

LAX

MAY 2021

PROJECT ID: 1074-00-72

WITH:

COUNTY: LA CROSSE

ORDER OF SHEETS

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

TOTAL SHEETS = 128



DESIGN DESIGNATION

A.A.D.T.	2021	=	22970
A.A.D.T.	2041	=	25660
D.H.V.		=	12.3
D.D.		=	55/45
T.		=	23%
DESIGN SPEED		=	70 MPH
ESALS		=	14,000,000

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

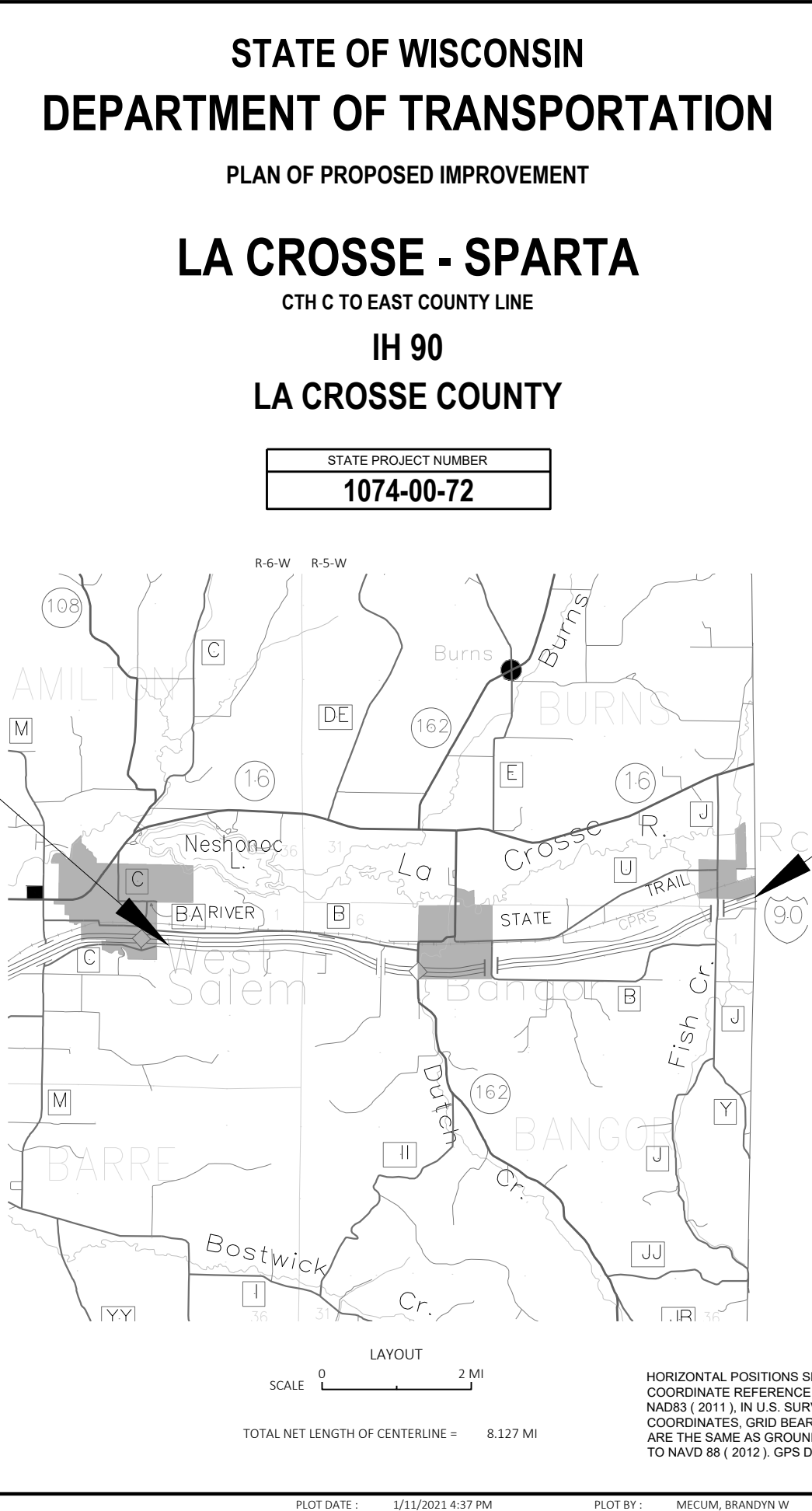
TELEPHONE

WATER

UTILITY PEDESTAL

POWER POLE

TELEPHONE POLE



STATE PROJECT	FEDERAL PROJECT	
	PROJECT	CONTRACT
1074-00-72		

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PREPARED BY

Surveyor	WISDOT
Designer	BRANDYN MECUM
Project Manager	BRIAN MEYER
Regional Examiner	SW REGION
Regional Supervisor	JIM SAVOLDELLI

APPROVED FOR THE DEPARTMENT

DATE: 1/29/2021

(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.
- THE CONTRACTOR SHALL COORDINATE HIS CONSTRUCTION ACTIVITIES WITH A CALL TO DIGGERS HOTLINE AND/OR A DIRECT CALL TO THE UTILITIES THAT HAVE FACILITIES IN THE AREA. NOT ALL UTILITIES ARE MEMBERS OF DIGGERS HOTLINE.
- ALL RADII ARE MEASURED TO EDGE OF PAVEMENT UNLESS OTHERWISE SHOWN OR NOTED ON THE PLAN.
- THE CONTRACTOR'S PAVING OPERATIONS SHALL BE CONSISTENT WITH THE PLAN TYPICAL SECTIONS AND CONSTRUCTED TO PREVENT HMA LONGITUDINAL JOINTS FROM BEING LOCATED WITHIN A DRIVING, TURNING, BIKE OR PARKING LANE.
- HMA PAVEMENT WEIGHT CALCULATIONS ARE BASED ON 112 LB/SY/IN.
- 4 INCH HMA PAVEMENT FOR MAINLINE, SHALL BE CONSTRUCTED WITH 1.75 INCH OF TYPE 4 SMA 58-28 H UPPER LAYER AND 2.25 INCH OF TYPE 3 HT 58-28 S LOWER LAYER.
2 INCH HMA PAVEMENT FOR MAINLINE SPOT REPAIR, SHALL BE CONSTRUCTED WITH 2 INCH OF TYPE ASPHALTIC SURFACE.
3.5 INCH HMA PAVEMENT FOR OUTSIDE SHOULDER, SHALL BE CONSTRUCTED WITH 3.5 INCH OF TYPE 4 LT 58-28 S.
2 INCH HMA PAVEMENT FOR STH 162 RAMPS, SHALL BE CONSTRUCTED WITH 2 INCH OF TYPE 4 MT 58-28 S.
2 INCH HMA PAVEMENT FOR MAINTENANCE CROSSOVERS, SHALL BE CONSTRUCTED WITH 2 INCH OF TYPE ASPHALTIC SURFACE.
- APPLY TACK COAT AT A RATE OF 0.07 GAL/SY TO MILLED SURFACES AND 0.05 GAL/SY BETWEEN LAYERS OF HMA PAVEMENT.
- CONTRACTOR WILL BE RESPONSIBLE FOR RESHAPING AND SEEDING ANY PREVIOUSLY GRASSED AREAS WHICH ARE DISTURBED BY HIS OPERATION OUTSIDE OF THE NORMAL CONSTRUCTION LIMITS.
- THE QUANTITY OF THE ITEMS FOR EROSION PROTECTION INCLUDES AN UNDISTRIBUTED AMOUNT FOR PROTECTION, CONTROL AND ABATEMENT OF WATER POLLUTION RESULTING FROM SOIL EROSION. THE DISTRIBUTION AND LOCATION OF THESE MATERIALS ARE TO BE DETERMINED BY THE ENGINEER.
- DISTURBED AREAS WITHIN THE RIGHT OF WAY ARE TO BE TOPSOILED, FERTILIZED, SEEDED, AND EMAT AS DIRECTED BY THE ENGINEER.
- TOPSOIL HAS BEEN COMPUTED BY DIRECT MEASUREMENTS ON THE CROSS SECTIONS PLUS 5 FT BEYOND THE TOE OF SLOPE. SEEDING AND FERTILIZER HAS BEEN COMPUTED BY DIRECT MEASUREMENTS ON THE CROSS SECTIONS PLUS 5 FT.

ORDER OF SECTION 2 SHEETS

GENERAL NOTES/WRITTEN MATERIAL
PROJECT OVERVIEW
TYPICAL SECTIONS
CONSTRUCTION DETAILS
TRAFFIC CONTROL AND CONSTRUCTION STAGING
CONTROL POINTS

STANDARD ABBREVIATIONS

AC	ACRE	LC.	LONG CHORD
AGG	AGGREGATE	LS	LUMP SUM
<	ANGLE	M.P.	MARKER POST
AE, AEW	APRON ENDWALL	MGAL	1000 GALLONS
ASPH.	ASPHALTIC	N.C.	NORMAL CROWN
A.D.T.	AVERAGE DAILY TRAFFIC	N	NORTH
A.A.D.T.	ANNUAL AVERAGE DAILY TRAFFIC	NB	NORTHBOUND
B.F.	BACK FACE	NOR	NORMAL
BM	BENCHMARK	NO.	NUMBER
BTWN	BETWEEN	PAV'T	PAVEMENT
CTR.	CENTER	P.L.E	PERMANENT LIMITED EASEMENT
C/L	CENTER LINE	P.C.	POINT OF CURVATURE
Δ	CENTRAL ANGLE OR DELTA	P.I.	POINT OF INTERSECTION
C.E	COMMERCIAL ENTRANCE	P.T.	POINT OF TANGENCY
CONST.	CONSTRUCTION	PCC	PORTLAND CEMENT CONCRETE
CMCP	CORRUGATED METAL CULVERT PIPE	P.E	PRIVATE ENTRANCE
CMP	CORRUGATED METAL PIPE	PGL	PROFILE GRADE LINE
CO.	COUNTY	P.L.	PROPERTY LINE
CTH	COUNTY TRUNK HIGHWAY	R	RADIUS OR RANGE
CR.	CREEK	R/L	REFERENCE LINE
CABC	CRUSHED AGGREGATE BASE COURSE	R.C.C.P.	REINFORCED CONCRETE CULVERT PIPE
CY	CUBIC YARD	REQ'D	REQUIRED
CP	CONTROL POINT OR CULVERT PIPE	RT	RIGHT
C&G	CURB AND GUTTER	R.H.F.	RIGHT HAND FORWARD
D	DEGREE OF CURVE	R/W	RIGHT OF WAY
D.H.V.	DESIGN HOURLY VOLUME	RD.	ROAD
DIA.	DIAMETER	SHLD.	SHOULDER(S)
D.D.	DIRECTIONAL DISTRIBUTION	SHR.	SHRINKAGE
DISCH.	DISCHARGE	S	SOUTH
DMS	DYNAMIC MESSAGE SIGN	SB	SOUTHBOUND
EA	EACH	S.F.	SQUARE FOOT (FEET)
E	EAST	SDD	STANDARD DETAIL DRAWING(S)
EB	EASTBOUND	STH	STATE TRUNK HIGHWAY
ELEC.	ELECTRIC(AL), ELEC. CABLE	STA.	STATION
EL., ELEV.	ELEVATION	S.E	SUPERELEVATION
ESALS	EQUIVALENT SINGLE AXLE LOADS	S/L	SURVEY LINE
EXC.	EXCAVATION	SYM	SYMMETRICAL
EXIST	EXISTING	T.	PERCENT TRUCKS
F.F.	FACE TO FACE	TEL.	TELEPHONE
FERT.	FERTILIZER	TEMP.	TEMPORARY
F.E	FIELD ENTRANCE	T.L.E	TEMPORARY LIMITED EASEMENT
F/L, F.L.	FLOW LINE	T.O.C.	TOP OF CURB
GALV.	GALVANIZE	TYP	TYPICAL
H.S.	HIGH STRENGTH	UNCL.	UNCLASSIFIED
CWT	HUNDRED WEIGHT	U.G.	UNDERGROUND (CABLE)
INL	INLET	VAR	VARIABLE
INTER.	INTERSECTION	V.C.	VERTICAL CURVE
IH	INTERSTATE HIGHWAY	V.P.C.	VERTICAL POINT OF CURVATURE
JT.	JOINT	V.P.I.	VERTICAL POINT OF INTERSECTION
LT	LEFT	V.P.T.	VERTICAL POINT OF TANGENCY
L.H.F.	LEFT HAND FORWARD	Wt.	WEIGHT
L.	LENGTH OF CURVE	W	WEST
L.F.	LINEAR FOOT(FEET)	WB	WESTBOUND

UTILITY CONTACTS

Brian Stelplugh
CenturyLink - Communication Line
333 North Front Street
La Crosse, WI 54601
(608) 615-4136
Brian.stelplugh@centurylink.com

John Louis
Wisconsin Independent Network, LLC - Communication Line
4955 Bullis Farm Rd
Eau Claire WI 54701
(O)(715)838-4012; (C)(715)864-2918
John.louis@wintechology.com

Mitchell Dienger
Xcel Energy - Electric-transmission
414 Nicollet Mall, 5th Floor
Minneapolis, MN 55401
(O)(612)321-3109; (C)(608)386-2233
Mitchell.A.Dienger@xcelenergy.com

Jason McRoberts
Xcel Energy - Electricity
3215 Commerce Drive
La Crosse, WI 54603
(O)(608)789-3689; (C)(715)577-1132
Jason.l.mcroberts@xcelenergy.com

Nicole Smullen
We Energies - Gas/Petroleum
A299
333 W Everett St
Milwaukee, WI 53203
(414) 221-5617
Nicole.Smullen@wecenergygroup.com

DESIGN CONTACTS

BRIAN MEYER
PROJECT MANAGER
WISDOT SW REGION
3550 MORMON COULEE ROAD
LA CROSSE, WI 54601
608-789-5676

BRANDYN MECUM
PROJECT DESIGNER
WISDOT SW REGION
3550 MORMON COULEE ROAD
LA CROSSE, WI 54601
608-785-9070

DNR LIAISON

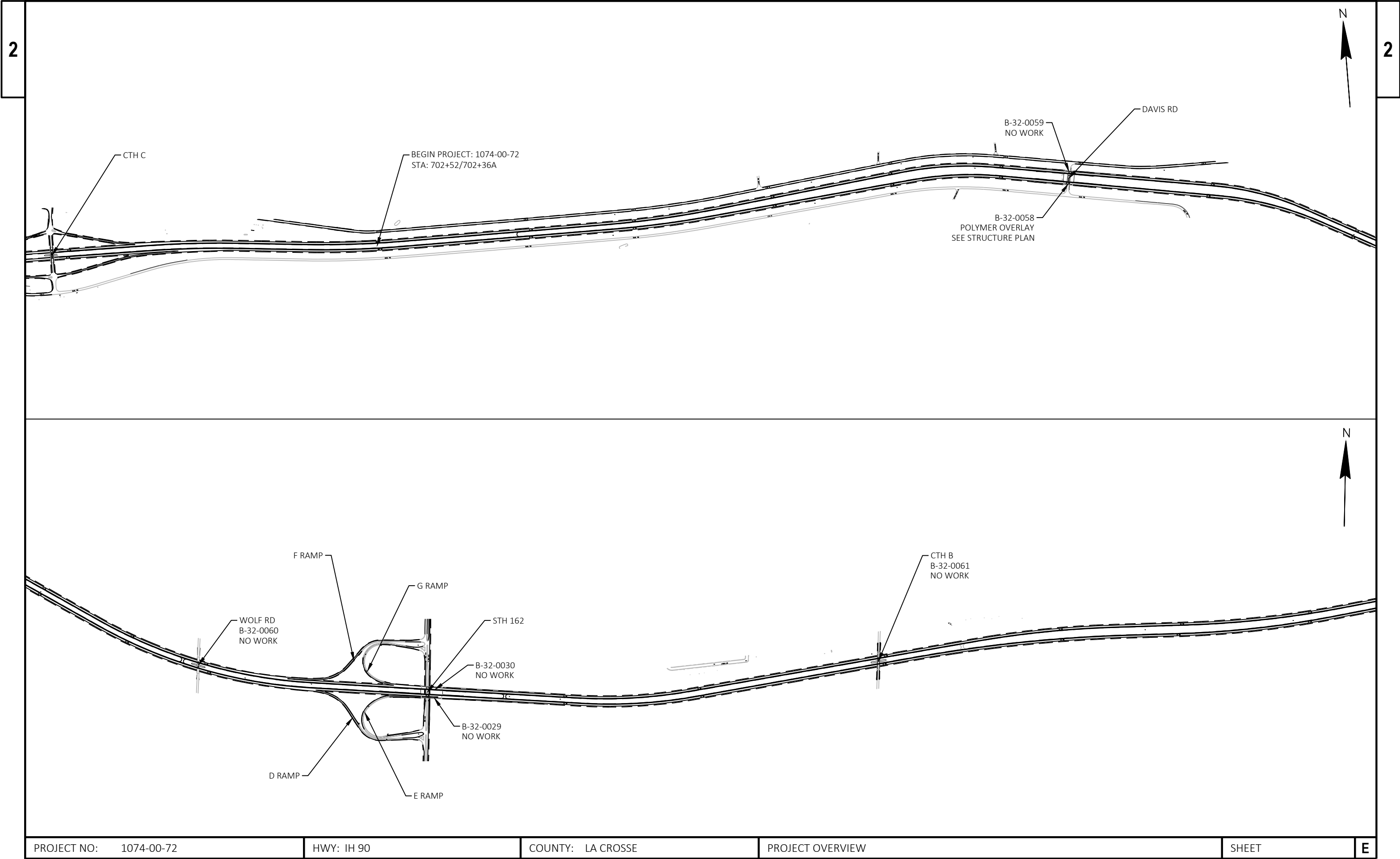
KAREN KALVELAGE
ENVIRONMENTAL ANALYSIS & REVIEW SPECIALIST
WISCONSIN DEPT. OF NATURAL RESOURCES
WEST CENTRAL REGION
3550 MORMON COULEE ROAD
LA CROSSE, WI 54601
608-785-9115

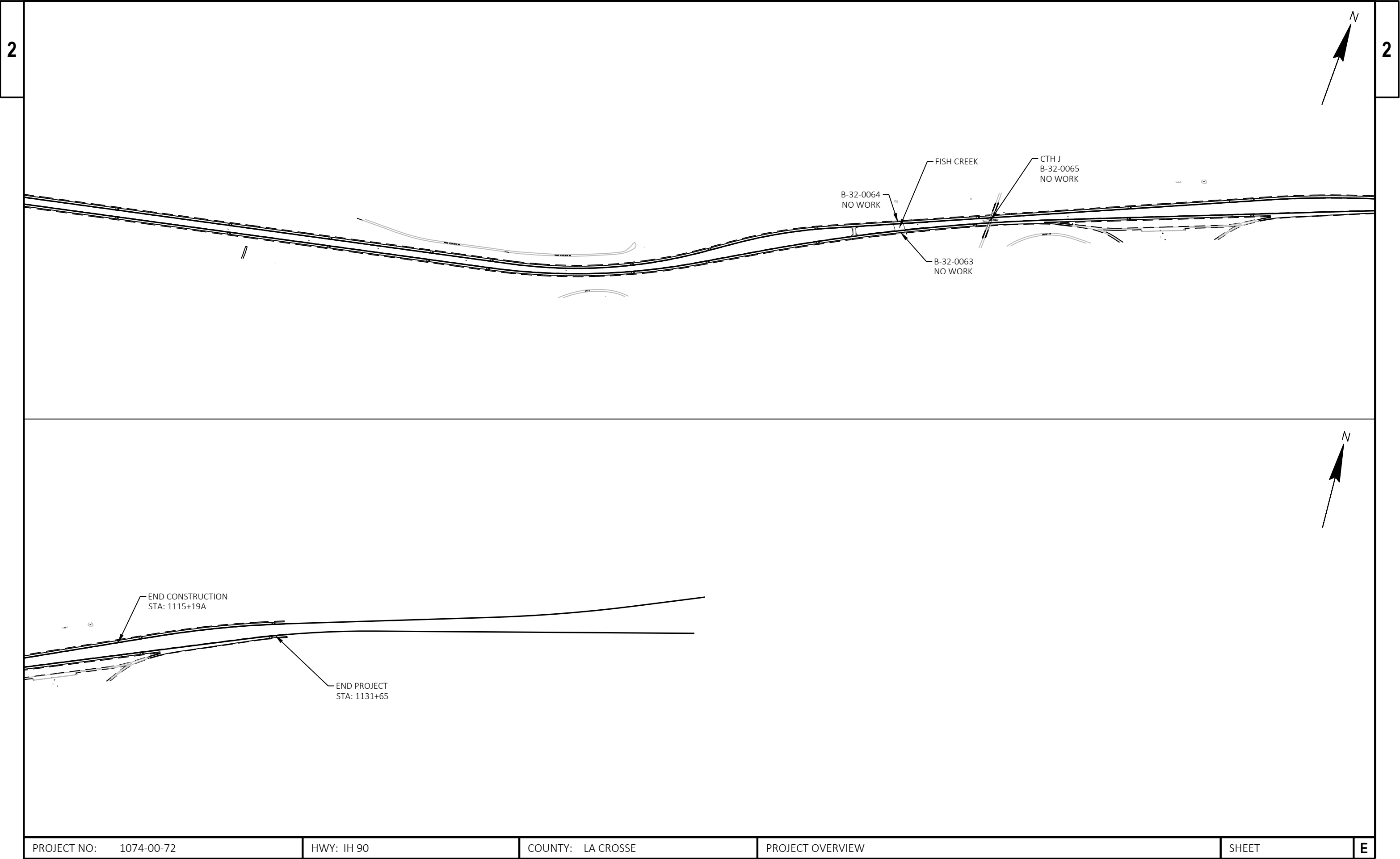
ROADWAY CORE SUMMARY TABLE

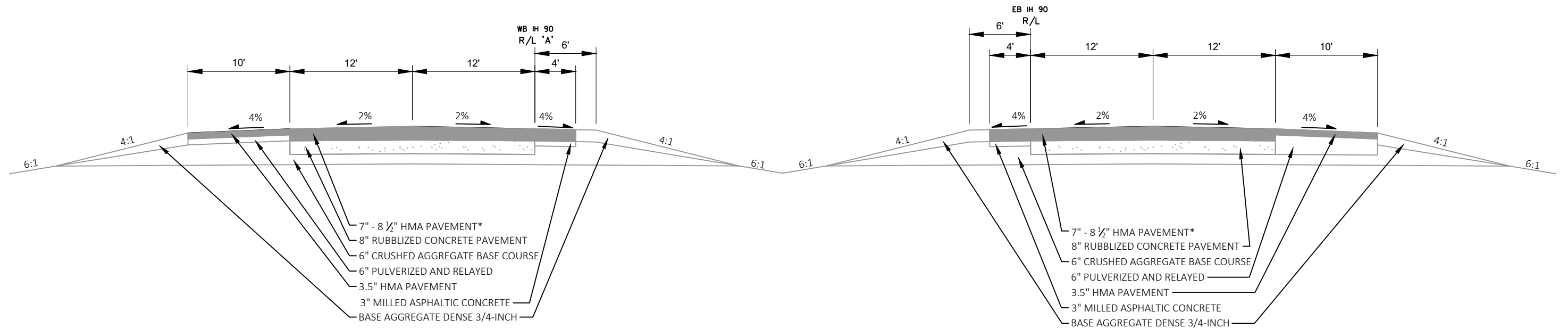
Boring #	STA.	Offset	Bituminous
1	709+39	15' RT	8.25"
2	709+39	21' RT	8.25"
3	734+20	18' RT	10.5"
4	734+20	15' RT	10.5"
5	734+20	21' RT	10.5"
6	794+92	16' RT	8"
7	794+92	21' RT	6.75"
8	794+92	24' RT	9.5"
9	1012+46	18' RT	8.25"
10	1012+46	15' RT	8.75"
11	1012+46	21' RT	7"
12	1110+14	15' RT	7.75"
13	1110+14	21' RT	6.75"
14	1102+03A	18' LT	8.75"
15	1102+03A	15' LT	9"
16	1102+03A	21' LT	8.5"
17	1011+74A	16' LT	8.25"
18	1011+74A	21' LT	7.5"
19	1011+74A	24' LT	7"
20	947+85A	18' LT	7.5"
21	947+85A	15' LT	8.25"
22	947+85A	21' LT	6.5"
23	810+04A	15' LT	9.25"
24	810+04A	21' LT	9.5"
25	910+04A	24' LT	10.5"

NOTES:
DATE BORINGS TAKEN: 5-7-2019
FOR REFERENCE PURPOSES ONLY
ALL OFFSETS ARE FROM EXISTING REFERENCE LINE



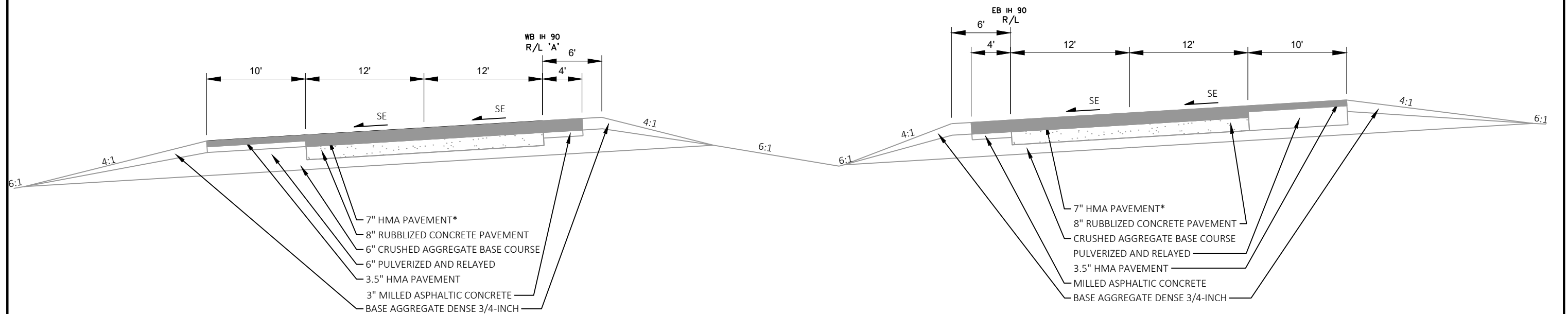






*NOTE: SEE SOIL BORING
SUMMARY TABLE FOR PAVEMENT
DEPTHS.

EXISTING TYPICAL TANGENT SECTION



EXISTING TYPICAL SUPERELEVATED SECTION

PROJECT NO: 1074-00-72

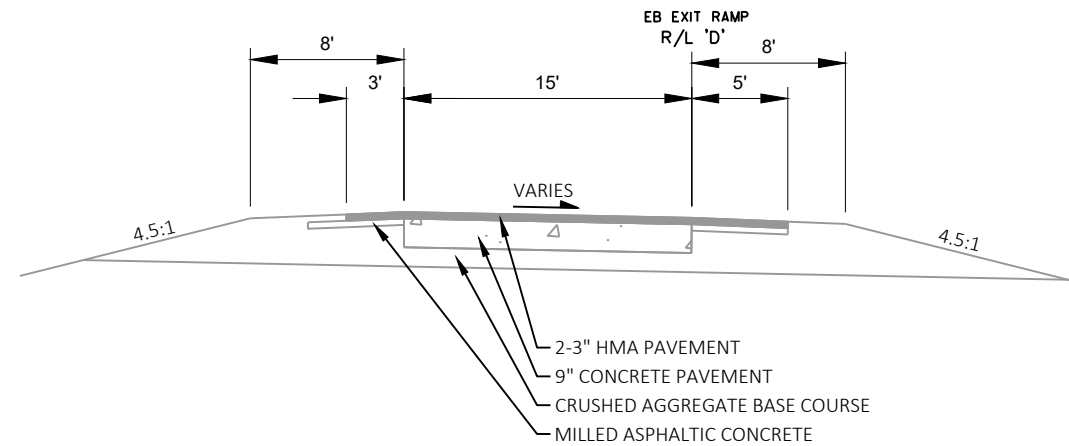
HWY: IH 90

COUNTY: LA CROSSE

TYPICAL SECTIONS

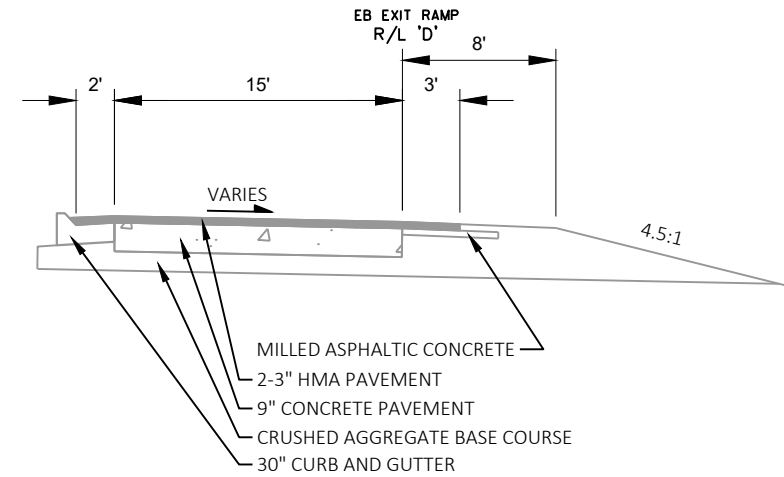
SHEET

E



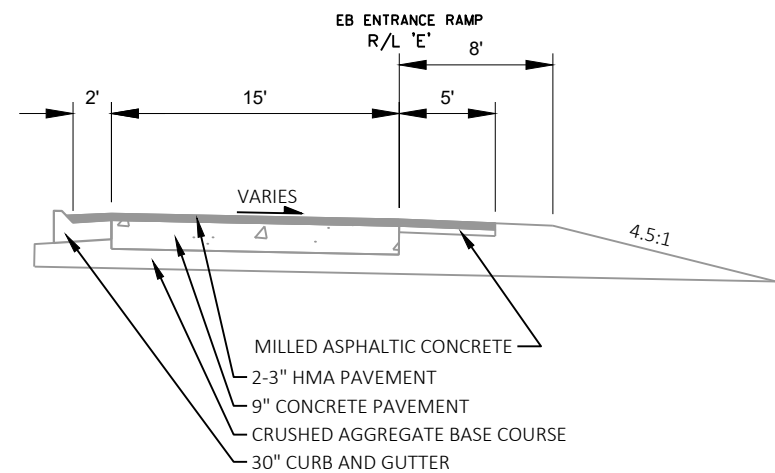
EXISTING TYPICAL RAMP SECTION

851+61D TO 858+65D



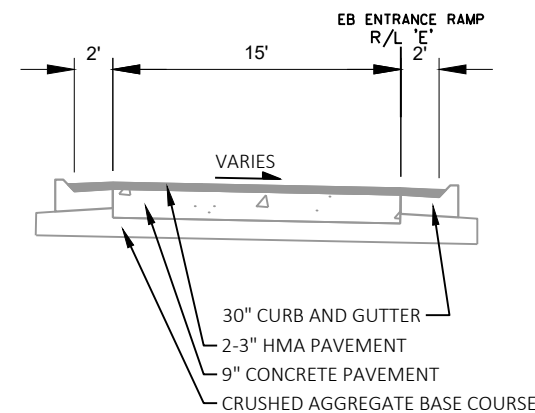
EXISTING TYPICAL RAMP SECTION

858+65D TO 867+08D



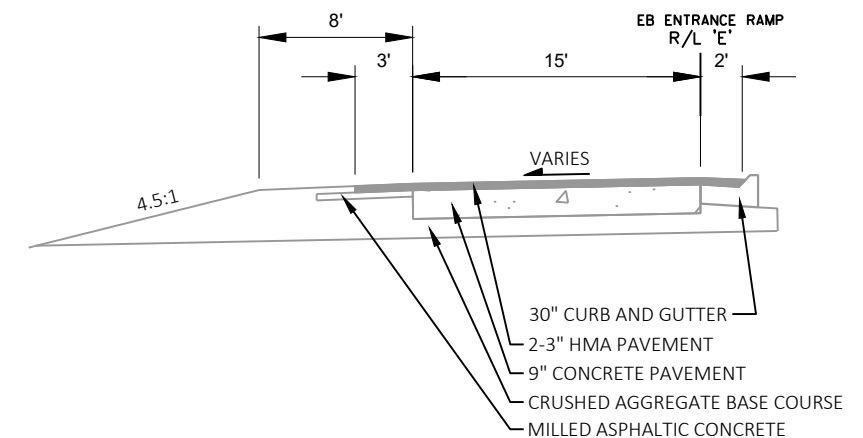
EXISTING TYPICAL RAMP SECTION

848+15E TO 852+40E



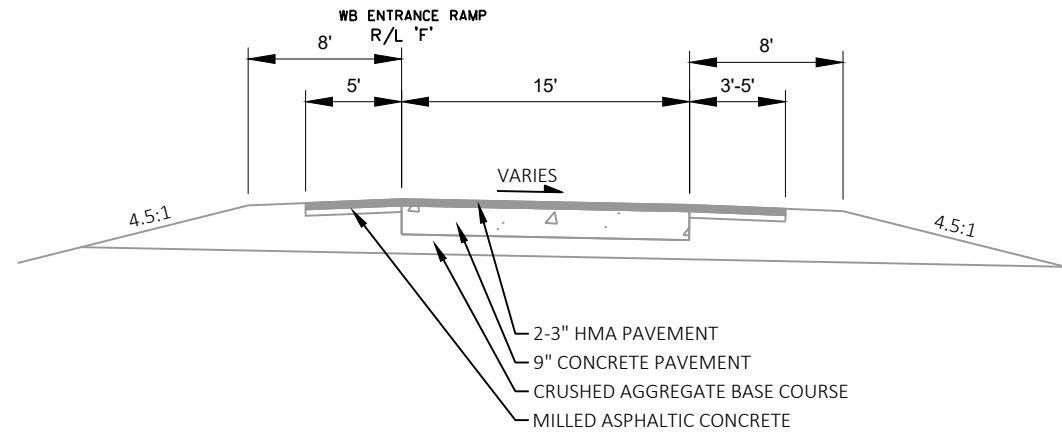
EXISTING TYPICAL RAMP SECTION

852+40E TO 855+23E



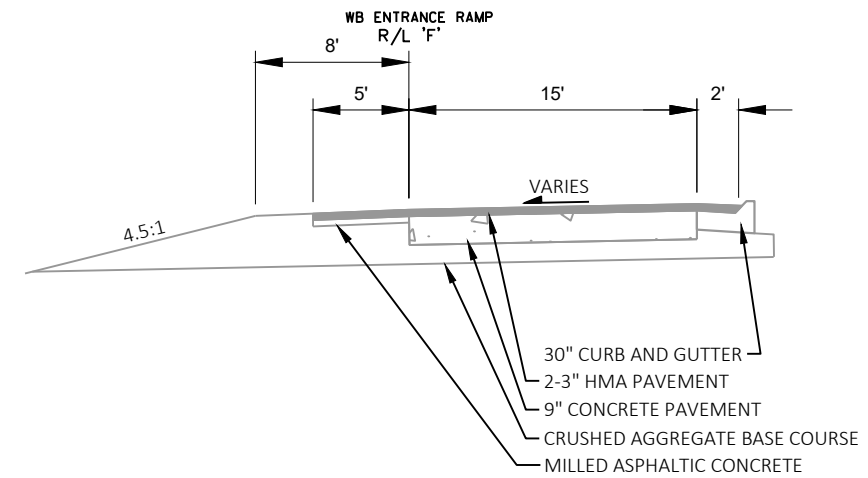
EXISTING TYPICAL RAMP SECTION

855+23E TO 861+84E



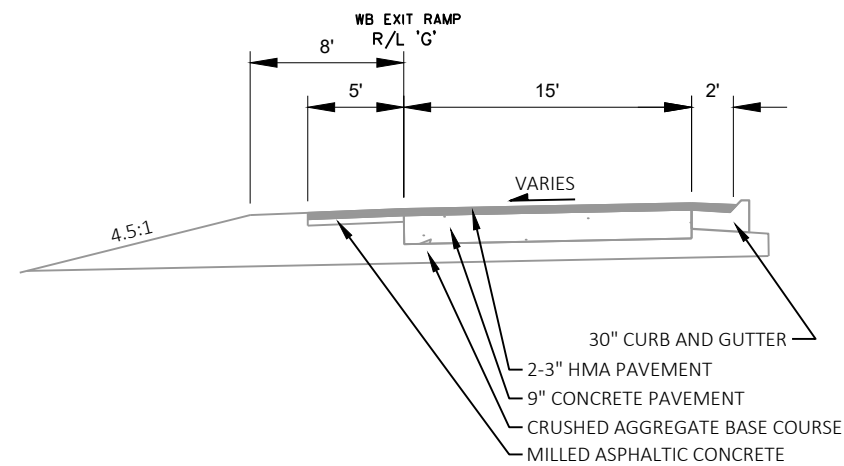
EXISTING TYPICAL RAMP SECTION

851+59F TO 858+57F



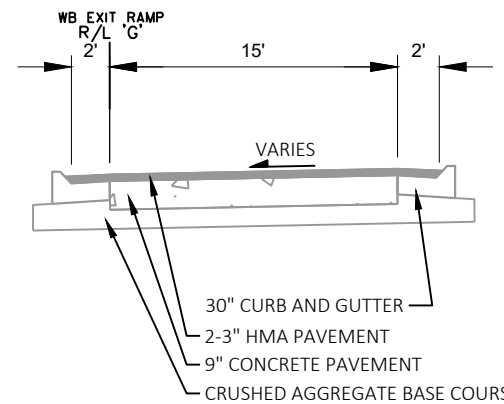
EXISTING TYPICAL RAMP SECTION

858+57F TO 866+40F



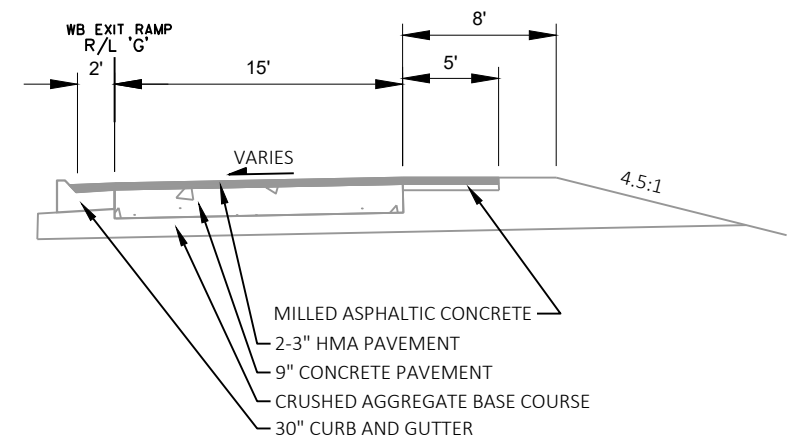
EXISTING TYPICAL RAMP SECTION

848+45G TO 853+74G



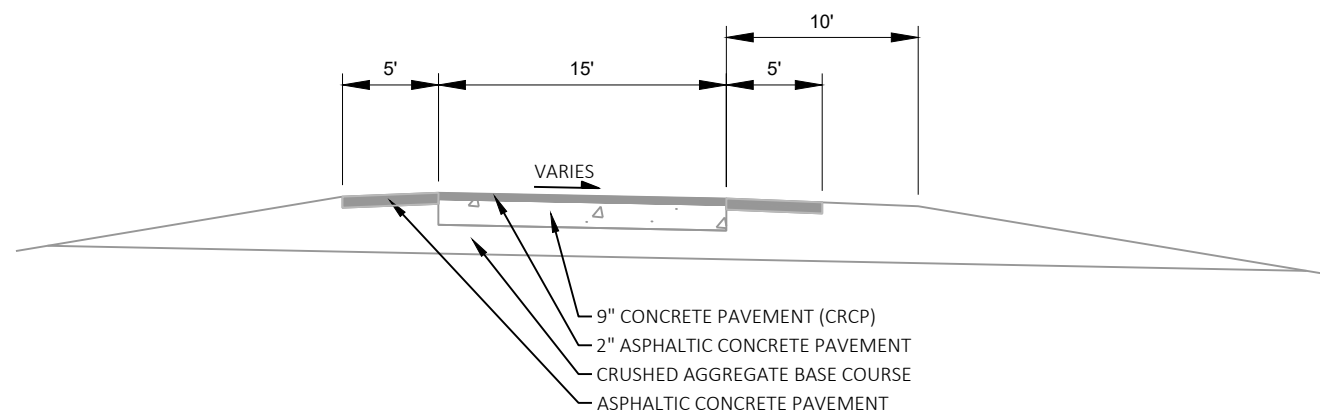
EXISTING TYPICAL RAMP SECTION

853+74G TO 856+23G



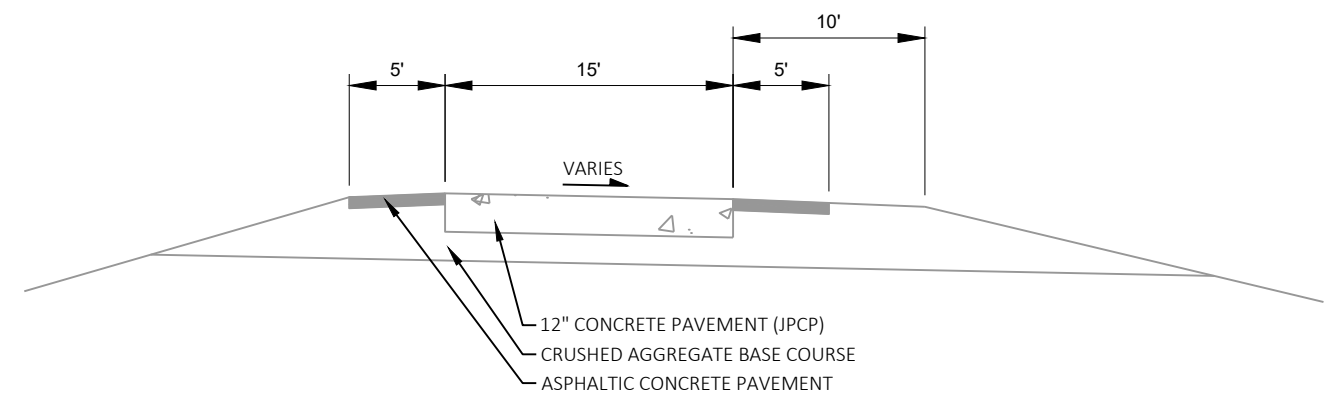
EXISTING TYPICAL RAMP SECTION

856+23G TO 861+90G



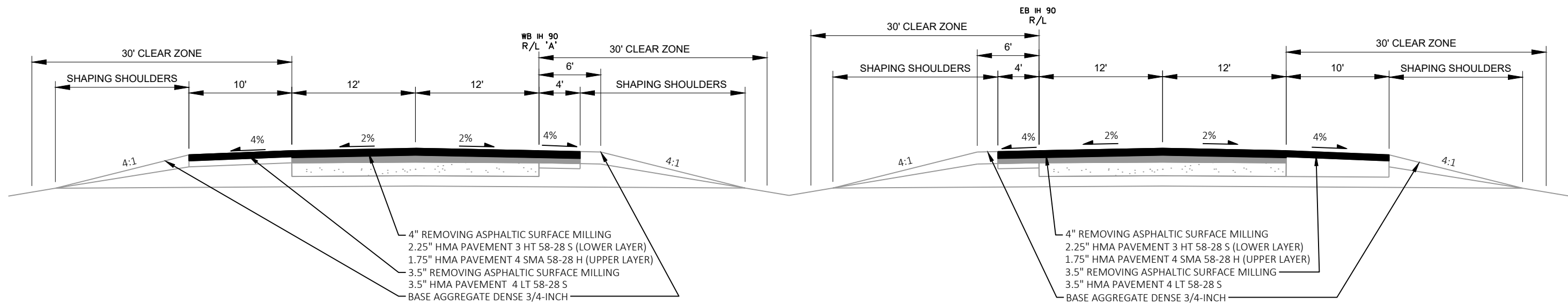
EXISTING TYPICAL REST AREA RAMP SECTION

1086+93 TO 1095+04



EXISTING TYPICAL REST AREA RAMP SECTION

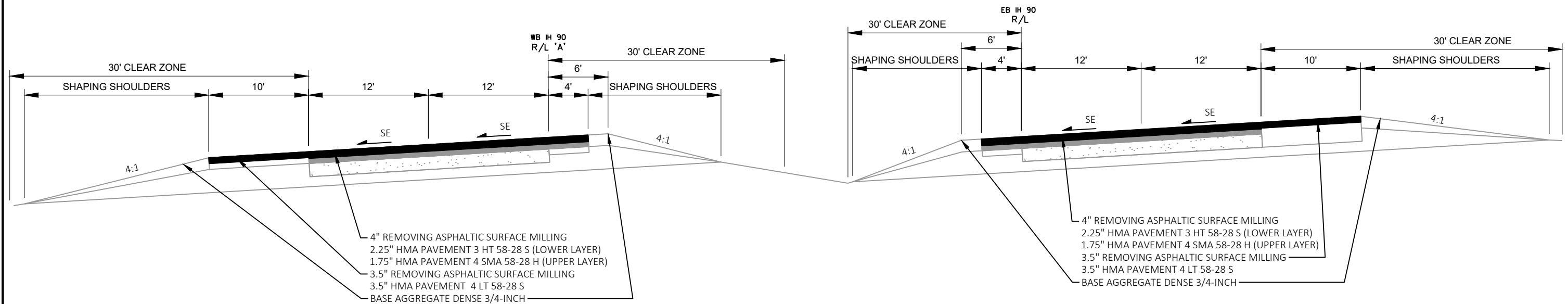
1116+53 TO 1129+00



PROPOSED TYPICAL TANGENT SECTION

702+52 - 765+63
775+38 - 801+57
813+32 - 825+73
851+16 - 883+30
896+27 - 1026+74
1050+69 - 1115+36

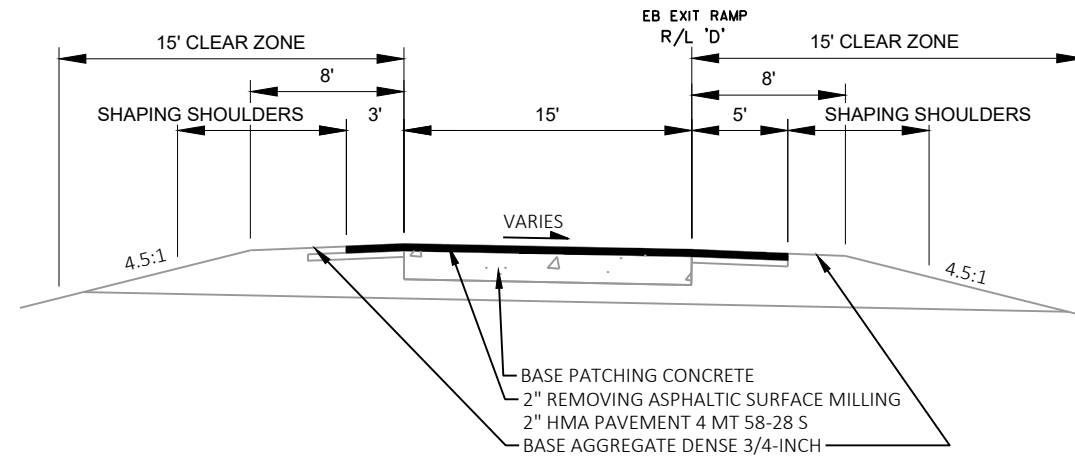
702+36A - 764+62A
774+72A - 801+18A
811+20A - 826+03A
851+80A - 882+96A
895+72A - 1029+20A
1051+32A - 1055+79A
1066+35A - 1115+19A



PROPOSED TYPICAL SUPERELEVATED SECTION

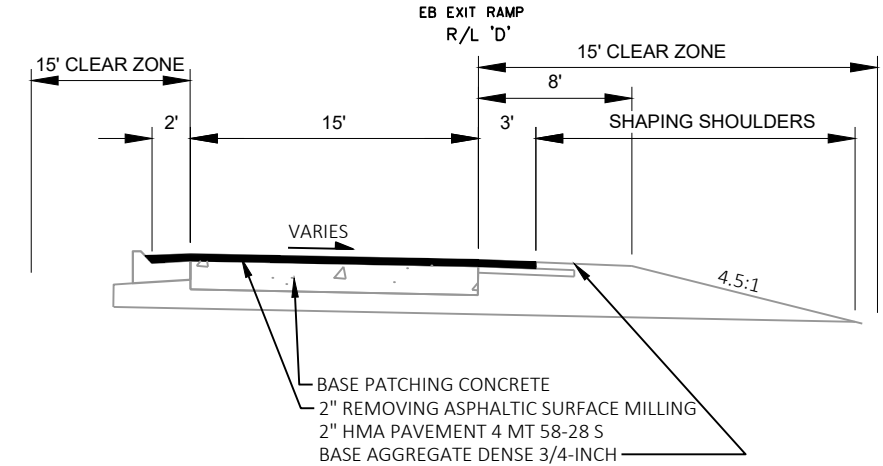
765+63 - 775+38
801+57 - 813+32
825+73 - 851+16
883+30 - 896+27
1026+74 - 1050+69

764+62A - 774+72A
801+18A - 811+20A
826+03A - 851+80A
882+96A - 895+72A
1029+20A - 1051+32A
1055+79A - 1066+35A



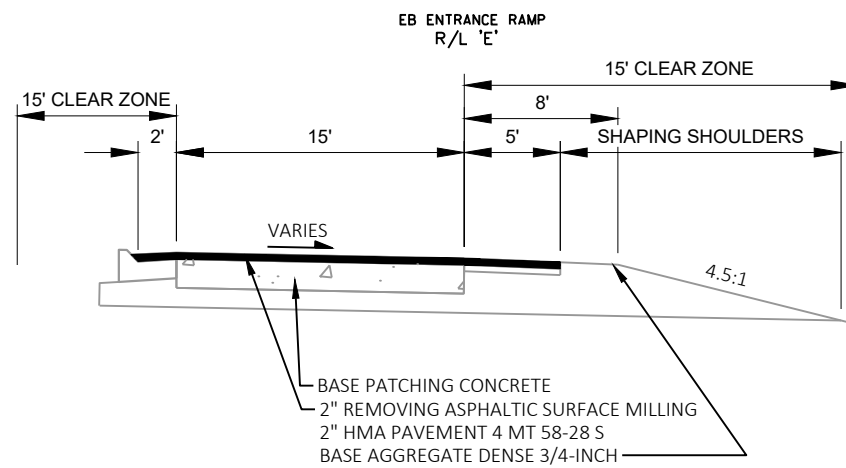
PROPOSED TYPICAL RAMP SECTION

851+61D TO 858+65D



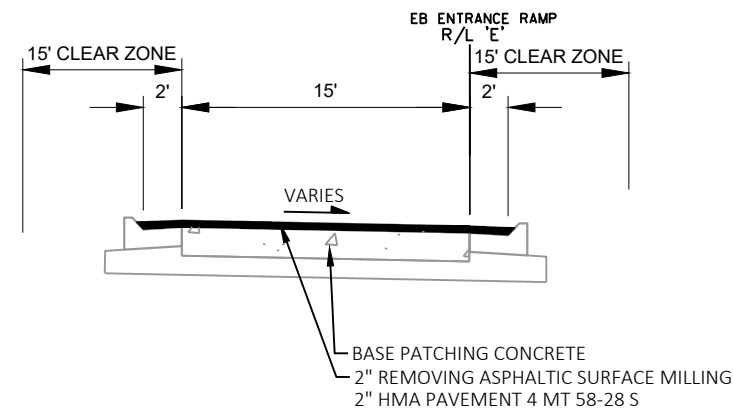
PROPOSED TYPICAL RAMP SECTION

858+65D TO 867+08D



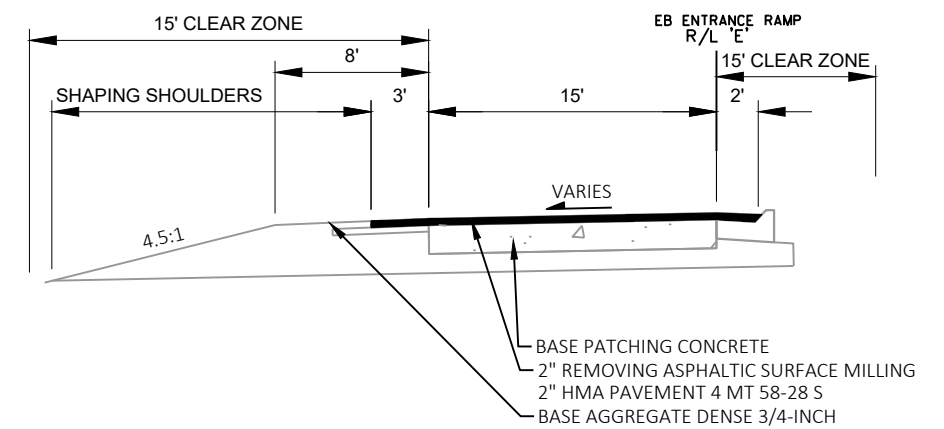
PROPOSED TYPICAL RAMP SECTION

848+08E TO 852+40E



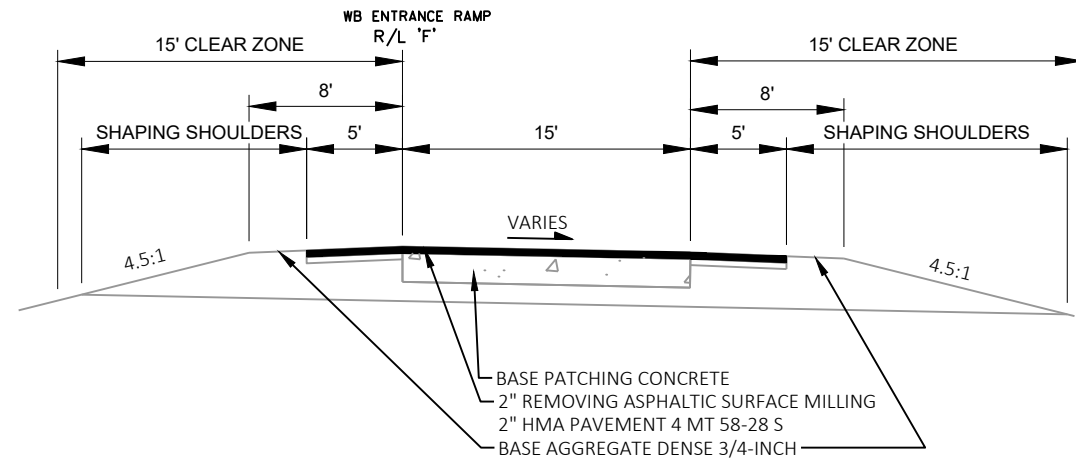
PROPOSED TYPICAL RAMP SECTION

852+40E TO 855+23E



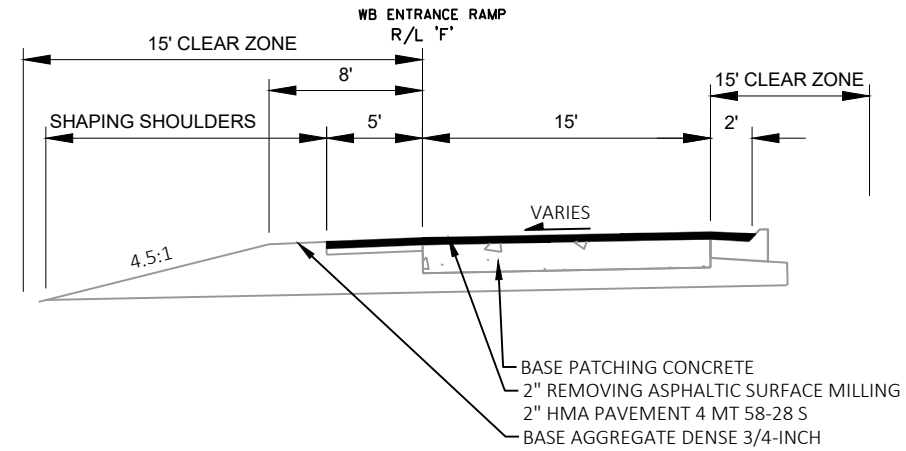
PROPOSED TYPICAL RAMP SECTION

855+23E TO 861+84E



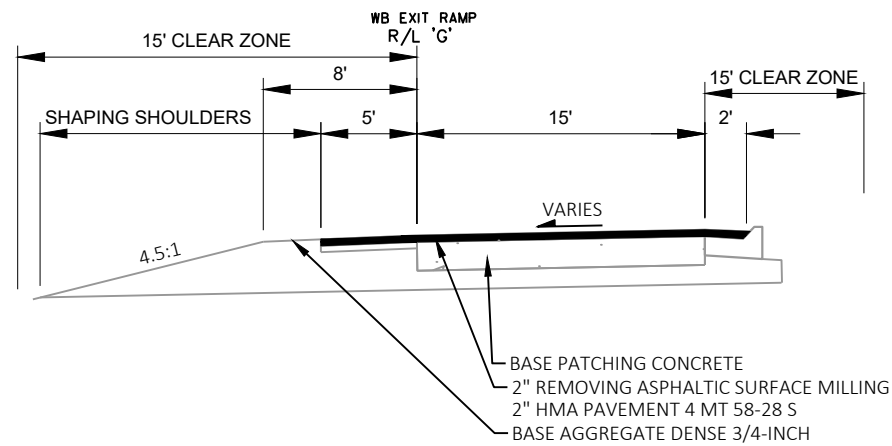
PROPOSED TYPICAL RAMP SECTION

851+59F TO 858+57F



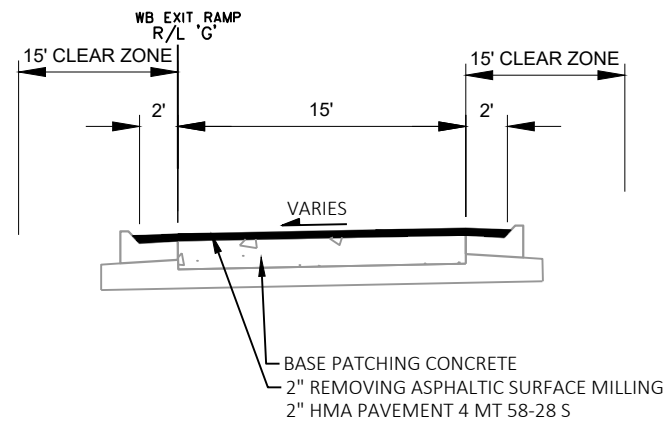
PROPOSED TYPICAL RAMP SECTION

858+57F TO 866+40F



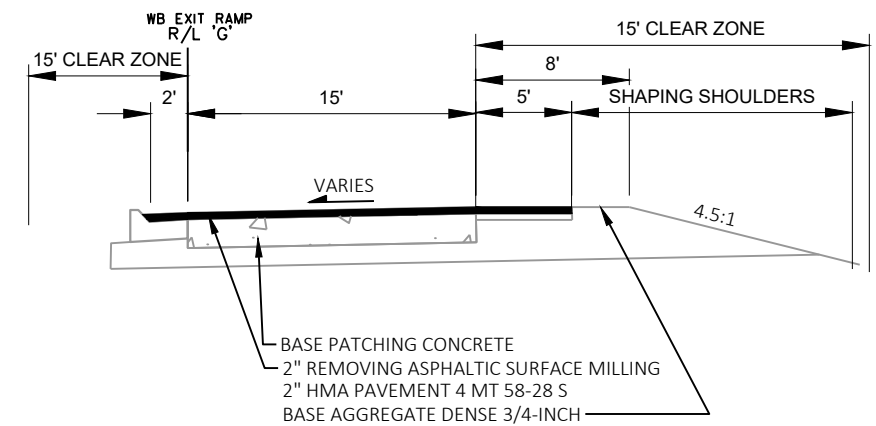
PROPOSED TYPICAL RAMP SECTION

848+42G TO 853+75G



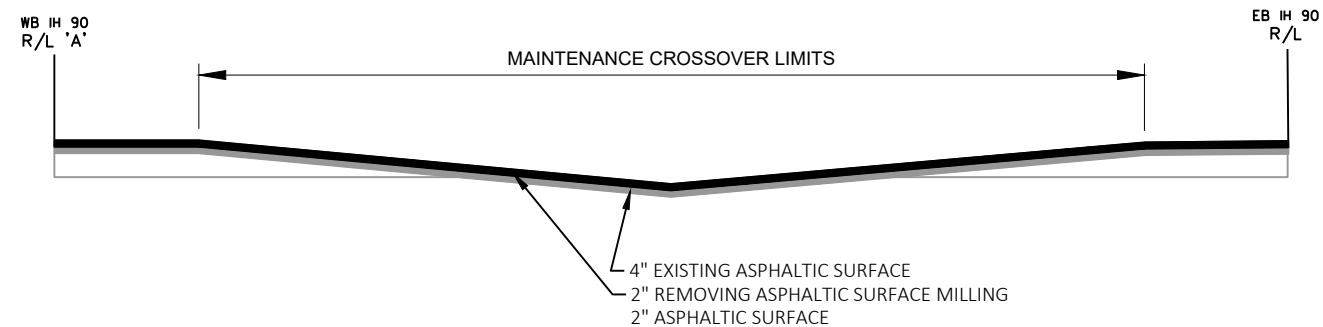
PROPOSED TYPICAL RAMP SECTION

853+75G TO 856+23G

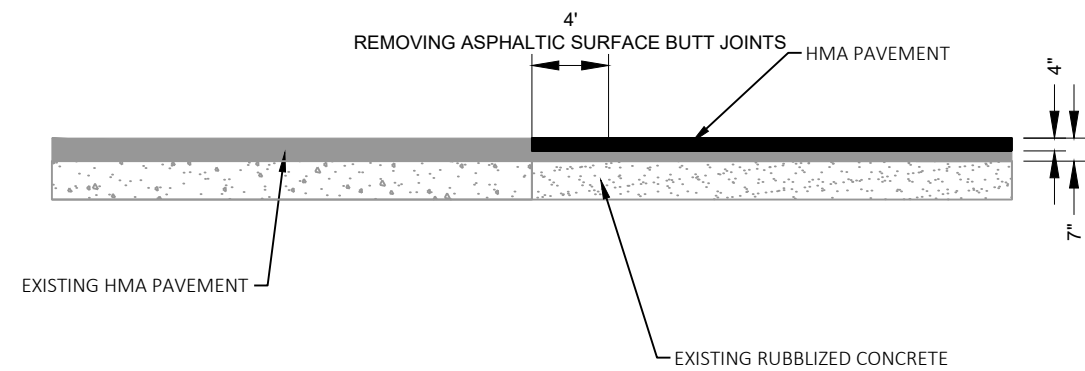


PROPOSED TYPICAL RAMP SECTION

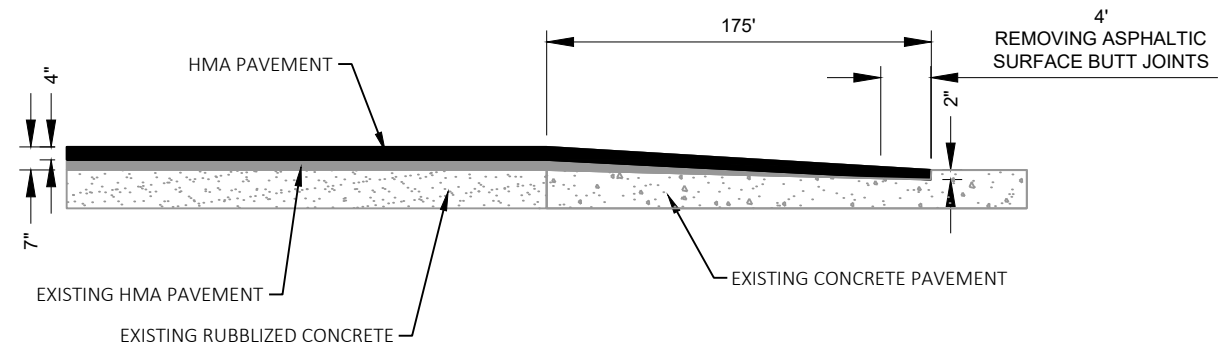
856+23G TO 861+90G



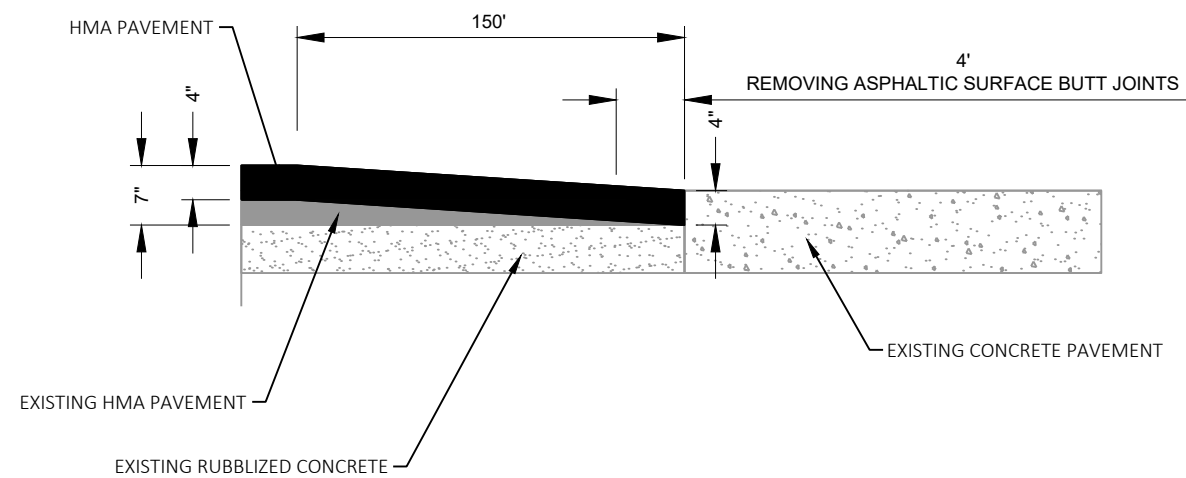
PROPOSED TYPICAL MAINTENANCE CROSSOVER

**BUTT JOINT DETAIL**

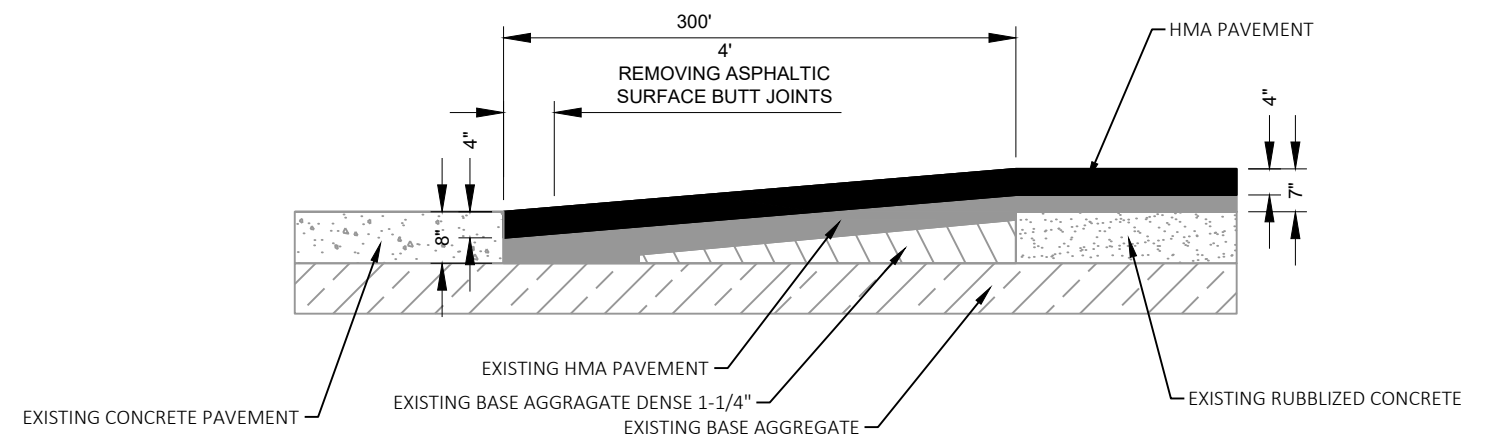
STATION 702+52 - STATION 702+56
STATION 702+36A - STATION 702+40A

**BUTT JOINT DETAIL**

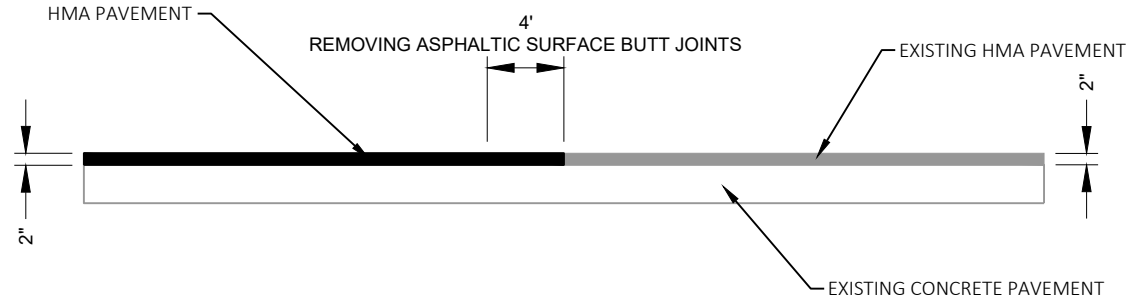
STATION 1115+32 - STATION 1115+36
STATION 1115+15A - STATION 1115+19A

**BUTT JOINT DETAIL**

STATION 863+87 - STATION 863+91
STATION 867+41 - STATION 867+45
STATION 863+54A - STATION 863+58A
STATION 867+52A - STATION 867+56A

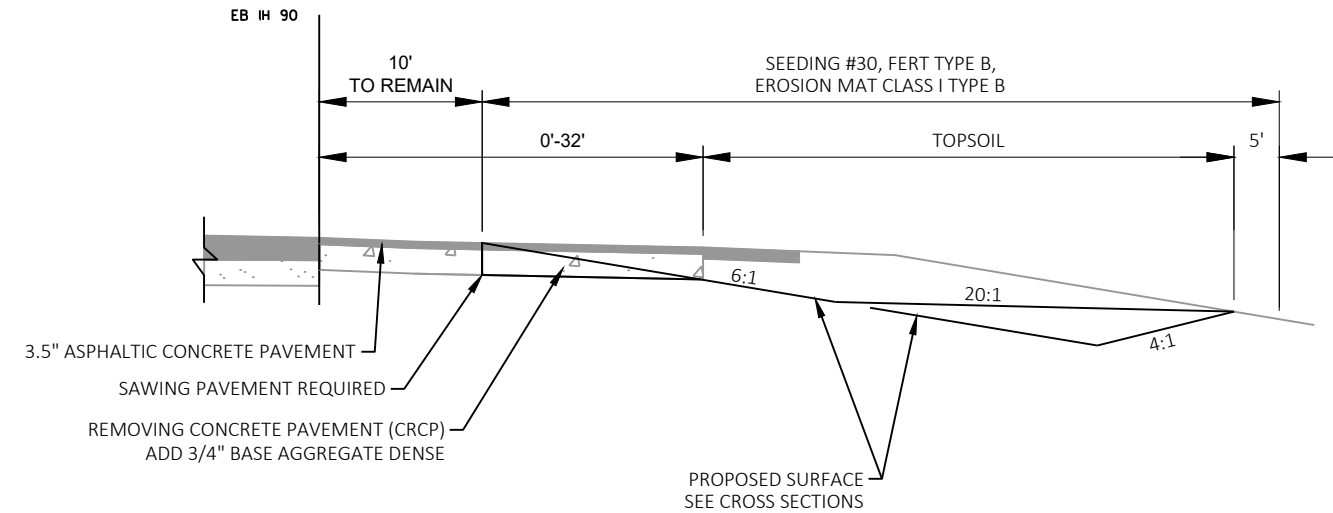
**BUTT JOINT DETAIL**

STATION 782+46 - STATION 782+50
STATION 784+74 - STATION 784+78
STATION 1074+21 - STATION 1074+25
STATION 1075+56 - STATION 1075+60
STATION 783+09A - STATION 783+13A
STATION 784+97A - STATION 785+01A
STATION 1074+00A - STATION 1074+04A
STATION 1075+37A - STATION 1075+42A



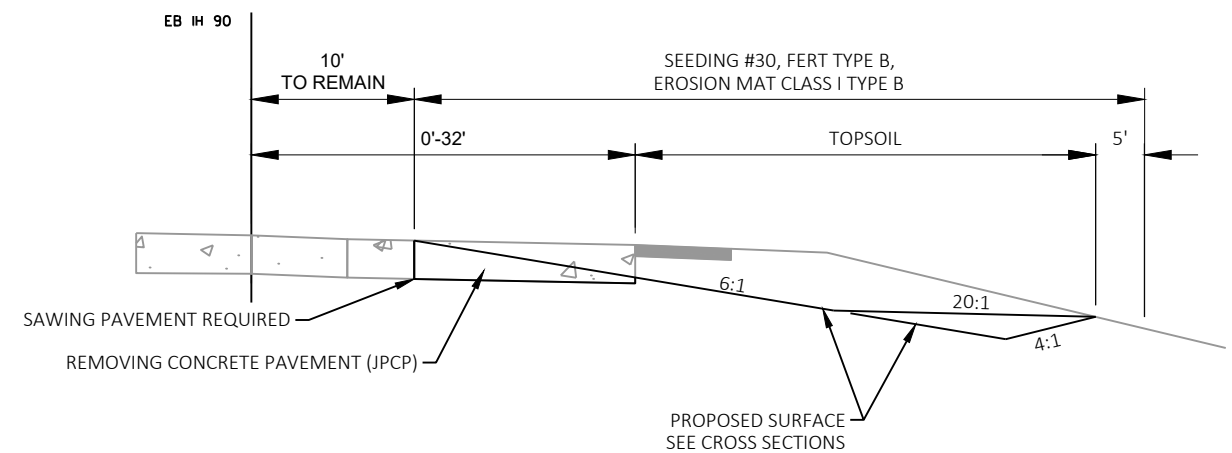
BUTT JOINT DETAIL

STATION 867+04D - STATION 867+08D
STATION 848+08E - STATION 848+12E
STATION 866+36F - STATION 866+40F
STATION 848+42G - STATION 848+46G



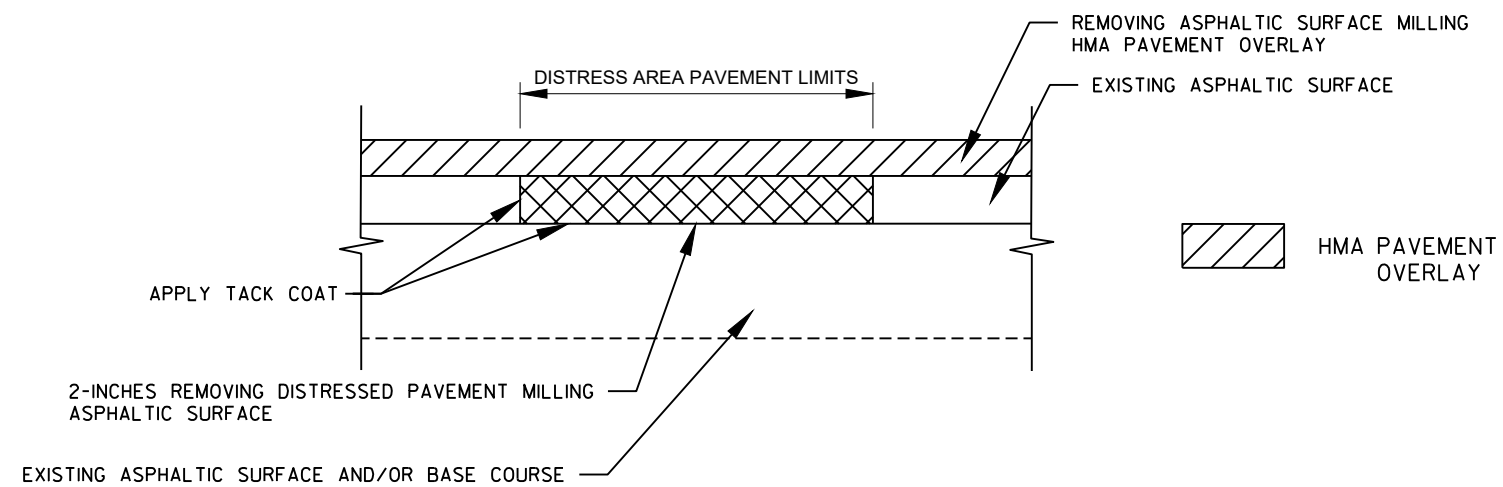
REST AREA ENTRANCE RAMP REMOVALS DETAIL

STATION 1086+93 - STATION 1094+93

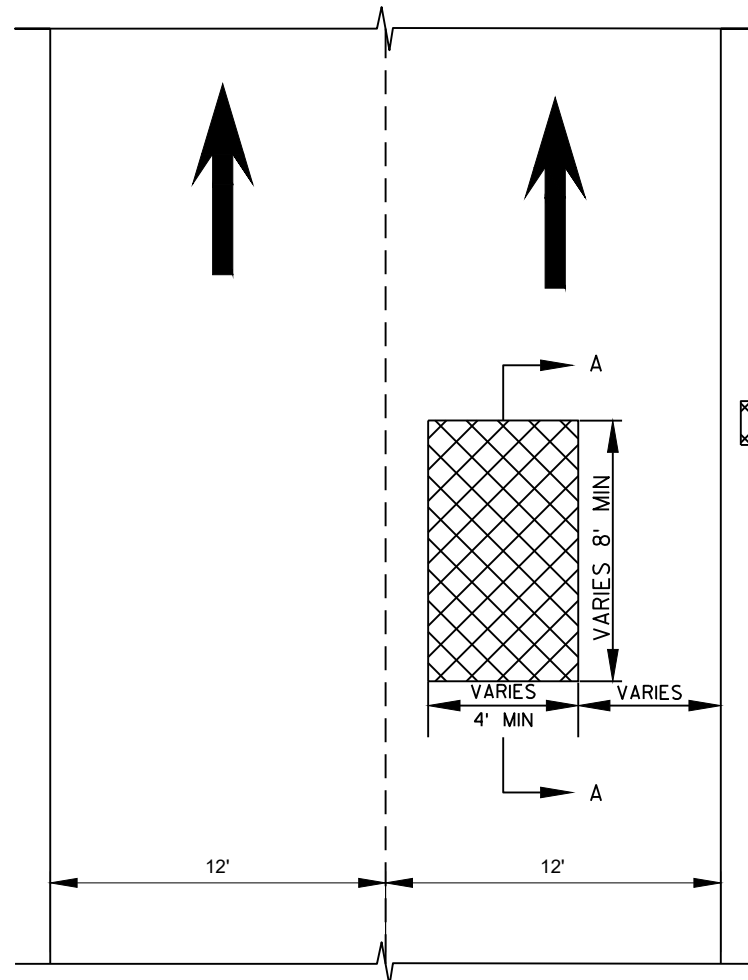


REST AREA EXIT RAMP REMOVALS DETAIL

STATION 1116+70 - STATION 1129+00

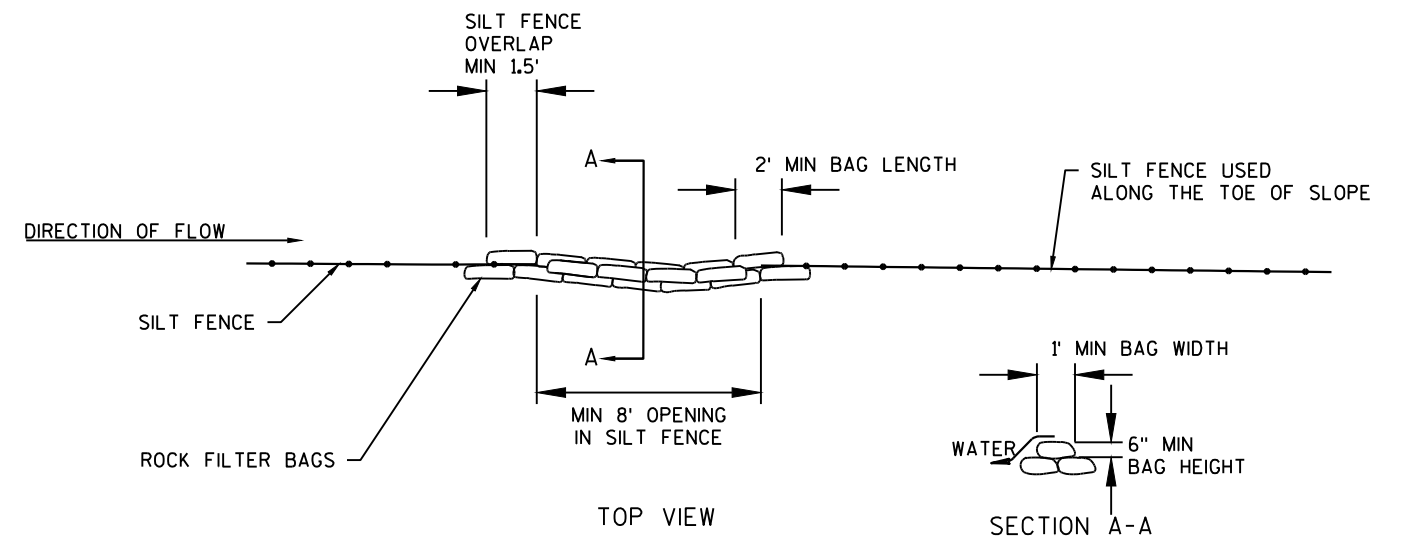


REMOVING DISTRESS PAVEMENT MILLING
SECTION A - A

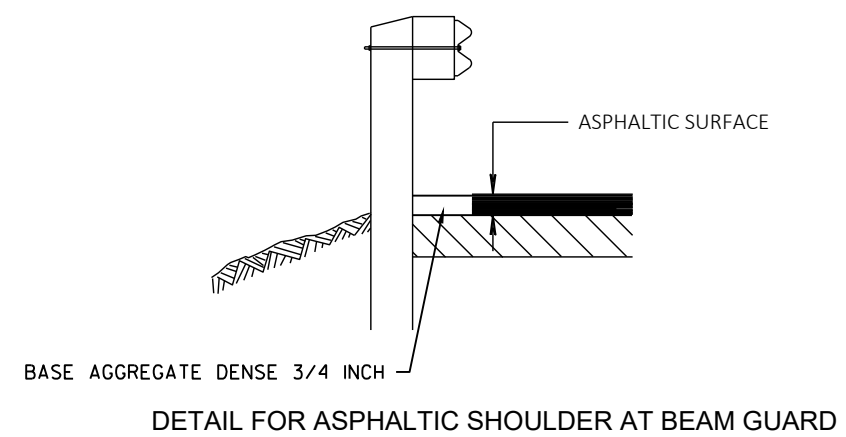


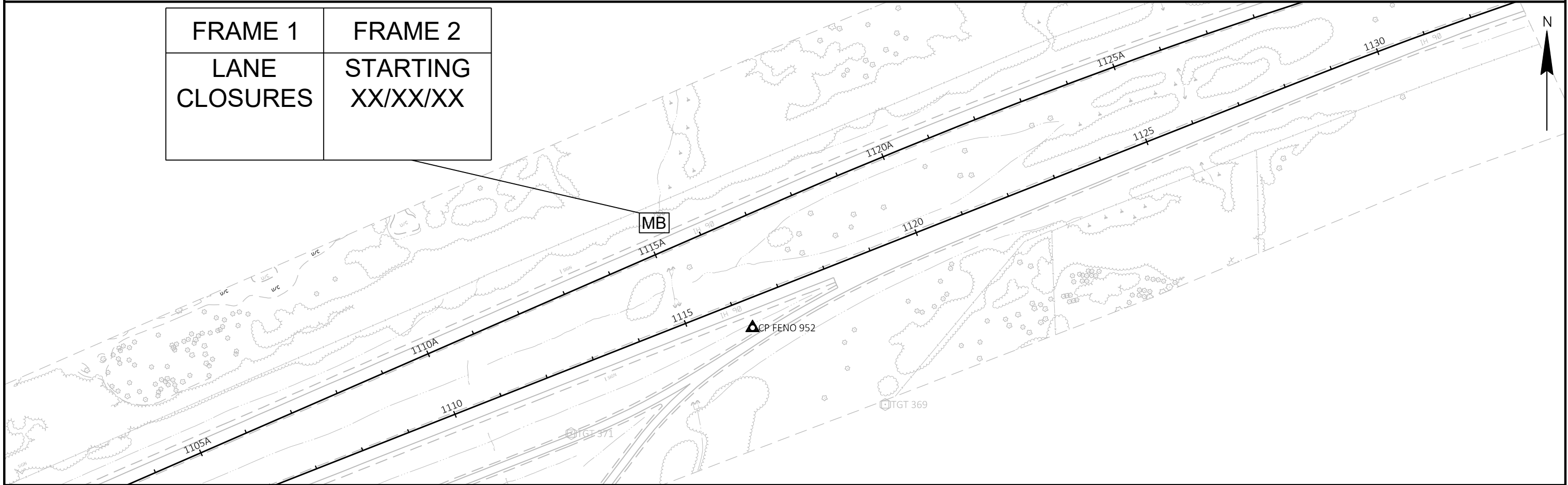
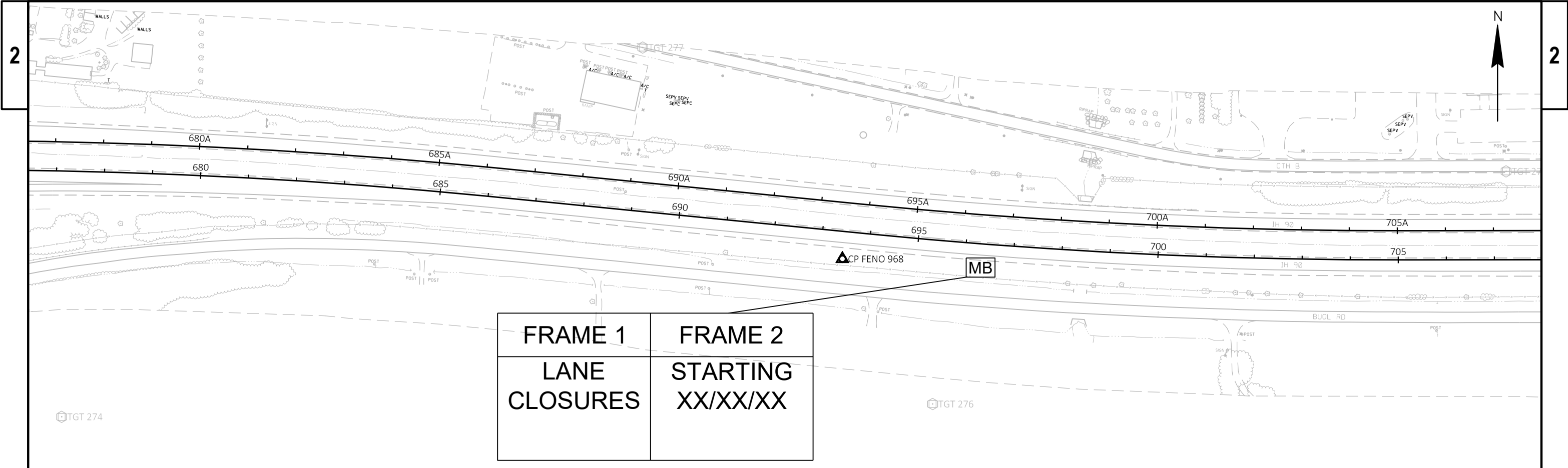
PLANVIEW

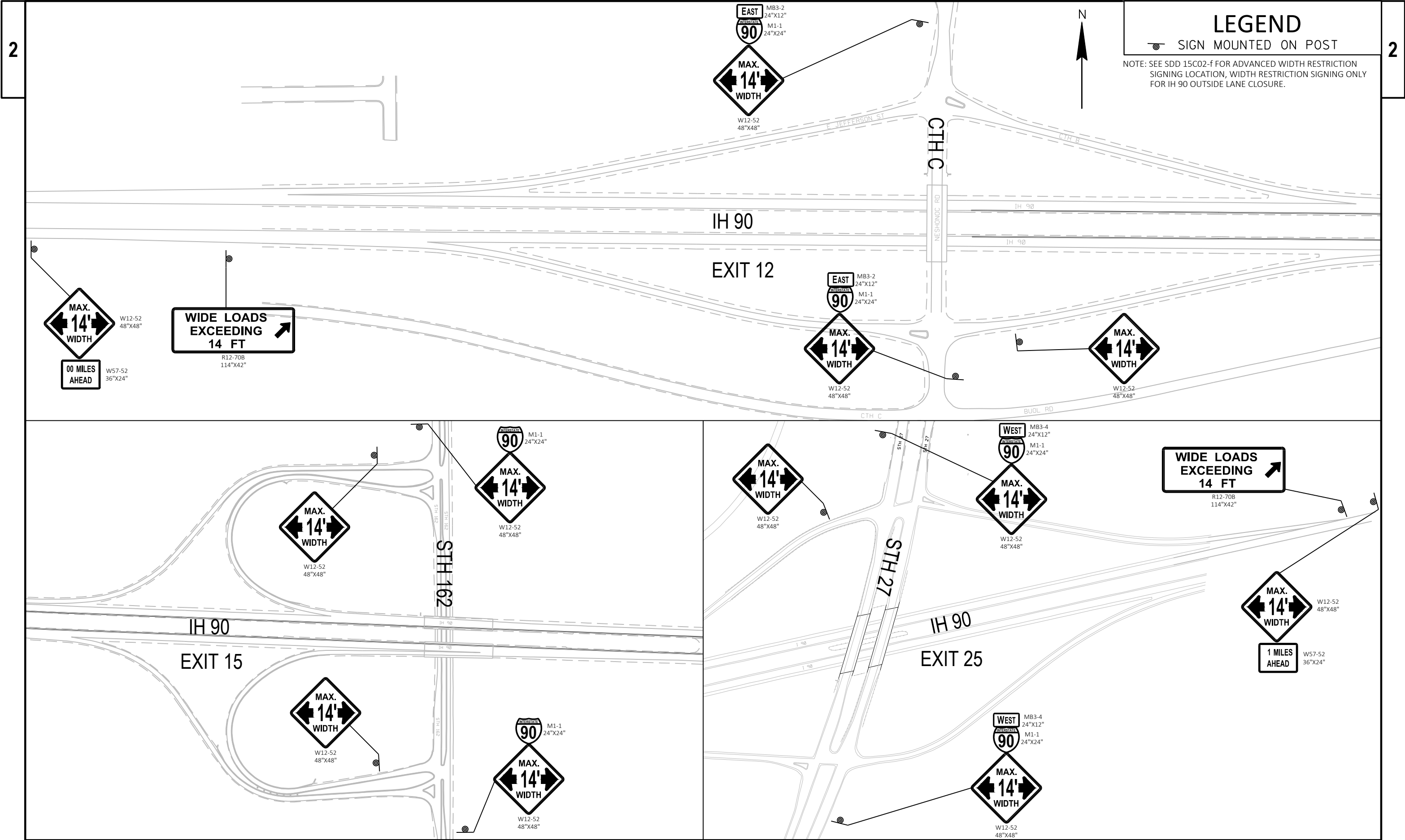
EXACT LOCATION AND LIMITS OF REMOVING DISTRESSED PAVEMENT MILLING TO BE DETERMINED BY THE ENGINEER IN THE FIELD

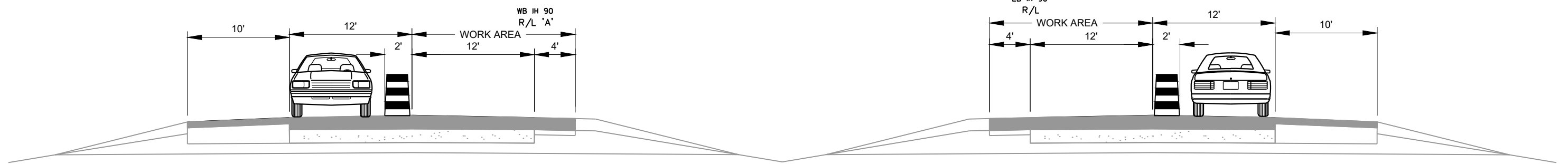


ROCK BAGS USED FOR SILT FENCE RELIEF

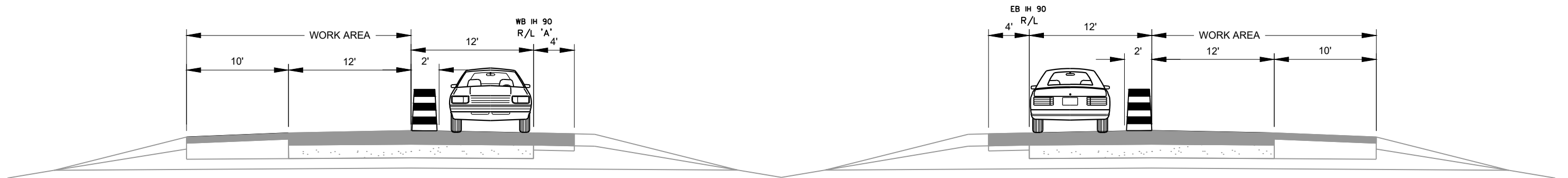








INSIDE LANE CLOSURE



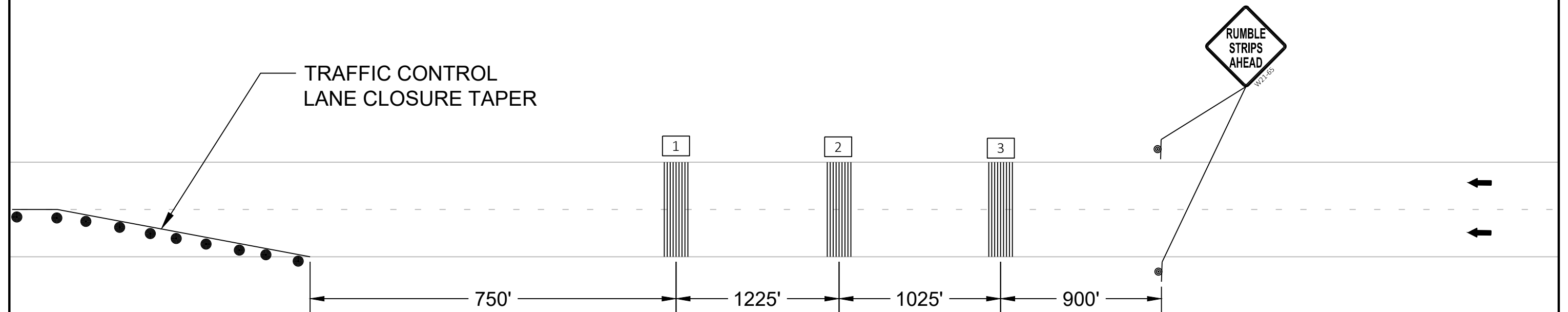
OUTSIDE LANE CLOSURE

2

2 |

LEGEND

- TRAFFIC CONTROL DRUM
- ➔ DIRECTION OF TRAFFIC
- ♫ TRAFFIC CONTROL SIGNS



TRAFFIC CONTROL NOTES

- 1 RUMBLE STRIP ARRAY CONSISTS OF NINE RUMBLE STRIPS SPACED 1.5 FEET
APART PLACED TRANSVERSE ACROSS ALL TRAVEL LANES AT LOCATION SHOWN
- 2 RUMBLE STRIP ARRAY CONSISTS OF NINE RUMBLE STRIPS SPACED 5 FEET
APART PLACED TRANSVERSE ACROSS ALL TRAVEL LANES AT LOCATION SHOWN
- 3 RUMBLE STRIP ARRAY CONSISTS OF NINE RUMBLE STRIPS SPACED 10 FEET
APART PLACED TRANSVERSE ACROSS ALL TRAVEL LANES AT LOCATION SHOWN
INSTALL TEMPORARY RUMBLE STRIPS PER MANUFACTURER'S
RECOMMENDATIONS.

