

spo DEC 12, 2023

PROJECT ID: 8170-01-74
WITH: N/A

COUNTY: SAWYER

ORDER OF SHEETS

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

TOTAL SHEETS = 108

PROJECT LOCATION



DESIGN DESIGNATION 8170-01-04

A.A.D.T.	2024	=	650
A.A.D.T.	2044	=	740
D.H.V.		=	20.0
D.D.		=	61/39
T.		=	21.3%
DESIGN SPEED		=	55 MPH
ESALS		=	210,000

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 OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PLAN OF PROPOSED IMPROVEMENT

OJIBWA - OXBO

LOG CREEK BRIDGE B-57-0094

STH 70

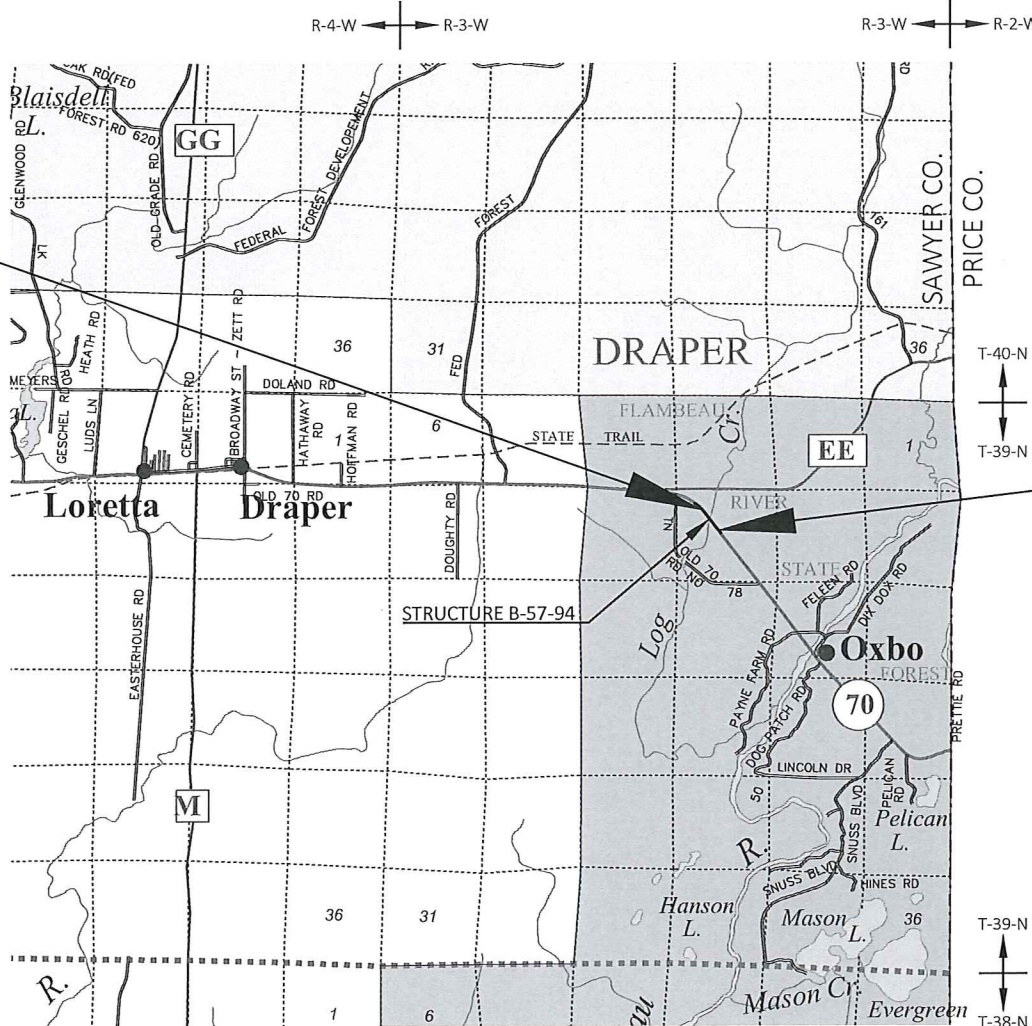
SAWYER COUNTY

STATE PROJECT NUMBER

8170-01-74

BEGIN PROJECT
STA 205+09.54
Y = 389,052.50
X = 809,142.60

END PROJECT
STA 211+70.40
Y = 388,533.86
X = 809,552.17



LAYOUT
SCALE 0 2.0 MI

TOTAL NET LENGTH OF CENTERLINE = 0.125 MI.

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

STATE PROJECT

8170-01-74

FEDERAL PROJECT

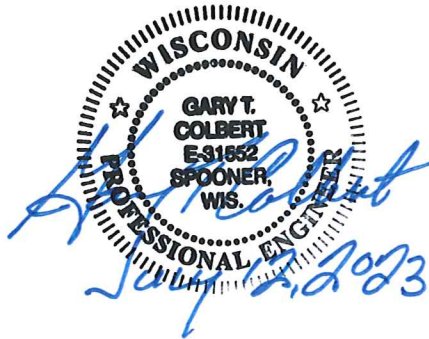
PROJECT

WISC 2024083

CONTRACT

1

ORIGINAL PLANS PREPARED BY



DATE:

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PREPARED BY

Surveyor	NWBE, INC.
Designer	NWBE, INC.
Project Manager	MATTHEW DICKENSON, PE
Regional Examiner	TOU YANG, PE
Regional Supervisor	JEFFREY OLSON, PE

APPROVED FOR THE DEPARTMENT

DATE: 7/12/2023 Matthew J. Dickenson
(Signature)

E

GENERAL NOTES

THE LOCATIONS OF EXISTING UTILITY FACILITIES AS SHOWN ON THE PLAN ARE APPROXIMATE. THERE MAY BE OTHER UTILITY INSTALLATIONS WITHIN THE PROJECT AREA THAT ARE NOT SHOWN. THE CONTRACTOR SHALL COORDINATE 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.

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

DISTURBED AREAS WITHIN THE RIGHT-OF-WAY, EXCEPT THE AREAS WITHIN THE FINISHED SHOULDER POINTS, SHALL BE SEEDED, FERTILIZED, AND COVERED WITH MULCH OR EMAT.

CURVE DATA IS BASED ON THE ARC DEFINITION.

DIMENSIONS GIVEN FOR EXISTING FEATURES SHALL BE CONSIDERED AS APPROXIMATE AND MEASURED IN THE FIELD FOR MATCHING PURPOSES.

EXACT EROSION CONTROL DEVICE LOCATIONS WILL BE DETERMINED BY THE ENGINEER.

EROSION CONTROL DEVICES SHALL BE PLACED IN SEQUENCE WITH CONSTRUCTION OPERATIONS OR AS DETERMINED BY THE ENGINEER.

DETAILS OF CONSTRUCTION NOT SHOWN ON THE PLAN SHALL BE DETERMINED IN THE FIELD BY THE ENGINEER.

DO NOT DRIVE EQUIPMENT OR STORE EQUIPMENT OR MATERIALS IN ENVIRONMENTALLY SENSITIVE AREAS, WETLANDS, OR WATERWAYS.

HMA PAVEMENT WEIGHT CALCULATIONS ARE BASED ON 112 LB/SY/IN.

APPLY TACK COAT BETWEEN LAYERS OF PAVEMENT AND TO MILLED SURFACES. THE APPLICATION RATE IS 0.05 GALLONS PER SQUARE YARD BETWEEN NEW HMA PAVEMENT LAYERS, OR AS DIRECTED BY THE ENGINEER.

SAWCUTS, AS SHOWN ON THE PLANS, ARE SUGGESTED LOCATIONS AND MAY BE ADJUSTED AT THE DISCRETION OF THE ENGINEER TO BETTER SUIT FIELD CONDITIONS.

ORDER OF SECTION 2 DETAIL SHEETS

- GENERAL NOTES
- TYPICAL SECTIONS
- CONSTRUCTION DETAILS
- EROSION CONTROL
- TRAFFIC CONTROL

DESIGN CONTACTS

NORTHERN WISCONSIN-BASED ENGINEERS, INC.
ATTN: GARY COLBERT - DESIGN ENGINEER
P.O. BOX 328
HAYWARD, WI 54843
PHONE: 715-634-4334 OFFICE
715-416-2089 MOBILE
EMAIL: GCOLBERT@NWBEINC.COM

WISDOT BUREAU OF STRUCTURES
ATTN: IAN LINDLOFF - STRUCTURAL ENGINEER
4822 MADISON YARDS WAY
MADISON, WI 53705
PHONE: 608-261-2557 OFFICE
EMAIL: IAN.LINDLOFF@DOT.WI.GOV

UTILITY CONTACTS

NORTH CENTRAL POWER COMPANY INC
ATTN: MIKE HEATH
P.O. BOX 68
RADISSON, WI 54867
PHONE: 715-945-2630 OFFICE
715-492-6407 MOBILE
EMAIL: NCPMIKE85@YAHOO.COM

WISDOT CONTACT

WISCONSIN DEPARTMENT OF TRANSPORTATION
ATTN: MATT DICKENSON - PROJECT ENGINEER
NW REGION - SUPERIOR
1701 N. 4TH STREET
SUPERIOR, WI 54880
PHONE: 715-395-3022 OFFICE
715-225-9446 MOBILE
EMAIL: MATTHEW.DICKENSON@DOT.WI.GOV

WDNR CONTACT

WISCONSIN DEPARTMENT OF NATURAL RESOURCES
ATTN: SHAWN HASELEU - TRANSPORTATION LIAISON
NORTHERN REGION HEADQUARTERS
810 W. MAPLE STREET
SPOONER, WI 54801
PHONE: 715-635-4228 OFFICE
715-416-0478 MOBILE
EMAIL: SHAWN.HASELEU@WISCONSIN.GOV



Dial 811 or (800)242-8511

www.DiggersHotline.com

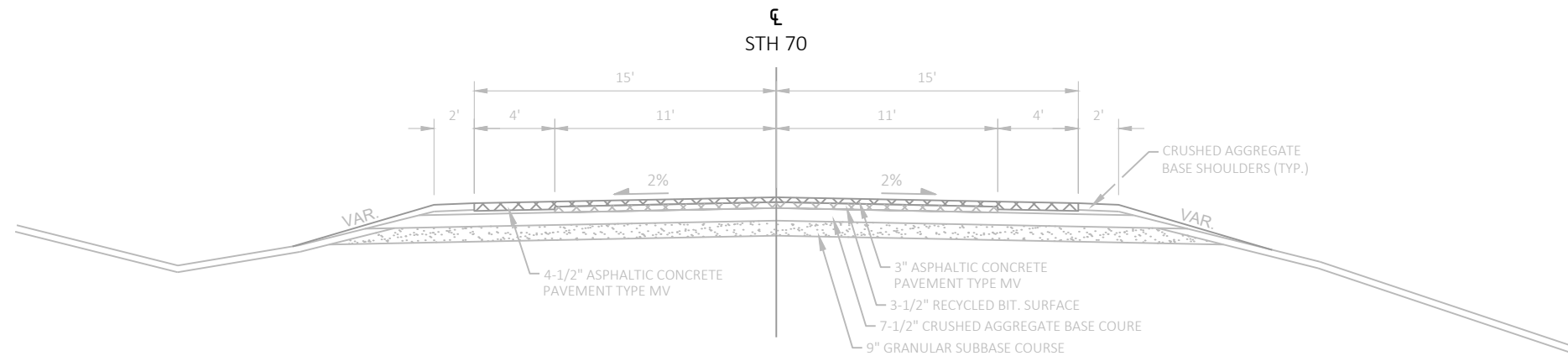
RUNOFF COEFFICIENT TABLE

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

TOTAL PROJECT AREA = 0.8 ACRES
TOTAL AREA EXPECTED TO BE DISTURBED BY CONSTRUCTION ACTIVITIES = 0.48 ACRES

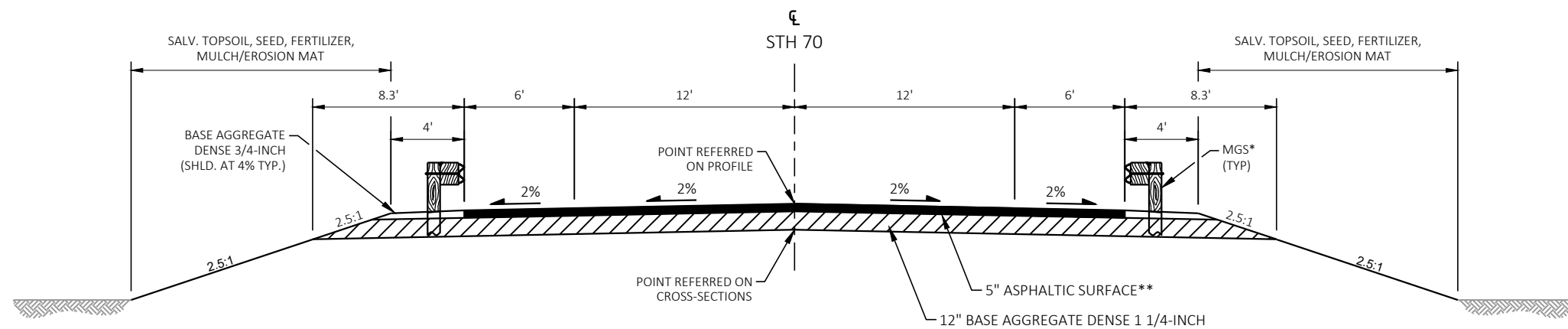
LIST OF STANDARD ABBREVIATIONS

ABUT.A.	ABUTMENT	ELEC.	ELECTRIC	P.E.	PRIVATE ENTRANCE
AGG.	AGGREGATE	EL. OR ELEV.	ELEVATION	PROJ.	PROJECT
AH.	AHEAD	ESALS	EQUIVALENT SINGLE AXLE LOADS	R.	RANGE
AADT	ANNUAL AVERAGE DAILY TRAFFIC	E.B.S.	EXCAVATION BELOW SUBGRADE	REQD.	REQUIRED
APPROX.	APPROXIMATE	EXIST.	EXISTING	R/L	REFERENCE LINE
A.E.W.	APRON END WALL	FERT.	FERTILIZE	RT.	RIGHT
ASPH.F.	ASPHALTIC	F.E.	FIELD ENTRANCE	R.H.F.	RIGHT-HAND FORWARD
BK.	BACK	FIN.	FINISHED	R/W	RIGHT-OF-WAY
BEG.	BEGIN	F.L. OR	FLOW LINE	RD.	ROAD
B.M.	BENCH MARK	HORIZ.	HORIZONTAL	SHLD.	SHOULDER
C/L OR	CENTER LINE	INL.	INLET	S.	SOUTH
C.E.	COMMERCIAL ENTRANCE	INT.	INTERSECTION	S.D.D.	STANDARD DETAIL DRAWINGS
CONC.	CONCRETE	INV.	INVERT	S.T.H.	STATE TRUNK HIGHWAYS
CONSTR.	CONSTRUCTION	LT.	LEFT	STA.	STATION
CO.	COUNTY	L.H.F.	LEFT-HAND FORWARD	STRUCT.	STRUCTURE
C.T.H.	COUNTY TRUNK HIGHWAY	L.I.	LINEAR FOOT	TEL.	TELEPHONE
X-SEC.	CROSS SECTION	L.S.	LUMP SUM	TEMP.	TEMPORARY
CR.	CRUSHED	MAX.	MAXIMUM	TN.	TOWN
CULV.	CULVERT	MISC.	MISCELLANEOUS	T.	TRUCKS (PERCENT OF)
C.P.	CULVERT PIPE	N.	NORTH	TYP.	TYPICAL
D.O.T.	DEPARTMENT OF TRANSPORTATION	Y	NORTH GRID COORDINATE	U.G.	UNDERGROUND
D.H.V.	DESIGN HOUR VOLUME	N.E.	NORTHEAST	VAR.	VARIABLE
DIA.	DIAMETER	N.W.	NORTHWEST	V.	VELOCITY OR DESIGN SPEED
DISCH. OR DIS.	DISCHARGE	PAVT.	PAVEMENT	V.C.	VERTICAL CURVE
E.	EAST	P.C.	POINT OF CURVATURE	W.	WEST
X	EAST GRID COORDINATE	P.I.	POINT OF INTERSECTION	WB	WESTBOUND
EB	EASTBOUND	P.T.	POINT OF TANGENCY	W.A.	WORKING DAY
EA.	EACH	P.O.T.	POINT ON TANGENT	WZ	WORK ZONE



EXISTING TYPICAL SECTION - STH 70

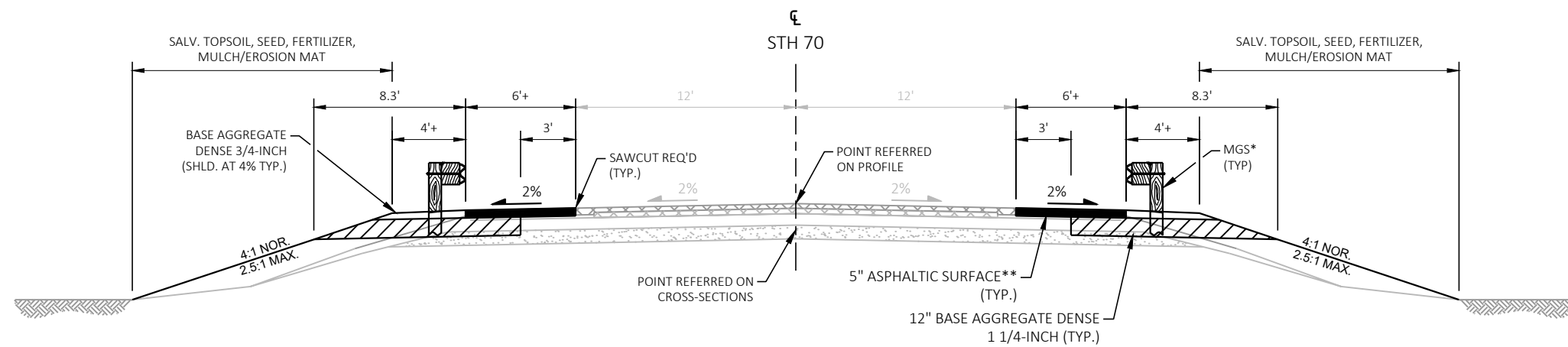
STA. 205+09.54 - 211+70.40



PROPOSED TYPICAL SECTION - STH 70

STA. 207+89.00- 208+17.71
STA. 208+62.29 - 209+50.00

- * MIDWEST GUARDRAIL SYSTEM. SEE SDD 14B42, 14B44, 14B45 FOR MGS THRIE BEAM, GUARDRAIL AND AND ENERGY ABSORBING TERMINAL POST AND RAIL DETAILS.
- ** ASPHALTIC SURFACE MIX DESIGN SHALL MEETING THE FOLLOW REQUIREMENTS:
2-1/4" HMA PAVEMENT 4 MT 58-34 S (UPPER LAYER)
2-3/4" HMA PAVEMENT 4 MT 58-34 S (LOWER LAYER)



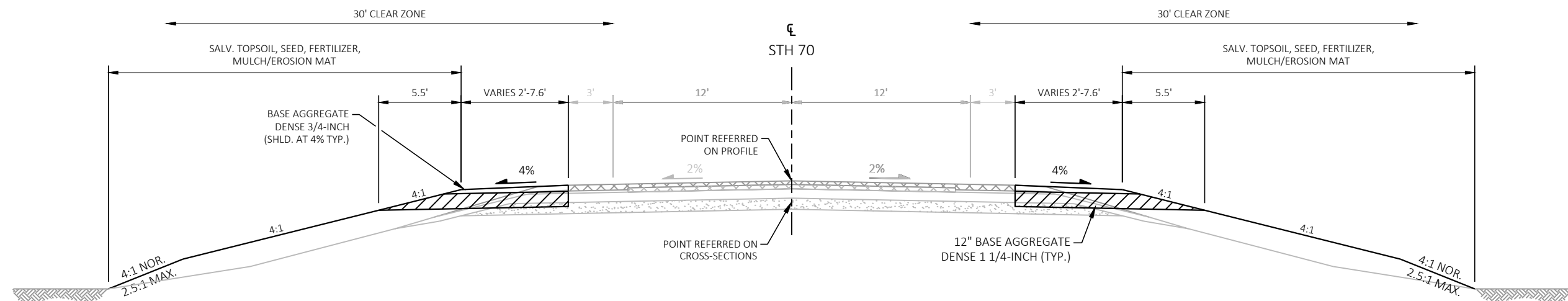
PROPOSED TYPICAL SECTION - STH 70

STA. 205+93.6 - 207+89.0
STA. 209+50.0 - 210+86.3

* MIDWEST GUARDRAIL SYSTEM. SEE SDD 14B42, 14B44, 14B45 FOR MGS THRIE BEAM, GUARDRAIL AND ENERGY ABSORBING TERMINAL POST AND RAIL DETAILS.

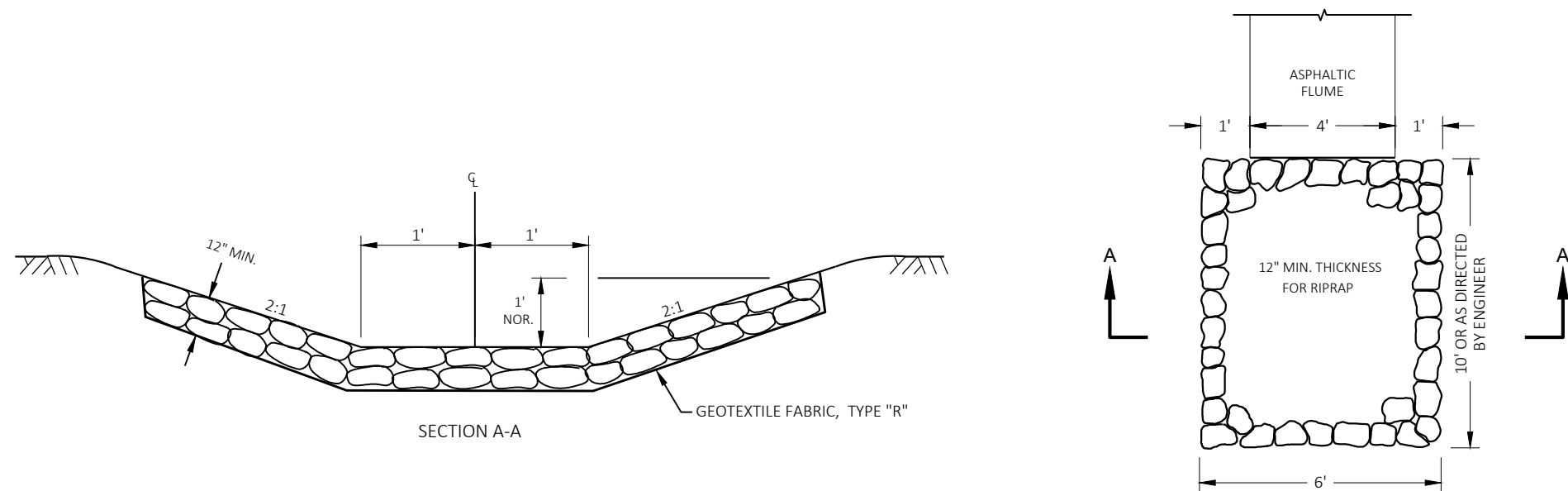
** ASPHALTIC SURFACE MIX DESIGN SHALL MEETING THE FOLLOW REQUIREMENTS:
2-1/4" HMA PAVEMENT 4 MT 58-34 S (UPPER LAYER)
2-3/4" HMA PAVEMENT 4 MT 58-34 S (LOWER LAYER)

+ ASPHALT SHOULDER WIDTH VARIES 3'-8'. BASE AGGREGATE SHOULDER WIDTH VARIES 4.0'-7.6'.

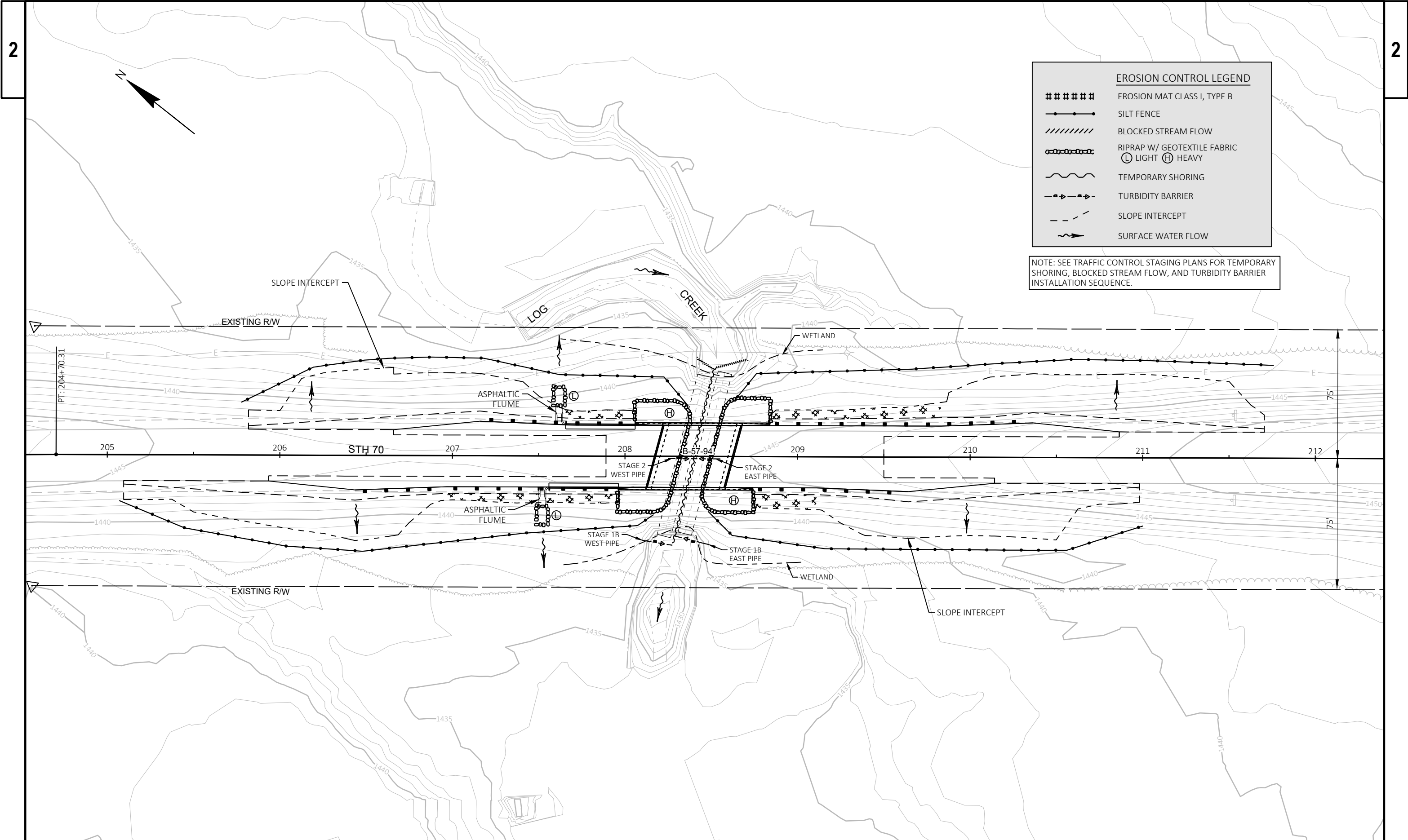





PROPOSED TYPICAL SECTION - STH 70

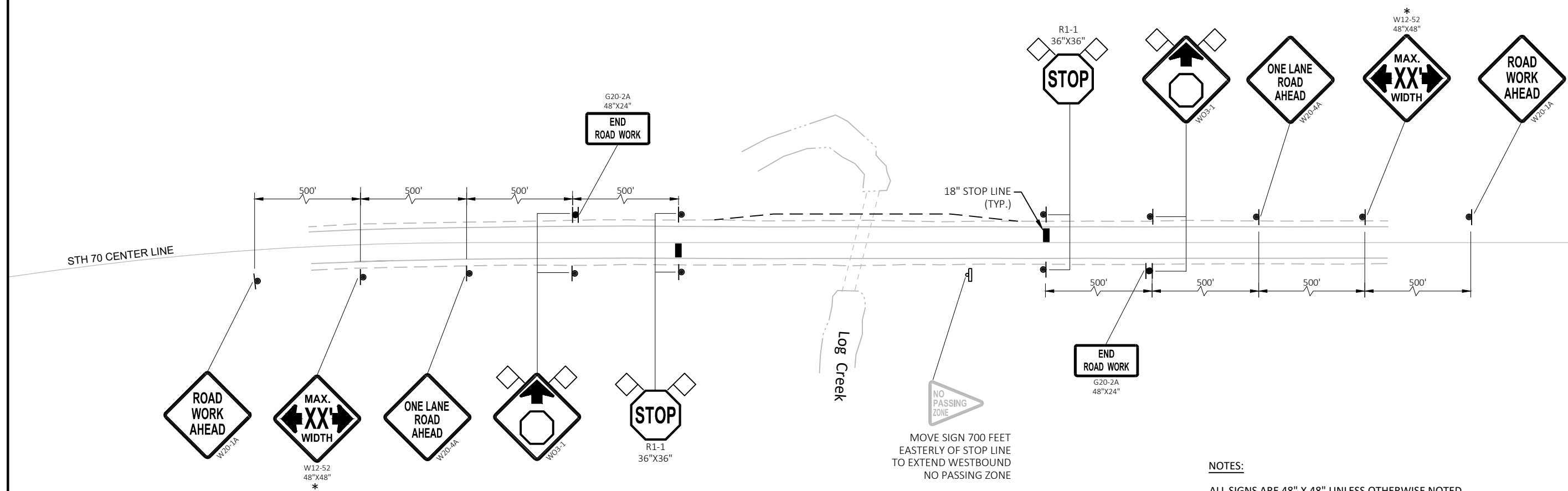
STA. 205+09.5 - 206+65.8
STA. 210+14.2 - 211+70.4



DETAIL FOR RIPRAP AND GEOTEXTILE AT ASPHALTIC FLUMES



	EXISTING SIGN
	SIGN ON PERMANENT SUPPORT
	FLAGS, 16" X 16" MIN. (ORANGE)



NOTES:

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

SEE SDD "TRAFFIC CONTROL, ONE LANE ROAD STOP CONDITION" FOR GENERAL NOTES. NOTE #4 SPECIFIES LENGTH OF NO PASSING ZONE AND DOUBLE YELLOW TEMPORARY MARKING LINES. EASTBOUND NO PASSING LINE MUST BE EXTENDED FROM STOP LINE TO CONNECT TO EXISTING NO PASSING ZONE.

SEE TRAFFIC CONTROL STAGING DETAILS SHEETS FOR ADDITIONAL SIGNING AND DEVICES REQUIRED FOR EACH TRAFFIC STAGING CHANGE.

* W12-52 SIGN MAX. WIDTH = 11' FOR STAGE 1B; MAX. WIDTH = 13' FOR STAGE 2.

SEE SDD "ADVANCED WIDTH RESTRICTION SIGNING" FOR REQUIRED SIGNS AT INTERSECTIONS OF STH 70 & STH 27 (22 MI), STH 70 & CTH EE (0.6 MI), STH 70 & STH 13 (17 MI), AND AT STH 70 & CTH B (14.5 MI).

Stage 1A Work

Grade for temporary widening using 3/4-inch base aggregate and pave temporary asphalt as shown. Blend 10:1 tapers into existing gravel shoulders.

Sawcut asphalt pavement 6 feet LT (longitudinally) from Sta. 207+89-208+91. See plan & profile sheet for transverse sawcut locations. Exact locations to be determined by the engineer in the field.

Stage 1B Work

Block inlet stream flow of westerly culvert pipe to divert water into easterly culvert pipe as shown on erosion control detail sheet.

Install temporary shoring longitudinally from approximate Sta. 207+89-208+91, 5 feet LT. Use care over existing pipes to prevent damage to the same.

Install temporary shoring transversely along the edge of and parallel with the east culvert pipe. Install turbidity barrier on south end of westerly pipe.

Install "Concrete Barrier Temporary Precast" as shown on Standard Detail Drawing 14B7 16a-16e and on this TC detail sheet.

Place temporary marking lines and traffic control devices as shown on this TC detail sheet and Standard Detail Drawing "One Lane Road with Stop Condition".

Begin excavation for structure. Cut existing westerly culvert pipe at 4 feet LT and remove downstream pipe end.

Construct westerly abutment with riprap to highway centerline.

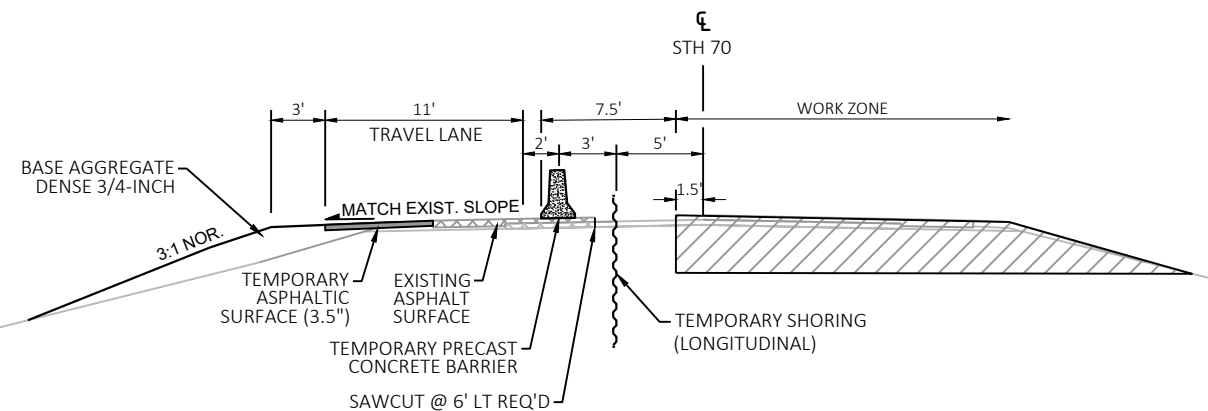
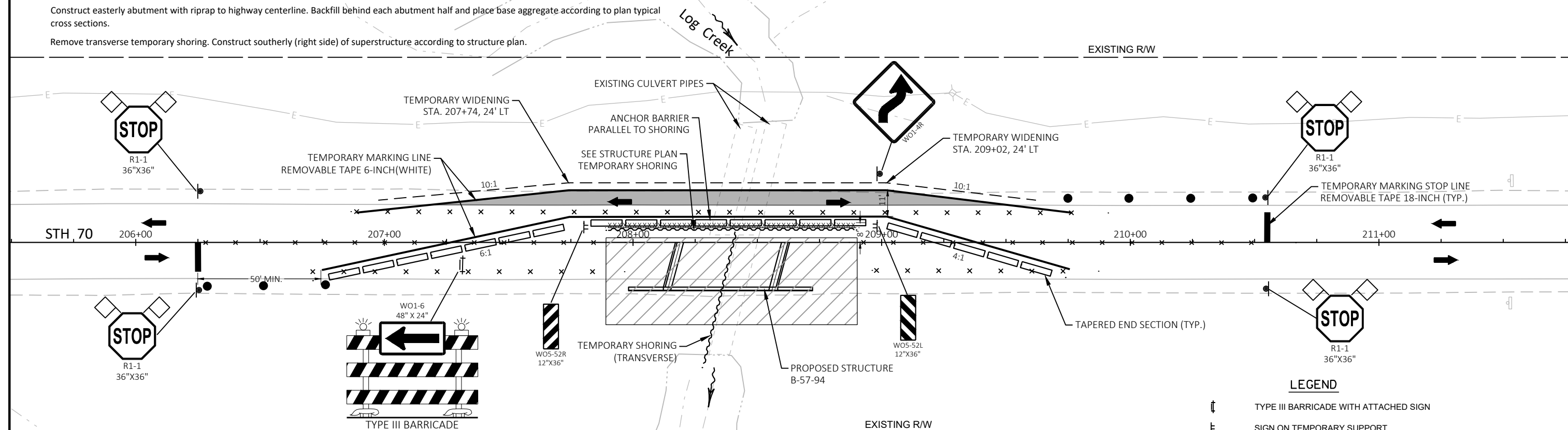
Block inlet stream flow of easterly culvert pipe to divert water into westerly culvert pipe as shown on erosion control detail sheet.

Install turbidity barrier on south end of easterly pipe.

Continue excavation for structure. Cut existing easterly culvert pipe at 4 feet LT and remove downstream pipe end.

Construct easterly abutment with riprap to highway centerline. Backfill behind each abutment half and place base aggregate according to plan typical cross sections.

Remove transverse temporary shoring. Construct southerly (right side) of superstructure according to structure plan.

**TRAFFIC CONTROL SECTION - STAGE 1B****LEGEND**

	TYPE III BARRICADE WITH ATTACHED SIGN
	SIGN ON TEMPORARY SUPPORT
	SIGN ON PERMANENT SUPPORT
	TRAFFIC CONTROL DRUM
	WARNING FLASHER LIGHT - TYPE A
	FLAGS, 16" X 16" MIN. (ORANGE)
	ASPHALT SAW CUT
	MARKING LINE REMOVAL
	TEMPORARY SHORING (SHEET PILING)
	CONCRETE BARRIER TEMPORARY PRECAST
	DIRECTION OF TRAFFIC
	STAGE 1B STRUCTURE WORK AREA
	ASPHALTIC SURFACE TEMPORARY

NOTES:

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

SEE SDD "TRAFFIC CONTROL, ONE LANE ROAD STOP CONDITION" AND TC ADVANCE SIGNING DETAIL SHEET FOR GENERAL NOTES AND ADDITIONAL REQUIRED SIGNING.

TEMPORARY SHORING TYPE IS AT CONTRACTOR'S DISCRETION. SHEET PILING IS SHOWN ON TC STAGING DETAILS AT APPROXIMATE LOCATIONS. OPTIMAL LOCATIONS FOR SOIL CONTAINMENT OR WATER DIVERSION WILL BE DETERMINED IN THE FIELD.

THE METHOD USED TO BLOCK STREAM FLOW INTO AN EXISTING CULVERT PIPE IS INCIDENTAL TO EXCAVATION FOR STRUCTURES.

STAGE 1A & 1B DETAIL

PROJECT NO: 8170-01-74

HWY: STH 70

COUNTY: SAWYER

TRAFFIC CONTROL STAGING DETAILS

SHEET

E

Pre-Stage 2 Work

Remove temporary shoring left of centerline. Install longitudinal temporary shoring 1.0 feet right of centerline on each end of abutments within the excavation limits. Exact location to be determined by the engineer in the field.

Place base aggregate dense 1 1/4-inch and pave lower layer asphaltic surface for Stage 2 driving surface from each end of new structure to transverse sawcuts. Install MGS guardrail prior to traffic switch.

Stage 2 Work

Move "Concrete Barrier Temporary Precast" to southerly side using a flagging operation. Install as shown on Standard Detail Drawing 14B7 16a-16e and on this TC detail sheet.

Place temporary marking lines and traffic control devices as shown on this TC detail sheet and Standard Detail Drawing "One Lane Road with Stop Condition".

Install temporary shoring transversely along the edge of and parallel with the westerly culvert pipe. Install turbidity barrier on south side of easterly pipe segment.

Continue to excavate for structure and remove remaining segment of easterly culvert pipe.

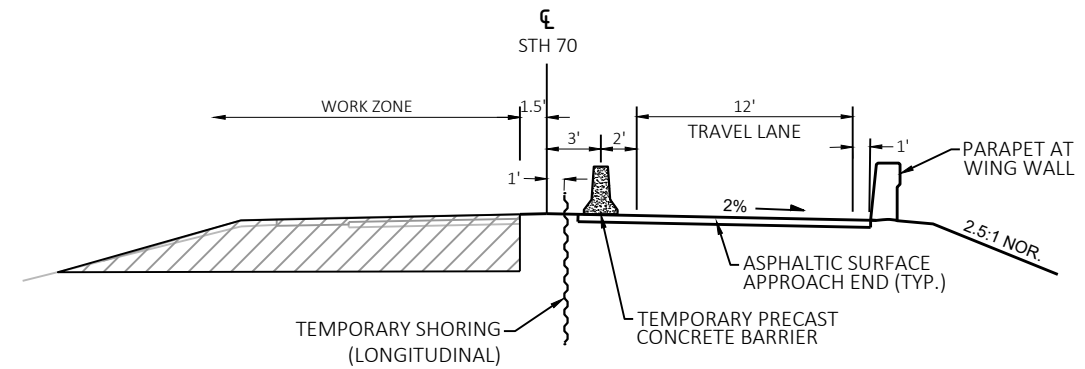
Construct easterly abutment with riprap to tie into Stage 1B substructure.

Block inlet stream flow of westerly culvert pipe to divert water into easterly side of stream bed. Move turbidity barrier to south side of westerly pipe segment. Remove remaining westerly pipe segment.

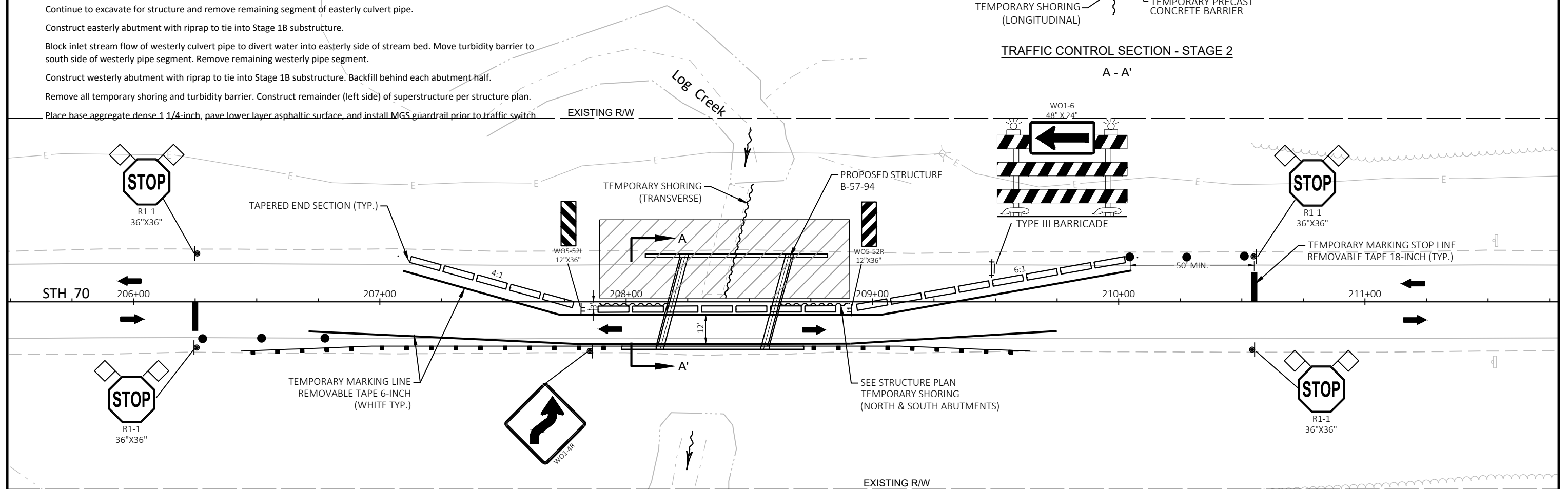
Construct westerly abutment with riprap to tie into Stage 1B substructure. Backfill behind each abutment half.

Remove all temporary shoring and turbidity barrier. Construct remainder (left side) of superstructure per structure plan.

Place base aggregate dense 1 1/4-inch, pave lower layer asphaltic surface, and install MGS guardrail prior to traffic switch

**TRAFFIC CONTROL SECTION - STAGE 2**

A - A'

**LEGEND**

- TYPE III BARRICADE WITH ATTACHED SIGN
- SIGN ON TEMPORARY SUPPORT
- SIGN ON PERMANENT SUPPORT
- TRAFFIC CONTROL DRUM
- WARNING FLASHER LIGHT - TYPE A
- FLAGS, 16" X 16" MIN. (ORANGE)
- ASPHALT SAW CUT
- MARKING LINE REMOVAL
- TEMPORARY SHORING (SHEET PILING)
- CONCRETE BARRIER TEMPORARY PRECAST
- DIRECTION OF TRAFFIC
- STAGE 2 STRUCTURE WORK AREA

NOTES:

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

SEE SDD "TRAFFIC CONTROL, ONE LANE ROAD STOP CONDITION" AND TC DETAIL SHEET WITH SIGN CHANGES FOR GENERAL NOTES AND ADDITIONAL REQUIRED SIGNING.

TEMPORARY SHORING TYPE IS AT CONTRACTOR'S DISCRETION. SHEET PILING IS SHOWN ON TC STAGING DETAILS AT APPROXIMATE LOCATIONS. OPTIMAL LOCATIONS FOR WATER DIVERSION OR SOIL CONTAINMENT WILL BE DETERMINED IN THE FIELD.

THE METHOD USED TO BLOCK STREAM FLOW INTO AN EXISTING CULVERT PIPE IS INCIDENTAL TO EXCAVATION FOR STRUCTURES.

STAGE 2 DETAIL

PROJECT NO: 8170-01-74

HWY: STH 70

COUNTY: SAWYER

TRAFFIC CONTROL STAGING DETAILS

SHEET

E

FILE NAME : \\NW\BESERVER\DRAWINGS\NWBE_PROJECTS\DESIGN\1913_STH70-LOGCREEK-CULVERT\C3D-18\SHEETSP\PLAN\025001_TC-STAGING.DWG
LAYOUT NAME - TC-Stage-2

PLOT DATE : 8/1/2023 2:03 PM

PLOT BY : USER

PLOT NAME :

PLOT SCALE : 1 IN:40 FT

WISDOT/CADDs SHEET 42

Estimate Of Quantities

8170-01-74

Line	Item	Item Description	Unit	Total	Qty
0002	203.0220	Removing Structure (structure) 01. C-57-26	EACH	1.000	1.000
0004	204.0110	Removing Asphaltic Surface	SY	174.000	174.000
0006	205.0100	Excavation Common	CY	540.000	540.000
0008	206.1001	Excavation for Structures Bridges (structure) 01. B-57-94	EACH	1.000	1.000
0010	208.0100	Borrow	CY	157.000	157.000
0012	210.1500	Backfill Structure Type A	TON	514.000	514.000
0014	211.0400	Prepare Foundation for Asphaltic Shoulders	STA	7.000	7.000
0016	213.0100	Finishing Roadway (project) 01. 8170-01-74	EACH	1.000	1.000
0018	305.0110	Base Aggregate Dense 3/4-Inch	TON	326.000	326.000
0020	305.0120	Base Aggregate Dense 1 1/4-Inch	TON	1,040.000	1,040.000
0022	455.0605	Tack Coat	GAL	45.000	45.000
0024	465.0105	Asphaltic Surface	TON	224.000	224.000
0026	465.0125	Asphaltic Surface Temporary	TON	24.000	24.000
0028	465.0315	Asphaltic Flumes	SY	12.000	12.000
0030	502.0100	Concrete Masonry Bridges	CY	190.000	190.000
0032	502.3200	Protective Surface Treatment	SY	192.000	192.000
0034	502.3210	Pigmented Surface Sealer	SY	77.000	77.000
0036	503.0128	Prestressed Girder Type I 28-Inch	LF	215.000	215.000
0038	505.0400	Bar Steel Reinforcement HS Structures	LB	5,360.000	5,360.000
0040	505.0600	Bar Steel Reinforcement HS Coated Structures	LB	19,640.000	19,640.000
0042	505.0906	Bar Couplers No. 6	EACH	22.000	22.000
0044	505.0908	Bar Couplers No. 8	EACH	14.000	14.000
0046	506.2605	Bearing Pads Elastomeric Non-Laminated	EACH	10.000	10.000
0048	506.4000	Steel Diaphragms (structure) 01. B-57-94	EACH	4.000	4.000
0050	511.1100	Temporary Shoring	SF	1,105.000	1,105.000
0052	511.1200	Temporary Shoring (structure) 01. B-57-94	SF	902.000	902.000
0054	516.0500	Rubberized Membrane Waterproofing	SY	24.000	24.000
0056	550.2108	Piling CIP Concrete 10 3/4 X 0.50-Inch	LF	840.000	840.000
0058	601.0588	Concrete Curb & Gutter 4-Inch Sloped 36-Inch Type TBT	LF	81.000	81.000
0060	603.8000	Concrete Barrier Temporary Precast Delivered	LF	300.000	300.000
0062	603.8125	Concrete Barrier Temporary Precast Installed	LF	600.000	600.000
0064	603.8500	Anchoring Concrete Barrier Temporary Precast	LF	100.000	100.000
0066	606.0100	Riprap Light	CY	6.000	6.000
0068	606.0300	Riprap Heavy	CY	227.000	227.000
0070	612.0406	Pipe Underdrain Wrapped 6-Inch	LF	144.000	144.000
0072	614.0150	Anchor Assemblies for Steel Plate Beam Guard	EACH	4.000	4.000
0074	614.2300	MGS Guardrail 3	LF	125.000	125.000
0076	614.2500	MGS Thrie Beam Transition	LF	158.000	158.000
0078	614.2610	MGS Guardrail Terminal EAT	EACH	4.000	4.000
0080	618.0100	Maintenance And Repair of Haul Roads (project) 01. 8170-01-74	EACH	1.000	1.000
0082	619.1000	Mobilization	EACH	1.000	1.000
0084	624.0100	Water	MGAL	24.000	24.000
0086	625.0500	Salvaged Topsoil	SY	1,587.000	1,587.000
0088	627.0200	Mulching	SY	2,735.000	2,735.000
0090	628.1504	Silt Fence	LF	1,400.000	1,400.000
0092	628.1520	Silt Fence Maintenance	LF	1,400.000	1,400.000
0094	628.1905	Mobilizations Erosion Control	EACH	6.000	6.000
0096	628.1910	Mobilizations Emergency Erosion Control	EACH	3.000	3.000
0098	628.2004	Erosion Mat Class I Type B	SY	299.000	299.000

Estimate Of Quantities

8170-01-74					
Line	Item	Item Description	Unit	Total	Qty
0100	628.6005	Turbidity Barriers	SY	52.000	52.000
0102	629.0210	Fertilizer Type B	CWT	5.800	5.800
0104	630.0110	Seeding Mixture No. 10	LB	38.000	38.000
0106	630.0200	Seeding Temporary	LB	241.000	241.000
0108	630.0300	Seeding Borrow Pit	LB	80.000	80.000
0110	630.0500	Seed Water	MGAL	38.000	38.000
0112	634.0614	Posts Wood 4x6-Inch X 14-FT	EACH	4.000	4.000
0114	637.2230	Signs Type II Reflective F	SF	12.000	12.000
0116	638.2102	Moving Signs Type II	EACH	2.000	2.000
0118	638.4000	Moving Small Sign Supports	EACH	2.000	2.000
0120	642.5001	Field Office Type B	EACH	1.000	1.000
0122	643.0300	Traffic Control Drums	DAY	870.000	870.000
0124	643.0420	Traffic Control Barricades Type III	DAY	221.000	221.000
0126	643.0705	Traffic Control Warning Lights Type A	DAY	442.000	442.000
0128	643.0900	Traffic Control Signs	DAY	4,829.000	4,829.000
0130	643.3180	Temporary Marking Line Removable Tape 6-Inch	LF	2,702.000	2,702.000
0132	643.3850	Temporary Marking Stop Line Removable Tape 18-Inch	LF	24.000	24.000
0134	643.5000	Traffic Control	EACH	1.000	1.000
0136	645.0111	Geotextile Type DF Schedule A	SY	70.000	70.000
0138	645.0120	Geotextile Type HR	SY	424.000	424.000
0140	645.0130	Geotextile Type R	SY	20.000	20.000
0142	646.2020	Marking Line Epoxy 6-Inch	LF	1,100.000	1,100.000
0144	646.9000	Marking Removal Line 4-Inch	LF	815.000	815.000
0146	650.4500	Construction Staking Subgrade	LF	1,084.000	1,084.000
0148	650.5000	Construction Staking Base	LF	1,084.000	1,084.000
0150	650.5500	Construction Staking Curb Gutter and Curb & Gutter	LF	81.000	81.000
0152	650.6501	Construction Staking Structure Layout (structure) 01. B-57-94	EACH	1.000	1.000
0154	650.9911	Construction Staking Supplemental Control (project) 01. 8170-01-74	EACH	1.000	1.000
0156	650.9920	Construction Staking Slope Stakes	LF	1,020.000	1,020.000
0158	690.0150	Sawing Asphalt	LF	720.000	720.000
0160	715.0502	Incentive Strength Concrete Structures	DOL	1,140.000	1,140.000
0162	ASP.1T0A	On-the-Job Training Apprentice at \$5.00/HR	HRS	300.000	300.000
0164	ASP.1T0G	On-the-Job Training Graduate at \$5.00/HR	HRS	300.000	300.000

REMOVING ASPHALTIC SURFACE

204.0110 REMOVING ASPHALTIC SURFACE				
CAT 0010				
STATION	- STATION	LOCATION		SY
205+94	- 207+89	STH 70	RT	65
206+66	- 207+89	STH 70	LT	41
209+50	- 210+14	STH 70	RT	22
209+50	- 210+86	STH 70	LT	46
PROJECT TOTAL				174

NOTE: ITEM FOR REMOVAL OF 3-FT PAVED SHOULDER

PREPARE FOUNDATION FOR ASPHALTIC SHOULDERS

211.0400 PREPARE FOUNDATION FOR ASPHALTIC SHOULDERS				
CAT 0010				
STATION	- STATION	LOCATION		STA
205+94	- 207+89	STH 70	RT	2
206+66	- 207+89	STH 70	LT	2
209+50	- 210+14	STH 70	RT	1
209+50	- 210+86	STH 70	LT	2
PROJECT TOTAL				7

FINISHING ROADWAY

213.0100 FINISHING ROADWAY 01.8170-01-74	
CAT 0010	LOCATION
PROJECT LIMITS	
PROJECT TOTAL	

EARTHWORK SUMMARY

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 1.17				
DIVISION 1												
EW_70_TEMPBYPASS-L	206+54.00/209+92.00	STH 70	45	0	0	45	16	19	26	26	0	
DIVISION 1 SUBTOTAL			45	0	0	45	16	19	26	26	0	
DIVISION 2												
EW_70_R	205+09.54/210+98.25	STH 70	268	0	0	268	155	181	87	87	0	
DIVISION 2 SUBTOTAL			268	0	0	268	155	181	87	87	0	
DIVISION 3												
EW_70_L	205+81.76/211+70.40	STH 70	227	0	0	227	328	384	-157	0	157	
DIVISION 3 SUBTOTAL			227	0	0	227	328	384	-157	0	157	
GRAND TOTAL			540	0	0	540	499	584	-44	113	157	
TOTAL COMMON EXC			540									

- NOTES:
- (1) COMMON EXCAVATION IS THE SUM OF THE CUT AND EBS EXCAVATION COLUMNS. ITEM NUMBER 205.0100
 - (2) SALVAGED/UNSUABLE PAVEMENT MATERIAL IS INCLUDED IN CUT.
 - (3) EBS EXCAVATION TO BE BACKFILLED WITH SELECT BORROW MATERIAL. NOTE: THIS IS DESIGNERS CHOICE, CAN BE BACKFILLED WITH BORROW, OR CUT AS WELL.
 - (4) SALVAGED/UNUSABLE PAVEMENT MATERIAL
 - 5) AVAILABLE MATERIAL = CUT - SALVAGED/UNUSABLE PAVEMENT MATERIAL
 - (13) EXPANDED FILL FACTOR = 1.17
 - (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.

ALL ITEMS ARE CATEGORY 0010 UNLESS OTHERWISE NOTED.

BASE AGGREGATE DENSE 3/4-INCH

CAT 0010		305.0110 BASE AGGREGATE DENSE 3/4-INCH			COMMENT
STATION	- STATION	LOCATION	TON		
206+98	- 209+62	LT	168		STAGE 1A - TEMP WIDENING & SURFACE
205+10	- 210+98	RT	78		SHOULDERING AT GUARDRAIL
205+82	- 211+70	LT	80		SHOULDERING AT GUARDRAIL
PROJECT TOTAL			326		

BASE AGGREGATE DENSE 1 1/4-INCH

CAT 0010		305.0120 BASE AGGREGATE DENSE 1 1/4-INCH			624.0100 WATER	COMMENT
STATION	- STATION	LOCATION	TON	MGAL		
205+10	- 210+98	RT	533	12		STAGE 1B
205+82	- 211+70	LT	507	12		STAGE 2
PROJECT TOTALS			1040	24		

ASPHALT PAVING ITEMS

CAT 0010		465.0105 ASPHALTIC SURFACE			455.0605 TACK COAT	COMMENT
STATION	- STATION	LOCATION	DEPTH INCH	TON	GAL	
207+89	- 208+18	RT STH 70	2.75	8	-	EASTBOUND LOWER LAYER
208+62	- 209+50	RT STH 70	2.75	23	-	EASTBOUND LOWER LAYER
207+89	- 208+18	LT STH 70	2.75	9	-	WESTBOUND LOWER LAYER
208+62	- 209+50	LT STH 70	2.75	22	-	WESTBOUND LOWER LAYER
207+89	- 208+18	RT STH 70	2.25	6	3	EASTBOUND UPPER LAYER
208+62	- 209+50	RT STH 70	2.25	19	8	EASTBOUND UPPER LAYER
207+89	- 208+18	LT STH 70	2.25	7	3	WESTBOUND UPPER LAYER
208+62	- 209+50	LT STH 70	2.25	18	8	WESTBOUND UPPER LAYER
205+94	- 207+89	RT STH 70	5	35	7	EASTBOUND MGS & TAPER
208+58	- 210+12	RT STH 70	5	21	4	EASTBOUND MGS & TAPER
206+68	- 207+89	LT STH 70	5	22	4	WESTBOUND MGS & TAPER
208+67	- 210+84	LT STH 70	5	34	7	WESTBOUND MGS & TAPER
PROJECT TOTALS				224	45	

ASPHALTIC FLUMES AND RIPRAP ITEMS

CAT 0010		465.0315 ASPHALTIC FLUMES			606.0100 RIPRAP LIGHT	645.0130 GEOTEXTILE TYPE R
STATION	LOCATION		SY	CY	SY	
207+52	STH 70 RT		6	3		10
207+62	STH 70 LT		6	3		10
PROJECT TOTALS			12	6		20

ASPHALTIC SURFACE TEMPORARY

CAT 0010		465.0125 ASPHALTIC SURFACE TEMPORARY			COMMENT
STATION	- STATION	LOCATION	DEPTH INCH	TON	
207+18	- 209+51	LT STH 70	3.5	24	STAGE 1 TEMPORARY WIDENING
PROJECT TOTAL				24	

CONCRETE CURB & GUTTER 4-INCH

CAT 0010		601.0588 CONCRETE CURB & GUTTER 4-INCH SLOPED 36-INCH TYPE TBT LF		
STATION	- STATION	LOCATION		
207+55.9	- 207+96.2	STH 70 RT RT		40.5
207+65.6	- 208+05.8	STH 70 LT LT		40.5
PROJECT TOTAL				81

TEMPORARY SHORING

CAT 0010		511.1100 TEMPORARY SHORING			COMMENT
LOCATION	STAGE	SF			
STH 70 RT	1B	630			TRANSVERSE ALONG EAST CULV. PIPE
STH 70 LT	2	475			TRANSVERSE ALONG WEST CULV. PIPE
PROJECT TOTAL		1105			

CONCRETE BARRIER TEMPORARY PRECAST ITEMS

CAT 0010		603.8000 CONCRETE BARRIER TEMPORARY PRECAST DELIVERED			603.8125 CONCRETE BARRIER TEMPORARY PRECAST INSTALLED	603.8500 ANCHORING CONCRETE BARRIER TEMPORARY PRECAST	COMMENT
STATION	- STATION	LOCATION	STAGE	LF	LF	LF	
206+72	- 209+72	STH 70	1B	300	300	100	SEE TC STAGING DETAIL
207+10	- 210+10	STH 70	2	-	300	-	SEE TC STAGING DETAIL
PROJECT TOTALS				300	600	100	

ALL ITEMS ARE CATEGORY 0010 UNLESS OTHERWISE NOTED.

MGS BARRIER ITEMS

CAT 0010			614.2300 MGS GUARDRAIL 3	614.2500 MGS THRIE BEAM TRANSITION	614.2610 MGS GUARDRAIL TERMINAL EAT
STATION	- STATION	LOCATION	LF	LF	EACH
206+43.6	- 206+96.7	RT	-	-	1
206+96.7	- 207+59.2	RT	62.5	-	-
207+59.2	- 207+98.6	RT	-	39.4	-
208+71.7	- 209+11.1	RT	-	39.4	-
209+11.1	- 209+64.2	RT	-	-	1
207+15.8	- 207+68.9	LT	-	-	1
207+68.9	- 208+08.3	LT	-	39.4	-
208+81.3	- 209+20.7	LT	-	39.4	-
209+20.7	- 209+83.2	LT	62.5	-	-
209+83.2	- 210+36.3	LT	-	-	1
PROJECT TOTALS			125	158	4

MAINTENANCE AND REPAIR OF HAUL ROADS

		618.0100
CAT 0010		MAINTENANCE AND REPAIR OF HAUL ROADS 01. 8170-01-74
LOCATION		EACH
PROJECT	STH 70	1
PROJECT TOTAL		1

MOBILIZATION

CAT 0010		619.1000 MOBILIZATION
LOCATION		EACH
PROJECT		1
PROJECT TOTAL		1

LANDSCAPING ITEMS

CAT 0010			625.0500 SALVAGED TOPSOIL	627.0200 MULCHING	629.0210 FERTILIZER TYPE B CWT	630.0110 SEEDING MIXTURE NO. 10 LB	630.0200 SEEDING TEMPORARY LB	630.0300 SEEDING BORROW PIT LB	630.0500 SEED WATER MGAL	COMMENT
STATION	- STATION	LOCATION	SY	SY						
206+98	- 209+62	STH 70 LT	102	248	0.2	-	7	-	3	STAGE 1A
205+10	- 210+98	STH 70 RT	523	937	0.7	14	29	-	12	STAGE 1B
205+82	- 211+70	STH 70 LT	714	1,135	0.8	17	35	-	17	STAGE 2
BORROW & WASTE AREAS			-	-	3.1	-	131	66	-	
UNDISTRIBUTED			248	415	1.0	7	39	14	6	
PROJECT TOTALS			1,587	2,735	5.8	38	241	80	38	

NOTE: SEED, FERTILIZER AND MULCH QUANTITIES INCLUDE 5' BEYOND SLOPE INTERCEPT.

SILT FENCE

CAT 0010			628.1504 SILT FENCE	628.1520 SILT FENCE MAINTENANCE	COMMENT
STATION	- STATION	LOCATION	LF	LF	
205+77	- 208+37	LT	273	273	INSTALL IN STAGE 1A
208+64	- 211+76	LT	320	320	INSTALL IN STAGE 1A
205+07	- 208+17	RT	317	317	INSTALL IN STAGE 1A
208+48	- 211+00	RT	260	260	INSTALL IN STAGE 1A
UNDISTRIBUTED			230	230	
PROJECT TOTALS			1,400	1,400	

TURBIDITY BARRIERS

CAT 0010			628.6005 TURBIDITY BARRIERS		COMMENT
STATION	LOCATION		LENGTH LF	HEIGHT LF	
208+22	STH 70 RT		17	7	STAGE 1B - WESTERLY CULVERT PIPE
208+35	STH 70 RT		17	7	STAGE 1B - EASTERLY CULVERT PIPE
208+48	STH 70 RT		15	7	STAGE 2 - EASTERLY CULVERT PIPE
208+32	STH 70 RT		15	7	STAGE 2 - WESTERLY CULVERT PIPE
PROJECT TOTAL				52	

EROSION MAT

CAT 0010			628.2004 EROSION MAT CLASS I TYPE B		COMMENT
STATION	- STATION	LOCATION		SY	
206+97	- 207+96	STH 70 RT		88	STAGE 1B
208+74	- 209+11	STH 70 RT		33	STAGE 1B
207+64	- 208+07	STH 70 LT		39	STAGE 2
208+83	- 209+83	STH 70 LT		89	STAGE 2
UNDISTRIBUTED				50	
PROJECT TOTAL				299	

EROSION CONTROL MOBILIZATIONS

CAT 0010		628.1905 MOBILIZATIONS EROSION CONTROL	628.1910 MOBILIZATIONS EMERGENCY EROSION CONTROL
LOCATION		EACH	EACH
PROJECT LIMITS		6	3
PROJECT TOTALS		6	3

ALL ITEMS ARE CATEGORY 0010 UNLESS OTHERWISE NOTED.

SIGN AND POST ITEMS

CAT 0010		637.2230 SIGNS TYPE II REFLECTIVE F SF	634.0614 POSTS WOOD 4x6- INCH x 14-FT EACH	COMMENT
LOCATION	SIGN CODE			
STH 70 RT	W5-52	6	2	2 SIGNS - SOUTH SIDE OF BRIDGE
STH 70 LT	W5-52	6	2	2 SIGNS - NORTH SIDE OF BRIDGE
PROJECT TOTALS		12	4	

MOVING SIGNS AND SUPPORTS

CAT 0010		638.2102 MOVING SIGNS TYPE II EACH	638.4000 MOVING SMALL SIGN SUPPORTS EACH	COMMENT
LOCATION				
STH 70 RT		1	1	SEE TC - ADVANCE SIGNING SHEET
STH 70 RT		1	1	MOVE NPZ TO ORIGINAL LOCATION
PROJECT TOTALS		2	2	

FIELD OFFICE TYPE B

CAT 0010		642.5001 FIELD OFFICE TYPE B EACH
LOCATION		
PROJECT		1
PROJECT TOTAL		1

TRAFFIC CONTROL ITEMS

		643.0300		643.0420		643.0705		643.0900		643.5000	
CAT 0010		TRAFFIC CONTROL		BARRI- CADES		TRAFFIC CONTROL		TRAFFIC CONTROL		TRAFFIC CONTROL	
		DRUMS		TYPE III		WARNING LIGHTS		SIGNS			
LOCATION	DAYS (CALENDAR)	DRUMS (COUNT)	DRUMS DAY	CADES (COUNT)	DAY	LIGHTS (COUNT)	TYPE A DAY	SIGNS (COUNT)	SIGNS DAY	EACH	COMMENT
PROJECT	-	-	-	-	-	-	-	-	-	1	---
ONE LANE STOP CONDITION	107	6	642	1	107	2	214	20	2,140	-	SEE PLAN TC STAGING DETAILS
ADVANCED WIDTH WARNING	107	-	-	-	-	-	-	23	2,461	-	SEE PLAN TC STAGING DETAILS
UNDISTRIBUTED	114	2	228	1	114	2	228	2	228	-	---
PROJECT TOTALS			870		221		442		4,829	1	

MARKING LINE EPOXY 6-INCH

CAT 0010		646.2020 MARKING LINE EPOXY 6-INCH LF		COMMENT
STATION	- STATION	LOCATION	LINE TYPE	
206+25	- 208+90	CENTERLINE	SKIPS	66 PASSING EASTBOUND
206+25	- 208+90	CENTERLINE	SOLID	265 NO PASSING WESTBOUND
208+90	- 210+55	CENTERLINE	SKIPS	41 PASSING EACH DIRECTION
207+00	- 210+10	EDGE LINE LT	SOLID	310 FOG LINE REPLACEMENT
206+65	- 209+90	EDGE LINE RT	SOLID	325 FOG LINE REPLACEMENT
UNDISTRIBUTED				92
PROJECT TOTAL				1,100

MARKING REMOVAL LINE 4-INCH

					646.9000
					MARKING
CAT 0010					REMOVAL LINE
					4-INCH
STATION	-	STATION	LOCATION	LINE TYPE	LF
206+25	-	207+89	STH 70 CL	SKIPS	41
206+25	-	207+89	STH 70 CL	SOLID	164
208+91	-	210+55	STH 70 CL	SKIPS	41
206+85	-	209+75	EDGE LINE LT	SOLID	290
206+70	-	207+89	EDGE LINE RT	SOLID	119
208+91	-	209+75	EDGE LINE RT	SOLID	84
UNDISTRIBUTED					76
PROJECT TOTAL					815

ALL ITEMS ARE CATEGORY 0010 UNLESS OTHERWISE NOTED.

TEMPORARY MARKING LINE REMOVABLE TAPE ITEMS

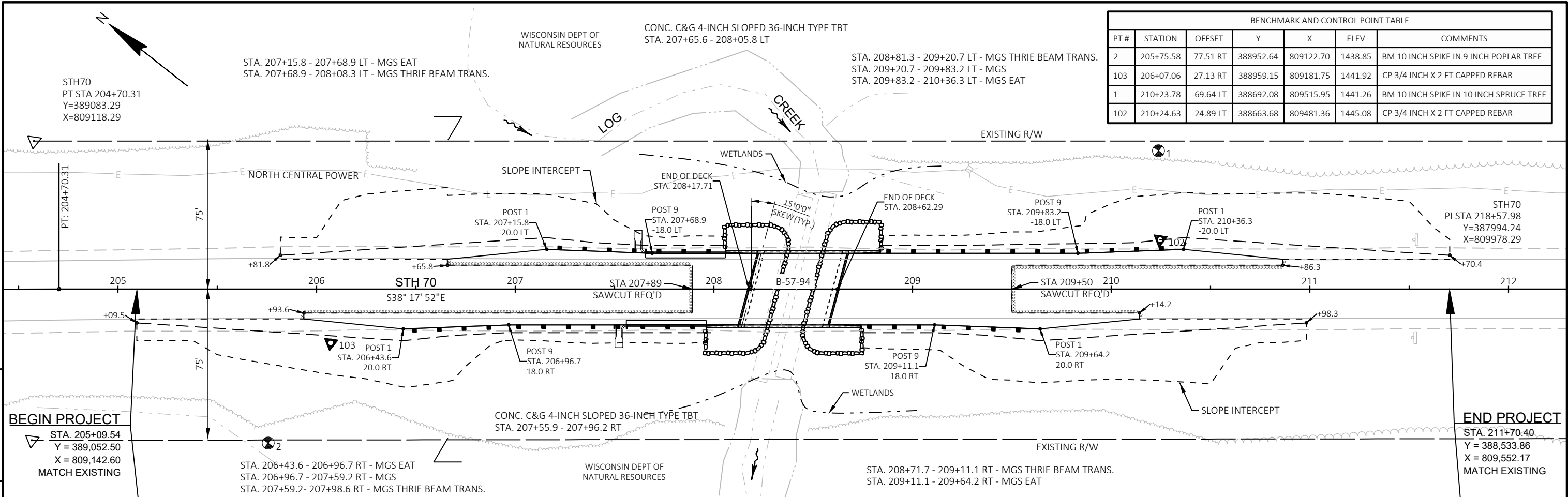
CAT 0010				643.3180 TEMPORARY MARKING LINE REMOVABLE TAPE 6-INCH LF	643.3850 TEMPORARY MARKING STOP LINE REMOVABLE TAPE 18-INCH LF	COMMENT	
STATION	-	STATION	LOCATION	STAGE	LF	LF	
206+25			RT	ALL	-	12	SEE TC STAGING DETAILS
206+73	-	209+78	ALONG CBTP	1B	305	-	SEE TC STAGING DETAILS
206+86	-	209+76	LT, TEMP WIDENING	1B	290	-	SEE TC STAGING DETAILS
207+05	-	210+05	ALONG CBTP	2	300	-	SEE TC STAGING DETAILS
206+70	-	209+75	RT	2	305	-	SEE TC STAGING DETAILS
210+55			LT	ALL	-	12	SEE TC STAGING DETAILS
199+25	-	206+25	CENTERLINE	ALL	700	-	NO PASSING EASTBOUND
210+55	-	211+52	CENTERLINE	ALL	194	-	NO PASSING EACH DIRECTION
211+52	-	217+60	CENTERLINE	ALL	608	-	NO PASSING WESTBOUND
PROJECT TOTALS					2,702	24	

SAWING ASPHALT

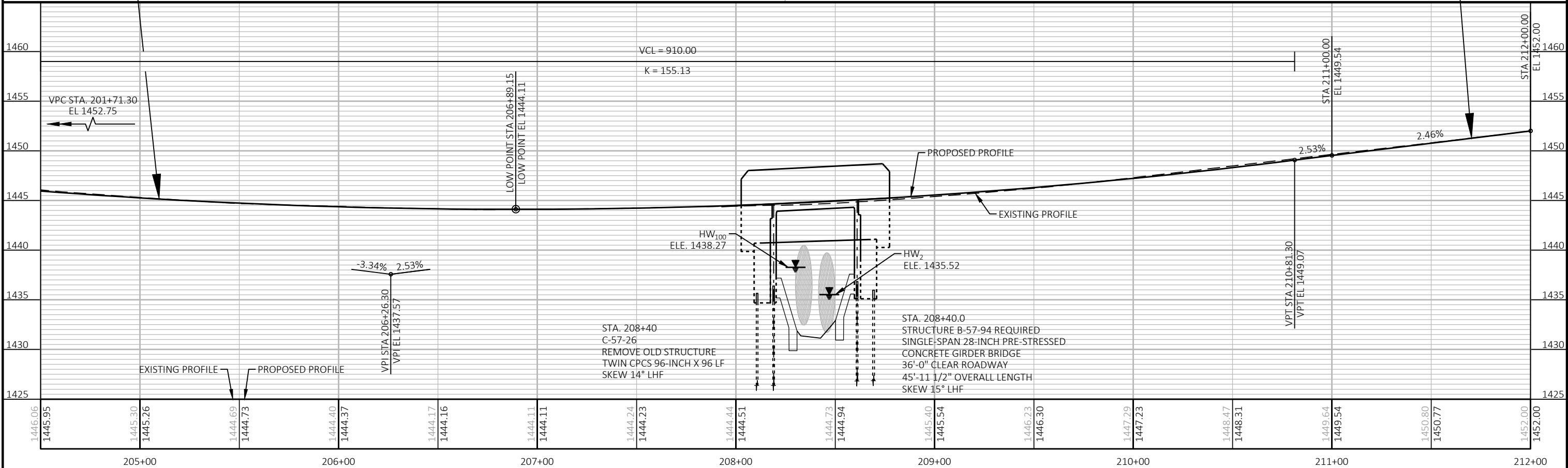
CAT 0010				690.0150 SAWING ASPHALT LF	COMMENT
STATION	-	STATION	LOCATION		
207+89			STH 70	24	STRUCTURE EXCAVATION LIMIT
207+89	-	208+91	STH 70	102	6' LT OF CENTERLINE
208+40			STH 70	23	PARALLEL WITH PIPE RT
208+40			STH 70	14	PARALLEL WITH PIPE LT
209+50			STH 70	24	BASE EXCAVATION LIMIT
205+94	-	207+89	STH 70	196	12' RT
206+66	-	207+89	STH 70	123	12' LT
209+50	-	210+14	STH 70	64	12' RT
209+50	-	210+86	STH 70	136	12' LT
UNDISTRIBUTED				14	
PROJECT TOTAL				720	

CONSTRUCTION STAKING ITEMS

CAT 0010				650.4500 CONSTRUCTION STAKING SUBGRADE LF	650.5000 CONSTRUCTION STAKING BASE LF	650.5500 CONSTRUCTION STAKING CURB & GUTTER LF	650.9920 CONSTRUCTION STAKING SLOPE STAKES LF	650.6501 CONSTRUCTION STAKING STRUCTURE LAYOUT 01. B-57-94 EACH	650.9911 CONSTRUCTION STAKING SUPPLEMENTAL CONTROL 01. 8170-01-74 EACH
STATION	-	STATION	LOCATION						
PROJECT LIMITS				-	-	-	-	-	1
208+17.7	-	208+62.3	B-57-94	-	-	-	-	1	-
205+10	-	208+17	MGS GRADING	RT	307	307	286	-	-
208+63	-	210+98	MGS GRADING	RT	235	235	224	-	-
205+82	-	208+17	MGS GRADING	LT	235	235	224	-	-
208+63	-	211+70	MGS GRADING	LT	307	307	286	-	-
207+56	-	207+96.5	CONCRETE C&G	RT			40.5		
207+65.5	-	208+06	CONCRETE C&G	LT			40.5		
PROJECT TOTALS				1,084	1,084	81	1,020	1	1



BENCHMARK AND CONTROL POINT TABLE						
PT #	STATION	OFFSET	Y	X	ELEV	COMMENTS
2	205+75.58	77.51 RT	388952.64	809122.70	1438.85	BM 10 INCH SPIKE IN 9 INCH POPLAR TREE
103	206+07.06	27.13 RT	388959.15	809181.75	1441.92	CP 3/4 INCH X 2 FT CAPPED REBAR
1	210+23.78	-69.64 LT	388692.08	809515.95	1441.26	BM 10 INCH SPIKE IN 10 INCH SPRUCE TREE
102	210+24.63	-24.89 LT	388663.68	809481.36	1445.08	CP 3/4 INCH X 2 FT CAPPED REBAR



PROJECT NO:	8170-01-74	HWY:	STH 70	COUNTY:	SAWYER	PLAN AND PROFILE:	STH 70	SHEET	5
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FILE NAME : W:\NWBE_PROJECTS\DESIGN\1913_STH70-LOGCREEK-CULVERT\C3D-18\SHEETS\PLAN\050201_PP-STH70.DWG
LAYOUT NAME - 70_pp-[01]

PLOT DATE : 7/31/2023 10:55 AM

PLOT BY : G. COLBERT

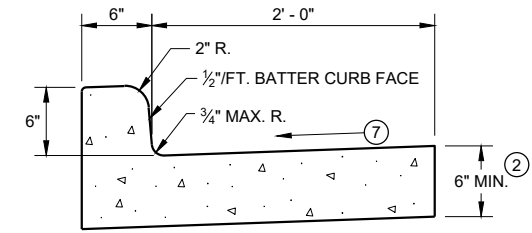
PLOT NAME :

PLOT SCALE : 1 IN=50 FT

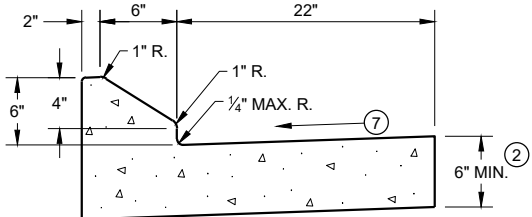
WISDOT/CADDs SHEET 44

Standard Detail Drawing List

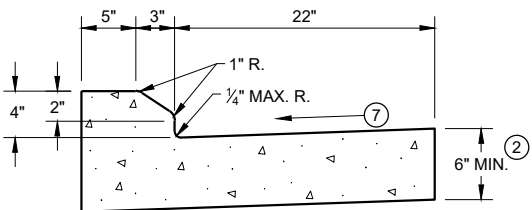
08D01-23A	CONCRETE CURB & GUTTER
08D01-23B	CONCRETE CURB, TIES AND CURB AND GUTTER APPLICATIONS
08D02-08A	CONCRETE SURFACE DRAINS FLUME TYPE AT STRUCTURES
08D02-08B	CONCRETE SURFACE DRAINS FLUME TYPE AT STRUCTURES
08D02-08C	CONCRETE SURFACE DRAINS FLUME TYPE AT STRUCTURES
08D04-07	CONCRETE SURFACE DRAINS & ASPHALTIC FLUMES
08E09-06	SILT FENCE
08E11-02	TURBIDITY BARRIER
12A03-10	NAME PLATE (STRUCTURES)
14B07-16A	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-16B	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-16C	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-16D	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-16E	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-16F	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-16G	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-16H	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-16I	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-16J	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-16K	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-16L	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-16M	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-16N	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B42-07A	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-07B	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-07C	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-07D	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B44-04A	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B44-04B	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B44-04C	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B45-05A	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-05B	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-05C	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-05D	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-05F	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
15C02-09F	ADVANCED WIDTH RESTRICTION SIGNING
15C06-12	SIGNING & MARKING FOR TWO LANE BRIDGES
15C08-23A	PERMANENT LONGITUDINAL PAVEMENT MARKINGS
15C08-23B	TEMPORARY LONGITUDINAL PAVEMENT MARKING
15C11-10B	CHANNELIZING DEVICES DRUMS, CONES, BARRICADES AND VERTICAL PANELS
15C12-09A	TRAFFIC CONTROL FOR LANE CLOSURE WITH FLAGGING OPERATION
15C19-08A	MOVING PAVEMENT MARKING OPERATION TWO-LANE TWO-WAY ROADWAY
15D32-07	TRAFFIC CONTROL, ONE LANE ROAD STOP CONDITION



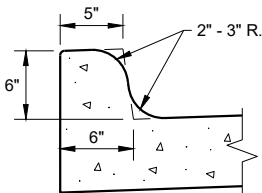
TYPES A^① & D



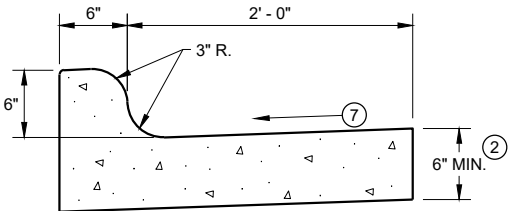
6" SLOPED CURB TYPES G^① & J



4" SLOPED CURB TYPES G^① & J

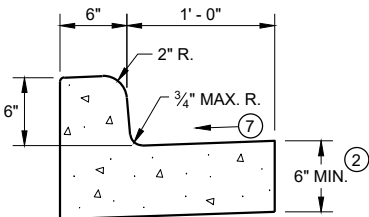


TYPES K^① & L
(OPTIONAL CURB SHAPE)



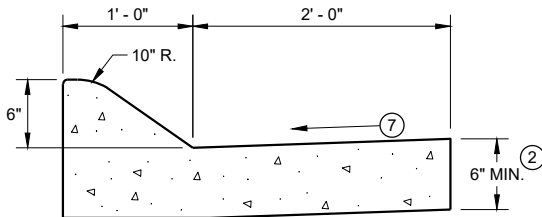
TYPES K^① & L

CONCRETE CURB AND GUTTER 30"

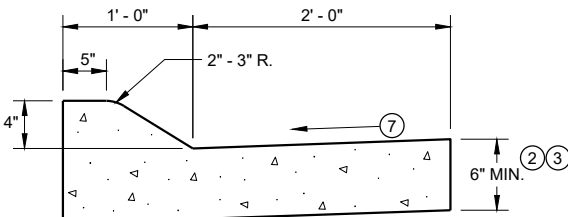


TYPES A^① & D

CONCRETE CURB AND GUTTER 18"

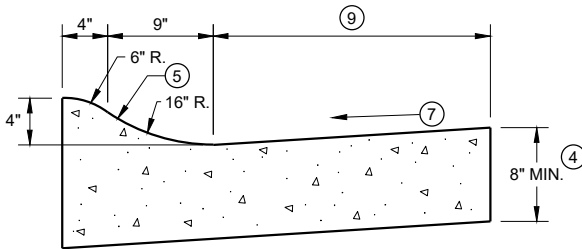


6" SLOPED CURB TYPES A^① & D



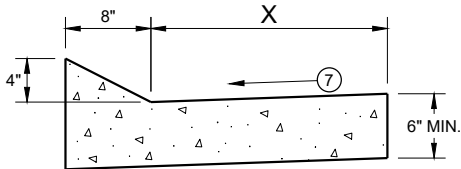
4" SLOPED CURB TYPES A^① & D

CONCRETE CURB AND GUTTER 36"



4" SLOPED CURB TYPES R^① & T

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

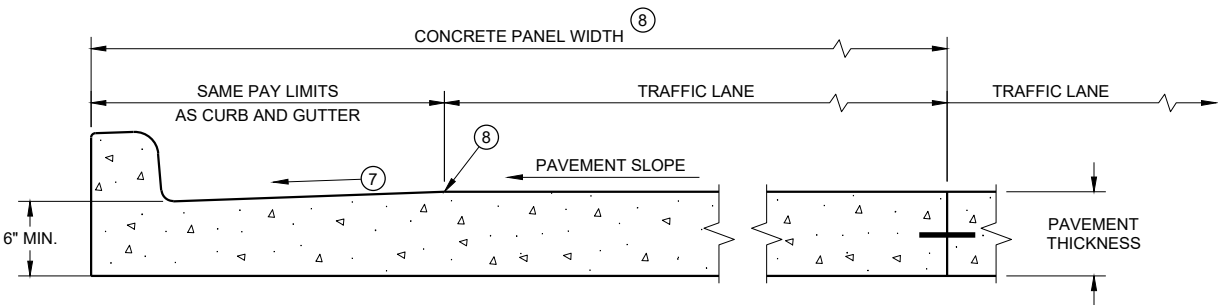


TYPES TBT & TBTT^①

CONCRETE CURB AND GUTTER

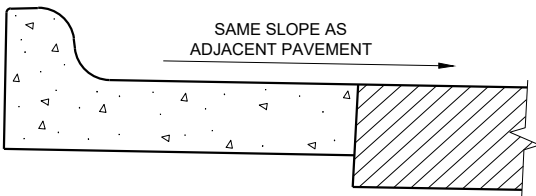
PAVEMENT THICKNESS
AND MAXIMUM CONCRETE
PANEL WIDTH TABLE

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



PARTIAL SECTION OF PAVEMENT*
WITH INTEGRAL CURB AND GUTTER

* BIKE LANE IS NOT SHOWN



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

GENERAL NOTES

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

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

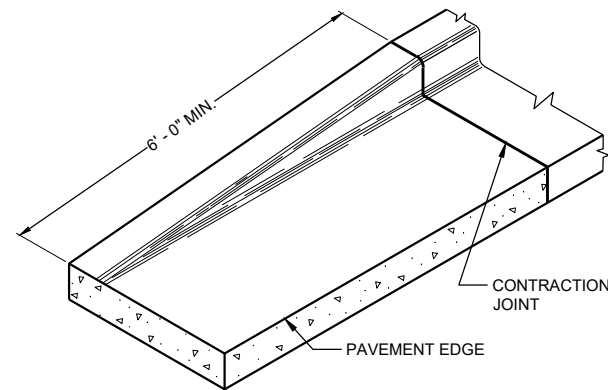
INTEGRAL CURB AND GUTTER SHALL CONFORM TO THE DETAILS SHOWN FOR CONCRETE CURB AND GUTTER INCLUDING THE TRANSVERSE GUTTER SLOPE.

