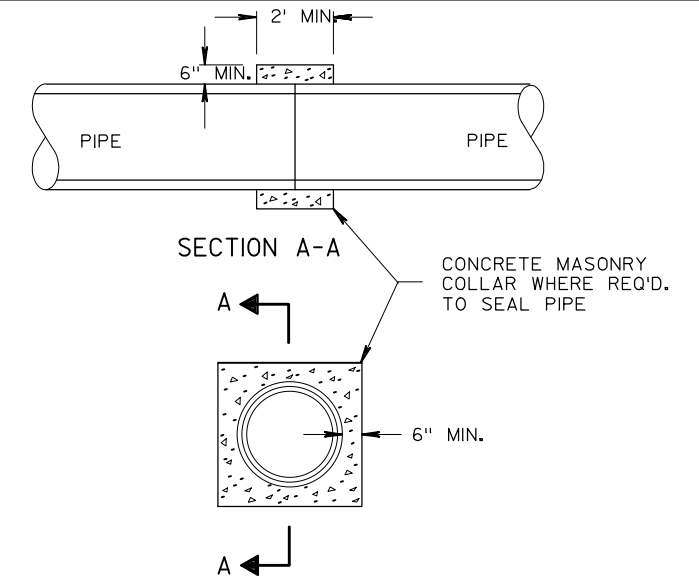


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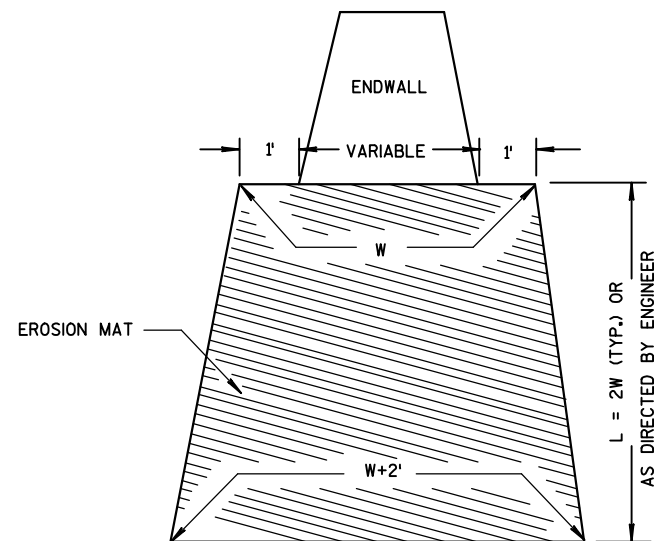


RIPRAP TREATMENT AT CULVERTS

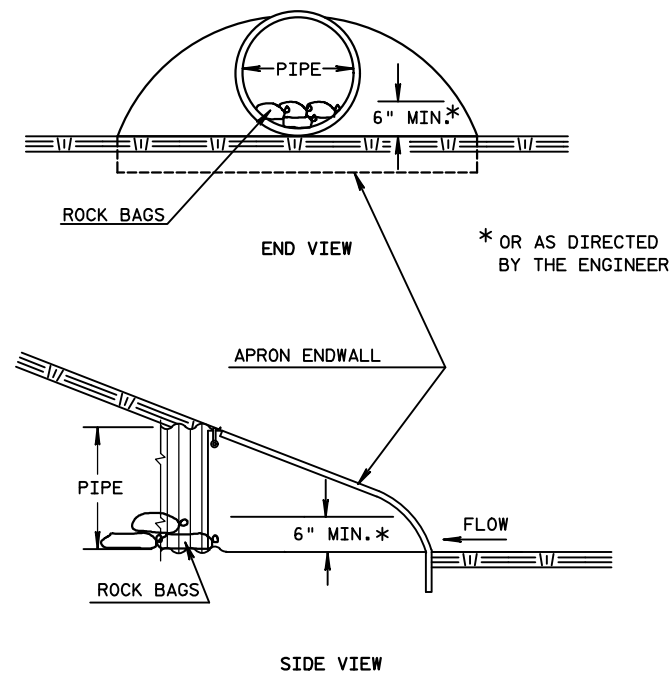
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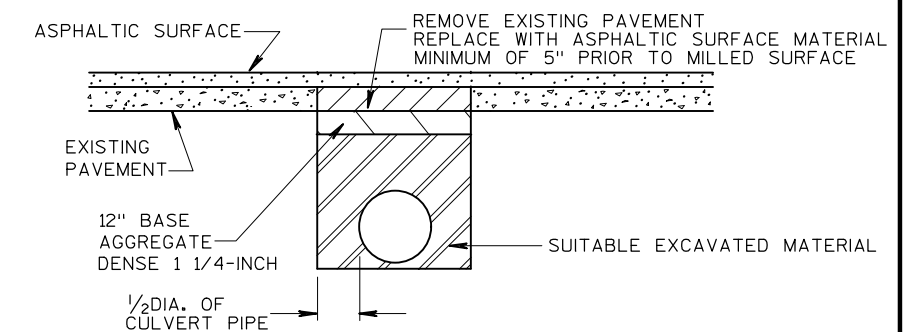
CONCRETE COLLAR DETAIL



EROSION MAT TREATMENT AT CULVERTS



CULVERT PIPE CHECK

DETAIL FOR CULVERT PIPE INSTALLATION
IN AREAS OF EXISTING PAVEMENT

PROJECT NO: 7050-03-72

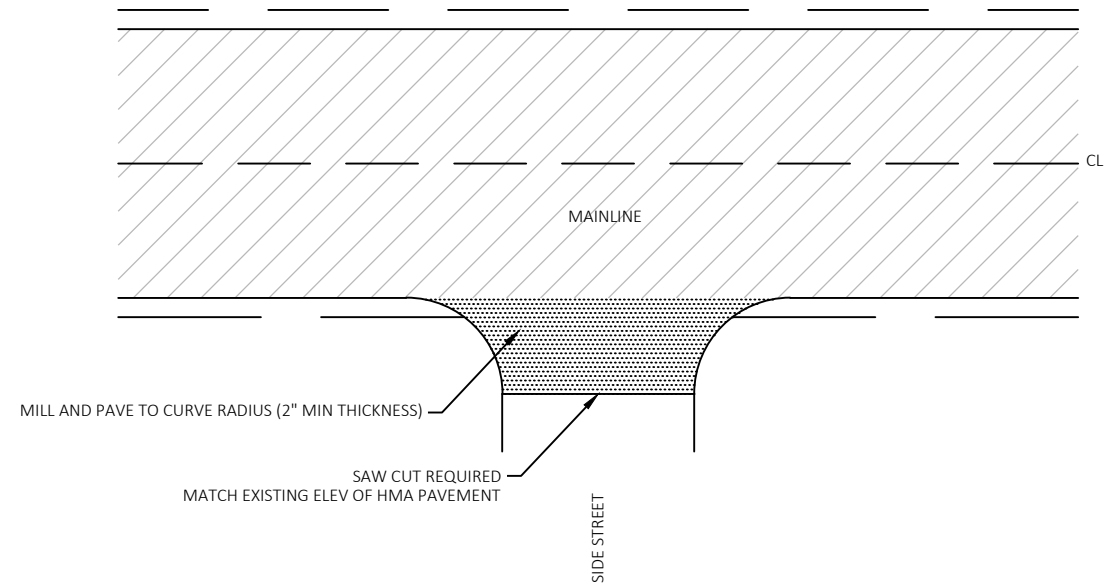
HWY: STH 73

COUNTY: CLARK

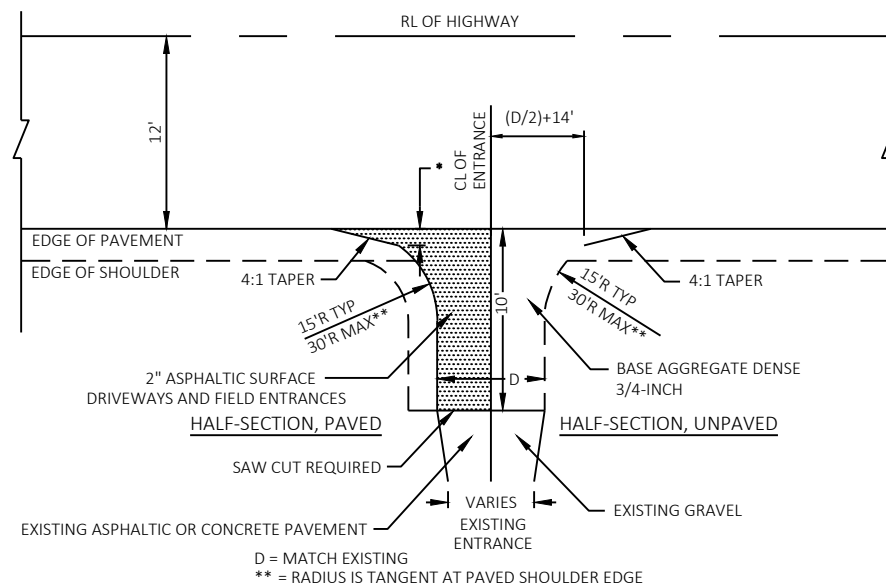
PLAN: CONSTRUCTION DETAILS

SHEET

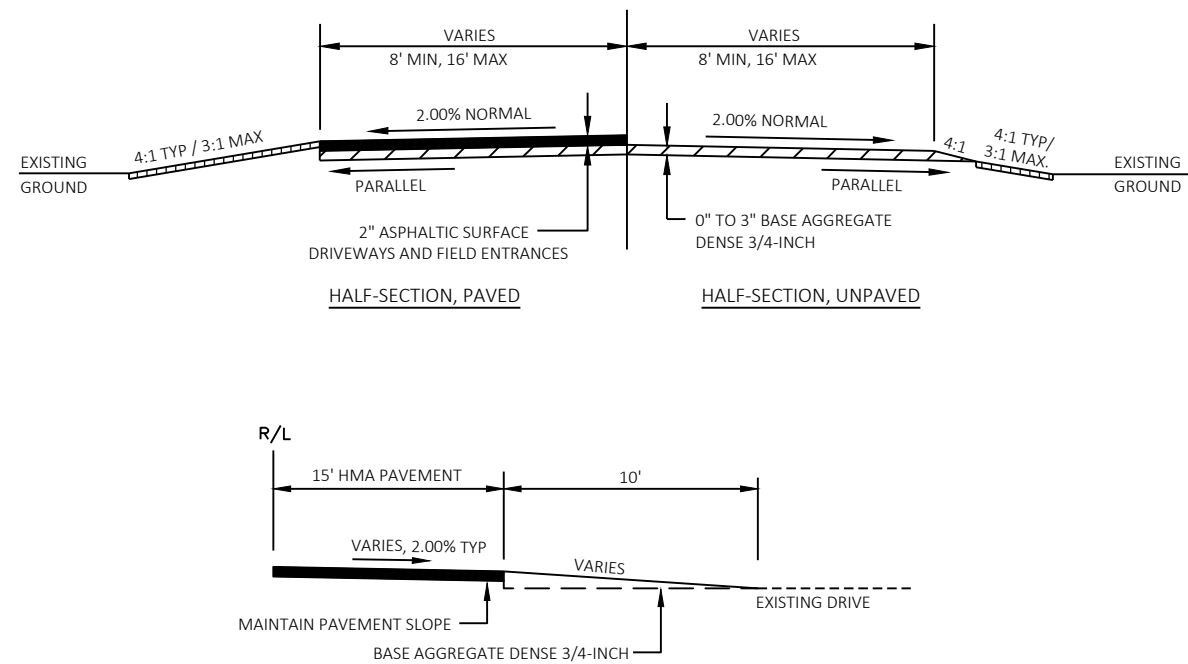
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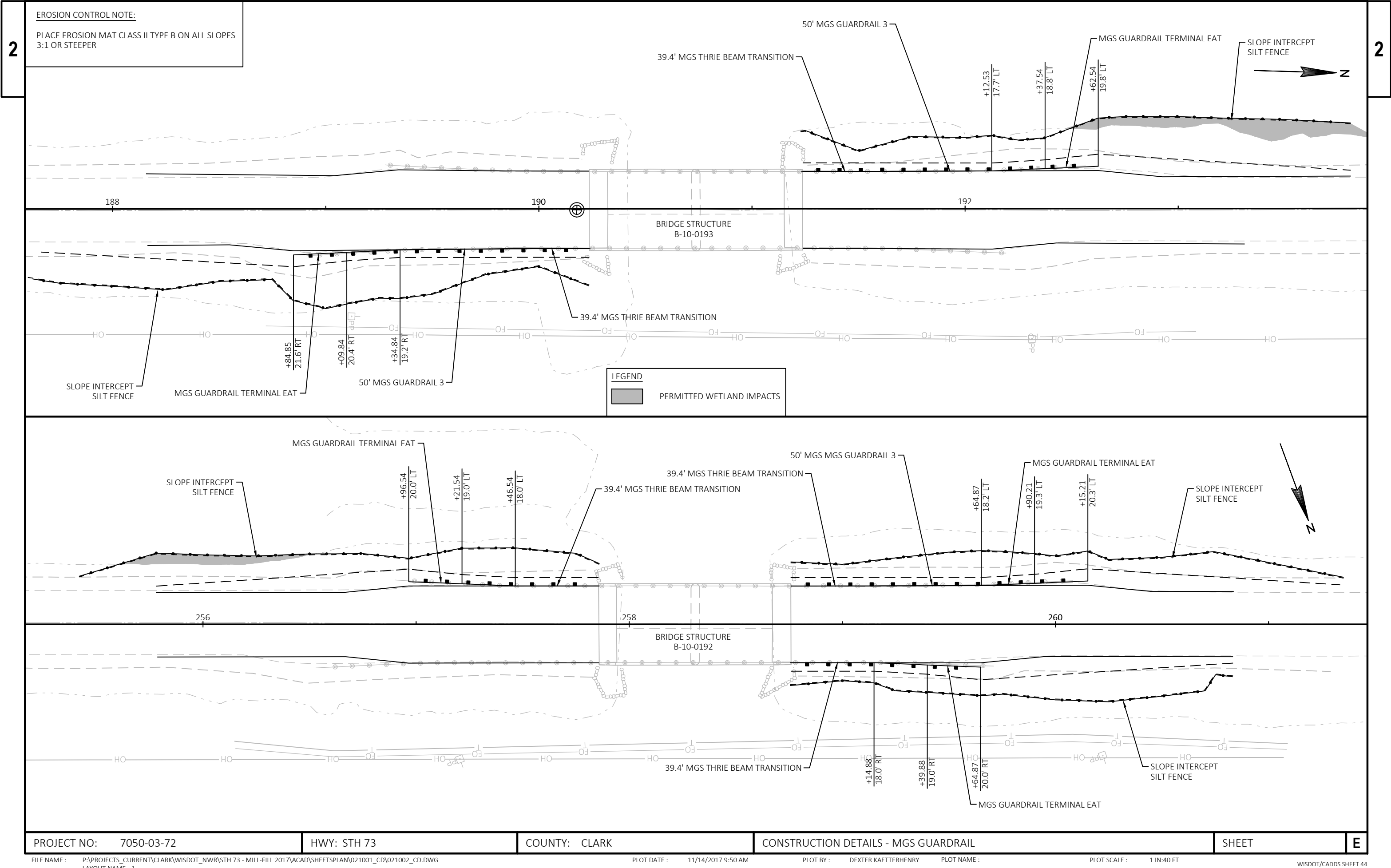


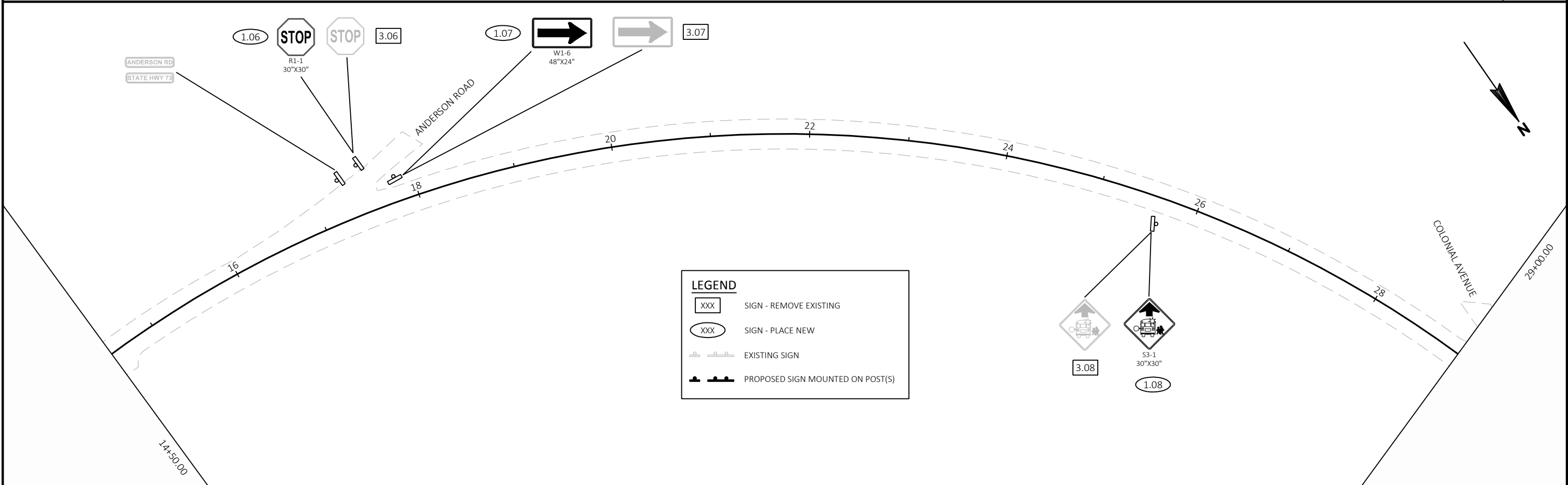
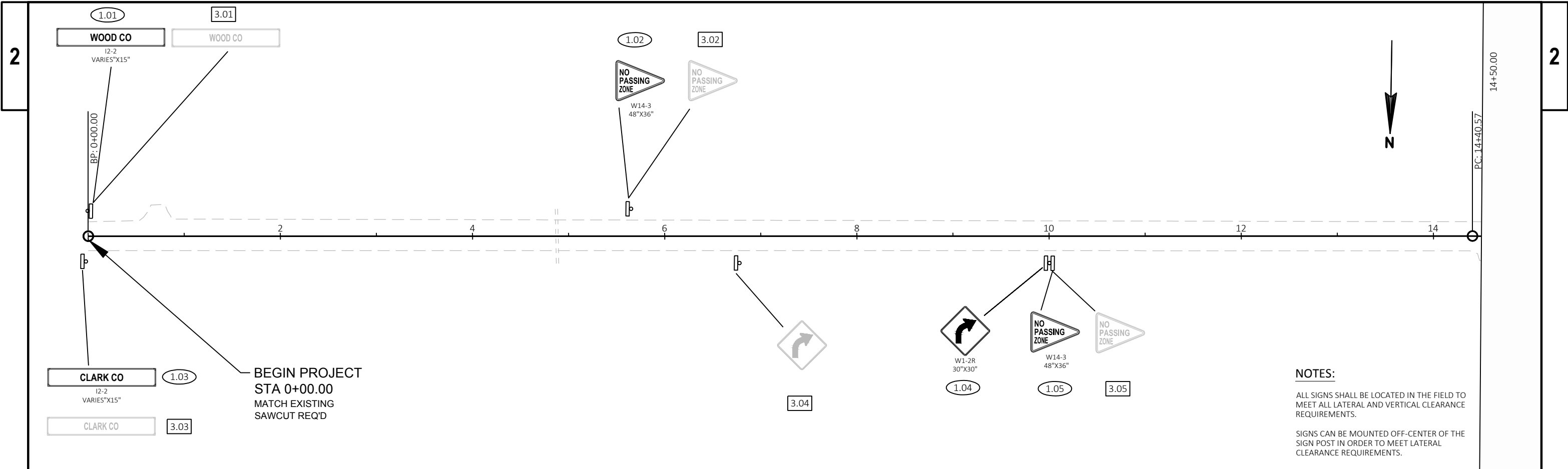
SIDE STREET DETAIL



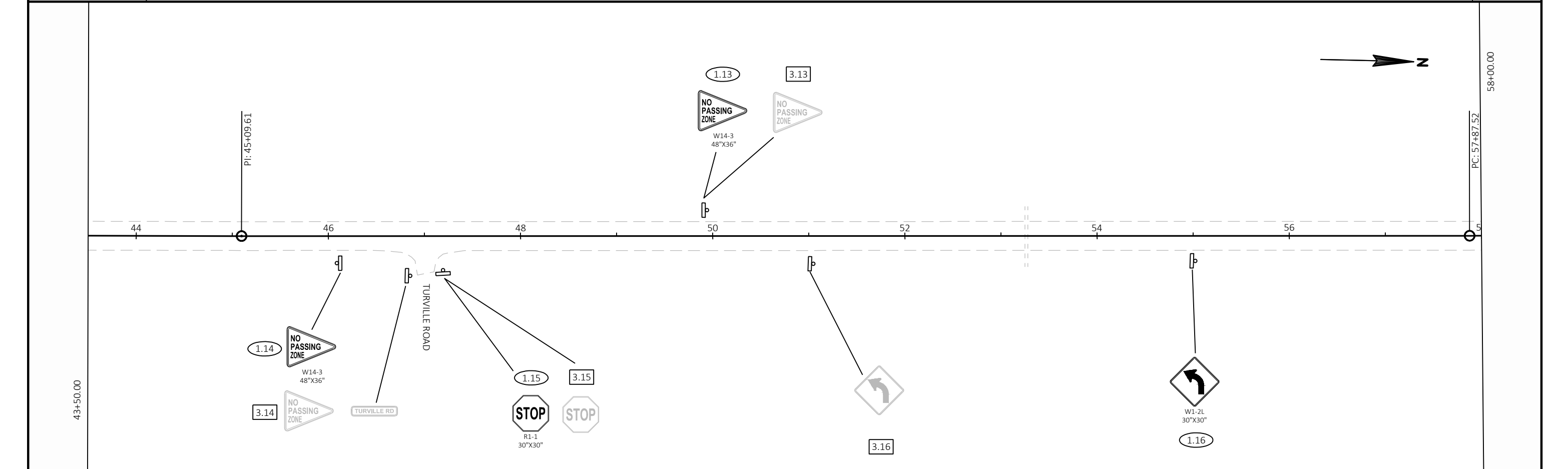
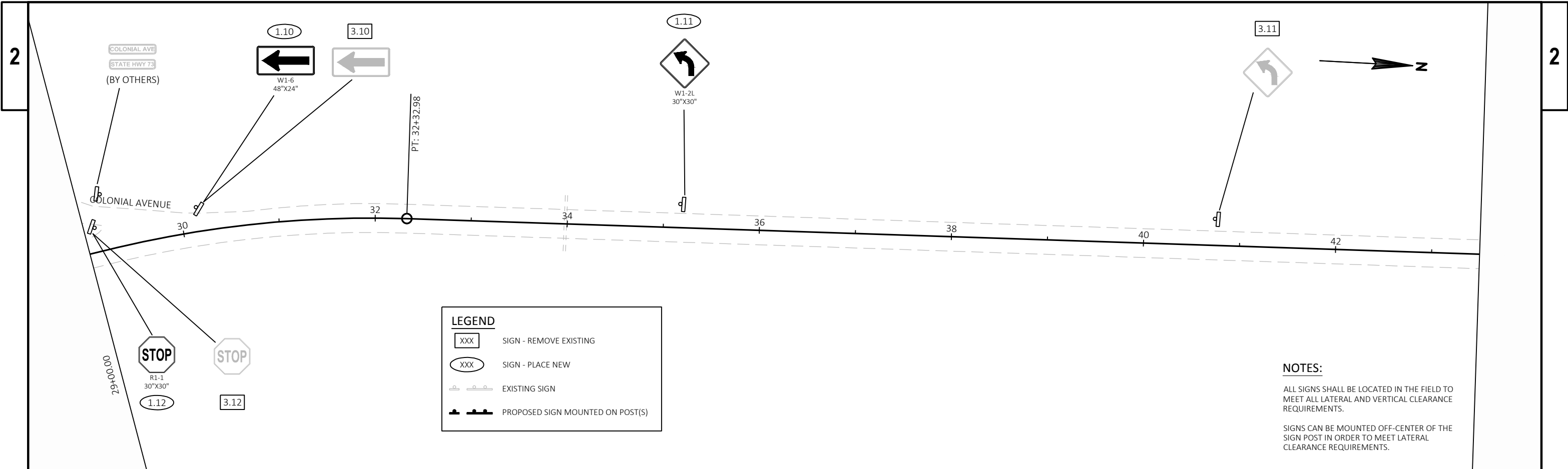
DRIVEWAY DETAIL



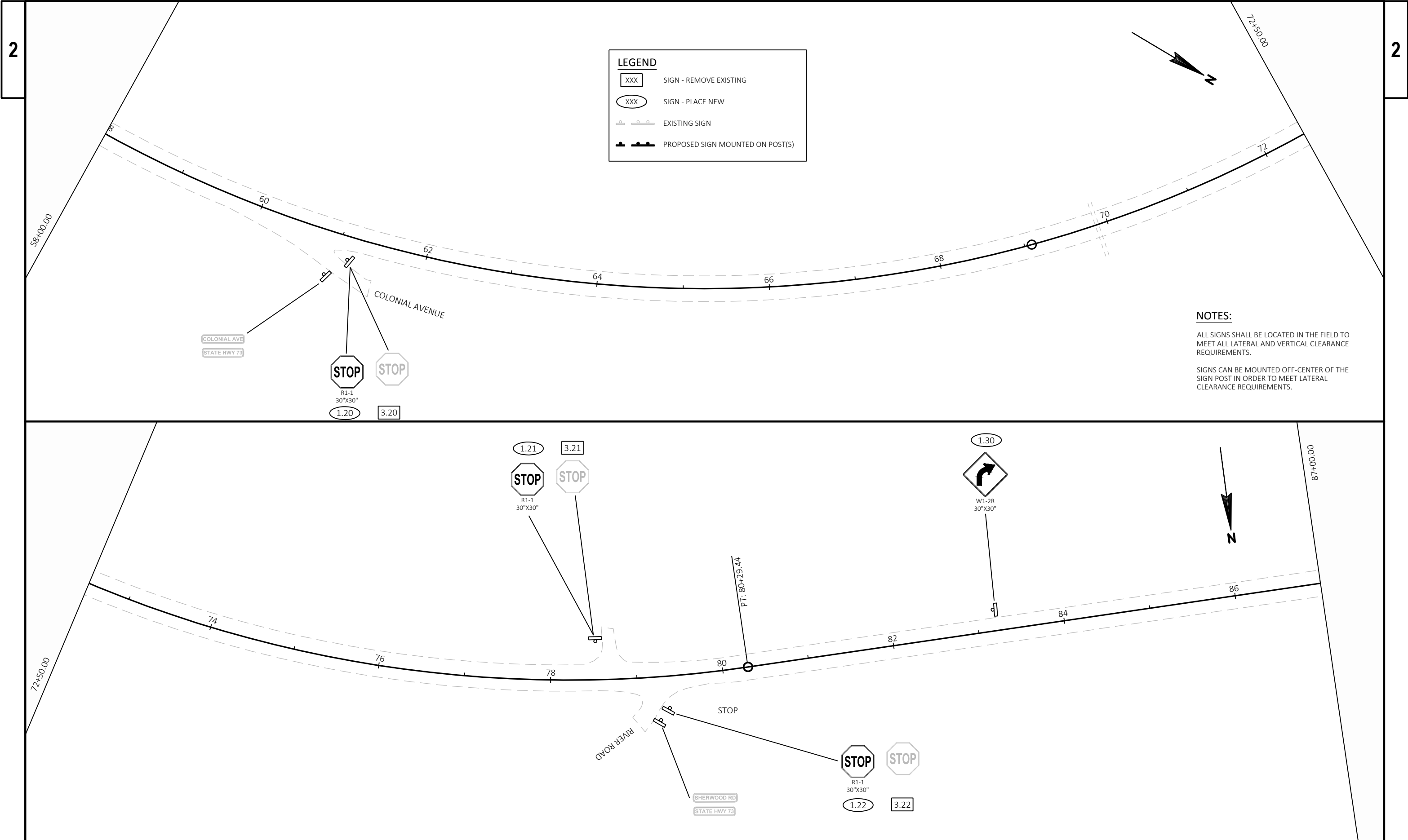




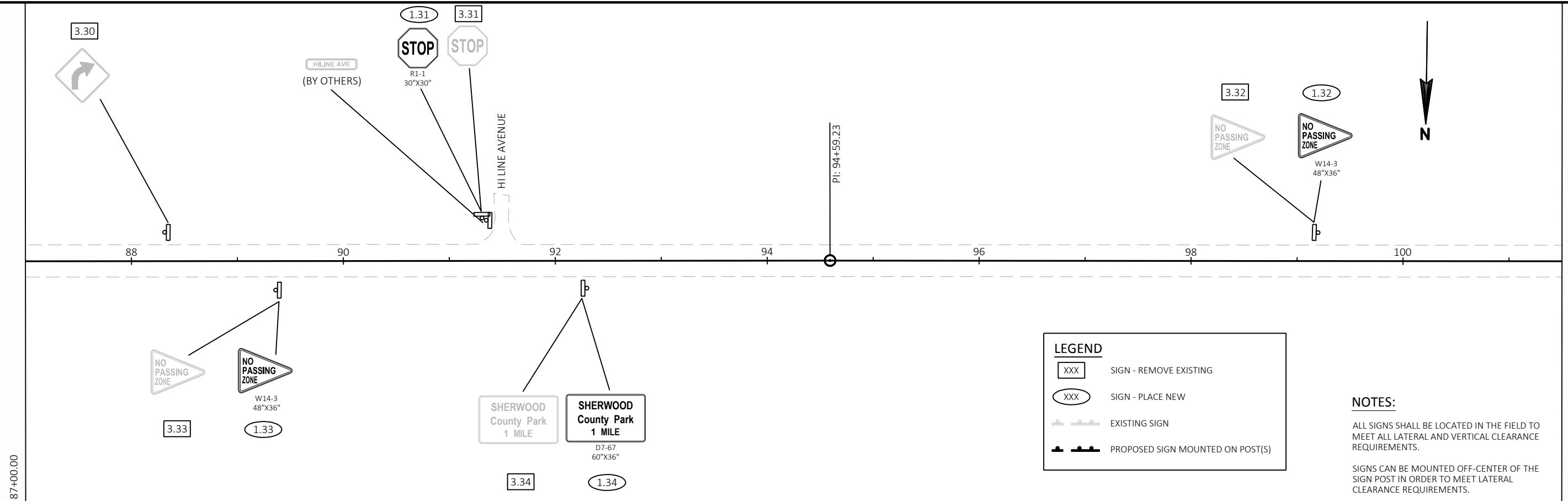
PROJECT NO: 7050-03-72	HWY: STH 73	COUNTY: CLARK	PERMANENT SIGNING	SHEET	E
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PROJECT NO: 7050-03-72	HWY: STH 73	COUNTY: CLARK	PERMANENT SIGNING	SHEET	E
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2



NOTES:

ALL SIGNS SHALL BE LOCATED IN THE FIELD TO MEET ALL LATERAL AND VERTICAL CLEARANCE REQUIREMENTS.

SIGNS CAN BE MOUNTED OFF-CENTER OF THE SIGN POST IN ORDER TO MEET LATERAL CLEARANCE REQUIREMENTS.

2 |

PROJECT NO:	7050-03-72
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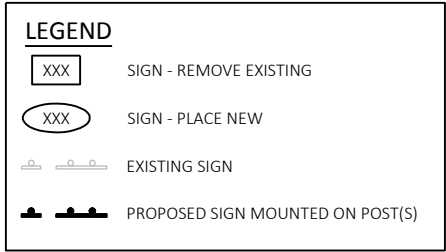
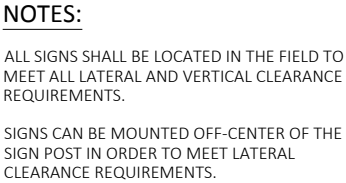
HWY: STH 73

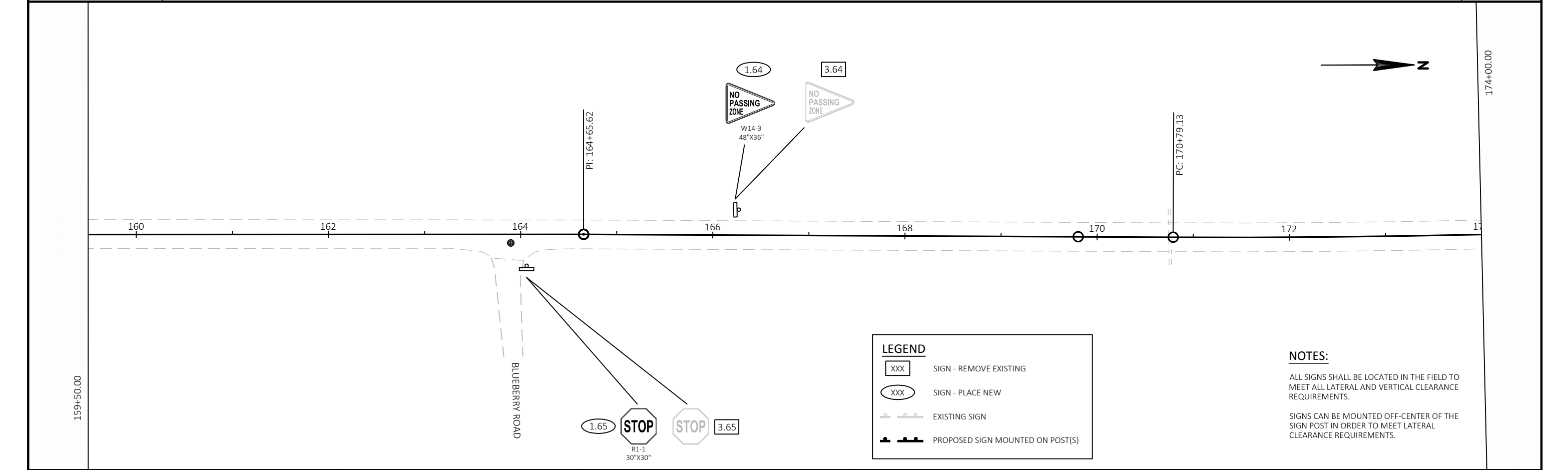
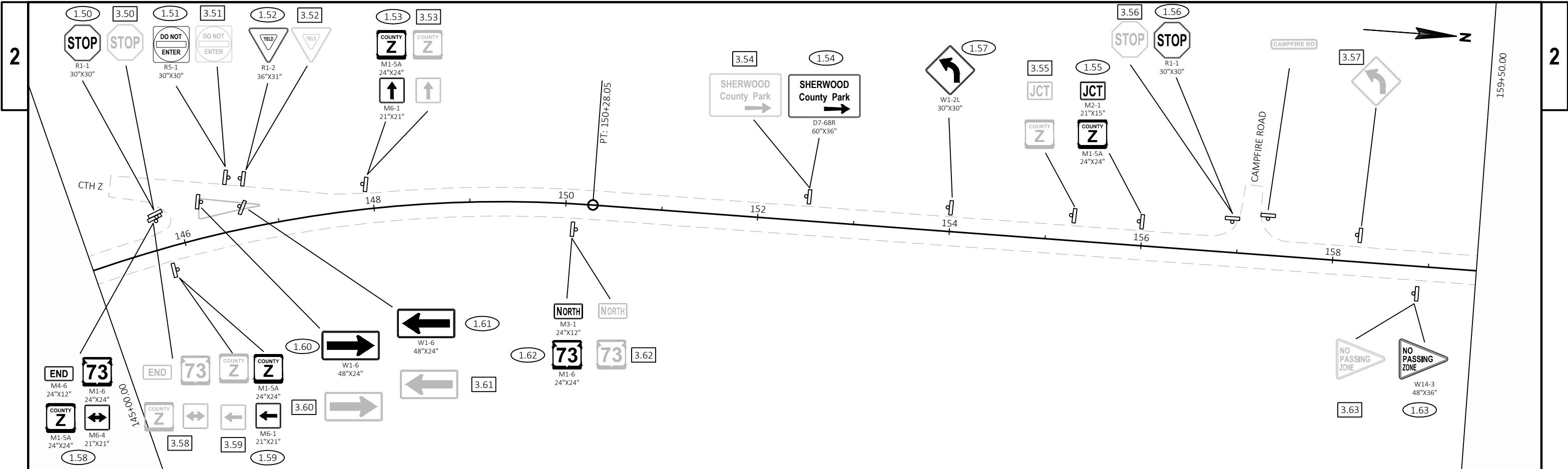
COUNTY: CLARK

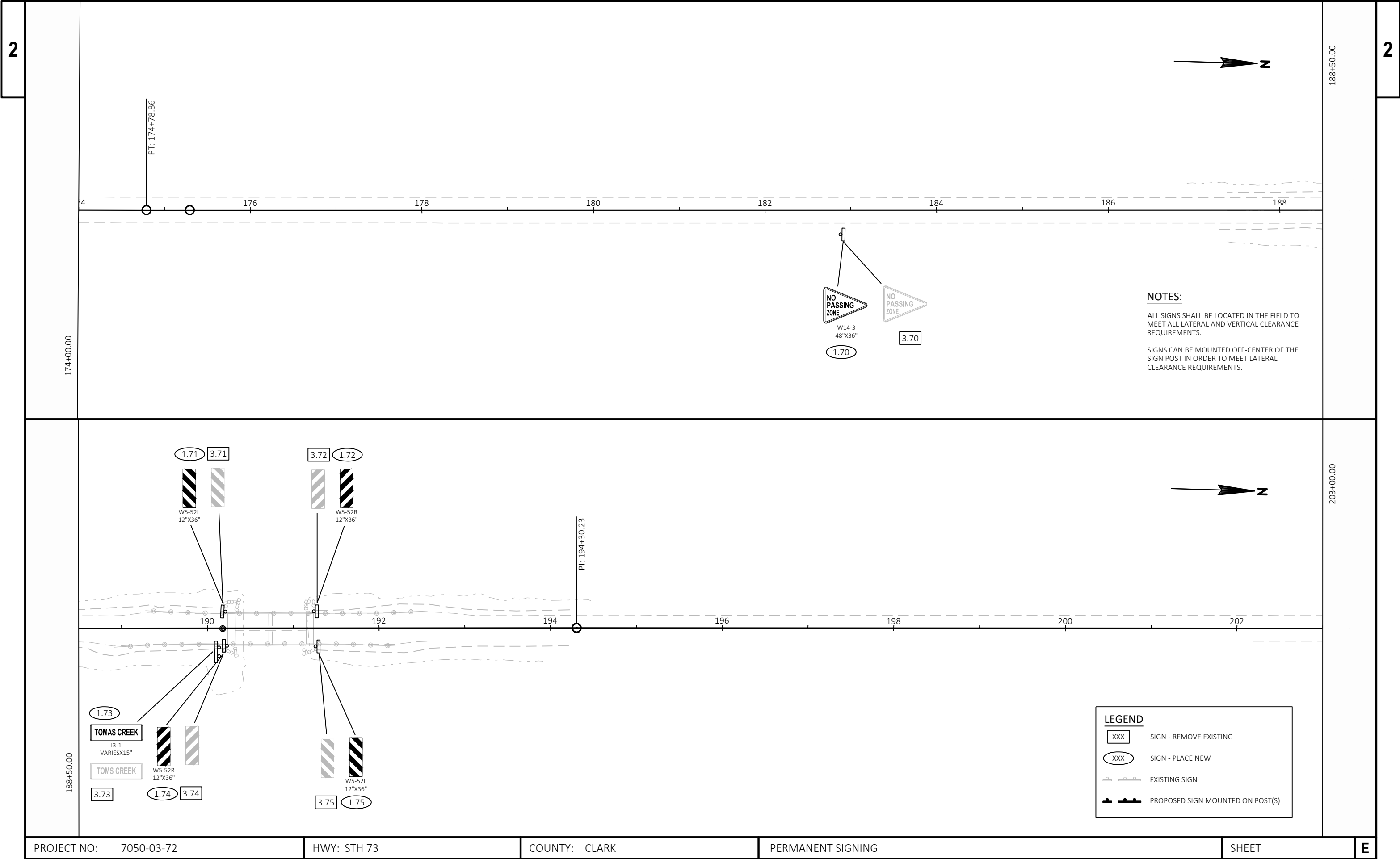
PERMANENT SIGNING

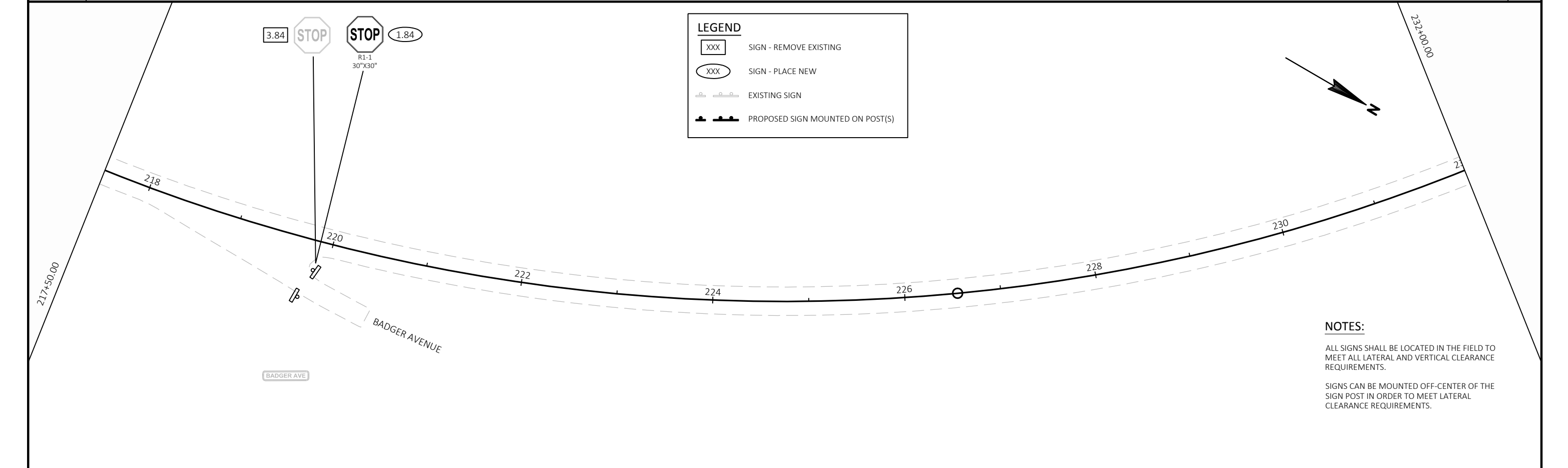
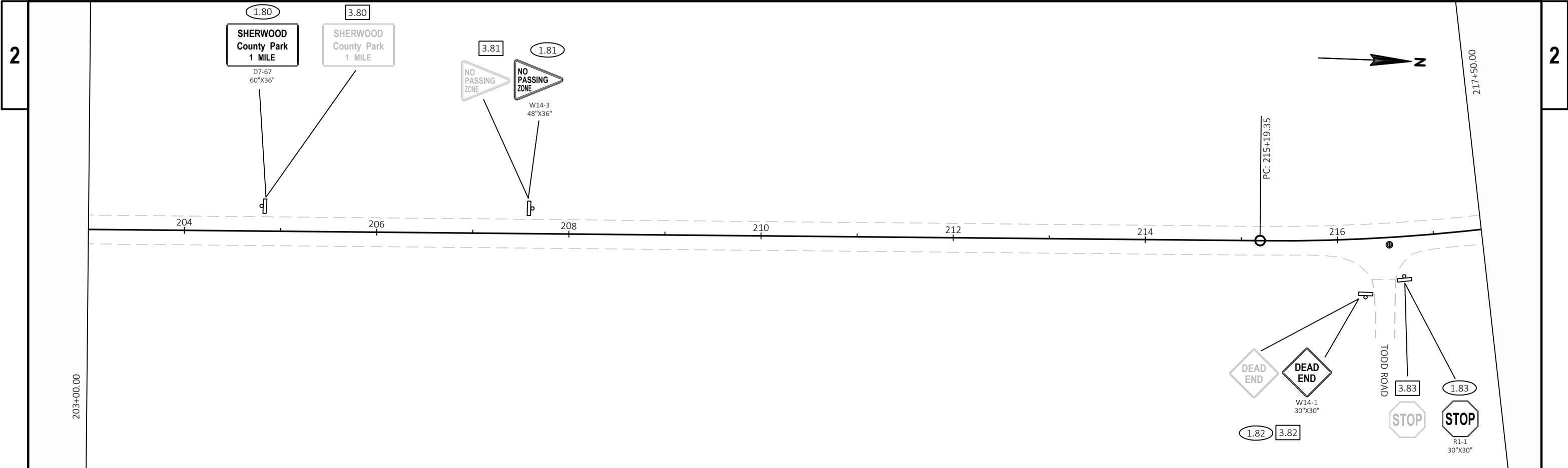
SHEET

11









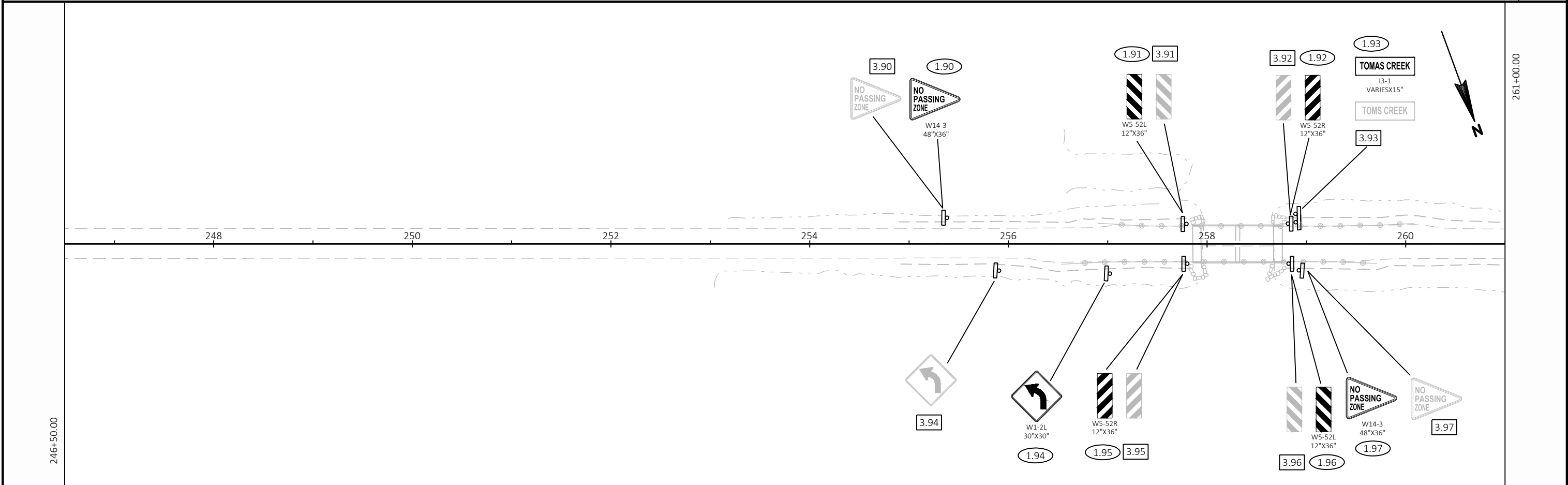
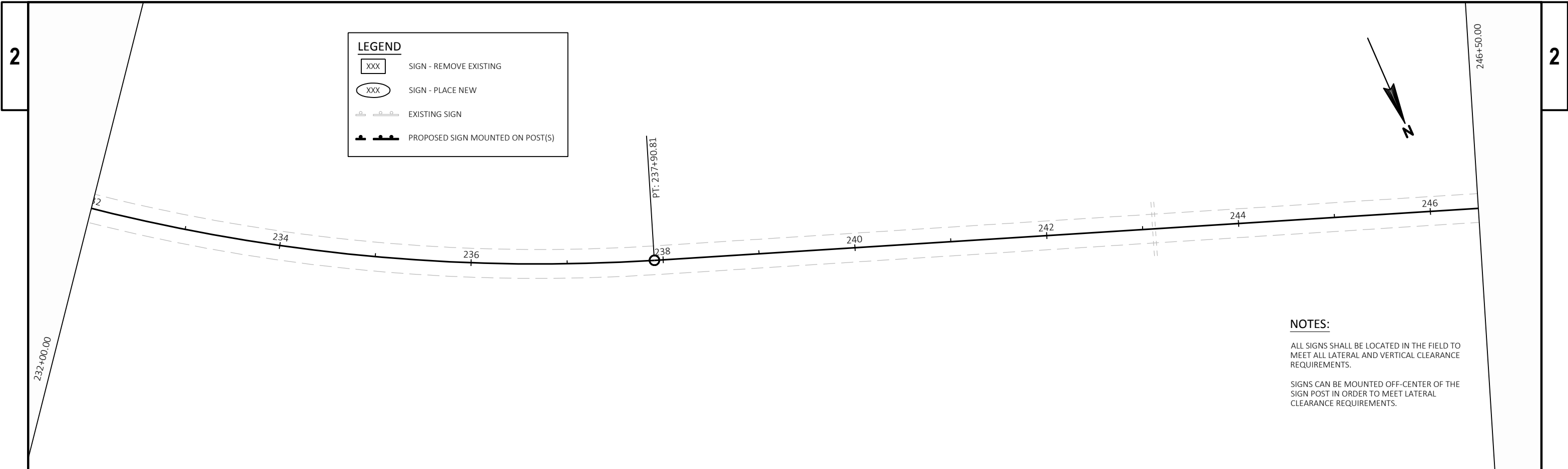
LEGEND

XXX	SIGN - REMOVE EXISTING
XXX	SIGN - PLACE NEW
EXISTING SIGN	EXISTING SIGN
PROPOSED SIGN MOUNTED ON POST(S)	PROPOSED SIGN MOUNTED ON POST(S)

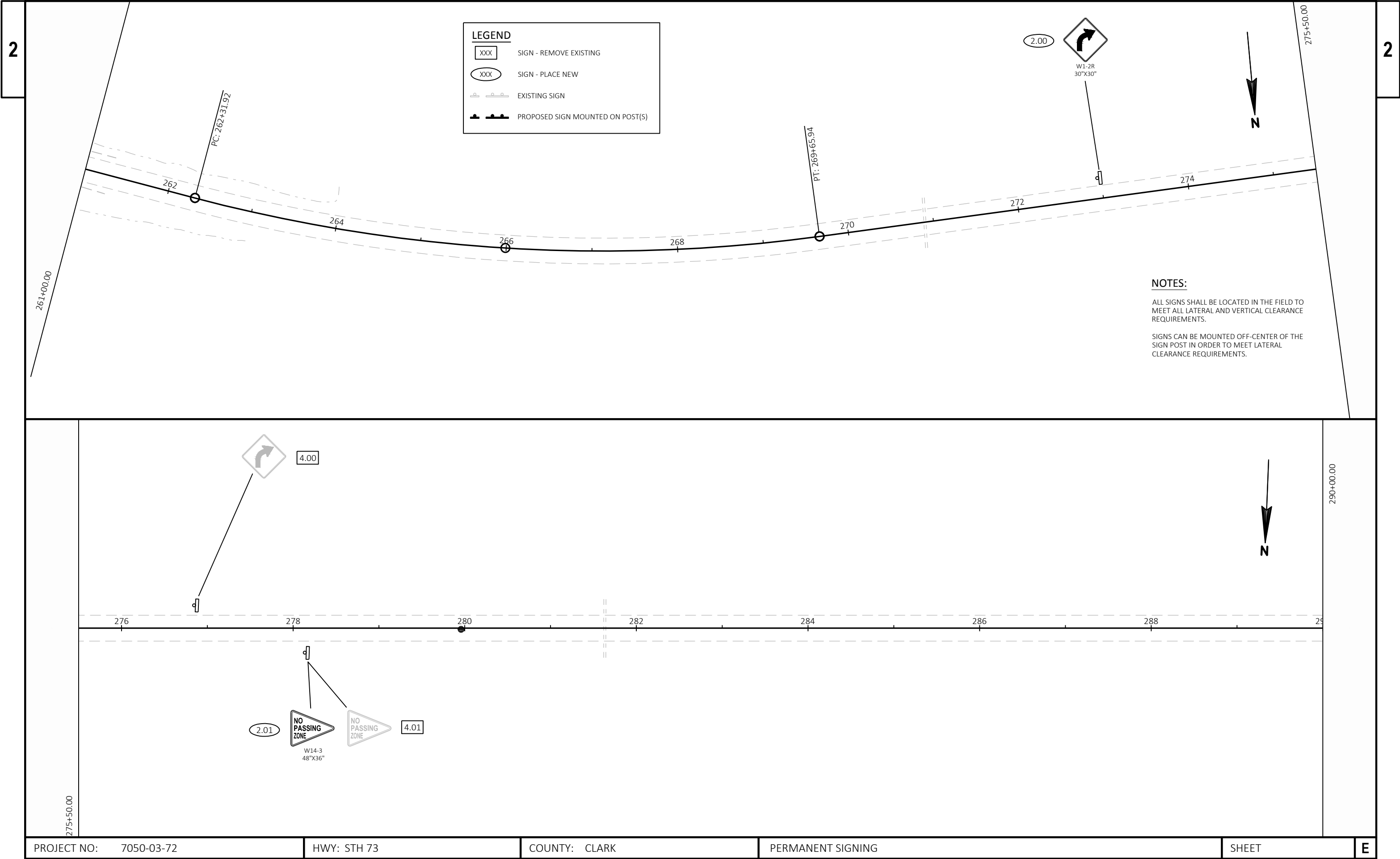
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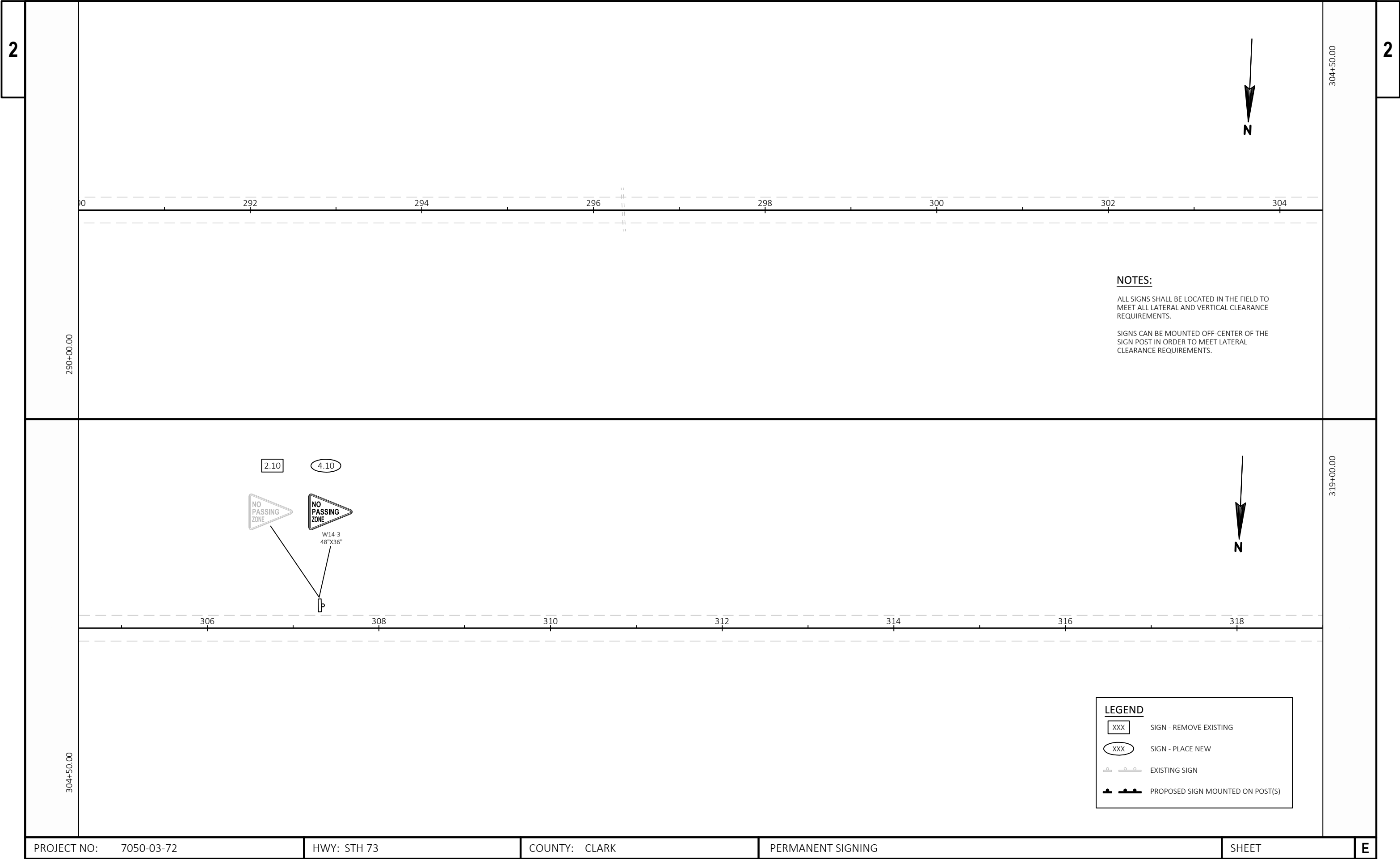
ALL SIGNS SHALL BE LOCATED IN THE FIELD TO MEET ALL LATERAL AND VERTICAL CLEARANCE REQUIREMENTS.

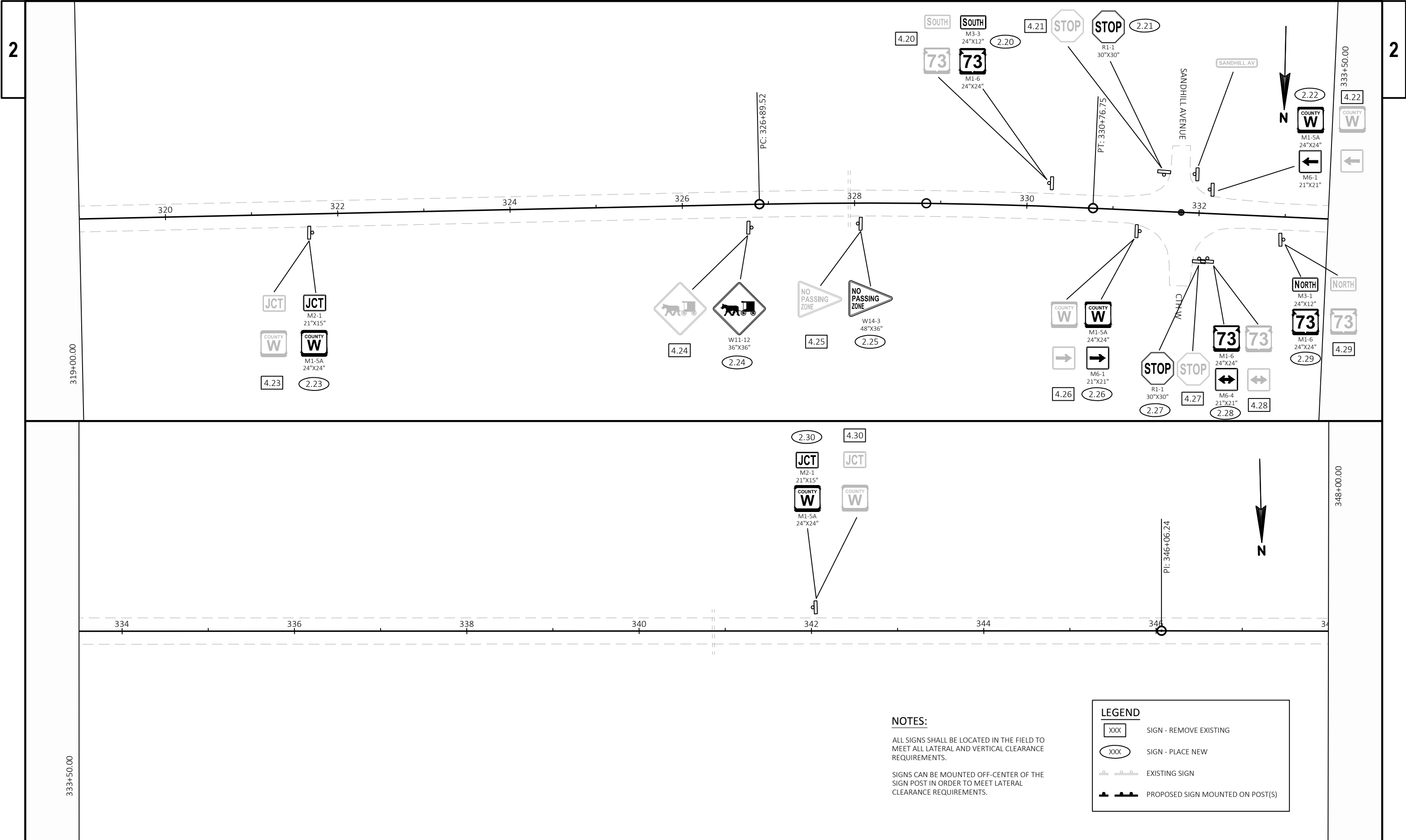
SIGNS CAN BE MOUNTED OFF-CENTER OF THE SIGN POST IN ORDER TO MEET LATERAL CLEARANCE REQUIREMENTS.

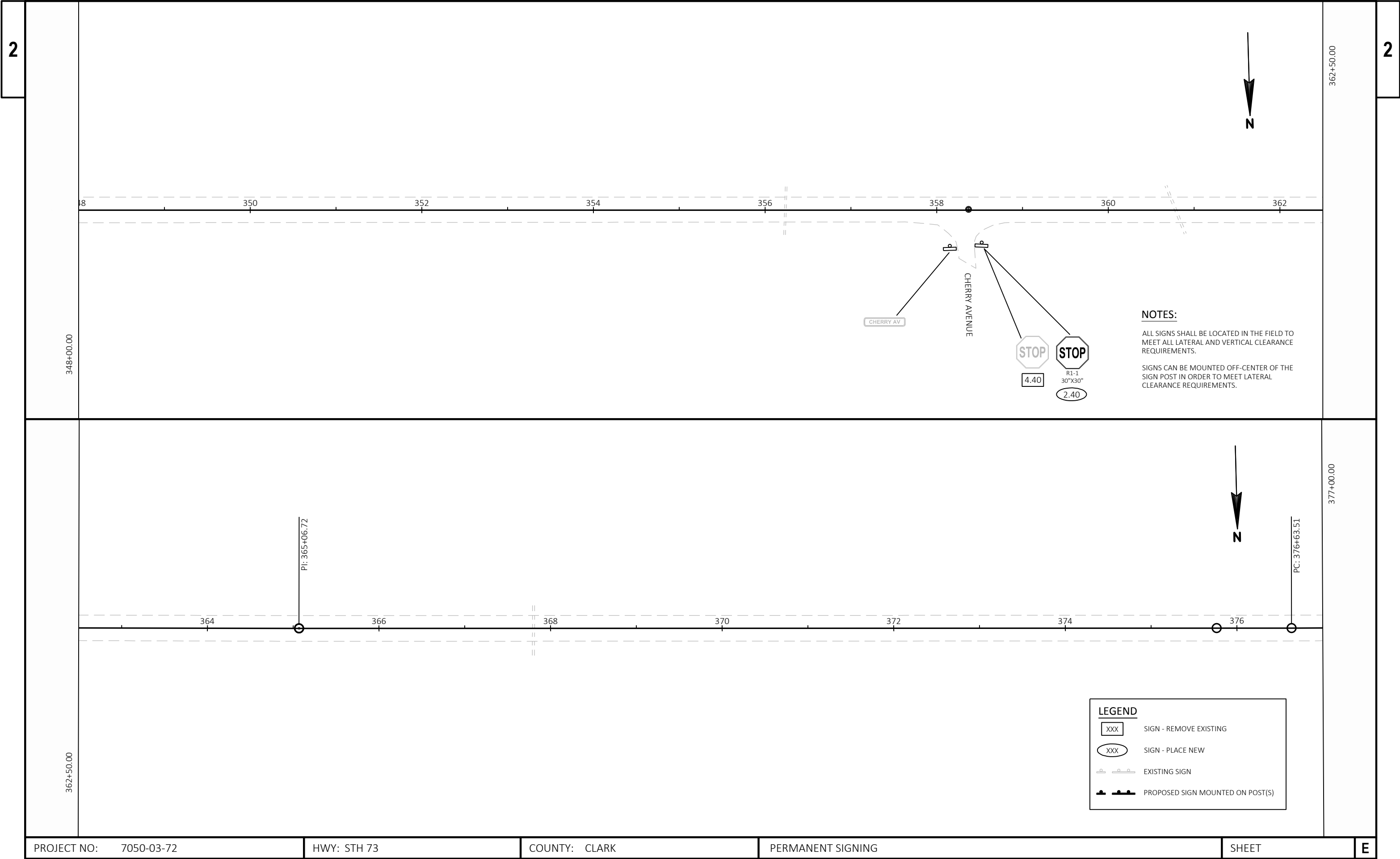


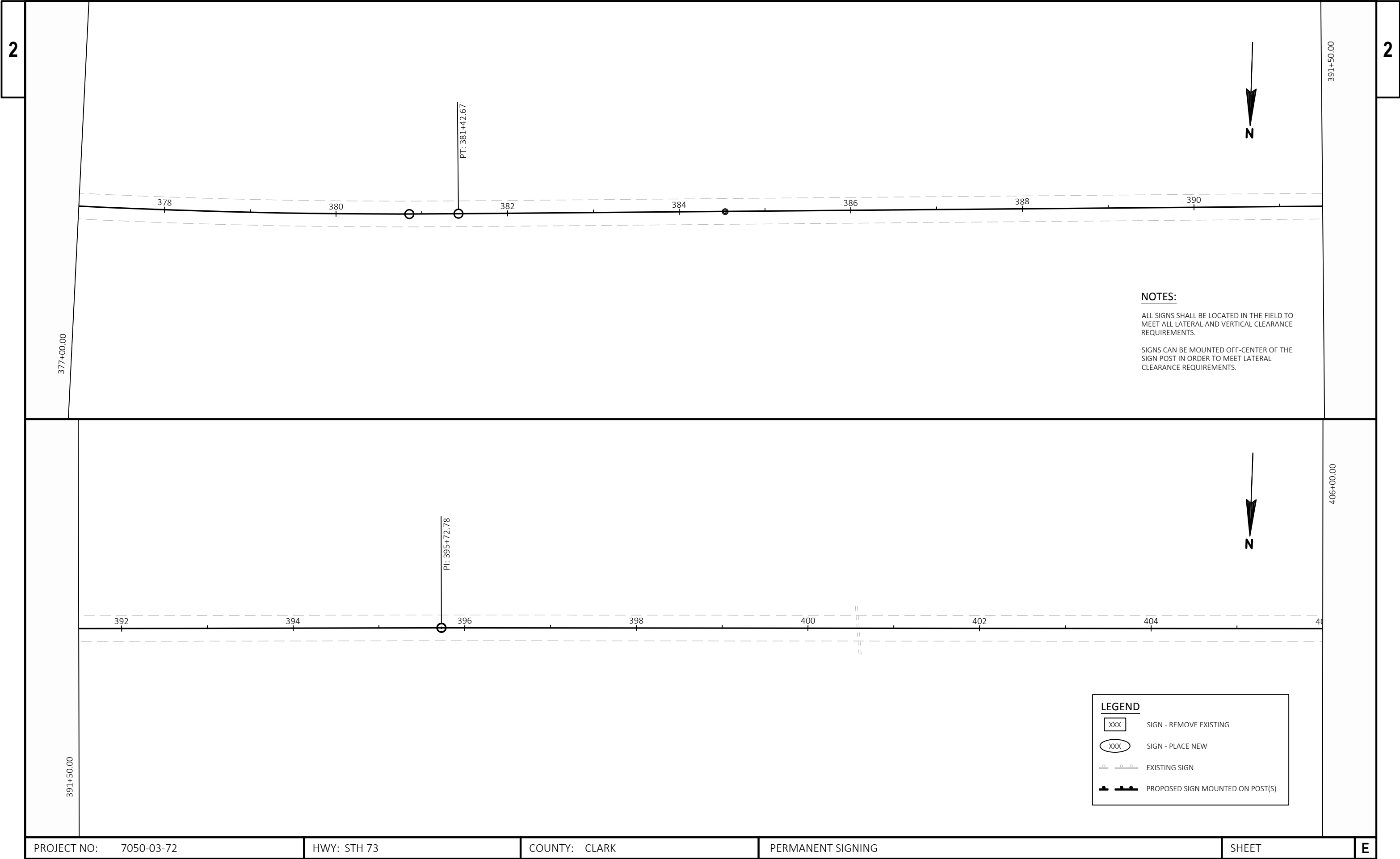
PROJECT NO: 7050-03-72	HWY: STH 73	COUNTY: CLARK	PERMANENT SIGNING	SHEET	E
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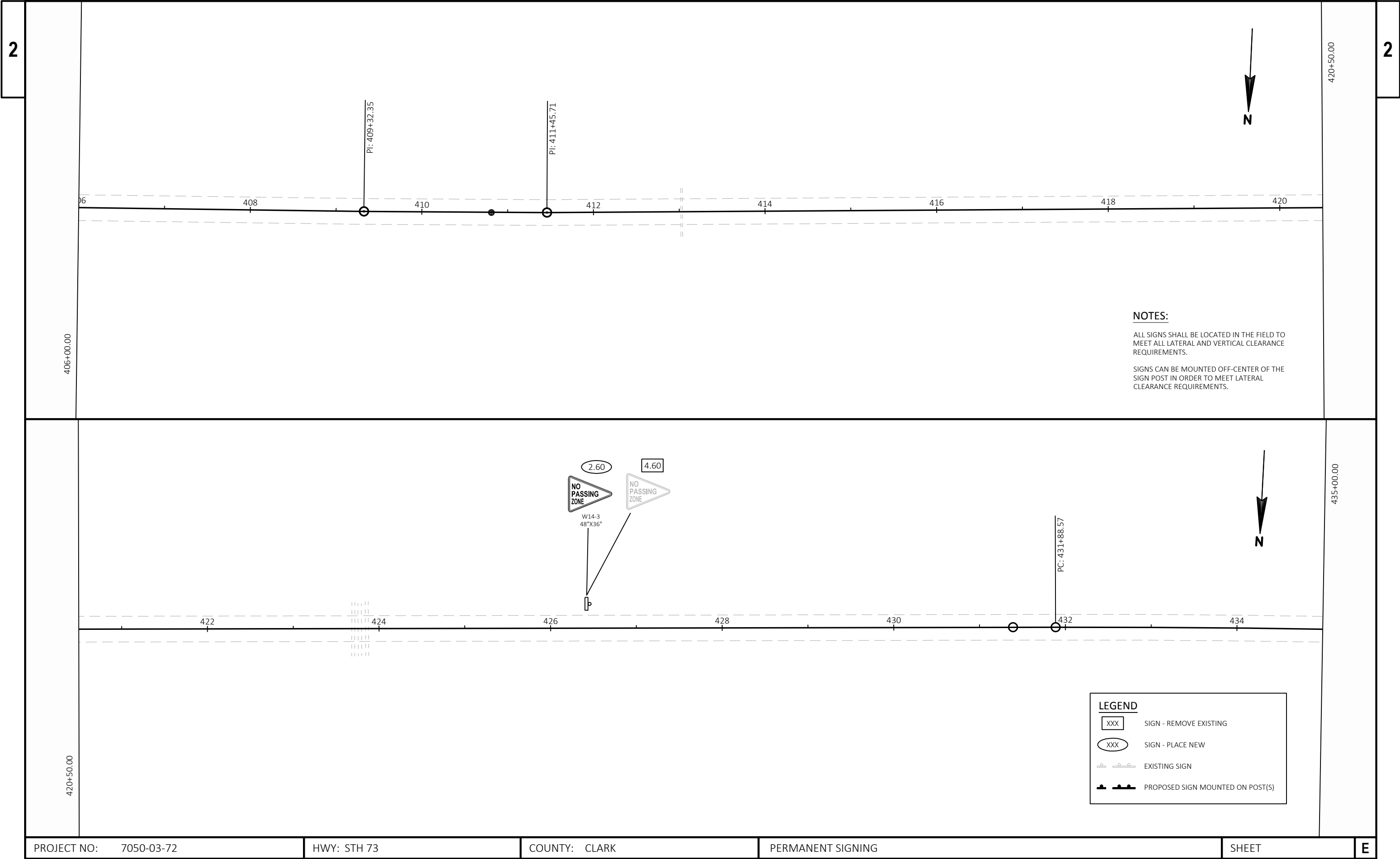


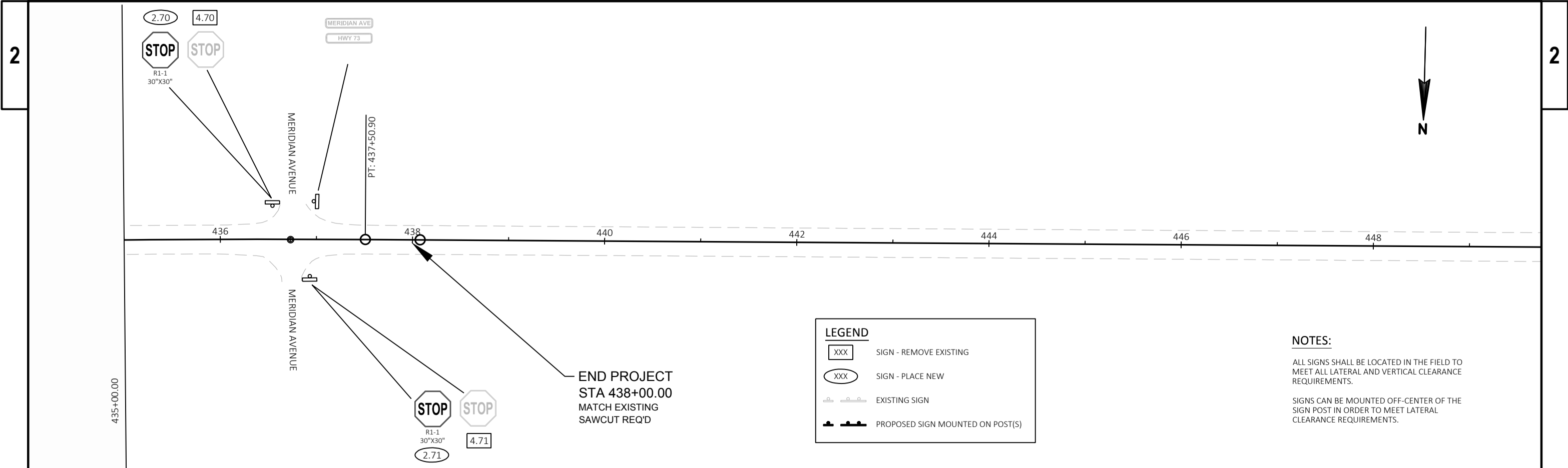


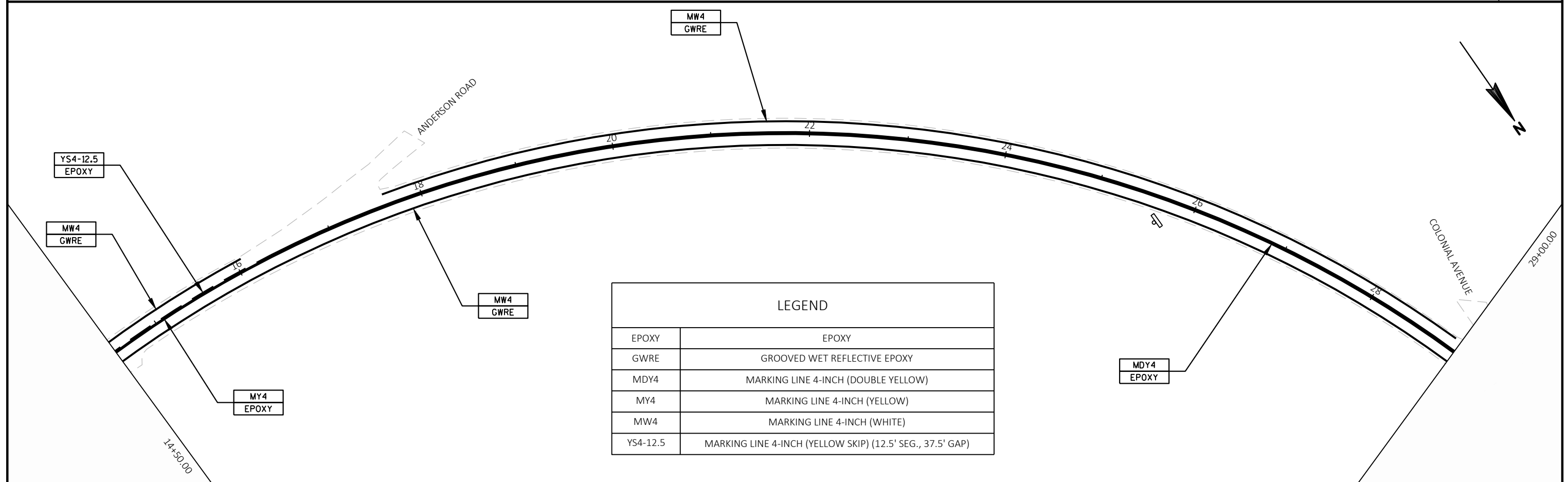
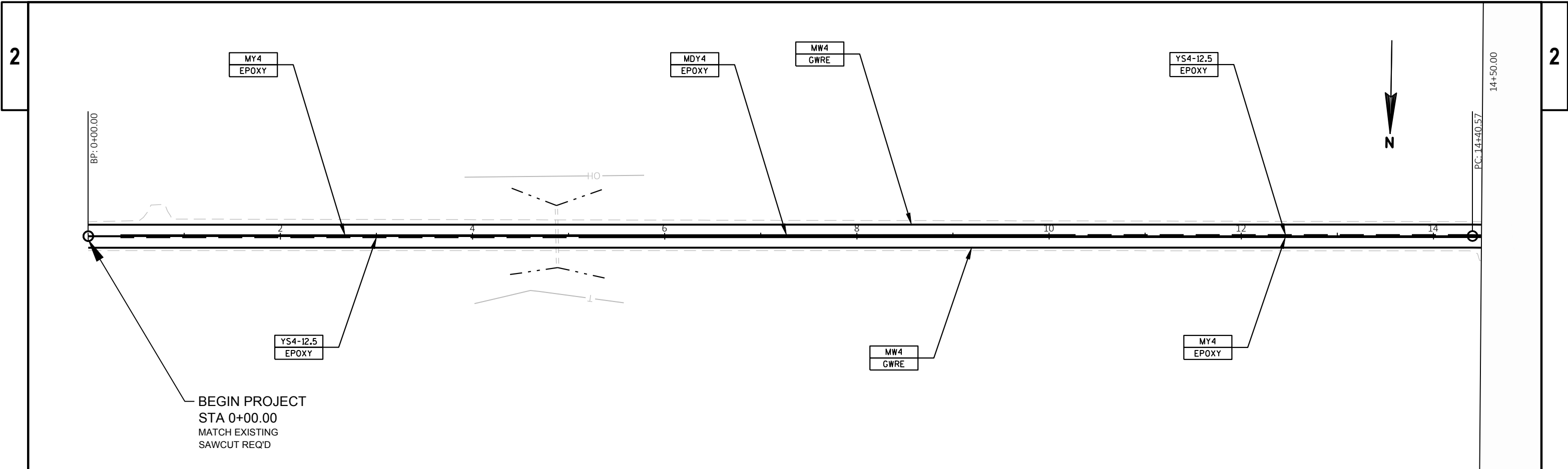




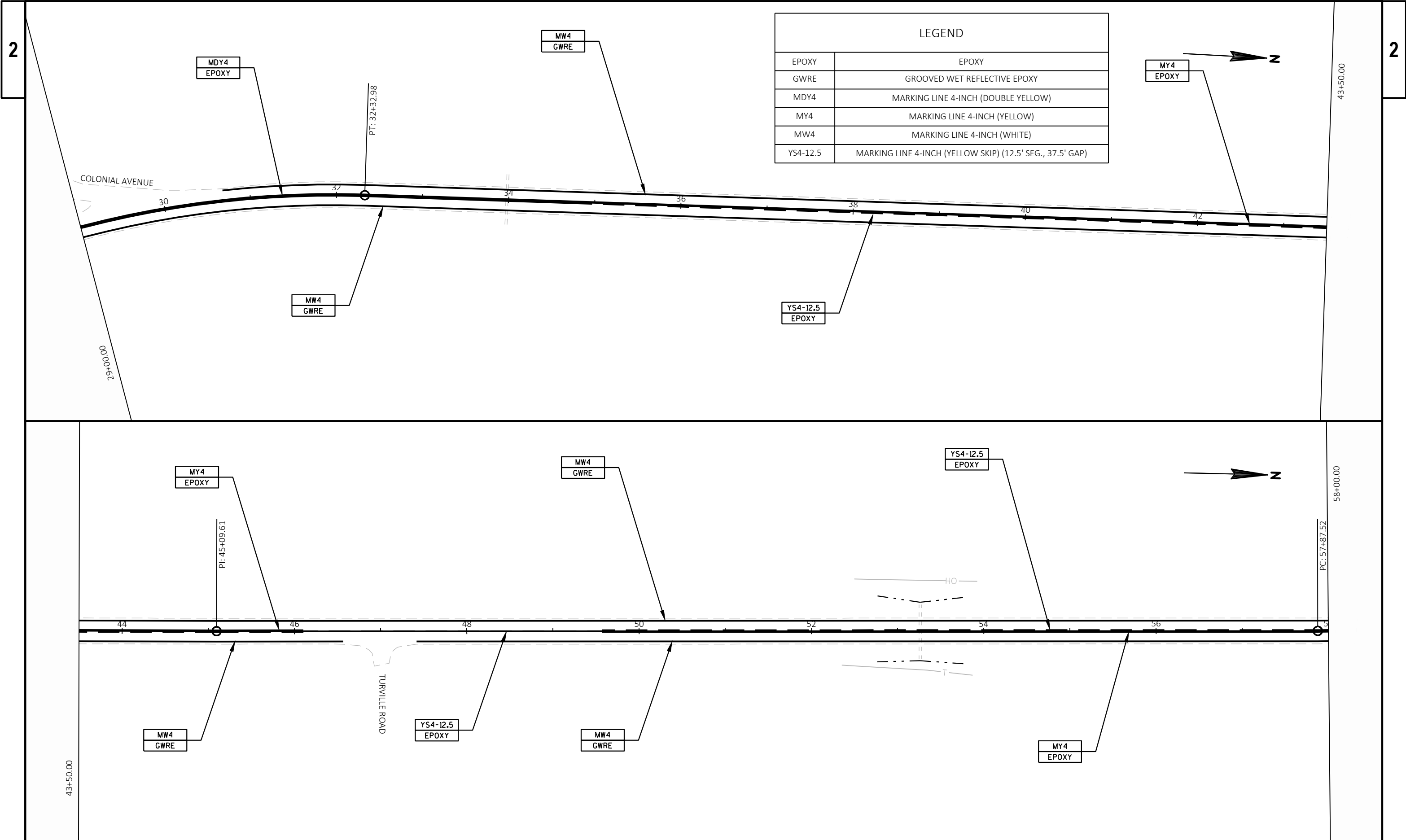


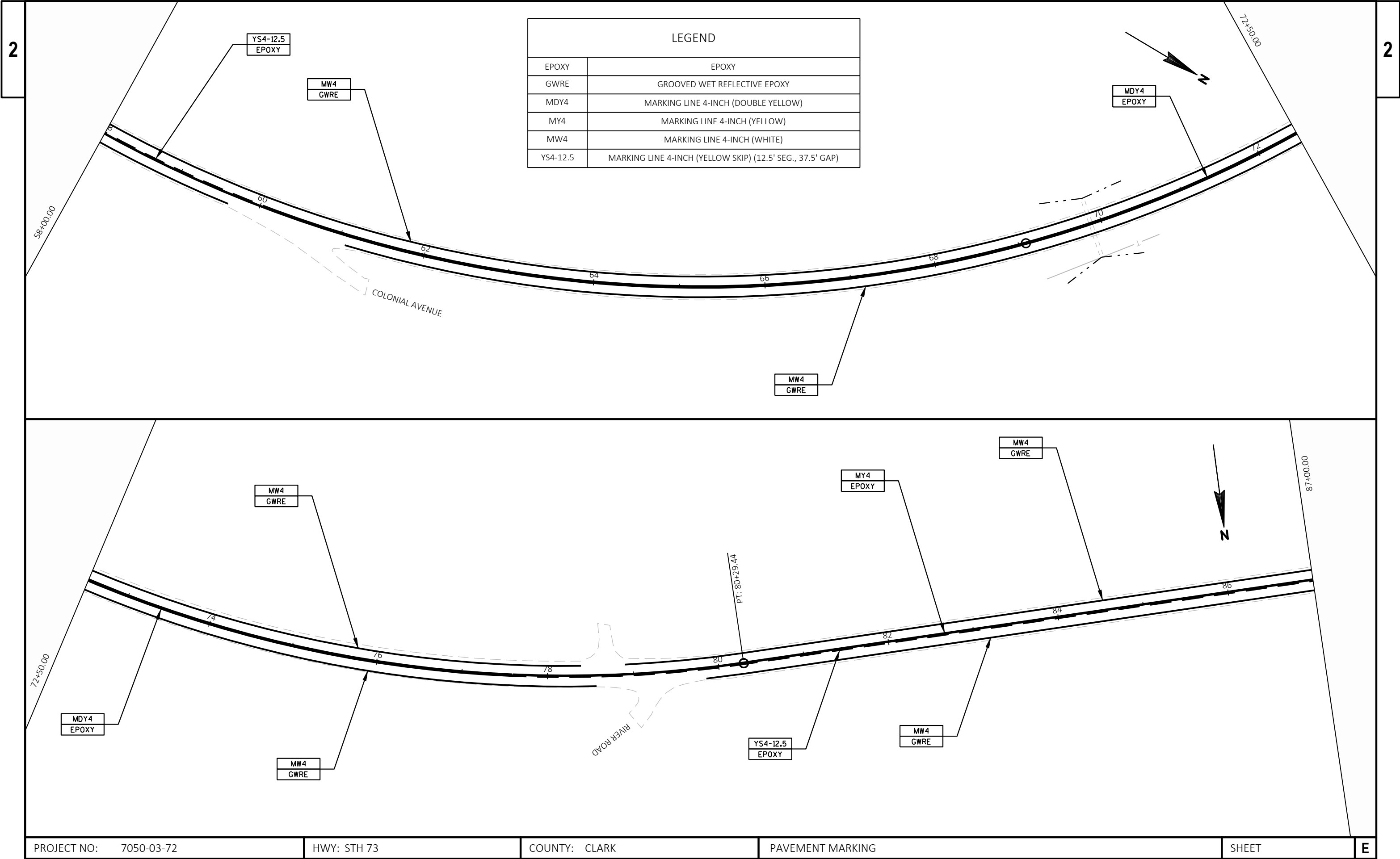






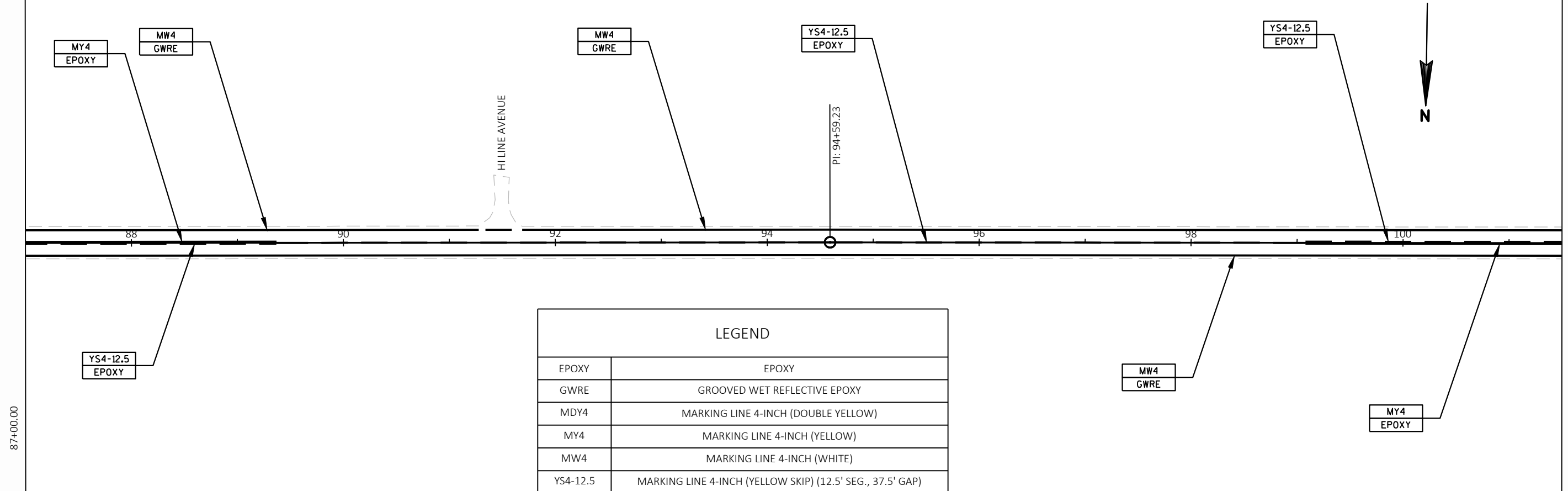
LEGEND	
EPOXY	EPOXY
GWRE	GROOVED WET REFLECTIVE EPOXY
MDY4	MARKING LINE 4-INCH (DOUBLE YELLOW)
MY4	MARKING LINE 4-INCH (YELLOW)
MW4	MARKING LINE 4-INCH (WHITE)
YS4-12.5	MARKING LINE 4-INCH (YELLOW SKIP) (12.5' SEG., 37.5' GAP)



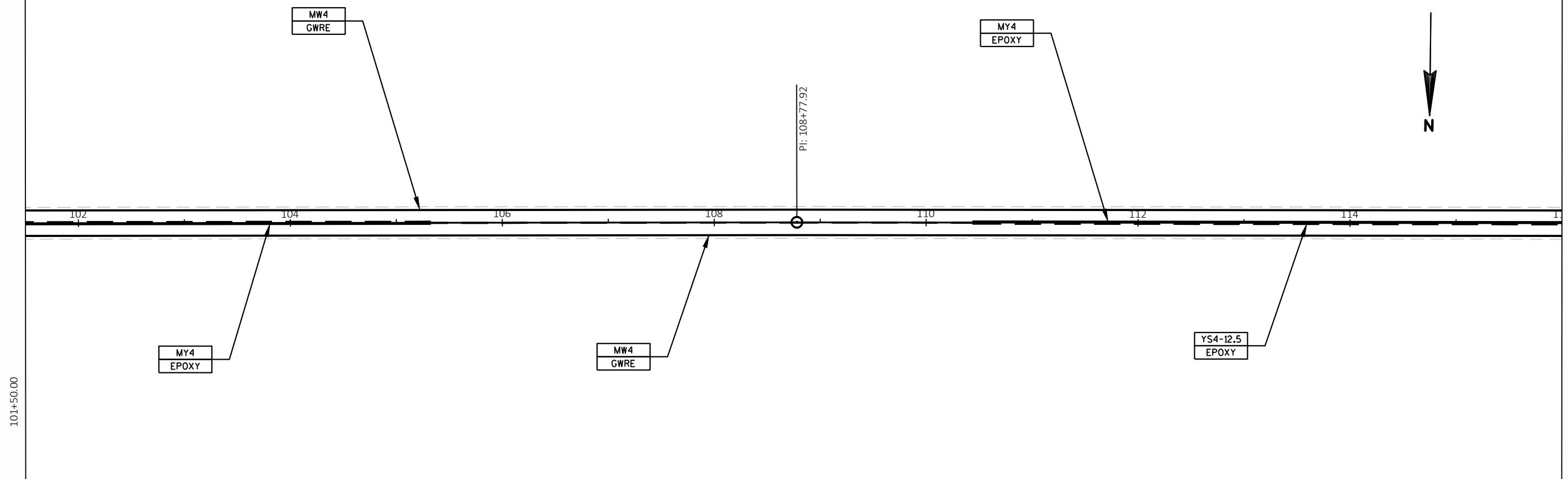


LEGEND	
EPOXY	EPOXY
GWRE	GROOVED WET REFLECTIVE EPOXY
MDY4	MARKING LINE 4-INCH (DOUBLE YELLOW)
MY4	MARKING LINE 4-INCH (YELLOW)
MW4	MARKING LINE 4-INCH (WHITE)
YS4-12.5	MARKING LINE 4-INCH (YELLOW SKIP) (12.5' SEG., 37.5' GAP)

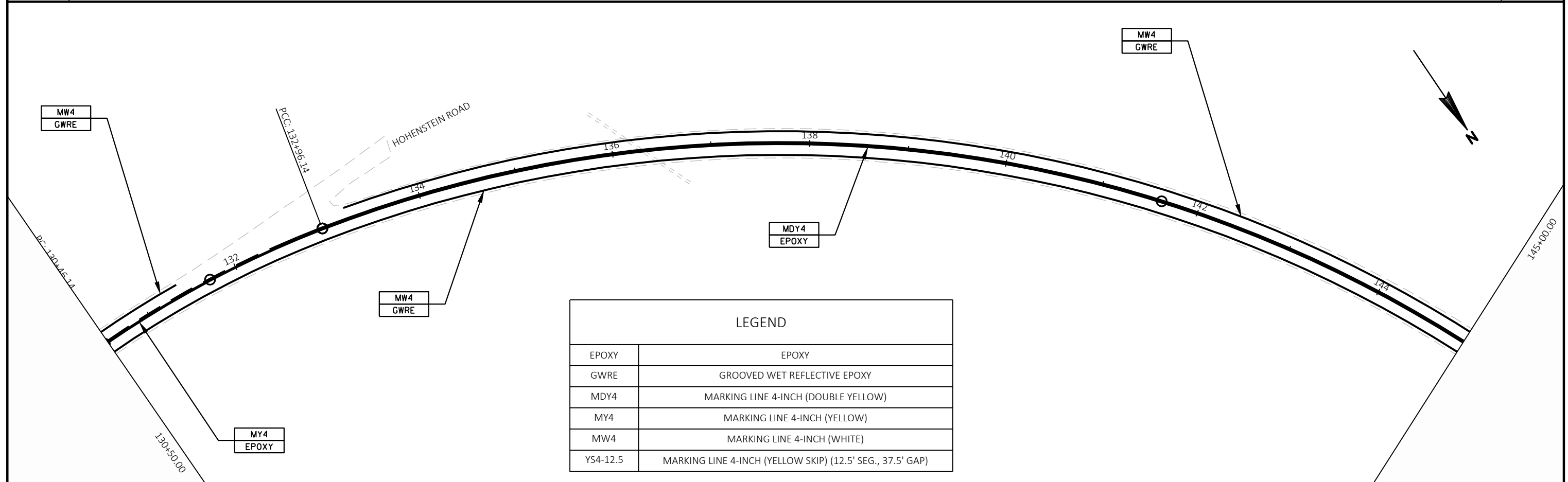
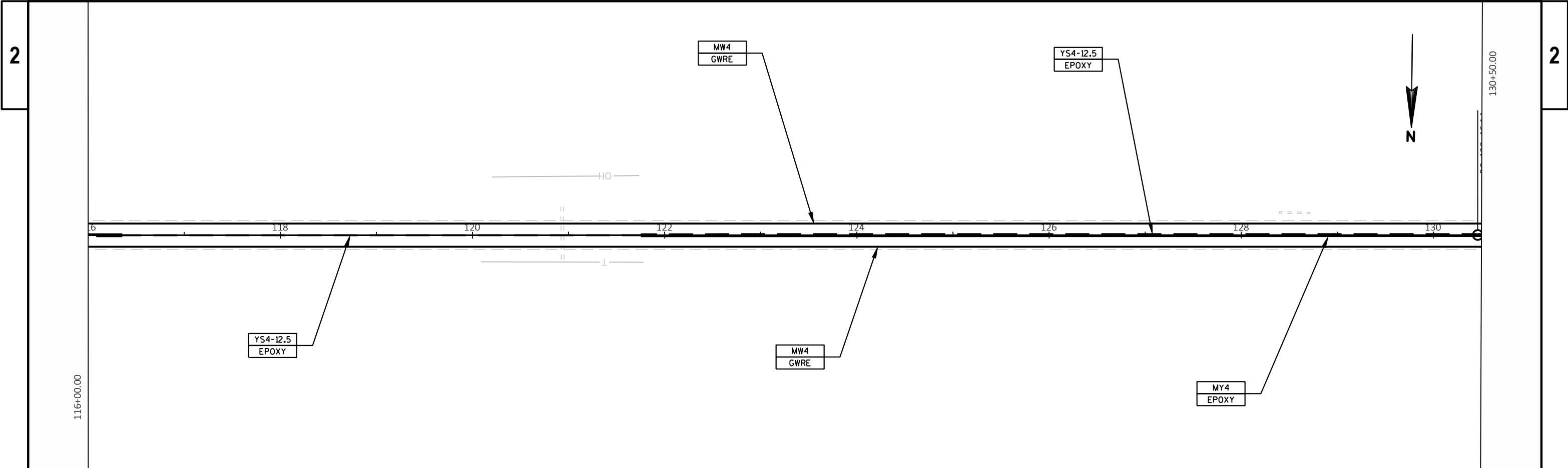
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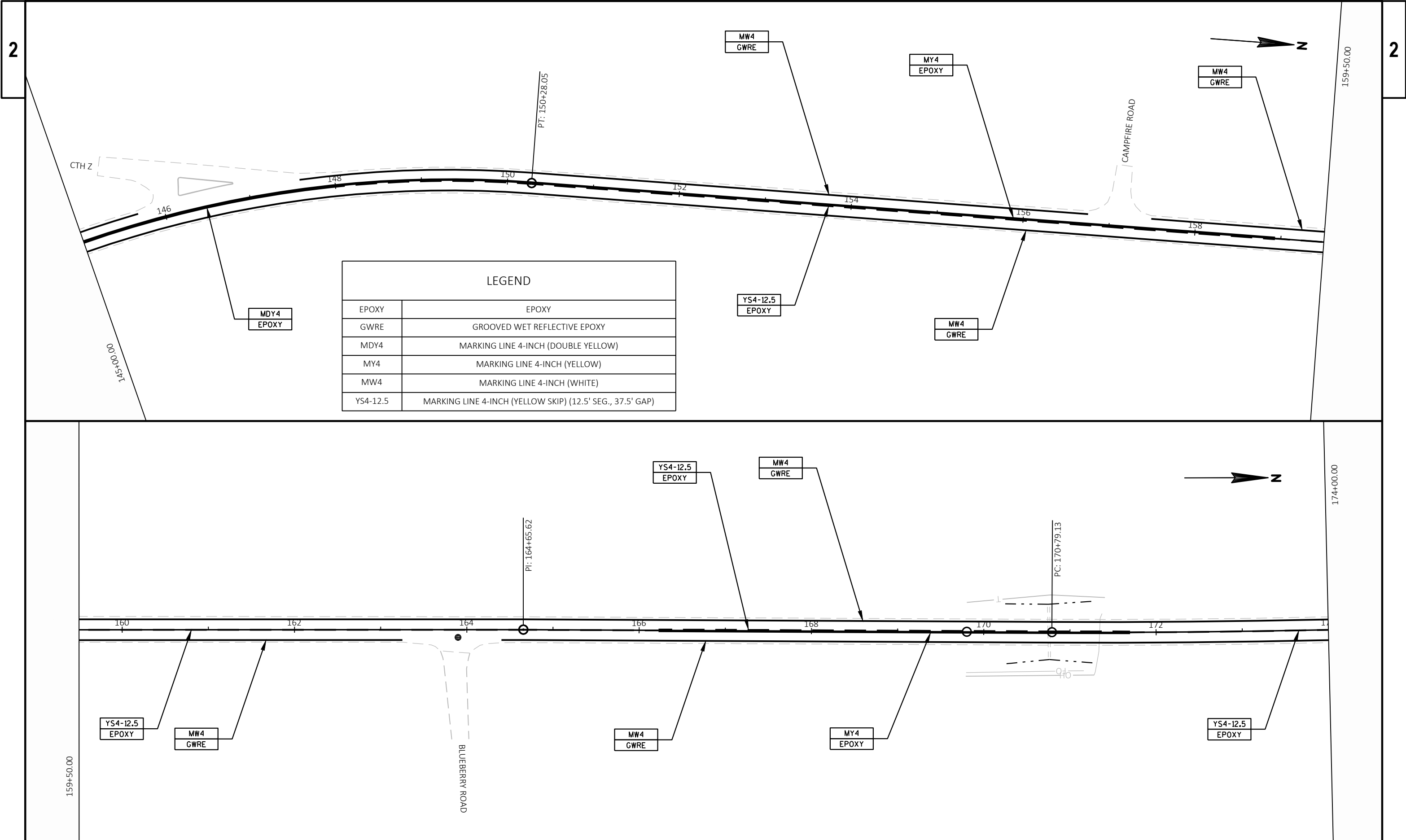
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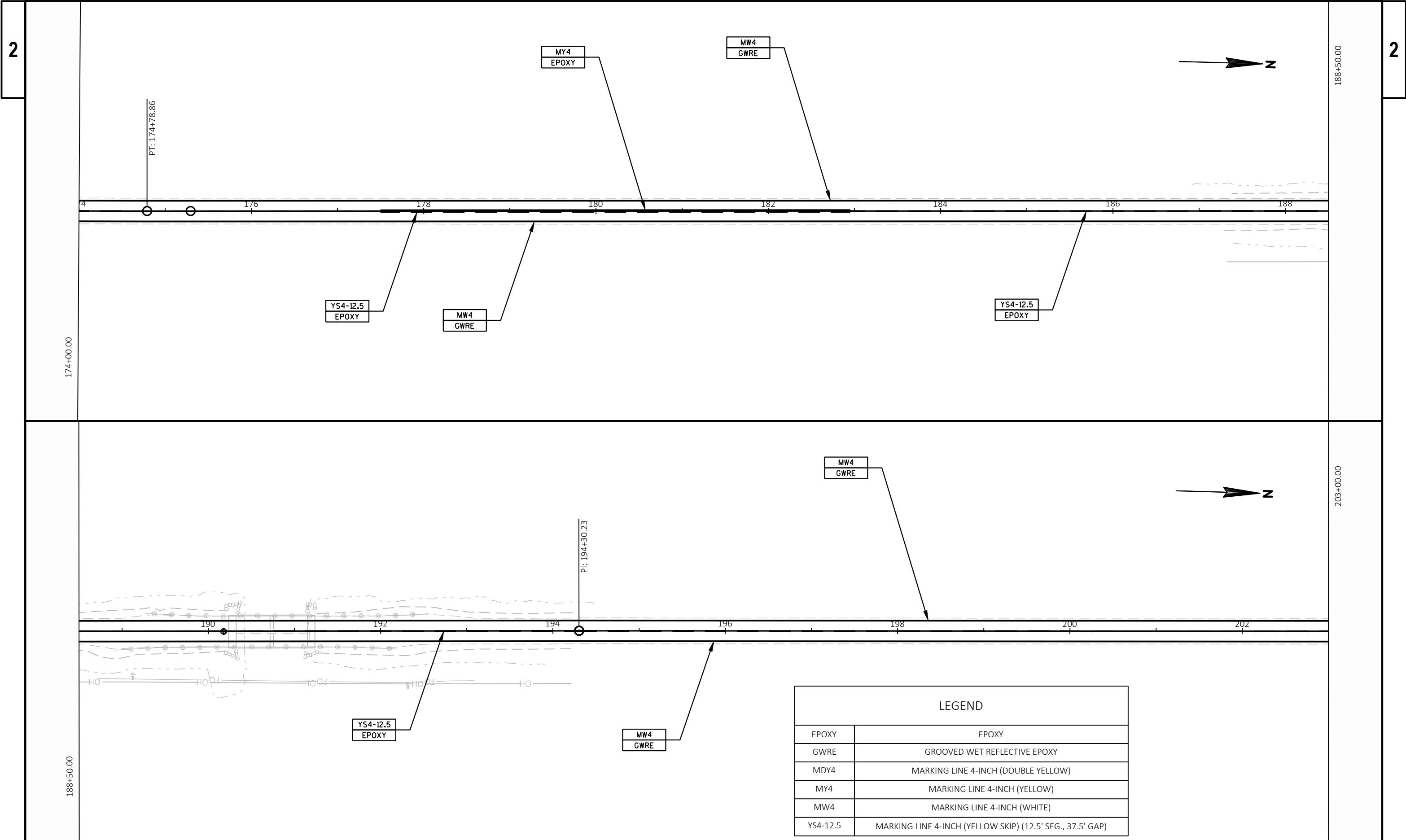