NOTE: SEE SDD 15D12-B FOR TRAFFIC CONTROL LANE CLOSURE SPEED REDUCTION AND SDD 15D12-D FOR TRAFFIC CONTROL LANE CLOSURE BASIC TRAFFIC QUEUE WARNING SYSTEM SET UP. THE TEMPORARY RUMBLE STRIPS FIT INTO THE LANE CLOSURE SDD'S SPACING.

PROJECT NO:	1074-00-72
-------------	------------

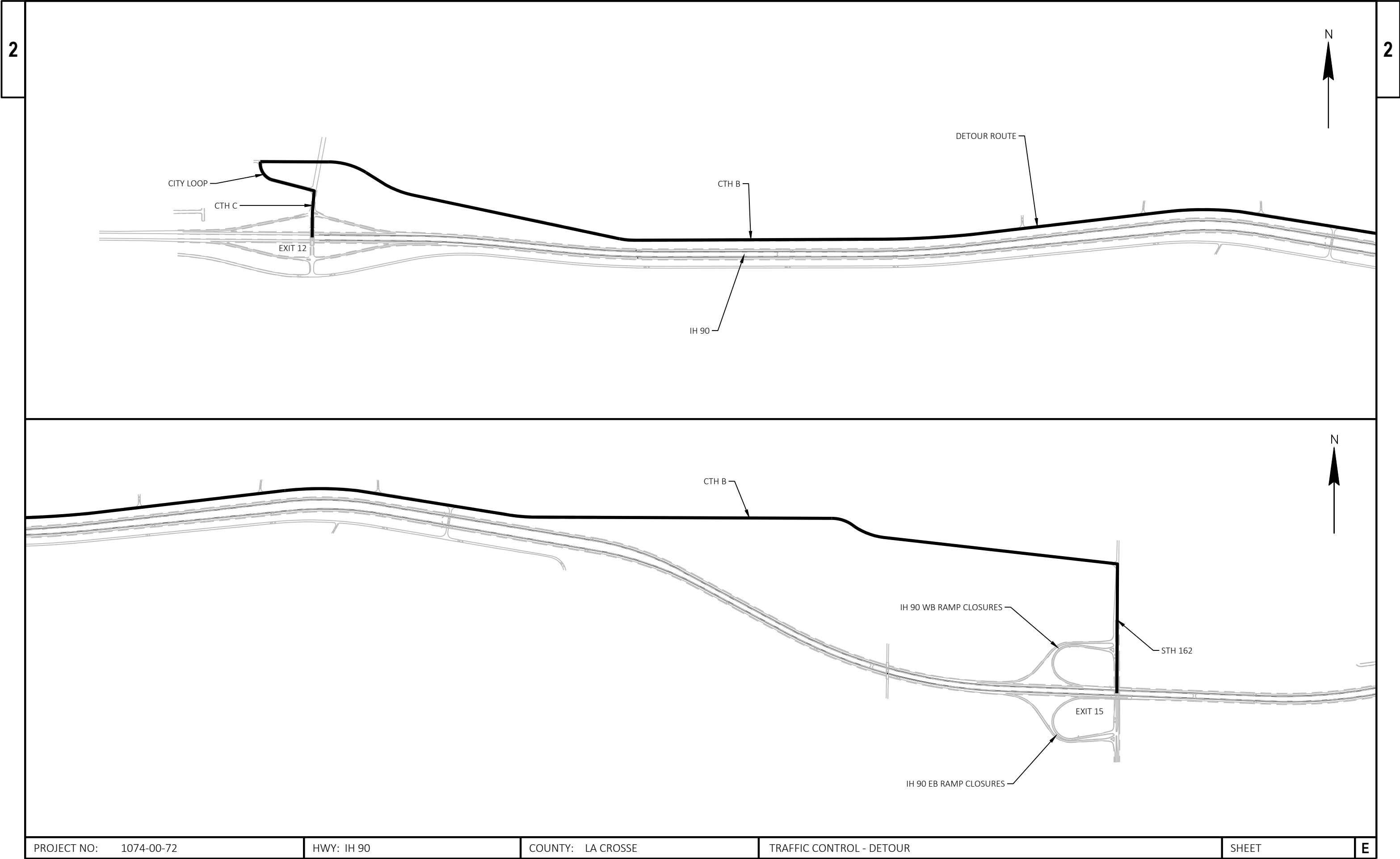
HWY: IH 90

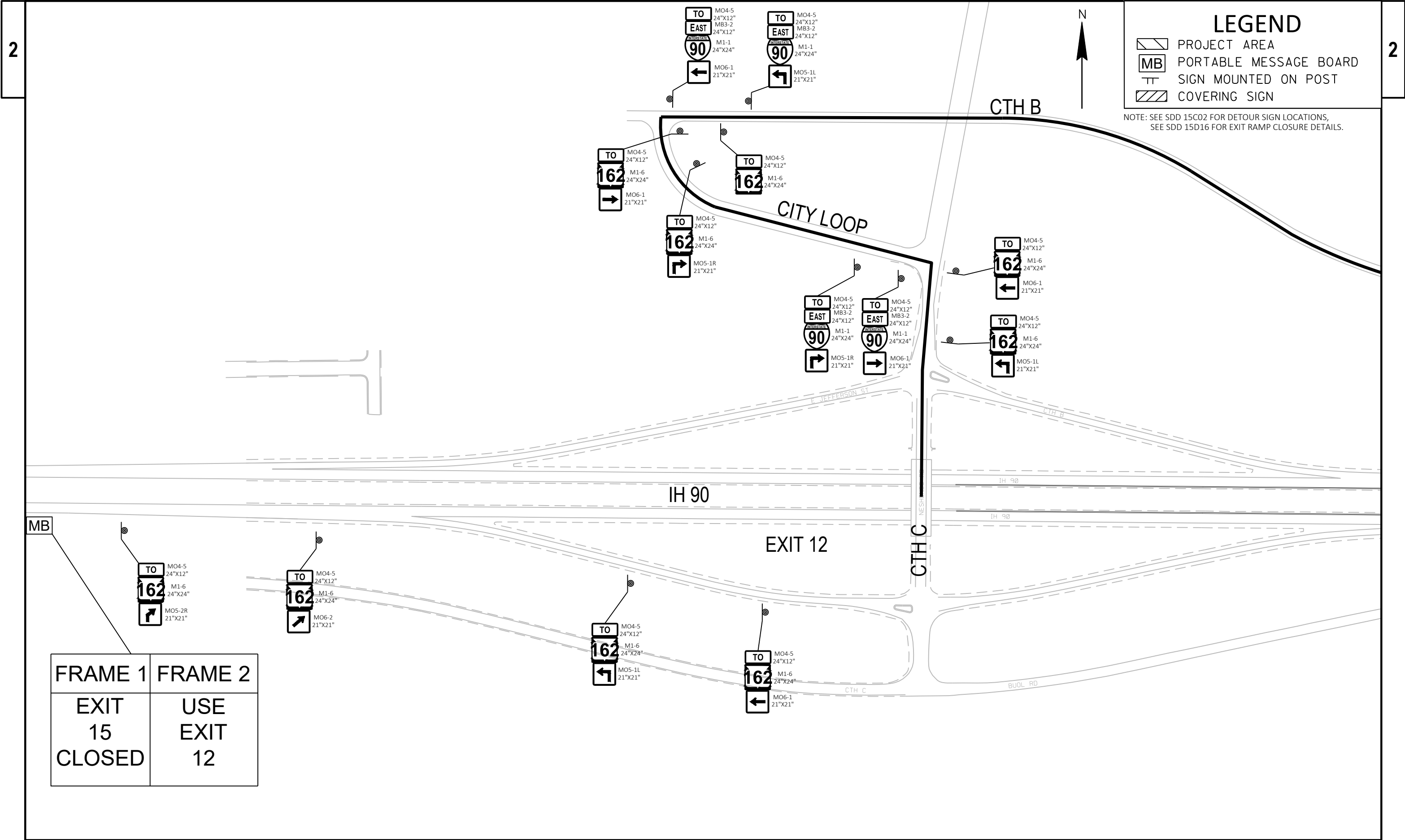
COUNTY: LA CROSSE

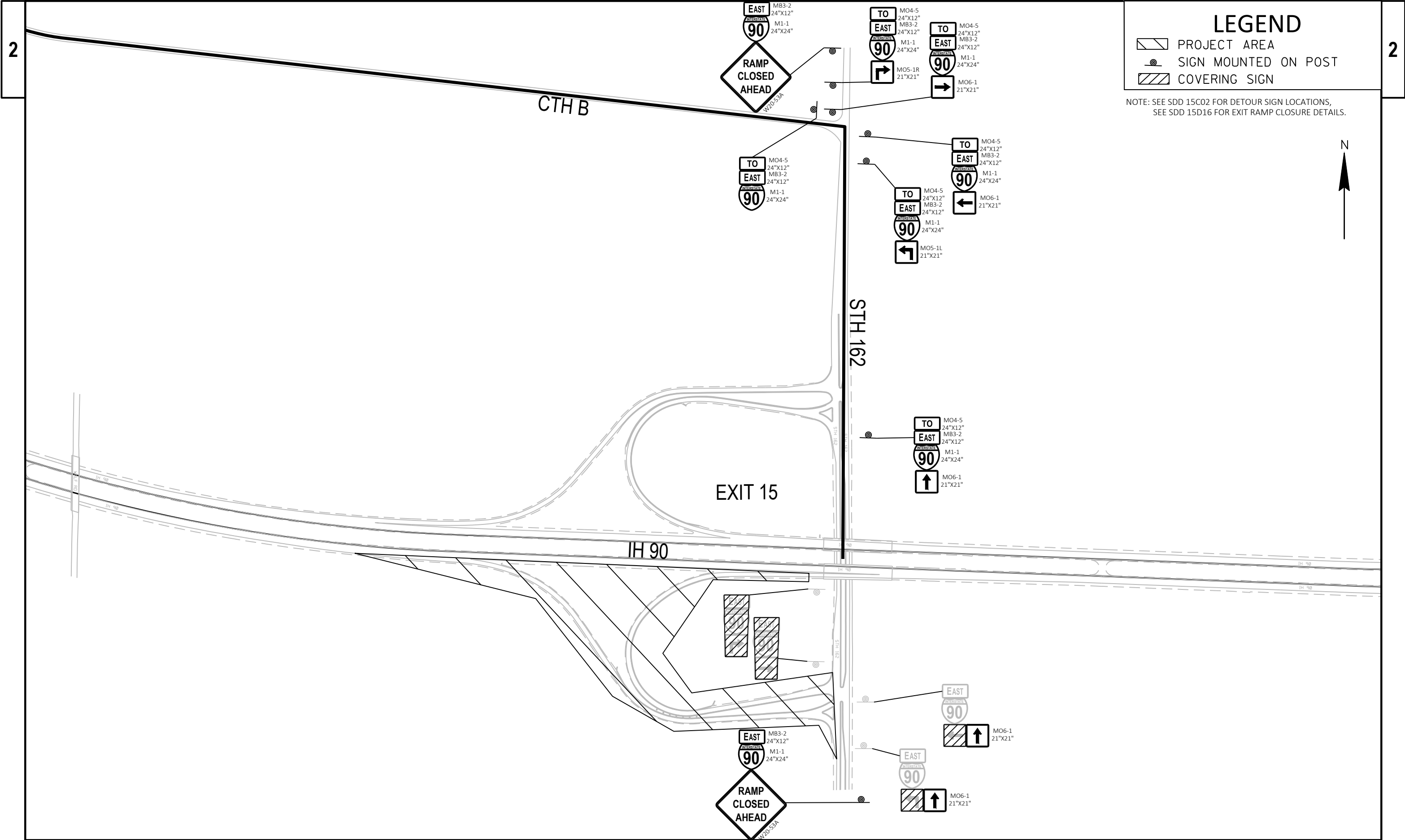
TRAFFIC CONTROL - TEMPORARY RUMBLE STRIPS

SHEET

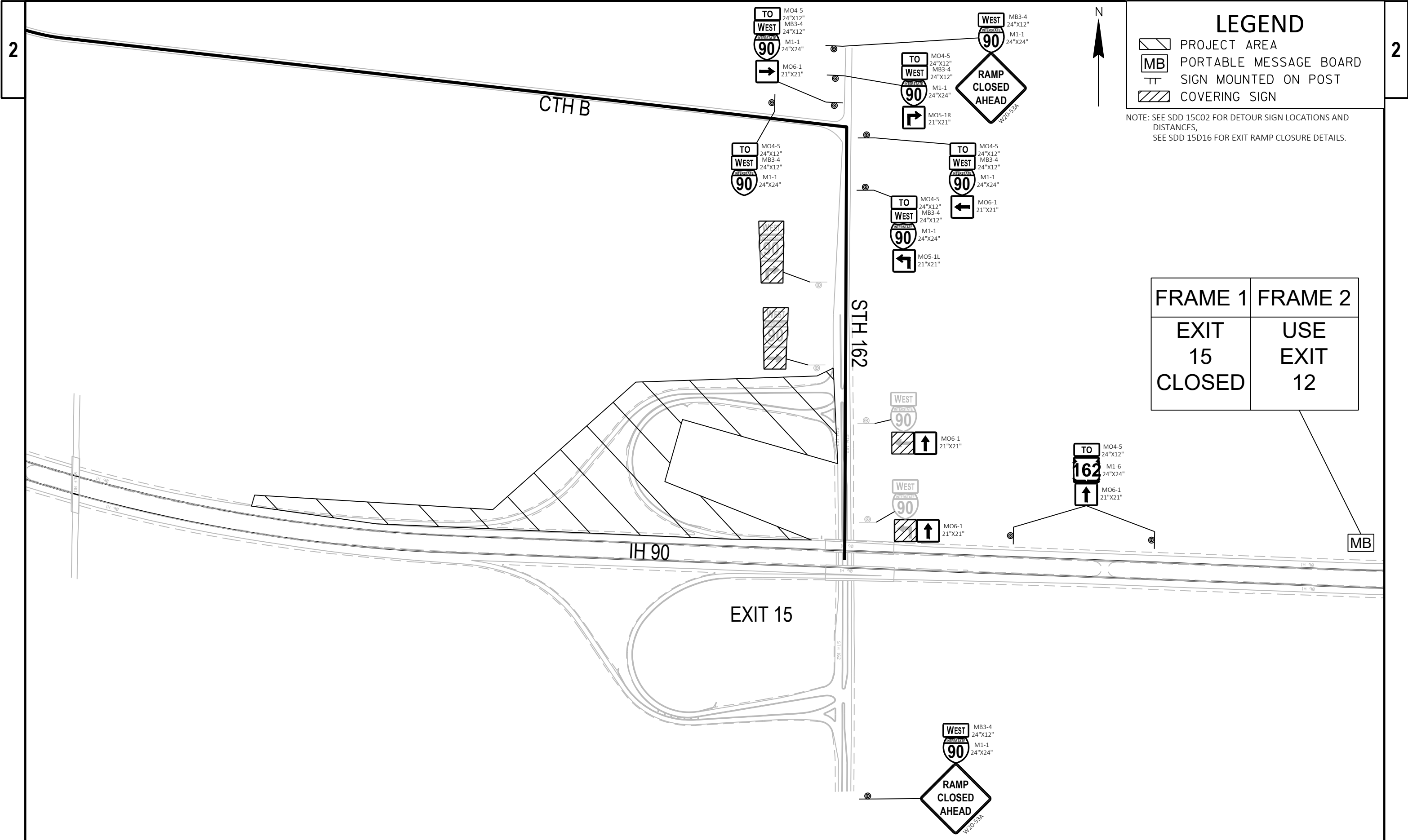
3

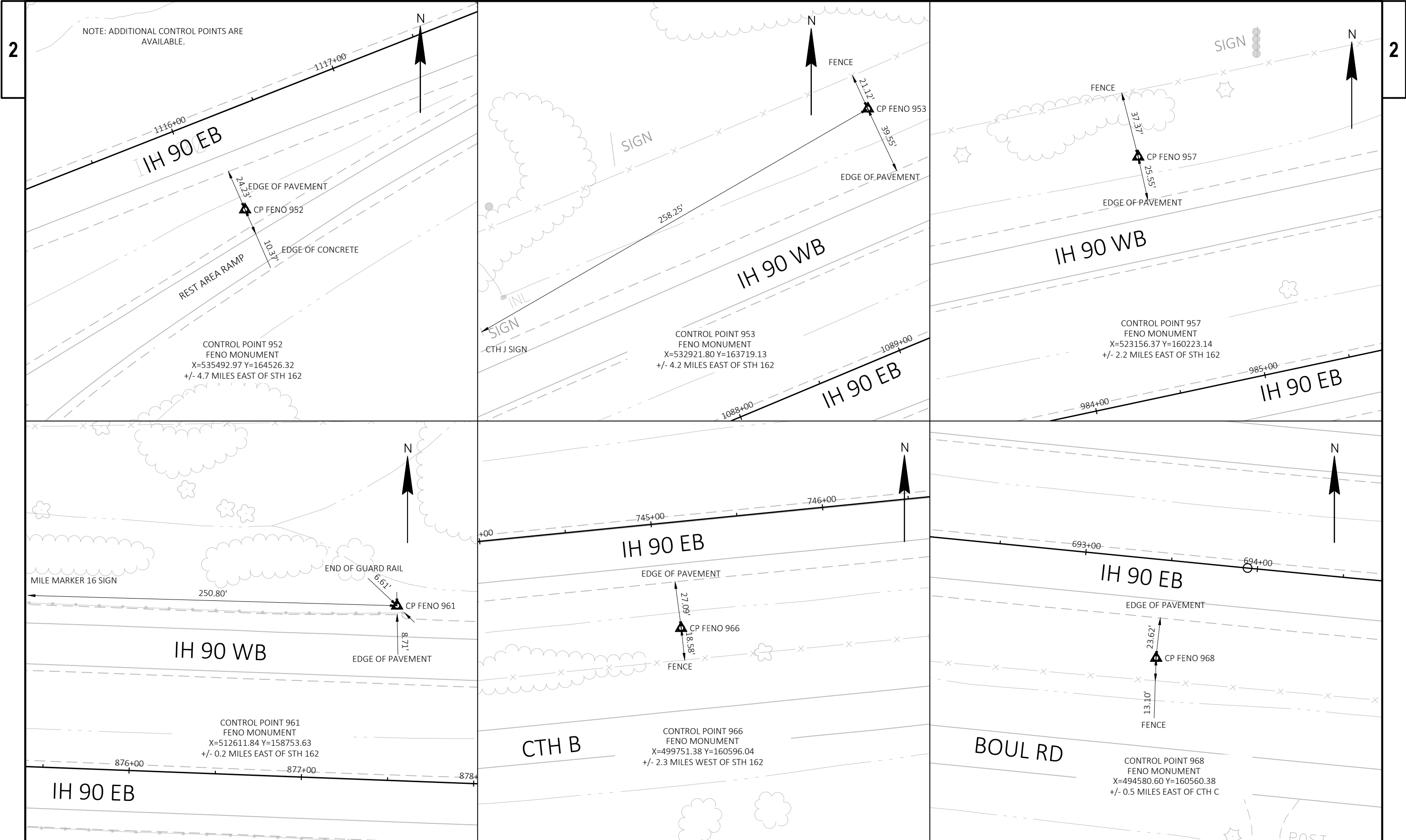












PROJECT NO: 1074-00-72	HWY: IH 90	COUNTY: LA CROSSE	CONTROL POINTS	SHEET	E
------------------------	------------	-------------------	----------------	-------	---

Estimate Of Quantities

1074-00-72					
Line	Item	Item Description	Unit	Total	Qty
0002	204.0100	Removing Concrete Pavement	SY	1,664.000	1,664.000
0004	204.0110	Removing Asphaltic Surface	SY	1,204.000	1,204.000
0006	204.0115	Removing Asphaltic Surface Butt Joints	SY	500.000	500.000
0008	204.0120	Removing Asphaltic Surface Milling	SY	361,304.000	361,304.000
0010	204.0170	Removing Fence	LF	80,233.000	80,233.000
0012	204.0180	Removing Delineators and Markers	EACH	31.000	31.000
0014	205.0100	Excavation Common	CY	1,787.000	1,787.000
0016	211.0100	Prepare Foundation for Asphaltic Paving (project) 01. 1074-00-72	LS	1.000	1.000
0018	213.0100	Finishing Roadway (project) 01. 1074-00-72	EACH	1.000	1.000
0020	305.0110	Base Aggregate Dense 3/4-Inch	TON	1,676.000	1,676.000
0022	305.0500	Shaping Shoulders	STA	1,707.000	1,707.000
0024	390.0303	Base Patching Concrete	SY	300.000	300.000
0026	416.0610	Drilled Tie Bars	EACH	116.000	116.000
0028	416.0620	Drilled Dowel Bars	EACH	600.000	600.000
0030	450.4000	HMA Cold Weather Paving	TON	4,500.000	4,500.000
0032	455.0605	Tack Coat	GAL	36,012.000	36,012.000
0034	460.0105.S	HMA Percent Within Limits (PWL) Test Strip Volumetrics	EACH	1.000	1.000
0036	460.0110.S	HMA Percent Within Limits (PWL) Test Strip Density	EACH	1.000	1.000
0038	460.0115.S	HMA Pavement Test Strips Volumetrics	EACH	1.000	1.000
0040	460.0120.S	HMA Pavement Test Strips Density	EACH	1.000	1.000
0042	460.2000	Incentive Density HMA Pavement	DOL	53,630.000	53,630.000
0044	460.2007	Incentive Density HMA Pavement Longitudinal Joints	DOL	45,230.000	45,230.000
0046	460.5224	HMA Pavement 4 LT 58-28 S	TON	17,058.000	17,058.000
0048	460.6224	HMA Pavement 4 MT 58-28 S	TON	2,273.000	2,273.000
0050	460.7223	HMA Pavement 3 HT 58-28 S	TON	35,397.000	35,397.000
0052	460.8424	HMA Pavement 4 SMA 58-28 H	TON	27,536.000	27,536.000
0054	465.0105	Asphaltic Surface	TON	1,212.000	1,212.000
0056	465.0400	Asphaltic Shoulder Rumble Strips	LF	159,934.000	159,934.000
0058	509.1500	Concrete Surface Repair	SF	30.000	30.000
0060	509.5100.S	Polymer Overlay	SY	448.000	448.000
0062	520.8700	Cleaning Culvert Pipes	EACH	8.000	8.000
0064	522.1060	Apron Endwalls for Culvert Pipe Reinforced Concrete 60-Inch	EACH	1.000	1.000
0066	524.0118	Culvert Pipe Salvaged 18-Inch	LF	36.000	36.000
0068	524.0148	Culvert Pipe Salvaged 48-Inch	LF	6.000	6.000
0070	524.0618	Apron Endwalls for Culvert Pipe Salvaged 18-Inch	EACH	7.000	7.000
0072	524.0624	Apron Endwalls for Culvert Pipe Salvaged 24-Inch	EACH	1.000	1.000
0074	524.0648	Apron Endwalls for Culvert Pipe Salvaged 48-Inch	EACH	4.000	4.000
0076	616.0100	Fence Woven Wire (height) 01. 4.5 FT	LF	78,299.000	78,299.000

Estimate Of Quantities

1074-00-72

Line	Item	Item Description	Unit	Total	Qty
0078	616.0206	Fence Chain Link 6-FT	LF	4,737.000	4,737.000
0080	616.0329	Gates Chain Link (width) 01. 3.5 FT	EACH	1.000	1.000
0082	618.0100	Maintenance And Repair of Haul Roads (project) 01. 1074-00-72	EACH	1.000	1.000
0084	619.1000	Mobilization	EACH	1.000	1.000
0086	624.0100	Water	MGAL	40.000	40.000
0088	625.0100	Topsoil	SY	5,520.000	5,520.000
0090	625.0500	Salvaged Topsoil	SY	273.000	273.000
0092	628.1504	Silt Fence	LF	1,665.000	1,665.000
0094	628.1520	Silt Fence Maintenance	LF	1,665.000	1,665.000
0096	628.1905	Mobilizations Erosion Control	EACH	3.000	3.000
0098	628.1910	Mobilizations Emergency Erosion Control	EACH	3.000	3.000
0100	628.2004	Erosion Mat Class I Type B	SY	14,173.000	14,173.000
0102	628.7504	Temporary Ditch Checks	LF	60.000	60.000
0104	628.7555	Culvert Pipe Checks	EACH	30.000	30.000
0106	628.7570	Rock Bags	EACH	51.000	51.000
0108	629.0210	Fertilizer Type B	CWT	10.900	10.900
0110	630.0130	Seeding Mixture No. 30	LB	277.300	277.300
0112	630.0200	Seeding Temporary	LB	45.000	45.000
0114	630.0500	Seed Water	MGAL	236.200	236.200
0116	633.0200	Delineators Flexible	EACH	27.000	27.000
0118	633.5200	Markers Culvert End	EACH	12.000	12.000
0120	635.0300	Sign Supports Replacing Base Connection Bolts	EACH	10.000	10.000
0122	637.1220	Signs Type I Reflective SH	SF	1,784.000	1,784.000
0124	638.2601	Removing Signs Type I	EACH	10.000	10.000
0126	642.5201	Field Office Type C	EACH	1.000	1.000
0128	643.0300	Traffic Control Drums	DAY	113,454.000	113,454.000
0130	643.0420	Traffic Control Barricades Type III	DAY	9,111.000	9,111.000
0132	643.0705	Traffic Control Warning Lights Type A	DAY	17,622.000	17,622.000
0134	643.0715	Traffic Control Warning Lights Type C	DAY	10,721.000	10,721.000
0136	643.0800	Traffic Control Arrow Boards	DAY	434.000	434.000
0138	643.0900	Traffic Control Signs	DAY	16,440.000	16,440.000
0140	643.0910	Traffic Control Covering Signs Type I	EACH	2.000	2.000
0142	643.0920	Traffic Control Covering Signs Type II	EACH	7.000	7.000
0144	643.1050	Traffic Control Signs PCMS	DAY	58.000	58.000
0146	643.1205.S	Basic Traffic Queue Warning System	DAY	107.000	107.000
0148	643.5000	Traffic Control	EACH	1.000	1.000
0150	646.1020	Marking Line Epoxy 4-Inch	LF	11,654.000	11,654.000
0152	646.1040	Marking Line Grooved Wet Ref Epoxy 4-Inch	LF	184,485.000	184,485.000
0154	646.3020	Marking Line Epoxy 8-Inch	LF	115.000	115.000

Estimate Of Quantities

1074-00-72					
Line	Item	Item Description	Unit	Total	Qty
0156	646.3040	Marking Line Grooved Wet Ref Epoxy 8-Inch	LF	2,888.000	2,888.000
0158	646.5420	Marking Aerial Enforcement Bar Epoxy	EACH	20.000	20.000
0160	646.6120	Marking Stop Line Epoxy 18-Inch	LF	85.000	85.000
0162	646.6464	Cold Weather Marking Epoxy 4-Inch	LF	177,912.000	177,912.000
0164	646.9000	Marking Removal Line 4-Inch	LF	905.000	905.000
0166	646.9100	Marking Removal Line 8-Inch	LF	1,319.000	1,319.000
0168	649.0150	Temporary Marking Line Removable Tape 4-Inch	LF	2,880.000	2,880.000
0170	650.8000	Construction Staking Resurfacing Reference	LF	81,171.000	81,171.000
0172	650.9910	Construction Staking Supplemental Control (project) 01. 1074-00-72	LS	1.000	1.000
0174	650.9920	Construction Staking Slope Stakes	LF	2,030.000	2,030.000
0176	690.0150	Sawing Asphalt	LF	595.000	595.000
0178	690.0250	Sawing Concrete	LF	2,231.000	2,231.000
0180	740.0440	Incentive IRI Ride	DOL	64,800.000	64,800.000
0182	SPV.0090	Special 01. Temporary Rumble Strips (Orange) in Advance of Lane Closure	LF	1,296.000	1,296.000
0184	SPV.0105	Special 01. Material Transfer Vehicle	LS	1.000	1.000
0186	SPV.0180	Special 01. Removing Distressed Pavement Milling	SY	9,508.000	9,508.000

3

3

PROJECT NO:	1074-00-72	HWY:	IH 90	COUNTY:	LA CROSSE	MISCELLANEOUS QUANTITIES	SHEET	E
-------------	------------	------	-------	---------	-----------	--------------------------	-------	----------

FENCING SUMMARY

CATEGORY	STATION	TO	STATION	LOCATION	204.0170	616.0100.01	616.0206	616.0329.01	REMARKS
					REMOVING FENCE	FENCE WOVEN WIRE (HEIGHT) (01. 4.5 FT)	FENCE CHAIN LINK 6-FT	GATES CHAIN LINK (WIDTH) (01. 3.5 FT)	
					LF	LF	LF	EACH	
0010	702+52	-	783+10	IH 90 EB RT	8,142	8,142	-	-	
0010	784+15		833+41	IH 90 EB RT	5,021	5,021			
0010	833+66	-	838+17	IH 90 EB RT	474	474	-	-	
0010	838+46	-	854+04	IH 90 EB RT	1,574	1,574	-	-	
0010	854+49D	-	866+32D	IH 90 EB OFF RAMP RT	1,225	1,225	-	-	
0010	866+86	-	917+79	IH 90 EB RT	5,241	5,241	-	-	
0010	918+16		1074+44	IH 90 EB RT	15,668	15,668			
0010	1075+47	-	1084+75	IH 90 EB RT	987	987	-	-	
0010	1085+14	-	1093+93	IH 90 EB RT	879	879	-	-	
0010	1093+93		1121+96	IH 90 EB RT		2,803			NEW FENCE
0010	702+36A	-	783+33A	IH 90 WB LT	8,154	8,154	-	-	
0010	784+38A	-	834+02A	IH 90 WB LT	5,027	5,027	-	-	
0010	834+28A	-	838+05A	IH 90 WB LT	390	390		-	
0010	838+33A	-	854+20A	IH 90 WB LT	1,617	1,617	-	-	
0010	854+55F		865+63F	IH 90 WB ON RAMP LT	1,159	1,159			
0010	867+02A	-	889+95A	IH 90 WB LT	2,293	2,293	-	-	
0010	889+95A	-	918+27A	IH 90 WB LT	2,926	-	2,926	-	
0010	918+64A	-	936+38A	IH 90 WB LT	1,811	-	1,811	1	PEDESTRIAN FENCE
0010	936+38A	-	1074+19A	IH 90 WB LT	13,817	13,817	-	-	
0010	1075+14A		1085+78A	IH 90 WB LT	1,100	1,100			
0010	1086+16A	-	1113+44A	IH 90 WB LT	2,728	2,728	-	-	
TOTAL 0010					80,233	78,299	4,737	1	

BASE PATCHING SUMMARY

CATEGORY	STATION	TO	STATION	LOCATION	390.0303	416.0610	416.0620	690.0250	REMARKS
					BASE PATCHING CONCRETE SY	DRILLED TIE BARS EACH	DRILLED DOWEL BARS EACH	SAWING CONCRETE LF	
0010	845+72D	-	867+09D	IH 90 EB OFF RAMP	60	16	120	204	UNDISTRIBUTED
0010	848+10E	-	873+14E	IH 90 EB ON RAMP	80	36	160	294	UNDISTRIBUTED
0010	841+91F	-	866+40F	IH 90 WB ON RAMP	80	40	160	300	UNDISTRIBUTED
0010	848+42G	-	864+48G	IH 90 WB OFF RAMP	80	24	160	276	UNDISTRIBUTED
TOTAL 0010					300	116	600	1,074	

* NOTE: Additional quantity shown elsewhere.

SHOULDER SUMMARY

CATEGORY	STATION	TO	STATION	LOCATION	305.0110	305.0500	624.0100	REMARKS
					Base Aggregate Dense 3/4-Inch TON	Shaping Shoulders STA	WATER MGAL	
0010	702+52	-	783+09	IH 90 EB RT	27	81	1	
0010	702+52	-	783+09	IH 90 EB LT	105	81	2	
0010	784+14	-	864+42	IH 90 EB RT	27	81	1	
0010	784+14	-	864+42	IH 90 EB LT	105	81	2	
0010	866+86	-	1074+37	IH 90 EB RT	68	208	2	
0010	866+86	-	1074+37	IH 90 EB LT	269	208	5	
0010	1075+46	-	1113+61	IH 90 EB RT	13	39	1	
0010	1075+46	-	1113+61	IH 90 EB LT	50	39	1	
0010	1090+25	-	1093+58	IH 90 EB RT	40	-	1	
0010	1116+69	-	1129+00	IH 90 EB RT	182	13	1	
0010	702+36A	-	783+23A	IH 90 WB RT	105	81	2	
0010	702+36A	-	783+23A	IH 90 WB LT	27	81	1	
0010	784+38A	-	864+53A	IH 90 WB RT	104	81	2	
0010	784+38A	-	864+53A	IH 90 WB LT	26	81	1	
0010	867+12A	-	1074+15A	IH 90 WB RT	269	208	5	
0010	867+12A	-	1074+15A	IH 90 WB LT	68	208	2	
0010	1075+32A	-	1113+44A	IH 90 WB RT	50	39	1	
0010	1075+32A	-	1113+44A	IH 90 WB LT	13	39	1	
0010	853+22D	-	866+47D	IH 90 EB OFF RAMP RT	35	14	1	
0010	853+22D	-	858+57D	IH 90 EB OFF RAMP LT	14	6	1	
0010	848+55E	-	852+29E	IH 90 EB ON RAMP RT	8	4	1	
0010	855+23E	-	860+61E	IH 90 EB ON RAMP LT	18	6	1	
0010	852+93F	-	858+57F	IH 90 WB ON RAMP RT	11	6	1	
0010	852+93F	-	865+79F	IH 90 WB ON RAMP LT	25	13	1	
0010	849+08G	-	853+60G	IH 90 WB OFF RAMP LT	9	5	1	
0010	856+23G	-	860+11G	IH 90 WB OFF RAMP RT	8	4	1	
TOTAL 0010					1,676	1,707	40	

REMOVAL SUMMARY

					204.0100 REMOVING CONCRETE PAVEMENT	204.0110 REMOVING ASPHALTIC SURFACE	
CATEGORY	STATION	TO	STATION	LOCATION	SY	SY	REMARKS
0010	1086+93	-	1095+04	IH 90 EB RT	504	478	REST AREA RAMP REMOVAL
0010	1116+53	-	1129+00	IH 90 EB RT	1,160	726	REST AREA RAMP REMOVAL
TOTAL 0010					1,664	1,204	

DIVISION	FROM/TO STATION	LOCATION	205.0100 COMMON EXCAVATION (1)		SALVAGED/UNUSABLE PAVEMENT MATERIAL (4)	AVAILABLE MATERIAL (5)	UNEXPANDED FILL	EXPANDED FILL (13)	MASS ORDINATE +/- (14)	WASTE	208.0100 BORROW	COMMENT
			CUT (2)	EBS EXCAVATION (3)				FACTOR 1.25				
DIVISION 1	1086+93 - 1094+90 1116+50 - 1129+00		377	0	119	258	0	0	258	258	0	
			1,410	0	420	990	0	0	990	990	0	
DIVISION 1 SUBTOTAL			1,787	0	539	1,248	0	0	1,248	1,248	0	
GRAND TOTAL			1,787	0	420	1,248	0	0	1,248	1,248	0	
TOTAL COMMON EXC			1,787									

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.
(4) SALVAGED/UNUSABLE PAVEMENT MATERIAL
(5) AVAILABLE MATERIAL = CUT - SALVAGED/UNUSUABLE PAVEMENT MATERIAL
(13) EXPANDED FILL FACTOR = 1.25
(14) 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.
(15) FACTORS USED TO COMPUTE ANTICIPATED WASTE AND THE COMPUTED WASTE VOLUME IDENTIFIED ARE FOR GENERAL INFORMATION ONLY.

MARKERS

					204.0180	633.0200	633.5200	
					REMOVING			
					DELINEATORS	DELINEATORS	MARKERS	
CATEGORY	STATION	TO	STATION	LOCATION	AND MARKERS	FLEXIBLE	CULVERT	END
					EACH	EACH	EACH	REMARKS
0010	702+36	-	1116+00	IH 90 EB RT	-	10	-	UNDISTRIBUTED
0010	897+53		-	IH 90 EB RT	1	-	1	
0010	1002+92		-	IH 90 EB RT	1	-	1	
0010	1086+93	-	1094+93	IH 90 EB RT	6	3	-	RAMP REMOVAL
0010	1116+58	-	1129+00	IH 90 EB RT	13	4	-	RAMP REMOVAL
0010	702+52A	-	1116+00A	IH 90 WB LT	-	10	-	UNDISTRIBUTED
0010	923+39A		-	IH 90 WB LT	1	-	1	
0010	966+91A		-	IH 90 WB LT	1	-	1	
0010	977+60A		-	IH 90 WB LT	1	-	1	
0010	1002+99A		-	IH 90 WB LT	1	-	1	
0010	1005+36A		-	IH 90 WB LT	1	-	1	
0010	1008+29A		-	IH 90 WB LT	1	-	1	
0010	1074+09A		-	IH 90 WB LT	1	-	1	
0010	862+79D		-	IH 90 EB OFF RAMP RT	1	-	1	
0010	856+04F		-	IH 90 WB ON RAMP	2	-	2	
TOTAL 0010					31	27	12	

DISTRESSED PAVEMENT SUMMARY

				455.0605		465.0105		SPV.0180.01 Special (01 - Removing Distressed Pavement: Milling)			
CATEGORY	STATION	TO	STATION	LOCATION	Tack Coat GAL	ASPHALTIC SURFACE TON			SY		REMARKS
0010	702+52	-	716+80	IH 90 EB	21	34			300		Undistributed Between Stations
0010	716+80	-	769+60	IH 90 EB	75	120			1,067		Undistributed Between Stations
0010	769+60	-	822+40	IH 90 EB	80	128			1,134		Undistributed Between Stations
0010	822+40	-	875+20	IH 90 EB	31	49			434		Undistributed Between Stations
0010	875+20	-	928+00	IH 90 EB	10	16			134		Undistributed Between Stations
0010	928+00		980+80	IH 90 EB	10	16			134		Undistributed Between Stations
0010	980+80	-	1033+60	IH 90 EB	24	38			334		Undistributed Between Stations
0010	1033+60	-	1086+40	IH 90 EB	10	16			134		Undistributed Between Stations
0010	1086+40		1113+61	IH 90 EB	5	8			67		Undistributed Between Stations
0010	702+36A	-	716+80A	IH 90 WB	10	16			134		Undistributed Between Stations
0010	716+80A	-	769+60A	IH 90 WB	24	38			334		Undistributed Between Stations
0010	769+60A	-	822+90A	IH 90 WB	46	73			650		Undistributed Between Stations
0010	822+90A	-	875+40A	IH 90 WB	46	73			650		Undistributed Between Stations
0010	875+40A		928+10A	IH 90 WB	59	94			834		Undistributed Between Stations
0010	928+10A	-	980+90A	IH 90 WB	59	94			834		Undistributed Between Stations
0010	980+90A	-	1033+60A	IH 90 WB	77	124			1,100		Undistributed Between Stations
0010	1033+60A	-	1086+40A	IH 90 WB	77	124			1,100		Undistributed Between Stations
0010	1086+40A		1113+44A	IH 90 WB	10	16			134		Undistributed Between Stations
TOTAL 0010					674	1,077			9,508		
* NOTE: Additional quantity shown elsewhere.											

PIPE SUMMARY

					520.8700	522.1060	524.0118	524.0148	524.0618	524.0624	524.0648	
						APRON						
						ENDWALLS						
						FOR CULVERT			APRON	APRON	APRON	
						PIPE			ENDWALLS FOR	ENDWALLS FOR	ENDWALLS FOR	
						REINFORCED	CULVERT PIPE	CULVERT PIPE	CULVERT PIPE	CULVERT PIPE	CULVERT PIPE	
					CLEANING	CONCRETE 60-	SALVAGED 18-	SALVAGED 48-	SALVAGED 18-	SALVAGED 24-	SALVAGED 48-	
CATEGORY	STATION	TO	STATION	LOCATION	CULVERT PIPES	INCH	INCH	INCH	INCH	INCH	INCH	REMARKS
					EACH	EACH	LF	LF	EACH	EACH	EACH	
0010	781+75	-	782+24	IH 90	1	1	-	-	-	-	-	
0010	897+53			IH 90 EB RT	1	-	-	-	1	-	-	
0010	1002+92			IH 90 EB RT	-	-	-	-	-	-	1	
0010	923+39A			IH 90 WB LT	1	-	-	6	-	-	1	
0010	966+91A			IH 90 WB LT	-	-	18	-	1	-	-	
0010	977+60A			IH 90 WB LT	1	-	6	-	1	-	-	
0010	1002+99A			IH 90 WB LT	-	-	-	-	-	-	1	
0010	1005+36A			IH 90 WB LT	-	-	12	-	1	-	-	
0010	1008+29A			IH 90 WB LT	-	-	-	-	-	-	1	
0010	1022+70A	-	1024+71	IH 90	2	-	-	-	-	-	-	
0010	1074+09A			IH 90 WB LT	-	-	-	-	-	1	-	
0010	862+79D			IH 90 EB OFF RAMP RT	1	-	-	-	1	-	-	
0010	856+04F			IH 90 WB ON RAMP	1	-	-	-	2	-	-	
TOTAL 0010					8	1	36	6	7	1	4	

COLD WEATHER ITEMS

			450.4000	646.6464	
			HMA COLD	COLD WEATHER	
			WEATHER	MARKING	
			PAVING	EPOXY 4-INCH	
CATEGORY	STATION	LOCATION	TON	LF	REMARKS
0010	PROJECT	IH 90	4,500	177,912	UNDISTRIBUTED
TOTAL 0010			4,500	177,912	

CONCRETE SURFACE REPAIR

			509.1500		
			CONCRETE		
			SURFACE REPAIR		
CATEGORY	STATION	LOCATION	SF		REMARKS
0010	782+00	IH 90	30		60-INCH CULVERT
TOTAL 0010			30		

LANDSCAPING SUMMARY

					625.0100	625.0500	628.2004	629.0210	630.0130	630.0200	630.0500	
					TOPSOIL	SALVAGED	EROSION MAT	FERTILIZER TYPE	SEEDING	SEEDING	SEED WATER	
					SY	TOPSOIL	CLASS I TYPE B	B	MIXTURE NO. 30	TEMPORARY	MGAL	
CATEGORY	STATION	TO	STATION	LOCATION	SY	SY	SY	CWT	LB	LB		REMARKS
0010	897+53			IH 90 EB RT	-	16	16	0.1	0.3	-	0.3	
0010	1002+92			IH 90 EB RT	-	25	25	0.1	0.5	-	0.5	
0010	1086+93	-	1094+93	IH 90 EB RT	1,530	-	2,220	1.4	40.0	-	38.0	
0010	1116+70	-	1129+00	IH 90 EB RT	3,990	-	5,200	3.3	94.0	-	88.0	
0010	923+39A			IH 90 WB LT	-	31	31	0.1	0.6	-	0.6	
0010	966+91A			IH 90 WB LT	-	32	32	0.1	0.6	-	0.6	
0010	977+60A			IH 90 WB LT	-	21	21	0.1	0.4	-	0.4	
0010	1002+99A			IH 90 WB LT	-	25	25	0.1	0.5	-	0.5	
0010	1005+36A			IH 90 WB LT	-	32	32	0.1	0.6	-	0.6	
0010	1008+29A			IH 90 WB LT	-	25	25	0.1	0.5	-	0.5	
0010	1074+09A			IH 90 WB LT	-	18	18	0.1	0.4	-	0.3	
0010	862+79D			IH 90 EB OFF RAMP RT	-	16	16	0.1	0.3	-	0.3	
0010	856+04F			IH 90 WB ON RAMP	-	32	32	0.1	0.6	-	0.6	
0010	UNDISTRIBUTED			IH 90	-	-	770	1.5	35.0	45	8.0	
0010	UNDISTRIBUTED			IH 90	-	-	5,710	3.6	103.0	-	97.0	FENCING
TOTAL 0010					5,520	273	14,173	10.9	277.3	45	236.2	

3

MARKING REMOVAL/TEMPORARY SUMMARY

* NOTE: Additional quantity shown elsewhere.

CATEGORY	STATION	TO	STATION	LOCATION	646.9000	646.9100	649.0150	REMARKS
					Marking Removal	Marking Removal	TEMPORARY MARKING LINE	
					Line 4-Inch	Line 8-Inch	REMOVABLE TAPE 4-INCH	
					LF	LF	LF	
0010	632+00		652+00	IH 90 EB	193	-	1440	TRAFFIC CONTROL
0010	1117+11	-	1125+30	IH 90 EB RT	-	1,319	-	RAMP REMOVAL
0010	1126+45	-	1131+65	IH 90 EB RT	520	-	-	RAMP REMOVAL
0010	1115+00		1135+00A	IH 90 WB	193	-	1440	TRAFFIC CONTROL
TOTAL 0010					905	1,319	2,880	

					*.		
					690.0150	690.0250	
					SAWING	SAWING	
					ASPHALT	CONCRETE	
CATEGORY	STATION	TO	STATION	LOCATION	LF	LF	REMARKS
0010	1086+93	-	1093+58	IH 90 EB RT	354	310	
0010	1118+11	-	1129+00	IH 90 EB RT	241	847	
TOTAL 0010					595	1,157	
* NOTE: Additional quantity shown elsewhere.							

EROSION CONTROL

628.1504 628.1520 628.7504 628.7555 628.7570										
SILT FENCE MAINTENANCE DITCH CHECKS CHECKS ROCK BAGS										
CATEGORY	STATION	TO	STATION	LOCATION	LF	LF	LF	EACH	EACH	REMARKS
0010	897+53			IH 90 EB RT	23	23	-	-	-	
0010	1002+92			IH 90 EB RT	27	27	-	-	-	
0010	1086+93	-	1094+93	IH 90 EB RT	-	-	30	10	-	
0010	1116+70	-	1129+00	IH 90 EB RT	1,221	1,221	-	20	51	
0010	923+39A			IH 90 WB LT	27	27	-	-	-	
0010	966+91A			IH 90 WB LT	23	23	-	-	-	
0010	977+60A			IH 90 WB LT	23	23	-	-	-	
0010	1002+99A			IH 90 WB LT	27	27	-	-	-	
0010	1005+36A			IH 90 WB LT	23	23	-	-	-	
0010	1008+29A			IH 90 WB LT	27	27	-	-	-	
0010	1074+09A			IH 90 WB LT	24	24	-	-	-	
0010	862+79D			IH 90 EB OFF RAMP RT	23	23	-	-	-	
0010	856+04F			IH 90 WB ON RAMP	46	46	-	-	-	
0010	UNDISTRIBUTED			IH 90	151	151	30	-	-	
TOTAL 0010					1,665	1,665	60	30	51	

MARKING AERIAL ENFORCEMENT BAR EPOXY

646.5420 MARKING AERIAL ENFORCEMENT BAR EPOXY						
CATEGORY	STATION	TO	STATION	LOCATION	EACH	REMARKS
0010	743+20	-	769+60	IH 90 EB	10	Mile Marker 13.5 -14.0
0010	743+20A	-	769+60A	IH 90 WB	10	Mile Marker 14.0 -13.5
-						
TOTAL 0010					20	

MOBILIZATION EROSION

628.1905 628.1910 MOBILIZATIONS EMERGENCY EROSION EROSION CONTROL CONTROL					
CATEGORY	STATION	LOCATION	EACH	EACH	REMARKS
0010	Project	IH 90	3	3	
TOTAL 0010			3	3	

CONSTRUCTION STAKING

650.8000 650.9920 CONSTRUCTION STAKING CONSTRUCTION RESURFACING STAKING SLOPE REFERENCE STAKES						
CATEGORY	STATION	TO	STATION	LOCATION	LF	LF
0010	702+52	-	782+50	IH 90 EB	7,998	-
0010	784+74	-	863+91	IH 90 EB	7,917	-
0010	867+41	-	1074+25	IH 90 EB	20,684	-
0010	1075+36	-	1115+36	IH 90 EB	4,000	-
0010	1086+93	-	1094+93	IH 90 EB RT	-	800
0010	1116+70	-	1129+00	IH 90 EB RT	-	1,230
0010	702+36A	-	783+13A	IH 90 WB	8,077	-
0010	784+97A	-	863+58A	IH 90 WB	7,861	-
0010	867+52A	-	1074+04A	IH 90 WB	20,652	-
0010	1075+37A	-	1115+19A	IH 90 WB	3,982	-
TOTAL 0010					81,171	2,030

TYPE I SIGNS

											635.0300 SIGN SUPPORTS REPLACING BASE CONNECTION BOLTS EACH	637.1220 SIGN TYPE I REFLECTIVE SH SF	638.2601 REMOVING SIGN TYPE I EACH	
CATEGORY	STATION	LOCATION	SIGN CODE	DESCRIPTION	WIDTH	HEIGHT	Order Lines						REMARKS	
0010	711+09	IH 90 EB RT	D2-3	Destination/Distance (Three) with Die Cut Letters	168"	84"	Bangor Tomah Madison	3 28 127	1	98.0	1	Install new sign on existing steel supports		
			E1-5-P	E1-5-P Exit Number for E1-1 & E4-1	96"	30"	EXIT 15 162			20.0		Mount above E1-1-A		
0010	797+28	IH 90 EB RT	E1-1-A	E1-1-A Advance Exit Guide Sign, __ Mile	228"	162"	Bangor Coon Valley	162 1 MILE	1	256.5	1	Install new sign on existing steel supports		
			E2-1	E2-1 156W x 24H Next Exit __ Miles, (Message in one line)	228"	24"	10			38.0		Mount below E1-1-A		
0010	836+65	IH 90 EB RT	E3-1	E3-1 Destination - Next Right - Exit Number	120"	60"	Rockland EXIT 15		1	50.0	1	Install new sign on existing steel supports		
			E1-5-P	E1-5-P Exit Number for E1-1 & E4-1	96"	30"	EXIT 15 162			20.0		Mount above E4-1-A		
0010	845+20	IH 90 EB RT	E4-1-A	E4-1-A Exit Direction Sign with Arrow	252"	132"	Bangor [TR] Coon Valley [TR]	162	1	231.0	1	Install new sign on existing steel supports		
0010	906+74	IH 90 EB RT	D2-3	D2-3 Destination/Distance (Three) with Die Cut Letters	168"	84"	Sparta Tomah Madison	9 25 124	1	98.0	1	Install new sign on existing steel supports		
			E1-5-P	E1-5-P Exit Number for E1-1 & E4-1	96"	30"	EXIT 15 162			20.0		Mount above E1-1-A		
0010	921+02A	IH 90 WB LT	E1-1-A	E1-1-A Advance Exit Guide Sign, __ Mile	228"	162"	Bangor Coon Valley	162 1 MILE	1	256.5	1	Install new sign on existing steel supports		
			E1-5-P	E1-5-P Exit Number for E1-1 & E4-1	96"	30"	EXIT 15 162			20.0		Mount above E4-1-A		
0010	868+12A	IH 90 WB LT	E4-1-A	E4-1-A Exit Direction Sign with Arrow	252"	132"	Bangor [TR] Coon Valley [TR]	162	1	231.0	1	Install new sign on existing steel supports		
0010	814+49A	IH 90 WB LT	D2-3	D2-3 Destination/Distance (Three) with Die Cut Letters	204"	84"	West Salem La Crosse Albert Lea	3 16 132	1	119.0	1	Install new sign on existing steel supports		
			E1-5-P	E1-5-P Exit Number for E1-1 & E4-1	96"	30"	EXIT 12 C			20.0		Mount above E1-1-A		
0010	732+76A	IH 90 WB LT	E1-1-A	E1-1-A Advance Exit Guide Sign, __ Mile	216"	120"	West Salem 1 MILE		1	180.0	1	Install new sign on existing steel supports		
			E2-1	E2-1 156W x 24H Next Exit __ Miles, (Message in one line)	216"	24"	8			36.0		Mount below E1-1-A		
0010	724+34A	IH 90 WB LT	D4-4	D4-4 144W x 90H Park and Ride - Car Symbol Only (Exit Number)	144"	90"	EXIT 12		1	90.0	1	Install new sign on existing steel supports		
TOTAL 0010										10	1784.0	10		

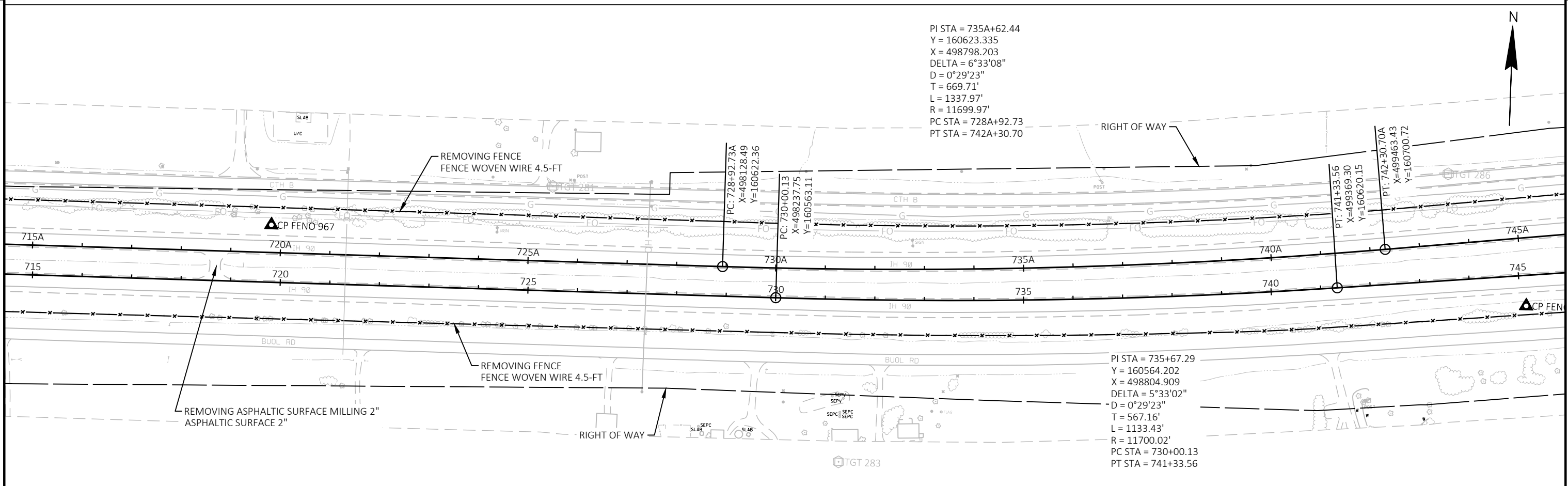
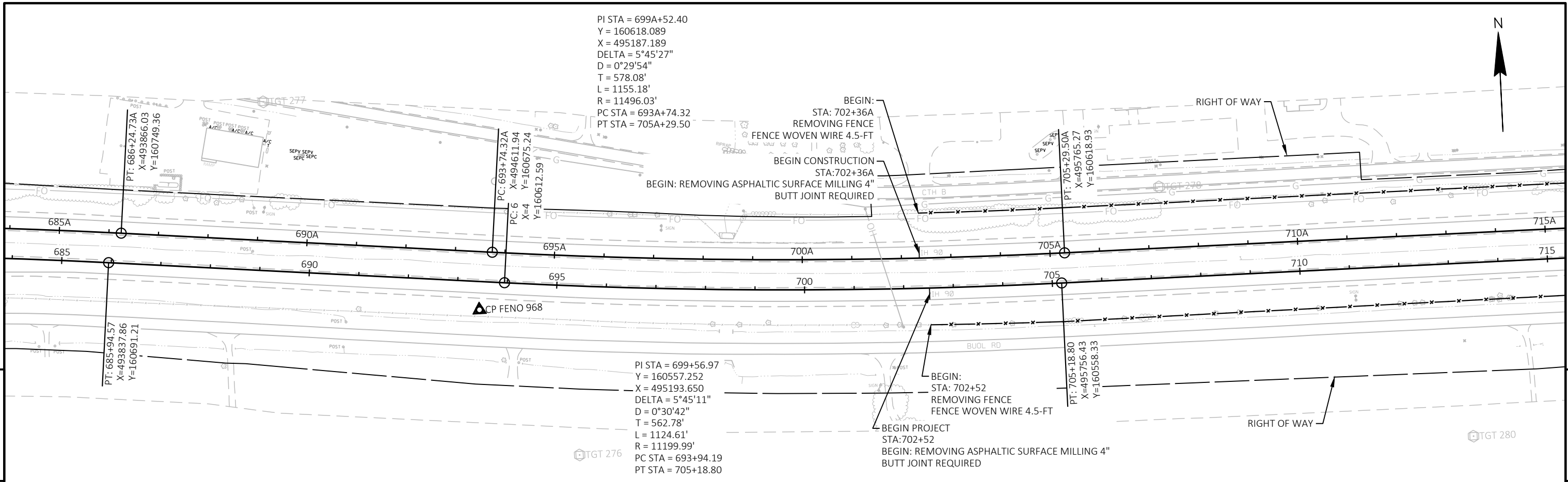
PAVEMENT MARKING SUMMARY

					646.1020	646.1040	646.3020	646.3040	646.6120		
					MARKING LINE		MARKING LINE		MARKING STOP		
					GROOVED WET		GROOVED WET				
					Marking Line	REF EPOXY 4-	Marking Line	REF EPOXY 8-	Line Epoxy 18-		
					Epoxy 4-Inch	INCH	Epoxy 8-Inch	INCH	Inch		
CATEGORY	STATION	TO	STATION	LOCATION	LF	LF	LF	LF	LF	REMARKS	
0010	702+52	-	851+61	IH 90 EB	-	14,909	-	-	-	WHITE, RIGHT	
0010	702+52	-	1113+61	IH 90 EB	-	10,278	-	-	-	CENTER LINE	
0010	702+52	-	1113+61	IH 90 EB	-	41,109	-	-	-	YELLOW, LEFT	
0010	845+71	-	852+12	IH 90 EB	-	161	-	-	-	MINI DASH	
0010	852+12	-	853+71	IH 90 EB	-	-	-	318	-	GORE	
0010	853+71	-	860+05	IH 90 EB	-	634	-	-	-	WHITE, RIGHT	
0010	860+05	-	866+36	IH 90 EB	-	-	-	1,262	-	GORE	
0010	861+84	-	1113+61	IH 90 EB	-	25,177	-	-	-	WHITE, RIGHT	
0010	1116+70	-	1129+00	IH 90 EB	1,230	-	-	-	-	WHITE, RIGHT	
0010	702+36A	-	851+59A	IH 90 WB	-	14,923	-	-	-	WHITE, LEFT	
0010	702+36A	-	1113+44A	IH 90 WB	-	10,277	-	-	-	CENTER LINE	
0010	702+36A	-	1113+44A	IH 90 WB	-	41,108	-	-	-	YELLOW, RIGHT	
0010	848+98A	-	853+71A	IH 90 WB	-	-	-	946	-	GORE	
0010	853+71A	-	859+56A	IH 90 WB	-	585	-	-	-	WHITE, LEFT	
0010	859+56A	-	861+37A	IH 90 WB	-	-	-	362	-	GORE	
0010	861+37A	-	868+15A	IH 90 WB	-	170	-	-	-	MINI DASH	
0010	861+90A	-	1113+44A	IH 90 WB	-	25,154	-	-	-	WHITE, LEFT	
0010	851+61D	-	866+47D	IH 90 EB OFF RAMP	1,486	-	-	-	-	WHITE, RIGHT	
0010	853+67D	-	867+09D	IH 90 EB OFF RAMP	1,342	-	-	-	-	YELLOW, LEFT	
0010	866+55D	-	866+80D	IH 90 FB OFF RAMP	-	-	50	-	-	ISLAND SPLIT	
0010	867+04D	-	-	IH 90 EB OFF RAMP	-	-	-	-	45	STOP LINE	
0010	848+32E	-	860+11E	IH 90 EB ON RAMP	1,179	-	-	-	-	YELLOW, LEFT	
0010	848+55E	-	861+84E	IH 90 EB ON RAMP	1,329	-	-	-	-	WHITE, RIGHT	
0010	851+37F	-	865+79F	IH 90 WB ON RAMP	1,442	-	-	-	-	WHITE, LEFT	
0010	853+46F	-	866+20F	IH 90 WB ON RAMP	1,274	-	-	-	-	YELLOW, RIGHT	
0010	848+60G	-	-	IH 90 WB OFF RAMP	-	-	-	-	40	STOP LINE	
0010	848+71G	-	859+61G	IH 90 WB OFF RAMP	1,090	-	-	-	-	YELLOW, RIGHT	
0010	848+80G	-	849+20G	IH 90 WB OFF RAMP	-	-	65	-	-	ISLAND SPLIT	
0010	849+08G	-	861+90G	IH 90 WB OFF RAMP	1,282	-	-	-	-	WHITE, LEFT	
TOTAL 0010					11,654	184,185	115	2,888	85		

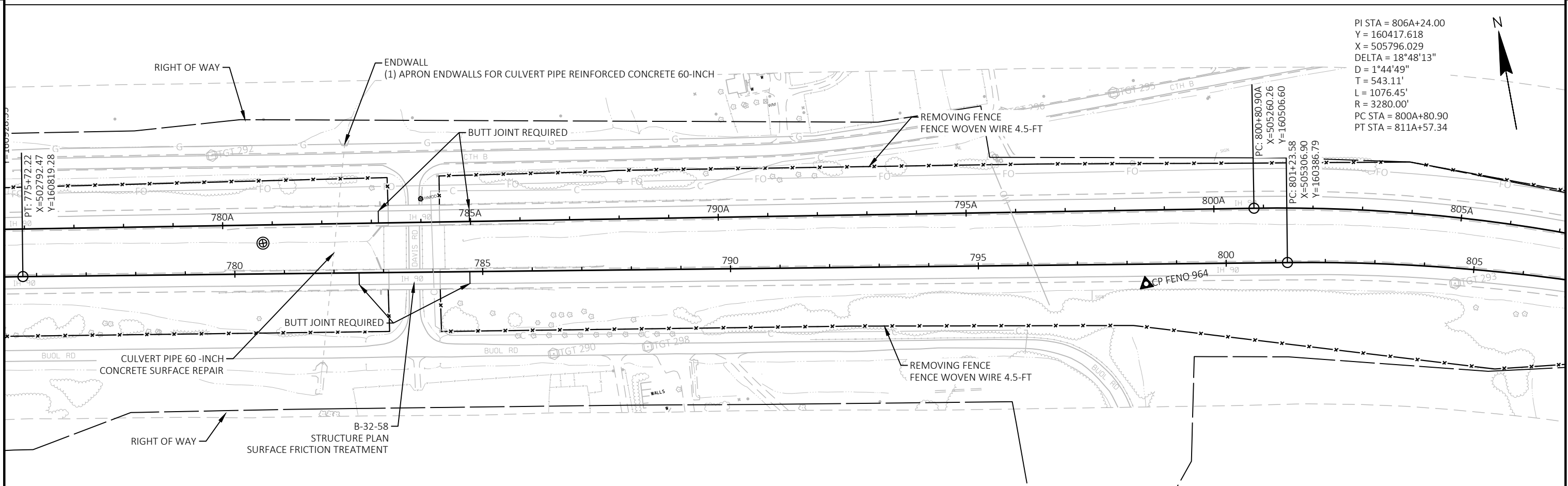
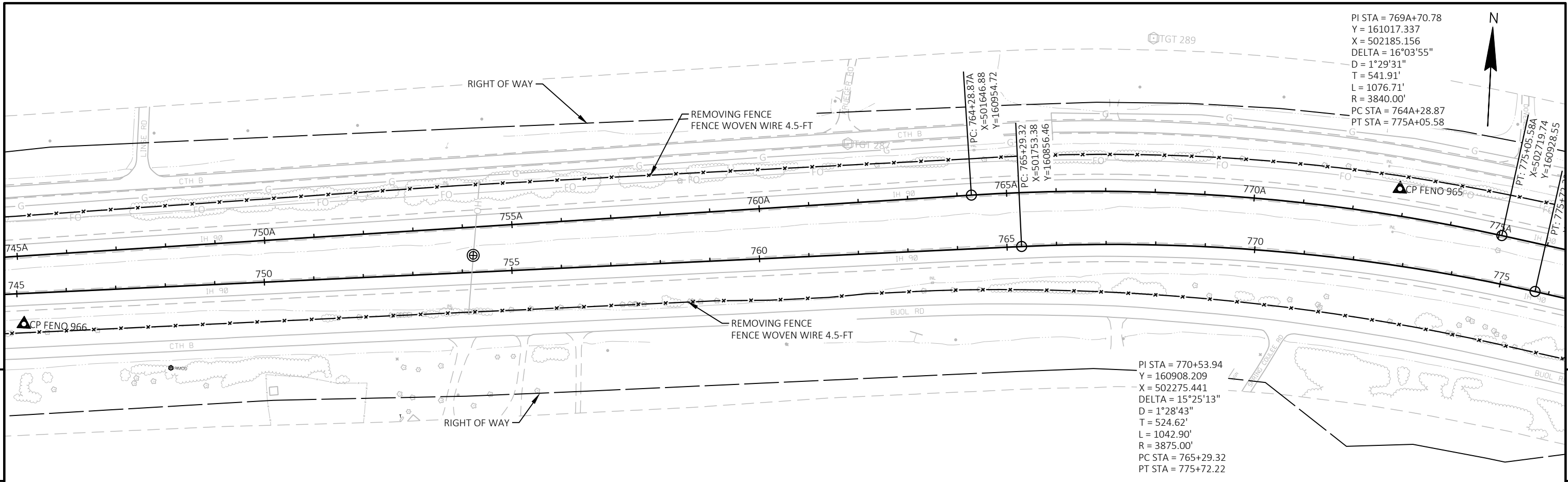
3

MIXTURE TESTING TABLE								
Location	Station	Mixture Use:	Underlying Surface	Bid Item	Tons	Thickness	Quality Management Program to be used for:	
							Mixture Acceptance	Density Acceptance
EASTBOUND								
2 - 12' Driving Lanes	702+52 to 782+50, 784+74 to 863+91, 867+41 to 1074+25, 1075+56 to 1115+36	Lower Layer	Milled Existing HMA Surface	3 HT 58-28 S	13634.4	2 1/4"	PWL Incentive Air Voids HMA Pavement 460.2010	Incentive Density PWL HMA Pavement 460.2005
4' Shoulder	702+52 to 782+50, 784+74 to 863+91, 867+41 to 1074+25, 1075+56 to 1115+36	Lower Layer	Milled Existing HMA Surface	3 HT 58-28 S	2272.4	2 1/4"	PWL Incentive Air Voids HMA Pavement 460.2010	Acceptance testing by the department; Not eligible for incentive
10' Shoulder	702+52 to 782+50, 784+74 to 863+91, 867+41 to 1074+25, 1075+56 to 1115+36	Upper Layer	Existing Base Aggregate Dense	4 LT 58-28 S	8837.2	3 1/2"	QMP as per SS 460.	QMP HMA Pavement Nuclear Density; Incentive Paid 460.2000
2 - 12' foot Driving Lanes	702+52 to 782+50, 784+74 to 863+91, 867+41 to 1074+25, 1075+56 to 1115+36	Upper Layer	3 HT 58-28 S	4 SMA 58-28 H	10604.6	1 3/4"	QMP as per SS 460.	QMP HMA Pavement Nuclear Density; Incentive Paid 460.2000
4' Shoulder	702+52 to 782+50, 784+74 to 863+91, 867+41 to 1074+25, 1075+56 to 1115+36	Upper Layer	3 HT 58-28 S	4 SMA 58-28 H	1767.4	1 3/4"	QMP as per SS 460.	QMP HMA Pavement Nuclear Density; Incentive Paid 460.2000
Maintenance Crossover	VARIOUS	Upper Layer	Existing HMA	Aspaltic Surface	135.0	2"	QMP as per SS 465.	Acceptance by ordinary Compaction
STH 162 Ramps	851+61D to 867+09D, 848+10E to 861+84E, 851+59F to 866+40F, 848+42G to 861+90G	Upper Layer	Milled Existing HMA Surface	4 MT 58-28 S	1502.9	2"	QMP as per SS 460.	QMP HMA Pavement Nuclear Density; Incentive Paid 460.2000
WESTBOUND								
2 - 12' Driving Lanes	702+36A to 783+14A, 784+97A to 863+59A, 867+53A to 1074+03A, 1075+37A to 1115+19A	Lower Layer	Milled Existing HMA Surface	3 HT 58-28 S	13632.2	2 1/4"	PWL Incentive Air Voids HMA Pavement 460.2010	Incentive Density PWL HMA Pavement 460.2005
4' Shoulder	702+36A to 783+14A, 784+97A to 863+59A, 867+53A to 1074+03A, 1075+37A to 1115+19A	Lower Layer	Milled Existing HMA Surface	3 HT 58-28 S	2272.0	2 1/4"	PWL Incentive Air Voids HMA Pavement 460.2010	Acceptance testing by the department; Not eligible for incentive
10' Shoulder	702+36A to 783+14A, 784+97A to 863+59A, 867+53A to 1074+03A, 1075+37A to 1115+19A	Upper Layer	Existing Base Aggregate Dense	4 LT 58-28 S	8835.7	3 1/2"	QMP as per SS 460.	QMP HMA Pavement Nuclear Density; Incentive Paid 460.2000
2 - 12' foot Driving Lanes	702+36A to 783+14A, 784+97A to 863+59A, 867+53A to 1074+03A, 1075+37A to 1115+19A	Upper Layer	3 HT 58-28 S	4 SMA 58-28 H	10602.8	1 3/4"	QMP as per SS 460.	QMP HMA Pavement Nuclear Density; Incentive Paid 460.2000
4' Shoulder	702+36A to 783+14A, 784+97A to 863+59A, 867+53A to 1074+03A, 1075+37A to 1115+19A	Upper Layer	3 HT 58-28 S	4 SMA 58-28 H	1767.1	1 3/4"	QMP as per SS 460.	QMP HMA Pavement Nuclear Density; Incentive Paid 460.2000
PROJECT NO: 1074-00-72		HWY: IH 90		COUNTY: LA CROSSE		MISCELLANEOUS QUANTITIES		
						SHEET		E

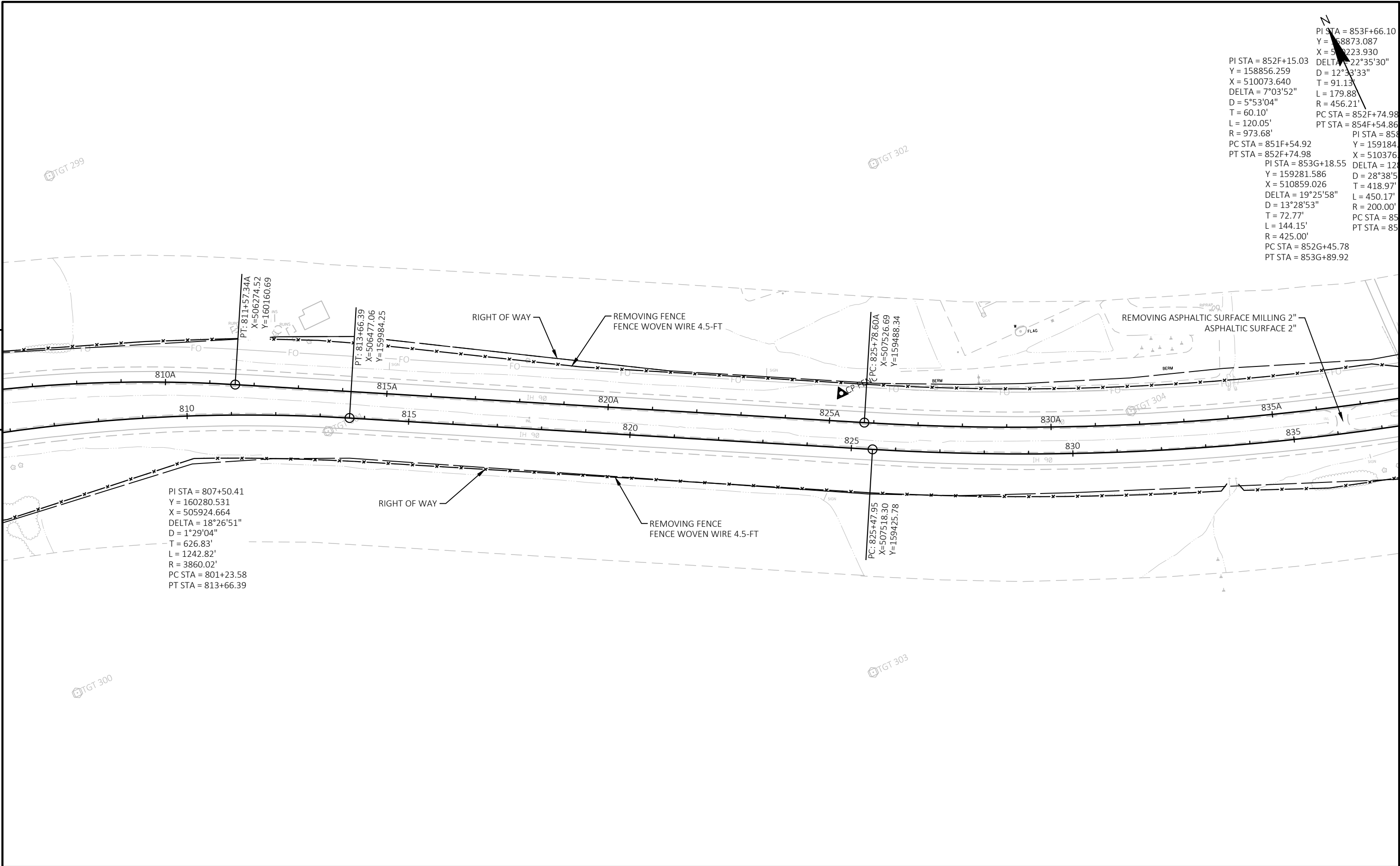
3



PROJECT NO:	1074-00-72	HWY:	IH 90	COUNTY:	LA CROSSE	PLAN	SHEET	E
-------------	------------	------	-------	---------	-----------	------	-------	---

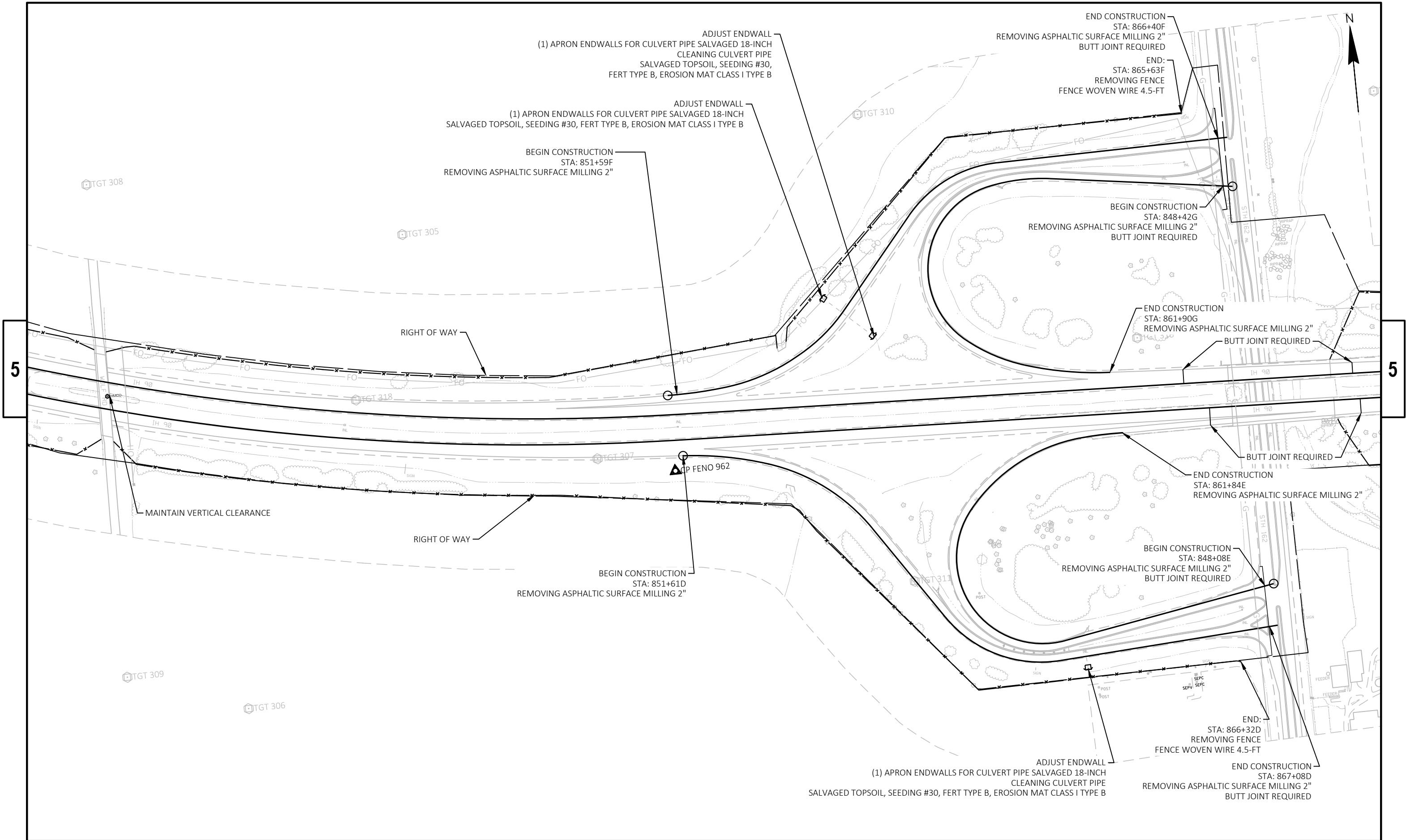


PROJECT NO: 1074-00-72	HWY: IH 90	COUNTY: LA CROSSE	PLAN	SHEET	E
------------------------	------------	-------------------	------	-------	---



PI STA = 852F+15.03
Y = 158856.259
X = 510073.640
DELTA = 7°03'52"
D = 5°53'04"
T = 60.10'
L = 120.05'
R = 973.68'
PC STA = 851F+54.92
PT STA = 852F+74.98
PI STA = 853G+18.55
Y = 159281.586
X = 510859.026
DELTA = 19°25'58"
D = 13°28'53"
T = 72.77'
L = 144.15'
R = 425.00'
PC STA = 852G+45.78
PT STA = 853G+89.92

PI STA = 853F+66.10
Y = 1568873.087
X = 510223.930
DELTA = 22°35'30"
D = 12°33'33"
T = 91.13'
L = 179.88'
R = 456.21'
PC STA = 852F+74.98
PT STA = 854F+54.86
PI STA = 858
Y = 159184.
X = 510376.
DELTA = 12°
D = 28°38'5
T = 418.97'
L = 450.17'
R = 200.00'
PC STA = 85
PT STA = 85



PI STA = 852F+15.03 Y = 158856.259 X = 510073.640 DELTA = 7°03'52" D = 5°53'04" T = 60.10' L = 120.05' R = 973.68' PC STA = 851F+54.92 PT STA = 852F+74.98	PI STA = 853F+66.10 Y = 158873.087 X = 510223.930 DELTA = 22°35'30" D = 12°33'33" T = 91.13' L = 179.88' R = 456.21' PC STA = 852F+74.98 PT STA = 854F+54.86	PI STA = 855F+39.26 Y = 158958.132 X = 510377.478 DELTA = 20°55'23" D = 14°22'22" T = 73.61' L = 145.57' R = 398.64' PC STA = 854F+65.66 PT STA = 856F+11.23	PI STA = 860F+09.11 Y = 159318.798 X = 510681.148 DELTA = 49°16'16" D = 20°00'03" T = 131.37' L = 246.34' R = 286.47' PC STA = 858F+77.74 PT STA = 861F+24.08
---	---	---	--

PI STA = 853G+18.55 Y = 159281.586 X = 510859.026 DELTA = 19°25'58" D = 13°28'53" T = 72.77' L = 144.15' R = 425.00' PC STA = 852G+45.78 PT STA = 853G+89.92	PI STA = 858G+08.89 Y = 159184.876 X = 510376.887 DELTA = 128°57'51" D = 28°38'53" T = 418.97' L = 450.17' R = 200.00' PC STA = 853G+89.92 PT STA = 858G+40.09	PI STA = 859G+16.01 Y = 158868.801 X = 510757.686 DELTA = 21°45'01" D = 14°30'10" T = 75.90' L = 149.97' R = 395.06' PC STA = 858G+40.11 PT STA = 859G+90.08	PI STA = 860G+90.66 Y = 158814.432 X = 510925.582 DELTA = 14°52'53" D = 7°26'31" T = 100.55' L = 199.97' R = 769.92' PC STA = 859G+90.11 PT STA = 861G+90.08
---	---	---	---

PI STA = 839A+04.46
Y = 158861.118
X = 508694.801
DELTA = 26°03'24"
D = 1°00'00"
T = 1325.86'
L = 2605.85'
R = 5730.00'
PC STA = 825A+78.60
PT STA = 851A+84.46

PI STA = 852D+61.94 Y = 158707.605 X = 510118.529 DELTA = 15°00'03" D = 7°30'02" T = 100.57' L = 200.00' R = 763.88' PC STA = 851D+61.37 PT STA = 853D+61.37	PI STA = 855D+11.63 Y = 158627.542 X = 510356.244 DELTA = 37°39'05" D = 13°00'00" T = 150.26' L = 289.62' R = 440.73' PC STA = 853D+61.37 PT STA = 856D+50.99	PI STA = 860D+83.27 Y = 158143.094 X = 510679.758 DELTA = 59°50'17" D = 20°00'00" T = 164.86' L = 299.19' R = 286.48' PC STA = 859D+18.41 PT STA = 862D+17.61
PI STA = 858E+31.42 Y = 158107.701 X = 510324.857 DELTA = 139°33'50" D = 28°38'53" T = 543.05' L = 487.17' R = 200.00' PC STA = 852E+88.36 PT STA = 857E+75.53	PI STA = 859E+38.32 Y = 158648.809 X = 510778.085 DELTA = 44°46'50" D = 14°30'00" T = 162.79' L = 308.83' R = 395.14' PC STA = 857E+75.53 PT STA = 860E+84.37	PI STA = 861E+34.43 Y = 158668.360 X = 510990.043 DELTA = 7°30'00" D = 7°30'02" T = 50.07' L = 99.99' R = 763.88' PC STA = 860E+84.37 PT STA = 861E+84.36

PI STA = 838+67.33
Y = 158802.155
X = 508680.996
DELTA = 26°01'17"
D = 1°00'12"
T = 1319.38'
L = 2593.25'
R = 5710.00'
PC STA = 825+47.95
PT STA = 851+41.20