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

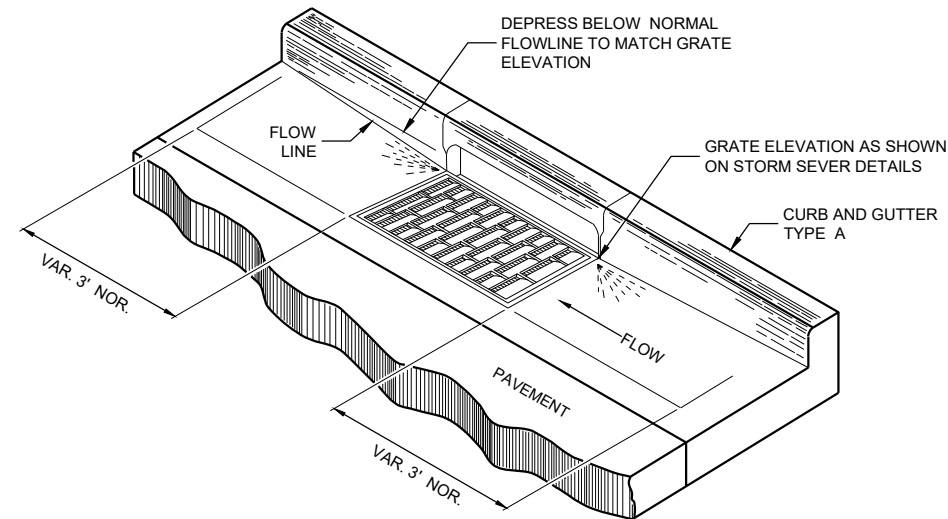
- ① TIE BARS ARE REQUIRED FOR CURB AND GUTTERS TYPES A, G, K, R, AND TBTT.
- ② THE BOTTOM OF CURB AND GUTTER MAY BE CONSTRUCTED EITHER LEVEL OR PARALLEL TO THE SLOPE OF THE SUBGRADE OR BASE AGGREGATE PROVIDED A 6" MINIMUM GUTTER THICKNESS IS MAINTAINED.
- ③ USE 8" MINIMUM GUTTER THICKNESS WHEN USED WITH AN ADJACENT CONCRETE TRUCK APRON PLACED BEHIND BACK OF CURB.
- ④ THE BOTTOM OF CURB AND GUTTER MAY BE CONSTRUCTED EITHER LEVEL OR PARALLEL TO THE SLOPE OF THE SUBGRADE OR BASE AGGREGATE PROVIDED A 8" MINIMUM GUTTER THICKNESS IS MAINTAINED.
- ⑤ UNLESS OTHERWISE NOTED, FOR STAKING PURPOSES THE FACE OF CURB IS 6" FROM THE BACK OF CURB.
- ⑥ WHEN REVERSE SLOPE GUTTER IS REQUIRED, THE LOCATION(S) WILL BE SHOWN ELSEWHERE IN THE PLAN.
- ⑦ USE 4% GUTTER CROSS SLOPE UNLESS OTHERWISE NOTED IN THE PLANS.
- ⑧ INCLUDE LONGITUDINAL JOINT AND TIE BARS ALONG LANE EDGE WHEN CONCRETE PANEL WIDTH EXCEEDS THE MAXIMUM WIDTH PER TABLE BELOW. LONGITUDINAL JOINT(S) ARE NOT ALLOWED WITHIN TRAFFIC LANES AND BIKE LANES. LONGITUDINAL JOINT MAY BE SAWED.
- ⑨ CONCRETE CURB AND GUTTER 4-INCH SLOPED 30-INCH TYPE "R" AND "T" = 17 INCHES
CONCRETE CURB AND GUTTER 4-INCH SLOPED 36-INCH TYPE "R" AND "T" = 23 INCHES

CONCRETE CURB AND GUTTER

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

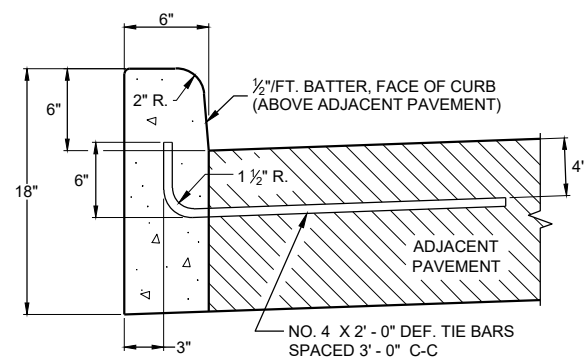


END SECTION CURB AND GUTTER

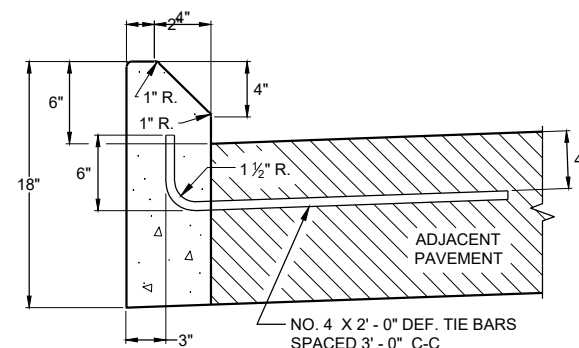


DETAIL OF CURB AND GUTTER AT INLETS

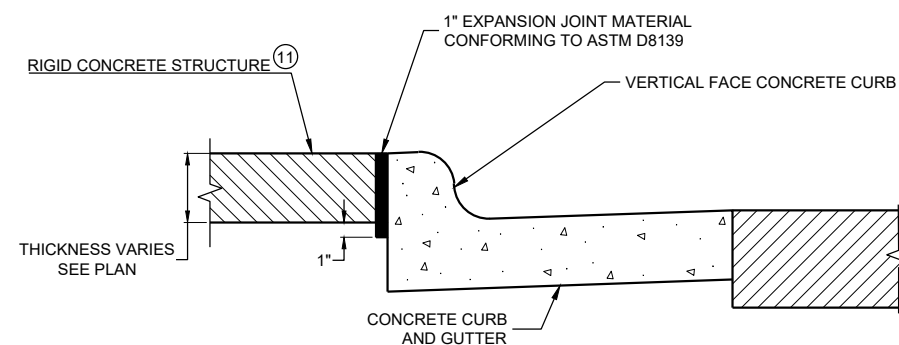
(TYPICAL H INLET COVER SHOWN)



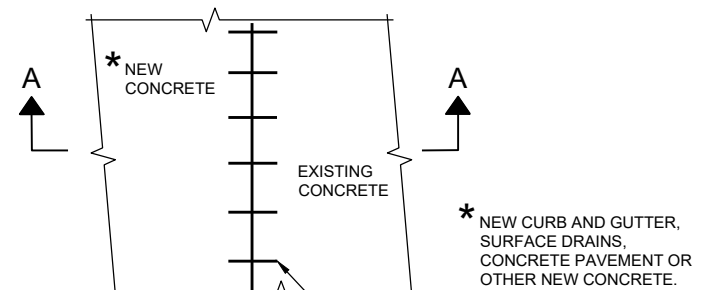
TYPES A^① & D



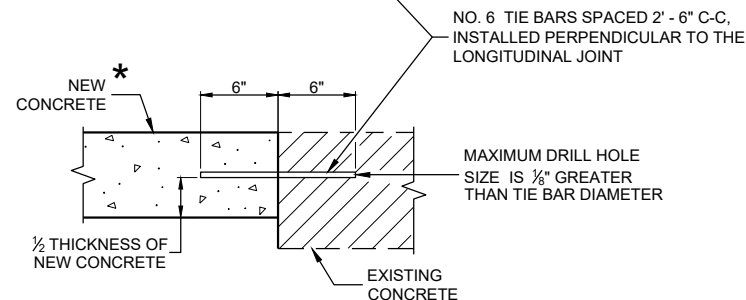
TYPES G^① & J
CONCRETE CURB



EXPANSION JOINT DETAIL FOR VERTICAL CURB ABUTTING A RIGID STRUCTURE^⑪



PLAN VIEW



SECTION A - A
TIE BARS DRILLED INTO EXISTING PAVEMENT

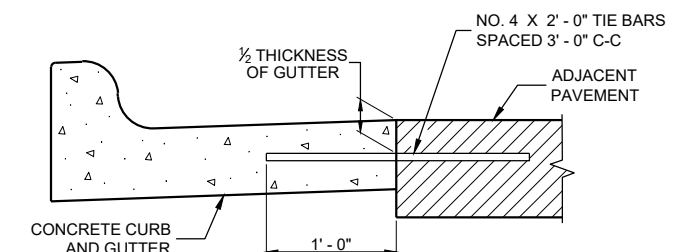
GENERAL NOTES

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

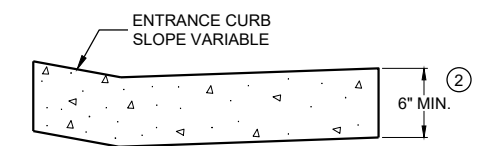
PAVEMENT TIES AND TIE BARS SHALL BE EPOXY COATED IN CONFORMANCE WITH SUBSECTION 505.2.6.2 OF THE STANDARD SPECIFICATIONS.

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

- ① TIE BARS ARE REQUIRED FOR CURB AND GUTTERS TYPES A, G, K, R, AND TBTT.
- ② THE BOTTOM OF CURB AND GUTTER MAY BE CONSTRUCTED EITHER LEVEL OR PARALLEL TO THE SLOPE OF THE SUBGRADE OR BASE AGGREGATE PROVIDED A 6" MINIMUM GUTTER THICKNESS IS MAINTAINED.
- ⑩ REFER TO SDD 08D18 AND 08D19 FOR ADDITIONAL DRIVEWAY ENTRANCE CURB DETAILS.
- ⑪ PLACE 1" THICK EXPANSION JOINT MATERIAL BETWEEN VERTICAL FACE CURB TYPES EXTENDING FROM THE TOP OF CURB TO 1 INCH BELOW THE ADJOINING CONCRETE SURFACE. RIGID CONCRETE STRUCTURES INCLUDE RAISED CONCRETE MEDIANS, CONCRETE SAFETY ISLANDS, SPLITTER ISLANDS, OR LOCATIONS IDENTIFIED ON THE PLANS.



TYPICAL TIE BAR LOCATION^①



DRIVEWAY ENTRANCE CURB^⑩
(WHEN DIRECTED BY THE ENGINEER)

CONCRETE CURB, TIES AND CURB AND GUTTER APPLICATIONS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
May 2023 DATE /S/ Rodney Taylor
ROADWAY STANDARDS DEVELOPMENT ENGINEER
FHWA

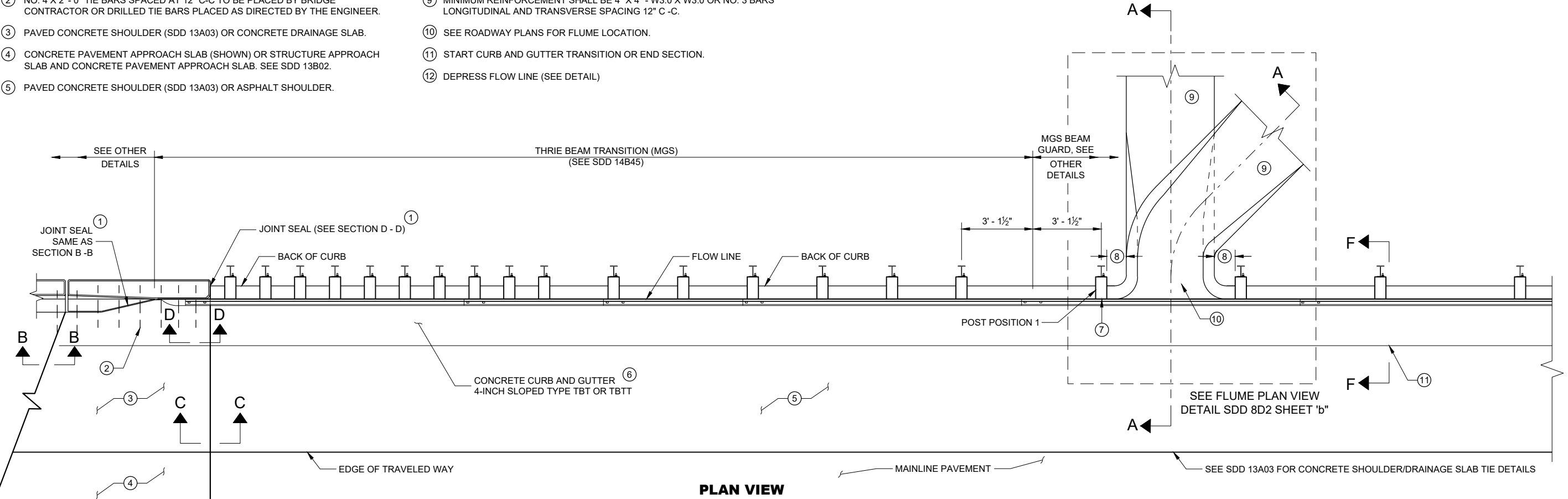
GENERAL NOTES

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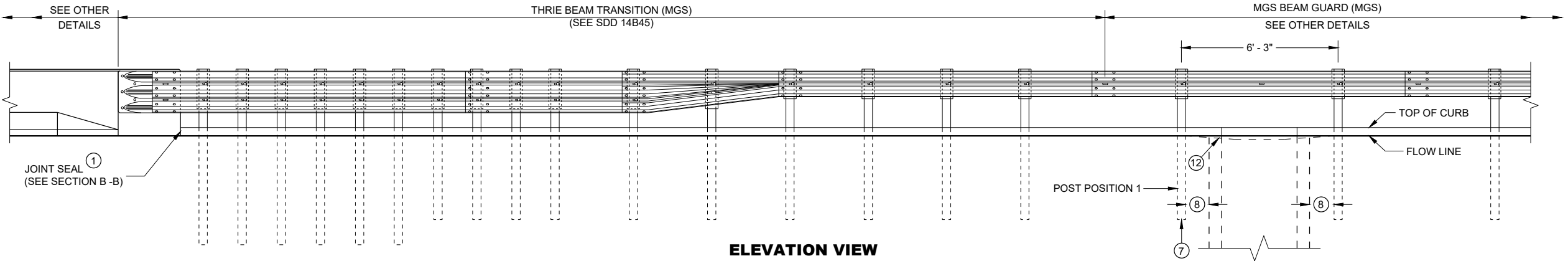
ALL STEEL REINFORCEMENT SHALL BE EMBEDDED 2 INCHES CLEAR UNLESS OTHERWISE SHOWN OR NOTED.

- 1 USE A JOINT SEALANT CONFORMING TO STANDARD SPECIFICATION 415.2.6.
- 2 NO. 4 X 2' - 0" TIE BARS SPACED AT 12" C-C TO BE PLACED BY BRIDGE CONTRACTOR OR DRILLED TIE BARS PLACED AS DIRECTED BY THE ENGINEER.
- 3 PAVED CONCRETE SHOULDER (SDD 13A03) OR CONCRETE DRAINAGE SLAB.
- 4 CONCRETE PAVEMENT APPROACH SLAB (SHOWN) OR STRUCTURE APPROACH SLAB AND CONCRETE PAVEMENT APPROACH SLAB. SEE SDD 13B02.
- 5 PAVED CONCRETE SHOULDER (SDD 13A03) OR ASPHALT SHOULDER.

- 6 CONCRETE CURB AND GUTTER 4-INCH SLOPED 36-INCH TYPE TBT OR TBTT. USE TYPE TBTT CURB WITH NO. 4 X 2' -0" TIE BARS SPACED AT 3' - 0" C-C ONLY WHEN ADJACENT TO CONCRETE PAVEMENTS.
- 7 PLACE FLUME BEFORE MSG THRIE BEAM TRANSITION POST 1 (SEE SDD 14B45)
- 8 CENTER FLUME BETWEEN POSTS. 6-INCH MINIMUM SEPARATION FROM OUTSIDE EDGE OF FLUME TO POSTS.
- 9 MINIMUM REINFORCEMENT SHALL BE 4" X 4" - W3.0 X W3.0 OR NO. 3 BARS LONGITUDINAL AND TRANSVERSE SPACING 12" C-C.
- 10 SEE ROADWAY PLANS FOR FLUME LOCATION.
- 11 START CURB AND GUTTER TRANSITION OR END SECTION.
- 12 DEPRESS FLOW LINE (SEE DETAIL)



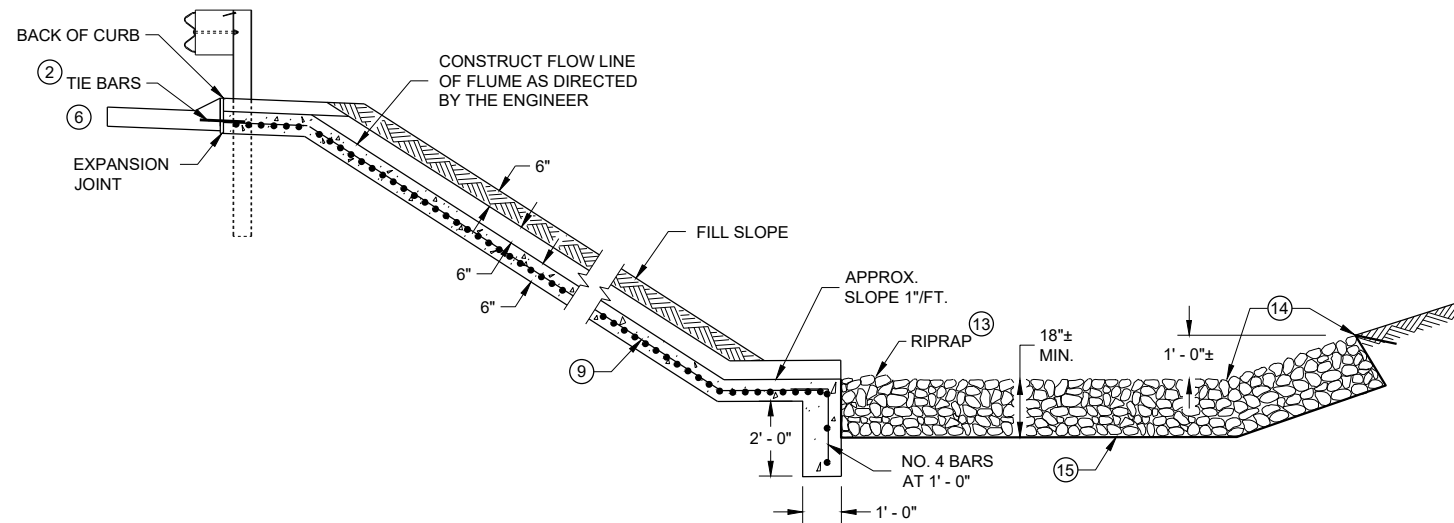
PLAN VIEW



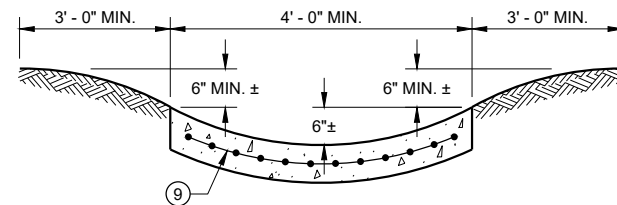
ELEVATION VIEW

CONCRETE SURFACE
DRAINS FLUME TYPE
AT STRUCTURES

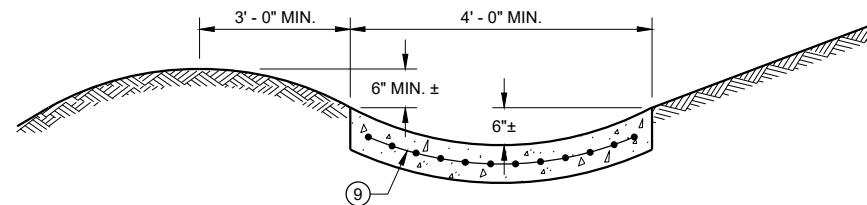
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



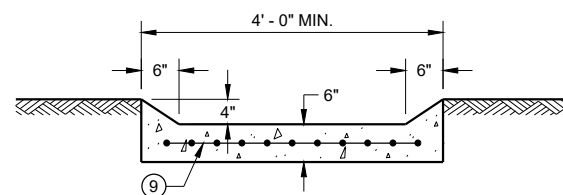
SECTION A - A



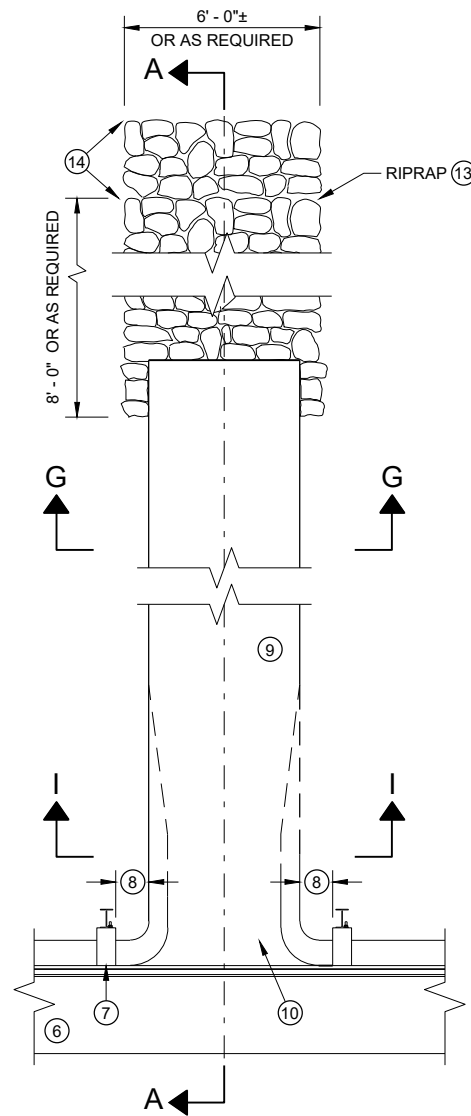
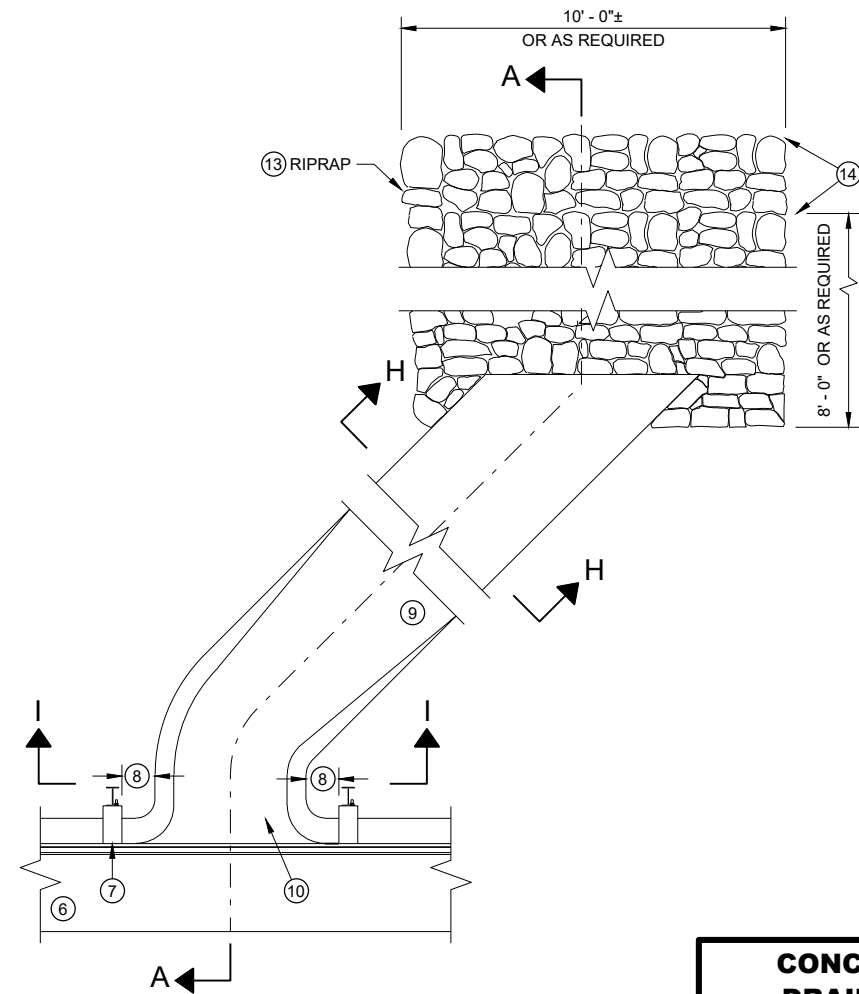
SECTION G - G



SECTION H - H



SECTION I - I

PLAN VIEW
PERPENDICULAR FLUMEPLAN VIEW
SKEWED FLUME

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.

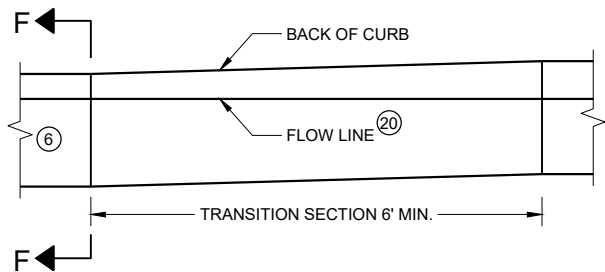
ALL STEEL REINFORCEMENT SHALL BE EMBEDDED 2 INCHES CLEAR UNLESS OTHERWISE SHOWN OR NOTED.

- ① USE A JOINT SEALANT CONFORMING TO STANDARD SPECIFICATION 415.2.6.
- ② NO. 4 X 2' - 0" TIE BARS SPACED AT 12" C-C TO BE PLACED BY BRIDGE CONTRACTOR OR DRILLED TIE BARS PLACED AS DIRECTED BY THE ENGINEER.
- ③ PAVED CONCRETE SHOULDER (SDD 13A03) OR CONCRETE DRAINAGE SLAB.
- ④ CONCRETE PAVEMENT APPROACH SLAB (SHOWN) OR STRUCTURE APPROACH SLAB AND CONCRETE PAVEMENT APPROACH SLAB. SEE SDD 13B02 AND STRUCTURE PLANS.
- ⑤ PAVED CONCRETE SHOULDER (SDD 13A03) OR ASPHALT SHOULDER.
- ⑥ CONCRETE CURB AND GUTTER 4-INCH SLOPED 36-INCH TYPE TBT OR TBT. USE TYPE TBT CURB WITH NO. 4 X 2' - 0" TIE BARS SPACED AT 3' - 0" C-C ONLY WHEN ADJACENT TO CONCRETE PAVEMENTS.

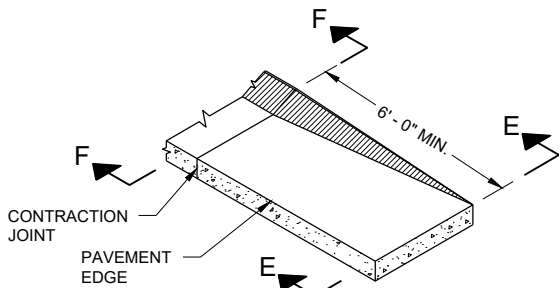
- ⑦ PLACE FLUME BEFORE MSG THRIE BEAM TRANSITION POST 1 (SEE SDD 14B45)
- ⑧ CENTER FLUME BETWEEN POSTS. 6-INCH MINIMUM SEPARATION FROM OUTSIDE EDGE OF FLUME TO POSTS.
- ⑨ MINIMUM REINFORCEMENT SHALL BE 4" X 4" - W3.0 X W3.0 OR NO. 3 BARS LONGITUDINAL AND TRANSVERSE SPACING 12" C - C.
- ⑩ SEE ROADWAY PLANS FOR FLUME LOCATION.
- ⑪ START CURB AND GUTTER TRANSITION OR END SECTION.
- ⑫ DEPRESS FLOW LINE (SEE DETAIL)
- ⑬ MEDIUM RIPRAP UNLESS OTHERWISE SPECIFIED.
- ⑭ LIMITS OF ADDITIONAL RIPRAP WHEN SPECIAL DITCH AS REQUIRED.
- ⑮ GEOTEXTILE TYPE HR.

**CONCRETE SURFACE
DRAINS FLUME TYPE
AT STRUCTURES**

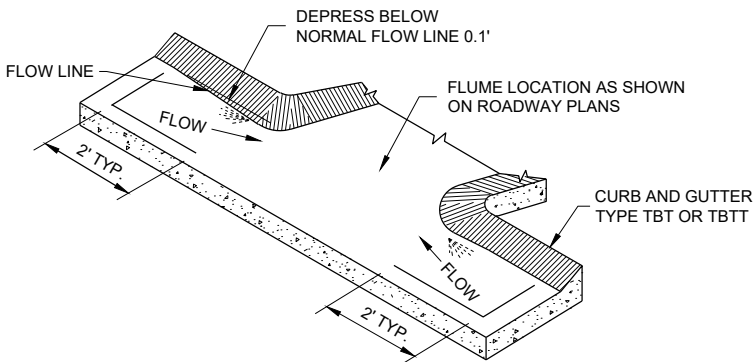
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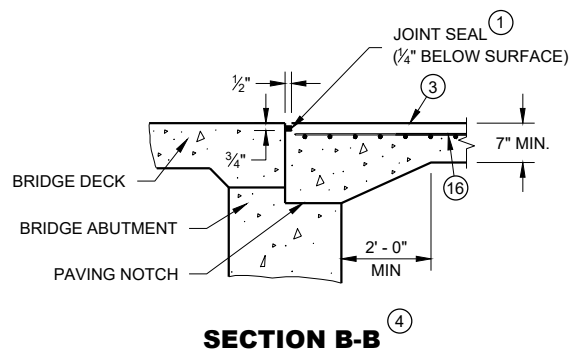
**CURB AND GUTTER TRANSITION SECTION
CONCRETE CURB AND GUTTER 4-INCH SLOPED
36 INCH TYPE TBT OR TBTT**



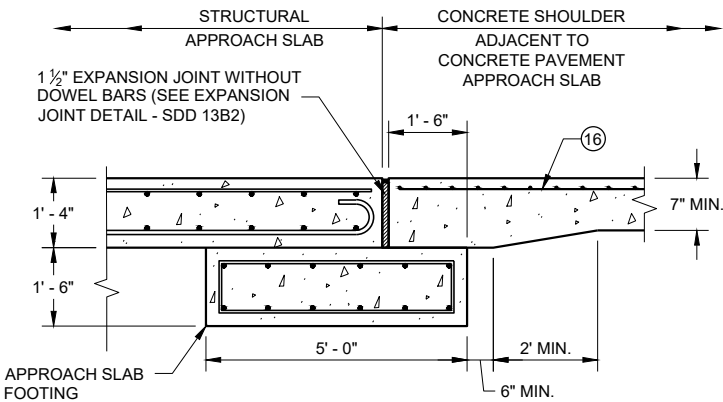
**CURB AND GUTTER END SECTION
CONCRETE CURB AND GUTTER 4-INCH SLOPED
36 INCH TYPE TBT OR TBTT**



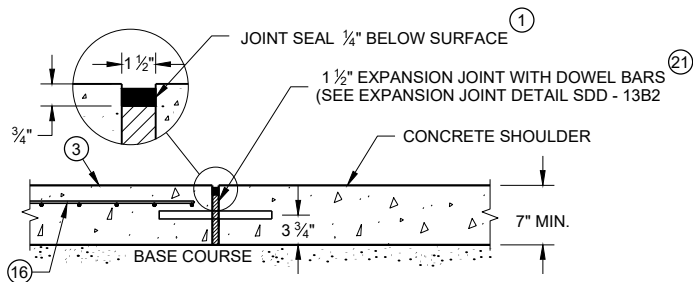
**CURB AND GUTTER FLOW LINE DEPRESSION
AT FLUMES CONCRETE CURB AND GUTTER
4-INCH SLOPED 36 INCH TYPE TBT OR TBTT**



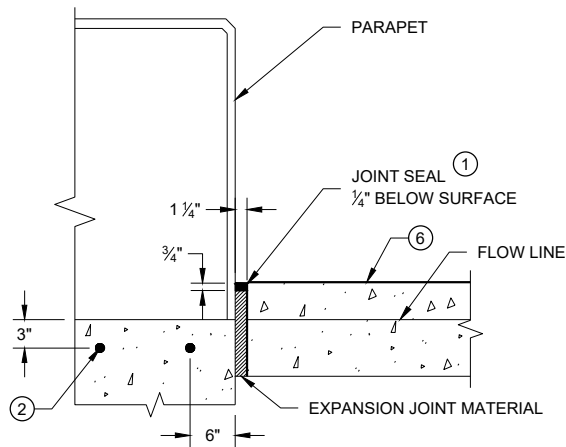
SECTION B-B



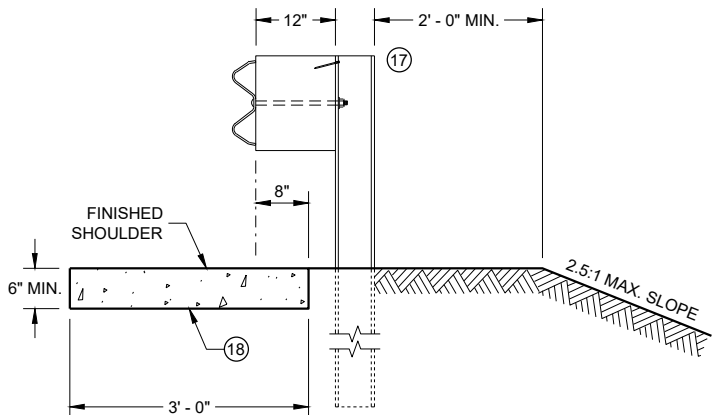
**SECTION C - C
JOINT DETAIL FOR BRIDGE WITH STRUCTURAL
APPROACH SLAB AND CONCRETE APPROACH SLAB**



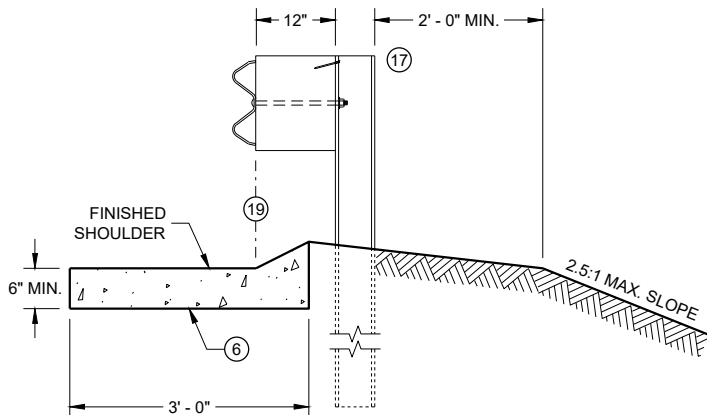
**SECTION C - C
JOINT DETAIL FOR BRIDGE APPROACH
WITH CONCRETE SHOULDERS**



SECTION D - D



SECTION E - E



SECTION F - F

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.

ALL STEEL REINFORCEMENT SHALL BE EMBEDDED 2 INCHES CLEAR UNLESS OTHERWISE SHOWN OR NOTED.

- USE A JOINT SEALANT CONFORMING TO STANDARD SPECIFICATION 415.2.6.
- NO. 4 X 2' - 0" TIE BARS SPACED AT 12" C-C TO BE PLACED BY BRIDGE CONTRACTOR OR DRILLED TIE BARS PLACED AS DIRECTED BY THE ENGINEER.
- PAVED CONCRETE SHOULDER (SDD 13A03) OR CONCRETE DRAINAGE SLAB.
- CONCRETE PAVEMENT APPROACH SLAB (SHOWN) OR STRUCTURE APPROACH SLAB AND CONCRETE PAVEMENT APPROACH SLAB. SEE SDD 13B02 AND STRUCTURE PLANS.
- PAVED CONCRETE SHOULDER (SDD 13A03) OR ASPHALT SHOULDER.
- CONCRETE CURB AND GUTTER 4-INCH SLOPED 36-INCH TYPE TBT OR TBTT. USE TYPE TBTT CURB WITH NO. 4 X 2' - 0" TIE BARS SPACED AT 3' - 0" C-C ONLY WHEN ADJACENT TO CONCRETE PAVEMENTS.
- PLACE FLUME BEFORE MSG THRIE BEAM TRANSITION POST 1 (SEE SDD 14B45)
- CENTER FLUME BETWEEN POSTS. 6-INCH MINIMUM SEPARATION FROM OUTSIDE EDGE OF FLUME TO POSTS.
- MINIMUM REINFORCEMENT SHALL BE 4" X 4" - W3.0 X W3.0 OR NO. 3 BARS LONGITUDINAL AND TRANSVERSE SPACING 12" C - C.
- SEE ROADWAY PLANS FOR FLUME LOCATION.
- START CURB AND GUTTER TRANSITION OR END SECTION.
- DEPRESS FLOW LINE (SEE DETAIL)
- MEDIUM RIPRAP UNLESS OTHERWISE SPECIFIED.
- LIMITS OF ADDITIONAL RIPRAP WHEN SPECIAL DITCH IS REQUIRED.
- GEOTEXTILE TYPE HR.
- MINIMUM REINFORCEMENT SHALL BE 6" X 6" - W4.0 X W4.0 OR NO. 3 BARS LONGITUDINAL AND TRANSVERSE SPACING 12" C - C.
- MSG THRIE BEAM TRANSITION POST 1. SEE SDD 14B45 FOR ADDITIONAL CONSTRUCTION DETAILS AND ACCEPTABLE MATERIALS.
- MAINTAIN WIDTH, THICKNESS AND CROSS SLOPE OF ADJACENT TYPE TBT OR TBTT CURB. SEE NOTE 6 FOR TIE BAR SPACING.
- ALIGN FACE OF POST BLOCK WITH FLOW LINE.
- MAINTAIN FLOW LINE AT EDGE OF PAVEMENT/FACE OF BEAM GUARD AS APPLICABLE.
- DO NOT CONSTRUCT AN EXPANSION JOINT OR INSTALL DOWEL BARS WHEN ABUTTING HMA PAVEMENTS.

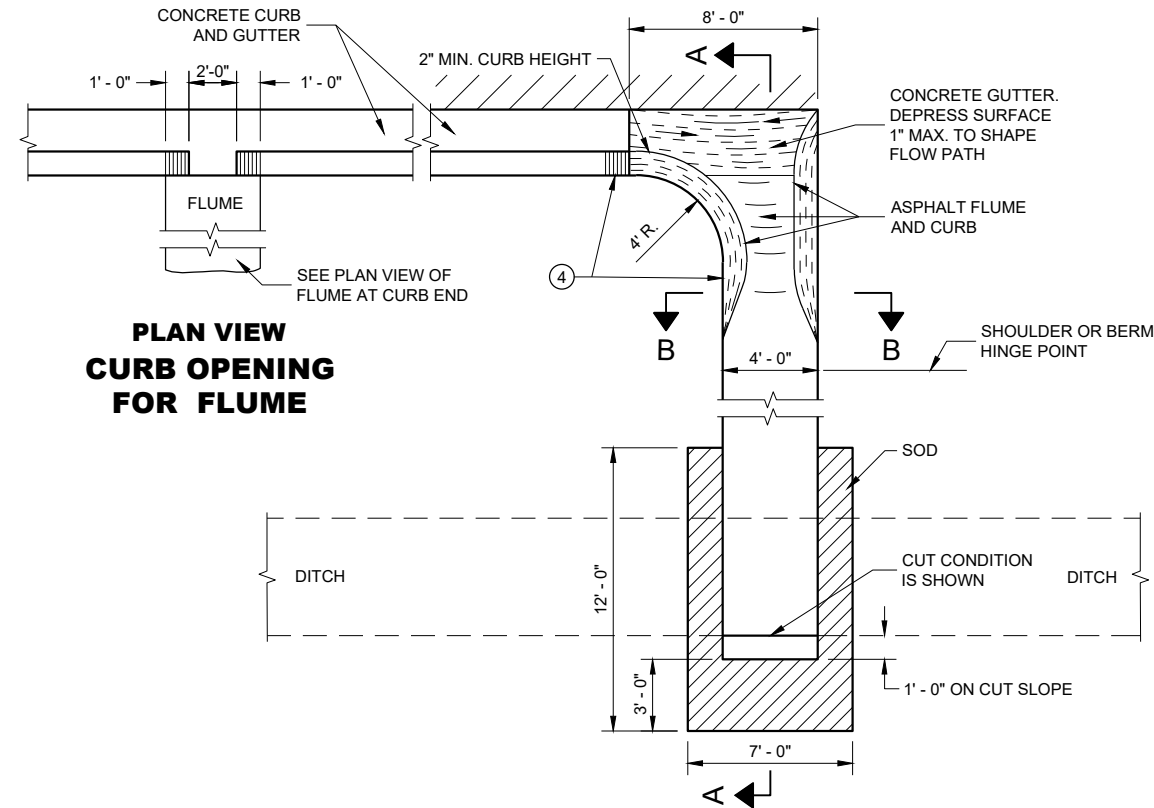
CONCRETE SURFACE DRAINS FLUME TYPE AT STRUCTURES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
May 2023 /S/ Rodney Taylor
DATE ROADWAY STANDARDS DEVELOPMENT
ENGINEER
FHWA

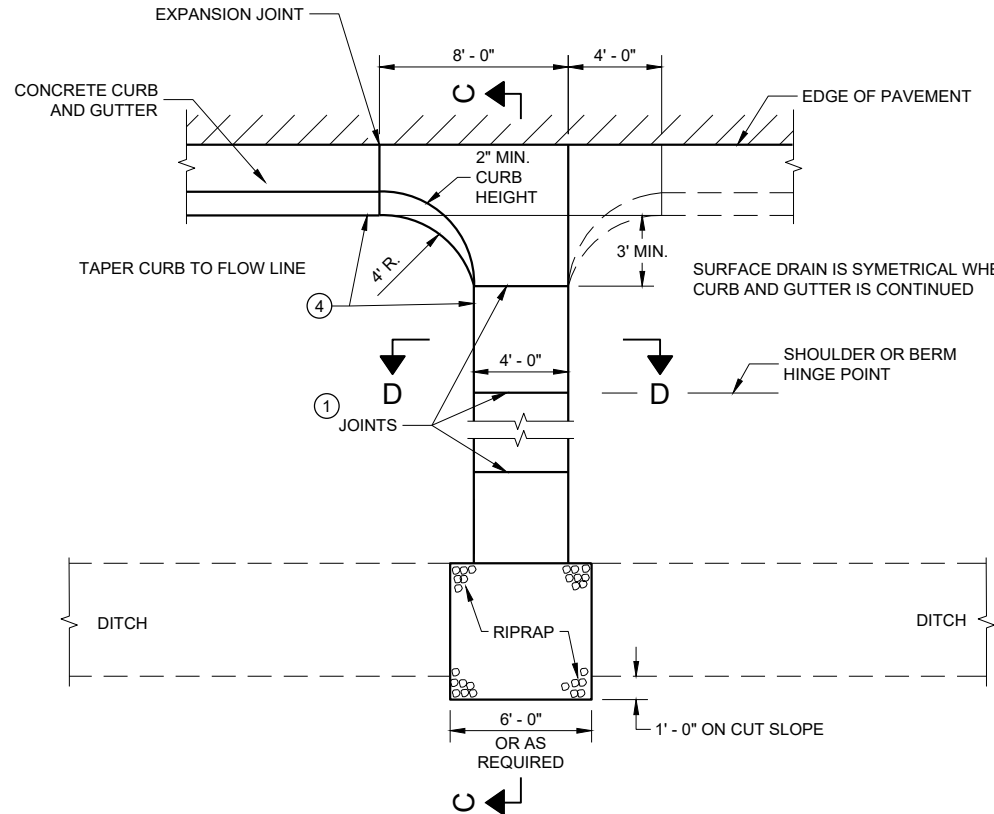
NOTE: TAPER CURB ENDS TO GUTTER IN 1' - 0"

ASPHALTIC FLUME



PLAN VIEW
CURB OPENING
FOR FLUME

PLAN VIEW
FLUME AT CURB END



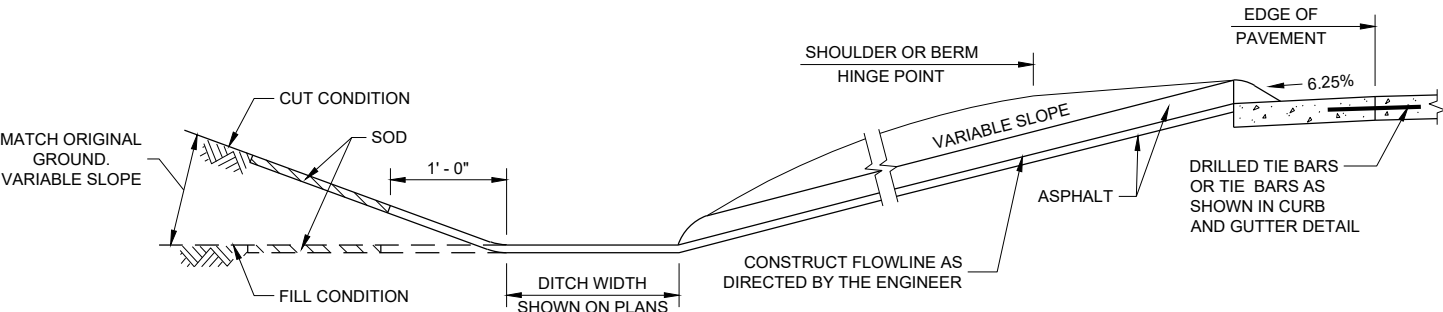
PLAN VIEW
CONCRETE SURFACE DRAIN

GENERAL NOTES

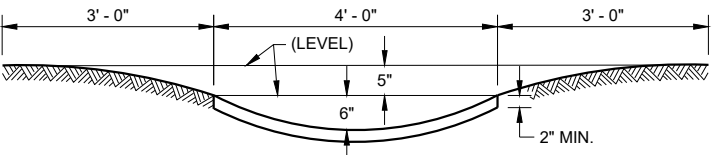
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND APPLICABLE SPECIAL PROVISIONS.

4" X 4" - W3.0 X W3.0 CONCRETE REINFORCEMENT SHALL BE IN ACCORDANCE WITH AASHTO SPECIFICATION M55.

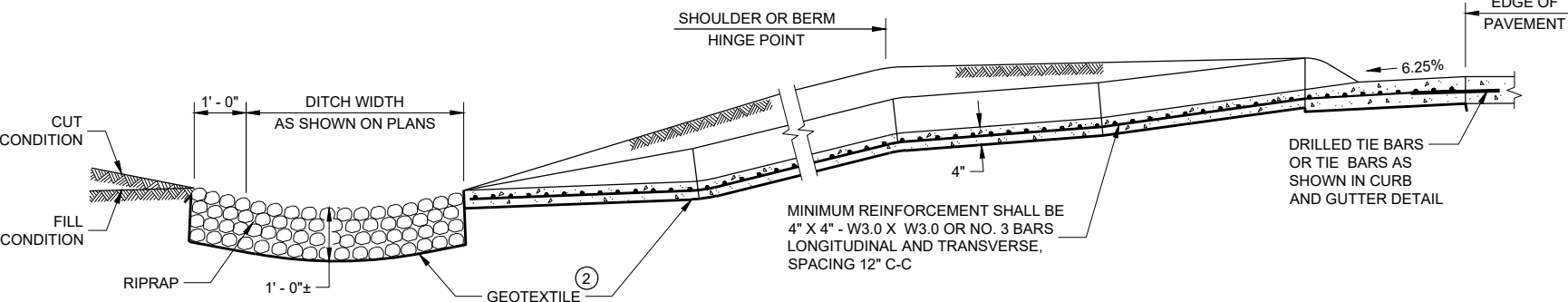
- JOINTS SHALL BE 1/8" TO 1/4" WIDE BY 1 1/2" DEEP AND SPACED AT UNIFORM INTERVALS OF APPROXIMATELY 4 FEET.
- GEOTEXTILE TYPE "R" SHALL UNDERLAY THE FULL LENGTH AND WIDTH OF THE CONCRETE SURFACE DRAIN AND RIPRAP.
- CONCRETE SURFACE DRAIN WITHOUT CURB AND GUTTER MAY BE USED ON BACKSLOPES WHEN SPECIFIED.
- ANGLE OF FLUME IN RELATION TO BACK OF CURB TO BE CONSTRUCTED PER THE PLAN DETAILS OR AS DIRECTED BY THE ENGINEER. ANGLE OF FLUME MAY BE OTHER THAN 90 DEGREES AS SHOWN.



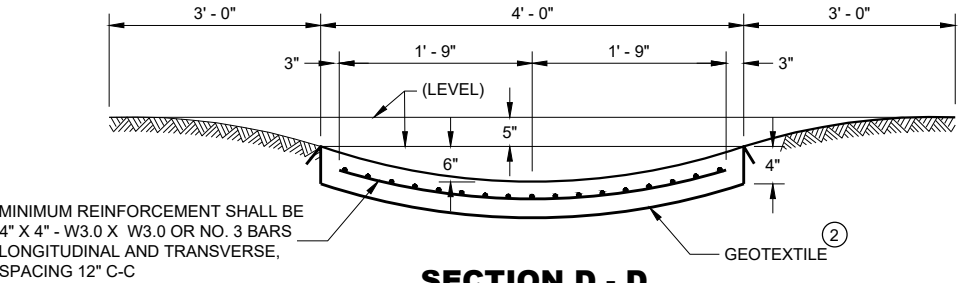
SECTION A - A



SECTION B - B



SECTION C - C



SECTION D - D

CONCRETE SURFACE
DRAINS AND
ASPHALTIC FLUMES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

May 2023

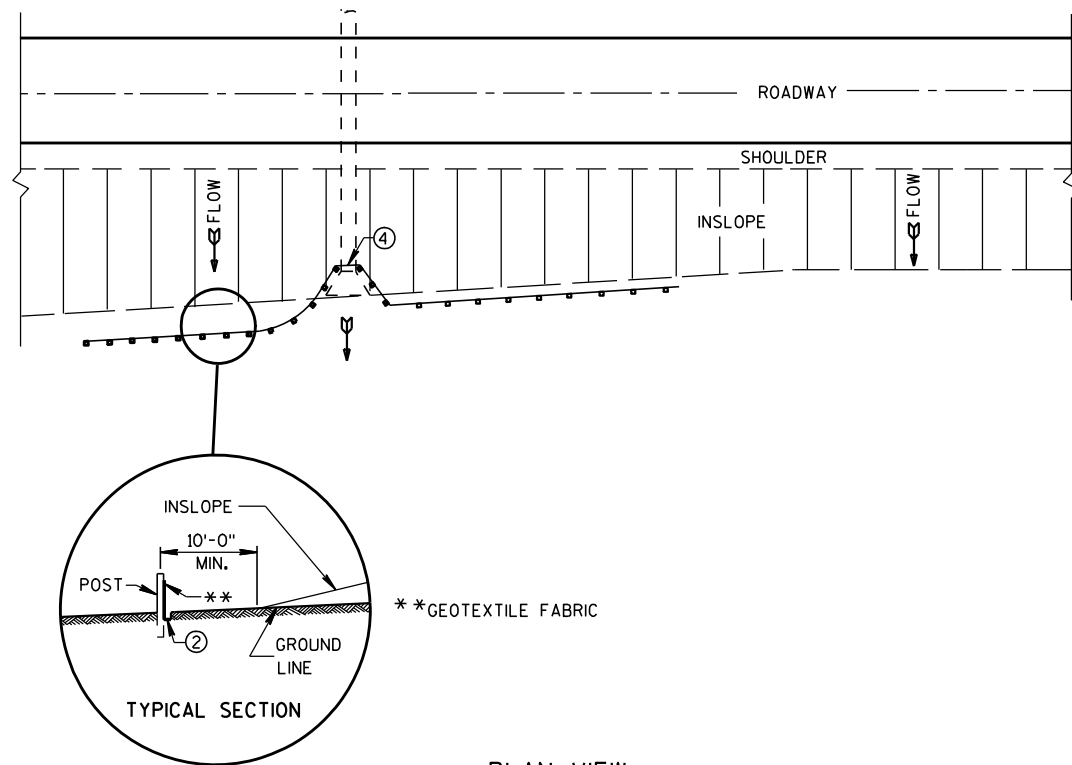
DATE

FHWA

/S/ Rodney Taylor

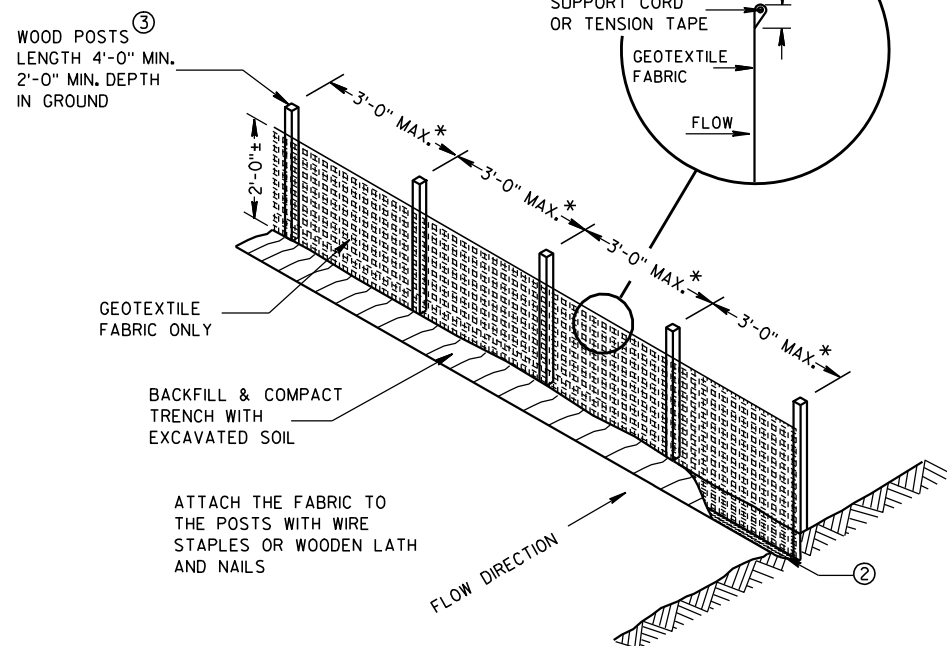
ROADWAY STANDARDS DEVELOPMENT

ENGINEER



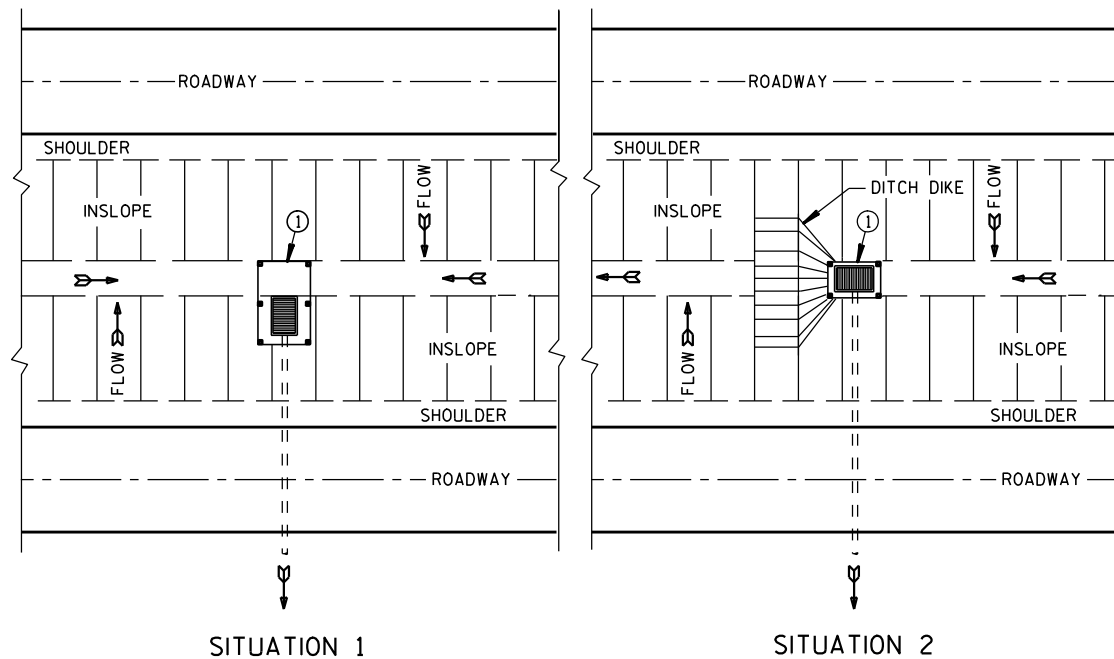
PLAN VIEW
TYPICAL APPLICATION OF SILT FENCE

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

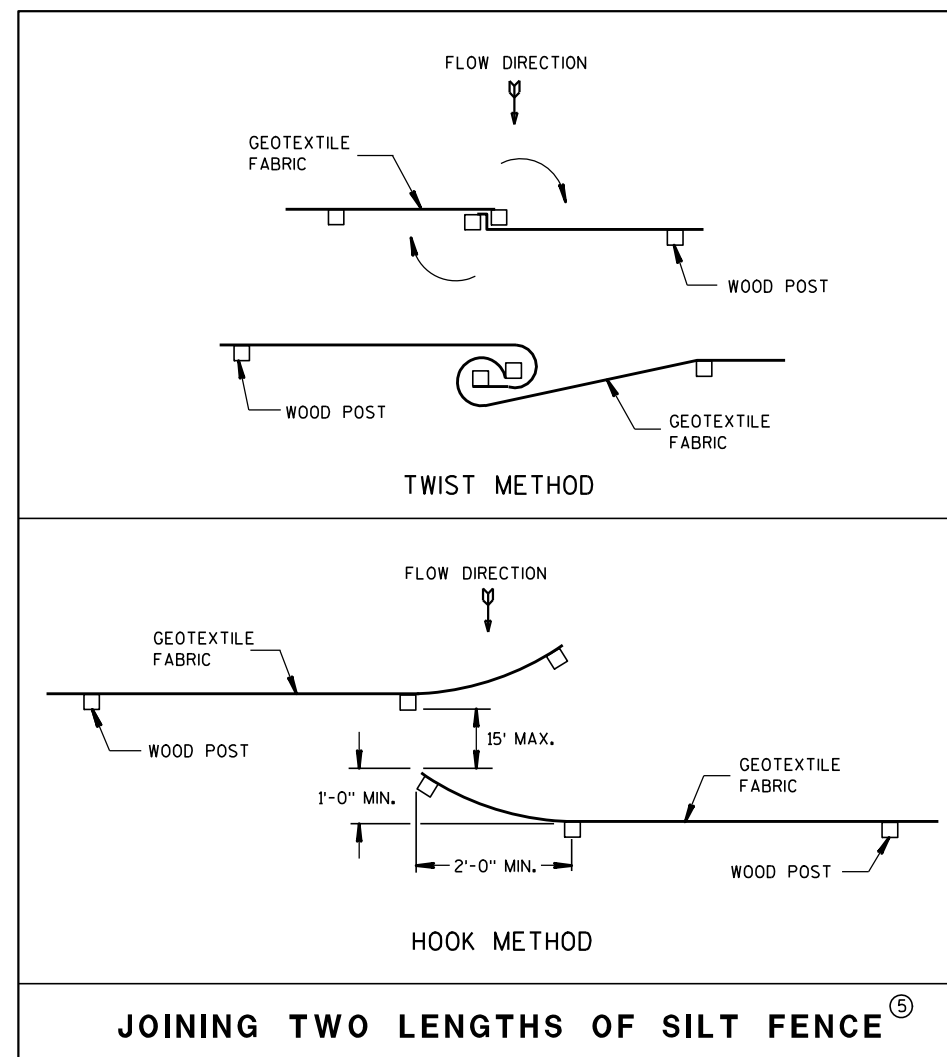


SILT FENCE

* NOTE: 8'-0" POST SPACING ALLOWED IF A
WOVEN GEOTEXTILE FABRIC IS USED.



PLAN VIEW
SILT FENCE AT MEDIAN SURFACE DRAINS

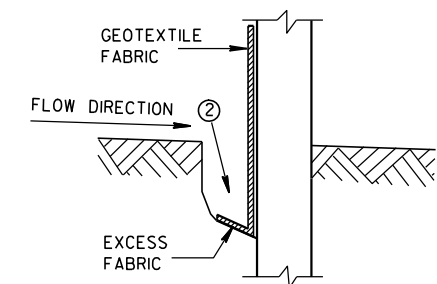


JOINING TWO LENGTHS OF SILT FENCE^⑤

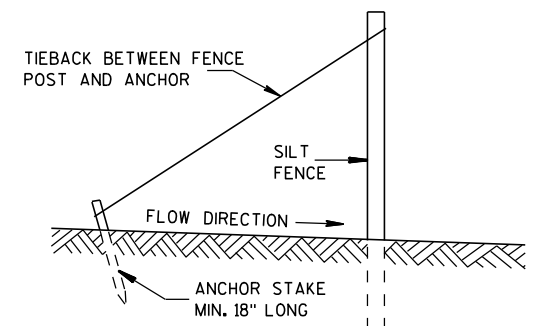
GENERAL NOTES

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

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



TRENCH DETAIL



SILT FENCE TIE BACK
(WHEN REQUIRED BY THE ENGINEER)

SILT FENCE

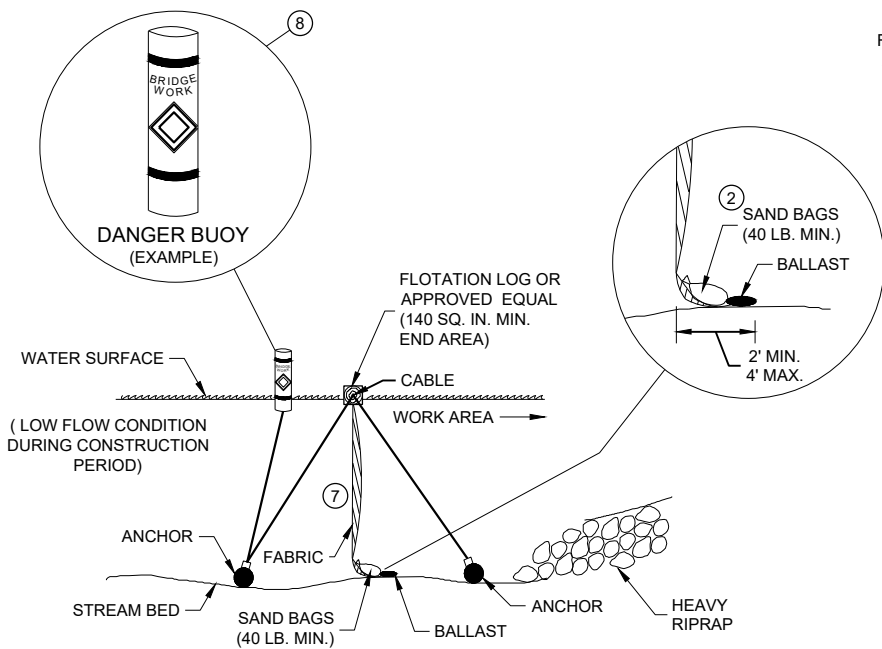
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

4-29-05
DATE

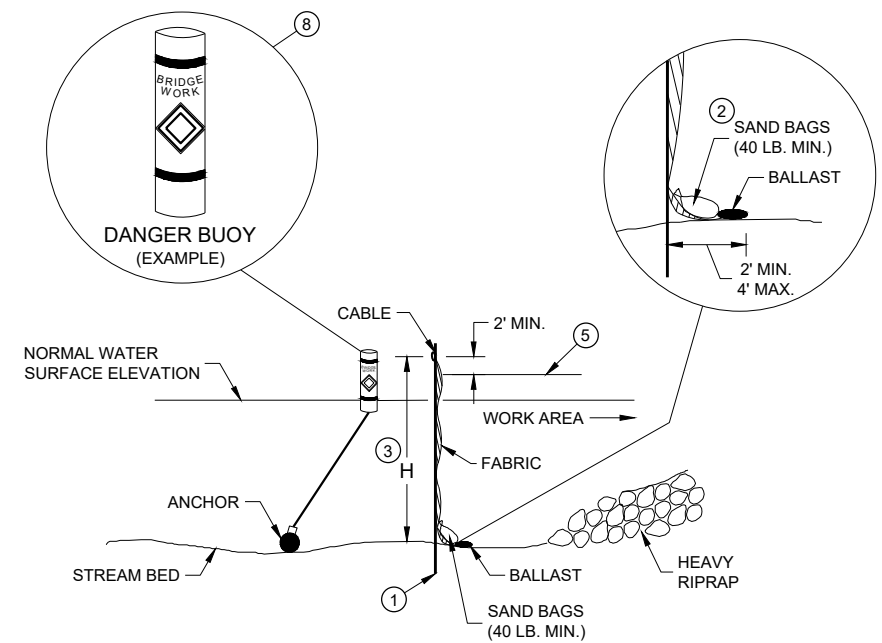
FHWA

/S/ Beth Cannestra
CHIEF ROADWAY DEVELOPMENT ENGINEER



SECTION B - B

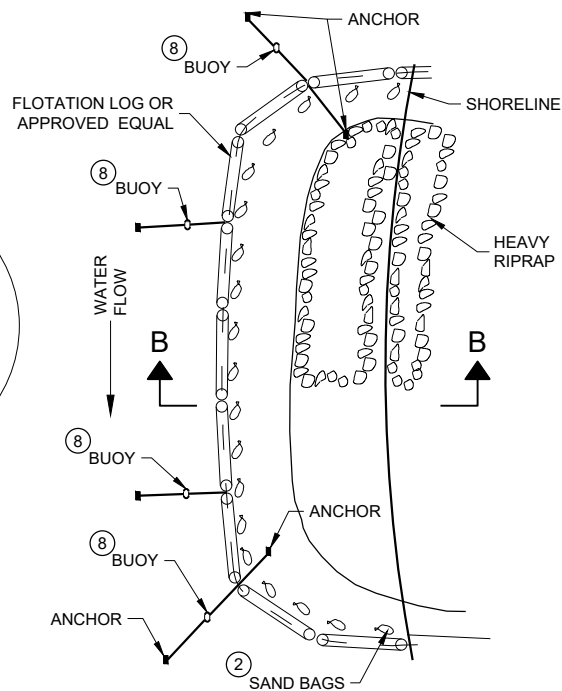
TURBIDITY BARRIER - FLOAT ALTERNATIVE
CAUTION - SEE NOTE 6



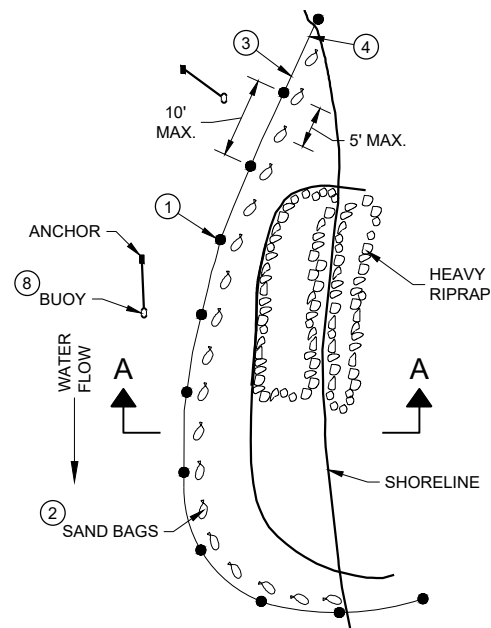
SECTION A - A

TURBIDITY BARRIER - STANDARD POST INSTALLATION

TURBIDITY BARRIER PLACEMENT DETAILS



PLAN VIEW



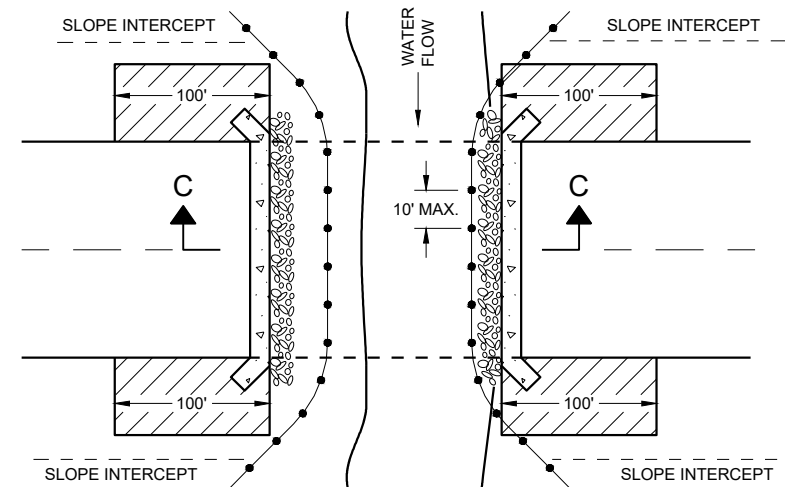
PLAN VIEW

GENERAL NOTES

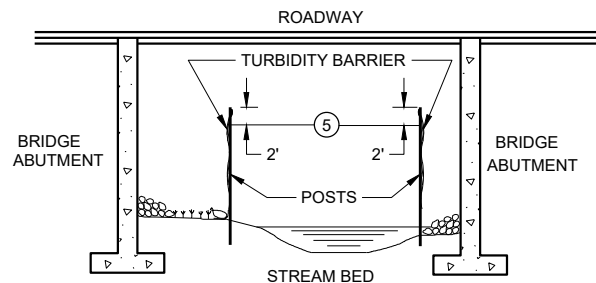
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

TURBIDITY BARRIER MAY BE REMOVED AT THE ENGINEERS DISCRETION, WHEN PERMANENT EROSION CONTROL MEASURES HAVE BEEN ESTABLISHED.

- 1 DRIVEN STEEL POSTS, PIPES, OR CHANNELS. LENGTH SHALL BE SUFFICIENT TO SECURELY SUPPORT BARRIER AT HIGH WATER ELEVATIONS.
- 2 SAND BAGS TO BE USED AS ADDITIONAL BALLAST WHEN ORDERED BY THE ENGINEER TO MEET ADVERSE FIELD CONDITIONS. SPACE AS APPROPRIATE FOR SITE CONDITIONS.
- 3 WHEN BARRIER HEIGHT "H" EXCEEDS 8 FEET, POST SPACING MAY NEED TO BE DECREASED.
- 4 IN WATERWAYS SUBJECT TO FLUCTUATING WATER ELEVATIONS, PROVISIONS SHOULD BE MADE TO ALLOW THE WATER TO EQUALIZE ON EACH SIDE OF THE BARRIER. THIS MAY BE ACCOMPLISHED BY LEAVING A PORTION OF THE BARRIER OPEN ON THE UPSTREAM END.
- 5 ESTIMATED HIGH WATER ELEVATION DURING CONSTRUCTION PERIOD. MINIMUM BARRIER HEIGHT SHALL BE 2' GREATER THAN EITHER THE Q2 ELEVATION OR THE ESTIMATED HIGH WATER ELEVATION DURING CONSTRUCTION, WHICHEVER IS GREATER.
- 6 FLOAT ALTERNATIVE WILL ONLY BE ALLOWED WITH WRITTEN APPROVAL OF THE ENGINEER, AND IS MEANT FOR LOCATIONS WHERE BEDROCK PREVENTS THE INSTALLATION OF POSTS.
- 7 ALLOW SUFFICIENT SLACK VERTICALLY AND HORIZONTALLY SO THAT SEDIMENT BUILD UP WILL NOT SEPARATE OR LOWER THE TURBIDITY BARRIER.
- 8 USE AS DIRECTED BY COAST GUARD OR DNR PERMIT WHEN WORKING IN NAVIGABLE WATERWAYS.



PLAN VIEW



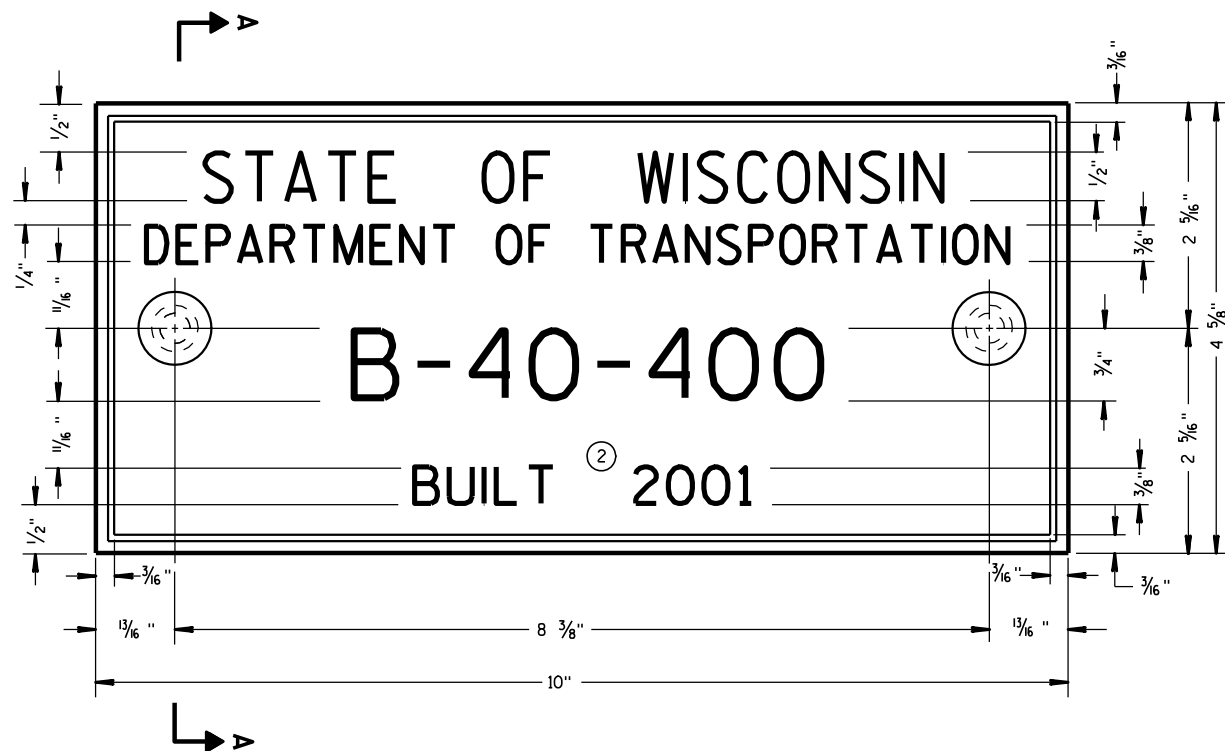
SECTION C - C

TURBIDITY BARRIER DETAIL SHOWING
TYPICAL PLACEMENT AT STRUCTURES

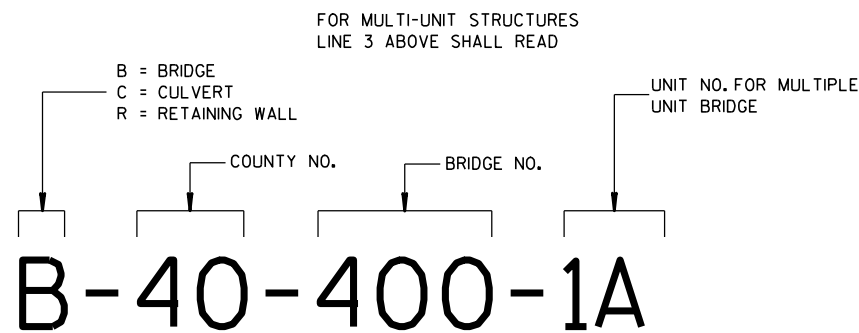
TURBIDITY BARRIER

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
6/4/02 DATE /S/ Beth Cannestra
DATE CHIEF ROADWAY DEVELOPMENT
ENGINEER
FHWA



TYPICAL NAME PLATE
(BRIDGES, CULVERTS, AND RETAINING WALLS)



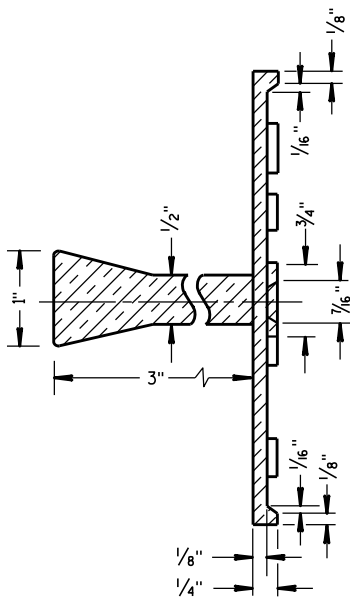
**NUMBERING DESIGNATION
MULTI-UNIT STRUCTURES**

GENERAL NOTES

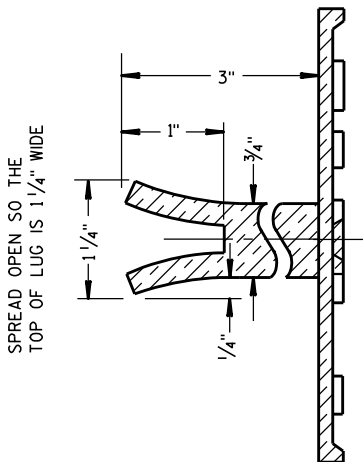
NAME PLATES TO BE INSTALLED ON BRIDGES, CULVERTS, AND RETAINING WALLS SHALL CONFORM TO THE REQUIREMENTS OF SECTION 502.3.11 OF THE STANDARD SPECIFICATIONS.