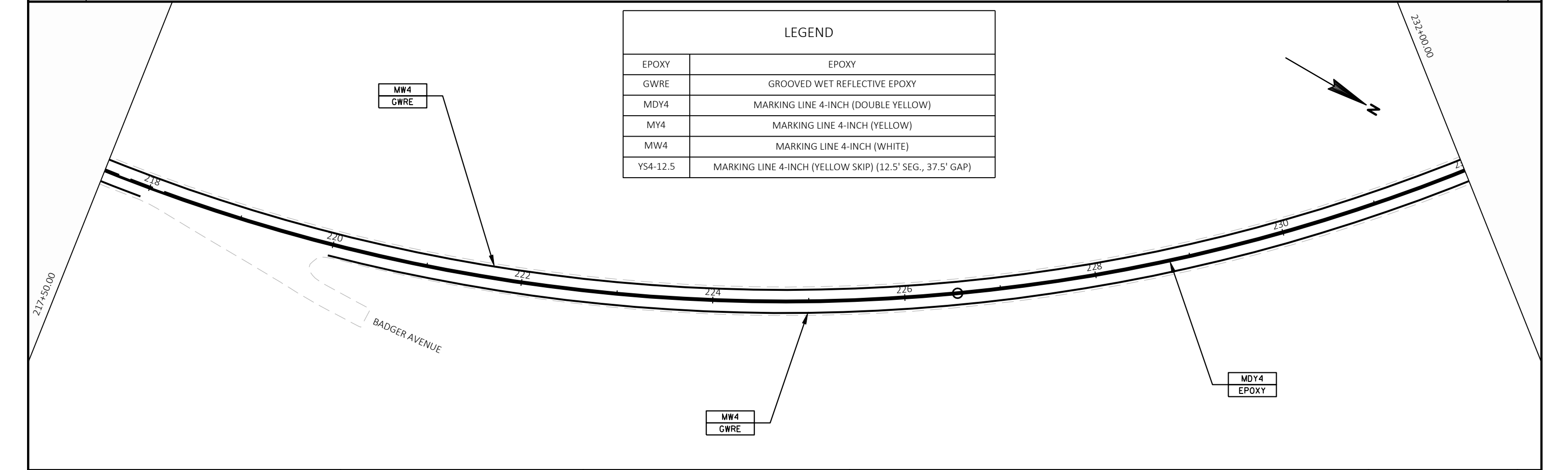
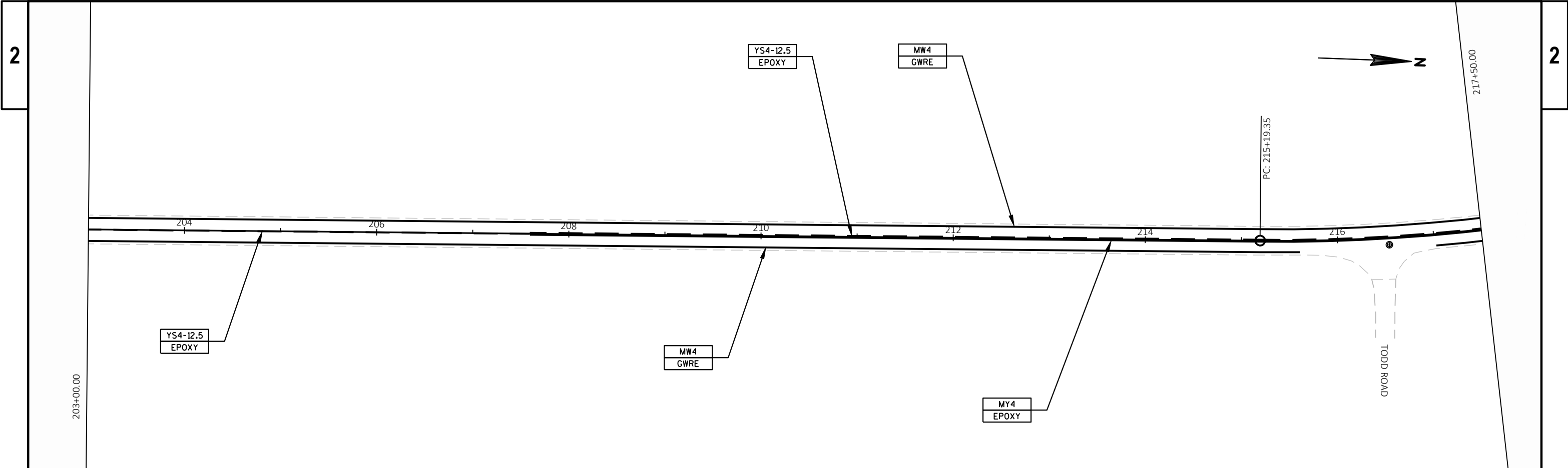
PROJECT NO:	7050-03-72	HWY: STH 73	COUNTY: CLARK	PAVEMENT MARKING	SHEET	E
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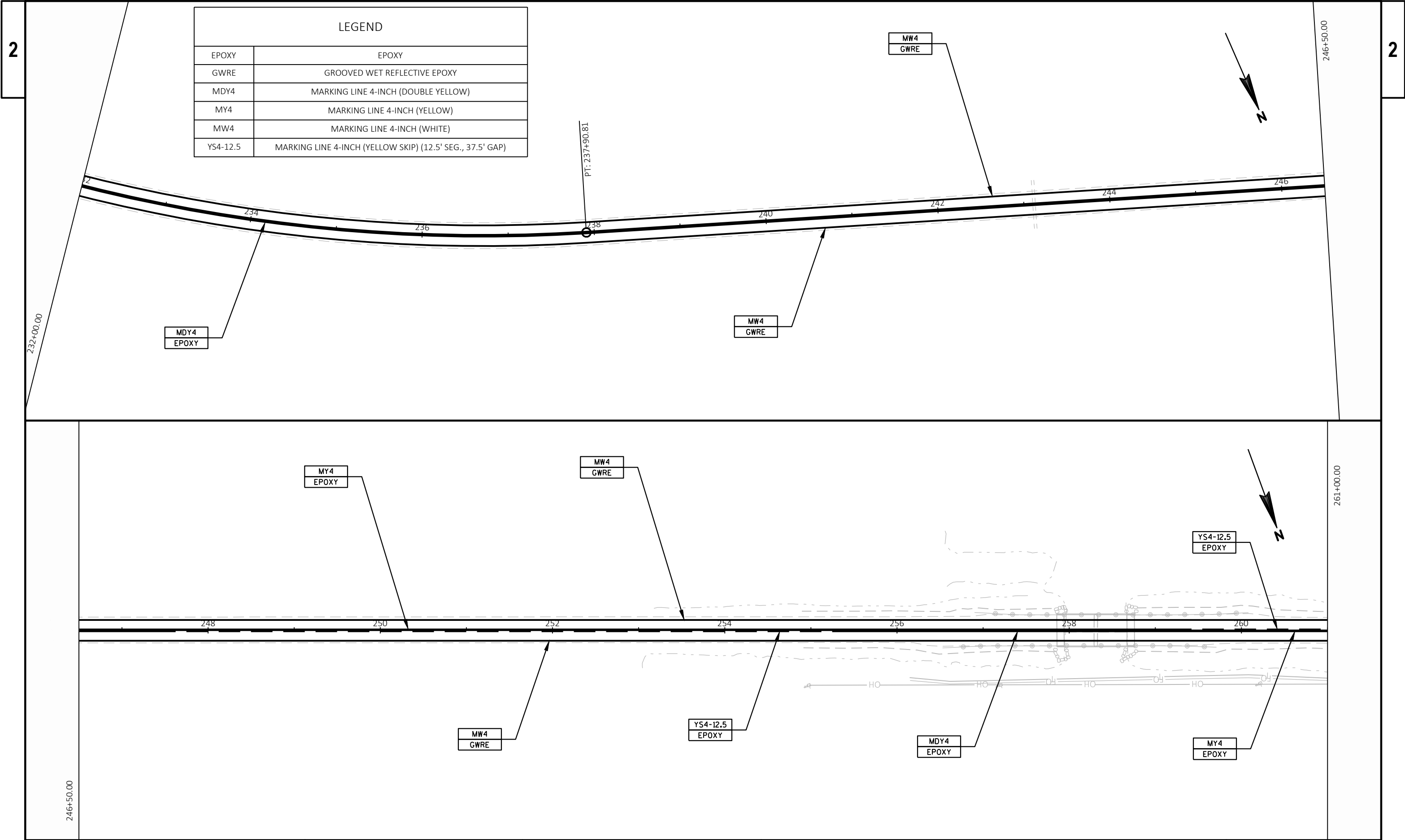
LEGEND	
EPOXY	EPOXY
GWRE	GROOVED WET REFLECTIVE EPOXY
MDY4	MARKING LINE 4-INCH (DOUBLE YELLOW)
MY4	MARKING LINE 4-INCH (YELLOW)
MW4	MARKING LINE 4-INCH (WHITE)
YS4-12.5	MARKING LINE 4-INCH (YELLOW SKIP) (12.5' SEG., 37.5' GAP)

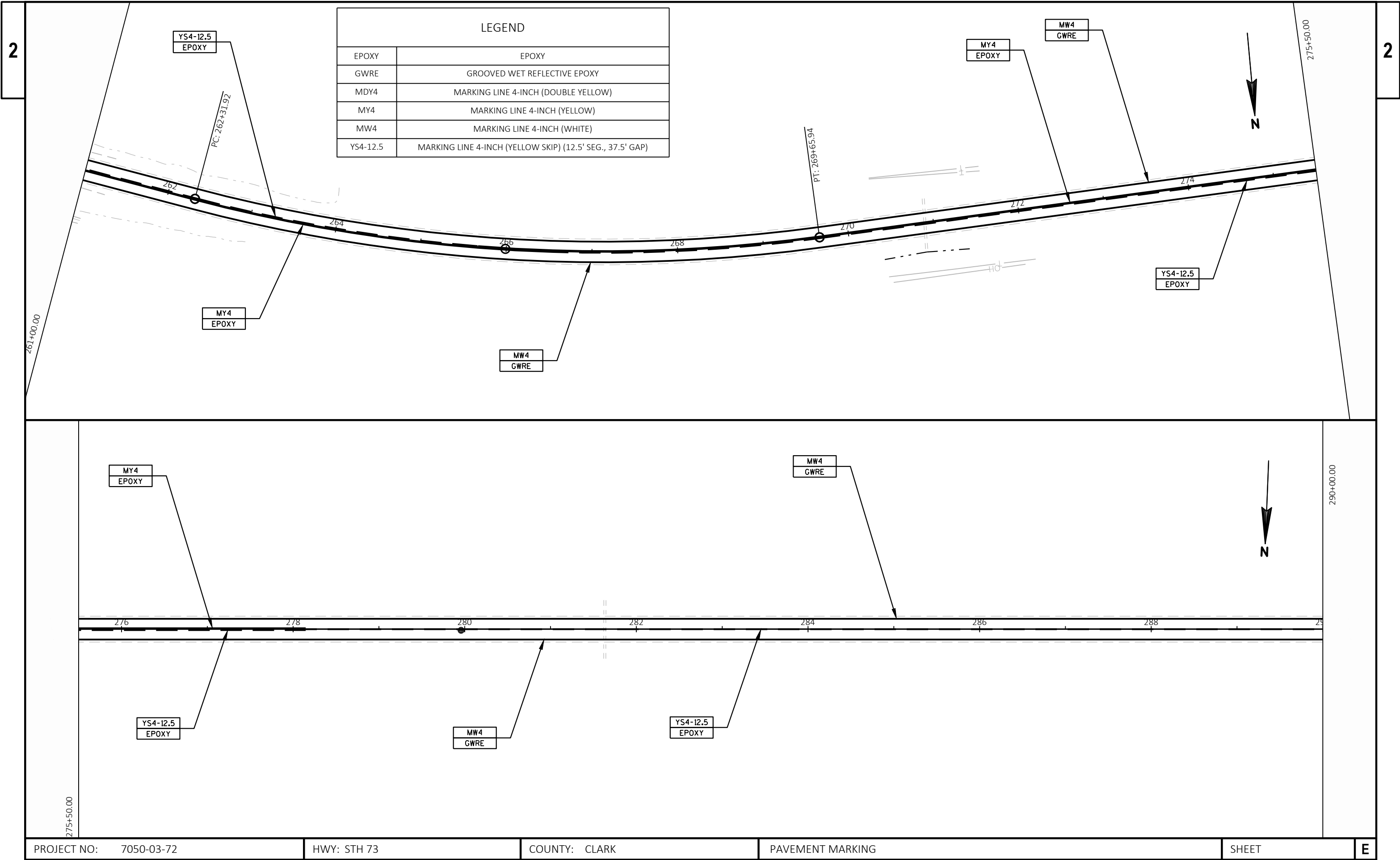


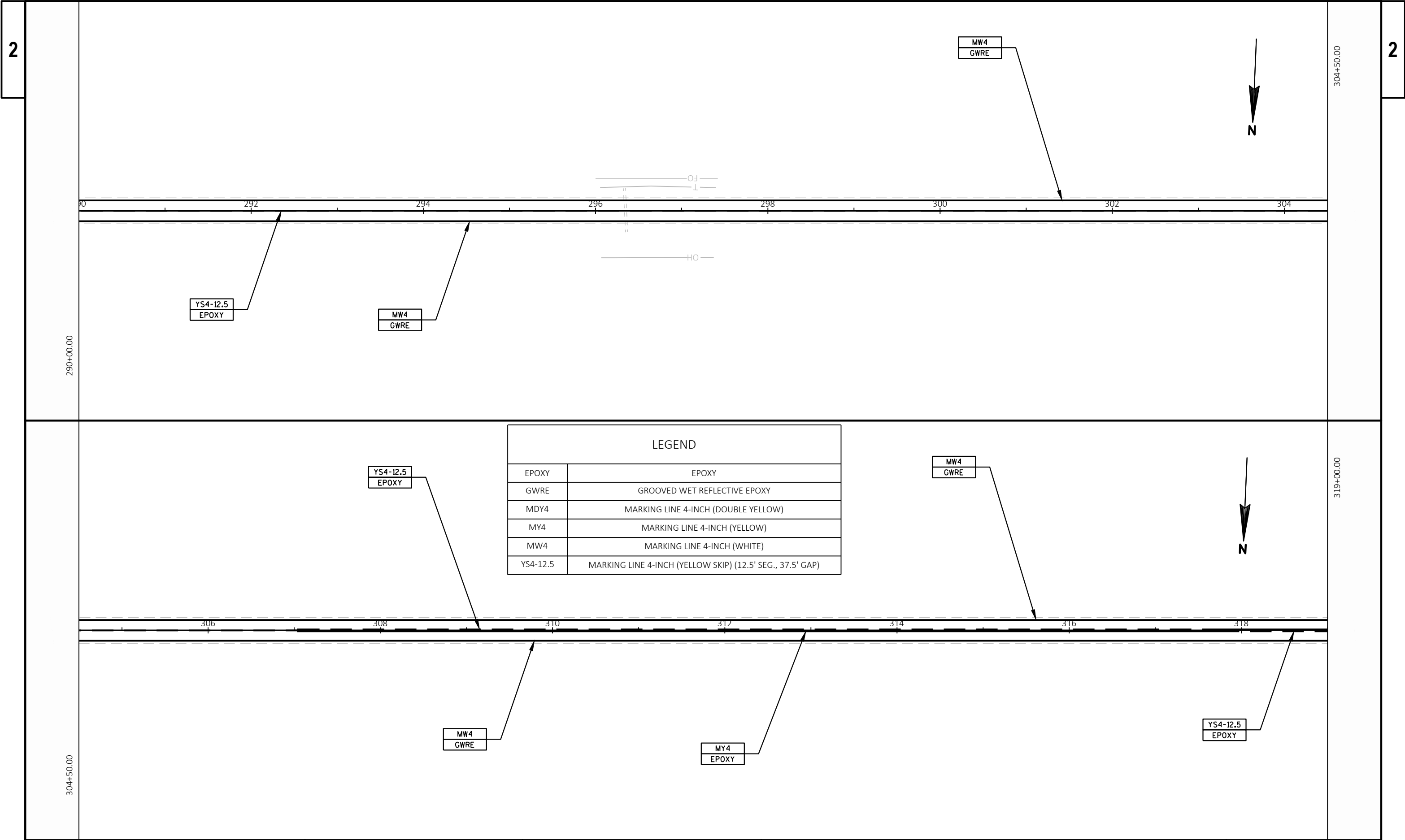


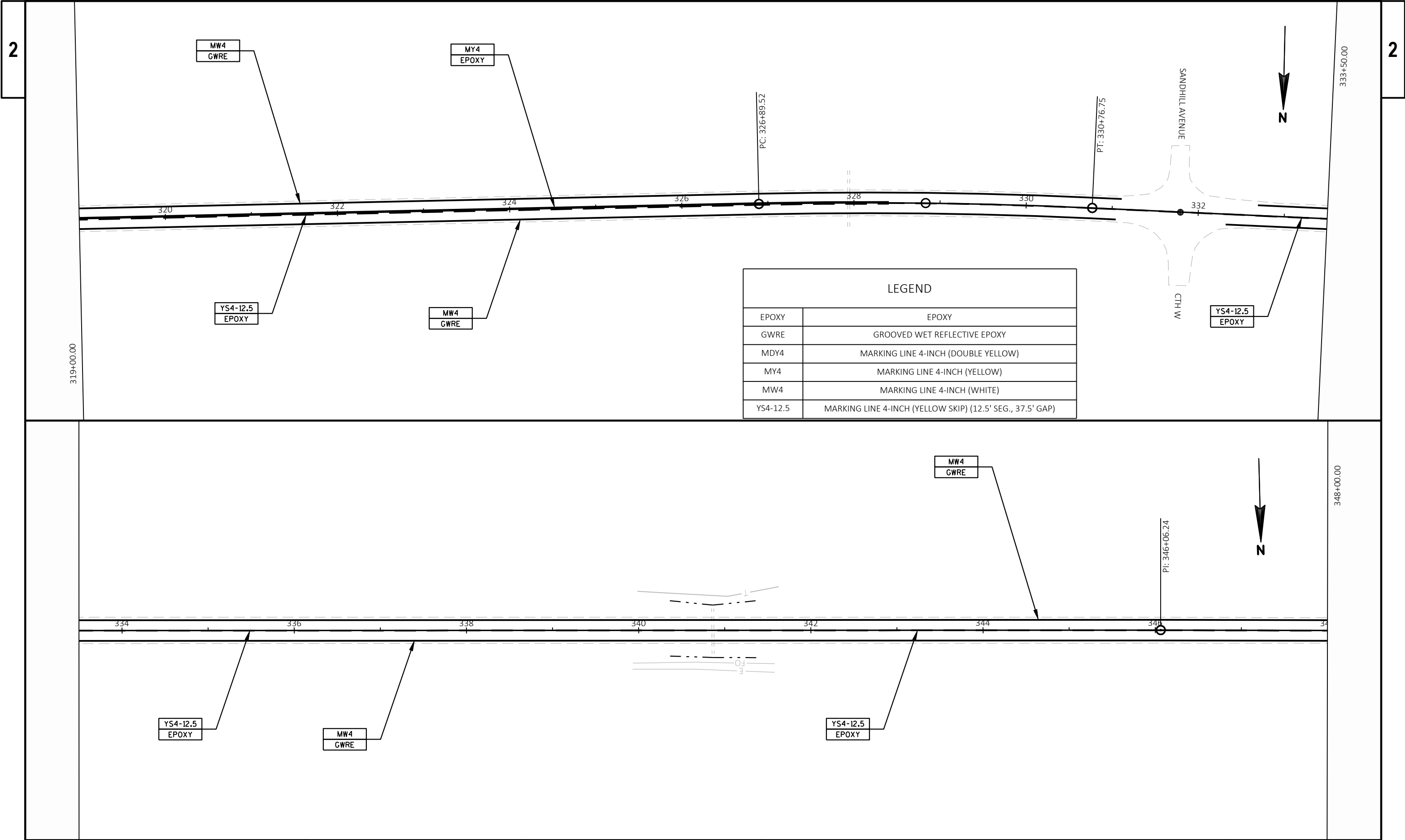


LEGEND	
EPOXY	EPOXY
GWRE	GROOVED WET REFLECTIVE EPOXY
MDY4	MARKING LINE 4-INCH (DOUBLE YELLOW)
MY4	MARKING LINE 4-INCH (YELLOW)
MW4	MARKING LINE 4-INCH (WHITE)
YS4-12.5	MARKING LINE 4-INCH (YELLOW SKIP) (12.5' SEG., 37.5' GAP)

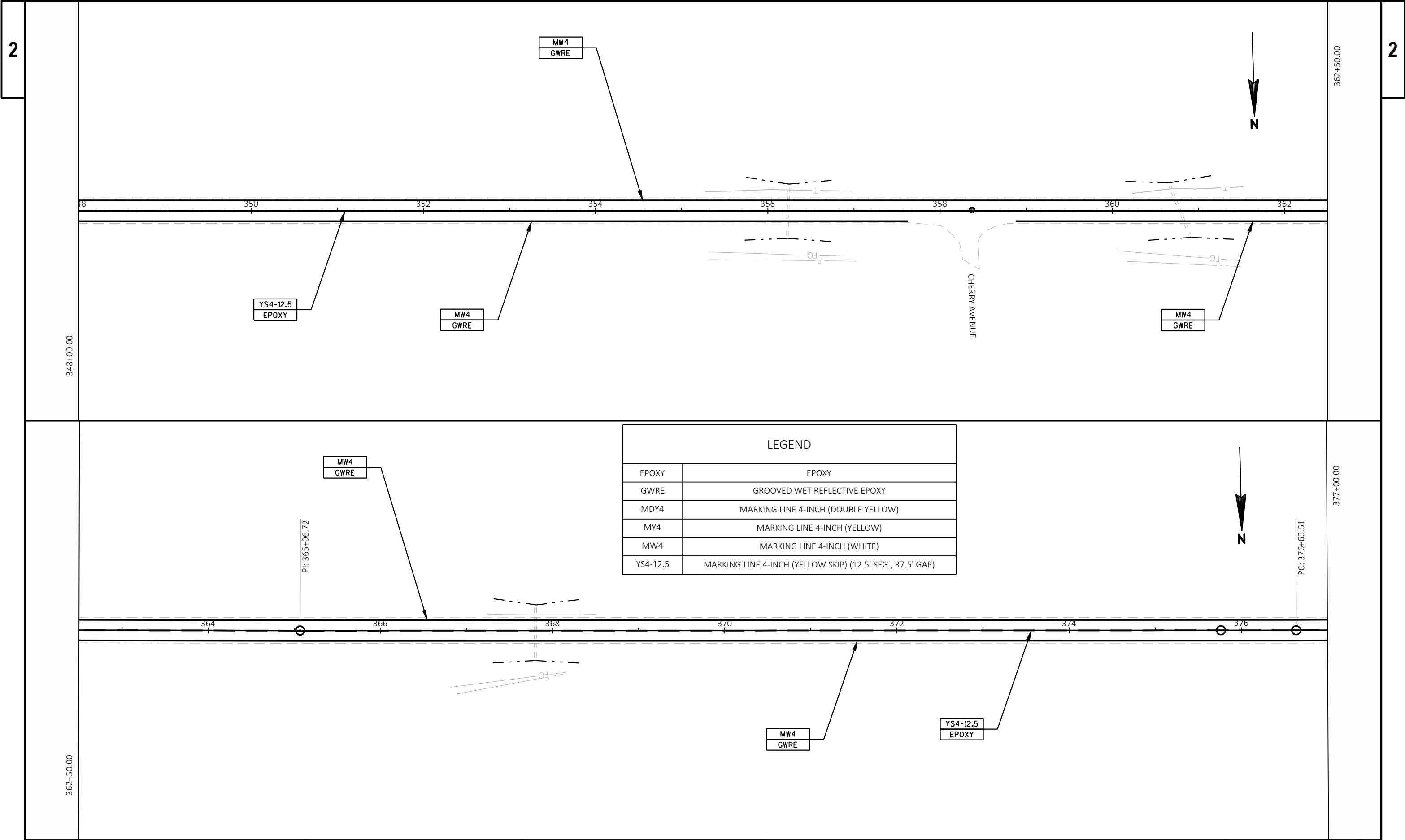


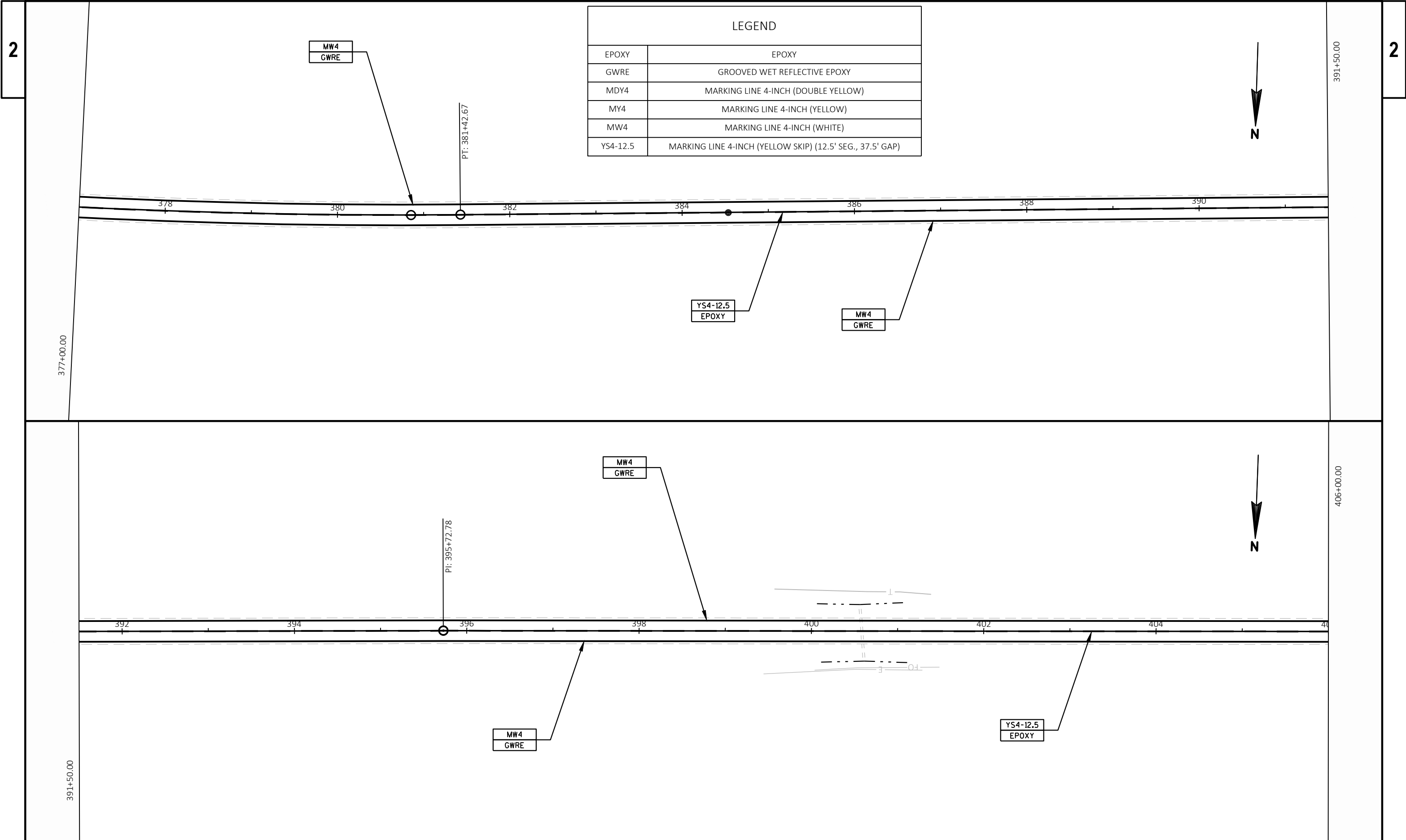


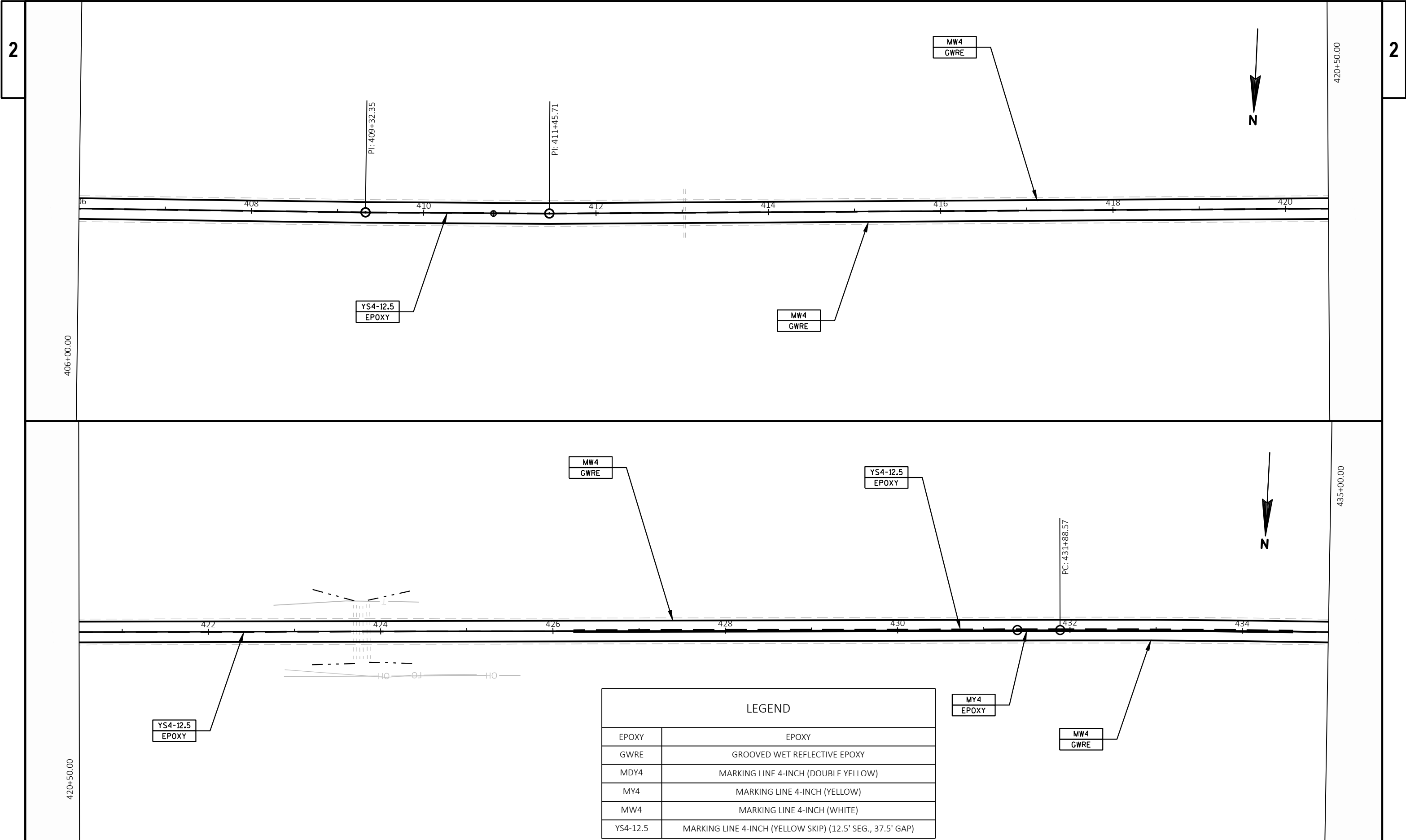


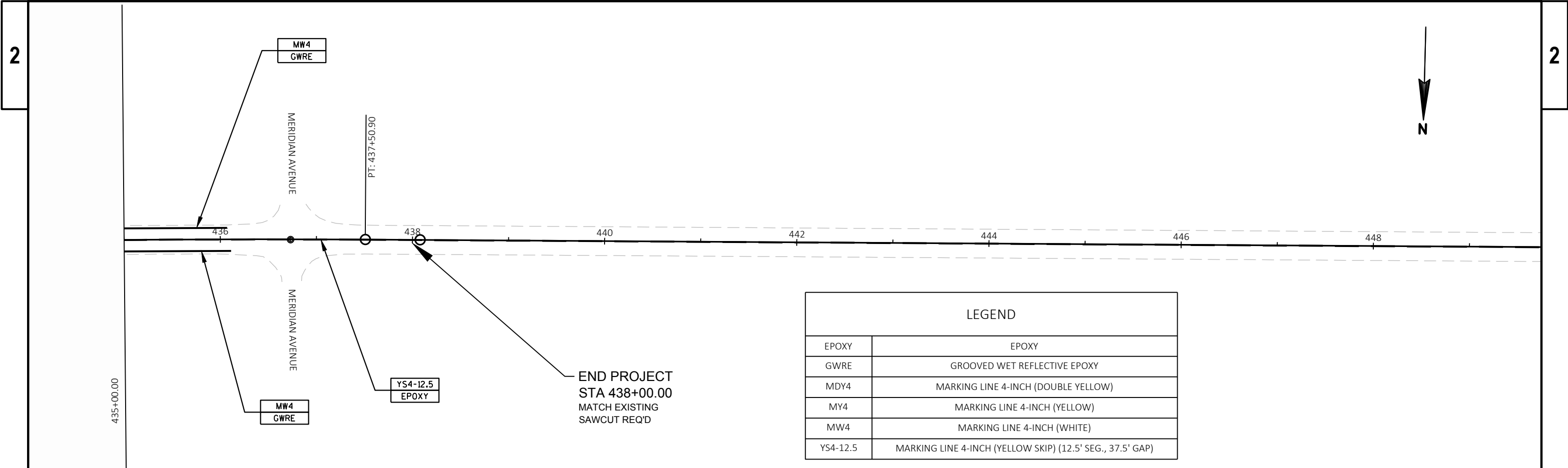


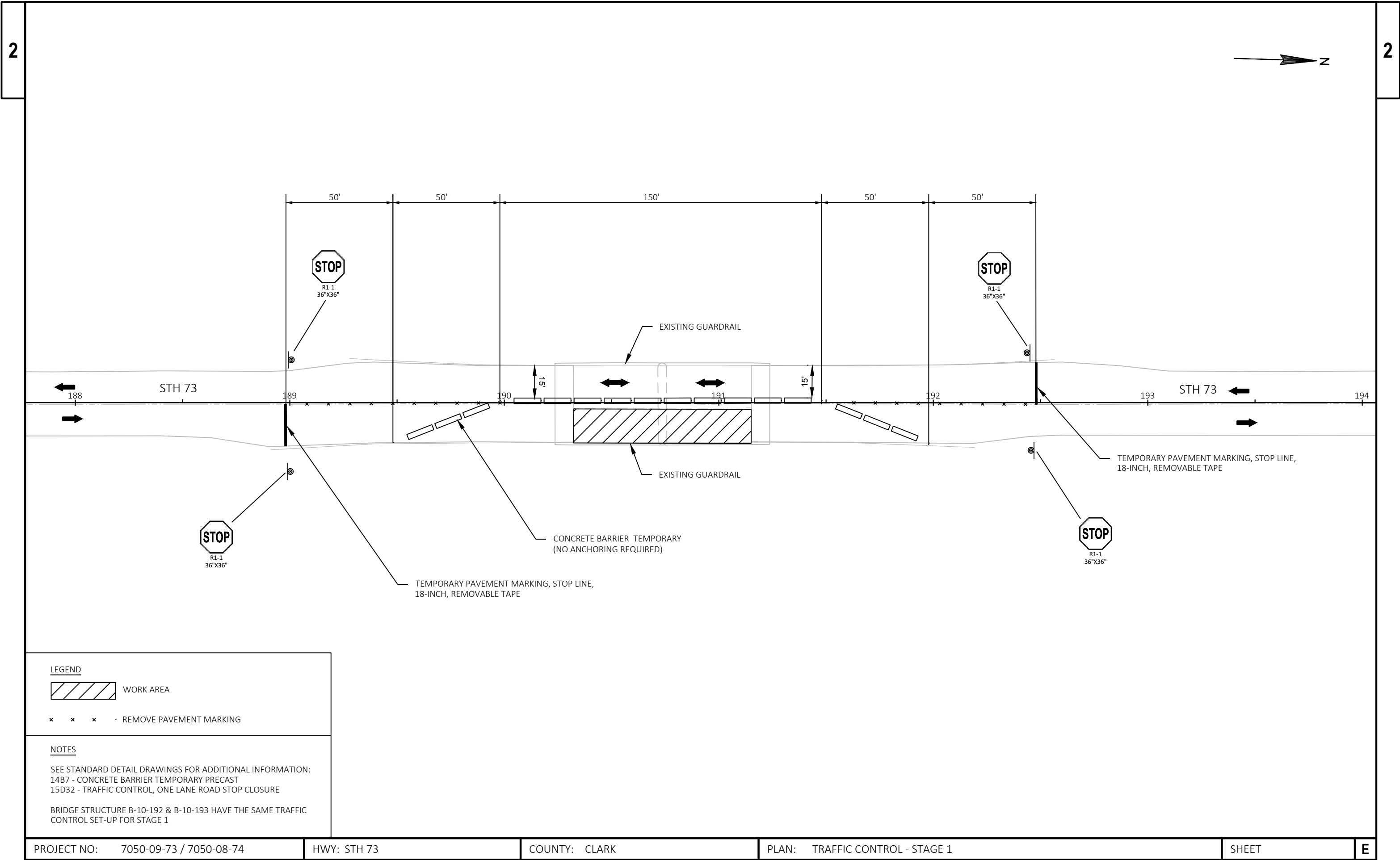
LEGEND	
EPOXY	EPOXY
GWRE	GROOVED WET REFLECTIVE EPOXY
MDY4	MARKING LINE 4-INCH (DOUBLE YELLOW)
MY4	MARKING LINE 4-INCH (YELLOW)
MW4	MARKING LINE 4-INCH (WHITE)
YS4-12.5	MARKING LINE 4-INCH (YELLOW SKIP) (12.5' SEG., 37.5' GAP)



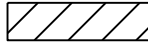








LEGEND

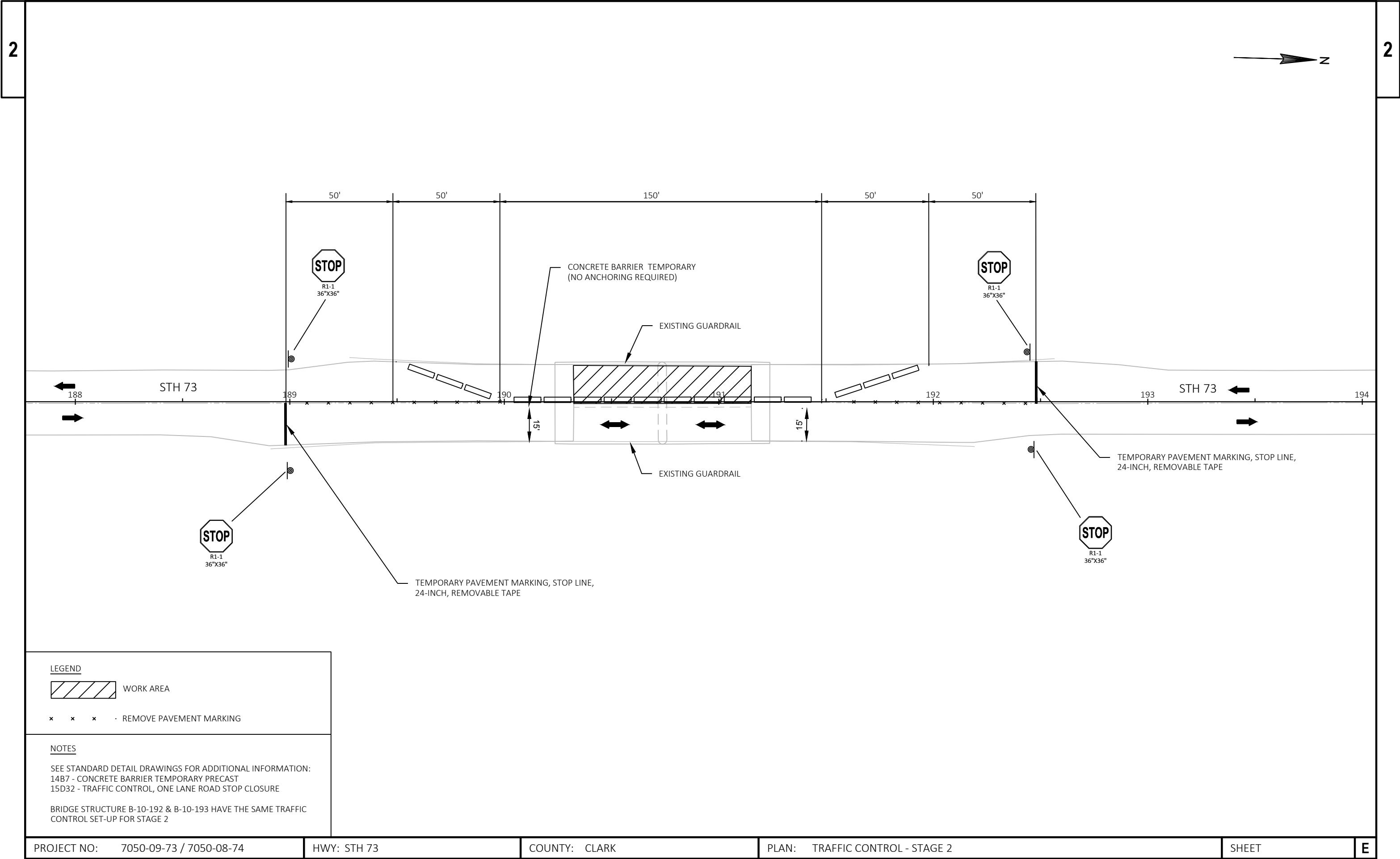
 WORK AREA

x x x · REMOVE PAVEMENT MARKING

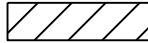
NOTES

SEE STANDARD DETAIL DRAWINGS FOR ADDITIONAL INFORMATION:
14B7 - CONCRETE BARRIER TEMPORARY PRECAST
15D32 - TRAFFIC CONTROL, ONE LANE ROAD STOP CLOSURE

BRIDGE STRUCTURE B-10-192 & B-10-193 HAVE THE SAME TRAFFIC CONTROL SET-UP FOR STAGE 1



LEGEND

 WORK AREA

x x x · REMOVE PAVEMENT MARKING

NOTES

SEE STANDARD DETAIL DRAWINGS FOR ADDITIONAL INFORMATION:
14B7 - CONCRETE BARRIER TEMPORARY PRECAST
15D32 - TRAFFIC CONTROL, ONE LANE ROAD STOP CLOSURE

BRIDGE STRUCTURE B-10-192 & B-10-193 HAVE THE SAME TRAFFIC CONTROL SET-UP FOR STAGE 2

Estimate Of Quantities

					7050-03-72	7050-08-74	7050-09-73
Line	Item	Item Description	Unit	Total	Qty	Qty	Qty
0002	204.0115	Removing Asphaltic Surface Butt Joints	SY	1,000.000	332.000	334.000	334.000
0004	204.0120	Removing Asphaltic Surface Milling	SY	145,366.000	144,700.000	333.000	333.000
0006	204.0180	Removing Delineators and Markers	EACH	42.000	42.000		
0008	205.0100	Excavation Common	CY	5.000	5.000		
0010	208.0100	Borrow	CY	3.000	3.000		
0012	211.0100	Prepare Foundation for Asphaltic Paving (project) 01. 7050-03-72	LS	1.000	1.000		
0014	213.0100	Finishing Roadway (project) 01. 7050-03-72	EACH	1.000	1.000		
0016	305.0110	Base Aggregate Dense 3/4-Inch	TON	10,200.000	10,120.000	40.000	40.000
0018	305.0120	Base Aggregate Dense 1 1/4-Inch	TON	190.000	190.000		
0020	305.0500	Shaping Shoulders	STA	876.000	868.000	4.000	4.000
0022	440.4410	Incentive IRI Ride	DOL	33,040.000	33,040.000		
0024	455.0605	Tack Coat	GAL	18,330.000	18,240.000	45.000	45.000
0026	460.2005	Incentive Density PWL HMA Pavement	DOL	12,280.000	12,280.000		
0028	460.2010	Incentive Air Voids HMA Pavement	DOL	28,500.000	28,500.000		
0030	460.4110.S	Reheating HMA Pavement Longitudinal Joints	LF	43,609.000	43,409.000	100.000	100.000
0032	460.6424	HMA Pavement 4 MT 58-28 H	TON	13,150.000	13,090.000	30.000	30.000
0034	460.6444	HMA Pavement 4 MT 58-34 H	TON	15,350.000	15,280.000	35.000	35.000
0036	465.0105	Asphaltic Surface	TON	3,550.000	3,550.000		
0038	465.0110	Asphaltic Surface Patching	TON	85.000	85.000		
0040	465.0120	Asphaltic Surface Driveways and Field Entrances	TON	150.000	150.000		
0042	465.0475	Asphalt Centerline Rumble Strips 2-Lane Rural	LF	43,609.000	43,409.000	100.000	100.000
0044	502.3200	Protective Surface Treatment	SY	626.000		333.000	293.000
0046	509.0301	Preparation Decks Type 1	SY	62.000		33.000	29.000
0048	509.0302	Preparation Decks Type 2	SY	32.000		17.000	15.000
0050	509.0500	Cleaning Decks	SY	626.000		333.000	293.000
0052	509.1500	Concrete Surface Repair	SF	20.000		10.000	10.000
0054	509.2500	Concrete Masonry Overlay Decks	CY	44.000		25.000	19.000
0056	520.1030	Apron Endwalls for Culvert Pipe 30-Inch	EACH	3.000	3.000		
0058	520.1036	Apron Endwalls for Culvert Pipe 36-Inch	EACH	1.000	1.000		
0060	520.8000	Concrete Collars for Pipe	EACH	4.000	4.000		
0062	520.8700	Cleaning Culvert Pipes	EACH	10.000	10.000		
0064	524.0624	Apron Endwalls for Culvert Pipe Salvaged 24-Inch	EACH	2.000	2.000		
0066	524.0630	Apron Endwalls for Culvert Pipe Salvaged 30-Inch	EACH	11.000	11.000		
0068	524.0636	Apron Endwalls for Culvert Pipe Salvaged 36-Inch	EACH	4.000	4.000		
0070	524.0642	Apron Endwalls for Culvert Pipe Salvaged 42-Inch	EACH	4.000	4.000		
0072	524.0648	Apron Endwalls for Culvert Pipe Salvaged 48-Inch	EACH	4.000	4.000		
0074	603.8000	Concrete Barrier Temporary Precast Delivered	LF	500.000		250.000	250.000
0076	603.8125	Concrete Barrier Temporary Precast Installed	LF	1,000.000		500.000	500.000
0078	606.0200	Riprap Medium	CY	22.000	22.000		

Estimate Of Quantities

					7050-03-72	7050-08-74	7050-09-73
Line	Item	Item Description	Unit	Total	Qty	Qty	Qty
0080	608.0130	Relaid Storm Sewer 30-Inch	LF	122.000	122.000		
0082	608.0136	Relaid Storm Sewer 36-Inch	LF	56.000	56.000		
0084	608.0142	Relaid Storm Sewer 42-Inch	LF	124.000	124.000		
0086	608.0148	Relaid Storm Sewer 48-Inch	LF	128.000	128.000		
0088	614.0010	Barrier System Grading Shaping Finishing	EACH	5.000	5.000		
0090	614.0920	Salvaged Rail	LF	617.000	617.000		
0092	614.2300	MGS Guardrail 3	LF	150.000	150.000		
0094	614.2500	MGS Thrie Beam Transition	LF	197.000	197.000		
0096	614.2610	MGS Guardrail Terminal EAT	EACH	5.000	5.000		
0098	618.0100	Maintenance And Repair of Haul Roads (project) 01. 7050-03-72	EACH	1.000	1.000		
0100	619.1000	Mobilization	EACH	1.000	0.940	0.030	0.030
0102	621.0100	Landmark Reference Monuments	EACH	36.000	36.000		
0104	624.0100	Water	MGAL	74.000	74.000		
0106	625.0100	Topsoil	SY	1,450.000	1,450.000		
0108	627.0200	Mulching	SY	250.000	250.000		
0110	628.1504	Silt Fence	LF	1,650.000	1,650.000		
0112	628.1520	Silt Fence Maintenance	LF	825.000	825.000		
0114	628.1905	Mobilizations Erosion Control	EACH	1.000	1.000		
0116	628.1910	Mobilizations Emergency Erosion Control	EACH	1.000	1.000		
0118	628.2023	Erosion Mat Class II Type B	SY	1,200.000	1,200.000		
0120	628.7555	Culvert Pipe Checks	EACH	13.000	13.000		
0122	628.7570	Rock Bags	EACH	50.000	50.000		
0124	629.0210	Fertilizer Type B	CWT	1.000	1.000		
0126	630.0160	Seeding Mixture No. 60	LB	20.000	20.000		
0128	633.5200	Markers Culvert End	EACH	42.000	42.000		
0130	634.0614	Posts Wood 4x6-Inch X 14-FT	EACH	65.000	65.000		
0132	634.0616	Posts Wood 4x6-Inch X 16-FT	EACH	18.000	18.000		
0134	634.0618	Posts Wood 4x6-Inch X 18-FT	EACH	2.000	2.000		
0136	637.2210	Signs Type II Reflective H	SF	261.460	261.460		
0138	637.2230	Signs Type II Reflective F	SF	195.150	195.150		
0140	638.2602	Removing Signs Type II	EACH	101.000	101.000		
0142	638.3000	Removing Small Sign Supports	EACH	85.000	85.000		
0144	642.5001	Field Office Type B	EACH	1.000	1.000		
0146	643.0300	Traffic Control Drums	DAY	880.000	880.000		
0148	643.0310.S	Temporary Portable Rumble Strips	LS	1.000	1.000		
0150	643.0420	Traffic Control Barricades Type III	DAY	528.000	528.000		
0152	643.0900	Traffic Control Signs	DAY	2,640.000	2,640.000		
0154	643.1050	Traffic Control Signs PCMS	DAY	176.000	176.000		
0156	643.5000	Traffic Control	EACH	1.000	1.000		

Estimate Of Quantities

					7050-03-72	7050-08-74	7050-09-73
Line	Item	Item Description	Unit	Total	Qty	Qty	Qty
0158	645.0120	Geotextile Type HR	SY	558.000	558.000		
0160	646.1020	Marking Line Epoxy 4-Inch	LF	42,500.000	42,275.000	25.000	200.000
0162	646.1040	Marking Line Grooved Wet Ref Epoxy 4-Inch	LF	85,500.000	85,100.000	200.000	200.000
0164	646.4520	Marking Line Same Day Epoxy 4-Inch	LF	42,500.000	42,275.000	25.000	200.000
0166	646.9000	Marking Removal Line 4-Inch	LF	500.000	500.000		
0168	648.0100	Locating No-Passing Zones	MI	8.300	8.300		
0170	649.0105	Temporary Marking Line Paint 4-Inch	LF	85,500.000	85,500.000		
0172	649.0850	Temporary Marking Stop Line Removable Tape 18-Inch	LF	60.000	60.000		
0174	650.6000	Construction Staking Pipe Culverts	EACH	6.000	6.000		
0176	650.8000	Construction Staking Resurfacing Reference	LF	43,800.000	43,800.000		
0178	650.9910	Construction Staking Supplemental Control (project) 01. 7050-03-72	LS	1.000	1.000		
0180	650.9920	Construction Staking Slope Stakes	LF	1,200.000	1,200.000		
0182	690.0150	Sawing Asphalt	LF	860.000	860.000		
0184	ASP.1T0A	On-the-Job Training Apprentice at \$5.00/HR	HRS	2,000.000	2,000.000		
0186	ASP.1T0G	On-the-Job Training Graduate at \$5.00/HR	HRS	630.000	630.000		
0188	SPV.0060	Special 01. PWL Test Strip Volumetrics	EACH	2.000	2.000		
0190	SPV.0060	Special 02. PWL Test Strip Density	EACH	1.000	1.000		

7050-03-72											
REMOVING ASPHALTIC SURFACE BUTT JOINTS				REMOVING ASPHALTIC SURFACE MILLING				REMOVING DELINEATORS AND MARKERS			
		204.0115				204.0120				204.0180	
STATION - STATION	LOCATION	SY	COMMENTS	STATION - STATION	LOCATION	SY	COMMENTS	STATION - STATION	LOCATION	EACH	COMMENTS
CATEGORY CODE 0010				CATEGORY CODE 0010				CATEGORY CODE 0010			
0+00		166		0+00 - 189+74		59,747				42	
438+00		166		191+74 - 257+38		21,541		PROJECT 7050-03-72			
				259+27 - 438+00		63,412					
TOTAL		332		TOTAL		144,700		TOTAL		42	

EARTHWORK SUMMARY

FROM/TO STATION	LOCATION	COMMON EXCAVATION (ITEM #205.0100) (NOTE 1)		SALVAGED / UNUSABLE PAVEMENT MATERIAL (NOTE 4)	AVAILABLE MATERIAL (NOTE 5)	UNEXPANDED FILL	EXPANDED FILL (NOTE 6)	MASS ORDINATE +/- (NOTE 7)	WASTE	BORROW (208.0100) (NOTE 8)	COMMENTS
		CUT (NOTE 2)	EBS EXCAVATION (NOTE 3)				FACTOR 1.25				
0+00 - 438+00	RELAID PIPES / GRADE TO DRAIN	5	0	2	3	0	0	3	3	3	
TOTAL COMMON EXCAVATION		5							3	3	

- 1) COMMON EXCAVATION IS THE SUM OF THE CUT AND EBS EXCAVATION COLUMNS.
- 2) SALVAGED/UNUSABLE PAVEMENT MATERIAL IS INCLUDED IN CUT.
- 3) EBS EXCAVATION TO BE BACKFILLED WITH BREAKER RUN.
- 4) SALVAGED/UNUSABLE PAVEMENT MATERIAL = LENGTH * TYPICAL WIDTH * TYPICAL DEPTH
- 5) AVAILABLE MATERIAL = CUT - SALVAGED/UNUSABLE PAVEMENT MATERIAL
- 6) EXPANDED FILL. FACTOR = 1.25. EXPANDED FILL = UNEXPANDED FILL * FILL FACTOR
- 7) 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.
- 8) BORROW TO BE USED WHEN EXISTING MATERIAL IS UNSUITABLE AT RELAID PIPE LOCATIONS

PREPARE FOUNDATION ITEMS		RUMBLE STRIP ITEMS				BASE AGGREGATE DENSE ITEMS					
211.0100 PREPARE FOUNDATION FOR ASPHALTIC PAVING		465.0475 ASPHALTIC CENTER LINE RUMBLE STRIPS 2-LANE RURAL				305.0110 BASE AGGREGATE DENSE 3/4-INCH		305.0120 BASE AGGREGATE DENSE 1 1/4-INCH		305.0500 SHAPING SHOULDERS	
STATION - STATION	LS	STATION - STATION	LOCATION	LF	COMMENTS	STATION - STATION	LOCATION	TON	TON	STA	COMMENTS
CATEGORY CODE 0010		CATEGORY CODE 0010				CATEGORY CODE 0010					
PROJECT 7050-03-72	1	0+00 - 189+74	CL	19,024	--	0+00 - 190+24	LT	2,210	--	190	SHOULDERING MATERIAL
		191+74 - 257+38	CL	6,462	--	0+00 - 190+24	RT	2,210	--	190	SHOULDERING MATERIAL
		259+27 - 438+00	CL	17,923	--	191+24 - 257+86	LT	760	--	65	SHOULDERING MATERIAL
						191+24 - 257+86	RT	760	--	65	SHOULDERING MATERIAL
						258+77 - 438+00	LT	2,090	--	179	SHOULDERING MATERIAL
						258+77 - 438+00	RT	2,090	--	179	SHOULDERING MATERIAL
						0+00 - 438+00	LT / RT	--	190	--	RELAID CULVERT MATERIAL
TOTALS		TOTALS		43,409		TOTALS		10,120	190	868	
MISC. SHEET 1											

MISC. SHEET 1

3

STATION - STATION	LOCATION	460.4110.S LF
0+00 - 190+24	CL	19,024
191+24 - 257+86	CL	6,462
258+77 - 438+00	CL	17,923

TOTAL	43,409
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STATION - STATION	618.0100
CATEGORY CODE 0010	EACH

PROJECT 7050-03-72 1

TOTALS	1
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STATION - STATION	LOCATION	624.0100 MGAL
CATEGORY CODE 0010		

0+00 - 438+00	LT & RT	74
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TOTAL 74

STATION	LOCATION	524.0624	524.0630	524.0636	524.0642	524.0648	520.1030	520.1036	520.8000	520.8700	608.0130	608.0136	608.0142	608.0148
		APRON ENDWALLS FOR CULVERT PIPE SALVAGED												
		24-INCH	30-INCH	36-INCH	42-INCH	48-INCH	30-INCH	36-INCH	CONCRETE COLLARS	CLEANING CULVERT PIPE	30-INCH	36-INCH	42-INCH	48-INCH
		EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	LF	LF	LF	LF
CATEGORY CODE 0010														
0+00 - 438+00	LT/RT	2	11	4	4	4	3	1	4	10	122	56	124	128
TOTALS		2	11	4	4	4	3	1	4	10	122	56	124	128

STATION - STATION	LOCATION	455.0605	460.6424	460.6444	460.2005	460.2010	SPV.0060.01	SPV.0060.02	465.0105	465.0110	465.0120	COMMENTS
		TACK COAT GAL	HMA PAVEMENT 4 MT 58-28 H TON	HMA PAVEMENT 4 MT 58-34 H TON	PWL INCENTIVE DENSITY DOL	PWL INCENTIVE AIR VOIDS DOL	PWL TEST STRIP VOLUMETRICS EACH	PWL TEST STRIP DENSITY EACH	ASPHALTIC SURFACE TON	ASPHALTIC SURFACE PATCHING TON	ASPHALTIC SURFACE DRIVEWAYS TON	
CATEGORY CODE 0010												
0+00 - 438+00		18,240	13,090	15,280	12,280	28,500	2	1	--	--	150	MAINLINE / EXISTING PAVED SHLD
UNDISTRIBUTED		--	--	--	--	--	--	--	--	85	--	MINOR REPAIR AFTER MILLING
UNDISTRIBUTED		--	--	--	--	--	--	--	3,400	--	--	WEDGING LAYER AS NEEDED
UNDISTRIBUTED		--	--	--	--	--	--	--	150	--	--	RELAID CULVERT
		18,240	13,090	15,280	12,280	28,500	2	1	3,550	85	150	

TONNAGE IS BASED ON ALL THREE COMBINED PROJECTS (7050-03-72, 7050-08-74, 7050-09-73) FOR PWL INCENTIVE ITEMS

LOCATION	STATION	MIXTURE USE	UNDERLYING SURFACE	BID ITEM	TONS	THICKNESS	MIXTURE ACCEPTANCE	DENSITY ACCEPTANCE
12' Driving Lane	0+00 to 438+00	Upper Layer	4 MT 58-28 H	4 MT 58-34 H	12,280	1 3/4"	PWL Incentive Air Voids HMA Pavement 460.2010 / PWL Test Strip Volumetrics SPV.0060.01	Incentive Density PWL HMA Pavement 460.2005 / PWL Test Strip Density SPV.0060.02
12' Driving Lane	0+00 to 438+00	Low er Layer	Milled Existing HMA Surface	4 MT 58-28 H	10,520	1 1/2"	PWL Incentive Air Voids HMA Pavement 460.2010 / PWL Test Strip Volumetrics SPV.0060.01	Acceptance by ordinary compaction per 460.3.3.3
3' Shoulder / Side Roads	0+00 to 438+00	Upper Layer	4 MT 58-28 H	4 MT 58-34 H	3,070	1 3/4"	PWL Incentive Air Voids HMA Pavement 460.2010	Acceptance testing by the department, not eligible for incentive
3' Shoulder / Side Roads	0+00 to 438+00	Low er Layer	Milled Existing HMA Surface	4 MT 58-28 H	2,630	1 1/2"	PWL Incentive Air Voids HMA Pavement 460.2010	Acceptance by ordinary compaction per 460.3.3.3
Various		Culvert Patches	Base Aggregate	Asphaltic Surface	150	5" total	QMP as per SS 465	Acceptance by ordinary compaction per 460.3.3.3

MISC. SHEET 2

HWY: STH 73

MISCELLANEOUS QUANTITIES

SHEET:

E

3

7050-03-72			
RIPRAP AND GEOTEXTILE FABRIC			
		606.0200 RIPRAP MEDIUM	645.0120 GEOTEXTILE FABRIC TYPE HR SY
STATION	LOCATION	CY	SY
4+40	RT	3	72
120+95	LT	3	72
356+15	RT	3	72
360+95	RT	3	72
423+90	RT	10	270
TOTALS		22	558

BARRIER SYSTEM GRADING		614.0010 SHAPING FINISHING
STATION - STATION	EACH	
CATEGORY CODE 0010		
PROJECT 7050-03-72	5	
TOTALS	5	

APPROXIMATE QUANTITIES FOR BARRIER SYSTEM GRADING SHAPING FINISHING, FOR INFORMATIONAL PURPOSES ONLY								
STATION	LOCATION	FILL (1.25)	COMMON EXCAVATION	TOPSOIL SY	SEED MIX 60 LBS	FERTILIZER TYPE B CWT	MULCH SY	EROSION MAT CLASS II TYPE B SY
187+00 - 194+00	LT/RT	4	62	1550	22	1.0	300	1250
255+50 - 261+50	LT/RT	15	113	2000	28	1.3	300	1700

MIDWEST GUARDRAIL SYSTEM ITEMS				
		614.2300 MGS GUARDRAIL 3	614.2500 MGS THRIE BEAM TRANSITION	614.2610 MGS GUARDRAIL TERMINAL EAT EACH
STATION - STATION	LOCATION	-- LF	-- LF	
189+00 - 190+24	RT	50.0	39.4	1
191+24 - 193+00	LT	50.0	39.4	1
257+00 - 257+86	LT	--	39.4	1
258+77 - 260+15	LT	50.0	39.4	1
258+77 - 259+65	RT	--	39.4	1
TOTALS		150	197	5

MARKERS CULVERT END		633.5200 EACH
STATION - STATION		
CATEGORY CODE 0010		
PROJECT 7050-03-72	42	
TOTALS	42	

SILT FENCE			
		628.1504 LF	628.1520 MAINTENANCE LF
STATION - STATION	LOCATION		
187+00 - 190+25	RT	350	175
191+25 - 194+50	LT	350	175
255+00 - 258+00	LT	350	175
258+75 - 262+00	LT/RT	600	300
TOTAL		1,650	825

		625.0100 TOPSOIL	627.0200 MULCHING	628.2023 EROSION MAT CLASS II TYPE B SY	629.0210 FERTILIZER TYPE B CWT	630.0160 SEED MIX NO. 60 LBS	COMMENTS
STATION - STATION	LOCATION	SY	SY				
CATEGORY CODE 0010							
DITCHES / RIPRAP	LT/RT	1,200	--	1,200	0.8	16	GRADE TO DRAIN
UNDISTRIBUTED	LT/RT	250	250	--	0.2	4	
TOTALS		1,450	250	1,200	1	20	

EROSION CONTROL MOBILIZATION			628.1905 MOBILIZATIONS EROSION CONTROL EACH	628.1910 MOBILIZATIONS EMERGENCY EROSION CONTROL EACH
LOCATION				
CATEGORY CODE 0010				
PROJECT 7050-03-72	3		1	
TOTALS	3		1	

LANDSCAPING ITEMS							
		625.0100 TOPSOIL	627.0200 MULCHING	628.2023 EROSION MAT CLASS II TYPE B SY	629.0210 FERTILIZER TYPE B CWT	630.0160 SEED MIX NO. 60 LBS	COMMENTS
STATION - STATION	LOCATION	SY	SY				
CATEGORY CODE 0010							
DITCHES / RIPRAP	LT/RT	1,200	--	1,200	0.8	16	GRADE TO DRAIN
UNDISTRIBUTED	LT/RT	250	250	--	0.2	4	
TOTALS		1,450	250	1,200	1	20	

LOCATING NO-PASSING ZONES		648.0100 MI
STATION - STATION		
CATEGORY CODE 0010		
00+00 - 438+00	8.30	
TOTAL	8.30	

DITCH CHECK ITEMS			
		628.7555 CULVERT PIPE CHECKS EACH	628.7570 ROCK BAGS EACH
STATION	LOCATION		
CATEGORY CODE 0010			
PROJECT 7050-03-72	LT/RT	13	--
UNDISTRIBUTED	LT/RT	--	50
TOTAL		13	50

MARKING LINE ITEMS								
		646.1020 EPOXY 4-INCH	646.1040 GROOVED WET REFLECTIVE EPOXY 4-INCH	646.4520 SAME DAY EPOXY 4-INCH	646.9000 REMOVAL LINE 4-INCH	649.0105 TEMPORARY PAINT 4-INCH	649.0850 TEMP REMOVABLE TAPE 18-INCH	
STATION - STATION	LOCATION	WHITE LF	YELLOW LF	LF	LF	LF	LF	
CATEGORY CODE 0010								
0+00 - 438+00	LT/ RT	--	42,275	85,100	42,275	500	85,500	60
TOTALS		--	42,275	85,100	42,275	500	85,500	60

MISC. SHEET 3

PERMANENT SIGNING

SIGN NUMBER	STATION	LOCATION	SIGN CODE	DESCRIPTION	SIZE	637.2210	637.2230	634.0614	634.0616	634.0618	COMMENTS
						SIGNS TYPE II REFLECTIVE H S.F.	SIGNS TYPE II REFLECTIVE F S.F.	POSTS WOOD 4X6X14 EACH	POSTS WOOD 4X6X16 EACH	POSTS WOOD 4X6X18 EACH	
CATEGORY CODE 0010											
1.01			I2-2	WOOD CO	8"X15"	0.83	--	1	--	--	
1.02			W14-3	NO PASSING ZONE	48"X36"	--	5.56	1	--	--	
1.03			I2-2	CLARK CO	8"X15"	0.83	--	1	--	--	
1.04			W1-2R	CURVE RIGHT	30"X30"	--	6.25	1	--	--	
1.05			W14-3	NO PASSING ZONE	48"X36"	--	5.56	1	--	--	
1.06			R1-1	STOP	30"X30"	5.18	--	1	--	--	
1.07			W1-6	RIGHT ARROW	48"X24"	--	8.00	1	--	--	
1.08			S3-1	BUS STOP AHEAD	36"X36"	--	9.00	1	--	--	
1.10			W1-6	LEFT ARROW	48"X24"	--	8.00	1	--	--	
1.11			W1-2L	LEFT CURVE	30"X30"	--	6.25	1	--	--	
1.12			R1-1	STOP	30"X30"	5.18	--	1	--	--	
1.13			W14-3	NO PASSING ZONE	48"X36"	--	5.56	1	--	--	
1.14			W14-3	NO PASSING ZONE	48"X36"	--	5.56	1	--	--	
1.15			R1-1	STOP	30"X30"	5.18	--	1	--	--	
1.16			W1-2L	CURVE LEFT	30"X30"	--	6.25	1	--	--	
1.20			R1-1	STOP	30"X30"	5.18	--	1	--	--	
1.21			R1-1	STOP	30"X30"	5.18	--	1	--	--	
1.22			R1-1	STOP	30"X30"	5.18	--	1	--	--	
1.30			W1-2R	CURVE RIGHT	30"X30"	5.18	--	1	--	--	
1.31			R1-1	STOP	30"X30"	5.18	--	1	--	--	
1.32			W14-3	NO PASSING ZONE	48"X36"	--	5.56	1	--	--	
1.33			W14-3	NO PASSING ZONE	48"X36"	--	5.56	1	--	--	
1.34			D7-67	COUNTY PARK 1 MILE	60"X36"	15.00	--	--	1	--	
1.40			W14-3	NO PASSING ZONE	48"X36"	--	5.56	1	--	--	
1.41			M3-3	SOUTH	24"X12"	2.00	--	--	1	--	J4-1
"			M1-6	STH 73	24"X24"	4.00	--	--	--	--	
1.42			W14-3	NO PASSING ZONE	48"X36"	--	5.56	1	--	--	
1.43			W1-2R	RIGHT CURVE	30"X30"	--	6.25	1	--	--	
1.44			R1-1	STOP	30"X30"	5.18	--	1	--	--	
1.45			W1-6	RIGHT ARROW	48"X24"	--	8.00	1	--	--	
1.46			W54-58	CHURCH ENTRANCE	30"X30"	--	6.25	1	--	--	
1.47			M2-1	JCT	21"X15"	2.19	--	--	1	--	J1-1
			M1-5A	COUNTY Z	24"X24"	4.00	--	--	--	--	
1.48			D7-68L	COUNTY PARK LEFT	60"X36"	15.00	--	--	1	--	
1.50			R1-1	STOP	30"X30"	5.18	--	1	--	--	
1.51			R5-1	DO NOT ENTER	30"X30"	6.25	--	1	--	--	
1.52			R1-2	YIELD	36"X31"	3.87	--	1	--	--	
1.53			M1-5A	COUNTY Z	24"X24"	4.00	--	--	1	--	J2-1
"			M6-1	UP ARROW	21"X21"	3.50	--	--	--	--	
1.54			D7-68R	COUNTY PARK RIGHT	60"X36"	15.00	--	--	1	--	
1.55			M2-1	JCT	21"X15"	2.19	--	--	1	--	J1-1
			M1-5A	COUNTY Z	24"X24"	4.00	--	--	--	--	
1.56			R1-1	STOP	30"X30"	5.18	--	1	--	--	
1.57			W1-2L	LEFT ARROW	48"X24"	--	8.00	1	--	--	
1.58			M4-6	END	24"X12"	2.00	--	--	1	--	J3-2
			M1-5A	COUNTY Z	24"X24"	4.00	--	--	--	--	
			M1-6	STH 73	24"X24"	4.00	--	--	--	--	
"			M6-4	LEFT / RIGHT ARROW	21"X21"	3.50	--	--	--	--	

PAGE 1 SUBTOTAL 153.14 116.73 33 8 --

MISC. SHEET 4

PERMANENT SIGNING

SIGN NUMBER	STATION	LOCATION	SIGN CODE	DESCRIPTION	SIZE	637.2210	637.2230	634.0614	634.0616	634.0618	COMMENTS
						SIGNS TYPE II REFLECTIVE H S.F.	SIGNS TYPE II REFLECTIVE F S.F.	POSTS WOOD 4X6X14 EACH	POSTS WOOD 4X6X16 EACH	POSTS WOOD 4X6X18 EACH	
CATEGORY CODE 0010											
1.59			M1-5A	COUNTY Z	24"X24"	4.00	--	--	1	--	J2-1
			M6-1	LEFT ARROW	21"X21"	3.50	--	--	--	--	
1.60			W1-6	RIGHT ARROW	48"X24"	--	8.00	1	--	--	
1.61			W1-6	LEFT ARROW	48"X24"	--	8.00	1	--	--	
1.62			M3-1	NORTH	24"X12"	2.00	--	--	1	--	J4-1
			M1-6	STH 73	24"X24"	4.00	--	--	--	--	
1.63			W14-3	NO PASSING ZONE	48"X36"	--	5.56	1	--	--	
1.64			W14-3	NO PASSING ZONE	48"X36"	--	5.56	1	--	--	
1.65			R1-1	STOP	30"X30"	5.18	--	1	--	--	
1.70			W14-3	NO PASSING ZONE	48"X36"	--	5.56	1	--	--	
1.71			W5-52L	BRIDGE	12"X36"	--	3.00	1	--	--	
1.72			W5-52R	BRIDGE	12"X36"	--	3.00	1	--	--	
1.73			I3-1	TOMAS CREEK	48"X15"	5.00	--	--	--	1	
1.74			W5-52R	BRIDGE	12"X36"	--	3.00	1	--	--	
1.75			W5-52L	BRIDGE	12"X36"	--	3.00	1	--	--	
1.80			D7-67	COUNTY PARK 1 MILE	60"X36"	15.00	--	--	1	--	
1.81			W14-3	NO PASSING ZONE	48"X36"	--	5.56	1	--	--	
1.82			W14-1	DEAD END	30"X30"	5.18	--	1	--	--	
1.83			R1-1	STOP	30"X30"	5.18	--	1	--	--	
1.84			R1-1	STOP	30"X30"	5.18	--	1	--	--	
1.90			W14-3	NO PASSING ZONE	48"X36"	--	5.56	1	--	--	
1.91			W5-52L	BRIDGE	12"X36"	--	3.00	1	--	--	
1.92			W5-52R	BRIDGE	12"X36"	--	3.00	1	--	--	
1.93			I3-1	TOMAS CREEK	48"X15"	5.00	--	--	--	1	
1.94			W1-2L	LEFT CURVE	30"X30"	--	6.25	1	--	--	
1.95			W5-52R	BRIDGE	12"X36"	--	3.00	1	--	--	
1.96			W5-52L	BRIDGE	12"X36"	--	3.00	1	--	--	
1.97			W14-3	NO PASSING ZONE	48"X36"	--	5.56	1	--	--	
2.00			W1-2R	RIGHT CURVE	30"X30"	--	6.25	1	--	--	
2.01			W14-3	NO PASSING ZONE	48"X36"	--	5.56	1	--	--	
2.10			W14-3	NO PASSING ZONE	48"X36"	--	5.56	1	--	--	
2.20			M3-3	SOUTH	24"X12"	2.00	--	--	1	--	J4-1
"			M1-6	STH 73	24"X24"	4.00	--	--	--	--	
2.21			R1-1	STOP	30"X30"	5.18	--	1	--	--	
2.22			M1-5A	COUNTY W	24"X24"	4.00	--	--	1	--	J2-1
"			M6-1	LEFT ARROW	21"X21"	3.50	--	--	--	--	
2.23			M2-1	JCT	21"X15"	2.19	--	--	1	--	J1-1
"			M1-5A	COUNTY W	24"X24"	4.00	--	--	--	--	
2.24			W11-12	BUGGY	36"X36"	--	9.00	1	--	--	
2.25			W14-3	NO PASSING ZONE	48"X36"	--	5.56	1	--	--	
2.26			M1-5A	COUNTY W	24"X24"	4.00	--	--	1	--	J2-1
			M6-1	RIGHT ARROW	21"X21"	3.50	--	--	--	--	
2.27			R1-1	STOP	30"X30"	5.18	--	1	--	--	
2.28			M1-6	STH 73	24"X24"	4.00	--	--	1	--	J2-1
			M6-4	LEFT / RIGHT ARROW	21"X21"	3.50	--	--	--	--	
2.29			M3-1	NORTH	24"X12"	2.00	--	--	1	--	J4-1
			M1-6	STH 73	24"X24"	4.00	--	--	--	--	
PAGE 2 SUBTOTAL						86.59	72.86	28	9	2	

PERMANENT SIGNING

SIGN NUMBER	STATION	LOCATION	SIGN CODE	DESCRIPTION	SIZE	637.2210	637.2230	634.0614	634.0616	634.0618	COMMENTS
						SIGNS TYPE II REFLECTIVE H S.F.	SIGNS TYPE II REFLECTIVE F S.F.	POSTS WOOD 4X6X14 EACH	POSTS WOOD 4X6X16 EACH	POSTS WOOD 4X6X18 EACH	
CATEGORY CODE 0010											
2.30			M2-1	JCT	21"X15"	2.19	--	--	1	--	J1-1
			M1-5A	COUNTY W	24"X24"	4.00	--	--	--	--	
2.40			R1-1	STOP	30"X30"	5.18	--	1	--	--	
2.60			W14-3	NO PASSING ZONE	48"X36"	--	5.56	1	--	--	
2.70			R1-1	STOP	30"X30"	5.18	--	1	--	--	
2.71			R1-1	STOP	30"X30"	5.18	--	1	--	--	
PAGE 3 SUBTOTAL						21.73	5.56	4	1	--	
TOTAL						261.46	195.15	65	18	2	

SALVAGED RAIL

STATION - STATION	LOCATION	614.0920 LF
CATEGORY CODE 0010		
188+91 to 190+24	RT	133
191+24 to 192+66	LT	142
256+90 to 257+86	LT	96
258+77 to 259+81	RT	104
258+77 to 260+09	LT	142
TOTAL		617

LANDMARK REFERENCE MONUMENTS

621.0100 LANDMARK REFERENCE MONUMENTS		
LOCATION	EACH	COMMENTS
CATEGORY CODE 0010		
163+90	4	CLARK COUNTY
190+18	4	WILL SET
216+54	4	SECTION CORNERS
279+96	4	CONTACT:
331+79	4	WADE PETTIT
358+37	4	(715) 743-5133
384+53	4	PRIOR
410+81	4	TO CONSTRUCTION
436+73	4	--
TOTALS	36	

REMOVING SIGNS ITEMS

SIGN NUMBER	STATION	LOCATION	638.2602	638.3000	COMMENTS
			REMOVING SIGNS TYPE II EACH	REMOVING SMALL SIGN SUPPORTS EACH	
CATEGORY CODE 0010					
PROJECT 7050-03-72			101	85	
TOTAL			101	85	

TRAFFIC CONTROL ITEMS

LOCATION	643.0300	643.0310.S	643.0420	643.0900	643.1050
	DRUMS DAYS	TEMPORARY PORTABLE RUMBLE STRIPS LS	BARRICADES TYPE III DAYS	SIGNS DAYS	SIGNS PORTABLE CHANGEABLE MESSAGE DAYS
CATEGORY CODE 0010					
0+00 - 438+00	880	1	528	2,640	176
TOTALS	880	1	528	2,640	176

CONSTRUCTION STAKING ITEMS

STATION - STATION	LOCATION	650.6000 PIPE CULVERTS EACH	650.8000 RESURFACING REFERENCE LF	650.9910 SUPPLEMENTAL CONTROL LS	650.9920 SLOPE STAKES LF
CATEGORY CODE 0010					
0+00 - 438+00		6	43,800	1	1,200
TOTALS		6	43,800	1	1,200

SAWING PAVEMENT ITEMS

STATION - STATION	LOCATION	690.0150 ASPHALT LF	COMMENTS
CATEGORY CODE 0010			
0+00		30	
438+00		30	
UNDISTRIBUTED		800	CULVERT RELAYS / SIDE STREETS
TOTALS		860	

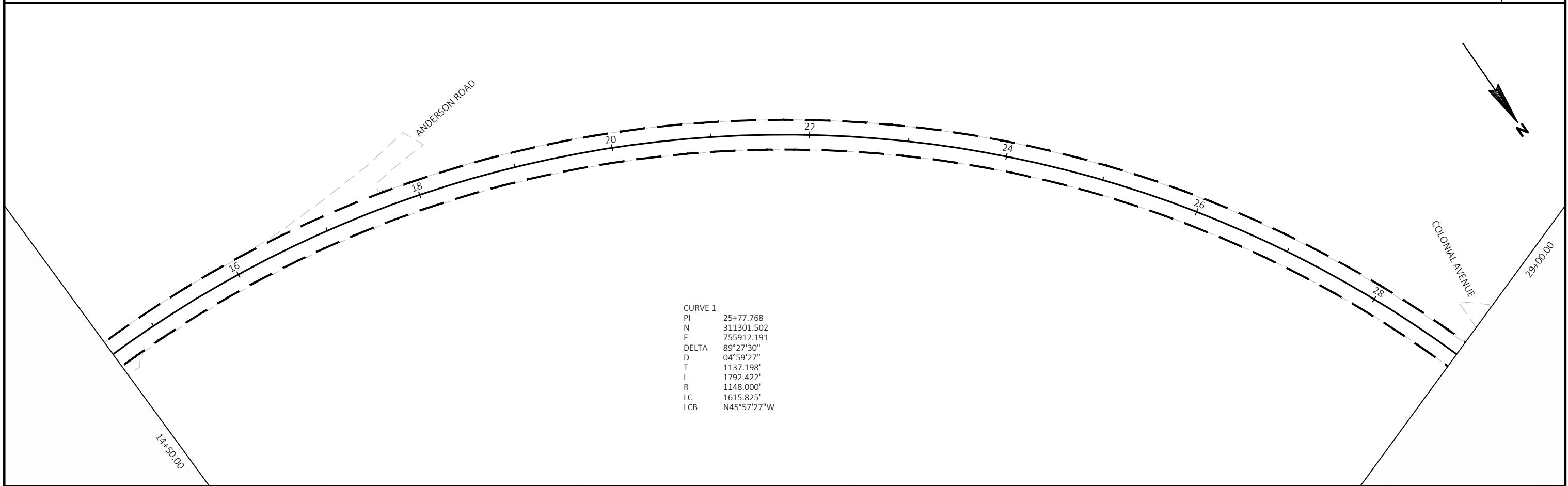
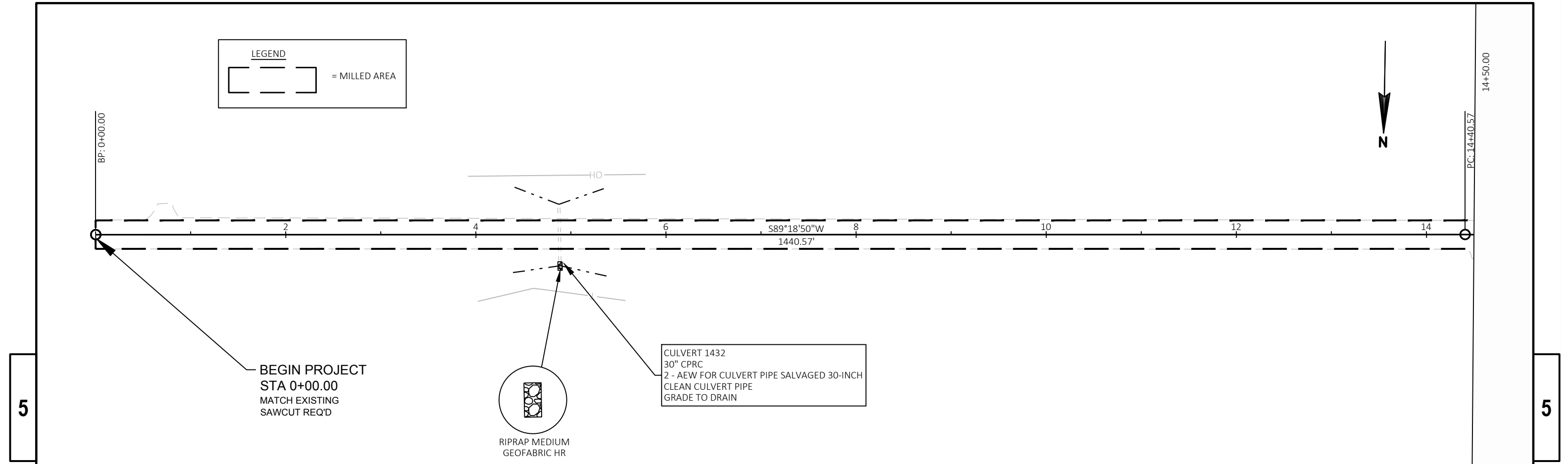
MISC. SHEET 6

3

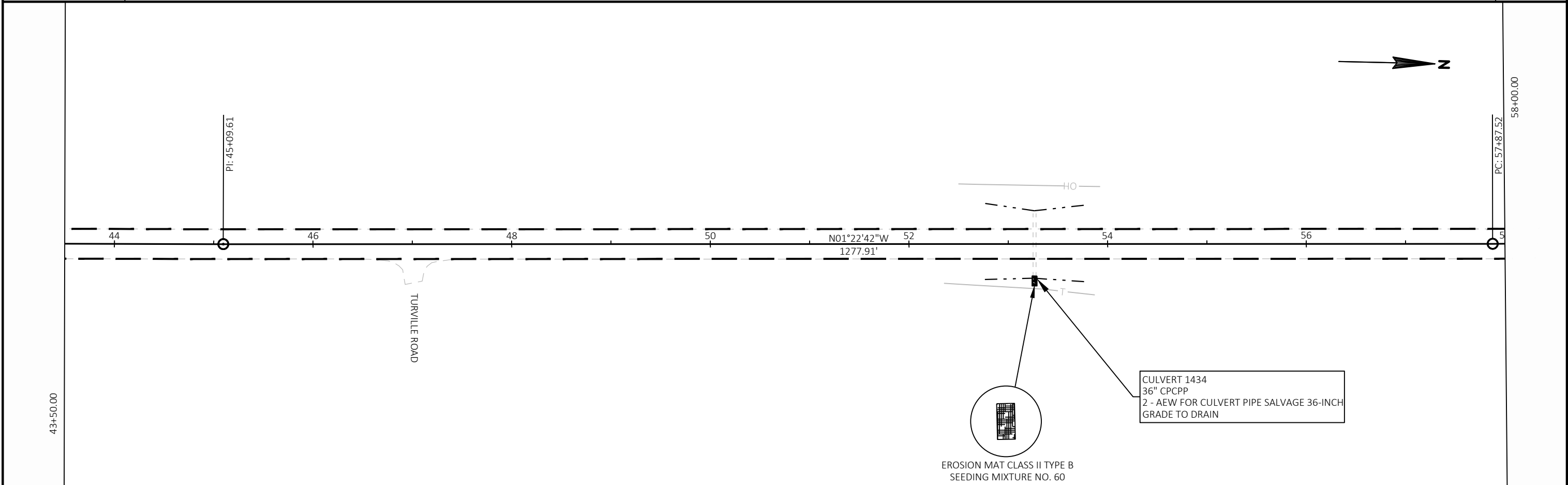
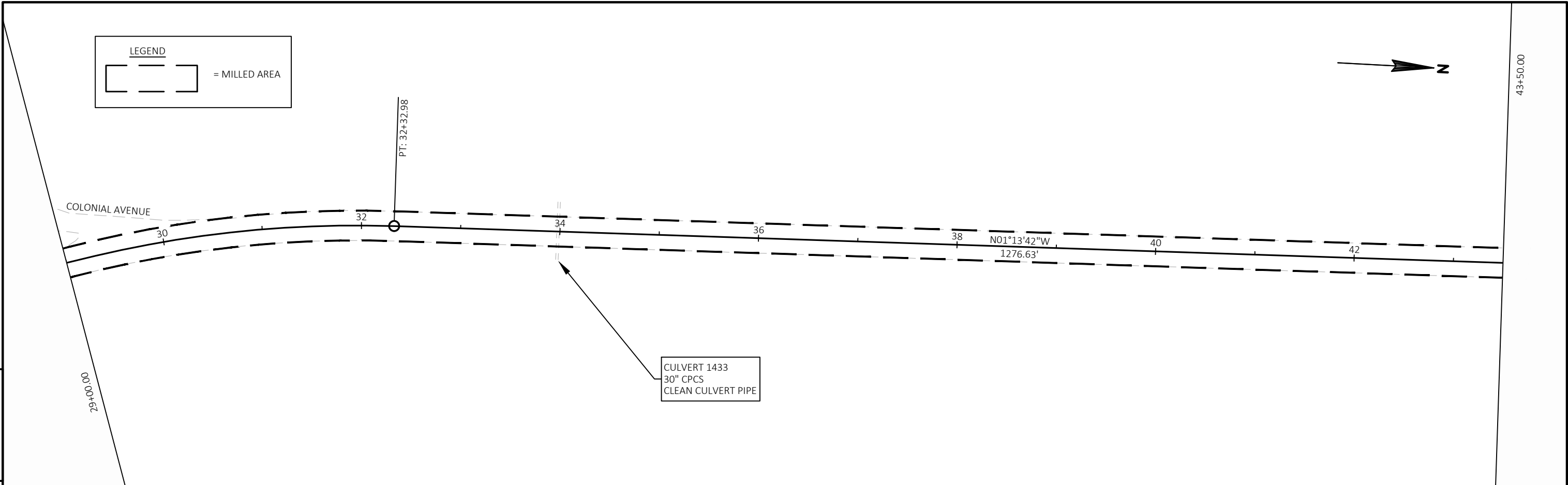
7050-08-74		<div>REMOVING ASPHALTIC SURFACE BUTT JOINTS</div> <table><tr><th>STATION - STATION</th><th>LOCATION</th><th>204.0115 SY</th><th>COMMENTS</th></tr><tr><td colspan="4">CATEGORY CODE 0010</td></tr><tr><td>190+24</td><td></td><td>167</td><td></td></tr><tr><td>191+24</td><td></td><td>167</td><td></td></tr><tr><td colspan="2">TOTAL</td><td>334</td><td></td></tr></table>				STATION - STATION	LOCATION	204.0115 SY	COMMENTS	CATEGORY CODE 0010				190+24		167		191+24		167		TOTAL		334		<div>REMOVING ASPHALTIC SURFACE MILLING</div> <table><tr><th>STATION - STATION</th><th>LOCATION</th><th>204.0120 SY</th><th>COMMENTS</th></tr><tr><td colspan="4">CATEGORY CODE 0010</td></tr><tr><td>189+74 - 191+74</td><td></td><td>333</td><td></td></tr><tr><td colspan="2">TOTAL</td><td>333</td><td></td></tr></table>				STATION - STATION	LOCATION	204.0120 SY	COMMENTS	CATEGORY CODE 0010				189+74 - 191+74		333		TOTAL		333		<div>RUMBLE STRIP ITEMS</div> <div>465.0475 ASPHALTIC CENTER LINE RUMBLE STRIPS 2-LANE RURAL</div> <table><tr><th>STATION - STATION</th><th>LOCATION</th><th>LF</th><th>COMMENTS</th></tr><tr><td colspan="4">CATEGORY CODE 0010</td></tr><tr><td>189+74 - 190+24</td><td>CL</td><td>50</td><td>--</td></tr><tr><td>191+24 - 191+74</td><td>CL</td><td>50</td><td>--</td></tr><tr><td colspan="2">TOTALS</td><td>100</td><td></td></tr></table>				STATION - STATION	LOCATION	LF	COMMENTS	CATEGORY CODE 0010				189+74 - 190+24	CL	50	--	191+24 - 191+74	CL	50	--	TOTALS		100												
STATION - STATION	LOCATION	204.0115 SY	COMMENTS																																																																													
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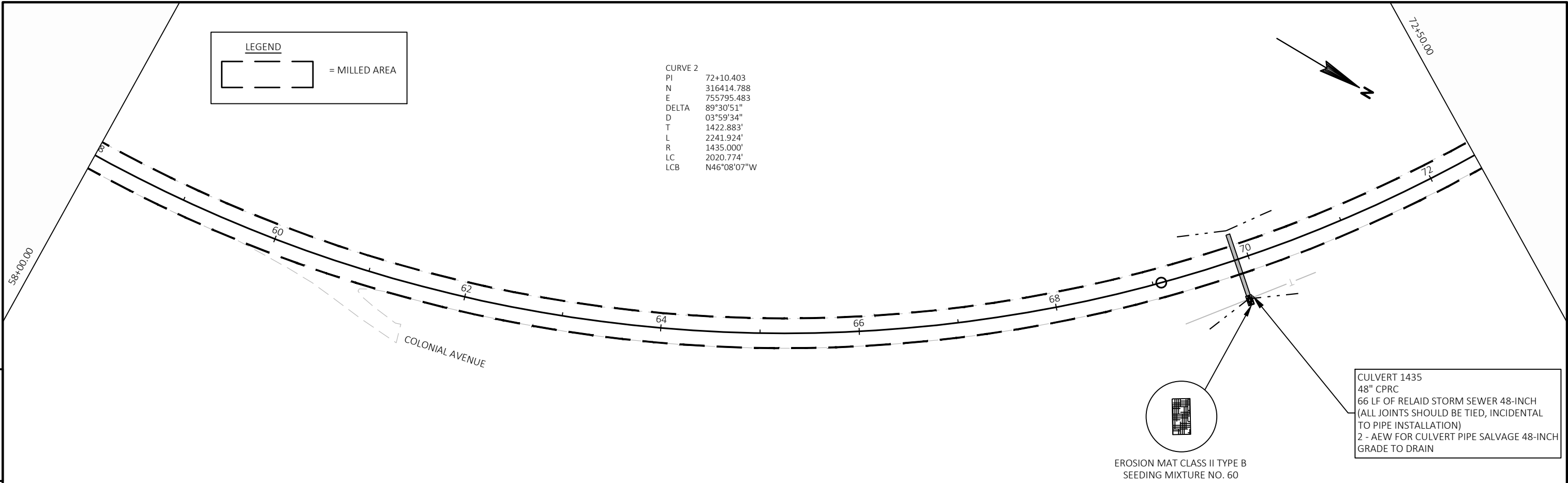
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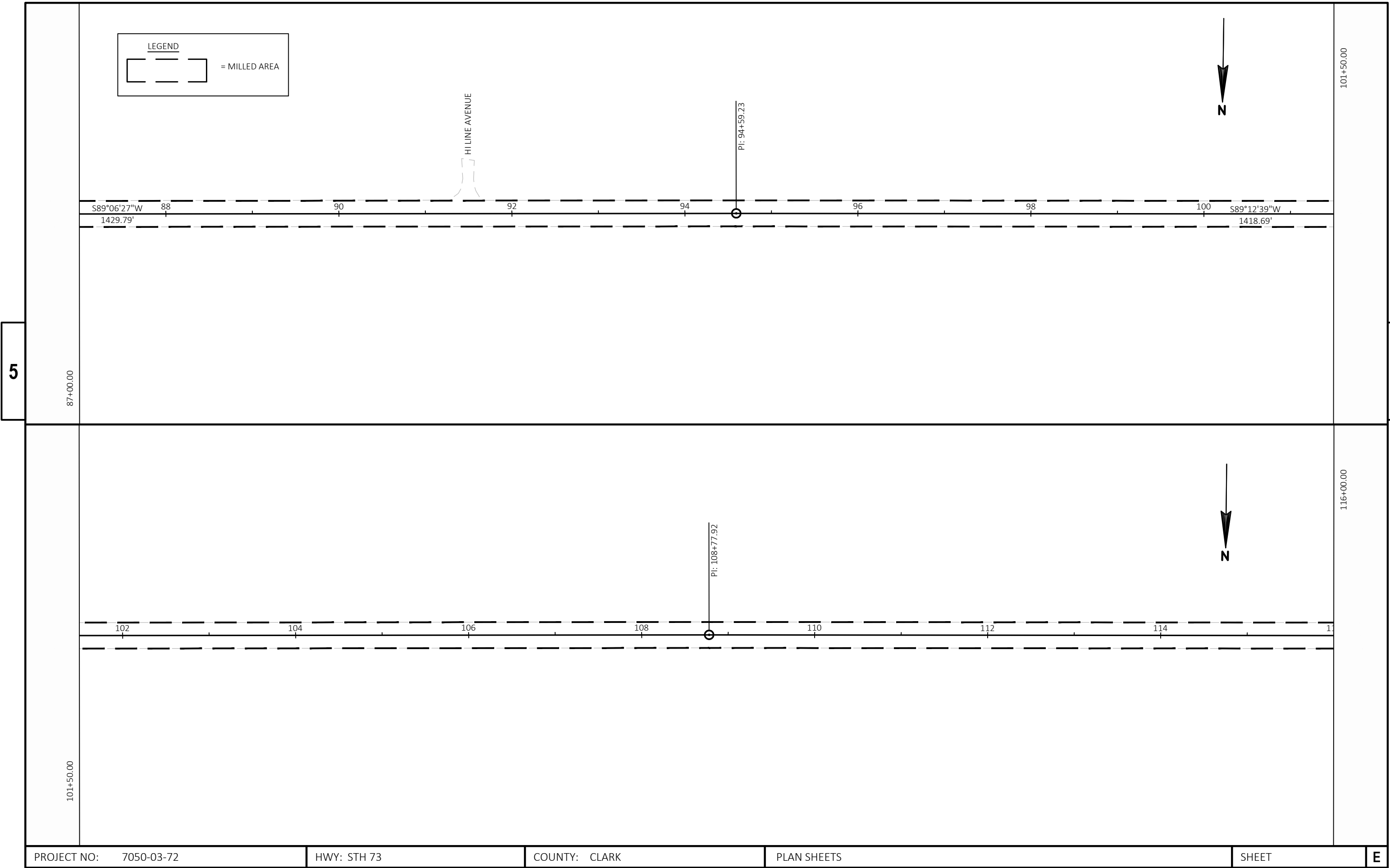
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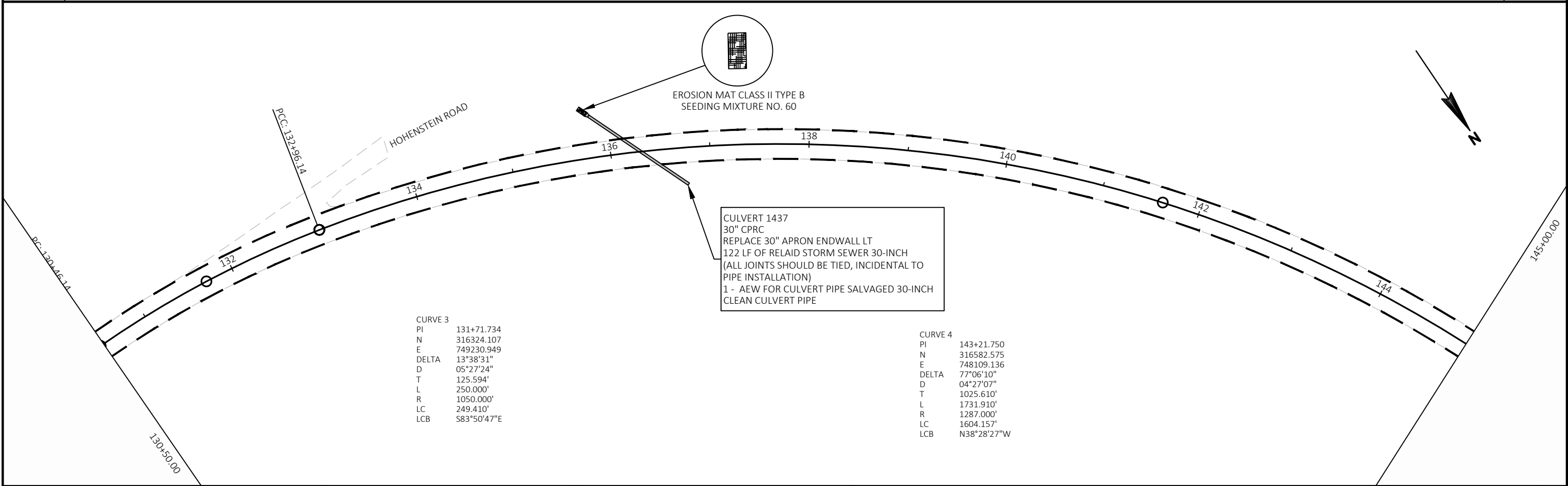
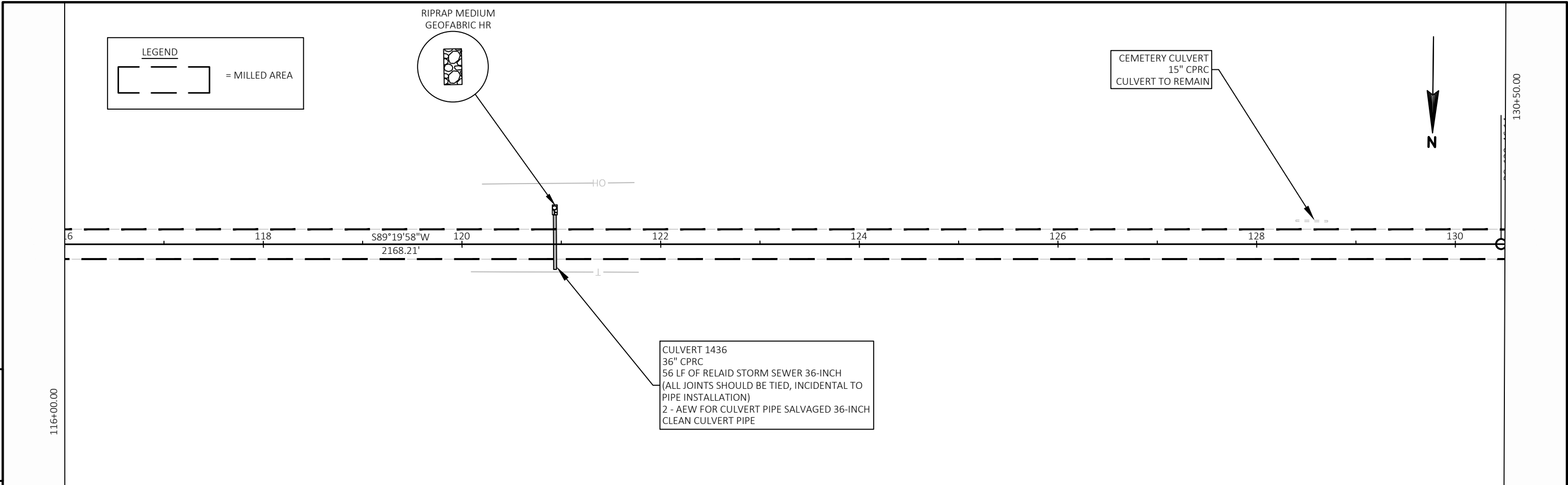


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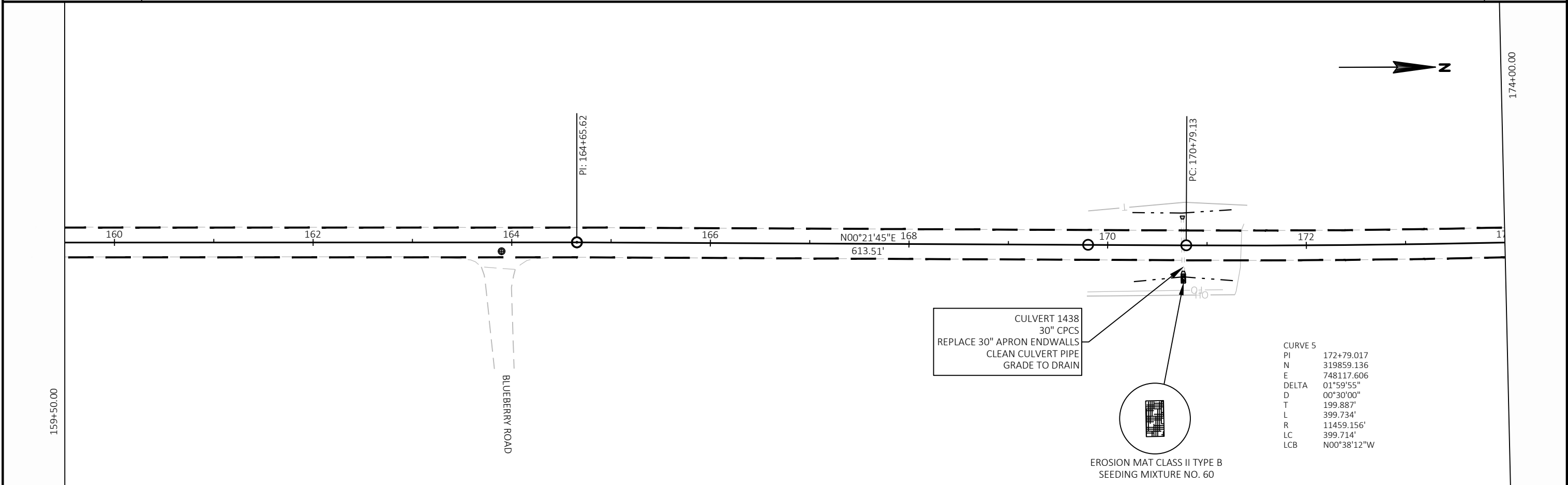
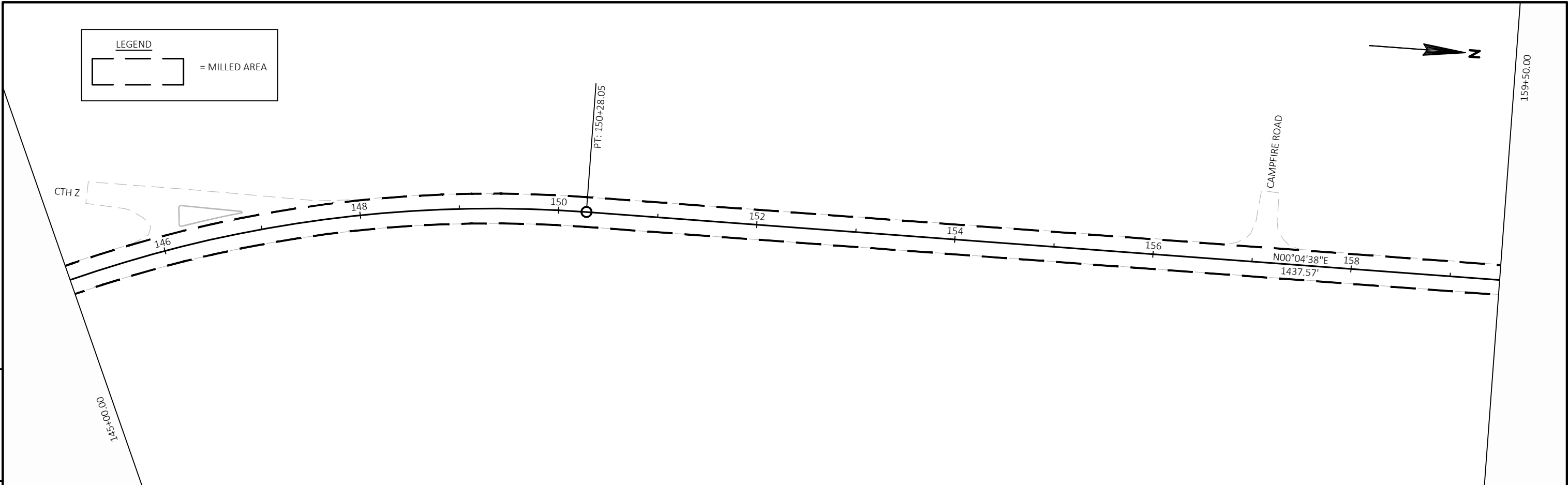


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PROJECT NO: 7050-03-72	HWY: STH 73	COUNTY: CLARK	PLAN SHEETS	SHEET	E
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LEGEND

[] = MILLED AREA

PT: 174+78.86

4 176 178 180 182 184 N01°38'10"W 186 188 1951.37'



