

WITH:

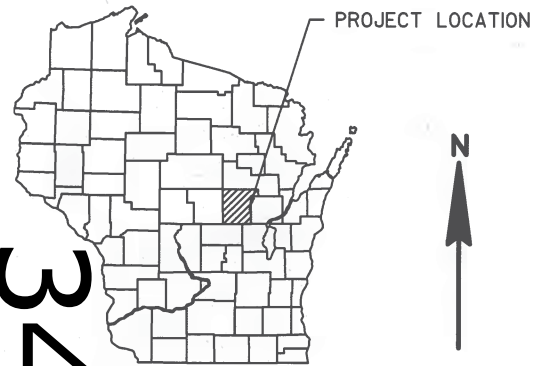
PROJECT ID: 6220-04-75

COUNTY: WAUPACA

ORDER OF SHEETS

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

TOTAL SHEETS = 140



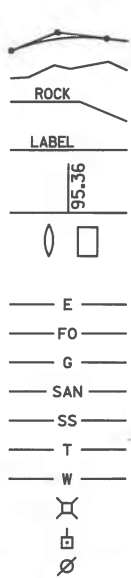
DESIGN DESIGNATION

A.A.D.T. 2017	=	10,400
A.A.D.T. 2037	=	12,000
D.H.V.	=	1,380
D.D.	=	60/40
T.	=	7.9%
DESIGN SPEED	=	55 MPH
ESALS	=	1,715,500

CONVENTIONAL SYMBOLS

- PLAN
- 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



STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
PLAN OF PROPOSED IMPROVEMENT
WAUPACA - NEW LONDON
ROYALTON OVERHEAD TO JEANNE STREET
STH 54
WAUPACA COUNTY

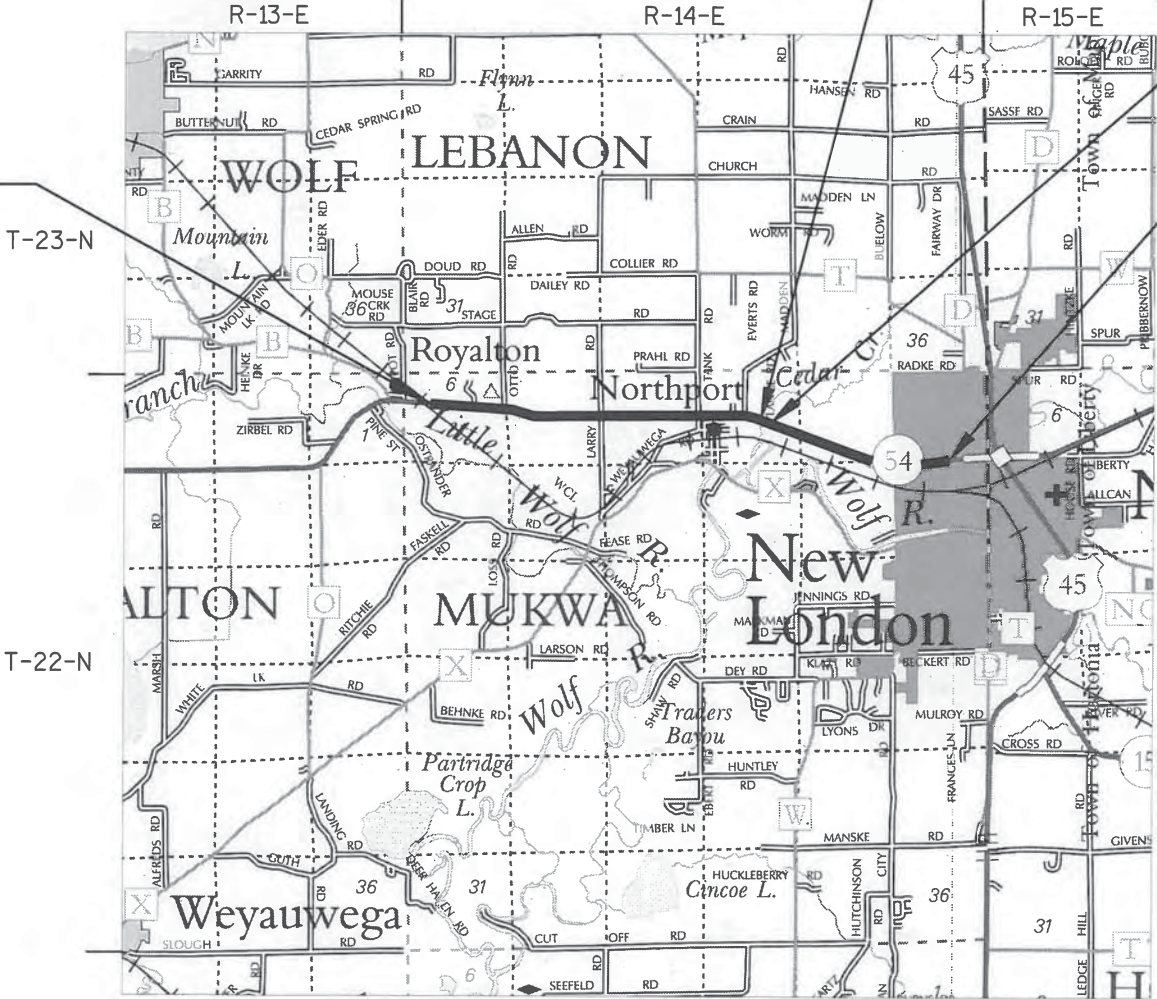
STATE PROJECT NUMBER
6220-04-75

BEGIN EXCEPTION TO
NET CENTERLINE LENGTH
STA 279+66.21

END EXCEPTION TO
NET CENTERLINE LENGTH
STA 280+58.60

END PROJECT 6220-04-75
STA 382+86.00

BEGIN PROJECT 6220-04-75
STA 100+36.00
Y = 361,528.250
X = 597,854.815



LAYOUT
SCALE 0 1 MI

TOTAL NET LENGTH OF CENTERLINE = 5.333 MI

HORIZONTAL POSITIONS SHOWN ON THIS PLAN ARE WISCONSIN COUNTY COORDINATES, WAUPACA COUNTY, NAD83 (2011), IN U.S. SURVEY FEET. VALUES ARE GRID COORDINATES, GRID BEARINGS, AND GRID DISTANCES. GRID DISTANCES MAY BE USED AS GROUND DISTANCES. ELEVATIONS ON THE PLAN ARE REFERENCED TO NAVD 88.

ORIGINAL PLANS PREPARED BY

AECOM



1/15/16 (Date) *Ry Barz* (Signature)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PREPARED BY

Surveyor	AECOM
Designer	AECOM
Project Manager	WENDY ARNESON
Regional Examiner	
Regional Supervisor	SHANNON RILEY
C.O. Examiner	

APPROVED FOR THE DEPARTMENT

DATE: 1/19/2016 *Wendy Arneson* (Signature)

E

GENERAL NOTES

THE LOCATIONS OF EXISTING AND PROPOSED UTILITY INSTALLATIONS, AS SHOWN ON THE PLANS ARE APPROXIMATE. THERE MAY BE OTHER UTILITY INSTALLATIONS WITHIN THE PROJECT AREA THAT ARE NOT SHOWN.

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

4-INCH HMA PAVEMENT SHALL BE CONSTRUCTED IN TWO (2) LAYERS.
THE UPPER LAYER SHALL BE 1.75 INCHES HMA PAVEMENT 4 LT 58-28 S.
THE LOWER LAYER SHALL BE 2.25 INCHES HMA PAVEMENT 3 LT 58-28 S.

6.25-INCH ASPHALTIC SURFACE AT CULVERT REPLACEMENT LOCATIONS SHALL BE CONSTRUCTED IN THREE (3) LAYERS.
THE UPPER LAYER SHALL BE 1.75 INCHES.
THE MIDDLE LAYER SHALL BE 2.25 INCHES.
THE LOWER LAYER SHALL BE 2.25 INCHES.

UTILITIES

AT&T WISCONSIN
(COMMUNICATION LINE)
JOSEPH KASSAB
221 WEST WISCONSIN
STREET, 4TH FLOOR
APPLETON, WI 54911
OFFICE 920-735-3206
MOBILE 920-202-4002
jk572k@att.com

ATC MANAGEMENT, INC
(ELECTRIC)
DOUG VOSBERG
2489 RINDEN ROAD
COTTAGE GROVE, WI 53527
608-877-7650
dvosberg@atcllc.com

NEW LONDON DEPT. OF PUBLIC WORKS
(SEWER)
JEFFREY BODOH
215 N. SHAWANO STREET
NEW LONDON, WI 54961
OFFICE 920-982-8503
MOBILE 920-538-5566
jbodoh@newlondonwi.org

CHARTER COMMUNICATIONS
(COMMUNICATION LINE)
RUDI RUDIGER
5024 HEFFRON STREET
STEVENS POINT, WI 54481
MOBILE 715-204-5339
rudi.rudiger@charter.com

WE ENERGIES
(ELECTRIC)
STEVE ARMSTRONG
800 S. LYNDALE DRIVE
APPLETON, WI 54912-1699
920-380-3563
steven.armstrong@we-energies.com

SEND ALL WE ENERGIES CORRESPONDENCE TO:
WE ENERGIES (GAS & ELECTRIC)
ATTN: LATROY BRUMFIELD
333 W. EVERETT STREET, A299
MILWAUKEE, WI 53203
414-221-5617
latroy.brumfield@we-energies.com

NEW LONDON UTILITIES
(WATER)
MICHAEL PINCH
400 E. NORTH WATER STREET
NEW LONDON, WI 54961
OFFICE 920-982-8516
MOBILE 920-851-3152
mpinch@wppienergy.org

WE ENERGIES
(GAS/PETROLEUM)
TOM BORCHART
PO BOX 1699
APPLETON, WI 54912-9705
920-380-3449
thomas.borchart@we-energies.com

NEW LONDON UTILITIES
(ELECTRIC)
MICHAEL FREDERICK
400 E. NORTH WATER STREET
NEW LONDON, WI 54961
OFFICE 920-359-0784
MOBILE 920-359-0784
mfrederick@wppienergy.org

ANR PIPELINE COMPANY
(GAS/PETROLEUM)
ANR PIPELINE COMPANY
DUANE PRONDZINSKI
2629 SUNSET DRIVE
STEVENS POINT, WI 54482
OFFICE 715-295-3143
MOBILE 715-460-4322
duane_prondzinski@transcanada.com

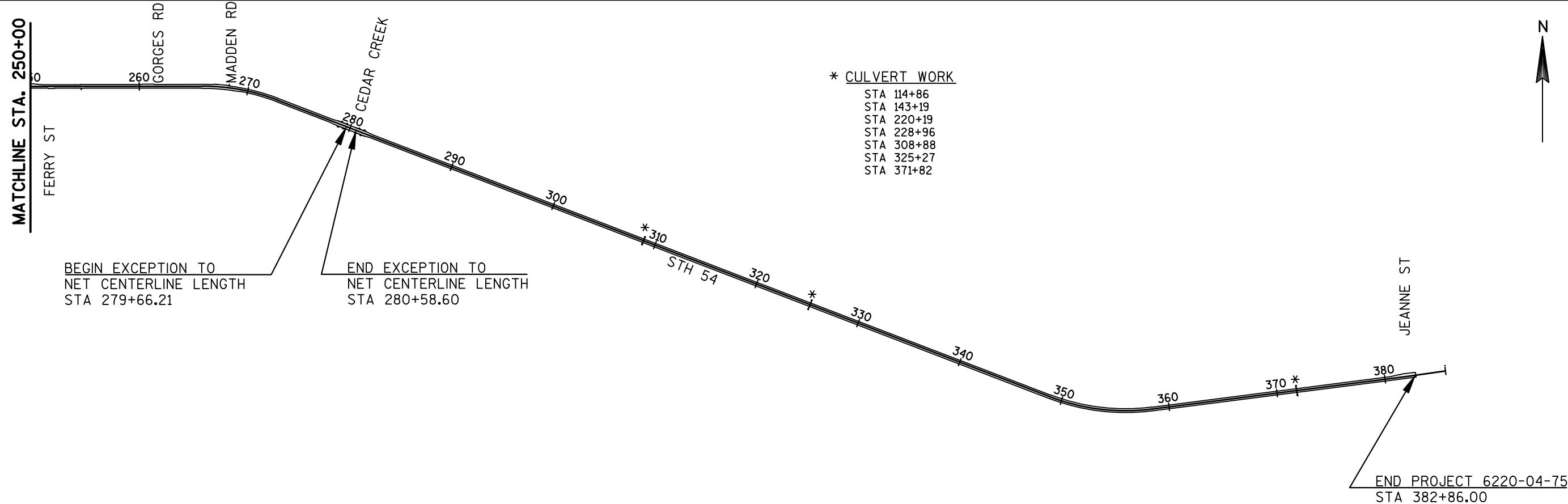
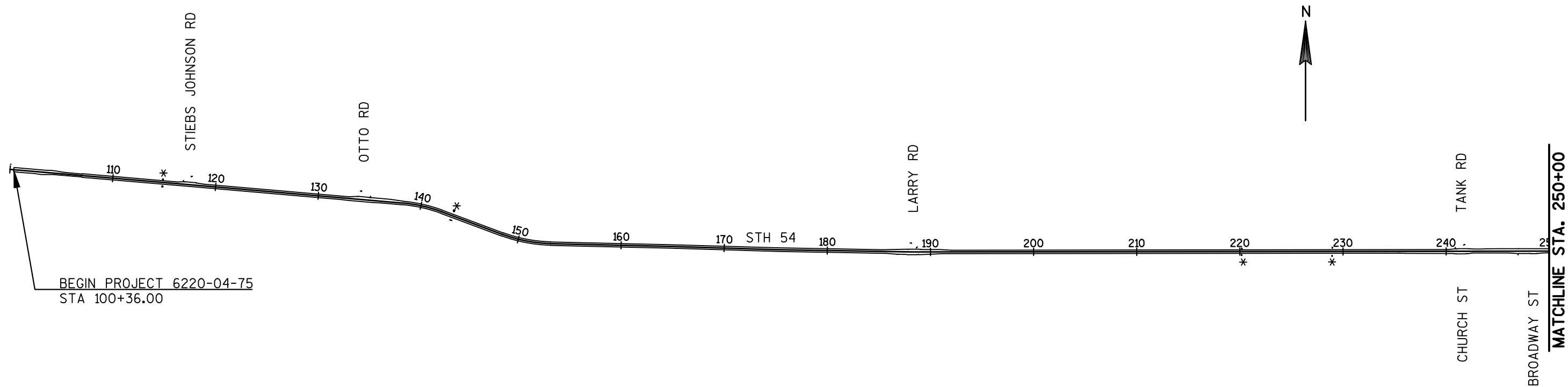
RUNOFF COEFFICIENT TABLE

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

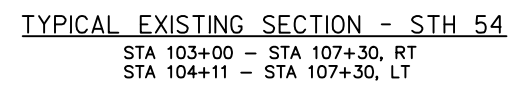
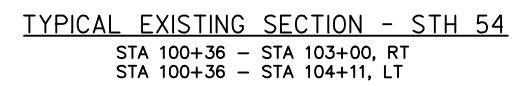
TOTAL PROJECT AREA = 98.443 ACRES
TOTAL AREA EXPECTED TO BE DISTURBED BY CONSTRUCTION ACTIVITIES = 0.855 ACRES

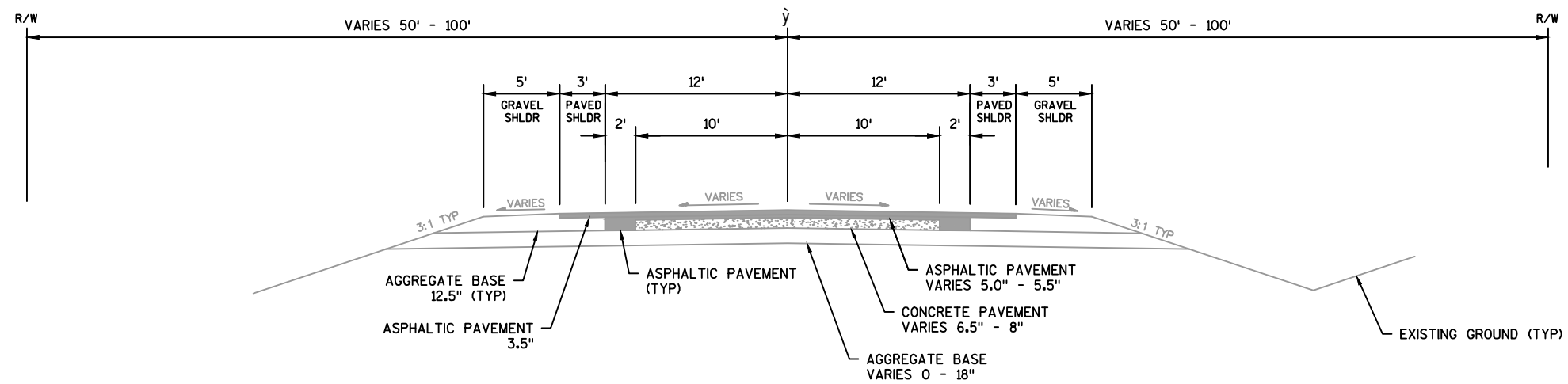


DNR LIAISON
WISCONSIN DEPARTMENT OF NATURAL RESOURCES
BOBBI JO FISCHER
427 EAST TOWER DRIVE, SUITE 100
WAUTOMA, WI 54982
920-787-3015
bobbi.fischer@wisconsin.gov



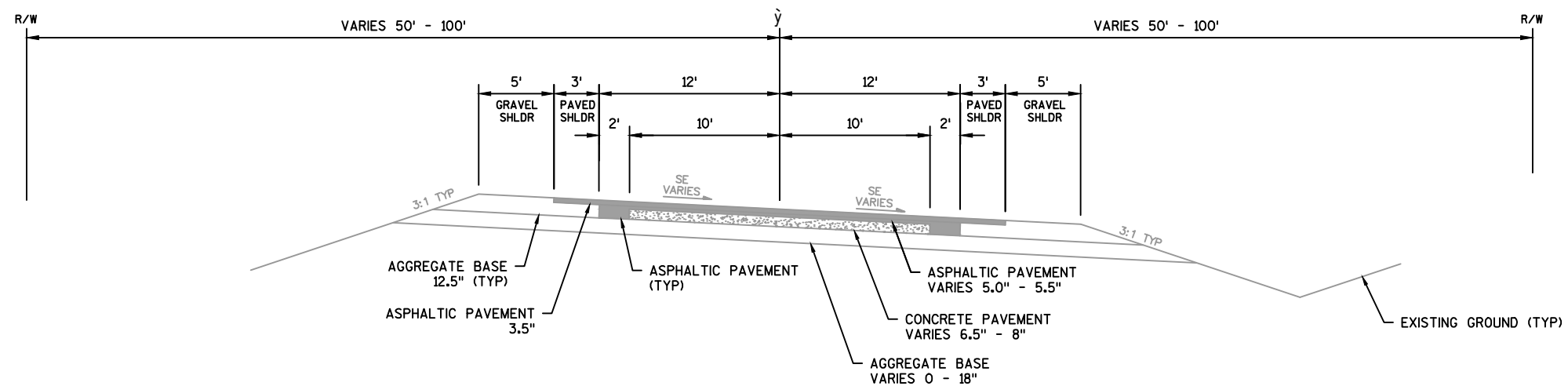
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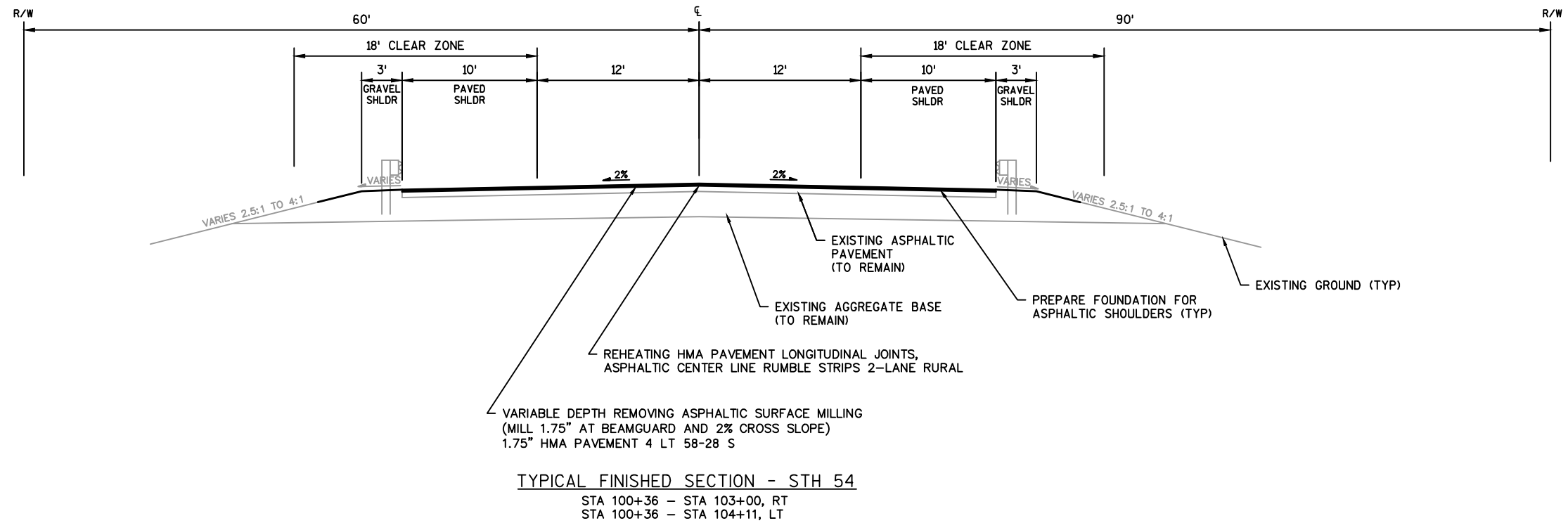
TYPICAL EXISTING SECTION - STH 54

STA 107+30 - STA 136+61
STA 143+67 - STA 146+78
STA 154+74 - STA 247+02
STA 254+11 - STA 264+31
STA 274+35 - STA 347+36
STA 359+91 - STA 382+86



TYPICAL SUPERELEVATED EXISTING SECTION - STH 54

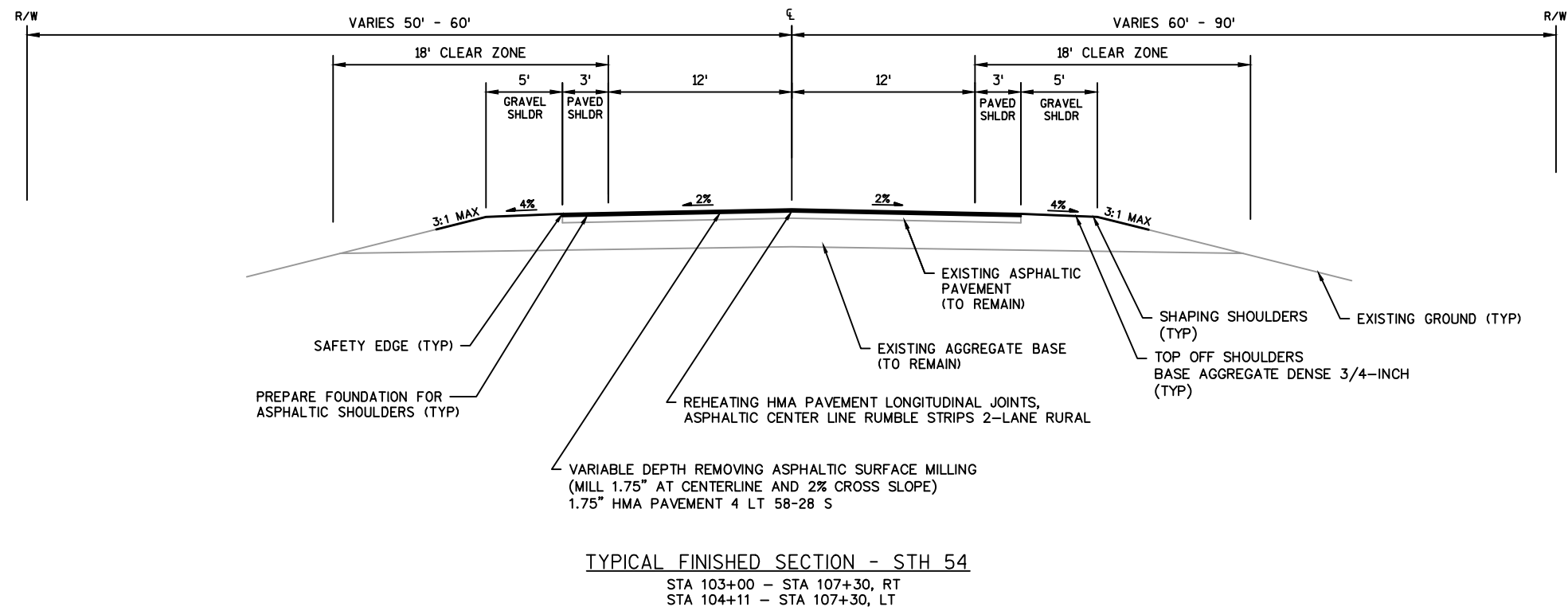
STA 136+61 - STA 143+67
STA 146+78 - STA 154+74
STA 264+31 - STA 274+35
STA 347+36 - STA 359+91

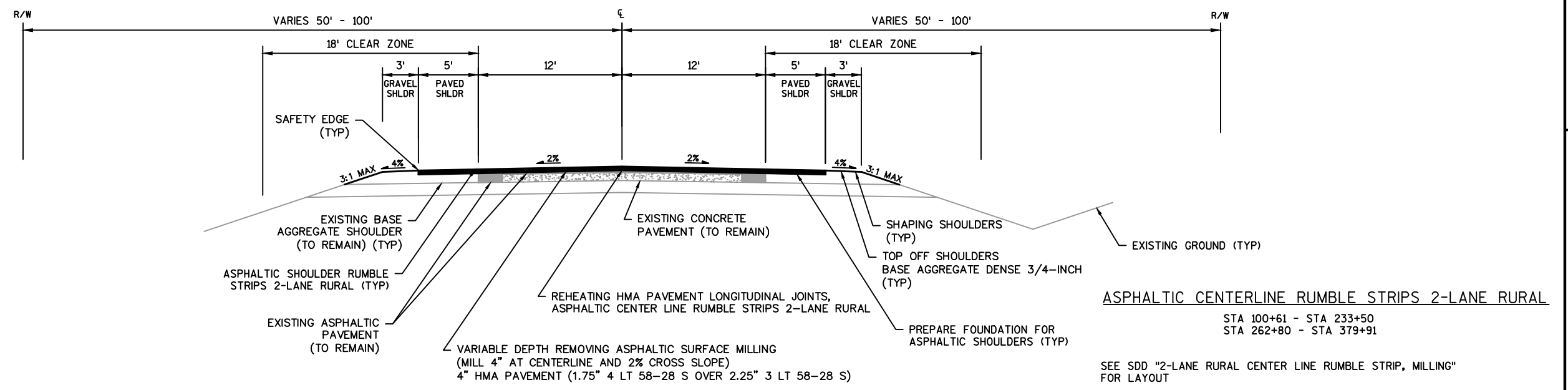


ASPHALTIC CENTERLINE RUMBLE STRIPS 2-LANE RURAL

STA 100+61 - STA 233+50
STA 262+80 - STA 379+91

SEE SDD "2-LANE RURAL CENTER LINE RUMBLE STRIP, MILLING"
FOR LAYOUT





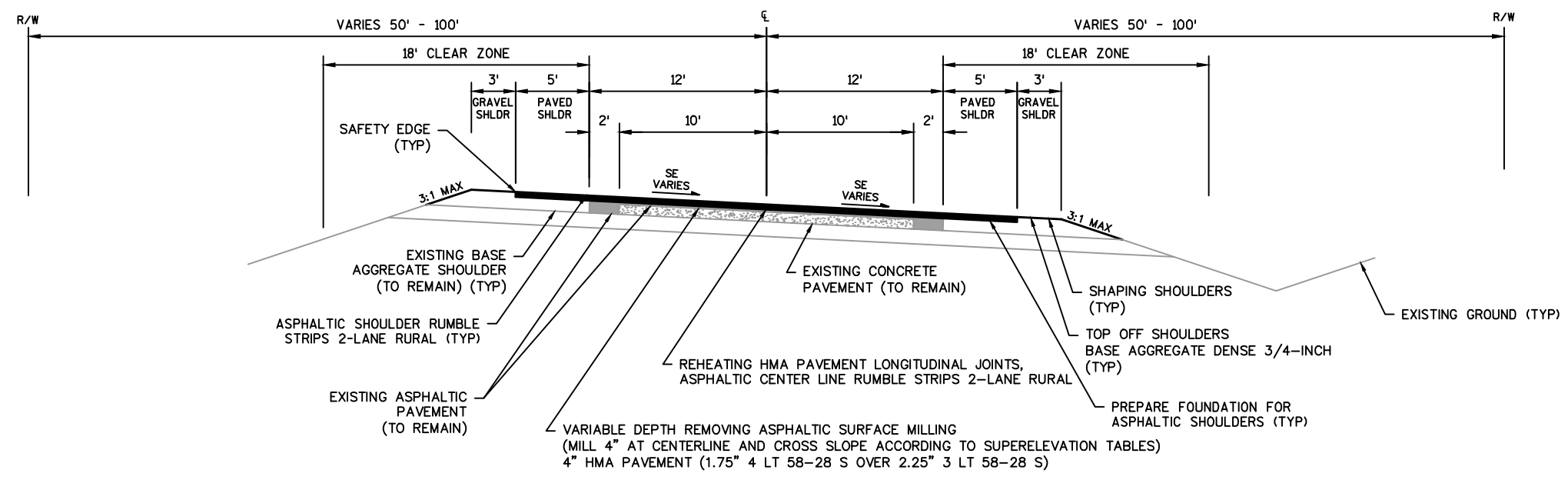
TYPICAL FINISHED SECTION - STH 54

STA 107+30 - STA 136+61
STA 143+67 - STA 146+78
STA 154+74 - STA 247+02
STA 254+11 - STA 264+31
STA 274+35 - STA 279+66.21
STA 280+58.60 - STA 347+36
STA 359+91 - STA 382+86

ASPHALTIC SHOULDER RUMBLE STRIPS 2-LANE RURAL

STA 107+30 - STA 235+30, RT
STA 107+30 - STA 237+30, LT
STA 255+50 - STA 277+94, LT & RT
STA 282+32 - STA 379+91, LT & RT

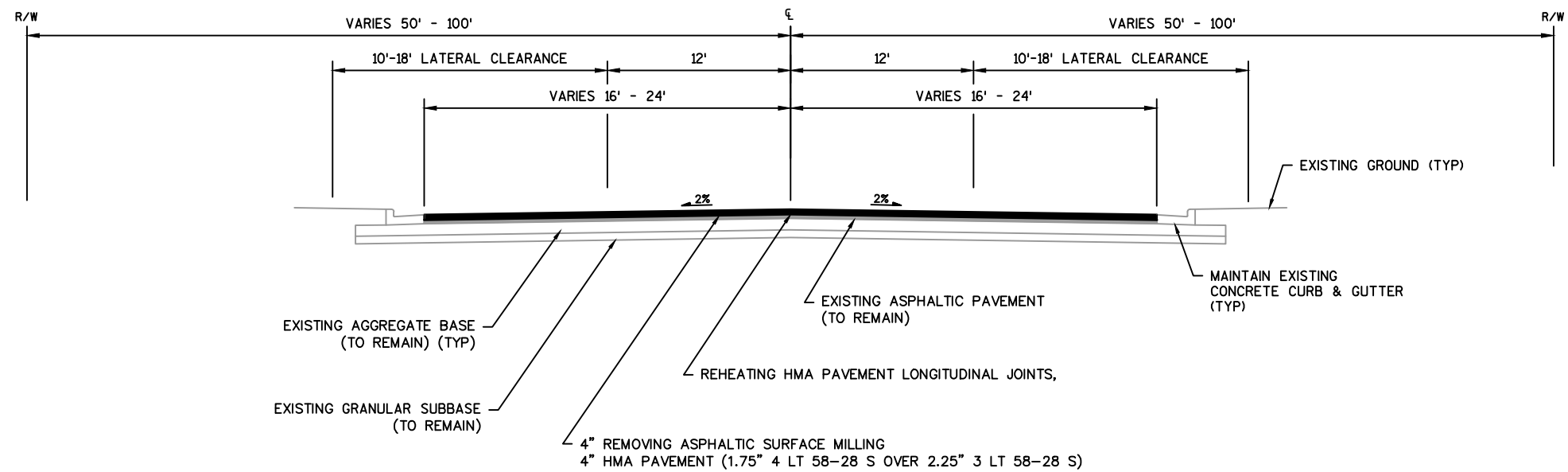
SEE SDD "2-LANE RURAL SHOULDER RUMBLE STRIP, MILLING" FOR LAYOUT



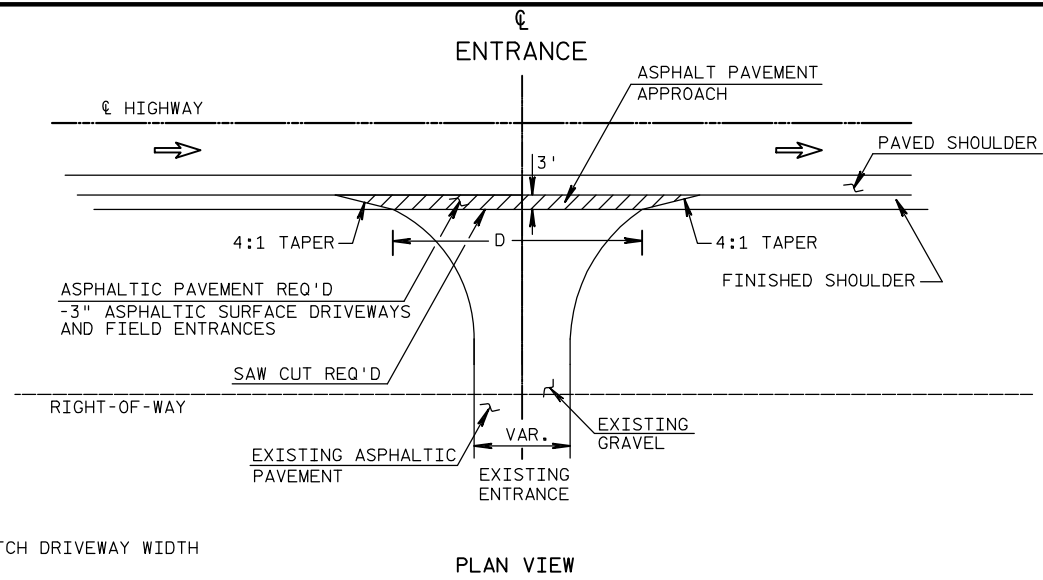
TYPICAL SUPERELEVATED FINISHED SECTION - STH 54

STA 136+61 - STA 143+67
STA 146+78 - STA 154+74
STA 264+31 - STA 274+35
STA 347+36 - STA 359+91

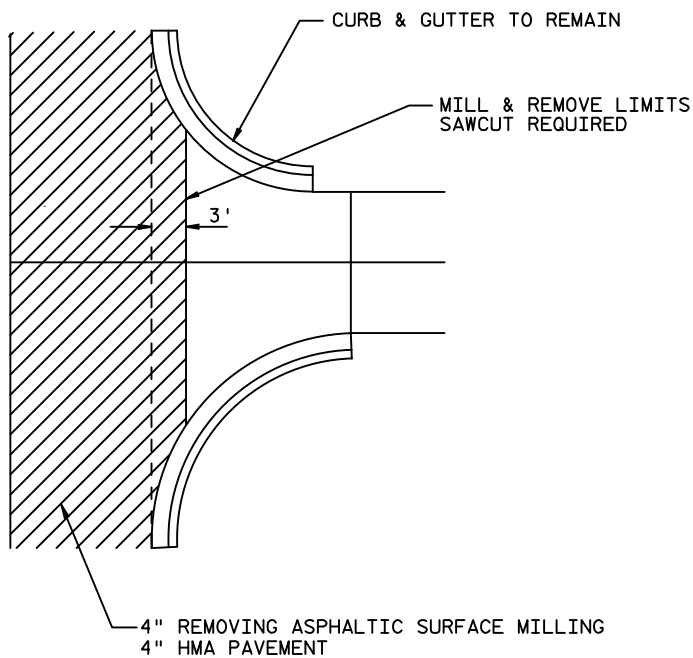
SUPERELEVATION TABLE			SUPERELEVATION TABLE			SUPERELEVATION TABLE			SUPERELEVATION TABLE		
STATION	CROSS SLOPE (%)		STATION	CROSS SLOPE (%)		STATION	CROSS SLOPE (%)		STATION	CROSS SLOPE (%)	
	LT LANE	RT LANE		LT LANE	RT LANE		LT LANE	RT LANE		LT LANE	RT LANE
136+61	-2.0	-2.0	146+78	-2.0	-2.0	264+31	-2.0	-2.0	347+36	-2.0	-2.0
137+14	0.0	-2.0	147+31	-2.0	0.0	264+84	0.0	-2.0	347+89	-2.0	0.0
137+67	2.0	-2.0	147+84	-2.0	2.0	265+37	2.0	-2.0	348+42	-2.0	2.0
138+74	6.0	-6.0	148+91	-6.0	6.0	266+31	5.5	-5.5	349+36	-5.5	5.5
141+54	6.0	-6.0	152+61	-6.0	6.0	272+35	5.5	-5.5	357+91	-5.5	5.5
142+61	2.0	-2.0	153+68	-2.0	2.0	273+29	2.0	-2.0	358+85	-2.0	2.0
143+14	0.0	-2.0	154+21	-2.0	0.0	273+82	0.0	-2.0	359+38	-2.0	0.0
143+67	-2.0	-2.0	154+74	-2.0	-2.0	274+35	-2.0	-2.0	359+91	-2.0	-2.0



TYPICAL FINISHED SECTION - STH 54
STA 247+02 - STA 254+11

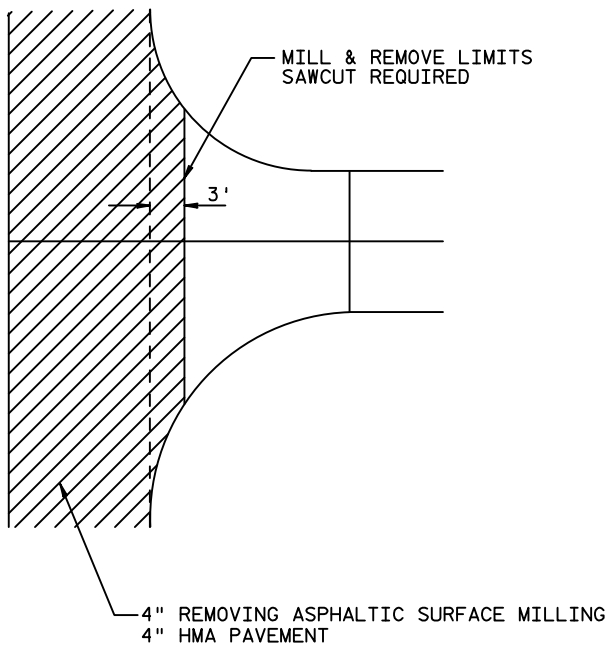


RURAL DRIVEWAY INTERSECTION DETAIL
(PE'S, FE'S & CE'S)



LOCATIONS

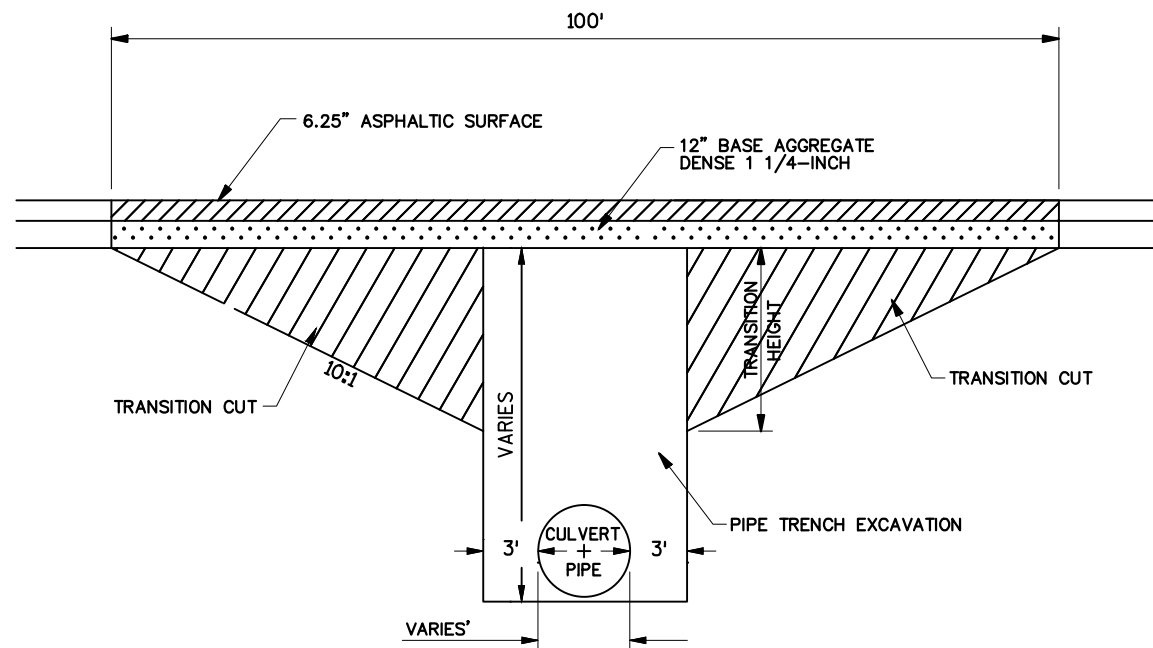
STIEBS JOHNSON ROAD
OTTO ROAD
LARRY ROAD
TANK ROAD
CHURCH STREET
BROADWAY STREET
FERRY STREET
MADDEN ROAD
JEANNE STREET



LOCATIONS

GORGES ROAD

SIDEROAD DETAIL



QUANTITIES FOR INFORMATIONAL PURPOSES		
STATION	TRANSITION HEIGHT FT	CUT VOL CY
308+88	4.5	320
325+27	4.5	440
371+82	4.5	430

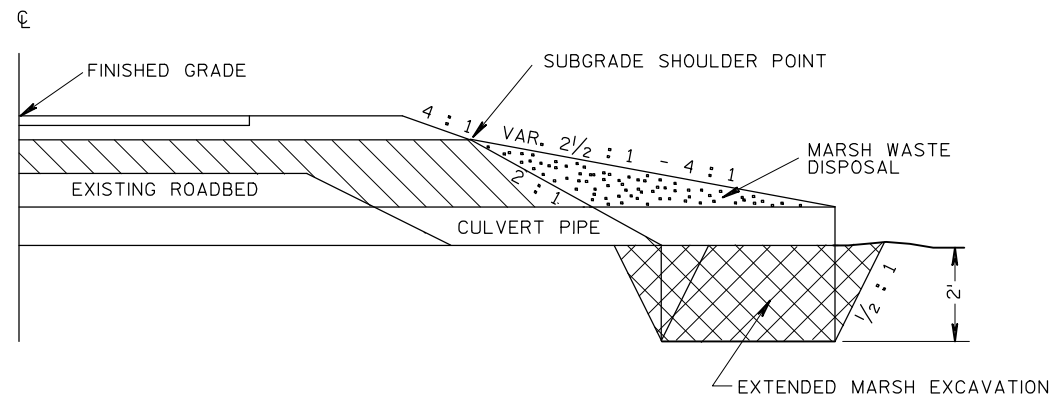
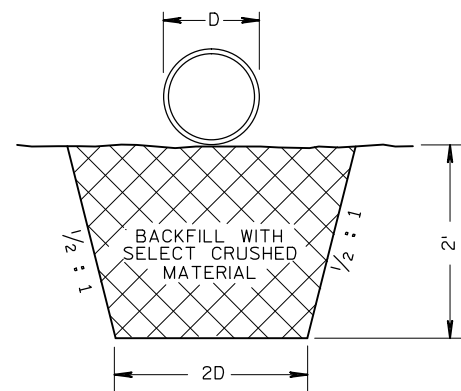
NOTE: REUSE MATERIAL REMOVED IN TRANSITION CUT AND PIPE TRENCH EXCAVATIONS AS BACKFILL UNLESS OTHERWISE DIRECTED BY THE ENGINEER TO USE BACKFILL GRANULAR

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

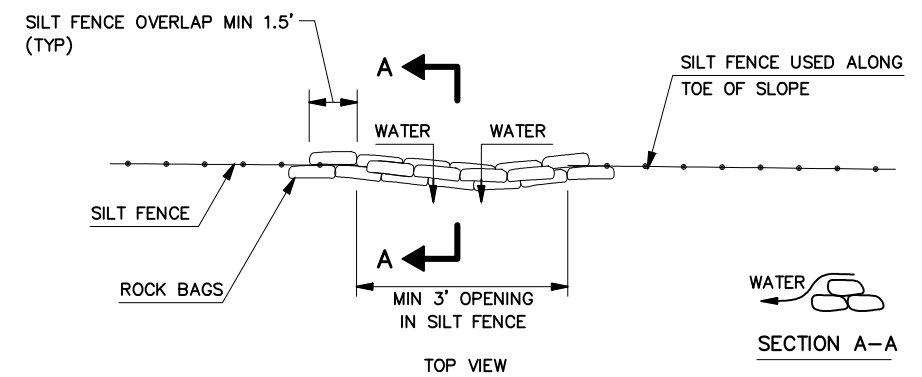
TRANSITION CUT WILL BE SHOULDER POINT TO SHOULDER POINT.

CULVERT PIPE TRANSITION

STA 308+88
STA 325+27
STA 371+82



MARSH EXCAVATION AT CULVERT

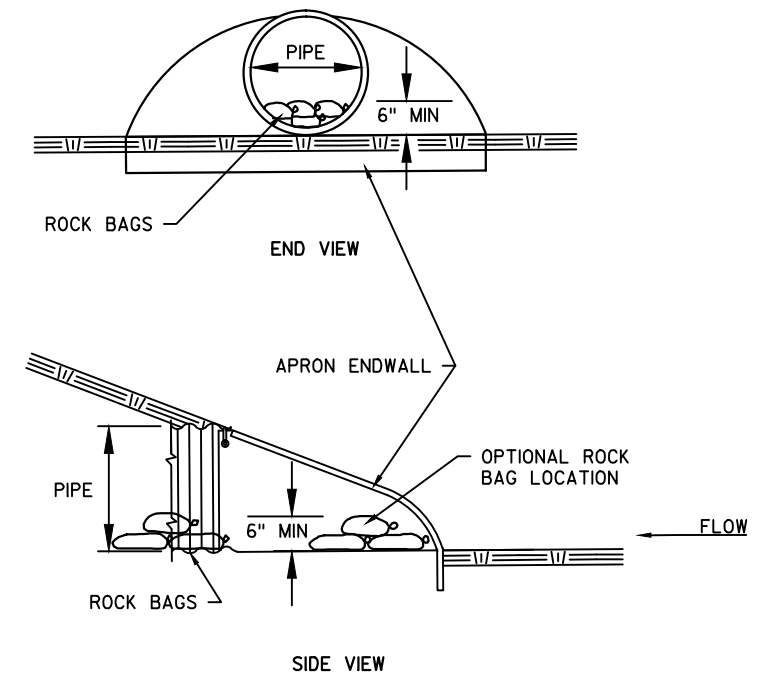


ROCK BAGS USED FOR SILT FENCE RELIEF DETAIL

PAID AS ROCK BAGS

APPROX. LOCATIONS

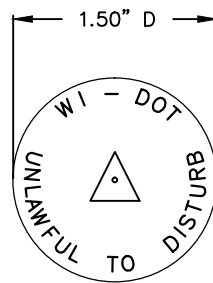
STA 278+70 RT
STA 278+80 LT
STA 281+40 LT
STA 281+60 RT



CULVERT PIPE CHECK

(INSTALL ON INLET END ONLY)
LOCATIONS

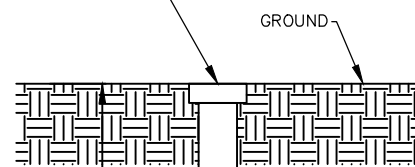
STA 114+86 LT
STA 143+19 LT
STA 220+19 LT
STA 228+96 LT
STA 308+88 LT
STA 325+27 LT
STA 371+82 LT



WIS DOT MONUMENT CAP MARKER LOGO (SSDR130)

CONTRACTOR TO ORDER LANDMARK REFERENCE MONUMENTS WITH THE ABOVE STAMPING

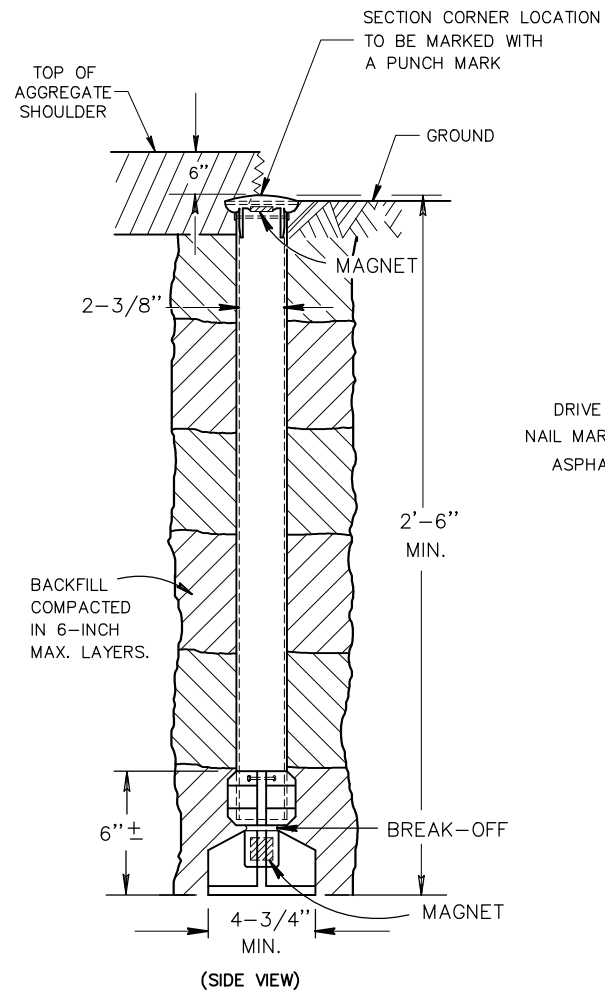
MONUMENT MARKER TO BE FLUSH WITH GROUND SURFACE OR DEPRESSED IN PAVED SURFACE.



(FRONT VIEW)

BERNSTEN DRIVABLE MONUMENT SSDR130

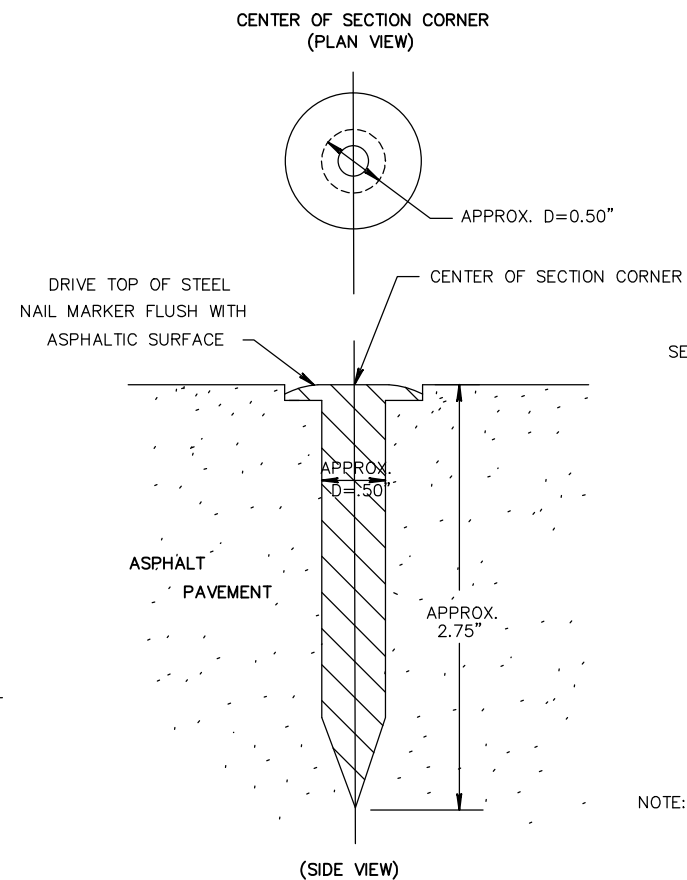
LANDMARK REFERENCE MONUMENT (TIES ONLY)



(SIDE VIEW)

OUTSIDE OF PAVEMENT

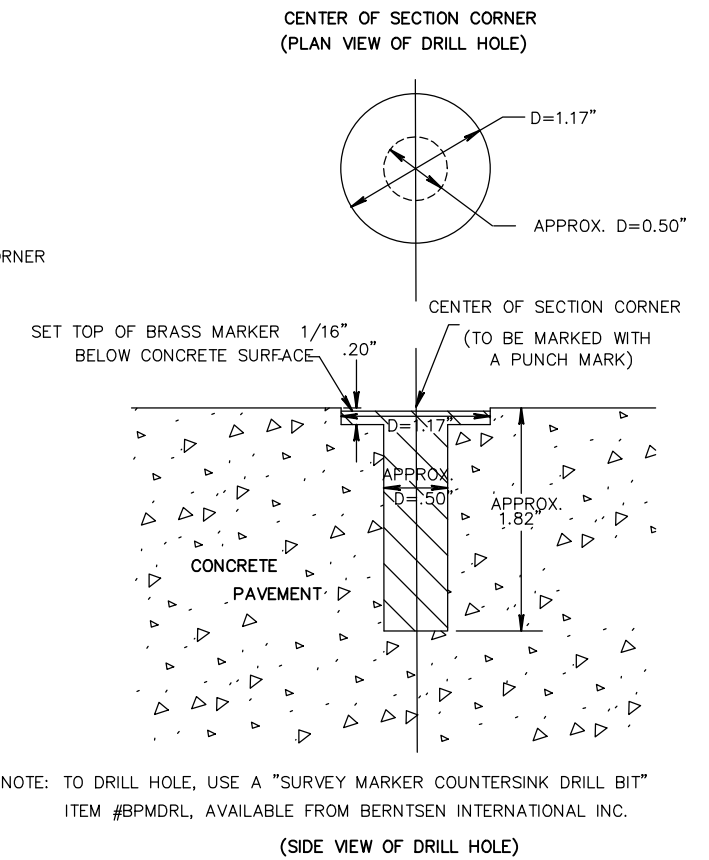
BERNTSEN A1BR30 ALUMINUM BREAK-OFF MONUMENT



(SIDE VIEW)

IN ASPHALTIC PAVEMENT

BERNTSEN SNM1 STEEL NAIL MARKER



(SIDE VIEW OF DRILL HOLE)

IN CONCRETE PAVEMENT

BERNTSEN BP - 1 BRASS MARKER WITH ANCHOR PLUG

SECTION CORNER MONUMENTS

GENERAL NOTES

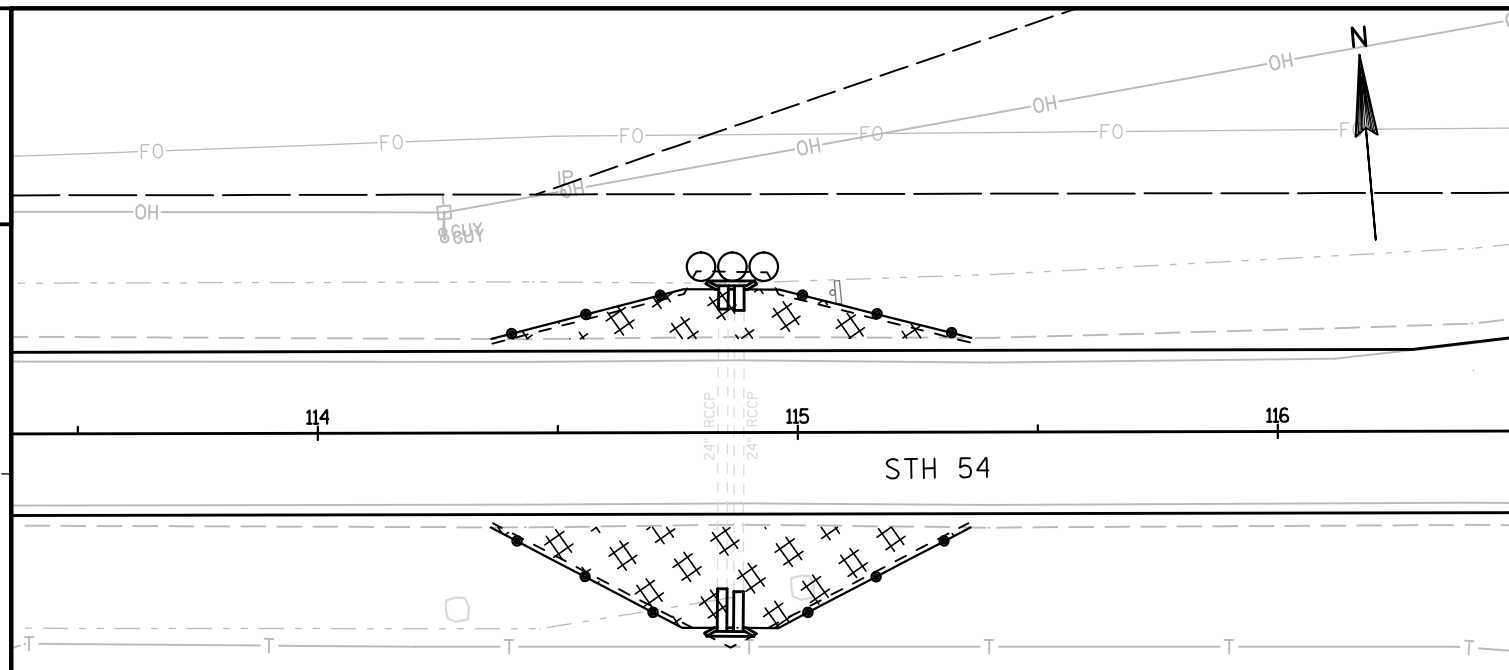
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

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

CONTRACTOR WILL SUPPLY ALL REQUIRED SURVEY MONUMENTS.

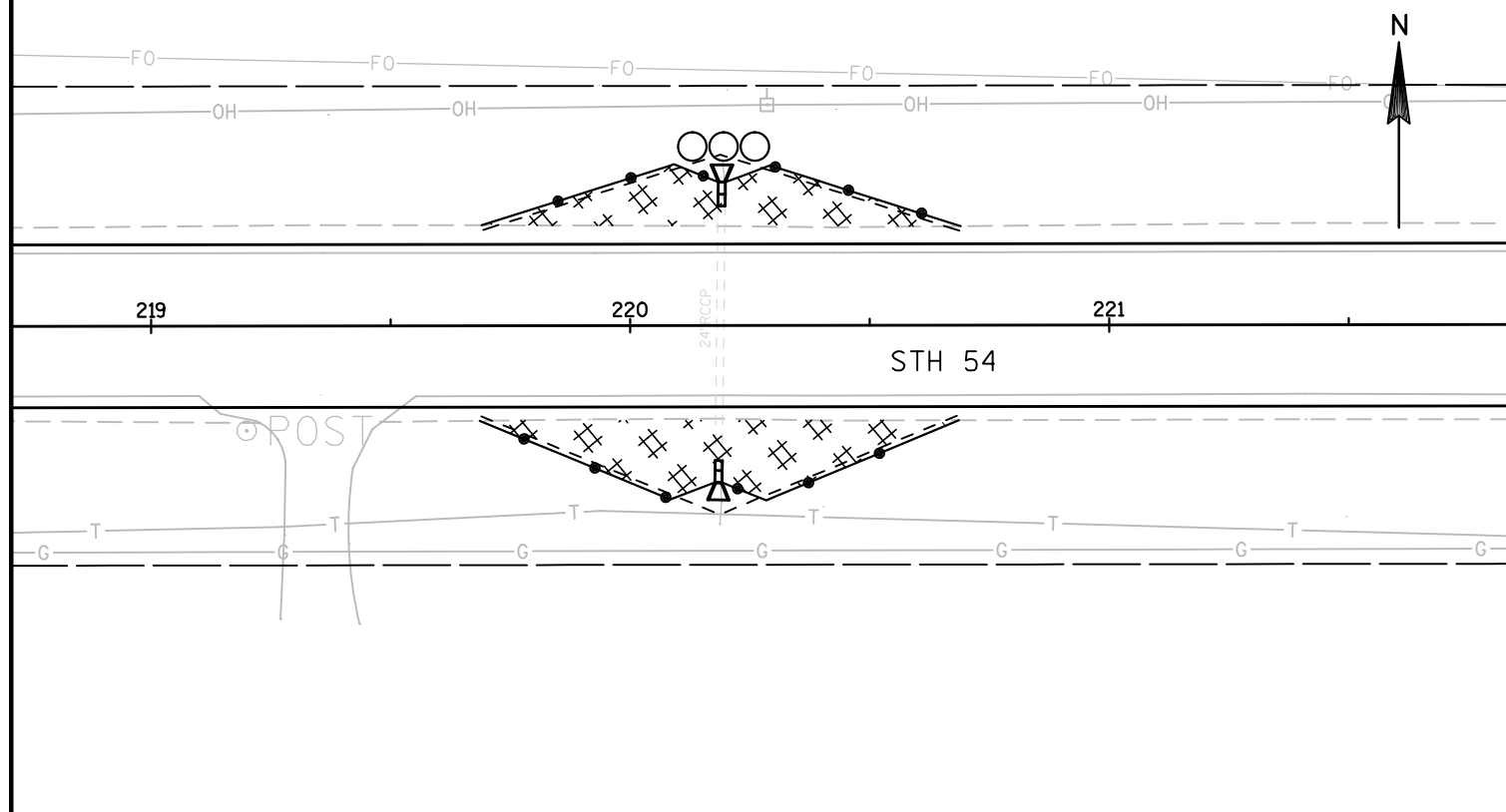
SECTION CORNER MONUMENT AND LANDMARK REFERENCE MONUMENT DETAIL

2

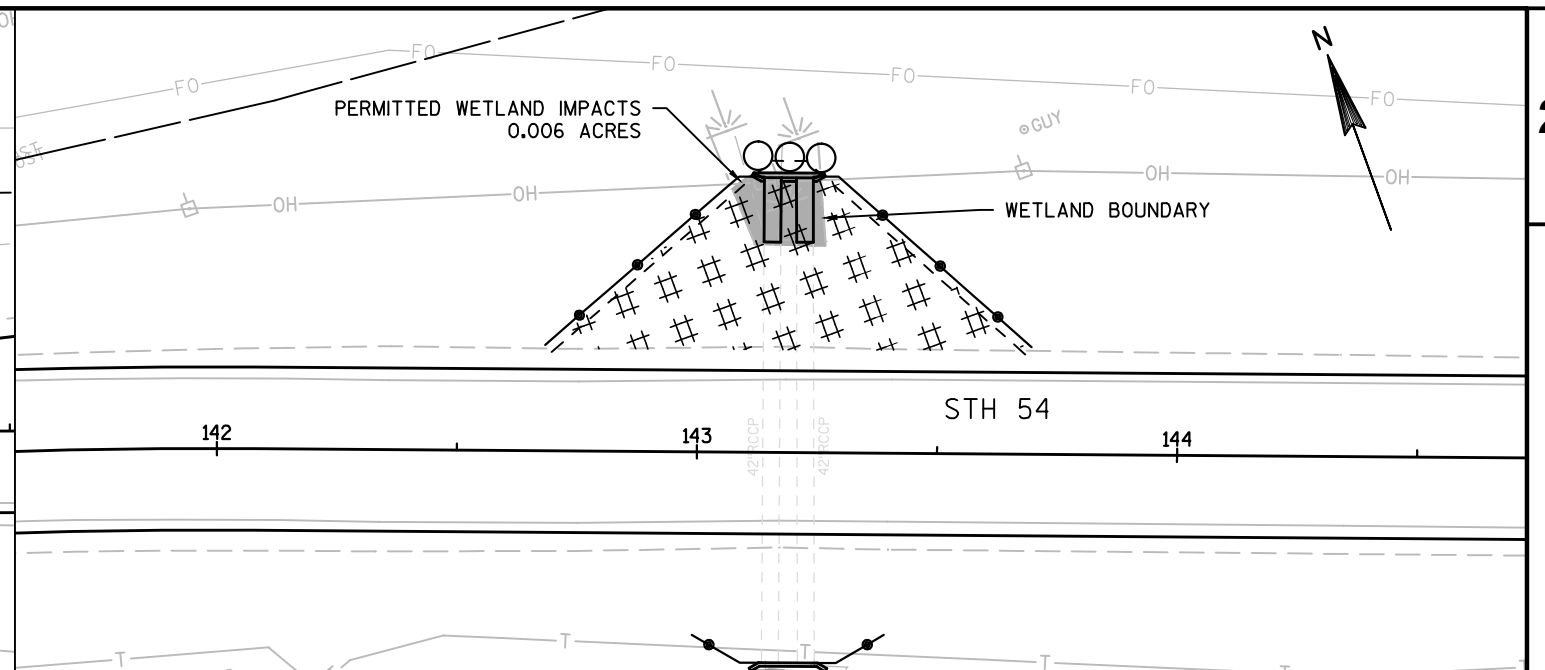


LEGEND

- ##### EROSION MAT URBAN CLASS I TYPE A
- SILT FENCE
- SILT FENCE (INSTALLED BY OTHERS, CONTRACTOR TO MAINTAIN AND REMOVE)
- OOO CULVERT PIPE CHECK
- ROCK BAGS
- PERMITTED WETLAND IMPACTS



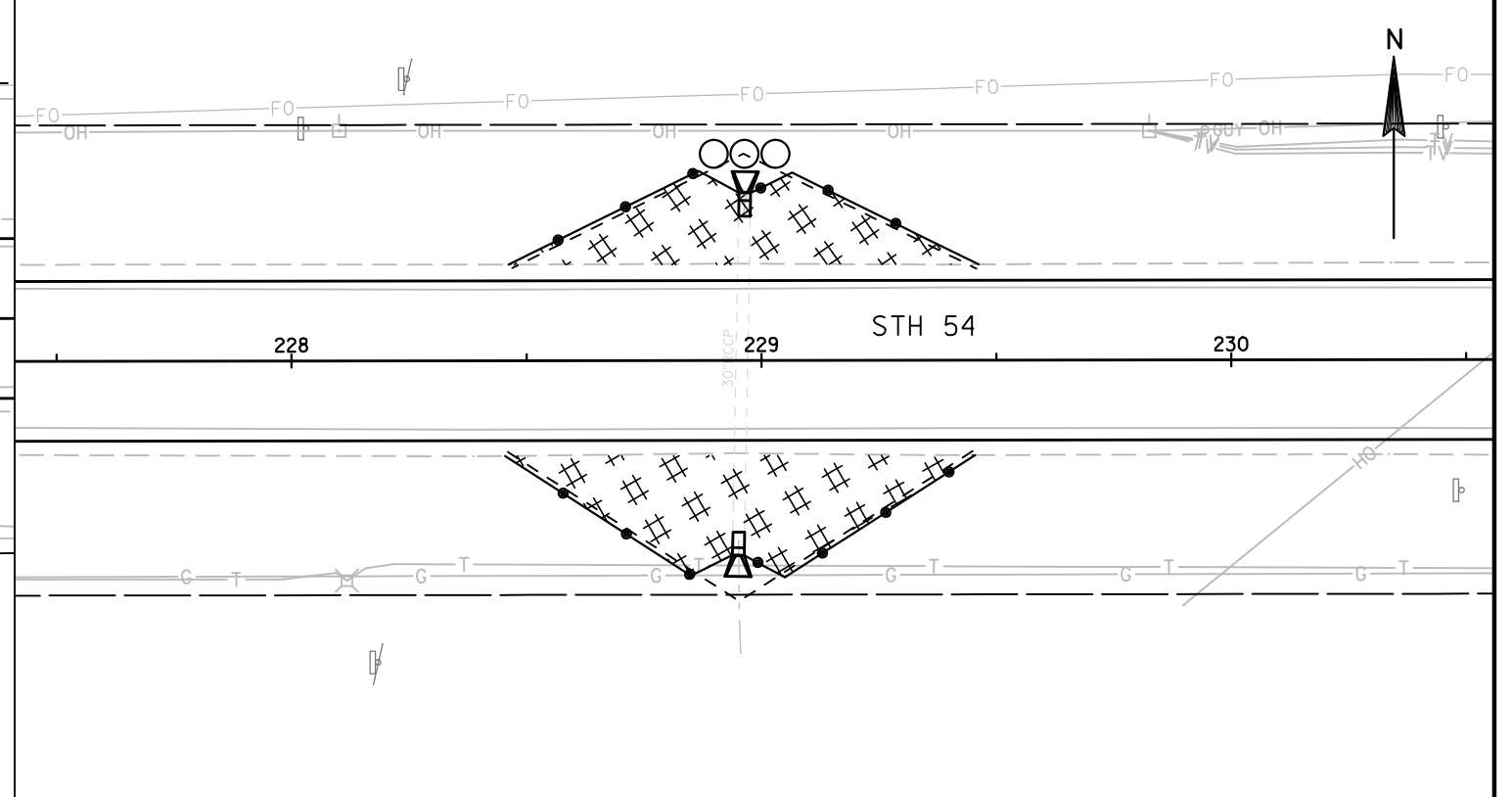
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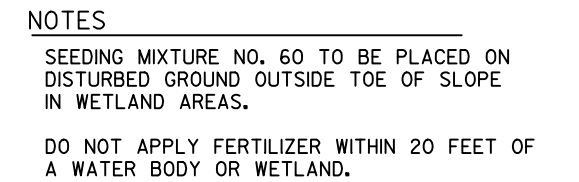


NOTES

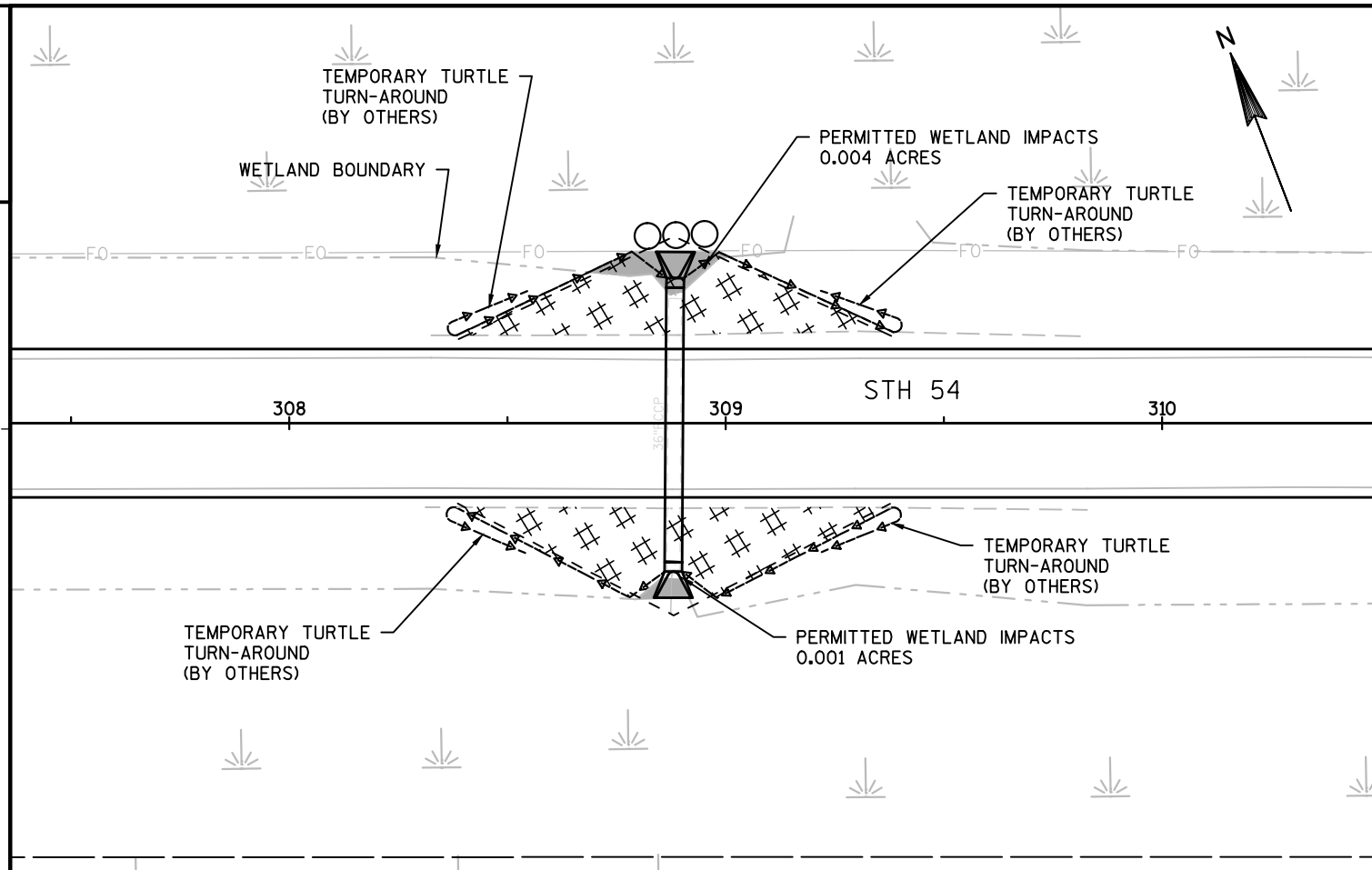
SEEDING MIXTURE NO. 60 TO BE PLACED ON DISTURBED GROUND OUTSIDE TOE OF SLOPE IN WETLAND AREAS.

DO NOT APPLY FERTILIZER WITHIN 20 FEET OF A WATER BODY OR WETLAND.

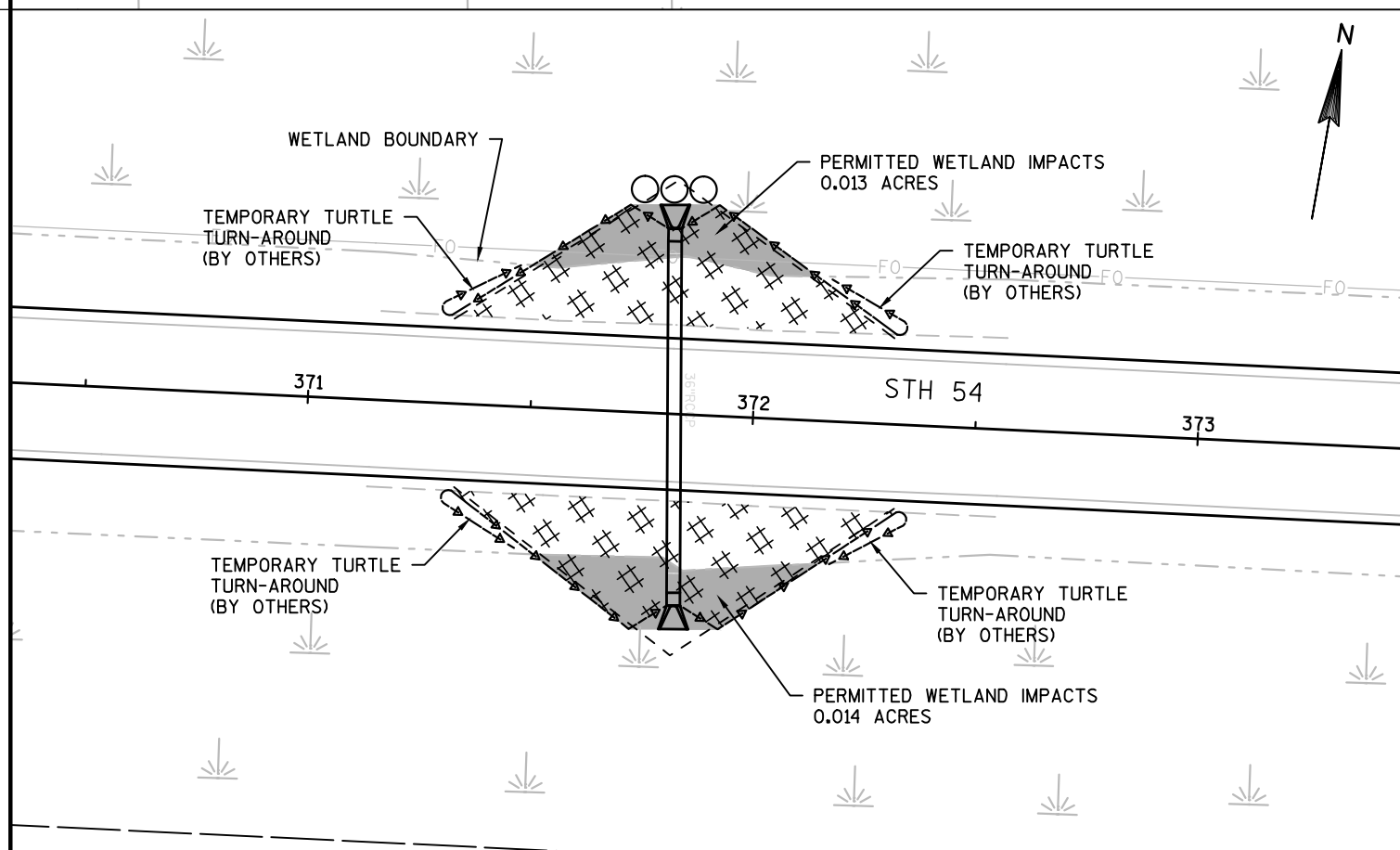
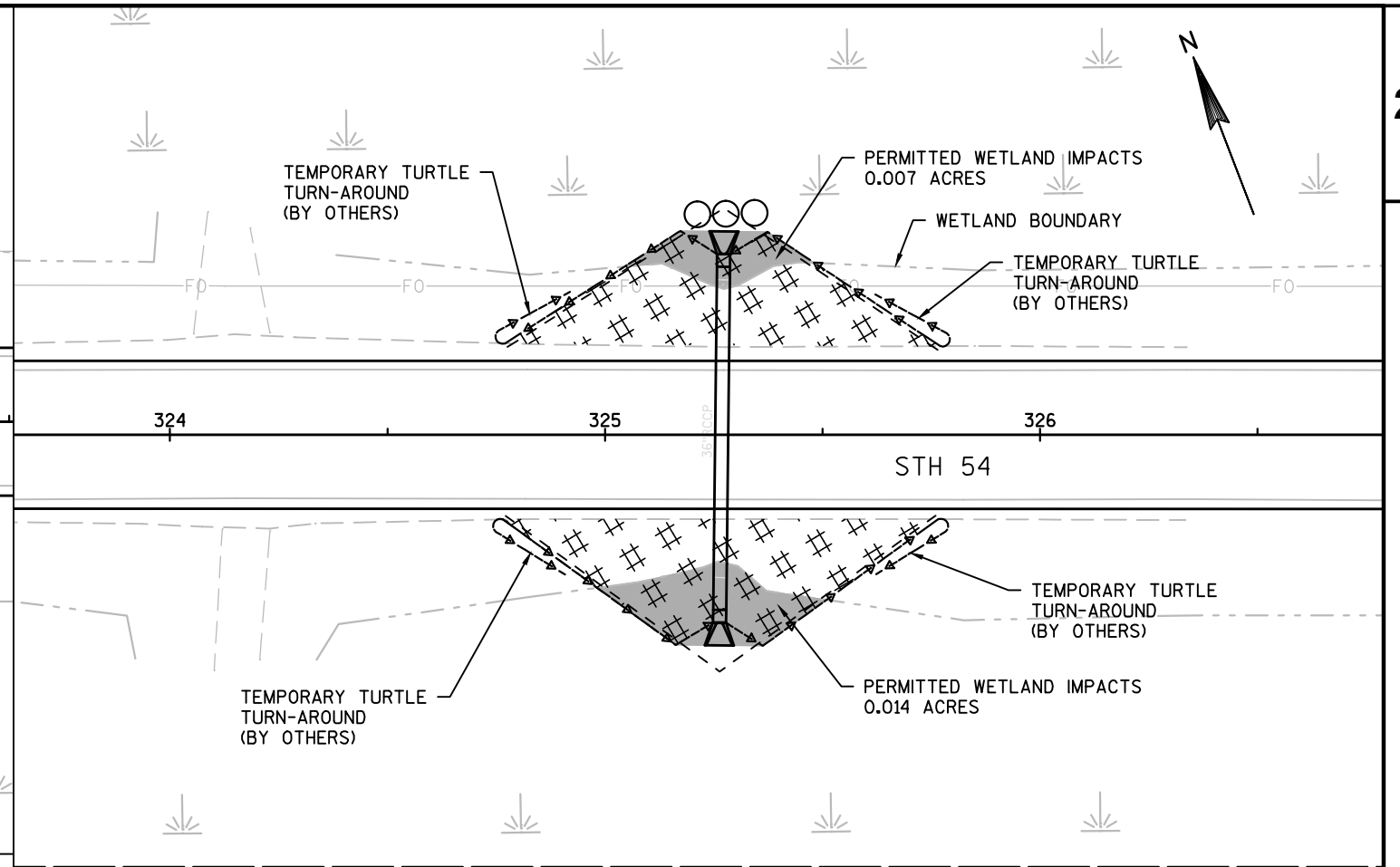




2



2



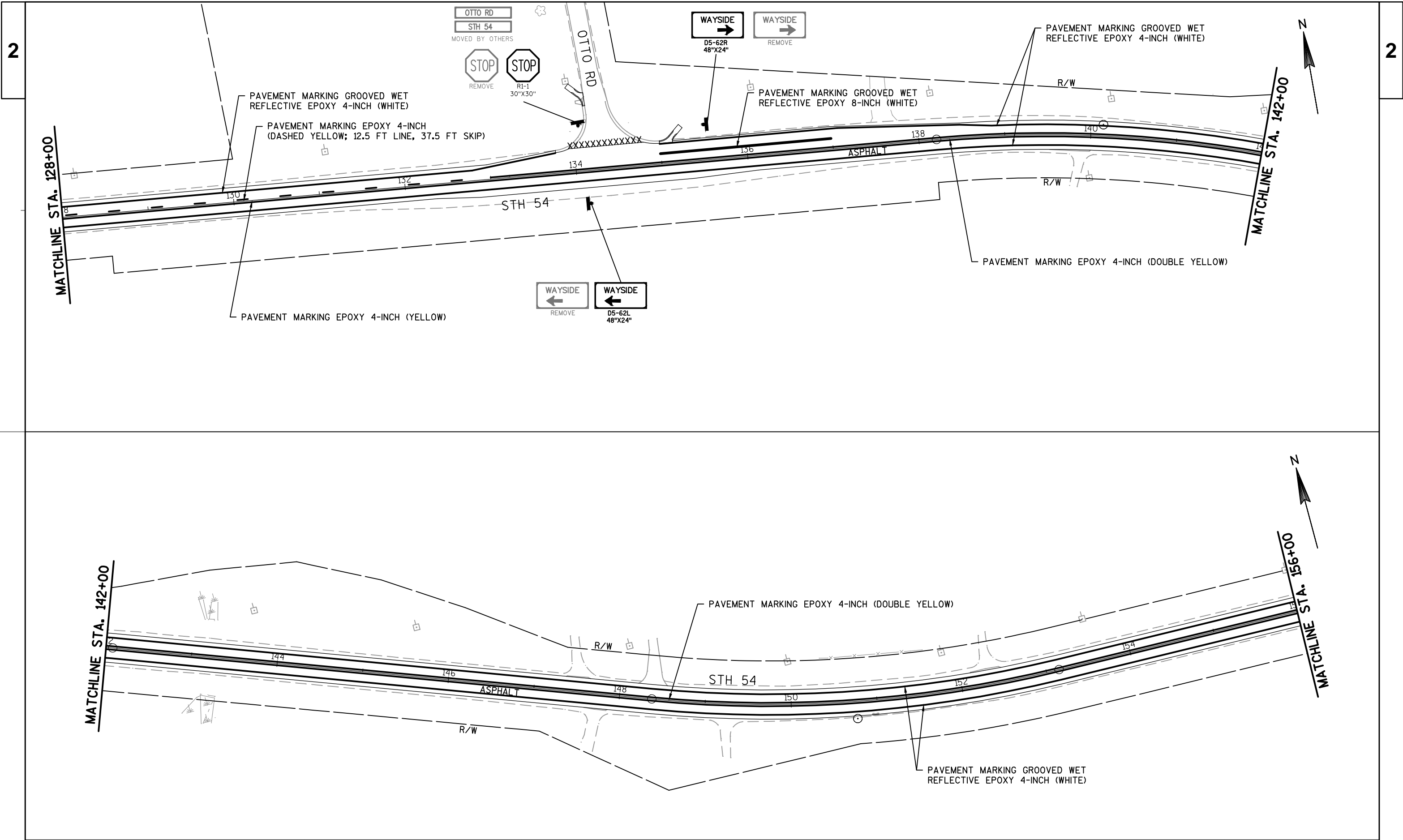
LEGEND

- ##### EROSION MAT URBAN CLASS I TYPE A
- SILT FENCE
- <—<—<— SILT FENCE (INSTALLED BY OTHERS, CONTRACTOR TO MAINTAIN AND REMOVE)
- CULVERT PIPE CHECK
- ROCK BAGS
- PERMITTED WETLAND IMPACTS

NOTES

SEEDING MIXTURE NO. 60 TO BE PLACED ON DISTURBED GROUND OUTSIDE TOE OF SLOPE IN WETLAND AREAS.

DO NOT APPLY FERTILIZER WITHIN 20 FEET OF A WATER BODY OR WETLAND.