THE BRIDGE NUMBER AND YEAR BUILT SHOWN ON THIS DRAWING ARE EXAMPLES ONLY. SEE CONSTRUCTION PLANS FOR INDIVIDUAL NUMBERING AND YEAR BUILT.

- ① EPOXY RESIN SHALL BE FROM AN APPROVED MANUFACTURER AND USED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.
- ② REHABILITATION OF AN EXISTING STRUCTURE SHOULD USE THE DATE OF ORIGINAL STRUCTURE CONSTRUCTION.

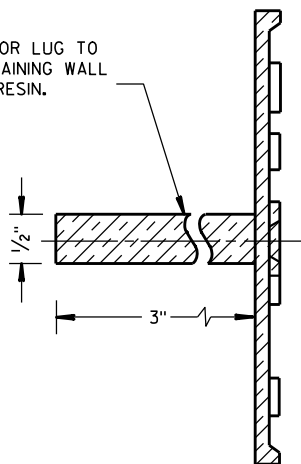


SECTION A-A



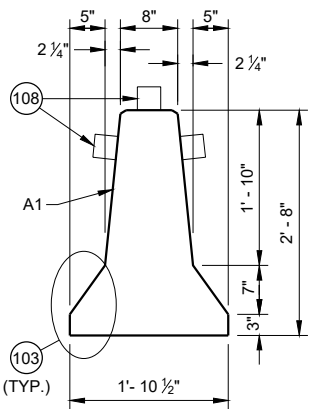
ALTERNATE LUG

- ① ADHERE ANCHOR LUG TO PRECAST RETAINING WALL WITH EPOXY RESIN.

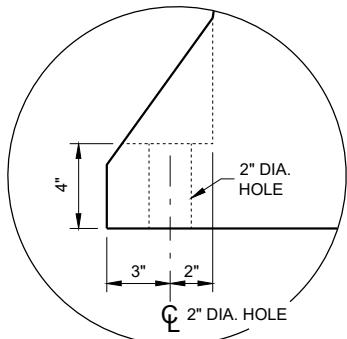


ALTERNATE LUG
(FOR ATTACHMENT TO PRECAST STRUCTURES)

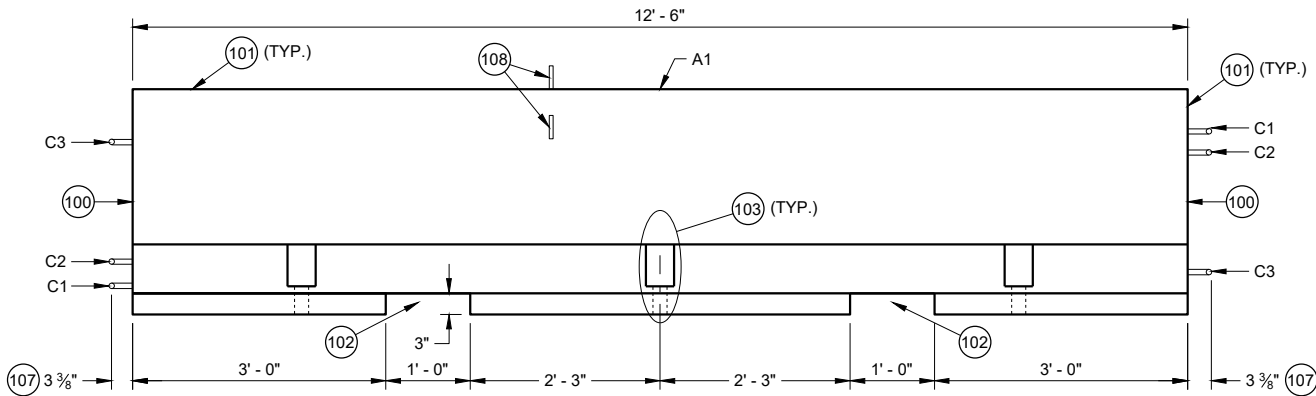
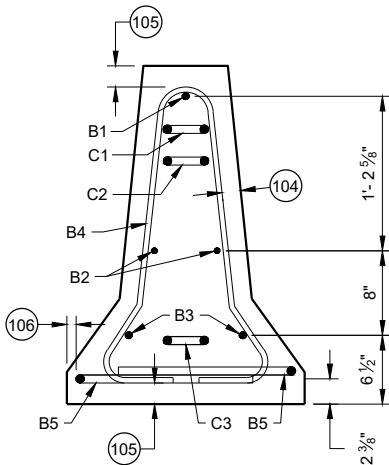
NAME PLATE (STRUCTURES)	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED 3/26/10 DATE	/S/ Scot Becker CHIEF STRUCTURAL DEVELOPMENT ENGINEER
FHWA	



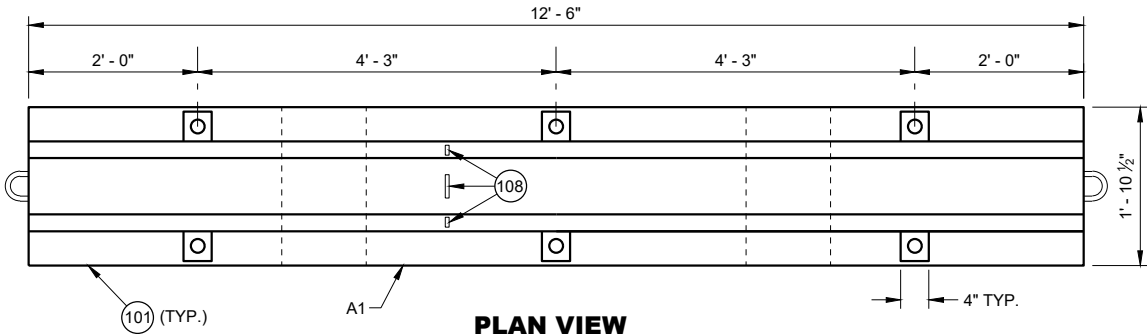
CROSS SECTION



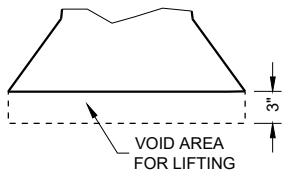
ANCHOR BLOCK
DETAIL



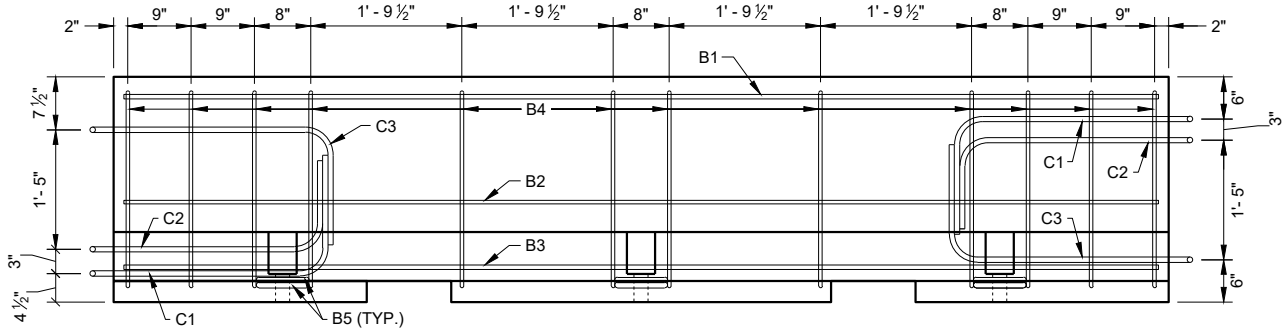
PROFILE VIEW



PLAN VIEW
TEMPORARY BARRIER



LIFTING SLOT DETAIL
(TYP.)



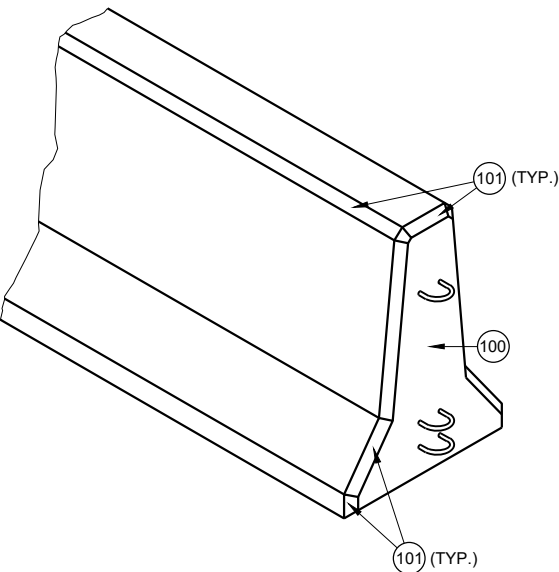
PROFILE VIEW
TEMPORARY BARRIER REINFORCEMENT

GENERAL NOTES

PLACE BARRIER ON PAVED SURFACE. BEFORE PLACEMENT OF TEMPORARY BARRIER, REMOVE ALL LOOSE MATERIAL FROM PAVED SURFACE.

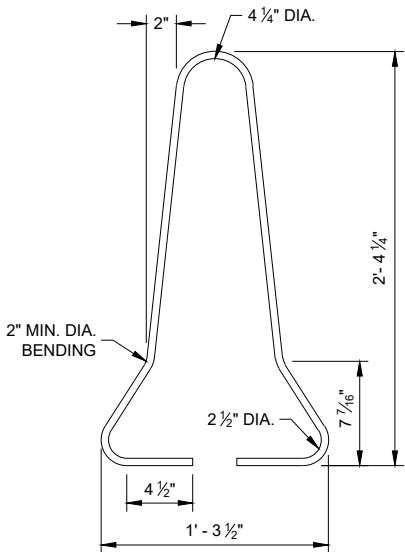
LOOP BARS C1, C2 AND C3 ARE NOT FOR PLACEMENT OR MOVEMENT OF BARRIER.

- 100 PERMANENTLY FORM INTO ONE END OF BARRIER THE FOLLOWING INFORMATION:
A. TYPE OF BARRIER: WI-CBTP
B. MANUFACTURER
C. DATE OF MANUFACTURE (MONTH AND YEAR)
- 101 1" OPTIONAL CHAMFER
- 102 SEE LIFTING SLOT DETAIL
- 103 SEE ANCHOR BLOCK DETAIL
- 104 1 3/4" MIN. CLEAR COVER
- 105 2" MIN. CLEAR COVER
- 106 1" MIN. CLEAR COVER
- 107 ± 1/8" MEASURED FROM FACE OF CONCRETE BARRIER TO OUTSIDE OF LOOP BAR (TYP.)
- 108 USE DELINEATORS CONFORMING TO SECTION 633 OF THE STANDARD SPECIFICATIONS. CONTRACTOR MY USE ALTERNATE SHAPES AND HOUSING. INSTALL DELINEATORS ACCORDING TO MANUFACTURERS INSTRUCTION. INSTALL YELLOW REFLECTORS WHEN BARRIER IS LOCATED LEFT OF TRAFFIC AND WHITE WHEN BARRIER IS LOCATED RIGHT OF TRAFFIC. SPACE DELINEATORS A MAXIMUM OF 25 FEET APART, PROVIDE TO MOUNTED DELINEATORS IN ADDITION TO SIDE MOUNTED DELINEATORS ON BARRIER INSTALLATIONS LOCATED ON A CURVED ALIGNMENT LONGER THAT 200 FEET AND ON BARRIERS USED TO SEPARATE OPPOSING TRAFFIC.

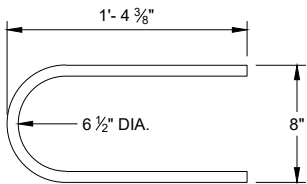


CONCRETE BARRIER
TEMPORARY PRECAST,
12' - 6"

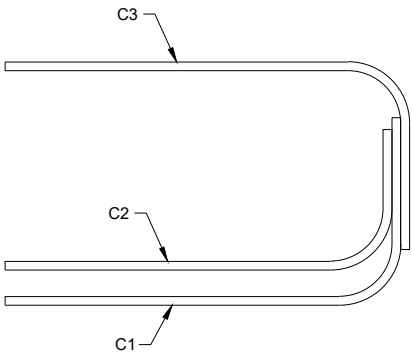
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



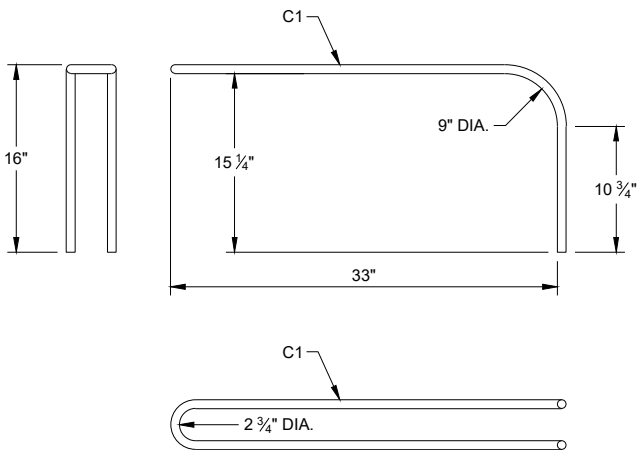
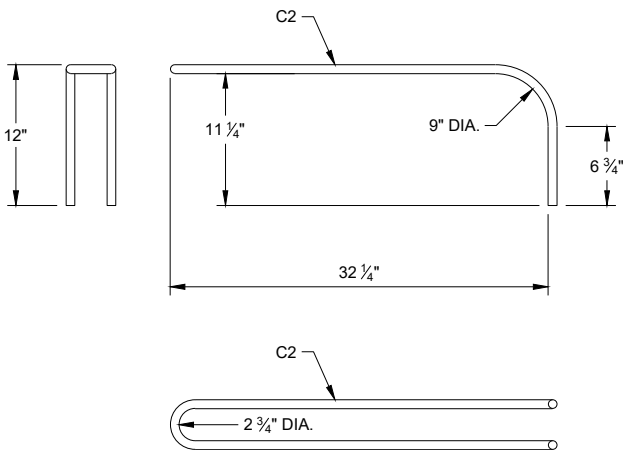
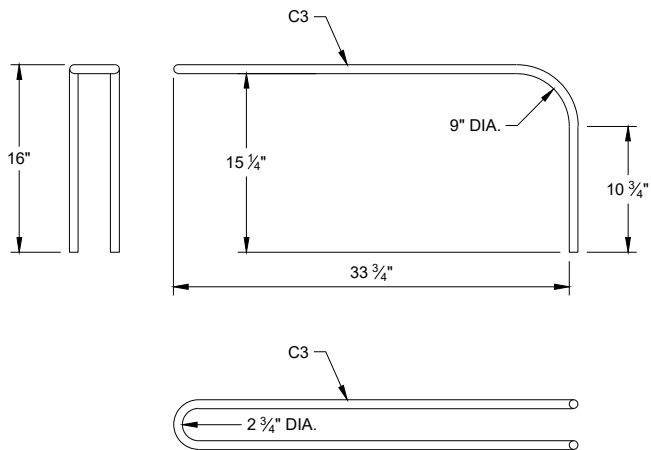
B4 BAR DETAIL



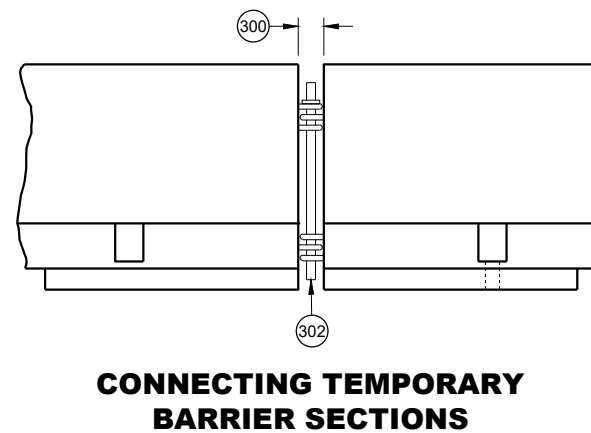
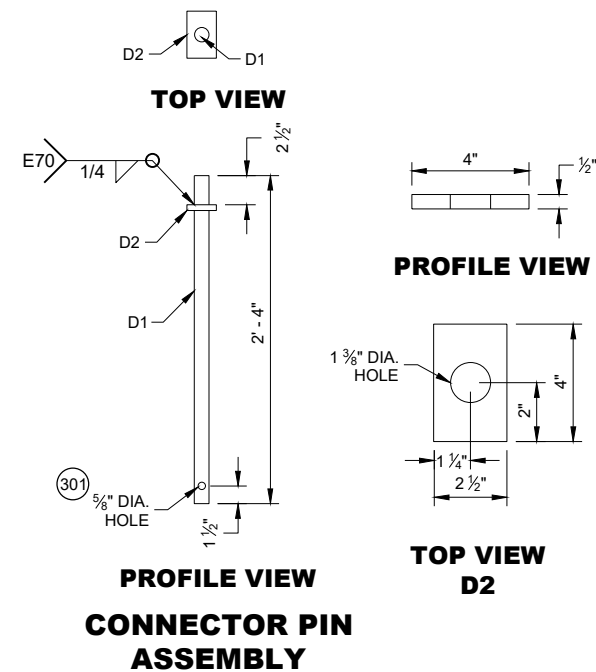
B5 BAR DETAIL



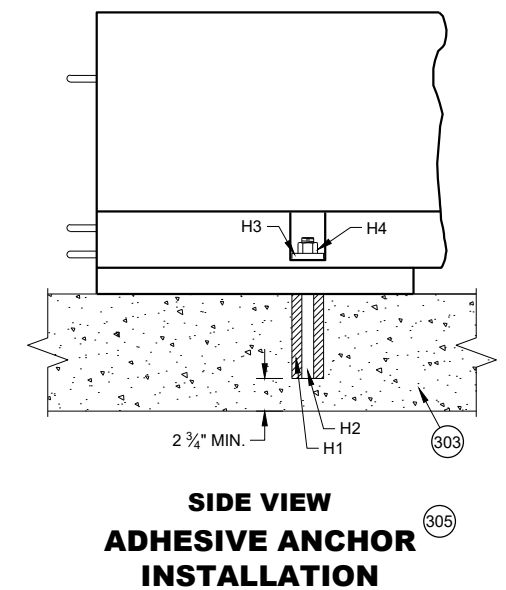
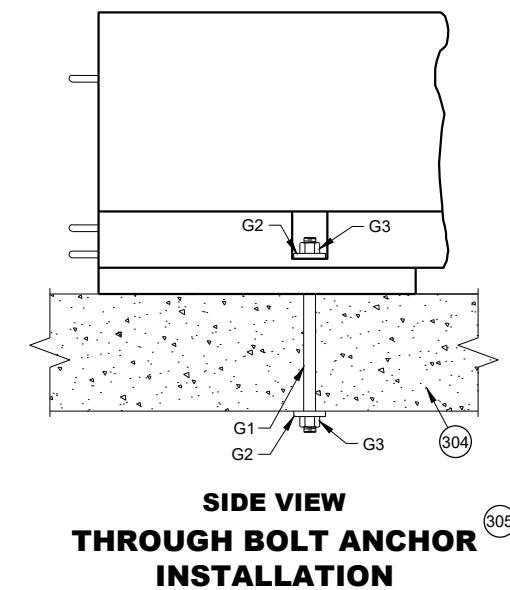
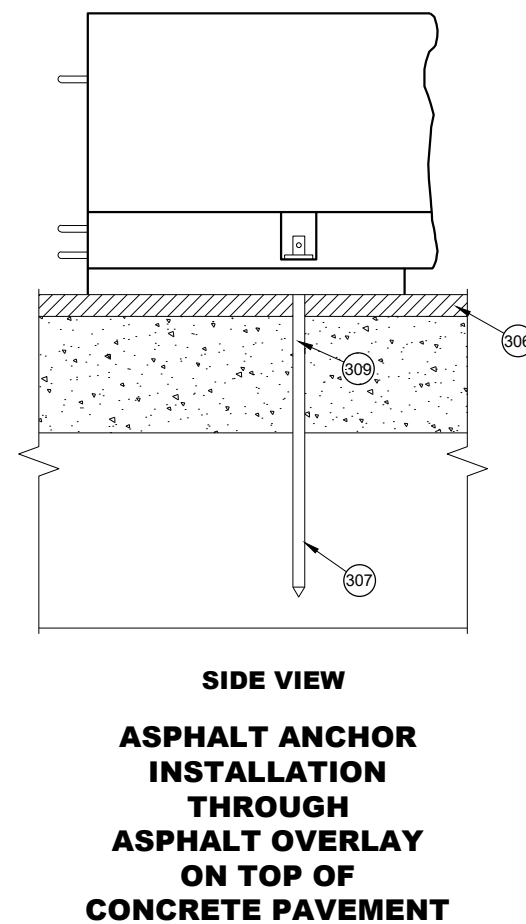
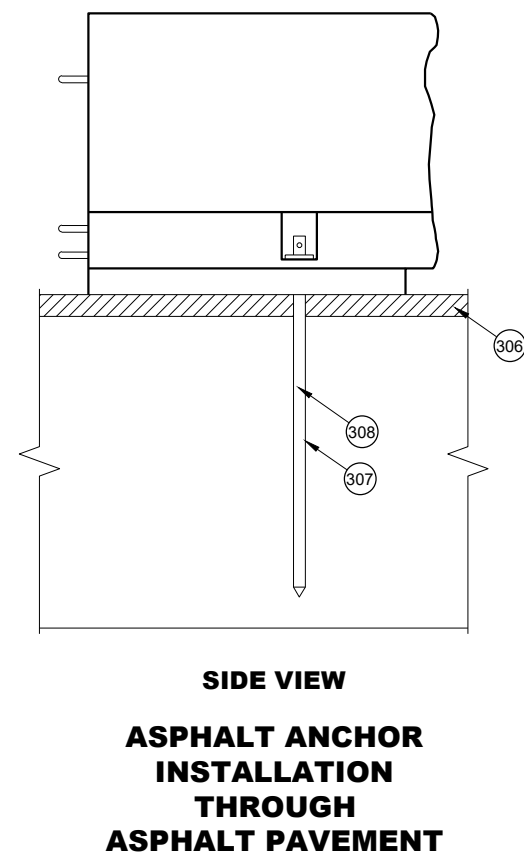
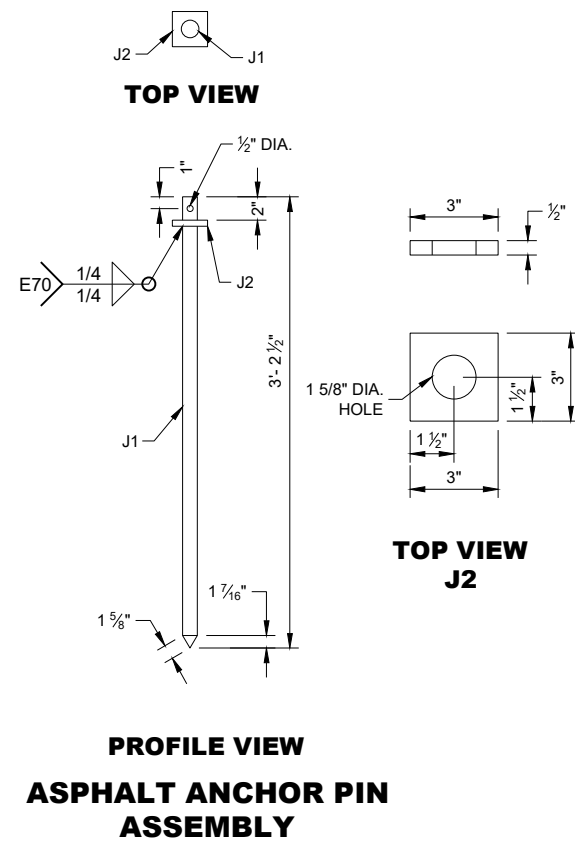
PROFILE VIEW
LOOP BAR ASSEMBLY



C BAR DETAILS

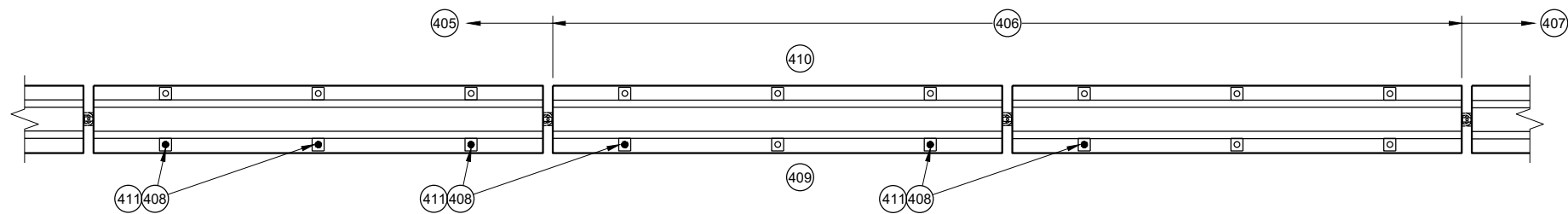


- ## GENERAL NOTES
- 300 SET WITH 3 5/8" WOOD BLOCK.
 - 301 HOLE IS OPTIONAL.
 - 302 CONNECTOR PIN ASSEMBLY.
 - 303 CONCRETE PAVEMENT, APPROACH SLAB, OR DECK.
 - 304 CONCRETE DECK.
 - 305 DO NOT USE ON CONCRETE BRIDGE DECK WITH ASPHALT OVERLAY OR CONCRETE PAVEMENT WITH ASPHALT OVERLAY.
 - 306 MINIMUM OF 2" OF ASPHALT.
 - 307 ASPHALT ANCHOR PIN ASSEMBLY
 - 308 IF DRILLING A PILOT HOLE, THE MAX. DIA. OF THE HOLE IS 3/4"
 - 309 WHEN THERE IS ASPHALT OVERLAYING CONCRETE PAVEMENT, A 1 5/8" DIA. PILOT HOLE CAN BE DRILLED INTO THE OVERLAY AND CONCRETE. IF NEEDED DRILL A 3/4" PILOT HOLE IN BASE COURSE.

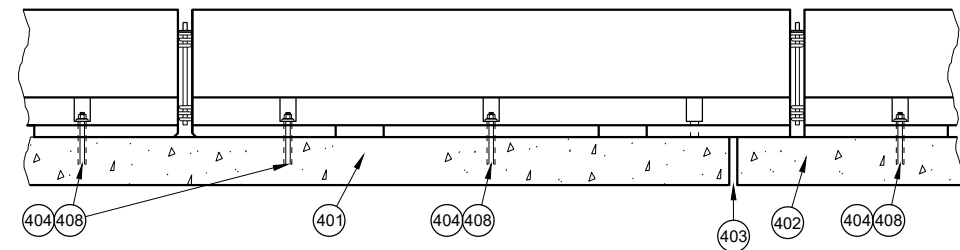


**CONCRETE BARRIER
TEMPORARY PRECAST,
12' - 6"**

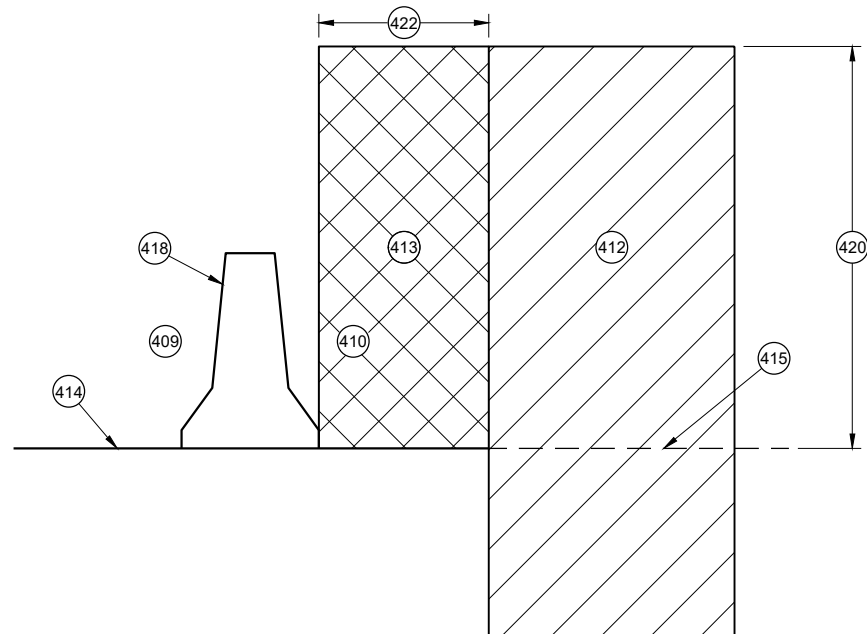
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



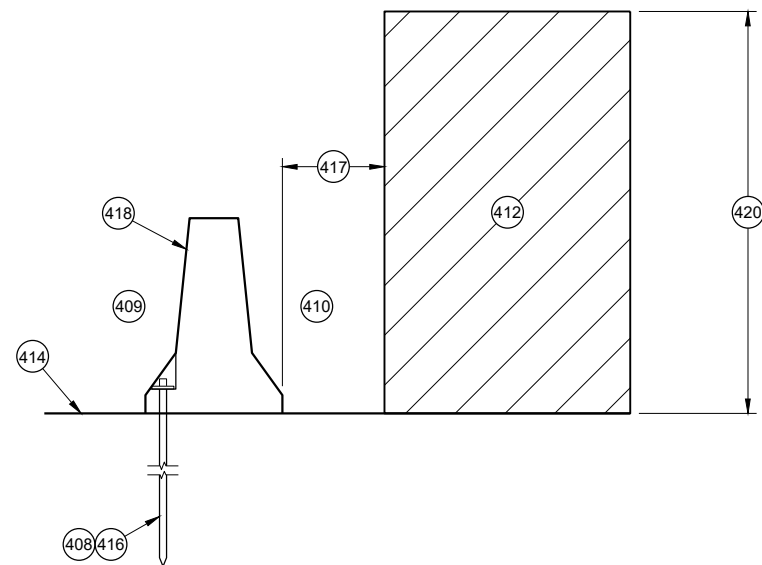
PLAN VIEW
TRANSITION FROM FREE STANDING TO ANCHORED BARRIER



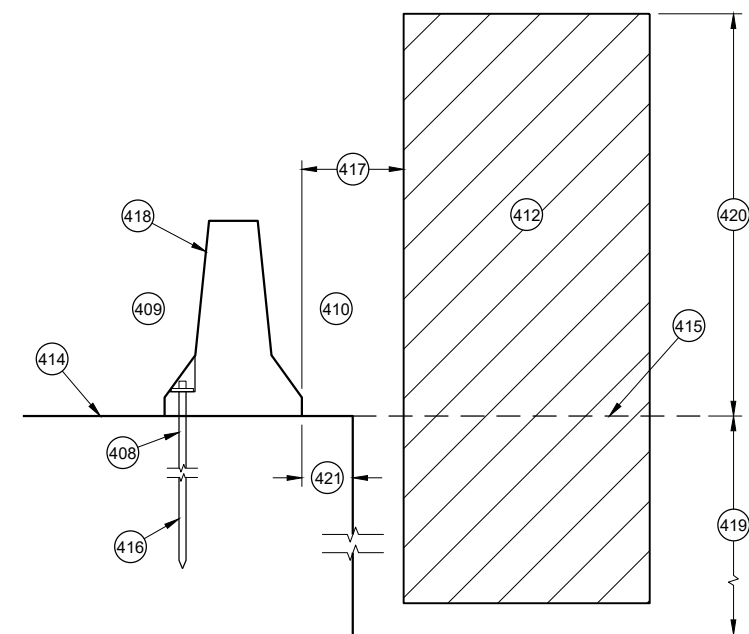
PROFILE VIEW
ANCHORED BARRIER NEAR EXPANSION JOINT



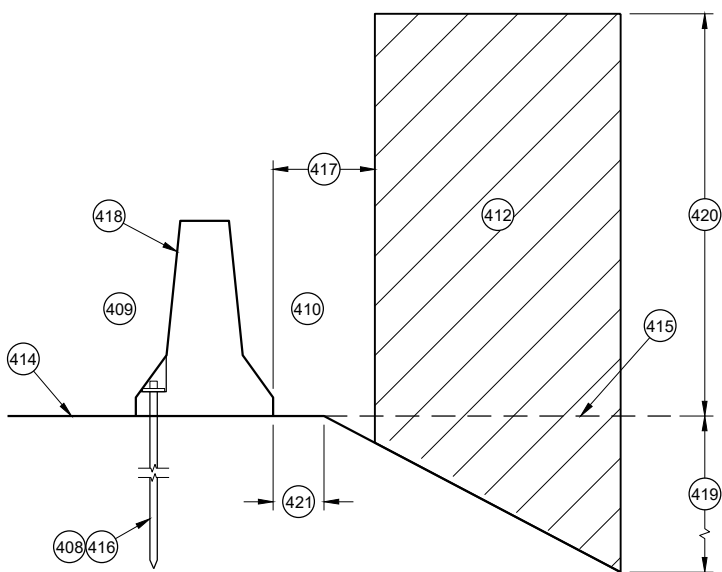
CROSS SECTION
FREE STANDING BARRIER



CROSS SECTION
**ANCHORED BARRIER FOR OBJECTS ABOVE
THE GRADE LINE AND NEAR THE BARRIER**



CROSS SECTION
ANCHORED BARRIER NEAR VERTICAL DROP OFF



CROSS SECTION
ANCHORED BARRIER NEAR A SLOPE

GENERAL NOTES

- (400) NO SINGLE CONCRETE BARRIER SECTION SHALL BE ANCHORED TO BOTH THE BRIDGE DECK AND THE APPROACH SLAB. ALL ANCHOR BOLT LOCATIONS SHALL BE ANCHORED TO THE DECK IN ACCORDANCE WITH THE DETAIL. NO MORE THAN ONE ANCHOR BOLT SHALL BE ELIMINATED FROM A BARRIER SECTION WHEN SPANNING AN EXPANSION JOINT.
- (401) CONCRETE DECK
- (402) CONCRETE DECK OR APPROACH SLAB.
- (403) EXPANSION JOINT
- (404) ADHESIVE ANCHOR SHOWN. SEE ANCHOR DETAILS.
- (405) ANCHORED TEMPORARY BARRIER
- (406) TRANSITION FROM ANCHORED TEMPORARY BARRIER TO FREE STANDING
- (407) FREE STANDING BARRIER
- (408) REMOVE ALL ANCHORS WHEN NO LONGER NEEDED. FILL CONCRETE PAVEMENTS, DECKS AND APPROACH SLABS WITH NON-SHRINK COMMERCIAL GROUT FROM THE APPROVED PRODUCT LIST. FILL ASPHALT PAVEMENTS WITH ASTM D6690 TYPE II RUBBERIZED CRACK FILLER.
- (409) TRAFFIC SIDE
- (410) NON-TRAFFIC SIDE
- (411) ANCHOR LOCATION. SEE ANCHORING DETAILS.
- (412) WORK AREA
- (413) AREA FREE OF OBJECTS AND WORKERS
- (414) GRADE LINE
- (415) EXTENDED GRADE LINE
- (416) ANCHORED TEMPORARY BARRIER. SEE BOLT THROUGH DECK, REMOVABLE ADHESIVE ANCHOR, OR AN ASPHALT ANCHOR ROD DETAILS FOR MORE INFORMATION. ASPHALT ANCHOR ROD SHOWN.
- (417) WHEN OBJECTS EXTEND ABOVE THE GRADE. A MINIMUM OF 1 FOOT IS REQUIRED FROM BACK OF BARRIER TO OBJECT.
- (418) OBJECTS ARE NOT TO BE PLACED ON, MOUNTED TO, OR ALLOWED TO LEAN AGAINST THE BARRIER WITHOUT WRITTEN PERMISSION OF THE PROJECT ENGINEER.
- (419) DEPTHS OF 3 FEET OR MORE.
- (420) $Y = 6.5'$
- (421) OFFSET FROM BACK OF BARRIER EDGE:
 - CONCRETE PAVEMENT 0.5'
 - ASPHALT 0.5'
- (422) POSTED SPEED (MPH):
 - 45 OR GREATER 4.0'
 - 40 OR LOWER 2.0'

CONCRETE BARRIER
TEMPORARY PRECAST,
12' - 6"

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

GENERAL NOTES

- 500 EXISTING RIGID BARRIERS (VARIES)

501 TEMPORARY BARRIER

502 SEE OTHER DETAIL ON HOW TO ANCHOR TEMPORARY BARRIER (BARRIER ASPHALT ANCHOR SHOWN).

503 ANCHORS ARE REQUIRED ON BOTH SIDE OF THE TEMPORARY BARRIER.

504 NESTED RAILS ARE REQUIRED ON BOTH SIDES OF THE TEMPORARY BARRIER FOR ALL INSTALLATIONS.

505 TRAFFIC TRAVELS FROM PERMANENT BARRIER TO TEMPORARY BARRIER.
- 506 TRAFFIC TRAVELS FROM TEMPORARY BARRIER TO PERMANENT BARRIER.

507 VERTICAL BARRIER

508 SAFETY SHAPE BARRIER

509 SINGLE SLOPE BARRIER

510 CAP END PLATE PLACED FLUSH WITH UPSTREAM END OF RIGID BARRIER.

511 BENT THRIE BEAM TO FIT.

512 THRIE BEAM PIECES ARE OFFSET 15 1/4" TO PREVENT INTERFERENCE FROM THE ANCHORS ON OPPOSING SIDES.
- 513 TWO (2) P1, P2 AND P3 ARE REQUIRED

514 FIVE (5) N1, N2 AND N3 ARE REQUIRED

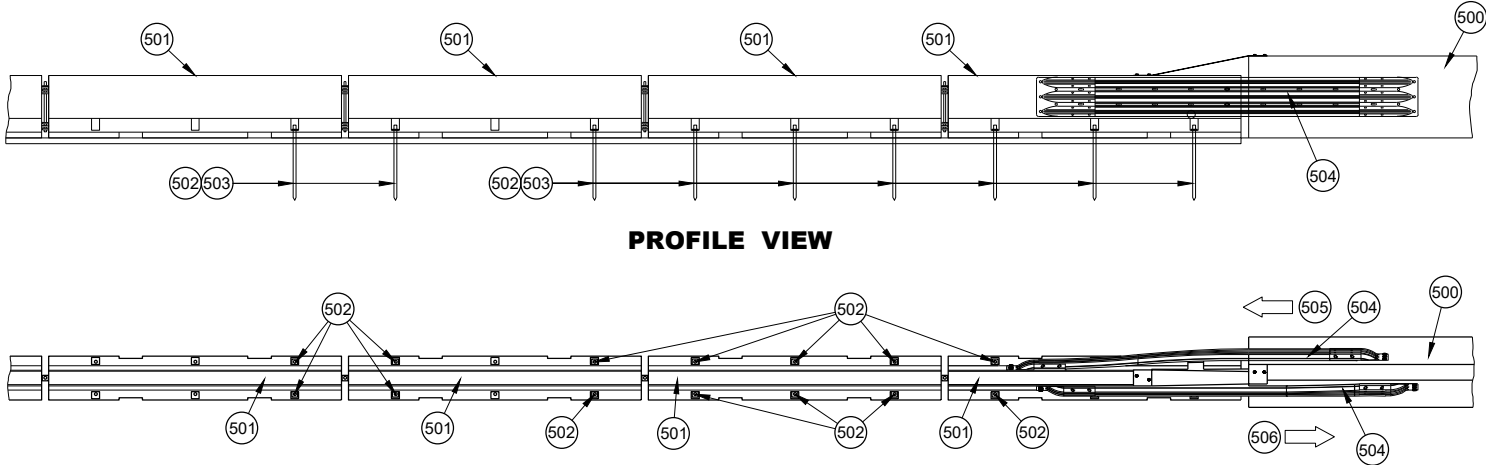
515 TWO (2) R1, R2 AND R3 ARE REQUIRED

516 CUT WOOD BLOCK TO FIT.

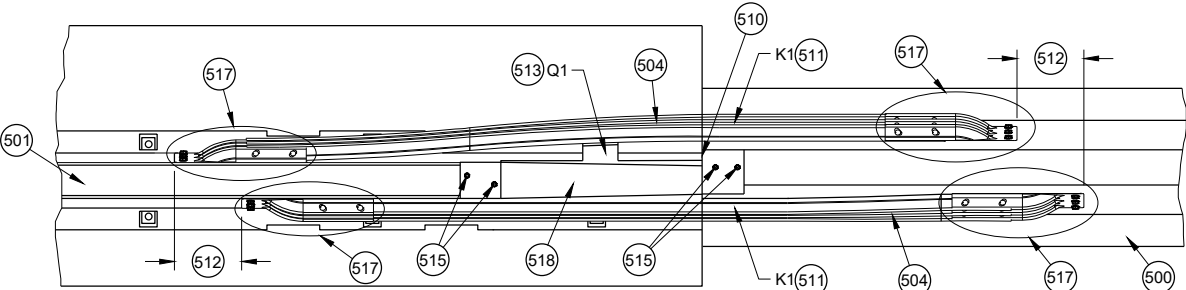
517 SEE THRIE BEAM RAIL TERMINAL CONNECTOR DETAIL ASSEMBLY.

518 CAP ASSEMBLY

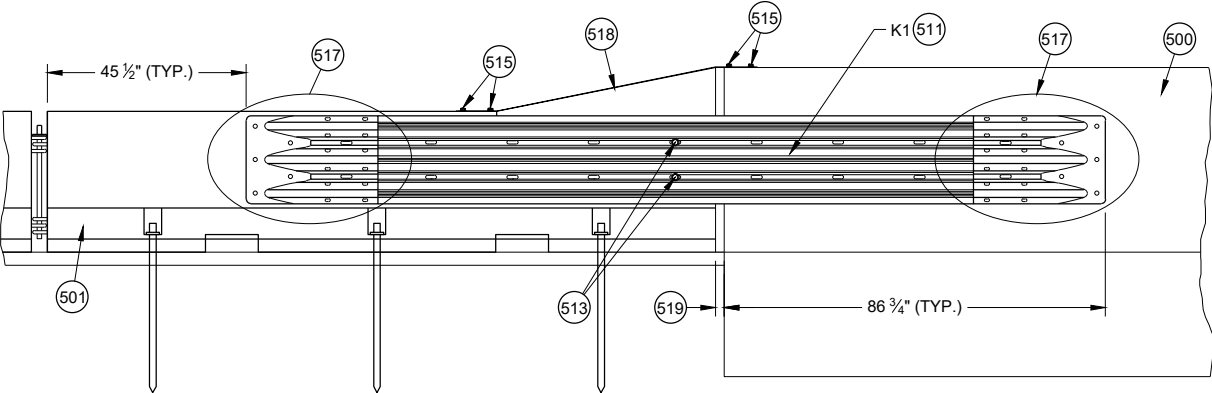
519 4" MAX. GAP BETWEEN TEMPORARY BARRIER AND RIGID BARRIER.
- 520 ALL TWELVE SPLICE HOLES REQUIRE M1 AND M2



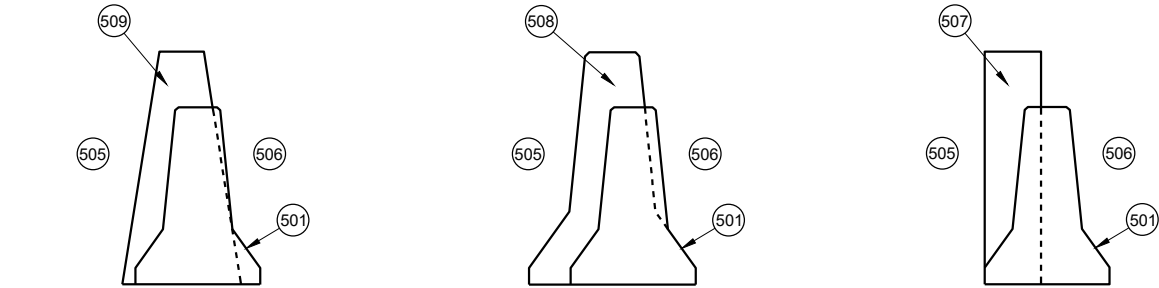
PLAN VIEW
TRANSITION TO RIGID BARRIER



PLAN DETAIL VIEW
TRANSITION TO RIGID BARRIER



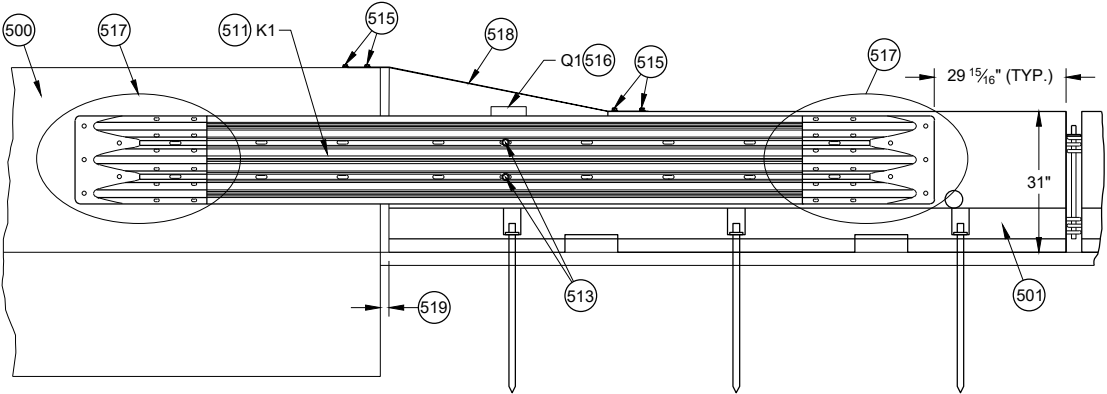
FRONT DETAIL VIEW
TRANSITION TO RIGID BARRIER



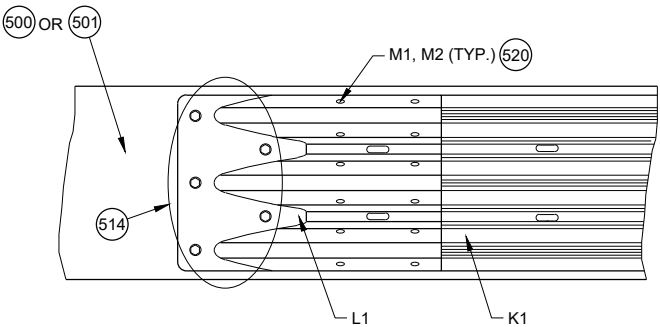
CROSS SECTION
TEMPORARY BARRIER
PLACEMENT SINGLE SLOPE

CROSS SECTION
TEMPORARY BARRIER
PLACEMENT SAFETY SHAPE

CROSS SECTION
TEMPORARY BARRIER
PLACEMENT VERTICAL



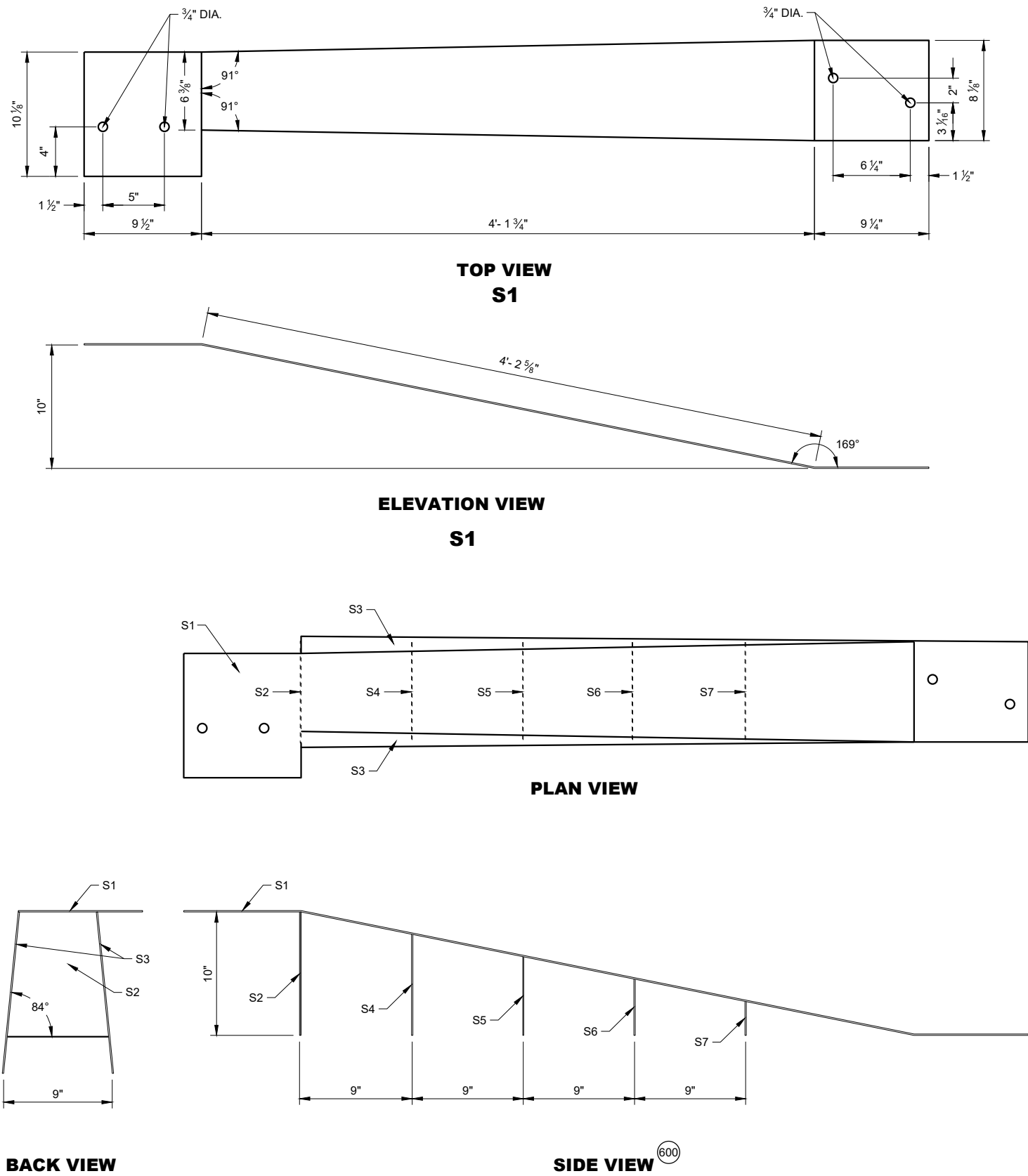
BACK DETAIL VIEW
TRANSITION TO RIGID BARRIER



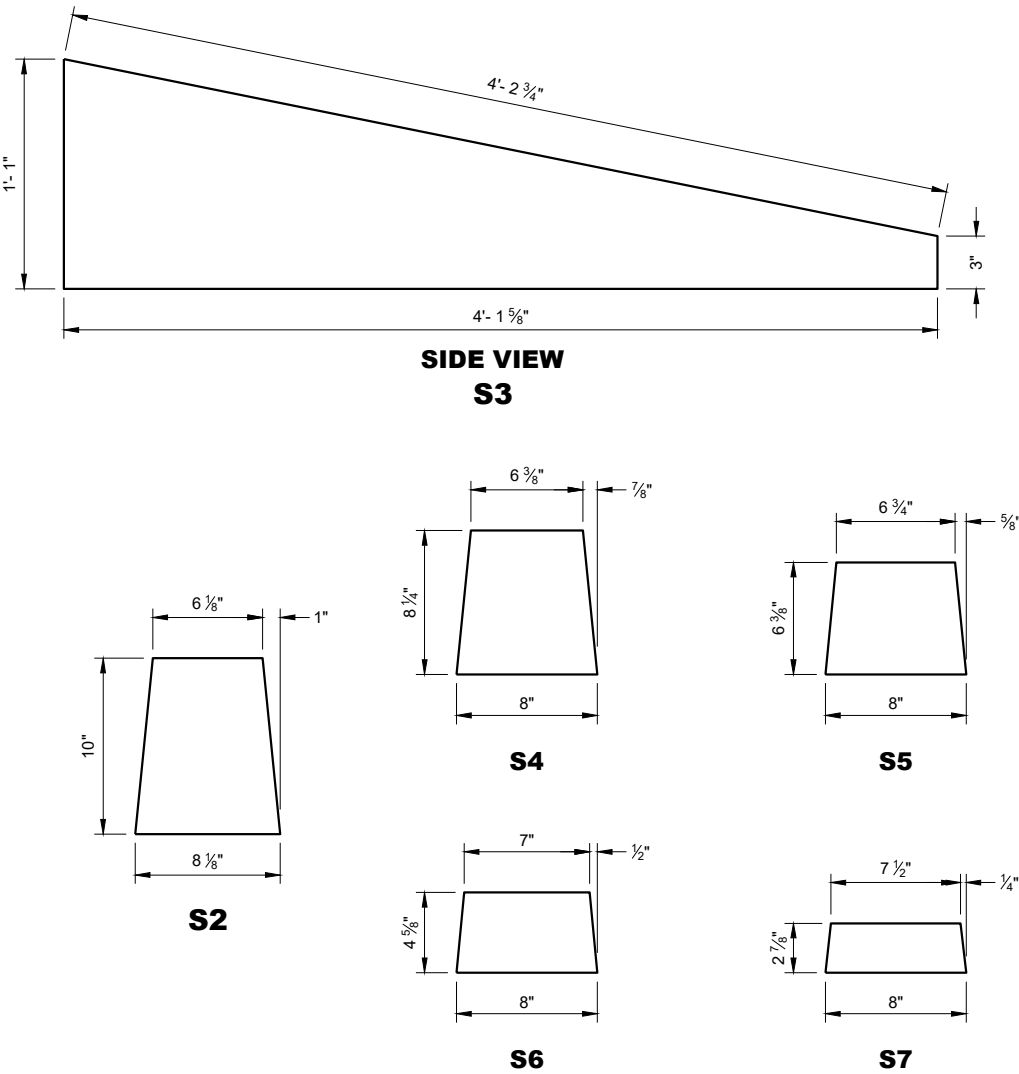
517 DETAIL PLAN VIEW
THRIE BEAM RAIL TERMINAL CONNECTOR ASSEMBLY

CONCRETE BARRIER
TEMPORARY PRECAST,
12' - 6"

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



42" TOP CAP ASSEMBLY



GENERAL NOTES

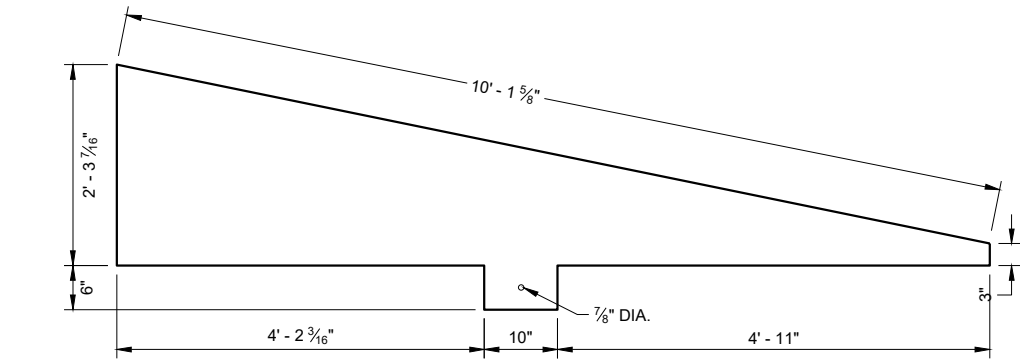
STITCH WELD GUSSET PLATES AND END PLATES ON THREE SIDES

STITCH WELD TWO SIDE PLATES TO TOP PLATE, END PLATE AND GUSSETS.

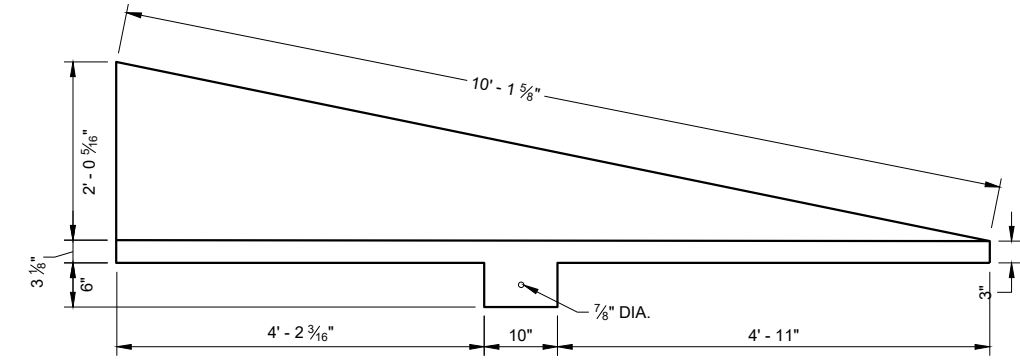
(600) SIDE PLATES (S3) NOT SHOWN FOR CLARITY.

CONCRETE BARRIER
TEMPORARY PRECAST,
12' - 6"

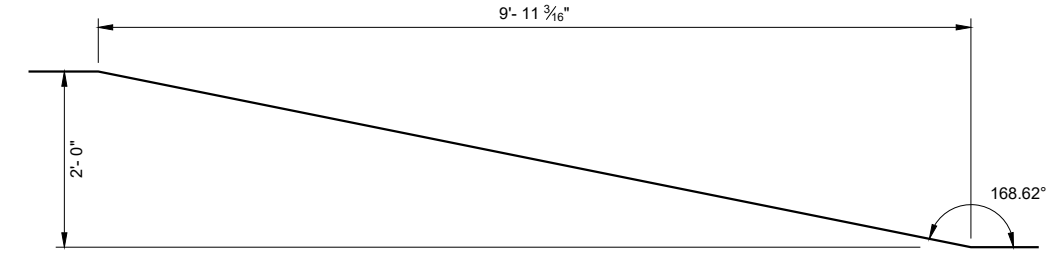
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



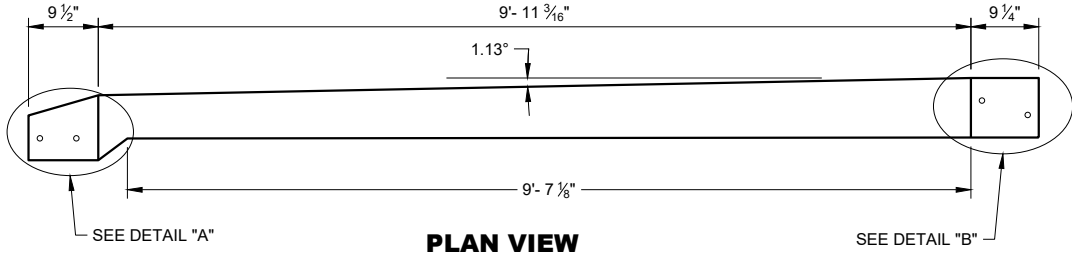
SIDE VIEW
T4



SIDE VIEW
T3



SIDE VIEW
TOP PLATE T1



PLAN VIEW
TOP PLATE T1

END
VIEW

END
VIEW

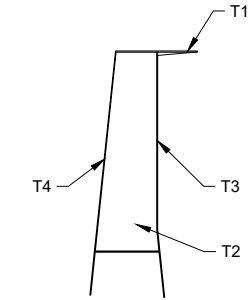
GENERAL NOTES

STITCH WELD GUSSET PLATES AND END PLATES ON THRIE SIDES

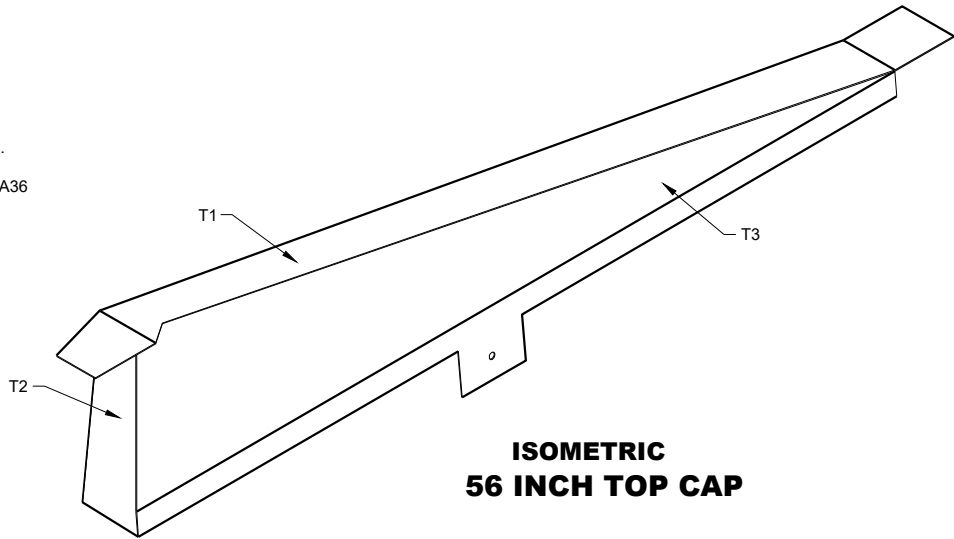
STITCH WELD TWO SIDE PLATES TO TOP PLATE, END PLATE AND GUSSETS.

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

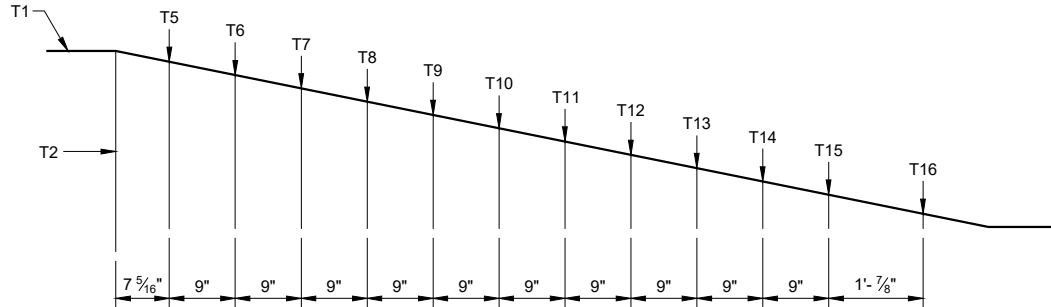
(700) SIDE PLATES (T3 AND T4) NOT SHOWN FOR CLARITY.



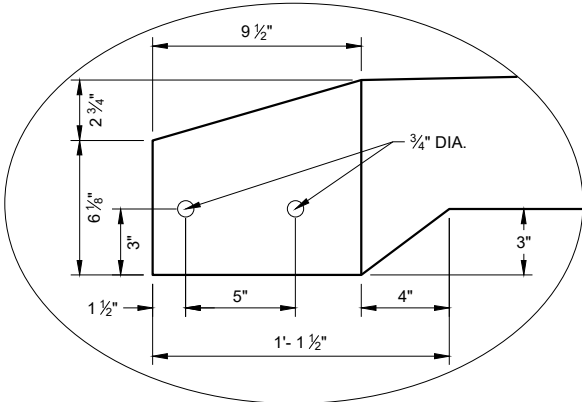
END VIEW
56 INCH TOP CAP



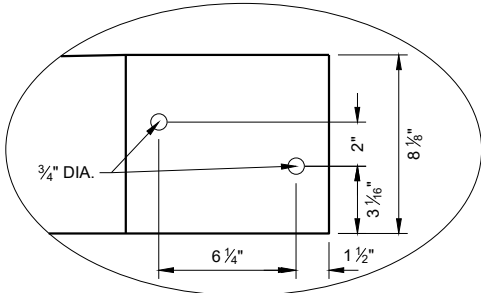
ISOMETRIC
56 INCH TOP CAP



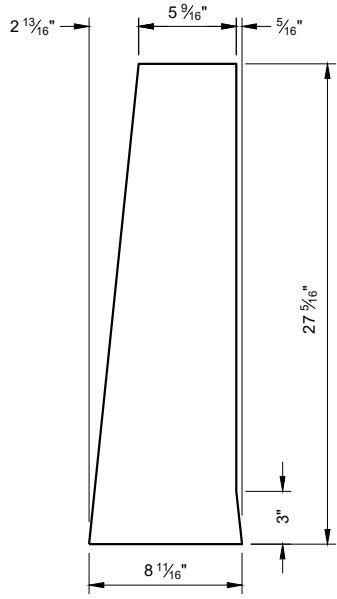
SIDE VIEW
56 INCH TOP CAP (700)



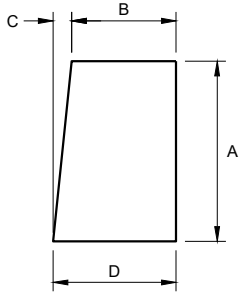
DETAIL "A"



DETAIL "B"



END PLATE T2

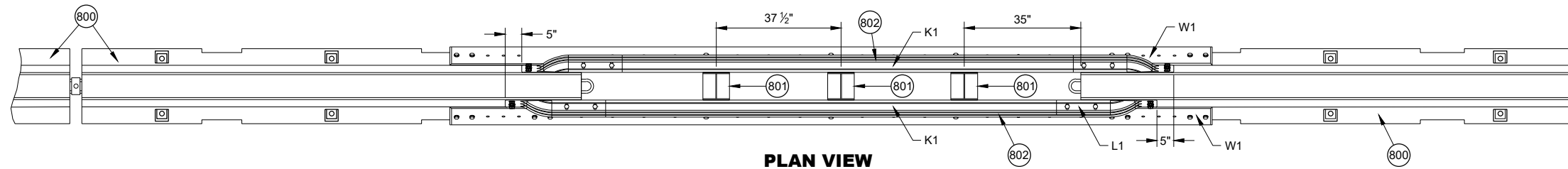
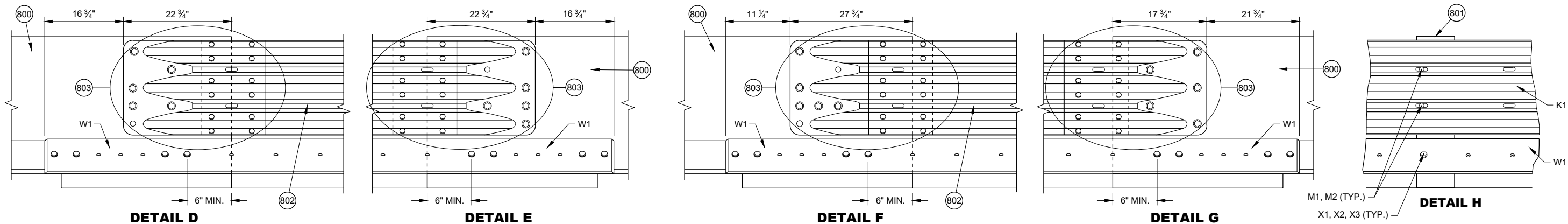


GUSSET PLATES
T5 - T16

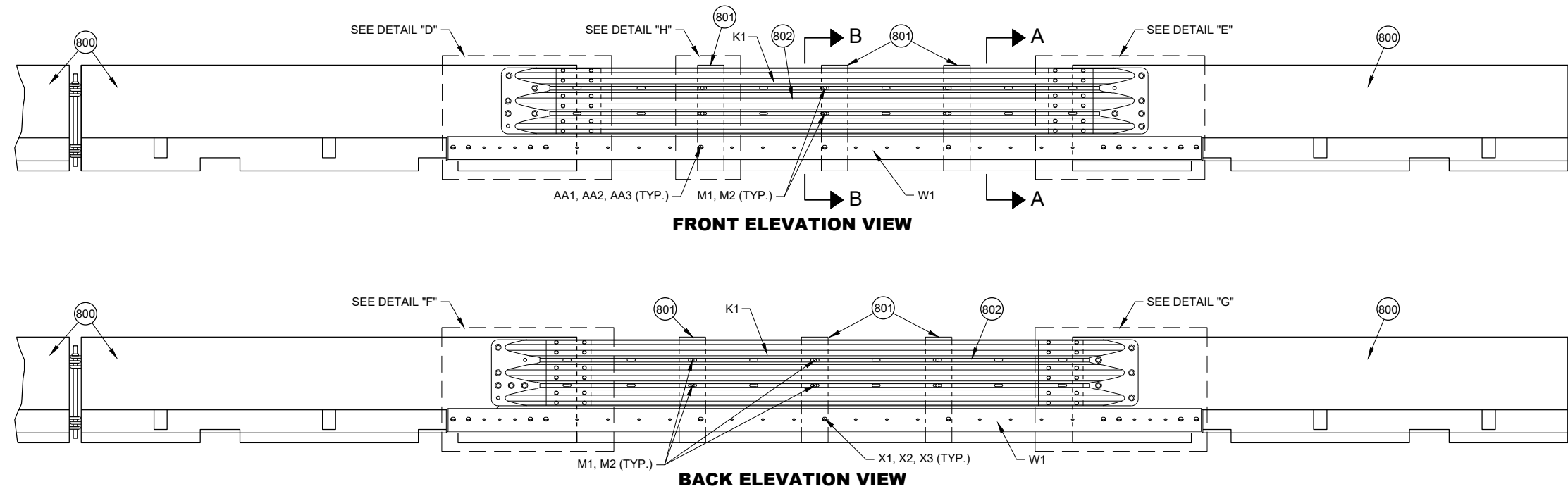
GUSSET DIMENSIONS				
GUSSET NO.	A	B	C	D
T5	22 13/16"	5 1/16"	2 5/16"	8 1/16"
T6	21"	5 7/8"	2 3/16"	8 1/16"
T7	19 3/16"	6 1/16"	1 15/16"	8 1/16"
T8	17 3/8"	6 1/4"	1 13/16"	8 1/16"
T9	15 9/16"	6 5/16"	1 9/16"	8 1/16"
T10	13 3/4"	6 5/8"	1 7/16"	8 1/16"
T11	11 15/16"	6 13/16"	1 1/4"	8 1/16"
T12	10 1/8"	7"	1 1/16"	8 1/16"
T13	8 5/16"	7 3/16"	7/8"	8 1/16"
T14	6 1/2"	7 3/8"	1 1/16"	8 1/16"
T15	4 1/16"	7 9/16"	1/2"	8"
T16	2 7/8"	7 3/4"	1/4"	8"

CONCRETE BARRIER
TEMPORARY PRECAST,
12' - 6"

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

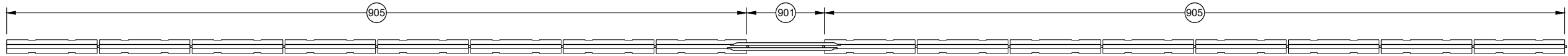


- GENERAL NOTES**
- 800 FREE STANDING TEMPORARY BARRIER
 - 801 GAP STIFFENER ASSEMBLY
 - 802 THRIE BEAMS ARE NESTED ON BOTH SIDES OF THE TEMPORARY BARRIER.
 - 803 SEE THRIE BEAM RAIL TERMINAL CONNECTOR DETAIL

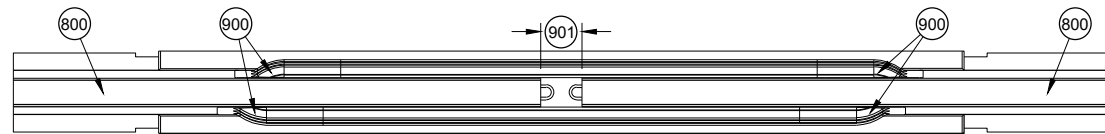


PORTABLE CONCRETE BARRIER GAP THRIE BEAM COVER

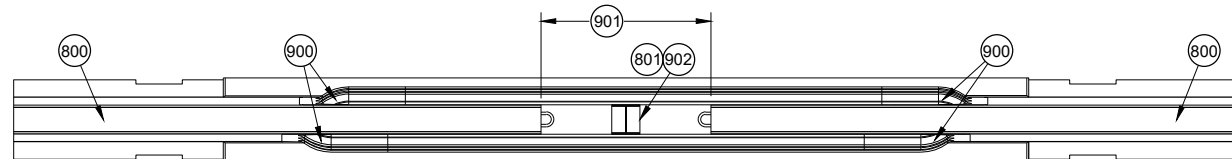
CONCRETE BARRIER TEMPORARY PRECAST, 12' - 6"
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION



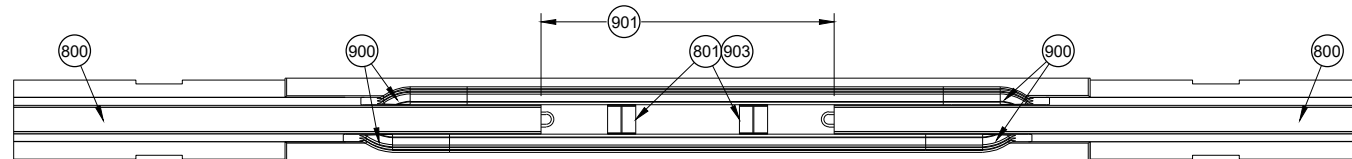
PLAN VIEW
GAP WITHIN SPACING



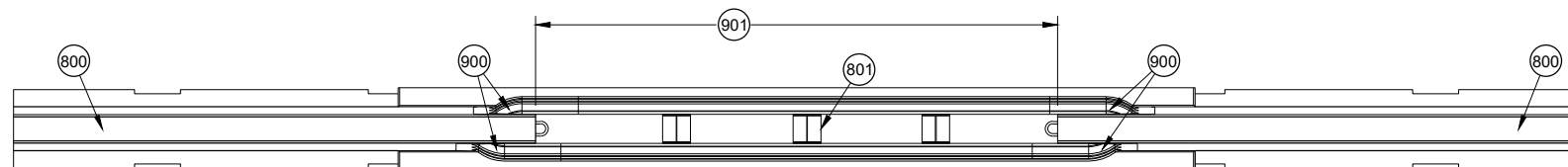
PLAN VIEW
TEMPORARY BARRIER GAP OVER 4" TO 1' MAX. 904



PLAN VIEW
TEMPORARY BARRIER GAP OVER 1' TO 4' MAX. 904



PLAN VIEW
TEMPORARY BARRIER GAP OVER 4' TO 7' MAX. 904



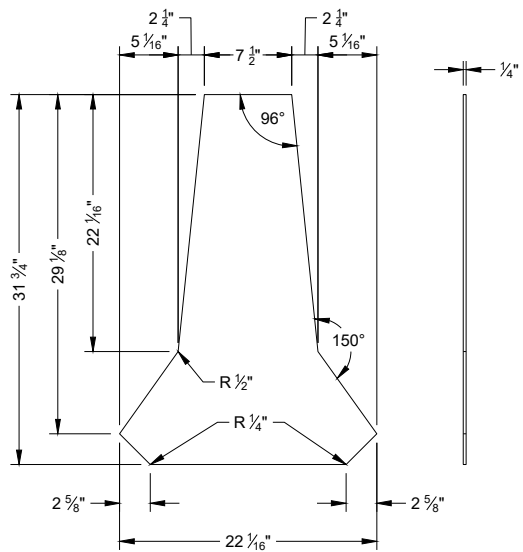
PLAN VIEW
TEMPORARY BARRIER GAP OVER 7' TO 12.5' MAX. 904

GENERAL NOTES

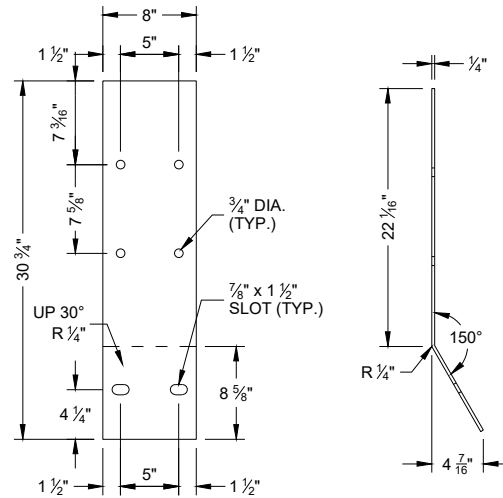
- 900 SEE OTHER DETAILS FOR TEMPORARY GAP HARDWARE (TYP.)
- 901 TEMPORARY BARRIER GAP
- 902 GAP STIFFENER ASSEMBLY CENTERED IN THE GAP.
- 903 GAP STIFFENER ASSEMBLY IS OFFSET 18 3/4" FROM CENTER
- 904 MINIMUM NUMBER OF GAP STIFFENERS SHOWN FOR THE GAP RANGE SHOWN.
- 905 MINIMUM OF 8 CONTINUOUS FREE STANDING TEMPORARY BARRIERS

CONCRETE BARRIER
TEMPORARY PRECAST,
12' - 6"

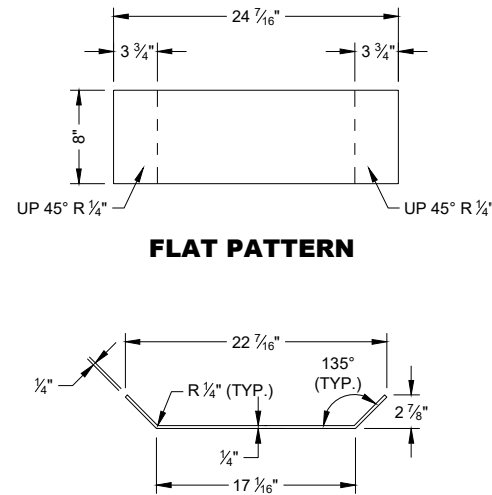
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



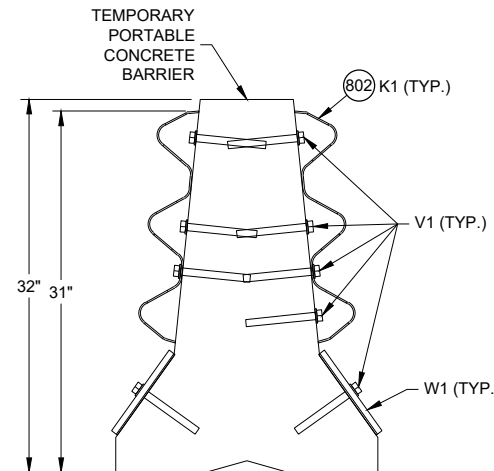
PROFILE VIEW
STIFFENER ASSEMBLY
CENTER PANEL U1



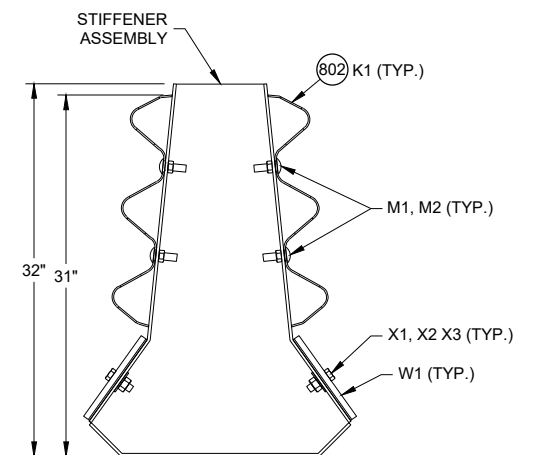
FLAT PATTERN
STIFFENER ASSEMBLY
SIDE PANEL U2



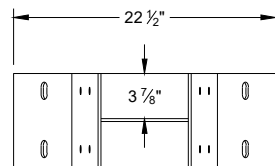
FLAT PATTERN
STIFFENER ASSEMBLY
BOTTOM PANEL U3



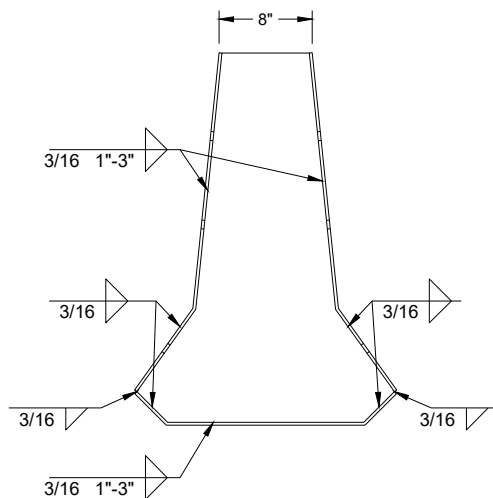
SECTION A - A



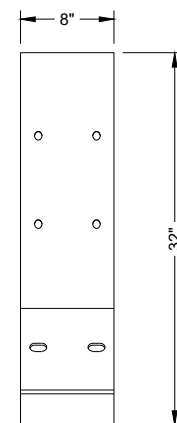
SECTION B - B



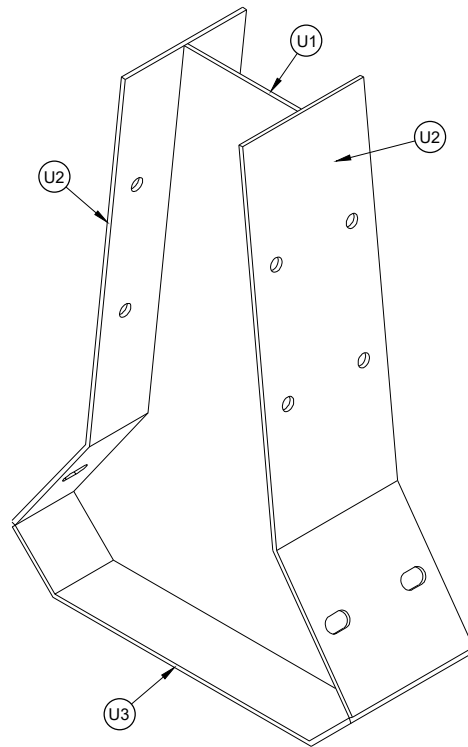
PLAN VIEW



PROFILE VIEW



SIDE VIEW

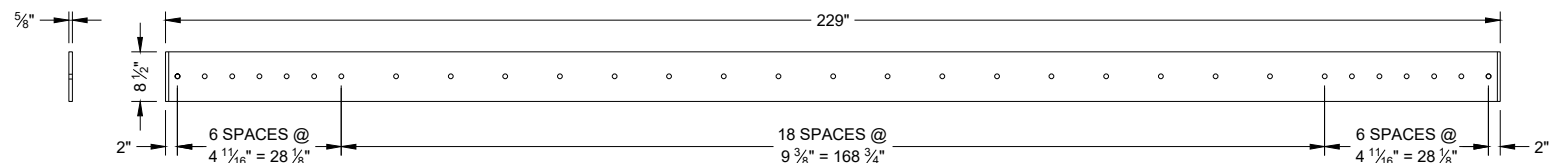


ISOMETRIC

GAP STIFFENER ASSEMBLY

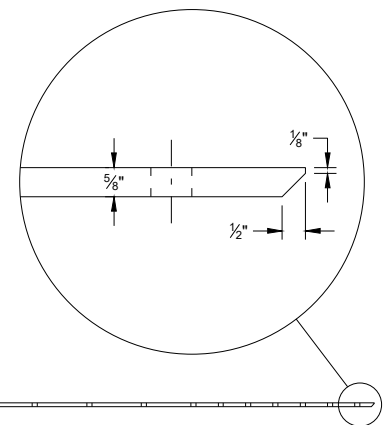


PLAN VIEW



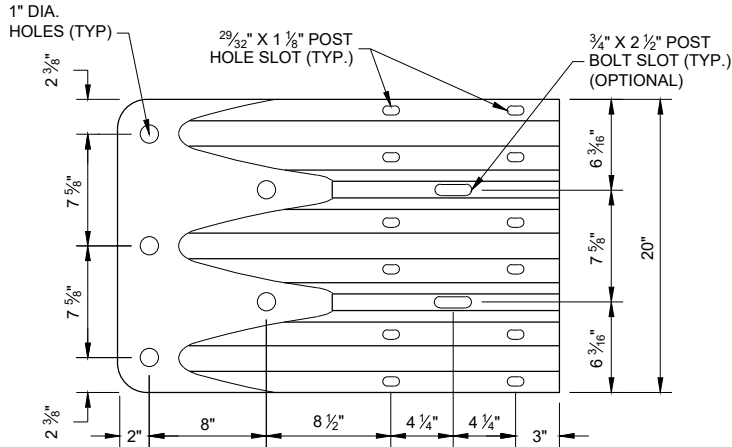
SIDE VIEW

ELEVATION VIEW
W1 TOE PLATE

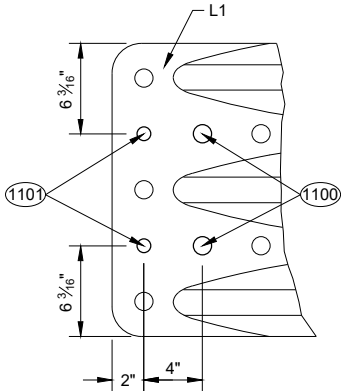


CONCRETE BARRIER
TEMPORARY PRECAST,
12' - 6"

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



ELEVATION VIEW
THRIE BEAM
TERMINAL CONNECTOR



ELEVATION VIEW
ADDITIONAL THRIE BEAM
TERMINAL CONNECTOR HOLE DETAIL

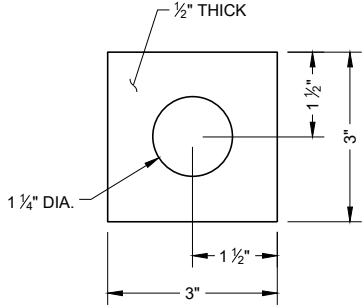
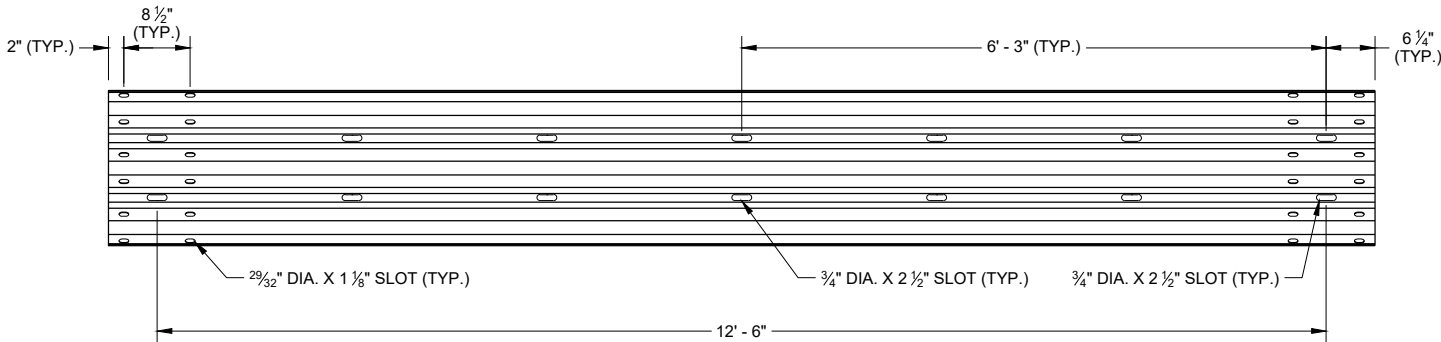


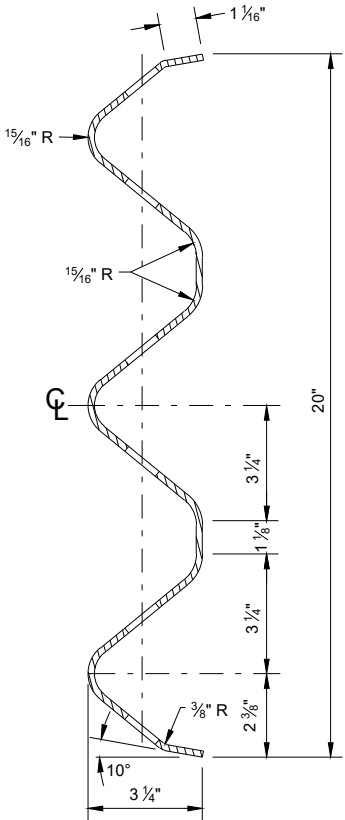
PLATE WASHER DETAIL
G2, H3

GENERAL NOTES

- 1100 1" DIA. HOLE
- 1101 3/4" DIA. HOLE
- 1102 PROVIDE HOLES IN THRIE BEAM TERMINAL CONNECTOR TO LIMIT STEEL REINFORCEMENT OR LOOP BAR CONFLICT. CONTRACTOR MAY FIELD DRILL ADDITIONAL HOLE OR PROVIDE THRIE BEAM TERMINAL CONNECTOR WITH ADDITIONAL HOLES FROM SUPPLIER.