188+50.00

B-10-0193
SEE BRIDGE PLANS & CONSTRUCTION
DETAILS FOR MORE DETAILS

PI: 194+30.23

190 192 194 196 198 200 202



203+00.00

END PROJECT 7050-08-74
STA 191+74.00

BEGIN PROJECT 7050-08-74
STA 189+74.00

PROJECT NO: 7050-03-72

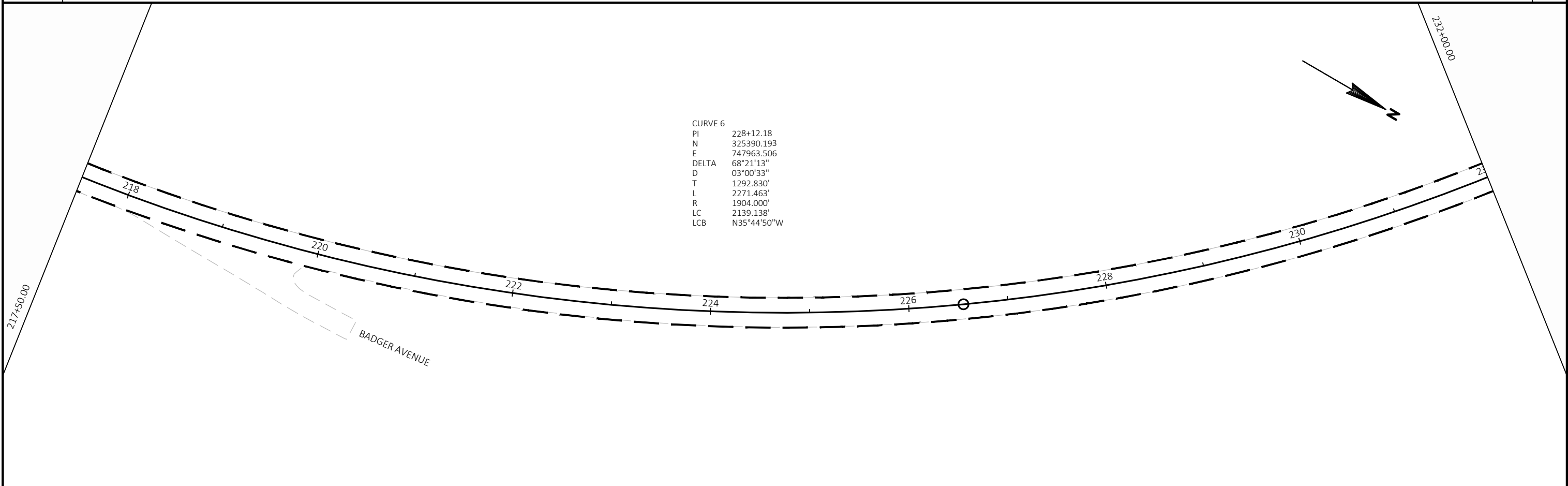
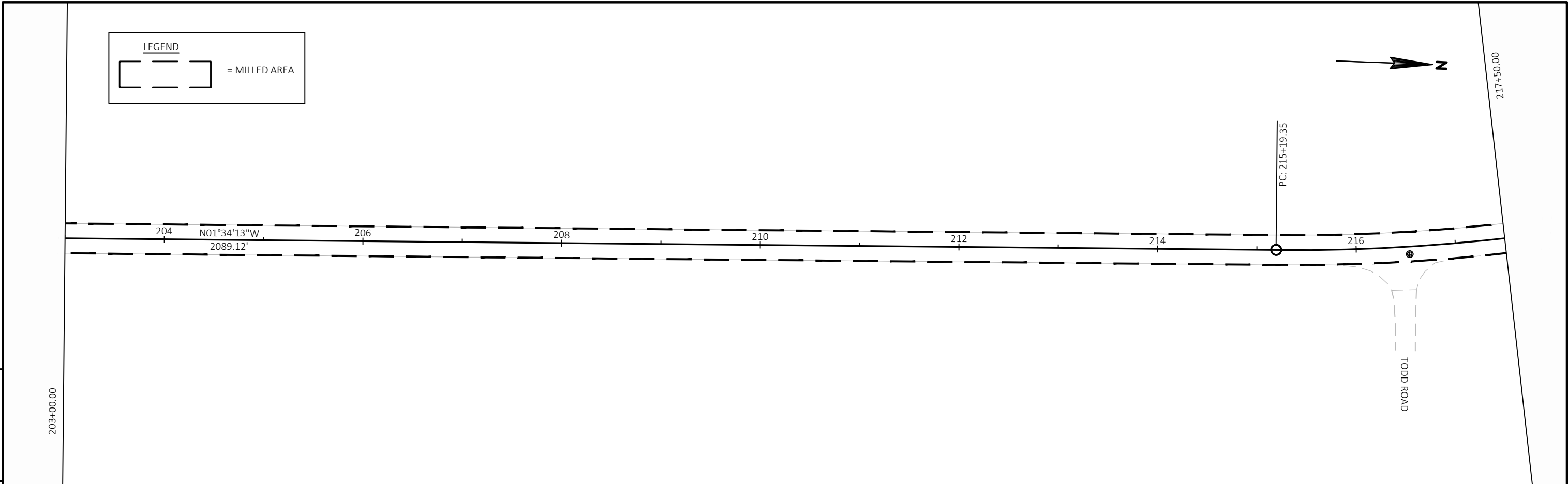
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COUNTY: CLARK

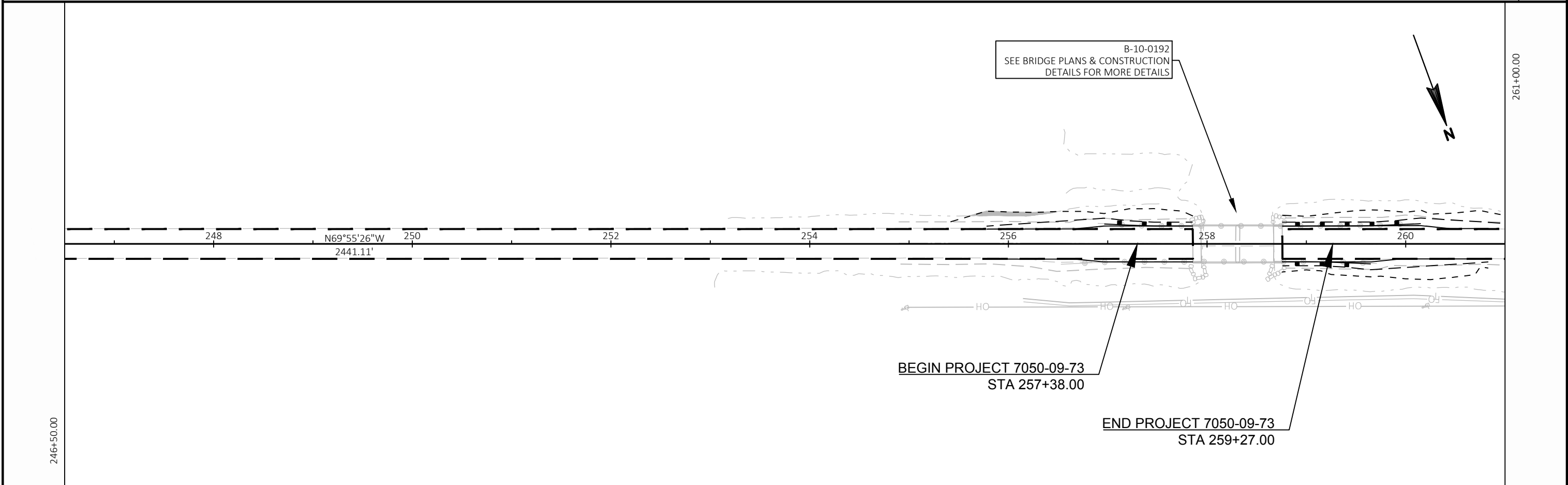
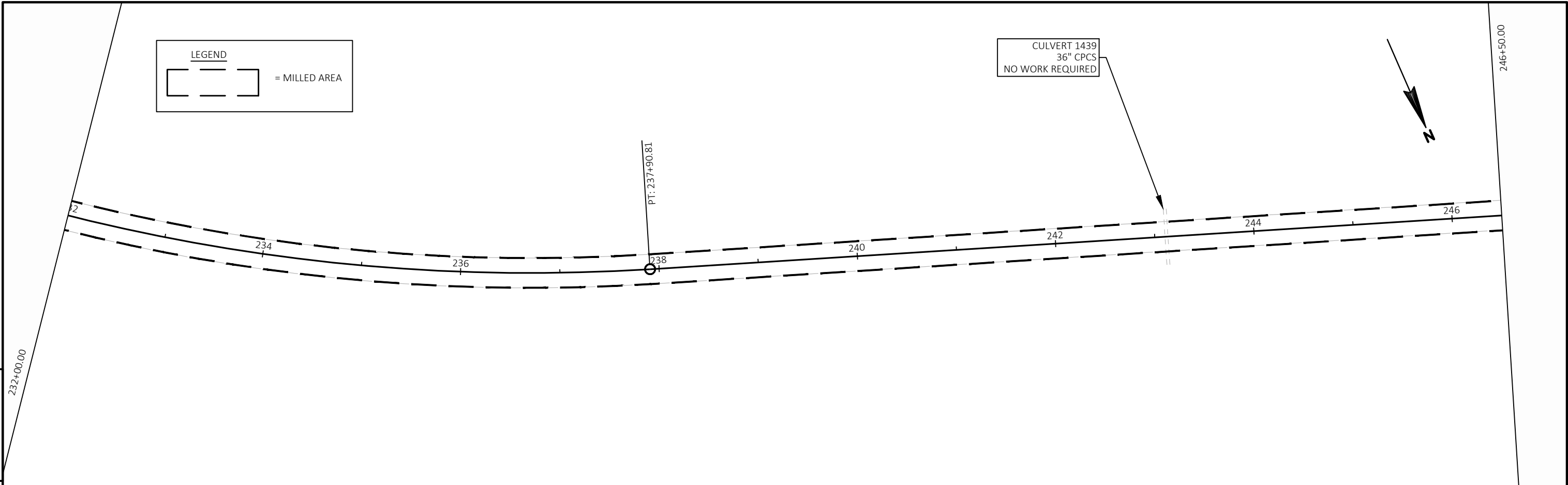
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SHEET

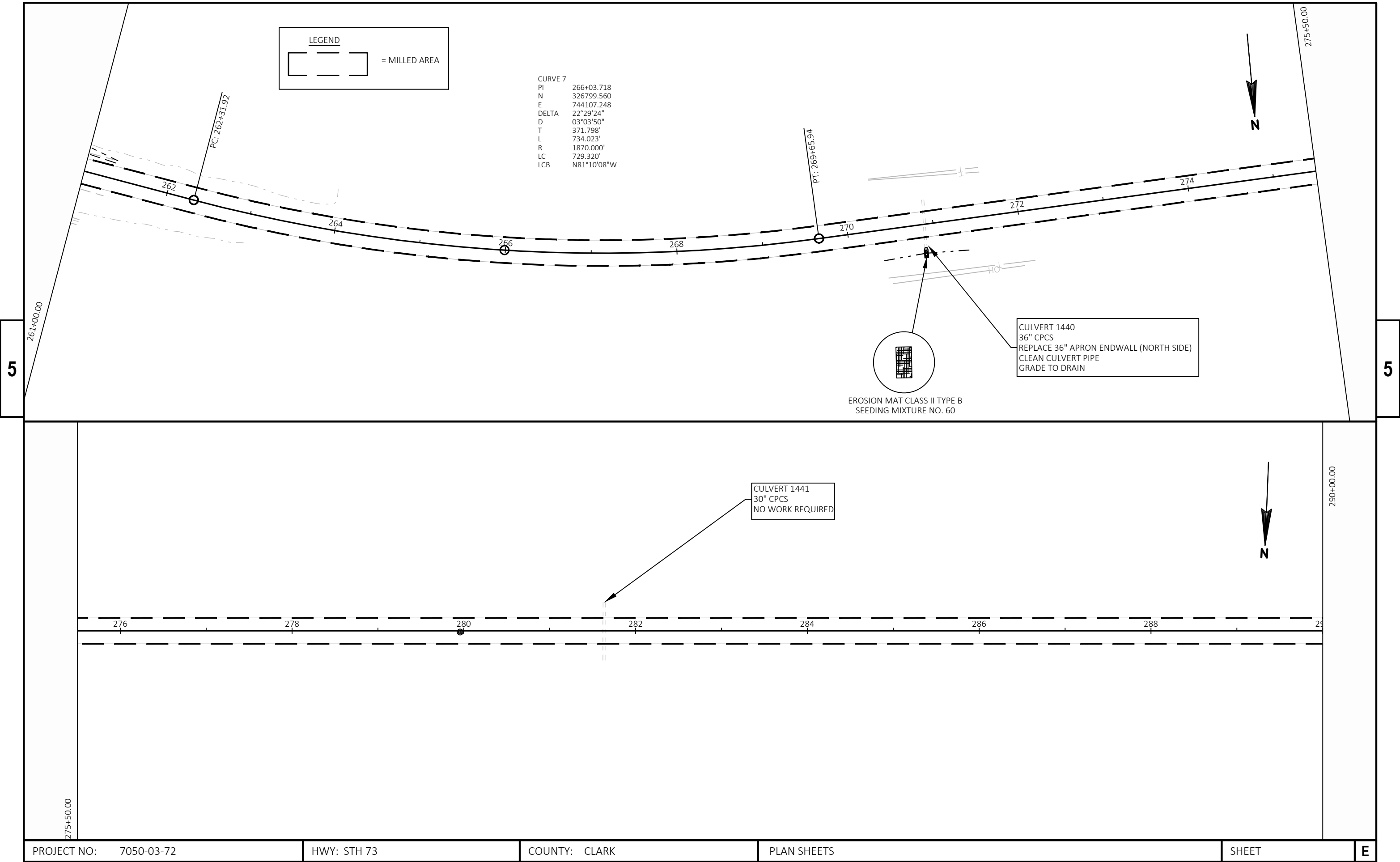
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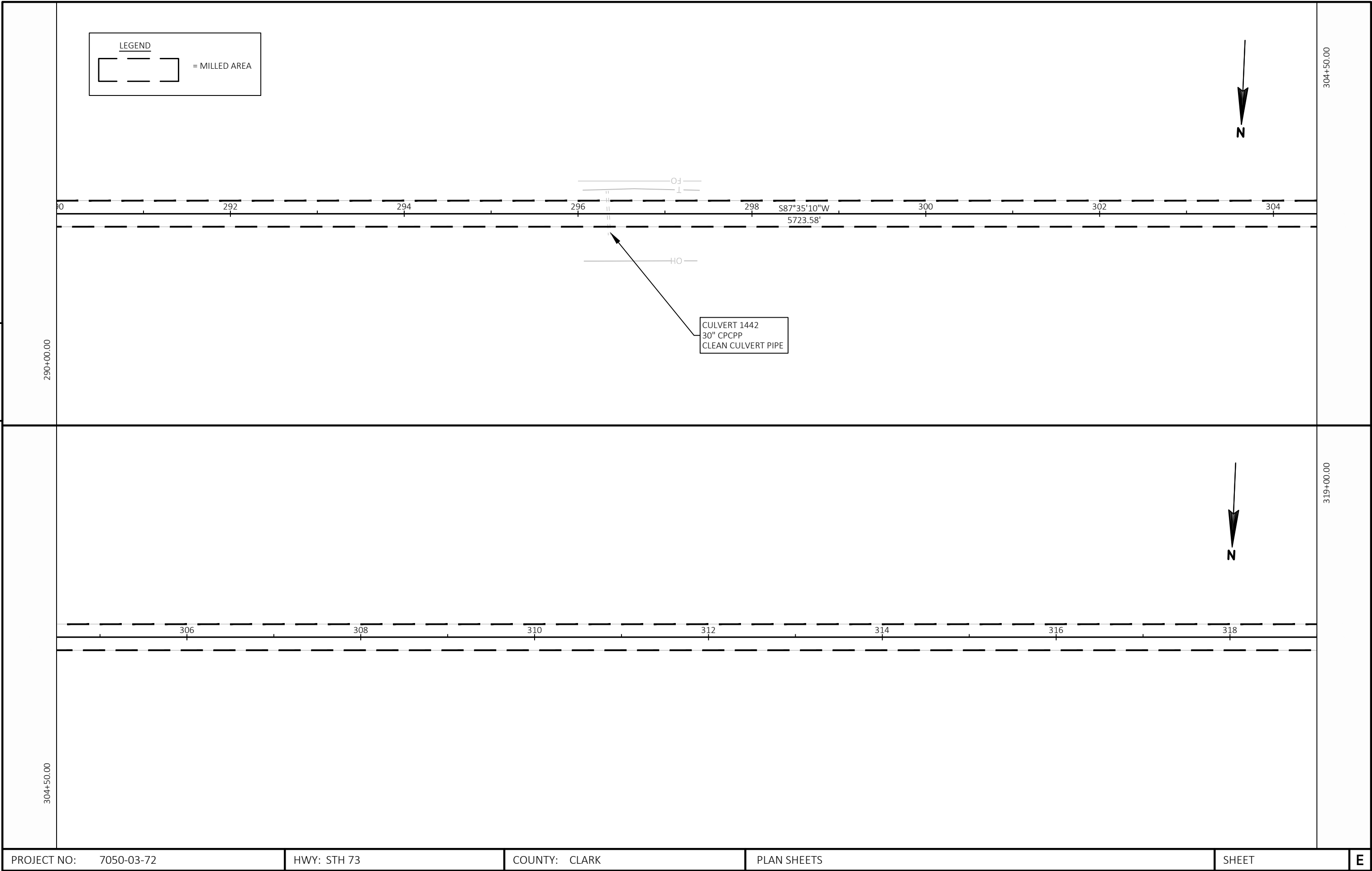


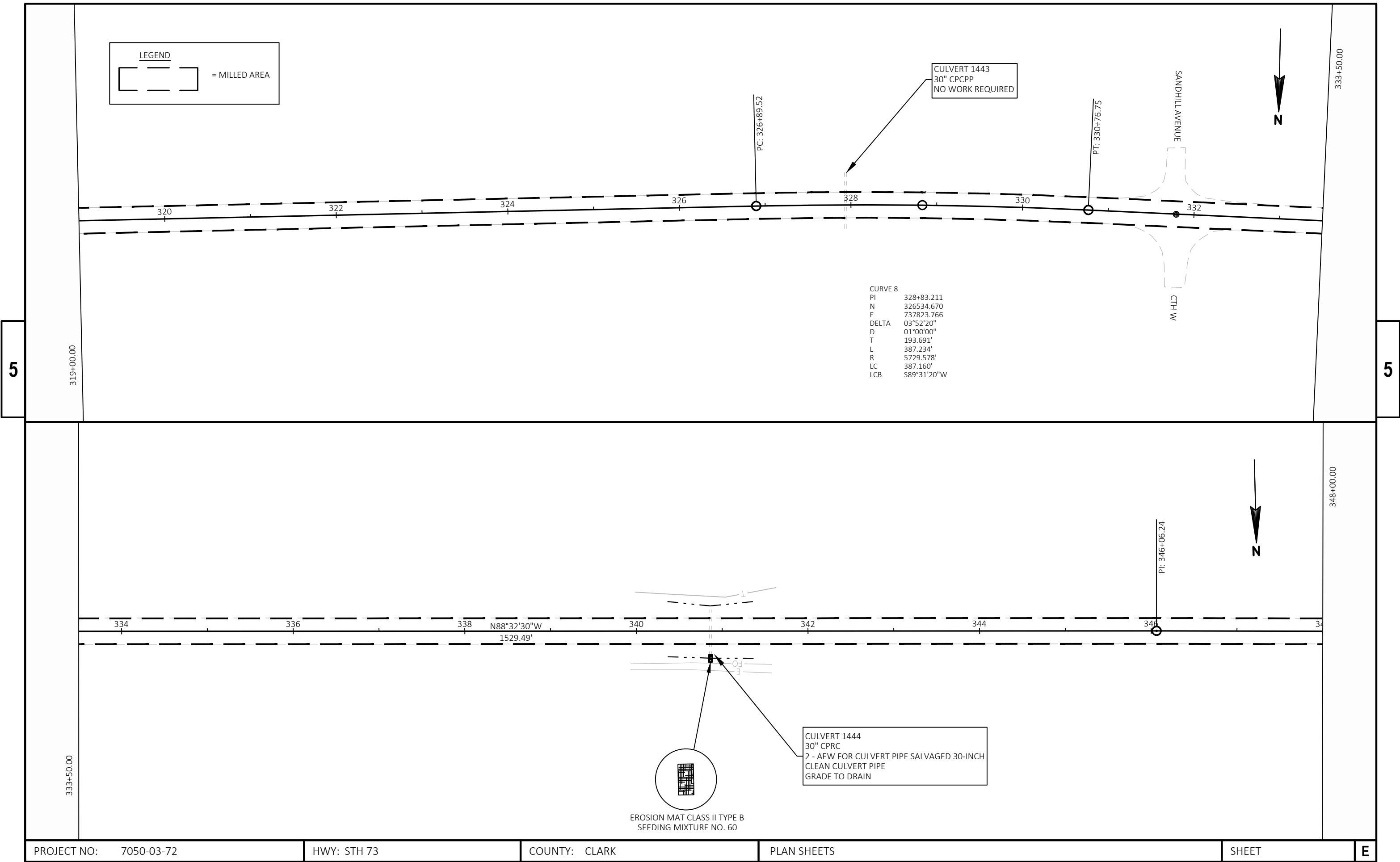
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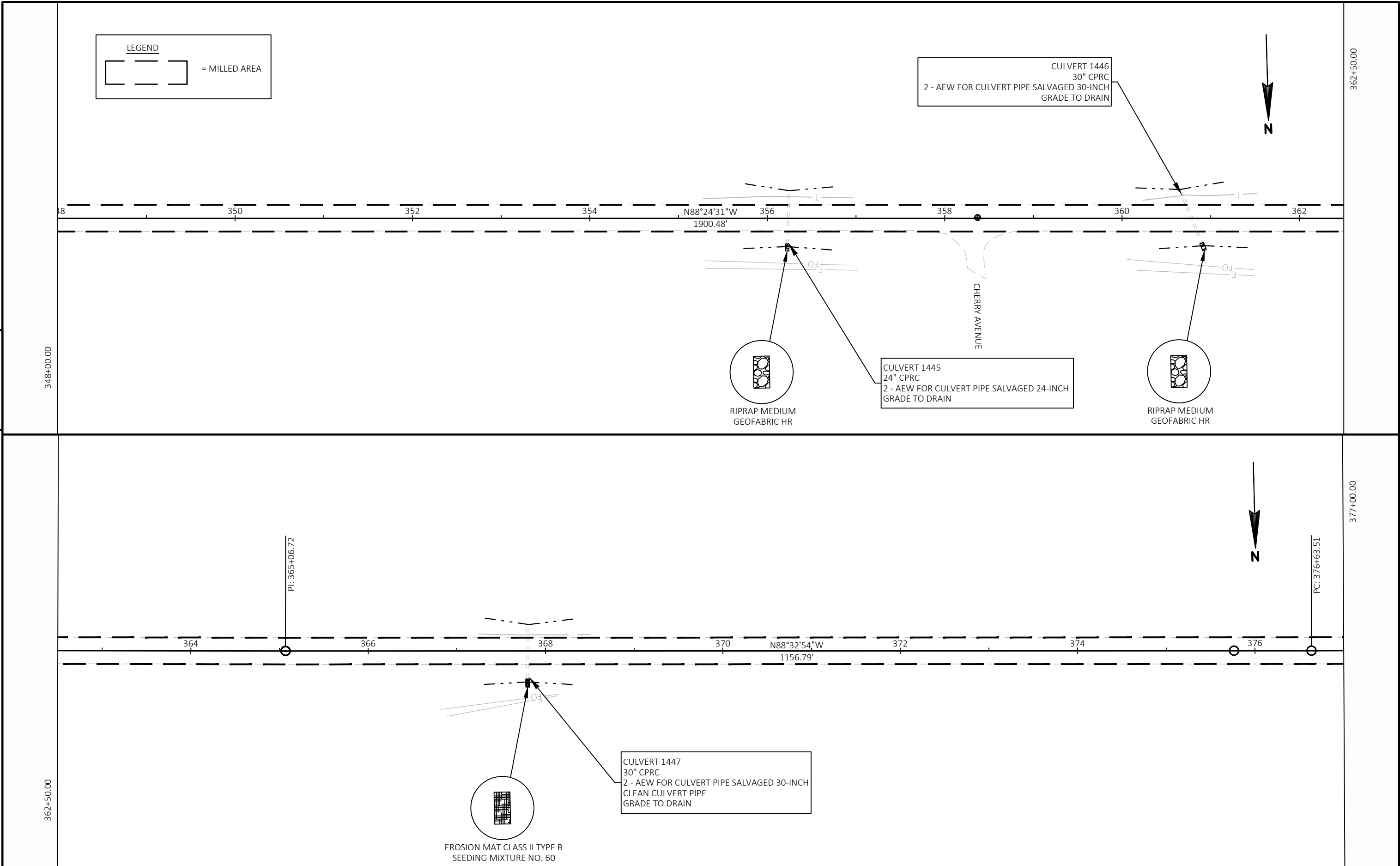


PROJECT NO: 7050-03-72	HWY: STH 73	COUNTY: CLARK	PLAN SHEETS	SHEET	E
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PROJECT NO: 7050-03-72	HWY: STH 73	COUNTY: CLARK	PLAN SHEETS	SHEET	E
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LEGEND

= MILLED AREA

CURVE 9
PI 379+03.171
N 326666.681
E 732805.395
DELTA 03°35'37"
D 00°45'00"
T 239.661'
L 479.165'
R 7639.437"
LC 479.087'
LCB S89°39'18"W

PT: 381+42.67



391+50.00

5

377+00.00

5

PI: 395+72.78



406+00.00

CULVERT 1448
30" CPRC
2 - AEW FOR CULVERT PIPE SALVAGED 30-INCH
CLEAN CULVERT PIPE
GRADE TO DRAIN

EROSION MAT CLASS II TYPE B
SEEDING MIXTURE NO. 60

PROJECT NO: 7050-03-72

HWY: STH 73

COUNTY: CLARK

PLAN SHEETS

SHEET

E

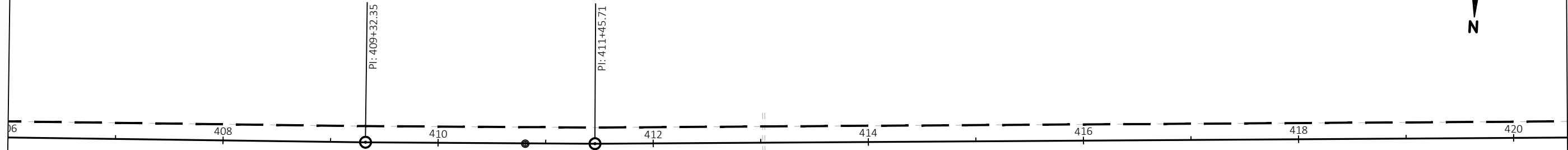
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406+00.00

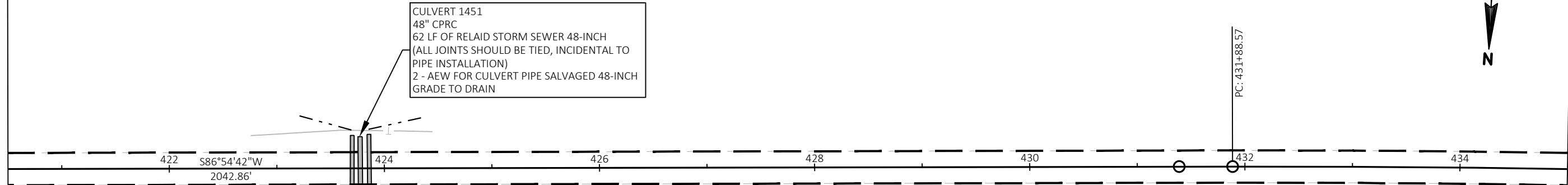


420+50.00

5

5

420+50.00

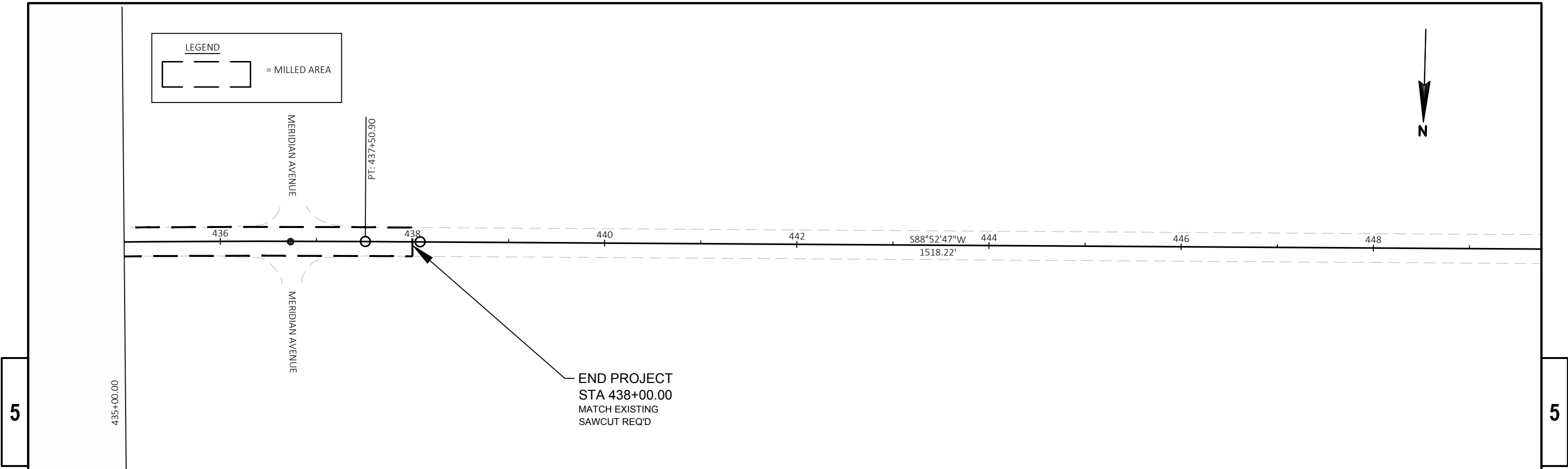


435+00.00

CURVE 10

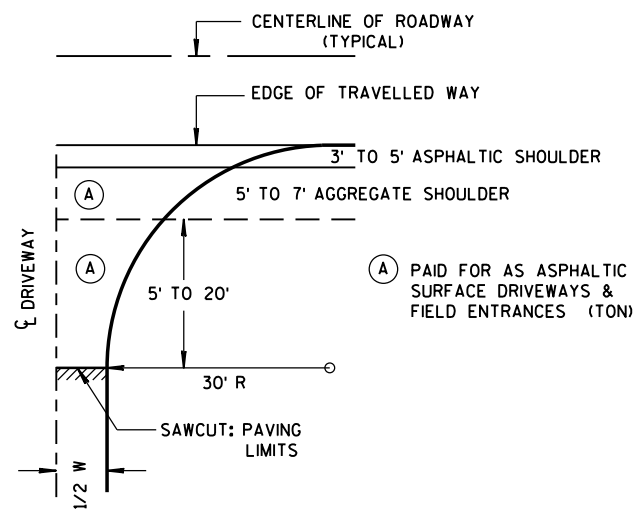
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N	326423.582
E	727244.170
DELTA	01°58'05"
D	00°21'00"
T	281.194'
L	562.333'
R	16370.223'
LC	562.306'
LCB	S87°53'45"W





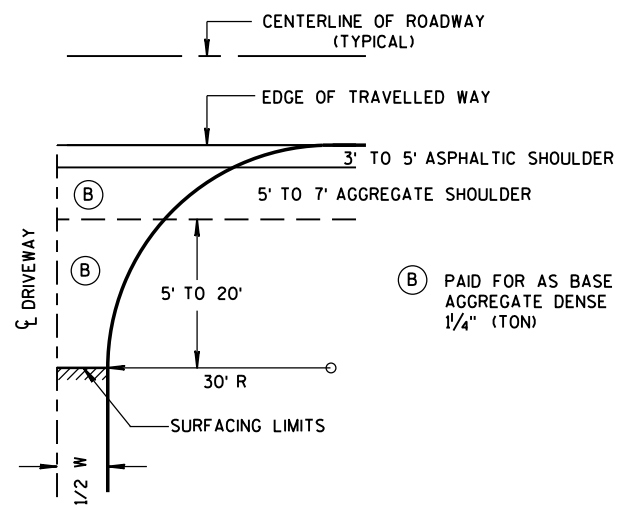
Standard Detail Drawing List

08D22-01	DRIVEWAYS WITHOUT CURB & GUTTER RESURFACING PROJECTS RURAL
08E09-06	SILT FENCE
08F01-11	APRON ENDWALLS FOR CULVERT PIPE
08F04-07	JOINT TIES FOR CONCRETE PIPE AND CONCRETE COLLAR DETAIL
13A11-02A	2-LANE RURAL CENTER LINE RUMBLE STRIP, MILLING
13A11-02B	2-LANE RURAL CENTER LINE RUMBLE STRIP, MILLING
14B07-15A	CONCRETE BARRIER TEMPORARY PRECAST, 12' -6"
14B07-15B	CONCRETE BARRIER TEMPORARY PRECAST, 12' -6"
14B07-15C	CONCRETE BARRIER TEMPORARY PRECAST, 12' -6"
14B07-15D	CONCRETE BARRIER TEMPORARY PRECAST, 12' -6"
14B07-15E	CONCRETE BARRIER TEMPORARY PRECAST, 12' -6"
14B07-15F	CONCRETE BARRIER TEMPORARY PRECAST, 12' -6"
14B07-15G	CONCRETE BARRIER TEMPORARY PRECAST, 12' -6"
14B07-15H	CONCRETE BARRIER TEMPORARY PRECAST, 12' -6"
14B07-15I	CONCRETE BARRIER TEMPORARY PRECAST, 12' -6"
14B29-01	SAFETY EDGE
14B42-05A	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-05B	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-05C	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-05D	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B44-03A	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B44-03B	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B44-03C	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B45-04A	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-04B	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-04C	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-04D	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-04E	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-04F	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-04G	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-04H	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-04I	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-04J	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-04K	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-04L	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
15C04-04	TRAFFIC CONTROL, ADVANCE WARNING SIGNS 45 M. P. H. OR GREATER TWO-WAY UNDIVIDED ROAD OPEN TO TRAFFIC
15C08-18A	LONGITUDINAL MARKING (MAINLINE)
15C08-18B	PAVEMENT MARKING (TURN LANES)
15C12-06	TRAFFIC CONTROL FOR LANE CLOSURE WITH FLAGGING OPERATION
15C19-05A	MOVING PAVEMENT MARKING OPERATION TWO-LANE TWO-WAY ROADWAY
15C19-05B	MOVING PAVEMENT MARKING OPERATION MULTI-LANE UNDIVIDED ROADWAY
15C19-05C	MOVING PAVEMENT MARKING OPERATION MULTI-LANE DIVIDED ROADWAY
15C35-02A	PAVEMENT MARKING (INTERSECTIONS)
15C35-02B	PAVEMENT MARKING AND SIGNING (CLIMBING LANE & PASSING LANE)
15C35-02C	PAVEMENT MARKING AND SIGNING (CLIMBING LANE & PASSING LANE)
15D32-04	TRAFFIC CONTROL, ONE LANE ROAD STOP CONDITION
15D38-02A	TEMPORARY TRAFFIC CONTROL SIGN MOUNTING
15D38-02B	ATTACHMENT OF SIGNS TO POSTS
15D39-01	TRAFFIC CONTROL, DROP-OFF SIGNING
16A01-06	LANDMARK REFERENCE MONUMENTS AND COVERS

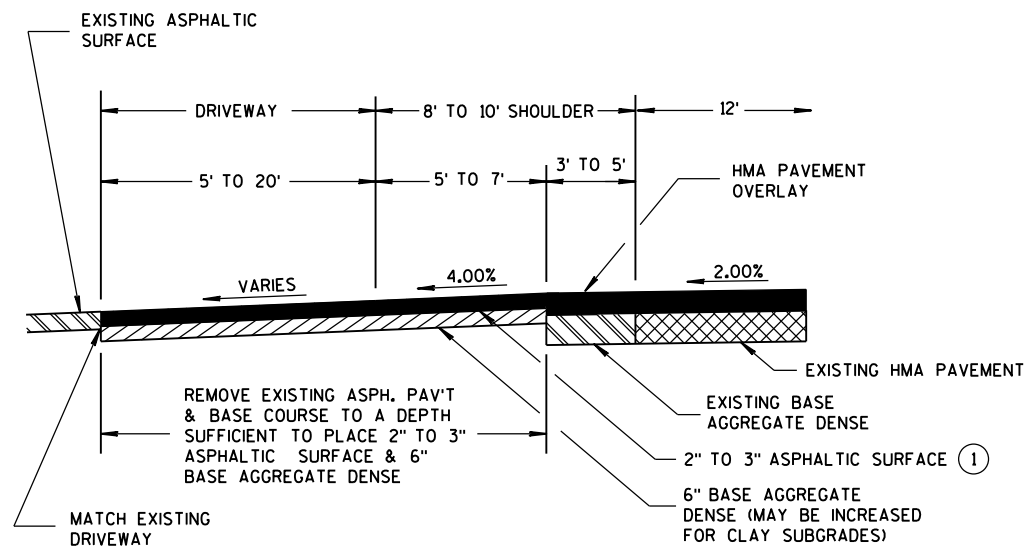


PLAN VIEW
HALF SECTION

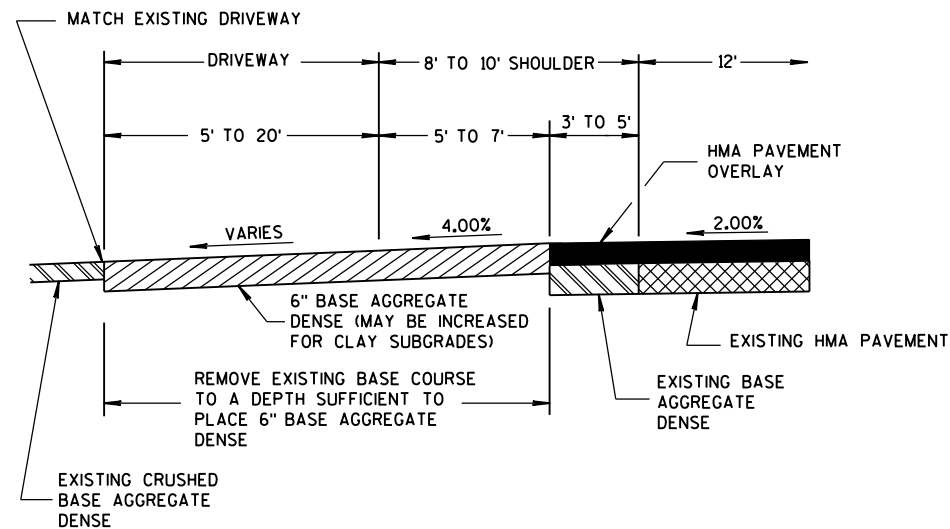
W MIN. = 16'
W MAX. = 24'



PLAN VIEW
HALF SECTION



PROFILE VIEW
RURAL ENTRANCE
WITH ASPHALTIC SURFACE
RESURFACING PROJECTS

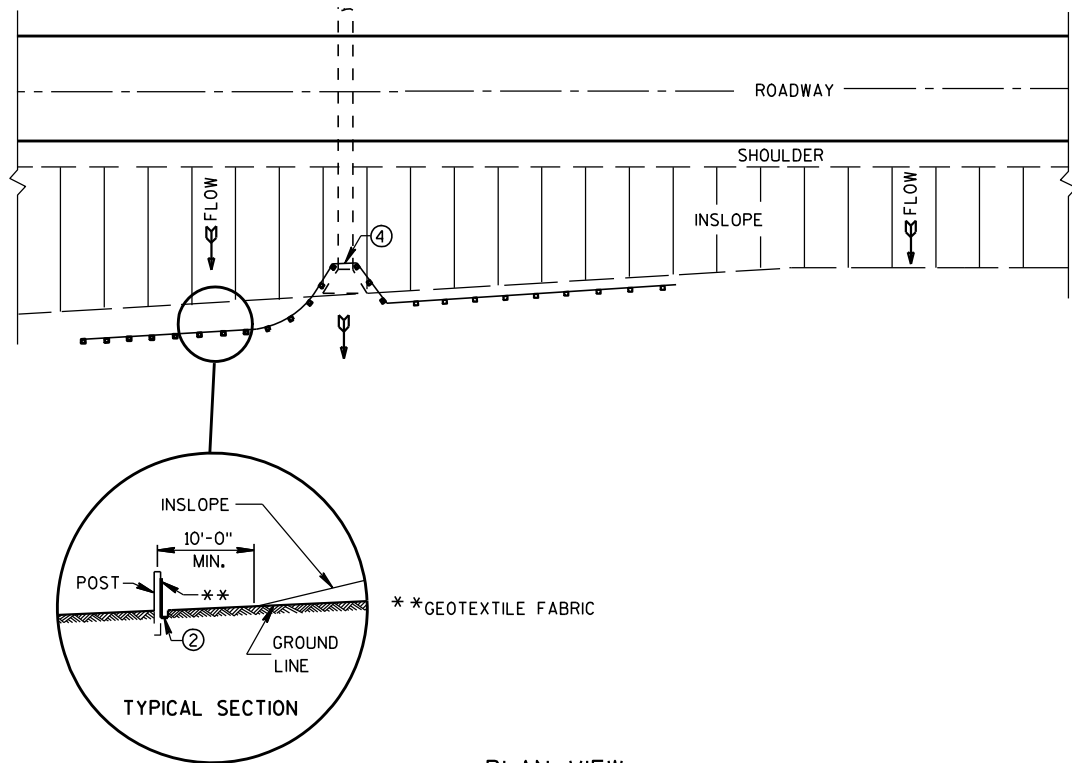


PROFILE VIEW
RURAL ENTRANCE
WITH AGGREGATE SURFACE
6" BASE AGGREGATE DENSE
RESURFACING PROJECTS

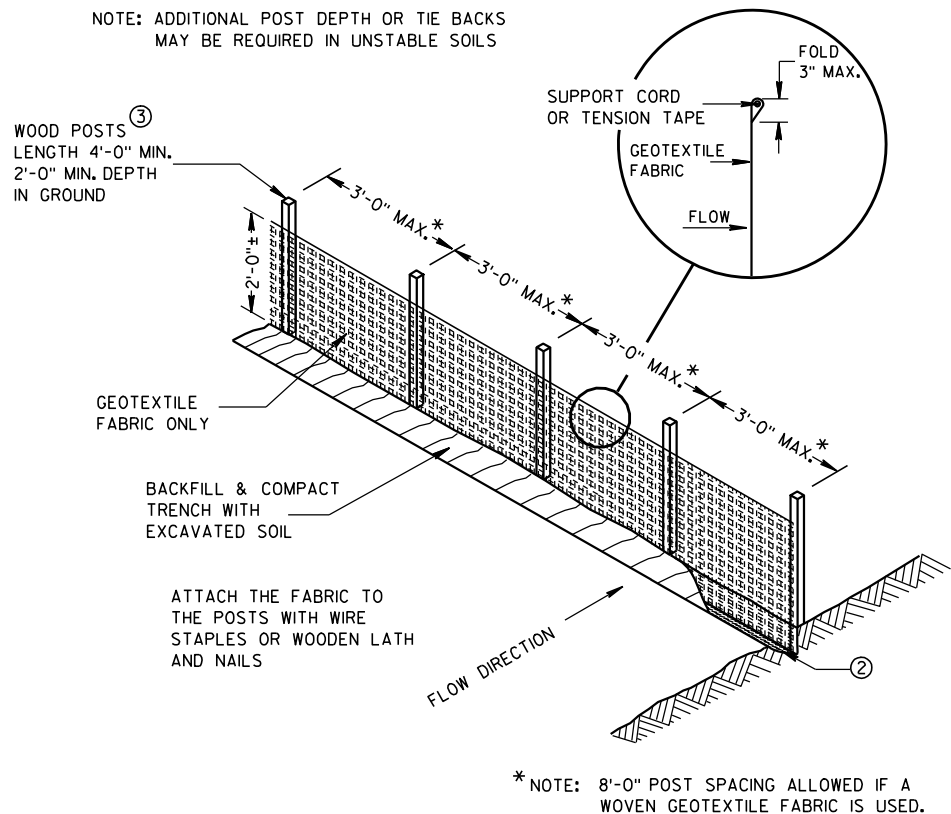
GENERAL NOTES

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

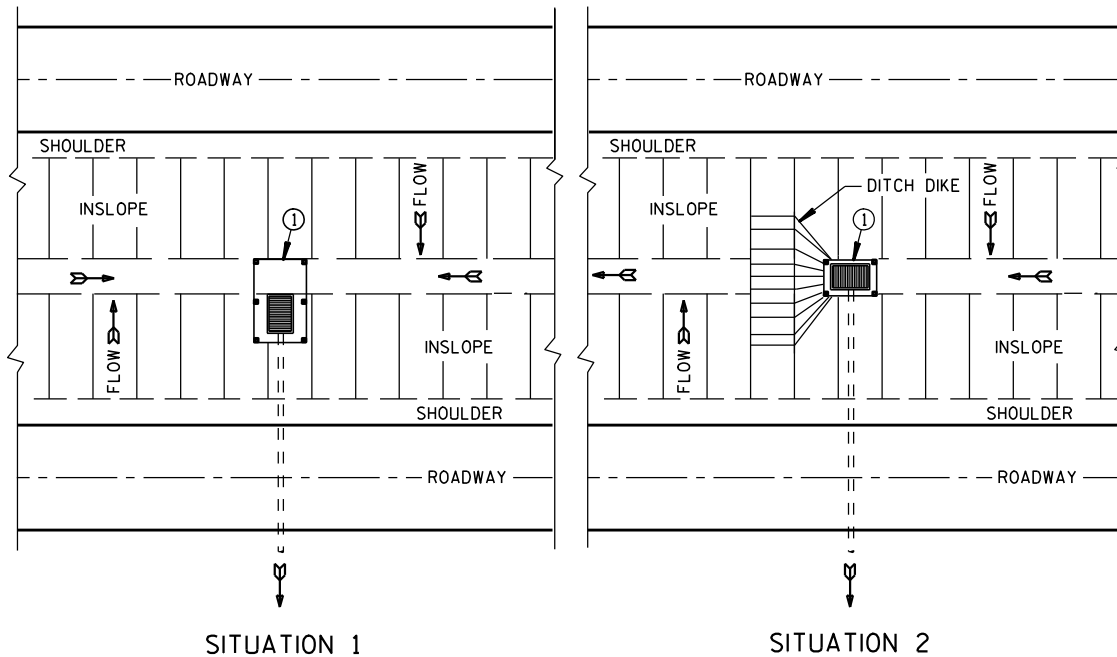
DRIVEWAYS WITHOUT CURB & GUTTER RESURFACING PROJECTS RURAL	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED December, 2016 DATE	/S/ Rodney Taylor ROADWAY STANDARDS DEVELOPMENT UNIT SUPERVISOR FHWA



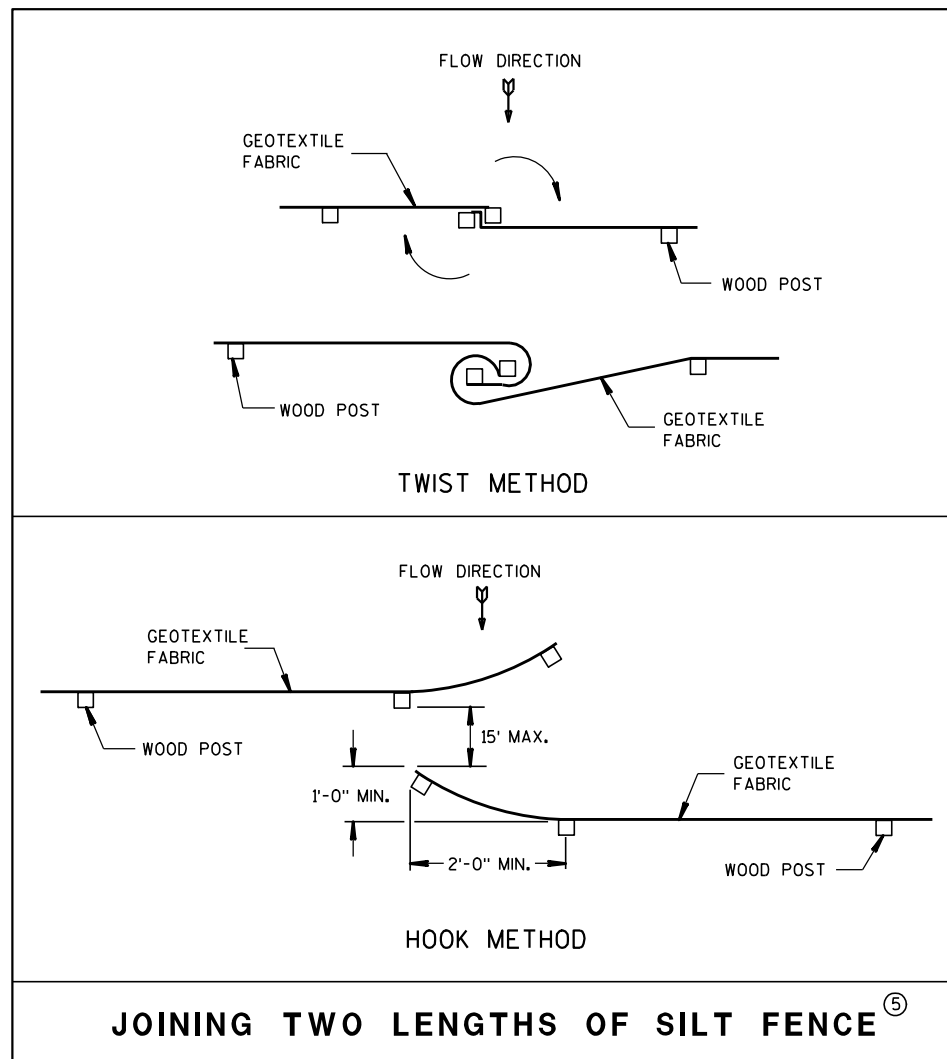
PLAN VIEW
TYPICAL APPLICATION OF SILT FENCE



SILT FENCE



PLAN VIEW
SILT FENCE AT MEDIAN SURFACE DRAINS

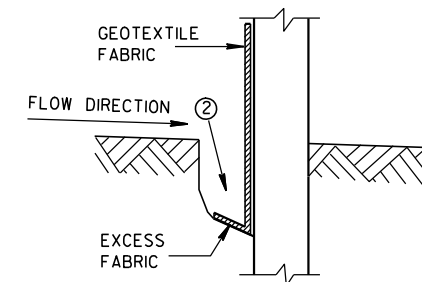


JOINING TWO LENGTHS OF SILT FENCE (5)

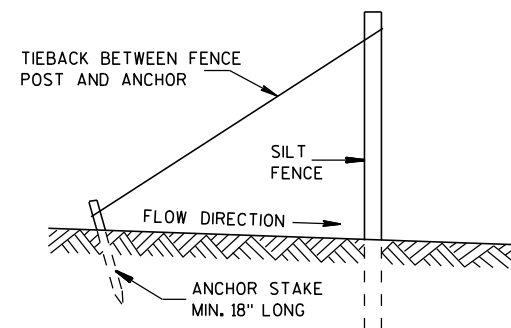
GENERAL NOTES

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

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



TRENCH DETAIL

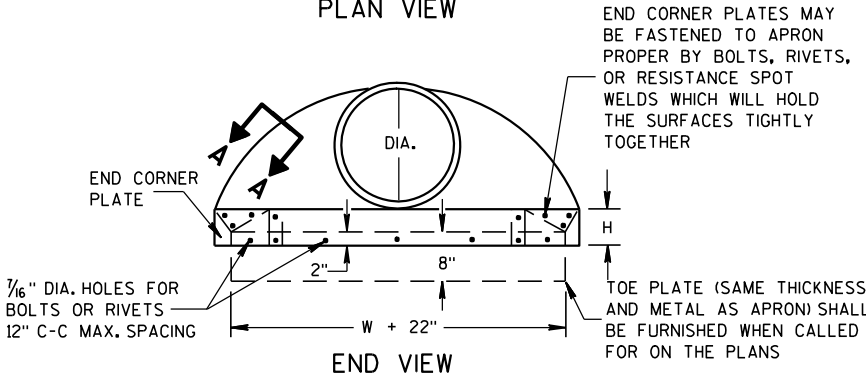
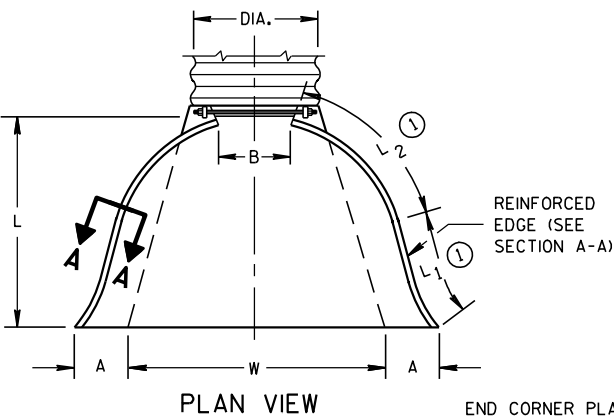


SILT FENCE TIE BACK
(WHEN REQUIRED BY THE ENGINEER)

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

METAL APRON ENDWALLS												
PIPE DIA. (IN.)	MIN. THICK. (Inches)		DIMENSIONS (Inches)							APPROX. SLOPE	BODY	
	STEEL	ALUM.	A (±1")	B (MAX.)	H (±1")	L (±1 1/2")	L ₁ ①	L ₂ 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.	

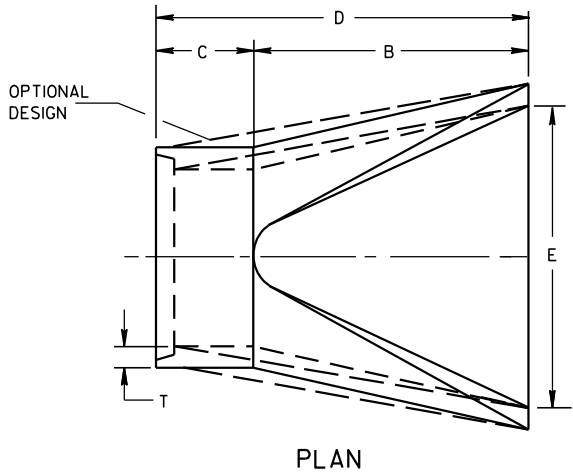
* EXCEPT CENTER PANEL
SEE GENERAL NOTES



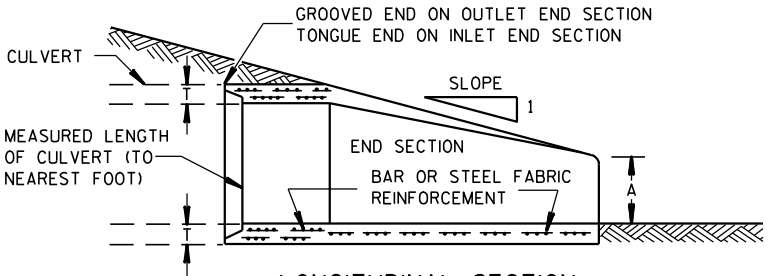
METAL ENDWALLS

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 ¹ / ₈	24	2	3 to 1
15	2 ¹ / ₄	6	27	46	73	30	2 ¹ / ₄	3 to 1
18	2 ¹ / ₂	9	27	46	73	36	2 ¹ / ₂	3 to 1
21	2 ³ / ₄	9	36	37 ¹ / ₂	73 ¹ / ₂	42	2 ³ / ₄	3 to 1
24	3	9 ¹ / ₂	43 ¹ / ₂	30	73 ¹ / ₂	48	3	3 to 1
27	3 ¹ / ₄	10 ¹ / ₂	49 ¹ / ₂	24	73 ¹ / ₂	54	3 ¹ / ₄	3 to 1
30	3 ¹ / ₂	12	54	19 ³ / ₄	73 ¹ / ₂	60	3 ¹ / ₂	3 to 1
36	4	15	63	34 ³ / ₄	97 ³ / ₄	72	4	3 to 1
42	4 ¹ / ₂	21	63	35	98	78	4 ¹ / ₂	3 to 1
48	5	24	72	26	98	84	5	3 to 1
54	5 ¹ / ₂	27	65	33 ¹ / ₄ -35 ^{**}	98 ¹ / ₄ -100 ^{**}	90	5 ¹ / ₂	2 ¹ / ₂ to 1
60	6	30-35 ^{**}	60	39	99	96	5	2 to 1
66	6 ¹ / ₂	24-30 ^{**}	72-78 ^{**}	21-27 ^{**}	99	102	5 ¹ / ₂	2 to 1
72	7	24-36 ^{**}	78	21	99	108	6	2 to 1
78	7 ¹ / ₂	24-36 ^{**}	78	21	99	114	6 ¹ / ₂	2 to 1
84	8	36	90 ¹ / ₂	21	111 ¹ / ₂	120	6 ¹ / ₂	1 ¹ / ₂ to 1
90	8 ¹ / ₂	41	87 ¹ / ₂	24	111 ¹ / ₂	132	6 ¹ / ₂	1 ¹ / ₂ to 1

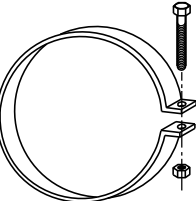
*MINIMUM
**MAXIMUM



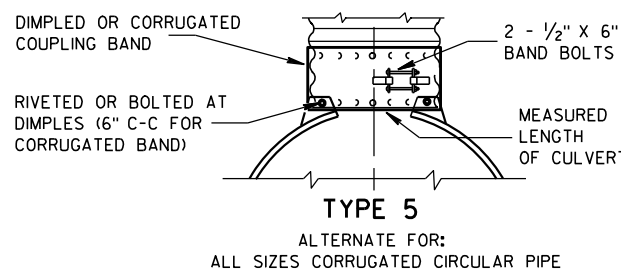
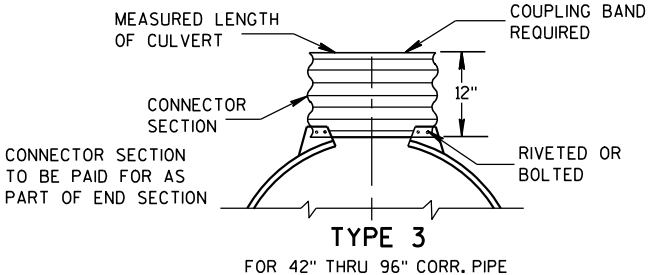
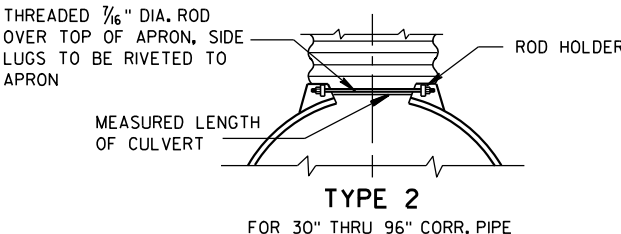
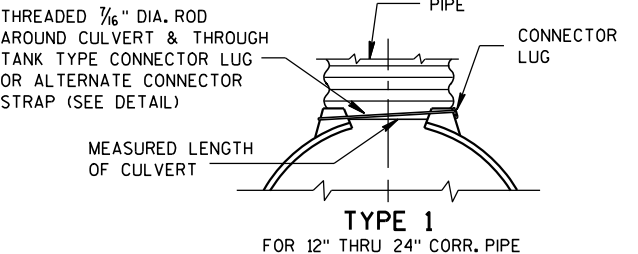
CONCRETE ENDWALLS



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



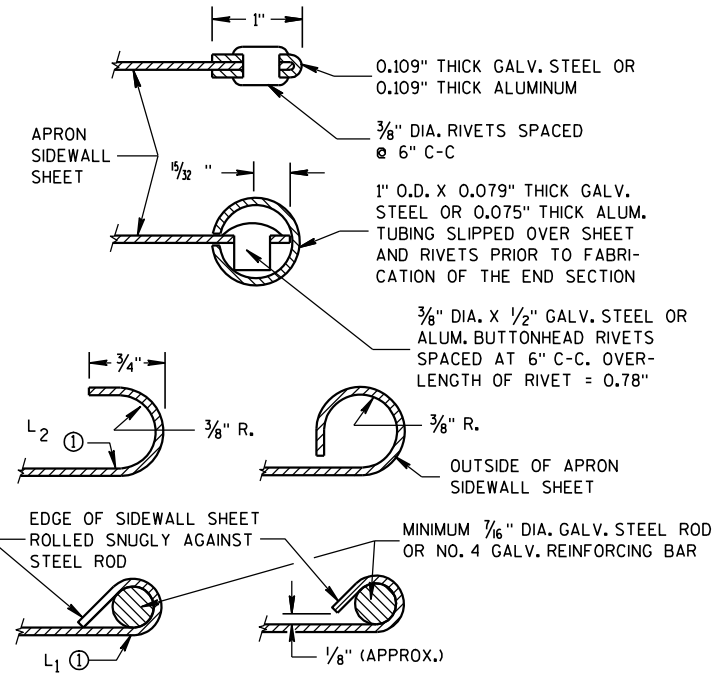
NOTE: DIMPLED BAND FITS OVER OUTSIDE OF ENDWALL, AND CORRUGATED BAND FITS INSIDE ENDWALL. DIMPLED BAND MAY BE USED WITH HELICALLY CORRUGATED PIPE.

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



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.

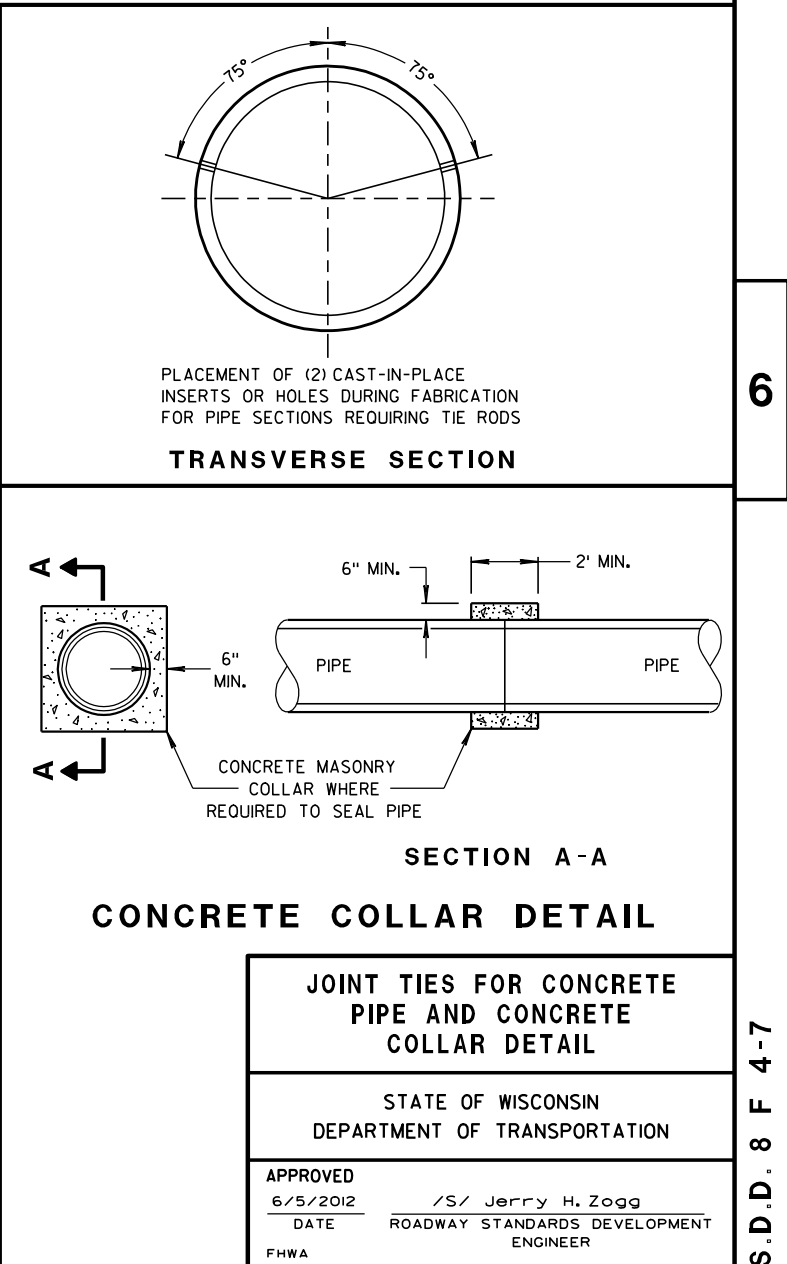
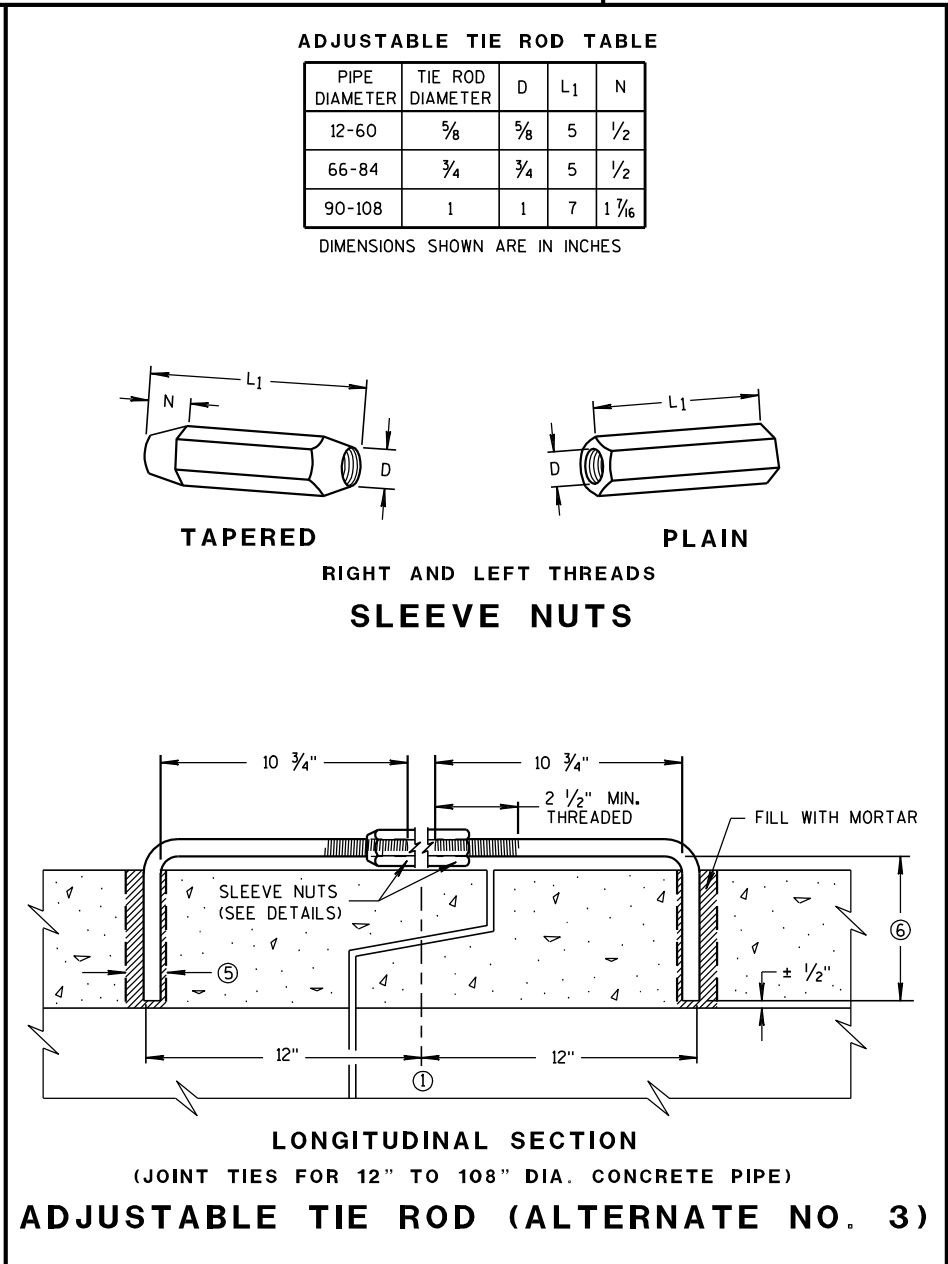
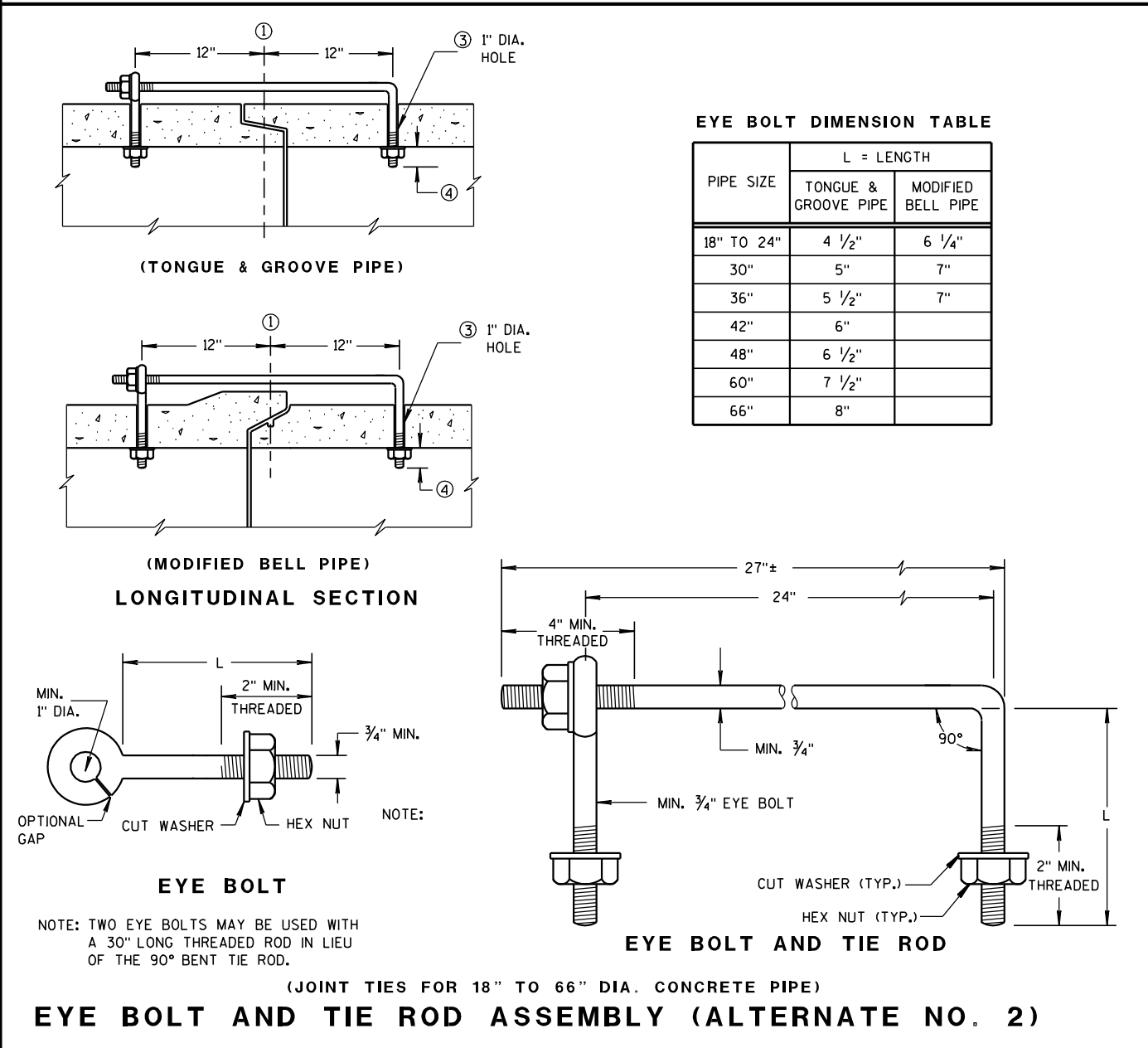
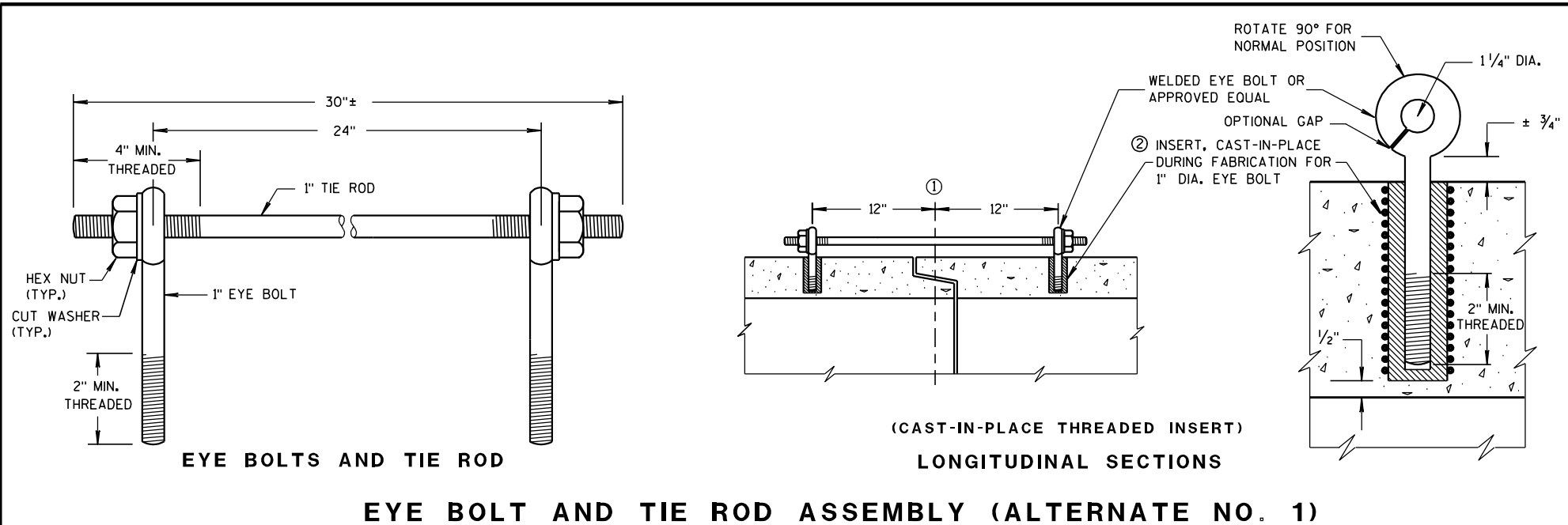
WHERE TWO OR MORE PIPES WITH APRON ENDWALLS ARE LAID ADJACENT TO EACH OTHER, THEY SHALL BE SEPARATED BY A DISTANCE SUFFICIENT TO PROVIDE A MINIMUM CLEARANCE OF 6 INCHES BETWEEN APRON ENDWALLS.

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

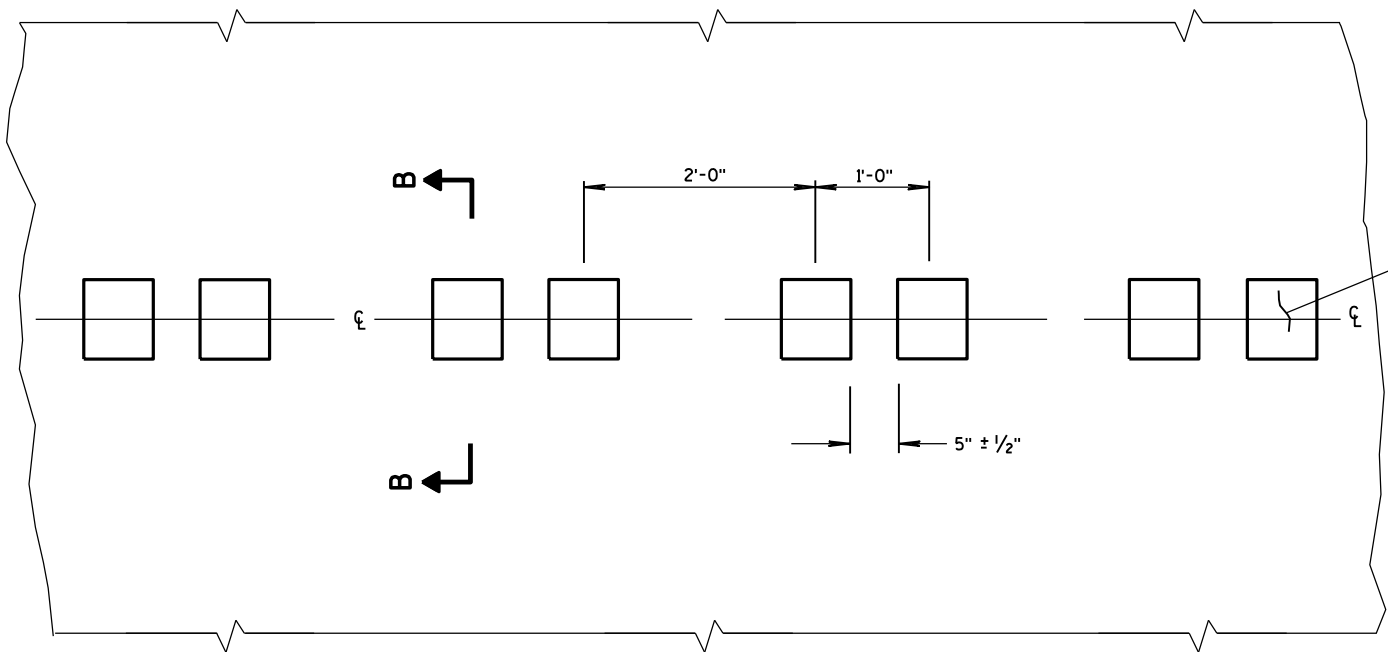
DETAILS OF CONSTRUCTION SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND APPLICABLE SPECIAL PROVISIONS.

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

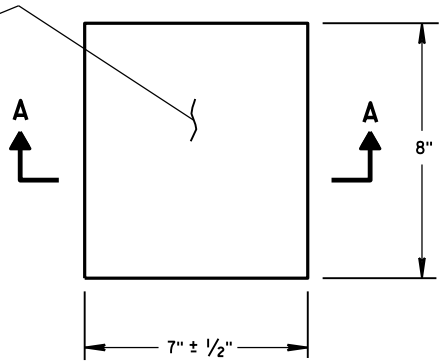
INSTALL PAVEMENT MARKING AFTER THE GROOVES ARE INSTALLED.

SEE SIGNING PLAN FOR SIGN REQUIREMENTS THAT MAY BE NEEDED.

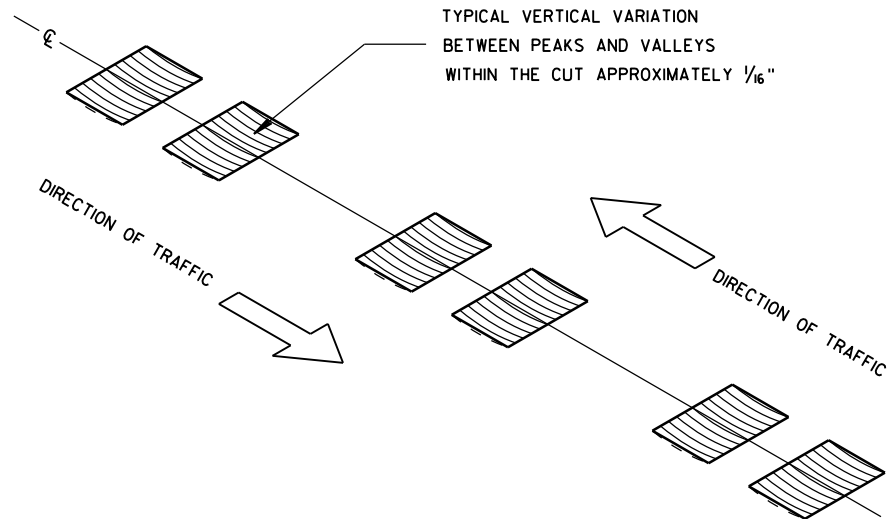
- ① CENTERLINE GROOVES MAY BE OMITTED IN AREAS WITH HIGH CONCENTRATIONS OF DRIVEWAYS, WHEN DIRECTED BY THE ENGINEER.



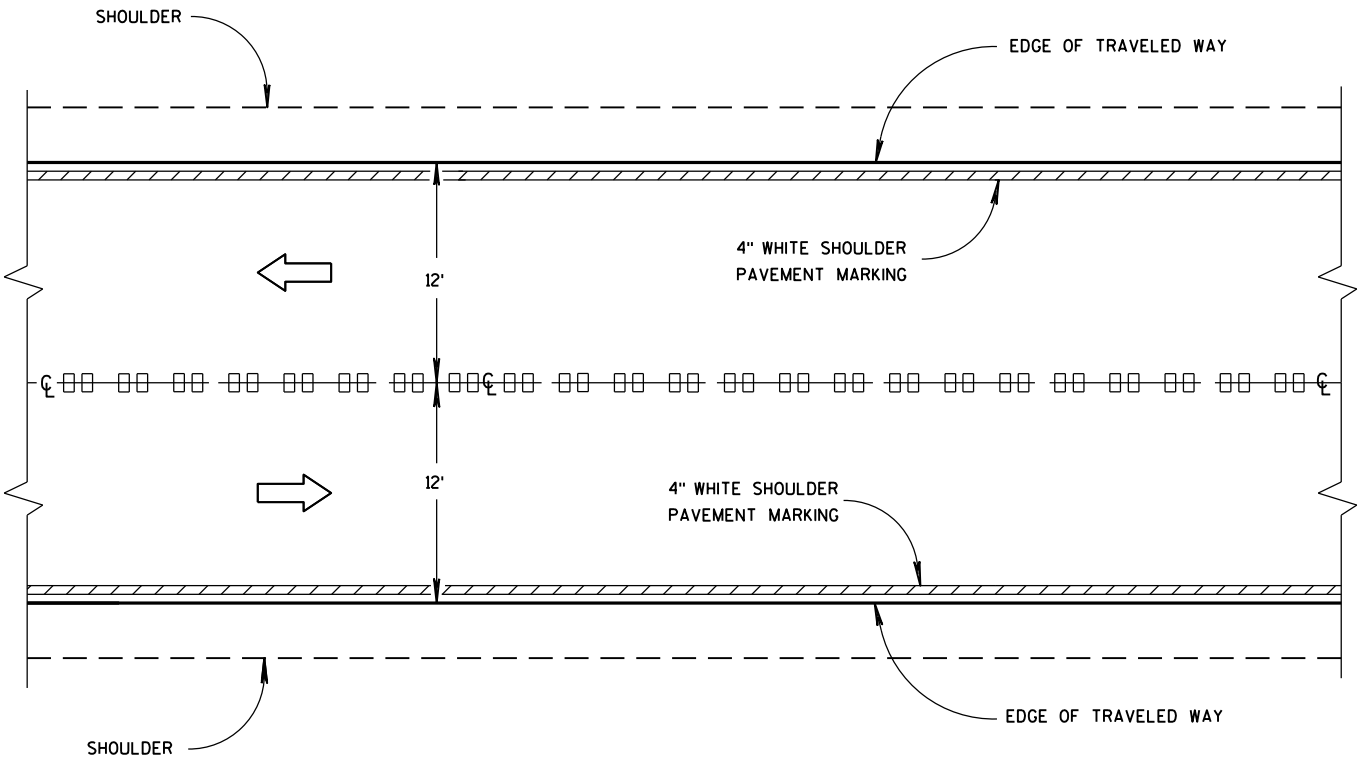
PLAN VIEW
CENTER LINE WITH GROOVES



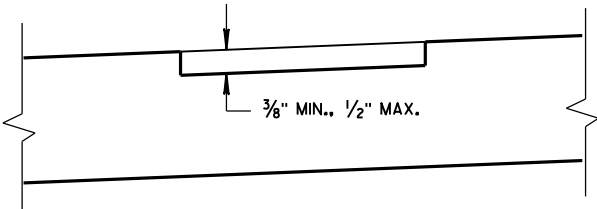
PLAN VIEW
(SINGLE GROOVE)



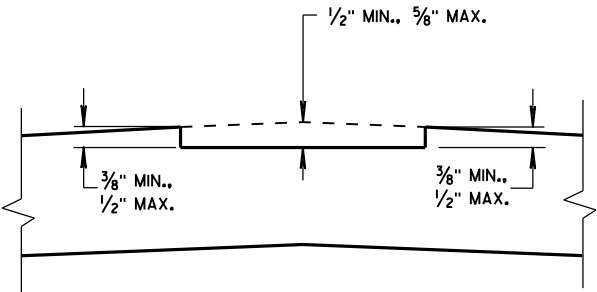
ISOMETRIC



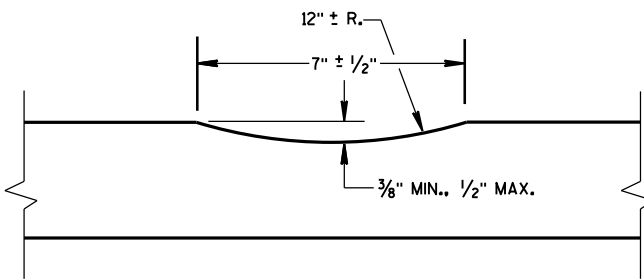
CENTER LINE GROOVES ON TWO-WAY ROADWAYS



SECTION B-B
SUPERELEVATED ROADWAY



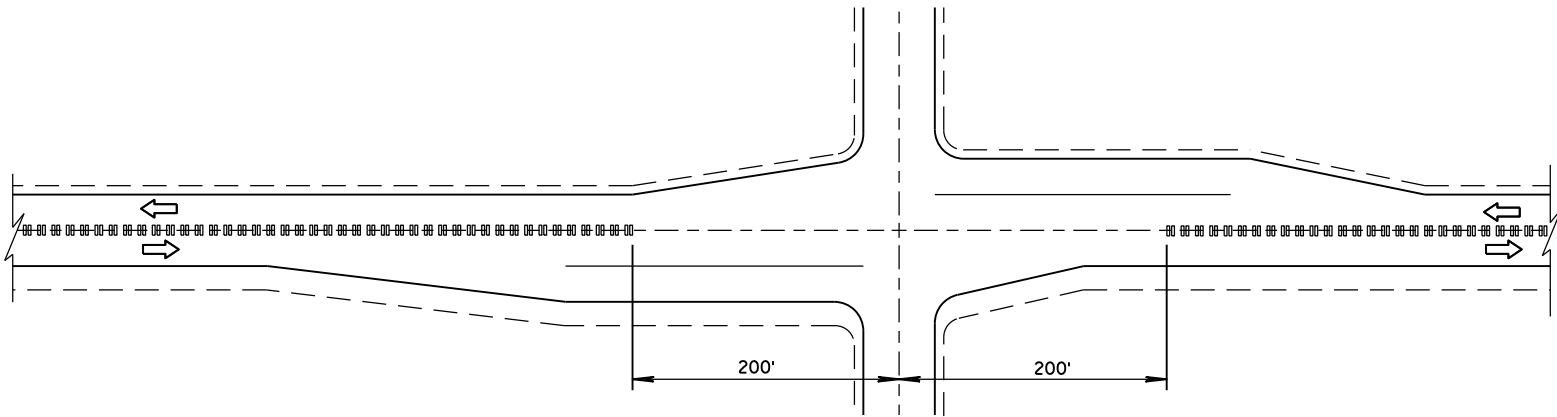
SECTION B-B
CROWNED ROADWAY



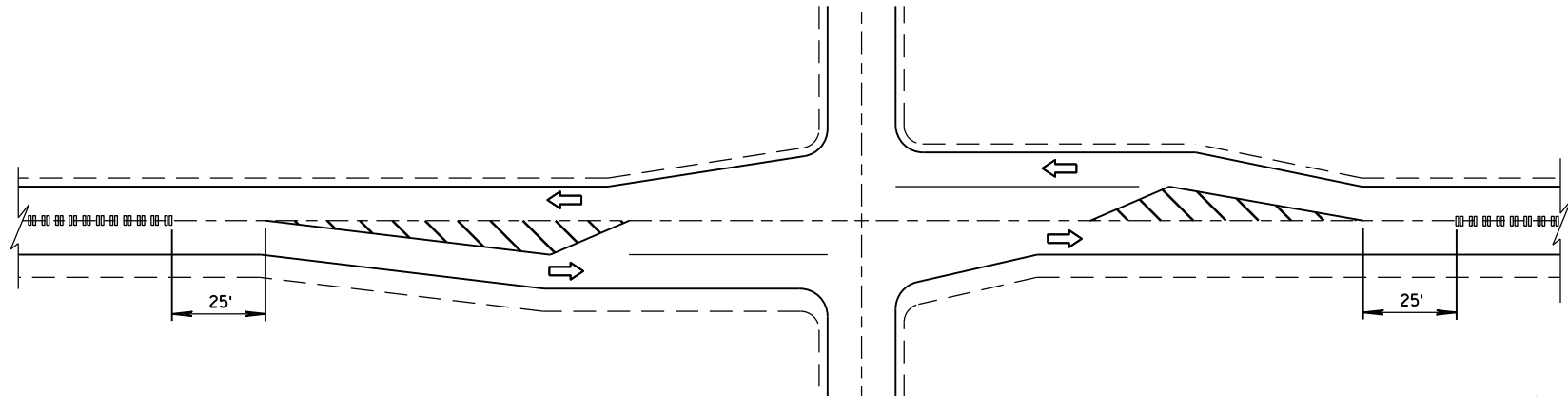
SECTION A-A

2-LANE RURAL
CENTER LINE RUMBLE STRIP,
MILLING

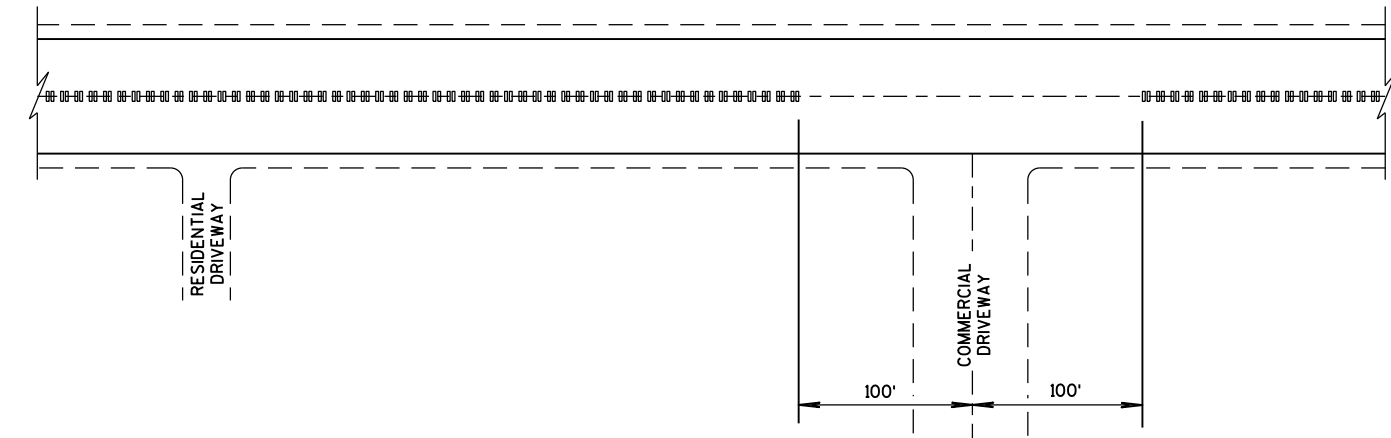
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



CENTER LINE GROOVES AT INTERSECTIONS

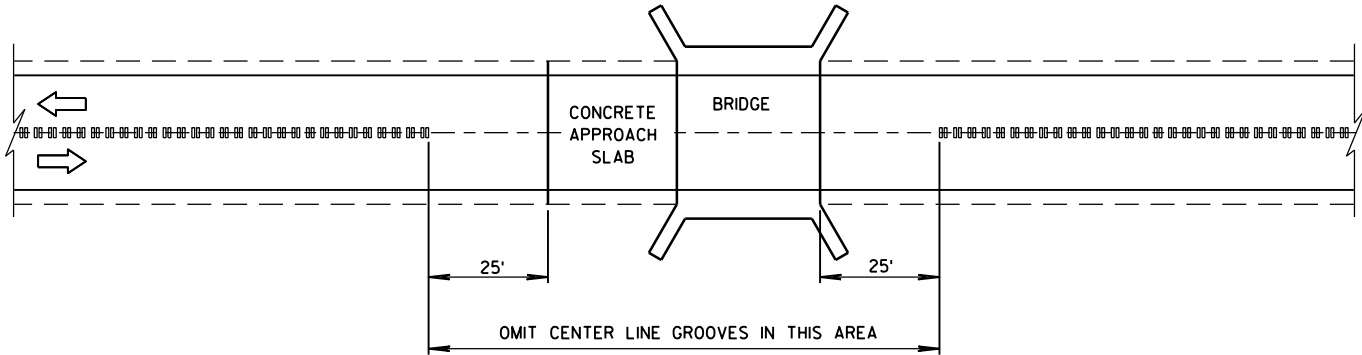


CENTER LINE GROOVES AT INTERSECTIONS
(WITH LEFT TURN LANES)

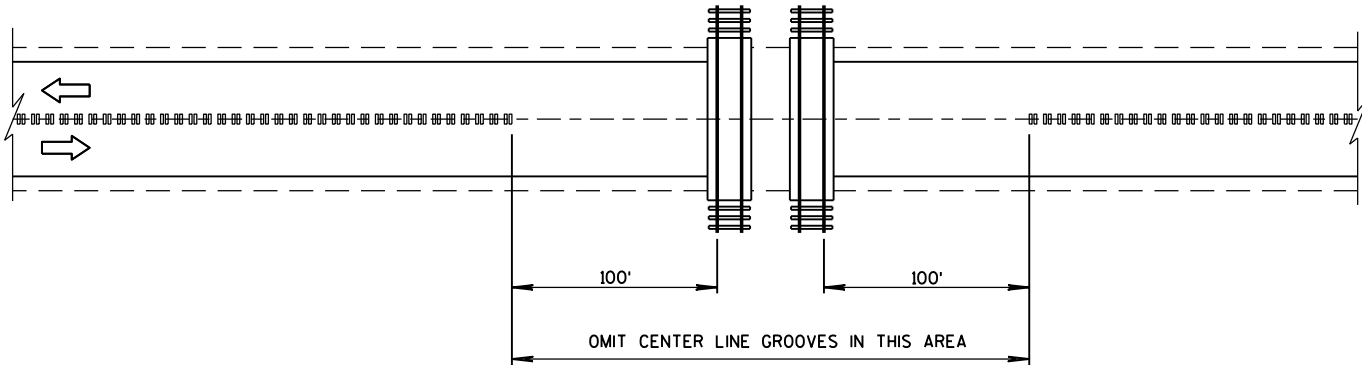


CENTER LINE GROOVES AT DRIVEWAYS^①

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

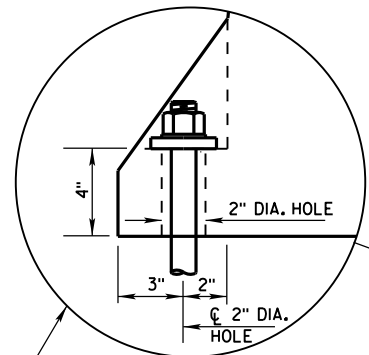


CENTER LINE GROOVES AT BRIDGES

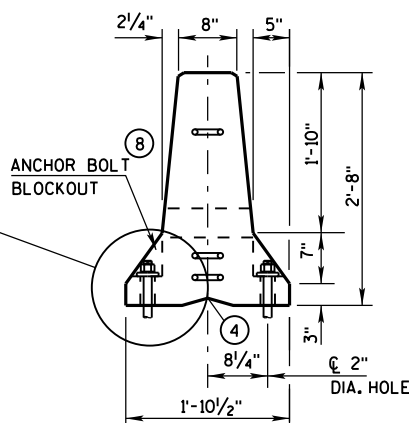


CENTER LINE GROOVES AT RAILROADS

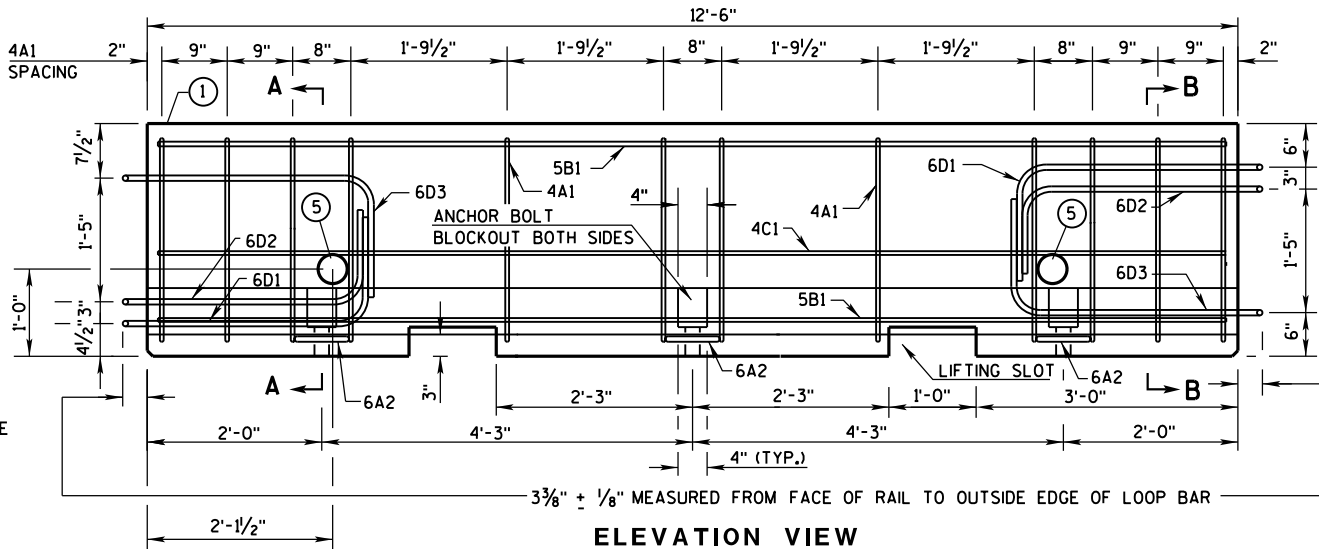
2-LANE RURAL CENTER LINE RUMBLE STRIP, MILLING	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED DATE 5/15/2013 FHWA	/S/ Jerry H. Zogg ROADWAY STANDARDS DEVELOPMENT ENGINEER



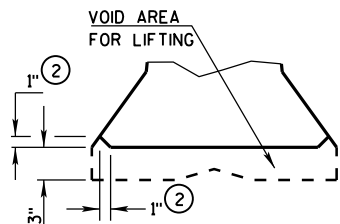
ANCHOR ON TRAFFIC SIDE
ONLY WHEN REQUIRED
(SEE SHEET D FOR ADDITIONAL
ANCHOR DETAIL)



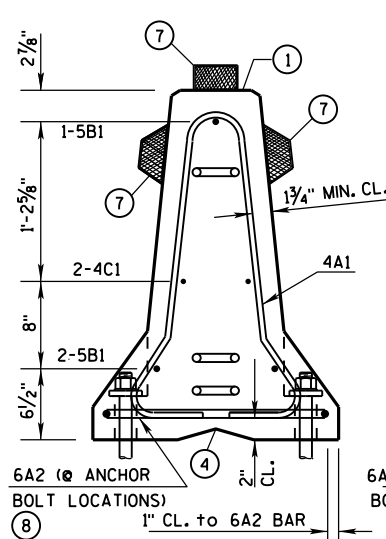
END VIEW



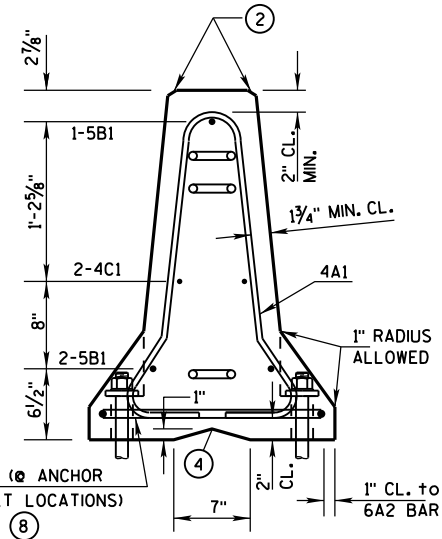
ELEVATION VIEW



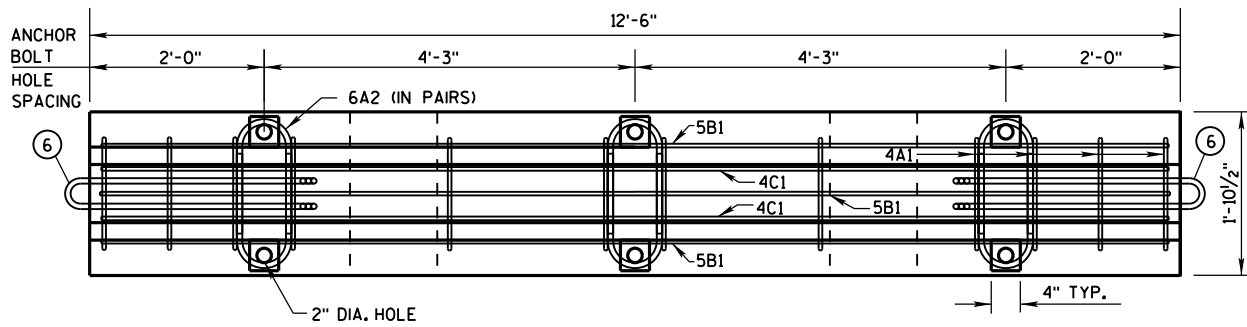
DETAIL "B"
LIFTING SLOT DETAIL



SECTION A-A
(STIRRUP PLACEMENT)

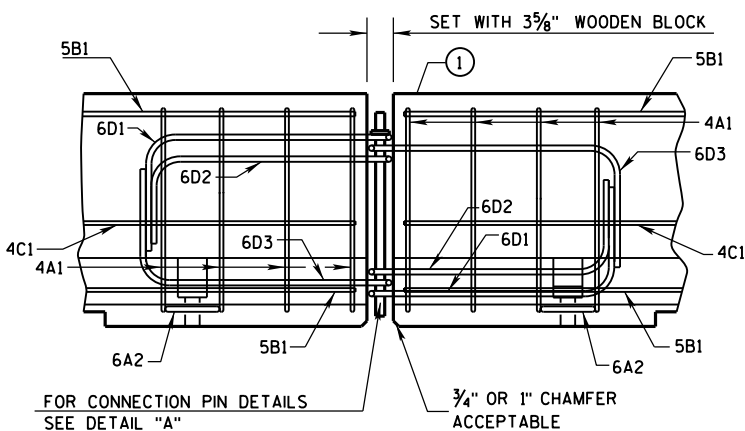


SECTION B-B
(STIRRUP PLACEMENT)

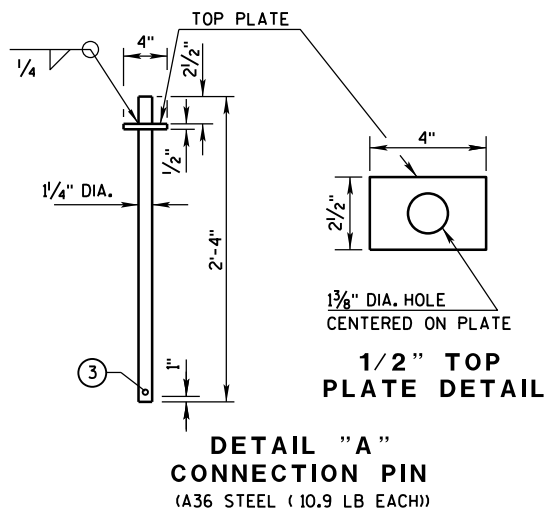


PLAN VIEW

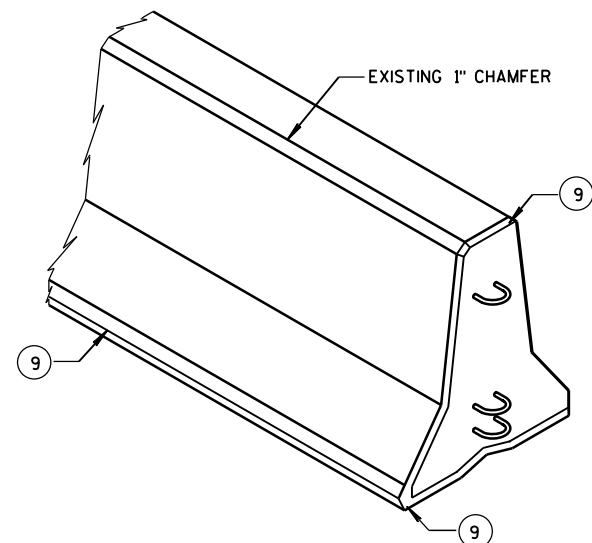
DETAILS OF BARRIER SECTION



DETAILS OF BARRIER CONNECTION



DETAIL "A"
CONNECTION PIN
(A36 STEEL (10.9 LB EACH))



GENERAL NOTES

THESE GENERAL NOTES APPLY TO SHEETS 14B7-15(a) THRU 14B7-15(i).

DO NOT INTERMIX CONCRETE BARRIER TEMPORARY PRECAST, 12'-6" (CBTP12.5) WITH OTHER TEMPORARY CONCRETE BARRIERS.

USE ASTM A-615, GRADE 60, DEFORMED STEEL BARS FOR BARS 4A1, 6A2, 5B1 AND 4C1 IN THE BARRIER SECTION AND FOR 4V1, 4V2, 4V3, 4V4, 4V5, 4V6, 4F1, 4F2 AND 5F3 IN THE BARRIER TAPER SECTION.

LOOP BARS 6D1, 6D2 AND 6D3 SHALL BE 3/4" SMOOTH STEEL BARS WITH A MINIMUM YIELD STRENGTH OF 60 KSI, A TENSILE STRENGTH OF NOT LESS THAN 1.25 TIMES THE YIELD STRENGTH BUT A MINIMUM OF 80 KSI, A MINIMUM 14% ELONGATION IN 8 INCHES AND PASSING A 180 DEGREE BEND TEST USING A 3-1/2" PIN BEND DIAMETER FOR BEND TESTS. THE LOOPS SHALL BE INSTALLED WITHIN 1/8" OF THE PLAN DIMENSION.

CONSTRUCT LIFTING SLOTS AS SPECIFIED ON THE PLANS TO FACILITATE THE DRAINAGE OF WATER AFTER INSTALLATION.

PLACE BARRIER ON A PAVED SURFACE. REMOVE ALL LOOSE DIRT AND SAND FROM THE ROADWAY SURFACE PRIOR TO PLACEMENT OF THE BARRIER.

INSTALL MECHANICAL OR ADHESIVE ANCHORS PER MANUFACTURER'S RECOMMENDATIONS. PROVIDE MANUFACTURER'S INFORMATION TO PROJECT ENGINEER.