2

MATCHLINE STA. 156+00

WAYSIDE
1/2 MILES
D5-61
48"X24"WAYSIDE
1/2 MILES
REMOVEPAVEMENT MARKING GROOVED WET
REFLECTIVE EPOXY 4-INCH (WHITE)

REMOVE

S3-1
36"X36"

STH 54

R/W

R/W

PAVEMENT MARKING EPOXY 4-INCH
(YELLOW)

PAVEMENT MARKING EPOXY 4-INCH (DOUBLE YELLOW)

PAVEMENT MARKING EPOXY 4-INCH
(DASHED YELLOW; 12.5 FT LINE, 37.5 FT SKIP)

MATCHLINE STA. 171+00

2

MATCHLINE STA. 171+00

PAVEMENT MARKING EPOXY 4-INCH
(YELLOW)NO
PASSING
ZONE
REMOVEW14-3
48"X36"PAVEMENT MARKING GROOVED WET
REFLECTIVE EPOXY 4-INCH (WHITE)

STH 54

R/W

R/W

PAVEMENT MARKING EPOXY 4-INCH
(DASHED YELLOW; 12.5 FT LINE, 37.5 FT SKIP)PAVEMENT MARKING EPOXY 4-INCH
(DOUBLE YELLOW)* ROLL UP SIGN BRACKET IS
INCIDENTAL TO SIGN 155-56

REMOVE

155-56
30"X36" *NO
PASSING
ZONE
REMOVEW14-3
48"X36"PAVEMENT MARKING EPOXY 4-INCH
(DASHED YELLOW; 12.5 FT LINE, 37.5 FT SKIP)

PAVEMENT MARKING EPOXY 4-INCH (YELLOW)

REMOVE

W2-1
30"X30"

MATCHLINE STA. 186+00

PROJECT NO:6220-04-75

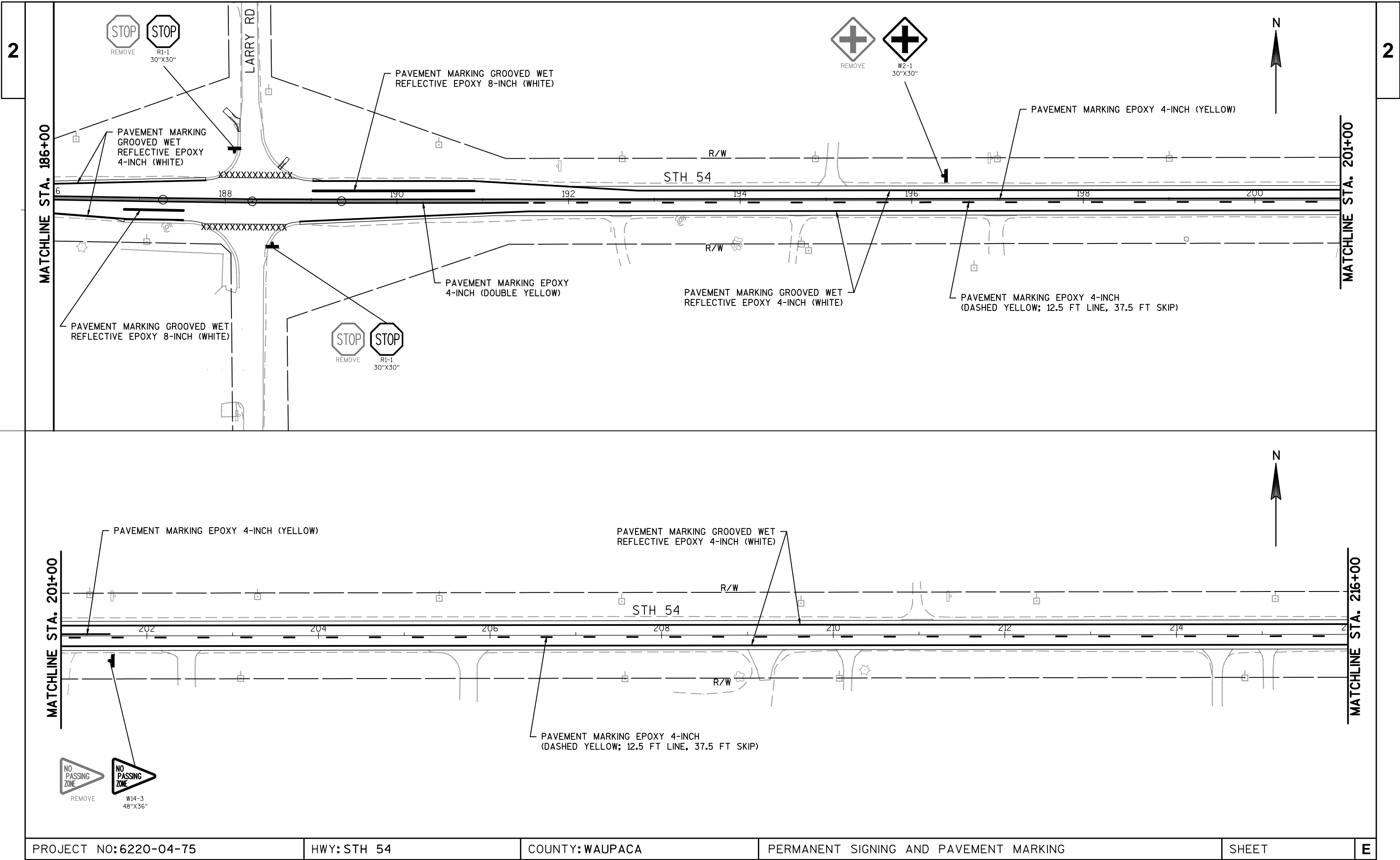
HWY:STH 54

COUNTY:WAUPACA

PERMANENT SIGNING AND PAVEMENT MARKING

SHEET

E



MATCHLINE STA. 216+00

MATCHLINE STA. 231+00

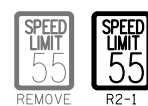
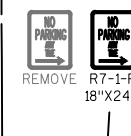
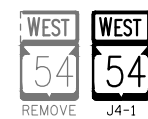
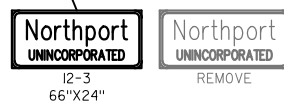
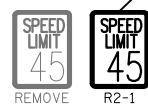
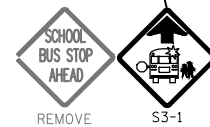
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REFLECTIVE EPOXY 4-INCH (WHITE)

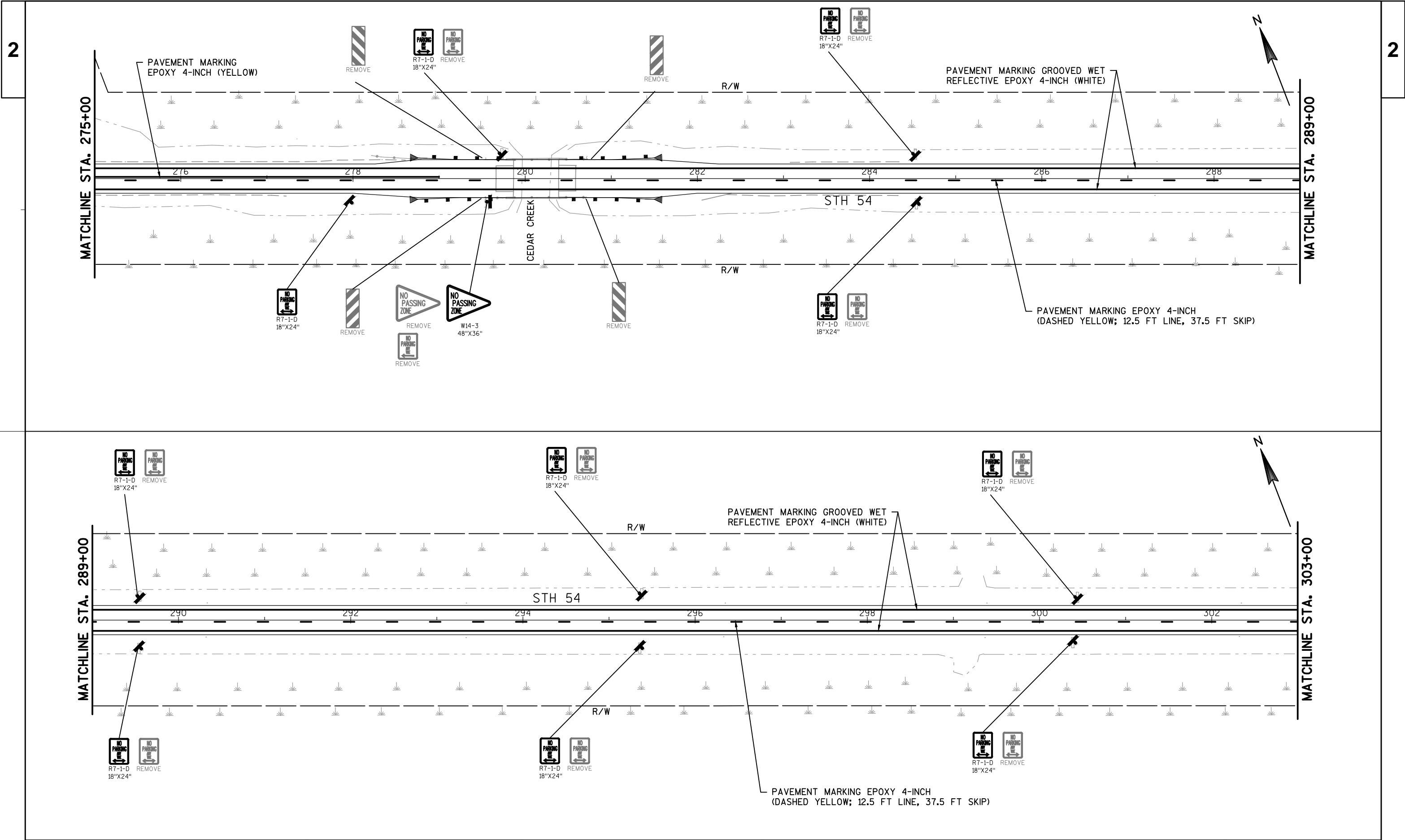
STH 54

PAVEMENT MARKING EPOXY 4-INCH
(DASHED YELLOW; 12.5 FT LINE, 37.5 FT SKIP)

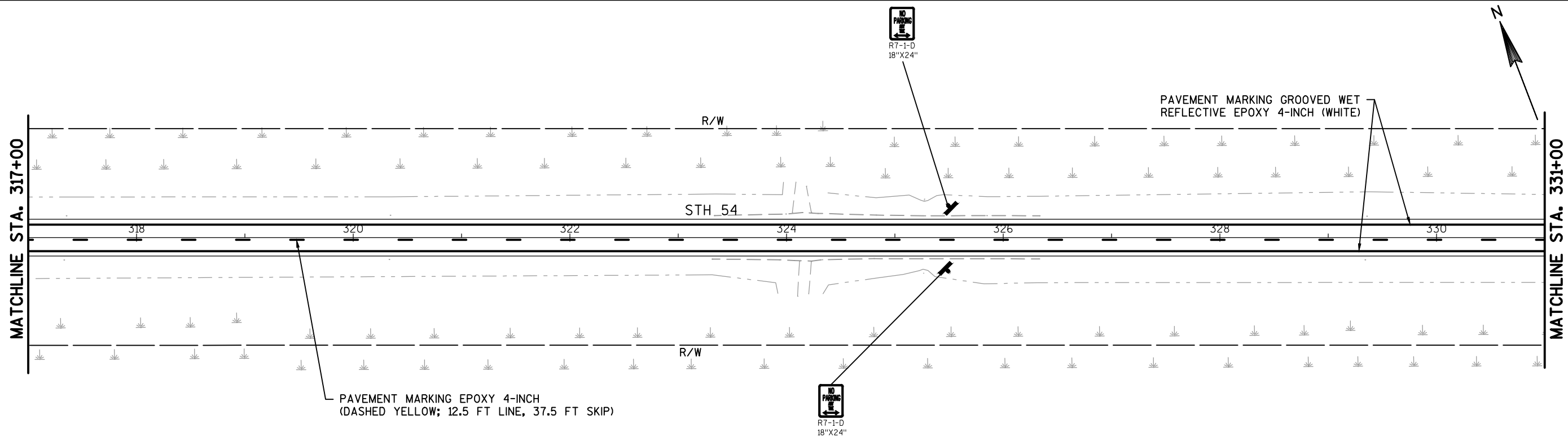
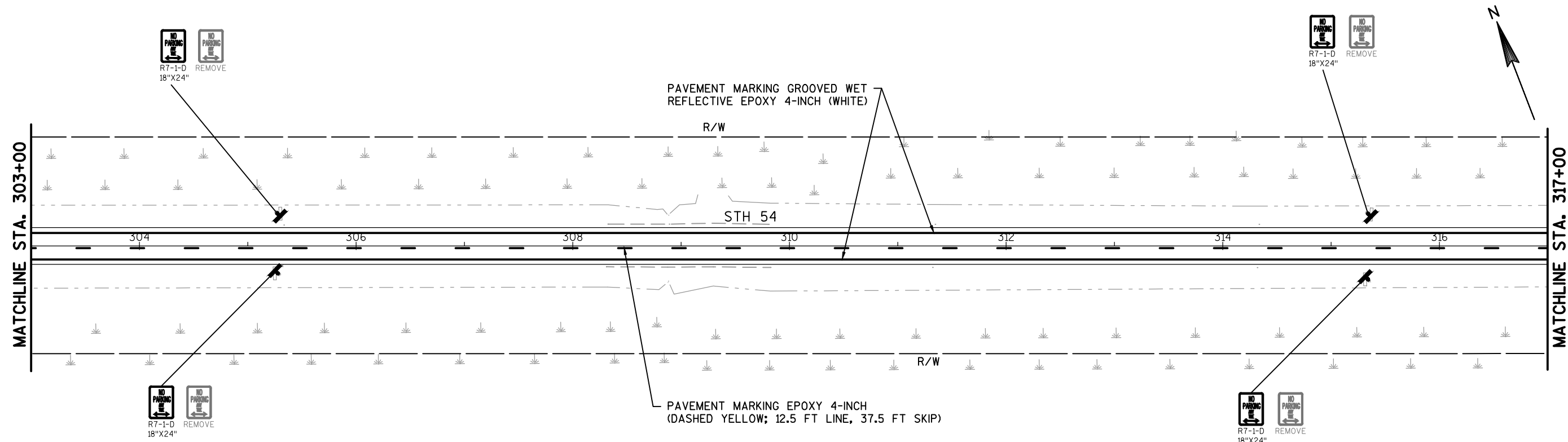
MATCHLINE STA. 231+00

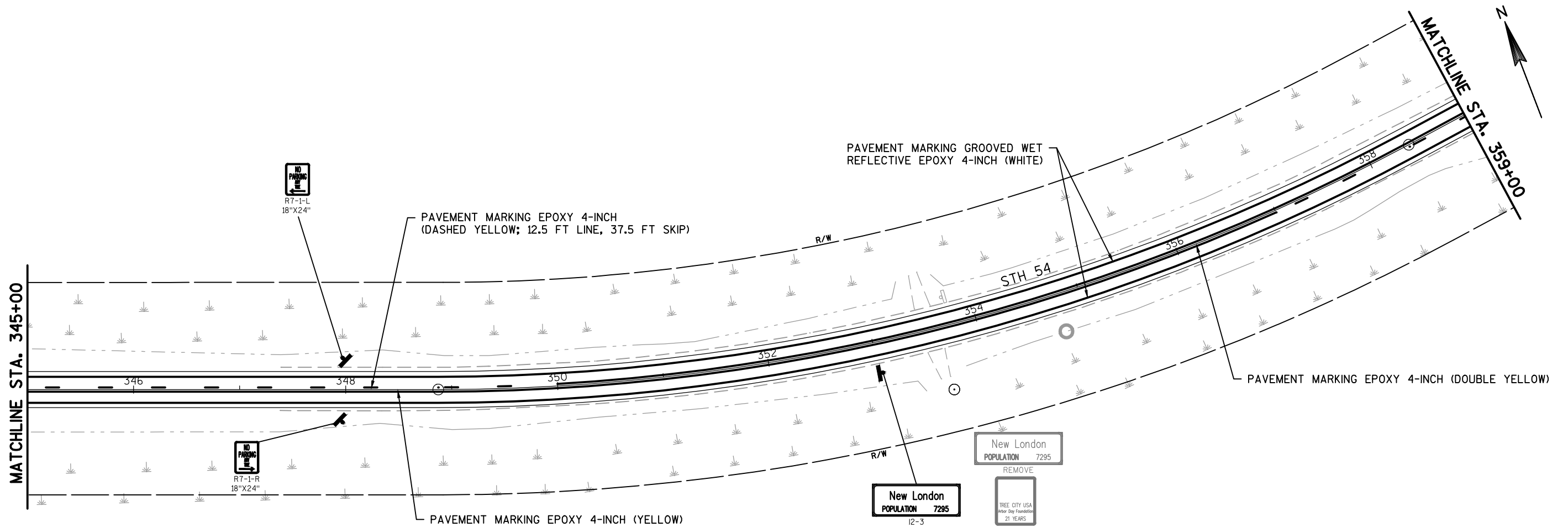
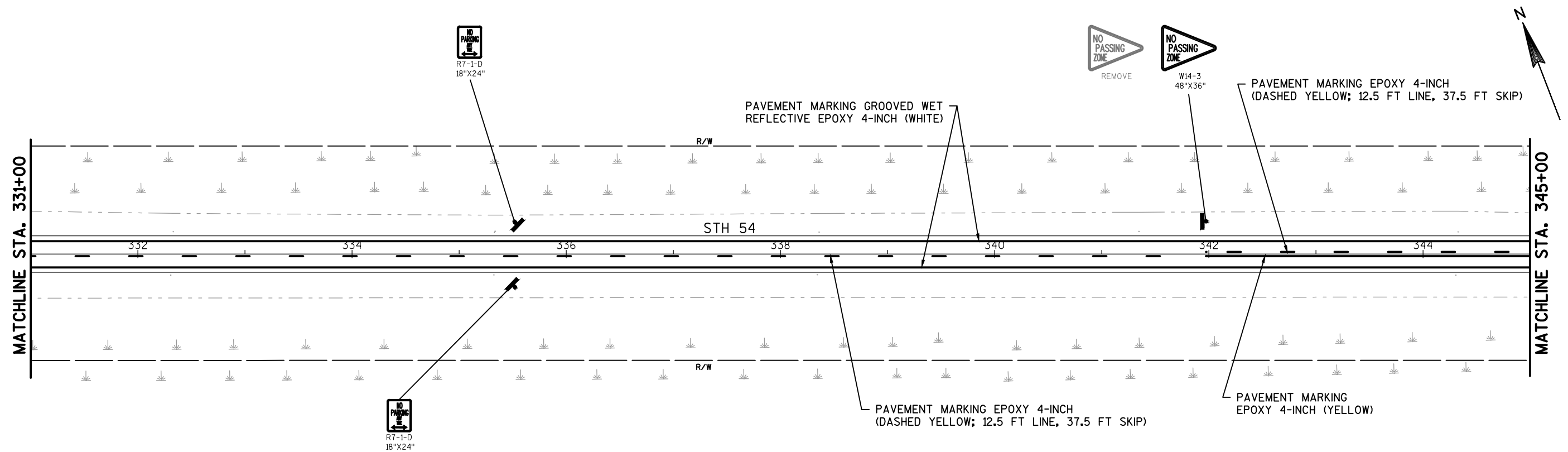
MATCHLINE STA. 246+00

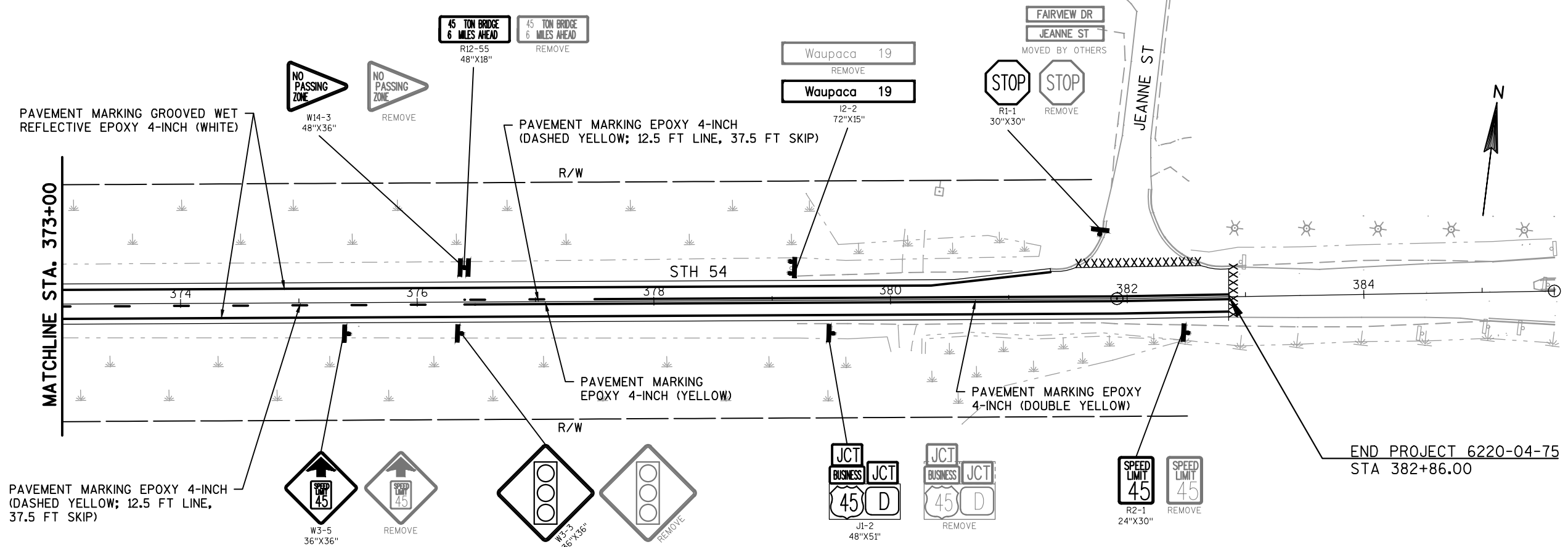
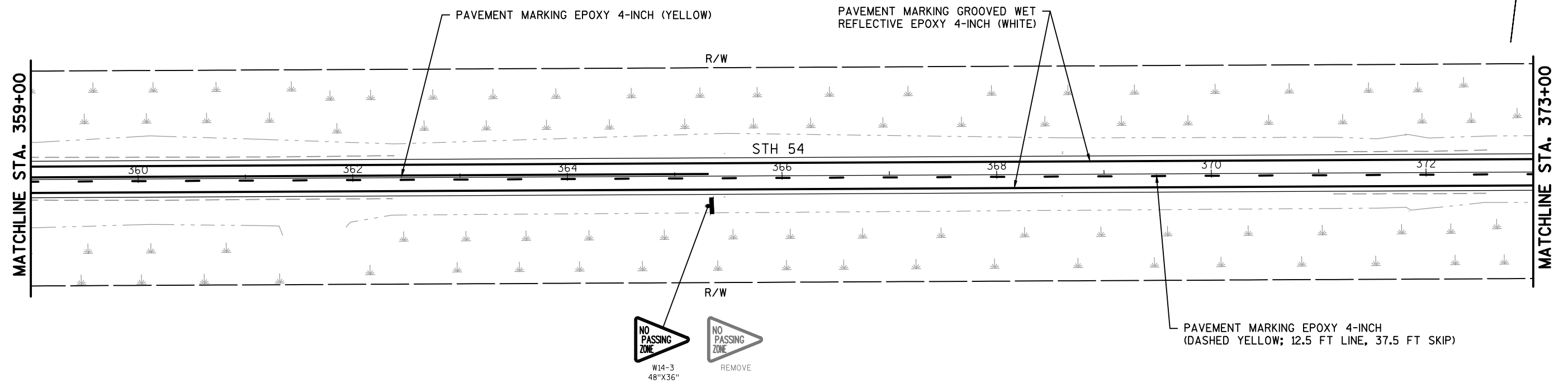
PAVEMENT MARKING GROOVED WET
REFLECTIVE EPOXY 4-INCH (WHITE)PAVEMENT MARKING EPOXY 4-INCH (DASHED YELLOW;
12.5 FT LINE, 37.5 FT SKIP)PAVEMENT MARKING EPOXY 4-INCH (DOUBLE YELLOW)
PAVEMENT MARKING GROOVED WET
REFLECTIVE EPOXY 8-INCH (WHITE)PAVEMENT MARKING EPOXY 4-INCH (YELLOW)
PAVEMENT MARKING EPOXY 4-INCH (DASHED YELLOW; 12.5 FT LINE, 37.5 FT SKIP)PAVEMENT MARKING GROOVED WET
REFLECTIVE EPOXY 4-INCH (WHITE)

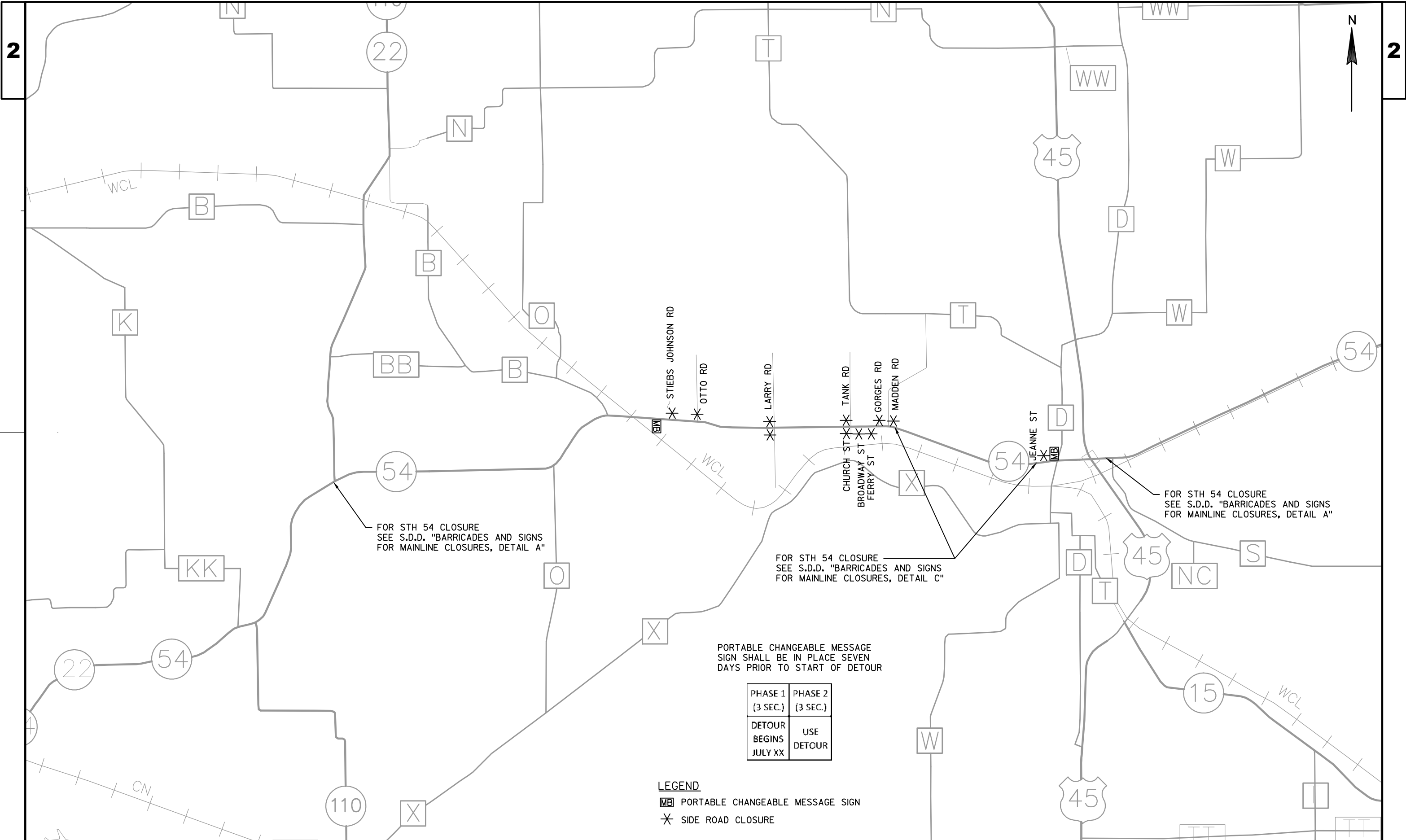


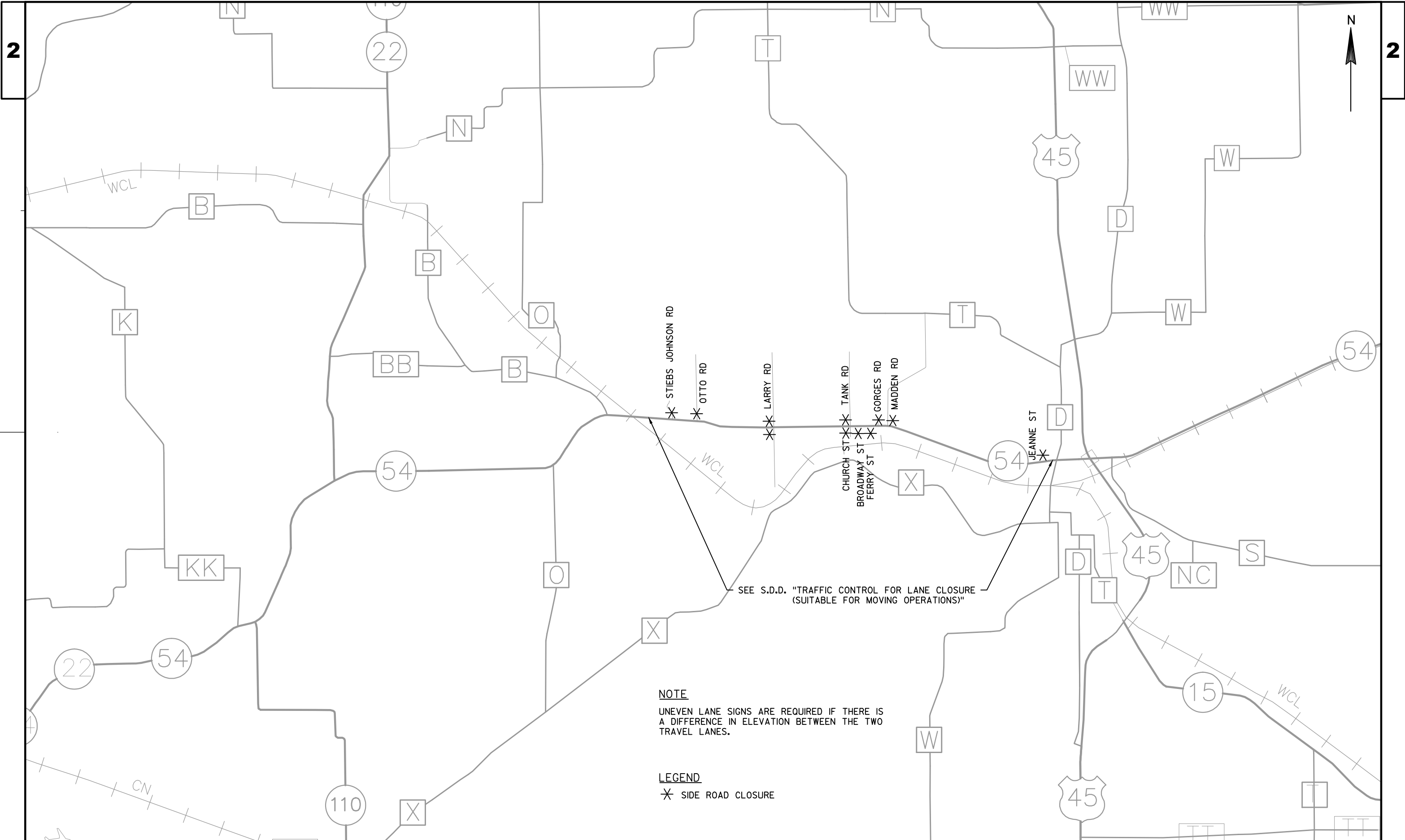
PROJECT NO:6220-04-75	HWY:STH 54	COUNTY:WAUPACA	PERMANENT SIGNING AND PAVEMENT MARKING	SHEET	E
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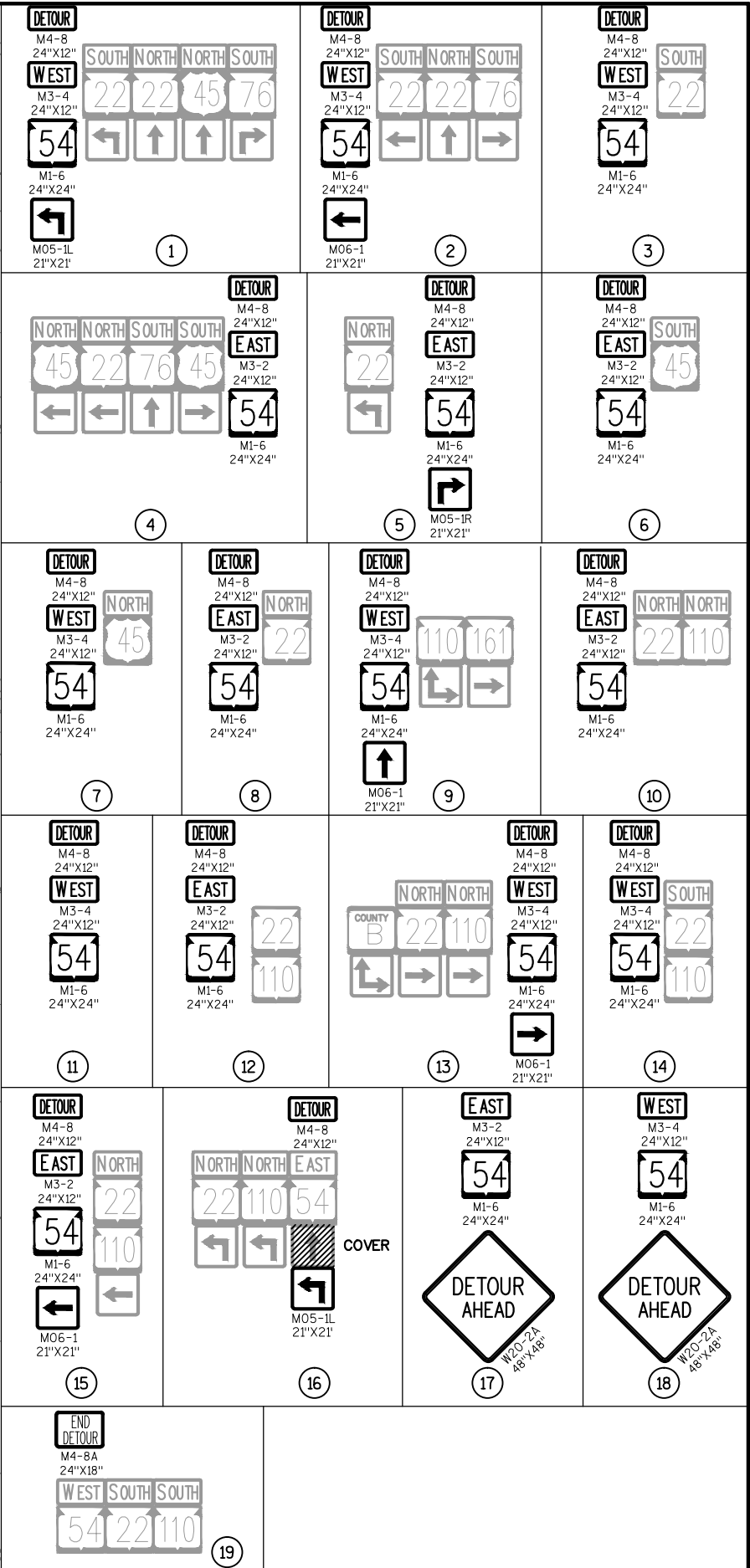
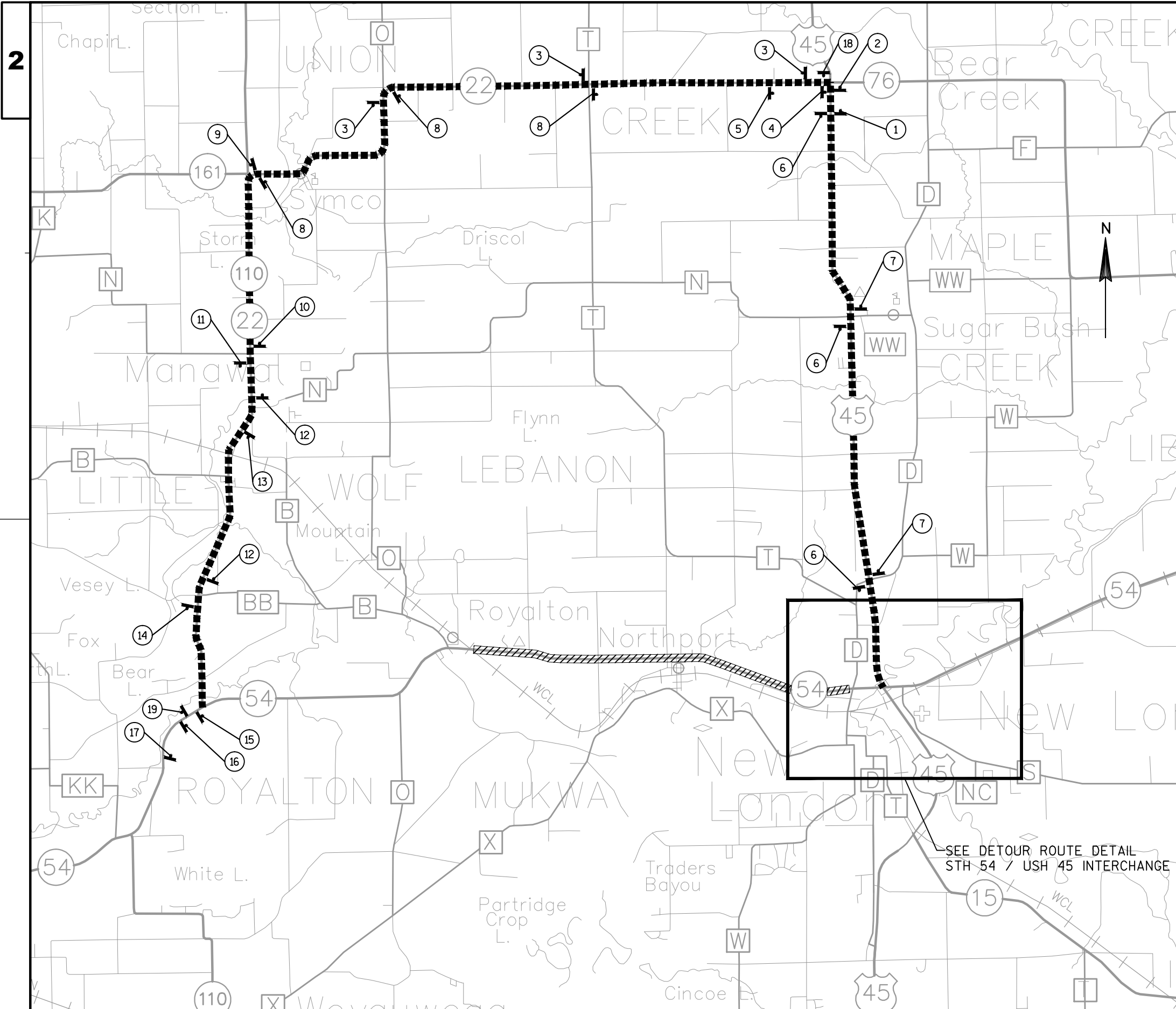












PROJECT NO:6220-04-75

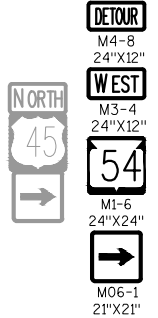
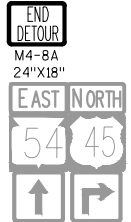
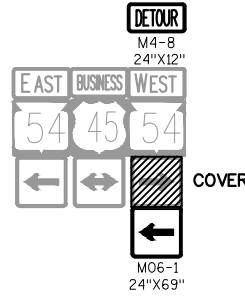
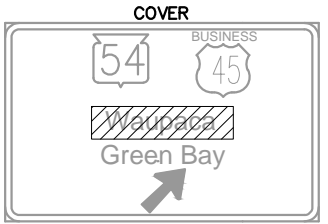
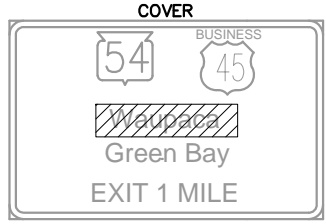
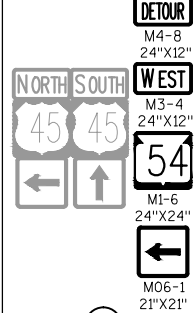
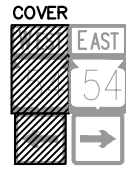
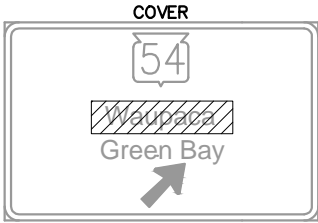
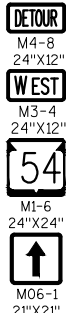
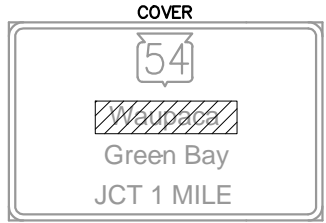
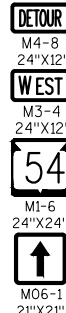
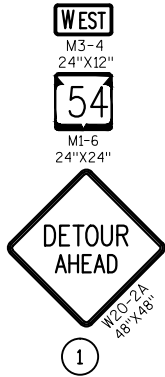
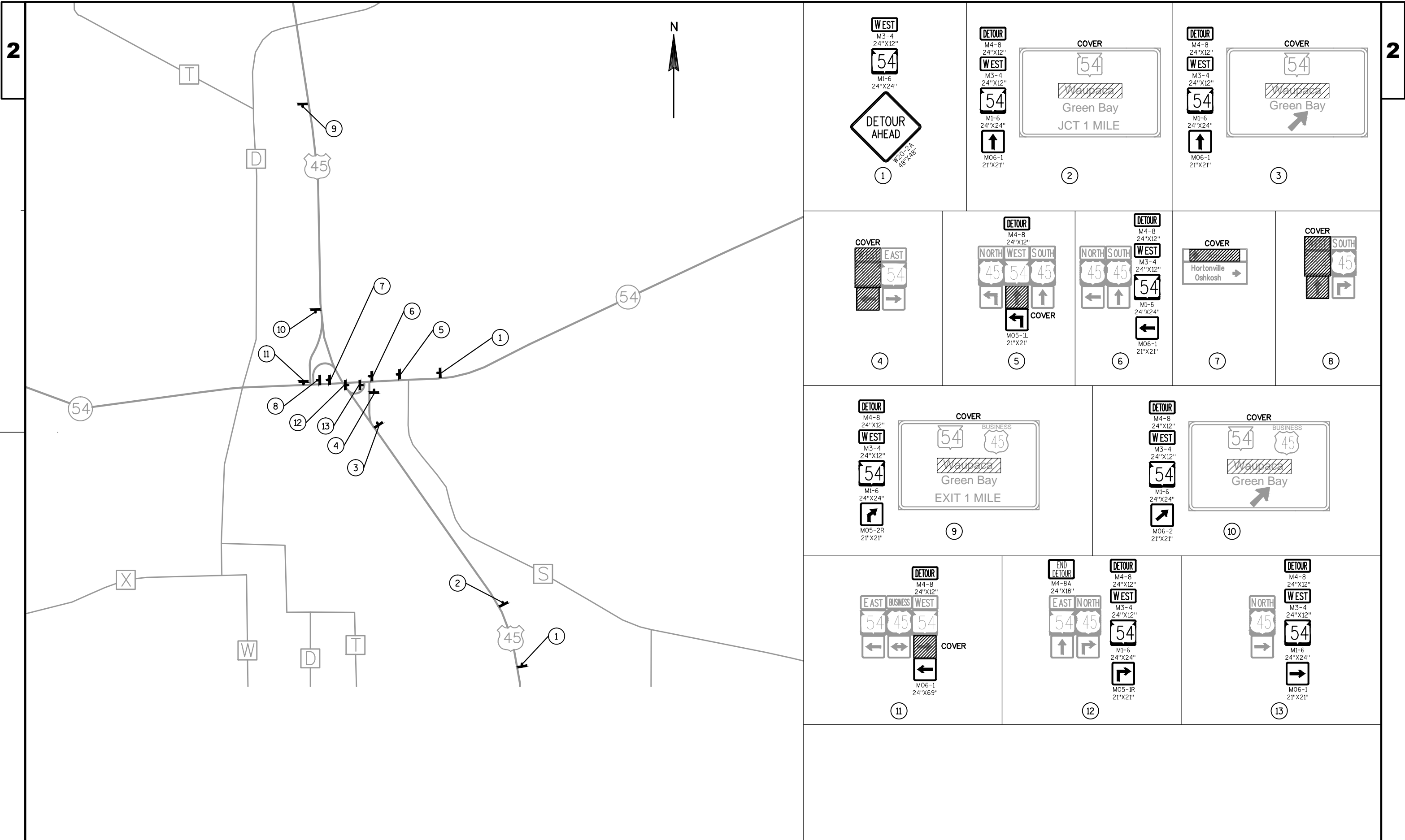
HWY: STH 54

COUNTY: WAUPACA

DETOUR OVERVIEW

SHEET

E



DATE 22MAR16		E S T I M A T E O F Q U A N T I T I E S			
LINE				6220-04-75	
NUMBER	ITEM	ITEM DESCRIPTION	UNIT	TOTAL	QUANTITY
0010	203.0100	Removing Small Pipe Culverts	EACH	3.000	3.000
0020	204.0100	Removing Pavement	SY	760.000	760.000
0030	204.0120	Removing Asphaltic Surface Milling	SY	100,680.000	100,680.000
0040	204.0165	Removing Guardrail	LF	832.000	832.000
0050	204.0180	Removing Delineators and Markers	EACH	30.000	30.000
0060	204.9090.S	Removing (item description) 01. Silt Fence	LF	2,630.000	2,630.000
0070	205.0100	Excavation Common	CY	1,222.000	1,222.000
0080	205.0400	Excavation Marsh	CY	76.000	76.000
0090	208.0100	Borrow	CY	2,361.000	2,361.000
0100	211.0400	Prepare Foundation for Asphaltic Shoulders	STA	548.000	548.000
0110	213.0100	Finishing Roadway (project) 01. 6220-04-75	EACH	1.000	1.000
0120	305.0110	Base Aggregate Dense 3/4-Inch	TON	305.000	305.000
0130	305.0120	Base Aggregate Dense 1 1/4-Inch	TON	1,100.000	1,100.000
0140	305.0500	Shaping Shoulders	STA	548.000	548.000
0150	312.0110	Select Crushed Material	TON	217.000	217.000
0160	440.4410	Incentive IRI Ride	DOL	21,332.000	21,332.000
0170	455.0605	Tack Coat	GAL	11,070.000	11,070.000
0180	460.2000	Incentive Density HMA Pavement	DOL	16,270.000	16,270.000
0190	460.4000	HMA Cold Weather Paving	TON	2,429.000	2,429.000
0200	460.4110.S	Reheating HMA Pavement Longitudinal Joints	LF	55,621.000	55,621.000
0210	460.5223	HMA Pavement 3 LT 58-28 S	TON	13,276.000	13,276.000
0220	460.5224	HMA Pavement 4 LT 58-28 S	TON	10,629.000	10,629.000
0230	465.0105	Asphaltic Surface	TON	390.000	390.000
0240	465.0120	Asphaltic Surface Driveways and Field Entrances	TON	150.000	150.000
0250	465.0315	Asphaltic Flumes	SY	87.000	87.000
0260	465.0425	Asphaltic Shoulder Rumble Strips 2-Lane Rural	LF	44,088.000	44,088.000
0270	465.0475	Asphalt Center Line Rumble Strips 2-Lane Rural	LF	23,257.000	23,257.000
0280	504.0900	Concrete Masonry Endwalls	CY	7.400	7.400
0290	520.8000	Concrete Collars for Pipe	EACH	10.000	10.000
0300	522.0124	Culvert Pipe Reinforced Concrete Class III 24-Inch	LF	33.000	33.000
0310	522.0130	Culvert Pipe Reinforced Concrete Class III 30-Inch	LF	7.000	7.000
0320	522.0136	Culvert Pipe Reinforced Concrete Class III 36-Inch	LF	158.000	158.000
0330	522.0142	Culvert Pipe Reinforced Concrete Class III 42-Inch	LF	26.000	26.000
0340	522.0148	Culvert Pipe Reinforced Concrete Class III 48-Inch	LF	63.000	63.000
0350	522.1024	Apron Endwalls for Culvert Pipe Reinforced Concrete 24-Inch	EACH	2.000	2.000
0360	522.1030	Apron Endwalls for Culvert Pipe Reinforced Concrete 30-Inch	EACH	2.000	2.000
0370	522.1036	Apron Endwalls for Culvert Pipe Reinforced Concrete 36-Inch	EACH	4.000	4.000
0380	522.1048	Apron Endwalls for Culvert Pipe Reinforced Concrete 48-Inch	EACH	2.000	2.000
0390	614.2300	MGS Guardrail 3	LF	50.000	50.000
0400	614.2500	MGS Thrie Beam Transition	LF	150.000	150.000

DATE 22MAR16		E S T I M A T E O F Q U A N T I T I E S			
LINE					6220-04-75
NUMBER	ITEM	ITEM DESCRIPTION	UNIT	TOTAL	QUANTITY
0410	614.2610	MGS Guardrail Terminal EAT	EACH	4.000	4.000
0420	618.0100	Maintenance And Repair of Haul Roads (project) 01. 6220-04-75	EACH	1.000	1.000
0430	619.1000	Mobilization	EACH	1.000	1.000
0440	621.0100	Landmark Reference Monuments	EACH	8.000	8.000
0450	624.0100	Water	MGAL	25.000	25.000
0460	625.0500	Salvaged Topsoil	SY	5,180.000	5,180.000
0470	628.1504	Silt Fence	LF	1,050.000	1,050.000
0480	628.1520	Silt Fence Maintenance	LF	3,680.000	3,680.000
0490	628.1905	Mobilizations Erosion Control	EACH	4.000	4.000
0500	628.1910	Mobilizations Emergency Erosion Control	EACH	5.000	5.000
0510	628.2006	Erosion Mat Urban Class I Type A	SY	5,150.000	5,150.000
0520	628.7555	Culvert Pipe Checks	EACH	68.000	68.000
0530	628.7570	Rock Bags	EACH	50.000	50.000
0540	629.0210	Fertilizer Type B	CWT	1.000	1.000
0550	630.0110	Seeding Mixture No. 10	LB	75.000	75.000
0560	630.0160	Seeding Mixture No. 60	LB	7.000	7.000
0570	633.5200	Markers Culvert End	EACH	14.000	14.000
0580	634.0614	Posts Wood 4x6-Inch X 14-FT	EACH	11.000	11.000
0590	634.0616	Posts Wood 4x6-Inch X 16-FT	EACH	71.000	71.000
0600	634.0618	Posts Wood 4x6-Inch X 18-FT	EACH	9.000	9.000
0610	637.2210	Signs Type II Reflective H	SF	339.980	339.980
0620	637.2230	Signs Type II Reflective F	SF	154.250	154.250
0630	638.2602	Removing Signs Type II	EACH	88.000	88.000
0640	638.3000	Removing Small Sign Supports	EACH	86.000	86.000
0650	642.5001	Field Office Type B	EACH	1.000	1.000
0660	643.0100	Traffic Control (project) 01. 6220-04-75	EACH	1.000	1.000
0670	643.0420	Traffic Control Barricades Type III	DAY	300.000	300.000
0680	643.0705	Traffic Control Warning Lights Type A	DAY	270.000	270.000
0690	643.0900	Traffic Control Signs	DAY	1,190.000	1,190.000
0700	643.0920	Traffic Control Covering Signs Type II	EACH	10.000	10.000
0710	643.1050	Traffic Control Signs PCMS	DAY	16.000	16.000
0720	643.2000	Traffic Control Detour (project) 01. 6220-04-75	EACH	1.000	1.000
0730	643.3000	Traffic Control Detour Signs	DAY	1,700.000	1,700.000
0740	646.0106	Pavement Marking Epoxy 4-Inch	LF	28,425.000	28,425.000
0750	646.2304.S	Pavement Marking Grooved Wet Reflective Epoxy 4-Inch	LF	54,640.000	54,640.000
0760	646.2308.S	Pavement Marking Grooved Wet Reflective Epoxy 8-Inch	LF	560.000	560.000
0770	648.0100	Locating No-Passing Zones	MI	5.350	5.350
0780	649.0402	Temporary Pavement Marking Paint 4-Inch	LF	71,750.000	71,750.000
0790	649.0403	Temporary Pavement Marking Epoxy 4-Inch	LF	24,885.000	24,885.000
0800	650.6000	Construction Staking Pipe Culverts	EACH	13.000	13.000
0810	650.8000	Construction Staking Resurfacing Reference	LF	28,159.000	28,159.000
0820	650.9910	Construction Staking Supplemental Control (project) 01. 6220-04-75	LS	1.000	1.000
0830	690.0150	Sawing Asphalt	LF	1,697.000	1,697.000
0840	690.0250	Sawing Concrete	LF	120.000	120.000
0850	ASP.1TOA	On-the-Job Training Apprentice at \$5.00/HR	HRS	2,000.000	2,000.000
0860	ASP.1TOG	On-the-Job Training Graduate at \$5.00/HR	HRS	1,260.000	1,260.000
0870	SPV.0060	Special 01. Reestablish Section Corner Monuments	EACH	2.000	2.000

REMOVING SMALL PIPE CULVERTS

				203.0100 REMOVING SMALL PIPE CULVERTS EACH
STATION	LOCATION	SIZE (IN)	TYPE	
308+88	CROSS	36	RCP	1
325+27	CROSS	36	RCP	1
371+82	CROSS	36	RCP	1
PROJECT 6220-04-75 TOTAL				3

REMOVING ASPHALTIC SURFACE MILLING

				204.0120 REMOVING ASPHALTIC SURFACE MILLING SY
STATION	-	STATION	LOCATION	
100+36	-	107+30	STH 54, 1.75" DEPTH	2,850
107+30	-	279+66	STH 54, 4.00" DEPTH	63,000
280+59	-	382+86	STH 54, 4.00" DEPTH	34,600
100+36	-	382+86	ASPHALT PEs, 3.00" DEPTH	230
PROJECT 6220-04-75 TOTAL				100,680

REMOVING GUARDRAIL

				204.0165 REMOVING GUARDRAIL LF	COMMENTS
STATION	-	STATION	OFFSET		
277+21	-	279+79	RT	258	REMOVE ALL EXISTING GUARDRAIL UP TO EXISTING W-SECTION BRIDGE RAILING.
278+22	-	279+79	LT	158	REMOVE ALL EXISTING GUARDRAIL UP TO EXISTING W-SECTION BRIDGE RAILING.
280+47	-	282+04	RT	158	REMOVE ALL EXISTING GUARDRAIL UP TO EXISTING W-SECTION BRIDGE RAILING.
280+47	-	283+04	LT	258	REMOVE ALL EXISTING GUARDRAIL UP TO EXISTING W-SECTION BRIDGE RAILING.
PROJECT 6220-04-75 TOTAL				832	

NOTE: ALL ITEMS ARE CATEGORY 0010, UNLESS OTHERWISE NOTED.

REMOVING PAVEMENT

			204.0100 REMOVING PAVEMENT SY
STATION	-	STATION	
308+38	-	309+38	245
324+77	-	325+77	245
371+32	-	372+32	245
UNDISTRIBUTED			25
PROJECT 6220-04-75 TOTAL			760

REMOVING DELINEATORS AND MARKERS

			204.0180 REMOVING DELINEATORS AND MARKERS EACH
STATION	LOCATION		
114+86	STH 54, CROSS		2
118+15	STH 54, LT		1
130+00	STH 54, LT		1
139+00	STH 54, LT		1
139+50	STH 54, LT		1
140+50	STH 54, LT		1
141+00	STH 54, LT		1
143+19	STH 54, CROSS		1
152+00	STH 54, RT		1
183+32	STH 54, RT		1
185+32	STH 54, RT		1
187+32	STH 54, RT		1
189+35	STH 54, LT		1
193+30	STH 54, RT		1
220+19	STH 54, CROSS		2
228+96	STH 54, CROSS		2
240+50	STH 54, LT		1
240+52	STH 54, RT		1
242+49	STH 54, RT		1
246+47	STH 54, RT		1
268+50	STH 54, LT		1
269+55	STH 54, LT		1
308+88	STH 54, CROSS		2
325+27	STH 54, CROSS		2
371+82	STH 54, CROSS		1
PROJECT 6220-04-75 TOTAL			30

3

3

EARTHWORK SUMMARY

FROM / TO STATION	LOCATION	EXCAVATION COMMON (1)	AVAILABLE MATERIAL (3)	EXCAVATION MARSH (4)	REDUCED MARSH IN FILL (5)	EXPANDED MARSH BACKFILL (6)	EXPANDED MARSH BACKFILL (6)	UNEXPANDED FILL	EXPANDED FILL (7)	MASS ORDNATE +/- (8)	WASTE	BORROW	COMMENT
		(ITEM #205.0100)		(ITEM #205.0400)		SELECT CRUSHED MATERIAL (CY)	SELECT CRUSHED MATERIAL (TON) (ITEM #312.0110)					(ITEM #208.0100)	
		CUT (2)			FACTOR 0.60	FACTOR 1.50	FACTOR 1.90		FACTOR 1.25				
114+36 - 115+36	CULVERT EXTENSION	0	0	0	0	0	0	146	182	-182	0	182	
142+69 - 143+69	CULVERT EXTENSION	6	6	30	18	45	86	154	170	-164	0	164	
219+69 - 220+69	CULVERT EXTENSION	1	1	0	0	0	0	86	107	-106	0	106	
228+46 - 229+46	CULVERT EXTENSION	2	2	0	0	0	0	112	140	-138	0	138	
277+26 - 279+66	BRIDGE GUARDRAIL	0	0	0	0	0	0	543	678	-678	0	678	
280+60 - 283+00	BRIDGE GUARDRAIL	23	23	0	0	0	0	156	195	-172	0	172	
308+38 - 309+38	CULVERT REPLACEMENT	0	0	14	8	21	40	227	273	-273	0	273	
324+77 - 325+77	CULVERT REPLACEMENT	0	0	17	10	26	48	288	347	-347	0	347	
371+32 - 372+32	CULVERT REPLACEMENT	0	0	15	9	23	43	249	300	-300	0	300	
GRAND TOTAL		32	32	76	46	114	217	1,959	2,392	-2,361	0	2,361	
308+38 - 309+38	TRANSITIONAL CUT	320											
324+77 - 325+77	TRANSITIONAL CUT	440											
371+32 - 372+32	TRANSITIONAL CUT	430											
SUBTOTAL		1,190											
TOTAL COMMON EXC		1,222											

Notes:
1) Common Excavation is the sum of the Cut and EBS Excavation columns. Item number 205.0100
2) Salvaged/Unsuable Pavement Material is included in Cut.
3) Available Material = Cut - Salvaged/Unusuable Pavement Material
4) Marsh Excavation - to be backfilled with Select Crushed Material. Item number 312.0110.
5) Reduced Marsh in Fill - Excavated Marsh Material is usable in Fills outside the 1:1 slope. Marsh in Fill Reduction factor = 0.6
6) Expanded Marsh Backfill - This is to be filled with Select Crushed Material. Marsh Backfill Factor = 1.5. Item number 312.0110.
7) Expanded Fill. Factor = 1.25. Expanded Fill = (Unexpanded Fill - Rock* Rock Factor - Reduced Marsh) * Fill Factor
8) The Mass Ordinate + or - Qty calculated for the Division. Plus quantity indicates an excess of material within the Division. Minus indicates a shortage of material within the Division.

NOTE: ALL ITEMS ARE CATEGORY 0010, UNLESS OTHERWISE NOTED.

3

PREPARE FOUNDATION FOR ASPHALTIC SHOULDERS

211.0400 PREPARE FOUNDATION FOR ASPHALTIC SHOULDERS (CAT. 0020)				
STATION	STATION	LOCATION	STA	
100+36	- 247+00	LT	147	
100+36	- 247+00	RT	147	
254+60	- 279+66	LT	25	
254+60	- 279+66	RT	25	
280+59	- 382+86	LT	102	
280+59	- 382+86	RT	102	
PROJECT 6220-04-75 TOTAL			548	

BASE AGGREGATE DENSE

			305.0110 3/4-INCH TON	305.0120 1 1/4-INCH TON	624.0100 WATER MGAL	REMARKS
STATION	- STATION	LOCATION				
308+38	- 309+38	STH 54	35	360	7	CULVERT REPLACEMENT
324+77	- 325+77	STH 54	35	360	7	CULVERT REPLACEMENT
371+32	- 372+32	STH 54	35	360	7	CULVERT REPLACEMENT
UNDISTRIBUTED		SHOULDERS	200	20	4	
PROJECT 6220-04-75 TOTAL			305	1,100	25	

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SHAPING SHOULDERS

305.0500 SHAPING SHOULDERS			
STATION	STATION	LOCATION	STA
100+36	- 247+00	LT	147
100+36	- 247+00	RT	147
254+60	- 279+66	LT	25
254+60	- 279+66	RT	25
280+59	- 382+86	LT	102
280+59	- 382+86	RT	102
PROJECT 6220-04-75 TOTAL			548

ASPHALT PAVEMENT ITEMS

			455.0605 TACK COAT (CAT. 0010)	(CAT. 0020)	460.5223 HMA PAVEMENT 3 LT 58-28 S (CAT. 0010)	(CAT. 0020)	460.5224 HMA PAVEMENT 4 LT 58-28 S (CAT. 0010)	(CAT. 0020)	460.4000 HMA COLD WEATHER PAVING TON	465.0105 ASPHALTIC SURFACE TON
STATION	STATION	LOCATION	GAL		TON		TON			
100+36	- 107+30	STH 54	150	---	---	---	275	---	27	---
107+30	- 279+66	STH 54	6,577	323	7,660	790	5,986	614	1,505	---
280+59	- 382+86	STH 54	3,675	225	4,277	549	3,327	427	858	---
308+38	- 309+38	CULVERT CROSSING	40	---	---	---	---	---	13	130
324+77	- 325+77	CULVERT CROSSING	40	---	---	---	---	---	13	130
371+32	- 372+32	CULVERT CROSSING	40	---	---	---	---	---	13	130
PROJECT 6220-04-75 TOTAL			10,522	548	11,937	1,339	9,588	1,041	2,429	390

NOTE: ALL ITEMS ARE CATEGORY 0010, UNLESS OTHERWISE NOTED.

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ASPHALTIC SURFACE DRIVEWAYS
AND FIELD ENTRANCES

465.0120 DRIVEWAYS AND FIELD ENTRANCES		
STATION	LOCATION	TON
104+94	GRAVEL PE, LT	2.7
108+27	GRAVEL PE, LT	2.7
111+07	GRAVEL PE, LT	4.5
112+05	GRAVEL PE, RT	2.5
118+84	ASPHALT PE, RT	2.6
120+89	GRAVEL PE, LT	2.6
121+98	GRAVEL PE, LT	2.8
125+98	GRAVEL FE, LT	2.4
126+00	GRAVEL PE, RT	2.7
137+60	GRAVEL FE, LT	2.7
139+90	GRAVEL PE, RT	2.4
147+50	GRAVEL PE, LT	3.0
147+75	GRAVEL PE, RT	2.6
148+37	ASPHALT PE, LT	2.4
149+25	GRAVEL PE, RT	2.6
152+33	GRAVEL PE, LT	3.1
156+78	GRAVEL PE, RT	3.7
161+18	GRAVEL PE, LT	2.9
162+76	GRAVEL PE, RT	2.2
166+13	ASPHALT PE, LT	2.9
167+67	GRAVEL PE, RT	2.6
171+07	GRAVEL PE, RT	2.4
173+45	GRAVEL PE, LT	2.8
173+53	ASPHALT PE, RT	2.4
175+26	ASPHALT PE, LT	2.6
176+89	GRAVEL PE, RT	2.6
182+00	GRAVEL PE, RT	2.7
183+84	ASPHALT PE, RT	2.1
185+42	GRAVEL FE, RT	1.6
192+60	GRAVEL PE, RT	2.6
SUBTOTAL		80.4

ASPHALTIC SURFACE DRIVEWAYS
AND FIELD ENTRANCES

465.0120 DRIVEWAYS AND FIELD ENTRANCES		
STATION	LOCATION	TON
194+72	GRAVEL PE, RT	2.3
195+06	ASPHALT PE, LT	2.5
196+98	GRAVEL PE, RT	2.5
201+07	GRAVEL FE, RT	1.8
202+47	ASPHALT PE, RT	2.7
205+75	ASPHALT PE, RT	3.9
209+22	ASPHALT PE, RT	3.0
210+18	ASPHALT PE, RT	2.3
210+98	GRAVEL PE, LT	3.0
214+49	ASPHALT PE, RT	2.5
215+07	ASPHALT PE, RT	1.9
217+26	ASPHALT PE, LT	2.6
219+36	ASPHALT PE, RT	2.3
223+90	GRAVEL PE, LT	2.1
224+79	GRAVEL PE, LT	3.0
234+03	ASPHALT PE, LT	2.1
234+83	ASPHALT PE, LT	1.9
237+98	ASPHALT CE, LT	4.3
239+50	GRAVEL PE, RT	2.0
242+82	GRAVEL PE, RT	3.6
243+50	GRAVEL FE, RT	2.0
246+05	GRAVEL FE, LT	2.5
255+19	GRAVEL PE, RT	2.7
257+34	ASPHALT PE, RT	2.7
268+68	GRAVEL FE, RT	1.9
274+31	GRAVEL PE, LT	3.1
353+52	GRAVEL FE, LT	1.6
SUBTOTAL		68.8
PROJECT 6220-04-75 TOTAL		150

REHEATING HMA PAVEMENT LONGITUDINAL JOINTS

460.4110.S REHEATING HMA PAVEMENT LONGITUDINAL JOINTS			
STATION	-	STATION	LOCATION
100+36	-	107+30	STH 54
107+30	-	279+66	STH 54
280+59	-	382+86	STH 54
PROJECT 6220-04-75 TOTAL			55,621

ASPHALTIC FLUMES

465.0315 ASPHALTIC FLUMES			
STATION	OFFSET	LOCATION	SY
116+85	25' LT	STIEBS JOHNSON RD	9
117+56	81' LT	STIEBS JOHNSON RD	8
134+14	81' LT	OTTO RD	8
135+03	26' LT	OTTO RD	7
188+14	86' LT	LARRY RD	6
188+64	40' LT	LARRY RD	7
240+91	24' LT	TANK RD	9
241+72	62' LT	TANK RD	7
246+99	24' RT	STH 54	10
254+66	19' RT	STH 54	7
268+23	21' LT	MADDEN RD	9
PROJECT 6220-04-75 TOTAL			87

ASPHALTIC RUMBLE STRIPS

465.0425 ASPHALTIC SHOULDER RUMBLE STRIPS 2-LANE RURAL (CAT. 0020)						465.0475 ASPHALTIC CENTERLINE RUMBLE STRIPS 2-LANE RURAL (CAT. 0010)	REMARKS
STATION	-	STATION	LOCATION	LF	LF		
100+61	-	233+50	STH 54	---	12,089		OVERHEAD TO TANK RD/CHURCH ST
262+80	-	379+91	STH 54	---	11,168		GORGES RD TO JEANNE ST
107+30	-	237+30	STH 54, LT	10,002	---		OVERHEAD TO TANK RD/CHURCH ST
107+30	-	235+30	STH 54, RT	10,657	---		OVERHEAD TO TANK RD/CHURCH ST
255+50	-	277+94	STH 54, LT	1,667	---		FERRY ST TO CEDAR CREEK
255+50	-	277+94	STH 54, RT	2,244	---		FERRY ST TO CEDAR CREEK
282+32	-	379+91	STH 54, LT	9,759	---		CEDAR CREEK TO JEANNE ST
282+32	-	379+91	STH 54, RT	9,759	---		CEDAR CREEK TO JEANNE ST
PROJECT 6220-04-75 TOTAL				44,088	23,257		

NOTE: ALL ITEMS ARE CATEGORY 0010, UNLESS OTHERWISE NOTED.

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CULVERT PIPES

			504.0900 CONCRETE MASONRY ENDWALLS	520.8000 CONCRETE COLLARS FOR PIPE	522.0124 CULVERT PIPE REINFORCED CONCRETE CLASS III 24-INCH	522.0130 CULVERT PIPE REINFORCED CONCRETE CLASS III 30-INCH	522.0136 CULVERT PIPE REINFORCED CONCRETE CLASS III 36-INCH	522.0142 CULVERT PIPE REINFORCED CONCRETE CLASS III 42-INCH	522.0148 CULVERT PIPE REINFORCED CONCRETE CLASS III 48-INCH	522.1024 APRON ENDWALLS FOR CULVERT PIPE REINFORCED CONCRETE 24-INCH	522.1030 APRON ENDWALLS FOR CULVERT PIPE REINFORCED CONCRETE 30-INCH	522.1036 APRON ENDWALLS FOR CULVERT PIPE REINFORCED CONCRETE 36-INCH	522.1048 APRON ENDWALLS FOR CULVERT PIPE REINFORCED CONCRETE 48-INCH	** JOINT TIES
STATION	LOCATION	NUMBER OF CULVERTS	CY	EACH	LF	LF	LF	LF	LF	EACH	EACH	EACH	EACH	EACH
114+86	STH 54, LT	2	1.3	2	10	---	---	---	---	---	---	---	---	---
114+86	STH 54, RT	2	1.3	2	18	---	---	---	---	---	---	---	---	---
143+19	STH 54, LT	2	2.4	2	---	---	---	26	---	---	---	---	---	---
143+19	STH 54, RT	2	2.4	---	---	---	---	---	---	---	---	---	---	---
220+19	STH 54, LT	1	---	1	3	---	---	---	---	1	---	---	---	2
220+19	STH 54, RT	1	---	1	2	---	---	---	---	1	---	---	---	2
228+96	STH 54, LT	1	---	1	---	4	---	---	---	---	1	---	---	2
228+96	STH 54, RT	1	---	1	---	3	---	---	---	---	1	---	---	2
308+88	STH 54, CROSS	1	---	---	---	---	---	---	63	---	---	---	2	24
325+27	STH 54, CROSS	1	---	---	---	---	79	---	---	---	---	2	---	28
371+82	STH 54, CROSS	1	---	---	---	---	79	---	---	---	---	2	---	28
PROJECT 6220-04-75 TOTAL			7.4	10	33	7	158	26	63	2	2	4	2	88

** FOR INFORMATION ONLY. TIE ALL PIPE JOINTS FOR PIPE REPLACEMENTS AND TIE THE PIPE AND APRON ENDWALL FOR EXTENSIONS.

GUARDRAIL

			614.2300 MGS GUARDRAIL 3	614.2500 MGS THRIE BEAM TRANSITION	614.2610 MGS GUARDRAIL TERMINAL EAT	
STATION -	STATION	OFFSET	LF	LF	EACH	COMMENTS
278+75 -	279+79	RT	12.5	37.5	1	CONNECTS TO EXISTING W-SECTION BRIDGE RAILING.
278+76 -	279+79	LT	12.5	37.5	1	CONNECTS TO EXISTING W-SECTION BRIDGE RAILING.
280+47 -	281+50	RT	12.5	37.5	1	CONNECTS TO EXISTING W-SECTION BRIDGE RAILING.
280+47 -	281+50	LT	12.5	37.5	1	CONNECTS TO EXISTING W-SECTION BRIDGE RAILING.
PROJECT 6220-04-75 TOTAL			50	150	4	

SURVEY MONUMENTS

		621.0100 LANDMARK REFERENCE MONUMENTS	SPV.0060.01 REESTABLISH SECTION CORNER MONUMENTS	
STATION	LOCATION	EACH	EACH	COMMENTS
188+28	1' RT	4	1	BERNTSEN STEEL NAIL MARKER
241+48	0' RT	4	1	BERNTSEN STEEL NAIL MARKER
PROJECT 6220-04-75 TOTAL		8	2	

NOTE: ALL ITEMS ARE CATEGORY 0010, UNLESS OTHERWISE NOTED.

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LANDSCAPING

			625.0500	629.0210	630.0110	630.0160
			SALVAGED	FERTILIZER	SEEDING	SEEDING
			TOPSOIL	TYPE B	MIXTURE NO. 10	MIXTURE NO. 60
STATION	-	STATION	LOCATION	SY	CWT	LB
114+35	-	115+35	LT & RT	210	0.1	3
142+68	-	143+68	LT	250	---	4
219+68	-	220+68	LT & RT	190	0.1	3
228+46	-	229+46	LT & RT	300	0.2	4
277+16	-	279+78	LT	650	---	9
277+16	-	279+83	RT	580	---	8
280+39	-	283+00	RT	450	---	7
280+45	-	283+00	LT	520	---	7
308+38	-	309+38	LT & RT	250	---	4
324+72	-	325+72	LT & RT	360	---	5
371+32	-	372+32	LT & RT	360	---	5
UNDISTRIBUTED			1,060	0.6	16	1.7
PROJECT 6220-04-75 TOTAL			5,180	1	75	7

MARKERS

		633.5200
		MARKERS
STATION	LOCATION	CULVERT END
114+86	STH 54, CROSS	EACH
143+19	STH 54, CROSS	2
220+19	STH 54, CROSS	2
228+96	STH 54, CROSS	2
308+88	STH 54, CROSS	2
325+27	STH 54, CROSS	2
371+82	STH 54, CROSS	2
PROJECT 6220-04-75 TOTAL		14

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EROSION CONTROL

			628.1504	628.1520	204.9090.S.01	628.1905	628.1910	628.2006	628.7555	628.7570
			SILT	SILT	REMOVE	MOBILIZATIONS	MOBILIZATIONS	EROSION MAT	CULVERT	ROCK
			FENCE	FENCE	SILT FENCE	EROSION	EMERGENCY	URBAN CLASS I	PIPE	BAGS
			MAINTENANCE			CONTROL	EROSION	TYPE A	CHECKS	
STATION	-	STATION	LOCATION	LF	LF	LF	EACH	EACH	SY	EACH
114+35	-	115+35	LT & RT	215	215	---	---	---	210	6
142+68	-	143+68	LT	126	126	---	---	---	250	16
142+99	-	143+39	RT	45	45	---	---	---	---	---
219+68	-	220+68	LT & RT	215	215	---	---	---	190	3
228+46	-	229+46	LT & RT	232	232	---	---	---	300	5
277+23	-	279+78	LT	---	286	286	---	---	650	---
277+25	-	279+75	RT	---	274	274	---	---	580	---
280+42	-	283+00	RT	---	278	278	---	---	450	---
280+49	-	283+00	LT	---	278	278	---	---	520	---
308+36	-	309+40	LT & RT	---	320	320	---	---	250	10
324+75	-	325+79	LT & RT	---	334	334	---	---	360	7
371+30	-	372+35	LT & RT	---	334	334	---	---	360	7
UNDISTRIBUTED				217	743	526	4	5	1,030	14
PROJECT 6220-04-75 TOTAL				1,050	3,680	2,630	4	5	5,150	68

NOTE: ALL ITEMS ARE CATEGORY 0010, UNLESS OTHERWISE NOTED.

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PERMANENT SIGNING

				634.0614	634.0616	634.0618	637.2210	637.2230	638.2602	638.3000	REMARKS
				POSTS	POSTS	POSTS	SIGNS	SIGNS	REMOVING	REMOVING	
				WOOD	WOOD	WOOD	TYPE II	TYPE II	SIGNS	SMALL SIGN	
				4X6-INCH	4X6-INCH	4X6-INCH	REFLECTIVE	REFLECTIVE	TYPE II	SUPPORTS	
STATION	OFFSET	SIGN CODE	SIGN SIZE	X 14-FT	X 16-FT	X 18-FT	H	F	EACH	EACH	
			IN x IN	EACH	EACH	EACH	SF	SF			
107+48	RT	D5-61	48"X24"	---	1	---	8.00	---	1	1	WAYSIDE 1/2 MILE, MOUNTED ON SAME POST AS W14-3
107+48	RT	W14-3	48"X36"	---	---	---	---	6.00	1	---	NO PASSING ZONE, MOUNTED ON SAME POST AS D5-61
115+07	LT	D7-68	84"X42"	---	1	1	24.50	---	1	2	ROAD TO CAMP VIC-TO-RAE COUNTY PARK 1 MILE
117+24	LT	R1-1	30"X30"	---	1	---	5.18	---	1	1	STOP
122+87	LT	W14-3	48"X36"	---	1	---	---	6.00	1	1	NO PASSING ZONE
134+07	LT	R1-1	30"X30"	---	1	---	5.18	---	1	1	STOP
134+14	RT	D5-62L	48"X24"	---	1	---	8.00	---	1	1	WAYSIDE WITH ARROW
135+52	LT	D5-62R	48"X24"	---	1	---	8.00	---	1	1	WAYSIDE WITH ARROW
156+05	LT	D5-61	48"X24"	---	1	---	8.00	---	1	1	WAYSIDE 1/2 MILE
162+29	LT	S3-1	36"X36"	---	1	---	---	9.00	1	1	SCHOOL BUS STOP AHEAD
172+84	RT	W14-3	48"X36"	---	1	---	---	6.00	1	1	NO PASSING ZONE
174+10	LT	W14-3	48"X36"	---	1	---	---	6.00	1	1	NO PASSING ZONE
180+51	RT	W2-1	30"X30"	---	1	---	---	6.25	1	1	CROSS ROAD
185+73	LT	I55-56	30"X36"	---	1	---	7.50	---	1	1	ADOPT A HIGHWAY, 'EMANUEL LUTHERAN YOUTH', ROLLUP SIGN BRACKET IS INCIDENTAL
188+10	LT	R1-1	30"X30"	---	1	---	5.18	---	1	1	STOP
188+55	RT	R1-1	30"X30"	---	1	---	5.18	---	1	1	STOP
196+37	LT	W2-1	30"X30"	---	1	---	---	6.25	1	1	CROSS ROAD
201+57	RT	W14-3	48"X36"	---	1	---	---	6.00	1	1	NO PASSING ZONE
230+49	RT	W3-5	36"X36"	---	---	1	---	9.00	1	1	SPEED REDUCTION AHEAD 45 MPH
233+57	RT	R2-1	24"X30"	---	1	---	5.00	---	1	1	SPEED LIMIT 45 MPH
233+57	RT	I2-3	66"X24"	---	1	1	11.00	---	1	2	NORTHPORT UNINCORPORATED
233+58	LT	R2-1	24"X30"	---	1	---	5.00	---	1	1	SPEED LIMIT 55 MPH
237+16	LT	W14-3	48"X36"	---	1	---	---	6.00	1	1	NO PASSING ZONE
239+70	RT	S3-1	36"X36"	---	1	---	---	9.00	1	1	SCHOOL BUS STOP AHEAD
239+71	LT	J4-1	24"X36"	---	1	---	6.00	---	1	1	WEST, WIS 54
241+29	LT	R1-1	30"X30"	---	1	---	5.18	---	1	1	STOP
241+71	RT	R1-1	30"X30"	---	1	---	5.18	---	1	1	STOP
242+29	LT	R7-1-R	18"X24"	---	1	---	3.00	---	1	1	NO PARKING ANY TIME (ARROWS)
242+45	RT	R2-1	24"X30"	---	1	---	5.00	---	---	---	SPEED LIMIT 45 MPH, MOUNTED ON SAME POST AS R7-1-L
242+45	RT	R7-1-L	18"X24"	---	---	---	3.00	---	---	---	NO PARKING ANY TIME (ARROWS), MOUNTED ON SAME POST AS R2-1
242+51	RT	R2-1	24"X30"	---	---	---	---	---	1	1	SPEED LIMIT 45 MPH, MOUNTED ON SAME POST AS R7-1-L
242+51	RT	R7-1-L	18"X24"	---	---	---	---	---	1	---	NO PARKING ANY TIME (ARROWS), MOUNTED ON SAME POST AS R2-1
243+68	RT	W11-2	30"X30"	---	---	---	---	---	1	1	PEDESTRIAN CROSSING
245+09	LT	R7-1-D	18"X24"	---	1	---	3.00	---	1	1	NO PARKING ANY TIME (ARROWS)
245+29	RT	W11-2	30"X30"	---	1	---	---	6.25	---	---	PEDESTRIAN CROSSING, MOUNTED ON SAME POST AS R7-1-D
SUBTOTAL				0	29	3	136.08	81.75	32	32	

NOTE: ALL ITEMS ARE CATEGORY 0010, UNLESS OTHERWISE NOTED.

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PERMANENT SIGNING

				634.0614	634.0616	634.0618	637.2210	637.2230	638.2602	638.3000	REMARKS
				POSTS	POSTS	POSTS	SIGNS	SIGNS	REMOVING	REMOVING	
				WOOD	WOOD	WOOD	TYPE II	TYPE II	SIGNS	SMALL SIGN	
				4X6-INCH	4X6-INCH	4X6-INCH	REFLECTIVE	REFLECTIVE	TYPE II	SUPPORTS	
STATION	OFFSET	SIGN CODE	SIGN SIZE IN x IN	X 14-FT EACH	X 16-FT EACH	X 18-FT EACH	H SF	F SF	EACH	EACH	
245+29	RT	R7-1-D	18"X24"	---	---	---	3.00	---	---	---	NO PARKING ANY TIME (ARROWS), MOUNTED ON SAME POST AS W11-2
245+40	RT	R7-1-D	18"X24"	---	---	---	---	---	1	1	NO PARKING ANY TIME (ARROWS)
246+51	LT	R2-1	24"X30"	---	1	---	5.00	---	1	1	SPEED LIMIT 45 MPH
247+50	LT	J4-1	24"X36"	---	---	---	---	---	1	1	WEST, WIS 54
248+10	LT	J4-1	24"X36"	---	1	---	6.00	---	---	---	WEST, WIS 54
248+13	RT	R7-1-R	18"X24"	1	---	---	3.00	---	1	1	NO PARKING ANY TIME (ARROWS)
248+18	LT	R7-1-D	18"X24"	---	---	---	---	---	1	1	NO PARKING ANY TIME (ARROWS)
248+67	RT	R1-1	30"X30"	1	---	---	5.18	---	1	1	STOP
248+67	RT	R7-1-L	18"X24"	---	---	---	---	---	1	---	NO PARKING ANY TIME (ARROWS)
248+90	RT	R7-1-L	18"X24"	1	---	---	3.00	---	---	---	NO PARKING ANY TIME (ARROWS)
250+30	LT	R7-1-D	18"X24"	1	---	---	3.00	---	1	1	NO PARKING ANY TIME (ARROWS)
251+50	RT	R7-1-R	18"X24"	1	---	---	3.00	---	---	---	NO PARKING ANY TIME (ARROWS)
252+06	RT	R1-1	30"X30"	1	---	---	5.18	---	1	1	STOP
252+14	LT	R7-1-D	18"X24"	---	---	---	---	---	1	1	NO PARKING ANY TIME (ARROWS)
252+20	RT	R7-1-L	18"X24"	---	---	---	---	---	1	1	NO PARKING ANY TIME (ARROWS)
252+20	RT	R7-1-L	18"X24"	1	---	---	3.00	---	---	---	NO PARKING ANY TIME (ARROWS)
253+50	RT	R2-1	24"X30"	---	1	---	5.00	---	---	---	SPEED LIMIT 45 MPH
253+74	LT	R7-1-D	18"X24"	1	---	---	3.00	---	---	---	NO PARKING ANY TIME (ARROWS)
254+50	LT	R2-1	24"X30"	1	---	---	5.00	---	1	1	SPEED LIMIT 45 MPH
254+53	RT	R2-1	24"X30"	---	---	---	---	---	1	1	SPEED LIMIT 45 MPH, MOUNTED ON SAME POST AS R7-1-R
254+53	RT	R7-1-R	18"X24"	---	---	---	---	---	1	---	NO PARKING ANY TIME (ARROWS), MOUNTED ON SAME POST AS R2-1
254+59	RT	R7-1-D	18"X24"	---	1	---	3.00	---	---	---	NO PARKING ANY TIME (ARROWS)
256+52	LT	W2-2	30"X30"	---	1	---	---	6.25	1	1	SIDE ROAD
258+00	LT	W11-2	30"X30"	---	1	---	---	6.25	---	---	PEDESTRIAN CROSSING
259+50	LT	W11-2	30"X30"	---	---	---	---	---	1	1	PEDESTRIAN CROSSING
259+50	LT	S3-1	36"X36"	---	1	---	---	9.00	1	1	SCHOOL BUS STOP AHEAD
260+54	LT	R1-1	30"X30"	---	1	---	5.18	---	1	1	STOP
260+79	RT	R2-1	24"X30"	---	1	---	5.00	---	1	1	SPEED LIMIT 55 MPH
261+55	LT	R2-1	24"X30"	---	1	---	5.00	---	1	1	SPEED LIMIT 45 MPH
261+55	LT	I2-3	66"X24"	---	1	1	11.00	---	1	2	NORTHPORT UNINCORPORATED
264+51	LT	W3-5	36"X36"	---	---	1	---	9.00	1	1	SPEED REDUCTION AHEAD 45 MPH
267+34	LT	R1-1	30"X30"	---	1	---	5.18	---	1	1	STOP
270+28	RT	J4-1	24"X36"	---	1	---	6.00	---	1	1	EAST, WIS 54
274+71	LT	R7-1-D	18"X24"	---	1	---	3.00	---	1	1	NO PARKING ANY TIME (ARROWS)
274+73	RT	R7-1-D	18"X24"	---	1	---	3.00	---	1	1	NO PARKING ANY TIME (ARROWS)
SUBTOTAL				9	15	2	98.72	30.50	26	25	

NOTE: ALL ITEMS ARE CATEGORY 0010, UNLESS OTHERWISE NOTED.

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PERMANENT SIGNING

				634.0614	634.0616	634.0618	637.2210	637.2230	638.2602	638.3000	REMARKS
				POSTS	POSTS	POSTS	SIGNS	SIGNS	REMOVING	REMOVING	
				WOOD	WOOD	WOOD	TYPE II	TYPE II	SIGNS	SMALL SIGN	
				4X6-INCH	4X6-INCH	4X6-INCH	REFLECTIVE	REFLECTIVE	TYPE II	SUPPORTS	
STATION	OFFSET	SIGN CODE	SIGN SIZE IN x IN	X 14-FT EACH	X 16-FT EACH	X 18-FT EACH	H SF	F SF	EACH	EACH	
278+00	RT	R7-1-D	18"X24"	1	---	---	3.00	---	1	---	NO PARKING ANY TIME (ARROWS)
279+53	LT	W5-52-L	12"X36"	---	---	---	---	---	1	1	BRIDGE HASH MARKS
279+53	RT	W5-52-R	12"X36"	---	---	---	---	---	1	1	BRIDGE HASH MARKS
279+55	RT	W14-3	48"X36"	---	1	---	---	6.00	1	1	NO PASSING ZONE
279+70	LT	R7-1-D	18"X24"	---	1	---	3.00	---	1	1	NO PARKING ANY TIME (ARROWS)
280+71	LT	W5-52-R	12"X36"	---	---	---	---	---	1	1	BRIDGE HASH MARKS
280+72	RT	W5-52-L	12"X36"	---	---	---	---	---	1	1	BRIDGE HASH MARKS
284+50	LT	R7-1-D	18"X24"	---	1	---	3.00	---	1	1	NO PARKING ANY TIME (ARROWS)
284+57	RT	R7-1-D	18"X24"	---	1	---	3.00	---	1	1	NO PARKING ANY TIME (ARROWS)
289+53	LT	R7-1-D	18"X24"	---	1	---	3.00	---	1	1	NO PARKING ANY TIME (ARROWS)
289+57	RT	R7-1-D	18"X24"	---	1	---	3.00	---	1	1	NO PARKING ANY TIME (ARROWS)
295+35	LT	R7-1-D	18"X24"	---	1	---	3.00	---	1	1	NO PARKING ANY TIME (ARROWS)
295+39	RT	R7-1-D	18"X24"	---	1	---	3.00	---	1	1	NO PARKING ANY TIME (ARROWS)
300+41	LT	R7-1-D	18"X24"	---	1	---	3.00	---	1	1	NO PARKING ANY TIME (ARROWS)
300+42	RT	R7-1-D	18"X24"	---	1	---	3.00	---	1	1	NO PARKING ANY TIME (ARROWS)
305+27	LT	R7-1-D	18"X24"	---	1	---	3.00	---	1	1	NO PARKING ANY TIME (ARROWS)
305+28	RT	R7-1-D	18"X24"	---	1	---	3.00	---	1	1	NO PARKING ANY TIME (ARROWS)
315+34	LT	R7-1-D	18"X24"	---	1	---	3.00	---	1	1	NO PARKING ANY TIME (ARROWS)
315+34	RT	R7-1-D	18"X24"	---	1	---	3.00	---	1	1	NO PARKING ANY TIME (ARROWS)
325+50	LT	R7-1-D	18"X24"	---	1	---	3.00	---	---	---	NO PARKING ANY TIME (ARROWS)
325+50	RT	R7-1-D	18"X24"	---	1	---	3.00	---	---	---	NO PARKING ANY TIME (ARROWS)
335+50	LT	R7-1-D	18"X24"	---	1	---	3.00	---	---	---	NO PARKING ANY TIME (ARROWS)
335+50	RT	R7-1-D	18"X24"	---	1	---	3.00	---	---	---	NO PARKING ANY TIME (ARROWS)
341+97	LT	W14-3	48"X36"	---	1	---	---	6.00	1	1	NO PASSING ZONE
348+00	LT	R7-1-L	18"X24"	---	1	---	3.00	---	---	---	NO PARKING ANY TIME (ARROWS)
348+00	RT	R7-1-R	18"X24"	---	1	---	3.00	---	---	---	NO PARKING ANY TIME (ARROWS)
353+03	RT	I2-3	78"X24"	---	1	1	13.00	---	1	2	NEW LONDON POPULATION 7295
365+31	RT	W14-3	48"X36"	---	1	---	---	6.00	1	1	NO PASSING ZONE
375+42	RT	W3-5	36"X36"	---	---	1	---	9.00	1	1	SPEED REDUCTION AHEAD 45 MPH
376+38	RT	W3-3	36"X36"	---	---	1	---	9.00	1	1	SIGNAL AHEAD
376+40	LT	W14-3	48"X36"	---	1	---	---	6.00	1	1	NO PASSING ZONE, MOUNTED ON SAME POST AS R12-55
376+40	LT	R12-55	48"X18"	---	---	---	6.00	---	1	---	45 TON BRIDGE 6 MILES AHEAD, MOUNTED ON SAME POST AS W14-3
379+16	LT	I2-2	72"X15"	1	1	---	7.50	---	1	1	WAUPACA 19
379+51	RT	J1-2	48"X51"	---	---	1	8.50	---	1	1	JUNCTION, BUSINESS, US 45; JUNCTION, COUNTY D
381+77	LT	R1-1	30"X30"	---	1	---	5.18	---	1	1	STOP
382+51	RT	R2-1	24"X30"	---	1	---	5.00	---	1	1	SPEED LIMIT 45 MPH
SUBTOTAL				2	27	4	105.18	42.00	30	29	
PROJECT 6220-04-75 TOTAL				11	71	9	339.98	154.25	88	86	

NOTE: ALL ITEMS ARE CATEGORY 0010, UNLESS OTHERWISE NOTED.

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TRAFFIC CONTROL

643.0100 TRAFFIC CONTROL 6220-04-75 EACH	
PROJECT	
6220-04-75	1
PROJECT 6220-04-75 TOTAL	
	1

TRAFFIC CONTROL SIGNS PCMS

643.1050 TRAFFIC CONTROL SIGNS PCMS			
LOCATION	DAYS IN SERVICE	NO.	DAY
SITE 1	7	1	7
SITE 2	7	1	7
UNDISTRIBUTED			2
PROJECT 6220-04-75 TOTAL			
			16

TRAFFIC CONTROL COVERING SIGNS

643.0920 TRAFFIC CONTROL COVERING SIGNS				
SIGN DETAIL NUMBER	PLAN SHEET	SIGN COVERED	NO. OF COVERING CYCLES	TYPE II EACH
16	DETOUR OVERVIEW	STRAIGHT ARROW	1	1
2	INTERCHANGE DETAIL	WAUPACA	1	1
3	INTERCHANGE DETAIL	WAUPACA	1	1
4	INTERCHANGE DETAIL	WEST, WIS 54, LEFT ARROW	1	1
5	INTERCHANGE DETAIL	STRAIGHT ARROW	1	1
7	INTERCHANGE DETAIL	WAUPACA STRAIGHT AHEAD	1	1
8	INTERCHANGE DETAIL	WEST, WIS 54, STRAIGHT ARROW	1	1
9	INTERCHANGE DETAIL	WAUPACA	1	1
10	INTERCHANGE DETAIL	WAUPACA	1	1
11	INTERCHANGE DETAIL	RIGHT ARROW	1	1
PROJECT 6220-04-75 TOTAL				
				10

NOTE: ALL ITEMS ARE CATEGORY 0010, UNLESS OTHERWISE NOTED.

TRAFFIC CONTROL

643.0420 TRAFFIC CONTROL BARRICADES TYPE III		643.0705 TRAFFIC CONTROL WARNING LIGHTS TYPE A		643.0900 TRAFFIC CONTROL SIGNS		643.2000 TRAFFIC CONTROL DETOUR 6220-04-75 EACH		643.3000 TRAFFIC CONTROL DETOUR SIGNS	
LOCATION	DAYS IN SERVICE	NO.	DAY	NO.	DAY	NO.	DAY	NO.	DAY
STAGE 1	12	22	264	20	240	29	348	1	124
SUB TOTAL		22	264	20	240	29	348	1	124
STAGE 2	63	----	----	----	----	11	693	----	----
SUB TOTAL		0	0	0	0	11	693	0	0
STAGE 1&2									
UNDISTRIBUTED		----	36		30		149	----	212
PROJECT 6220-04-75 TOTAL			300		270		1,190	1	1,700

LOCATING NO-PASSING ZONES

648.0100 LOCATING NO-PASSING ZONES		
STATION	- STATION	MI
100+36	- 382+86	5.35
PROJECT 6220-04-75 TOTAL		
		5.35

CONSTRUCTION STAKING

650.6000 PIPE CULVERTS		650.8000 RESURFACING REFERENCE		650.9910 SUPPLEMENTAL CONTROL 6220-04-75	
STATION	- STATION	LOCATION	EACH	LF	LS
114+86		STH 54, CROSS	4	---	---
143+19		STH 54, CROSS	2	---	---
220+19		STH 54, CROSS	2	---	---
228+96		STH 54, CROSS	2	---	---
308+88		STH 54, CROSS	1	---	---
325+27		STH 54, CROSS	1	---	---
371+82		STH 54, CROSS	1	---	---
100+36	- 279+66	STH 54	---	17,931	---
280+59	- 382+86	STH 54	---	10,228	---
6220-04-75			---	---	1
PROJECT 6220-04-75 TOTAL			13	28,159	1

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PAVEMENT MARKING ITEMS

			646.0106	646.2304.S	646.2308.S	649.0402	649.0403
			PAVEMENT MARKING	PAVEMENT MARKING	PAVEMENT MARKING	TEMPORARY PAVEMENT MARKING	TEMPORARY PAVEMENT MARKING
			EPOXY	GROOVED WET	GROOVED WET	PAINT	EPOXY
			4-INCH	REFLECTIVE	REFLECTIVE	4-INCH	4-INCH
			YELLOW	WHITE	WHITE	YELLOW	YELLOW
STATION	- STATION	TYPE	LF	LF	LF	LF	LF
100+36	- 107+50	EDGE LINE, CENTERLINE (SOLID & DASHED)	895	1,430	---	2,315	775
107+50	- 122+87	EDGE LINE(SOLID & DASHED), CENTERLINE (DASHED)	385	2,900	---	370	125
122+87	- 133+00	EDGE LINE, CENTERLINE (SOLID & DASHED)	1,270	2,030	---	3,290	1,100
133+00	- 162+32	EDGE LINE, CENTERLINE (DOUBLE SOLID)	5,870	5,750	200	17,600	5,870
162+32	- 172+85	EDGE LINE, CENTERLINE (SOLID & DASHED)	1,320	2,110	---	3,420	1,140
172+85	- 174+11	EDGE LINE, CENTERLINE (DASHED)	160	260	---	410	140
174+11	- 184+93	EDGE LINE, CENTERLINE (SOLID & DASHED)	1,360	2,170	---	3,510	1,170
184+93	- 191+53	EDGE LINE, CENTERLINE (DOUBLE SOLID)	1,320	1,070	260	3,960	1,320
191+53	- 201+57	EDGE LINE, CENTERLINE (SOLID & DASHED)	1,260	2,010	---	3,260	1,090
201+57	- 237+16	EDGE LINE, CENTERLINE (DASHED)	890	7,120	---	855	285
237+16	- 244+56	EDGE LINE, CENTERLINE (SOLID & DASHED)	925	1,230	100	2,400	800
244+56	- 270+39	EDGE LINE, CENTERLINE (DOUBLE SOLID)	5,170	4,190	---	15,500	5,170
270+39	- 279+00	EDGE LINE, CENTERLINE (SOLID & DASHED)	1,080	1,730	---	2,790	930
279+00	- 342+00	EDGE LINE, CENTERLINE (DASHED)	1,580	12,600	---	1,520	510
342+00	- 350+00	EDGE LINE, CENTERLINE (SOLID & DASHED)	1,000	1,600	---	2,600	870
350+00	- 357+00	EDGE LINE, CENTERLINE (DOUBLE SOLID)	1,400	1,400	---	1,400	1,400
357+00	- 365+31	EDGE LINE, CENTERLINE (SOLID & DASHED)	1,040	1,670	---	2,700	900
365+31	- 376+40	EDGE LINE, CENTERLINE (DASHED)	280	2,220	---	270	90
376+40	- 377+50	EDGE LINE, CENTERLINE (SOLID & DASHED)	140	220	---	360	120
377+50	- 382+86	EDGE LINE, CENTERLINE (DOUBLE SOLID)	1,080	930	---	3,220	1,080
PROJECT 6220-04-75 TOTAL			28,425	54,640	560	71,750	24,885

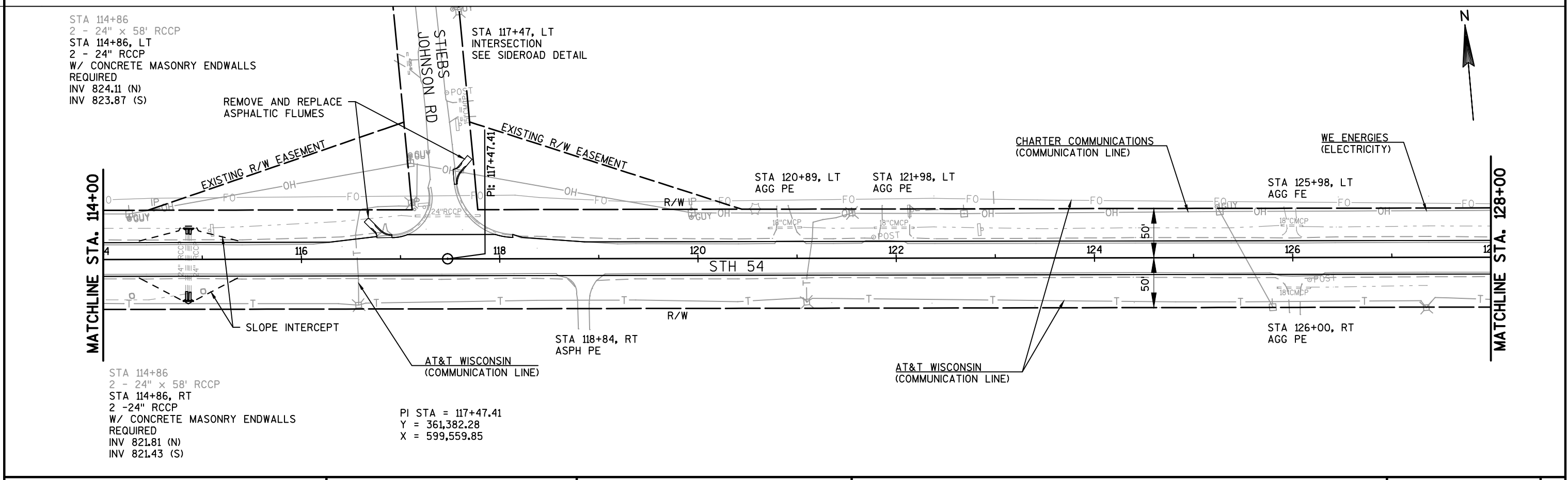
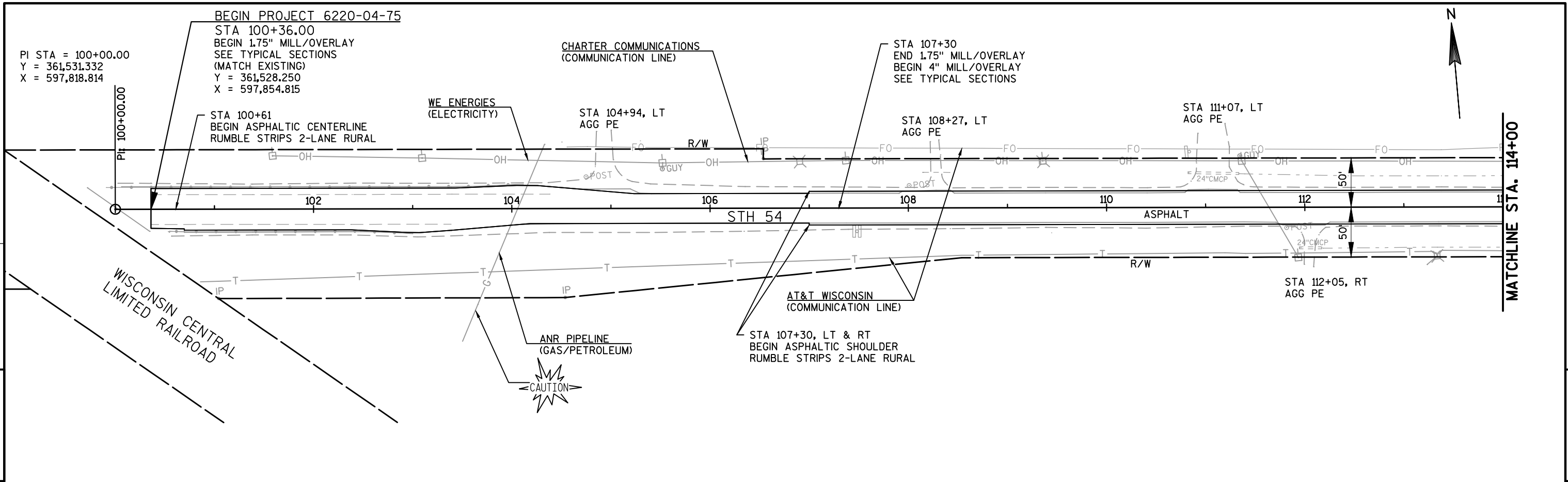
APPLY TEMPORARY PAVEMENT MARKING PAINT FOR CENTERLINE ON MILLED SURFACES AND LOWER ASPHALT LAYER. APPLY TEMPORARY PAVEMENT MARKING EPOXY FOR CENTERLINE ON FINAL PAVED SURFACE. AFTER CENTERLINE RUMBLE STRIP INSTALLATION, APPLY PAVEMENT MARKING EPOXY OVER TEMPORARY EPOXY AND RUMBLE STRIP.

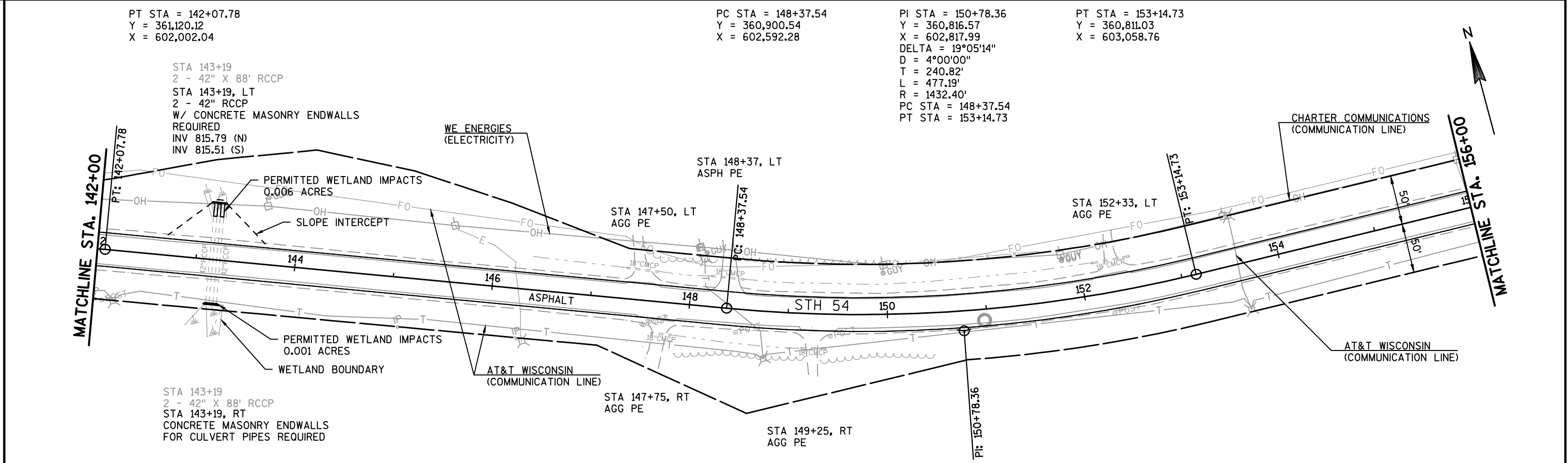
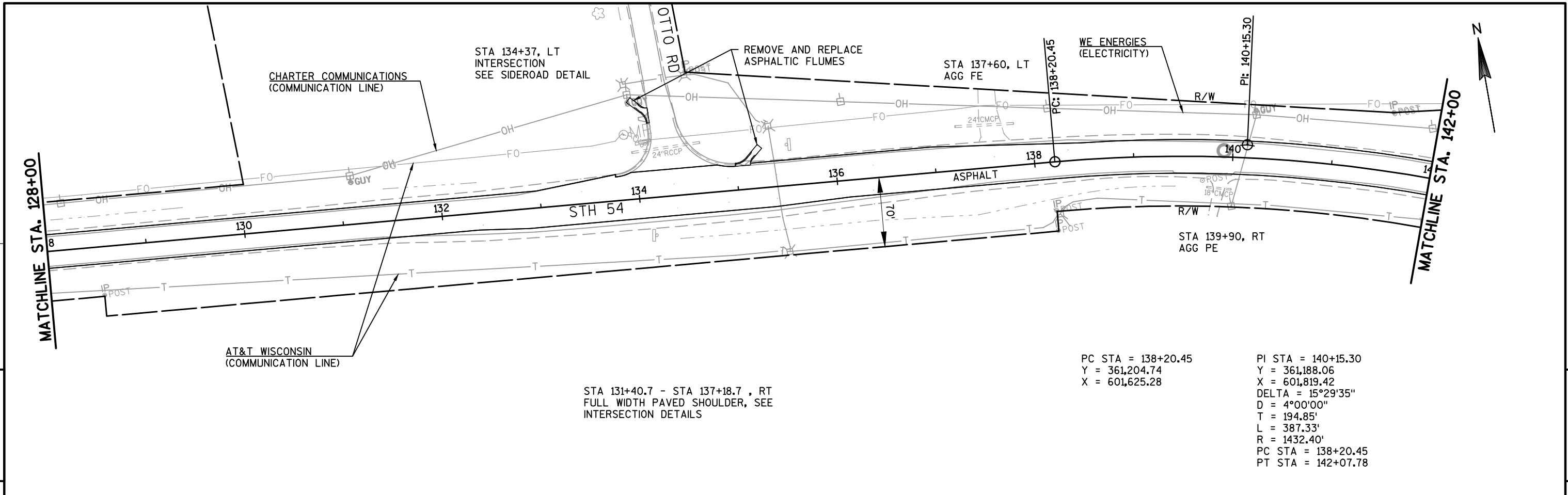
NOTE: ALL ITEMS ARE CATEGORY 0010, UNLESS OTHERWISE NOTED.