TGT

TGT 305

TGT 318

TGT 307

CP FENO 962

TGT 311

TGT 318



PROJECT NO: 1074-00-72

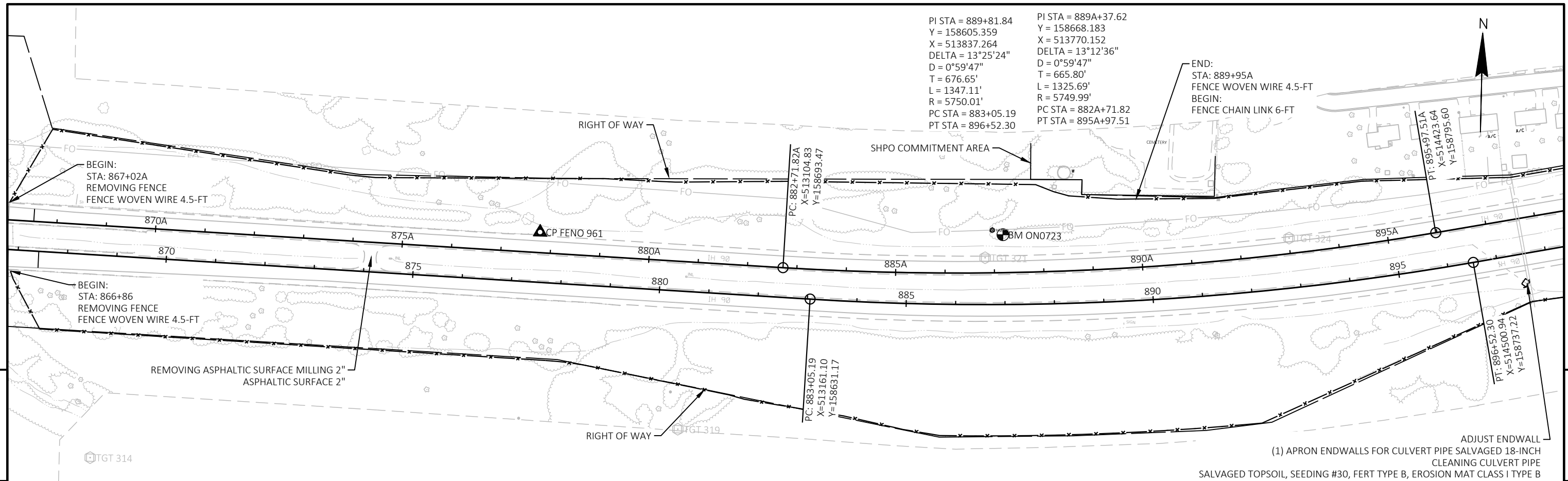
HWY: IH 90

COUNTY: LA CROSSE

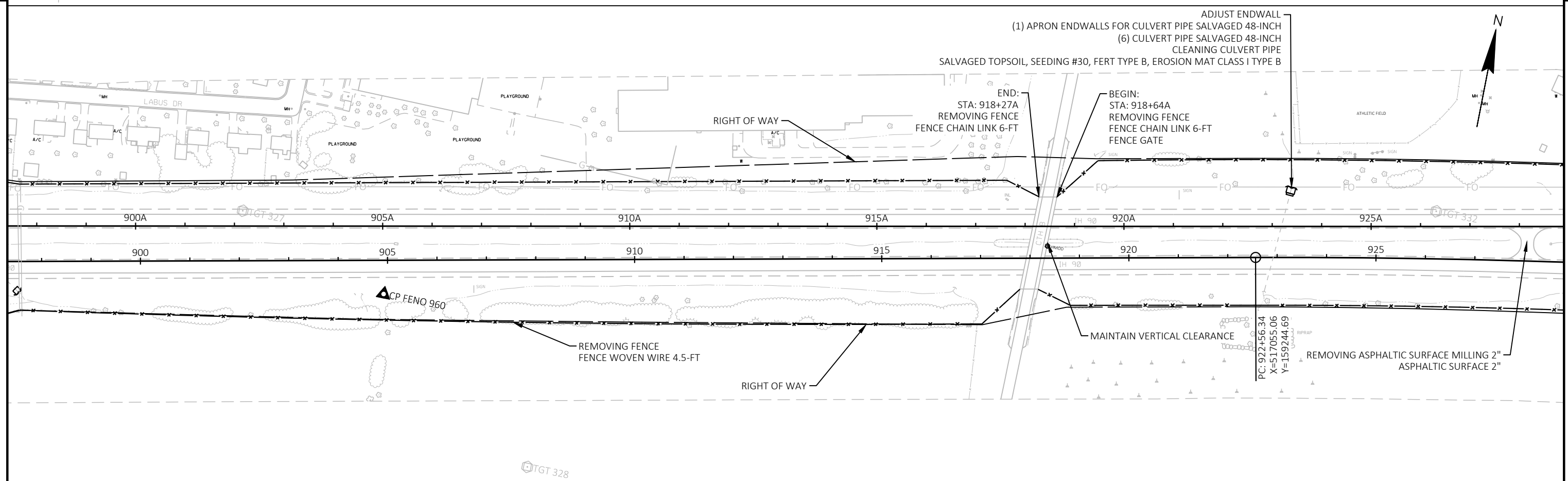
PLAN

SHEET

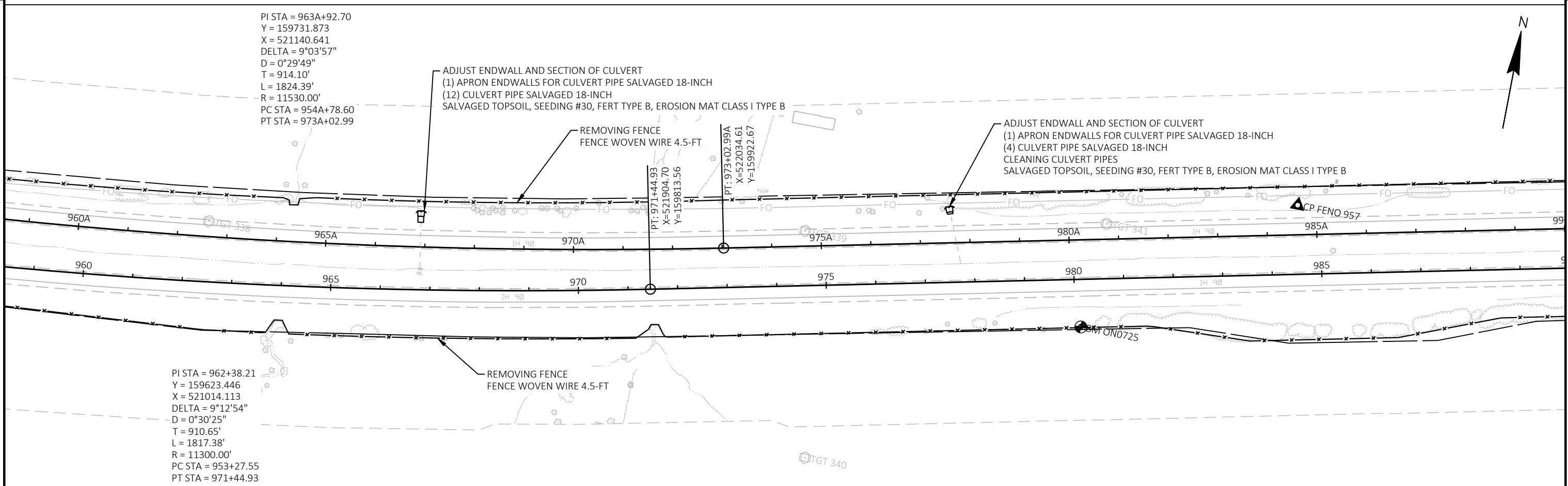
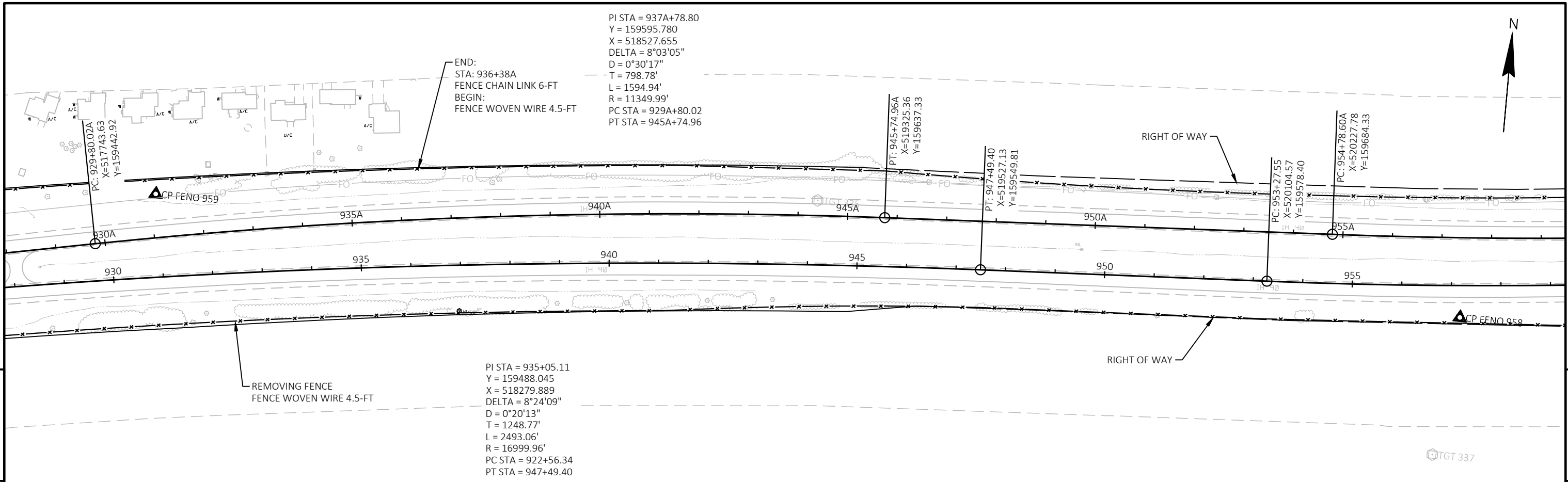
E



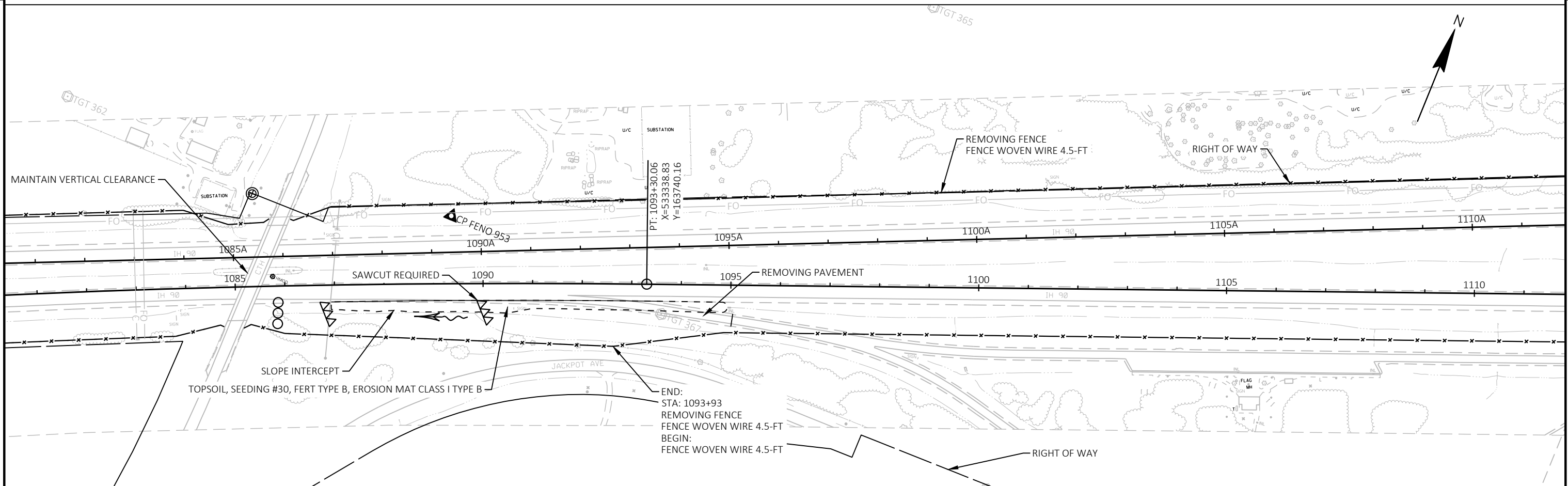
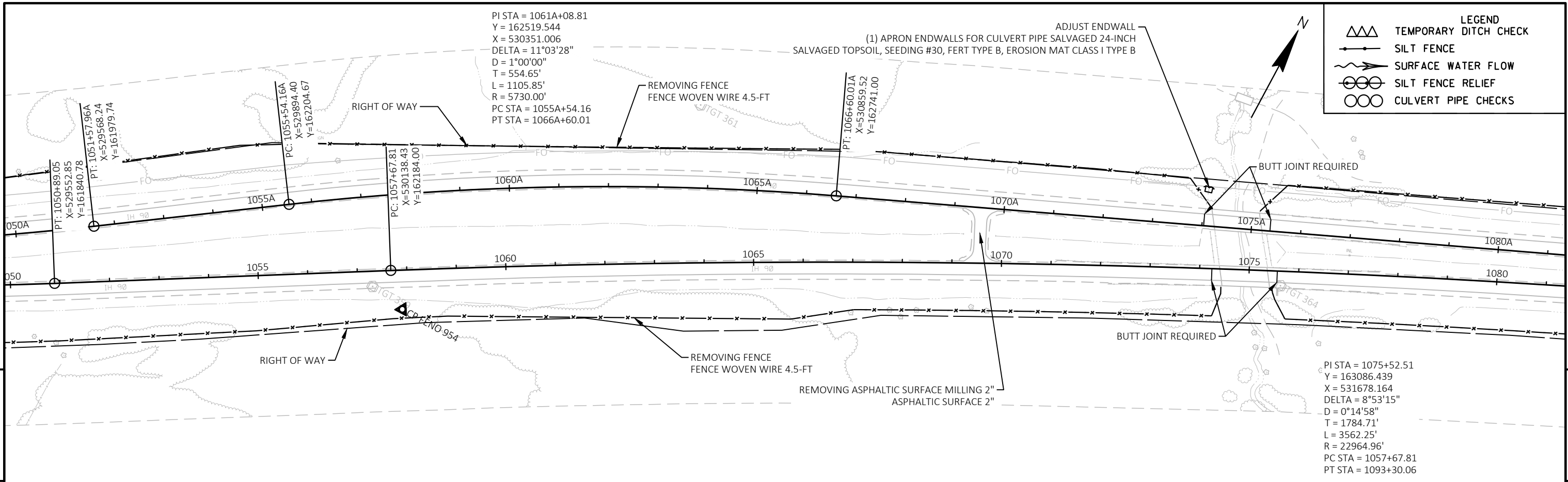
ADJUST ENDWALL
(1) APRON ENDWALLS FOR CULVERT PIPE SALVAGED 18-INCH
CLEANING CULVERT PIPE
SALVAGED TOPSOIL, SEEDING #30, FERT TYPE B, EROSION MAT CLASS I TYPE B



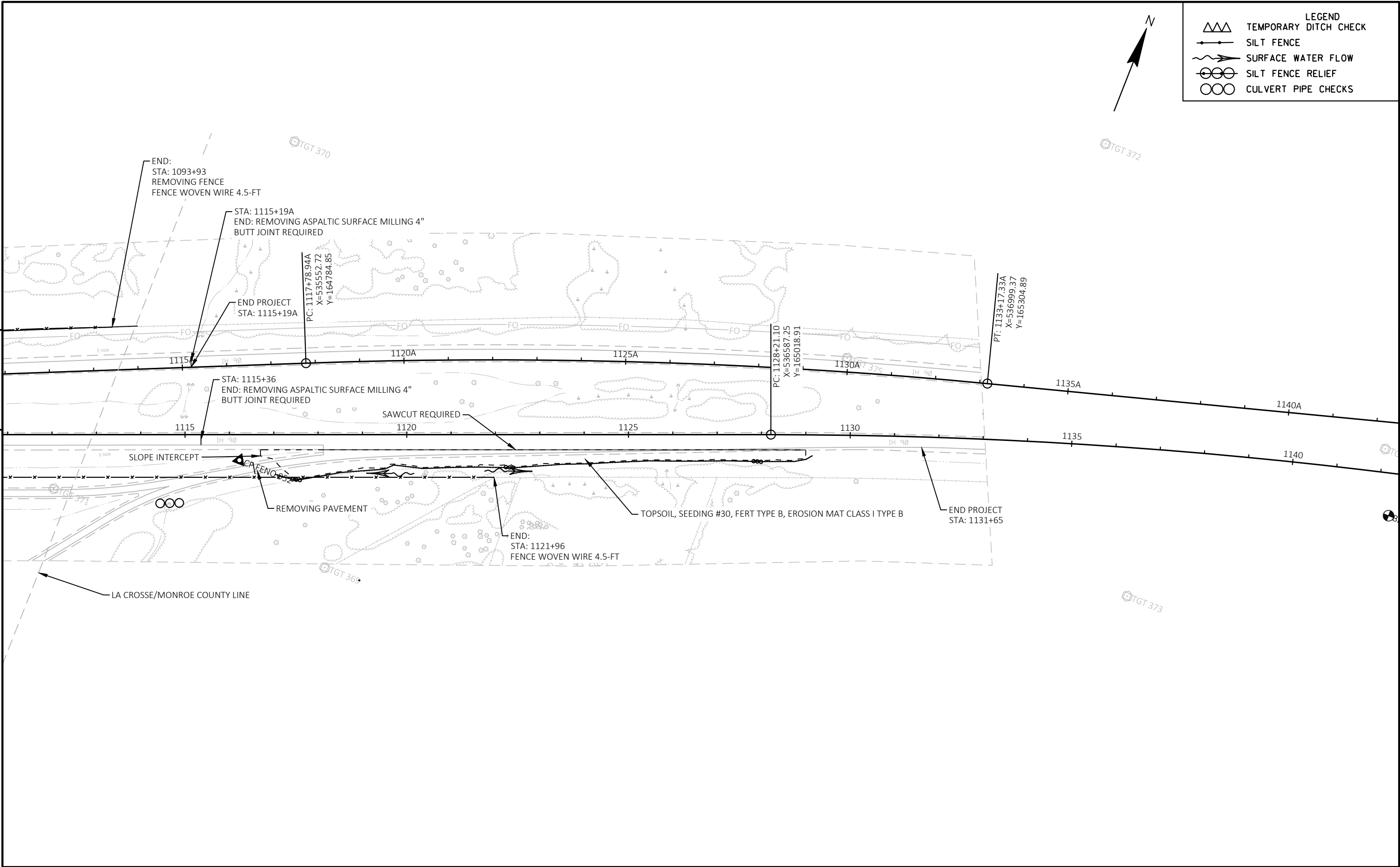
PROJECT NO: 1074-00-72	HWY: IH 90	COUNTY: LA CROSSE	PLAN	SHEET	E
------------------------	------------	-------------------	------	-------	---



PROJECT NO: 1074-00-72	HWY: IH 90	COUNTY: LA CROSSE	PLAN	SHEET	E
------------------------	------------	-------------------	------	-------	---



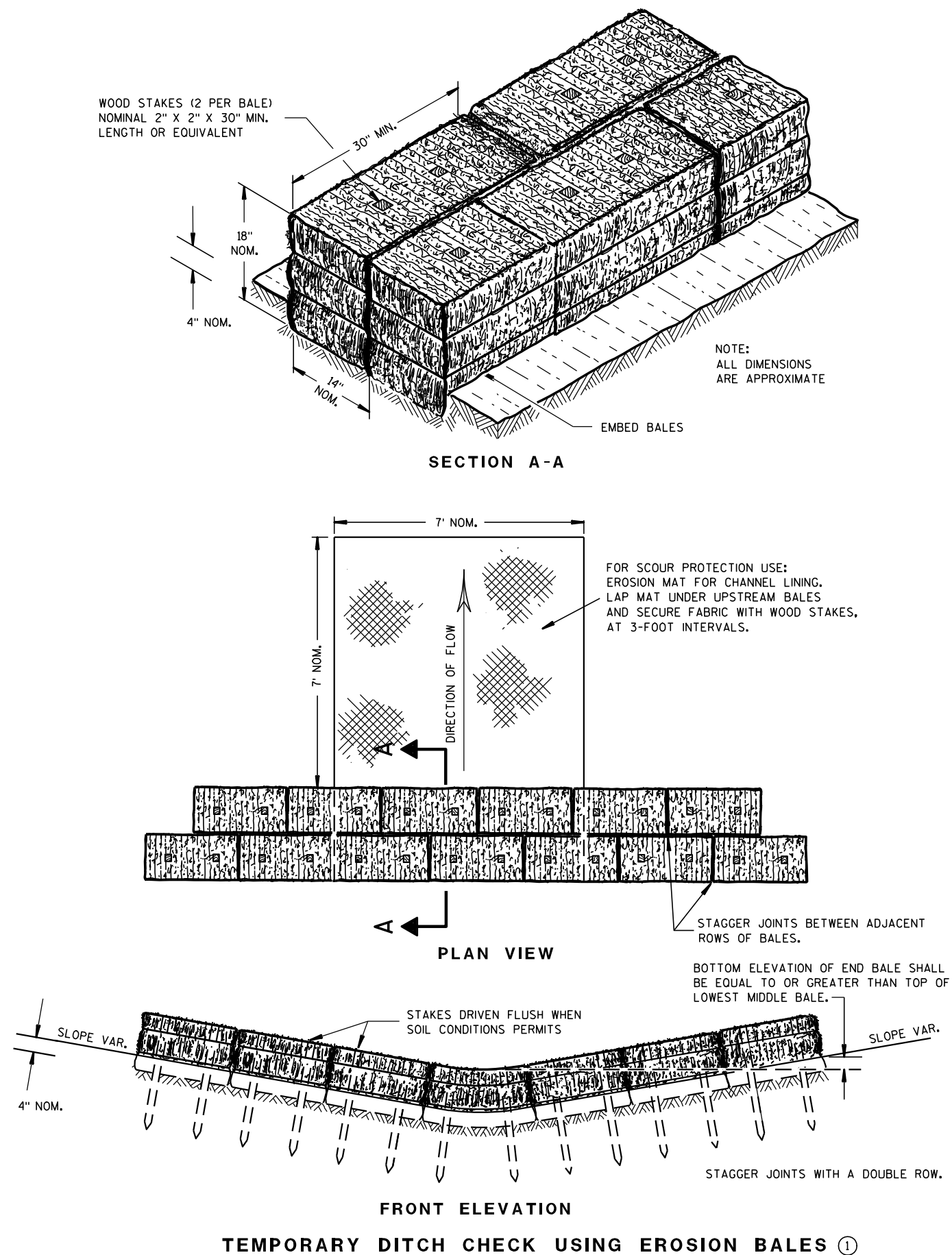
PROJECT NO:	1074-00-72	HWY:	IH 90	COUNTY:	LA CROSSE	PLAN	SHEET	E
-------------	------------	------	-------	---------	-----------	------	-------	---



PROJECT NO: 1074-00-72	HWY: IH 90	COUNTY: LA CROSSE	PLAN	SHEET	E
------------------------	------------	-------------------	------	-------	---

Standard Detail Drawing List

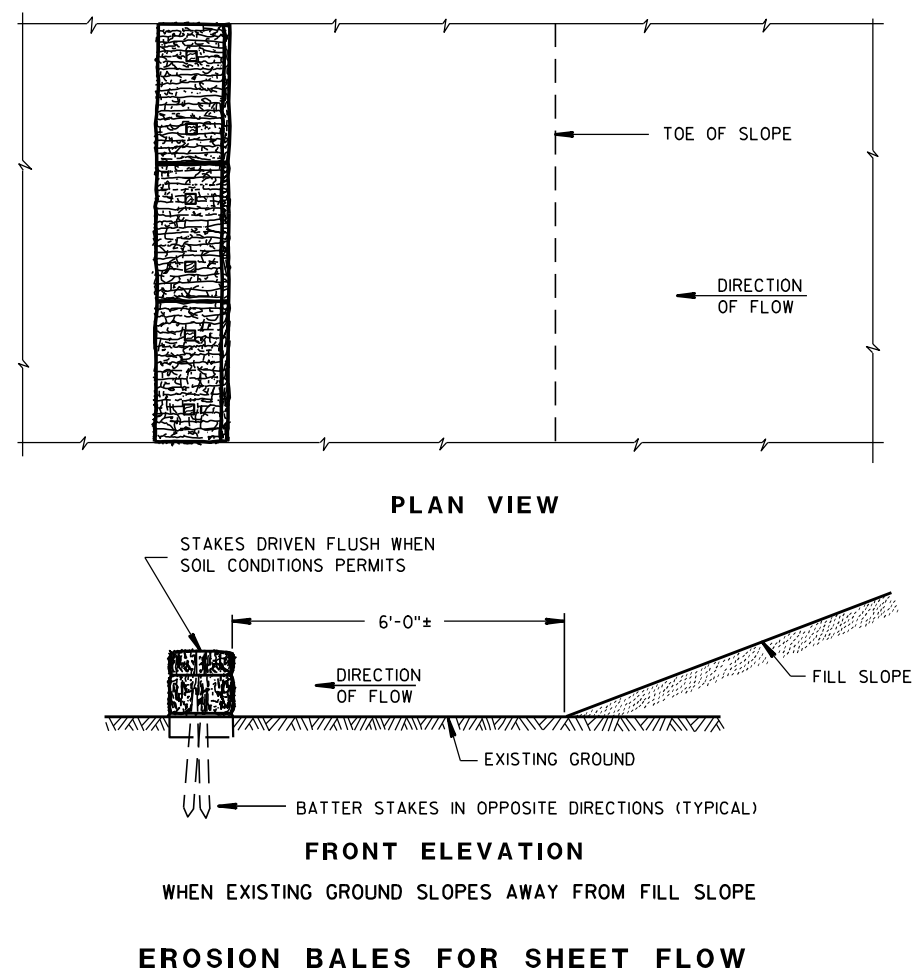
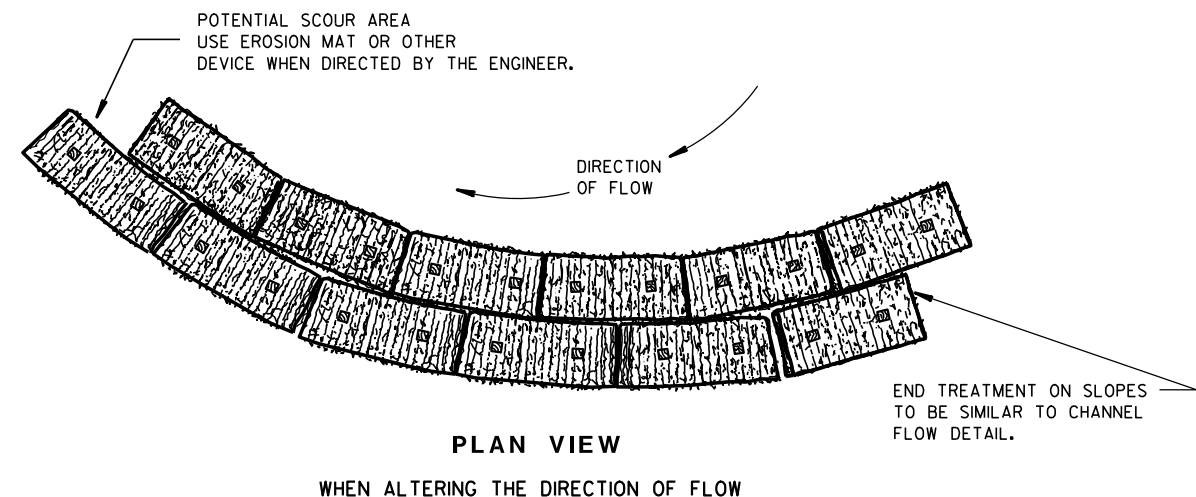
08E08-03	TYPICAL INSTALLATIONS OF EROSION BALES / TEMPORARY DITCH CHECKS
08E09-06	SILT FENCE
08E15-01	CULVERT PIPE CHECK
08F01-11	APRON ENDWALLS FOR CULVERT PIPE
08F04-07	JOINT TIES FOR CONCRETE PIPE AND CONCRETE COLLAR DETAIL
11A01-06	MAINTENANCE CROSSOVER FOR FREEWAYS
13A05-05A	SHOULDER RUMBLE STRIP, MILLING
13A05-05B	SHOULDER RUMBLE STRIP, MILLING
13C14-07A	BASE PATCHING CONCRETE
13C14-07B	BASE PATCHING CONCRETE
13C14-07C	BASE PATCHING CONCRETE
13C19-03	HMA LONGITUDINAL JOINTS
15A03-02A	FLEXIBLE MARKER POST FOR CULVERT END
15A03-02B	FLEXIBLE MARKER POST FOR CULVERT END
15A04-05A	FLEXIBLE DELINEATOR POST
15B01-08A	FENCE WOVEN WIRE
15B01-08B	FENCE WOVEN WIRE
15B03-15A	FENCE CHAIN LINK
15B03-15B	FENCE CHAIN LINK
15C02-08A	BARRICADES AND SIGNS FOR MAINLINE CLOSURES
15C02-08B	BARRICADES AND SIGNS FOR VARIOUS CLOSURES
15C02-08C	DETOUR SIGNING FOR MAINLINE CLOSURES
15C02-08D	ON RAMP LANE CLOSURE
15C02-08E	OFF RAMP LANE CLOSURE
15C02-08F	ADVANCED WIDTH RESTRICTION SIGNING
15C08-20A	LONGITUDINAL MARKING (MAINLINE)
15C14-03	AERIAL ENFORCEMENT BARS PAVEMENT MARKING DETAILS
15C27-03B	PAVEMENT MARKING (ISLANDS)
15C31-03A	PAVEMENT MARKING (RAMPS AND GORES)
15C31-03B	PAVEMENT MARKING MAJOR SPLIT FREEWAY TO FREEWAY
15C31-03C	PAVEMENT MARKING FOR PARALLEL ON-RAMP AND PARALLEL OFF-RAMP
15C33-04	STOP LINE AND CROSSWALK PAVEMENT MARKING
15D12-09A	TRAFFIC CONTROL, LANE CLOSURE
15D12-09B	TRAFFIC CONTROL, LANE CLOSURE, SPEED REDUCTION
15D12-09D	TRAFFIC CONTROL, LANE CLOSURE, BASIC TRAFFIC QUEUE WARNING SYSTEM
15D15-05A	TRAFFIC CONTROL, PARALLEL ENTRANCE RAMP WITHIN LANE CLOSURE
15D15-05B	TRAFFIC CONTROL, ENTRANCE RAMP WITHIN LANE CLOSURE
15D15-05C	TRAFFIC CONTROL, TAPERED ENTRANCE RAMP WITHIN LANE CLOSURE
15D15-05D	TRAFFIC CONTROL, TAPERED ENTRANCE RAMP WITHIN LANE CLOSURE
15D15-05E	TRAFFIC CONTROL, PARALLEL EXIT RAMP WITHIN LANE CLOSURE
15D16-04	TRAFFIC CONTROL, EXIT RAMP CLOSURE
15D28-04	TRAFFIC CONTROL, WORK ON SHOULDER OR PARKING LANE, UNDIVIDED ROADWAY
15D38-02A	TEMPORARY TRAFFIC CONTROL SIGN MOUNTING
15D38-02B	ATTACHMENT OF SIGNS TO POSTS



GENERAL NOTES

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

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

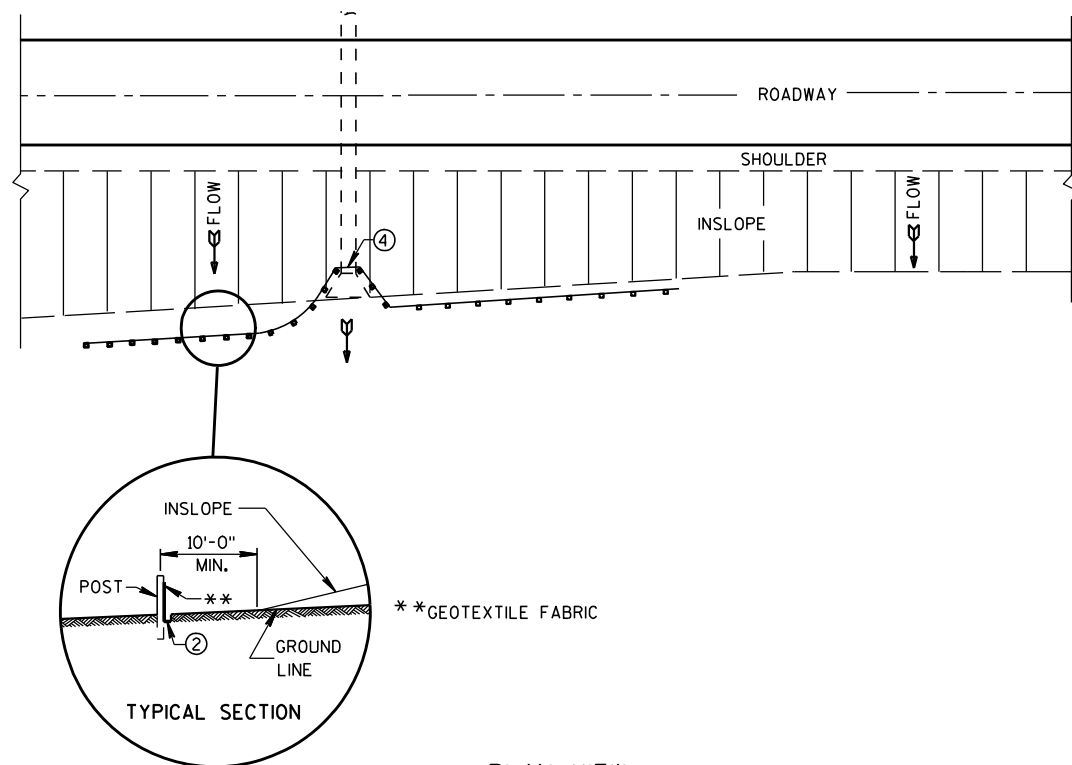
TYPICAL INSTALLATIONS OF
EROSION BALES / TEMPORARY
DITCH CHECKS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

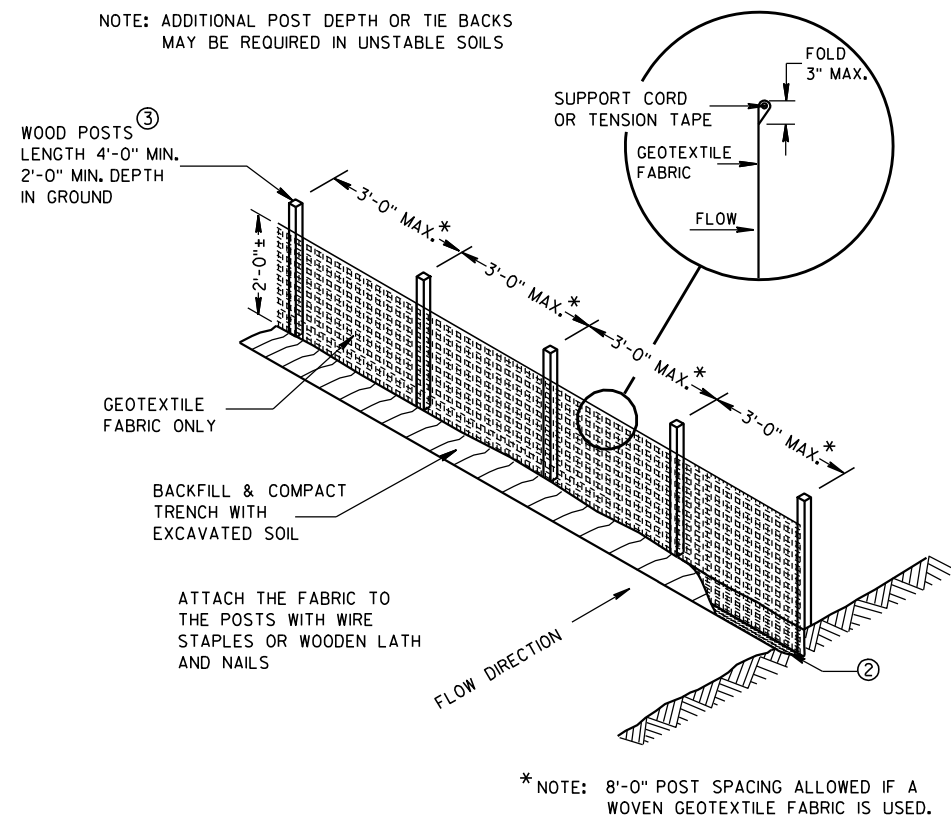
6/04/02
DATE/S/ Beth Canestra
CHIEF ROADWAY DEVELOPMENT ENGINEER

FHWA

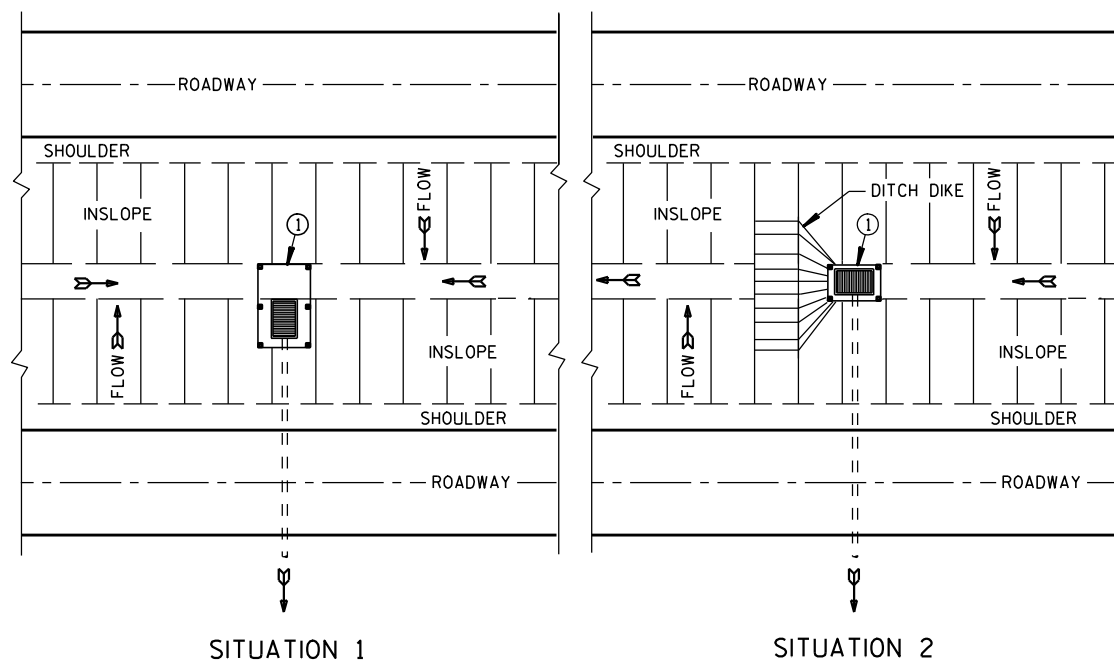


TYPICAL APPLICATION OF SILT FENCE

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

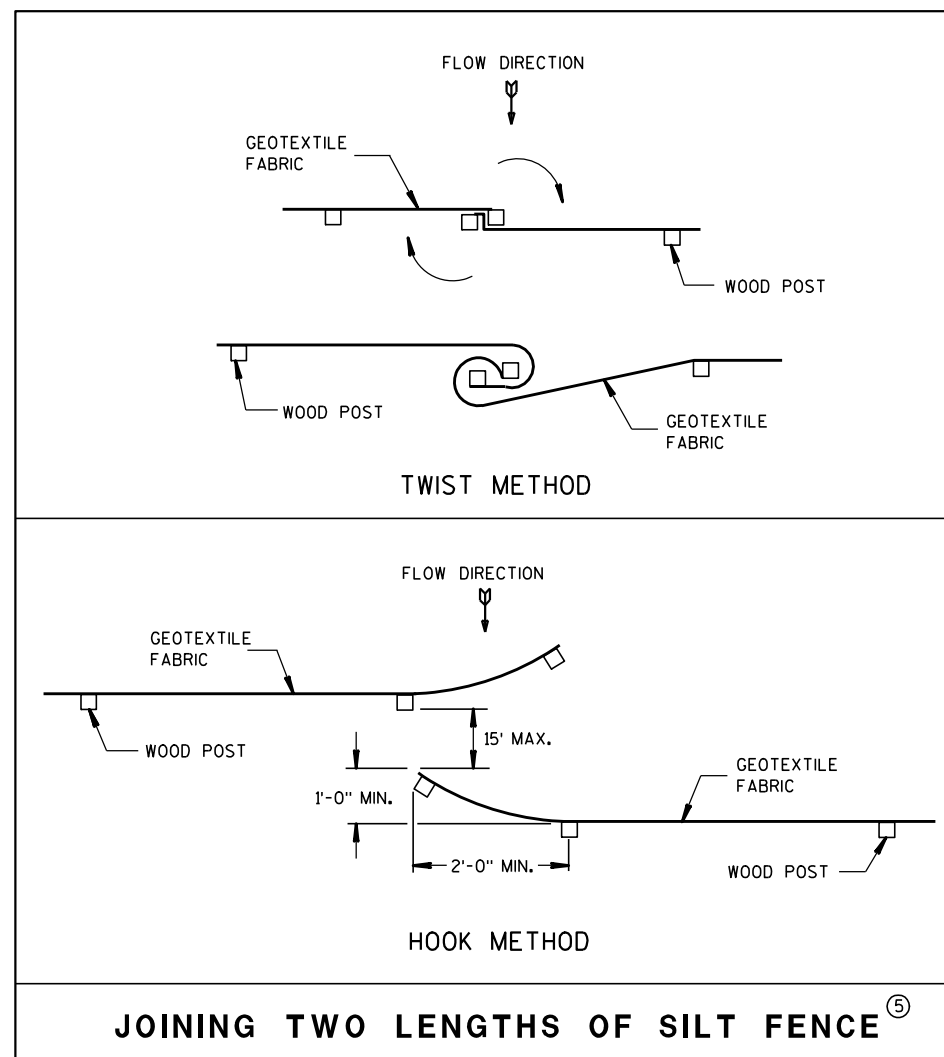


SILT FENCE



PLAN VIEW

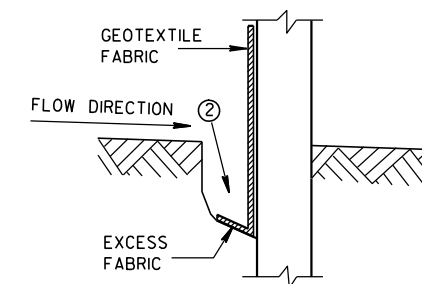
SILT FENCE AT MEDIAN SURFACE DRAINS



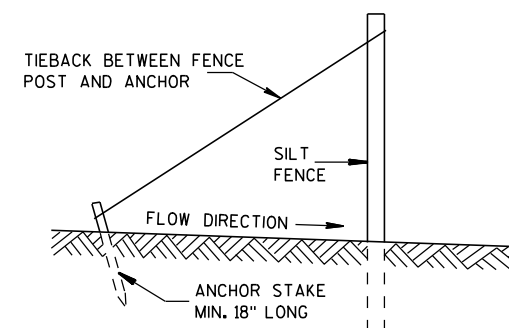
GENERAL NOTES

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

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



TRENCH DETAIL



SILT FENCE TIE BACK (WHEN REQUIRED BY THE ENGINEER)

SILT FENCE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

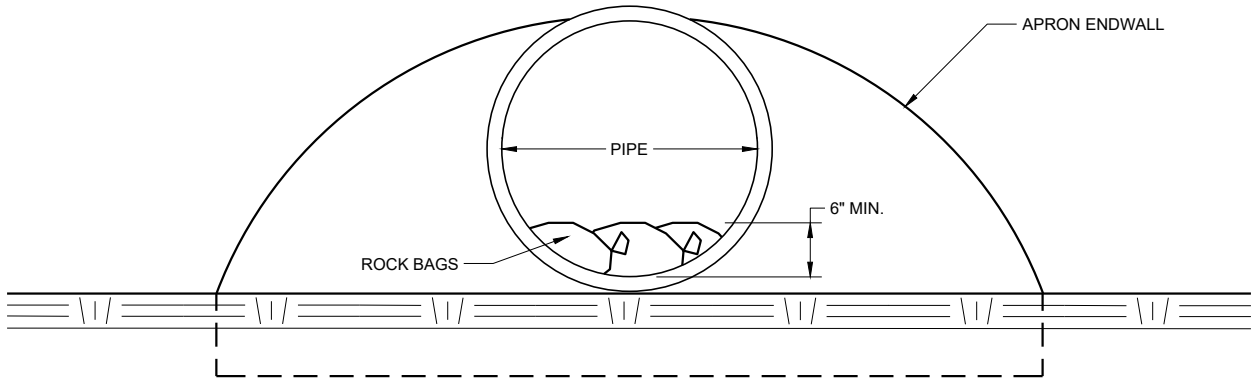
APPROVED

4-29-05

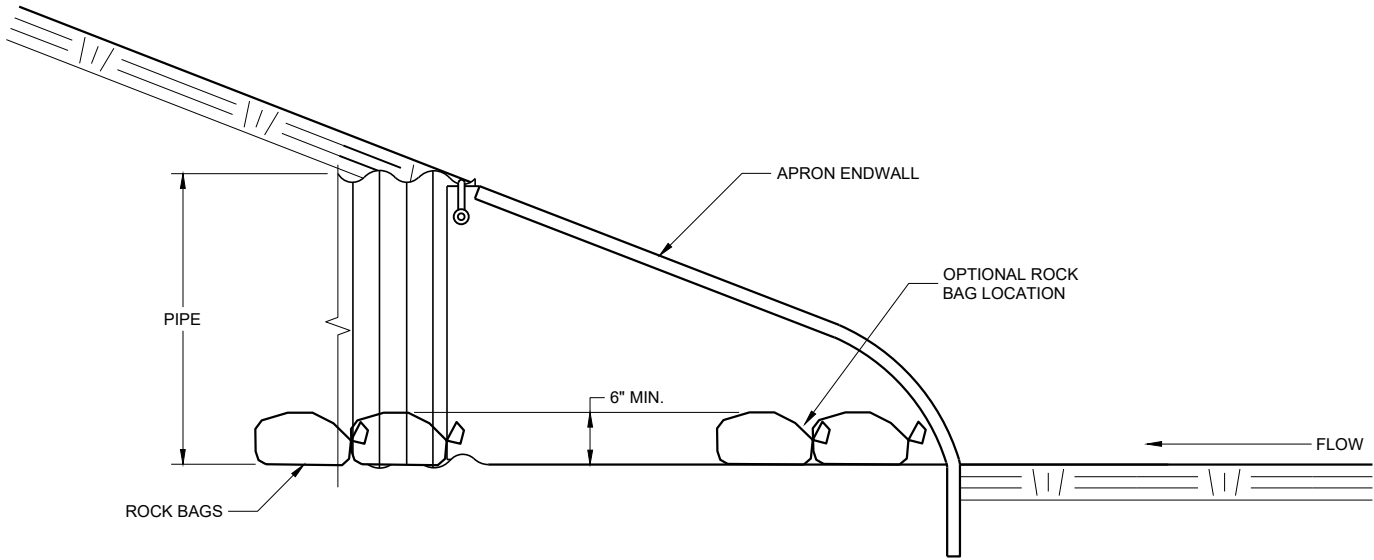
DATE

FHWA

/S/ Beth Canestra
CHIEF ROADWAY DEVELOPMENT ENGINEER



END VIEW



SIDE VIEW

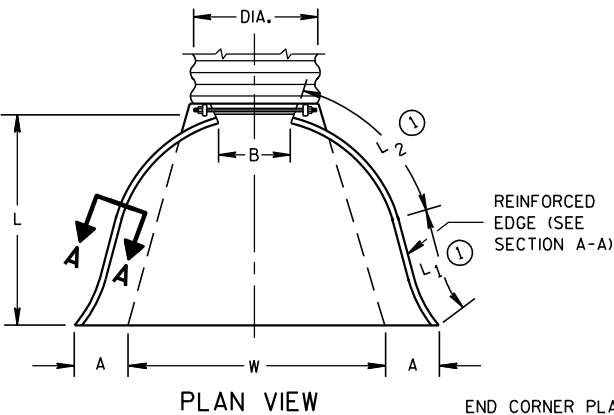
CULVERT PIPE CHECK
(INSTALL ON INLET END ONLY)

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

FHWA

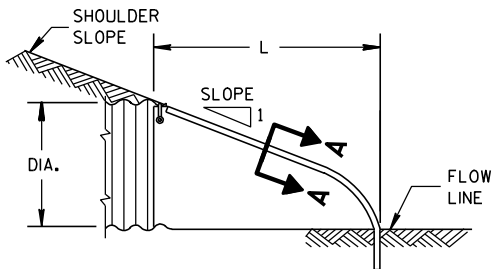
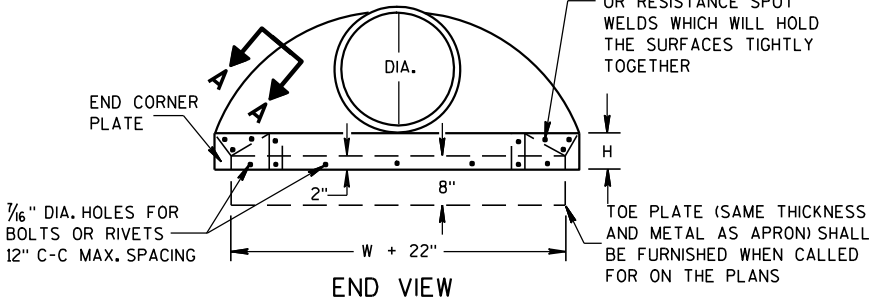
METAL APRON ENDWALLS											
PIPE DIA. (IN.)	MIN. THICK. (Inches)		DIMENSIONS (Inches)							APPROX. SLOPE	BODY
	STEEL	ALUM.	A (±1")	B (MAX.)	H (±1")	L (±1 1/2")	L1 ①	L2 ①	W (±2")		
12	.064	.060	6	6	6	21	12	17 1/2	24	2 1/2 to 1	1 Pc.
15	.064	.060	7	8	6	26	14	21 3/4	30	2 1/2 to 1	1 Pc.
18	.064	.060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

* EXCEPT CENTER PANEL
SEE GENERAL NOTES



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

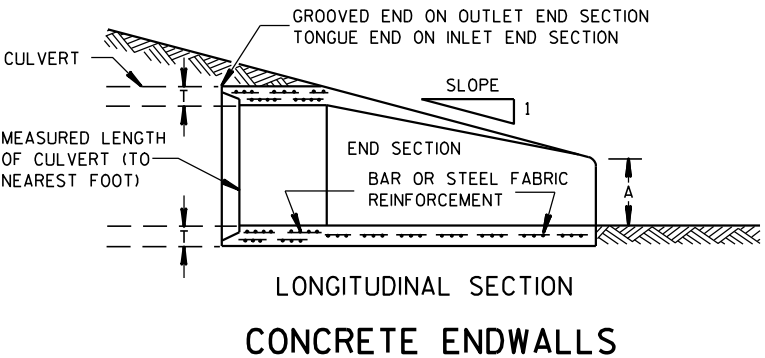
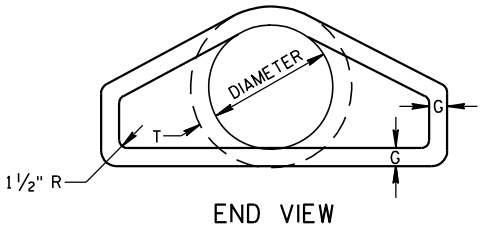
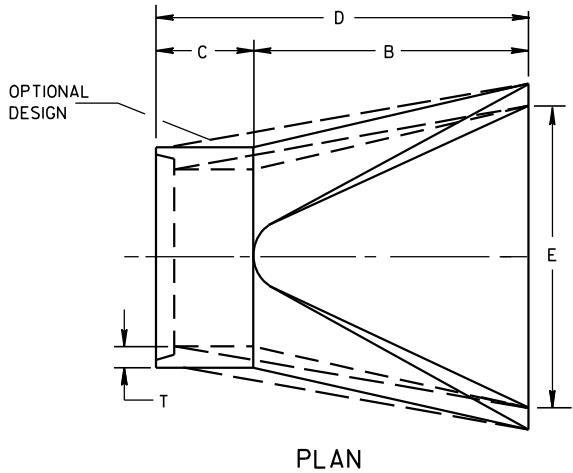
TOE PLATE (SAME THICKNESS AND METAL AS APRON) SHALL BE FURNISHED WHEN CALLED FOR ON THE PLANS



SIDE ELEVATION
METAL ENDWALLS

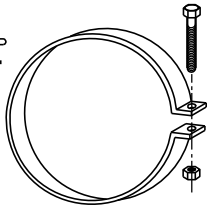
REINFORCED CONCRETE APRON ENDWALLS											
PIPE DIA. (IN.)	DIMENSIONS (Inches)							APPROX. SLOPE			
	T	A	B	C	D	E	G				
12	2	4	24	48 7/8	72 7/8	24	2	3 to 1			
15	2 1/4	6	27	46	73	30	2 1/4	3 to 1			
18	2 1/2	9	27	46	73	36	2 1/2	3 to 1			
21	2 3/4	9	36	37 1/2	73 1/2	42	2 3/4	3 to 1			
24	3	9 1/2	43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

* MINIMUM
** MAXIMUM

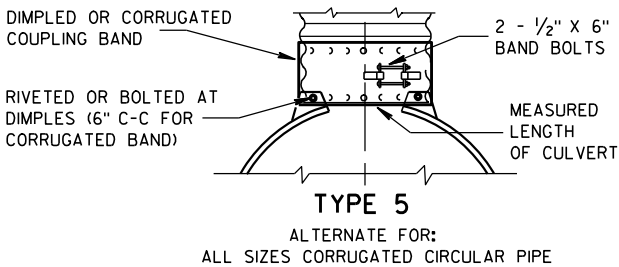
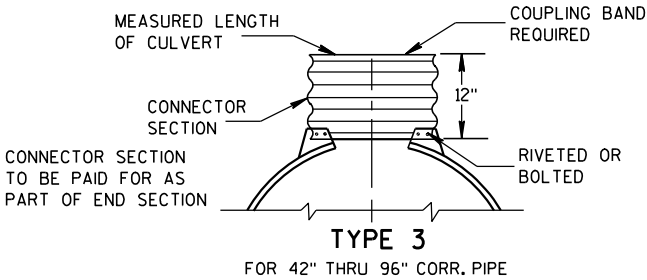
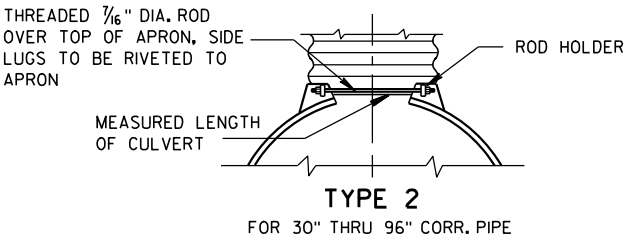
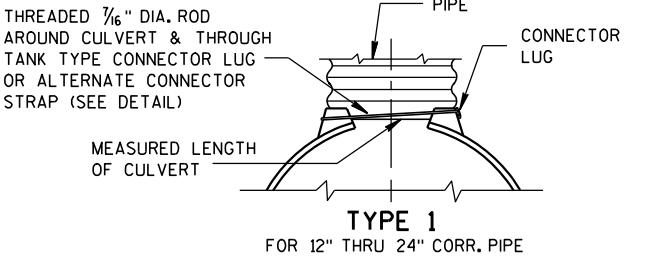


LONGITUDINAL SECTION
CONCRETE ENDWALLS

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



ALTERNATE FOR TYPE 1 CONNECTION
END SECTION CONNECTOR STRAP



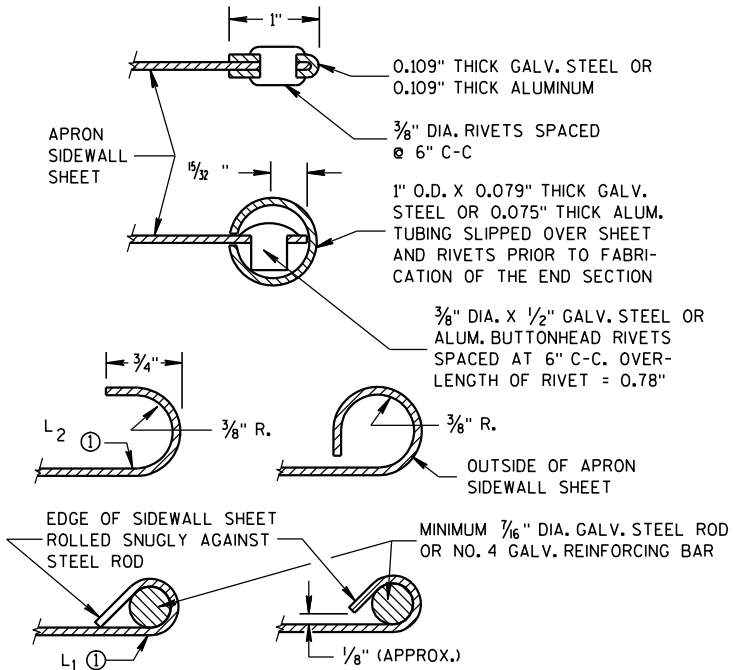
NOTE: DIMPLED BAND FITS OVER OUTSIDE OF ENDWALL, AND CORRUGATED BAND FITS INSIDE ENDWALL. DIMPLED BAND MAY BE USED WITH HELICALLY CORRUGATED PIPE.

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

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

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

CONNECTION DETAILS



SECTION A-A

GENERAL NOTES

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

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

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

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

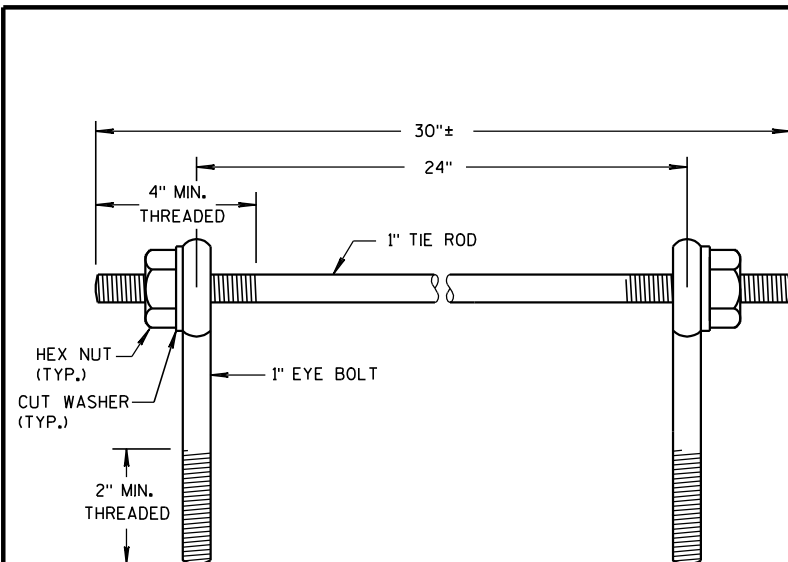
WHERE TWO OR MORE PIPES WITH APRON ENDWALLS ARE LAID ADJACENT TO EACH OTHER, THEY SHALL BE SEPARATED BY A DISTANCE SUFFICIENT TO PROVIDE A MINIMUM CLEARANCE OF 6 INCHES BETWEEN APRON ENDWALLS.

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

APRON ENDWALLS FOR
CULVERT PIPE

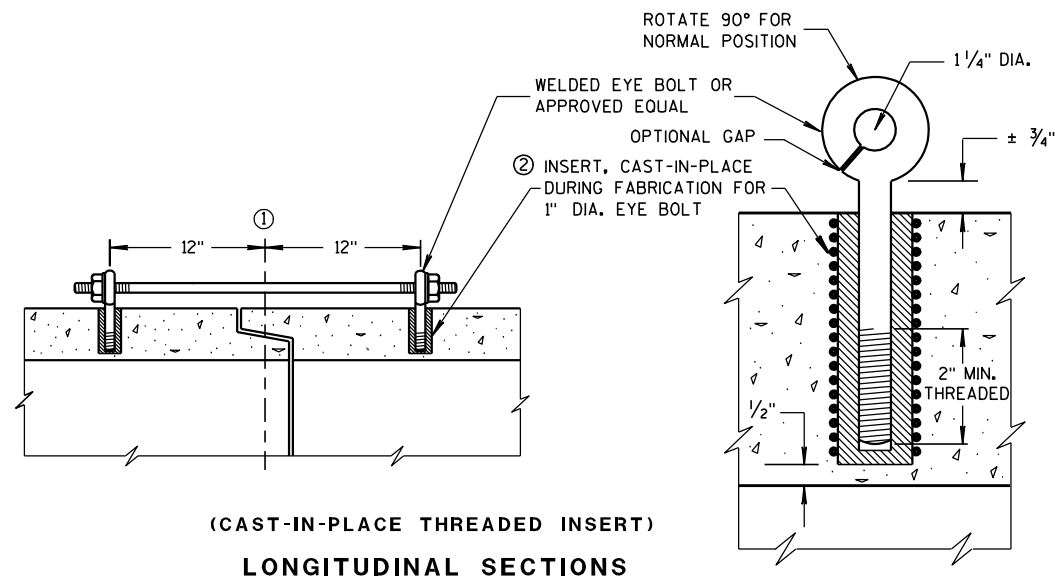
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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



EYE BOLTS AND TIE ROD

EYE BOLT AND TIE ROD ASSEMBLY (ALTERNATE NO. 1)

(CAST-IN-PLACE THREADED INSERT)
LONGITUDINAL SECTIONS

GENERAL NOTES

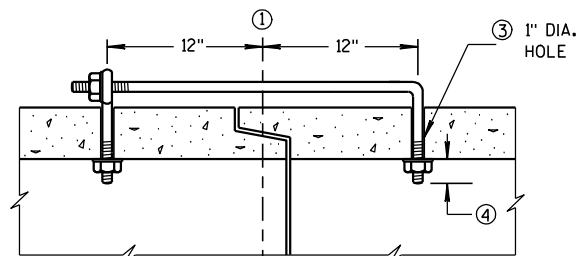
DETAILS OF CONSTRUCTION, MATERIALS, AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND APPLICABLE SPECIAL PROVISIONS.

CONCRETE CULVERT AND STORM SEWER PIPE SHALL BE TIED TOGETHER IN THE MANNER ILLUSTRATED BY THIS DETAIL AT LOCATIONS DESIGNATED IN THE STANDARD SPECIFICATIONS AND THE PLAN. THE CONTRACTOR MAY USE EITHER ALTERNATE 1, 2 OR 3 FOR DRAINAGE STRUCTURES. ONLY ALTERNATE 1 AND 3 MAY BE USED FOR CATTLE PASSES, UNLESS OTHERWISE STATED IN THE CONTRACT. THE MATERIALS, FABRICATION AND WORK NECESSARY TO TIE THE PIPE BY THIS DETAIL WILL BE CONSIDERED INCIDENTAL TO THE PIPE AND APRON ENDWALLS IF REQUIRED.

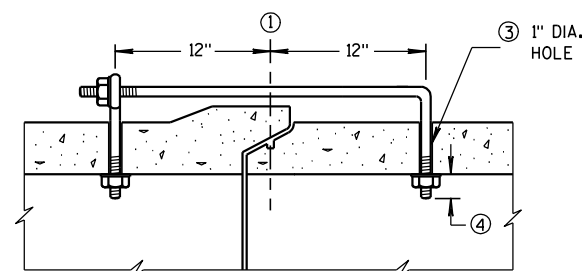
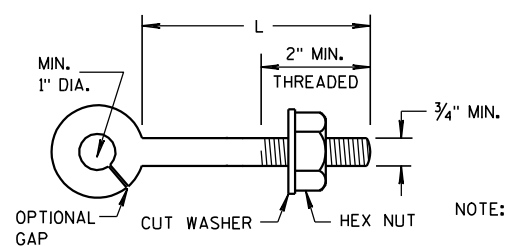
DETAILED DRAWINGS FOR PROPOSED ALTERNATE DESIGNS FOR JOINT TIES SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL.

JOINT TIES TO BE HOT-DIP GALVANIZED PER ASTM A 153.

- ① ϕ OF TONGUE AND GROOVE OR BELL AND SPIGOT JOINTS.
- ② THE INSIDE OF THE THREADED INSERTS SHALL BE CLEAN TO ALLOW THE INSERTION OF THREADED EYE BOLTS.
- ③ HOLES SHALL BE CAST-IN-PLACE OR DRILLED 12 INCHES FROM ϕ OF TONGUE AND GROOVE.
- ④ BOLT PROJECTION INSIDE OF PIPE SHALL NOT EXCEED 2 INCHES.
- ⑤ OPENING TO BE ROD DIAMETER PLUS 1 INCH.
- ⑥ LENGTH ADEQUATE TO EXTEND TO WITHIN $\frac{1}{2}$ INCH OF THE INNER SURFACE OF THE PIPE.



(TONGUE & GROOVE PIPE)

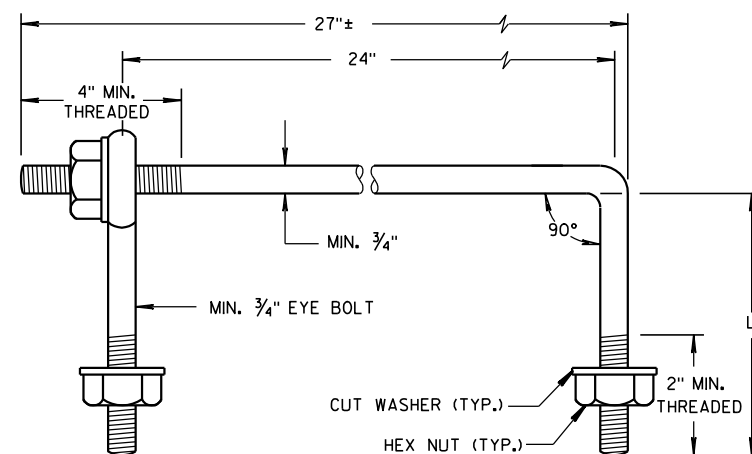
(MODIFIED BELL PIPE)
LONGITUDINAL SECTION

EYE BOLT

NOTE: TWO EYE BOLTS MAY BE USED WITH A 30" LONG THREADED ROD IN LIEU OF THE 90° BENT TIE ROD.

(JOINT TIES FOR 18" TO 66" DIA. CONCRETE PIPE)

EYE BOLT AND TIE ROD ASSEMBLY (ALTERNATE NO. 2)



EYE BOLT AND TIE ROD

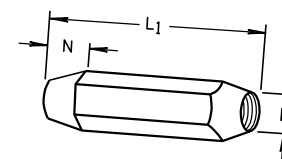
EYE BOLT DIMENSION TABLE

PIPE SIZE	L = LENGTH	
	TONGUE & GROOVE PIPE	MODIFIED BELL PIPE
18" TO 24"	4 1/2"	6 1/4"
30"	5"	7"
36"	5 1/2"	7"
42"	6"	
48"	6 1/2"	
60"	7 1/2"	
66"	8"	

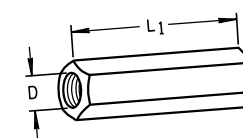
ADJUSTABLE TIE ROD TABLE

PIPE DIAMETER	TIE ROD DIAMETER	D	L ₁	N
12-60	5/8	5/8	5	1/2
66-84	3/4	3/4	5	1/2
90-108	1	1	7	1 1/16

DIMENSIONS SHOWN ARE IN INCHES



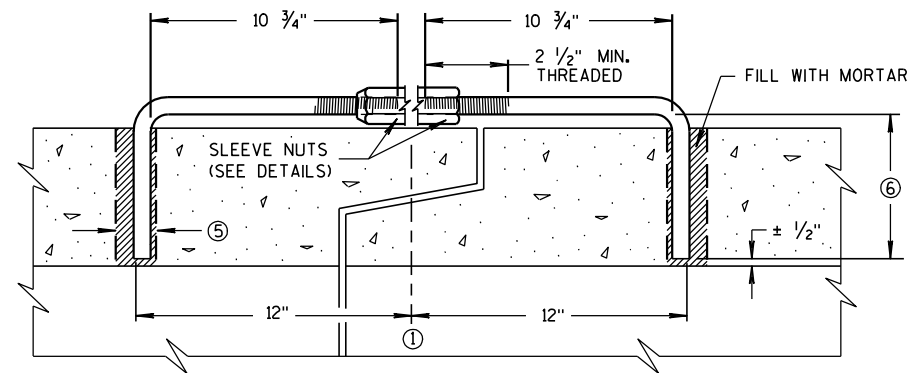
TAPERED



PLAIN

RIGHT AND LEFT THREADS

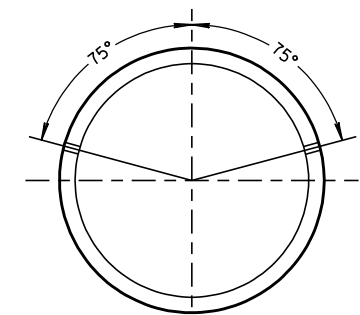
SLEEVE NUTS



LONGITUDINAL SECTION

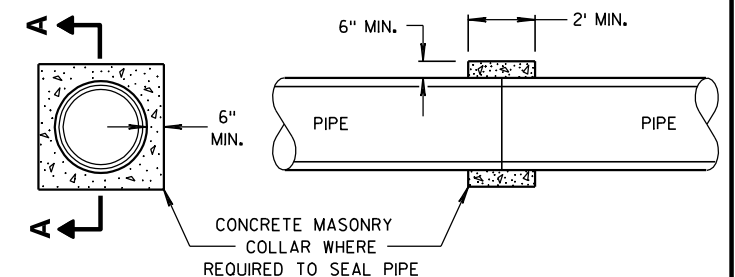
(JOINT TIES FOR 12" TO 108" DIA. CONCRETE PIPE)

ADJUSTABLE TIE ROD (ALTERNATE NO. 3)



PLACEMENT OF (2) CAST-IN-PLACE INSERTS OR HOLES DURING FABRICATION FOR PIPE SECTIONS REQUIRING TIE RODS

TRANSVERSE SECTION



SECTION A-A

CONCRETE COLLAR DETAIL

JOINT TIES FOR CONCRETE
PIPE AND CONCRETE
COLLAR DETAIL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

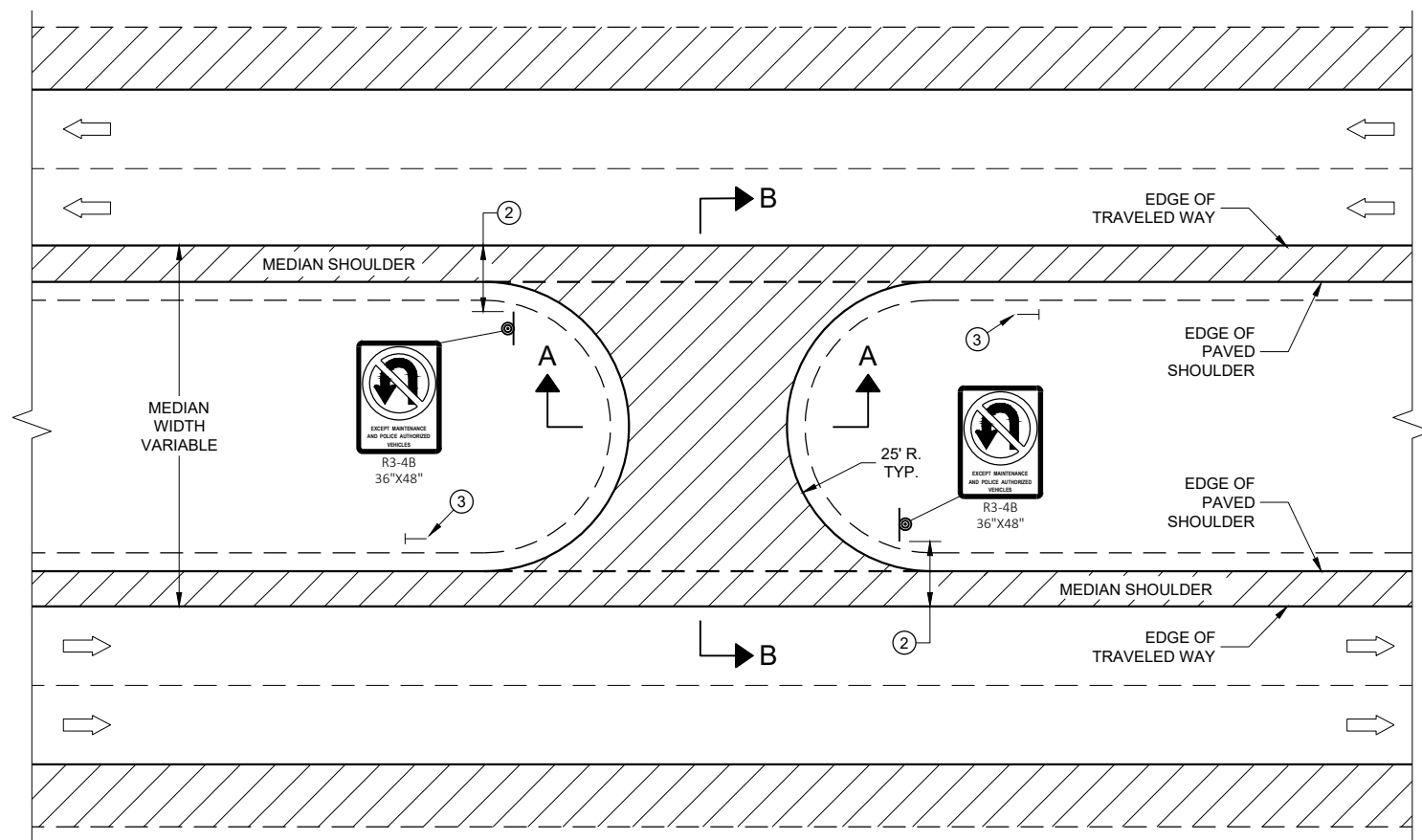
APPROVED

6/5/2012

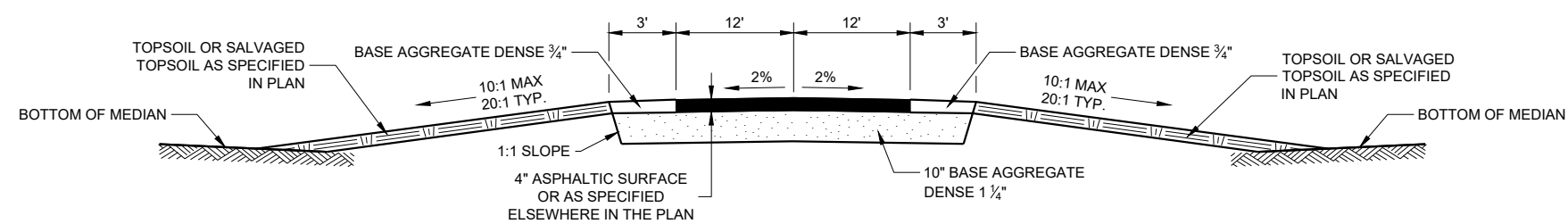
DATE

FHWA

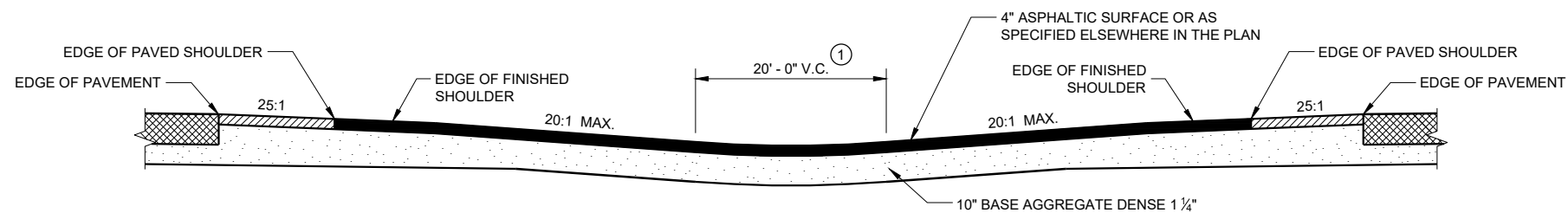
/S/ Jerry H. Zogg
ROADWAY STANDARDS DEVELOPMENT
ENGINEER



PLAN VIEW



SECTION A-A



SECTION B-B

GENERAL NOTES

- ① ADJUST VERTICAL CURVE LOCATION Laterally TO MAINTAIN 20:1 MAX.
- ② SIGNING DETAILS AND SPECIFICATIONS ARE PROVIDED ELSEWHERE IN THE CONTRACT.
- ③ INSTALL DELINEATOR. SEE STANDARD DETAIL DRAWING 15A4.

LEGEND

- SIGN ON PERMANENT SUPPORT
- DELINEATOR
- DIRECTION OF TRAFFIC

MAINTENANCE CROSSOVER
FOR FREEWAYSSTATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

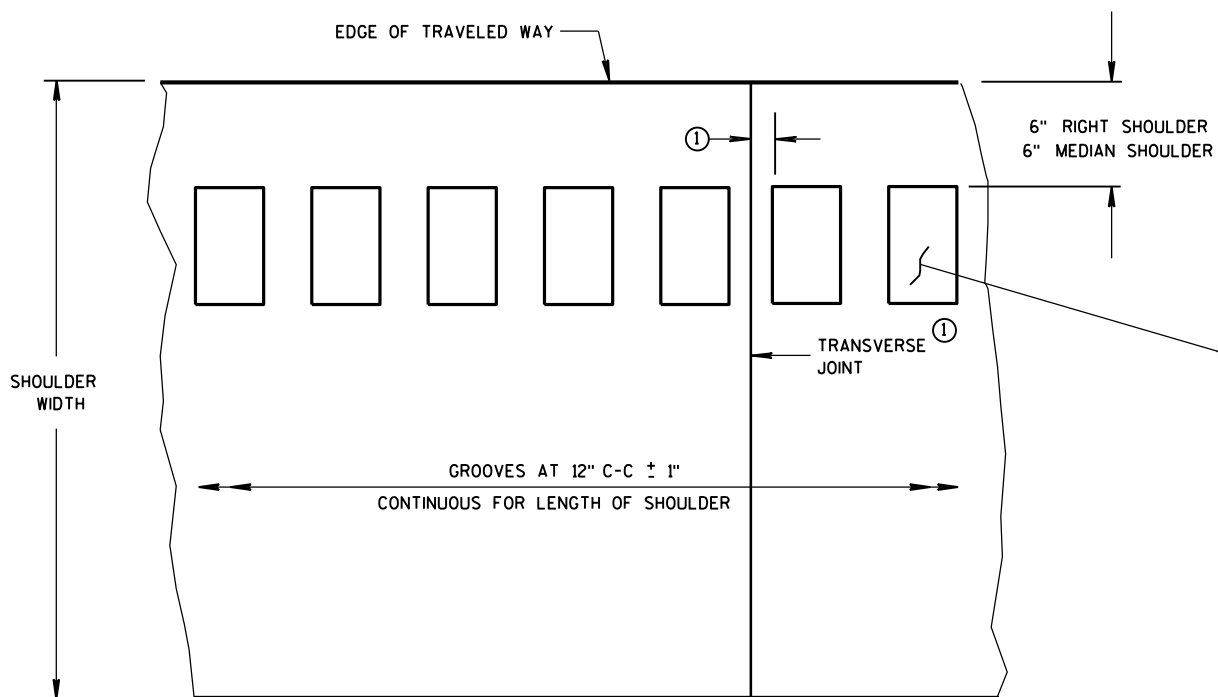
APPROVED

November 2019

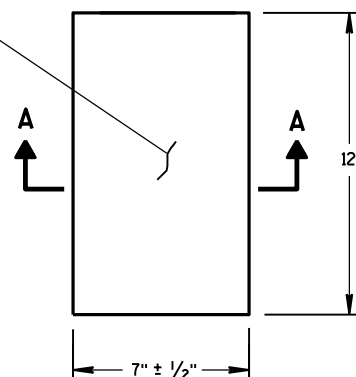
DATE

FHWA

/S/ Rodney Taylor
ROADWAY STANDARDS DEVELOPMENT
ENGINEER



PLAN VIEW
SHOULDER WITH GROOVES



PLAN VIEW
(SINGLE GROOVE)

PLACEMENT DETAIL FOR MILLED RUMBLE STRIP

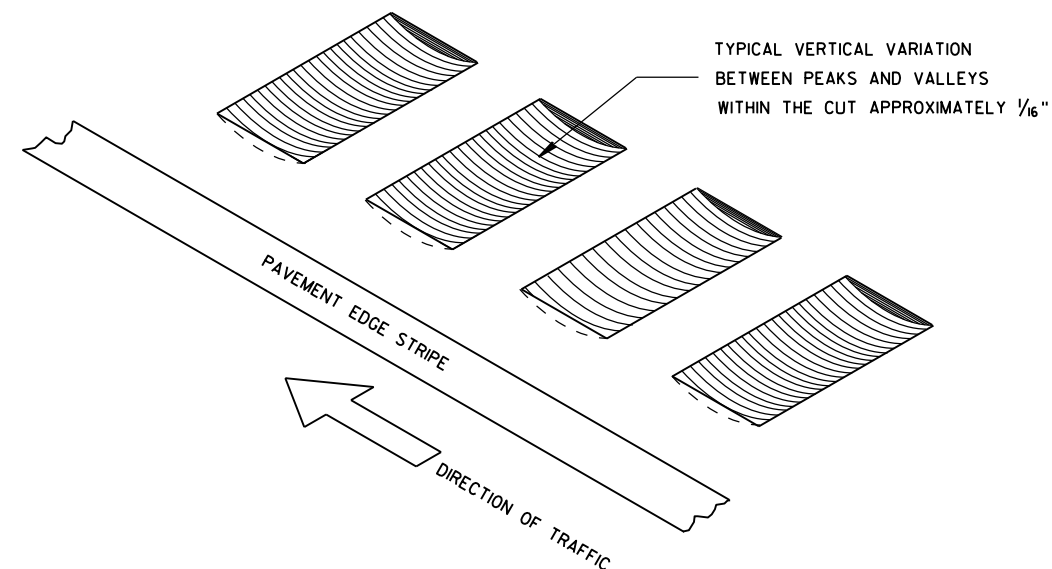
GENERAL NOTES

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

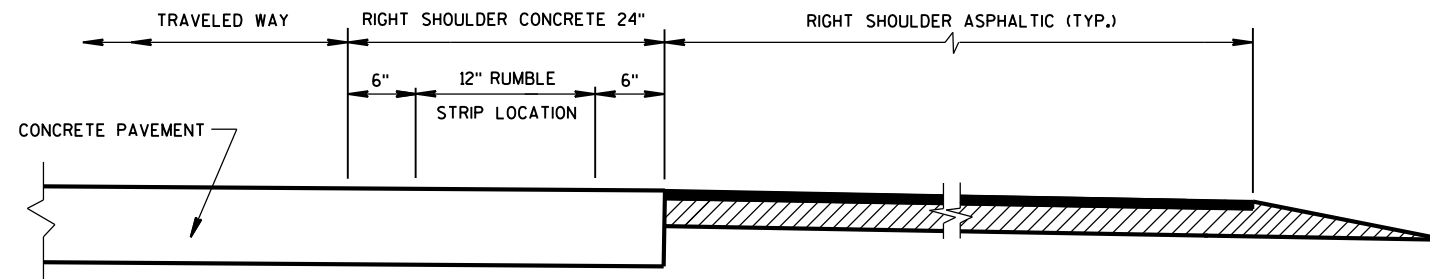
RUMBLE STRIPS ON EXPRESSWAYS

DO NOT INSTALL RUMBLE STRIPS ACROSS SIDE ROAD INTERSECTIONS, COMMERCIAL DRIVEWAYS, PRIVATE DRIVEWAYS OR ADJACENT TO RIGHT TURN LANES, LEFT TURN LANES, TURN LANE TAPERS, BRIDGE DECKS, BRIDGE APPROACHES, OR 100 FEET IN ADVANCE OF RAILROAD CROSSING. THE ATTACHED STANDARD DETAIL DRAWING SHOWS THE LOCATION OF THE RUMBLE STRIPS AT INTERCHANGE AREAS.

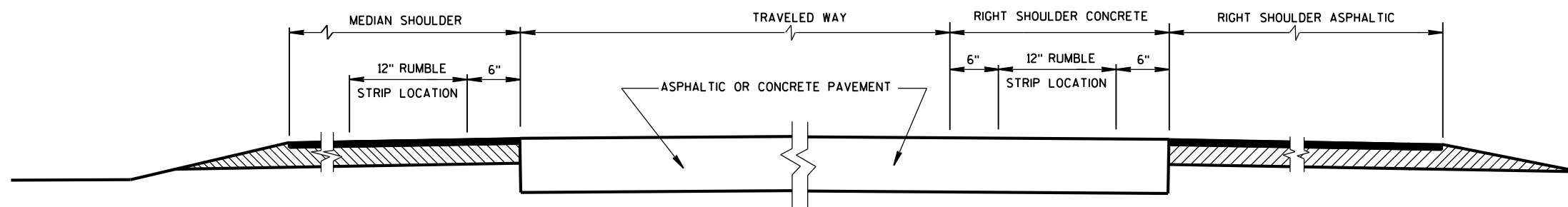
① CONCRETE PAVEMENT - RUMBLE STRIPS SHALL BE A MINIMUM OF 6" AWAY FROM TRANSVERSE JOINTS.



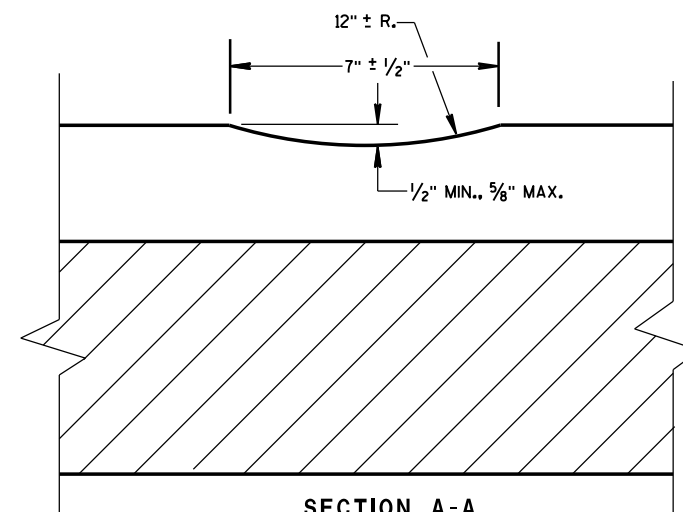
ISOMETRIC



SECTION VIEW
(CONCRETE PAVEMENT EXTENDS INTO RIGHT SHOULDER)



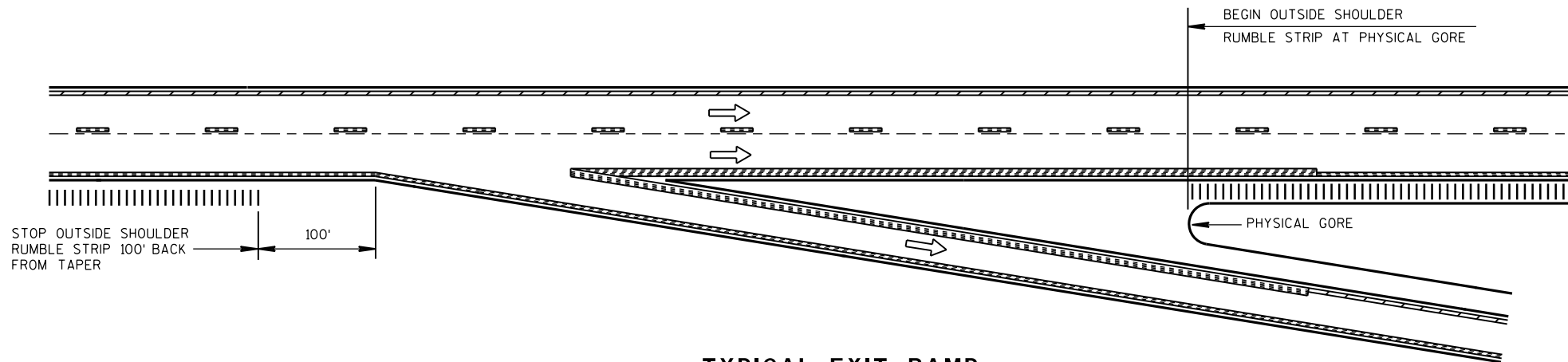
SECTION VIEW
TYPICAL LOCATIONS OF SHOULDER RUMBLE STRIPS
IN RURAL DIVIDED HIGHWAYS
(ONE ROADWAY IS SHOWN)



SECTION A-A

SHOULDER RUMBLE STRIP,
MILLING

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



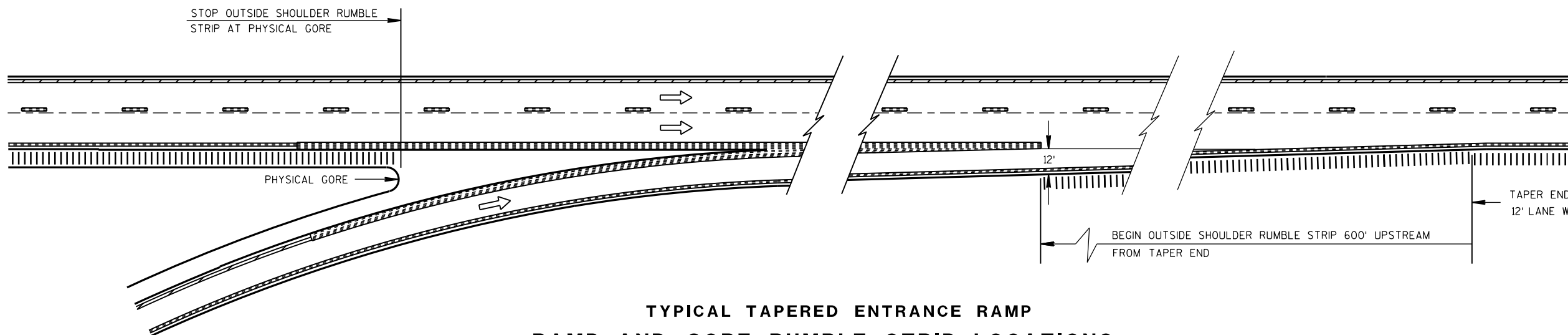
TYPICAL EXIT RAMP

NOTES:

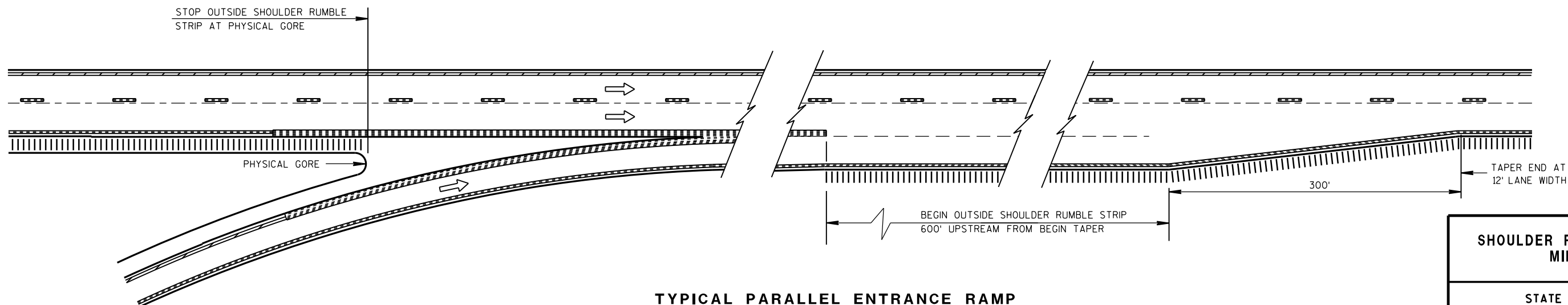
NO RUMBLE STRIP ON EXIT, DIRECTIONAL, OR ENTRANCE RAMPS, EXCEPT NEAR THE ENTRANCE TAPER END AND ALONG THE PARALLEL RAMP AREA AS SHOWN.