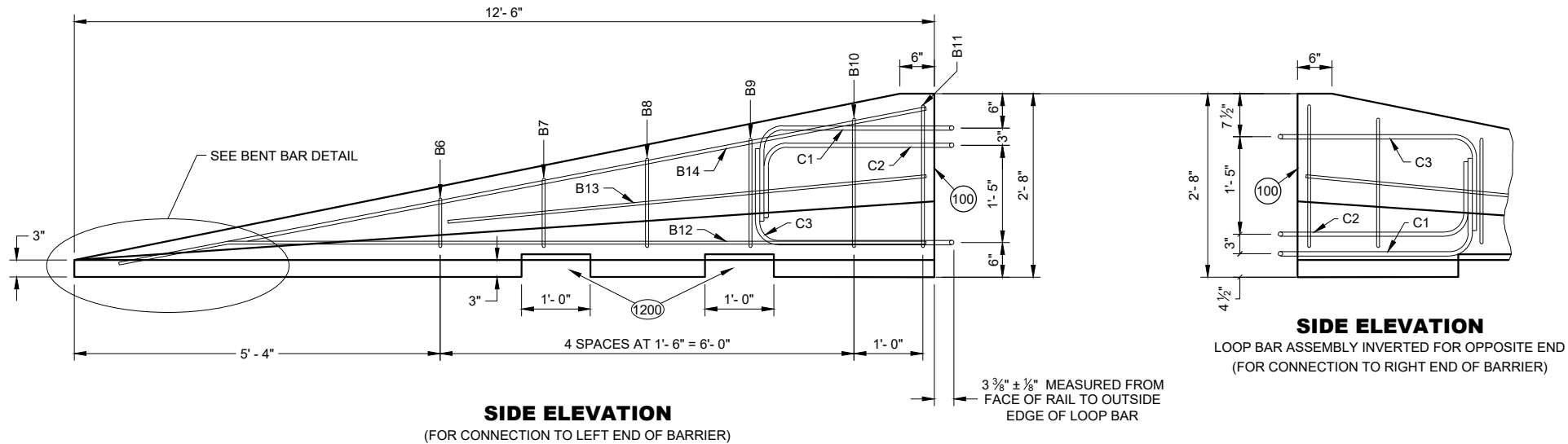
SLOTTED THRIE BEAM RAIL K1



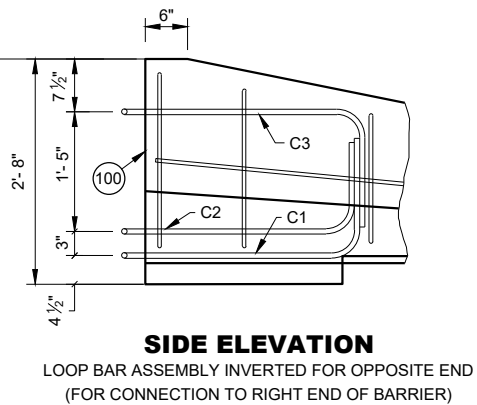
SECTION THROUGH
BEAM K1

CONCRETE BARRIER
TEMPORARY PRECAST,
12' - 6"

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



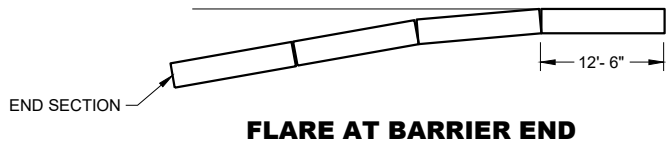
SIDE ELEVATION
(FOR CONNECTION TO LEFT END OF BARRIER)



SIDE ELEVATION
LOOP BAR ASSEMBLY INVERTED FOR OPPOSITE END
(FOR CONNECTION TO RIGHT END OF BARRIER)

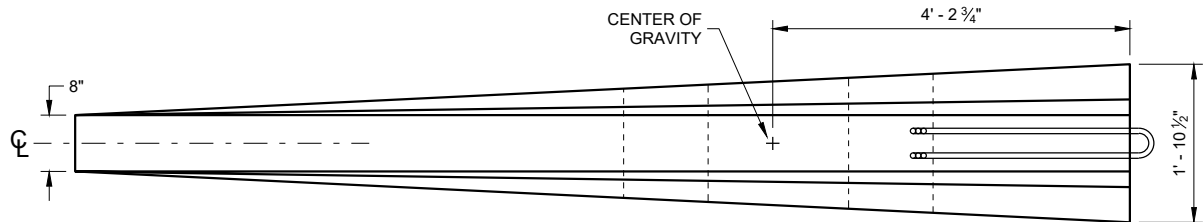
GENERAL NOTES

(1200) SEE LIFTING SLOT DETAIL. LOCATION OF LIFTING SLOTS DETERMINED BY CONTRACTOR.

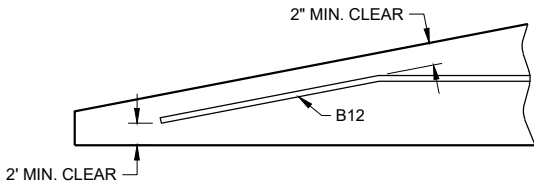
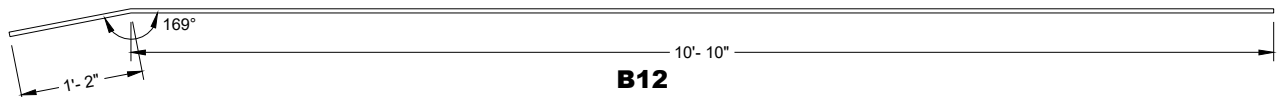


FLARE AT BARRIER END

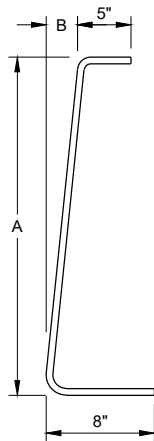
POSTED SPEED, (MPH)	FLARE RATE
40 OR LESS	6:1
45 OR GREATER	8:1



PLAN VIEW

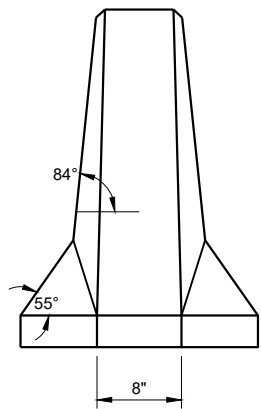


BENT BAR DETAIL

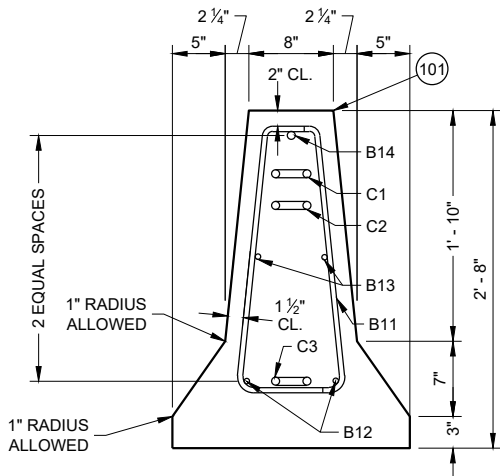


BAR	A	B
B6	10"	1"
B7	1'- 1"	1 1/4"
B8	1'- 5"	1 5/8"
B9	1'- 8"	1 7/8"
B10	2'- 0 1/2"	2 3/8"
B11	2'- 3"	2 3/4"

B BARS
2 OF EACH SIZE REQUIRED
FOR STIRRUP ASSEMBLY



FRONT ELEVATION



END SECTION

DETAILS OF BARRIER TAPER SECTION

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

SDD 14B07-16m

BILL OF MATERIALS - CONCRETE BARRIER PRECAST

PART	DESCRIPTION	MATERIALS SPECIFICATIONS	NOTES
A1	PRECAST TEMPORARY BARRIER - CONCRETE	MIN. = f'c 5000 PSI	
B1	REBAR	STANDARD SPEC. 505.2 GRADE 60 UNCOATED REBAR	#5 REBAR, LENGTH 12'-2"
B2	REBAR	STANDARD SPEC. 505.2 GRADE 60 UNCOATED REBAR	#4 REBAR, LENGTH 12'-2"
B3	REBAR	STANDARD SPEC. 505.2 GRADE 60 UNCOATED REBAR	#5 REBAR, LENGTH 12'-2"
B4	REBAR	STANDARD SPEC. 505.2 GRADE 60 UNCOATED REBAR	#4 REBAR, LENGTH 6'-0"
B5	REBAR	STANDARD SPEC. 505.2 GRADE 60 UNCOATED REBAR	#6 REBAR, LENGTH 2'-11"
B6	REBAR	STANDARD SPEC. 505.2 GRADE 60 UNCOATED REBAR	#4 REBAR, LENGTH 1'-11"
B7	REBAR	STANDARD SPEC. 505.2 GRADE 60 UNCOATED REBAR	#4 REBAR, LENGTH 2'-2"
B8	REBAR	STANDARD SPEC. 505.2 GRADE 60 UNCOATED REBAR	#4 REBAR, LENGTH 2'-6"
B9	REBAR	STANDARD SPEC. 505.2 GRADE 60 UNCOATED REBAR	#4 REBAR, LENGTH 2'-9"
B10	REBAR	STANDARD SPEC. 505.2 GRADE 60 UNCOATED REBAR	#4 REBAR, LENGTH 3'-2"
B11	REBAR	STANDARD SPEC. 505.2 GRADE 60 UNCOATED REBAR	#4 REBAR, LENGTH 3'-4"
B12	REBAR	STANDARD SPEC. 505.2 GRADE 60 UNCOATED REBAR	#4 REBAR, LENGTH 12'-0"
B13	REBAR	STANDARD SPEC. 505.2 GRADE 60 UNCOATED REBAR	#4 REBAR, LENGTH 7'-9"
B14	REBAR	STANDARD SPEC. 505.2 GRADE 60 UNCOATED REBAR	#5 REBAR, LENGTH 11'-9"
C1	LOOP BAR	ASTM A709 GRADE 70 SMOOTH BAR OR ASTM A706 GRADE 60 REBAR UNCOATED	¾" DIA.
C2	LOOP BAR	ASTM A709 GRADE 70 SMOOTH BAR OR ASTM A706 GRADE 60 REBAR UNCOATED	¾" DIA.
C3	LOOP BAR	ASTM A709 GRADE 70 SMOOTH BAR OR ASTM A706 GRADE 60 REBAR UNCOATED	¾" DIA.
D1	CONNECTION PIN - ROD	ASTM A36 MIN. STRENGTH 36 KSI / ASTM A529 MAX. STRENGTH 50 KSI / ASTM A572 MAX STRENGTH 50 KSI / ASTM A709 MAX STRENGTH 50 KSI / ASTM A992 MAX STRENGTH 50 KSI	1 ¼" DIA.
D2	CONNECTION PIN - TOP PLATE	ASTM A36 MIN. STRENGTH 36 KSI / ASTM A529 MAX. STRENGTH 50 KSI / ASTM A572 MAX STRENGTH 50 KSI / ASTM A709 MAX STRENGTH 50 KSI / ASTM A992 MAX STRENGTH 50 KSI	
G1	BOLT THROUGH ANCHOR - THREADED ROD	HOT DIP AASHTO M232 CLASS / ASTM A153 CLASS C / ASTM F2329 C OR MECHANICAL GALVANIZE TO AASHTO M298 CLASS 55 TYPE 2 / ASTM B695 CLASS 55 TYPE 2 A307 GRADE A OR SAE J429 GRADE 2 UNC	1 ⅝" DIA.
G2	BOLT THROUGH ANCHOR - WASHER, SQUARE	ASTM A36 MIN. STRENGTH 36 KSI / ASTM A529 MAX. STRENGTH 50 KSI / ASTM A572 MAX STRENGTH 50 KSI / ASTM A709 MAX STRENGTH 50 KSI / ASTM A992 MAX STRENGTH 50 KSI	
G3	BOLT THROUGH ANCHOR - NUT	HOT DIP AASHTO M232 CLASS / ASTM A153 CLASS C / ASTM F2329 C OR MECHANICAL GALVANIZE TO AASHTO M298 CLASS 55 TYPE 2 / ASTM B695 CLASS 55 UNC OVER TAP NUTS AS SPECIFIED IN AASHTO 291 / ASTM A 563 HEAVY HEX HEAD ASTM A563DH OR SAE J995 GRADE 5	
H1	ADHESIVE ANCHOR - ADHESIVE	ICC-ES-AC308 5 ¼" EMBEDMENT WITH A MIN. BOND STRENGTH OF 1,650 PSI. SEE 603.2 AND 603.3.1.2 OF THE WISCONSIN STANDARD SPECIFICATIONS FOR MORE INFORMATION ON ADHESIVE ANCHORS.	
H2	ADHESIVE ANCHOR - THREADED ROD	HOT DIP AASHTO M232 CLASS / ASTM A153 CLASS C / ASTM F2329 C OR MECHANICAL GALVANIZE TO AASHTO M298 CLASS 55 TYPE 2 / ASTM B695 CLASS 55 TYPE 2 A307 GRADE A / SAE J429 GRADE 2 UNC	1 ⅝" DIA.
H3	ADHESIVE ANCHOR - WASHER, SQUARE	ASTM A36 MIN. STRENGTH 36 KSI / ASTM A529 MAX. STRENGTH 50 KSI / ASTM A572 MAX STRENGTH 50 KSI / ASTM A709 MAX STRENGTH 50 KSI / ASTM A992 MAX STRENGTH 50 KSI	
H4	ADHESIVE ANCHOR - NUT	HOT DIP AASHTO M232 CLASS / ASTM A153 CLASS C / ASTM F2329 C OR MECHANICAL GALVANIZE TO AASHTO M298 CLASS 55 TYPE 2 / ASTM B695 CLASS 55 UNC OVER TAP NUTS AS SPECIFIED IN AASHTO 291 / ASTM A 563 HEAVY HEX HEAD ASTM A563DH OR SAE J995 GRADE 5	
J1	ASPHALT ANCHOR PIN - ROD	ASTM A36 MIN. STRENGTH 36 KSI / ASTM A529 MAX. STRENGTH 50 KSI / ASTM A572 MAX STRENGTH 50 KSI / ASTM A709 MAX STRENGTH 50 KSI / ASTM A992 MAX STRENGTH 50 KSI	1 ½" DIA.
J2	ASPHALT ANCHOR PIN - STOP PLATE	ASTM A36 MIN. STRENGTH 36 KSI / ASTM A529 MAX. STRENGTH 50 KSI / ASTM A572 MAX STRENGTH 50 KSI / ASTM A709 MAX STRENGTH 50 KSI / ASTM A992 MAX STRENGTH 50 KSI	
K1	THRIE BEAM RAIL	AASHTO M180 CLASS A TYPE 2 APPROVED PRODUCER	12 GAUGE
L1	THRIE BEAM RAIL - TERMINAL	AASHTO M180 CLASS A TYPE 2 APPROVED PRODUCER	12 GAUGE

PART	DESCRIPTION	MATERIALS SPECIFICATIONS	NOTES
M1	SPLICE BOLT	HOT DIP AASHTO M232 CLASS / ASTM A153 CLASS C / ASTM F2329 C OR MECHANICAL GAL. TO AASHTO M298 CLASS 55 TYPE 2 / ASTM B695 CLASS 55 TYPE 2 UNC AASHTO M180 HEAD ASTM A307 GRADE B OR SAE J429 GRADE 2 OR ASTM F1554 GRADE 36	⅝" DIA.
M2	SPLICE BOLT - NUT	HOT DIP AASHTO M232 CLASS / ASTM A153 CLASS C / ASTM F2329 C OR MECHANICAL GALVANIZE TO AASHTO M298 CLASS 55 TYPE 2 / ASTM B695 CLASS 55 UNC OVER TAP NUTS AS SPECIFIED IN AASHTO 291 / ASTM A 563 AASHTO M180 RECESSED HEAVY HEX HEAD ASTM A563DH OR SAE J995 GRADE 5	
N1	THRIE BEAM RAIL TERMINAL - MECHANICAL ANCHOR	HOT DIP AASHTO M232 CLASS / ASTM A153 CLASS C / ASTM F2329 C OR MECHANICAL GALVANIZE TO AASHTO M298 CLASS 55 TYPE 2 / ASTM B695 CLASS 55 UNC OVER TAP NUTS AS SPECIFIED IN AASHTO 291 / ASTM A 563 AASHTO M180 RECESSED HEAVY HEX HEAD ASTM A563DH OR SAE J995 GRADE 5	¾" DIA. LENGTH 6"
N2	THRIE BEAM RAIL TERMINAL - WASHER	HOT DIP AASHTO M232 CLASS / ASTM A153 CLASS C / ASTM F2329 C OR MECHANICAL GALVANIZE TO AASHTO M298 CLASS 55 TYPE 2 / ASTM B695 CLASS 55 TYPE 2 F436 TYPE 1	
N3	THRIE BEAM RAIL TERMINAL MECHANICAL OR ADHESIVE ANCHOR	MINIMUM MECHANICAL OR ADHESIVE ANCHOR STRENGTH REQUIREMENTS: ULTIMATE TENSILE LOAD 17.9 KIPS AND ULTIMATE SHEAR LOAD 21.96 KIPS. SEE 603.2 AND 603.3.1.2 OF THE WISCONSIN STANDARD SPECIFICATIONS FOR MORE INFORMATION ON ADHESIVE ANCHORS.	
P1	THRIE BEAM RAIL CONNECTION 1-BOLT	HOT DIP AASHTO M232 CLASS / ASTM A153 CLASS C / ASTM F2329 C OR MECHANICAL GALVANIZE TO AASHTO M298 CLASS 55 TYPE 2 / ASTM B695 CLASS 55 UNC OVER TAP NUTS AS SPECIFIED IN AASHTO 291 / ASTM A 563 AASHTO M180 RECESSED HEAVY HEX HEAD ASTM A563DH OR SAE J995 GRADE 5	¾" DIA.
P2	THRIE BEAM RAIL CONNECTION 1-WASHER	HOT DIP AASHTO M232 CLASS / ASTM A153 CLASS C / ASTM F2329 C OR MECHANICAL GAL. TO AASHTO M298 CLASS 55 TYPE 2 / ASTM B695 CLASS 55 TYPE 2 F436 TYPE 1	
P3	THRIE BEAM RAIL CONNETION 1- MECHANICAL OR ADHESIVE ANCHOR	MINIMUM MECHANICAL OR ADHESIVE ANCHOR STRENGTH REQUIREMENTS: ULTIMATE TENSILE LOAD 9.48 KIPS AND ULTIMATE SHEAR LOAD 10.48 KIPS. SEE 603.2 AND 603.3.1.2 OF THE WISCONSIN STANDARD SPECIFICATIONS FOR MORE INFORMATION ON ADHESIVE ANCHORS.	
Q1	BLOCK WOOD	SEE STANDARD SPEC. 614	
R1	CAP - BOLT	HOT DIP AASHTO M232 CLASS / ASTM A153 CLASS C / ASTM F2329 C OR MECHANICAL GALVANIZE TO AASHTO M298 CLASS 55 TYPE 2 / ASTM B695 CLASS 55 UNC OVER TAP NUTS AS SPECIFIED IN AASHTO 291 / ASTM A 563 AASHTO M180 RECESSED HEAVY HEX HEAD ASTM A563DH OR SAE J995 GRADE 5	⅝" DIA.
R2	CAP- BOLT - WASHER	HOT DIP AASHTO M232 CLASS / ASTM A153 CLASS C / ASTM F2329 C OR MECHANICAL GAL. TO AASHTO M298 CLASS 55 TYPE 2 / ASTM B695 CLASS 55 TYPE 2 F436 TYPE 1	
R3	CAP - BOLT - MECHANICAL ANCHOR	MINIMUM MECHANICAL OR ADHESIVE ANCHOR STRENGTH REQUIREMENTS ULTIMATE TENSILE LOAD 12.14 KIPS AND ULTIMATE SHEAR LOAD 17.5 KIPS.SEE 603.2 AND 603.3.1.2 OF THE WISCONSIN STANDARD SPECIFICATIONS FOR MORE INFORMATION ON ADHESIVE ANCHORS.	12 GAUGE
S1	CAP 42-INCH TOP PLATE	AASHTO M111 / ASTM A123 ASTM A36 MIN. STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX. STRENGTH 50 KSI, OR ASTM A709 MAX. STRENGTH 50 KSI, OR ASTM A992 MAX. STRENGTH 50 KSI	12 GAUGE
S2	CAP 42-INCH END PLATE	AASHTO M111 / ASTM A123 ASTM A36 MIN. STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX. STRENGTH 50 KSI, OR ASTM A709 MAX. STRENGTH 50 KSI, OR ASTM A992 MAX. STRENGTH 50 KSI	12 GAUGE
S3	CAP 42-INCH SIDE PLATE	AASHTO M111 / ASTM A123 ASTM A36 MIN. STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX. STRENGTH 50 KSI, OR ASTM A709 MAX. STRENGTH 50 KSI, OR ASTM A992 MAX. STRENGTH 50 KSI	12 GAUGE
S4	CAP 42-INCH GUSSET 1	AASHTO M111 / ASTM A123 ASTM A36 MIN. STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX. STRENGTH 50 KSI, OR ASTM A709 MAX. STRENGTH 50 KSI, OR ASTM A992 MAX. STRENGTH 50 KSI	12 GAUGE
S5	CAP 42-INCH GUSSET 2	AASHTO M111 / ASTM A123 ASTM A36 MIN. STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX. STRENGTH 50 KSI, OR ASTM A709 MAX. STRENGTH 50 KSI, OR ASTM A992 MAX. STRENGTH 50 KSI	12 GAUGE
S6	CAP 42-INCH GUSSET 3	AASHTO M111 / ASTM A123 ASTM A36 MIN. STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX. STRENGTH 50 KSI, OR ASTM A709 MAX. STRENGTH 50 KSI, OR ASTM A992 MAX. STRENGTH 50 KSI	12 GAUGE
S7	CAP 42-INCH GUSSET 4	AASHTO M111 / ASTM A123 ASTM A36 MIN. STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX. STRENGTH 50 KSI, OR ASTM A709 MAX. STRENGTH 50 KSI, OR ASTM A992 MAX. STRENGTH 50 KSI	12 GAUGE

6

SDD 14B07-16m

CONCRETE BARRIER
TEMPORARY PRECAST,
12' - 6"

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

BILL OF MATERIALS - CONCRETE BARRIER PRECAST

PART	DESCRIPTION	MATERIALS SPECIFICATIONS	NOTES
T1	CAP 56-INCH TOP PLATE	AASHTO M111 / ASTM A123 ASTM A36 MIN. STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX. STRENGTH 50 KSI, OR ASTM A709 MAX. STRENGTH 50 KSI, OR ASTM A992 MAX. STRENGTH 50 KSI	12 GAUGE
T2	CAP 56-INCH END PLATE	AASHTO M111 / ASTM A123 ASTM A36 MIN. STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX. STRENGTH 50 KSI, OR ASTM A709 MAX. STRENGTH 50 KSI, OR ASTM A992 MAX. STRENGTH 50 KSI	12 GAUGE
T3	CAP 56-INCH SIDE PLATE 1	AASHTO M111 / ASTM A123 ASTM A36 MIN. STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX. STRENGTH 50 KSI, OR ASTM A709 MAX. STRENGTH 50 KSI, OR ASTM A992 MAX. STRENGTH 50 KSI	12 GAUGE
T4	CAP 56-INCH SIDE PLATE 2	AASHTO M111 / ASTM A123 ASTM A36 MIN. STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX. STRENGTH 50 KSI, OR ASTM A709 MAX. STRENGTH 50 KSI, OR ASTM A992 MAX. STRENGTH 50 KSI	12 GAUGE
T5	CAP 56-INCH GUSSET 1	AASHTO M111 / ASTM A123 ASTM A36 MIN. STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX. STRENGTH 50 KSI, OR ASTM A709 MAX. STRENGTH 50 KSI, OR ASTM A992 MAX. STRENGTH 50 KSI	12 GAUGE
T6	CAP 56-INCH GUSSET 2	AASHTO M111 / ASTM A123 ASTM A36 MIN. STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX. STRENGTH 50 KSI, OR ASTM A709 MAX. STRENGTH 50 KSI, OR ASTM A992 MAX. STRENGTH 50 KSI	12 GAUGE
T7	CAP 56-INCH GUSSET 3	AASHTO M111 / ASTM A123 ASTM A36 MIN. STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX. STRENGTH 50 KSI, OR ASTM A709 MAX. STRENGTH 50 KSI, OR ASTM A992 MAX. STRENGTH 50 KSI	12 GAUGE
T8	CAP 42-INCH GUSSET 4	AASHTO M111 / ASTM A123 ASTM A36 MIN. STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX. STRENGTH 50 KSI, OR ASTM A709 MAX. STRENGTH 50 KSI, OR ASTM A992 MAX. STRENGTH 50 KSI	12 GAUGE
T9	CAP 42-INCH GUSSET 5	AASHTO M111 / ASTM A123 ASTM A36 MIN. STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX. STRENGTH 50 KSI, OR ASTM A709 MAX. STRENGTH 50 KSI, OR ASTM A992 MAX. STRENGTH 50 KSI	12 GAUGE
T10	CAP 42-INCH GUSSET 6	AASHTO M111 / ASTM A123 ASTM A36 MIN. STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX. STRENGTH 50 KSI, OR ASTM A709 MAX. STRENGTH 50 KSI, OR ASTM A992 MAX. STRENGTH 50 KSI	12 GAUGE
T11	CAP 42-INCH GUSSET 7	AASHTO M111 / ASTM A123 ASTM A36 MIN. STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX. STRENGTH 50 KSI, OR ASTM A709 MAX. STRENGTH 50 KSI, OR ASTM A992 MAX. STRENGTH 50 KSI	12 GAUGE
T12	CAP 42-INCH GUSSET 8	AASHTO M111 / ASTM A123 ASTM A36 MIN. STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX. STRENGTH 50 KSI, OR ASTM A709 MAX. STRENGTH 50 KSI, OR ASTM A992 MAX. STRENGTH 50 KSI	12 GAUGE
T13	CAP 42-INCH GUSSET 9	AASHTO M111 / ASTM A123 ASTM A36 MIN. STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX. STRENGTH 50 KSI, OR ASTM A709 MAX. STRENGTH 50 KSI, OR ASTM A992 MAX. STRENGTH 50 KSI	12 GAUGE
T14	CAP 42-INCH GUSSET 10	AASHTO M111 / ASTM A123 ASTM A36 MIN. STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX. STRENGTH 50 KSI, OR ASTM A709 MAX. STRENGTH 50 KSI, OR ASTM A992 MAX. STRENGTH 50 KSI	12 GAUGE
T15	CAP 42-INCH GUSSET 11	AASHTO M111 / ASTM A123 ASTM A36 MIN. STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX. STRENGTH 50 KSI, OR ASTM A709 MAX. STRENGTH 50 KSI, OR ASTM A992 MAX. STRENGTH 50 KSI	12 GAUGE
T16	CAP 42-INCH GUSSET 12	AASHTO M111 / ASTM A123 ASTM A36 MIN. STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX. STRENGTH 50 KSI, OR ASTM A709 MAX. STRENGTH 50 KSI, OR ASTM A992 MAX. STRENGTH 50 KSI	12 GAUGE
U1	GAP STIFFENER	AASHTO M111 / ASTM A123 ASTM A36 MIN. STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX. STRENGTH 50 KSI, OR ASTM A709 MAX. STRENGTH 50 KSI, OR ASTM A992 MAX. STRENGTH 50 KSI	
U2	GAP STIFFENER - CONNECTOR PLATE 1	AASHTO M111 / ASTM A123 ASTM A36 MIN. STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX. STRENGTH 50 KSI, OR ASTM A709 MAX. STRENGTH 50 KSI, OR ASTM A992 MAX. STRENGTH 50 KSI	
U3	GAP STIFFENER - CONNECTOR PLATE 2	AASHTO M111 / ASTM A123 ASTM A36 MIN. STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX. STRENGTH 50 KSI, OR ASTM A709 MAX. STRENGTH 50 KSI, OR ASTM A992 MAX. STRENGTH 50 KSI	

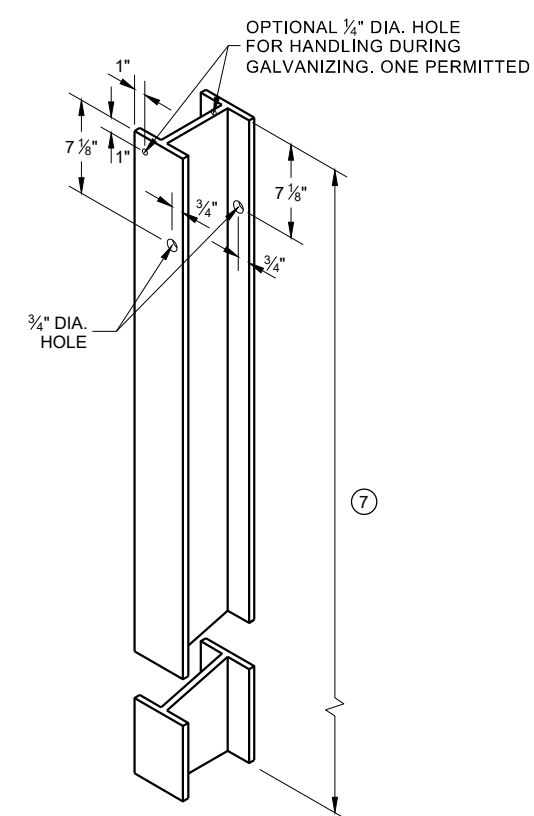
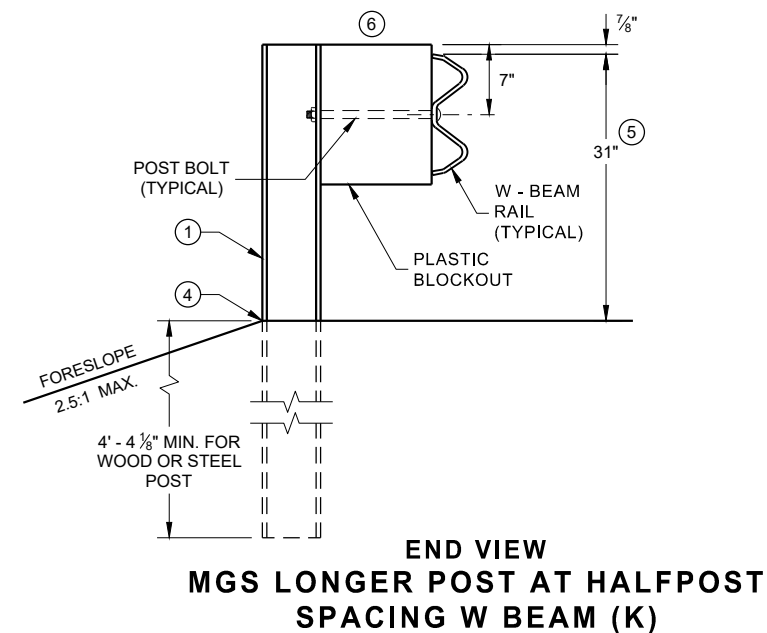
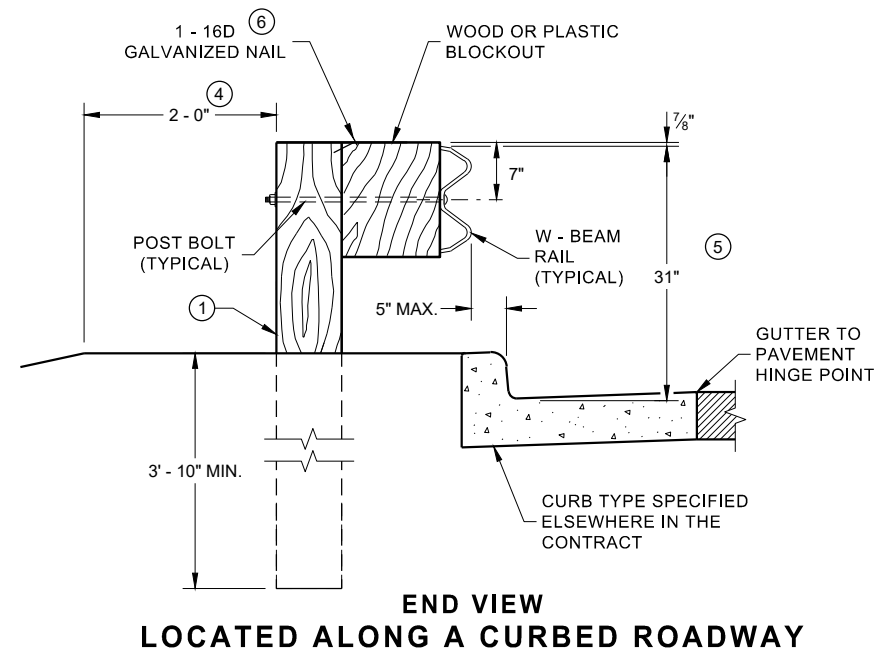
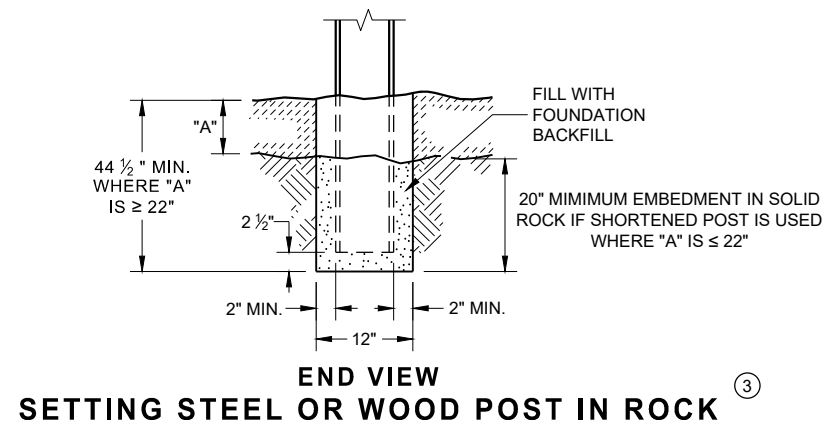
PART	DESCRIPTION	MATERIALS SPECIFICATIONS	NOTES
V1	THRIE BEAM RAIL TERMINAL MECHANICAL OR ADHESIVE ANCHOR	MINIMUM MECHANICAL OR ADHESIVE ANCHOR STRENGTH REQUIREMENTS ULTIMATE TENSILE LOAD 24.0 KIPS AND ULTIMATE SHEAR LOAD 21.5 KIPS. SEE 603.2 AND 603.3.1.2 OF THE WISCONSIN STANDARD SPECIFICATIONS FOR MORE INFORMATION ON ADHESIVE ANCHORS.	¾" DIA.
V2	GAP STIFFENER - BOLT - NUT	HOT DIP AASHTO M232 CLASS / ASTM A153 CLASS C / ASTM F2329 C O R MECHANICAL GALVANIZE TO AASHTO M298 CLASS 50 TYPE 1 / ASTM B695 CLASS 50 TYPE 1 UNC OVER TAP NUTS AS SPECIFIED IN AASHTO 291/ASTM A 563 HEAVY HEX HEAD ASTM A563DH OR SAE J995 GRADE 5	
W1	TOE PLATE	AASHTO M111/ASTM A123 ASTM A36 MIN STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX. STRENGTH 50 KSI, OR ASTM A709 MAX. STRENGTH 50 KSI, OR ASTM A992 MAX. STRENGTH 50 KSI	
X1	TOE PLATE - CONNECTION BOLT	HOT DIP AASHTO M232 CLASS / ASTM A153 CLASS C / ASTM F2329 C OR MECHANICAL GALVANIZE TO AASHTO M298 CLASS 55 TYPE 2 / ASTM B695 CLASS 55 TYPE 2 UNC HEAVY HEX HEAD OR AASTHO M180 HEAD, ASTM F3125 GRADE A325 TYPE 1 HEAVY HEX HEAD OR SAE J429 GRADE 5 HEAVY HEX HEAD / ASTM A449 TYPE 1 HEAVY HEX HEAD. BOLTS MAY BE FULLY THREADED. PROVIDE ENOUGH THREADING FOR PROPER TIGHTENING OF BOLT.	¾" DIA.
X2	TOE PLATE - CONNECTION BOLT - WASHER	HOT DIP AASHTO M232 CLASS / ASTM A153 CLASS C / ASTM F2329 C OR MECHANICAL GALVANIZE TO AASHTO M298 CLASS 55 TYPE 2 / ASTM B695 CLASS 55 TYPE 2 F436 TYPE 1 (HARDEN WASHER ONLY)	
X3	TOE PLATE - CONNECTION BOLT - NUT	HOT DIP AASHTO M232 CLASS / ASTM A153 CLASS C / ASTM F2329 C OR MECHANICAL GALVANIZE TO AASHTO M298 CLASS 55 TYPE 2 / ASTM B695 CLASS 55 UNC OVER TAP NUTS AS SPECIFIED IN AASHTO 291 / ASTM A 563 HEAVY HEX HEAD ASTM A563DH OR SAE J995 GRADE 5	

CONCRETE BARRIER
TEMPORARY PRECAST,
12' - 6"

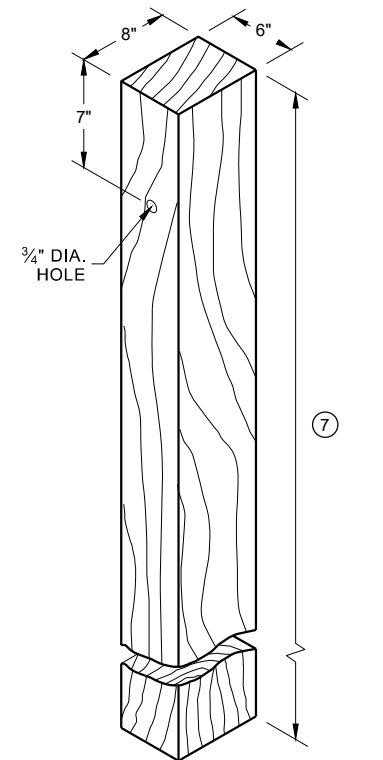
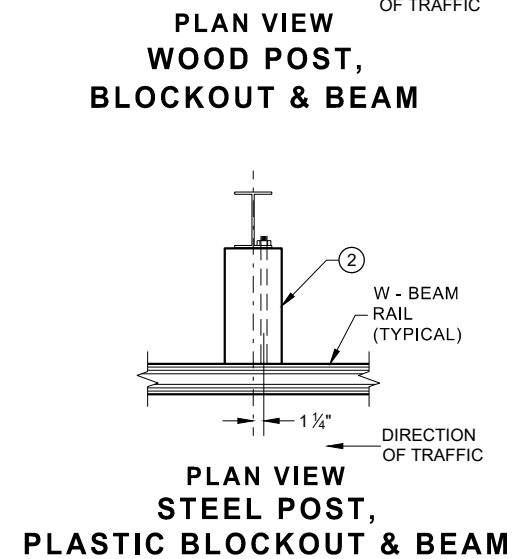
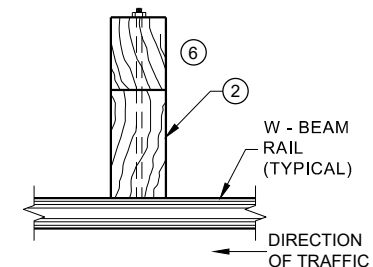
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
February 2023
DATE /S/ Rodney Taylor
ROADWAY STANDARDS DEVELOPMENT
ENGINEER
FHWA

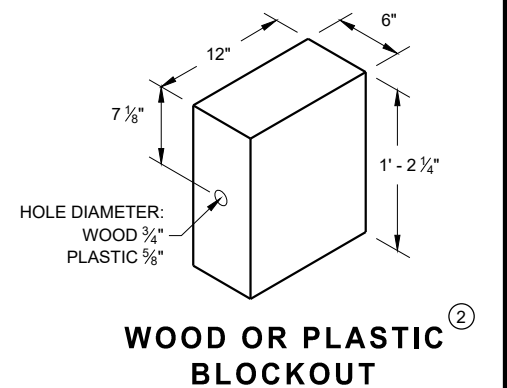
- WOOD OR STEEL POSTS (w6X9 OR w6X8.5) MAY BE USED. DO NOT INTERMIX WOOD AND STEEL POSTS. INSTALL STEEL POSTS WITH HOLES ON APPROACHING TRAFFIC SIDE.
- USE WOOD OR APPROVED PLASTIC BLOCKOUTS. WOOD BLOCKOUTS MAY BE CONSTRUCTED OUT OF TWO OR MORE WOOD BLOCKOUTS. SEE ALTERNATE WOOD BLOCKOUT DETAIL. DIMENSIONS OF APPROVED PLASTIC BLOCKOUTS MAY VARY.
- IF ROCK IS ENCOUNTERED DURING EXCAVATION, PROVIDE A HOLE 12 INCHES IN DIAMETER EXTENDING 20 INCHES DEEP INTO THE ROCK. PLACE APPROXIMATELY 2 1/2" INCHES OF GRANULAR MATERIAL IN THE BOTTOM OF THE HOLE. CUT THE POSTS THE TO LENGTH AMD INSTALL. BACKFILL WITH EXCAVATED MATERIAL AND COMPACT. BACKFILL IS TO BE FREE OF LARGE ROCKS.
- WHEN THE DISTANCE FROM BACK OF POST TO SHOULDER HINGE POINT IS LESS THAN 2 FEET INSTALL LONGER POST AT HALF POST SPACING (K).
- FOR NEW MGS INSTALLATION TOP OF W-BEAM RAIL TOLERANCE IS $\pm 1"$. FOR EXISTING MGS INSTALLATION TOP OF W-BEAM IS BETWEEN 27 3/4" TO 32".
- WHEN USING STEEL POST AND WOOD BLOCKOUTS INSTALL FOUR 16D GALVANIZED NAILS. INSTALL NAILS AT THE BACK CORNERS OF THE BLOCK AND BEND THE NAILS OVER THE FLANGE OF THE STEEL POST.
- TOTAL POST LENGTH FOR TYPE K IS 7' - 0".
TOTAL POST LENGTH FOR OTHER MGS TYPES IS 6' - 0".



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



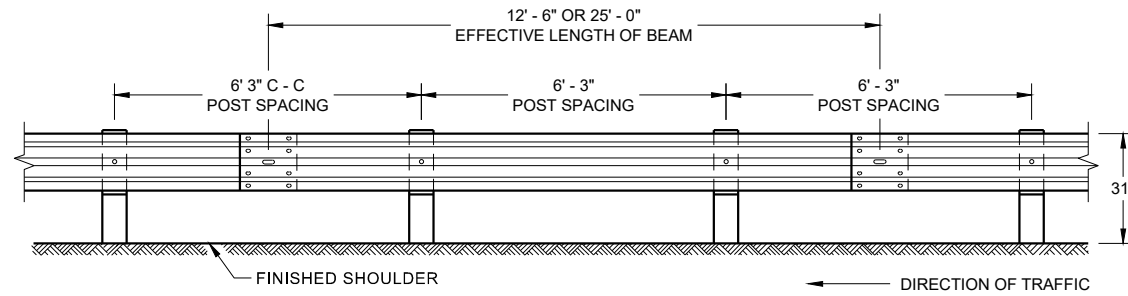
WOOD POST
(6" X 8") NOMINAL ①



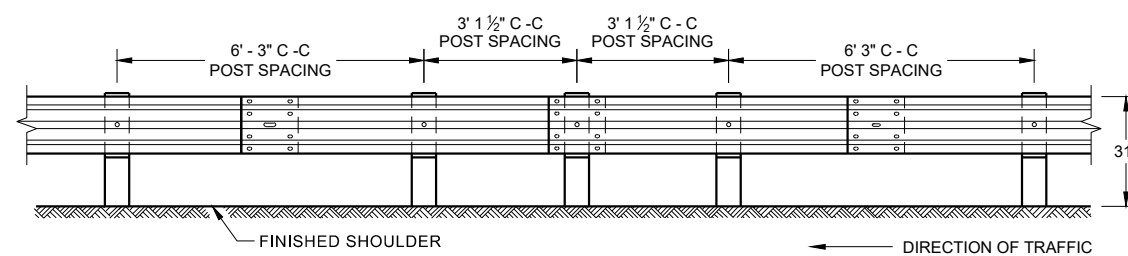
WOOD OR PLASTIC
BLOCKOUT ②

MIDWEST GUARDRAIL SYSTEM
(MGS) GUARDRAIL

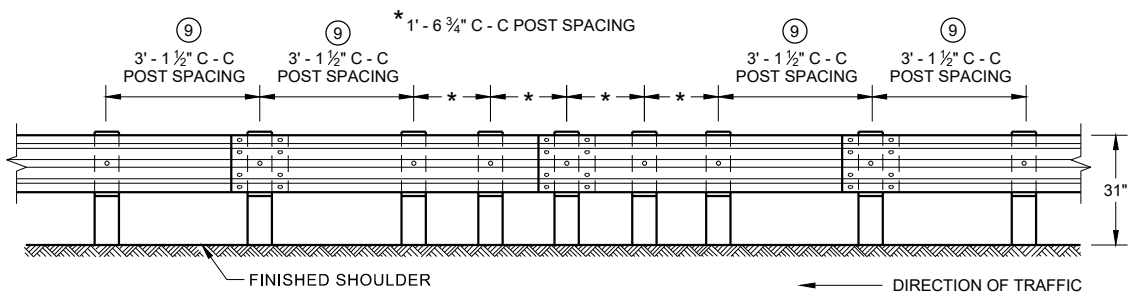
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



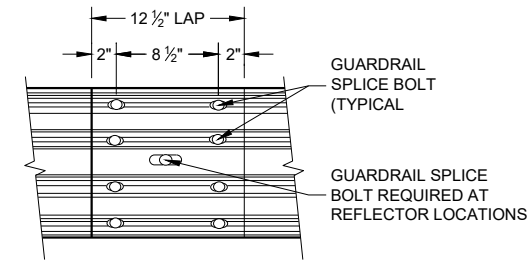
**FRONT VIEW
POST SPACING STANDARD INSTALLATION**



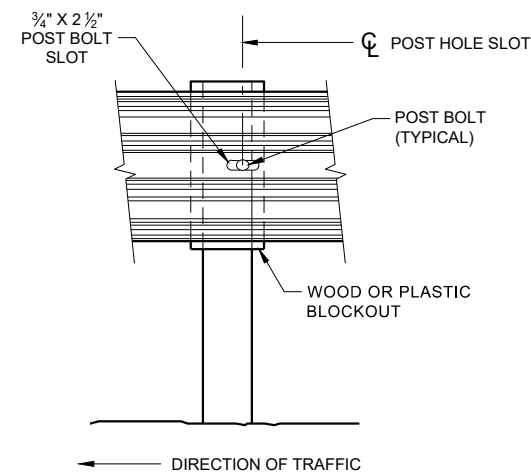
**FRONT VIEW
HALF POST SPACING (HS) AND
HALF POST SPACING WITH LONGER POSTS (K)**



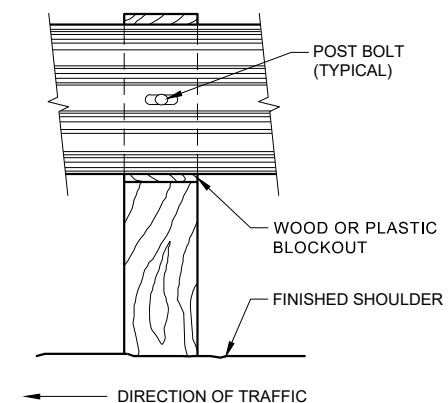
**FRONT VIEW
QUARTER POST SPACING (QS)**



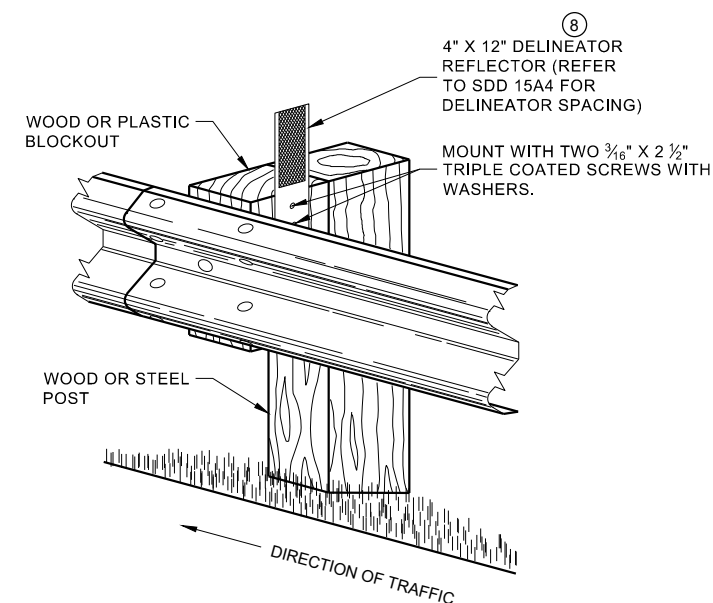
**FRONT VIEW
MID-SPAN BEAM SPLICE**



FRONT VIEW AT STEEL POST



FRONT VIEW AT WOOD POST



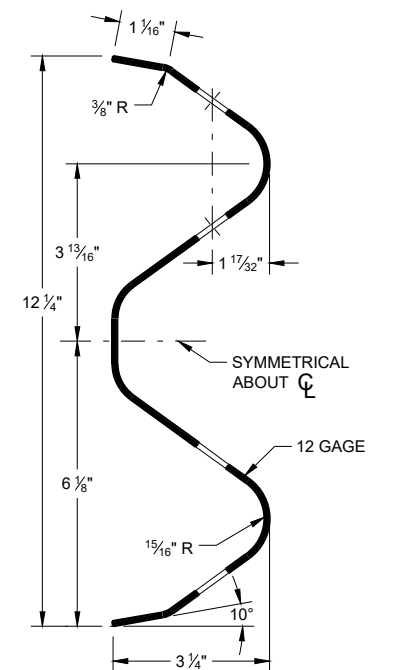
**ONE SIDED REFLECTOR DETAIL
AND TYPICAL INSTALLATION**

GENERAL NOTES

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

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

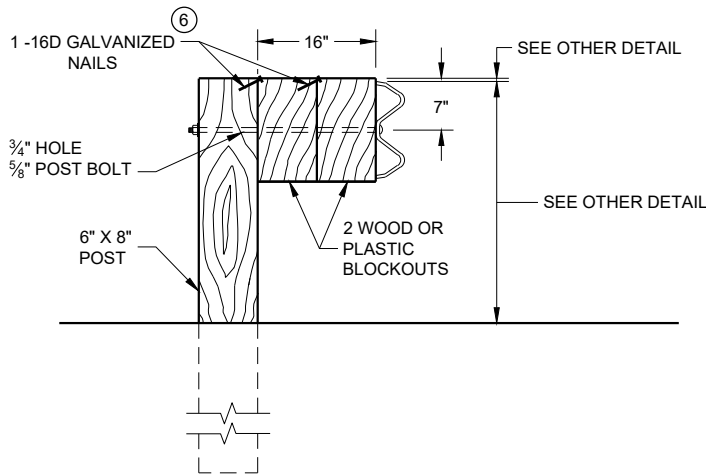
GUARD RAIL SPLICE BOLTS ARE A 3/8" DIAMETER ASTM A307 GUARDRAIL HEAD BOLT. A GUARDRAIL SPLICE BOLT REQUIRES 3/8" DIAMETER A563A DOUBLE RECESSED (DR) HEAVY HEX NUT.



SECTION THRU W-BEAM RAIL

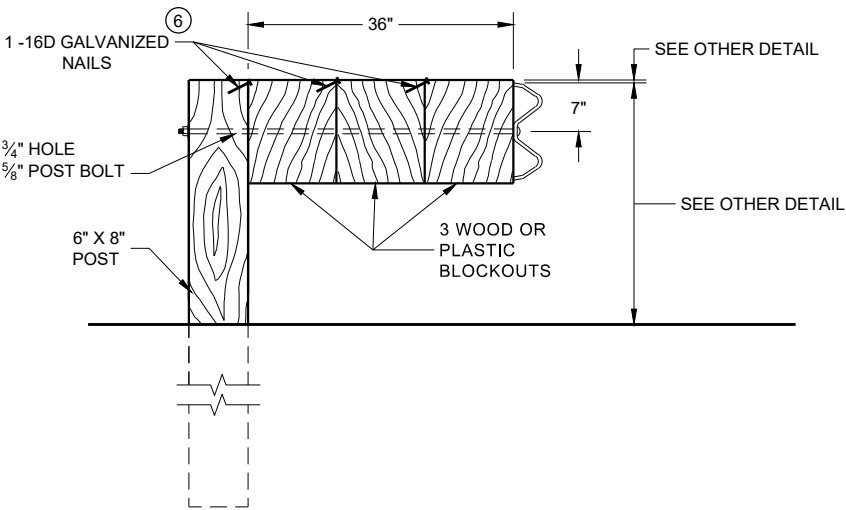
**MIDWEST GUARDRAIL SYSTEM
(MGS) GUARDRAIL**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



DETAIL FOR 16" BLOCKOUT DEPTH

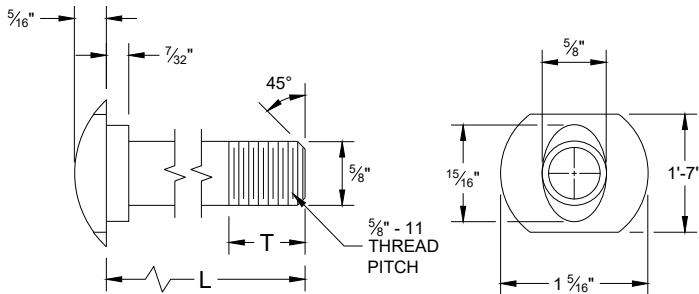
IT IS ACCEPTABLE TO USE BLOCKOUTS UP TO 16" DEEP TO INCREASE THE POST OFFSET TO AVOID UNDERGROUND OBSTACLES. THERE IS NO LIMIT TO THE NUMBER OF POSTS THAT CAN HAVE ADDITIONAL BLOCKOUTS UP TO 16" DEEP.



DETAIL FOR 36" BLOCKOUT DEPTH

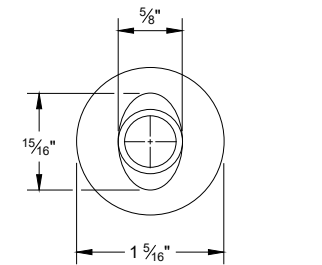
NOTES: UNDER SPECIAL CIRCUMSTANCES, SUCH AS AVOIDING OBSTACLES THAT ARE NOT RELOCATED, IT IS ACCEPTABLE TO INSTALL ADDITIONAL BLOCKOUTS TO OBTAIN UP TO 36" DEPTH FOR ONE OR TWO POSTS IN A SECTION OF GUARDRAIL.
DO NOT USE 16" OR 36" BLOCKOUTS IF IT CAUSES THE POST TO BE DRIVEN BEYOND SHOULDER HINGE POINT OR CAUSES A FIXED OBJECT TO BE WITHIN THE DEFLECTION DISTANCE OF THE BARRIER.

- NOTE:
- 1. ALL FILLETS SHALL HAVE A MINIMUM RADIUS OF 3/16".
 - 2. IF THE BOLT EXTENDS MORE THAN 1/4" FROM THE NUT THE BOLT SHOULD BE TRIMMED BACK.

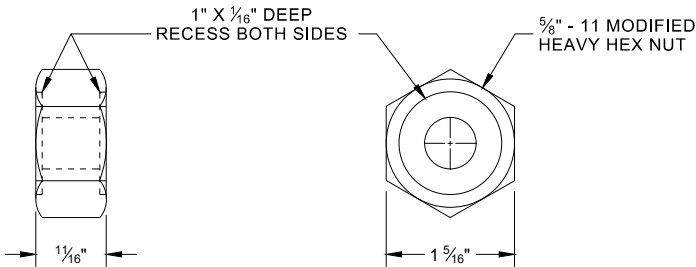


POST BOLT TABLE

L	T (MIN.)
1 1/4"	1 1/8"
2"	1 3/4"
10"	4"
14"	4 1/16"
18"	4"
21"	4 1/16"
25"	4"

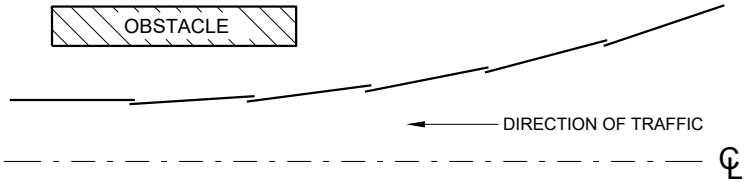


ALTERNATE BOLT HEAD

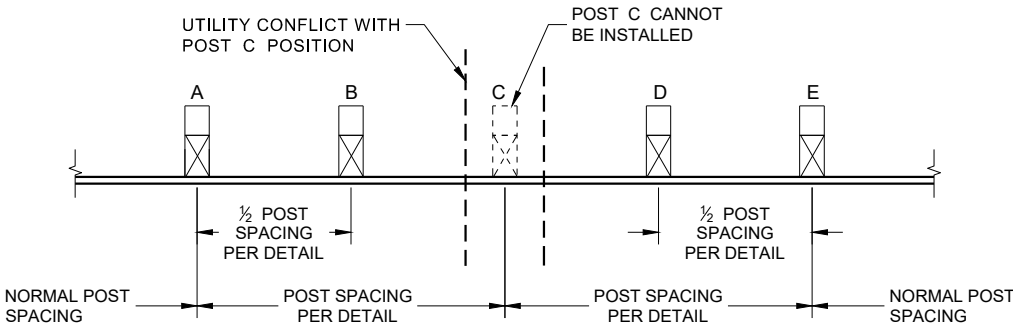


POST BOLT, SPLICE BOLT AND RECESS NUT

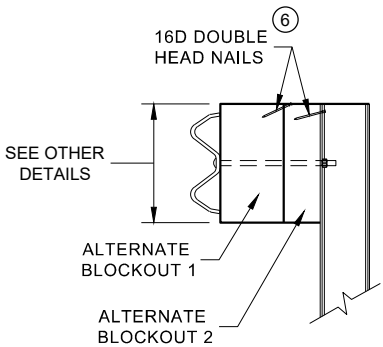
- 6 WHEN USING STEEL POST AD WOOD BLOCKOUTS, INSTALL FOUR 16D GALVANIZED NAILS. INSTALL NAILS AT THE BACK CORNERS OF THE BLOCK AND BEND THE NAILS OVER THE FLANGE OF THE STEEL POST.



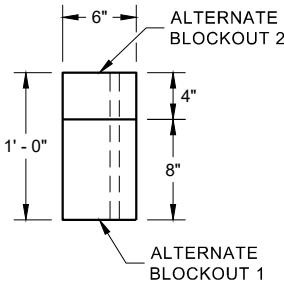
PLAN VIEW
BEAM LAPPING DETAIL



POST DRIVING FOR CONTINUOUS
UNDERGROUND OBSTRUCTION



SIDE VIEW

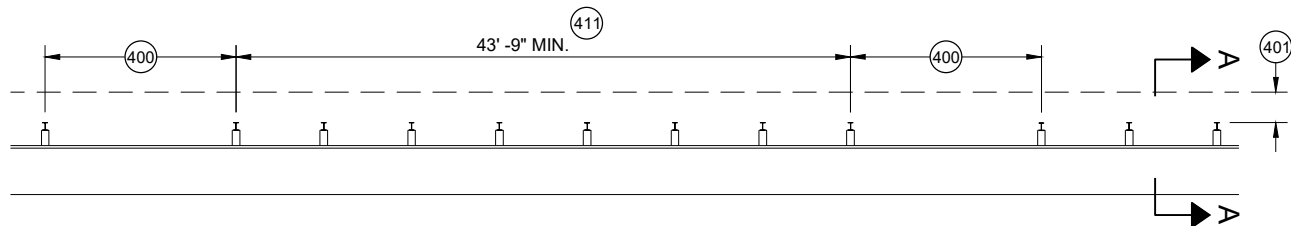


PLAN VIEW

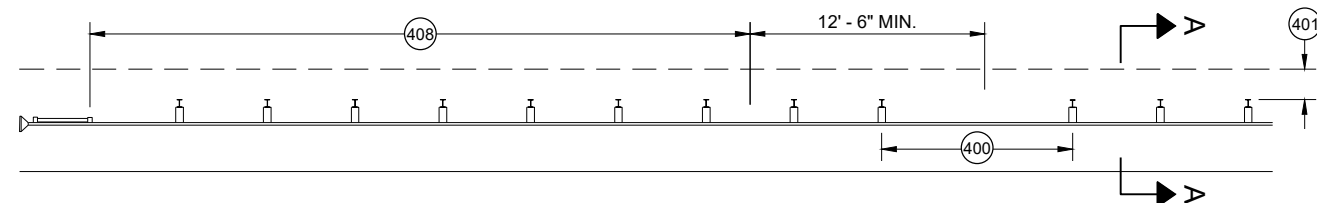
ALTERNATE WOOD
BLOCKOUT DETAIL

MIDWEST GUARDRAIL SYSTEM
(MGS) GUARDRAIL

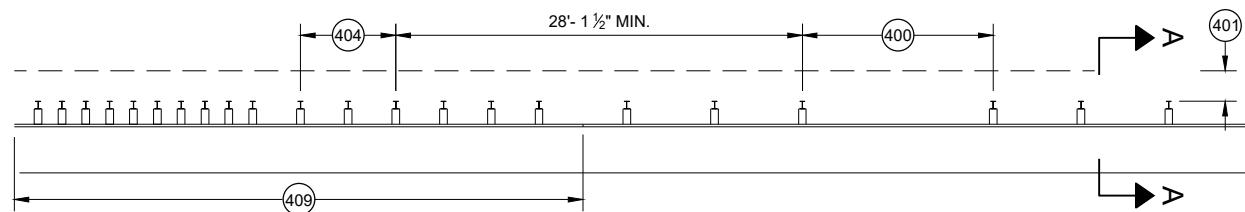
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



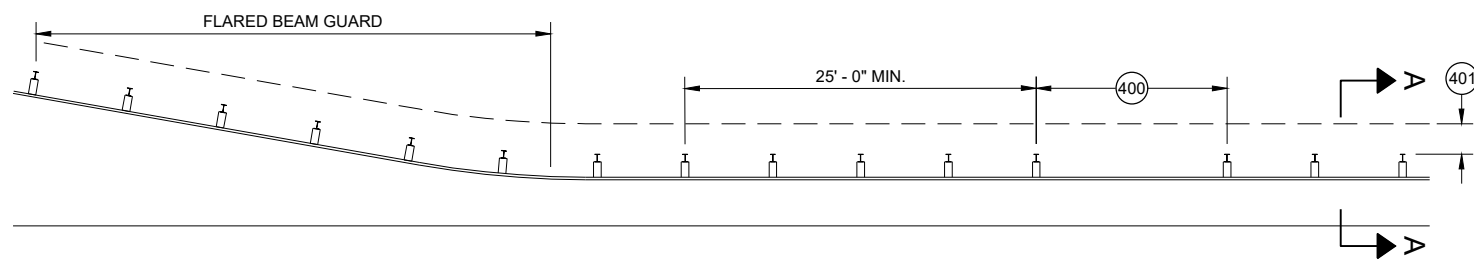
MISSING POST IN MGS GUARDRAIL



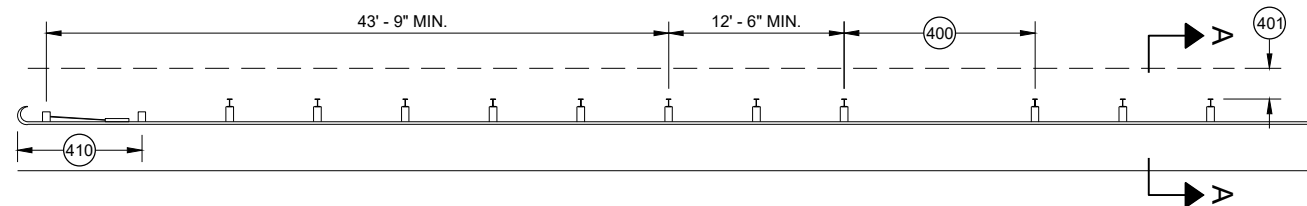
MISSING POST IN MGS GUARDRAIL NEAR EAT



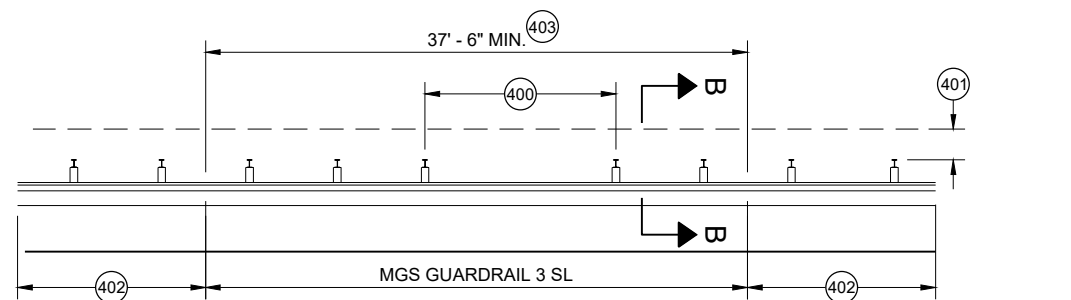
MISSING POST IN MGS GUARDRAIL NEAR AN APPROACH TRANSITION



MISSING POST IN MGS GUARDRAIL NEAR FLARED BEAM GUARD

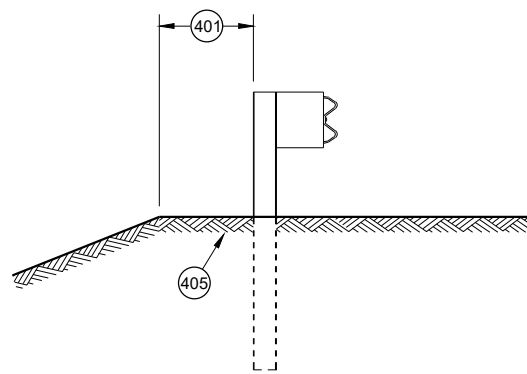


MISSING POST IN MGS GUARDRAIL NEAR A TYPE 2 END TERMINAL

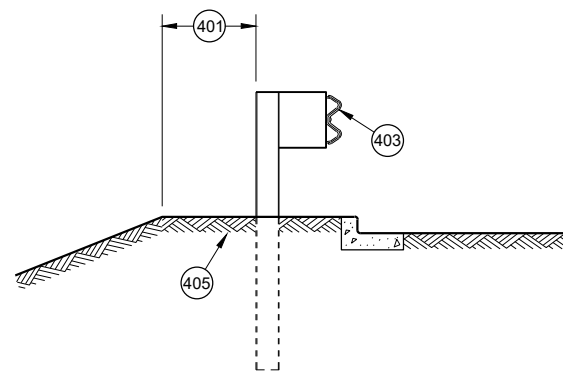


MISSING POST IN SHORT SPAN MGS GUARDRAIL NEAR CURB (SL)

- (400) MAX SPAN 12' - 6"
- (401) 2' MIN.
- (402) MGS GUARDRAIL 3
- (403) NESTING BEAM GUARD
- (404) ASYMMETRIC TRANSITION
- (405) SOIL WELL DRAINED AND COMPACTED
- (406) SEE OTHER DRAWINGS IN THIS SDD
- (407) SEE OTHER DRAWINGS FOR MIN. SPACING BETWEEN SPANS
- (408) SEE SDD 14B44
- (409) SEE SDD 14B45
- (410) SEE SDD 14B47
- (411) MINIMUM DISTANCE BETWEEN MISSING POST SPANS.



SECTION A - A



SECTION B - B

**MIDWEST GUARDRAIL SYSTEM
(MGS) GUARDRAIL**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
May 2021
DATE
/S/ Rodney Taylor
ROADWAY STANDARDS DEVELOPMENT
UNIT SUPERVISOR

FHWA

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

DIMENSIONS MAY VARY, MANUFACTURER'S INFORMATION.

SEE SDD 14B42 FOR MORE INFORMATION.

*** DO NOT ATTACH BLOCKOUTS TO POST 1 AND 2.**

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

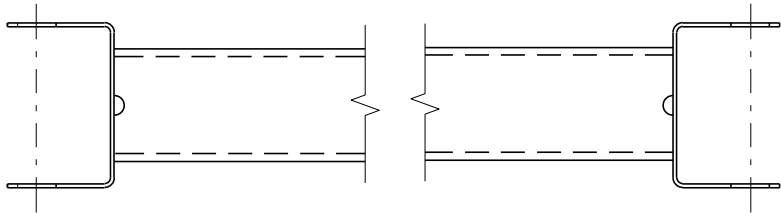
SEE MANUFACTURER'S DRAWING FOR SPLICE LOCATION, HARDWARE DIMENSIONS AND INSTALLATION INSTRUCTIONS.