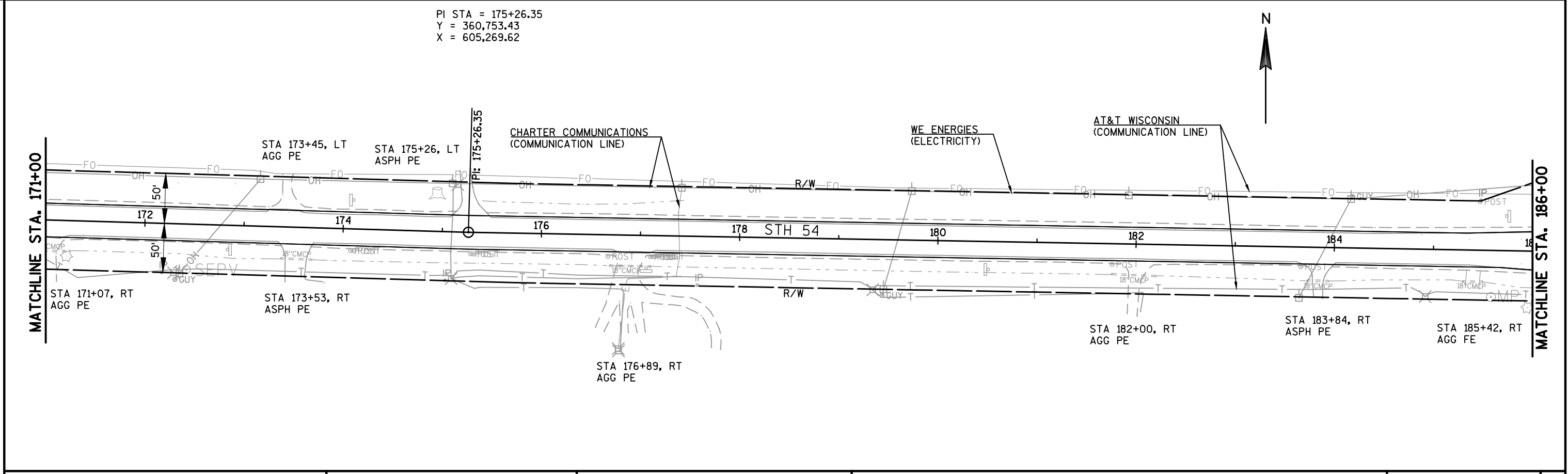
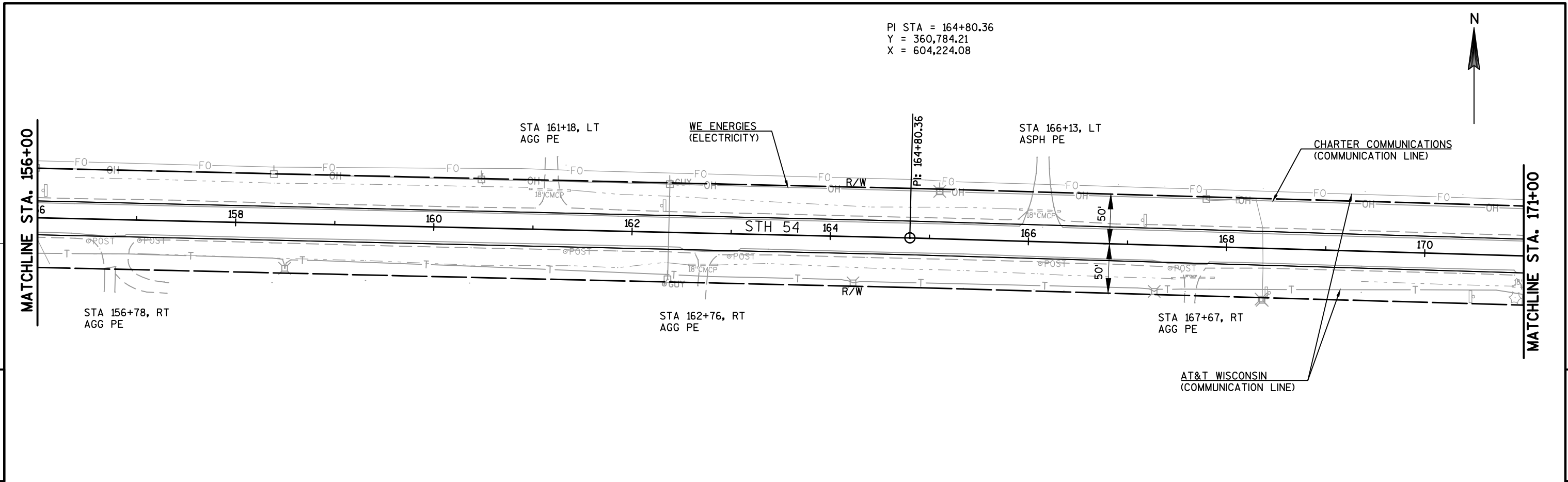
SAWING PAVEMENT

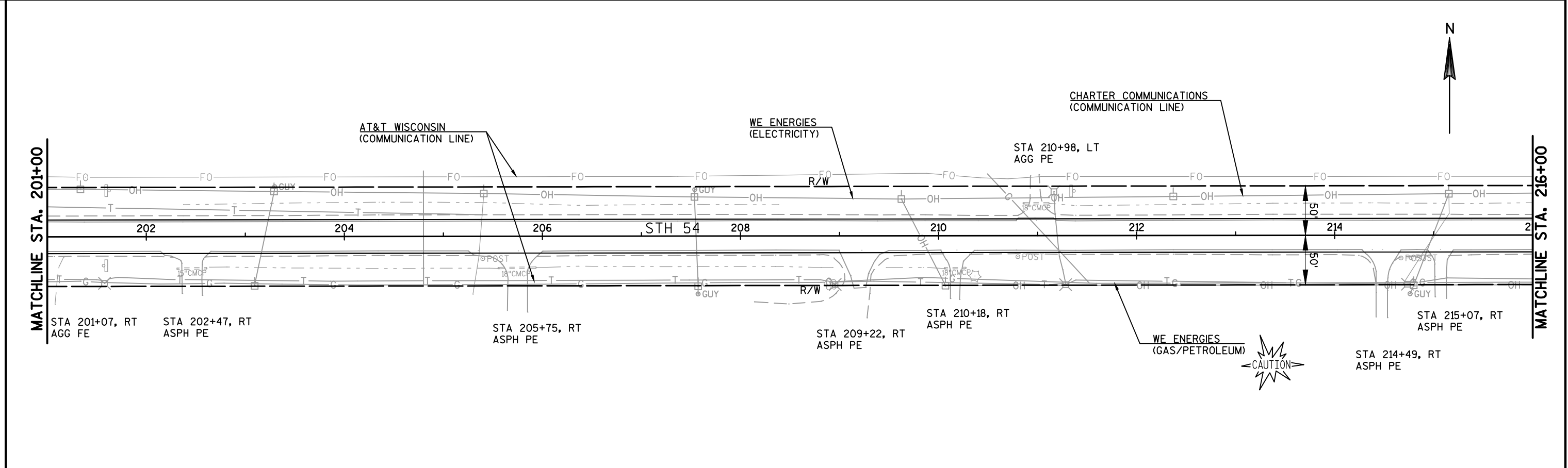
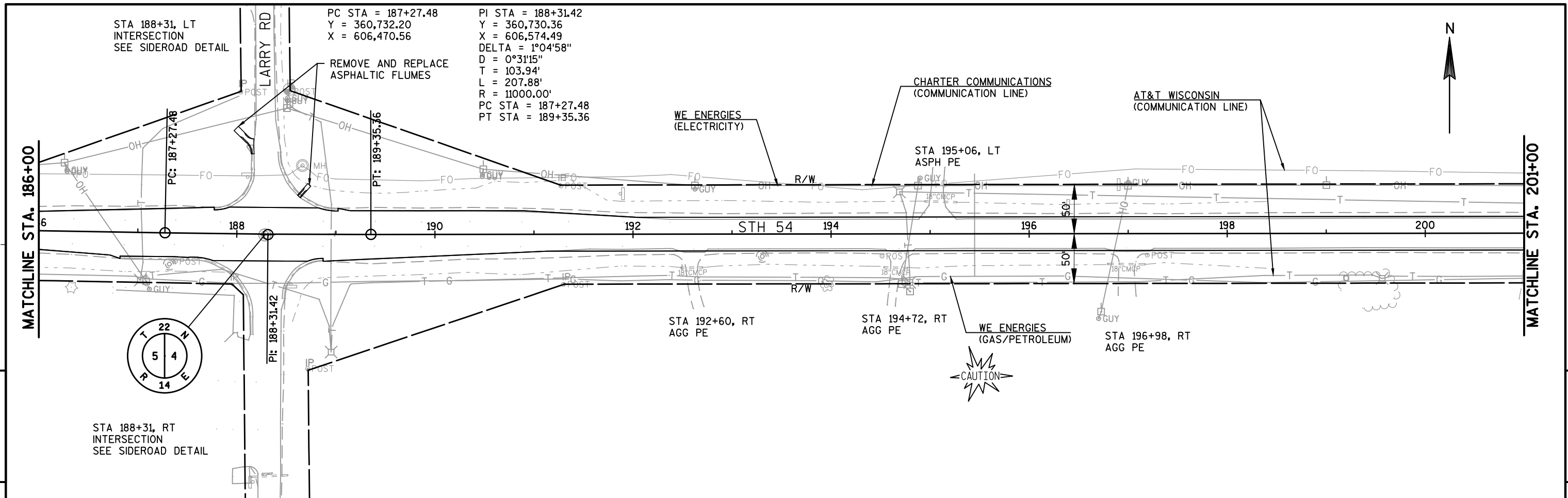
		690.0150	690.0250
		SAWING ASPHALT	SAWING CONCRETE
STATION	LOCATION	LF	LF
100+36	STH 54	40	---
117+47	STIEBS JOHNSON RD INT.	89	---
118+84	ASPHALT PE, RT	32	---
134+37	OTTO RD INT.	88	---
148+37	ASPHALT PE, LT	27	---
166+13	ASPHALT PE, LT	36	---
173+53	ASPHALT PE, RT	29	---
175+26	ASPHALT PE, LT	32	---
183+84	ASPHALT PE, RT	24	---
188+31	LARRY RD (NORTH) INT.	90	---
188+31	LARRY RD (SOUTH) INT.	97	---
195+06	ASPHALT PE, LT	30	---
202+47	ASPHALT PE, RT	34	---
205+75	ASPHALT PE, RT	54	---
209+22	ASPHALT PE, RT	38	---
210+18	ASPHALT PE, RT	26	---
214+49	ASPHALT PE, RT	31	---
215+07	ASPHALT PE, RT	20	---
217+26	ASPHALT PE, LT	31	---
219+36	ASPHALT PE, RT	26	---
234+03	ASPHALT PE, LT	23	---
234+83	ASPHALT PE, LT	21	---
237+98	ASPHALT CE, LT	62	---
241+49	TANK RD INT.	99	---
241+49	CHURCH ST INT.	88	---
248+47	BROADWAY ST INT.	53	---
251+88	FERRY ST INT.	55	---
257+34	ASPHALT PE, RT	34	---
260+80	GORGES RD INT.	96	---
267+57	MADDEN RD INT.	83	---
308+38	STH 54, CULVERT REPLACEMENT	10	20
309+38	STH 54, CULVERT REPLACEMENT	10	20
324+77	STH 54, CULVERT REPLACEMENT	10	20
325+77	STH 54, CULVERT REPLACEMENT	10	20
371+32	STH 54, CULVERT REPLACEMENT	10	20
372+32	STH 54, CULVERT REPLACEMENT	10	20
381+91	JEANNE ST INT.	108	---
382+86	STH 54	41	---
PROJECT 6220-04-75 TOTAL		1,697	120

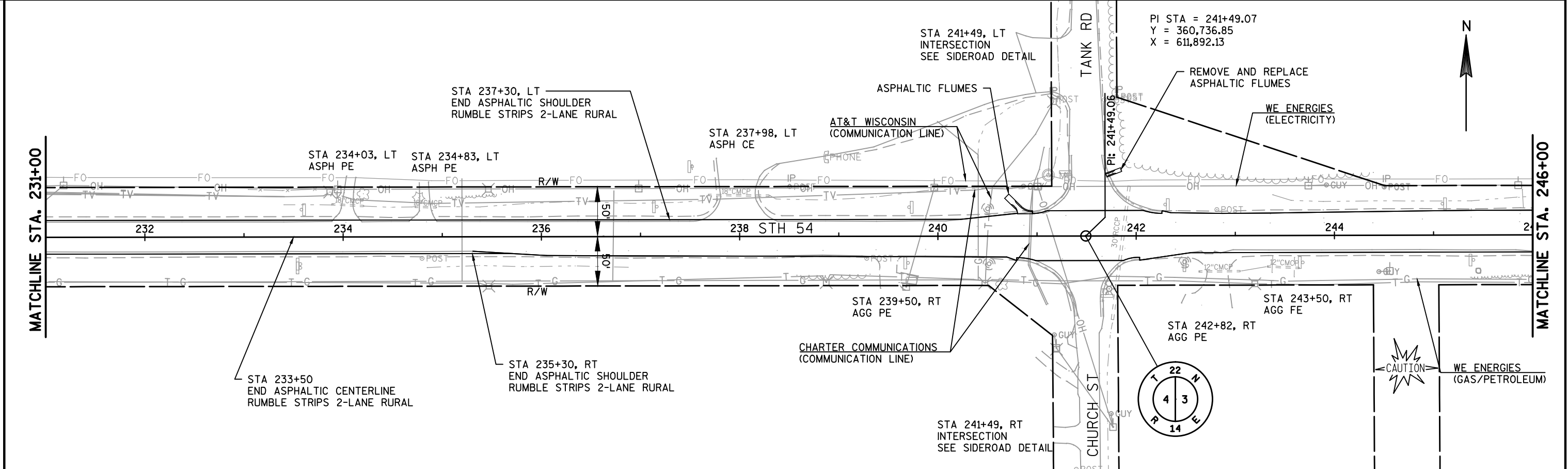
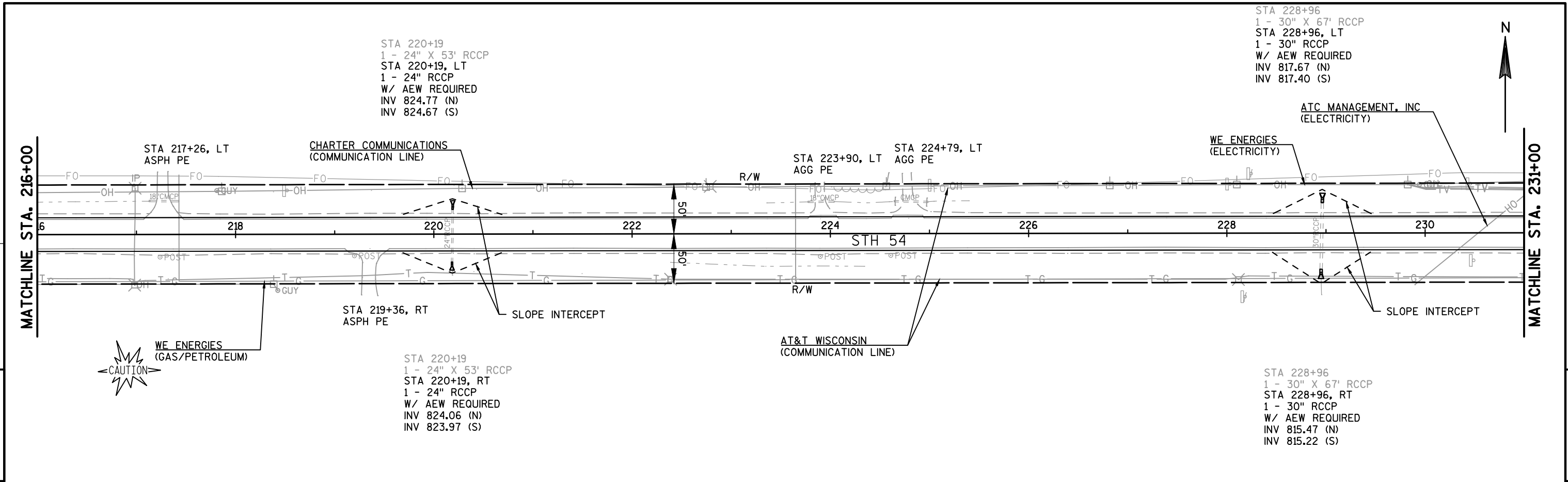
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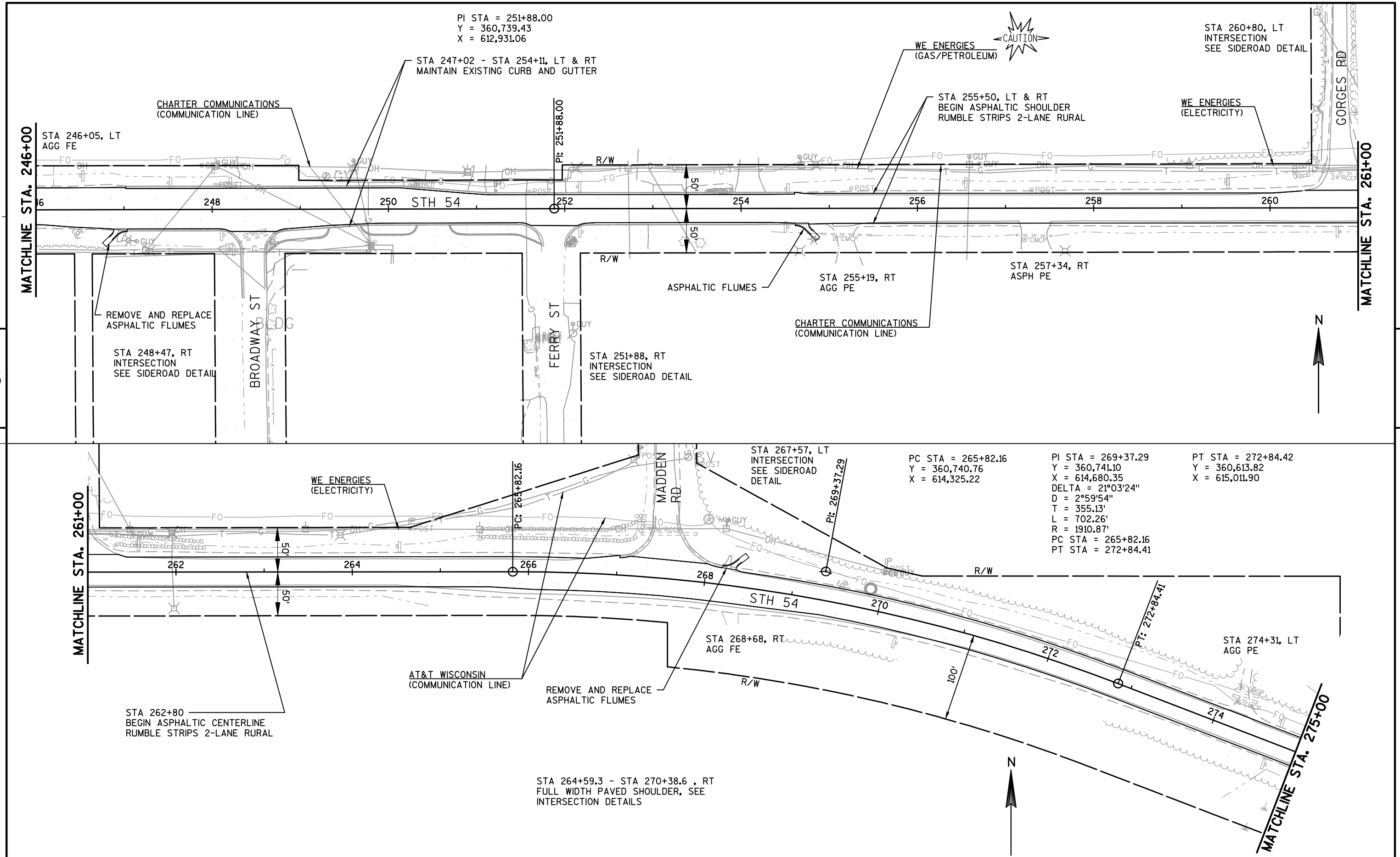




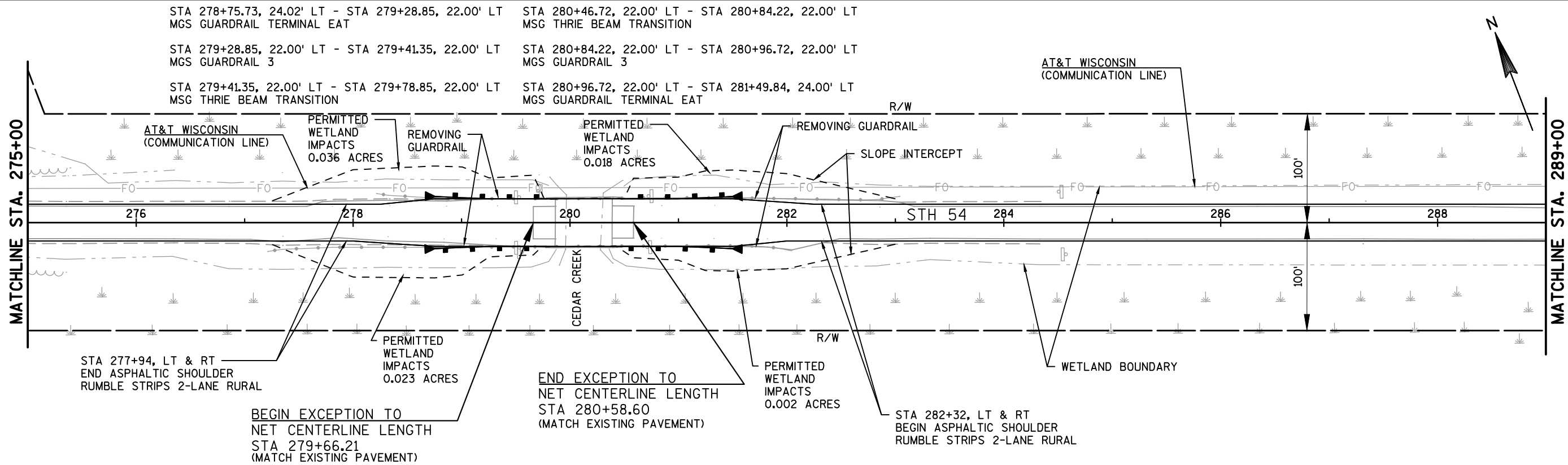






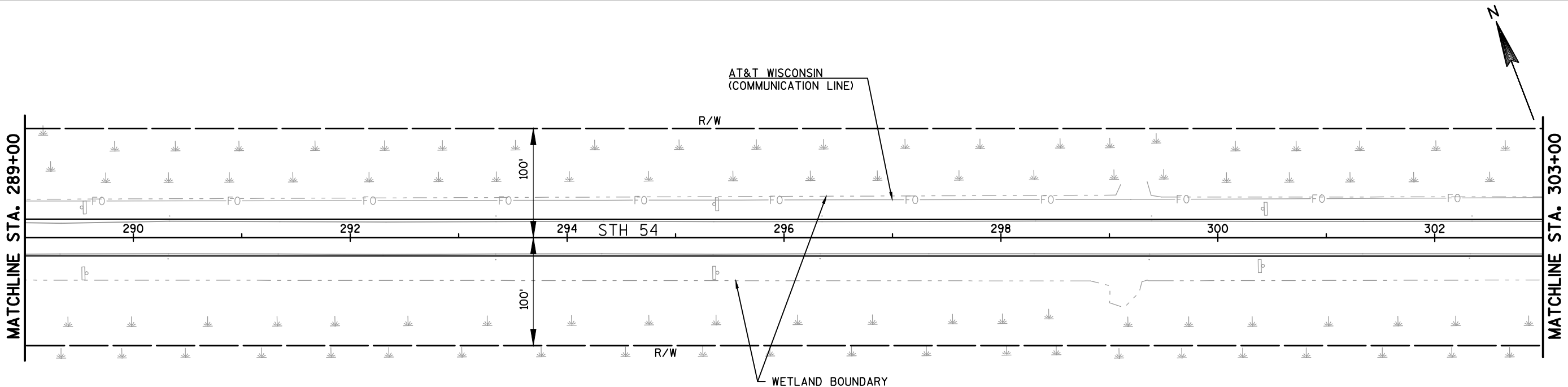


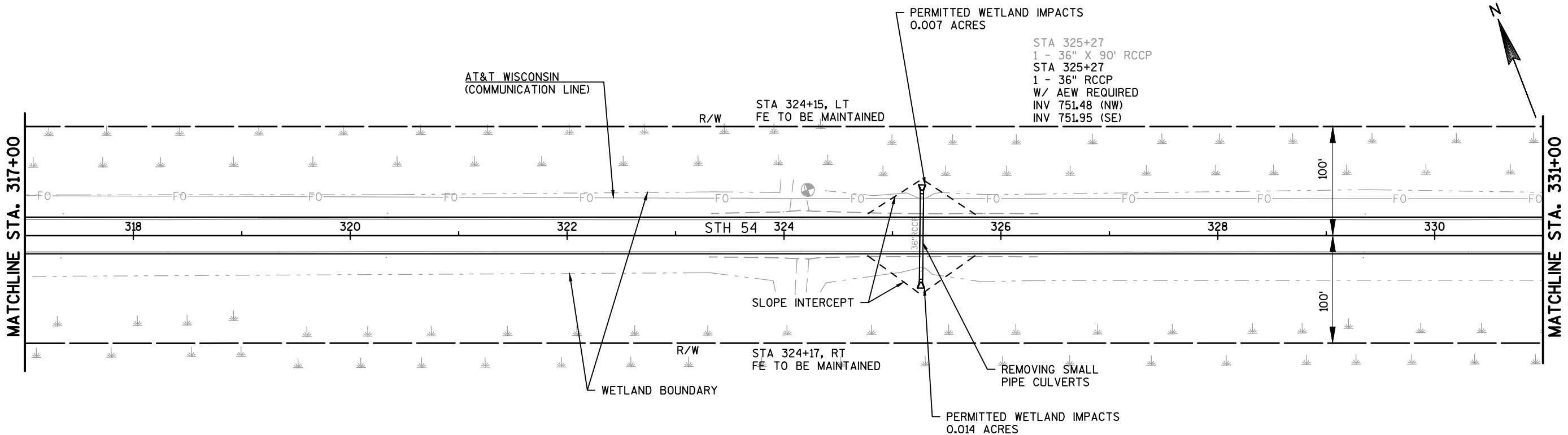
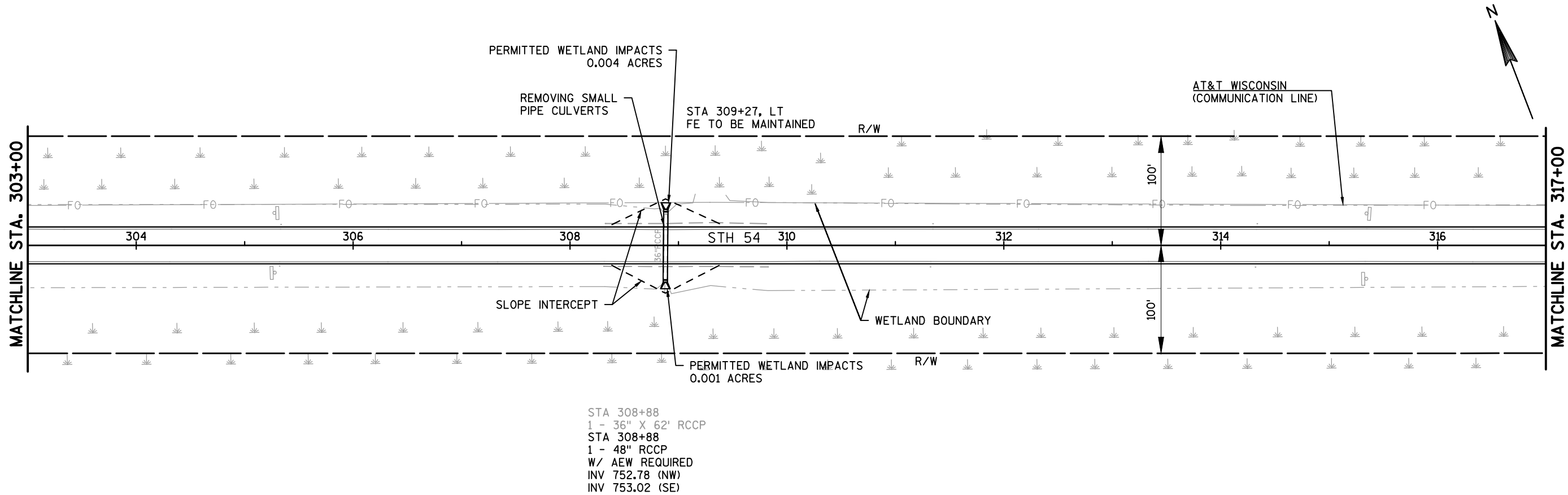
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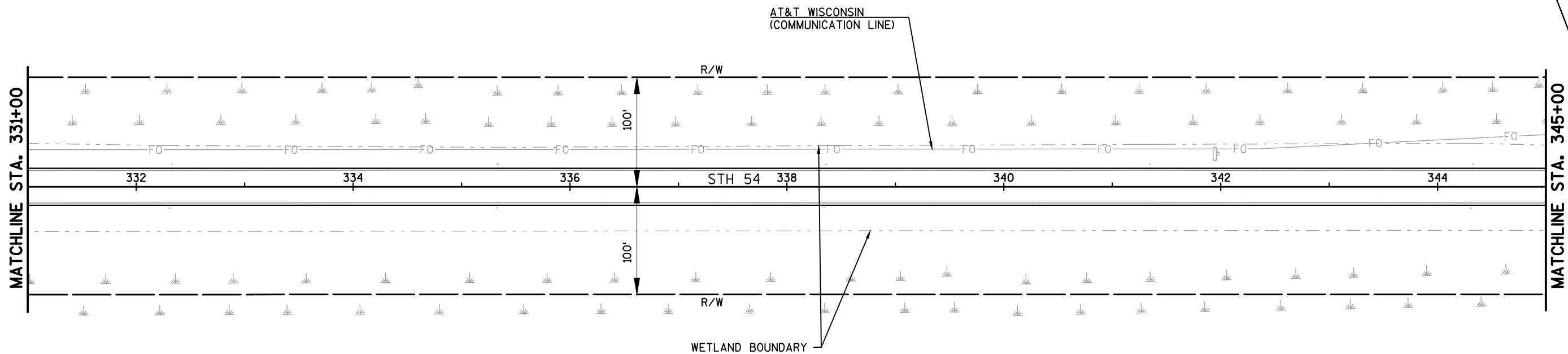


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STA 278+75.42, 24' RT - STA 279+28.54, 22.00' RT MGS GUARDRAIL TERMINAL EAT	STA 280+46.71, 22.00' RT - STA 280+84.21, 22.00' RT MSG THRIE BEAM TRANSITION
STA 279+28.54, 22.00' RT - STA 279+41.04, 22.00' RT MGS GUARDRAIL 3	STA 280+84.21, 22.00' RT - STA 280+96.71, 22.00' RT MGS GUARDRAIL 3
STA 279+41.04, 22.00' RT - STA 279+78.54, 22.00' RT MSG THRIE BEAM TRANSITION	STA 280+96.71, 22.00' RT - STA 281+49.83, 24' RT MGS GUARDRAIL TERMINAL EAT



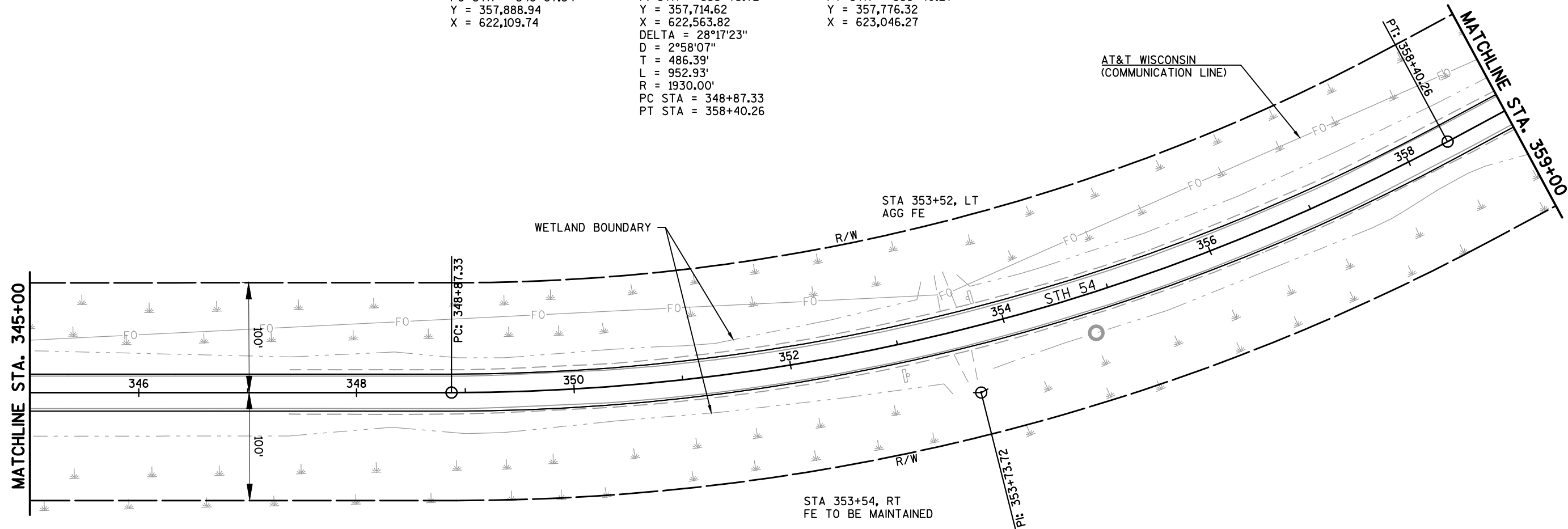




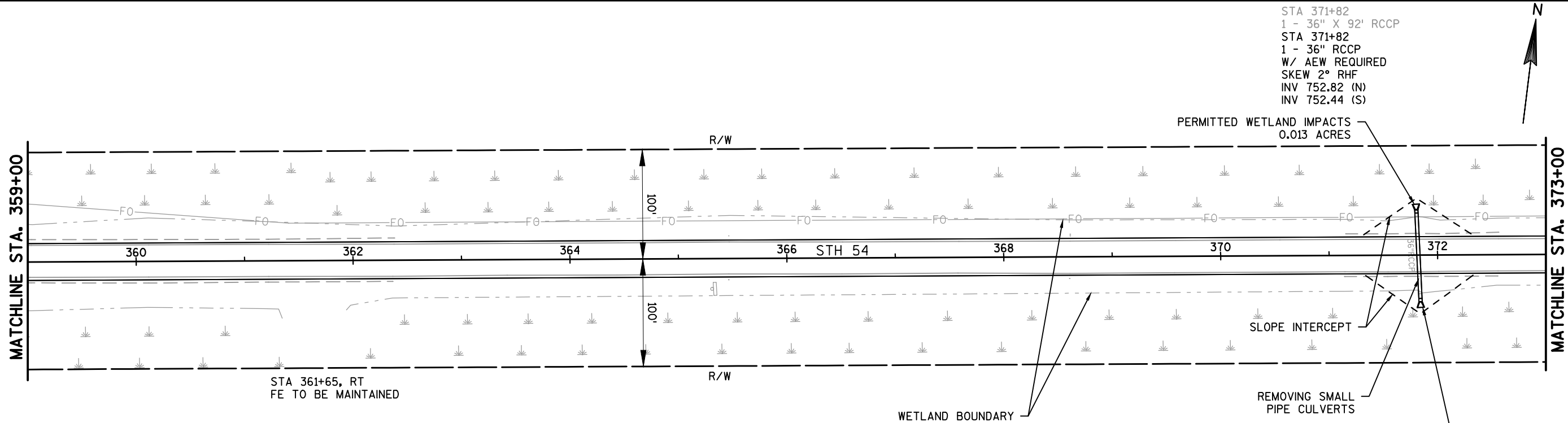
PC STA = 348+87.34
Y = 357,888.94
X = 622,109.74

PI STA = 353+73.72
Y = 357,714.62
X = 622,563.82
DELTA = 28°17'23"
D = 2°58'07"
T = 486.39'
L = 952.93'
R = 1930.00'
PC STA = 348+87.33
PT STA = 358+40.26

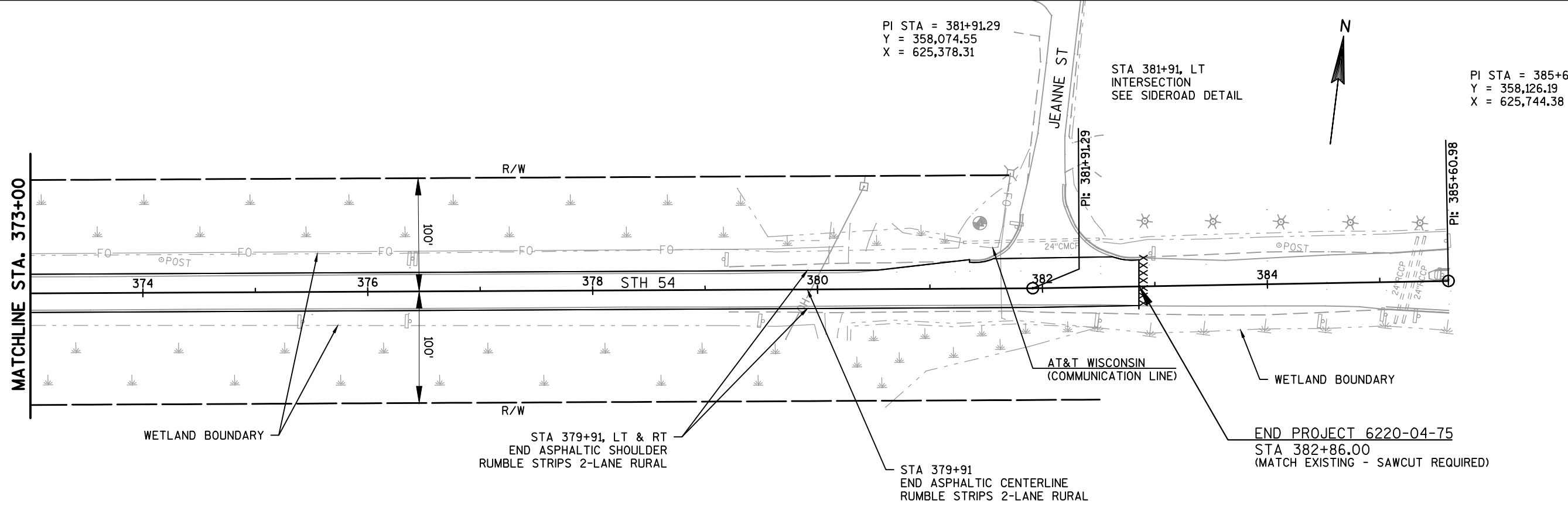
PT STA = 358+40.27
Y = 357,776.32
X = 623,046.27



5



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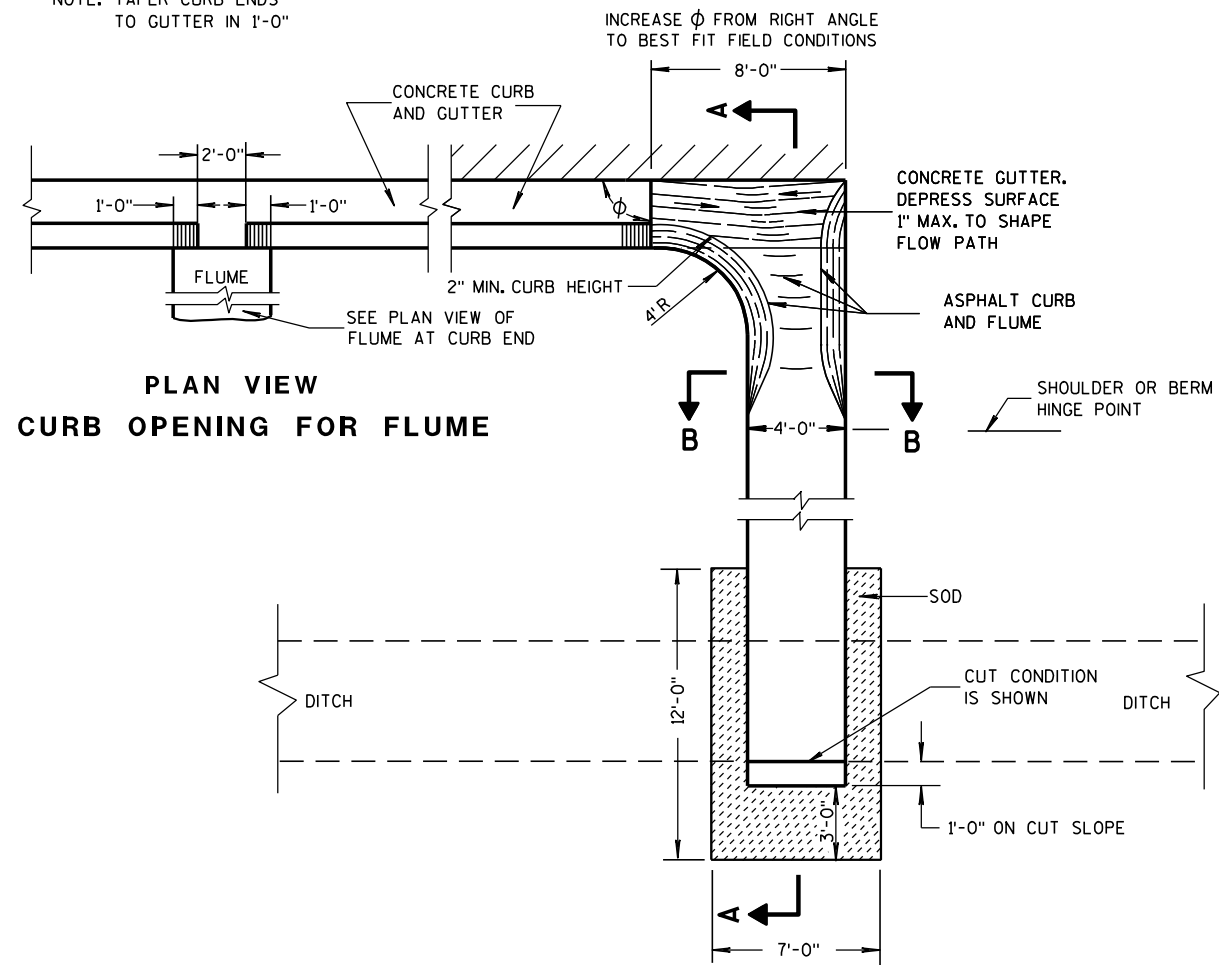


Standard Detail Drawing List

08D04-05	CONCRETE SURFACE DRAINS & ASPHALTIC FLUMES
08E09-06	SILT FENCE
08F01-11	APRON ENDWALLS FOR CULVERT PIPE
08F04-07	JOINT TIES FOR CONCRETE PIPE AND CONCRETE COLLAR DETAIL
08F10-01	CONCRETE MASONRY ENDWALLS FOR CULVERT PIPE AND PIPE ARCH
13A10-01A	2-LANE RURAL SHOULDER RUMBLE STRIP, MILLING
13A10-01B	2-LANE RURAL SHOULDER RUMBLE STRIP, MILLING
13A10-01C	2-LANE RURAL SHOULDER RUMBLE STRIP, MILLING
13A10-01D	2-LANE RURAL SHOULDER RUMBLE STRIP, MILLING
13A11-02A	2-LANE RURAL CENTER LINE RUMBLE STRIP, MILLING
13A11-02B	2-LANE RURAL CENTER LINE RUMBLE STRIP, MILLING
14B29-01	SAFETY EDGE
14B42-03A	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-03B	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-03C	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B44-02A	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B44-02B	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B44-02C	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)
15A03-02A	FLEXIBLE MARKER POST FOR CULVERT END
15A03-02B	FLEXIBLE MARKER POST FOR CULVERT END
15C02-06A	BARRICADES AND SIGNS FOR MAINLINE CLOSURES
15C02-06B	BARRICADES AND SIGNS FOR MAINLINE CLOSURES
15C02-06C	DETOUR SIGNING FOR MAINLINE CLOSURES
15C03-03	BARRICADES AND SIGNS FOR SIDEROAD CLOSURES
15C04-03	TRAFFIC CONTROL, ADVANCE WARNING SIGNS 45 M. P. H. OR GREATER TWO-WAY UNDIVIDED ROAD OPEN TO TRAFFIC
15C08-16A	PAVEMENT MARKING (MAINLINE)
15C08-16B	PAVEMENT MARKING (INTERSECTIONS)
15C12-04	TRAFFIC CONTROL FOR LANE CLOSURE (SUITABLE FOR MOVING OPERATIONS)
15C19-03A	MOVING PAVEMENT MARKING OPERATION TWO-LANE TWO-WAY ROADWAY
15D28-03	TRAFFIC CONTROL, WORK ON SHOULDER OR PARKING LANE, UNDIVIDED ROADWAY
16A01-06	LANDMARK REFERENCE MONUMENTS AND COVERS

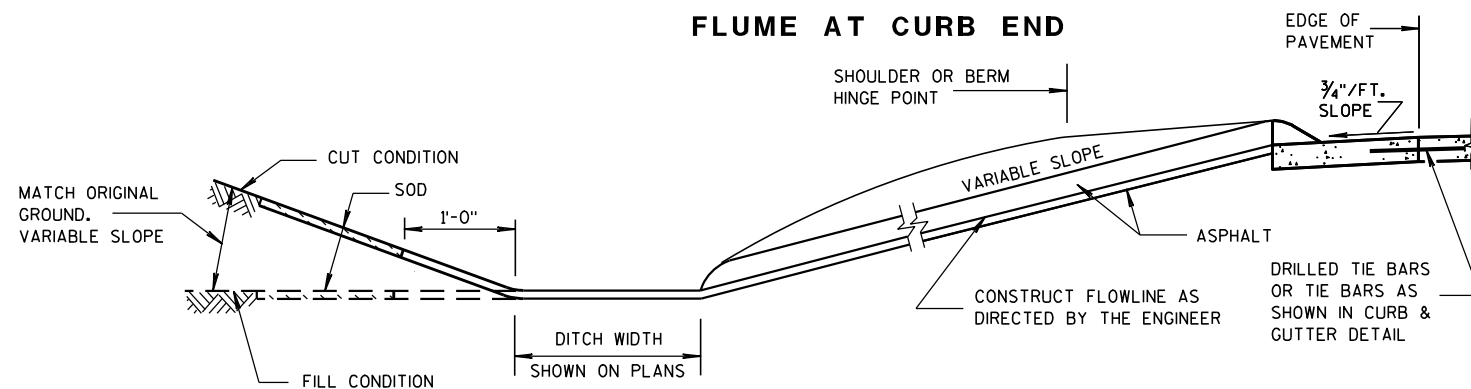
ASPHALTIC FLUME

NOTE: TAPER CURB ENDS
TO GUTTER IN 1'-0"

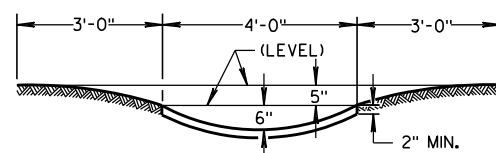


PLAN VIEW
CURB OPENING FOR FLUME

PLAN VIEW
FLUME AT CURB END



SECTION A-A



SECTION B-B

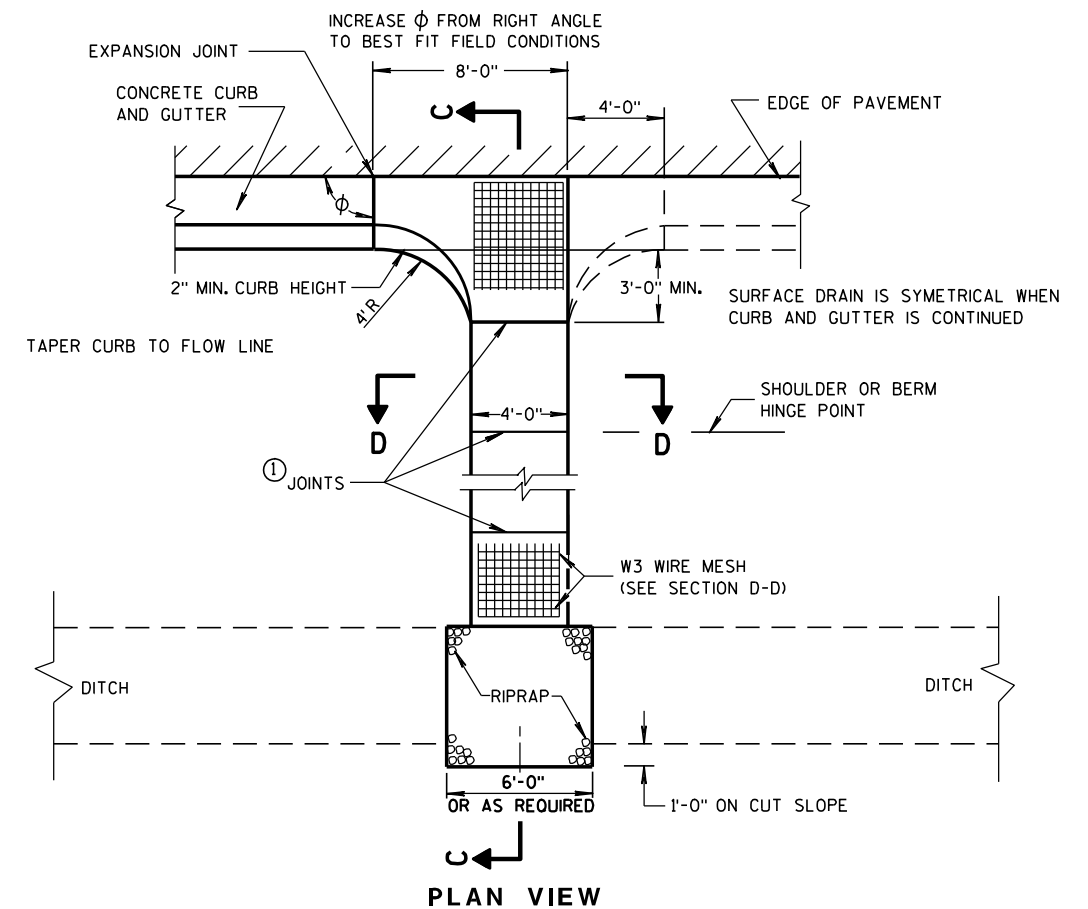
GENERAL NOTES

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

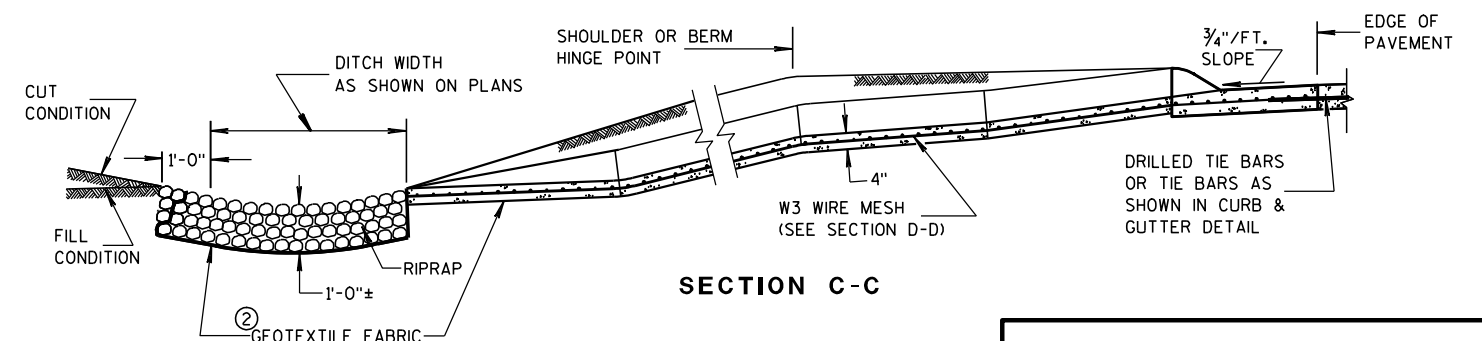
WELDED STEEL WIRE FABRIC SHALL BE IN ACCORDANCE WITH AASHTO SPECIFICATION M55.

- ① JOINTS SHALL BE $\frac{1}{8}$ TO $\frac{1}{4}$ INCH WIDE BY $1\frac{1}{2}$ INCHES DEEP AND SPACED AT UNIFORM INTERVALS OF APPROXIMATELY 4 FEET.
- ② GEOTEXTILE FABRIC TYPE "R" SHALL UNDERLAY THE FULL LENGTH AND WIDTH OF THE CONCRETE SURFACE DRAIN AND RIPRAP.
- ③ CONCRETE SURFACE DRAIN WITHOUT CURB AND GUTTER MAY BE USED ON BACKSLOPES WHEN SPECIFIED

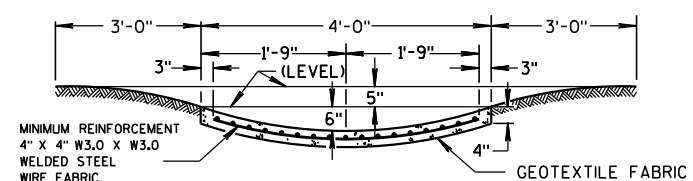
③ CONCRETE SURFACE DRAIN



PLAN VIEW



SECTION C-C



SECTION D-D

CONCRETE SURFACE DRAINS & ASPHALTIC FLUMES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

9-4-08

DATE

FHWA

/S/ Jerry H. Zogg
ROADWAY STANDARDS DEVELOPMENT
ENGINEER



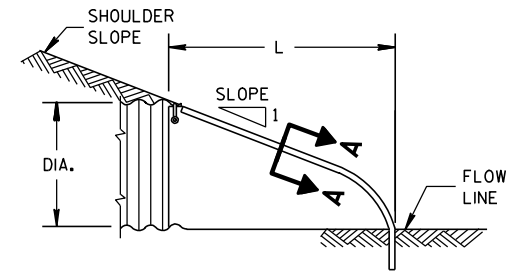
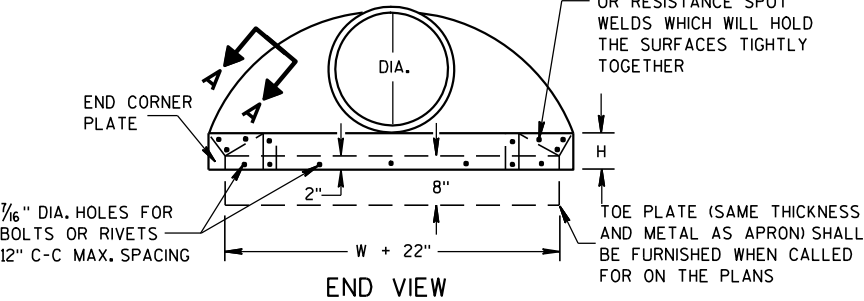
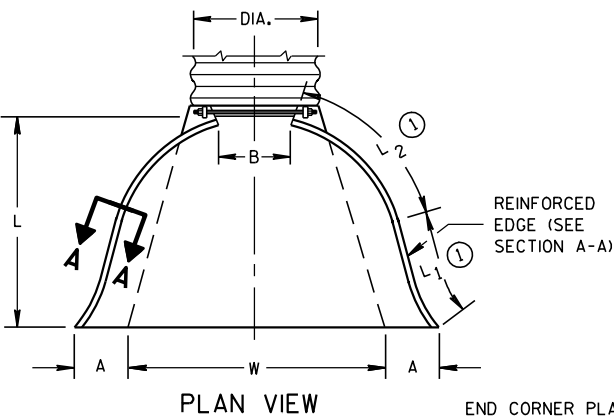
- ① HORIZONTAL BRACE REQUIRED WITH 2" X 4" WOODEN FRAME OR EQUIVALENT AT TOP OF POSTS.
- ② FOR MANUAL INSTALLATIONS THE TRENCH SHALL BE A MINIMUM OF 4" WIDE & 6" DEEP TO BURY AND ANCHOR THE GEOTEXTILE FABRIC. FOLD MATERIAL TO FIT TRENCH AND BACKFILL & COMPACT TRENCH WITH EXCAVATED SOIL.
- ③ WOOD POSTS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



<p style="text-align: center;">SILT FENCE</p>	
<p style="text-align: center;">STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION</p>	
<p>APPROVED</p> <p><u>4-29-05</u></p> <p>DATE</p>	<p><u>/S/ Beth Cannestra</u></p> <p>CHIEF ROADWAY DEVELOPMENT ENGINEER</p>

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

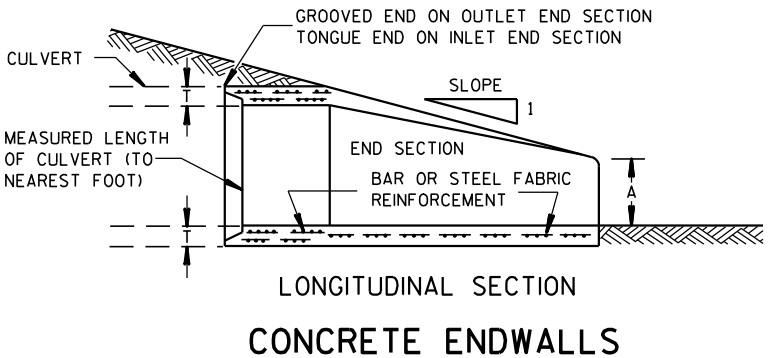
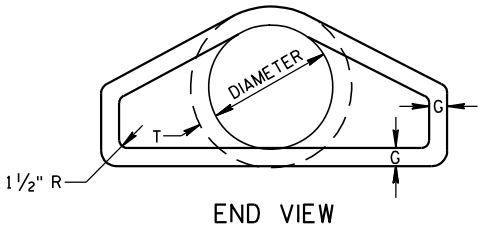
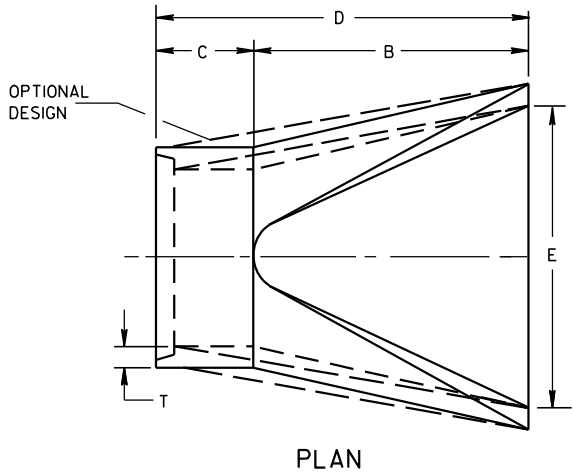
* EXCEPT CENTER PANEL
SEE GENERAL NOTES



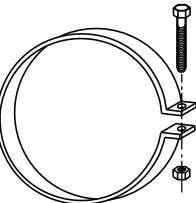
METAL ENDWALLS

REINFORCED CONCRETE APRON ENDWALLS											
PIPE DIA. (IN.)	DIMENSIONS (Inches)							APPROX. SLOPE			
	T	A	B	C	D	E	G				
12	2	4	24	48 1/8	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			

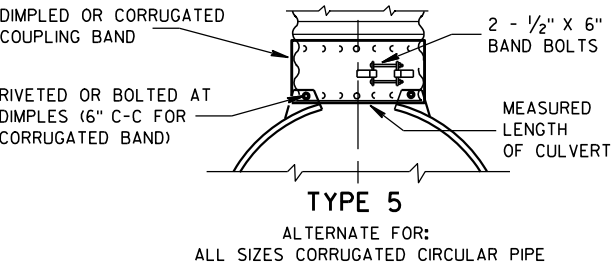
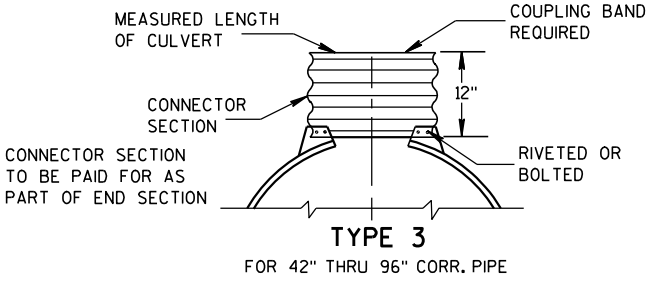
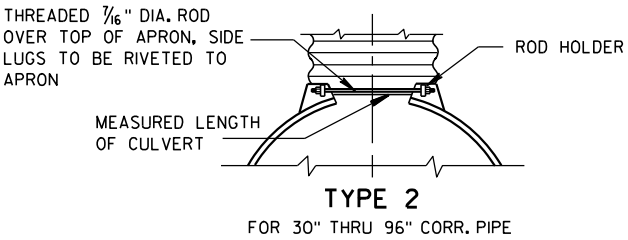
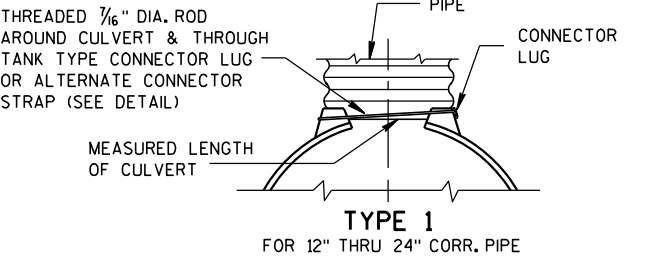
* MINIMUM
** MAXIMUM



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



ALTERNATE FOR TYPE 1 CONNECTION
END SECTION CONNECTOR STRAP



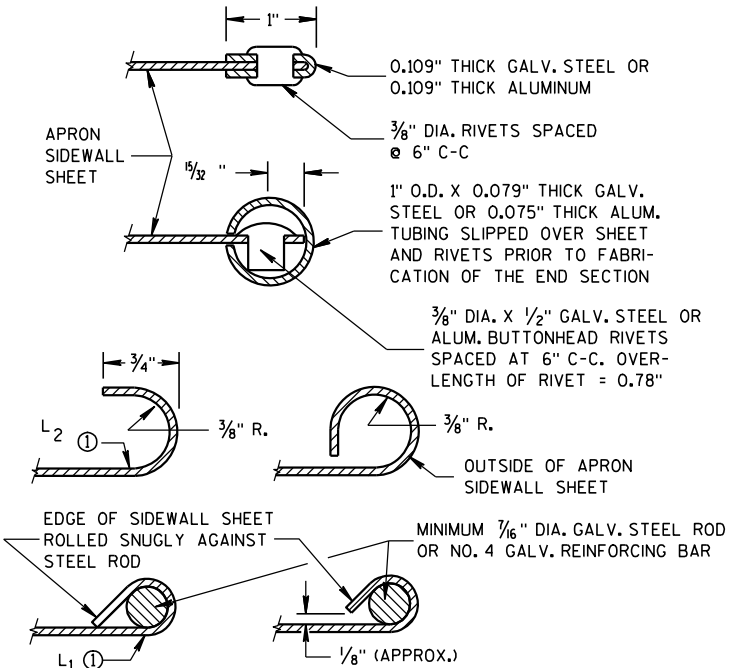
NOTE: DIMPLED BAND FITS OVER OUTSIDE OF ENDWALL, AND CORRUGATED BAND FITS INSIDE ENDWALL. DIMPLED BAND MAY BE USED WITH HELICALLY CORRUGATED PIPE.

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

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

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

CONNECTION DETAILS



SECTION A-A

GENERAL NOTES

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

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

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

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

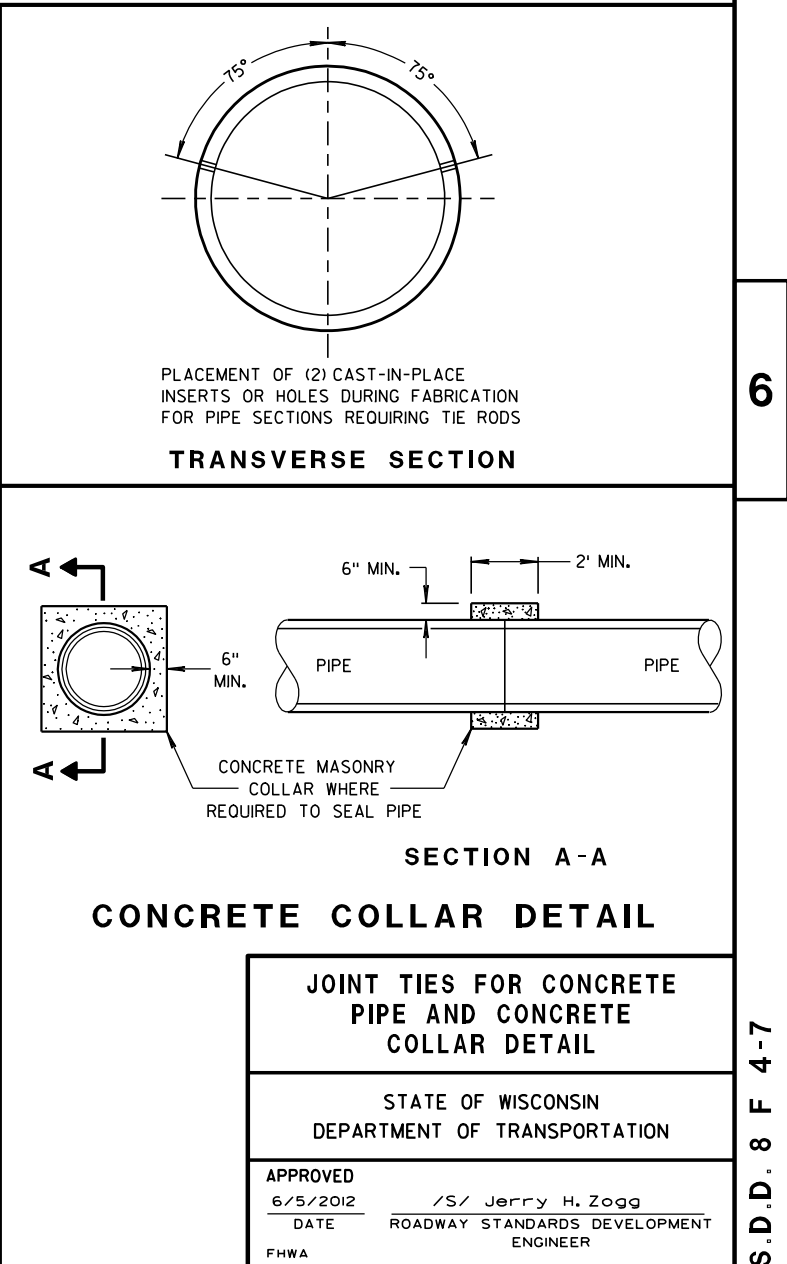
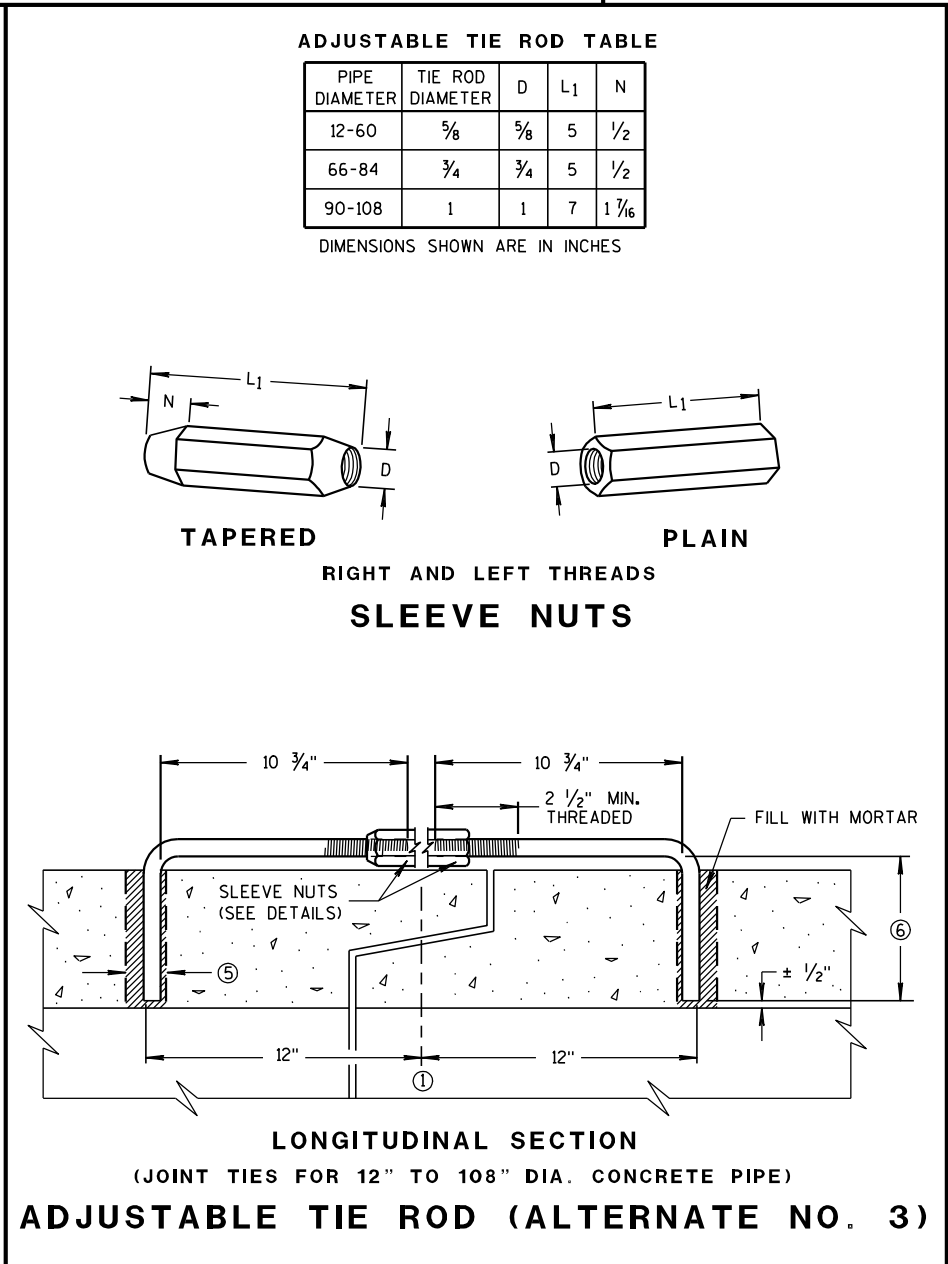
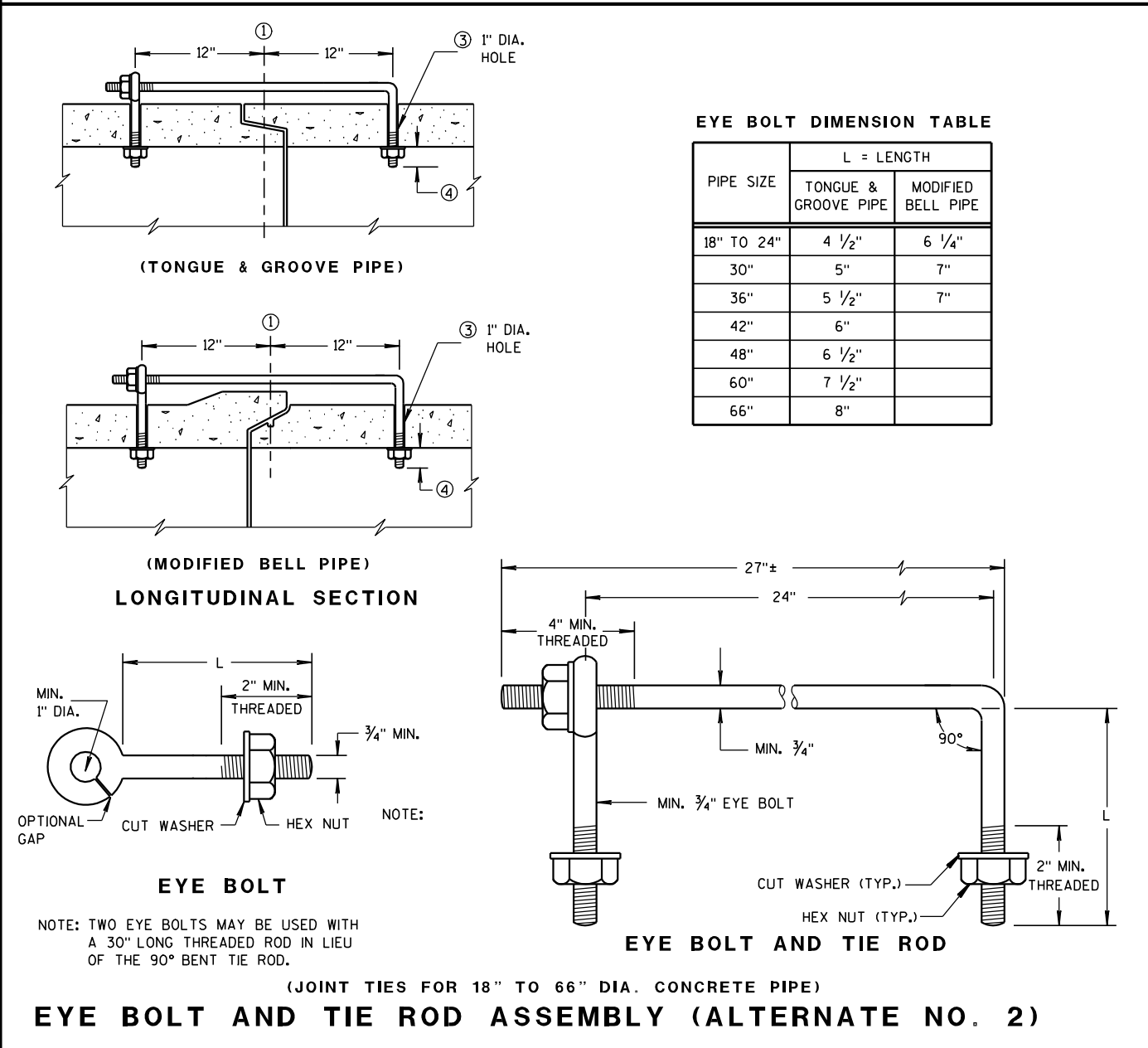
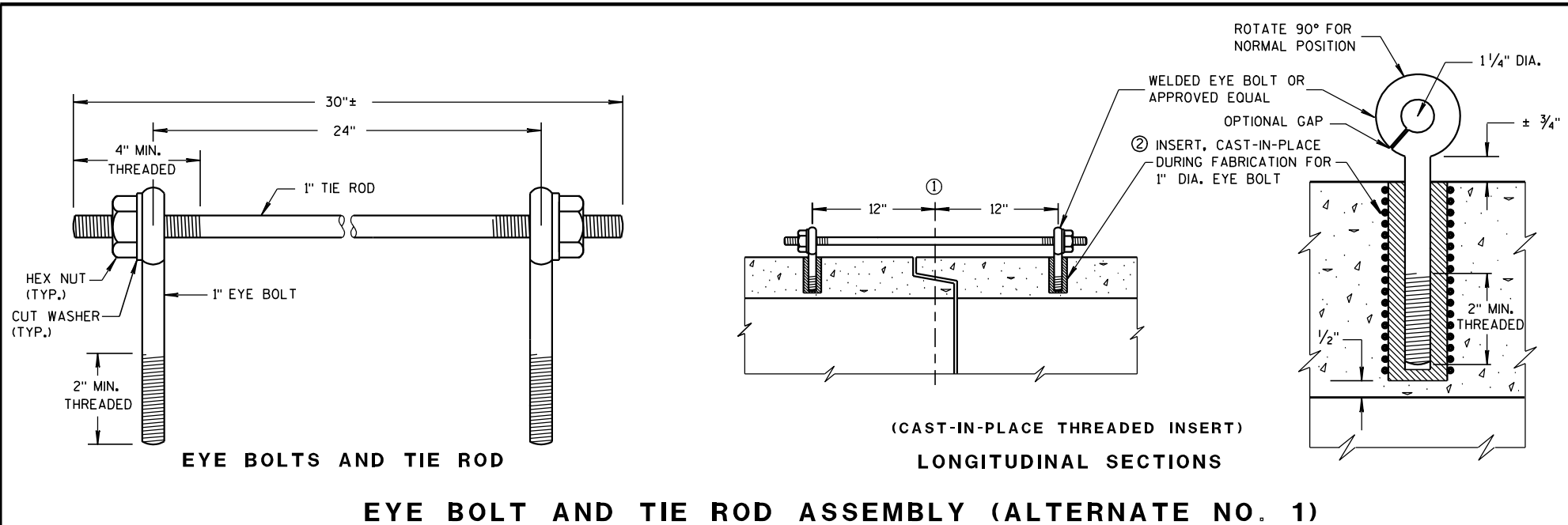
WHERE TWO OR MORE PIPES WITH APRON ENDWALLS ARE LAID ADJACENT TO EACH OTHER, THEY SHALL BE SEPARATED BY A DISTANCE SUFFICIENT TO PROVIDE A MINIMUM CLEARANCE OF 6 INCHES BETWEEN APRON ENDWALLS.

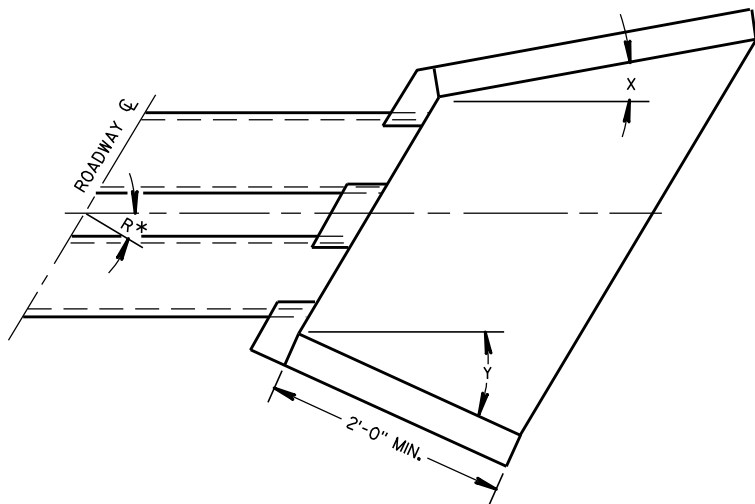
① FOR PIPE SIZES UP TO 60" DIAMETER, A 180° ROLLED EDGE MAY BE USED INSTEAD OF STEEL ROD REINFORCEMENT. SEE SECTION A-A.

APRON ENDWALLS FOR
CULVERT PIPE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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





WINGWALL ANGLE DETAILS

INLET			OUTLET		
R*	X	Y	R*	X	Y
0 - 7°	30°	30°	0 - 15°	15°	15°
8 - 22°	25°	"	16 - 45°	10°	"
23 - 37°	20°	"	46 - 75°	5°	"
38 - 52°	15°	"	OVER 75°	0°	"
53 - 67°	10°	"			
68 - 82°	5°	"			
OVER 82°	0°	"			

*R = NUMBER OF DEGREES RIGHT OR LEFT HAND FORWARD

GENERAL NOTES

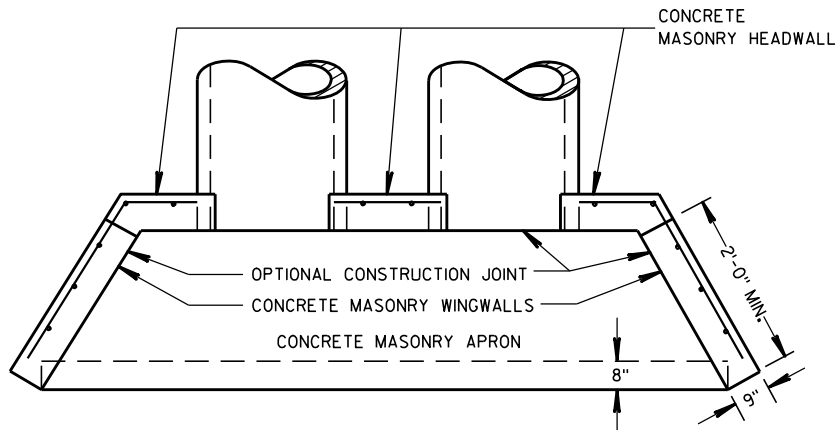
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

FILL SLOPES FLATTER THAN 2 1/2:1 SHALL BE WARPED TO MEET THE TOP OF THE WINGWALLS.

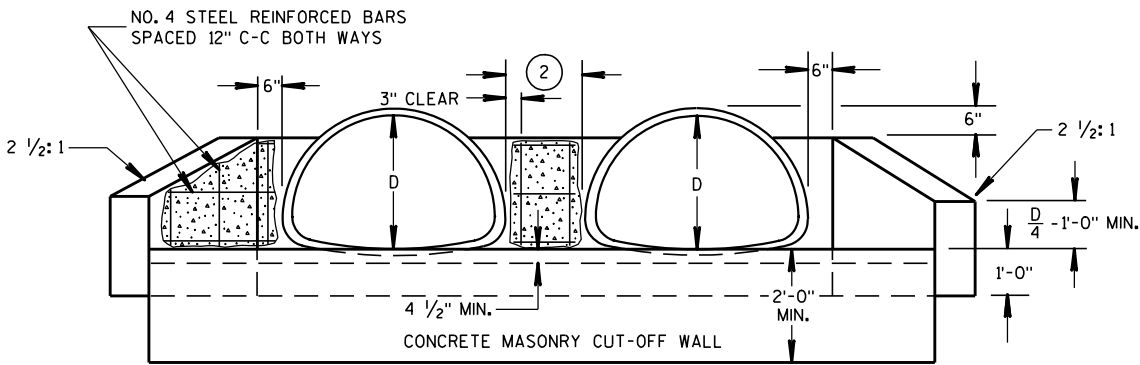
ALL STEEL REINFORCEMENT AND WELDED STEEL WIRE FABRIC SHALL BE EMBEDDED 2 INCHES CLEAR UNLESS OTHERWISE NOTED.

- 1 MINIMUM REINFORCEMENT SHALL BE 6" X 6" - W4.0 X W4.0 OR NO. 3 BARS SPACED 12" C-C IN BOTH DIRECTIONS.
- 2 THE SPACE BETWEEN PIPES SHALL BE AS FOLLOWS:

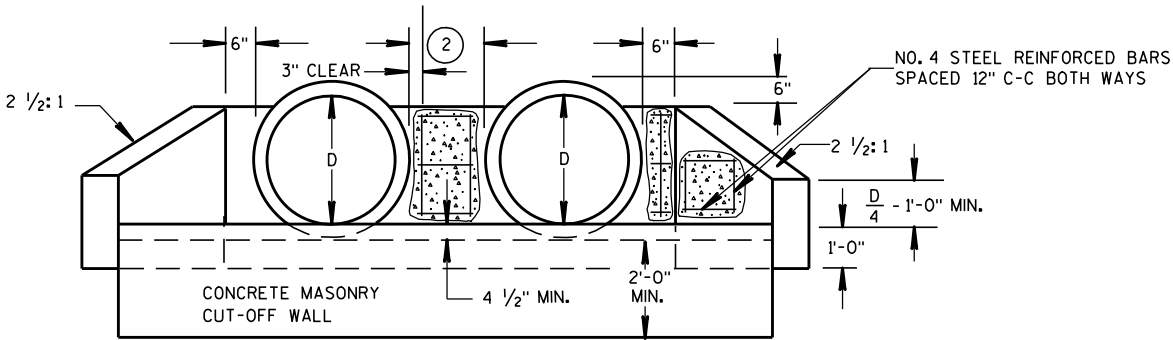
DIAMETER OR SPAN	SPACE
UP TO AND INCLUDING 48"	2'-0"
OVER 48" TO 72"	1/2 DIA. OR SPAN
OVER 72"	3'-0"



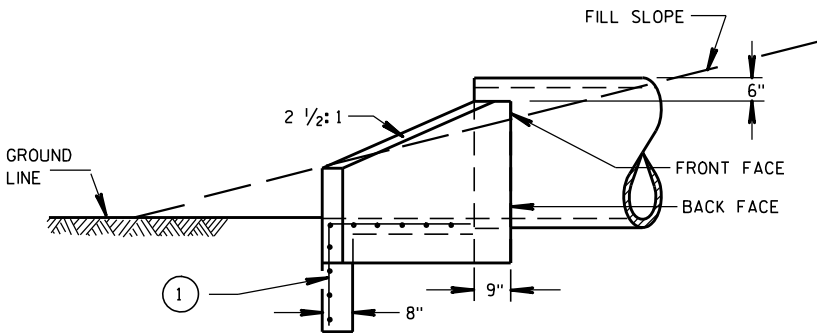
PLAN VIEW
CULVERT PIPE AND PIPE ARCH



END ELEVATION
PIPE ARCH



END ELEVATION
CULVERT PIPE

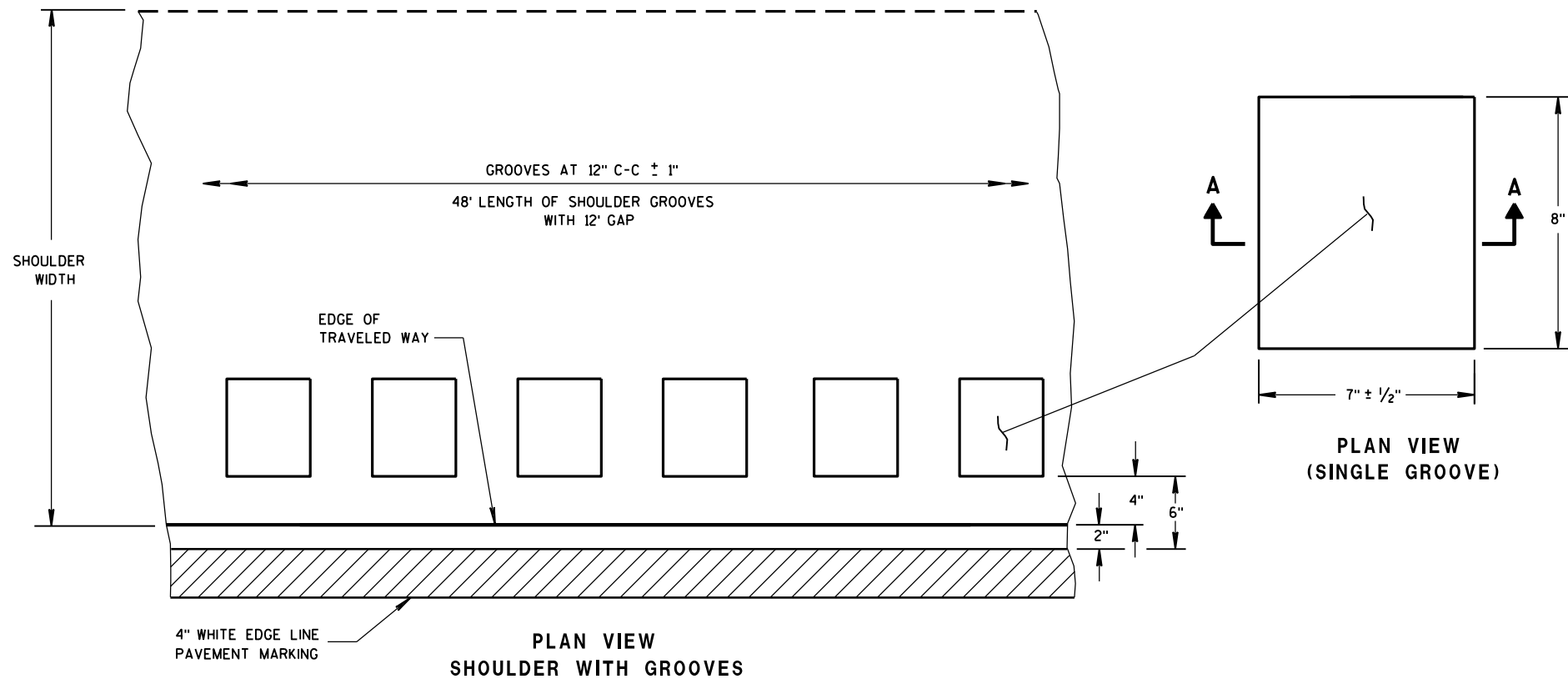


SIDE ELEVATION
CULVERT PIPE AND PIPE ARCH

CONCRETE MASONRY ENDWALLS
FOR CULVERT PIPE AND
PIPE ARCH

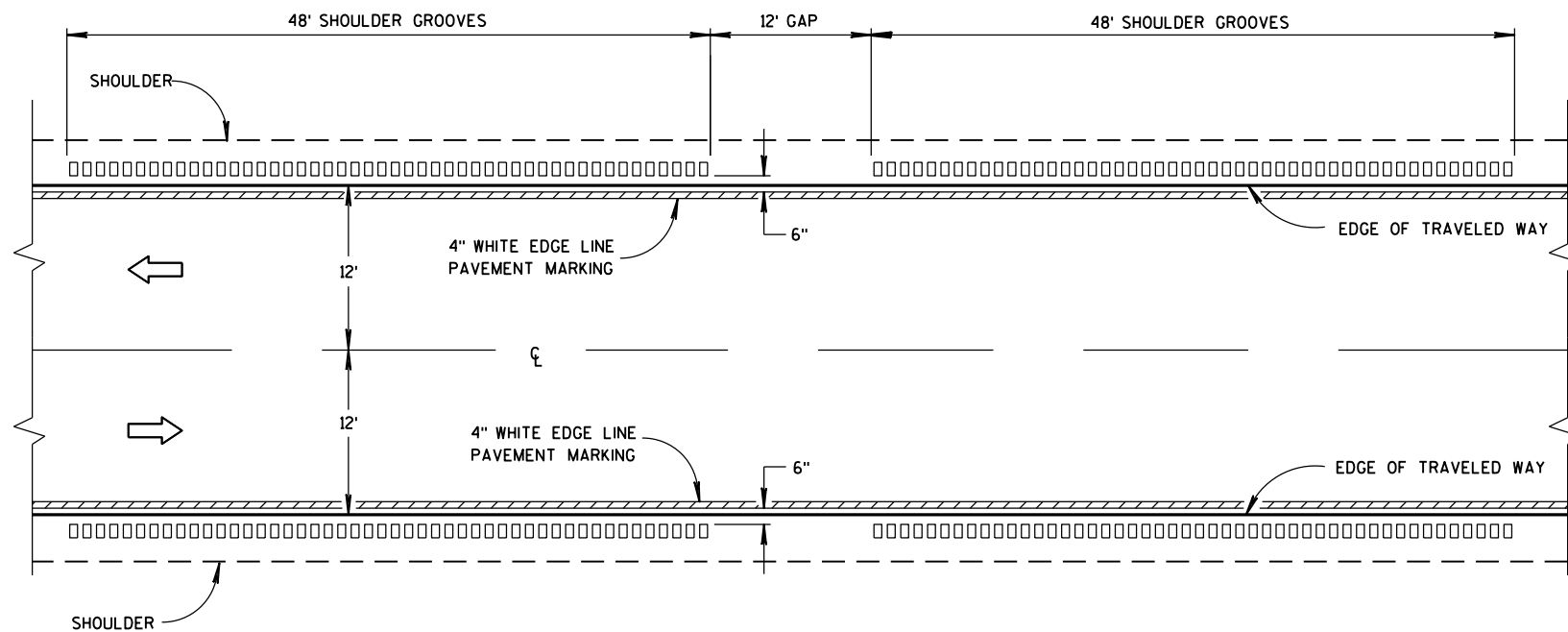
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
9/14/98 /S/ Rory L. Rhinesmith
DATE CHIEF ROADWAY DEVELOPMENT ENGINEER
FHWA



6

PLACEMENT DETAIL FOR TYPE 1 MILLED RUMBLE STRIP



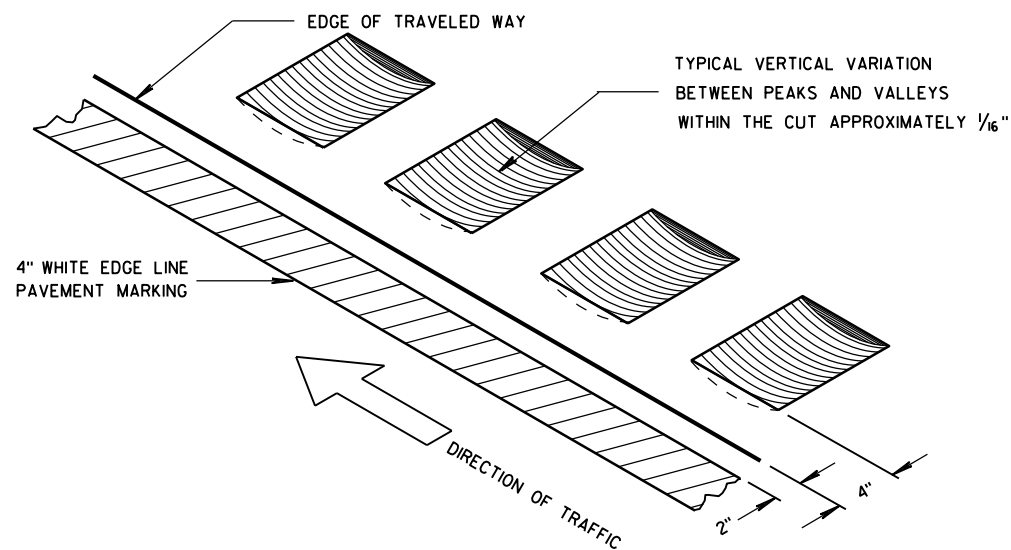
TYPE 1
2-LANE SHOULDER RUMBLE STRIP

GENERAL NOTES

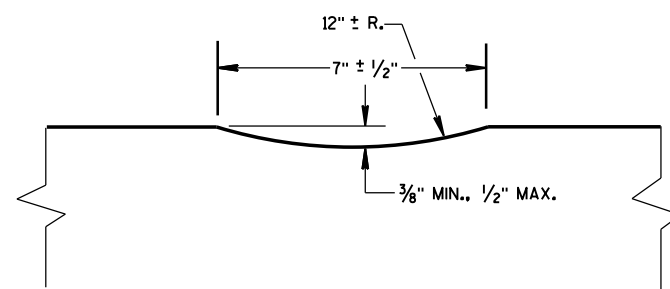
DETAILS OF CONSTRUCTION SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND APPLICABLE SPECIAL PROVISIONS.