PAVEMENT MARKING DETAILS AND SPECIFICATIONS ARE PROVIDED ELSEWHERE IN THE CONTRACT.

NOTE:
ARROW SYMBOL (→)
SHOWS DIRECTION OF TRAVEL



**TYPICAL TAPERED ENTRANCE RAMP
RAMP AND GORE RUMBLE STRIP LOCATIONS**



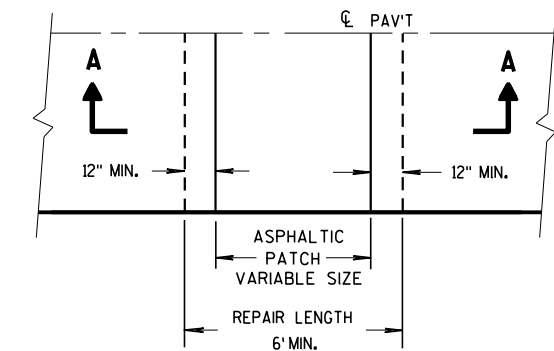
**TYPICAL PARALLEL ENTRANCE RAMP
RAMP AND GORE RUMBLE STRIP LOCATIONS**

**SHOULDER RUMBLE STRIP,
MILLING**

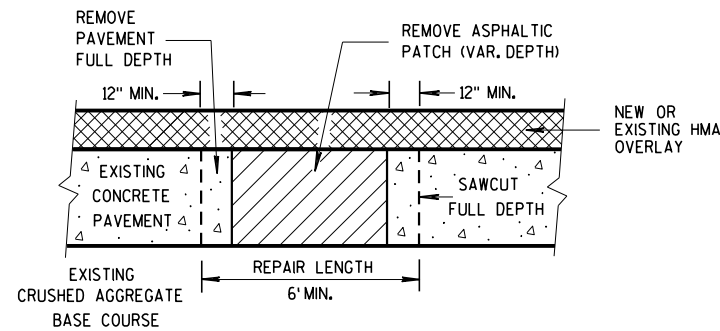
**STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION**

APPROVED
12/17/2012
DATE
FHWA

/S/ Jerry H. Zogg
ROADWAY STANDARDS DEVELOPMENT
ENGINEER

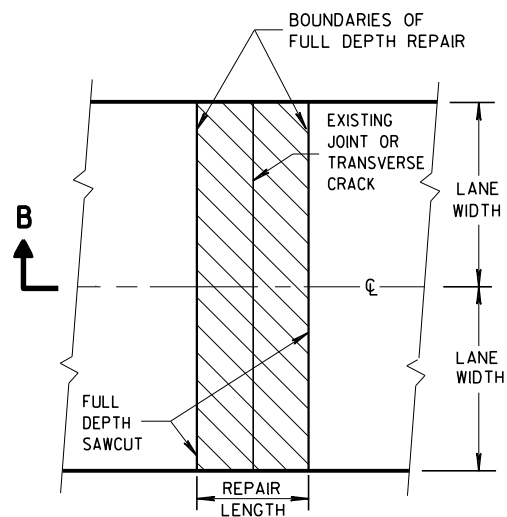


PLAN VIEW

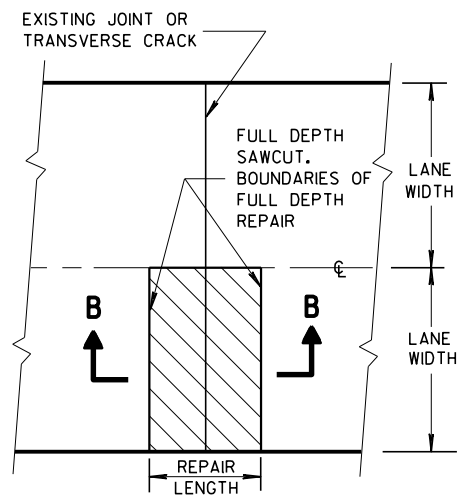


SECTION A-A

HMA PATCH REMOVAL



PLAN VIEW
(DOUBLE LANE REPAIR)



PLAN VIEW
(SINGLE LANE REPAIR)

FULL DEPTH CONCRETE PAVEMENT REMOVAL

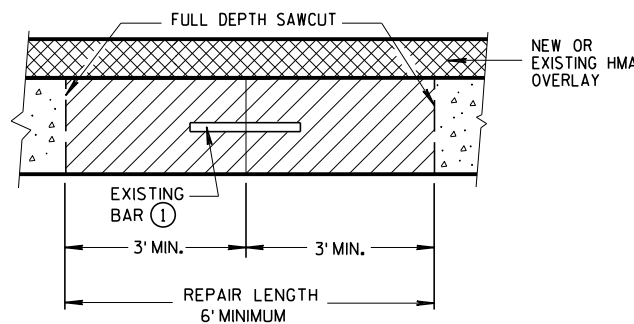
GENERAL NOTES

SAW CUT, DRILL, AND LIFT OUT EXISTING CONCRETE PAVEMENT WITHIN THE BOUNDARIES OF CONCRETE REPAIR AREAS. THE CONTRACTOR MAY MAKE ADDITIONAL SAW CUTS INSIDE THE REPAIR LIMITS TO REDUCE WEIGHT AND SIZE OF CONCRETE PIECES.

PROVIDE 6-FOOT MINIMUM DISTANCE FROM BOUNDARIES OF CONCRETE REPAIR AREAS TO ADJACENT TRANSVERSE JOINT OR CRACK.

THE LENGTH OF THE REPAIRS MAY VARY FROM THE DIMENSIONS SHOWN IF THE EXISTING CONCRETE PAVEMENT IS NONDOWELED AND THE PAVEMENT IS TO BE OVERLAID AFTER REPAIRING.

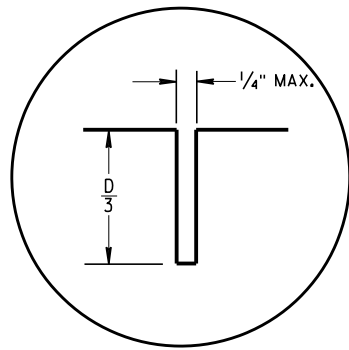
① DOWEL BARS MIGHT NOT EXIST.



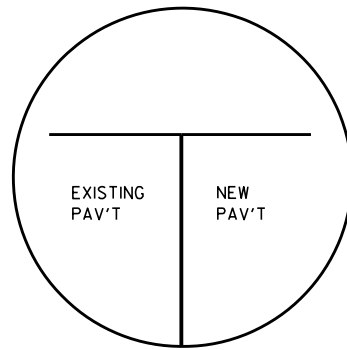
SECTION B-B
CONCRETE REMOVAL

BASE PATCHING CONCRETE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

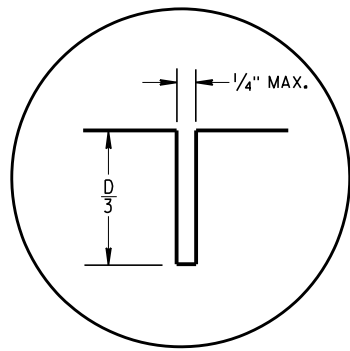


C1

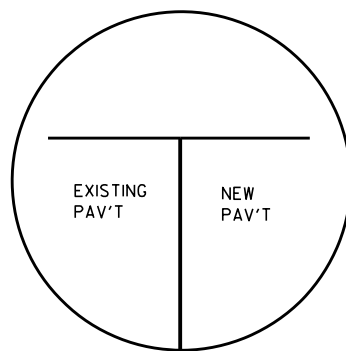


C2

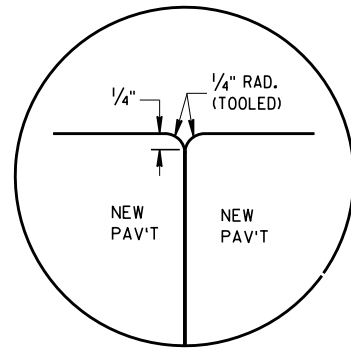
TRANSVERSE JOINTS



L1

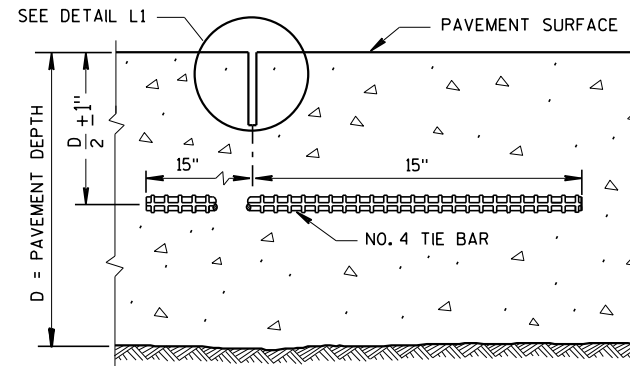


L2

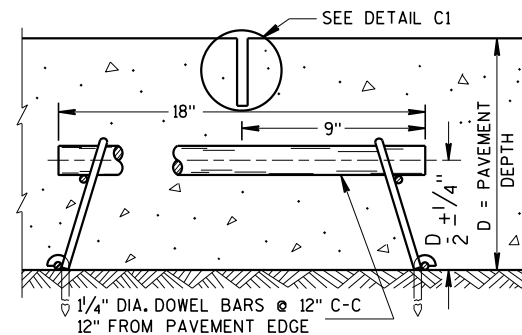


L3

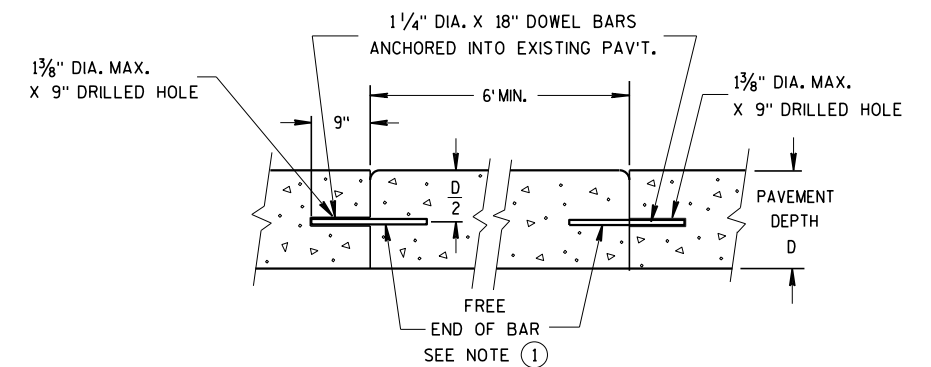
LONGITUDINAL JOINTS



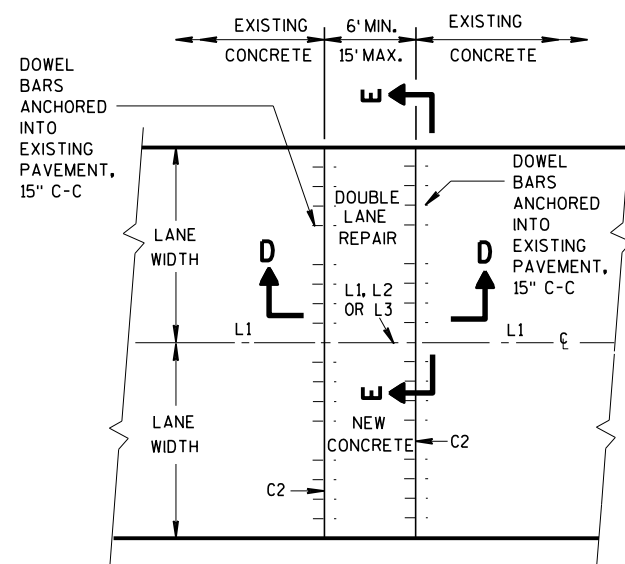
SECTION C-C
SAWED LONGITUDINAL JOINT



SECTION F-F
CONTRACTION JOINT

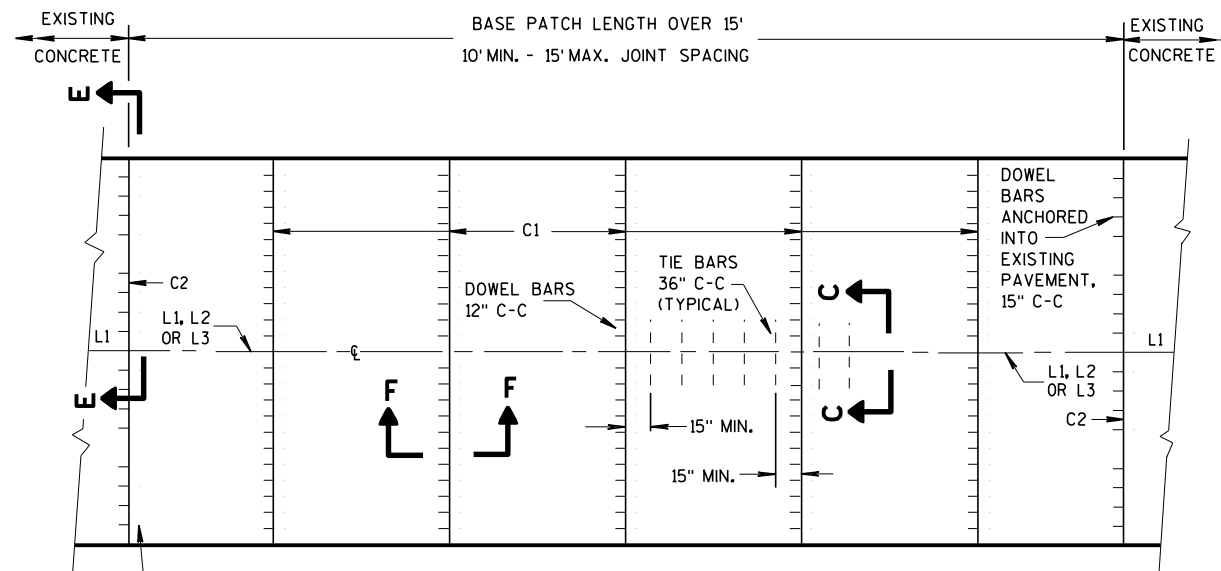


SECTION D-D



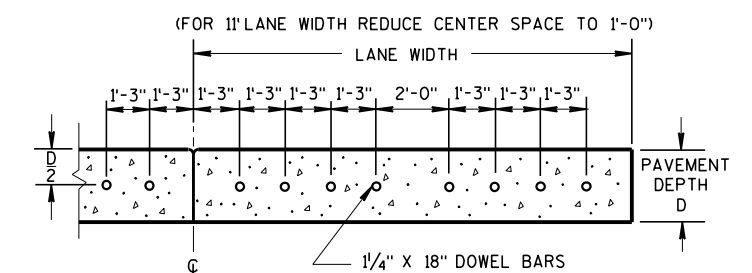
PLAN VIEW

MULTI-LANE CONCRETE BASE PATCH
15' MAXIMUM LENGTH



PLAN VIEW

MULTI-LANE CONCRETE BASE PATCH
GREATER THAN 15' IN LENGTH



SECTION E-E
SPACING OF DOWEL BARS
ANCHORED INTO EXISTING PAVEMENT

GENERAL NOTES

INSTALL DOWEL BARS PARALLEL TO THE PAVEMENT CENTERLINE AND PAVEMENT SURFACE.

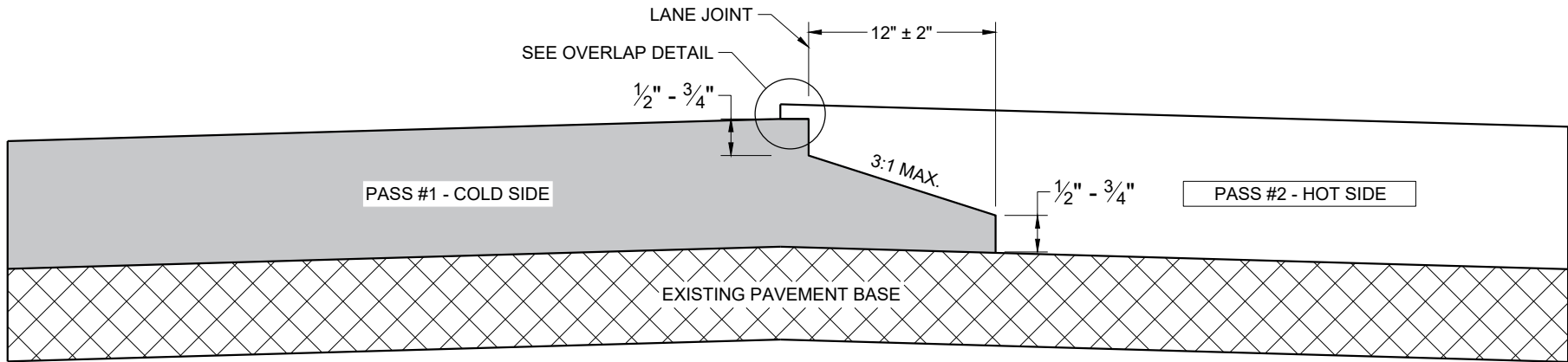
CONCRETE BASE PATCHES OF EXISTING NONDOWELED CONCRETE PAVEMENTS DO NOT NEED TO BE DOWELED.

ANCHOR DOWEL BARS AND TIE BARS INTO DRILLED HOLES WITH AN EPOXY.

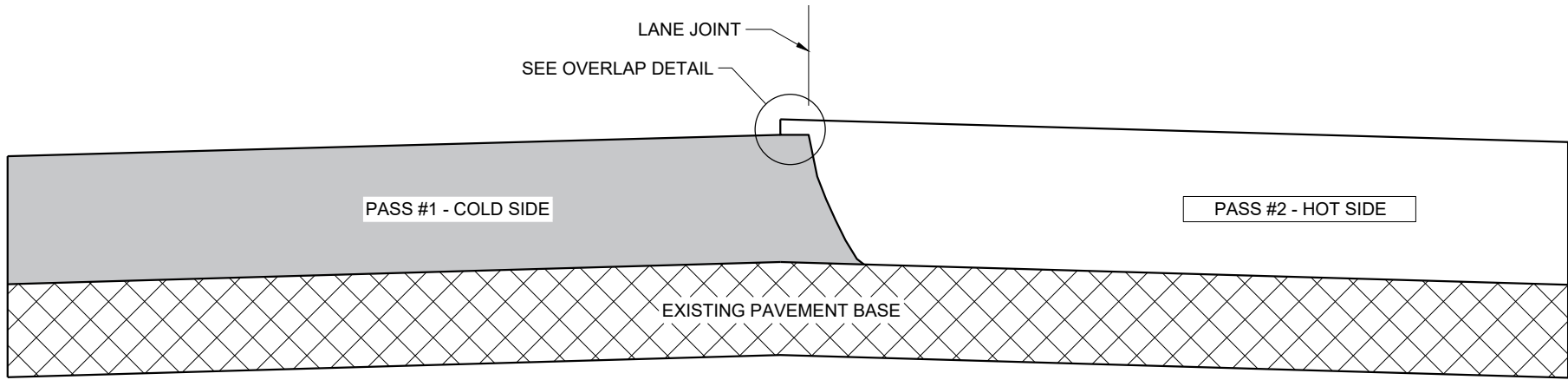
PROVIDE A MINIMUM DISTANCE OF 15 INCHES FROM AN EXISTING TRANSVERSE JOINT OR THE EDGE OF REPLACEMENT TO THE CENTER OF THE TIE BAR NEAREST THAT JOINT OR EDGE.

- APPLY A THIN UNIFORM COATING OF SURFACE TREATMENT TO THE FREE END OF DOWEL BARS TO PREVENT BONDING.

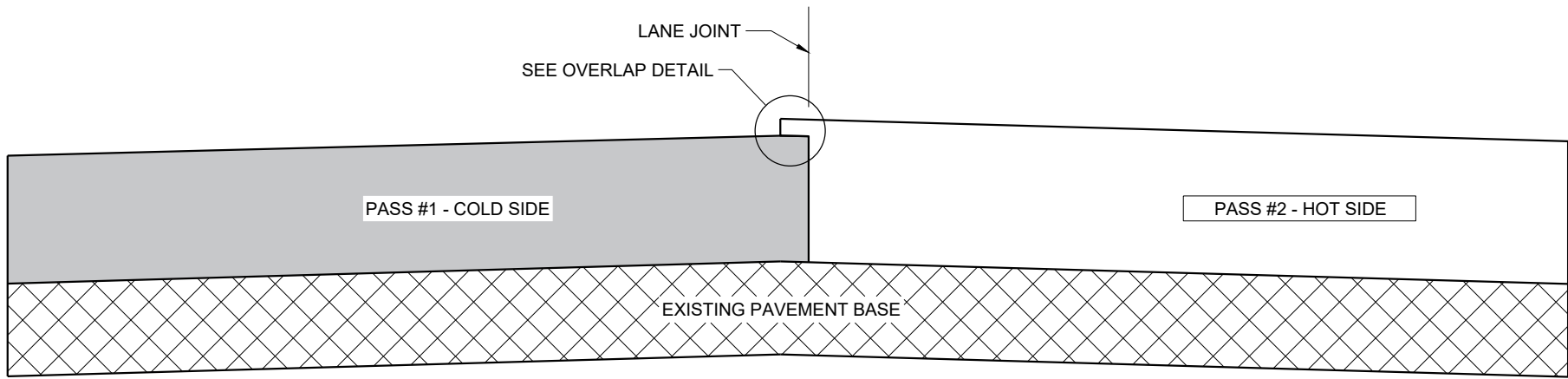
S.D.D. 13 C 14-7c



TYPICAL PAVEMENT CROSS SECTION
NOTCHED WEDGE JOINT



TYPICAL PAVEMENT CROSS SECTION
VERTICAL JOINT



TYPICAL PAVEMENT CROSS SECTION
VERTICAL JOINT (MILLED)

GENERAL NOTES

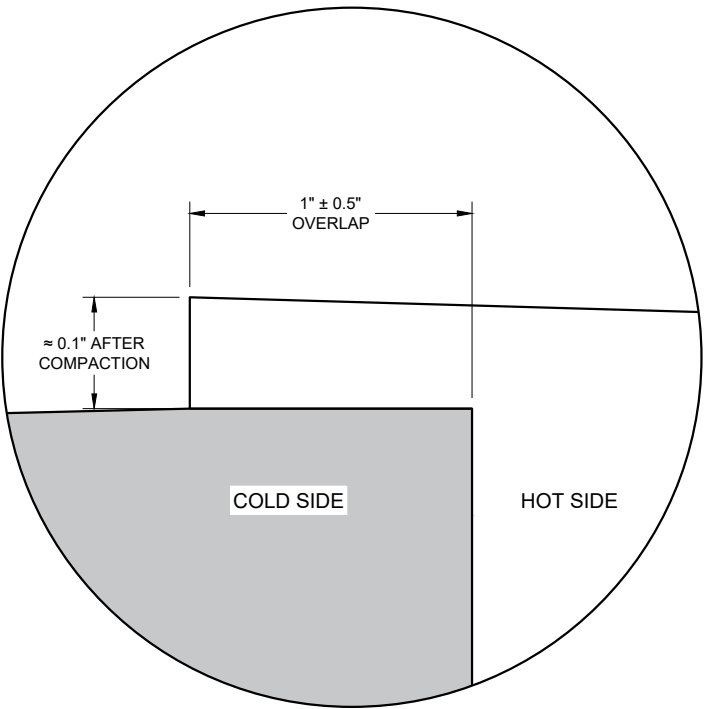
IN ADDITION TO THE DETAILS PROVIDED IN THIS DRAWING, CONFORM TO STANDARD SPECIFICATION 450.3.2.8 FOR WHEN A NOTCHED WEDGE JOINT IS REQUIRED AND FOR GENERAL JOINT CONSTRUCTION REQUIREMENTS.

FOR ALL LONGITUDINAL JOINTS, ENSURE THE PAVER SCREED OVERLAPS THE PREVIOUSLY PLACED PAVEMENT BY $1" \pm 0.5"$ AND THE HOT SIDE OF THE JOINT REMAINS HIGHER THAN THE COLD SIDE BY APPROXIMATELY $0.1"$ AFTER FINAL COMPACTION. (IT WILL BE FLUSH WHEN PAVING IN ECHELON.)

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

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

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

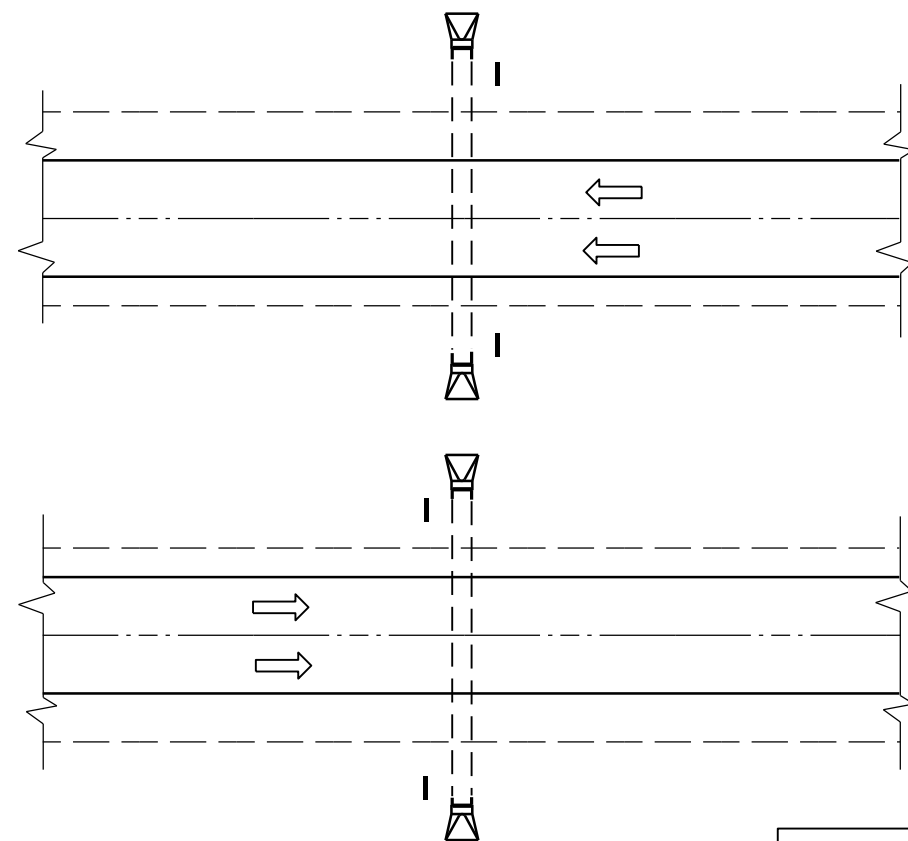


OVERLAP DETAIL (TYPICAL)

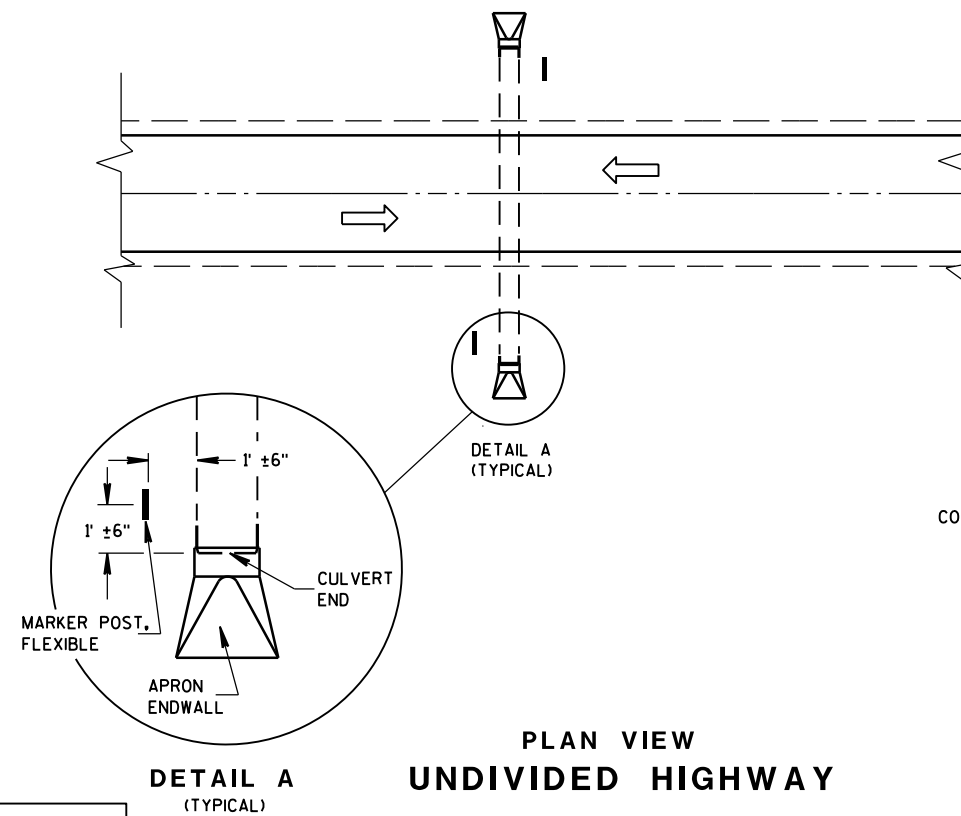
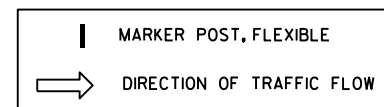
HMA LONGITUDINAL JOINTS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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



PLAN VIEW
DIVIDED HIGHWAY

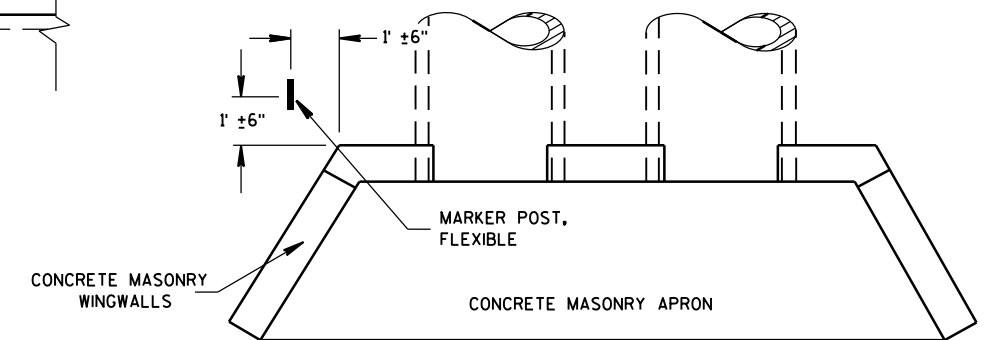


PLAN VIEW
UNDIVIDED HIGHWAY

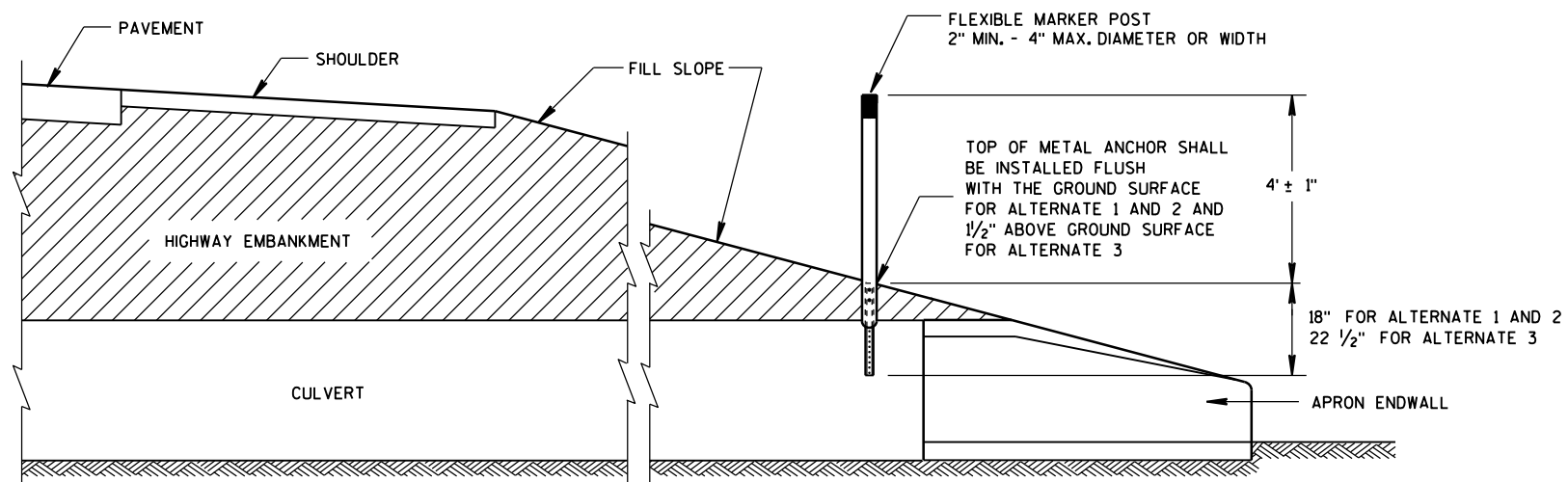
FLEXIBLE MARKER POST LOCATION

GENERAL NOTES

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



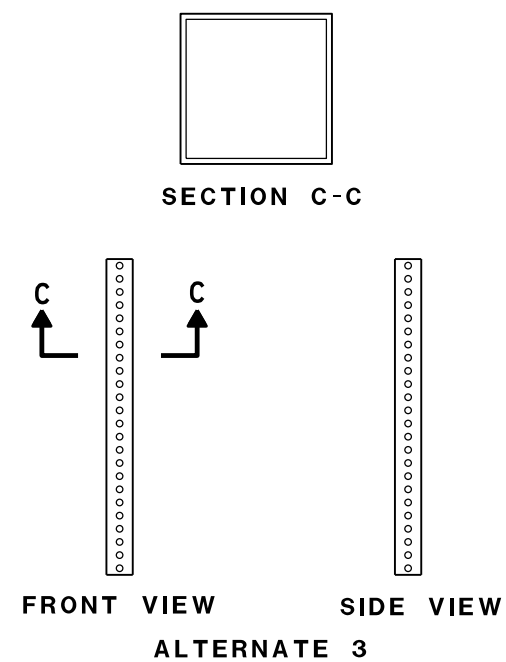
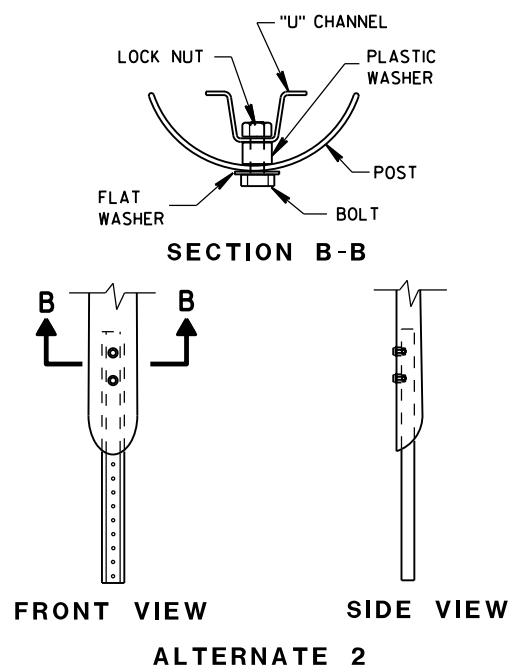
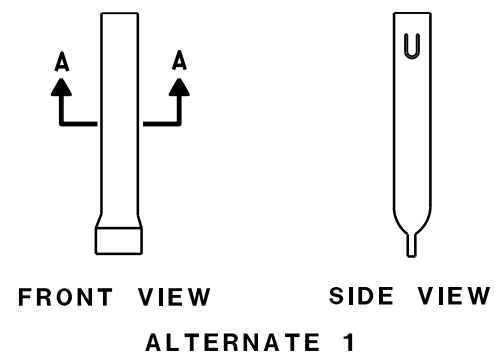
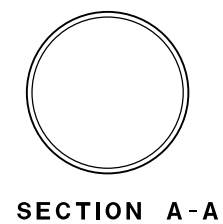
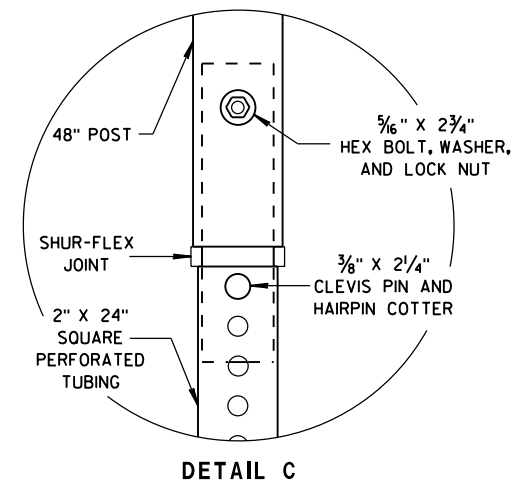
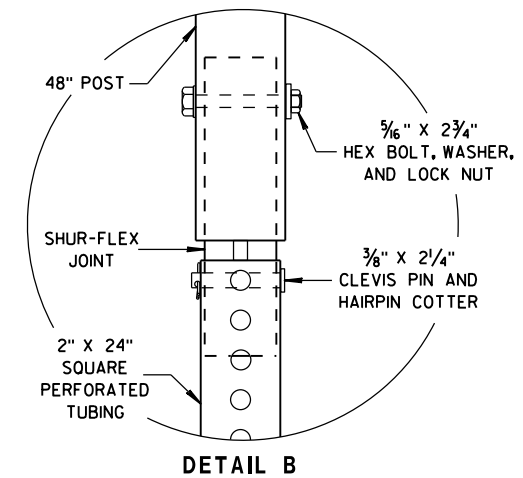
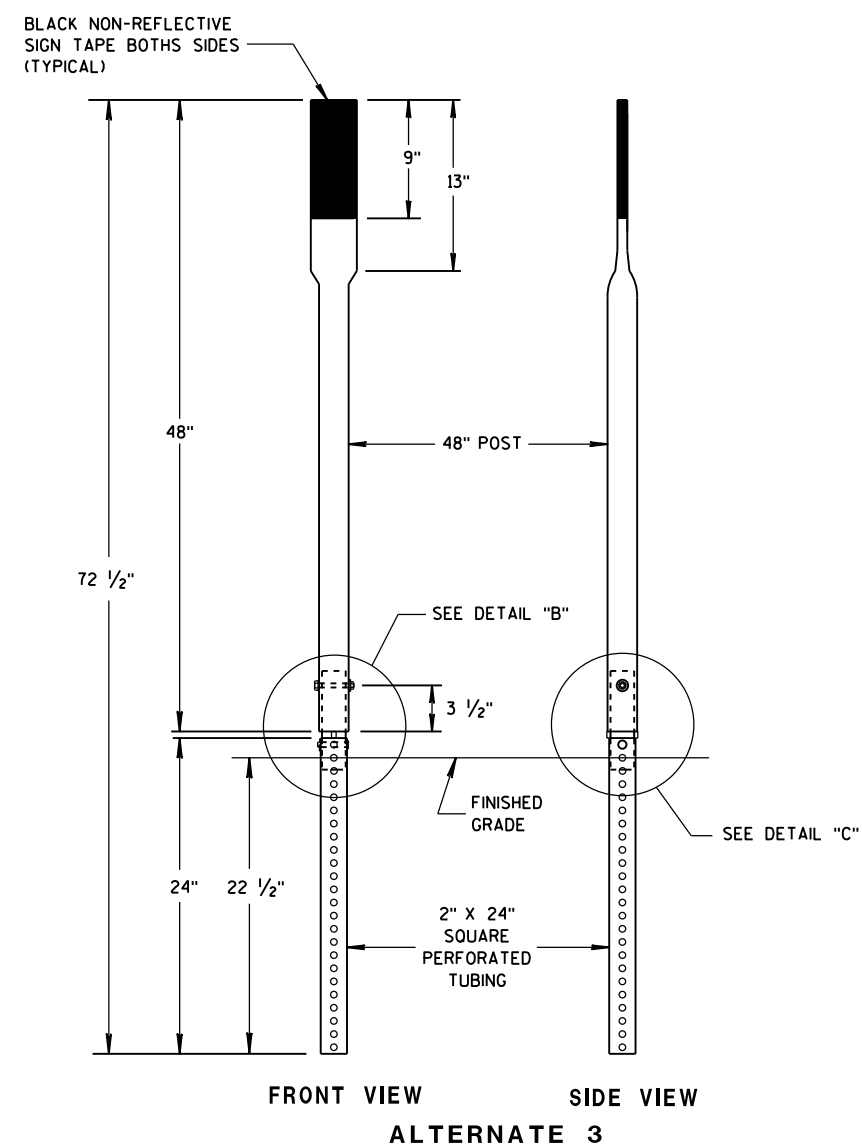
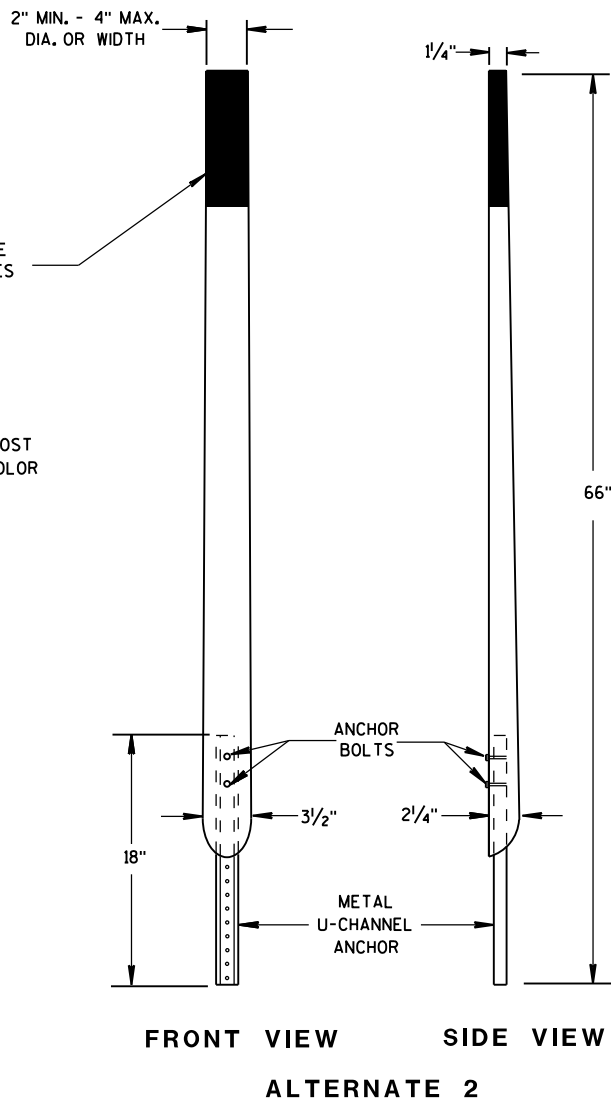
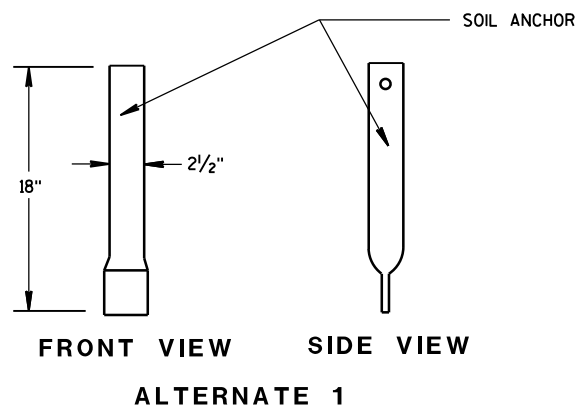
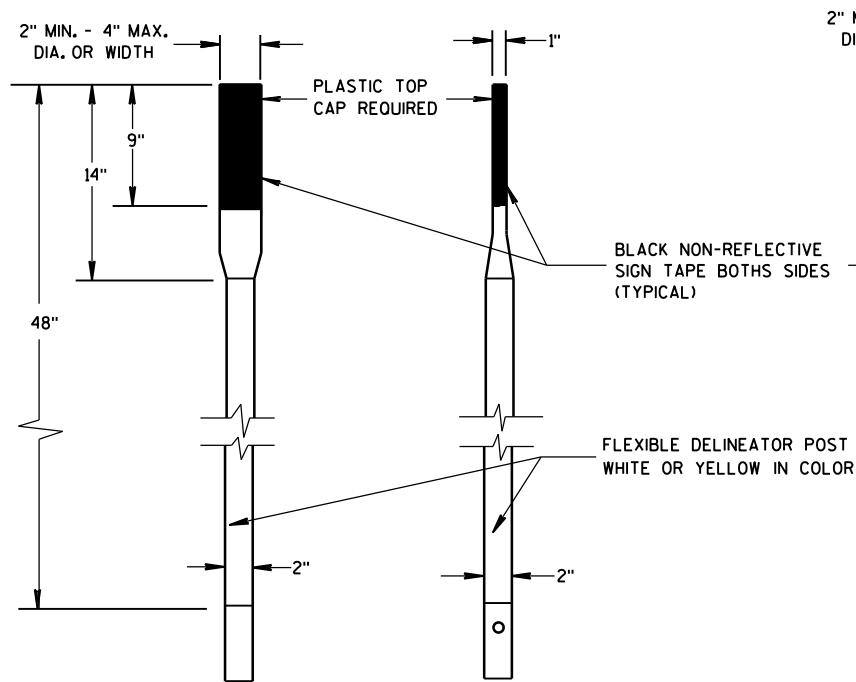
PLAN VIEW
CONCRETE MASONRY ENDWALLS FOR
CULVERT PIPE AND PIPE ARCH



CROSS SECTION
FLEXIBLE MARKER POST

FLEXIBLE MARKER POST
FOR CULVERT END

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

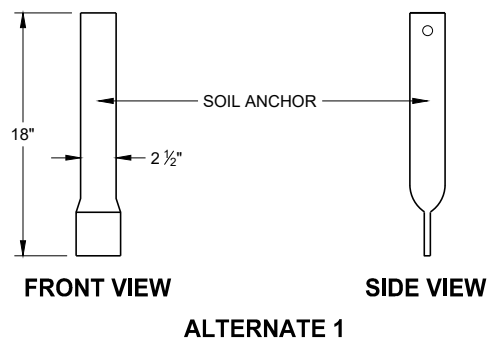
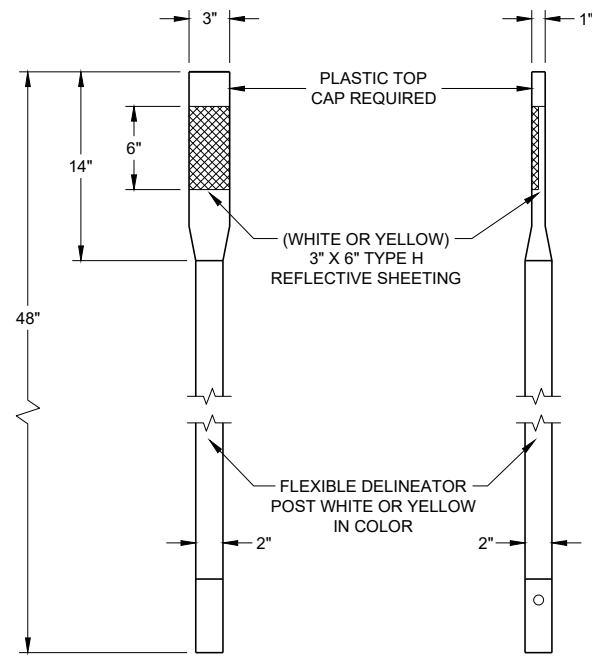


FLEXIBLE MARKER POST FOR CULVERT END

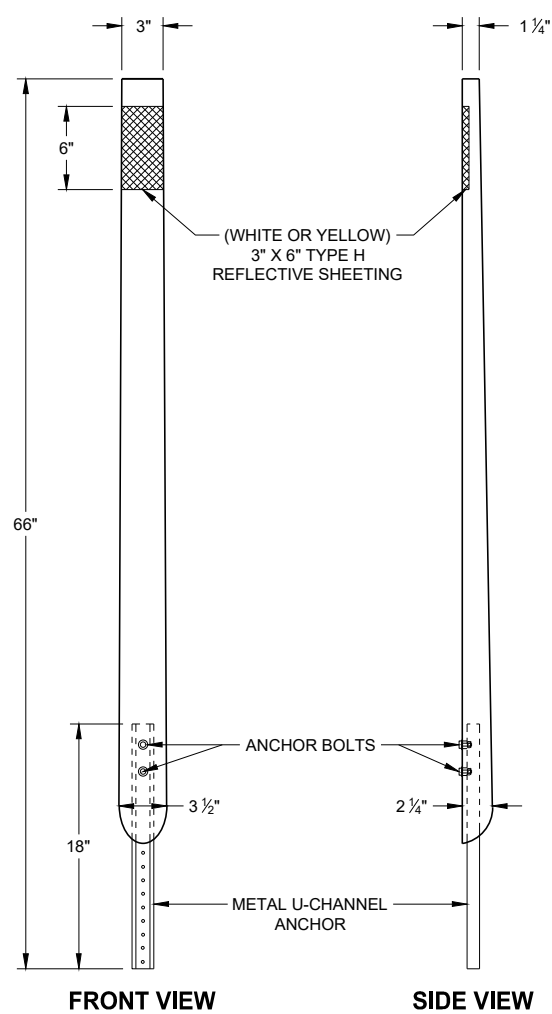
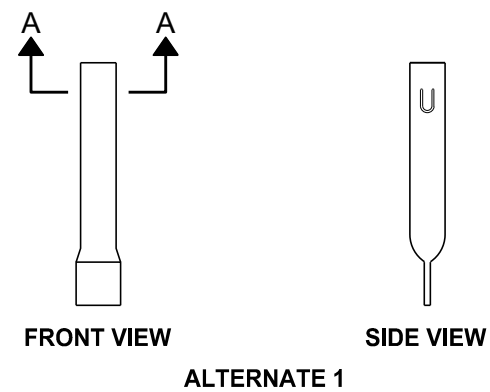
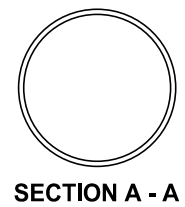
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
10/1/2012
DATE
FHWA

/S/ Travis Feltes
STATE TRAFFIC ENGINEER OF DESIGN

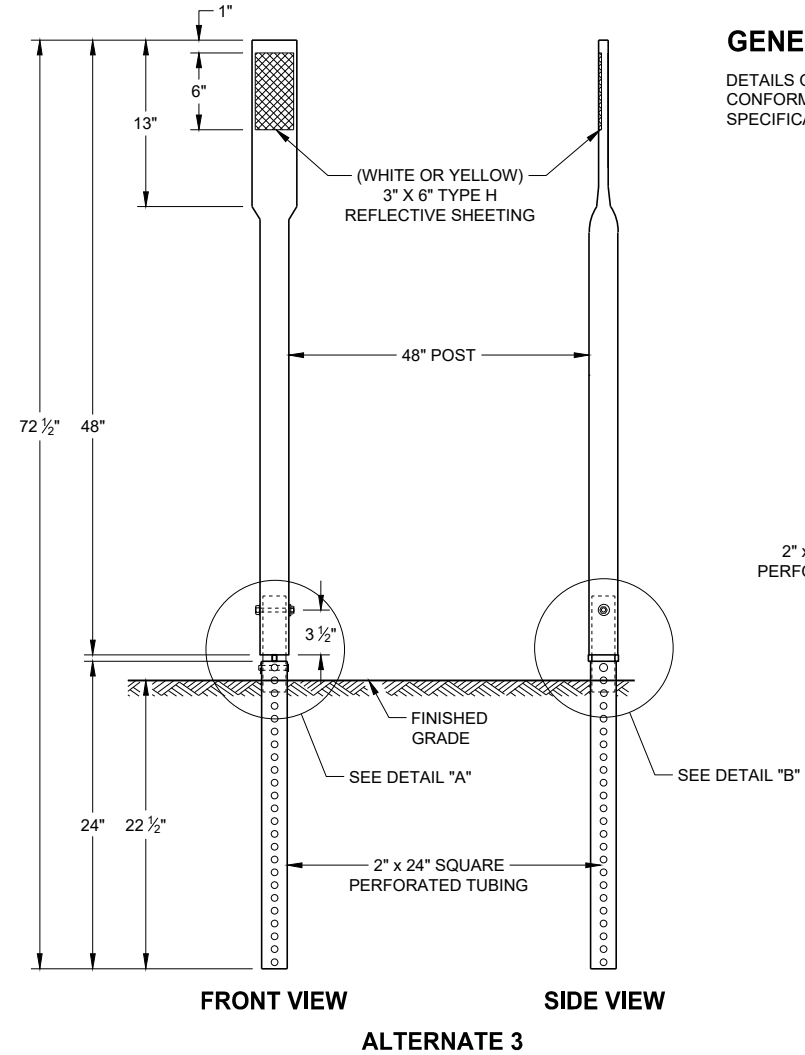
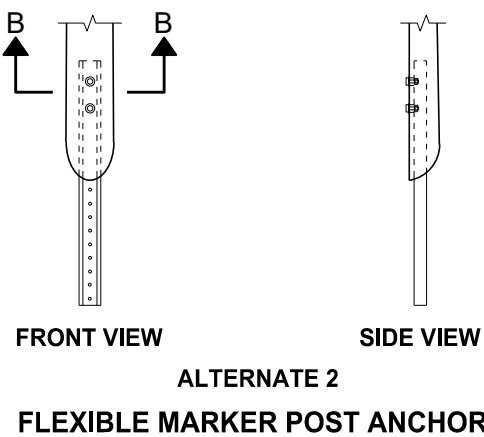
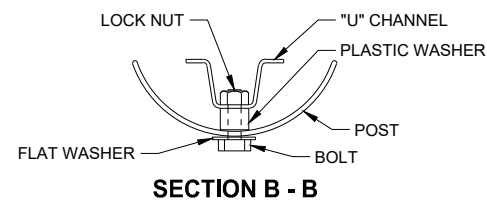


ALTERNATE 1



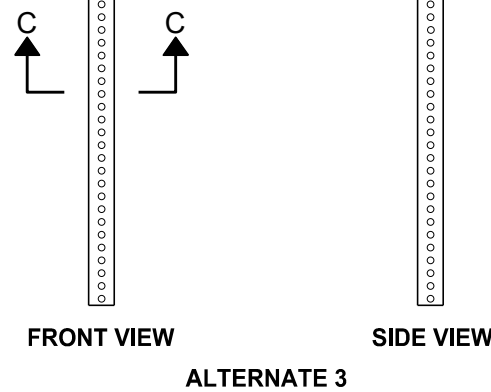
ALTERNATE 2

FLEXIBLE DELINEATOR POSTS



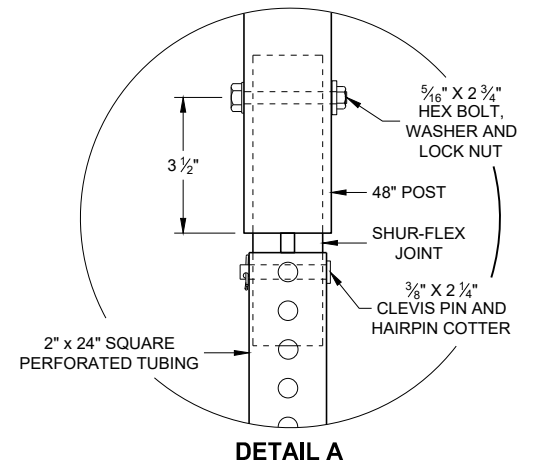
ALTERNATE 3

SECTION C - C

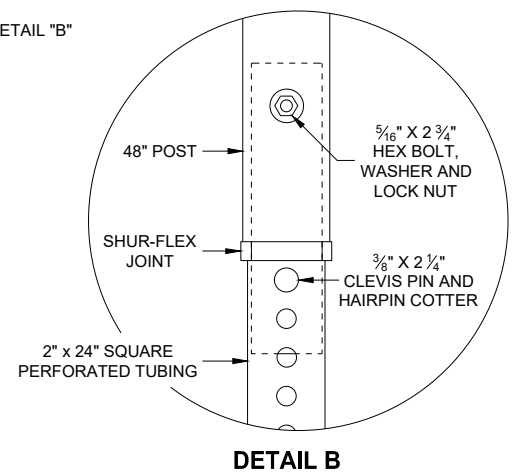


GENERAL NOTES

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



DETAIL A



DETAIL B

REFLECTOR SPACING TABLE

REFLECTOR SPACING	LOCATION
* 100' C-C	RAMPS
400' C-C	MAINLINE

* START AT BEGINNING OF RAMP TAPER AND END AT END OF RAMP TAPER

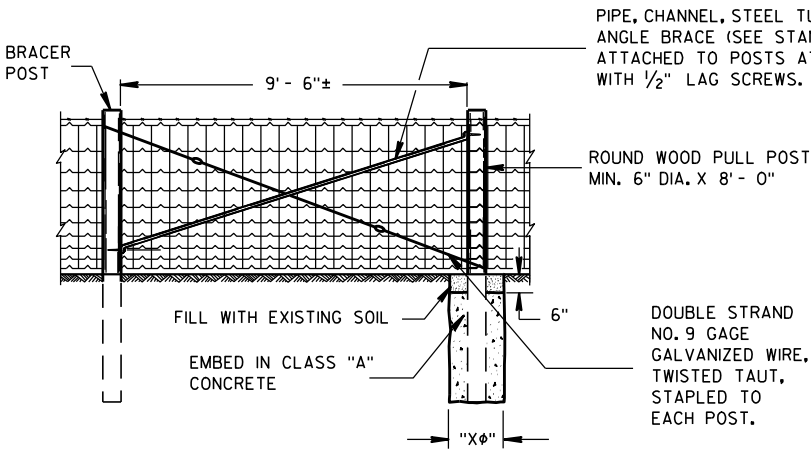
FLEXIBLE DELINEATOR POST

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

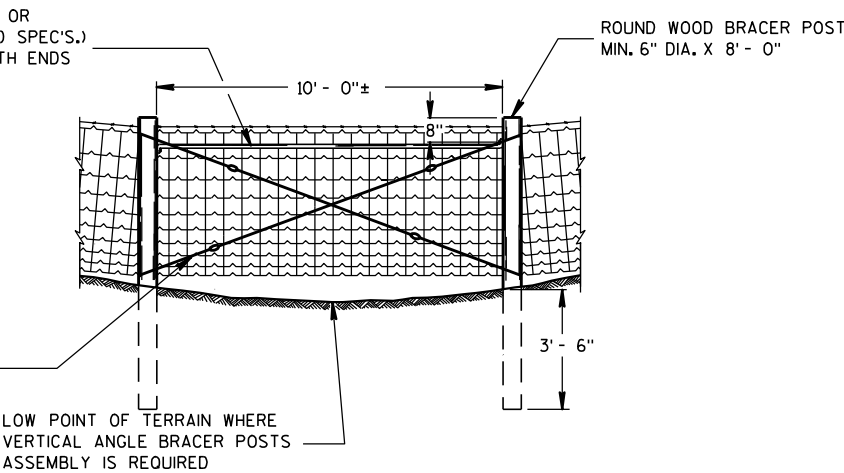
APPROVED
August 2019 /S/ Matthew Rauch
DATE STATE SIGNING AND MARKING
ENGINEER
FHWA

NOTE: PULL OR STRETCHER POST ASSEMBLIES SHALL BE PLACED MIDWAY BETWEEN END POSTS AND CORNER POSTS WHERE A RUN OF FENCE EXCEEDS 660' BUT IS LESS THAN 1,320'. FOR RUNS OF FENCE IN EXCESS OF 1,320' MAXIMUM SPACING OF PULL OR STRETCHER POST ASSEMBLIES SHALL BE 660'± C-C.

ILLUSTRATION SHOWS POSITION OF STANDARD STEEL BRACE, DOUBLE STRAND GALVANIZED WIRE, AND THE POST TO BE EMBEDDED IN CONCRETE WHEN WIRE FENCE IS INSTALLED FROM LEFT TO RIGHT. THE BRACES SHALL BE POSITIONED ON THE OPPOSITE DIAGONALS AND THE OPPOSITE POST SHALL BE EMBEDDED IN CONCRETE WHEN WIRE FENCE IS INSTALLED FROM RIGHT TO LEFT.



PULL OR STRETCHER POSTS ASSEMBLY



VERTICAL ANGLE BRACER POSTS ASSEMBLY

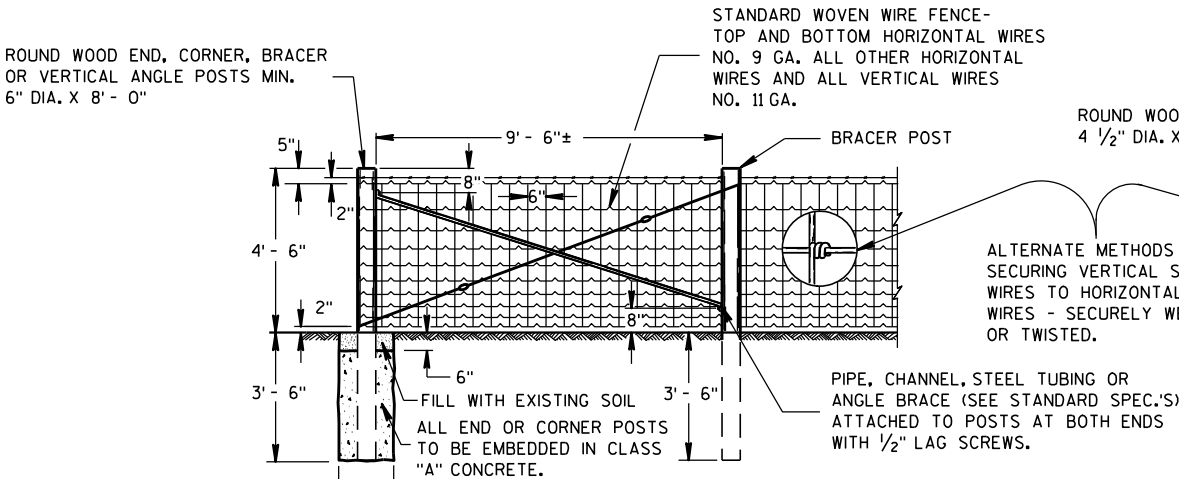
GENERAL NOTES

"Xφ" = DIAMETER OF THE POST PLUS 12".

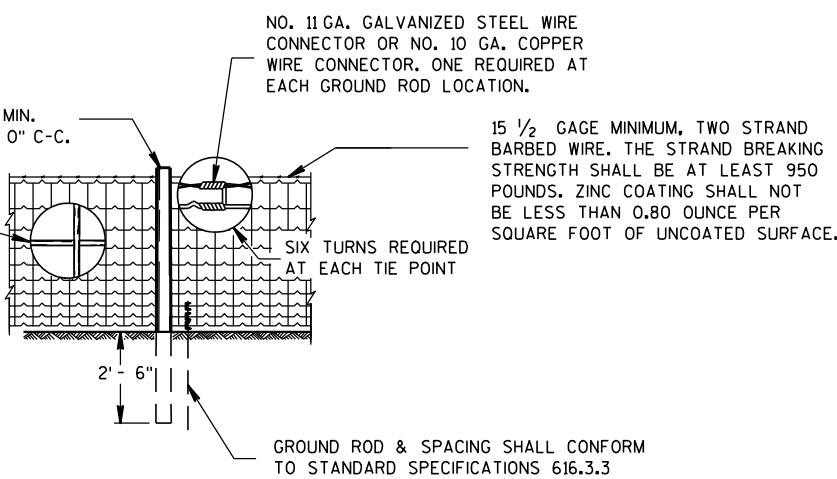
FENCE STAPLES SHOULD NEVER BE DRIVEN VERTICALLY INTO WOOD POSTS (WITH BOTH LEGS PARALLEL WITH THE WOOD GRAIN). DOING SO CAN SEPARATE THE GRAIN AND SIGNIFICANTLY REDUCE THE HOLDING POWER. ROTATING THE STAPLES SLIGHTLY OFF VERTICAL STRADDLES THE GRAIN AND PROVIDES MORE RESISTANCE TO PULL-OUT.

DO NOT STAPLE WIRE TIGHT TO THE LINE POSTS. ALLOW MOVEMENT OF WIRE FOR EXPANSION AND CONTRACTION. STAPLE ARRANGEMENT SHALL BE THE SAME FOR ALL OTHER POSTS EXCEPT THAT THEY SHALL BE DRIVEN TIGHT TO POSTS. ALL STAPLES SHALL BE 2" X 9 GAGE AND SHALL BE MANUFACTURED FROM GALVANIZED WIRE OR HOT DIP GALVANIZED AFTER FORMING. STAPLES SHALL HAVE SLASH-CUT POINTS.

FENCE SHALL BE LOCATED 3'-0" INSIDE THE RIGHT OF WAY LINE UNLESS OTHERWISE INDICATED ON THE PLANS.

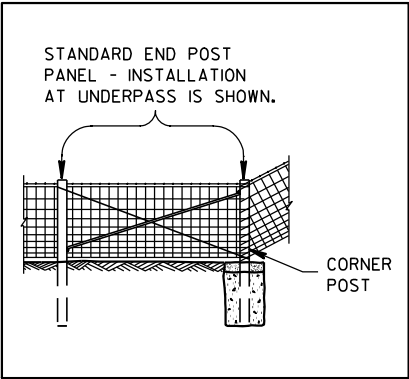


END OR CORNER POSTS ASSEMBLY

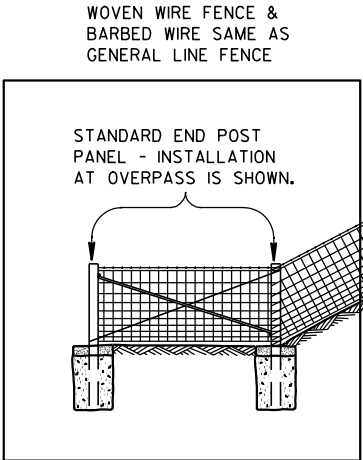


LINE FENCE CONSTRUCTION

GENERAL ROADSIDE VIEW OF WOVEN WIRE FENCE



ALTERNATE FENCE DESIGN AT STRUCTURE



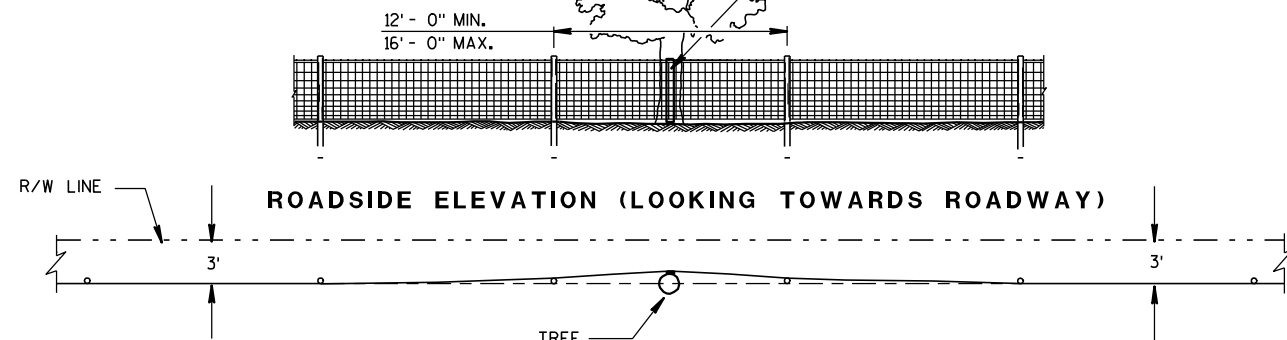
FENCE DESIGN AT STRUCTURE APPROACH

FENCE WOVEN WIRE

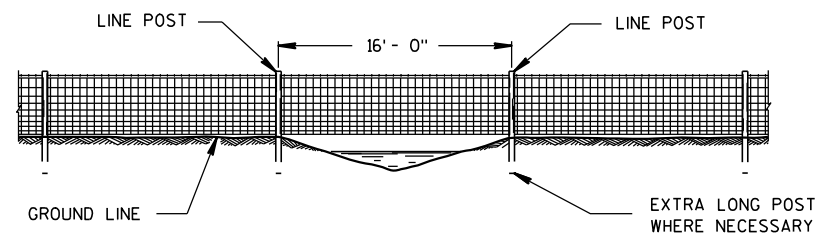
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

NOTE: TREE IN NORMAL FENCE LINE SPECIFICALLY ORDERED BY ENGINEER TO REMAIN IN PLACE.

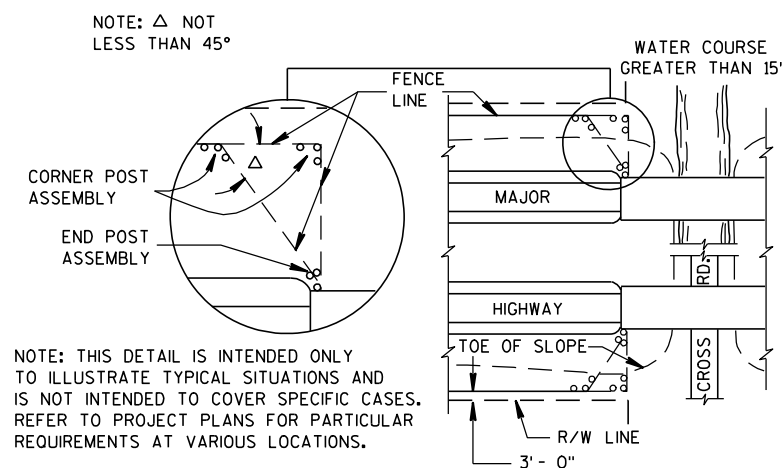
2" X 6" DOUGLAS FIR OR SO. YELLOW PINE PLACED BETWEEN TREE AND WOVEN WIRE FENCE. WOVEN WIRE FENCE AND BARBED WIRE TO BE STAPLED TO 2" X 6" LIKE AS TO LINE POST. 2" X 6" NOT FASTENED TO TREE.



PLAN VIEW
FENCE DESIGN AT TREES REMAINING
IN NORMAL FENCE LINE

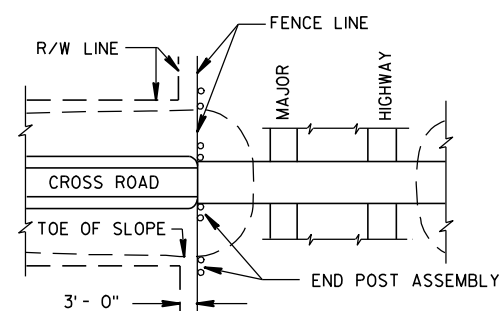


FENCE CONSTRUCTION OVER STREAM
COURSES OF 15 FT. OR LESS IN WIDTH

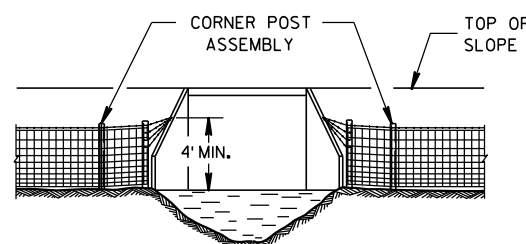


PLAN VIEW
MAJOR HIGHWAY OVERPASS OR STREAM COURSE
CROSSING OF GREATER THAN 15 FT. IN WIDTH

FENCE LOCATION AT STRUCTURES

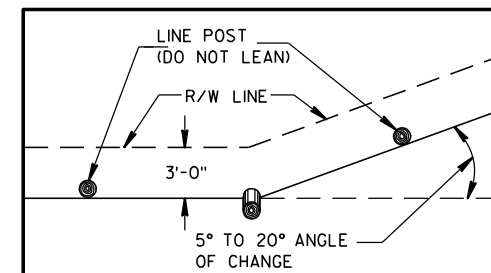
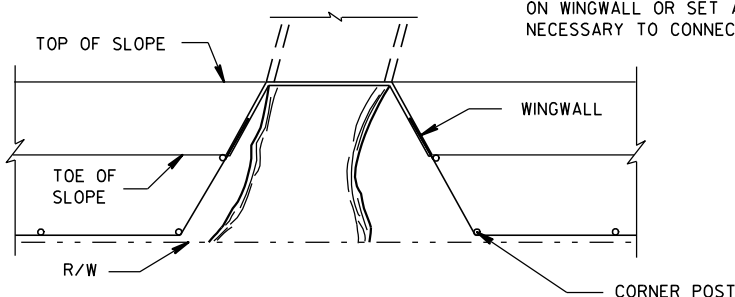


PLAN VIEW
MAJOR HIGHWAY UNDERPASS

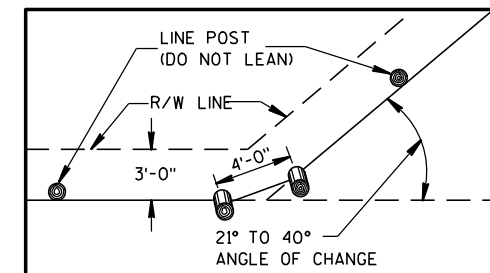


FENCE INSTALLATION TO WINGWALLS

NOTE: PLACE A MINIMUM OF 4 STRANDS OF BARBED WIRE, 6" MAXIMUM CENTERS IN FAN SHAPE CONNECTED TO AN EYE BOLT ON WINGWALL OR SET A LONE POST WHEN NECESSARY TO CONNECT BARBED WIRE.



PLAN VIEW
SINGLE POST CORNER

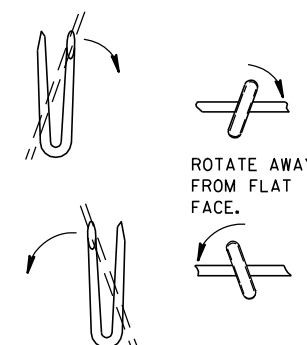


PLAN VIEW
DOUBLE POST CORNER

RIGHT OF WAY LINE CHANGE 40° AND LESS

NOTE: SINGLE AND DOUBLE POSTS SHALL BE A MIN. 6" DIA. X 8'-0" WITH A LEAN OF 4" TOWARD THE OUTSIDE OF THE CURVE.

WHEN THE RIGHT OF WAY LINE CHANGE IS MORE THAN 40° USE THE CORNER OR STRETCHER POSTS ASSEMBLY.



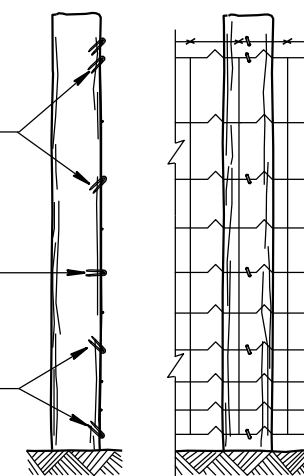
LINE POST

NOTE: WHEN POSTS ARE DRIVEN THE SMALL END SHALL BE DOWN.

STAPLES SLOPED DOWNWARD FOR SUSTAINED GRADES AND OVER KNOLLS.

STAPLES LEVEL FOR LEVEL GROUND.

SLOPE UPWARDS WHEN FENCE TENDS TO LIFT.



END ELEVATION
FARM SIDE ELEVATION
FENCE MOUNTING DETAIL

FENCE WOVEN WIRE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

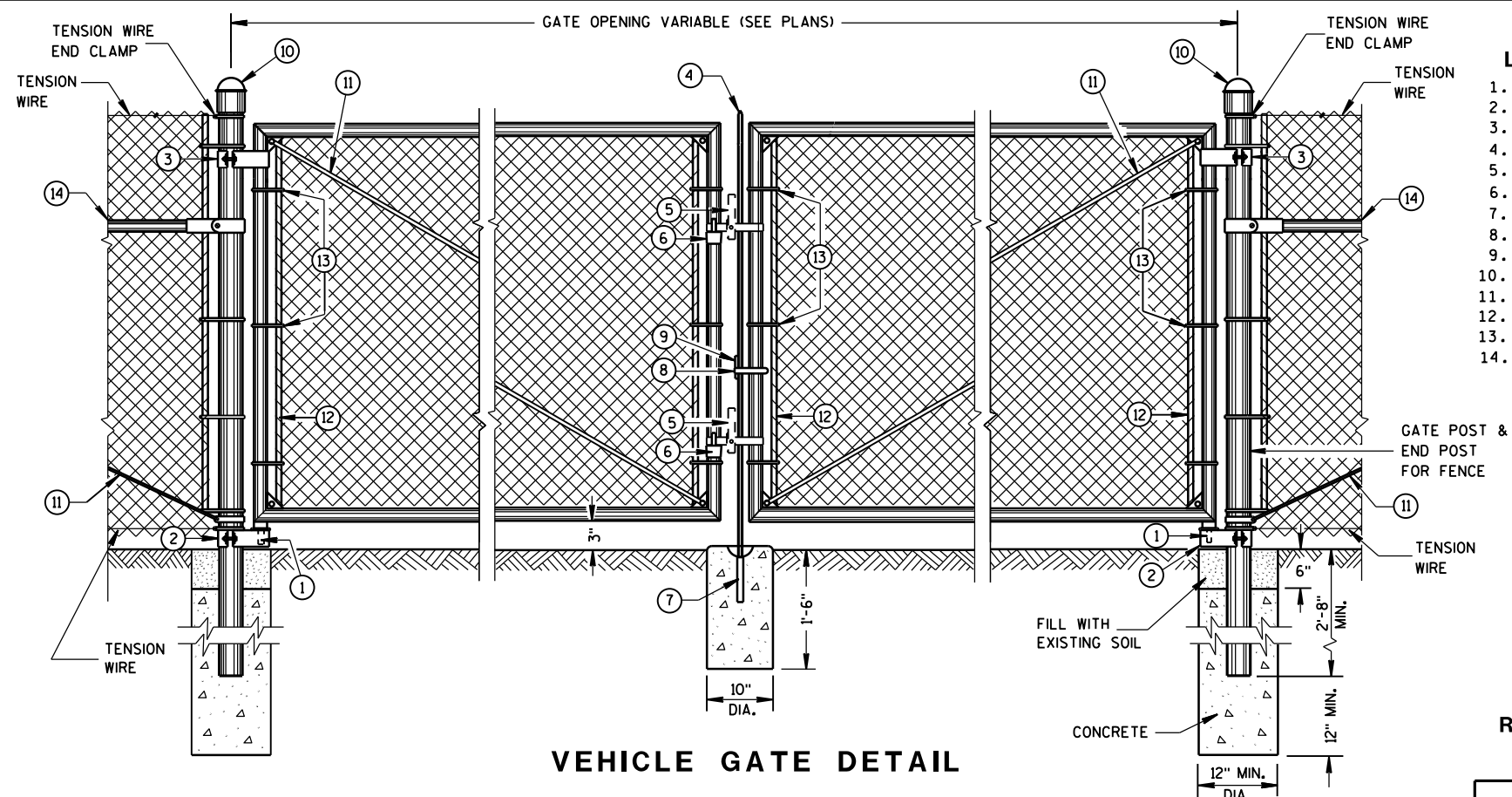
APPROVED

4/4/2008

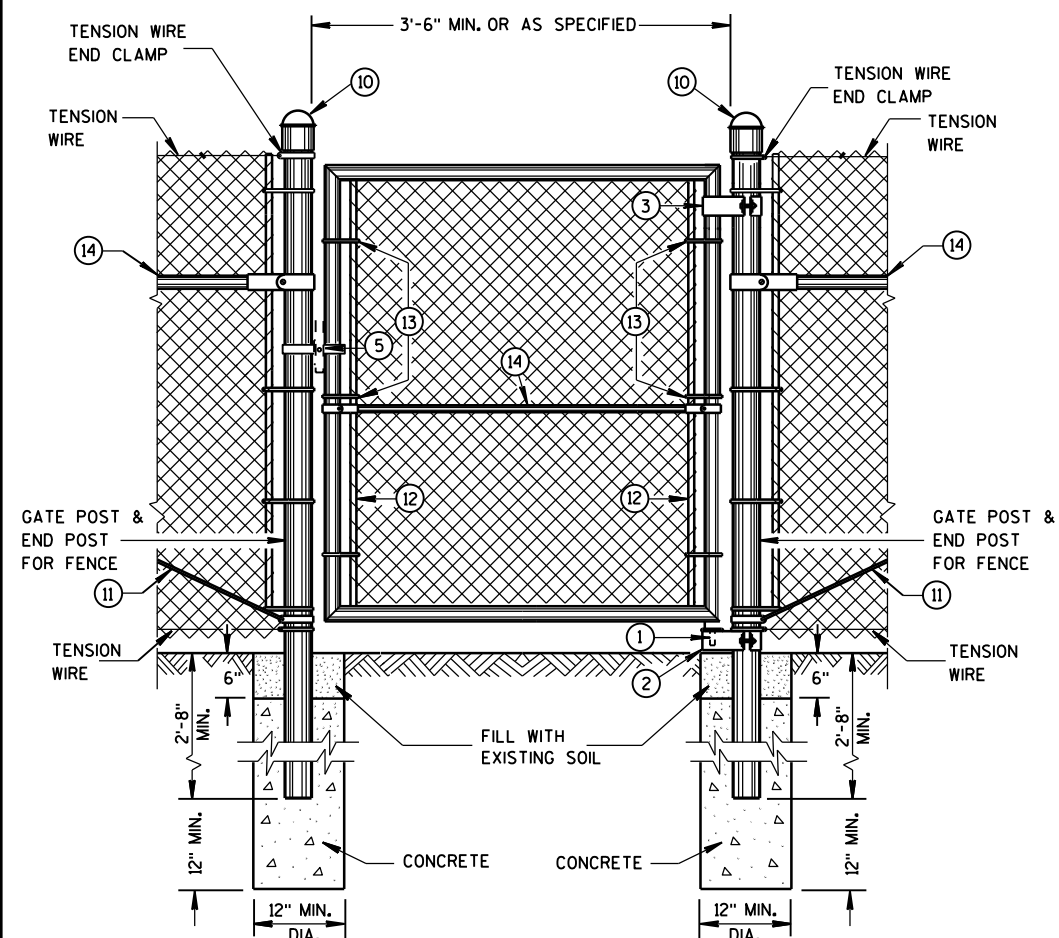
DATE

FHWA

/S/ Jerry H. Zogg
ROADWAY STANDARDS DEVELOPMENT
ENGINEER



VEHICLE GATE DETAIL



PEDESTRIAN GATE DETAIL

- ## LEGEND

1. STRAIGHT PLUG
2. BOTTOM HINGE
3. TOP HINGE
4. PLUNGER ROD
5. FULCRUM LATCH
6. FORK CATCH *
7. PLUNGER ROD CATCH
8. LOCK KEEPER GUIDE
9. LOCK KEEPER
10. DOME TOPS
11. TRUSS RODS
12. TENSION BAR
13. TENSION BANDS
14. BRACE RAIL

*NOT REQUIRED ON SINGLE SWING PEDESTRIAN GATE

GENERAL NOTES

FENCE POSTS INSTALLED ON CONCRETE WALLS SHALL BE ANCHORED INTO EMBEDDED METAL SLEEVES OR CORED HOLE BY FILLING THE ANNULAR SPACE WITH PEA GRAVEL FOLLOWED BY AN EPOXY RESIN ADHESIVE. THE EPOXY RESIN ADHESIVE SHALL CONFORM TO THE REQUIREMENTS OF AASHTO M 235, CLASS A, B OR C.

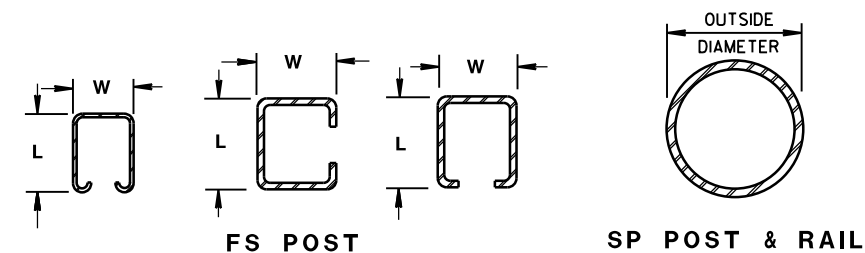
USE FENCE FABRIC KNUCKLED AT BOTH SELVAGES.

FOR LEAF GATES GREATER THAN 8 FEET WIDE, INSTALL INTERIOR VERTICAL BRACE RAIL AT 8 FOOT INTERVALS.

FOR FABRIC HEIGHTS GREATER THAN 8 FEET, INSTALL INTERIOR HORIZONTAL BRACE RAILS TO LEAF GATE.

MAXIMUM SAG FOR OUTER GATE MEMBER SHALL NOT EXCEED THE GREATER OF 1% OF THE LEAF GATE WIDTH OR 2 INCHES.

USE TYPE 2, CLASS 3, MARCELLED/CRIMPED, TENSION WIRE PER ASTM A 817.