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



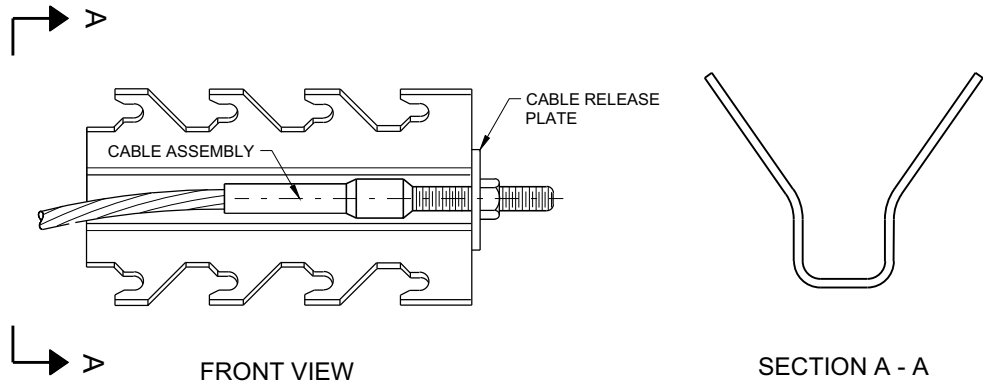
**MIDWEST GUARDRAIL SYSTEM
ENERGY ABSORBING TERMINAL
(MGS)**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

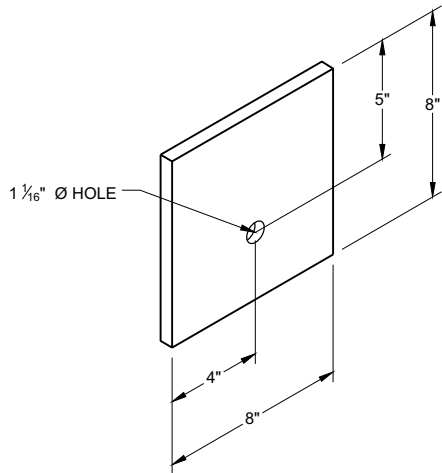


GENERIC GROUND STRUT⁹ ^E

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



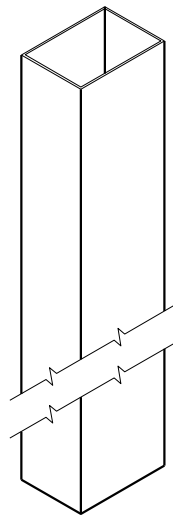
GENERIC ANCHOR CABLE BOX⁹ ^E



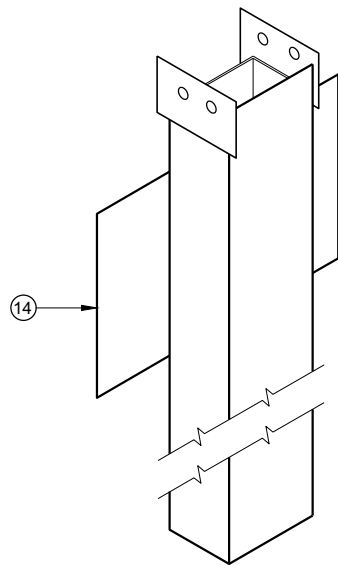
BEARING PLATE⁶ ^E

MIDWEST GUARDRAIL SYSTEM
ENERGY ABSORBING TERMINAL
(MGS)

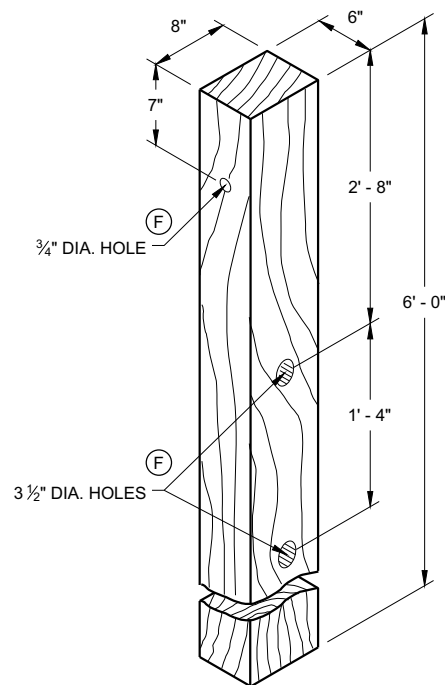
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



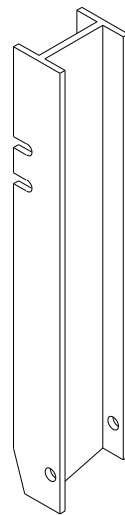
UPPER POST NO. 1 ⁽¹⁾ (E)



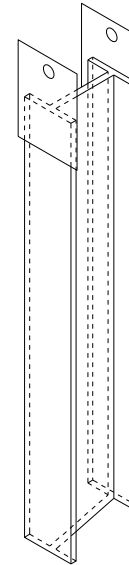
LOWER POST NO. 1 ⁽²⁾ (E)



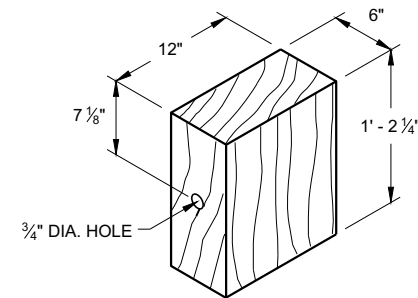
WOOD CRT POST ⁽³⁾ (E)
POSTS NUMBER 3-9



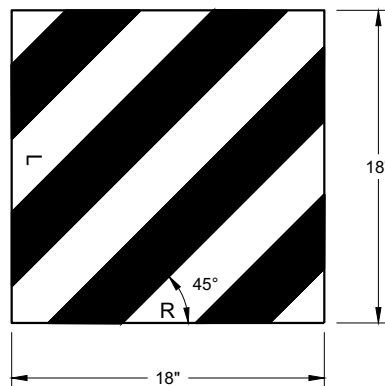
UPPER POST NO. 2 ⁽¹⁵⁾ (E)



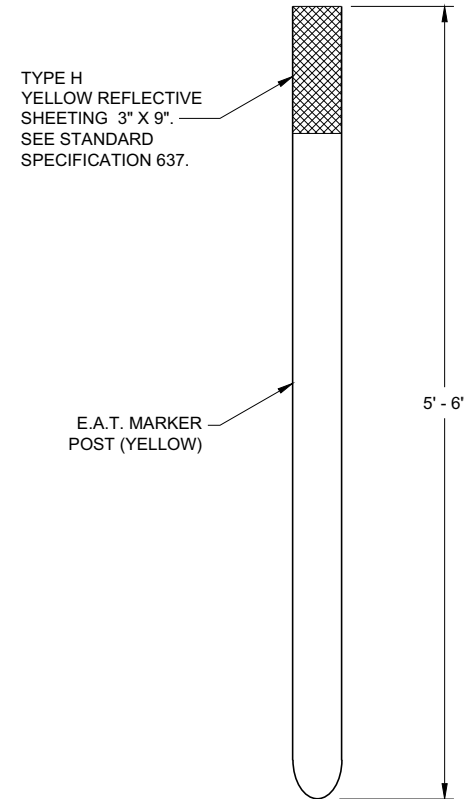
LOWER POST NO. 2 ⁽¹⁶⁾ (E)



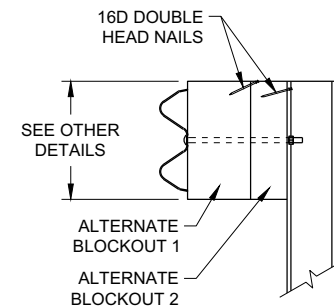
WOOD BLOCKOUT ⁽⁴⁾
REQ'D. AT ALL POSTS EXCEPT POST NO'S 1 & 2



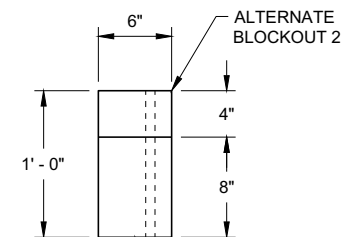
REFLECTIVE SHEETING DETAIL ^(E)



E.A.T. MARKER POST ⁽¹³⁾



SIDE VIEW



TOP VIEW

ALTERNATE WOOD
BLOCKOUT DETAIL

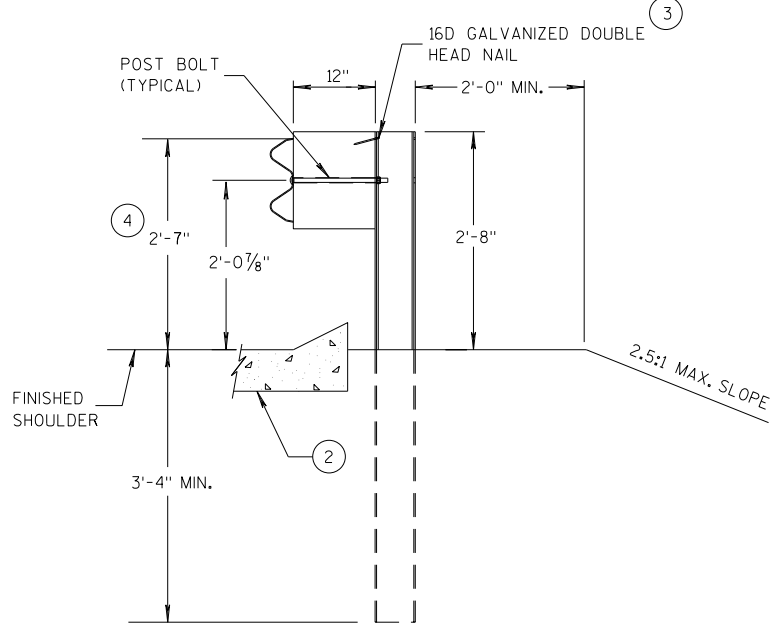
**MIDWEST GUARDRAIL SYSTEM
ENERGY ABSORBING TERMINAL
(MGS)**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

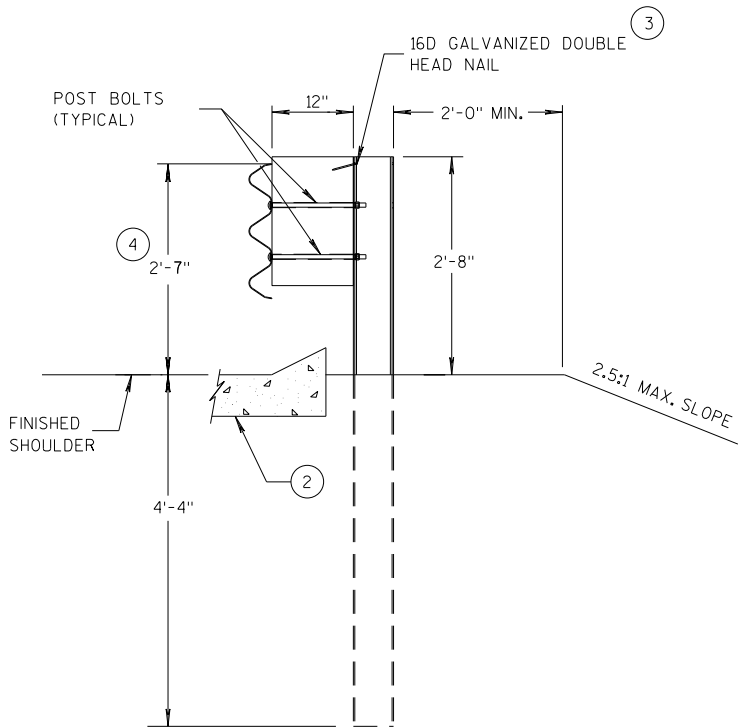
APPROVED
7/2018 DATE /S/ Rodney Taylor
ROADWAY STANDARDS DEVELOPMENT
UNIT SUPERVISOR
FHWA

GENERAL NOTES

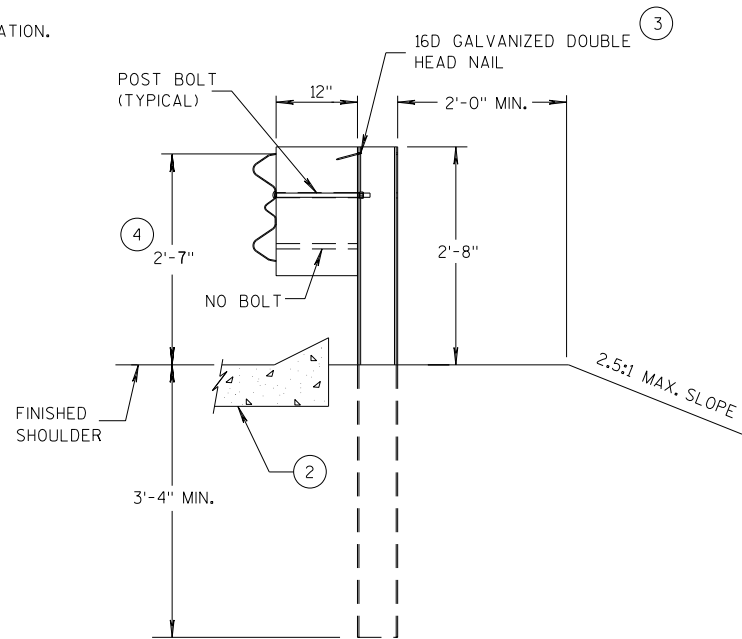
- 2 OPTIONAL CURB AND GUTTER OR DRAINAGE FEATURE SEE PLAN FOR INFORMATION.
- 3 WHEN USING STEEL POSTS AND WOOD BLOCKOUTS INSTALL FOUR 10D GALVANIZED NAILS. INSTALL NAILS AT THE BACK CORNERS OF THE BLOCK AND BEND THE NAILS OVER THE FLANGE OF THE STEEL POST.
- 4 TOLERANCE FOR TOP OF W-BEAM RAIL IS $\pm 1"$.
- 13 STEEL OR WOOD POST IS ACCEPTABLE AT POST 1. SEE SDD 14B42



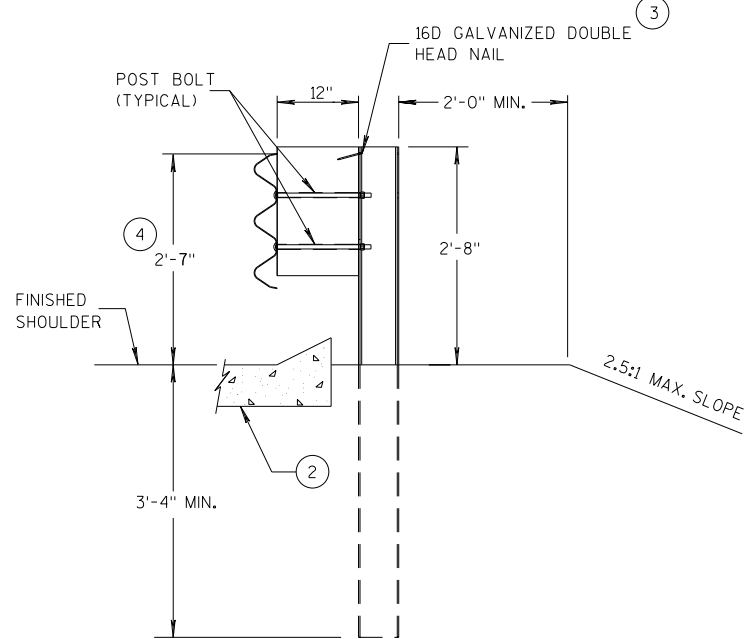
SECTION A-A
POSTS 1-5



SECTION D-D
POSTS 12-17



SECTION B-B
POST 6



SECTION C-C
POSTS 7-11

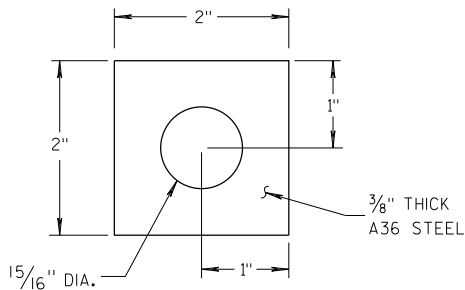
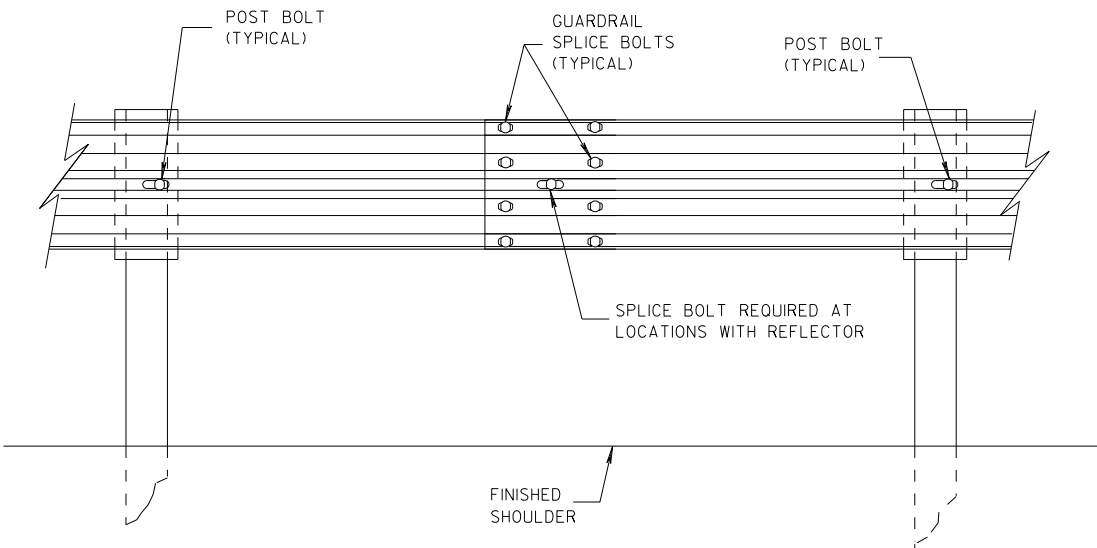
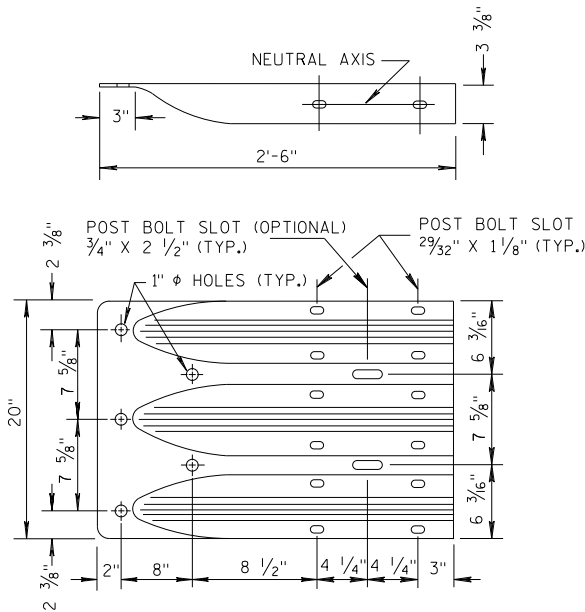


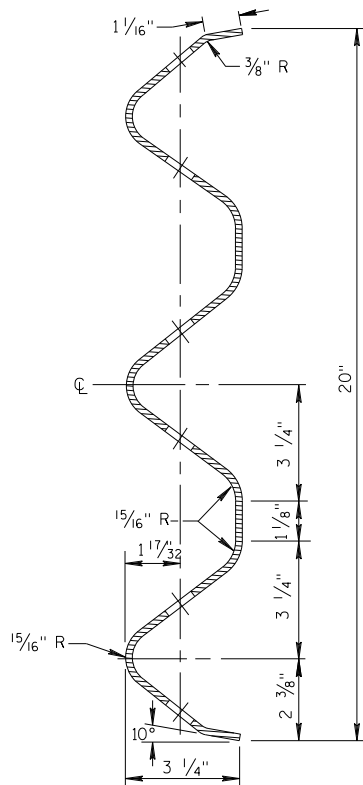
PLATE WASHER DETAIL



SPLICE DETAIL



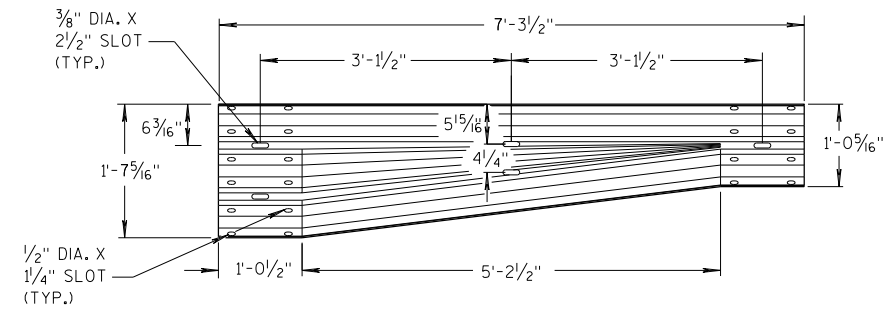
THRIE BEAM
TERMINAL CONNECTOR



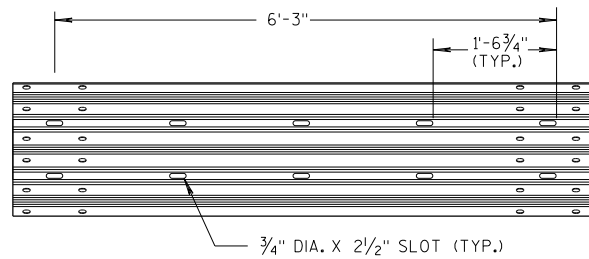
SECTION THRU THRIE
BEAM RAIL ELEMENT

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

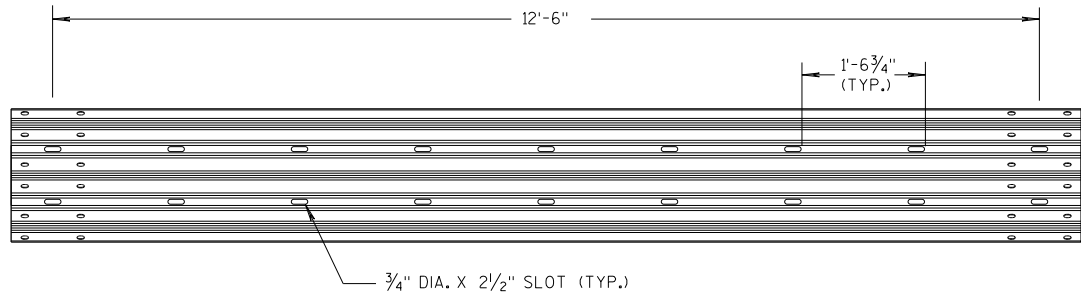
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



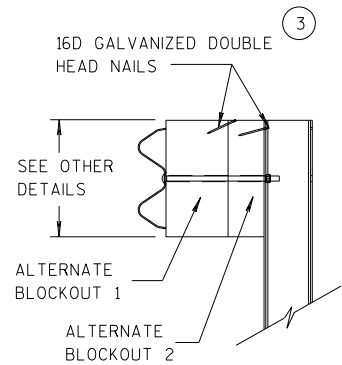
W-BEAM TO THRIE BEAM TRANSITION SECTION



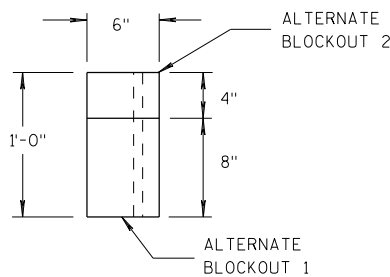
6'-3" THRIE BEAM SECTION



12'-6" THRIE BEAM SECTION

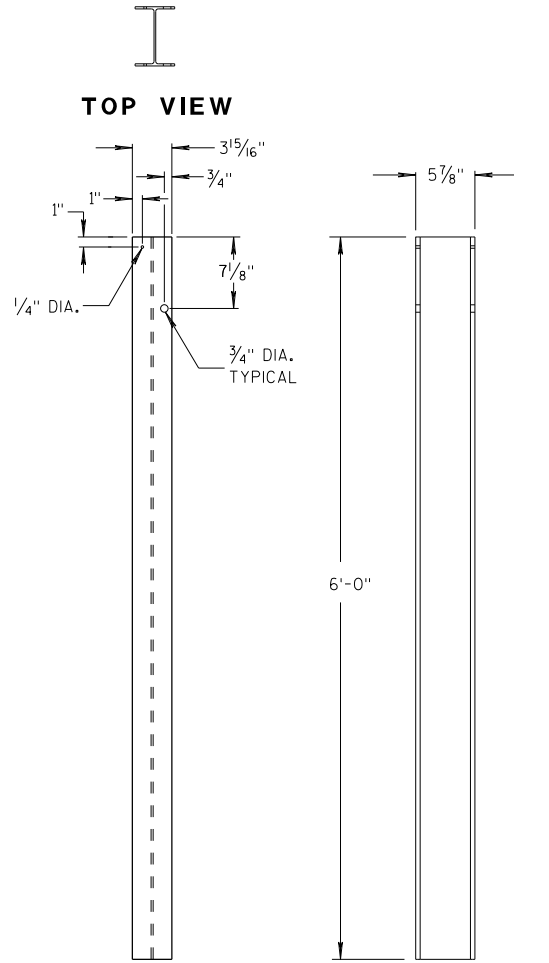


SIDE VIEW



TOP VIEW

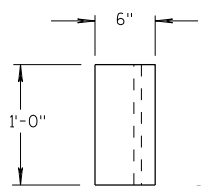
ALTERNATE WOOD BLOCKOUT DETAIL



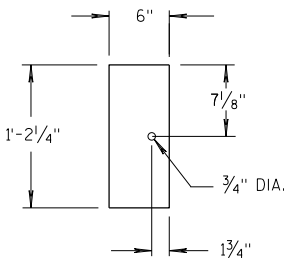
FRONT VIEW

SIDE VIEW

STEEL POSTS 1-5

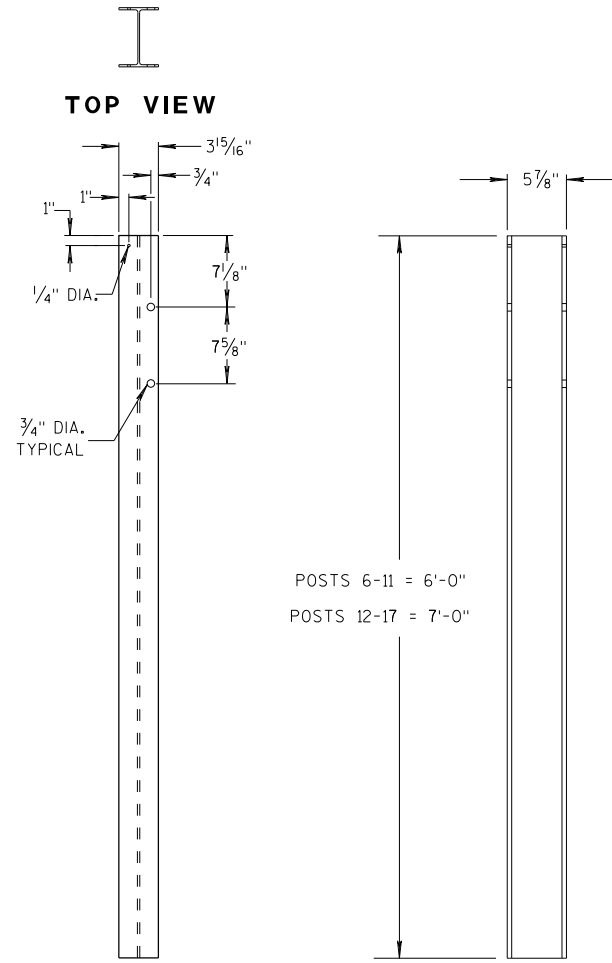


TOP VIEW



FRONT VIEW

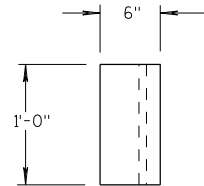
BLOCKOUT POSTS 1-5



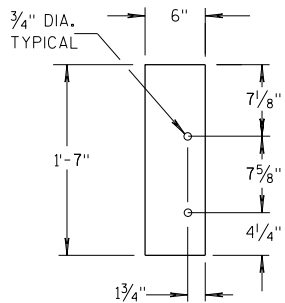
FRONT VIEW

SIDE VIEW

STEEL POSTS 6-17



TOP VIEW



FRONT VIEW

BLOCKOUT POSTS 6-17

GENERAL NOTES

STEEL POSTS ARE W6X9 OR W6X8.5.

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

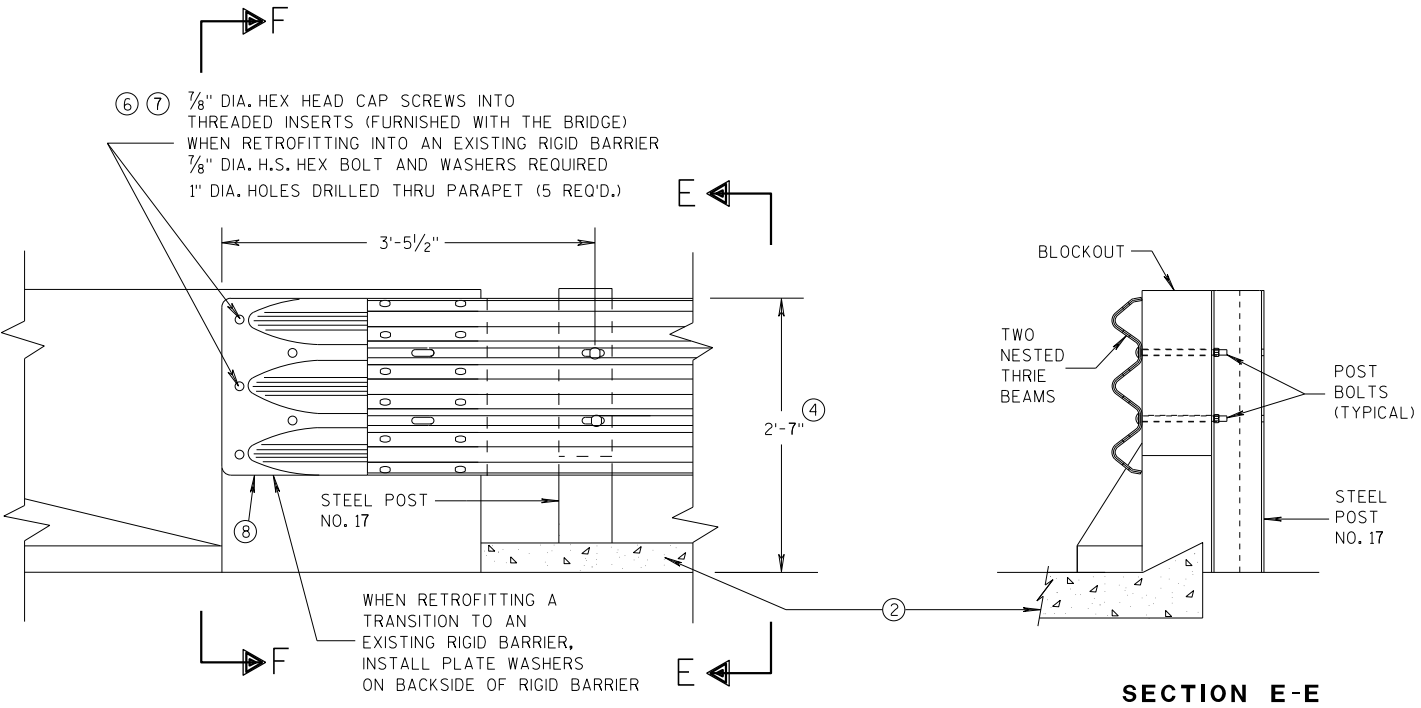
③ WHEN USING STEEL POSTS AND WOOD BLOCKOUTS INSTALL FOUR 16D GALVANIZED NAILS. INSTALL NAILS AT THE BACK CORNERS OF THE BLOCK AND BEND THE NAILS OVER THE FLANGE OF THE STEEL POST.

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

⑬ STEEL OR WOOD POST IS ACCEPTABLE AT POST 1. SEE SDD 14B42.

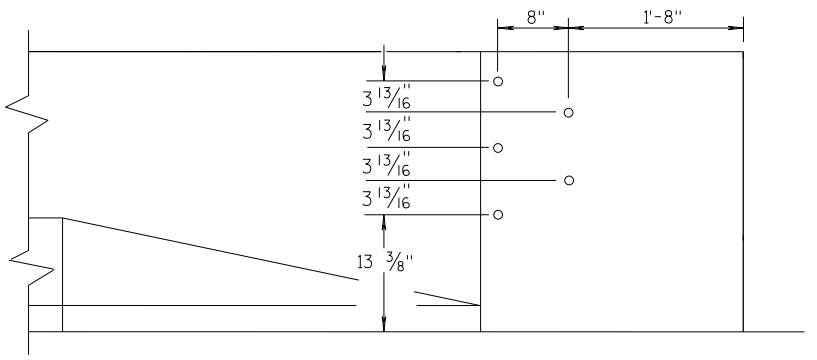
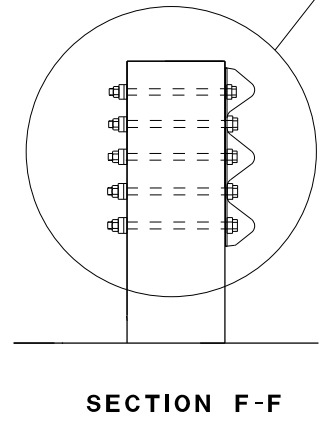
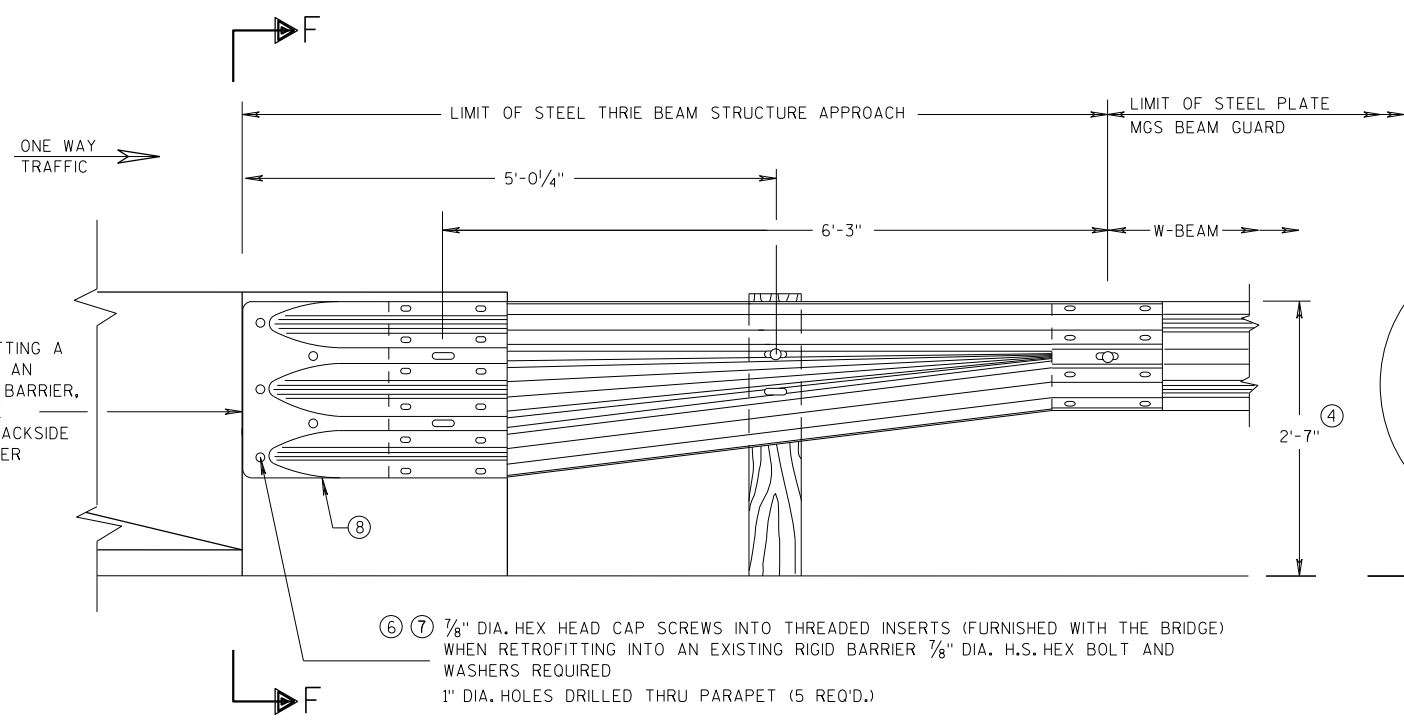
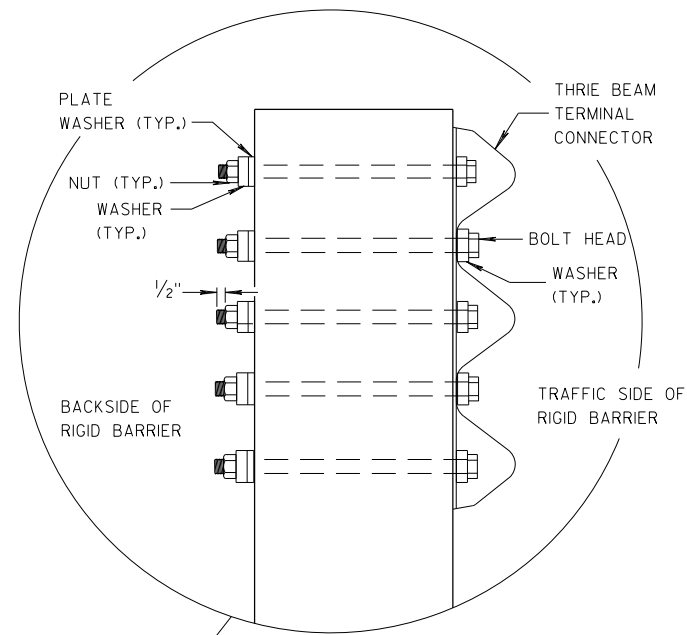
**MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

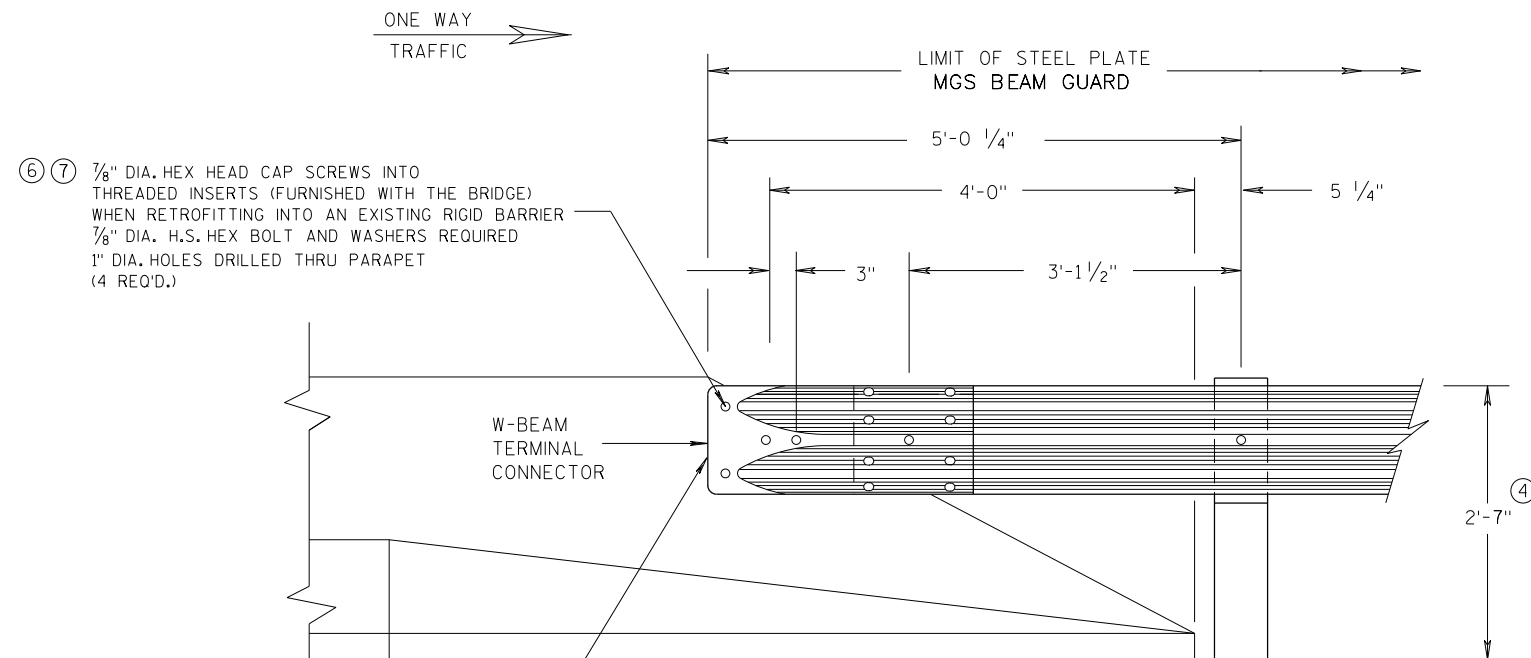


GENERAL NOTES

- THESE ARE TYPICAL CONNECTION DETAILS. ADJUST THE POSTION OF CONNECTIONS TO EXISTING BRIDGES TO FIT THE ACTUAL BRIDGE AND SITE DIMENSIONS.
- ② OPTIONAL CURB AND GUTTER OR DRAINAGE FEATURE SEE PLAN FOR INFORMATION.
- ④ TOLERANCE FOR TOP OF BEAM IS $\pm 1"$.
- ⑥ DRILLING BOLT HOLES THROUGH THE PARAPET, BOLTS, NUTS, WASHERS AND REPAIRING DAMAGED CONCRETE ARE INCIDENTAL TO THE CONTRACT.
- ⑦ BOLTS MAY BE A325 BOLTS OR A449 BOLTS. BOLT LENGTH AND THREADING LENGTH ARE TO ALLOW FOR A TIGHT CONNECTION BETWEEN RIGID BARRIER AND THRIE BEAM CONNECTION PLATE. CONTRACTOR IS TO FIELD VERIFY BOLT LENGTH AND THREAD LENGTH. ONE ROUND WASHER REQUIRED BETWEEN BOLT HEAD AND THRIE BEAM CONNECTOR PLATE. BOLTS THAT EXTEND THROUGH THE PARAPET AND OUT THE BACK FACE REQUIRE A HARDENED ROUND STEEL WASHER THAT IS 2" O.D. X 5/32" THICK AND ONE PLATE WASHER. REPAIR ANY DAMAGED CONCRETE FROM BOLT INSTALLATION.
- ⑧ THE RECESS FOR A W-BEAM CONNECTION, WHICH EXISTS ON SOME PARAPETS OF THIS TYPE, SHALL BE FILLED WITH A TREATED TIMBER BLOCKOUT. BLOCKOUT SIZE IS 1'-6" X 2'-0" X 3 1/2".



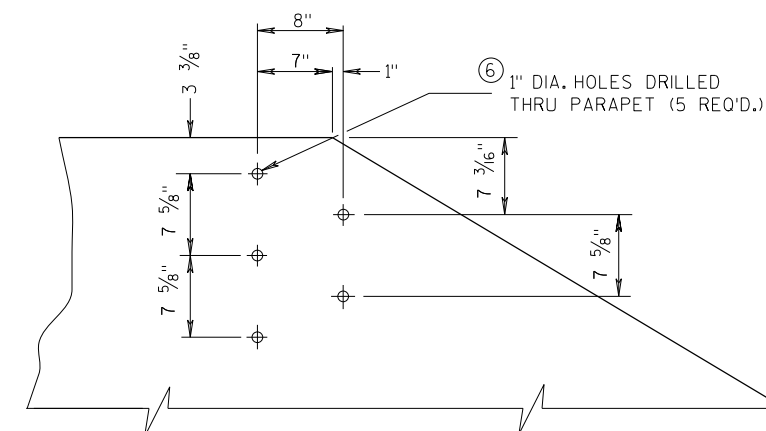
MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED 07/2018 DATE	/S/ Rodney Taylor ROADWAY STANDARDS DEVELOPMENT UNIT SUPERVISOR
FHWA	



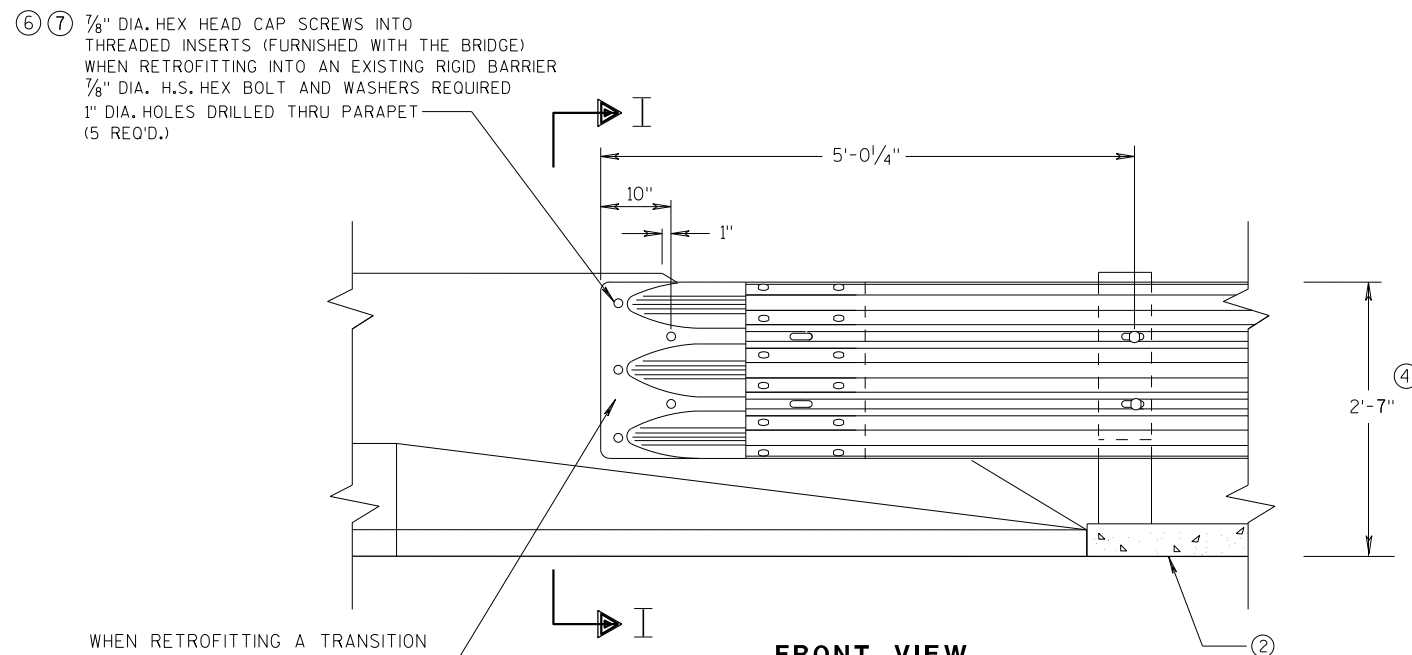
WHEN RETROFITTING A TRANSITION TO AN EXISTING RIGID BARRIER, INSTALL PLATE WASHERS ON BACKSIDE OF RIGID BARRIER.

FRONT VIEW

**W BEAM CONNECTION TO
PARAPETS WITH SLOPED ENDS
(USE ONLY AT TRAFFIC EXIT END OF ONE WAY BRIDGE)**



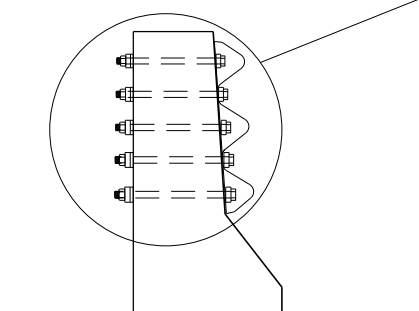
**DRILL HOLE LOCATION AND PATTERN
FOR THRIE BEAM CONNECTION**



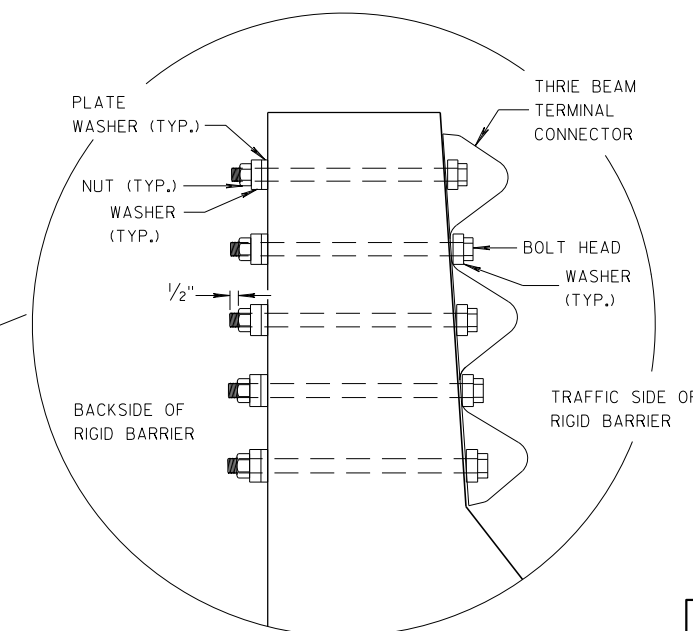
WHEN RETROFITTING A TRANSITION TO AN EXISTING RIGID BARRIER, INSTALL PLATE WASHERS ON BACKSIDE OF RIGID BARRIER.

FRONT VIEW

**THRIE BEAM CONNECTION TO BRIDGE
PARAPETS WITH SLOPED ENDS**



SECTION I-I



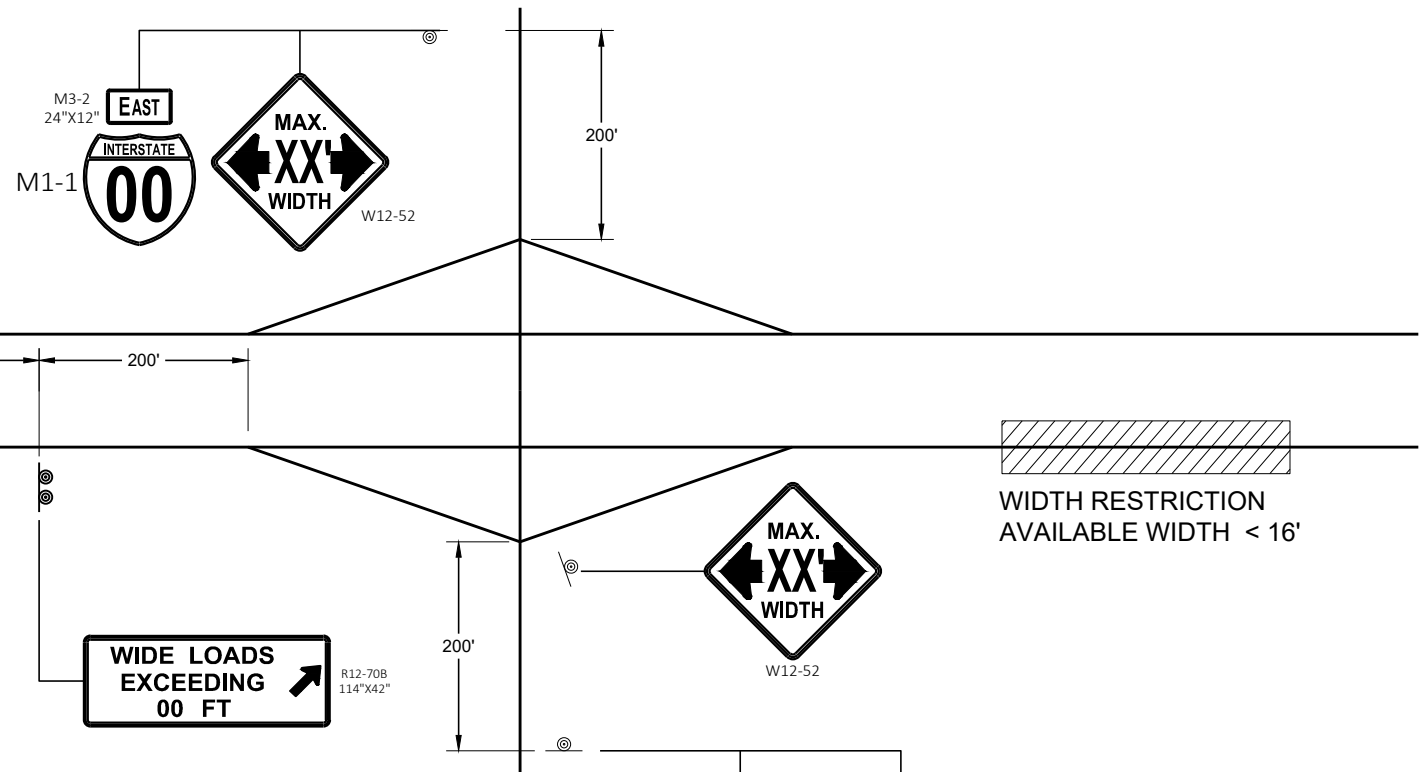
GENERAL NOTES

- ② OPTIONAL CURB AND GUTTER OR DRAINAGE FEATURE SEE PLAN FOR INFORMATION.
- ④ TOLERANCE FOR TOP OF BEAM IS $\pm 1"$.
- ⑥ DRILLING BOLT HOLES THROUGH THE PARAPET, BOLTS, NUTS, WASHERS AND REPAIRING DAMAGED CONCRETE ARE INCIDENTAL TO THE CONTRACT.
- ⑦ BOLTS MAY BE A325 BOLTS OR A449 BOLTS. BOLT LENGTH AND THREADING LENGTH ARE TO ALLOW FOR A TIGHT CONNECTION BETWEEN RIGID BARRIER AND THRIE BEAM CONNECTION PLATE. CONTRACTOR IS TO FIELD VERIFY BOLT LENGTH AND THREAD LENGTH. ONE ROUND WASHER REQUIRED BETWEEN BOLT HEAD AND THRIE BEAM CONNECTOR PLATE. BOLTS THAT EXTEND THROUGH THE PARAPET AND OUT THE BACK FACE REQUIRE A HARDENED ROUND STEEL WASHER THAT IS 2" O.D. X 5/32" THICK AND ONE PLATE WASHER. REPAIR ANY DAMAGED CONCRETE FROM BOLT INSTALLATION.

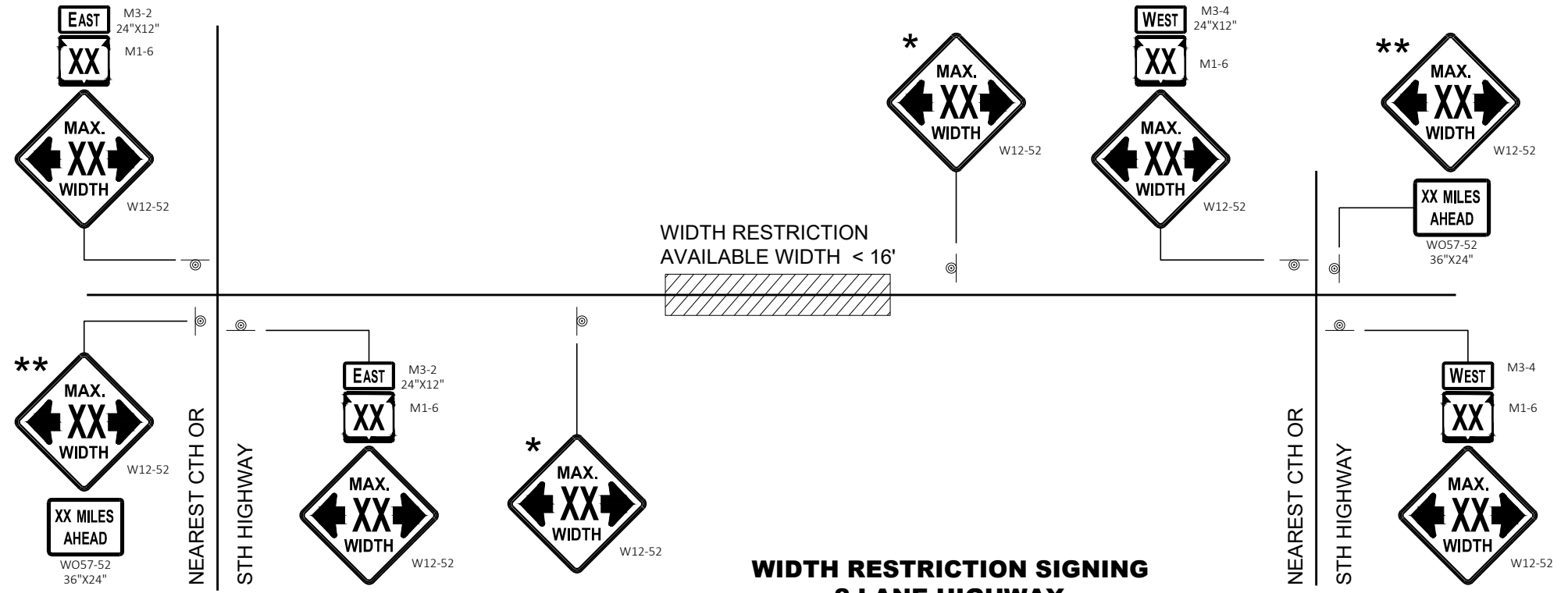
**MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
07/2018
DATE /S/ Rodney Taylor
ROADWAY STANDARDS DEVELOPMENT
UNIT SUPERVISOR
FHWA



WIDTH RESTRICTION SIGNING



WIDTH RESTRICTION SIGNING
2 LANE HIGHWAY

LEGEND

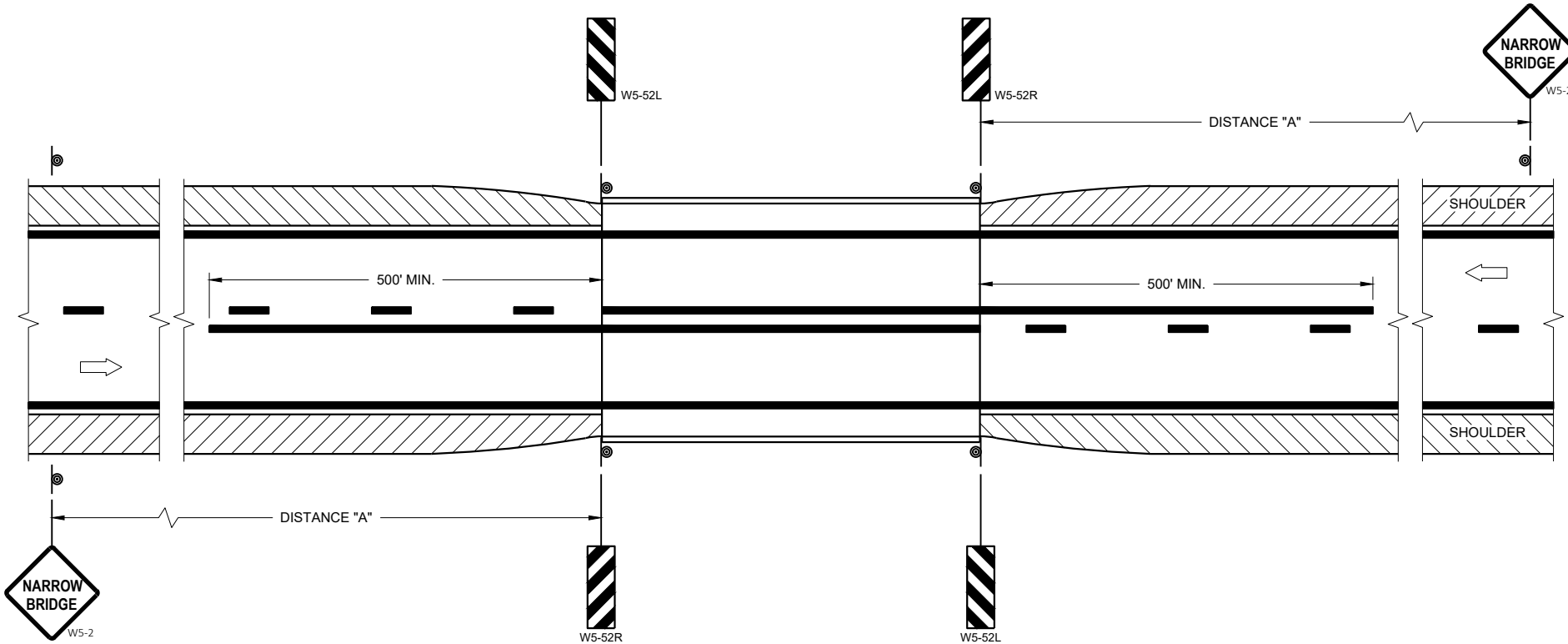
⊙ SIGN ON PERMANENT SUPPORT

GENERAL NOTES

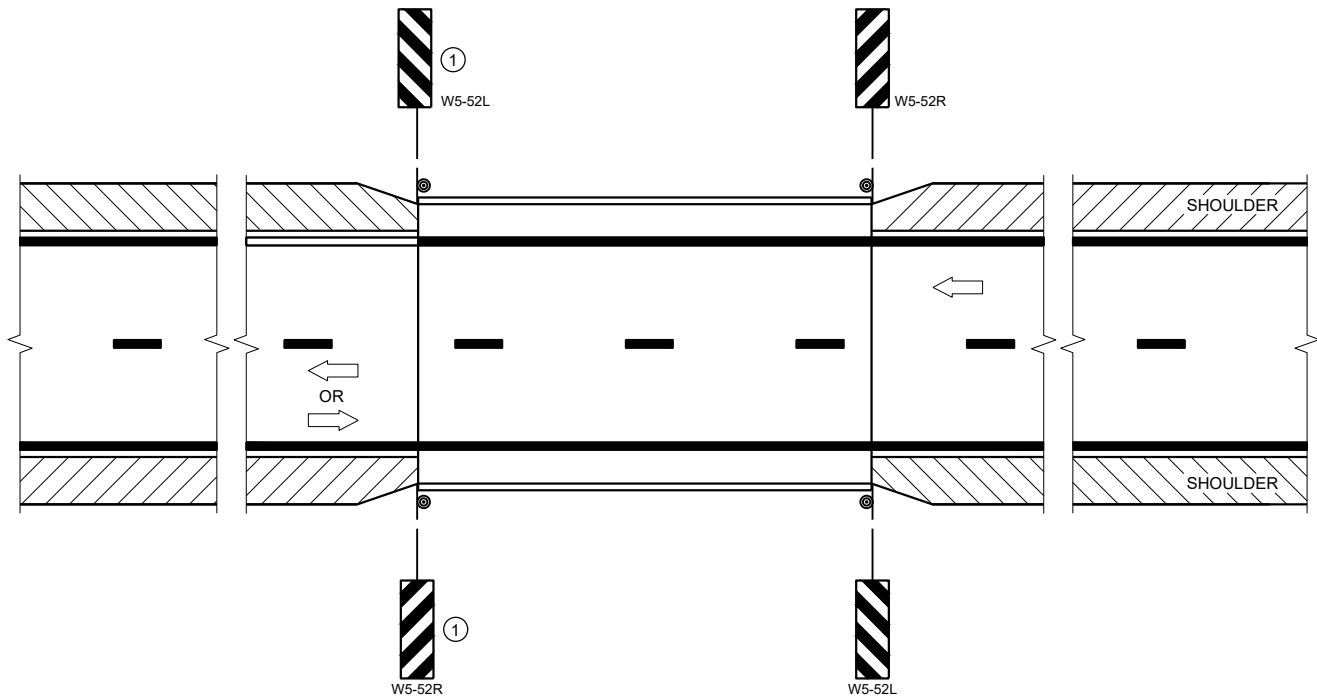
- THE EXACT NUMBER, LOCATION AND SPACING OF ALL SIGNS SHALL BE ADJUSTED TO FIT FIELD CONDITIONS AS APPROVED BY THE ENGINEER.
- THE SPACING BETWEEN SIGNS SHOULD BE ADJUSTED TO NOT CONFLICT WITH AND TO PROVIDE A DESIRABLE MINIMUM OF 200 FEET CLEARANCE TO EXISTING SIGNS THAT WILL REMAIN IN PLACE.
- ANY 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 AFTER 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 May 2023 DATE	/S/ Andrew Heidtke WORK ZONE ENGINEER
FHWA	



SITUATION 1
WARRANTING CRITERIA:
BRIDGE WIDTH IS AT LEAST 16 FEET BUT LESS THAN 24 FEET.



SITUATION 2
WARRANTING CRITERIA:
1. BRIDGE WIDTH IS AT LEAST 24 FEET AND
2. BRIDGE SHOULDER WIDTH IS LESS THAN 6 FEET

GENERAL NOTES

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

LOCATE W5-52 SIGN POST(S) BEHIND GUARDRAIL WHEN PRESENT.

PLACE THE EDGE OF THE W5-52 SIGN IN LINE WITH FACE OF CURB OR PARAPET.

ON BRIDGE ONLY PROJECTS, PLACE 300 FEET OF EDGELINE.

OMIT EDGELINES ON ROADWAYS WITHOUT EXISTING EDGELINES.

① OMIT ON ONE-WAY TRAVELED WAYS.

LEGEND

⊙ SIGN ON PERMANENT SUPPORT

➡ DIRECTION OF TRAFFIC

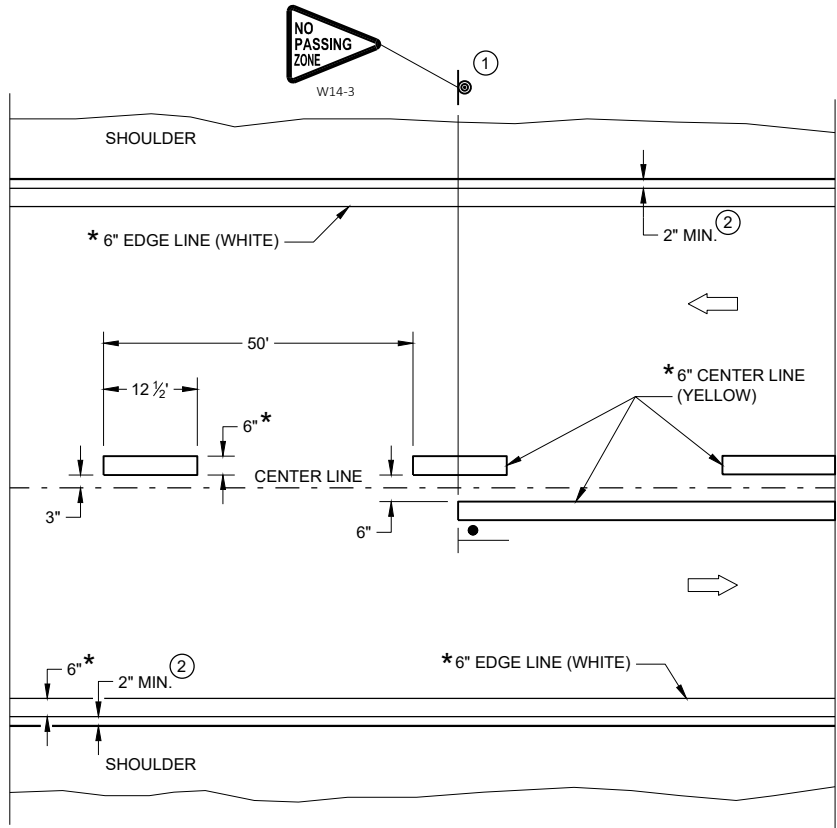
DISTANCE TABLE

POSTED OR 85TH PERCENTILE SPEED	DISTANCE "A"
25	150'
30	200'
35	250'
40	300'
45	400'
50	550'
55	700'

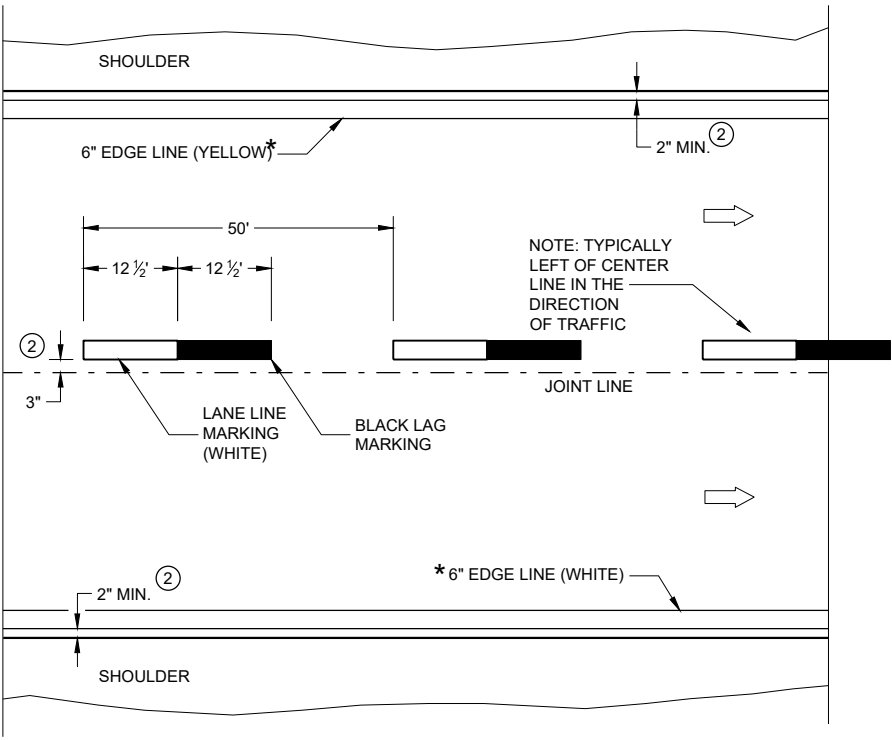
**SIGNING AND MARKING
FOR TWO LANE BRIDGES**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
May 2023 /S/ Jeannie Silver
DATE STATE SIGNING AND MARKING
ENGINEER
FHWA



TWO WAY TRAFFIC



ONE WAY TRAFFIC

PERMANENT PAVEMENT MARKING

* CONFIRM MARKING LINE WIDTH WITH THE MISCELLANEOUS QUANTITIES

GENERAL NOTES

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

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

LEGEND

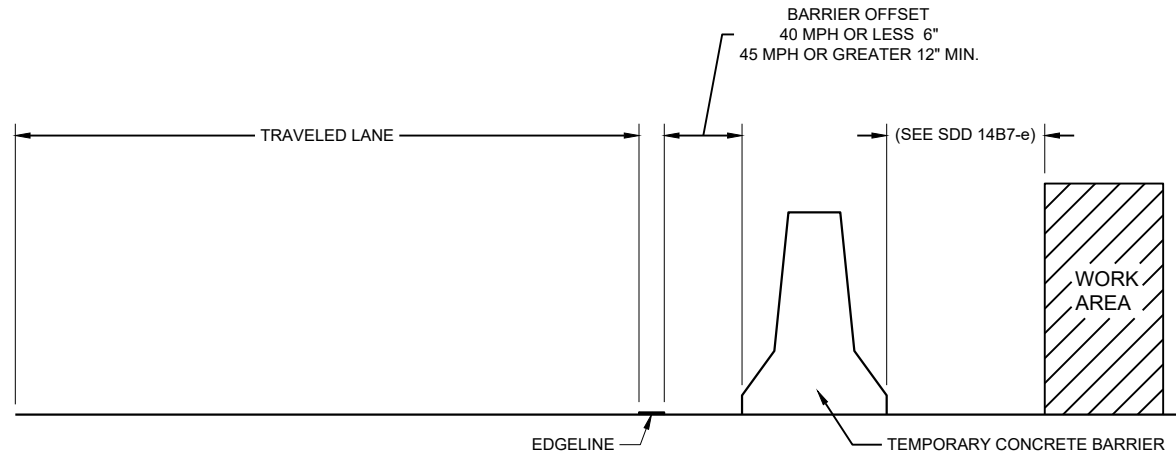
- "T" MARKING
- SIGN ON PERMANENT SUPPORT
- DIRECTION OF TRAFFIC

PERMANENT LONGITUDINAL PAVEMENT MARKINGS

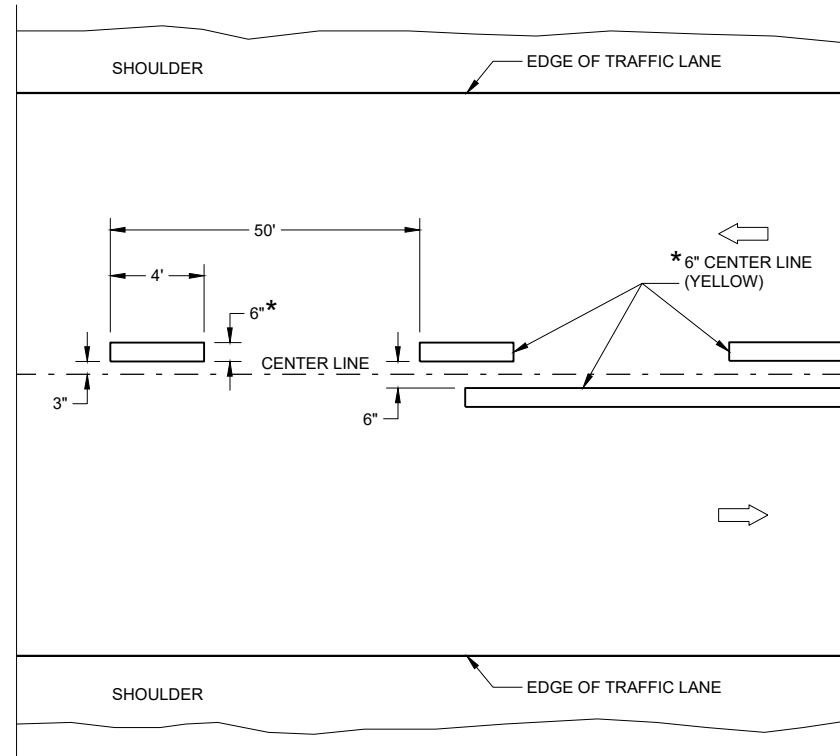
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
May 2023
DATE
/S/ Jeannie Silver
STATEWIDE SIGNING AND MARKING
ENGINEER

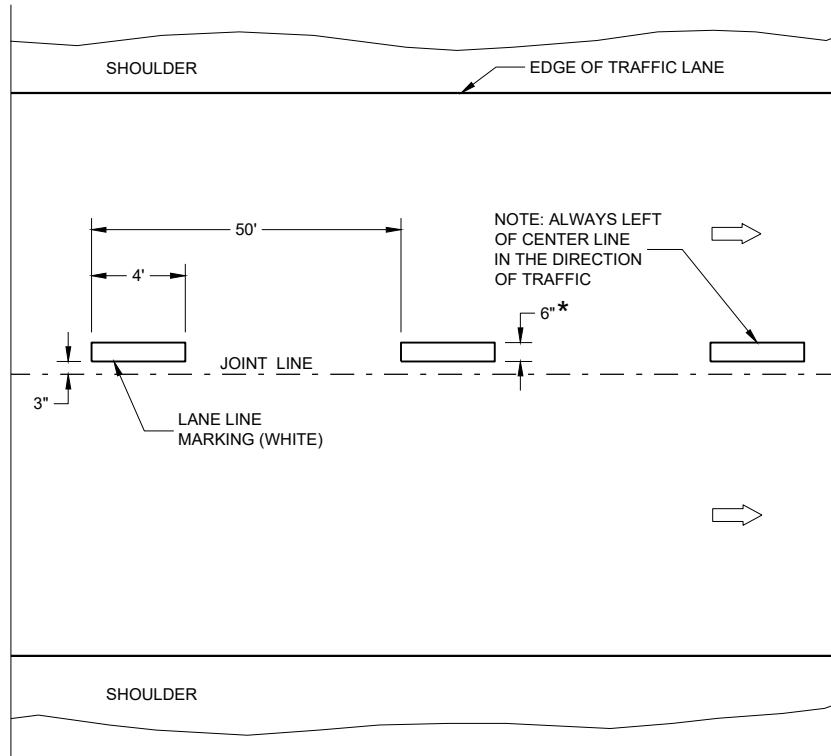
FHWA



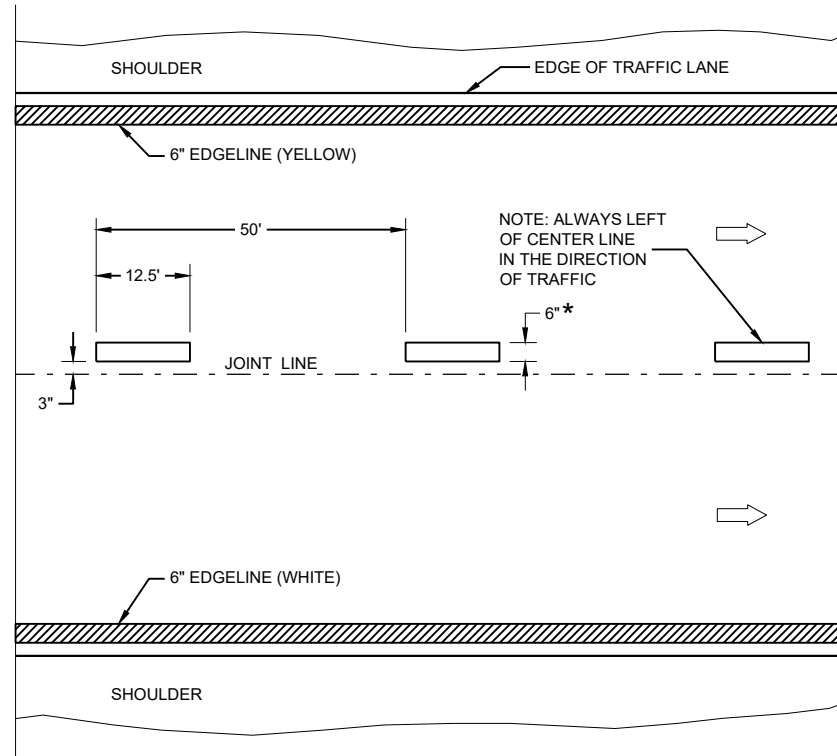
TEMPORARY BARRIER OFFSET FROM EDGE LINE



TWO WAY TRAFFIC



ONE WAY TRAFFIC



FREEWAYS AND EXPRESSWAYS

GENERAL NOTES

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

LEGEND

DIRECTION OF TRAFFIC

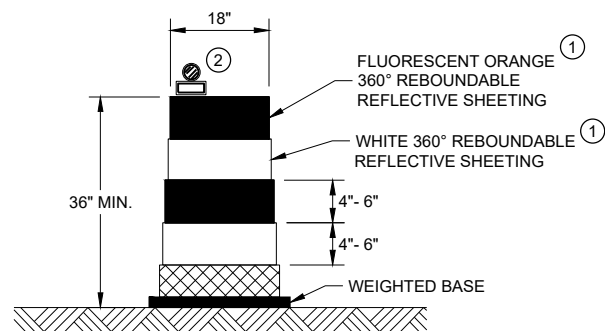
* CONFIRM MARKING LINE WIDTH WITH THE MISCELLANEOUS QUANTITIES

TEMPORARY PAVEMENT MARKING

TEMPORARY LONGITUDINAL PAVEMENT MARKING

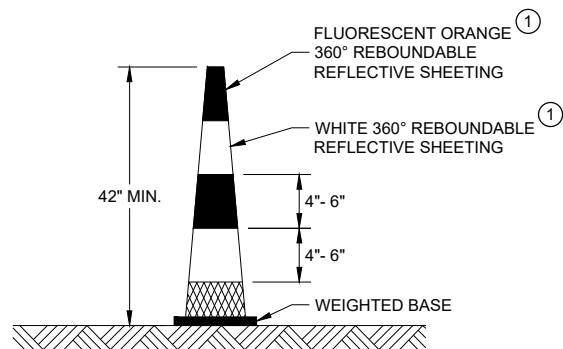
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
May 2023
DATE
/S/ Jeannie Silver
STATEWIDE SIGNING AND MARKING
ENGINEER
FHWA



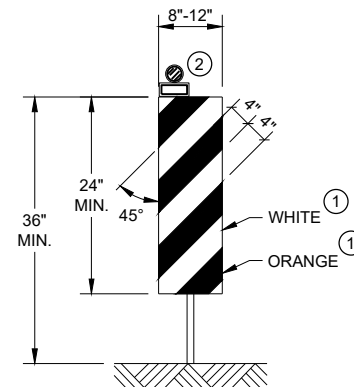
DRUM

BALLAST WIDTHS
RANGE FROM 24"-36"



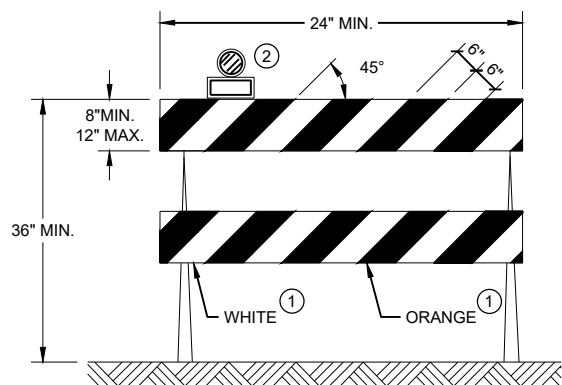
42" CONE

DO NOT USE IN TAPERS
½ SPACING OF DRUMS
BALLAST WIDTHS
RANGE FROM 14"-20"



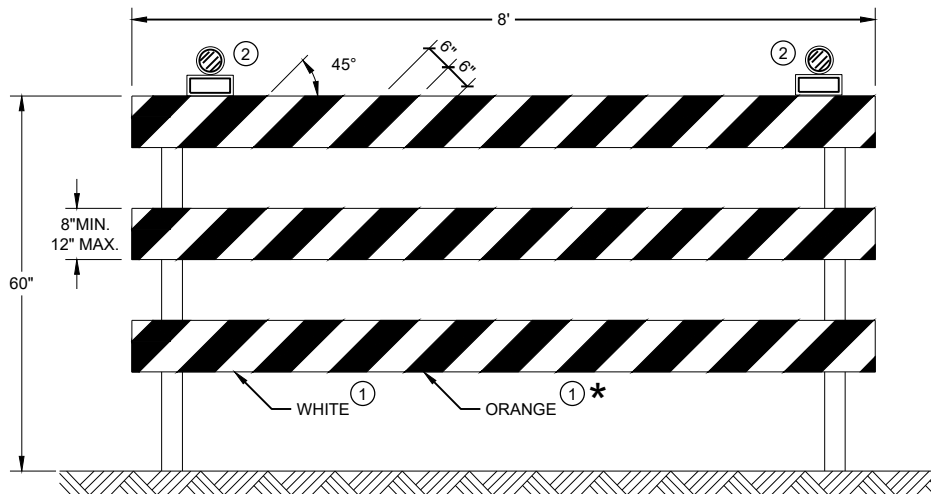
VERTICAL PANEL

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



TYPE II BARRICADE

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



TYPE III BARRICADE

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

* IF USED FOR A PERMANENT APPLICATION USE RED SHEETING.

GENERAL NOTES

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






**CHANNELIZING DEVICES
DRUMS, CONES, BARRICADES
AND VERTICAL PANELS**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
November 2022 /S/ Andrew Heidtke
DATE WORK ZONE ENGINEER

FHWA

LEGEND

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

GENERAL NOTES

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

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

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

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

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

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

FLAGGING

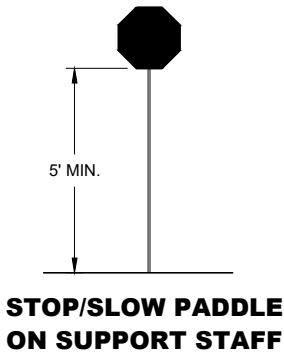
FLAGGERS SHALL BE IN SIGHT OF EACH OTHER OR IN DIRECT COMMUNICATION AT ALL TIMES. THEY SHALL BE EQUIPPED WITH STOP/SLOW PADDLES FASTENED ON SUPPORT STAFFS. WHEN THE FLAGGING OPERATION IS NOT IN EFFECT REMOVE TEMPORARY PORTABLE RUMBLE STRIPS PRIOR TO COVERING OR REMOVING ALL ADVANCE SIGNING.

- ① FOR MOVING WORK OPERATIONS, POST ADDITIONAL W20-7A FLAGGER SIGNS AT APPROXIMATELY 3,500' INTERVALS IN THE MOVING WORK OPERATION OR AS APPROVED BY THE ENGINEER.
- ② SIGN NOT REQUIRED IF FLAGGING OPERATION OCCURS WITHIN A SIGNED ROAD WORK ZONE AREA.

WHEN THE DISTANCE BETWEEN FLAGGERS EXCEEDS 2 MILES, A PILOT CAR IS REQUIRED. WHEN CURVES REDUCE SIGHT DISTANCE BELOW 400', A PILOT CAR IS REQUIRED.