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

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



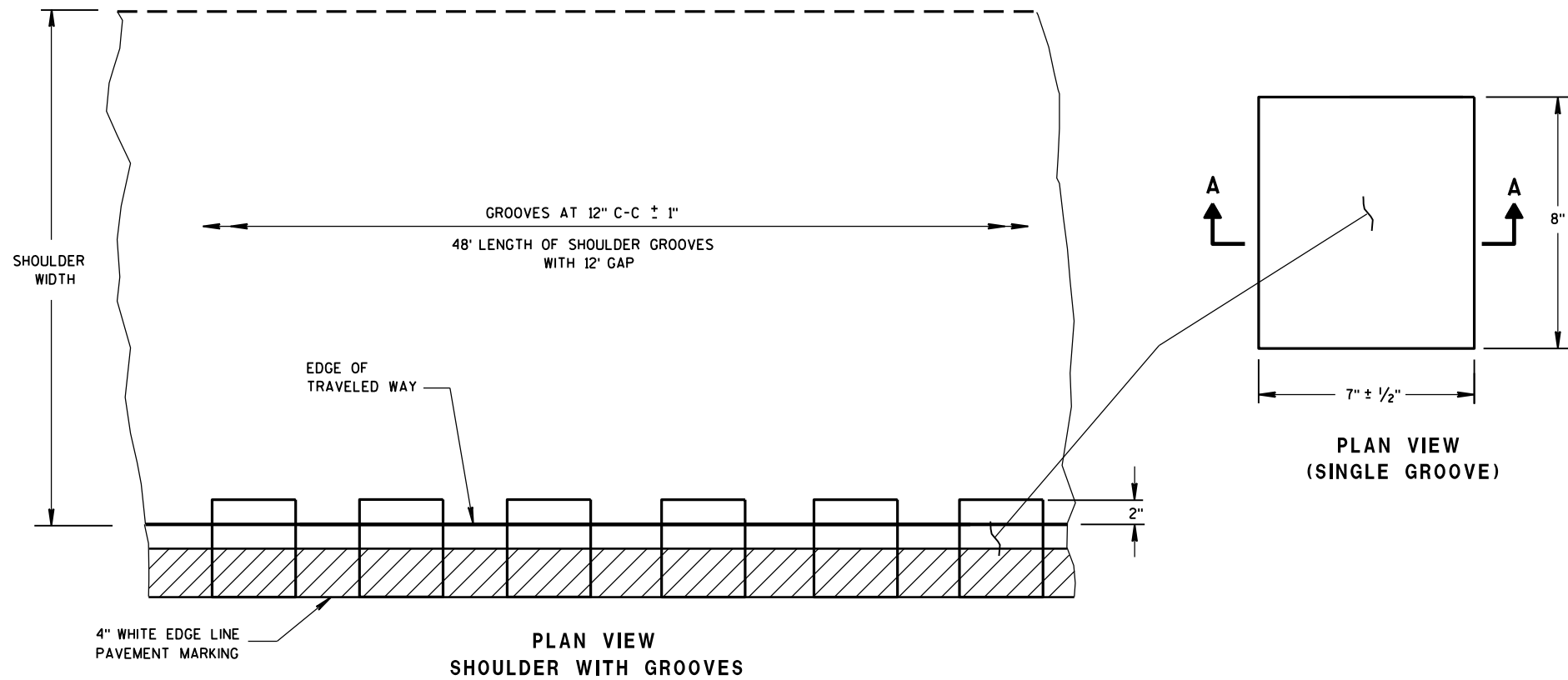
ISOMETRIC



SECTION A-A

2-LANE RURAL
SHOULDER RUMBLE STRIP, MILLING

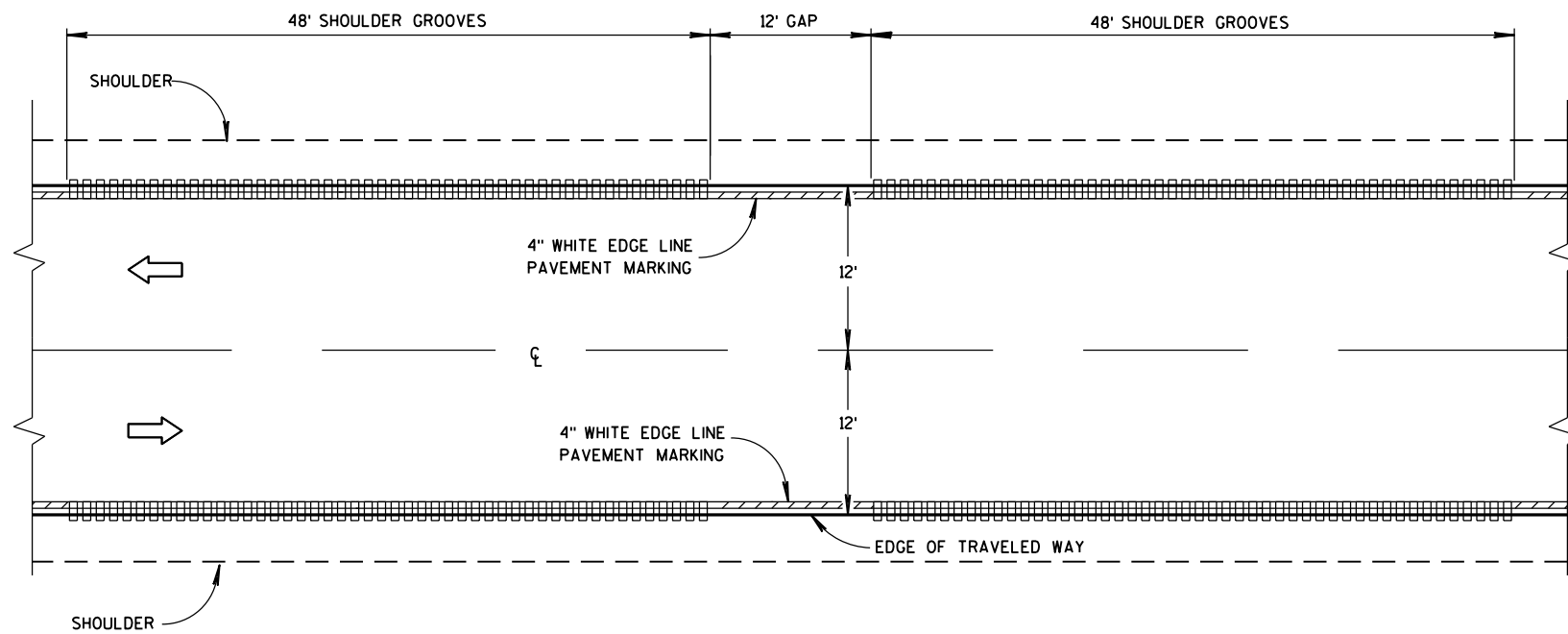
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



PLAN VIEW
SHOULDER WITH GROOVES

PLAN VIEW
(SINGLE GROOVE)

6
PLACEMENT DETAIL FOR TYPE 2 MILLED RUMBLE STRIP

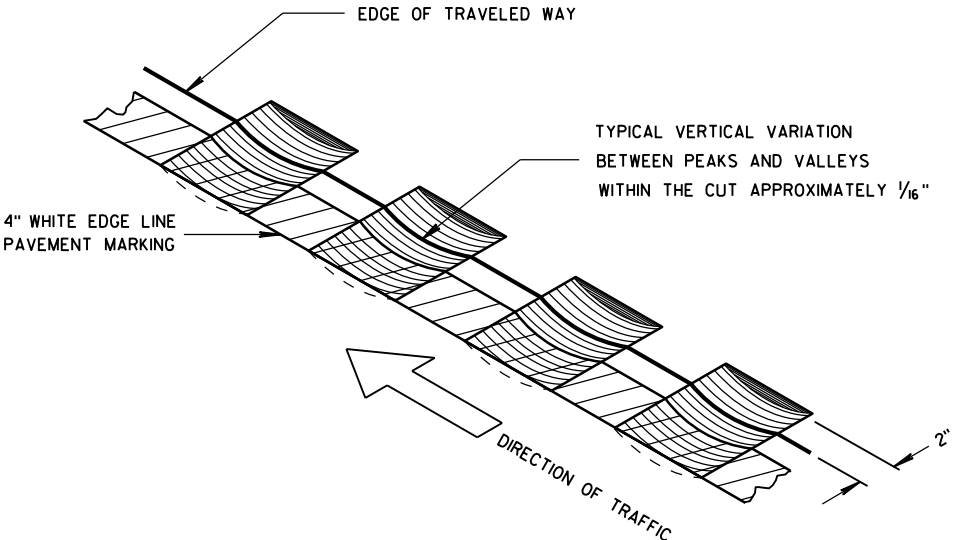


TYPE 2
2-LANE SHOULDER RUMBLE STRIP

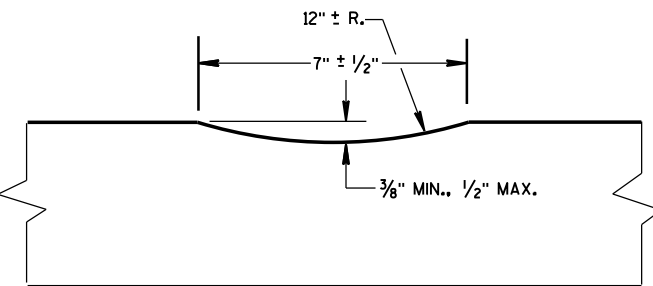
GENERAL NOTES

DETAILS OF CONSTRUCTION SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND APPLICABLE SPECIAL PROVISIONS.
DO NOT MILL SHOULDER GROOVES THROUGH ANY INTERSECTION, MARKED CROSSWALK, NON-MOTORIZED PATH CROSSING, OR SNOWMOBILE CROSSING.

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



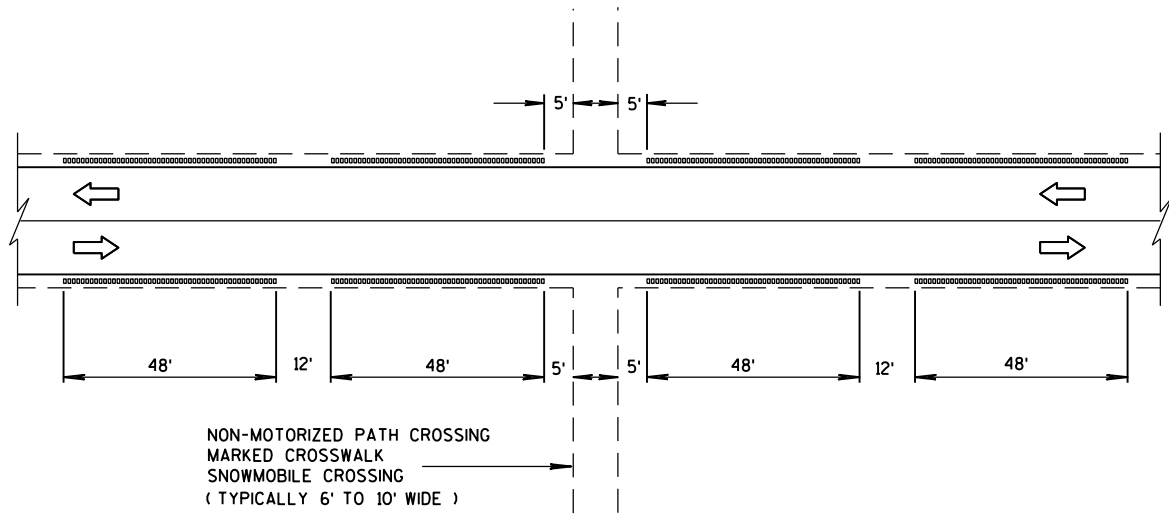
ISOMETRIC



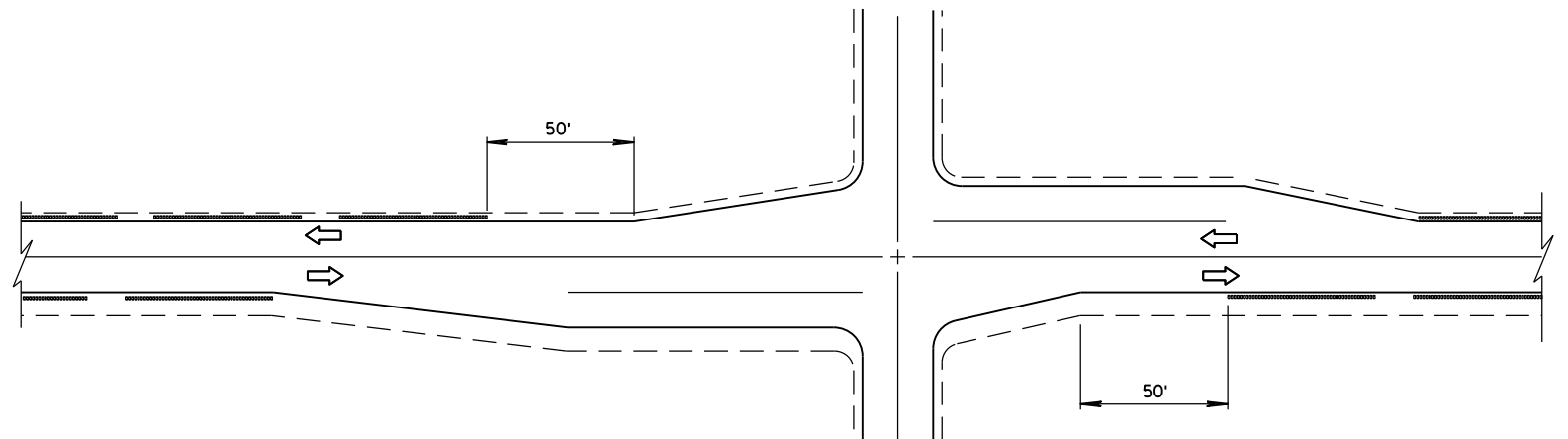
SECTION A-A

2-LANE RURAL
SHOULDER RUMBLE STRIP, MILLING

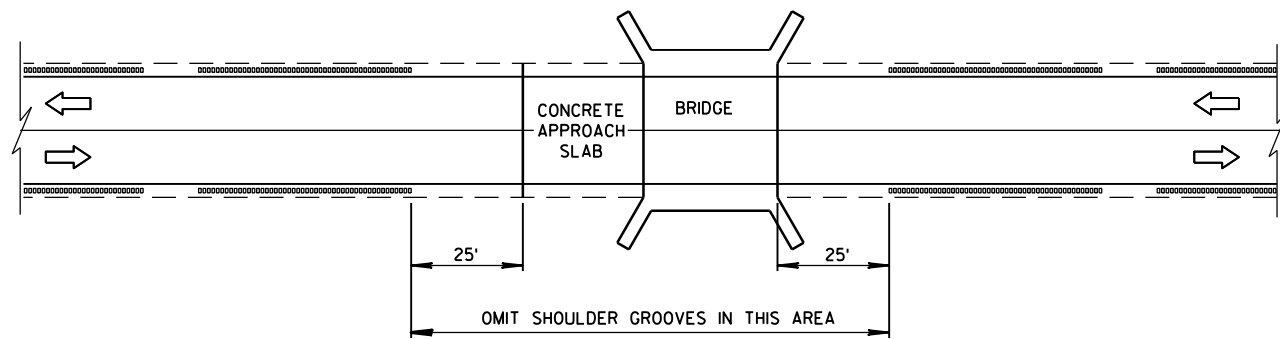
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



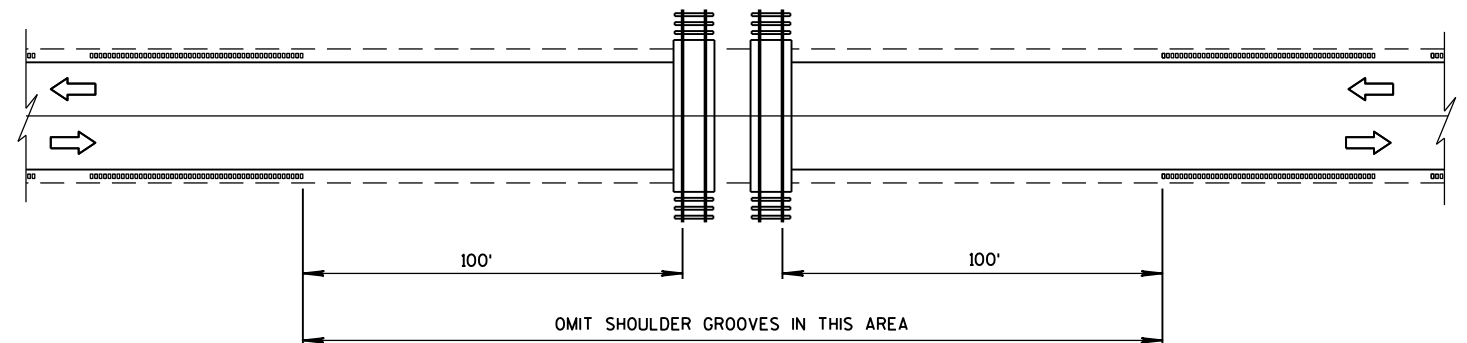
SHOULDER GROOVES AT MISCELLANEOUS CROSSINGS



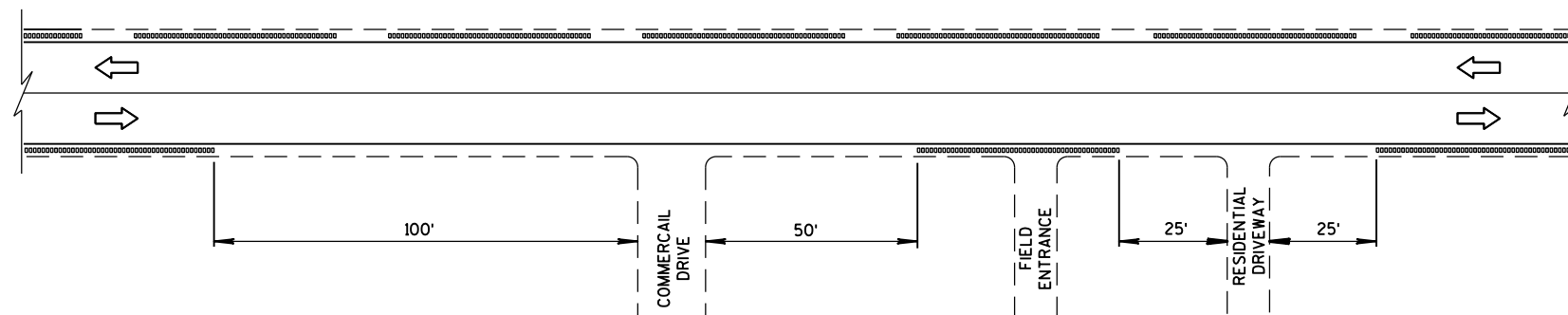
SHOULDER GROOVES AT INTERSECTIONS



SHOULDER GROOVES AT BRIDGES



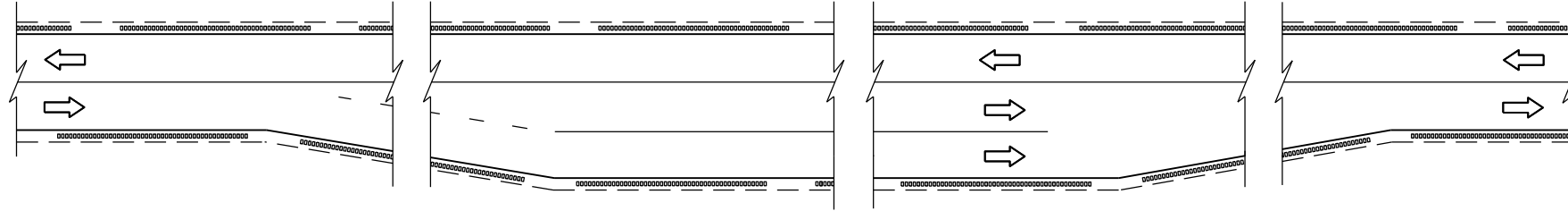
SHOULDER GROOVES AT RAILROADS



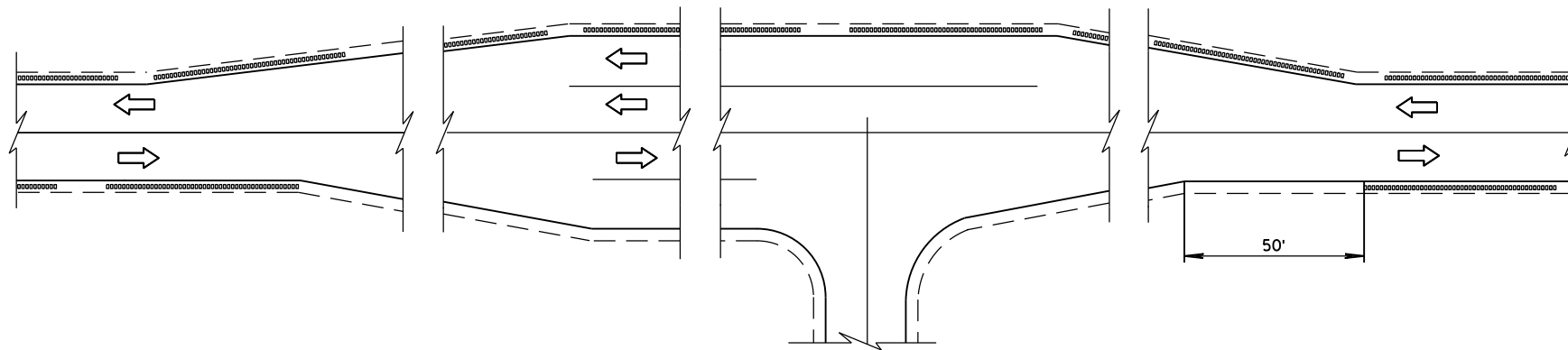
SHOULDER GROOVES AT DRIVEWAYS^①

2-LANE RURAL
SHOULDER RUMBLE STRIP, MILLING

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



SHOULDER GROOVES AT PASSING AND CLIMBING LANES



SHOULDER GROOVES AT BYPASS LANES

2-LANE RURAL SHOULDER RUMBLE STRIP, MILLING	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED 12/17/2012 DATE	/S/ Jerry H. Zogg ROADWAY STANDARDS DEVELOPMENT ENGINEER
FHWA	

GENERAL NOTES

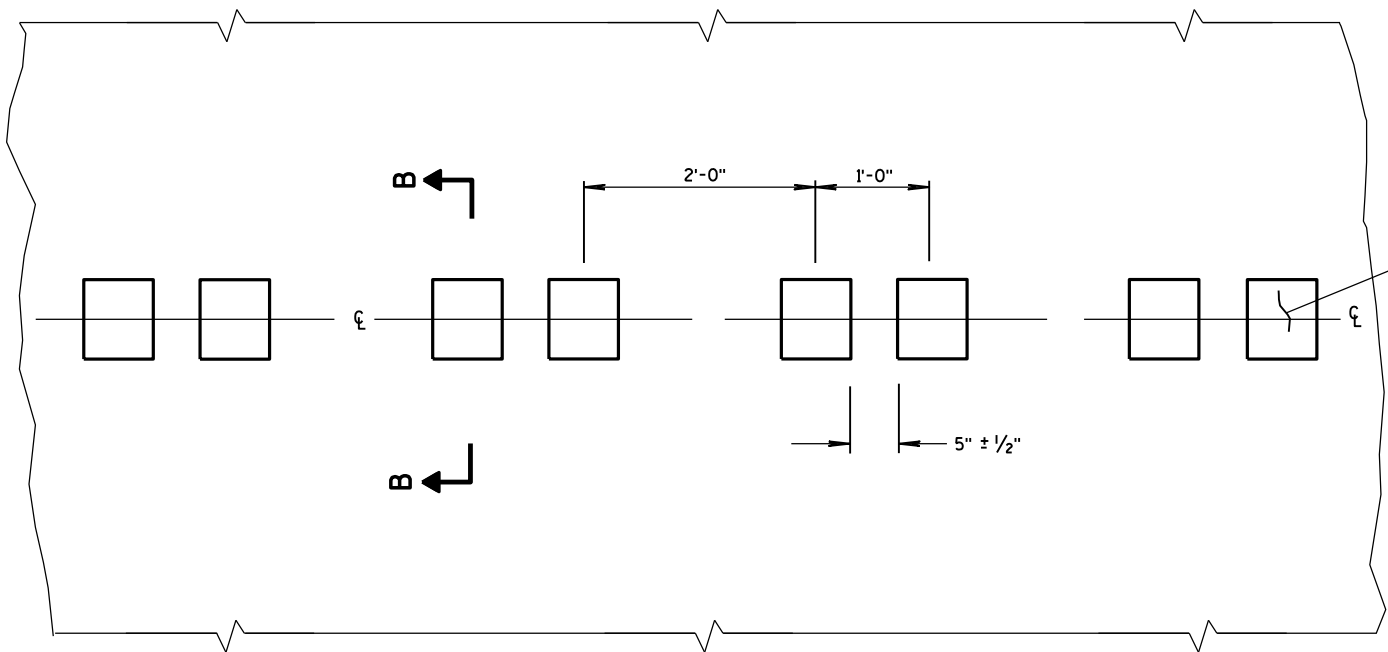
DETAILS OF CONSTRUCTION SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND APPLICABLE SPECIAL PROVISIONS.

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

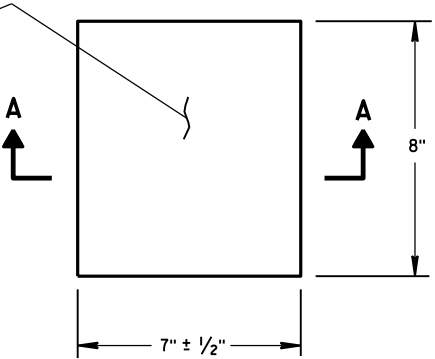
INSTALL PAVEMENT MARKING AFTER THE GROOVES ARE INSTALLED.

SEE SIGNING PLAN FOR SIGN REQUIREMENTS THAT MAY BE NEEDED.

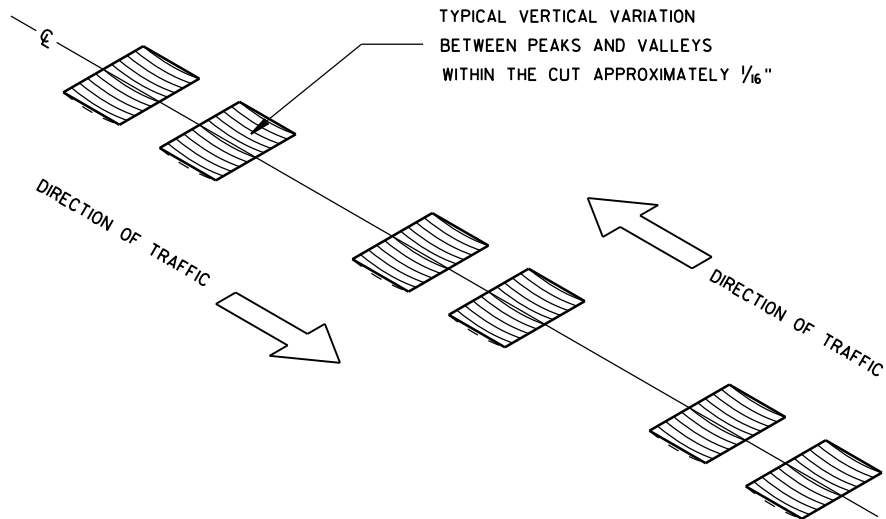
- ① CENTERLINE GROOVES MAY BE OMITTED IN AREAS WITH HIGH CONCENTRATIONS OF DRIVEWAYS, WHEN DIRECTED BY THE ENGINEER.



PLAN VIEW
CENTER LINE WITH GROOVES

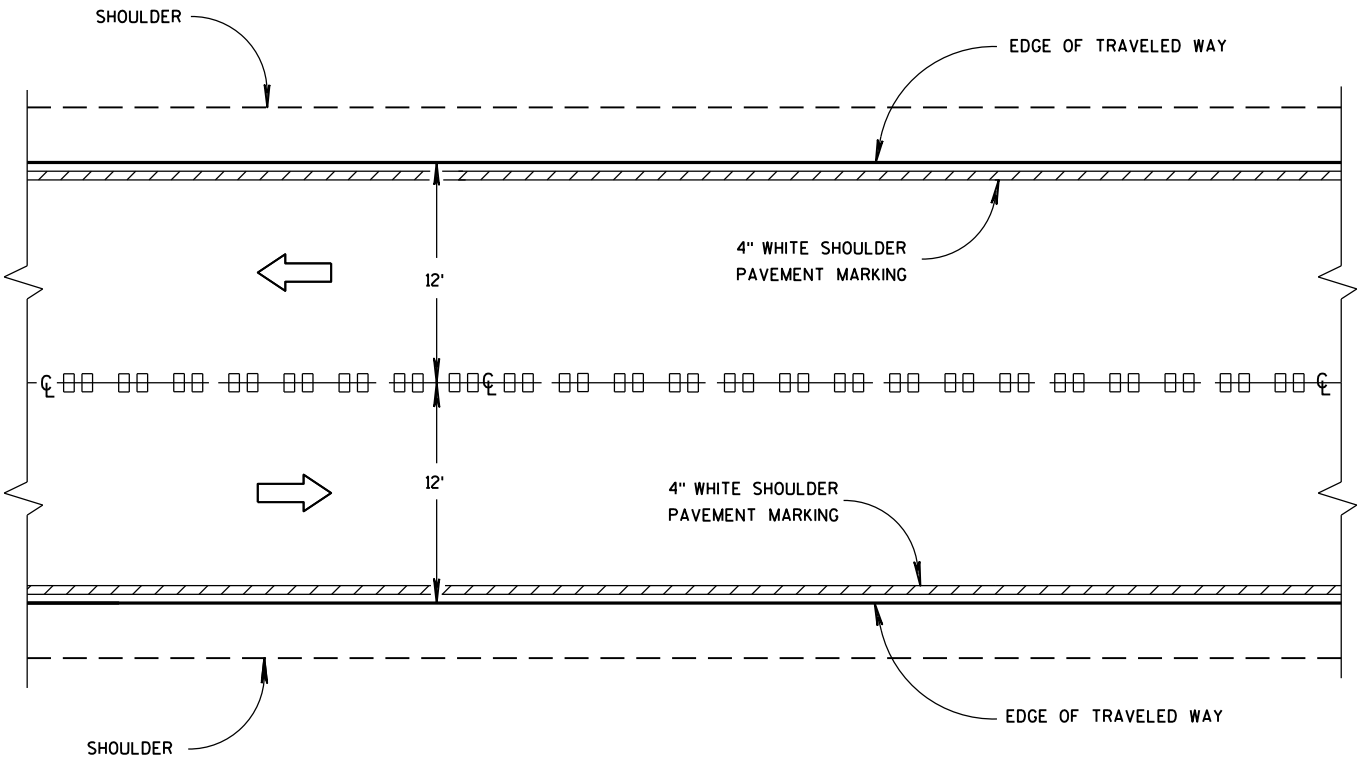


PLAN VIEW
(SINGLE GROOVE)

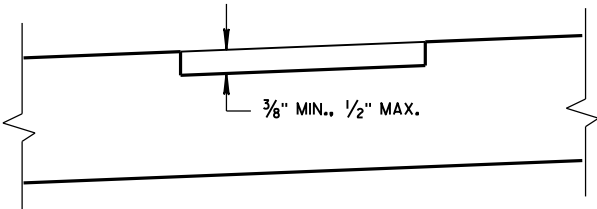


ISOMETRIC

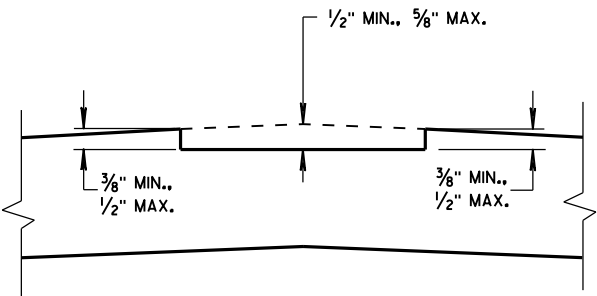
PLACEMENT DETAIL FOR MILLED RUMBLE STRIP



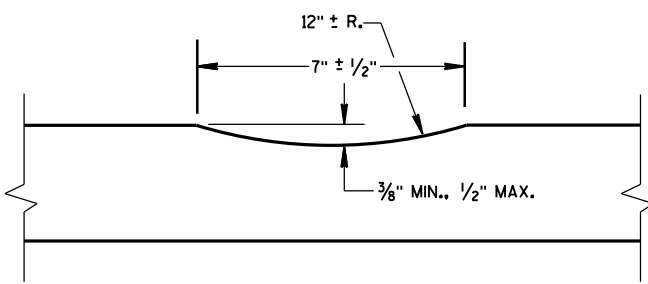
CENTER LINE GROOVES ON TWO-WAY ROADWAYS



SECTION B-B
SUPERELEVATED ROADWAY



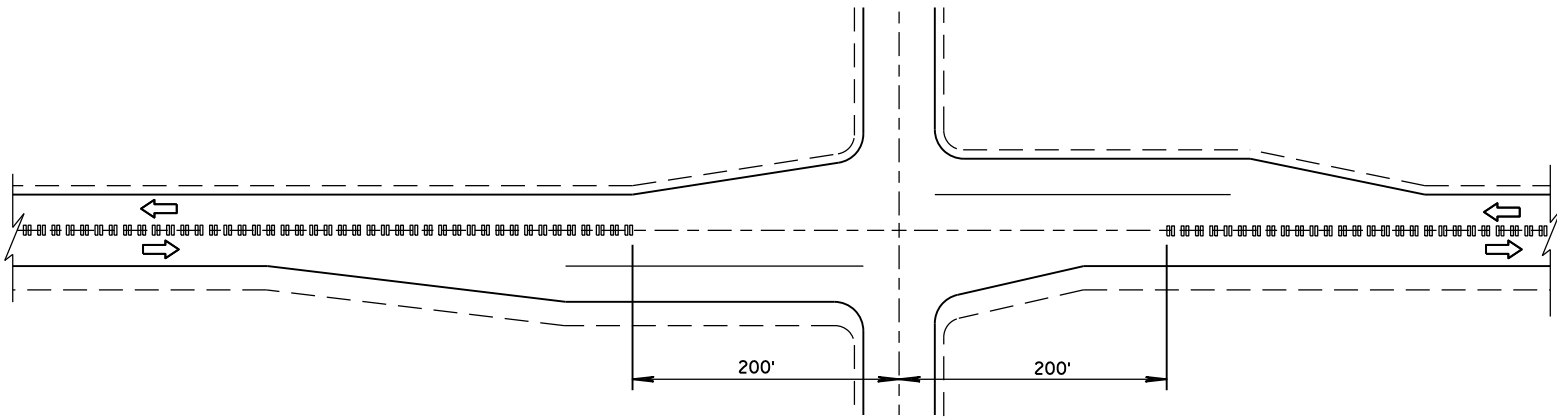
SECTION B-B
CROWNED ROADWAY



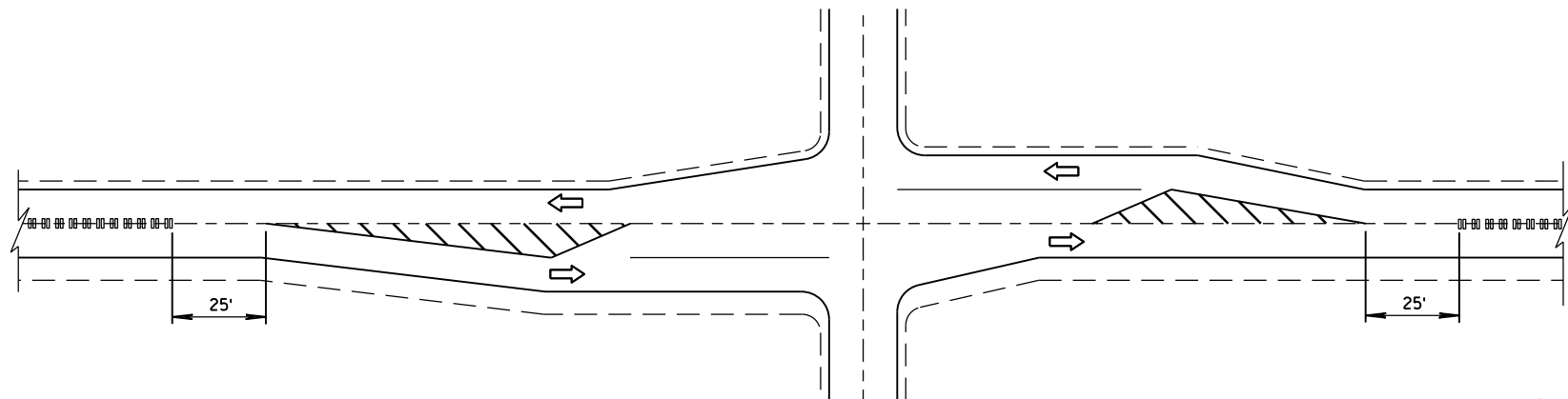
SECTION A-A

2-LANE RURAL
CENTER LINE RUMBLE STRIP,
MILLING

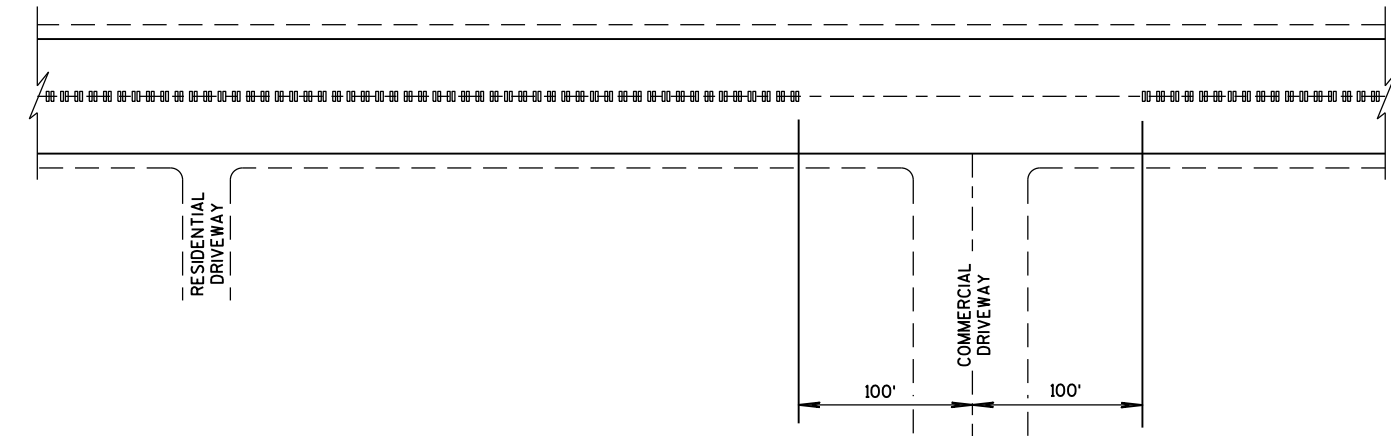
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



CENTER LINE GROOVES AT INTERSECTIONS

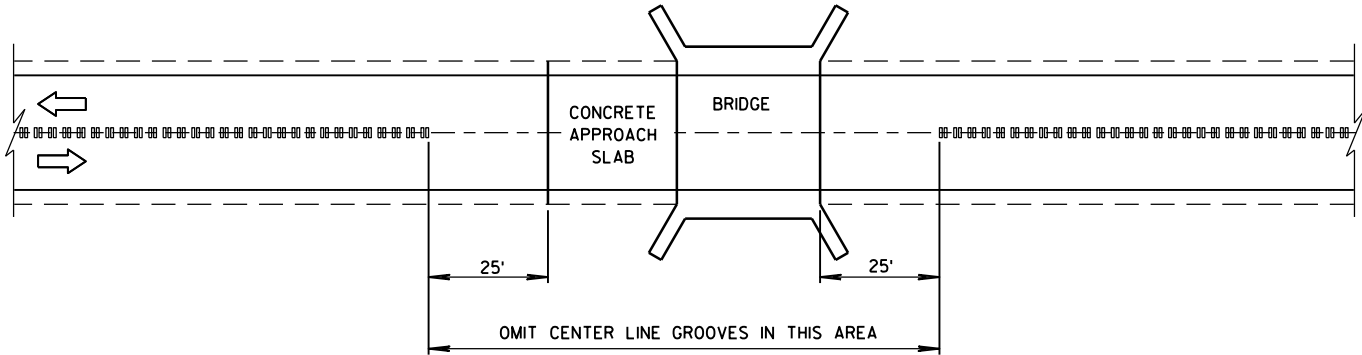


CENTER LINE GROOVES AT INTERSECTIONS
(WITH LEFT TURN LANES)

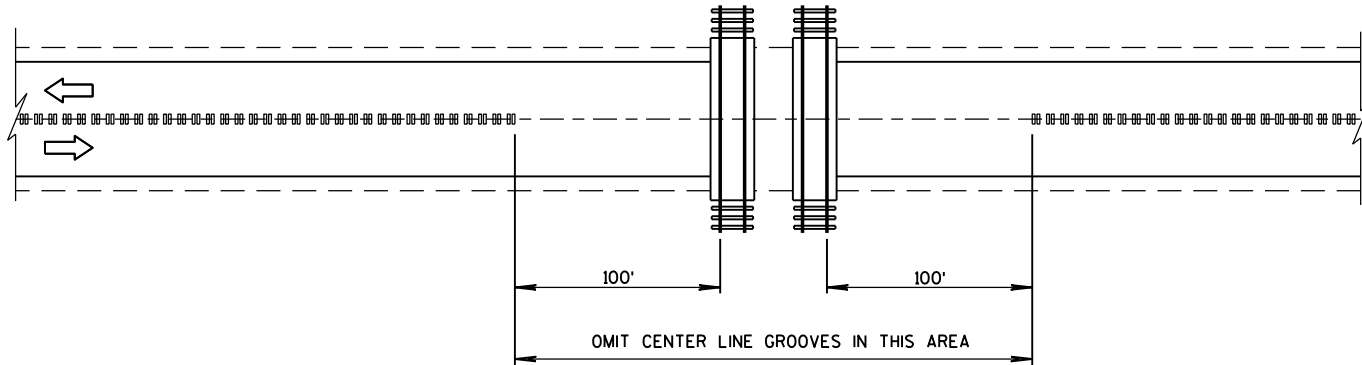


CENTER LINE GROOVES AT DRIVEWAYS^①

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

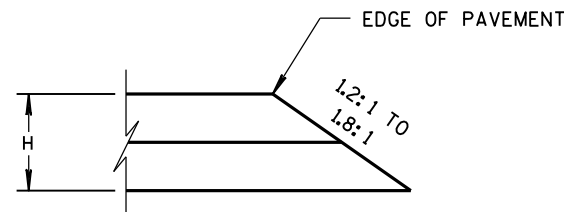


CENTER LINE GROOVES AT BRIDGES

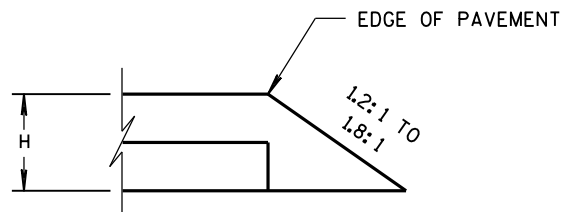


CENTER LINE GROOVES AT RAILROADS

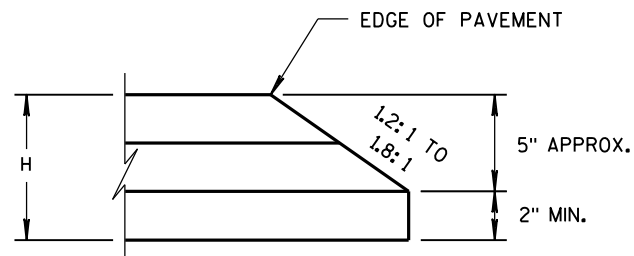
2-LANE RURAL CENTER LINE RUMBLE STRIP, MILLING	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED DATE 5/15/2013 FHWA	/S/ Jerry H. Zogg ROADWAY STANDARDS DEVELOPMENT ENGINEER



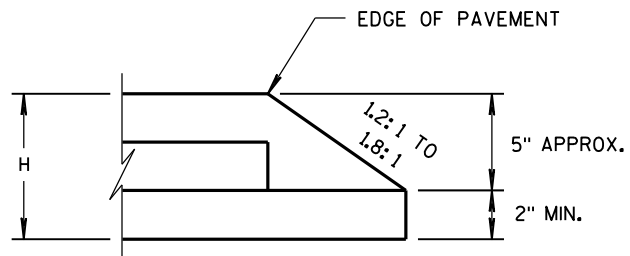
CONSTRUCTED WITH FINAL TWO LAYERS
FOR H 5" OR LESS



CONSTRUCTED WITH FINAL LAYER
FOR H 5" OR LESS

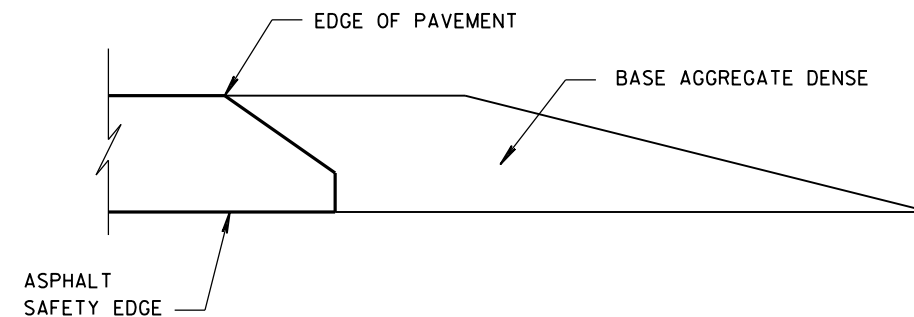


CONSTRUCTED WITH FINAL TWO LAYERS
FOR H GREATER THAN 5"



CONSTRUCTED WITH FINAL LAYER
FOR H GREATER THAN 5"

HMA PAVEMENT AND HMA OVERLAYS

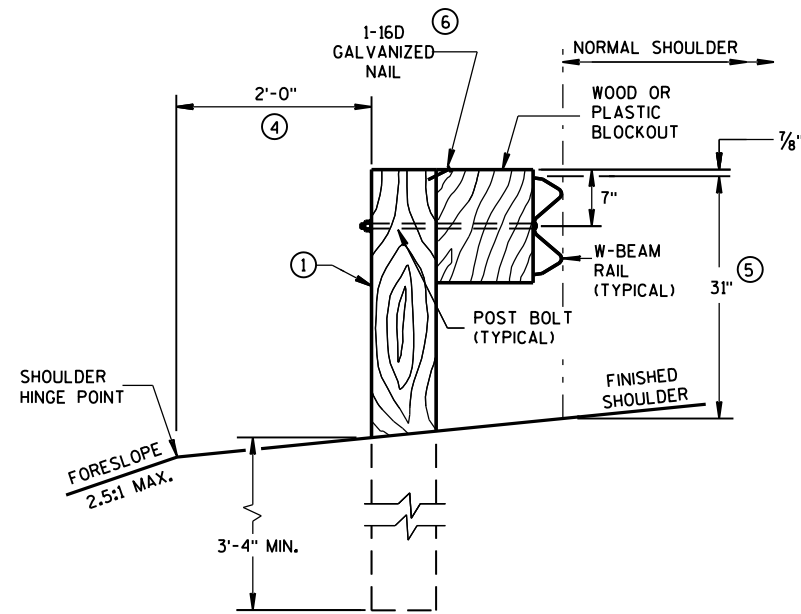


FINISHED SHOULDER AGGREGATE PLACEMENT

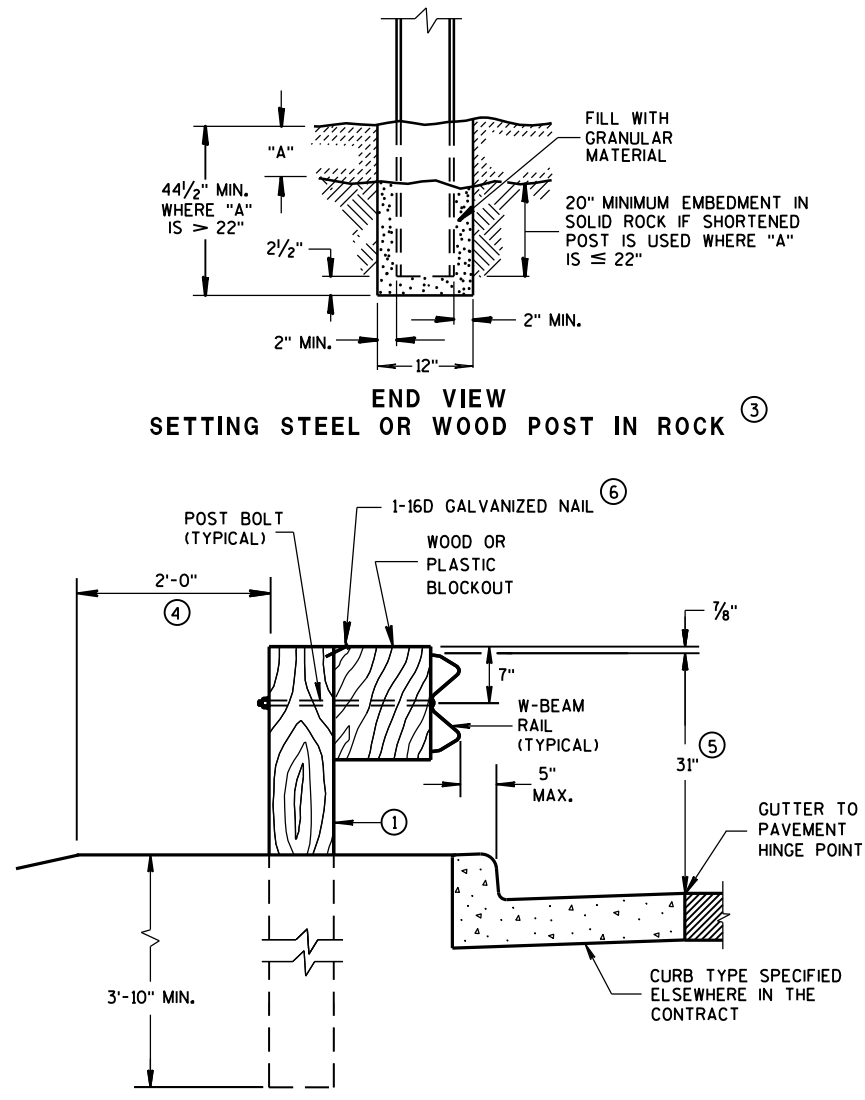
SAFETY EDGE _{SM}	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED DATE 11/30/2012	/S/ Jerry H. Zogg ROADWAY STANDARDS DEVELOPMENT ENGINEER FHWA

GENERAL NOTES

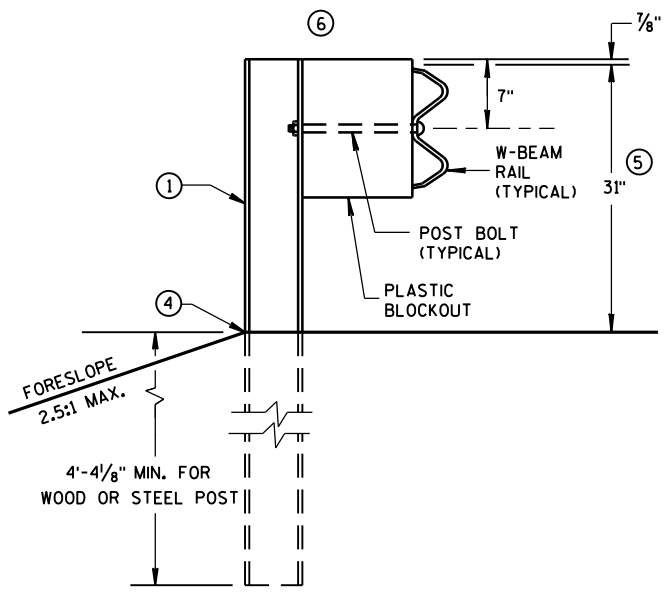
- ① WOOD OR STEEL POSTS (w6X9 OR w6X8.5) MAY BE USED. DO NOT INTERMIX WOOD AND STEEL POSTS. INSTALL STEEL POSTS WITH HOLES ON APPROACHING TRAFFIC SIDE.
- ② USE WOOD OR APPROVED PLASTIC BLOCKOUTS. WOOD BLOCKOUTS MAY BE CONSTRUCTED OUT OF TWO OR MORE WOOD BLOCKOUTS. SEE ALTERNATE WOOD BLOCKOUT DETAIL. 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 AMD INSTALL. BACKFILL WITH EXCAVATED MATERIAL AND COMPACT. BACKFILL IS TO BE FREE OF LARGE ROCKS.
- ④ WHEN THE DISTANCE FROM BACK OF POST TO SHOULDER HINGE POINT IS LESS THAN 2 FEET INSTALL LONGER POST AT HALF POST SPACING (K).
- ⑤ FOR NEW MGS INSTALLATION TOP OF W-BEAM RAIL TOLERANCE IS ± 1". FOR EXISTING MGS INSTALLATION TOP OF W-BEAM IS BETWEEN 27 3/4" TO 32".
- ⑥ WHEN USING STEEL POST AND WOOD BLOCKOUTS INSTALL FOUR 16D GALVANIZED NAILS. INSTALL NAILS AT THE BACK CORNERS OF THE BLOCK AND BEND THE NAILS OVER THE FLANGE OF THE STEEL POST.



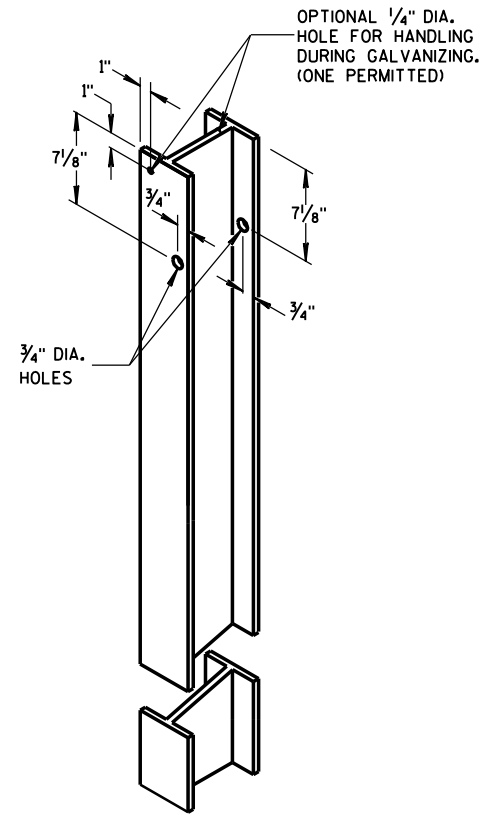
END VIEW
LOCATED ALONG A ROADWAY SHOULDER
STANDARD INSTALLATION



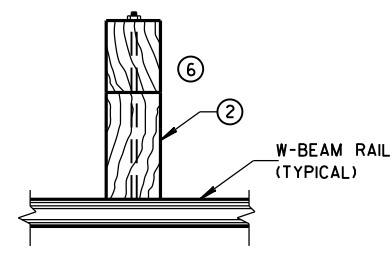
END VIEW
LOCATED ALONG A CURBED ROADWAY



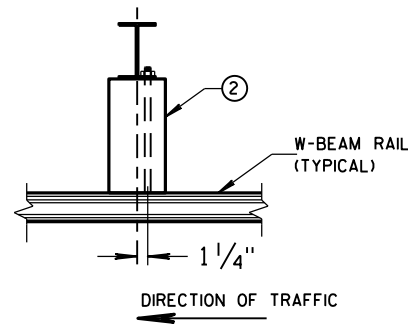
END VIEW
MGS LONGER POST AT HALFPST SPACING W BEAM (K)



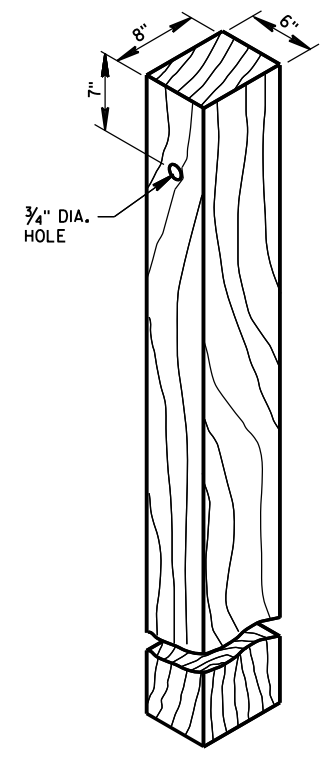
STEEL POST &
HOLE PUNCHING DETAIL
(w6X9) ①



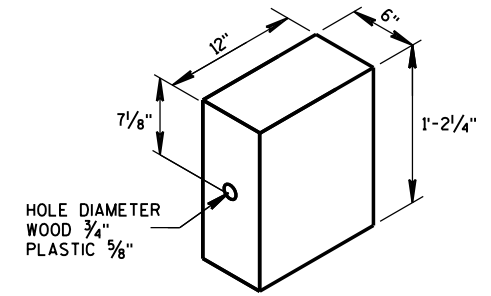
PLAN VIEW
WOOD POST,
BLOCKOUT & BEAM



PLAN VIEW
STEEL POST,
PLASTIC BLOCKOUT & BEAM



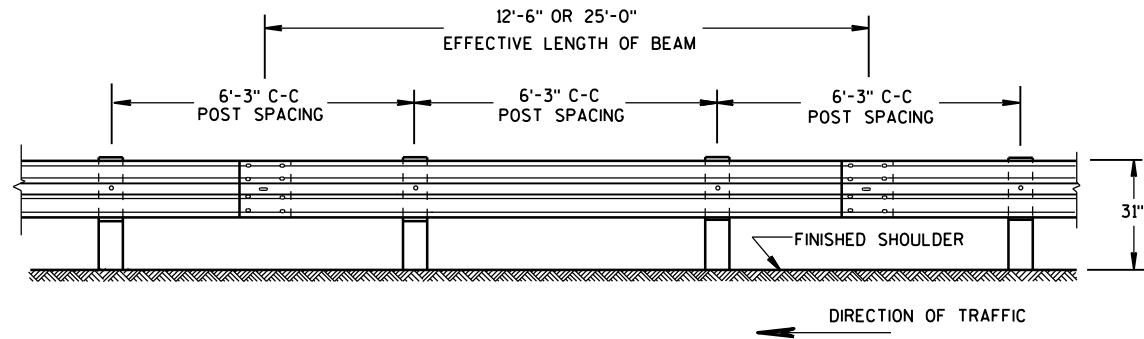
WOOD POST
(6" X 8") NOMINAL ①



WOOD OR
PLASTIC BLOCKOUT ②

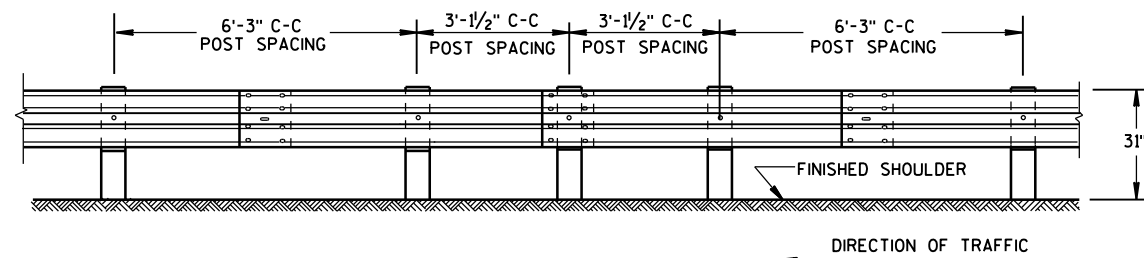
MIDWEST GUARDRAIL SYSTEM
(MGS) GUARDRAIL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



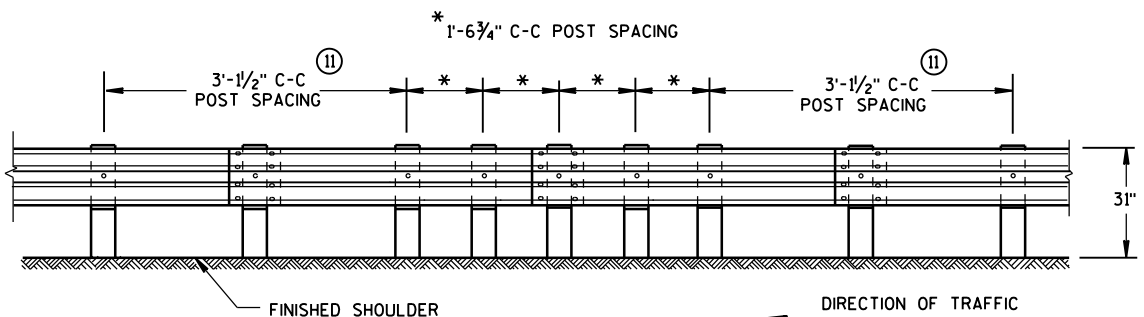
FRONT VIEW

POST SPACING STANDARD INSTALLATION



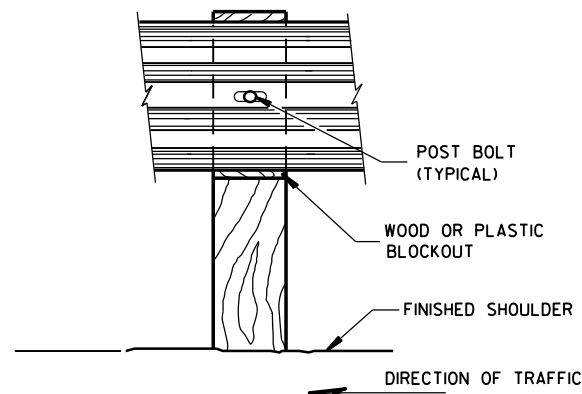
FRONT VIEW

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

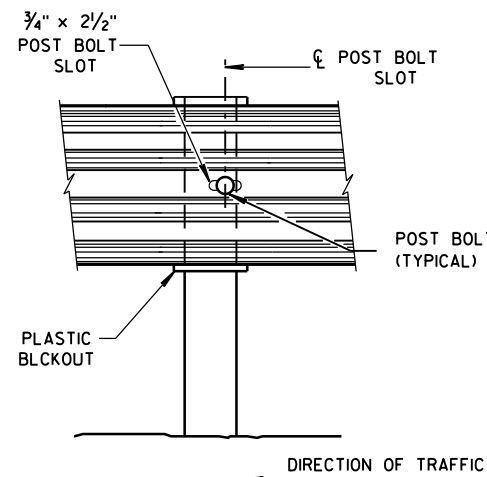


FRONT VIEW

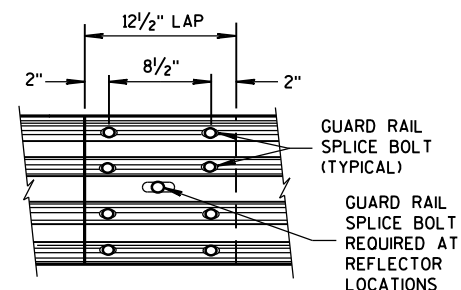
QUARTER POST SPACING (QS)



FRONT VIEW AT WOOD POST

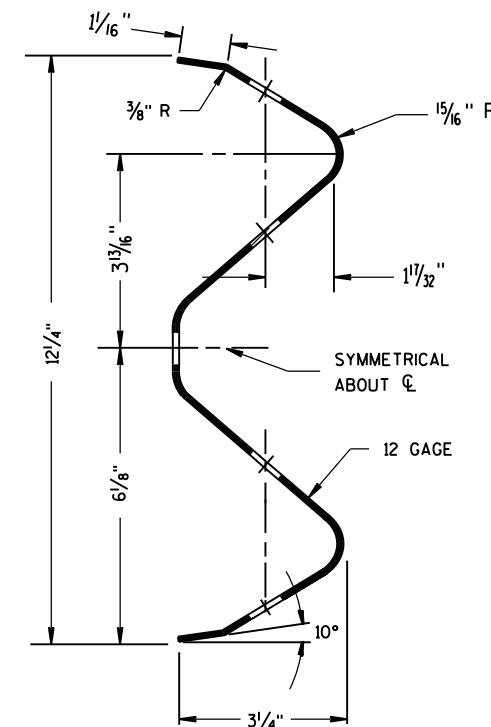


FRONT VIEW AT STEEL POST

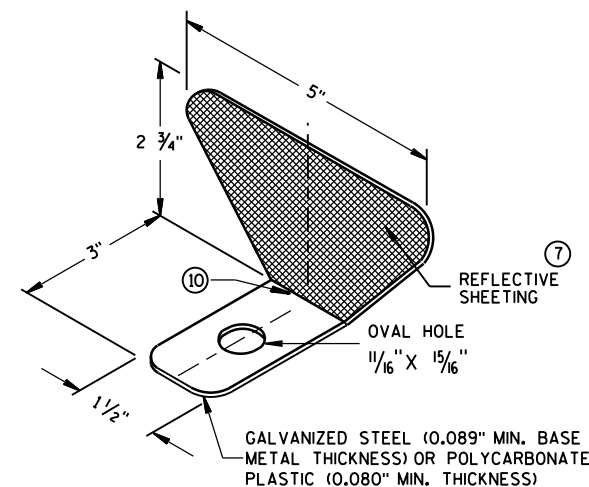
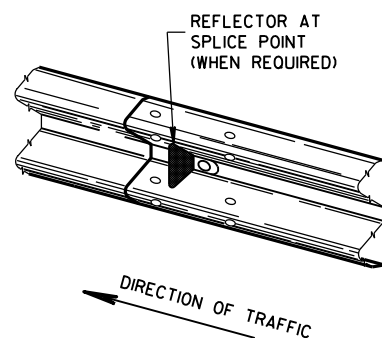


FRONT VIEW

MID-SPAN BEAM SPLICE



SECTION THRU W-BEAM RAIL



ONE SIDED REFLECTOR DETAIL AND TYPICAL INSTALLATION

GENERAL NOTES

- ⑦ PROVIDE SILVER REFLECTIVE SHEETING ON ALL REFLECTORS EXCEPT THOSE LOCATED ALONG THE LEFT EDGE OF ONE-WAY ROADWAYS, WHICH SHALL BE PROVIDED WITH YELLOW REFLECTIVE SHEETING. SHEETING IS TYPE H. SEE STANDARD SPECIFICATION 637.
- 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.
- ⑨ REVERSE EVERY OTHER REFLECTOR FOR 2-WAY VISIBILITY. THE CONTRACTOR MAY FURNISH TWO-SIDED REFLECTORS IN LIEU OF ONE-SIDED REFLECTORS.
- ⑩ PROVIDE AN ANGLE OF BEND OF $90^\circ \pm 1^\circ$ FOR TWO-SIDED REFLECTORS.
- ⑪ 25 FEET OF HALF POST SPACING IS REQUIRED ON APPROACH AND DEPARTURE ENDS OF QUARTER POST SPACING.

POST BOLTS ARE A $\frac{5}{8}$ " DIAMETER ASTM A307 GUARDRAIL BOLT. A POST BOLT REQUIRES $\frac{5}{8}$ " DIAMETER A563A DOUBLE RECESSED (DR) HEAVY HEX NUT AND $\frac{5}{8}$ " DIAMETER F844 FLAT WASHER. POST BOLTS MAY BE LONGER IF MULTIPLE BLOCKOUTS ARE BEING USED.

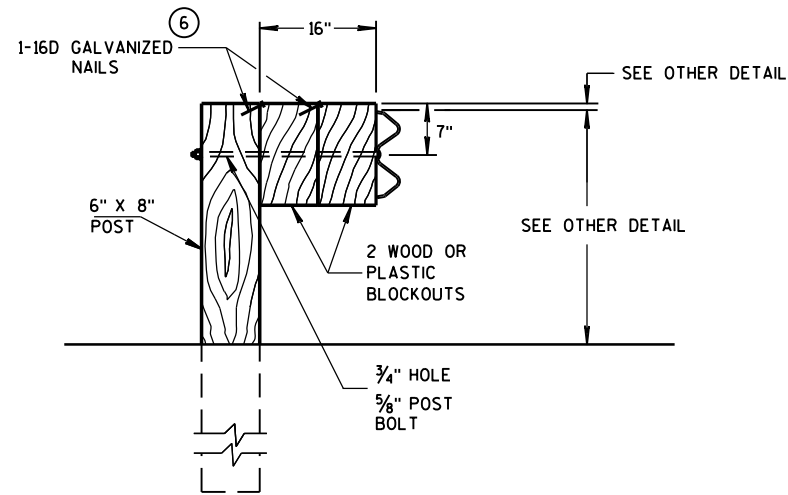
GUARD RAIL SPLICE BOLTS ARE A $\frac{5}{8}$ " DIAMETER ASTM A307 GUARDRAIL HEAD BOLT. A GUARDRAIL SPLICE BOLT REQUIRES $\frac{5}{8}$ " DIAMETER A563A DOUBLE RECESSED (DR) HEAVY HEX NUT.

REFLECTOR SPACING

	BEAM GUARD LENGTH	REFLECTOR SPACING	NO. SURFACES REFLECTORIZED	MIN. NO. REFLECTORS
ONE WAY TRAFFIC	< 200'	50' C-C	1	3
	> 200'	100' C-C	1	
TWO WAY TRAFFIC	< 200'	25' C-C	1 ⑨	6
	> 200'	50' C-C	1	
TWO WAY TRAFFIC	< 200'	50' C-C	2 ⑩	3
	> 200'	100' C-C	2	

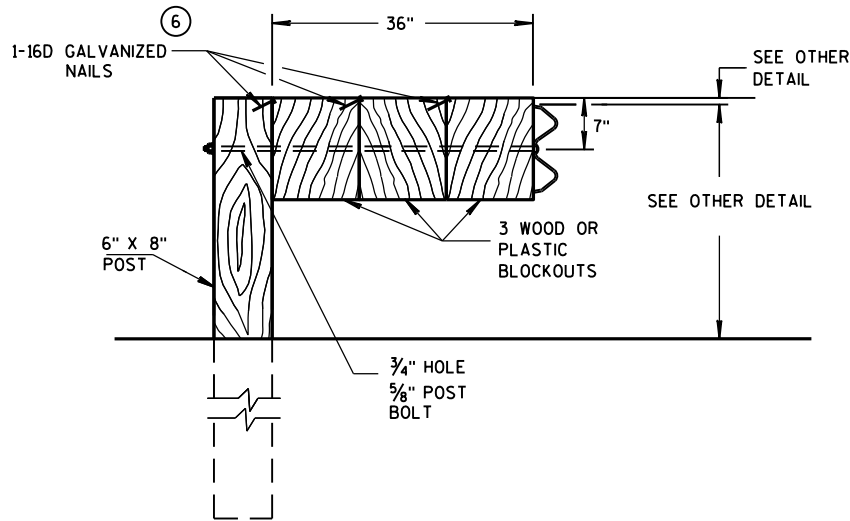
MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



DETAIL FOR 16" BLOCKOUT DEPTH

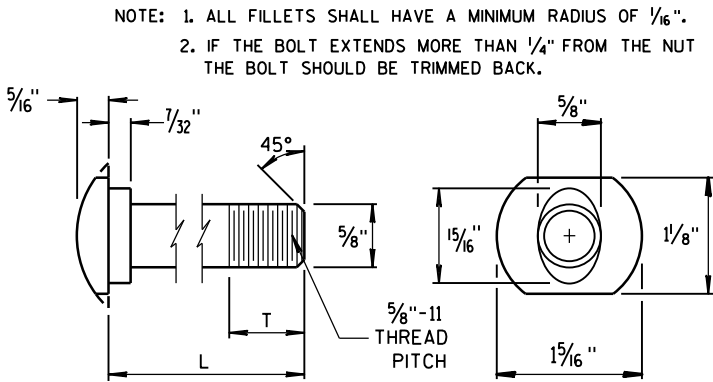
IT IS ACCEPTABLE TO USE BLOCKOUTS UP TO 16" DEEP TO INCREASE THE POST OFFSET TO AVOID UNDERGROUND OBSTACLES. THERE IS NO LIMIT TO THE NUMBER OF POSTS THAT CAN HAVE ADDITIONAL BLOCKOUTS UP TO 16" DEEP.



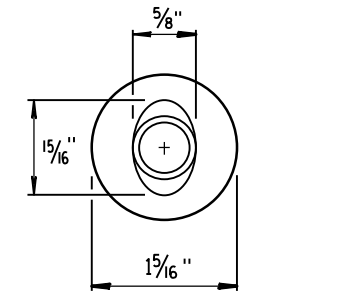
DETAIL FOR 36" BLOCKOUT DEPTH

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.

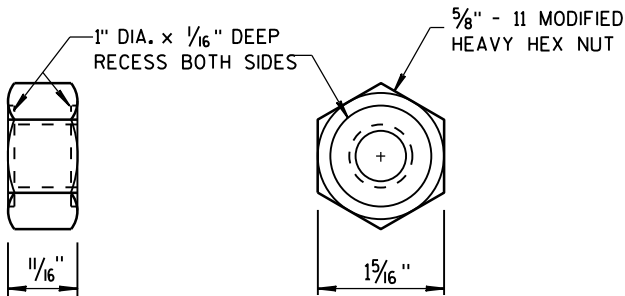
DO NOT USE 16" OR 36" BLOCKOUTS IF IT CAUSES THE POST TO BE DRIVEN BEYOND SHOULDER HINGE POINT OR CAUSES A FIXED OBJECT TO BE WITHIN THE DEFLECTION DISTANCE OF THE BARRIER.



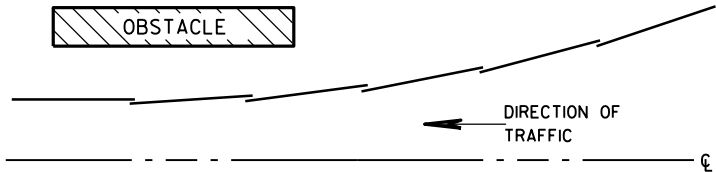
POST BOLT TABLE



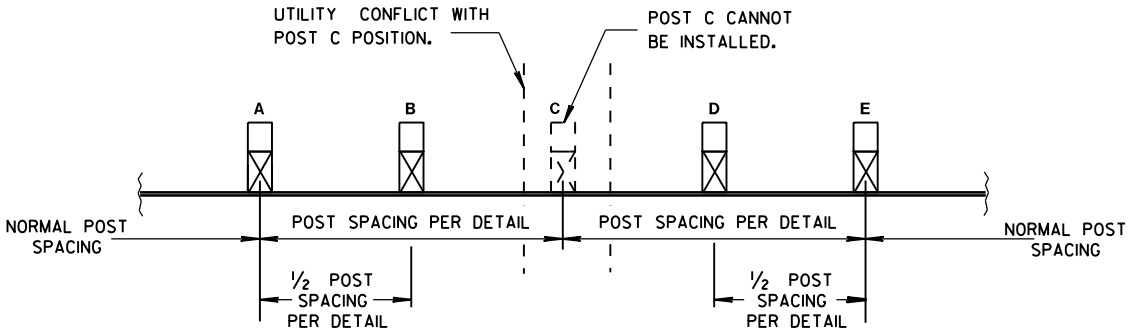
ALTERNATE BOLT HEAD



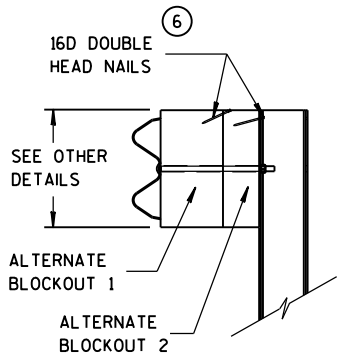
POST BOLT
AND RECESS NUT



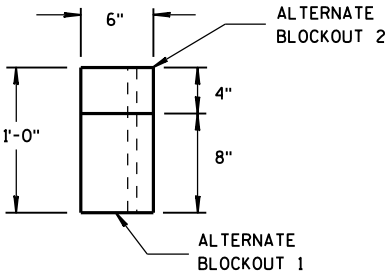
PLAN VIEW
BEAM LAPPING DETAIL



POST DRIVING FOR CONTINUOUS
UNDERGROUND OBSTRUCTION



SIDE VIEW



TOP VIEW

ALTERNATE WOOD
BLOCKOUT DETAIL

MIDWEST GUARDRAIL SYSTEM
(MGS) GUARDRAIL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
June 2014
DATE
/S/ Jerry H. Zogg
ROADWAY STANDARDS DEVELOPMENT
ENGINEER

GENERAL NOTES

- (A) THE SLOPE IN THE AREA BOUNDED BY THE GRADELINE, THE HINGE POINT LINE (HPL), AND THE CLEAR ZONE LIMITS (CZL) SHALL BE 4:1 OR FLATTER.
- (B) AFTER FINAL ASSEMBLY, RECHECK CABLE TO BE SURE IT IS TAUT AND HAS NOT RELAXED.
- (C) DIFFERENT MANUFACTURES REQUIRE DIFFERENT PERFORATED W-BEAM RAIL END PANELS. SEE MANUFACTURES INFORMATION.
- (D) THE TOP OF THE STEEL TUBE ON POST 1 AND POST 2 SHALL NOT BE MORE THAN 3" ABOVE THE FINISH GROUND ELEVATION.
- (E) ATTACH ALUMINUM SHEET TO E.A.T. HEAD USING 4 STAINLESS STEEL SELF-TAPPING SCREWS, ONE SCREW PER CORNER.
- (G) 1/2" DIAMETER X 3" LONG LAG BOLT AND WASHER.
- (H) HARDWARE VARIES BETWEEN DIFFERENT MANUFACTURES. SEE MANUFACTURE'S DRAWING FOR INFORMATION.
- (I) DIMENSIONS MAY VARY. SEE MANUFACTURE'S INFORMATION.

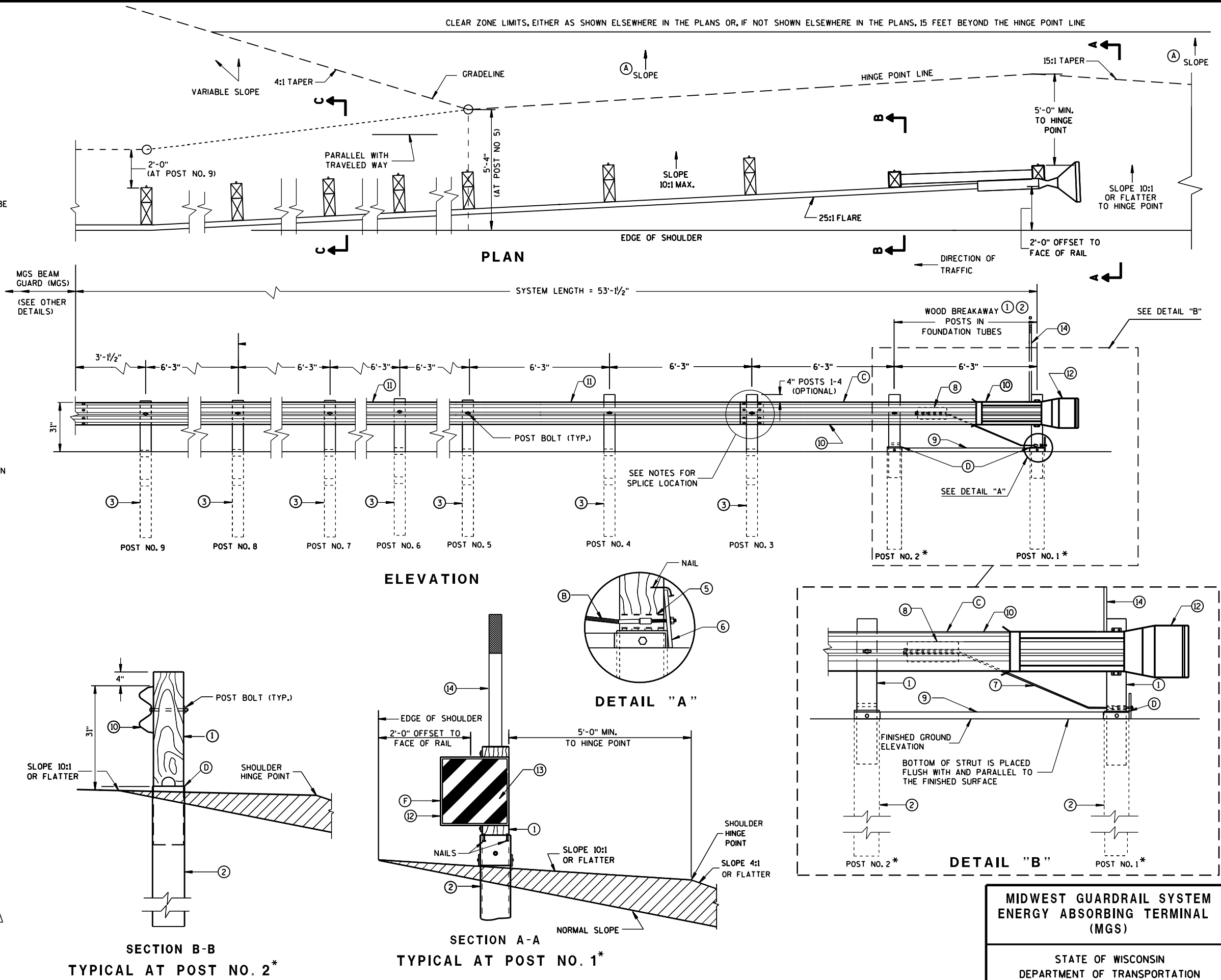
SEE SDD 14B42 FOR MORE INFORMATION.

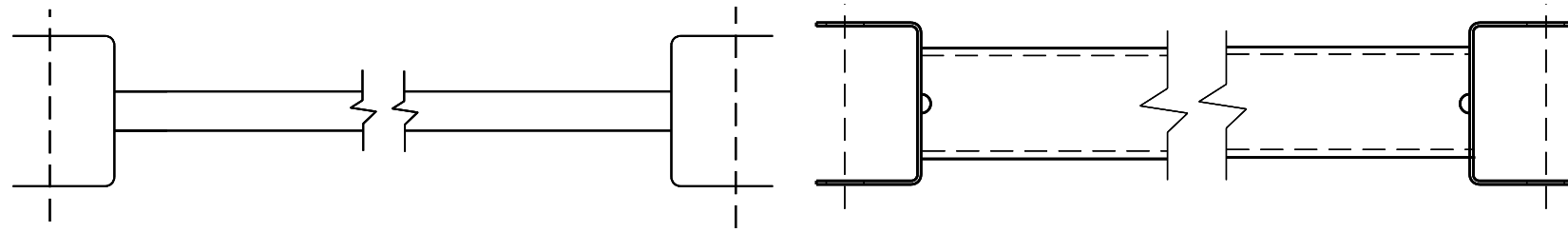
* DO NOT ATTACH BLOCKOUTS TO POSTS 1 AND 2.

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

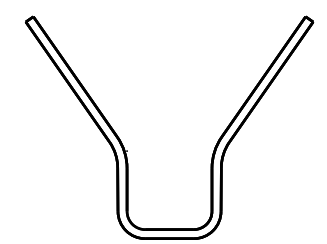
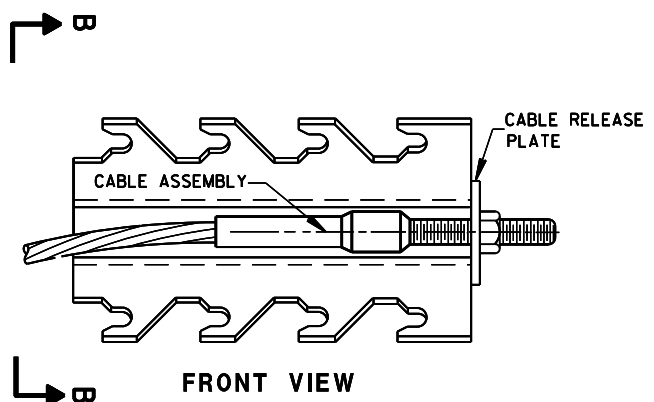
W-BEAM RAIL SPLICES ARE LOCATED AT POST NUMBER 3, AND BETWEEN POST 5 AND 6, BETWEEN POSTS 7 AND 8, AND MIDDLE OF THE SPAN AFTER POST 9.

THE CENTER OF THE UPPER 3/2" 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.

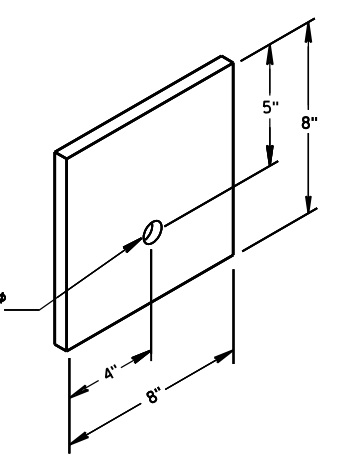
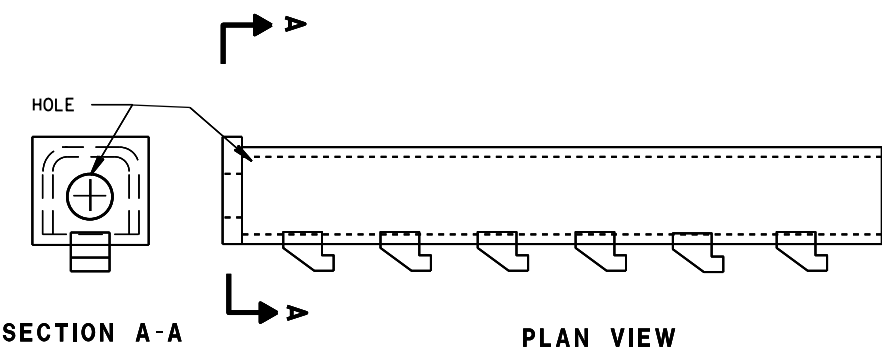




9 H
GENERIC GROUND STRUT

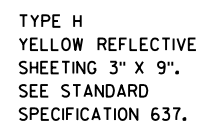
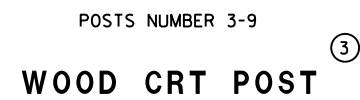
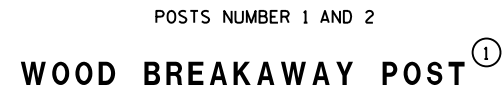


SECTION B-B
8 H
GENERIC ANCHOR CABLE BOX

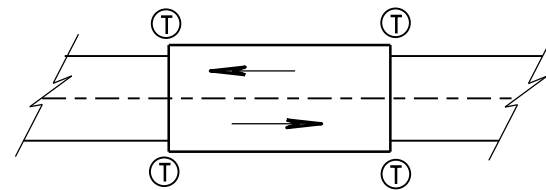


6
BEARING PLATE

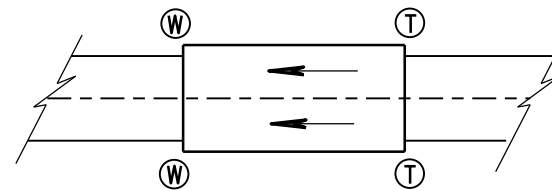
BILL OF MATERIALS	
PART NO.	DESCRIPTION
MATERIALS PROVIDED BY MGS EAT MANUFACTURER. SEE MANUFACTURER'S DETAILS FOR MORE INFORMATION.	
①	WOOD BREAKAWAY POST
②	6" X 8" X 0.188", 6'-0" LONG FOUNDATION TUBE AT POSTS 1 AND 2
③	WOOD CRT
④	WOOD BLOCKOUT
⑤	PIPE SLEEVE
⑥	BEARING PLATE
⑦	BCT CABLE ASSEMBLY
⑧	ANCHOR CABLE BOX
⑨	GROUND STRUT
⑩	PERFORATED W-BEAM RAIL END PANEL, 12'-6" LONG.
⑪	STANDARD W-BEAM RAIL. MULTIPLE SECTIONS REQUIRED. SECTIONS VARY IN LENGTH.
⑫	END SECTION EAT
⑬	0.040" ALUMINUM SHEET WITH REFLECTIVE SHEETING TYPE F PER SECTION 637 OF THE STANDARD SPECIFICATIONS
⑭	EAT MARKER POST - YELLOW (SEE APPROVED PRODUCTS LIST)



MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED June 2014	/S/ Jerry H. Zogg
DATE	ROADWAY STANDARDS DEVELOPMENT ENGINEER
FHWA	



TWO WAY TRAFFIC



ONE WAY TRAFFIC

(T) THRIE BEAM CONNECTION

(W) 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.

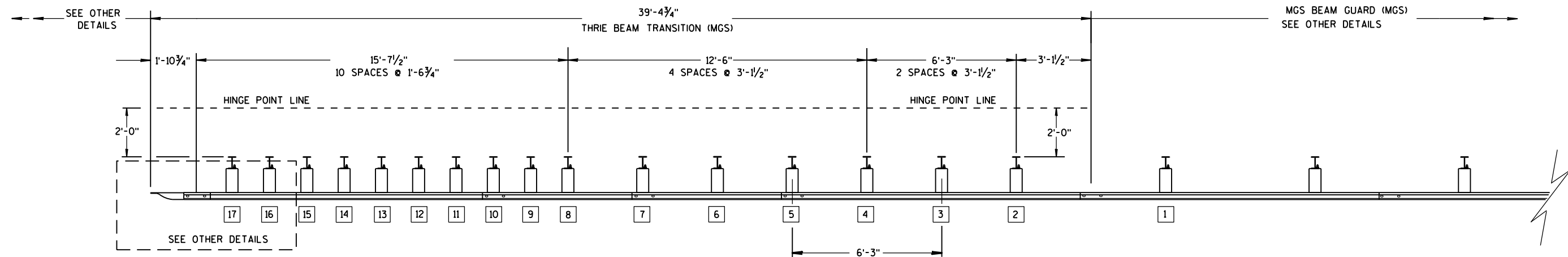
TRANSITION USES STEEL POSTS ONLY.

SEE STANDARD DETAIL DRAWING 14 B 42 FOR MORE INFORMATION.

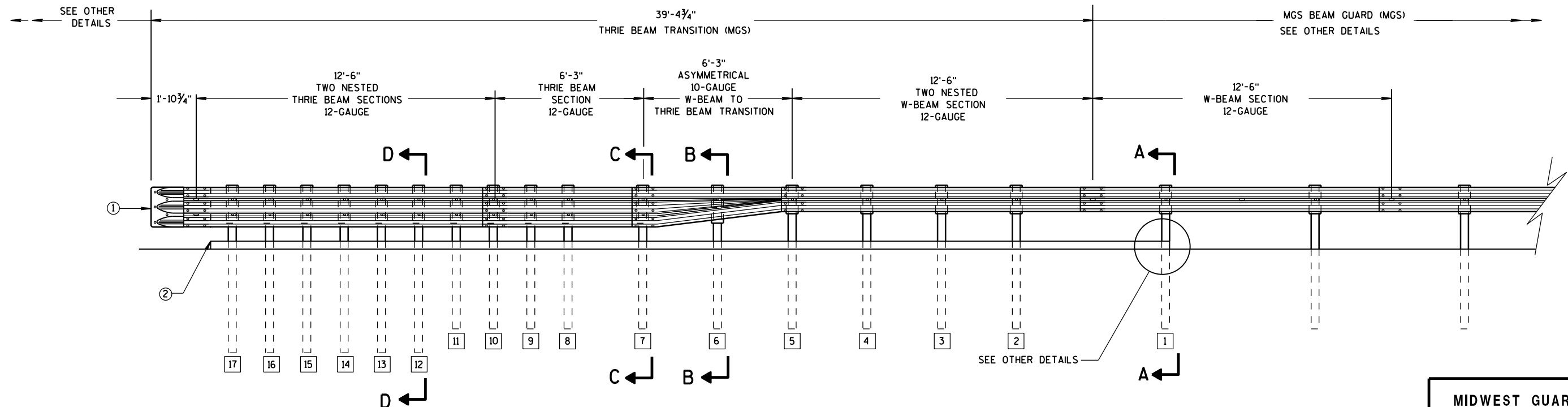
① BRIDGE RAILING TYPE "W" DOES NOT REQUIRE A TERMINAL CONNECTOR.