CROSS SECTIONS OF POSTS AND RAILS

**ROLLED-FORMED STEEL FENCE POST
(2.0 OZ./SQ. FT. COATING)**

POST TYPE	LENGTH (L) INCH	WIDTH (W) INCH	WEIGHT LBS/FT
FS1	1.625	1.25	1.35
FS2†	1.875	1.625	1.850
FS2	1.875	1.625	2.400
FS3	2.250	1.700	2.780

**ROUND STEEL FENCE POST
(1.8 OZ./SQ. FT. COATING)**

POST TYPE	OUTSIDE DIMENSION INCH	WALL THICKNESS INCH	WEIGHT LBS/FT
SP1	1.660	0.140	2.270
SP2	1.900	0.145	2.720
SP3	2.375	0.154	3.650
SP4	2.875	0.203	5.800
SP5	4.000	0.226	9.120
SP6	6.625	0.280	18.990
SP7	8.625	0.322	28.580

REQUIRED POST SIZE FOR GATES

USE	LEAF WIDTHS FEET	POST TYPE
GATES	LESS THAN OR EQUAL TO 6 FT.	SP4
	LESS THAN OR EQUAL TO 13 FT.	SP5
	LESS THAN OR EQUAL TO 18 FT.	SP6
	LESS THAN OR EQUAL TO 23 FT.	SP7

REQUIRED FENCE POST SIZES

USE	FABRIC HEIGHTS FEET	POST TYPE
TERMINAL POSTS **	LESS THAN OR EQUAL TO 6 FT.	SP3
	GREATER THAN OR EQUAL TO 6 FT.	SP4
LINE POSTS	LESS THAN OR EQUAL TO 6 FT.	SP2
	LESS THAN OR EQUAL TO 8 FT.	SP3
	GREATER THAN OR EQUAL TO 8 FT.	SP4
	LESS THAN OR EQUAL TO 8 FT.	FS2 OR FS2†
	GREATER THAN OR EQUAL TO 8 FT.	FS3

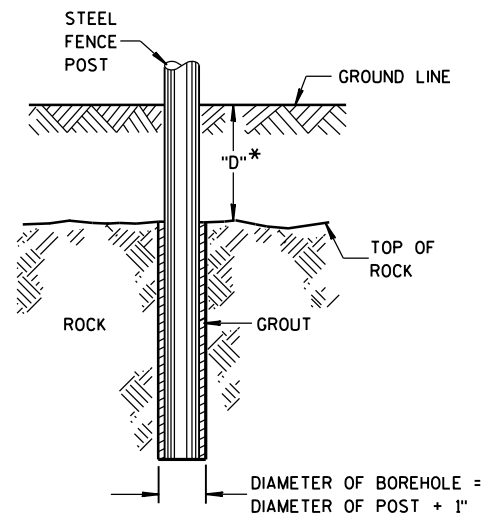
BRACE RAIL TYPES

USE		TYPE
BRACE RAIL		SP1 OR FS1

** INCLUDES END, CORNER, ANGLE, INTERSECTION AND
INTERMEDIATE BRACED POSTS

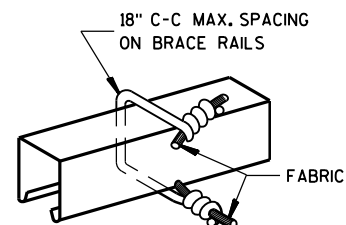
FENCE CHAIN LINK

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



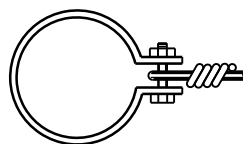
* IF "D" IS LESS THAN 2'-6",
DRILL ROCK AND INSTALL GROUT

ROCK INSTALLATION OF LINE POST

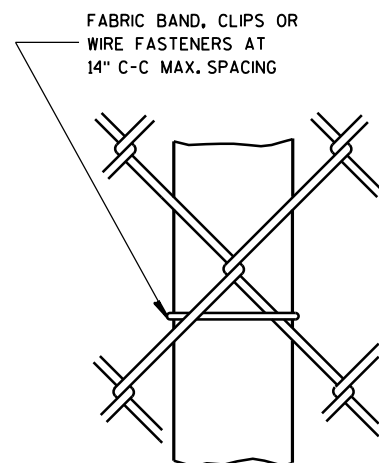


BRACE RAIL FABRIC FASTENER

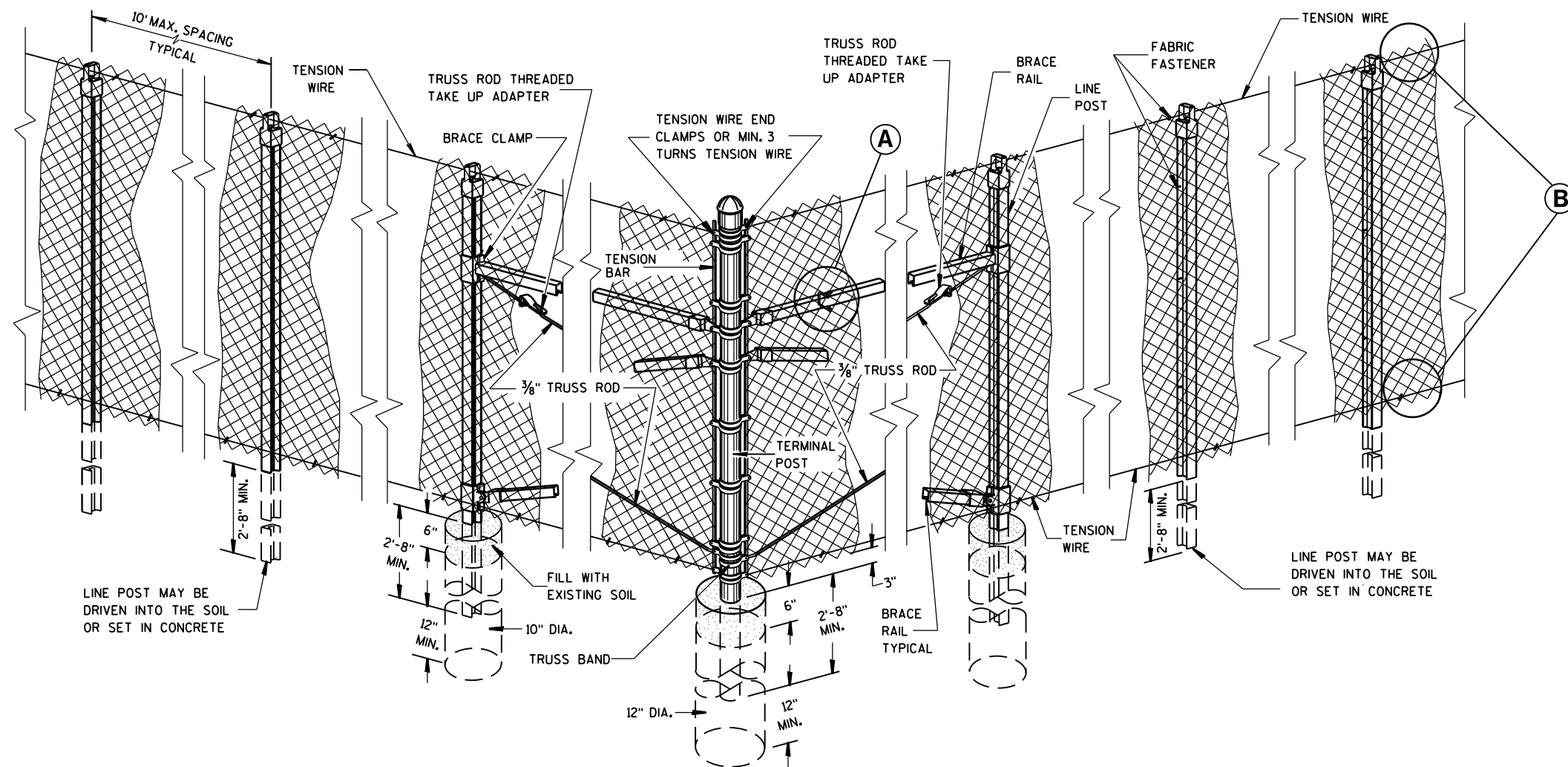
(A)



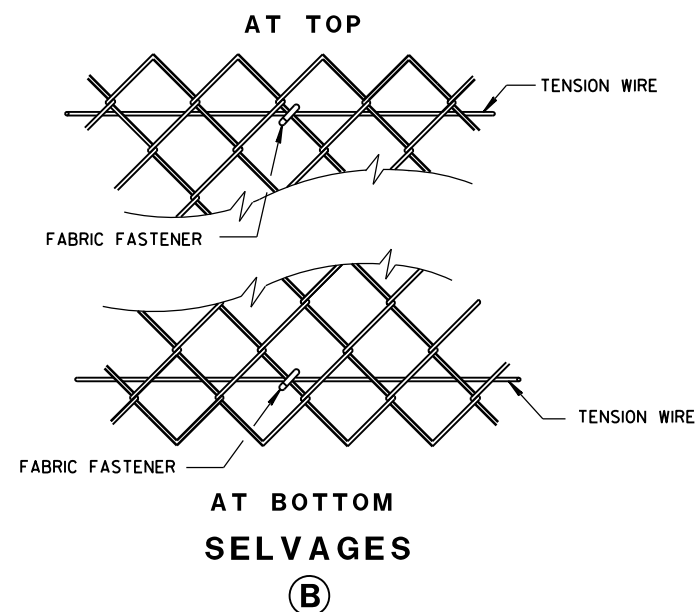
TENSION WIRE END CLAMP



LINE POST FABRIC FASTENER



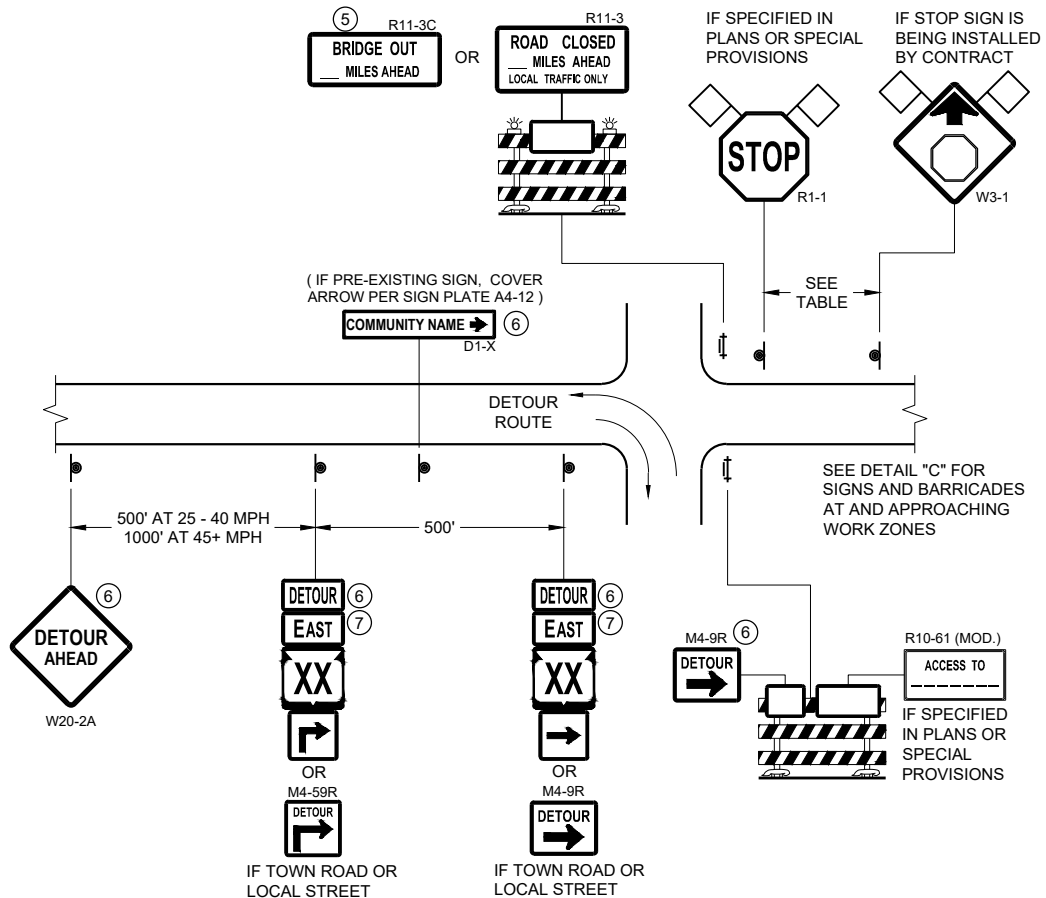
END, CORNER, ANGLE INTERSECTION & INTERMEDIATE BRACED POSTS



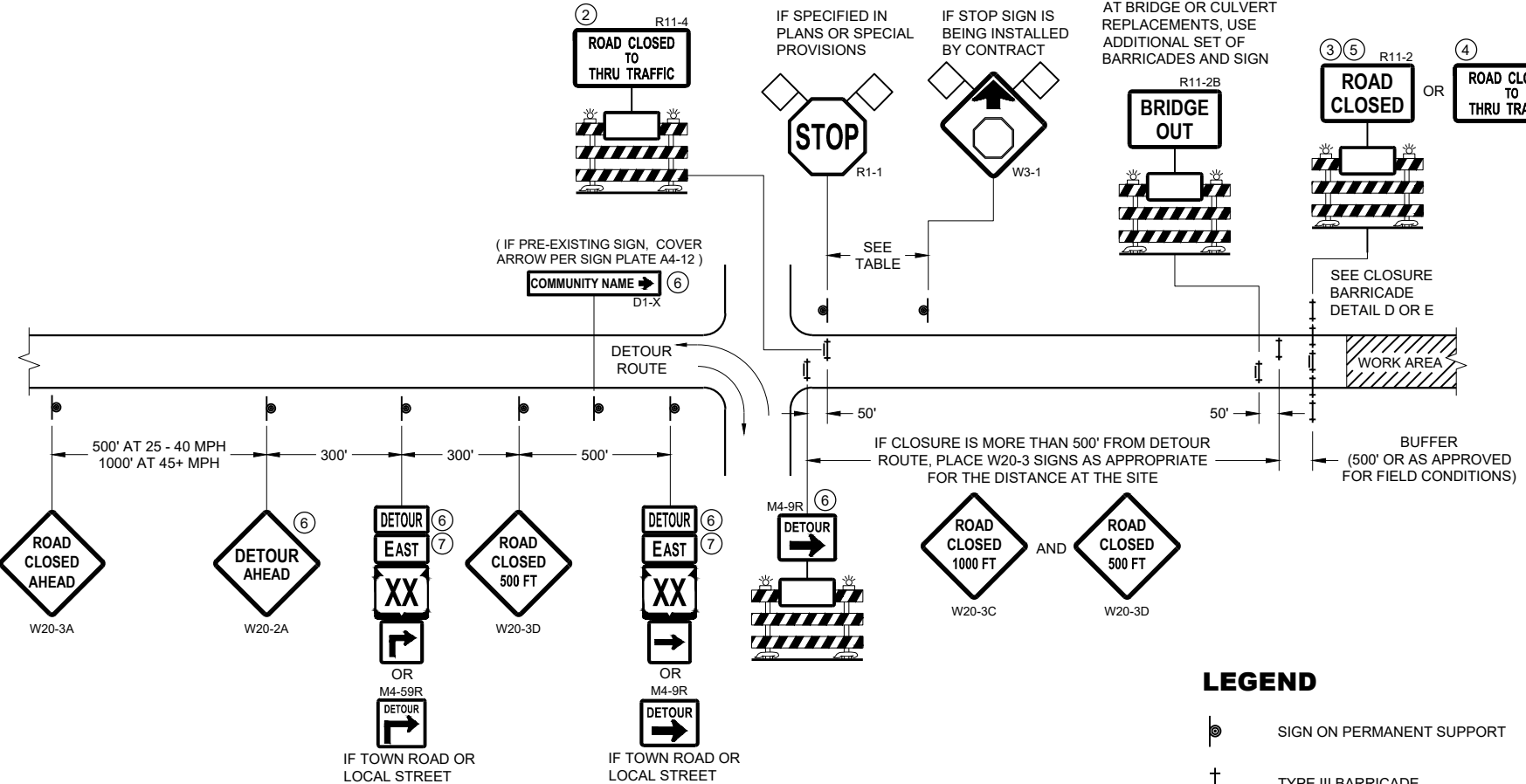
FENCE CHAIN LINK

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

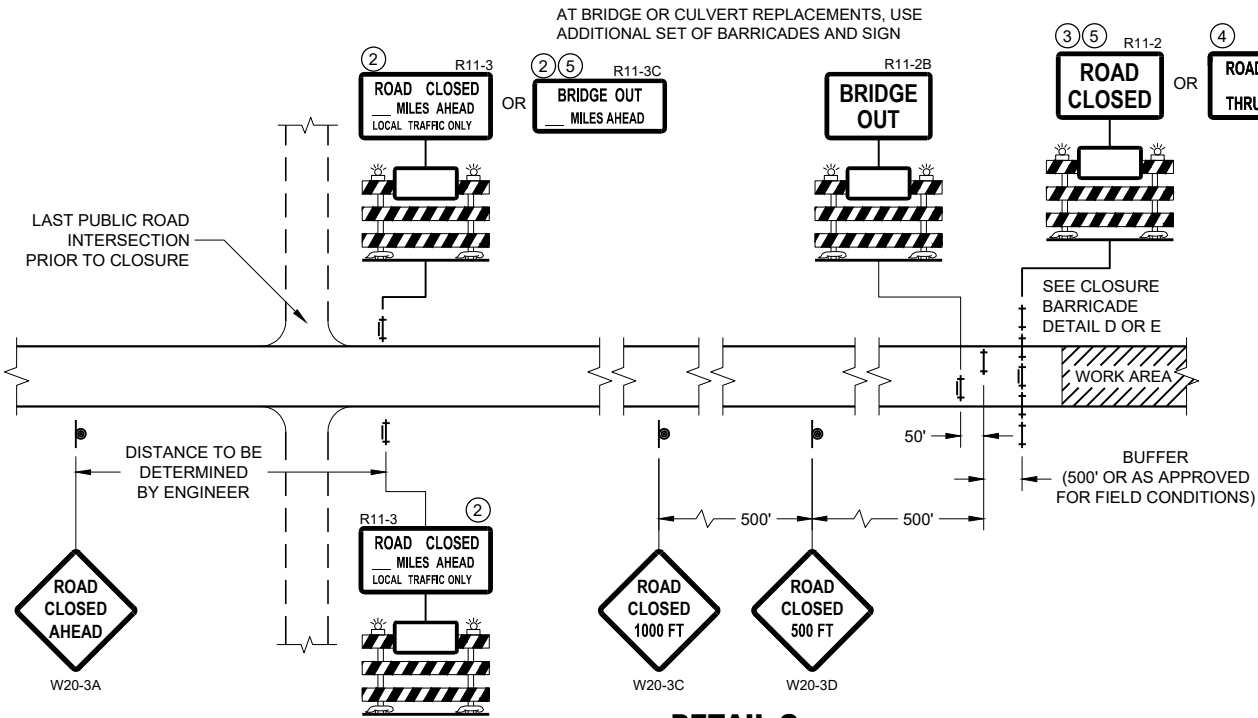
APPROVED
FEB. 2015
DATE /S/ Jerry H. Zogg
ROADWAY STANDARDS DEVELOPMENT
ENGINEER
FHWA



DETAIL A
MAINLINE CLOSURE WITH POSTED DETOUR
WORK ZONE GREATER THAN OR EQUAL TO ½ MILE FROM
DETOUR ROUTE (1000 FEET IF URBAN)



DETAIL B
MAINLINE CLOSURE WITH POSTED DETOUR
WORK ZONE LESS THAN ½ MILE FROM
DETOUR ROUTE (1000 FEET IF URBAN)



DETAIL C
MAINLINE CLOSURE, NO POSTED DETOUR

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

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

LEGEND

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

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

**BARRICADES AND SIGNS
FOR MAINLINE CLOSURES**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

FHWA



SEE SDD 15C2 - SHEET "a" FOR LEGEND

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

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

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

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

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

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

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

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

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

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

LESS OTHERWISE NOTED BELOW:

R11 - 2 SHALL BE 48" X 30"

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

M4 - 9 SHALL BE 30" X 24"

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

M4 - 8 SHALL BE 24" X 12" (36" X 18" IF NEEDED TO MATCH EXISTING SIGNS)

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

MO5 - 1 AND MO6 - 1 SHALL BE 21" X 21" (30" X 30" IF NEEDED TO MATCH EXISTING SIGNS)

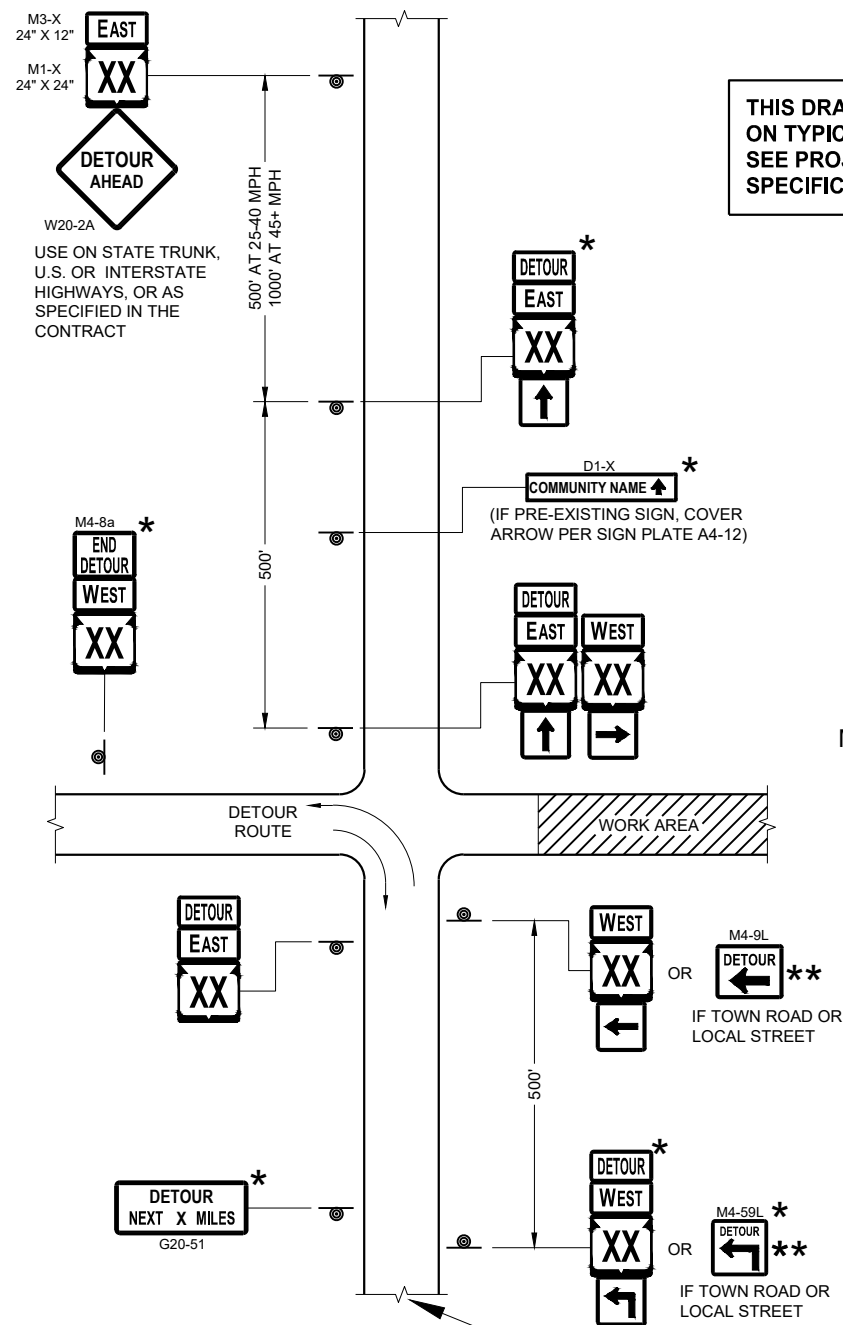
D1 - X SHALL BE AS SHOWN ON SPECIFIC PROJECT SIGNING DETAIL SHEETS.

R1 - 1 SHALL BE 36" X 36"

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

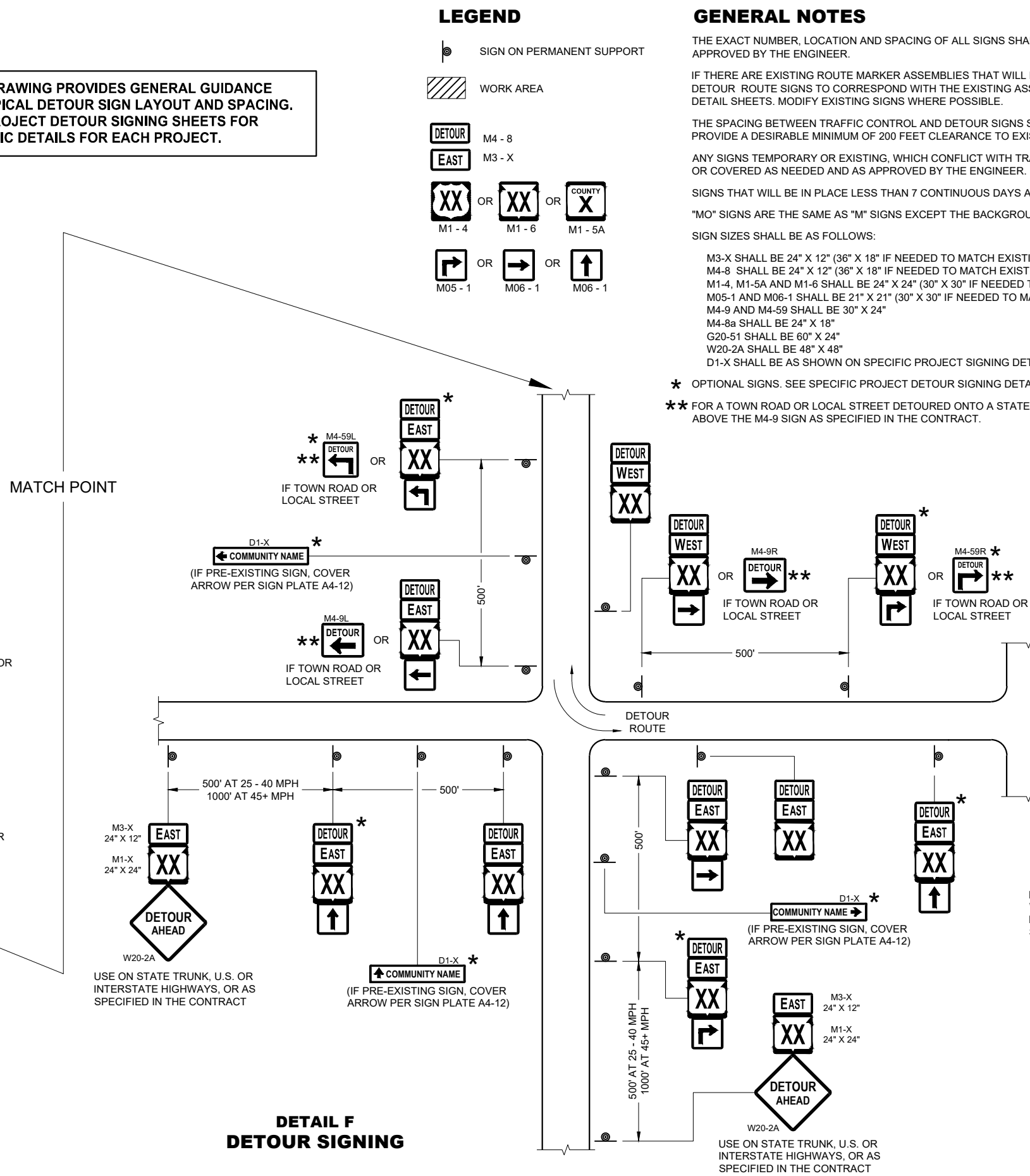
APPROVED
February 2020 /S/ Andrew Heidtke
DATE WORK ZONE ENGINEER



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

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

SDD 15C02 - 08c



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

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

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

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

DETOUR SIGNING FOR MAINLINE CLOSURES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

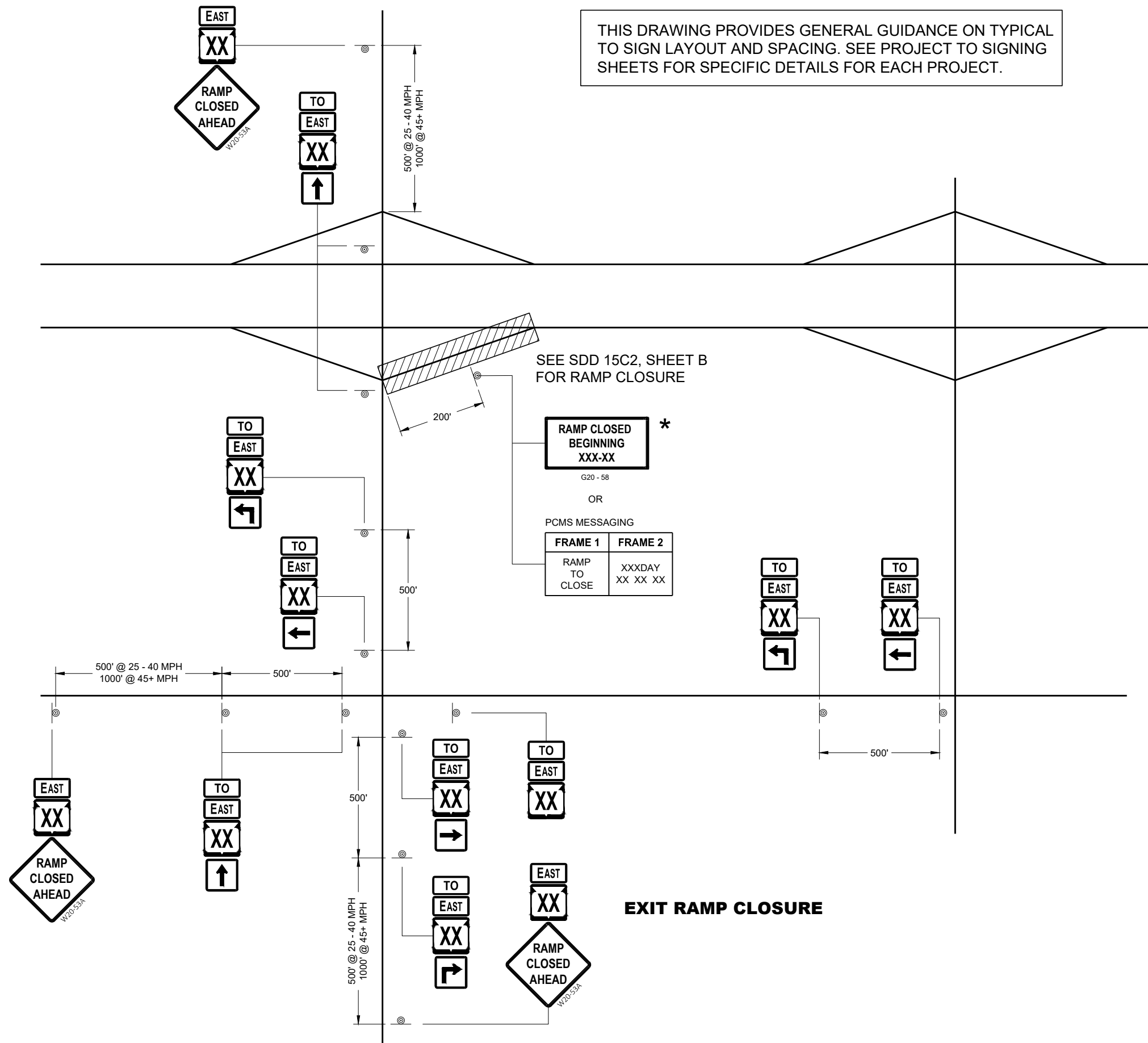
APPROVED
February 2020
DATE

/S/ Andrew Heidtke
WORK ZONE ENGINEER

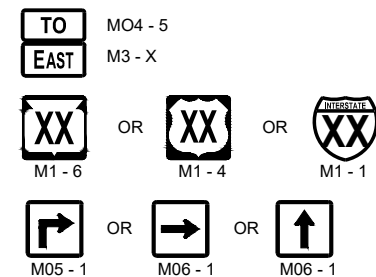
FHWA

WORK ZONE ENGINEER

SDD15C02 - 08c

**LEGEND**

⊙ SIGN ON PERMANENT SUPPORT

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

THE SPACING BETWEEN TRAFFIC CONTROL AND TO 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 SHALL 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 FOLLOW:
M3 - X SHALL BE 24" X 12". (36" X 18" IF NEEDED TO MATCH EXISTING SIGNS).
MO4 - 5 SHALL BE 24" X 12". (36" X 18" IF NEEDED TO MATCH EXISTING SIGNS).
M1 - 1, M1 - 4, AND M1 - 6 SHALL BE 24" X 24" (36" X 36" IF NEEDED TO MATCH EXISTING SIGNS).
MO5 - 1, MO5 - 2, AND MO6 - 1, SHALL BE 21" X 21". (30" X 30" IF NEEDED TO MATCH EXISTING SIGNS).
W20 - 53A SHALL BE 48" X 48"

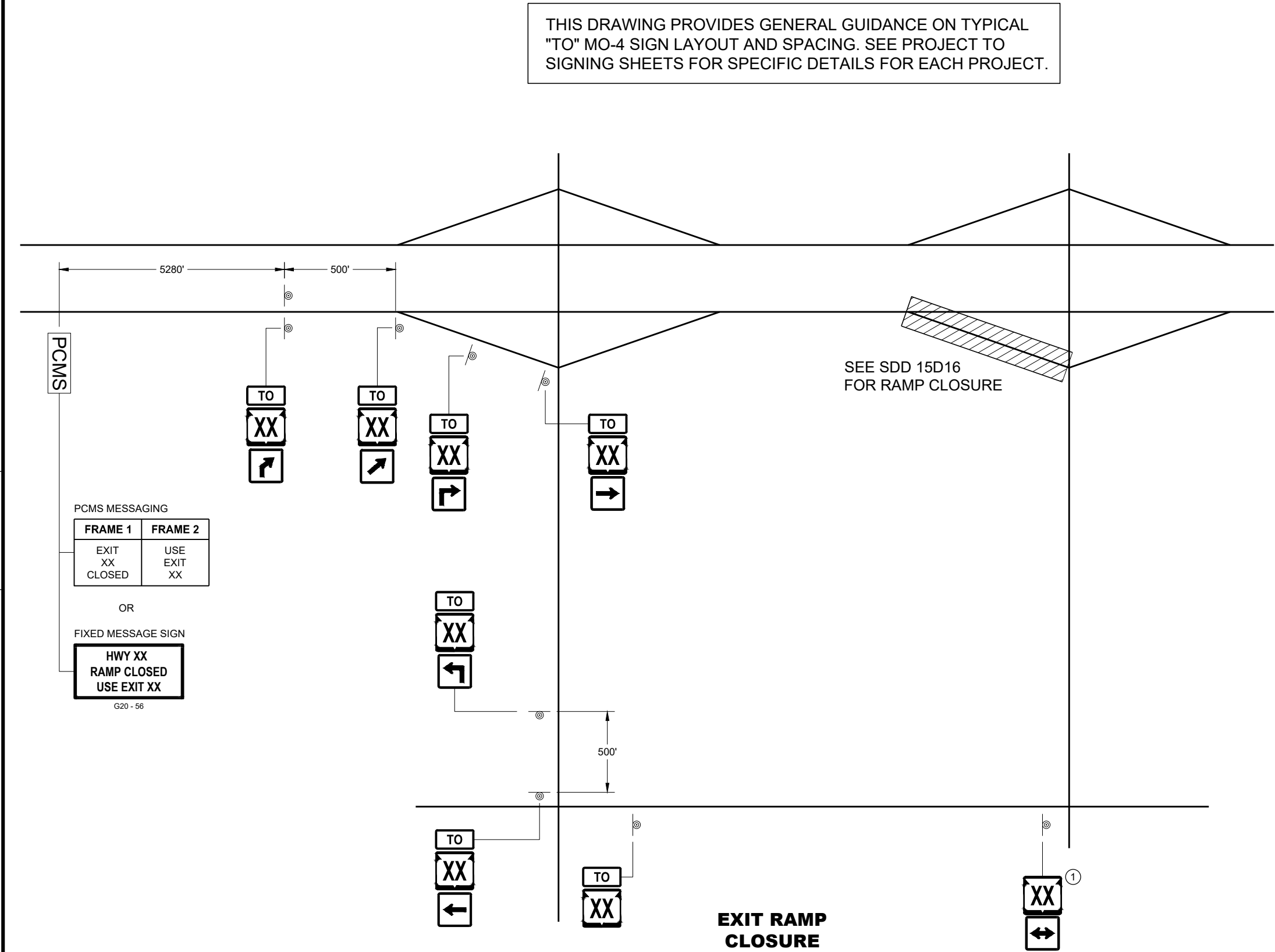
* PLACE "RAMP CLOSED BEGINNING" SIGN 7 CALENDAR DAYS PRIOR TO CLOSURE OR AS DIRECTED BY THE ENGINEER. SEE WISCONSIN STANDARD SIGN PLATES FOR LAYOUT.

**ON RAMP
LANE CLOSURE**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

FHWA



LEGEND

- SIGN ON PERMANENT SUPPORT
- PORTABLE CHANGEABLE MESSAGE SIGN

- MO4 - 5
- M1 - 4
- OR
- M1 - 6
- OR
- M1 - 5A
- M05 - 1
- OR
- M05 - 2
- OR
- M06 - 1
- OR
- M06 - 2
- OR
- M06 - 4

GENERAL NOTES

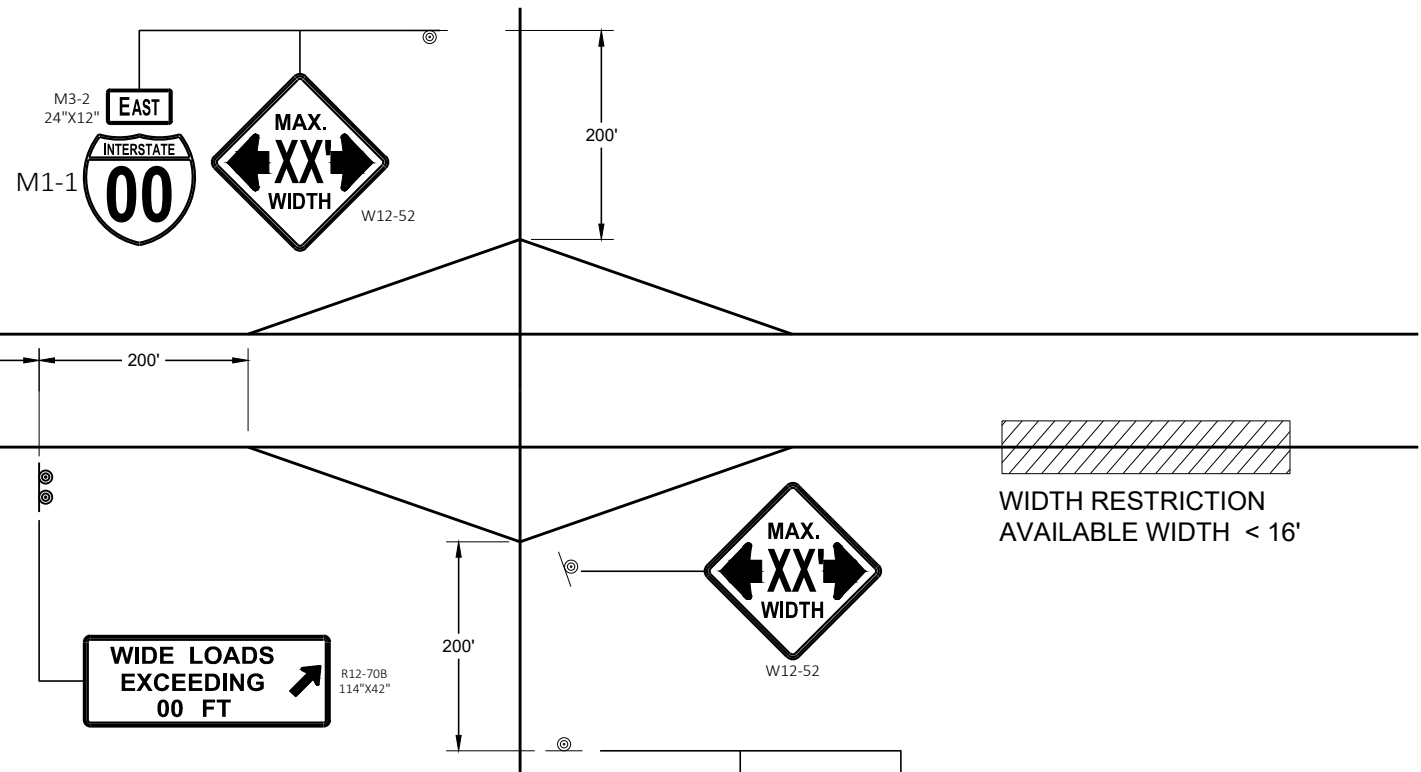
- SEE SDD 15D16 "TRAFFIC CONTROL, EXIT RAMP CLOSURE" DETAIL FOR TRAFFIC CONTROL AT EXIT RAMP CLOSURE.
- THE EXACT NUMBER, LOCATION AND SPACING OF ALL SIGNS SHALL BE ADJUSTED TO FIT FIELD CONDITIONS AS APPROVED BY THE ENGINEER.
- IF THERE ARE ANY ROUTE MARKER ASSEMBLIES THAT WILL REMAIN IN PLACE, ADJUST THE LOCATION OF THE "TO" MO-4 ROUTE SIGNS TO CORRESPOND WITH THE EXISTING ASSEMBLIES. SEE SPECIFIC PROJECT TO SIGNING DETAIL SHEETS. MODIFY EXISTING SIGNS WHERE POSSIBLE.
- THE SPACING BETWEEN TRAFFIC CONTROL AND "TO" MO-4 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 SHALL 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 FOLLOW:
MO4 - 5 SHALL BE 24" X 12". (36" X 18" IF NEEDED TO MATCH EXISTING SIGNS).
M1 - 4, M1 - 5A, AND M1 - 6 SHALL BE 24" X 24" (36" X 36" IF NEEDED TO MATCH EXISTING SIGNS).
MO5 - 1, MO5 - 2, AND MO6 - 1, SHALL BE 21" X 21". (30" X 30" IF NEEDED TO MATCH EXISTING SIGNS).
- 1 ONLY ADD IF THERE ARE NO EXISTING ROUTE MARKERS FOR THE INTERSECTING ROADWAY.

OFF RAMP
LANE CLOSURE

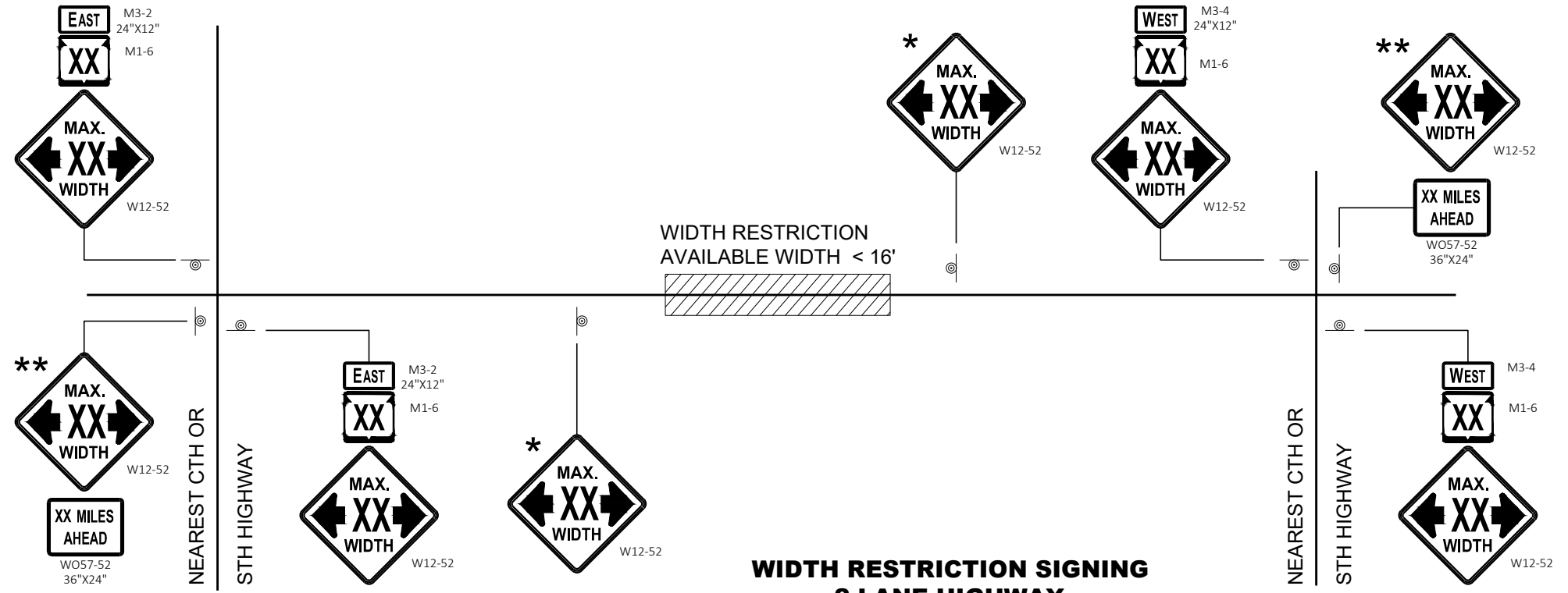
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

FHWA



WIDTH RESTRICTION SIGNING



WIDTH RESTRICTION SIGNING
2 LANE HIGHWAY

LEGEND

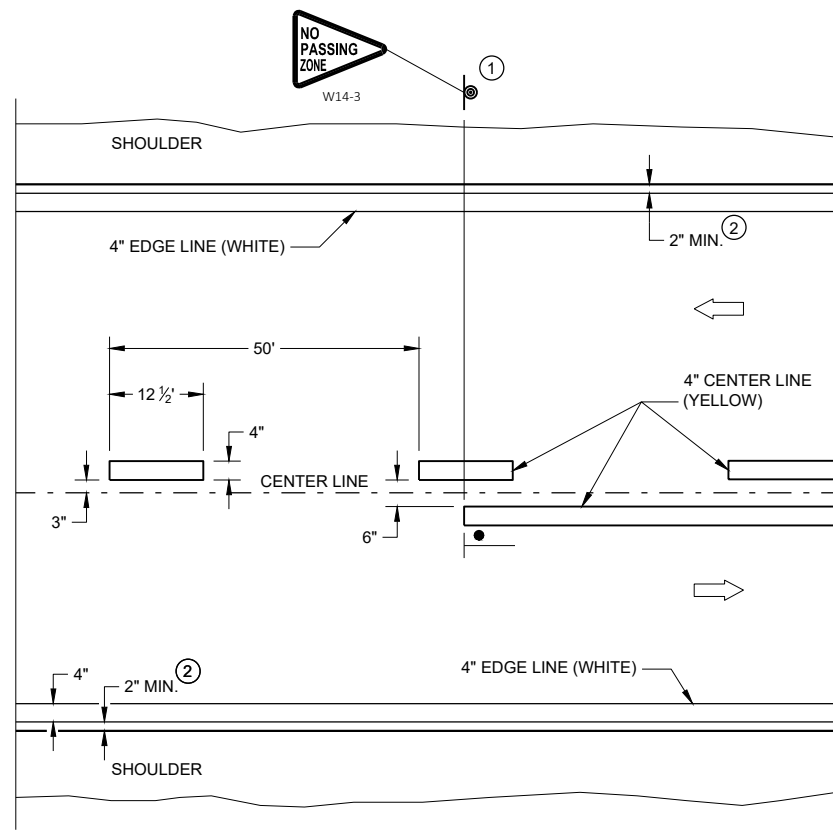
⊙ SIGN ON PERMANENT SUPPORT

GENERAL NOTES

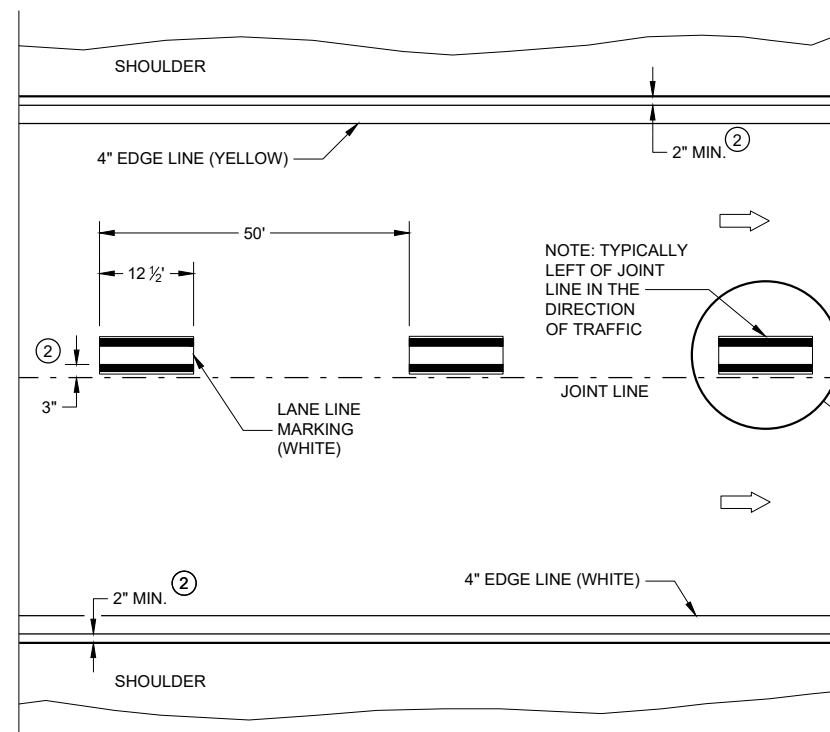
- THE EXACT NUMBER, LOCATION AND SPACING OF ALL SIGNS SHALL BE ADJUSTED TO FIT FIELD CONDITIONS AS APPROVED BY THE ENGINEER.
- THE SPACING BETWEEN SIGNS SHOULD BE ADJUSTED TO NOT CONFLICT WITH AND TO PROVIDE A DESIRABLE MINIMUM OF 200 FEET CLEARANCE TO EXISTING SIGNS THAT WILL REMAIN IN PLACE.
- ANY SIGNS TEMPORARY OR EXISTING, WHICH CONFLICT WITH TRAFFIC CONTROL "IN USE" SHALL BE REMOVED OR COVERED AS NEEDED AND AS APPROVED BY THE ENGINEER.
- ALL SIGNS ARE 48" X 48" UNLESS OTHERWISE NOTED.
- "WO" SIGNS ARE THE SAME AS "W" SIGNS EXCEPT THE BACKGROUND IS ORANGE.
- WIDTH ON SIGN TO BE APPROXIMATELY ONE FOOT LESS THAN AVAILABLE WIDTH.
- * PLACE 500 FEET BEFORE THE W20 - 1A AND 500 FEET BEFORE ADDITIONAL SIGNS FOR ROADWAYS WITH A PRE - CONSTRUCTION SPEED LIMIT OF 45 MPH OR MORE. FOR 35-40 MPH, USE 350 FOOT TYPICAL SPACING. FOR 25-30 MPH, USE 200 FOOT TYPICAL SPACING.
- ** SIGN SHALL BE VISIBLE FROM ROADWAY.
- *** ADDITIONAL SIGNS NEEDED IF THERE IS AN ON RAMP BETWEEN SIGNS.



ADVANCED WIDTH RESTRICTION SIGNING	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED February 2020 DATE	/S/ Andrew Heidtke WORK ZONE ENGINEER
FHWA	

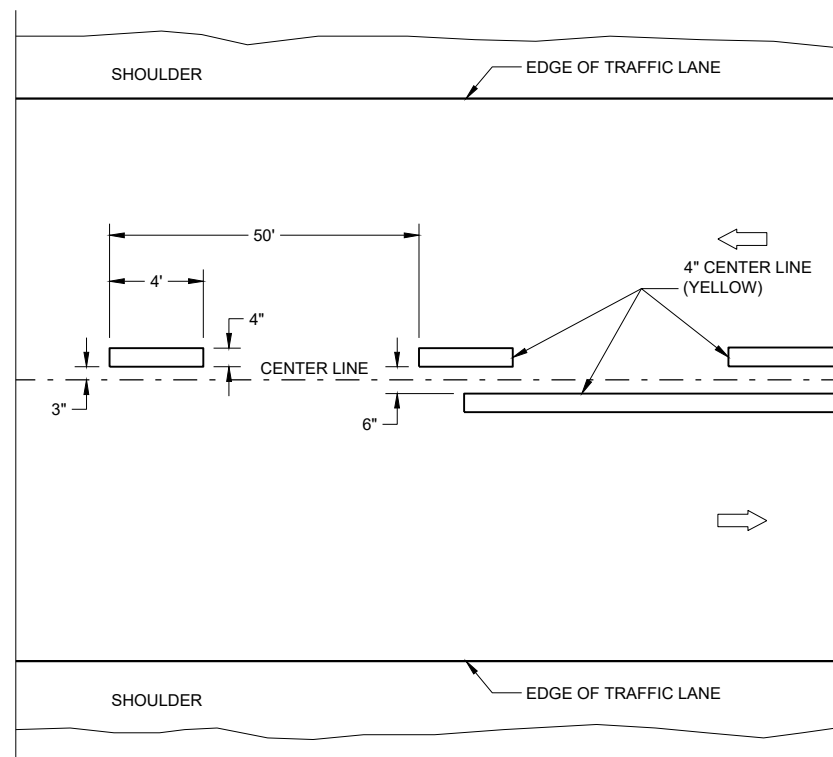


TWO WAY TRAFFIC

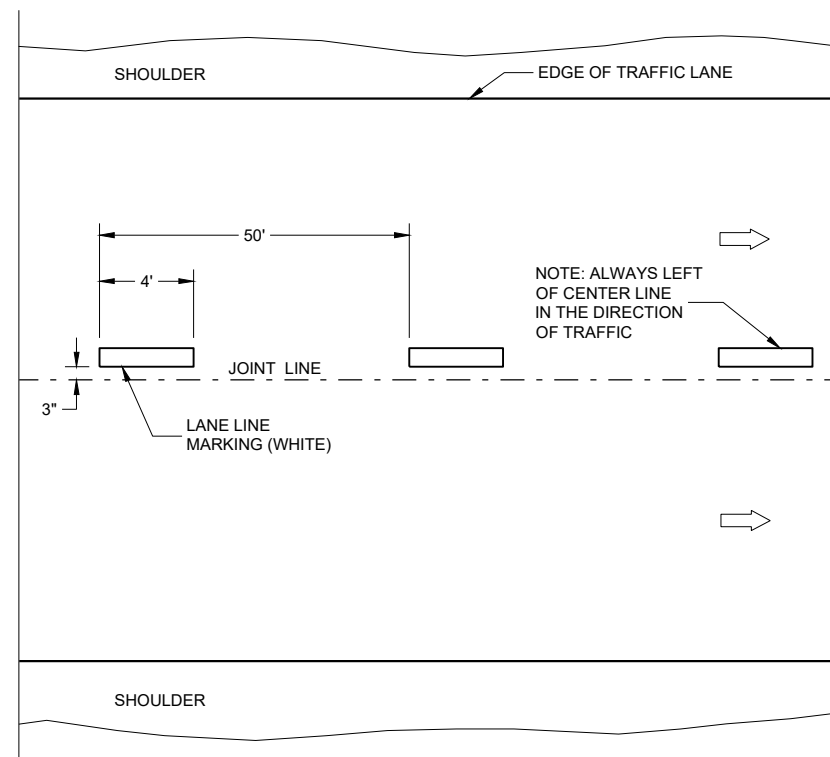


ONE WAY TRAFFIC

PERMANENT PAVEMENT MARKING



TWO WAY TRAFFIC



ONE WAY TRAFFIC

TEMPORARY PAVEMENT MARKING

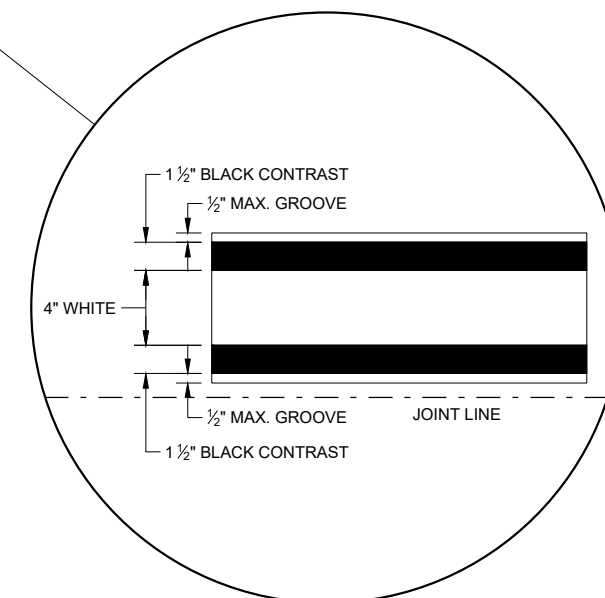
GENERAL NOTES

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

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

LEGEND

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

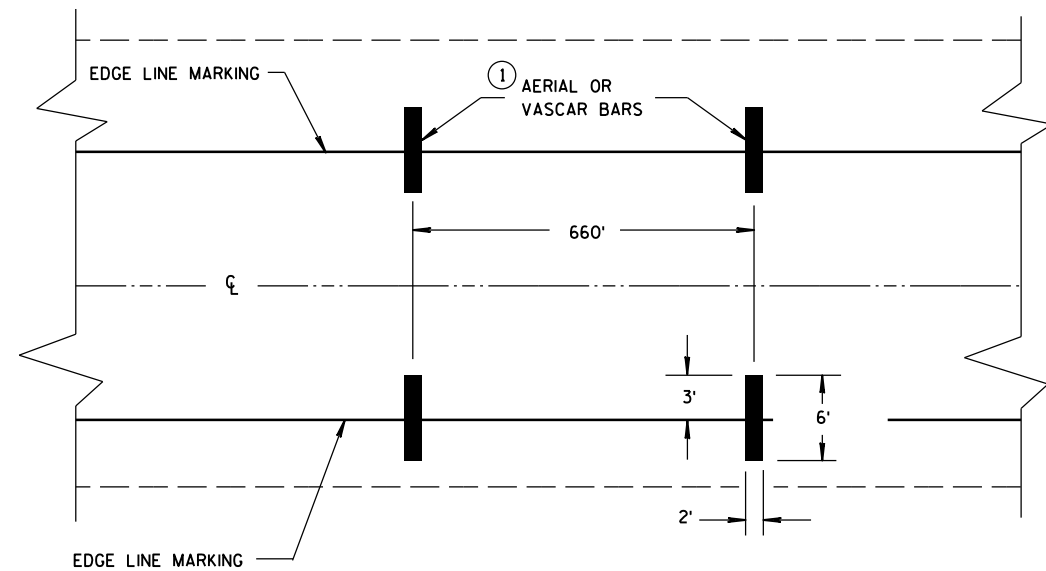


LONGITUDINAL MARKING (MAINLINE)

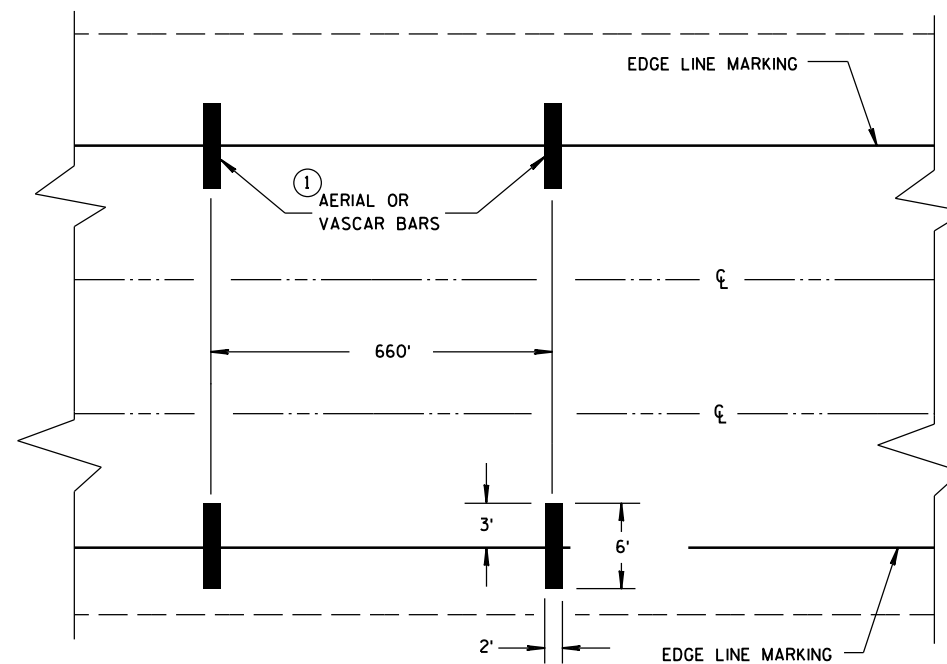
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
February 2020
DATE

/S/ Matthew Rauch
STATEWIDE SIGNING AND MARKING
ENGINEER



TYPICAL FOR TWO WAY OR ONE WAY TRAFFIC



TYPICAL FOR MULTILANE TRAFFIC

SPEED ENFORCEMENT ZONE WITH AERIAL OR VASCAR BARS

GENERAL NOTES

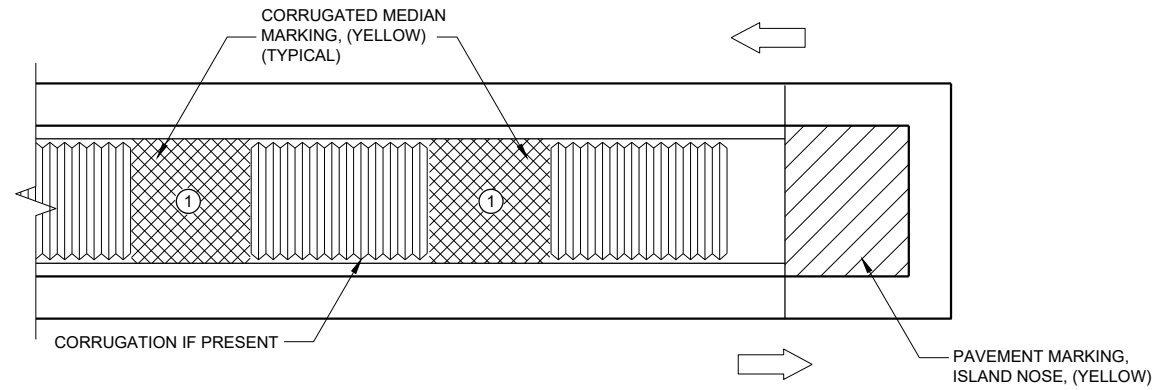
① PLACE TWO TO FIVE AERIAL OR VASCAR BARS AT 660 FOOT SPACING.

A CAR CAN BE PROVIDED BY THE WISCONSIN STATE PATROL FOR TRAFFIC CONTROL.

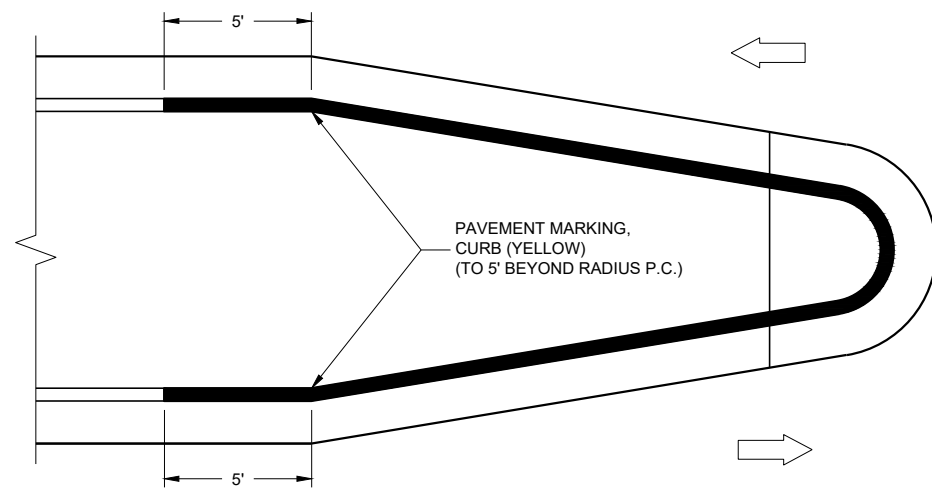
AERIAL ENFORCEMENT BARS
PAVEMENT MARKING DETAILS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

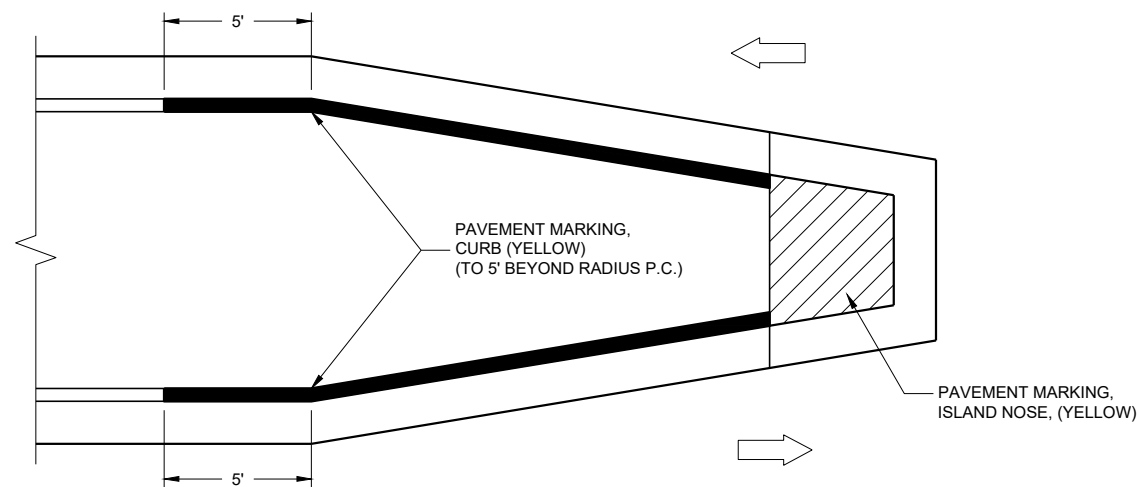
APPROVED
June 2017 /S/ Matthew R. Rauch
DATE STATE SIGNING AND MARKING ENGINEER
FHWA



MEDIAN ISLAND WITH SQUARE BLUNT NOSE



MEDIAN ISLAND WITH ROUND BLUNT NOSE



MEDIAN ISLAND WITH SLOPED NOSE

**TYPICAL PLACEMENT OF
PAVEMENT MARKING ON MEDIAN ISLANDS**

GENERAL NOTES

WHEN CONCRETE CORRUGATED MEDIAN IS CONSTRUCTED TO SEPARATE TRAFFIC OPERATING IN THE OPPOSING DIRECTION, YELLOW PAVEMENT MARKING SHALL BE APPLIED TO THE FLAT PORTION OF THE CONCRETE CORRUGATED MEDIAN. THE ITEM OF PAVEMENT MARKING, CONCRETE CORRUGATED MEDIAN, WILL BE MEASURED IN PLACE AND ACCEPTED IN ACCORDANCE WITH THE CONTRACT AND PAID FOR AT THE CONTRACT UNIT PRICE PER SQUARE FOOT.

-  ISLAND NOSE MARKING
-  CURB MARKING
-  CORRUGATED MEDIAN MARKING
-  DIRECTION OF TRAVEL

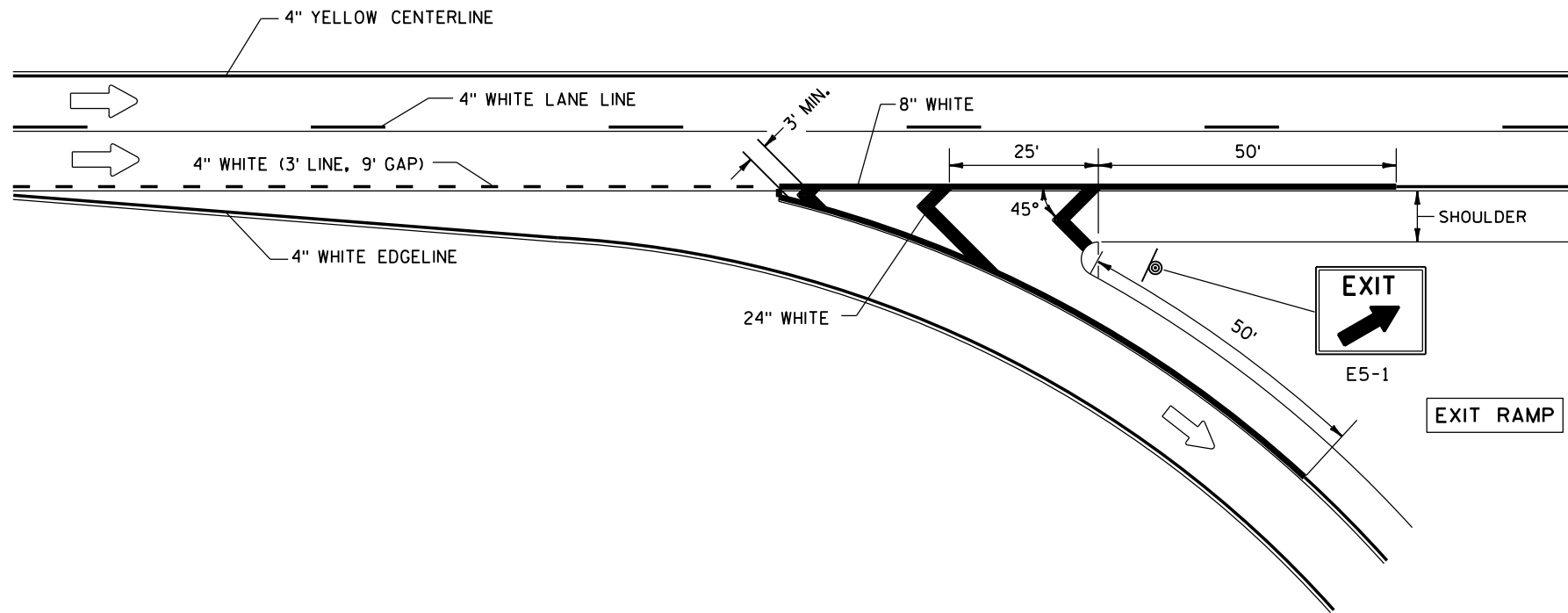
**PAVEMENT MARKINGS
(ISLANDS)**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
7/2018
DATE

/S/ Matthew R. Rauch
STATE SIGNING AND MARKING
ENGINEER

FHWA



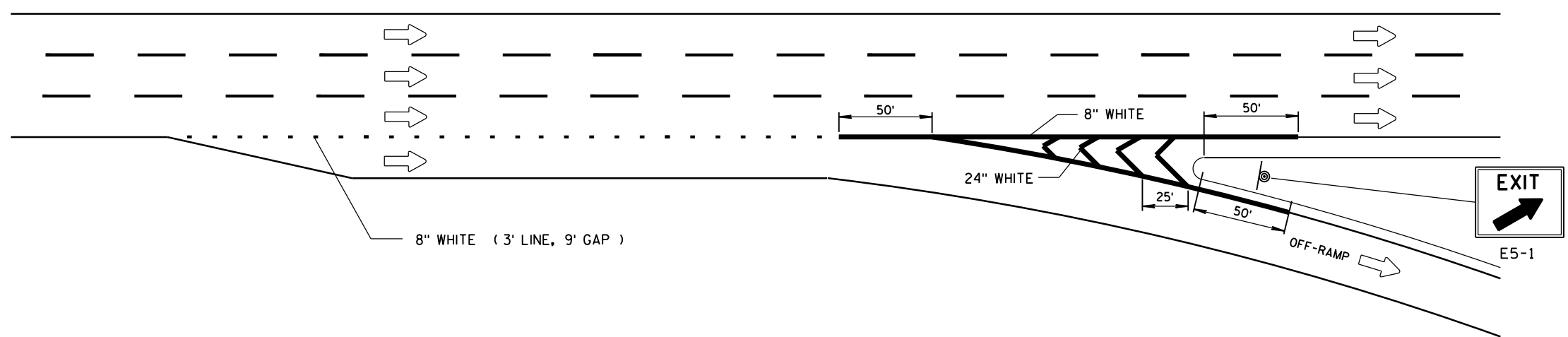
GENERAL NOTES

PLACE GROOVE 3 INCHES LEFT OF JOINT.

LEGEND

- DIRECTION OF TRAVEL
- SIGN ON PERMANENT SUPPORT

PAVEMENT MARKING FOR EXIT RAMP



SERVICE INTERCHANGE PAVEMENT MARKING FOR PARALLEL EXIT-RAMP

PAVEMENT MARKING
(RAMPS AND GOES)

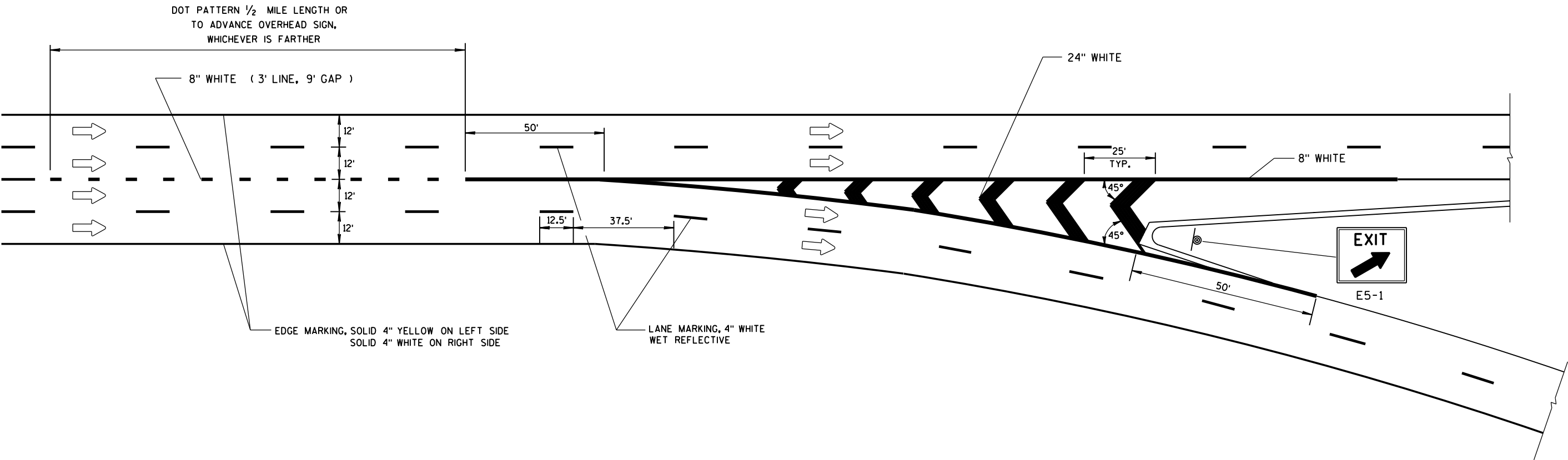
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

GENERAL NOTES

PLACE GROOVE 3 INCHES LEFT OF JOINT.

LEGEND

- ➡ DIRECTION OF TRAVEL
- ⊙ SIGN ON PERMANENT SUPPORT



PAVEMENT MARKING
MAJOR SPLIT
FREEWAY TO FREEWAY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

GENERAL NOTES

PLACE GROOVE 3 INCHES LEFT OF JOINT.

① 1/2 LENGTH OF FULL WIDTH ACCELERATION LANE.

PAVEMENT MARKING FOR ENTRANCE RAMP

LEGEND

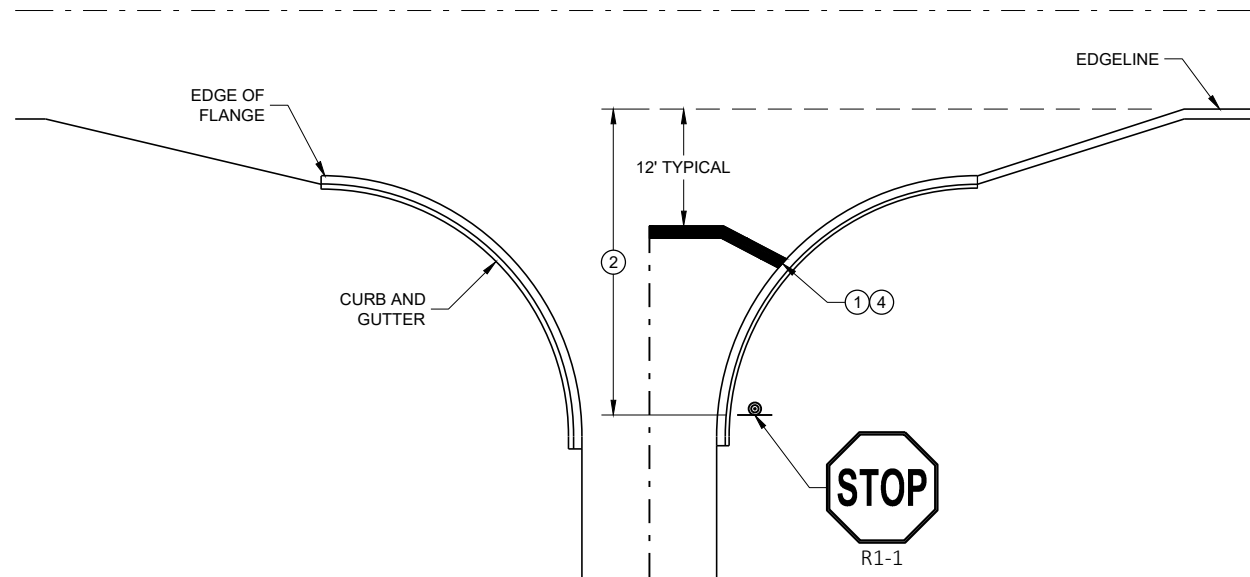
➡ DIRECTION OF TRAVEL

SERVICE INTERCHANGE PAVEMENT MARKING FOR PARALLEL ENTRANCE-RAMP

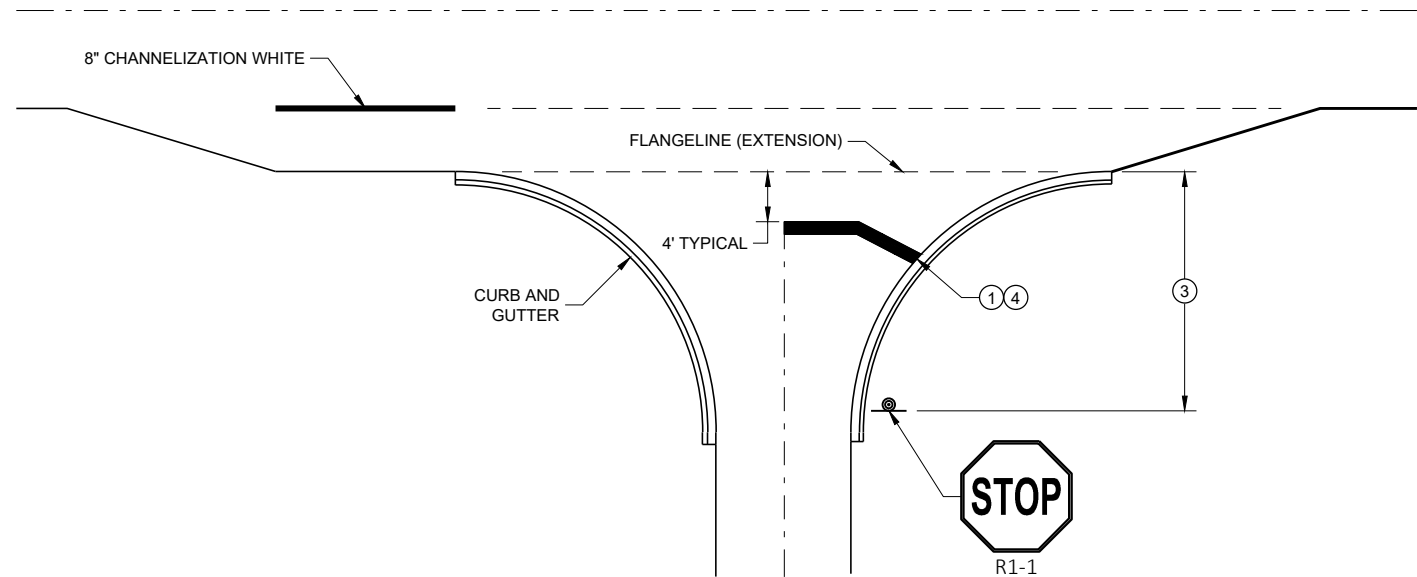
**PAVEMENT MARKING FOR
PARALLEL ON-RAMP AND
PARALLEL OFF-RAMP**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

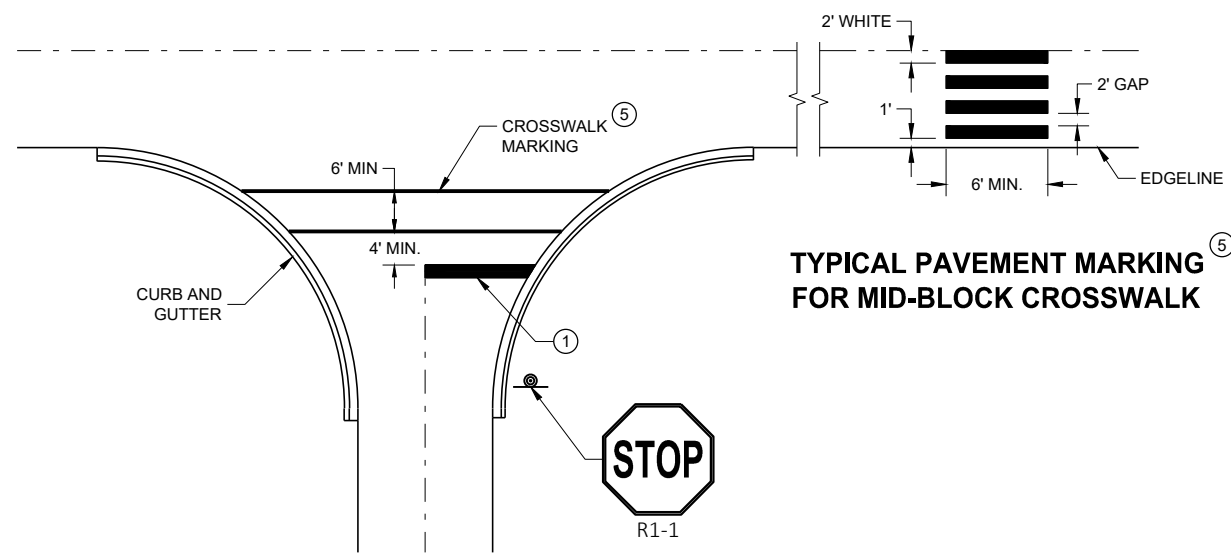
APPROVED
Sept., 2017 /S/ Matthew R. Rauch
DATE STATE SIGNING AND MARKING ENGINEER
FHWA



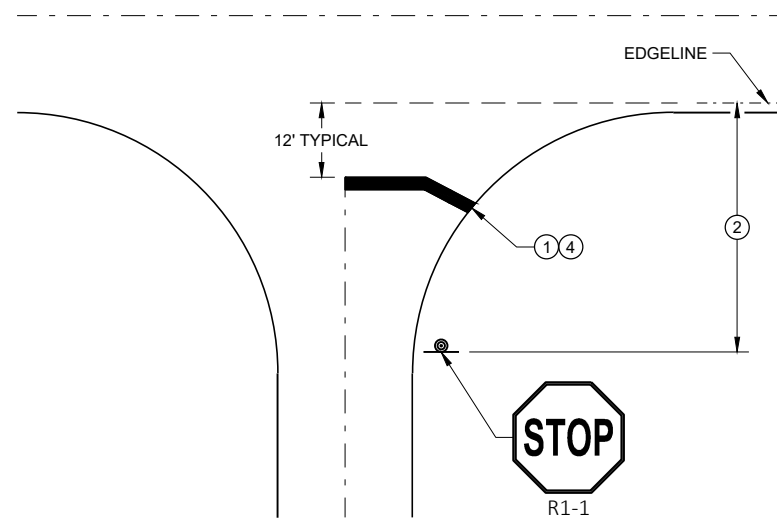
TYPICAL STOP LINE PAVEMENT MARKING WITH CURB AND GUTTER



TYPICAL STOP LINE PAVEMENT MARKING FOR SIDEROADS WITH RIGHT TURN LANE



TYPICAL STOP LINE PAVEMENT MARKING FOR SIDEROADS WITH CROSSWALK MARKING



TYPICAL STOP LINE PAVEMENT MARKING WITHOUT CURB AND GUTTER

GENERAL NOTES

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

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

STOP LINE AND CROSSWALK PAVEMENT MARKING

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

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.

THE SPACING BETWEEN SIGNS SHOULD BE ADJUSTED TO NOT CONFLICT WITH AND TO PROVIDE A MINIMUM OF 200 FEET (500 FEET DESIRABLE) CLEARANCE TO EXISTING SIGNS.

THIS LANE CLOSURE IS TYPICAL FOR CLOSING RIGHT LANE - REVERSE FOR CLOSING LEFT LANE.

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

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

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

FOR A LANE CLOSURE THAT IS IN PLACE LESS THAN 7 CONTINUOUS DAYS AND NIGHTS, THE ADVANCED WARNING SIGNS MAY BE MOUNTED ON PORTABLE SUPPORTS.

REMOVE PAVEMENT MARKINGS IF LANE CLOSURE IS TO BE IN PLACE 4 OR MORE CONTINUOUS DAYS AND NIGHTS.

IF THE HORIZONTAL ALIGNMENT IS SUCH THAT A CURVE MAY REQUIRE ADDITIONAL DELINEATION, THE DEVICE SPACING MAY BE DECREASED TO 50 FEET.

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

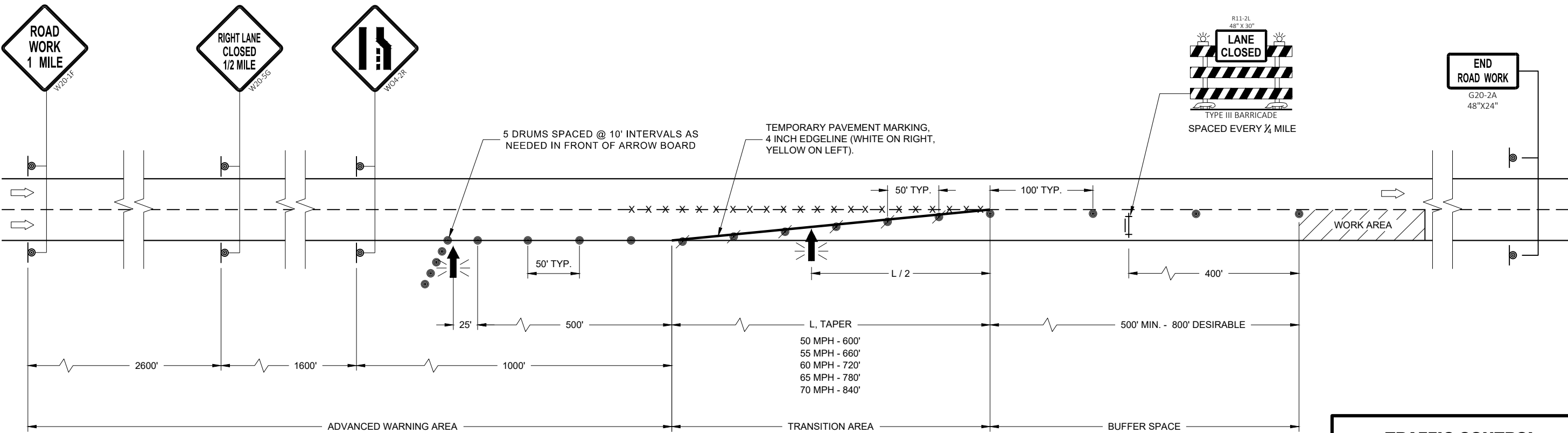
ADJUSTMENTS IN BUFFER SPACE NEED TO BE INCORPORATED WHEN THE LANE CLOSURE OCCURS

NEAR AN INTERCHANGE EXIT OR ENTRANCE RAMP OR INTERSECTION. THE LANE CLOSURE MUST TAKE PLACE FAR ENOUGH IN ADVANCE OF AN EXIT OR ENTRANCE RAMP TO STILL ALLOW FOR ADEQUATE BUFFER SPACE. THE MINIMUM LENGTH OF THE BUFFER SPACE BEFORE AN EXIT RAMP SHOULD BE ONE HALF THE LENGTH OF THE TRANSITION AREA. THE ENTRANCE RAMP SHOULD BE FOLLOWED BY THE ORIGINAL BUFFER SPACE LENGTH OF 800 FEET DESIRABLE PRIOR TO ANOTHER TRAFFIC CONTROL CHANGE SUCH AS A CROSSOVER MANEUVER.

CONSIDER ROADWAY GEOMETRICS WHEN LOCATING SIGNS AND ARROW BOARD SO THE DRIVER HAS A CLEAR VIEW OF THE ARROW BOARD AND LANE CLOSURE DRUMS.

LEGEND

- SIGN ON PERMANENT SUPPORT
- TRAFFIC CONTROL DRUM
- TRAFFIC CONTROL DRUM WITH TYPE "C" STEADY BURN LIGHT
- TYPE III BARRICADE WITH ATTACHED SIGN
- TYPE "A" WARNING LIGHT (FLASHING)
- REMOVING PAVEMENT MARKINGS
- DIRECTION OF TRAFFIC
- WORK AREA
- FLASHING ARROW BOARD



TRAFFIC CONTROL LANE CLOSURE	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED August 2020 DATE	/S/ Andrew Heidtke WORK ZONE 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.

THE SPACING BETWEEN SIGNS SHOULD BE ADJUSTED TO NOT CONFLICT WITH AND TO PROVIDE A MINIMUM OF 200 FEET (500 FEET DESIRABLE) CLEARANCE TO EXISTING SIGNS.

THIS LANE CLOSURE IS TYPICAL FOR CLOSING RIGHT LANE - REVERSE FOR CLOSING LEFT LANE.

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

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

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

CONSIDER ROADWAY GEOMETRICS WHEN LOCATING SIGNS AND ARROW BOARD SO THE DRIVER HAS A CLEAR VIEW OF THE ARROW BOARD AND LANE CLOSURE DRUMS.

FOR A LANE CLOSURE THAT IS IN PLACE LESS THAN 7 CONTINUOUS DAYS AND NIGHTS, THE ADVANCED WARNING SIGNS MAY BE MOUNTED ON PORTABLE SUPPORTS.

REMOVE PAVEMENT MARKINGS IF LANE CLOSURE IS TO BE IN PLACE 4 OR MORE CONTINUOUS DAYS AND NIGHTS.

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

IF THE HORIZONTAL ALIGNMENT IS SUCH THAT A CURVE MAY REQUIRE ADDITIONAL DELINEATION, THE DEVICE SPACING MAY BE DECREASED TO 50 FEET.

ADJUSTMENTS IN BUFFER SPACE NEED TO BE INCORPORATED WHEN THE LANE CLOSURE OCCURS NEAR AN INTERCHANGE EXIT OR ENTRANCE RAMP OR INTERSECTION. THE LANE CLOSURE MUST TAKE PLACE FAR ENOUGH IN ADVANCE OF AN EXIT OR ENTRANCE RAMP TO STILL ALLOW FOR ADEQUATE BUFFER SPACE. THE MINIMUM LENGTH OF THE BUFFER SPACE BEFORE AN EXIT RAMP SHOULD BE ONE HALF THE LENGTH OF THE TRANSITION AREA. THE ENTRANCE RAMP SHOULD BE FOLLOWED BY THE ORIGINAL BUFFER SPACE LENGTH OF 800 FEET DESIRABLE PRIOR TO ANOTHER TRAFFIC CONTROL CHANGE SUCH AS A CROSSOVER MANEUVER.

* A SPEED LIMIT SIGN SHALL BE LOCATED 1500 FEET BEYOND THE END OF THE ACCELERATION LANE OF EACH ENTRANCE RAMP. PLACE A SPEED LIMIT SIGN A MINIMUM OF EVERY 3 MILES. INCLUDE A RESUME SPEED LIMIT SIGN 200 FEET MINIMUM (500 FEET DESIRABLE) BEYOND THE "END OF ROADWORK" SIGN.