TEMPORARY PORTABLE RUMBLE STRIPS

- UTILIZE TEMPORARY PORTABLE RUMBLE STRIPS ON ALL FLAGGING OPERATIONS.
- ③ EACH TEMPORARY PORTABLE RUMBLE STRIP ARRAY CONSISTS OF THREE RUMBLE STRIPS PLACED TRANSVERSE ACROSS THE LANE AT THE LOCATIONS SHOWN. WITHIN EACH ARRAY, SPACING BETWEEN RUMBLE STRIPS SHALL BE 15 FEET ON CENTER
- ONLY USE TEMPORARY PORTABLE RUMBLE STRIPS FROM THE APPROVED PRODUCTS LIST.
- INSTALL TEMPORARY RUMBLE STRIPS PER MANUFACTURER'S RECOMMENDATIONS.
- PLACE ADVANCE SIGNING PRIOR TO INSTALLING TEMPORARY RUMBLE STRIPS.
- DO NOT INSTALL TEMPORARY PORTABLE RUMBLE STRIPS ON GRAVEL, MILLED SURFACES, OR ASPHALT THAT HAS BEEN PAVED LESS THAN 12 HOURS.

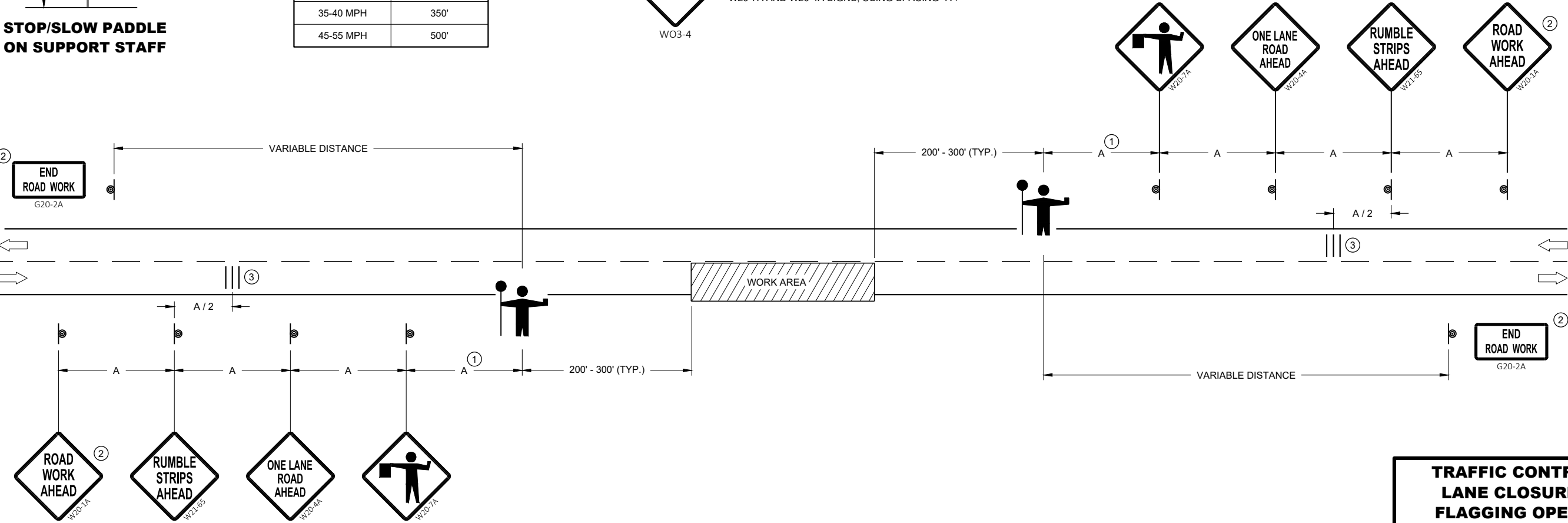


SIGN AND TEMPORARY RUMBLE STRIP ARRAY SPACING TABLE

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







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



TRAFFIC CONTROL FOR LANE CLOSURE WITH FLAGGING OPERATION	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED May 2022 DATE	/S/ Andrew Heidtke WORK ZONE ENGINEER
FHWA	

LEGEND

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

GENERAL NOTES

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

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

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

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

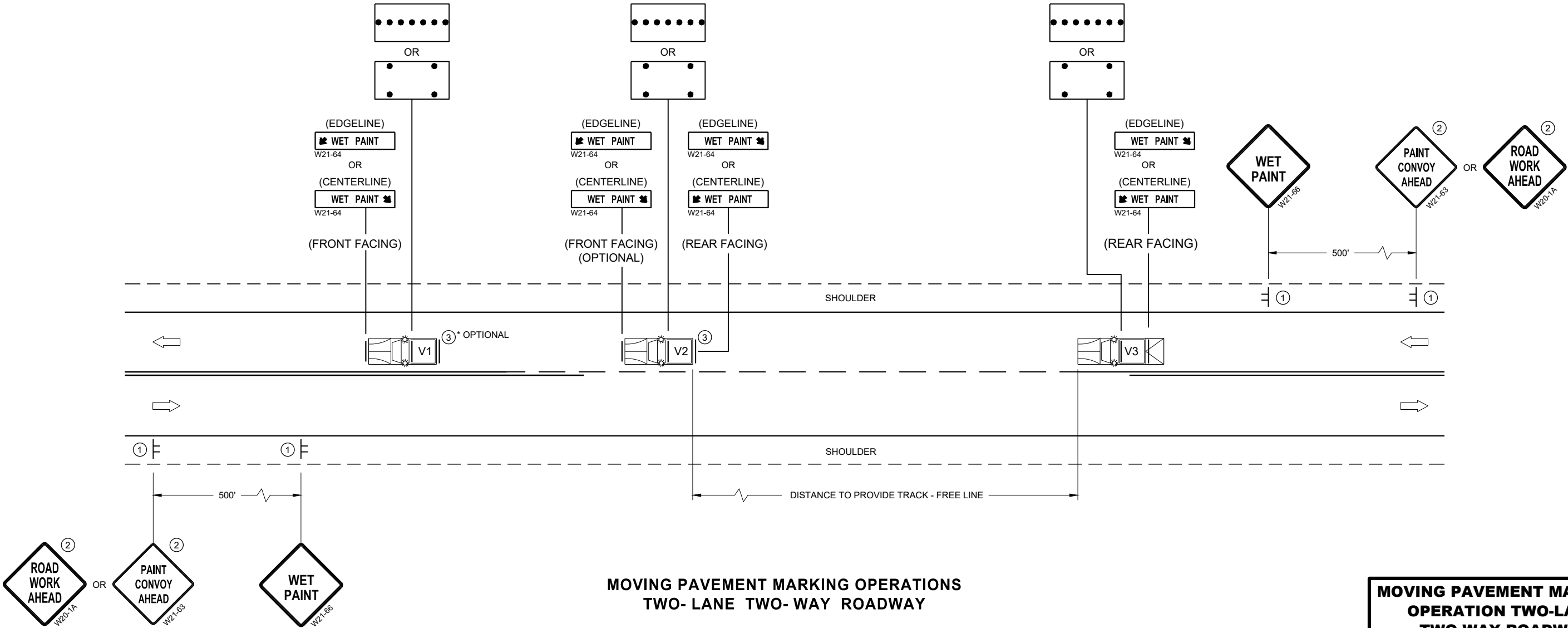
THE WORK AND SHADOW VEHICLES SHOULD PULL OVER PERIODICALLY TO ALLOW TRAFFIC TO PASS.

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

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

CONES SHALL BE A MINIMUM OF 28" FOR WET PAVEMENT MARKING .

- ① SIGNS SHALL BE REPEATED APPROXIMATELY EVERY THREE MILES.
- ② IF CONSTRUCTION WORK ZONE SIGNS ARE IN PLACE, W20-1A OR W21-63 ARE NOT REQUIRED.
- ③ V1 AND V2 CAN BE SWITCHED SO THAT THE MARKER IS THE LEAD VEHICLE.



MOVING PAVEMENT MARKING
OPERATION TWO-LANE
TWO-WAY ROADWAY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

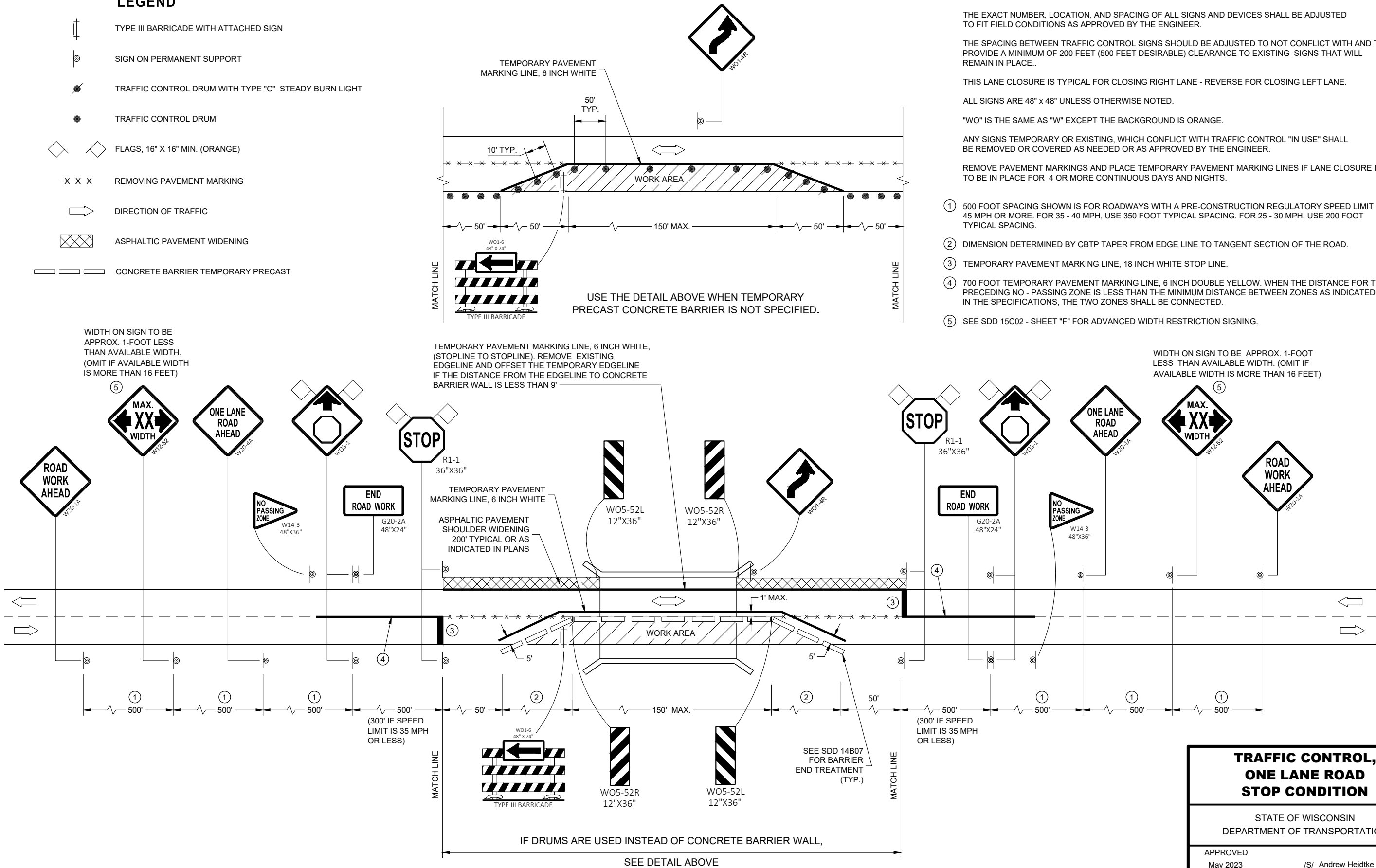
APPROVED
February 2023 /S/ Andrew Heidtke
DATE WORK ZONE ENGINEER
FHWA

LEGEND

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

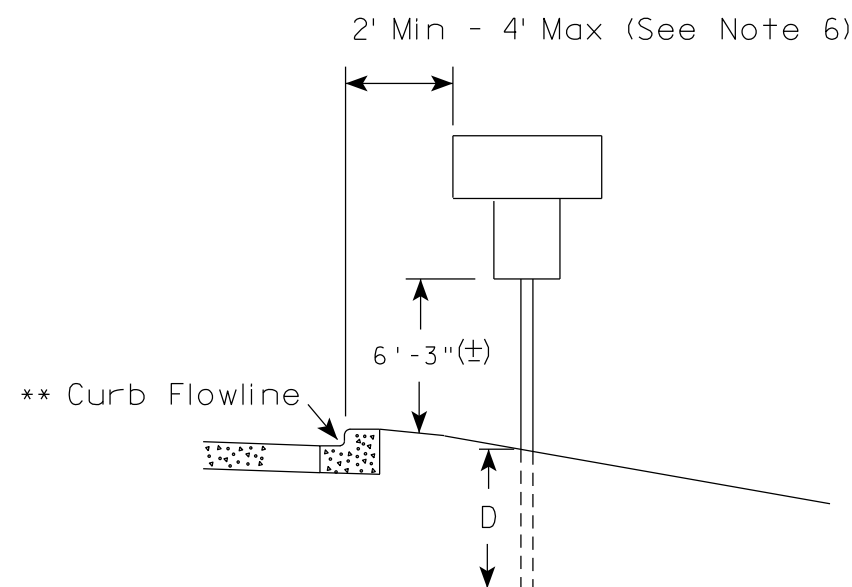
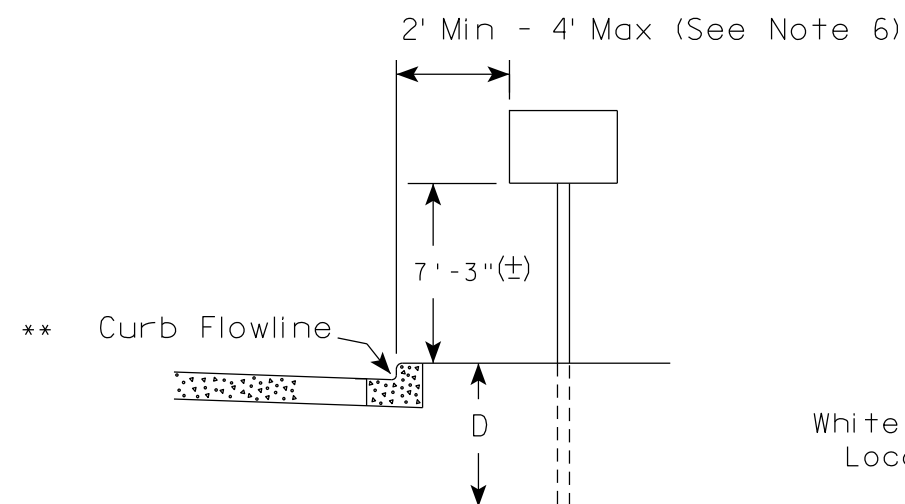
GENERAL NOTES

- 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 TRAFFIC CONTROL SIGNS SHOULD BE ADJUSTED TO NOT CONFLICT WITH AND TO PROVIDE A MINIMUM OF 200 FEET (500 FEET DESIRABLE) CLEARANCE TO EXISTING SIGNS THAT WILL REMAIN IN PLACE..
- 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.
- REMOVE PAVEMENT MARKINGS AND PLACE TEMPORARY PAVEMENT MARKING LINES IF LANE CLOSURE IS TO BE IN PLACE FOR 4 OR MORE CONTINUOUS DAYS AND NIGHTS.
- 500 FOOT SPACING SHOWN IS FOR ROADWAYS WITH A PRE-CONSTRUCTION REGULATORY SPEED LIMIT OF 45 MPH OR MORE. FOR 35 - 40 MPH, USE 350 FOOT TYPICAL SPACING. FOR 25 - 30 MPH, USE 200 FOOT TYPICAL SPACING.
 - DIMENSION DETERMINED BY CBTP TAPER FROM EDGE LINE TO TANGENT SECTION OF THE ROAD.
 - TEMPORARY PAVEMENT MARKING LINE, 18 INCH WHITE STOP LINE.
 - 700 FOOT TEMPORARY PAVEMENT MARKING LINE, 6 INCH DOUBLE YELLOW. WHEN THE DISTANCE FOR THE PRECEDING NO - PASSING ZONE IS LESS THAN THE MINIMUM DISTANCE BETWEEN ZONES AS INDICATED IN THE SPECIFICATIONS, THE TWO ZONES SHALL BE CONNECTED.
 - SEE SDD 15C02 - SHEET "F" FOR ADVANCED WIDTH RESTRICTION SIGNING.



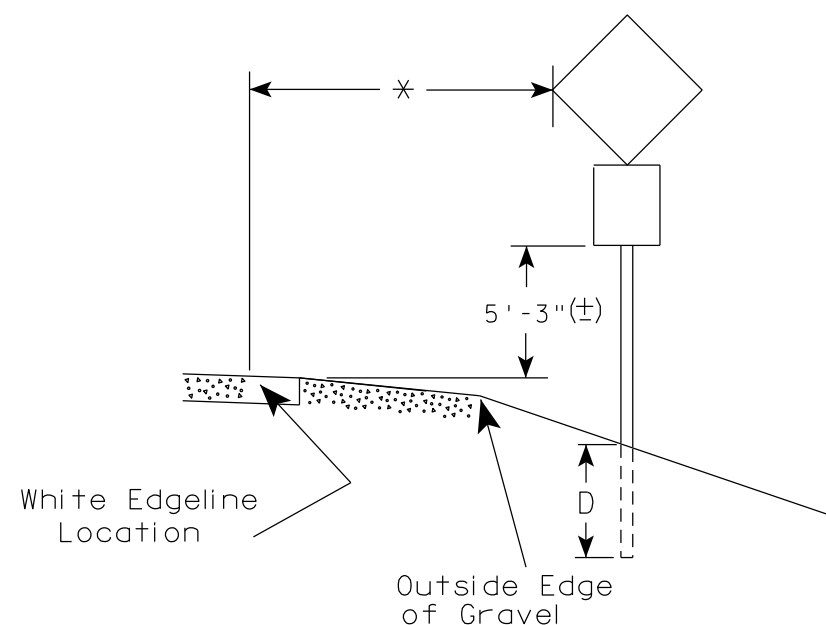
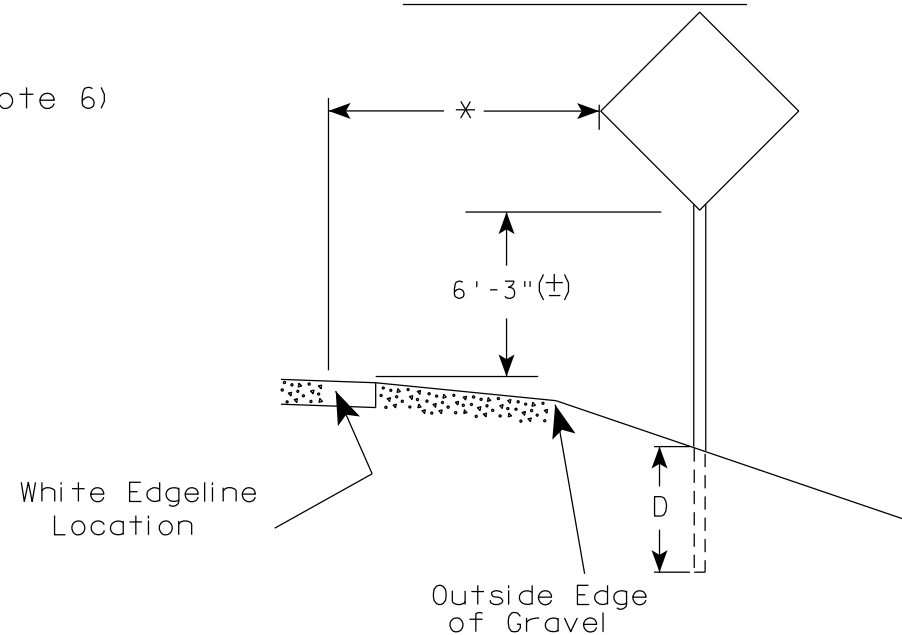
TRAFFIC CONTROL, ONE LANE ROAD STOP CONDITION	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED May 2023 DATE	/S/ Andrew Heidtke WORK ZONE ENGINEER
FHWA	

URBAN AREA



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

RURAL AREA (See Note 2)



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

POST EMBEDMENT DEPTH

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

GENERAL NOTES

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

TYPICAL INSTALLATION
OF PERMANENT TYPE II
SIGNS ON SINGLE POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

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

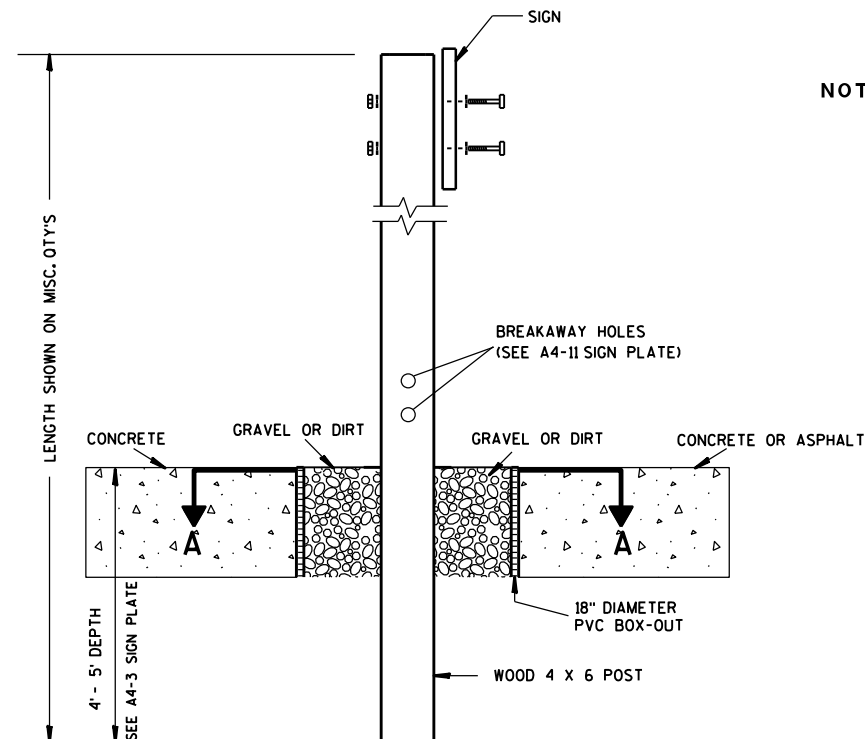
PROJECT NO:

HWY:

COUNTY:

SHEET NO:

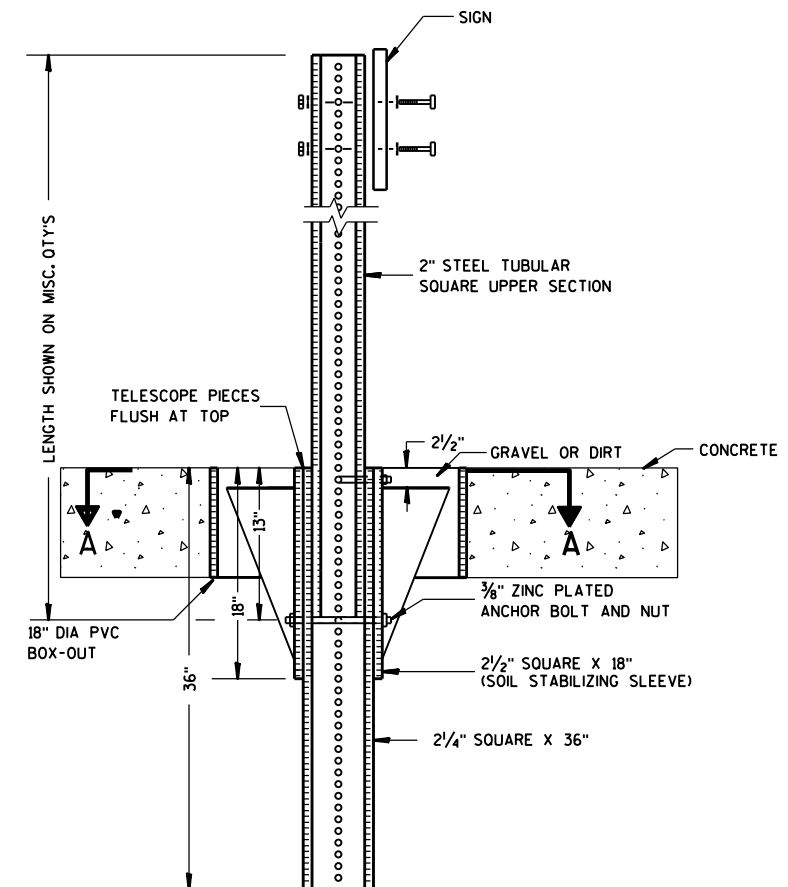
E



ELEVATION VIEW

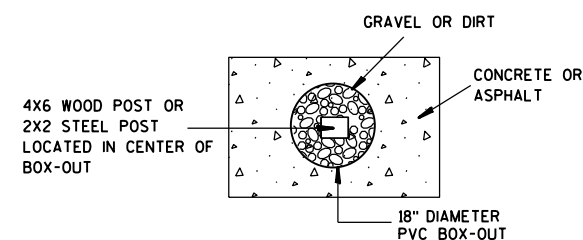
DETAIL OF WOOD 4 X 6 SIGN POST IN BOX-OUT

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



ELEVATION VIEW

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



PLAN VIEW

FOR NEW CONCRETE/ASPHALT INSTALLATIONS

SIGN POST
BOX-OUTS
A4-3B

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

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

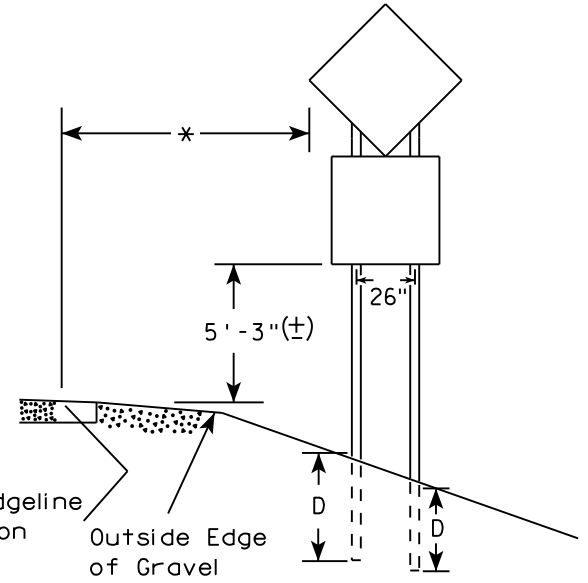
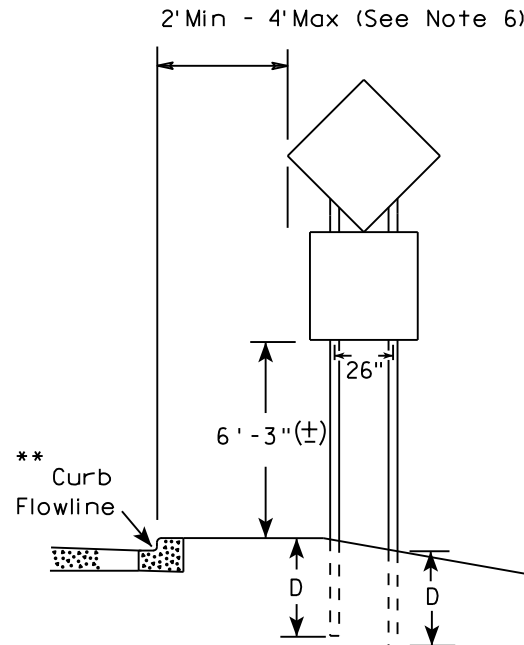
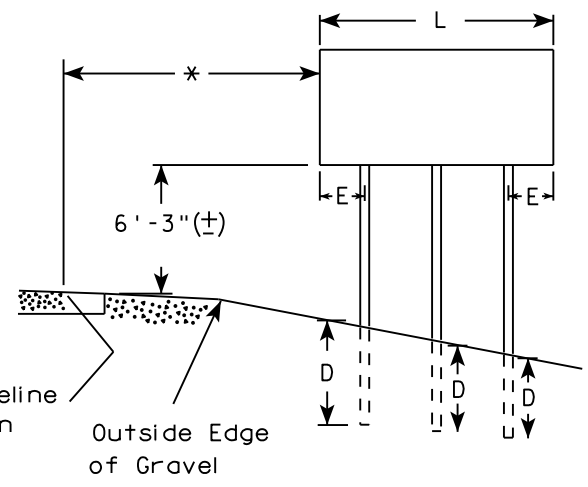
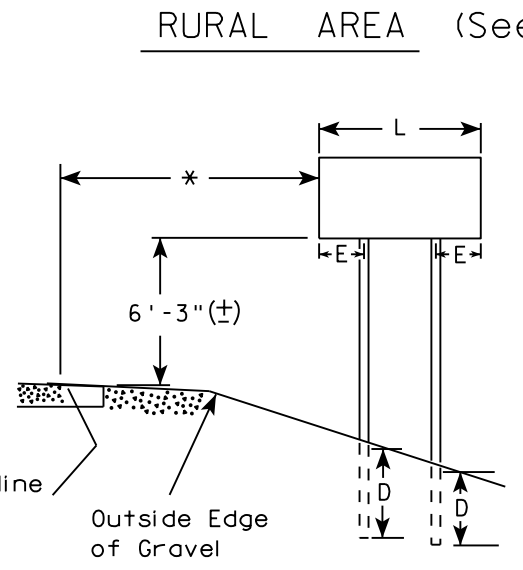
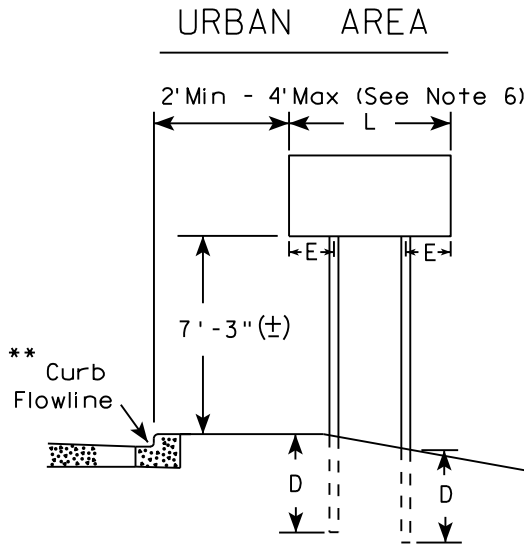
PROJECT NO:

HWY:

COUNTY:

SHEET NO:

E



48" DIAMOND WARNING SIGN

48" DIAMOND WARNING SIGN

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

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

POST EMBEDMENT DEPTH

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

TYPICAL INSTALLATION
OF TYPE II SIGNS
ON MULTIPLE POSTS

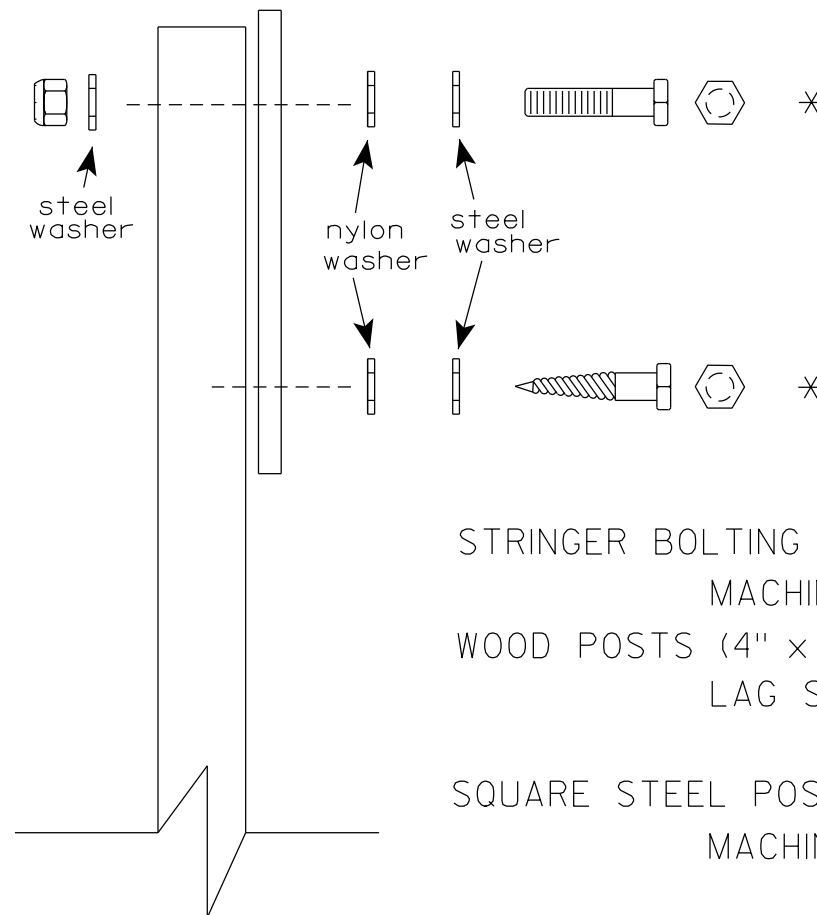
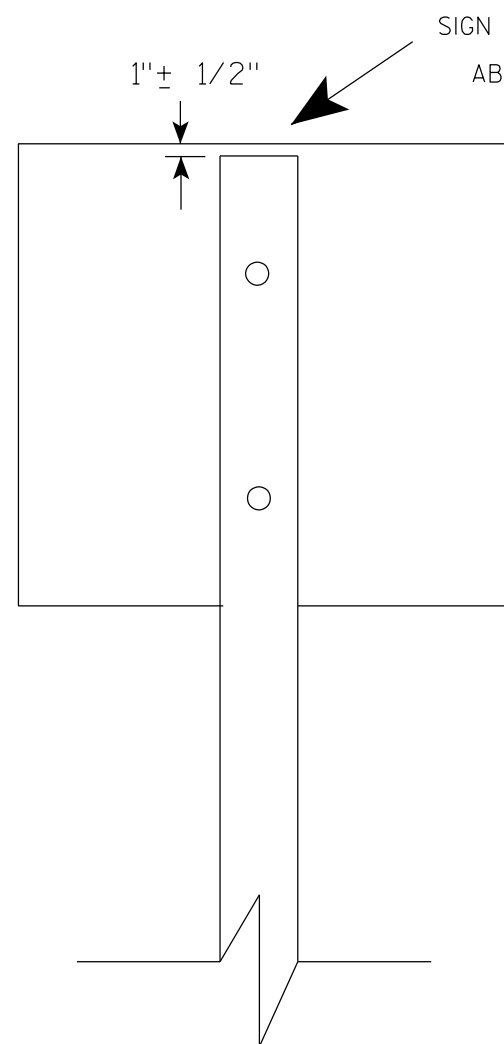
WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

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

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

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



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

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

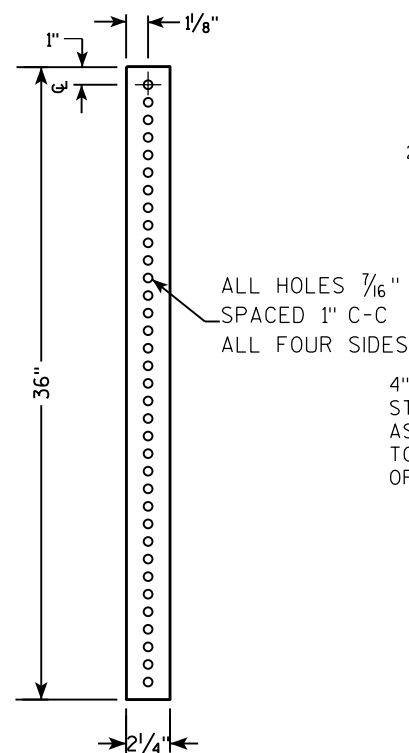
Threads on bolts and nuts shall be manufactured with sufficient allowance for the cadmium plate or galvanized coating to permit the nuts to run freely on the bolts.

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

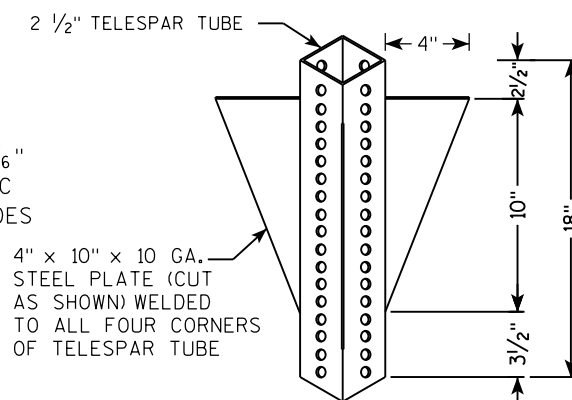
* Two different fastening systems are shown for illustration purposes. On any individual sign, either one or the other system shall be used. Actual number of fasteners per sign varies with the sign area, but normally there are two. For a single post installation, all signs greater than 9 sq. ft. require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

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

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



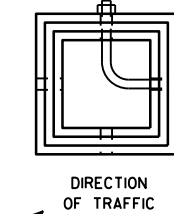
**2 1/2" SQUARE
12 GAUGE
OMNI-DIRECTIONAL
PERFORATED
SOIL STABILIZING SLEEVE
GALVANIZED FINISH**

[illegible]

TECHNICAL DRAWING OF A SIGNPOST ASSEMBLY:

- TELESCOPE PIECES FLUSH AT TOP**: Indicated by a dimension line on the left.
- 2" STEEL TUBULAR SQUARE UPPER SECTION**: The main vertical support.
- ALL HOLES $\frac{7}{16}$ " SPACED 1" C-C ALL FOUR SIDES**: Specification for the upper section's holes.
- 3/8" ZINC PLATED CORNER ANCHOR BOLT AND NUT**: Located at the top of the upper section.
- 1"**: Dimension for the offset of the anchor bolt.
- 3/8" ZINC PLATED ANCHOR BOLT AND NUT**: Located at the base of the upper section.
- 2 1/2" SQUARE X 18" (SOIL STABILIZING SLEEVE)**: The sleeve supporting the upper section.
- 2 1/4" SQUARE X 36"**: The main base post.
- SIGN**: The sign plate at the top.
- SEE SIGN PLATE A4-8 FOR BOLT WASHER, & NUT MATERIAL**: Reference to the sign plate for hardware details.
- LENGTH SHOWN ON MISC. QTY'S**: Dimension line on the left for the total length.
- Dimensions**:
 - 36" (Total length)
 - 18" (Distance from top to base of upper section)
 - 12" (Distance from base of upper section to bottom of sleeve)

3/8" ZINC PLATED CORNER
ANCHOR BOLT AND NUT



SECTION A-A

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

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

TUBULAR STEEL
SIGN POST
A4-9

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R. Rauch

for State Traffic Engineer

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

PROJECT NO:

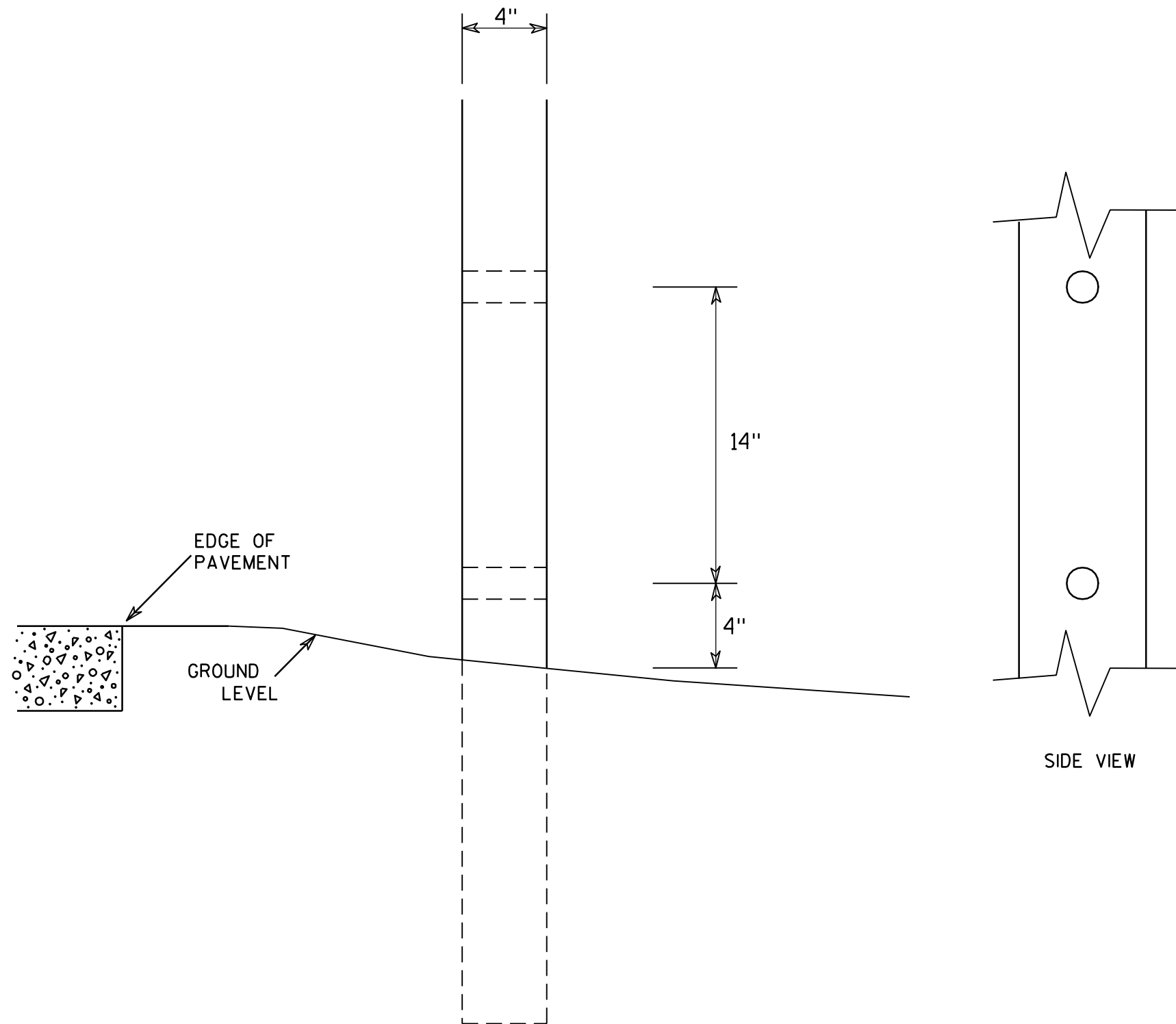
HWY:

COUNTY:

SHEET NO:

E

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

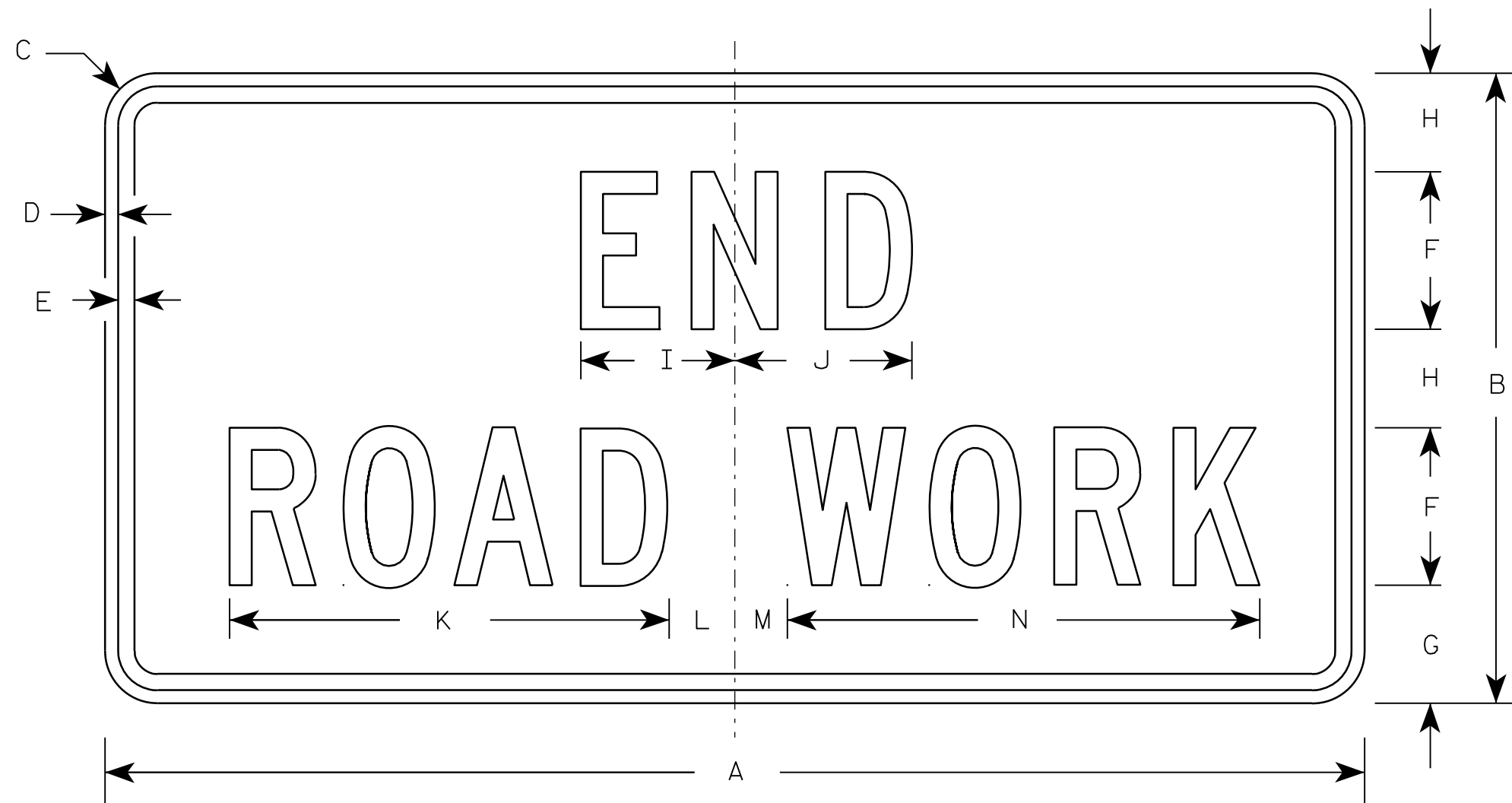
WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Chester J. Spang*
for State Traffic Engineer

DATE 3/27/97 PLATE NO. A4-11.2

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



G20-2A

Metric equivalent
for this sign is:

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

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.	Area sq. m.
1	36	18	1 1/8	3/8	1/2	4	3 3/4	2 1/2	4 1/8	4 1/8	11 1/8	2	1	12 1/8													4.5	0.41
2	48	24	1 1/2	1/2	5/8	6	4 1/2	3 3/4	5 7/8	6 3/4	16 3/4	2 1/2	1 3/4	18 1/2													8.0	0.72
3	48	24	1 1/2	1/2	5/8	6	4 1/2	3 3/4	5 7/8	6 3/4	16 3/4	2 1/2	1 3/4	18 1/2													8.0	0.72
4	48	24	1 1/2	1/2	5/8	6	4 1/2	3 3/4	5 7/8	6 3/4	16 3/4	2 1/2	1 3/4	18 1/2													8.0	0.72
5	48	24	1 1/2	1/2	5/8	6	4 1/2	3 3/4	5 7/8	6 3/4	16 3/4	2 1/2	1 3/4	18 1/2													8.0	0.72

NOTES

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

7

PROJECT NO:

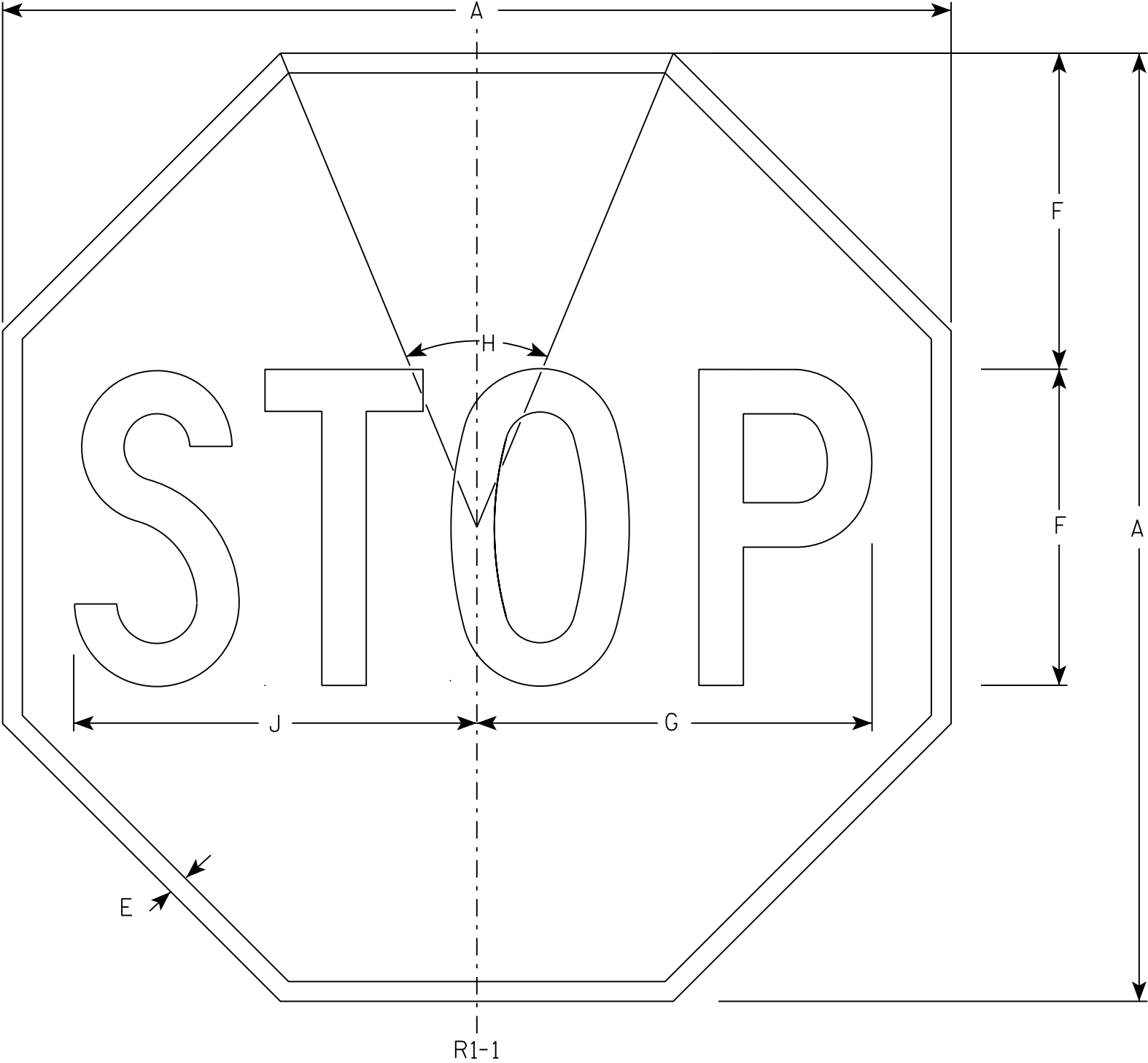
HWY:

COUNTY:

SHEET NO:

E

7



NOTES

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

7

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

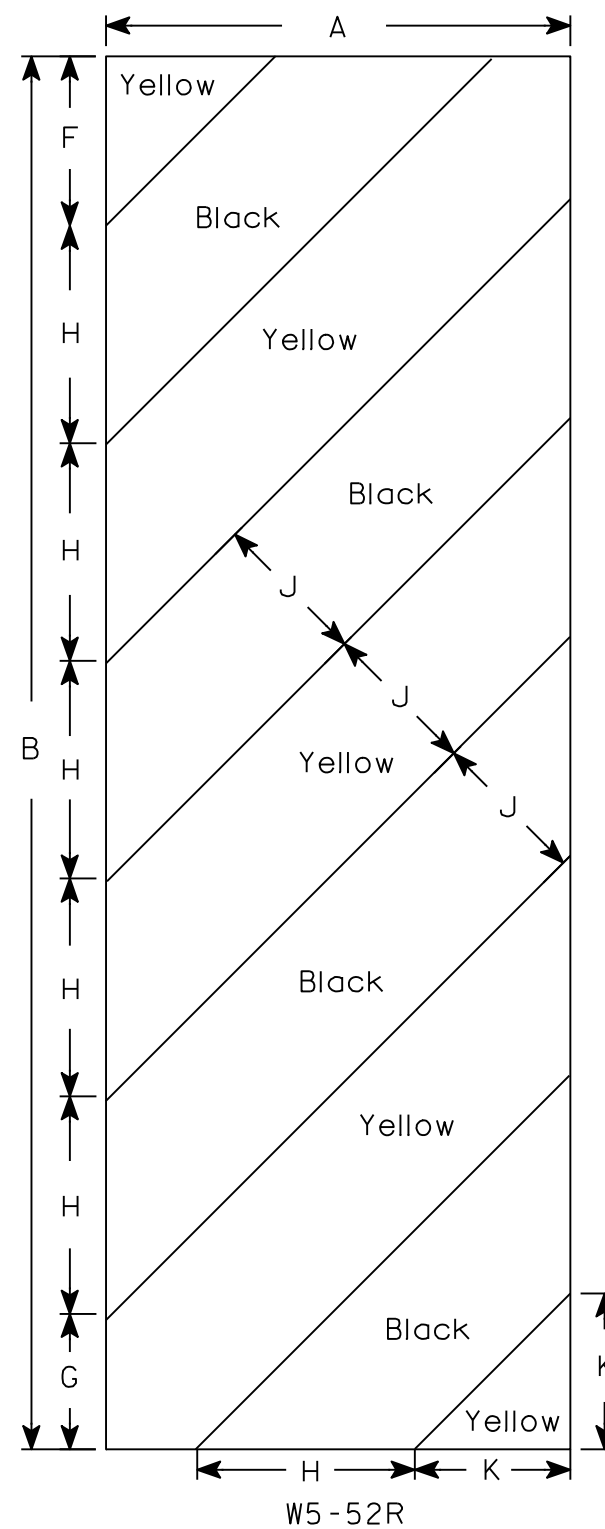
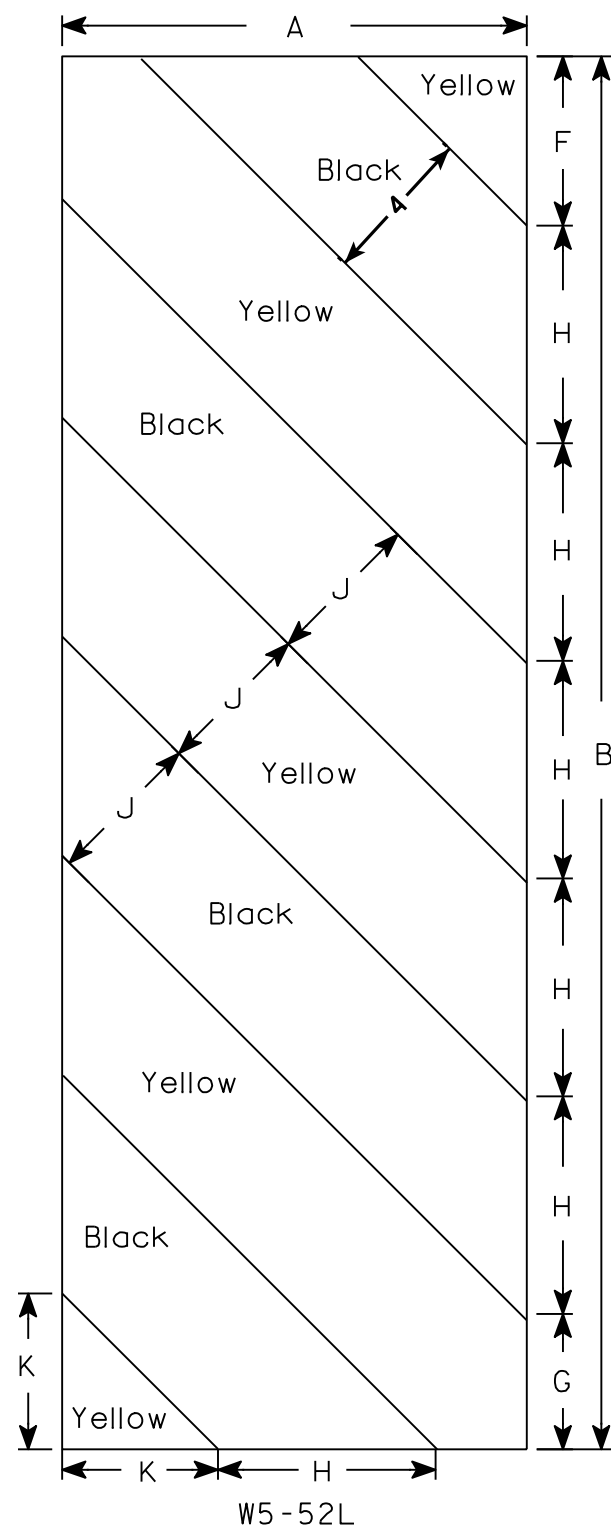
STANDARD SIGN

R1 - 1

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

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



NOTES

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

[illegible]

STANDARD SIGN
W5-52L & W5-52R

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer
DATE 5/29/12 PLATE NO. W5-52.9

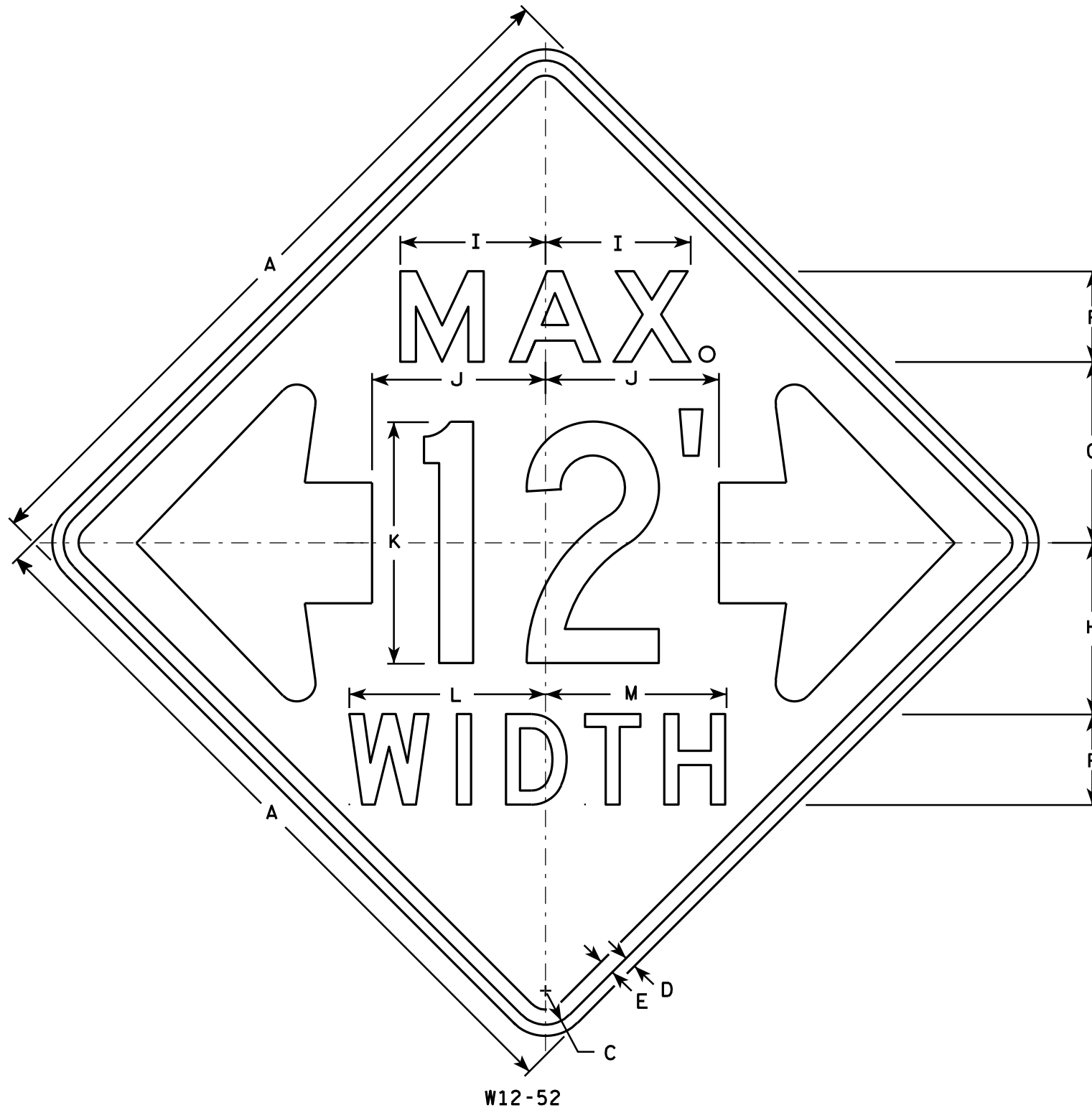
PROJECT NO:

HWY:

COUNTY:

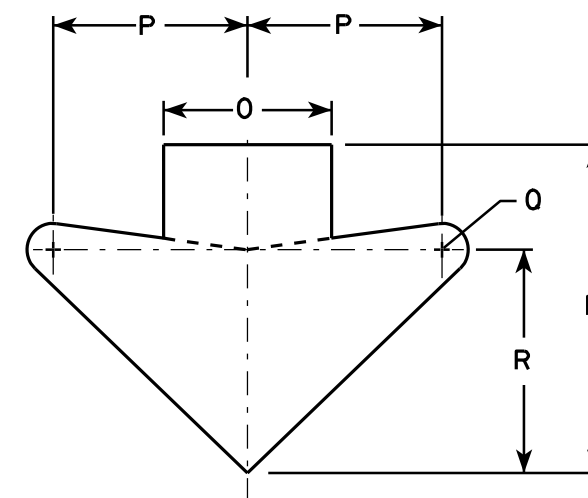
SHEET NO:

E



NOTES

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

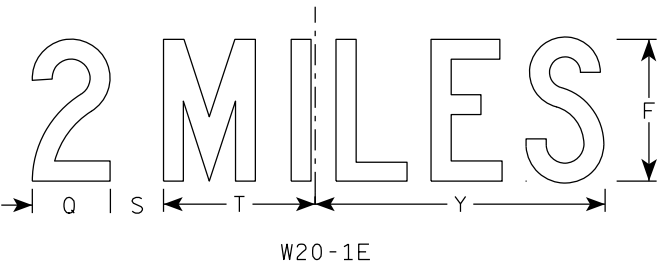
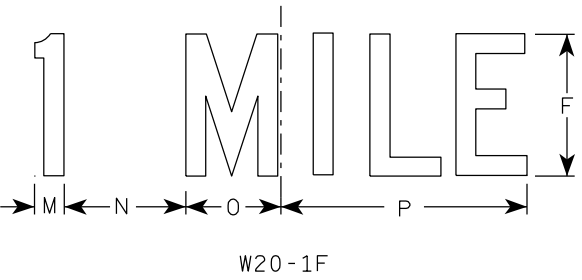
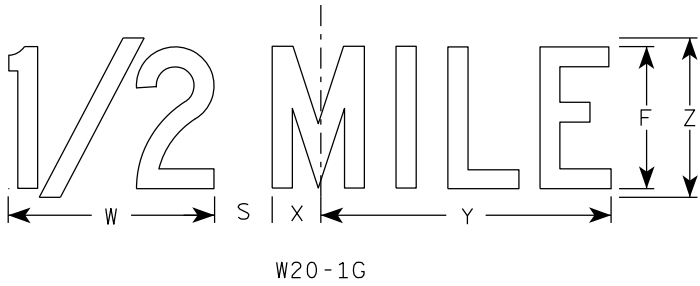
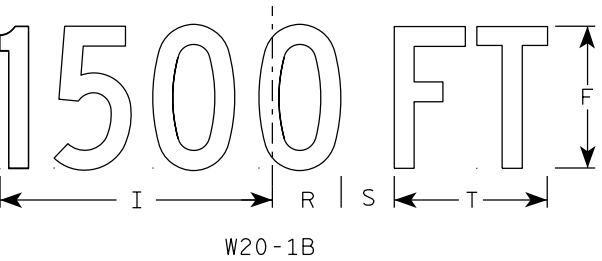
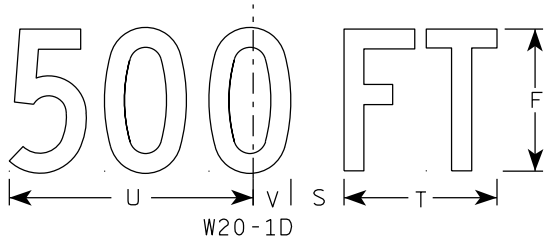
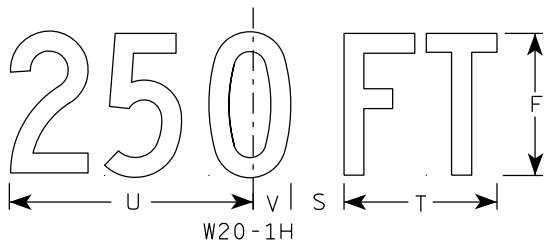
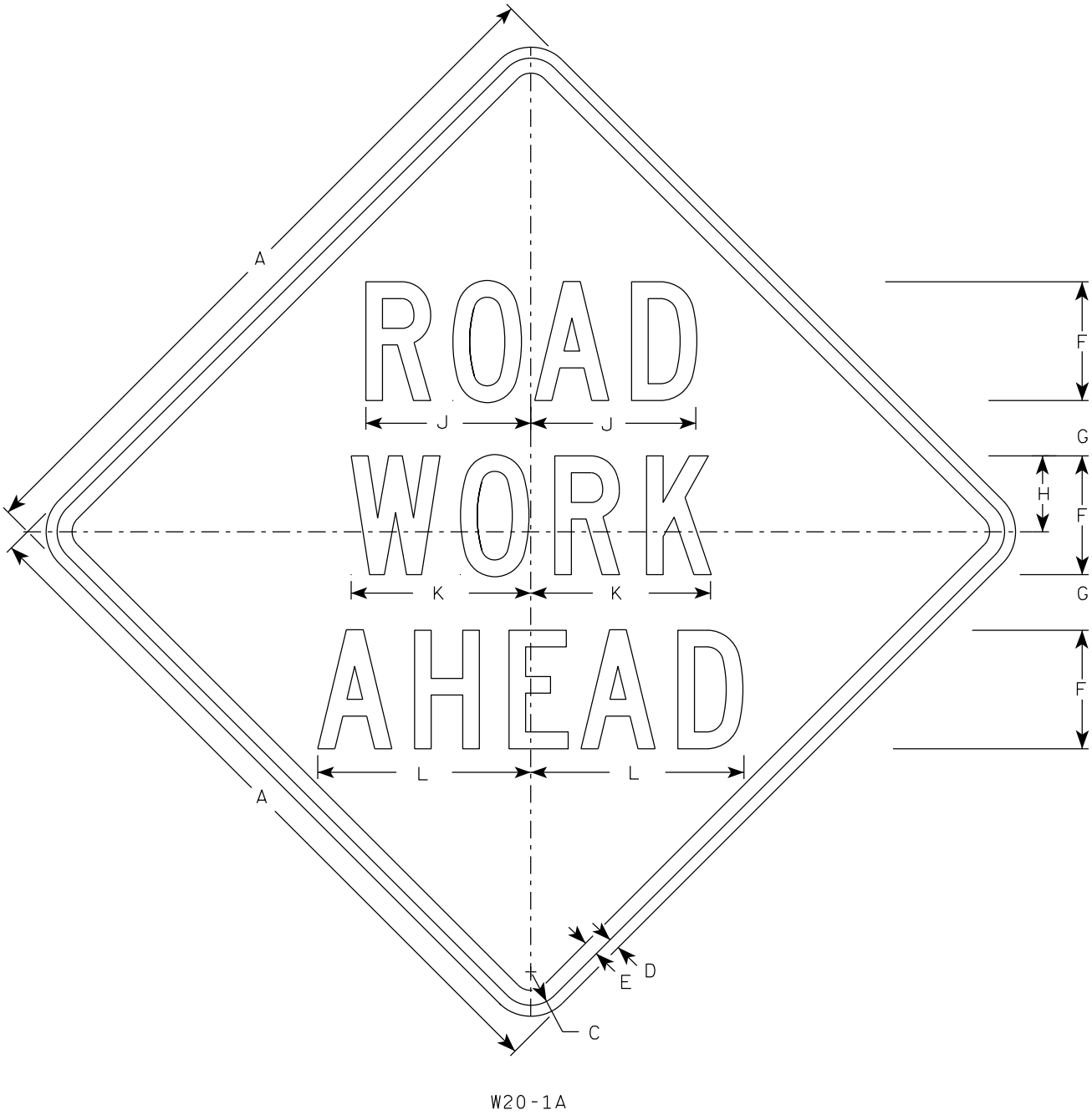
COUNTY:

SHEET NO:

E

NOTES

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



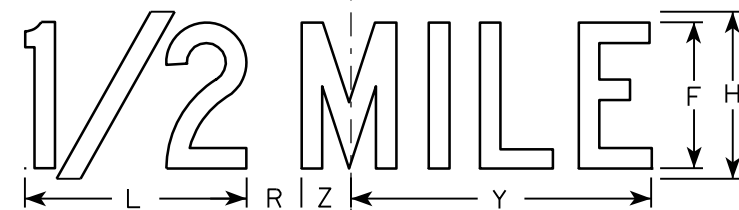
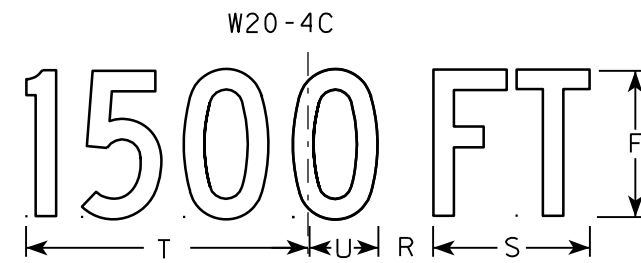
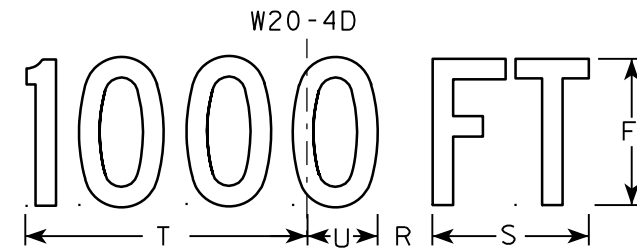
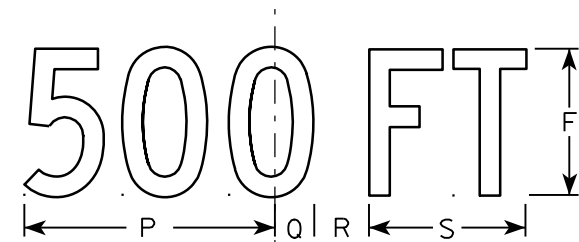
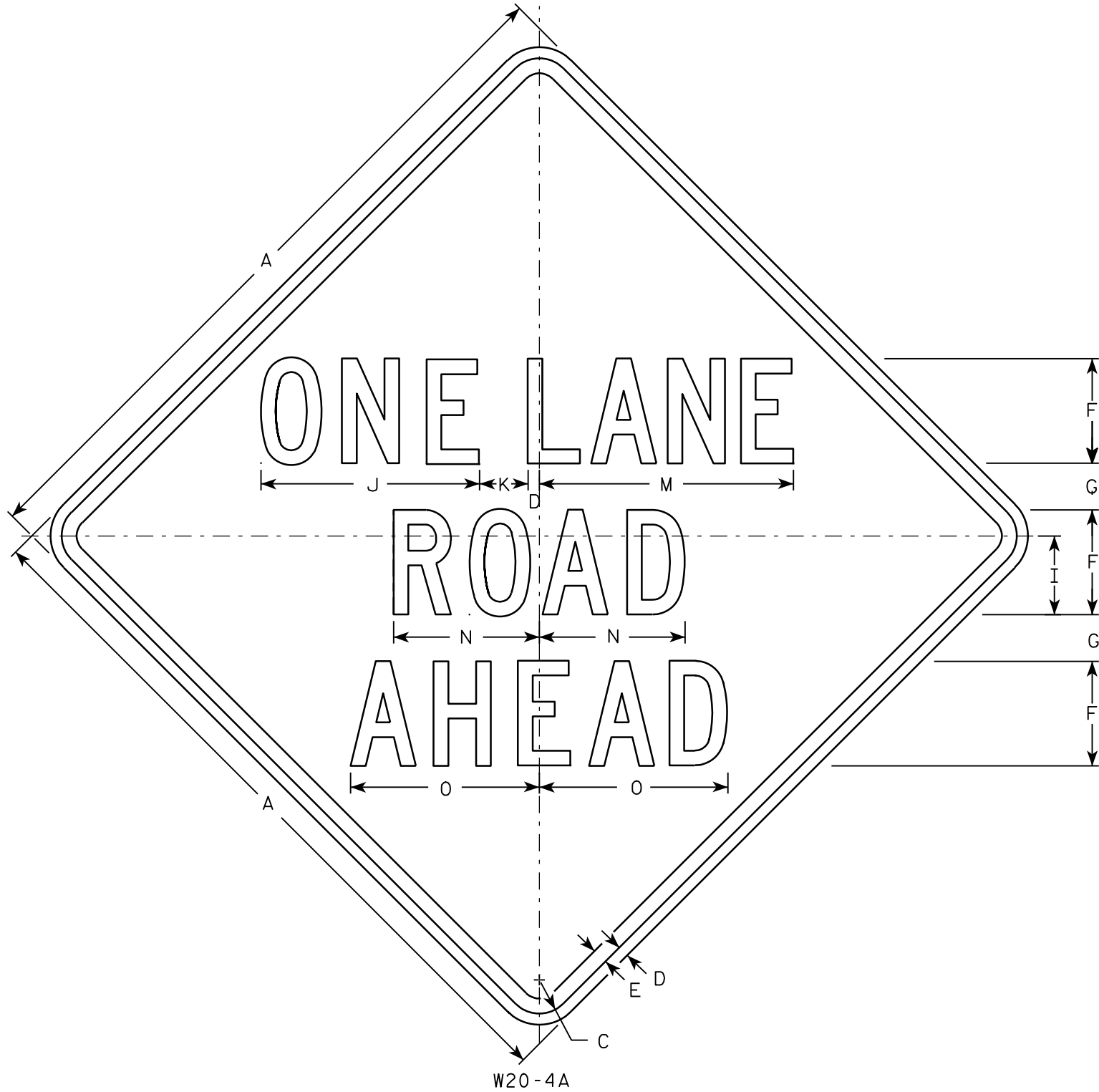
SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	A _{req} sq. ft.
1	36		1 5⁄8	5⁄8	3⁄4	5	2 5⁄8	3 1⁄4	10 1⁄8	7	7 5⁄8	8 7⁄8	1 1⁄8	4 1⁄2	3 1⁄2	9	3 1⁄4	2 1⁄2	2 1⁄4	5 5⁄8	9	1 3⁄8	8	1 3⁄4	10 3⁄4	6	9.0
2S	48		2 1⁄4	3⁄4	1	8	3 3⁄4	5 1⁄8	15 3⁄8	11 1⁄8	12 1⁄8	14 3⁄8	1 5⁄8	6 7⁄8	5 3⁄8	13 7⁄8	4 3⁄8	3 7⁄8	3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

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

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

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



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 - C
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.

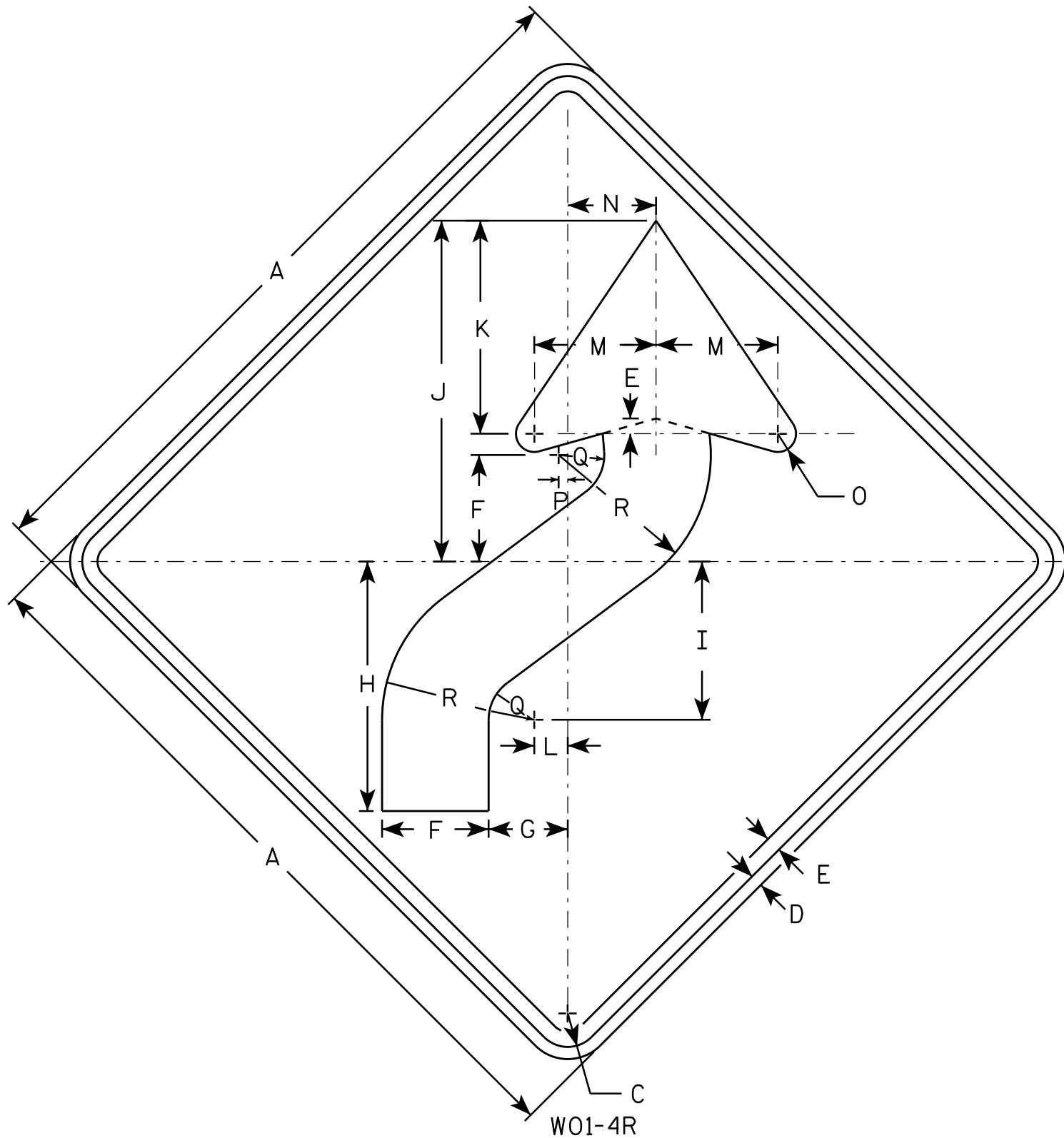
SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	36		1 5/8	5/8	3/4	5	2 3/8	6	3 3/4	10 3/8	2 3/8	8	13 1/2	7	8 7/8	9	1 3/8	1 7/8	5 5/8	10 1/8	2 1/2	1 1/8	4 1/2	3 1/2	10 3/4	1 3/4	9.0
2S	48		2 1/4	3/4	1	7	3 1/8	8	5 1/4	14 5/8	3 1/4	10 5/8	17 3/4	9 3/4	12 5/8	12	1 7/8	2 5/8	7 1/2	13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

STANDARD SIGN
W20-4A, B, C, D, F & G

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 3/18/11 PLATE NO. W20-4.9



NOTES

1. Sign is Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
Background - Orange
Message - Black
3. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
4. W01-4L is the same as W01-4R except the arrow is reversed along the vertical centerline.