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

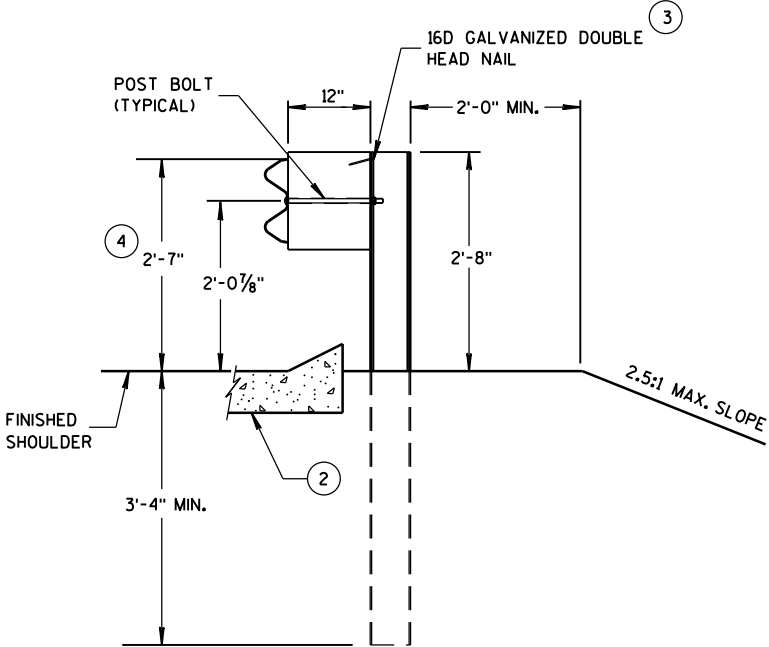
MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

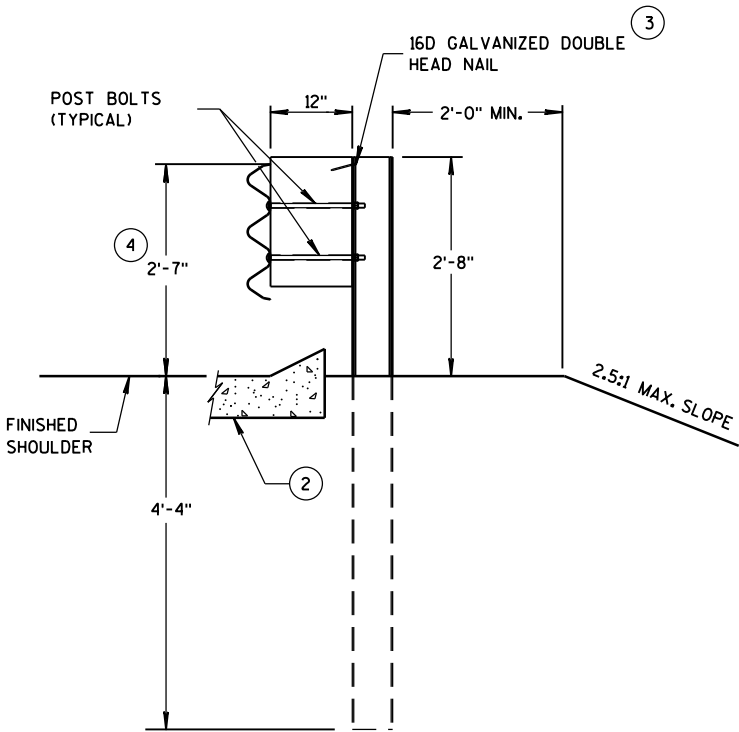
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

GENERAL NOTES

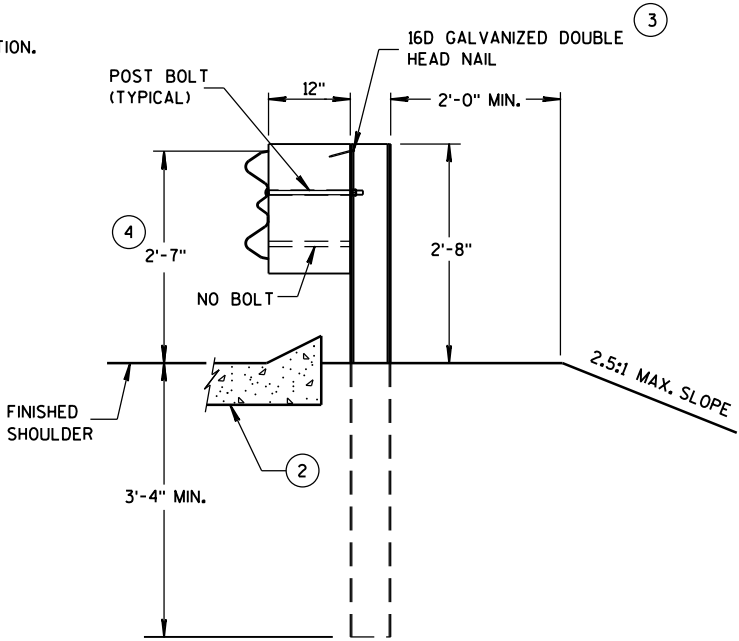
- 2 OPTIONAL CURB AND GUTTER OR DRAINAGE FEATURE SEE PLAN FOR INFORMATION.
- 3 WHEN USING STEEL POSTS AND WOOD BLOCKOUTS INSTALL FOUR 10D GALVANIZED NAILS. INSTALL NAILS AT THE BACK CORNERS OF THE BLOCK AND BEND THE NAILS OVER THE FLANGE OF THE STEEL POST.
- 4 TOLERANCE FOR TOP OF W-BEAM RAIL IS $\pm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



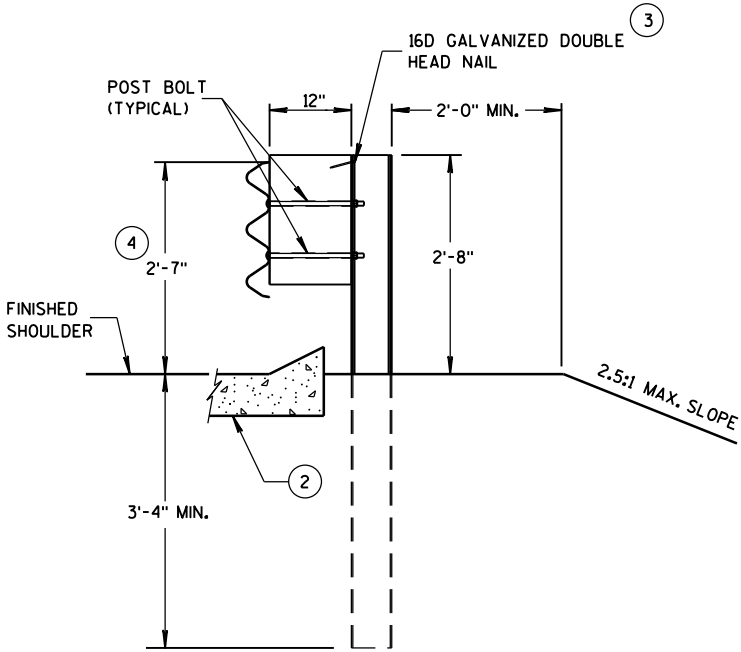
SECTION A-A
POSTS 1-5



SECTION D-D
POSTS 12-17



SECTION B-B
POST 6



SECTION C-C
POSTS 7-11

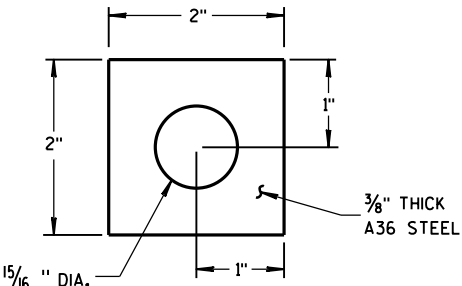
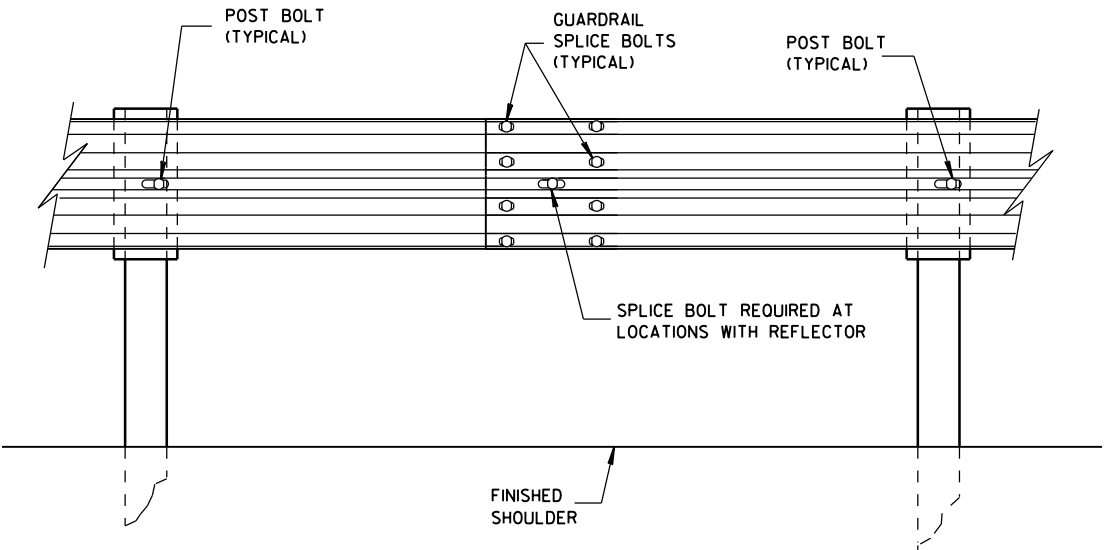
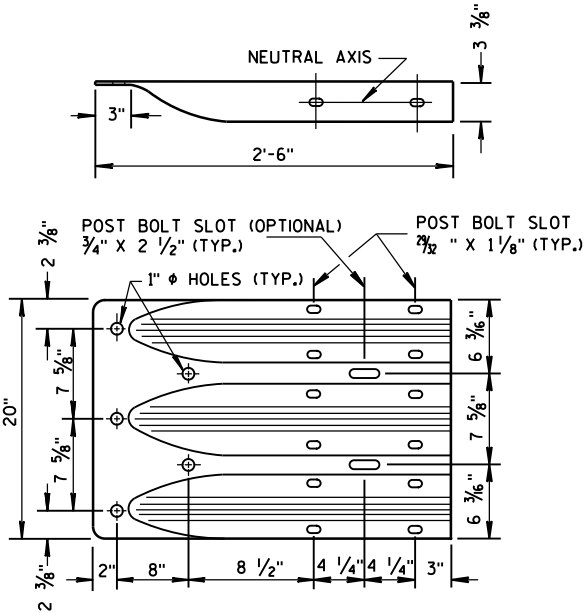


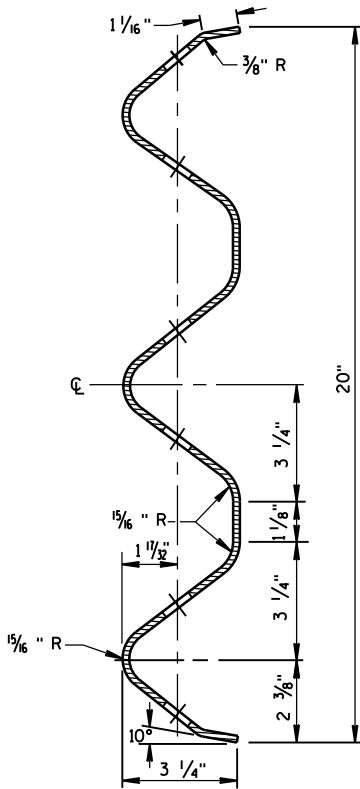
PLATE WASHER DETAIL



SPlice DETAIL



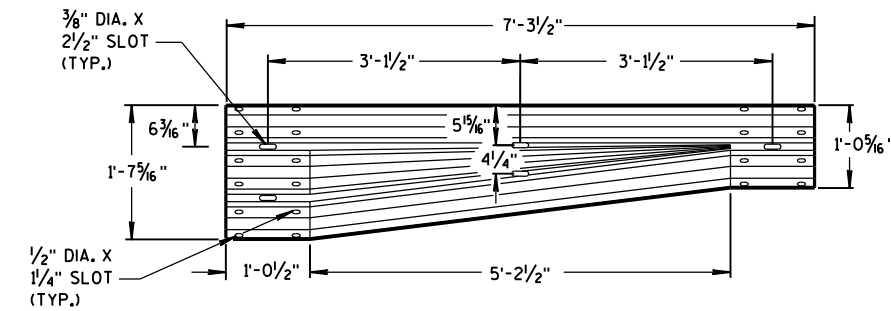
THRIE BEAM
TERMINAL CONNECTOR



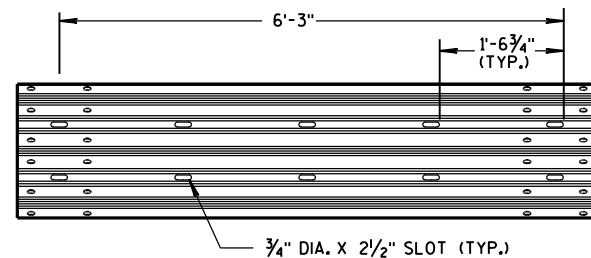
SECTION THRU THRIE
BEAM RAIL ELEMENT

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

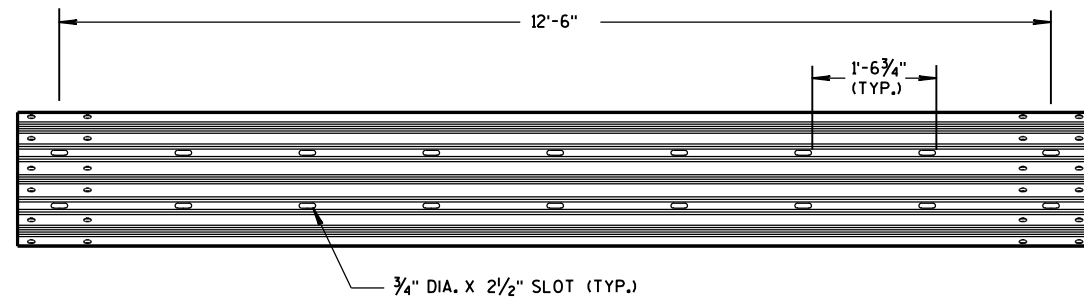
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



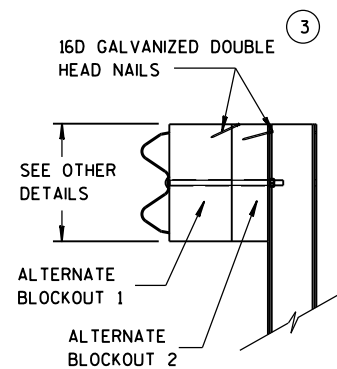
W-BEAM TO THRIE BEAM TRANSITION SECTION



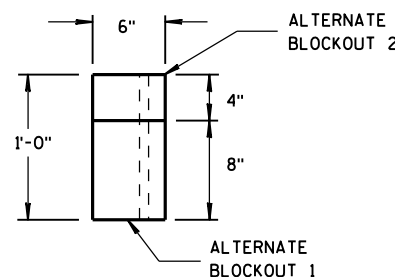
6'-3" THRIE BEAM SECTION



12'-6" THRIE BEAM SECTION

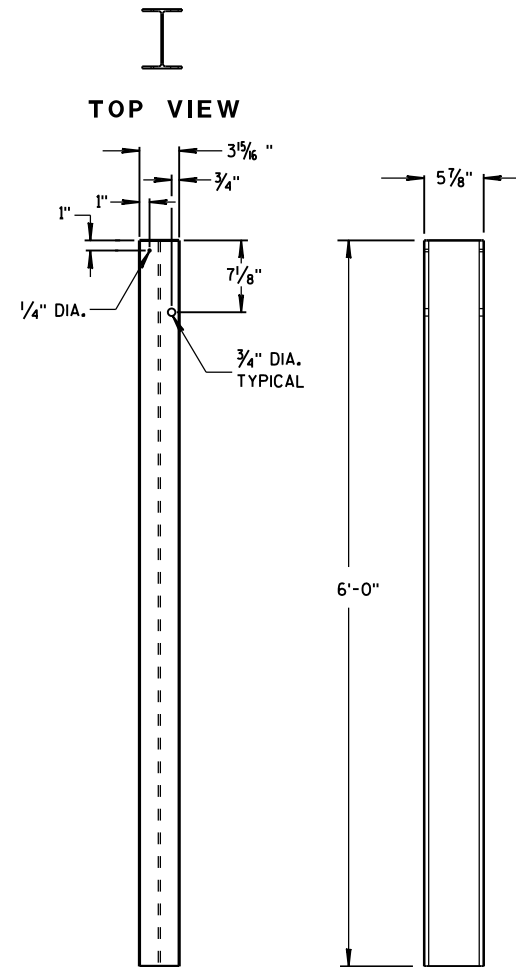


SIDE VIEW



TOP VIEW

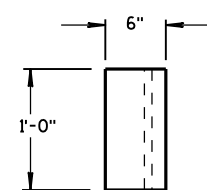
ALTERNATE WOOD BLOCKOUT DETAIL



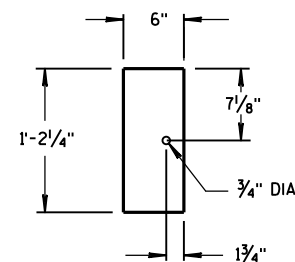
FRONT VIEW

SIDE VIEW

STEEL POSTS 1-5

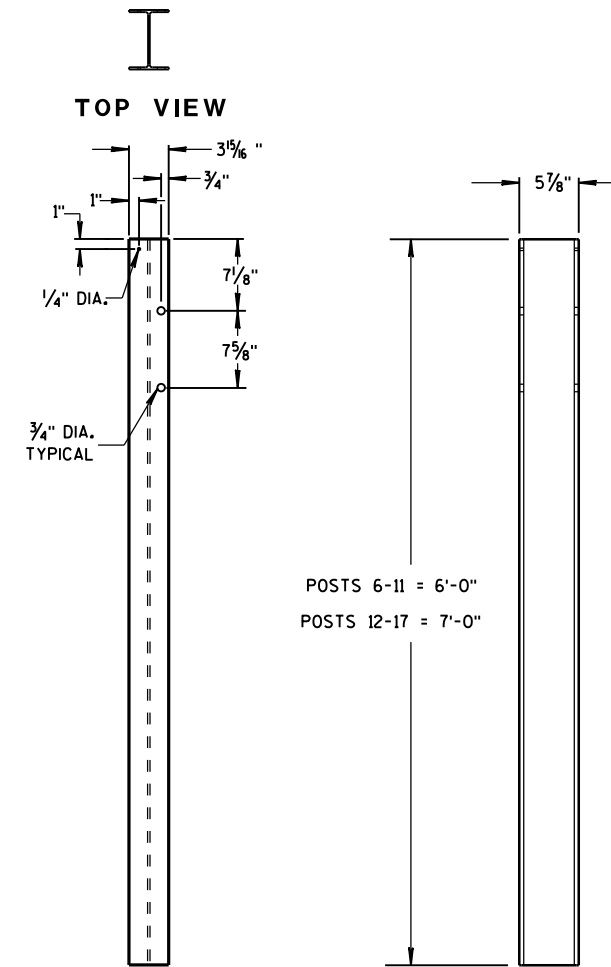


TOP VIEW



FRONT VIEW

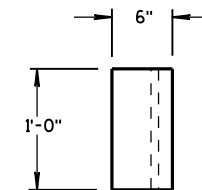
BLOCKOUT
POSTS 1-5



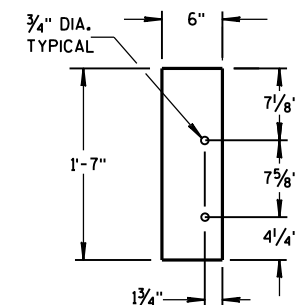
FRONT VIEW

SIDE VIEW

STEEL POSTS 6-17



TOP VIEW



FRONT VIEW

BLOCKOUT
POSTS 6-17

GENERAL NOTES

STEEL POSTS ARE W6X9 OR W6X8.5.

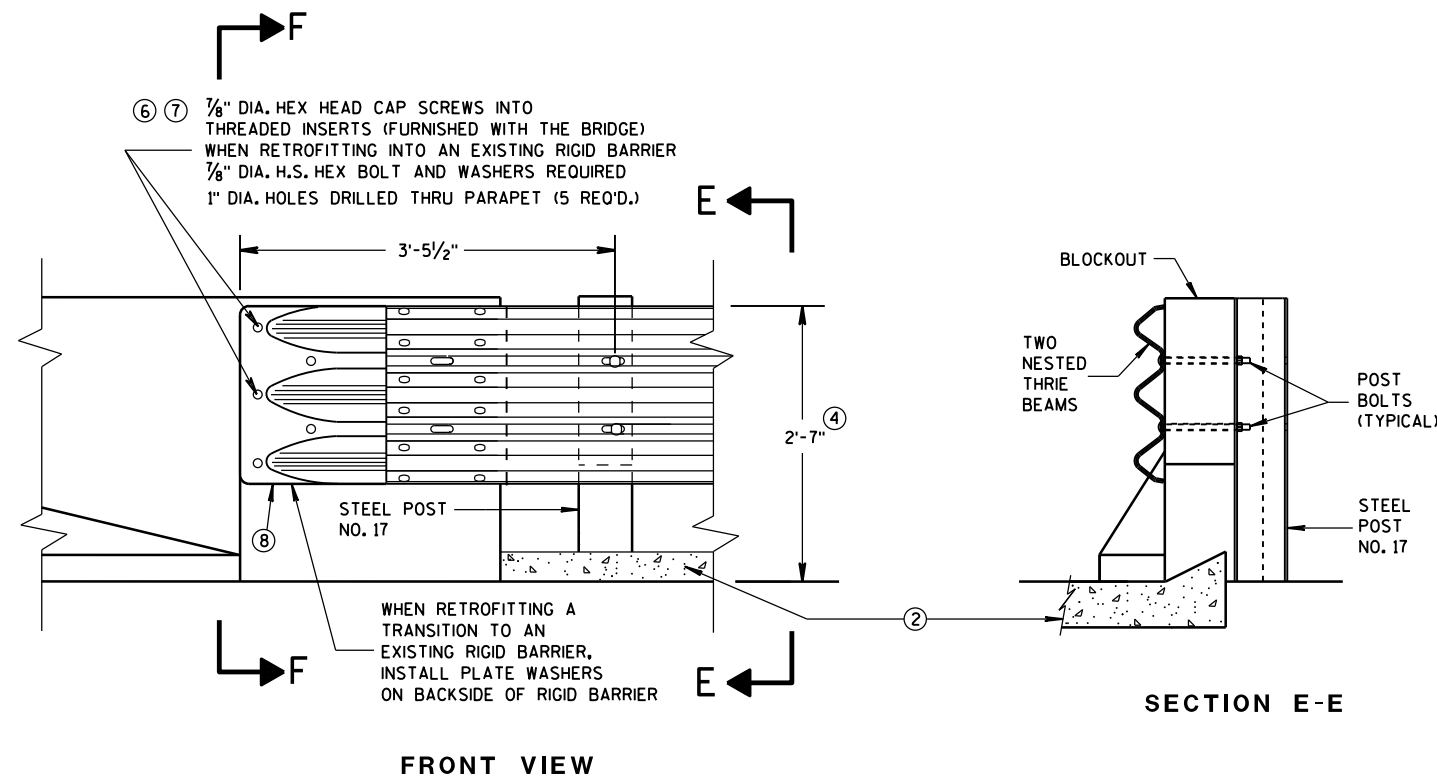
BOLT HOLES FOR POST ARE ON FRONT AND OF SIDE OF POST.

(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)

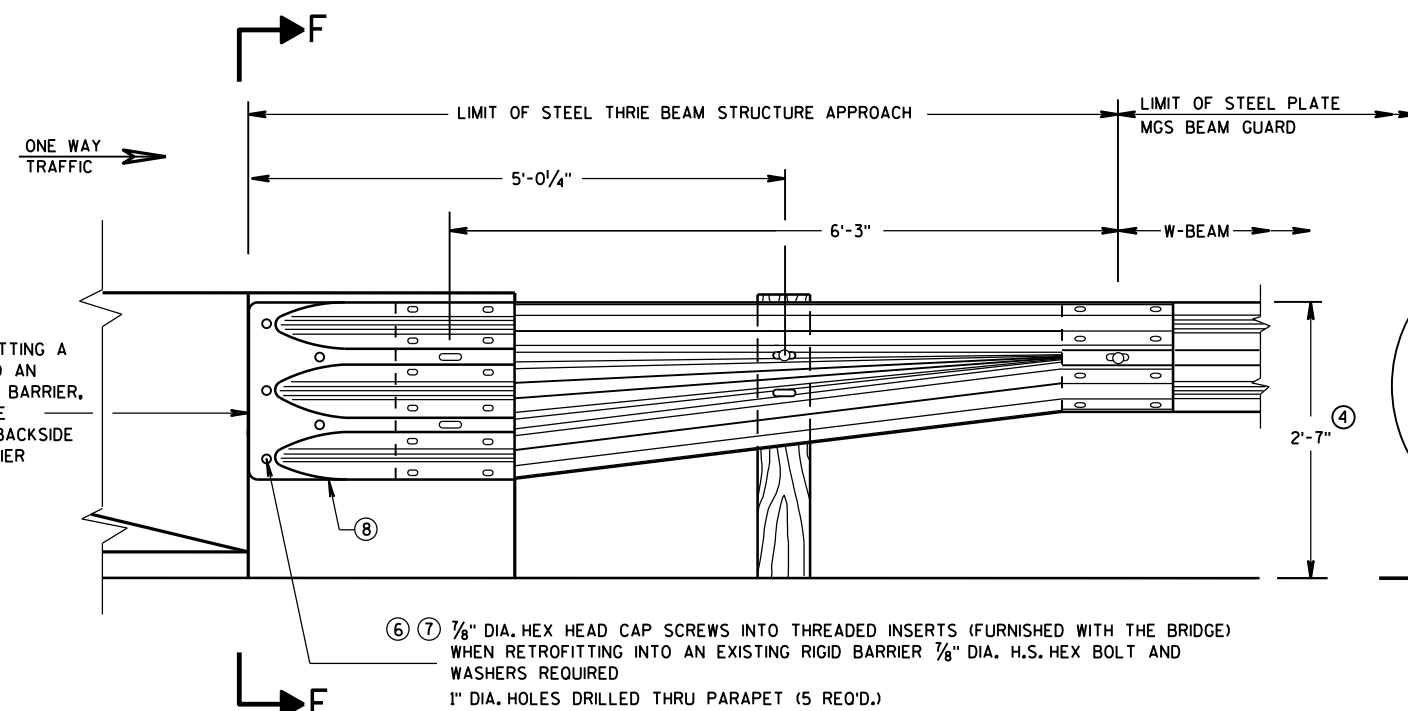
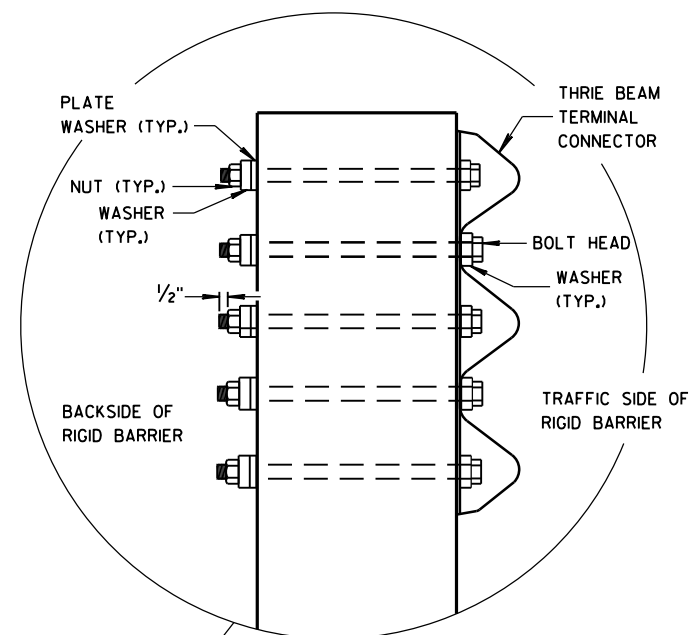
STATE OF WISCONSIN
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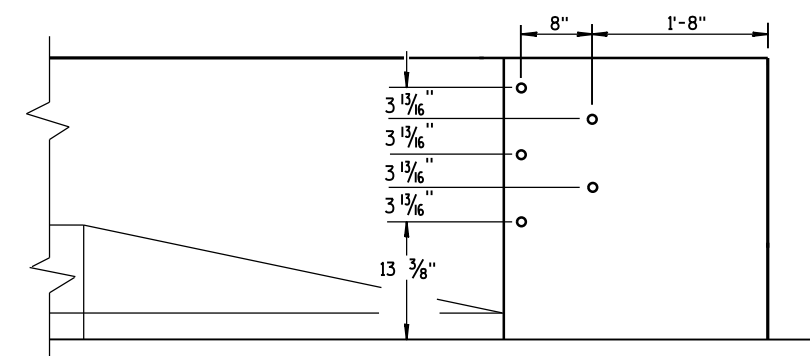
GENERAL NOTES

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".



SECTION F-F



DRILL HOLE LOCATION

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

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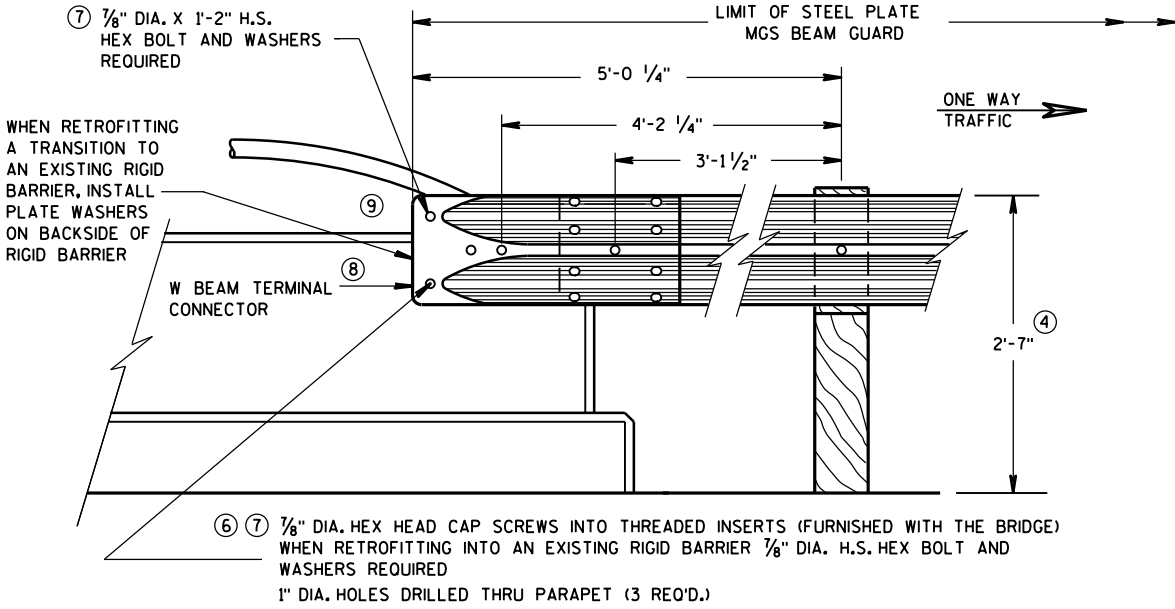
APPROVED
June, 2015
DATE
FHWA

/S/ Jerry H. Zogg
ROADWAY STANDARDS DEVELOPMENT
ENGINEER

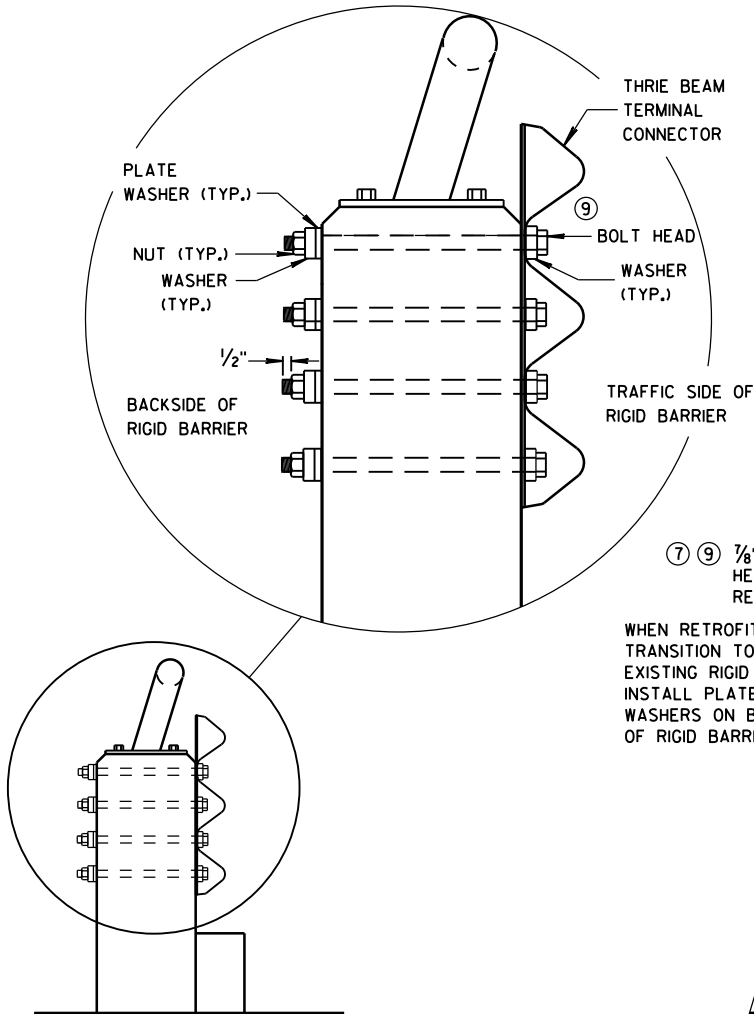
GENERAL NOTES

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

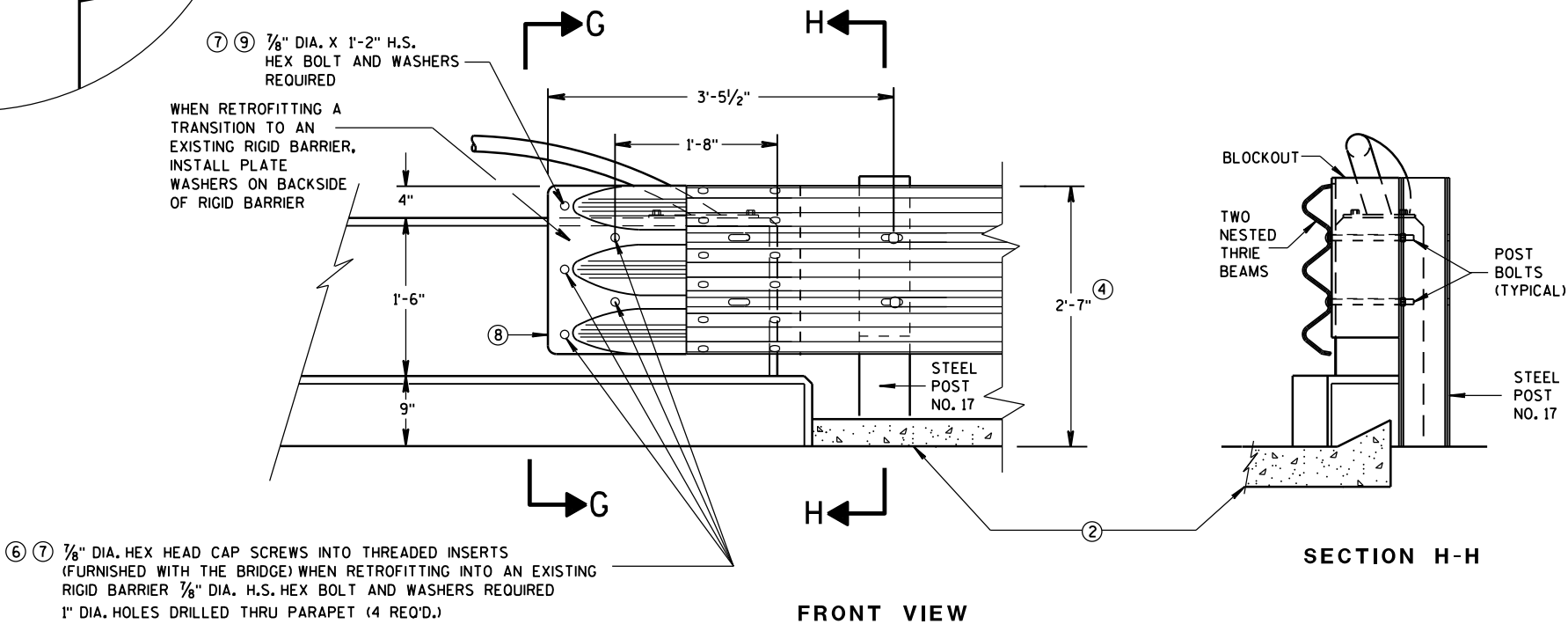
- ② OPTIONAL CURB AND GUTTER OR DRAINAGE FEATURE SEE PLAN FOR INFORMATION.
- ④ TOLERANCE FOR TOP OF BEAM IS $\pm 1"$.
- ⑥ DRILLING BOLT HOLES THROUGH THE PARAPET, BOLTS, NUTS, WASHERS AND REPAIRING DAMAGED CONCRETE ARE INCIDENTAL TO THE CONTRACT.
- ⑦ BOLTS MAY BE A325 BOLTS OR A449 BOLTS. BOLT LENGTH 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.



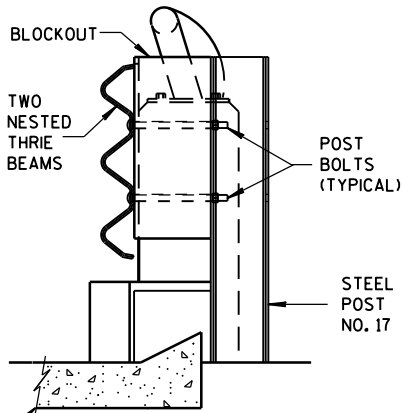
FRONT VIEW
W BEAM CONNECTION TO VERTICAL FACE PARAPET
(USE ONLY ON THE TRAFFIC EXIT END OF ONE WAY BRIDGES)



SECTION G-G



FRONT VIEW
THRIE BEAM CONNECTION TO VERTICAL FACED PARAPETS

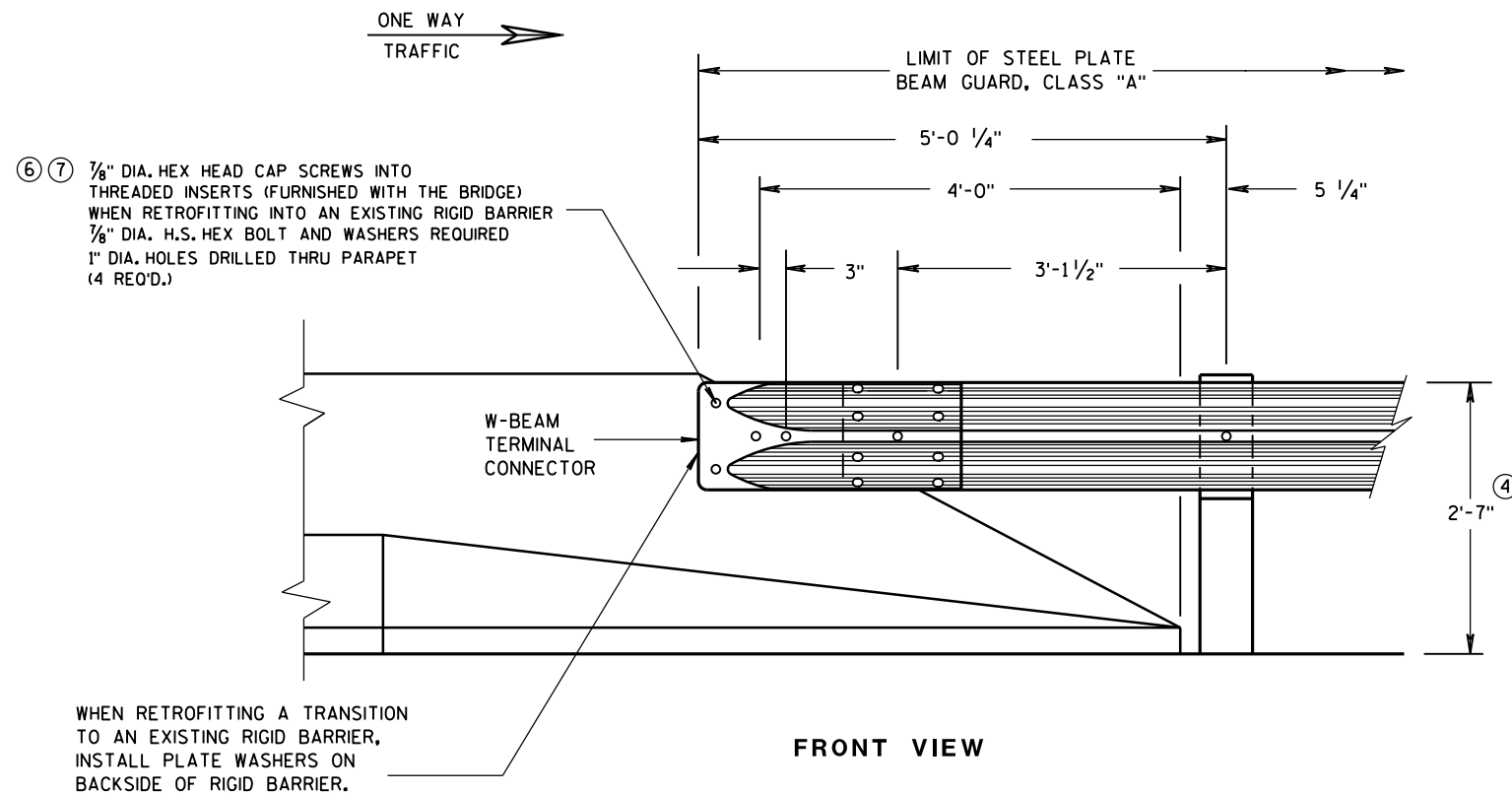


SECTION H-H

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

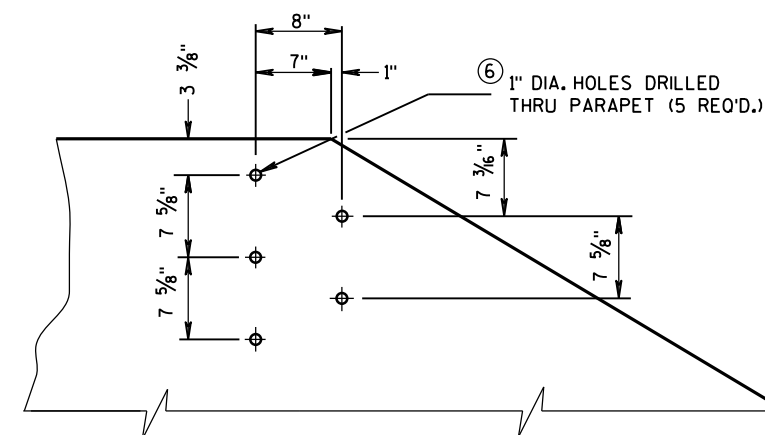
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ENGINEER
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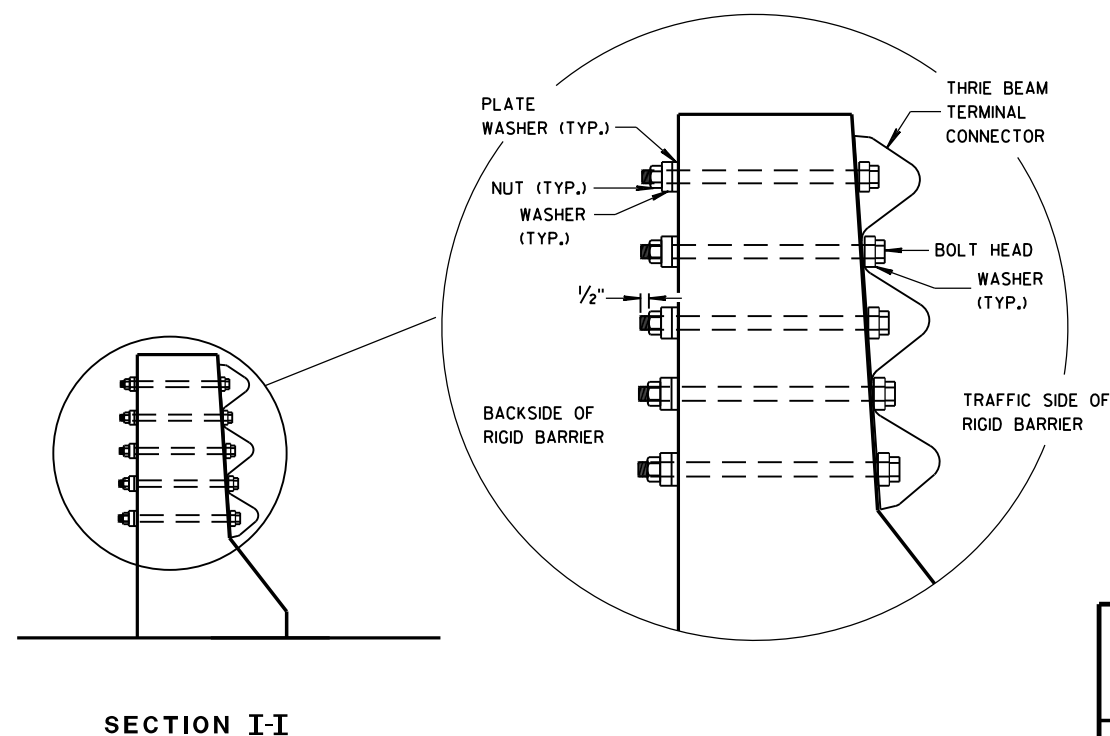
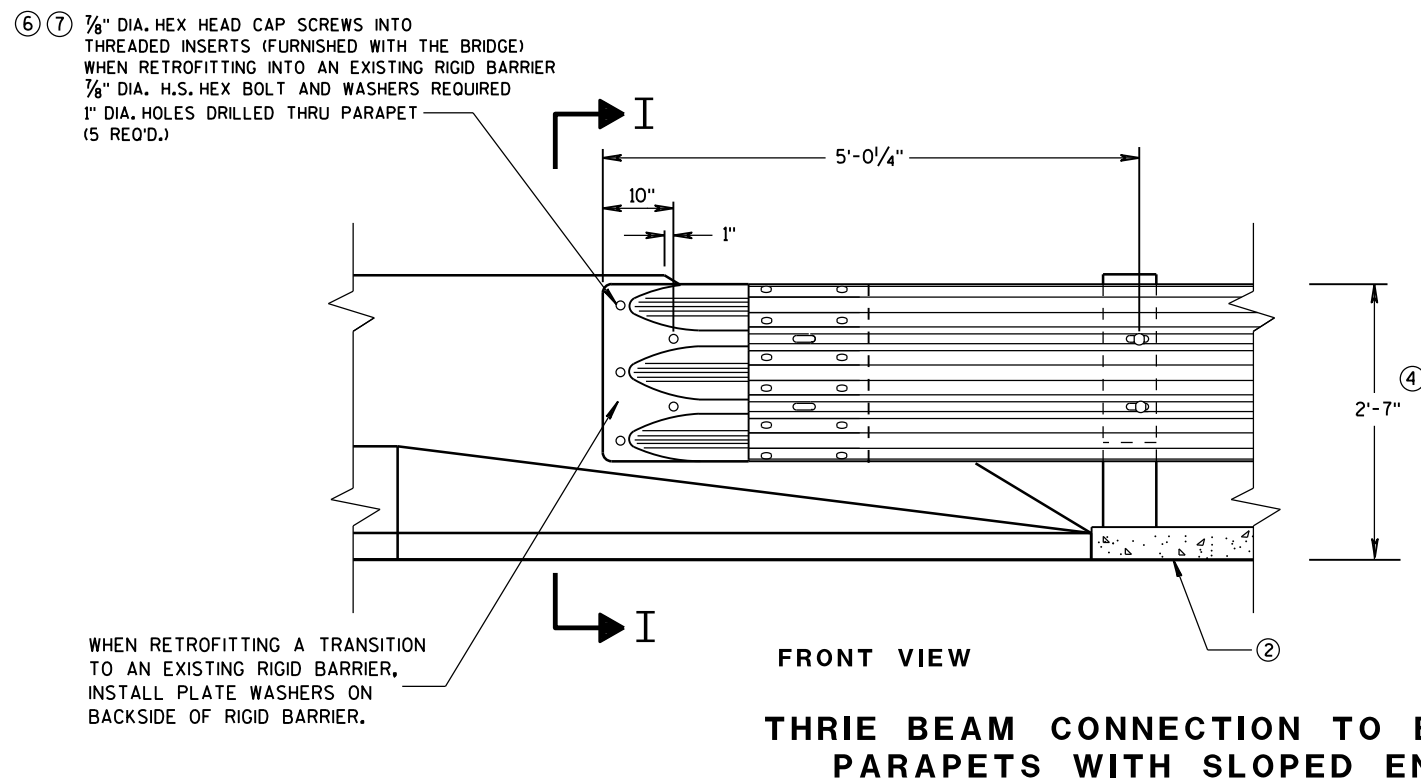


GENERAL NOTES

- 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

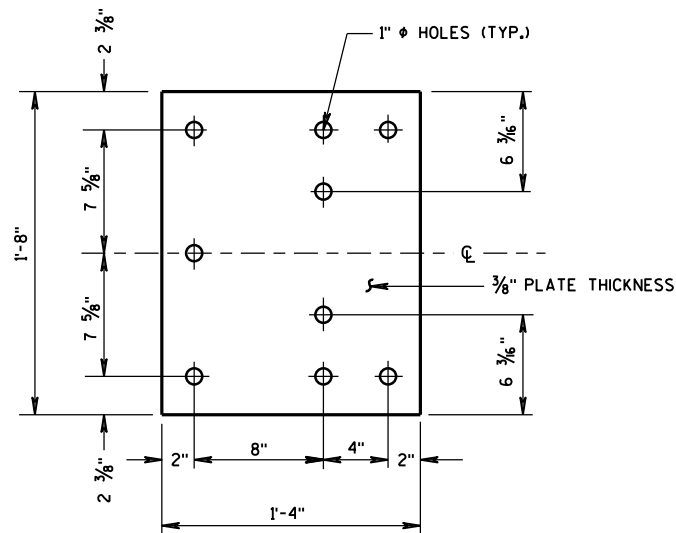


MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

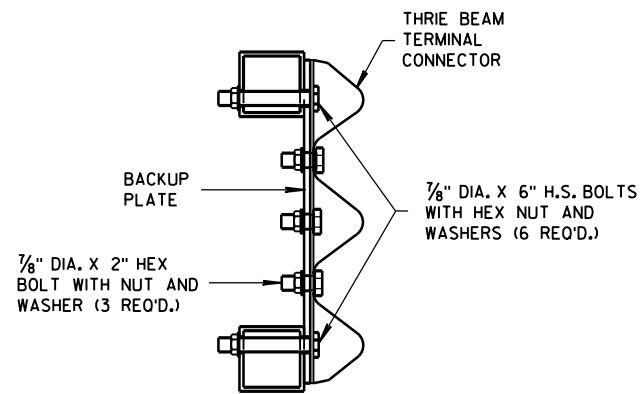
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June, 2015
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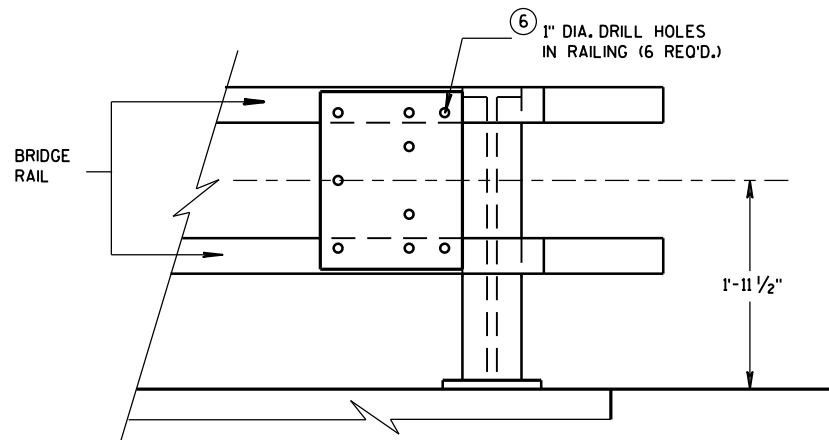
/S/ Jerry H. Zogg
ROADWAY STANDARDS DEVELOPMENT
ENGINEER



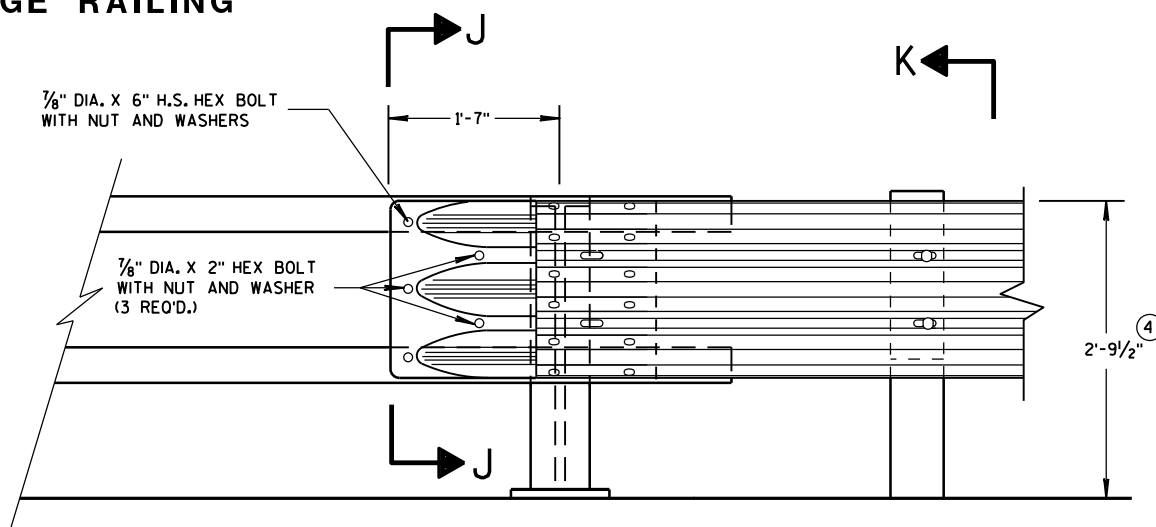
BACK-UP PLATE DETAIL



SECTION J-J

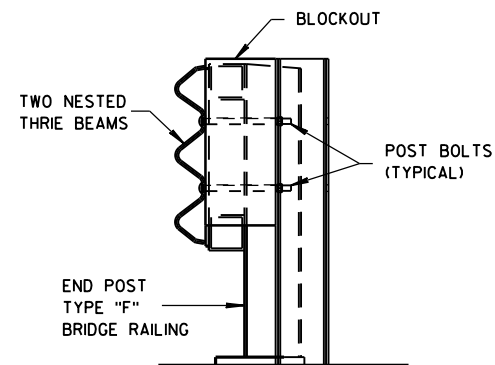


BACK-UP PLATE MOUNTING ONTO BRIDGE RAILING



FRONT VIEW

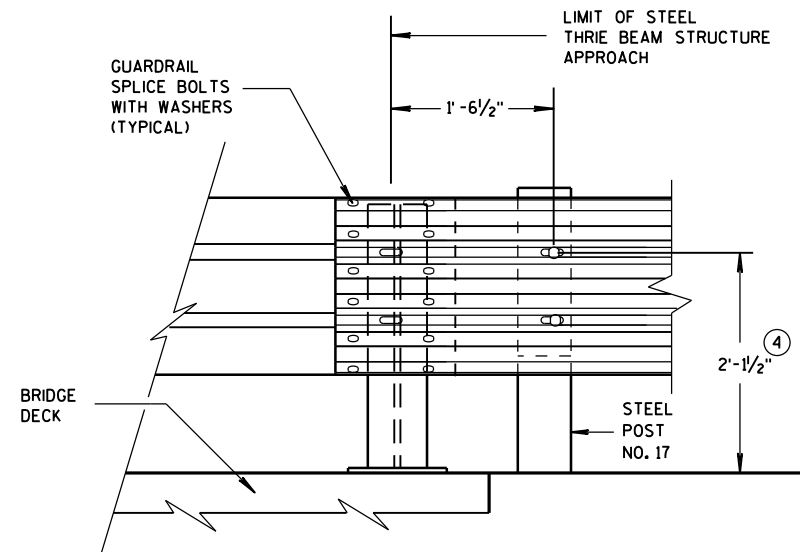
THRIE BEAM CONNECTION TO TUBULAR RAILING TYPE "F"



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)

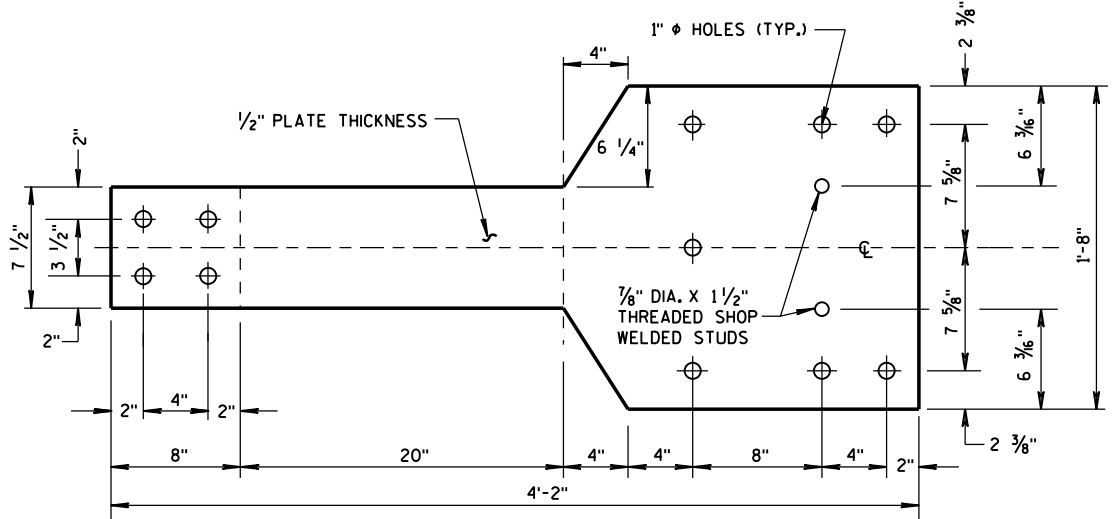
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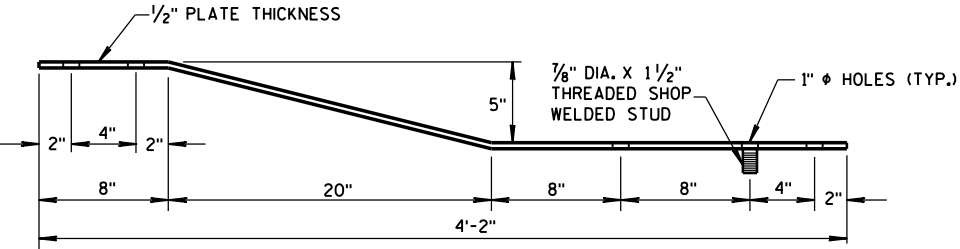
/S/ Jerry H. Zogg
ROADWAY STANDARDS DEVELOPMENT
ENGINEER

GENERAL NOTES

④ TOLERANCE FOR TOP OF W-BEAM RAIL IS $\pm 1"$.

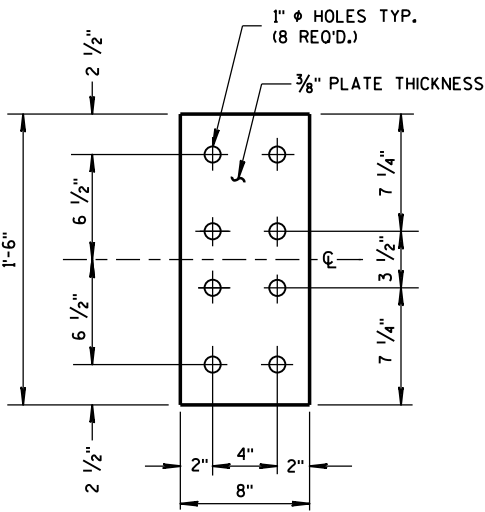


FRONT VIEW



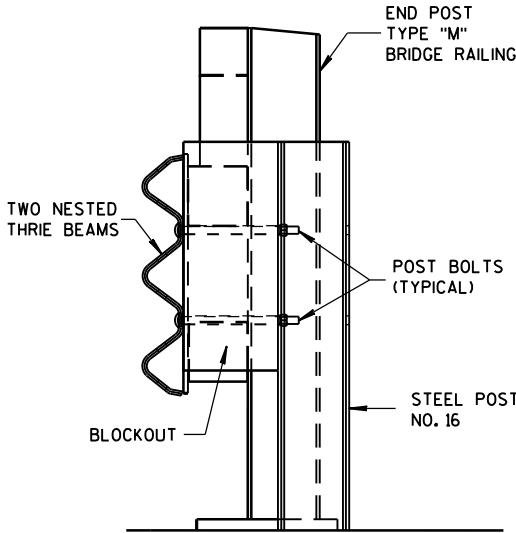
PLAN VIEW

BACK-UP PLATE DETAIL, TYPE "M"

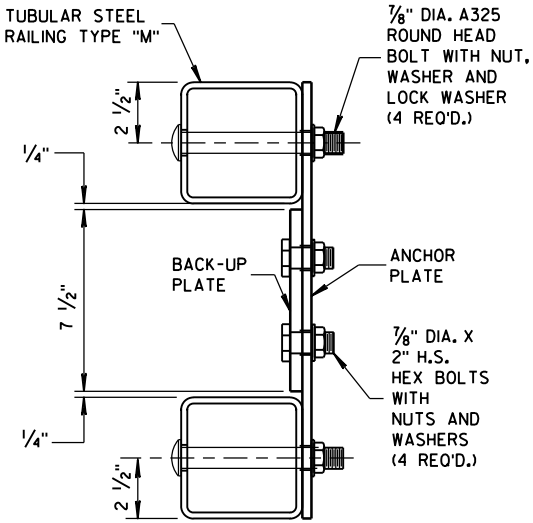


FRONT VIEW

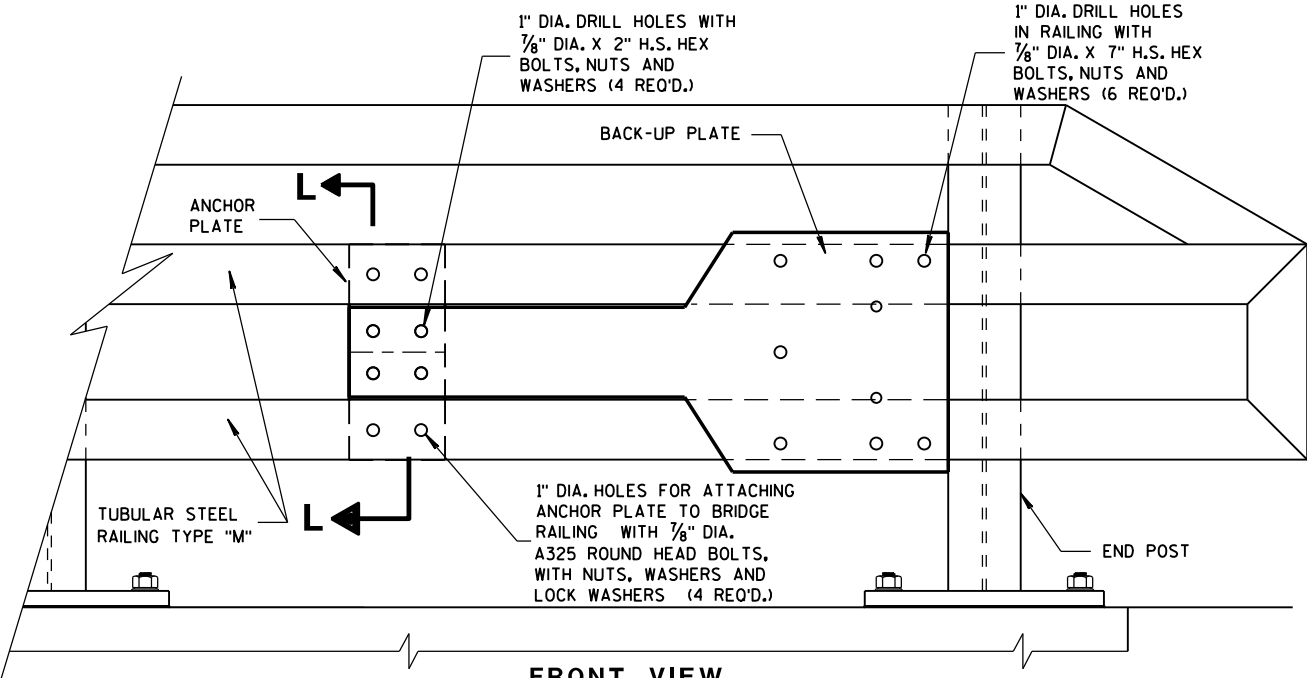
ANCHOR PLATE DETAIL, TYPE "M"



SECTION M-M

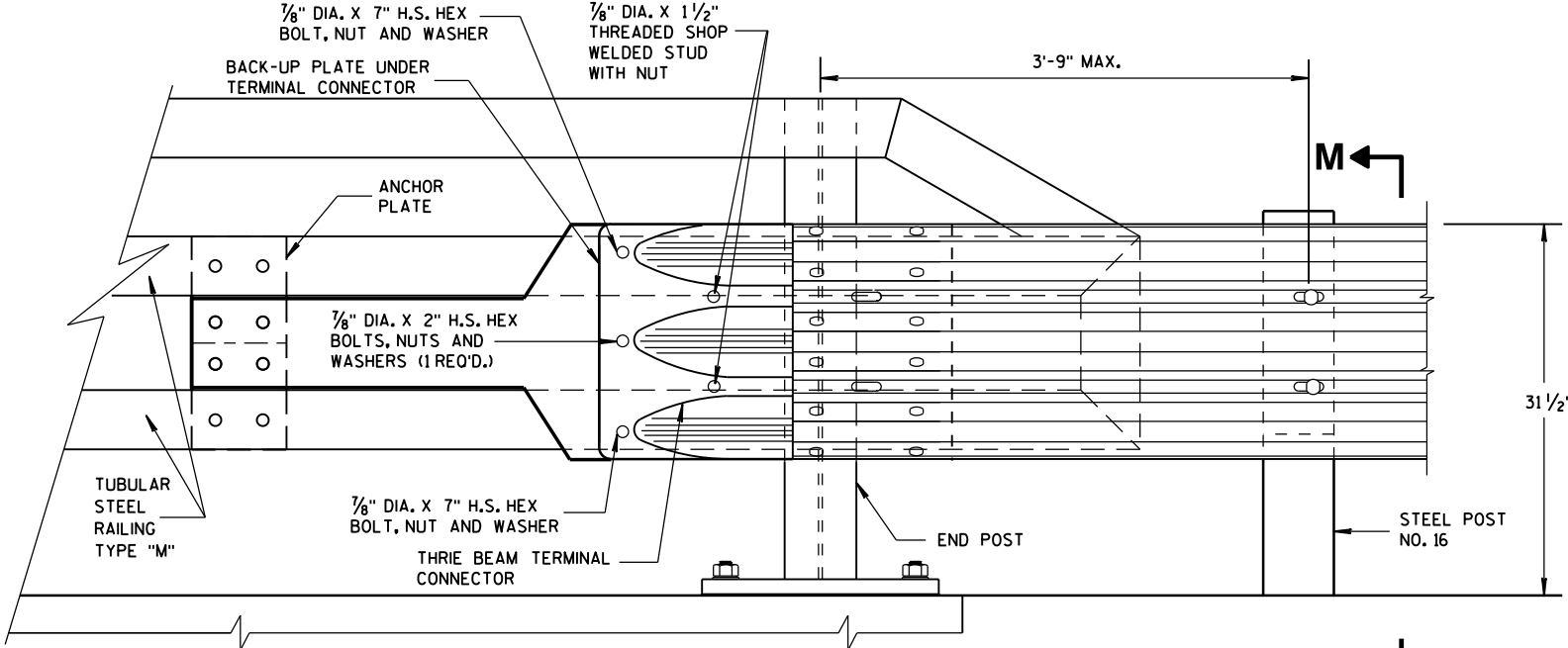


SECTION L-L

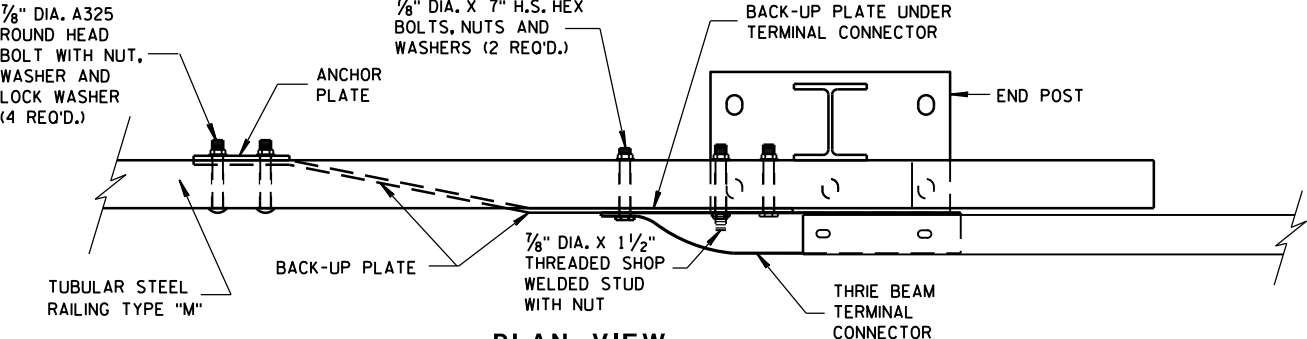


FRONT VIEW

ANCHOR AND BACK-UP PLATE MOUNTING TO BRIDGE RAILING, TYPE "M"



FRONT VIEW



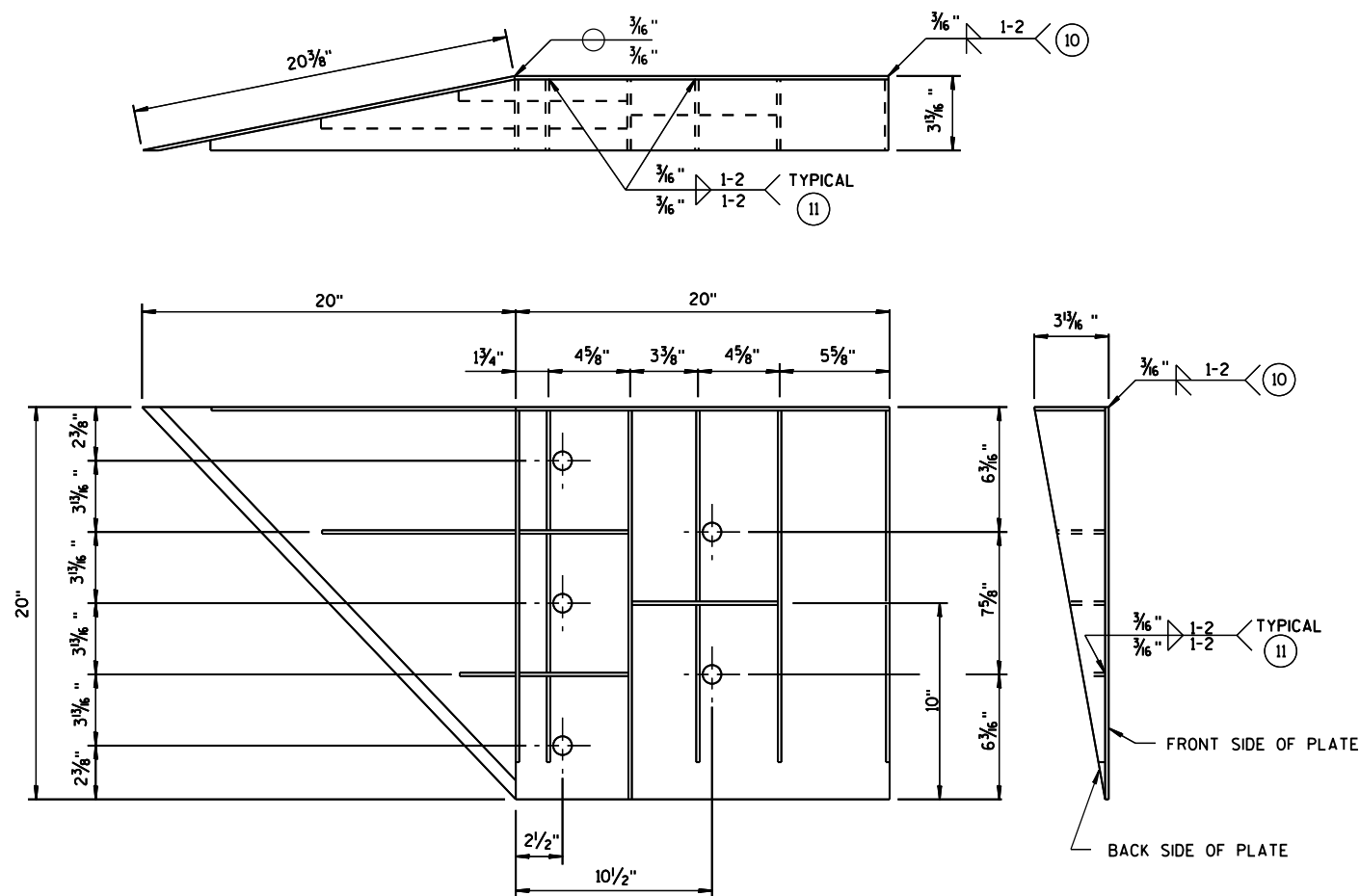
PLAN VIEW

THRIE BEAM CONNECTION TO TUBULAR RAILING, TYPE "M"

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

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DATE
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ROADWAY STANDARDS DEVELOPMENT
ENGINEER
FHWA



WELDING INSTRUCTION

(VIEWED FROM BACK SIDE OF PLATE)

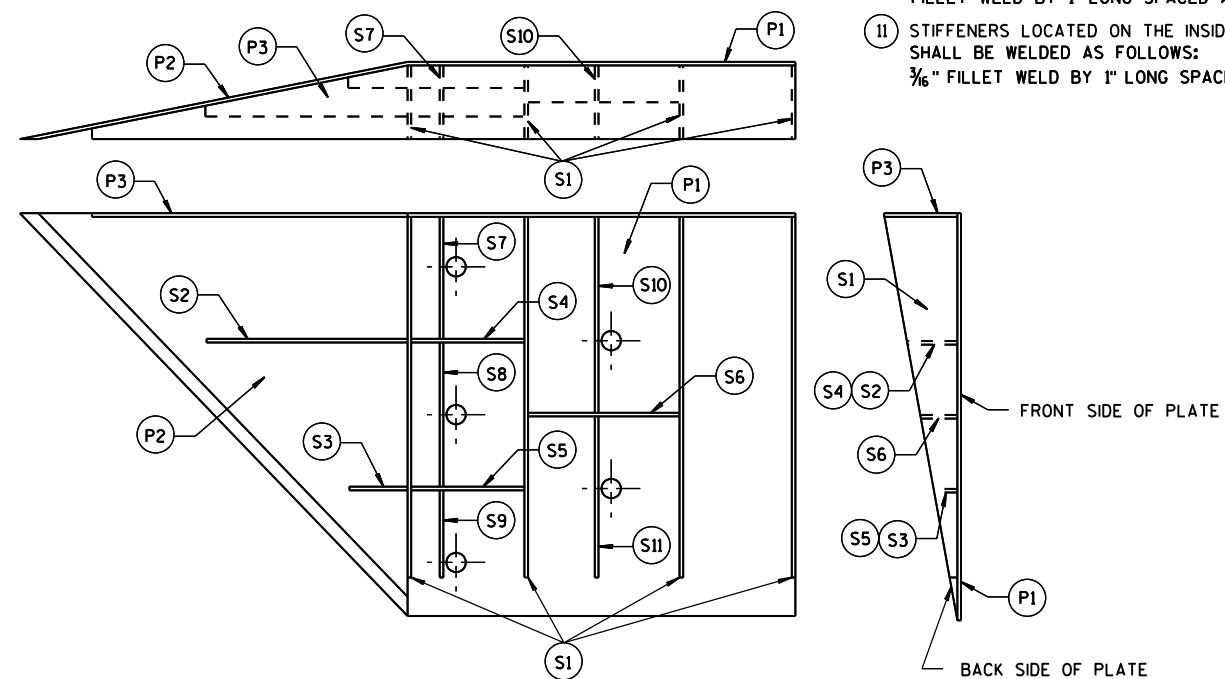


PLATE AND STIFFENER IDENTIFICATION

(VIEWED FROM BACK SIDE OF PLATE)

GENERAL NOTES

COVER PLATE PANELS ARE $\frac{3}{16}$ " THICK.

ALL STIFFENERS ARE $\frac{1}{4}$ " 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 $\frac{3}{16}$ " 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:
 $\frac{3}{16}$ " FILLET WELD BY 1" LONG SPACED AT 2".

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

SINGLE SLOPE CONNECTION PLATE

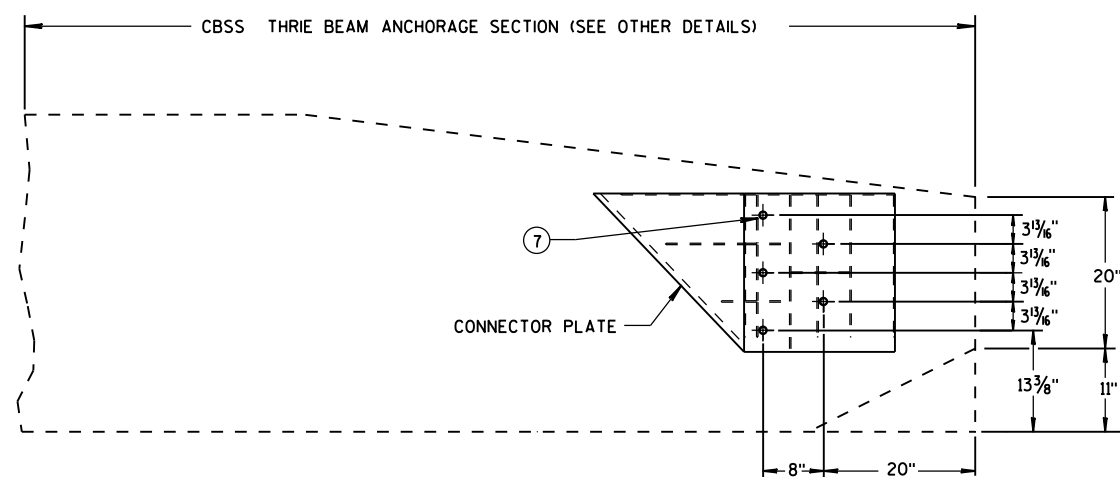
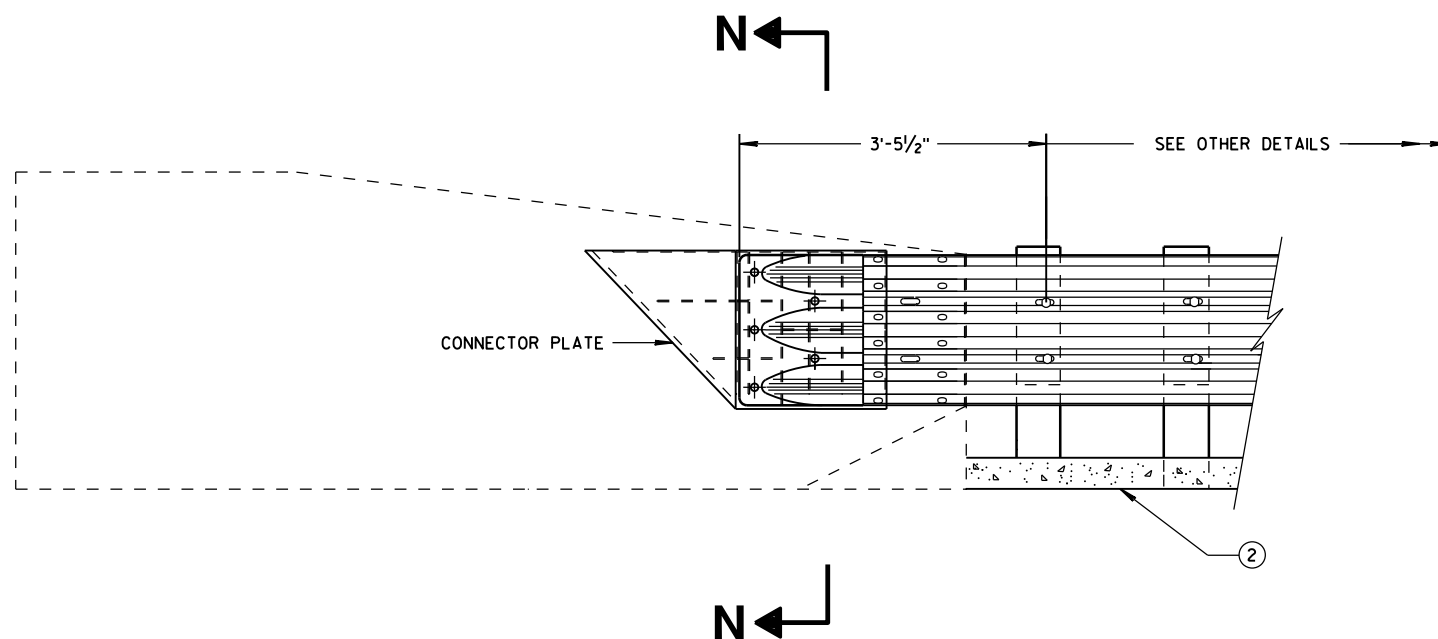
MIDWEST GUARDRAIL SYSTEM
THREE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
June, 2015
DATE
FHWA

/S/ Jerry H. Zogg
ROADWAY STANDARDS DEVELOPMENT
ENGINEER

THRIE BEAM CONNECTION TO SINGLE SLOPE BARRIER



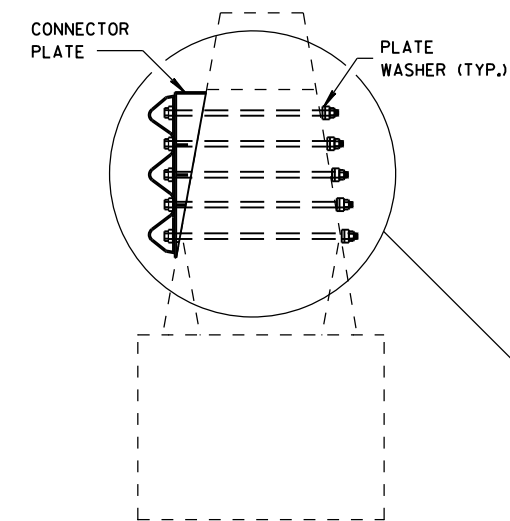
SINGLE SLOPE CONNECTION PLATE PLACEMENT

GENERAL NOTES

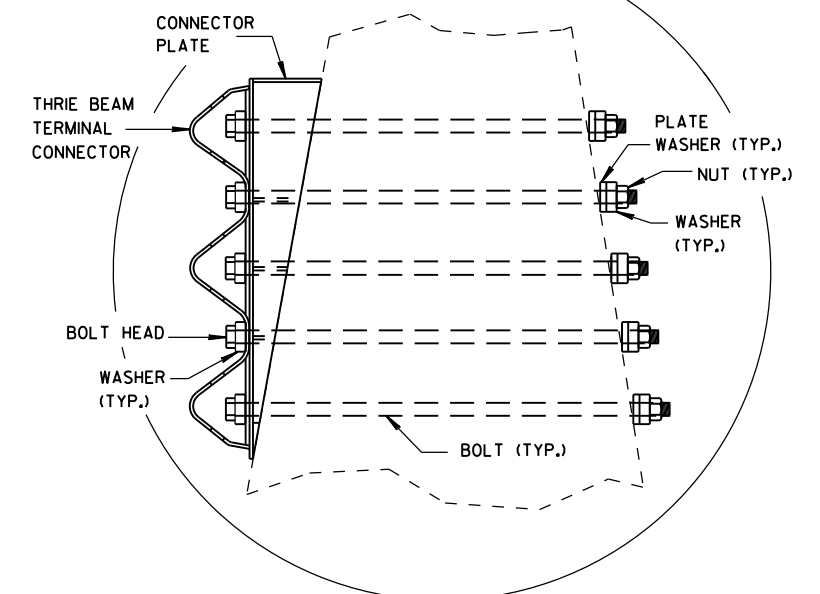
CONNECTOR PLATE, DRILLING BOLT HOLES THROUGH THE PARAPET, BOLTS, NUTS, WASHERS AND REPAIRING DAMAGED CONCRETE ARE INCIDENTAL TO THE CONTRACT.

(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.



SECTION N-N



MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
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/s/ Jerry H. Zogg

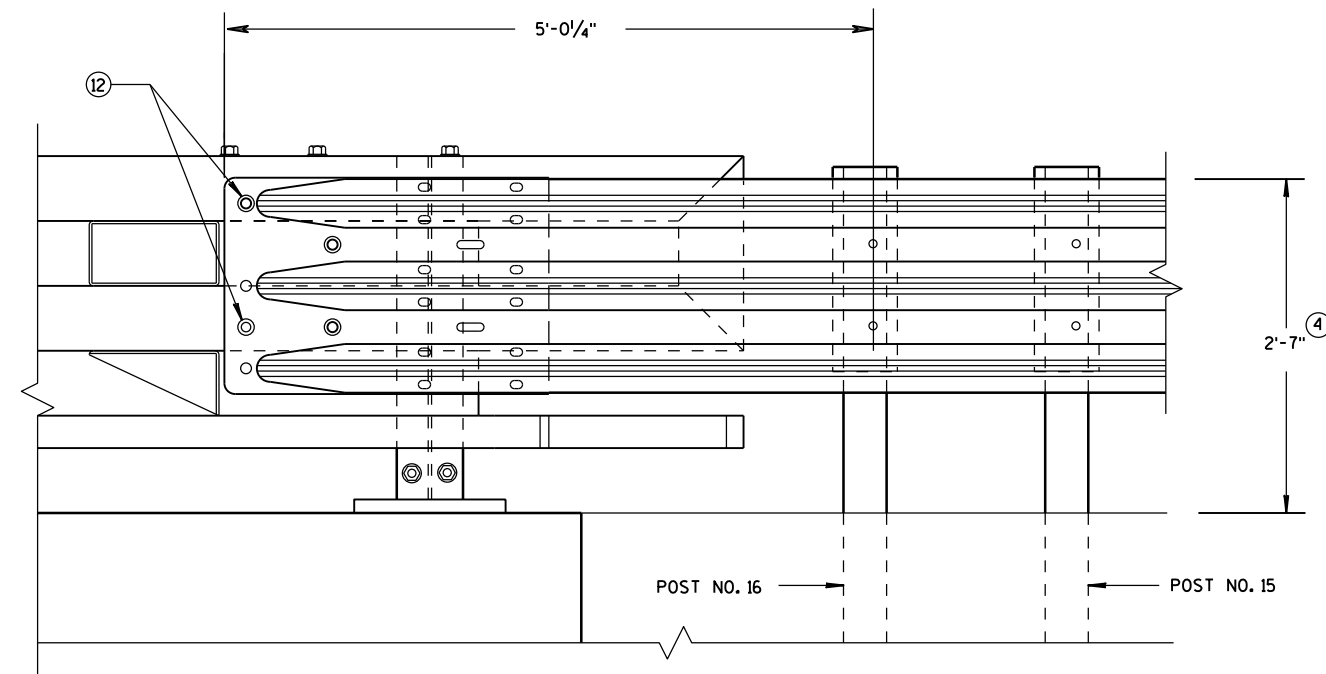
ROADWAY STANDARDS DEVELOPMENT

ENGINEER

GENERAL NOTES

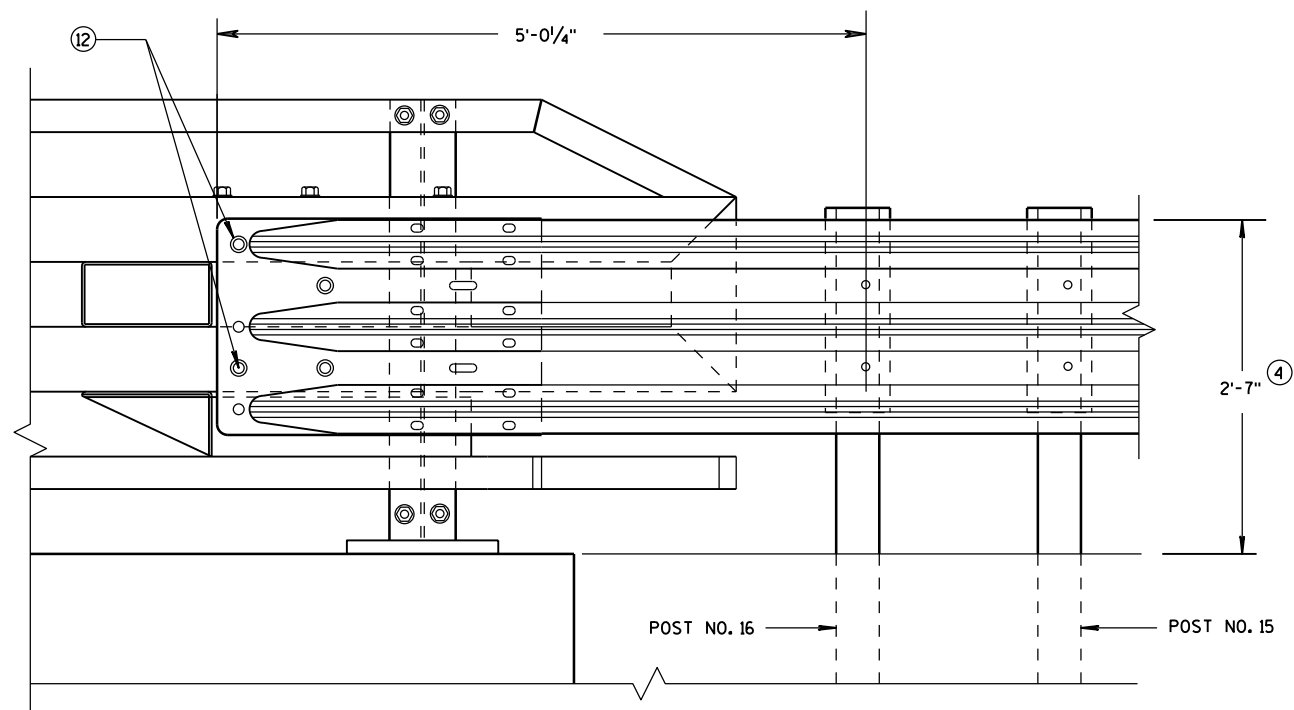
④ TOLERANCE FOR TOP OF BEAM IS $\pm 1"$.

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.