- MARK ONE END OF EACH BARRIER PERMANENTLY BY FORMING INTO THE BARRIER THE FOLLOWING INFORMATION:
 - TYPE: WICBTP
 - MANUFACTURER
 - DATE MANUFACTURED (MONTH AND YEAR)
- 1" CHAMFER TO PREVENT SPALLING.
- A 3/8" HOLE IN THE CONNECTION PIN, AT THE LOCATION SHOWN, IS ACCEPTABLE, BUT NOT REQUIRED..
- "V" NOTCH IS OPTIONAL.
- THE 4" DIAMETER, 11 GAUGE STEEL, ROUND MECHANICAL TUBING SLEEVE FOR LIFTING (OPTIONAL).
- NEVER USE LOOP BARS (6D1, 6D2 OR 6D3) TO LIFT, MOVE OR REPOSITION THE BARRIER.
- USE DELINEATORS CONFORMING TO SECTION 633 OF THE STANDARD SPECIFICATIONS. CONTRACTOR MAY USE ALTERNATE SHAPES AND HOUSING. INSTALL DELINEATORS ACCORDING TO MANUFACTURER'S INSTRUCTION. INSTALL YELLOW REFLECTORS WHEN BARRIER IS LOCATED TO THE LEFT OF TRAFFIC AND WHITE REFLECTORS WHEN BARRIER IS LOCATED TO THE RIGHT OF TRAFFIC. SPACE DELINEATORS A MAXIMUM OF 25 FEET APART. PROVIDE TOP MOUNTED DELINEATORS IN ADDITION TO THE SIDE MOUNTED DELINEATORS ON ALL BARRIER INSTALLATIONS LOCATED ON A CURVED ALIGNMENT LONGER THAN 200 FEET AND ON BARRIERS USED TO SEPARATE OPPOSING TRAFFIC.
- SEE SHEET D FOR HOW TO ANCHOR BARRIER. SEE SHEET E FOR WHEN TO ANCHOR BARRIER.
- 1" CHAMFER OPTIONAL.

f'c = 4,000 psi

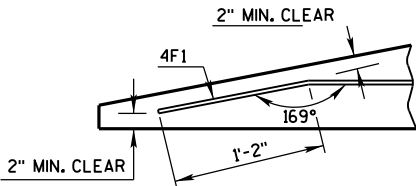
CONCRETE BARRIER
TEMPORARY PRECAST, 12'-6"

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

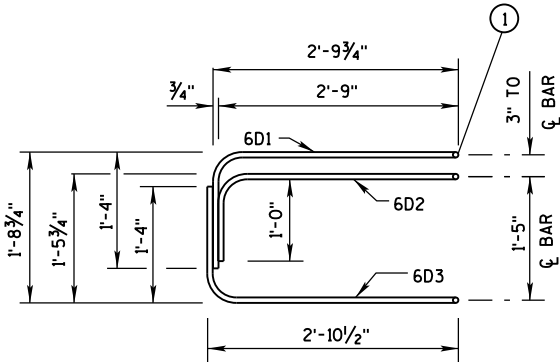
BARRIER TAPER SECTION
BILL OF MATERIALS

(PER 12'-6" BARRIER TAPER SECTION)

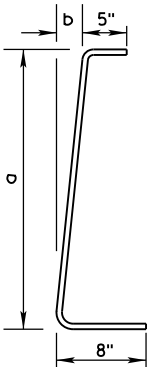
BAR	BAR SIZE	NO. OF BARS	LENGTH FT.
4V1	4	2	1'-11"
4V2	4	2	2'-2"
4V3	4	2	2'-6"
4V4	4	2	2'-9"
4V5	4	2	3'-2"
4V6	4	2	3'-4"
4F1	4	2	12'-0"
4F2	4	2	7'-6"
5F3	5	1	11'-9"
LOOP ASSEMBLY			
6D1	6	1	8'-5"
6D2	6	1	7'-7"
6D3	6	1	8'-6"



DETAIL "C"
BENT BAR DETAIL



ELEVATION
LOOP BAR ASSEMBLY



BAR	a	b
V1	10"	1"
V2	1'-1"	1 1/4"
V3	1'-5"	1 5/8"
V4	1'-8"	1 7/8"
V5	2'-0 1/2"	2 3/8"
V6	2'-3"	2 3/4"

4V BARS
2 AT EACH SIZE REQUIRED
FOR STIRRUP ASSEMBLY

TAPER BARRIER SECTION

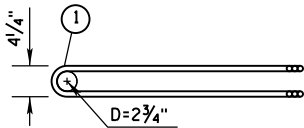
GENERAL NOTES

① NEVER USE LOOP BARS (6D1, 6D2 OR 6D3) TO LIFT, MOVE OR REPOSITION THE BARRIER.

BARRIER SECTION
BILL OF MATERIALS

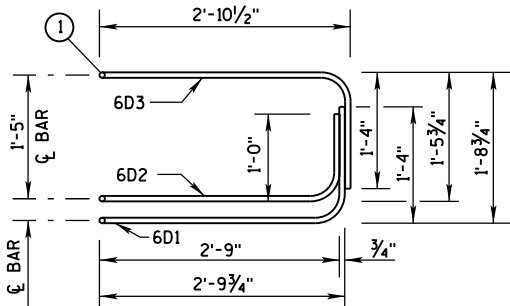
(PER 12'-6" BARRIER SECTION)

BAR	BAR SIZE	NO. OF BARS	LENGTH FT.
4A1	4	12	6'-0"
6A2	6	6	2'-11"
5B1	5	3	12'-2"
4C1	4	2	12'-2"
LOOP ASSEMBLY			
6D1	6	2	8'-5"
6D2	6	2	7'-7"
6D3	6	2	8'-6"

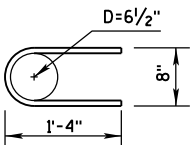


PLAN VIEW
LOOP BAR ASSEMBLY

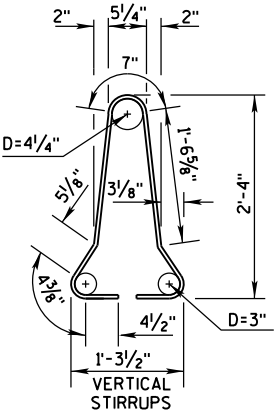
(MARKED END SHOWN, INVERT FOR OTHER END)



ELEVATION VIEW



6A2

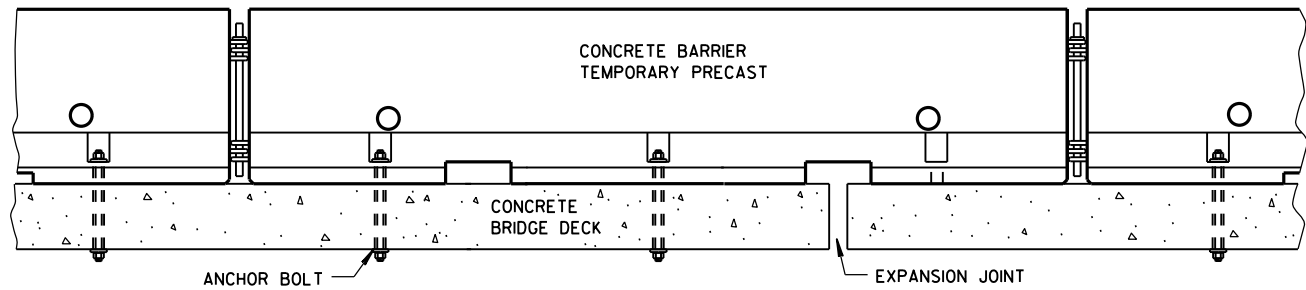
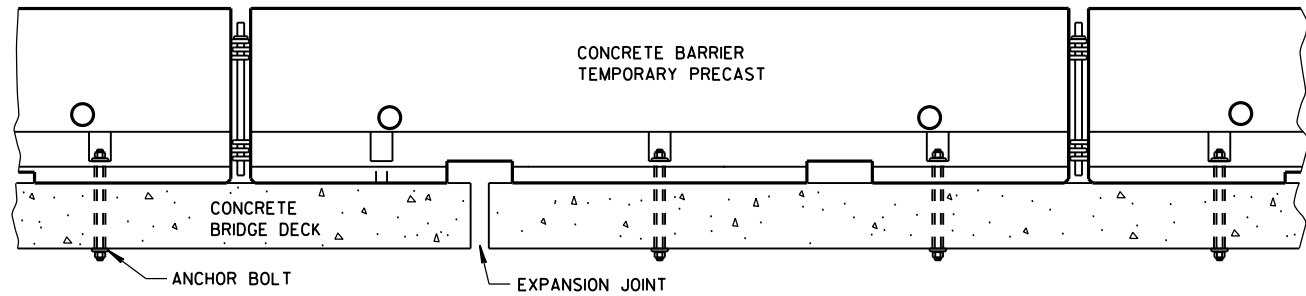


4A1

BARRIER SECTION

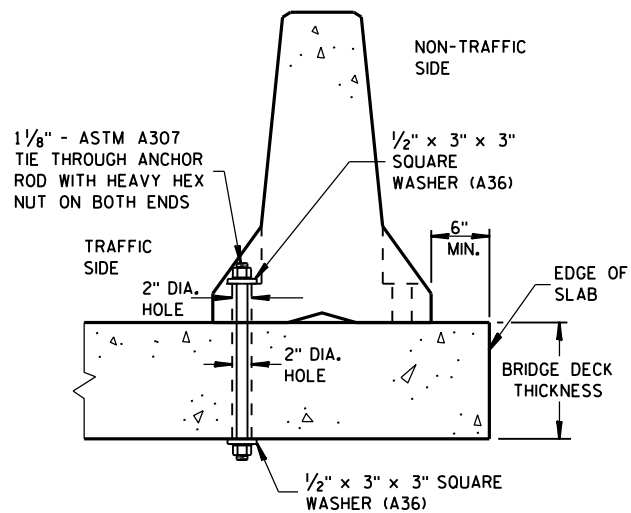
CONCRETE BARRIER
TEMPORARY PRECAST, 12'-6"

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



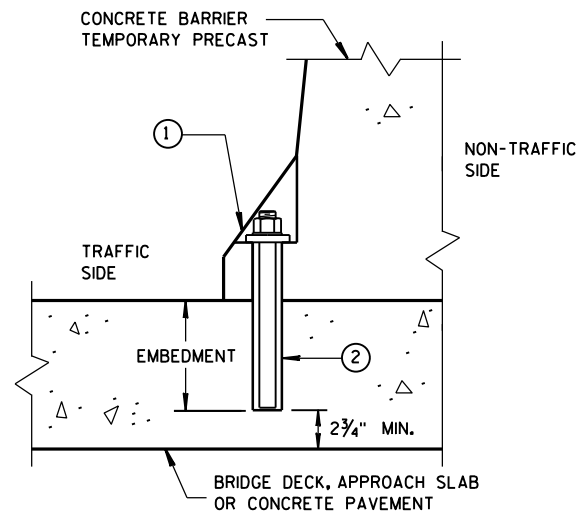
TREATMENT AT BRIDGE DECK EXPANSION JOINTS

(NO SINGLE CONCRETE BARRIER SECTION SHALL BE ANCHORED TO BOTH THE BRIDGE DECK AND THE APPROACH SLAB. ALL ANCHOR BOLT LOCATIONS SHALL BE ANCHORED TO THE DECK IN ACCORDANCE WITH THE DETAIL. NO MORE THAN ONE ANCHOR BOLT SHALL BE ELIMINATED FROM A BARRIER SECTION WHEN SPANNING AN EXPANSION JOINT.)



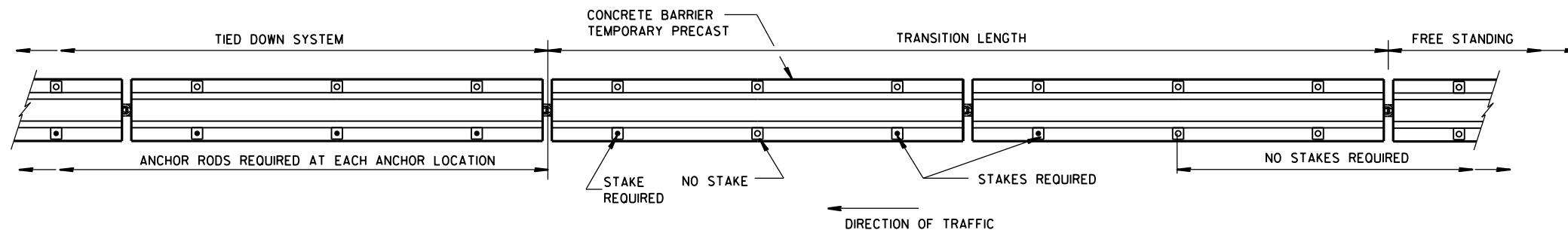
THROUGH BOLTED ANCHOR INSTALLATION ON BRIDGE DECK

(DO NOT USE ON CONCRETE BRIDGE DECK WITH ASPHALT OVERLAY)



REMOVABLE ADHESIVE ANCHOR INSTALLATION ON CONCRETE BRIDGE DECK, CONCRETE APPROACH SLAB, OR CONCRETE PAVEMENT

(DO NOT USE ON CONCRETE WITH AN ASPHALTIC OVERLAY)



PLAN VIEW

FREE STANDING TRANSITION TO TIED-DOWN SYSTEM

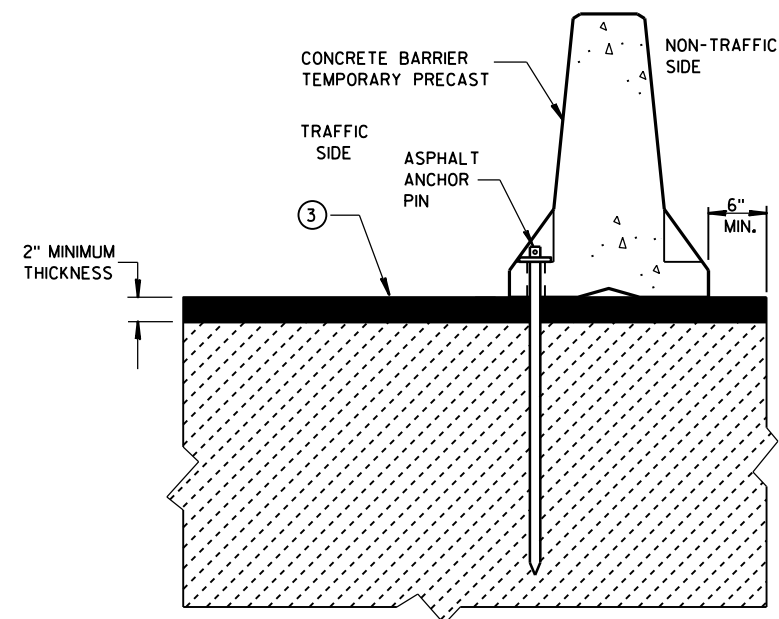
(PLACE TRANSITION IN A TANGENT SECTION OF BARRIER PARALLEL TO THE ROADWAY. IF TRANSITION OCCURS ON STRUCTURAL SLAB, ANCHOR AS SHOWN.)

GENERAL NOTES

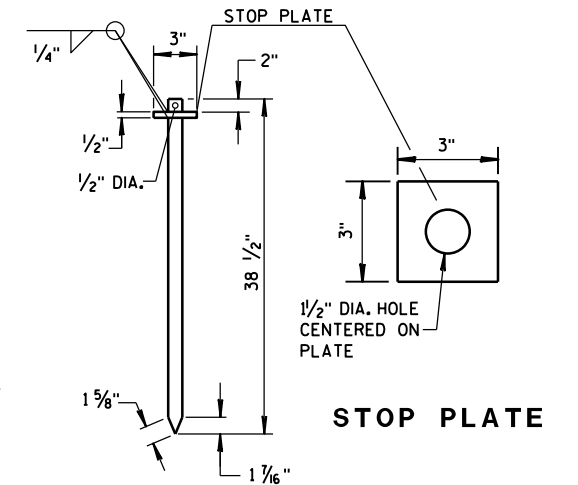
SEE SHEET E FOR WHEN TO ANCHOR. OTHER PARTS OF THE PLAN MAY SHOW ADDITIONAL LOCATIONS REQUIRING ANCHORING.

REMOVE ALL ANCHORS WHEN NO LONGER NEEDED. FILL CONCRETE PAVEMENTS, DECKS AND APPROACH SLABS WITH NON-SHRINK COMMERCIAL GROUT FROM THE APPROVED PRODUCT LIST. FILL ASPHALT PAVEMENTS WITH ASTM D6690 TYPE II RUBBERIZED CRACK FILLER.

- ① 1/8" DIAMETER A307 THREADED ROD, 1/2" X 3" X 3" SQUARE PLATE WASHER WITH ASTM A36 STEEL, ASTM A563A HEAVY HEX NUT.
- ② ADHESIVE ANCHORS WITH A MINIMUM BOND STRENGTH OF 1,800 PSI AND 5/4" EMBEDMENT. SEE 603.2 AND 603.3.12 OF THE WISCONSIN STANDARD SPECIFICATIONS FOR MORE INFORMATION ON ADHESIVE ANCHORS.
- ③ ASPHALT SURFACE SHOWN. CONTRACTOR MAY DRILL THROUGH CONCRETE PAVEMENT AND THEN DRIVE ASPHALT ANCHOR PIN.



STAKE DOWN INSTALLATION FOR ASPHALTIC SURFACE

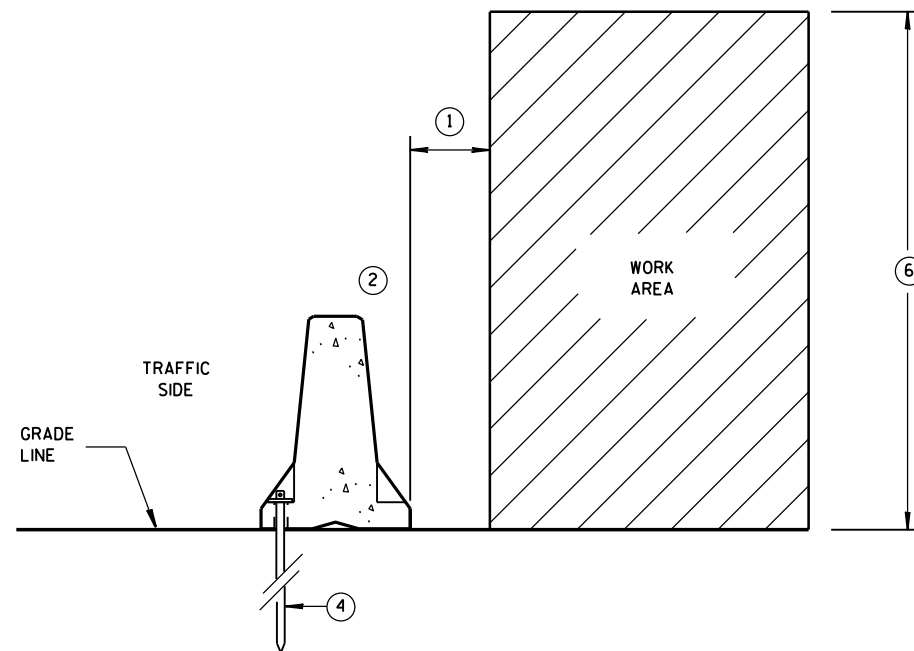


ASPHALT ANCHOR PIN

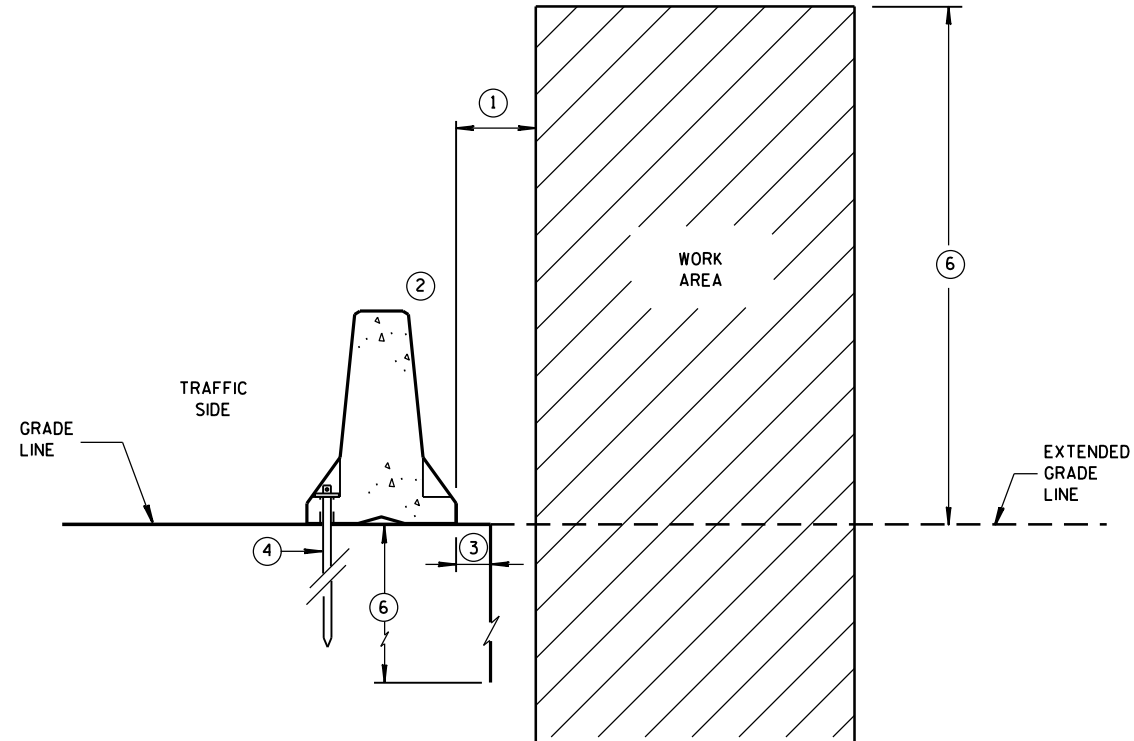
(ASTM A36 STEEL)

CONCRETE BARRIER
TEMPORARY PRECAST, 12'-6"

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



**ANCHORED BARRIER SPACE REQUIREMENTS
FOR HAZARDS EXTENDED
ABOVE THE GRADE LINE**

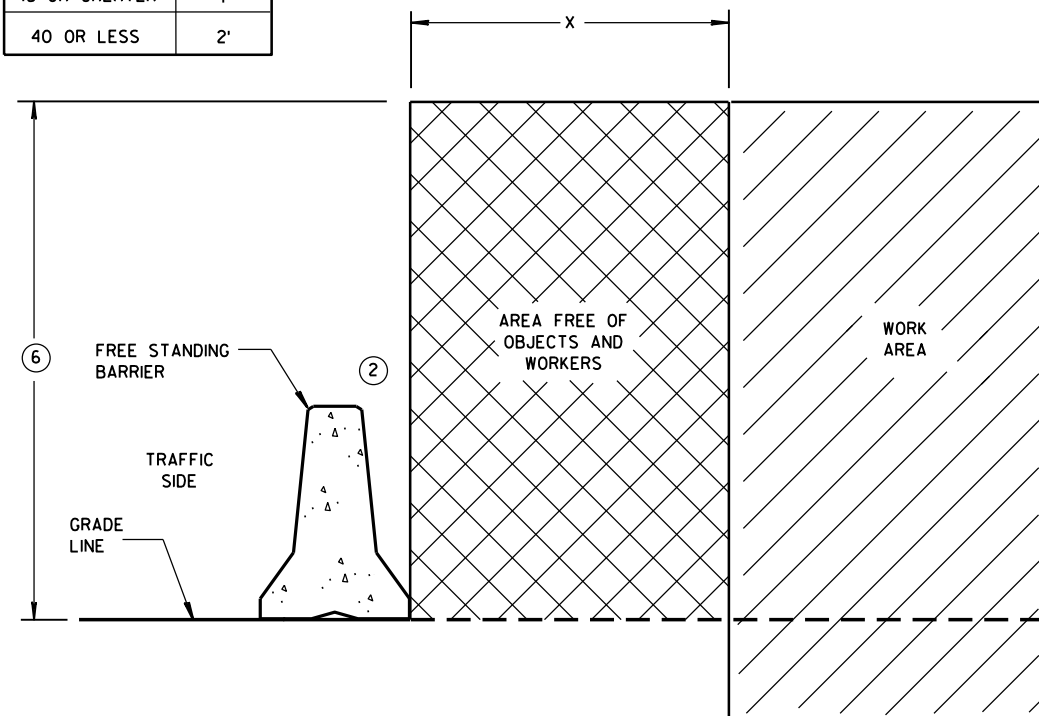


**ANCHORED BARRIER SPACE REQUIREMENTS
ON VERTICAL DROP OFFS**

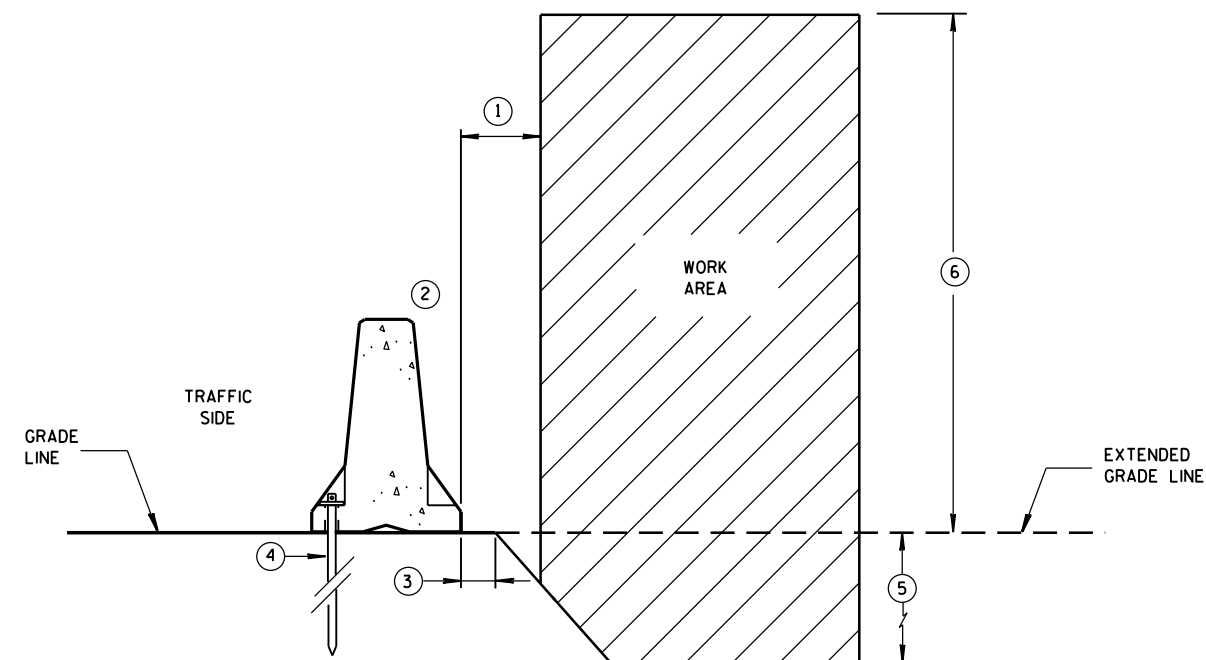
GENERAL NOTES

- ① WHEN OBJECTS EXTEND ABOVE THE GRADE, A MINIMUM OF 1 FOOT IS REQUIRED FROM BACK OF BARRIER TO OBJECT. SEE OTHER DETAILS FOR THE MINIMUM OFFSET FROM BACK OF BARRIER TO SLOPES OR VERTICAL DROPS.
- ② OBJECTS ARE NOT TO BE PLACED ON, MOUNTED TO, OR LEANED AGAINST THE BARRIER WITHOUT PERMISSION OF THE PROJECT ENGINEER.
- ③ SEE OTHER DETAIL ON SHEET "D" FOR SPACE REQUIREMENTS.
- ④ SEE BOLT THROUGH DECK, REMOVABLE ADHESIVE ANCHOR, OR A STAKE DOWN FOR ASPHALTIC SURFACE TREATMENT DETAILS. ASPHALTIC ANCHOR SHOWN.
- ⑤ DEPTH OF 3 FEET OR MORE.
- ⑥ Y = 6'-6".

POSTED SPEED MPH	X
45 OR GREATER	4'
40 OR LESS	2'



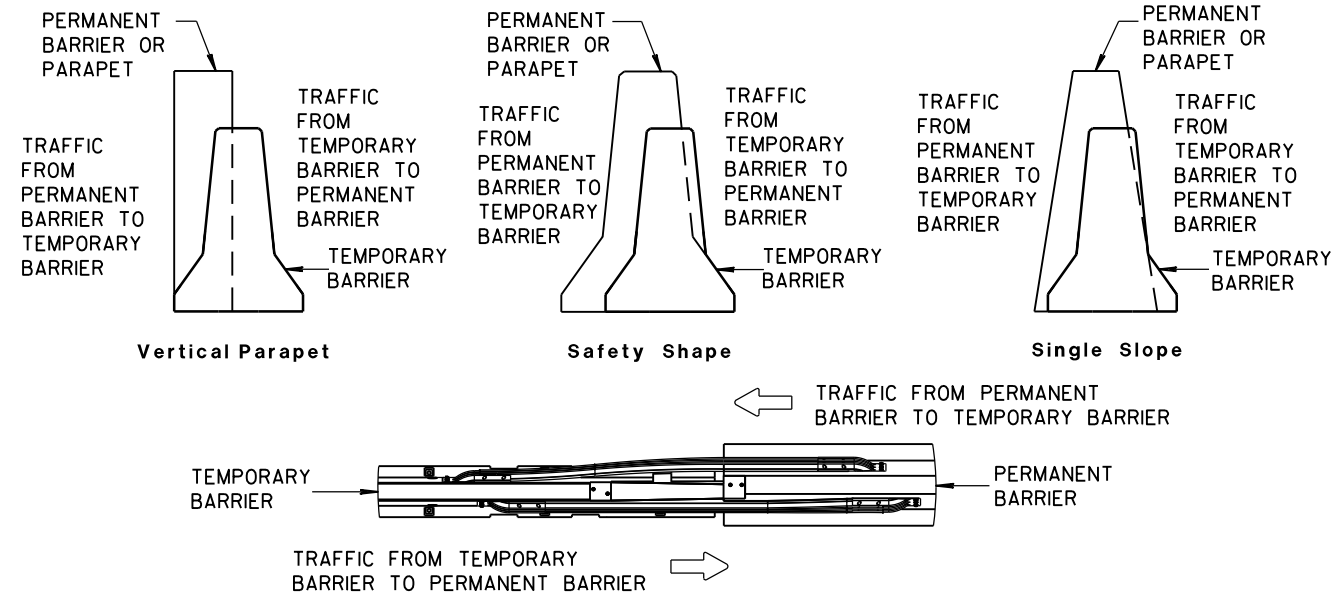
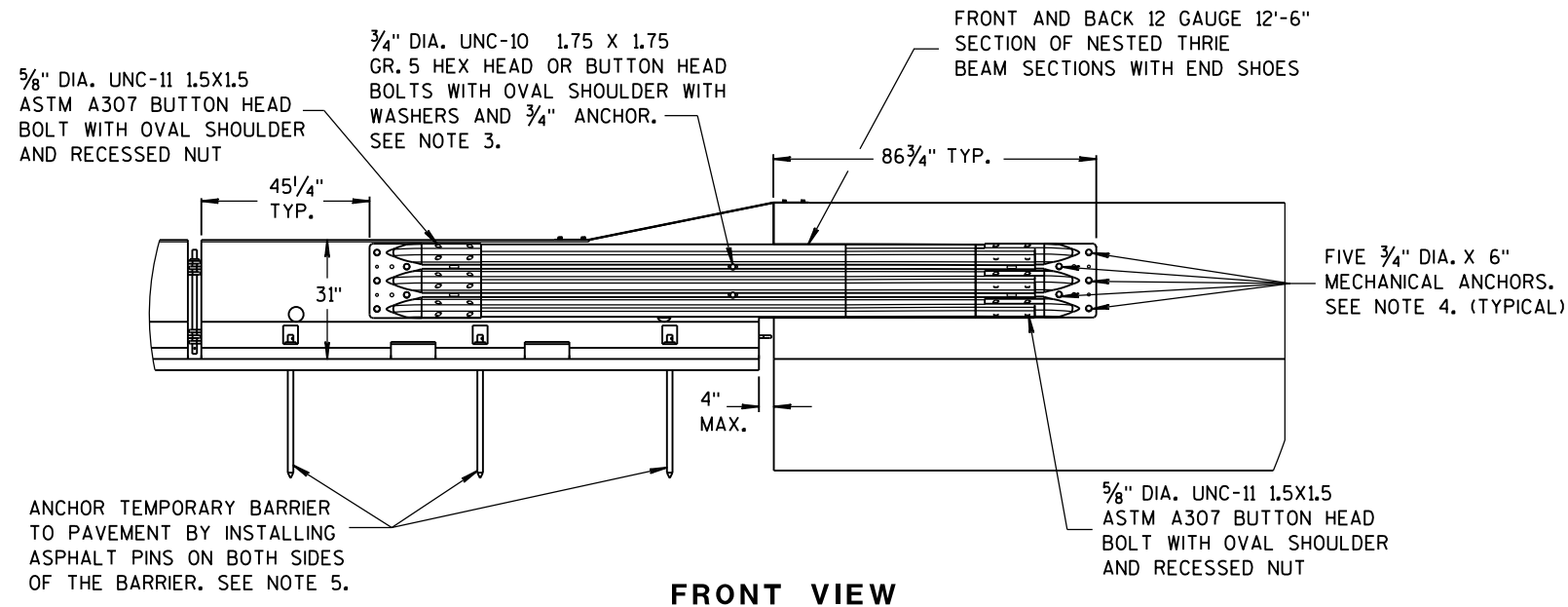
FREE STANDING BARRIER SPACE REQUIREMENTS



**ANCHORED BARRIER SPACE REQUIREMENTS
ON SLOPES**

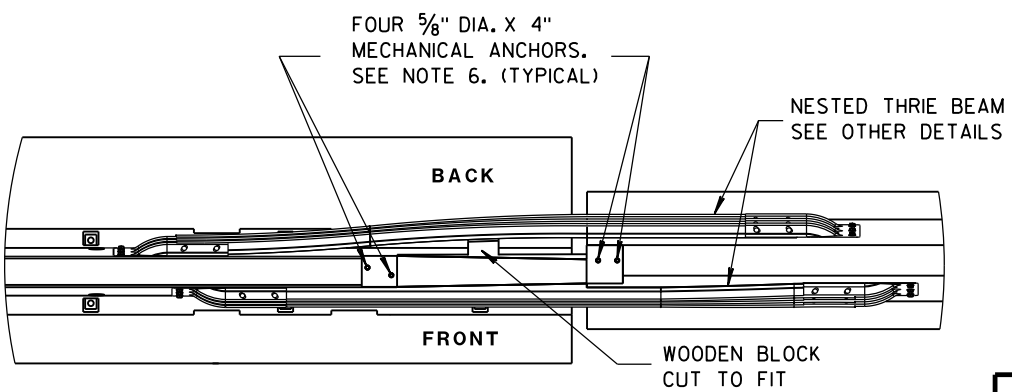
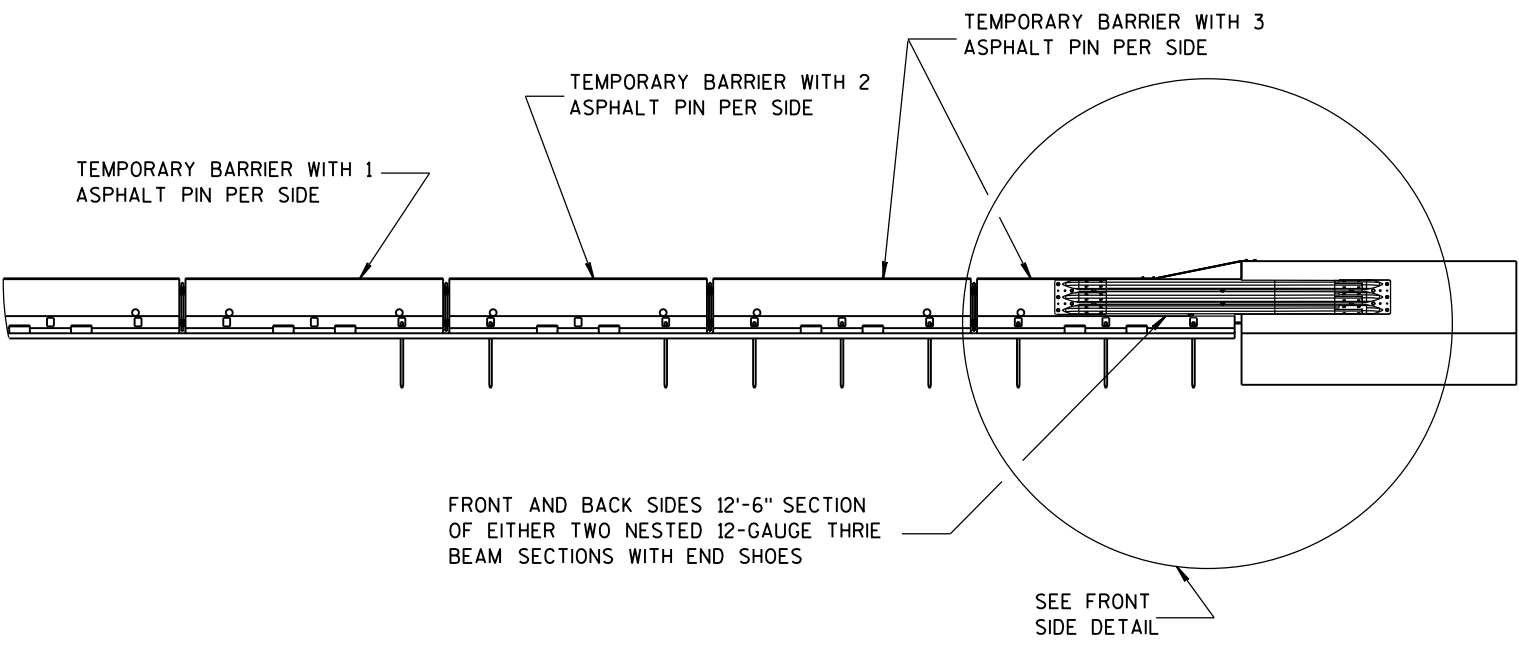
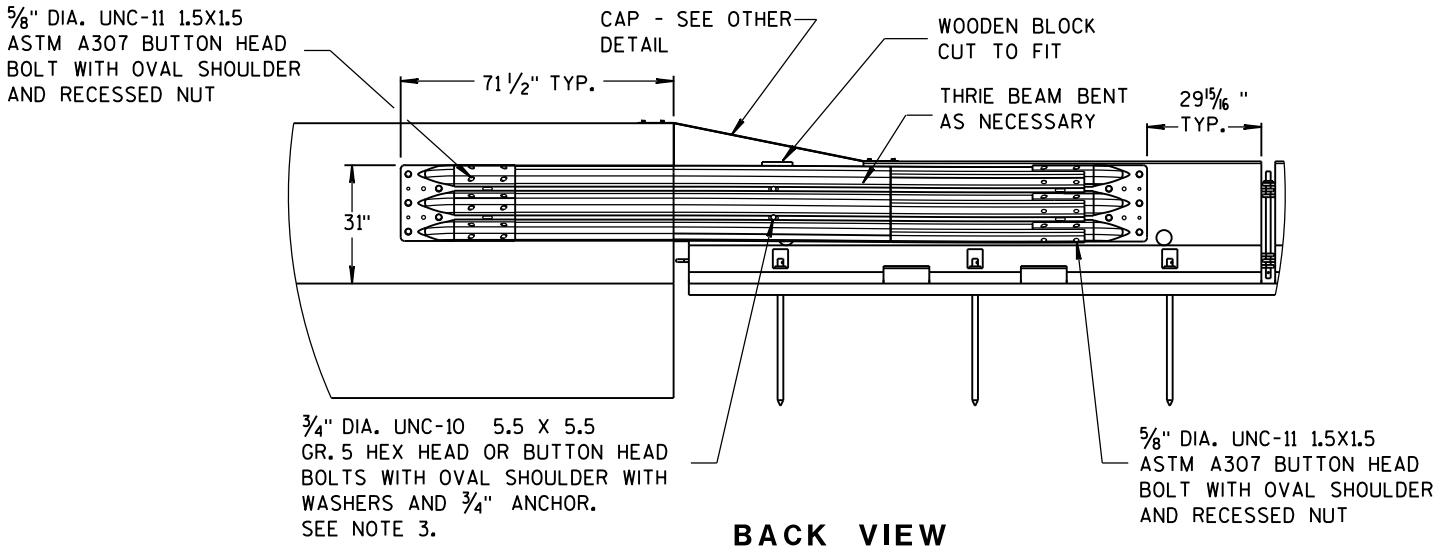
**CONCRETE BARRIER
TEMPORARY PRECAST, 12'-6"**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



TEMPORARY BARRIER PLACEMENT FOR BI-DIRECTIONAL TRANSITION TO TIED-DOWN SYSTEM

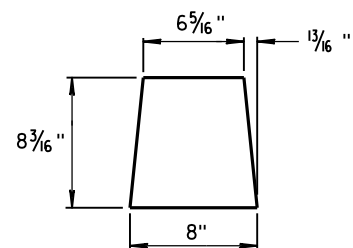
- NOTES**
- NESTED THRIE BEAM IS REQUIRED ON BOTH SIDES OF THE TEMPORARY BARRIER FOR ALL INSTALLATIONS REGARDLESS OF TRAFFIC.
- CAP END PLATE PLACED FLUSH WITH UPSTREAM END OF PERMANENT BARRIER OR PARAPET.
 - THRIE BEAM PIECES ARE OFFSET 15 1/4" TO PREVENT INTERFERENCE FROM THE ANCHORS ON OPPOSING SIDES.
 - MINIMUM MECHANICAL OR ADHESIVE ANCHOR STRENGTH REQUIREMENTS: ULTIMATE TENSILE LOAD 9.48 KIPS AND ULTIMATE SHEAR LOAD 10.48 KIPS.
 - MINIMUM MECHANICAL OR ADHESIVE ANCHOR STRENGTH REQUIREMENTS: ULTIMATE TENSILE LOAD 17.9 KIPS AND ULTIMATE SHEAR LOAD 21.96 KIPS.
 - MAY BE USED ON CONCRETE OR ASPHALT PAVEMENTS. ASPHALT OPTION SHOWN. FOR CONCRETE OPTION SEE OTHER DETAILS.
 - MINIMUM MECHANICAL OR ADHESIVE ANCHOR STRENGTH REQUIREMENTS: ULTIMATE TENSILE LOAD 12.14 KIPS AND ULTIMATE SHEAR LOAD 17.5 KIPS.



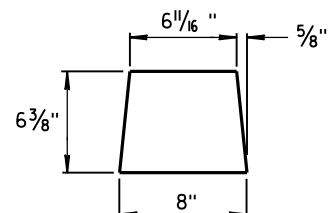
BI-DIRECTIONAL TRANSITION TO TIED-DOWN SYSTEM

**CONCRETE BARRIER
TEMPORARY PRECAST, 12'-6"**

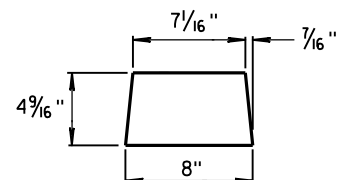
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



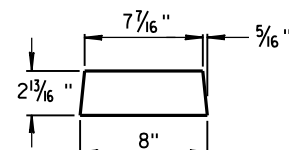
GUSSET 1



GUSSET 2

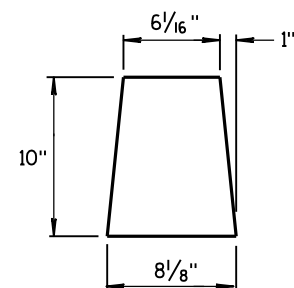


GUSSET 3

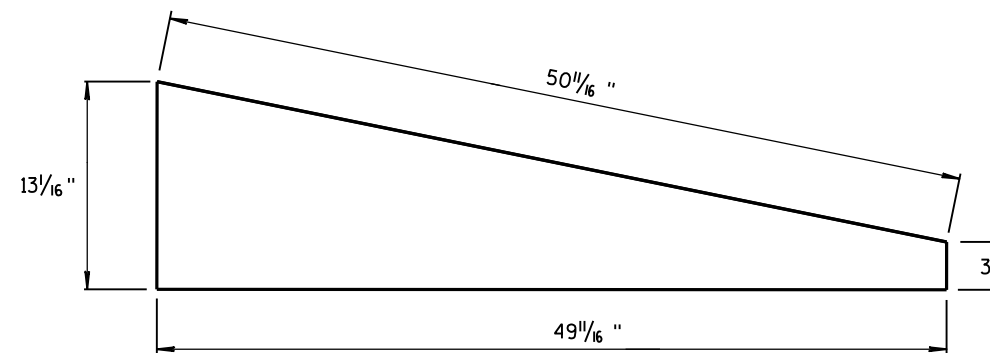


GUSSET 4

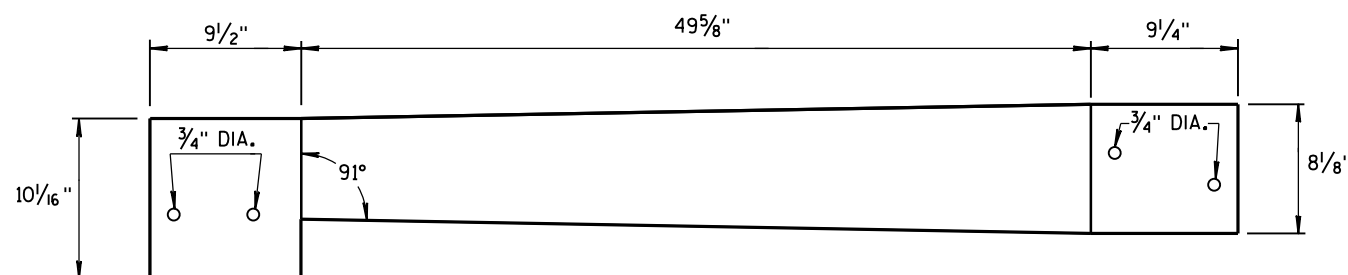
GUSSETS



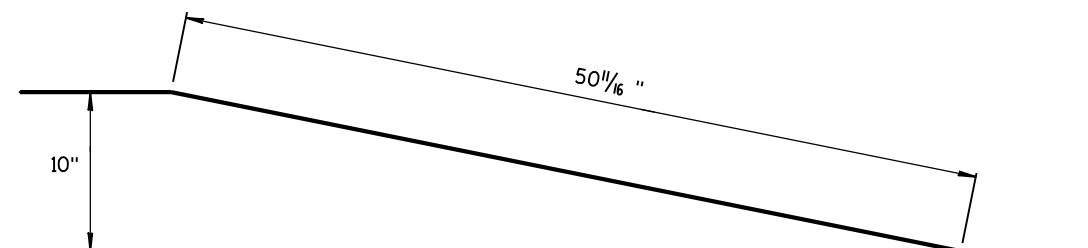
END PLATE



SIDE PLATE

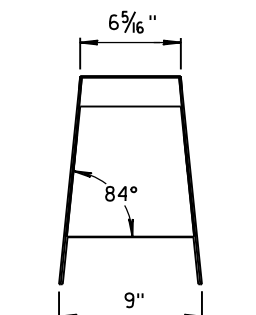


TOP PLATE

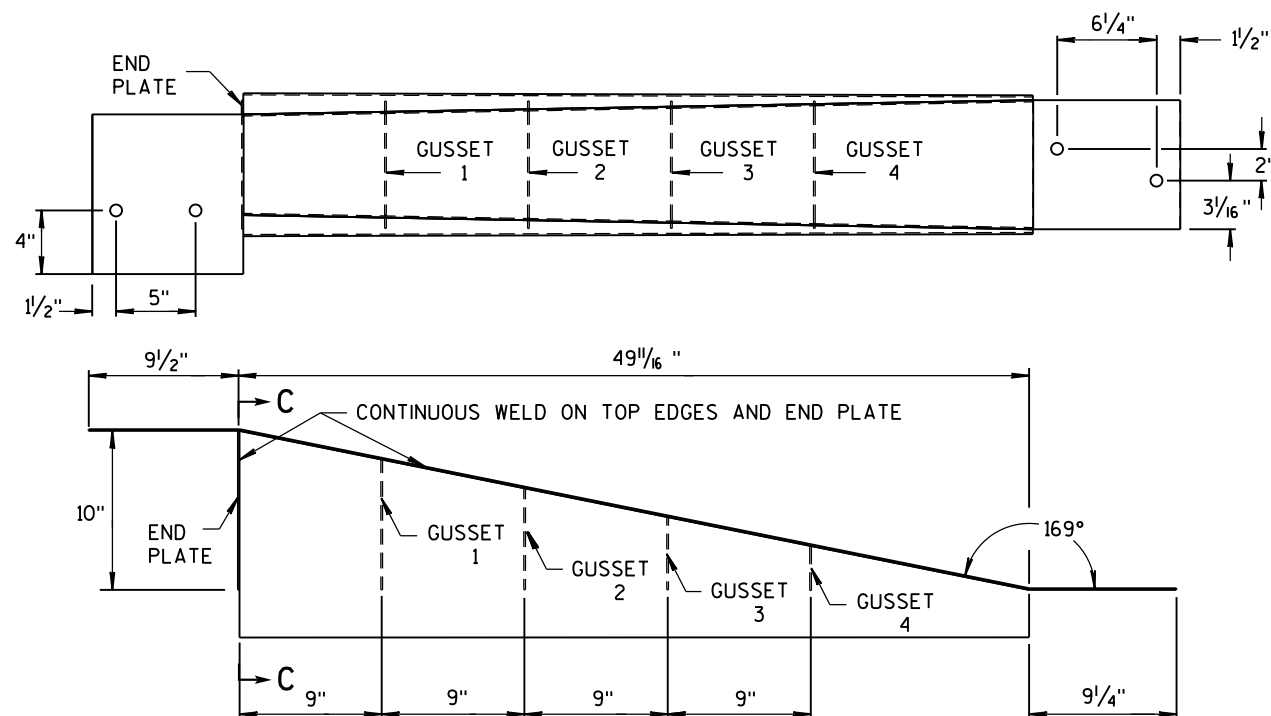


**SIDE, TOP AND END PLATES FOR CAP
FROM TEMPORARY CONCRETE BARRIER
TO 42" PERMANENT CONCRETE BARRIER**

SIDE PLATES, TOP PLATE, END PLATE AND GUSSETS ARE 12 GAUGE ASTM A36 GALVANIZED STEEL.



SECTION C-C



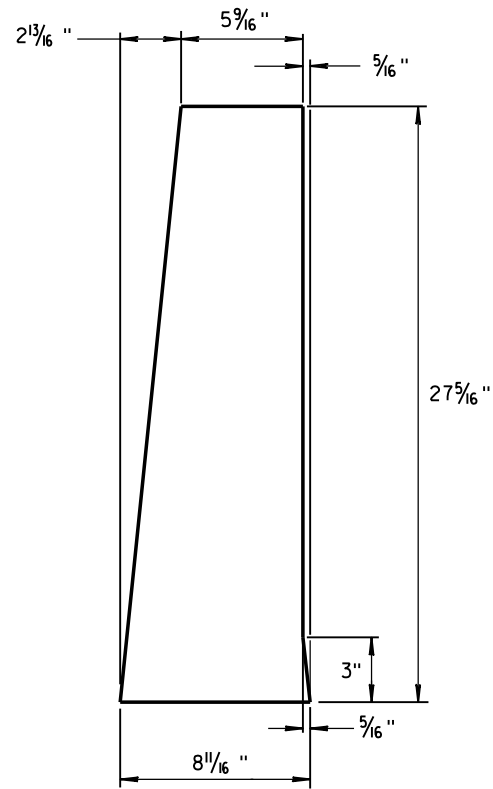
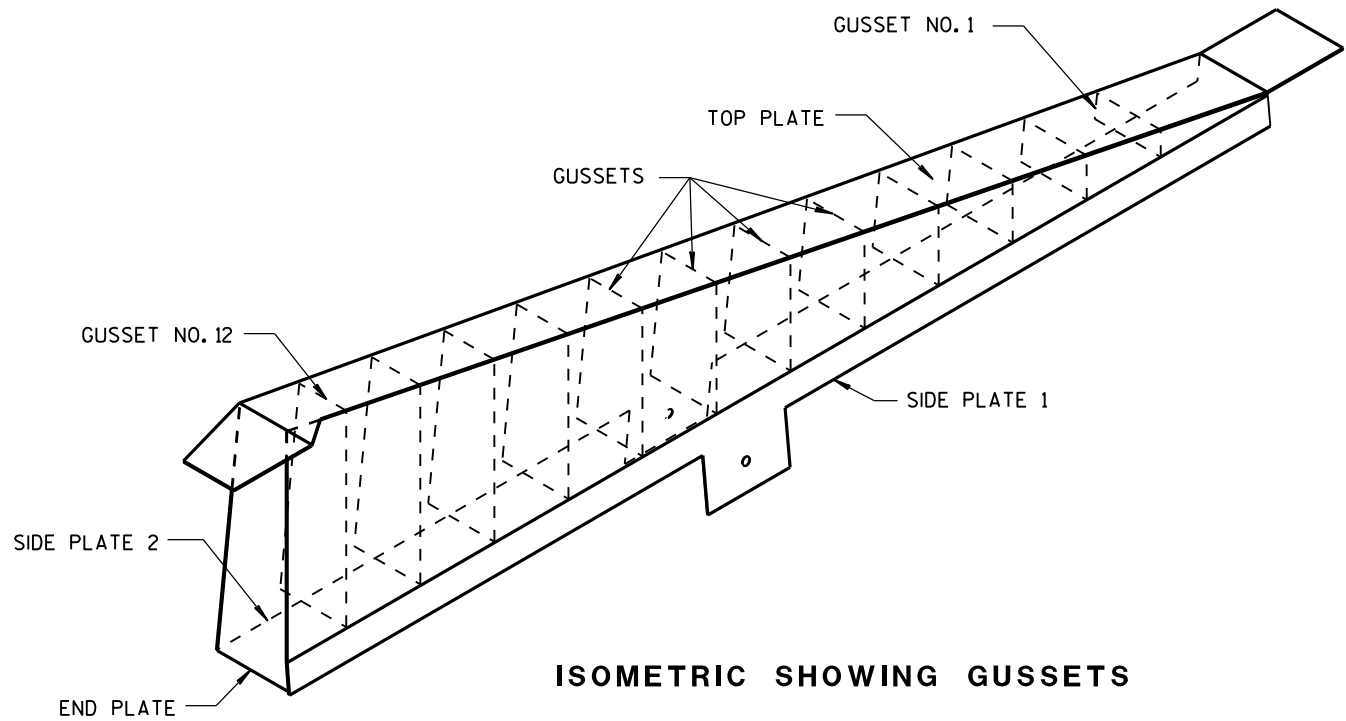
NOTES

1. FOUR GUSSETS AND END PLATE ARE STITCH WELDED ON THREE SIDES.
2. TWO TRIANGULAR SIDE PLATES ARE STITCH WELDED TO TOP PLATE, END PLATE, AND GUSSETS.

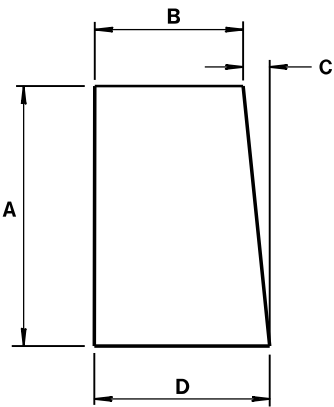
**CAP DETAILS FOR TEMPORARY CONCRETE
BARRIER TO 42" PERMANENT CONCRETE BARRIER**

**CONCRETE BARRIER
TEMPORARY PRECAST, 12'-6"**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



END PLATE
1/8" STEEL PLATE

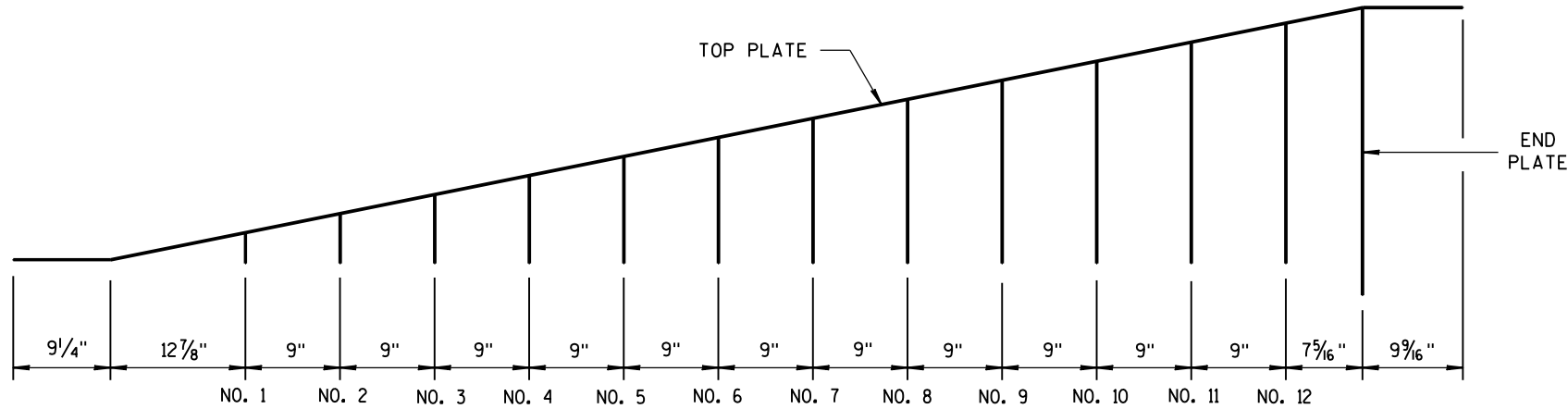


GUSSETS 1 - 12
ALL GUSSETS 1/8" STEEL PLATE

GUSSET DIMENSIONS				
GUSSET NO.	A	B	C	D
1	2 7/8"	7 3/4"	1/4"	8
2	4 1/16 "	7 9/16 "	1/2"	8
3	6 1/2"	7 3/8 "	1 1/16 "	8 1/16 "
4	8 5/16 "	7 3/16 "	7/8"	8 1/16 "
5	10 1/8 "	7"	1 1/16 "	8 1/16 "
6	11 5/16 "	6 13/16 "	1 1/4"	8 1/16 "
7	13 3/4"	6 5/8 "	1 7/16 "	8 1/16 "
8	15 9/16 "	6 7/16 "	1 9/16 "	8 1/16 "
9	17 3/8"	6 1/4"	1 13/16 "	8 1/16 "
10	19 3/16 "	6 1/16 "	1 15/16 "	8 1/16 "
11	21"	5 7/8 "	2 3/16 "	8 1/16 "
12	22 13/16 "	5 11/16 "	2 5/16 "	8 1/16 "

SIDE PLATES, TOP PLATE, END PLATE AND GUSSETS ARE 12 GAUGE ASTM A36 STEEL AND GALVANIZED.

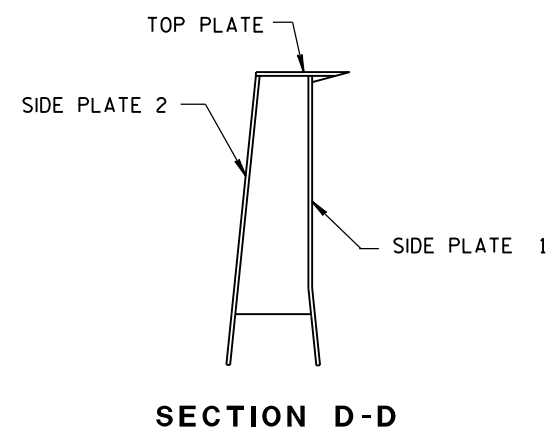
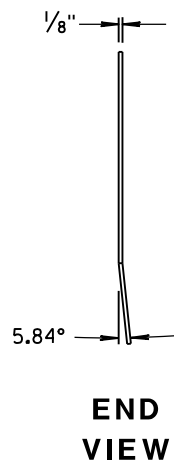
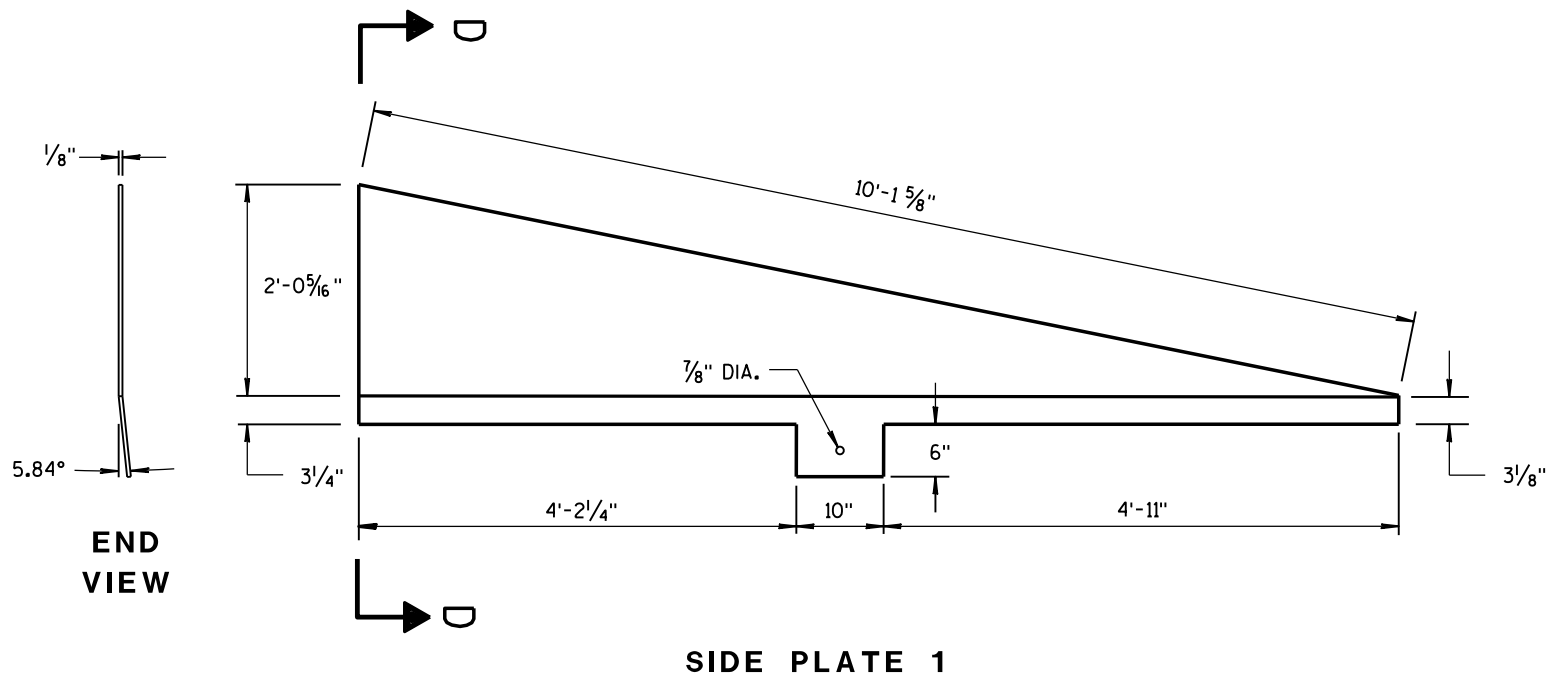
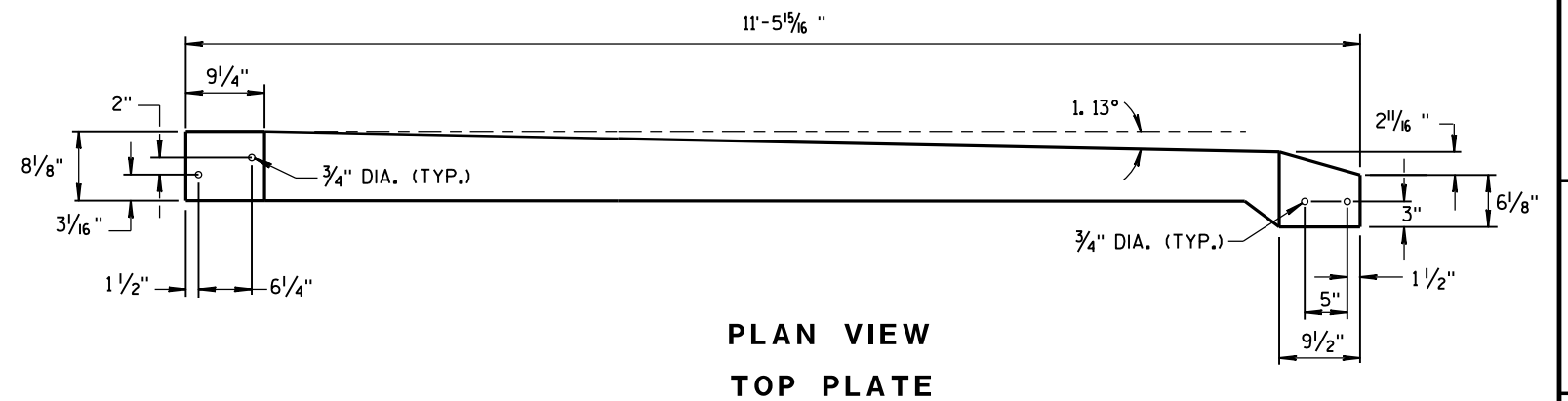
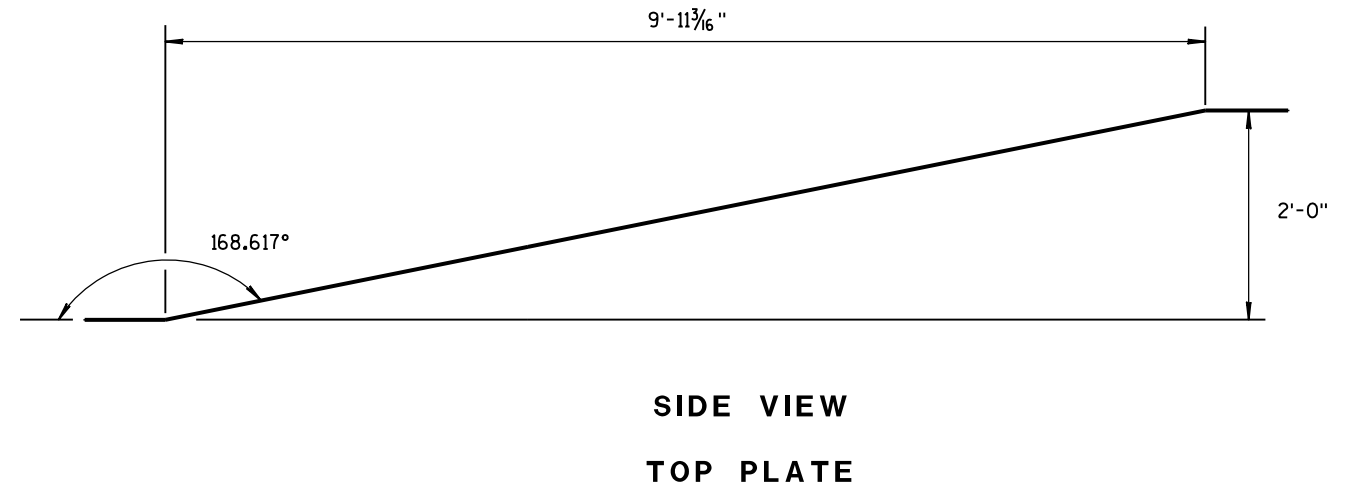
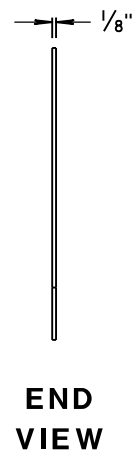
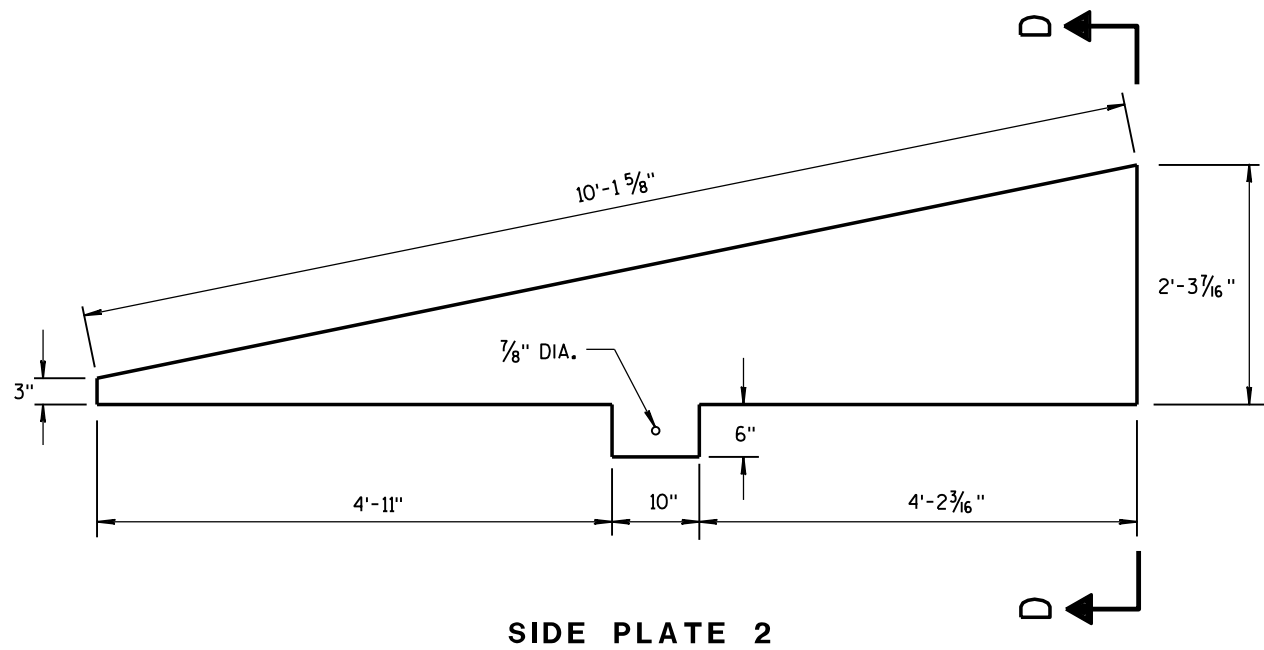
GUSSETS AND END PLATE ARE STITCH WELDED ON 3 SIDES. TWO TRIANGULAR SIDE PLATES ARE STITCH WELDED TO TOP PLATE, END PLATE AND GUSSETS.



CAP DETAILS FOR TEMPORARY CONCRETE
BARRIER TO 56" PERMANENT CONCRETE BARRIER

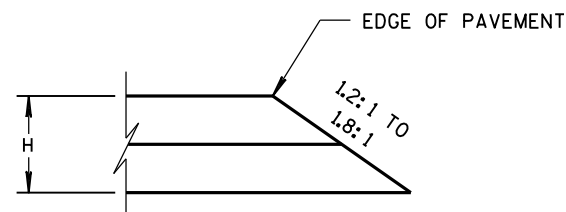
CONCRETE BARRIER
TEMPORARY PRECAST, 12'-6"

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

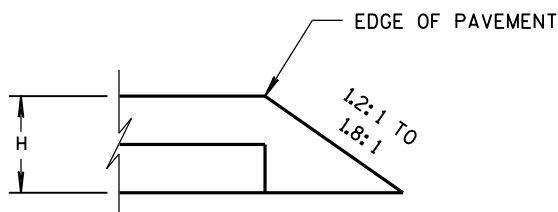


**CAP DETAILS FOR TEMPORARY CONCRETE
BARRIER TO 56" PERMANENT CONCRETE BARRIER**

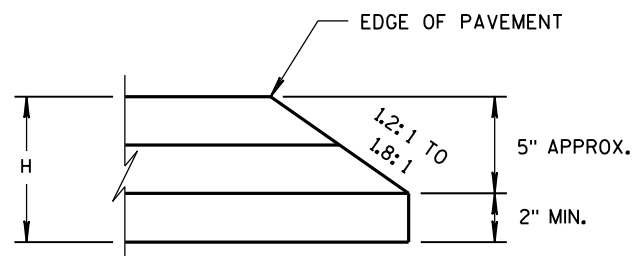
CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED June 2017 DATE	/S/ Rodney Taylor ROADWAY STANDARD DEVELOPMENT UNIT SUPERVISOR
FHWA	



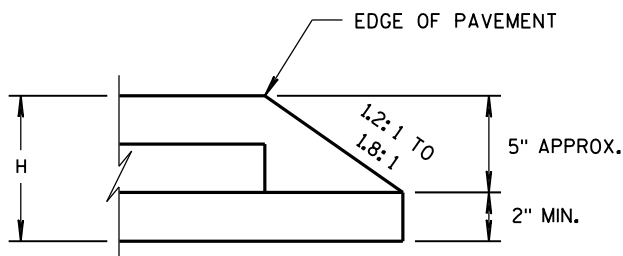
CONSTRUCTED WITH FINAL TWO LAYERS
FOR H 5" OR LESS



CONSTRUCTED WITH FINAL LAYER
FOR H 5" OR LESS

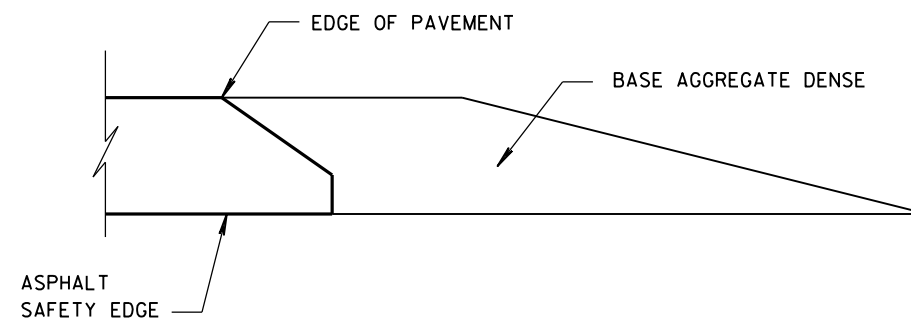


CONSTRUCTED WITH FINAL TWO LAYERS
FOR H GREATER THAN 5"



CONSTRUCTED WITH FINAL LAYER
FOR H GREATER THAN 5"

HMA PAVEMENT AND HMA OVERLAYS



FINISHED SHOULDER AGGREGATE PLACEMENT

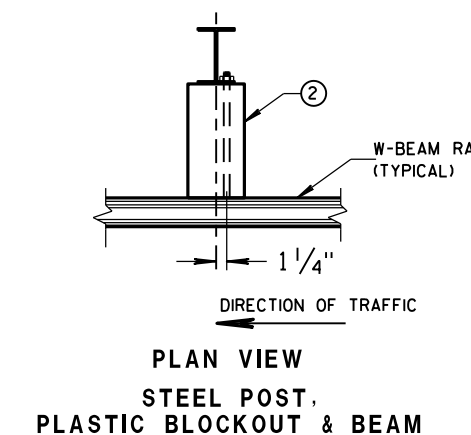
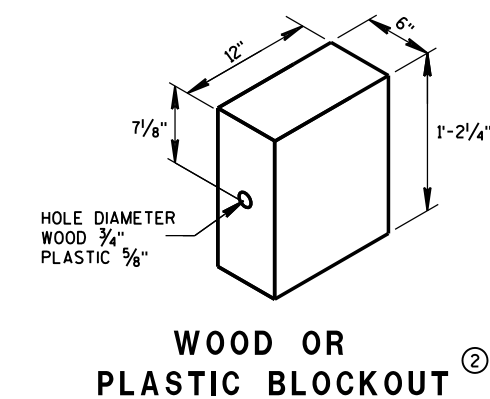
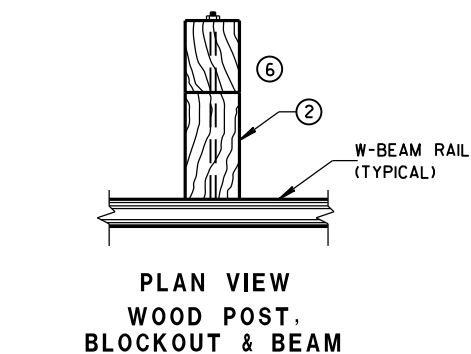
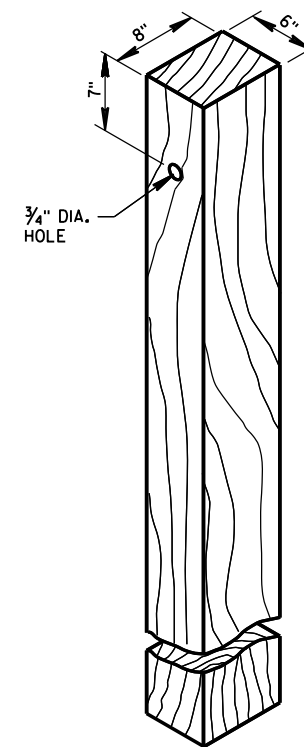
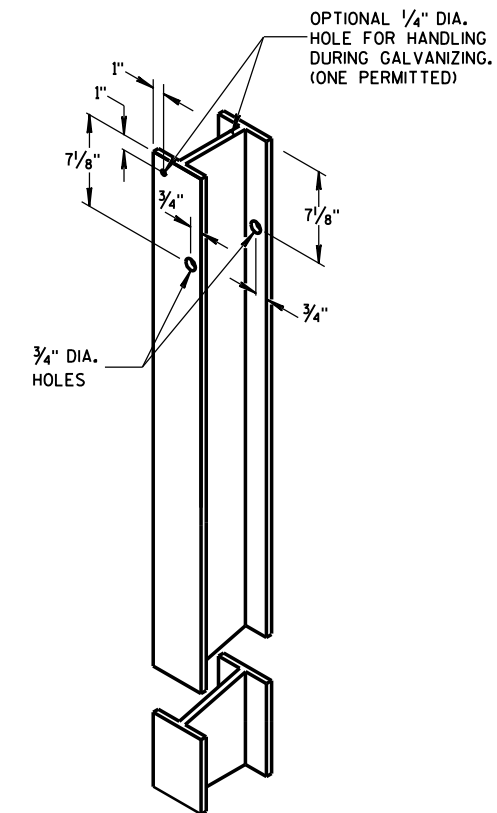
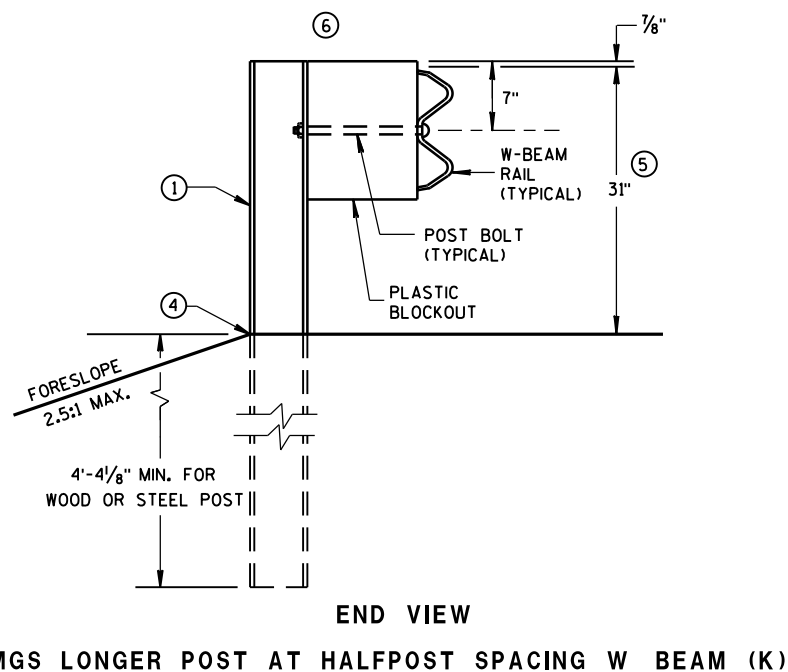
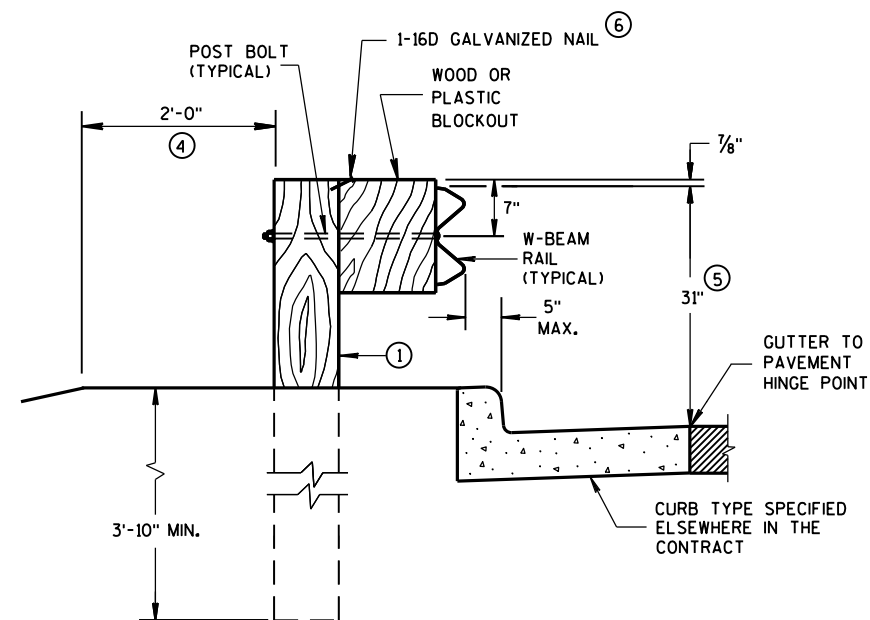
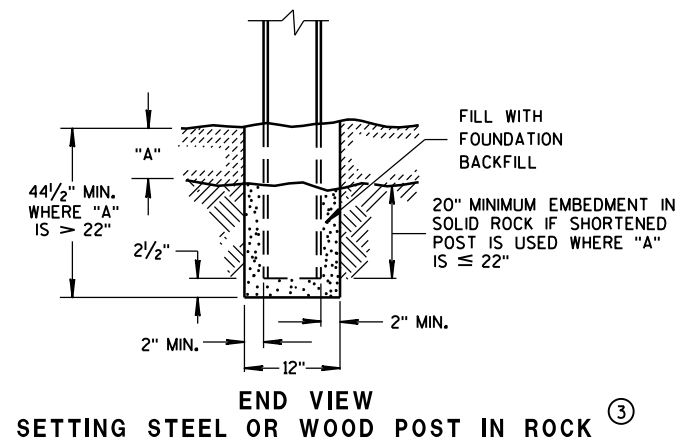
SAFETY EDGE_{SM}

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
11/30/2012
DATE
FHWA

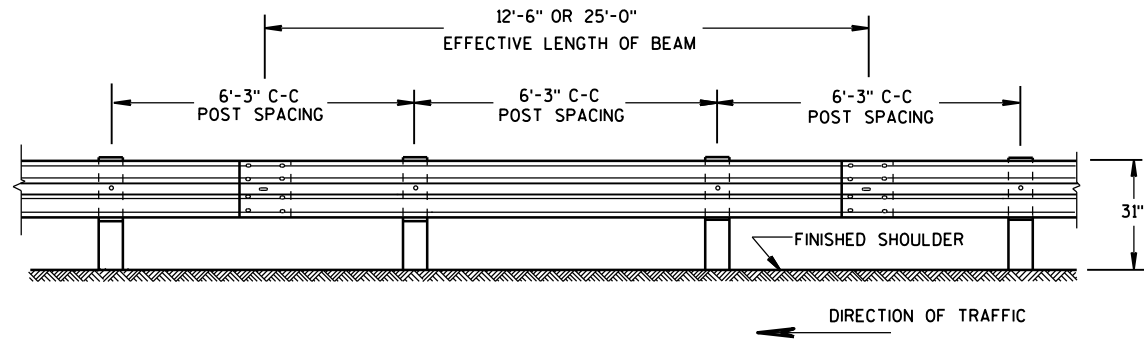
/s/ Jerry H. Zogg
ROADWAY STANDARDS DEVELOPMENT
ENGINEER

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



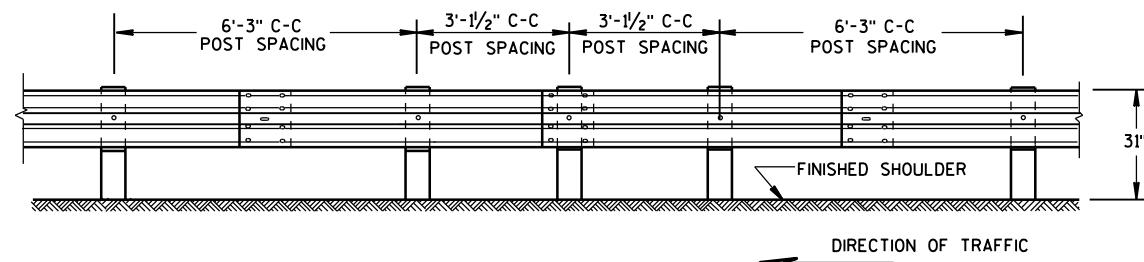
**MIDWEST GUARDRAIL SYSTEM
(MGS) GUARDRAIL**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



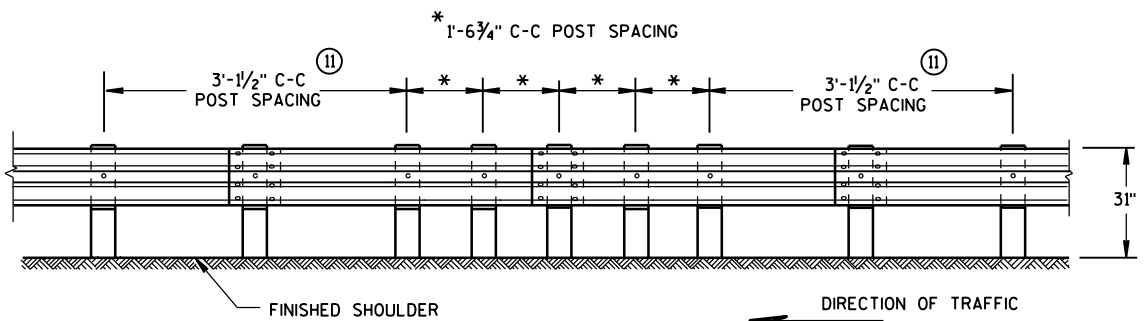
FRONT VIEW

POST SPACING STANDARD INSTALLATION



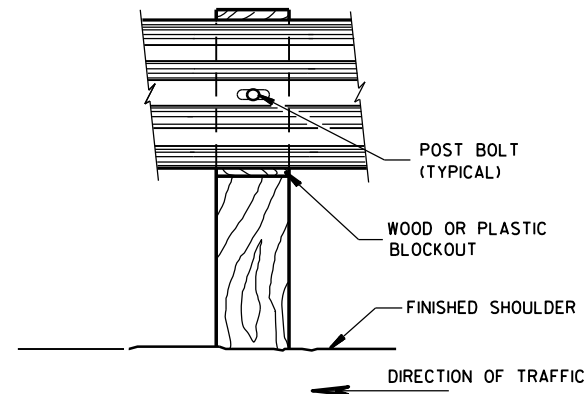
FRONT VIEW

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

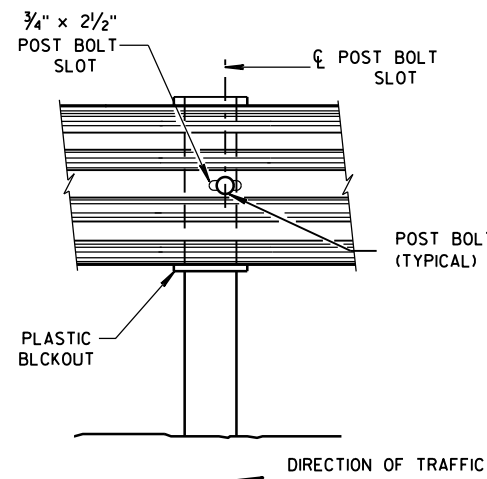


FRONT VIEW

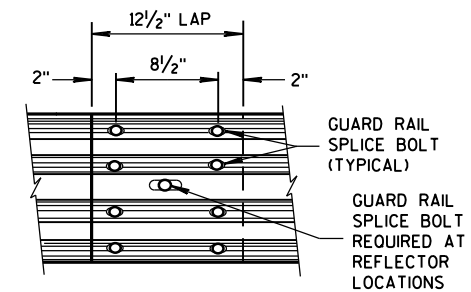
QUARTER POST SPACING (QS)



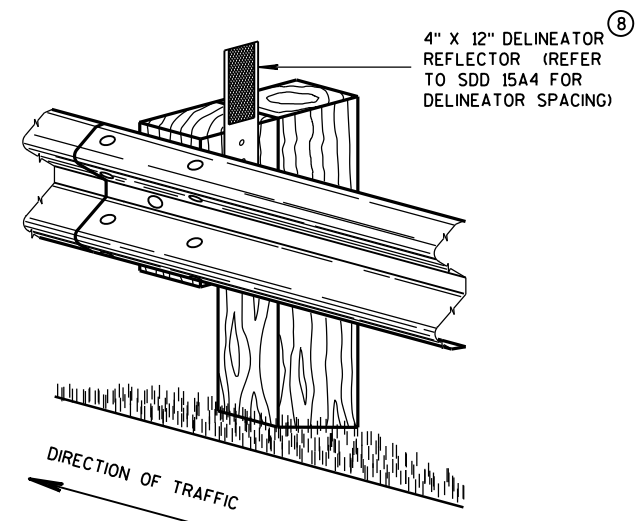
FRONT VIEW AT WOOD POST



FRONT VIEW AT STEEL POST



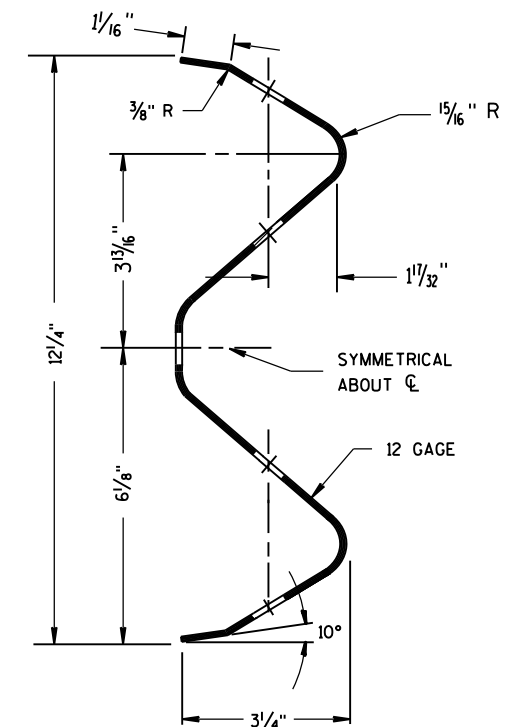
FRONT VIEW
MID-SPAN BEAM SPLICE



ONE SIDED REFLECTOR DETAIL AND TYPICAL INSTALLATION

GENERAL NOTES

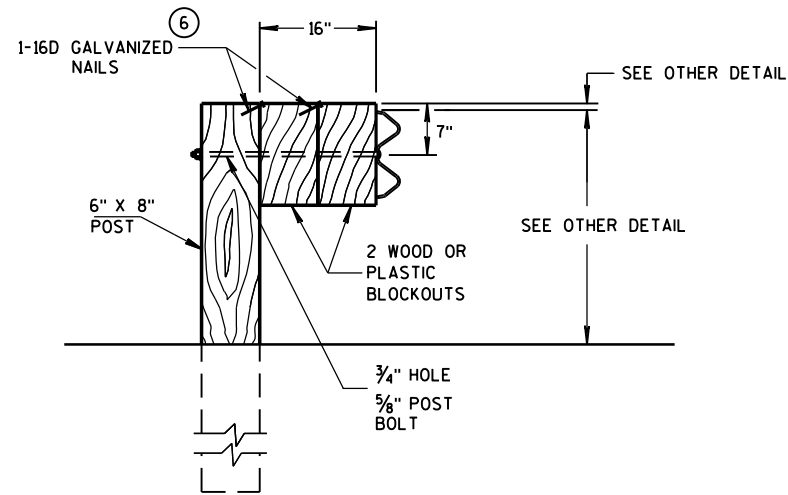
- ⑧ DO NOT INSTALL REFLECTORS ON THE FIRST 50 FEET OF THE APPROACH END OF THE ENERGY ABSORBING TERMINAL. RAIL SPLICE LOCATIONS ARE THE ONLY ACCEPTABLE LOCATIONS FOR REFLECTORS.
 - ⑪ 25 FEET OF HALF POST SPACING IS REQUIRED ON APPROACH AND DEPARTURE ENDS OF QUARTER POST SPACING.
- POST BOLTS ARE A 5/8" DIAMETER ASTM A307 GUARDRAIL BOLT. A POST BOLT REQUIRES 5/8" DIAMETER A563A DOUBLE RECESSED (DR) HEAVY HEX NUT AND 5/8" DIAMETER F844 FLAT WASHER. POST BOLTS MAY BE LONGER IF MULTIPLE BLOCKOUTS ARE BEING USED.
- GUARD RAIL SPLICE BOLTS ARE A 5/8" DIAMETER ASTM A307 GUARDRAIL HEAD BOLT. A GUARDRAIL SPLICE BOLT REQUIRES 5/8" DIAMETER A563A DOUBLE RECESSED (DR) HEAVY HEX NUT.



SECTION THRU W-BEAM RAIL

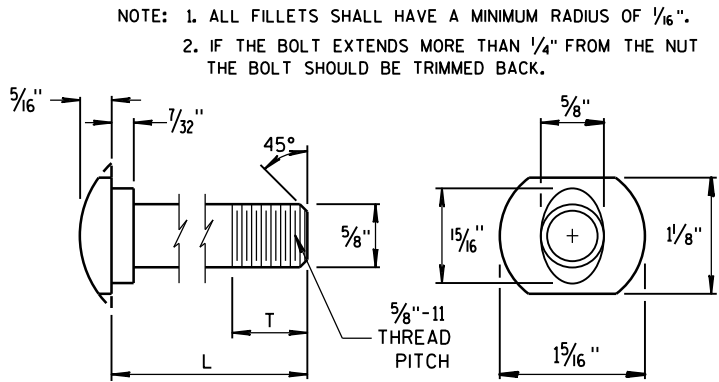
MIDWEST GUARDRAIL SYSTEM
(MGS) GUARDRAIL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

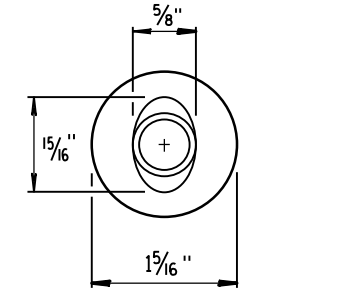


DETAIL FOR 16" BLOCKOUT DEPTH

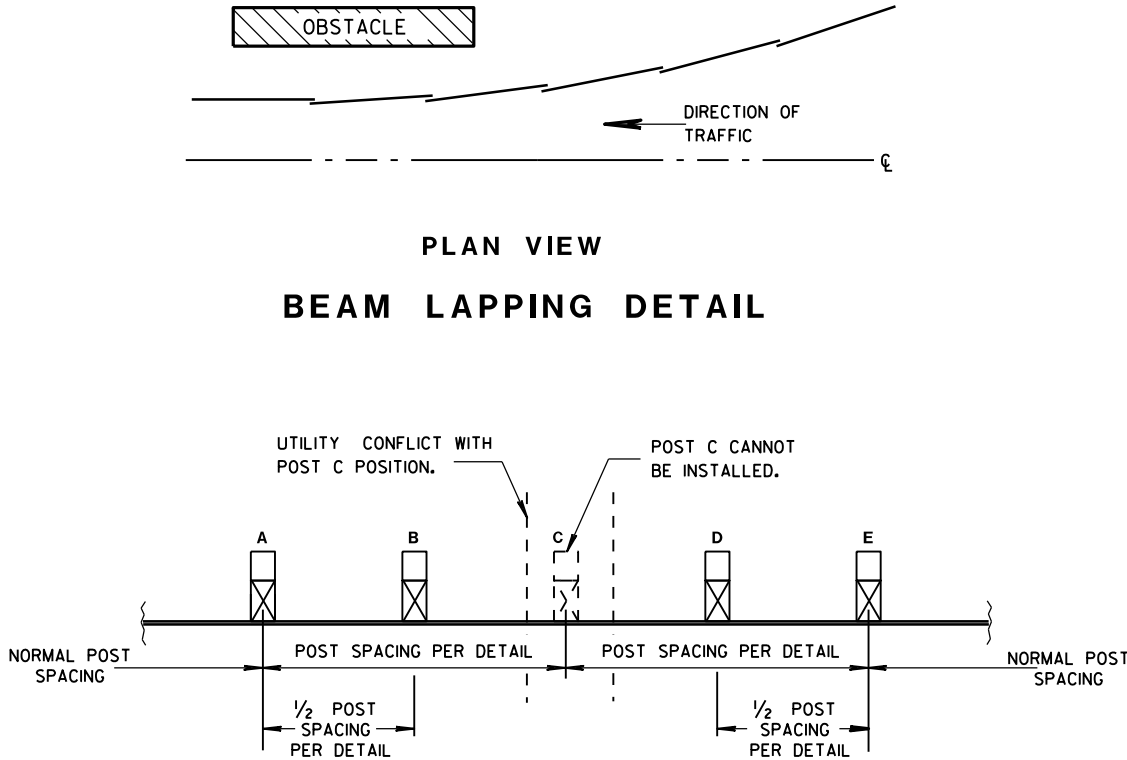
IT IS ACCEPTABLE TO USE BLOCKOUTS UP TO 16" DEEP TO INCREASE THE POST OFFSET TO AVOID UNDERGROUND OBSTACLES. THERE IS NO LIMIT TO THE NUMBER OF POSTS THAT CAN HAVE ADDITIONAL BLOCKOUTS UP TO 16" DEEP.



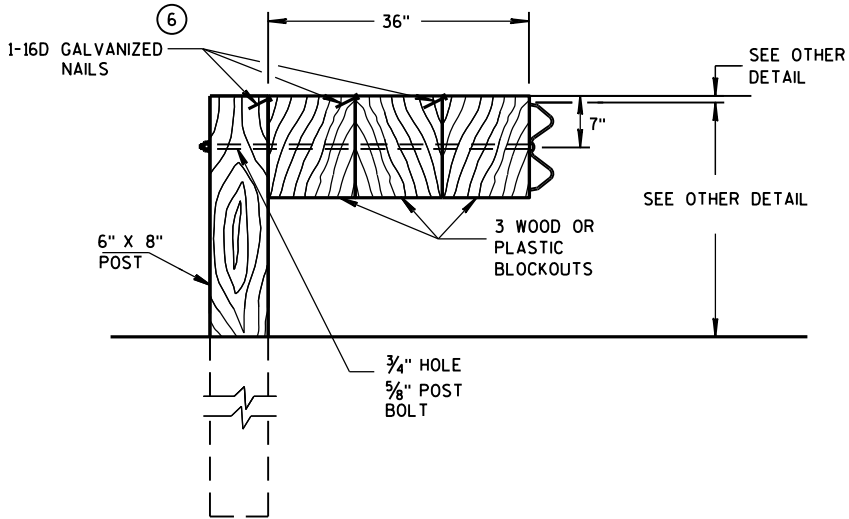
POST BOLT TABLE



ALTERNATE BOLT HEAD



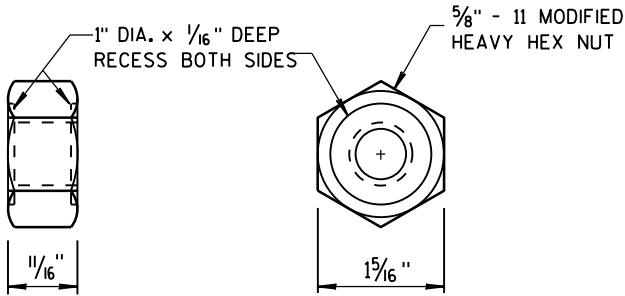
POST DRIVING FOR CONTINUOUS UNDERGROUND OBSTRUCTION



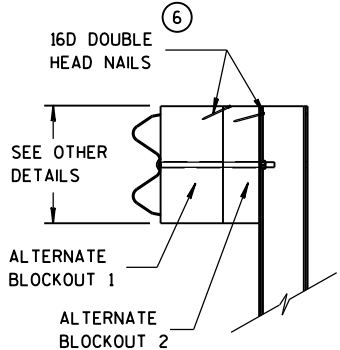
DETAIL FOR 36" BLOCKOUT DEPTH

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

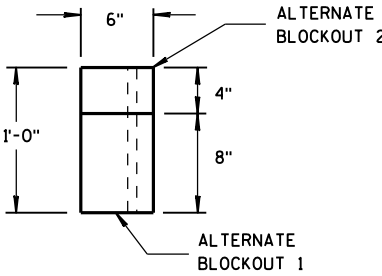
DO NOT USE 16" OR 36" BLOCKOUTS IF IT CAUSES THE POST TO BE DRIVEN BEYOND SHOULDER HINGE POINT OR CAUSES A FIXED OBJECT TO BE WITHIN THE DEFLECTION DISTANCE OF THE BARRIER.