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 1/4	4	12 3/8	7 7/8	16 7/8	10 1/2	1 5/8	6	4 1/2	1	1/2	2 1/4	7 1/2									9.0
2S	48		2 1/4	3/4	1	7	5 1/4	16 1/2	10 1/2	22 1/2	14	2 1/4	8	6	1 1/4	5/8	3	10									16.0
2M	48		2 1/4	3/4	1	7	5 1/4	16 1/2	10 1/2	22 1/2	14	2 1/4	8	6	1 1/4	5/8	3	10									16.0
3	48		2 1/4	3/4	1	7	5 1/4	16 1/2	10 1/2	22 1/2	14	2 1/4	8	6	1 1/4	5/8	3	10									16.0
4	48		2 1/4	3/4	1	7	5 1/4	16 1/2	10 1/2	22 1/2	14	2 1/4	8	6	1 1/4	5/8	3	10									16.0
5	48		2 1/4	3/4	1	7	5 1/4	16 1/2	10 1/2	22 1/2	14	2 1/4	8	6	1 1/4	5/8	3	10									16.0

STANDARD SIGN W01-4

WISCONSIN DEPT OF TRANSPORTATION

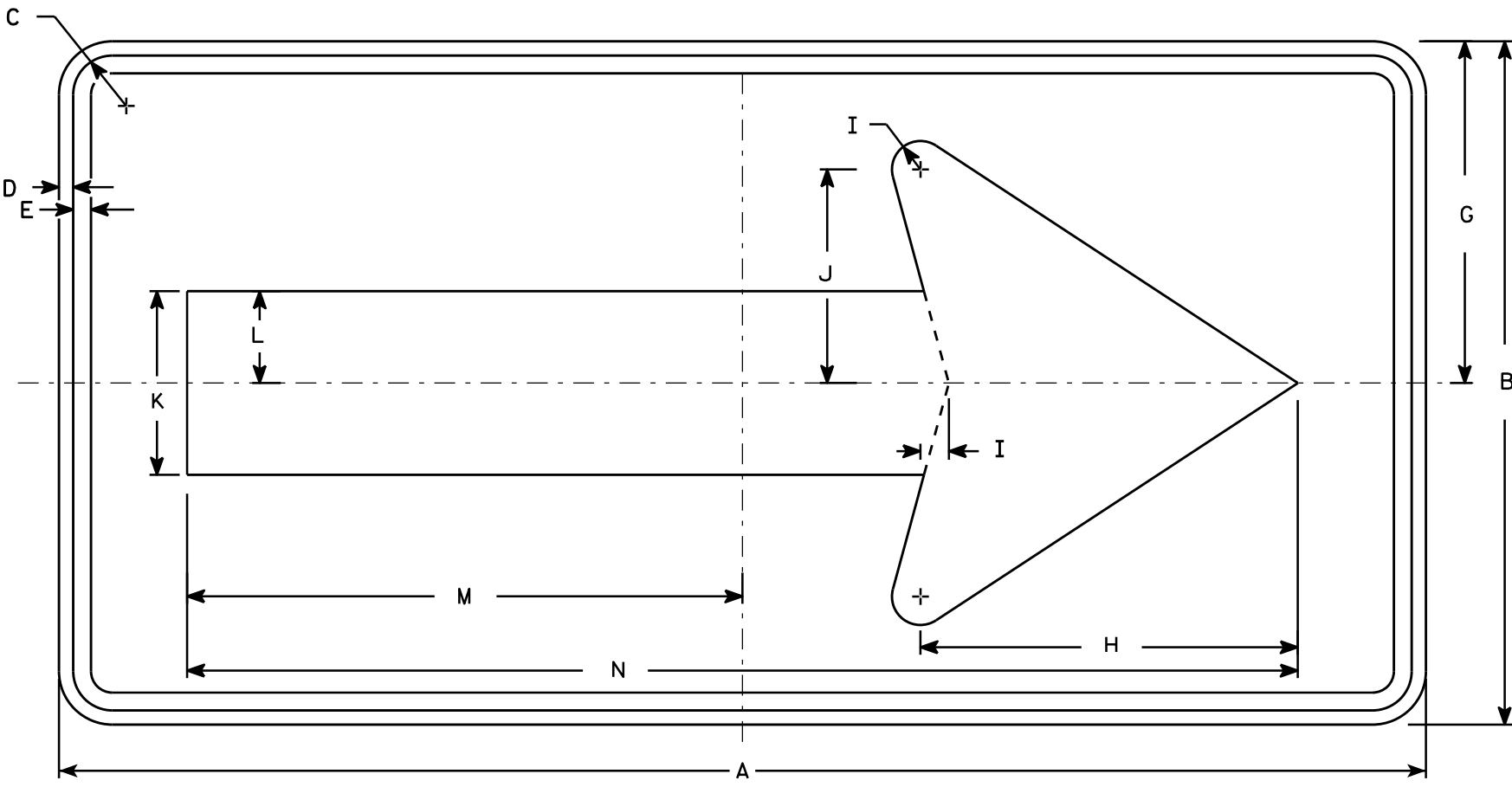
APPROVED 
for State Traffic Engineer

DATE 11/18/13 PLATE NO. W01-4.1

PROJECT NO: HWY: COUNTY: SHEET NO: E

NOTES

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



W01-6

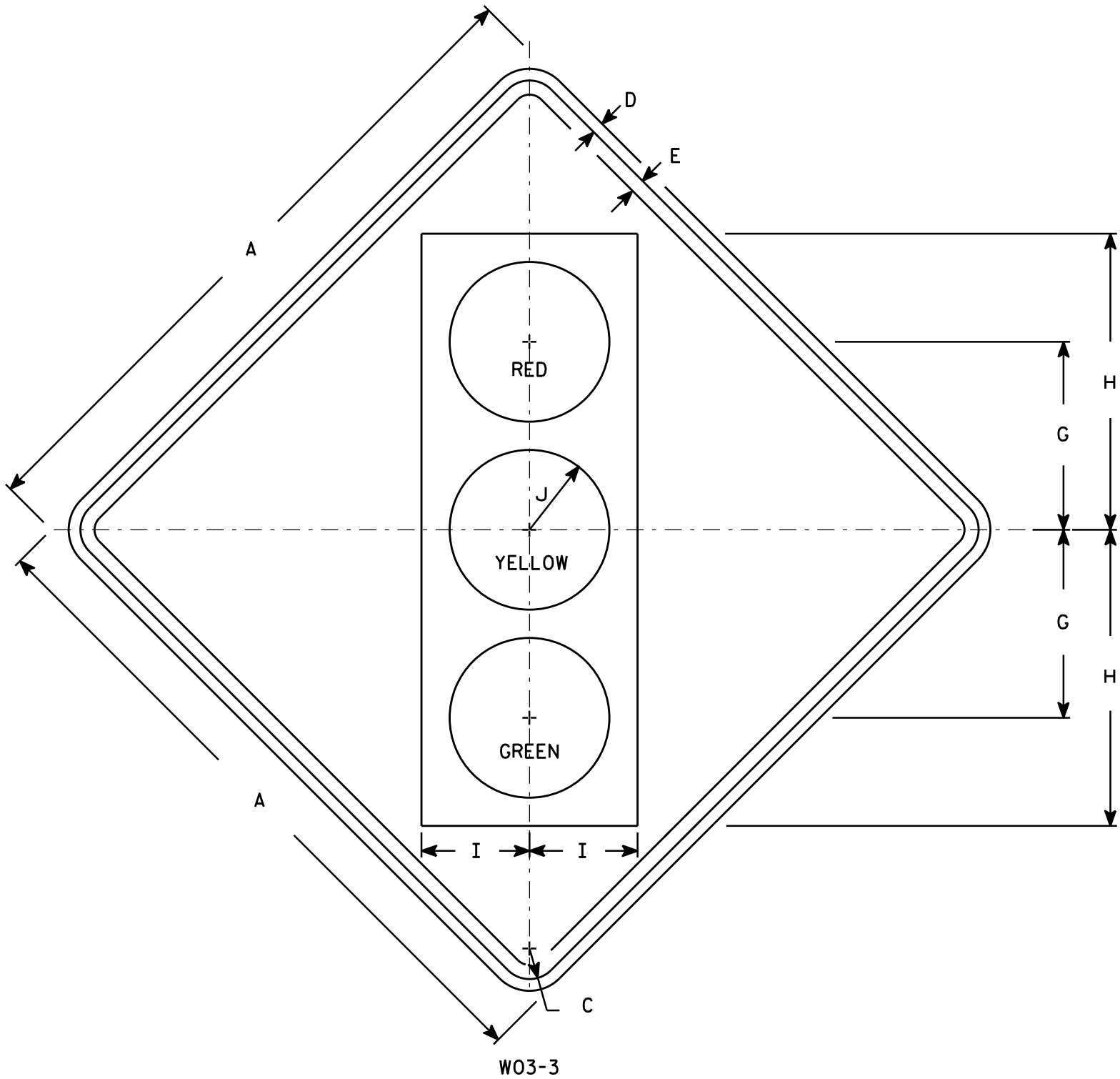
SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2S	48	24	1 3/8	1/2	5/8		12	13 1/4	1	7 1/2	6 1/2	3 1/4	19 1/2	39													8.0
2M	48	24	1 3/8	1/2	5/8		12	13 1/4	1	7 1/2	6 1/2	3 1/4	19 1/2	39													8.0
3	60	30	1 3/8	1/2	5/8		15	16 1/4	1 1/4	9 1/4	8	4	24 3/8	48 3/4													12.5
4	60	30	1 3/8	1/2	5/8		15	16 1/4	1 1/4	9 1/4	8	4	24 3/8	48 3/4													12.5
5	60	30	1 3/8	1/2	5/8		15	16 1/4	1 1/4	9 1/4	8	4	24 3/8	48 3/4													12.5

STANDARD SIGN
W01-6

WISCONSIN DEPT OF TRANSPORTATION

APPROVED
Matthew R. Rauch
for State Traffic Engineer

DATE 11/18/13 PLATE NO. W01-6.1



NOTES

1. Sign is Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
Background - Orange
Message - See Note 4
3. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
4. Symbol and border are non-reflective black.
Top circle - Type H Reflectorized Red
Center circle - Same as background
Bottom circle - Type H Reflectorized Green

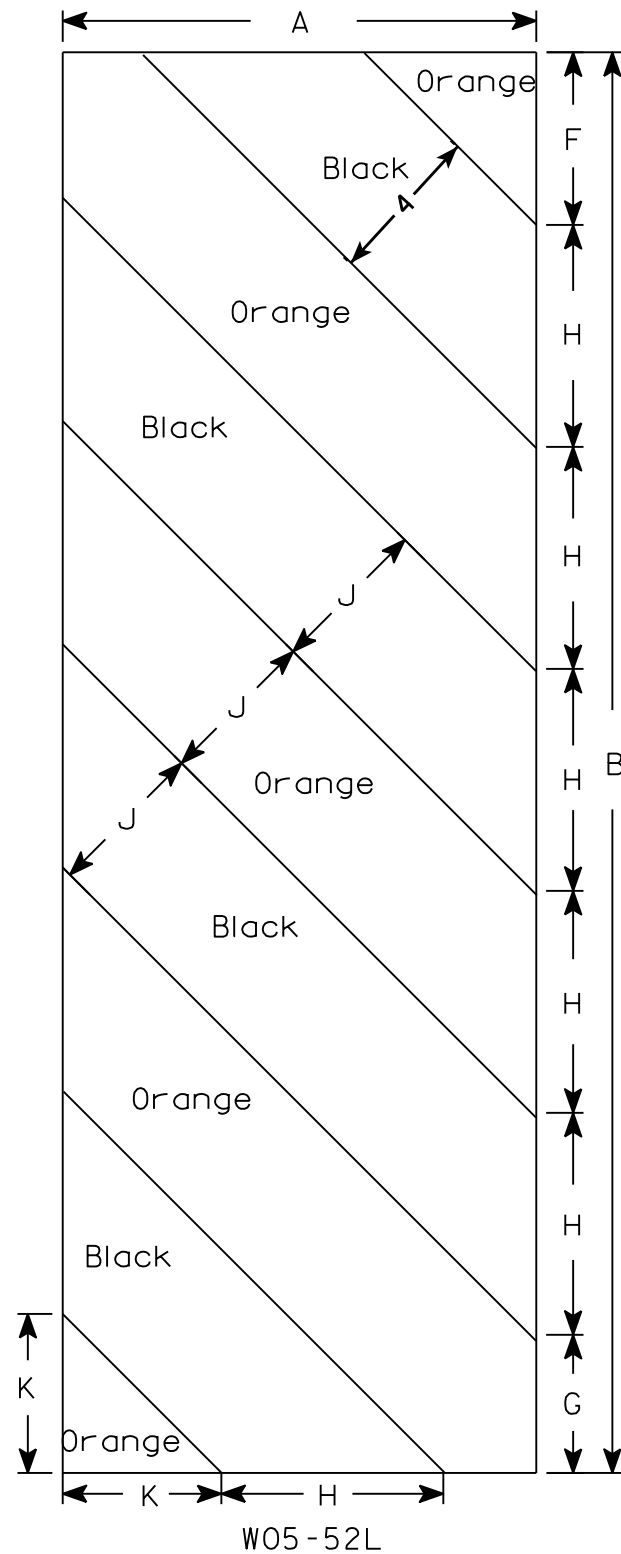
SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	36		1 5/8	5/8	3/4		10	15 3/4	5 3/4	4 1/4																	9.0
2S	48		2 1/4	3/4	1		12 1/2	20	7 1/2	5																	16.0
2M	48		2 1/4	3/4	1		12 1/2	20	7 1/2	5																	16.0
3	48		2 1/4	3/4	1		12 1/2	20	7 1/2	5													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

STANDARD SIGN
W03-3

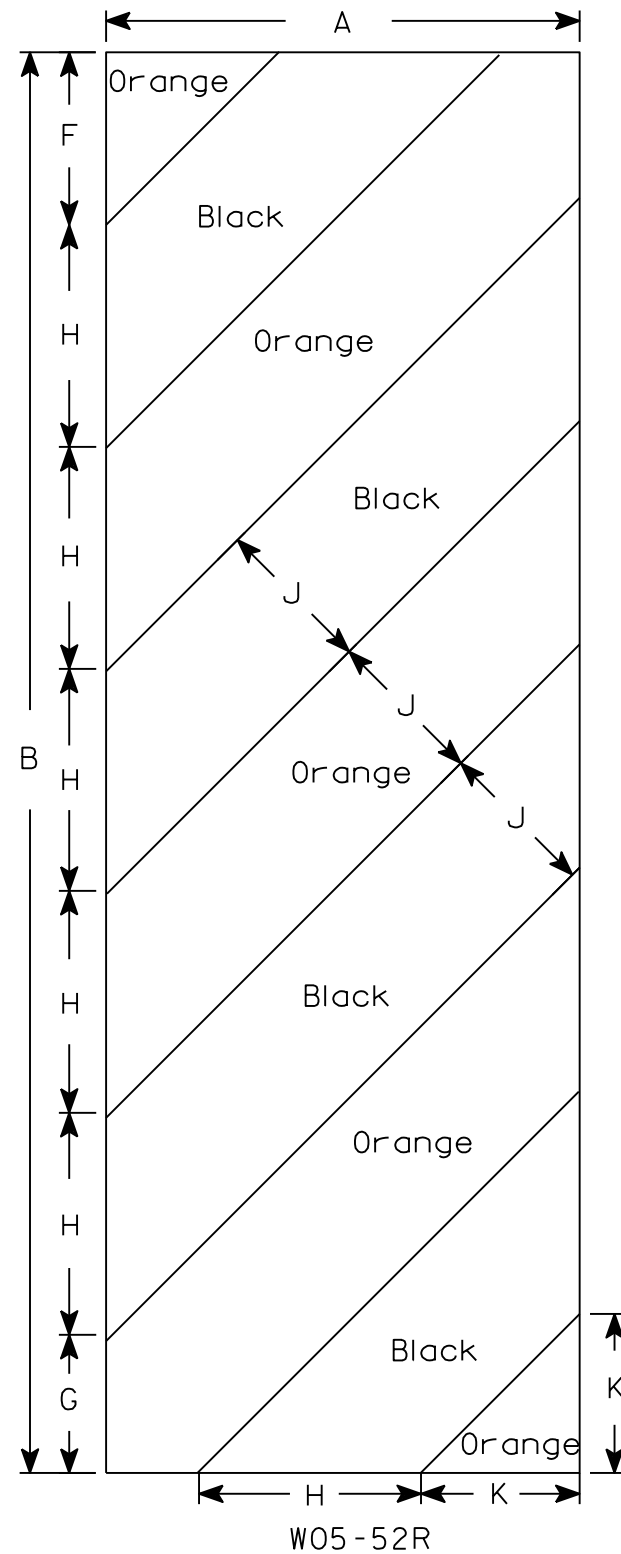
WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 11/20/13 PLATE NO. W03-3.1



W05-52L



W05-52R

NOTES

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

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2S	12	36				4 3⁄8	3 1⁄2	5 5⁄8	45°	4	4																3.0
2M	12	36				4 3⁄8	3 1⁄2	5 5⁄8	45°	4	4																3.0
3	18	54				6	5 1⁄2	8 1⁄2	45°	6	6 9⁄16																6.75
4																											
5																											

STANDARD SIGN

W05-52L & W05-52R

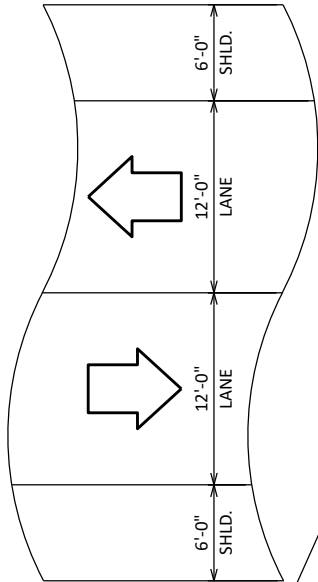
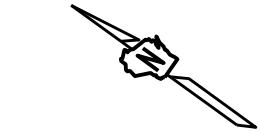
WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

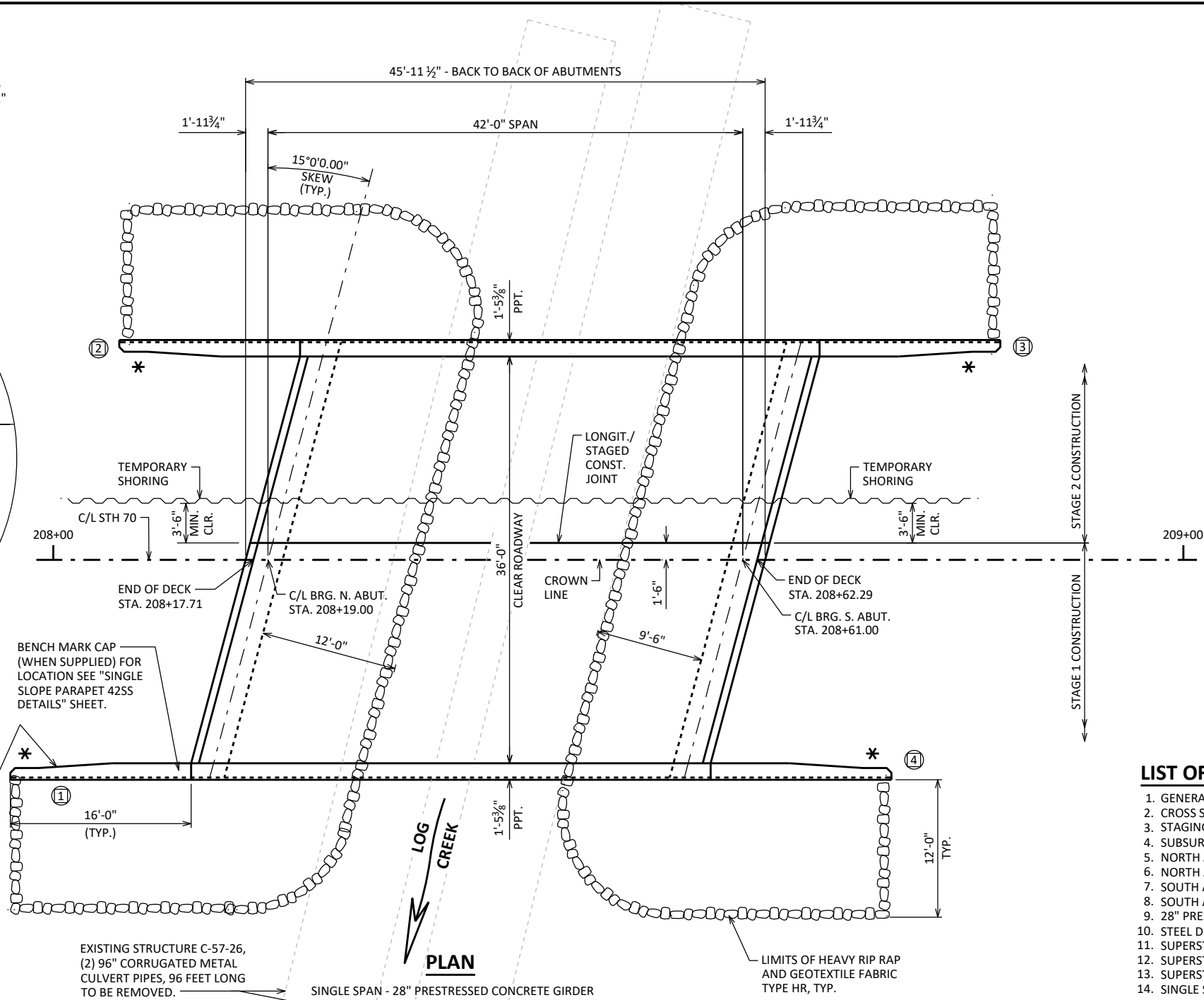
DATE 11/20/13 PLATE NO. W05-52.1

INDICATES WING NUMBER

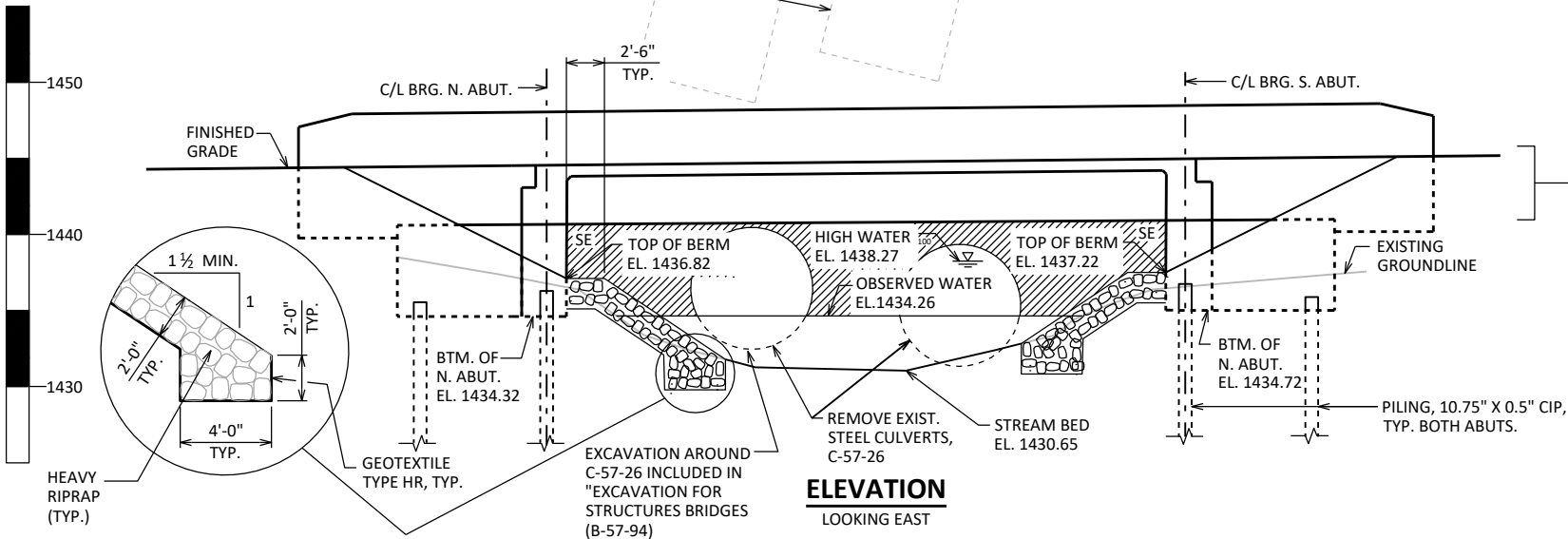
PROVIDE FOR THRIE BEAM GUARD RAIL ATTACHMENT. AT UNUSED ANCHOR ASSEMBLIES CAULK HOLES SHUT WITH "100% SILICONE CAULK."



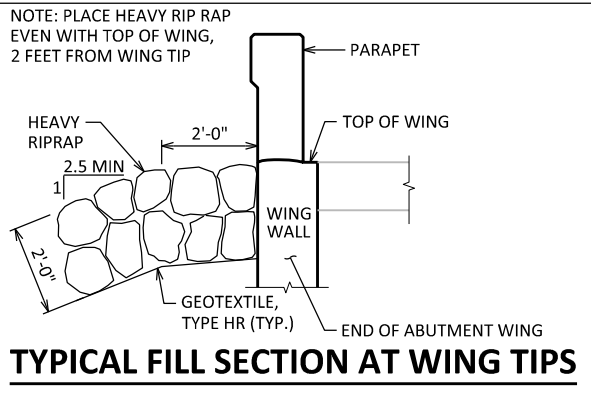
NAME PLATE. FOR LOCATION SEE "SINGLE SLOPE PARAPET 42SS DTAILS" SHEET.



PLAN



ELEVATION
LOOKING EAST



TYPICAL FILL SECTION AT WING TIPS

DESIGN DATA

LIVE LOAD:

DESIGN LOADING: HL-93
INVENTORY RATING FACTOR: RF = 1.41
OPERATING RATING FACTOR: RF = 1.83
WISCONSIN STANDARD PERMIT VEHICLE (WIS.-SPV): 250 (KIPS)

STRUCTURE IS DESIGNED FOR A FUTURE WEARING SURFACE OF 20 POUNDS PER SQUARE FOOT.

MATERIAL PROPERTIES:

CONCRETE MASONRY: _____ F'C = 4,000 P.S.I.
SUPERSTRUCTURE _____ F'C = 3,500 P.S.I.
ALL OTHER _____

BAR STEEL REINFORCEMENT: _____ FY = 60,000 P.S.I.
GRADE 60 _____

28" PRESTRESSED GIRDERS: _____ F'C = 8,000 P.S.I.
CONCRETE MASONRY _____
STRANDS: 0.6" DIA. WITH ULTIMATE TENSILE STRENGTH OF 270,000 P.S.I.

FOUNDATION DATA

ABUTMENTS TO BE SUPPORTED ON 10 3/4" X 0.5" CIP PILING DRIVEN TO A REQUIRED DRIVING RESISTANCE OF 150 TONS * * PER PILE AS DETERMINED BY THE MODIFIED GATES DYNAMIC FORMULA.
ESTIMATED 50 FEET LONG AT THE NORTH ABUTMENT.
ESTIMATED 55 FEET LONG AT THE SOUTH ABUTMENT.

* * THE FACTORED AXIAL RESISTANCE OF PILES IN COMPRESSION USED FOR DESIGN IS THE REQUIRED DRIVING RESISTANCE MULTIPLIED BY A RESISTANCE FACTOR OF 0.5 USING MODIFIED GATES TO DETERMINE DRIVEN PILE CAPACITY.

HYDRAULIC DATA

100 YEAR FREQUENCY

Q₁₀₀ = 700 C.F.S.
VEL₁₀₀ = 4.5 F.P.S.
HW₁₀₀ = EL. 1,438.27
DRAINAGE AREA = 13.8 SQ. MI.
ROADWAY OVERTOPPING = N/A
SCOUR CRITICAL CODE = 5

2 YEAR FREQUENCY

Q₂ = 190 C.F.S.
VEL₂ = 2.4 F.P.S.
HW₂ = EL. 1,435.52

STATE PROJECT NUMBER

8170-01-74

TRAFFIC VOLUME

STH 70

ADT = 740 (2044)
R.D.S. = 60 M.P.H.

LIST OF DRAWINGS

1. GENERAL PLAN
2. CROSS SECTION & QUANTITIES
3. STAGING DETAILS
4. SUBSURFACE EXPLORATION
5. NORTH ABUTMENT
6. NORTH ABUTMENT DETAILS
7. SOUTH ABUTMENT
8. SOUTH ABUTMENT DETAILS
9. 28" PRESTRESSED GIRDER DETAILS
10. STEEL DIAPHRAGM
11. SUPERSTRUCTURE PLAN
12. SUPERSTRUCTURE CROSS SECTION
13. SUPERSTRUCTURE DETAILS
14. SINGLE SLOPE PARAPET 42SS

STRUCTURE DESIGN CONTACTS:

IAN LINDLOFF 608-261-2557
KYLE BUSCH 608-267-0465

NO.	DATE	REVISION	BY
ACCEPTED 7/24/23 CHIEF STRUCTURES DESIGN ENGINEER DATE			
STRUCTURE B-57-94			
STH 70 OVER LOG CREEK			
COUNTY	SAWYER	TOWN	DRAPER
DESIGN SPEC. AASHTO LRFD BRIDGE DESIGN SPECIFICATION			
DESIGNED BY	DESIGNED CK'D	DRAWN AA	PLANS WWR CK'D
IDL	CK'D	AA	IDL
GENERAL PLAN			SHEET 1 OF 14

I.D. 8170-01-04A

DATE: MAY 2023

SCALE =

GENERAL NOTES

DRAWINGS SHALL NOT BE SCALED.

BAR STEEL REINFORCEMENT SHALL BE EMBEDDED 2" CLEAR UNLESS OTHERWISE SHOWN OR NOTED.

THE FIRST OR FIRST TWO DIGITS OF THE BAR MARK SIGNIFIES THE BAR SIZE.

BEVEL EXPOSED EDGES OF CONCRETE 3/4" UNLESS OTHERWISE NOTED.

THE UPPER LIMITS OF "EXCAVATION FOR STRUCTURES BRIDGES B-57-94" SHALL BE THE EXISTING GROUNDLINE.

AT THE BACK FACE OF ABUTMENT ALL VOLUME WHICH CANNOT BE PLACED BEFORE ABUTMENT CONSTRUCTION AND IS NOT OCCUPIED BY THE NEW STRUCTURE SHALL BE BACKFILLED WITH STRUCTURE BACKFILL TYPE A.

EXCAVATION BELOW THE ABUTMENT AND ABUTMENT BEDDING MATERIALS REQUIRES ENGINEER APPROVAL. GEOTEXTILE SHALL BE SET AT THE BOTTOM OF EXCAVATION AND EXTEND 2'-0" ABOVE BOTTOM OF ABUTMENT.

THE QUANTITY FOR BACKFILL STRUCTURE IS CALCULATED BASED ON THE DETAIL SHOWN IN THE PLANS.

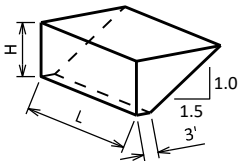
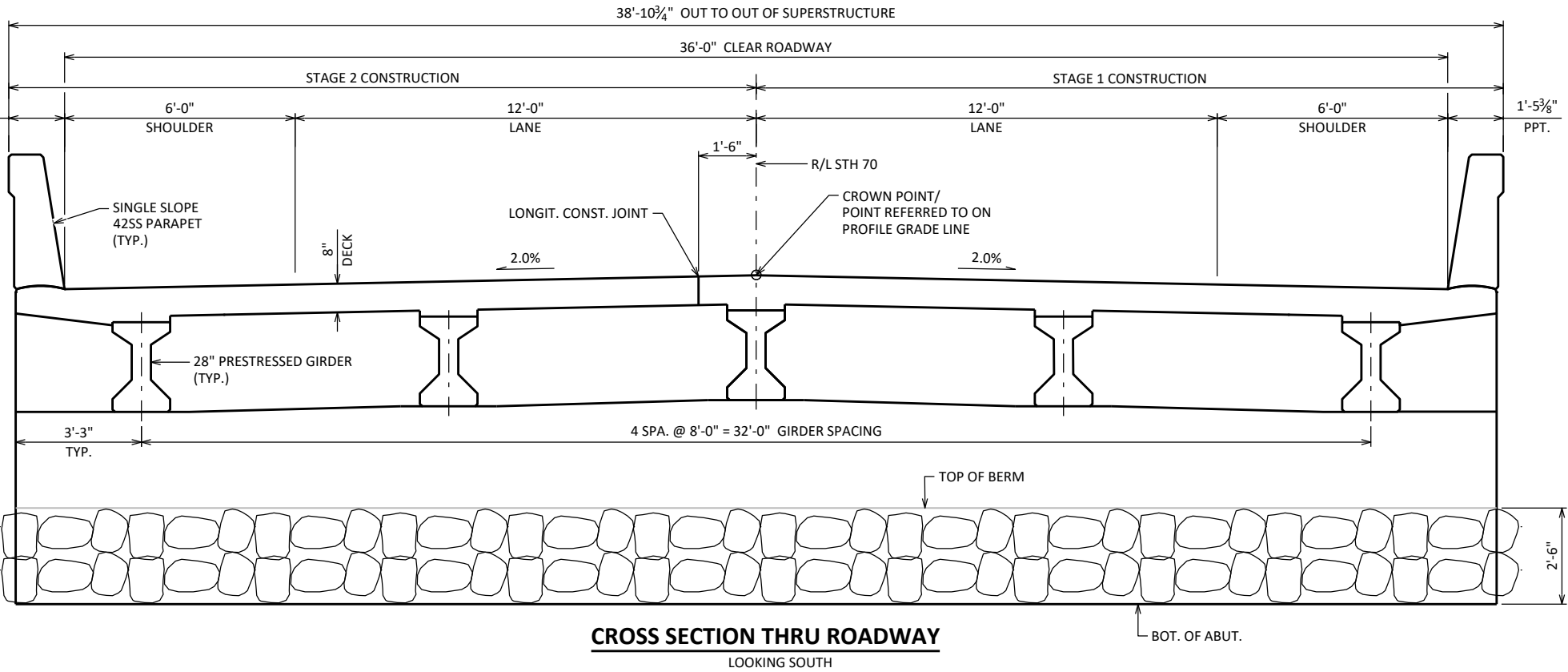
ELASTOMERIC BEARING PADS NEED NOT BE INDIVIDUALLY MOLDED PROVIDED THE CUT EDGES ARE SMOOTH AND TRUE.

PROTECTIVE SURFACE TREATMENT TO BE APPLIED TO THE ENTIRE EXPOSED TOP OF DECK AND TO THE VERTICAL AND HORIZONTAL SURFACES OF THE PAVING NOTCHES AT ABUTMENT DIAPHRAGMS.

PIGMENTED SURFACE SEALER TO BE APPLIED TO THE FRONT FACE AND THE TOP OF THE PARAPETS, INCLUDING PARAPETS ON WINGS.

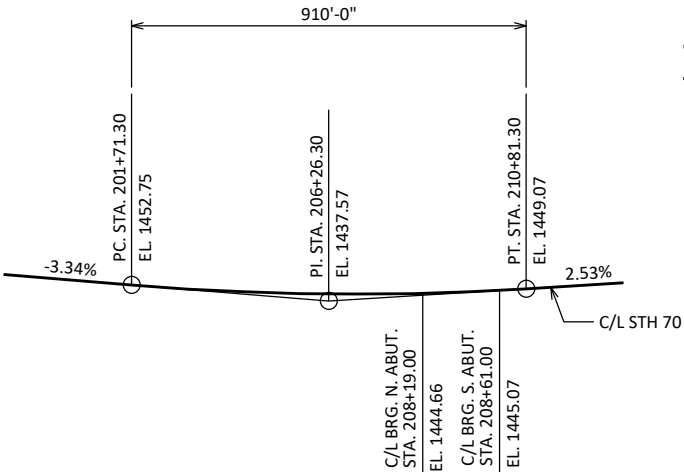
THE SLOPE OF THE FILL IN FRONT OF THE ABUTMENTS SHALL BE COVERED WITH HEAVY RIPRAP AND GEOTEXTILE TYPE "HR" TO THE EXTENT SHOWN ON SHEET 1 AND THE ABUTMENT DETAILS.

THE HAUNCH CONCRETE QUANTITY IS BASED ON THE AVERAGE HAUNCH SHOWN ON THE "28-INCH PRESTRESSED GIRDER DETAILS 2" SHEET.

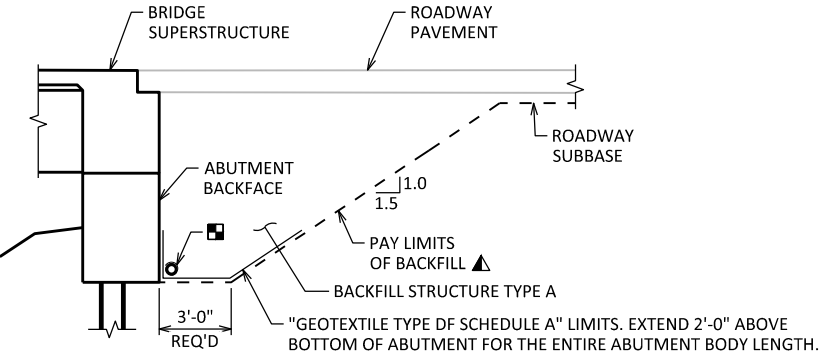


ABUTMENT BACKFILL DIAGRAM

L = OUT TO OUT OF ABUTMENT BODY INCLUDING WINGS (FT)
H = AVERAGE ABUTMENT FILL HEIGHT (FT)
EF = EXPANSION FACTOR (1.20 FOR CY BID ITEMS AND 1.00 FOR TON BID ITEMS)
 $V_{CF} = (L)(3.0')(H) + (L)(0.5)(1.5H)(H)$
 $V_{CY} = V_{CF}(EF)/27$
 $V_{TON} = V_{CY}(2.0)$



PROFILE GRADE LINE - C/L STH 70



TYPICAL SECTION THRU ABUTMENT

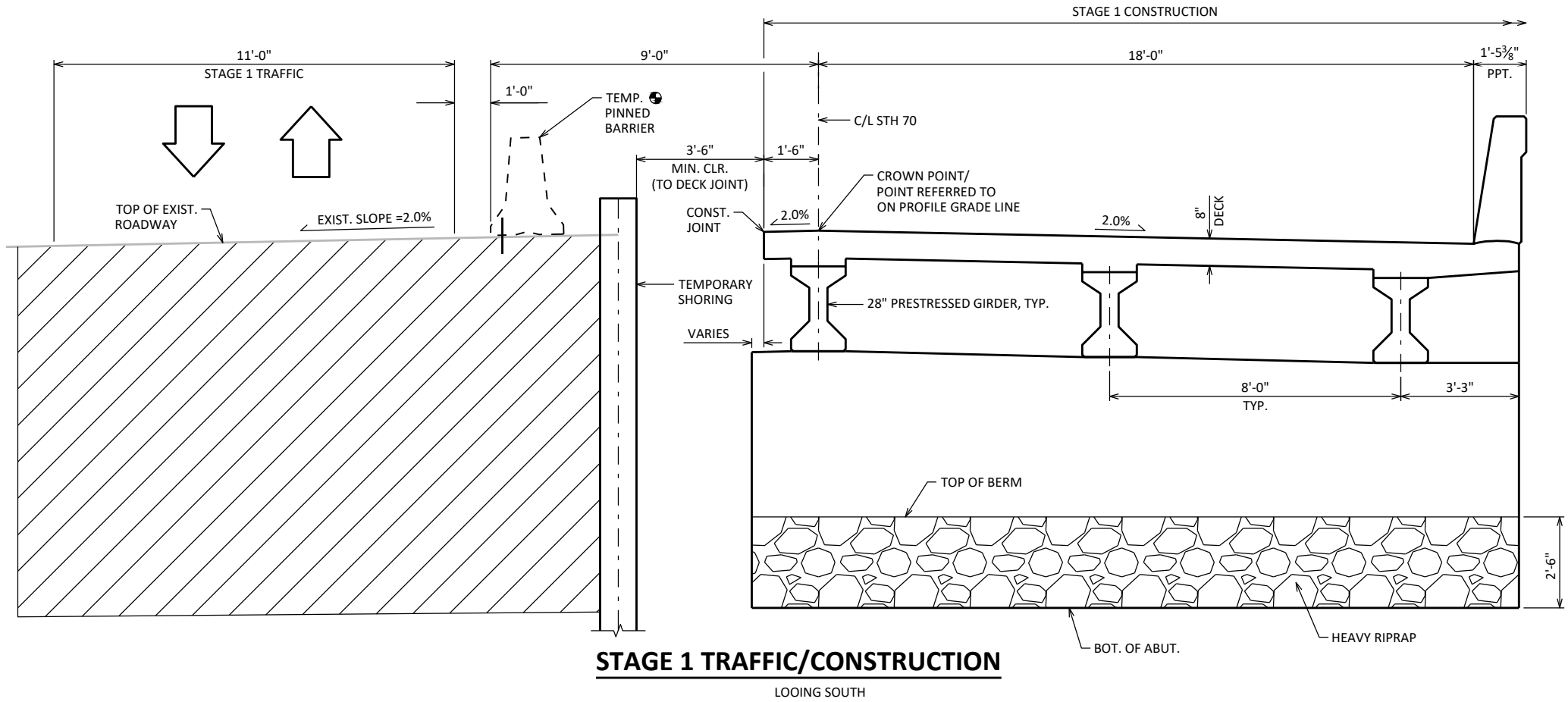
- ▲ BACKFILL PAY LIMITS. BACKFILL BEYOND PAY LIMITS SHALL BE INCIDENTAL TO EXCAVATION FOR STRUCTURES. LIMITS OF EXCAVATION SHALL BE DETERMINED BY THE CONTRACTOR.
- PIPE UNDERDRAIN WRAPPED (6-INCH). SLOPE 0.5% MIN. TO SUITABLE DRAINAGE. ATTACH RODENT SHIELD AT ENDS OF PIPE UNDERDRAIN.

TOTAL ESTIMATED QUANTITIES

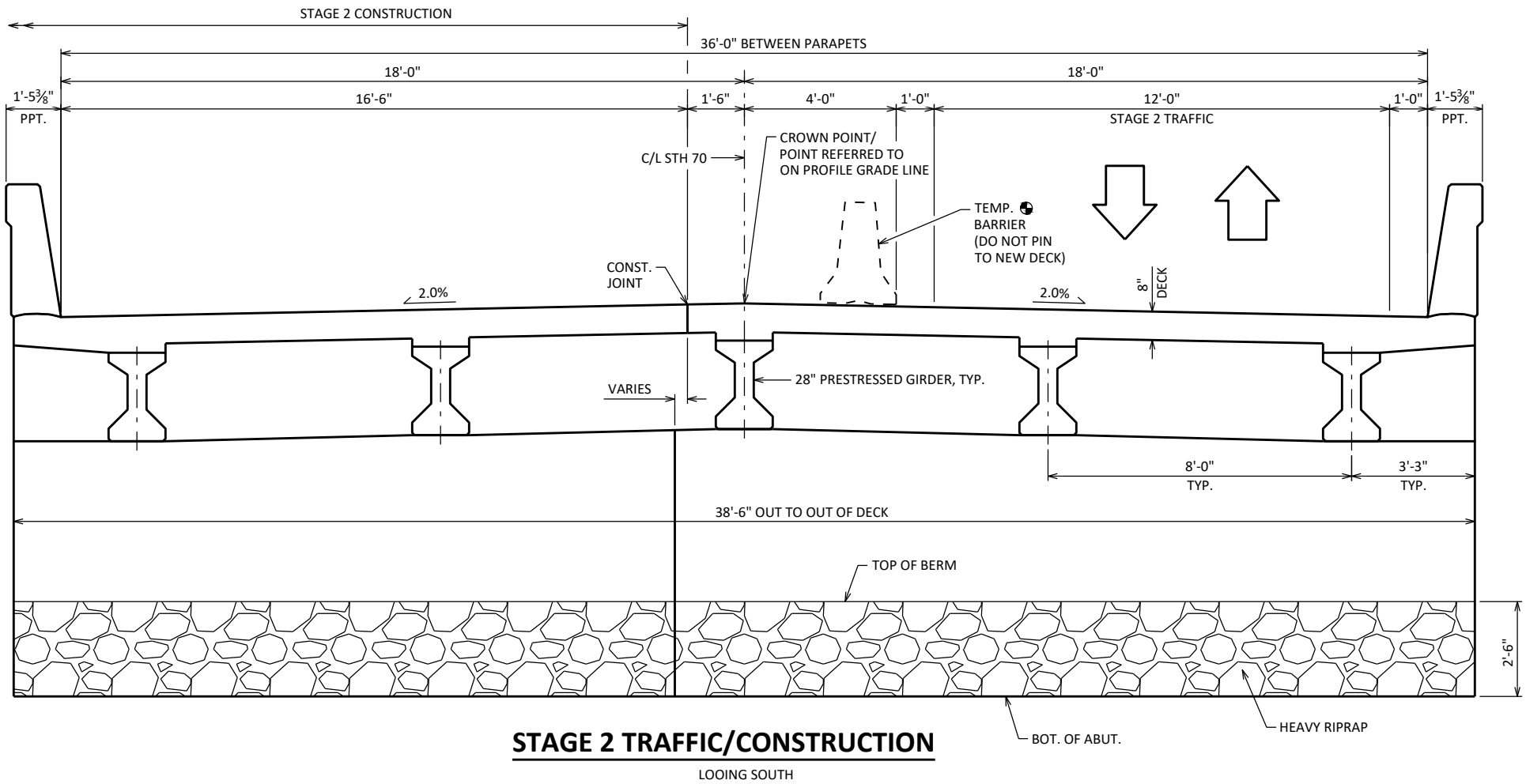
BID ITEM NUMBER	BID ITEMS	UNIT	SUPER.	NORTH ABUT.	SOUTH ABUT.	TOTALS
203.0220	REMOVING STRUCTURE C-57-26	EACH	—	—	—	1
206.1001	EXCAVATION FOR STRUCTURES BRIDGES B-57-94	EACH	—	—	—	1
210.1500	BACKFILL STRUCTURE TYPE A	TON	—	257	257	514
502.0100	CONCRETE MASONRY BRIDGES	CY	81.3	54.1	54.4	190
502.3200	PROTECTIVE SURFACE TREATMENT	SY	192	—	—	192
502.3210	PIGMENTED SURFACE SEALER	SY	45	16	16	77
503.0128	PRESTRESSED GIRDER TYPE I 28-INCH	LF	215	—	—	215
505.0400	BAR STEEL REINFORCEMENT HS STRUCTURES	LB	—	2700	2660	5360
505.0600	BAR STEEL REINFORCEMENT HS COATED STRUCTURES	LB	16,050	1790	1800	19,640
505.0906	BAR COUPLERS NO. 6	EACH	—	11	11	22
505.0908	BAR COUPLERS NO. 8	EACH	—	7	7	14
506.2605	BEARING PADS ELASTOMERIC NON-LAMINATED	EACH	—	5	5	10
506.4000	STEEL DIAPHRAGMS B-57-94	EACH	4	—	—	4
511.1200	TEMPORARY SHORING B-57-94	SF	422	240	240	902
516.0500	RUBBERIZED MEMBRANE WATERPROOFING	SY	—	12	12	24
550.2108	PILING CIP CONCRETE 10 3/4 X 0.50-INCH	LF	—	400	440	840
606.0300	RIPRAP HEAVY	CY	—	120	107	227
612.0406	PIPE UNDERDRAIN WRAPPED 6-INCH	LF	—	72	72	144
614.0150	ANCHOR ASSEMBLIES FOR STEEL PLATE BEAM GUARD	EACH	4	—	—	4
645.0111	GEOTEXTILE TYPE DF SCHEDULE A	SY	—	35	35	70
645.0120	GEOTEXTILE TYPE HR	SY	—	213	211	424
NON-BID ITEMS						
	FILLER	SIZE	—	—	—	1/2", 3/4"

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE B-57-94		DRAWN BY WWR	PLANS CK'D IDL
CROSS SECTION & QUANTITIES		SHEET 2	

SCALE =



INDICATES EXCAVATION INCLUDED IN THE BID ITEMS "EXCAVATION FOR STRUCTURES BRIDGES B-57-94"

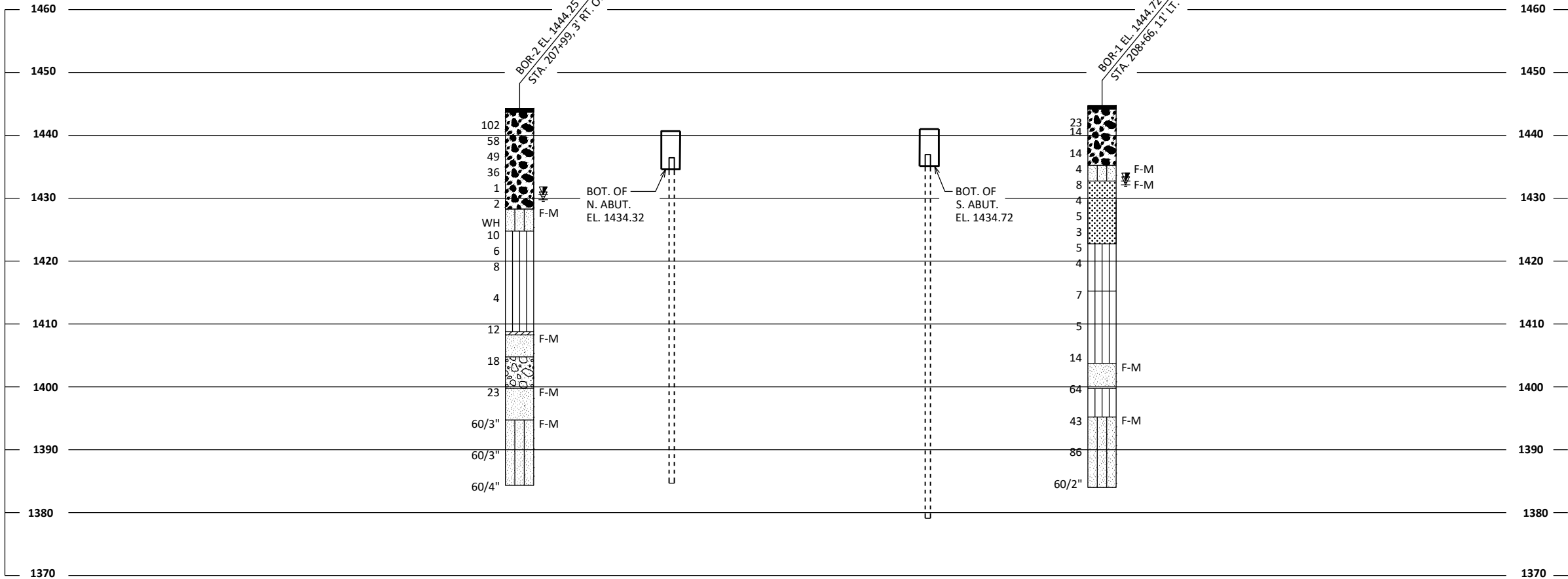
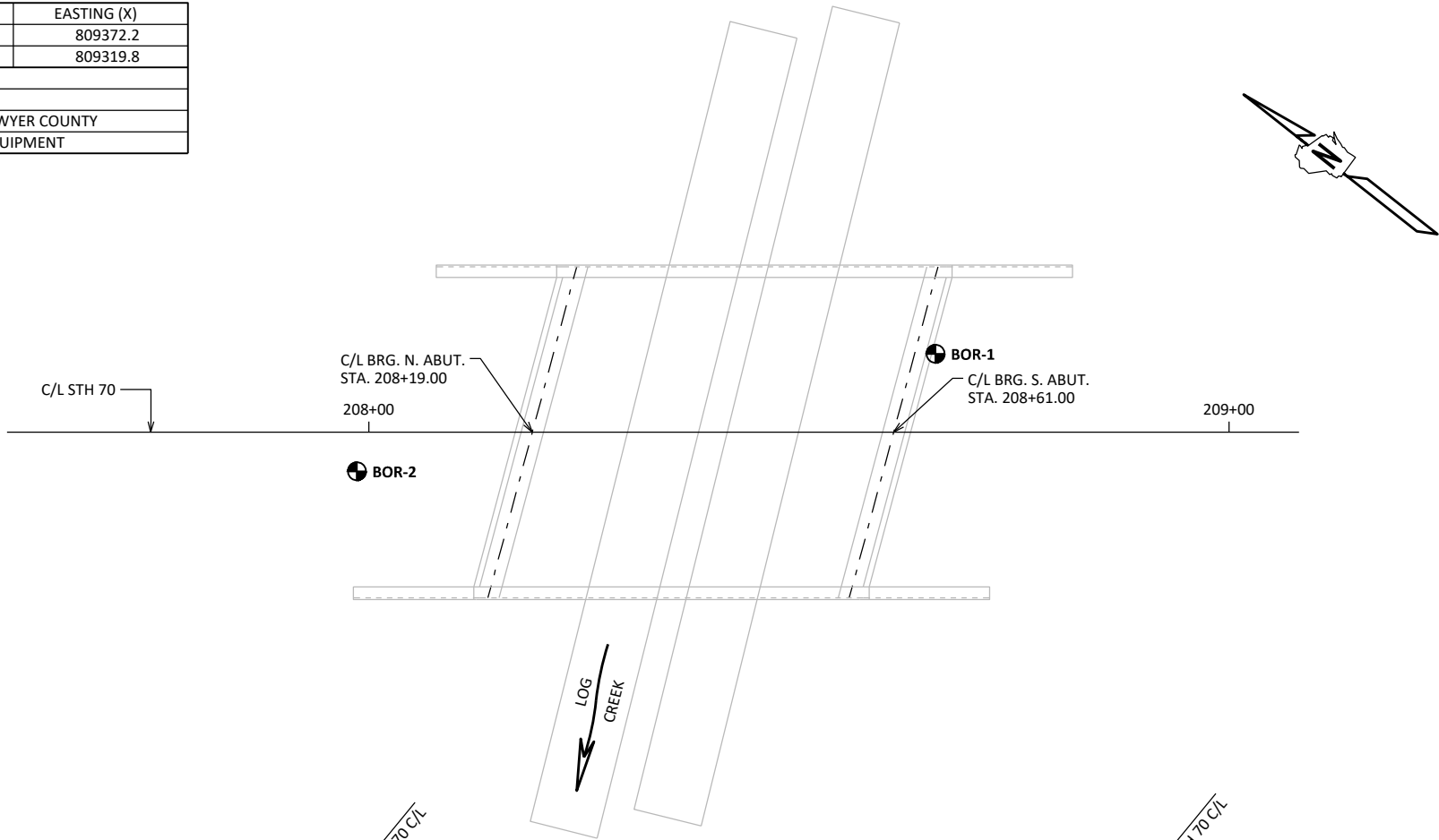


TEMPORARY TRAFFIC BARRIER PAID FOR UNDER ROADWAY BID ITEMS. SEE ROADWAY PLANS FOR MORE INFORMATION

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE B-57-94			
DRAWN BY WWR		PLANS CK'D IDL	
STAGING DETAILS			SHEET 3

SCALE =

BORING #	DATE COMPLETED	NORTHING (Y)	EASTING (X)
1	3/23/2023	388779.3	809372.2
2	3/24/2023	388823.6	809319.8
BORINGS COMPLETED BY: AET			
REPORT COMPLETED BY: WISDOT			
ALL COORDINATES REFERENCED TO WCCS NAD 83 (91) SAWYER COUNTY			
COORDINATES COLLECTED USING NON-SURVEY GRADE EQUIPMENT			



STATE PROJECT NUMBER

8170-01-74

MATERIAL SYMBOLS

ASPHALT

CONCRETE

SAND

BOULDERS OR COBBLES

SHALE

TOPSOIL

FILL

CLAY

LIMESTONE

SANDSTONE

PEAT

GRAVEL

SILT

BEDROCK (UNKNOWN)

IGNEOUS/META

LEGEND OF BORING

BORING #/EL.
STA./OFFSET

ST

0.25

17

F-C

COBBLE OR BOULDER

WEATHERED LIMESTONE

CORE RUN #1 - 24'-29'

REC=80%, RQD=72%

(1) UNCONFINED STRENGTH, AS DETERMINED BY A POCKET PENETROMETER (TSF)

(2) UNLESS OTHERWISE, SPECIFIED THE SPT 'N' VALUE IS BASED ON AASHTO T-206, STANDARD PENETRATION TEST. THE SPT 'N' VALUE PRESENTED HAS NOT BEEN CORRECTED FOR OVERBURDEN PRESSURE OR HAMMER EFFICIENCY.

GROUND WATER ELEVATION

▽

 AT TIME OF DRILLING

▼

 END OF DRILLING

▽

 AFTER DRILLING

ABBREVIATIONS

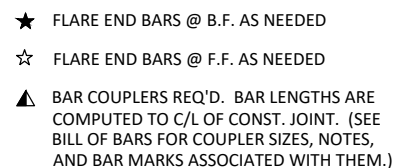
F-FINE M-MEDIUM C-COARSE ST-SHELBY TUBE

SUBSURFACE EXPLORATION FOR FOUNDATION DESIGN AND BIDDERS INFORMATION

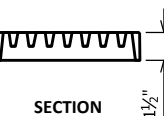
BORINGS WERE COMPLETED AT POINTS APPROXIMATELY AS INDICATED ON THIS DRAWING TO OBTAIN INFORMATION CONCERNING THE CHARACTER OF SUBSURFACE MATERIALS FOUND AT THE SITE. BECAUSE THE INVESTIGATED DEPTHS ARE LIMITED AND THE AREA OF THE BORINGS IS VERY SMALL IN RELATION TO THE ENTIRE SITE, THE WISCONSIN DEPARTMENT OF TRANSPORTATION DOES NOT WARRANT SIMILAR SUBSURFACE CONDITIONS BELOW, BETWEEN, OR BEYOND THESE BORINGS. VARIATIONS IN SOIL CONDITIONS SHOULD BE EXPECTED AND FLUCTUATIONS IN GROUNDWATER LEVELS MAY OCCUR.

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE B-57-94			
DRAWN BY		WWR	PLANS CK'D IDL
SUBSURFACE EXPLORATION		SHEET 4	

SCALE =



STEEL TROWEL TOP SURFACE OF ABUTMENT. - PLACE MULTIPLE LAYERS OF POLYETHYLENE SHEETS OVER ENTIRE ABUTMENT TOP BEFORE PLACING BEARING PADS. TOTAL THICKNESS OF SHEETS SHALL BE AT LEAST 0.03".

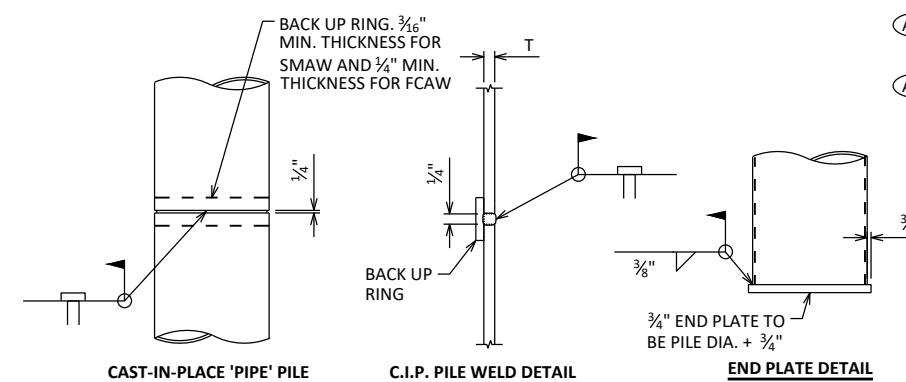


RODENT SHIELD DETAIL

* DIMENSIONS ARE APPROXIMATE. THE GRATE IS SIZED TO FIT INTO A PIPE COUPLING. ORIENT SO SLOTS ARE VERTICAL.

THE RODENT SHIELD, PIPE COUPLING AND SCREWS SHALL BE CONSIDERED INCIDENTAL TO THE BID ITEM "PIPE UNDERDRAIN WRAPPED 6-INCH".

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



- A04 VERT. CONST. JOINT: KEYWAY FORMED BY A BEVELED 2 x 8. $\frac{3}{4}$ " "V" GROOVE @ THE FRONT FACE AND 18" RMW @ BACKFACE.
- A09 SUPPORT ABUTMENT ON $10\frac{3}{4}$ " DIA. X 0.5" CIP CONCRETE PILING, ESTIMATED 50'-0" LONG WITH A REQUIRED DRIVING RESISTANCE OF 150 TONS PER PILE.
- A15 PIPE UNDERDRAIN WRAPPED (6-INCH). SLOPE 0.5% MIN. TO SUITABLE DRAINAGE. RODENT SHIELD REQUIRED.
- A17 $\frac{1}{2}$ " FILLER (INCLUDED IN WING LENGTH): SEAL ALL EXPOSED HORIZ. & VERT. SURFACES OF $\frac{1}{2}$ " FILLER WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER. (1" DEEP AND HOLD $\frac{1}{8}$ " BELOW SURFACE OF CONCRETE). EXTEND SEALER 3" BELOW GUTTER LINE AT INSIDE FACE.
- A18 $\frac{3}{4}$ " CORK FILLER UP VERT. BEAM SEAT FACES THAT RUN PARALLEL WITH GIRDER.
- A19 18" (RMW) RUBBERIZED MEMBRANE WATERPROOFING SEAL ALL HORIZ. & VERT. JOINTS AT BACKFACE.

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE B-57-94			
	DRAWN BY	PLANS CK'D	IDL
NORTH ABUTMENT		SHEET 5	

SCALE -

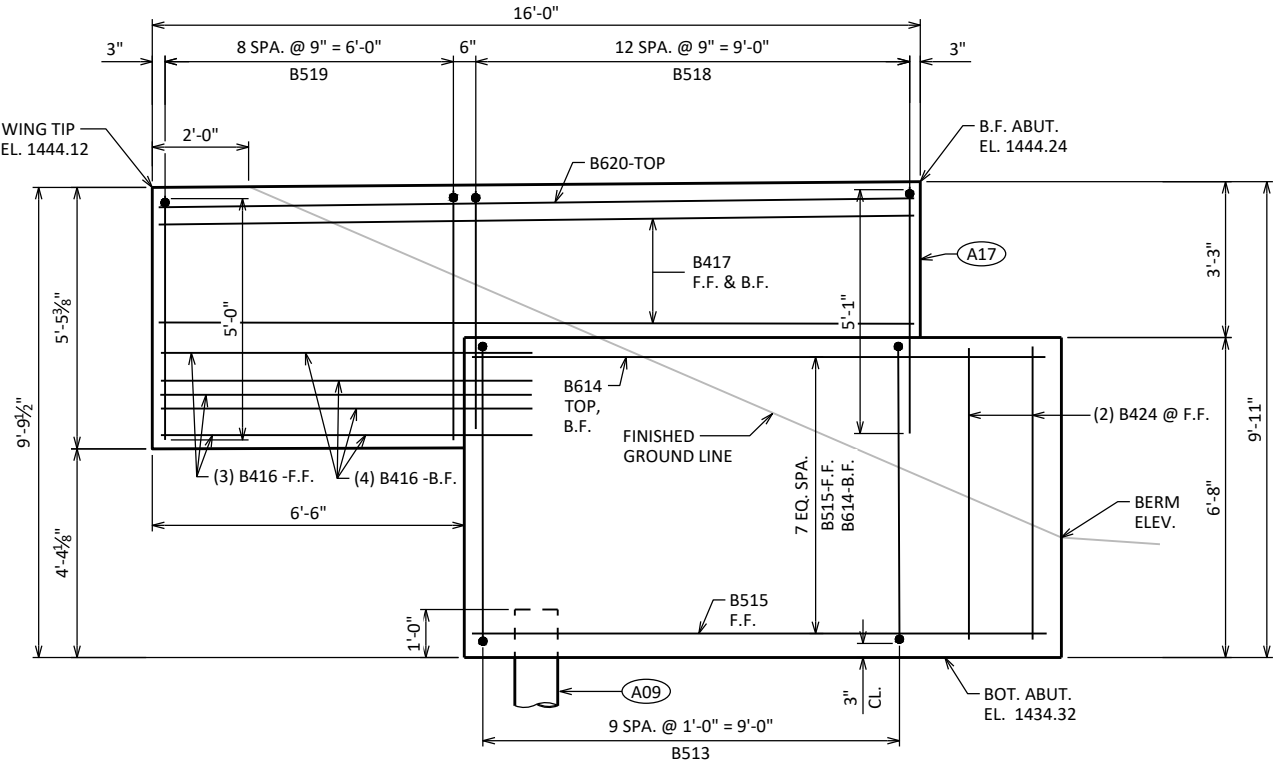
BILL OF BARS

NOTE: THE FIRST OR FIRST TWO DIGITS OF THE BAR MARK SIGNIFIES THE BAR SIZE.

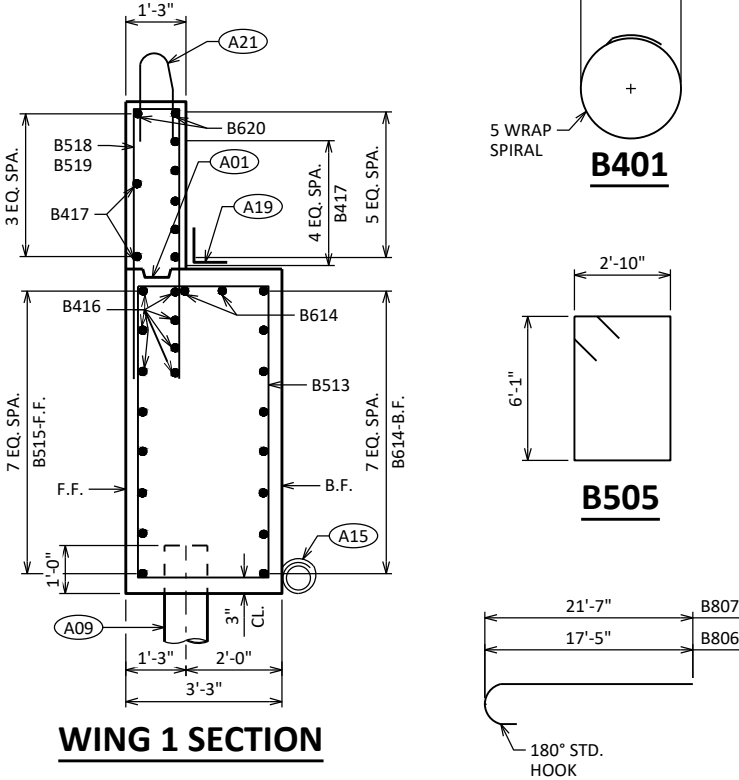
BAR MARK	COAT	NO. REQ'D	LENGTH	BENT	BAR SERIES	LOCATION
B401		6	28'-0"	X		ABUT. BODY-1 PER BODY PILE
B402		12	2'-3"			ABUT. BODY-2 PER BODY PILE
B603		22	12'-5"			ABUT. BODY-HORIZ.-STAGE 1
B604		22	10'-8"			ABUT. BODY-HORIZ.-STAGE 2
B505		42	18'-6"	X		ABUT. BODY-VERT. STIRRUP
B806		7	18'-4"	X		ABUT. BODY-HORIZ.-STAGE 2
B807		7	22'-6"	X		ABUT. BODY-HORIZ.-STAGE 1
B508		15	5'-7"	X		ABUT. BODY-VERT. U-BAR-TOP-STAGE 1 & 2
B409		4	8'-6"			ABUT. BODY-HORIZ.-TOP-STAGE 1
B410		4	5'-4"			ABUT. BODY-HORIZ.-TOP-STAGE 2
B411		20	4'-11"	X		ABUT. BODY-VERT. U-BAR-BTWN. BEAM SEATS
B412		8	7'-8"			ABUT. BODY-HORIZ. BTWN. BEAM SEATS
B513	X	10	19'-4"	X		WING 1 BODY-VERT. STIRRUP
B614	X	10	12'-2"			WING 1 BODY-HORIZ.-B.F. & TOP
B515	X	8	11'-11"			WING 1 BODY-HORIZ.-F.F.
B416	X	14	7'-10"			WINGS 1 & 2-HORIZ.
B417	X	14	15'-9"			WINGWALLS-HORIZ.
B518	X	26	10'-10"	X		WING BODY/WALL-VERT. U-BAR
B519	X	18	10'-8"	X		WINGWALLS-VERT. U-BAR
B620	X	4	15'-9"			WINGWALLS-HORIZ.-TOP
B521	X	10	19'-6"	X		WING 2 BODY-VERT. STIRRUP
B622	X	10	11'-9"			WING 2 BODY-HORIZ.-B.F. & TOP
B523	X	8	12'-6"			WING 2 BODY-HORIZ.-F.F.
B424	X	4	6'-4"			WING BODY-VERT. ENDS

NO. 6 BAR COUPLER REQUIRED. BAR LENGTHS ARE COMPUTED TO THE C/L OF CONSTRUCTION JOINT AND SHALL BE MODIFIED BY THE BAR COUPLER MANUFACTURER'S RECOMMENDATIONS. PAY BASED ON BARS AS DETAILED IN PLANS.

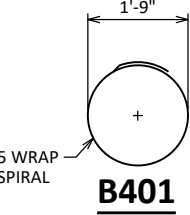
NO. 8 BAR COUPLER REQUIRED. BAR LENGTHS ARE COMPUTED TO THE C/L OF CONSTRUCTION JOINT AND SHALL BE MODIFIED BY THE BAR COUPLER MANUFACTURER'S RECOMMENDATIONS. PAY BASED ON BARS AS DETAILED IN PLANS.



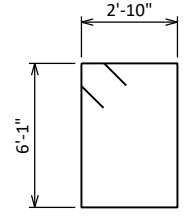
WING 1 ELEVATION



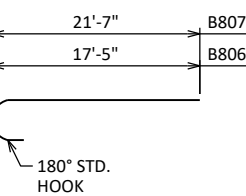
WING 1 SECTION



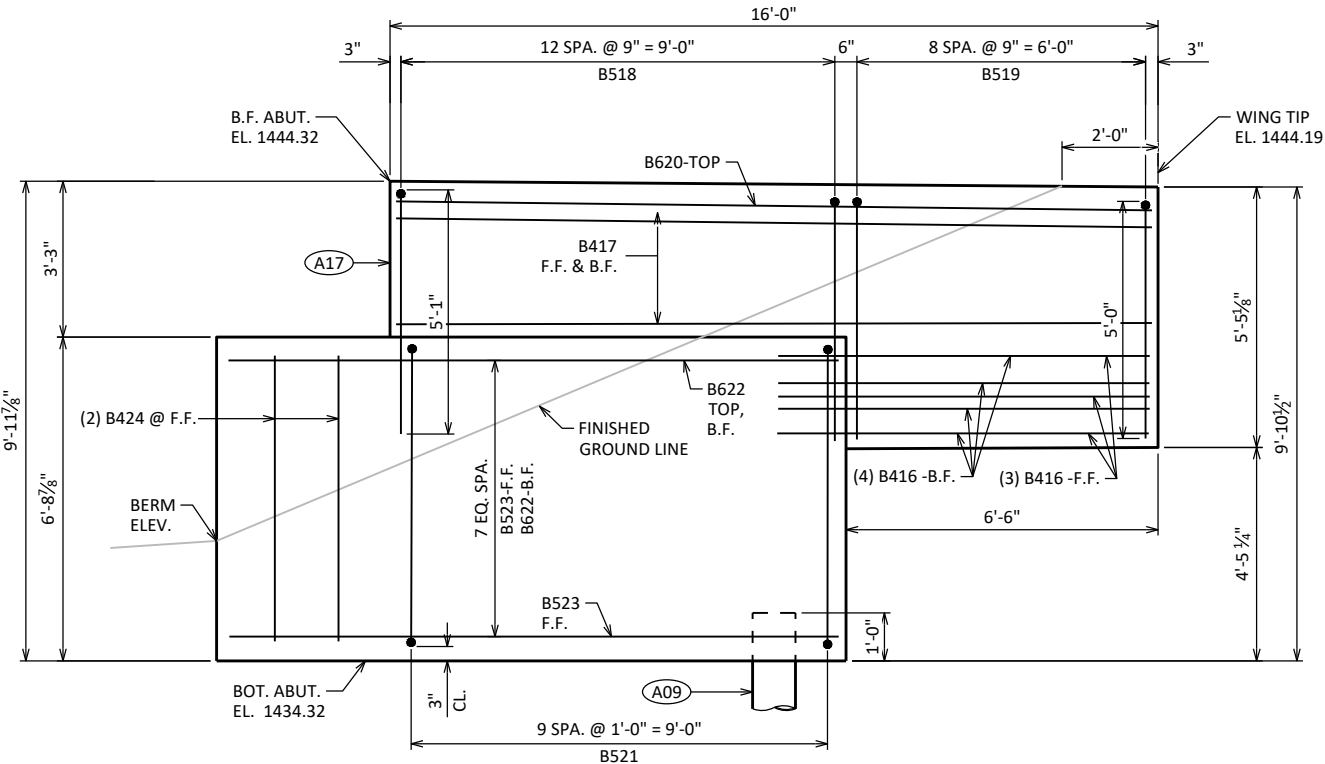
B401



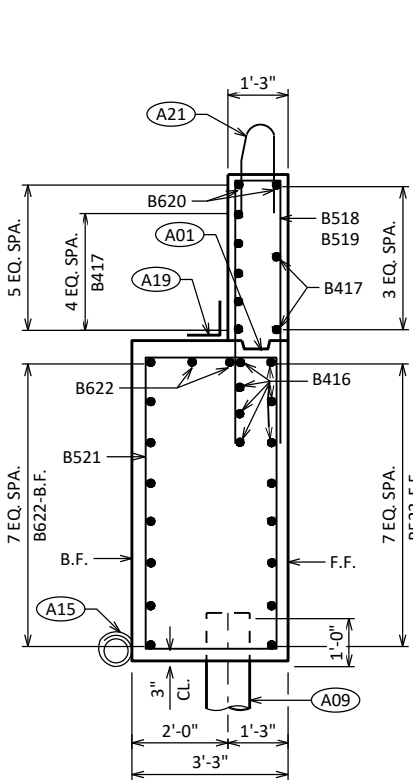
B505



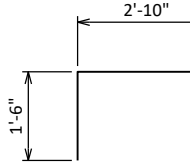
B806 , B807



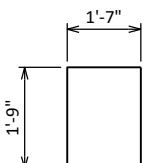
WING 2 ELEVATION



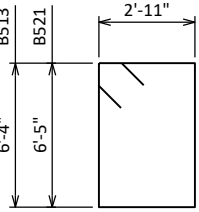
WING 2 SECTION



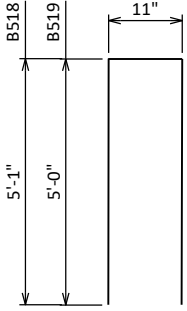
B508



B411



B513 , B521

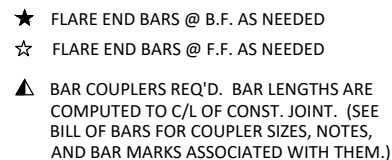


B518 , B519

- (A01) CONST. JOINT: KEYWAY FORMED BY A BEVELED 2 x 6.
- (A09) SUPPORT ABUTMENT ON 10 3/4" DIA. X 0.5" CIP CONCRETE PILING, ESTIMATED 50'-0" LONG WITH A REQUIRED DRIVING RESISTANCE OF 150 TONS PER PILE.
- (A15) PIPE UNDERDRAIN WRAPPED (6-INCH). SLOPE 0.5% MIN. TO SUITABLE DRAINAGE. RODENT SHIELD REQUIRED.
- (A17) 1/2" FILLER (INCLUDED IN WING LENGTH): SEAL ALL EXPOSED HORIZ. & VERT. SURFACES OF 1/2" FILLER WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER. (1" DEEP AND HOLD 3/8" BELOW SURFACE OF CONCRETE). EXTEND SEALER 3" BELOW GUTTER LINE AT INSIDE FACE.
- (A19) 18" (RMW) RUBBERIZED MEMBRANE WATERPROOFING SEAL ALL HORIZ. & VERT. JOINTS AT BACKFACE.
- (A21) FOR PPT. BARS & DIMENSIONS SEE PARAPET SHEET.

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE B-57-94		DRAWN BY WWR	PLANS CK'D IDL
NORTH ABUTMENT DETAILS		SHEET 6	

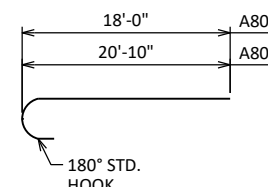
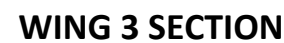
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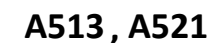
NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE B-57-94			
		DRAWN BY	PLANS CK'D
		WWR	IDL
SOUTH ABUTMENT		SHEET 7	

NOTE: THE FIRST OR FIRST TWO DIGITS OF THE BAR MARK SIGNIFIES THE BAR SIZE.

NO. 8 BAR COUPLER REQUIRED. BAR LENGTHS ARE COMPUTED TO THE C/L OF CONSTRUCTION JOINT AND SHALL BE MODIFIED BY THE BAR COUPLER MANUFACTURER'S RECOMMENDATIONS. PAY BASED ON BARS AS DETAILED IN PLANS.

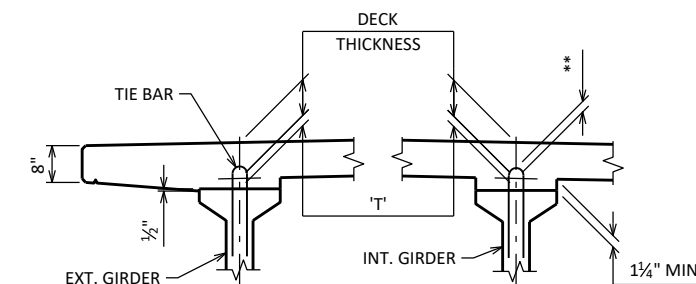
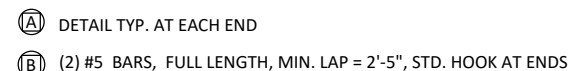


A806 , A807



- | | | | |
|---|------|----------|------------|
| | | | |
| NO. | DATE | REVISION | BY |
| STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION | | | |
| STRUCTURE | | B-57-94 | |
| | | DRAWN BY | PLANS CK'D |
| | | WWR | IDL |
| SOUTH ABUTMENT
DETAILS | | SHEET 8 | |
| | | | |

FOR DIAPHRAGM INSERT & CONNECTION DETAILS SEE "STEEL DIAPHRAGM" SHEET.

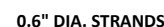


IF $\frac{1}{4}$ " MINIMUM HAUNCH HEIGHT AT EDGE OF GIRDER CANNOT BE MAINTAINED, THE GRADE LINE MAY BE REVISED BY THE ENGINEER AT THE OPTION OF THE CONTRACTOR, THE PLAN DECK THICKNESS SHALL BE HELD. NOTIFY THE STRUCTURES SECTION IF THE GRADE LINE IS RAISED FROM THE PLAN PROFILE BY MORE THAN $\frac{1}{2}$ " OR,
 ** IF 3" MINIMUM DECK EMBEDMENT OF THE TIE BAR CANNOT BE OBTAINED.

TO DETERMINE 'T', ELEVATION OF TOP OF GIRDERS AT C/L OF SUBSTRUCTURE UNITS & AT $\frac{1}{10}$ POINTS OF EACH SPAN SHALL BE TAKEN. THEN FOLLOW THIS PROCESS:

$$\begin{aligned} & \text{TOP OF DECK ELEV. AT FINAL GRADE} \\ & - \text{TOP OF GIRDER ELEVATION} \\ & + \text{DEAD LOAD DEFLECTION} \\ & - \text{DECK THICKNESS} \\ \hline & = \text{HAUNCH HEIGHT "T"} \end{aligned}$$

NOTE: AN AVERAGE HAUNCH ("T") OF 2.8" WAS USED IN THE QUANTITY "CONCRETE
MASONRY BRIDGES".



	"A"	"B"	"C"
GIRDER 1	20'-5 $\frac{1}{8}$ "	—	22'-6 $\frac{7}{8}$ "
GIRDER 2	20'-5 $\frac{1}{8}$ "	2'-1 $\frac{3}{4}$ "	20'-5 $\frac{1}{8}$ "
GIRDER 3	20'-5 $\frac{1}{8}$ "	2'-1 $\frac{3}{4}$ "	20'-5 $\frac{1}{8}$ "
GIRDER 4	20'-5 $\frac{1}{8}$ "	2'-1 $\frac{3}{4}$ "	20'-5 $\frac{1}{8}$ "
GIRDER 5	22'-6 $\frac{7}{8}$ "	—	20'-5 $\frac{1}{8}$ "

* THE THEORETICAL INITIAL CAMBER VALUE AT THE TIME OF STRAND RELEASE AT MIDSPAN MULTIPLIED BY A FACTOR OF 1.4 TO ACCOUNT FOR CAMBER GROWTH FROM THE TIME OF STRAND RELEASE TO JOBSITE PLACEMENT.

SPAN	CAMBER (IN.) *
1	1.15

THESE VALUES ARE NOT TO BE USED IN DETERMINING 'T',
USE ACTUAL GIRDER SHOTS.

THESE VALUES ARE FOR INFORMATIONAL PURPOSES ONLY.

* MINIMUM CYLINDER STRENGTH OF CONCRETE @ TIME OF TRANSFER OF PRESTRESS FORCE.