ELEVATION OF DETAIL AT NY3 END POST

THRIE BEAM RAIL ATTACHMENT



ELEVATION OF DETAIL AT NY4 END POST

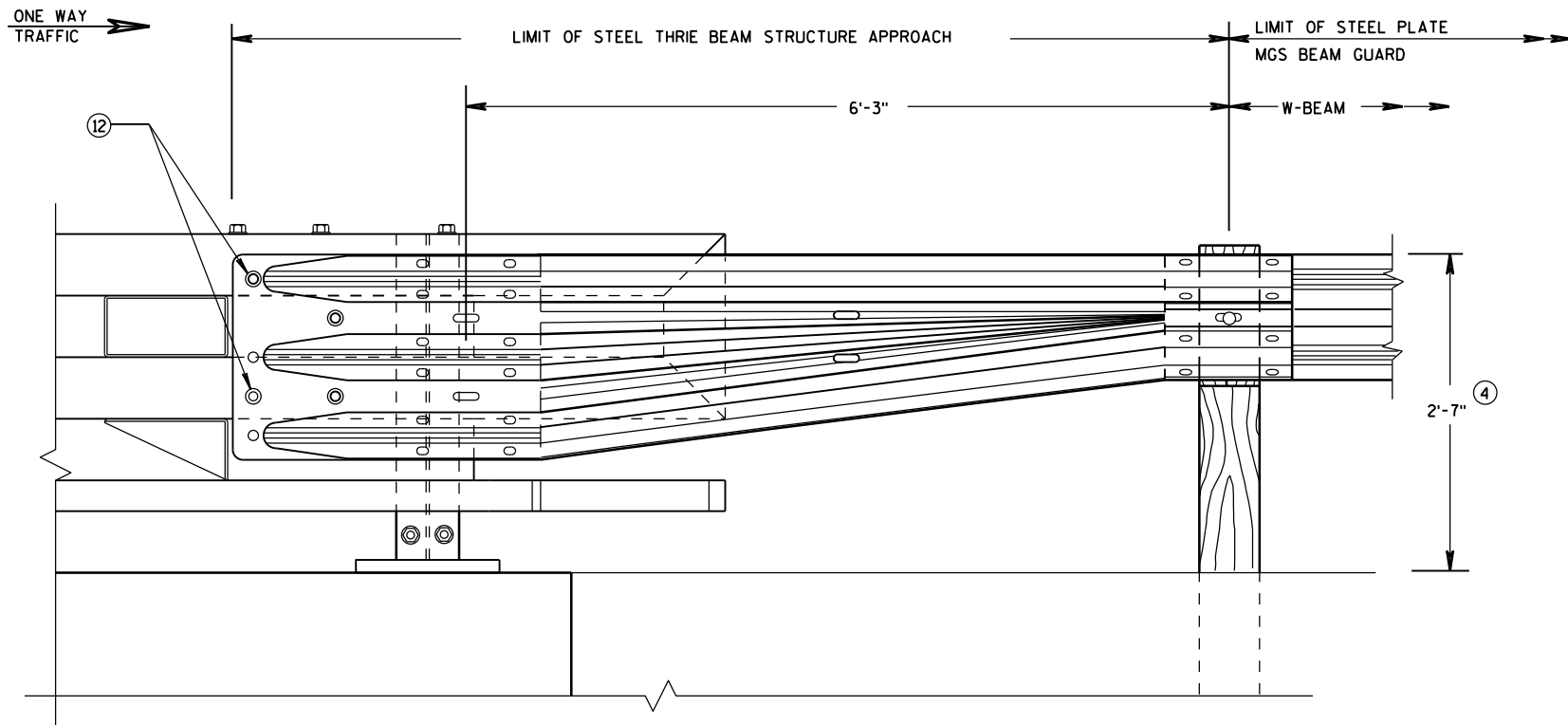
THRIE BEAM RAIL ATTACHMENT

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
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FHWA

/S/ Jerry H. Zogg
ROADWAY STANDARDS DEVELOPMENT
ENGINEER

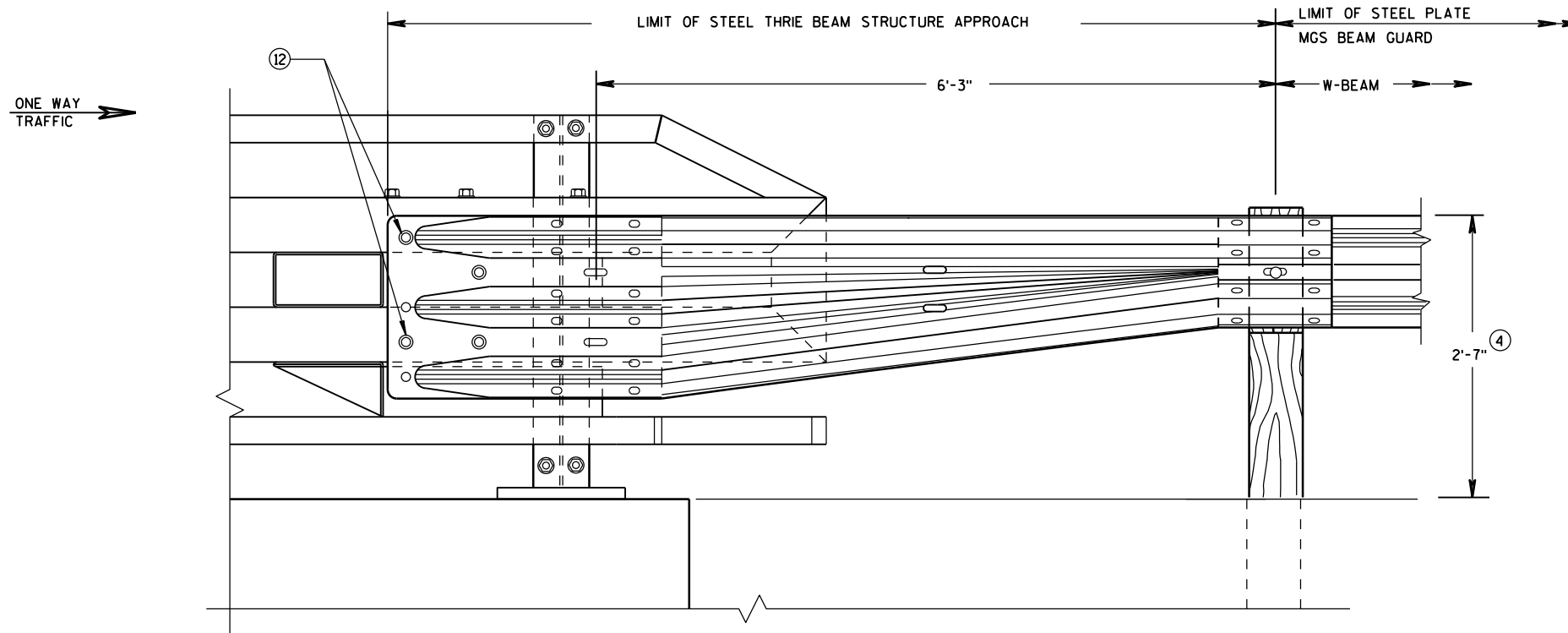


FRONT VIEW

**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.



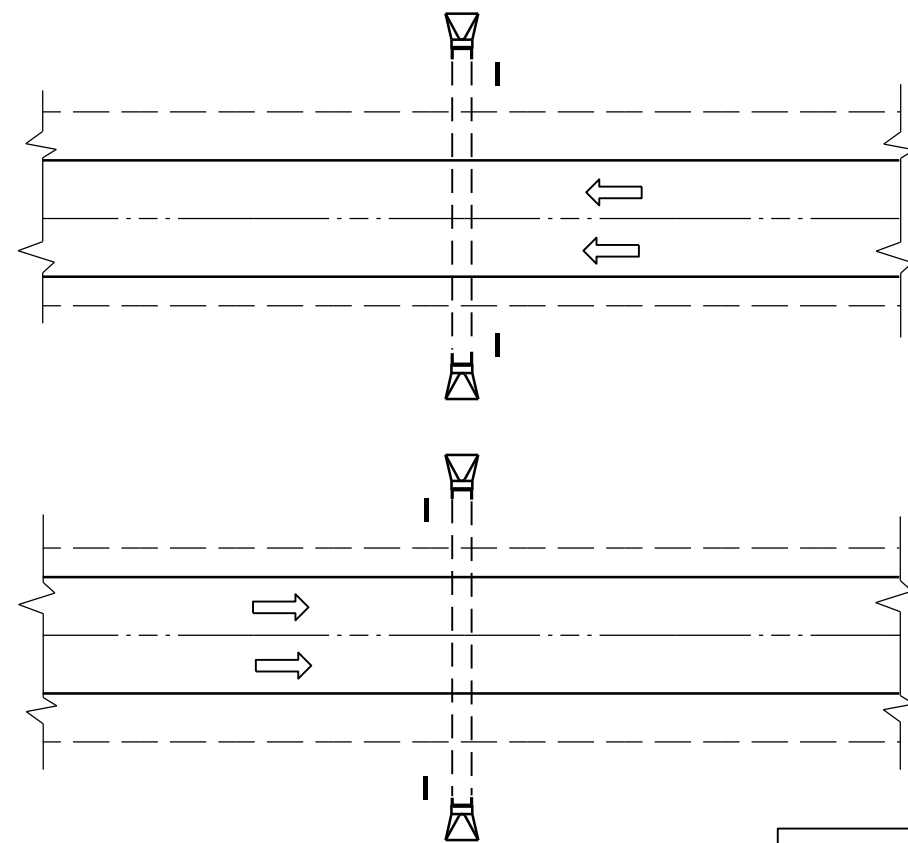
FRONT VIEW

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

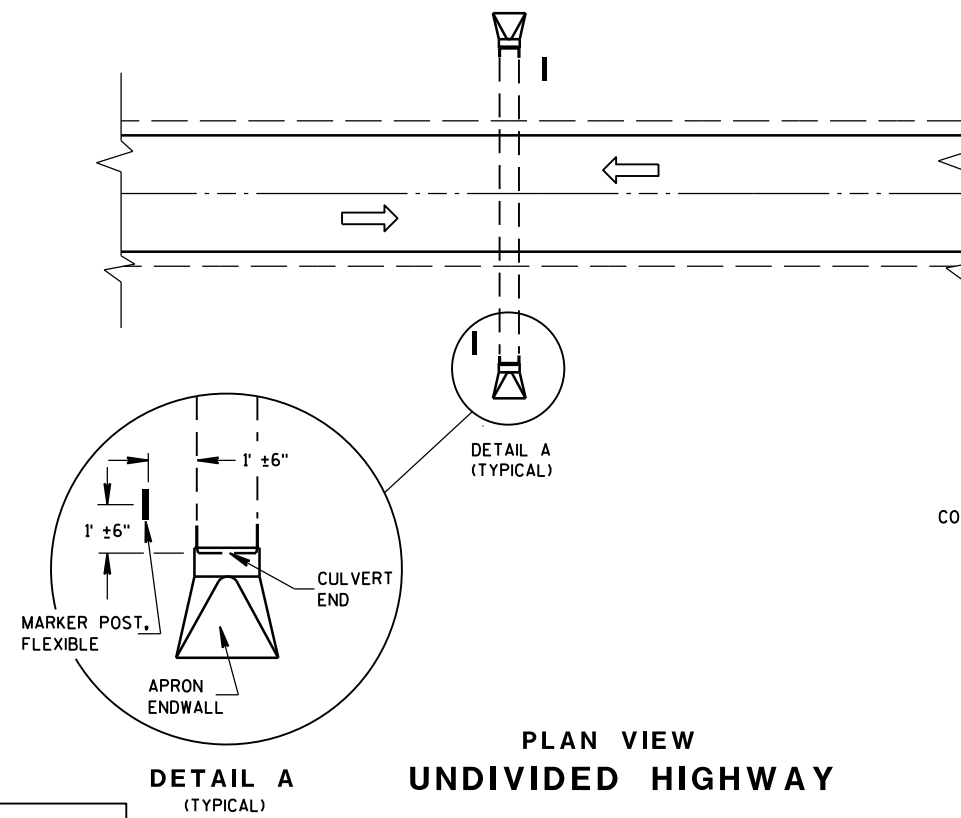
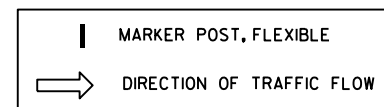
MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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



PLAN VIEW
DIVIDED HIGHWAY



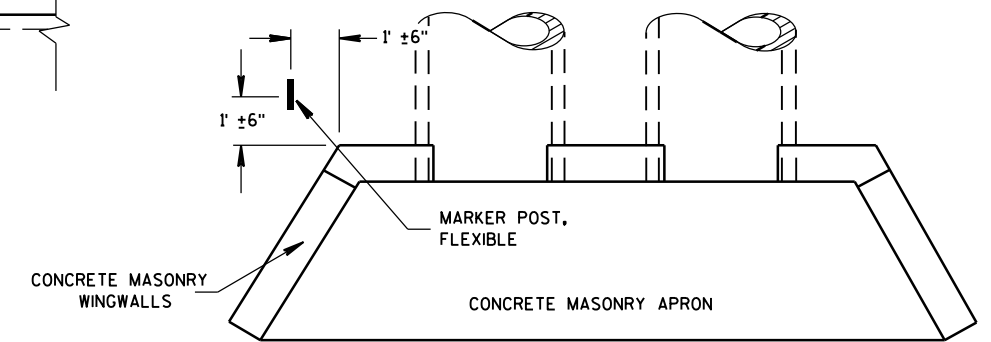
DETAIL A
(TYPICAL)

PLAN VIEW
UNDIVIDED HIGHWAY

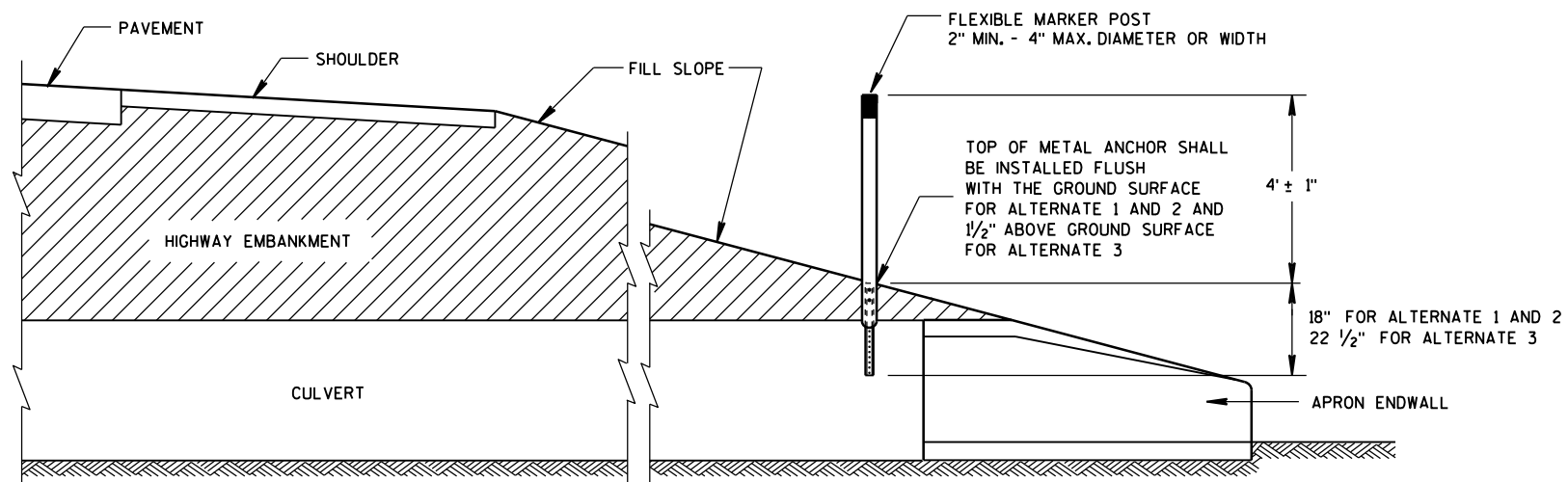
FLEXIBLE MARKER POST LOCATION

GENERAL NOTES

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



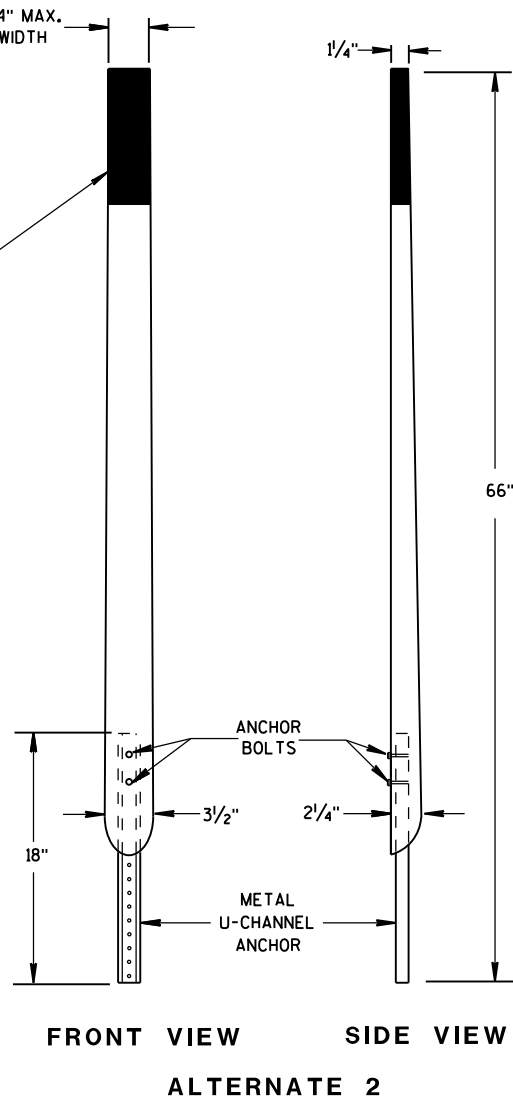
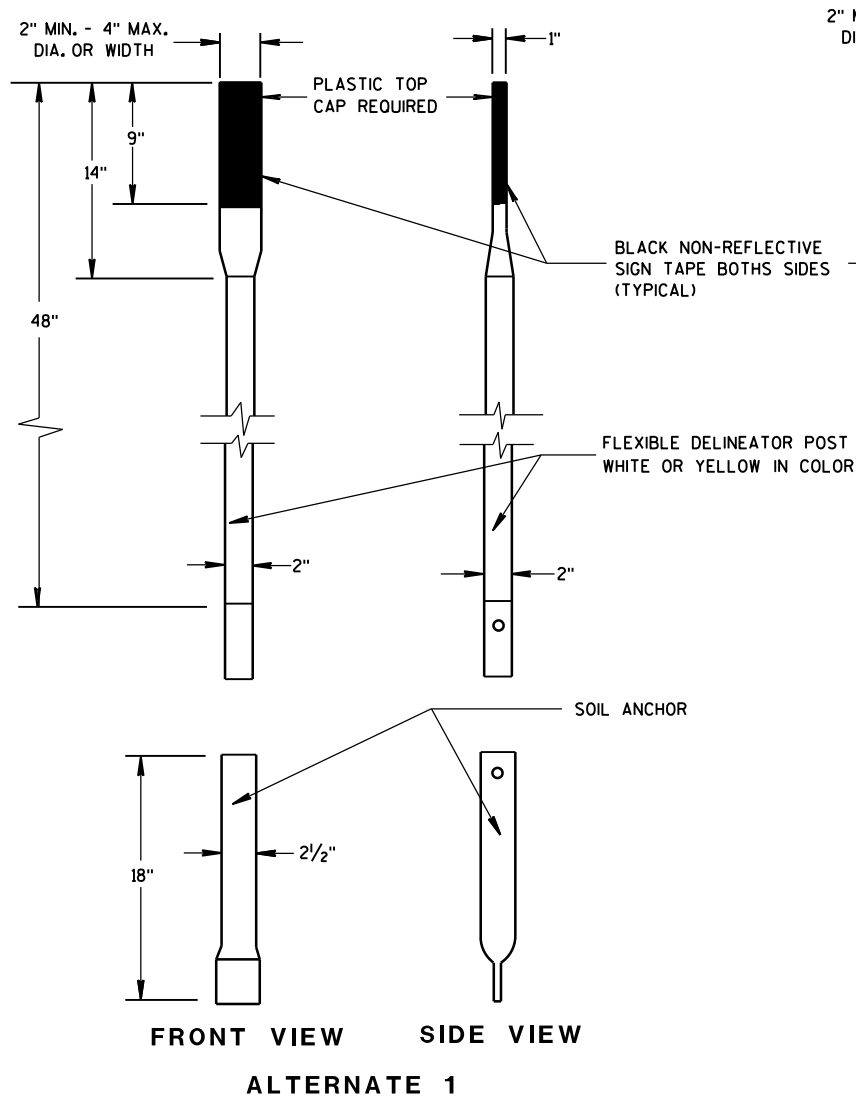
PLAN VIEW
CONCRETE MASONRY ENDWALLS FOR
CULVERT PIPE AND PIPE ARCH



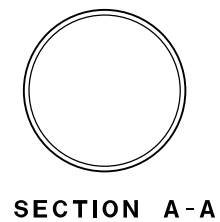
CROSS SECTION
FLEXIBLE MARKER POST

FLEXIBLE MARKER POST
FOR CULVERT END

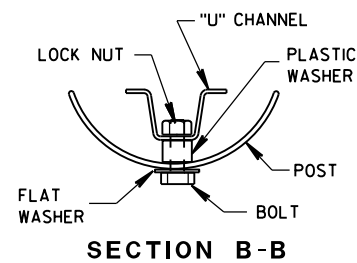
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



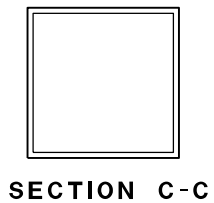
FLEXIBLE MARKER POSTS



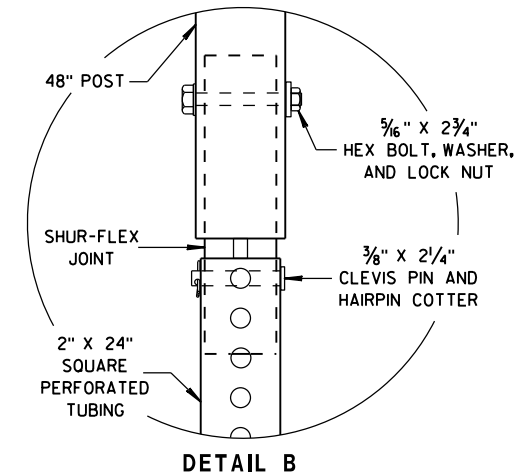
SECTION A-A



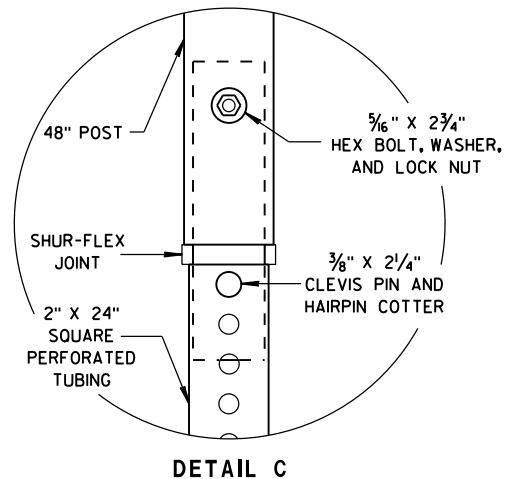
SECTION B-B



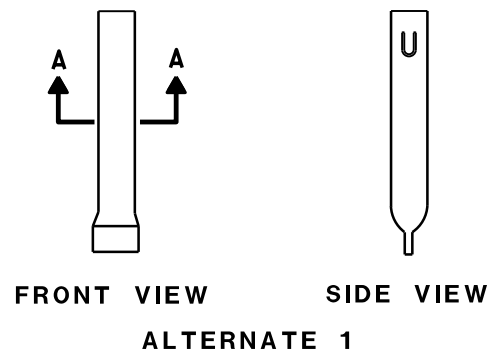
SECTION C-C



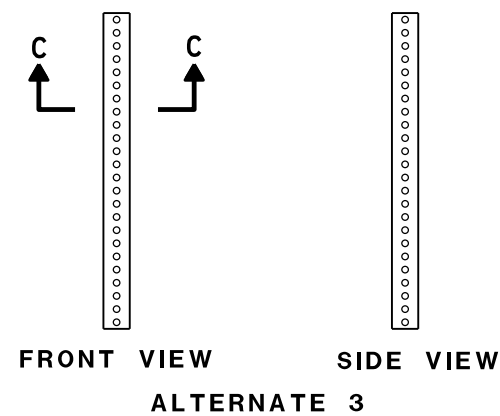
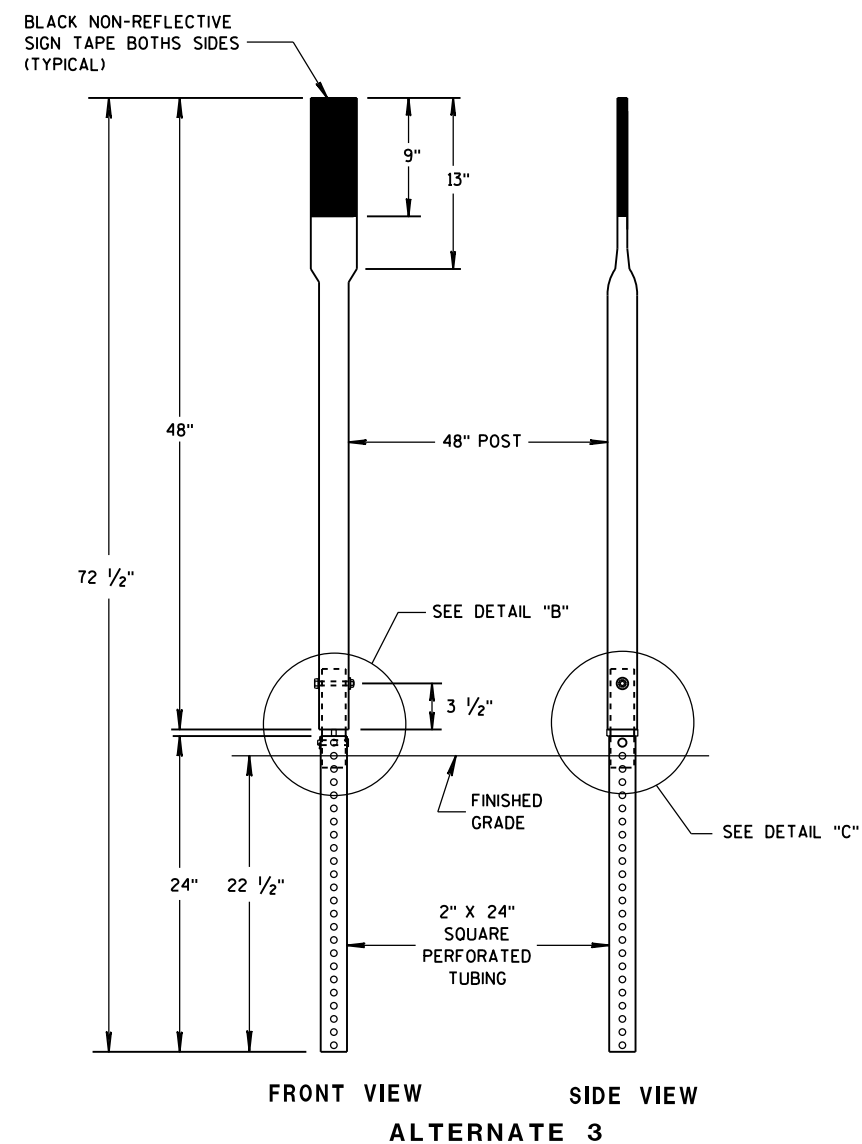
DETAIL B



DETAIL C



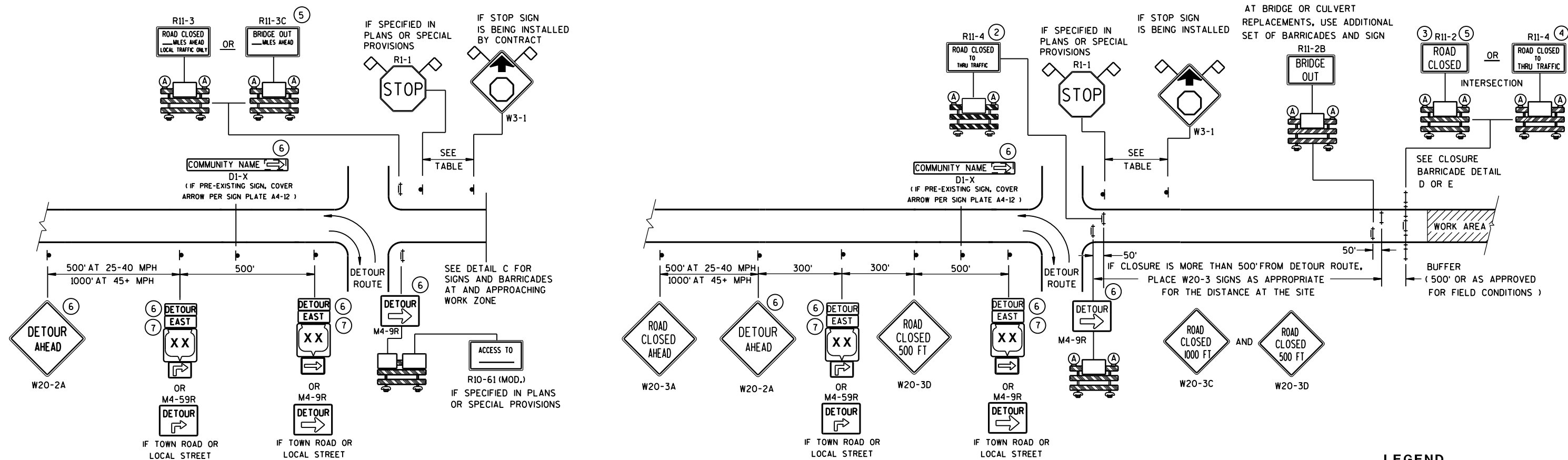
FLEXIBLE MARKER POST ANCHORS



FLEXIBLE MARKER POST FOR CULVERT END

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

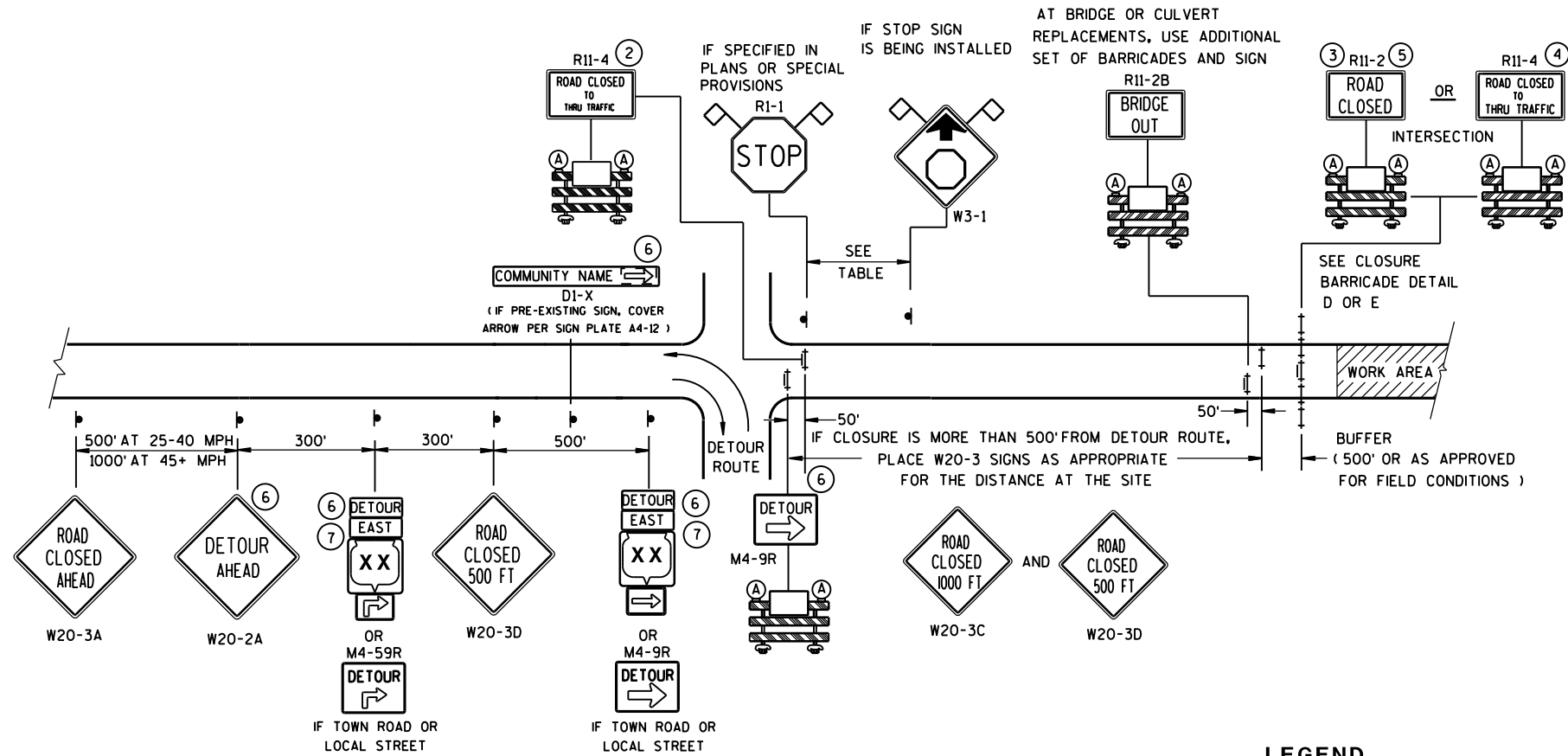
APPROVED
10/1/2012 /S/ Travis Feltes
DATE STATE TRAFFIC ENGINEER OF DESIGN
FHWA



DETAIL A

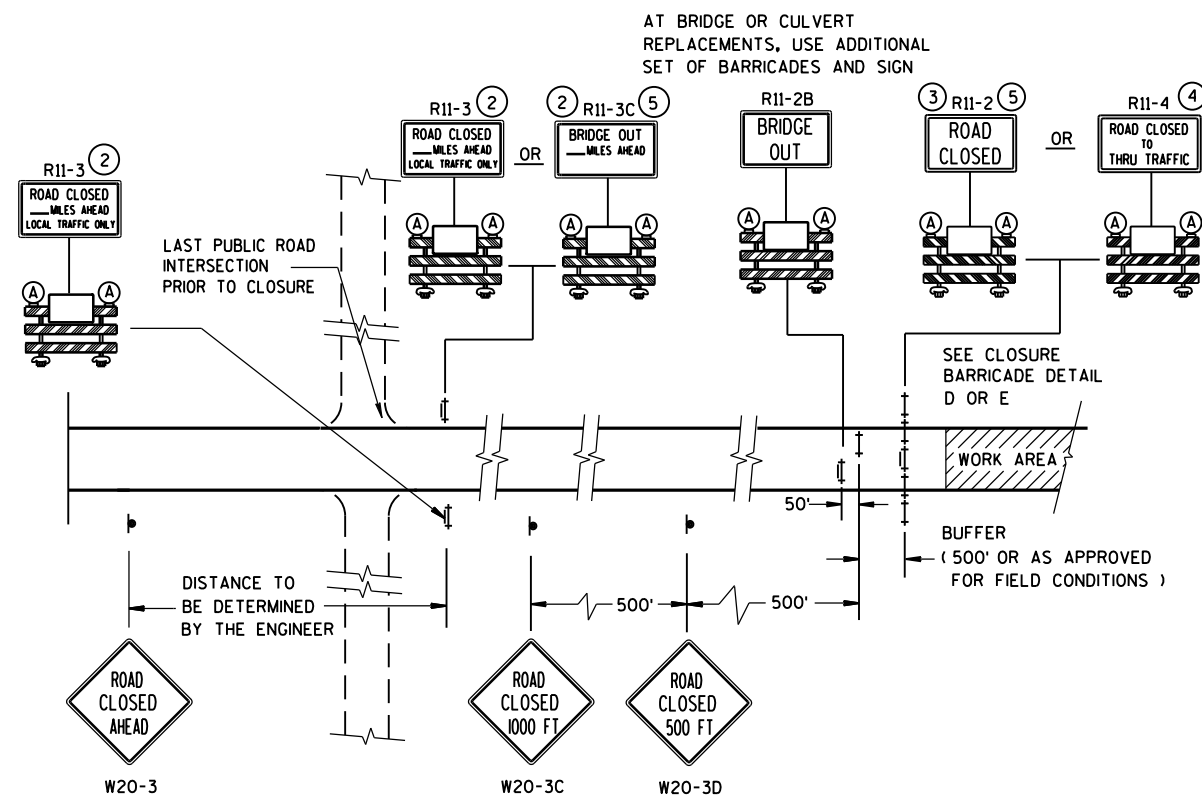
MAINLINE CLOSURE WITH POSTED DETOUR

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



DETAIL B
MAINLINE CLOSURE WITH POSTED DETOUR














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



DETAIL C
MAINLINE CLOSURE, NO POSTED DETOUR

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

- ### LEGEND

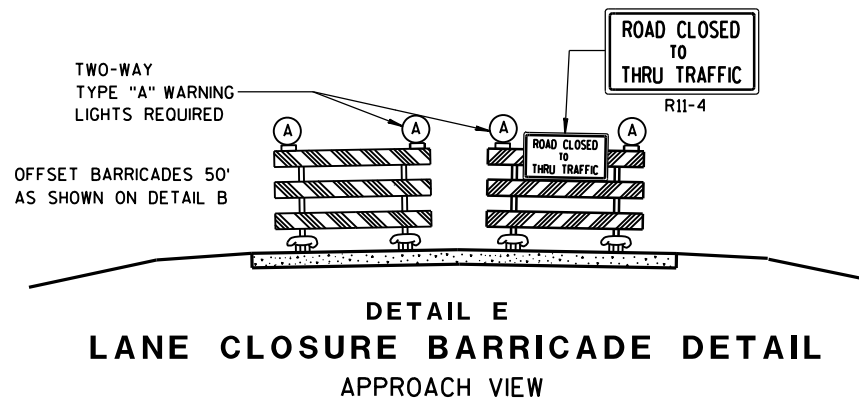
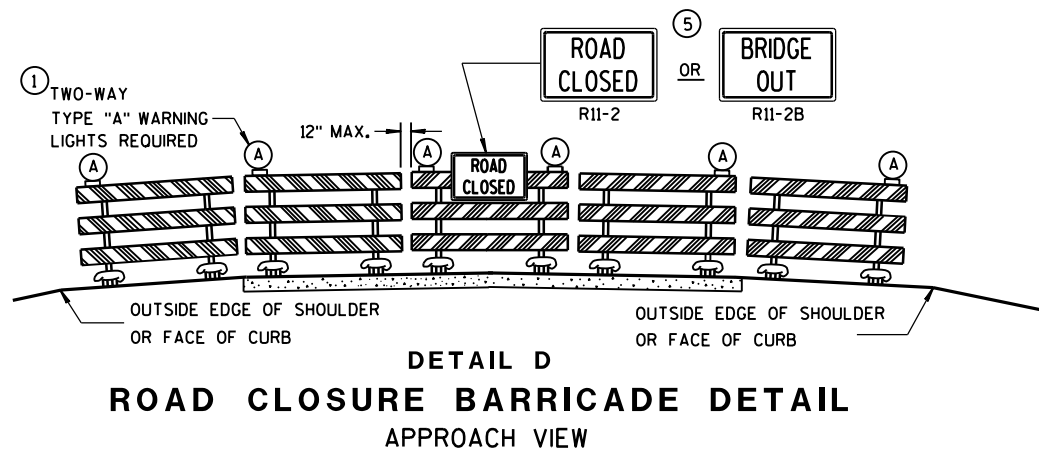
-  SIGN ON PERMANENT SUPPORT
 TYPE III BARRICADE
 TYPE III BARRICADE WITH ATTACHED SIGN
 TYPE "A" WARNING LIGHT (FLASHING)
 WORK AREA
 M4-8
 M3-X
 M1-4
 M1-5A
 M1-6
 M05-1
 M06-1
 FLAGS, 16" X 16" MIN., (ORANGE)

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

BARRICADES AND SIGNS FOR MAINLINE CLOSURES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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



SEE SDD 15C2-SHEET "a" FOR LEGEND

GENERAL NOTES

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

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

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

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

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

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

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

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

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

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

R11-2 SHALL BE 48" X 30".

R11-3, R11-4 AND R10-61 SHALL BE 60" X 30".

M4-9 SHALL BE 30" X 24".

M3-X SHALL BE 24" X 12". (36" X 18" IF NEEDED TO MATCH EXISTING SIGNS.)

M4-8 SHALL BE 24" X 12". (30" X 15" IF NEEDED TO MATCH EXISTING SIGNS.)

M1-4, M1-5A, AND M1-6 SHALL BE 24" X 24". (36" X 36" IF NEEDED TO MATCH EXISTING SIGNS.)

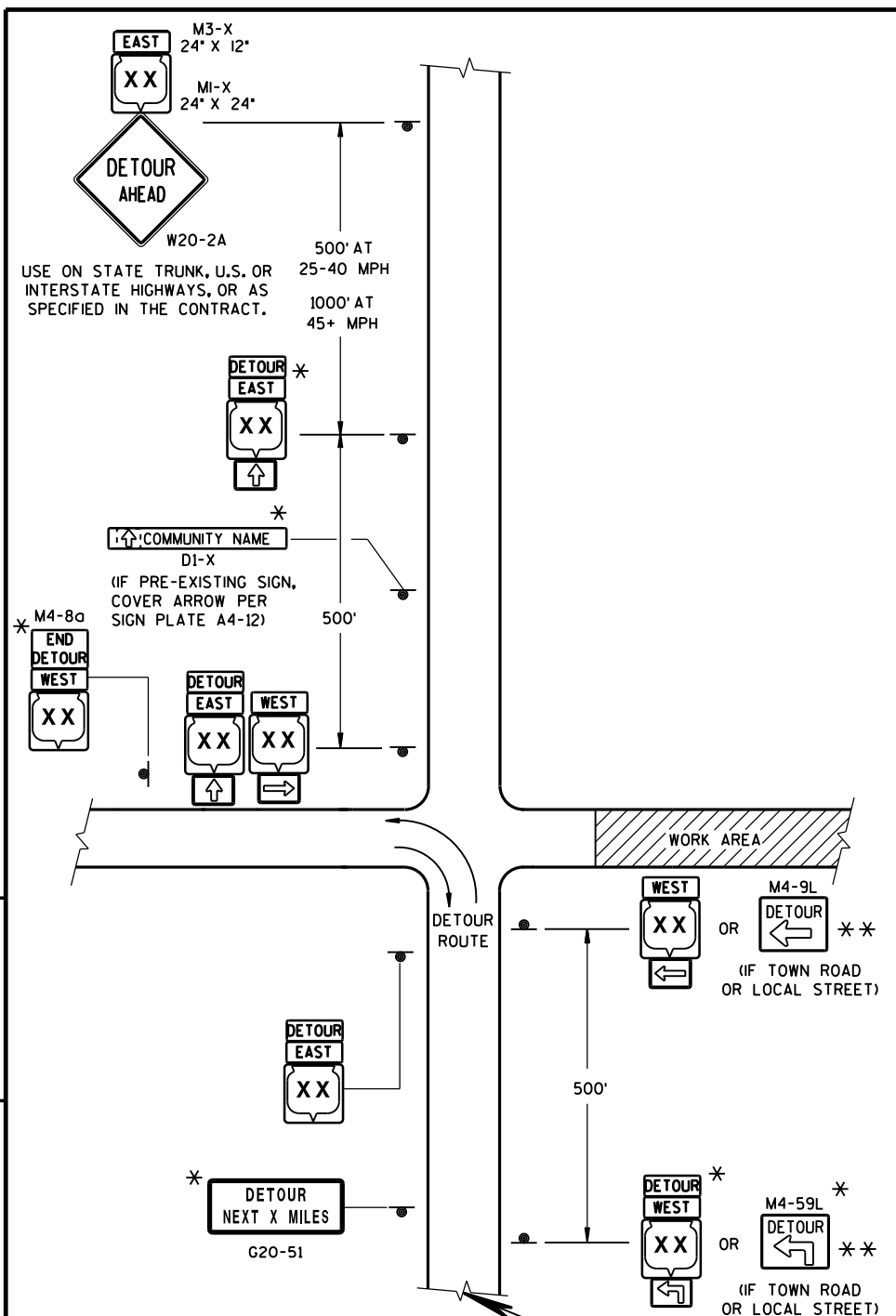
M05-1 AND M06-1 SHALL BE 21" X 21". (30" X 30" IF NEEDED TO MATCH EXISTING SIGNS.)

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

R1-1 SHALL BE 36" X 36".

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

BARRICADES AND SIGNS FOR MAINLINE CLOSURES	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
Sept. 2015 DATE	/S/ Peter Amokobe Atepe STATEWIDE WORK ZONE TRAFFIC SAFETY ENGINEER
FHWA	



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

MATCH POINT

DETAIL F
DETOUR SIGNING

GENERAL NOTES

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

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

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

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

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

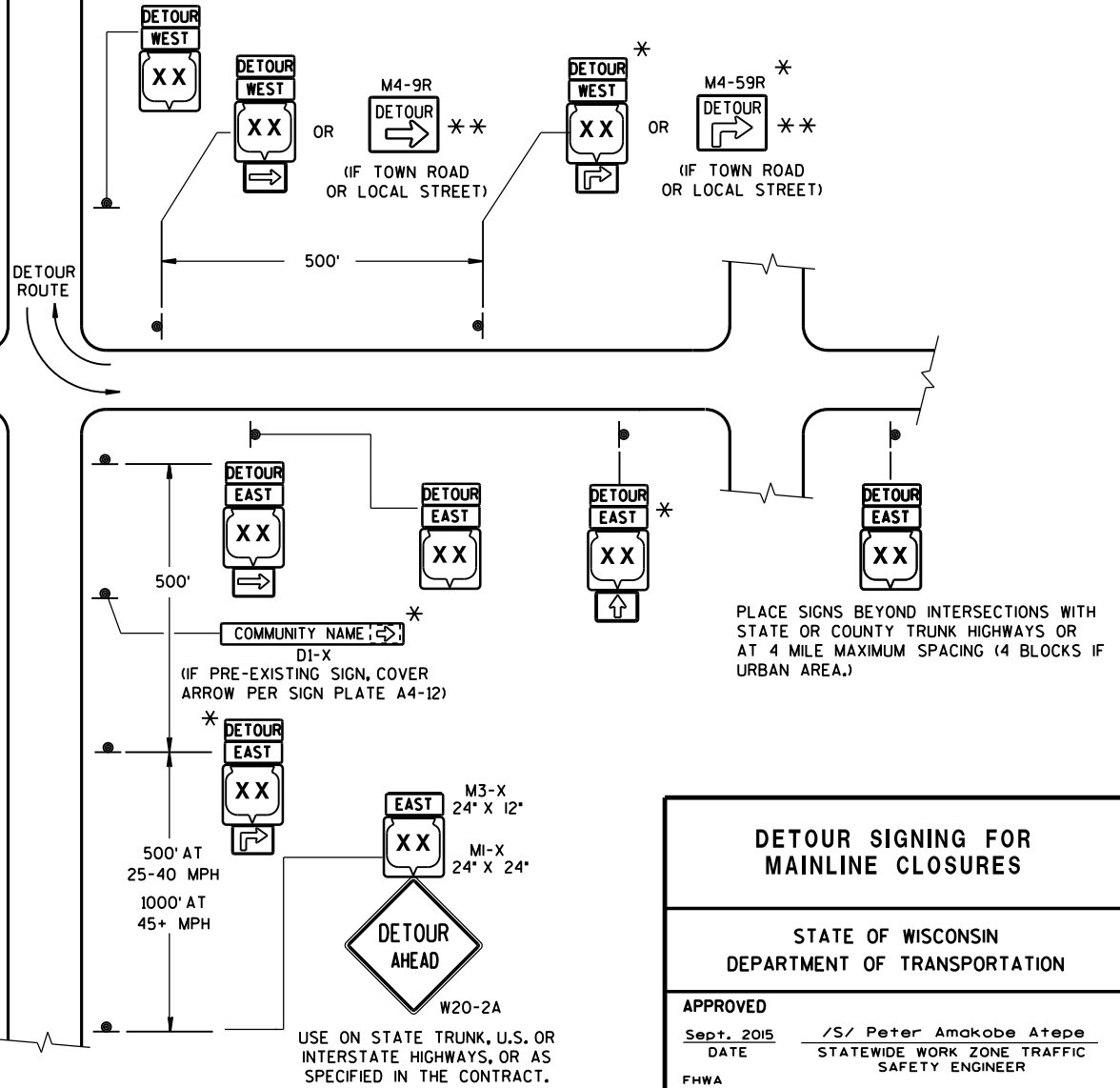
"MO" SIGNS ARE THE SAME AS "M" SIGNS EXCEPT THE BACKGROUND IS ORANGE.

SIGN SIZES SHALL BE AS FOLLOWS:

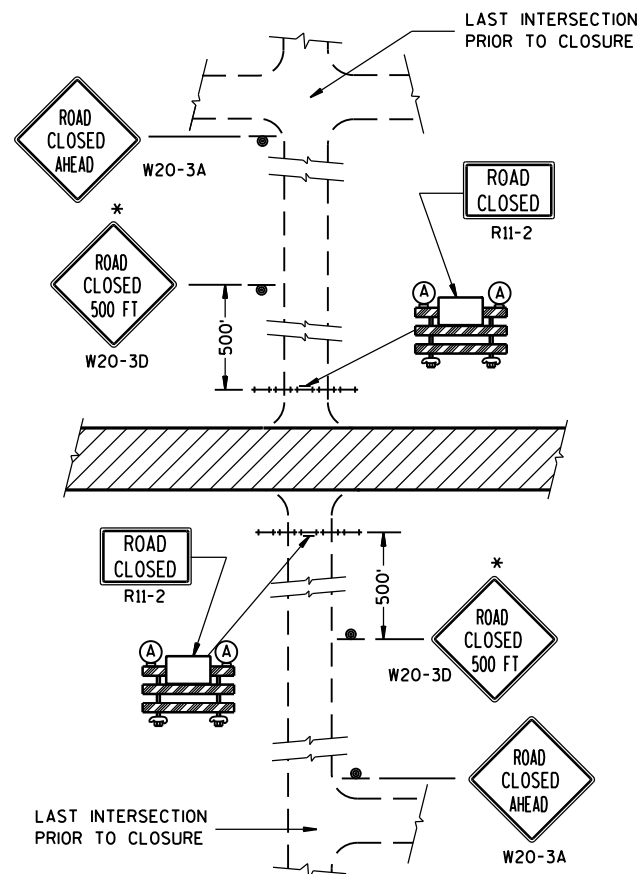
- M3-X SHALL BE 24" X 12". (36" X 18" IF NEEDED TO MATCH EXISTING SIGNS.)
- M4-8 SHALL BE 24" X 12". (30" X 15" IF NEEDED TO MATCH EXISTING SIGNS.)
- M1-4, M1-5A, AND M1-6 SHALL BE 24" X 24". (36" X 36" IF NEEDED TO MATCH EXISTING SIGNS.)
- M05-1 AND M06-1 SHALL BE 21" X 21". (30" X 30" IF NEEDED TO MATCH EXISTING SIGNS.)
- M4-9 SHALL BE 30" X 24".
- M4-8a SHALL BE 24" X 18".
- G20-51 SHALL BE 60" X 24".
- W20-2 SHALL BE 48" X 48".
- D1-X SHALL BE AS SHOWN ON SPECIFIC PROJECT SIGNING DETAIL SHEETS.

* OPTIONAL SIGNS. SEE SPECIFIC PROJECT DETOUR SIGNING DETAIL SHEETS.

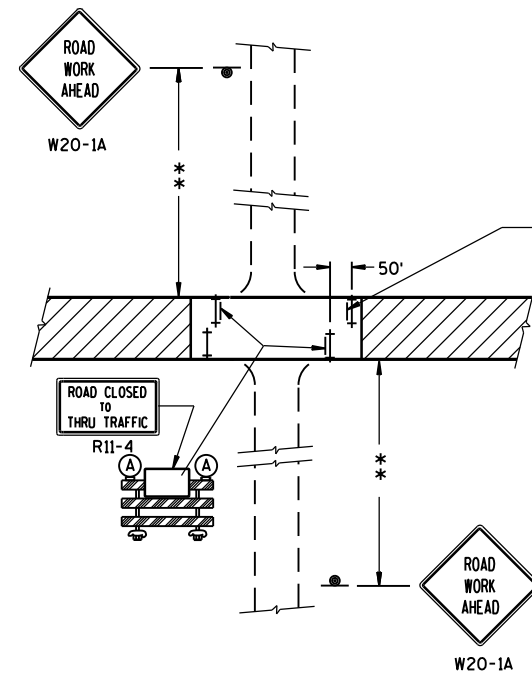
** FOR A TOWN ROAD OR LOCAL STREET DETOURED ONTO A STATE TRUNK HIGHWAY, PLACE A ROAD NAME PLAQUE ABOVE THE M4-9 SIGN AS SPECIFIED IN THE CONTRACT.



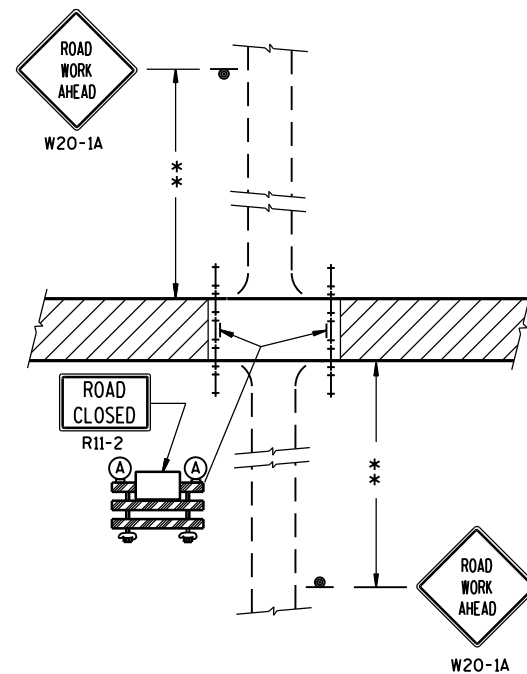
DETOUR SIGNING FOR MAINLINE CLOSURES	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED	DATE
Sept. 2015	/S/ Peter Amakobe Atepe
FWHA	STATEWIDE WORK ZONE TRAFFIC SAFETY ENGINEER



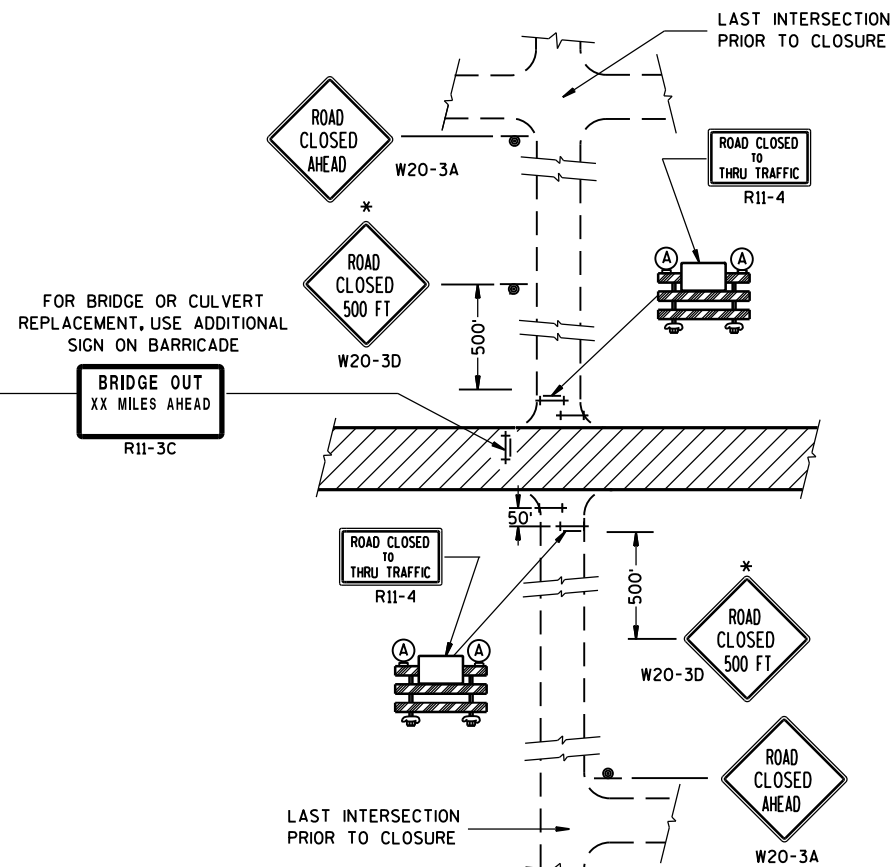
DETAIL 1
(NO ACCESS TO PROJECT)



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



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



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

GENERAL NOTES

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

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

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

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

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

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

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

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

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

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

R11-2 SHALL BE 48" X 30".

R11-4 AND R11-3 SHALL BE 60" X 30".

*OMIT THE "ROAD CLOSED 500 FT." SIGN IF THE LAST INTERSECTION IS 500 FT. OR LESS FROM THE WORK ZONE.

**500' MAX. OR AT LAST INTERSECTION WHICHEVER IS CLOSER.

LEGEND

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

BARRICADES AND SIGNS FOR SIDEROAD CLOSURES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

Sept. 2015

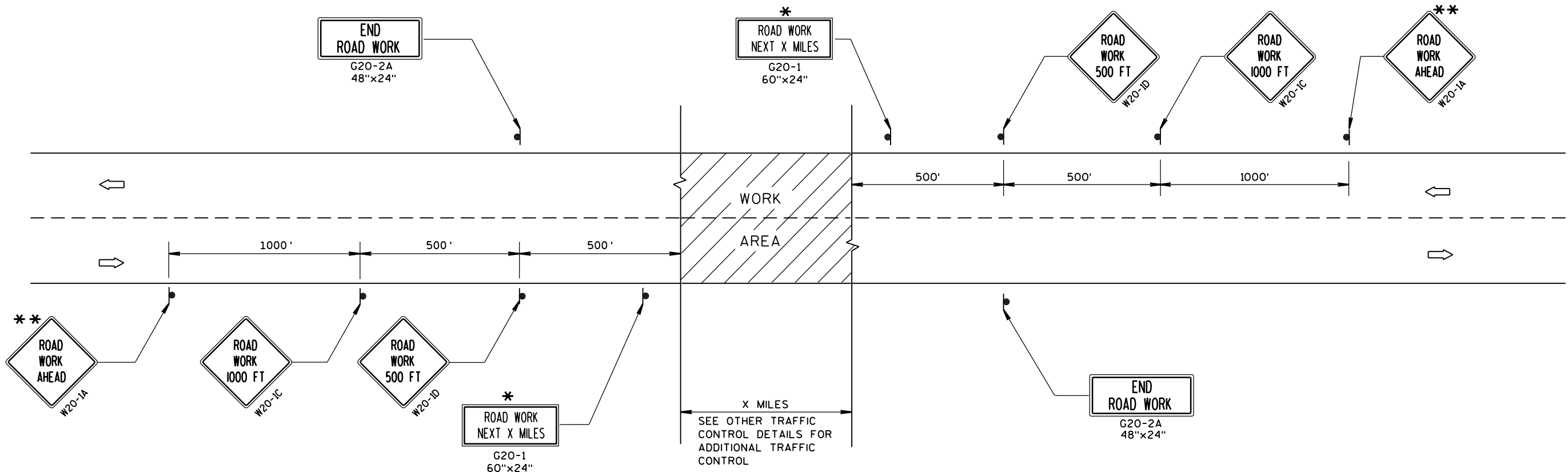
DATE

FHWA

/S/ Peter Amakobe Atepe

STATEWIDE WORK ZONE TRAFFIC

SAFETY ENGINEER



TYPICAL SIDEROAD APPROACH WARNING SIGN DETAIL

GENERAL NOTES

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

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

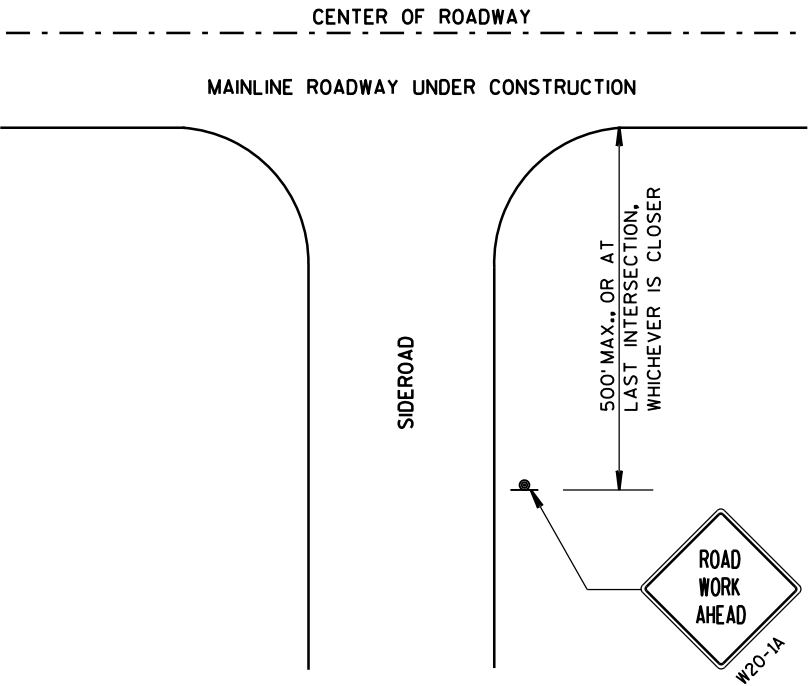
ALL SIGNS ARE 48"x48" UNLESS OTHERWISE NOTED.

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

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

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

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



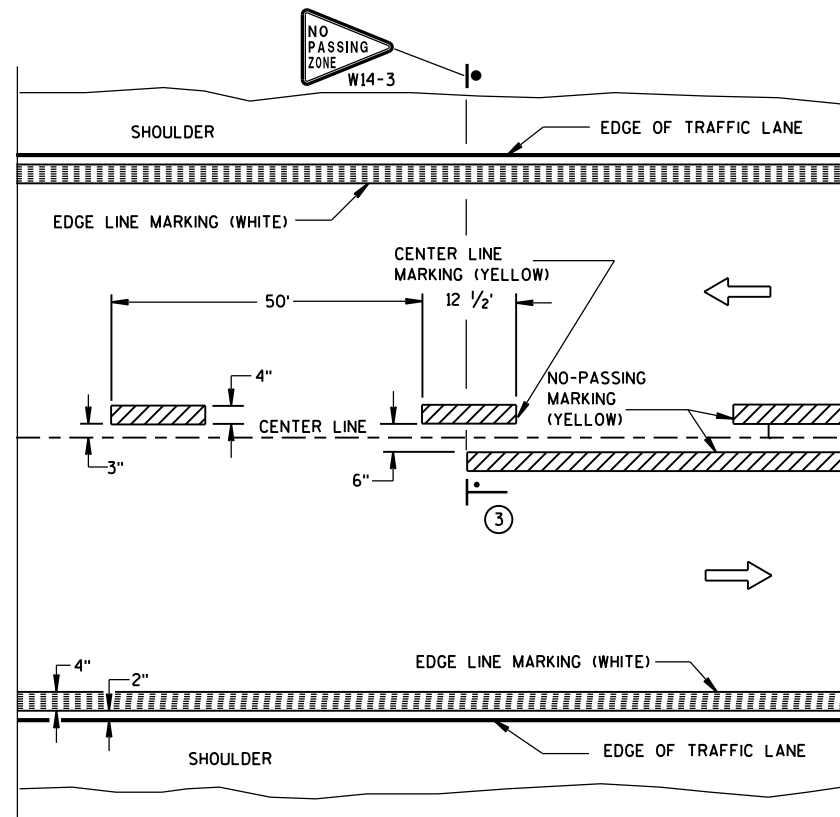
LEGEND

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

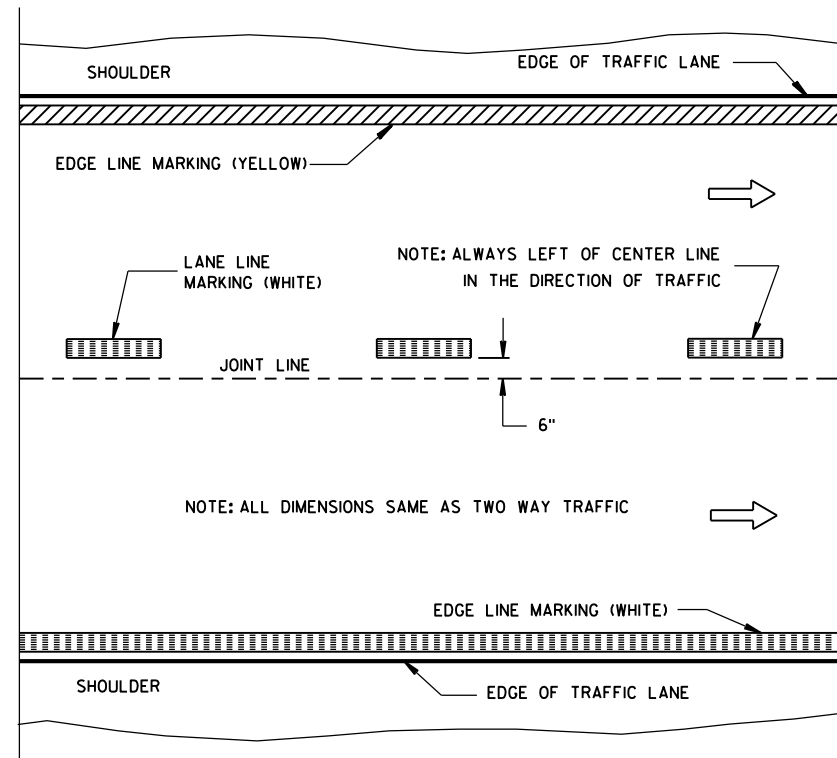
TRAFFIC CONTROL, ADVANCE
WARNING SIGNS 45 M.P.H.
OR GREATER TWO-WAY
UNDIVIDED ROAD OPEN TO TRAFFIC

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

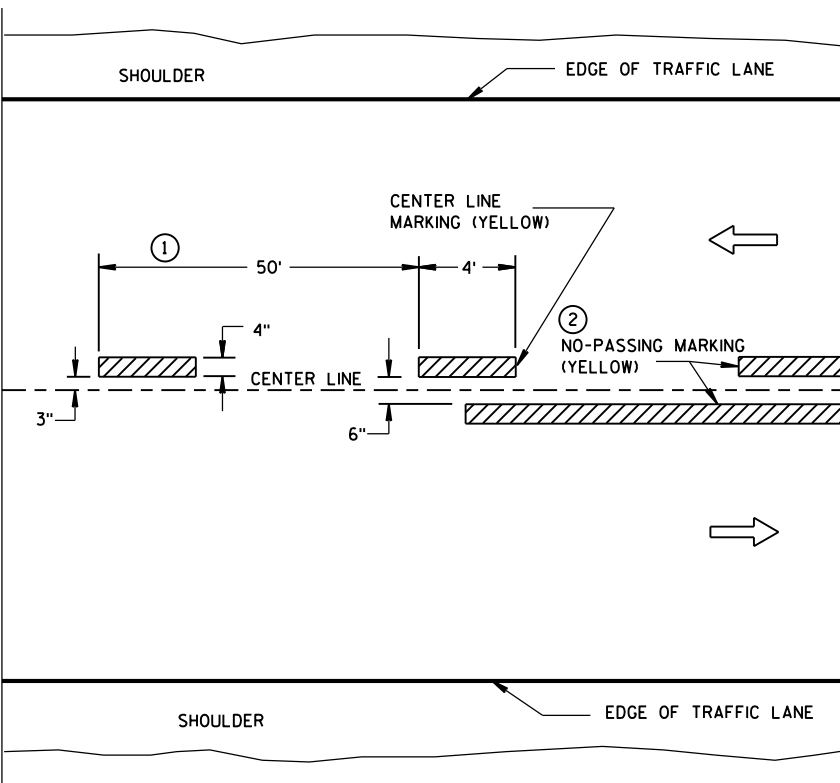


TWO WAY TRAFFIC

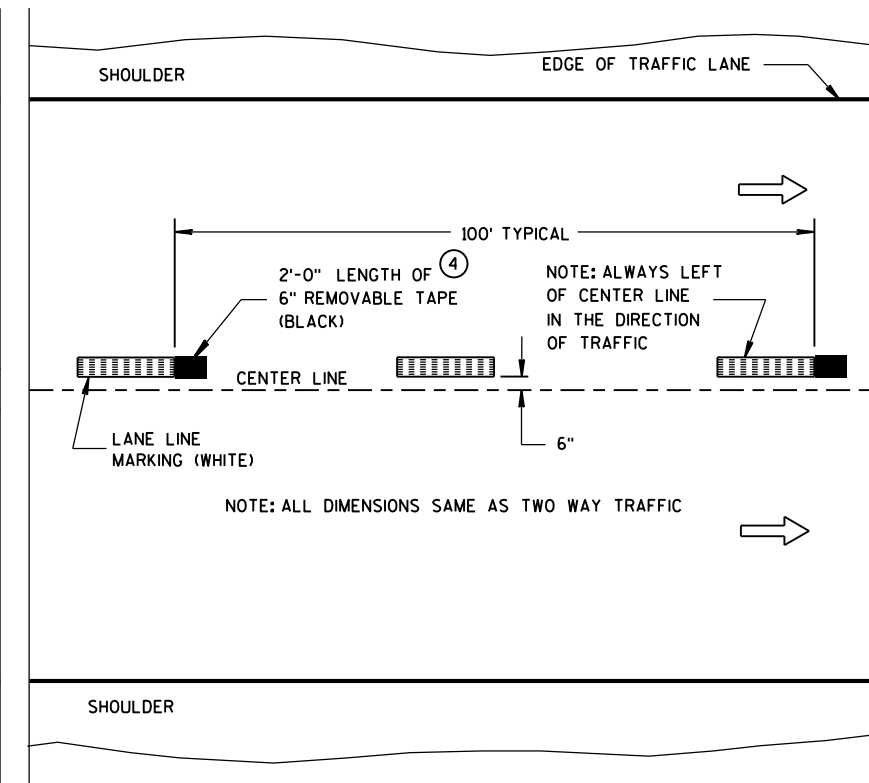


ONE WAY TRAFFIC

PERMANENT PAVEMENT MARKING



TWO WAY TRAFFIC



ONE WAY TRAFFIC

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

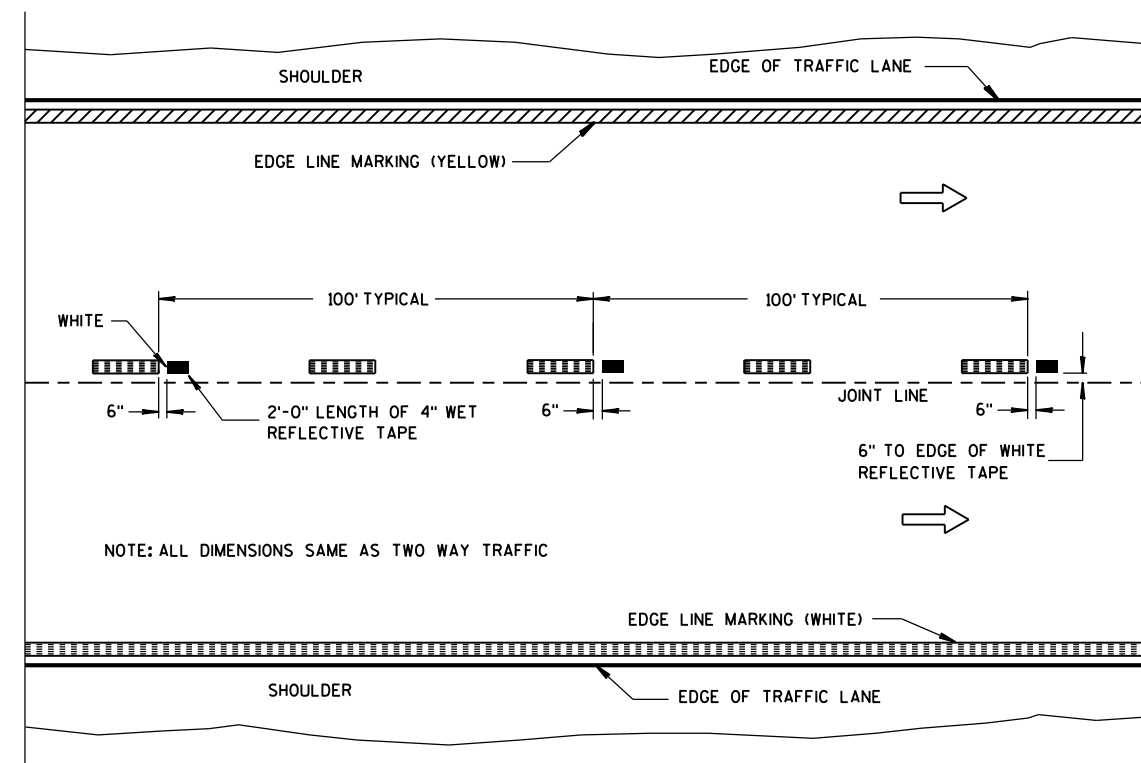
GENERAL NOTES

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

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

NOTE

ARROW SYMBOL (→) SHOWS DIRECTION OF TRAVEL



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

LEGEND

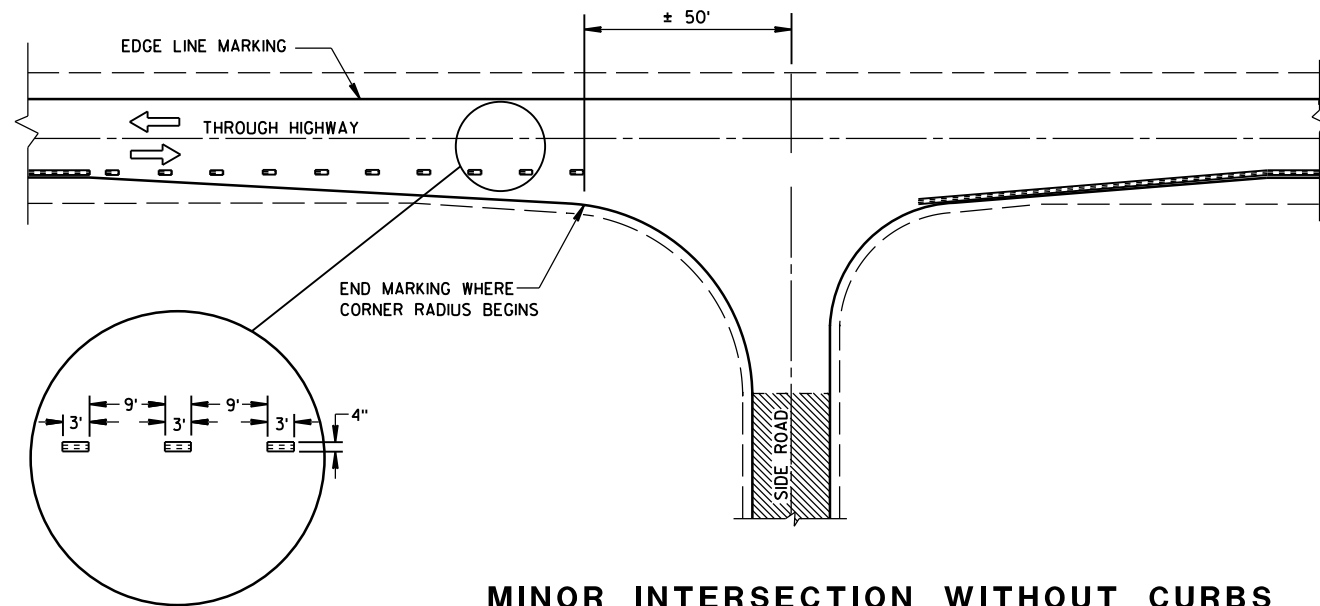
- "T" MARKING
- POST MOUNTED SIGN

PAVEMENT MARKING
(MAINLINE)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
5-13-2013
DATE
FHWA

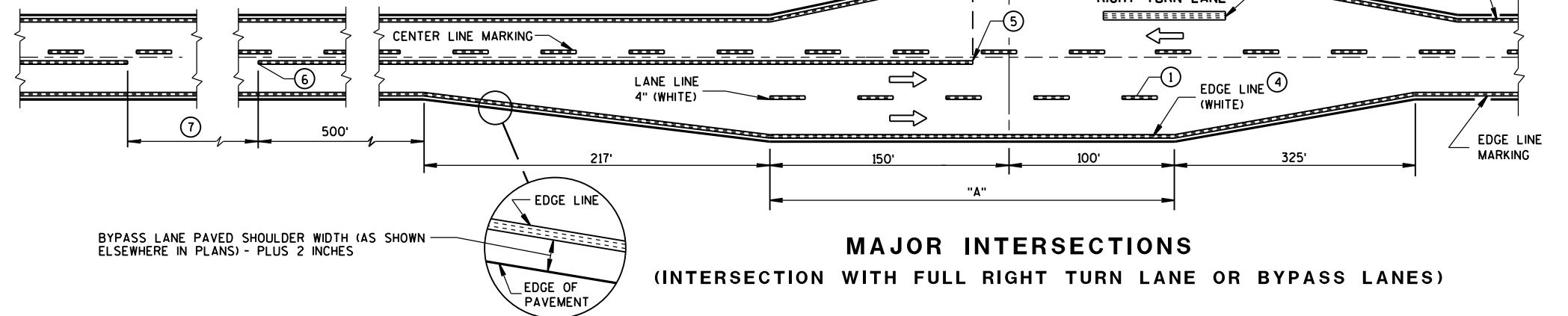
/S/ Travis Feltes
STATE TRAFFIC ENGINEER



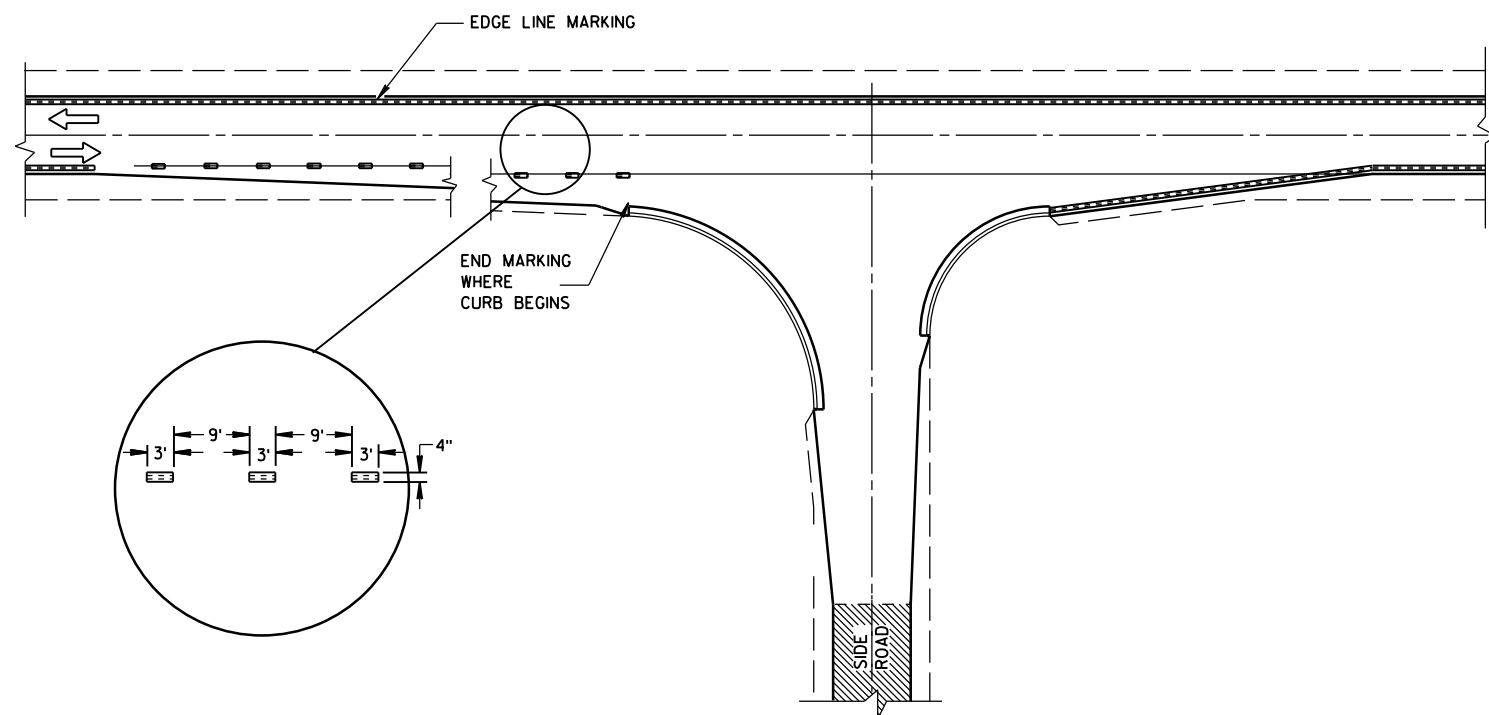
MINOR INTERSECTION WITHOUT CURBS

⑦

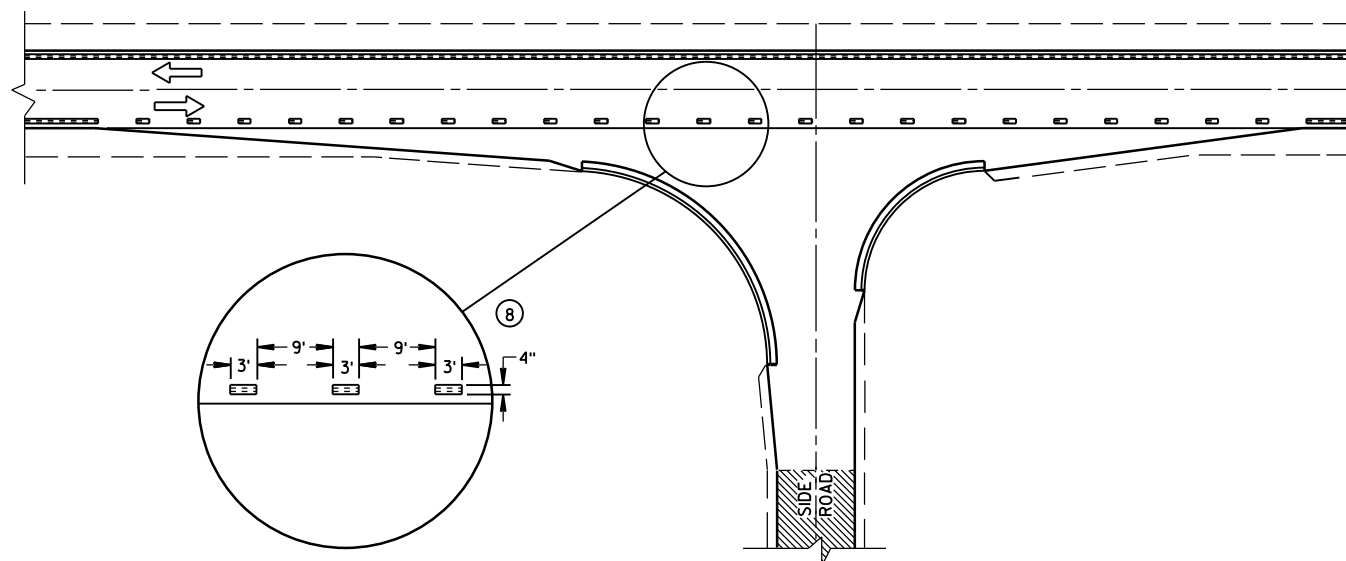
POSTED SPEED (MPH)	MINIMUM DISTANCE BETWEEN ZONES (FEET)
25 - 30	528
35 - 40	528
45 - 50	686
55	792



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



MINOR INTERSECTION WITH CURBS
(TYPICAL MARKING)



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

GENERAL NOTES

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

PAVEMENT MARKING
(INTERSECTIONS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

LEGEND

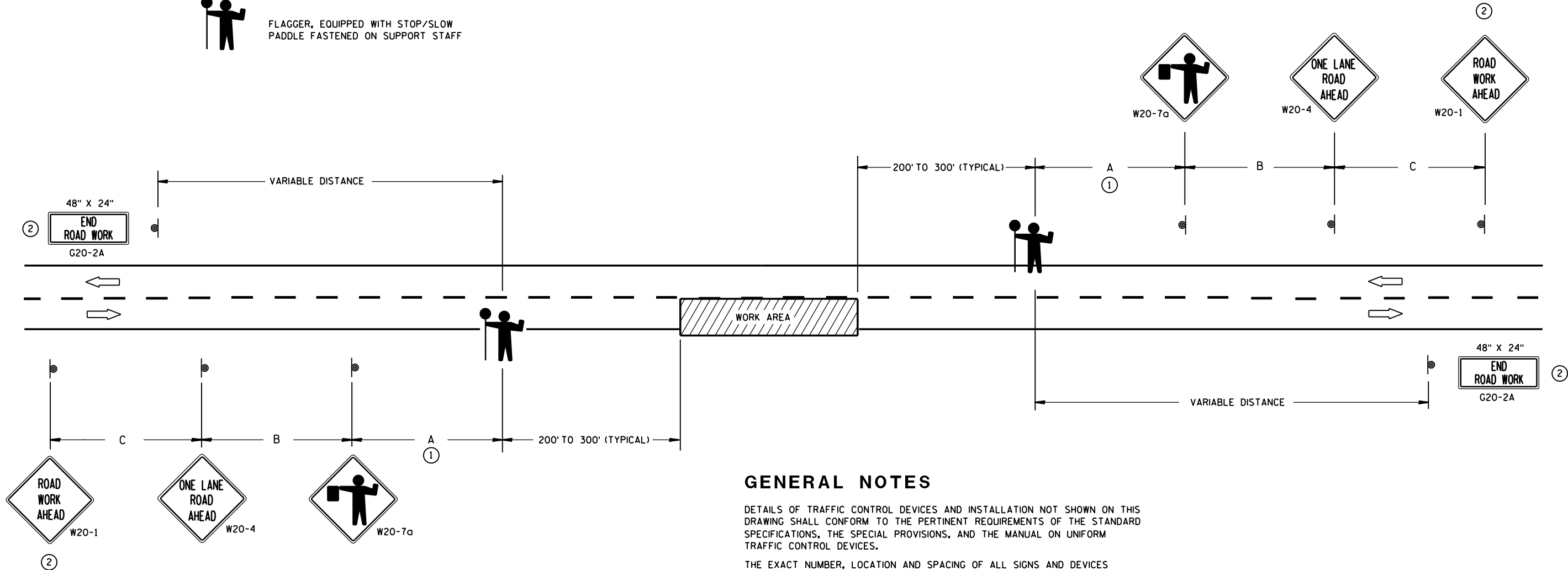
-  SIGN ON PORTABLE OR PERMANENT SUPPORT
-  DIRECTION OF TRAFFIC
-  WORK AREA
-  FLAGGER, EQUIPPED WITH STOP/SLOW PADDLE FASTENED ON SUPPORT STAFF

SIGN SPACING TABLE

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



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



GENERAL NOTES

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

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

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

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

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

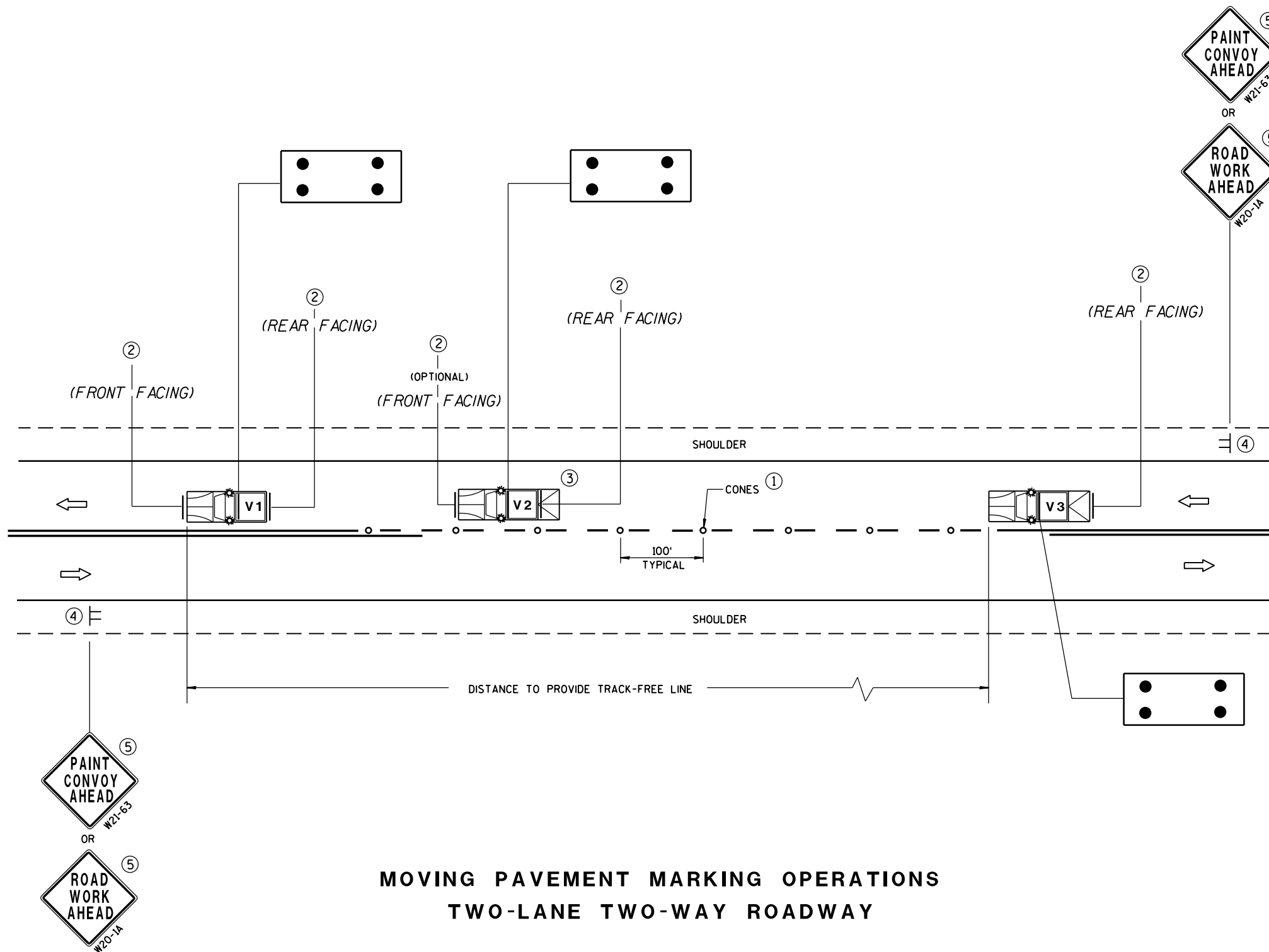
ALL SIGNS ARE 48" X 48" UNLESS OTHERWISE NOTED.

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

TRAFFIC CONTROL FOR LANE CLOSURE (SUITABLE FOR MOVING OPERATIONS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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



MOVING PAVEMENT MARKING OPERATIONS
TWO-LANE TWO-WAY ROADWAY

GENERAL NOTES

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

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

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

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

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

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

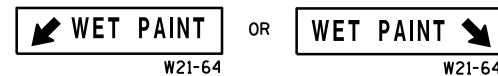
THE WORK AND SHADOW VEHICLES SHOULD PULL OVER PERIODICALLY TO ALLOW TRAFFIC TO PASS.

THIS DRAWING SHALL BE USED FOR CENTERLINE OR EDGELINE MARKING.

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

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

② USE STANDARD SIGN W21-64 WITH APPROPRIATE ARROW.



③ OPTIONAL TRUCK-MOUNTED ATTENUATOR.

④ SIGNS SHALL BE REPEATED APPROXIMATELY EVERY THREE MILES.

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

LEGEND

V1 LEAD VEHICLE

V2 SHADOW VEHICLE

V3 TRAIL VEHICLE WITH TMA

TMA TRUCK-MOUNTED ATTENUATOR

SIGN ON TEMPORARY SUPPORT

DIRECTION OF TRAFFIC

CONES

FLASHING ARROW PANEL (CAUTION)

MOVING PAVEMENT MARKING
OPERATION
TWO-LANE TWO-WAY ROADWAY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

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

FHWA

GENERAL NOTES

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

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

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

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

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.

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

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

TABLE A

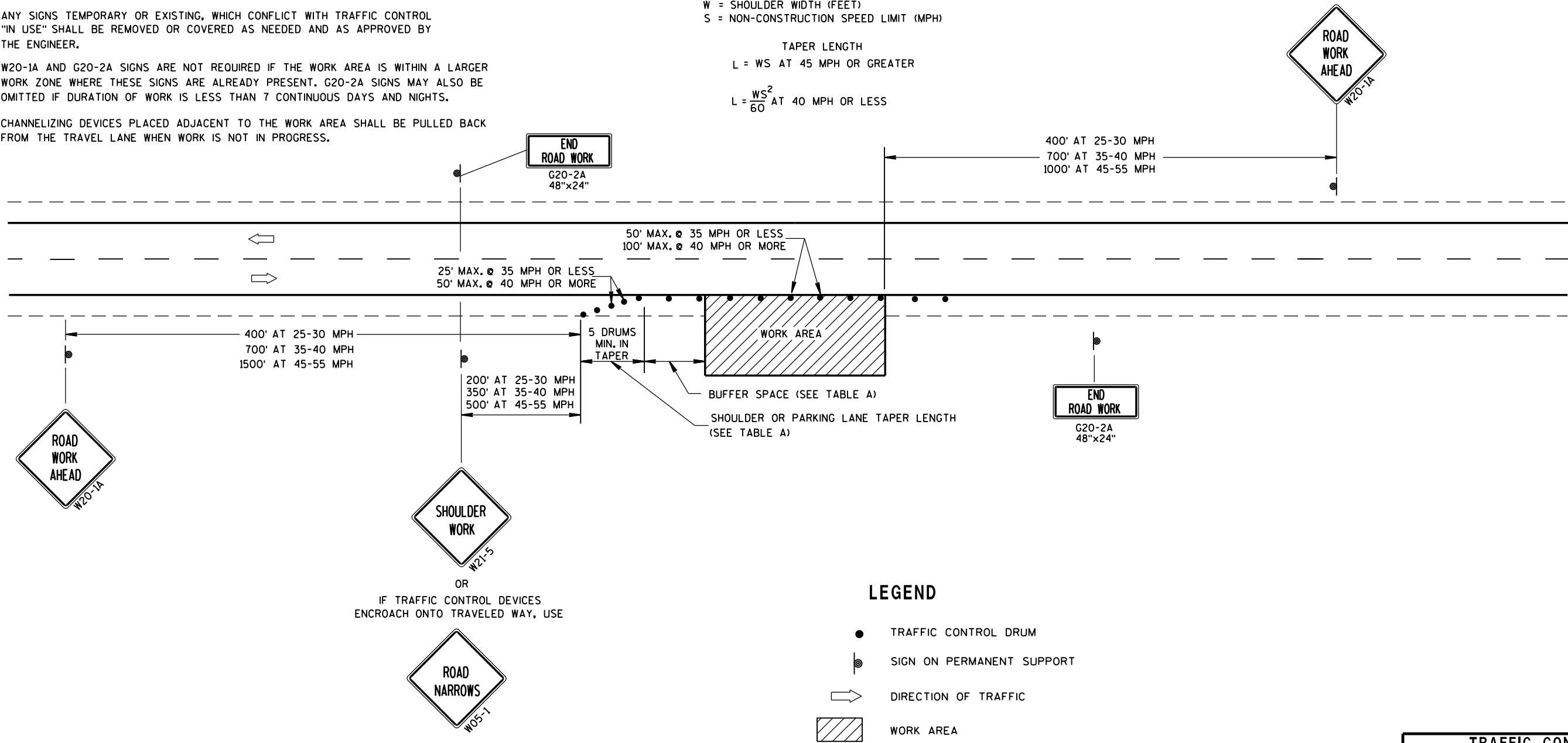
SHOULDER TAPER LENGTH (FEET)					BUFFER SPACE (FEET)
S	W	4	6	8	
30	20	30	40	50	200
35	30	45	55	70	250
40	40	55	75	90	305
45	60	90	120	150	360
50	70	100	135	170	425
55	75	110	150	185	495

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

TAPER LENGTH
L = WS AT 45 MPH OR GREATER

$L = \frac{WS^2}{60}$ AT 40 MPH OR LESS

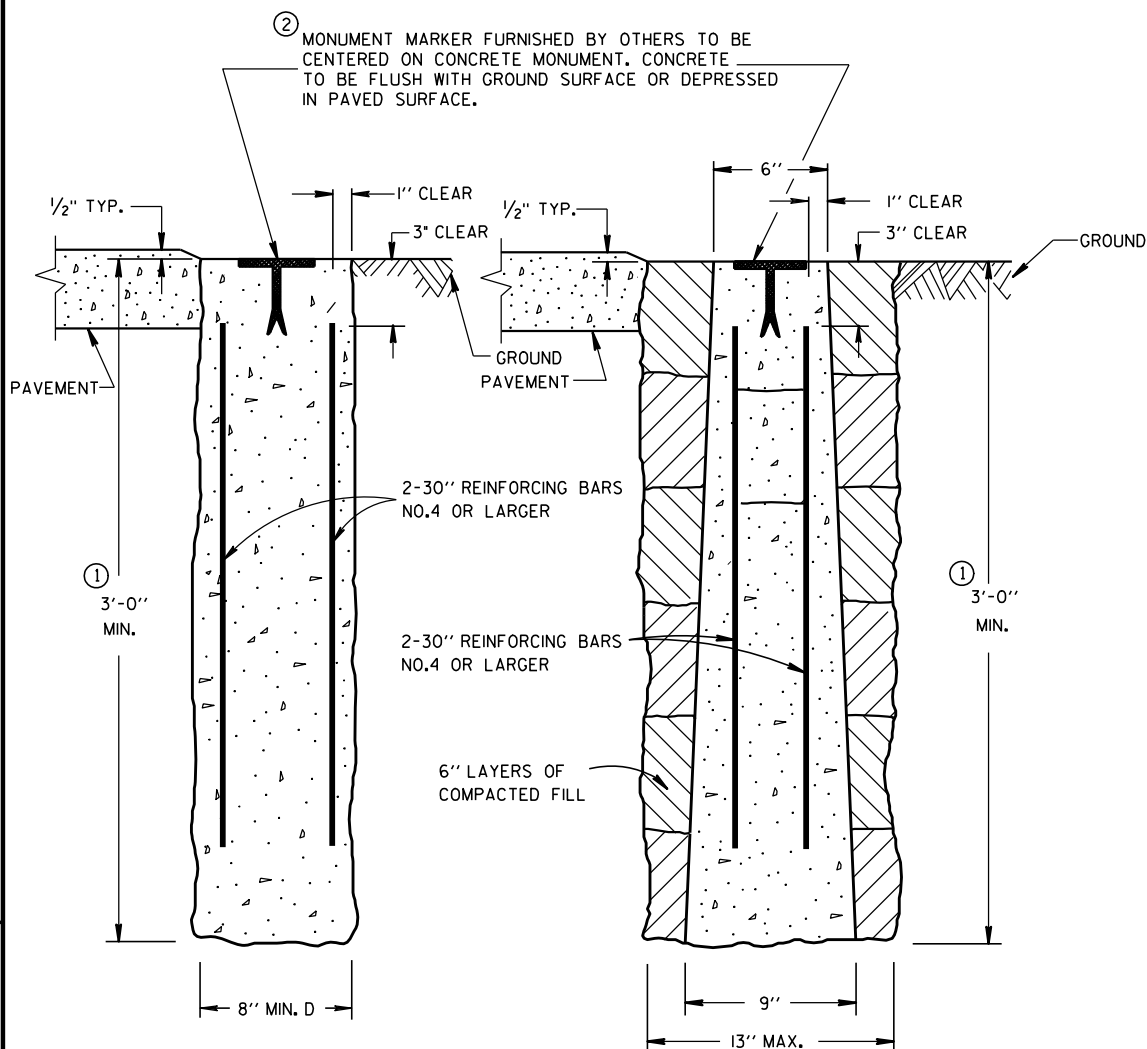
SHOULDER TAPER LENGTH = $\frac{1}{3}L$



LEGEND

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

TRAFFIC CONTROL, WORK ON SHOULDER OR PARKING LANE, UNDIVIDED ROADWAY	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED July 14, 2015 DATE	/S/ Peter Amakobe Atepe STATEWIDE WORK ZONE TRAFFIC SAFETY ENGINEER
FHWA	

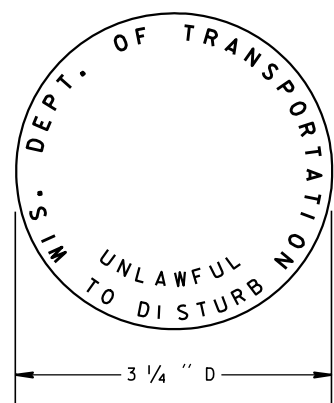


CAST-IN-PLACE

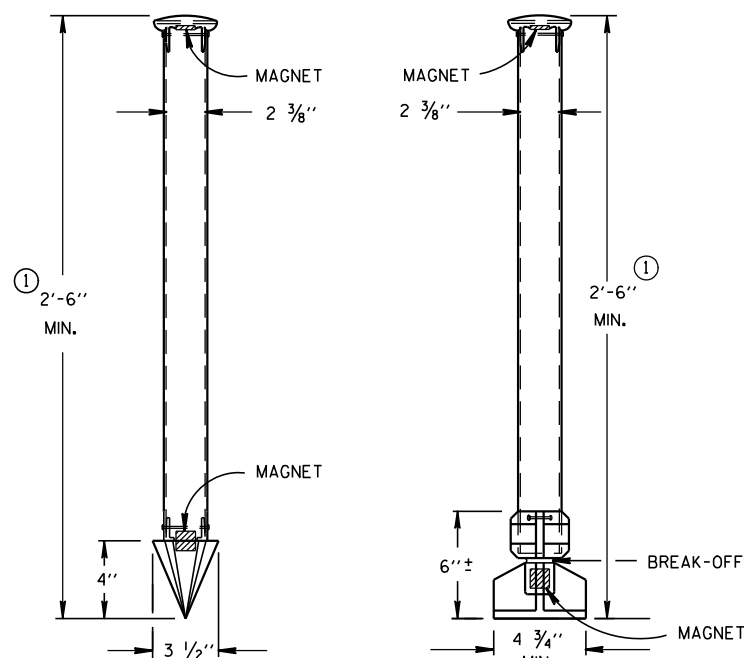
PRECAST

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.

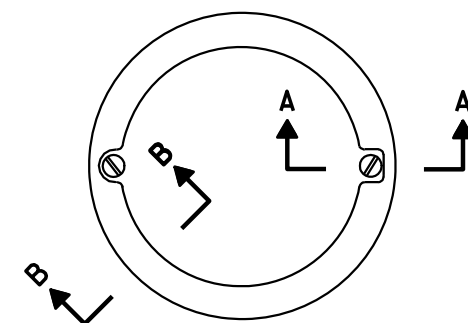
ALUMINUM MONUMENTS AND MONUMENT COVERS SHALL BE MADE FROM AN ALUMINUM AND MAGNESIUM ALLOY AS DETERMINED BY THE MANUFACTURER.

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.

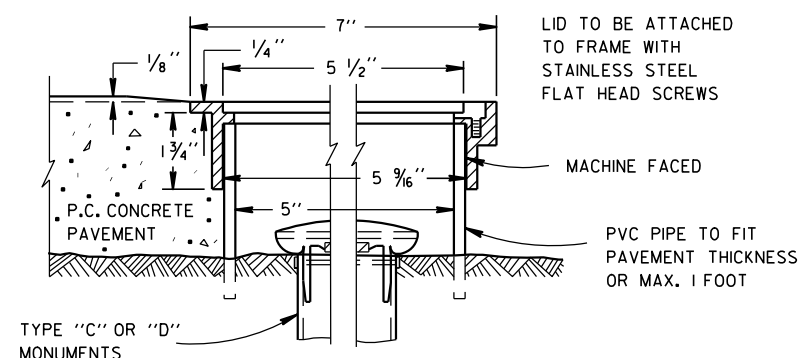
MONUMENT SHALL BE CAST-IN-PLACE CONCRETE UNLESS PRECAST CONCRETE OR ALUMINUM MONUMENTS ARE SPECIFIED IN THE CONTRACT OR PERMITTED BY THE ENGINEER.

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

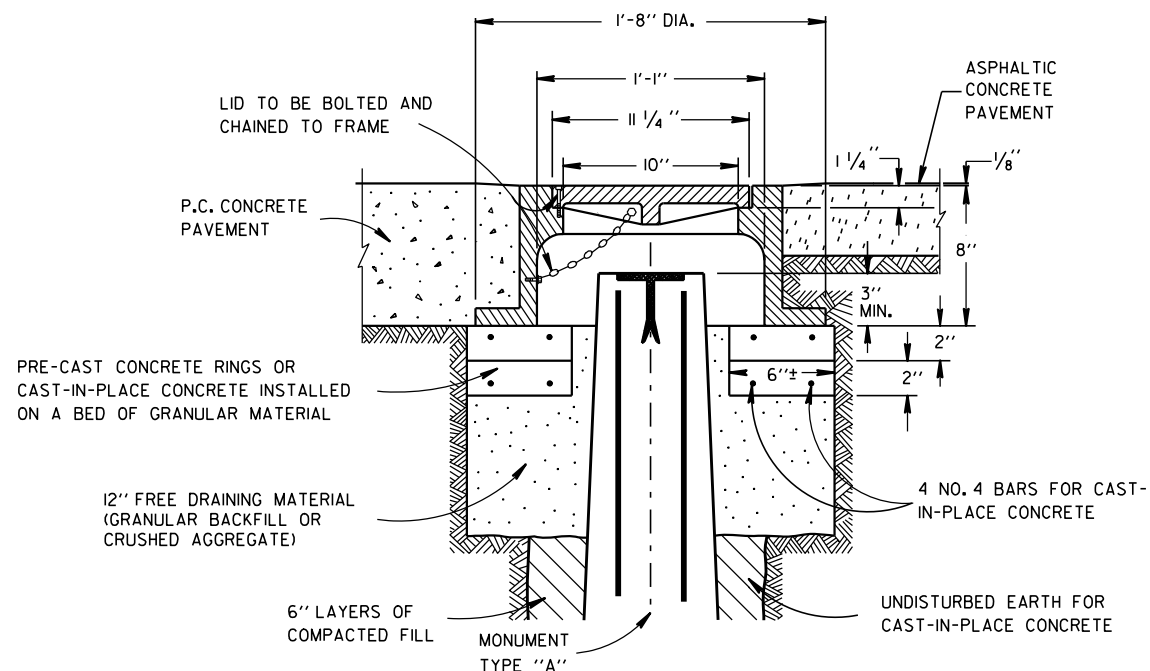
② AN OFFICIAL COUNTY MONUMENT MARKER SUPPLIED BY A COUNTY MAY BE REQUIRED FOR SOME SECTION CORNERS AND WITNESS MONUMENTS INSTEAD OF THIS WIS DOT MARKER.