POST BOLT, SPLICE BOLT AND RECESS NUT



SIDE VIEW

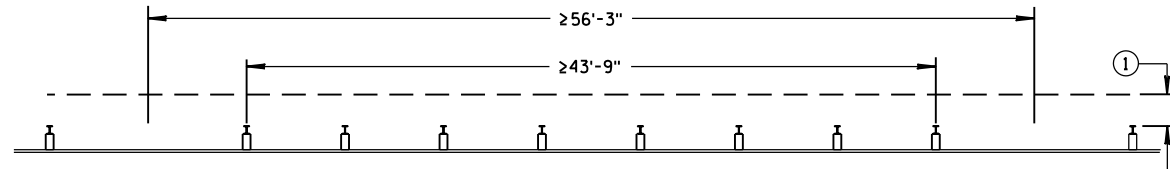


TOP VIEW

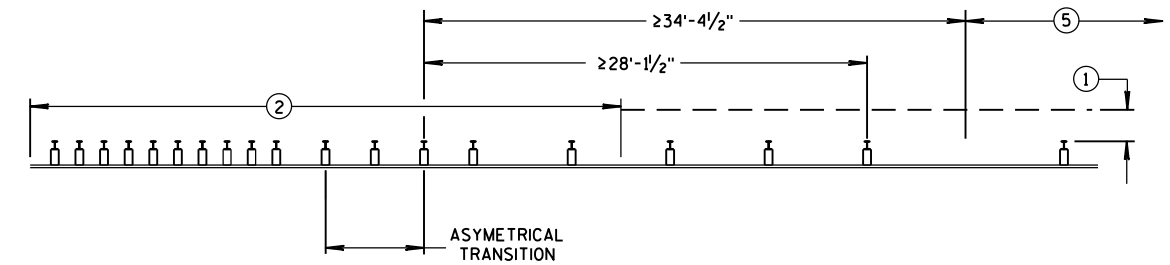
ALTERNATE WOOD BLOCKOUT DETAIL

MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL

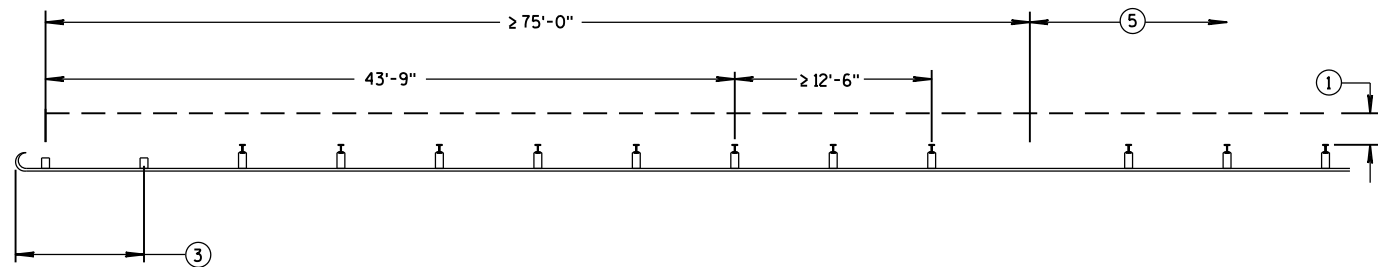
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



MISSING POST IN NORMAL BEAM GUARD RUN

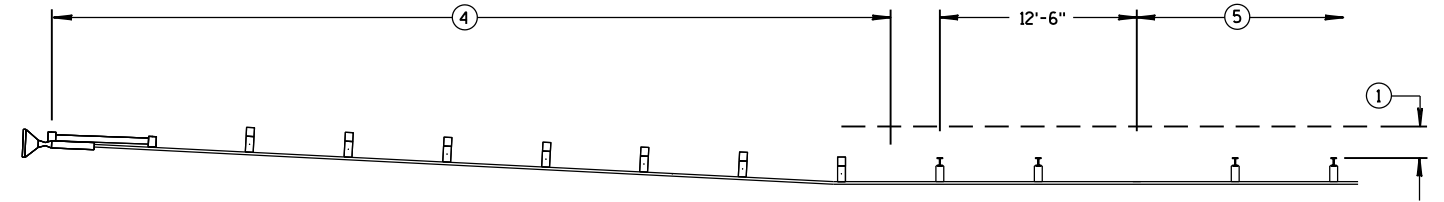


MISSING POST NEAR APPROACH THRIE BEAM TRANSITION

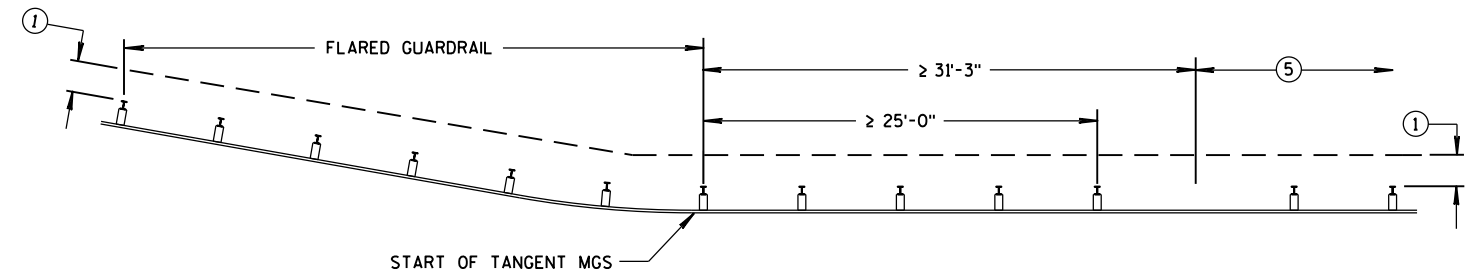


MISSING POST IN NORMAL BEAM GUARD RUN
NEAR TYPE 2 TERMINAL

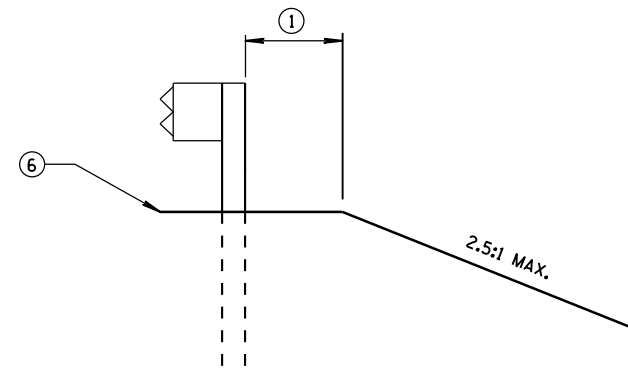
- ① MINIMUM OF 2 FEET OF GRADING BEHIND POST.
- ② SEE SDD 14B45 FOR MORE DETAILS.
- ③ SEE SDD 14B47 FOR MORE DETAILS.
- ④ SEE SDD 14B44 FOR MORE DETAILS.
- ⑤ SEE MISSING POST IN NORMAL BEAM GUARD RUN FOR DISTANCE TO NEXT MISSING POST AND AREA FOR WELL DRAINED, COMPACTED SOILS.
- ⑥ SEE PLAN FOR SHOULDER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



MISSING POST IN NORMAL BEAM GUARD RUN NEAR EAT



MISSING POST IN NORMAL BEAM GUARD RUN
NEAR FLARED BEAM GUARD



CROSS SECTION VIEW

MIDWEST GUARDRAIL SYSTEM
(MGS) GUARDRAIL

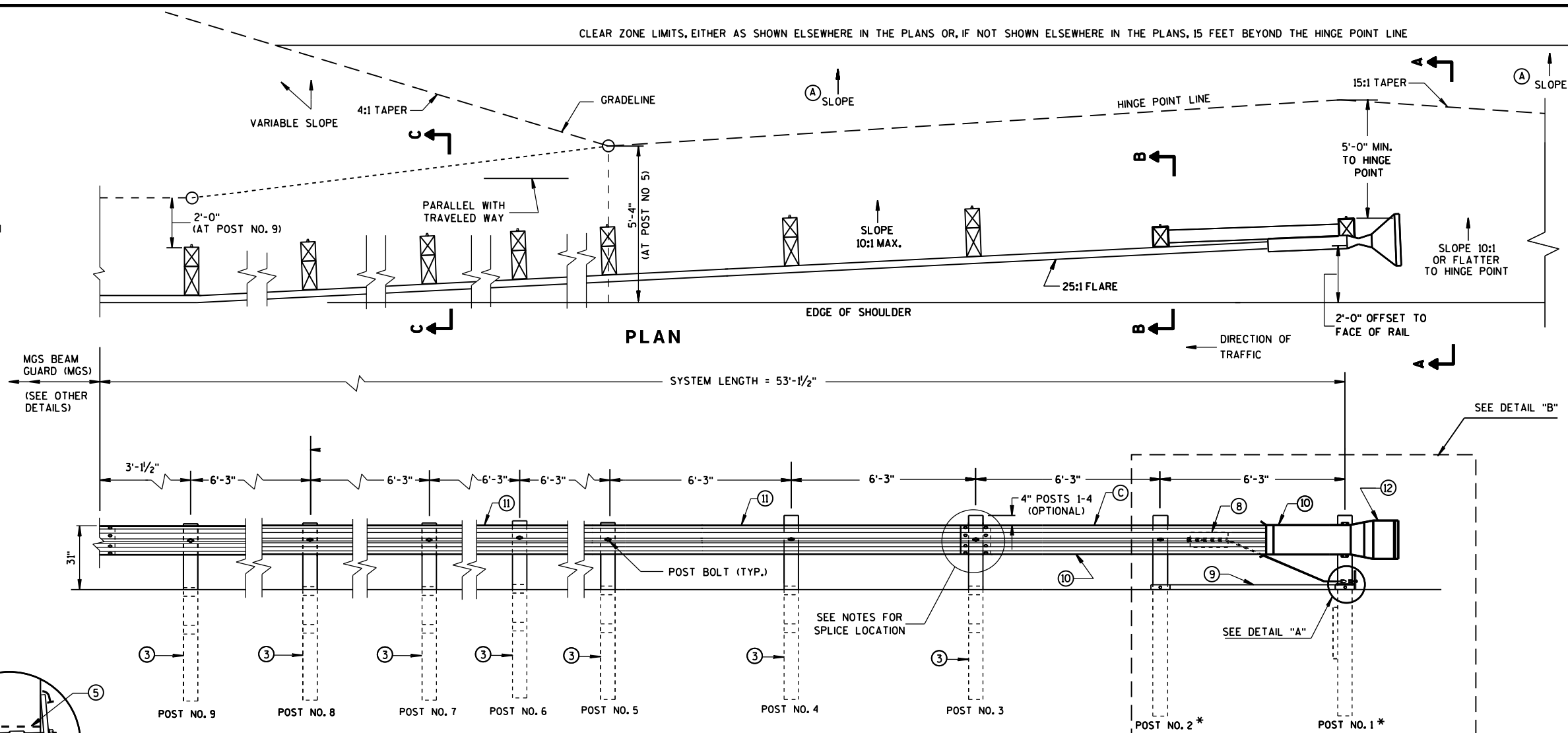
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

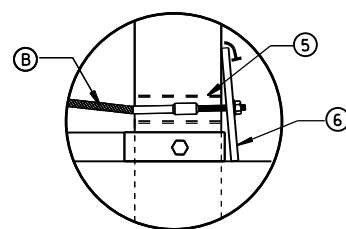
6

- S.D.D. 14 B 44-3a**

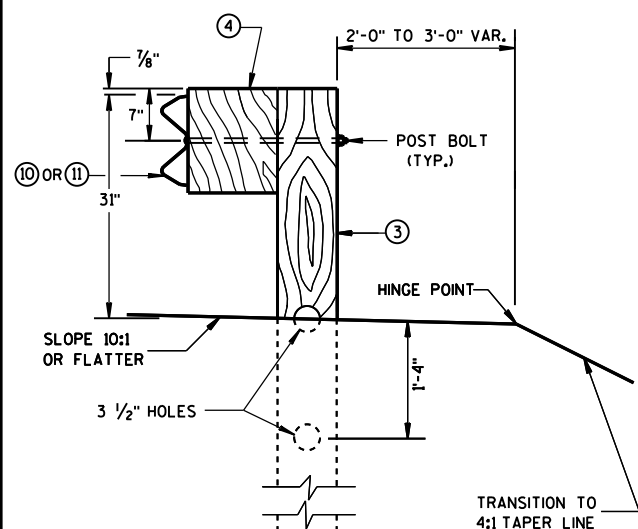
THE CENTER OF THE UPPER 3 1/2" DIAMETER HOLE ON POST NUMBER 3 THROUGH POST 9 IS TO BE FLUSH WITH THE GROUND LINE UP TO A MAXIMUM OF 2" ABOVE GROUND LINE.



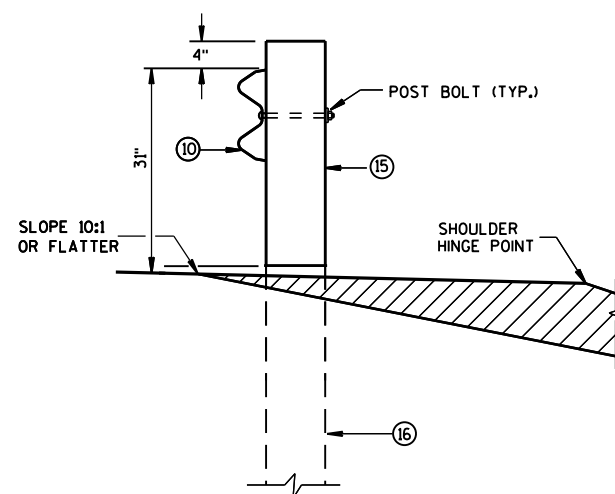
ELEVATION



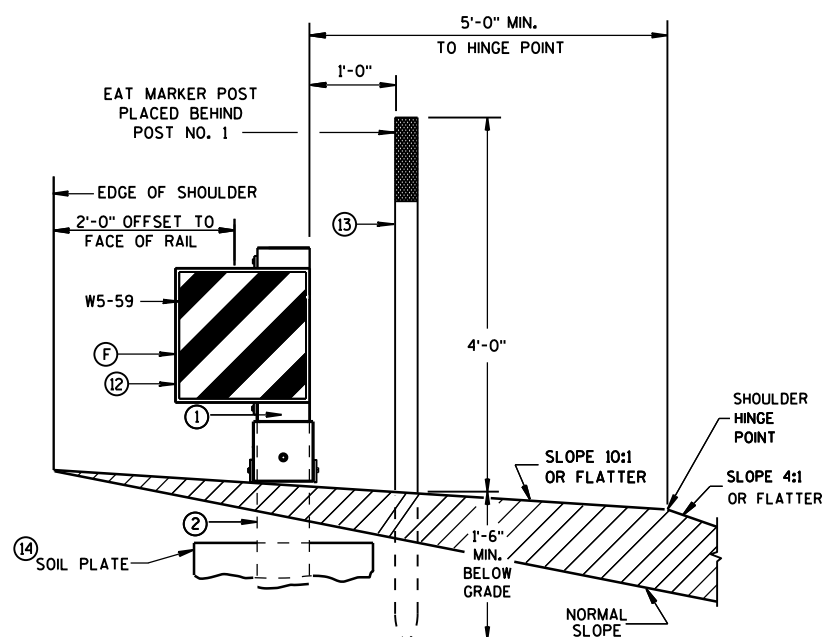
DETAIL "A"



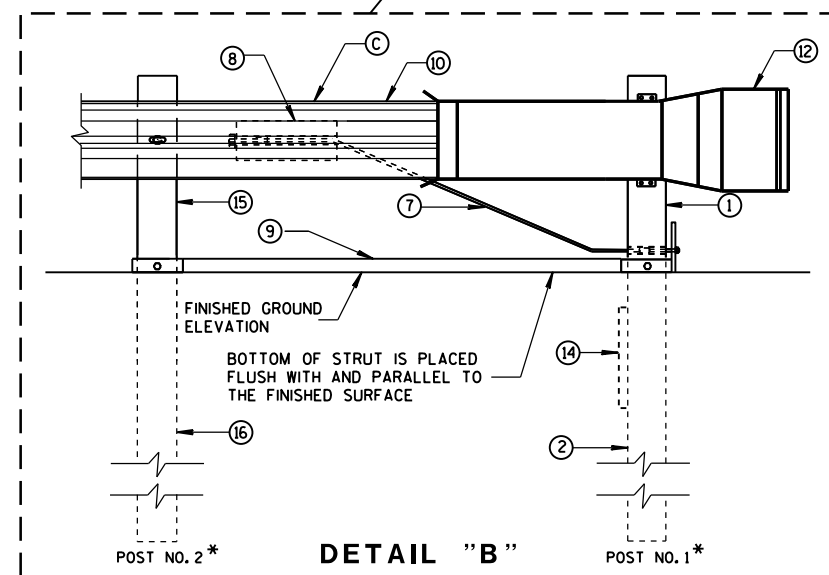
SECTION C-C
TYPICAL AT POST NOS. 3-9



SECTION B-B
TYPICAL AT POST NO. 2*



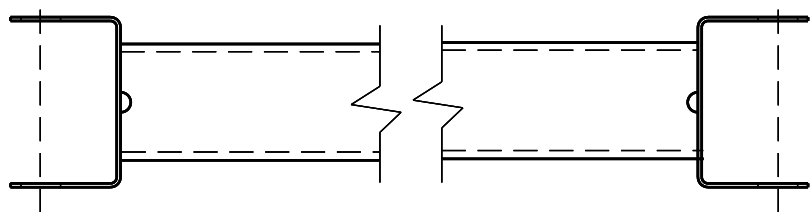
SECTION A-A
TYPICAL AT POST NO. 1 *



DETAIL "B"

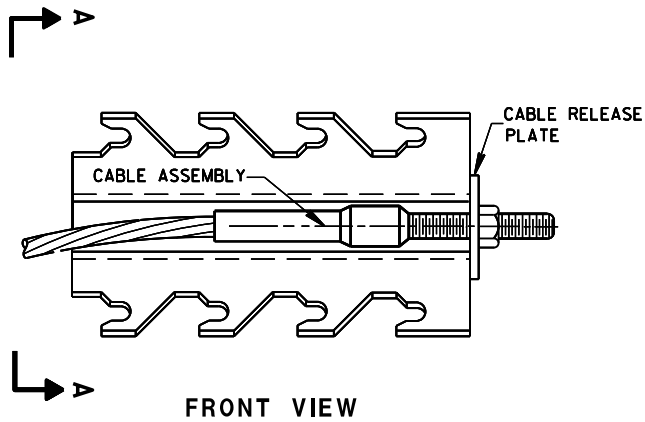
**MIDWEST GUARDRAIL SYSTEM
ENERGY ABSORBING TERMINAL
(MGS)**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



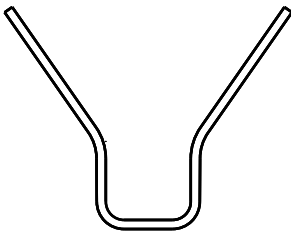
GENERIC GROUND STRUT

9 H

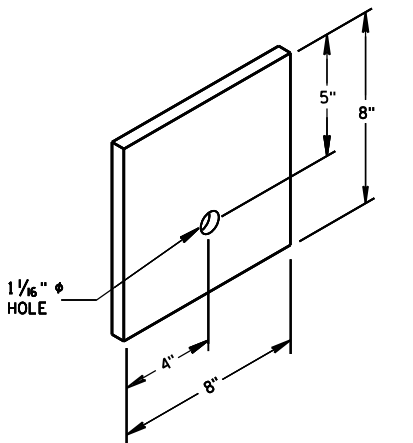


GENERIC ANCHOR CABLE BOX

8 H



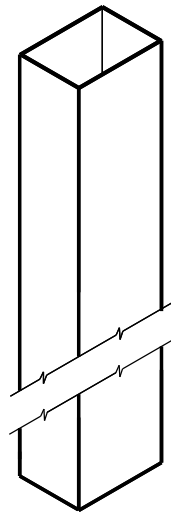
SECTION A-A



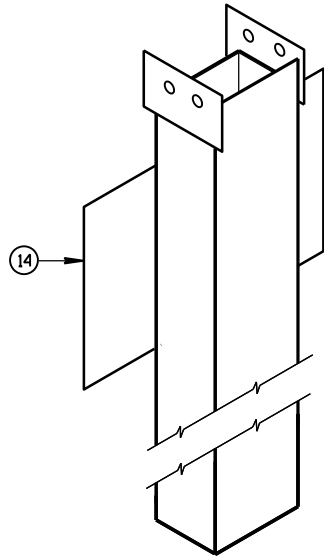
BEARING PLATE

6

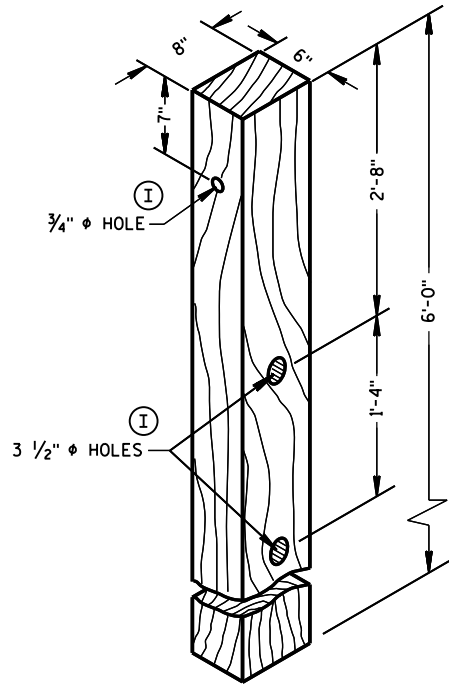
PART NO.	DESCRIPTION
MATERIALS PROVIDED BY MGS EAT MANUFACTURER. SEE MANUFACTURER'S DETAILS FOR MORE INFORMATION.	
①	UPPER POST NO.1 6" X 6" TUBE
②	LOWER POST NO.1
③	WOOD CRT
④	WOOD BLOCKOUT
⑤	PIPE SLEEVE
⑥	BEARING PLATE
⑦	BCT CABLE ASSEMBLY
⑧	ANCHOR CABLE BOX
⑨	GROUND STRUT
⑩	PERFORATED W-BEAM RAIL 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



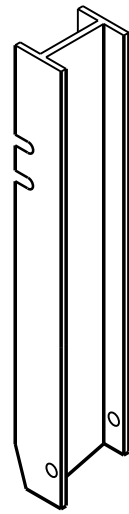
UPPER POST NO. 1⁽¹⁾



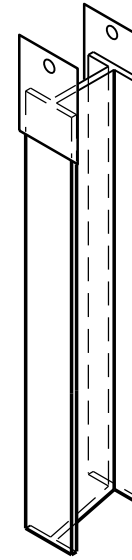
LOWER POST NO. 1⁽²⁾



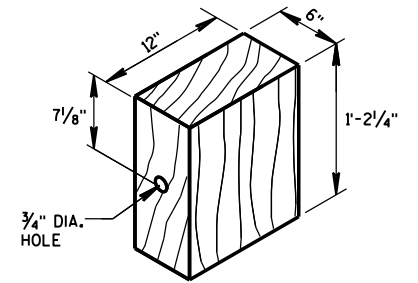
POSTS NUMBER 3-9
WOOD CRT POST⁽³⁾



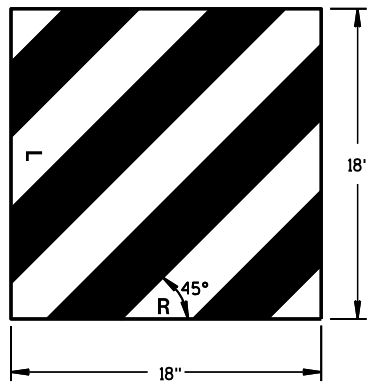
UPPER POST NO. 2⁽¹⁵⁾



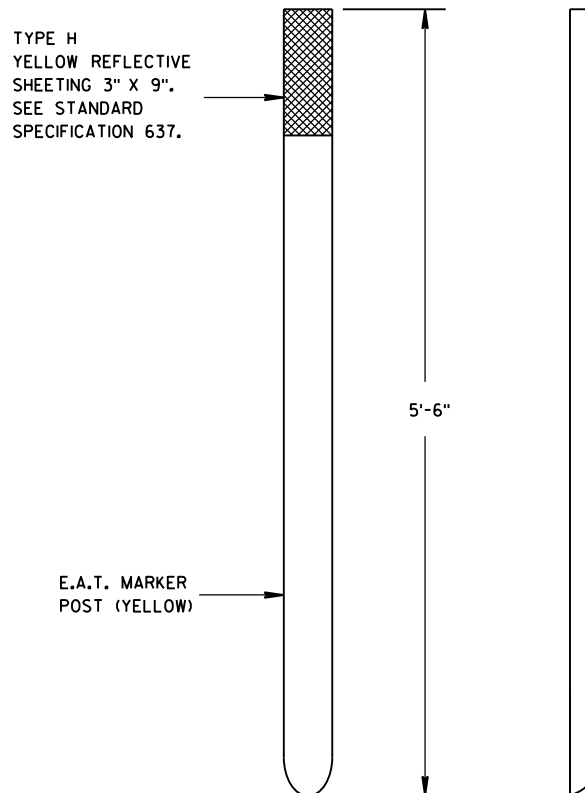
LOWER POST NO. 2⁽¹⁶⁾



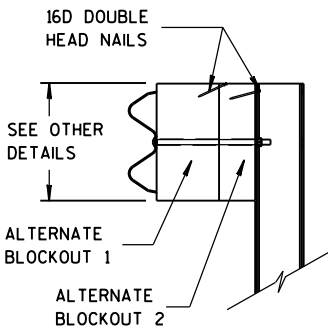
WOOD BLOCKOUT⁽⁴⁾
REQ'D. AT ALL POSTS EXCEPT POST NO'S 1 & 2



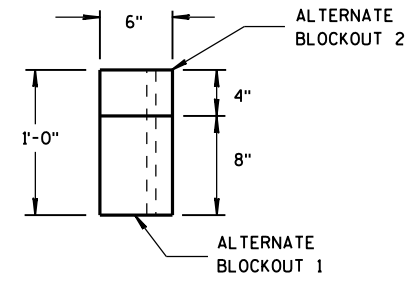
W5-59
REFLECTIVE SHEETING DETAIL^(H)



FRONT VIEW
SIDE VIEW
E.A.T. MARKER POST⁽¹³⁾

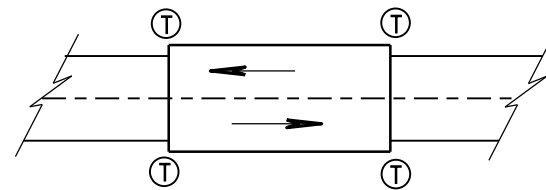


SIDE VIEW
ALTERNATE WOOD
BLOCKOUT DETAIL



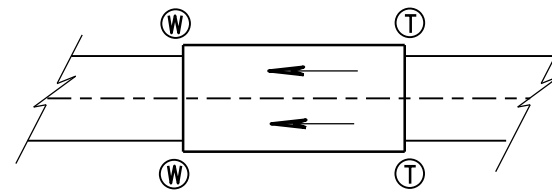
TOP VIEW

MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED June 2017 DATE	/S/ Rodney Taylor ROADWAY STANDARDS DEVELOPMENT UNIT SUPERVISOR
FHWA	



TWO WAY TRAFFIC

Ⓣ THRIE BEAM CONNECTION



ONE WAY TRAFFIC

Ⓦ W-BEAM CONNECTION WHEN REQUIRED

GENERAL NOTES

IF ROCK IS ENCOUNTERED, REMOVE ROCK TO FULL DEPTH OF POST PLUS 2½", AND 12" DIAMETER AROUND POST. SEE 14B42 FOR MORE DETAILS.

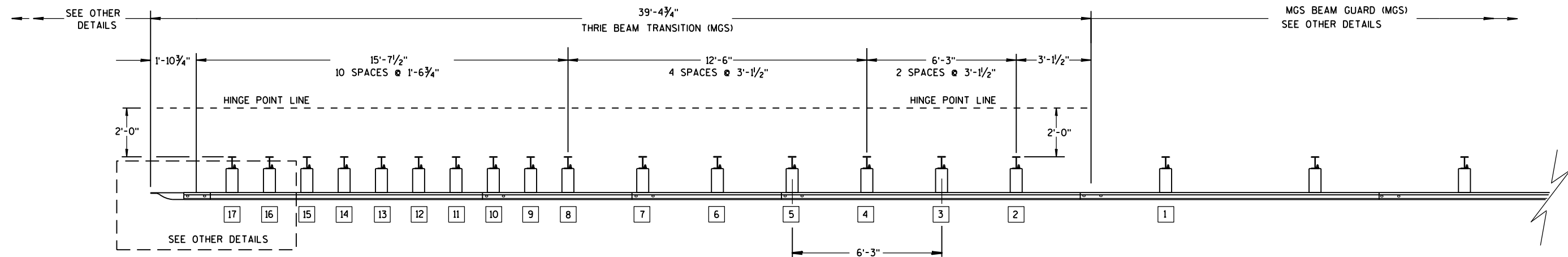
TRANSITION USES STEEL POSTS ONLY.

SEE STANDARD DETAIL DRAWING 14 B 42 FOR MORE INFORMATION.

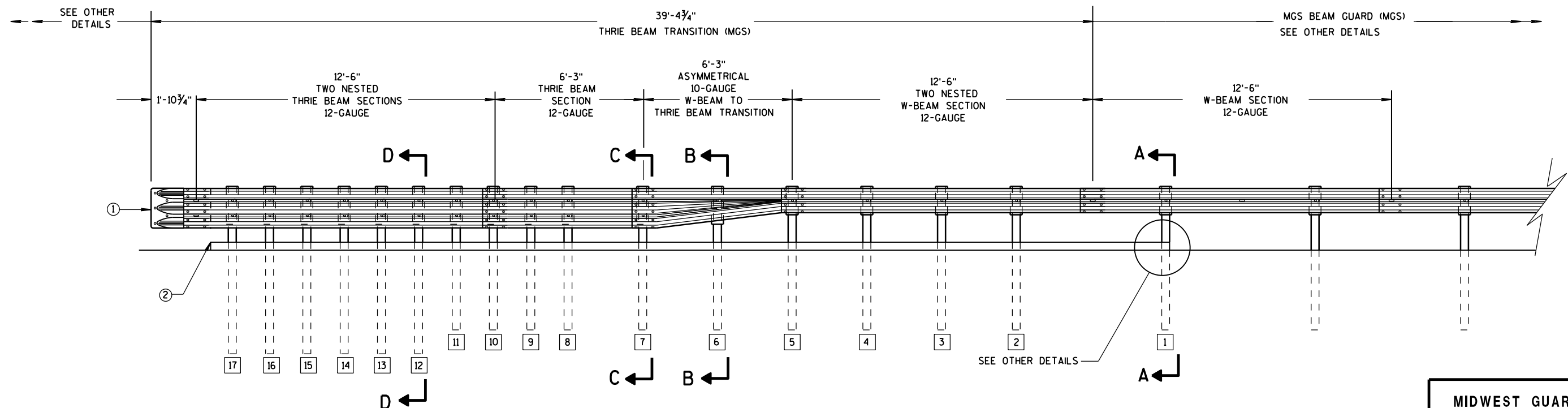
① BRIDGE RAILING TYPE "W" DOES NOT REQUIRE A TERMINAL CONNECTOR.

② OPTIONAL CURB AND GUTTER OR DRAINAGE FEATURE SEE PLAN FOR INFORMATION.

TYPICAL LOCATIONS OF THRIE BEAM AND W-BEAM CONNECTIONS TO BRIDGE



PLAN VIEW



ELEVATION VIEW

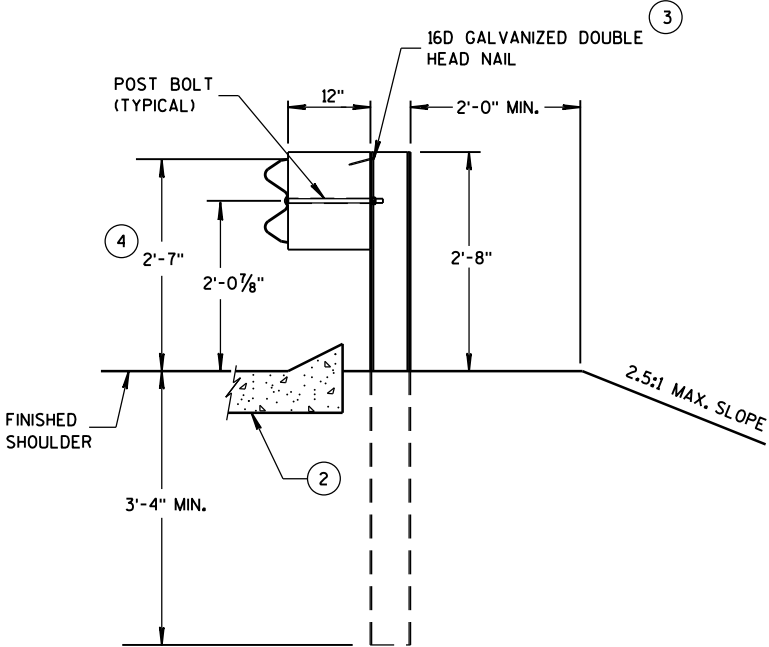
MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

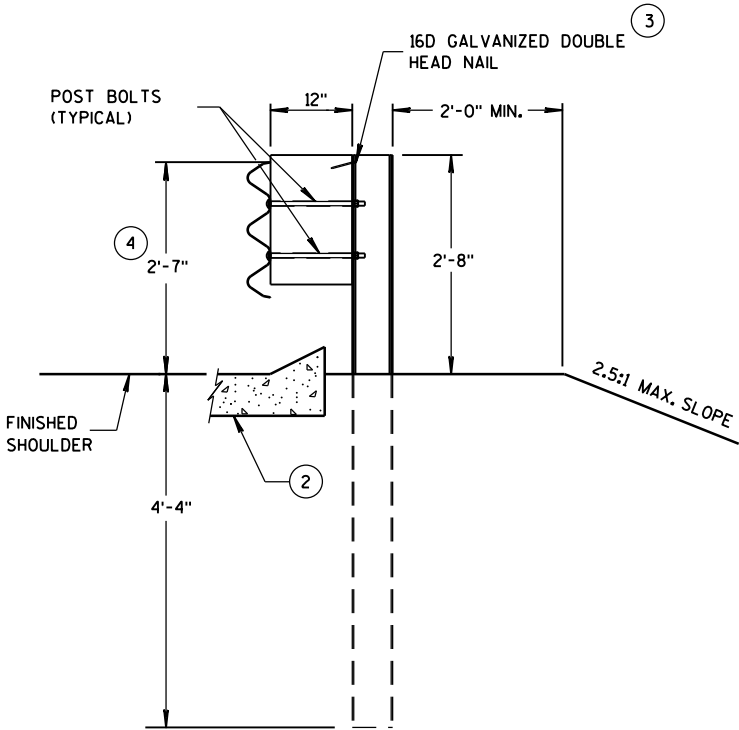
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

GENERAL NOTES

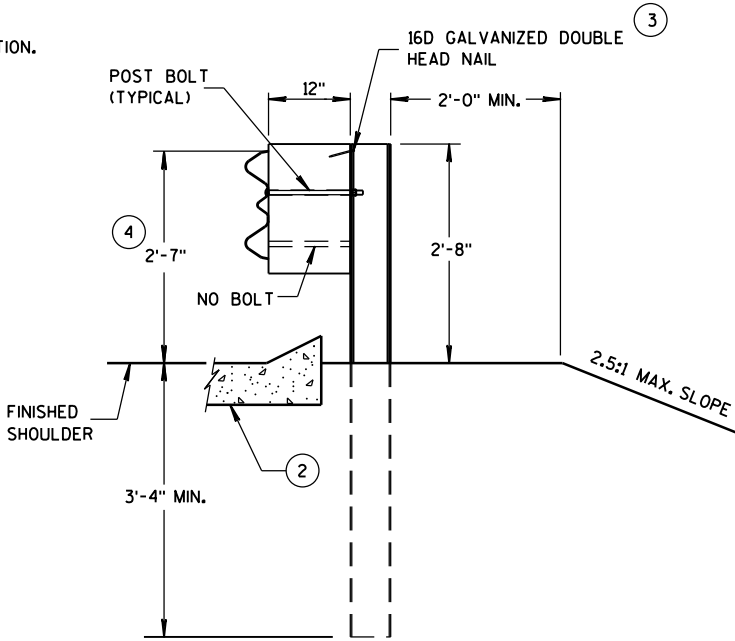
- 2 OPTIONAL CURB AND GUTTER OR DRAINAGE FEATURE SEE PLAN FOR INFORMATION.
- 3 WHEN USING STEEL POSTS AND WOOD BLOCKOUTS INSTALL FOUR 10D GALVANIZED NAILS. INSTALL NAILS AT THE BACK CORNERS OF THE BLOCK AND BEND THE NAILS OVER THE FLANGE OF THE STEEL POST.
- 4 TOLERANCE FOR TOP OF W-BEAM RAIL IS ± 1".



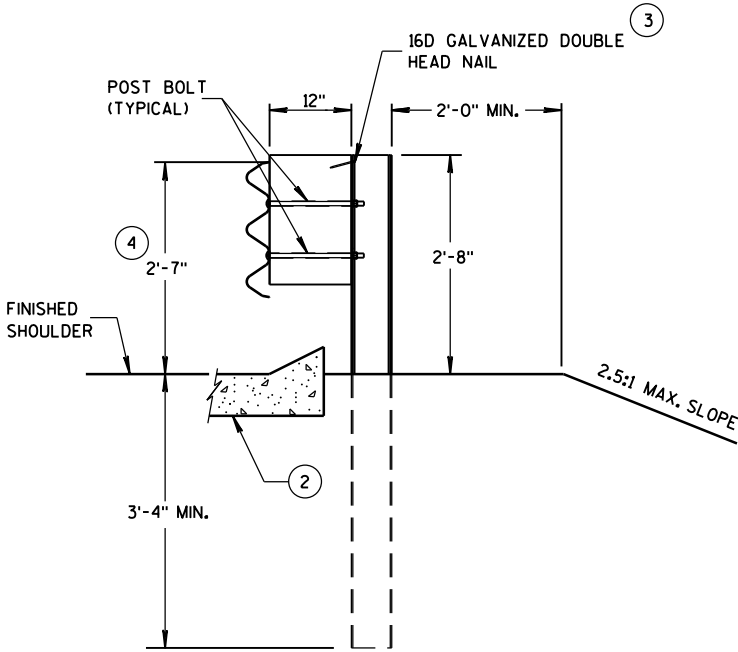
SECTION A-A
POSTS 1-5



SECTION D-D
POSTS 12-17



SECTION B-B
POST 6



SECTION C-C
POSTS 7-11

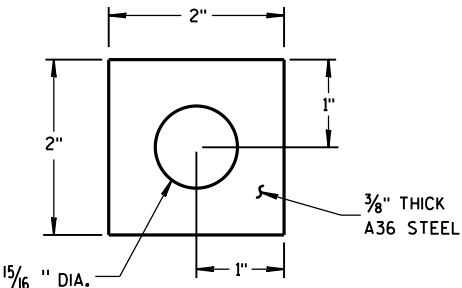
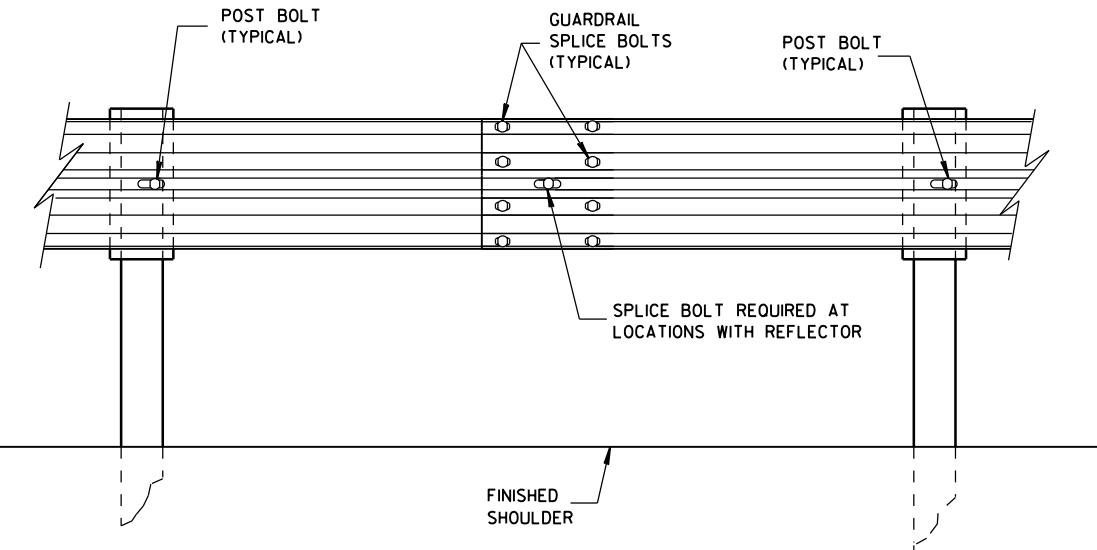
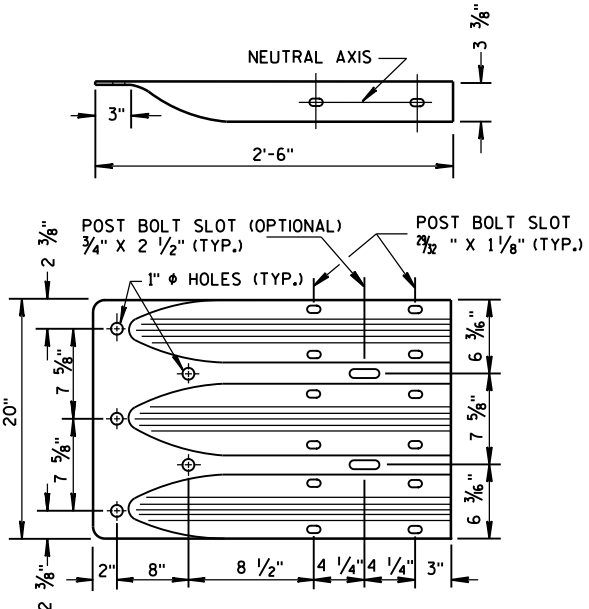


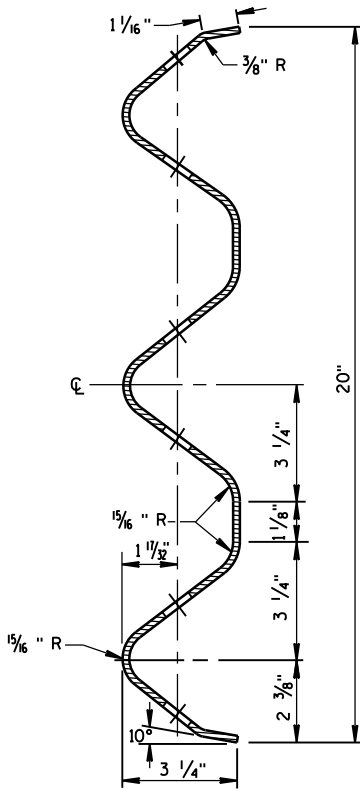
PLATE WASHER DETAIL



SPlice DETAIL



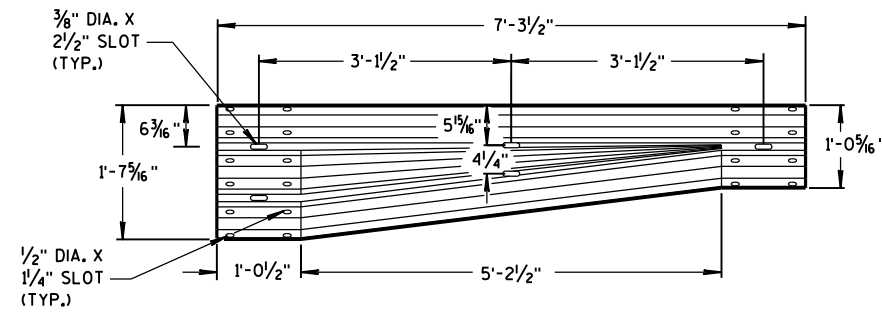
THRIE BEAM
TERMINAL CONNECTOR



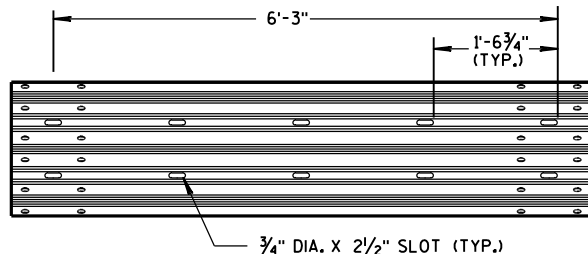
SECTION THRU THRIE
BEAM RAIL ELEMENT

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

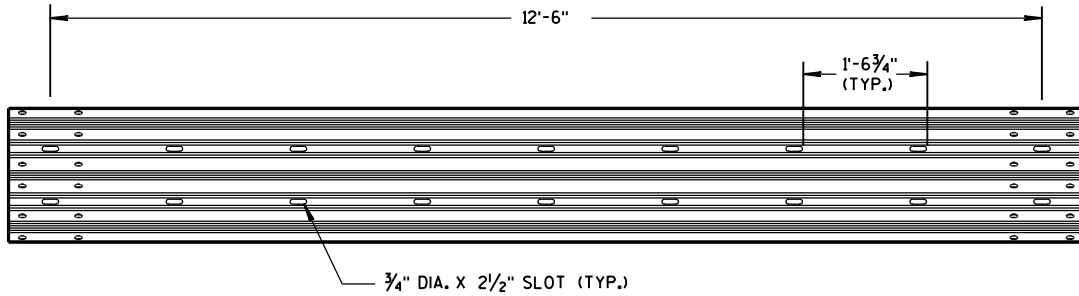
STATE OF WISCONSIN
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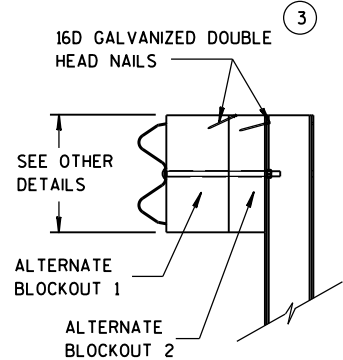
W-BEAM TO THRIE BEAM TRANSITION SECTION



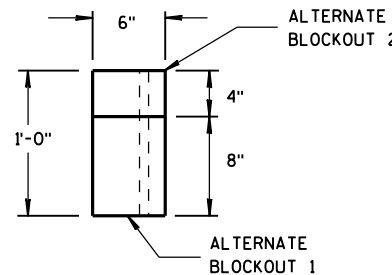
6'-3" THRIE BEAM SECTION



12'-6" THRIE BEAM SECTION

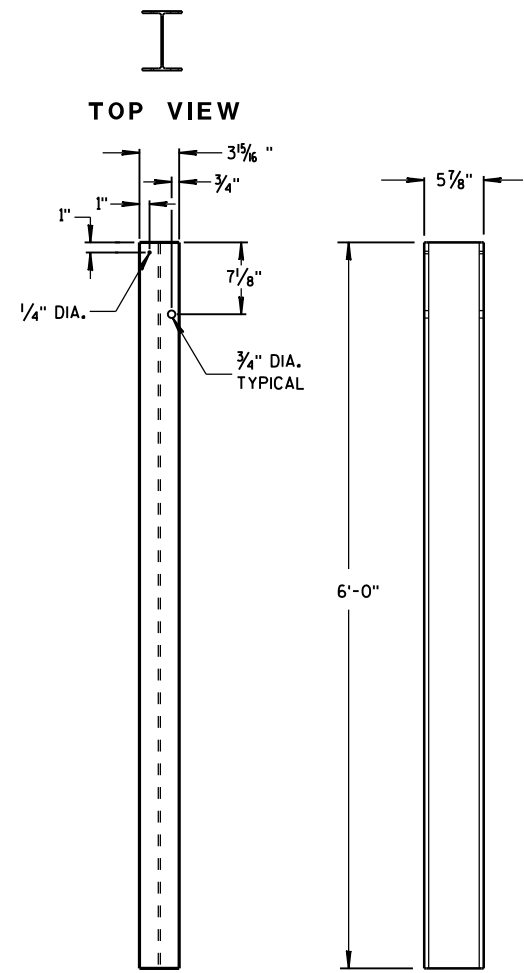


SIDE VIEW



TOP VIEW

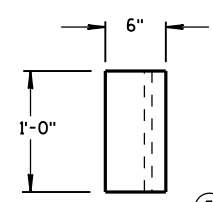
ALTERNATE WOOD BLOCKOUT DETAIL



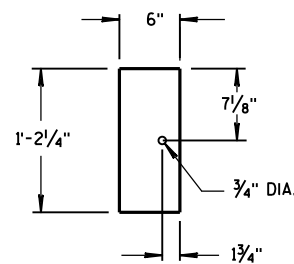
FRONT VIEW

SIDE VIEW

STEEL POSTS 1-5

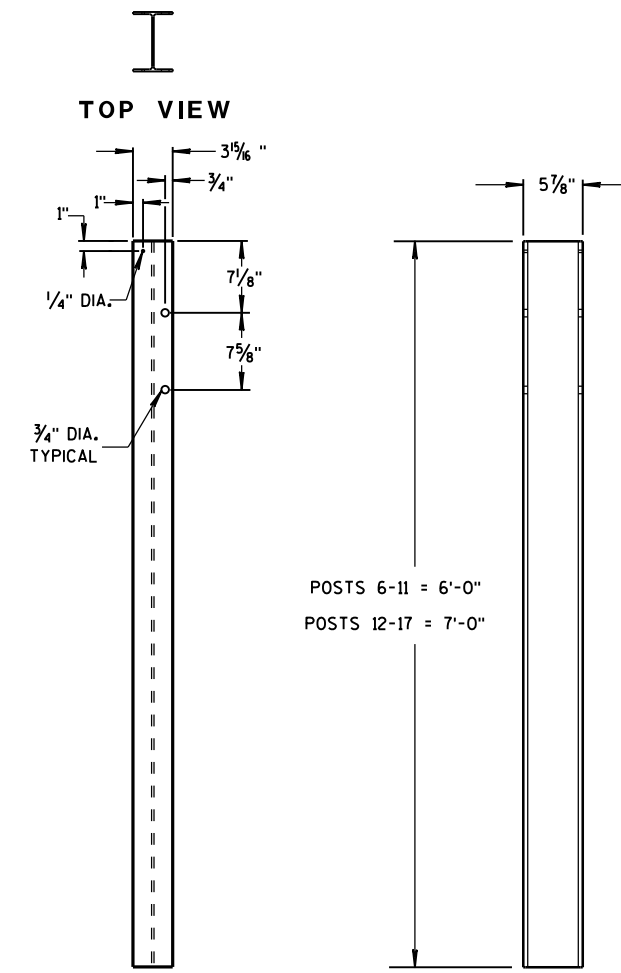


TOP VIEW



FRONT VIEW

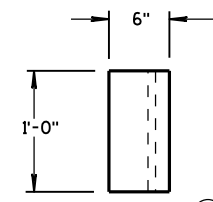
BLOCKOUT POSTS 1-5



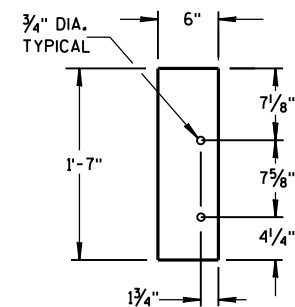
FRONT VIEW

SIDE VIEW

STEEL POSTS 6-17



TOP VIEW



FRONT VIEW

BLOCKOUT POSTS 6-17

GENERAL NOTES

STEEL POSTS ARE W6X9 OR W6X8.5.

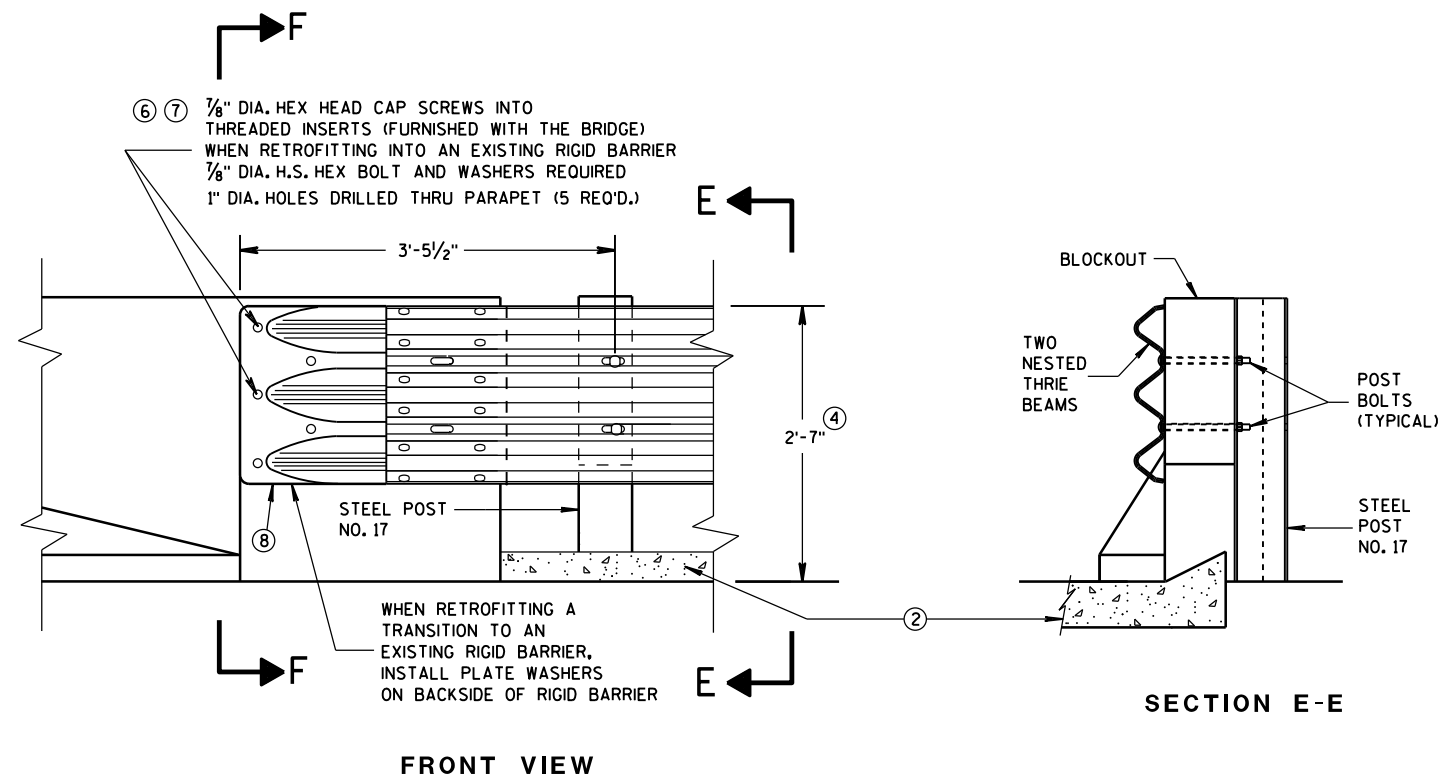
BOLT HOLES FOR POST ARE ON FRONT AND OF SIDE OF POST.

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

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

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
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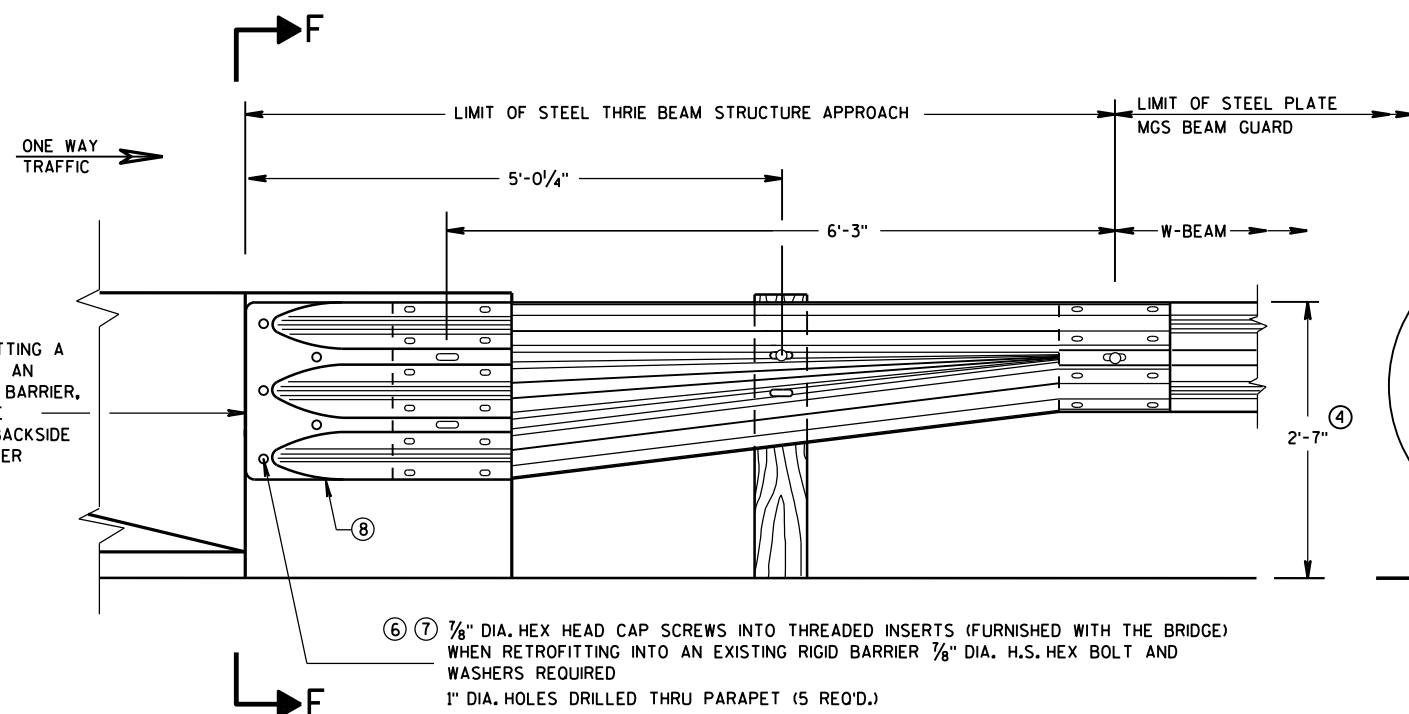
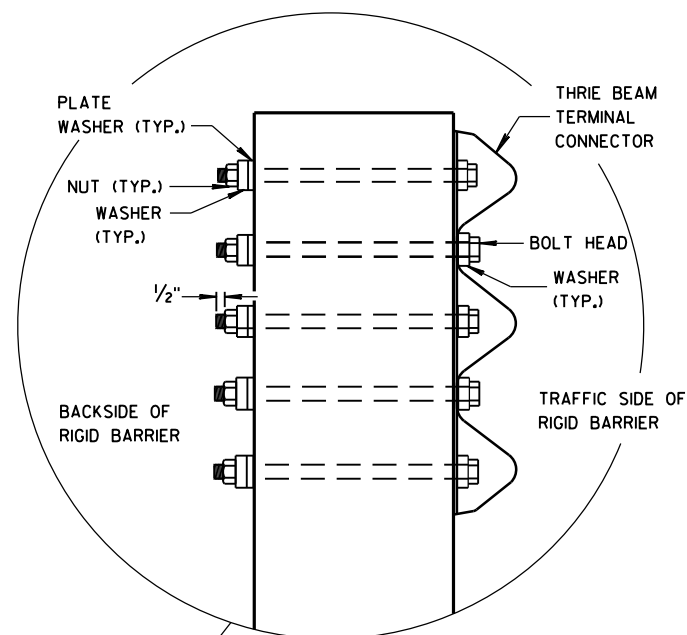


THRIE BEAM CONNECTION TO BRIDGE PARAPET WITH SQUARE ENDS

GENERAL NOTES

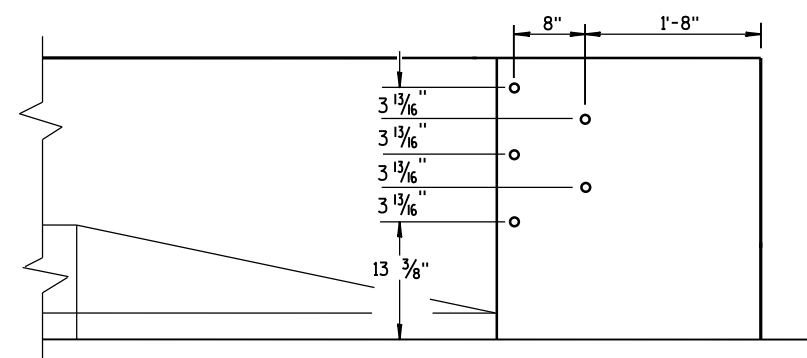
THESE ARE TYPICAL CONNECTION DETAILS. ADJUST THE POSITION OF CONNECTIONS TO EXISTING BRIDGES TO FIT THE ACTUAL BRIDGE AND SITE DIMENSIONS.

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



W BEAM TRANSITION AND CONNECTION TO BRIDGE PARAPETS WITH SQUARE ENDS (USE ONLY ON THE TRAFFIC EXIT END OF ONE WAY BRIDGES)

SECTION F-F



DRILL HOLE LOCATION

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

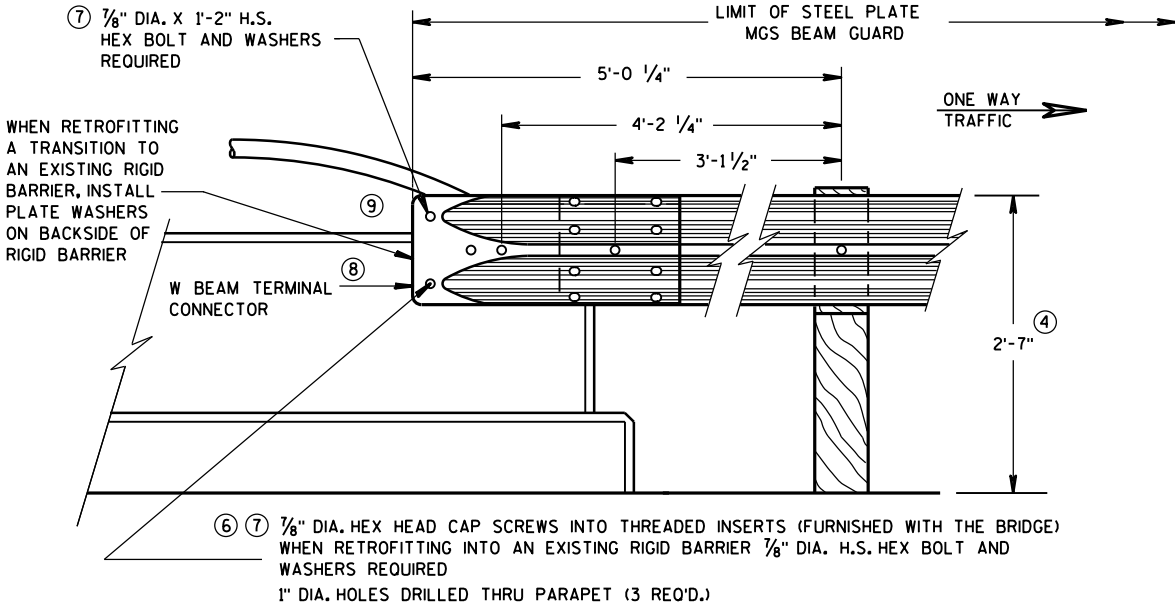
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ENGINEER
FHWA

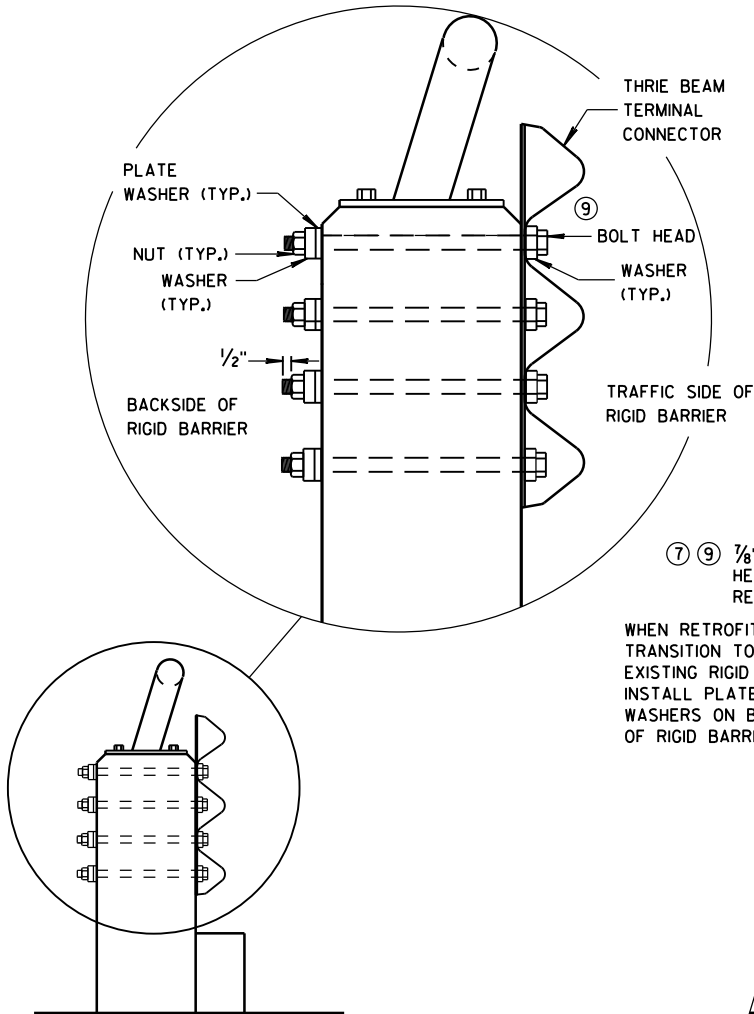
GENERAL NOTES

THESE ARE TYPICAL CONNECTION DETAILS. ADJUST THE POSTION OF CONNECTIONS TO EXISTING BRIDGES TO FIT THE ACTUAL BRIDGE AND SITE DIMENSIONS.

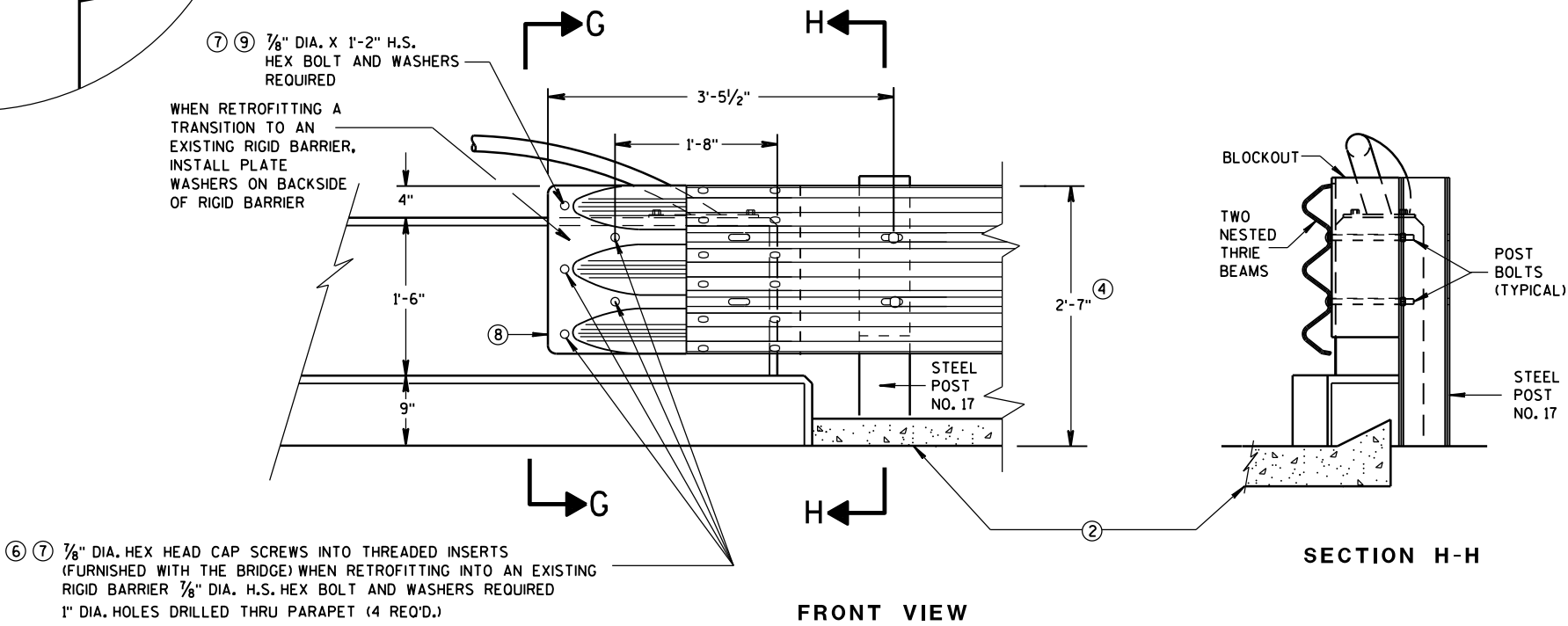
- ② OPTIONAL CURB AND GUTTER OR DRAINAGE FEATURE SEE PLAN FOR INFORMATION.
- ④ TOLERANCE FOR TOP OF BEAM IS $\pm 1"$.
- ⑥ DRILLING BOLT HOLES THROUGH THE PARAPET, BOLTS, NUTS, WASHERS AND REPAIRING DAMAGED CONCRETE ARE INCIDENTAL TO THE CONTRACT.
- ⑦ BOLTS MAY BE A325 BOLTS OR A449 BOLTS. BOLT LENGTH AND THREADING LENGTH ARE TO ALLOW FOR A TIGHT CONNECTION BETWEEN RIGID BARRIER AND THRIE BEAM CONNECTION PLATE. CONTRACTOR IS TO FIELD VERIFY BOLT LENGTH AND THREAD LENGTH. ONE ROUND WASHER REQUIRED BETWEEN BOLT HEAD AND THRIE BEAM CONNECTOR PLATE. BOLTS THAT EXTEND THROUGH THE PARAPET AND OUT THE BACK FACE REQUIRE A HARDENED ROUND STEEL WASHER THAT IS 2" O.D. X $\frac{5}{8}"$ THICK AND ONE PLATE WASHER. REPAIR ANY DAMAGED CONCRETE FROM BOLT INSTALLATION.
- ⑧ THE RECESS FOR A W-BEAM CONNECTION, WHICH EXISTS ON SOME PARAPETS OF THIS TYPE, SHALL BE FILLED WITH A TREATED TIMBER BLOCKOUT. BLOCKOUT SIZE IS 1'-6" X 2'-0" X 3 $\frac{1}{2}"$.
- ⑨ BOLT, NUT AND WASHERS NOT REQUIRED FOR THIS LOCATION WHEN RETROFITTING AN EXISTING PAPAPET AND THE HOLE IS EITHER ABOVE PARAPET OR WITHIN 4 INCHES OF THE EDGE OF PARAPET.



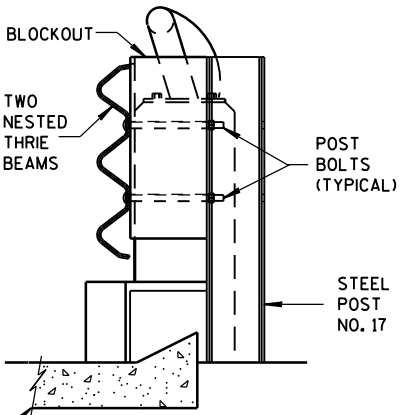
FRONT VIEW
W BEAM CONNECTION TO VERTICAL FACE PARAPET
(USE ONLY ON THE TRAFFIC EXIT END OF ONE WAY BRIDGES)



SECTION G-G



FRONT VIEW
THRIE BEAM CONNECTION TO VERTICAL FACED PARAPETS

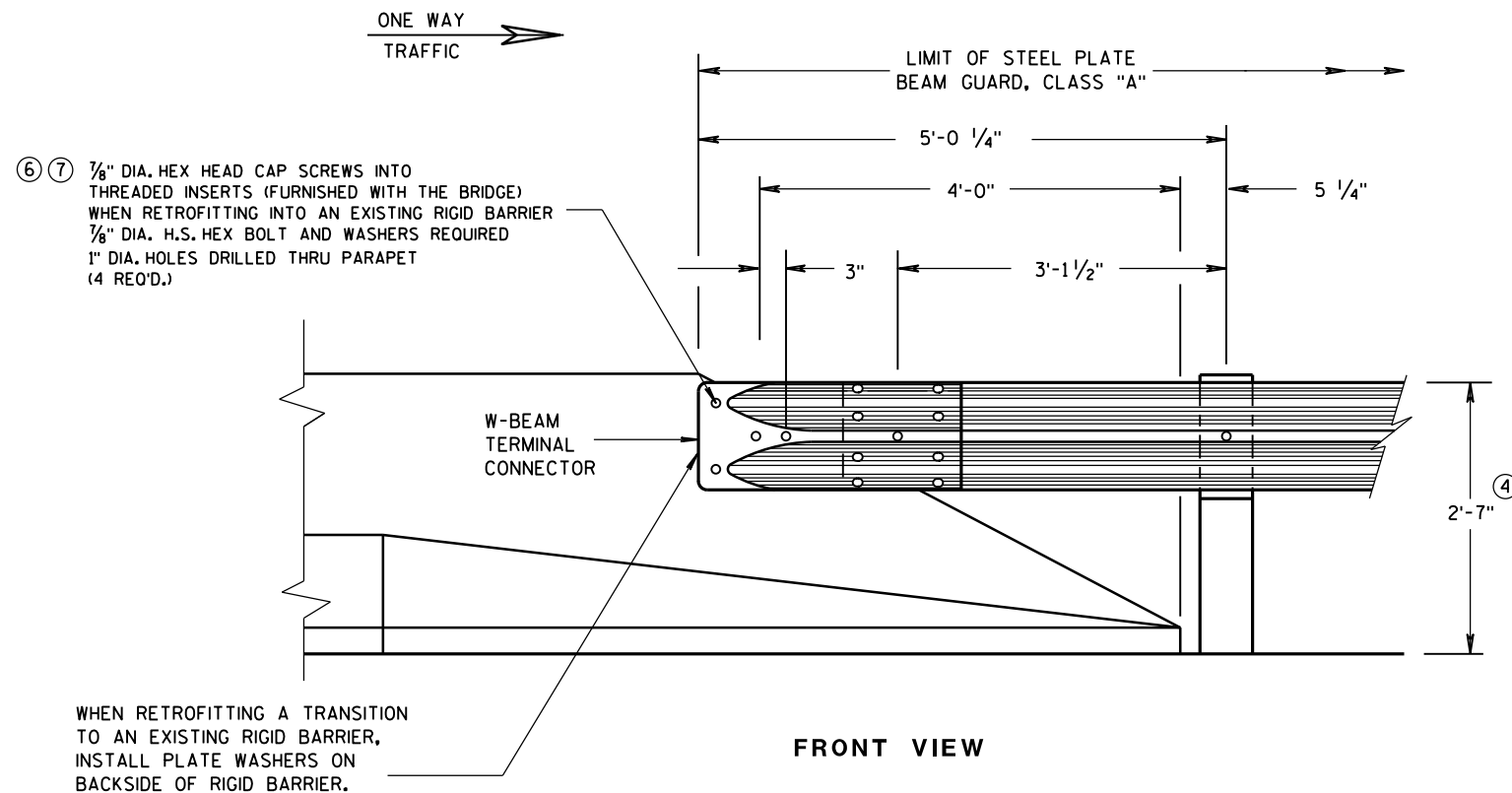


SECTION H-H

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

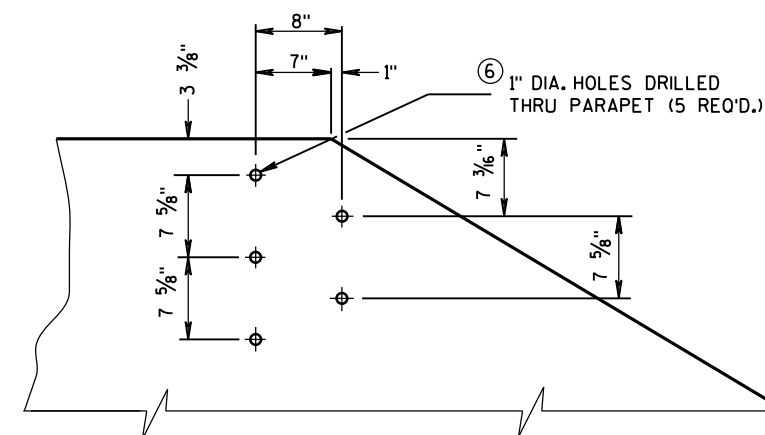
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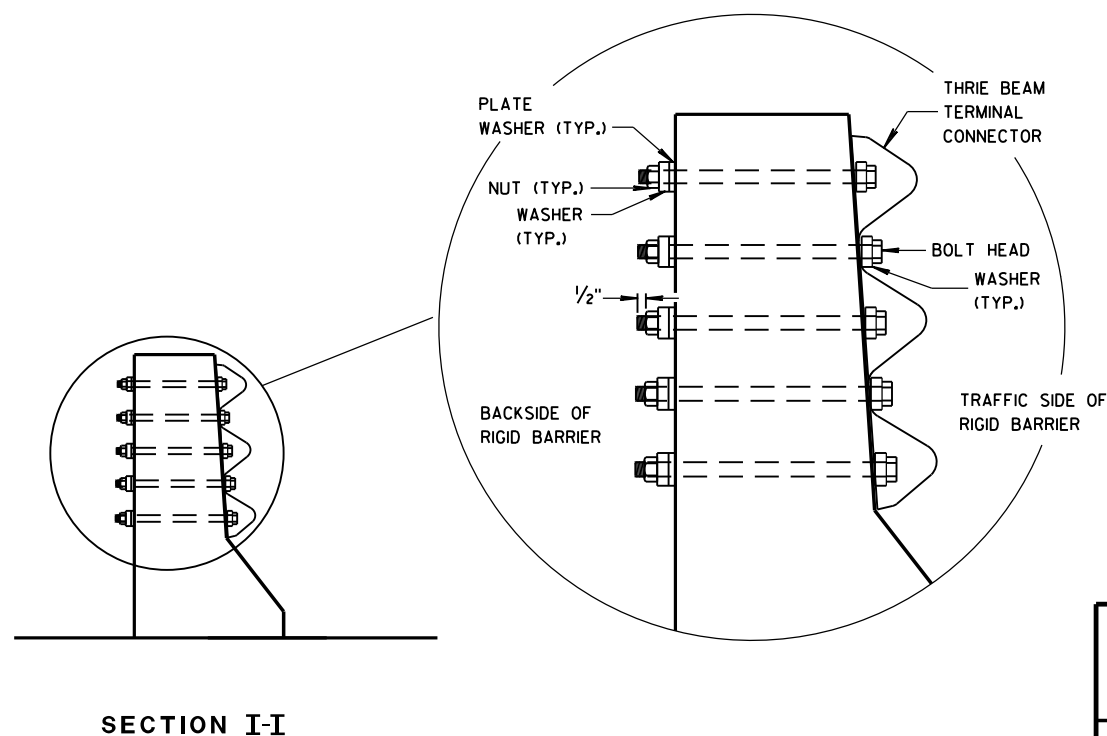
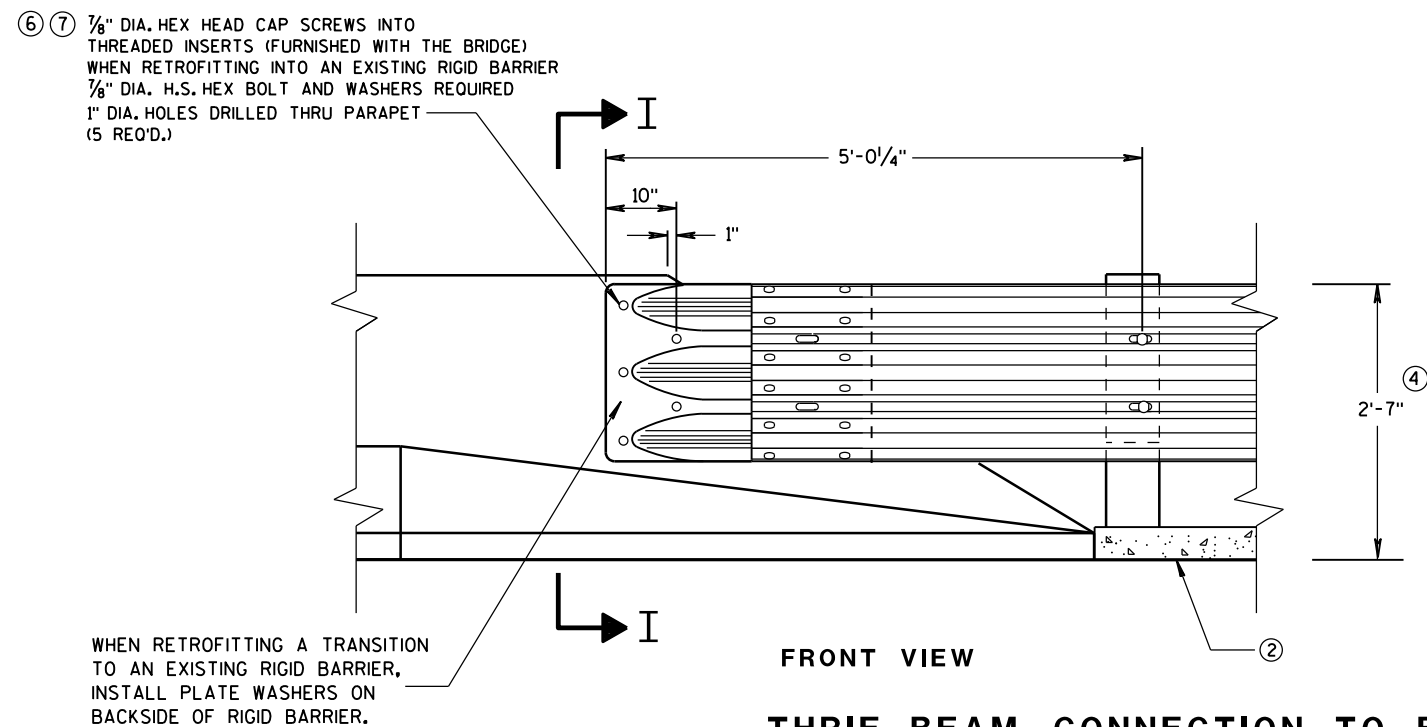


GENERAL NOTES

- ② OPTIONAL CURB AND GUTTER OR DRAINAGE FEATURE SEE PLAN FOR INFORMATION.
- ④ TOLERANCE FOR TOP OF BEAM IS $\pm 1"$.
- ⑥ DRILLING BOLT HOLES THROUGH THE PARAPET, BOLTS, NUTS, WASHERS AND REPAIRING DAMAGED CONCRETE ARE INCIDENTAL TO THE CONTRACT.
- ⑦ BOLTS MAY BE A325 BOLTS OR A449 BOLTS. BOLT LENGTH AND THREADING LENGTH ARE TO ALLOW FOR A TIGHT CONNECTION BETWEEN RIGID BARRIER AND THRIE BEAM CONNECTION PLATE. CONTRACTOR IS TO FIELD VERIFY BOLT LENGTH AND THREAD LENGTH. ONE ROUND WASHER REQUIRED BETWEEN BOLT HEAD AND THRIE BEAM CONNECTOR PLATE. BOLTS THAT EXTEND THROUGH THE PARAPET AND OUT THE BACK FACE REQUIRE A HARDENED ROUND STEEL WASHER THAT IS 2" O.D. X 5/8" THICK AND ONE PLATE WASHER. REPAIR ANY DAMAGED CONCRETE FROM BOLT INSTALLATION.



DRILL HOLE LOCATION AND PATTERN
FOR THRIE BEAM CONNECTION

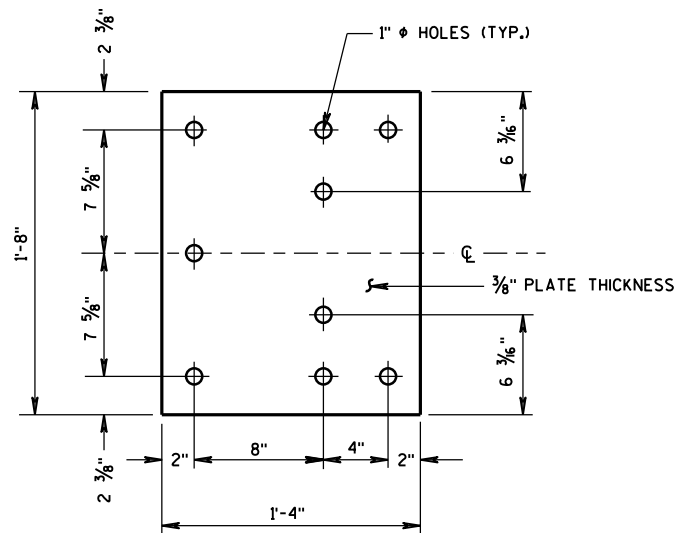


MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

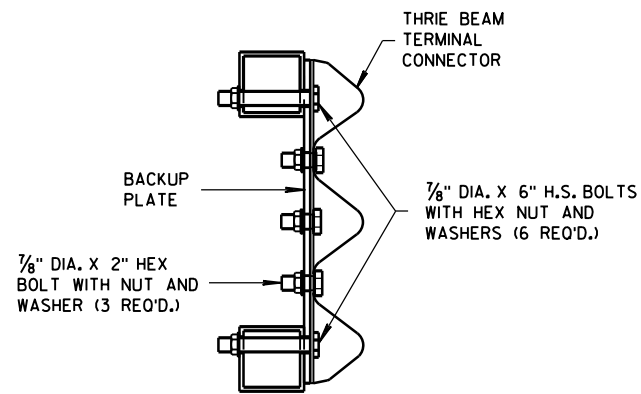
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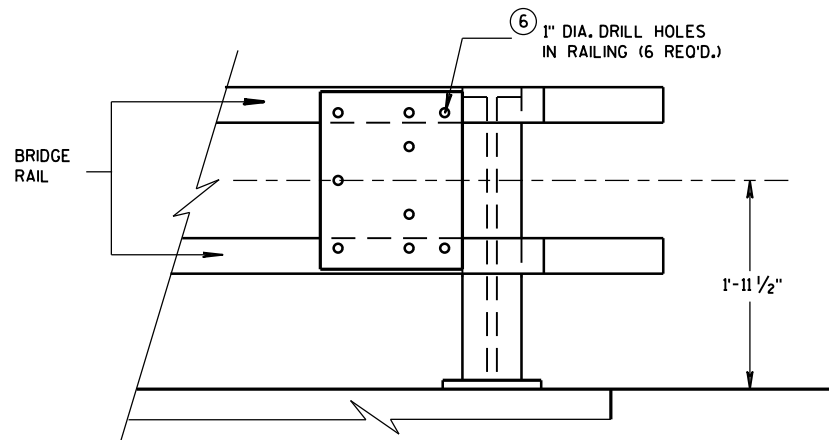
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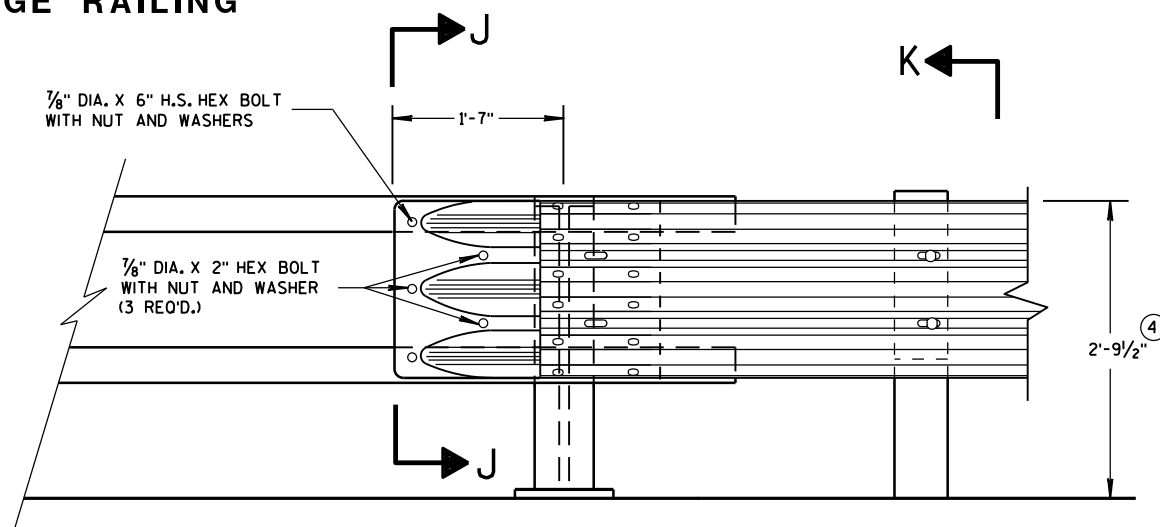
BACK-UP PLATE DETAIL



SECTION J-J

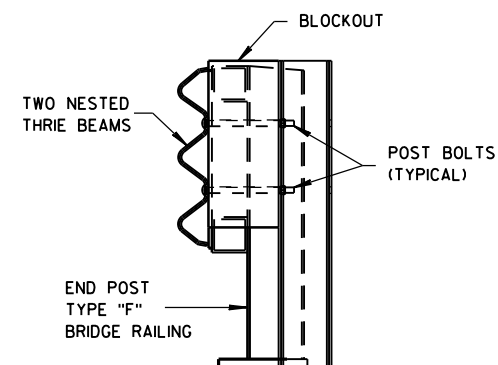


BACK-UP PLATE MOUNTING ONTO BRIDGE RAILING



FRONT VIEW

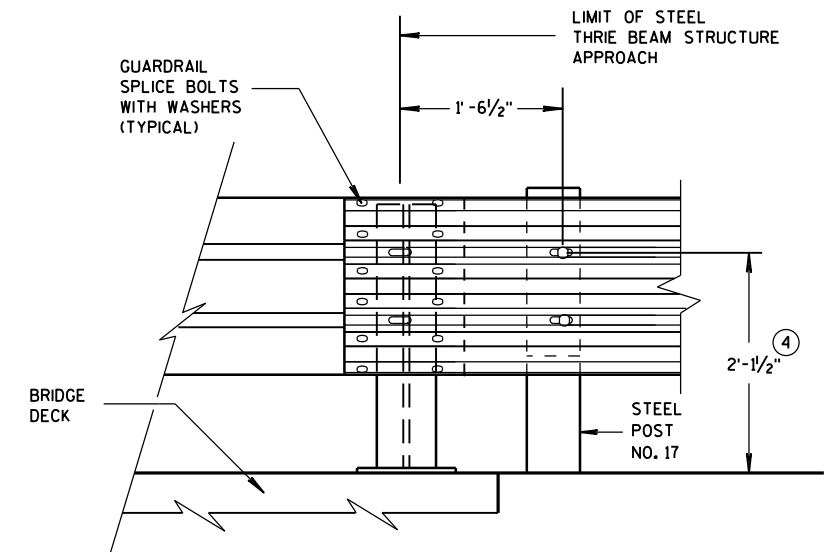
THRIE BEAM CONNECTION TO TUBULAR RAILING TYPE "F"



SECTION K-K

GENERAL NOTES

- ④ TOLERANCE FOR TOP OF BEAM IS $\pm 1"$.
- ⑥ DRILLING HOLES THROUGH THE PAPER, BOLTS, NUTS, WASHERS AND REPAIRING DAMAGED CONCRETE ARE INCIDENTAL TO THE CONTRACT.



FRONT VIEW

THRIE BEAM CONNECTION TO STEEL RAILING TYPE "W"

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

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ROADWAY STANDARDS DEVELOPMENT
ENGINEER

6

- S.D.D. 14 B 45-4h**



S.D.D. 14 B 45-4h



S.D.D. 14 B 45-4h



S.D.D. 14 B 45-4h

S.D.D. 14 B 45-4h



S.D.D. 14 B 45-4h



S.D.D. 14 B 45-4h



S.D.D. 14 B 45-4h

S.D.D. 14 B 45-4h



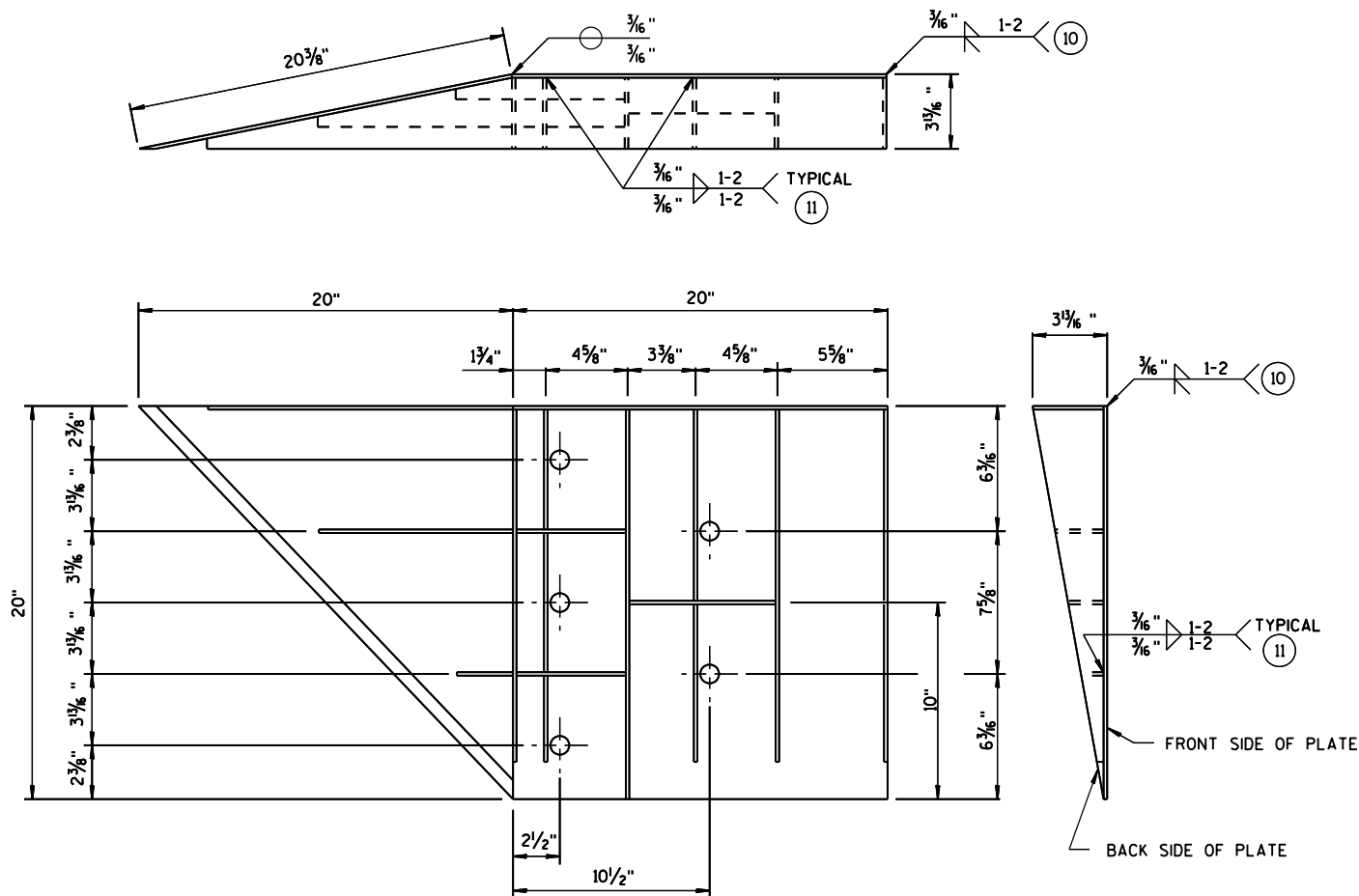
S.D.D. 14 B 45-4h



S.D.D. 14 B 45-4h

S.D.D. 14 B 45-4h

6



WELDING INSTRUCTION
(VIEWED FROM BACK SIDE OF PLATE)

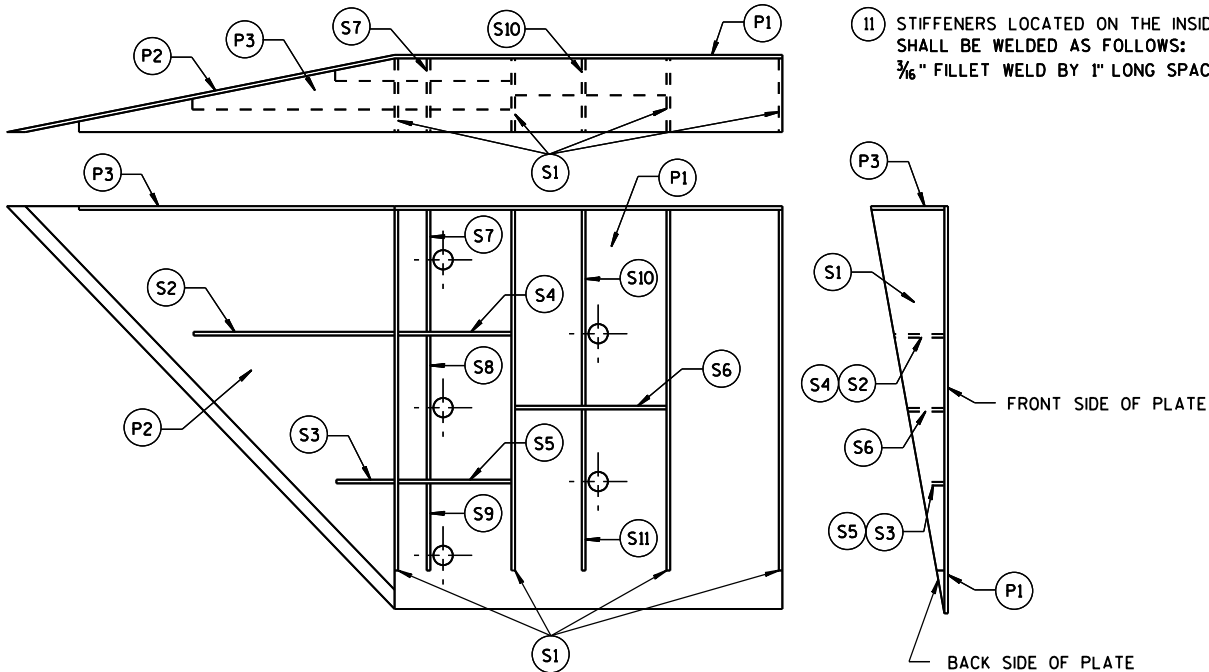


PLATE AND STIFFENER IDENTIFICATION
(VIEWED FROM BACK SIDE OF PLATE)

CONNECTOR PLATE DIMENSION (PER ASSEMBLY)				
PLATE	QUANTITY	SHAPE	SIZE (A x B x C x D)	THICKNESS
P1	1		20" x 20"	3/16"
P2	1		20" x 20" x 28 9/16"	3/16"
P3	1		39" x 3 5/8" x 20" x 19 5/16"	3/16"
S1	4		18 7/16" x 3 5/8" x 18 3/4"	1/4"
S2	1		10 1/4" x 2 1/16" x 10 3/8" x 1/2"	1/4"
S3	1		3" x 1 1/16" x 3 1/8" x 1/2"	1/4"
S4	1		6 1/8" x 2 1/16"	1/4"
S5	1		6 1/8" x 1 1/16"	1/4"
S6	1		7 3/4" x 1 3/4"	1/4"
S7	1		2 9/16" x 6" x 3 5/8" x 5 1/8"	1/4"
S8	1		1 5/32" x 7 1/2" x 2 1/2" x 7 3/8"	1/4"
S9	1		6 1/16" x 6 3/16" x 1 7/32"	1/4"
S10	1		1 7/8" x 9 7/8" x 3 5/8" x 9 1/16"	1/4"
S11	1		8 1/2" x 8 3/4" x 1 1/16"	1/4"

SINGLE SLOPE CONNECTION PLATE

GENERAL NOTES

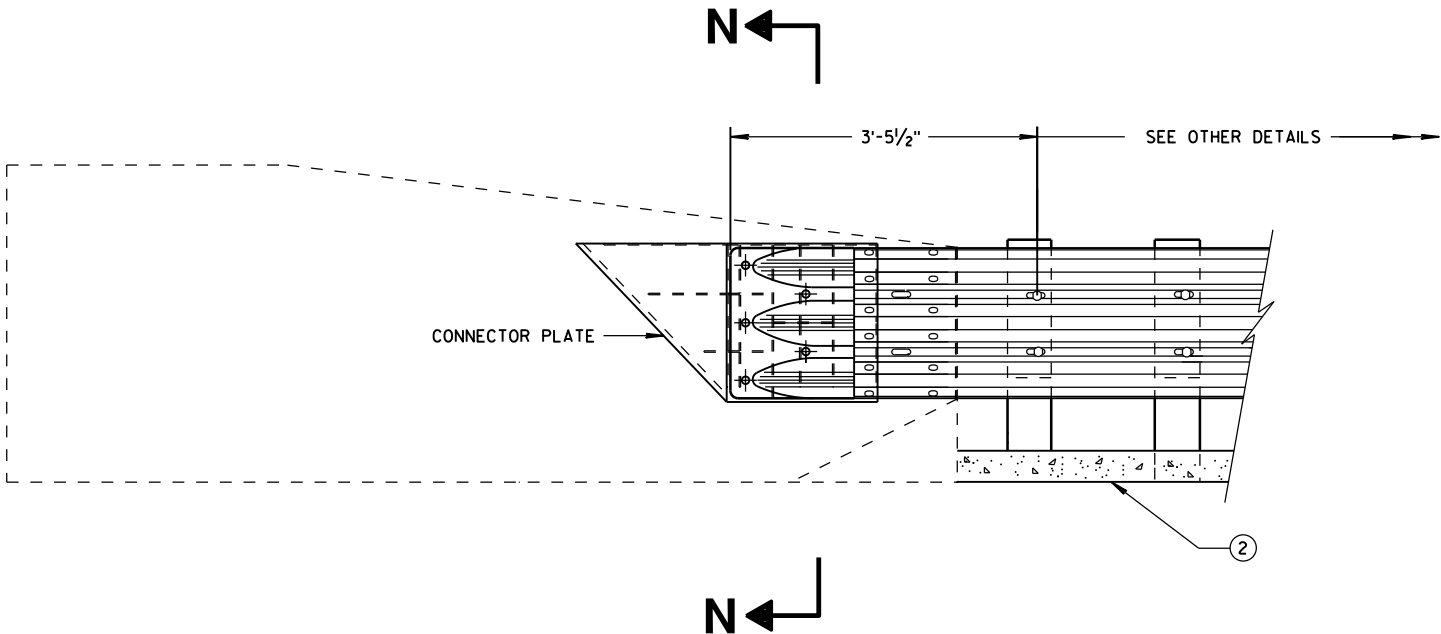
- COVER PLATE PANELS ARE 3/16" THICK.
- ALL STIFFENERS ARE 1/4" THICK.
- CONNECTOR PLATE SHALL BE FABRICATED FROM ASTM GRADE A36 STEEL AND GALVANIZED.
- FOR GALVANIZED REQUIREMENTS, SEE SECTION 614 OF THE STANDARD SPECIFICATIONS.
- ALL HOLE DIAMETERS SHALL BE 1".
- FOR OPPOSITE SIDE INSTALLATION MIRROR DRAWINGS.

- 10 STIFFENERS LOCATED AT THE OUTSIDE EDGES OF THE COVER PLATES SHALL BE WELDED AS FOLLOWS:
SINGLE BEVEL GROOVE WELD ON EXTERNAL SIDES AND 3/16" FILLET WELD BY 1" LONG SPACED AT 2" ON INTERNAL SIDES.
- 11 STIFFENERS LOCATED ON THE INSIDE OF THE COVER PLATE SHALL BE WELDED AS FOLLOWS:
3/16" FILLET WELD BY 1" LONG SPACED AT 2".

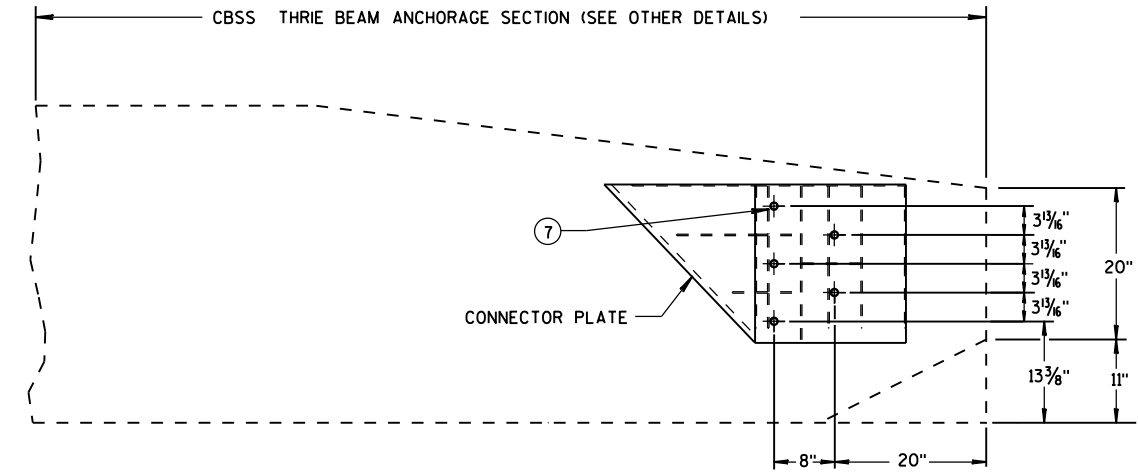
MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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June, 2015 /S/ Jerry H. Zogg
DATE ROADWAY STANDARDS DEVELOPMENT
FHWA ENGINEER



THRIE BEAM CONNECTION TO SINGLE SLOPE BARRIER



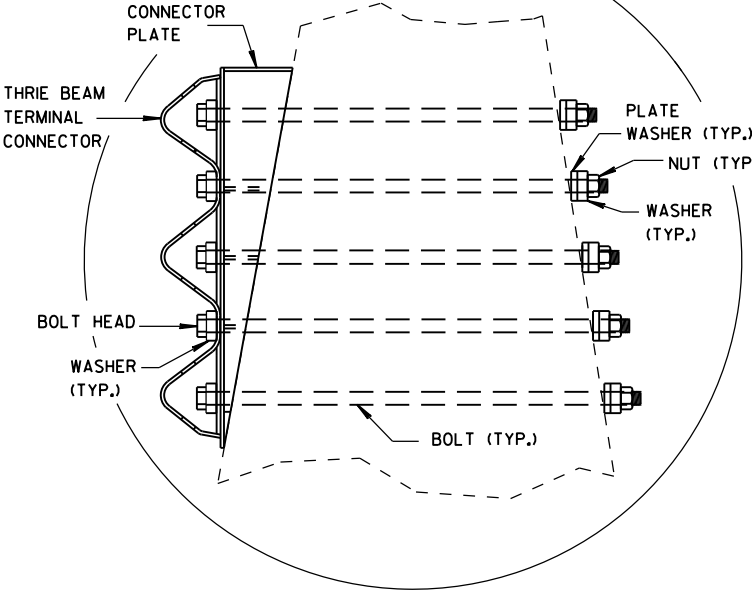
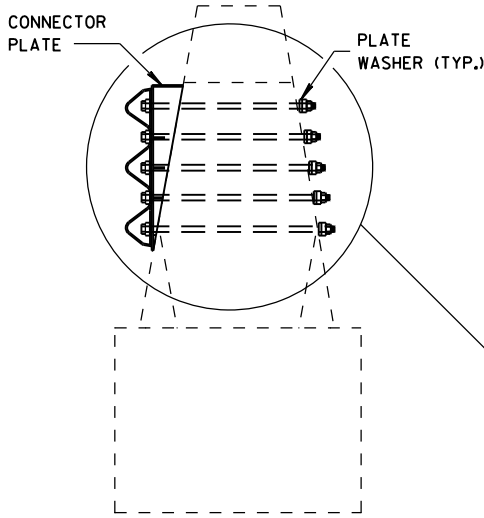
SINGLE SLOPE CONNECTION PLATE PLACEMENT

GENERAL NOTES

CONNECTOR PLATE, DRILLING BOLT HOLES THROUGH THE PARAPET, BOLTS, NUTS, WASHERS AND REPAIRING DAMAGED CONCRETE ARE INCIDENTAL TO THE CONTRACT.

(2) OPTIONAL CURB AND GUTTER OR DRAINAGE FEATURE SEE PLAN FOR INFORMATION.

(7) BOLTS MAY BE A325 BOLTS OR A449 BOLTS. BOLT LENGTH AND THREADING LENGTH ARE TO ALLOW FOR A TIGHT CONNECTION BETWEEN RIGID BARRIER AND THRIE BEAM CONNECTION PLATE. CONTRACTOR IS TO FIELD VERIFY BOLT LENGTH AND THREAD LENGTH. ONE ROUND WASHER REQUIRED BETWEEN BOLT HEAD AND THRIE BEAM CONNECTOR PLATE. BOLTS THAT EXTEND THROUGH THE PARAPET AND OUT THE BACK FACE REQUIRE A HARDENED ROUND STEEL WASHER THAT IS 2" O.D. X 5/8" THICK AND ONE PLATE WASHER. REPAIR ANY DAMAGED CONCRETE FROM BOLT INSTALLATION.



MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

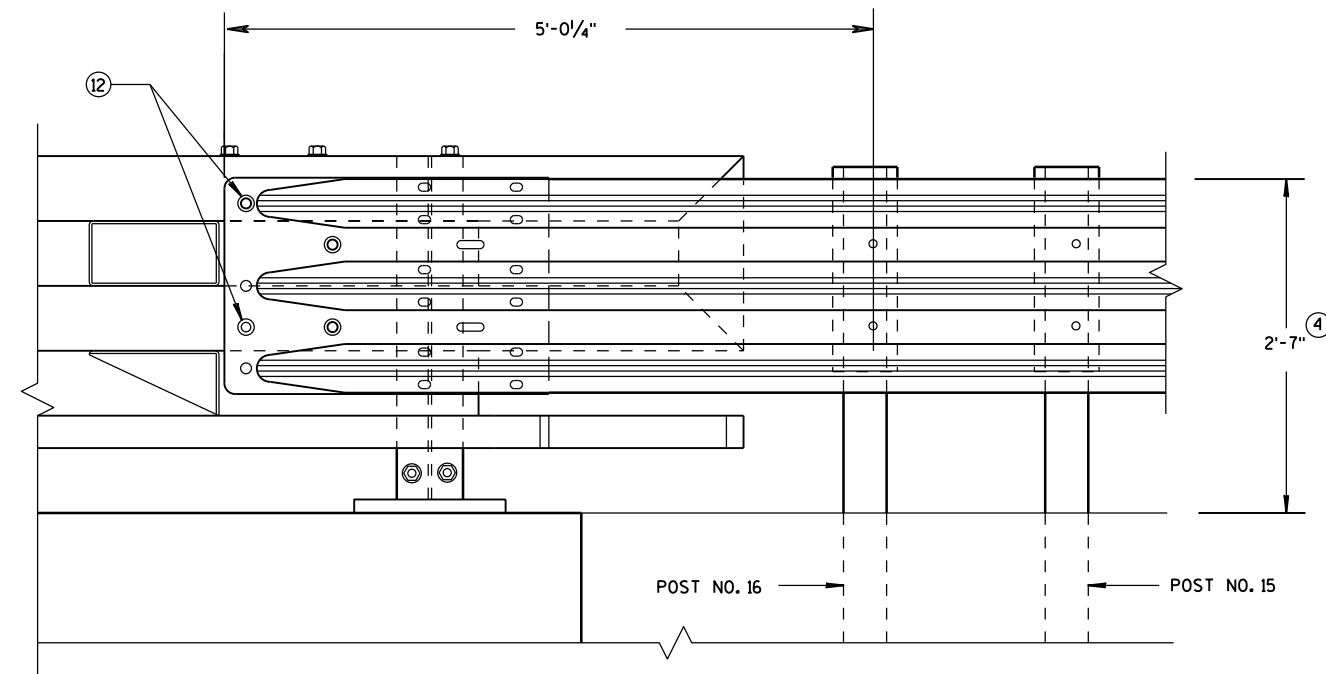
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GENERAL NOTES

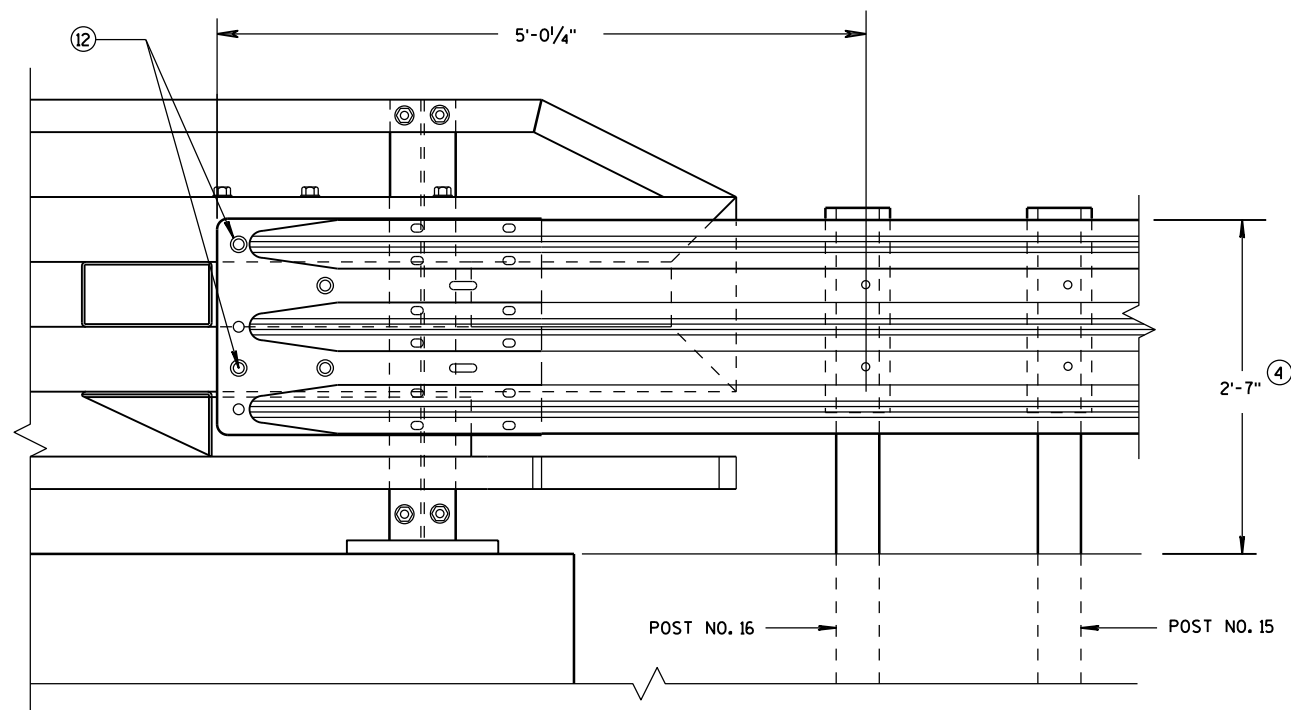
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ELEVATION OF DETAIL AT NY3 END POST

THRIE BEAM RAIL ATTACHMENT



ELEVATION OF DETAIL AT NY4 END POST

THRIE BEAM RAIL ATTACHMENT

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

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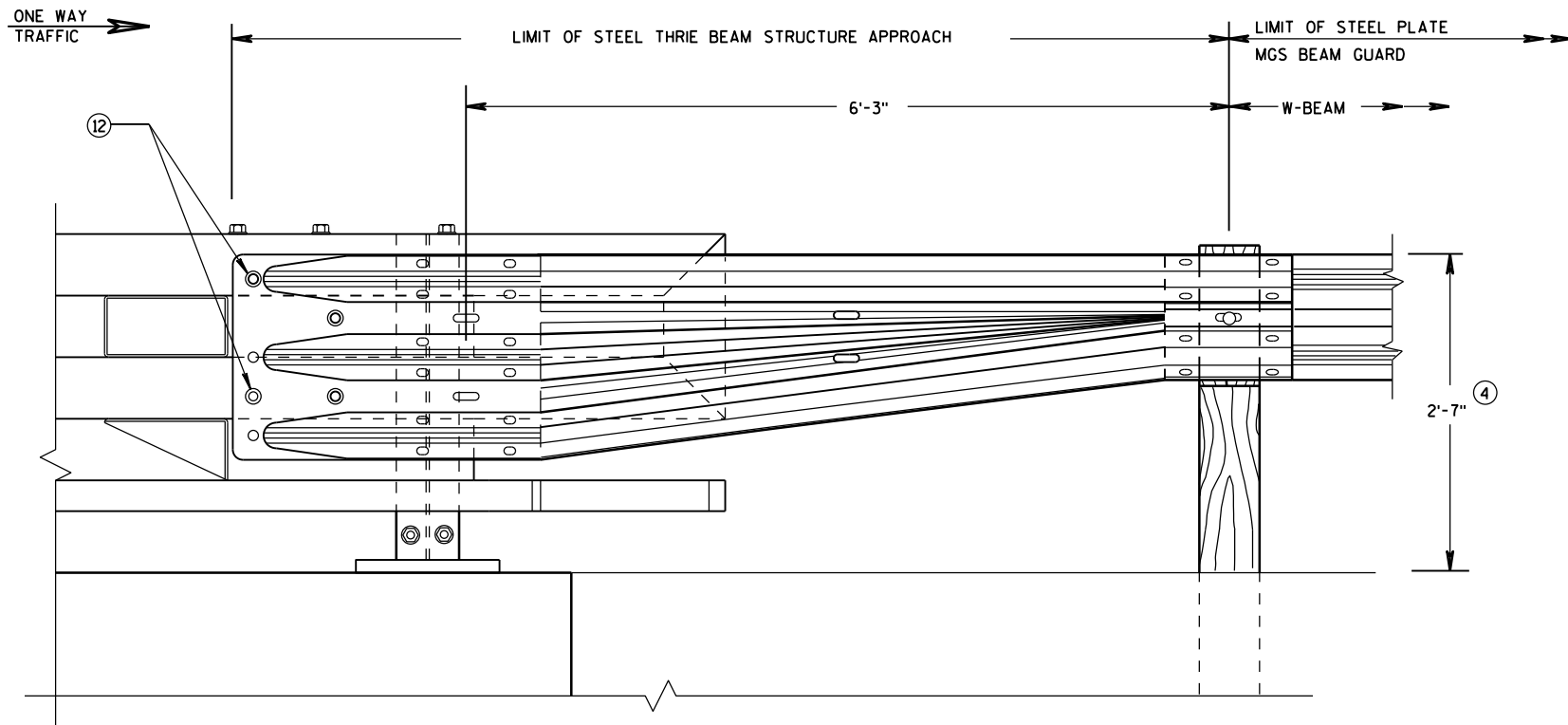
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ROADWAY STANDARDS DEVELOPMENT
ENGINEER

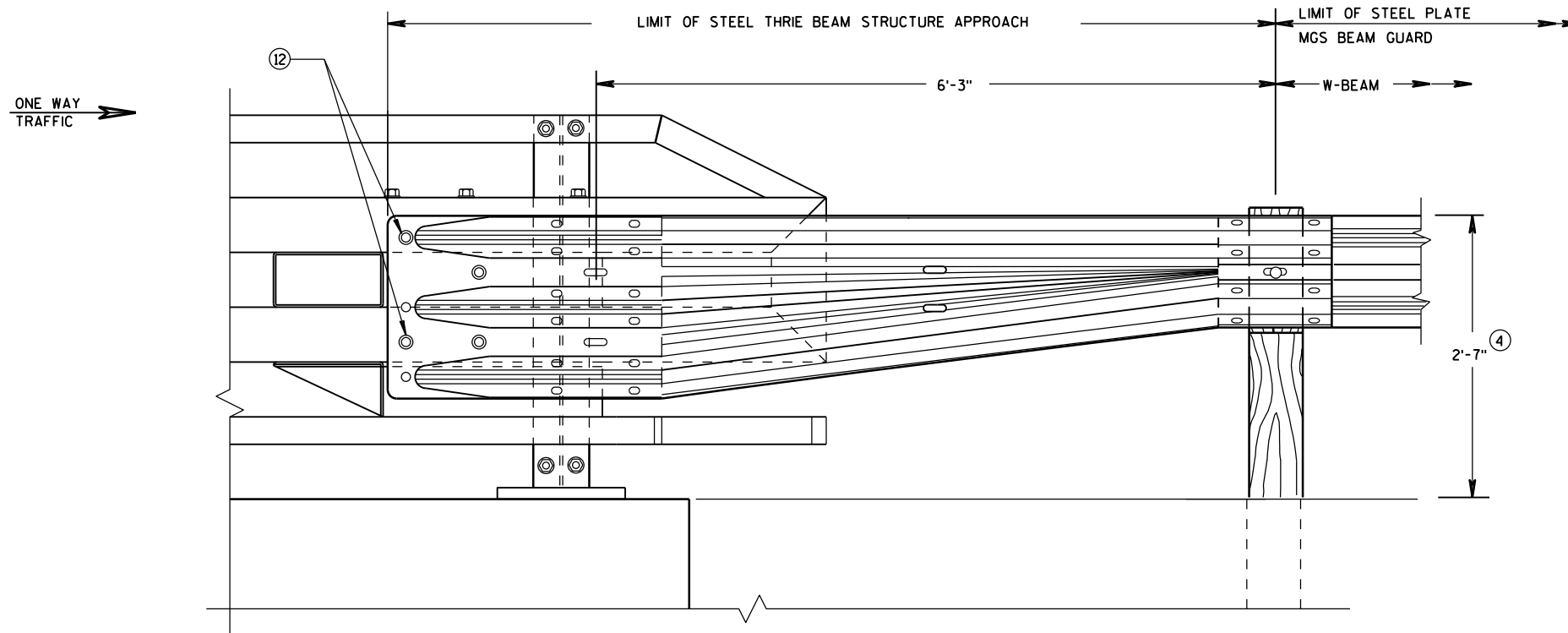


FRONT VIEW

**W BEAM TRANSITION AND
CONNECTION TO BRIDGE RAILING TYPE "NY3"**
(USE ONLY ON THE TRAFFIC EXIT END OF ONE WAY BRIDGES)

GENERAL NOTES

- ④ TOLERANCE FOR TOP OF BEAM IS $\pm 1"$.
- ⑫ BOLTS MAY BE A325 BOLTS OR A449 BOLTS. BOLT LENGTH AND THREADING LENGTH ARE TO ALLOW FOR A TIGHT CONNECTION BETWEEN RIGID BARRIER AND THRIE BEAM CONNECTION PLATE. CONTRACTOR IS TO FIELD VERIFY BOLT LENGTH AND THREAD LENGTH. ONE ROUND WASHER REQUIRED BETWEEN BOLT HEAD AND THRIE BEAM CONNECTOR PLATE. ON BACKSIDE OF PARAPET ONE ROUND WASHER, AND NUT REQUIRED. BOLT THREAD IS TO EXTEND $\frac{1}{2}$ -INCH BEYOND NUT.



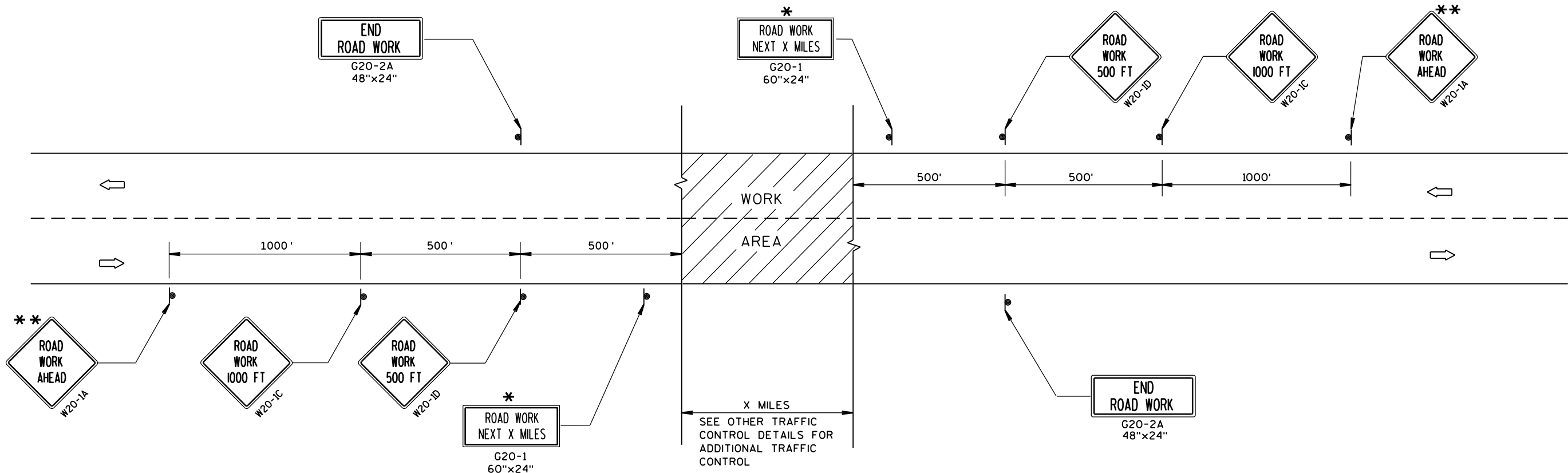
FRONT VIEW

**W BEAM TRANSITION AND
CONNECTION TO BRIDGE RAILING TYPE "NY4"**
(USE ONLY ON THE TRAFFIC EXIT END OF ONE WAY BRIDGES)

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED June, 2015	/S/ Jerry H. Zogg
DATE	ROADWAY STANDARDS DEVELOPMENT ENGINEER
FHWA	



TYPICAL SIDEROAD APPROACH WARNING SIGN DETAIL

GENERAL NOTES

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

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

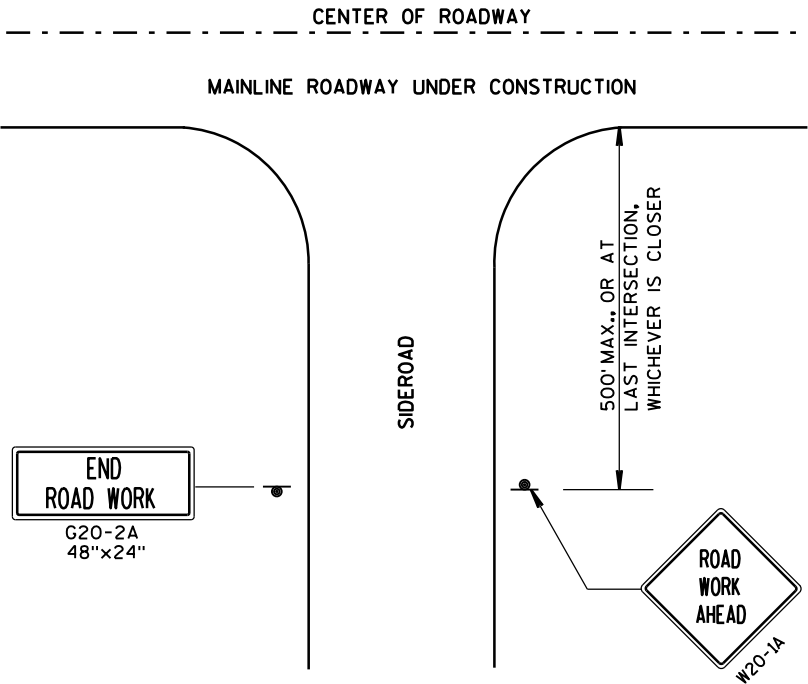
ALL SIGNS ARE 48"x48" UNLESS OTHERWISE NOTED.

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

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

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

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



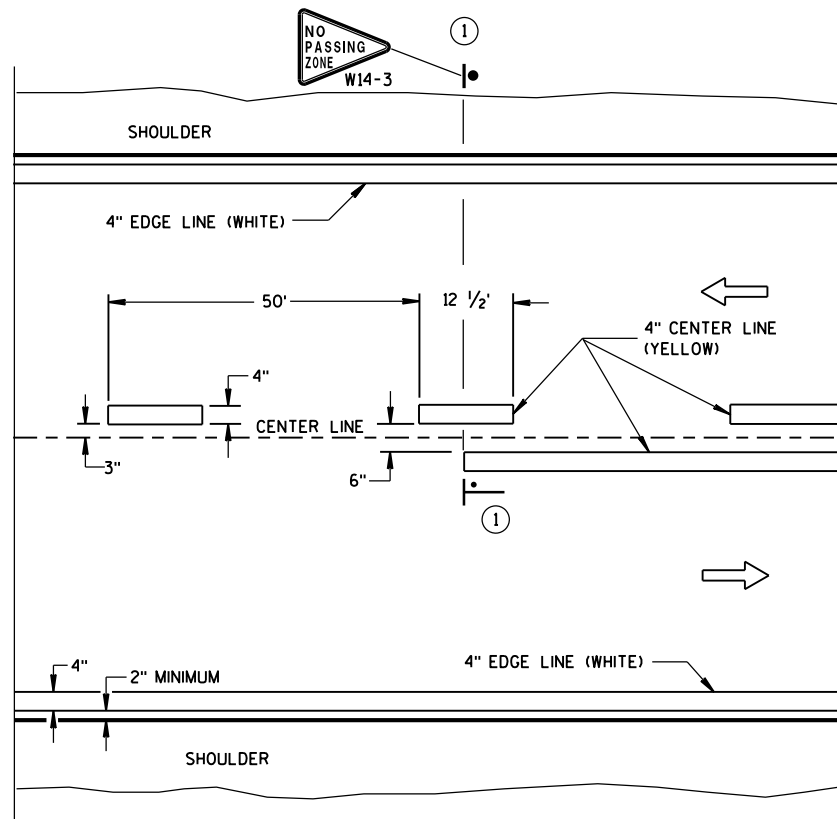
LEGEND

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

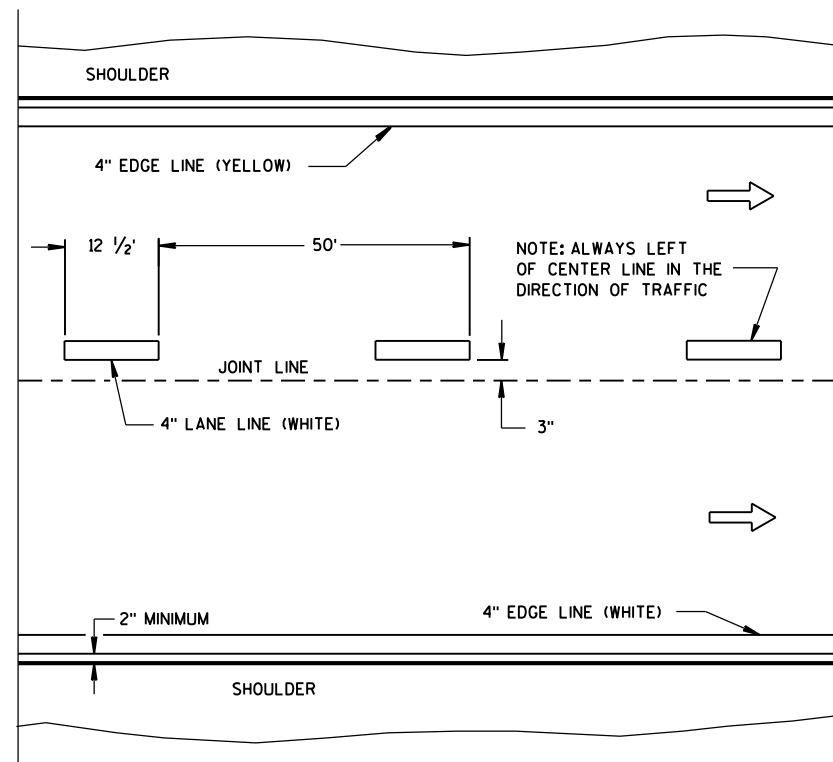
TRAFFIC CONTROL, ADVANCE
WARNING SIGNS 45 M.P.H.
OR GREATER TWO-WAY
UNDIVIDED ROAD OPEN TO TRAFFIC

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
Sept. 2017 /S/ Andrew Heidtke
DATE WORK ZONE ENGINEER
FHWA

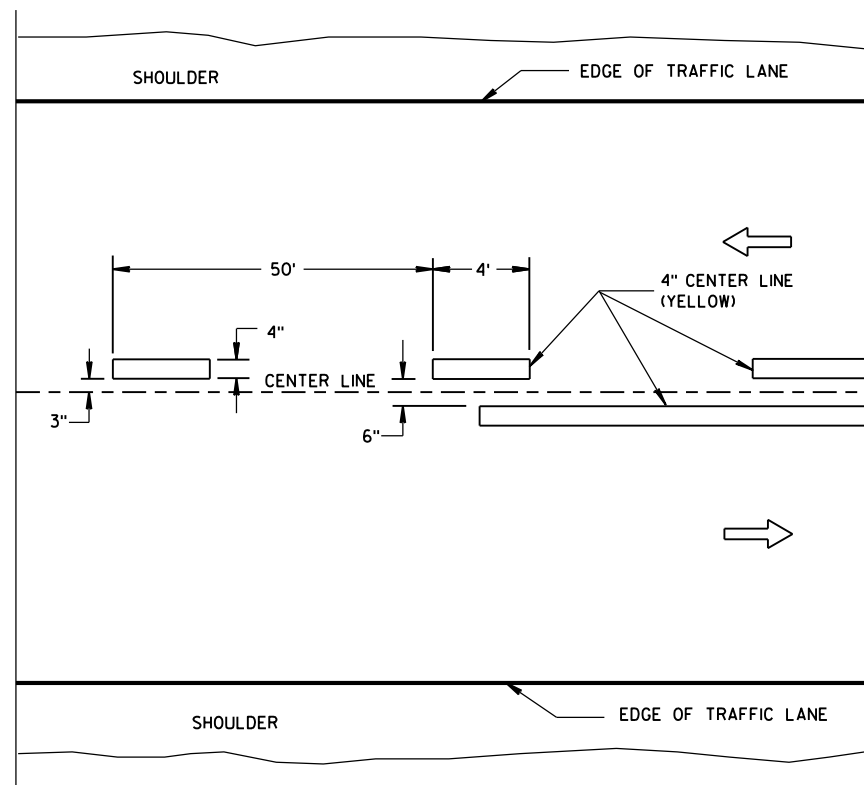


TWO WAY TRAFFIC

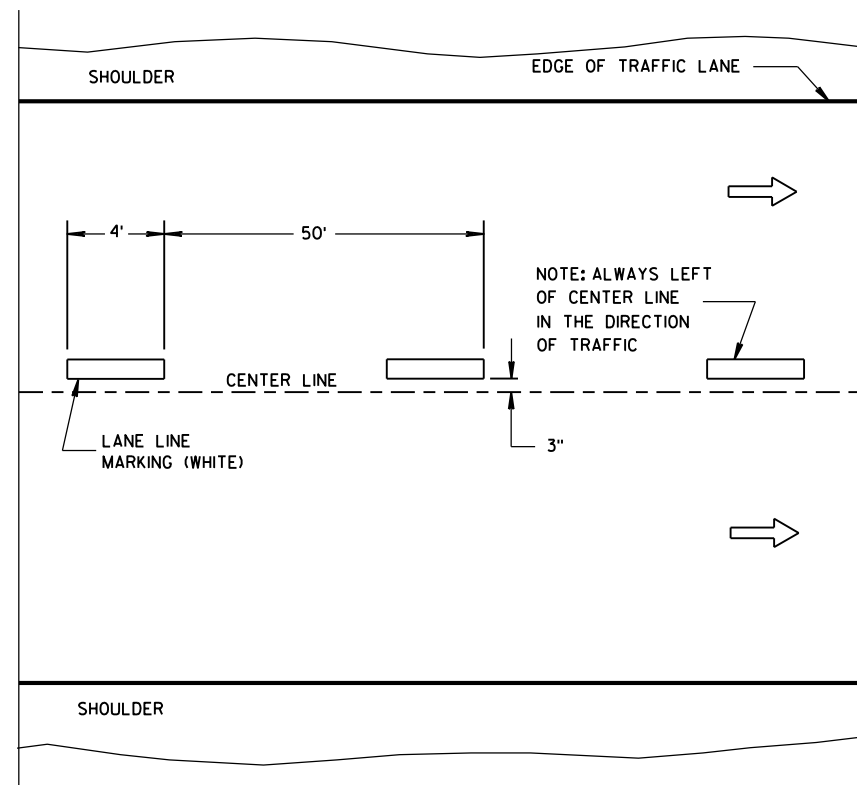


ONE WAY TRAFFIC

PERMANENT PAVEMENT MARKING



TWO WAY TRAFFIC



ONE WAY TRAFFIC

TEMPORARY PAVEMENT MARKING

GENERAL NOTES

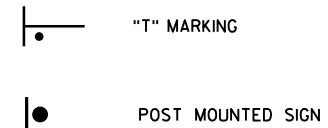
DETAILS OF CONSTRUCTION NOT SHOWN ON THIS DRAWING SHALL CONFORM TO STANDARD SPECIFICATIONS AND SPECIAL PROVISIONS.

- ① LOCATE THE NO PASSING ZONE W14-3 SIGN WITHIN 50 FEET OF THE "T" MARKING.

NOTE

ARROW SYMBOL () SHOWS DIRECTION OF TRAVEL

LEGEND



LONGITUDINAL MARKING (MAINLINE)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
June 2017 /S/ Matthew R. Rouch
DATE STATE SIGNING AND MARKING ENGINEER
FHWA



TWO WAY LEFT TURN LANE

- L = LENGTH OF TURN BAY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

LEGEND

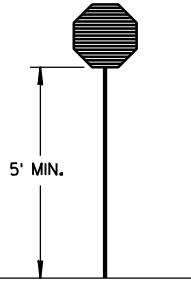
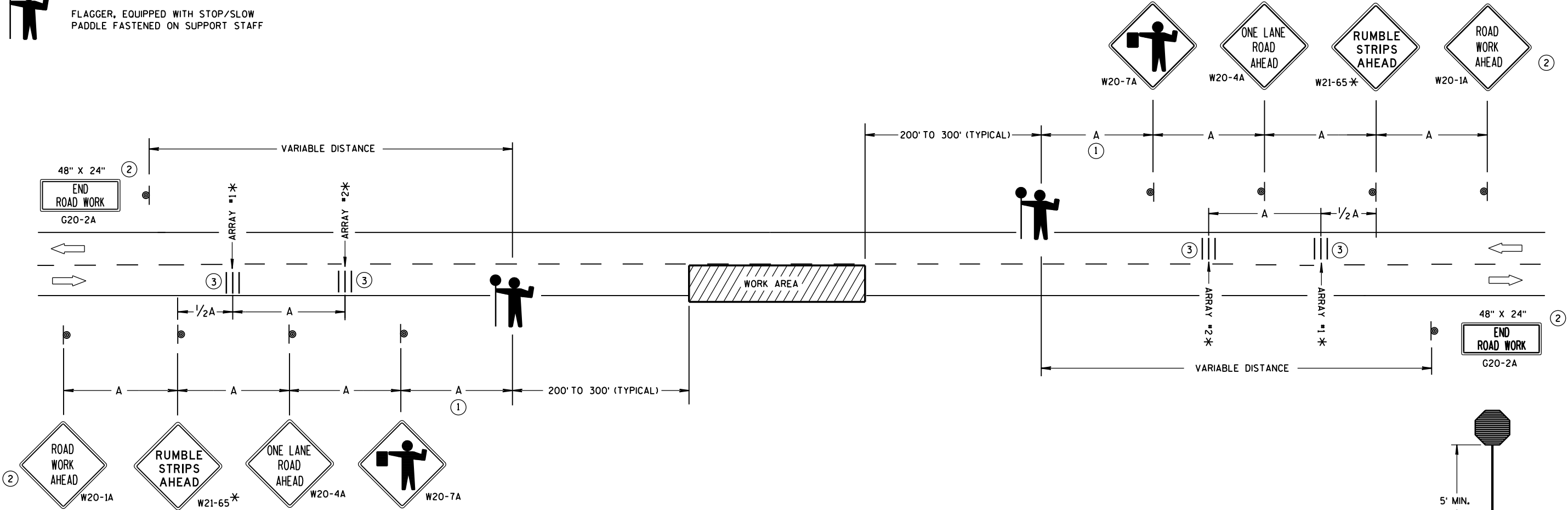
- SIGN ON PORTABLE OR PERMANENT SUPPORT
- DIRECTION OF TRAFFIC
- WORK AREA
- FLAGGER, EQUIPPED WITH STOP/SLOW PADDLE FASTENED ON SUPPORT STAFF

SIGN AND TEMPORARY RUMBLE STRIP ARRAY SPACING TABLE

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



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



STOP/SLOW PADDLE ON SUPPORT STAFF

TRAFFIC CONTROL FOR LANE CLOSURE WITH FLAGGING OPERATION

GENERAL NOTES

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

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

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

"W0" SIGNS ARE THE SAME AS "W" SIGNS EXCEPT THE BACKGROUND IS ORANGE.

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.

INSTALL TEMPORARY RUMBLE STRIPS PER MANUFACTURER'S RECOMMENDATIONS. PLACE ADVANCE SIGNING PRIOR TO INSTALLING TEMPORARY RUMBLE STRIPS.

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

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 RUMBLE STRIPS PRIOR TO COVERING OR REMOVING ALL ADVANCE SIGNING.

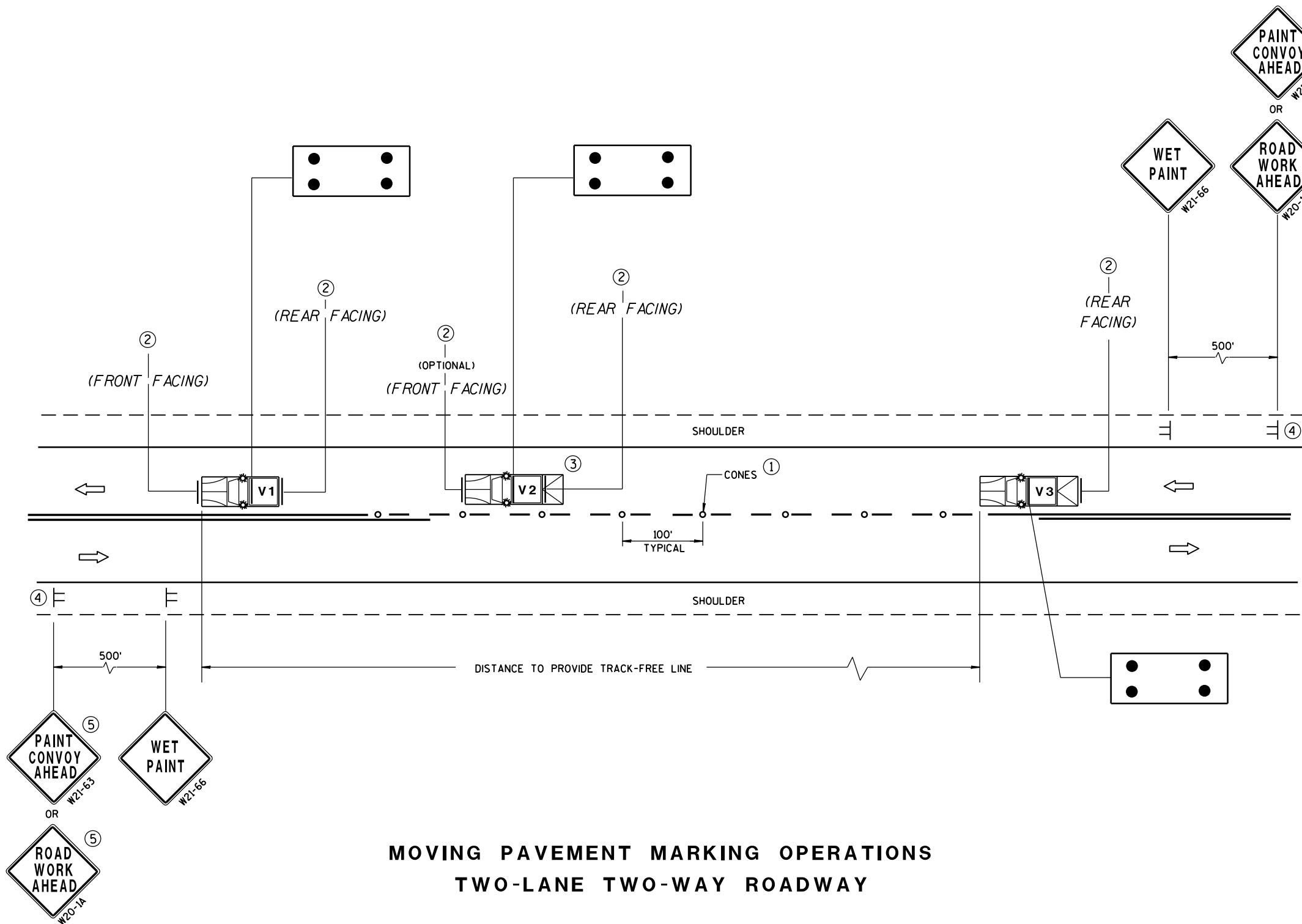
* UTILIZE TEMPORARY RUMBLE STRIPS WHEN FLAGGING OPERATION IS ANTICIPATED TO BE STATIONARY IN EXCESS OF TWO HOURS.

- FOR A MOVING WORK OPERATION, SIGNING AND TEMPORARY RUMBLE STRIPS (IF USED) SHALL BE REESTABLISHED (AS SIMULTANEOUSLY AS PRACTICAL) AT APPROXIMATELY 3,500 FOOT 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.
- EACH TEMPORARY RUMBLE STRIP ARRAY CONSISTS OF THREE RUMBLE STRIPS SPACED ACCORDING TO MANUFACTURER'S RECOMMENDATION, PLACED TRANSVERSE ACROSS THE LANE AT LOCATIONS SHOWN.

TRAFFIC CONTROL FOR LANE CLOSURE WITH FLAGGING OPERATION

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

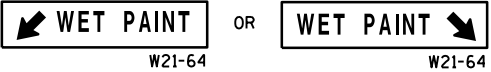
APPROVED
June 2017 /S/ Andrew Heldtke
DATE WORK ZONE ENGINEER
FHWA



MOVING PAVEMENT MARKING OPERATIONS
TWO-LANE TWO-WAY ROADWAY

GENERAL NOTES

- ALL VEHICLES SHALL BE EQUIPPED WITH TWO 360 DEGREE HIGH INTENSITY YELLOW FLASHING LIGHTS OR STROBE LIGHTS AND OPERATED WITH HEADLIGHTS TURNED ON.
- VEHICLES SHALL BE EQUIPPED WITH REAR FACING TYPE B OR C FLASHING ARROW PANEL OPERATING IN CAUTION MODE. SIGNS PLACED ON VEHICLES MUST NOT OBSCURE THE ARROW PANEL.
- ALL SIGNS ARE 48" X 48" UNLESS OTHERWISE SPECIFIED.
- IF SPEED LIMIT IS 40 MPH OR LESS STATIONARY SIGNS MAY BE OMITTED IF CONES ARE USED.
- ALTERNATE SIGN MESSAGES, SUCH AS "PAINT CREW AHEAD" OR "ROAD PAINTING AHEAD" MAY BE USED.
- DISTANCE BETWEEN VEHICLES MAY VARY ACCORDING TO TERRAIN, SIGHT DISTANCE, PAINT DRYING TIME, AND OTHER FACTORS. WHENEVER ADEQUATE STOPPING SIGHT DISTANCE EXISTS TO THE REAR, SHADOW VEHICLES SHOULD MAINTAIN THE MINIMUM DISTANCE FROM THE WORK VEHICLE AND PROCEED AT THE SAME SPEED AS THE WORK VEHICLE. SHADOW VEHICLES SHOULD SLOW DOWN IN ADVANCE OF VERTICAL OR HORIZONTAL CURVES THAT RESTRICT SIGHT DISTANCE.
- THE WORK AND SHADOW VEHICLES SHOULD PULL OVER PERIODICALLY TO ALLOW TRAFFIC TO PASS.
- THIS DRAWING SHALL BE USED FOR CENTERLINE OR EDGELINE MARKING.
- WHEN NO WORK ACTIVITY IS TAKING PLACE, REMOVE OR TURN THE STATIONARY WARNING SIGNS AWAY FROM TRAFFIC.
- ① CONES MAY BE OMITTED ON PAINTED LINE IF APPROVED BY THE ENGINEER. CONSIDER PAVEMENT MARKING DRY OR CURE TIMES AND TRAFFIC VOLUME.
- ② USE STANDARD SIGN W21-64 WITH APPROPRIATE ARROW.
- ③ OPTIONAL TRUCK-MOUNTED ATTENUATOR.
- ④ SIGNS SHALL BE REPEATED APPROXIMATELY EVERY THREE MILES.
- ⑤ IF CONSTRUCTION WORK ZONE SIGNS ARE IN PLACE, W20-1 OR W21-63 ARE NOT REQUIRED.



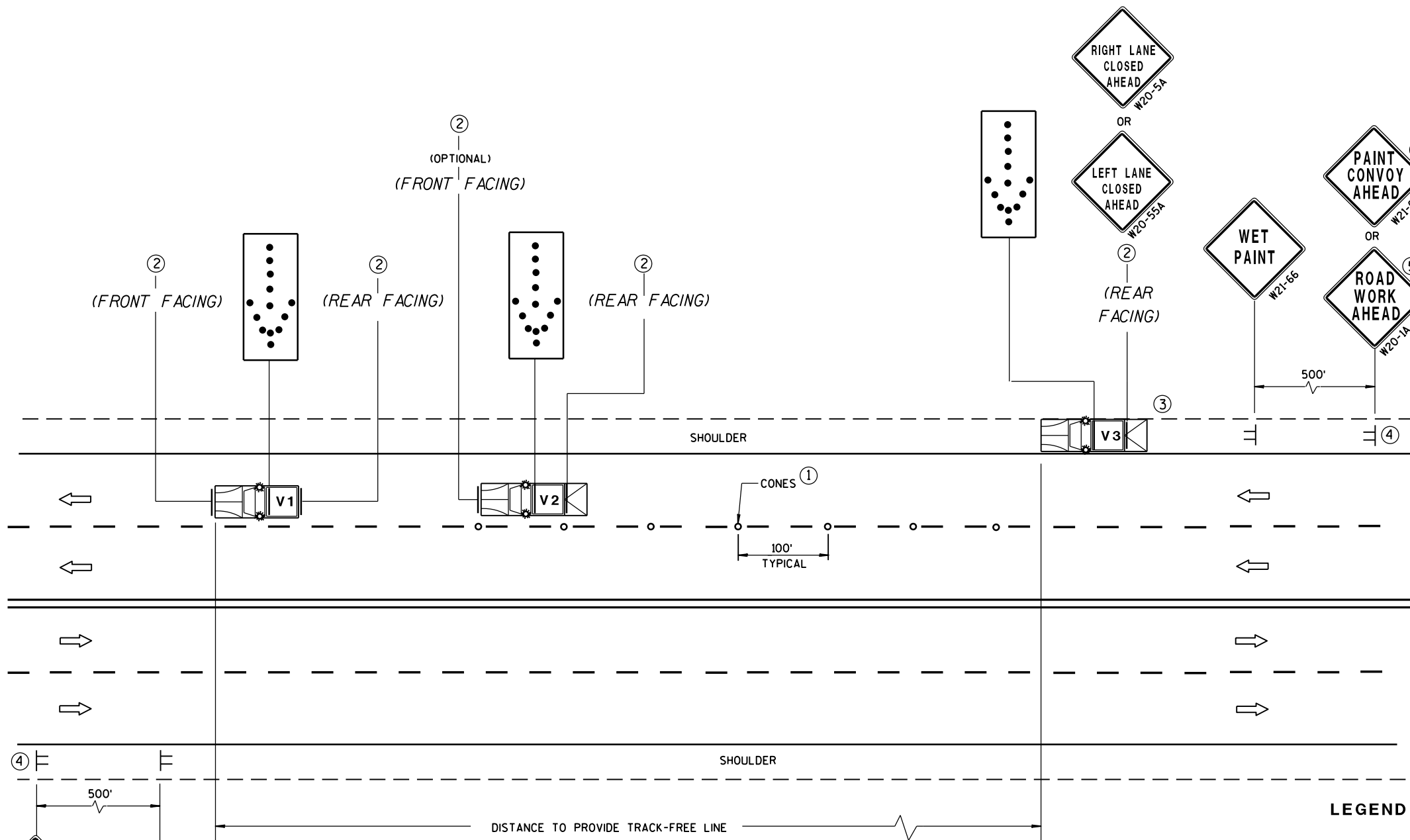
LEGEND

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

MOVING PAVEMENT MARKING
OPERATION
TWO-LANE TWO-WAY ROADWAY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
Sept., 2017 /S/ Andrew Heidtke
DATE WORK ZONE ENGINEER
FHWA



MOVING PAVEMENT MARKING OPERATIONS
MULTI-LANE UNDIVIDED ROADWAY

GENERAL NOTES

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

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

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

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

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

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

WHEN WORK ACTIVITY BLOCKS THE LEFT LANE, REVERSE TRAFFIC CONTROL.

WHEN A RAMP INTERSECTS THE FACILITY ON WHICH THE WORK IS BEING PERFORMED, PROVIDE ADDITIONAL TRAFFIC CONTROLS AS SPECIFIED IN THE CONTRACT OR AS APPROVED BY THE ENGINEER.

USE AN ATTENUATOR ON THE REARMOST VEHICLE THAT BLOCKS ALL OR PART OF THE TRAFFIC LANE.

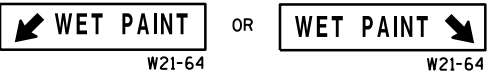
FOR EDGE LINE MARKING OR IF CONES ARE NOT USED, POSITION THE REARMOST SHADOW VEHICLE ON THE SHOULDER AS SHOWN IN THE MUTCD IF THE SHOULDER HAS ADEQUATE WIDTH.

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

THIS DRAWING SHALL BE USED FOR CENTERLINE OR EDGE LINE OR LANELINE MARKING FOR MULTILANE UNDIVIDED ROADWAYS.

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

② USE STANDARD SIGN W21-64 WITH APPROPRIATE ARROW.



③ OPTIONAL TRUCK-MOUNTED ATTENUATOR.

④ SIGNS SHALL BE REPEATED APPROXIMATELY EVERY THREE MILES.

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

LEGEND

V1 LEAD VEHICLE

V2 SHADOW VEHICLE

V3 TRAIL VEHICLE WITH TMA

TMA TRUCK-MOUNTED ATTENUATOR

Sign on temporary support

Direction of traffic

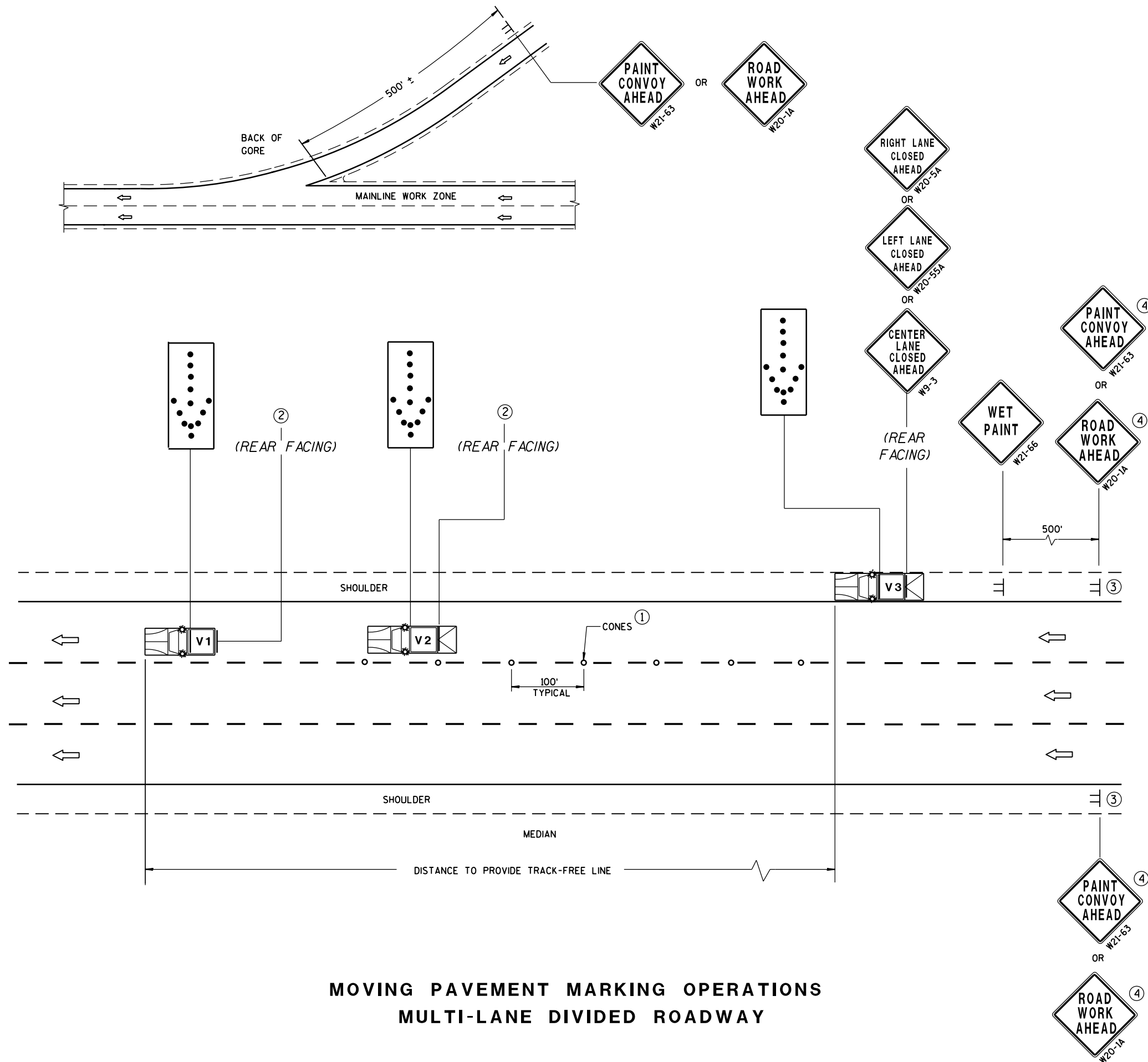
Cones

Flashing arrow panel (merge)

MOVING PAVEMENT MARKING
OPERATION
MULTI-LANE UNDIVIDED ROADWAY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
Sept., 2017 /S/ Andrew Heldtke
DATE WORK ZONE ENGINEER
FHWA



GENERAL NOTES

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

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

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

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

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

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

WHEN WORK ACTIVITY BLOCKS THE LEFT LANE, REVERSE TRAFFIC CONTROL.


WHEN A RAMP INTERSECTS THE FACILITY ON WHICH THE WORK IS BEING PERFORMED, PROVIDE ADDITIONAL TRAFFIC CONTROLS AS SPECIFIED IN THE CONTRACT OR AS APPROVED BY THE ENGINEER.

USE AN ATTENUATOR ON THE REARMOST VEHICLE THAT BLOCKS ALL OR PART OF THE TRAFFIC LANE.

FOR EDGELINE MARKING OR IF CONES ARE NOT USED, POSITION THE REARMOST SHADOW VEHICLE ON THE SHOULDER AS SHOWN IN THE MUTCD IF THE SHOULDER HAS ADEQUATE WIDTH. USE DOUBLE ARROWS WHEN CONVOY IS IN CENTER LANE ONLY.

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

THIS DRAWING SHALL BE USED FOR EDGELINE OR LANELINE MARKING FOR MULTILANE DIVIDED ROADWAYS.


- ① CONES MAY BE OMITTED ON PAINTED LINE IF APPROVED BY THE ENGINEER. CONSIDER PAVEMENT MARKING DRY OR CURE TIMES AND TRAFFIC VOLUME.
- ② USE STANDARD SIGN W21-64 WITH APPROPRIATE ARROW.

- ③ SIGNS SHALL BE REPEATED AFTER EVERY ON RAMP OR EVERY THREE MILES.
- ④ IF CONSTRUCTION WORK ZONE SIGNS ARE IN PLACE, W20-1 OR W21-63 ARE NOT REQUIRED.

LEGEND

V1 LEAD VEHICLE

V2 SHADOW VEHICLE

V3 TRAIL VEHICLE WITH TMA

 **TMA** TRUCK-MOUNTED ATTENUATOR

SIGN ON TEMPORARY SUPPORT

DIRECTION OF TRAFFIC

○ CONES

FLASHING
ARROW
PANEL (MERGE)

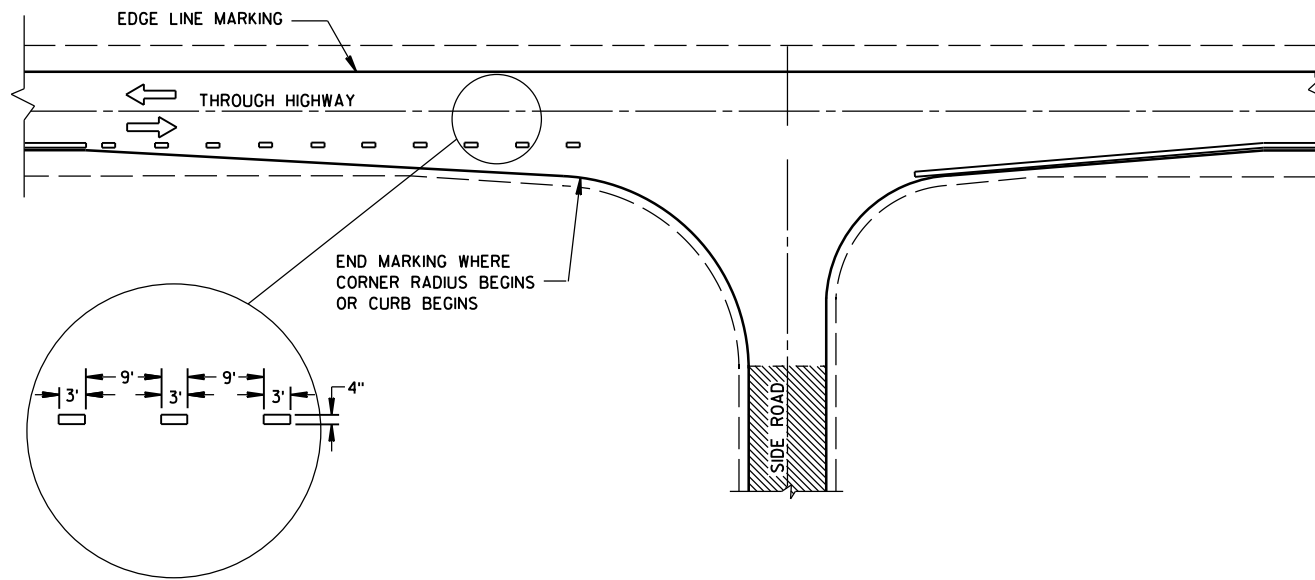
MOVING PAVEMENT MARKING OPERATION MULTI-LANE DIVIDED ROADWAY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

Sept. 2017	/S/ Andrew Heidtke
DATE	WORK ZONE ENGINEER

FHWA




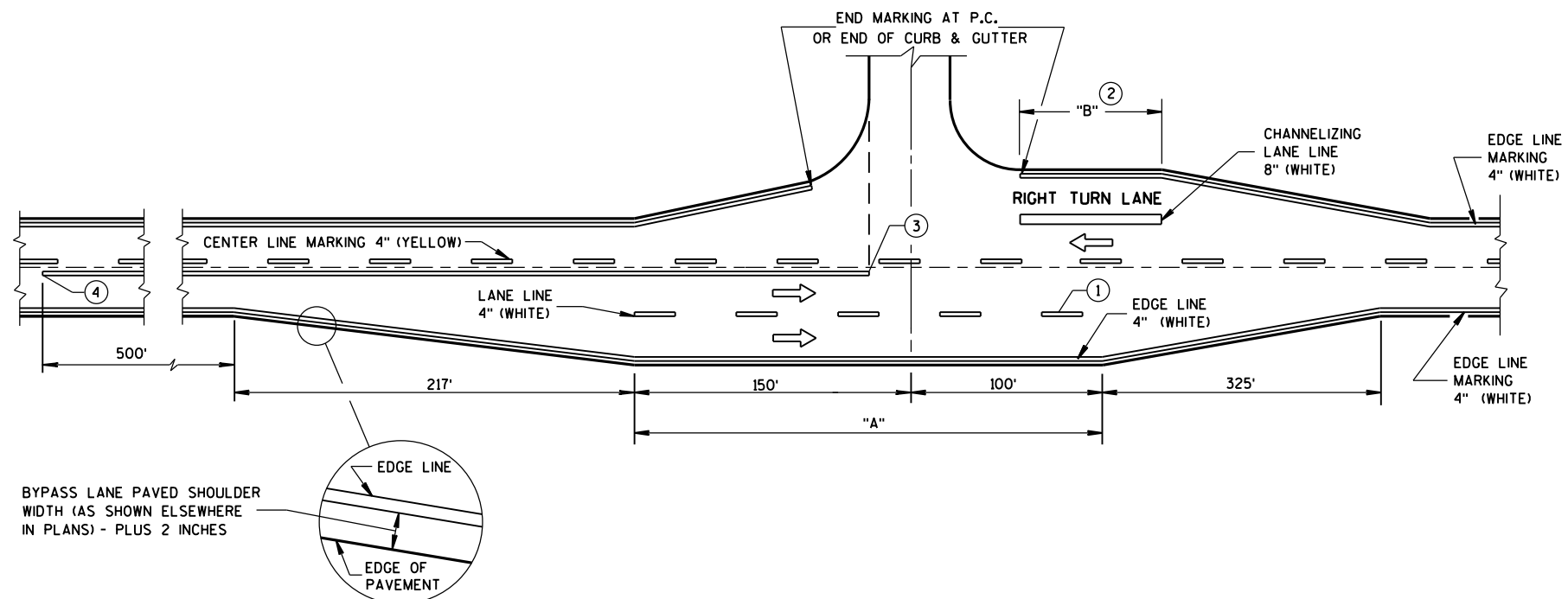
MINOR INTERSECTION

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.

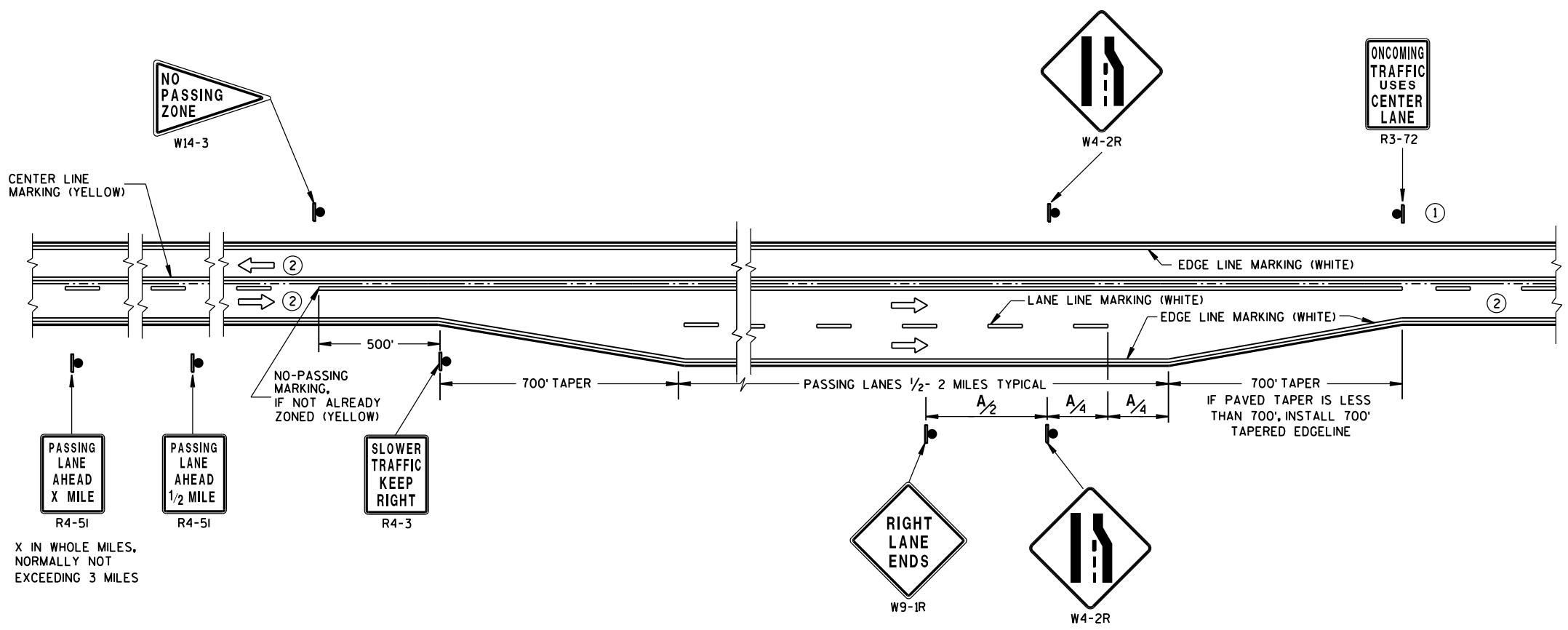
ARROW SYMBOL () SHOWS DIRECTION OF TRAVEL



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

**PAVEMENT MARKING
(INTERSECTIONS)**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



**SOLID DOUBLE-YELLOW LINE
(THROUGHOUT ENTIRE PASSING/CLIMBING LANE)**

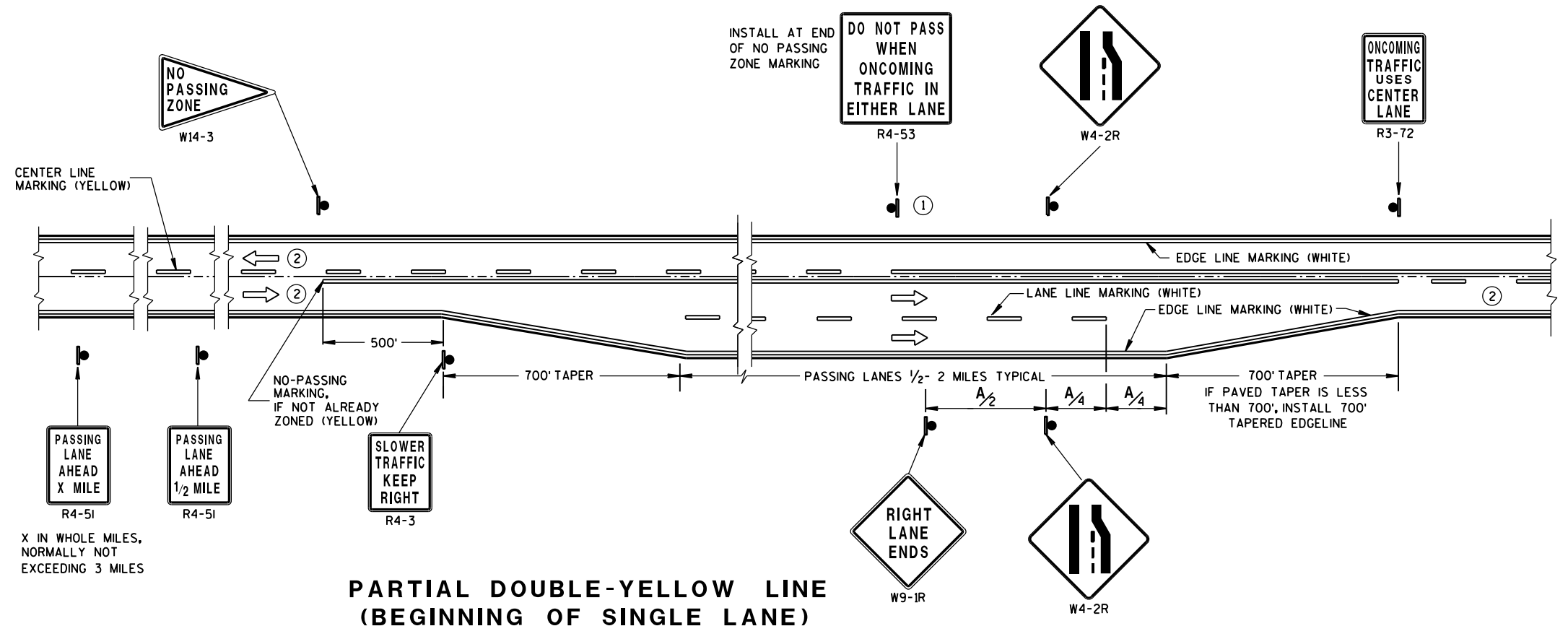
GENERAL NOTES

- ① SIGN SHALL BE REPEATED AT 1 MILE INCREMENTS OR AT THE DISCRETION OF THE REGIONAL TRAFFIC ENGINEER.
- ② THERE MAY BE SOLID YELLOW ON THE CENTERLINE DUE TO SIGHT CONDITIONS.

ARROW SYMBOL (➡) SHOWS DIRECTION OF TRAVEL

DISTANCE TABLE

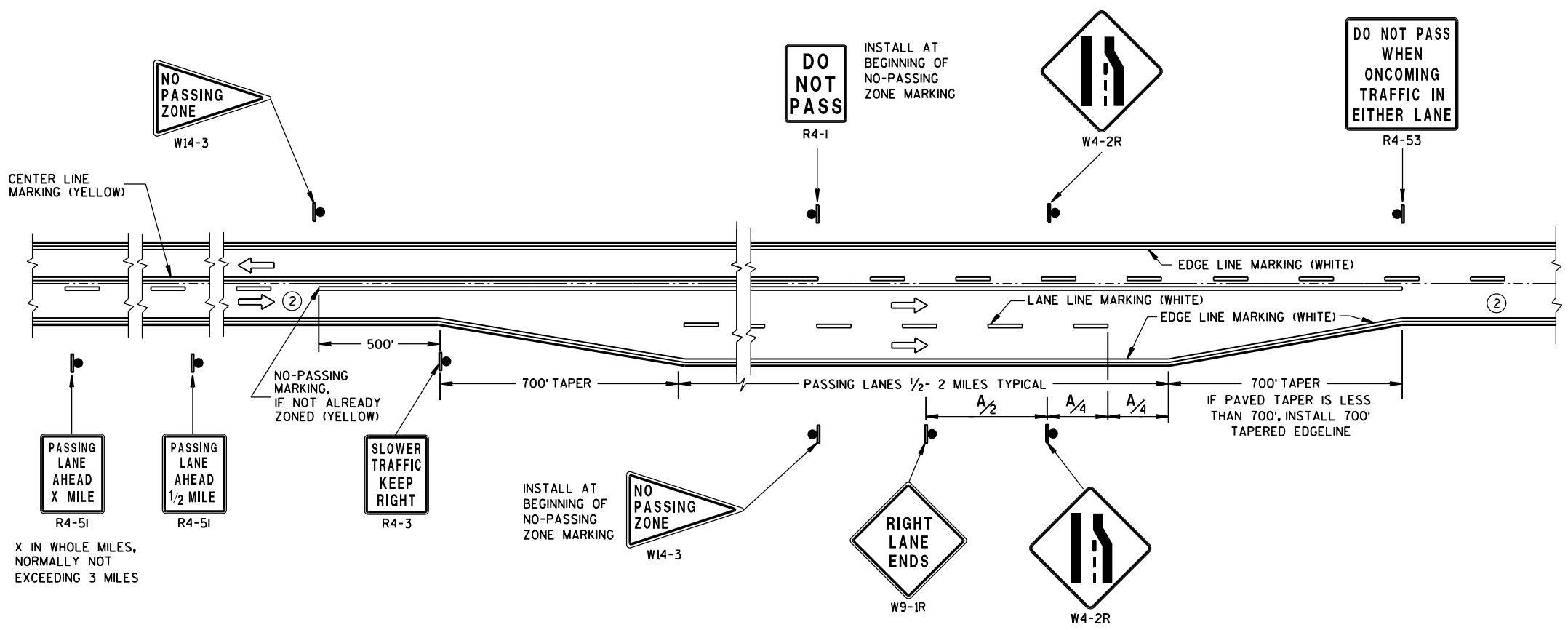
POSTED OR 85th PERCENTILE SPEED	DISTANCE "A"
45	775
50	850
55	950



**PARTIAL DOUBLE-YELLOW LINE
(BEGINNING OF SINGLE LANE)**

**PAVEMENT MARKING & SIGNING
(CLIMBING LANE & PASSING LANE)**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



**SOLID DOUBLE-YELLOW LINE
(END OF SINGLE LANE)**

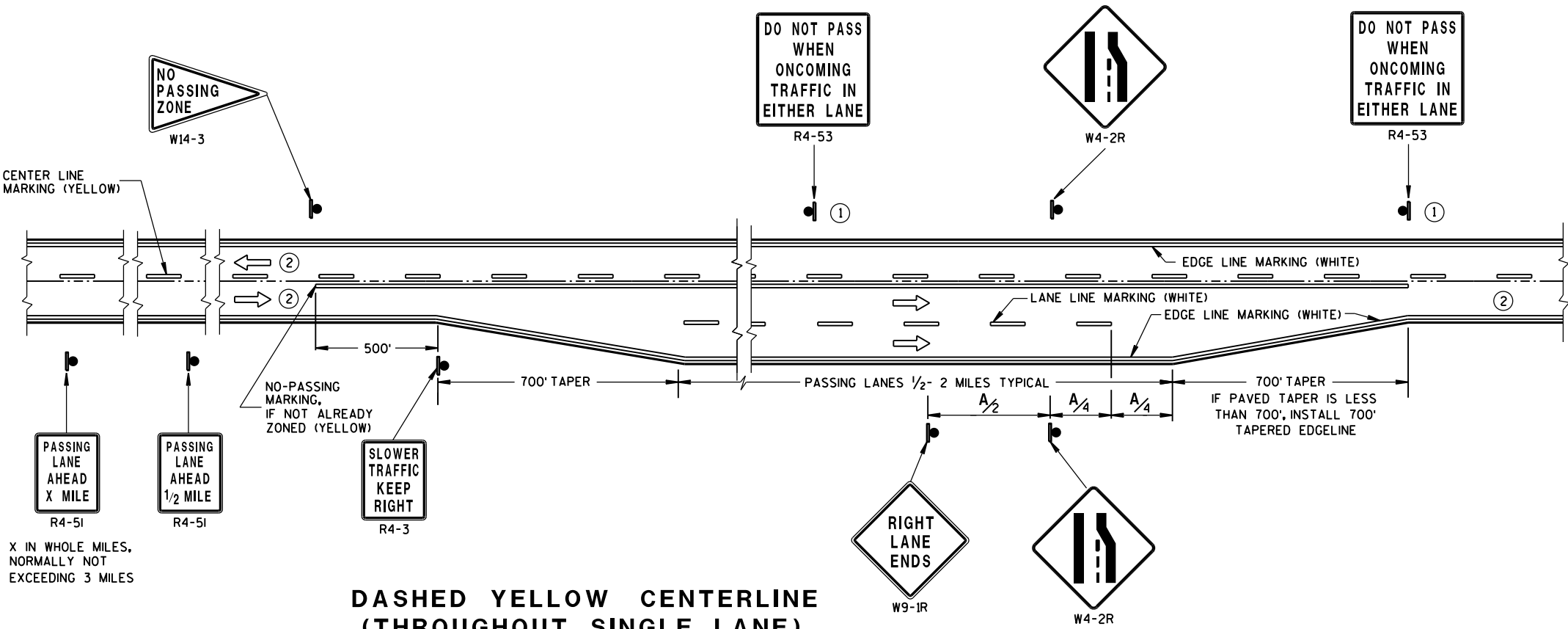
GENERAL NOTES

- ① SIGN SHALL BE REPEATED AT ONE MILE INCREMENTS OR AT THE DISCRETION OF THE REGIONAL TRAFFIC ENGINEER.
- ② THERE MAY BE SOLID YELLOW ON THE CENTERLINE DUE TO SIGHT CONDITIONS.

ARROW SYMBOL (→) SHOWS DIRECTION OF TRAVEL

DISTANCE TABLE

POSTED OR 85th PERCENTILE SPEED	DISTANCE "A"
45	775
50	850
55	950



**DASHED YELLOW CENTERLINE
(THROUGHOUT SINGLE LANE)**

**PAVEMENT MARKING & SIGNING
(CLIMBING LANE & PASSING LANE)**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
Sept., 2017 /S/ Matthew R. Rauch
DATE STATE SIGNING AND MARKING ENGINEER
FHWA

LEGEND

- SIGN ON PERMANENT SUPPORT
- REMOVING PAVEMENT MARKING
- TYPE III BARRICADE WITH ATTACHED SIGN
- CONCRETE BARRIER TEMPORARY PRECAST
- FLAGS, 16" x 16" MIN., (ORANGE)
- TRAFFIC CONTROL DRUM
- TRAFFIC CONTROL DRUM WITH TYPE "C" STEADY BURN LIGHT
- ASPHALTIC PAVEMENT WIDENING
- DIRECTION OF TRAFFIC

GENERAL NOTES

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

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

ALL SIGNS ARE 48"x48" UNLESS OTHERWISE NOTED.

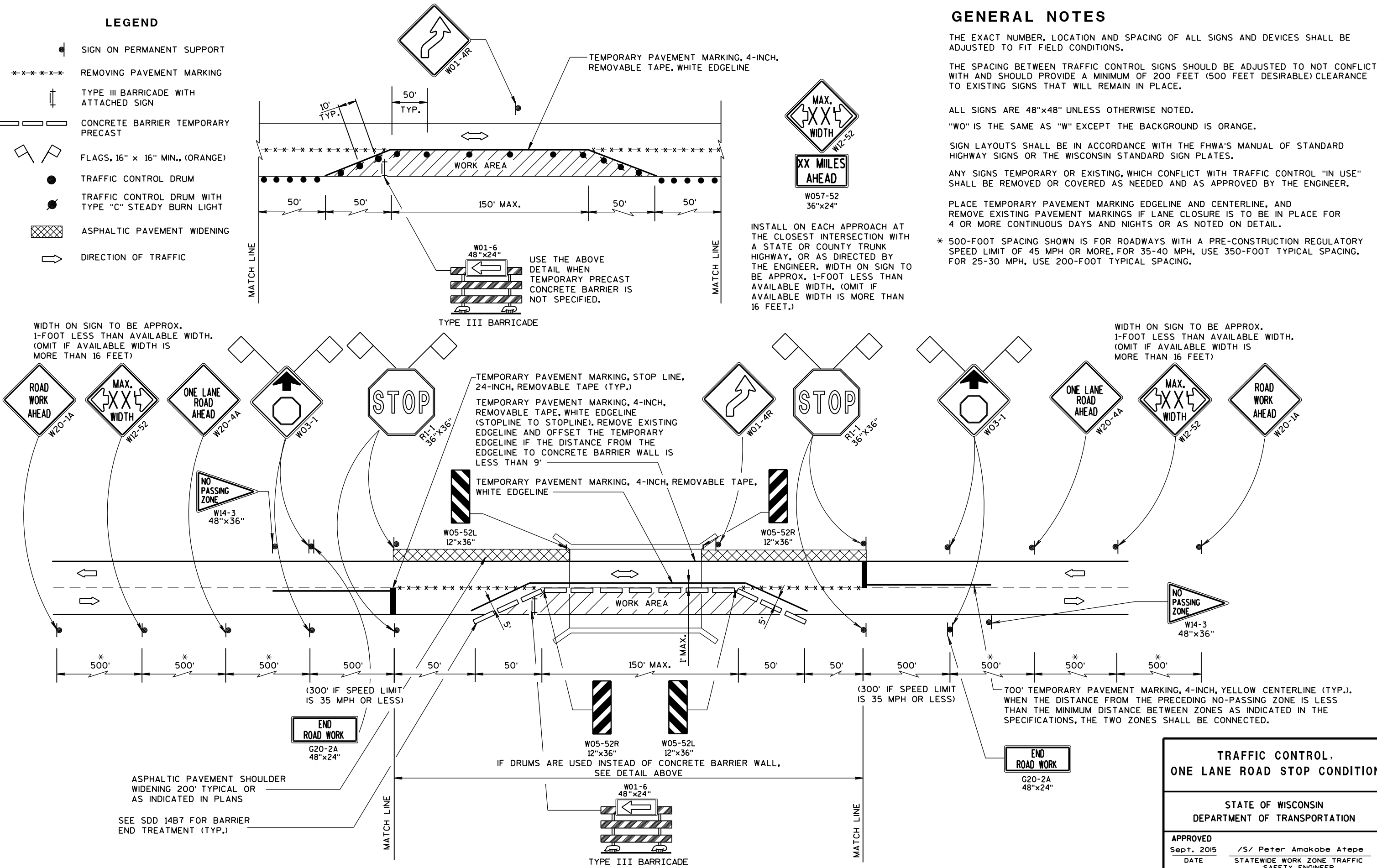
"WO" IS THE SAME AS "W" EXCEPT THE BACKGROUND IS ORANGE.

SIGN LAYOUTS SHALL BE IN ACCORDANCE WITH THE FHWA'S MANUAL OF STANDARD HIGHWAY SIGNS OR THE WISCONSIN STANDARD SIGN PLATES.

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.

PLACE TEMPORARY PAVEMENT MARKING EDGELINE AND CENTERLINE, AND REMOVE EXISTING PAVEMENT MARKINGS IF LANE CLOSURE IS TO BE IN PLACE FOR 4 OR MORE CONTINUOUS DAYS AND NIGHTS OR AS NOTED ON DETAIL.

* 500-FOOT SPACING SHOWN IS FOR ROADWAYS WITH A PRE-CONSTRUCTION REGULATORY SPEED LIMIT OF 45 MPH OR MORE. FOR 35-40 MPH, USE 350-FOOT TYPICAL SPACING. FOR 25-30 MPH, USE 200-FOOT TYPICAL SPACING.



TRAFFIC CONTROL,
ONE LANE ROAD STOP CONDITION

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

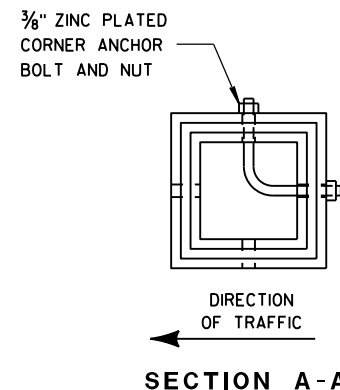


DETAIL OF TUBULAR
STEEL SIGN POST

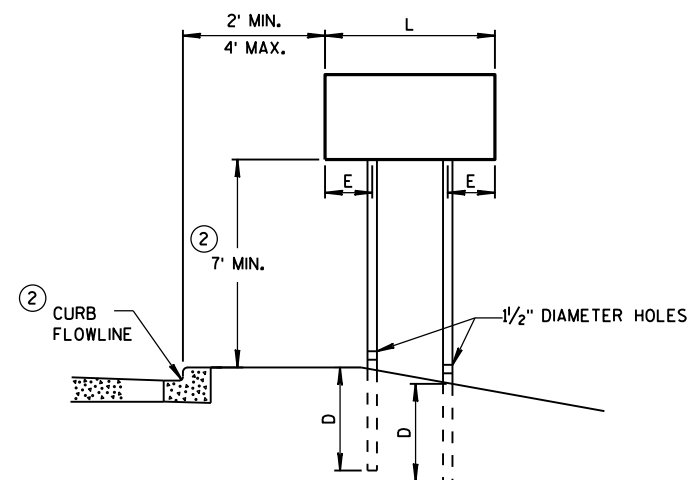
TUBULAR STEEL POSTS

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.



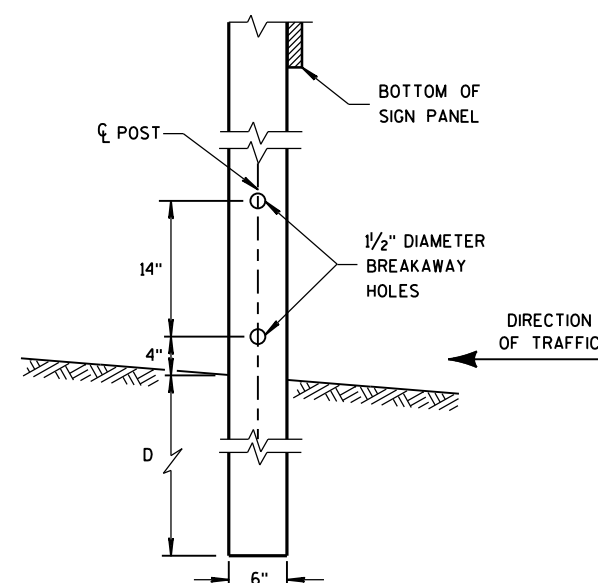
SECTION A-A



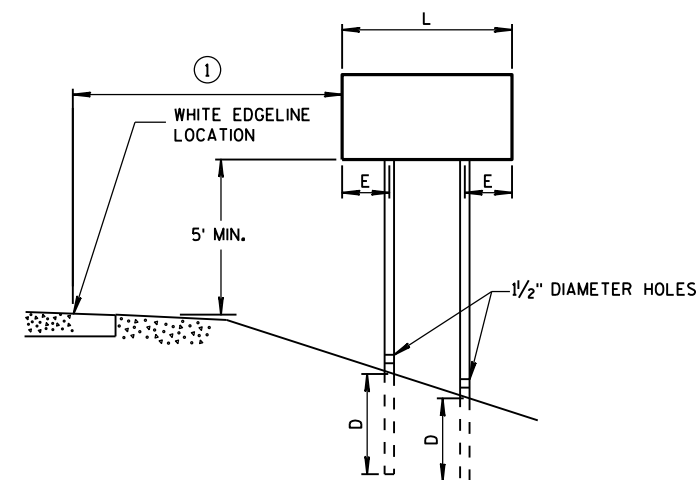
URBAN AREA

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

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.

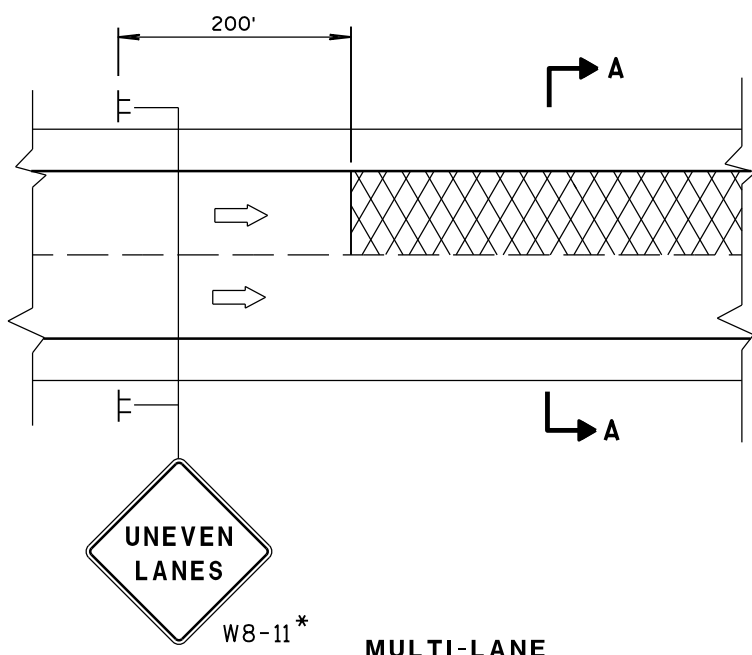
- WOOD POSTS (4" x 4" or 4" x 6")
- LAG SCREWS - 3/8" x 3"
 - MACHINE BOLTS - 5/16" x 6-1/2" OR 7" LENGTH W/ NUTS

- SQUARE STEEL POSTS (2" x 2")
- MACHINE BOLTS - 3/8" x 3-1/4" LENGTH W/ NUTS
 - RIVETS - 9/32" (6605-9-6) BULB-TITE, TRI-FOLD, ALUMINUM BODY/MANDREL O.D. FLANGE .720-.765 INCH, GRIP RANGE .042-.375 INCH

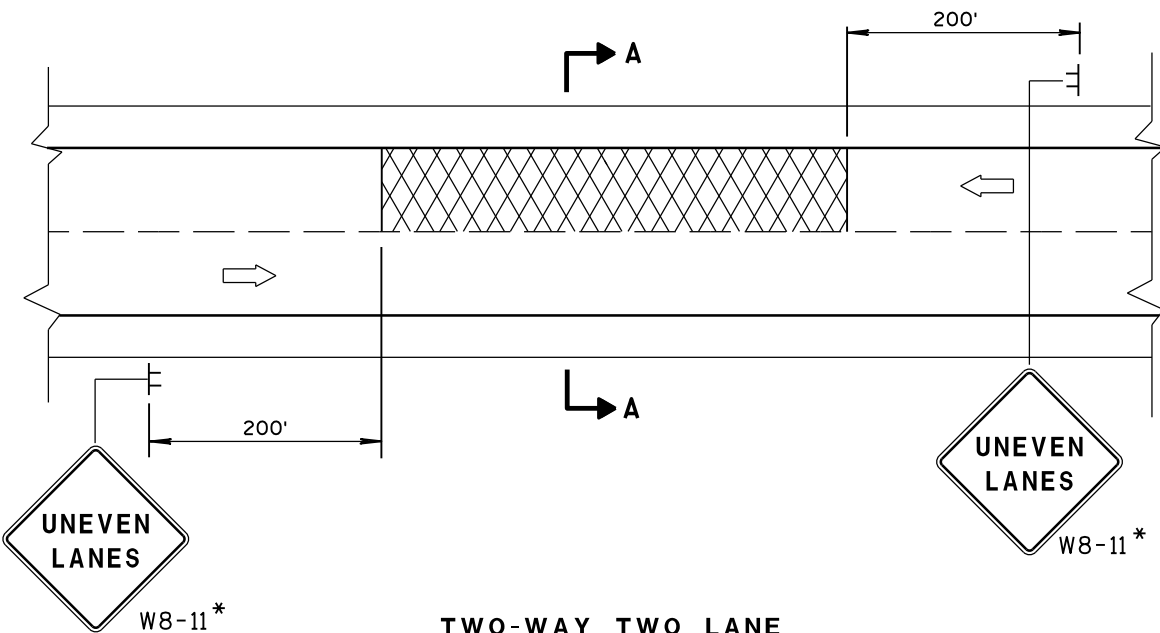
- WASHERS (ALL POSTS) -
- 1-1/4" O.D. x 3/8" I.D. x 1/16" STEEL
 - 1-1/4" O.D. x 3/8" I.D. x .080 NYLON FOR ALL TYPE H SIGNS

* 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.

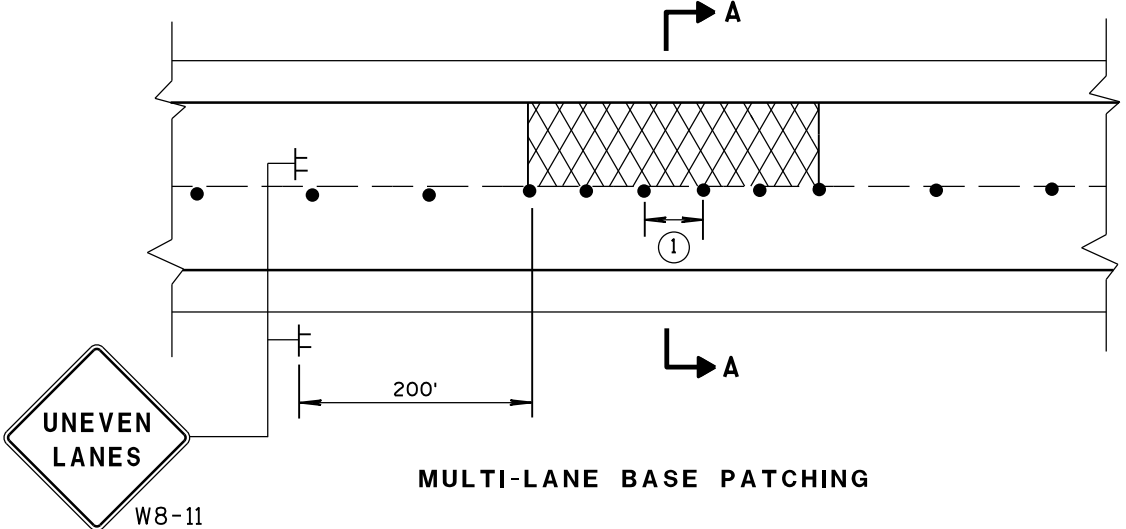
ATTACHMENT OF SIGNS TO POSTS	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED June 2017 DATE	/S/ Andrew Heldtke WORK ZONE ENGINEER
FHWA	



MULTI-LANE

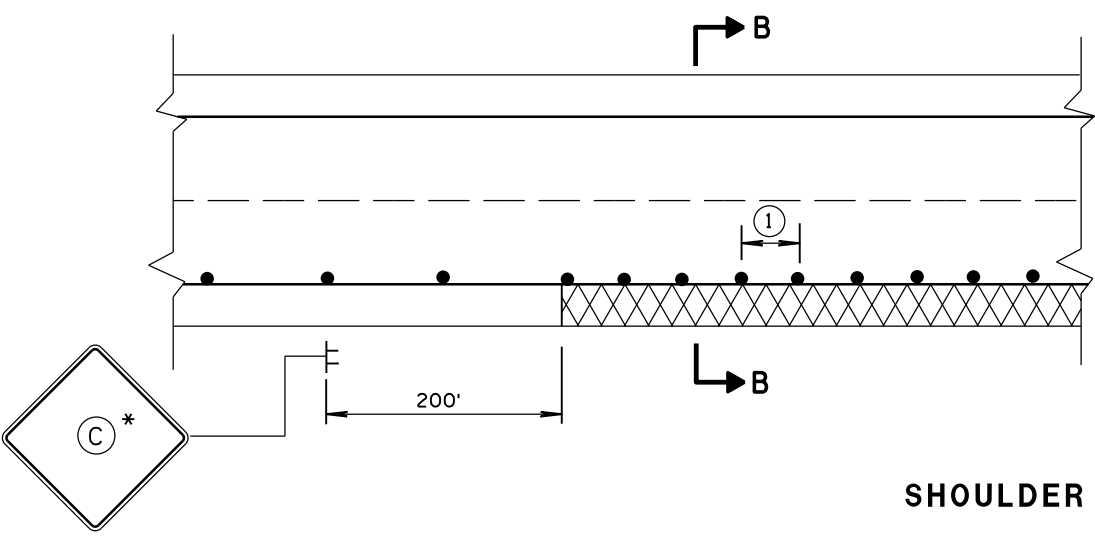
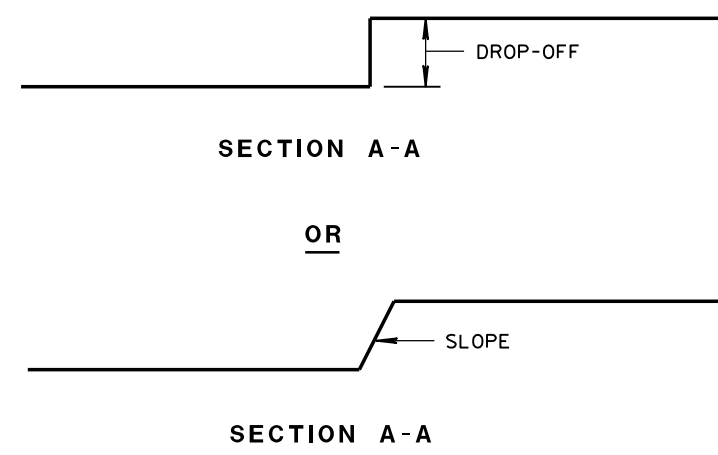


TWO-WAY TWO LANE

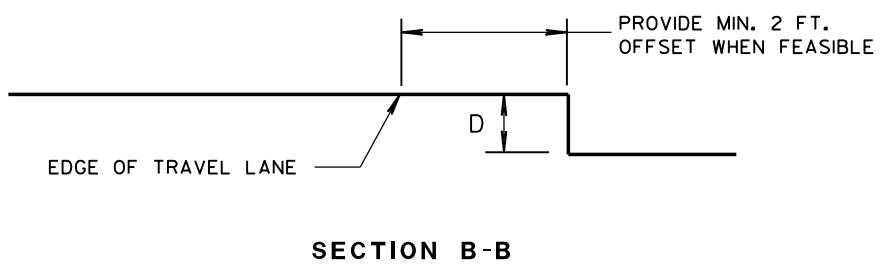


MULTI-LANE BASE PATCHING

ADJACENT LANE DROP-OFFS



SHOULDER DROP-OFFS



SECTION B-B

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.

* IF THE DROP-OFF IS CONTINUOUS ALONG THE PROJECT, PLACE ADDITIONAL SIGNS EVERY 1/2 MILE.

① USE CLOSER SPACING WHEN DELINEATING DROP-OFF.

LEGEND

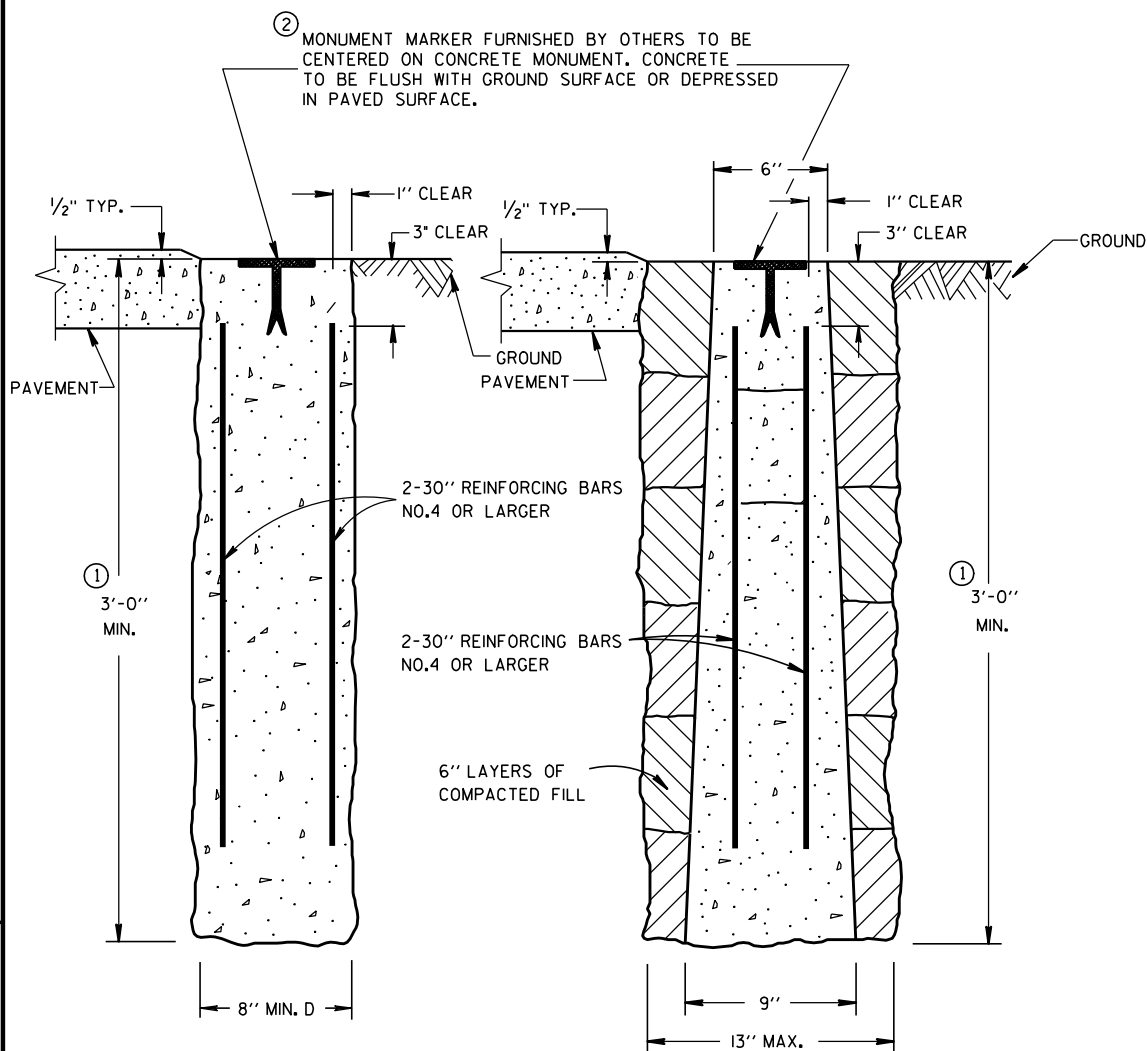
- ┌ SIGN ON TEMPORARY SUPPORT
- TRAFFIC CONTROL DRUM
- ➡ DIRECTION OF TRAFFIC
- ▨ WORK AREA WITH DROP-OFF

D	SIGN ①
< 2" WITH A SLOPE STEEPER THAN 3:1	<div>LOW SHOULDER</div> W08-9
2" < 6" WITH A SLOPE STEEPER THAN 3:1	<div>SHOULDER DROP-OFF</div> 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, 2017 /S/ Andrew Heldtke
DATE WORK ZONE ENGINEER
FHWA

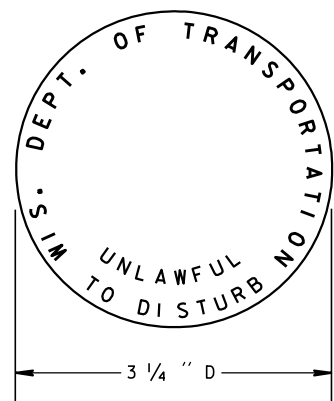


CAST-IN-PLACE

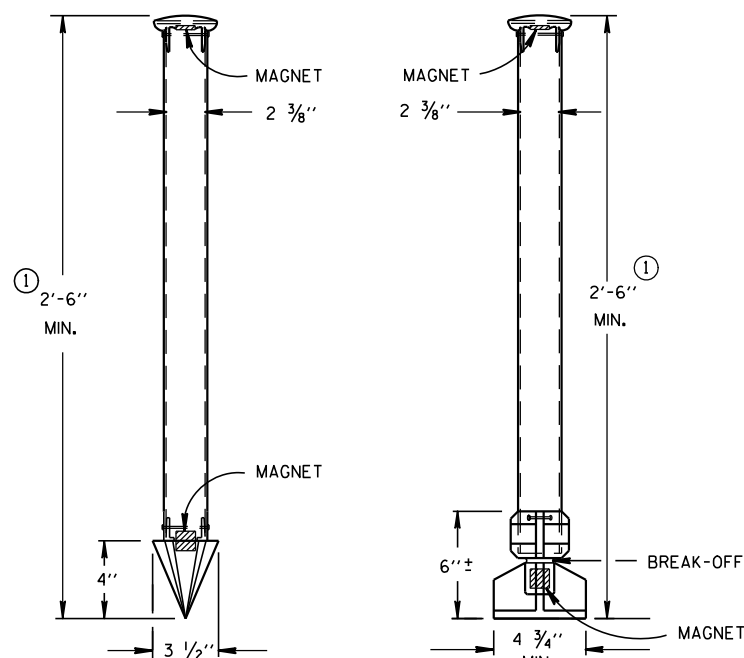
PRECAST

CONCRETE MONUMENTS

TYPE A



② WIS DOT MONUMENT MARKER LOGO
FOR TYPES "A", "C" & "D"



TYPE C

TYPE D

DRIVE-IN MONUMENT

BREAK-OFF MONUMENT

ALUMINUM MONUMENTS

(INCLUDES MARKER)

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.

DETAILED DRAWINGS OF PROPOSED ALTERNATE DESIGNS FOR METAL MONUMENTS OR MONUMENT COVERS SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL.

INSTALLED METAL MONUMENTS MUST BE EASILY DETECTED WITH A DIP NEEDLE. INSERT PERMANENT MAGNETS SHALL BE ATTACHED NEAR THE TOP AND BOTTOM OF THOSE MONUMENTS CONSTRUCTED OF A METAL ALLOY WHICH IS NOT ATTRACTIVE TO A DIP NEEDLE.

THE CAST IRON MONUMENT COVER SHALL BE A "NON-ROCKING" TYPE. ADJUSTMENT OF THE COVER TO GRADE MAY BE ACCOMPLISHED BY THE USE OF MORTAR AND BRICK, OR BY EITHER PRECAST OR CAST-IN-PLACE REINFORCED CONCRETE GRADE RINGS.

MONUMENTS SHALL BE LOCATED AND PLACED AT THE DIRECTION OF THE ENGINEER.

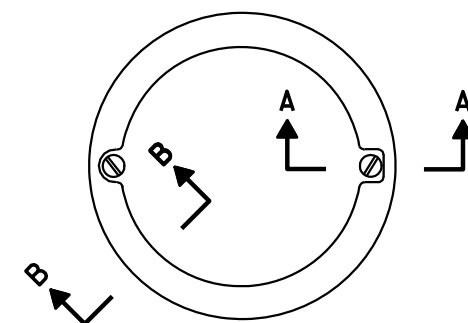
ALUMINUM MONUMENTS AND MONUMENT COVERS SHALL BE MADE FROM AN ALUMINUM AND MAGNESIUM ALLOY AS DETERMINED BY THE MANUFACTURER.

THE MONUMENT COVERS DETAILED ON THIS DRAWING ARE NOT EQUAL ALTERNATES. MONUMENT COVERS SHALL BE CAST IRON UNLESS ALUMINUM IS SPECIFIED ELSEWHERE IN THE CONTRACT.

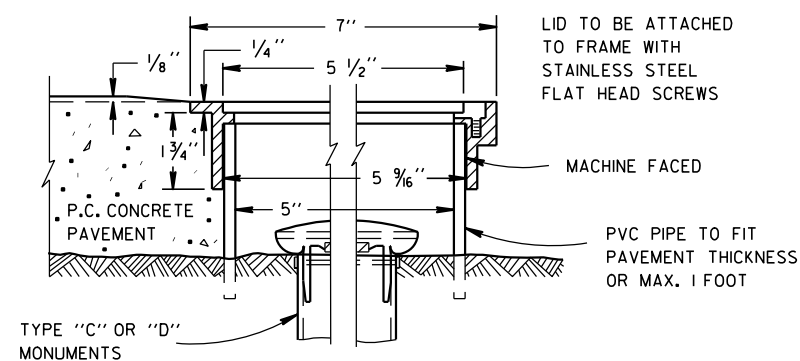
MONUMENT SHALL BE CAST-IN-PLACE CONCRETE UNLESS PRECAST CONCRETE OR ALUMINUM MONUMENTS ARE SPECIFIED IN THE CONTRACT OR PERMITTED BY THE ENGINEER.

① MINIMUM LENGTH SHALL BE 4'-0" FOR MONUMENTS INSTALLED IN PAVED AREAS.

② AN OFFICIAL COUNTY MONUMENT MARKER SUPPLIED BY A COUNTY MAY BE REQUIRED FOR SOME SECTION CORNERS AND WITNESS MONUMENTS INSTEAD OF THIS WIS DOT MARKER.