[illegible]

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE		B-57-94	
	DRAWN BY	WWR	PLANS CK'D IDL
28-INCH PRESTRESSED GIRDER DETAILS		SHEET 9	

SCALE =

NOTES

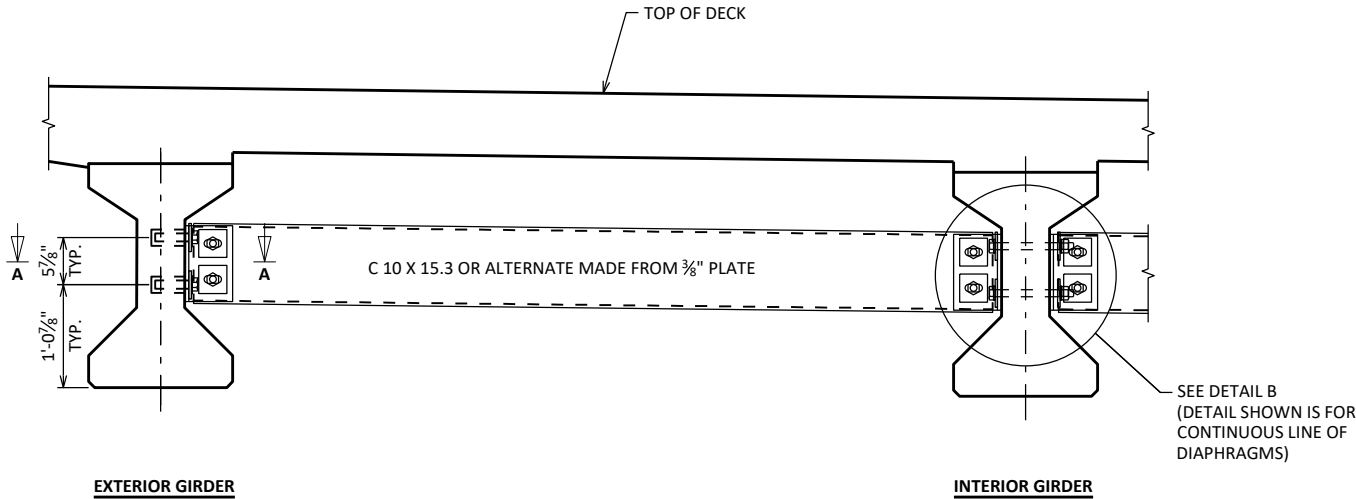
ALL DIAPHRAGM MATERIAL NOT EMBEDDED IN THE CONCRETE GIRDER SHALL BE PAID FOR AT THE UNIT PRICE BID FOR "STEEL DIAPHRAGMS B-57-94", EACH.

EACH DIAPHRAGM BETWEEN GIRDERS SHALL CONSTITUTE ONE UNIT.

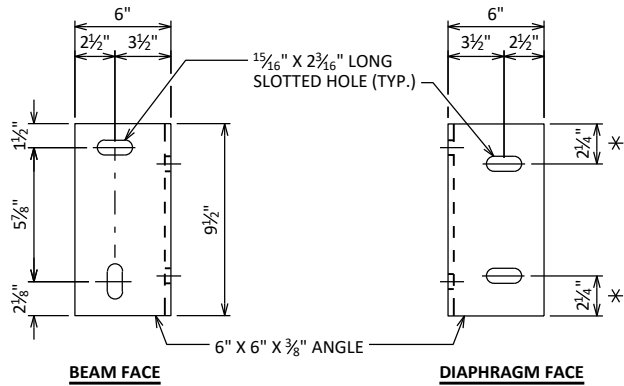
ALL DIAPHRAGM STRUCTURAL STEEL SHALL BE ASTM A709 GRADE 36.

ALL DIAPHRAGM MATERIAL INCLUDING BOLTS, NUTS AND WASHERS SHALL BE GALVANIZED AFTER FABRICATION.

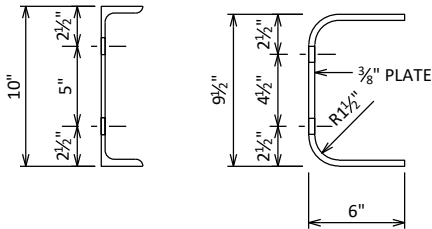
STEEL DIAPHRAGM TO CONCRETE WEB CONNECTION SHALL BE SNUG-TIGHT PLUS 1/4 TURN, UNLESS NOTED OTHERWISE. HIGH STRENGTH BOLTS FOR WEB CONNECTION SHALL MEET THE REQUIREMENTS FOR ASTM A325 OR ASTM A449.



PART TRANSVERSE SECTION AT DIAPHRAGM

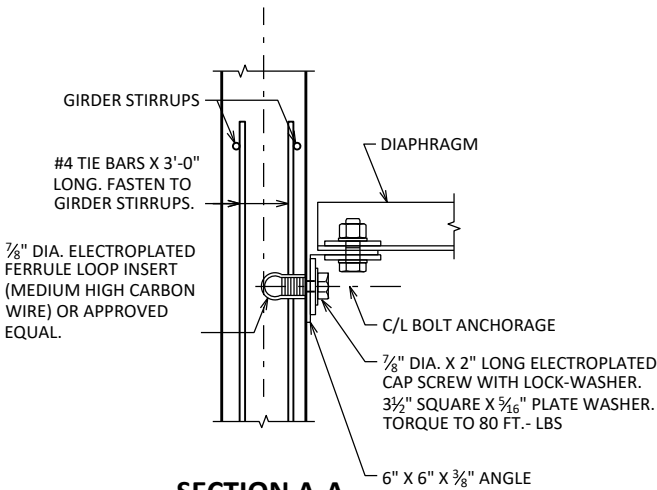


DIAPHRAGM SUPPORT



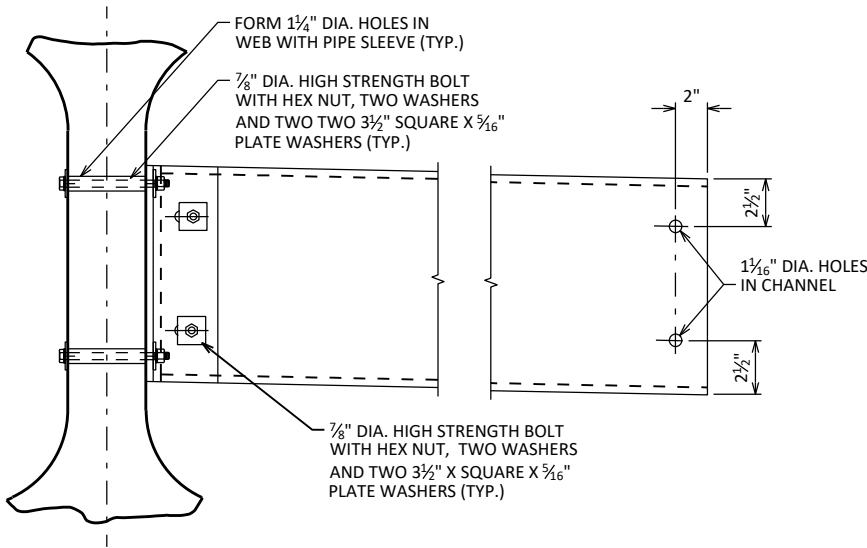
C10 X 15.3 ALTERNATE DIAPHRAGM

SECTION THRU DIAPHRAGM



SECTION A-A

(FOR EXTERIOR ATTACHMENT)



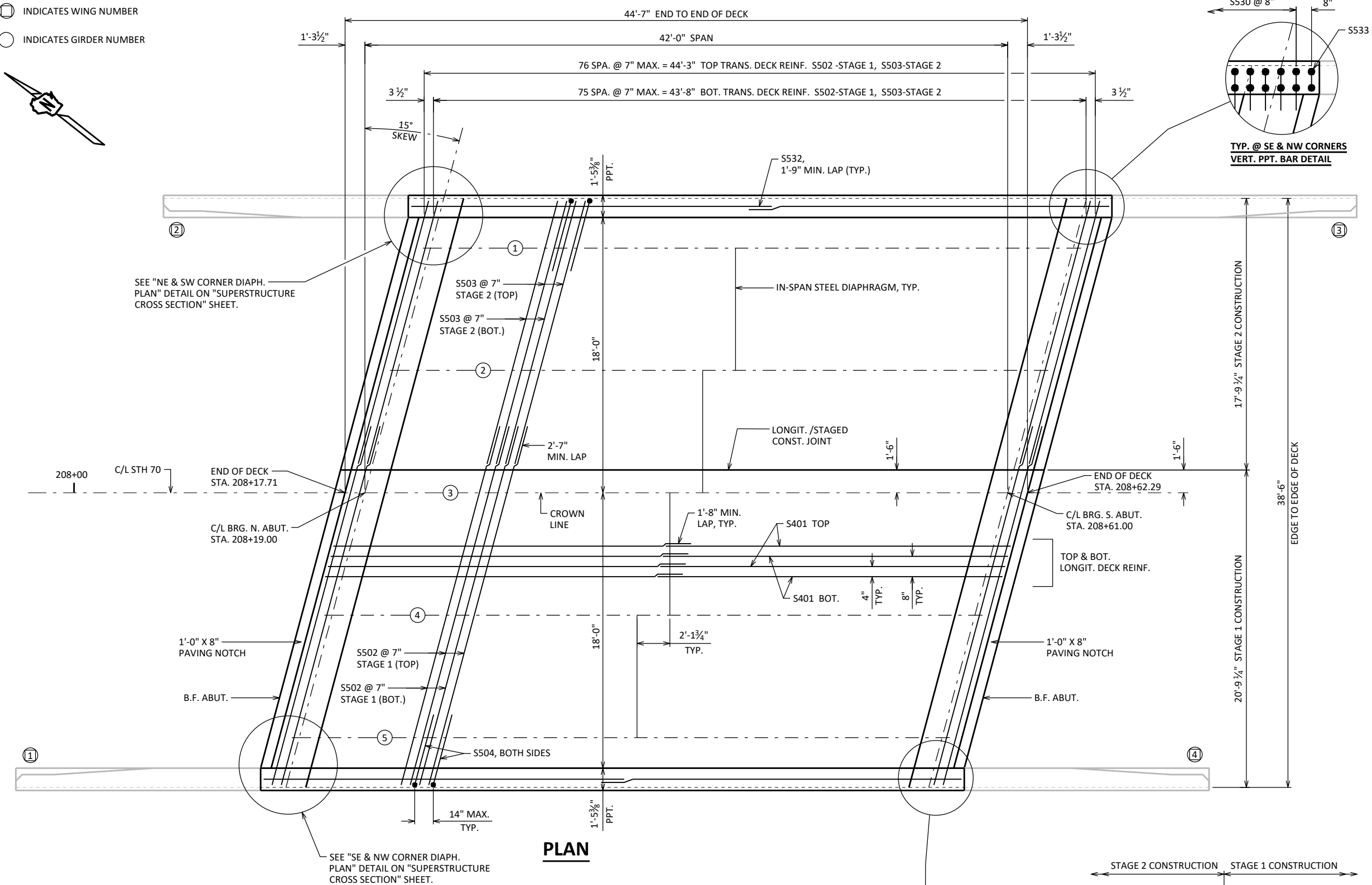
(FOR STAGGERED DIAPHRAGM)

DETAIL B

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE B-57-94			
DRAWN BY WWR		PLANS CK'D IDL	
STEEL DIAPHRAGM			SHEET 10

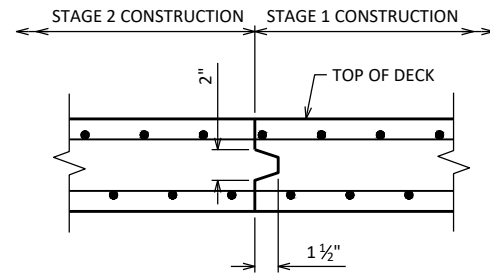
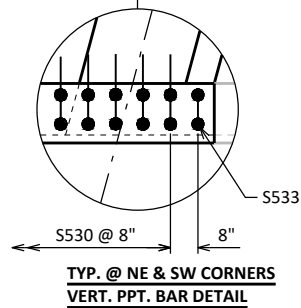
SCALE =

- ⊖ INDICATES WING NUMBER
○ INDICATES GIRDER NUMBER



TOP OF DECK ELEVATIONS

	N. ABUT.	1/10	2/10	3/10	4/10	5/10	6/10	7/10	8/10	9/10	S. ABUT.
E. EOD	1444.34	1444.38	1444.41	1444.45	1444.49	1444.53	1444.58	1444.62	1444.67	1444.71	1444.76
GIRDER 1	1444.37	1444.41	1444.45	1444.49	1444.53	1444.57	1444.61	1444.66	1444.70	1444.75	1444.79
GIRDER 2	1444.52	1444.55	1444.59	1444.63	1444.67	1444.71	1444.75	1444.79	1444.84	1444.88	1444.93
GIRDER 3 (R/L STH 70)	1444.66	1444.69	1444.73	1444.77	1444.81	1444.85	1444.89	1444.93	1444.97	1445.03	1445.07
GIRDER 4	1444.48	1444.51	1444.55	1444.59	1444.63	1444.67	1444.71	1444.75	1444.79	1444.84	1444.88
GIRDER 5	1444.30	1444.34	1444.37	1444.41	1444.45	1444.49	1444.53	1444.57	1444.61	1444.65	1444.70
W. EOD	1444.26	1444.29	1444.33	1444.36	1444.40	1444.44	1444.48	1444.52	1444.56	1444.61	1444.65



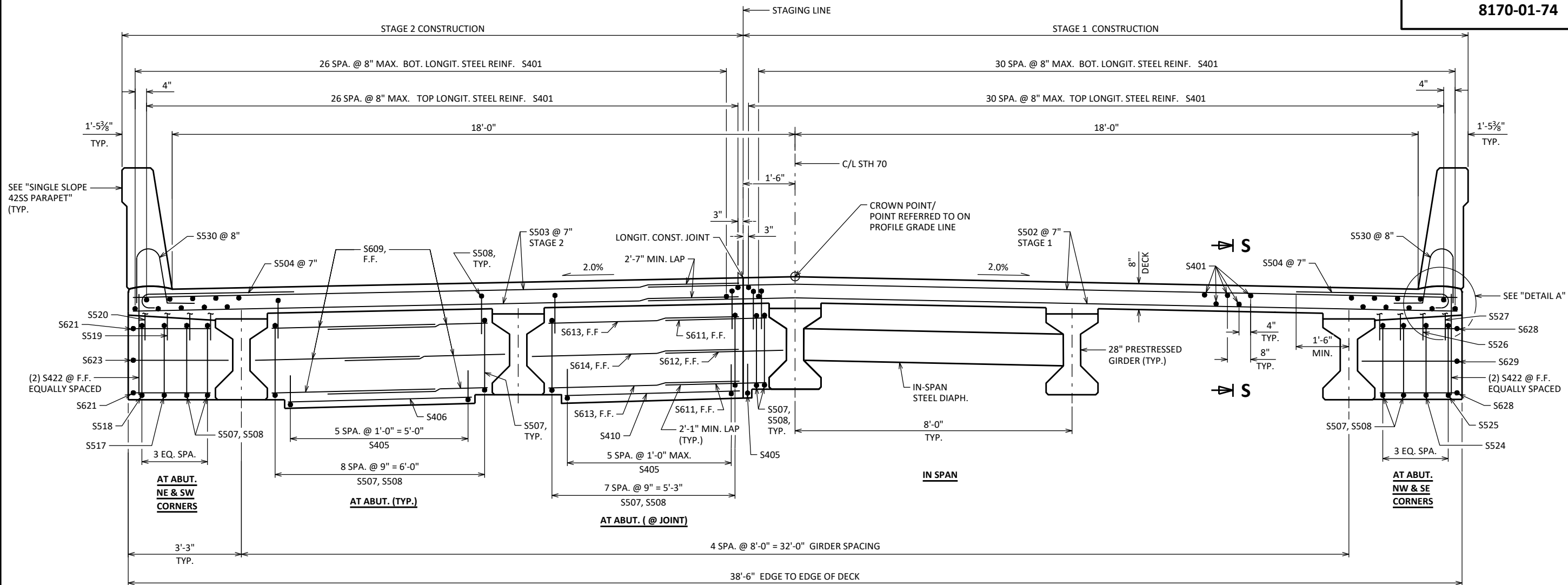
SECTION THRU LONGIT. CONST. JOINT @ DECK
(BAR LAPS NOT SHOWN)

STATE PROJECT NUMBER

8170-01-74

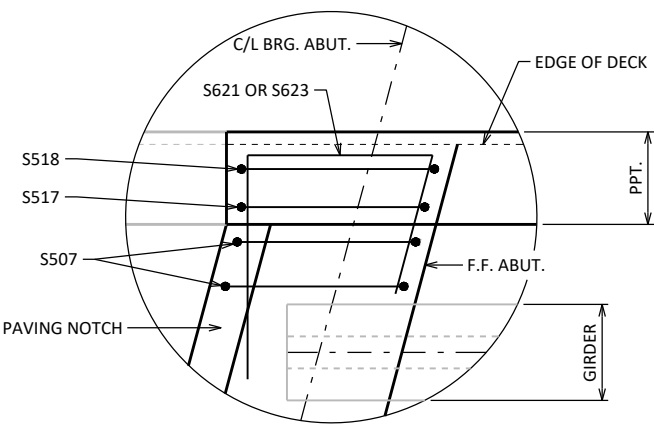
NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE		B-57-94	
DRAWN BY		WWR	PLANS CK'D IDL
SUPERSTRUCTURE PLAN		SHEET 11	

SCALE =



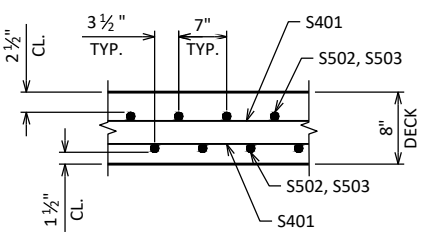
CROSS SECTION THRU SUPERSTRUCTURE (LOOKING SOUTH)

SHOWING CONCRETE AND STEEL DIAPHRAGMS

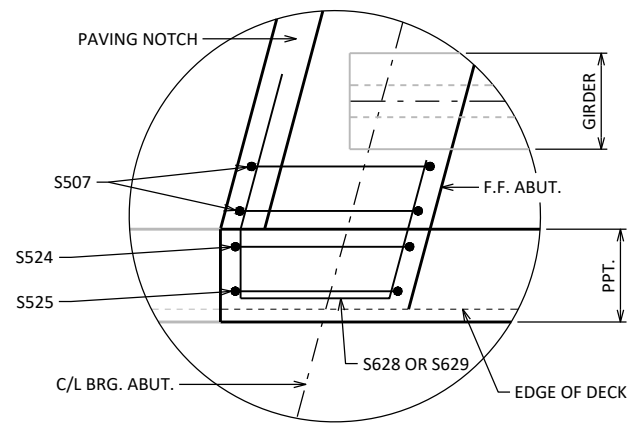


NE & SW CORNER DIAPH. PLAN

(SHOWING VERT. STIRRUPS AND HORIZ. U-BARS ONLY)

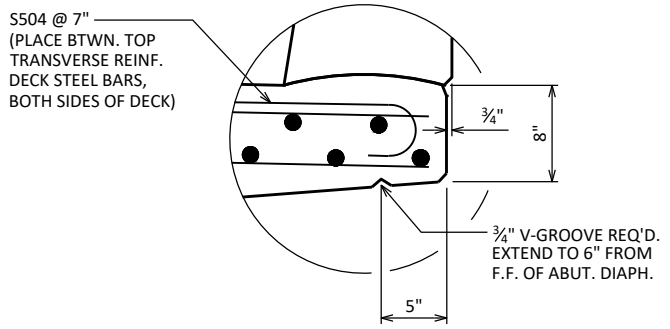


SECTION S-S



SE & NW CORNER DIAPH. PLAN

(SHOWING VERT. STIRRUPS AND HORIZ. U-BARS ONLY)



DETAIL A

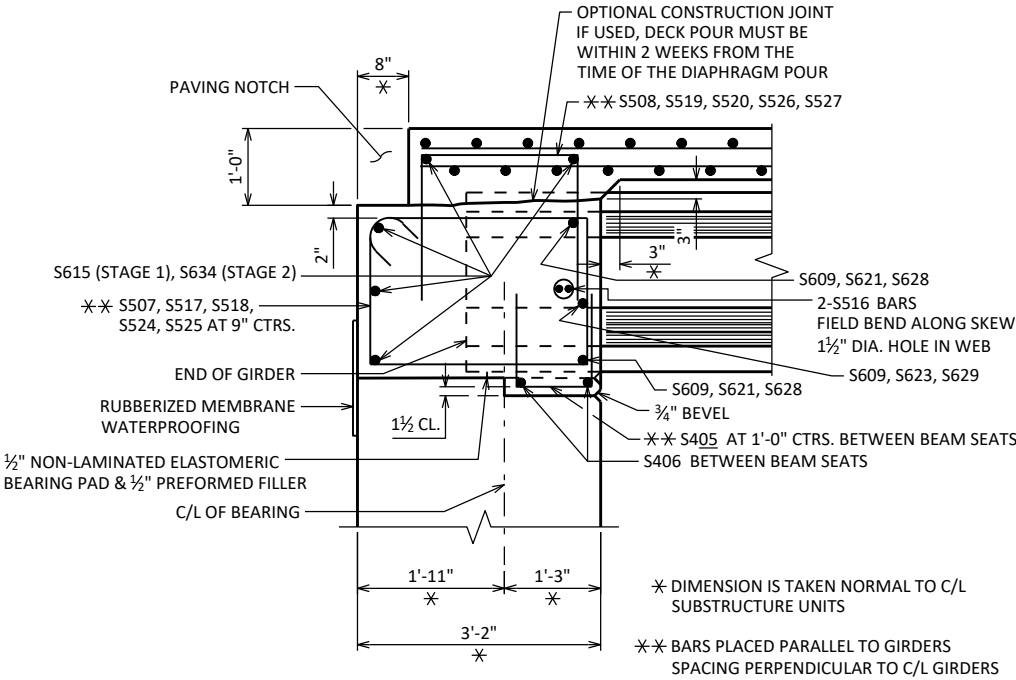
NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE B-57-94			
DRAWN BY WWR		PLANS CK'D IDL	
SUPERSTRUCTURE CROSS SECTION			SHEET 12

SCALE =

BILL OF BARS

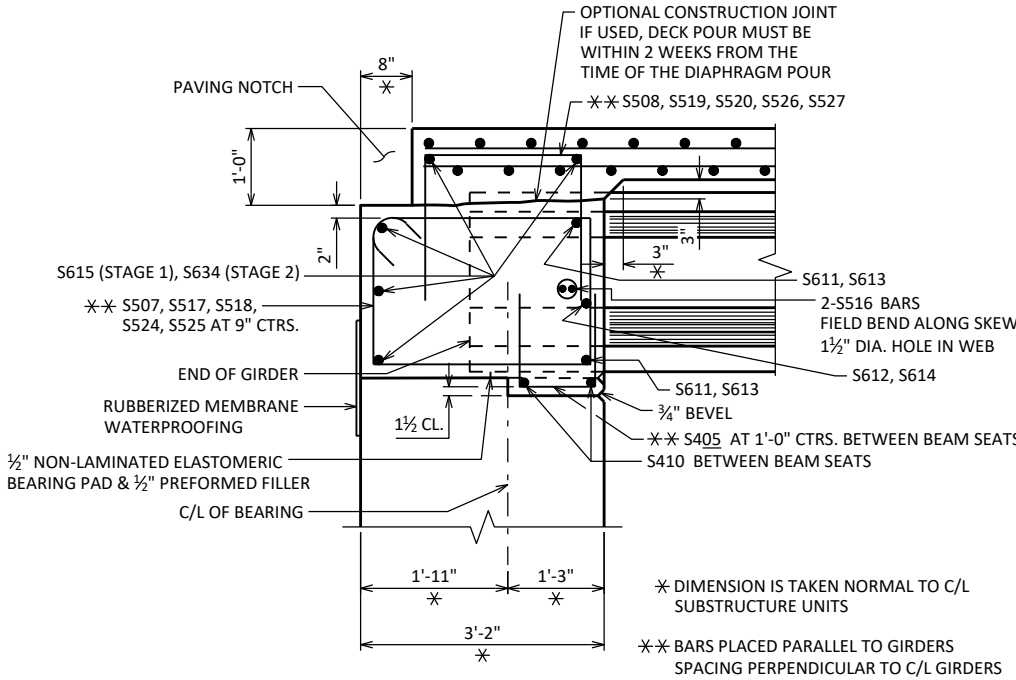
NOTE: THE FIRST OR FIRST TWO DIGITS OF THE BAR MARK SIGNIFIES THE BAR SIZE.

BAR MARK	COAT	NO. REQ'D	LENGTH	BENT	BAR SERIES	LOCATION
S401	X	232	23'-0"			DECK-LONGIT.
S502	X	153	24'-1"			DECK-TRANS.-STAGE 1
S503	X	153	18'-2"			DECK-TRANS.-STAGE 2
S504	X	76	5'-4"	X		DECK-TRANS.-TOP EDGE
S405	X	49	3'-3"	X		DIAPH.-VERT. U-BAR-BOT.
S406	X	6	5'-4"			DIAPH.-HORIZ.-BOT.
S507	X	82	10'-6"	X		DIAPH.-VERT. STIRRUP
S508	X	82	5'-8"	X		DIAPH.-VERT. U-BAR-TOP
S609	X	36	4'-11"			DIAPH.-HORIZ.
S410	X	4	5'-1"			DIAPH.-HORIZ.-BOT.
S611	X	4	3'-0"			DIAPH.-HORIZ.-AT JOINT-STAGE 1
S612	X	2	3'-6"			DIAPH.-HORIZ.-AT JOINT-STAGE 1
S613	X	4	5'-8"			DIAPH.-HORIZ.-AT JOINT-STAGE 2
S614	X	2	6'-2"			DIAPH.-HORIZ.-AT JOINT-STAGE 2
S615	X	10	24'-11"			DIAPH.-HORIZ.-B.F. & TOP- STAGE 1
S516	X	20	6'-0"			DIAPH.-HORIZ.-THRU GIRDERS
S517	X	2	10'-8"	X		DIAPH.-VERT.-STIRRUP-NE & SW
S518	X	2	11'-0"	X		DIAPH.-VERT.-STIRRUP-NE & SW
S519	X	2	5'-9"	X		DIAPH.-VERT. U-BAR-NE & SW
S520	X	2	5'-11"	X		DIAPH.-VERT. U-BAR-NE & SW
S621	X	4	8'-5"	X		DIAPH.-HORIZ. END U-BAR-NE & SW
S422	X	8	2'-7"			DIAPH.-VERT. END.
S623	X	2	8'-11"	X		DIAPH.-HORIZ. END U-BAR-NE & SW
S524	X	2	10'-4"	X		DIAPH.-VERT.-STIRRUP-SE & NW
S525	X	2	10'-0"	X		DIAPH.-VERT.-STIRRUP-SE & NW
S526	X	2	5'-7"	X		DIAPH.-VERT. U-BAR-SE & NW
S527	X	2	5'-5"	X		DIAPH.-VERT. U-BAR-SE & NW
S628	X	4	8'-1"	X		DIAPH.-HORIZ. END U-BAR-SE & NW
S629	X	2	8'-7"	X		DIAPH.-HORIZ. END U-BAR-SE & NW
S530	X	132	4'-5"	X		DECK/PPT.-VERT.
S531	X	136	6'-8"	X		PPT.-VERT.
S532	X	32	23'-10"			PPT.-HORIZ.
S533	X	4	5'-10"	X		DECK/PPT.-VERT.
S634	X	10	18'-2"			DIAPH.-HORIZ.-B.F. & TOP-STAGE 2



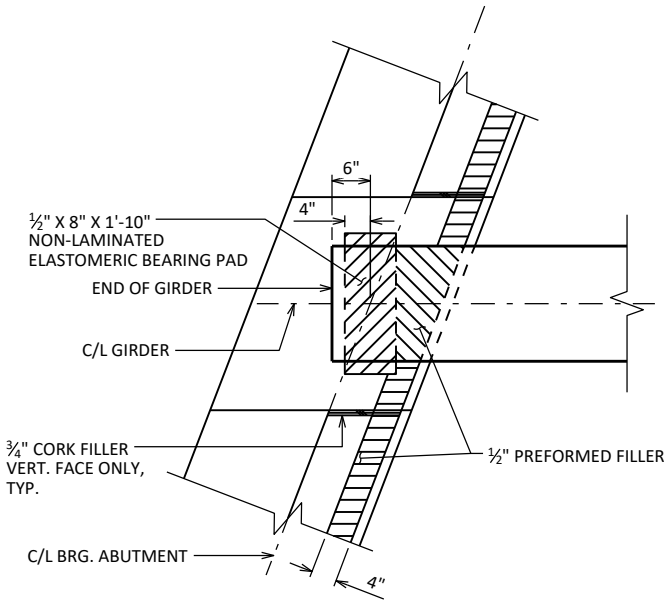
AT ABUTMENTS

PART. LONGIT. SECTION (TYP.)



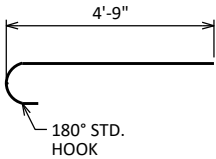
AT ABUTMENTS

PART. LONGIT. SECTION (@ JOINT)

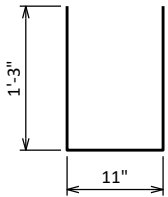


AT ABUTMENTS

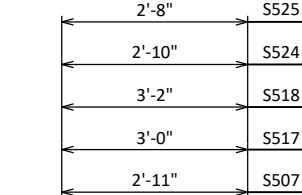
BEARING PAD DETAIL



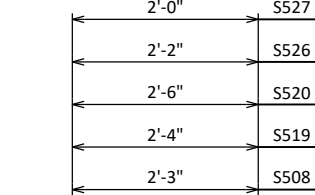
S504



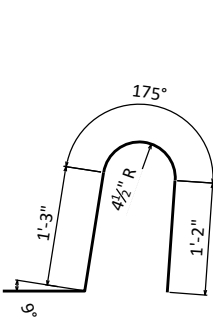
S405



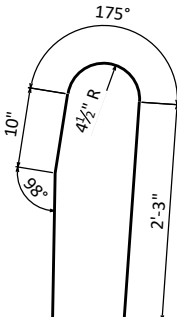
S507, S517, S518, S524, S525



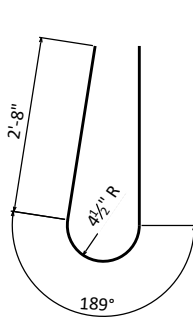
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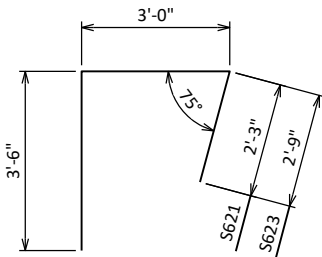
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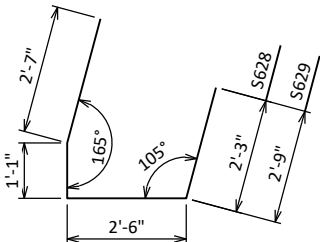
S533



S531



S621, S623



S628, S629

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE B-57-94			
DRAWN BY		WWR	PLANS CK'D IDL
SUPERSTRUCTURE DETAILS		SHEET 13	

SCALE =

BAR MARK	COAT	NORTH ABUT.	SOUTH ABUT.	LENGTH	BENT	BAR SERIES	LOCATION
R501	X	24	24	5'-10"	X		PARAPET VERT.
R502	X	24	24	6'-8"	X		PARAPET VERT.
R503	X	24	24	3'-0"	X		PARAPET VERT.
R504	X	34	34	5'-7"	X		PARAPET VERT.
R505	X	10	10	6'-5"	X		PARAPET VERT.
R506	X	12	12	6'-6"	X		PARAPET VERT.
R507	X	2	2	15'-10"	X		PARAPET HORIZ.
R508	X	10	10	15'-10"			PARAPET HORIZ.
R509	X	12	12	5'-5"	X	▲	PARAPET VERT.
R510	X	4	4	15'-10"	X		PARAPET HORIZ.

BAR MARK	NO. REQ'D.	LENGTH
R509	4 SERIES OF 6	4'-9" TO 6'-1"

LOOKING AT INSIDE FACE OF PARAPET

NO.	DATE	REVISION			BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION					
STRUCTURE		B-57-94			
		DRAWN BY	WWR	PLANS CK'D	IDL
SINGLE SLOPE PARAPET 42SS			SHEET 14		

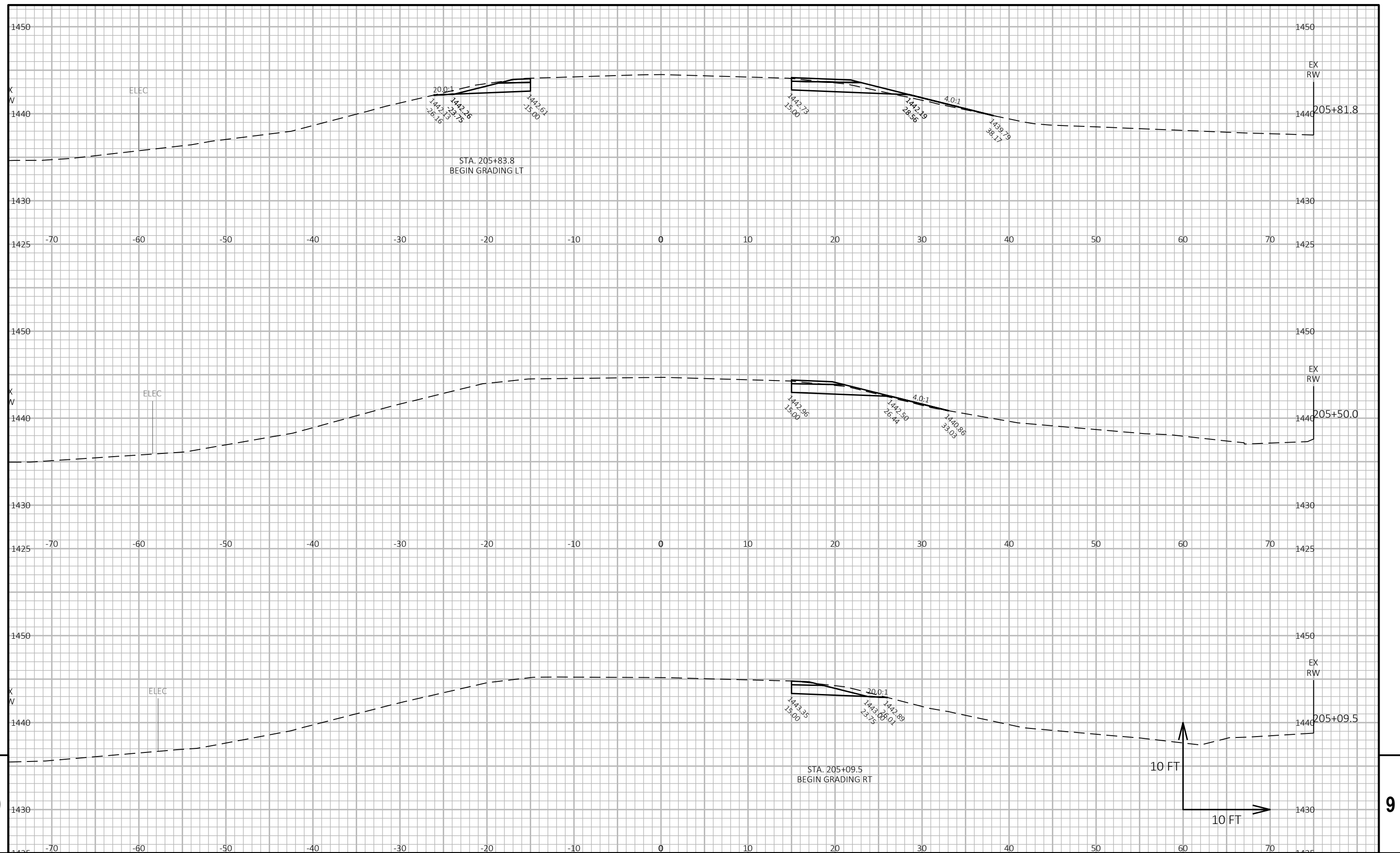
DIVISION 1 - STH 70 - TEMPORARY BY-PASS - LT													
STATION	REAL STATION	DISTANCE	AREA (SF)				INCREMENTAL VOL (CY) (UNADJUSTED)				CUMULATIVE VOL (CY)		
			CUT	SALVAGED/UNUSABLE PAVEMENT MATERIAL	FILL	EBS	CUT	SALVAGED/UNUSABLE PAVEMENT MATERIAL	FILL	EBS	CUT	EXPANDED FILL	MASS ORDINATE
							NOTE 1	NOTE 2	NOTE 3		NOTE 1	1.17	NOTE 8
206+54.00	20654.00	0.00	0.00	0.00	0.00	0.00	0	0	0	0	0	0	0
206+78.41	20678.41	24.41	0.00	0.00	0.00	0.00	0	0	0	0	0	0	0
206+97.50	20697.50	19.09	4.42	0.00	0.00	0.00	2	0	0	0	2	0	2
207+00.00	20700.00	2.50	4.41	0.00	0.00	0.00	0	0	0	0	2	0	2
207+25.00	20725.00	25.00	4.35	0.00	0.77	0.00	4	0	0	0	6	0	6
207+50.00	20750.00	25.00	4.20	0.00	2.90	0.00	4	0	2	0	10	2	8
207+74.00	20774.00	24.00	4.53	0.00	2.70	0.00	4	0	2	0	14	5	9
207+87.59	20787.59	13.59	4.42	0.00	2.12	0.00	2	0	1	0	16	6	10
207+92.41	20792.41	4.82	4.38	0.00	2.13	0.00	1	0	0	0	17	6	11
208+00.00	20800.00	7.59	4.33	0.00	1.68	0.00	1	0	1	0	18	7	11
208+34.19	20834.19	34.19	4.23	0.00	0.80	0.00	5	0	2	0	23	9	14
208+45.79	20845.79	11.60	4.35	0.00	4.09	0.00	2	0	1	0	25	11	14
208+75.00	20875.00	29.21	4.34	0.00	2.66	0.00	5	0	4	0	30	15	15
208+89.38	20889.38	14.38	4.73	0.00	1.99	0.00	2	0	1	0	32	16	16
209+00.00	20900.00	10.62	4.50	0.00	2.30	0.00	2	0	1	0	34	18	16
209+02.00	20902.00	2.00	4.46	0.00	2.12	0.00	0	0	0	0	34	18	16
209+25.00	20925.00	23.00	3.96	0.00	0.63	0.00	4	0	1	0	38	19	19
209+50.00	20950.00	25.00	4.17	0.00	0.00	0.00	4	0	0	0	42	19	23
209+62.30	20962.30	12.30	4.25	0.00	0.00	0.00	2	0	0	0	44	19	25
209+73.65	20973.65	11.35	0.00	0.00	0.00	0.00	1	0	0	0	45	19	26
209+92.00	20992.00	18.35	0.00	0.00	0.00	0.00	0	0	0	0	45	19	26

DIVISION 2 - STH 70 RT

STATION	REAL STATION	DISTANCE	AREA (SF)				INCREMENTAL VOL (CY) (UNADJUSTED)				CUMULATIVE VOL (CY)		
			CUT	SALVAGED/UNUSABLE PAVEMENT MATERIAL	FILL	EBS	CUT	SALVAGED/UNUSABLE PAVEMENT MATERIAL	FILL	EBS	CUT	EXPANDED FILL	MASS ORDINATE
							NOTE 1	NOTE 2	NOTE 3		NOTE 1	1.17	NOTE 8
205+09.54	20509.54	0.00	10.05	0.00	0.00	0.00	0	0	0	0	0	0	0
205+50.00	20550.00	40.46	9.12	0.00	0.82	0.00	14	0	1	0	14	1	13
205+93.49	20593.49	43.49	8.58	0.00	3.77	0.00	14	0	4	0	28	6	22
205+93.61	20593.61	0.12	9.66	0.00	3.79	0.00	0	0	0	0	28	6	22
206+00.00	20600.00	6.39	9.83	0.00	4.77	0.00	2	0	1	0	30	7	23
206+43.60	20643.60	43.60	9.64	0.00	17.86	0.00	16	0	18	0	46	28	18
206+50.00	20650.00	6.40	9.47	0.00	16.67	0.00	2	0	4	0	48	33	15
206+68.60	20668.60	18.60	8.55	0.00	13.14	0.00	6	0	10	0	54	44	10
206+93.60	20693.60	25.00	9.92	0.00	0.03	0.00	9	0	6	0	63	51	12
207+00.00	20700.00	6.40	10.29	0.00	0.00	0.00	2	0	0	0	65	51	14
207+50.00	20750.00	50.00	10.18	0.00	0.23	0.00	19	0	0	0	84	51	33
207+89.00	20789.00	39.00	28.70	0.00	0.42	0.00	28	0	0	0	112	51	61
207+89.17	20789.17	0.17	28.69	0.00	0.42	0.00	0	0	0	0	112	51	61
207+96.20	20796.20	7.03	24.32	0.00	0.00	0.00	7	0	0	0	119	51	68
207+98.19	20798.19	1.99	24.19	0.00	0.00	0.00	2	0	0	0	121	51	70
208+07.84	20807.84	9.65	23.61	0.00	0.00	0.00	9	0	0	0	130	51	79
208+12.19	20812.19	4.35	23.28	0.00	0.00	0.00	4	0	0	0	134	51	83
208+16.96	20816.96	4.77	22.79	0.00	0.00	0.00	4	0	0	0	138	51	87
208+16.98	20816.98	0.02	0.00	0.00	0.00	0.00	0	0	0	0	138	51	87
208+62.92	20862.92	45.94	0.00	0.00	0.00	0.00	0	0	0	0	138	51	87
208+62.97	20862.97	0.05	21.03	0.00	0.00	0.00	0	0	0	0	138	51	87
208+72.16	20872.16	9.19	21.35	0.00	0.00	0.00	7	0	0	0	145	51	94
208+75.00	20875.00	2.84	24.35	0.00	1.91	0.00	2	0	0	0	147	51	96
208+83.82	20883.82	8.82	24.63	0.00	2.36	0.00	8	0	1	0	155	53	102
209+00.00	20900.00	16.18	25.71	0.00	2.10	0.00	15	0	1	0	170	54	116
209+14.18	20914.18	14.18	26.11	0.00	2.62	0.00	14	0	1	0	184	55	129
209+39.18	20939.18	25.00	27.08	0.00	22.85	0.00	25	0	12	0	209	69	140
209+50.00	20950.00	10.82	19.93	0.00	26.77	0.00	9	0	10	0	218	81	137
209+50.00	20950.00	0.00	0.00	0.00	0.00	0.00	0	0	0	0	218	81	137
209+64.18	20964.18	14.18	8.02	0.00	30.35	0.00	2	0	8	0	220	90	130
209+86.33	20986.33	22.15	9.01	0.00	26.58	0.00	7	0	23	0	227	117	110
210+00.00	21000.00	13.67	9.49	0.00	23.47	0.00	5	0	13	0	232	132	100
210+14.18	21014.18	14.18	10.46	0.00	19.13	0.00	5	0	11	0	237	145	92
210+14.41	21014.41	0.23	8.74	0.00	19.09	0.00	0	0	0	0	237	145	92
210+50.00	21050.00	35.59	9.91	0.00	13.70	0.00	12	0	22	0	249	171	78
210+86.33	21086.33	36.33	10.44	0.00	0.00	0.00	14	0	9	0	263	181	82
210+86.50	21086.50	0.17	10.45	0.00	0.00	0.00	0	0	0	0	263	181	82
210+98.25	21098.25	11.75	10.32	0.00	0.00	0.00	5	0	0	0	268	181	87

DIVISION 3 - STH 70 LT

STATION	REAL STATION	DISTANCE	AREA (SF)				INCREMENTAL VOL (CY) (UNADJUSTED)				CUMULATIVE VOL (CY)		
			CUT	SALVAGED/UNUSABLE PAVEMENT MATERIAL	FILL	EBS	CUT	SALVAGED/UNUSABLE PAVEMENT MATERIAL	FILL	EBS	CUT 1.00	EXPANDED FILL 1.17	MASS ORDINATE
							NOTE 1	NOTE 2	NOTE 3		NOTE 1		NOTE 8
205+81.76	20581.76	0.00	10.07	0.00	0.00	0.00	0	0	0	0	0	0	0
206+00.00	20600.00	18.24	9.45	0.00	0.00	0.00	7	0	0	0	7	0	7
206+50.00	20650.00	50.00	8.49	0.00	19.83	0.00	17	0	18	0	24	21	3
206+65.73	20665.73	15.73	7.18	0.00	23.53	0.00	5	0	13	0	29	36	-7
206+65.83	20665.83	0.10	8.27	0.00	23.56	0.00	0	0	0	0	29	36	-7
207+00.00	20700.00	34.17	8.72	0.00	26.49	0.00	11	0	32	0	40	74	-34
207+15.82	20715.82	15.82	8.60	0.00	28.75	0.00	5	0	16	0	45	92	-47
207+40.82	20740.82	25.00	8.31	0.00	14.11	0.00	8	0	20	0	53	116	-63
207+50.00	20750.00	9.18	8.30	0.00	5.08	0.00	3	0	3	0	56	119	-63
207+65.82	20765.82	15.82	8.38	0.00	0.80	0.00	5	0	2	0	61	122	-61
207+88.99	20788.99	23.17	8.31	0.00	0.08	0.00	7	0	0	0	68	122	-54
207+89.17	20789.17	0.18	24.98	0.00	0.39	0.00	0	0	0	0	68	122	-54
208+00.00	20800.00	10.83	24.28	0.00	0.43	0.00	10	0	0	0	78	122	-44
208+05.84	20805.84	5.84	23.60	0.00	0.29	0.00	5	0	0	0	83	122	-39
208+07.84	20807.84	2.00	21.50	0.00	0.00	0.00	2	0	0	0	85	122	-37
208+16.96	20816.96	9.12	20.72	0.00	0.00	0.00	7	0	0	0	92	122	-30
208+16.98	20816.98	0.02	0.00	0.00	0.00	0.00	0	0	0	0	92	122	-30
208+62.92	20862.92	45.94	0.00	0.00	0.00	0.00	0	0	0	0	92	122	-30
208+62.98	20862.98	0.06	19.10	0.00	0.00	0.00	0	0	0	0	92	122	-30
208+81.81	20881.81	18.83	20.09	0.00	0.00	0.00	14	0	0	0	106	122	-16
208+83.82	20883.82	2.01	22.40	0.00	0.02	0.00	2	0	0	0	108	122	-14
209+00.00	20900.00	16.18	23.13	0.00	0.76	0.00	14	0	0	0	122	122	0
209+50.00	20950.00	50.00	25.35	0.00	1.61	0.00	45	0	2	0	167	124	43
209+50.03	20950.03	0.03	7.90	0.00	1.12	0.00	0	0	0	0	167	124	43
209+86.33	20986.33	36.30	8.44	0.00	3.86	0.00	11	0	3	0	178	128	50
210+00.00	21000.00	13.67	8.43	0.00	19.12	0.00	4	0	6	0	182	135	47
210+11.33	21011.33	11.33	7.07	0.00	34.42	0.00	3	0	11	0	185	147	38
210+36.33	21036.33	25.00	7.58	0.00	50.24	0.00	7	0	39	0	192	193	-1
210+50.00	21050.00	13.67	7.60	0.00	50.01	0.00	4	0	25	0	196	222	-26
210+86.29	21086.29	36.29	7.45	0.00	44.67	0.00	10	0	64	0	206	297	-91
210+86.33	21086.33	0.04	7.45	0.00	44.66	0.00	0	0	0	0	206	297	-91
211+00.00	21100.00	13.67	6.69	0.00	41.11	0.00	4	0	22	0	210	323	-113
211+50.00	21150.00	50.00	6.50	0.00	11.21	0.00	12	0	48	0	222	379	-157
211+70.40	21170.40	20.40	6.53	0.00	0.10	0.00	5	0	4	0	227	384	-157



PROJECT NO:	8170-01-74
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HWY: STH 70

COUNTY: SAWYER

CROSS SECTIONS: STH 70

SHEET

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FILE NAME : W:\NWBE_PROJECTS\DESIGN\1913_STH70-LOGCREEK-CULVERT\C3D-18\SHEETSPLAN\090201_XS-FINALXSECS-LT&RT.DWG
LAYOUT NAME - 70_xs-1-Final

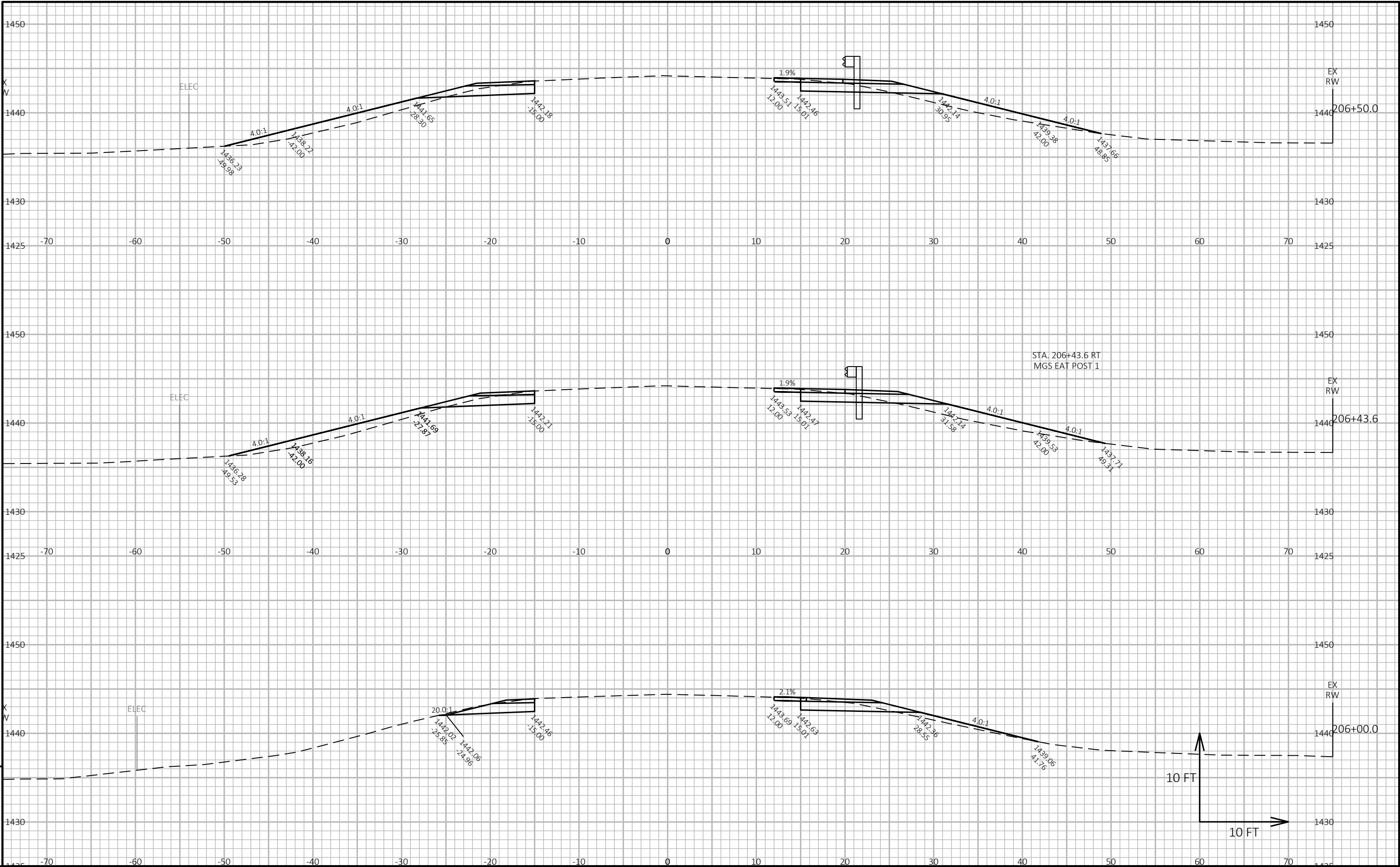
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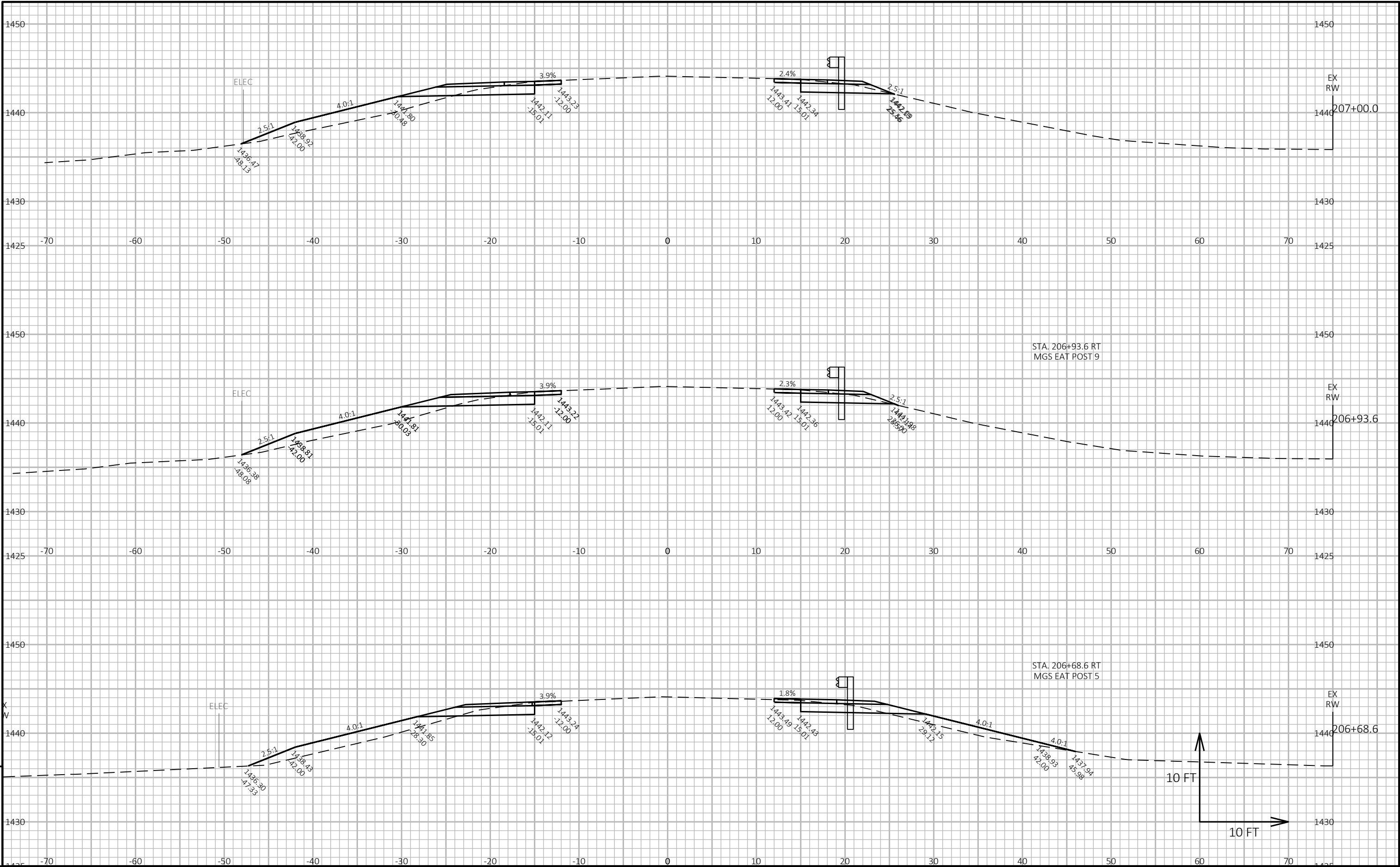
PLOT BY : G. COLBERT

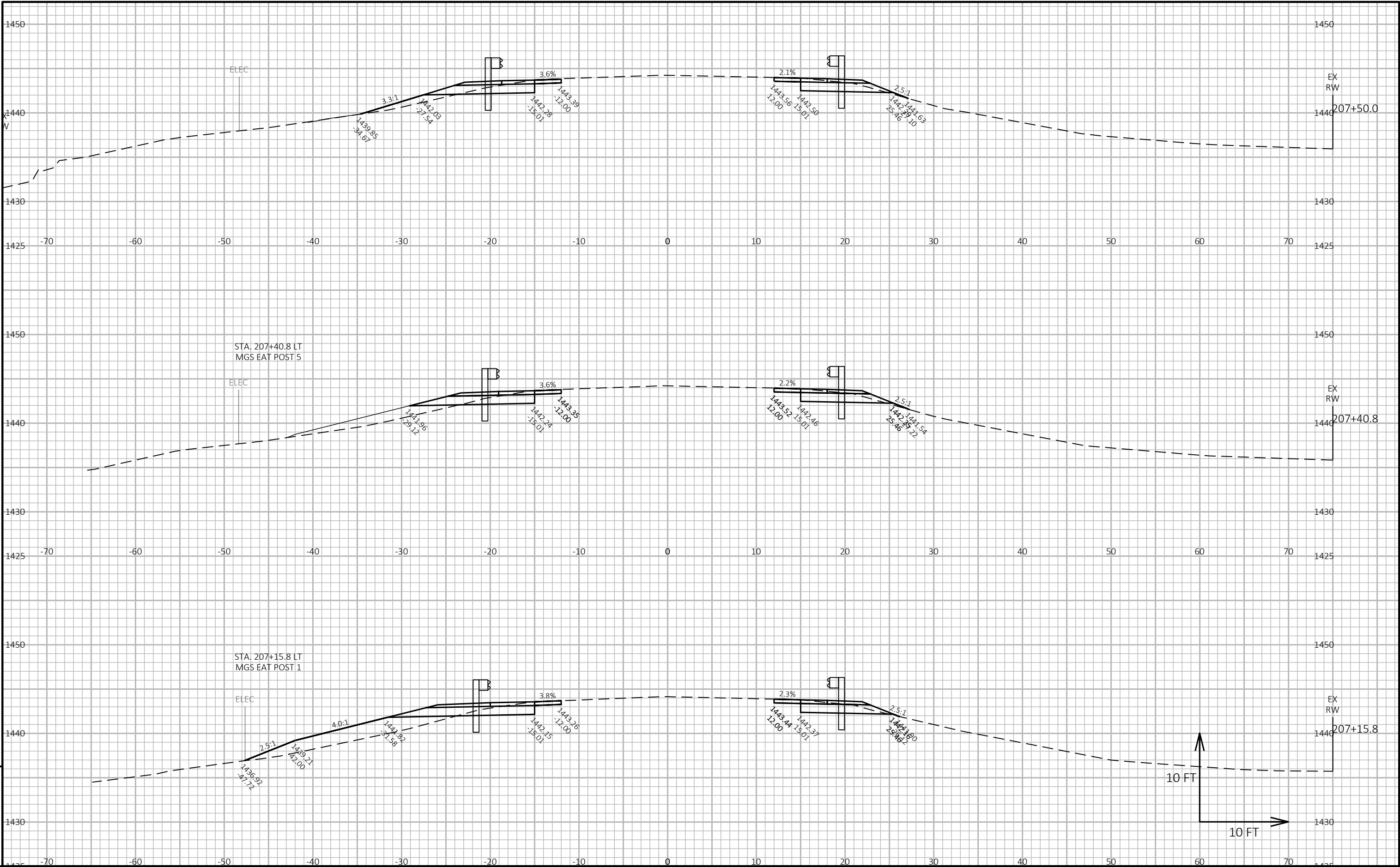
PLOT NAME :

PLOT SCALE : 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49

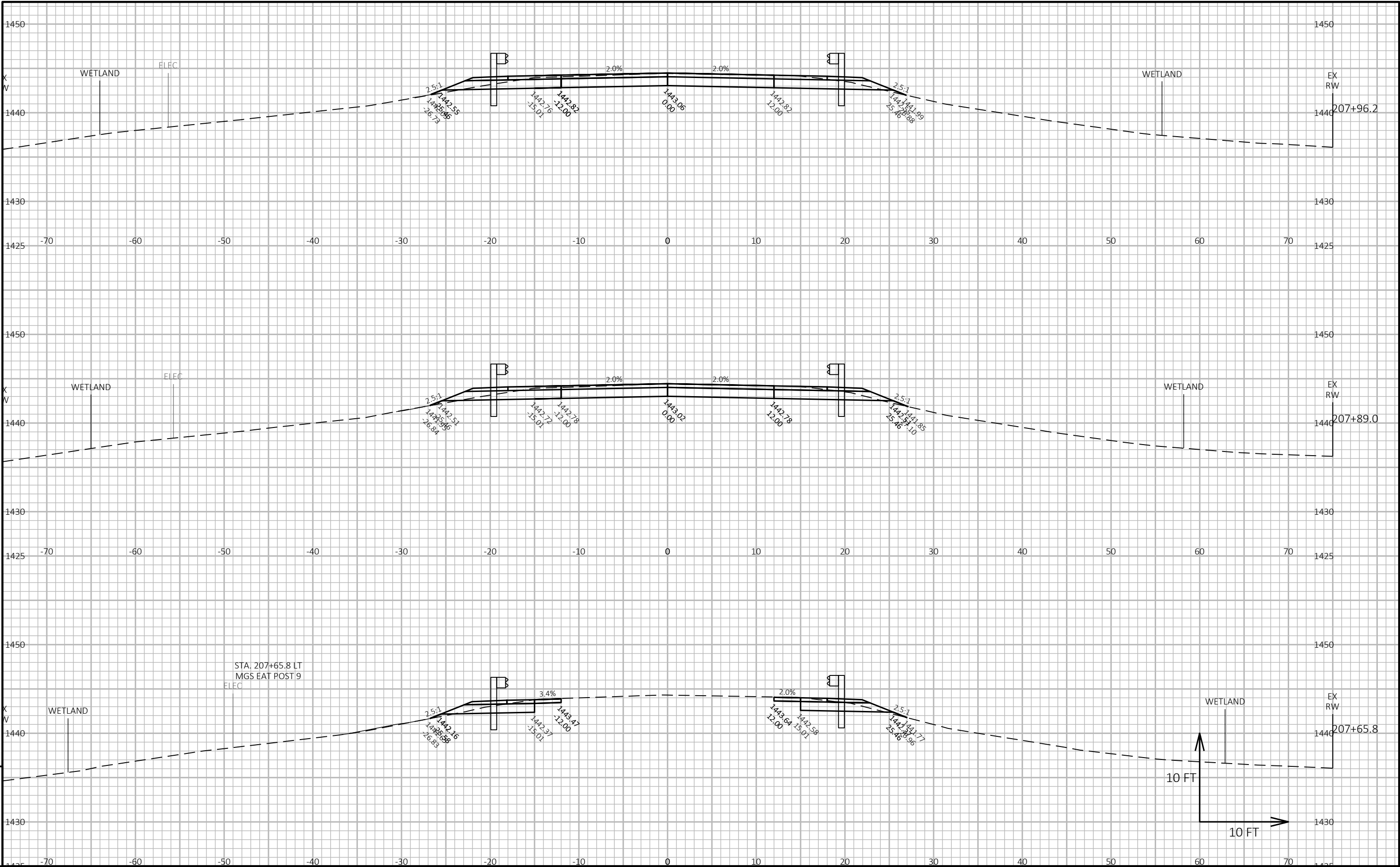






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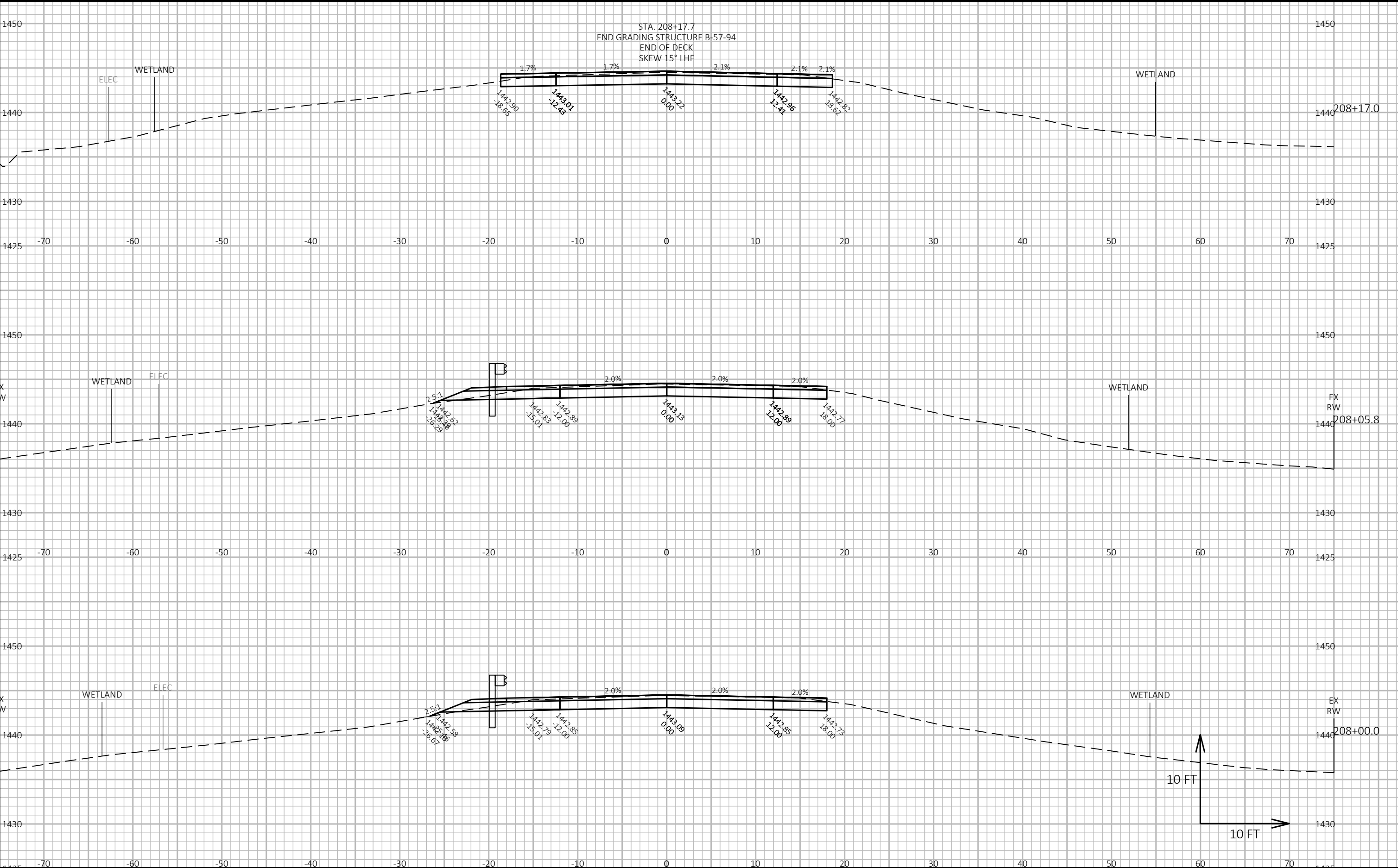
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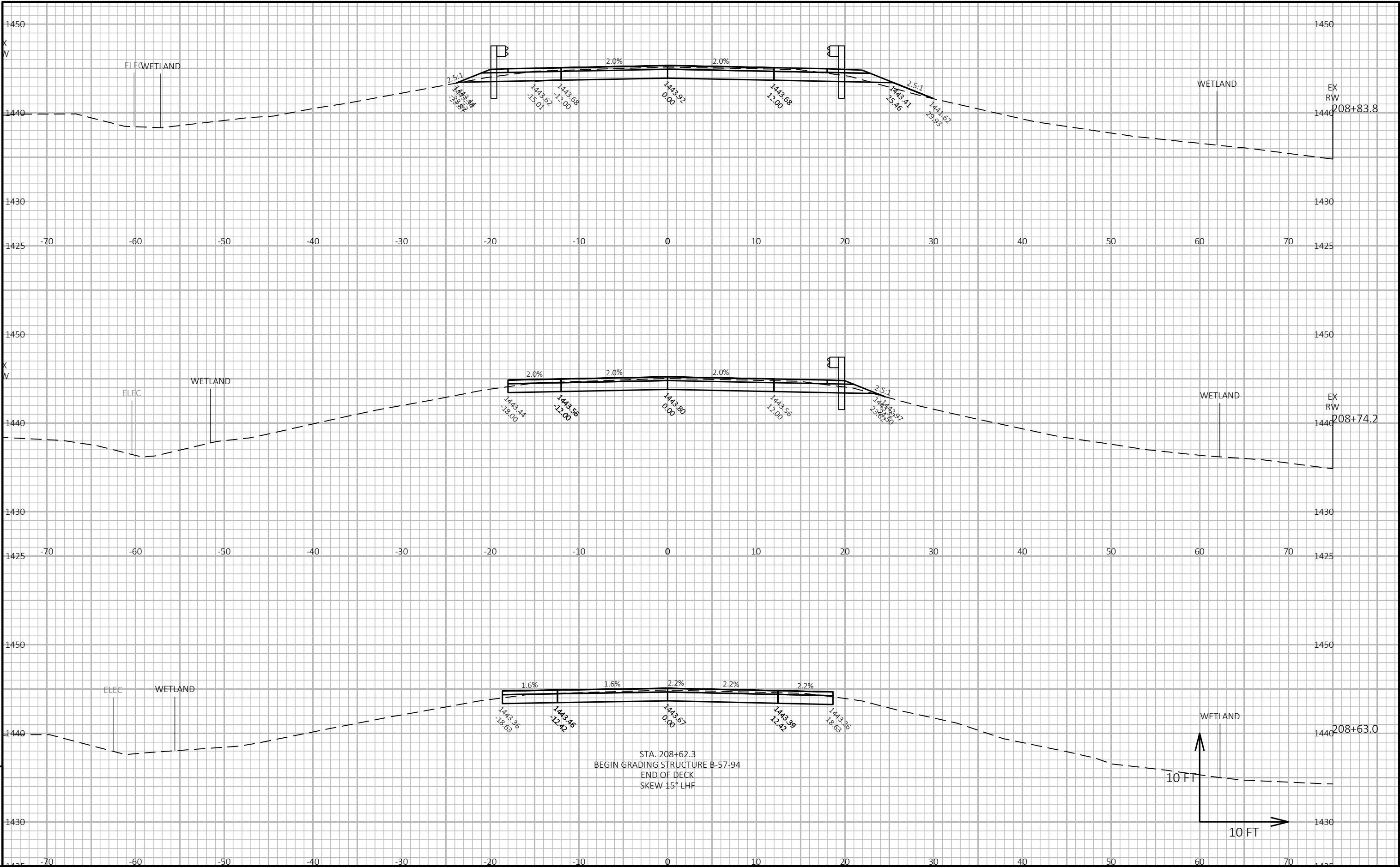


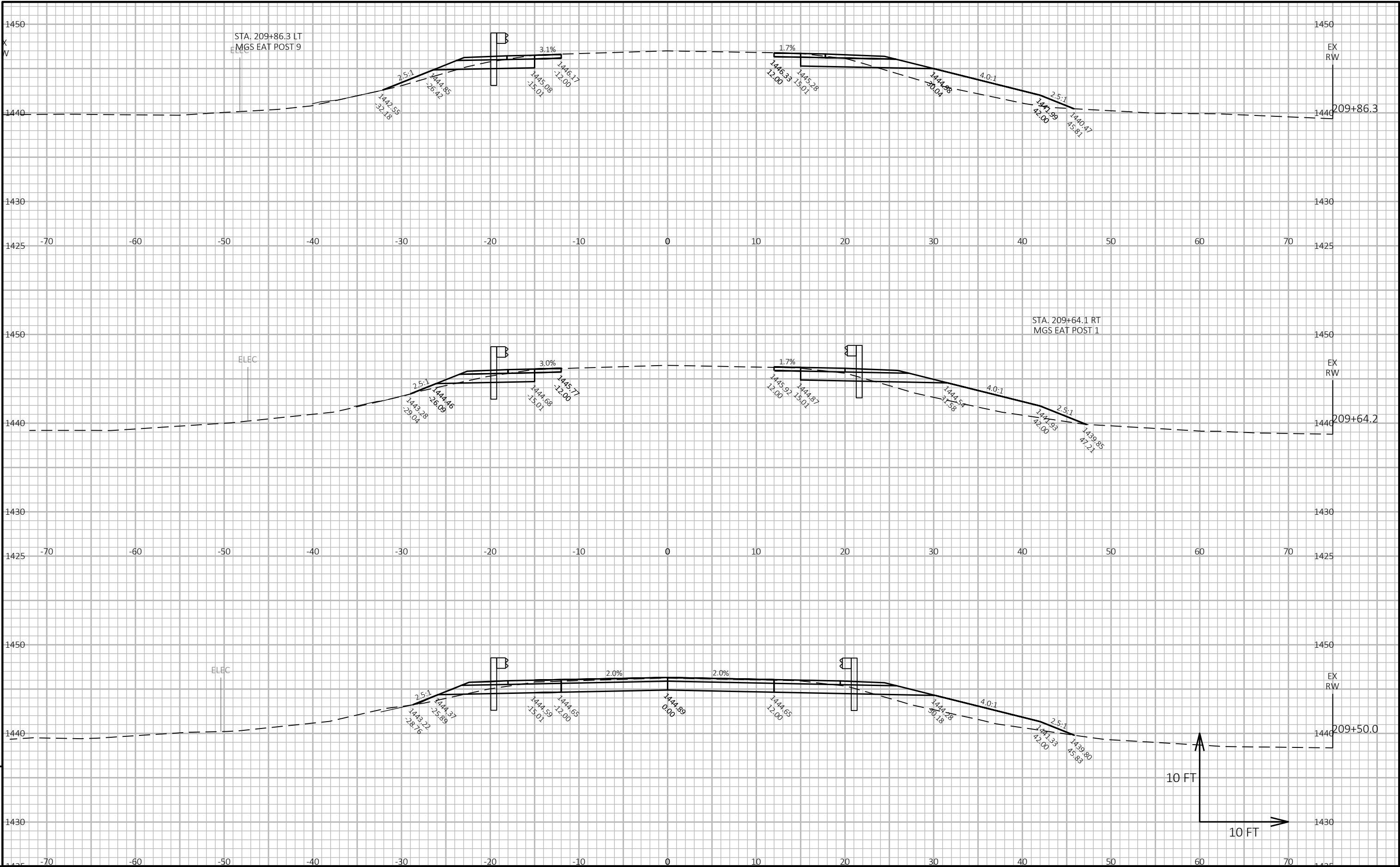
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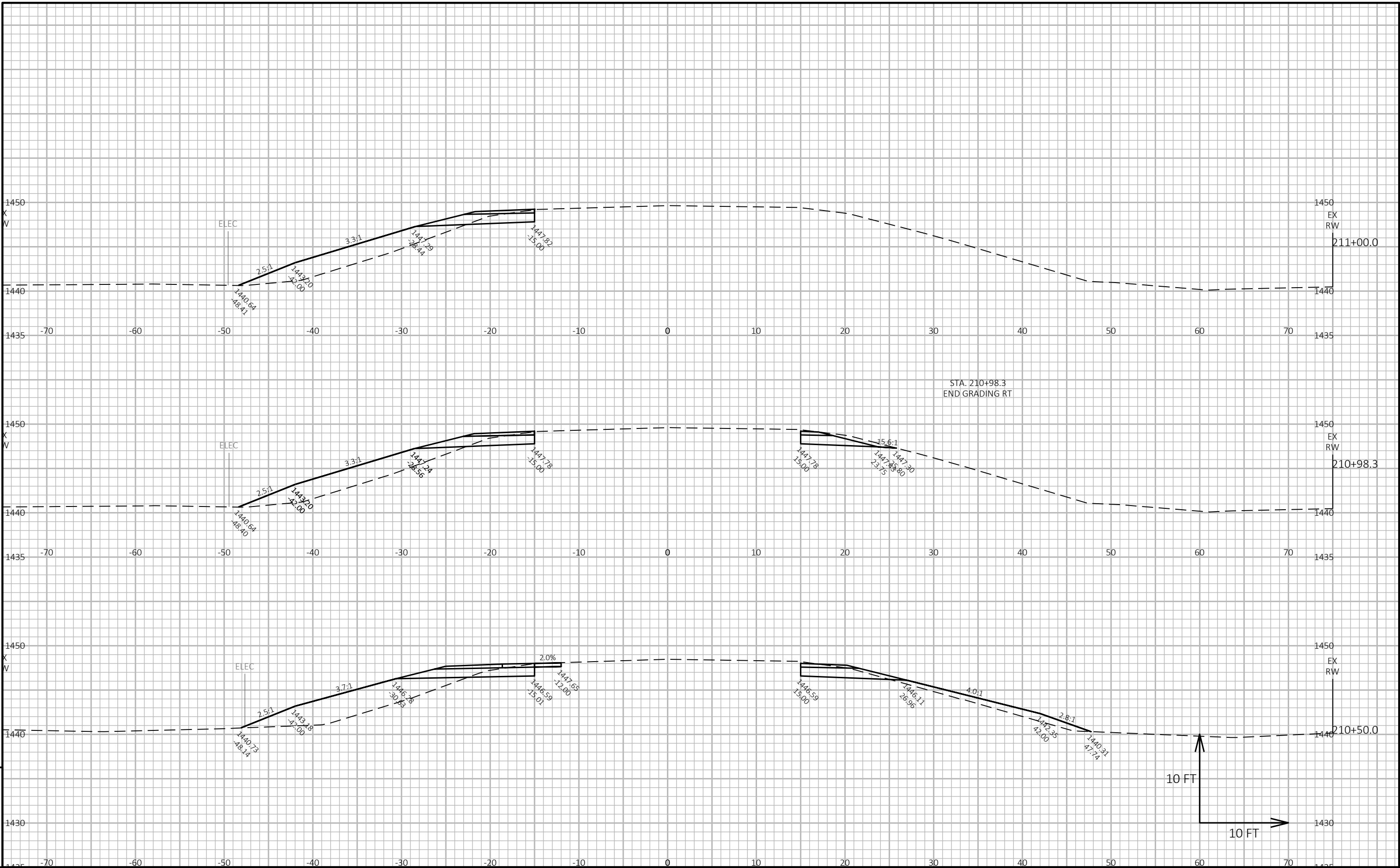
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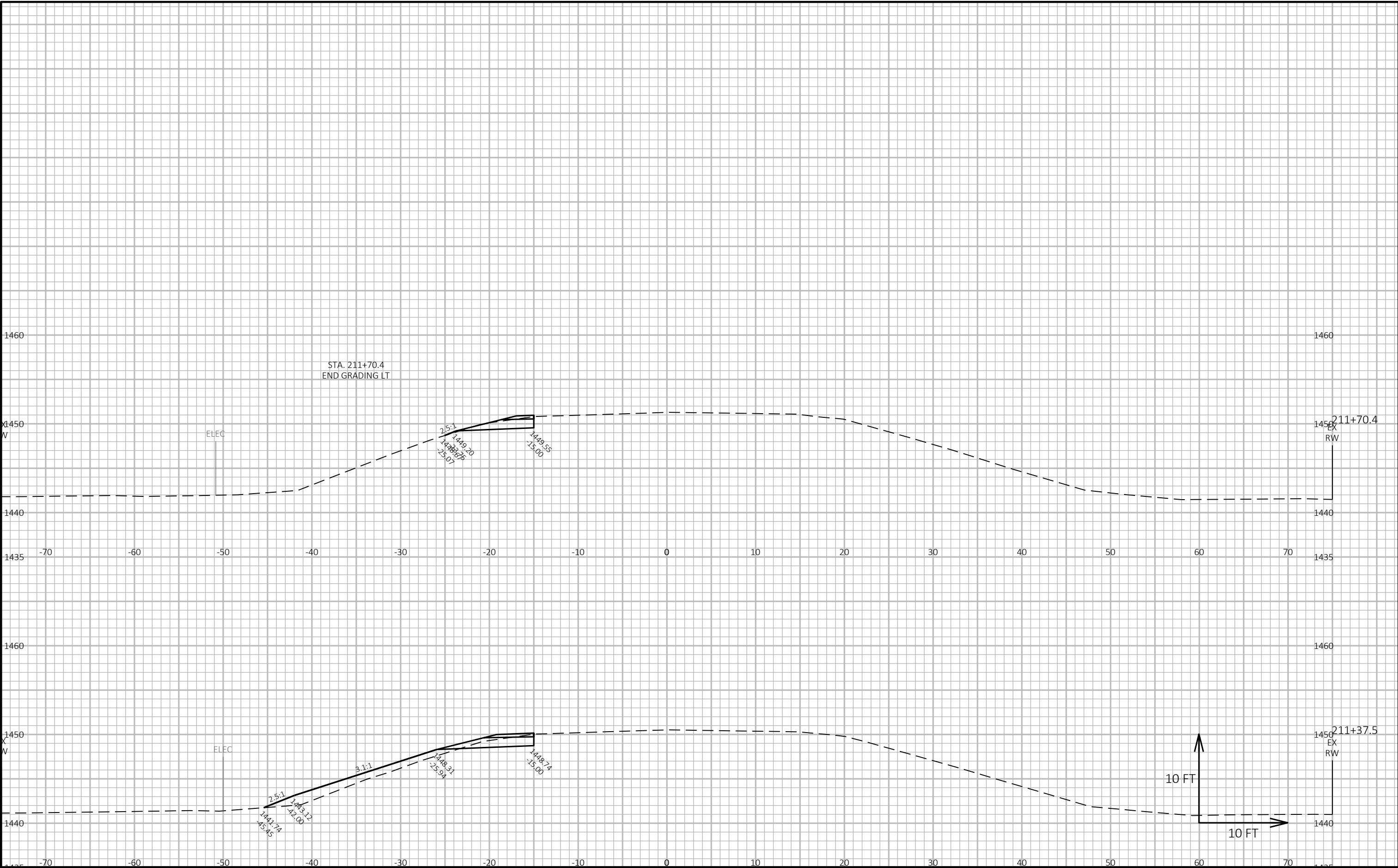
PROJECT NO: 8170-01-74	HWY: STH 70	COUNTY: SAWYER	CROSS SECTIONS: STH 70	SHEET E
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PROJECT NO: 8170-01-74	HWY: STH 70	COUNTY: SAWYER	CROSS SECTIONS: STH 70	SHEET E
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Notes



Wisconsin Department of Transportation

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through innovation and exceptional service.

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