LEGEND

- SIGN ON PERMANENT SUPPORT
- TRAFFIC CONTROL DRUM
- TRAFFIC CONTROL DRUM WITH TYPE "C" STEADY BURN LIGHT
- TYPE III BARRICADE WITH ATTACHED SIGN
- TYPE "A" WARNING LIGHT (FLASHING)

✕ ✕ ✕ REMOVING PAVEMENT MARKINGS

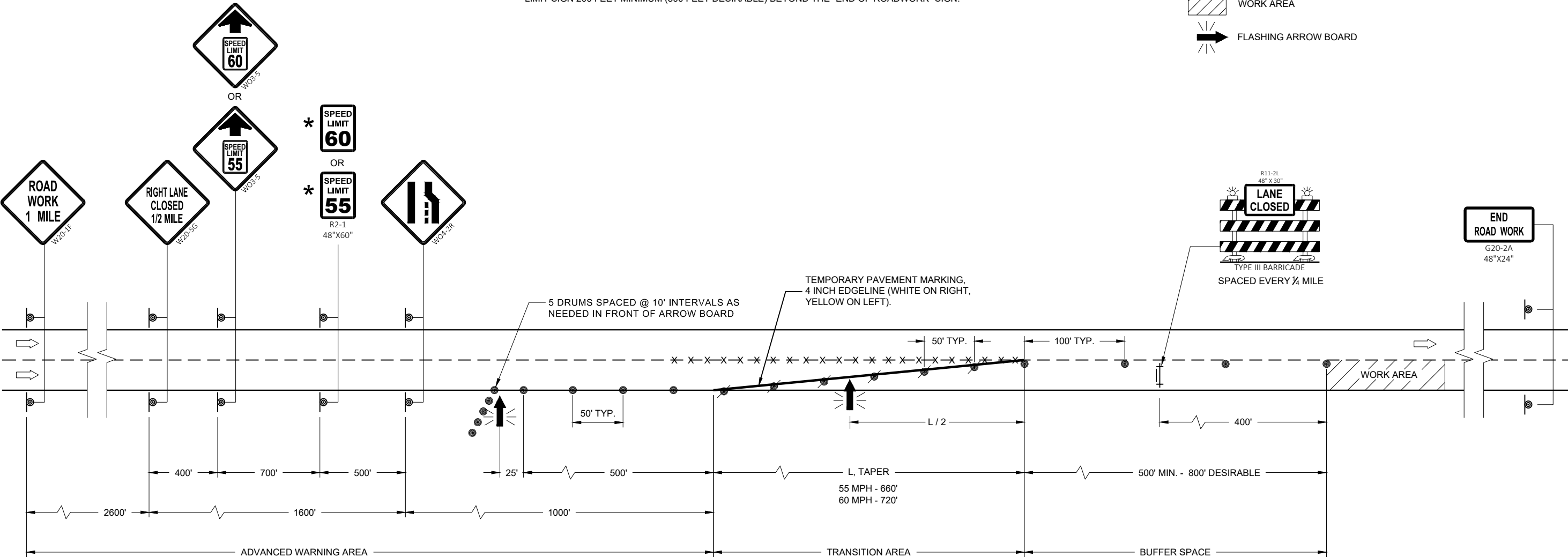
➡ DIRECTION OF TRAFFIC

WORK AREA

FLASHING ARROW BOARD

SDD 15D12 - 09b

SDD 15D12 - 09b



TRAFFIC CONTROL,
LANE CLOSURE,
SPEED REDUCTION

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

FHWA

LEGEND

- SIGN ON PERMANENT SUPPORT
- TRAFFIC CONTROL DRUM
- TRAFFIC CONTROL DRUM WITH TYPE "C" STEADY BURN LIGHT
- TYPE III BARRICADE WITH ATTACHED SIGN
- TYPE "A" WARNING LIGHT (FLASHING)
- REMOVING PAVEMENT MARKINGS
- DIRECTION OF TRAFFIC
- WORK AREA
- FLASHING ARROW BOARD
- PORTABLE TRAFFIC SENSOR (PTS)
- FLASHING BEACON SIGN

GENERAL NOTES

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

THE SPACING BETWEEN SIGNS SHOULD BE ADJUSTED TO NOT CONFLICT WITH AND TO PROVIDE A MINIMUM OF 200 FEET (500 FEET DESIRABLE) CLEARANCE TO EXISTING SIGNS.

THIS LANE CLOSURE IS TYPICAL FOR CLOSING RIGHT LANE - REVERSE FOR CLOSING LEFT LANE.

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

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

ANY SIGNS TEMPORARY OR EXISTING, WHICH CONFLICT WITH TRAFFIC CONTROL "IN USE" SHALL BE REMOVED OR COVERED AS NEEDED OR AS APPROVED BY THE ENGINEER. NO WARNING LIGHTS SHALL BE WORKING ON "COVERED" OR "DOWNED" SIGNS.

FOR A LANE CLOSURE THAT IS IN PLACE LESS THAN 7 CONTINUOUS DAYS AND NIGHTS, THE ADVANCED WARNING SIGNS MAY BE MOUNTED ON PORTABLE SUPPORTS.

REMOVE PAVEMENT MARKINGS IF LANE CLOSURE IS TO BE IN PLACE 4 OR MORE CONTINUOUS DAYS AND NIGHTS.

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

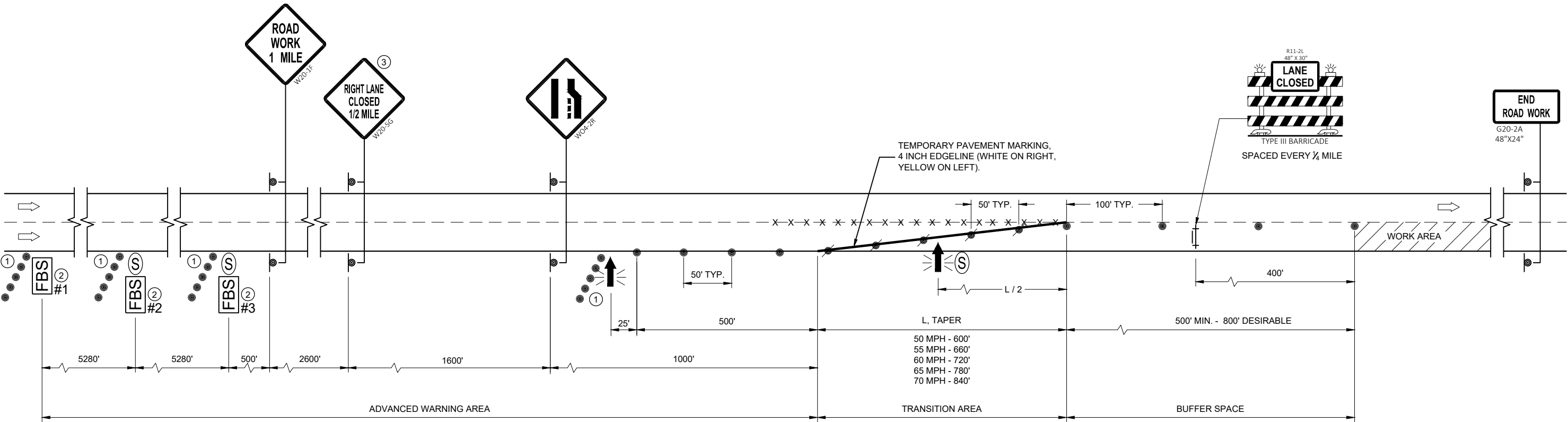
IF THE HORIZONTAL ALIGNMENT IS SUCH THAT A CURVE MAY REQUIRE ADDITIONAL DELINEATION, THE DEVICE SPACING MAY BE DECREASED TO 50 FEET.

ADJUSTMENTS IN BUFFER SPACE NEED TO BE INCORPORATED WHEN THE LANE CLOSURE OCCURS NEAR AN INTERCHANGE EXIT OR ENTRANCE RAMP OR INTERSECTION. THE LANE CLOSURE MUST TAKE PLACE FAR ENOUGH IN ADVANCE OF AN EXIT OR ENTRANCE RAMP TO STILL ALLOW FOR ADEQUATE BUFFER SPACE. THE MINIMUM LENGTH OF THE BUFFER SPACE BEFORE AN EXIT RAMP SHOULD BE ONE HALF THE LENGTH OF THE TRANSITION AREA. THE ENTRANCE RAMP SHOULD BE FOLLOWED BY THE ORIGINAL BUFFER SPACE LENGTH OF 800 FEET DESIRABLE PRIOR TO ANOTHER TRAFFIC CONTROL CHANGE SUCH AS A CROSSOVER MANEUVER.

CONSIDER ROADWAY GEOMETRICS WHEN LOCATING SIGNS AND ARROW BOARD SO THE DRIVER HAS A CLEAR VIEW OF THE ARROW BOARD AND LANE CLOSURE DRUMS.

PORTABLE TRAFFIC SENSOR (PTS) MAY BE MOUNTED ON THE FBS, ARROW BOARD OR OTHER TRAILER DEVICES.

- 5 DRUMS SPACED AT 10 FOOT INTERVALS AS NEEDED.
- IF THERE ARE MORE THAN TWO LANES OR IF SPECIFIED IN THE PLANS, PLACE FBS ON BOTH SIDES OF THE ROADWAY.
- IF THERE IS AN APPROVED TEMPORARY SPEED DECLARATION, ADD WO-3-5 SIGNS 400 FEET AFTER THE W20-5G SIGNS AND ADD R2-1 SIGNS (48"x60") 700 FEET AFTER THE WO3-5 SIGNS. A SPEED LIMIT SIGN SHALL BE LOCATED 1500 FEET BEYOND THE END OF THE ACCELERATION LANE OF EACH ENTRANCE RAMP. PLACE A SPEED LIMIT SIGN A MINIMUM OF EVERY 3 MILES. INCLUDE A "RESUME SPEED LIMIT" SIGN 200 FEET MINIMUM (800 FEET DESIRABLE) BEYOND THE G30-3A "END ROAD WORK" SIGN.



TRAFFIC CONTROL, LANE CLOSURE, BASIC TRAFFIC QUEUE WARNING SYSTEM

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

FHWA

LEGEND

- SIGN ON PERMANENT SUPPORT
- SIGN ON TEMPORARY SUPPORT
- TRAFFIC CONTROL DRUM
- TRAFFIC CONTROL DRUM WITH TYPE "C" STEADY BURN LIGHT
- REMOVING PAVEMENT MARKING (SEE GENERAL NOTES)
- TYPE III BARRICADE WITH ATTACHED SIGN
- DIRECTION OF TRAFFIC

GENERAL NOTES

THE INSTALLATIONS SHOWN ON THIS SHEET ARE TYPICAL EXAMPLES AND ARE NOT INTENDED TO REPRESENT ANY PARTICULAR RAMP. AT SPECIFIC FIELD LOCATIONS, SIMILAR INSTALLATIONS SHALL BE USED AND ADJUSTED TO THE GEOMETRICS OF THE RAMP AS COORDINATED WITH THE ENGINEER.

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

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

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

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

SEE SEPARATE LANE CLOSURE DETAIL FOR TYPICAL SPACING OF TYPE III BARRICADES AND R11-2L "LANE CLOSED" SIGNS.

SIGNS THAT WILL BE IN PLACE LESS THAN 7 CONSECUTIVE DAYS AND NIGHTS OR THAT WILL BE PLACED IN A CLOSED LANE, MAY BE MOUNTED ON PORTABLE SUPPORTS. USE SUPPORTS THAT PROVIDE A MINIMUM OF 5 FEET FROM THE BOTTOM OF THE SIGN TO THE PAVEMENT.

IF INDICATED IN MISCELLANEOUS QUANTITIES, SUBSTITUTE FLEXIBLE TUBULAR MARKERS FOR DRUMS IN THE GORE BETWEEN THE ENTRANCE RAMP AND MAINLINE TRAFFIC.

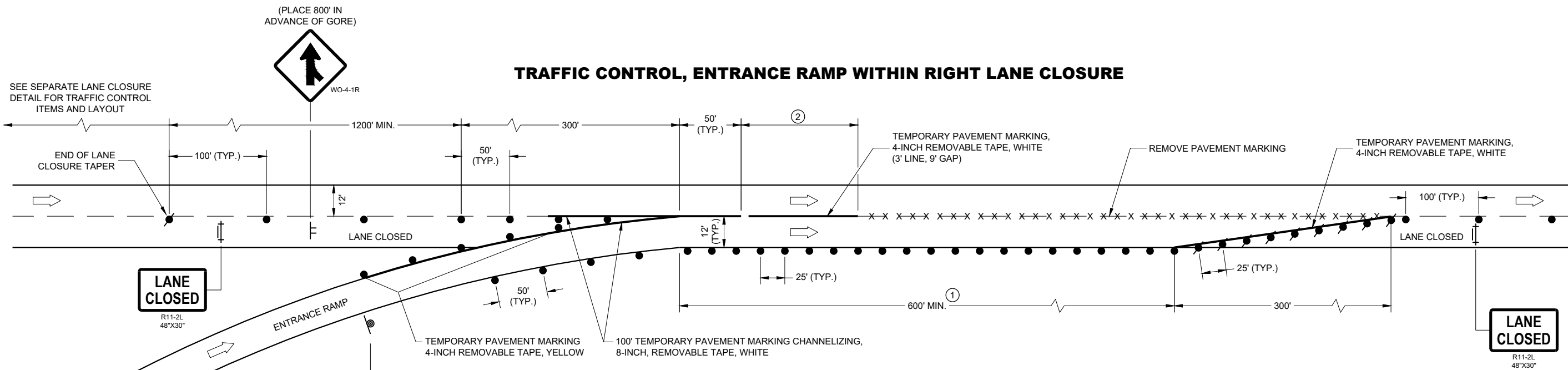
ANY SIGNS TEMPORARY OR EXISTING, WHICH CONFLICT WITH TRAFFIC CONTROL "IN USE" SHALL BE REMOVED OR COVERED AS NEEDED AND AS APPROVED BY THE ENGINEER.

REMOVE PAVEMENT MARKINGS AND PLACE TEMPORARY PAVEMENT MARKING, REMOVABLE TAPE IF LANE CLOSURE IS TO BE IN PLACE FOR 4 OR MORE CONTINUOUS DAYS AND NIGHTS.

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

- ① EXTEND THE LENGTH OF THE MERGE ARE IF THE ENTERING (DESIGN) SPEED IS LESS THAN 50MPH OR IF THE MAINLINE GRADE EXCEEDS ±2.2%.
- ② END TEMPORARY MARKING AT ½ THE LENGTH OF FULL WIDTH OF THE ACCELERATION LANE.

TRAFFIC CONTROL, ENTRANCE RAMP WITHIN RIGHT LANE CLOSURE



PARALLEL EXIT RAMP

TRAFFIC CONTROL,
PARALLEL ENTRANCE RAMP
WITHIN LANE CLOSURE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

FHWA

LEGEND

- SIGN ON PERMANENT SUPPORT
- SIGN ON TEMPORARY SUPPORT
- TRAFFIC CONTROL DRUM
- TRAFFIC CONTROL DRUM WITH TYPE "C" STEADY BURN LIGHT
- REMOVING PAVEMENT MARKING (SEE GENERAL NOTES)
- TYPE III BARRICADE WITH ATTACHED SIGN
- DIRECTION OF TRAFFIC

GENERAL NOTES

THE INSTALLATIONS SHOWN ON THIS SHEET ARE TYPICAL EXAMPLES AND ARE NOT INTENDED TO REPRESENT ANY PARTICULAR RAMP. AT SPECIFIC FIELD LOCATIONS, SIMILAR INSTALLATIONS SHALL BE USED AND ADJUSTED TO THE GEOMETRICS OF THE RAMP AS COORDINATED WITH THE ENGINEER.

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

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

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

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

SEE SEPARATE LANE CLOSURE DETAIL FOR TYPICAL SPACING OF TYPE III BARRICADES AND R11-2L "LANE CLOSED" SIGNS.

SIGNS THAT WILL BE IN PLACE LESS THAN 7 CONSECUTIVE DAYS AND NIGHTS OR THAT WILL BE PLACED IN A CLOSED LANE, MAY BE MOUNTED ON PORTABLE SUPPORTS.

IF INDICATED IN MISCELLANEOUS QUANTITIES, SUBSTITUTE FLEXIBLE TUBULAR MARKERS /OR DRUMS IN THE GORE BETWEEN THE EXIT RAMP AND MAINLINE TRAFFIC.

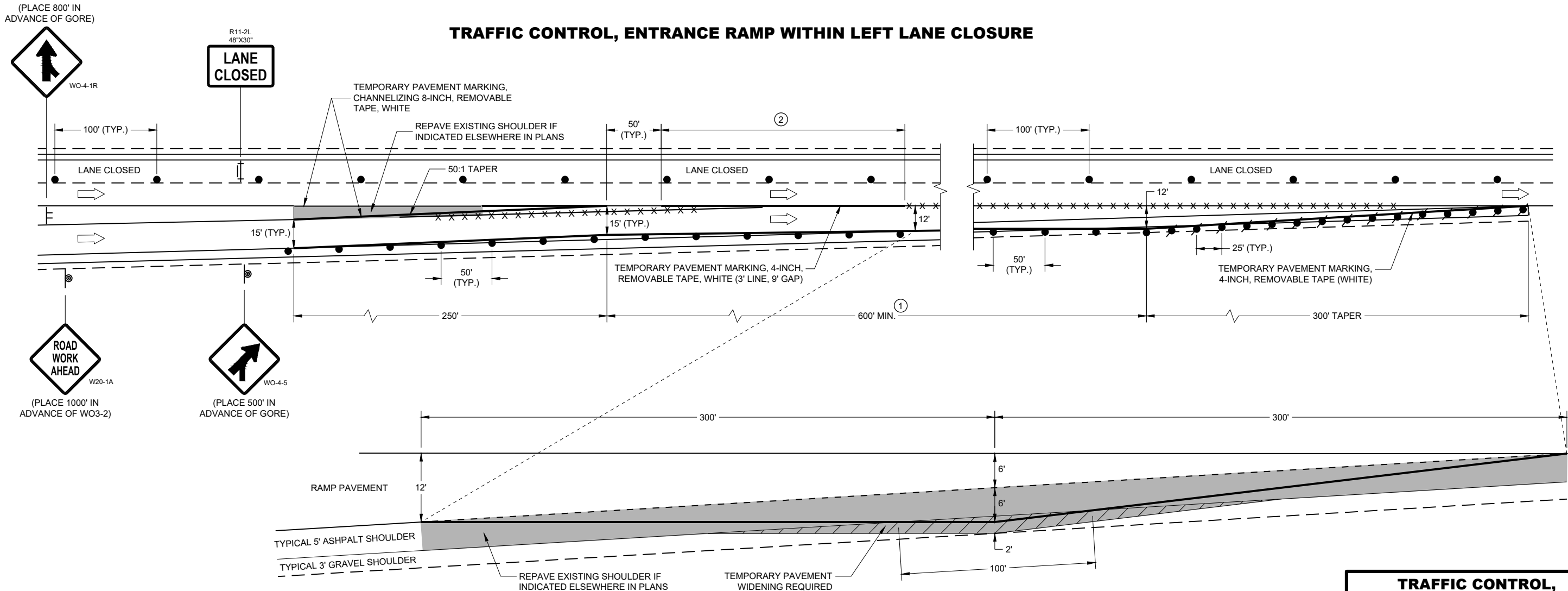
ANY SIGNS TEMPORARY OR EXISTING, WHICH CONFLICT WITH TRAFFIC CONTROL "IN USE" SHALL BE REMOVED OR COVERED AS NEEDED AND AS APPROVED BY THE ENGINEER.

REMOVE PAVEMENT MARKINGS AND PLACE TEMPORARY PAVEMENT MARKING, REMOVABLE TAPE IF LANE CLOSURE IS TO BE IN PLACE FOR 4 OR MORE CONTINUOUS DAYS AND NIGHTS.

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

- ① EXTEND THE LENGTH OF THE MERGE AREA IF THE ENTERING (DESIGN) SPEED OF THE RAMP IS LESS THAN 50 MPH OR IF THE MAINLINE GRADE EXCEEDS ±2.2%.
- ② END TEMPORARY MARKING AT ½ THE LENGTH OF FULL WIDTH OF THE ACCELERATION LANE.

TRAFFIC CONTROL, ENTRANCE RAMP WITHIN LEFT LANE CLOSURE



TEMPORARY PAVEMENT DETAIL

(EXISTING RAMP DIMENSIONS MAY VARY, ADJUST TEMPORARY PAVEMENT ACCORDINGLY)

TRAFFIC CONTROL,
ENTRANCE RAMP
WITHIN LANE CLOSURE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

FHWA

LEGEND

- SIGN ON PERMANENT SUPPORT
- SIGN ON TEMPORARY SUPPORT
- TRAFFIC CONTROL DRUM
- TRAFFIC CONTROL DRUM WITH TYPE "C" STEADY BURN LIGHT
- REMOVING PAVEMENT MARKING (SEE GENERAL NOTES)
- TYPE III BARRICADE WITH ATTACHED SIGN
- FLAGS, 16" X 16" MIN., ORANGE
- DIRECTION OF TRAFFIC

GENERAL NOTES

THE INSTALLATIONS SHOWN ON THIS SHEET ARE TYPICAL EXAMPLES AND ARE NOT INTENDED TO REPRESENT ANY PARTICULAR RAMP. AT SPECIFIC FIELD LOCATIONS, SIMILAR INSTALLATIONS SHALL BE USED AND ADJUSTED TO THE GEOMETRICS OF THE RAMP AS COORDINATED WITH THE ENGINEER.

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

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

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

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

SEE SEPARATE LANE CLOSURE DETAIL FOR TYPICAL SPACING OF TYPE III BARRICADES AND R11-2L "LANE CLOSED" SIGNS.

YIELD SIGN AND WARNING SIGNS ON ENTRANCE RAMP ARE ALSO APPROPRIATE FOR CLOSURE OF THE MAINLINE LEFT LANE. OMIT THE YIELD SIGN IF MORE THAN ONE LANE REMAINS OPEN ON THE MAINLINE AND THE RAMP TAPER IS AT LEAST AS LONG AS THE NORMAL ENTRANCE RAMP TAPER AT THE SITE.

SIGNS THAT WILL BE IN PLACE LESS THAN 7 CONSECUTIVE DAYS AND NIGHTS OR THAT WILL BE PLACED IN A CLOSED LANE, MAY BE MOUNTED ON PORTABLE SUPPORTS. USE SUPPORTS THAT PROVIDE A MINIMUM OF 5 FEET FROM THE BOTTOM OF THE SIGN TO THE PAVEMENT.

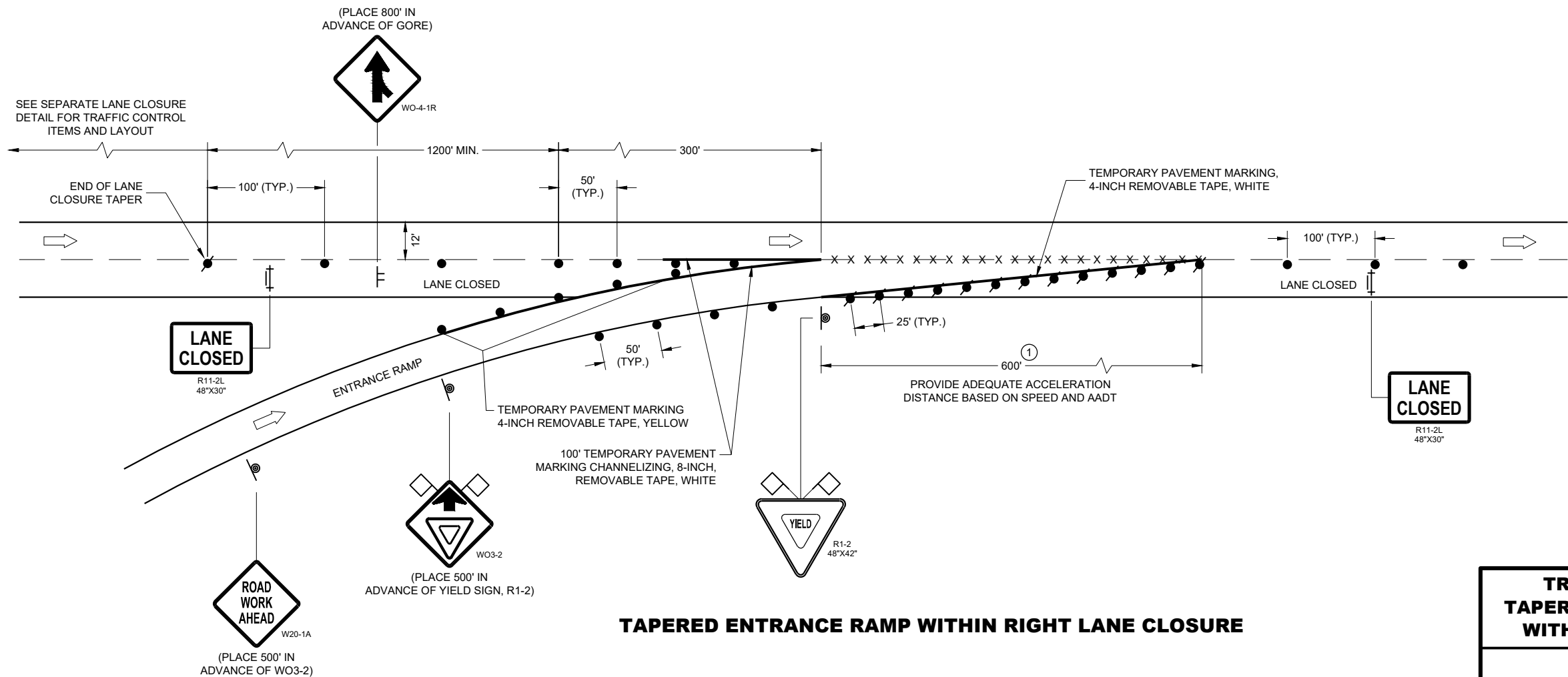
IF INDICATED IN MISCELLANEOUS QUANTITIES, SUBSTITUTE FLEXIBLE TUBULAR MARKERS FOR DRUMS IN THE GORE BETWEEN THE ENTRANCE RAMP AND MAINLINE TRAFFIC.

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.

REMOVE PAVEMENT MARKINGS AND PLACE TEMPORARY PAVEMENT MARKING, REMOVABLE TAPE IF LANE CLOSURE IS TO BE IN PLACE FOR 4 OR MORE CONTINUOUS DAYS AND NIGHTS.

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

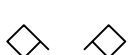
① CONSULT WITH REGIONAL WORK ZONE ENGINEER IF NEED TO REDUCE LENGTH EXISTS.



TAPERED ENTRANCE RAMP WITHIN RIGHT LANE CLOSURE

TRAFFIC CONTROL, TAPERED ENTRANCE RAMP WITHIN LANE CLOSURE	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED May 2019 DATE	/S/ Andrew Heidtke WORK ZONE ENGINEER
FHWA	

LEGEND

-  SIGN ON PERMANENT SUPPORT
-  SIGN ON TEMPORARY SUPPORT
-  TRAFFIC CONTROL DRUM
-  TRAFFIC CONTROL DRUM WITH TYPE "C" STEADY BURN LIGHT
-  TYPE III BARRICADE WITH ATTACHED SIGN
-  FLAGS, 16" X 16" MIN., ORANGE
-  DIRECTION OF TRAFFIC

GENERAL NOTES

THE INSTALLATIONS SHOWN ON THIS SHEET ARE TYPICAL EXAMPLES AND ARE NOT INTENDED TO REPRESENT ANY PARTICULAR RAMP. AT SPECIFIC FIELD LOCATIONS, SIMILAR INSTALLATIONS SHALL BE USED AND ADJUSTED TO THE GEOMETRICS OF THE RAMP AS COORDINATED WITH THE ENGINEER.

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

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

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

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

SEE SEPARATE LANE CLOSURE DETAIL FOR TYPICAL SPACING OF TYPE III BARRICADES AND R11-2L "LANE CLOSED" SIGNS.

YIELD SIGN AND WARNING SIGNS ON ENTRANCE RAMP ARE ALSO APPROPRIATE FOR CLOSURE OF THE MAINLINE LEFT LANE. OMIT THE YIELD SIGN IF MORE THAN ONE LANE REMAINS OPEN ON THE MAINLINE AND THE RAMP TAPER IS AT LEAST AS LONG AS THE NORMAL ENTRANCE RAMP TAPER AT THE SITE.

SIGNS THAT WILL BE IN PLACE LESS THAN 7 CONSECUTIVE DAYS AND NIGHTS OR THAT WILL BE PLACED IN A CLOSED LANE, MAY BE MOUNTED ON PORTABLE SUPPORTS. USE SUPPORTS THAT PROVIDE A MINIMUM OF 5 FEET FROM THE BOTTOM OF THE SIGN TO THE PAVEMENT.

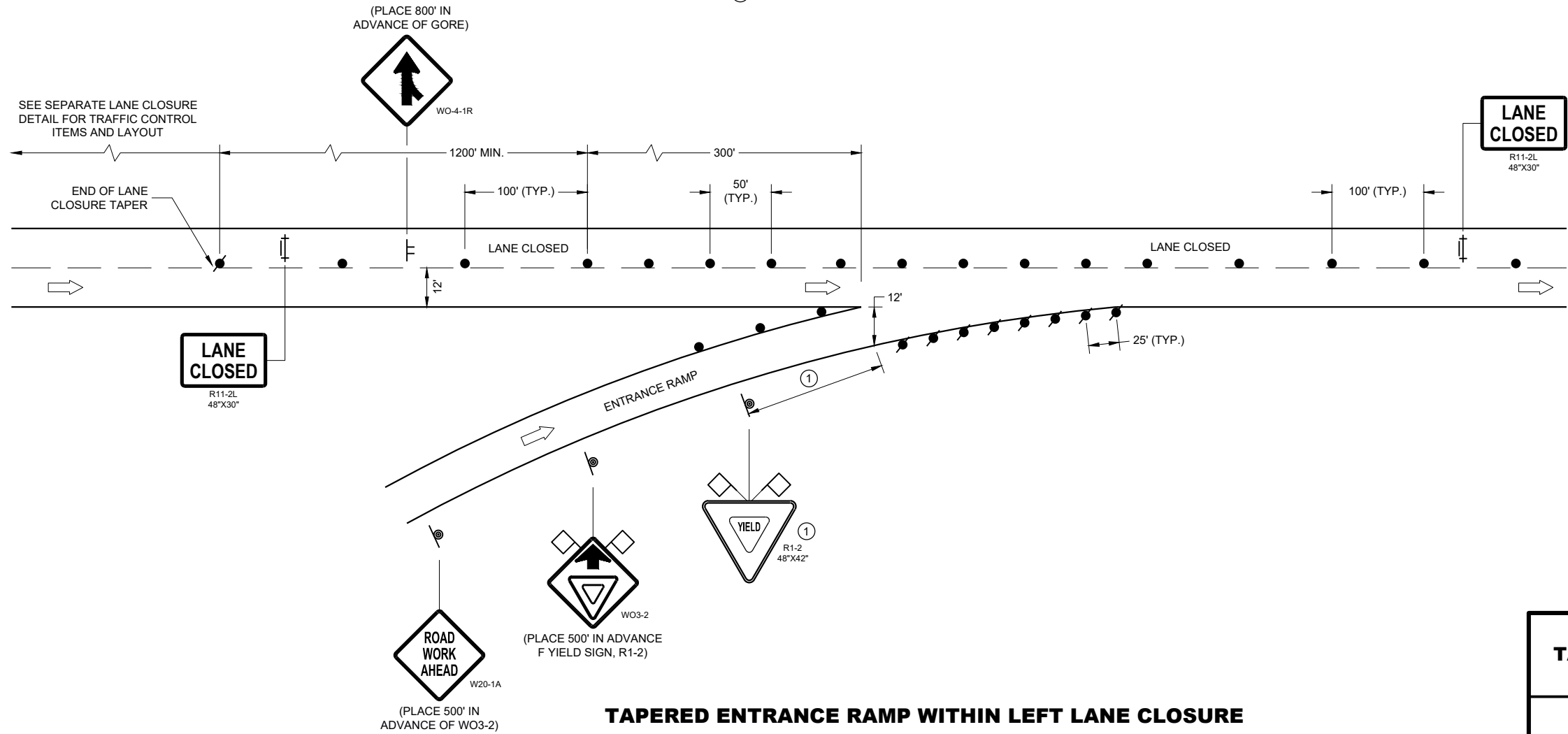
IF INDICATED IN MISCELLANEOUS QUANTITIES, SUBSTITUTE FLEXIBLE TUBULAR MARKERS FOR DRUMS IN THE GORE BETWEEN THE ENTRANCE RAMP AND MAINLINE TRAFFIC.

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.

REMOVE PAVEMENT MARKINGS AND PLACE TEMPORARY PAVEMENT MARKING, REMOVABLE TAPE IF LANE CLOSURE IS TO BE IN PLACE FOR 4 OR MORE CONTINUOUS DAYS AND NIGHTS.

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

- ① PLACE YIELD SIGN TO PROVIDE ADEQUATE SIGHT DISTANCE AND ACCELERATION DISTANCE.



TAPERED ENTRANCE RAMP WITHIN LEFT LANE CLOSURE

TRAFFIC CONTROL, TAPERED ENTRANCE RAMP WITHIN LANE CLOSURE	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED May 2019 DATE	/S/ Andrew Heidtke WORK ZONE ENGINEER
FHWA	

LEGEND

-  SIGN ON PERMANENT SUPPORT
-  SIGN ON TEMPORARY SUPPORT
-  TRAFFIC CONTROL DRUM
-  TRAFFIC CONTROL DRUM WITH TYPE "C" STEADY BURN LIGHT
-  REMOVING PAVEMENT MARKING (SEE GENERAL NOTES)
-  TYPE III BARRICADE WITH ATTACHED SIGN
-  DIRECTION OF TRAFFIC

GENERAL NOTES

THE INSTALLATIONS SHOWN ON THIS SHEET ARE TYPICAL EXAMPLES AND ARE NOT INTENDED TO REPRESENT ANY PARTICULAR RAMP. AT SPECIFIC FIELD LOCATIONS, SIMILAR INSTALLATIONS SHALL BE USED AND ADJUSTED TO THE GEOMETRICS OF THE RAMP AS COORDINATED WITH THE ENGINEER.

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

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

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

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

SEE SEPARATE LANE CLOSURE DETAIL FOR TYPICAL SPACING OF TYPE III BARRICADES AND R11-2L "LANE CLOSED" SIGNS.

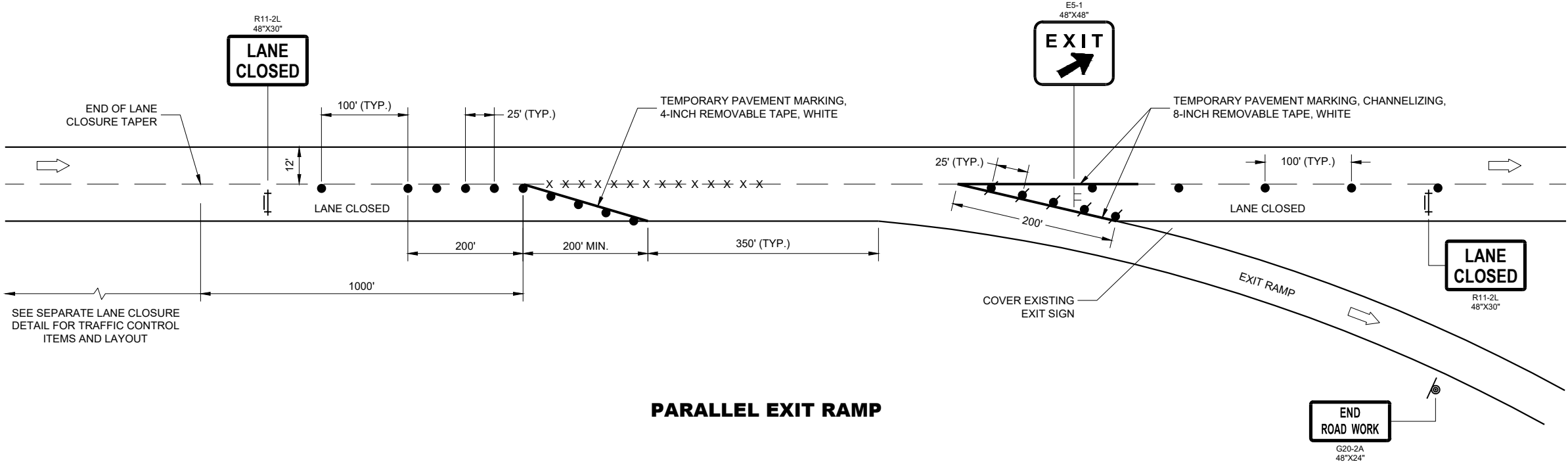
SIGNS THAT WILL BE IN PLACE LESS THAN 7 CONSECUTIVE DAYS AND NIGHTS OR THAT WILL BE PLACED IN A CLOSED LANE, MAY BE MOUNTED ON PORTABLE SUPPORTS.

IF INDICATED IN MISCELLANEOUS QUANTITIES, SUBSTITUTE FLEXIBLE TUBULAR MARKERS FOR DRUMS IN THE GORE BETWEEN THE EXIT RAMP AND MAINLINE TRAFFIC.

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.

REMOVE PAVEMENT MARKINGS AND PLACE TEMPORARY PAVEMENT MARKING, REMOVABLE TAPE IF LANE CLOSURE IS TO BE IN PLACE FOR 4 OR MORE CONTINUOUS DAYS AND NIGHTS.

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



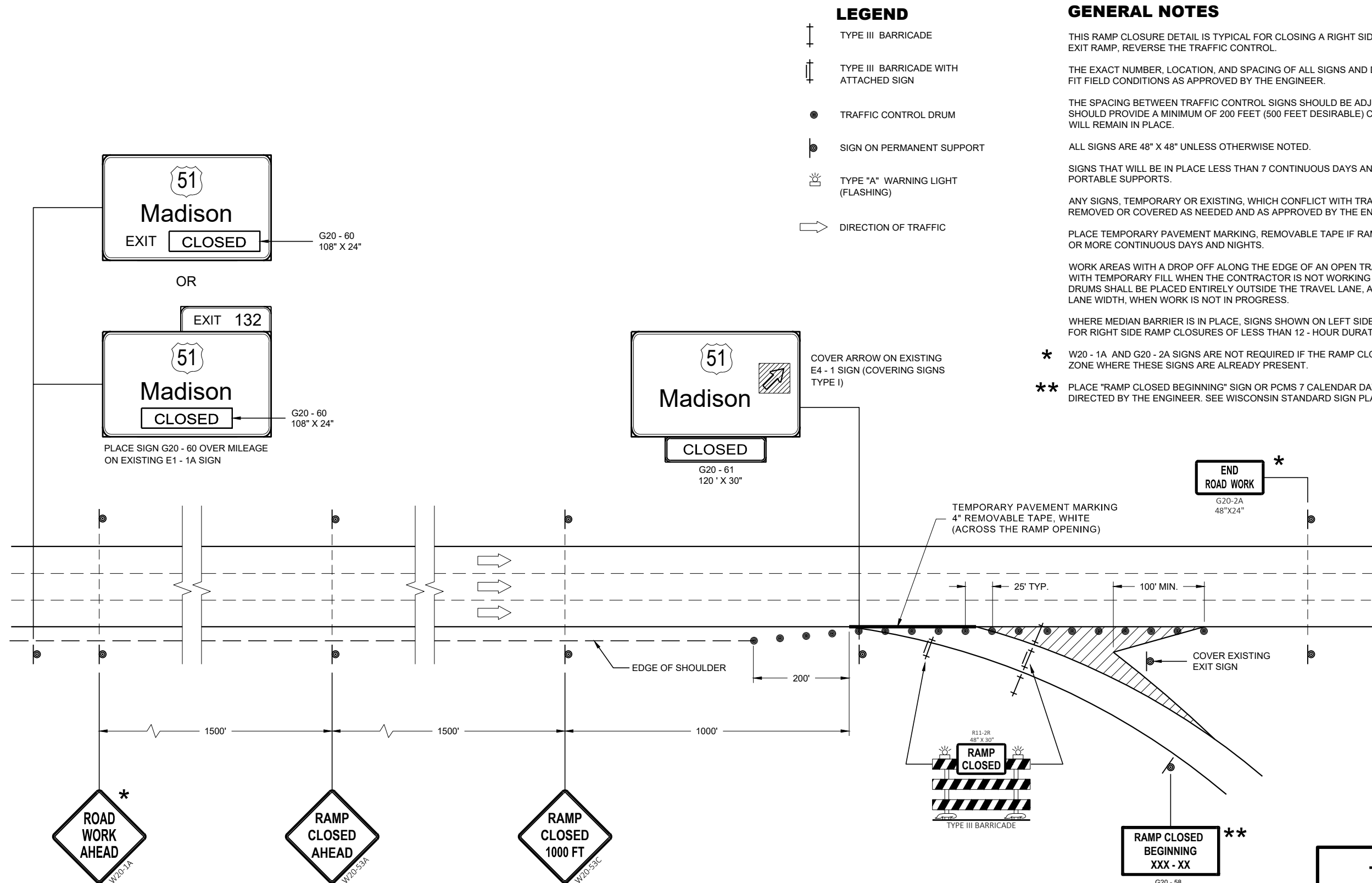
TRAFFIC CONTROL,
PARALLEL EXIT RAMP
WITHIN LANE CLOSURE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
May 2019
DATE

/S/ Andrew Heidtke
WORK ZONE ENGINEER

FHWA



LEGEND

- TYPE III BARRICADE
- TYPE III BARRICADE WITH ATTACHED SIGN
- TRAFFIC CONTROL DRUM
- SIGN ON PERMANENT SUPPORT
- TYPE "A" WARNING LIGHT (FLASHING)
- DIRECTION OF TRAFFIC

GENERAL NOTES

- THIS RAMP CLOSURE DETAIL IS TYPICAL FOR CLOSING A RIGHT SIDE EXIT RAMP. FOR A LEFT SIDE EXIT RAMP, REVERSE THE TRAFFIC CONTROL.
- THE EXACT NUMBER, LOCATION, AND SPACING OF ALL SIGNS AND DEVICES SHALL BE ADJUSTED TO FIT FIELD CONDITIONS AS APPROVED BY THE ENGINEER.
- THE SPACING BETWEEN TRAFFIC CONTROL SIGNS SHOULD BE ADJUSTED TO NOT CONFLICT WITH AND SHOULD PROVIDE A MINIMUM OF 200 FEET (500 FEET DESIRABLE) CLEARANCE TO EXISTING SIGNS THAT WILL REMAIN IN PLACE.
- ALL SIGNS ARE 48" X 48" UNLESS OTHERWISE NOTED.
- SIGNS THAT WILL BE IN PLACE LESS THAN 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.
- PLACE TEMPORARY PAVEMENT MARKING, REMOVABLE TAPE IF RAMP CLOSURE IS TO BE IN PLACE 4 OR MORE CONTINUOUS DAYS AND NIGHTS.
- WORK AREAS WITH A DROP OFF ALONG THE EDGE OF AN OPEN TRAVEL LANE SHALL BE LEVELED WITH TEMPORARY FILL WHEN THE CONTRACTOR IS NOT WORKING ADJACENT TO THE TRAVEL LANE. DRUMS SHALL BE PLACED ENTIRELY OUTSIDE THE TRAVEL LANE, ALLOWING THE FULL UNOBSTRUCTED LANE WIDTH, WHEN WORK IS NOT IN PROGRESS.
- WHERE MEDIAN BARRIER IS IN PLACE, SIGNS SHOWN ON LEFT SIDE OF ROADWAY MAY BE OMITTED FOR RIGHT SIDE RAMP CLOSURES OF LESS THAN 12 - HOUR DURATION.
- * W20 - 1A AND G20 - 2A SIGNS ARE NOT REQUIRED IF THE RAMP CLOSURE IS WITHIN A LARGER WORK ZONE WHERE THESE SIGNS ARE ALREADY PRESENT.
- ** PLACE "RAMP CLOSED BEGINNING" SIGN OR PCMS 7 CALENDAR DAYS PRIOR TO CLOSURE OR AS DIRECTED BY THE ENGINEER. SEE WISCONSIN STANDARD SIGN PLATES FOR SIGN LAYOUT.

TRAFFIC CONTROL, EXIT RAMP CLOSURE	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED November 2018 DATE	/S/ Andrew Heidtke ROADWAY STANDARDS DEVELOPMENT ENGINEER
FHWA	

LEGEND

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

GENERAL NOTES

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

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

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

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

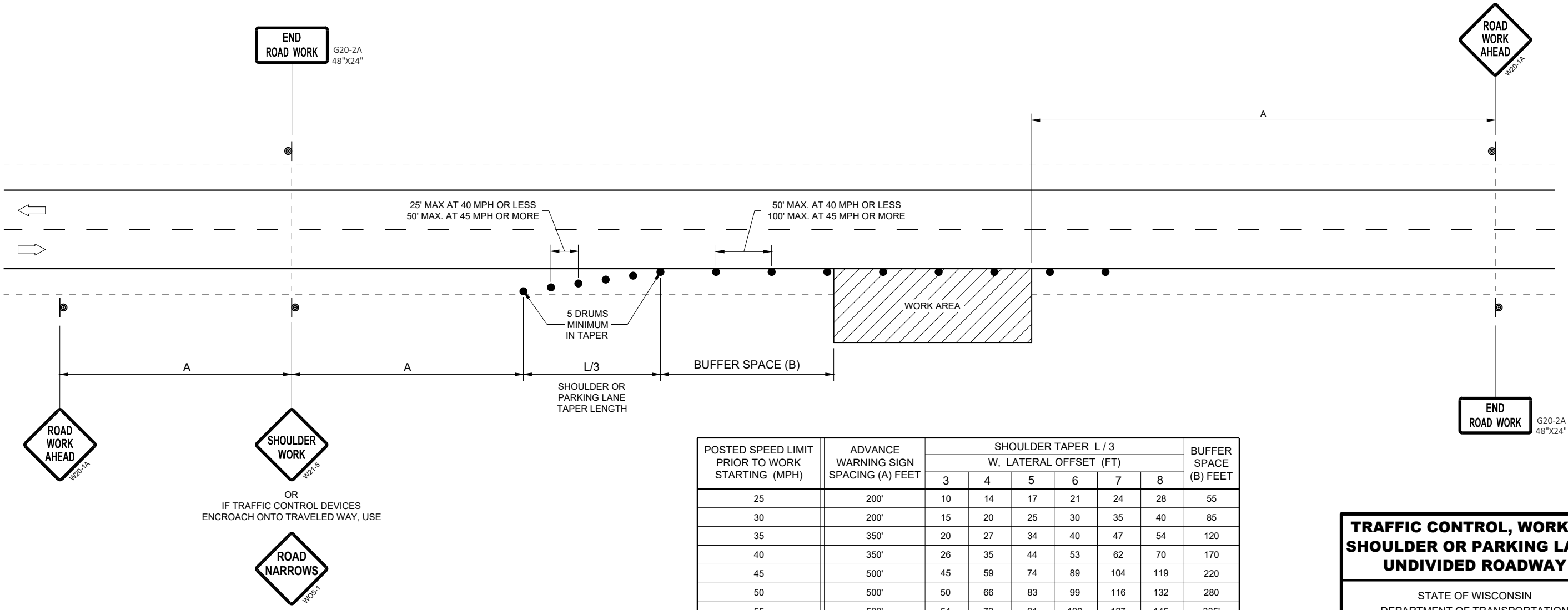
CHANNELIZING DEVICES PLACED ADJACENT TO WORK AREA SHALL BE PULLED BACK FROM THE TRAVEL LANE WHEN WORK IS NOT IN PROGRESS.

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

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

6

6



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

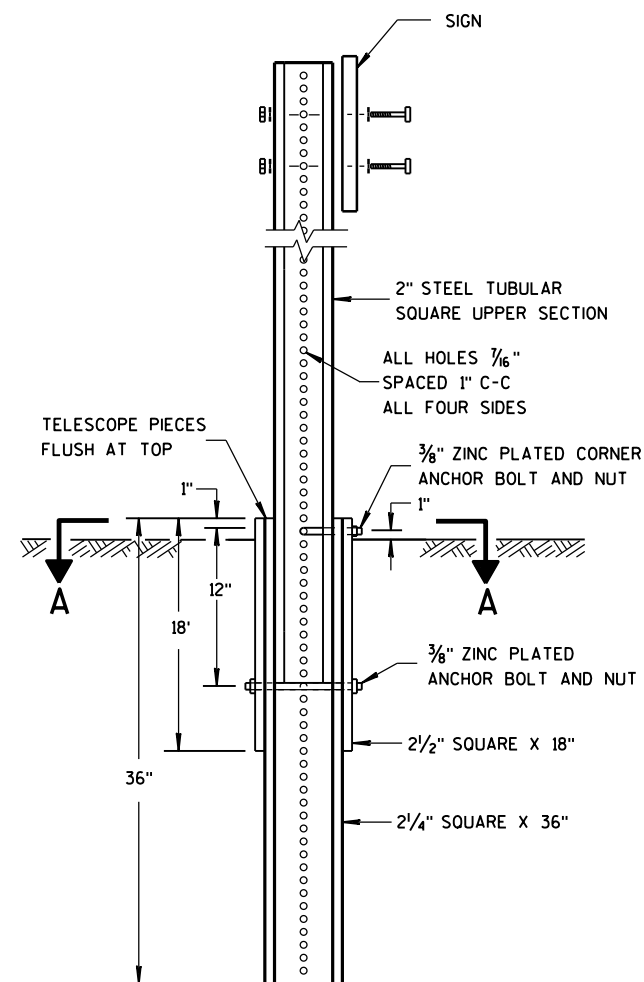
TRAFFIC CONTROL, WORK ON
SHOULDER OR PARKING LANE,
UNDIVIDED ROADWAY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
May 2020
DATE

/S/ Andrew Heidtke
STATEWIDE WORK ZONE TRAFFIC
SAFETY ENGINEER

FHWA

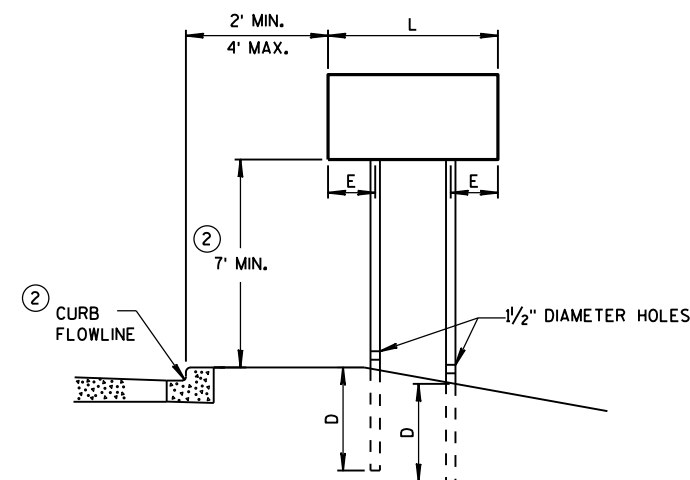
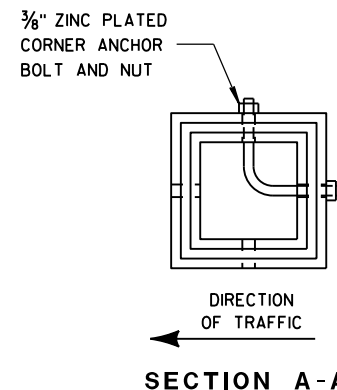


DETAIL OF TUBULAR
STEEL SIGN POST

TUBULAR STEEL POSTS

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

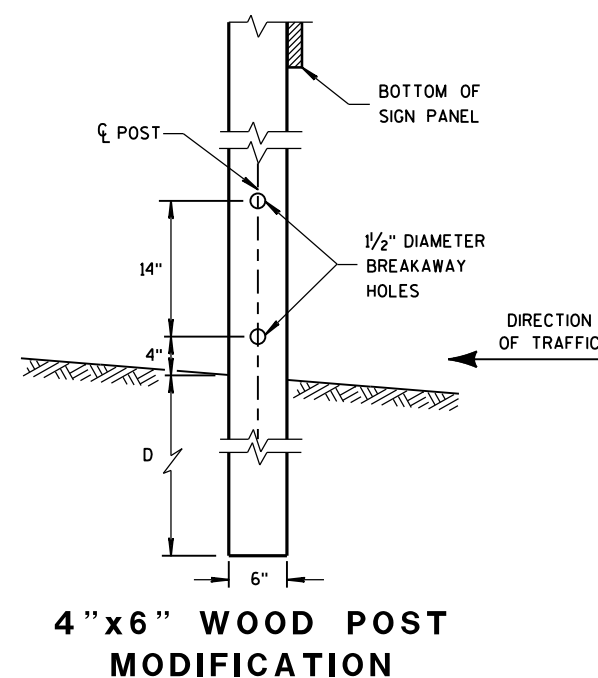
SIGNS WIDER THAN 3 FEET OR LARGER THAN 9 SQ. FT. SHALL
BE MOUNTED ON MULTIPLE POSTS (SEE ABOVE TABLE).
SIGNS LARGER THAN 27 SQ. FT. SHALL NOT BE MOUNTED
ON TUBULAR STEEL POSTS.



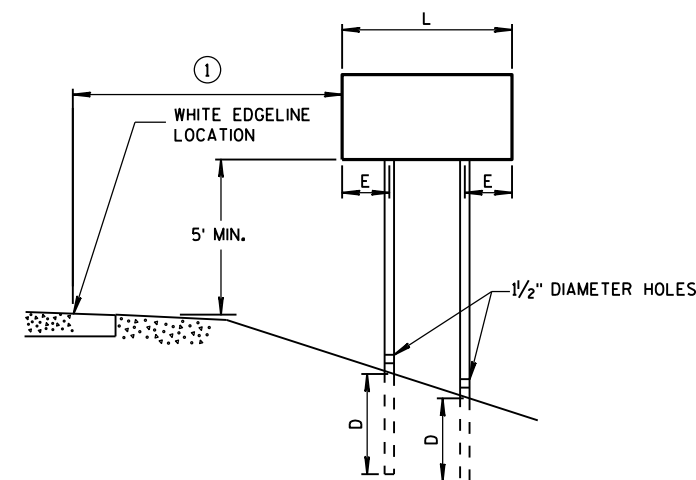
URBAN AREA

POST MOUNTING DETAIL FOR TEMPORARY TRAFFIC CONTROL FIXED MESSAGE SIGNS

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



4 "x6 " WOOD POST
MODIFICATION



RURAL AREA

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

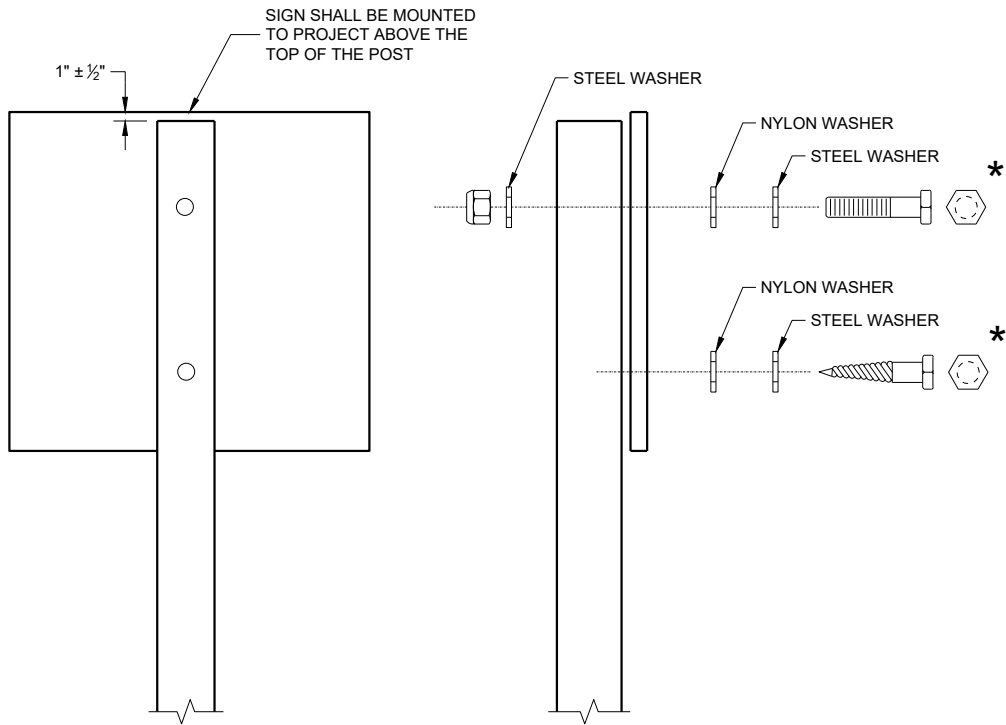
SEE NOTE ③

GENERAL NOTES

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

TEMPORARY TRAFFIC CONTROL
SIGN MOUNTING

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



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

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

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

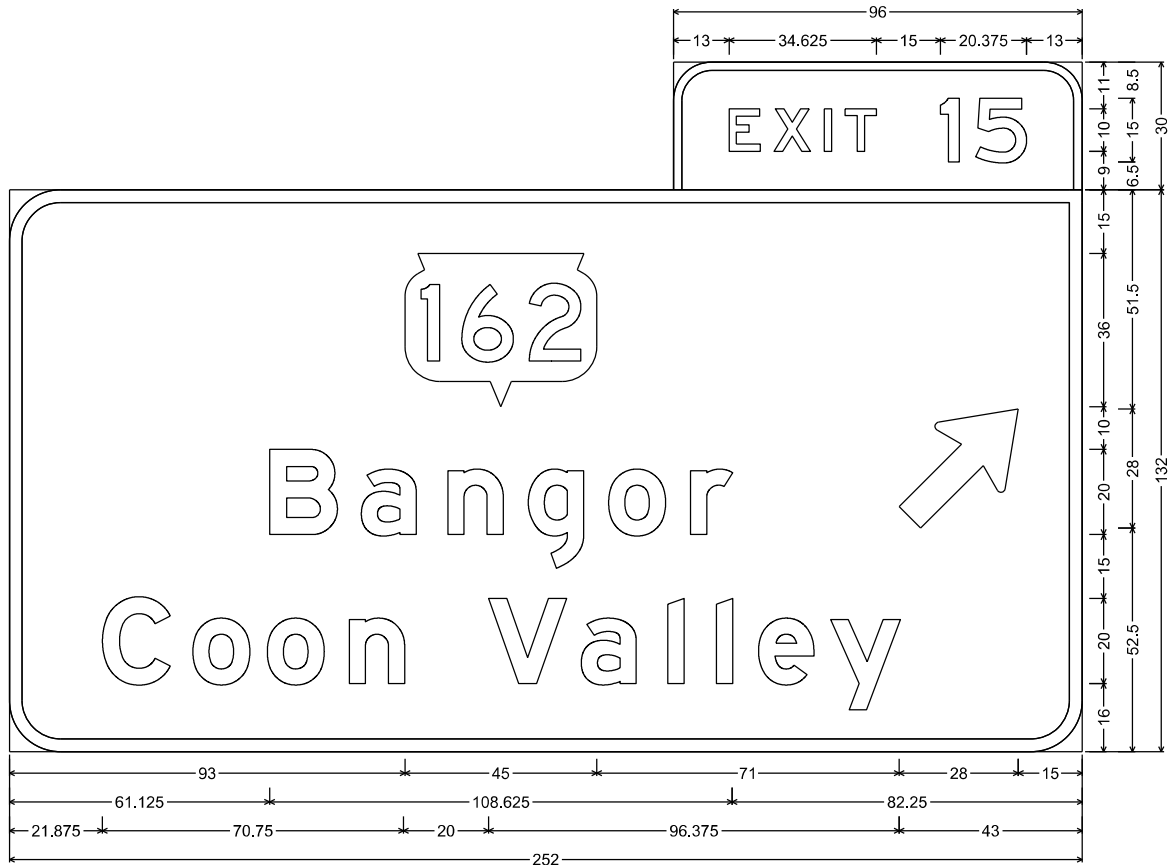
WOOD POST (4" x 6")
LAG SCREWS - 3/8" x 3"
MACHINE BOLTS - 5/16" x 6 1/2" OR 7" LENGTH W/NUTS

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

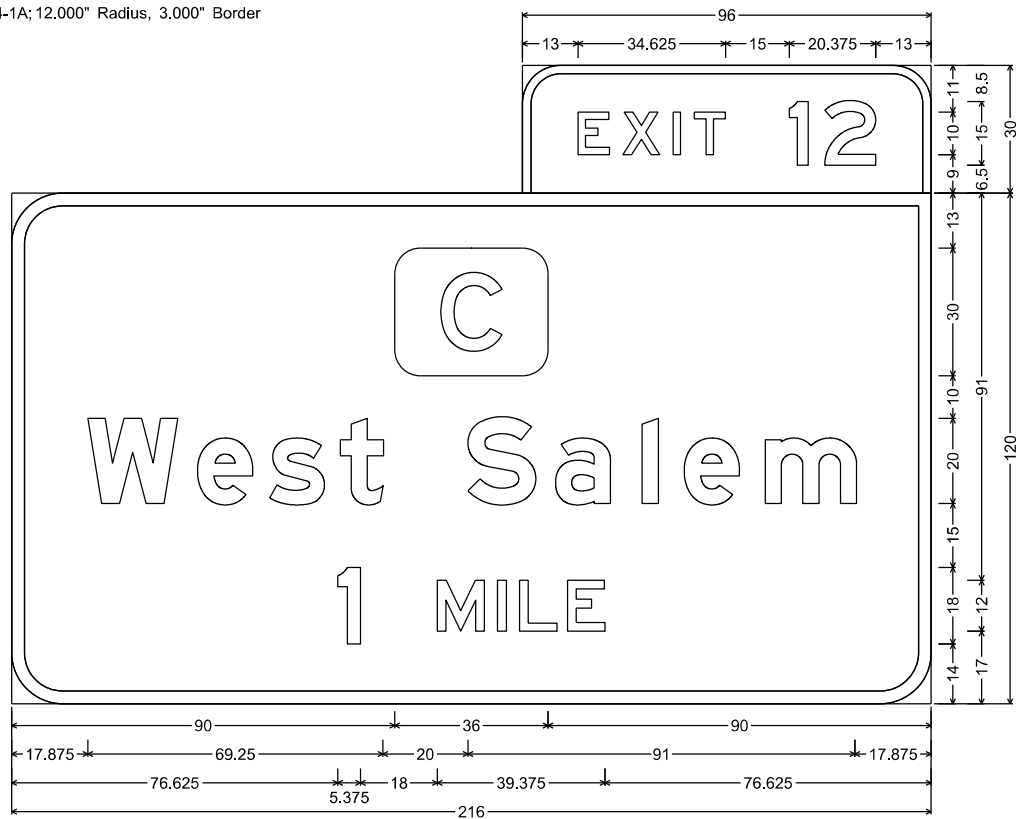
WASHERS (ALL POSTS) -
1 1/4" O.D. x 3/8" I.D. x 1/16" STEEL
1 1/4" O.D. x 3/8" I.D. x 0.080 NYLON

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

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



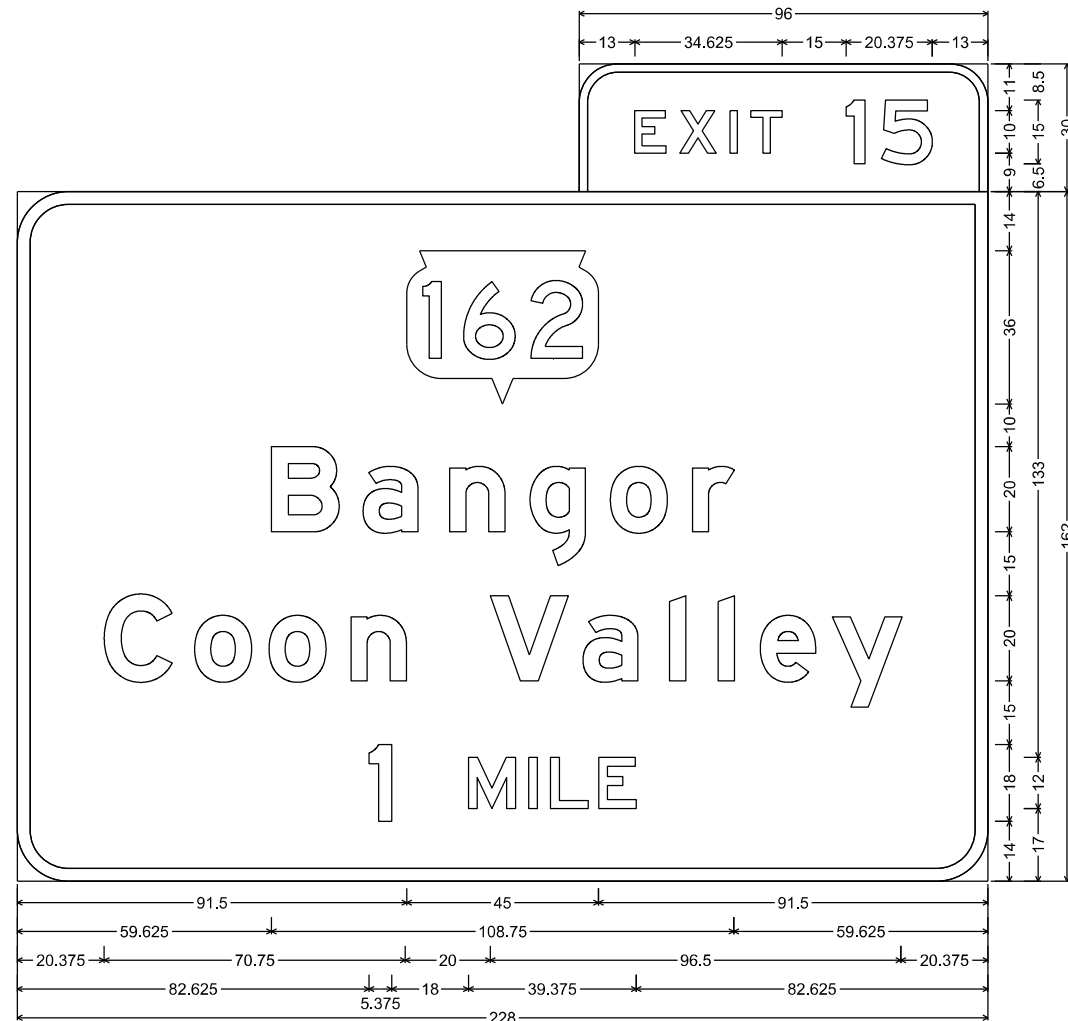
E1-5P; 9.000" Radius, 2.000" Border
E4-1A; 12.000" Radius, 3.000" Border



E1-5P; 9.000" Radius, 2.000" Border
E1-1A; 12.000" Radius, 3.000" Border

NOTES

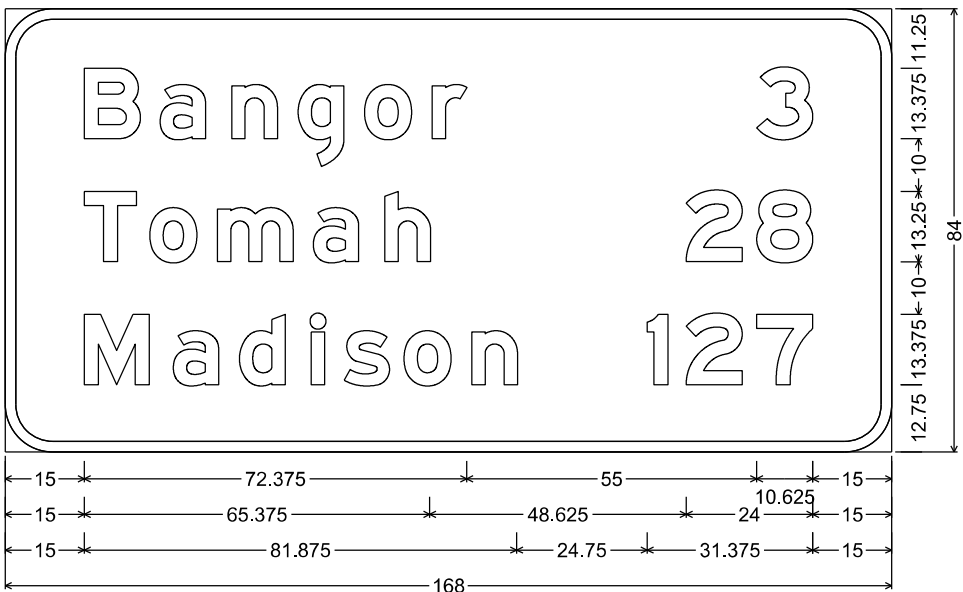
1. All Signs Type I - Type SH Reflective
2. Color:
Background - Green
Message - White
3. Message Series - E Modified except all CAP words Series E



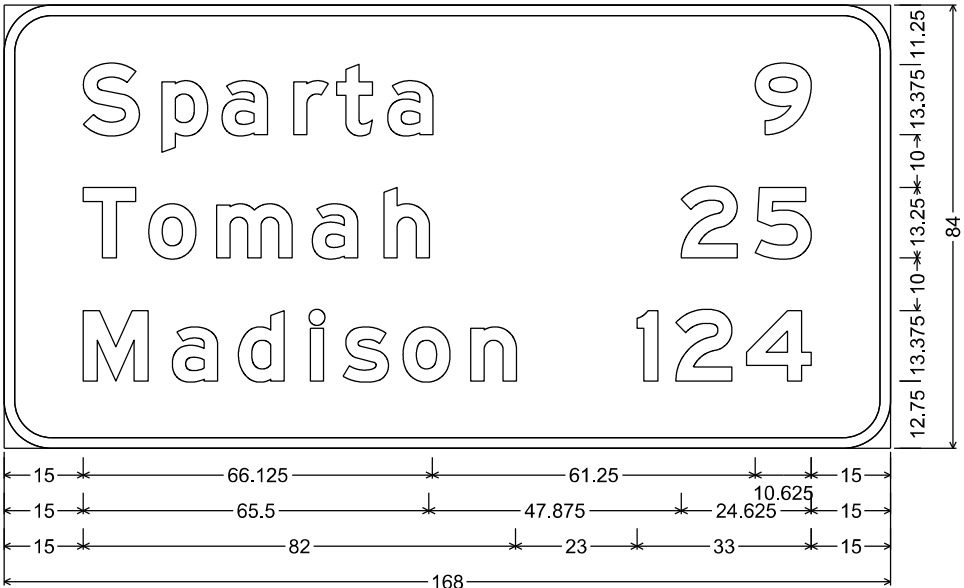
E1-5P; 9.000" Radius, 2.000" Border
E1-1A; 12.000" Radius, 3.000" Border

NOTES

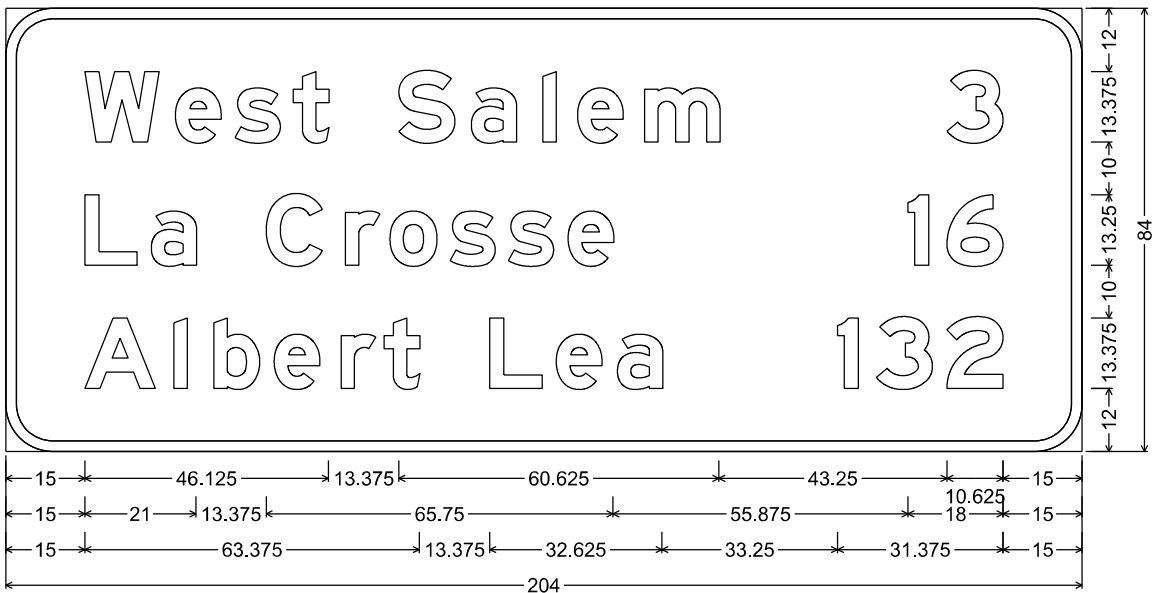
- 1. All Signs Type I - Type SH Reflective
- 2. Color:
Background - Green
Message - White
- 3. Message Series - E Modified except all CAP words Series E



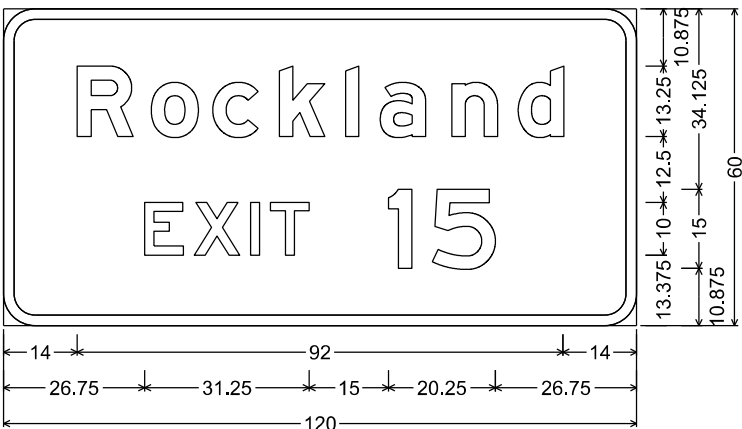
D2-3; 9.000" Radius, 2.000" Border



D2-3; 9.000" Radius, 2.000" Border



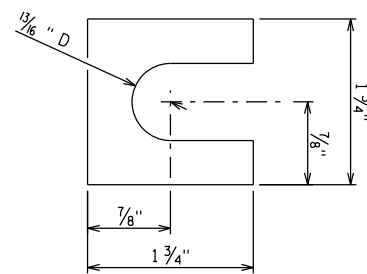
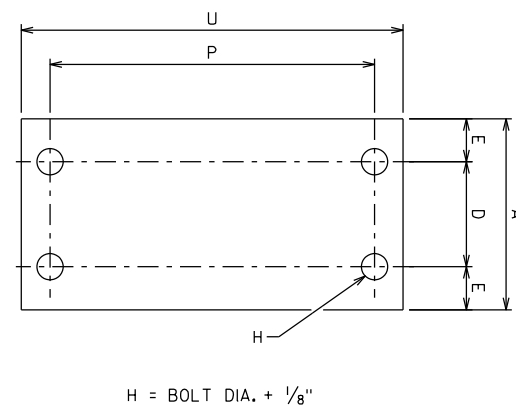
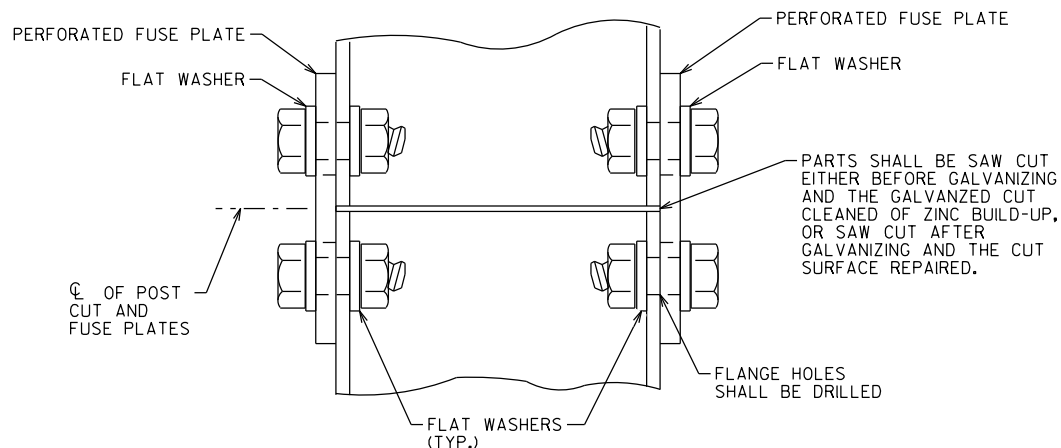
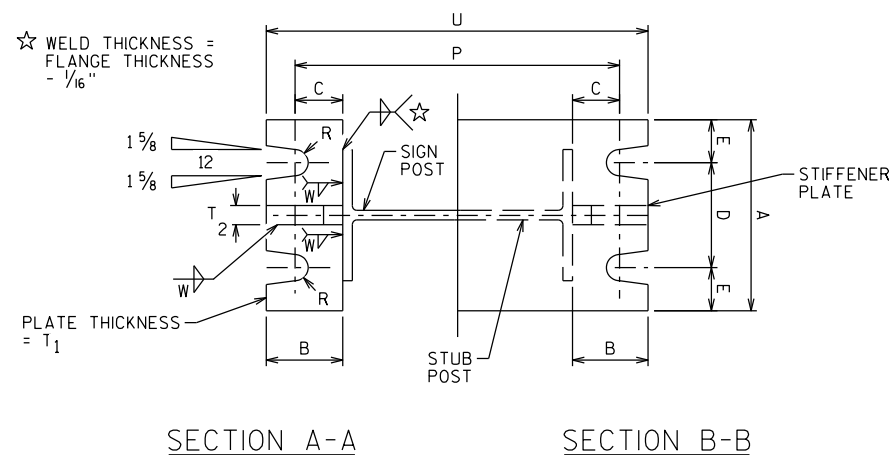
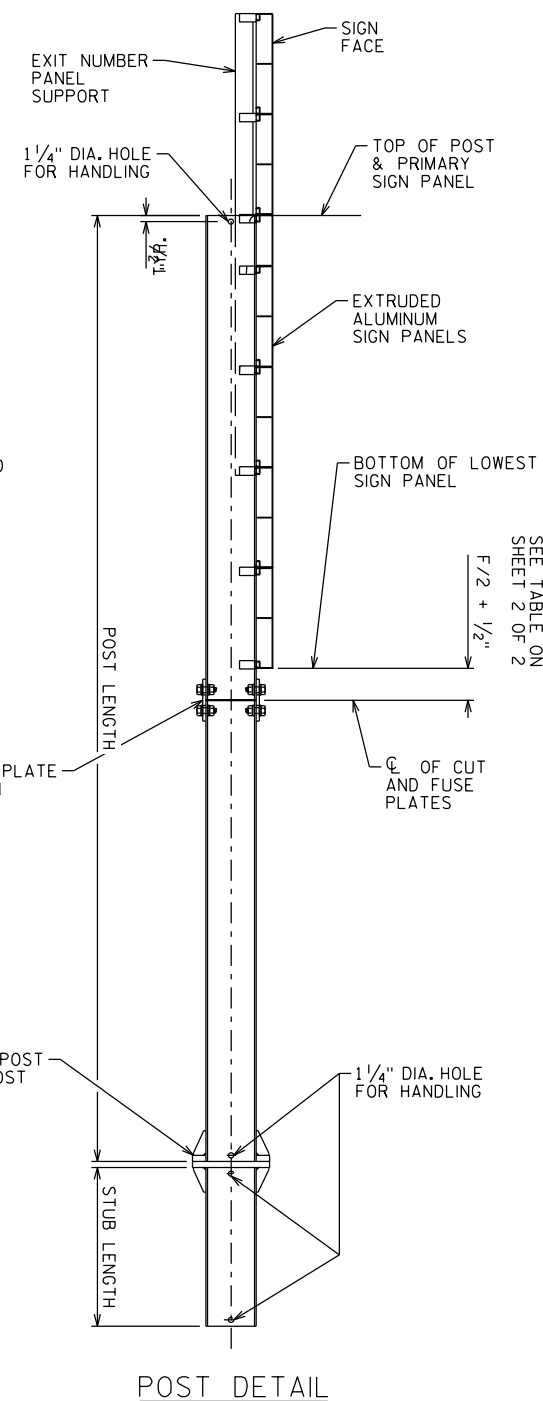
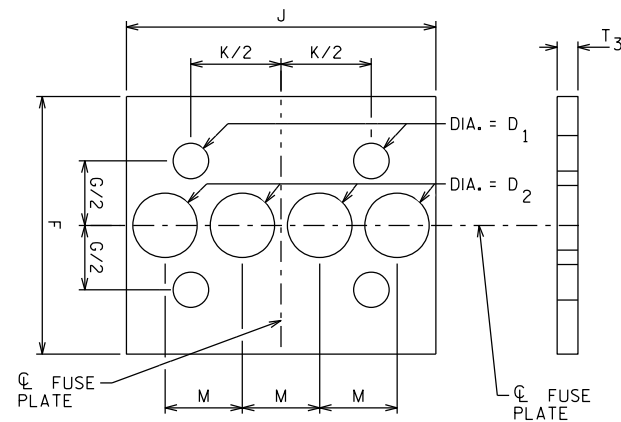
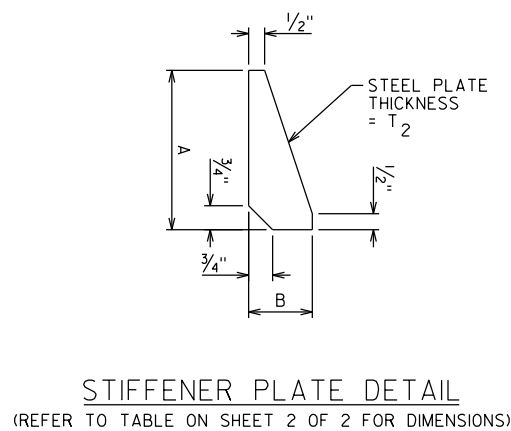
D2-3; 9.000" Radius, 2.000" Border



E3-1; 6.000" Radius, 2.000" Border

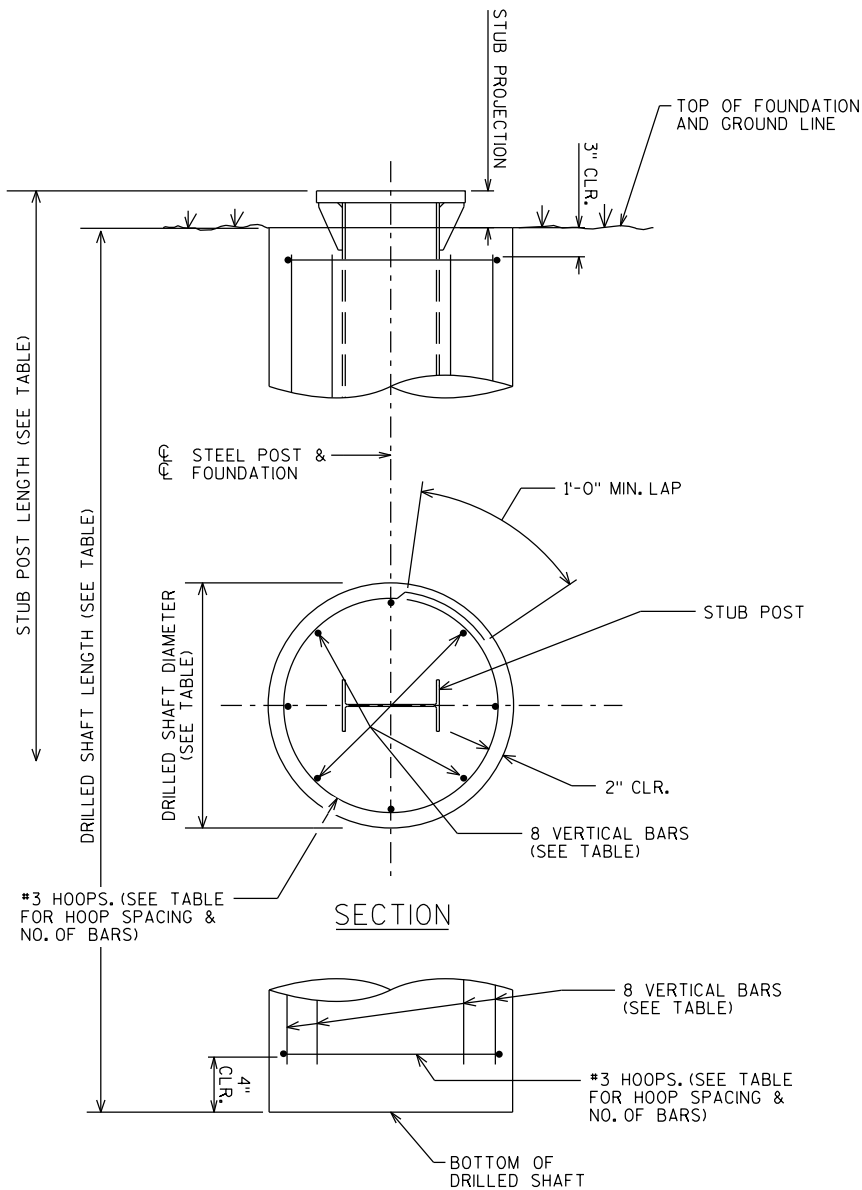
7

7

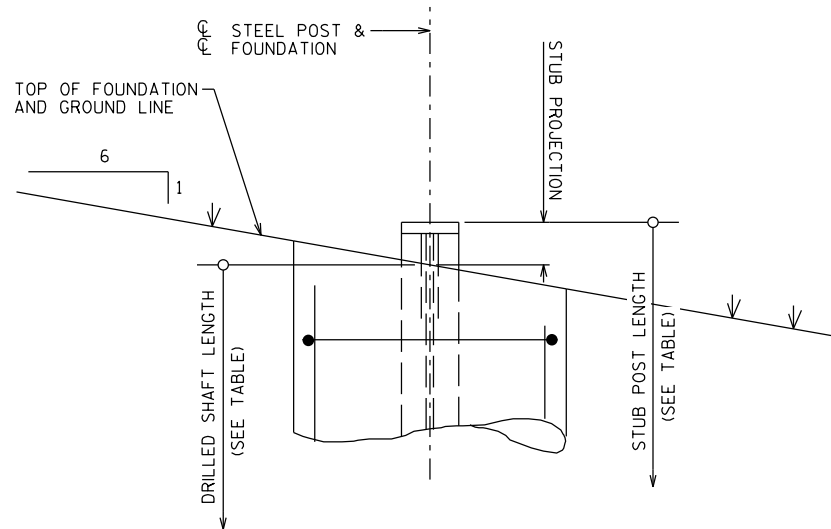


1. ASSEMBLE SIGN POST, BOLT KEEPER PLATE, AND STUB POST WITH BOLTS AND THREE FLAT WASHERS PER BOLT AS SHOWN.
2. SHIM AS REQUIRED TO PLUMB POST.
3. PRIOR TO BOLT TIGHTENING, LUBRICATE BASE CONNECTION BOLTS WITH BEESWAX OR OTHER HIGH-WAX LUBRICANT.
4. TIGHTEN ALL BOLTS THE MAXIMUM POSSIBLE WITH A 12" OR 15" WRENCH TO BED WASHERS & SHIMS AND TO CLEAN BOLT THREADS.
5. LOOSEN EACH BOLT IN TURN AND RETIGHTEN IN A SYSTEMATIC ORDER TO THE PERSCRIBED TORQUE. (SEE TABLE FOR PERSCRIBED TORQUE). DO NOT OVER-TIGHTEN.
6. BURR THREADS AT JUNCTION WITH NUT USING A CENTER PUNCH TO PREVENT NUT LOOSENING.

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE BTO TYPE 1 SIGNS			
		DRAWN BY	PLANS CK'D.
CONNECTION & FOUNDATION DETAILS 1 OF 2		SHEET A3-1.20	



FOUNDATION DETAIL



SHAFT PLACEMENT

FOUNDATION DATA TABLE

POST SHAPE	STUB LENGTH	STUB PROJECTION	DRILLED SHAFT DIAMETER	DRILLED SHAFT LENGTH	VERTICAL BARS		HOOPS		CONCRETE VOLUME	TOTAL REINF. WEIGHT
					SIZE	LENGTH	MAX SPA.	NO.		
W6X15	2'-6"	3"	24"	6'-6"	#5	5'-11"	10"	9	0.8 CY	71 LB
W8X18	2'-6"	3"	24"	7'-6"	#6	6'-11"	12"	8	0.9 CY	102 LB
W8X21	3'-0"	2½"	24"	8'-0"	#6	7'-5"	12"	9	1.0 CY	110 LB
W10X22	3'-0"	2½"	24"	8'-6"	#7	7'-11"	12"	9	1.0 CY	151 LB
W12X26	3'-0"	2½"	24"	10'-0"	#7	9'-5"	12"	11	1.2 CY	180 LB

◆ QUANTITIES SHOWN ARE FOR ONE DRILLED SHAFT

BASE CONNECTION & FUSE PLATE DATA TABLE

		BASE CONNECTION DATA										BOLT KEEPER PLATE DATA		PERFORATED FUSE PLATE DATA														
POST SHAPE	WEIGHT PER FOOT	BOLT SIZE & TORQUE	A	B	C	D	E	T1	T2	W	R	P	U	F	G	J	K	M	D1	D2	T3	BOLT DIA.	WGT. EA. LBS	BOLT LENGTH	V 			
W6X15	15 LB	5/8" DIA. X 4"	5"	2"	1/4"	2 3/4"	1/8"	1/4"	1/2"	1/4"	1/32"	8 1/2"	10"	5"	2 1/2"	6"	3 1/2"	1 1/2"	1 1/16"	1/4"	3/8"	5/8"	2.4	2	73.0 LB			
W8X18	18 LB	36 TO 38 FT-LB										10 5/8"	12 7/8"	5"	2 1/2"	5 1/4"	2 3/4"	1 1/4"	1 1/16"	1/16"	3/8"	5/8"	2.0	2	83.0 LB			
W8X21	21 LB	3/4" DIA. X 4 3/4"	6"	2 1/4"	1 3/8"	3 1/2"	1 1/4"	1 1/2"	3/4"	5/16"	1/32"	11"	12 3/4"	5 1/2"	2 1/2"	5 1/4"	2 3/4"	1 1/4"	1 1/16"	1"	1/2"	3/4"	3.1	2 1/4"	124.0 LB			
W10X22	22 LB											12 7/8"	14 3/8"	6"	3"	5 3/4"	2 3/4"	1 3/8"	1 1/16"	1/8"	1/2"	3/4"	3.9	2 1/4"	134.0 LB			
W12X26	26 LB											15"	16 3/4"	6"	3"	6 1/2"	3 1/2"	1 5/8"	1 3/16"	1 1/2"	3/4"	4.5	2 1/4"	152.0 LB				

■ TOTAL STRUCTURAL CARBON STEEL WEIGHT FOR ONE POST
= V + (POST LENGTH X POST WEIGHT PER FOOT)

"V" INCLUDES STUB POST, BASE PLATES, STIFFENER
PLATES, PERFORATED FUSE PLATES, BOLTS, NUTS, AND
WASHERS.