TOP VIEW

SECTION B-B SECTION A-A
ALUMINUM MONUMENT COVER

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



CAST IRON MONUMENT COVER

(APPROXIMATE WEIGHT - 95 LBS.)

LANDMARK REFERENCE
MONUMENTS AND COVERS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

9/22/1999

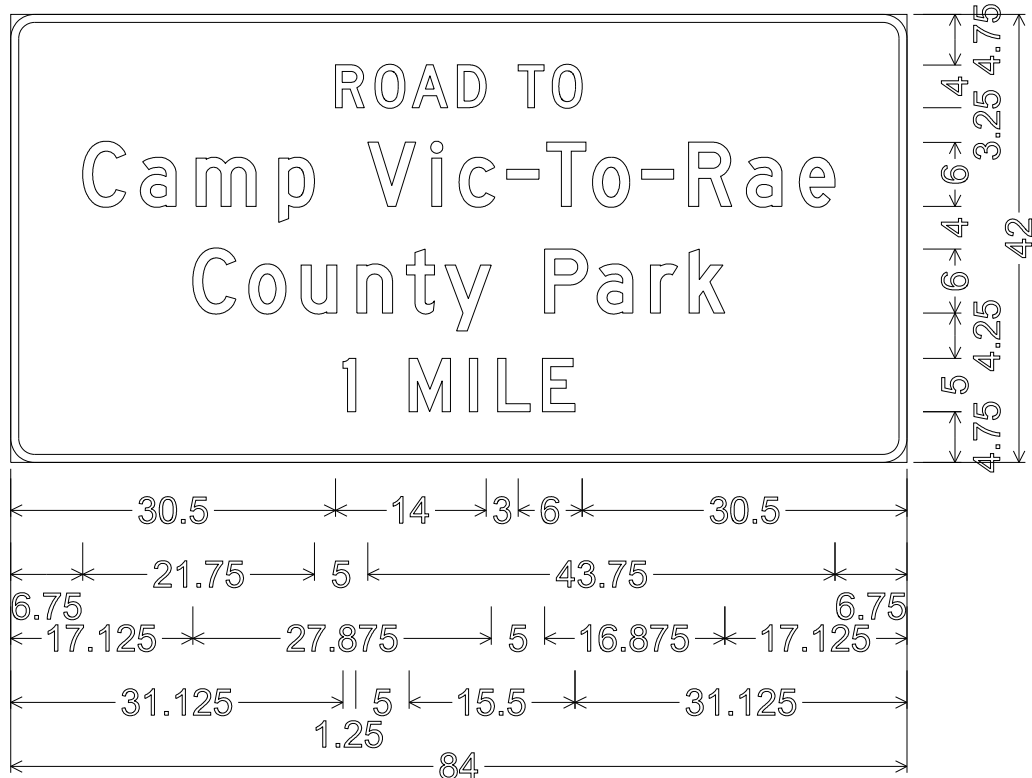
DATE

FHWA

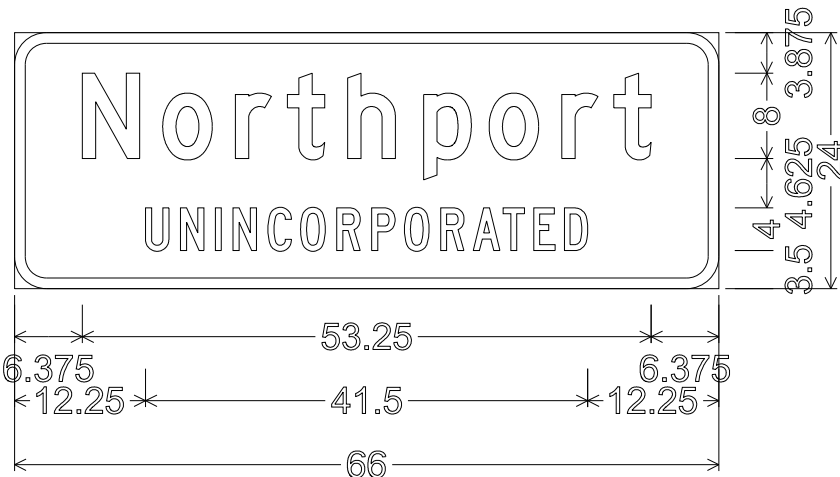
/S/ Rory L. Rhinesmith
CHIEF ROADWAY DEVELOPMENT ENGINEER

NOTES

- 1. All Signs Type II - Type H Reflective
- 2. Color:
Background - GREEN except as shown
Message - WHITE
- 3. Message Series - E except as Shown



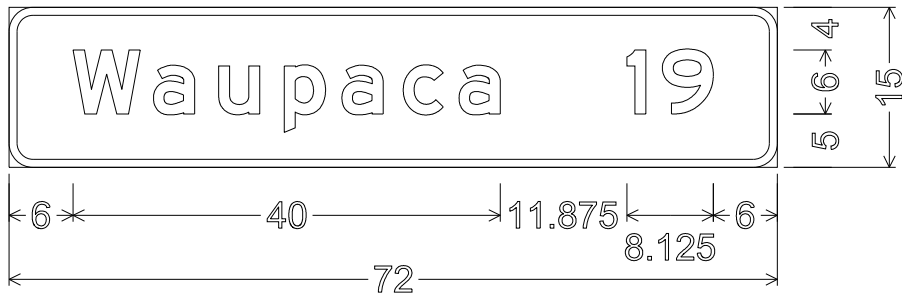
D7-68;
2.250" Radius, 0.750" Border, White on Brown;
"ROAD" D; "TO" D; "Camp" D; "Vic-To-Rae" D;
"County" D; "Park" D;
"1" D; "MILE" D;



I2-3;
3.000" Radius, 1.000" Border,
"Northport" D;
"UNINCORPORATED" C

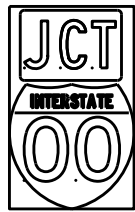


I2-3;
3.000" Radius, 1.000" Border
"New" D; "London" D;
"POPULATION" C; "7295" C;

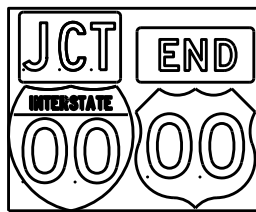


D2-1;
2.250" Radius, 0.750" Border

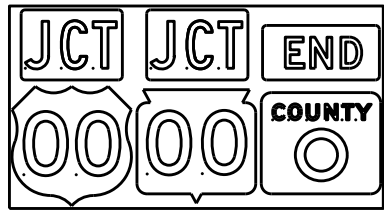
TYPICAL ASSEMBLIES



J1-1



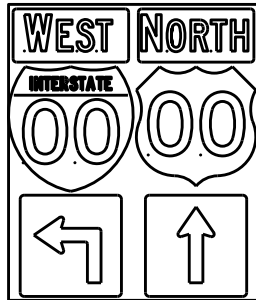
J1-2



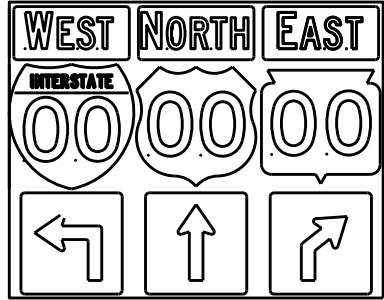
J1-3



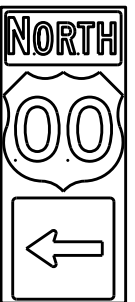
J2-1



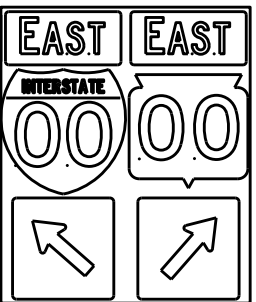
J2-2



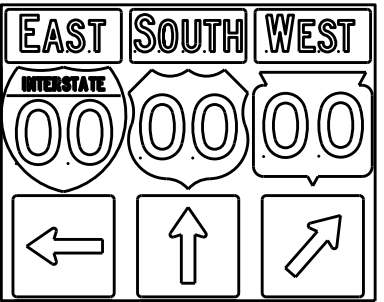
J2-3



J3-1



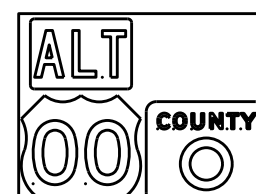
J3-2



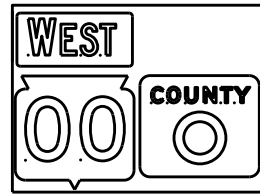
J3-3



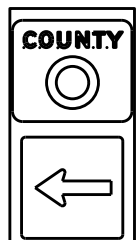
J4-1



J4-2



J4-2



J13-1



J12-1



J32-1



J33-1



J23-1

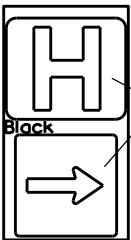


J22-1



JV

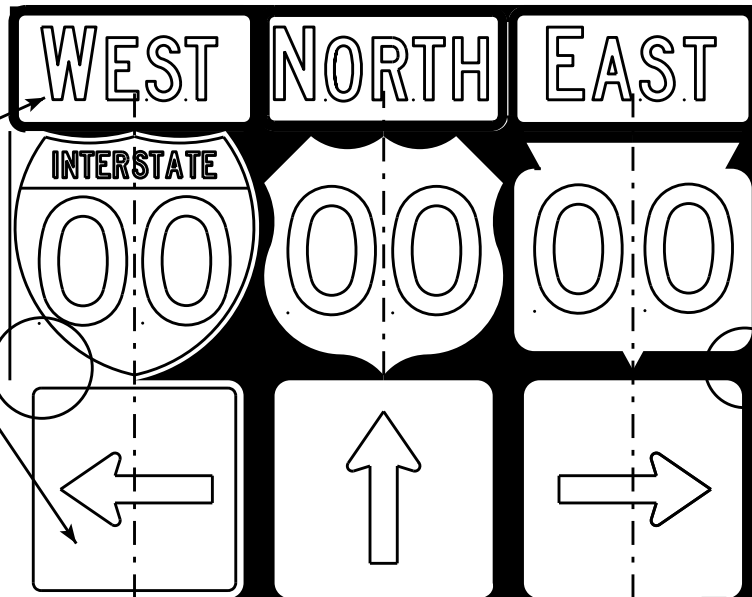
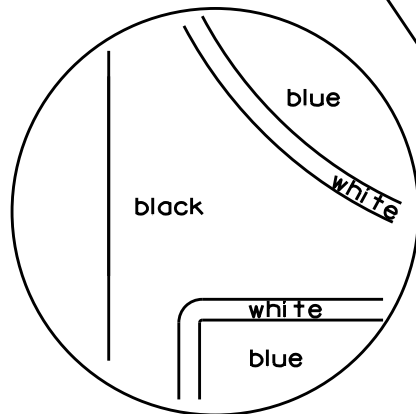
(Typical Vertical J-Assembly
See Note 10 and 11)



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

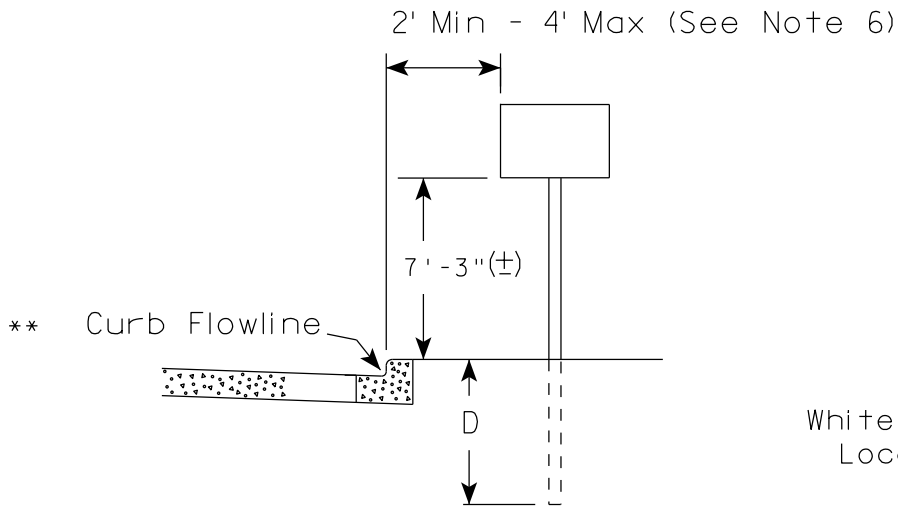
PLOT NAME :

SHEET NO:

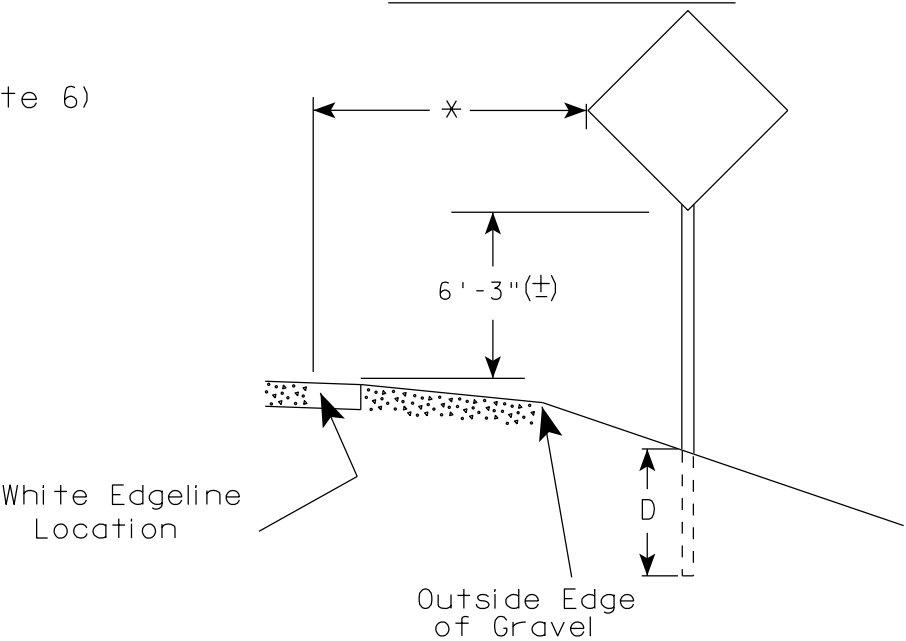
E

WISDOT/CADDs SHEET 42

URBAN AREA

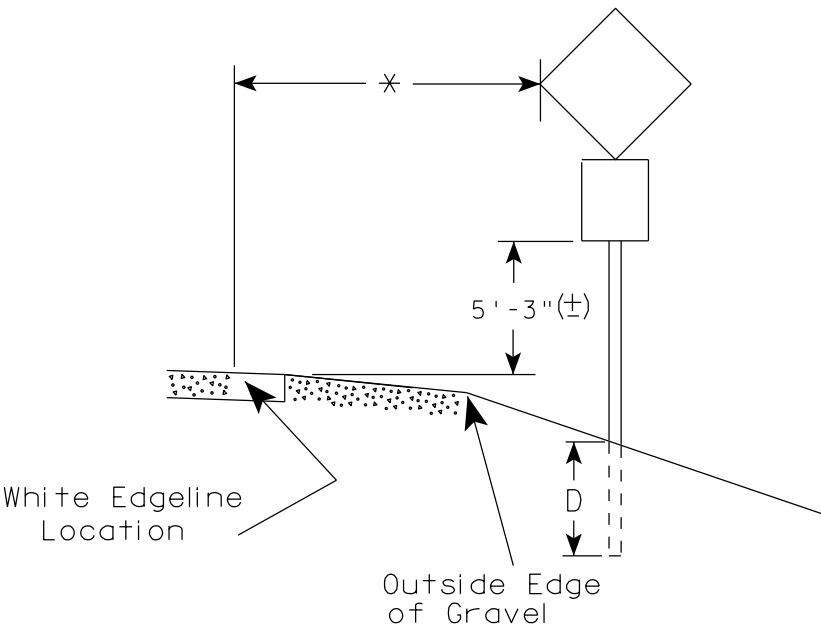
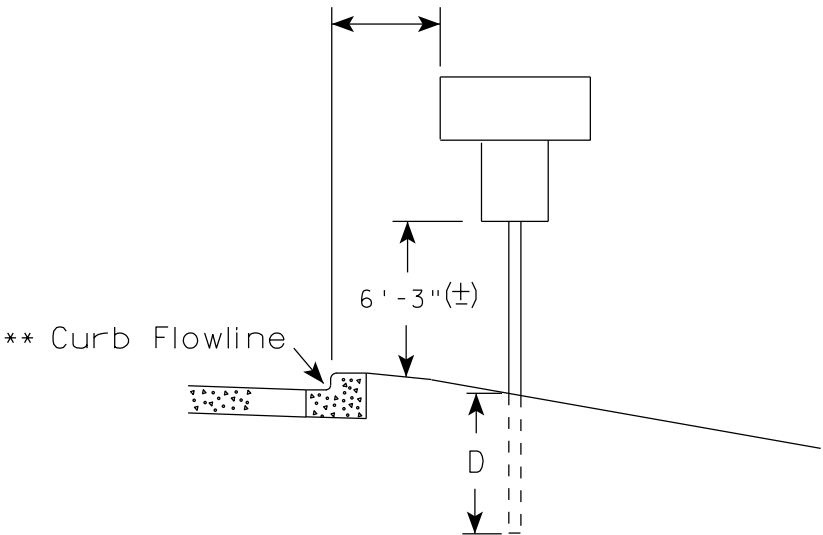


RURAL AREA (See Note 2)



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

2' Min - 4' Max (See Note 6)



POST EMBEDMENT DEPTH

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

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

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

TYPICAL INSTALLATION
OF PERMANENT TYPE II
SIGNS ON SINGLE POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED
Matthew R. Rauch
for State Traffic Engineer

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



ELEVATION VIEW

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

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



ELEVATION VIEW

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



PLAN VIEW

FOR NEW CONCRETE/ASPHALT INSTALLATIONS

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

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

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

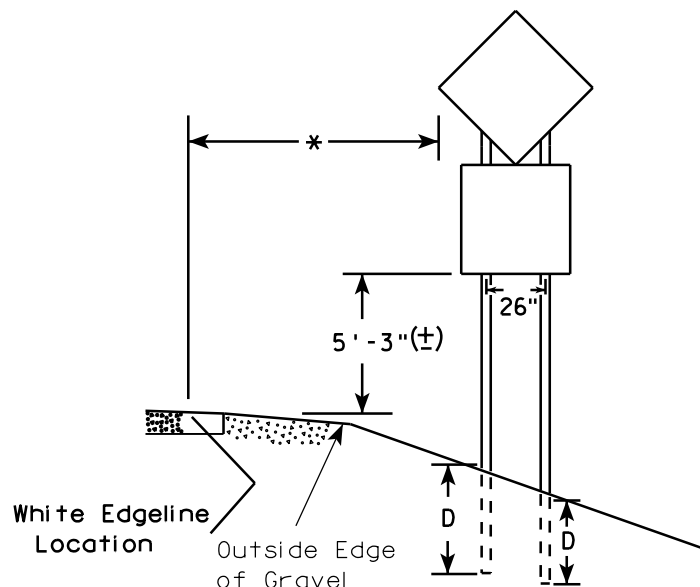
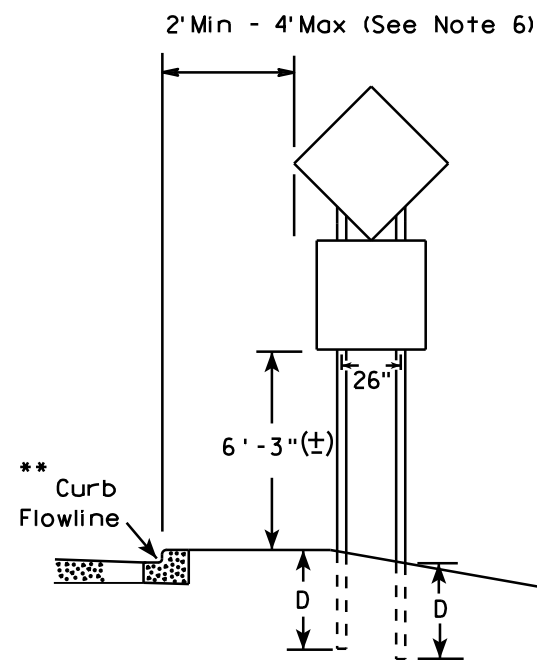
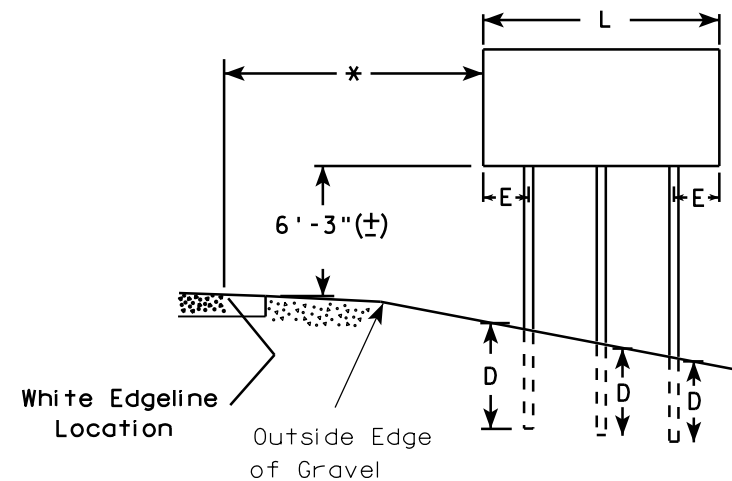
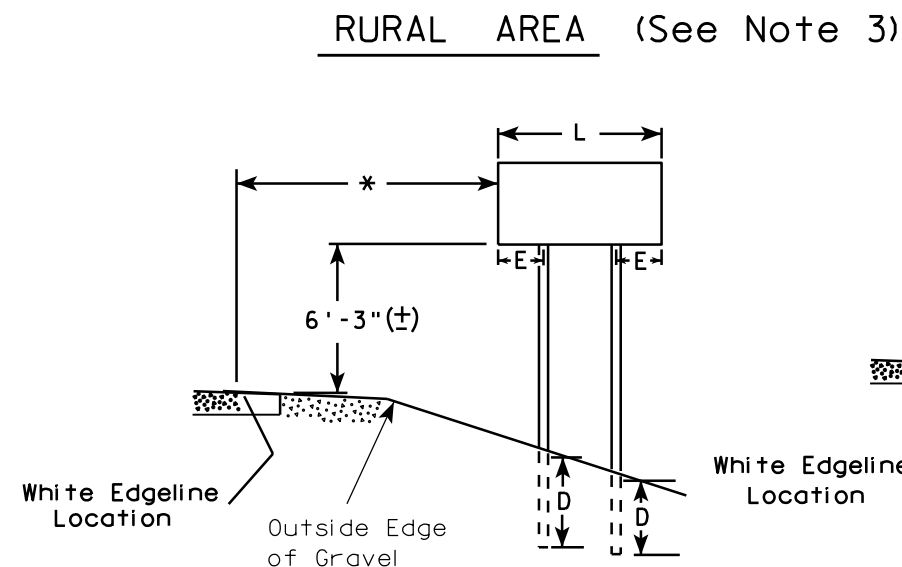
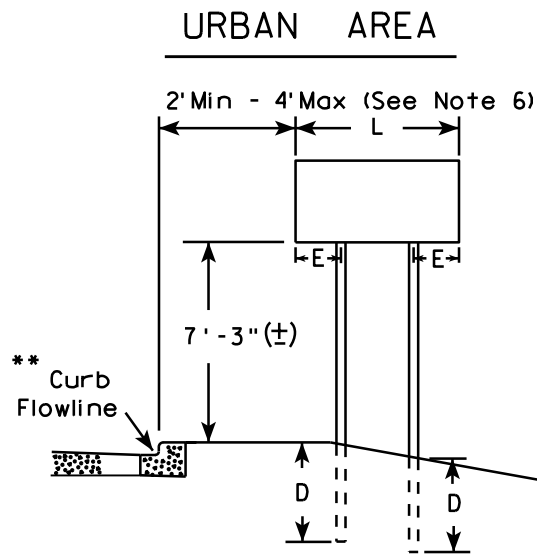
PROJECT NO:

HWY:

COUNTY:

SHEET NO:

E



48" DIAMOND WARNING SIGN

48" DIAMOND WARNING SIGN

- GENERAL NOTES**
1. For 3 or 4 post installations, individual post spacing shall be greater than 3'-6".
 2. See tables below for required number of posts.
 3. For expressways and freeways, mounting height is 7'-3" (±) or 6'-3" (±) depending upon existence of sub-sign.
 4. The (±) tolerance for mounting height is 3 inches.
 5. Minimum mounting height for J assemblies (A2-1S) is 7'-3" (±) or 6'-3" (±) per urban or rural detail respectively.
 6. Offset distance shall be consistent with existing signs or consistent throughout length of project.
 7. Folding signs shall be mounted at a height of 5'-3" (±) or as directed by the engineer.
 8. The Double Arrow sign (W12-1) shall be mounted at a height of 2'-3" (±). The Chevron sign (W1-8), Roundabout Chevron panel (R6-4B), Clearance Markers (W5-52), Mile Markers (D10 series), In Road Object Markers (W5-54) & End of Road Markers (W5-56) shall be mounted at a height of 4'-3" (±).

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

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

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

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

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

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

POST EMBEDMENT DEPTH

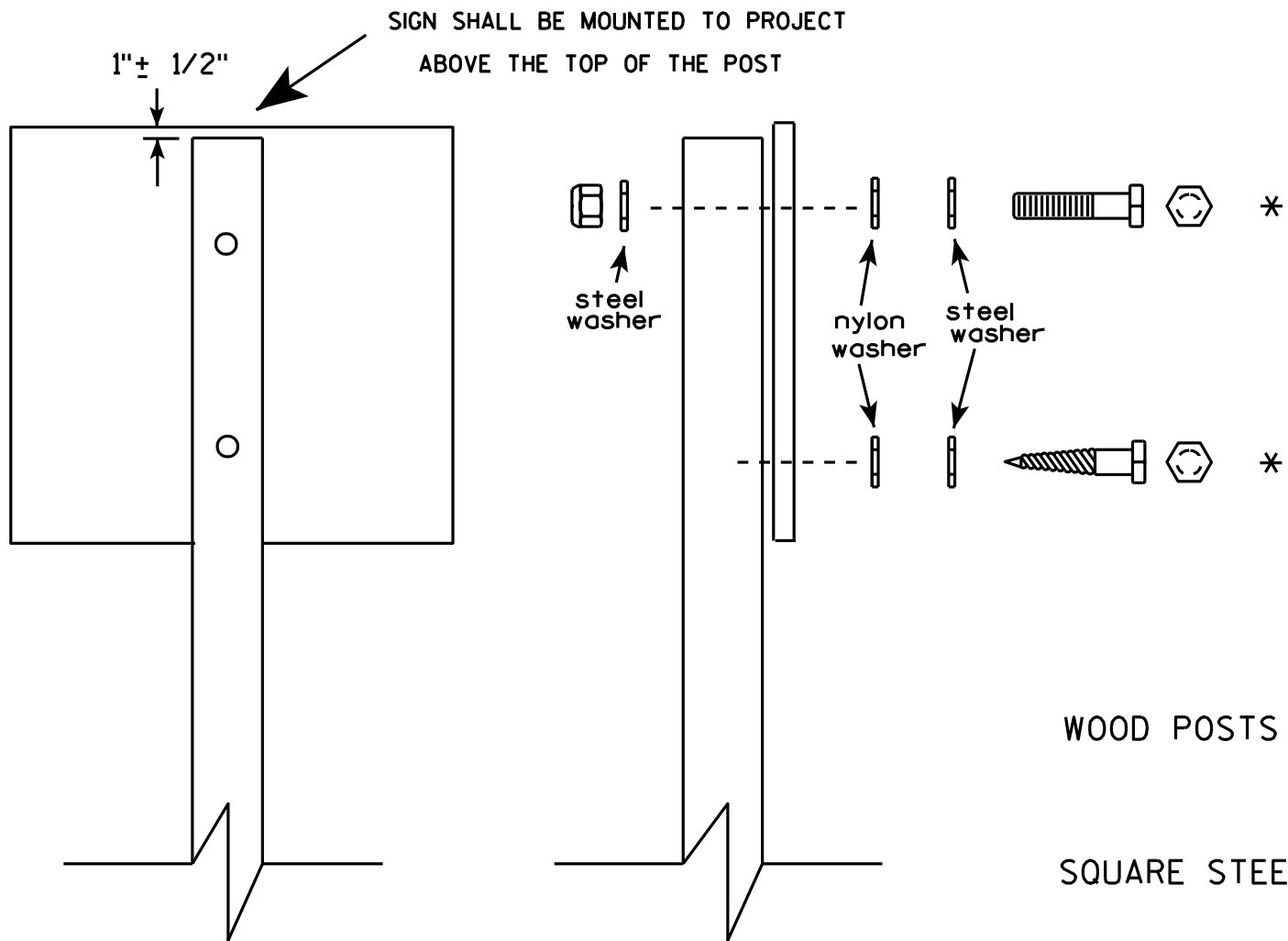
Area of Sign Installation (Sq. Ft.)	D (Min)
20 or Less	4'
Greater than 20	5'

TYPICAL INSTALLATION
OF TYPE II SIGNS
ON MULTIPLE POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

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

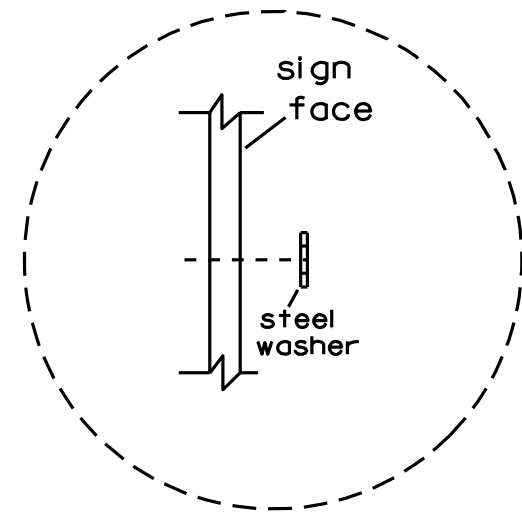


Nuts, bolts and lags used for mounting signs shall have hexagonal heads and shall be either :

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

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

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

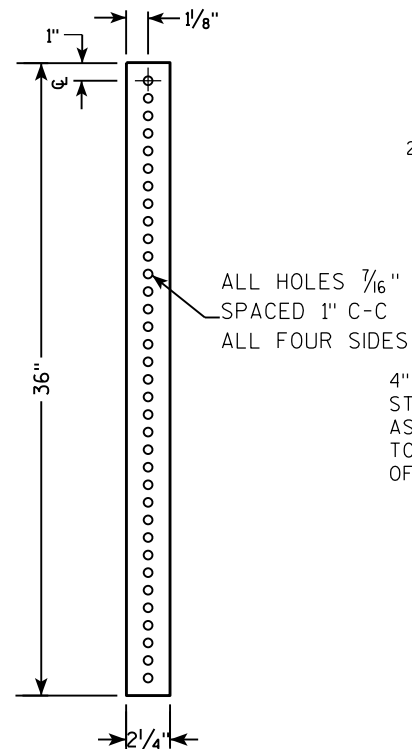


Washer Placement when Sign Has Other Than Type H or Type F Face

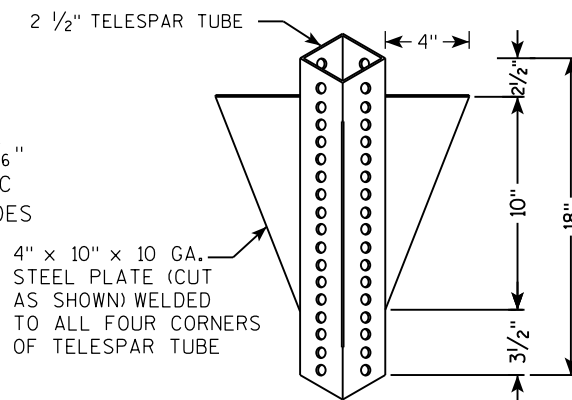
* Two different fastening systems are shown for illustration purposes. On any individual sign, either one or the other system shall be used. Actual number of fasteners per sign varies with the sign area, but normally there are two. For a single post installation, all signs greater than 9 sq. ft. require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

ATTACHMENT OF SIGNS TO POSTS	
WISCONSIN DEPT OF TRANSPORTATION	
APPROVED	<i>Matthew R. Rauch</i> For State Traffic Engineer
DATE 3/23/10	PLATE NO. A4-8.7

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



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



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

LENGTH SHOWN ON MISC. QTY'S

SIGN

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

2" STEEL TUBULAR SQUARE UPPER SECTION

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

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

TELESCOPE PIECES FLUSH AT TOP

1"

A

B

C

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

2 $\frac{1}{2}$ " SQUARE X 18" (SOIL STABILIZING SLEEVE)

2 $\frac{1}{4}$ " SQUARE X 36"

36"

18"

12"

DIRECTION
OF TRAFFIC

SECTION A-A

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

TUBULAR STEEL
SIGN POST
A4-9

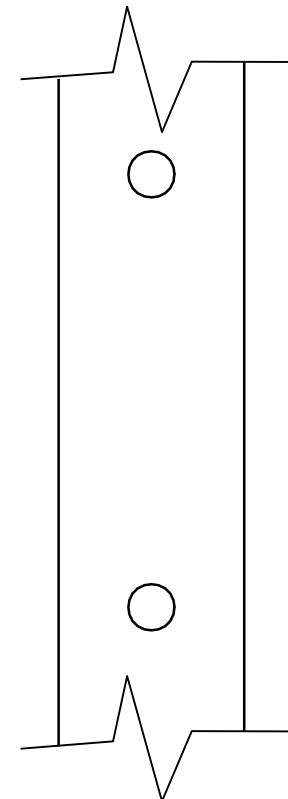
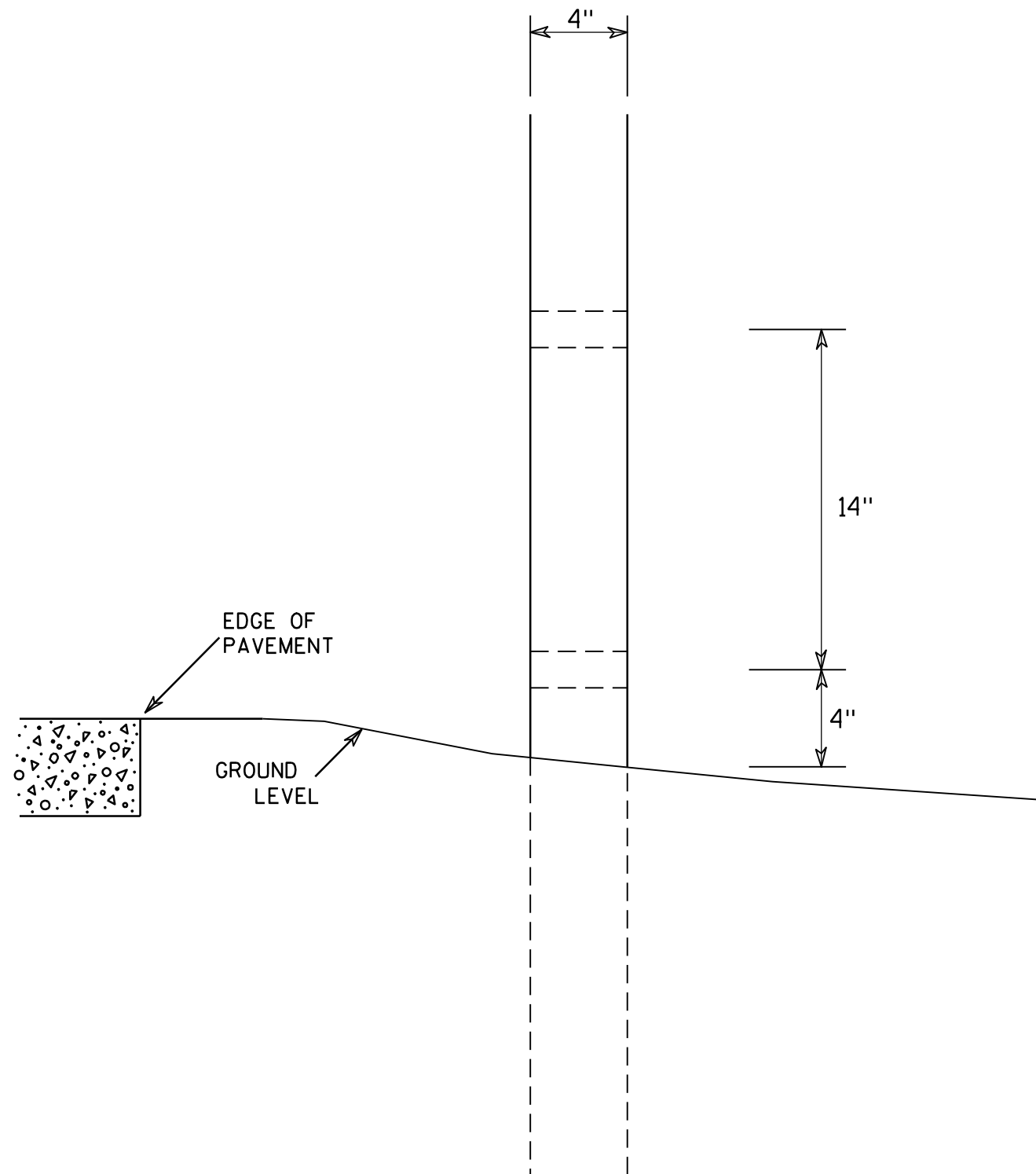
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthieu R. Rauch

for State Traffic Engineer

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

PROJECT NO:	HWY:	COUNTY:		SHEET NO:	E
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SIDE VIEW

GENERAL NOTES

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

4 X 6 WOOD POST MODIFICATIONS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED

Chester J. Spang
for State Traffic Engineer

DATE 3/27/97

PLATE NO. A4-11.2

PROJECT NO:

HWY:

COUNTY:

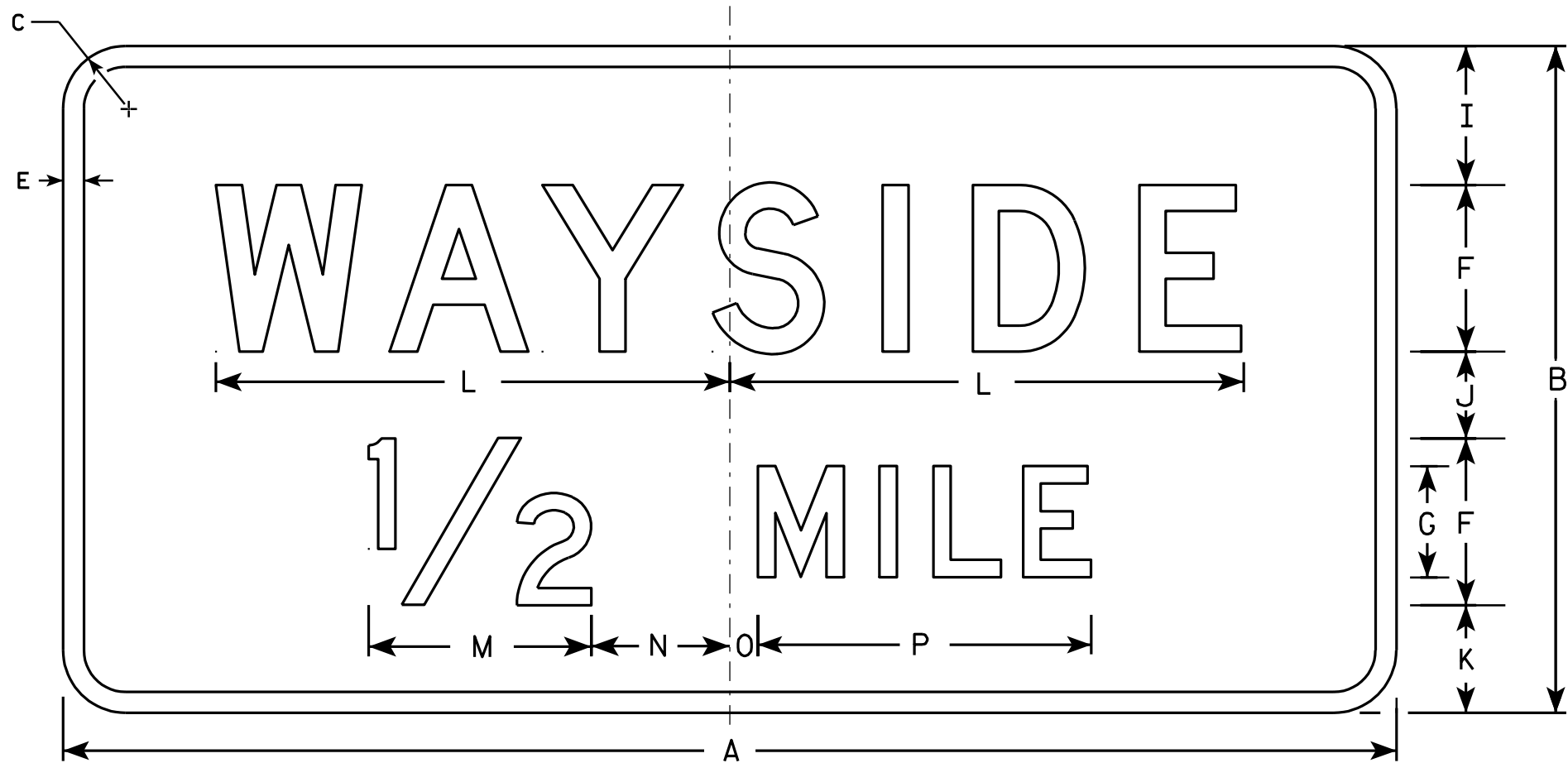
SHEET NO:

E

58, 59, 60, 61, 62, 63

7

LEVELS ON - 2, 3, 5, 6, 10,



D5-61

Metric equivalent
for this sign is:

SIZE	
1	
2	1200 mm X 600 mm
3	
4	1950 mm X 1050 mm
5	

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z		
1																												
2	48	24	2 1/4		3/4	6	4	6	5	3 1/8	3 7/8	18 1/2	8	5	1	12											8.0	0.72
3																												
4	78	42	3		1	10	7	10 1/2	8 3/4	5 3/4	7	30 1/8	14	8 3/4	1 3/4	21											22.8	2.05
5																												

STATE PROJECT NUMBER:

STANDARD SIGN
D5-61

WISCONSIN DEPT OF TRANSPORTATION

APPROVED
Charles J. Spang
for State Traffic Engineer

DATE 1/09/02
PLATE NO. D5-61.9

SHEET NO:

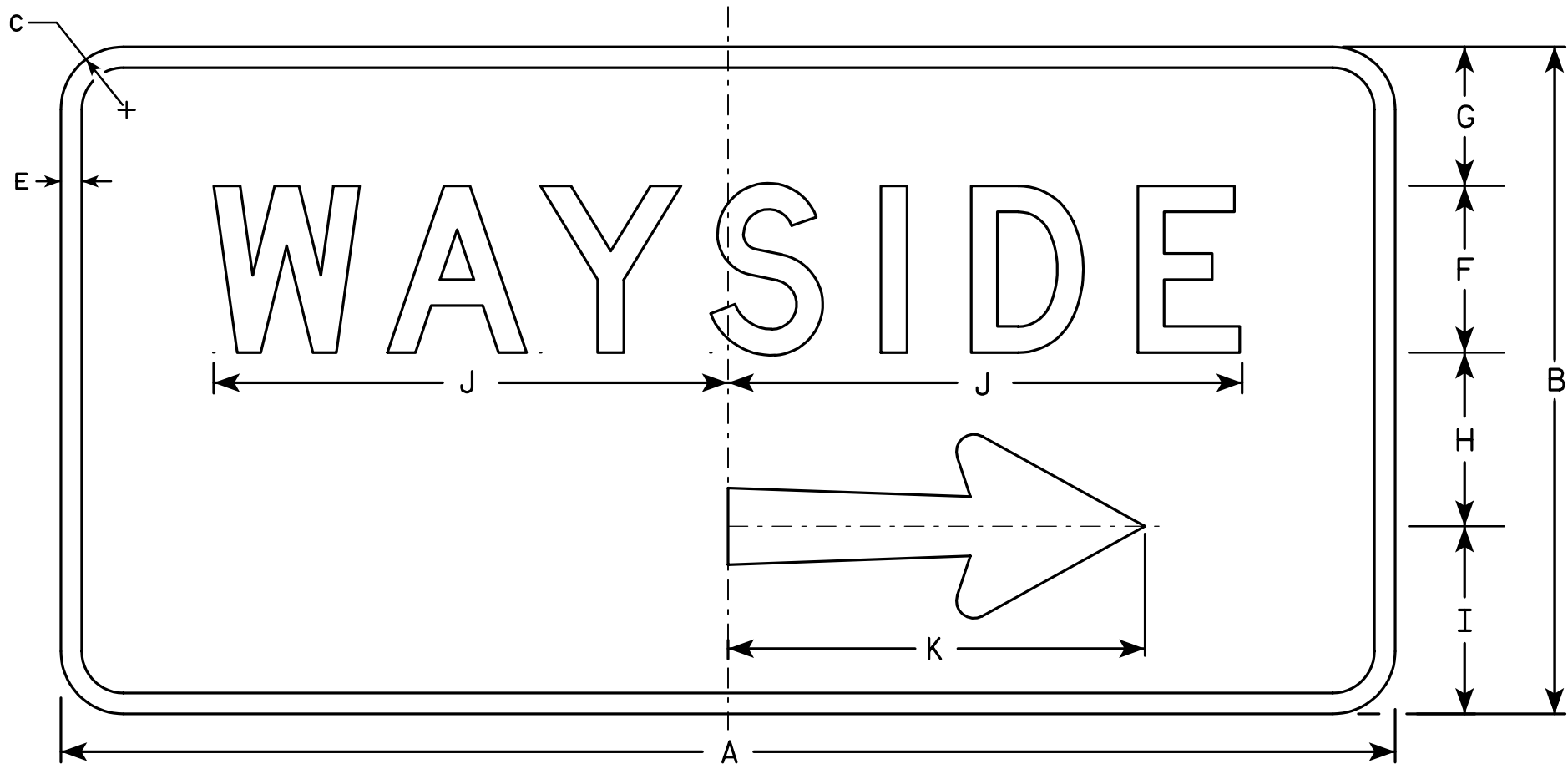
E

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

58, 59, 60, 61, 62, 63

7

LEVELS ON - 2, 3, 5, 6, 14, 10,



D5-62R

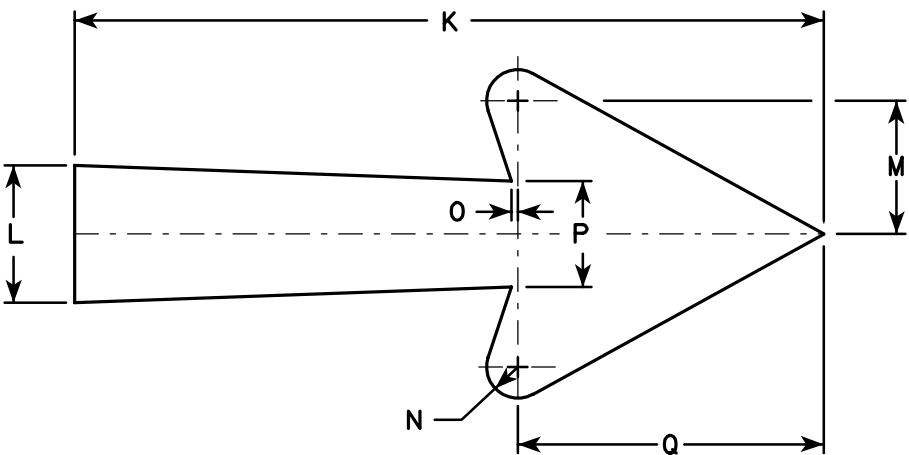
Metric equivalent
for this sign is:

SIZE	
1	
2	1200 mm X 600 mm
3	
4	1950 mm X 1050 mm
5	

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.	Area m ²
1																												
2	48	24	2 1/4		3/4	6	4	6 1/4	6 3/4	18 1/2	15	2 3/4	3 1/8	5/8	1/8	2 1/8	6 1/8										8.0	0.72
3																												
4	78	42	3		1	10	8 3/4	11	12 1/4	30 1/8	26 1/4	4 3/4	4 5/8	1 1/8	1/4	3 3/4	10 3/4										22.8	2.05
5																												

NOTES

1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
Background - Blue
Message - White
3. Message Series - D
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. D5-62L is the same as D5-62R except that the arrow is rotated 180° about the vertical center line.



Arrow Detail

STANDARD SIGN
D5-62

WISCONSIN DEPT OF TRANSPORTATION

APPROVED

Christa J. Spang
for State Traffic Engineer

DATE 1/09/02

PLATE NO. D5-62.10

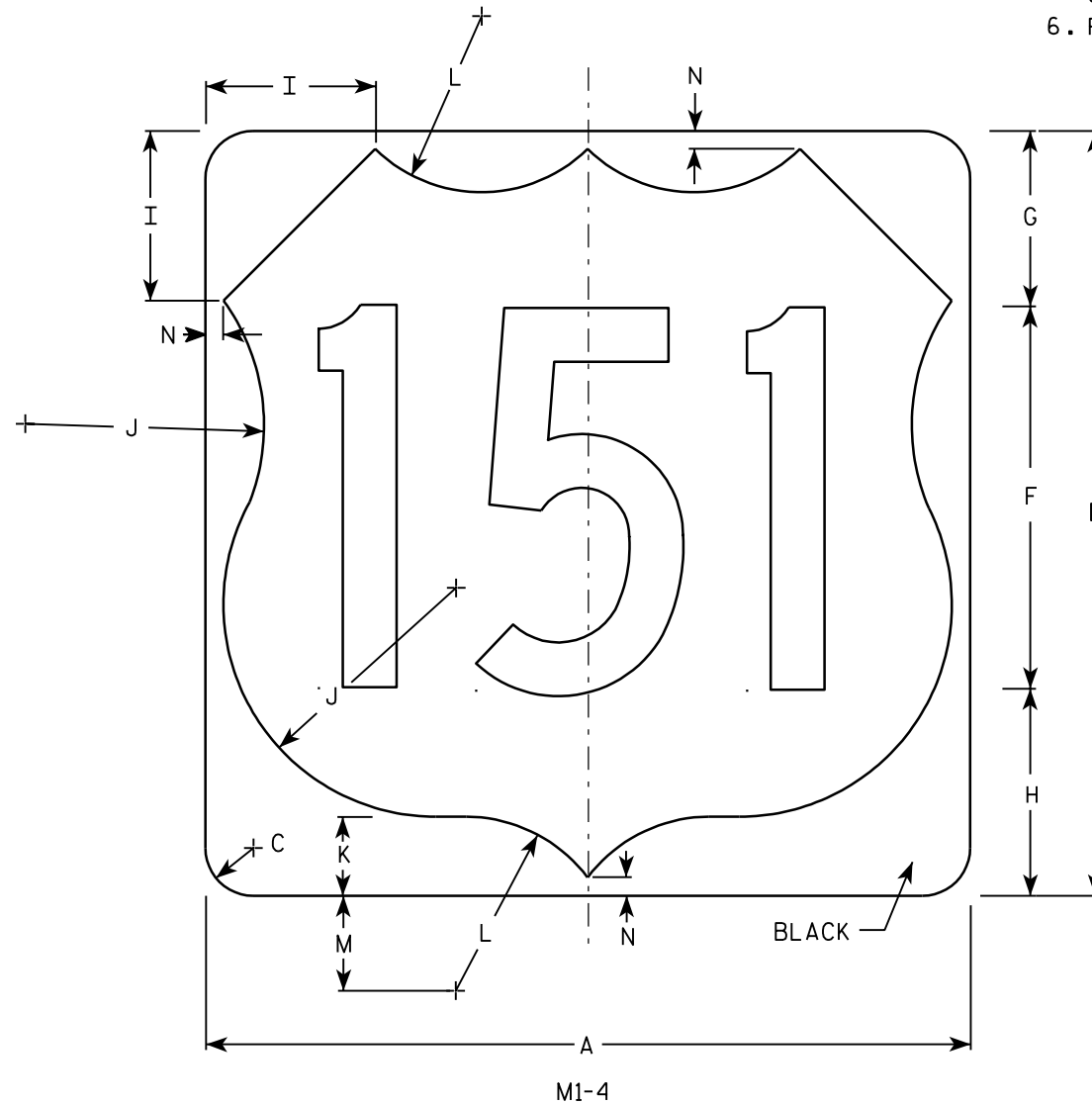
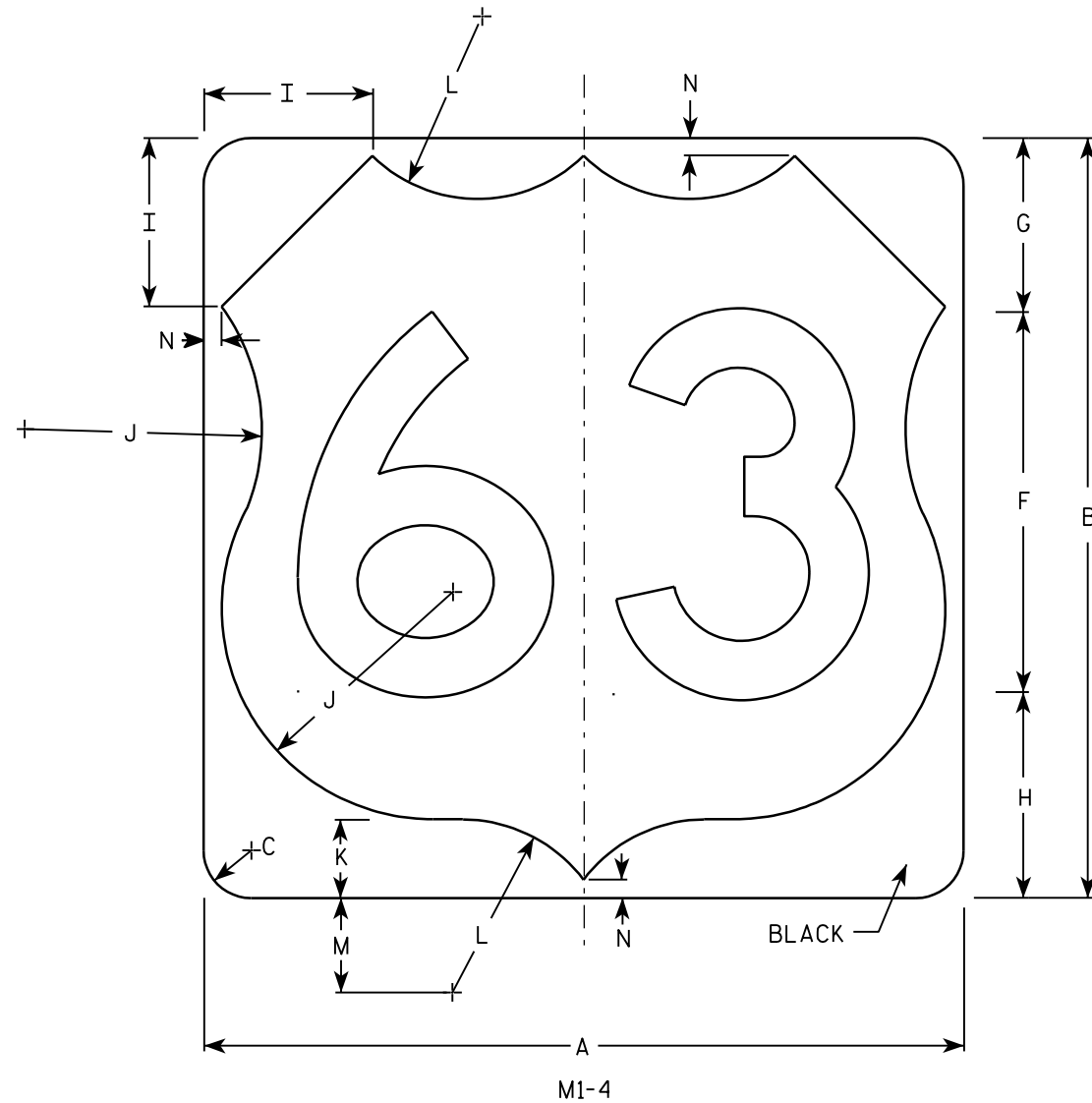
STATE PROJECT NUMBER:

SHEET NO:

E

NOTES

1. Sign is Type II - See Note 6 - reference
WIS DOT Standard Specification for HIGHWAY
and STRUCTURE CONSTRUCTION latest edition.
2. Color:
Background - White & Black - See Note 6
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. Substitute appropriate numerals and adjust
spacing as per Plate A10-1.
6. Permanent Signs
Background - Type H Reflective
Detour or other temporary signs
Background - Reflective



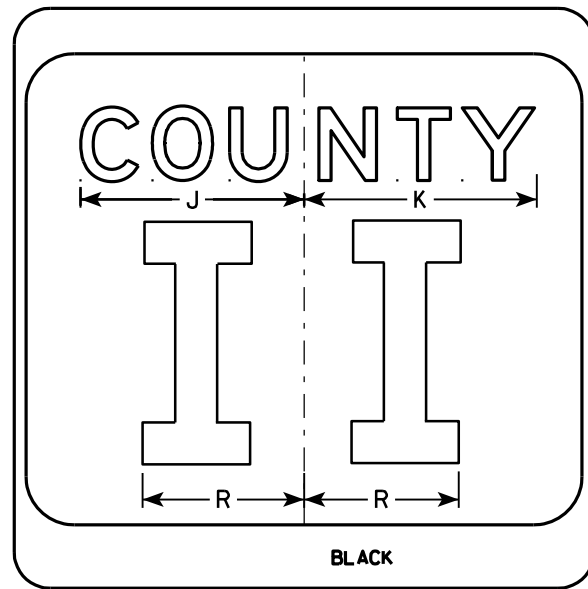
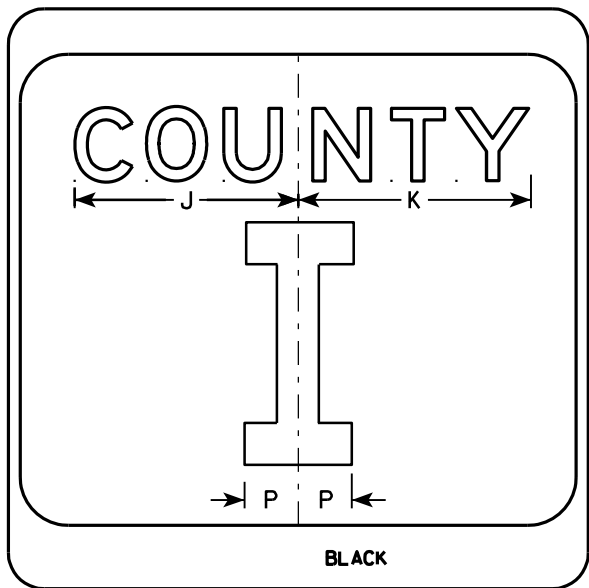
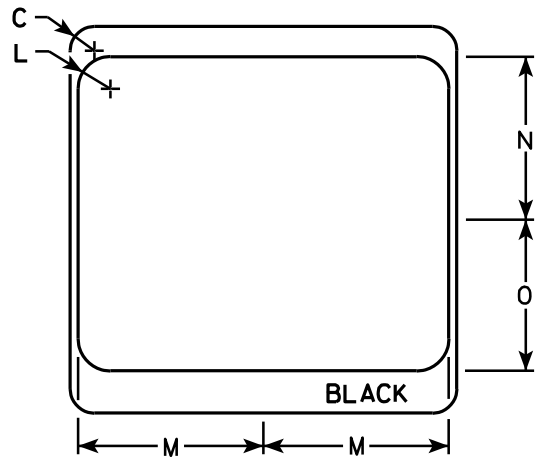
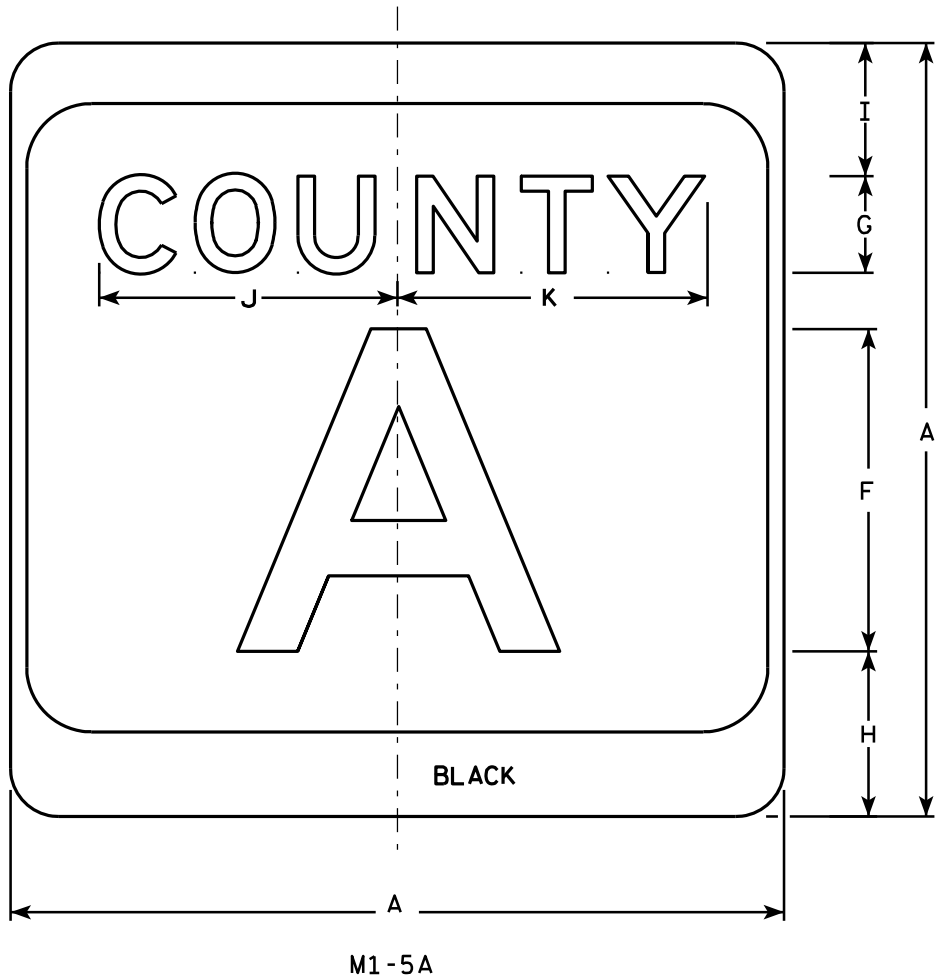
Metric equivalent
for this sign is:

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	Areq sq. ft.	Area m ²
1																												
2	24	24	1 1/2			12	5 1/2	6 1/2	5	7 1/2	2 1/2	5 1/2	3	1/2													4.0	.36
3	36	36	2 1/4			18	8 1/4	9 1/4	7 1/4	11 1/4	3 3/4	8 1/4	4 1/2	3/4													9.0	.81
4	36	36	2 1/4			18	8 1/4	9 1/4	7 1/4	11 1/4	3 3/4	8 1/4	4 1/2	3/4													9.0	.81
5	36	36	2 1/4			18	8 1/4	9 1/4	7 1/4	11 1/4	3 3/4	8 1/4	4 1/2	3/4													9.0	.81

PROJECT NO: HWY: COUNTY: 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

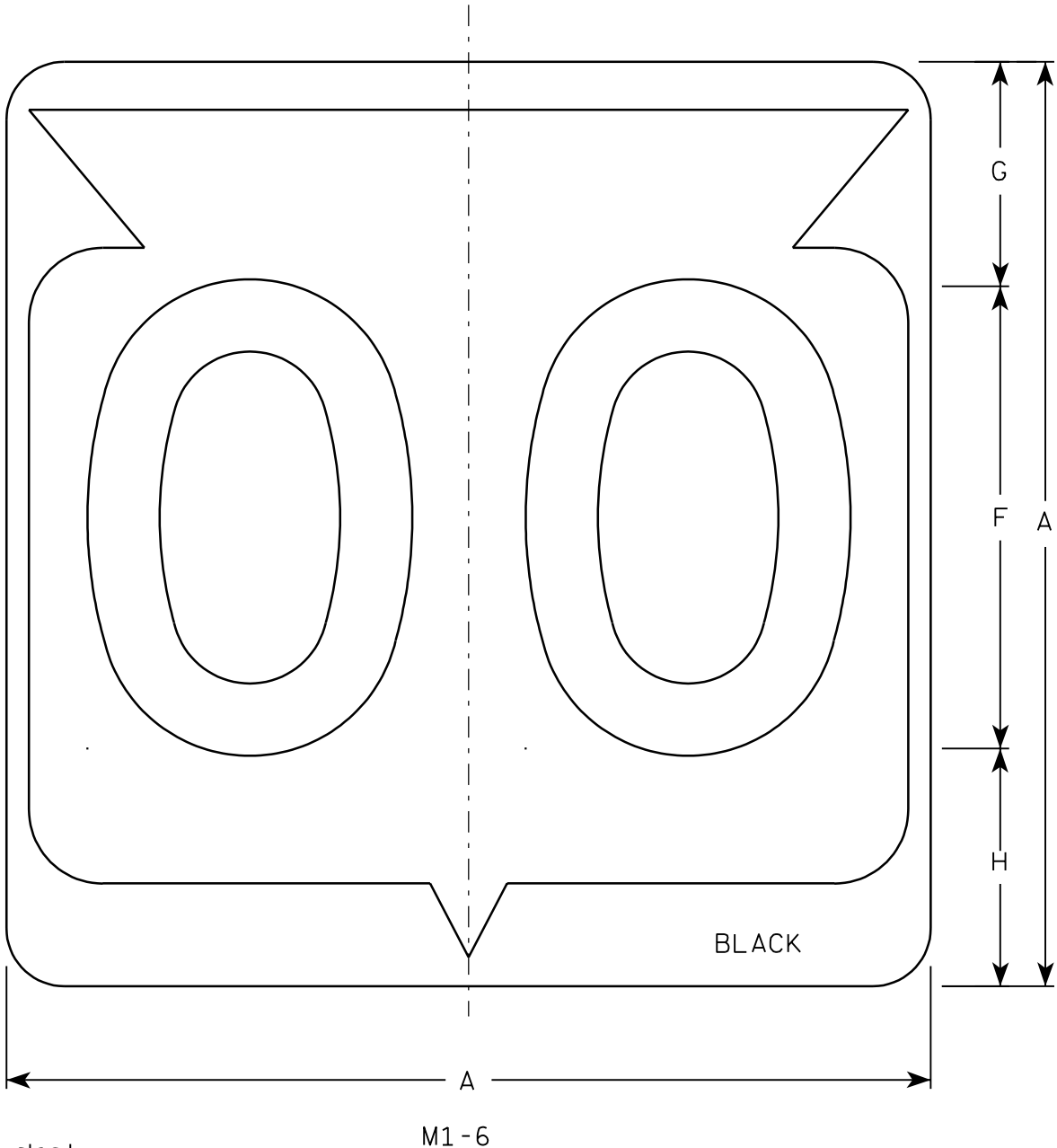
SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2	24		1 1/2			10	3	5 1/8	4 1/8	9 1/4	9 5/8	2	11 1/2	10 1/8	9 3/8	2 1/4		6 5/8									4.0
3	36		2 1/4			16	4	7 5/8	5 5/8	12 1/4	12 7/8	3	17 1/8	15 1/4	14	3 3/8		10									9.0
4	36		2 1/4			16	4	7 5/8	5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

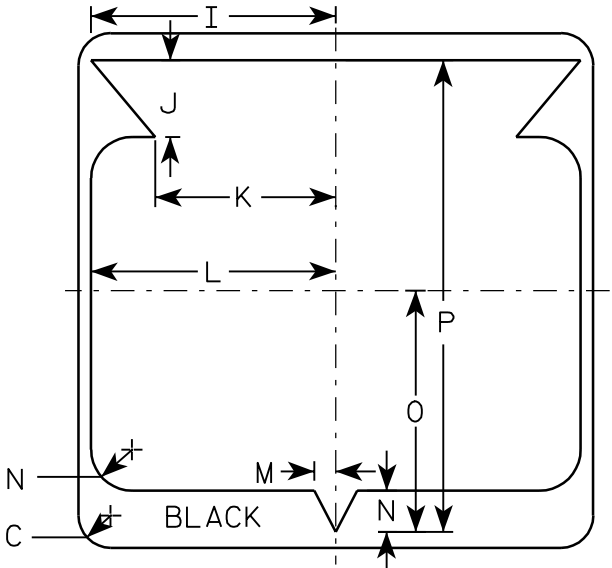
SIZE	
1	
2	600 mm X 600 mm
3	900 mm X 900 mm
4	900 mm X 900 mm
5	900 mm X 900 mm

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

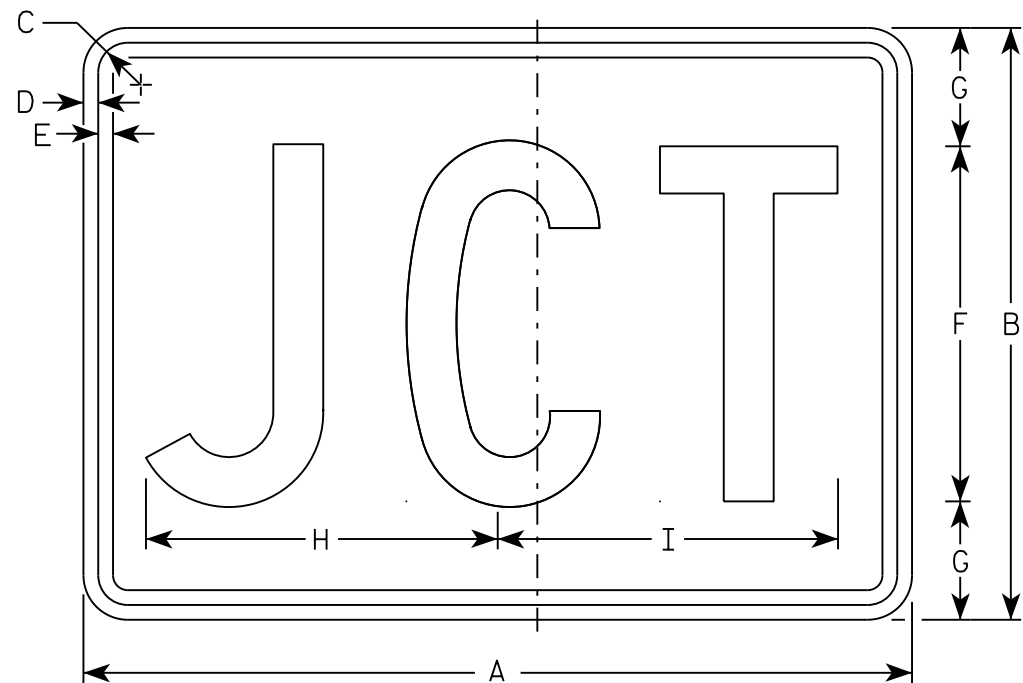
PROJECT NO:				HWY:				COUNTY:																SHEET NO:				E
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NOTES

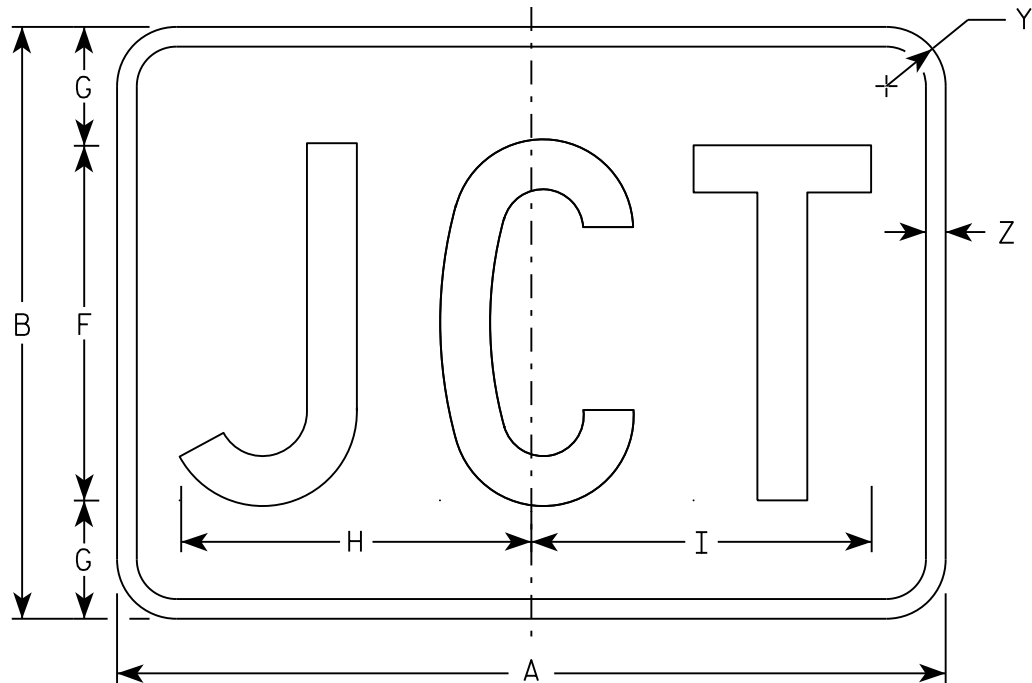
- Sign is Type II - See Note 6 - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
- Color:
Background - White & Black - See Note 6
Message - Black
- Message Series - See note 5
- Corners may be square or rounded when base material is plywood but borders 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



7



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

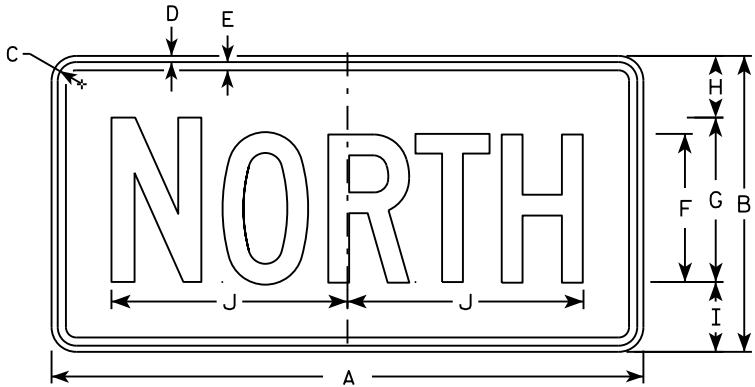
APPROVED

Matthew R. Rauch

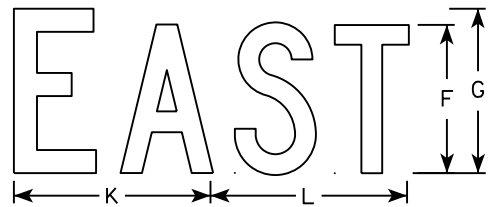
For State Traffic Engineer

DATE 10/15/15

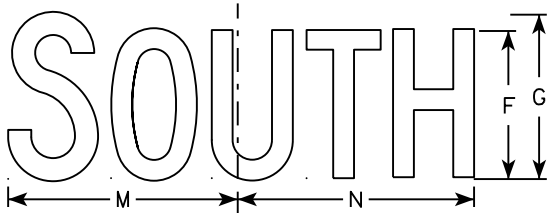
PLATE NO. M2-1.12



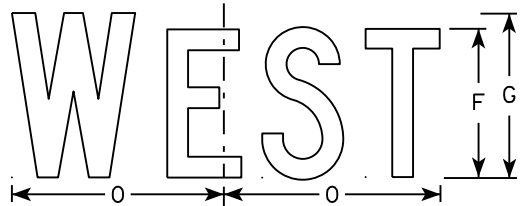
M3-1
MM3-1
MP3-1



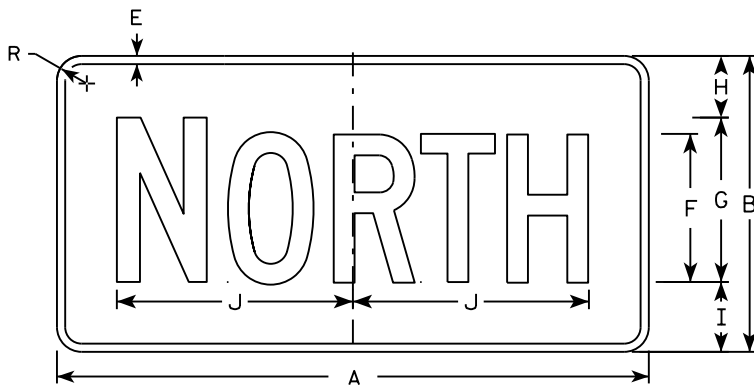
M3-2
MM3-2
MP3-2



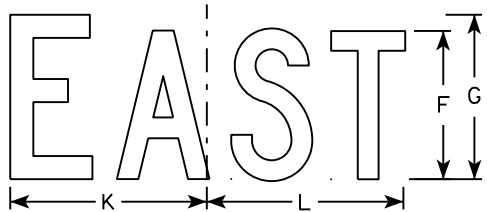
M3-3
MM3-3
MP3-3



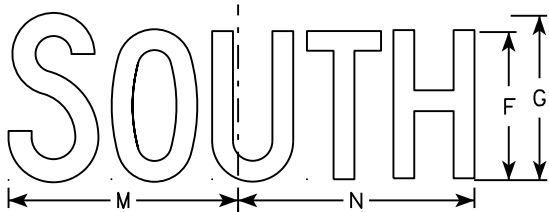
M3-4
MM3-4
MP3-4



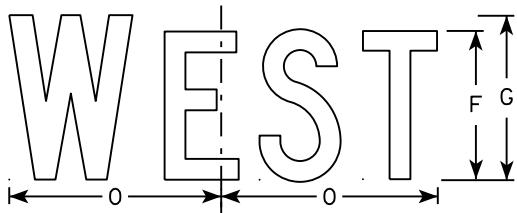
MB3-1
MK3-1
MN3-1



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.

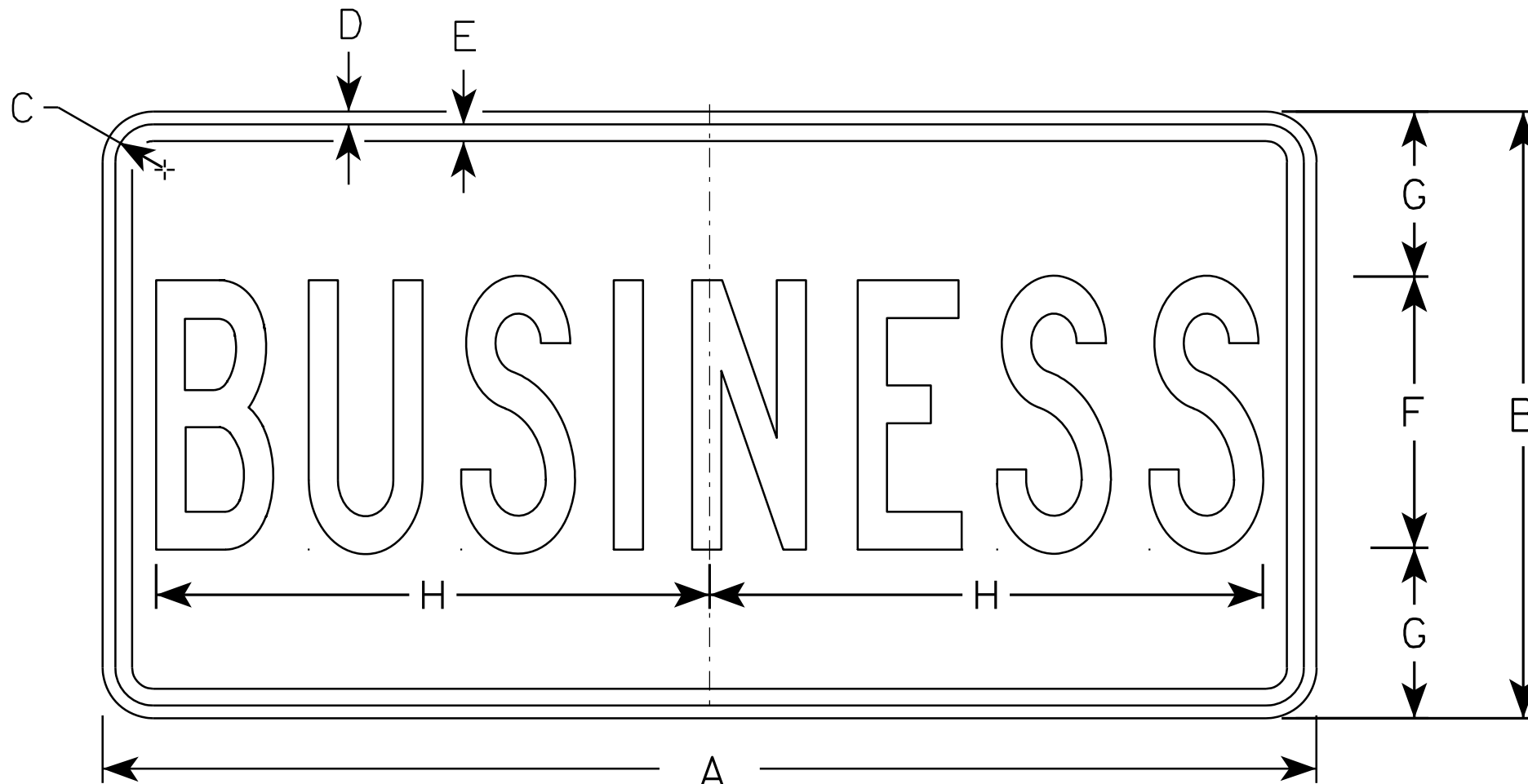
SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2	24	12	1 1/8	3/8	3/8	6	7	2 1/4	2 3/4	10 1/4	7 7/8	8 3/8	10 1/4	9 3/4	8 3/4			1 1/2									2.00
3	36	18	1 1/8	3/8	1/2	9	10	3 3/4	4 1/4	14 3/8	12	12 1/8	14	14 1/8	13			1 1/2									4.5
4	36	18	1 1/8	3/8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



M4 - 3

NOTES

1. Sign is Type II - See Note 5 - reference
WIS DOT Standard Specification for HIGHWAY
and STRUCTURE CONSTRUCTION latest edition.
2. Color:
Background - White - See Note 5
Message - Black
3. Message Series - B
4. Corners may be square or rounded when base
material is plywood but borders shall be rounded
as shown. When base material is metal, the
corners and borders shall be rounded.
5. Permanent Signs
Background - Type H Reflective
Detour or other 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	12	1 1/8	3/8	3/8	5	3 1/2	9 5/8																			2.0
3	36	18	1 1/8	3/8	1/2	8	5	16 3/8																			4.5
4																											
5																											

STANDARD SIGN

M4 - 3

WISCONSIN DEPT OF TRANSPORTATION

APPROVED
Matthew R. Rauch
for State Traffic Engineer

DATE 11/10/10 PLATE NO. M4-3.5

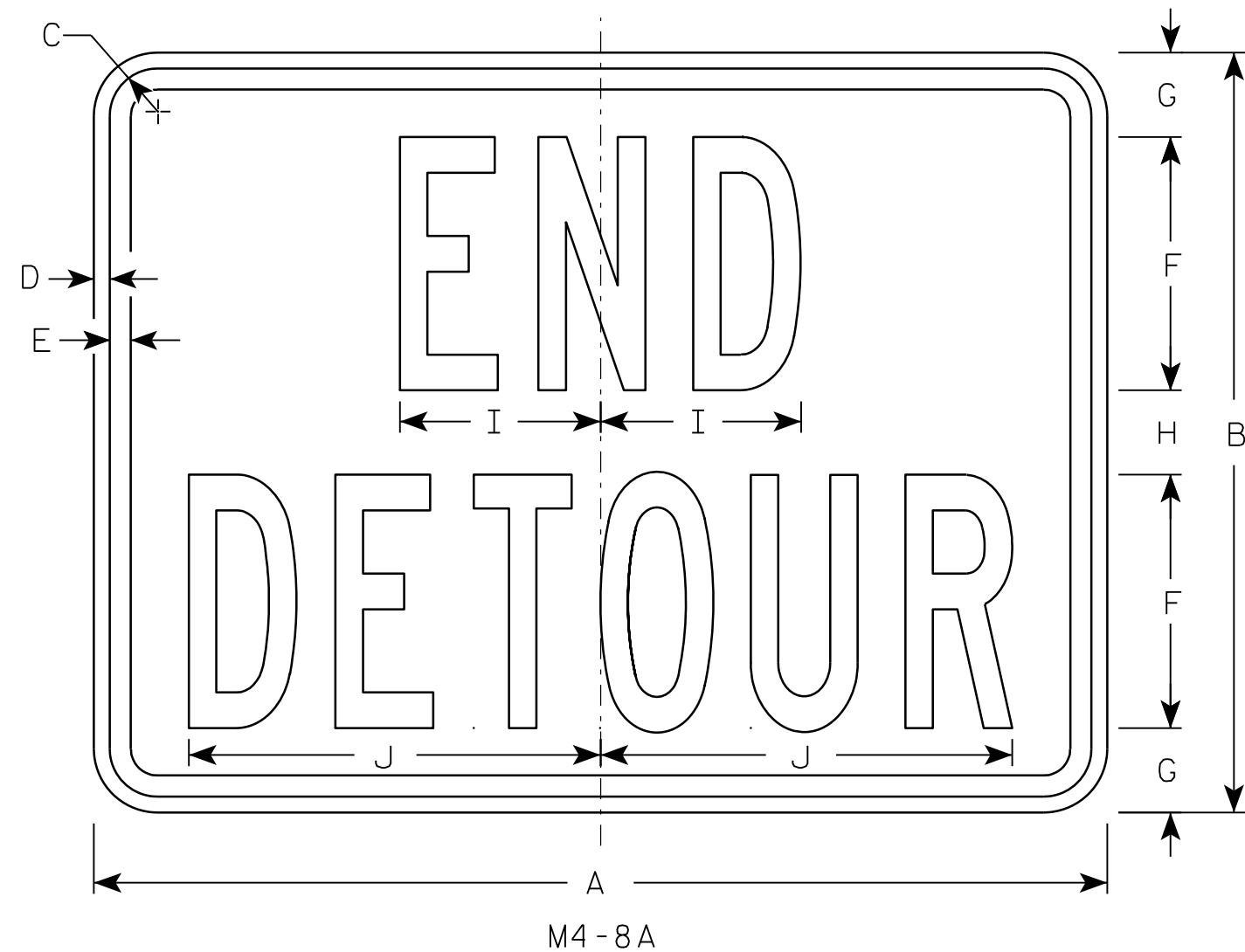
PROJECT NO:

HWY:

COUNTY:

SHEET NO:

E



NOTES

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

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

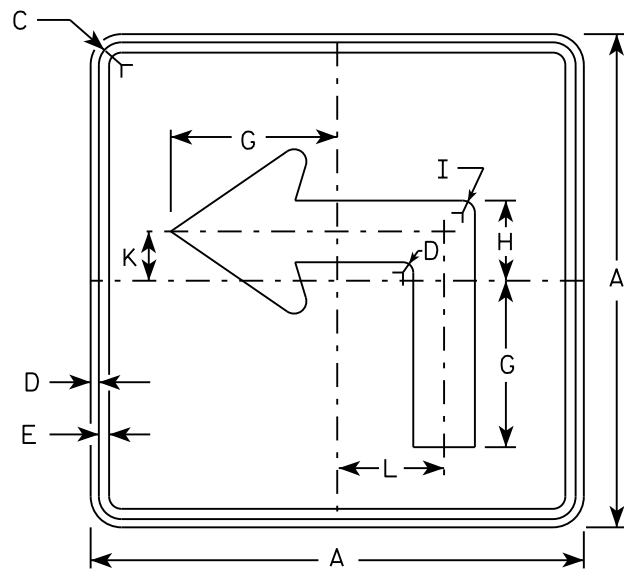
PROJECT NO:	HWY:	COUNTY:		SHEET NO:	E
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STANDARD SIGN
M4-8A

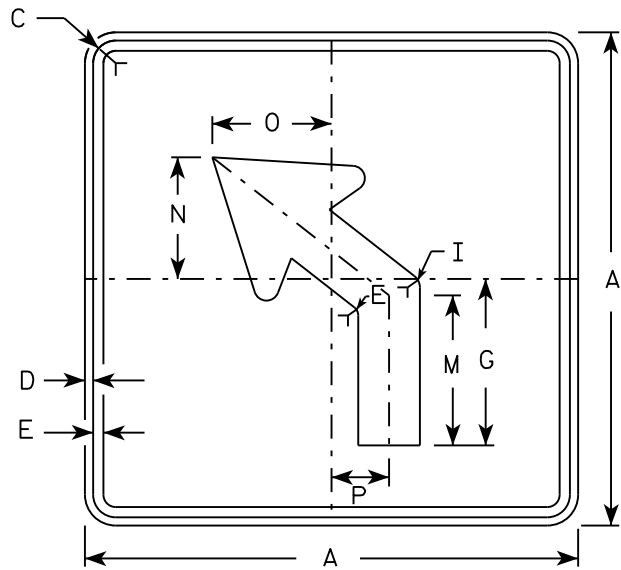
WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

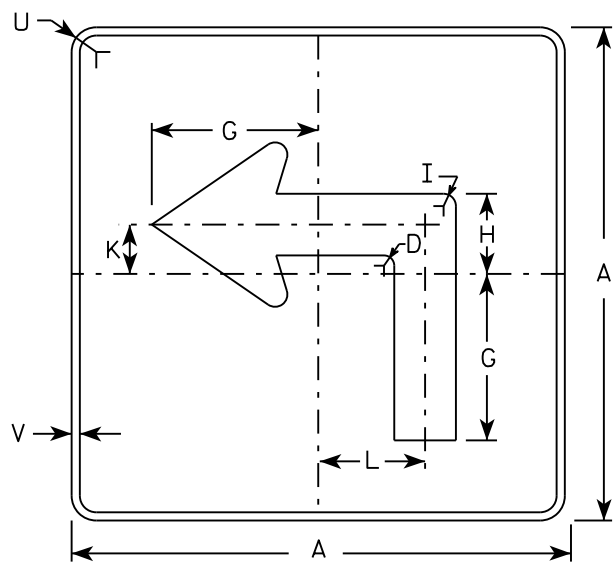
DATE 3/9/11 PLATE NO. M4-8A.2



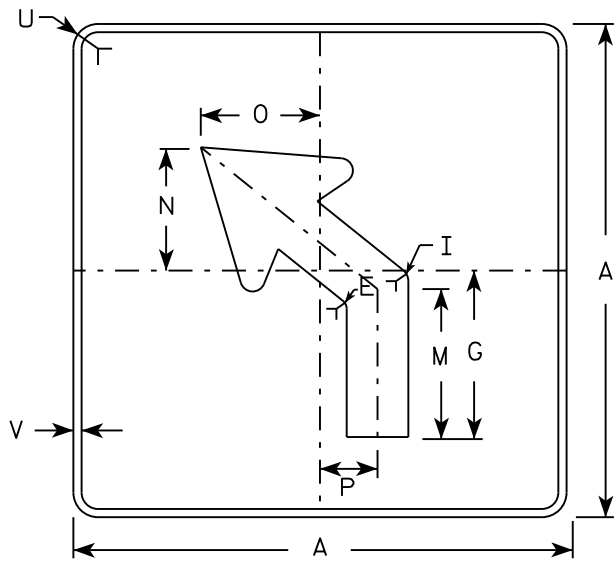
M5-1L
MM5-1L
M05-1L
MP5-1L



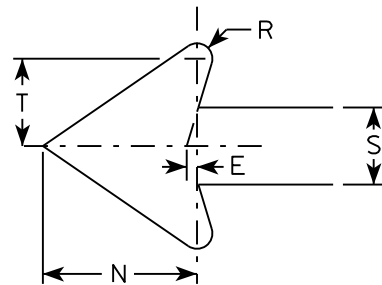
M5-2L
MM5-2L
M05-2L
MP5-2L



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



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



NOTES

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

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

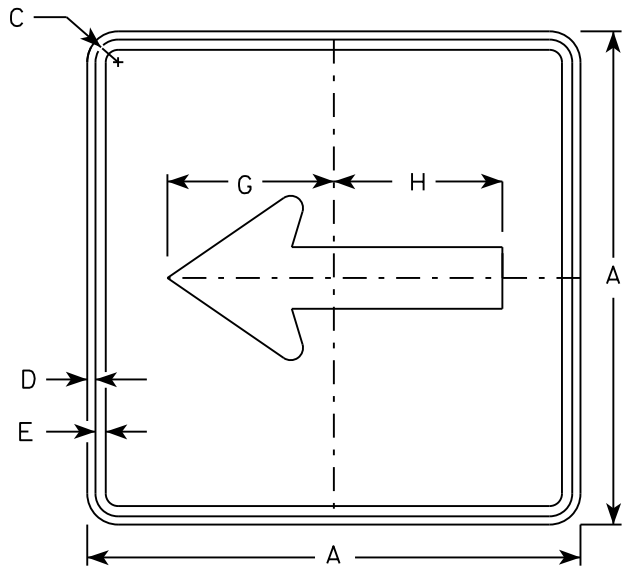
PROJECT NO:	HWY:	COUNTY:	SHEET NO:	E
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STANDARD SIGN
M5-1 & M5-2

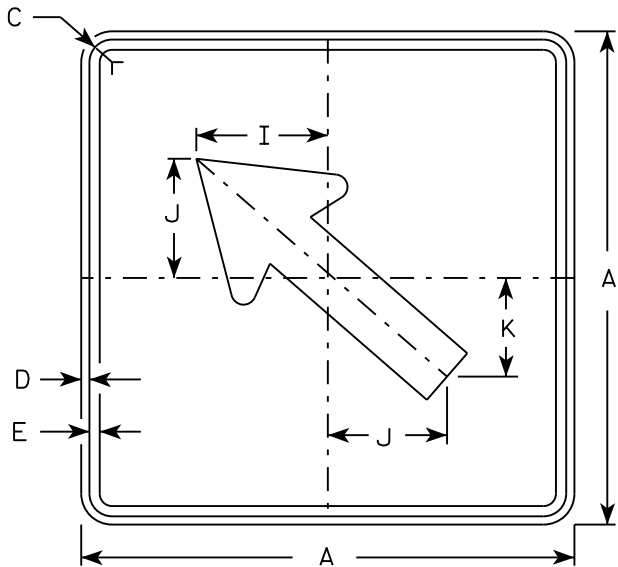
WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

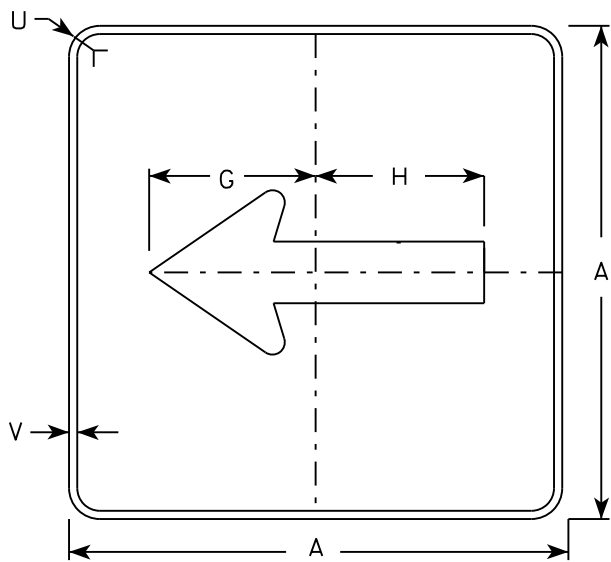
DATE 10/15/15 PLATE NO. M5-1.13



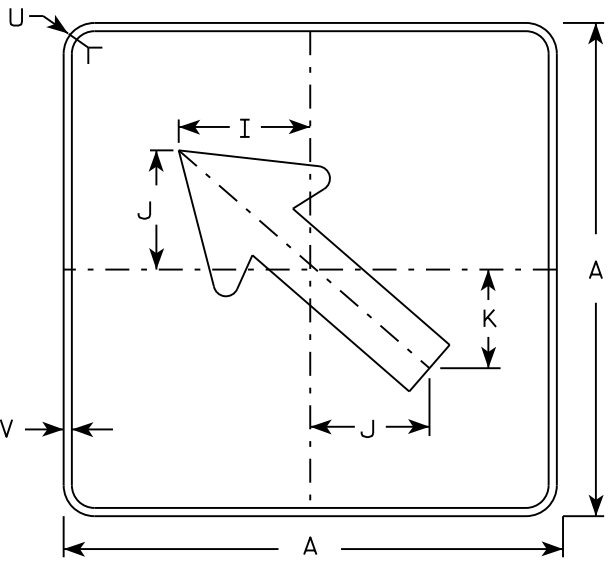
M6 - 1
MM6 - 1
M06 - 1
MP6 - 1



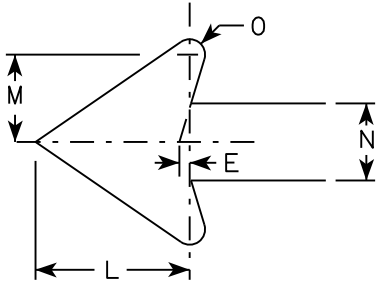
M6 - 2
MM6 - 2
M06 - 2
MP6 - 2



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



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



NOTES

- 1. Signs are Type II - Type H except as Shown
- 2. Color:
Background - See note 4
Message - See note 4
- 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. M6-1 and M6-2 Background - White
Message - Black
MB6-1 and MB6-2 Background - Blue
Message - White
MK6-1 and MK6-2 Background - Green
Message - White
MM6-1 and MM6-2 Background - White
Message - Green
MN6-1 and MN6-2 Background - Brown
Message - White
M06-1 and M06-2 Background - Orange - Type F Reflective
Message - Black
MP6-1 and MP6-2 Background - White
Message - Blue
MR6-1 and MR6-2 Background - Brown
Message - Yellow

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

PROJECT NO:

HWY:

COUNTY:

SHEET NO:

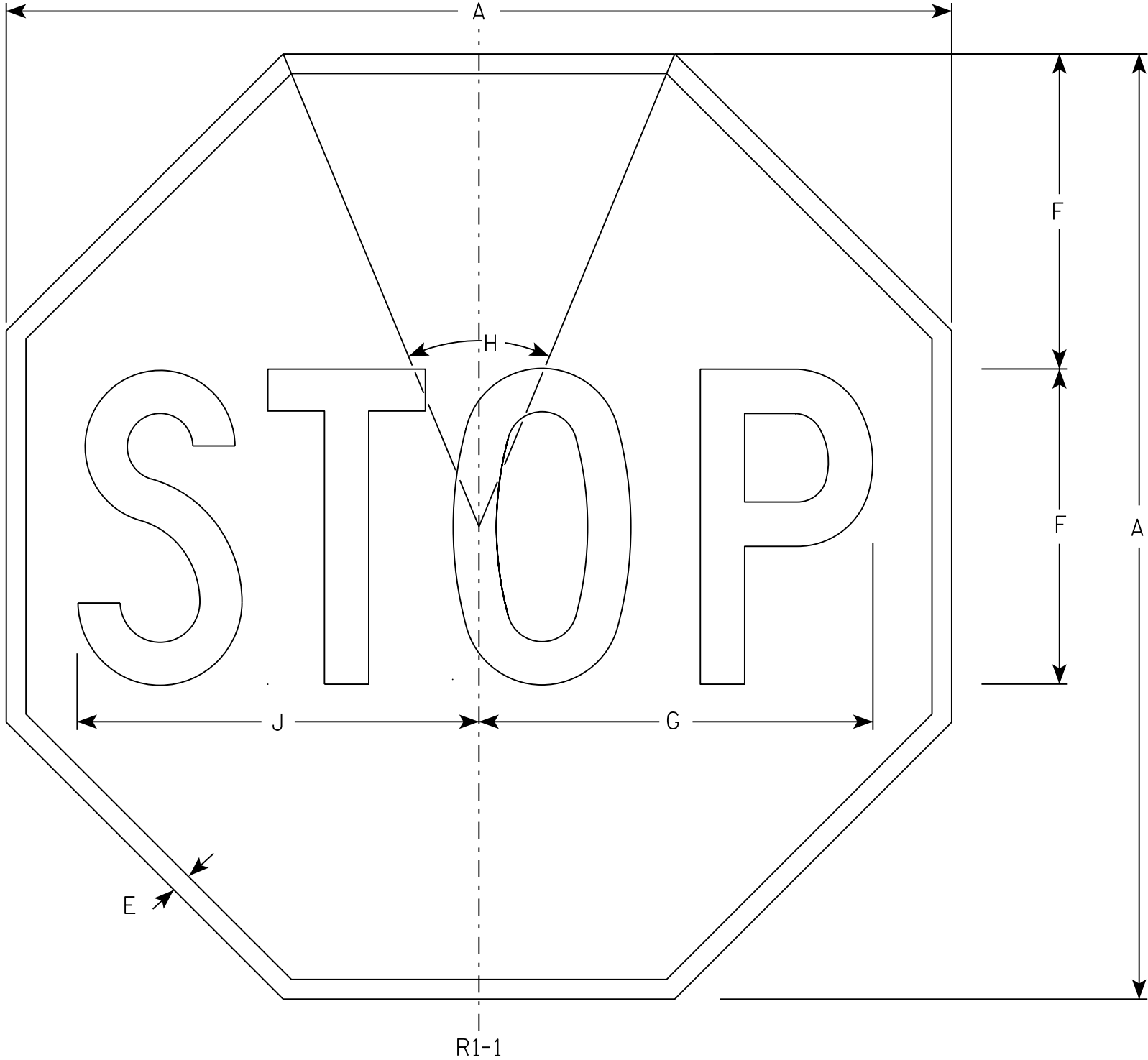
E

STANDARD SIGN
M6 - 1 & M6 - 2
SERIES

WISCONSIN DEPT OF TRANSPORTATION

APPROVED
Matthew R. Rauch
for State Traffic Engineer

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



NOTES

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

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

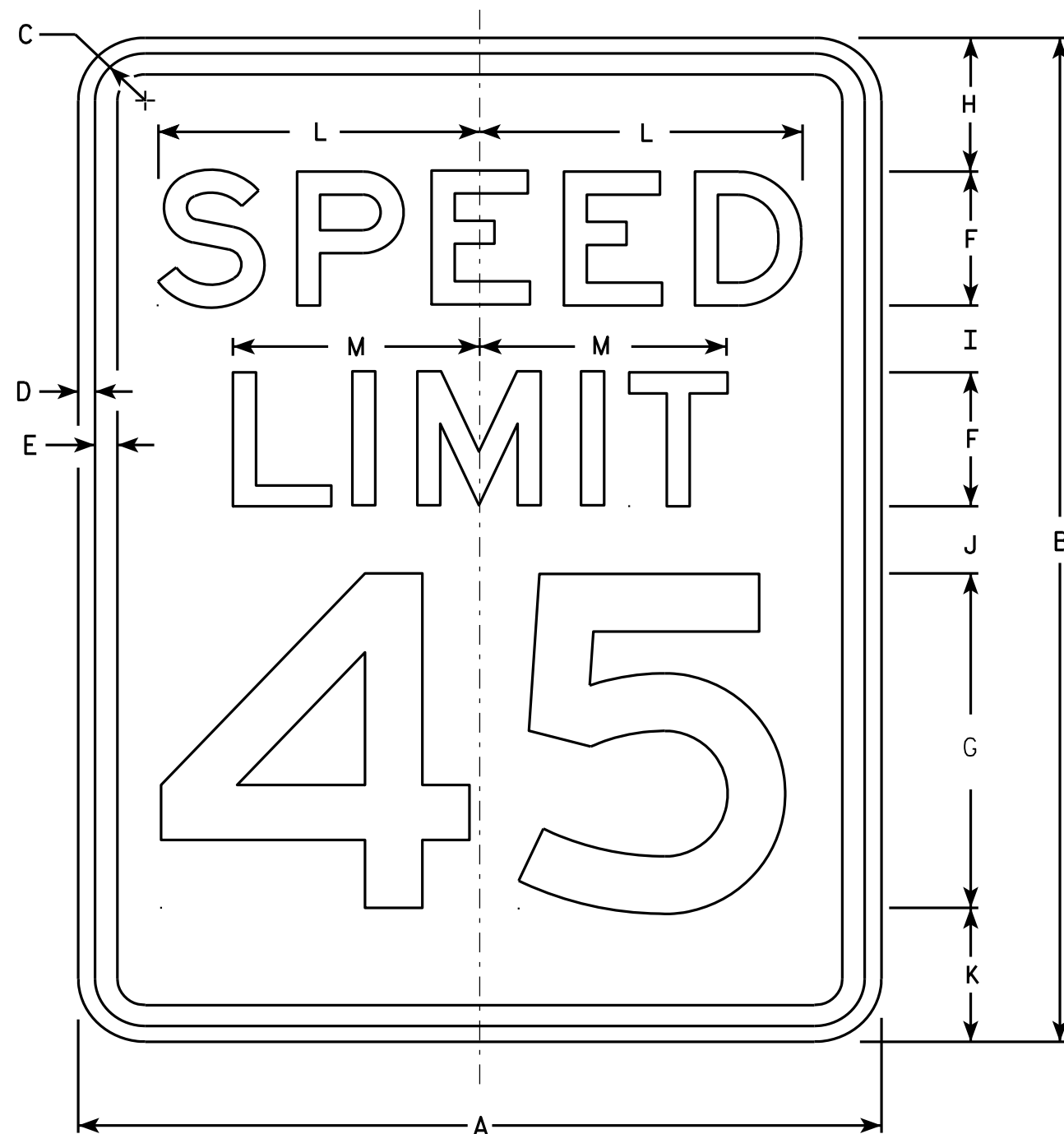
STANDARD SIGN

R1-1

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

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



R2-1

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 - Black
3. Message Series - E
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. Substitute appropriate numerals and optically adjust spacing to achieve proper balance.