TOP VIEW



TYPE "C" OR "D" MONUMENTS

SECTION B-B SECTION A-A
ALUMINUM MONUMENT COVER

(APPROXIMATE WEIGHT 2 LBS)
(FOR CONCRETE PAVEMENT ONLY)

LANDMARK REFERENCE
MONUMENTS AND COVERS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

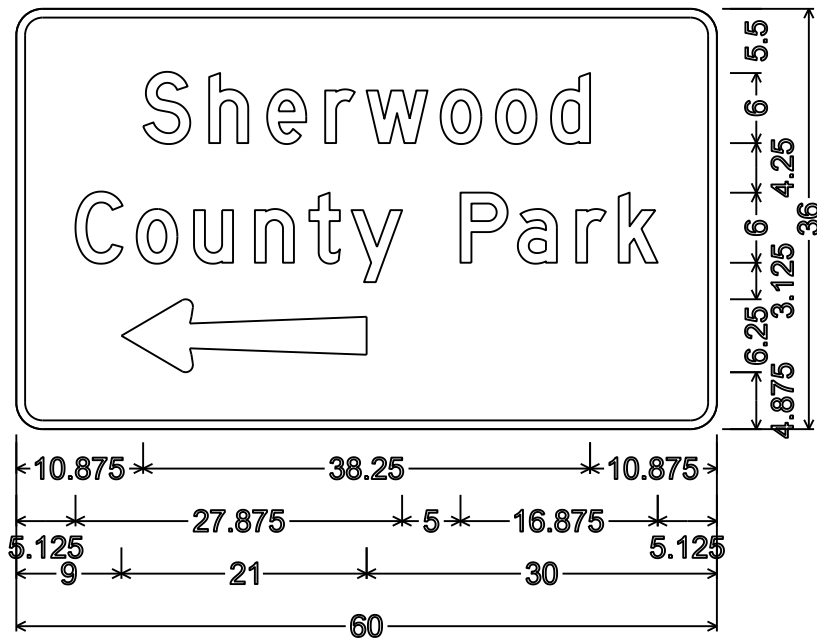
APPROVED

9/22/1999

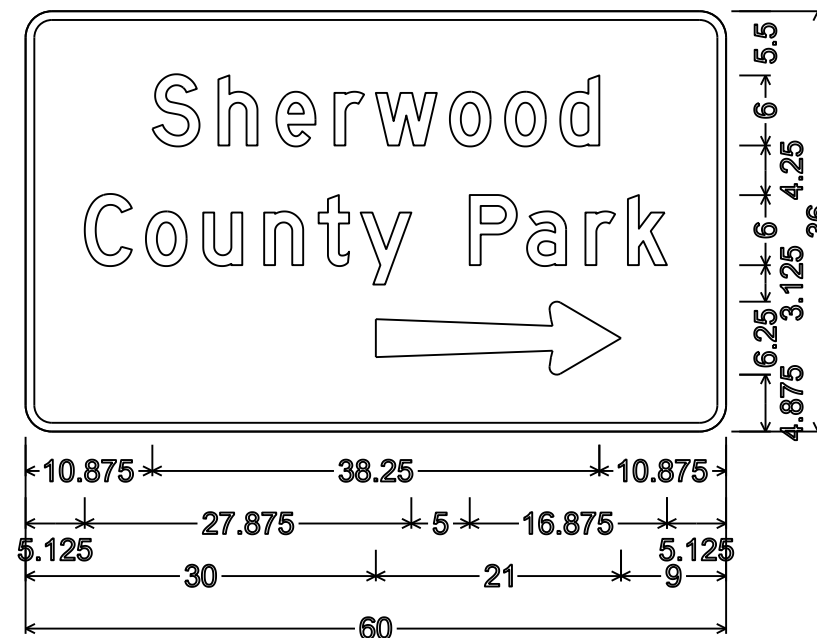
DATE

FHWA

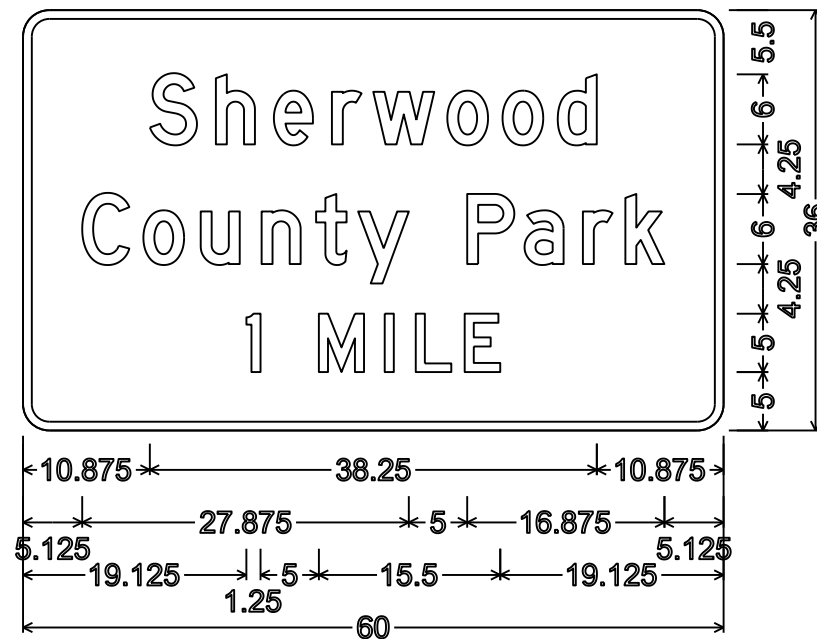
/S/ Rory L. Rhinesmith
CHIEF ROADWAY DEVELOPMENT ENGINEER



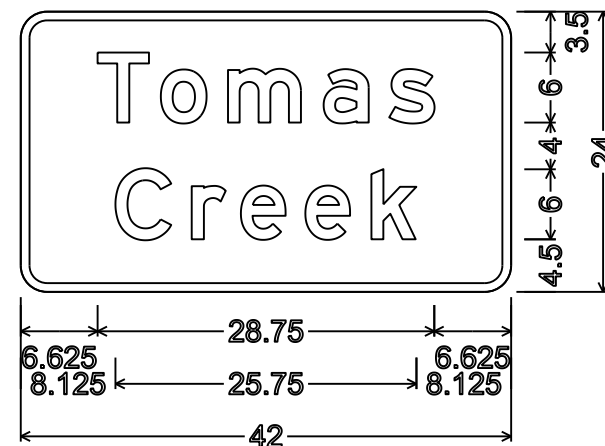
D7-68L;
2.250" Radius, 0.750" Border, White on Brown;
"Sherwood" D; "County" D; "Park" D



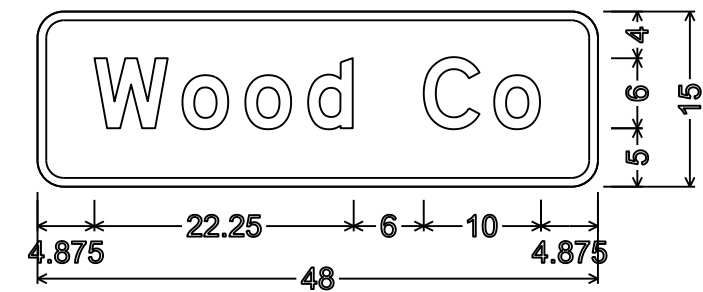
D7-68R;
2.250" Radius, 0.750" Border, White on Brown;
"Sherwood" D; "County" D; "Park" D



D7-67;
2.250" Radius, 0.750" Border, White on Brown;
"Sherwood" D; "County" D; "Park" D; "1" D; "MILE" D



I3-1;
2.250" Radius, 0.750" Border



I2-2;
2.250" Radius, 0.750" Border

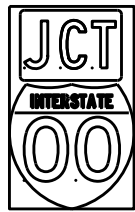


I2-2;
2.250" Radius, 0.750" Border

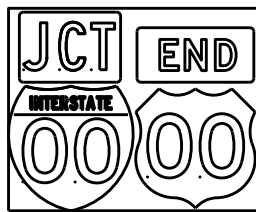
NOTES

1. All Signs Type II - Type H Reflective
2. Color:
Background - Green except as noted
Message - White
3. Message Series - E except as noted

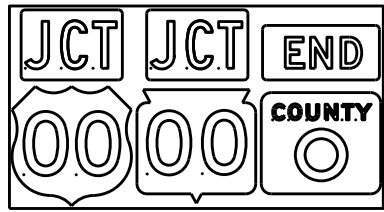
TYPICAL ASSEMBLIES



J1-1



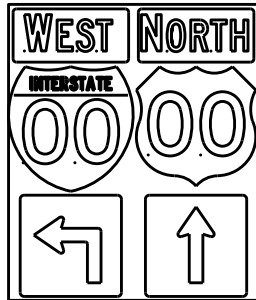
J1-2



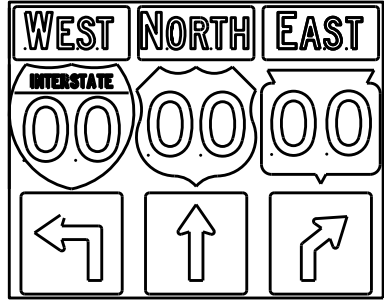
J1-3



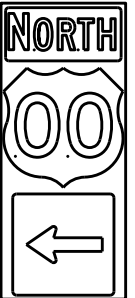
J2-1



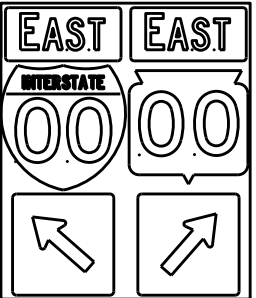
J2-2



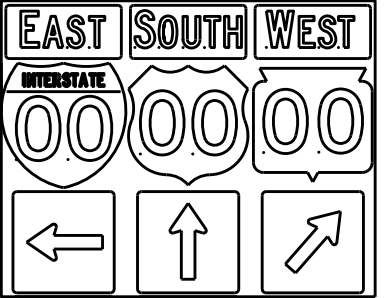
J2-3



J3-1



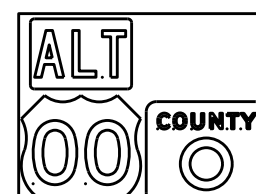
J3-2



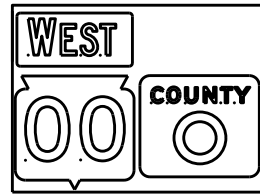
J3-3



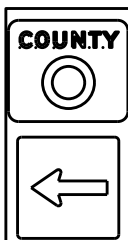
J4-1



J4-2



J4-2



J13-1



J12-1



J32-1



J33-1



J23-1

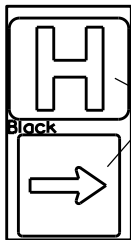


J22-1



JV

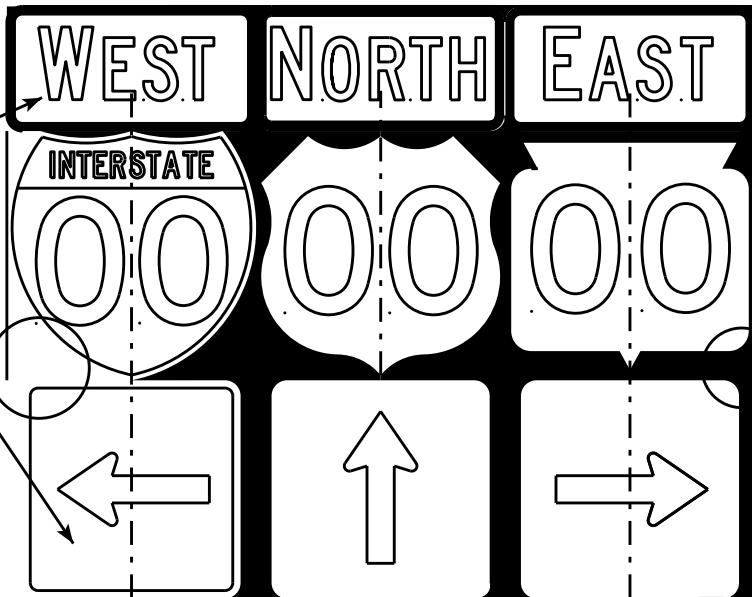
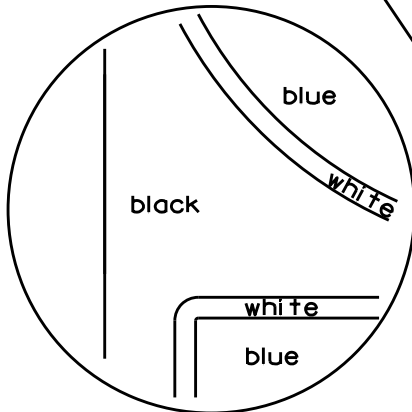
(Typical Vertical J-Assembly
See Note 10 and 11)



JH-1

Blue Background

[blue background
with interstate]



[black background]

ROUTE MARKERS & COMPONENTS
IN TYPICAL ASSEMBLIES

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
For State Traffic Engineer

DATE 2/06/14 PLATE NO. A2-1S.8

NOTES

1. Signs are Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
Background - Black Non-reflective
Message - see Note 5
3. Message Series - See Note 5
4. Corners shall be square or rounded if base material is plywood. If base material is metal the corners shall be rounded.
5. The colors and message spacing on each marker shall be according to the applicable route marker panel specifications.
6. Certain marker heads require the component pieces to be the same color. As an example, all the components used with an M1-1 Interstate marker shall be blue.
7. Single panel j-assemblies shall only be used with route marker shields that are same size. If the route marker shields are different size use multiple piece component.
8. Route assemblies that have 24 inch route shields and have dimensions greater than 48 inches (both vertical and horizontal) shall have one horizontal splice between the arrows and route shields. Vertical splices shall not be used on route assemblies with a horizontal dimension of 144 inches or less. The contractor shall not use more than one vertical joint per sign and the joint shall be between route shields.
9. Route assemblies that have 36 inch shields and have dimensions greater than 48 inches (both vertical and horizontal) shall have two horizontal splices. One horizontal splice shall be between the cardinal direction and route shields and the other horizontal splice shall be between the arrows and route shields. Vertical splices shall not be used on route assemblies with a horizontal dimension of 144 or less. The contractor shall not use more than one vertical joint per sign and the joint shall be between route shields.
10. All Vertical J Assemblies are given a Sign Code of JV
11. For JV Assemblies that have a mixture of Interstate and non Interstate shields, arrows and cardinals shall be white on blue.

PROJECT NO:

FILE NAME : C:\CAEFiles\Projects\tr_stdplate\A21S.DGN

PLOT DATE : 06-FEB-2014 14:10

PLOT BY : mscs.ja

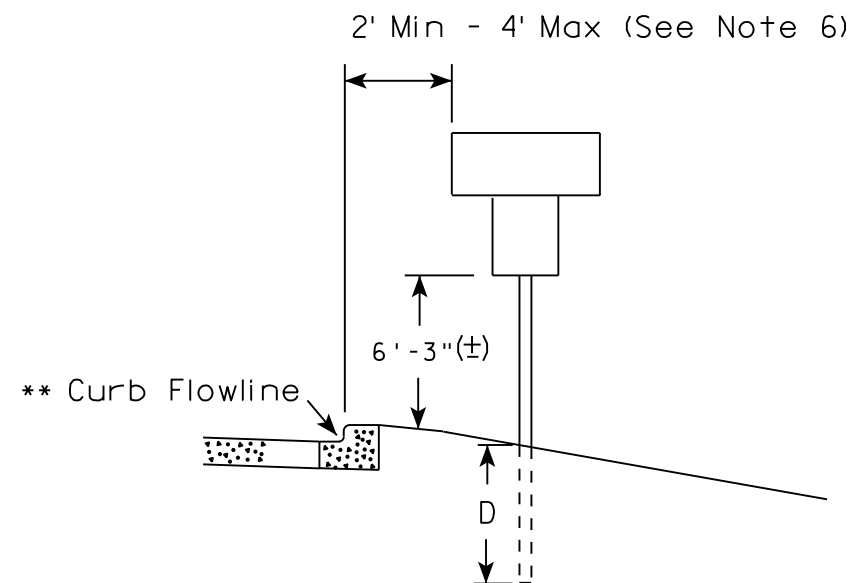
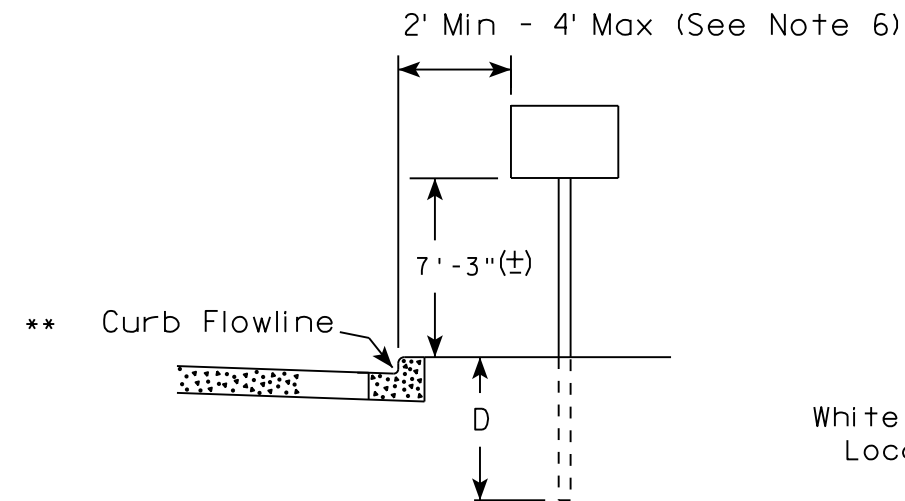
PLOT NAME :

SHEET NO:

E

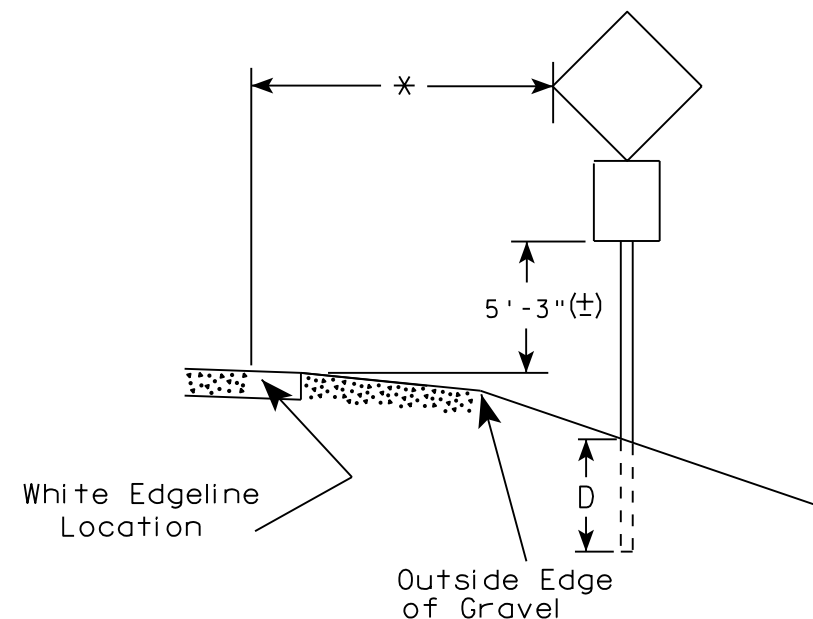
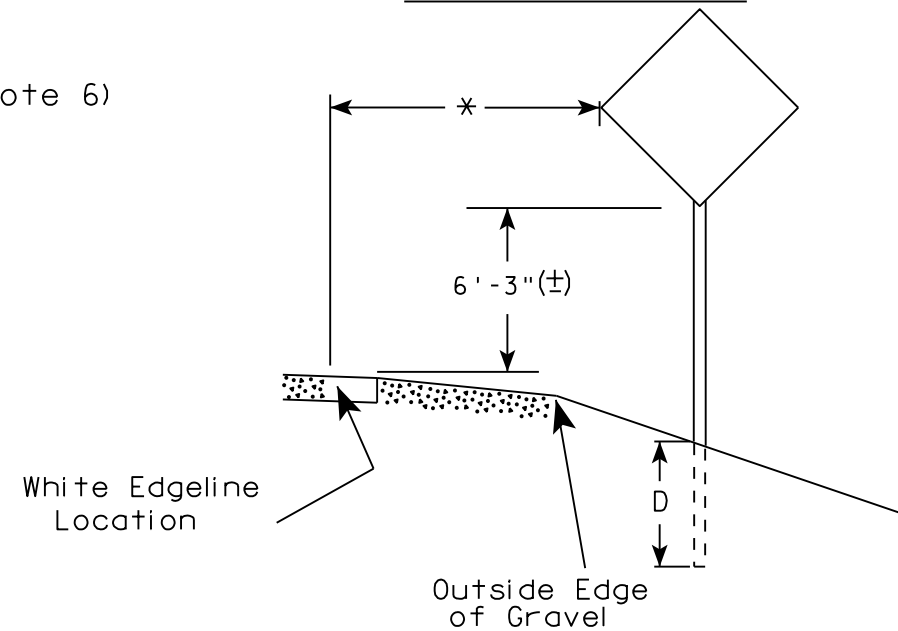
WISDOT/CADDs SHEET 42

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

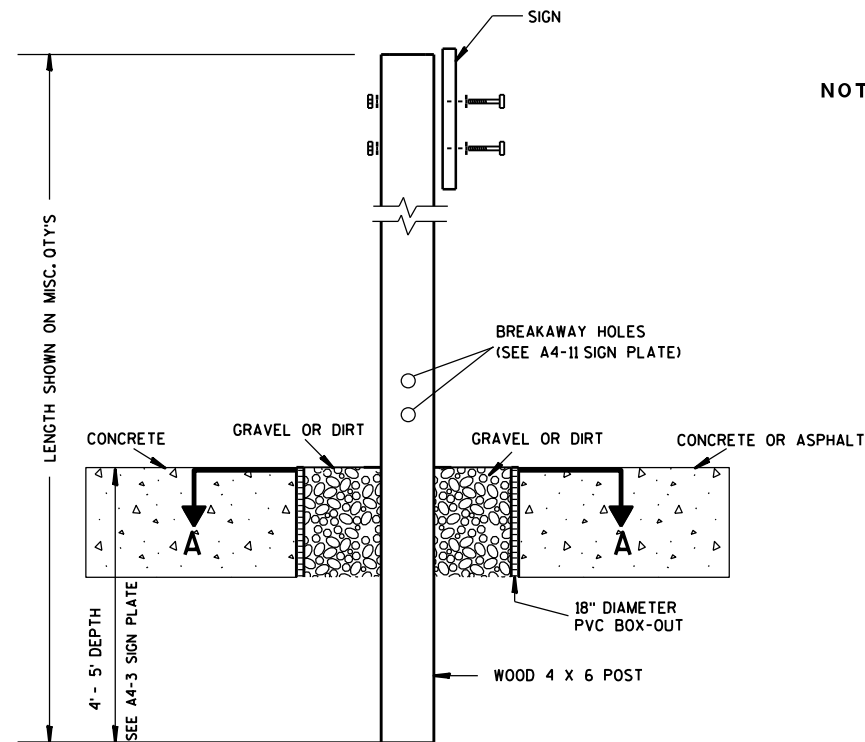
1. Signs wider than 4 feet or 20 sq.ft or larger, shall be mounted on multiple posts. Refer to plate A4-4.
2. If signs are mounted on barrier wall, see A4-10 sign plate.
3. For expressways and freeways, mounting height is 7'-3" (±) or 6'-3" (±) depending upon existence of a sub-sign.
4. J-Assemblies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

TYPICAL INSTALLATION
OF PERMANENT TYPE II
SIGNS ON SINGLE POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

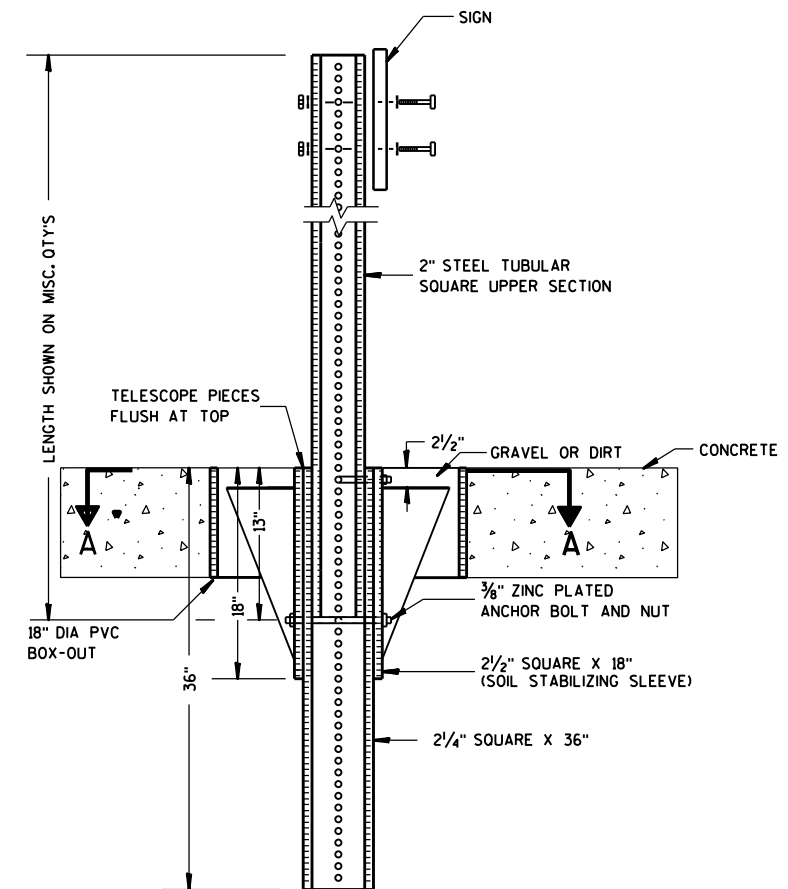
DATE 8/21/17 PLATE NO. A4-3.21



ELEVATION VIEW

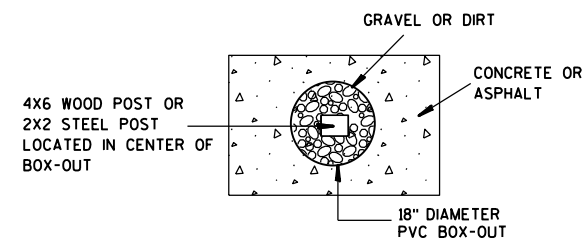
DETAIL OF WOOD 4 X 6 SIGN POST IN BOX-OUT

- 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

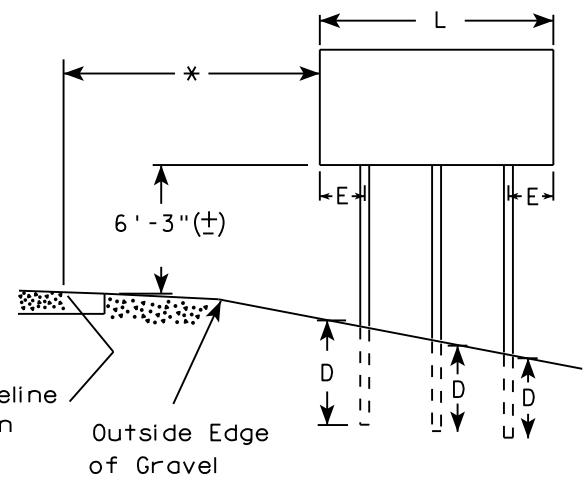
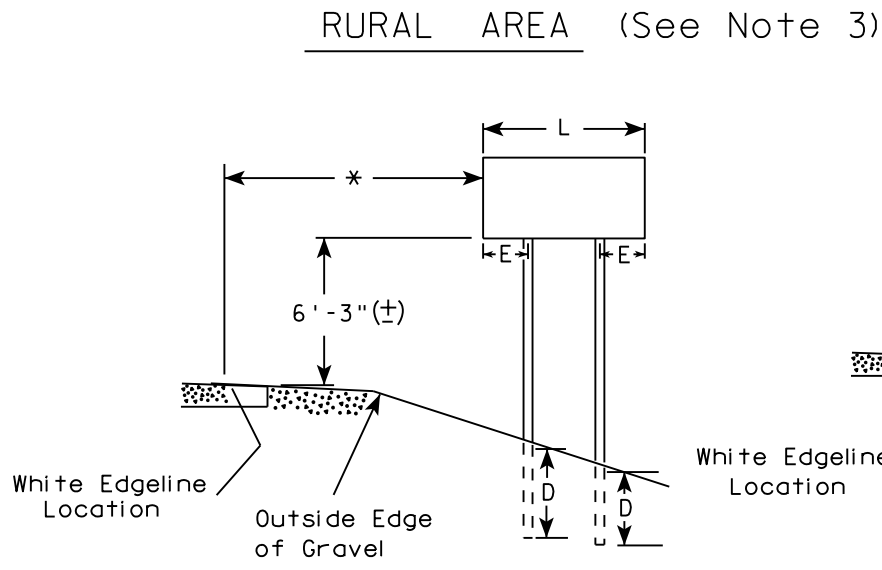
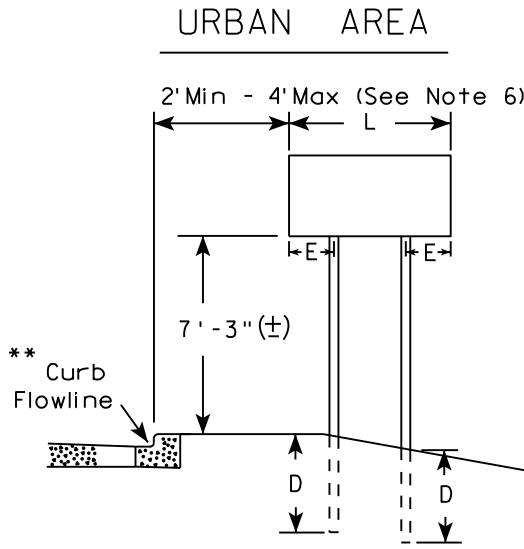
PROJECT NO:

HWY:

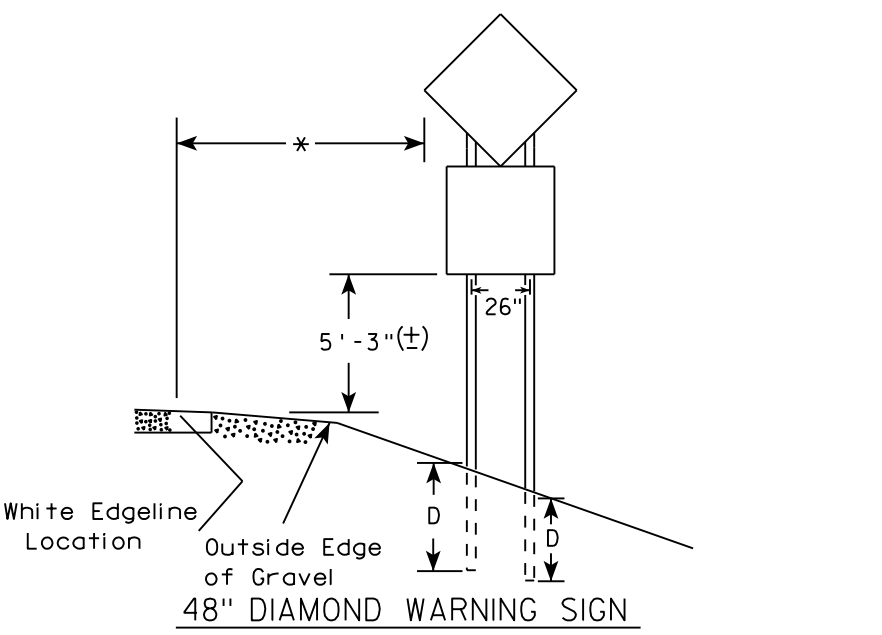
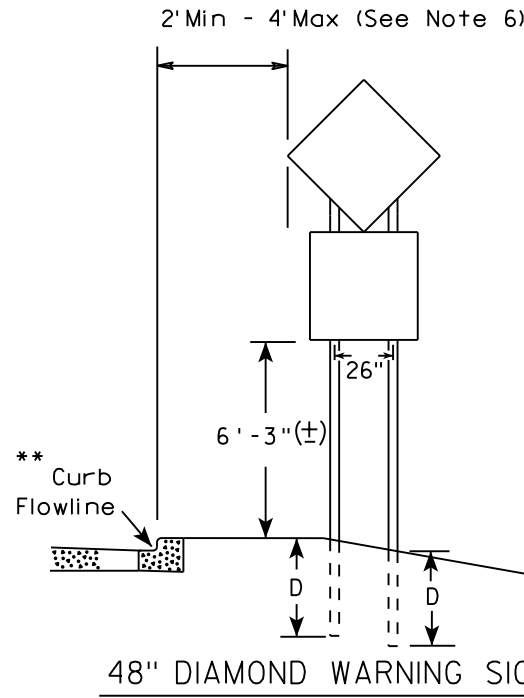
COUNTY:

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

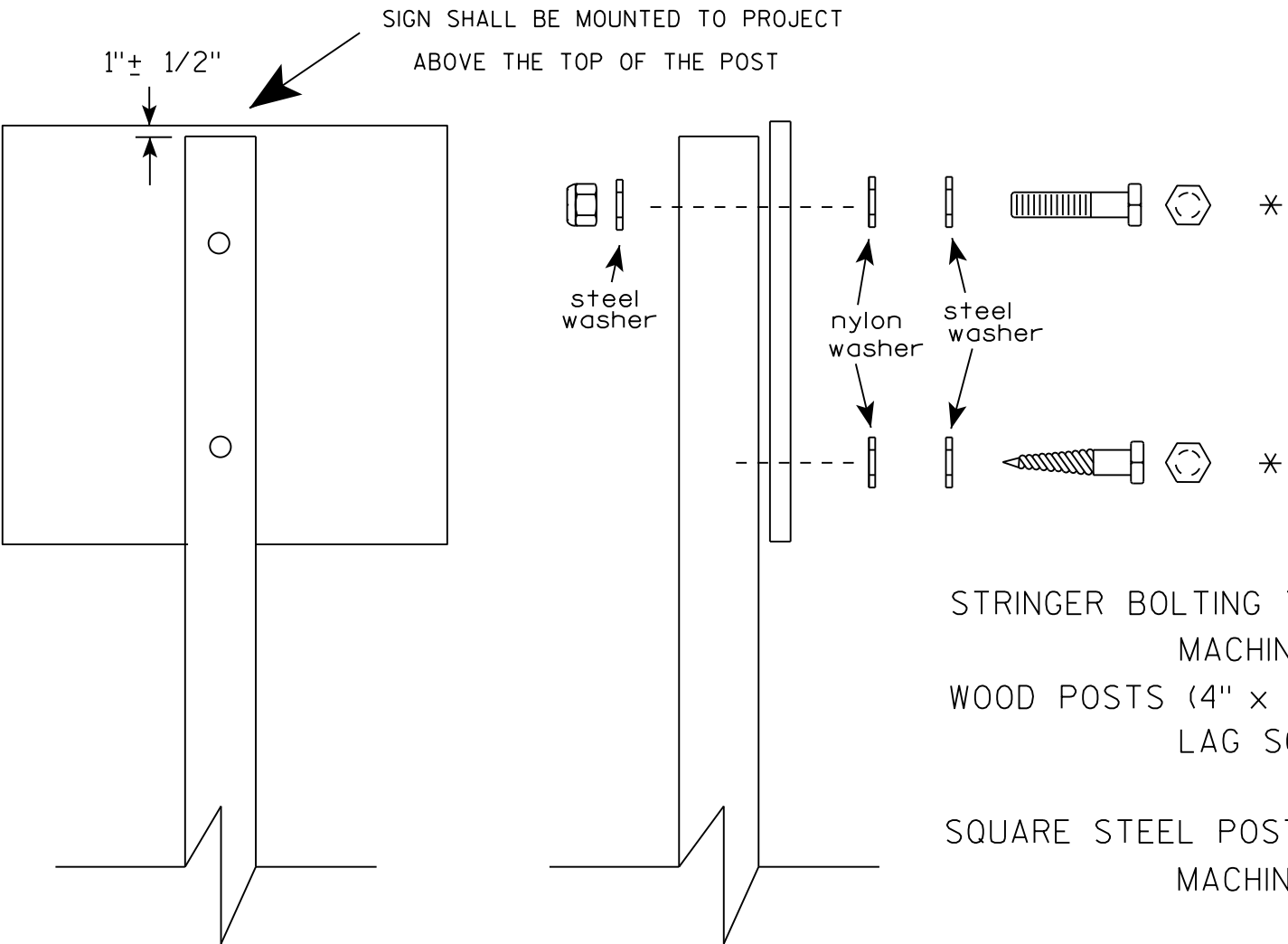
Area of Sign Installation (Sq. Ft.)	D (Min)
20 or Less	4'
Greater than 20	5'

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

* 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.

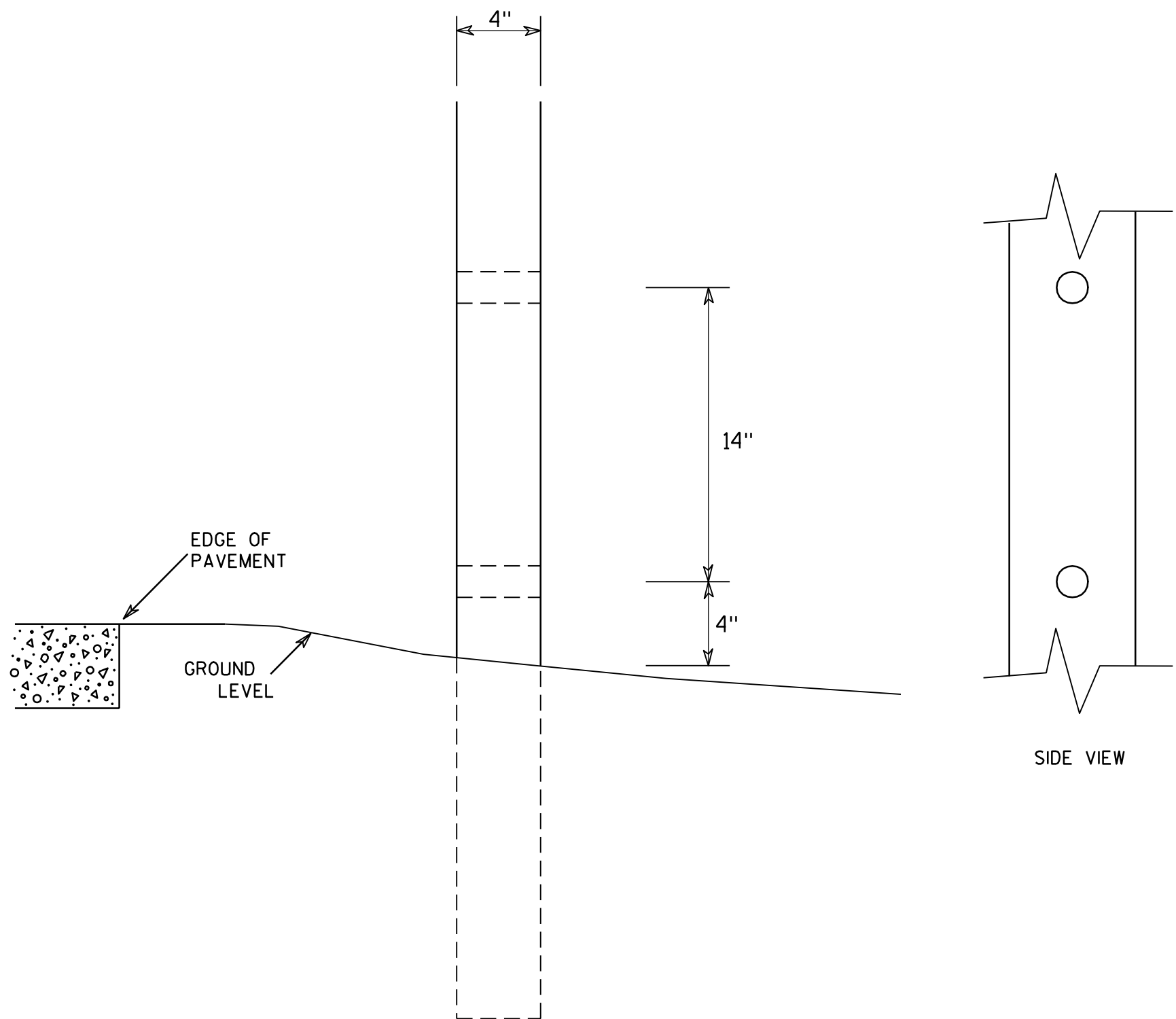
ATTACHMENT OF SIGNS
TO POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
For State Traffic Engineer

DATE 8/11/16 PLATE NO. A4-8.8

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

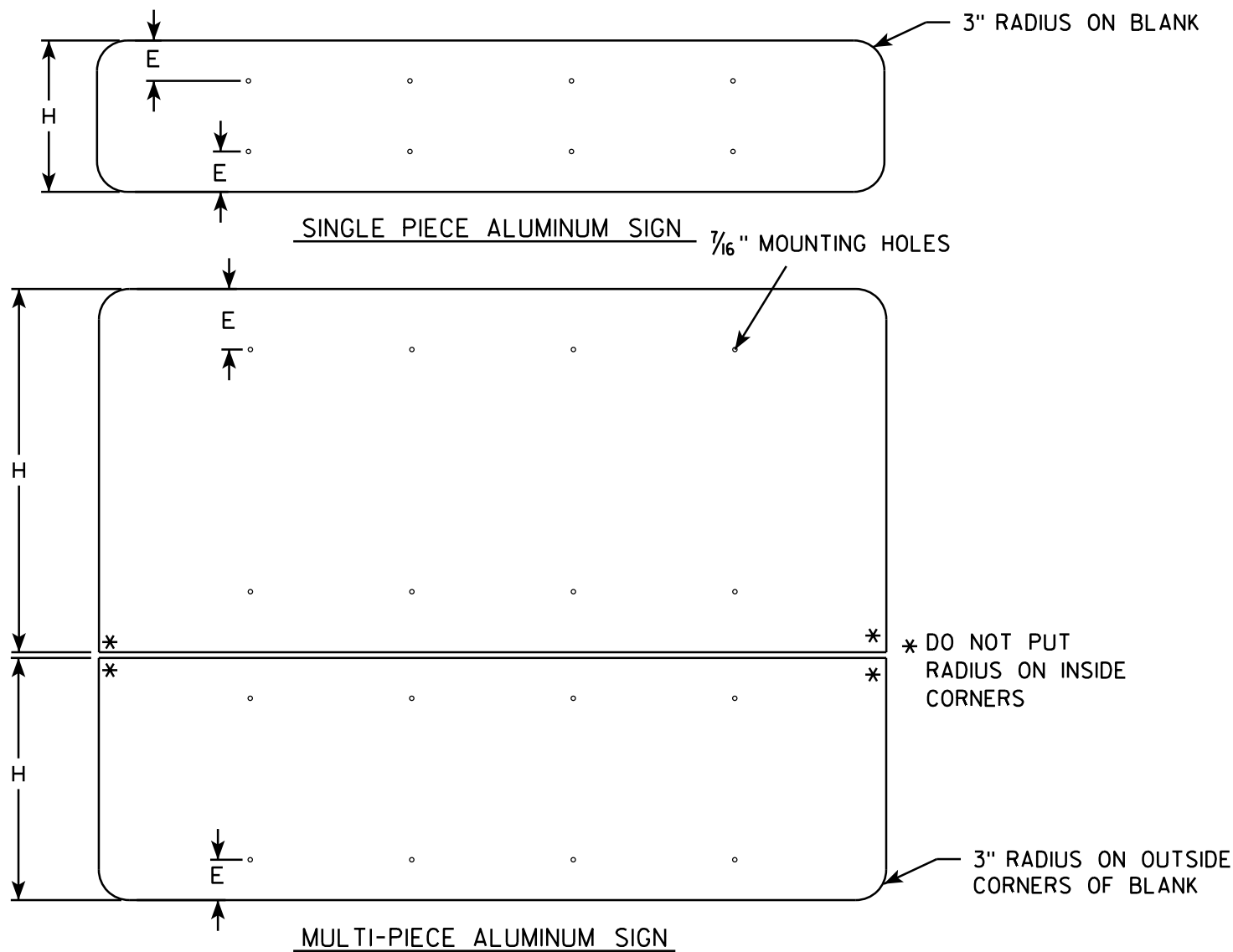
PROJECT NO:

HWY:

COUNTY:

SHEET NO:

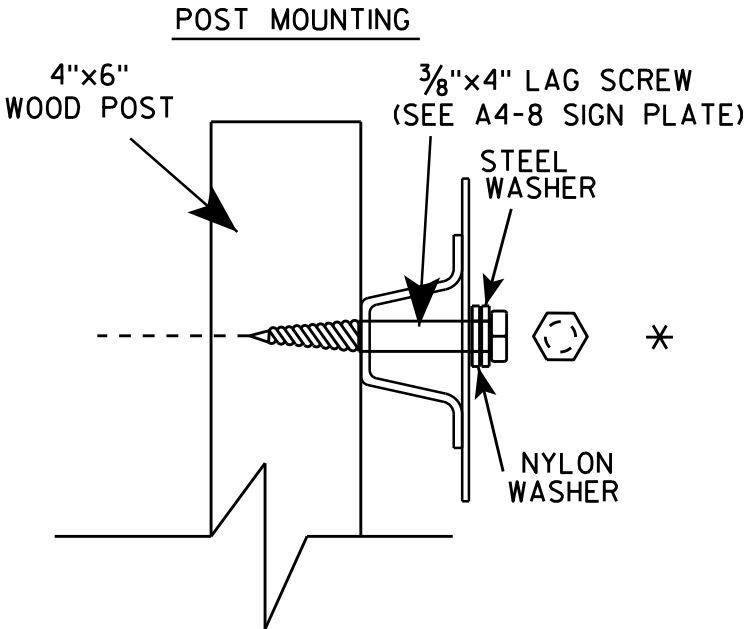
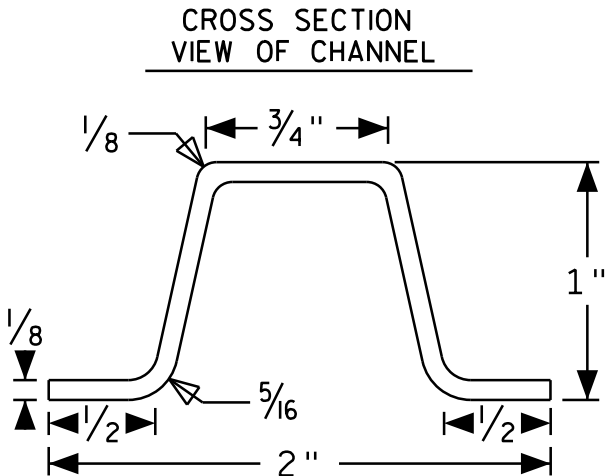
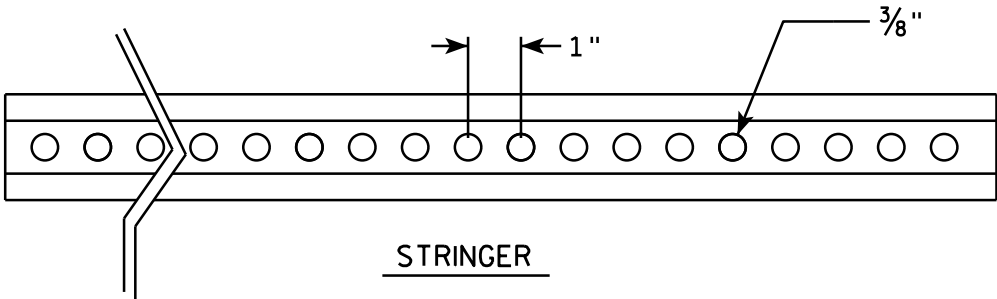
E



GENERAL NOTES

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

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



SIGN STRINGER
MOUNTING REQUIREMENTS

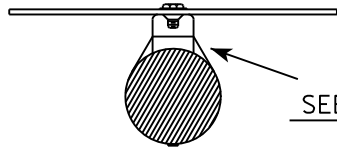
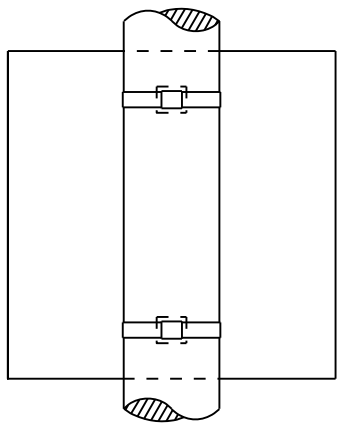
WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 4/26/16 PLATE NO. A4-18.1

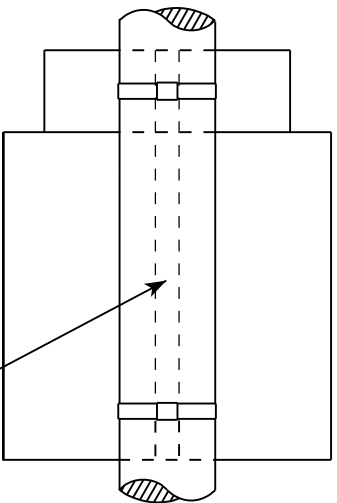
BANDING

SINGLE SIGN

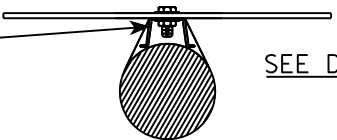


SEE DETAIL A

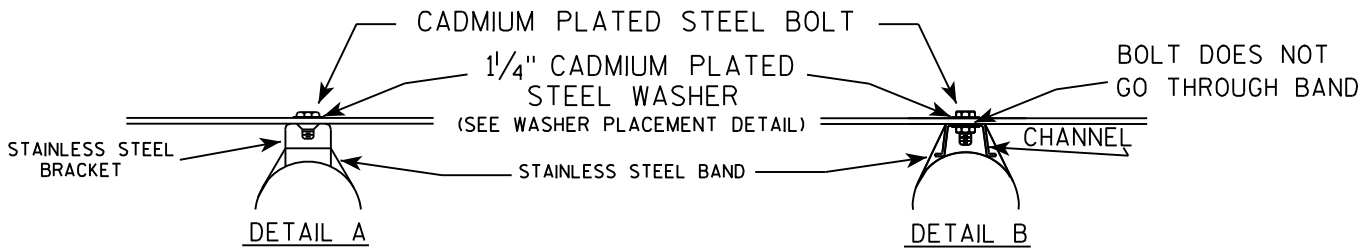
"J" ASSEMBLY



CHANNEL
SEE TYPICAL PANEL
INSTALLATION SHEET



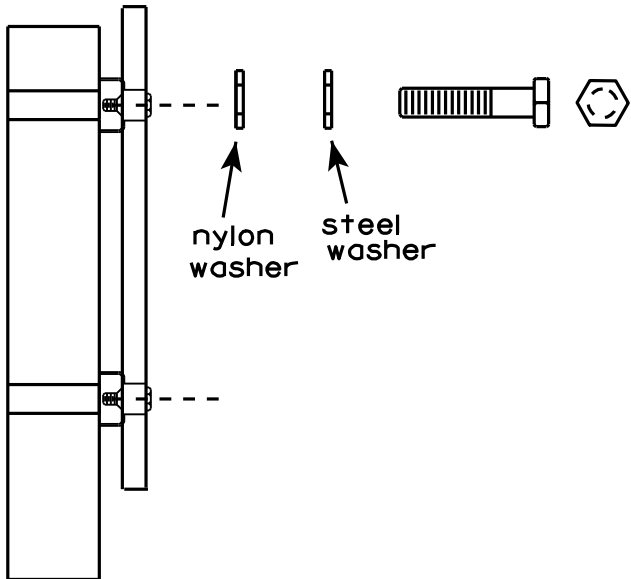
SEE DETAIL B



GENERAL NOTES

1. Any sign over 3 feet in width shall use the V-Block banding method. See A5-10 standard plate.
2. Signs 3 feet or greater in height shall have three bracket bands installed. Signs less than 3 feet in height shall have two bracket bands installed.
3. Banding and assembly bracket shall be stainless steel. All bands shall be $\frac{3}{4}$ " in width and 0.025" thickness.

WASHER PLACEMENT



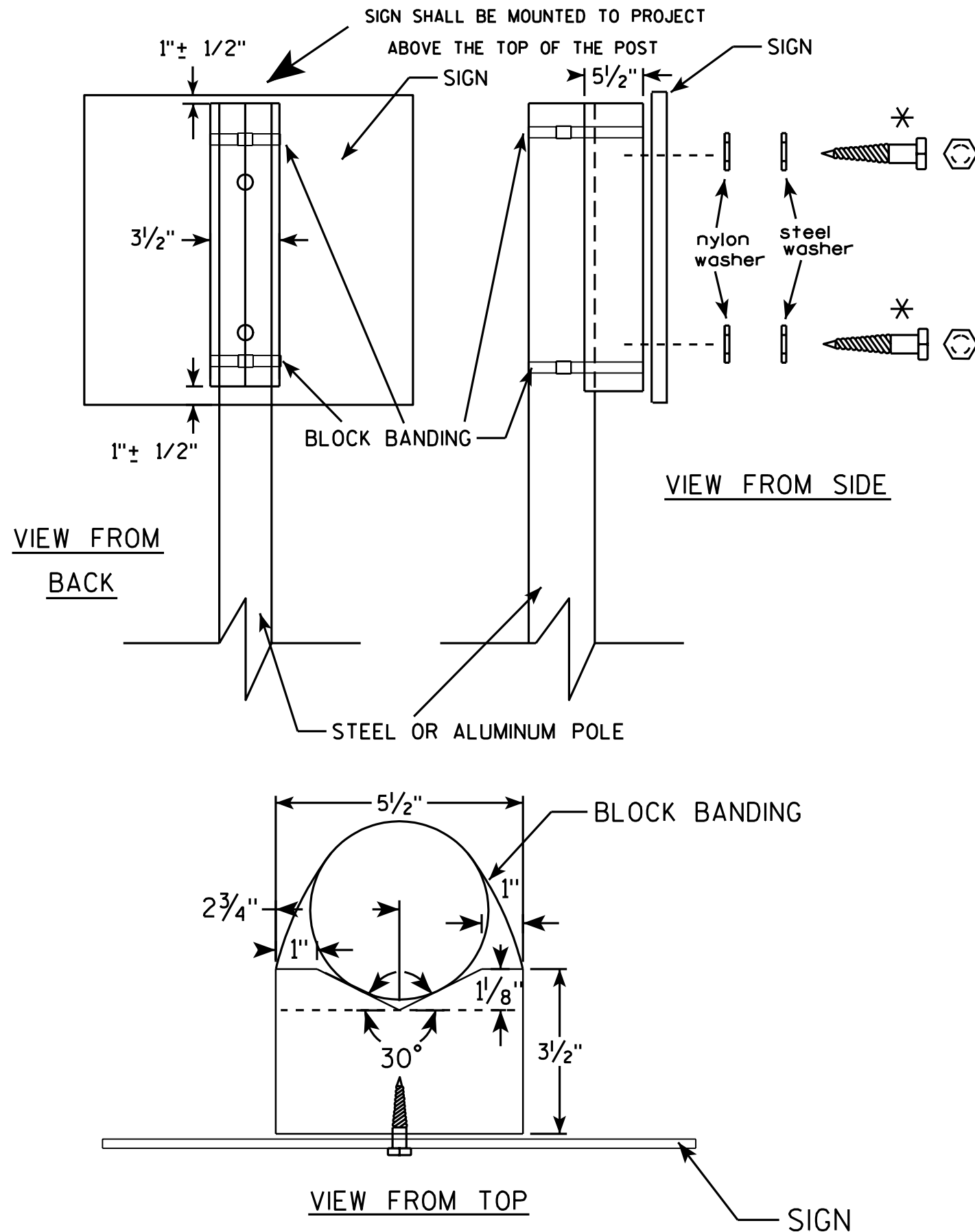
WASHERS (ALL POSTS) -
1-1/4" O.D. X $\frac{3}{8}$ " I.D. X $\frac{1}{16}$ " STEEL
1-1/4" O.D. X $\frac{3}{8}$ " I.D. X .080 NYLON
FOR ALL TYPE H SIGNS

STANDARD SIGN
SIGN BANDING DETAILS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 8/16/13 PLATE NO. A5-9.3



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, or
 - b. Cadmium plated in accordance with ASTM Designation : B 766 TYPE 3, Class 12, or
 - c. 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

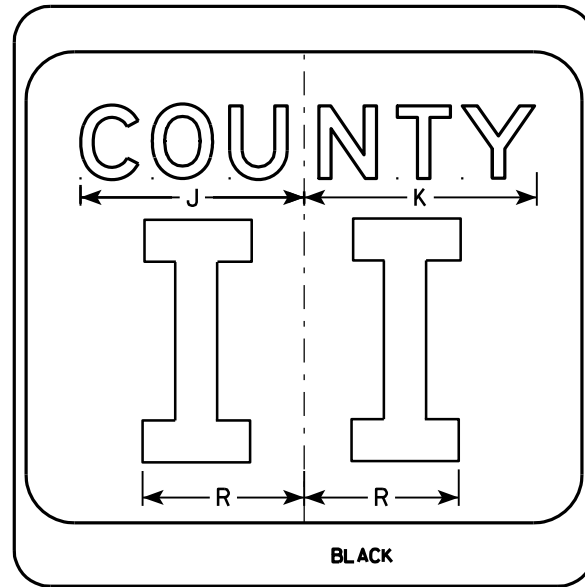
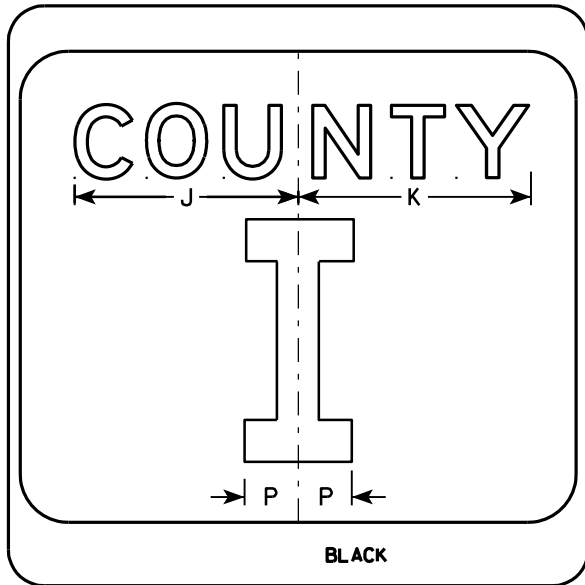
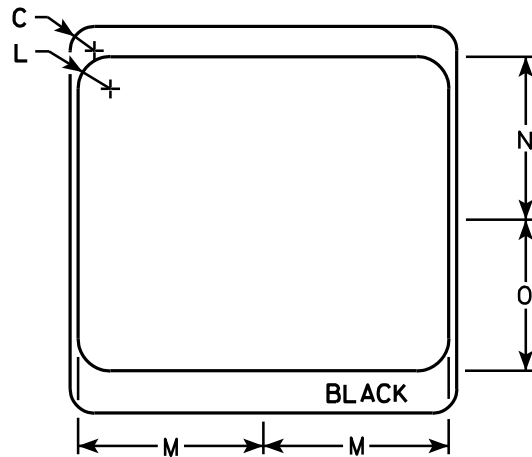
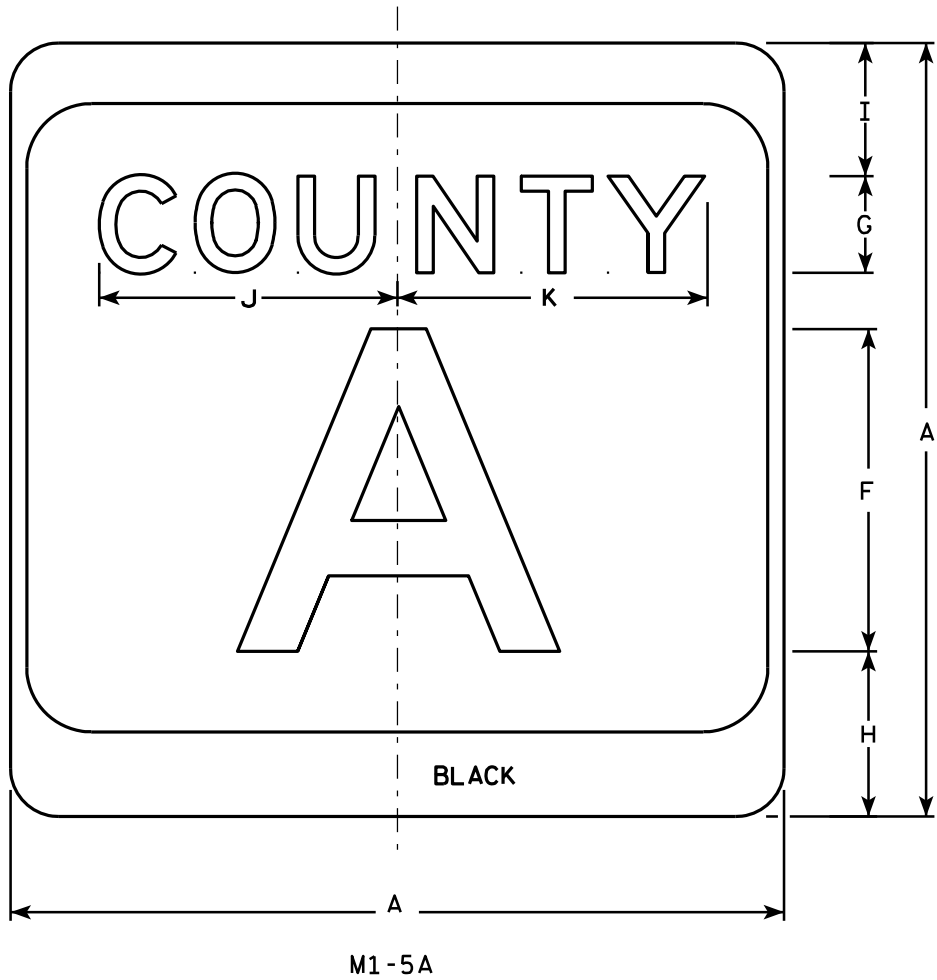
DATE 7/12/07 PLATE NO. A5-10.1

PROJECT NO:

SHEET NO:

E

7



NOTES

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

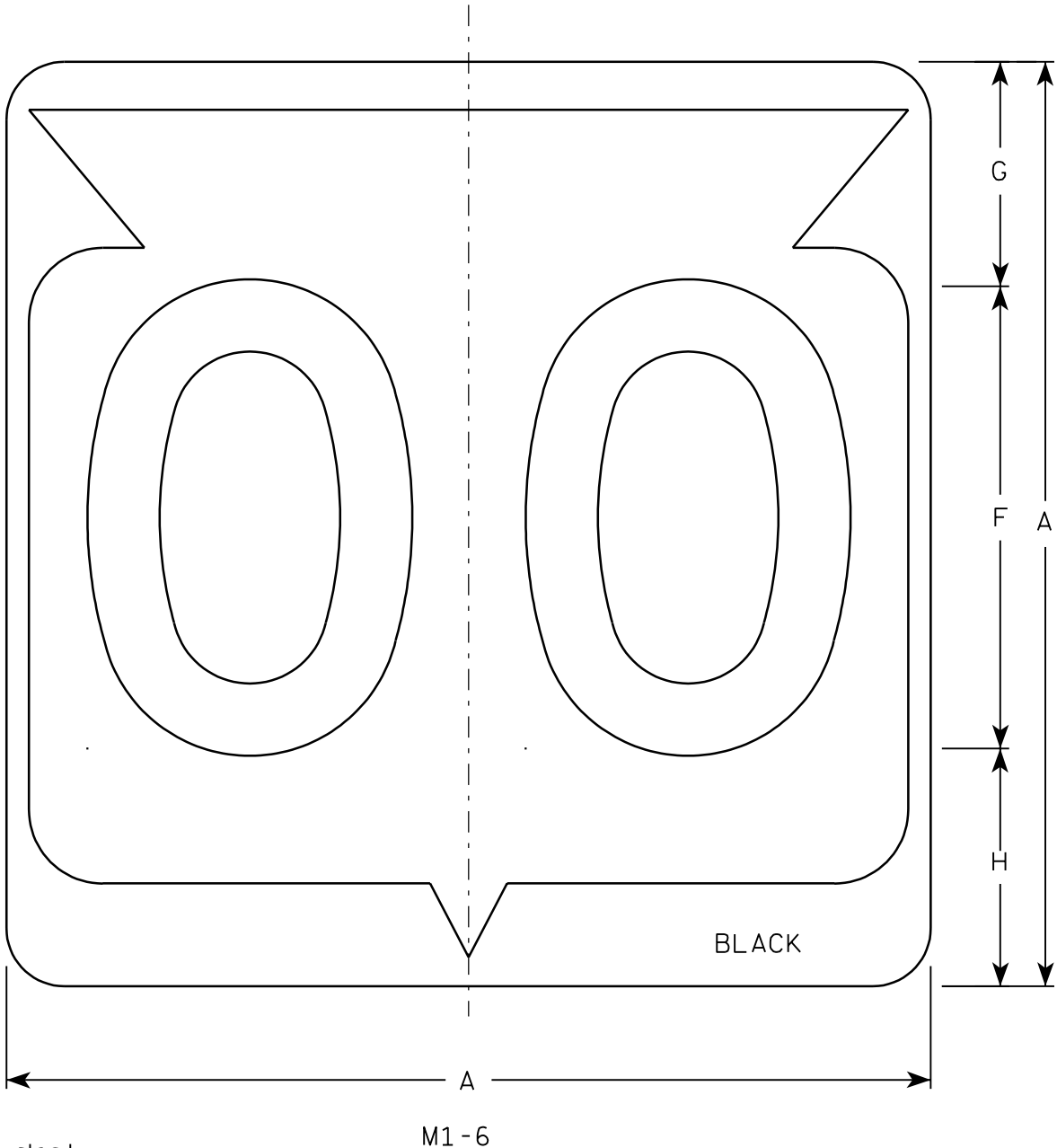
SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2	24		1 1/2			10	3	5 1/8	4 1/8	9 1/4	9 5/8	2	11 1/2	10 1/8	9 3/8	2 1/4		6 5/8									4.0
3	36		2 1/4			16	4	7 5/8	5 5/8	12 1/4	12 7/8	3	17 1/8	15 1/4	14	3 3/8		10									9.0
4	36		2 1/4			16	4	7 5/8	5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

CTH MARKER	
M1-5A FOR ASSEMBLIES	
WISCONSIN DEPT OF TRANSPORTATION	
APPROVED	<i>Matthew R. Rauch</i> For State Traffic Engineer
DATE 9/27/11	PLATE NO. M1-5A.8

PROJECT NO:	HWY:	COUNTY:	SHEET NO:	E
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7

7



Metric equivalent
for this sign is:

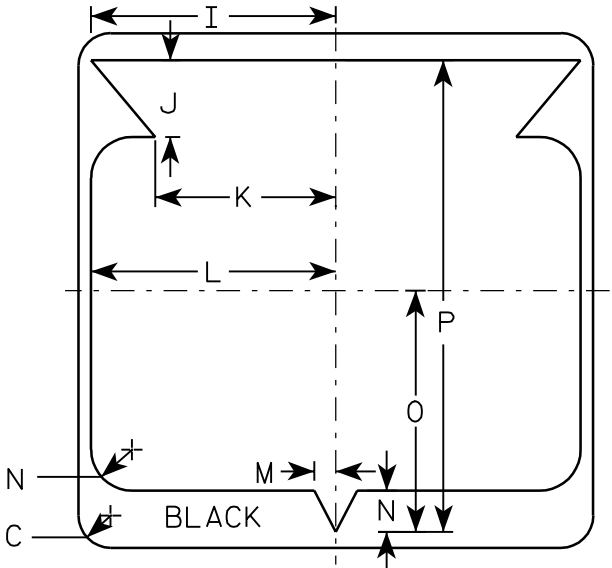
SIZE	
1	
2	600 mm X 600 mm
3	900 mm X 900 mm
4	900 mm X 900 mm
5	900 mm X 900 mm

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																												
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	.36
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	.81
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	.81
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	.81

PROJECT NO:	HWY:	COUNTY:		SHEET NO:	E
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NOTES

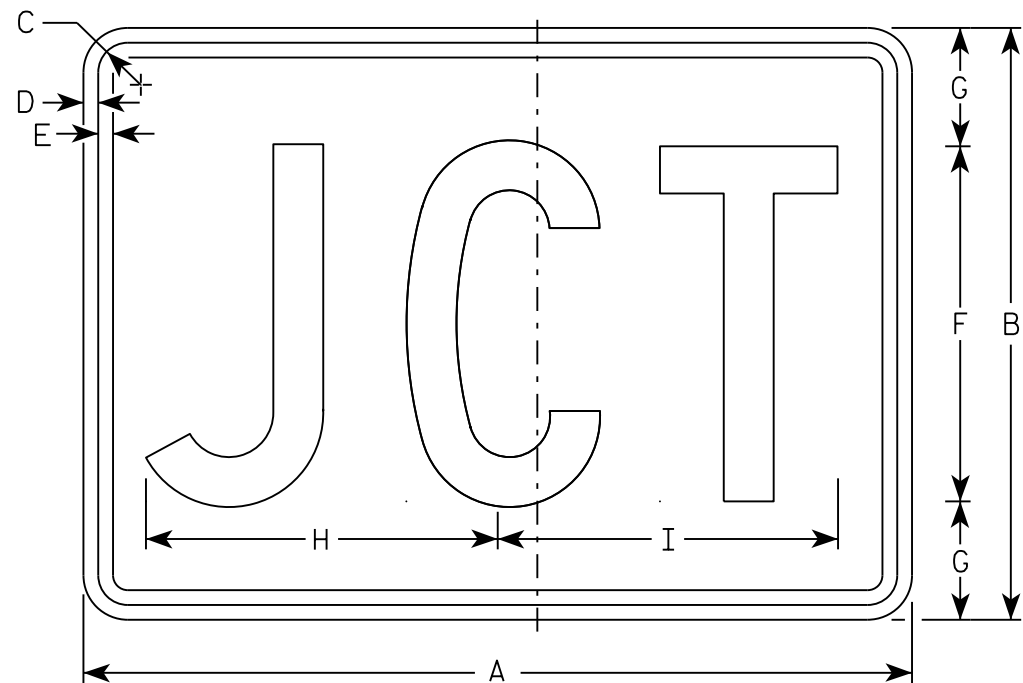
- Sign is Type II - See Note 6 - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
- Color:
Background - White & Black - See Note 6
Message - Black
- Message Series - See note 5
- Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
- Substitute appropriate Series numerals and adjust spacing as per plate A10-1.
- Permanent Signs
Background - Type H Reflective
Detour or temporary Signs
Background - Reflective



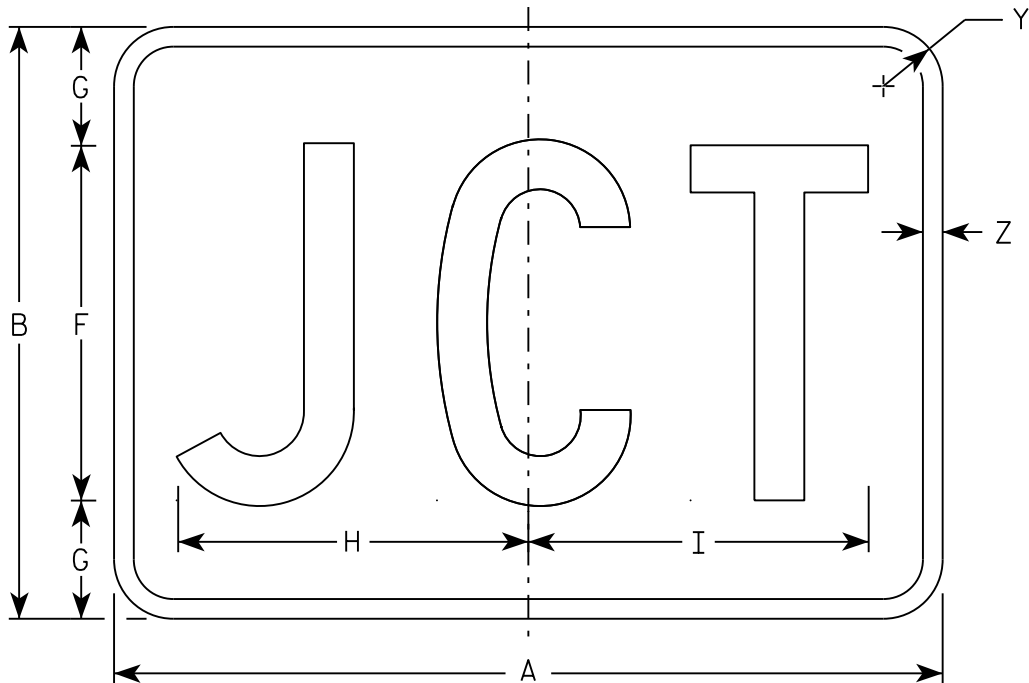
STATE ROUTE MARKER
M1-6 FOR ASSEMBLIES

WISCONSIN DEPT OF TRANSPORTATION

APPROVED
Chester J. Spang
for State Traffic Engineer
DATE 3/20/02 PLATE NO. M1-6.9



M2-1
MM2-1
MP2-1



MB2-1
MK2-1
MN2-1
MR2-1

NOTES

- 1. Sign is 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. M2-1 Background - White
 Message - Black
 MB2-1 Background - Blue
 Message - White
 MK2-1 Background - Green
 Message - White
 MM2-1 Background - White
 Message - Green
 MN2-1 Background - Brown
 Message - White
 MP2-1 Background - White
 Message - Blue
 MR2-1 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	15	1 1/8	3/8	3/8	9	3	8 7/8	8 5/8																1 1/2	1/2	2.20
3	30	21	1 1/8	3/8	3/8	13	4	12 7/8	12 3/8																1 1/2	1/2	4.40
4	30	21	1 1/8	3/8	3/8	13	4	12 7/8	12 3/8																1 1/2	1/2	4.40
5	30	21	1 1/8	3/8	3/8	13	4	12 7/8	12 3/8																1 1/2	1/2	4.40

STANDARD SIGN

M2 - 1

WISCONSIN DEPT OF TRANSPORTATION

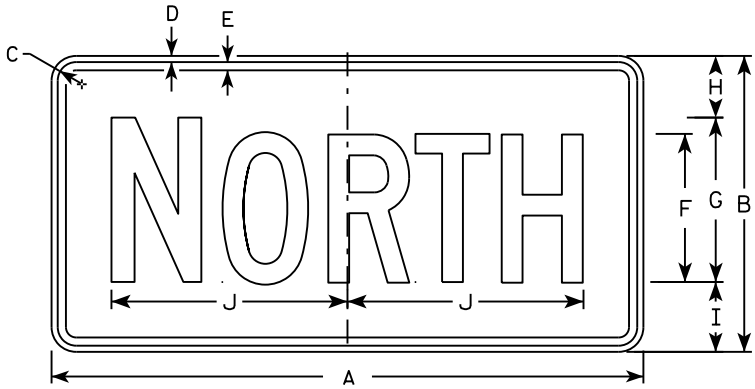
APPROVED

Matthew R. Rauch

For State Traffic Engineer

DATE 10/15/15

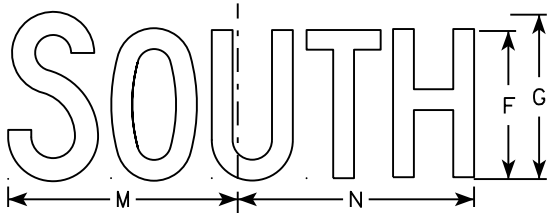
PLATE NO. M2-1.12



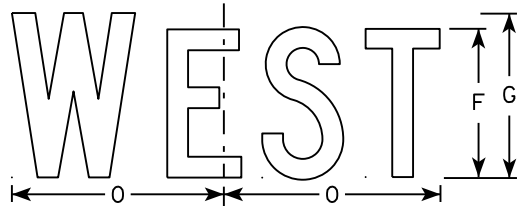
M3-1
MM3-1
MP3-1



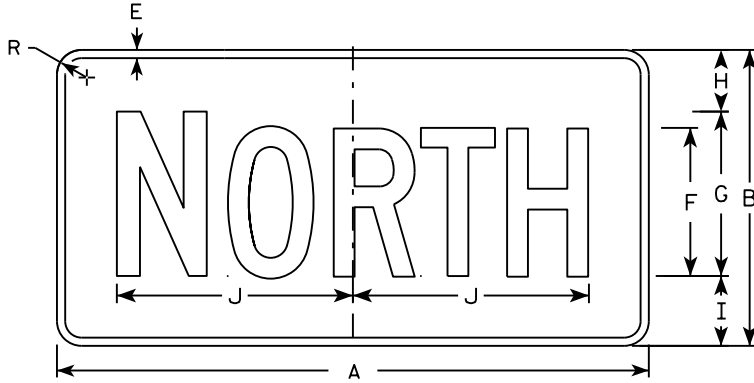
M3-2
MM3-2
MP3-2



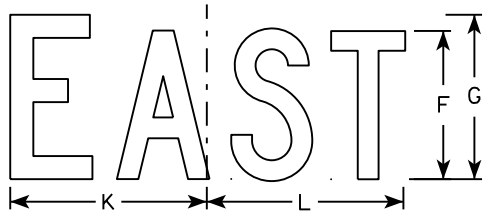
M3-3
MM3-3
MP3-3



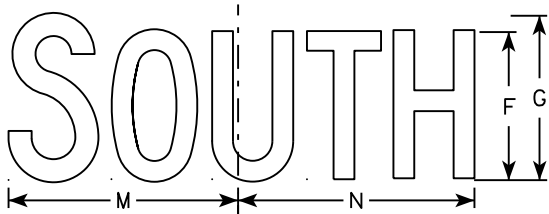
M3-4
MM3-4
MP3-4



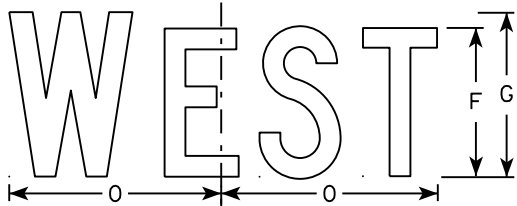
MB3-1
MK3-1
MN3-1



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.

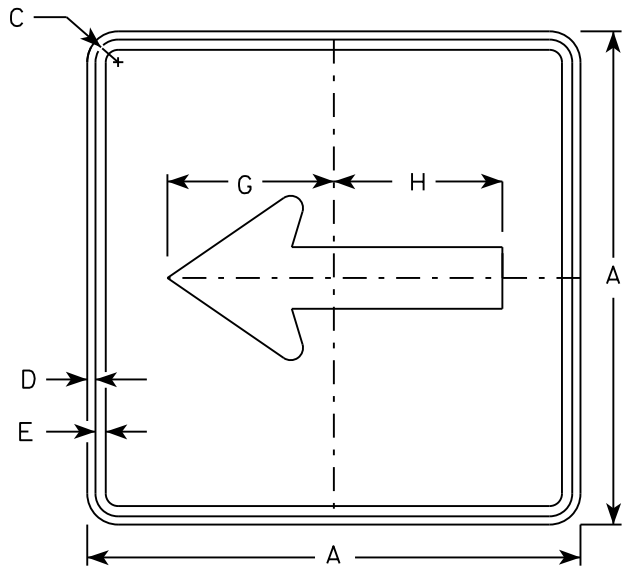
SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2	24	12	1 1/8	3/8	3/8	6	7	2 1/4	2 3/4	10 1/4	7 7/8	8 3/8	10 1/4	9 3/4	8 3/4			1 1/2									2.00
3	36	18	1 1/8	3/8	1/2	9	10	3 3/4	4 1/4	14 3/8	12	12 1/8	14	14 1/8	13			1 1/2									4.5
4	36	18	1 1/8	3/8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

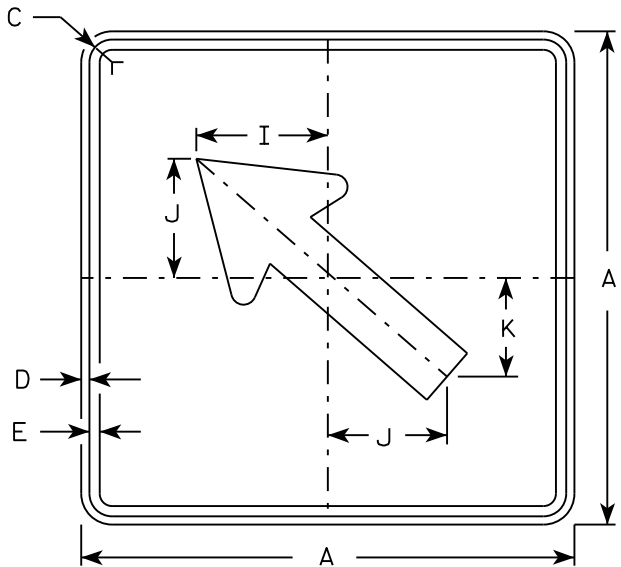
WISCONSIN DEPT OF TRANSPORTATION

APPROVED
Matthew R. Rauch
for State Traffic Engineer

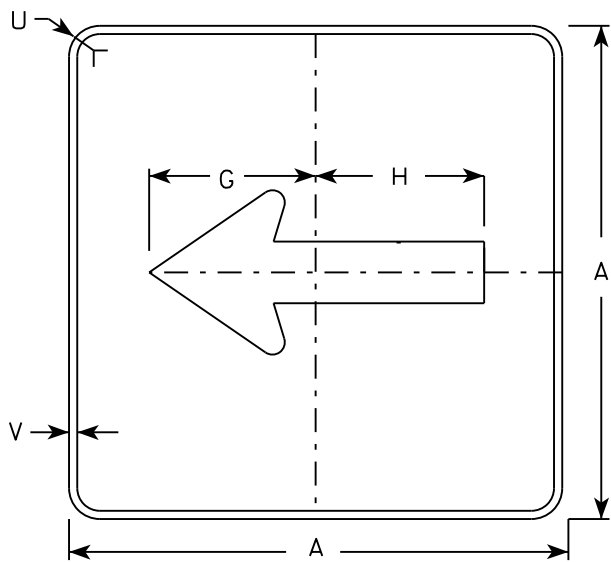
DATE 10/15/15 PLATE NO. M3-1.14



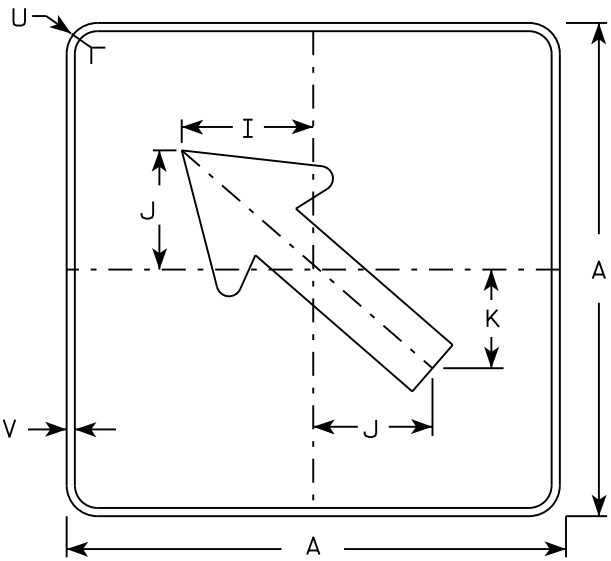
M6 - 1
MM6 - 1
M06 - 1
MP6 - 1



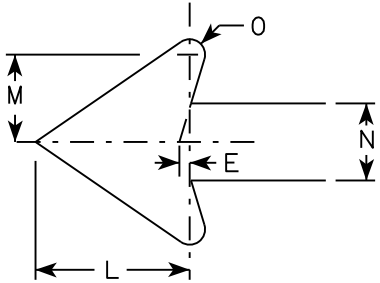
M6 - 2
MM6 - 2
M06 - 2
MP6 - 2



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

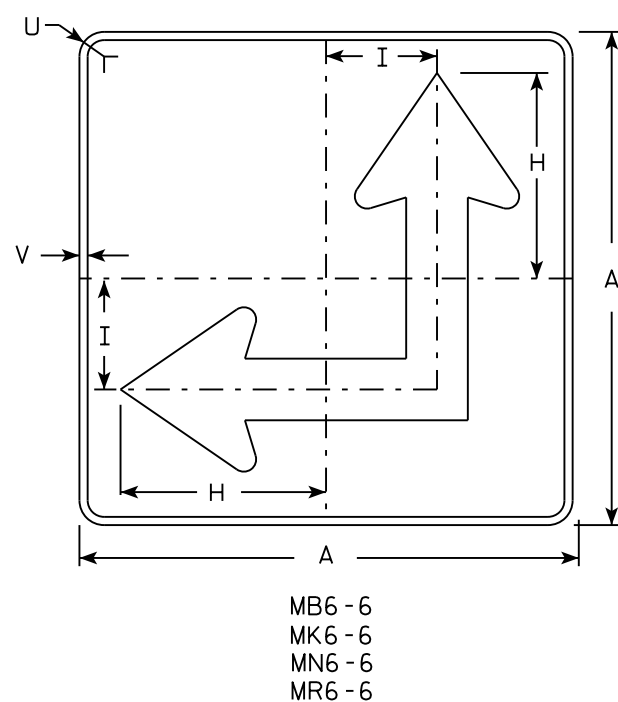
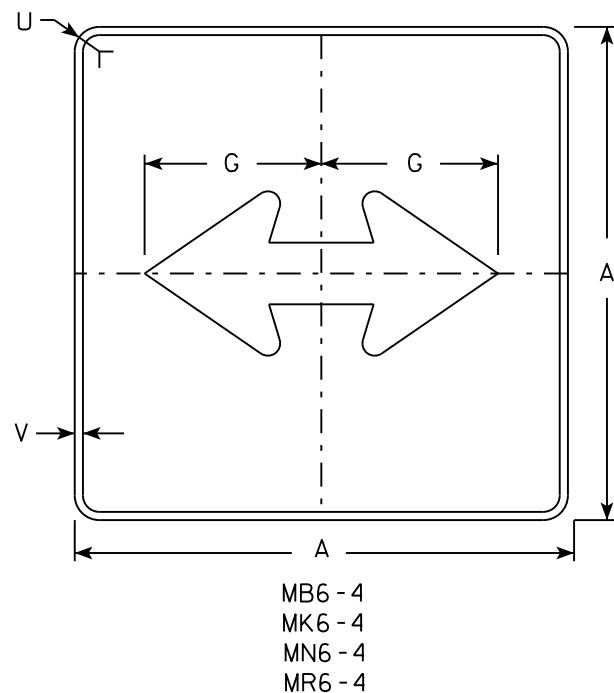
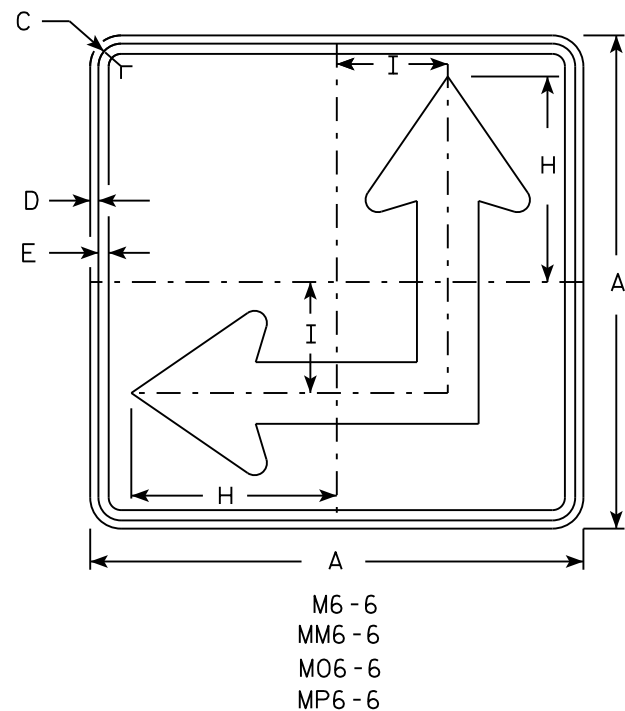
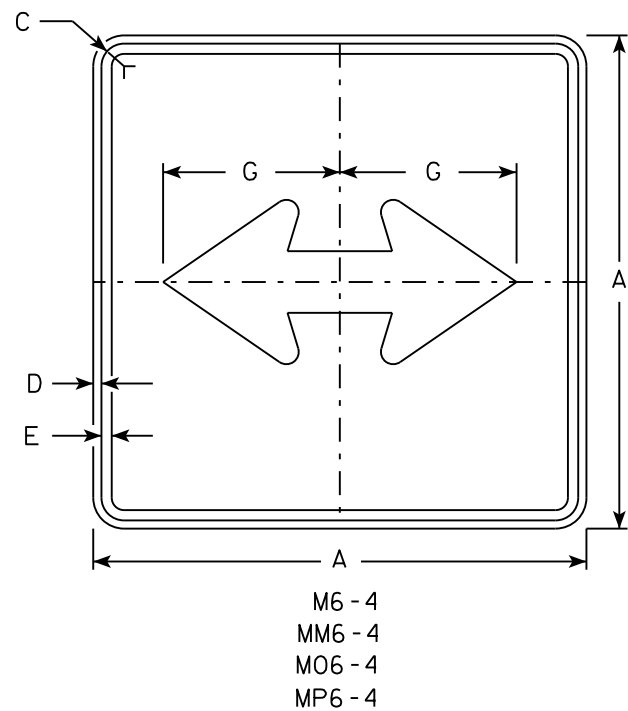
SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2	21		1 1/8	3/8	3/8		7 1/2	7 1/8	5 5/8	5	4 1/4	5 1/4	3	2 5/8	1/2						1 1/2	1/2					3.06
3	30		1 3/8	1/2	5/8		10 3/4	10 1/4	8	7 1/4	6	7 1/2	4 1/4	3 3/4	3/4						1 7/8	1/2					6.25
4	30		1 3/8	1/2	5/8		10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

STANDARD SIGN
M6 - 1 & M6 - 2
SERIES

WISCONSIN DEPT OF TRANSPORTATION

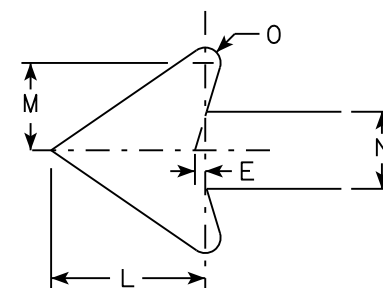
APPROVED
Matthew R. Rauch
for State Traffic Engineer

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



NOTES

- 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.
- M6-4 and M6-6 Background - White
Message - Black
MB6-4 and MB6-6 Background - Blue
Message - White
MK6-4 and MK6-6 Background - Green
Message - White
MM6-4 and MM6-6 Background - White
Message - Green
MN6-4 and MN6-6 Background - Brown
Message - White
M06-4 and M06-6 Background - Orange - Type F Reflective
Message - Black
MP6-4 and MP6-6 Background - White
Message - Blue
MR6-4 and MR6-6 Background - Brown
Message - Yellow
- M6-6R same as M6-6L except arrow points ahead and 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 1/2	8 3/4	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	12 1/2	6 3/4			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	12 1/2	6 3/4			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	12 1/2	6 3/4			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
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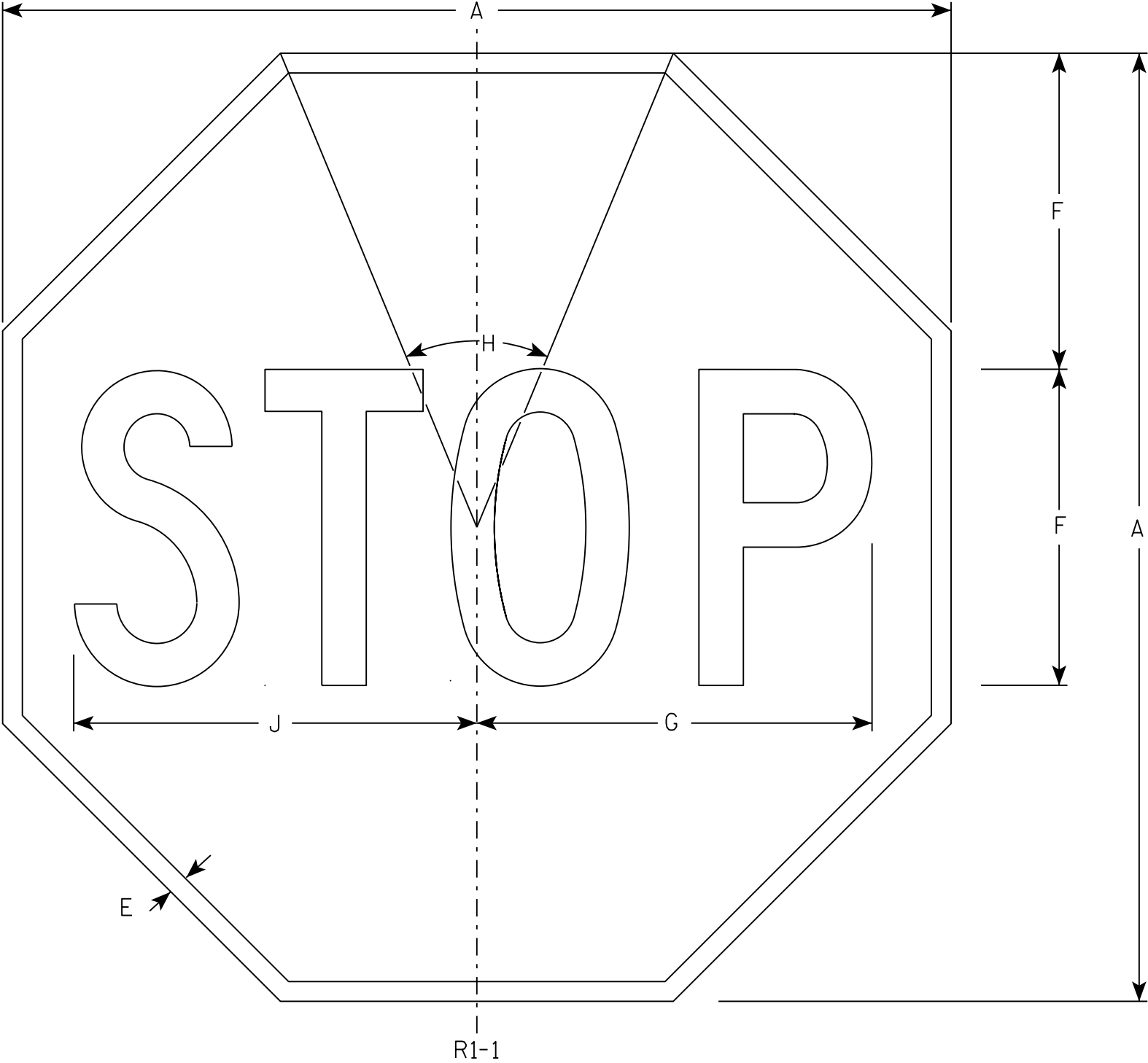
STANDARD SIGN
M6 - 4 & M6 - 6
SERIES

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 10/15/15 PLATE NO. M6-4.10

7



NOTES

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

7

R1-1

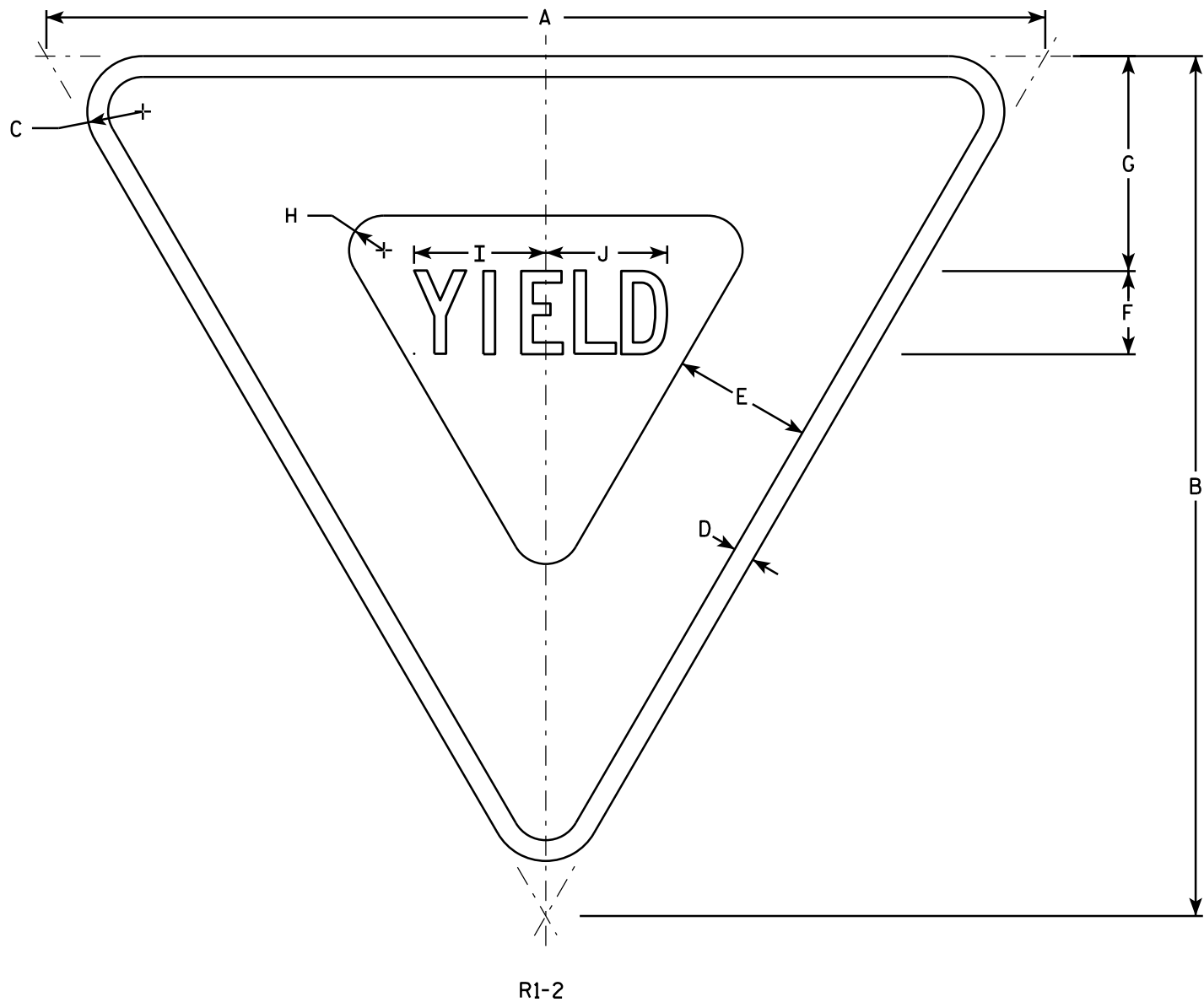
SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	30				5/8	10	12 1/2	45°		12 3/4																	5.18
2S	30				5/8	10	12 1/2	45°		12 3/4																	5.18
2M	36				3/4	12	15	45°		15 3/8																	7.46
3	36				3/4	12	15	45°		15 3/8																	7.46
4	48				1	16	20	45°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

STANDARD SIGN
R1 - 1

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

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



NOTES

- 1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
- 2. Color:
Background - White
Message - See note 5
- 3. Message Series - 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. The border strip and word message are reflectorized red.

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	30	26	1 1/2	5/8	4	2 1/2	6 3/8	7/8	4	3 5/8																	2.71
2S	36	31	2	3/4	5	3	7 3/4	1 1/4	4 3/4	4 3/8																	3.88
2M	48	42	3	1	6	4	9 3/4	2	6 1/4	5 7/8																	7.00
3	48	42	3	1	6	4	9 3/4	2	6 1/4	5 7/8																	7.00
4	48	42	3	1	6	4	9 3/4	2	6 1/4	5 7/8																	7.00
5	60	52	3	1 1/2	8	5	13	2 1/2	7 7/8	7 1/4																	10.83
6																											
7	18	15 1/2	1	3/8	2 1/2	1 1/2	3 7/8	5/8	2 3/8	2 1/4																	0.97

STANDARD SIGN

R1-2

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

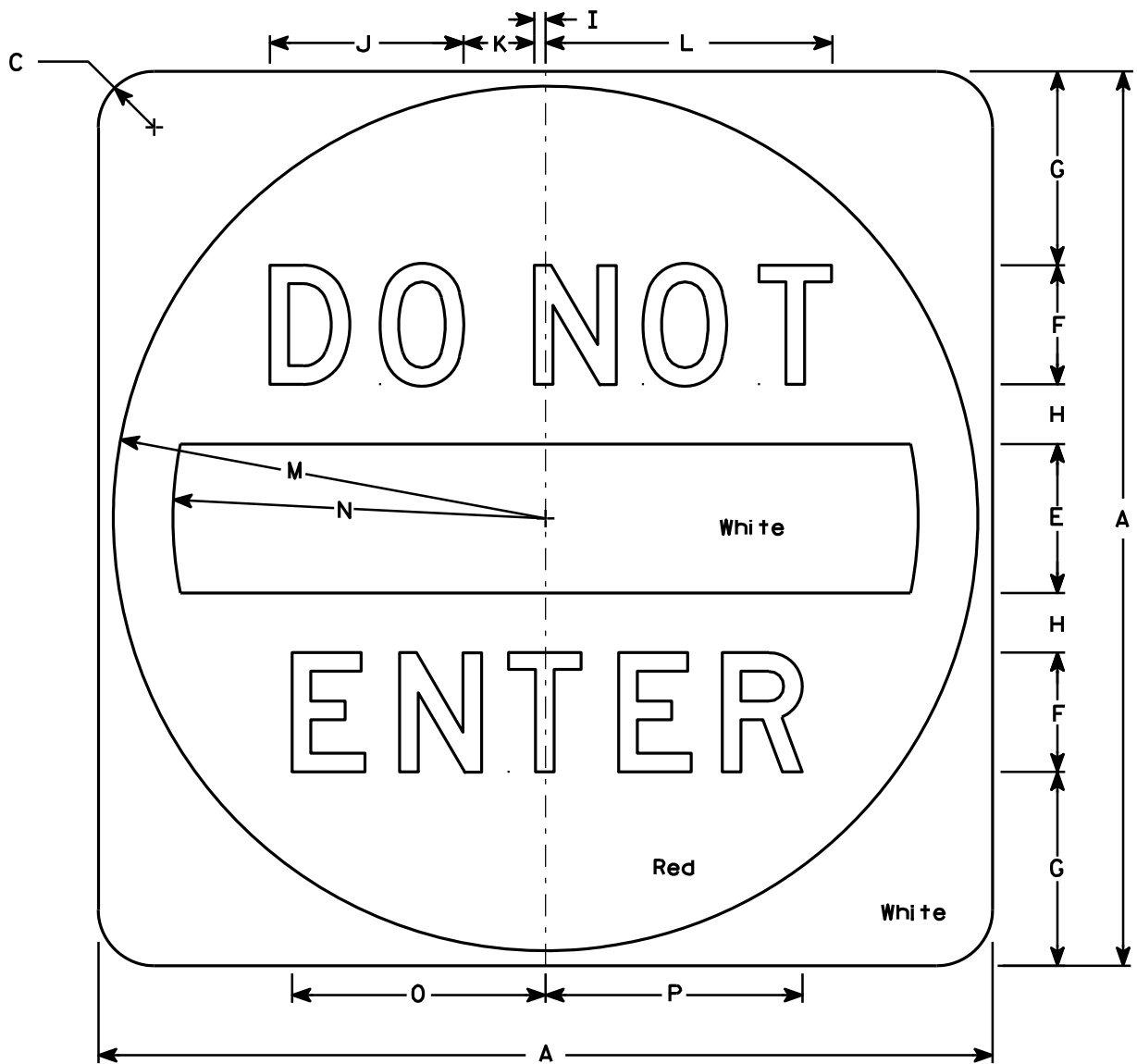
DATE 10/13/14 PLATE NO. R1-2.12

NOTES

1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:

Background - See detail

Message - White - Type H Reflective
3. Message Series - D
4. Corners may be square or rounded when base material is plywood but when base material is metal, the corners shall be rounded.



R5 - 1

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2S	30		1 7⁄8		5	4	6 1⁄2	2	3⁄8	6 1⁄2	2 3⁄8	9 5⁄8	14 1⁄2	12 1⁄2	8 1⁄2	8 5⁄8											6.26
2M	36		2 1⁄4		6	5	7 1⁄2	2 1⁄2	1⁄2	8 1⁄8	3	12 1⁄8	17 1⁄2	15	10 5⁄8	10 3⁄4											9.0
3	36		2 1⁄4		6	5	7 1⁄2	2 1⁄2	1⁄2	8 1⁄8	3	12 1⁄8	17 1⁄2	15	10 5⁄8	10 3⁄4											9.0
4	36		2 1⁄4		6	5	7 1⁄2	2 1⁄2	1⁄2	8 1⁄8	3	12 1⁄8	17 1⁄2	15	10 5⁄8	10 3⁄4											9.0
5	48		3		8	6	11	3	5⁄8	9 3⁄4	3 5⁄8	14 1⁄2	23 1⁄2	20	12 3⁄4	12 7⁄8											16.0

PROJECT NO:

HWY:

COUNTY:

SHEET NO:

E

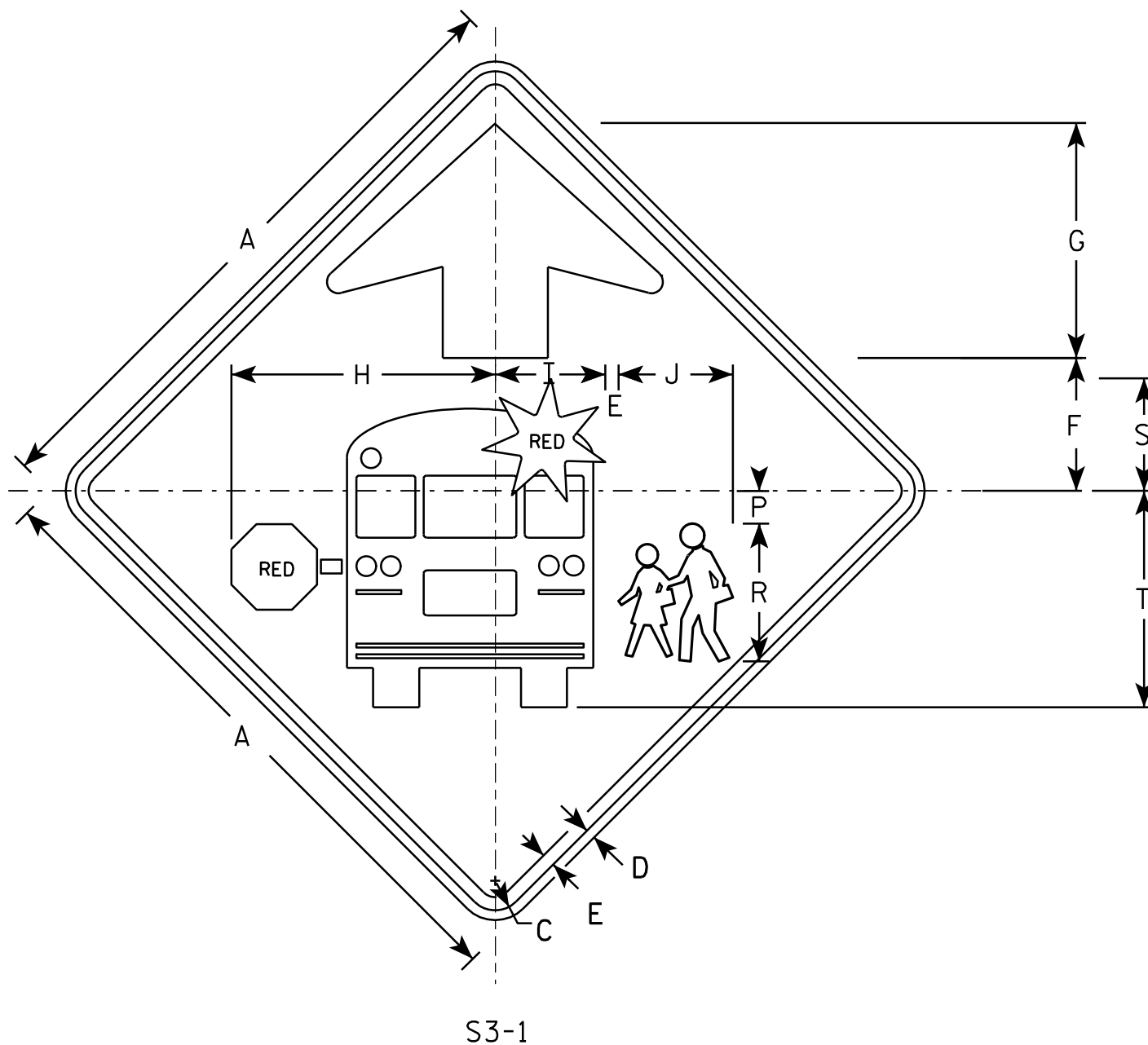
STANDARD SIGN

R5 - 1

WISCONSIN DEPT OF TRANSPORTATION

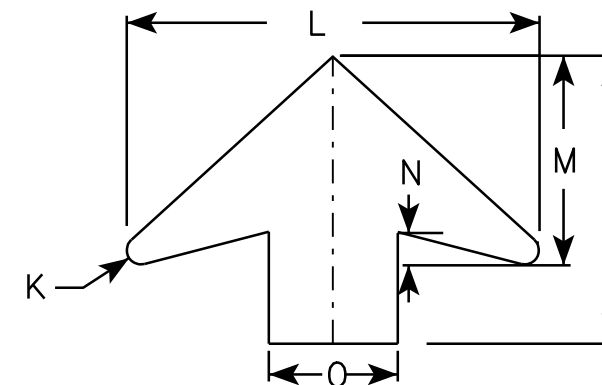
APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 12/17/10 PLATE NO. R5-1.15



NOTES

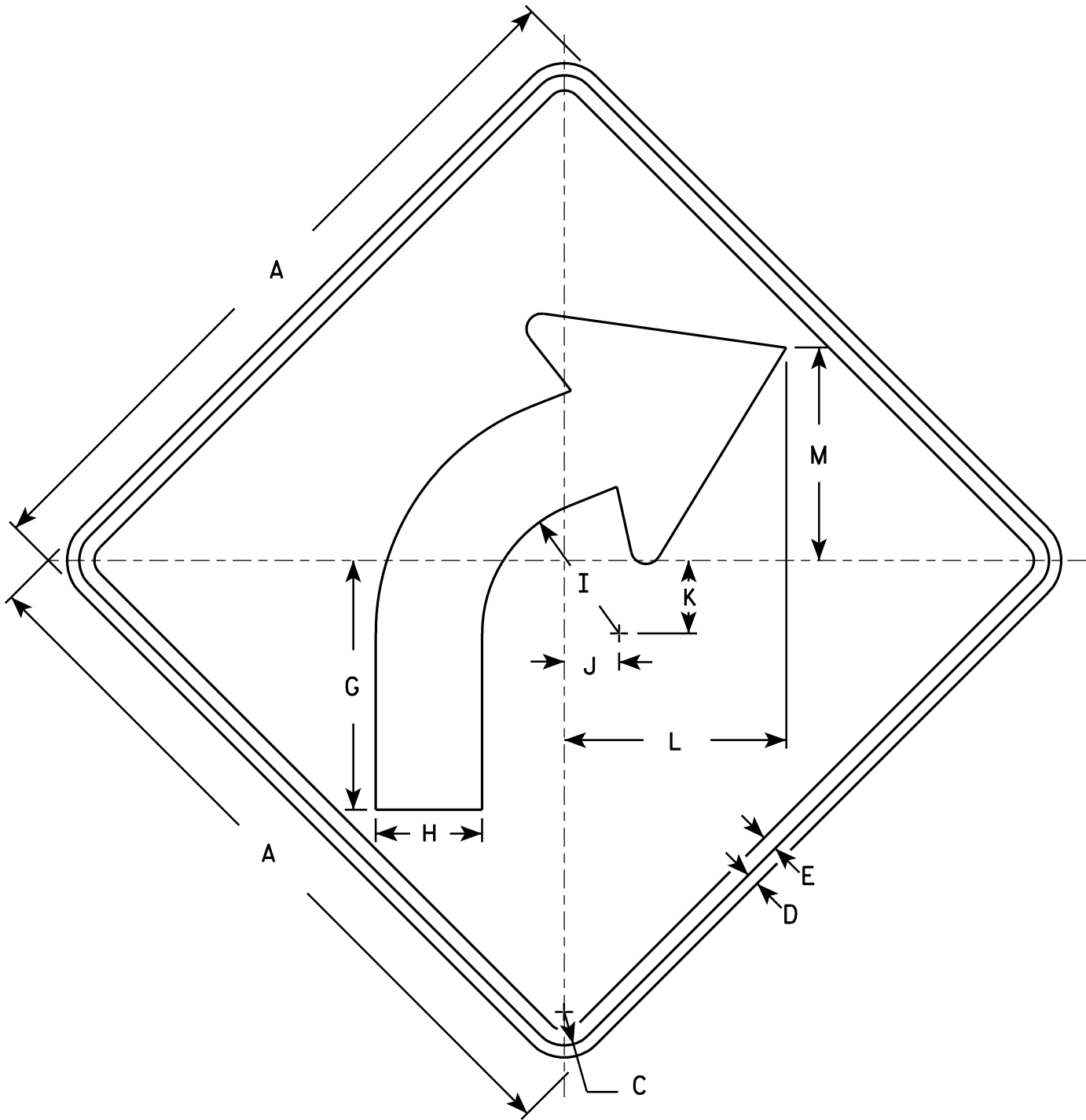
1. All Signs Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
 - Background - YELLOW-GREEN
 - Message - BLACK except as noted
 - Circles except PEDS- RED BACKGROUND
3. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.