GENERAL NOTES

DRAWINGS SHALL NOT BE SCALED

MATERIALS SHALL CONFORM TO THE WISCONSIN DEPARTMENT OF
TRANSPORTATION STANDARD SPECIFICATIONS SECTION 506, UNLESS
NOTED OTHERWISE.

FABRICATION SHALL CONFORM TO THE WISCONSIN DEPARTMENT OF
TRANSPORTATION STANDARD SPECIFICATIONS SECTION 506.

ALL POST, POST STUBS & ATTACHMENTS SHALL BE ASTM
A709 GRADE 50, GALVANIZED IN ACCORDANCE WITH ASTM A123.

THE POST, BASE PLATES, UPPER SIX INCHES OF STUB POST, FLANGE
SPLICE PLATE AND FUSE PLATE SHALL BE GALVANIZED AFTER
FABRICATION.

H.S. BOLTS, WASHERS, & NUTS SHALL BE A325 GALVANIZED.

FOUNDATION MATERIAL PROPERTIES

CONCRETE MASONRY F'C = 3,500 P.S.I.
BAR STEEL REINFORCEMENT (UNCOATED), GRADE 60 FY = 60,000 P.S.I.

DESIGN DATA

DESIGN CONFORMS TO AASHTO LRFD SPECIFICATIONS FOR
STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES, AND
TRAFFIC SIGNALS 1ST EDITION 2015 (WITH 2017 & 2018 INTERIM
REVISIONS).

DEAD LOADS (DL):

- STEEL POST SELF WEIGHT
- SIGN PANEL WEIGHT = 3 PSF

WIND LOADS (WL):

WIND LOADS WERE APPLIED TO THE PROJECTED AREAS OF THE SIGN
PANELS AND THE STEEL SIGN POSTS.

- BASIC WIND SPEED = 76 MPH
- MEAN RECURRENCE INTERVAL (MRI) = 10 YEARS
- HEIGHT & EXPOSURE FACTOR = 1.00
- DIRECTIONALITY FACTOR = 0.85
- GUST EFFECT FACTOR = 1.14

WIND LOAD CASES:

- WL CASE 1: 1.0 X NORMAL WIND
- WL CASE 2: 1.0 X TRANSVERSE WIND
- WL CASE 3: 0.75 X NORMAL WIND + 0.75 X TRANSVERSE WIND

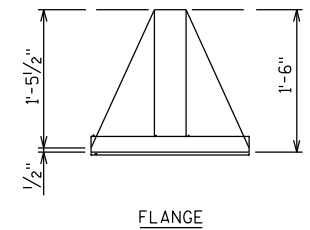
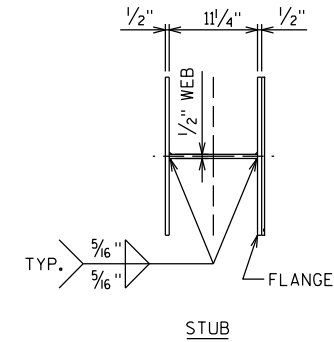
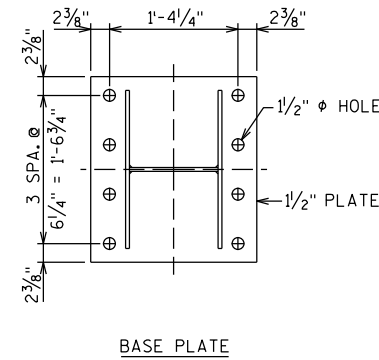
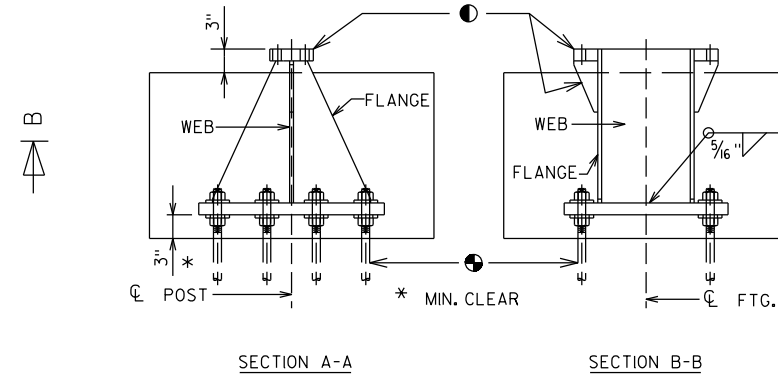
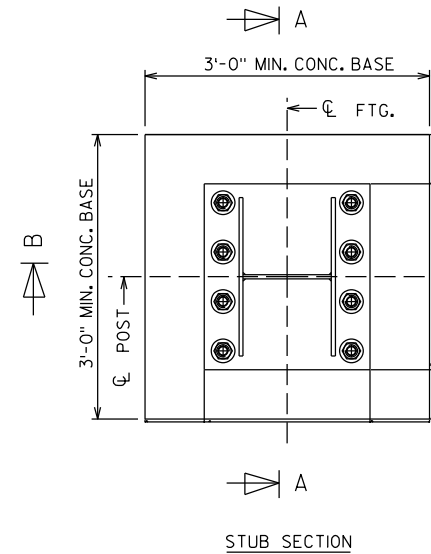
LOAD COMBINATION	TYPE	DL FACTOR	WL FACTOR
STRENGTH I	GRAVITY	1.25	-
EXTREME I	WIND	1.10	1.0
		0.9	1.0
SERVICE I	DEFLECTION	1.0	1.0

FOUNDATION DESIGN DATA

THE FOUNDATION DESIGN ASSUMED COHESIONLESS SOILS (LOOSE
SAND) ABOVE THE WATER TABLE WITH THE FOLLOWING PROPERTIES:

- SOIL UNIT WEIGHT = 115 PCF
- ANGLE OF INTERNAL FRICTION = 24 DEGREES
- SOIL MODULUS PARAMETER = 25 LB/IN³

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE BTO TYPE I SIGNS			
		DRAWN BY	PLANS CK'D.
CONNECTION & FOUNDATION DETAILS 2 OF 2		SHEET A3-120	



- SEE BASE CONNECTION DETAILS ON "CONNECTIONS & FOUNDATION DETAILS" SHEETS.
- ADHESIVE ANCHORS 1/4-INCHES. ALLOWABLE PULL OUT CAPACITY = 15 KIPS. EMBED 1'-3" INTO ROCK.

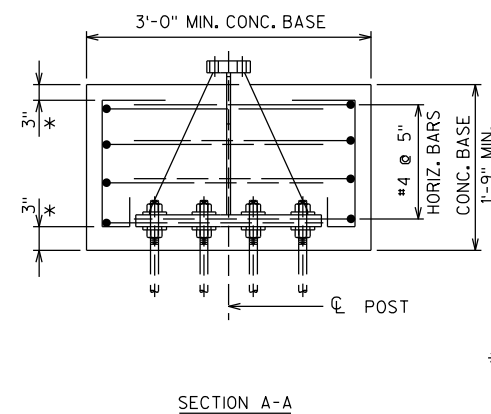
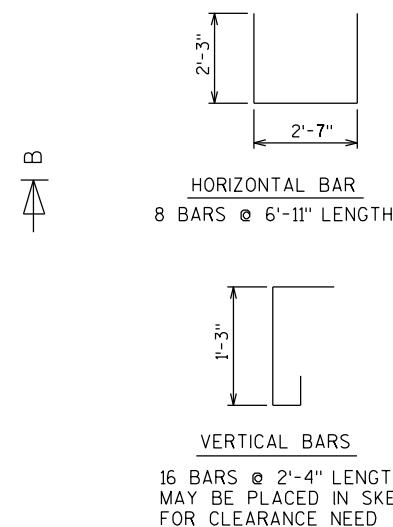
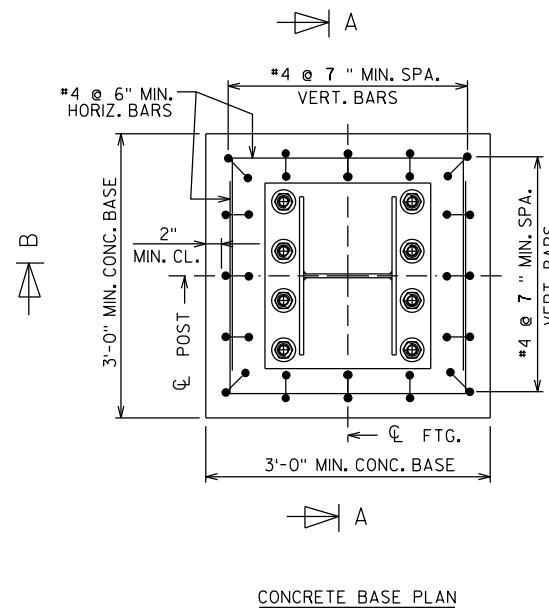
GENERAL NOTES:

QUANTITIES PER BASE:
 REINFORCING STEEL = 62 LB
 CONCRETE = 0.6 CY
 STRUCTURAL STEEL = 335 LB

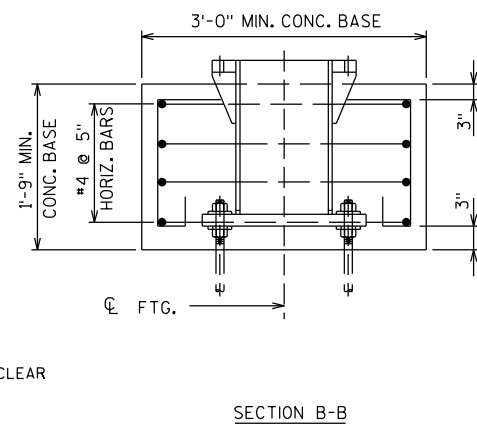
ALL MATERIALS, EXCEPT FOR ANCHOR ROD, NUTS, AND WASHERS, SHALL BE ASTM A709 GRADE 50. ALL MATERIALS TO BE GALVANIZED AFTER FABRICATION.

IF ROCK IS ENCOUNTERED PRIOR TO REACHING THE MINIMUM DRILLED SHAFT EMBEDMENT DEPTH DEFINED ON THE FOUNDATION DATA TABLE OF THE "CONNECTIONS & FOUNDATION DETAILS 2 OF 2" SHEET, THE CONTRACTOR SHALL INSTALL A TEST ADHESIVE ANCHOR AND DETERMINE THE PULL-OUT CAPACITY. IF THE FIELD TEST RESULTS IN A PULL-OUT CAPACITY GREATER THAN OR EQUAL TO 15 KIPS, THE CONTRACTOR MAY INSTALL THE ALTERNATE CONCRETE BASE AND BREAK-WAY STUB PER THE DETAILS ON THIS SHEET.

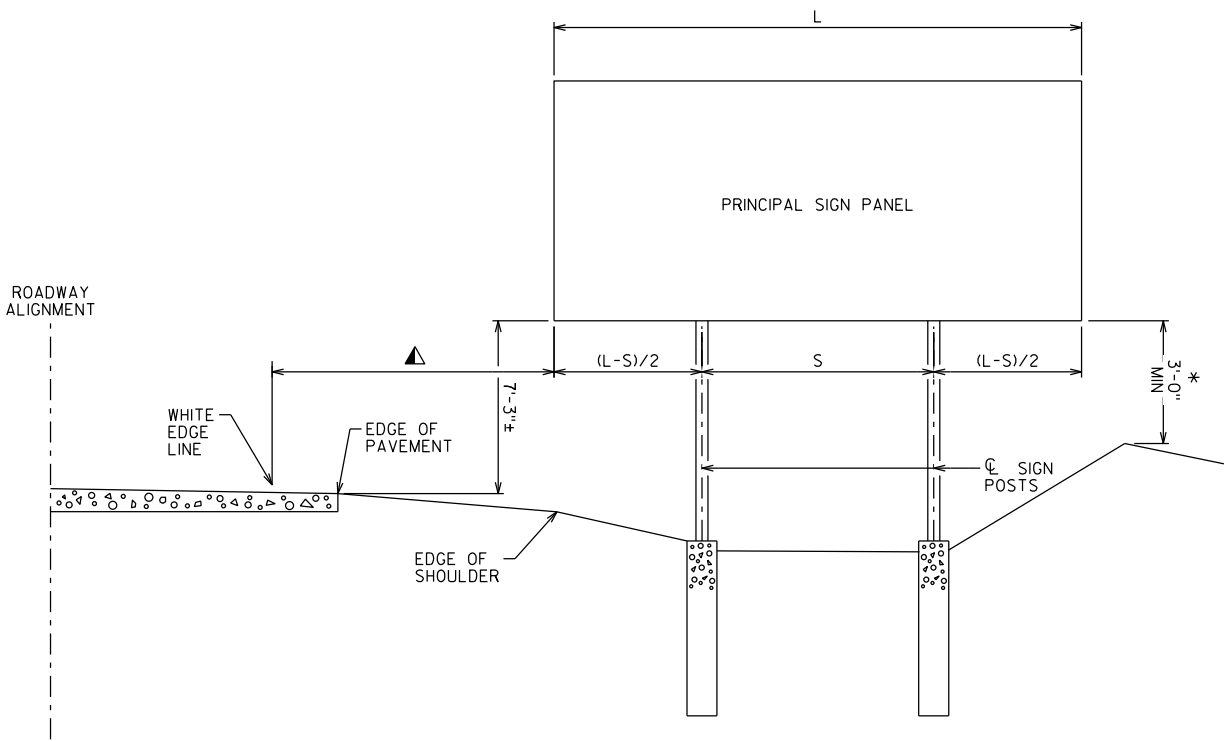
CONCRETE BASE DETAILS



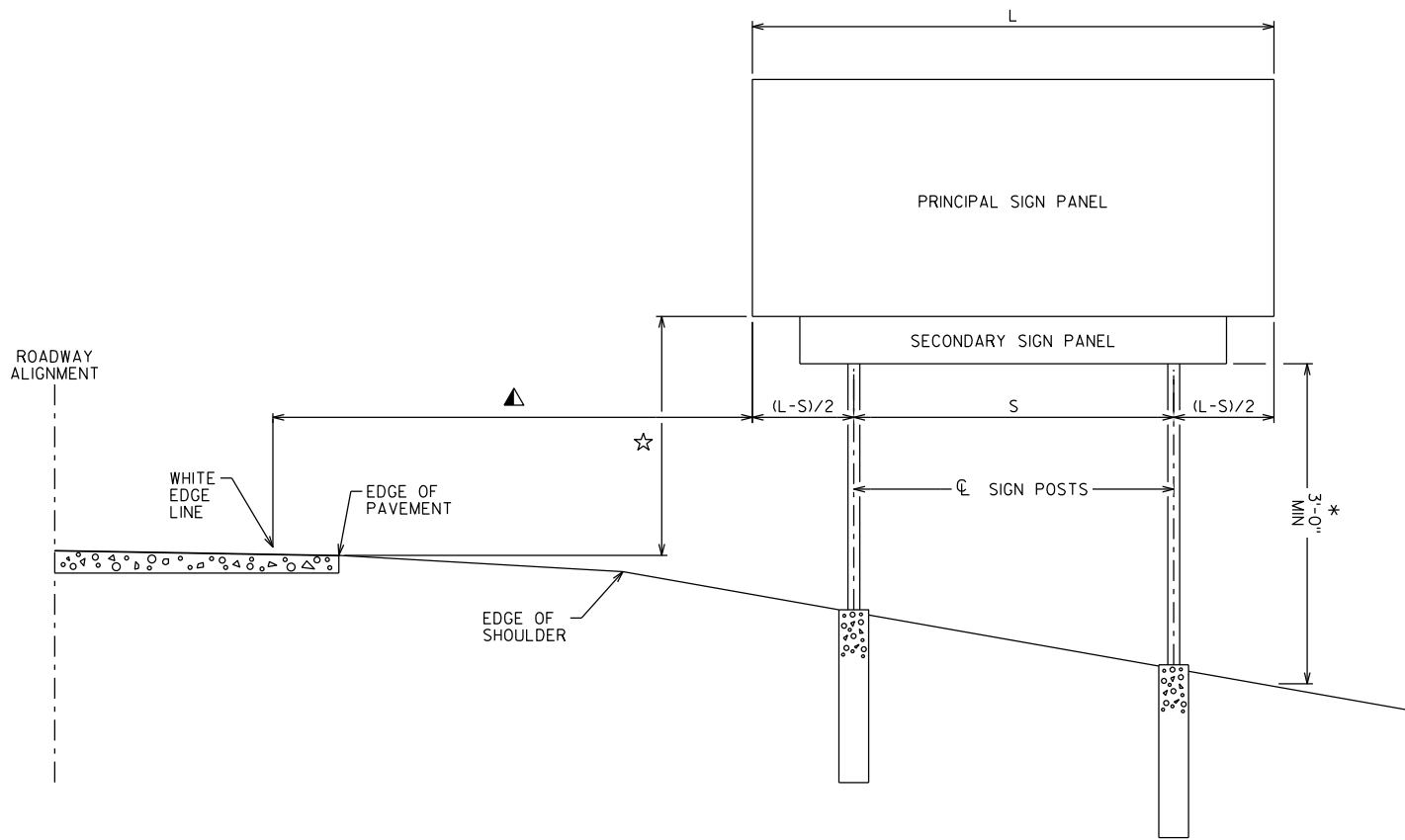
* MIN. CLEAR



NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE BTO TYPE I SIGNS			
DRAWN BY		PLANS CK'D.	
ALTERNATE BREAK-AWAY BASE ON ROCK		SHEET A3-1M.2	



INSTALLATION WITHOUT SECONDARY SIGN



INSTALLATION WITH SECONDARY SIGN

TYPE 1 SIGN INSTALLATION NOTES:

FOR A 2-POST INSTALLATION, "S" EQUALS 3L/5, BUT SHALL NOT BE LESS THAN 6'-0".

FOR A 3-POST INSTALLATION, "S" EQUALS 5L/7, BUT SHALL NOT BE LESS THAN 12'-0". THE SPACING BETWEEN ANY TWO POSTS SHALL NOT BE LESS THAN 6'-0".

▲ UNLESS NOTED IN THE PLANS, THE SIGN OFFSET DISTANCE SHALL BE A MINIMUM OF 17'-6" FROM THE WHITE EDGE LINE, DESIRABLE 30'-0".

THE ± TOLERANCE SHOWN ON THIS SHEETS IS 3".

THE VERTICAL SIGN HEIGHT CLEARANCES SHOWN ON THIS SHEET ARE MEASURED FROM THE BOTTOM OF THE SIGN PANEL TO THE NEAR EDGE OF PAVEMENT.

☆ THE VERTICAL CLEARANCE SHALL BE 8'-3"± WHEN THE SECONDARY SIGN HEIGHT IS 3'-0" OR LESS, FOR SECONDARY SIGN HEIGHTS LARGER THAN 3'-0", THE VERTICAL CLEARANCE TO THE BOTTOM OF THE SECONDARY SIGN PANEL SHALL BE 5'-3"±.

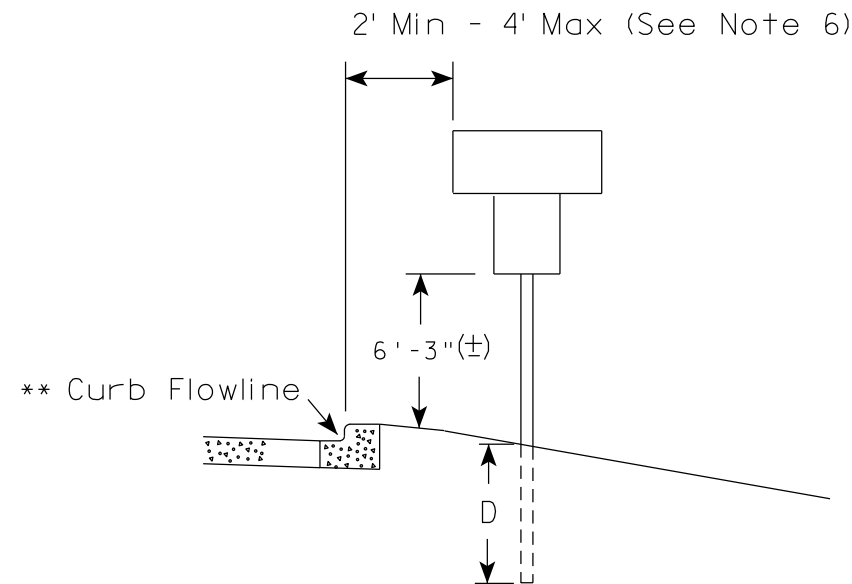
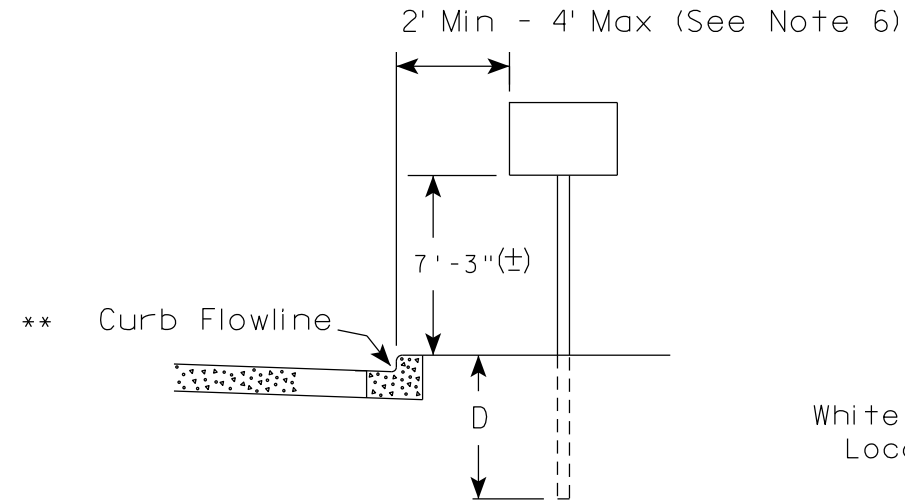
* THE VERTICAL SIGN GROUND CLEARANCE ON RIGHT END OF SIGN SHALL BE A MINIMUM OF 3'-0"±.

POST LENGTHS SHOWN IN THE MISCELLANEOUS QUANTITIES ARE ESTIMATED LENGTHS. THE CONTRACTOR SHALL VERIFY POST LENGTHS AT THE TIME OF FINAL GRADING.

REFER TO THE TRAFFIC ENGINEERING OPERATIONS AND SAFETY MANUAL FOR FURTHER GUIDANCE ON MINIMUM VERTICAL CLEARANCE REQUIREMENTS.

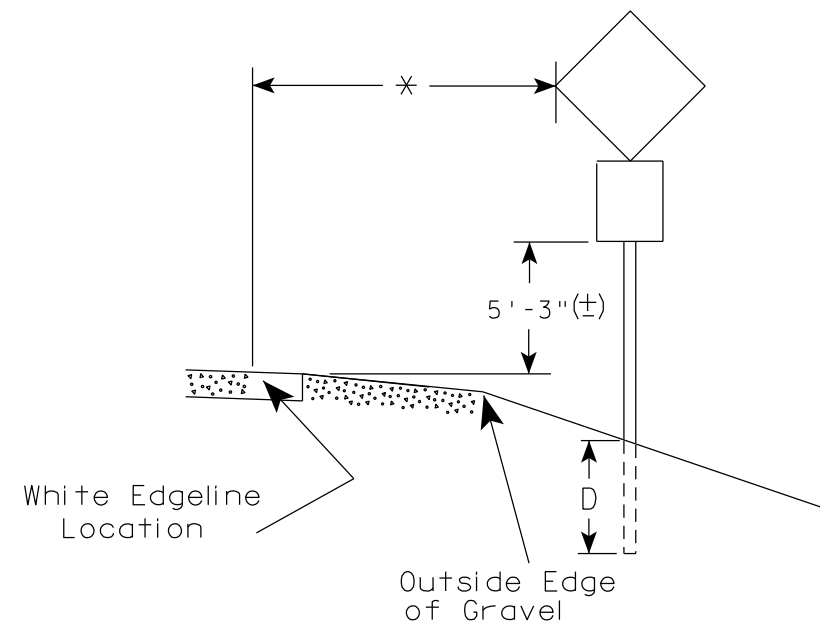
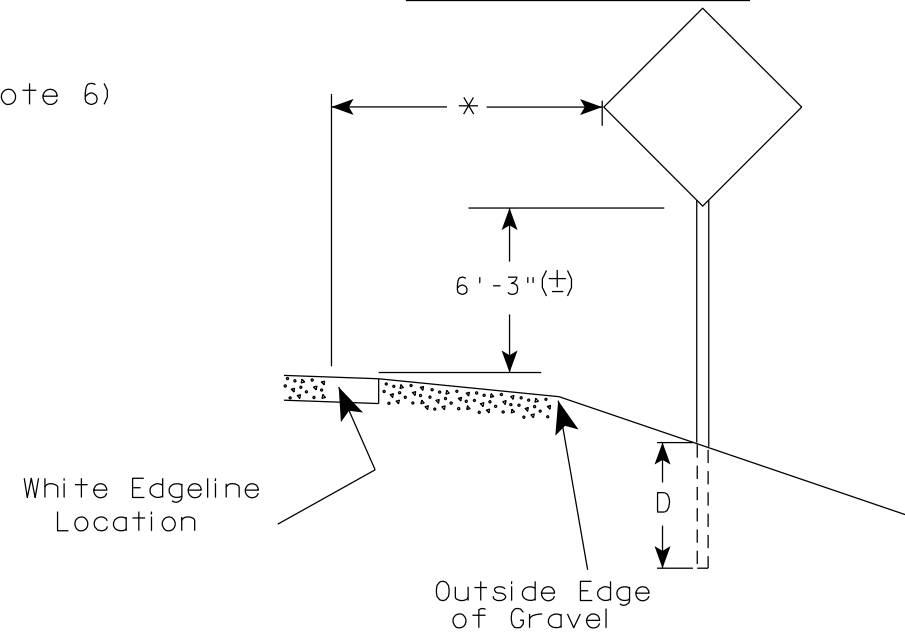
NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE BTO TYPE I SIGNS			
		DRAWN BY	PLANS CK'D.
TYPICAL TYPE I SIGN INSTALLATION			SHEET A4-1.10

URBAN AREA



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

RURAL AREA (See Note 2)



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

POST EMBEDMENT DEPTH

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

GENERAL NOTES

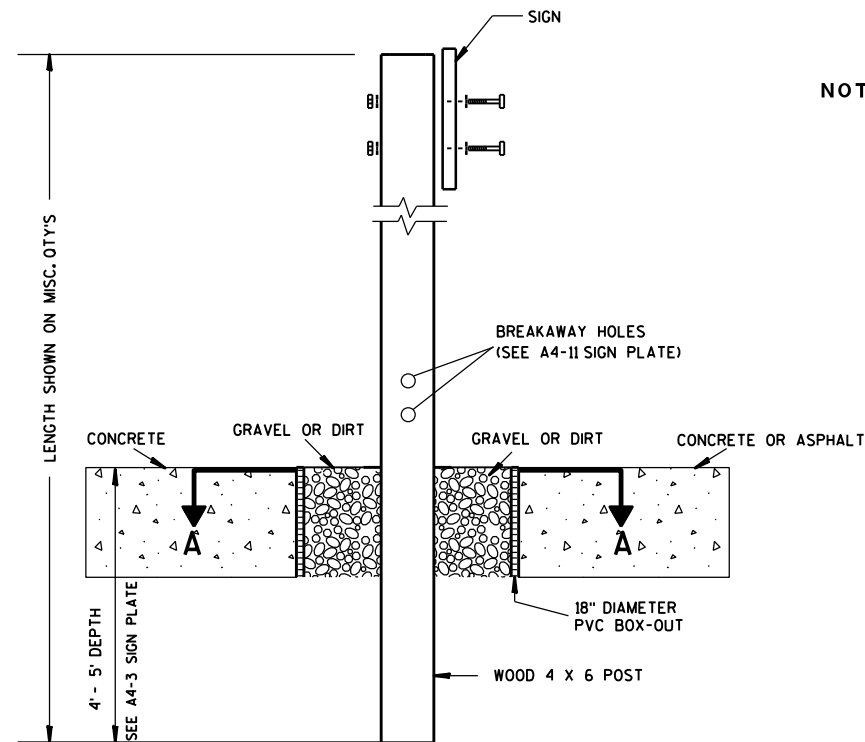
- Signs wider than 4 feet or 20 sq.ft or larger, shall be mounted on multiple posts. Refer to plate A4-4.
- If signs are mounted on or behind barrier wall, see A4-10 sign plate.
The Double Arrow sign (W12-1D) shall be mounted at a height of 2'-3" (±). The Chevron sign (W1-8), Roundabout Chevron panel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

TYPICAL INSTALLATION
OF PERMANENT TYPE II
SIGNS ON SINGLE POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

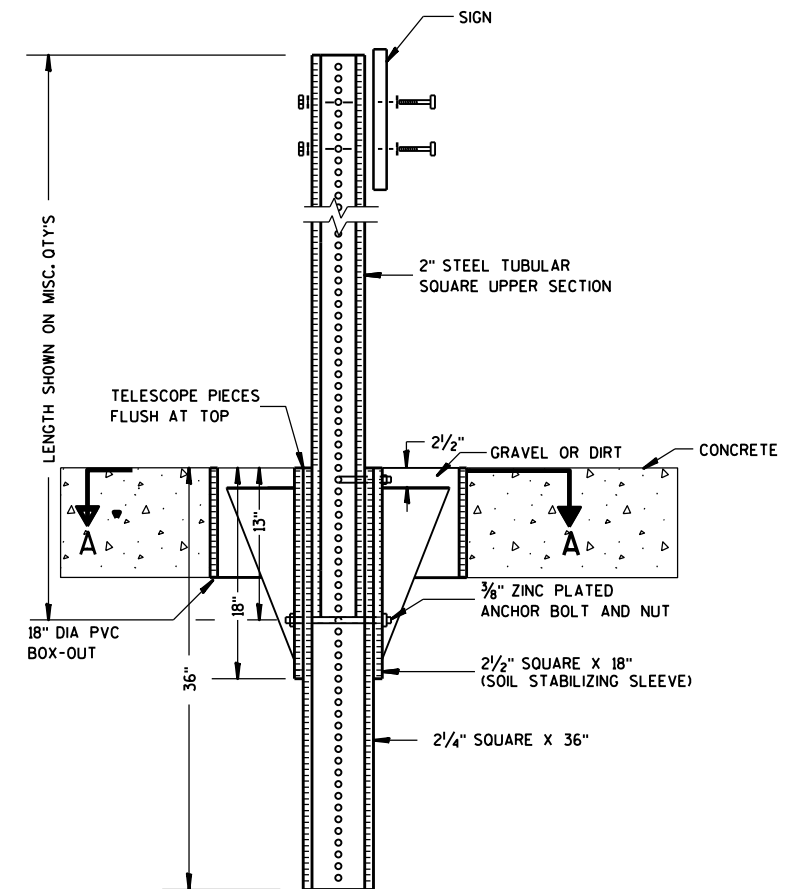
DATE 5/13/2020 PLATE NO. A4-3.22



ELEVATION VIEW

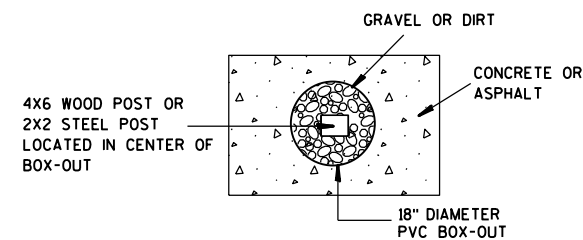
DETAIL OF WOOD 4 X 6 SIGN POST IN BOX-OUT

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



ELEVATION VIEW

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



PLAN VIEW

FOR NEW CONCRETE/ASPHALT INSTALLATIONS

SIGN POST
BOX-OUTS
A4-3B

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

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

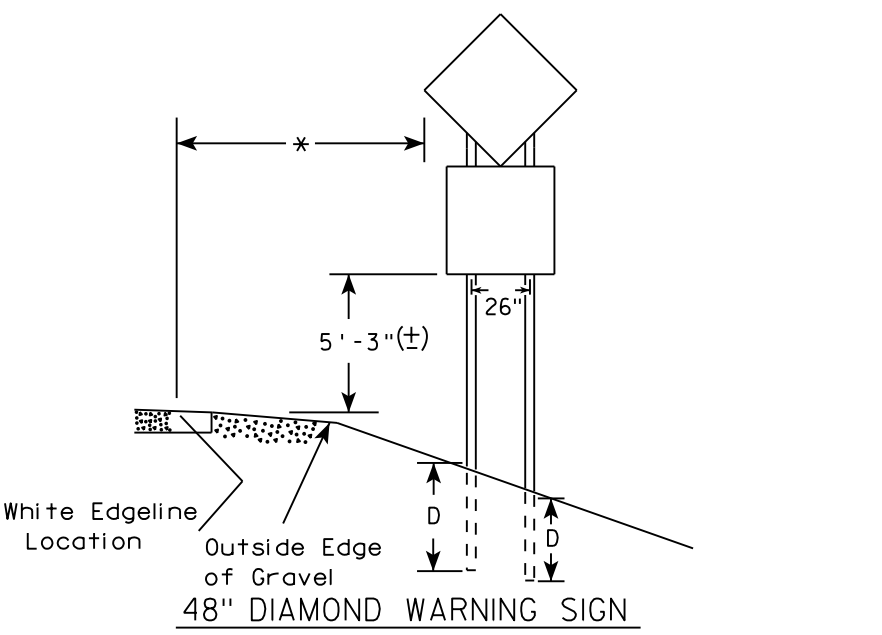
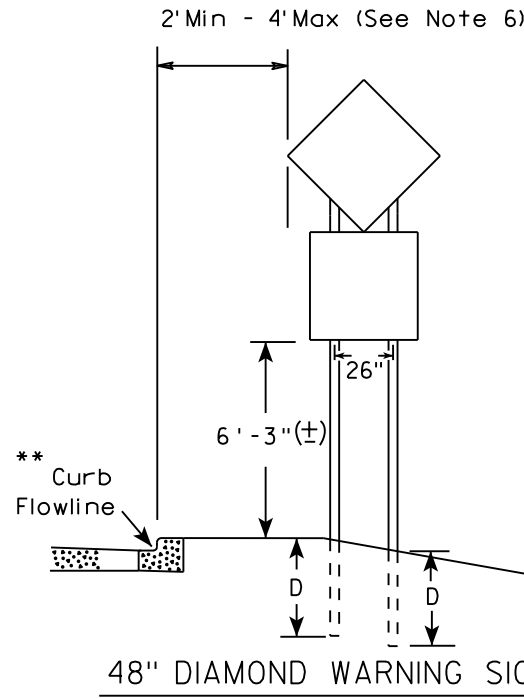
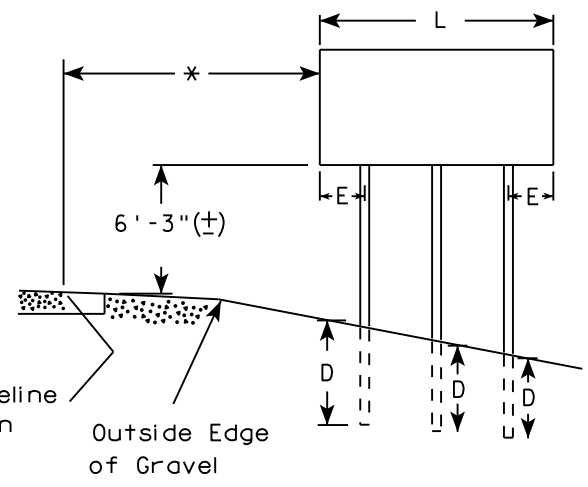
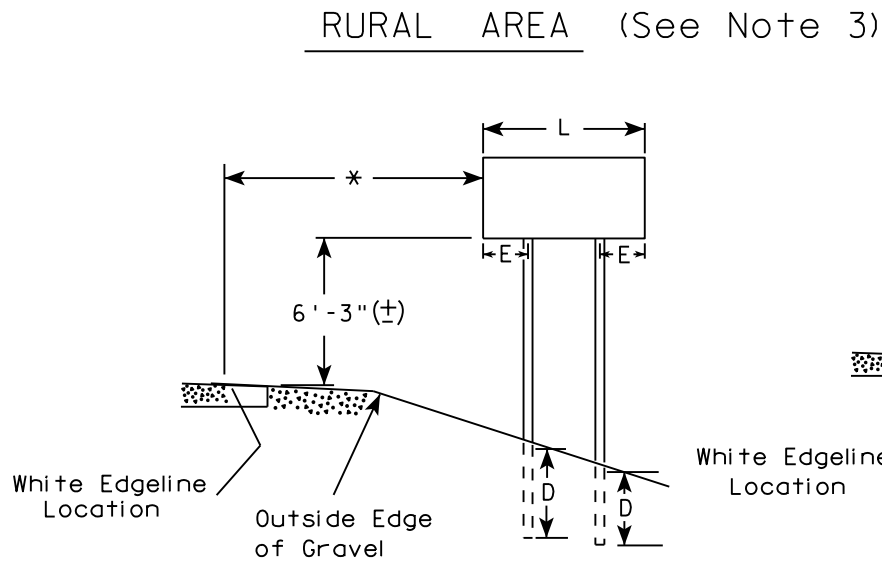
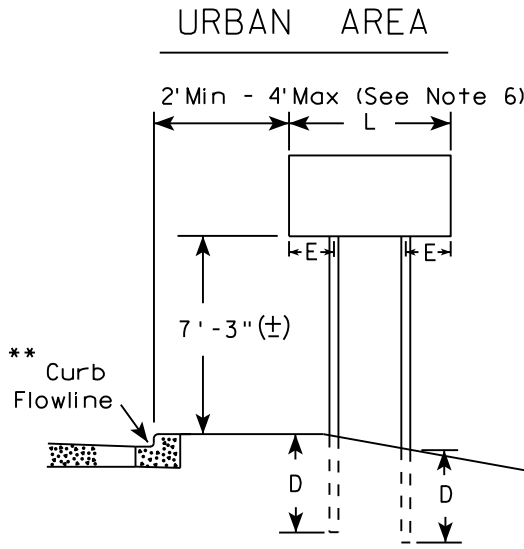
PROJECT NO:

HWY:

COUNTY:

SHEET NO:

E



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

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

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

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

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

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

POST EMBEDMENT DEPTH

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

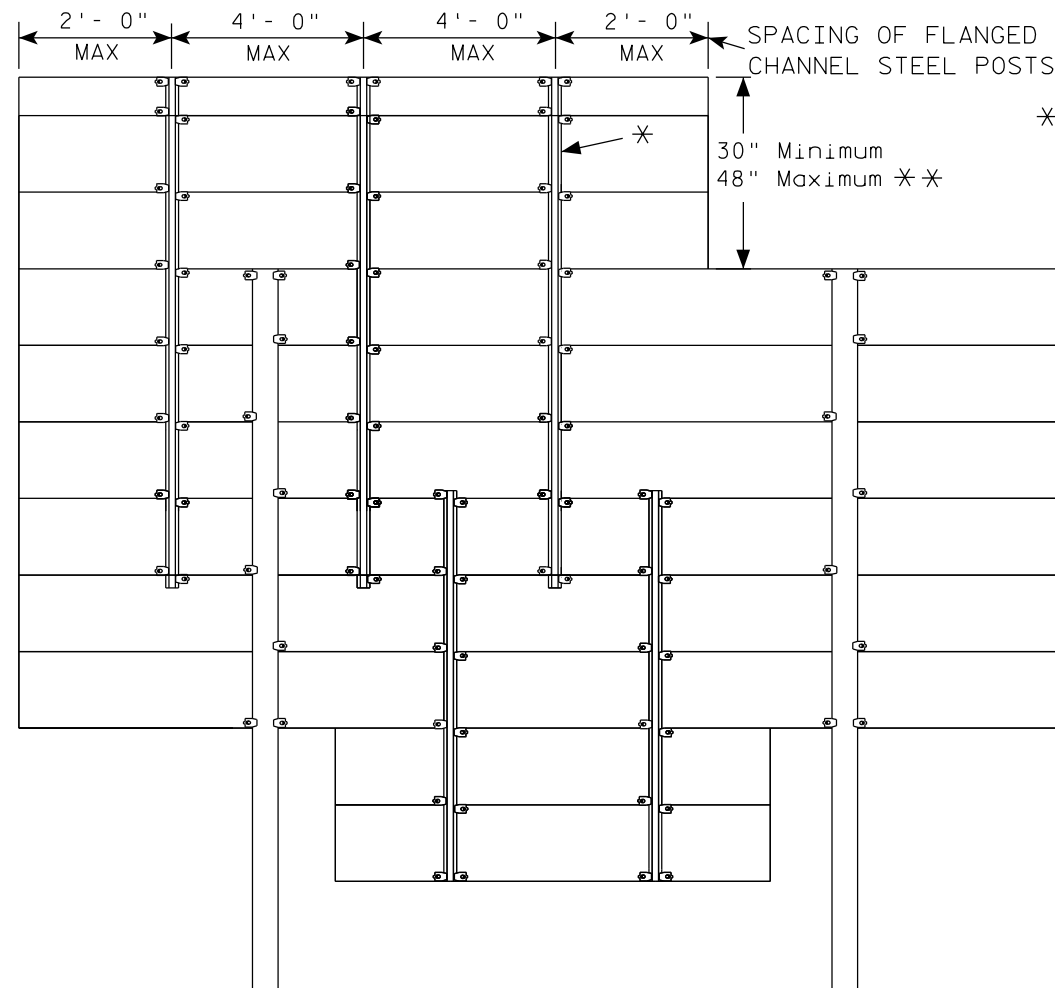
TYPICAL INSTALLATION
OF TYPE II SIGNS
ON MULTIPLE POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

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

GROUND MOUNTED SIGN



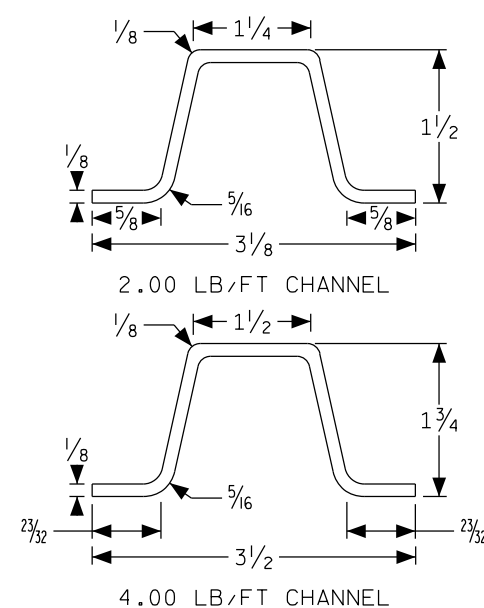
* = 2.00 lb/ft AND 4.00 lb/ft FLANGED CHANNEL, MIN. YIELD STRENGTH = 60,000 PSI (GRADE 60) GALVANIZED

* * = FOR 48" HEIGHT PANELS ON OVERHEAD STRUCTURES, ENTIRE SIGN SHALL BE CENTERED VERTICALLY ABOUT THE DEPTH OF THE TRUSS.

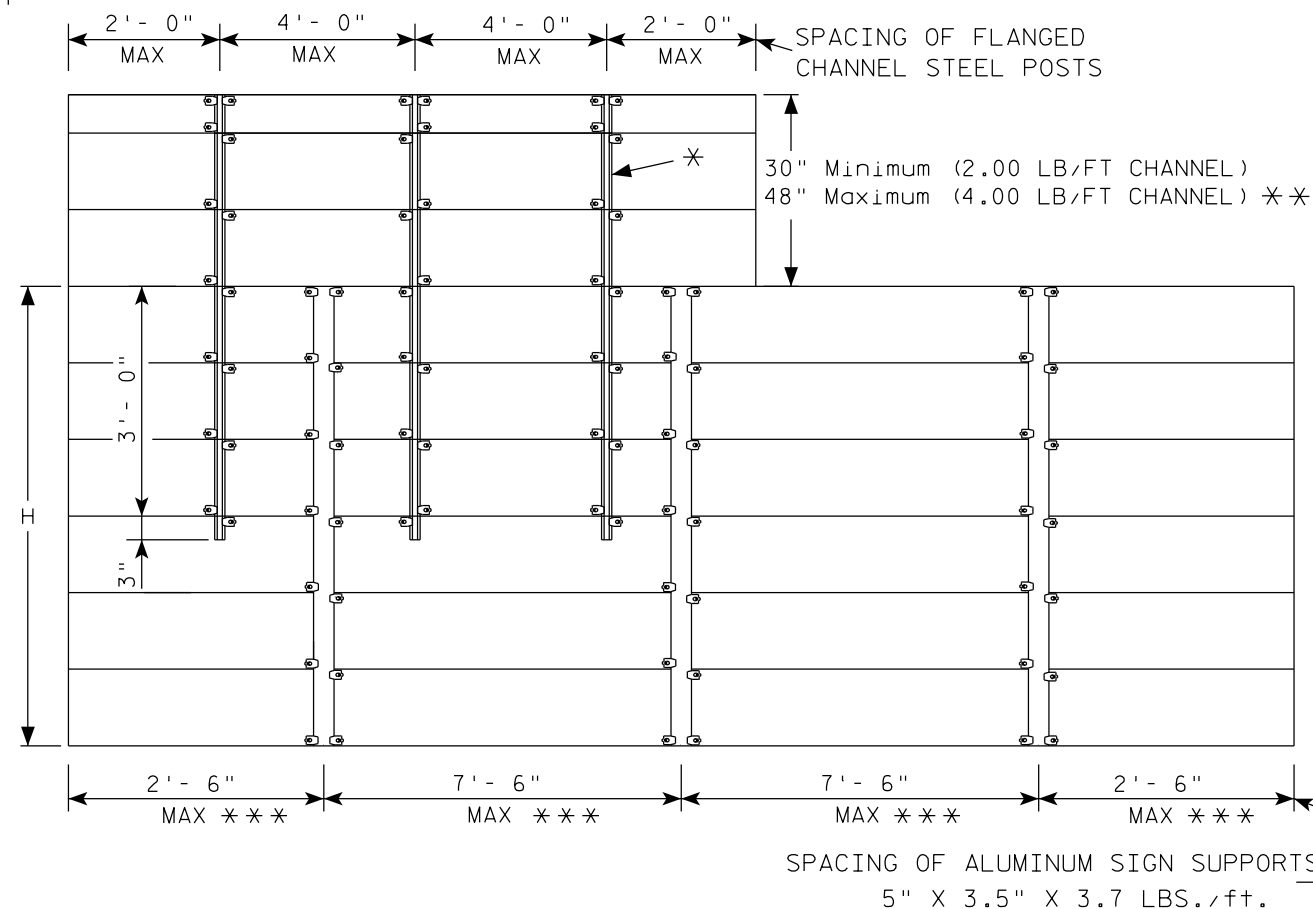
* * * THESE SPACING DISTANCES SHALL ONLY BE USED WHEN THE MAIN SIGN HAS A MAXIMUM HEIGHT (DIMENSION H) OF 15 FT OR LESS. FOR SIGNS WITH A HEIGHT OF GREATER THAN 15 FT, STRUCTURAL CALCULATIONS SHALL BE PERFORMED.

FLANGE CHANNEL DETAILS

NOT TO SCALE



SIGN BRIDGE MOUNTED SIGN



GENERAL NOTES

1. Flanged channel steel posts shall conform to size and material above, and shall be considered as incidental to other items in the contract.
2. Number of Flanged channel steel supports varies with length of panel and shall be spaced as shown:
 PANEL LENGTH 8'-0" OR LESS = 2 CHANNELS
 PANEL LENGTH 9'-0" - 12'-0" = 3 CHANNELS
 PANEL LENGTH 13'-0" OR MORE = 4 CHANNELS
 If the flanged channel steel posts can not be horizontally spaced as shown, they can be moved so as to securely hold the sign.

3. The EXIT NUMBER PANEL shall normally be positioned above the guide sign aligned with the right edge of the guide sign. If the guide sign indicates a left exit, the EXIT NUMBER PANEL shall be aligned with the left edge of the guide sign.
4. If the bolt holes in the top panel (EXIT NUMBER), or sub panel (NEXT EXIT) line up with holes in main sign panel, stitch bolts shall be used in addition to the channels.
5. Provide post clips for each sign as shown. (Please note the differences between a ground mounted versus Sign bridge mounted sign as far as number of clips required on the main supports or beams)
6. Structural steel sign supports shall extend to the top of the main signs, as shown on the above details.

ATTACHMENT OF GUIDE SIGNS TO SUPPORTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED

Matthew R. Rauch
 for State Traffic Engineer

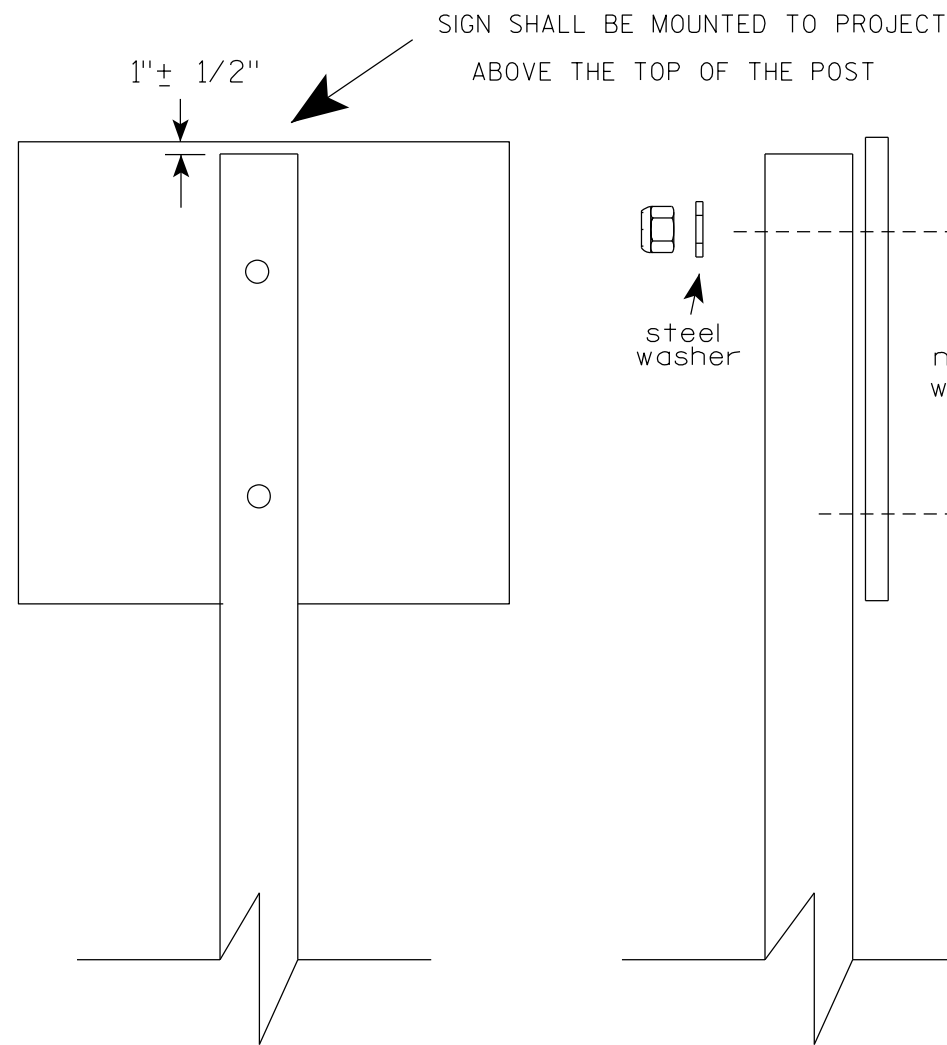
DATE 1/07/20

PLATE NO. A4-6.12

PROJECT NO:

SHEET NO:

E



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

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

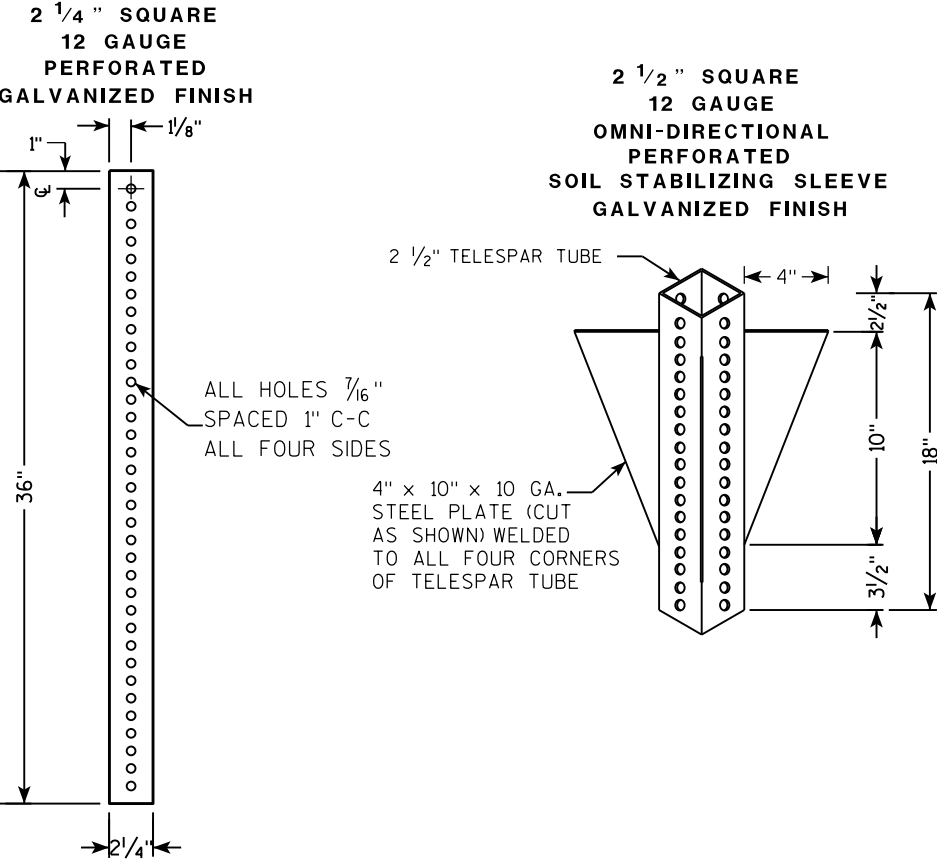
Threads on bolts and nuts shall be manufactured with sufficient allowance for the cadmium plate or galvanized coating to permit the nuts to run freely on the bolts.

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

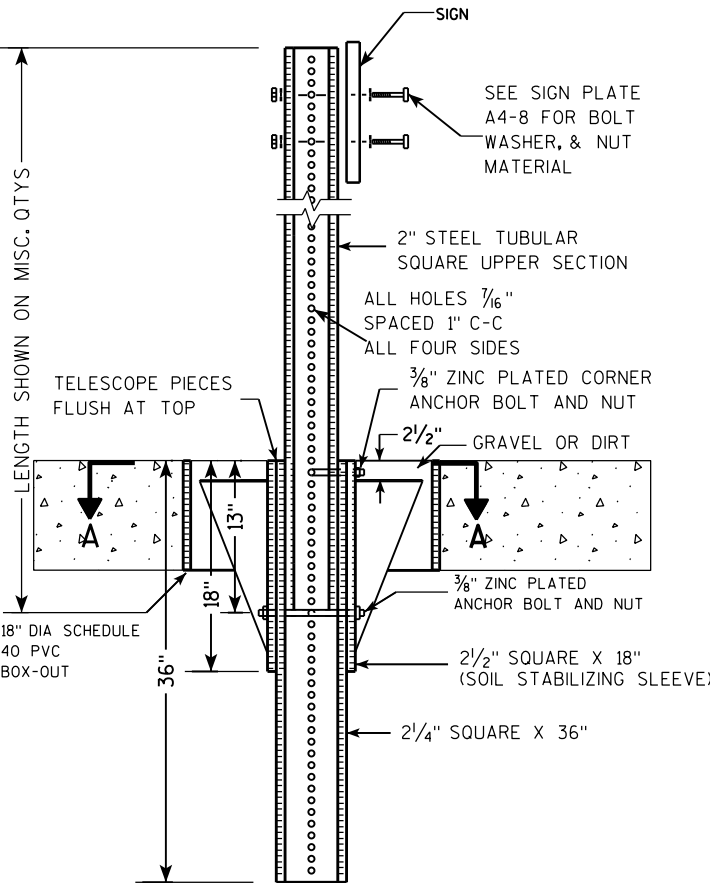
* Two different fastening systems are shown for illustration purposes. On any individual sign, either one or the other system shall be used. Actual number of fasteners per sign varies with the sign area, but normally there are two. For a single post installation, all signs greater than 9 sq. ft. require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

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

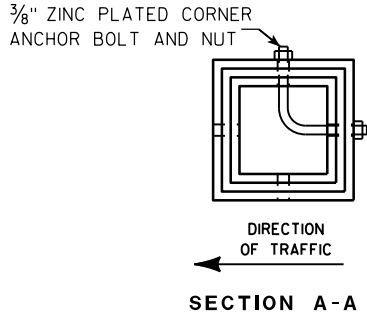
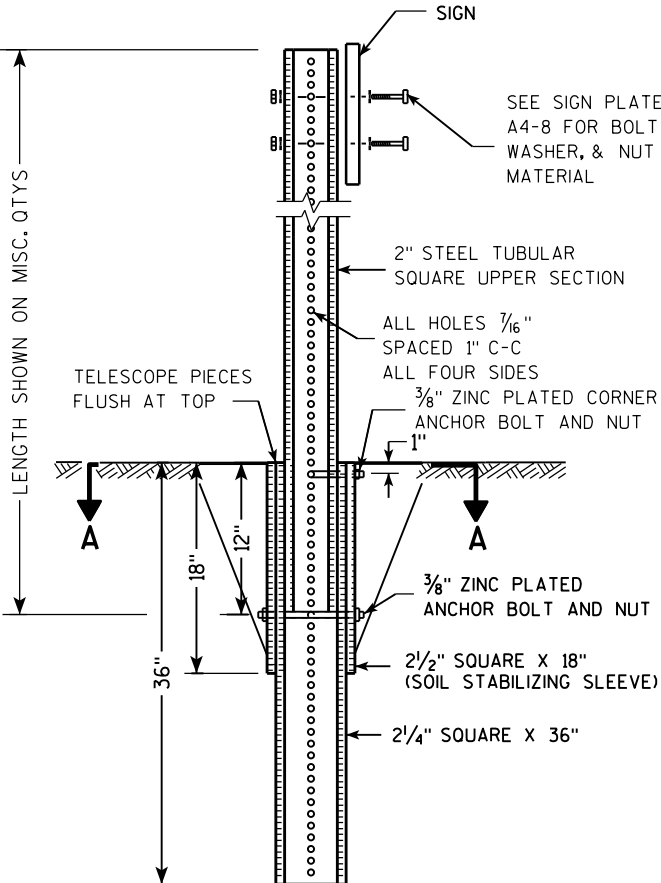
TELESCOPIC TUBING ANCHORS
TWO PIECE SYSTEM



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



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



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

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

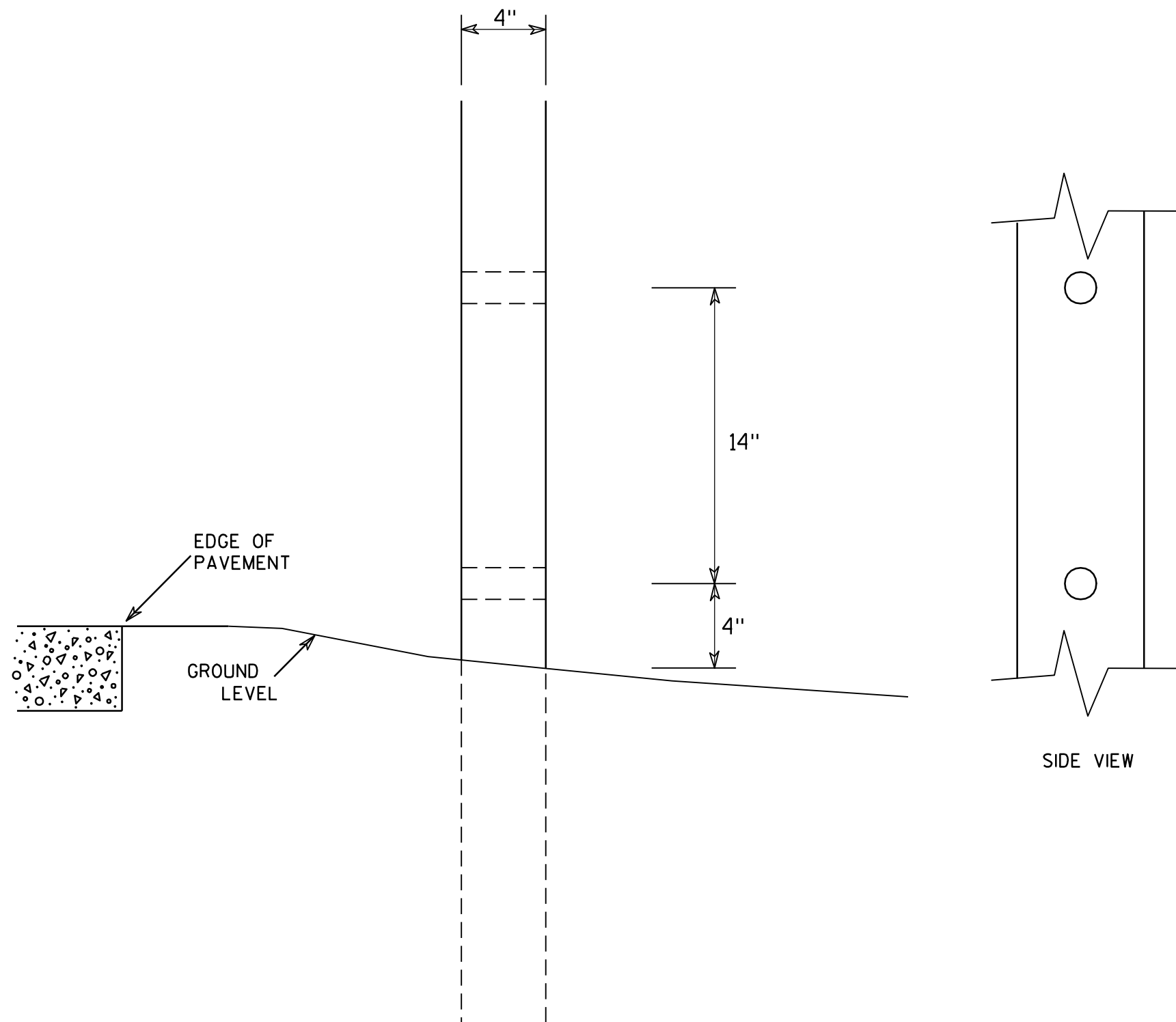
TUBULAR STEEL
SIGN POST
A4-9

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

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

7

GENERAL NOTES

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

7

**4 X 6 WOOD POST
MODIFICATIONS**

WISCONSIN DEPT OF TRANSPORTATION

APPROVED

Chester J. Spang
for State Traffic Engineer

DATE 3/27/97

PLATE NO. A4-11.2

PROJECT NO:

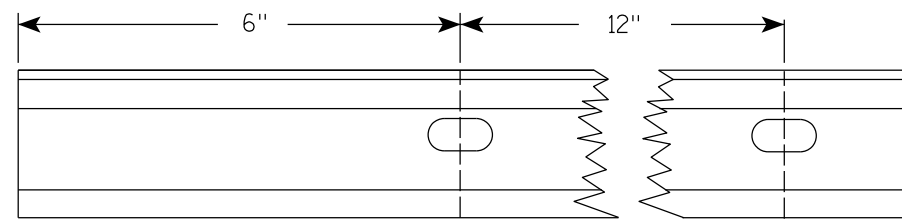
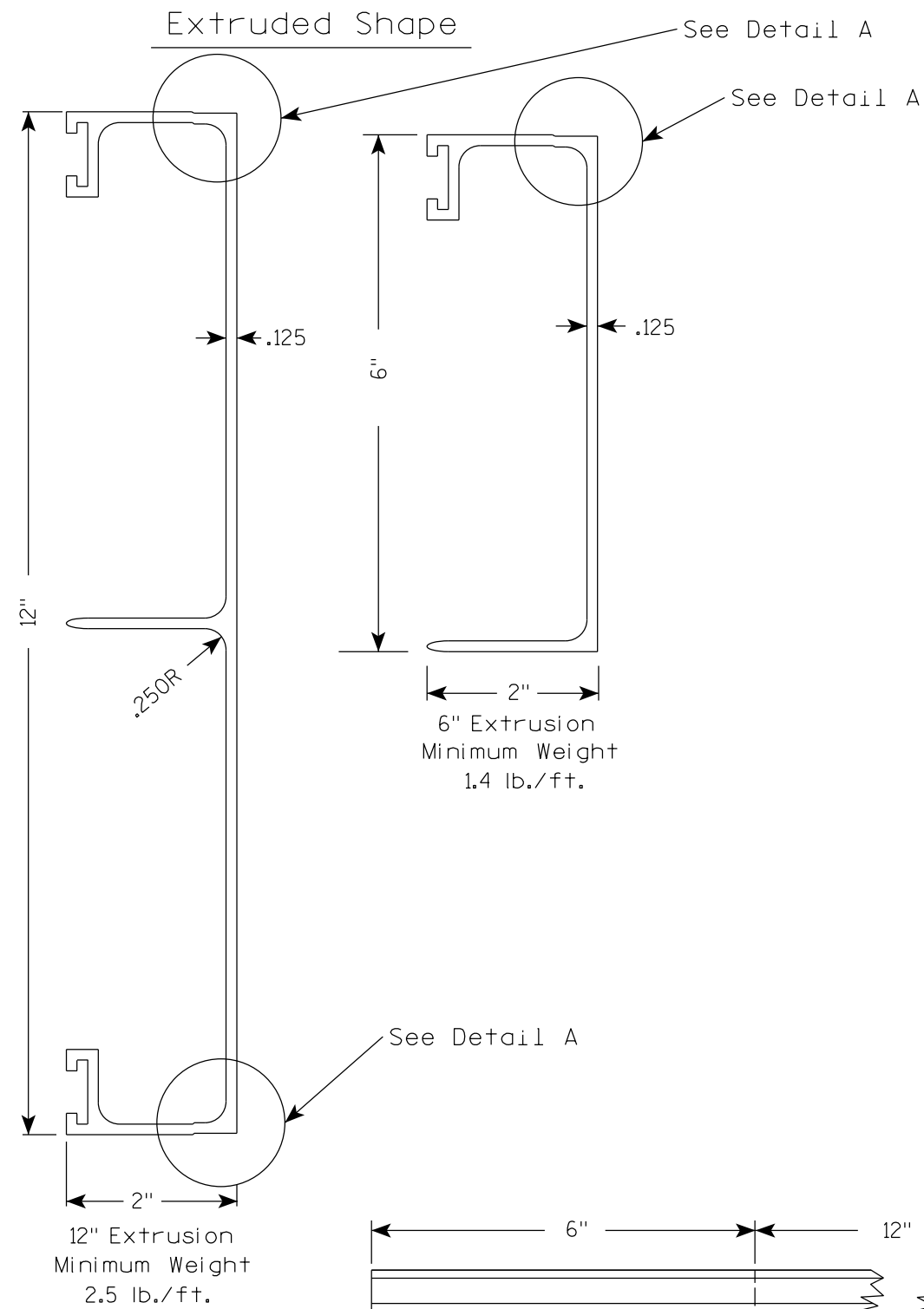
HWY:

COUNTY:

SHEET NO:

E

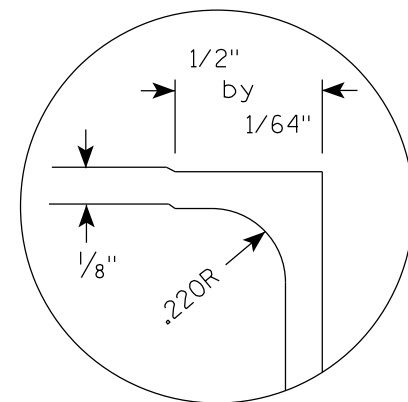
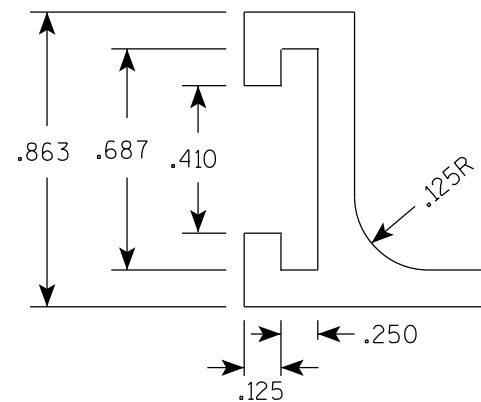
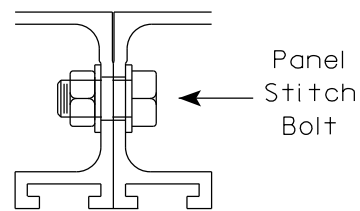
7



Punch 7/16" x 7/8" oval holes beginning 6" in from end of extrusion 12" CC on both edges of 6" and 12" panels.

STITCH BOLT, WASHER & NUT

The hardware includes:
3/8 " - 16 X 3/4 " Economy Bolt 2024-T4 alloy
3/8 " - Stainless steel stop nut
3/8" X .064 Flat Washers, Alclad 2024-T4 alloy

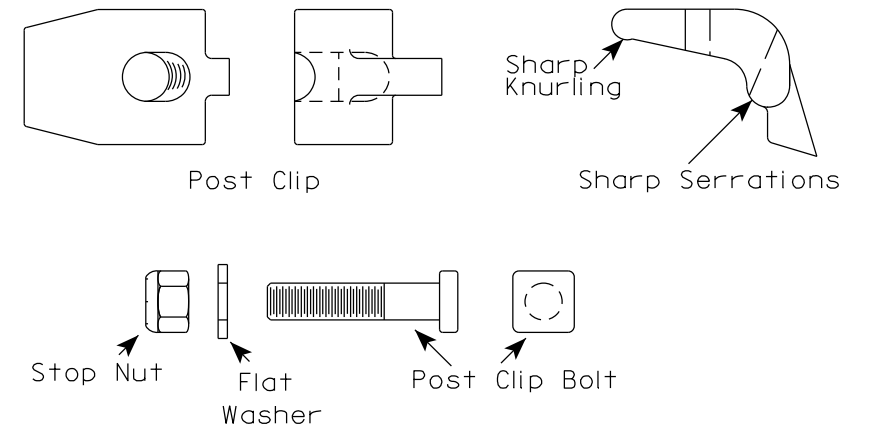


DETAIL A (EDGE WRAP JOINT)

Hardware

POST CLIP, POST CLIP BOLT, WASHER & NUT

Post Clip shall be Alum. Alloy 356-T6
Post Clip Bolt shall be Stainless Steel.
Flat washer shall be 3/8" X .091, Stainless Steel.
Stop nut shall be stainless steel.



NOTES

1. The contractor may select any brand of extrusion that conforms to the illustrations or meets with the approval of the engineer, but all extrusions used on this contract shall be of the same brand.
2. Panel Stitch Bolts shall be used to assemble adjacent panels. Maximum stitch bolt spacing shall be 24" C-C, and a minimum of 4 bolts shall be used to connect any two extrusions.
3. Post Clips shall be used to attach the sign panel to the sign support.
4. Edge wrapping of sign sheeting required on all extrusions joints shown in Detail A.

ALUMINUM EXTRUSIONS FOR
TYPE I SIGNS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
For State Traffic Engineer
DATE 1/07/20 PLATE NO. A5-2.10

PROJECT NO:

FILE NAME : C:\CAEFiles\Projects\tr_stdplate\A52.DGN

PLOT DATE : 7-Jan-2020

PLOT BY : dotc4c

SHEET NO:

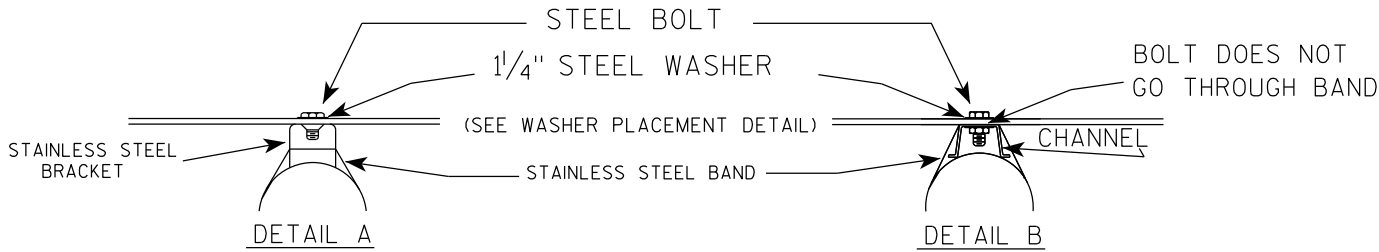
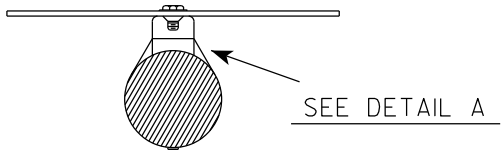
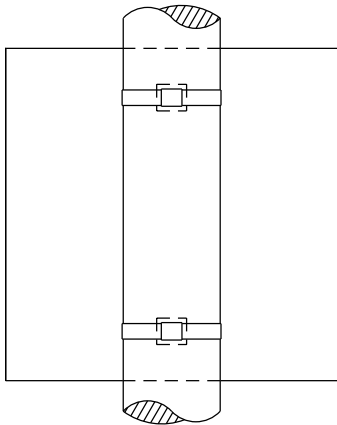
E

WISDOT/CADDS SHEET 42

7

BANDING

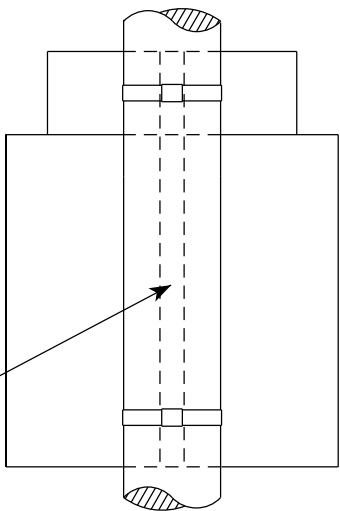
SINGLE SIGN



GENERAL NOTES

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

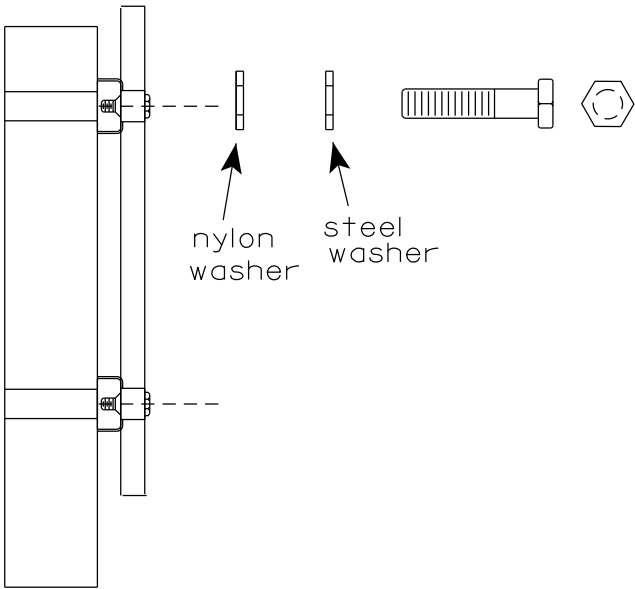
"J" ASSEMBLY



CHANNEL
SEE TYPICAL PANEL
INSTALLATION SHEET

SEE DETAIL B

WASHER PLACEMENT



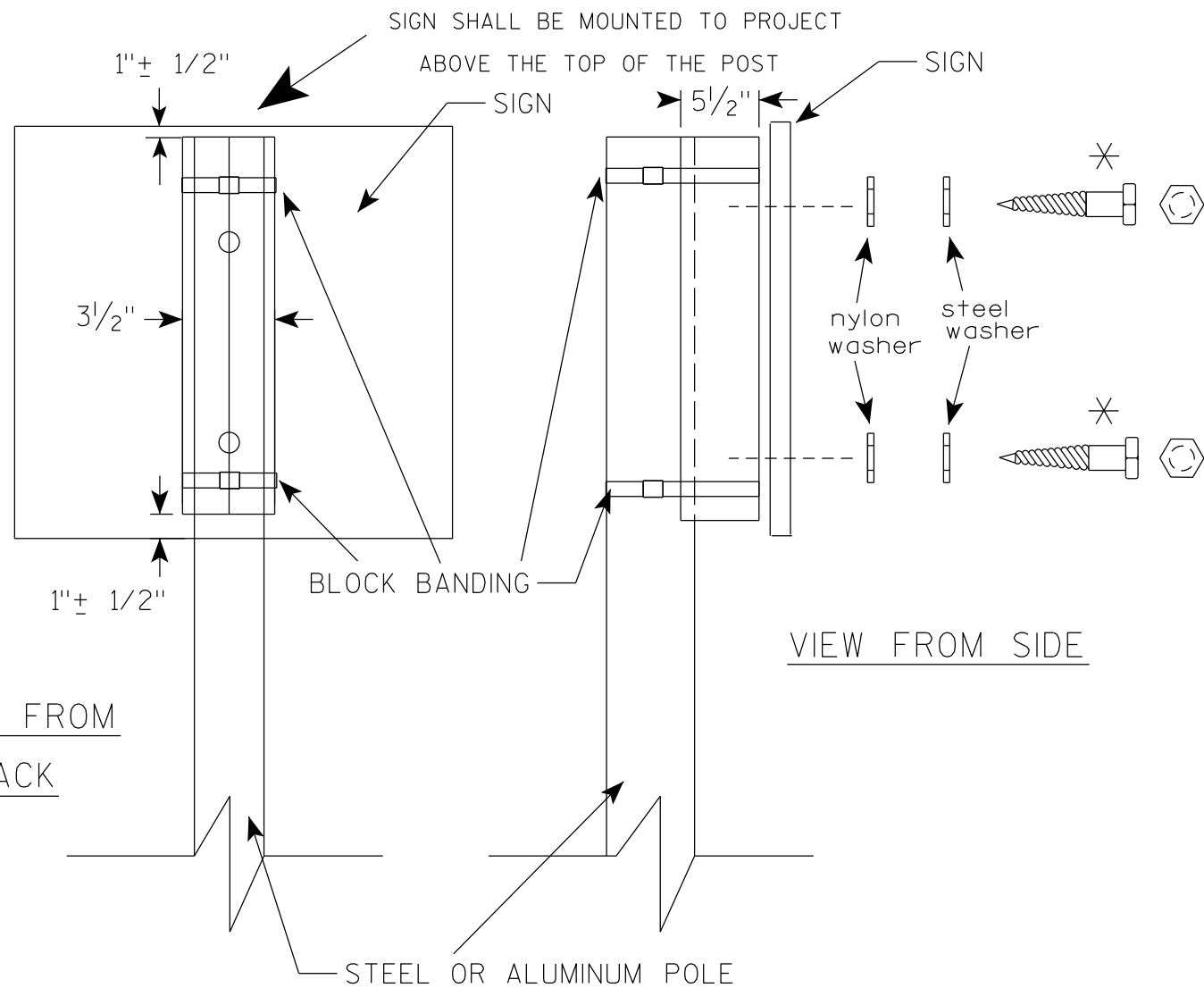
WASHERS (ALL POSTS) -
1-1/4" O.D. X $\frac{3}{8}$ " I.D. X $\frac{1}{16}$ " STEEL
1-1/4" O.D. X $\frac{3}{8}$ " I.D. X .080 NYLON
FOR ALL TYPE H SIGNS

STANDARD SIGN
SIGN BANDING DETAILS

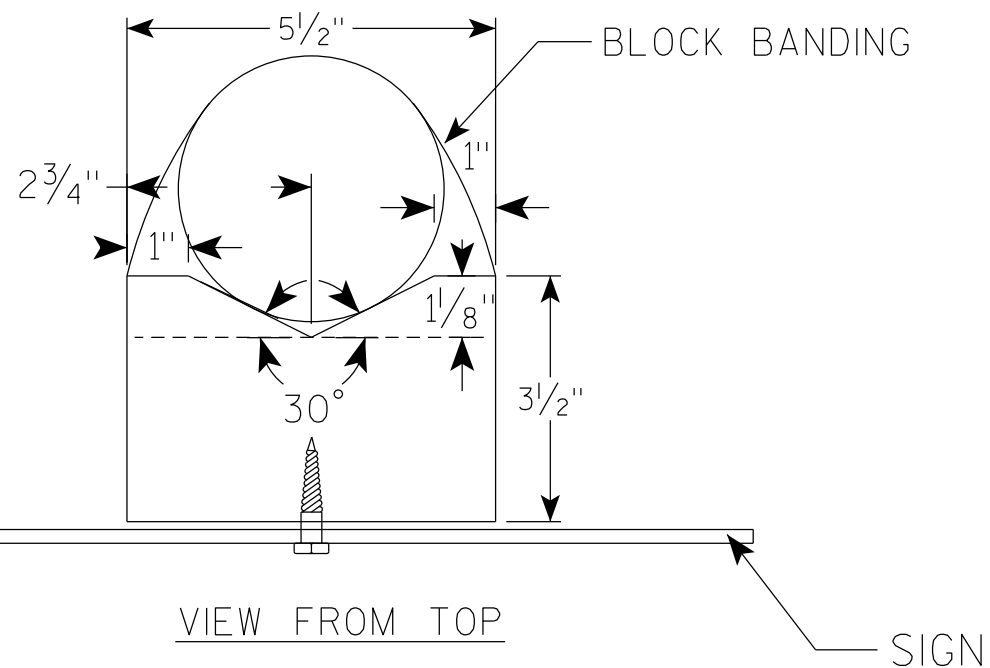
WISCONSIN DEPT OF TRANSPORTATION

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

VIEW FROM
BACK



VIEW FROM SIDE



GENERAL NOTES

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

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

BLOCK BANDING DETAIL
(V-BLOCK OPTION)

WISCONSIN DEPT OF TRANSPORTATION

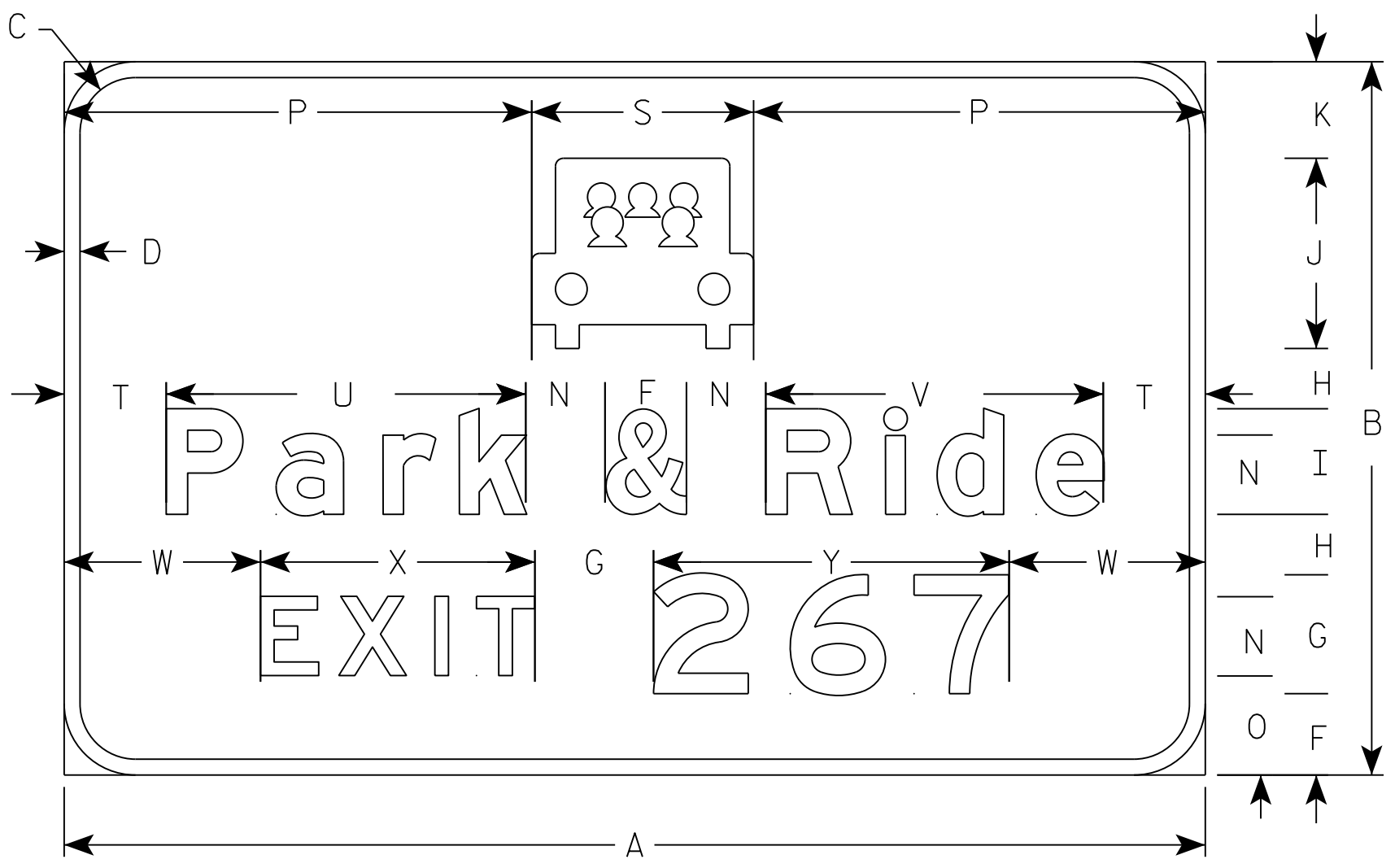
APPROVED *Matthew R. Rauch*
for State Traffic Engineer

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

PROJECT NO:

SHEET NO:

E



NOTES

- 1. Sign is Type I - Type SH Reflective
- 2. Color:
Background - Green
Message - White
- 3. Message Series - Series E Modified.

D4-4

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2																											
3																											
4	144	90	9	2		10 1/4	15	7 5/8	13 7/8	24	12 1/4			10	12 1/2	58			28	12 7/8	45 3/8	42 5/8	24 3/4	34 5/8	44 7/8		90.0
5	144	90	9	2		10 1/4	15	7 5/8	13 7/8	24	12 1/4			10	12 1/2	58			28	12 7/8	45 3/8	42 5/8	24 3/4	34 5/8	44 7/8		90.0

STANDARD SIGN
D4-4

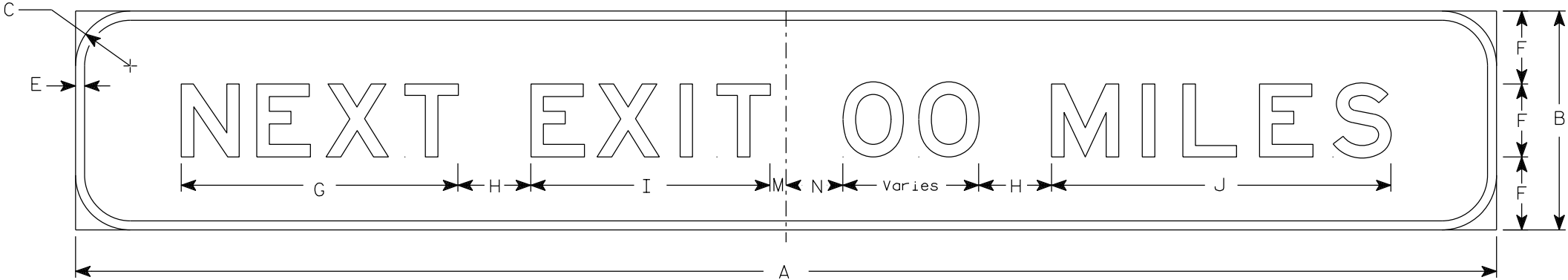
WISCONSIN DEPT OF TRANSPORTATION

APPROVED
Matthew R. Rauch
for
State Traffic Engineer

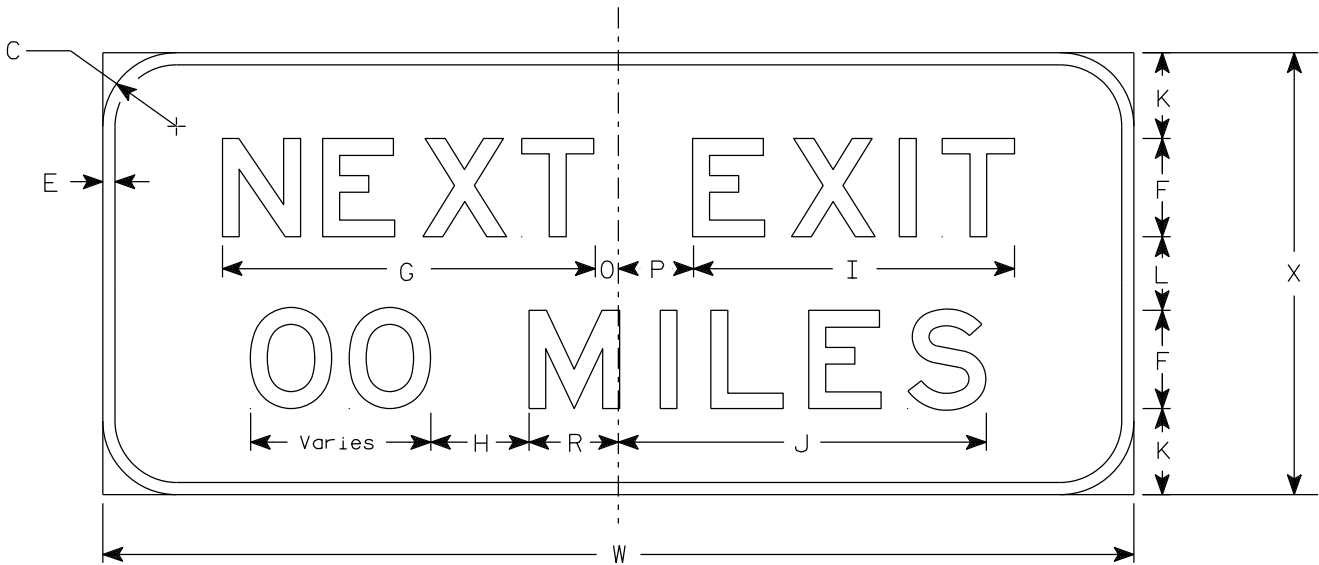
DATE 3/14/17
PLATE NO. D4-4.3

NOTES

- 1. Signs are Type I - Type SH Reflective
- 2. Color:
Background - Green
Message - White
- 3. Message Series - E
- 4. Substitute appropriate numerals and adjust spacing as required to achieve proper balance.
- 5. Use appropriate sign in conjunction with E1-1A. Width varies per sign



E2-1 *For use with E1-1A, 13' wide or wider. Sign width must match with of E1-1A.