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	18	24	1 1/8	3/8	1/2	3	8	3	2	2	3	7 1/4	5 1/2														3.0
2S	24	30	1 1/8	3/8	1/2	4	10	3	2 1/4	3 3/8	3 3/8	9 5/8	7 3/8														5.0
2M	30	36	1 3/8	1/2	5/8	5	12	5	2 1/2	2 1/2	4	12	9 1/4														7.5
3	36	48	1 3/8	1/2	5/8	6	14	6	5	5	6	14 3/8	11														12.0
4	36	48	1 3/8	1/2	5/8	6	14	6	5	5	6	14 3/8	11														12.0
5	48	60	2 1/4	3/4	1	8	20	6	4 1/2	6 3/4	6 3/4	19 1/4	14 5/8														20.0

STANDARD SIGN R2-1

WISCONSIN DEPT OF TRANSPORTATION
APPROVED *Matthew R. Rauch*
For State Traffic Engineer
DATE 5/26/10 PLATE NO. R2-1.13

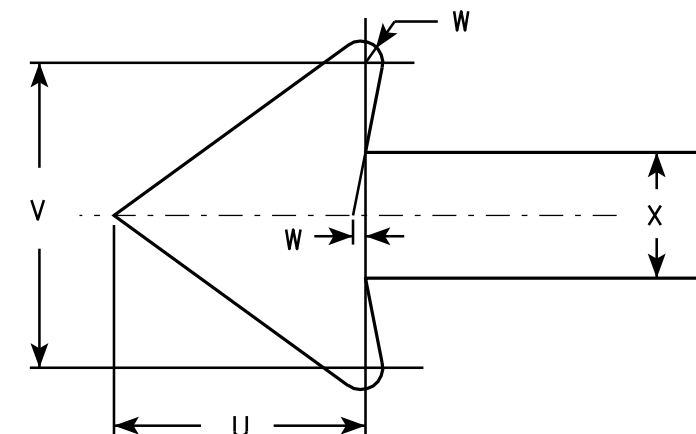
PROJECT NO: HWY: COUNTY: SHEET NO: E



R7-1

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 - Red
3. Message Series - See Note 5
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. Lines 1, 3 and 4 are series C, line 2 is series B.
6. R7-1D (double arrow)
R7-1L (left arrow)
R7-1R (right arrow)



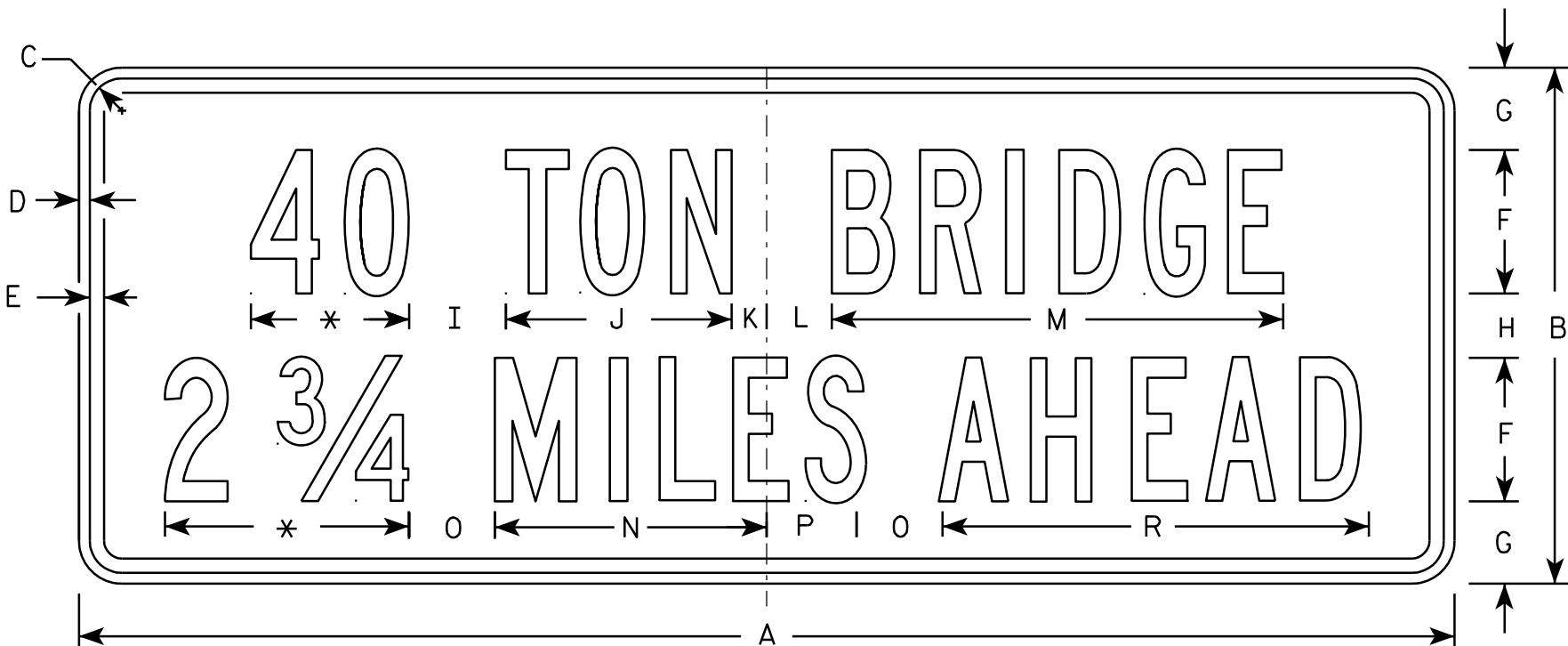
SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	12	18	1 1/8	3/8	3/8	3	1 7/8	2	7/8	5/8	1 1/2	2 1/2	2	2	4 7/8	4 7/8	2 1/4	2 1/8	2 1/2	3 7/8	1 1/2	1 3/4	1/8	3/4			1.5
2S	18	24	1 1/8	3/8	1/2	4	2 1/2	2 1/2	1 1/4	1	2	3 1/4	2 3/4	2 5/8	7 1/8	7	2 3/4	2 5/8	3 1/8	5 7/8	2 1/4	2 5/8	1/4	1 1/8			3.0
2M	24	30	1 1/8	3/8	1/2	5	3	3	2	1 1/4	2 1/2	4	3 1/4	3 3/8	9 1/4	9 1/4	3 1/4	3 1/4	3 3/4	7 3/4	3	3 1/2	1/4	1 1/2			5.0
3	24	30	1 1/8	3/8	1/2	5	3	3	2	1 1/4	2 1/2	4	3 1/4	3 3/8	9 1/4	9 1/4	3 1/4	3 1/4	3 3/4	7 3/4	3	3 1/2	1/4	1 1/2			5.0
4																											
5																											

STANDARD SIGN R7-1	
WISCONSIN DEPT OF TRANSPORTATION	
APPROVED	<i>Matthew R. Rauch</i> for State Traffic Engineer
DATE 3/31/2011	PLATE NO. R7-1.9

PROJECT NO:	HWY:	COUNTY:	SHEET NO:	E
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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 - Black
- 3. Message Series - B for Size 2, Series D for Sizes 3 & 4
- 4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
- 5. Substitute appropriate numerals and optically adjust spacing to achieve proper balance.
- 6. For distances less than 5 miles, that figure should be expressed to the nearest 1/4 mile.



R12-55

* Varies

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	O	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2S	48	18	1 1/8	3/8	1/2	5	2 7/8	2 1/4	3 3/8	7 7/8	1 1/4	2 1/4	15 3/4	9 1/2	3	3 1/8		14 7/8									6.0
2M	48	18	1 1/8	3/8	1/2	5	2 7/8	2 1/4	3 3/8	7 7/8	1 1/4	2 1/4	15 3/4	9 1/2	3	3 1/8		14 7/8									6.0
3	90	24	2 1/4	3/4	1	6	4	4	6	15 1/4	2 1/2	3 1/2	30 5/8	18 3/8	6	6 1/4		28 3/8									15.0
4	120	30	2 1/4	3/4	1	8	5 1/4	3 5/8	8	19 5/8	4	3	39 1/2	24 1/2	7	6 3/4		36 3/8									20.0
5	120	30	2 1/4	3/4	1	8	5 1/4	3 5/8	8	19 5/8	4	3	39 1/2	24 1/2	7	6 3/4		36 3/8									20.0

STANDARD SIGN
R12-55

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 11/23/11 PLATE NO. R12-55.5

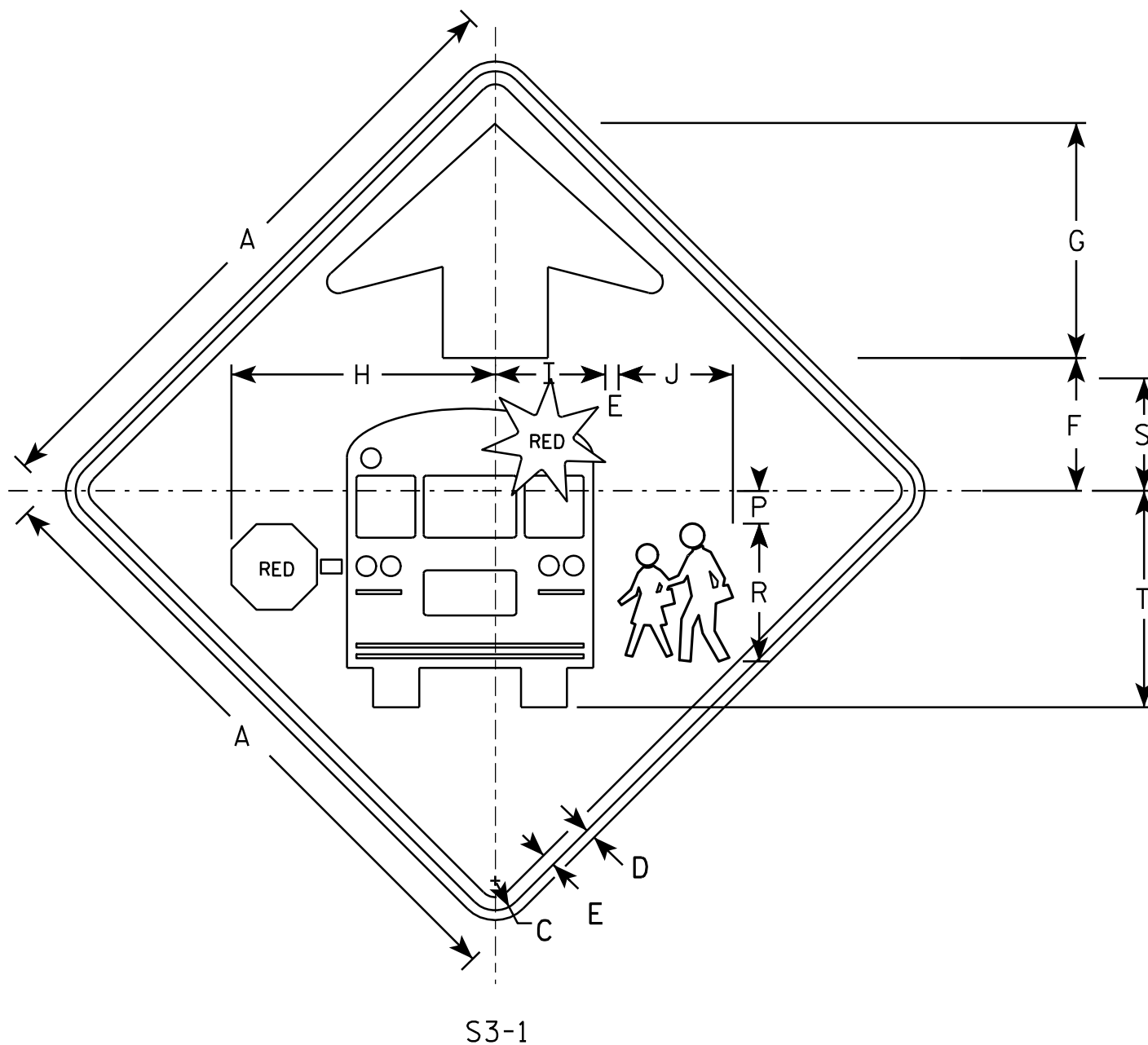
PROJECT NO:

HWY:

COUNTY:

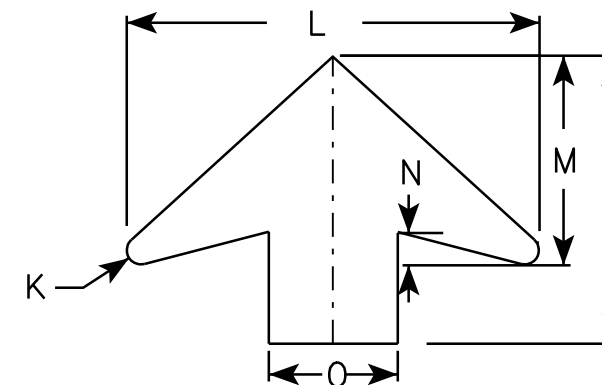
SHEET NO:

E

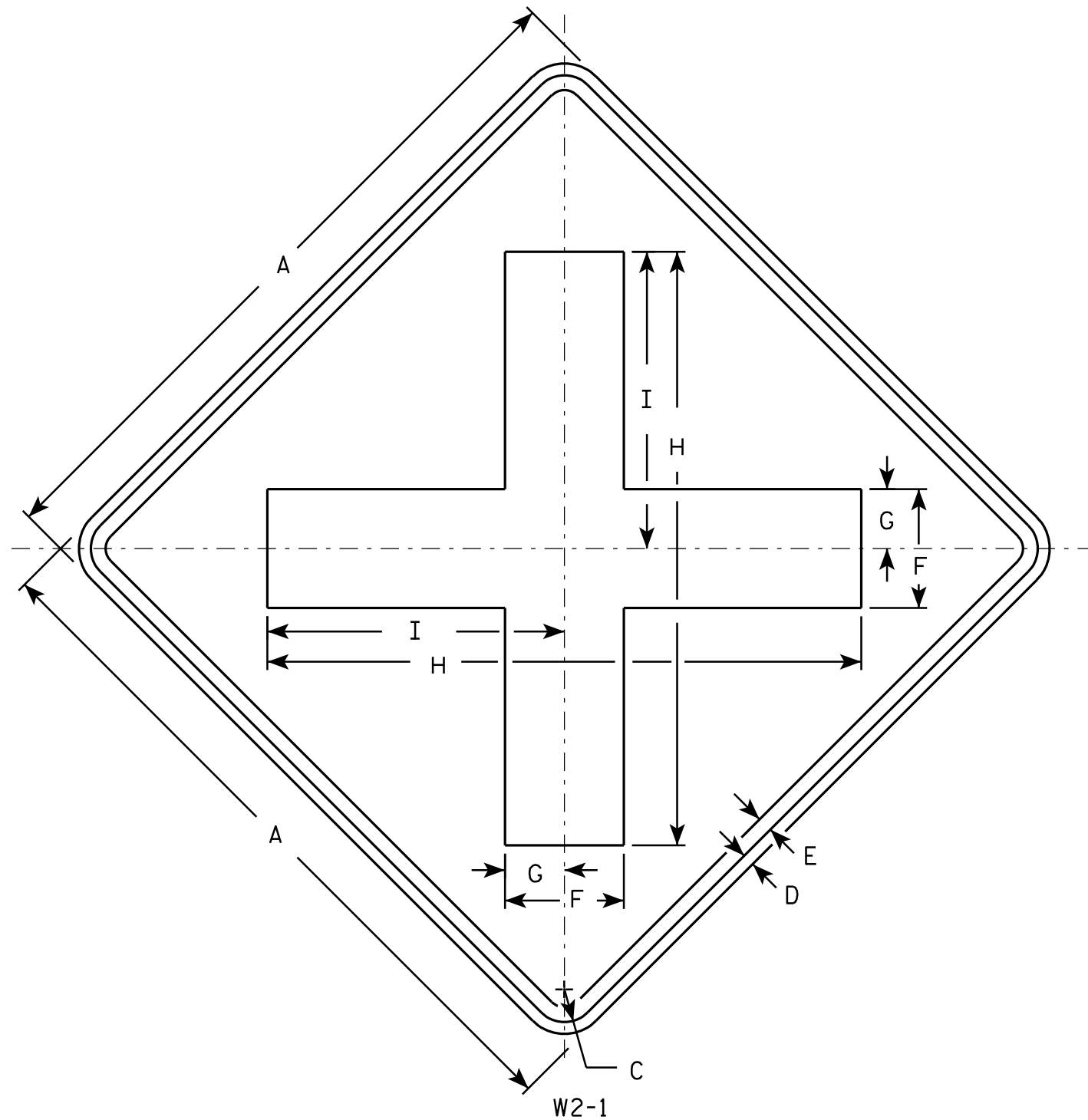


NOTES

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.

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	24		1 1/8	3/8	1/2	4	2	20	10																		4.0
2S	30		1 3/8	1/2	5/8	5	2 1/2	25	12 1/2																		6.25
2M	30		1 3/8	1/2	5/8	5	2 1/2	25	12 1/2																		6.25
3	36		1 5/8	5/8	3/4	6	3	30	15																		9.0
4	48		2 1/4	3/4	1	8	4	40	20																		16.0
5																											

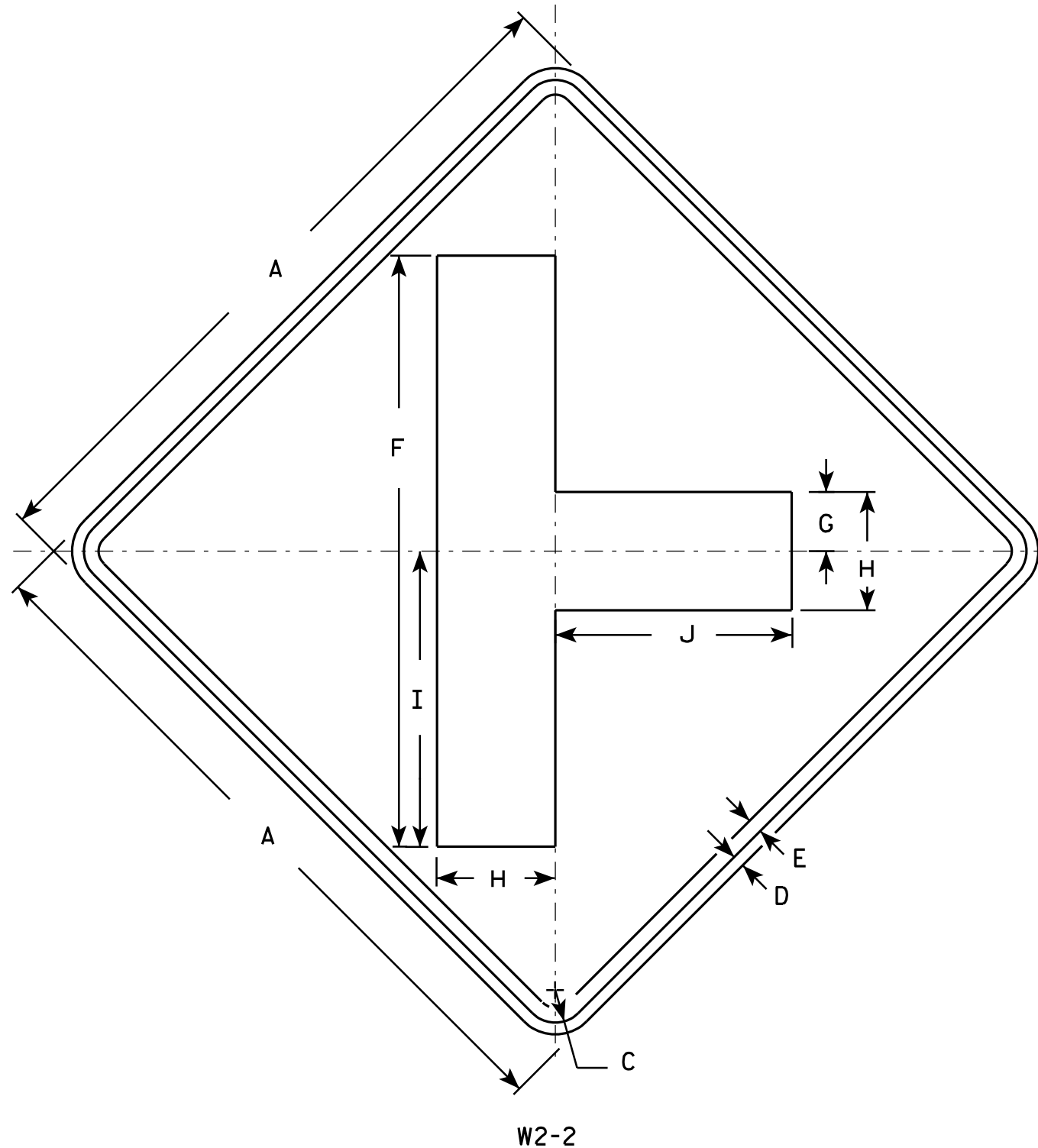
STANDARD SIGN W2-1

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 5/29/12 PLATE NO. W2-1.9

PROJECT NO: HWY: COUNTY: SHEET NO: E



NOTES

- Sign is Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
- Color:
Background - Yellow
Message - Black
- 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	20	2	4	10	8																	4.0
2S	30		1 3/8	1/2	5/8	25	2 1/2	5	12 1/2	10																	6.25
2M	30		1 3/8	1/2	5/8	25	2 1/2	5	12 1/2	10																	6.25
3	36		1 5/8	5/8	3/4	30	3	6	15	12																	9.0
4	48		2 1/4	3/4	1	40	4	8	20	16																	16.0
5																											

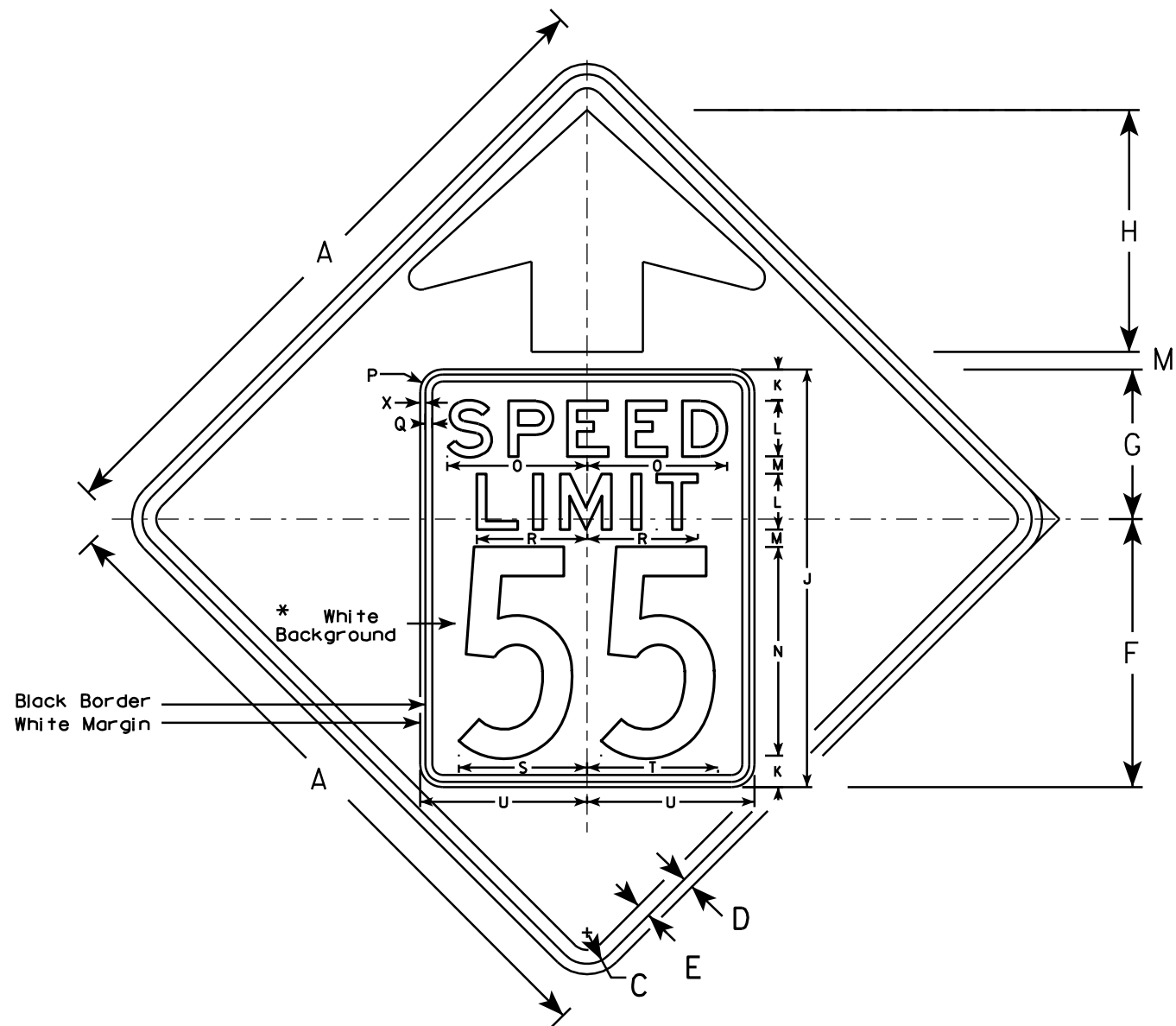
STANDARD SIGN W2-2

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 5/29/12 PLATE NO. W2-2.6

PROJECT NO: HWY: COUNTY: SHEET NO: E

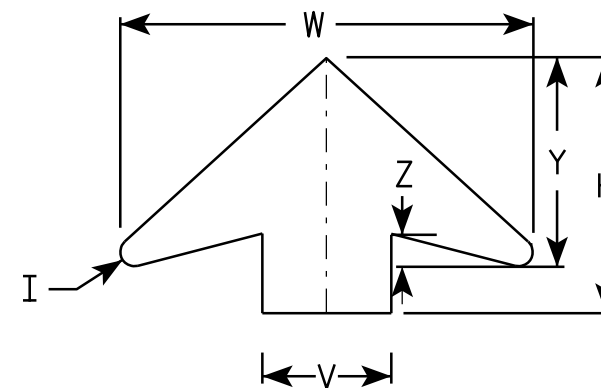


W3-5

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 - C for numbers Series E for wording
4. Substitute appropriate numerals and optically adjust spacing to achieve proper balance

*Speed Limit Sign shall have a White Background



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																											
2S	36		1 5/8	5/8	3/4	14 1/2	9 1/2	11 1/2	5/8	24	2	3	1	12	7 1/8	1 1/2	3/8	5 3/4	7 1/4	7 1/8	9	6	19 1/4	3/8	9 3/4	1 5/8	9.0
2M	36		1 5/8	5/8	3/4	14 1/2	9 1/2	11 1/2	5/8	24	2	3	1	12	7 1/8	1 1/2	3/8	5 3/4	7 1/4	7 1/8	9	6	19 1/4	3/8	9 3/4	1 5/8	9.0
3	36		1 5/8	5/8	3/4	14 1/2	9 1/2	11 1/2	5/8	24	2	3	1	12	7 1/8	1 1/2	3/8	5 3/4	7 1/4	7 1/8	9	6	19 1/4	3/8	9 3/4	1 5/8	9.0
4	48		2 1/4	3/4	1	19 1/4	10 3/4	17 3/8	7/8	30	2 1/4	4	1 1/4	15	10	1 5/8	1/2	8	9 1/4	9 3/8	12	8	25 5/8	3/8	13	2	16.0
5	48		2 1/4	3/4	1	19 1/4	10 3/4	17 3/8	7/8	30	2 1/4	4	1 1/4	15	10	1 5/8	1/2	8	9 1/4	9 3/8	12	8	25 5/8	3/8	13	2	16.0

STANDARD SIGN

W3-5

WISCONSIN DEPT OF TRANSPORTATION

APPROVED

Matthew R. Rauch
for State Traffic Engineer

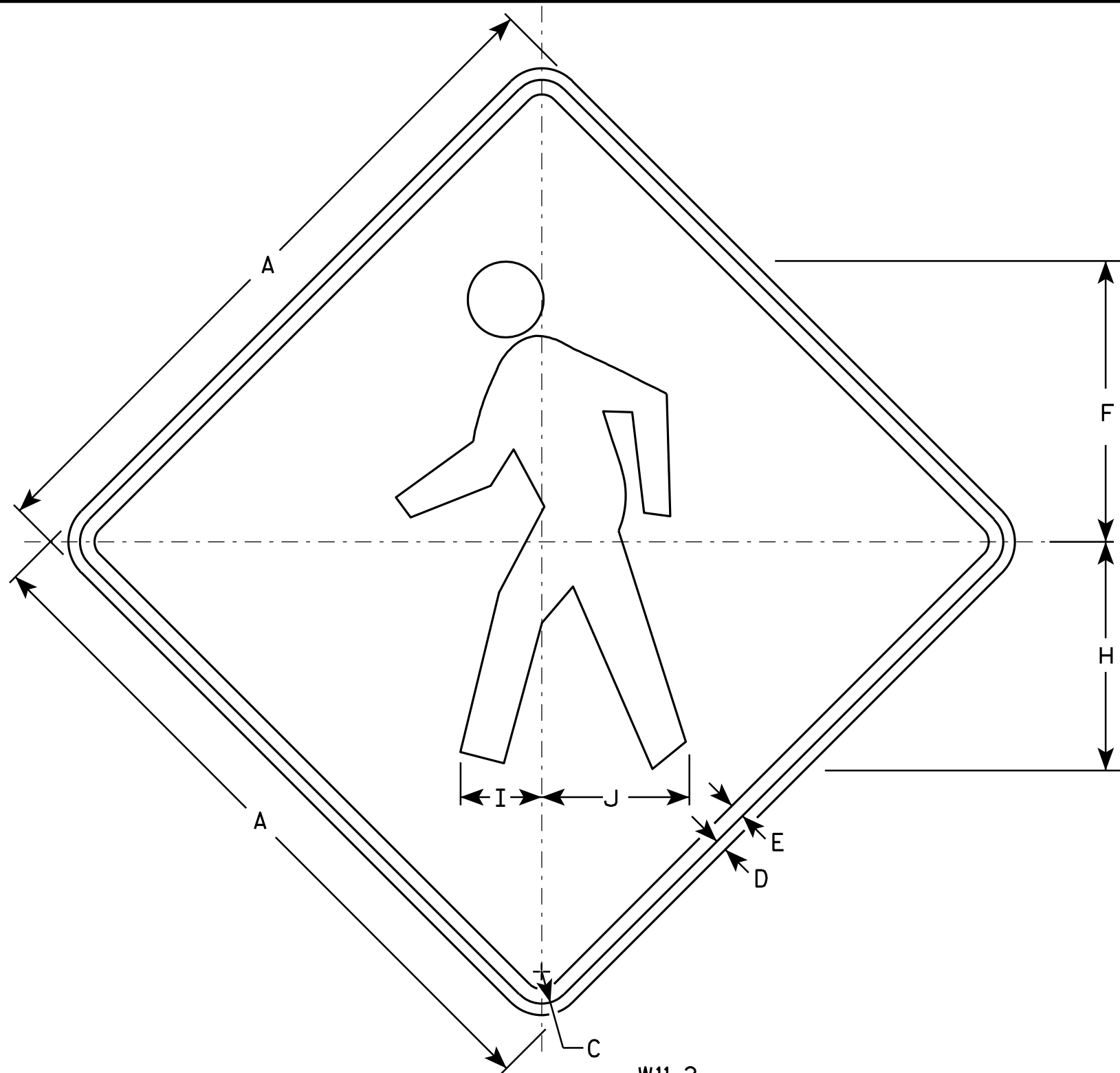
DATE 5/29/12

PLATE NO. W3-5.5

PROJECT NO:

SHEET NO:

E



W11-2

NOTES

1. Sign is Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
Background - 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	24		1 1/8	3/8	1/2	9 3/4		7 7/8	2 7/8	5 1/8																	4.0
2S	30		1 3/8	1/2	5/8	12 1/8		9 7/8	3 1/2	6 3/8																	6.25
2M	36		1 5/8	5/8	3/4	14 1/2		11 7/8	4 1/4	7 5/8																	9.0
3	36		1 5/8	5/8	3/4	14 1/2		11 7/8	4 1/4	7 5/8																	9.0
4	48		2 1/4	3/4	1	19 3/8		15 3/4	5 5/8	10 1/4																	16.0
5																											

STANDARD SIGN
W11-2

WISCONSIN DEPT OF TRANSPORTATION

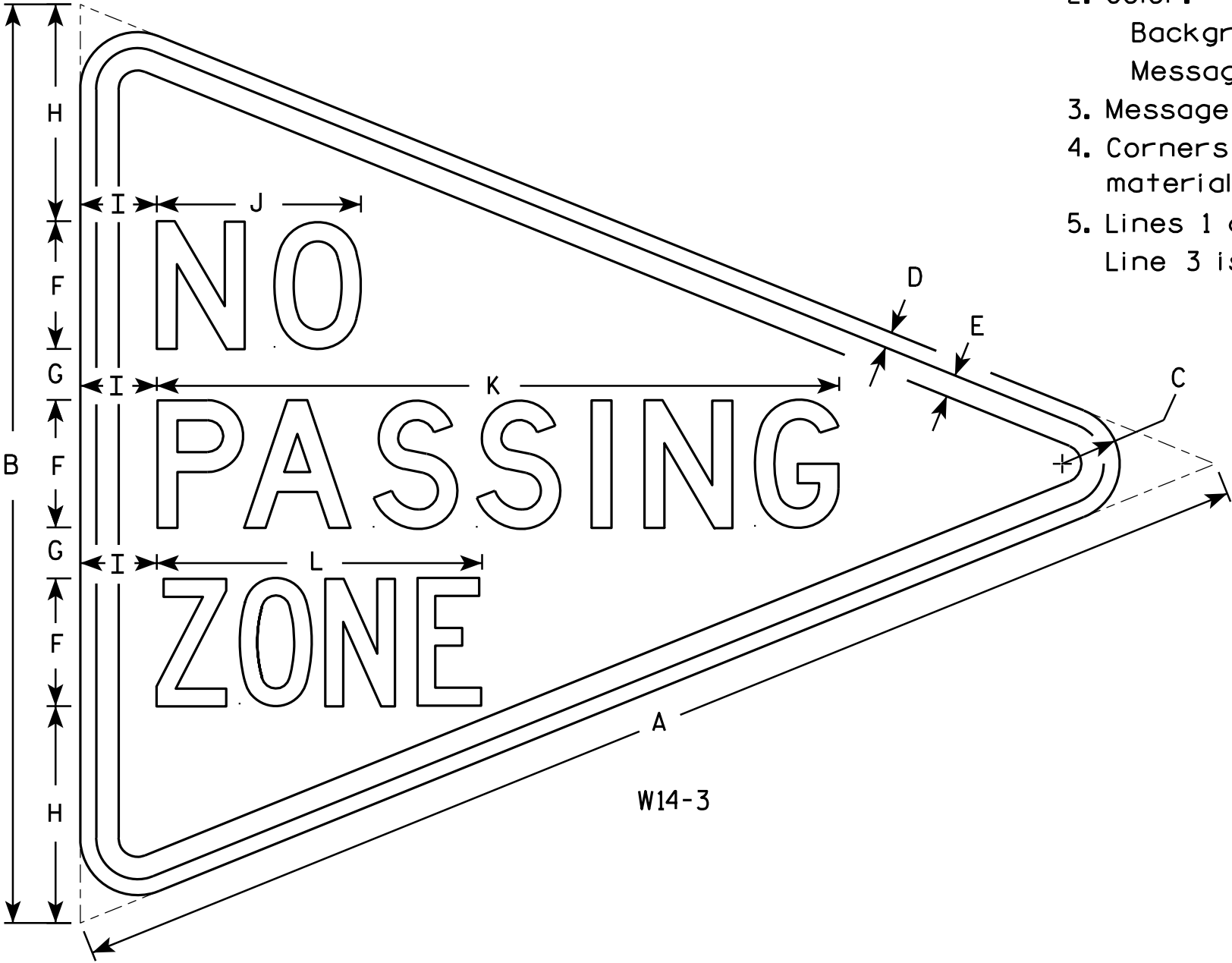
APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 6/7/10 PLATE NO. W11-2.7

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

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



W14-3

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

STANDARD SIGN
W14-3

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
For State Traffic Engineer

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

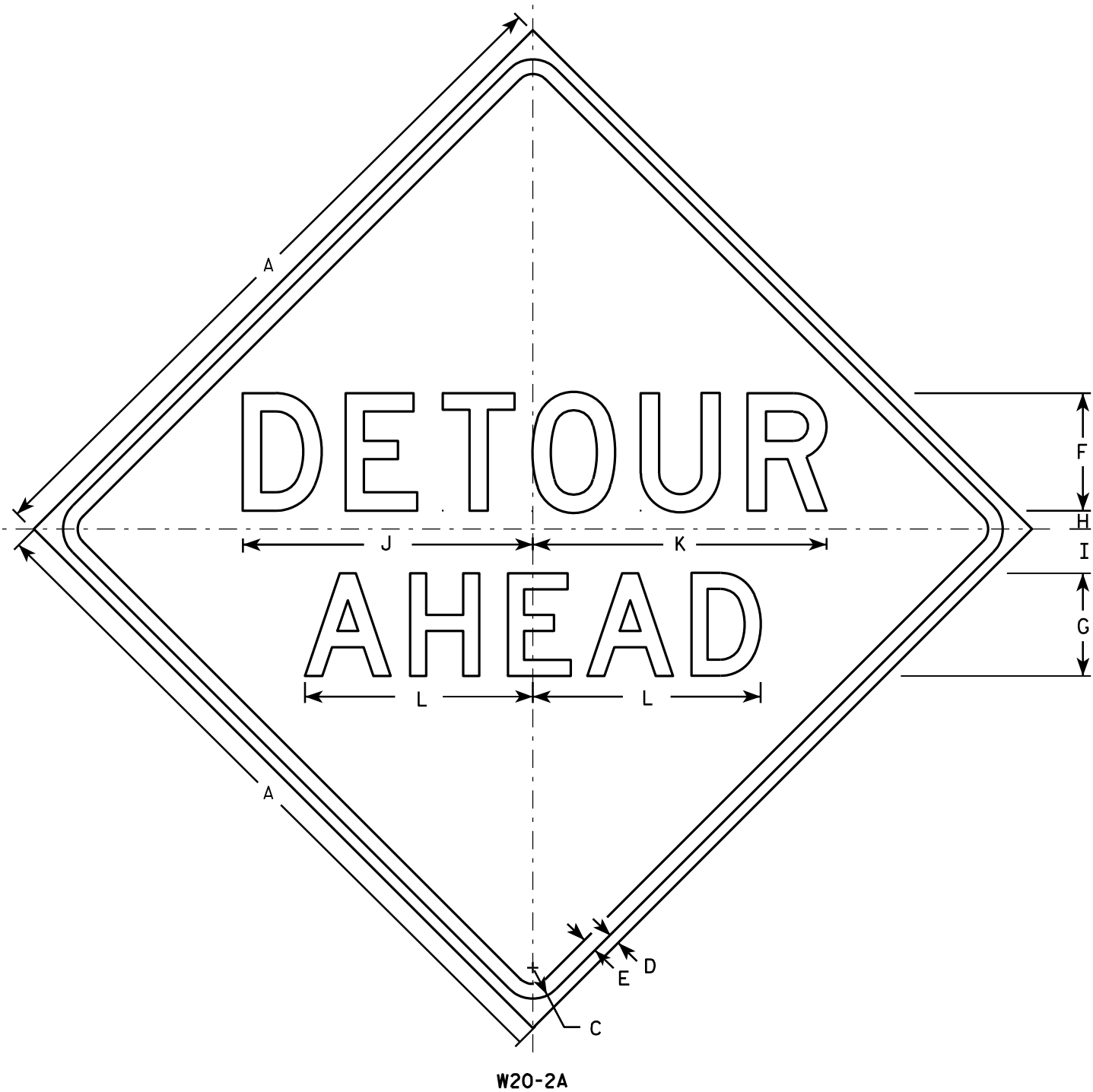
PROJECT NO:

HWY:

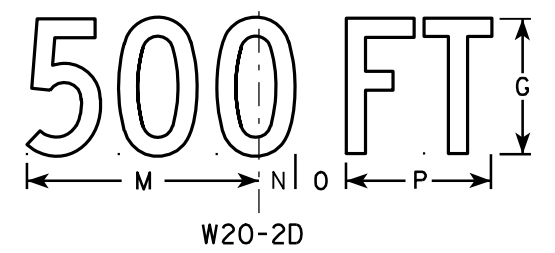
COUNTY:

SHEET NO:

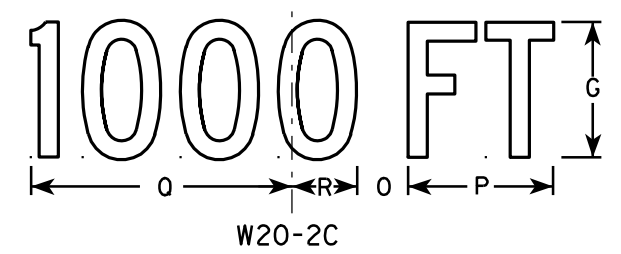
E



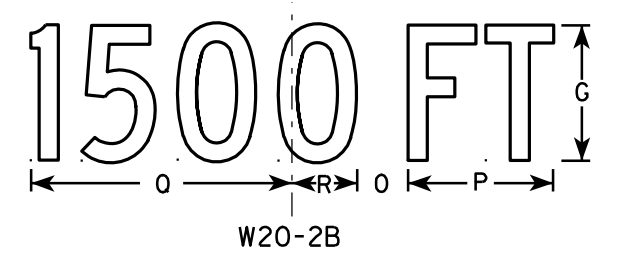
W20-2A



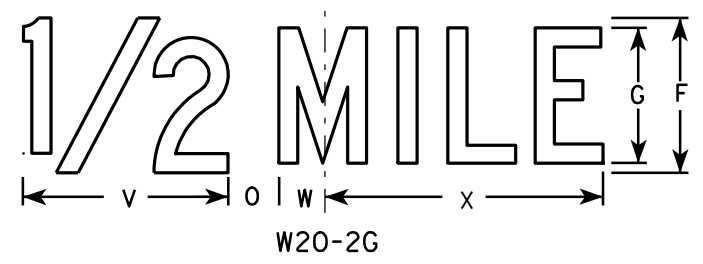
W20-2D



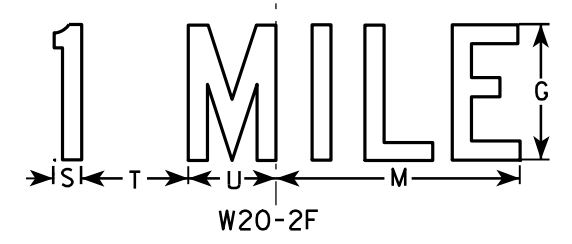
W20-2C



W20-2B



W20-2G



W20-2F

NOTES

1. Sign is Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
Background - Orange
Message - Black
3. Message Series - See note 5
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. Line 1 is Series D.
Line 2 is Series D for AHEAD and Series C for all other distances.

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

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

WISCONSIN DEPT OF TRANSPORTATION
APPROVED *Matthew R. Rauch* for State Traffic Engineer
DATE 3/18/11 PLATE NO. W20-2.6

PROJECT NO:

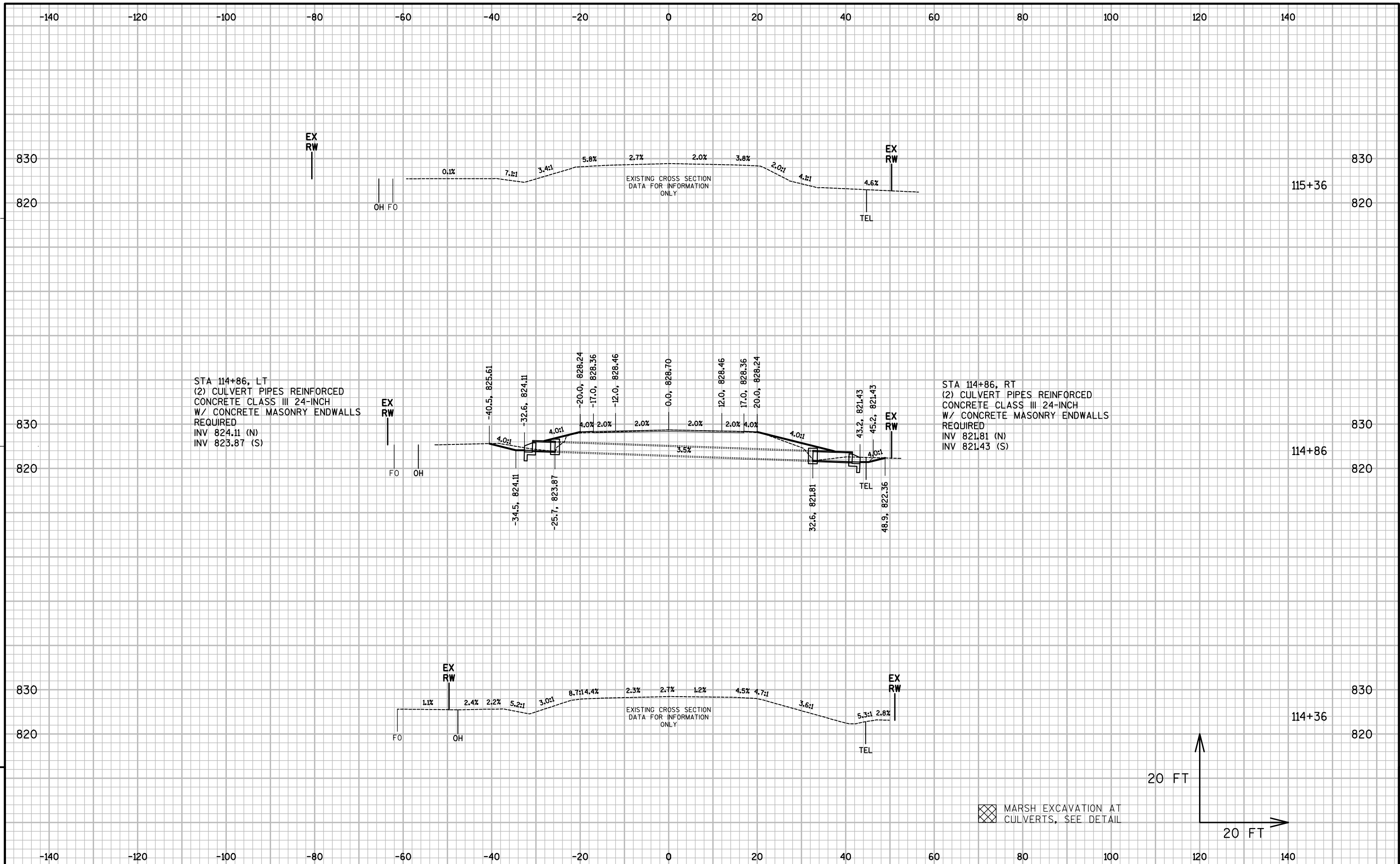
HWY:

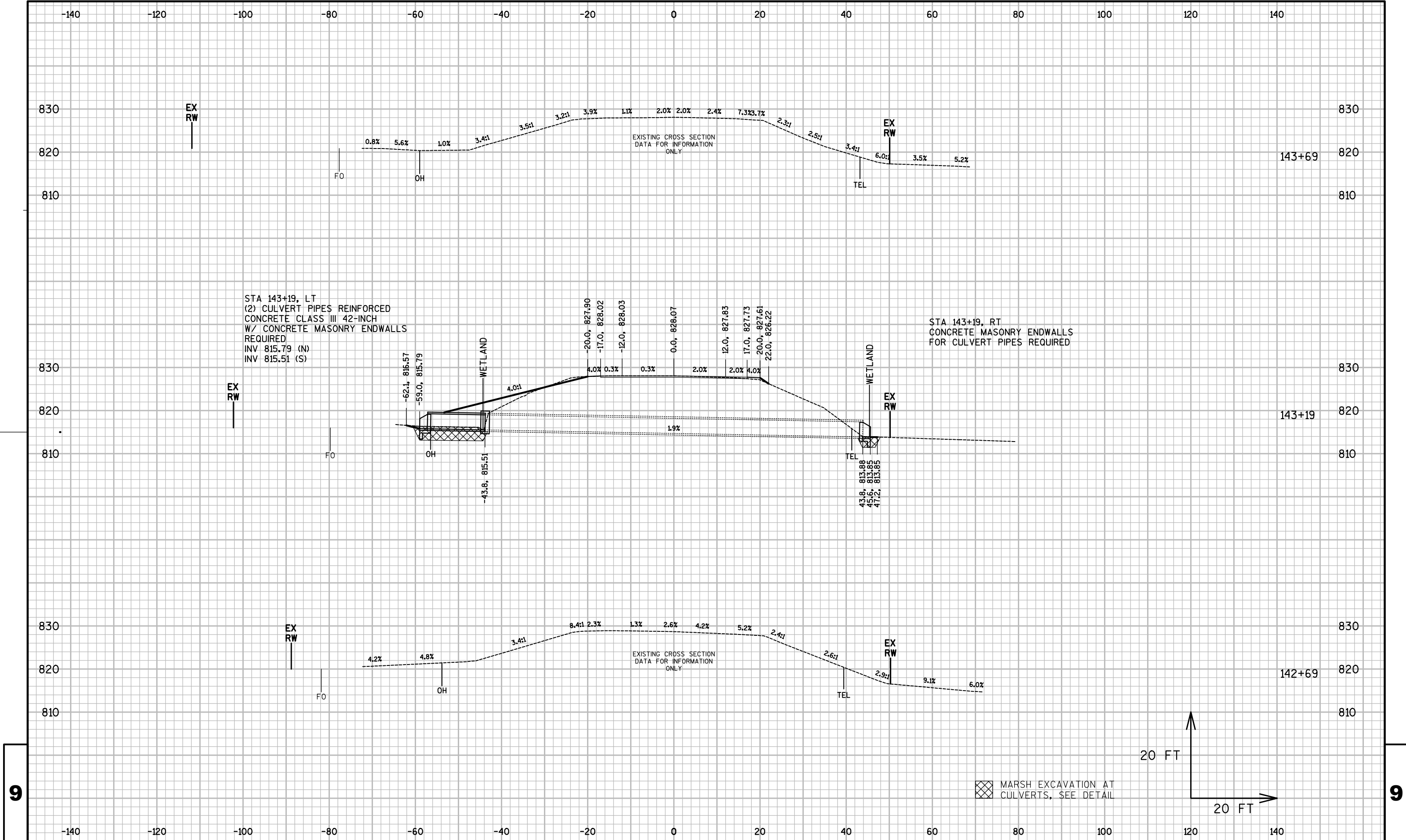
COUNTY:

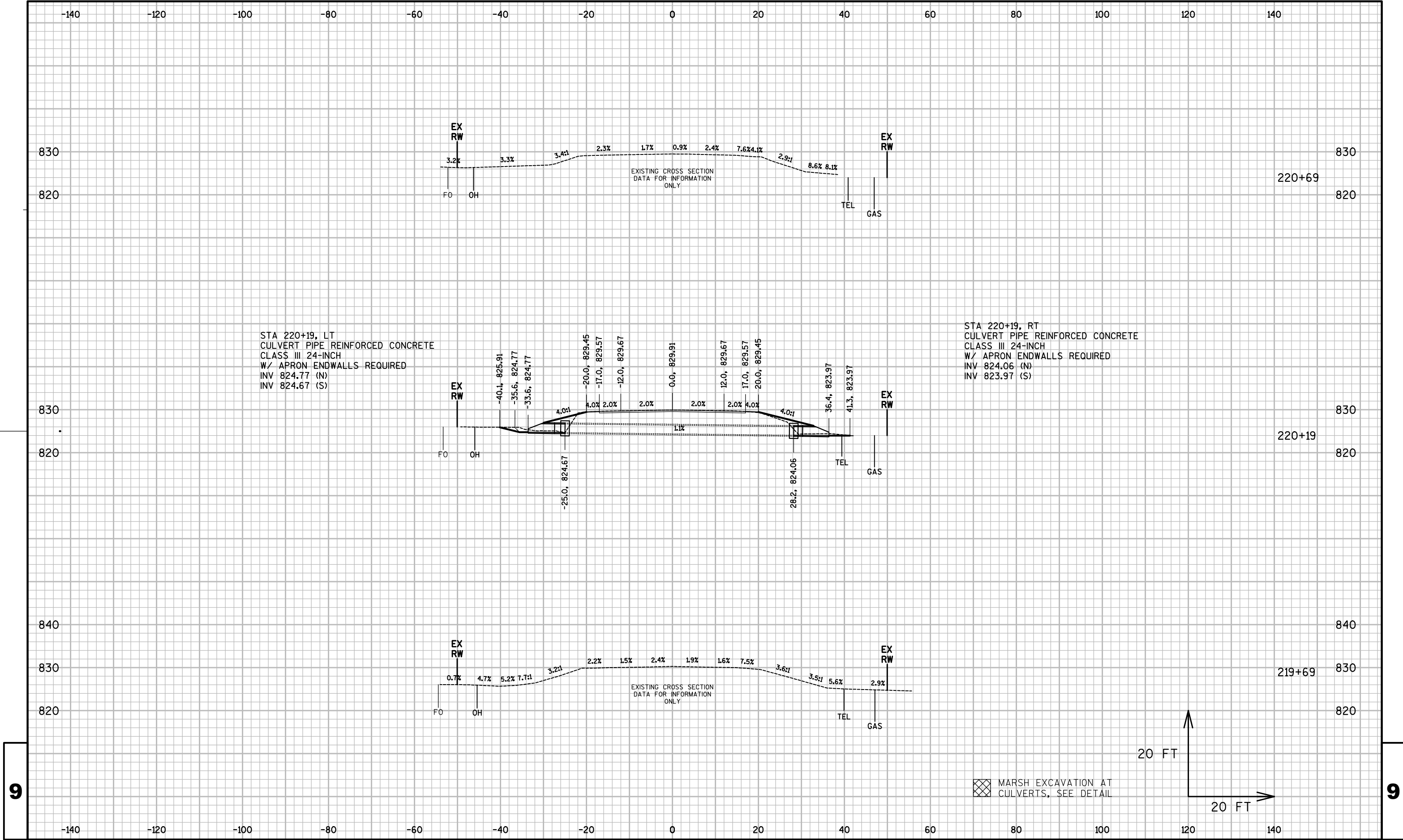
SHEET NO:

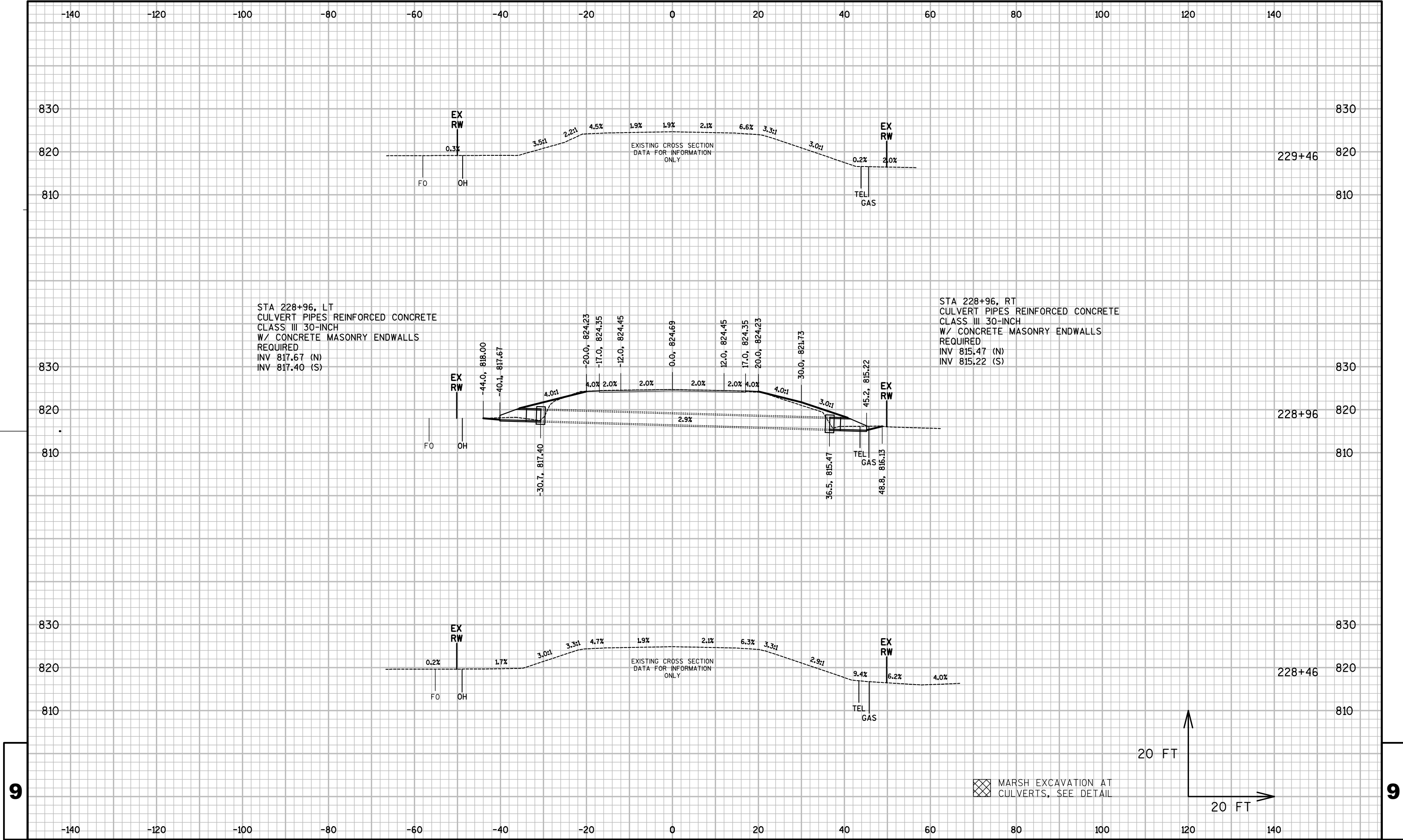
E

STATION	Real Station	Distance	AREA (SF)						Incremental Vol (CY) (Unadjusted)						Cumulative Vol (CY)								Mass Ordinate
			Cut	Salvaged/Unusable Pavement Material	Fill	Marsh Exc	Rock Exc	EBS	Cut Note 1	Salvaged/Unusable Pavement Material Note 2	Fill Note 3	Marsh Exc	Rock Exc	EBS	Cut 1.00 Note 1	Expanded Fill 1.25	Expanded Marsh Backfill 1.50 Note 4	Expanded Rock 1.10	Expanded EBS Backfill 1.30 Note 5	Reduced Marsh in Fill 0.60 Note 6	Reduced EBS In Fill 0.80 Note 7		
114+36	11436		0.0	0.0	0.0	0.0	0.0	0.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
114+86	11486	50	0.0	0.0	78.7	0.0	0.0	0.0	0	0	73	0	0	0	0	91	0	0	0	0	0	-91	
115+36	11536	50	0.0	0.0	0.0	0.0	0.0	0.0	0	0	73	0	0	0	0	182	0	0	0	0	0	-182	
			Subtotal						0	0	146	0	0	0									
142+69	14269		0.0	0.0	0.0	0.0	0.0	0.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
143+19	14319	50	3.4	0.0	83.3	0.0	0.0	0.0	3	0	77	0	0	0	3	96	0	0	0	0	0	-93	
143+69	14369	50	0.0	0.0	0.0	0.0	0.0	0.0	3	0	77	0	0	0	6	193	0	0	0	0	0	-187	
			Subtotal						6	0	154	0	0	0									
219+69	21969		0.0	0.0	0.0	0.0	0.0	0.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
220+19	22019	50	0.4	0.0	46.3	0.0	0.0	0.0	0	0	43	0	0	0	0	54	0	0	0	0	0	-53	
220+69	22069	50	0.0	0.0	0.0	0.0	0.0	0.0	0	0	43	0	0	0	1	107	0	0	0	0	0	-106	
			Subtotal						1	0	86	0	0	0									
228+46	22846		0.0	0.0	0.0	0.0	0.0	0.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
228+96	22896	50	0.9	0.0	60.3	0.0	0.0	0.0	1	0	56	0	0	0	1	70	0	0	0	0	0	-69	
229+46	22946	50	0.0	0.0	0.0	0.0	0.0	0.0	1	0	56	0	0	0	2	140	0	0	0	0	0	-138	
			Subtotal						2	0	112	0	0	0									
277+26	27726		0.0	0.0	0.8	0.0	0.0	0.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
278+00	27800	74	0.1	0.0	81.2	0.0	0.0	0.0	0	0	112	0	0	0	0	140	0	0	0	0	0	-140	
278+76	27876	76	0.0	0.0	115.4	0.0	0.0	0.0	0	0	277	0	0	0	0	486	0	0	0	0	0	-486	
279+01	27901	25	0.0	0.0	85.0	0.0	0.0	0.0	0	0	93	0	0	0	0	602	0	0	0	0	0	-602	
279+26	27926	25	0.1	0.0	11.5	0.0	0.0	0.0	0	0	45	0	0	0	0	658	0	0	0	0	0	-658	
279+66	27966	40	0.0	0.0	10.6	0.0	0.0	0.0	0	0	16	0	0	0	0	678	0	0	0	0	0	-678	
			Subtotal						0	0	543	0	0	0									
280+60	28060		0.1	0.0	13.2	0.0	0.0	0.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
281+00	28100	40	2.5	0.0	0.0	0.0	0.0	0.0	2	0	10	0	0	0	2	12	0	0	0	0	0	-10	
281+25	28125	25	1.4	0.0	23.6	0.0	0.0	0.0	2	0	11	0	0	0	4	26	0	0	0	0	0	-22	
281+50	28150	25	1.0	0.0	40.7	0.0	0.0	0.0	1	0	30	0	0	0	5	63	0	0	0	0	0	-58	
282+00	28200	50	5.8	0.0	24.5	0.0	0.0	0.0	6	0	60	0	0	0	11	139	0	0	0	0	0	-128	
283+00	28300	100	0.7	0.0	0.0	0.0	0.0	0.0	12	0	45	0	0	0	23	195	0	0	0	0	0	-172	
			Subtotal						23	0	156	0	0	0									
308+38	30838		0.0	0.0	0.0	0.0	0.0	0.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
308+88	30888	50	0.0	0.0	122.4	0.0	0.0	0.0	0	0	113	0	0	0	0	142	0	0	0	0	0	-142	
309+38	30938	50	0.0	0.0	0.0	0.0	0.0	0.0	0	0	113	0	0	0	0	283	0	0	0	0	0	-283	
			Subtotal						0	0	227	0	0	0									
324+77	32477		0.0	0.0	0.0	0.0	0.0	0.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
325+27	32527	50	0.0	0.0	155.3	0.0	0.0	0.0	0	0	144	0	0	0	0	180	0	0	0	0	0	-180	
325+77	32577	50	0.0	0.0	0.0	0.0	0.0	0.0	0	0	144	0	0	0	0	360	0	0	0	0	0	-360	
			Subtotal						0	0	288	0	0	0									
371+32	37132		0.0	0.0	0.0	0.0	0.0	0.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
371+82	37182	50	0.0	0.0	134.4	0.0	0.0	0.0	0	0	124	0	0	0	0	155	0	0	0	0	0	-155	
372+32	37232	50	0.0	0.0	0.0	0.0	0.0	0.0	0	0	124	0	0	0	0	311	0	0	0	0	0	-311	
			Subtotal						0	0	249	0	0	0									



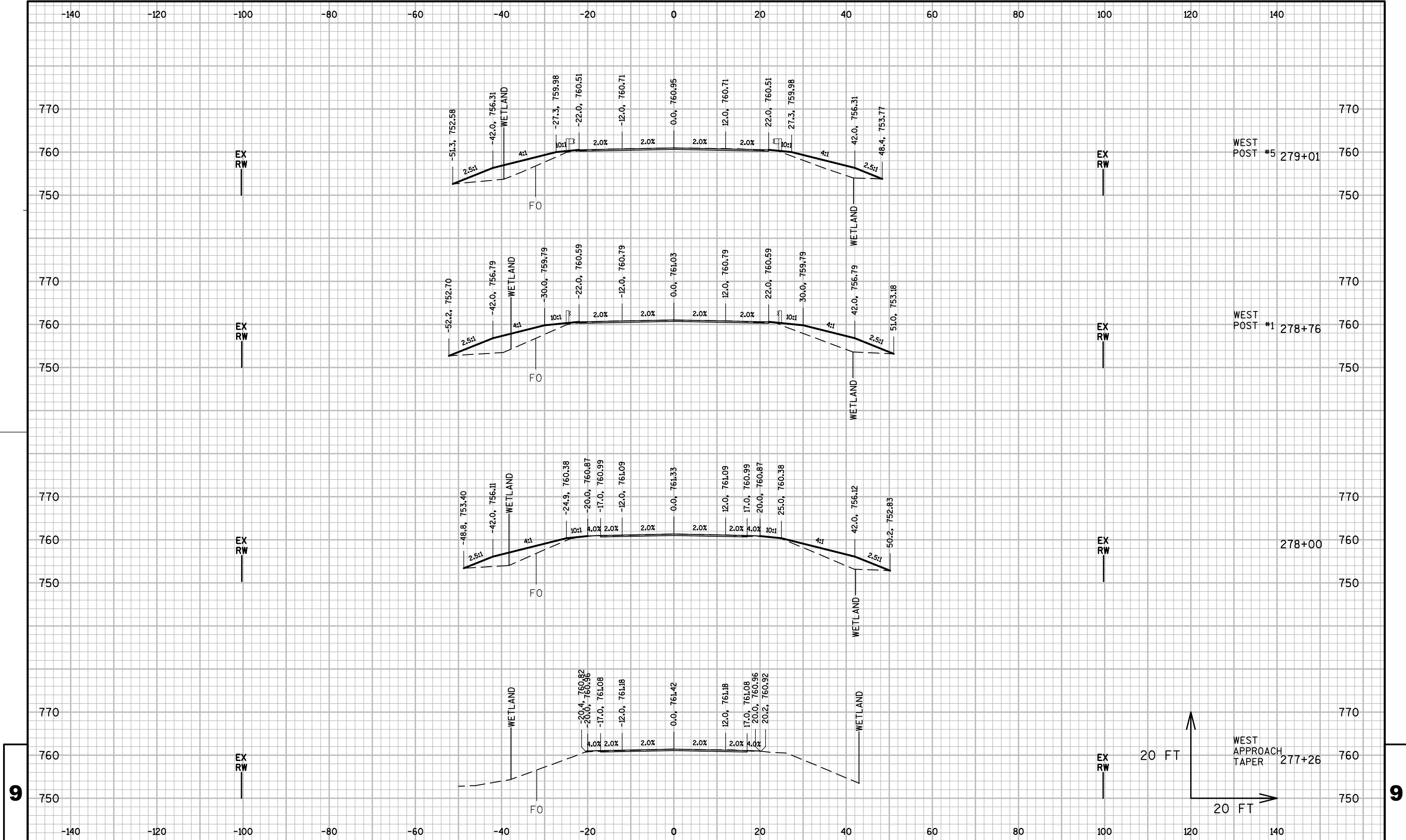


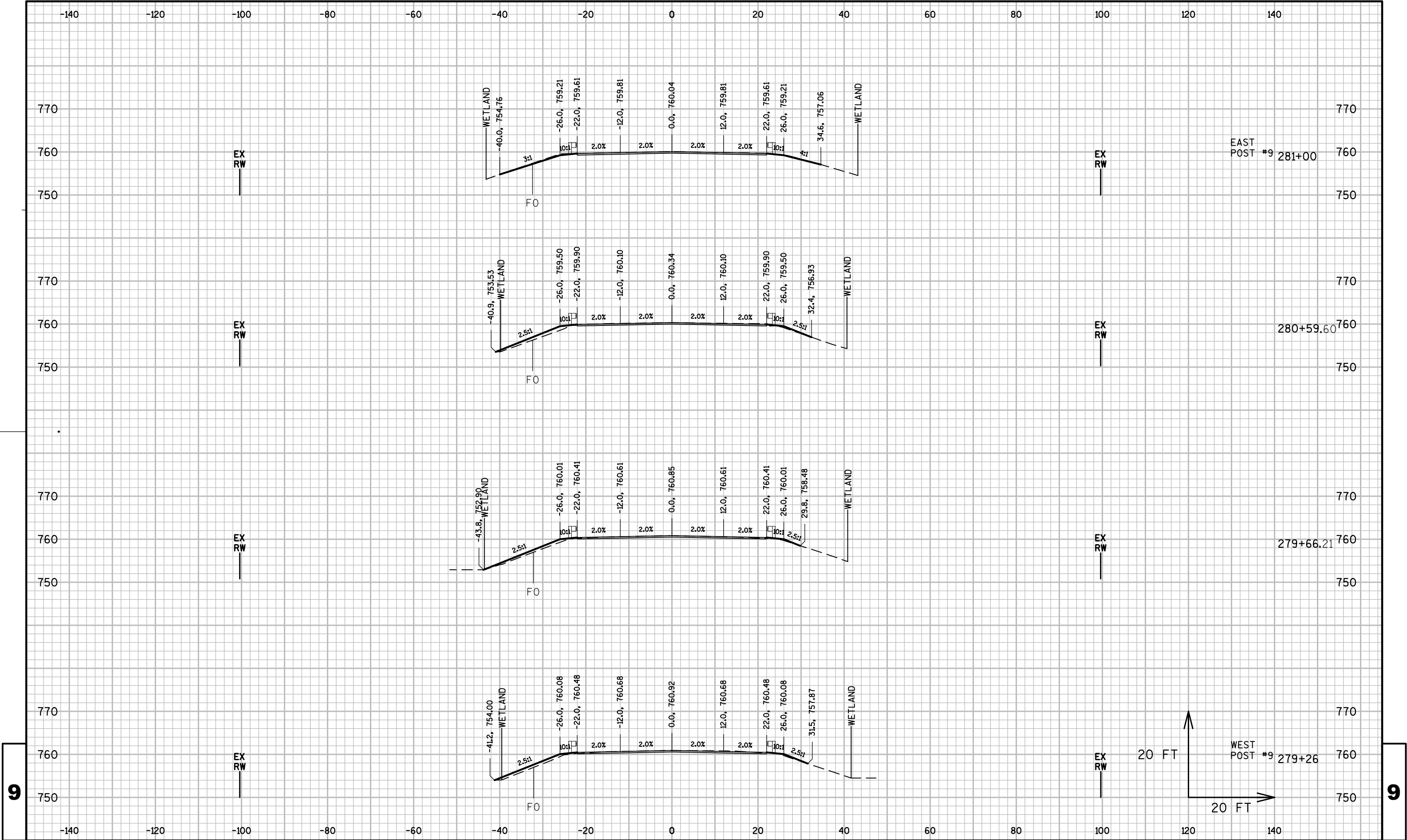




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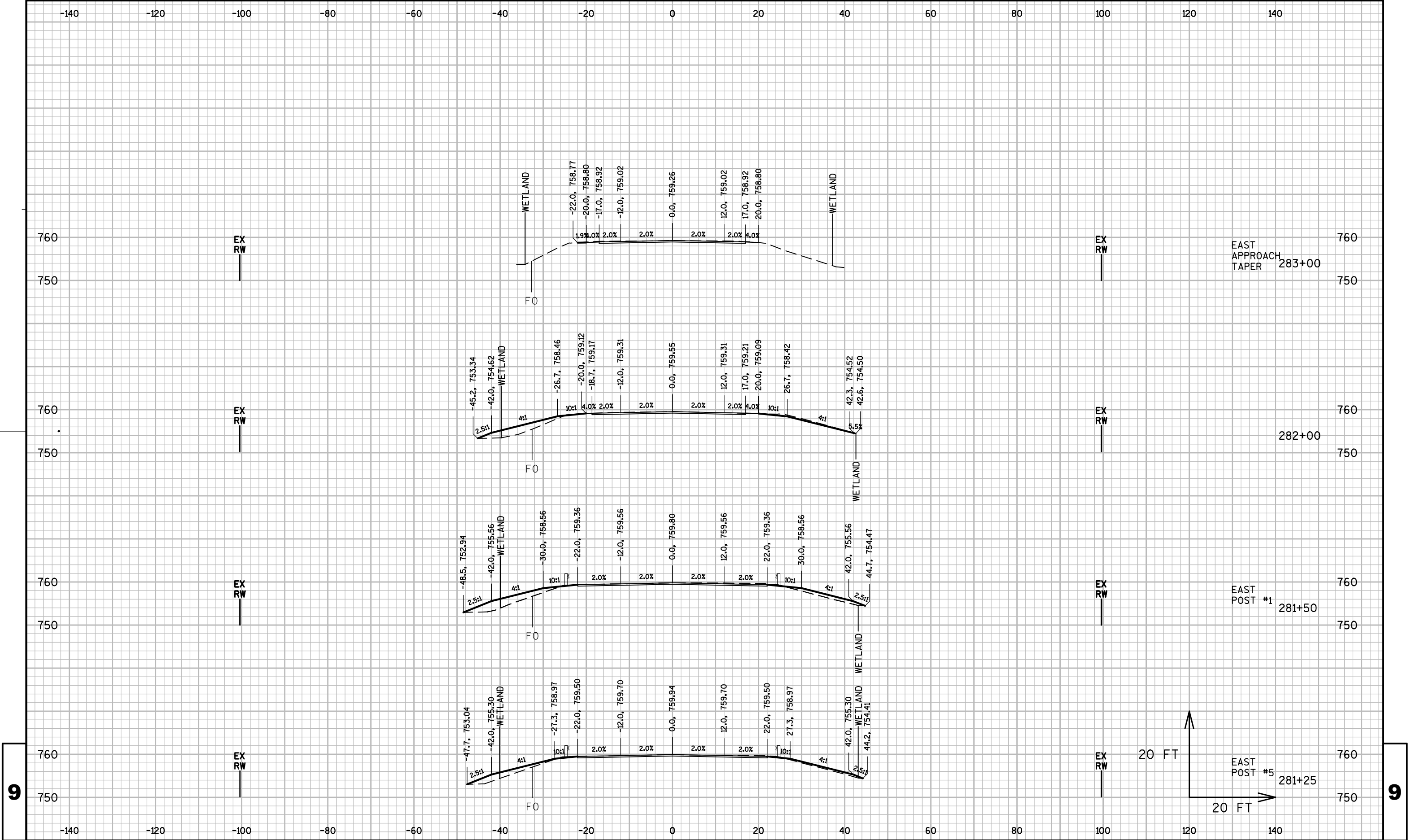
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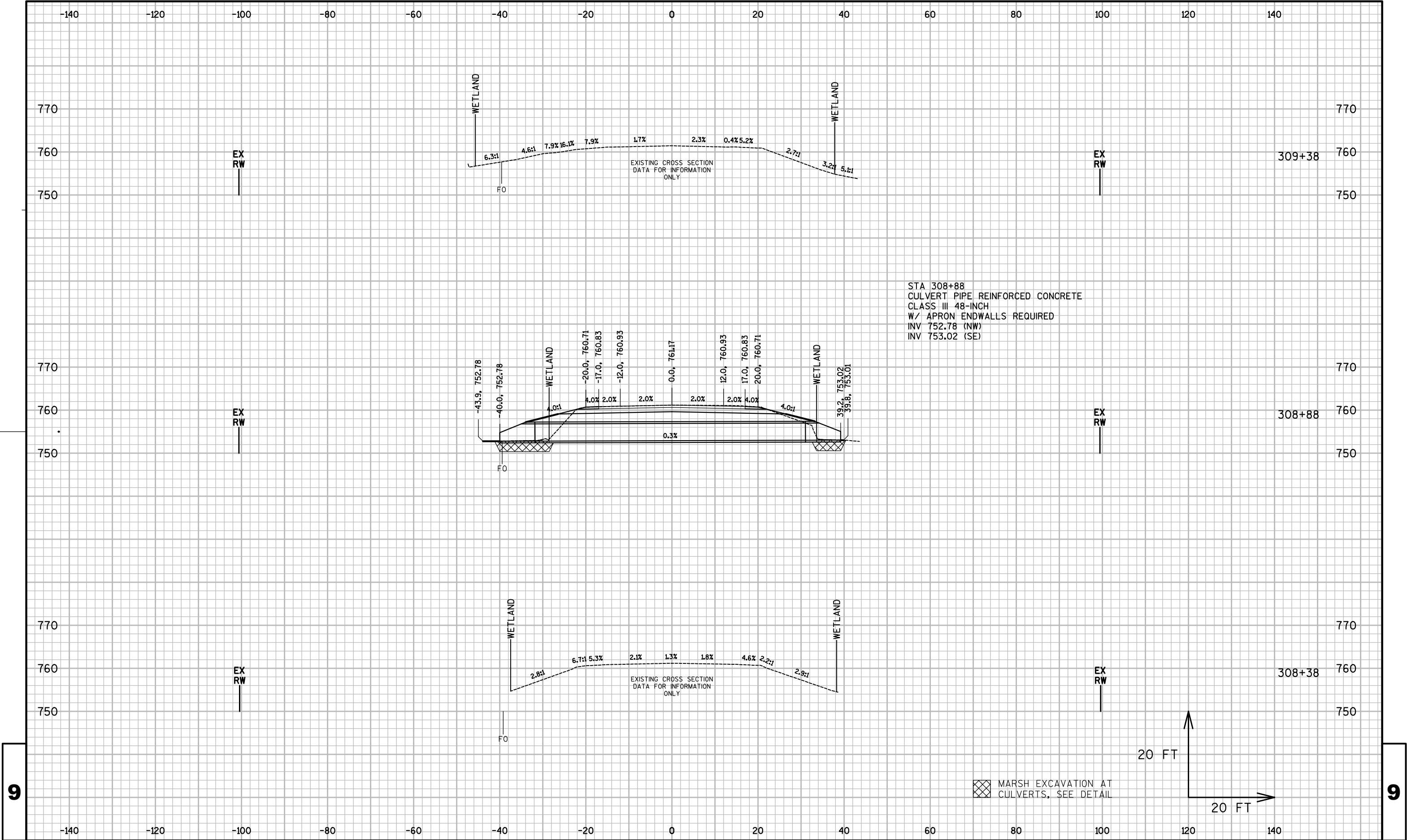


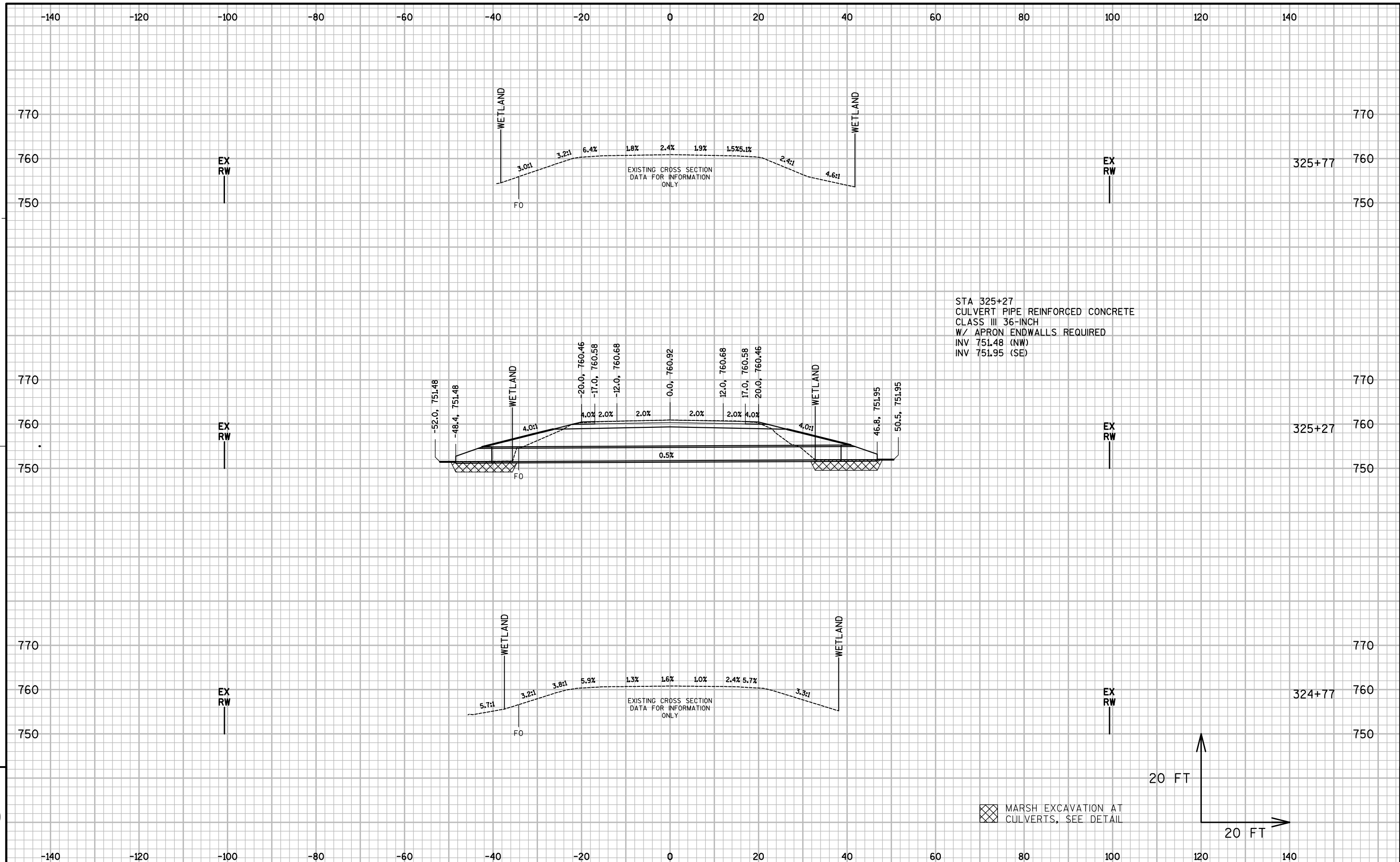


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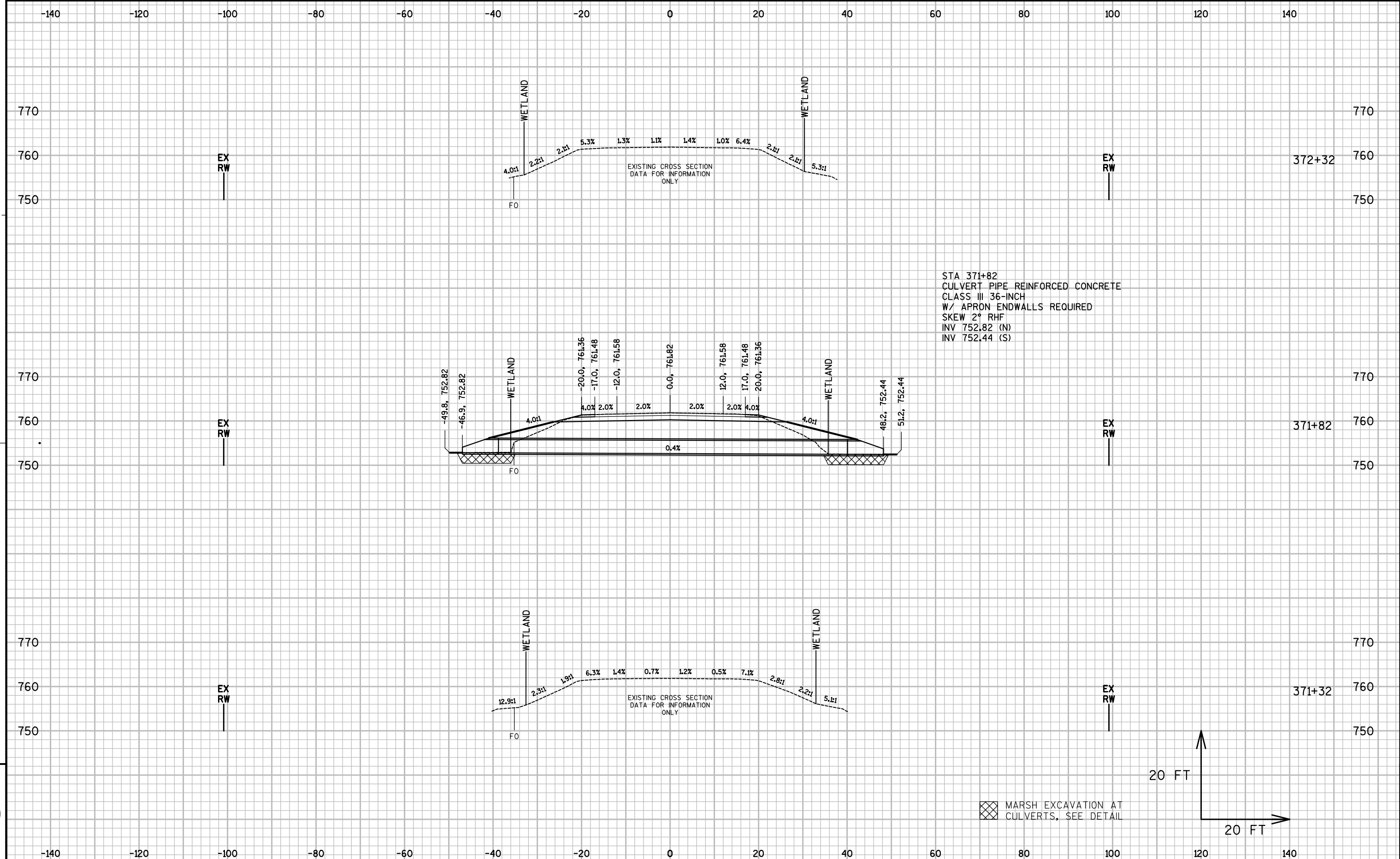






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STA 371+82
CULVERT PIPE REINFORCED CONCRETE
CLASS III 36-INCH
W/ APRON ENDWALLS REQUIRED
SKEW 2° RHF
INV 752.82 (N)
INV 752.44 (S)

MARSH EXCAVATION AT
CULVERTS, SEE DETAIL

Notes



Wisconsin Department of Transportation

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