[illegible]

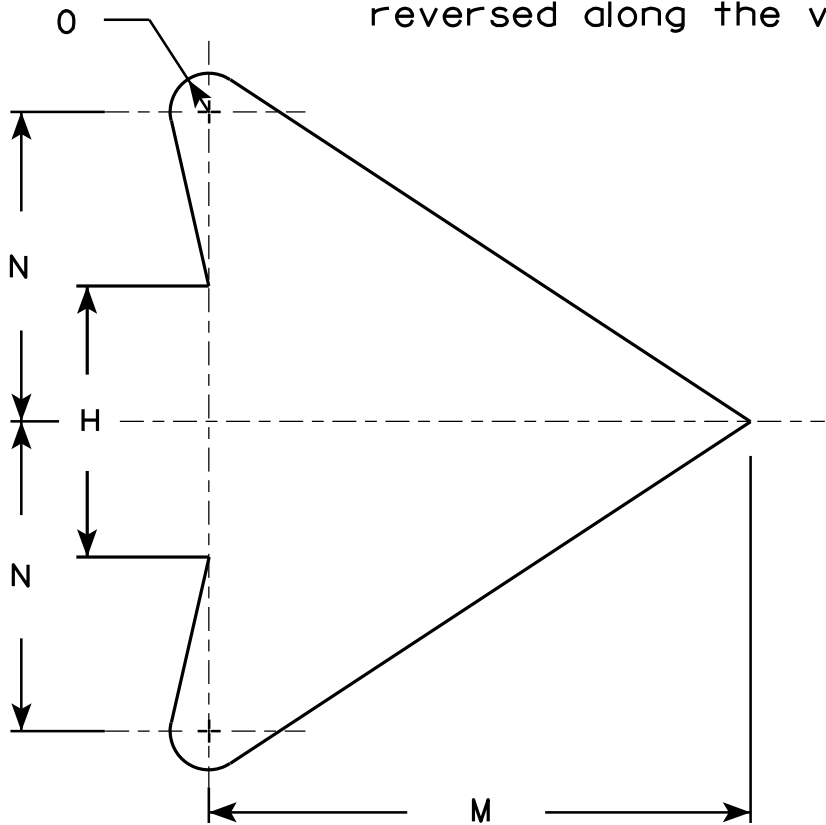
STANDARD SIGN	
S3-1	
WISCONSIN DEPT OF TRANSPORTATION	
APPROVED	<u>Matthew R. Rauch</u> for State Traffic Engineer
DATE <u>6/8/10</u>	PLATE NO. <u>S3-16</u>

NOTES

1. Sign is Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
Background - Yellow
Message - Black
3. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
4. W1-2L is the same as W1-2R except the arrow is reversed along the vertical centerline.



W1-2R



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	24		1 1/8	3/8	1/2		8 1/4	3 1/2	4 1/2	1 3/4	2 3/8	7 1/4	7	4	1/2												4.0
2S	30		1 3/8	1/2	5/8		10 1/4	4 3/8	5 5/8	2 1/4	3	9 1/8	8 3/4	5	5/8												6.25
2M	36		1 5/8	5/8	3/4		12 3/8	5 1/4	6 3/4	2 5/8	3 1/2	10 7/8	10 1/2	6	3/4												9.0
3	36		1 5/8	5/8	3/4		12 3/8	5 1/4	6 3/4	2 5/8	3 1/2	10 7/8	10 1/2	6	3/4												9.0
4	36		1 5/8	5/8	3/4		12 3/8	5 1/4	6 3/4	2 5/8	3 1/2	10 7/8	10 1/2	6	3/4												9.0
5	48		2 1/4	3/4	1		16 1/2	7	9	3 1/2	4 5/8	14 1/2	14	8	1												16.0

STANDARD SIGN
W1-2

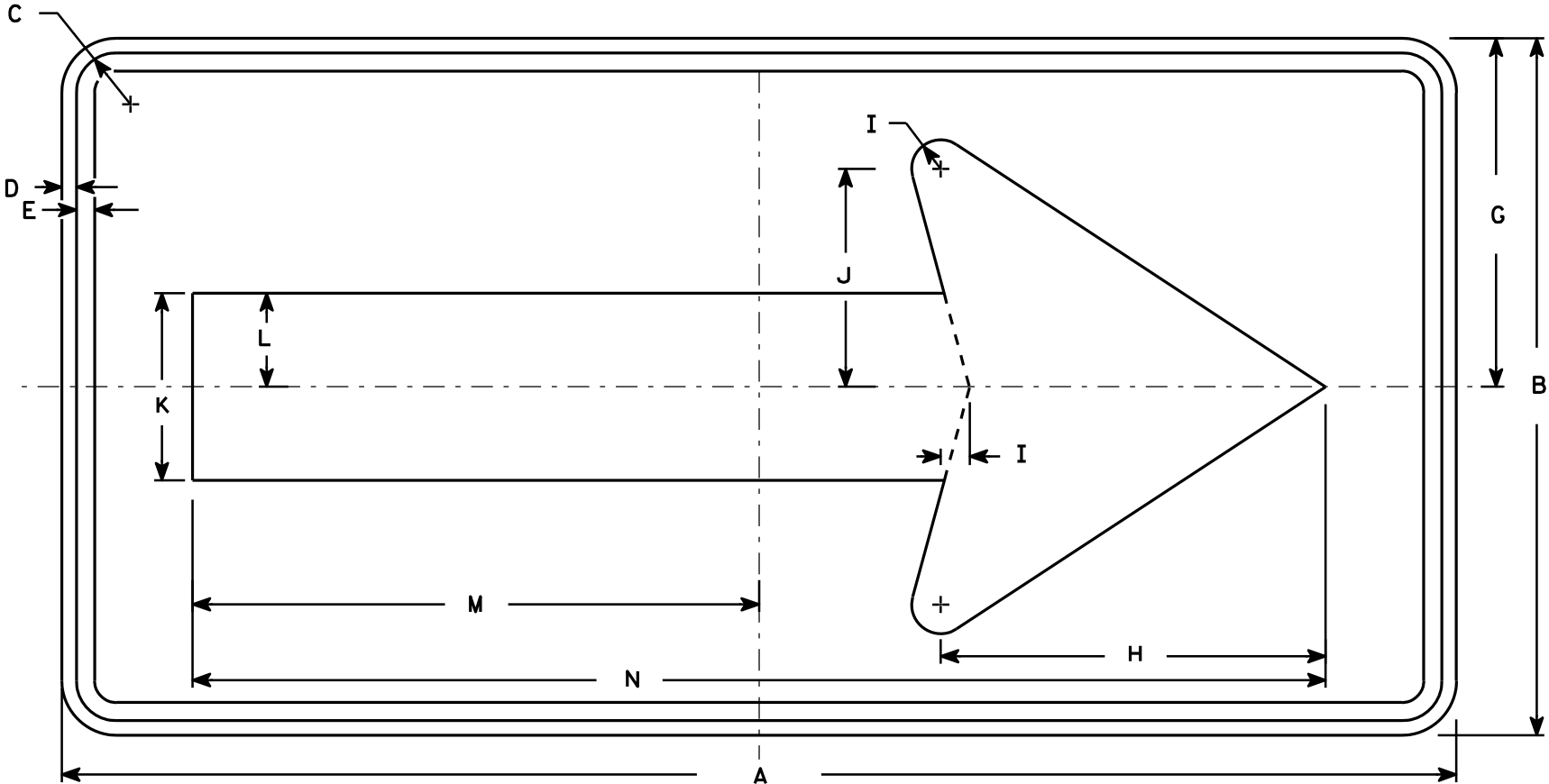
WISCONSIN DEPT OF TRANSPORTATION

APPROVED
Matthew R. Rauch
for State Traffic Engineer

DATE 5/15/12 PLATE NO. W1-2.10

NOTES

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



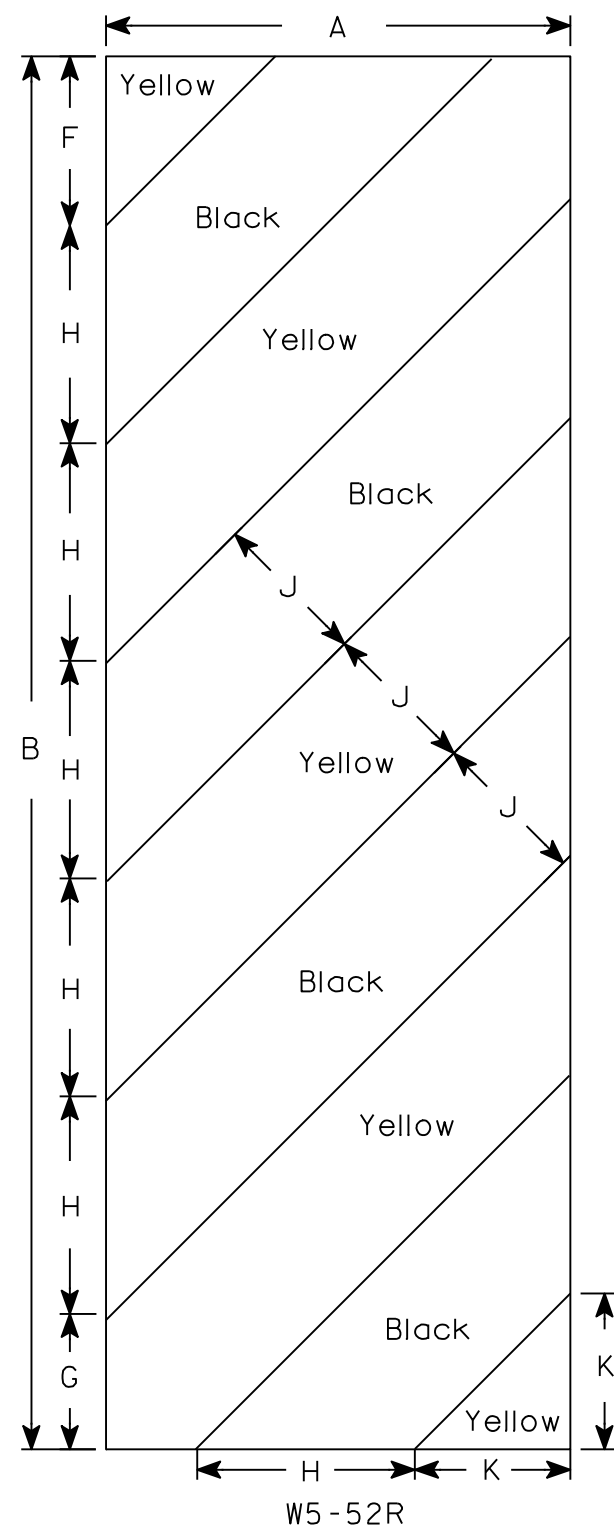
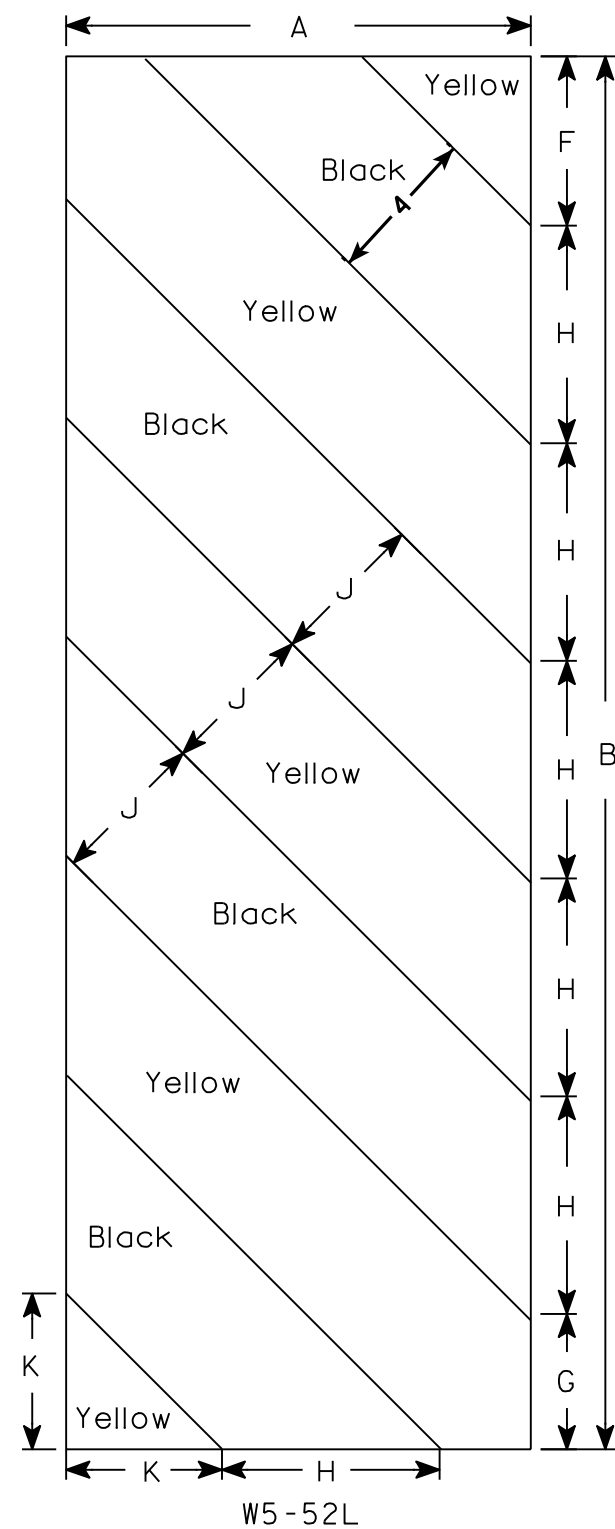
W1-6

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 1/8	3/8	3/8		9	10	3/4	5 5/8	4 3/4	2 3/8	14 5/8	29 1/4													4.5
2S	48	24	1 3/8	1/2	5/8		12	13 1/4	1	7 1/2	6 1/2	3 1/4	19 1/2	39													8.0
2M	48	24	1 3/8	1/2	5/8		12	13 1/4	1	7 1/2	6 1/2	3 1/4	19 1/2	39													8.0
3	60	30	1 3/8	1/2	5/8		15	16 1/4	1 1/4	9 1/4	8	4	24 3/8	48 3/4													12.5
4	60	30	1 3/8	1/2	5/8		15	16 1/4	1 1/4	9 1/4	8	4	24 3/8	48 3/4													12.5
5	96	48	2 1/4	3/4	1		24	26 1/2	2	15	13	6 1/2	39	78													32.0

STANDARD SIGN
W1-6

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer
DATE 6/7/10 PLATE NO. W1-6.8



NOTES

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

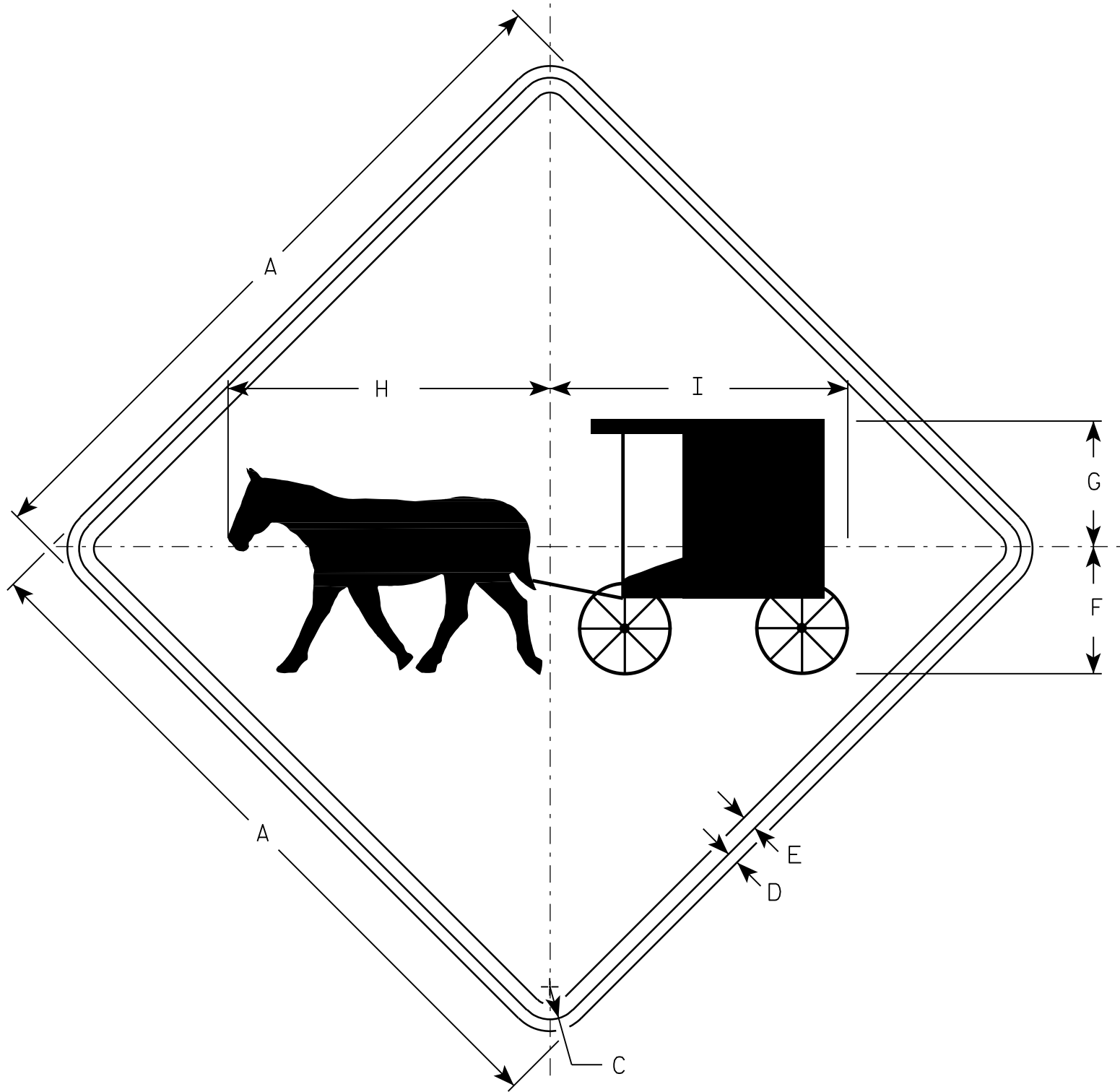
SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2S	12	36				4 3⁄8	3 1⁄2	5 5⁄8	45°	4	4																3.0
2M	12	36				4 3⁄8	3 1⁄2	5 5⁄8	45°	4	4																3.0
3	18	54				6	5 1⁄2	8 1⁄2	45°	6	6 5⁄6																6.75
4																											
5																											

STANDARD SIGN
W5-52L & W5-52R

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 5/29/12 PLATE NO. W5-52.9



W11-12

NOTES

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

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	30		1 3/8	1/2	5/8	5 3/8	5 1/4	13 5/8	12 5/8																		6.25
2S	36		1 5/8	5/8	3/4	6 1/2	6 3/8	16 3/8	15 1/8																		9.0
2M	36		1 5/8	5/8	3/4	6 1/2	6 3/8	16 3/8	15 1/8																		9.0
3	48		2 1/4	3/4	1	8 5/8	8 1/2	21 7/8	20 1/8																		16.0
4																											
5																											

STANDARD SIGN

W11-12

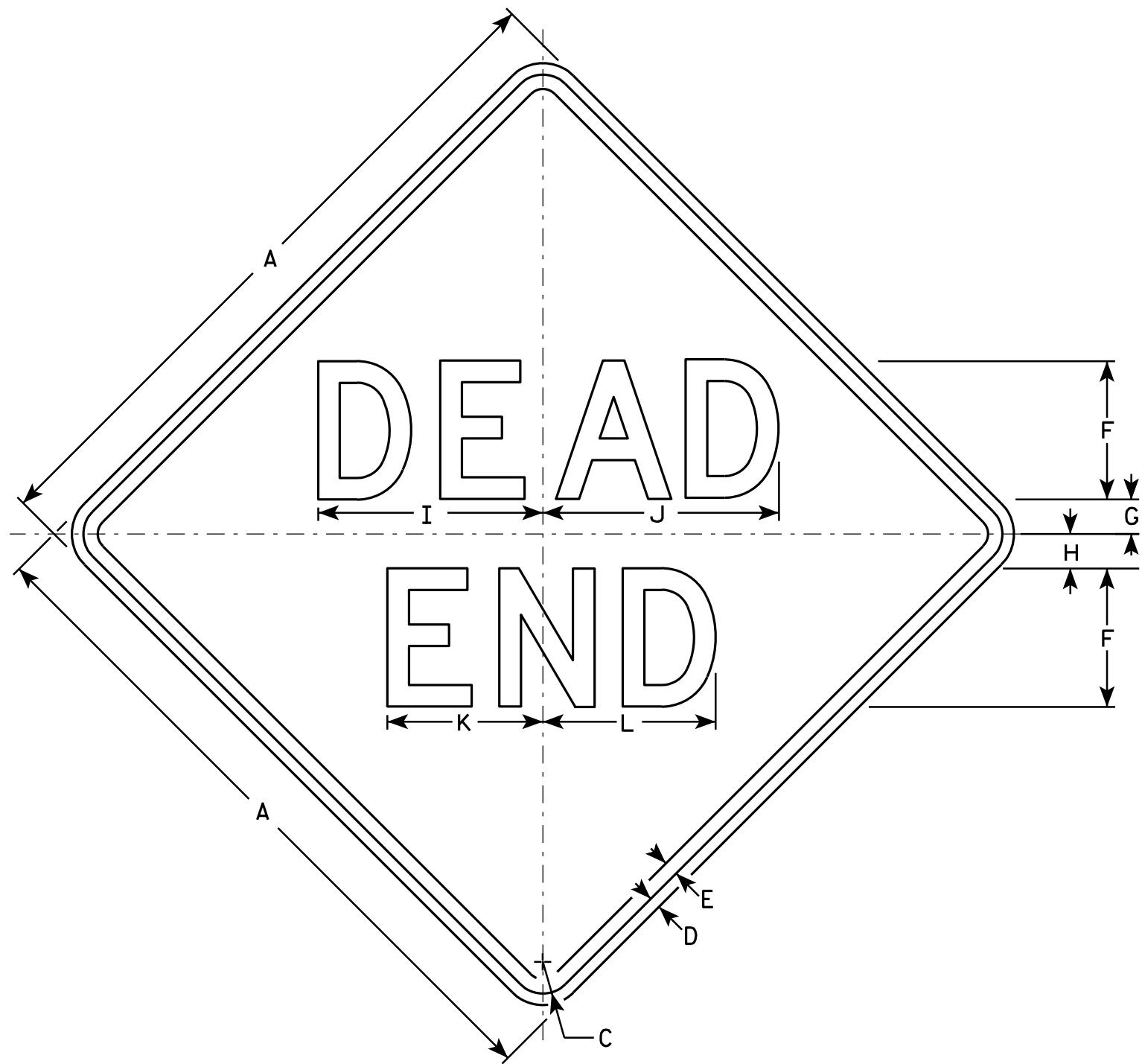
WISCONSIN DEPT OF TRANSPORTATION

APPROVED

Matthew R. Rauch
For State Traffic Engineer

DATE 3/13/13

PLATE NO. W11-12.4



W14-1

NOTES

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

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area, sq. ft.
1	24		1 1/8	3/8	1/2	5	1	2	8 1/4	8 5/8	5 5/8	6 1/4															4.0
2S	30		1 3/8	1/2	5/8	6	1 1/2	2 1/2	9 3/4	10 1/4	6 3/4	7 1/2															6.25
2M	30		1 3/8	1/2	5/8	6	1 1/2	2 1/2	9 3/4	10 1/4	6 3/4	7 1/2															6.25
3	36		1 5/8	5/8	3/4	7	2	3	11 3/8	12	7 7/8	8 3/4															9.0
4																											
5																											

STANDARD SIGN
W14-1

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R. Rauch
for State Traffic Engineer

DATE 3/13/13 PLATE NO. W14-1.7

PROJECT NO:

HWY:

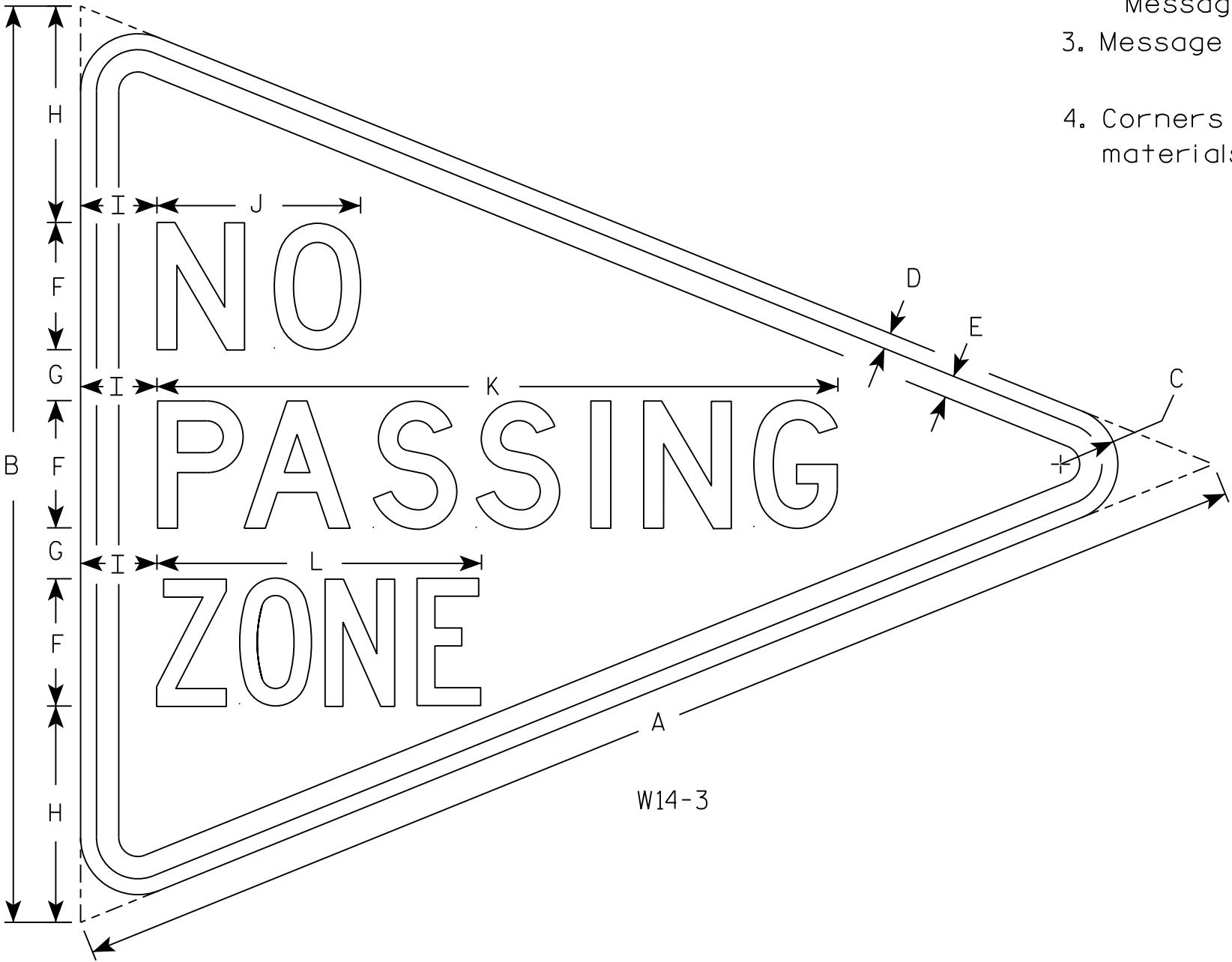
COUNTY:

SHEET NO:

E

NOTES

- 1. Sign is Type II - Type F Reflective
- 2. Color:
Background - Yellow
Message - Black
- 3. Message Series - Lines 1 and 2 are Series D.
Line 3 is series C.
- 4. Corners and borders shall be rounded on all base materials for this sign.



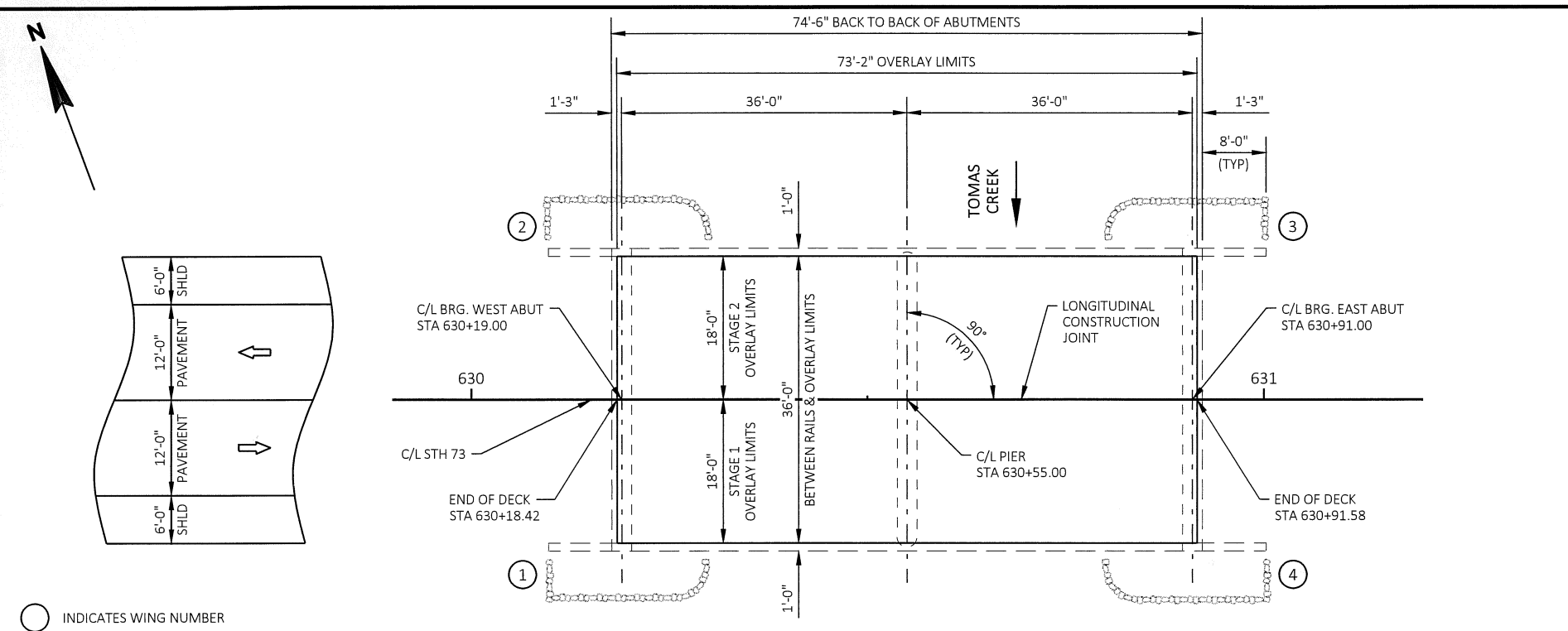
SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2S	48	36	2 1/4	5/8	7/8	5	2	8 1/2	3	8	26 3/4	12 3/4															5.56
2M																											
3																											
4																											
5																											

STANDARD SIGN
W14-3

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 3/21/17 PLATE NO. W14-3.10



GENERAL NOTES

DRAWINGS SHALL NOT BE SCALED.

DIMENSIONS SHOWN ARE BASED ON THE ORIGINAL STRUCTURE PLANS.

PROFILE GRADE LINE SHALL BE DETERMINED IN THE FIELD BASED ON A MIN. OVERLAY THICKNESS OF 1½" PLACED ABOVE THE DECK SURFACE AFTER CLEANING, EXPECTED AVERAGE OVERLAY THICKNESS IS 2". IF EXPECTED AVERAGE OVERLAY THICKNESS IS EXCEEDED BY MORE THAN ½", CONTACT THE STRUCTURES DESIGN SECTION.

ANY EXCAVATION REQUIRED TO COMPLETE THE OVERLAY SHALL BE CONSIDERED INCIDENTAL TO THE BID ITEM "CONCRETE MASONRY OVERLAY DECKS".

ALL CONCRETE REMOVAL NOT COVERED WITH A CONCRETE OVERLAY SHALL BE DEFINED BY A 1 INCH DEEP SAW CUT.

PROTECTIVE SURFACE TREATMENT TO BE APPLIED TO THE ENTIRE TOP OF DECK SURFACE.

"PREPARATION DECKS TYPE 1", "PREPARATION DECKS TYPE 2" AND "CONCRETE SURFACE REPAIR" AREAS TO BE DETERMINED BY THE ENGINEER IN THE FIELD.

"CONCRETE SURFACE REPAIR AREAS" SHALL NOT EXTEND BELOW THE WATER SURFACE ELEVATION AT THE TIME OF CONSTRUCTION, AND SHALL NOT REDUCE THE EXISTING WATERWAY OPENING OF THE STRUCTURE.

A MINIMUM OF 1-INCH OF CONCRETE SHALL BE REMOVED FROM THE ENTIRE BRIDGE DECK UNDER THE BID ITEM "CLEANING DECKS".

DESIGN DATA

LIVE LOAD

INVENTORY RATING FACTOR

OPERATING RATING FACTOR

WISCONSIN STANDARD PERMIT VEHICLE (WIS-SPV)

HS-22

HS-37

250 KIPS

LIST OF DRAWINGS

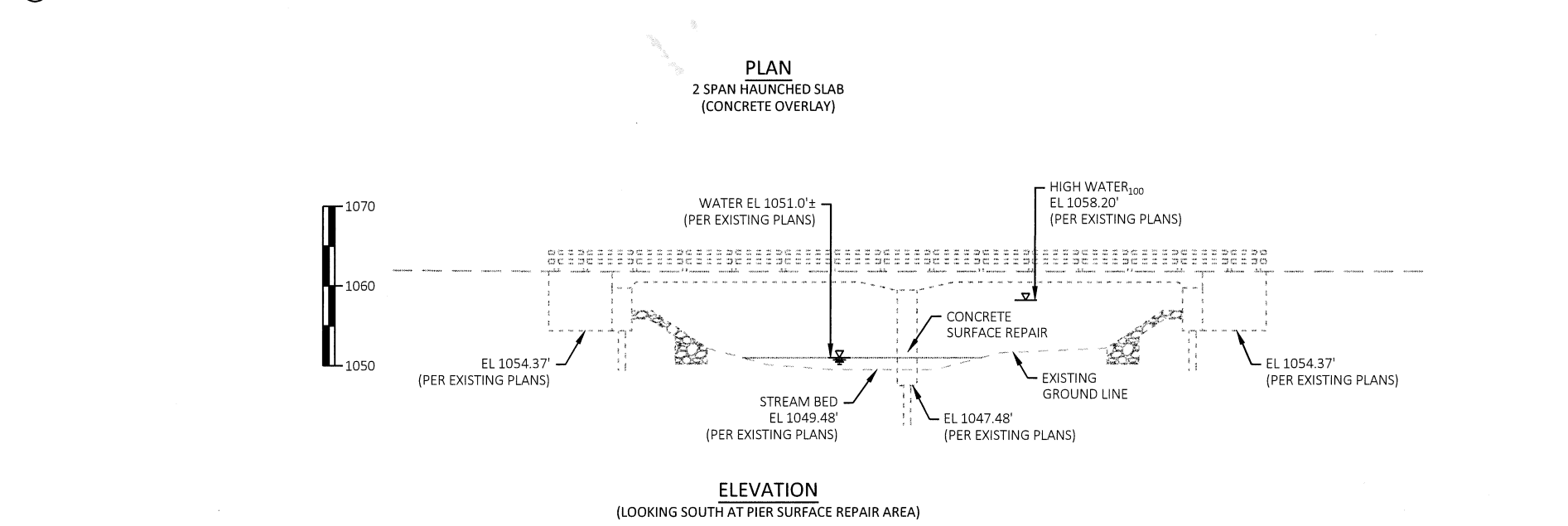
1. CONCRETE OVERLAY

2. CROSS SECTIONS

MATERIAL PROPERTIES (WBM STD. 40.31)

CONCRETE MASONRY OVERLAY DECKS f'c

4,000 psi



TRAFFIC DATA

STH 73

ADT (2019)

ADT (2039)

V

1200 vpd

1600 vpd

60 MPH

BRIDGE OFFICE CONTACT:

BILL DREHER 608-266-8489

CONSULTANT CONTACT:

DAVID GLODOWSKI 715-341-4363

8

TOTAL ESTIMATED QUANTITIES							
ITEM NO.	BID ITEMS	UNIT	W ABUT	PIER	E ABUT	SUPER	TOTAL
502.3200	PROTECTIVE SURFACE TREATMENT	SY				293	293
* 509.0301	PREPARATION DECKS TYPE 1	SY				29	29
* 509.0302	PREPARATION DECKS TYPE 2	SY				15	15
509.0500	CLEANING DECKS	SY				293	293
** 509.1500	CONCRETE SURFACE REPAIR	SF		10			10
▲ ☆ 509.2500	CONCRETE MASONRY OVERLAY DECKS	CY				19	19

▲

BID ITEM INCLUDES AN AVERAGE THICKNESS OF 2".

☆

BID ITEM INCLUDES CONCRETE FOR "PREPARATION DECKS TYPE 1" AND "PREPARATION DECKS TYPE 2".

*

QUANTITY LISTED IS TENTATIVE. CONTRACTOR SHALL COORDINATE THE FIELD IDENTIFICATION AND DETERMINATION OF ALL DECK REPAIR LOCATIONS WITH THE ENGINEER.

**

CONCRETE SURFACE REPAIR REQUIRED ON SUBSTRUCTURES AS DESIGNATED BY THE ENGINEER. QUANTITY LISTED IS TENTATIVE. CONTRACTOR SHALL COORDINATE THE FIELD IDENTIFICATION AND DETERMINATION OF ALL CONCRETE SURFACE REPAIR LOCATIONS WITH THE ENGINEER.

WISCONSIN

RYAN T. ARNDT

E-41765

FOND DU LAC, WI

PROFESSIONAL ENGINEER

1-26-18

GREMMER & ASSOCIATES, INC.

CONSULTING ENGINEERS

Stevens Point • Fond du Lac

STATE OF WISCONSIN

DEPARTMENT OF TRANSPORTATION

ACCEPTED *William C. Dreher* SDR 02/06/18

CHIEF STRUCTURES DESIGN ENGINEER DATE

STRUCTURE B-10-192

STH 73 OVER TOMAS CREEK

COUNTY CLARK

TOWN/CITY/VILLAGE SHERWOOD

DESIGN SPEC REHABILITATION N/A

DESIGNED BY RTA

DESIGN CK'D ALK

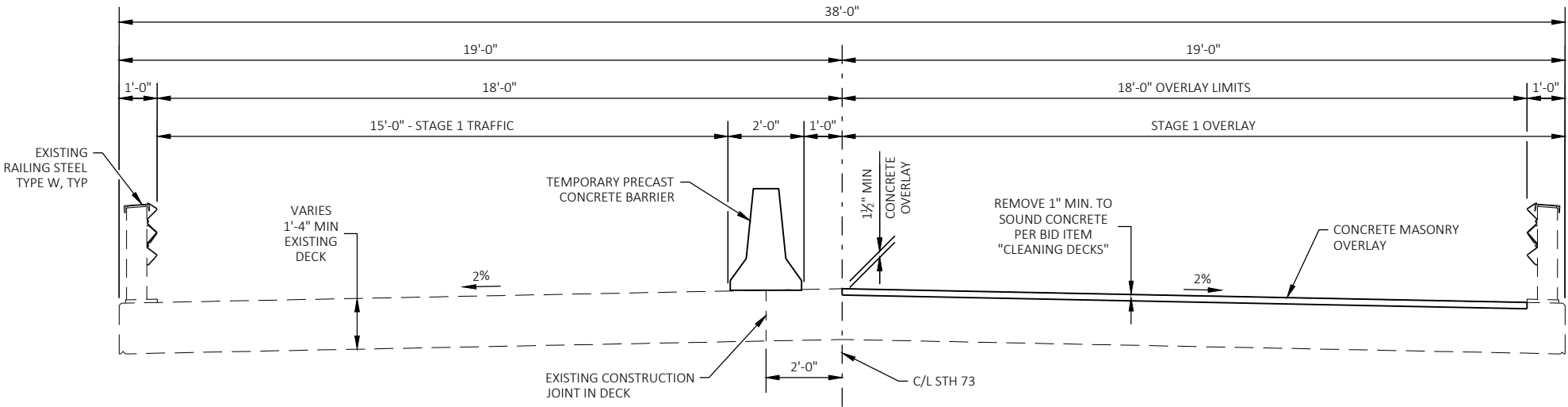
DRAWN BY AJS

PLANS CK'D ALK

CONCRETE OVERLAY

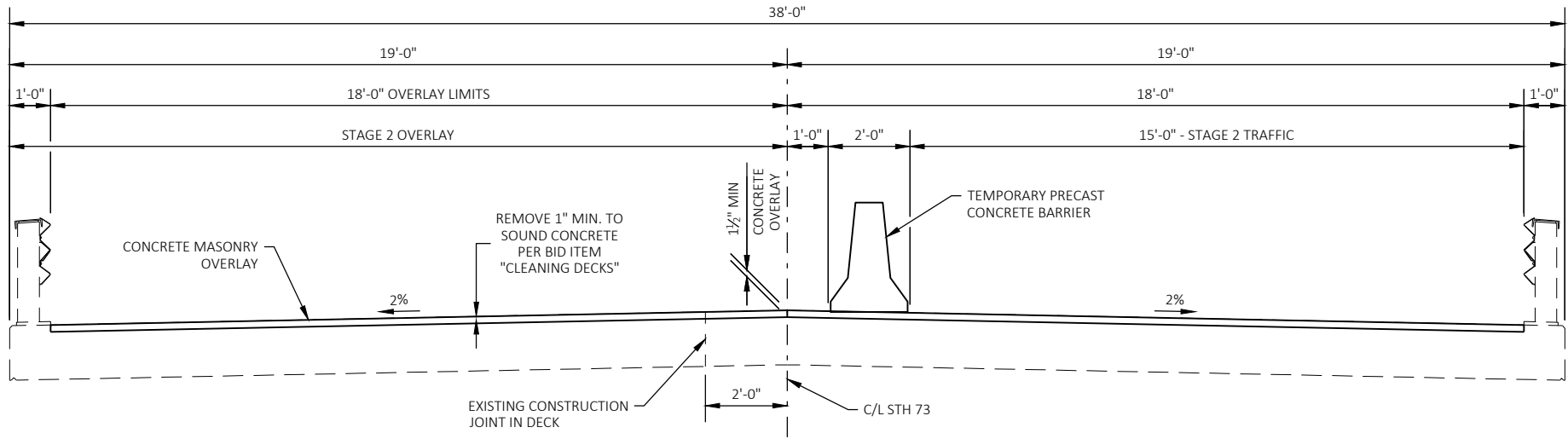
SHEET 1 OF 2

8



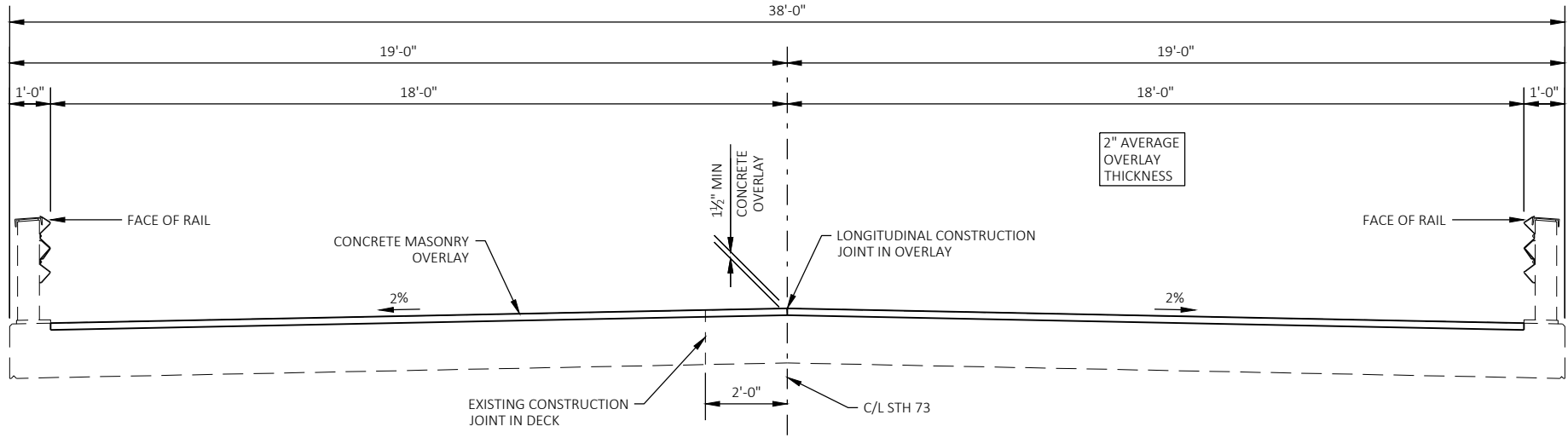
CROSS-SECTION THROUGH STRUCTURE

STAGE 1
(LOOKING EAST)



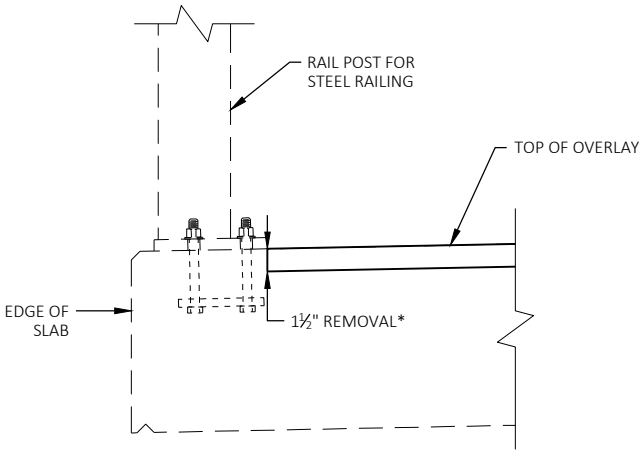
CROSS-SECTION THROUGH STRUCTURE

STAGE 2
(LOOKING EAST)



CROSS-SECTION THROUGH STRUCTURE

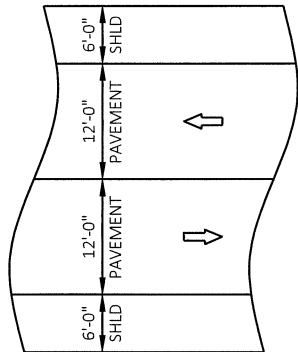
FINAL OVERLAY REHABILITATION
(LOOKING EAST)



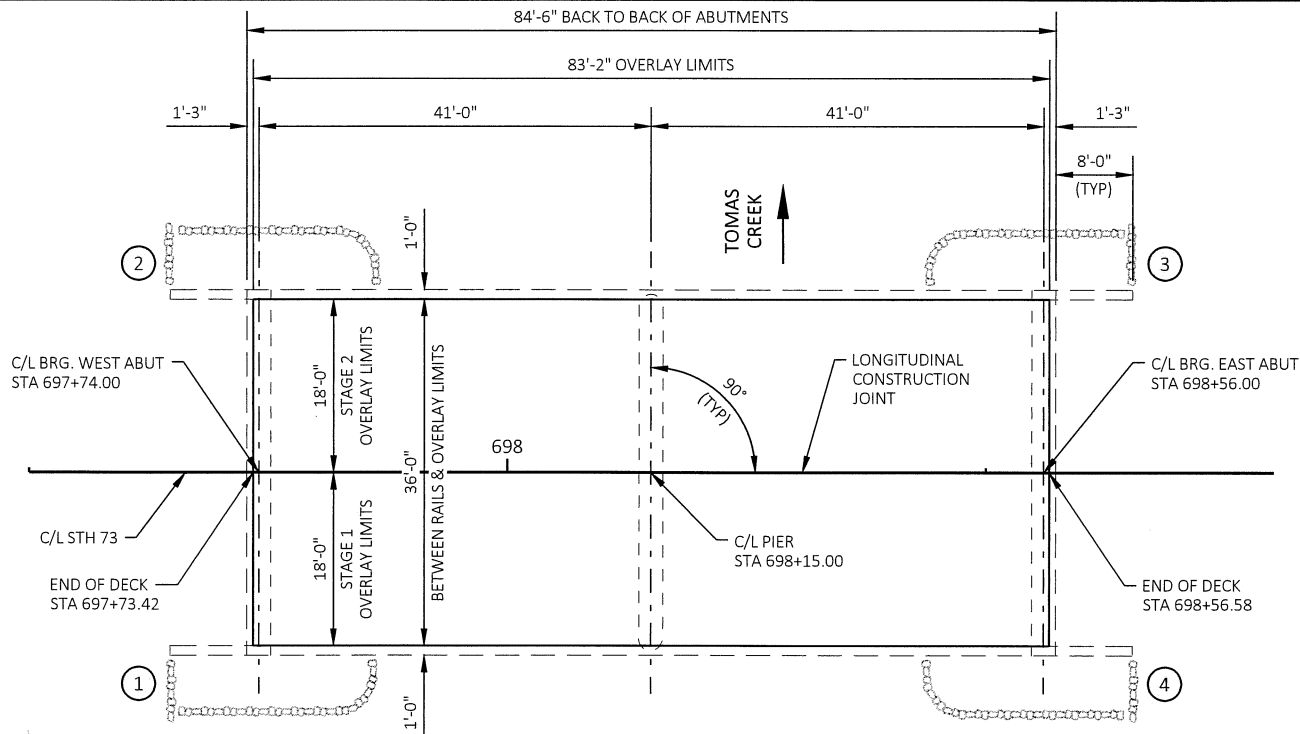
SECTION THROUGH RAILING

* CONCRETE OVERLAY SHALL MATCH THE EXISTING TOP OF DECK ELEVATION AT THE FACE OF RAILING. CONCRETE OVERLAY MAY NOT REDUCE THE EFFECTIVE HEIGHT OF THE EXISTING RAILING, AND REMOVAL SHALL NOT DAMAGE THE EXISTING REINFORCEMENT.

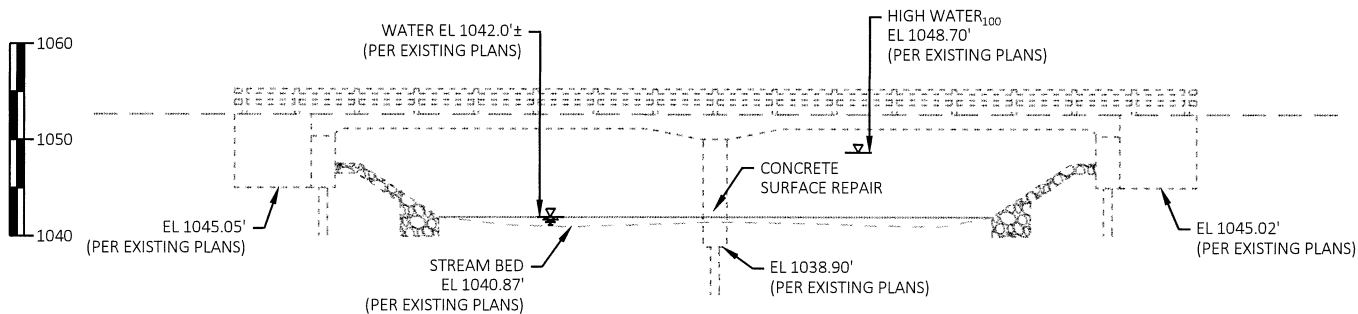
NO.	DATE	REVISION		BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION				
B-10-192				
DRAWN BY		AJS	PLANS CK'D	ALK
CROSS SECTIONS			SHEET 2	



○ INDICATES WING NUMBER



PLAN
2 SPAN HAUNCHED SLAB
(CONCRETE OVERLAY)



ELEVATION
(LOOKING EAST)

TOTAL ESTIMATED QUANTITIES

ITEM NO.	BID ITEMS	UNIT	W ABUT	PIER	E ABUT	SUPER	TOTAL
502.3200	PROTECTIVE SURFACE TREATMENT	SY				333	333
* 509.0301	PREPARATION DECKS TYPE 1	SY				33	33
* 509.0302	PREPARATION DECKS TYPE 2	SY				17	17
509.0500	CLEANING DECKS	SY				333	333
** 509.1500	CONCRETE SURFACE REPAIR	SF		10			10
▲ ☆ 509.2500	CONCRETE MASONRY OVERLAY DECKS	CY				25	25

- ▲ BID ITEM INCLUDES AN AVERAGE THICKNESS OF 2½".
- ☆ BID ITEM INCLUDES CONCRETE FOR "PREPARATION DECKS TYPE 1" AND "PREPARATION DECKS TYPE 2".
- * QUANTITY LISTED IS TENTATIVE. CONTRACTOR SHALL COORDINATE THE FIELD IDENTIFICATION AND DETERMINATION OF ALL DECK REPAIR LOCATIONS WITH THE ENGINEER.
- ** CONCRETE SURFACE REPAIR REQUIRED ON SUBSTRUCTURES AS DESIGNATED BY THE ENGINEER. QUANTITY LISTED IS TENTATIVE. CONTRACTOR SHALL COORDINATE THE FIELD IDENTIFICATION AND DETERMINATION OF ALL CONCRETE SURFACE REPAIR LOCATIONS WITH THE ENGINEER.

STATE PROJECT NUMBER

7050-08-74

GENERAL NOTES

DRAWINGS SHALL NOT BE SCALED.

DIMENSIONS SHOWN ARE BASED ON THE ORIGINAL STRUCTURE PLANS.

PROFILE GRADE LINE SHALL BE DETERMINED IN THE FIELD BASED ON A MIN. OVERLAY THICKNESS OF 1½" PLACED ABOVE THE DECK SURFACE AFTER CLEANING. EXPECTED AVERAGE OVERLAY THICKNESS IS 2½". IF EXPECTED AVERAGE OVERLAY THICKNESS IS EXCEEDED BY MORE THAN ½", CONTACT THE STRUCTURES DESIGN SECTION.

ANY EXCAVATION REQUIRED TO COMPLETE THE OVERLAY SHALL BE CONSIDERED INCIDENTAL TO THE BID ITEM "CONCRETE MASONRY OVERLAY DECKS".

ALL CONCRETE REMOVAL NOT COVERED WITH A CONCRETE OVERLAY SHALL BE DEFINED BY A 1 INCH DEEP SAW CUT.

PROTECTIVE SURFACE TREATMENT TO BE APPLIED TO THE ENTIRE TOP OF DECK SURFACE.

"PREPARATION DECKS TYPE 1", "PREPARATION DECKS TYPE 2" AND "CONCRETE SURFACE REPAIR" AREAS TO BE DETERMINED BY THE ENGINEER IN THE FIELD.

"CONCRETE SURFACE REPAIR AREAS" SHALL NOT EXTEND BELOW THE WATER SURFACE ELEVATION AT THE TIME OF CONSTRUCTION, AND SHALL NOT REDUCE THE EXISTING WATERWAY OPENING OF THE STRUCTURE.

A MINIMUM OF 1-INCH OF CONCRETE SHALL BE REMOVED FROM THE ENTIRE BRIDGE DECK UNDER THE BID ITEM "CLEANING DECKS".

DESIGN DATA

LIVE LOAD

INVENTORY RATING FACTOR	HS-21
OPERATING RATING FACTOR	HS-35
WISCONSIN STANDARD PERMIT VEHICLE (WIS-SPV)	250 KIPS

MATERIAL PROPERTIES (WBM STD. 40.31)

CONCRETE MASONRY OVERLAY DECKS f'c	4,000 psi
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LIST OF DRAWINGS

1. CONCRETE OVERLAY
2. CROSS SECTIONS

TRAFFIC DATA

STH 73

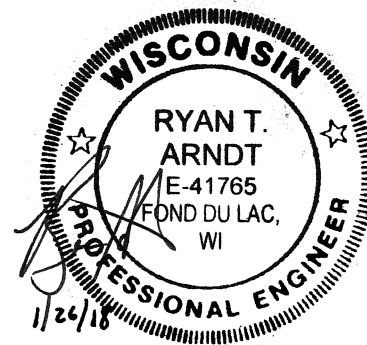
ADT (2012)	2000 vpd
ADT (2032)	2600 vpd
V	60 MPH

BRIDGE OFFICE CONTACT:

BILL DREHER 608-266-8489

CONSULTANT CONTACT:

DAVID GŁODOWSKI 715-341-4363



STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
ACCEPTED <i>William C. Dreher</i> SR	02/08/18
CHIEF STRUCTURES DESIGN ENGINEER	DATE

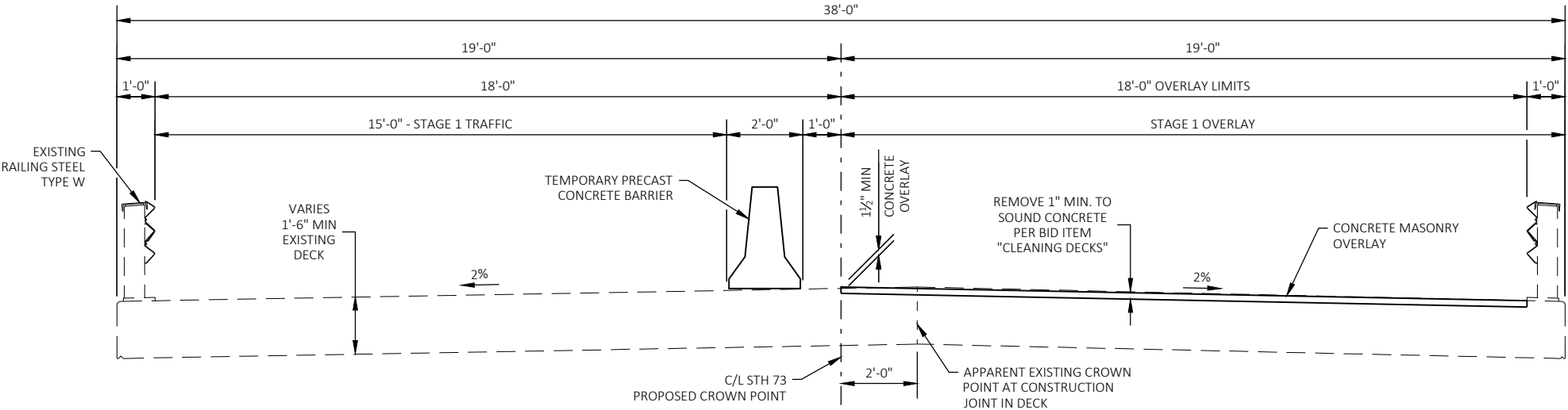
STRUCTURE B-10-193

STH 73 OVER TOMAS CREEK

COUNTY	CLARK	TOWN/CITY/VILLAGE	SHERWOOD
DESIGN SPEC	REHABILITATION N/A		
DESIGNED BY	RTA	DESIGN CK'D	ALK
DRAWN BY	AJS	PLANS CK'D	ALK

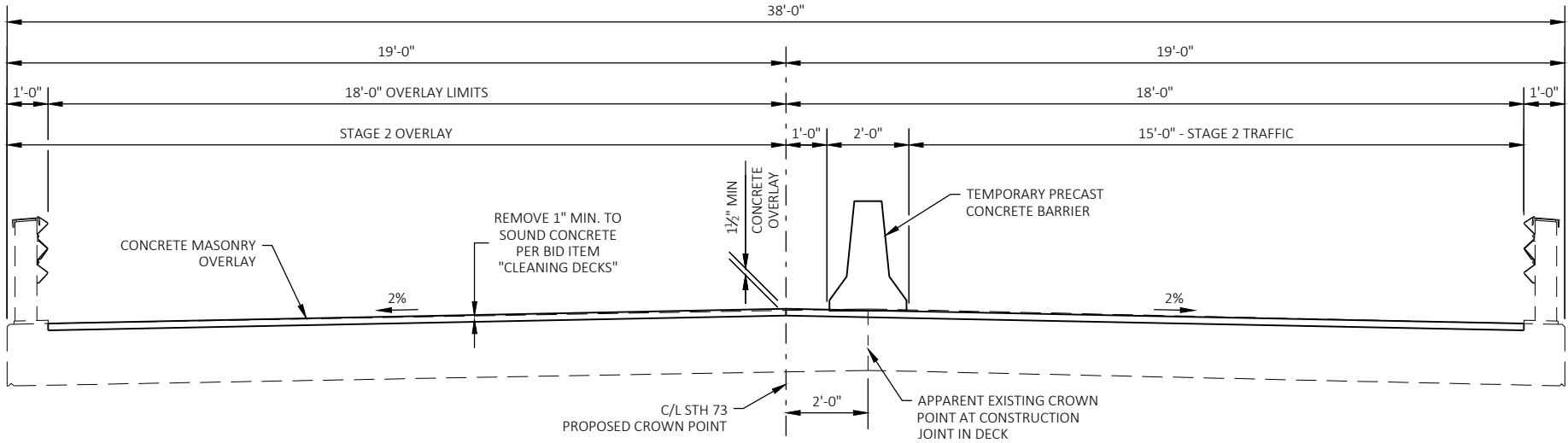
CONCRETE
OVERLAY

SHEET 1 OF 2



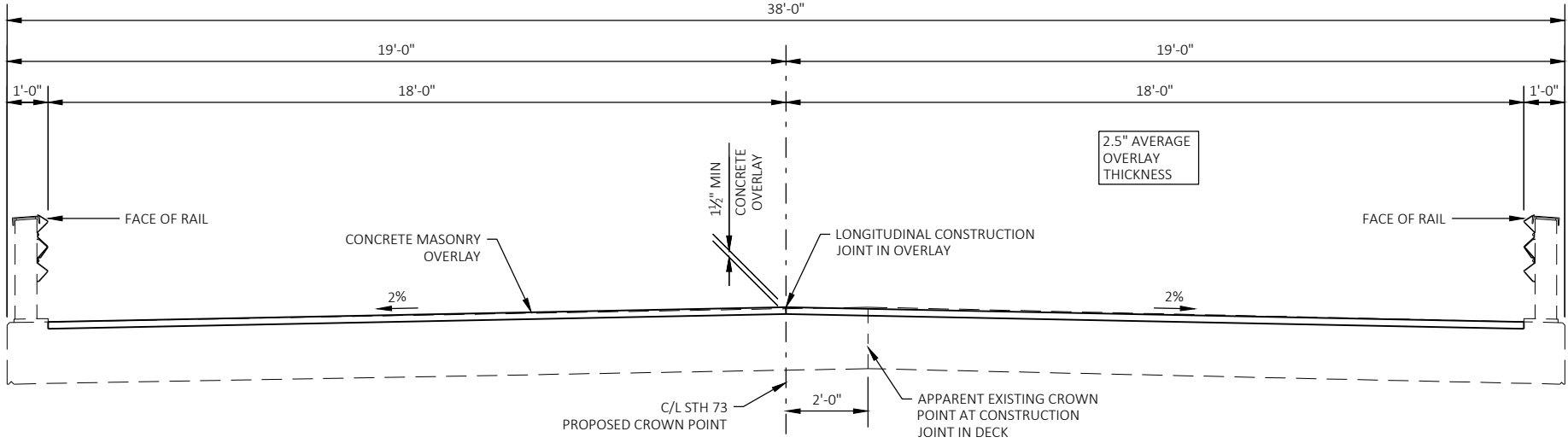
CROSS-SECTION THROUGH STRUCTURE

STAGE 1
(LOOKING EAST)



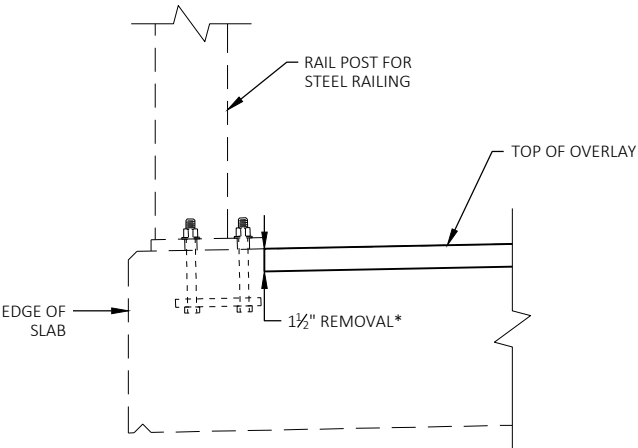
CROSS-SECTION THROUGH STRUCTURE

STAGE 2
(LOOKING EAST)



CROSS-SECTION THROUGH STRUCTURE

FINAL OVERLAY REHABILITATION
(LOOKING EAST)



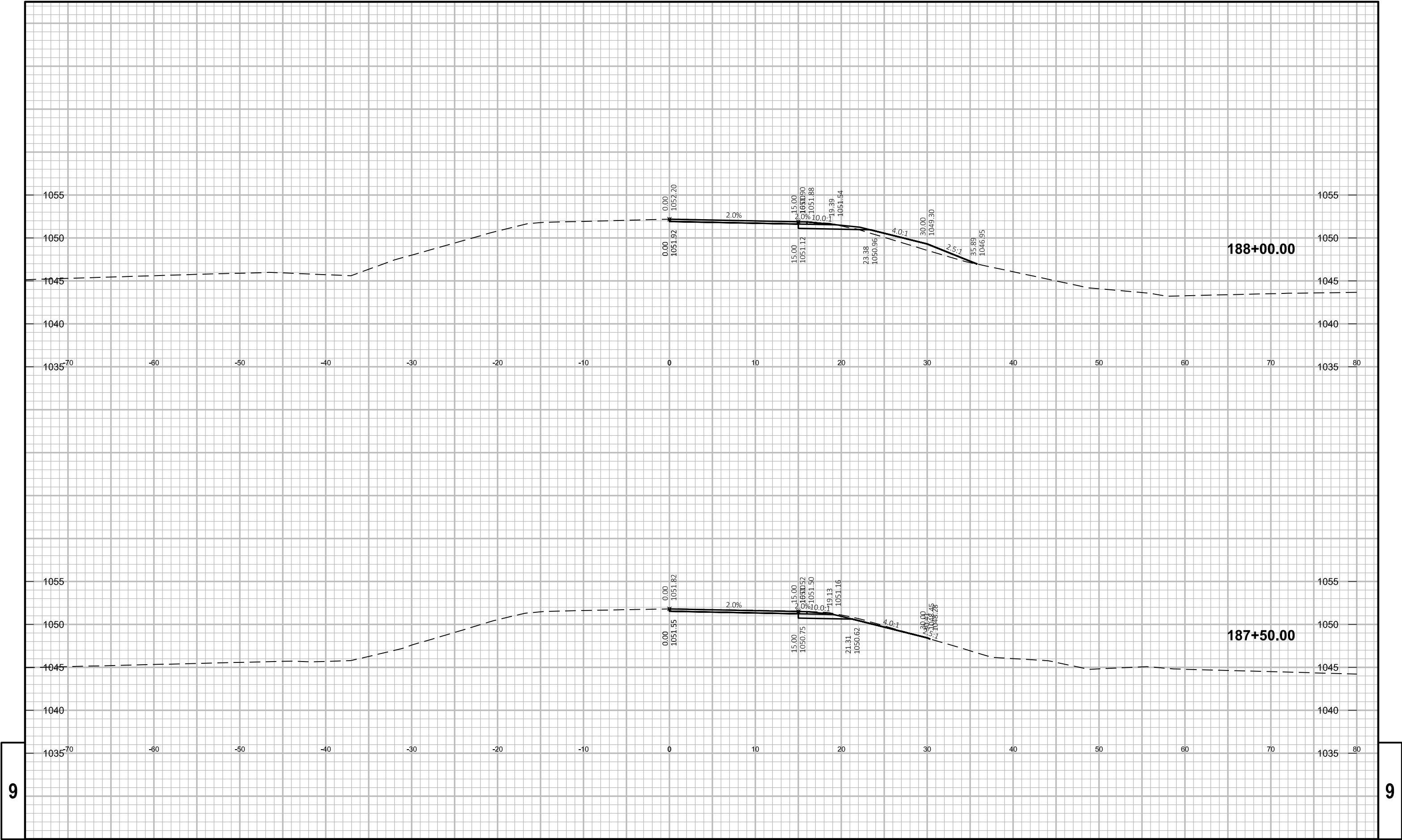
SECTION THROUGH RAILING

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NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
B-10-193			
DRAWN BY		AJS	PLANS CK'D ALK
CROSS SECTIONS			SHEET 2

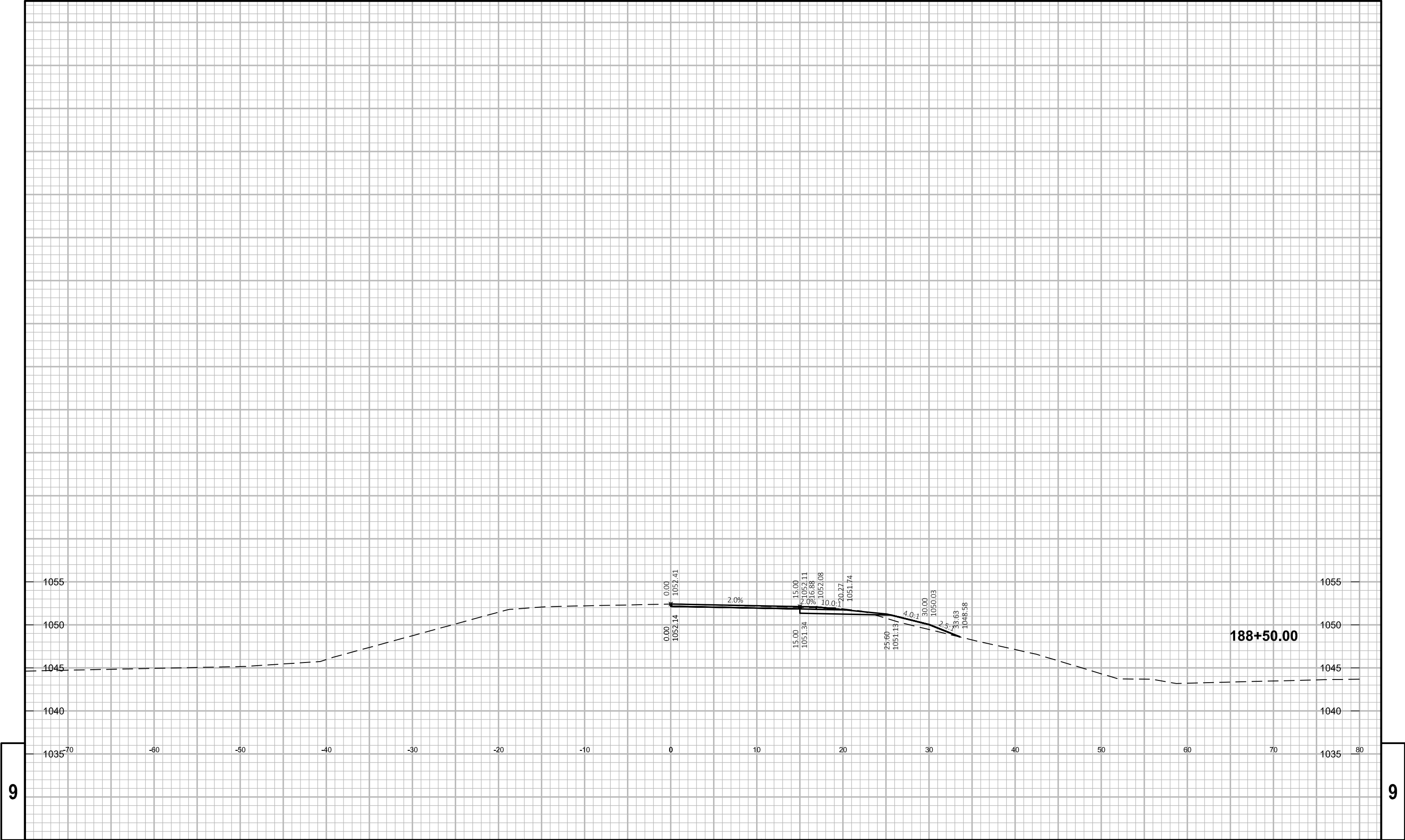
STATION	REAL STATION	DISTANCE	AREA (SF)		INCREMENTAL VOL (CY) (UNADJUSTED)		CUMULATIVE VOL (CY)		MASS ORDINATE
					CUT	FILL	CUT	EXPANDED FILL	
			CUT	FILL	NOTE 1	NOTE 2	1	1.25	
					NOTE 1	NOTE 2	NOTE 1		NOTE 3
188+84	18884		18.1	0.0	0.0	0.0	0.0	0.0	0.0
189+09	18909	25	18.6	0.0	16.9	0.0	16.9	0.0	16.9
189+34	18934	25	19.3	0.0	19.3	0.0	36.3	0.0	36.3
192+12	19212		18.7	0.0	0.0	0.0	36.3	0.0	36.3
192+37	19237	25	10.1	0.4	13.4	0.2	49.6	0.3	49.4
192+62	19262	25	15.4	6.8	11.8	3.3	61.5	4.4	57.0
256+96	25696		17.2	0.0	0.0	0.0	61.5	4.4	57.0
257+21	25721	25	11.4	0.0	13.2	0.0	74.7	4.4	70.3
257+46	25746	25	18.1	0.0	13.7	0.0	88.4	4.4	83.9
259+14	25914		16.7	0.8	0.0	0.0	88.4	4.4	83.9
259+39	25939	25	18.9	1.6	16.5	1.1	104.9	5.8	99.1
259+64	25964	25	33.2	3.0	24.1	2.1	129.0	8.4	120.6
259+65	25965	1	33.4	2.9	0.4	0.0	129.4	8.5	120.9
259+90	25990	25	24.5	4.7	26.8	3.5	156.2	12.9	143.3
260+15	26015	25	15.1	6.2	18.3	5.1	174.5	19.3	155.3
COLUMN TOTALS					174.5	15.4	EARTHWORK DATA PROVIDED IS FOR "BARRIER SYSTEM GRADING SHAPING FINISHING" LOCATIONS		

STATION	REAL STATION	DISTANCE	AREA (SF)		INCREMENTAL VOL (CY) (UNADJUSTED)		CUMULATIVE VOL (CY)		MASS ORDINATE
					CUT	FILL	CUT	EXPANDED FILL	
			CUT	FILL	NOTE 1	NOTE 2	1	1.25	
					NOTE 1	NOTE 2	NOTE 1		NOTE 3
04+89	489		13.5	0.0	0.25	0.0	0.25	0.0	0.3
53+24	5324		13.5	0.0	0.25	0.0	0.50	0.0	0.5
69+88	6988		13.5	0.0	0.25	0.0	0.75	0.0	0.8
120+93	12093		13.5	0.0	0.25	0.0	1.00	0.0	1.0
135+74	13574		13.5	0.0	0.25	0.0	1.25	0.0	1.3
170+77	17077		13.5	0.0	0.25	0.0	1.50	0.0	1.5
270+88	27088		13.5	0.0	0.25	0.0	1.75	0.0	1.8
340+87	34087		13.5	0.0	0.25	0.0	2.00	0.0	2.0
356+22	35622		13.5	0.0	0.25	0.0	2.25	0.0	2.3
360+93	36093		13.5	0.0	0.25	0.0	2.50	0.0	2.5
367+80	36780		13.5	0.0	0.25	0.0	2.75	0.0	2.8
400+61	40061		13.5	0.0	0.25	0.0	3.00	0.0	3.0
423+78	42378		120.0	0.0	2.0	0.0	5.0	0.0	5.0
COLUMN TOTALS					5.0	0.0	EARTHWORK DATA PROVIDED IS FOR "EXCAVATION COMMON" LOCATIONS		



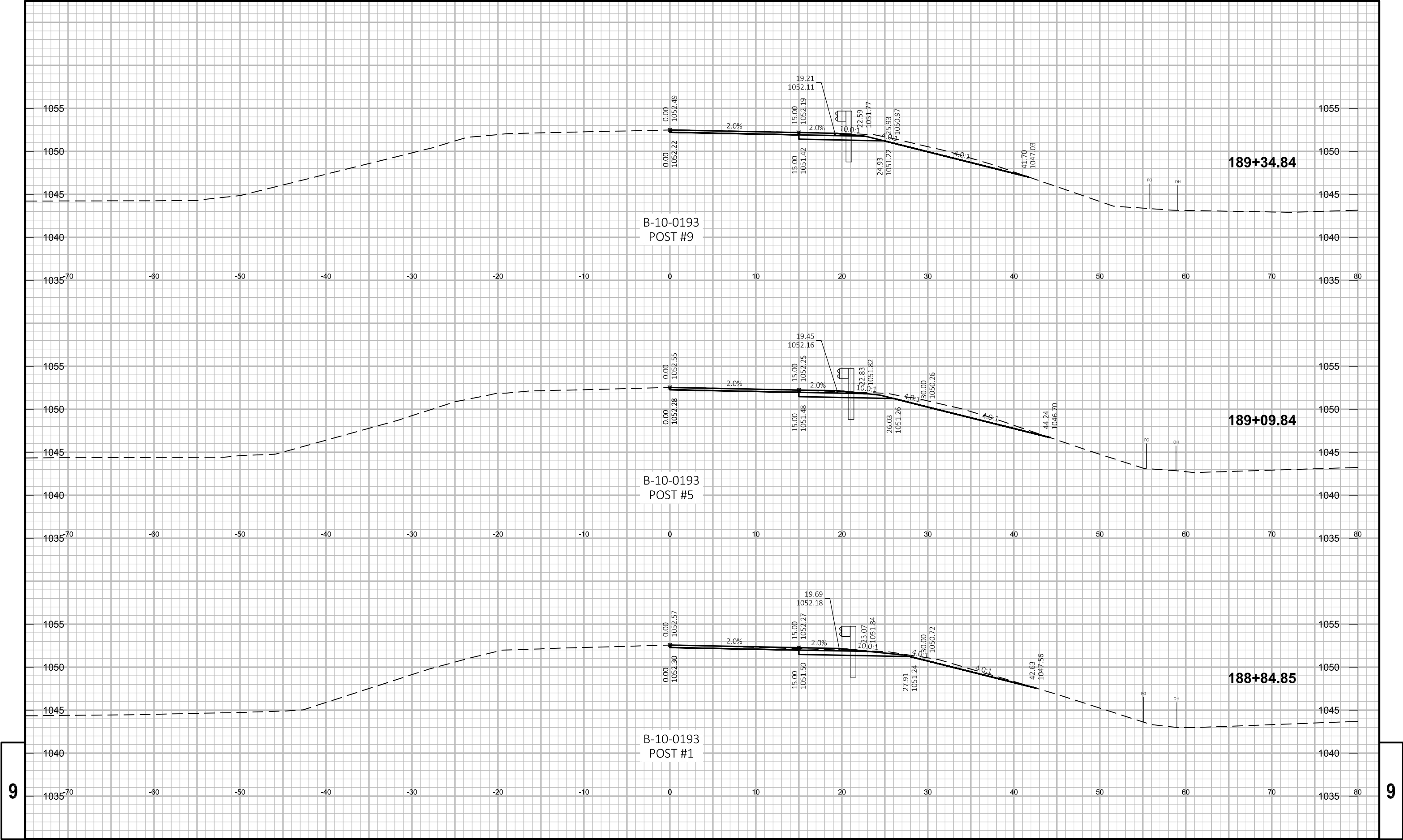
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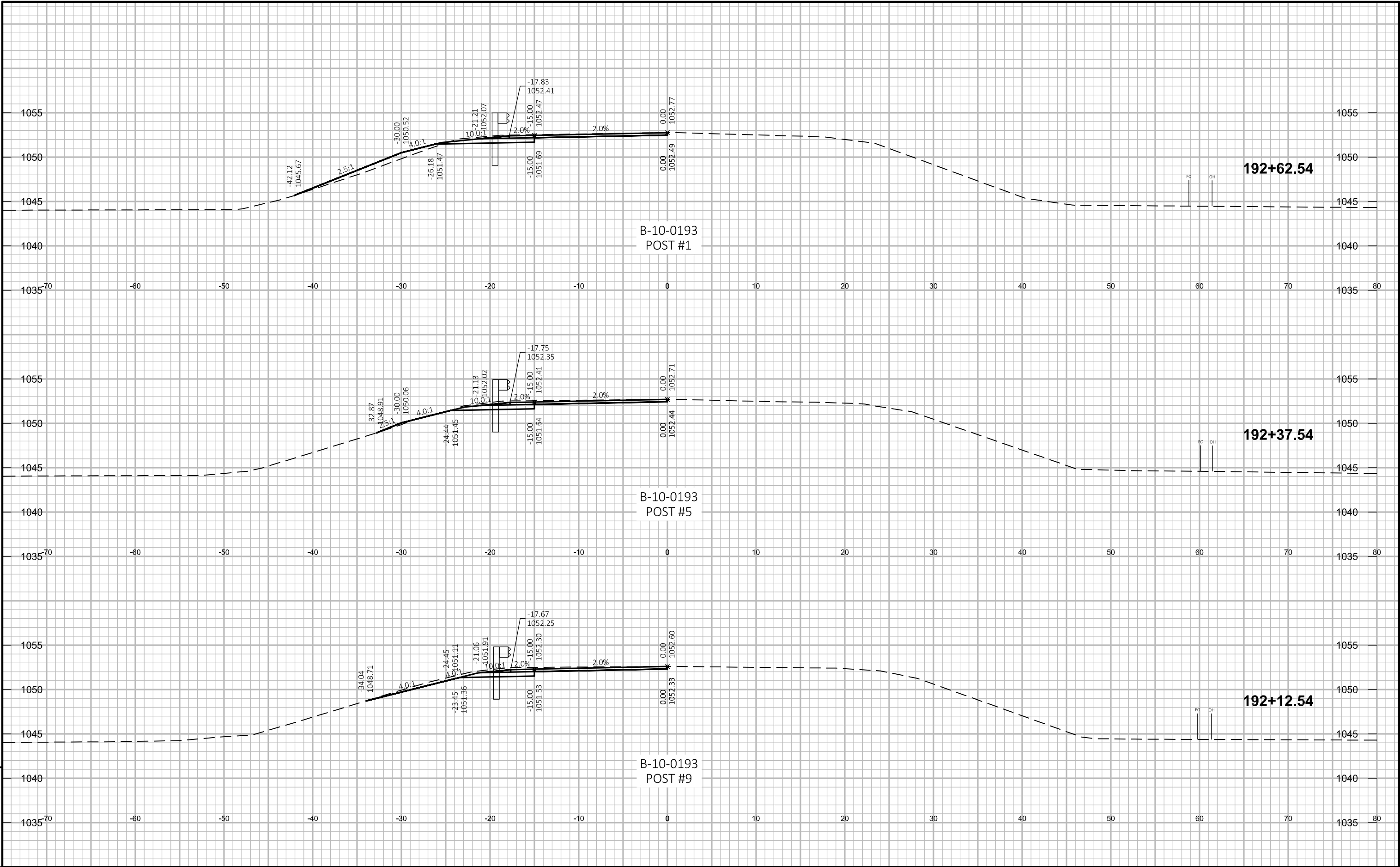
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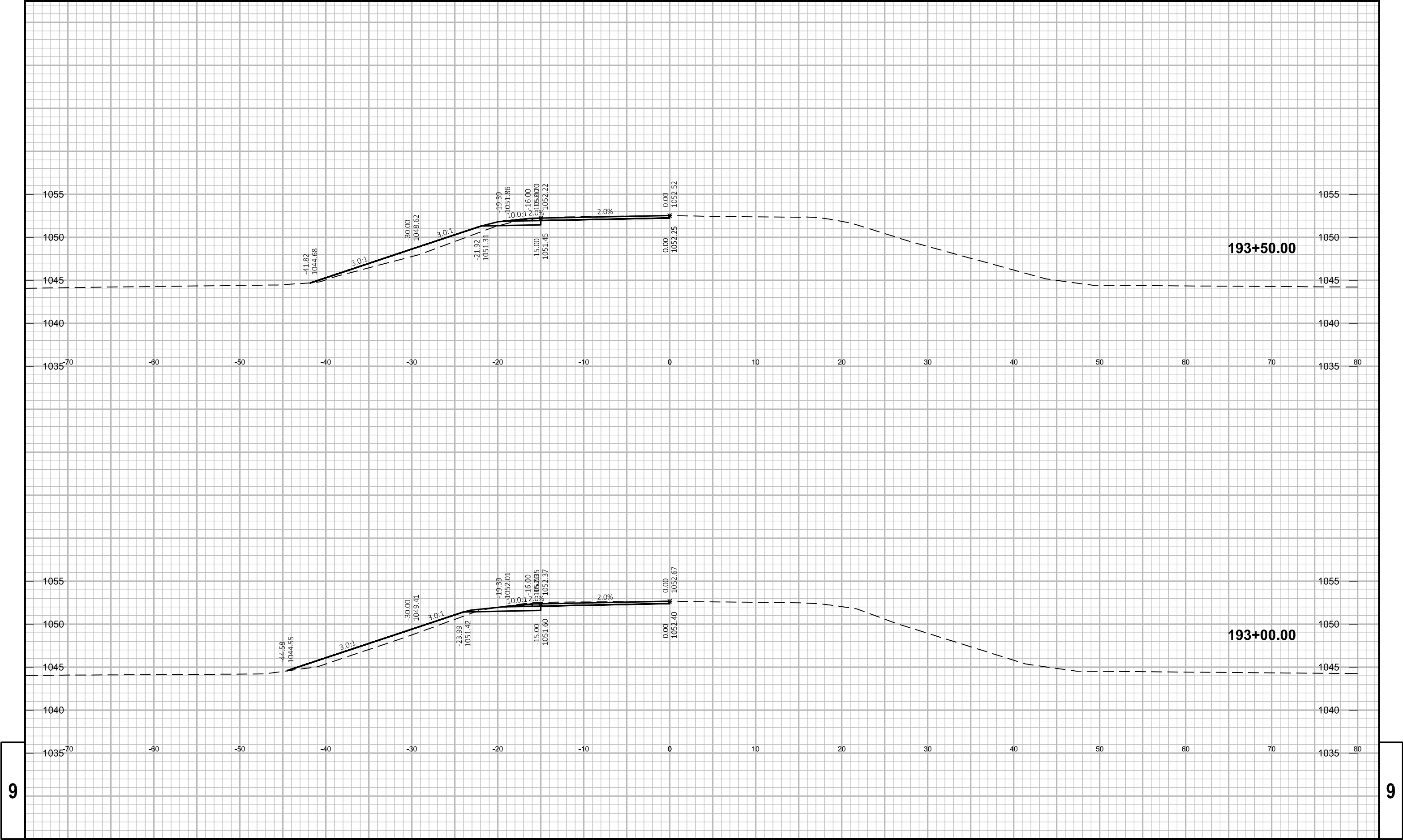


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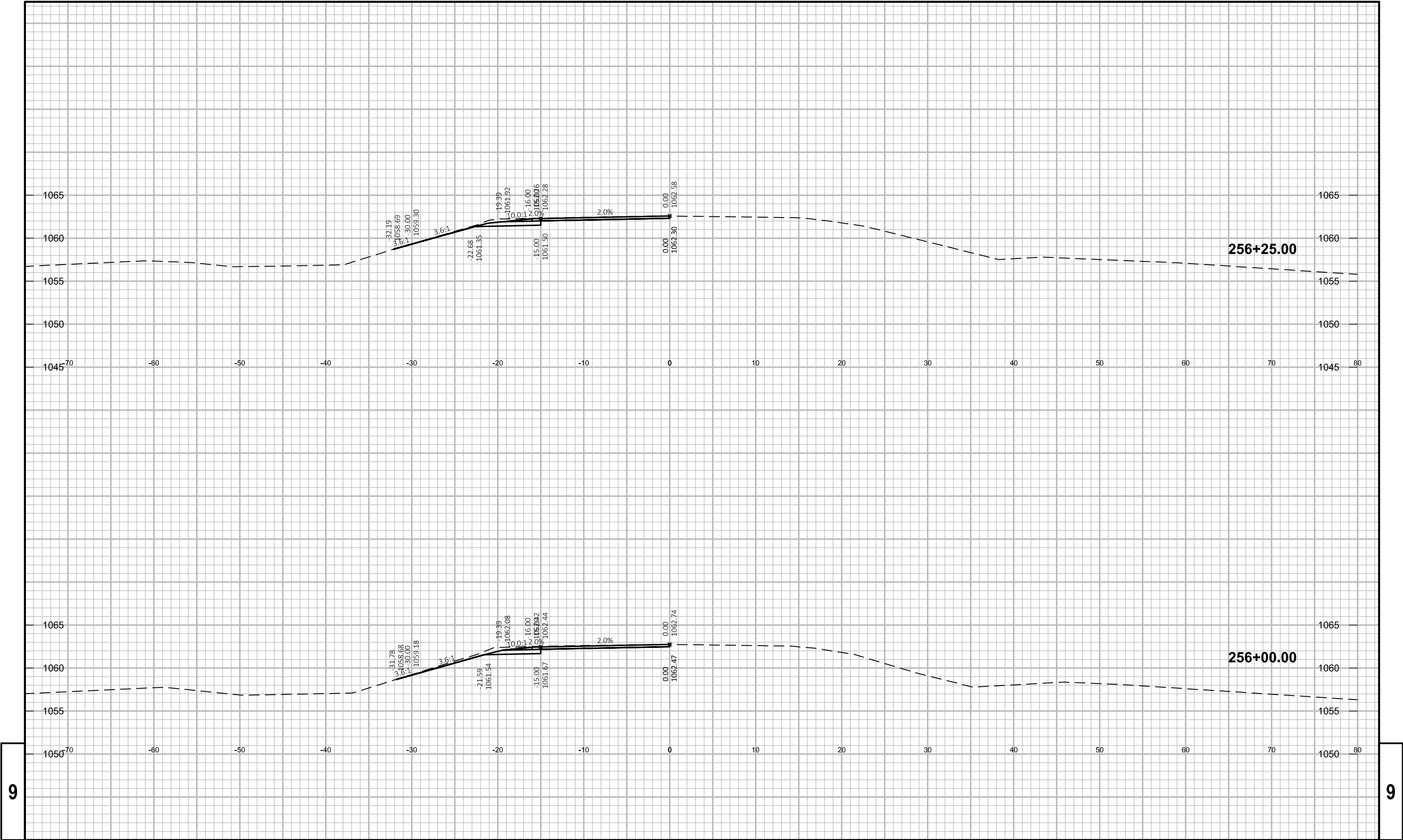






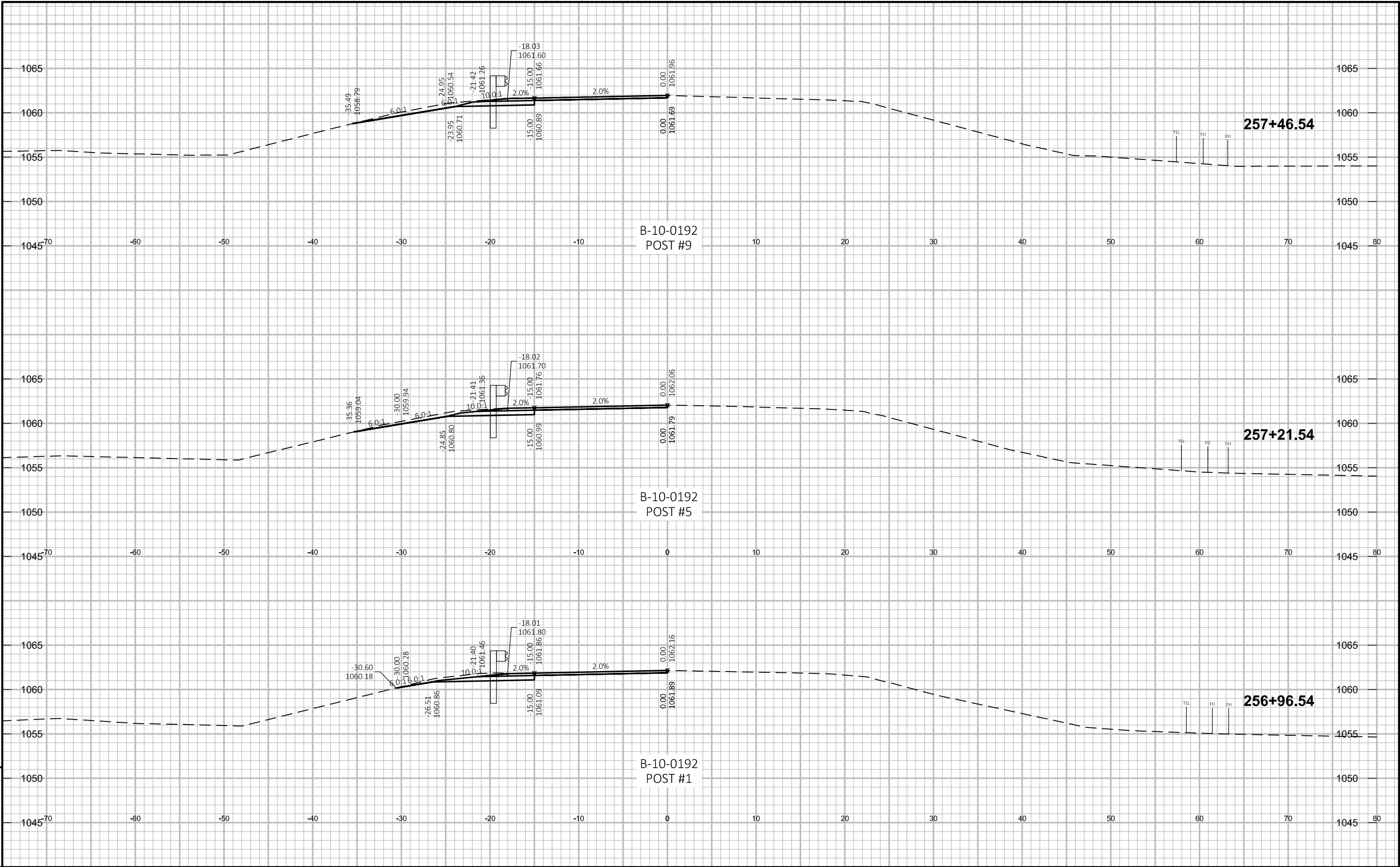
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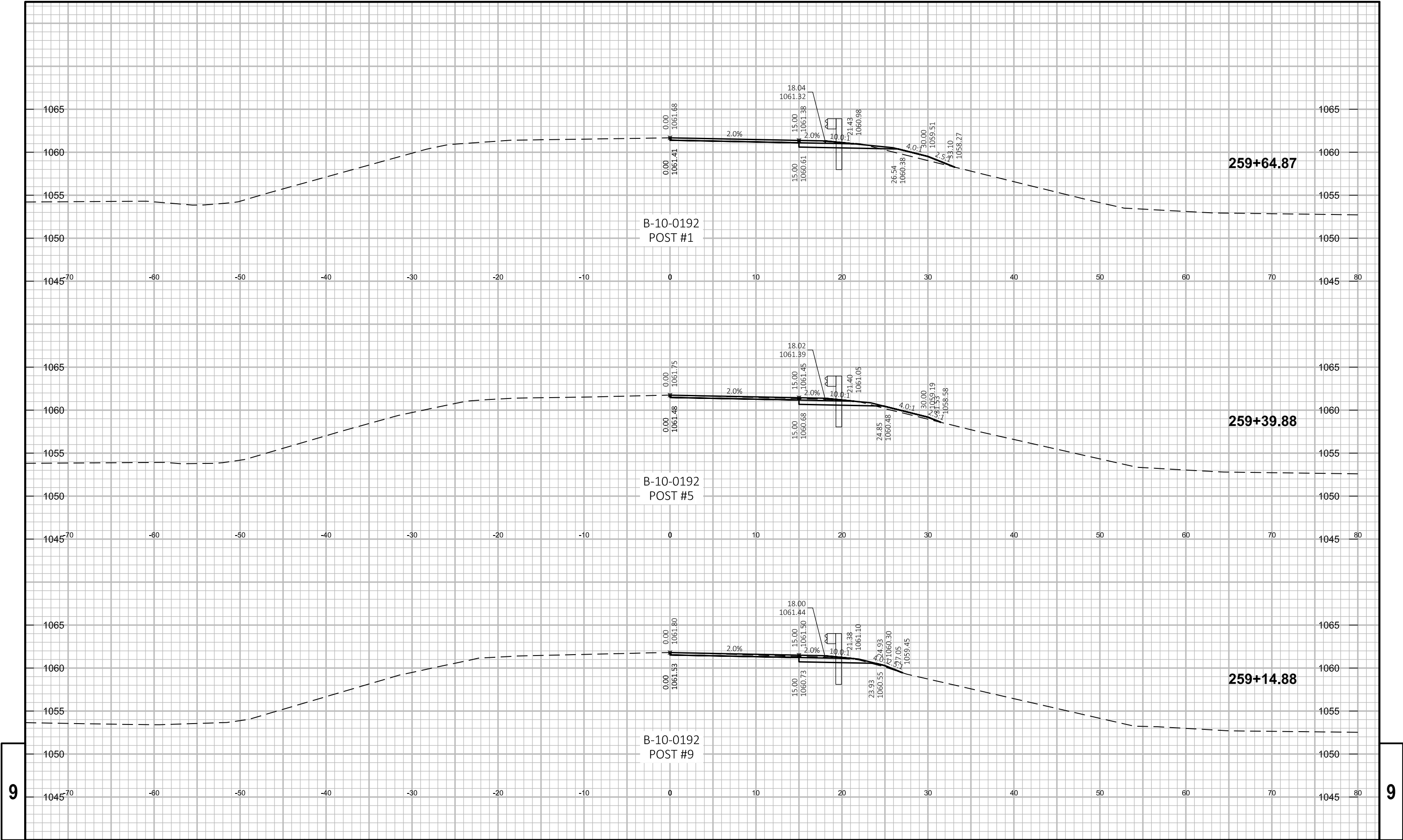
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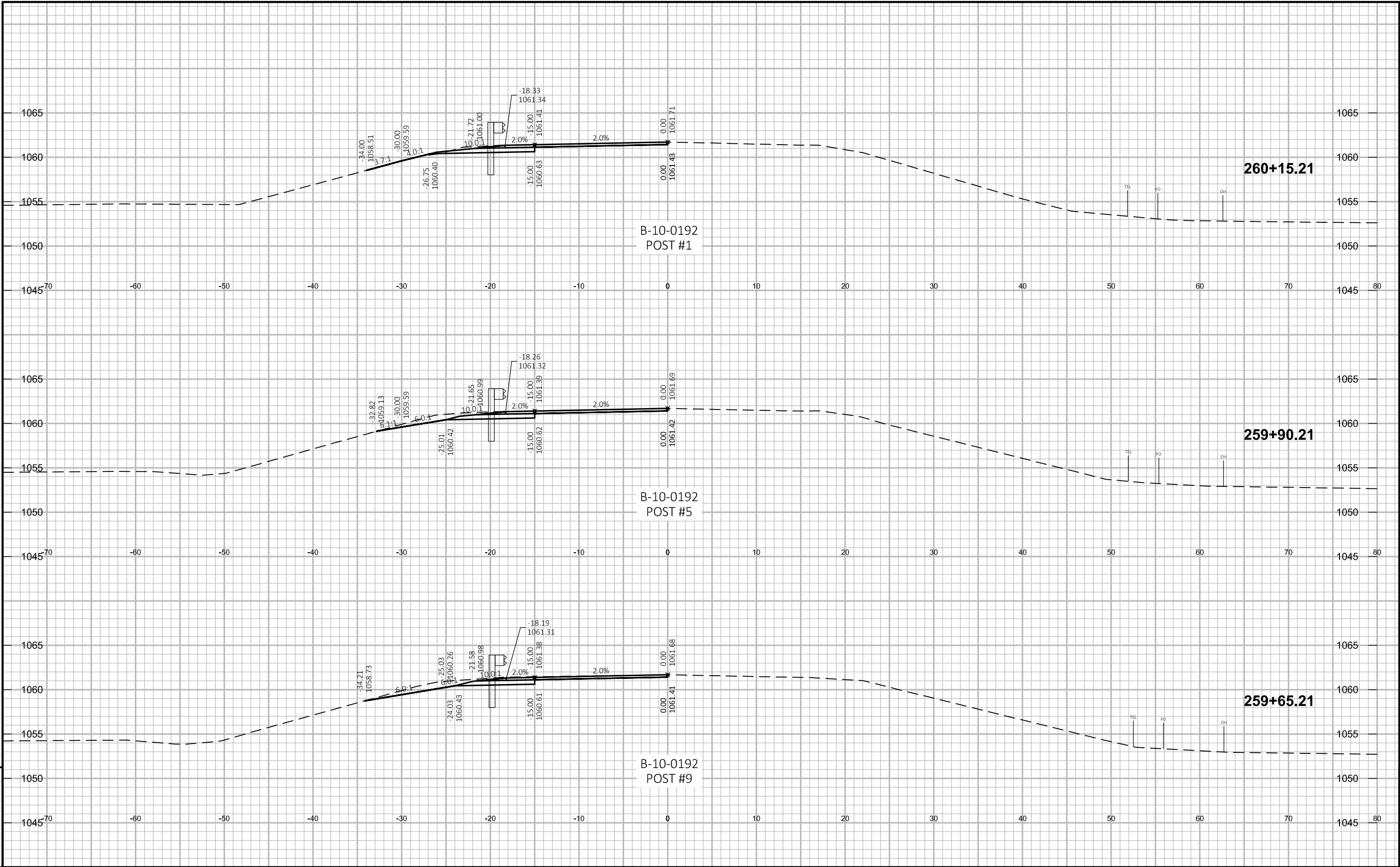
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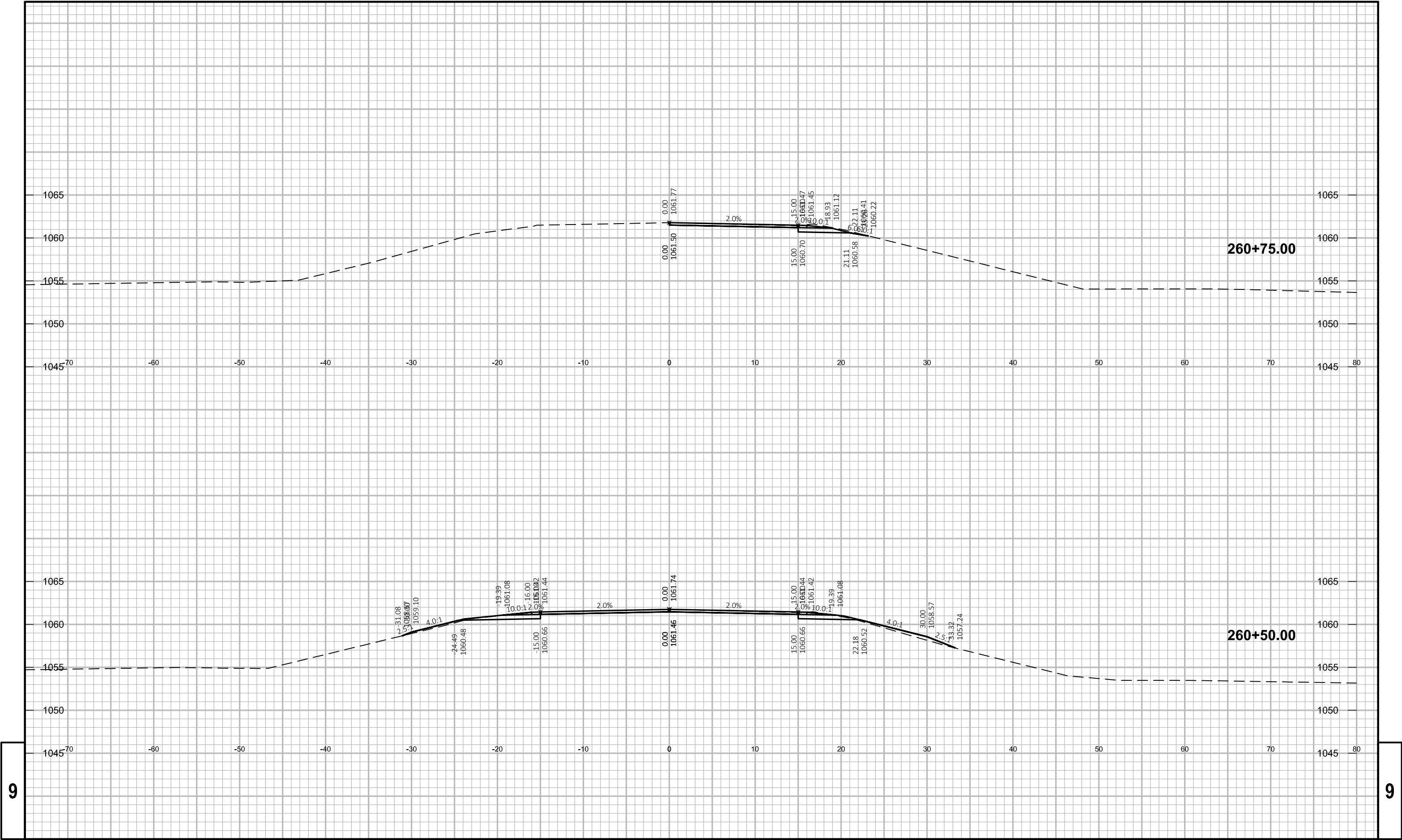




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