E2-1A *For use with E1-1A, under 13'in width.

SIZE	E2-1 E2-1A																								Area	Area
	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	sq. ft.	sq. ft.
1																										
2																										
3																										
4	varies	24	6		1	8	30 3/8	8	26 1/4	30	7	6	1 3/4	6 1/4	1 7/8	6 1/8		7 1/4					84	36	varies	21.0
5	varies	24	6		1	8	30 3/8	8	26 1/4	30	7	6	1 3/4	6 1/4	1 7/8	6 1/8		7 1/4					84	36	varies	21.0

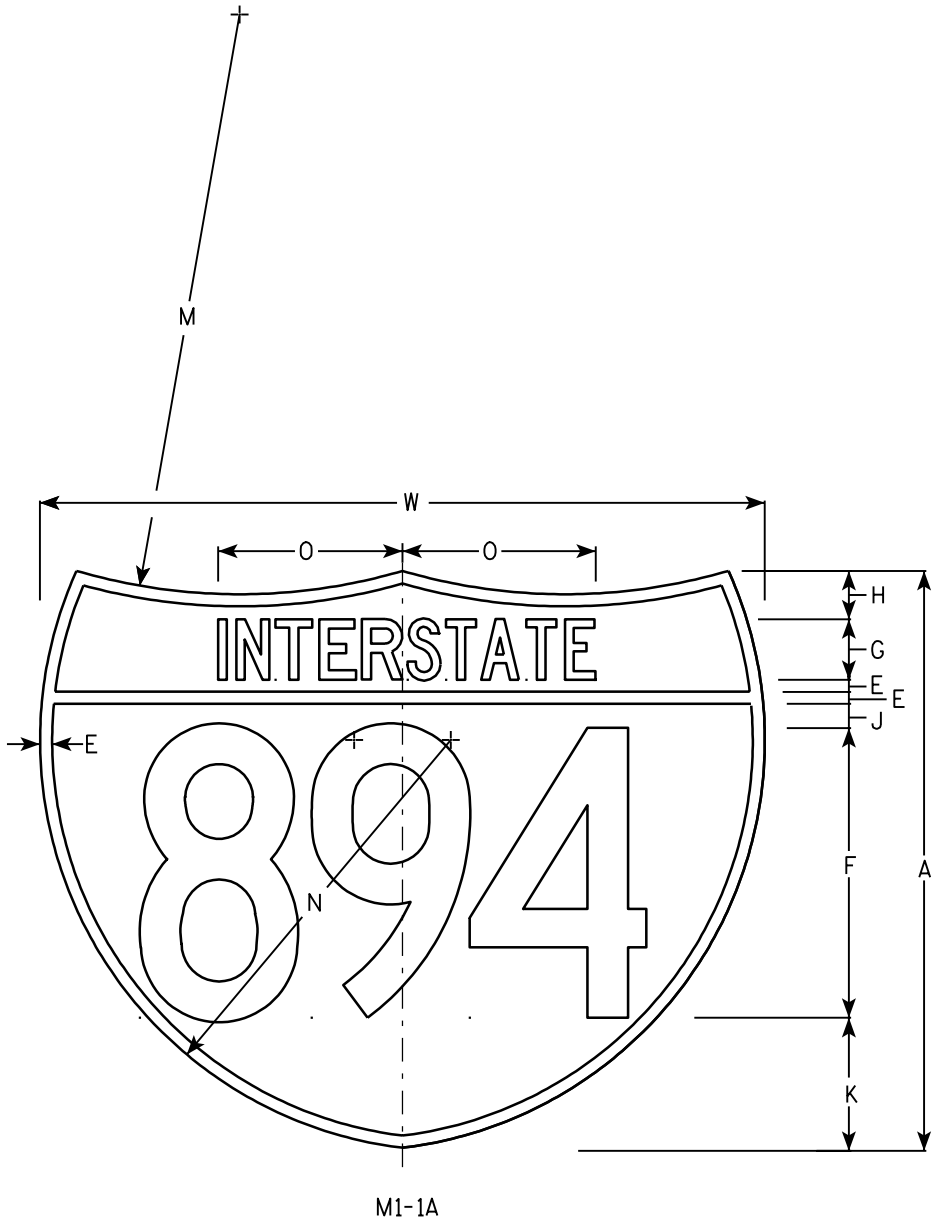
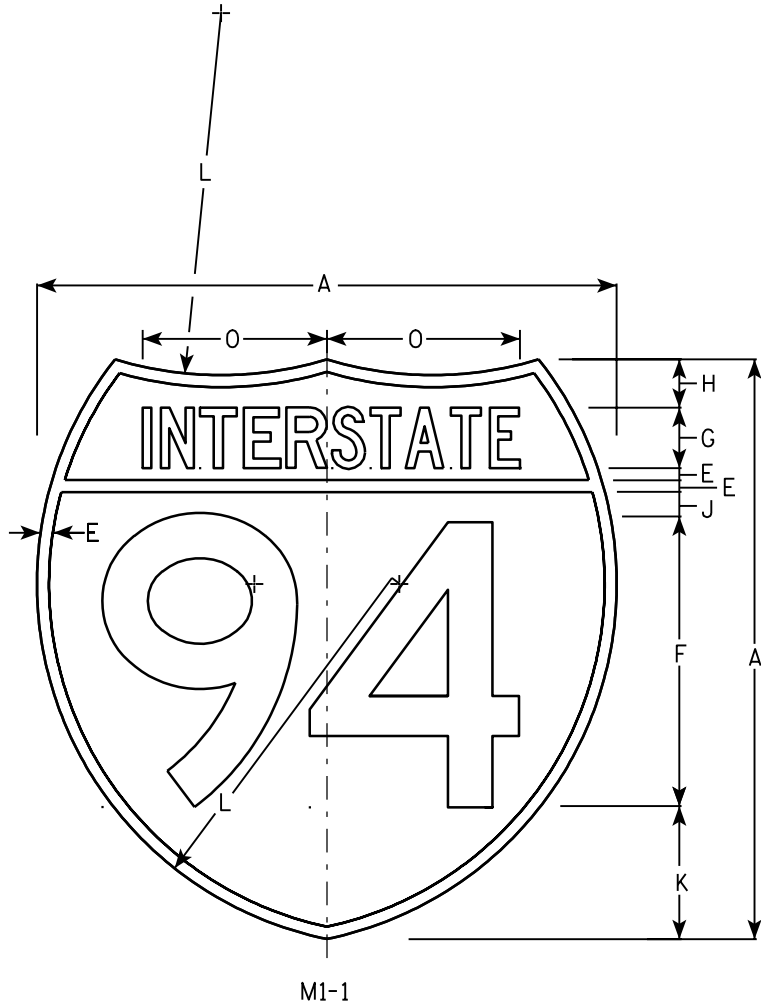
PROJECT NO:

HWY:

COUNTY:

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 - Top Red - Bottom Blue (See Note 6)
Message - White - See Note 6
- 3. Message Series - See note 5
- 4. Substitute appropriate numerals & adjust spacing as per plate A10-1.
- 5. M1-1 - Numerals - D
Interstate - C
M1-1A - All copy - C
- 6. Permanent Signs
Message - Type H Reflective
Detour or other temporary signs
Background - Reflective
Message - Reflective

Metric equivalent for these signs are:

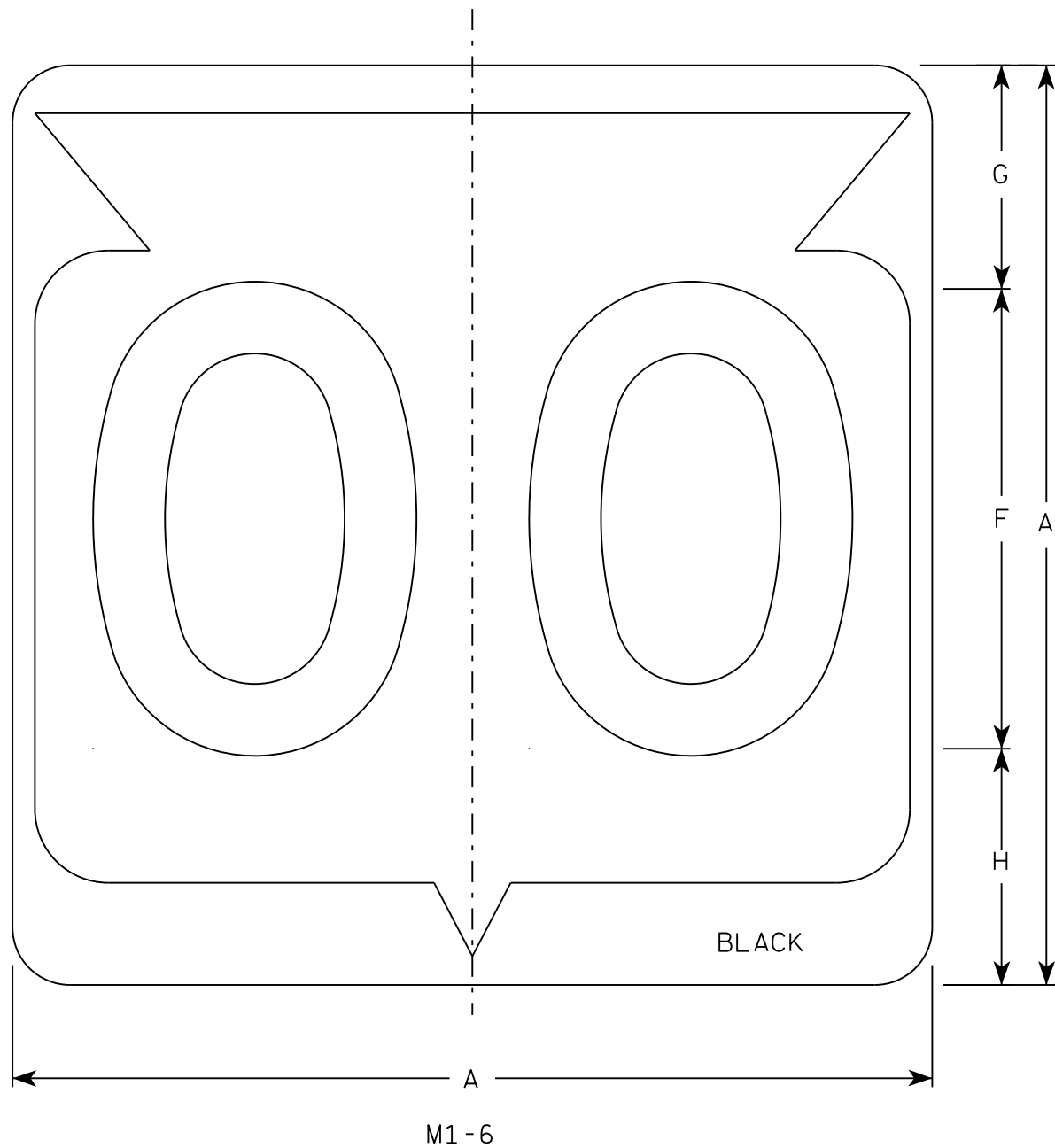
SIZE	M1 - 1	SIZE	M1 - 1A
1			
2	600 mm X 600 mm	2	600 mm X 750 mm
3	900 mm X 900 mm	3	900 mm X 1125 mm
4	900 mm X 900 mm	4	900 mm X 1125 mm
5	900 mm X 900 mm	5	900 mm X 1125 mm

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	Area sq. ft.	Area sq. ft.	Area m ²	Area m ²
1																													
2	24				1/2	12	2 1/2	2		1	5 1/2	15	24	17	7 7/8								30			3.13	3.91	.36	.46
3	36				3/4	18	3 3/4	3		1 1/2	8 1/4	22 1/2	36	25 1/2	11 3/4								45			7.03	8.79	.81	1.05
4	36				3/4	18	3 3/4	3		1 1/2	8 1/4	22 1/2	36	25 1/2	11 3/4								45			7.03	8.79	.81	1.05
5	36				3/4	18	3 3/4	3		1 1/2	8 1/4	22 1/2	36	25 1/2	11 3/4								45			7.03	8.79	.81	1.05

INTERSTATE ROUTE MARKER
M1-1 FOR ASSEMBLIES

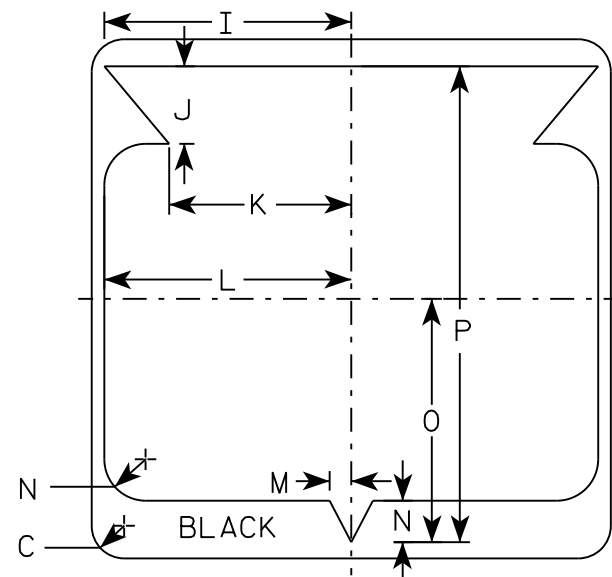
WISCONSIN DEPT OF TRANSPORTATION
APPROVED *Matthew R. Rauch*
for State Traffic Engineer
DATE 08/23/05 PLATE NO. M1-1.8

7



NOTES

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



7

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

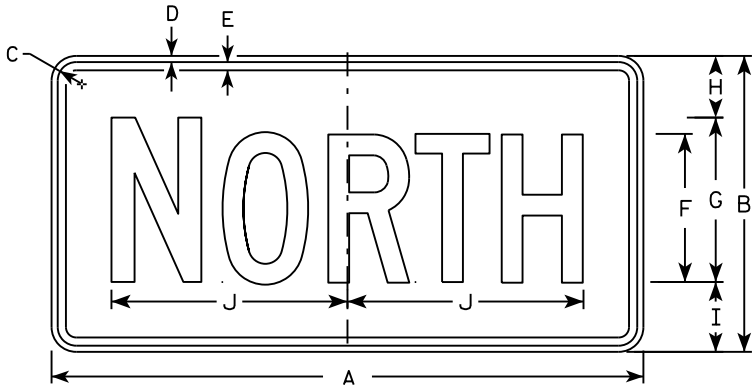
STATE ROUTE MARKER
M1-6 FOR ASSEMBLIES

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

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

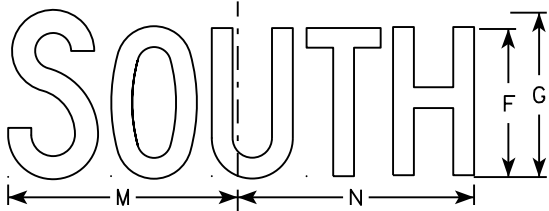
SHEET NO: E



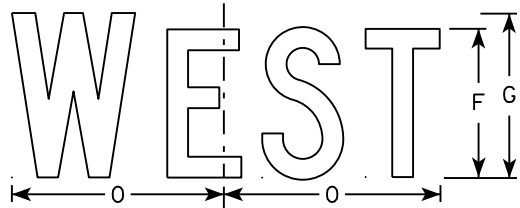
M3-1
MM3-1
MP3-1



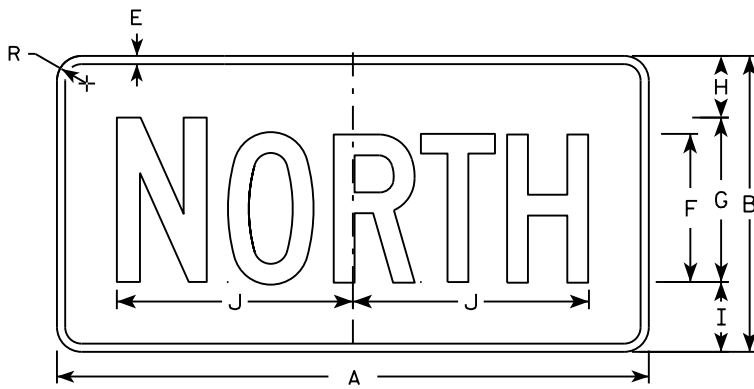
M3-2
MM3-2
MP3-2



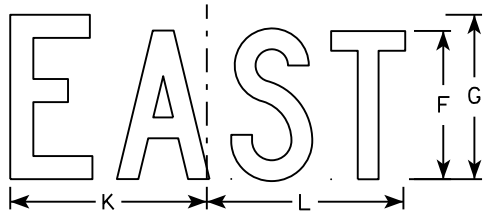
M3-3
MM3-3
MP3-3



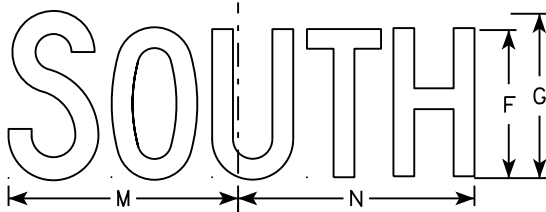
M3-4
MM3-4
MP3-4



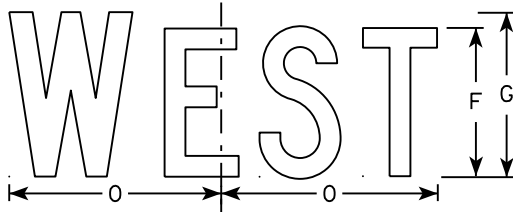
MB3-1
MK3-1
MN3-1



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

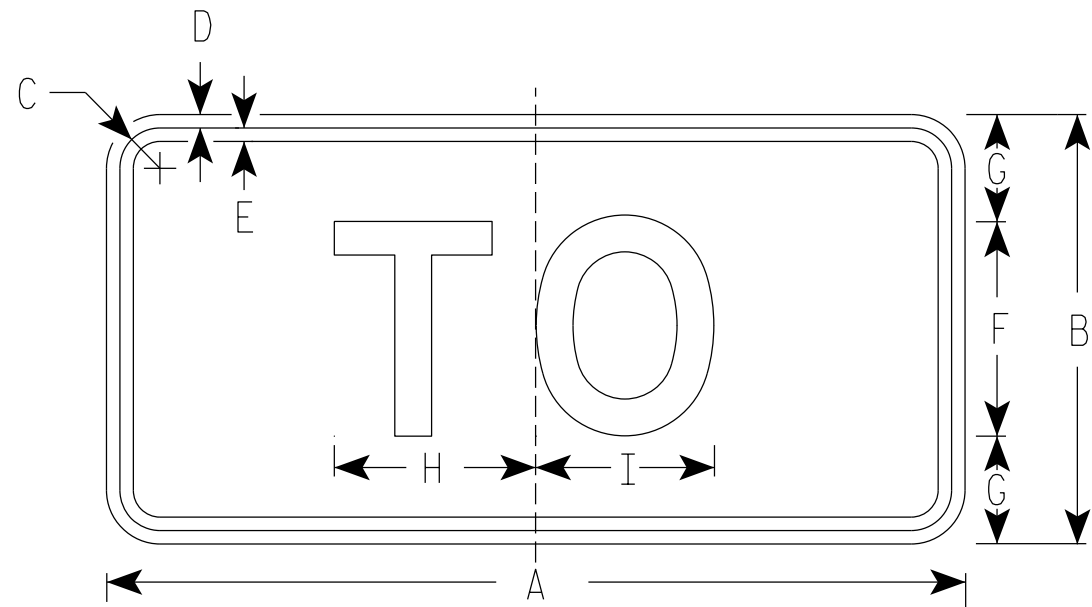
STANDARD SIGNS
M3-1 thru M3-4
SERIES

WISCONSIN DEPT OF TRANSPORTATION

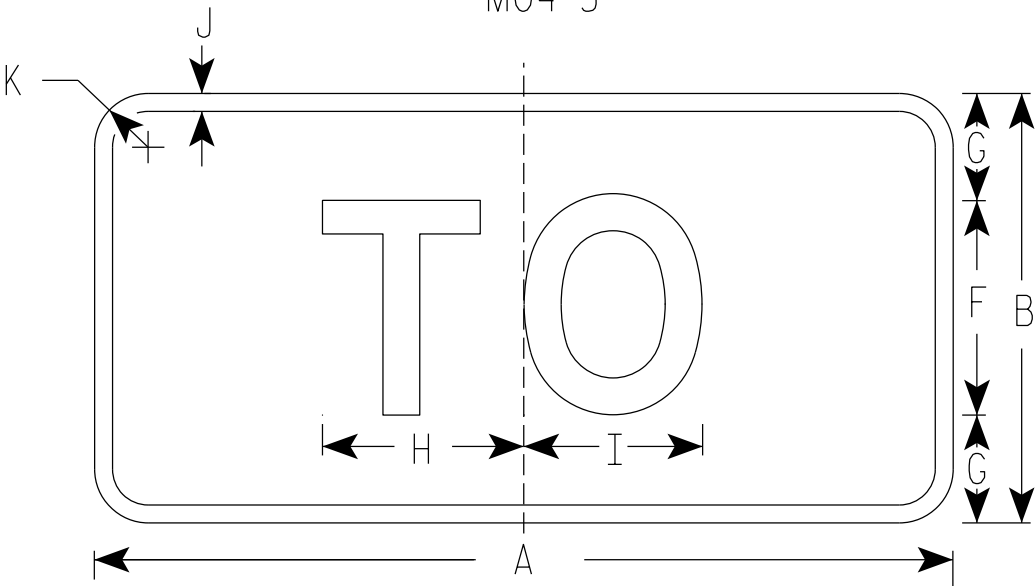
APPROVED
Matthew R. Rauch
for State Traffic Engineer

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

7



M4-5
MM4-5
MP4-5
M04-5



MB4-5
MK4-5
MN4-5

NOTES

1. Sign is Type II - Type H Reflective
2. Color:
Background - See note 5
Message - See note 5
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. M4-5 Background - White
Message - Black
MB4-5 Background - Blue
Message - White
MK4-5 Background - Green
Message - White
MM4-5 Background - White
Message - Green
MN4-5 Background - Brown
Message - White
MP4-5 Background - White
Message - Blue
M04-5 Background - Orange Type F Reflective
Message - Black

7

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

PROJECT NO:

HWY:

COUNTY:

SHEET NO:

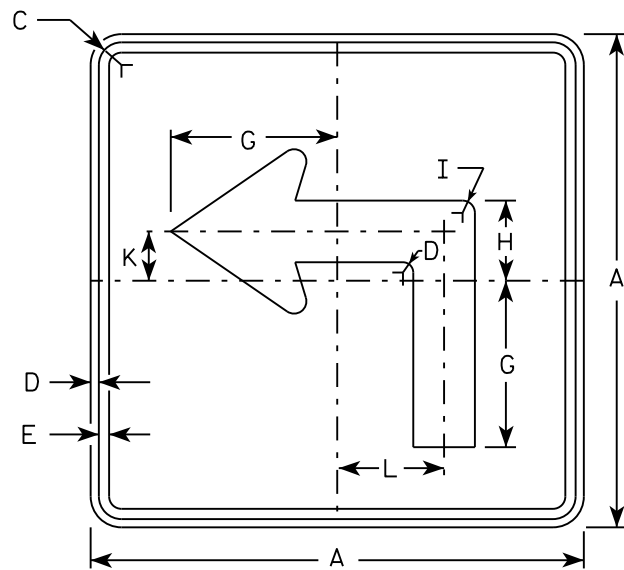
E

STANDARD SIGN
M4-5

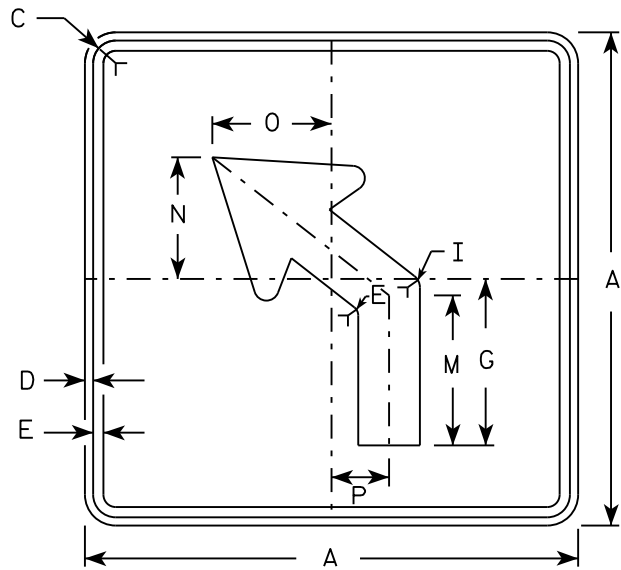
WISCONSIN DEPT OF TRANSPORTATION

APPROVED
Matthew R. Rauch
State Traffic Engineer

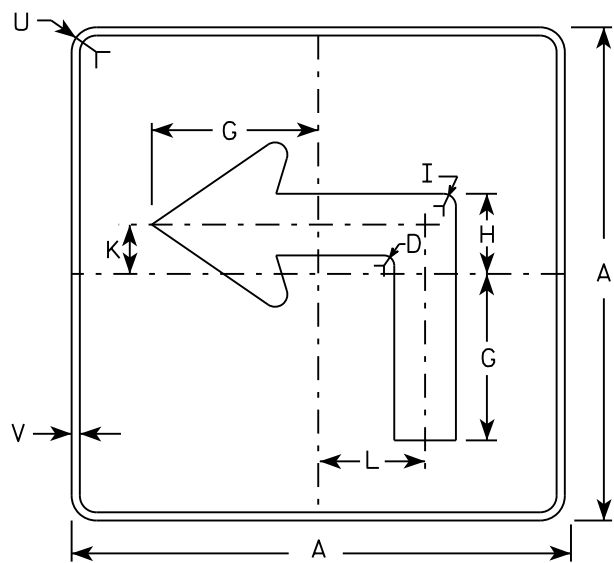
DATE 03/7/19 PLATE NO. M4-5.9



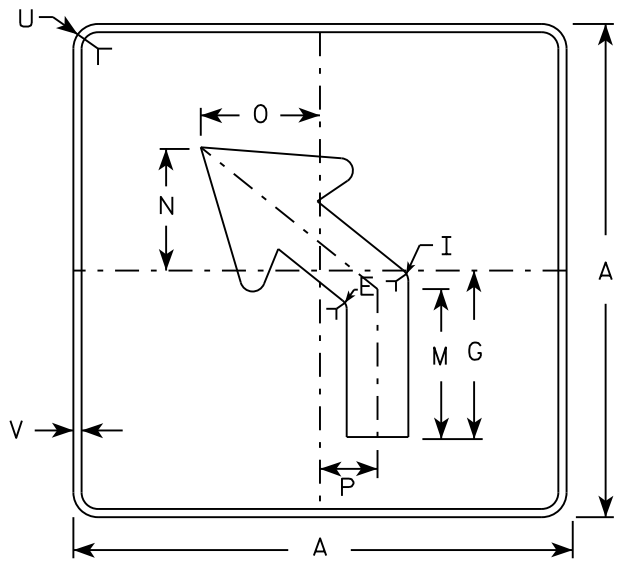
M5-1L
MM5-1L
M05-1L
MP5-1L



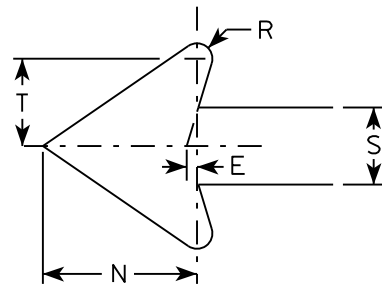
M5-2L
MM5-2L
M05-2L
MP5-2L



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.

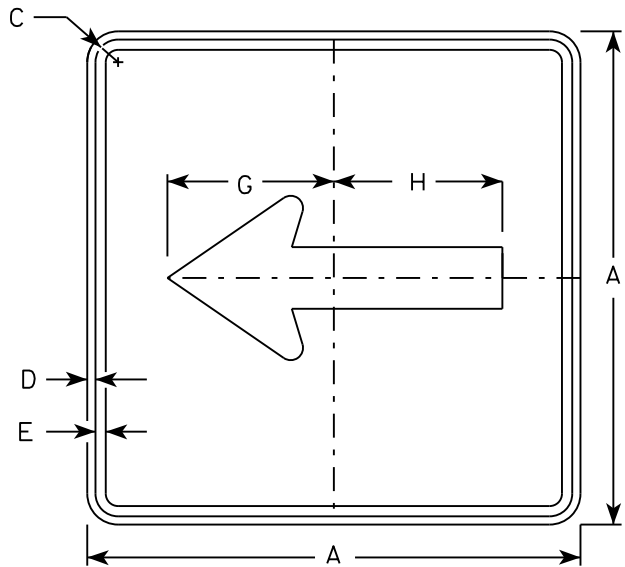
SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2	21		1 1/8	3/8	3/8		7	3 3/8	5/8		2 1/8	4 1/2	6 3/8	5 1/4	5	2 1/2		1/2	2 5/8	3	1 1/2	1/2					3.06
3	30		1 3/8	1/2	5/8		10 1/8	4 7/8	7/8		3	6 1/2	9 1/8	7 1/2	7 1/4	3 1/2		3/4	3 3/4	4 1/4	1 7/8	1/2					6.25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

STANDARD SIGN
M5-1 & M5-2

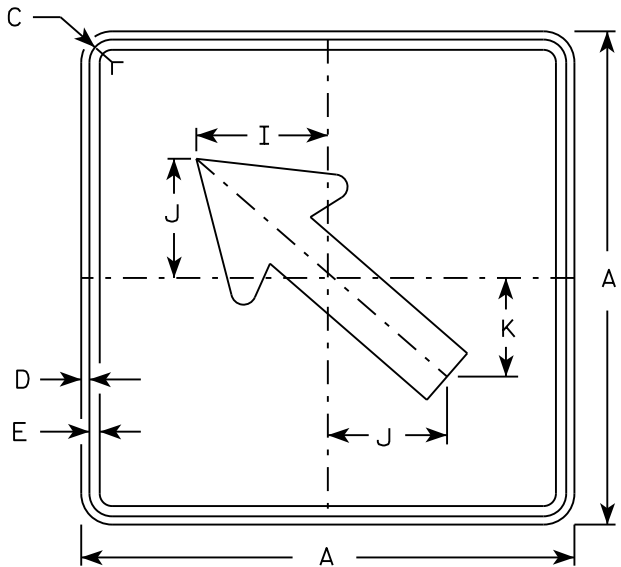
WISCONSIN DEPT OF TRANSPORTATION

APPROVED
Matthew R. Rauch
for State Traffic Engineer

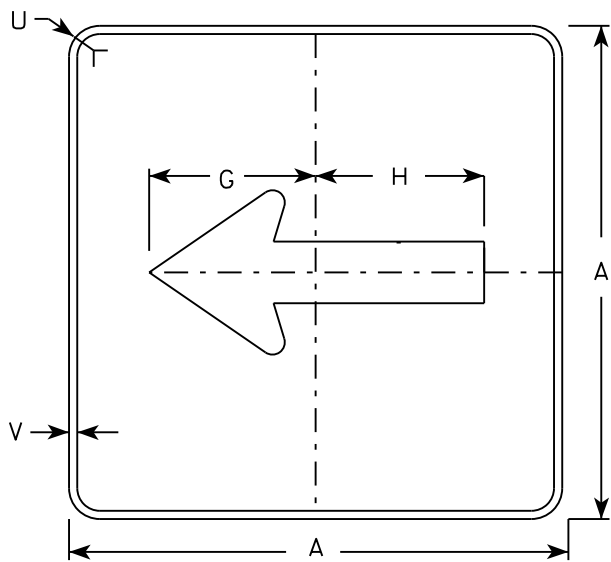
DATE 10/15/15 PLATE NO. M5-1.13



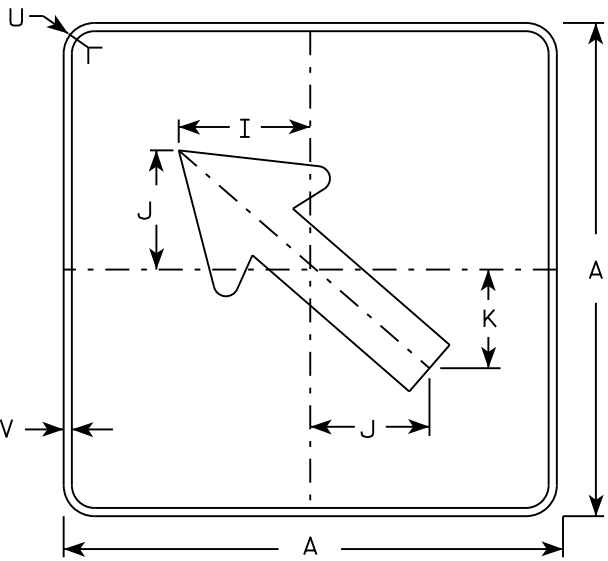
M6 - 1
MM6 - 1
M06 - 1
MP6 - 1



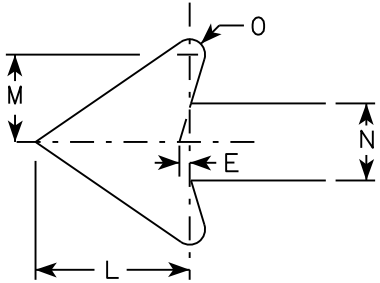
M6 - 2
MM6 - 2
M06 - 2
MP6 - 2



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



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



NOTES

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

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

PROJECT NO:

HWY:

COUNTY:

SHEET NO:

E

STANDARD SIGN
M6 - 1 & M6 - 2
SERIES

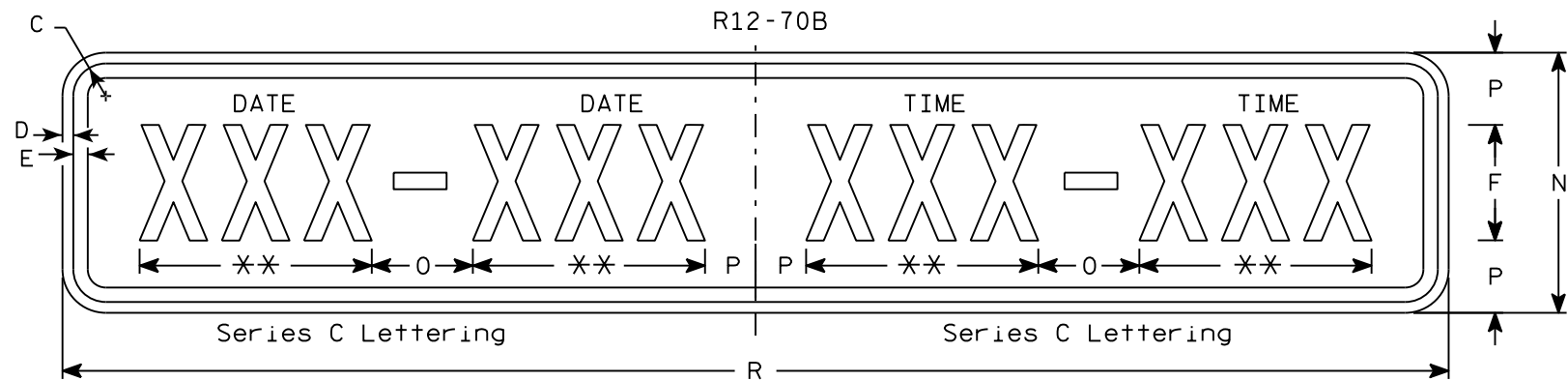
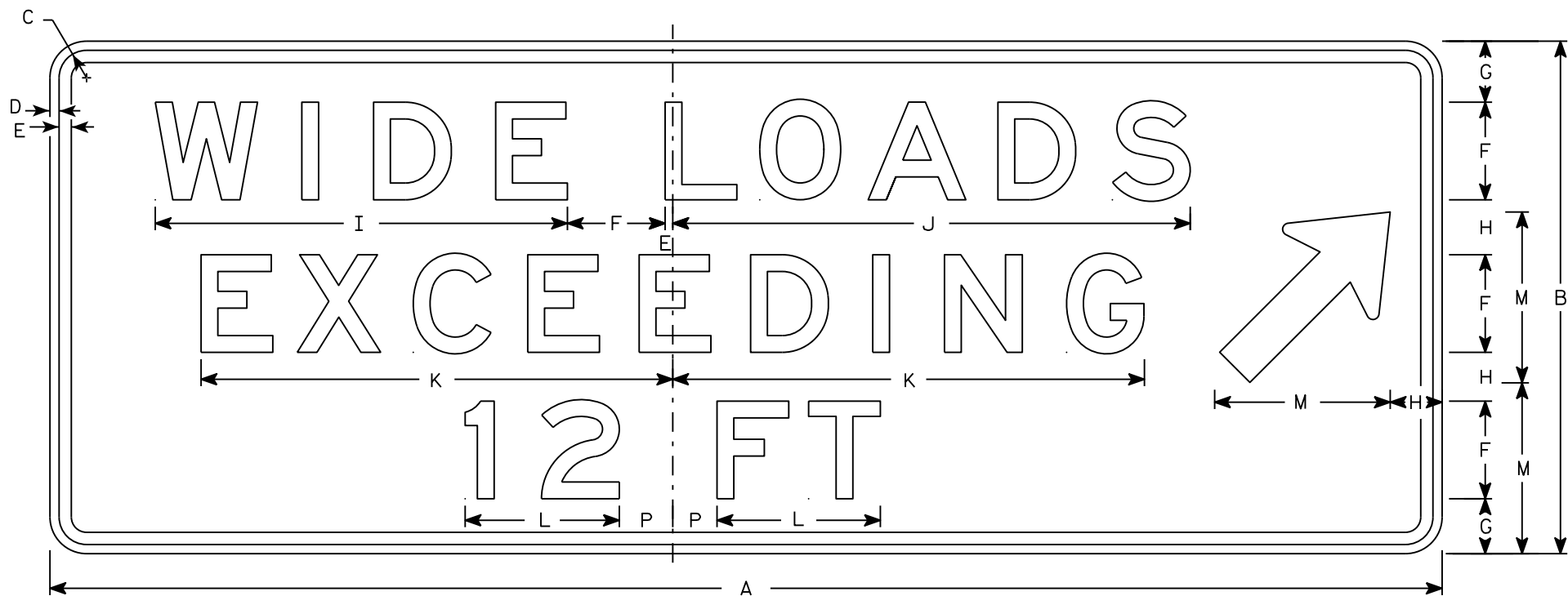
WISCONSIN DEPT OF TRANSPORTATION

APPROVED
Matthew R. Rauch
for State Traffic Engineer

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

NOTES

- 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 except as noted
 - 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.
- ** Substitute appropriate message, optically center message



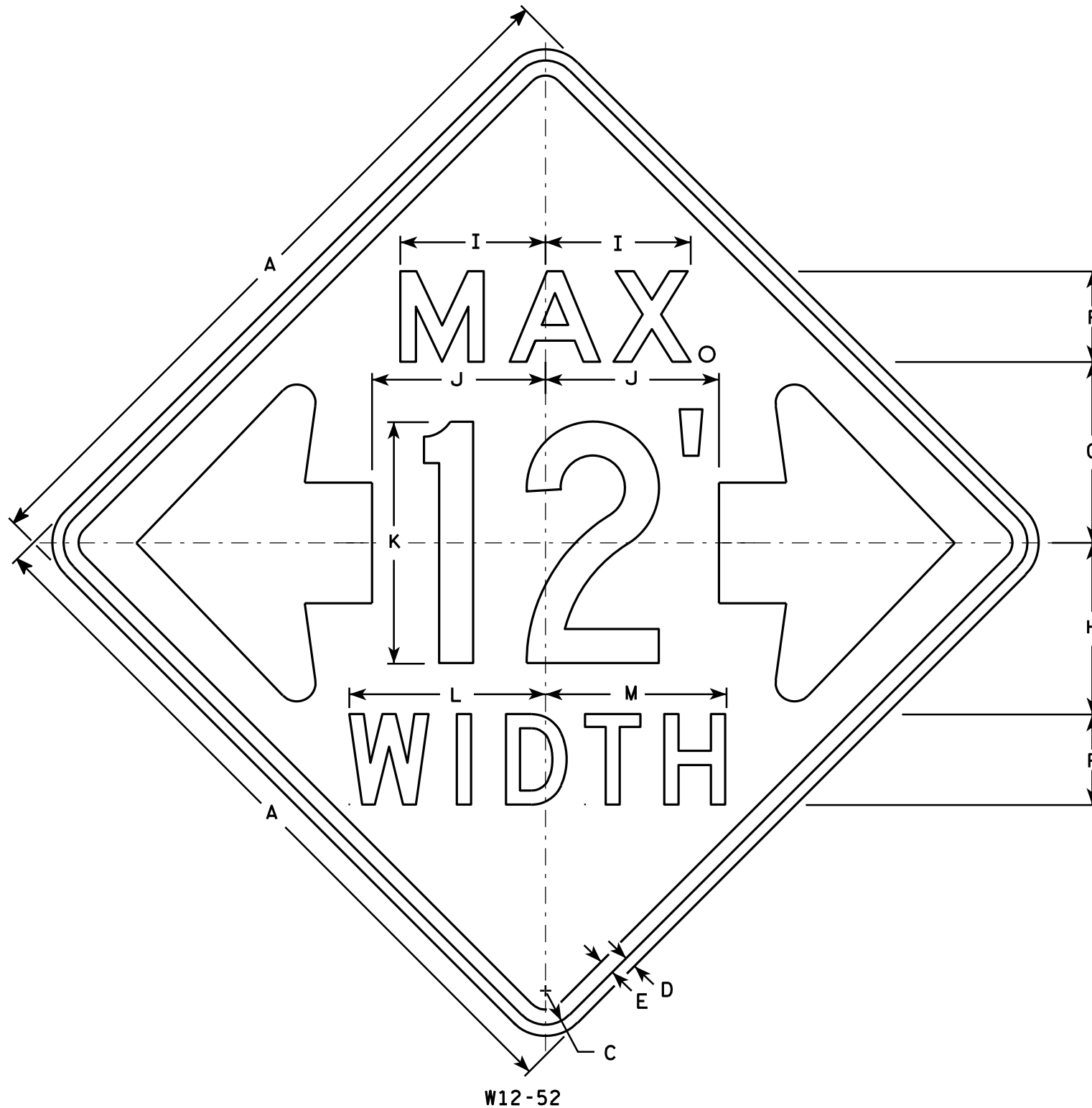
R12-70C																												R12-70	R12-70C
SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.	Area sq. ft.	
1																													
2S	90	36	2 1/4	1/2	5/8	6	4	5	20 7/8	28 3/8	24 5/8	8 1/8	12	12	6	3		66									22.5	5.5	
2M	90	36	2 1/4	1/2	5/8	6	4	5	20 7/8	28 3/8	24 5/8	8 1/8	12	12	6	3		66									22.5	5.5	
3																													
4	114	42	2 1/4	3/4	1	8	5	4	34	42	39	13	14	18	7	3 1/2		96									36.75	12.0	
5	114	42	2 1/4	3/4	1	8	5	4	34	42	39	13	14	18	7	3 1/2		96									36.75	12.0	

TYPICAL SIGN
R12-70B

WISCONSIN DEPT OF TRANSPORTATION

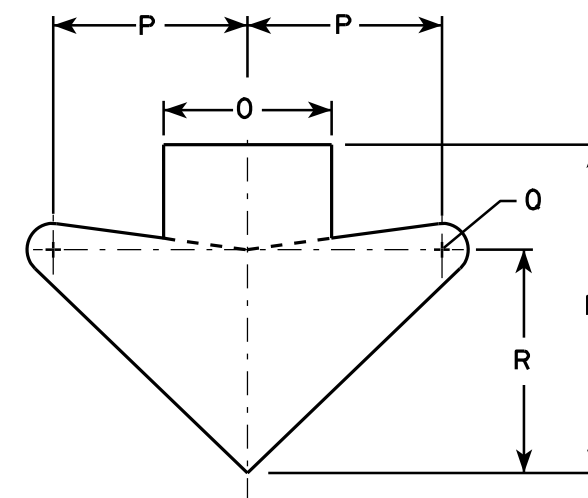
APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 11/10/15 PLATE NO. R12-70B.3



NOTES

- Sign Is Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
- Color:
Background - Orange
Message - Black
- Message Series - 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.
- The top line is series E, the numerals are series C, and the bottom line is series D.
- Substitute appropriate numerals and adjust spacing as required.



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	48		2 1/4	3/4	1	6	12	11 3/8	9 5/8	11 1/2	16	13	12	15 5/8	8	9 1/4	1 1/4	10 5/8									16.0
2M	48		2 1/4	3/4	1	6	12	11 3/8	9 5/8	11 1/2	16	13	12	15 5/8	8	9 1/4	1 1/4	10 5/8									16.0
3																											
4																											
5																											

STANDARD SIGN W12-52

WISCONSIN DEPT OF TRANSPORTATION

APPROVED
Matthew R. Rauch
For State Traffic Engineer

DATE 3/16/11 PLATE NO. W12-52.7

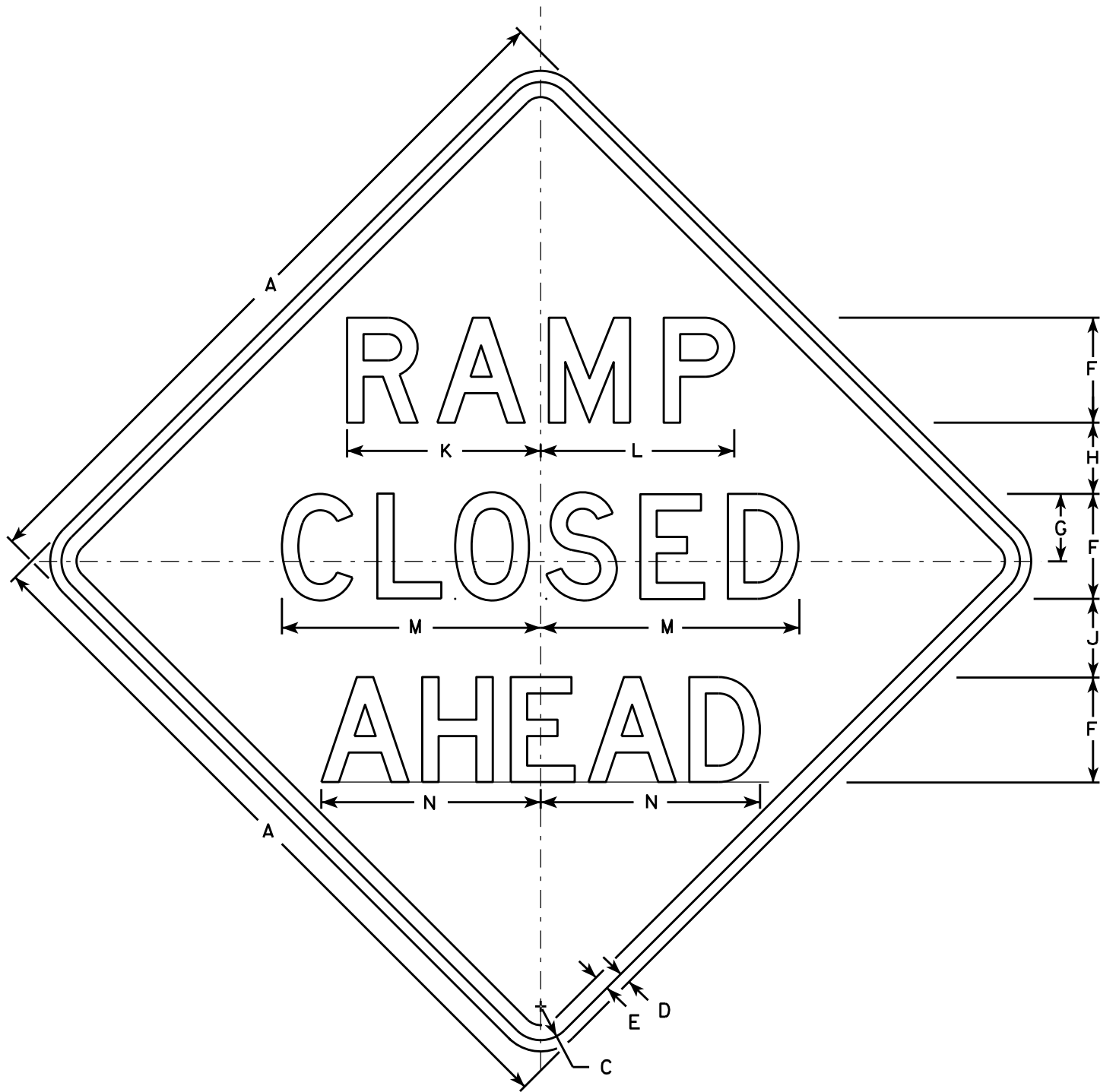
PROJECT NO:

HWY:

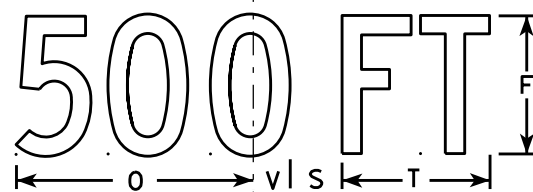
COUNTY:

SHEET NO:

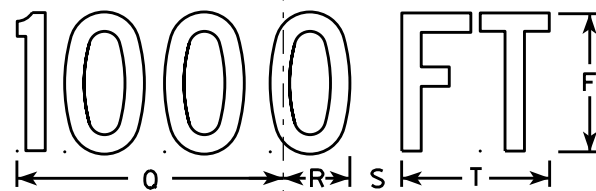
E



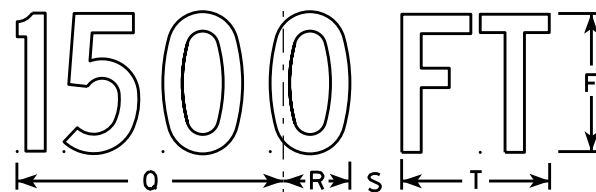
W20-53A



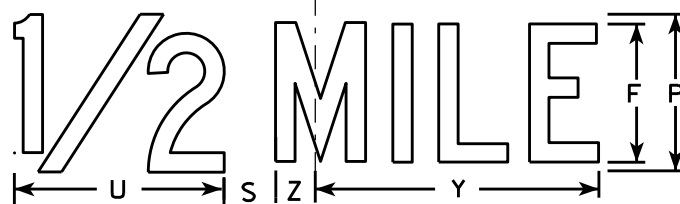
W20-53D



W20-53C



W20-53B



W20-53G



W20-53F

NOTES

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

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

STANDARD SIGN
W20-53A,B,C,D,F,G

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 5/27/15 PLATE NO. W20-53.1

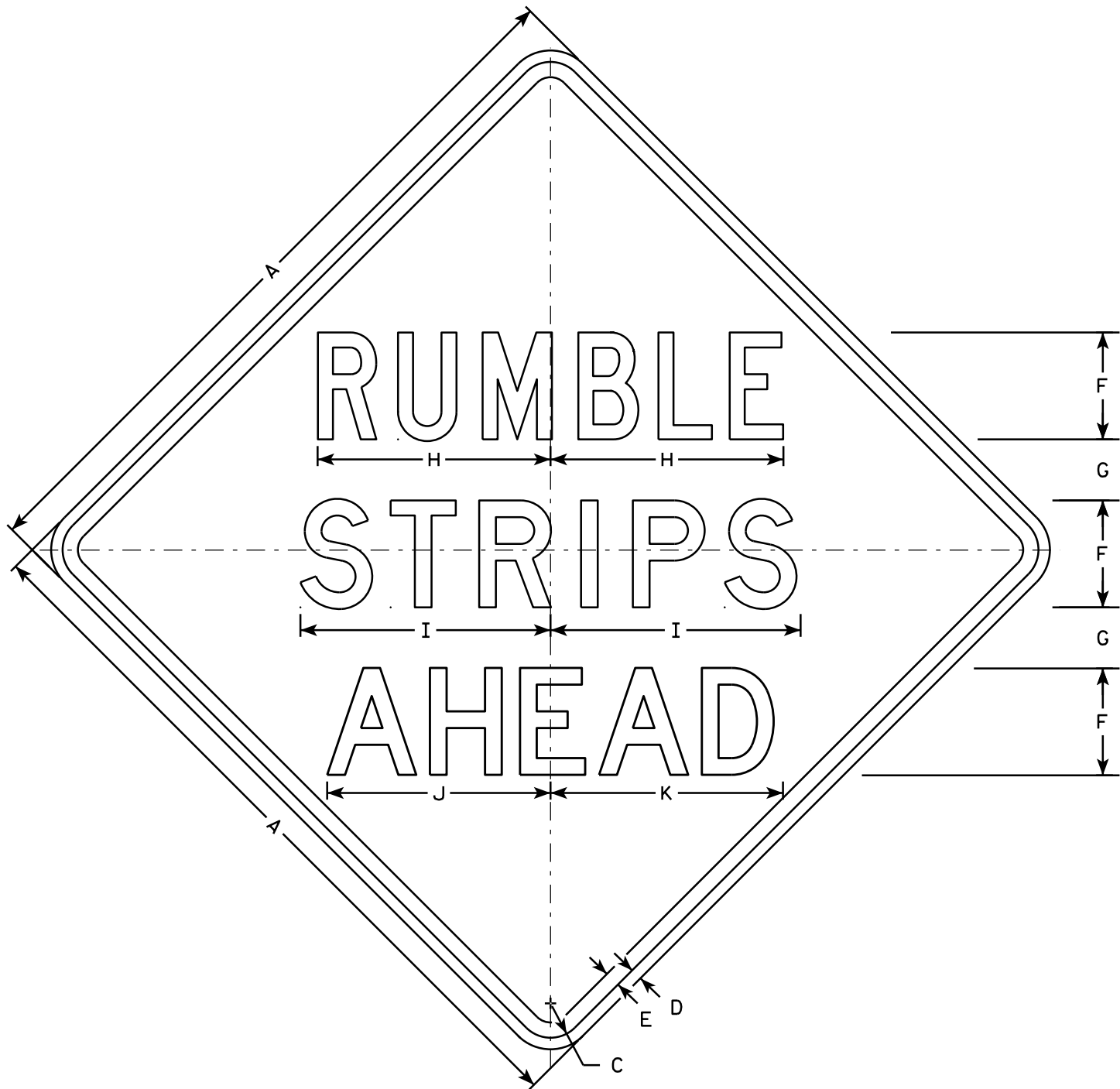
PROJECT NO:

HWY:

COUNTY:

SHEET NO:

E



W21-65

NOTES

- 1. Sign is Type II - Type F Reflective
- 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 C
Lines 2 and 3 are Series D

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

STANDARD SIGN

W21-65

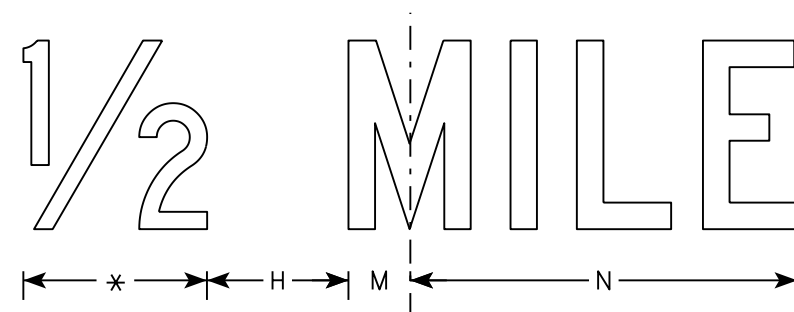
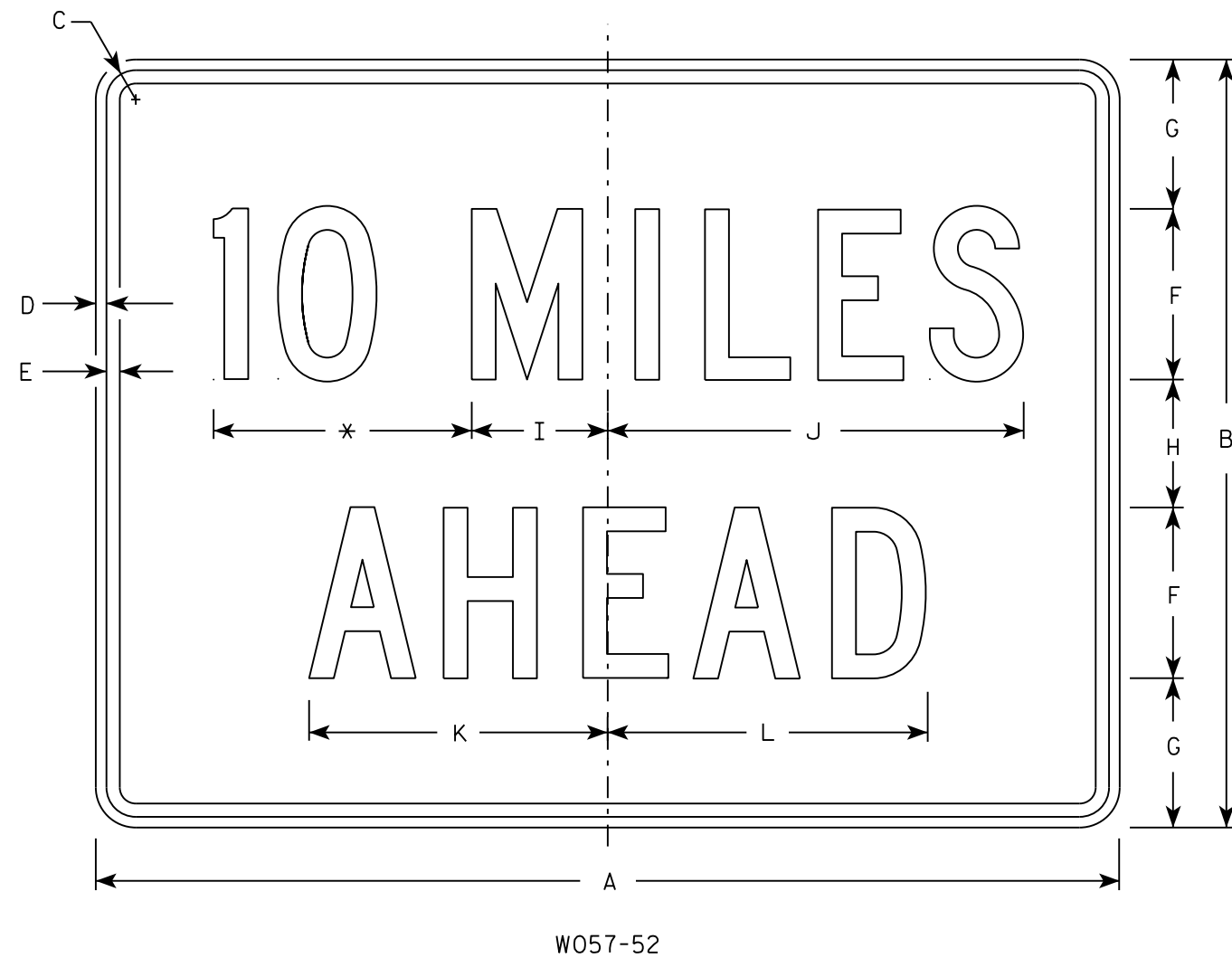
WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 5/28/14 PLATE NO. W21-65.1

NOTES

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



* See note 5

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	36	24	1 1/8	3/8	1/2	6	4 1/2	3	4 3/4	14 5/8	10 5/8	11 3/8	2	12													6.0
2S	48	36	1 3/8	1/2	5/8	8	7	6	6 3/8	19 1/2	14	15	2 3/4	16 3/8													12.0
2M	48	36	1 3/8	1/2	5/8	8	7	6	6 3/8	19 1/2	14	15	2 3/4	16 3/8													12.0
3	48	36	1 3/8	1/2	5/8	8	7	6	6 3/8	19 1/2	14	15	2 3/4	16 3/8													12.0
4	48	36	1 3/8	1/2	5/8	8	7	6	6 3/8	19 1/2	14	15	2 3/4	16 3/8													12.0
5	48	36	1 3/8	1/2	5/8	8	7	6	6 3/8	19 1/2	14	15	2 3/4	16 3/8													12.0

STANDARD SIGN W057-52	
WISCONSIN DEPT OF TRANSPORTATION	
APPROVED	<i>Matthew R. Rauch</i> for State Traffic Engineer
DATE 3/21/17	PLATE NO. W057-52.2

DESIGN DATA

LIVE LOAD:
INVENTORY RATING: HS-19
OPERATING RATING: HS-32
WISCONSIN STANDARD PERMIT VEHICLE (WIS.-SPV): 160 (KIPS)

GENERAL NOTES

DRAWINGS SHALL NOT BE SCALED.
DIMENSIONS SHOWN ARE BASED ON THE ORIGINAL STRUCTURE PLANS.
SHOT BLASTING, DECK SURFACE PREPARATION AND TRANSITIONAL AREAS ARE INCLUDED IN THE BID ITEM "POLYMER OVERLAY".

TRAFFIC VOLUME

IH 90 EB
ADT = 25800 (2017)
R.D.S. = 70 M.P.H.

TOTAL ESTIMATED QUANTITIES

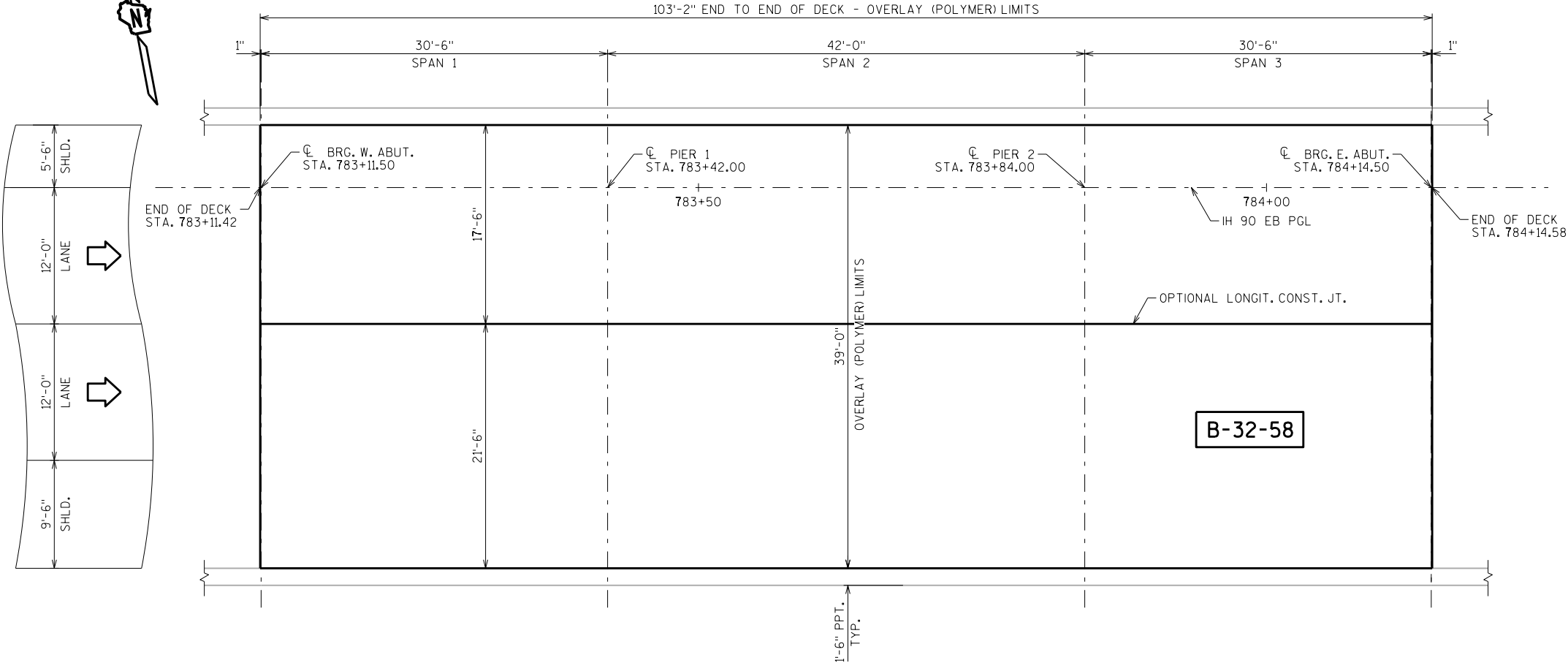
BID ITEM NUMBER	BID ITEMS	UNIT	TOTALS
509.5100.S	POLYMER OVERLAY	SY	448

STRUCTURE DESIGN CONTACTS:
SHANNON LIPE (608) 266-2369
DOMINIQUE BECHLE (608) 261-8205

NO.	DATE	REVISION	BY
BUREAU OF STRUCTURES ACCEPTED  DMB 02/04/21 CHIEF STRUCTURES DESIGN ENGINEER DATE			
STRUCTURE B-32-58			
IH 90 EB OVER DAVIS RD			
COUNTY	LA CROSSE	TOWN	BANGOR
DESIGN SPEC. REHABILITATION N/A			
DESIGNED BY	DESIGNED CK'D.	DRAWN BY	PLANS CK'D.
SCL	SEW	SCL	SEW
POLYMER OVERLAY			SHEET 1 OF 1

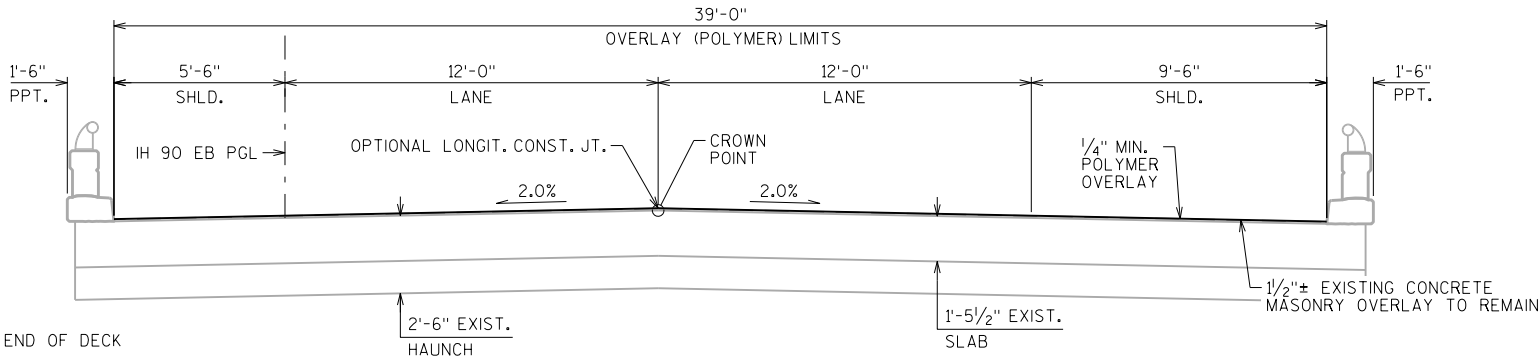
LIST OF DRAWINGS

1. POLYMER OVERLAY



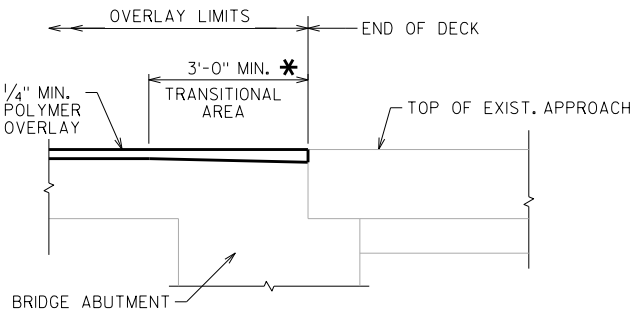
PLAN

3 SPAN - CONCRETE HAUNCHED SLAB



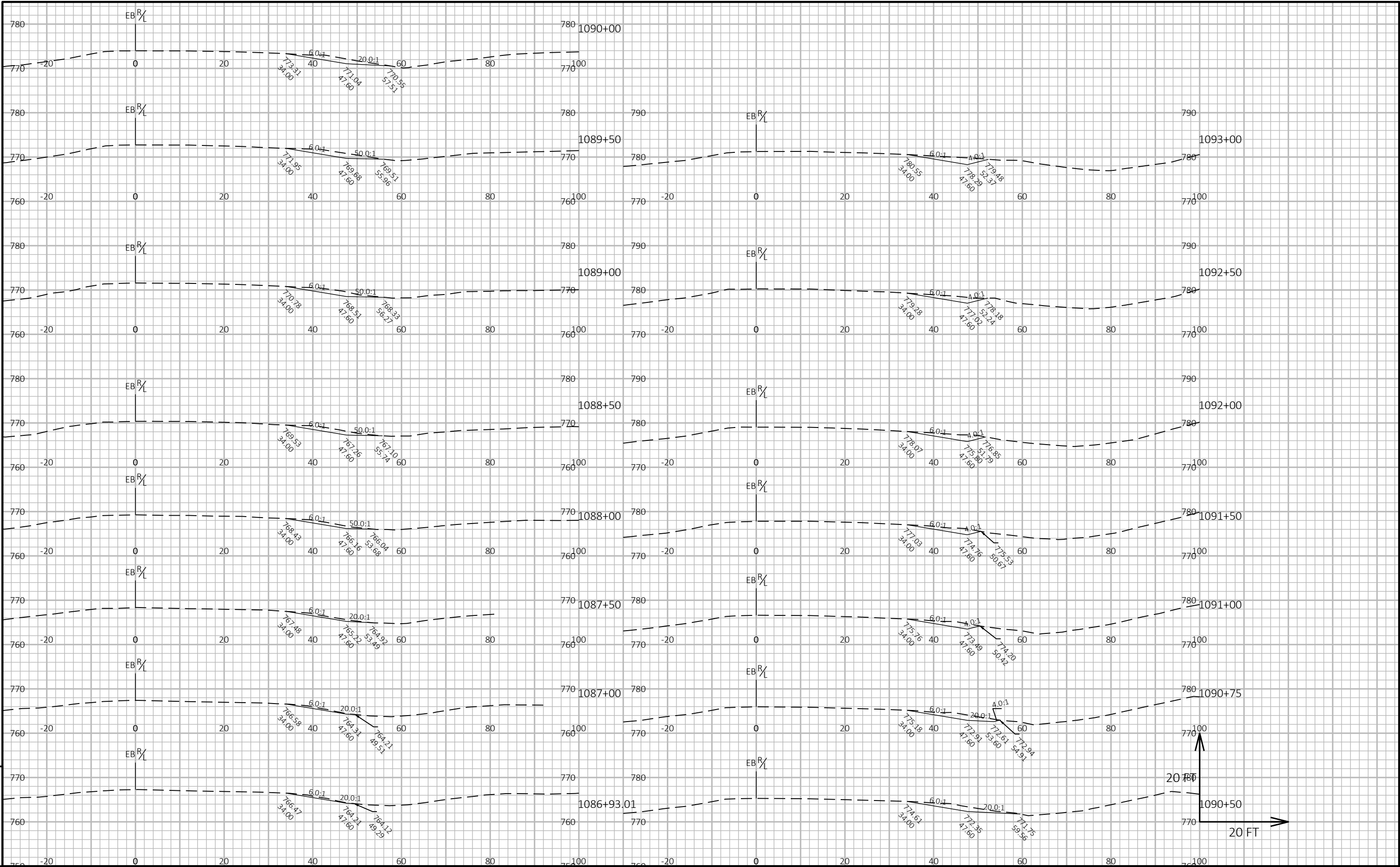
CROSS SECTION THRU ROADWAY

LOOKING EAST

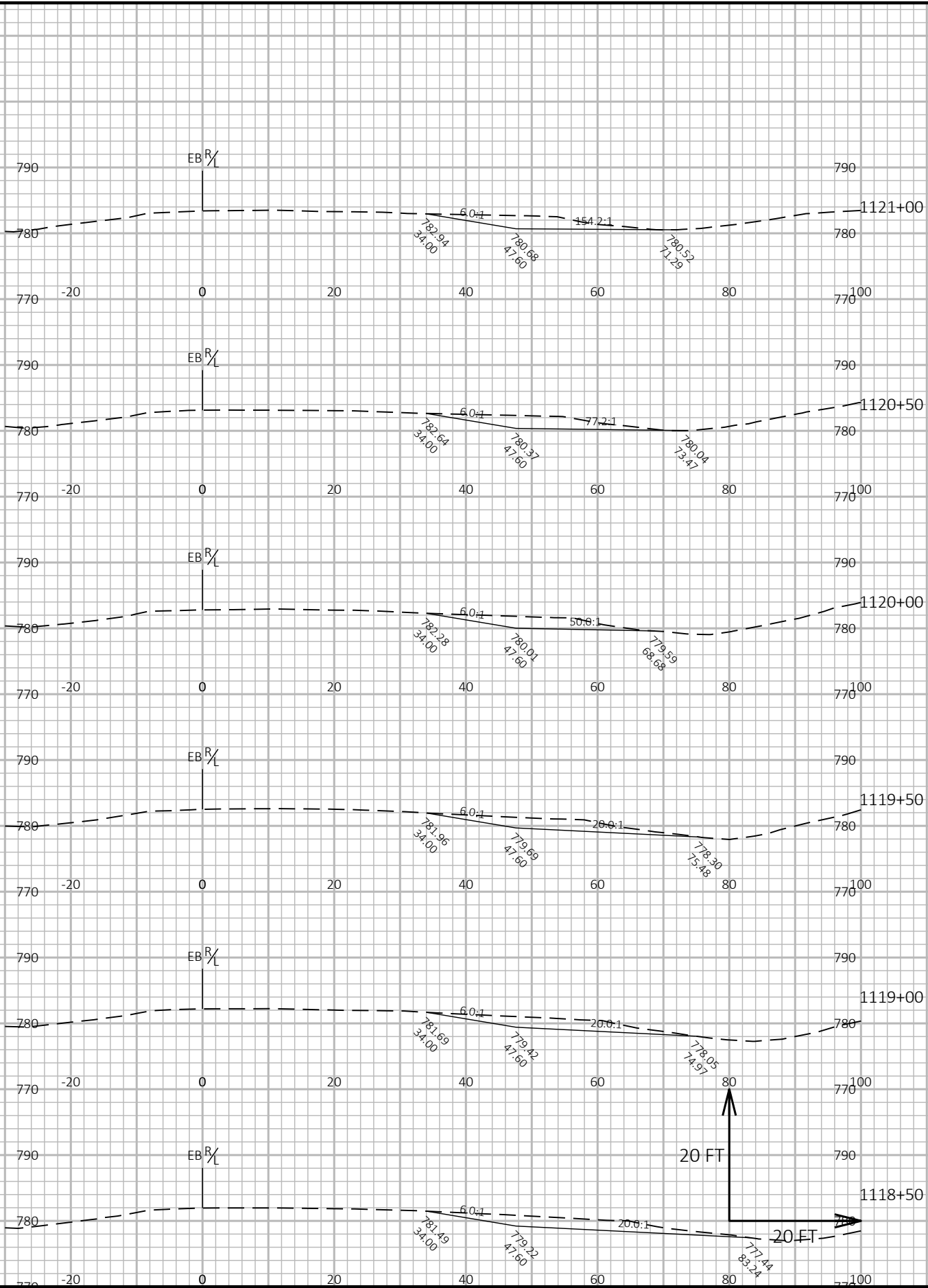
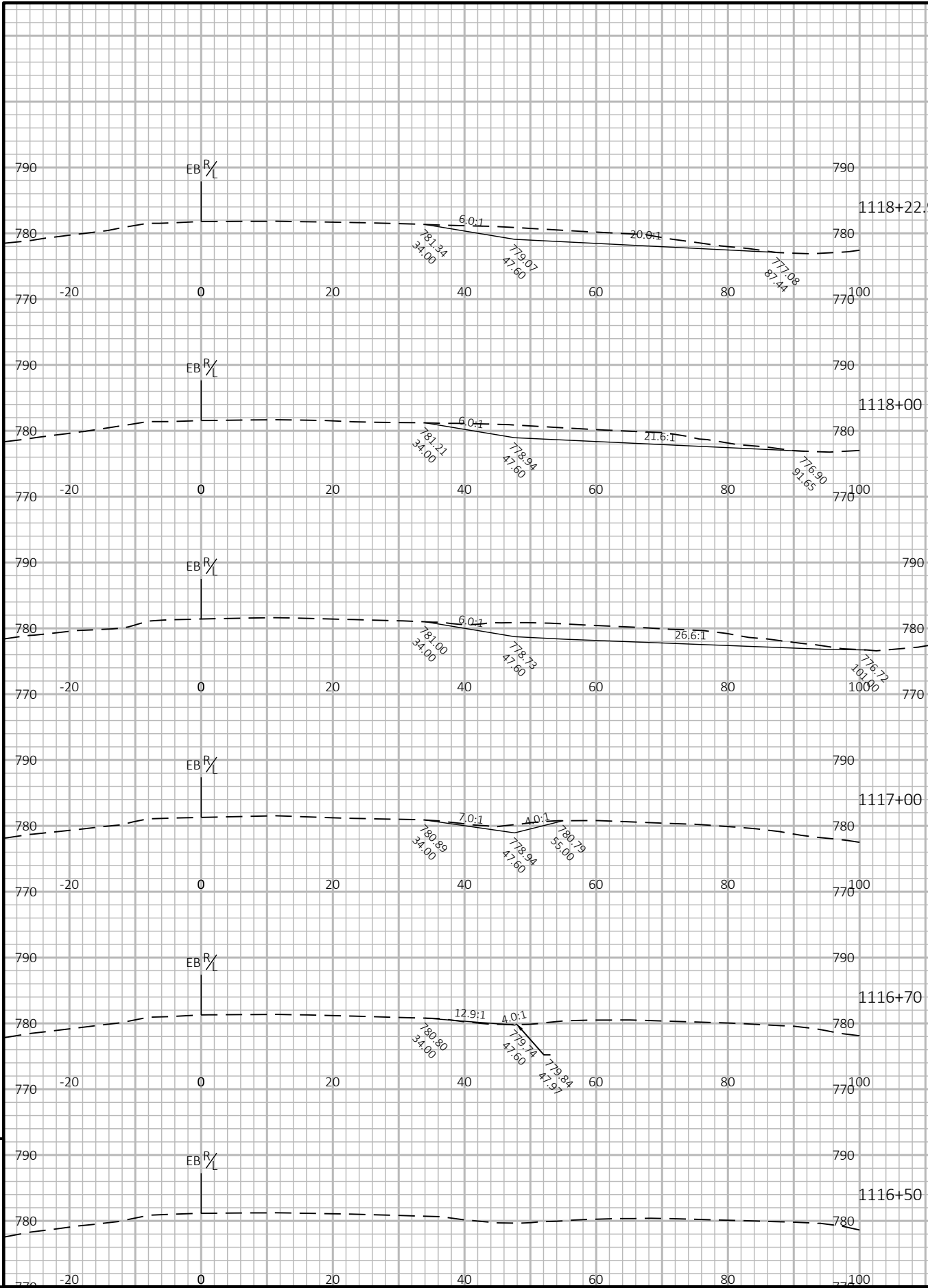


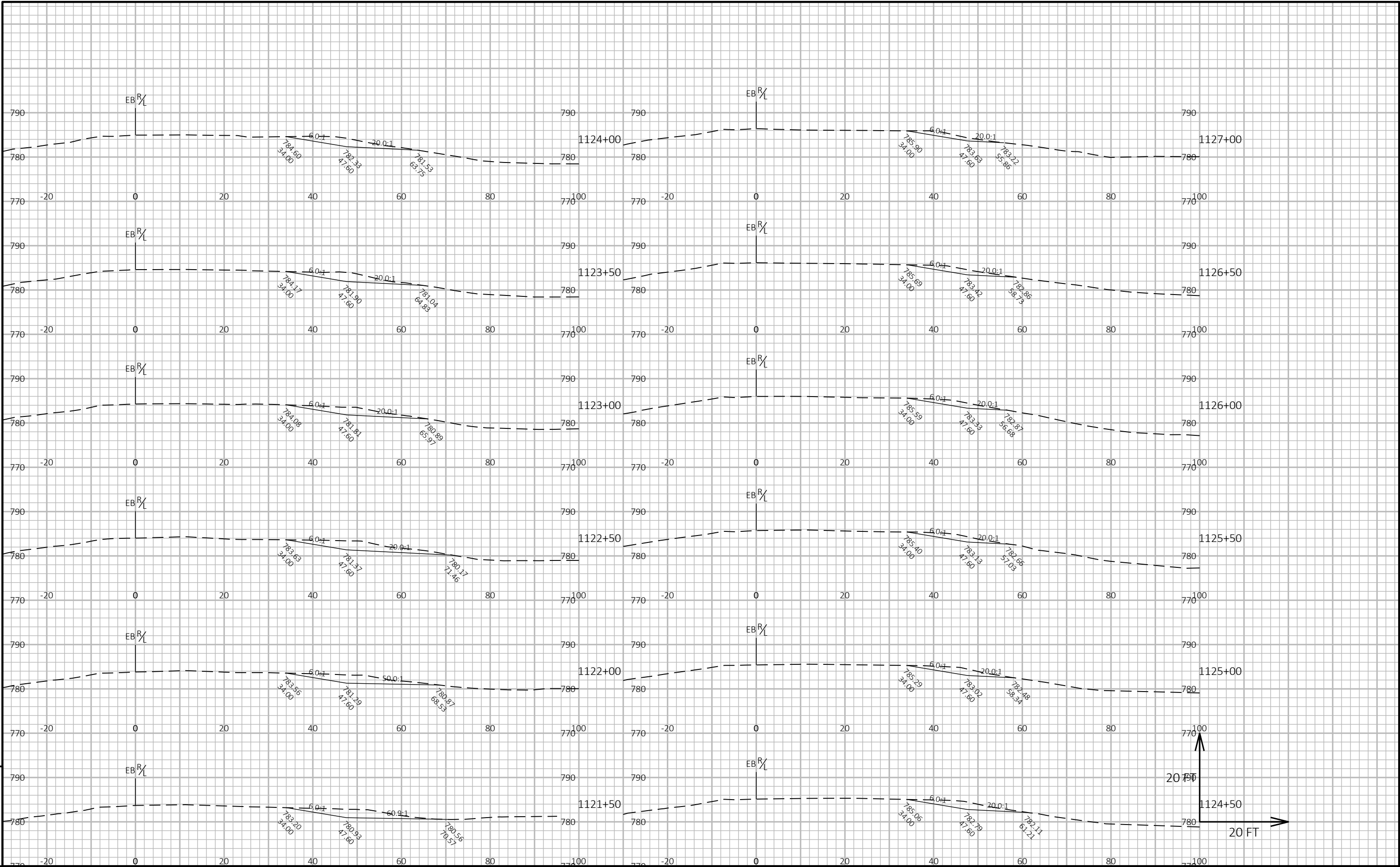
END OF DECK TRANSITIONAL AREA DETAIL

* REMOVE 1/4" TO 5/16" OF CONCRETE ADJACENT TO END OF DECK AND TAPER A DISTANCE OF 3-FEET

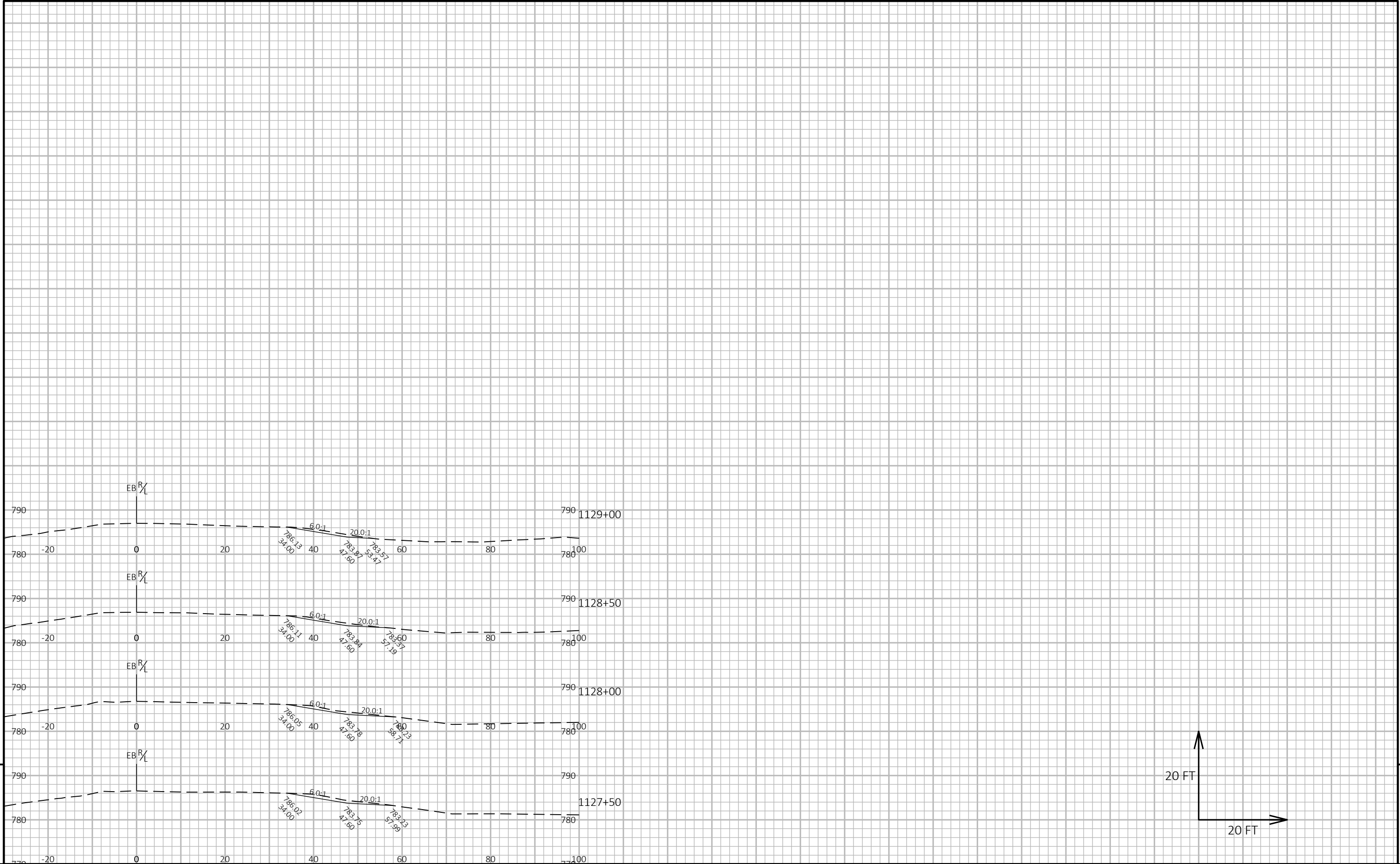


PROJECT NO: 1074-00-72	HWY: IH 90	COUNTY: LA CROSSE	CROSS SECTIONS: IH 90 - REST AREA OFF RAMP	SHEET	E
------------------------	------------	-------------------	--	-------	---





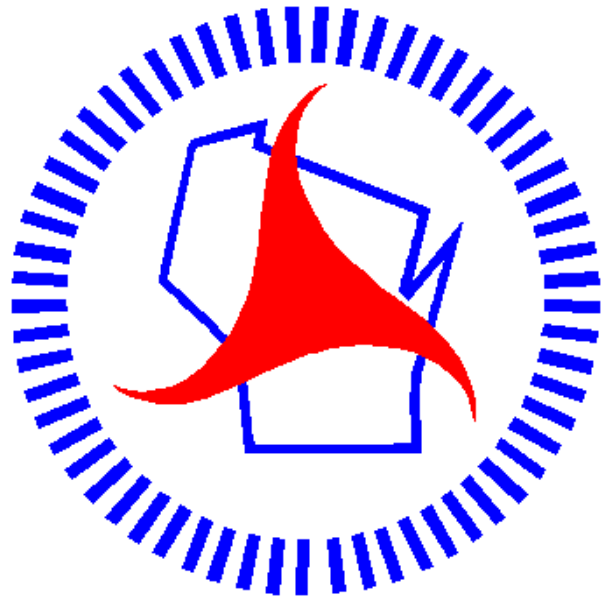
9



9

PROJECT NO: 1074-00-72	HWY: IH 90	COUNTY: LA CROSSE	CROSS SECTIONS: IH 90 - REST AREA ON RAMP	SHEET	E
------------------------	------------	-------------------	---	-------	---

Notes



Wisconsin Department of Transportation

Dedicated people creating transportation solutions
through innovation and exceptional service.

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